

REPORT NUMBER: 5FEM-MGA-2001-017

35 MPH FRONTAL BARRIER IMPACT TEST

**Nissan Motor Company
2001 Nissan Maxima 4 Door Sedan
NHTSA NUMBER: M15207**

**PREPARED BY:
MGA RESEARCH CORPORATION
5000 WARREN ROAD
BURLINGTON, WI 53105**



March 21, 2001

FINAL REPORT

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

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COTR, Frontal Barrier Impact Program

Date of Acceptance

Technical Report Documentation Page

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16. Abstract A 35 mph (56.3 km/h) frontal barrier impact was conducted on a 2001 Nissan Maxima 4 Door Sedan at MGA Research Corporation on March 21, 2001. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The impact velocity was 56.0 km/h. The ambient temperature at the barrier face at the time of impact was 21 degrees Celsius. The vehicle's maximum post test static crush is 480 mm located to the right of the vehicle centerline. The test vehicle is equipped with a 3-point continuous belt system and a second generation supplemental airbag in both front outboard seating positions. With respect to FMVSS 208 "Occupant Crash Protection", the occupant injury criteria summary is as follows:																																																																	
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SECTION 1

PURPOSE AND TEST PROCEDURE

1.1 PURPOSE

This 35 mph (56.3 km/h) frontal barrier crashworthiness evaluation program is sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract Number DTNH22-01-D-12005. The purpose of this test is to obtain vehicle crashworthiness, occupant restraint system performance, lower leg data, and child seat research data for a frontal barrier impact. The impact velocity used in this test is in excess of the current 30 mph (48.3 km/h) FMVSS 208/212/219/301 requirements.

1.2 TEST PROCEDURE

This 56.3 km/h frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) New Car Assessment Program (NCAP) Laboratory Test Procedure, dated December 1999 and the corresponding MGA Research Corporation Test Procedure NHTSA3, dated January 5, 2001. Data was obtained indicant of FMVSS 208, "Occupant Crash Protection"; FMVSS 212, "Windshield Retention"; FMVSS 219, "Windshield Zone Intrusion (Partial)"; and FMVSS 301, "Fuel System Integrity" performance. Procedures for receiving, inspection, and reporting of test results are described in the test procedures and are not repeated in this report.

The test was conducted at MGA Research Corporation on March 21, 2001 at a speed of 56.0 km/h. The test vehicle was instrumented with nine (9) accelerometers to measure longitudinal axis accelerations. The driver's and passenger's restraint systems were instrumented with four(4) seat belt load cells to measure lap and shoulder belt tension. The specified impact velocity range was 55.5 to 57.1 km/h. The frontal barrier impact event was documented by one (1) real-time panning motion picture camera and sixteen (16) high-speed motion picture cameras. The pre- and post-test conditions were recorded by one (1) real-time motion picture camera. Camera locations and pertinent camera information is documented in the data sheets. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The test vehicle contained four (4) anthropomorphic test devices (ATDs). Two (2) part 572O 5th percentile female ATDs and two (2) part 572P 3 year old ATDs. Both adult ATDs were instrumented with head, chest, and pelvic tri-axial accelerometers, left and right femur load cells, upper and lower tibia sensors, and foot accelerometers. In addition, chest displacement and upper neck six-axis force and moment sensors were utilized. The adult ATDs were positioned in the front outboard seating positions according to the dummy placement procedures specified in the Laboratory Indicant Test Procedure. Both child ATDs were instrumented with head, chest, and pelvic tri-axial accelerometers, and upper and lower neck load cells. The child ATDs were positioned according to the child seat manufacturer's instructions. One hundred forty three (143) channels of data were recorded with an EME on-board data acquisition system. The data was digitally sampled at 10,000 samples per second and processed per section IP11 of the Laboratory Test Procedure.

The driver (Serial No. 288) and the right-front passenger (Serial No. 273) were calibrated one test prior to this test. FMVSS 208 "Occupant Crash Protection" injury criteria were not exceeded by either ATD during this frontal barrier impact test.

1.3 SUMMARY OF FRONTAL IMPACT TEST

A rigid load cell barrier was impacted by a 2001 Nissan Maxima 4 Door Sedan at a velocity of 56.0 km/h. The test vehicle weight was 1583.1 kilograms with two (2) part 572O 5th percentile female ATDs and two (2) part 572P 3 year old ATDs. Six (6) load cell barrier data channels were obtained in conducting the test. The test vehicle is equipped with a transversely mounted 3.0-liter, 6-cylinder engine and an automatic transmission.

The occupant injury criteria summary is as follows:

	Requirement	Driver	Passenger
Head Injury Criteria (HIC ₁₅)	700	396	318
N _{te}	1.0	0.9	0.8
N _{tf}	1.0	0.2	0.0
N _{ce}	1.0	0.6	0.8
N _{cf}	1.0	0.0	0.0
Neck Tension (N)	2620	1960	1319
Neck Compression (N)	2520	647	768
3 msec CLIP	60	45	45
Chest Deflection (mm)	52	21	17
Left Femur (N)	6805	2833	1713
Right Femur (N)	6805	3175	2611

Seat belt spool out was not measured by on-board pullout potentiometers at the manufacturer's request.

There was 100 percent windshield retention (minimum 50 percent required for passive restraint systems). No intrusion occurred into the protected or unprotected zone of the windshield. No Stoddard Solvent leakage occurred after impact or during any phase of the rollover.

The test vehicle sustained a maximum static crush of 480 mm located to the right of the vehicle centerline. Both the driver and passenger side doors opened without the aid of tools.

1.4 GENERAL COMMENTS

The 2001 Nissan Maxima 4 Door Sedan passed the requirements of FMVSS 208, FMVSS 212, FMVSS 219, and FMVSS 301-75. Data pertaining to these standards are presented in the data sheets.

The vehicle, occupant, camera, and measurement data are presented in Section 2. Appendix A contains the still photograph prints. Appendix B Contains the dummy and vehicle response data traces. Appendix C contains the dummy calibration data. Appendix D contains the instrumentation calibration data and Appendix E contains the owner's manual instructions for the occupant seating and restraint systems and Appendix F contains the child data and photos.

SECTION 2

OCCUPANT AND VEHICLE INFORMATION / DATA SHEETS

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

CONVERSION FACTORS USED IN THIS REPORT*

Quantity	Typical Application	Old 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 Pressure	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: 2001/Nissan/Maxima/4 Door Sedan NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact Test Date: March 21, 2001

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
Velocity at Impact	km/h	56.0
Test Weight	kg	1583.1
Impact Angle	degrees	90
Average Rebound	mm	451
Maximum Static Crush	mm	480

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Front Door Opening	Yes	Yes
Rear Door Opening	Yes	Yes
Seat Track Shift (mm)	4 mm forward	None
Seat Back Failure	None	None

TEST DUMMY INFORMATION

Description	Driver	Passenger
Dummy Type / Serial No.	HIII 5th / 288	HIII 5th / 273
Head Contact	to airbag and headrest	to airbag and headrest
Chest Contact	to airbag	to airbag
Abdomen Contact	none noted	none noted
Left Knee Contact	to dash panel	to glovebox
Right Knee Contact	to dash panel	to glovebox

16mm MOVIE COVERAGE

High Speed	16
Real Time	1
Total	17

Driver ATD Sensors	42
Passenger ATD Sensors	42
Belt Assessment Sensors	4
Vehicle Structure Accelerometers	9
Rigid Barrier Load Cells	6
Total	103

**DATA SHEET NO. 2
GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

TEST VEHICLE INFORMATION

TEST VEHICLE OPTIONS

Manufacturer	Nissan Motor Co.
Model	Maxima
Body Style	4 door sedan
NHTSA No.	M15207
VIN	JN1CA31D61T617080
Color	sand
Delivery Date	2/27/01
Odometer Reading (mile)	50
Dealer	Rosen Nissan
Transmission	automatic
Final Drive	front
Number of Cylinders	6
Engine Displacement (L)	3.0
Engine Placement	transverse

Driver Airbag	yes
Passenger Airbag	yes
Power Windows	yes
Power Steering	yes
Power Door Locks	yes
Tilt Wheel	yes
Air Conditioning	yes
Power Brakes	yes
Disc Brakes, Front	yes
Disc Brakes, Rear	yes
Anti-lock Brakes	yes
AM/FM/Cassette	yes
Anti-theft System	yes
Cruise Control	yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Nissan Motor Co.
Date of Manufacture	11/00

GVWR (kg)	1955.0
GAWR Front (kg)	1049.2
GAWR Rear (kg)	913.1

DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	231	210
Cold Pressure (kPa)	231	210
Recommended Tire Size	P215/55R16	P215/55R16
Tire Size on Vehicle	P215/55R16	P215/55R16
Tire Manufacturer	Toyo	Toyo

Measured Parameter	Front	Rear	Third	Total
Type of Seats	bucket	bench	N/A	
Number of Occupants	2	3	N/A	5
Capacity Wt. (VCW) (kg)				400.1
Cargo Weight (RCLW) (kg)				59.9

DATA SHEET NO. 2...(continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan NHTSA No.: M15207
 Test Program: 35 mph Frontal Barrier Impact Test Date: March 21, 2001

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	468.6	175.1		490.8	319.8	
Right	kg	464.5	265.8		475.8	296.7	
Ratio	%	67.9	32.1		61.1	38.9	
Totals	kg	933.1	440.9	1374.0	966.6	616.5	1583.1

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1374.0
Weight of 2 P572E ATDs	kg	156.0
Rated Cargo/Luggage Weight (RCLW)	kg	59.9
Calculated Vehicle Target Weight (TVTW)	kg	1589.9

TEST VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	707	712	698	702	881
As Tested	mm	698	705	686	691	1069
Post Test	mm	718	717	691	680	

Vehicle Wheelbase (mm): 2744
 Weight of Ballast secured in cargo area (kg): 0
 Vehicle Components Removed: spare tire, jack, rear deck lid, rear bumper and cover, exhaust, and rear door glass

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

FUEL SYSTEM DATA

Fuel System Capacity From Owner's Manual (L): 70.0
 Usable Capacity Figure Furnished by COTR (L): 70.0
 Actual Test Volume (L): 11.4
 Test Fluid Type: Stoddard Solvent ; Specific Gravity: 0.77
 Is Vehicle Fuel Pump Electric or Mechanical?: electric
 If electric, does pump operate with ignition switch "ON" & engine "OFF"?: yes
 Fuel System Particulars: With the ignition on, the fuel pump will operate for 3 seconds and stop. With the engine running, the fuel pump will run continuously.

DATA SHEET NO. 3

POST IMPACT DATA

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h		56.0
Trap No. 1 Entry Distance	mm	<1524	1300
Trap No. 1 Exit Distance	mm	<1524	300
Trap No. 2 Velocity (Redundant)	km/h		56.2
Trap No. 2 Entry Distance	mm	<1524	1425
Trap No. 2 Exit Distance	mm	<1524	425

VEHICLE STATIC CRUSH

Measured Parameter	Units	Pre-Test	Post-Test	Difference
Left Side	mm	4430	4050	380
Center	mm	4565	4093	472
Right Side	mm	4432	40388	394

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	480
Center	mm	411
Right Side	mm	462
Average	mm	451

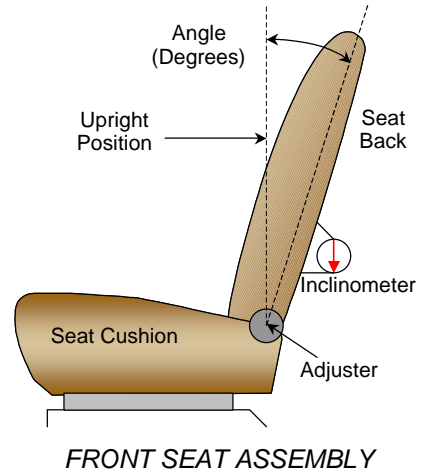
DATA SHEET NO. 4
TEST VEHICLE INFORMATION

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan
Test Program: 35 mph Frontal Barrier Impact

NHTSA No.: M15207
Test Date: March 21, 2001

NORMAL DESIGN RIDING POSITION

The driver and passenger seat backs are positioned according to the procedure stated in Federal Register, Volume 65, No. 93/Friday May 12, 2000 Rules and Regulations section S16.3



Driver seat back angle: 9.5E measured on headrest
Passenger seat back angle: 9.1E measured on headrest

SEAT FORE/AFT POSITIONS

Both driver and passenger seats are power operated seats. The total travel on the driver and passenger seats is 240mm. The fore/aft position is set as far forward as possible without allowing the ATDs' knees to touch the dash panel.

Driver seat fore/aft total travel: 240 mm
Passenger seat fore/aft total travel: 240 mm
Driver seat fore/aft position: 30 mm from full forward
Passenger seat fore/aft position: full forward

SEAT BELT UPPER ANCHORAGE

The test vehicle is equipped with adjustable anchorages for both the driver and passenger seat positions. The anchorages were placed in the lowest position.

DATA SHEET NO. 4...(continued)

TEST VEHICLE INFORMATION

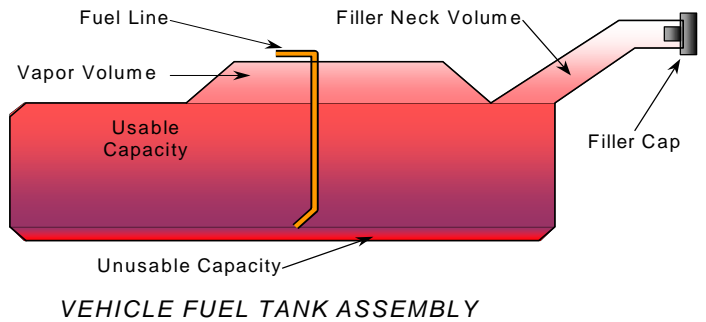
Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan
Test Program: 35 mph Frontal Barrier Impact

NHTSA No.: M15207
Test Date: March 21, 2001

FUEL TANK CAPACITY DATA

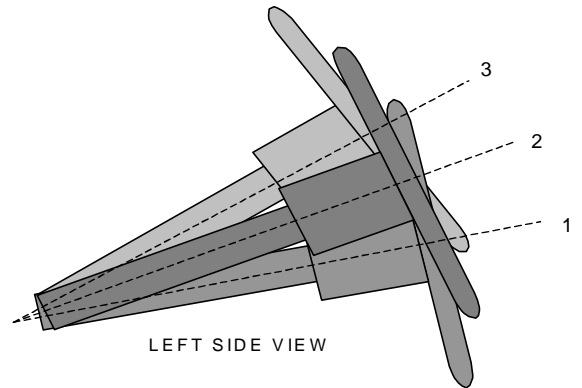
The "Usable Capacity" of the standard equipment fuel tank is: 70.0 liters
The "Usable Capacity" of any optional equipment fuel tank is: N/A liters
The "Usable Capacity" used for certification to FMVSS 301 requirements: 70.0 liters
Actual amount of Stoddard solvent added to vehicle for certification test: 11.4 liters

The test vehicle is equipped with an electric fuel pump. The fuel pump operates only when the engine is running. The fuel filler door is located on the left rear fender.



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 it is moved through its full range of motion. A metal plate is placed across the rim of the steering wheel, and inclinometer is placed onto the plate and the angle is measured.



Lowermost, position 1: 21.5°
Geometric center, position 2: 23.4°
Uppermost, position 3: 25.3°

DATA SHEET NO. 5

DUMMY POSITIONING IN VEHICLE

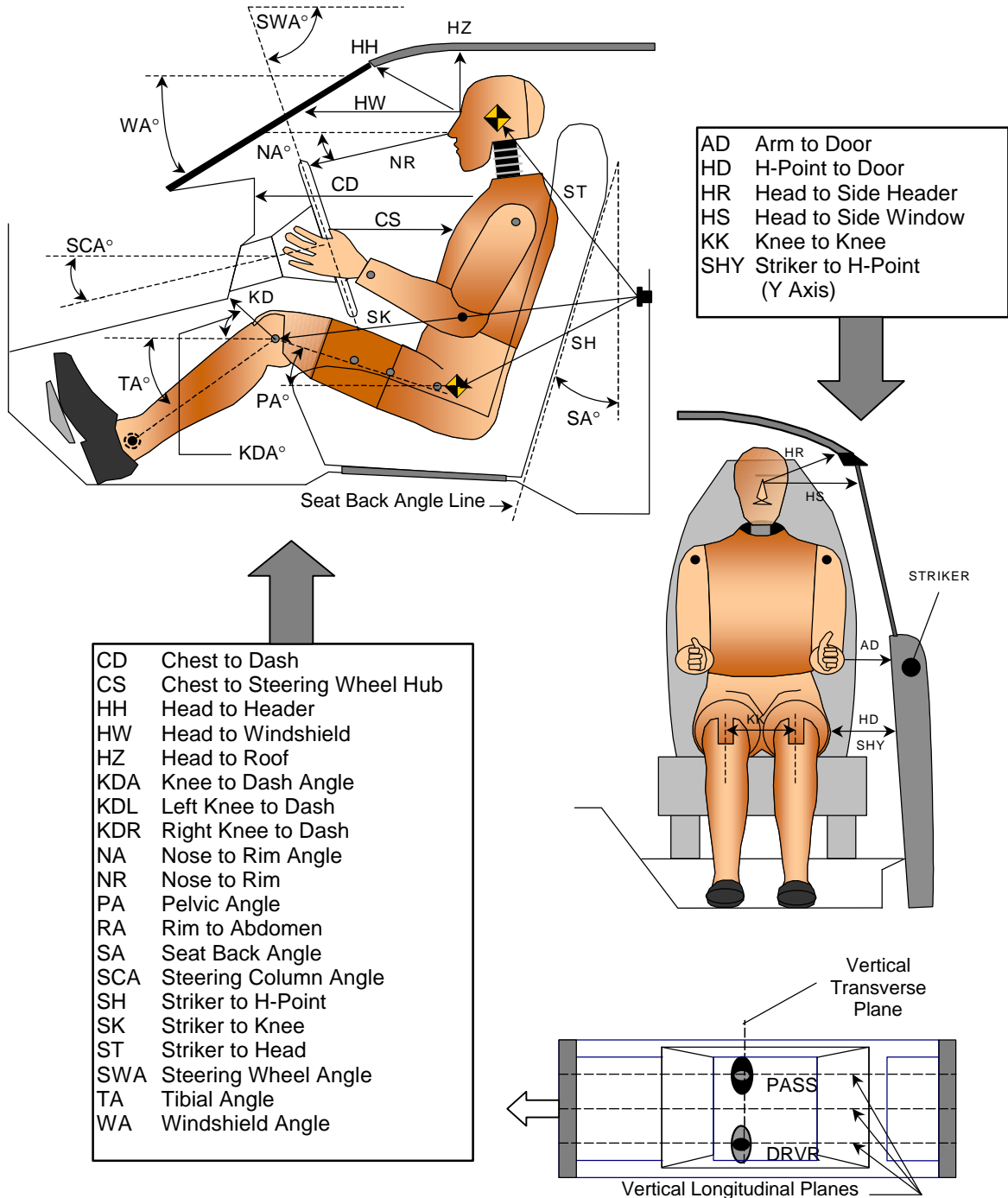
Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

DUMMY MEASUREMENTS FOR FRONT SEAT OCCUPANTS



DATA SHEET NO. 5...(continued)

DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

TEST DUMMY POSITION MEASUREMENTS

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA	Windshield Angle		25.5		
SWA	Steering Wheel Angle		66.6		
SCA	Steering Column Angle		22.1		
SA	Seat Back Angle		9.5		9.1
HZ	Head to Roof (Z)	199	90.0	203	90.0
HH	Head to Header	263	60.2	265	59.2
HW	Head to Windshield	583	0.0	578	0.0
HR	Head to Side Header (Y)	304		282	
NR	Nose to Rim	265	6.5		
CD	Chest to Dash	444		508	
CS	Chest to Steering Hub	200	2.2		
RA	Rim to Abdomen	75	0.0		
KDL	Left Knee to Dash	103	0.0	58	
KDR	Right Knee to Dash	98		77	0.0
PA	Pelvic Angle		22.2		22.5
TA	Tibia Angle		56.4		63.6
KK	Knee to Knee (Y)	169		165	
SK	Striker to Knee	694	95.1	713	88.9
ST	Striker to Head	497	26.2	514	25.6
SH	Striker to H-Point	320	97.1	334	109.6
SHY	Striker to H-Point (Y)	312		283	
HS	Head to Side Window	351		348	
HD	H-Point to Door (Y)	198		211	
AD	Arm to Door (Y)	150		150	
AA	Ankle to Ankle	232		213	

DATA SHEET NO. 6

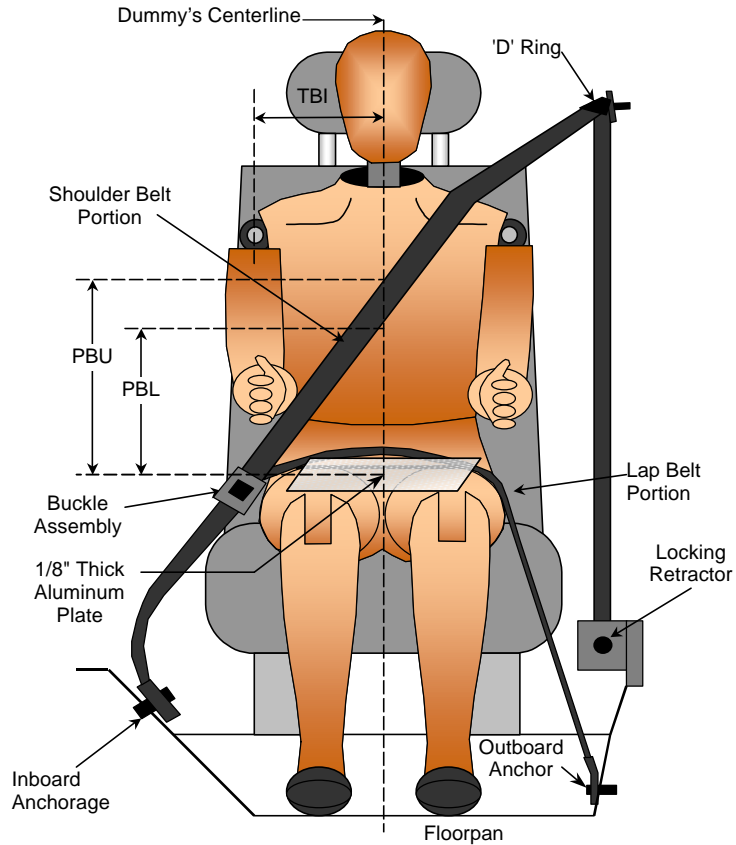
SEAT BELT POSITIONING DATA

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001



SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TBI - Dummy centerline to shoulder bolt	mm	158	168
PBU - Top surface of reference to belt upper edge	mm	280	279
PBL - To surface of reference to belt lower edge	mm	202	200

DATA SHEET NO. 7

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

VEHICLE X-AXIS 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 (Primary)	1667	-384	288	G's	2.7	118	34.1	53
2	Right Rear X-Member (Primary)	1667	390	290	G's	3.3	117	34.1	60
3	Engine Top	3857	-15	890	G's	40.6	42	102.7	35
4	Engine Bottom	3570	280	174	G's	12.3	63	132.2	32
5	Left Brake Caliper	3710	-650	246	G's	67.0	61	158.9	40
6	Right Brake Caliper*	3710	650	246	G's	2.8	7	115.6	47
7	Instrument Panel	3067	5	944	G's	20.0	57	93.1	48
8	Left Rear X-Member (Redundant)**	1667	-384	288	G's	---	---	34.7	53
9	Right Rear X-Member (Redundant)	1667	390	290	G's	3.0	117	35.3	60

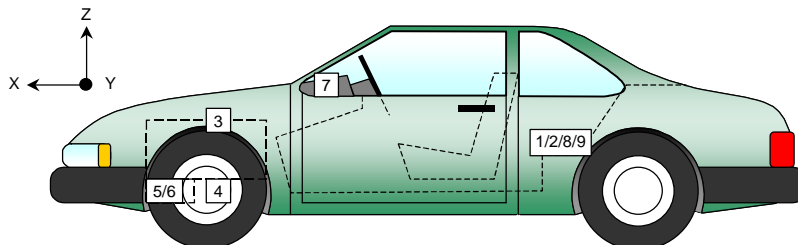
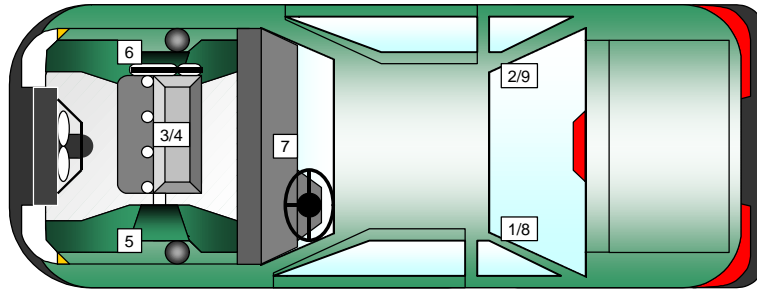
Reference Points: X - From Rear Surface of Vehicle (+ forward)

*Data not valid after 50 msec.

Y - Vehicle Centerline (+ to right)

**Data not valid after 60 msec.

Z - Ground Plane (+ up)



DATA SHEET NO. 8

HYBRID III ATD INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	15.3	98	60.9	57	51.2	122	56.3	69
Head CG	Y	G's	10.8	104	39.6	66	29.3	122	10.6	48
Head CG	Z	G's	17.0	45	8.5	72	27.4	122	13.7	28
Head CG Resultant	N/A	G's	64.5	57			64.9	122		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	7.3	149	45.4	59	9.9	146	44.8	74
Chest CG	Y	G's	7.3	81	4.7	54	2.2	148	7.2	74
Chest CG	Z	G's	5.3	49	14.2	62	10.0	98	5.1	34
Chest CG Resultant	N/A	G's	46.7	59			45.4	74		

FEMUR PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur	Z	Newtons	239	41	2833	59	73	13	1713	51
Right Femur	Z	Newtons	598	42	3175	57	89	21	2611	52

SEAT BELT SENSOR PEAK VALUES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Lap Belt Force	N/A	Newtons	3152	49			1871	57		
Shoulder Belt Force	N/A	Newtons	3729	49			4188	71		

HEAD INJURY CRITERIA (HIC₁₅)

Location	Driver				Passenger			
	HIC	Avg G's	T ¹	T ²	HIC	Avg G's	T ¹	T ²
Head CG Primary	396	58.7	50.9	65.9	318	53.8	62.3	77.3

CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Primary	44.9	57.7	60.8	44.6	72.5	75.6

NECK INJURY CRITERIA

Location	Driver	Passenger
N _{te}	0.9	0.8
N _{tr}	0.2	0.0
N _{ce}	0.6	0.8
N _{cf}	0.0	0.0

DATA SHEET NO. 8...(continued)

HYBRID III ATD INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	2.7	177	68.8	57	5.1	126	44.3	51
Pelvis	Y	G's	8.1	76	16.7	47	5.8	154	12.4	62
Pelvis	Z	G's	4.3	155	32.8	57	6.4	199	21.8	51

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	234	102	461	71	225	46	364	33
Neck Force	Y	Newtons	245	60	321	137	66	21	450	139
Neck Force	Z	Newtons	1960	50	647	149	1319	72	768	139
Neck Moment	X	N•m	15.6	139	18.7	59	20.8	136	8.2	164
Neck Moment	Y	N•m	0.6	39	43.9	71	0.2	10	47.1	137
Neck Moment	Z	N•m	25.4	70	0.2	32	13.2	139	0.7	18

FOOT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Foot Aft	X	G's	183.7	50	27.3	73	267.9	47	63.3	62
Left Foot Aft	Z	G's	83.7	51	19.6	65	96.0	43	29.3	56
Left Foot Fore	Z	G's	104.3	65	135.5	52	266.2	47	296.5	42
Right Foot Aft	X	G's	343.7	45	46.1	61	191.4	44	27.2	66
Right Foot Aft	Z	G's	237.2	46	58.8	57	20.0	85	20.3	55
Right Foot Fore	Z	G's	116.9	54	350.0	41	122.9	55	117.7	46

UPPER AND LOWER TIBIA PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Lower Moment	X	N•m	17.8	75	13.1	54	19.3	43	39.3	54
Left Lower Moment	Y	N•m	64.0	69	59.4	52	130.2	64	137.0	43
Left Lower Force	Z	Newtons	2168	51	137	130	3426	48	186	138
Left Upper Moment	X	N•m	22.0	39	41.1	86	17.8	49	27.7	54
Left Upper Moment	Y	N•m	21.4	71	108.3	52	19.4	54	183.7	43
Left Upper Force	Z	Newtons	1502	51	150	135	2368	48	323	30
Right Lower Moment	X	N•m	139.3	47	43.8	45	39.9	45	69.5	56
Right Lower Moment	Y	N•m	109.4	70	60.7	41	38.4	56	84.1	45
Right Lower Force	Z	Newtons	8495	46	115	151	2372	45	311	51
Right Upper Moment	X	N•m	60.6	47	68.8	45	56.2	45	21.6	56
Right Upper Moment	Y	N•m	16.1	71	173.9	46	13.3	114	131.5	45
Right Upper Force	Z	Newtons	6300	46	63	137	1717	45	316	26

DATA SHEET NO. 8...(continued)

HYBRID III ATD INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	mm			20.8	61			17.2	73

HEAD REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	14.6	104	59.2	57	50.8	122	55.5	69
Head CG	Y	G's	10.7	153	36.6	66	27.1	122	9.5	29
Head CG	Z	G's	17.6	45	7.8	73	28.4	122	14.0	28
Head CG Resultant	N/A	G's	63.9	60			64.2	122		

CHEST REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	7.0	149	45.0	51	9.6	147	44.4	74
Chest CG	Y	G's	7.2	81	4.7	54	2.3	60	6.4	75
Chest CG	Z	G's	5.1	49	13.6	61	5.5	34	9.7	98
Chest CG Resultant	N/A	G's	45.8	59			44.9	74		

REDUNDANT HEAD INJURY CRITERIA (HIC)

Location	Driver				Passenger			
	HIC	Avg G's	T ¹	T ²	HIC	Avg G's	T ¹	T ²
Head CG Redundant	374	57.3	50.3	65.3	314	53.5	62.6	77.6

REDUNDANT CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T ¹	T ²	CLIP	T ¹	T ²
Chest CG Primary Redundant	44.2	57.9	61.0	44.0	72.3	75.4

DATA SHEET NO. 9

SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

SEAT BELT PLACEMENT MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TBI - Dummy centerline to shoulder bolt	mm	158	168
PBU - Top surface of reference to belt upper edge	mm	280	279
PBL - Top surface of reference to belt lower edge	mm	202	200

BELT LENGTH DATA

Measurement Description	Units	Driver	Passenger
Retractor reel to "D" ring	mm	157	140
Shoulder belt length as measured on ATD	mm	900	918
Lap belt length as measured on ATD	mm	906	898
Total belt length for continuous webbing systems	mm	1963	1956

SHOULDER BELT SPOOL-OUT DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm	N/A	N/A
As determined electronically	mm	N/A	N/A

DATA SHEET NO. 10

SUMMARY OF FMVSS 212 DATA

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

Windshield Mounting Details:

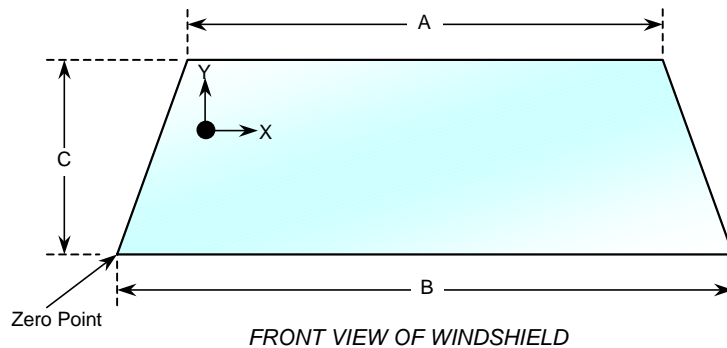
Windshield glass is secured to the vehicle frame with a rubber trim and glue.

The standard requires that the post-test 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, which are equipped with occupant passive restraints.

Temperature of windshield molding during test: 21 °C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test (mm)	Post-Test (mm)	% of Retention
Left Side	2127	2127	100
Right Side	2127	2127	100
Total	4254	4254	100



WINDSHIELD DIMENSIONS

Item	Units	Segment Length	Molding Width
A	mm	1154	11
B	mm	1490	9
C	mm	807	21

DATA SHEET NO. 11

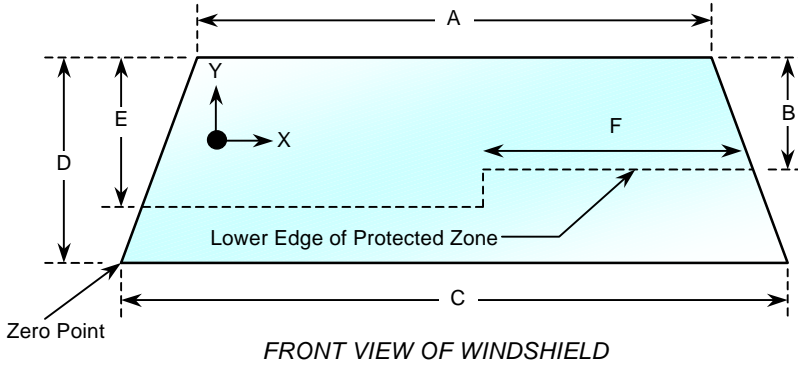
WINDSHIELD ZONE INTRUSION FMVSS 219 (Partial) DATA

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001



Item	Units	Value
A	mm	1154
B	mm	553
C	mm	1490
D	mm	807
E	mm	565
F	mm	566

AREA OF PROTECTED ZONE FAILURES

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

X	Y

- 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

DATA SHEET NO. 12

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

Test Time: 2:24 p.m.

Temperature at Time of Impact: 21 °C

Stoddard Solvent Spillage Measurements

- A. From impact until vehicle motion ceases: 0 oz.
(Maximum Allowable = 1 ounce)
- B. For the 5 minute period after motion ceases: 0 oz.
(Maximum Allowable = 5 ounces)
- C. For the following 25 minutes: 0 oz.
(Maximum Allowable = 1 oz./minute)
- D. Spillage Details: none

DATA SHEET NO. 13

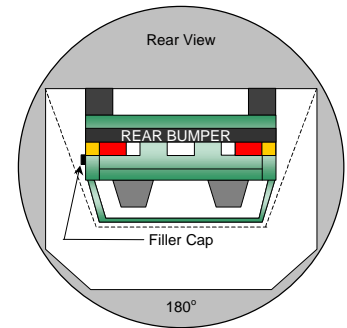
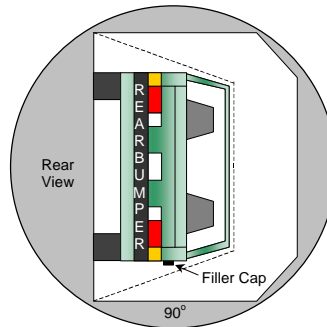
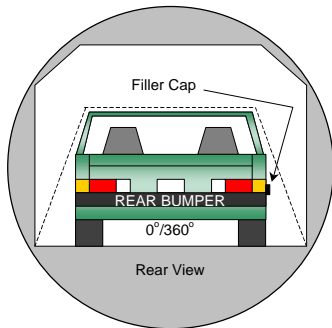
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

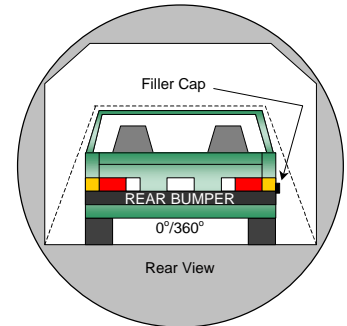
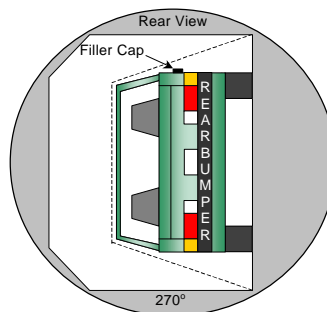
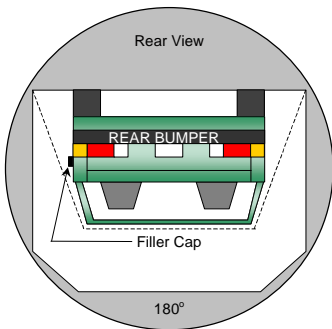
Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001



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 180 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. Details of Stoddard Solvent spillage locations:

Test Phase	Rotation Time (sec.)	Hold Time (sec.)	Spillage (oz.)
0° TO 90°	168	300	0
90° TO 180°	150	300	0
180° TO 270°	137	300	0
270° TO 360°	166	300	0

DATA SHEET NO. 14
VEHICLE MEASUREMENTS

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
1	Total length of vehicle at centerline	mm	4565	4093	472
2	RSOV to front of engine	mm	4075	3838	237
3	RSOV to firewall centerline	mm	3422	3279	143
4	RSOV to leading edge of right door	mm	3077	3071	6
5	RSOV to leading edge of left door	mm	3070	3077	-7
6	RSOV to lower leading edge of right door	mm	3058	3072	14
7	RSOV to lower leading edge of left door	mm	3058	3059	-1
8	RSOV to upper leading edge of right door	mm	1977	1980	-3
9	RSOV to upper leading edge of left door	mm	1975	1986	-11
10	RSOV to lower trailing edge of right door	mm	1976	1972	4
11	RSOV to lower trailing edge of left door	mm	1974	1971	3
12	RSOV to bottom of right 'A' pillar	mm	3070	3055	15
13	RSOV to bottom of left 'A' pillar	mm	3062	3057	5
14	RSOV to firewall on right side	mm	3355	3299	56
15	RSOV to firewall on left side	mm	3351	3302	49
16	RSOV to steering column	mm	2612	2594	18
17	Center of steering column to left 'A' pillar	mm	385	435	-50
18	Center of steering column to headlining	mm	435	440	-5
19	RSOV to right side of front bumper	mm	4432	4038	394
20	RSOV to left side of front bumper	mm	4430	4050	380
21	Length of engine block	mm	456	456	0
RD	RSOV to right side of dash panel	mm	2798	2798	0
CD	RSOV to center of dash panel	mm	2885	5849	36
LD	RSOV to left side of dash panel	mm	2825	2795	30

RSOV = Rear Surface of Vehicle

DATA SHEET NO. 14...(continued)

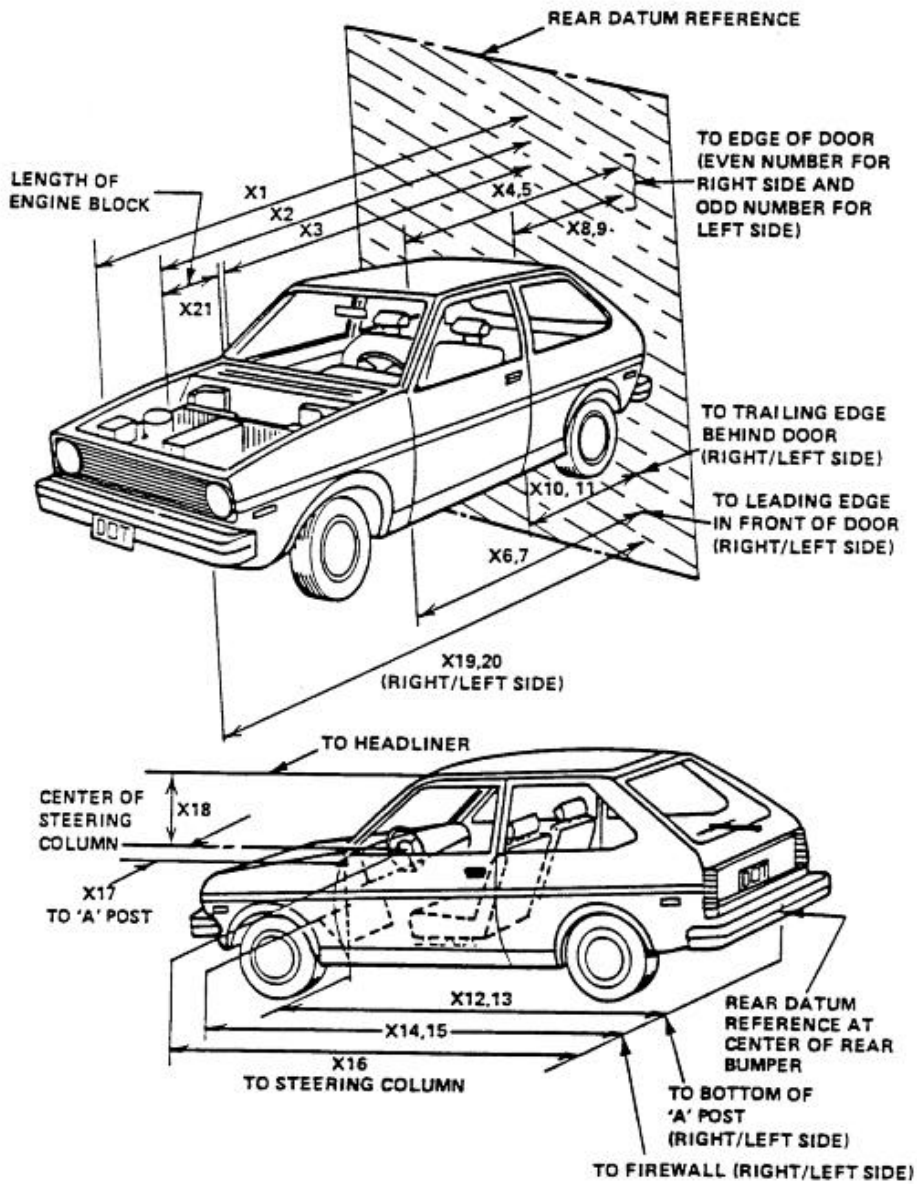
VEHICLE MEASUREMENTS

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001



DATA SHEET NO. 15
CAMERA LOCATIONS

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

No.	Camera View	Location (mm) *			Lens (mm)	Speed (fps)
		X	Y	Z		
1	Real-Time Left Side View				18	32
2	Left Front View	1000	-8220	1570	25	1010
3	Steering Column Top	2000	-8250	1560	25	1087
4	Steering Column Bottom	2000	-8250	1030	25	738
5	Driver Close-up	1420	-10250	1460	75	905
6	Driver Angle	4740	-5150	2030	50	1053
7	Onboard Driver				8	518
8	Onboard Passenger**					
9	Right Overall	2000	7070	1300	1313	1015
10	Right Passenger Half	920	7630	1370	25	1015
11	Right Close-up	1430	8090	1430	50	873
12	Right Angle	4700	5530	2110	50	1010
13	Windshield	-50	0	2640	13	1031
14	Top Driver	110	-430	1760	13	1005
15	Top Passenger	130	460	1760	13	0
16	Pit Front	990	0	-3190	13	1010
17	Pit Rear	2630	0	-3200	12	1005

*COORDINATES:

+X = film plane rearward of barrier

+Y = film plane to right of monorail centerline

+Z = film plane to above ground level

ORIGIN: For X and Y it is the Impact Point. For Z it is the Floor.

** Camera was not used.

CAMERA LOCATIONS

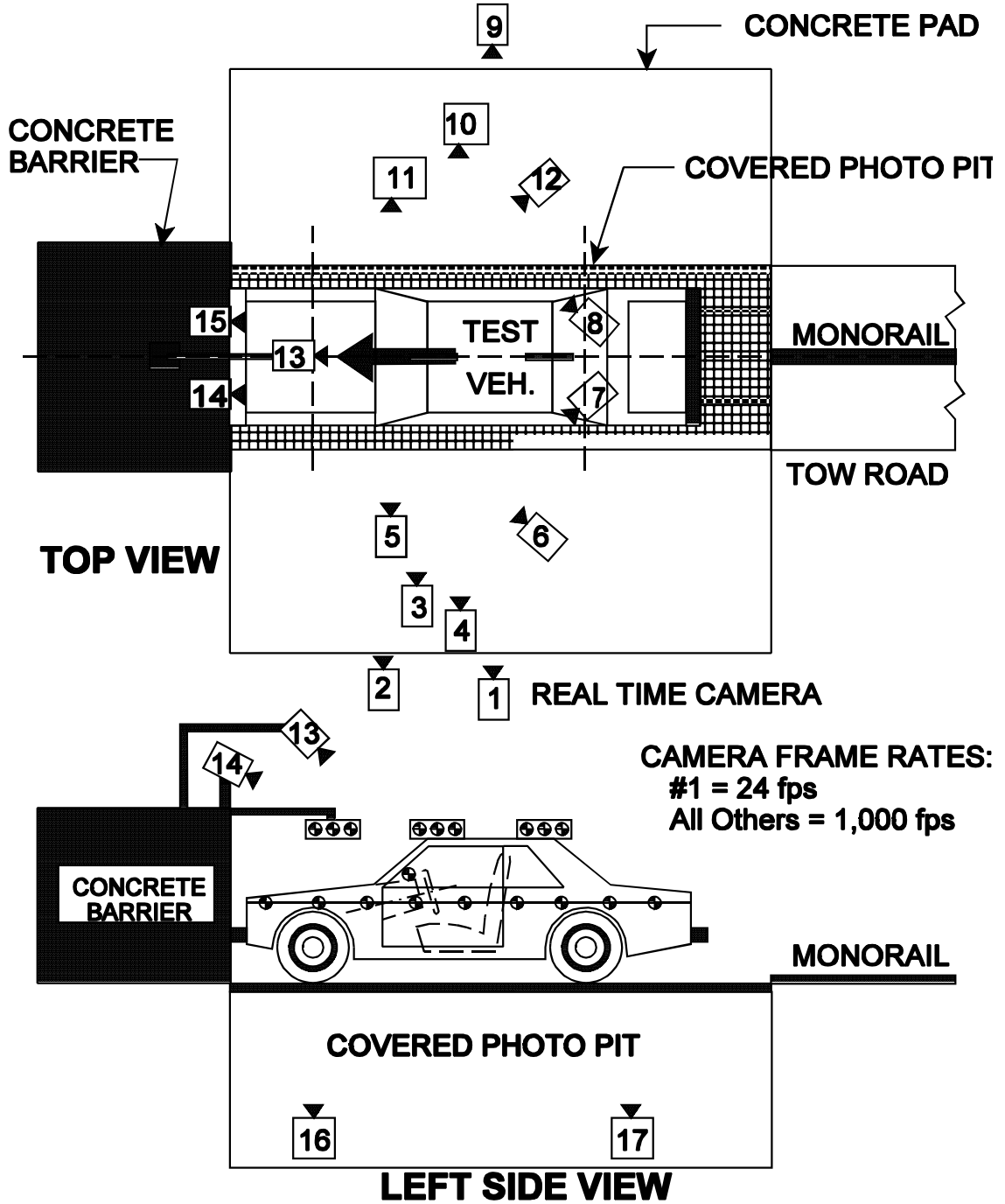
Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

CAMERA POSITIONS FOR FRONTAL IMPACTS



DATA SHEET NO. 16

PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

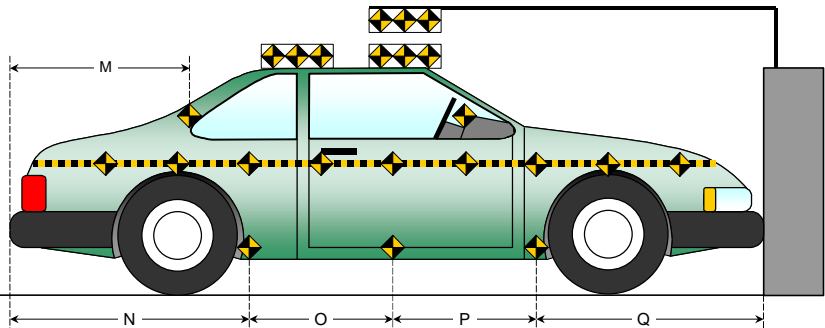
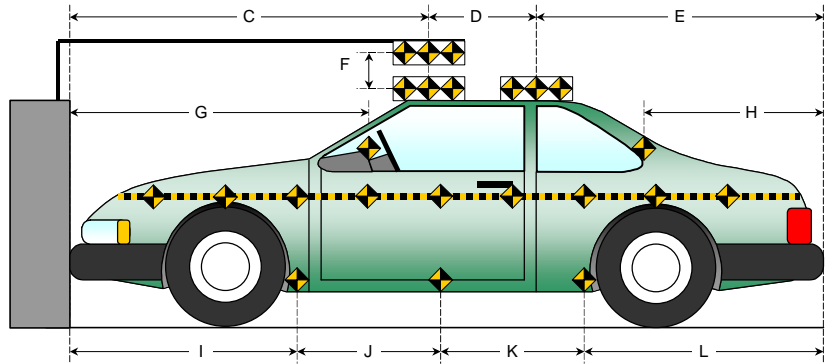
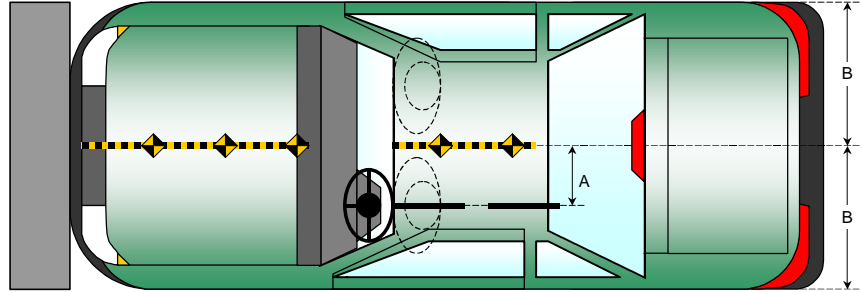
Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

Item	Value
A	359
B	883
C	2205
D	610
E	1750
F	605
G	1720
H	868
I	1525
J	870
K	870
L	1300
M	862
N	1301
O	870
P	870
Q	1513



DATA SHEET NO. 17

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

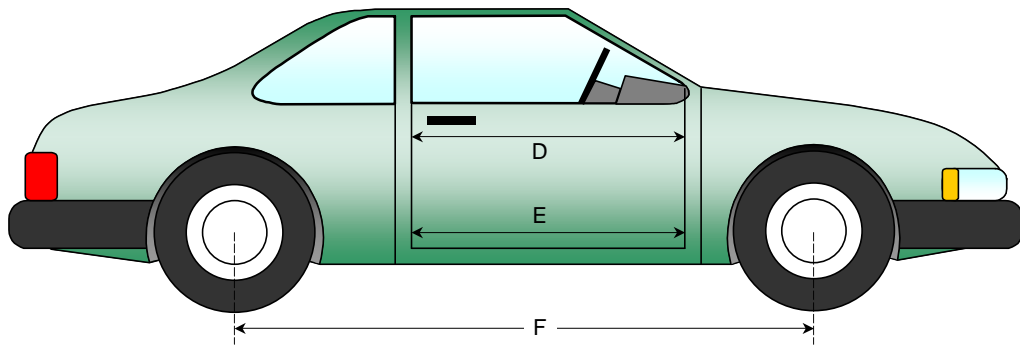
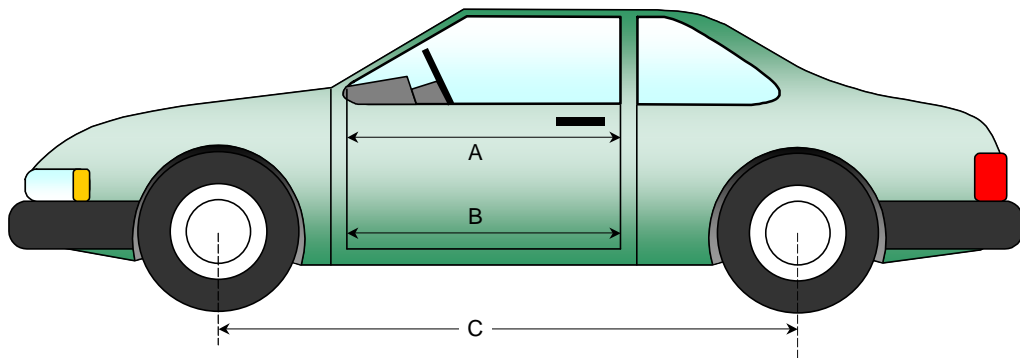
Test Date: March 21, 2001

DOOR OPENING WIDTH

Item	Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	1005	1001	4
B	Left Side Lower	mm	930	928	2
D	Right Side Upper	mm	1020	1015	5
E	Right Side Lower	mm	943	938	5

WHEELBASE MEASUREMENTS

Item	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheelbase	mm	2759	2684	75
F	Right Side Wheelbase	mm	2753	2641	112



DATA SHEET NO. 17...(continued)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

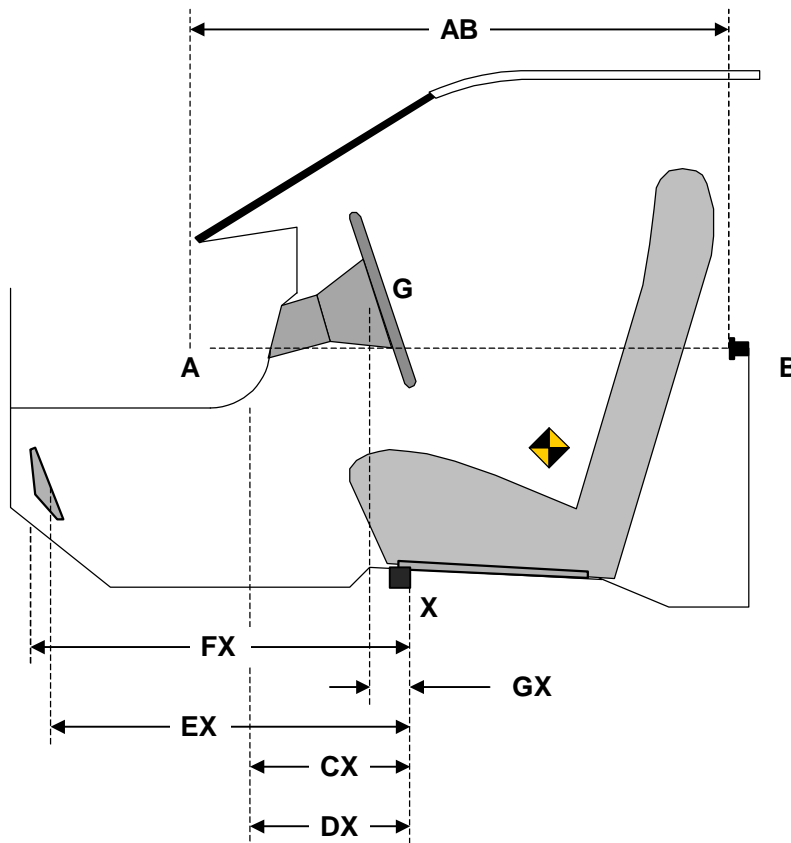
Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

DRIVER COMPARTMENT INTRUSION

Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside window jam)	mm	1005	1001	4
CX	Left Knee Bolster to X	mm	307	300	7
DX	Right Knee Bolster to X	mm	329	292	37
EX	Brake Pedal to X	mm	562	510	52
FX	Foot Rest to X	mm	597	550	47
GX	Center of Steering Column Wheel Hub to X	mm	77	48	29

X = Left Front Seat Front Outboard Anchor Bolt Head



DRIVER COMPARTMENT

DATA SHEET NO. 17...(continued)

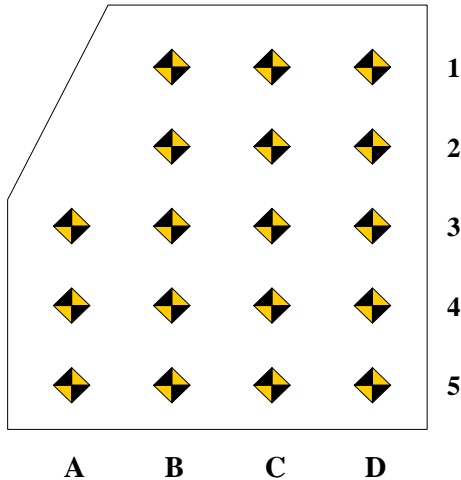
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001



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	N/A	670	665	659	N/A	560	505	509	N/A	110	160	150
2	N/A	594	589	587	N/A	504	456	514	N/A	90	133	73
3	477	479	476	475	484	470	428	495	-7	9	48	-20
4	376	378	375	374	380	378	370	390	-4	0	5	-16
5	281	278	282	279	280	278	280	279	1	0	2	0

DRIVER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	N/A	-24	-26	-38	N/A	7	37	35	N/A	31	63	73
2	N/A	-71	-75	-81	N/A	-61	-43	-44	N/A	10	32	37
3	-102	-100	-94	-102	-97	-116	-121	-112	5	-16	-27	-10
4	-103	-96	-102	-100	-95	-136	-103	-71	8	-40	-1	29
5	-98	-100	-100	-105	-99	-128	-118	-80	-1	-28	-18	25

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

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan
 Test Program: 35 mph Frontal Barrier Impact

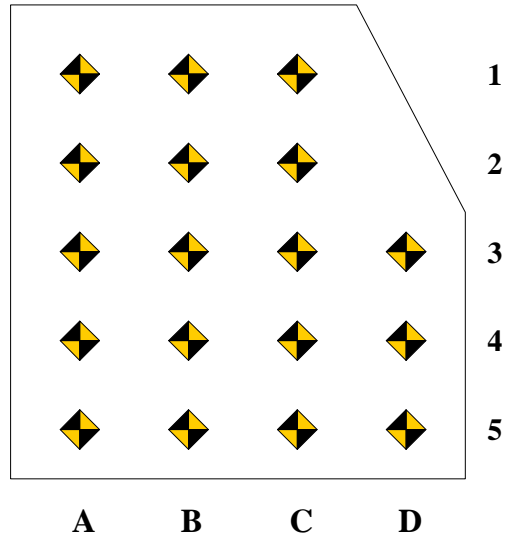
NHTSA No.: M15207
 Test Date: March 21, 2001

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	671	681	689	N/A	493	478	541	N/A	178	203	148	N/A
2	623	629	634	N/A	437	453	519	N/A	186	176	115	N/A
3	551	551	547	638	445	447	490	490	106	104	57	148
4	423	529	522	508	418	422	420	407	5	107	102	101
5	301	301	301	301	297	295	299	300	4	6	2	1

PASSENGER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-22	-28	-23	N/A	36	50	29	N/A	58	78	52	N/A
2	-53	-61	-63	N/A	0	-9	-33	N/A	53	52	30	N/A
3	-88	-95	-99	-109	-58	-88	-135	-110	30	7	-36	-1
4	-106	-99	-105	-107	-113	-101	-132	-94	-7	-2	-27	13
5	-104	-100	-100	-93	-110	-105	-124	-103	-6	-5	-24	-10

DATA SHEET NO. 17...(continued)

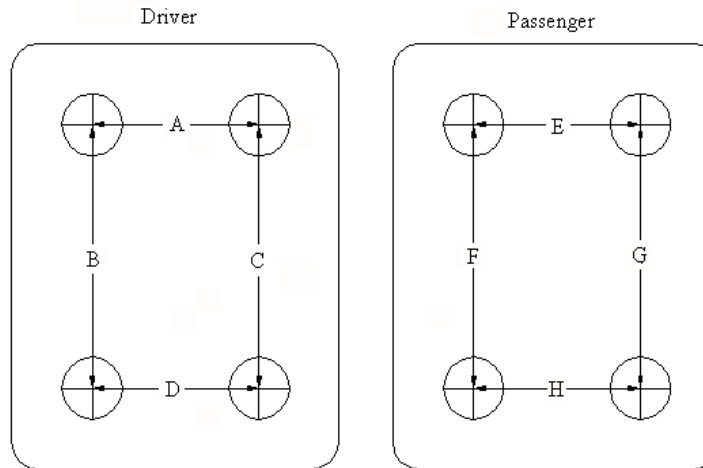
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001



UNDERBODY FLOORBOARD DEFORMATION

MEASUREMENT	PRE TEST	POST TEST	DIFFERENCE
A	338	346	8
B	223	201	-22
C	238	222	-16
D	314	305	-9
E	312	321	9
F	305	282	-23
G	298	300	2
H	265	269	4

DATA SHEET NO. 18

LOAD CELL LOCATIONS ON FIXED BARRIER

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

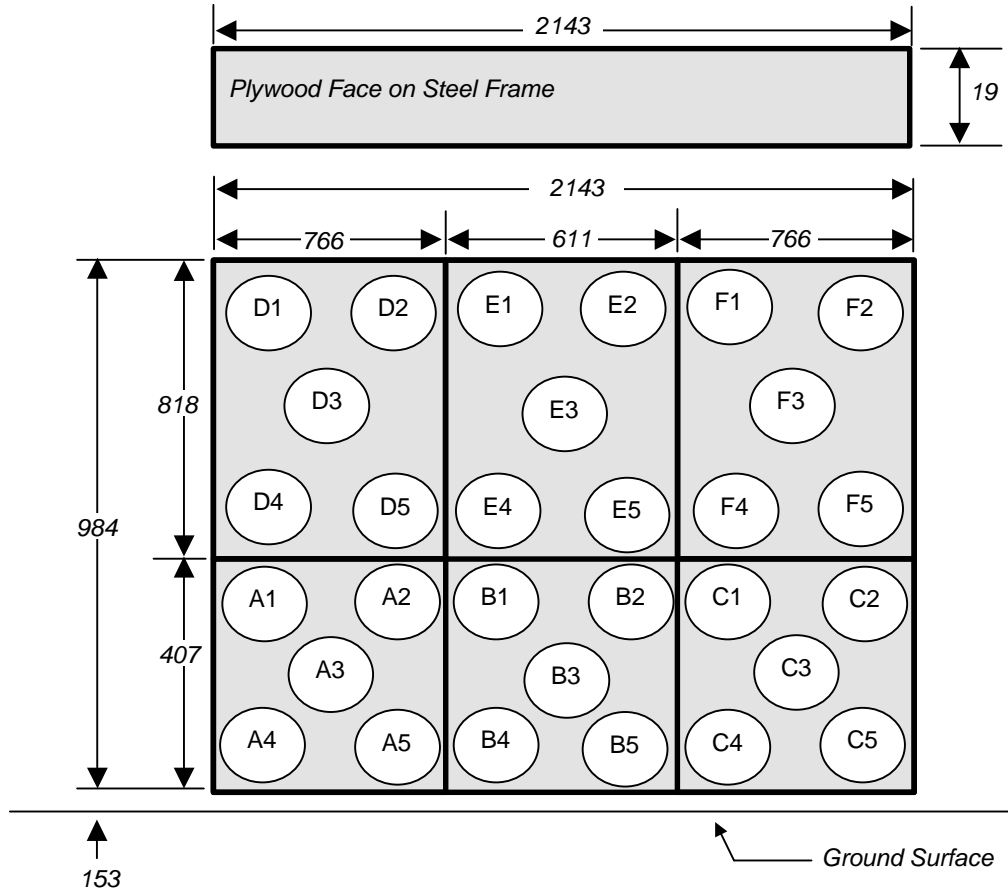
NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

30 Load Cell Rigid Barrier

Load Cell Locations on Fixed Barrier



Group 4 D1-D5	Group 5 E1-E5	Group 6 F1-F5
Group 1 A1-A5	Group 2 B1-B5	Group 3 C1-C5

6 Groups of 5 Load Cells Each

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

1. Data from 30 individual load cells
2. Sum data from 6 groupings shown above (5 cells/group)
3. Total or sum of all 30 individual load cells

DATA SHEET NO. 19

ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan
 Test Program: 35 mph Frontal Barrier Impact

NHTSA No.: M15207
 Test Date: March 21, 2001

VEHICLE INFORMATION

VIN: JN1CA31D61T617080 Wheelbase (mm): 2744
 Vehicle Size Category: midsize Test Weight (kg): 1583.1

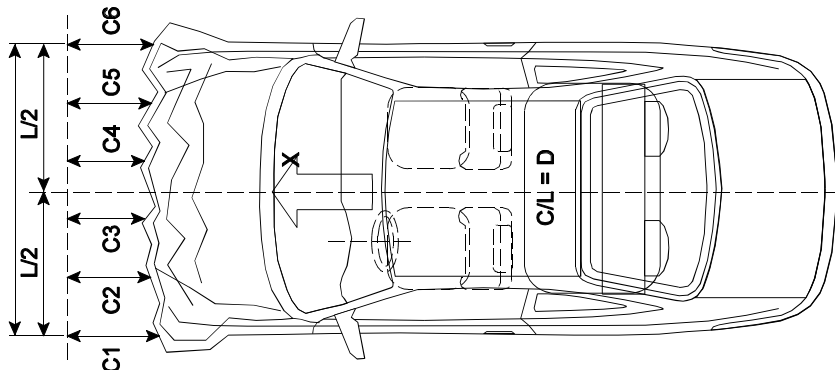
ACCELEROMETER DATA

Accelerometer Locations: As per measurements on page 13
 Cal. Procedure/Interval: MGA procedure / 6 month
 Integration Algorithm: Trapezoidal Linearity: >99.9%
 Impact Velocity (km/h): 56.0
 Velocity Change (km/h): 63.3 Time of Separation (msec): 188

CRUSH PROFILE

Collision Deformation Classification: Frontal Midpoint of Damage: vehicle centerline
 Damage Region Length (mm): 1766 Impact Mode: Frontal

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	4430	4050	380
C2	Crush zone 2 at left side	mm	4521	4089	432
C3	Crush zone 3 at left side	mm	4561	4092	469
C4	Crush zone 4 at right side	mm	4560	4080	480
C5	Crush zone 5 at right side	mm	4522	4052	470
C6	Crush zone 6 at right side	mm	4432	4038	394



DATA SHEET NO. 20

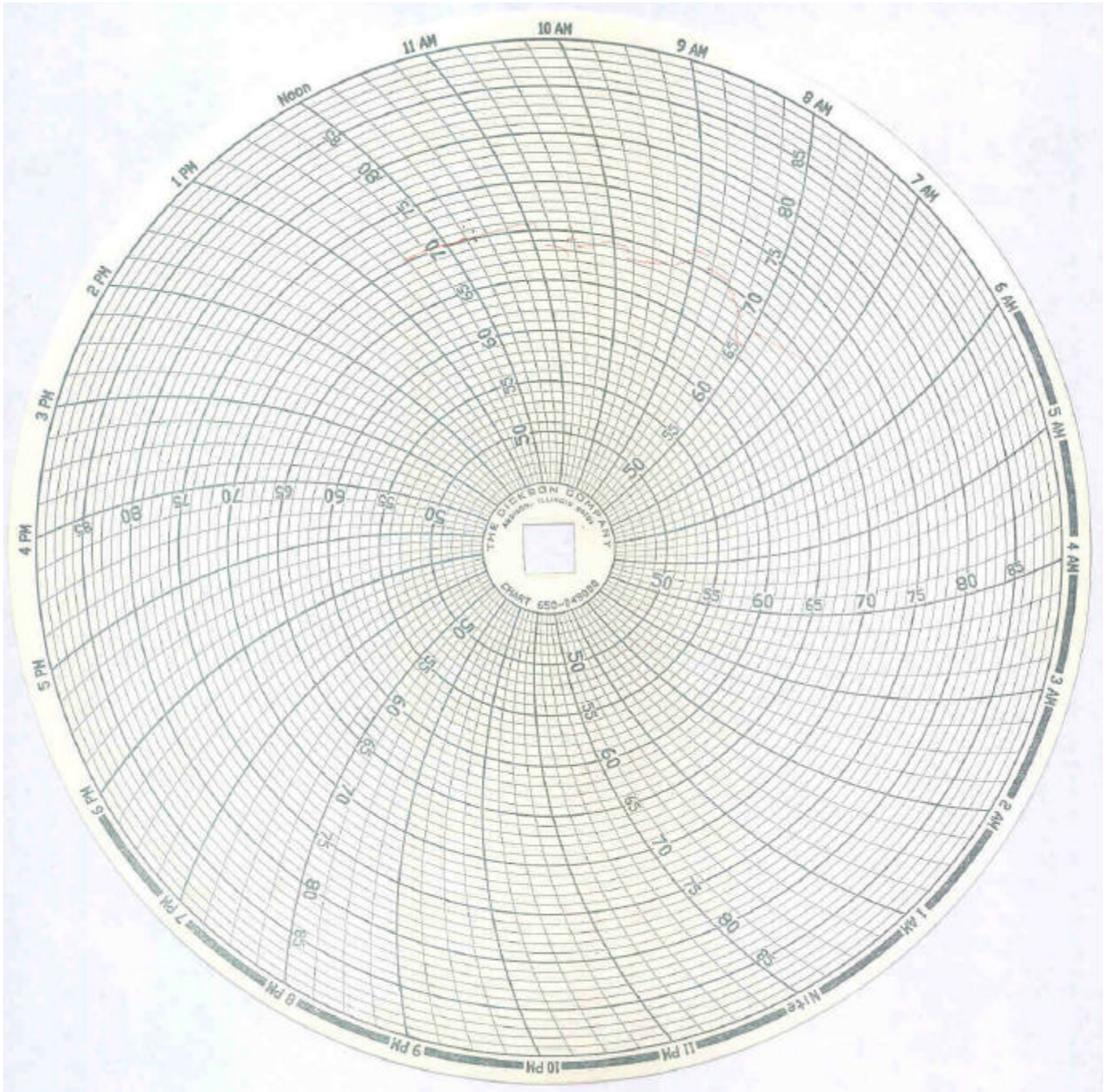
DUMMY / VEHICLE TEMPERATURE STABILIZATION CHART

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001



A = Dummies installed in vehicle at 7:00 a.m.

B = Test conducted at 12:24 p.m.

APPENDIX A

PHOTOGRAPHS

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Photo No. A-1 - Pre-Test Front View of Test Vehicle

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Photo No. A-2 - Post-Test Front View of Test Vehicle

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Photo No. A-3 - Pre-Test Rear View of Test Vehicle



Photo No. A-4 - Post-Test Rear View of Test Vehicle

A-5



Photo No. A-5 - Pre-Test Left Side View of Test Vehicle

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Photo No. A-6 - Post-Test Left Side View of Test Vehicle

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Photo No. A-7 - Pre-Test Left Rear Three-Quarter View of Test Vehicle

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Photo No. A-8 - Post-Test Left Rear Three-Quarter View of Test Vehicle

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Photo No. A-9 - Pre-Test Right Side View of Test Vehicle

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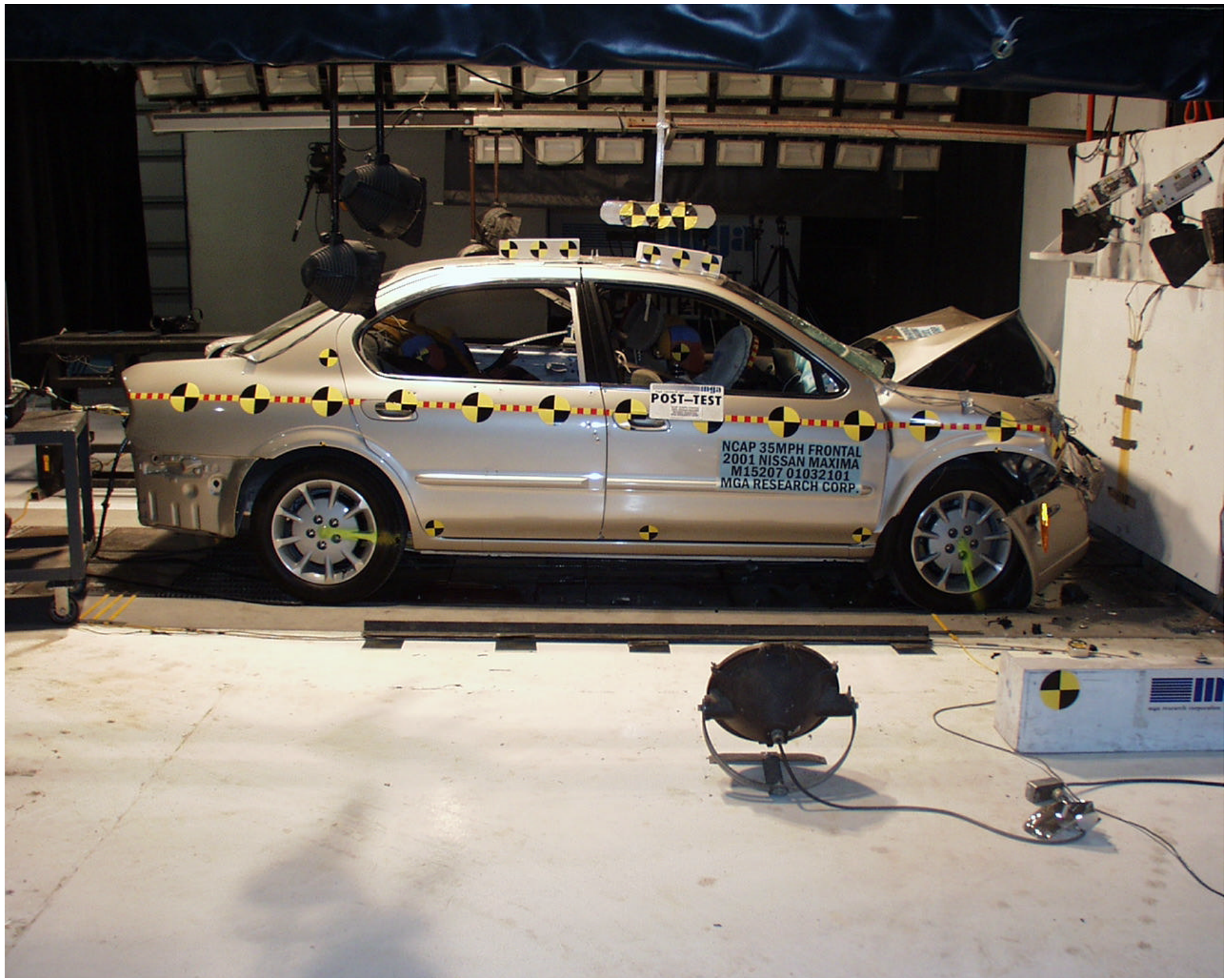


Photo No. A-10 - Post-Test Right Side View of Test Vehicle



Photo No. A-11 - Pre-Test Right Front Three-Quarter View of Test Vehicle

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Photo No. A-12 - Post-Test Right Front Three-Quarter View of Test Vehicle

 **mga**
mga research corporation
PRE-TEST
NCAP 35MPH FRONTAL
2001 NISSAN MAXIMA
M15207 01032101
MGA RESEARCH CORP.



A-13

Photo No. A-13 - Pre-Test Fuel Filler Cap

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Photo No. A-14 - Pre-Test Engine Compartment View

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Photo No. A-15 - Post-Test Engine Compartment View

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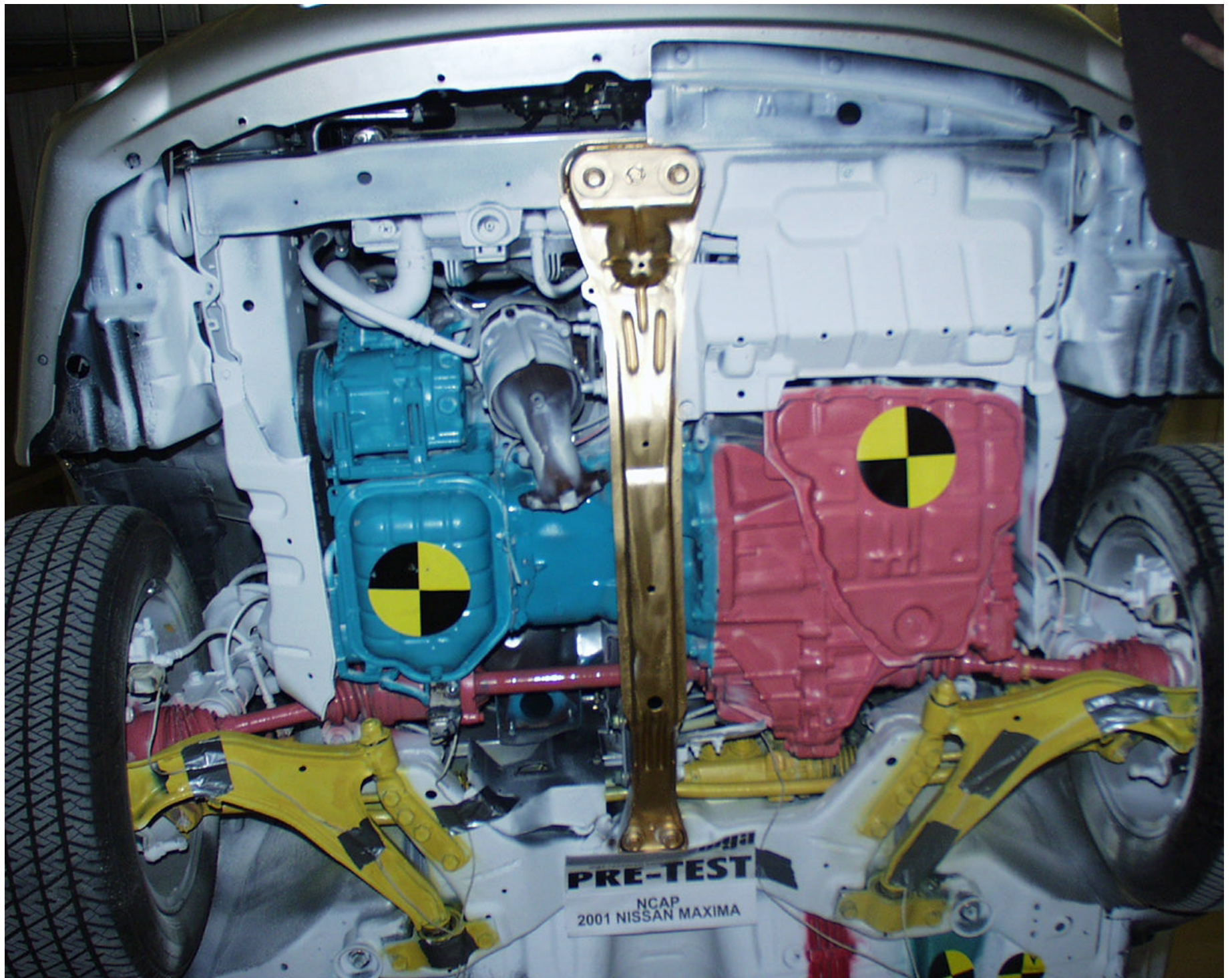


Photo No. A-16 - Pre-Test Front Underbody View

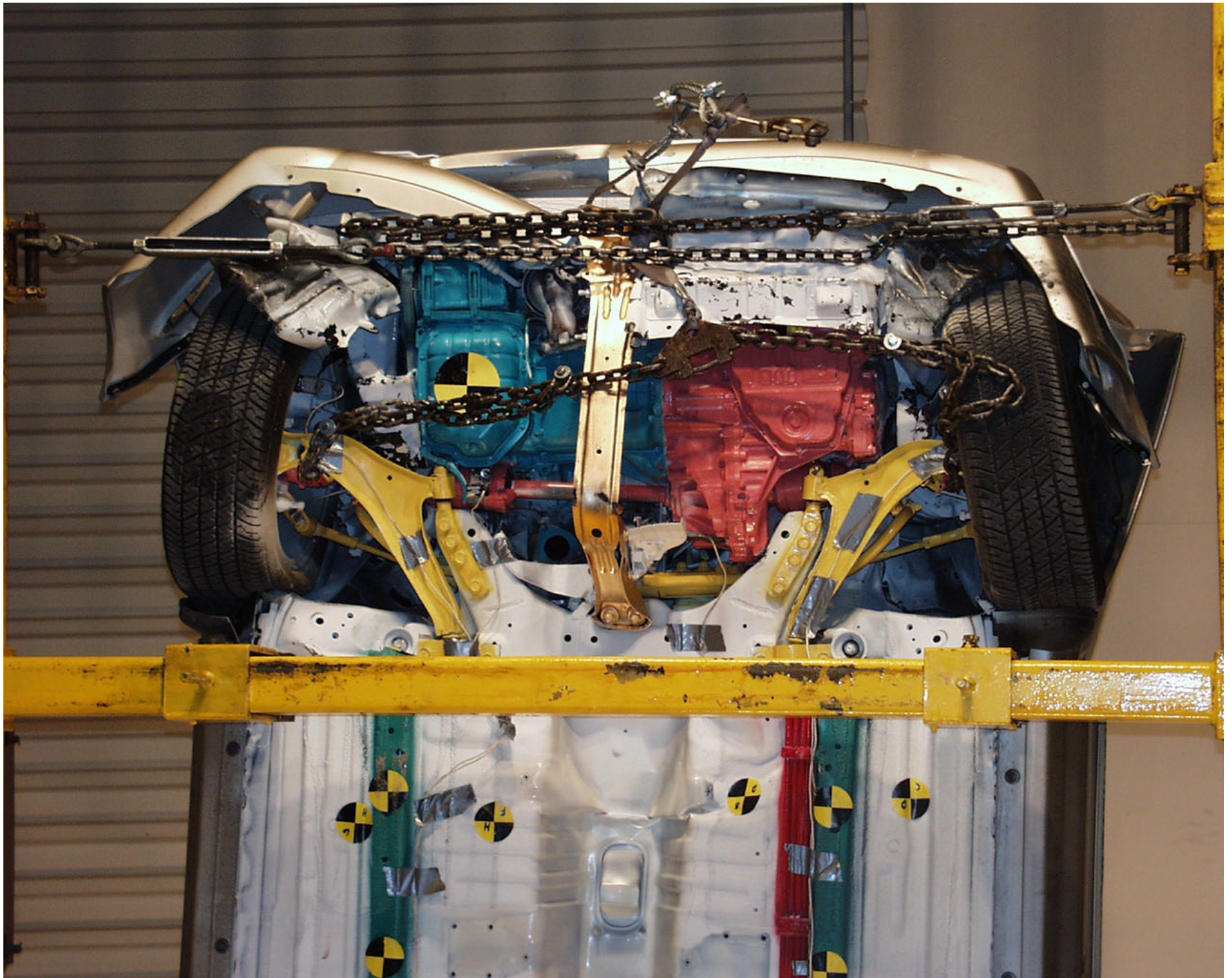


Photo No. A-17 - Post-Test Front Underbody View

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Photo No. A-18 - Pre-Test Rear Underbody View

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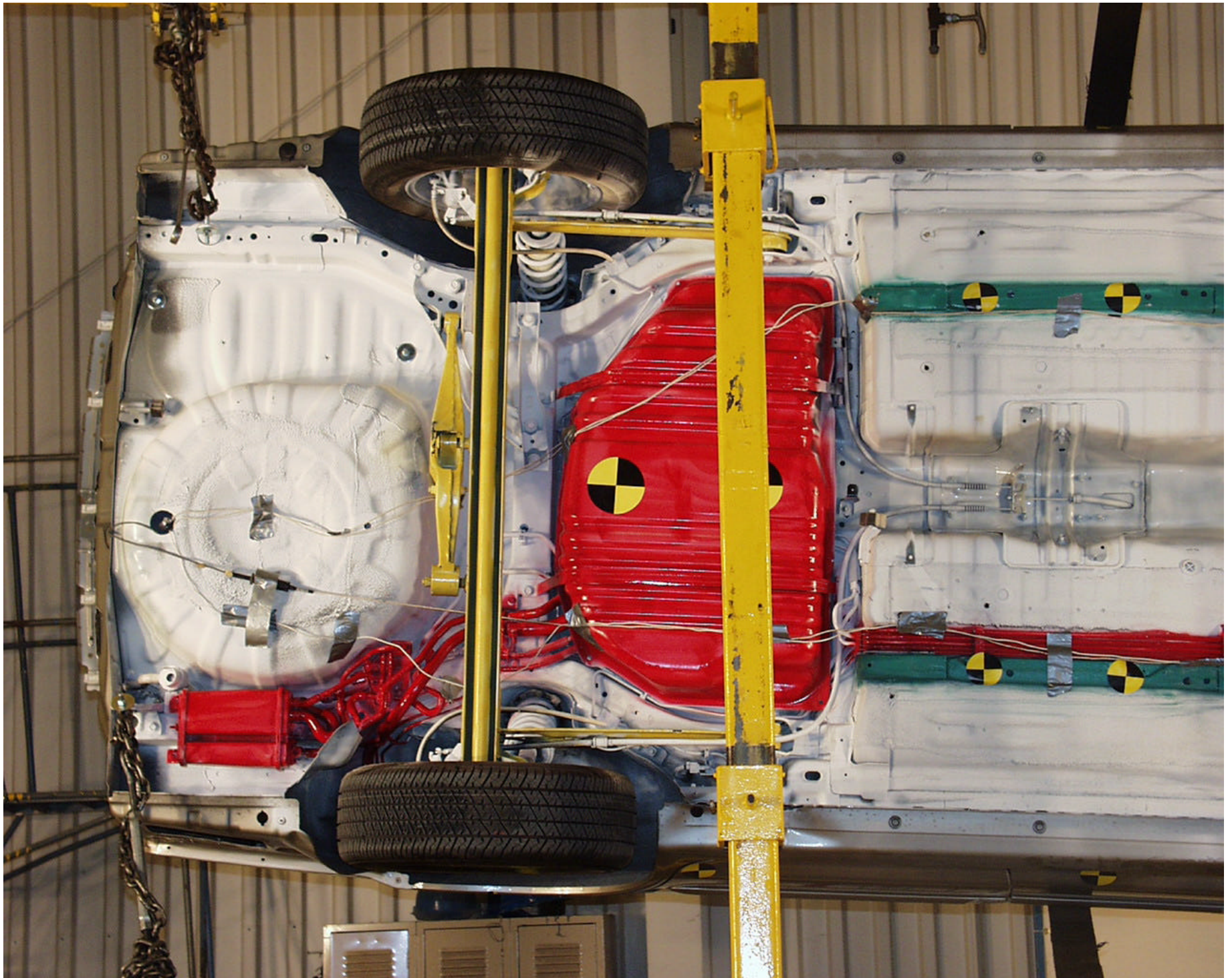


Photo No. A-19 - Post-Test Rear Underbody View

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**NCAP 35MPH FRONTAL
2001 NISSAN MAXIMA
M15207 01032101
MGA RESEARCH CORP.**

Photo No. A-20 - Pre-Test Windshield View

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Photo No. A-21 - Post-Test Windshield View

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Photo No. A-22 - Pre-Test Driver Dummy Position Left Side View

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Photo No. A-23 - Post-Test Driver Dummy Position Left Side View



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Photo No. A-24 - Pre-Test Driver Dummy Position Left Side View (Door Open)

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Photo No. A-25 - Post-Test Driver Dummy Position Left Side View (Door Open)

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Photo No. A-26 - Pre-Test Driver Seat Position View

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Photo No. A-27 - Post-Test Driver Seat Position View

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Photo No. A-28 - Pre-Test Driver Dummy Knee Position

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Photo No. A-29 - Post-Test Driver Dummy Knee Position

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Photo No. A-30 - Post-Test Driver Airbag Contact

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Photo No. A-31 - Post-Test Driver Knee Contact View



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Photo No. A-32 - Pre-Test Driver Windshield View

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Photo No. A-33 - Post-Test Driver Windshield View

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Photo No. A-34 - Pre-Test Passenger Dummy Position Right Side View

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Photo No. A-35 - Post-Test Passenger Dummy Position Right Side View

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Photo No. A-36 - Pre-Test Passenger Dummy Position Right Side View (Door Open)

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Photo No. A-37 - Post-Test Passenger Dummy Position Right Side View (Door Open)

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Photo No. A-38 - Pre-Test Passenger Seat Position View

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Photo No. A-39 - Post-Test Passenger Seat Position View

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Photo No. A-40 - Pre-Test Passenger Dummy Knee Position

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Photo No. A-41 - Post-Test Passenger Dummy Knee Position

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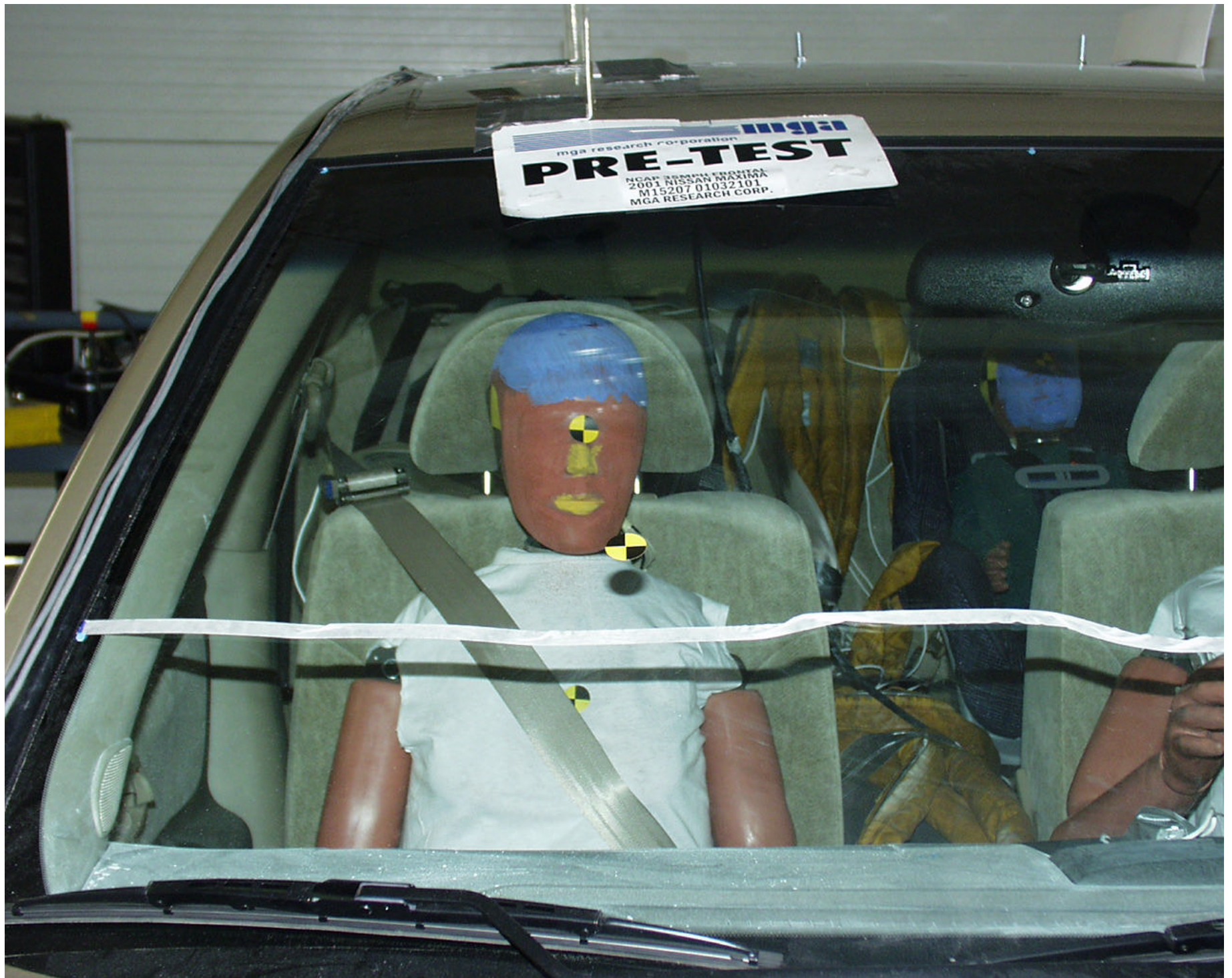


Photo No. A-42 - Post-Test Passenger Airbag Contact

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Photo No. A-43 - Post-Test Passenger Knee Contact View



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Photo No. A-44 - Pre-Test Passenger Windshield View

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Photo No. A-45 - Post-Test Passenger Windshield View

MFD.BY NISSAN MOTOR CO.,LTD

DATE 11/00

GVWR/PNBV 4310 LBS.

GAWR/PNBE FR. 2313 LBS. RR. 2013 LBS.

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

JN1CA31D61T617080

PASSENGER CAR/VOITURE DE TOURISME



JN1CA31D61T617080

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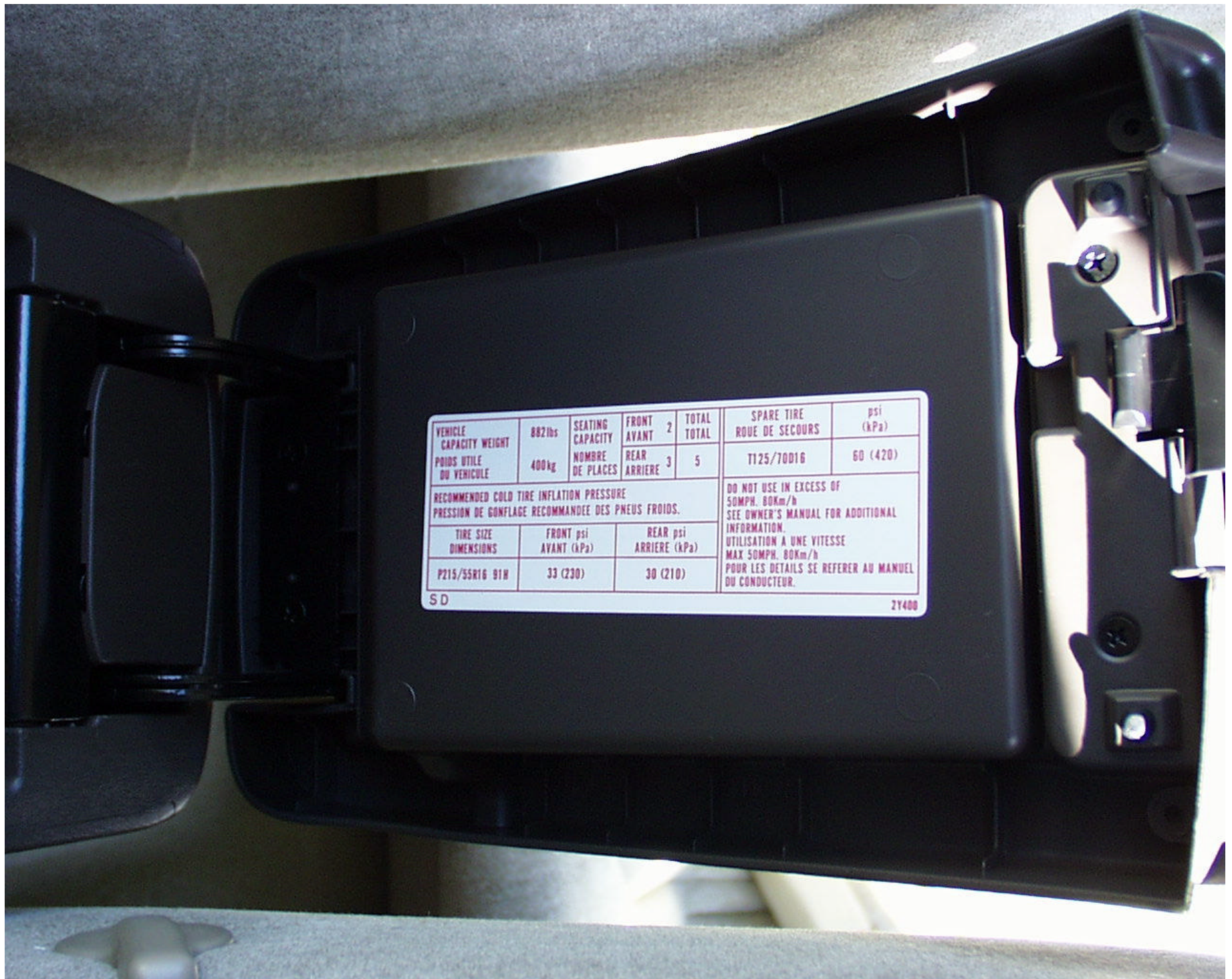


Photo No. A-47 - Tire Placard

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Photo No. A-48 – Vehicle Impact

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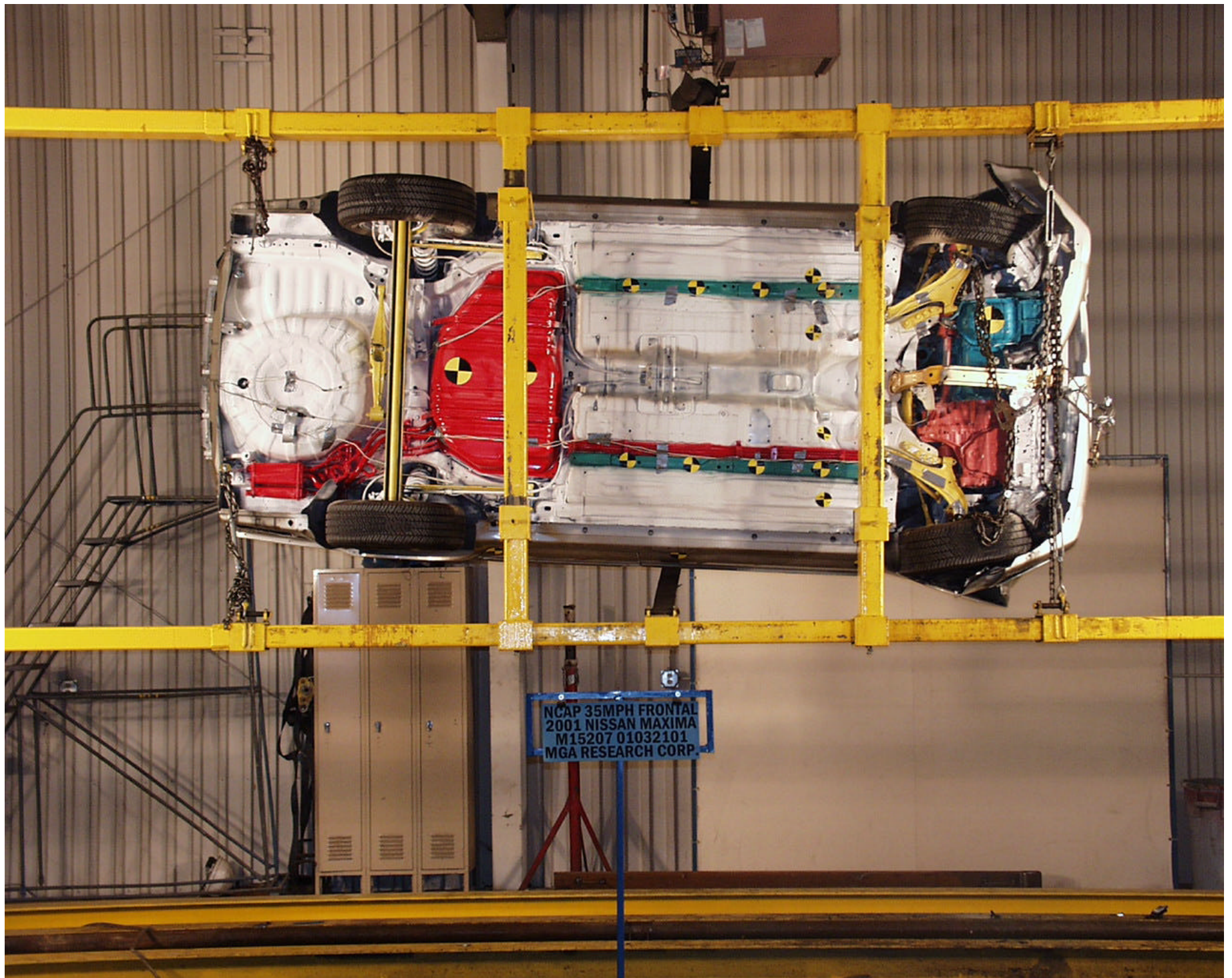


Photo No. A-49 - Rollover 90E



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Photo No. A-50 - Rollover 180E

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Photo No. A-51 - Rollover 270E

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Photo No. A-52 - Rollover 360E

APPENDIX B

DUMMY AND VEHICLE RESPONSE DATA TRACES

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VEHICLE DATA FILTER CHANNEL CLASS

Head Accelerations 1000 (1650 Hz)

Chest Accelerations 180 (300 Hz)

Vehicle Accelerations 60 (100 Hz)

Barrier Load Cells 60 (100 Hz)

Femur Load Cells 600 (1000 Hz)

Lap and Torso Belts 60 (100 Hz)

Tibia Load Cells 600 (1000Hz)

Foot Accelerations 180 (300Hz)

Occupant Data

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*Data not valid after 50 msec.

**Data not valid after 60 msec.



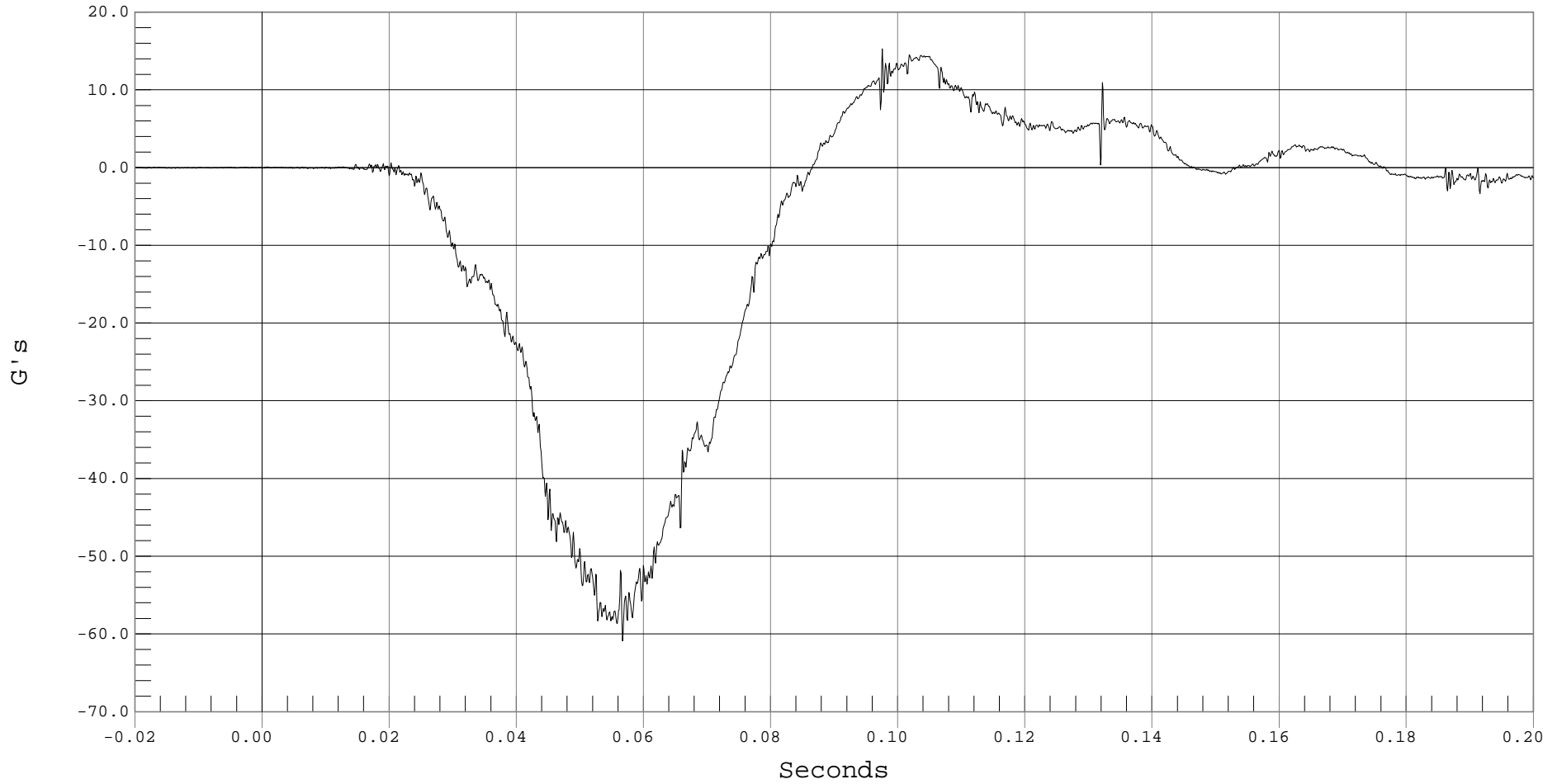
DRIVER HEAD X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 DRIVER HEAD X, B01032AT.A01

Ymin = -60.91 G's @ 0.0566 Seconds, Ymax = 15.27 G's @ 0.0975 Seconds



B-1



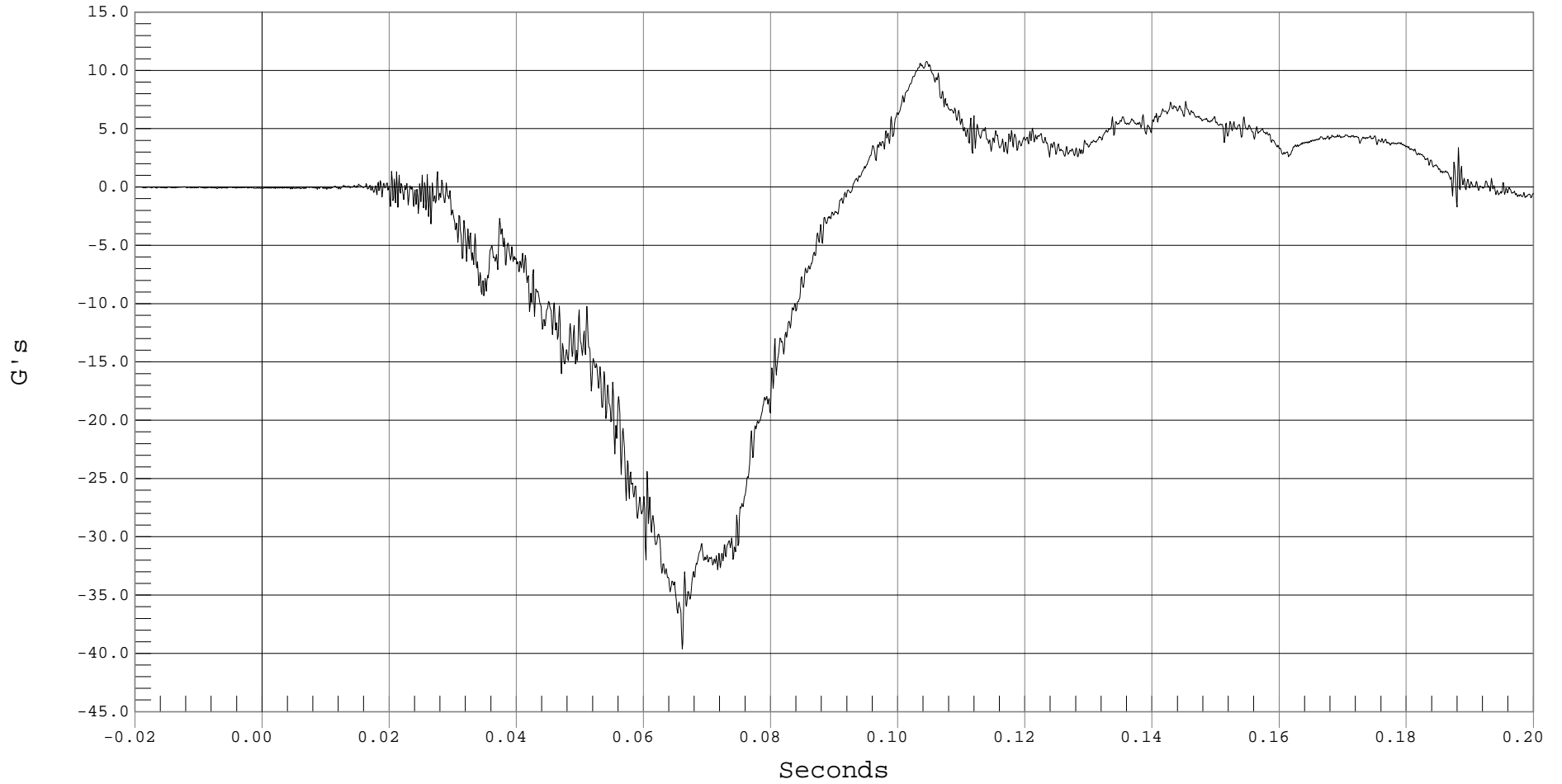
DRIVER HEAD Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 DRIVER HEAD Y, B01032AT.A02

Ymin = -39.63 G's @ 0.0660 Seconds, Ymax = 10.76 G's @ 0.1044 Seconds



B-2



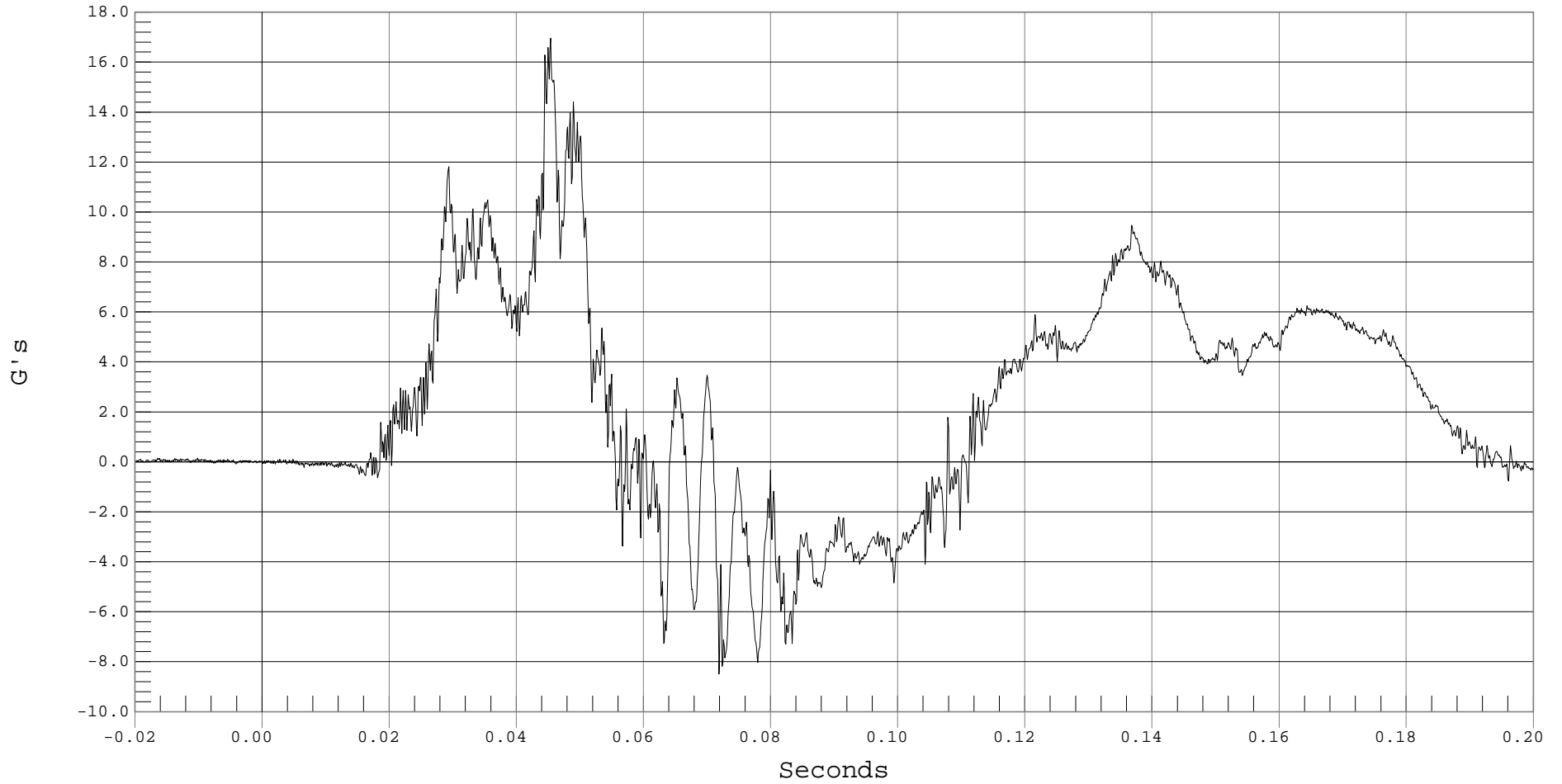
DRIVER HEAD Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 DRIVER HEAD Z, B01032AT.A03

Ymin = -8.49 G's @ 0.0718 Seconds, Ymax = 16.95 G's @ 0.0453 Seconds



B-3



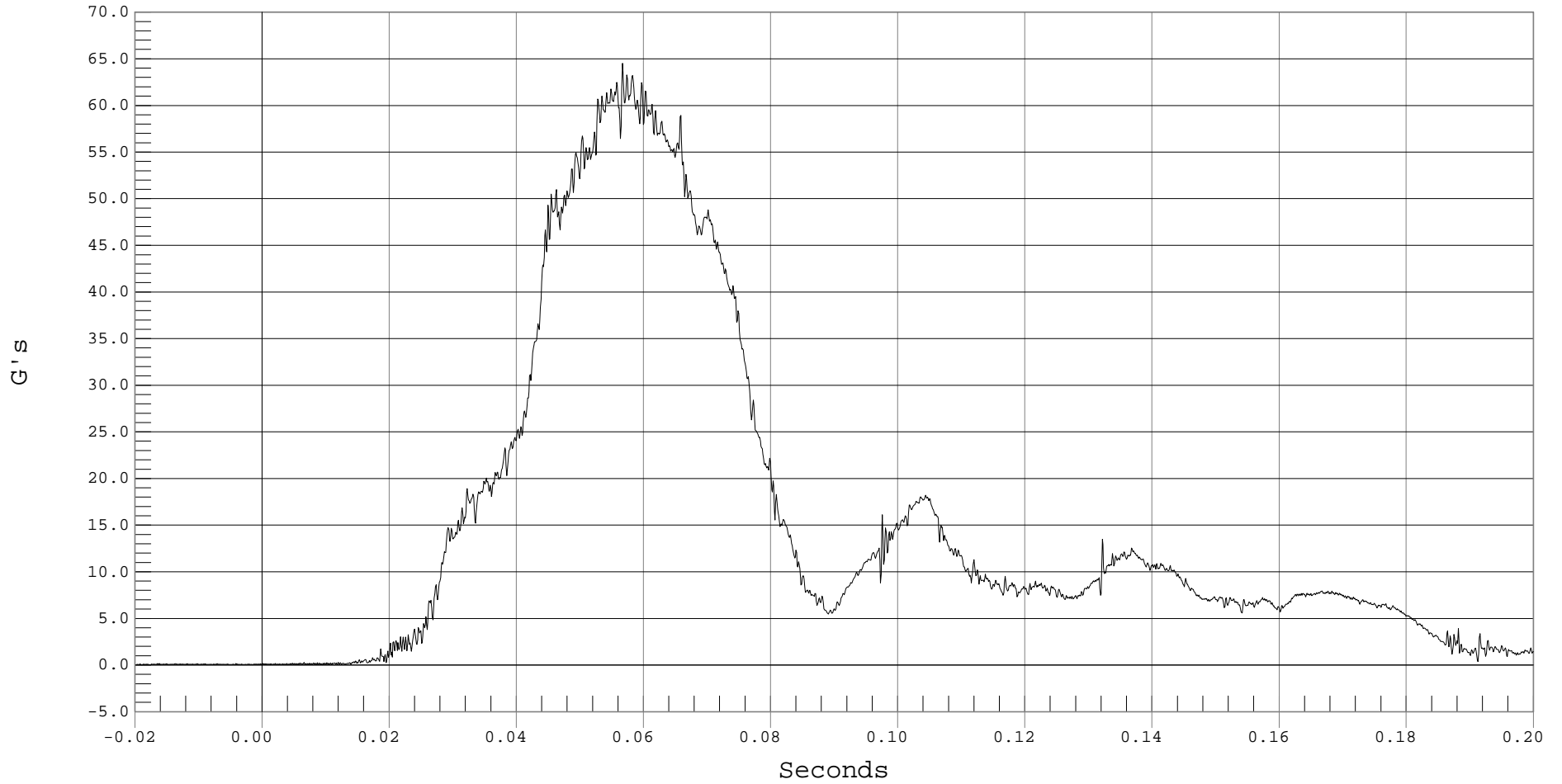
DRIVER HEAD RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 DRIVER HEAD RESULTANT ACCELERATION, B01032AV.A01

Ymin = .02 G's @ -0.0038 Seconds, Ymax = 64.51 G's @ 0.0566 Seconds



B-4



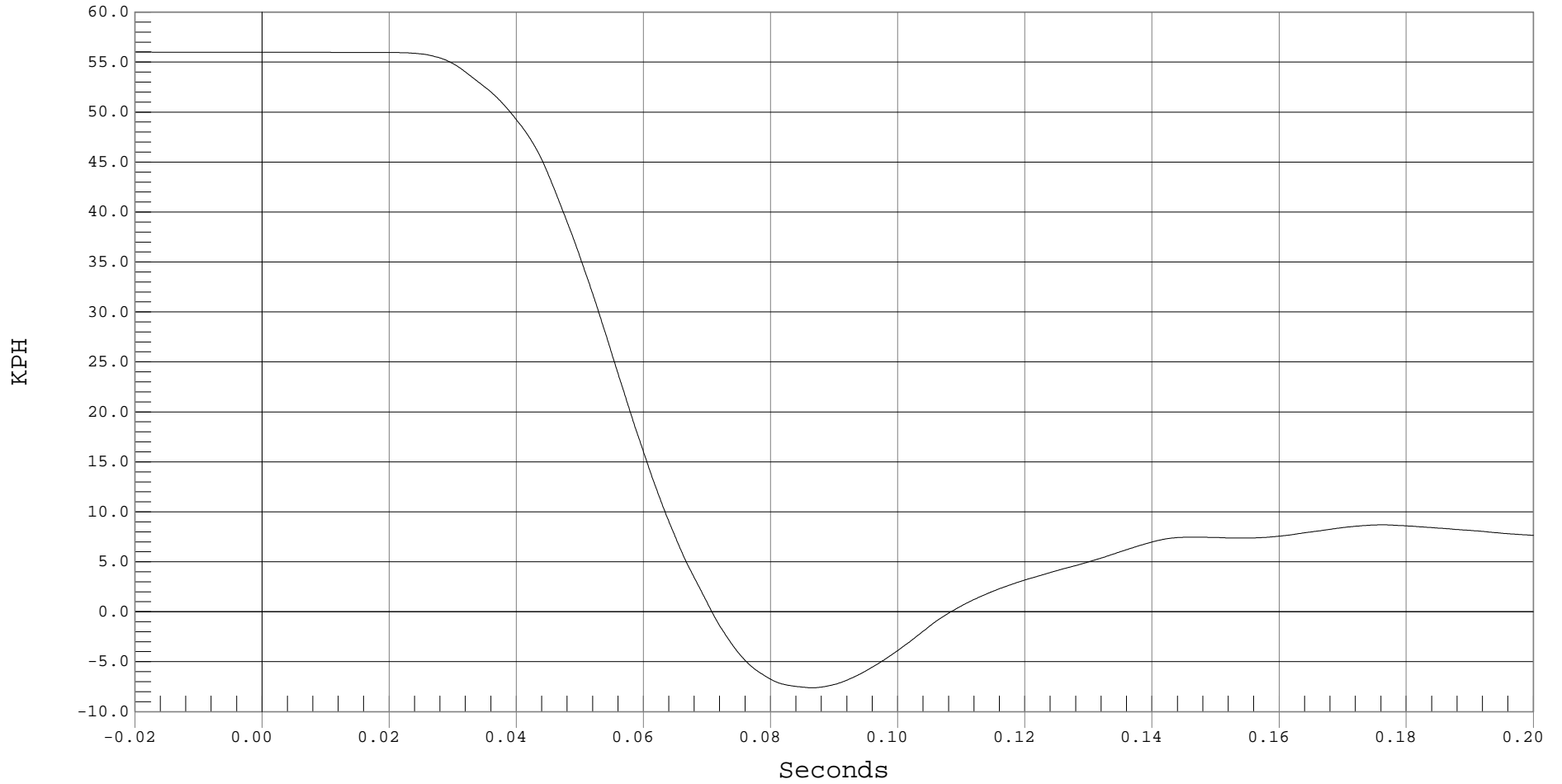
DRIVER HEAD X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 DRIVER HEAD X VELOCITY, B01032AI.V01

Ymin = -7.61 KPH @ 0.0864 Seconds, Ymax = 56 KPH @ -0.0199 Seconds



B-5



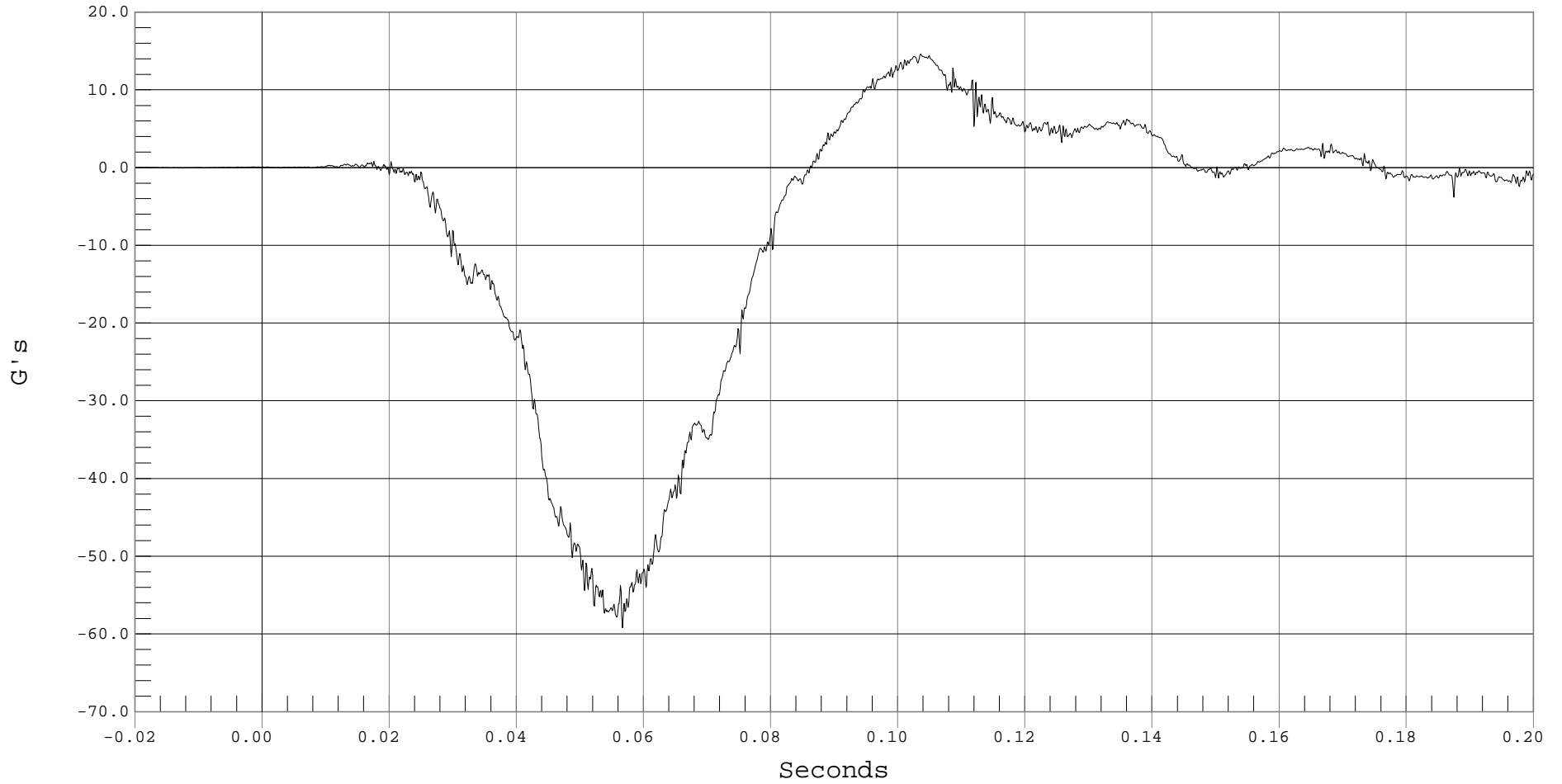
DRIVER HEAD REDUNDANT X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 DRIVER HEAD Xr, B01032AT.A33

Ymin = -59.2 G's @ 0.0566 Seconds, Ymax = 14.59 G's @ 0.1035 Seconds



B-6



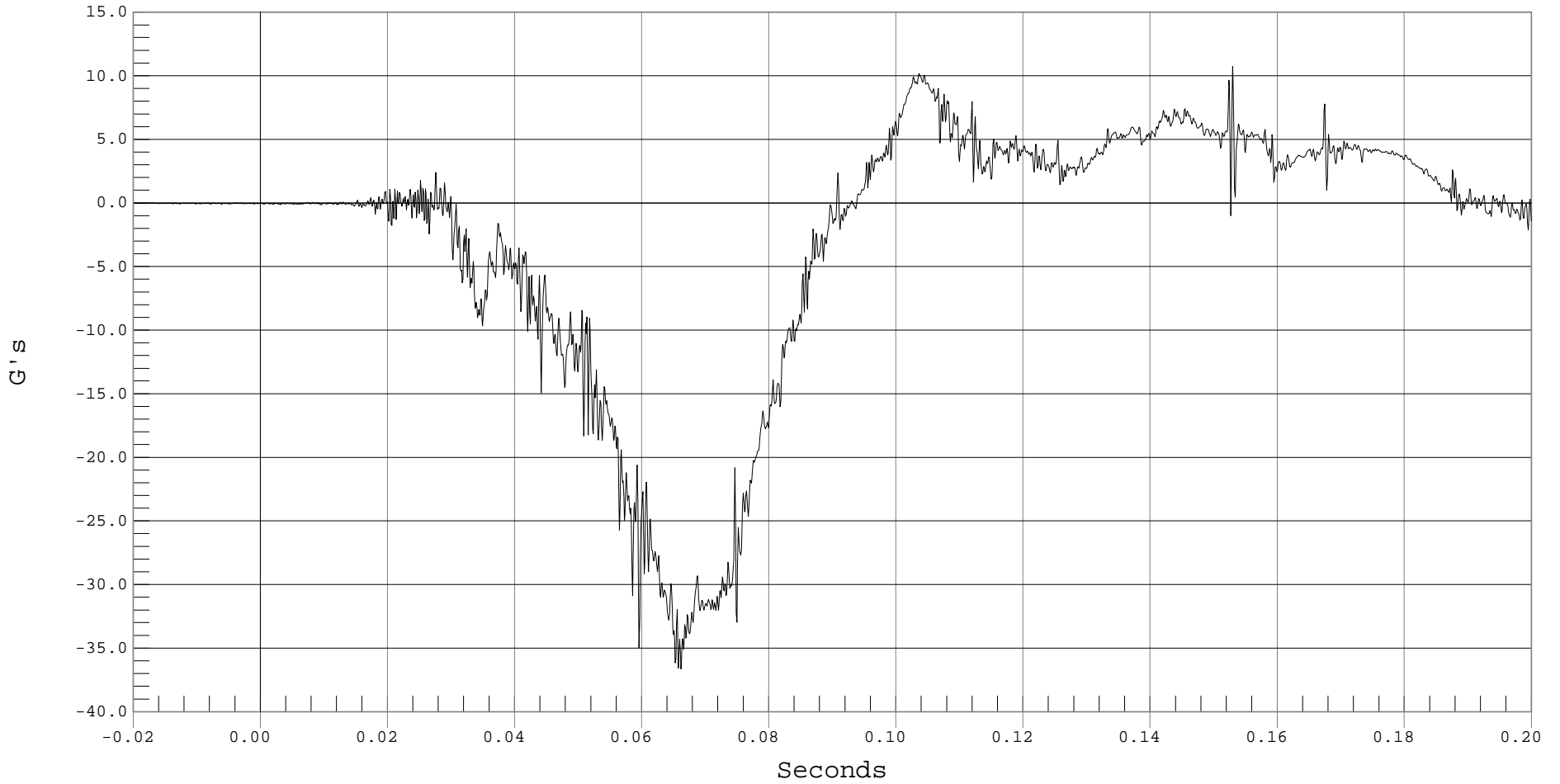
DRIVER HEAD REDUNDANT Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 DRIVER HEAD Yr, B01032AT.A34

Ymin = -36.64 G's @ 0.0661 Seconds, Ymax = 10.72 G's @ 0.1529 Seconds



B-7



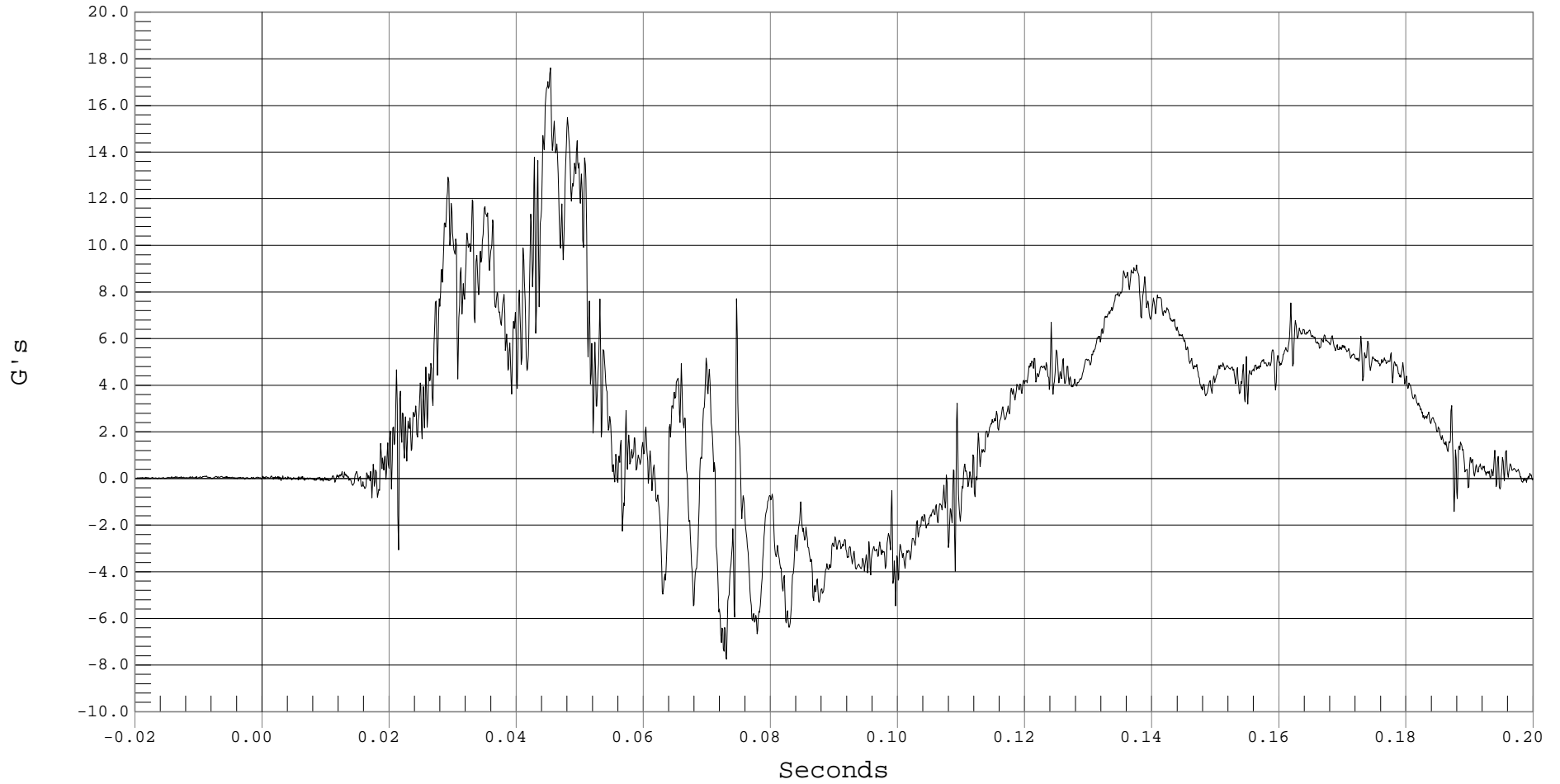
DRIVER HEAD REDUNDANT Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 DRIVER HEAD Zr, B01032AT.A35

Ymin = -7.75 G's @ 0.0730 Seconds, Ymax = 17.61 G's @ 0.0453 Seconds



B-8



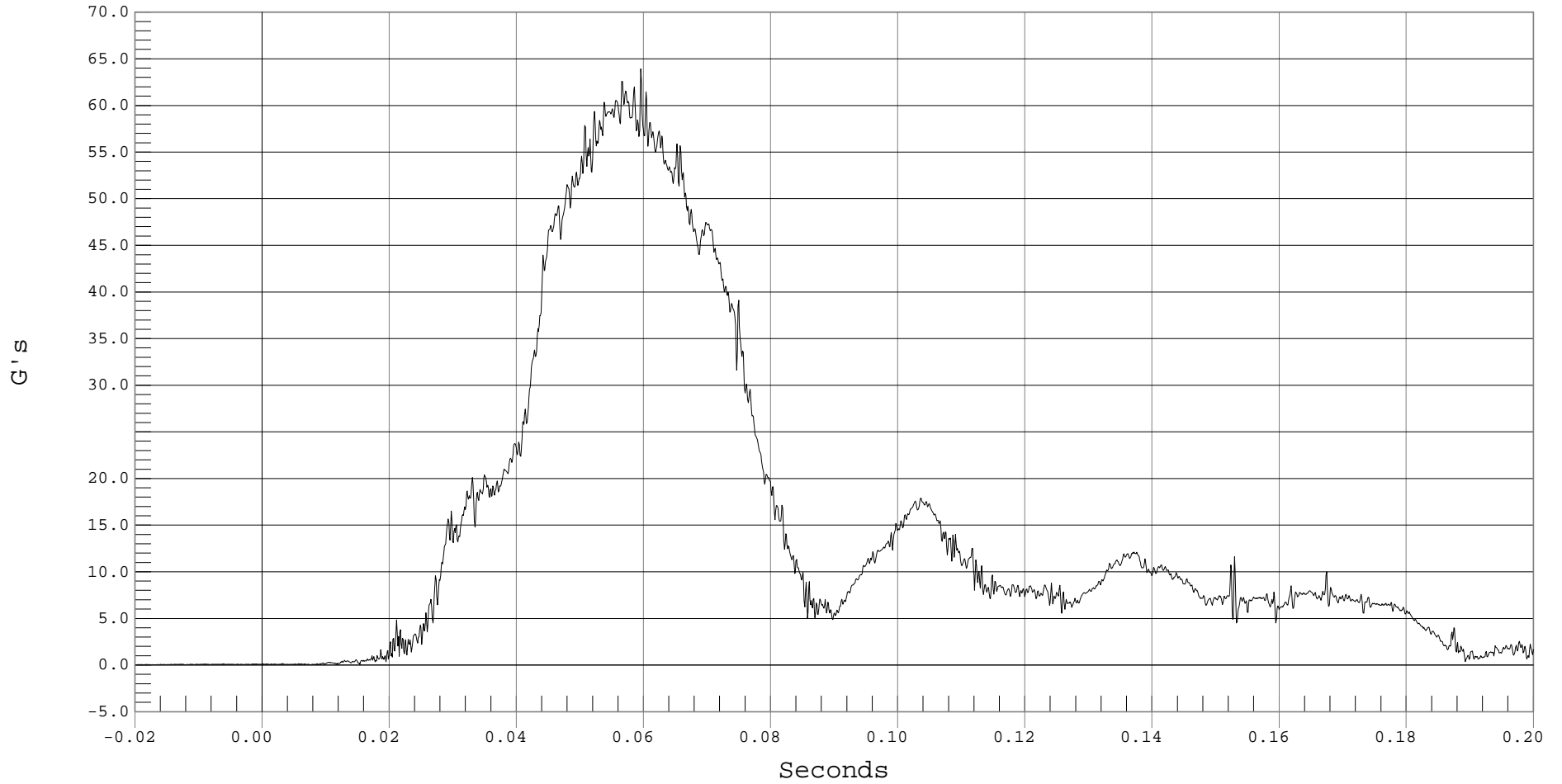
DRIVER HEAD REDUNDANT RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 DRIVER HEAD REDUNDANT RESULTANT ACCELERATION, B01032AV.A33

Ymin = .02 G's @ -0.0178 Seconds, Ymax = 63.92 G's @ 0.0595 Seconds





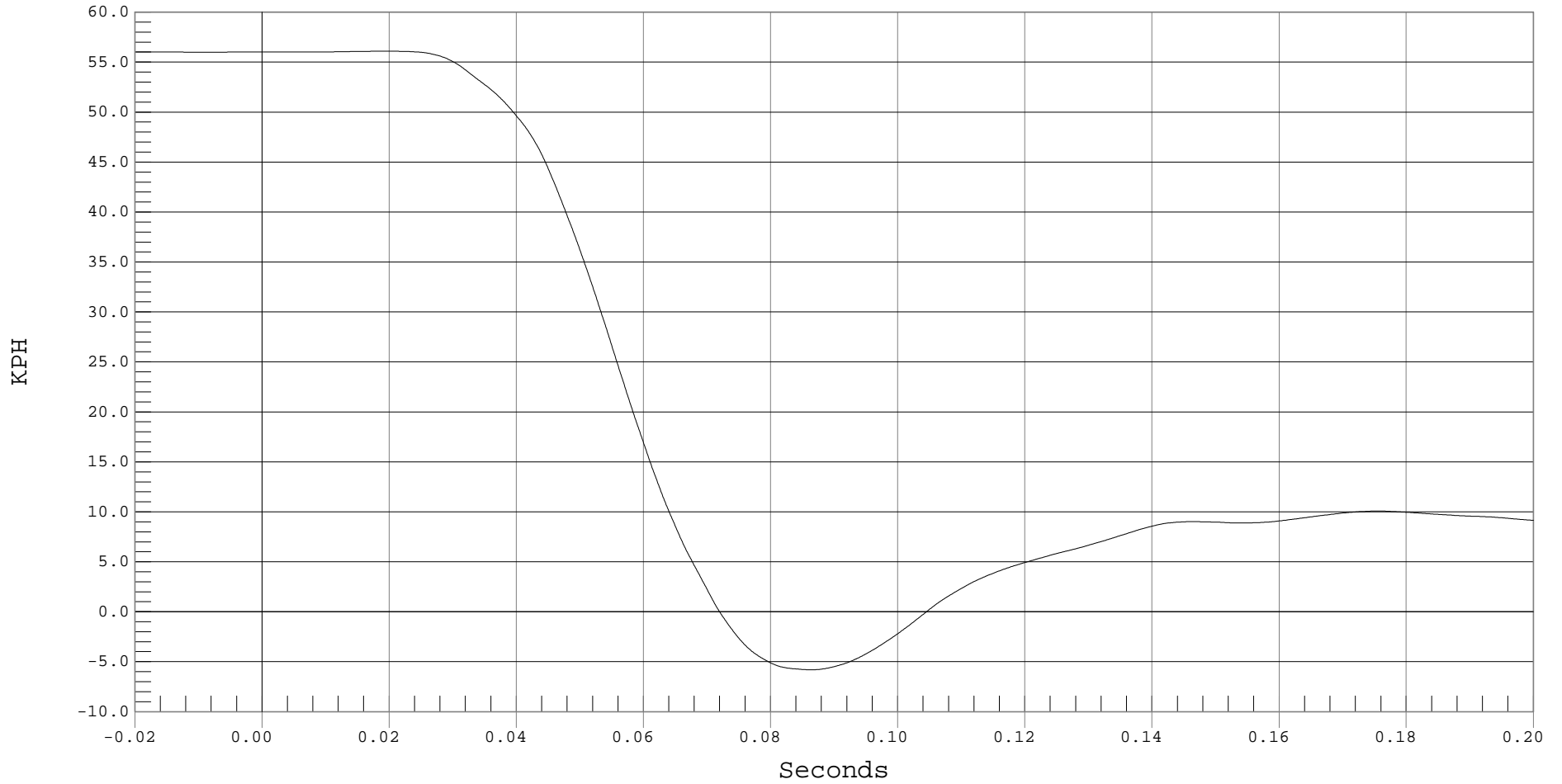
DRIVER HEAD REDUNDANT X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 DRIVER HEAD REDUNDANT X VELOCITY, B01032AI.V33

Ymin = -5.81 KPH @ 0.0862 Seconds, Ymax = 56.1 KPH @ 0.0185 Seconds



B-10



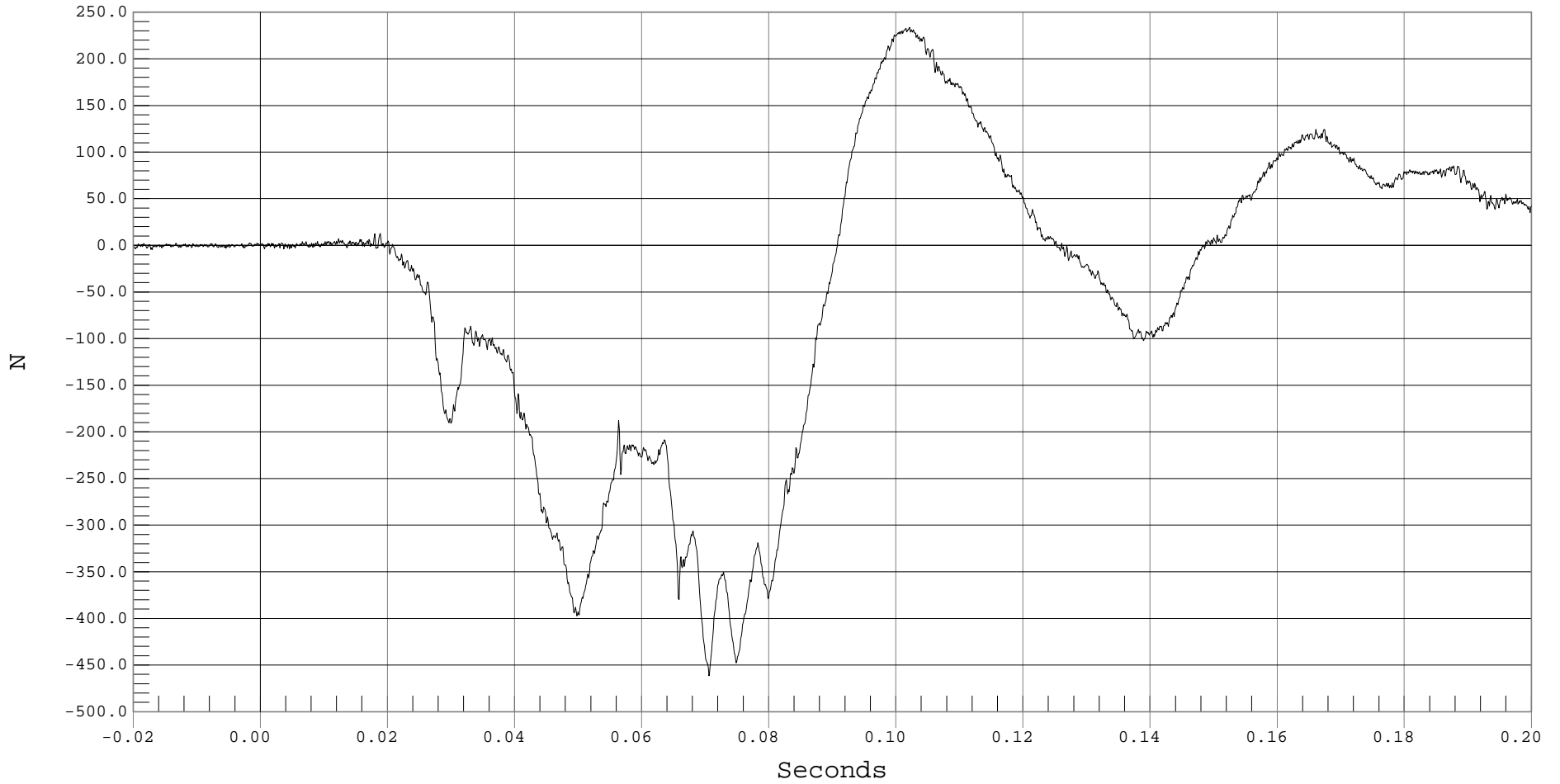
DRIVER NECK FORCE X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 DRIVER NECK FX, B01032FT.F07

Ymin = -461.48 N @ 0.0705 Seconds, Ymax = 233.69 N @ 0.1021 Seconds



B-11



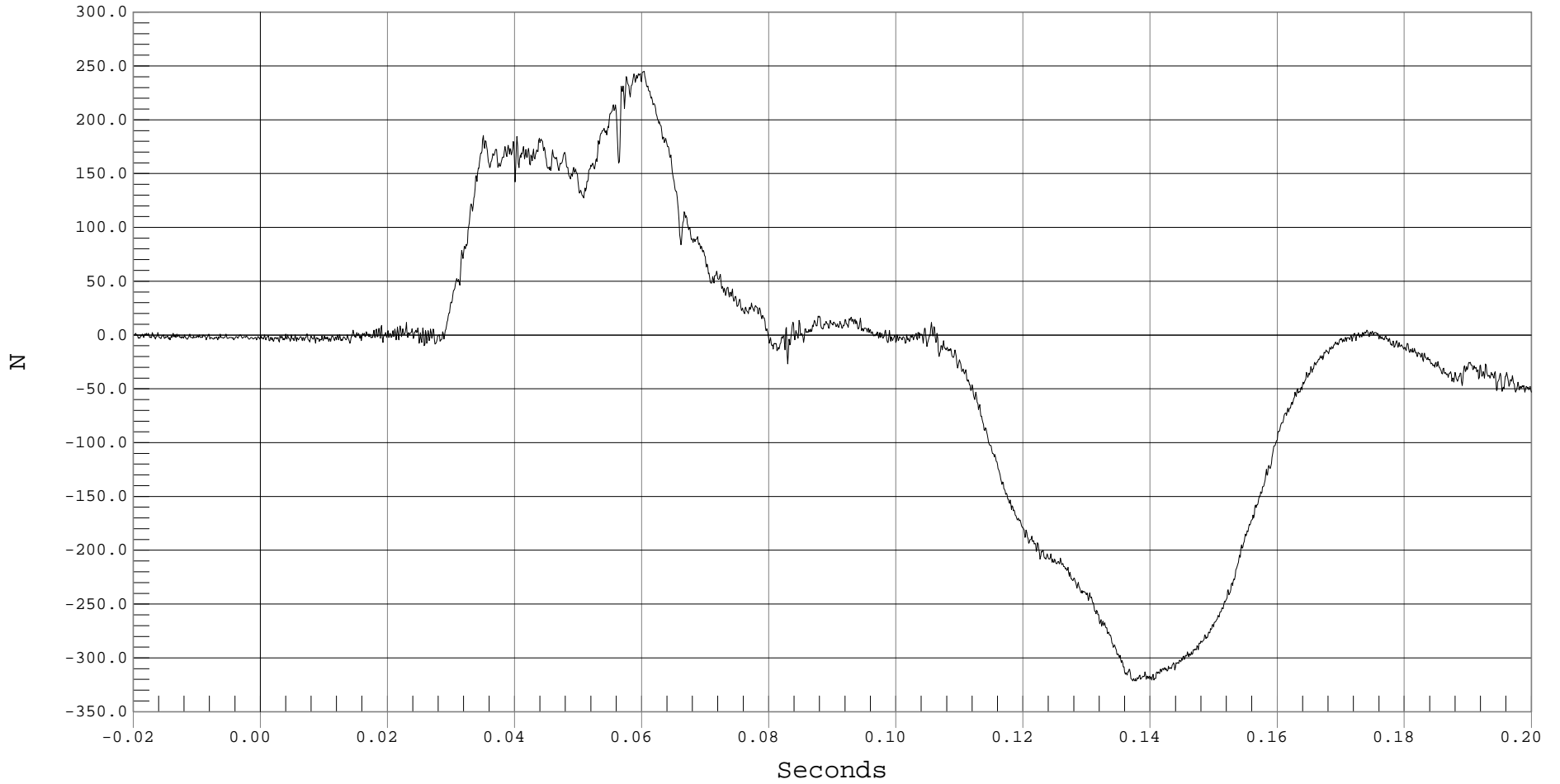
DRIVER NECK FORCE Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 DRIVER NECK FY, B01032FT.F08

Ymin = -321.45 N @ 0.1372 Seconds, Ymax = 245.24 N @ 0.0603 Seconds



B-12



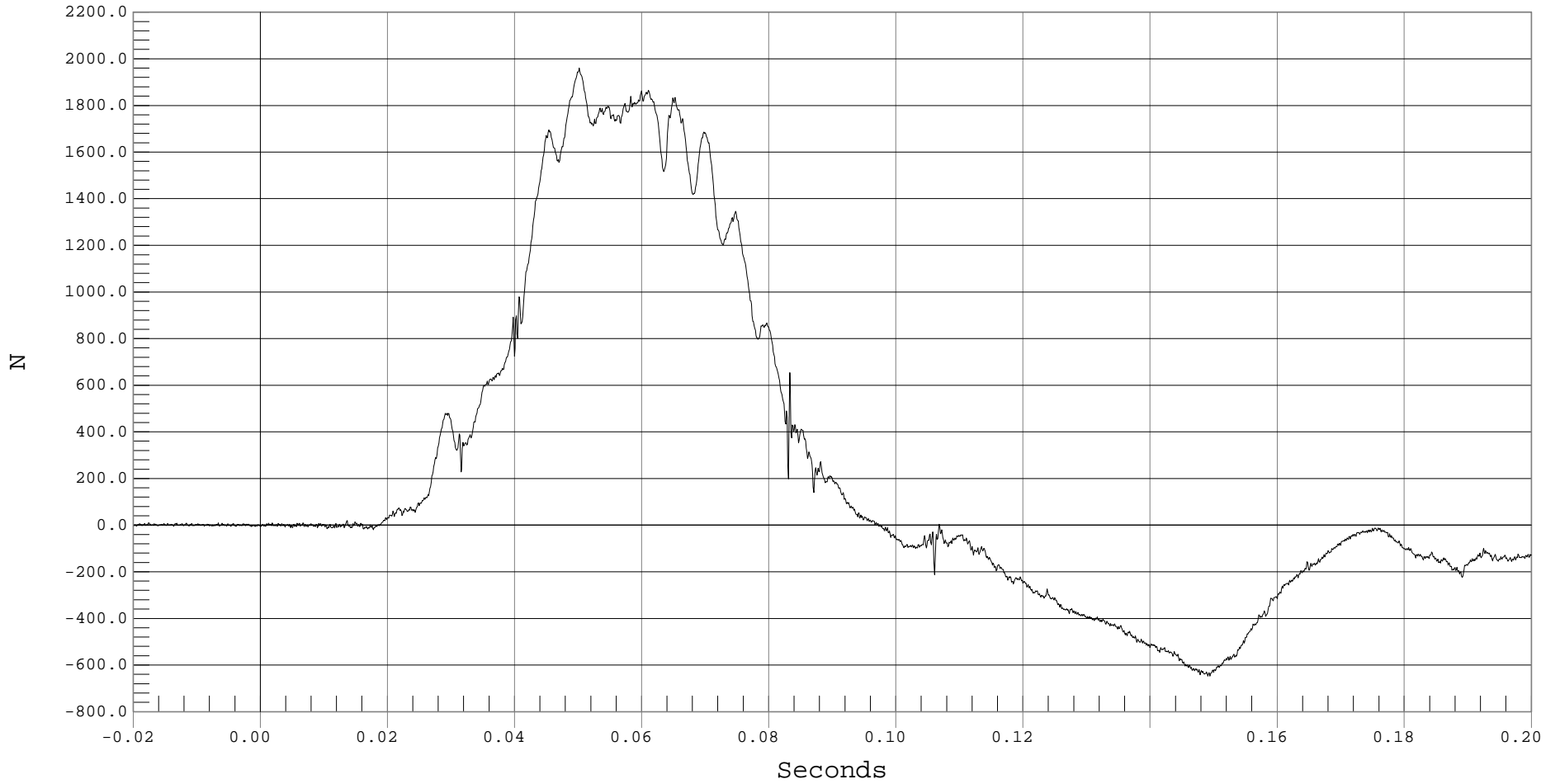
DRIVER NECK FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 DRIVER NECK FZ, B01032FT.F09

Ymin = -647.33 N @ 0.1490 Seconds, Ymax = 1959.9 N @ 0.0501 Seconds



B-13



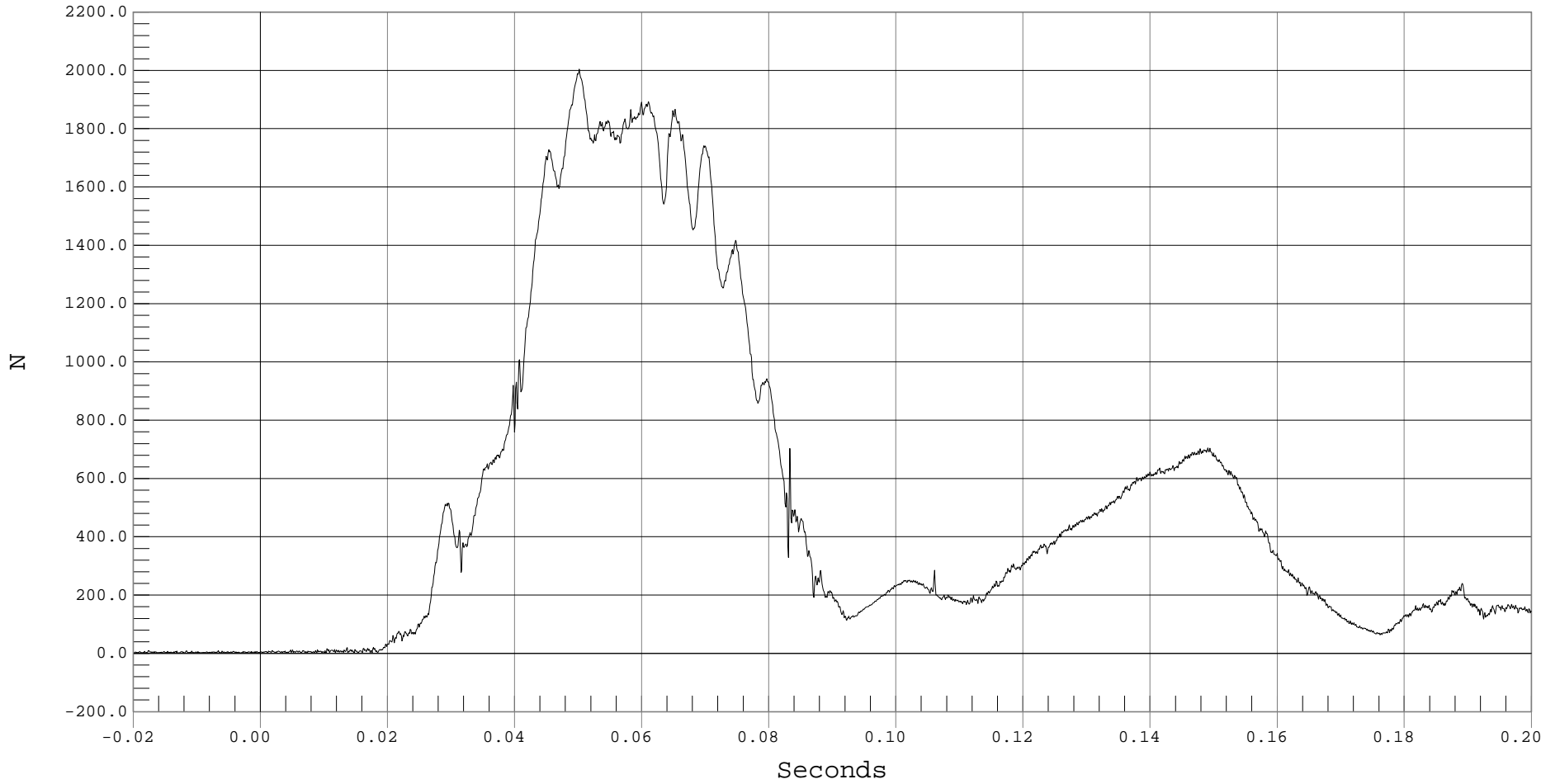
DRIVER NECK FORCE RESULTANT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 DRIVER NECK FORCE RESULTANT, B01032FV.F07

Ymin = .76 N @ -0.0154 Seconds, Ymax = 2003.89 N @ 0.0501 Seconds



B-14



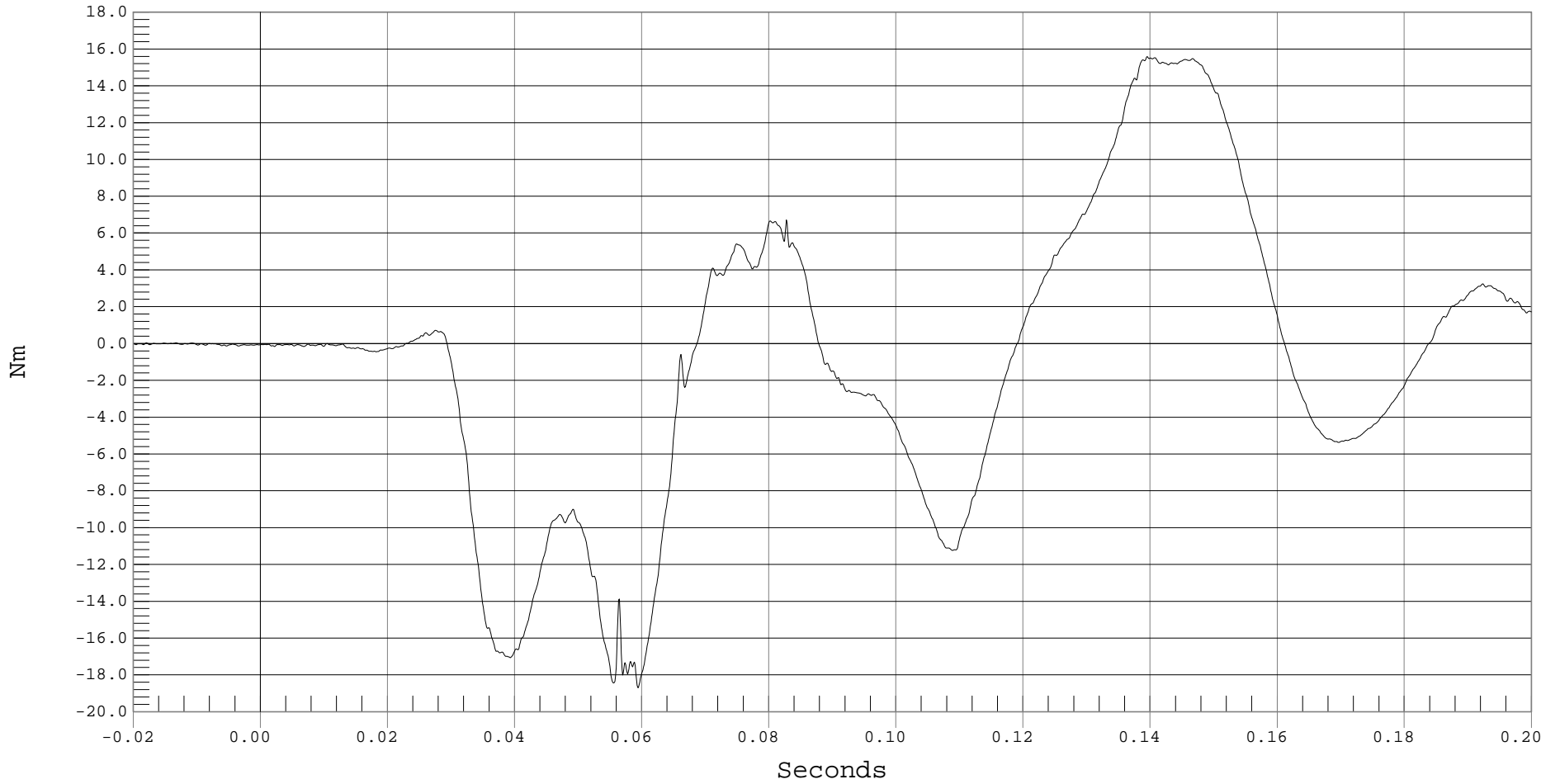
DRIVER NECK MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 DRIVER NECK MX, B01032MF.M04

Ymin = -18.7 Nm @ 0.0593 Seconds, Ymax = 15.59 Nm @ 0.1394 Seconds



B-15



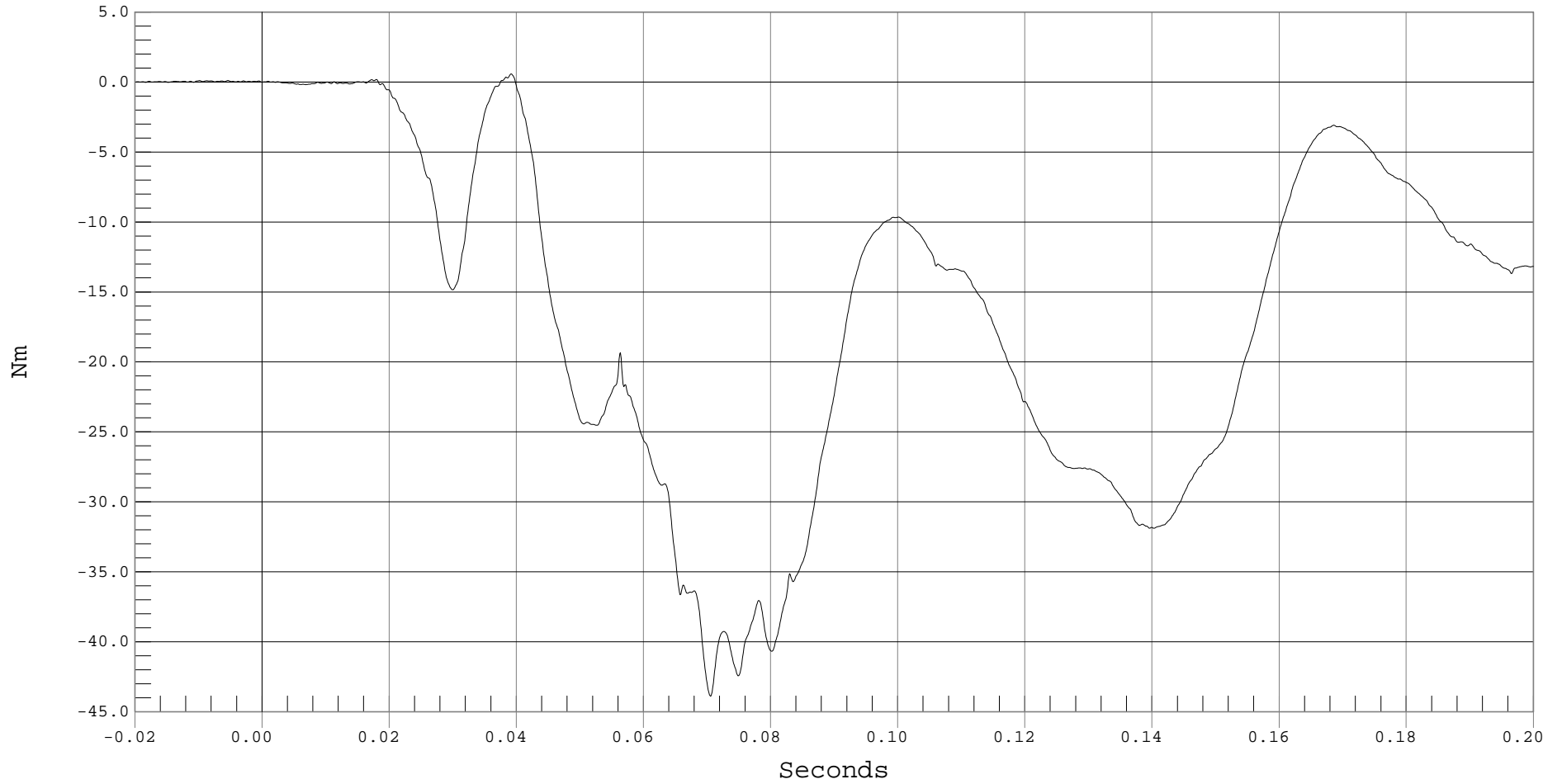
DRIVER NECK MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 DRIVER NECK MY, B01032MF.M05

Ymin = -43.89 Nm @ 0.0705 Seconds, Ymax = .59 Nm @ 0.0391 Seconds



B-16



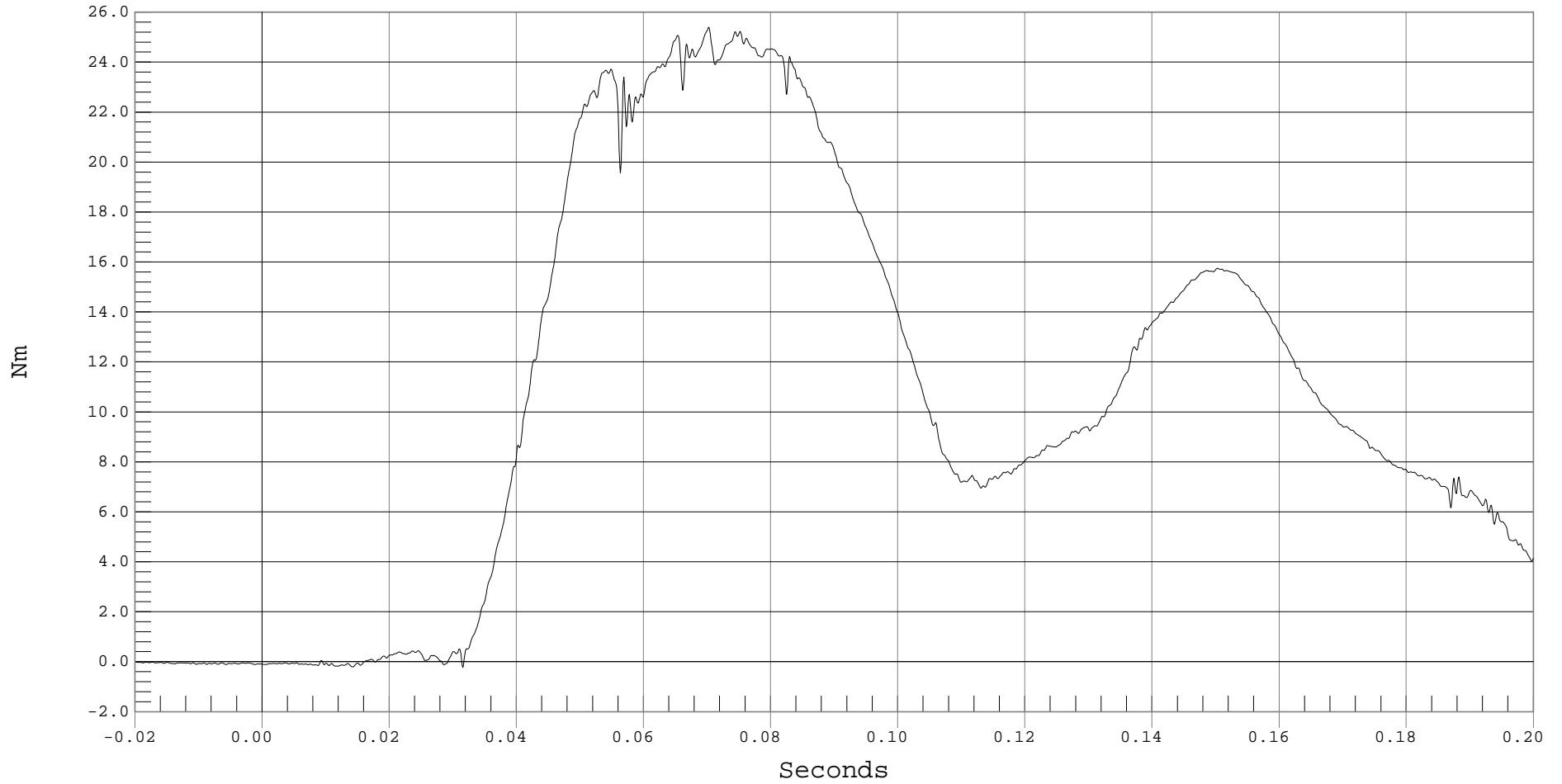
DRIVER NECK MOMENT Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 DRIVER NECK MZ, B01032MF.M06

Ymin = -.23 Nm @ 0.0315 Seconds, Ymax = 25.4 Nm @ 0.0702 Seconds





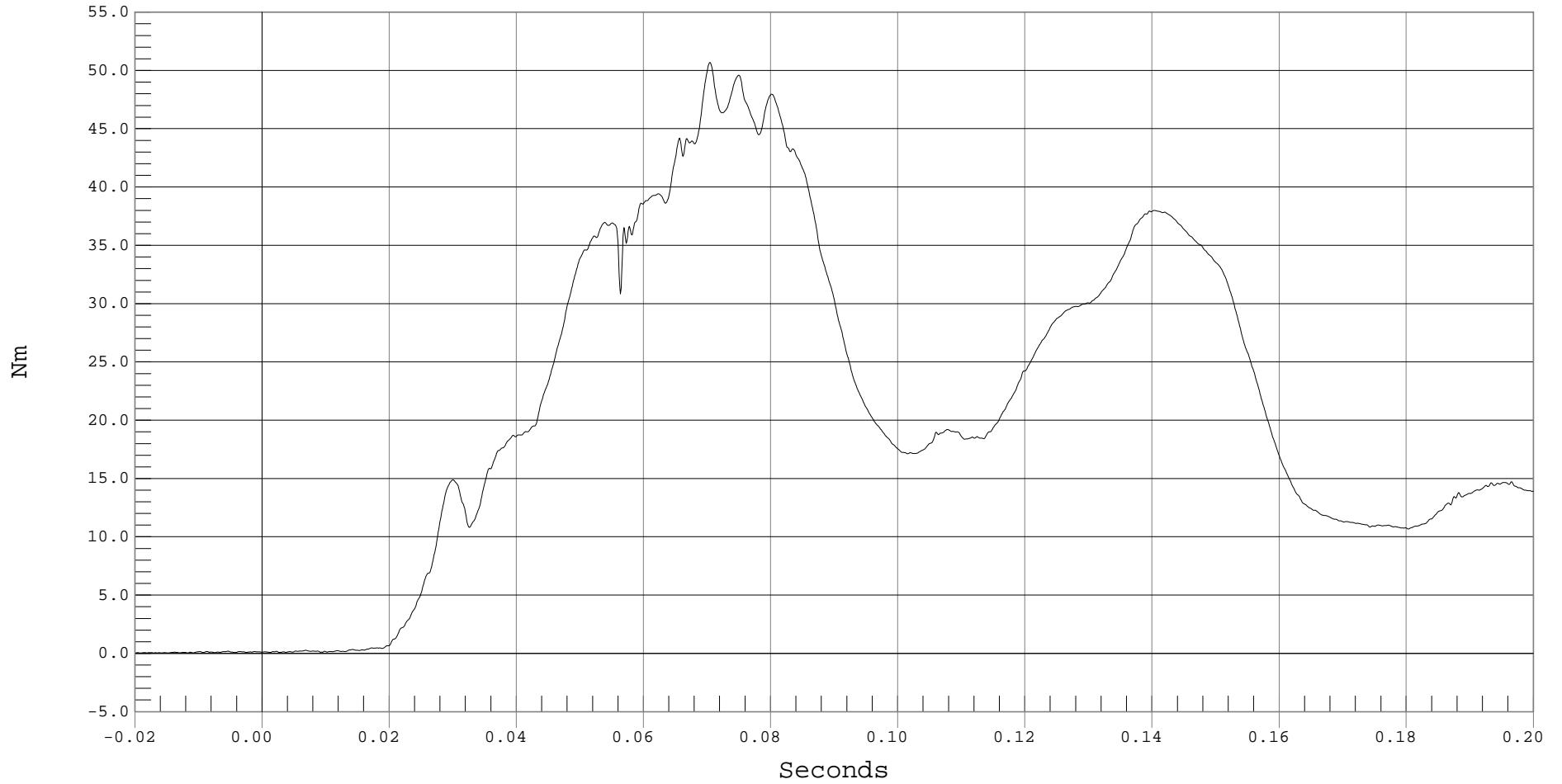
DRIVER NECK MOMENT RESULTANT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 DRIVER NECK MOMENT RESULTANT, B01032MV.M04

Ymin = .02 Nm @ -0.0182 Seconds, Ymax = 50.67 Nm @ 0.0703 Seconds



B-18



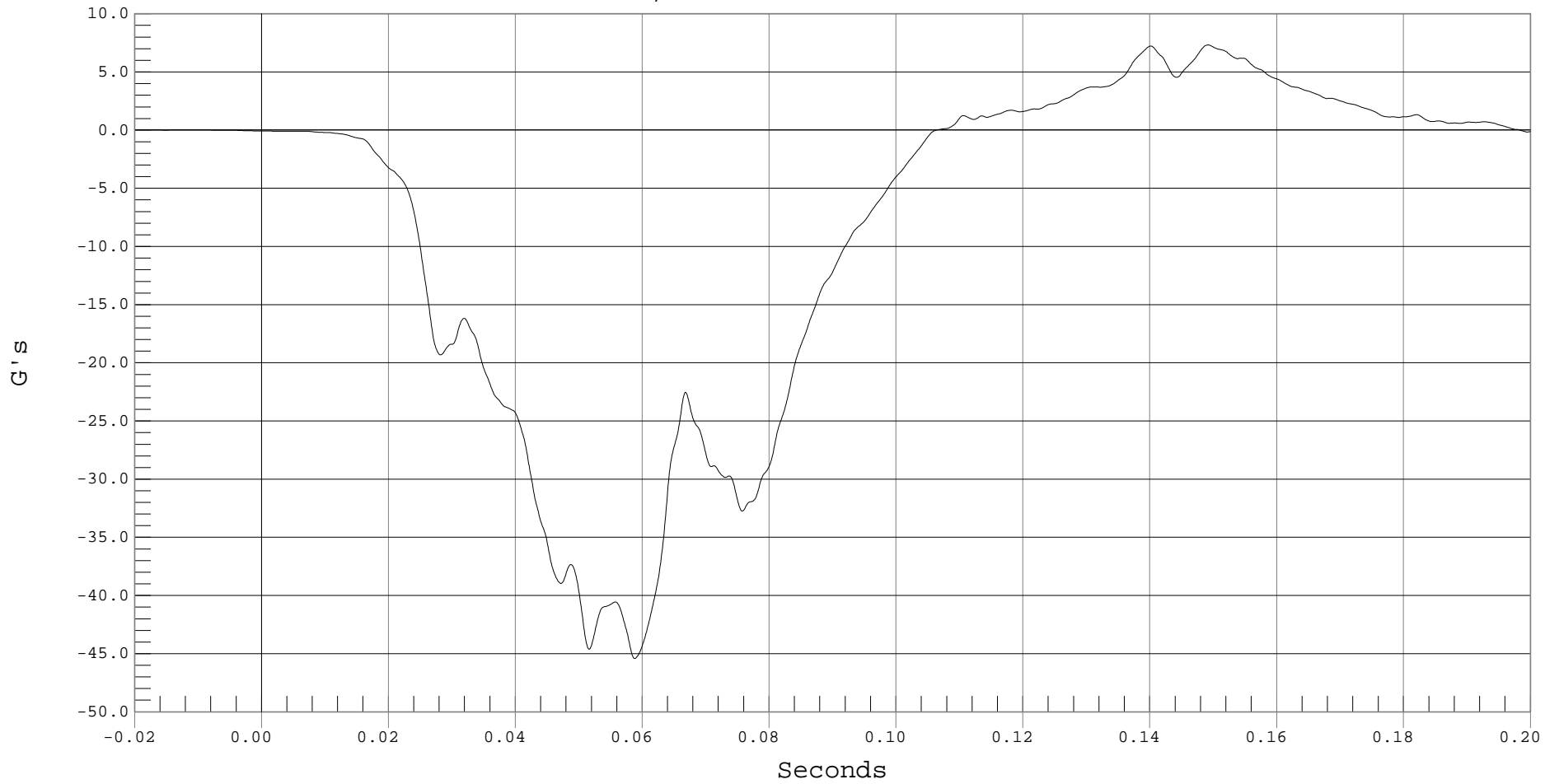
DRIVER CHEST X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 DRIVER CHEST X, B01032AF.A10

Ymin = -45.42 G's @ 0.0587 Seconds, Ymax = 7.33 G's @ 0.1491 Seconds



B-19



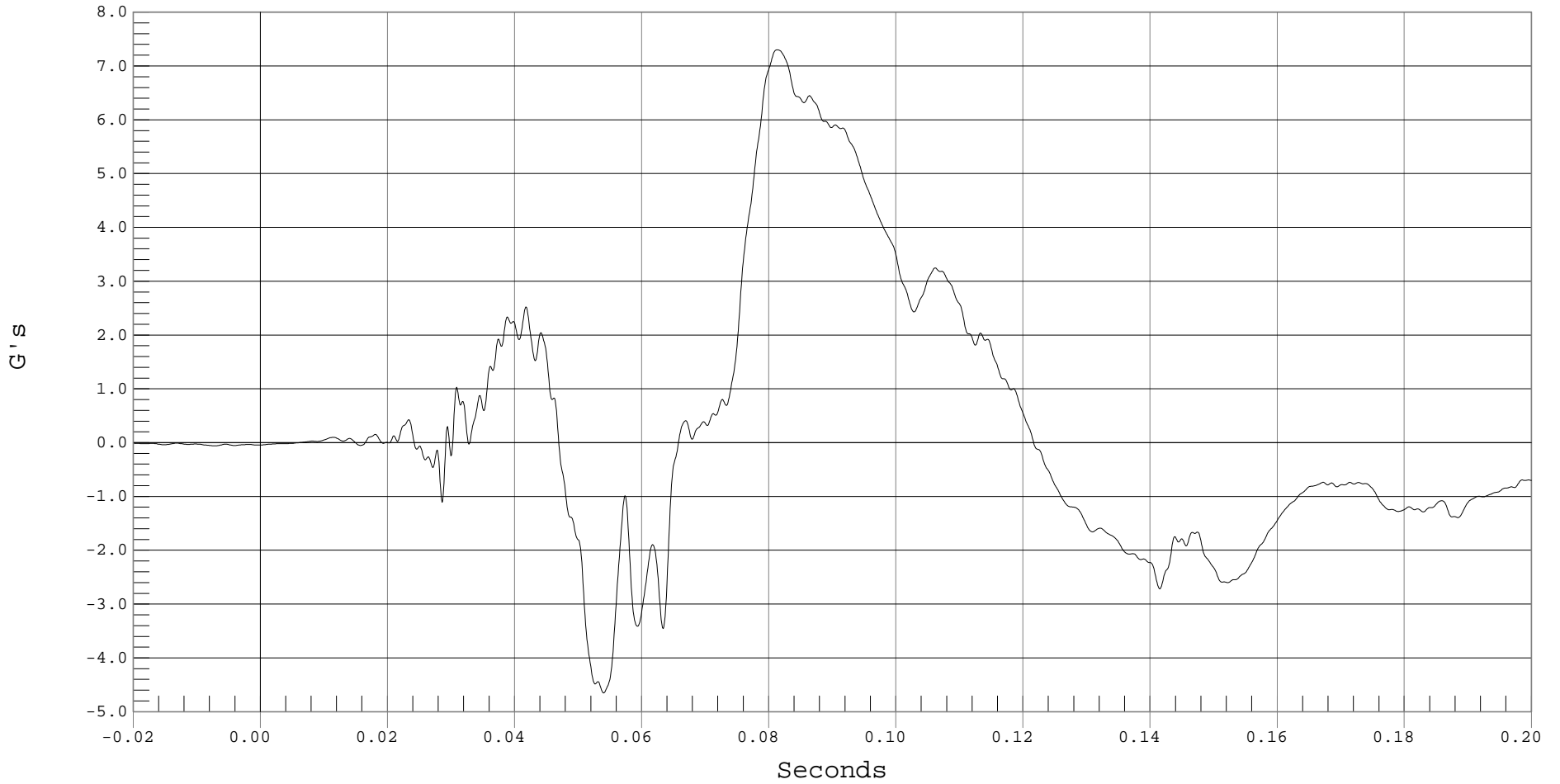
DRIVER CHEST Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 DRIVER CHEST Y, B01032AF.A11

Ymin = -4.65 G's @ 0.0539 Seconds, Ymax = 7.3 G's @ 0.0812 Seconds



B-20



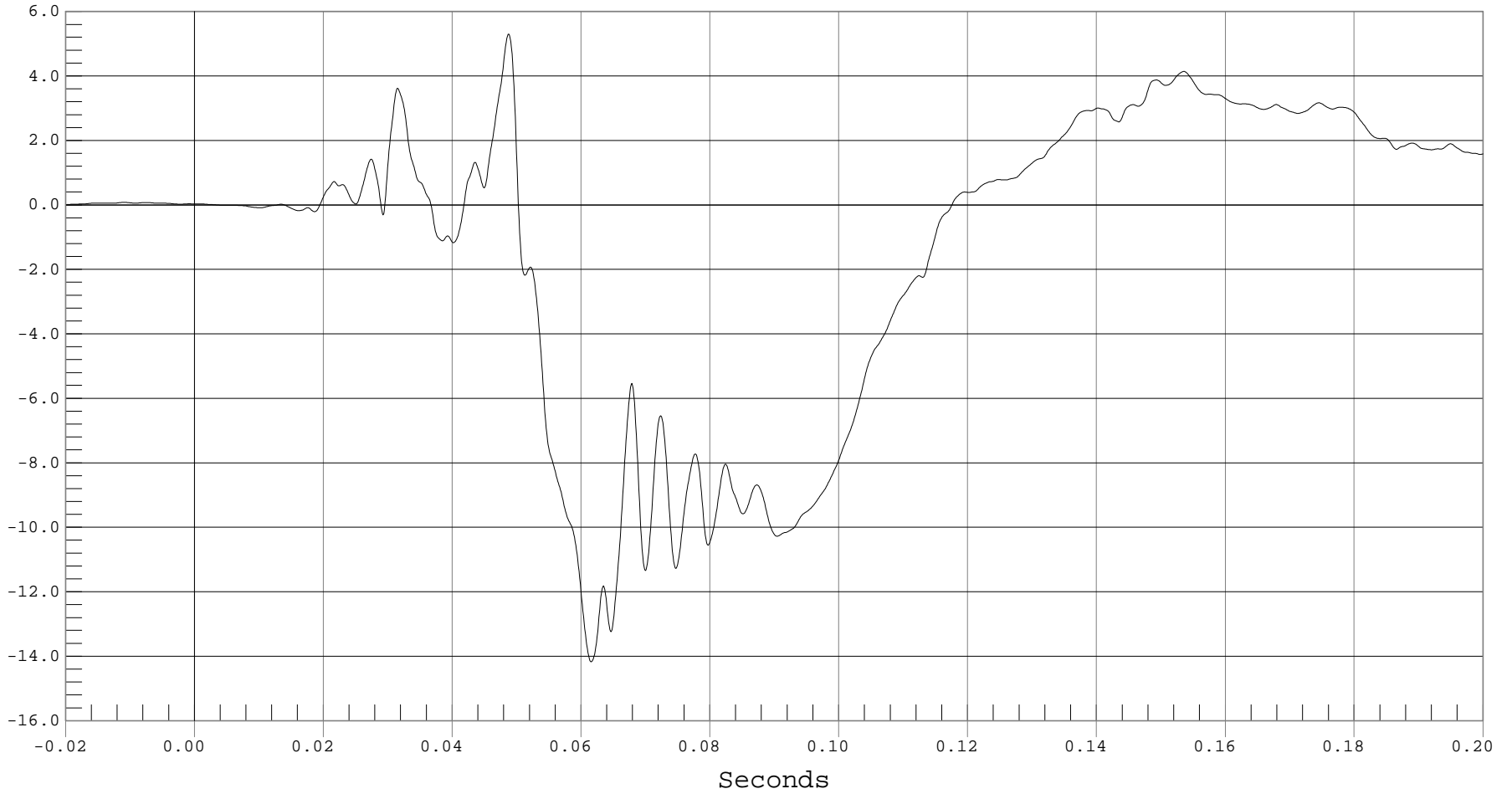
DRIVER CHEST Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 DRIVER CHEST Z, B01032AF.A12

Ymin = -14.17 G's @ 0.0615 Seconds, Ymax = 5.3 G's @ 0.0487 Seconds



B-21



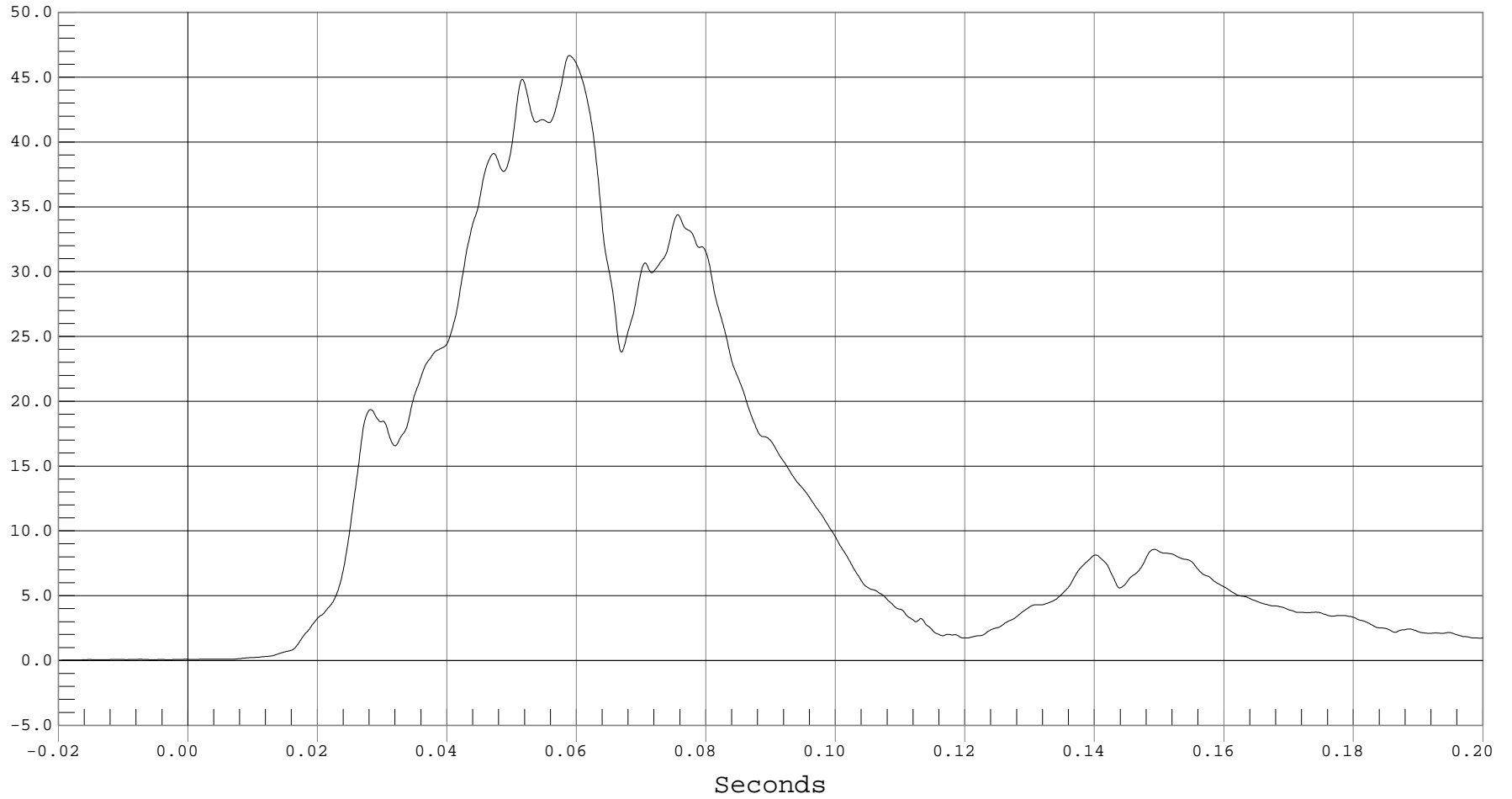
DRIVER CHEST RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 DRIVER CHEST RESULTANT ACCELERATION, B01032AV.A10

Ymin = .02 G's @ -0.0197 Seconds, Ymax = 46.66 G's @ 0.0588 Seconds



B-22



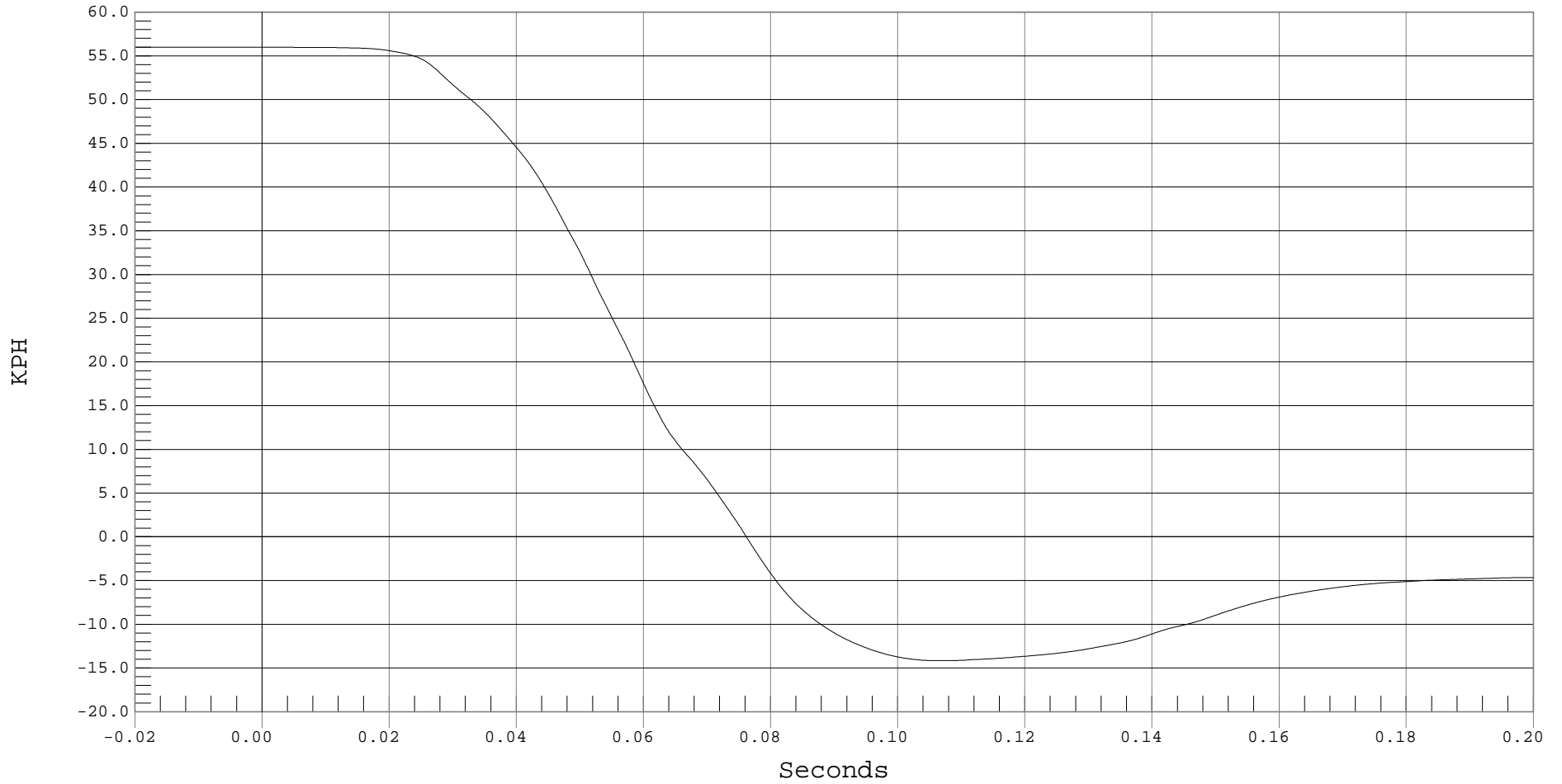
DRIVER CHEST X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 DRIVER CHEST X VELOCITY, B01032AI.V10

Ymin = -14.16 KPH @ 0.1063 Seconds, Ymax = 56 KPH @ -0.0082 Seconds



B-23



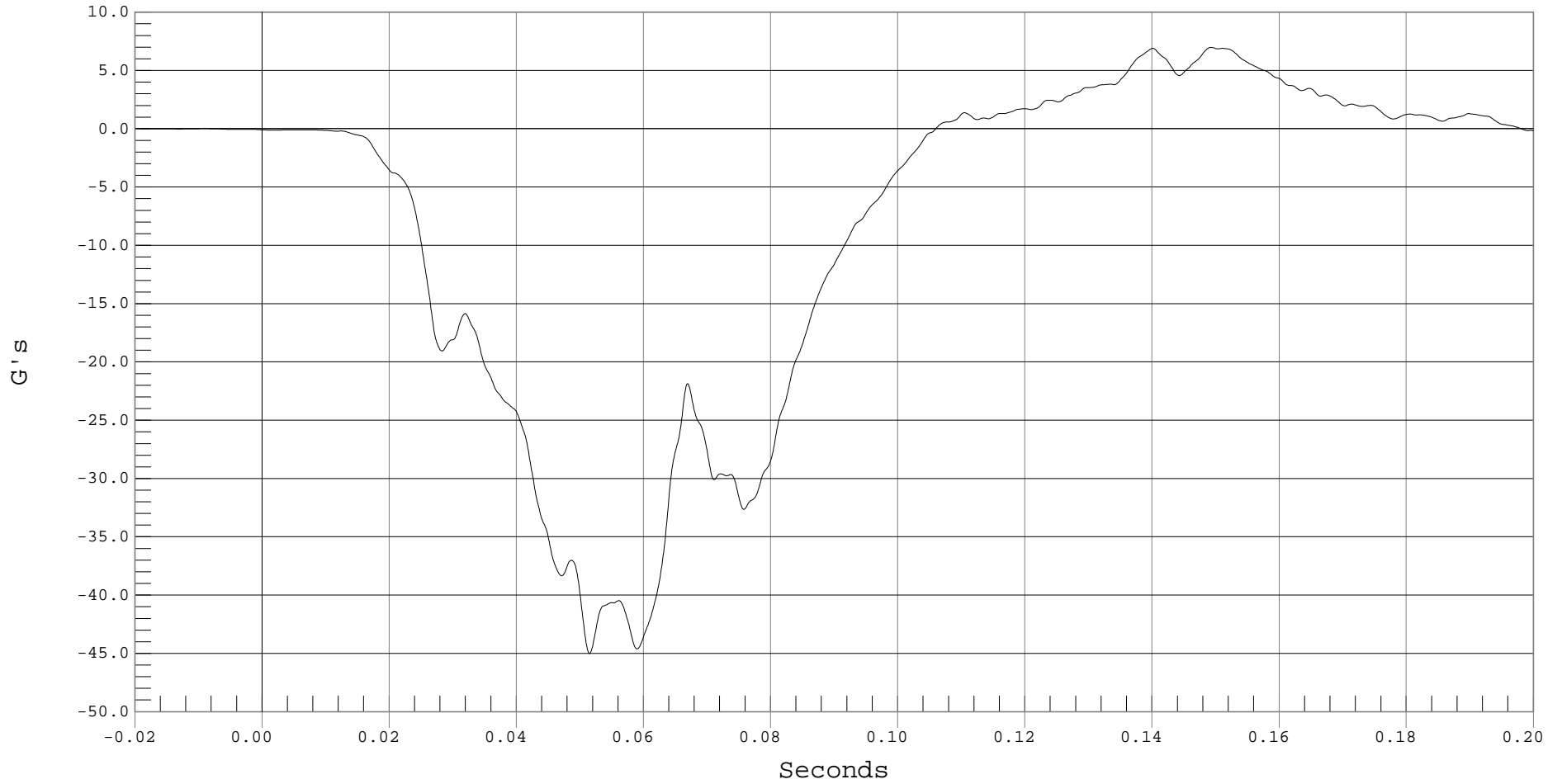
DRIVER CHEST REDUNDANT X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 DRIVER CHEST Xr, B01032AF.A36

Ymin = -45.01 G's @ 0.0514 Seconds, Ymax = 6.98 G's @ 0.1492 Seconds



B-24



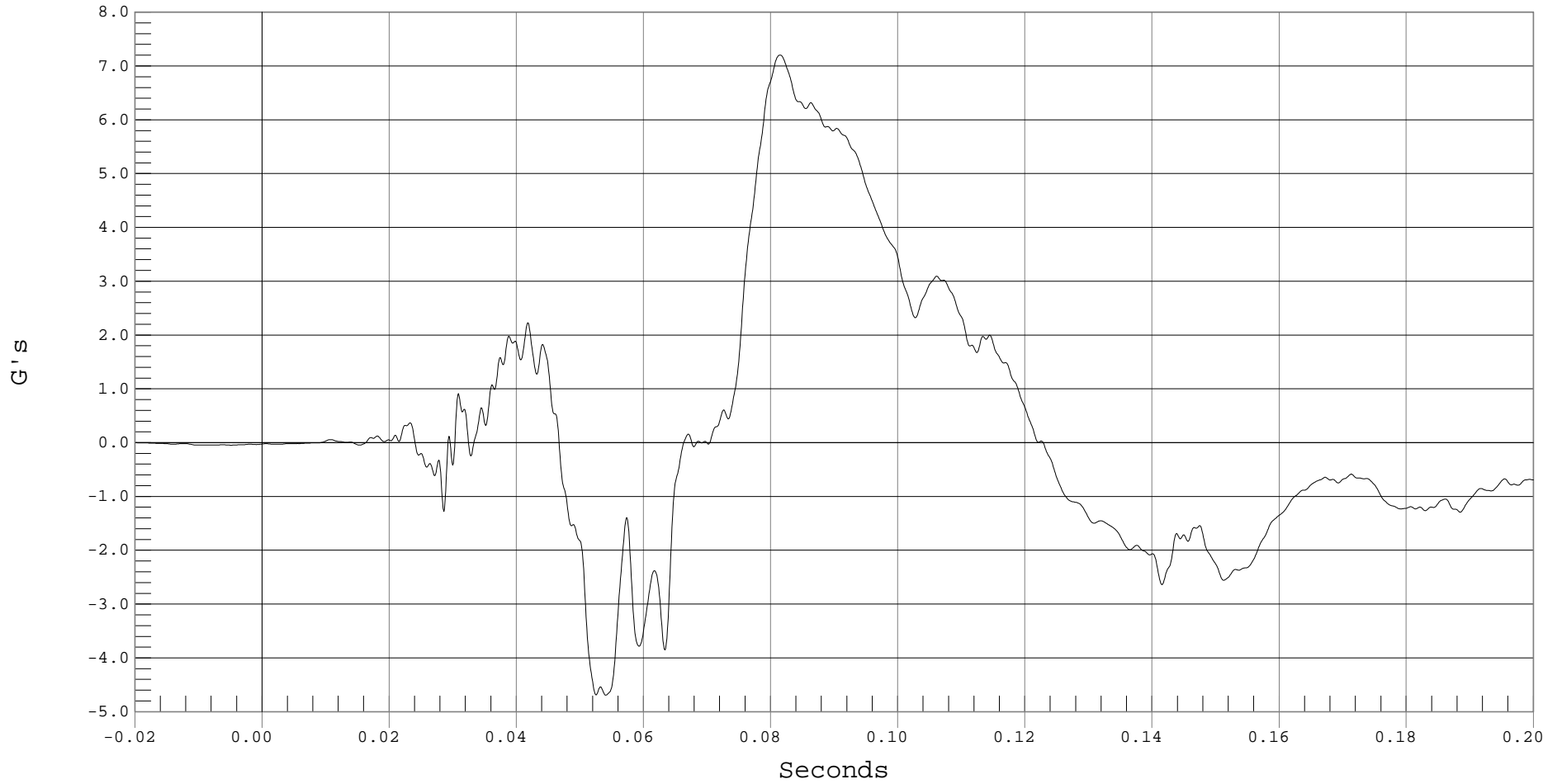
DRIVER CHEST REDUNDANT Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 DRIVER CHEST Yr, B01032AF.A37

Ymin = -4.69 G's @ 0.0540 Seconds, Ymax = 7.2 G's @ 0.0814 Seconds





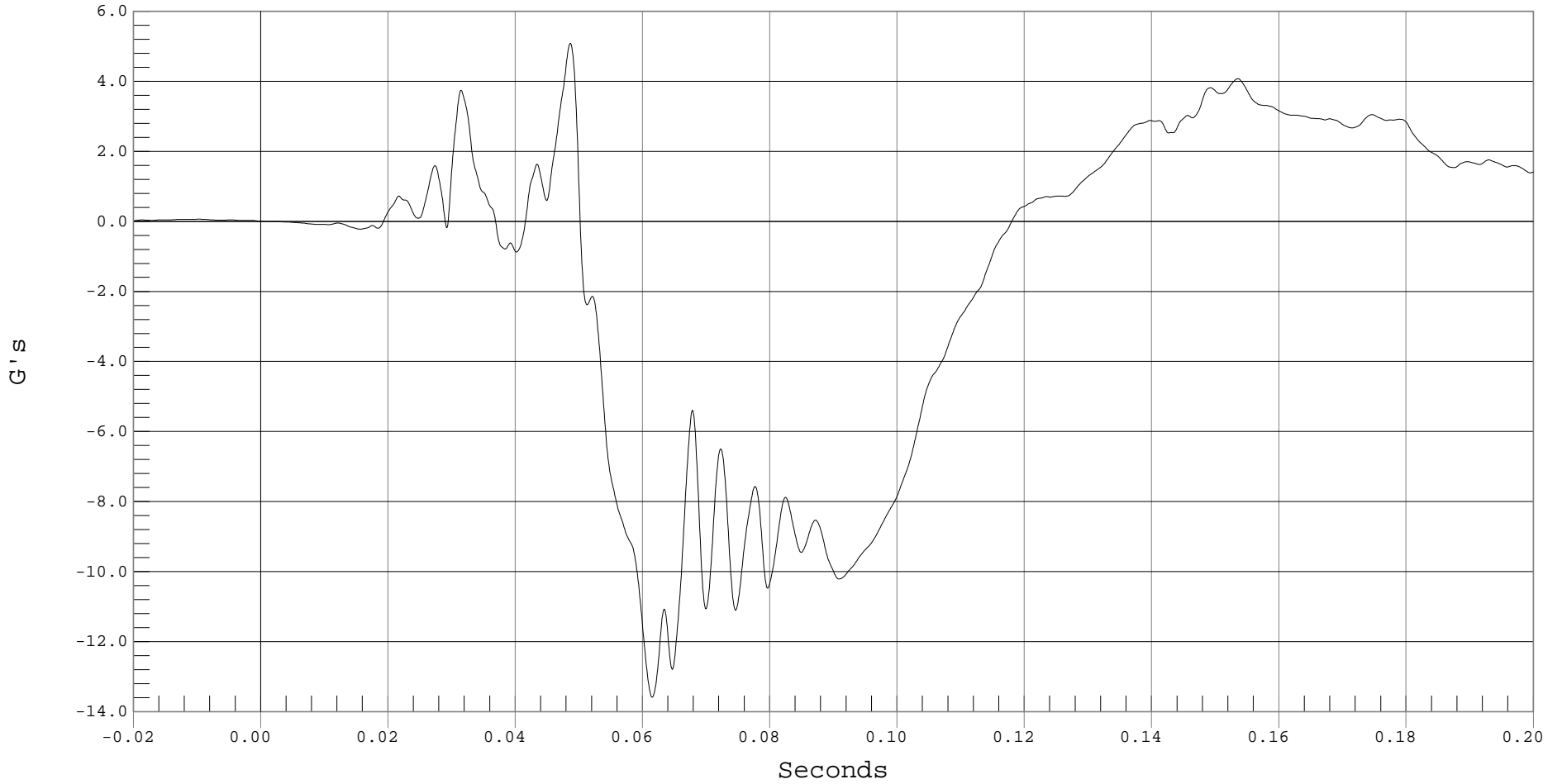
DRIVER CHEST REDUNDANT Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 DRIVER CHEST Zr, B01032AF.A38

Ymin = -13.59 G's @ 0.0614 Seconds, Ymax = 5.09 G's @ 0.0486 Seconds



B-26



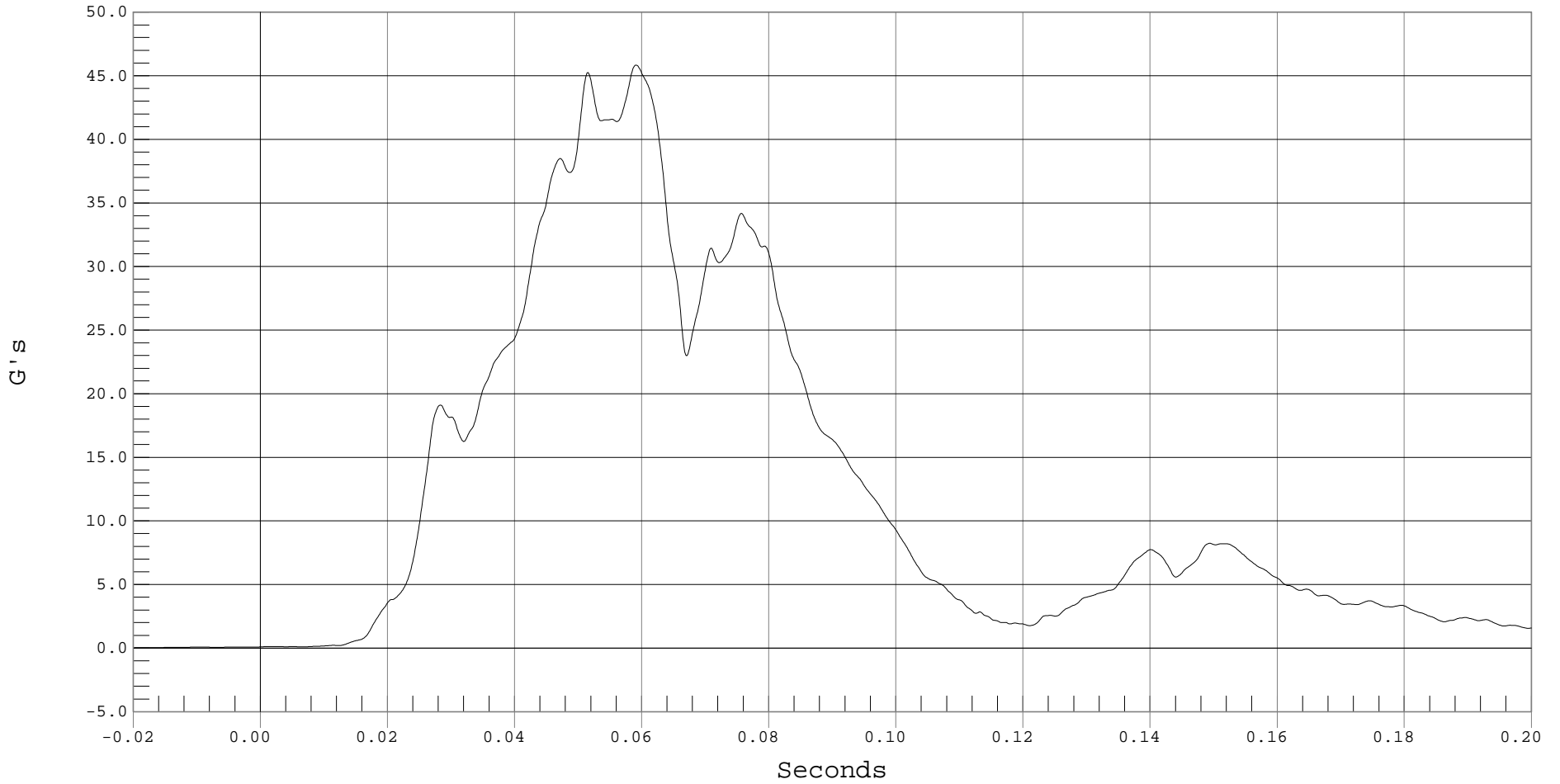
DRIVER CHEST REDUNDANT RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 DRIVER CHEST REDUNDANT RESULTANT ACCELERATION, B01032AV.A36

Ymin = .02 G's @ -0.0199 Seconds, Ymax = 45.84 G's @ 0.0590 Seconds



B-27



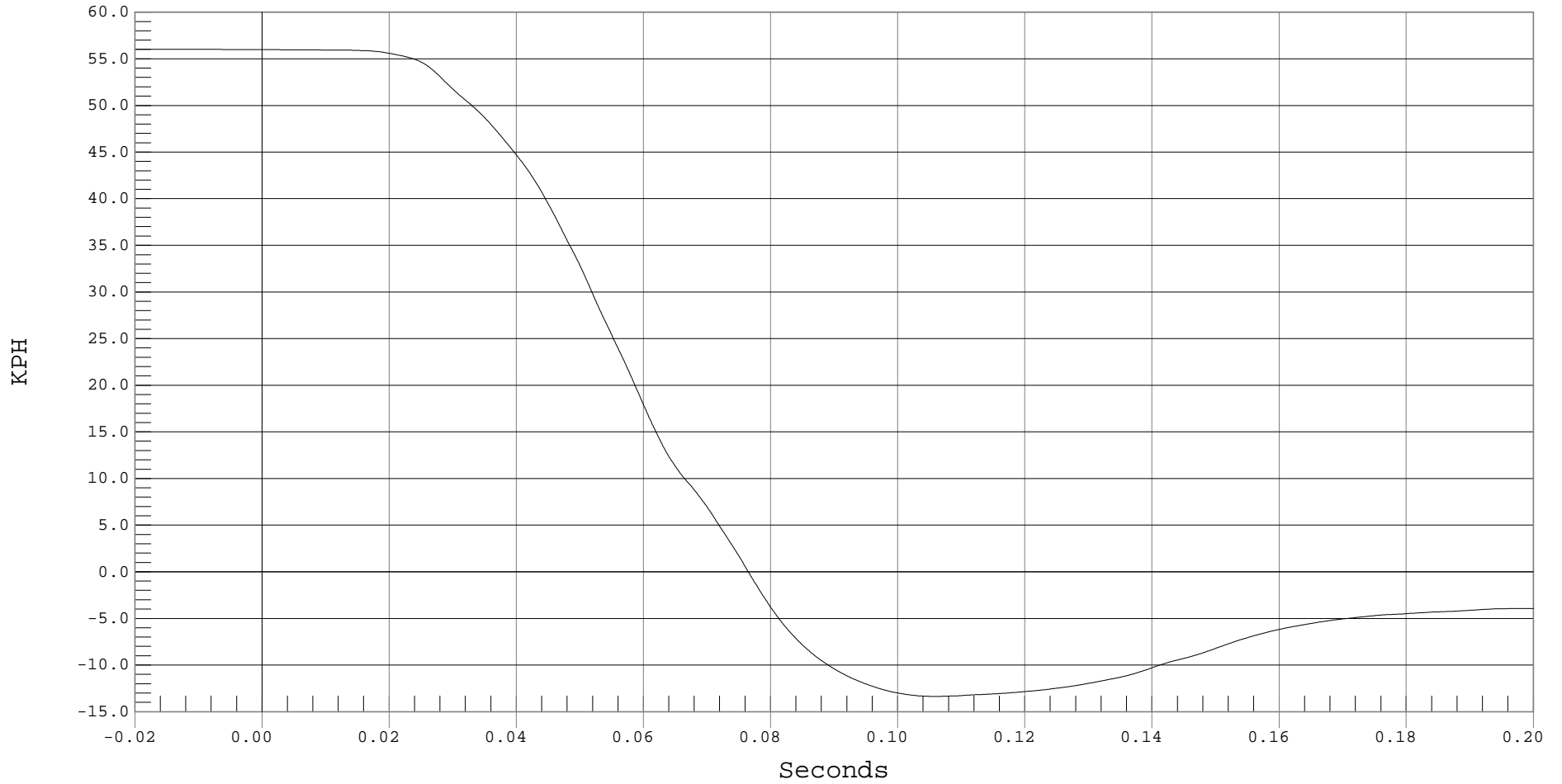
DRIVER CHEST REDUNDANT X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 DRIVER CHEST REDUNDANT X VELOCITY, B01032AI.V36

Ymin = -13.36 KPH @ 0.1059 Seconds, Ymax = 56 KPH @ -0.0194 Seconds



B-28



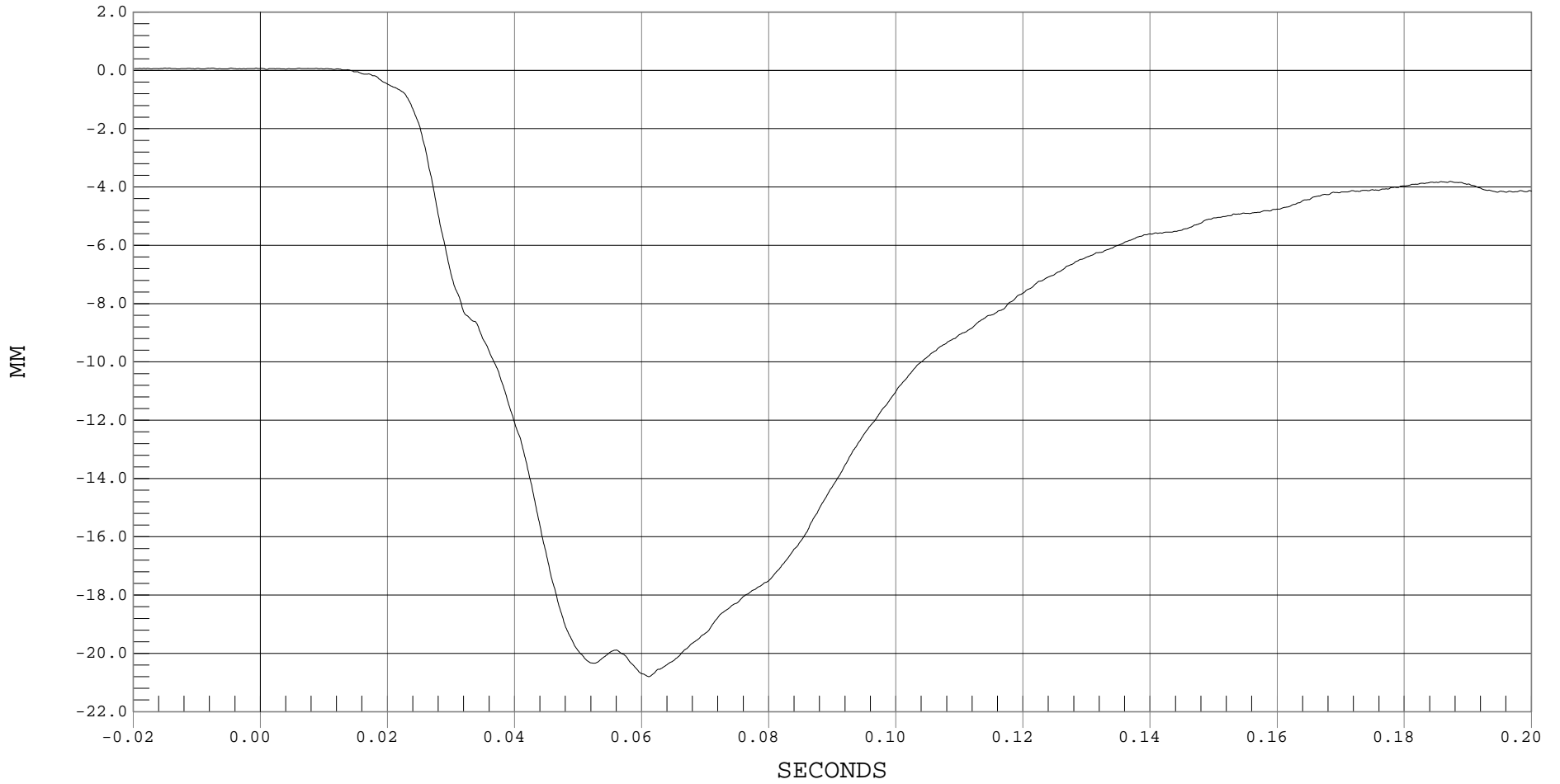
DRIVER CHEST COMPRESSION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 DRIVER CHEST COMP., B01032DF.D13

Ymin = -20.8 MM @ 0.0611 SECONDS, Ymax = .08 MM @ -0.0076 SECONDS



B-29



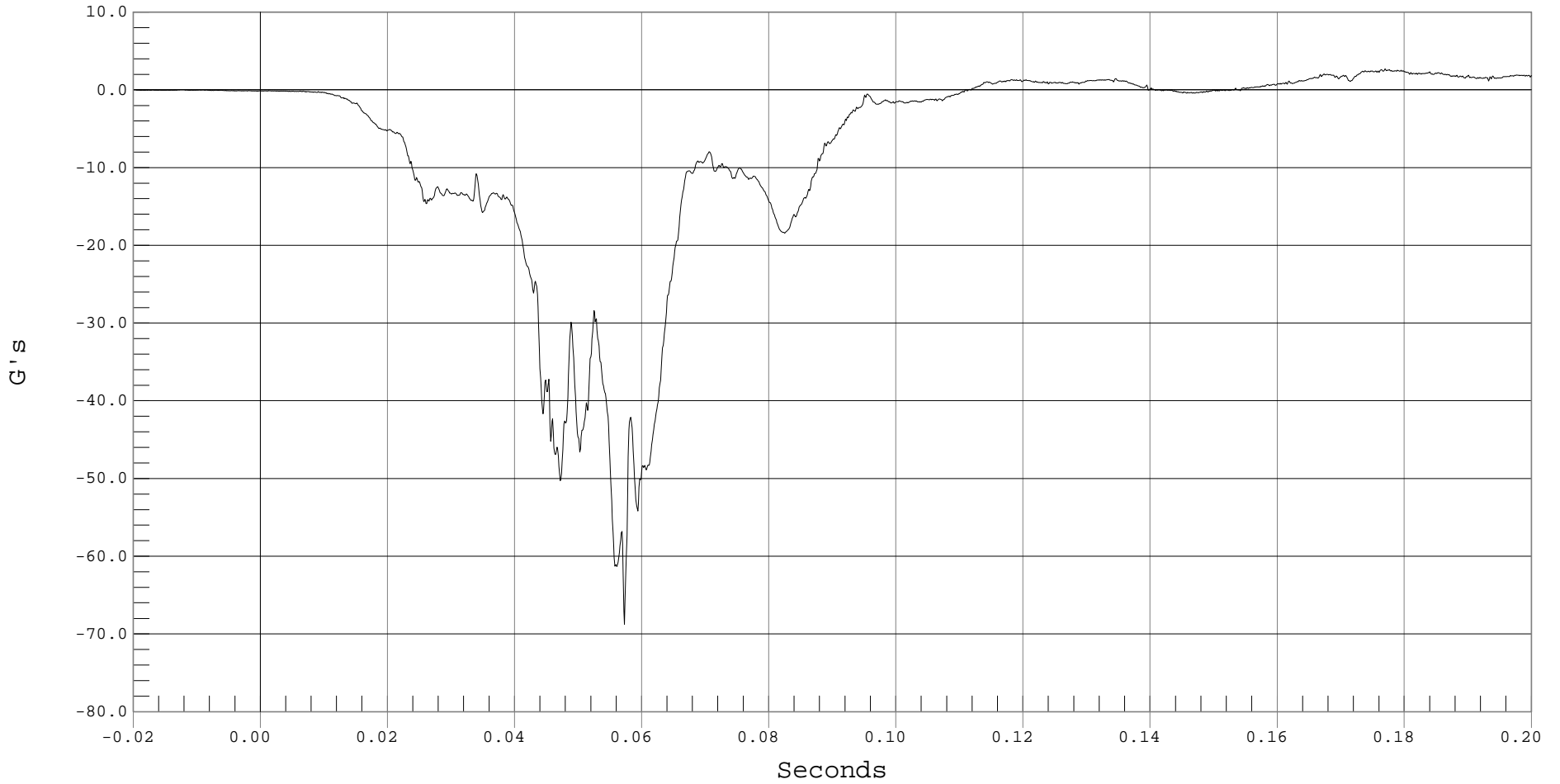
DRIVER PELVIS X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 DRIVER PELVIS X, B01032AT.A14

Ymin = -68.75 G's @ 0.0572 Seconds, Ymax = 2.7 G's @ 0.1769 Seconds



B-30



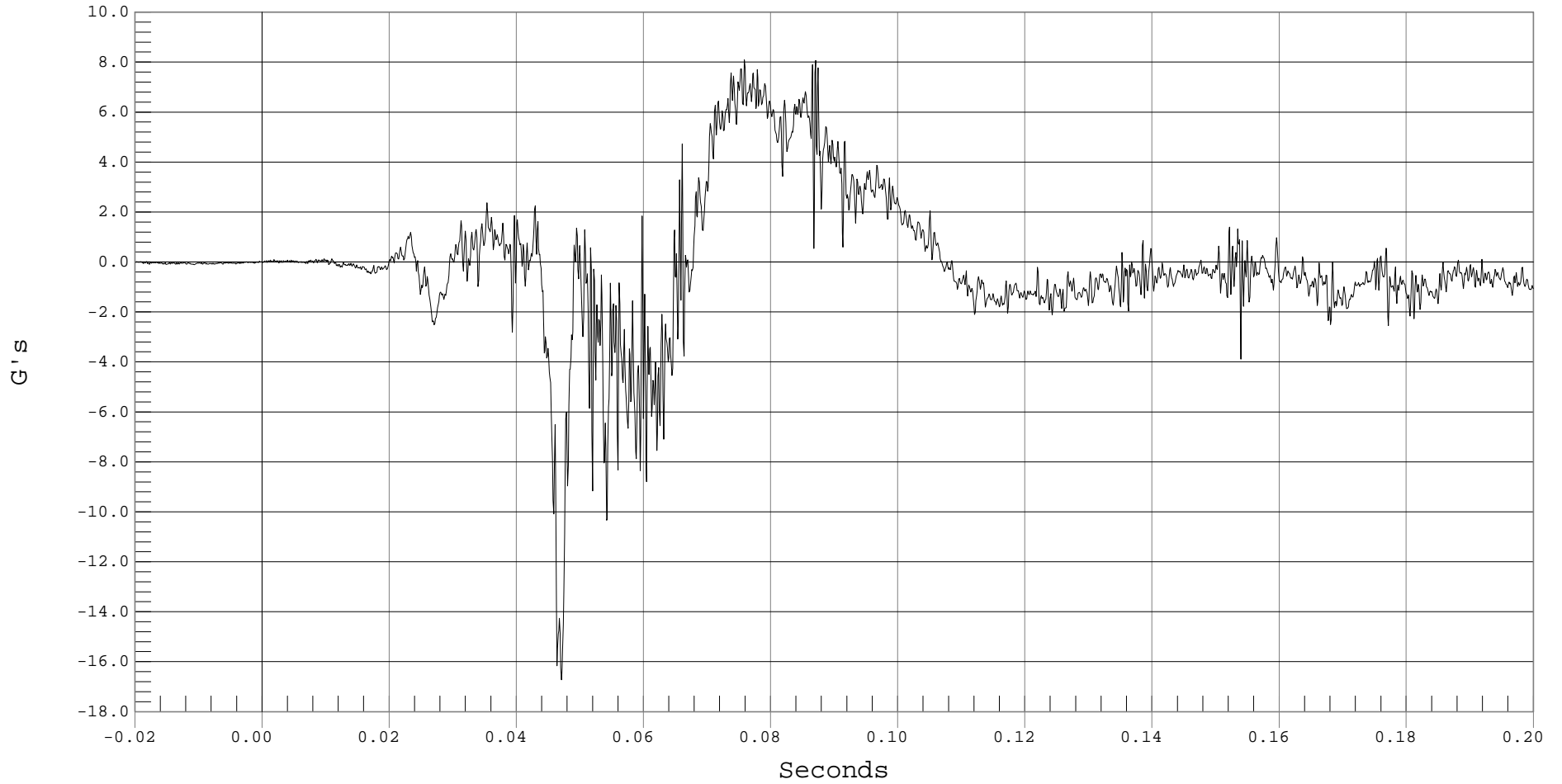
DRIVER PELVIS Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 DRIVER PELVIS Y, B01032AT.A15

Ymin = -16.72 G's @ 0.0470 Seconds, Ymax = 8.09 G's @ 0.0758 Seconds





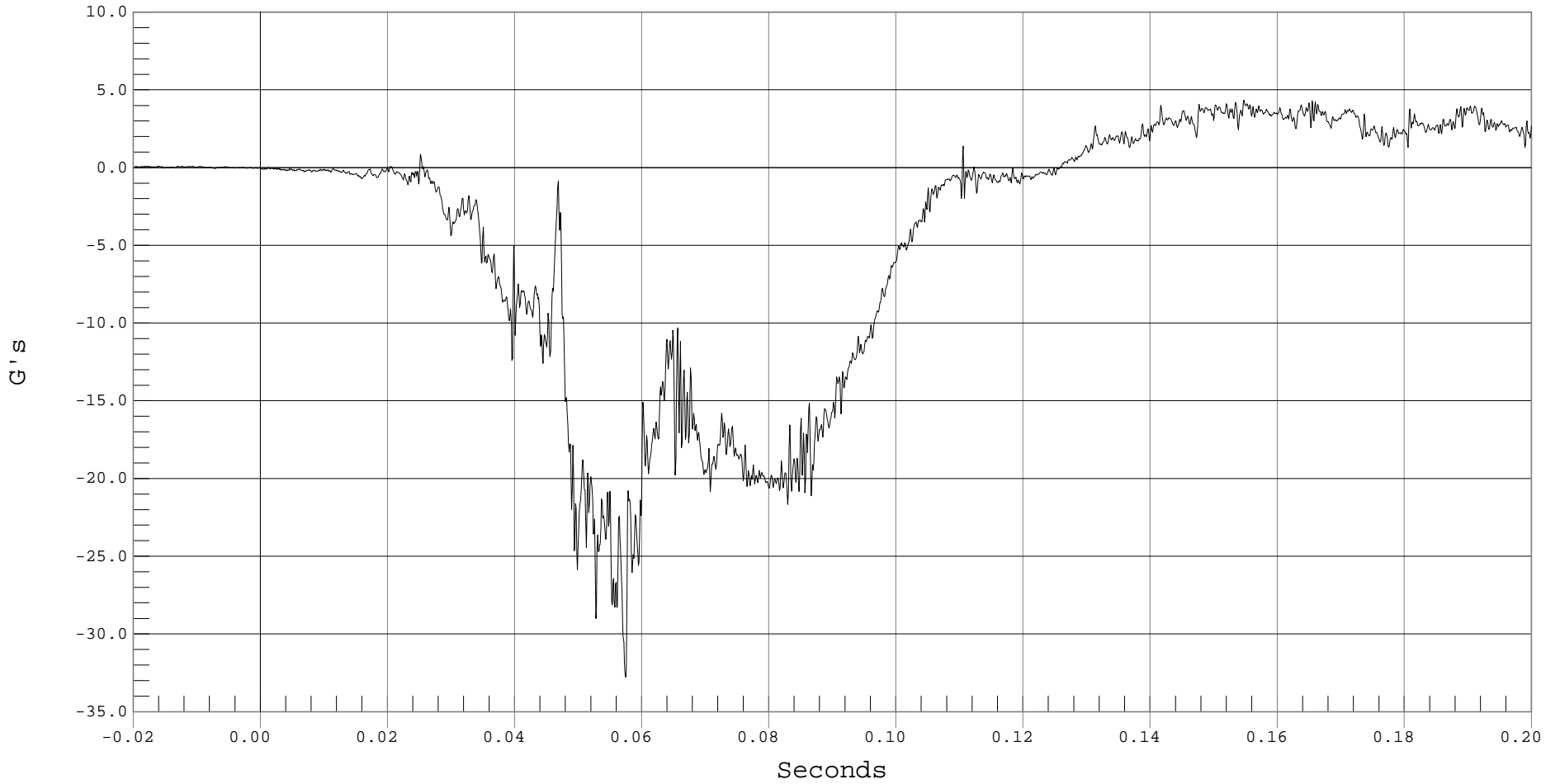
DRIVER PELVIS Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 DRIVER PELVIS Z, B01032AT.A16

Ymin = -32.77 G's @ 0.0574 Seconds, Ymax = 4.32 G's @ 0.1546 Seconds



B-32



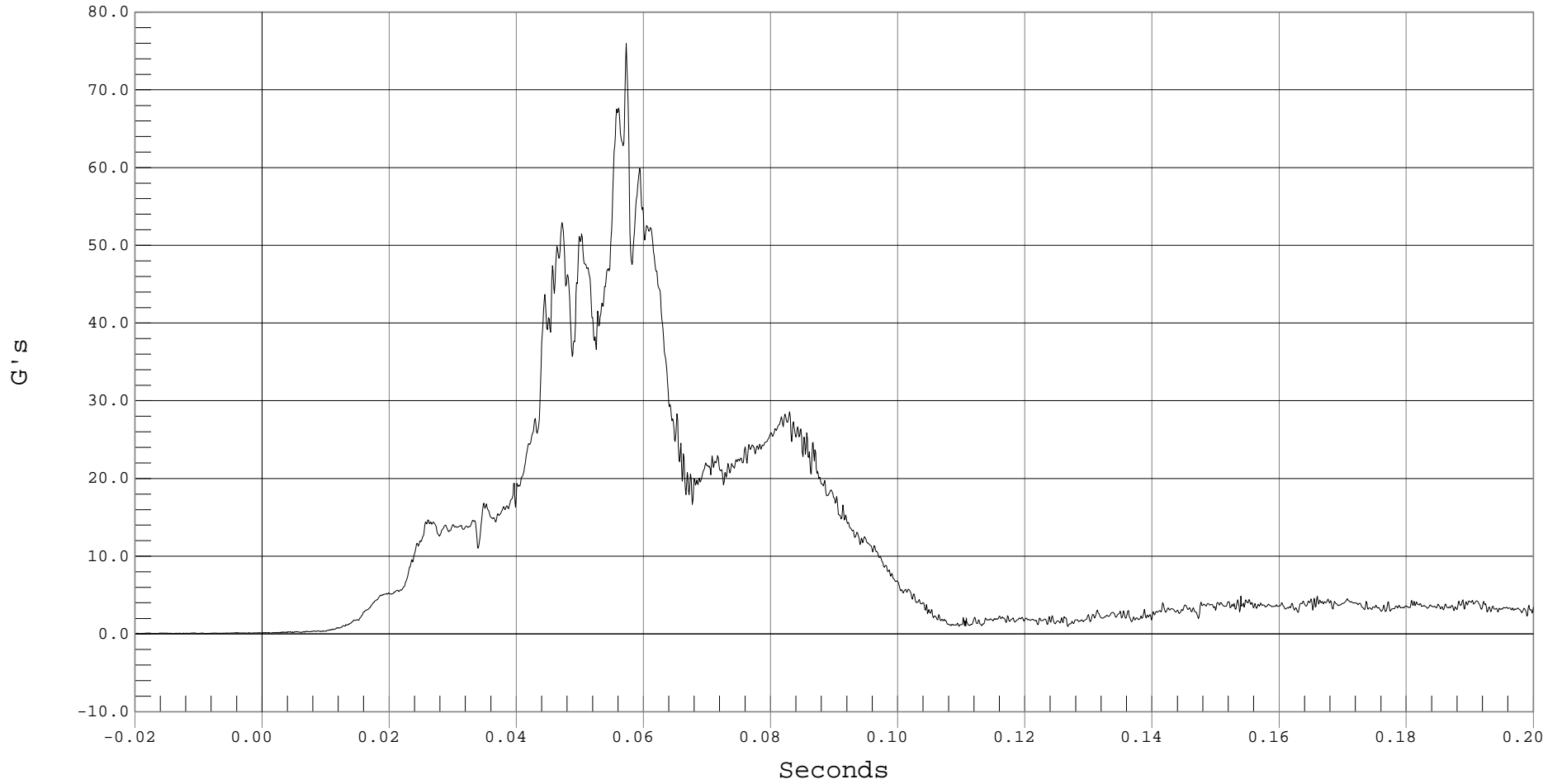
DRIVER PELVIS RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 DRIVER PELVIS RESULTANT ACCELERATION, B01032AV.A14

Ymin = .03 G's @ -0.0199 Seconds, Ymax = 75.97 G's @ 0.0572 Seconds





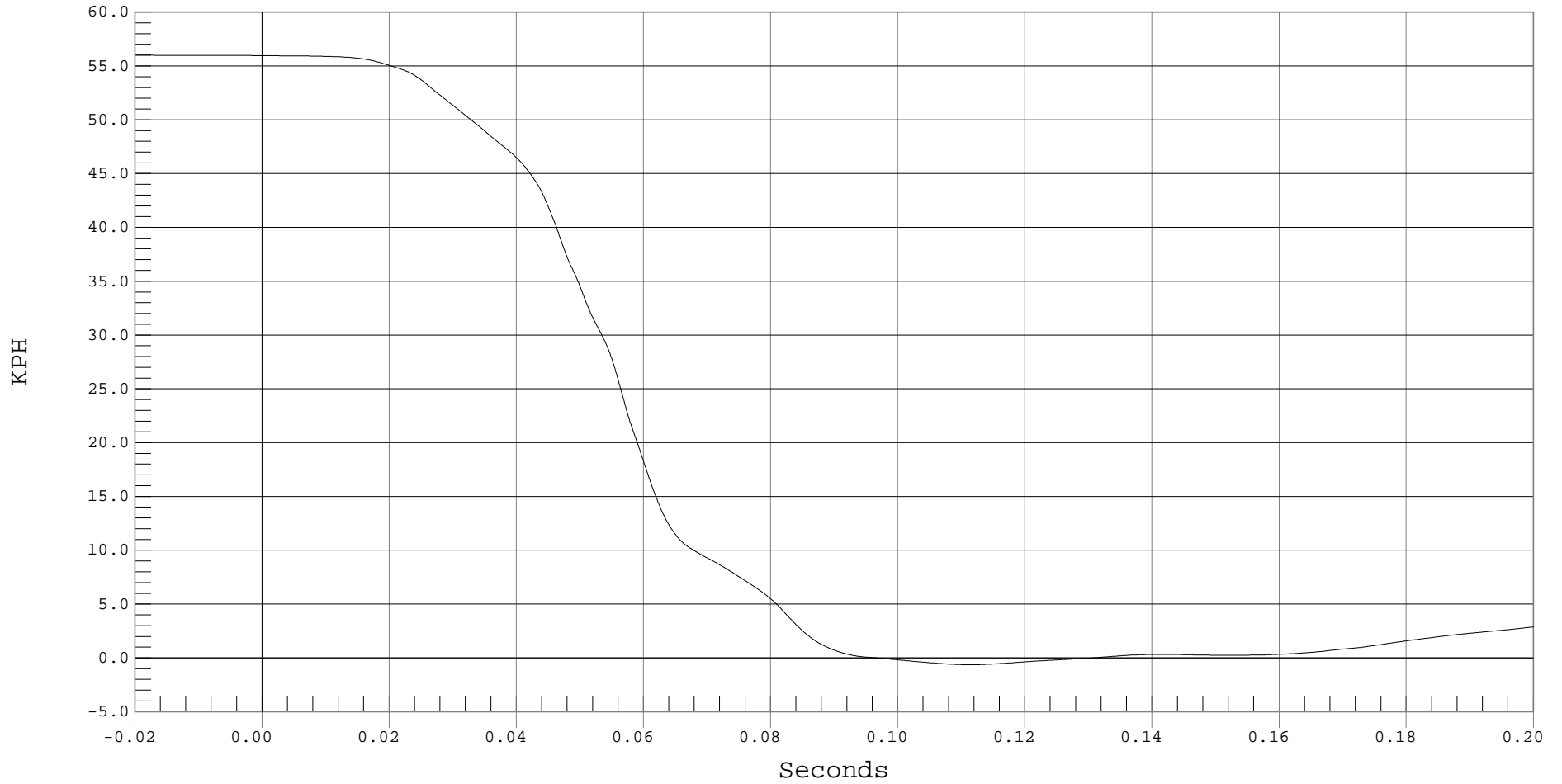
DRIVER PELVIS X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 DRIVER PELVIS X VELOCITY, B01032AI.V14

Ymin = -.64 KPH @ 0.1114 Seconds, Ymax = 56 KPH @ -0.0198 Seconds





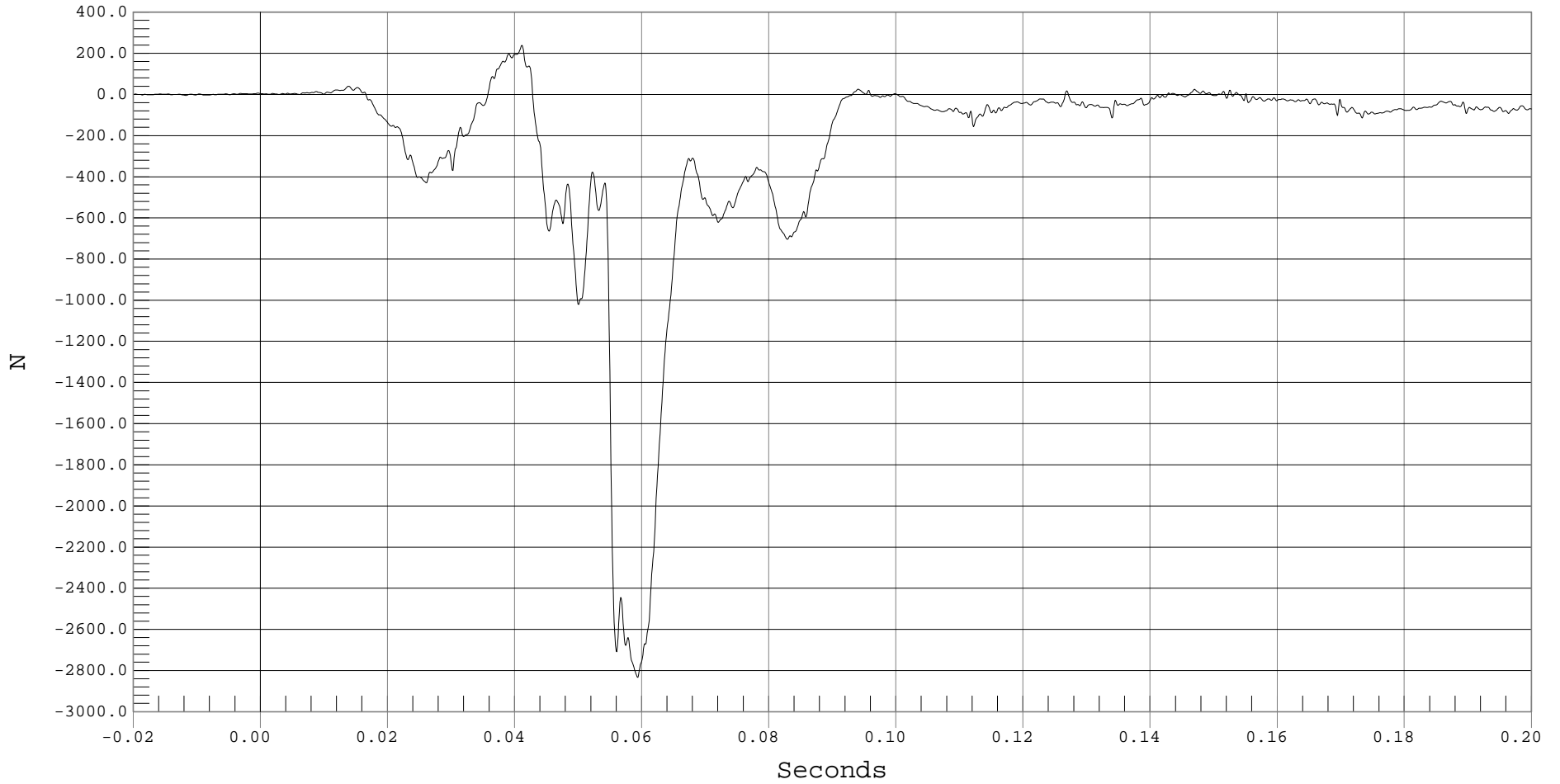
DRIVER LEFT FEMUR FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR X, B01032FF.F18

Ymin = -2832.89 N @ 0.0593 Seconds, Ymax = 238.78 N @ 0.0411 Seconds



B-35



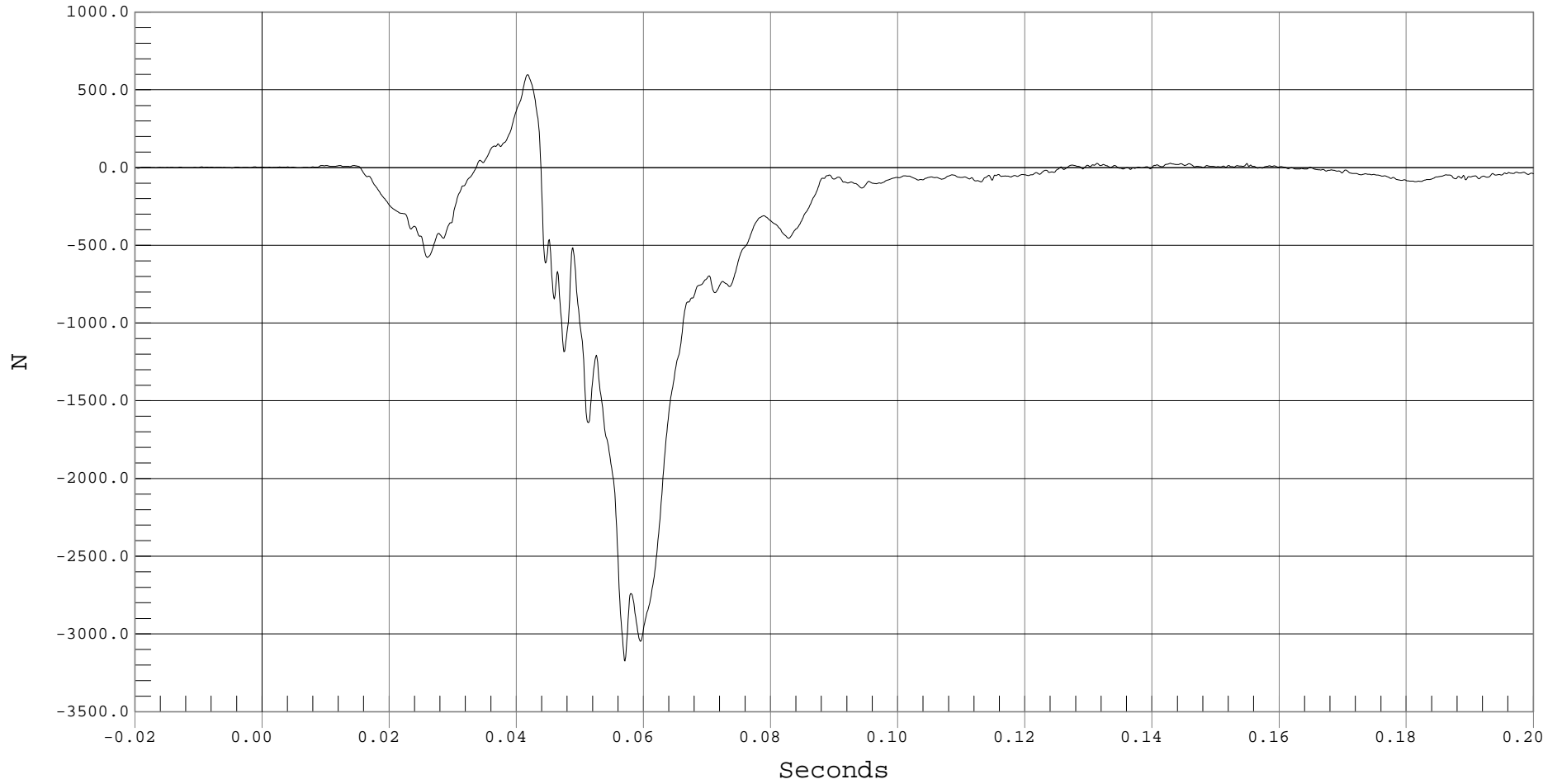
DRIVER RIGHT FEMUR FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR X, B01032FF.F17

Ymin = -3174.53 N @ 0.0570 Seconds, Ymax = 597.56 N @ 0.0417 Seconds



B-36



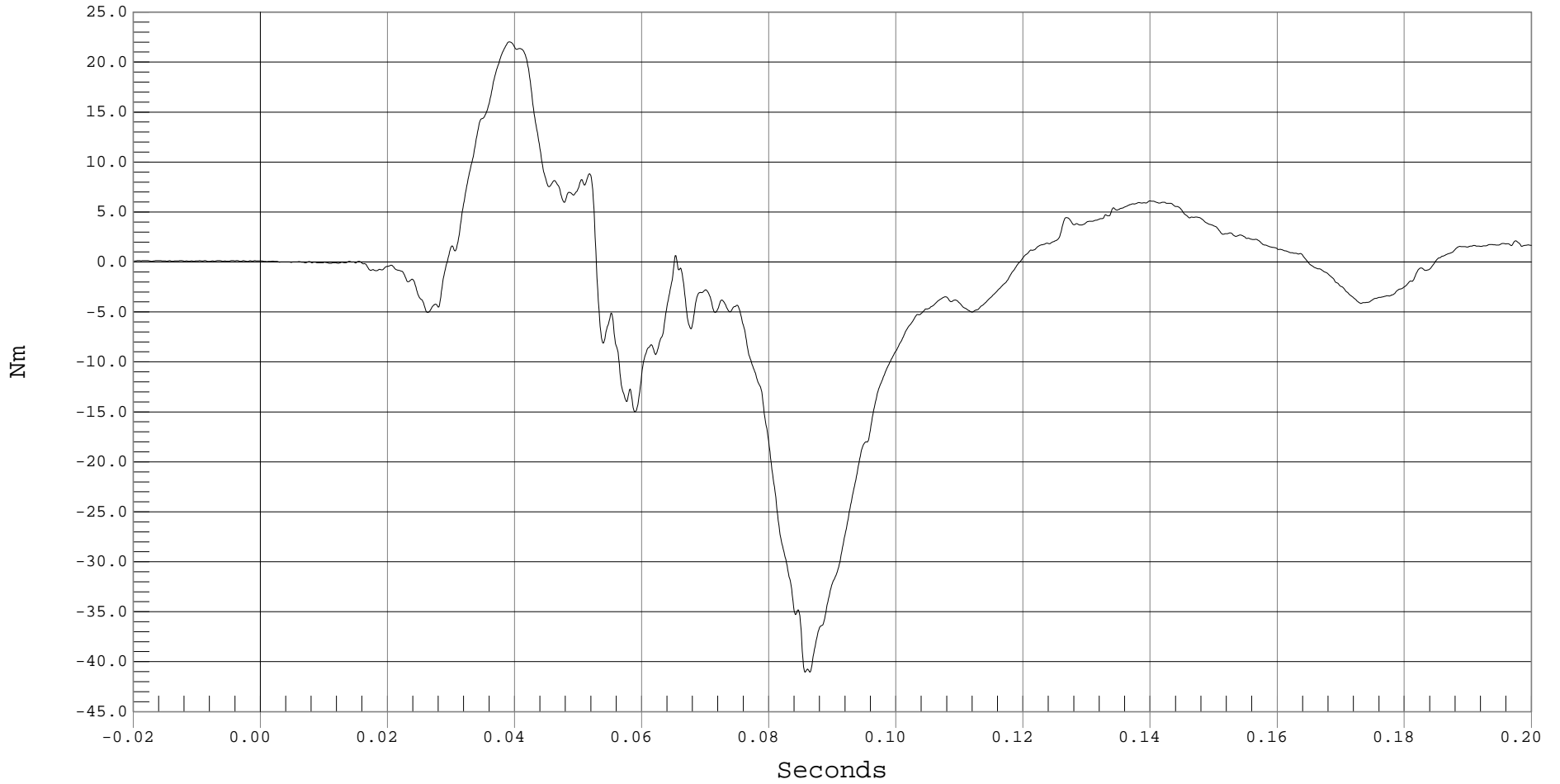
DRIVER LEFT UPPER TIBIA MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 DRIVER LEFT UPPER TIBIA MX, B01032MF.M75

Ymin = -41.05 Nm @ 0.0856 Seconds, Ymax = 22.03 Nm @ 0.0391 Seconds



B-37



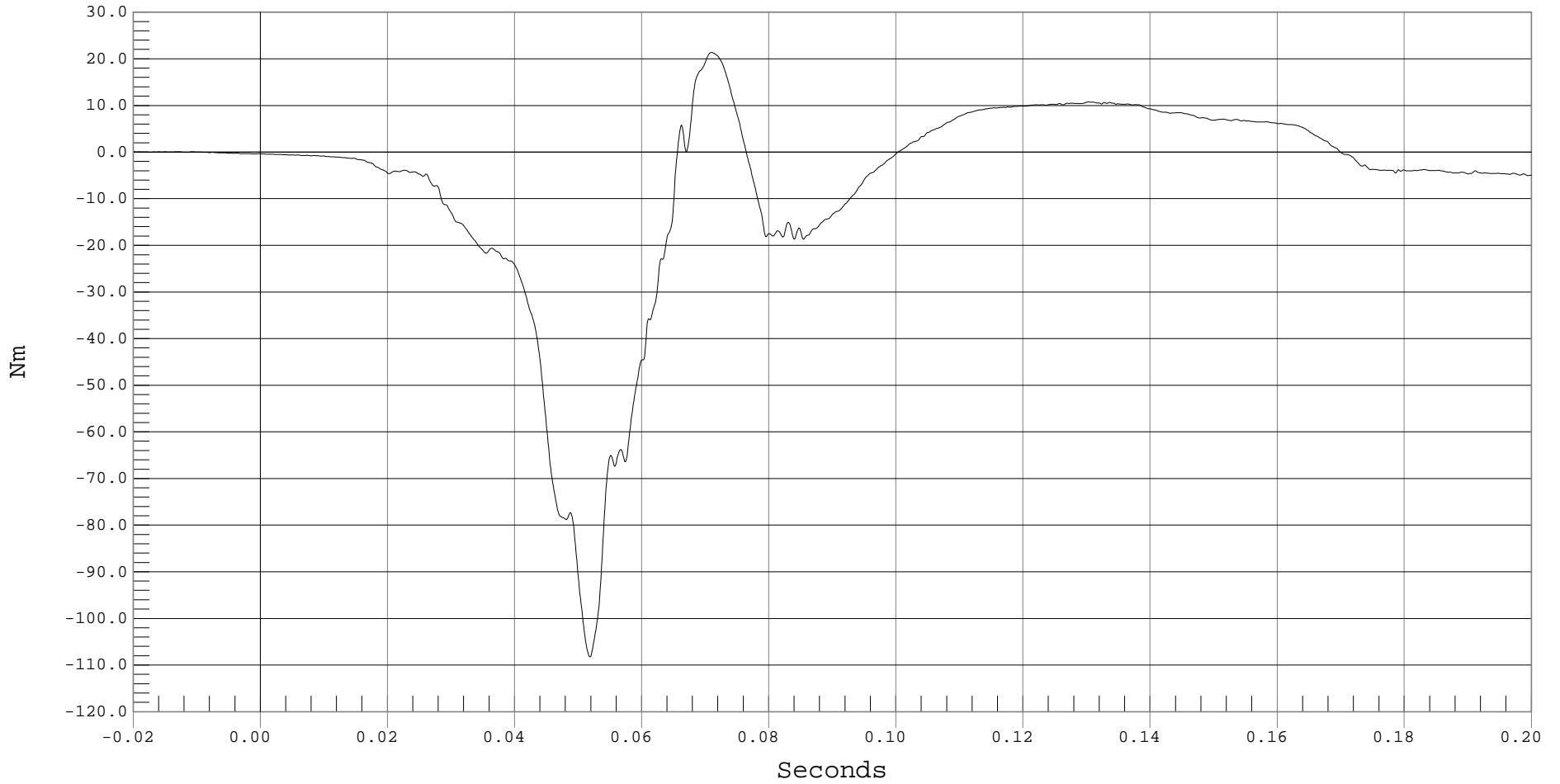
DRIVER LEFT UPPER TIBIA MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 DRIVER LEFT UPPER TIBIA MY, B01032MF.M76

Ymin = -108.28 Nm @ 0.0518 Seconds, Ymax = 21.37 Nm @ 0.0709 Seconds





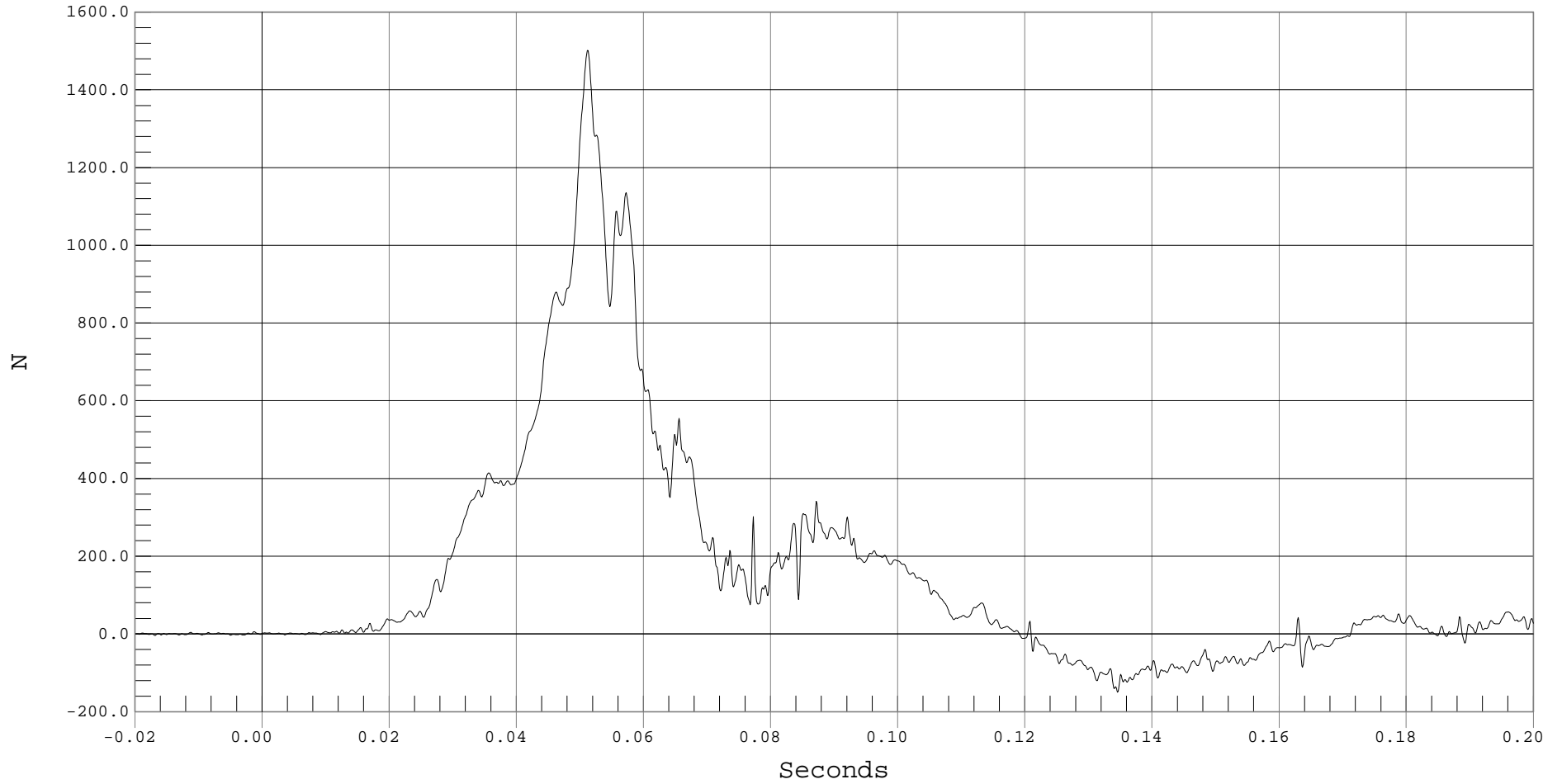
DRIVER LEFT UPPER TIBIA FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 DRIVER LEFT UPPER TIBIA FZ, B01032FF.F77

Ymin = -149.99 N @ 0.1345 Seconds, Ymax = 1501.83 N @ 0.0511 Seconds





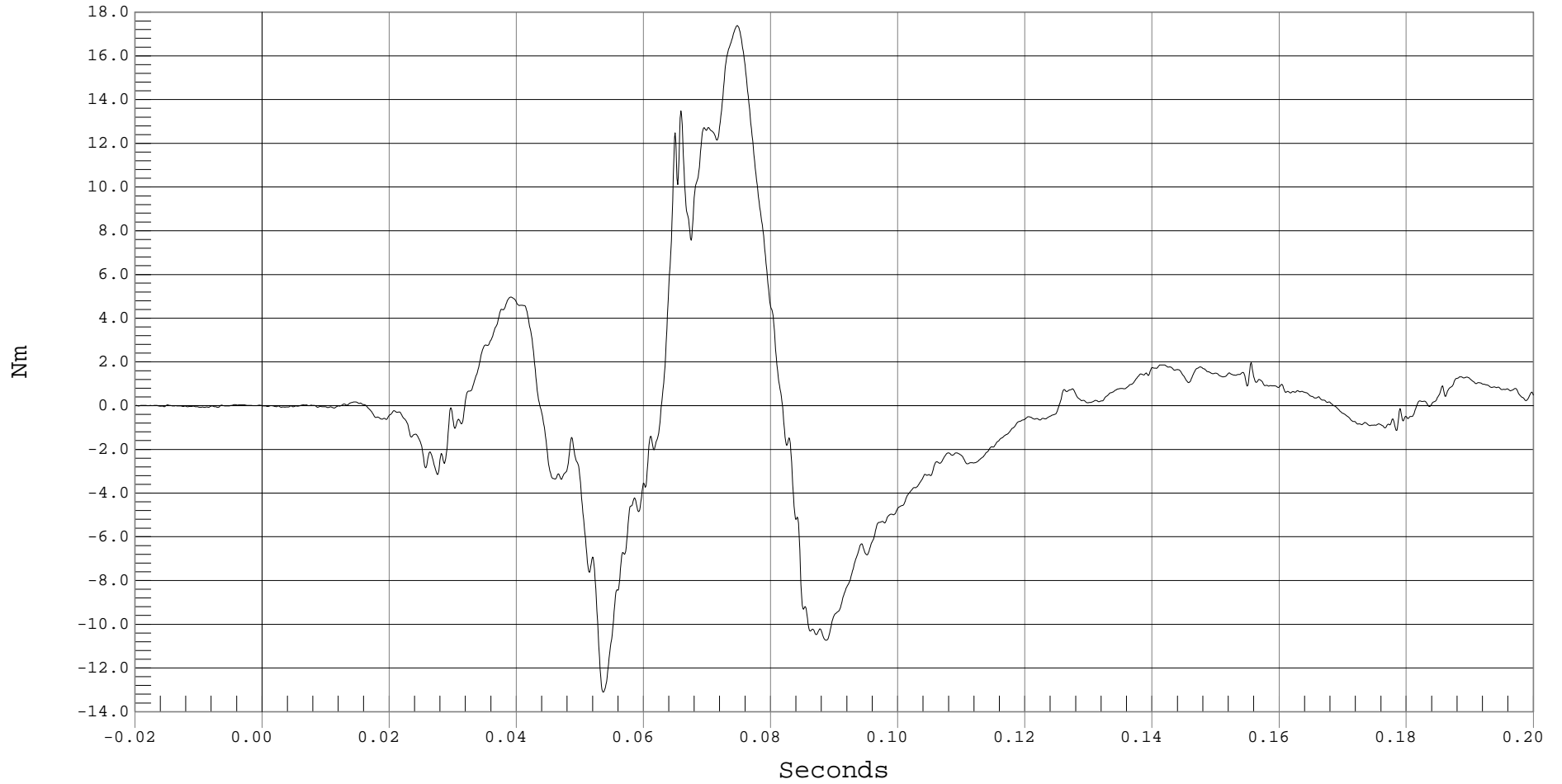
DRIVER LEFT LOWER TIBIA MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 DRIVER LEFT LOWER TIBIA MX, B01032MF.M78

Ymin = -13.11 Nm @ 0.0536 Seconds, Ymax = 17.38 Nm @ 0.0747 Seconds



B-40



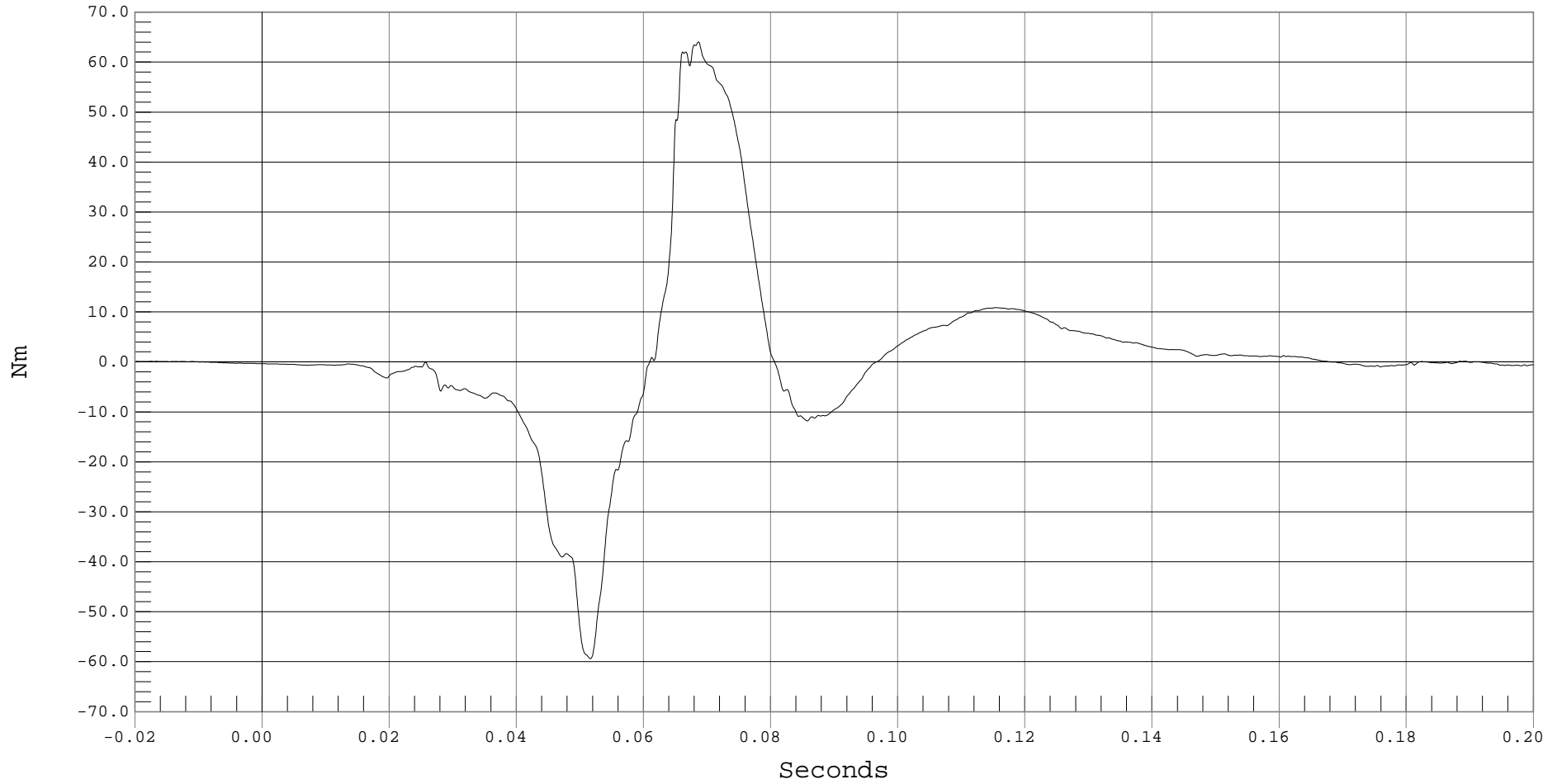
DRIVER LEFT LOWER TIBIA MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 DRIVER LEFT LOWER TIBIA MY, B01032MF.M79

Ymin = -59.4 Nm @ 0.0516 Seconds, Ymax = 64.04 Nm @ 0.0686 Seconds



B-41



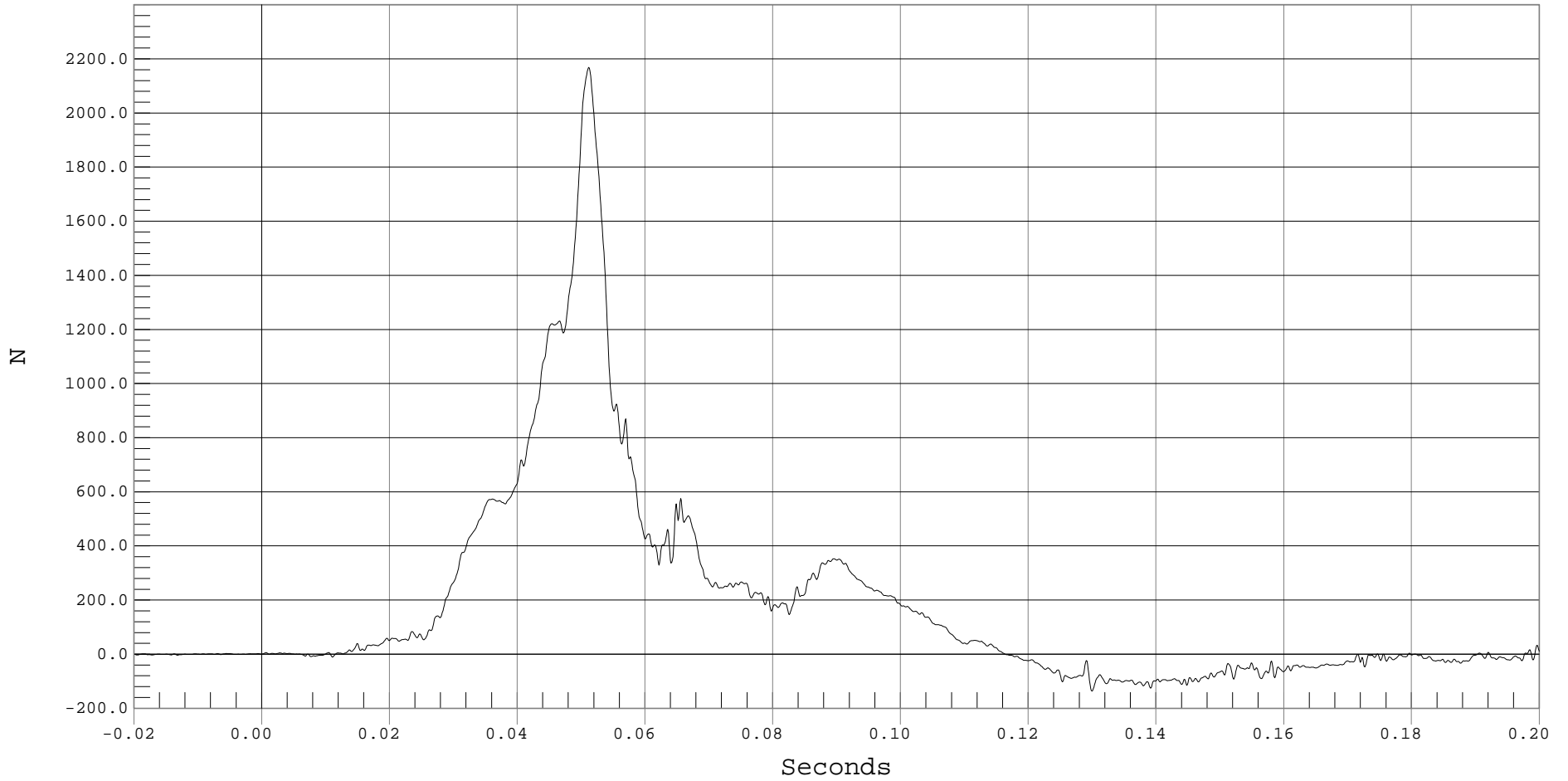
DRIVER LEFT LOWER TIBIA FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 DRIVER LEFT LOWER TIBIA FZ, B01032FF.F80

Ymin = -136.55 N @ 0.1299 Seconds, Ymax = 2168.24 N @ 0.0511 Seconds



B-42



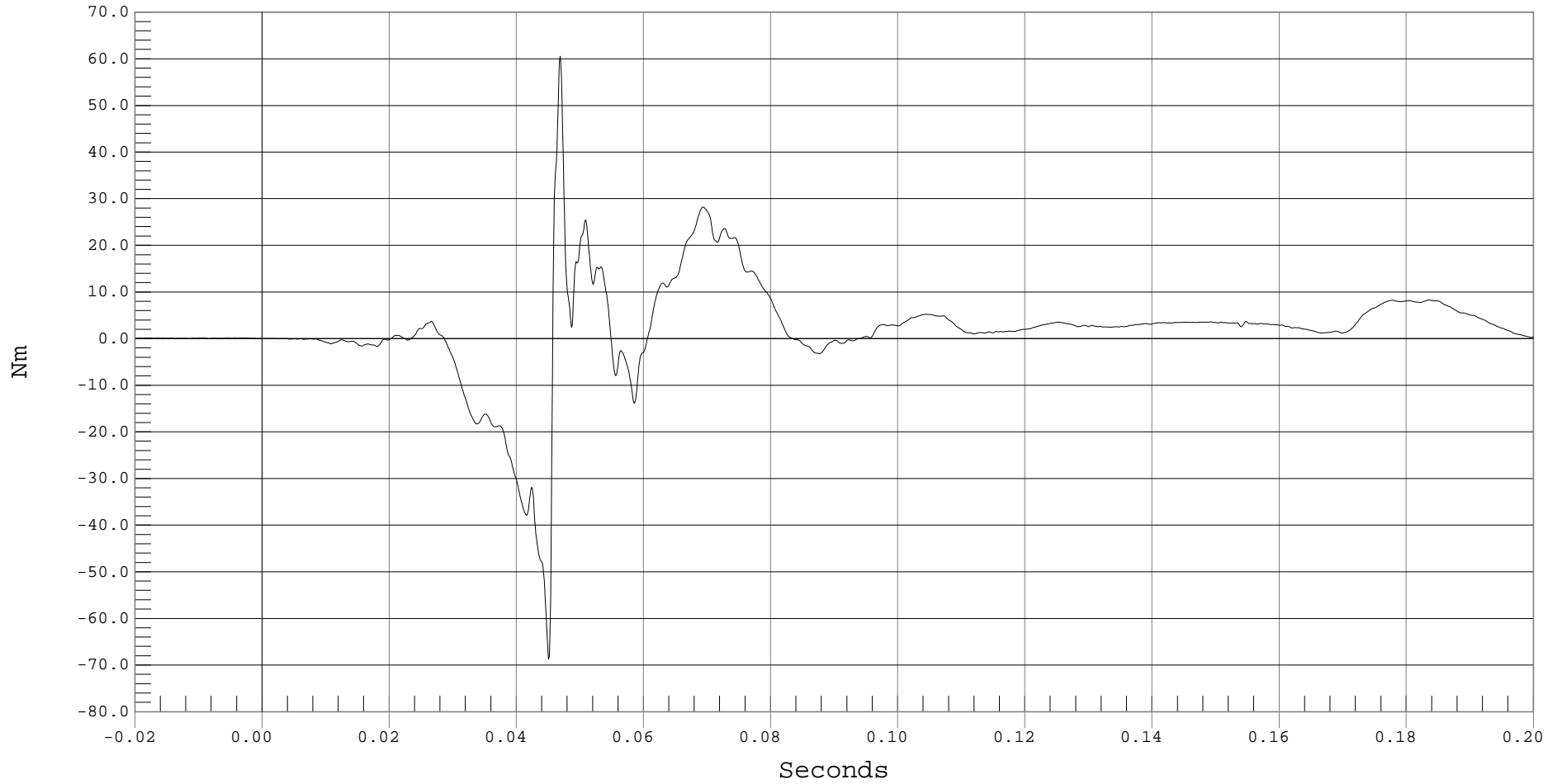
DRIVER RIGHT UPPER TIBIA MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 DRIVER RIGHT UPPER TIBIA MX, B01032MF.M69

Ymin = -68.77 Nm @ 0.0450 Seconds, Ymax = 60.55 Nm @ 0.0468 Seconds



B-43



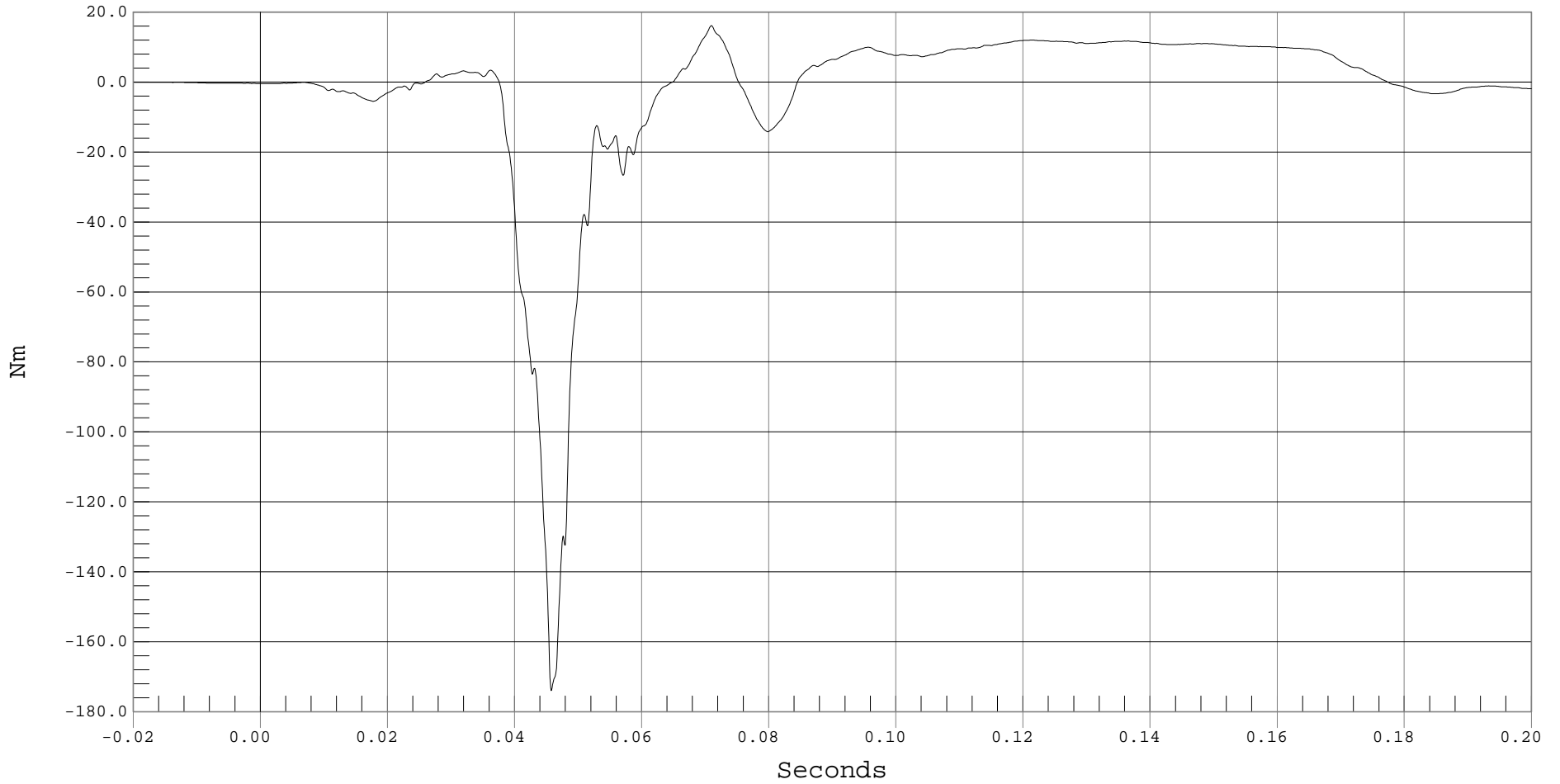
DRIVER RIGHT UPPER TIBIA MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 DRIVER RIGHT UPPER TIBIA MY, B01032MF.M70

Ymin = -173.94 Nm @ 0.0457 Seconds, Ymax = 16.13 Nm @ 0.0709 Seconds



B-44



DRIVER RIGHT UPPER TIBIA FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT

Test Date: 03-21-01

Component: 2001 NISSAN MAXIMA (M15207)

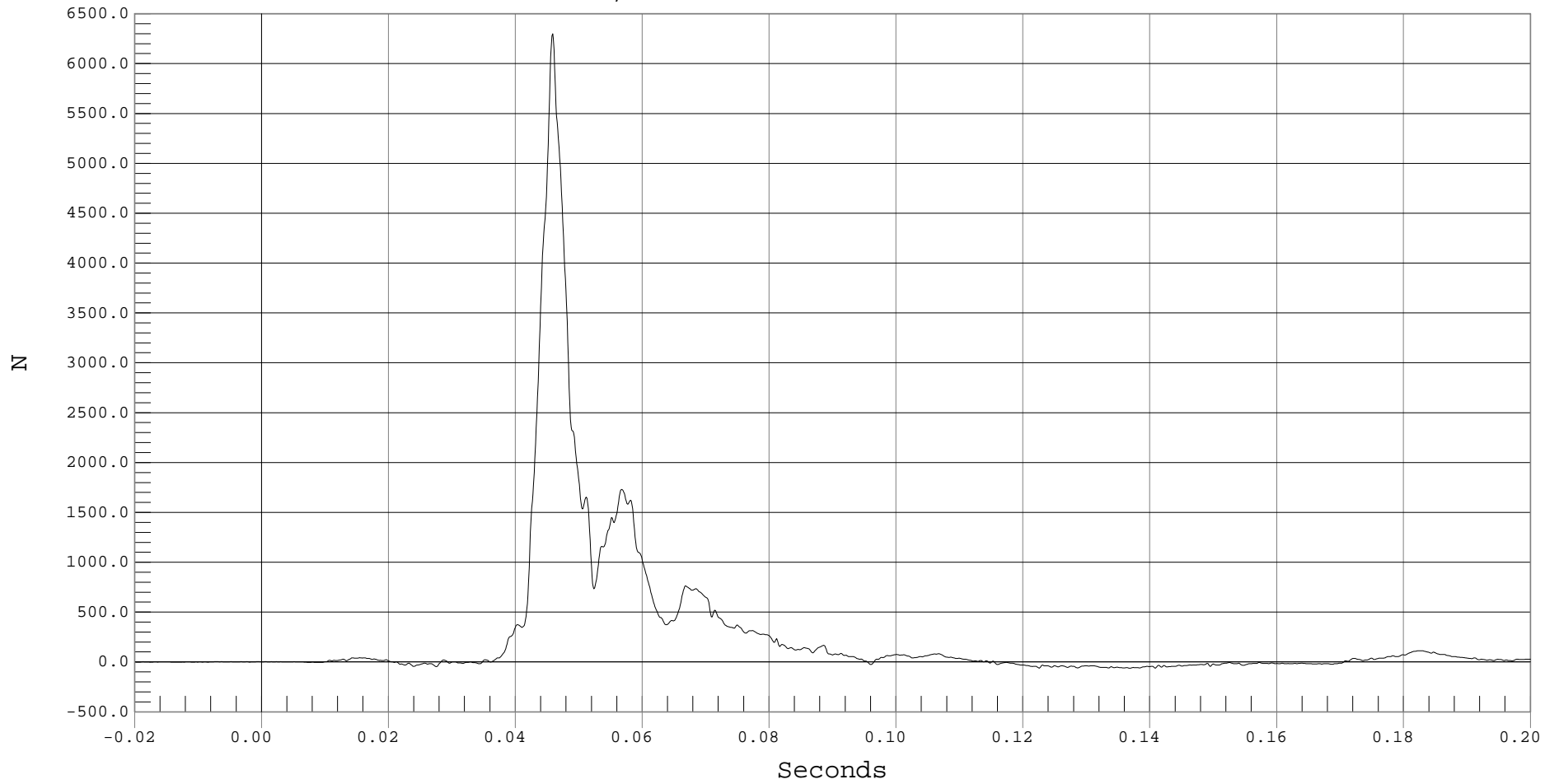
Speed: 34.8 MPH, 56.0 KPH

Other Info:

Filter Class: 600

— 1 DRIVER RIGHT UPPER TIBIA FZ, B01032FF.F71

Ymin = -62.7 N @ 0.1368 Seconds, Ymax = 6299.95 N @ 0.0458 Seconds



B-45



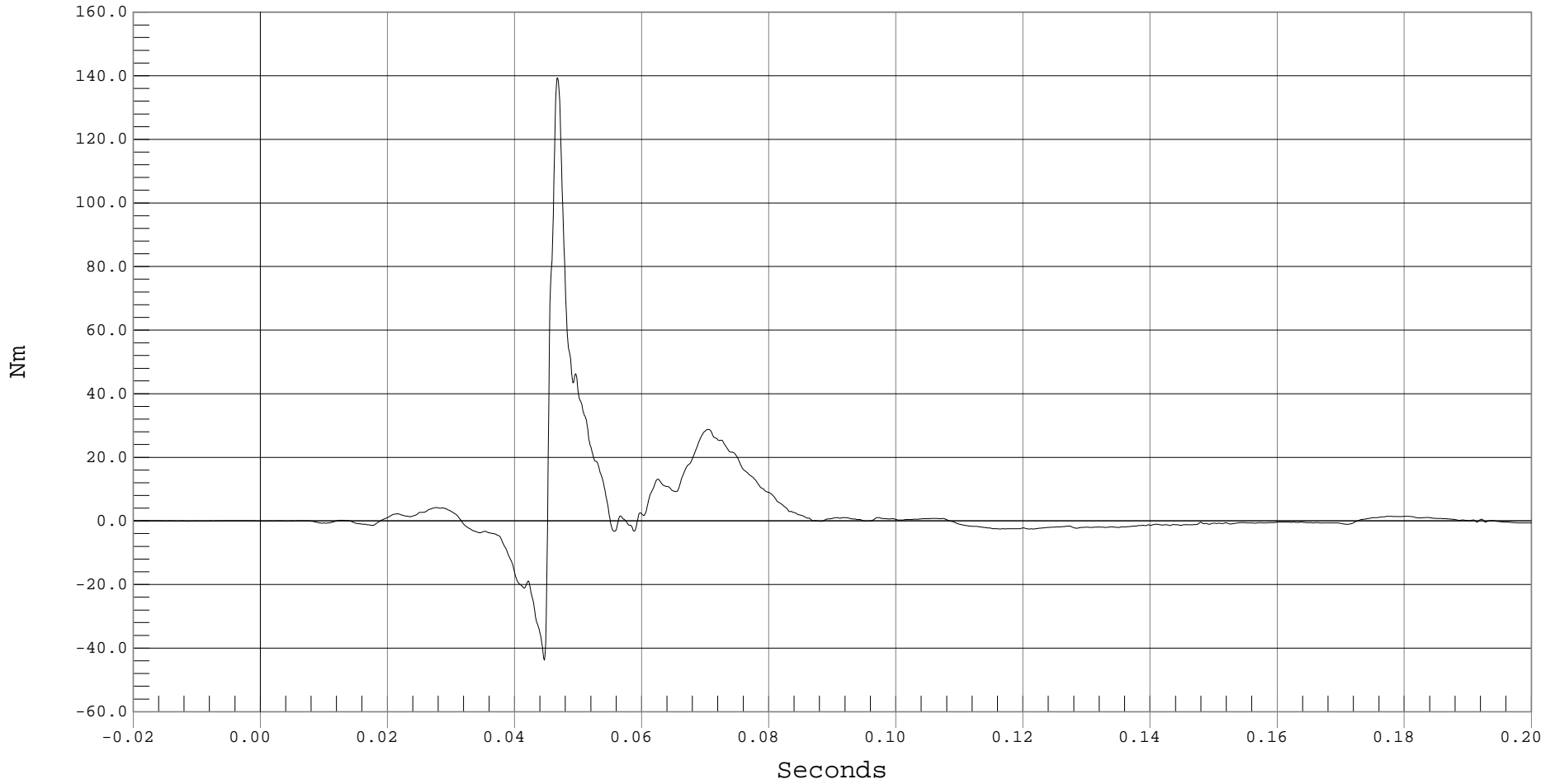
DRIVER RIGHT LOWER TIBIA MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 DRIVER RIGHT LOWER TIBIA MX, B01032MF.M72

Ymin = -43.84 Nm @ 0.0446 Seconds, Ymax = 139.33 Nm @ 0.0467 Seconds



B-46



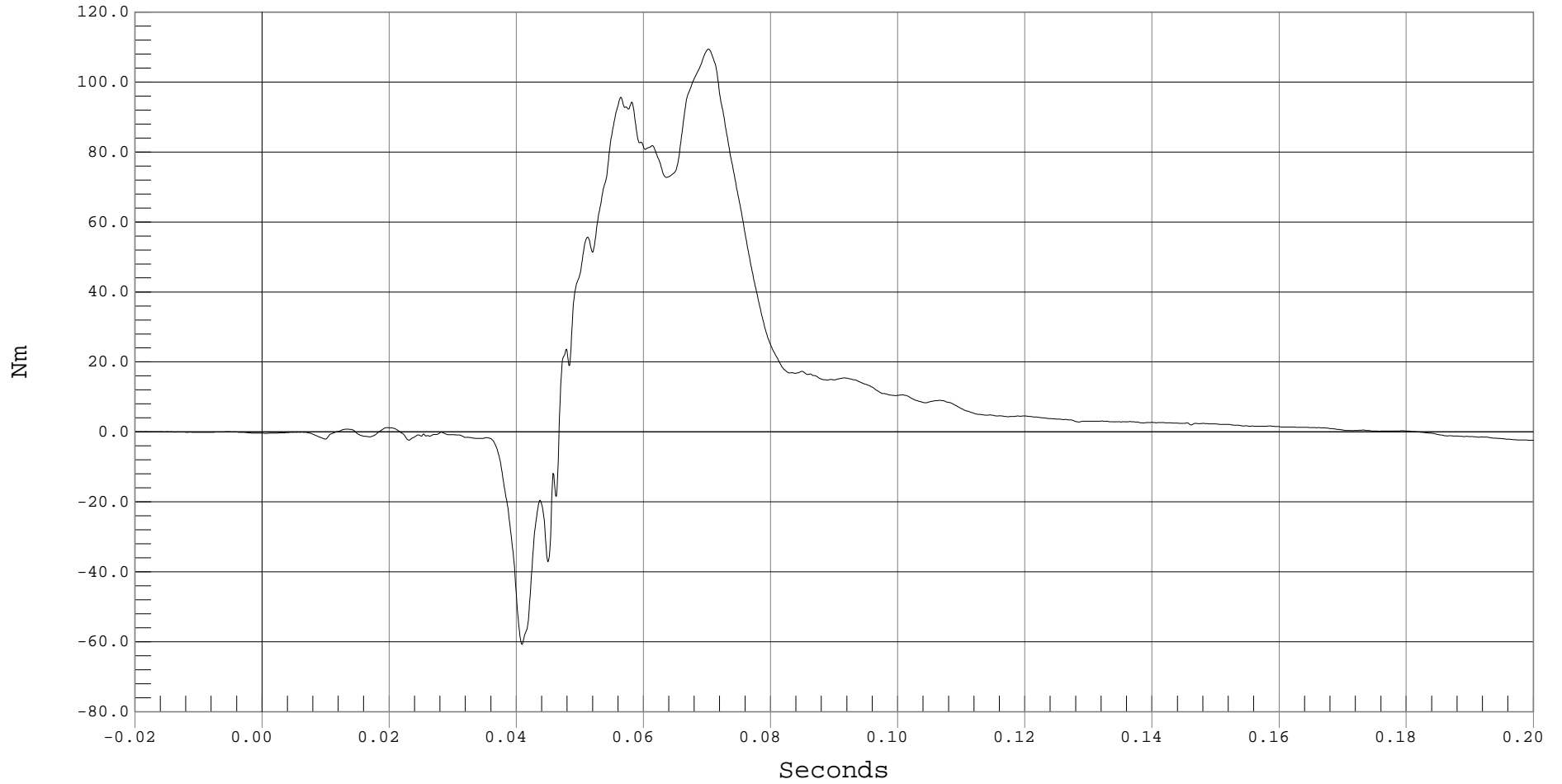
DRIVER RIGHT LOWER TIBIA MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 DRIVER RIGHT LOWER TIBIA MY, B01032MF.M73

Ymin = -60.74 Nm @ 0.0408 Seconds, Ymax = 109.43 Nm @ 0.0701 Seconds





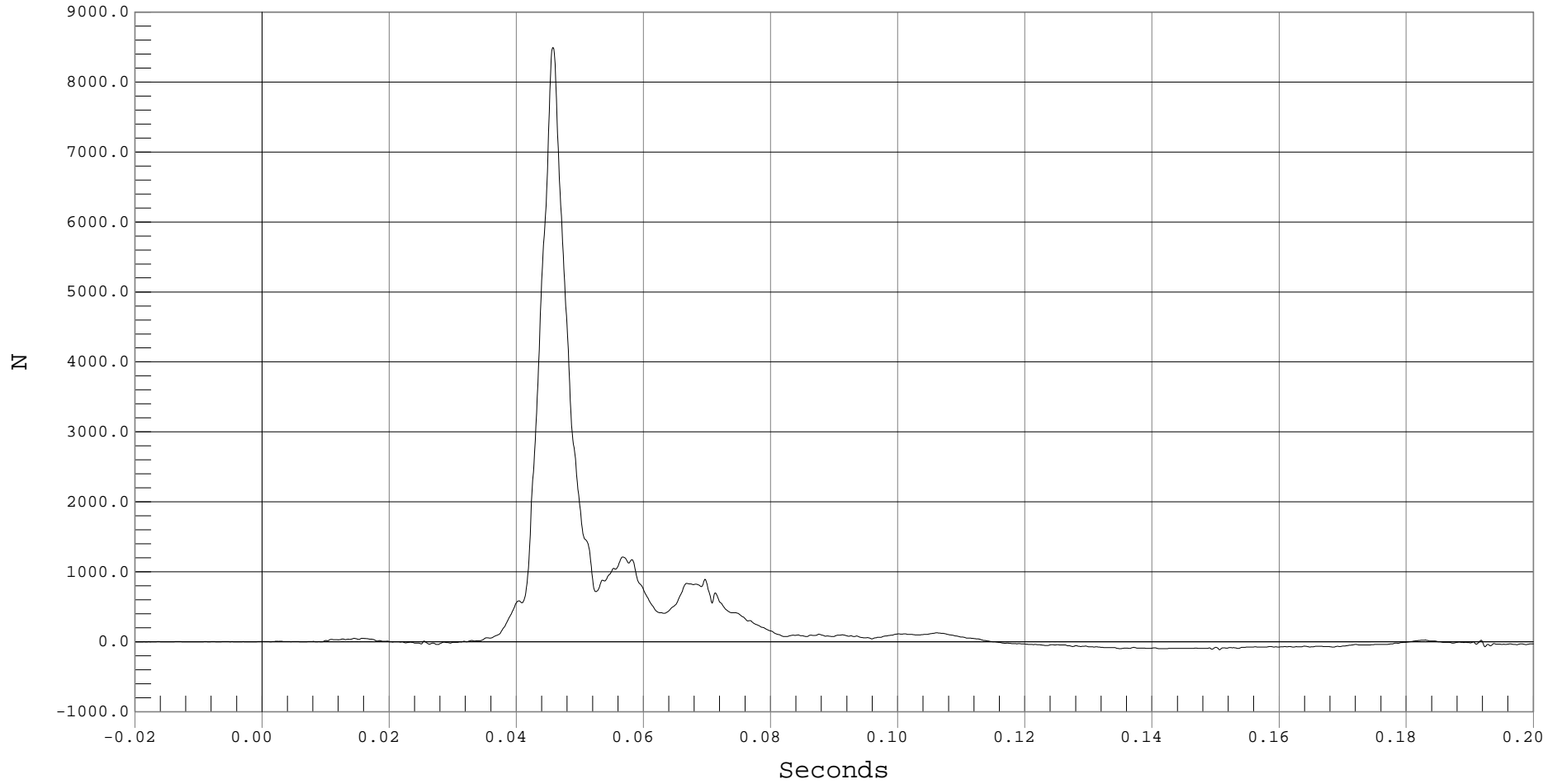
DRIVER RIGHT LOWER TIBIA FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 DRIVER RIGHT LOWER TIBIA FZ, B01032FF.F74

Ymin = -115.44 N @ 0.1506 Seconds, Ymax = 8494.51 N @ 0.0457 Seconds



B-48



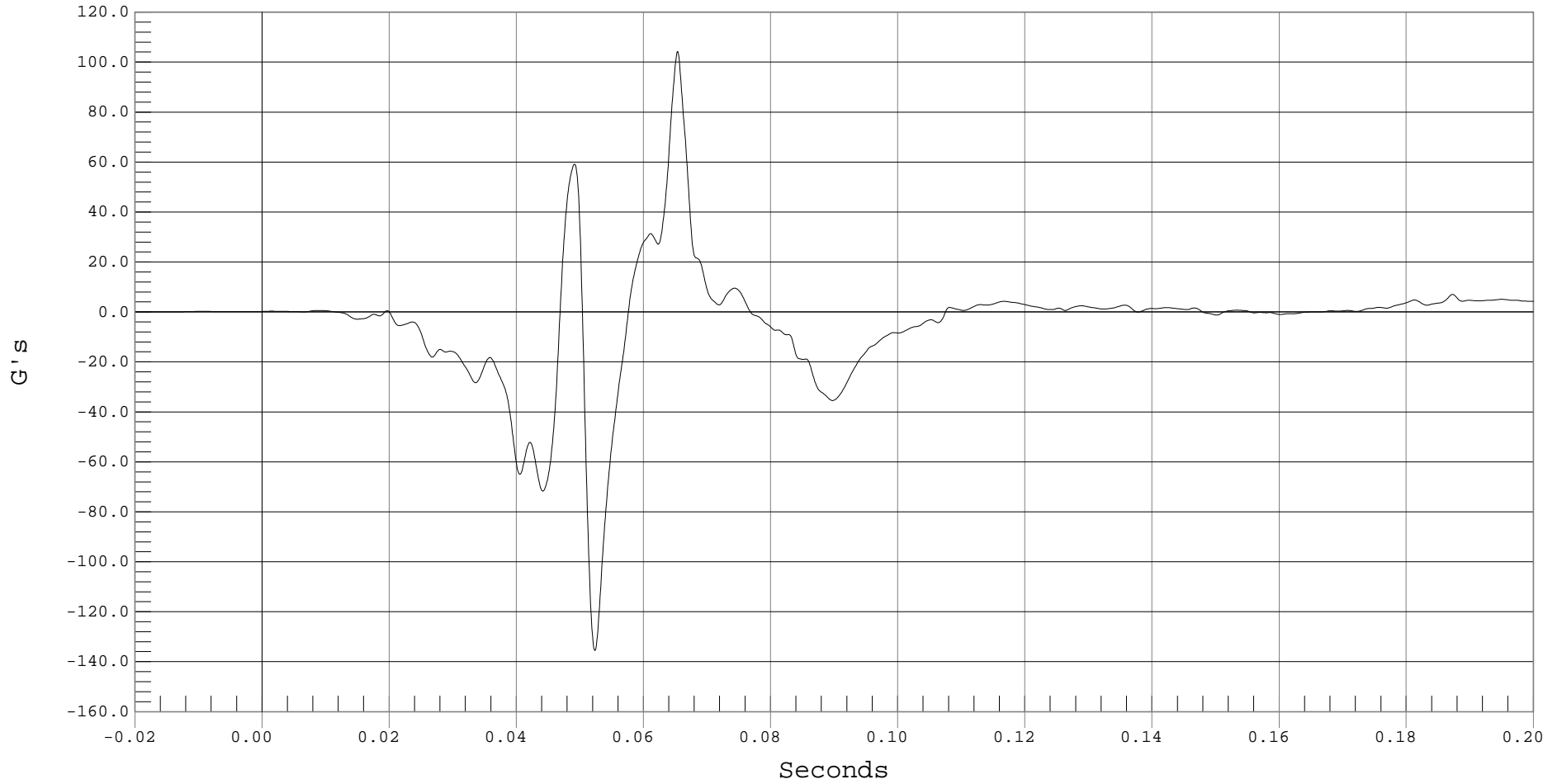
DRIVER LEFT FOOT @ BALL Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 DRIVER LEFT FOOT @ BALL Z, B01032AF.A12

Ymin = -135.51 G's @ 0.0523 Seconds, Ymax = 104.29 G's @ 0.0653 Seconds



B-49



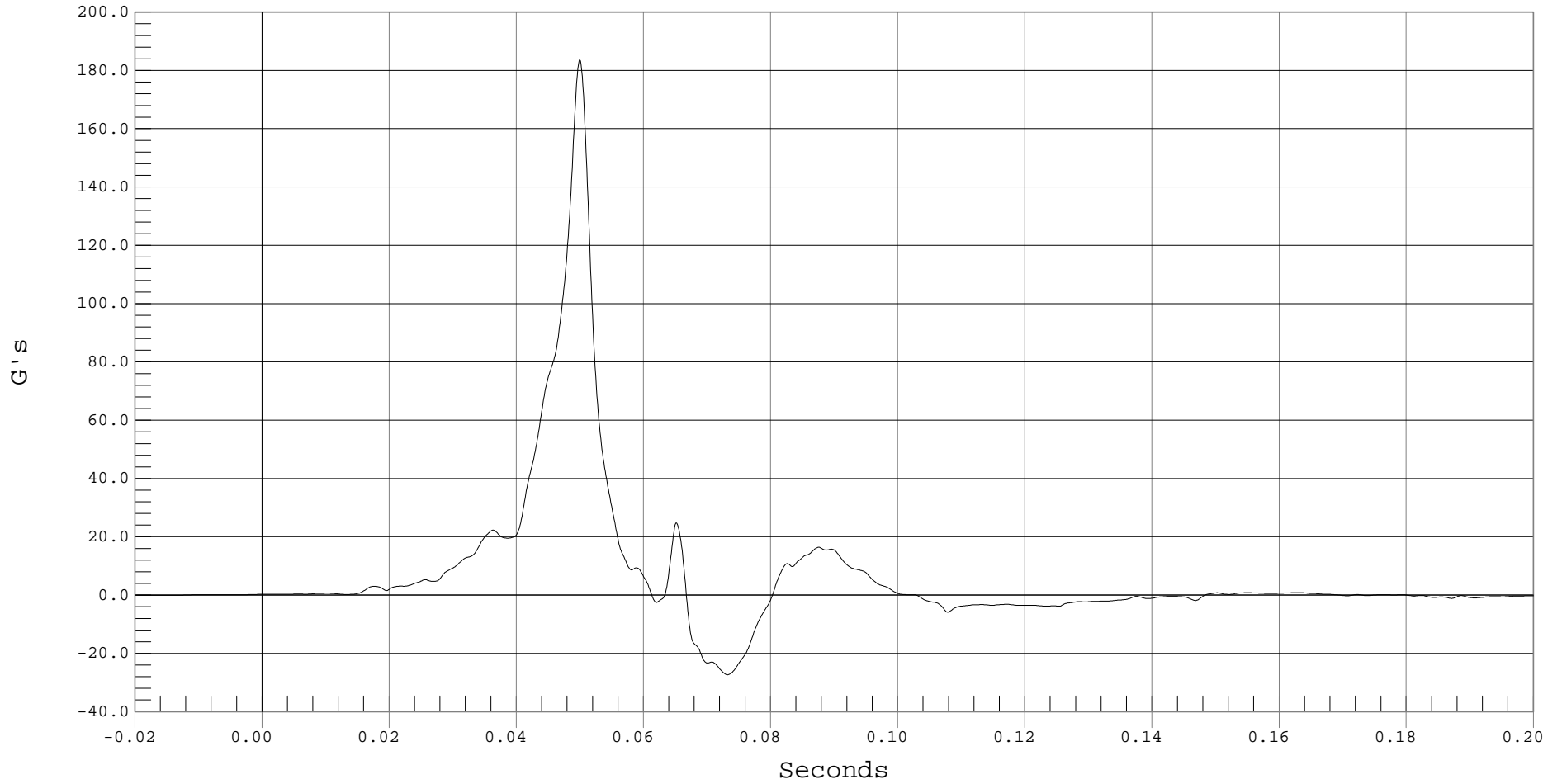
DRIVER LEFT FOOT @ HEEL X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 DRIVER LEFT FOOT @ HEEL X, B01032AF.A10

Ymin = -27.3 G's @ 0.0731 Seconds, Ymax = 183.69 G's @ 0.0499 Seconds



B-50



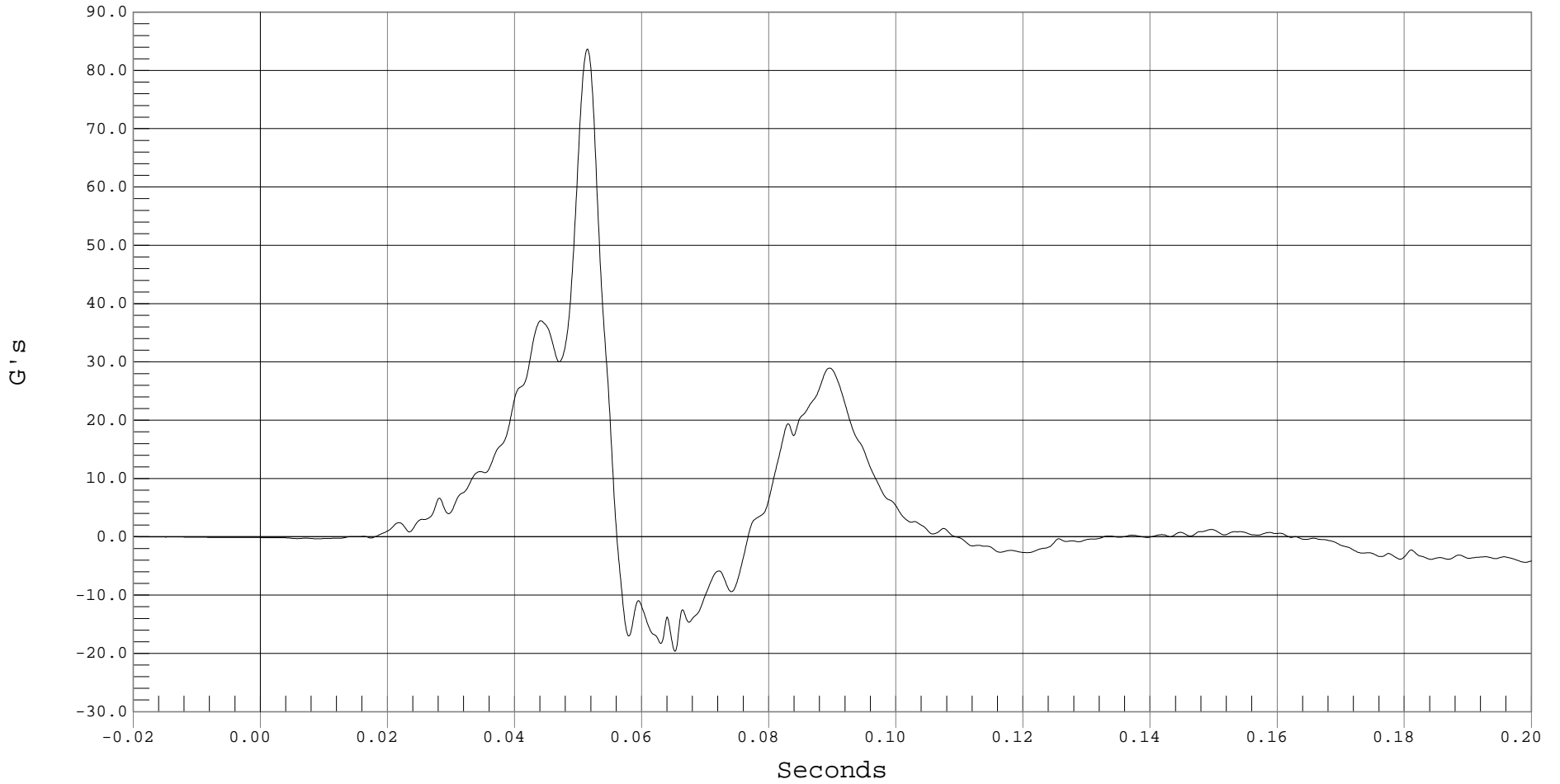
DRIVER LEFT FOOT @ HEEL Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 DRIVER LEFT FOOT @ HEEL Z, B01032AF.A11

Ymin = -19.63 G's @ 0.0652 Seconds, Ymax = 83.68 G's @ 0.0514 Seconds



B-51



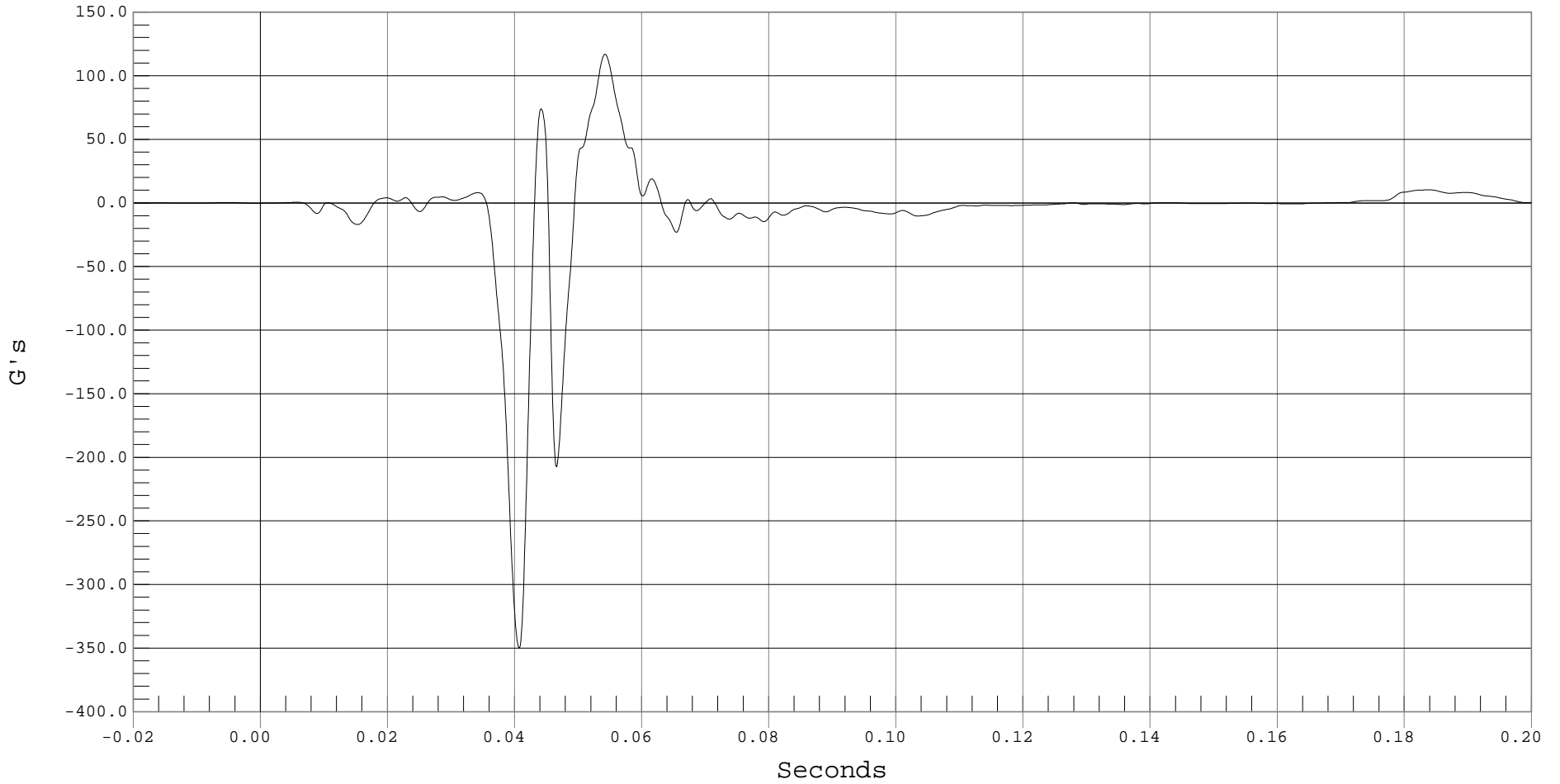
DRIVER RIGHT FOOT @ BALL Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 DRIVER RIGHT FOOT @ BALL Z, B01032AF.A95

Ymin = -350 G's @ 0.0406 Seconds, Ymax = 116.92 G's @ 0.0541 Seconds



B-52



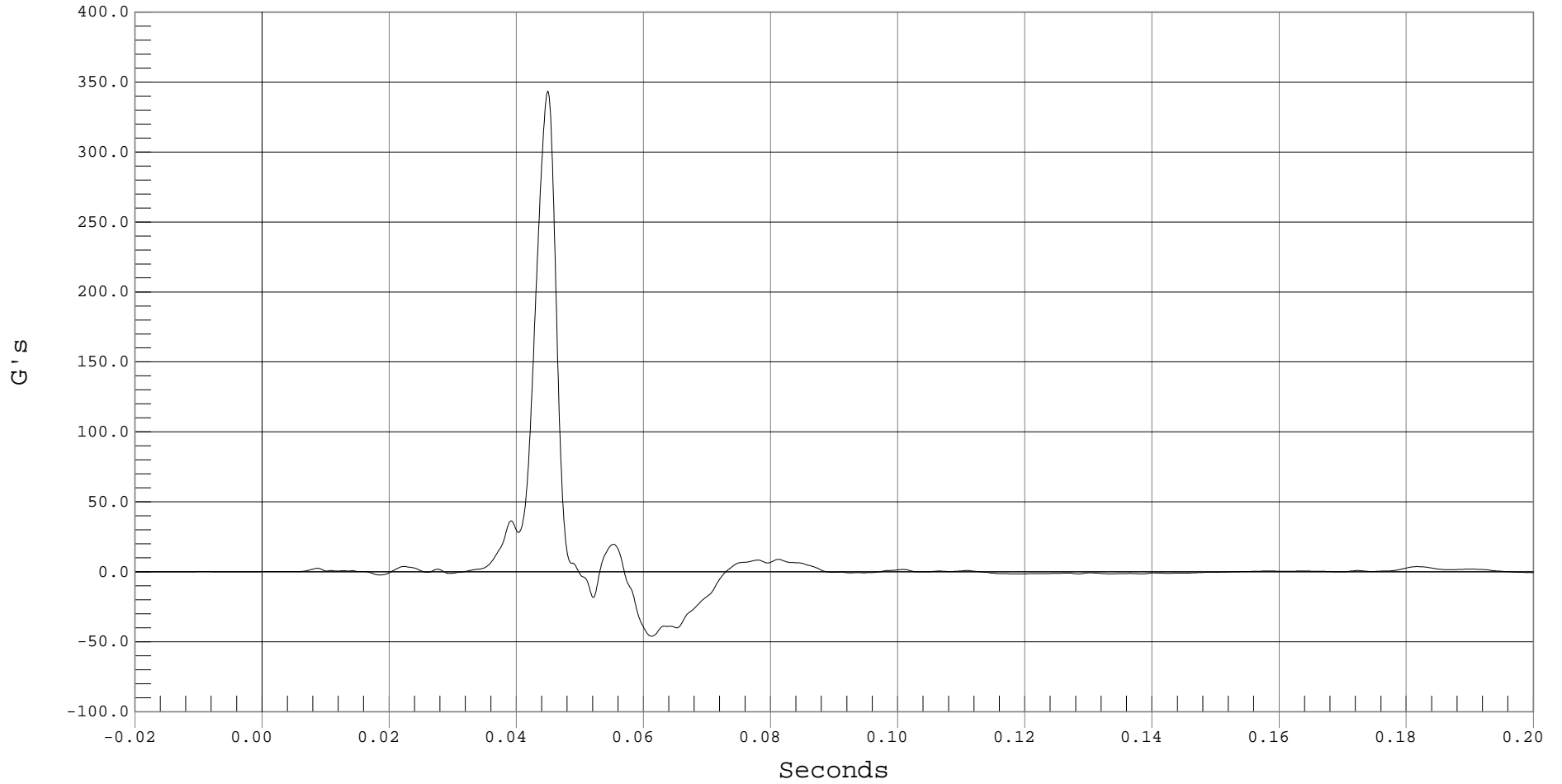
DRIVER RIGHT FOOT @ HEEL X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 DRIVER RIGHT FOOT @ HEEL X, B01032AF.A93

Ymin = -46.08 G's @ 0.0612 Seconds, Ymax = 343.65 G's @ 0.0449 Seconds



B-53



DRIVER RIGHT FOOT @ HEEL Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT

Test Date: 03-21-01

Component: 2001 NISSAN MAXIMA (M15207)

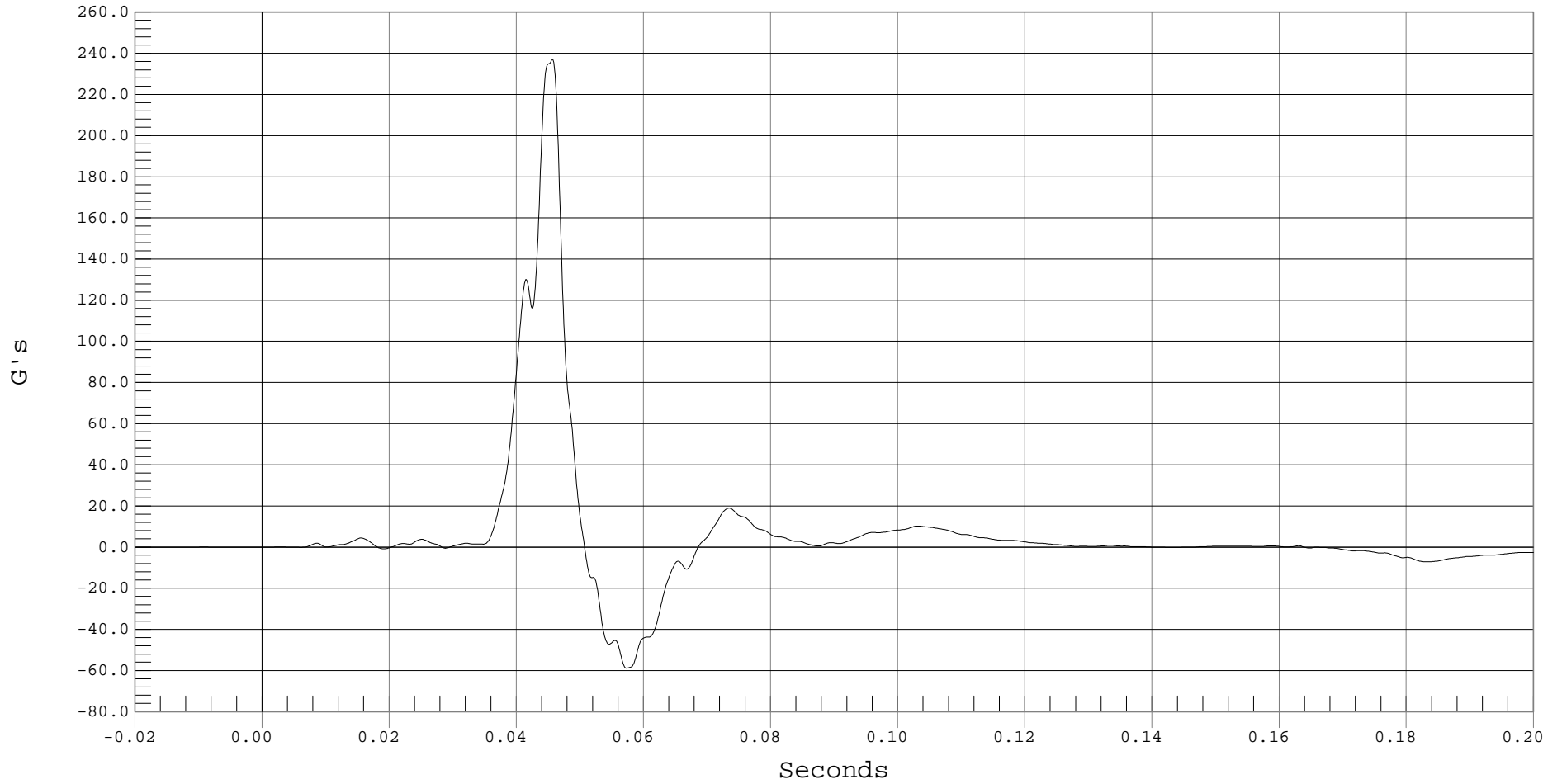
Speed: 34.8 MPH, 56.0 KPH

Other Info:

Filter Class: 180

— 1 DRIVER RIGHT FOOT @ HEEL Z, B01032AF.A94

Ymin = -58.83 G's @ 0.0573 Seconds, Ymax = 237.21 G's @ 0.0456 Seconds



B-54



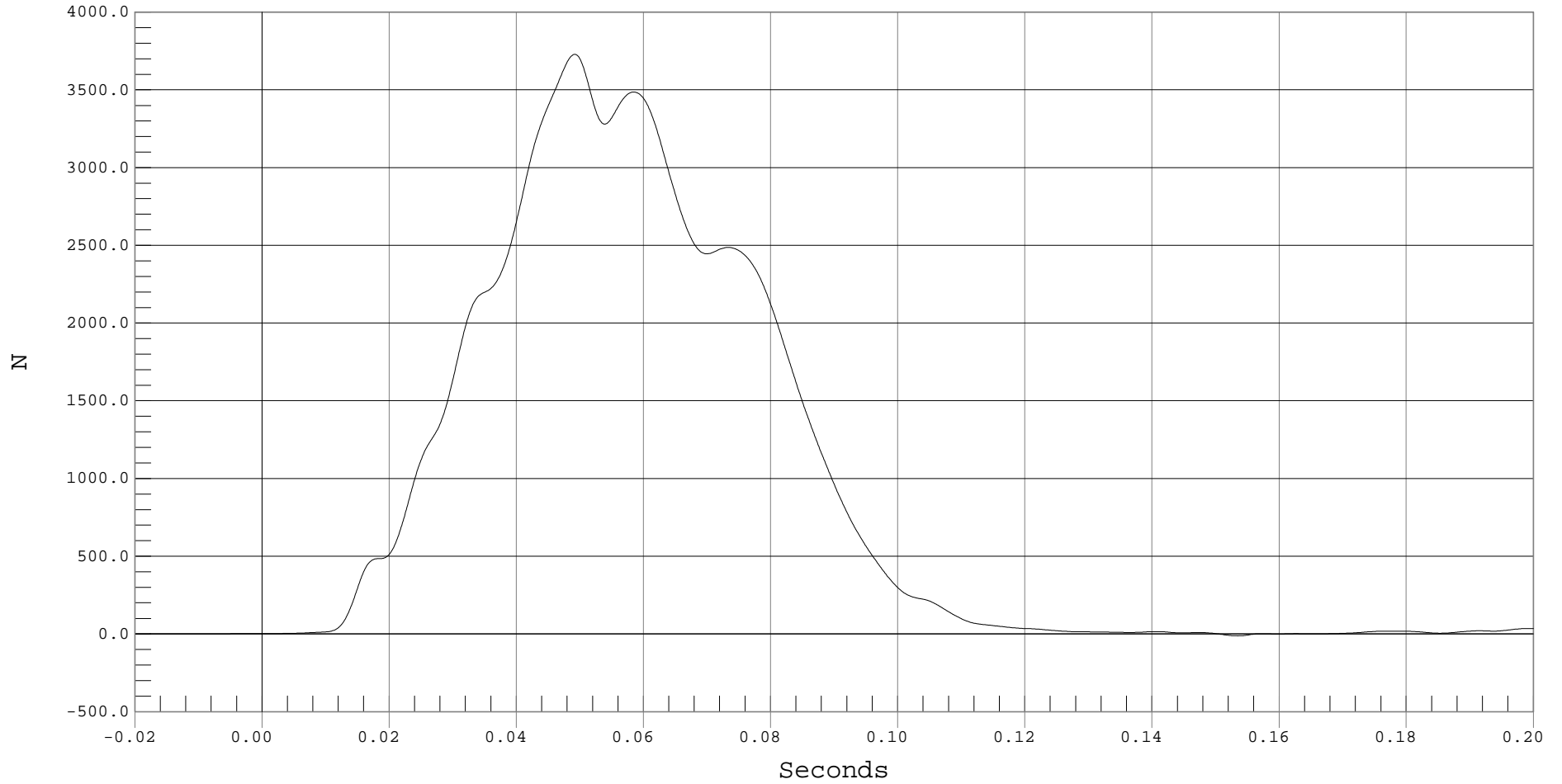
DRIVER SHOULDER BELT FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 DRIVER SHOULDER BELT, B01032FF.F65

Ymin = -12.46 N @ 0.1534 Seconds, Ymax = 3729 N @ 0.0491 Seconds



B-55



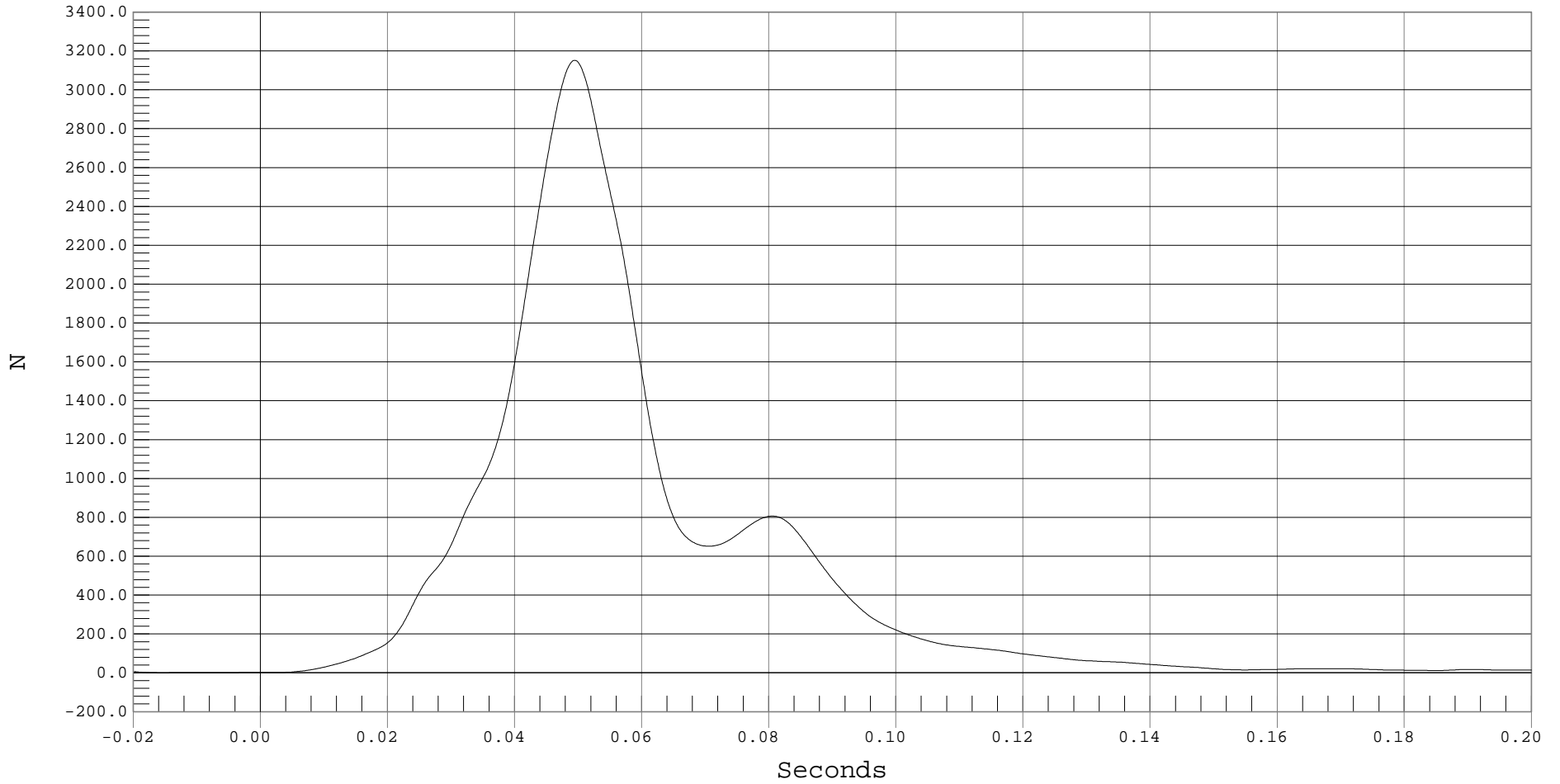
DRIVER LAP BELT FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 DRIVER LAP BELT, B01032FF.F66

Ymin = -.38 N @ -0.0155 Seconds, Ymax = 3152.27 N @ 0.0494 Seconds



B-56



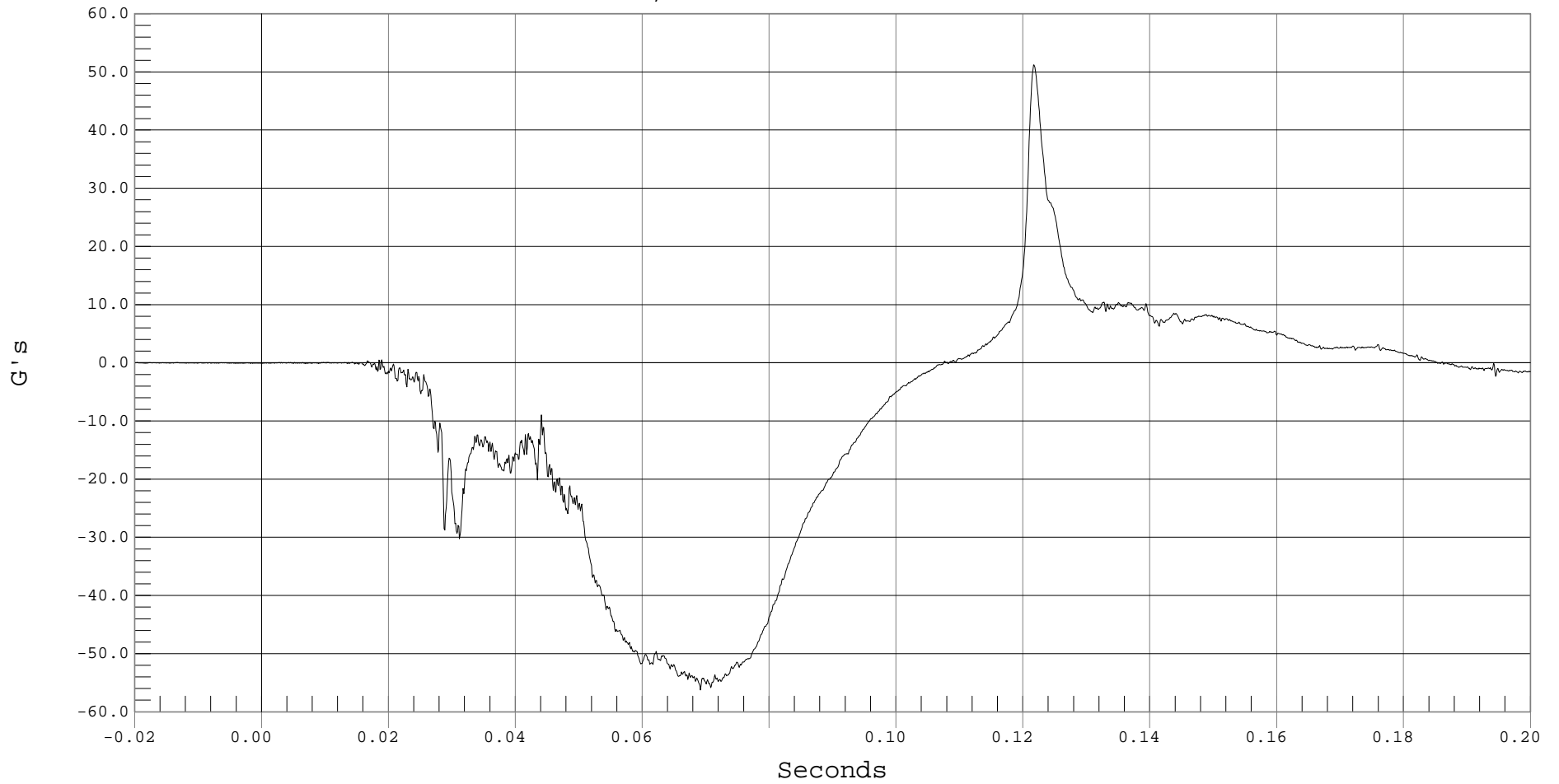
PASSENGER HEAD X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 PASSENGER HEAD X, B01032AT.A19

Ymin = -56.28 G's @ 0.0691 Seconds, Ymax = 51.2 G's @ 0.1216 Seconds



B-57



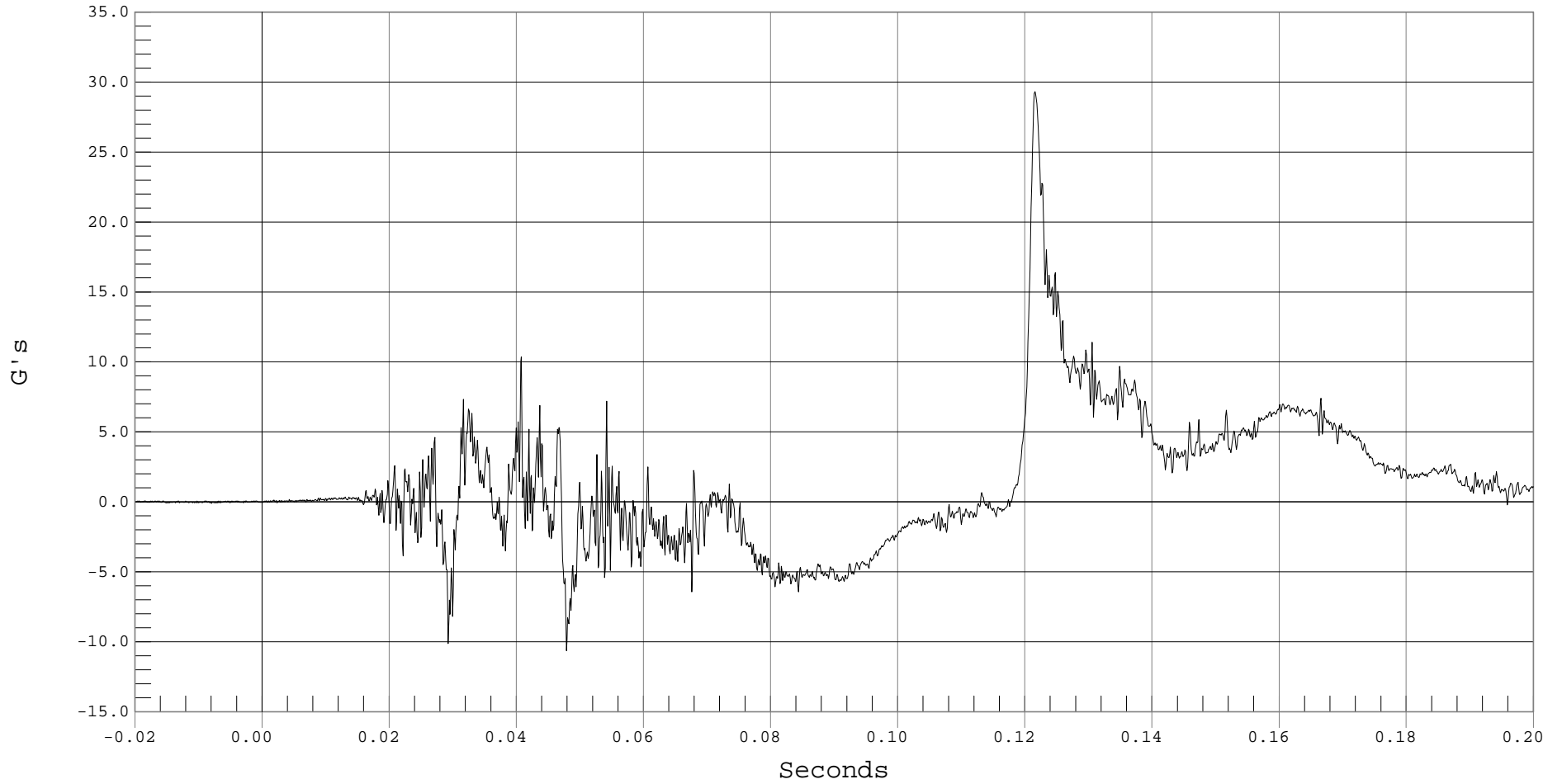
PASSENGER HEAD Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 PASSENGER HEAD Y, B01032AT.A20

Ymin = -10.64 G's @ 0.0478 Seconds, Ymax = 29.33 G's @ 0.1215 Seconds



B-58



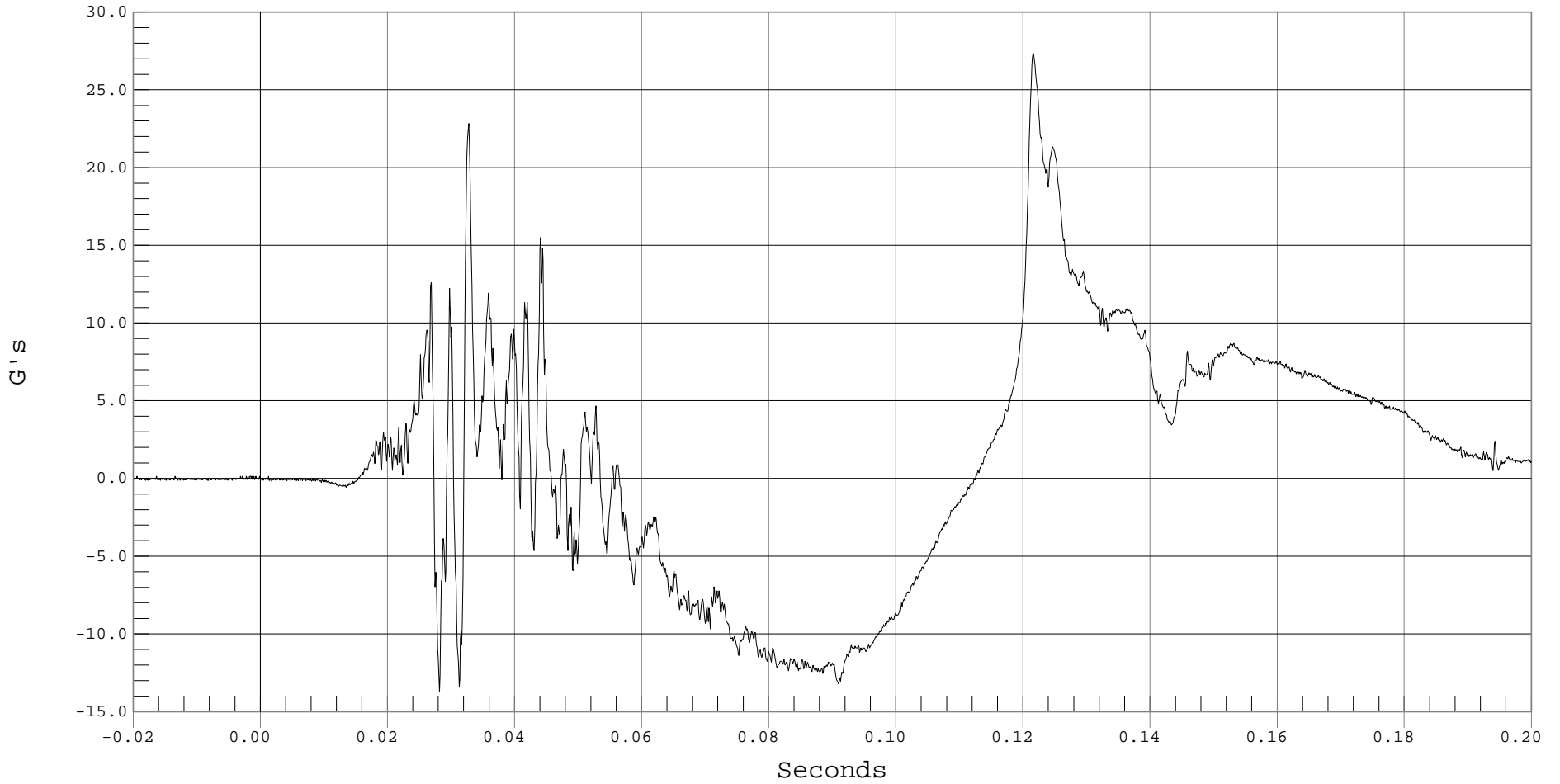
PASSENGER HEAD Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 PASSENGER HEAD Z, B01032AT.A21

Ymin = -13.71 G's @ 0.0281 Seconds, Ymax = 27.35 G's @ 0.1215 Seconds



B-59



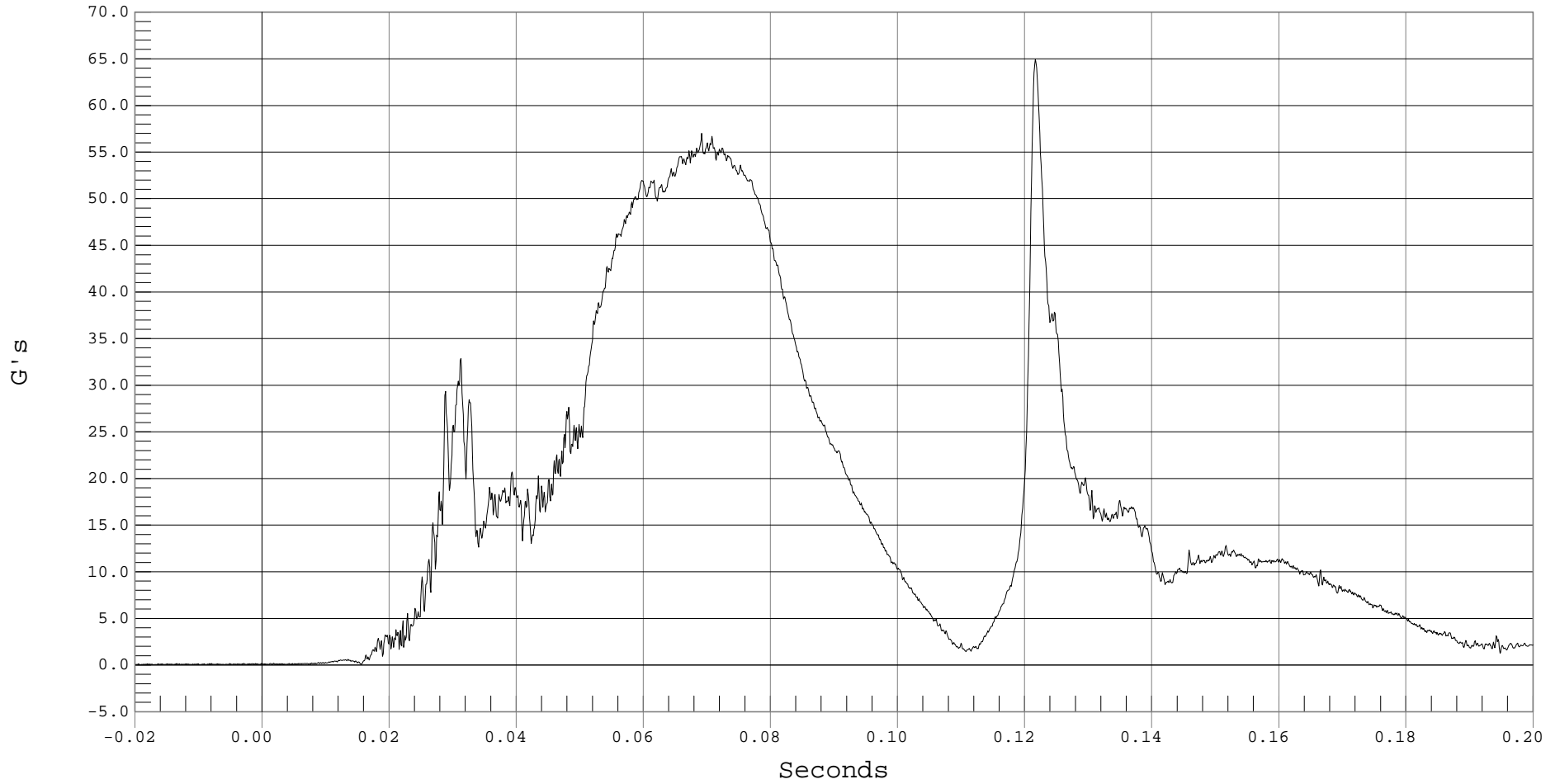
PASSENGER HEAD RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 PASSENGER HEAD RESULTANT ACCELERATION, B01032AV.A19

Ymin = .03 G's @ -0.0196 Seconds, Ymax = 64.94 G's @ 0.1216 Seconds



B-60



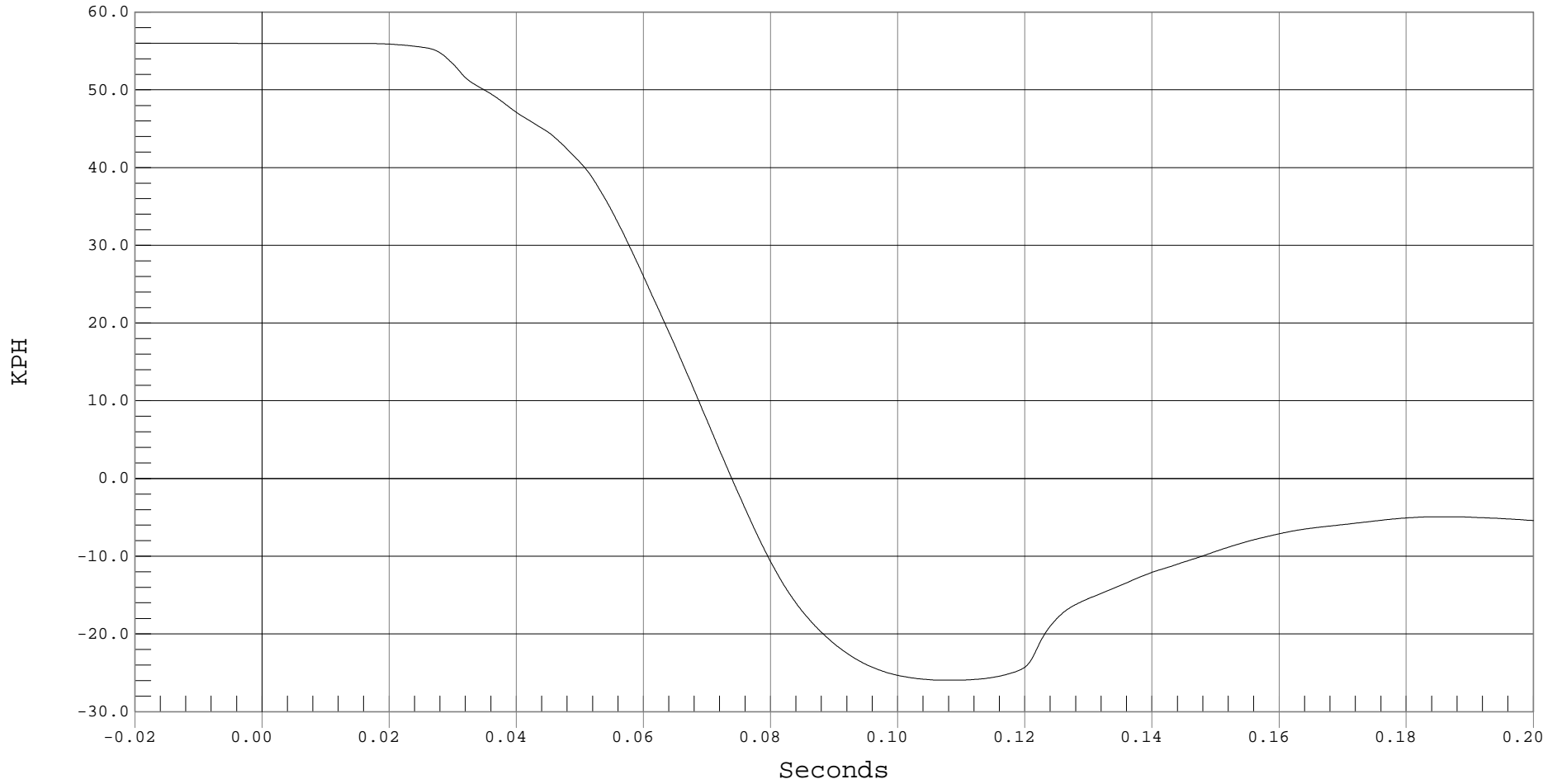
PASSENGER HEAD X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 PASSENGER HEAD X VELOCITY, B01032AI.V19

Ymin = -25.95 KPH @ 0.1077 Seconds, Ymax = 56 KPH @ -0.0199 Seconds



B-61



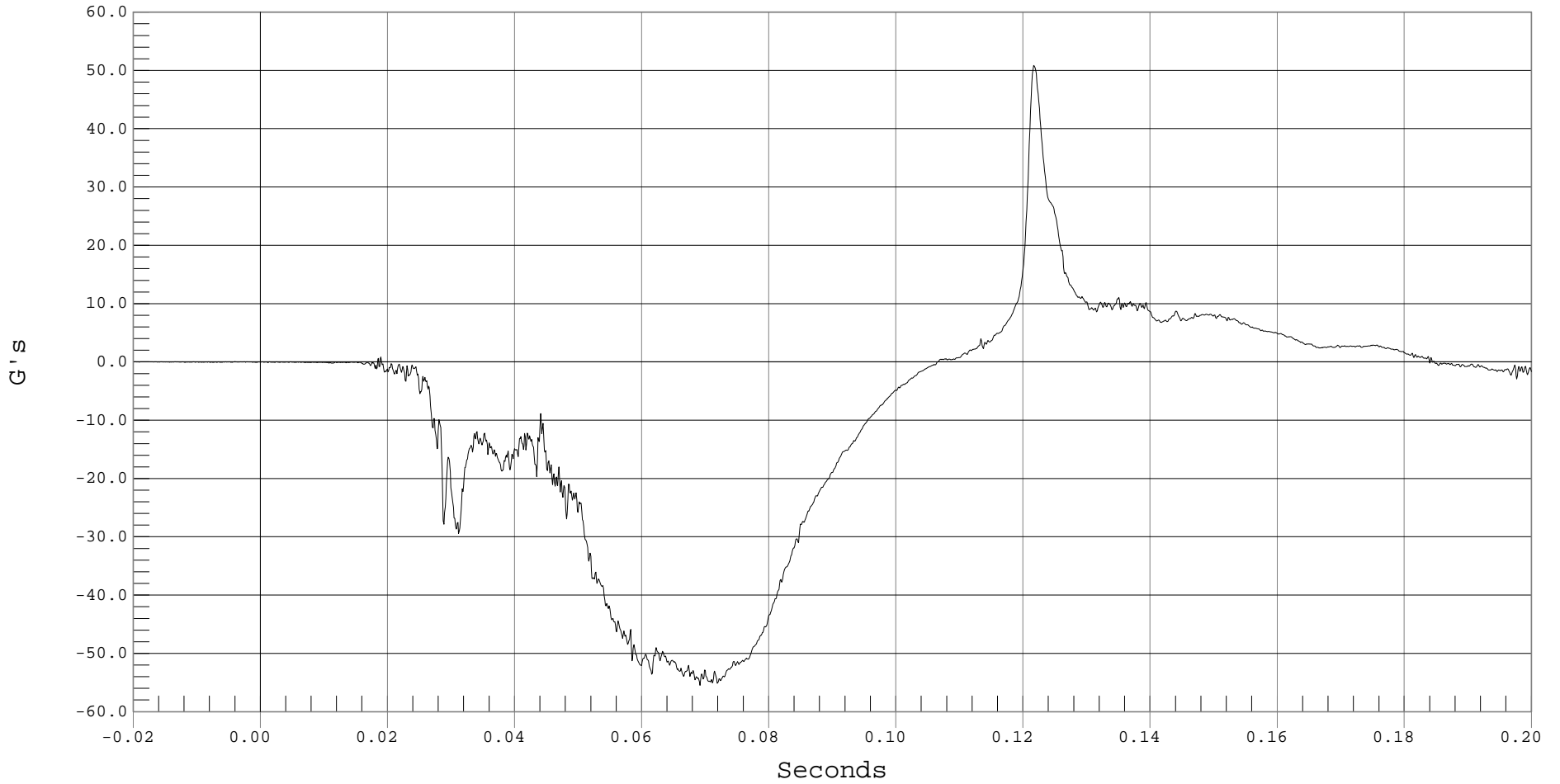
PASSENGER HEAD REDUNDANT X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 PASSENGER HEAD Xr, B01032AT.A41

Ymin = -55.5 G's @ 0.0691 Seconds, Ymax = 50.84 G's @ 0.1216 Seconds



B-62



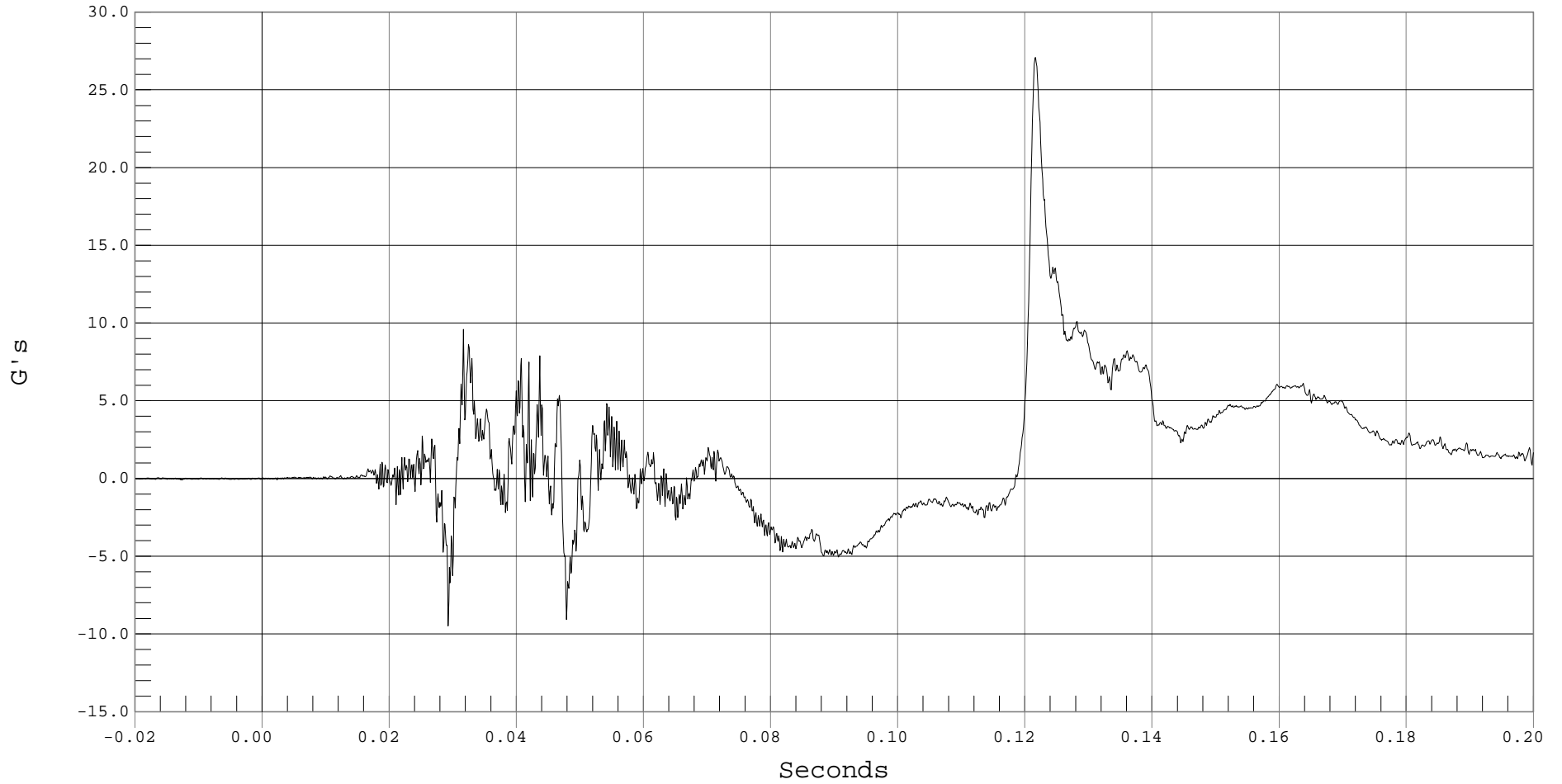
PASSENGER HEAD REDUNDANT Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 PASSENGER HEAD Yr, B01032AT.A42

Ymin = -9.49 G's @ 0.0292 Seconds, Ymax = 27.08 G's @ 0.1216 Seconds



B-63



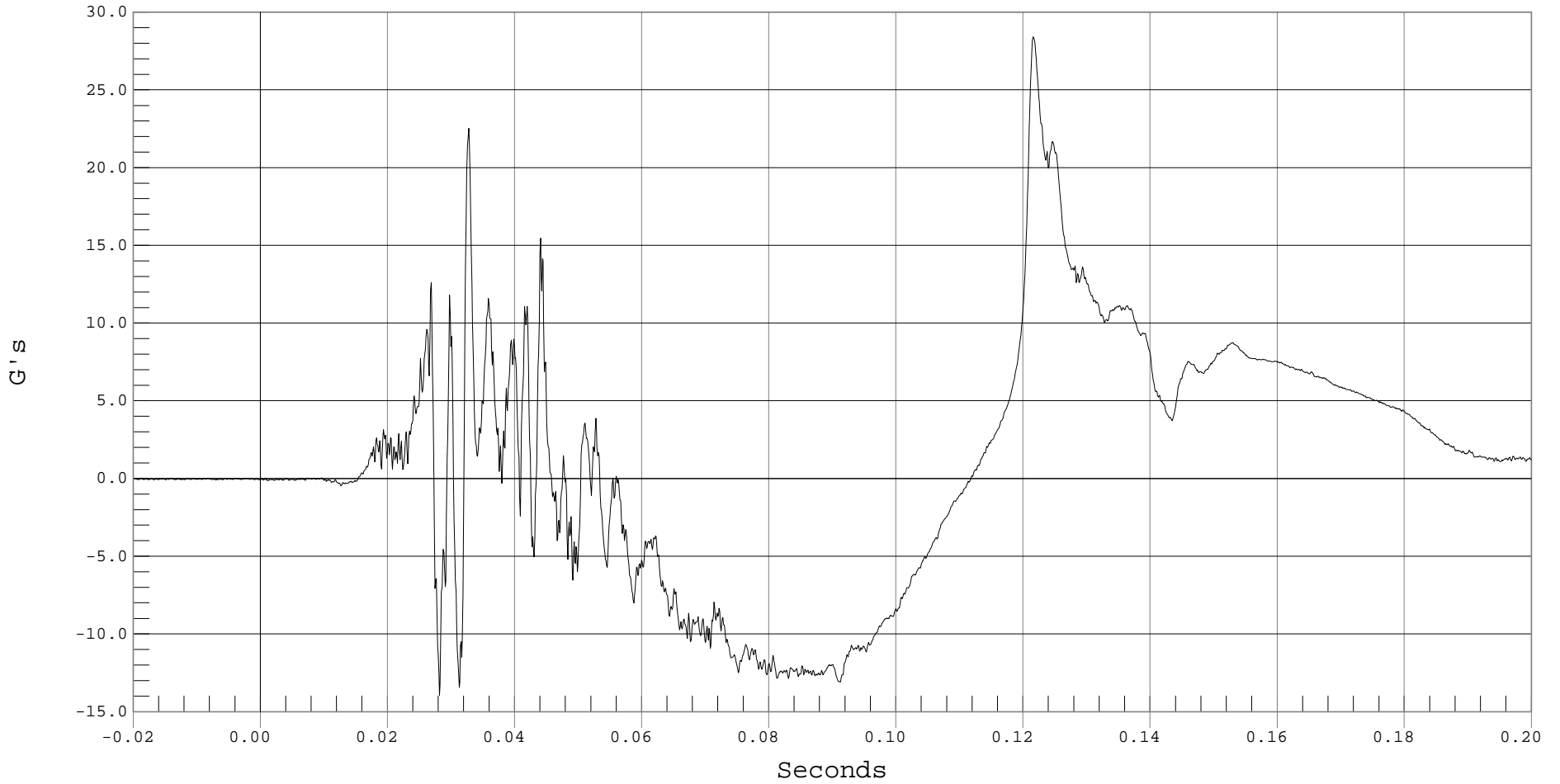
PASSENGER HEAD REDUNDANT Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 PASSENGER HEAD Zr, B01032AT.A43

Ymin = -13.95 G's @ 0.0281 Seconds, Ymax = 28.4 G's @ 0.1215 Seconds



B-64



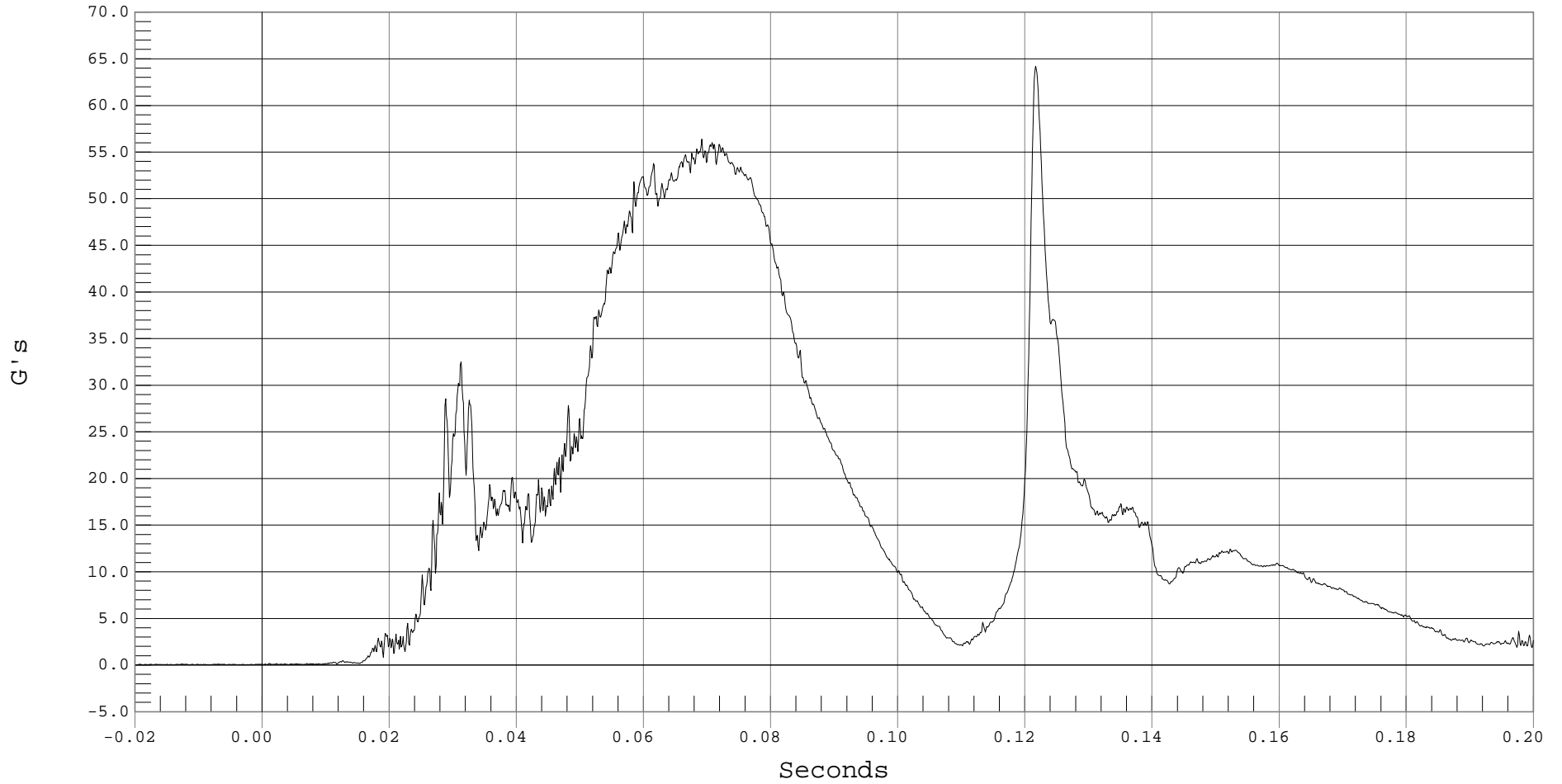
PASSENGER HEAD REDUNDANT RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 PASSENGER HEAD REDUNDANT RESULTANT ACCELERATION, B01032AV.A41

Ymin = .01 G's @ -0.0199 Seconds, Ymax = 64.2 G's @ 0.1216 Seconds



B-65



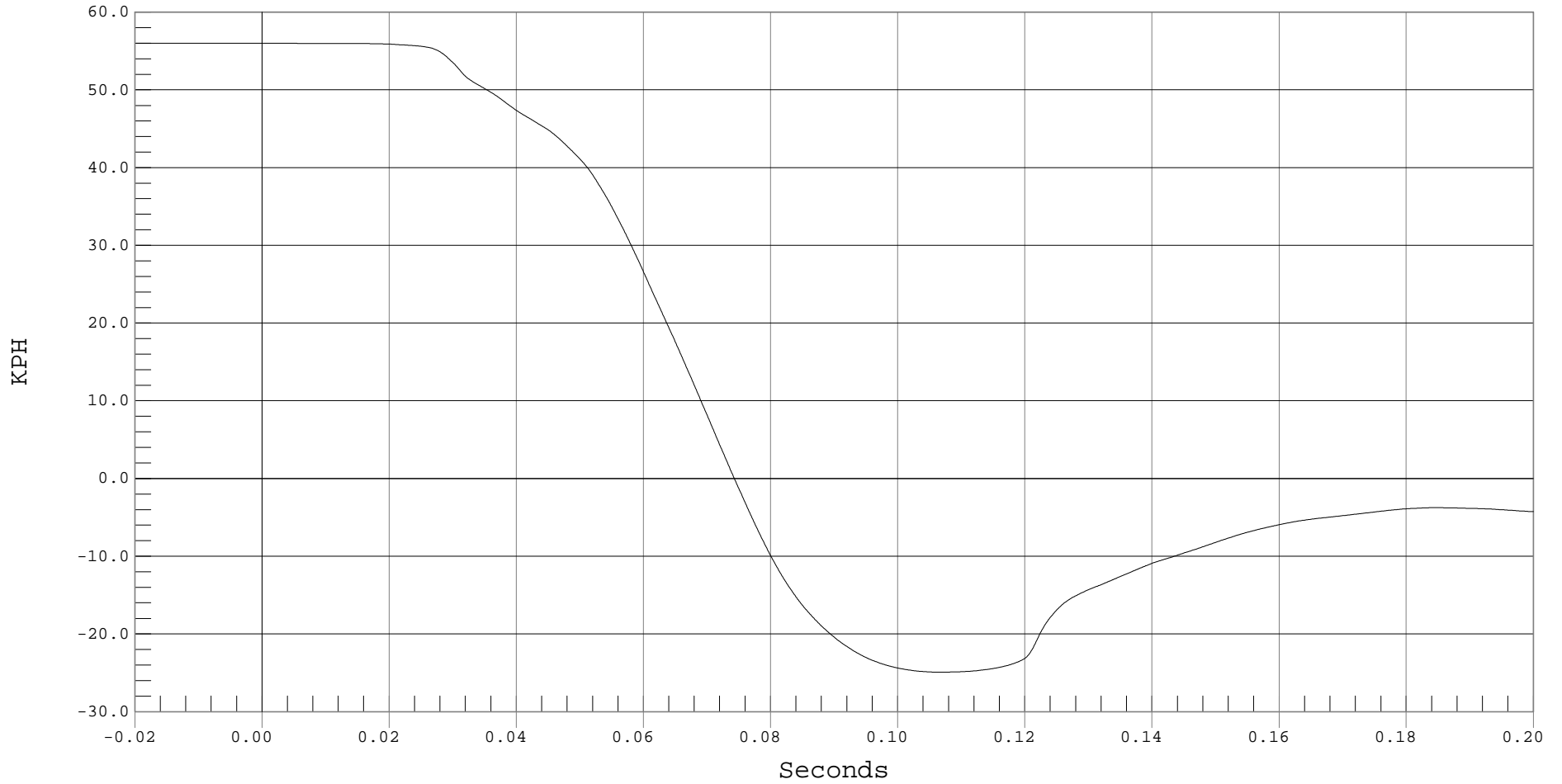
PASSENGER HEAD REDUNDANT X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 PASSENGER HEAD REDUNDANT X VELOCITY, B01032AI.V41

Ymin = -24.91 KPH @ 0.1065 Seconds, Ymax = 56 KPH @ -0.0165 Seconds



B-66



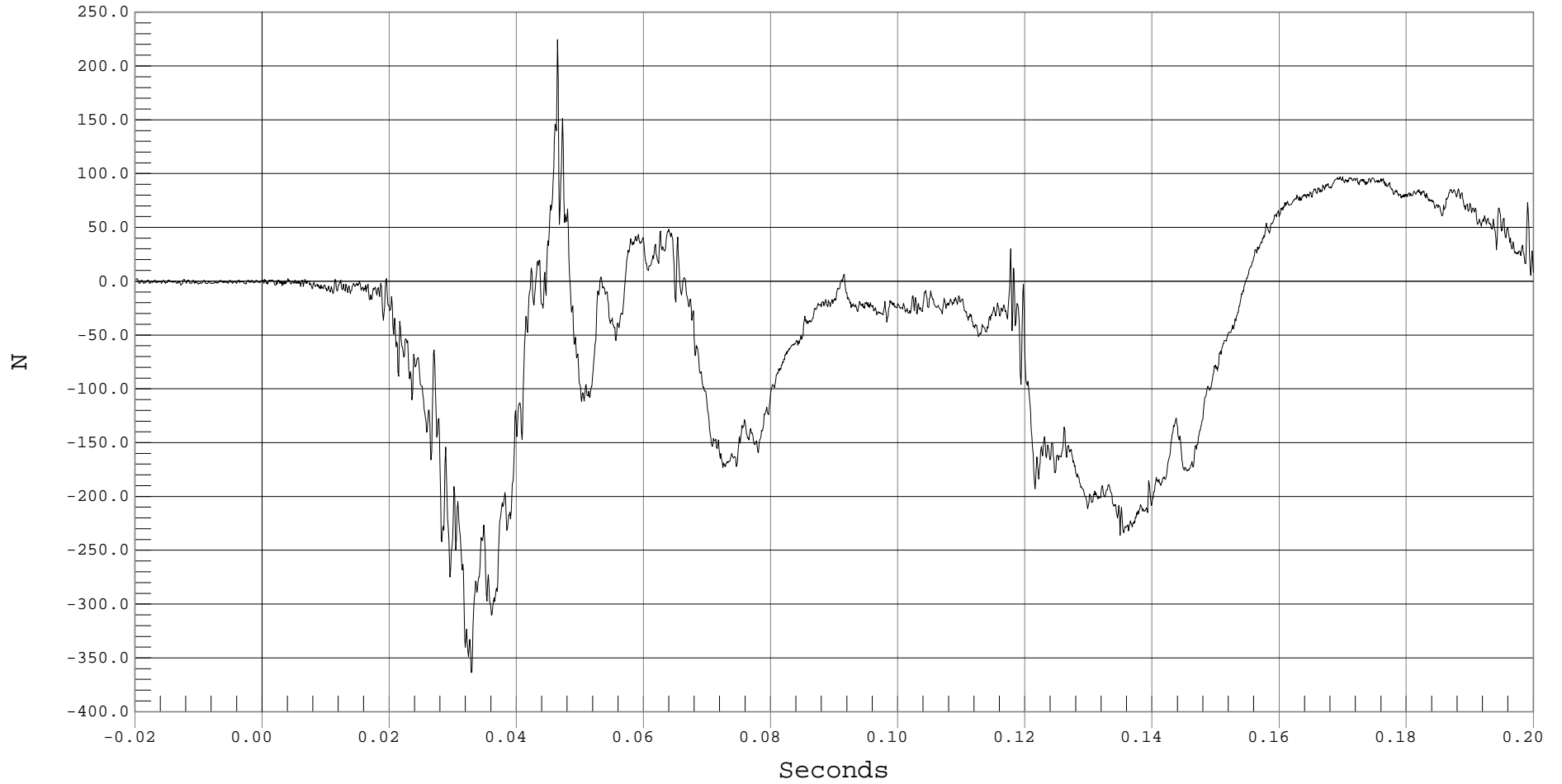
PASSENGER NECK FORCE X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 PASSENGER NECK FX, B01032FT.F44

Ymin = -363.59 N @ 0.0328 Seconds, Ymax = 224.66 N @ 0.0464 Seconds



B-67



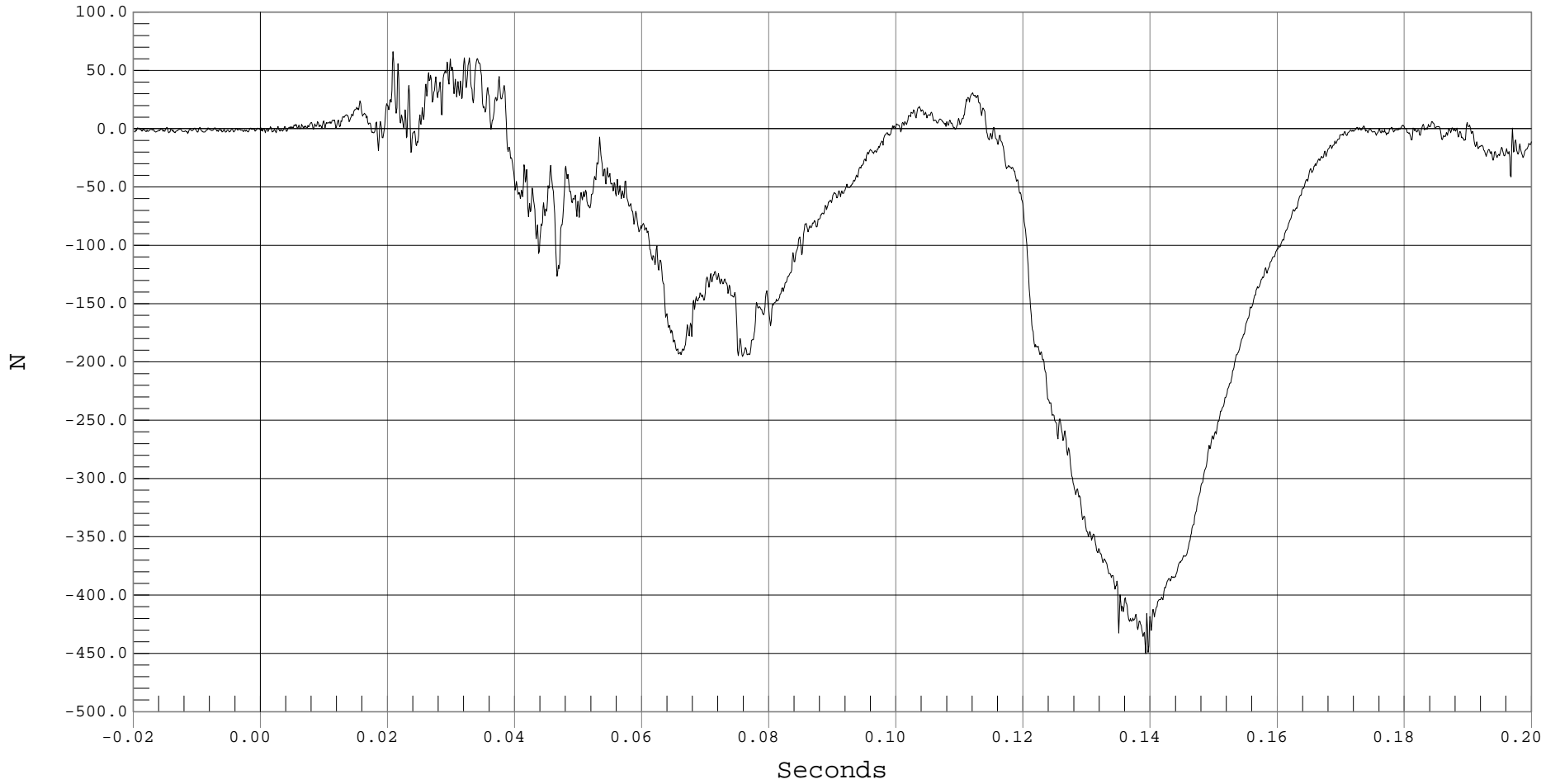
PASSENGER NECK FORCE Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 PASSENGER NECK FY, B01032FT.F45

Ymin = -450.17 N @ 0.1392 Seconds, Ymax = 66.07 N @ 0.0208 Seconds



B-68



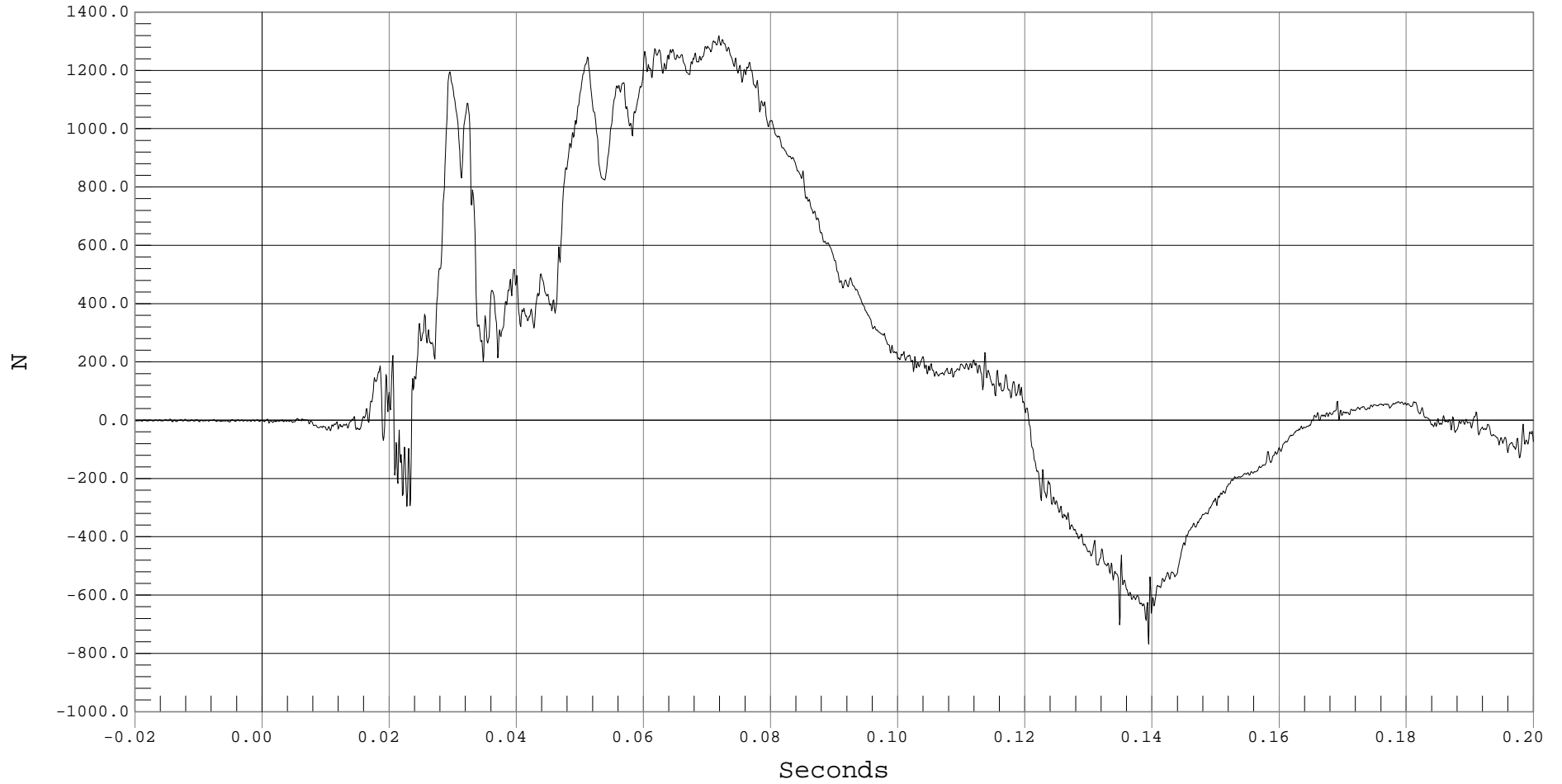
PASSENGER NECK FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 PASSENGER NECK FZ, B01032FT.F46

Ymin = -767.93 N @ 0.1394 Seconds, Ymax = 1318.92 N @ 0.0718 Seconds



B-69



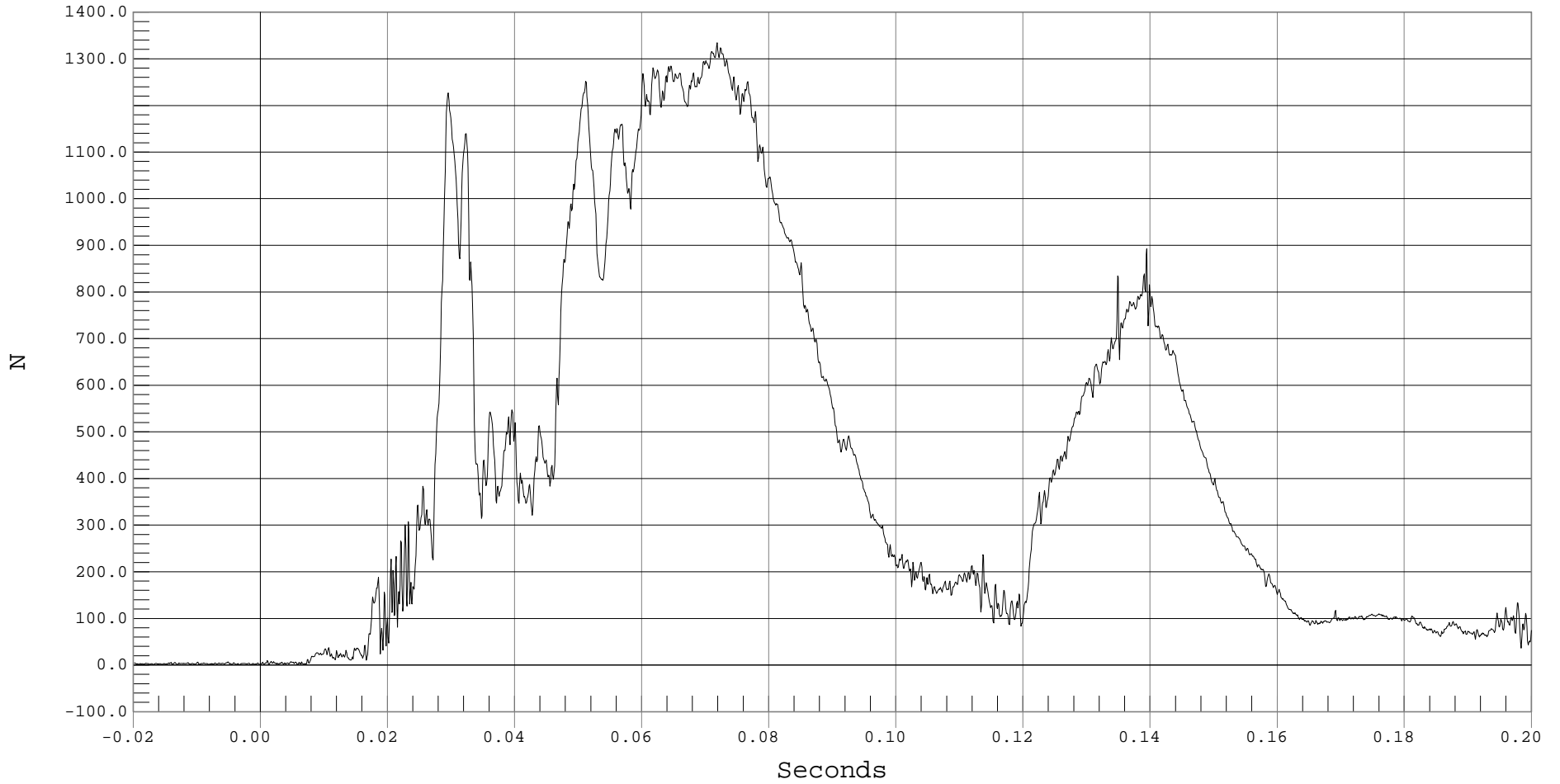
PASSENGER NECK FORCE RESULTANT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 PASSENGER NECK FORCE RESULTANT, B01032FV.F44

Ymin = .74 N @ -0.0016 Seconds, Ymax = 1334.24 N @ 0.0718 Seconds





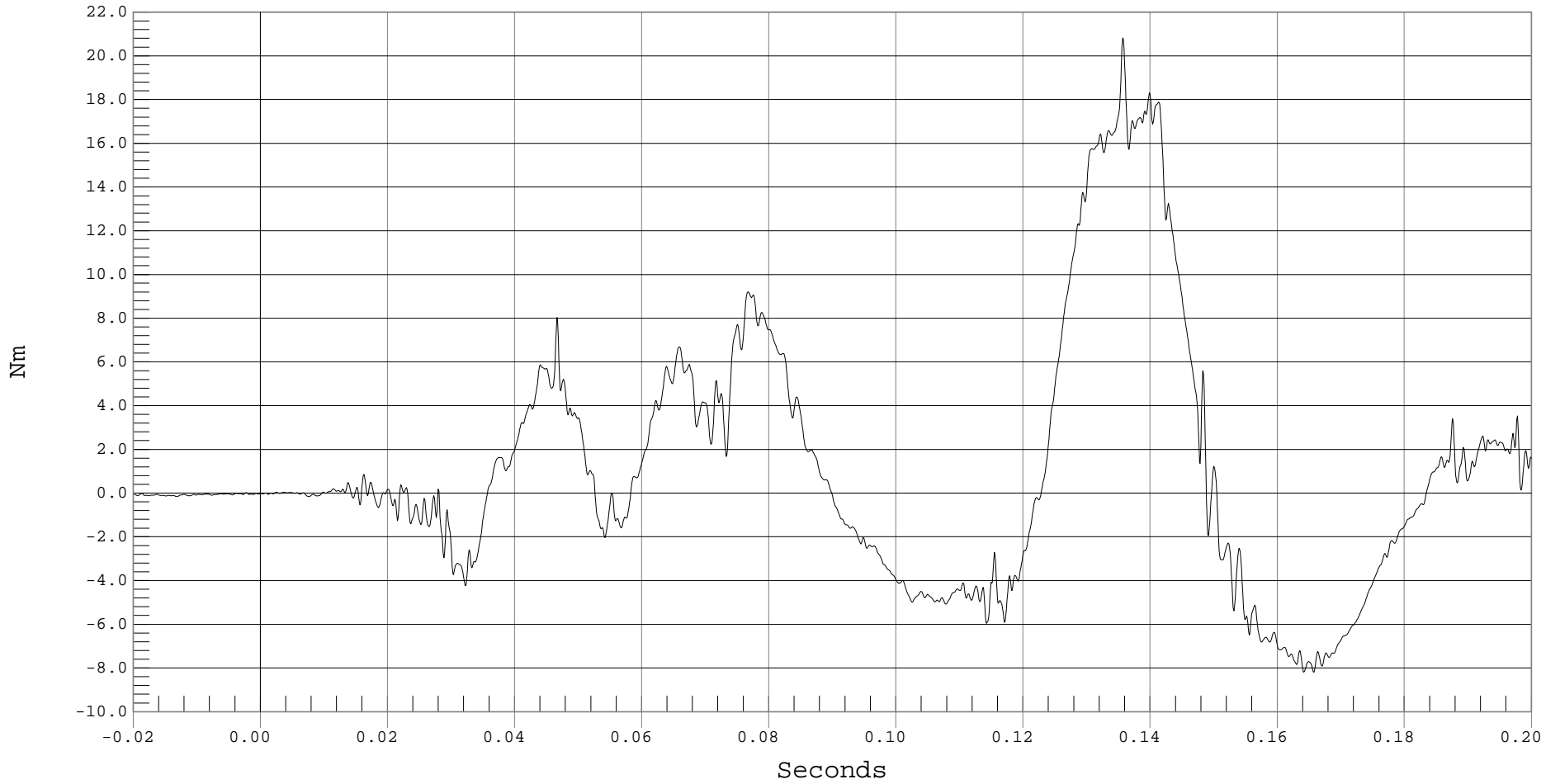
PASSENGER NECK MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 PASSENGER NECK MX, B01032MF.M47

Ymin = -8.19 Nm @ 0.1641 Seconds, Ymax = 20.82 Nm @ 0.1356 Seconds



B-71



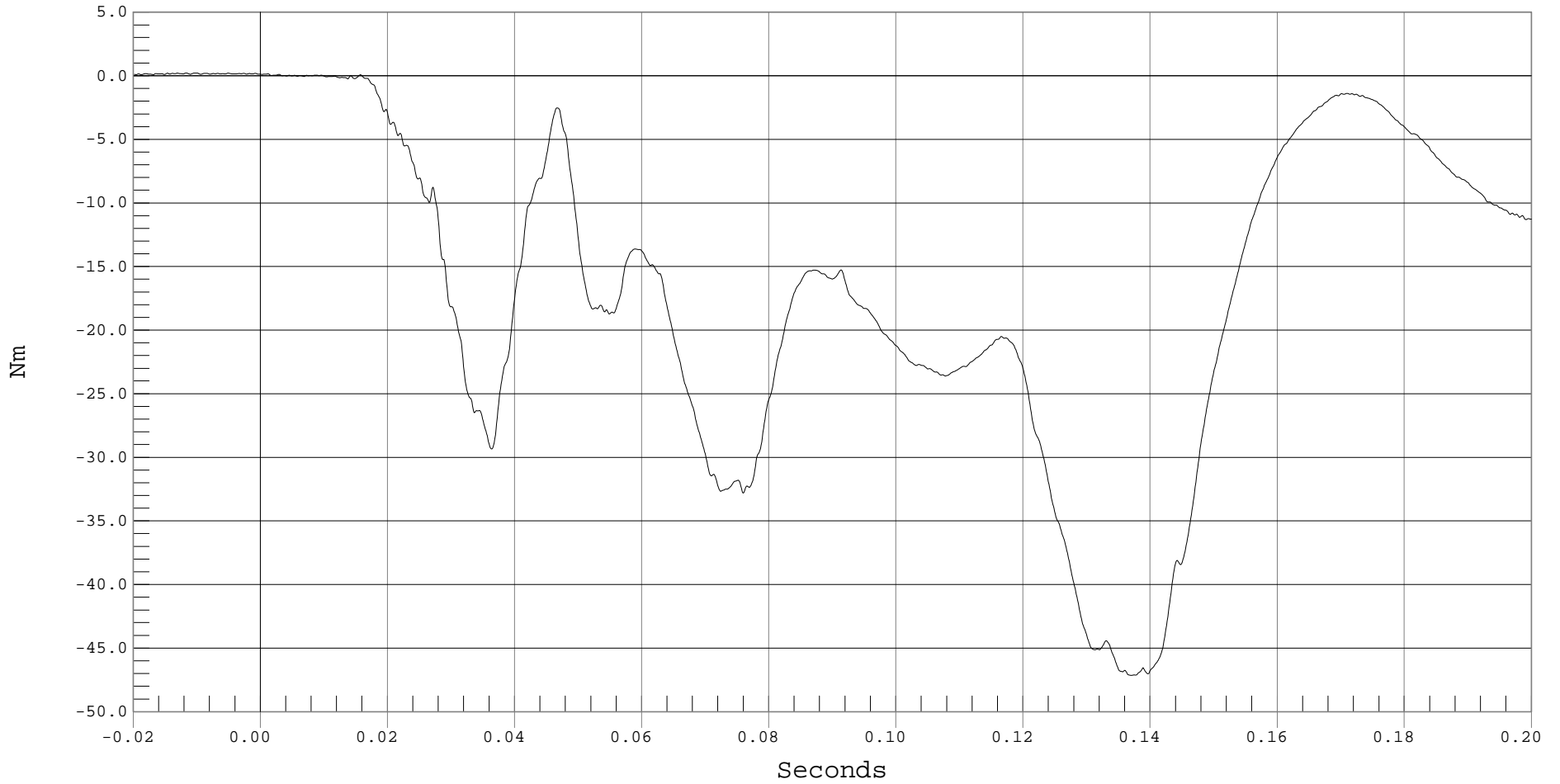
PASSENGER NECK MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 PASSENGER NECK MY, B01032MF.M48

Ymin = -47.14 Nm @ 0.1370 Seconds, Ymax = .22 Nm @ -0.0101 Seconds



B-72



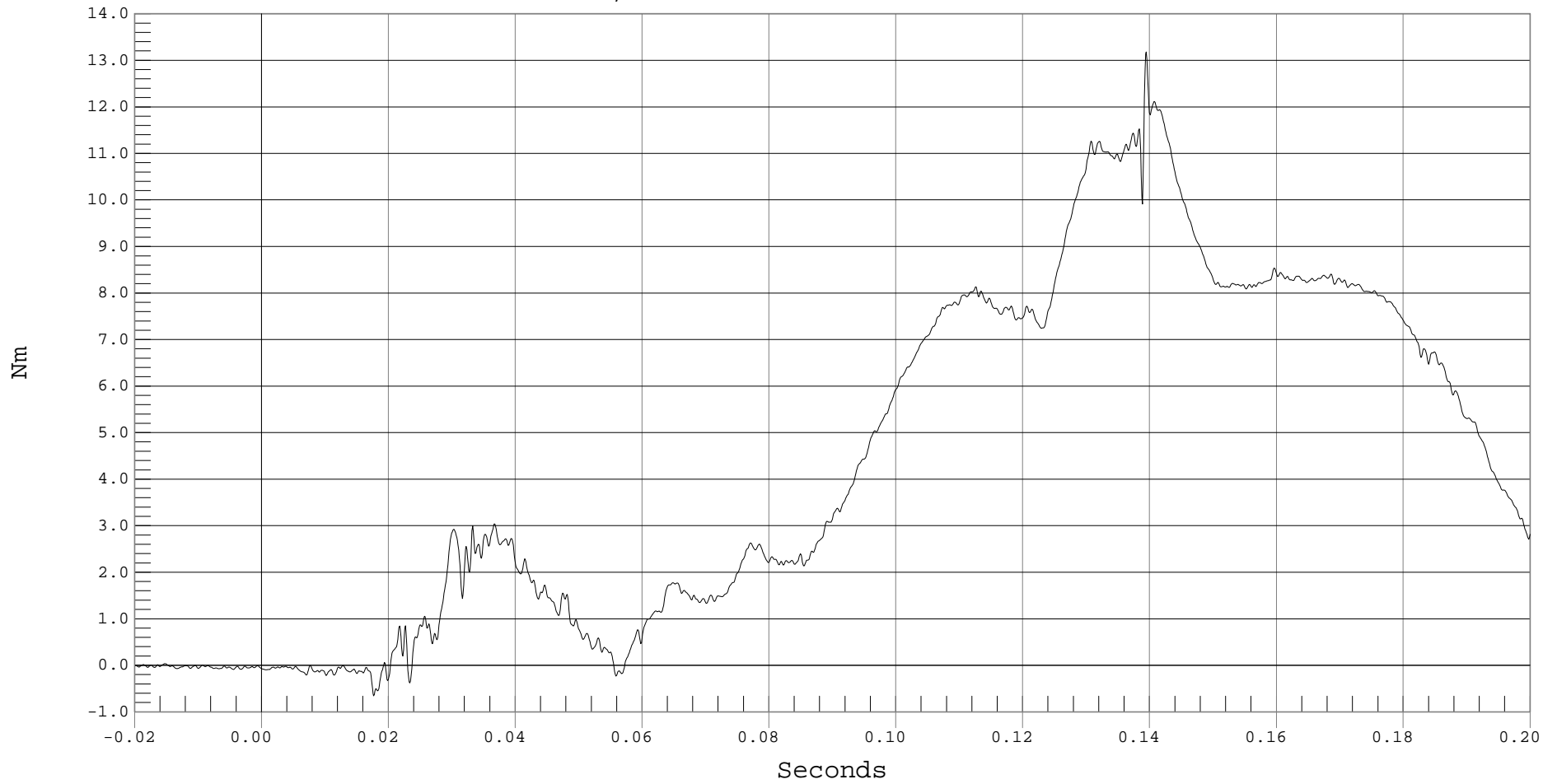
PASSENGER NECK MOMENT Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 PASSENGER NECK MZ, B01032MF.M49

Ymin = -0.66 Nm @ 0.0176 Seconds, Ymax = 13.18 Nm @ 0.1394 Seconds





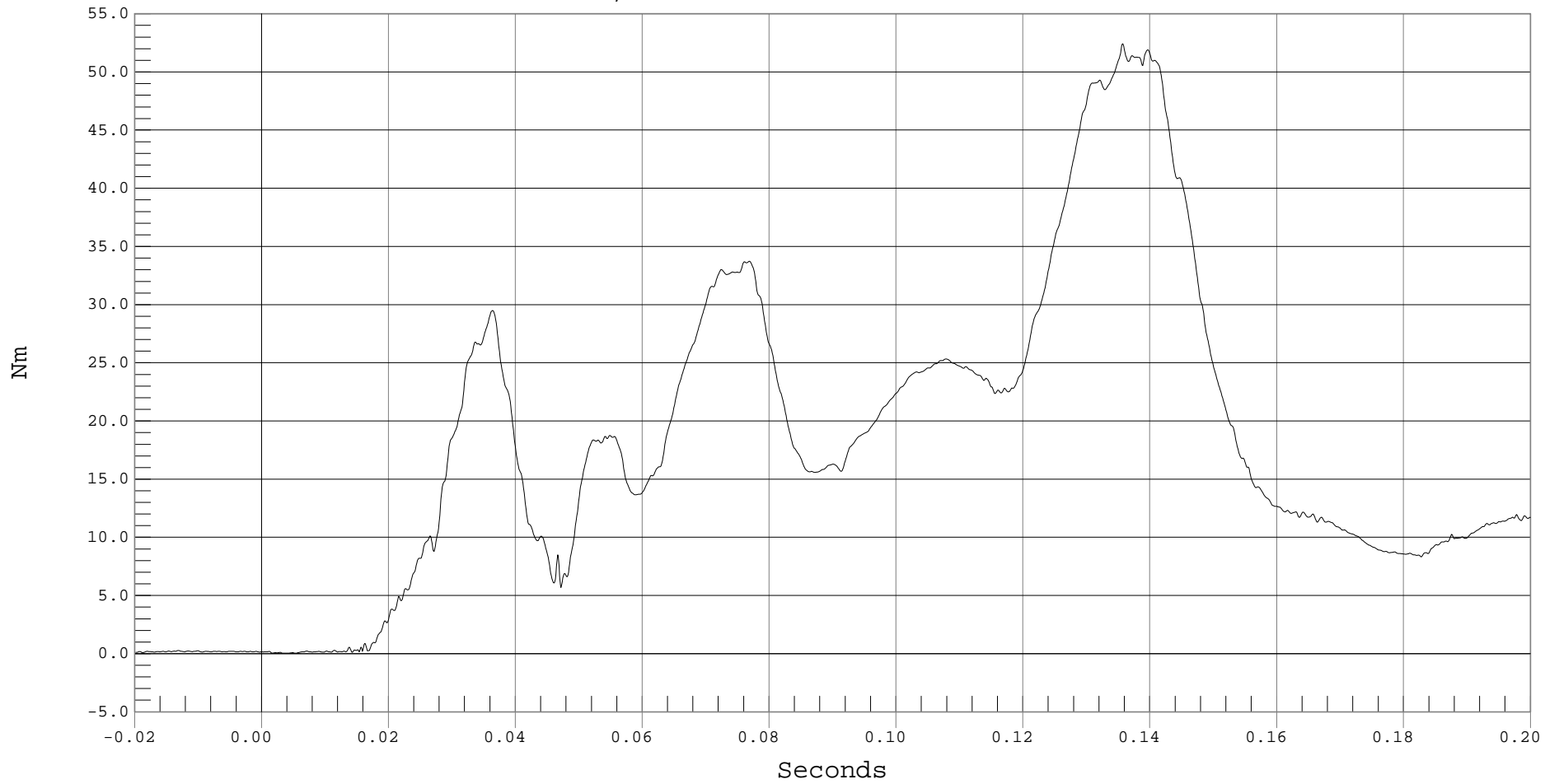
PASSENGER NECK MOMENT RESULTANT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 PASSENGER NECK MOMENT RESULTANT, B01032MV.M47

Ymin = .04 Nm @ 0.0033 Seconds, Ymax = 52.44 Nm @ 0.1356 Seconds



B-74



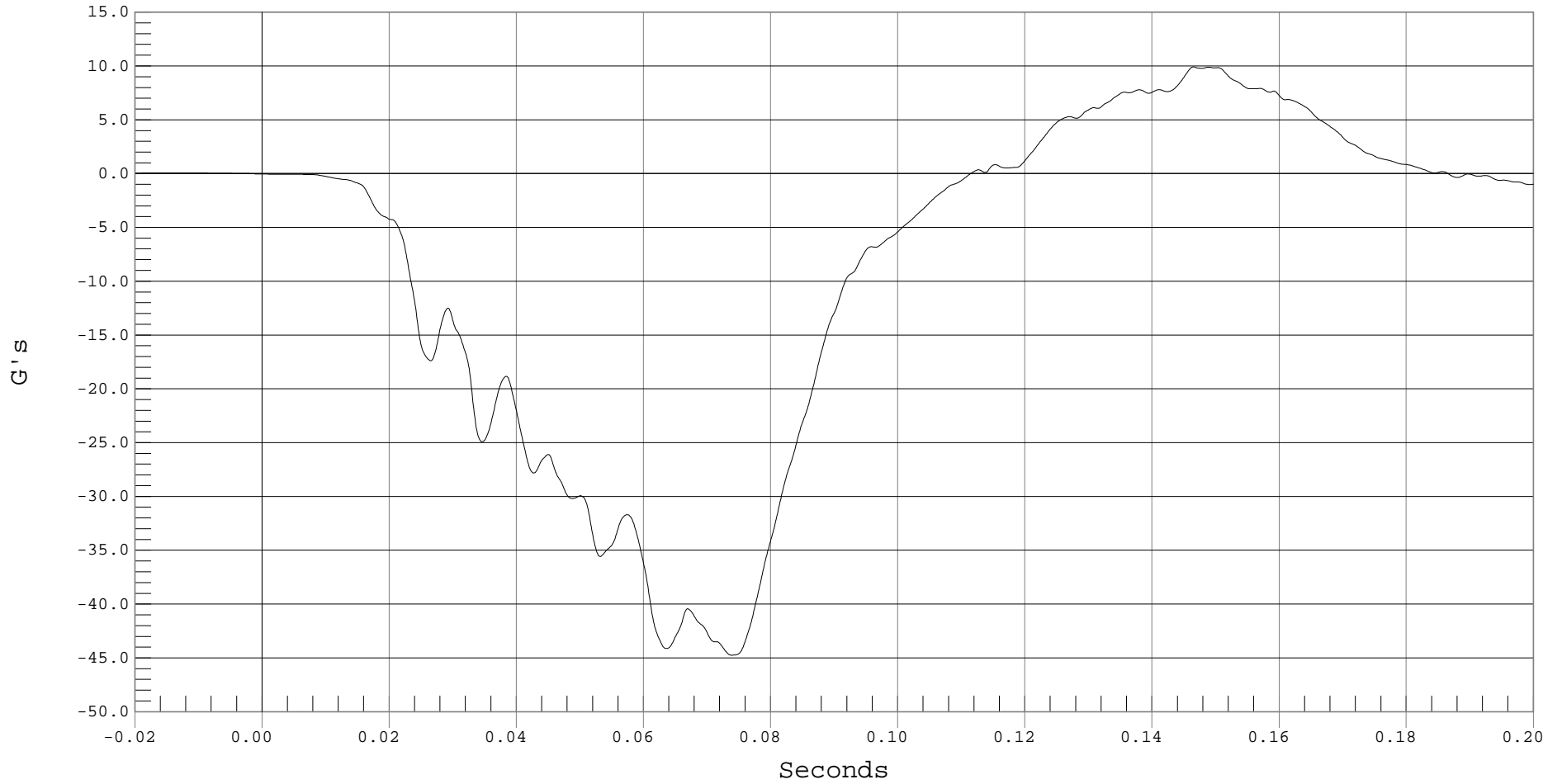
PASSENGER CHEST X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 PASSENGER CHEST X, B01032AF.A22

Ymin = -44.75 G's @ 0.0738 Seconds, Ymax = 9.92 G's @ 0.1464 Seconds



B-75



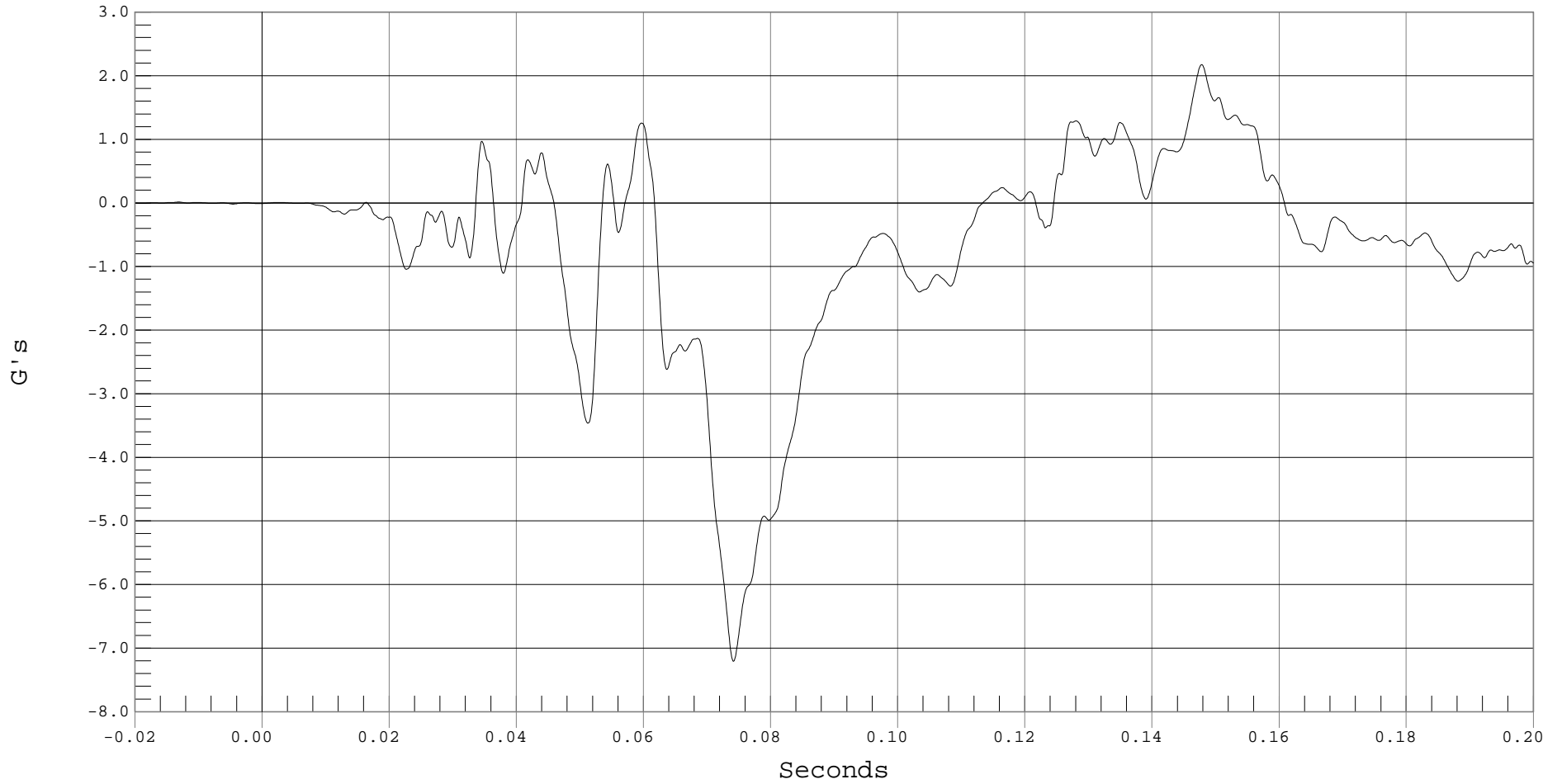
PASSENGER CHEST Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 PASSENGER CHEST Y, B01032AF.A23

Ymin = -7.21 G's @ 0.0741 Seconds, Ymax = 2.18 G's @ 0.1477 Seconds



B-76



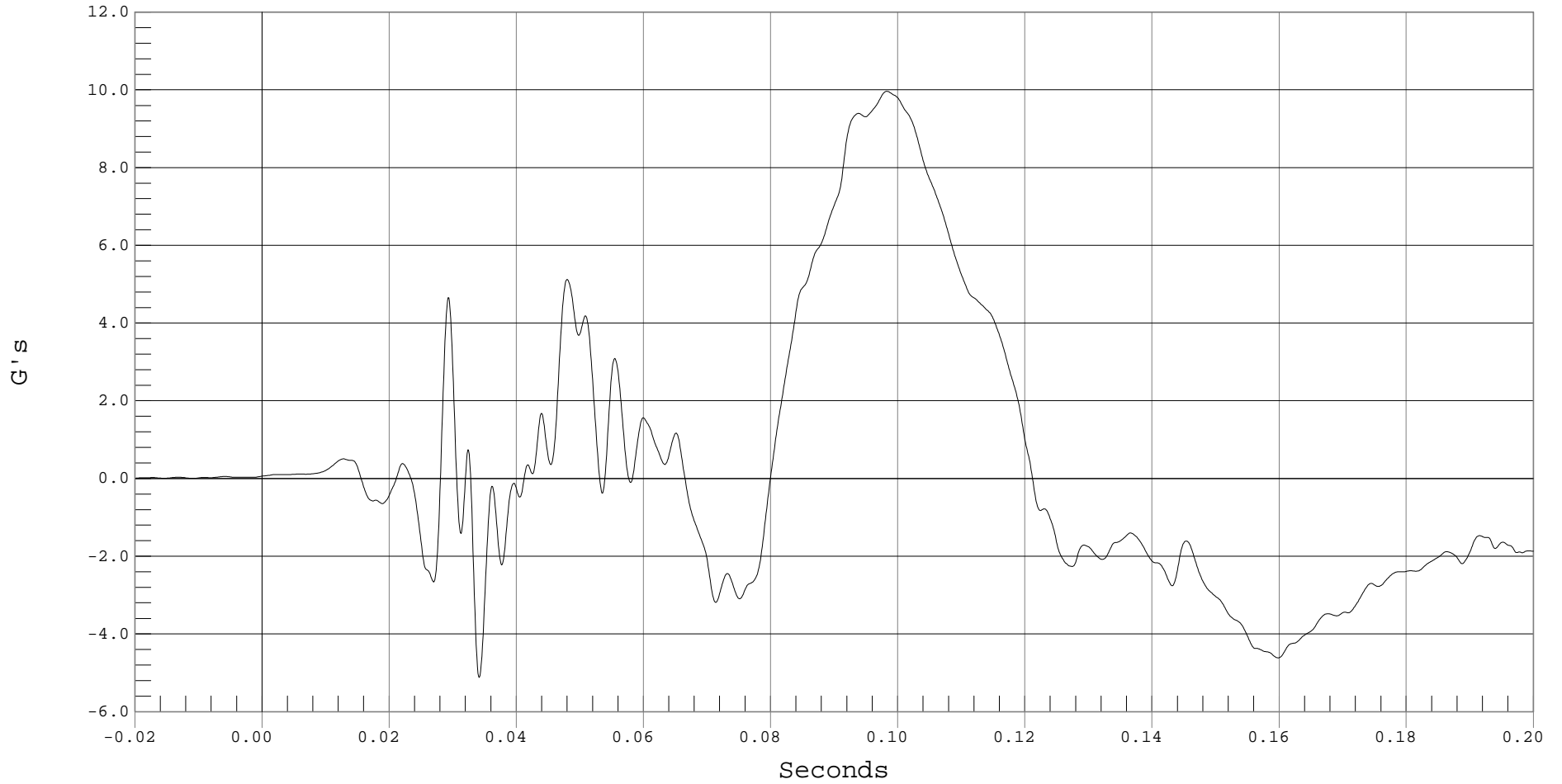
PASSENGER CHEST Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 PASSENGER CHEST Z, B01032AF.A24

Ymin = -5.12 G's @ 0.0341 Seconds, Ymax = 9.96 G's @ 0.0982 Seconds





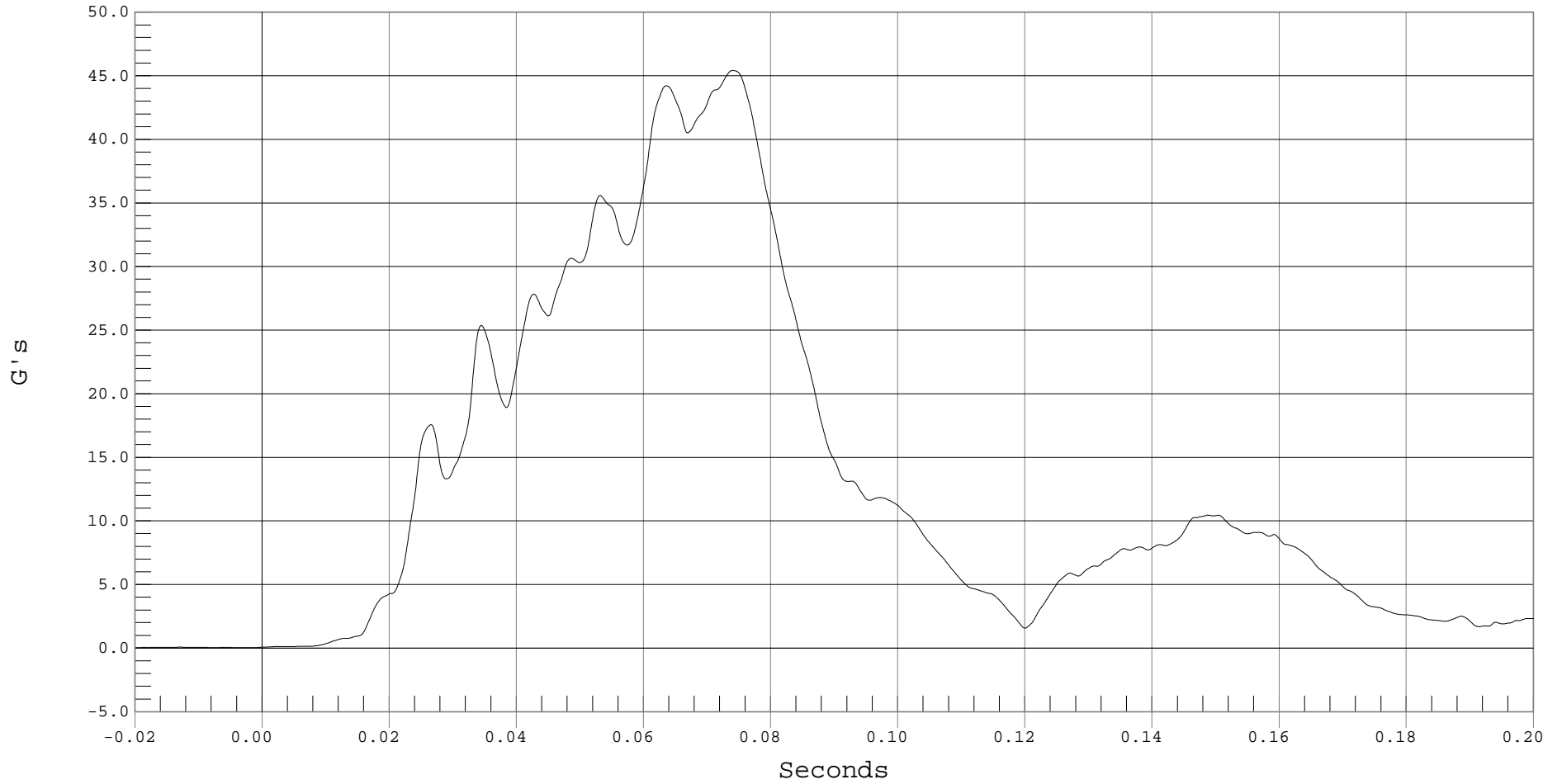
PASSENGER CHEST RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 PASSENGER CHEST RESULTANT ACCELERATION, B01032AV.A22

Ymin = .03 G's @ -0.0199 Seconds, Ymax = 45.4 G's @ 0.0740 Seconds





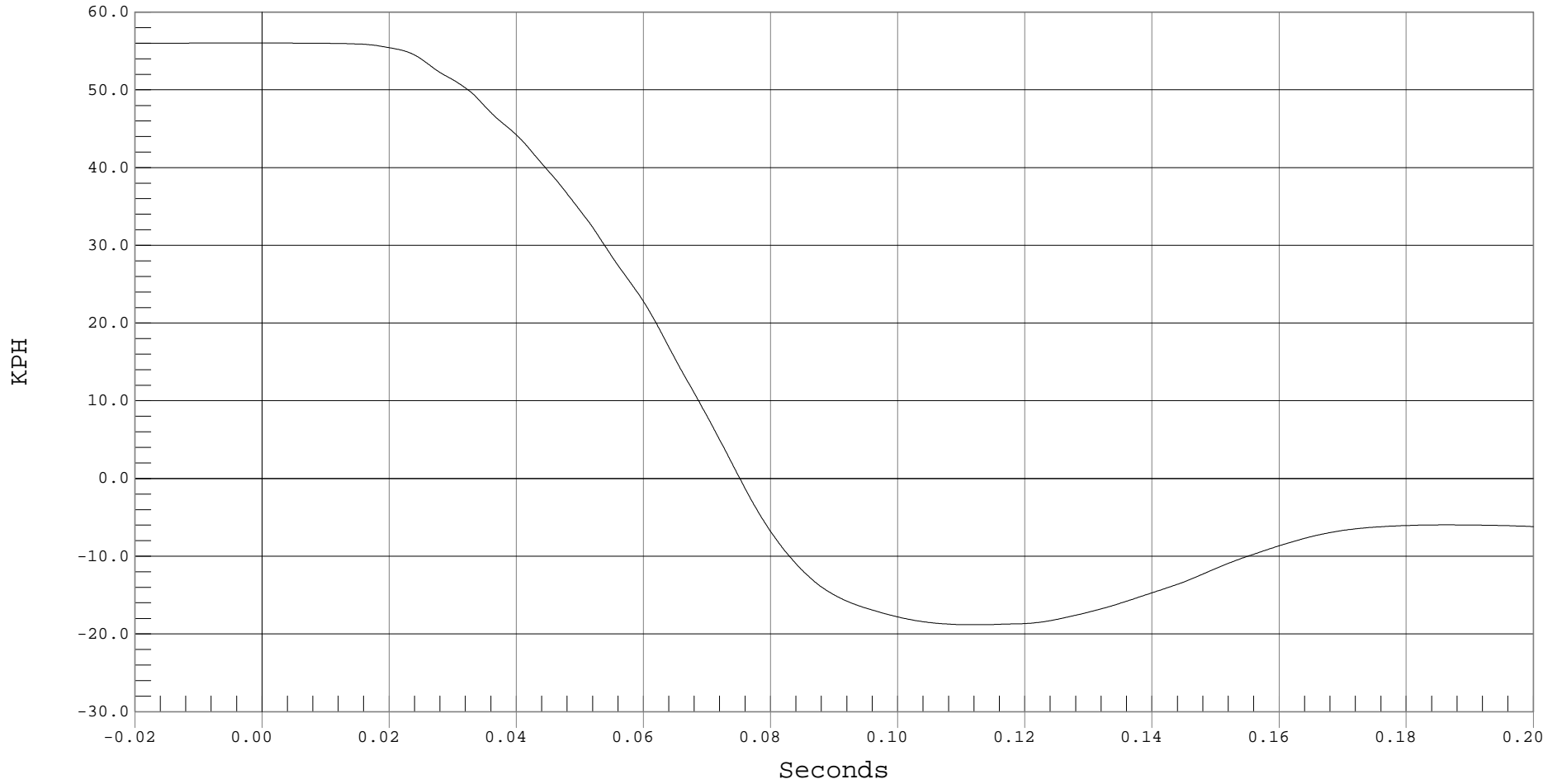
PASSENGER CHEST X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 PASSENGER CHEST X VELOCITY, B01032AI.V22

Ymin = -18.82 KPH @ 0.1114 Seconds, Ymax = 56.03 KPH @ -0.0024 Seconds



B-79



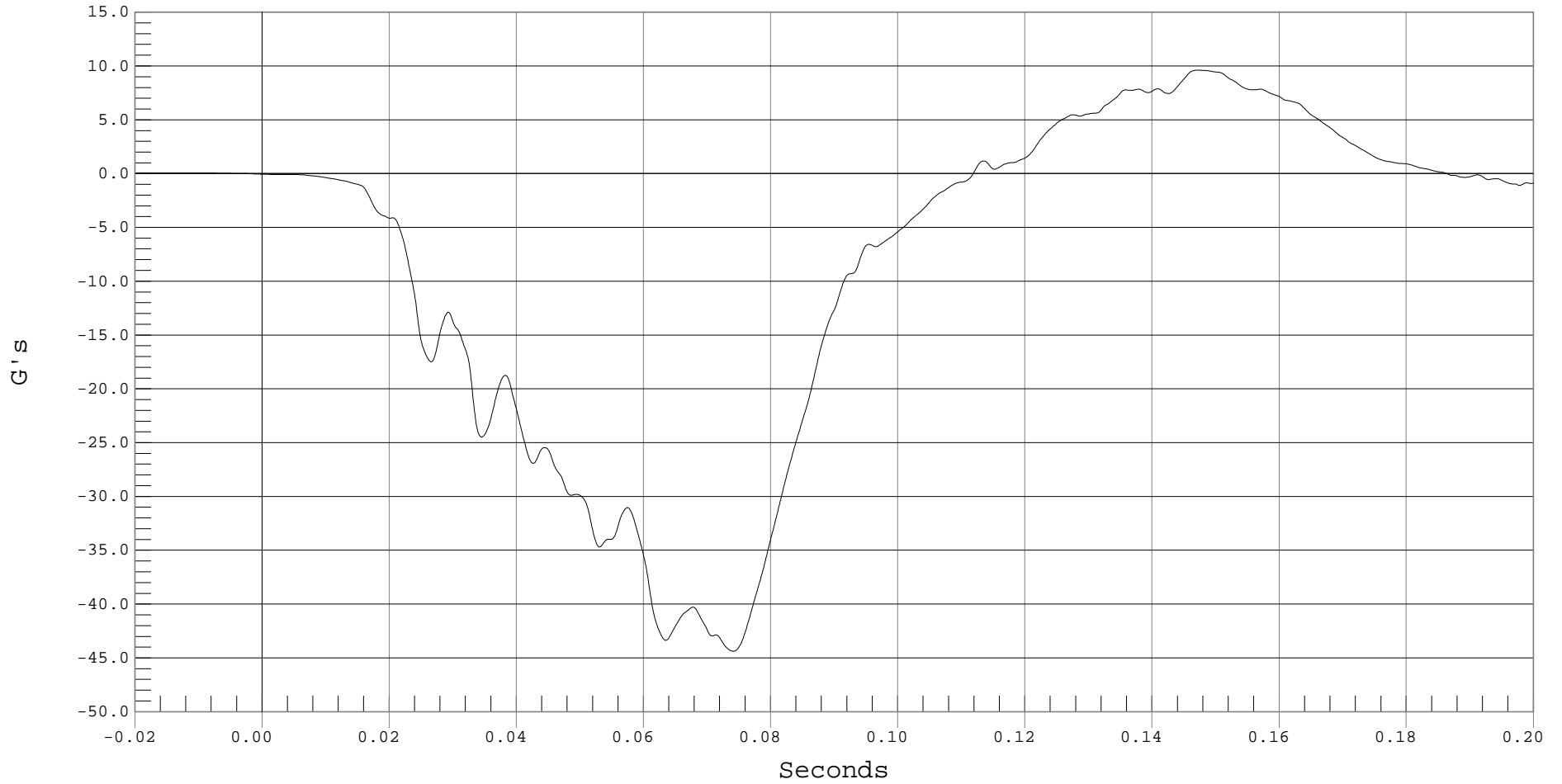
PASSENGER CHEST REDUNDANT X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 PASSENGER CHEST Xr, B01032AF.A50

Ymin = -44.38 G's @ 0.0741 Seconds, Ymax = 9.61 G's @ 0.1470 Seconds



B-80



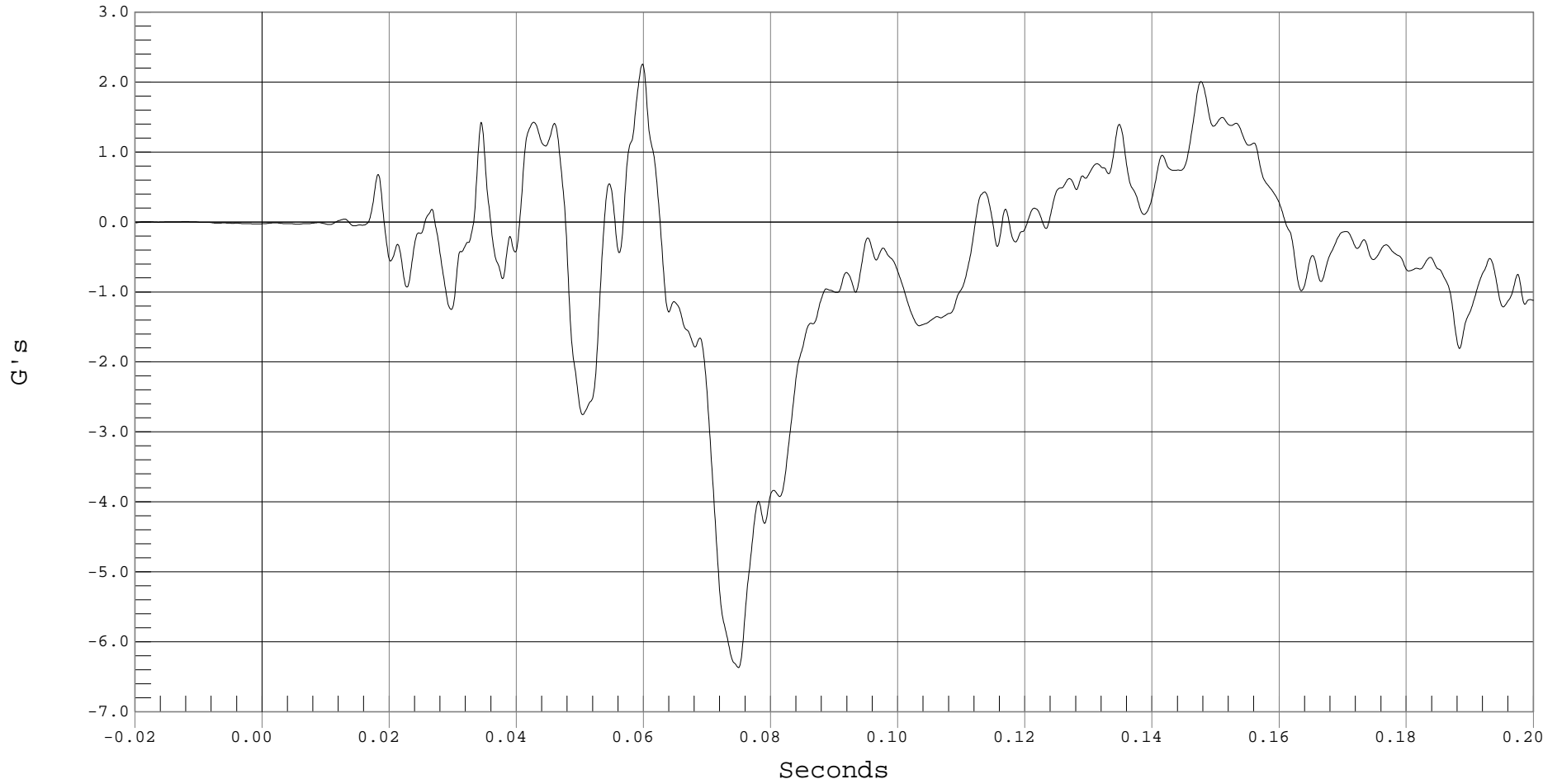
PASSENGER CHEST REDUNDANT Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 PASSENGER CHEST Yr, B01032AF.A51

Ymin = -6.37 G's @ 0.0749 Seconds, Ymax = 2.26 G's @ 0.0598 Seconds



B-81



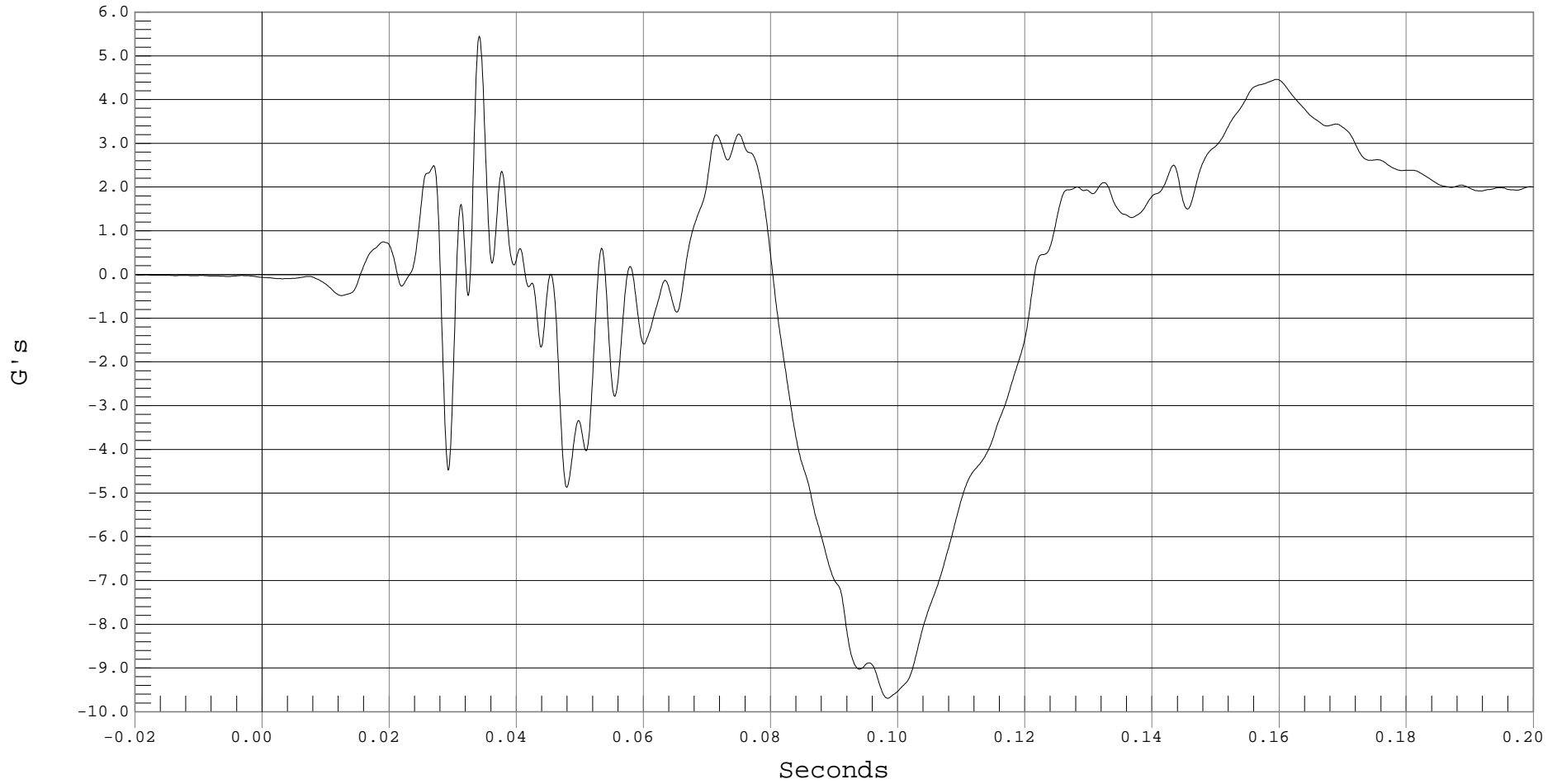
PASSENGER CHEST REDUNDANT Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 PASSENGER CHEST Zr, B01032AF.A52

Ymin = -9.69 G's @ 0.0983 Seconds, Ymax = 5.45 G's @ 0.0341 Seconds



B-82



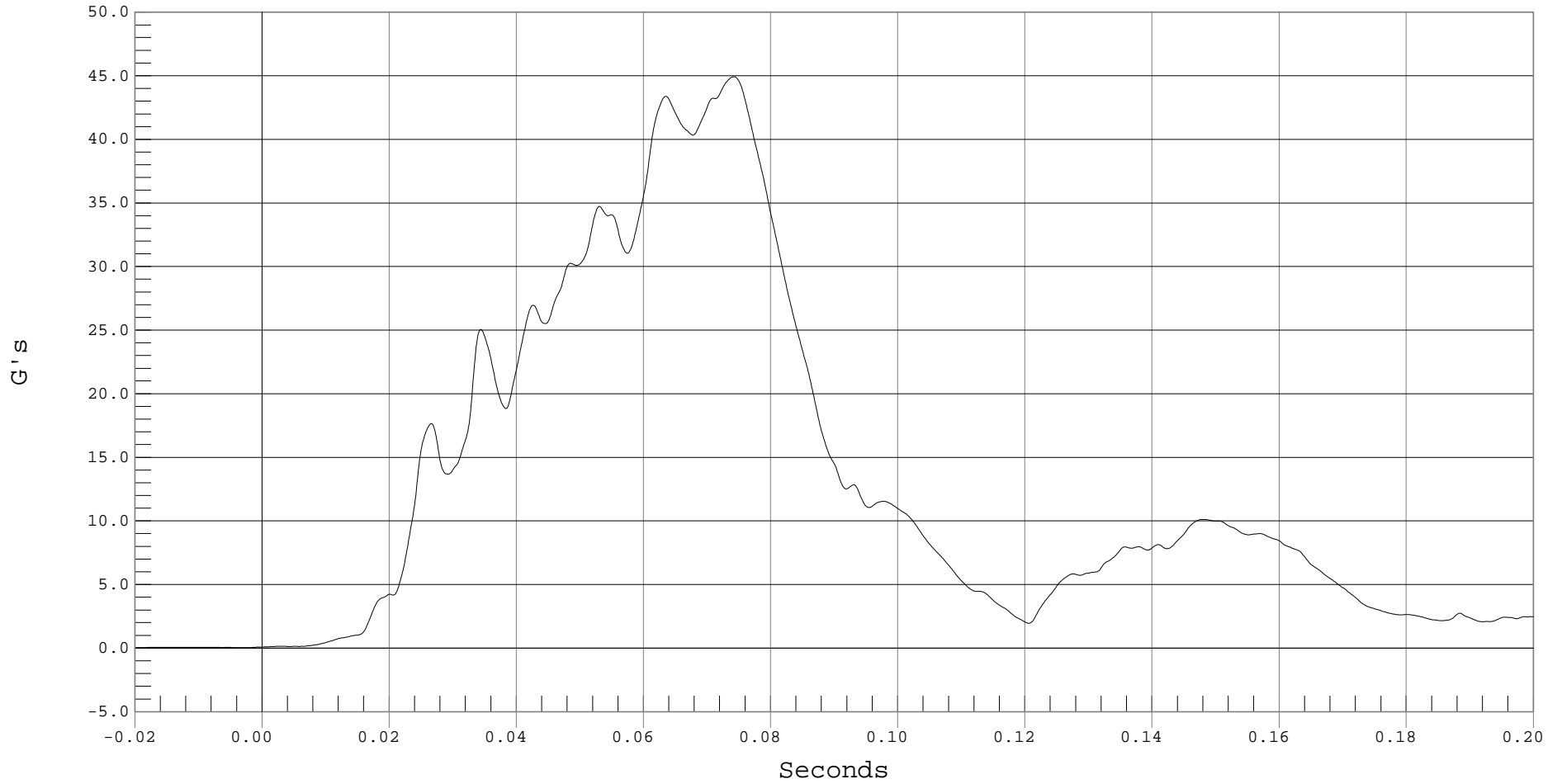
PASSENGER CHEST REDUNDANT RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 PASSENGER CHEST REDUNDANT RESULTANT ACCELERATION, B01032AV.A50

Ymin = .03 G's @ -0.0035 Seconds, Ymax = 44.92 G's @ 0.0741 Seconds





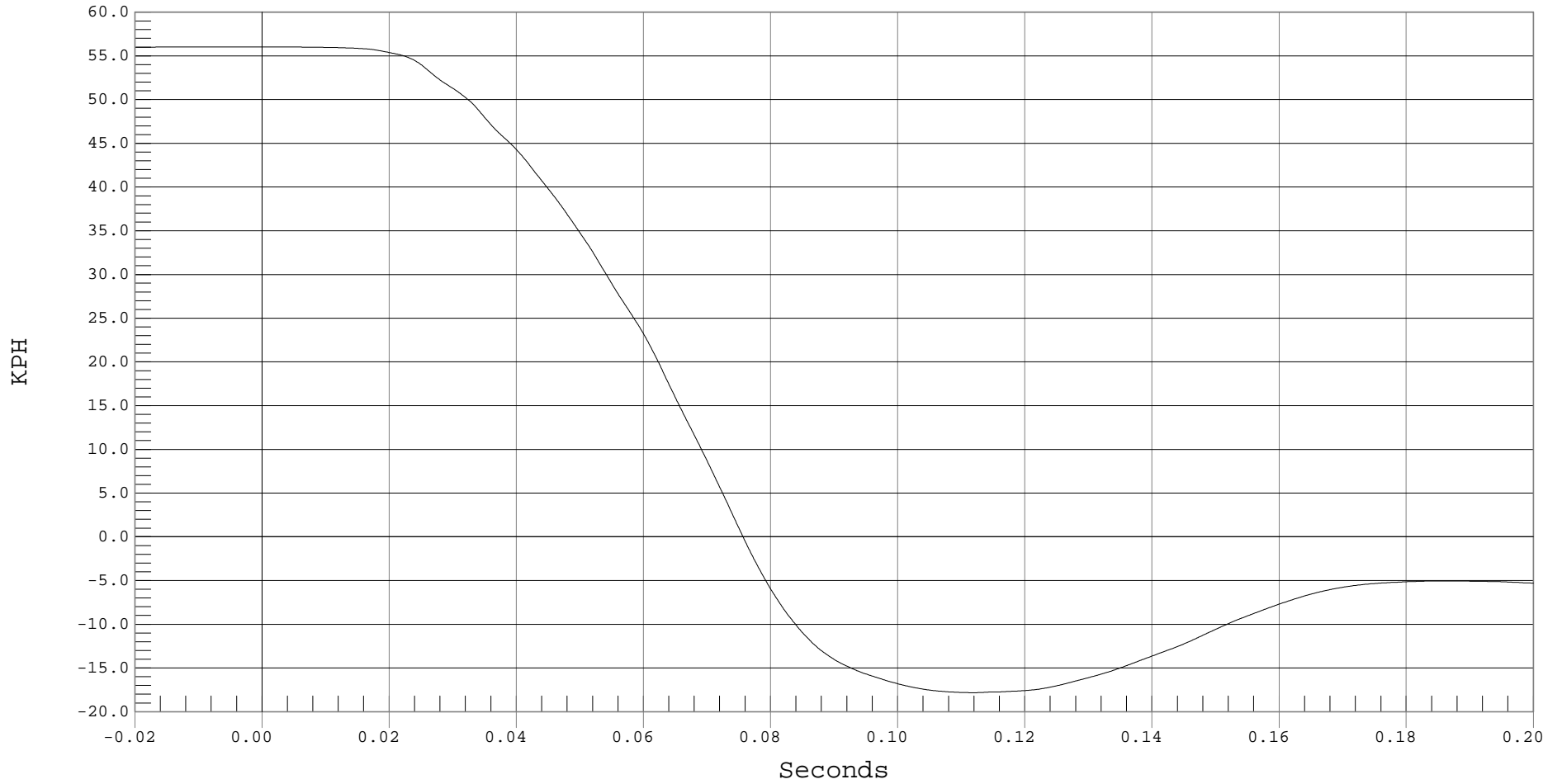
PASSENGER CHEST REDUNDANT X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 PASSENGER CHEST REDUNDANT X VELOCITY, B01032AI.V50

Ymin = -17.84 KPH @ 0.1118 Seconds, Ymax = 56.03 KPH @ -0.0026 Seconds



B-84



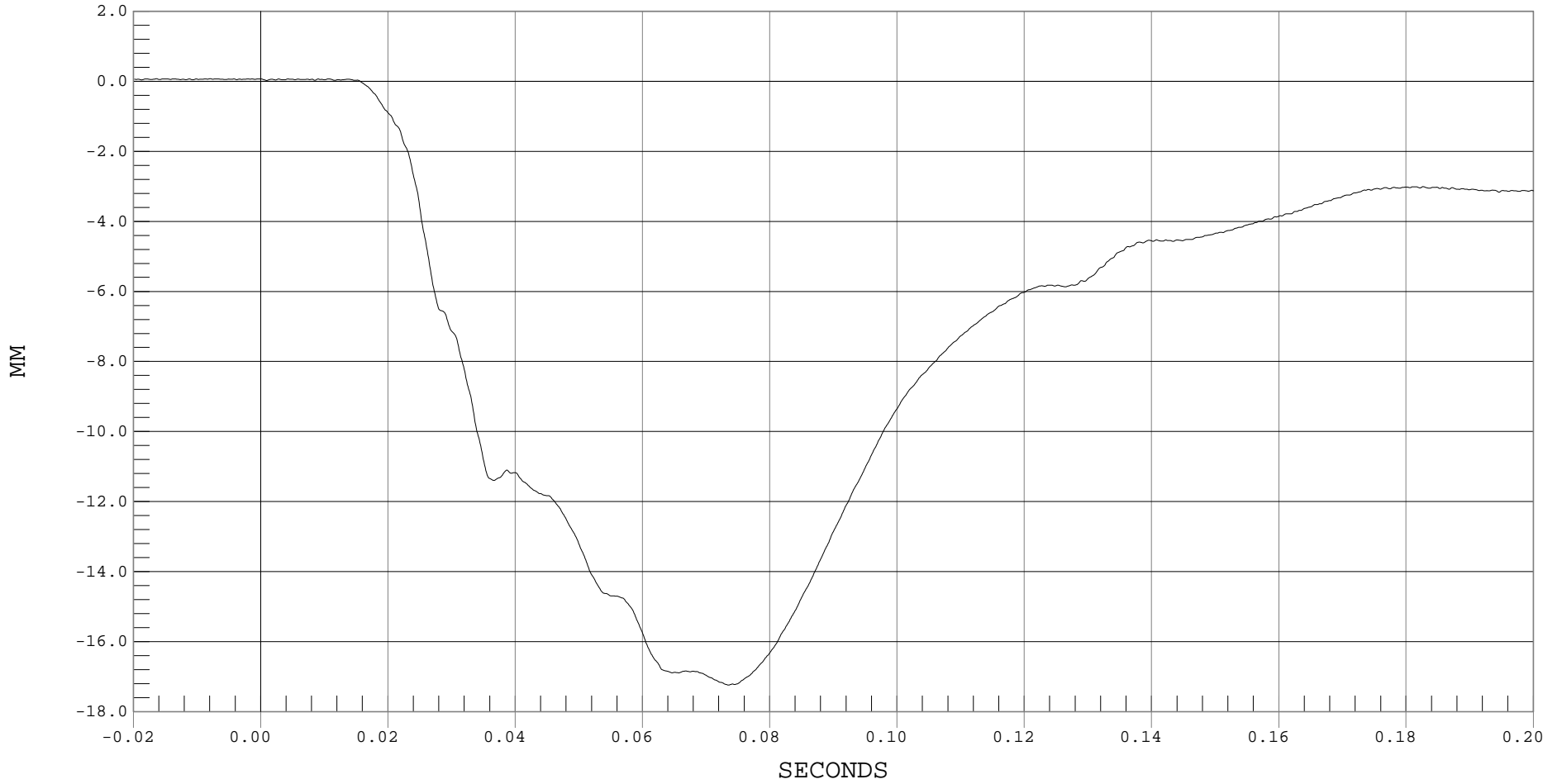
PASSENGER CHEST COMPRESSION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 DISPLACEMENT, B01032DF.D25

Ymin = -17.24 MM @ 0.0734 SECONDS, Ymax = .08 MM @ -0.0080 SECONDS



B-85



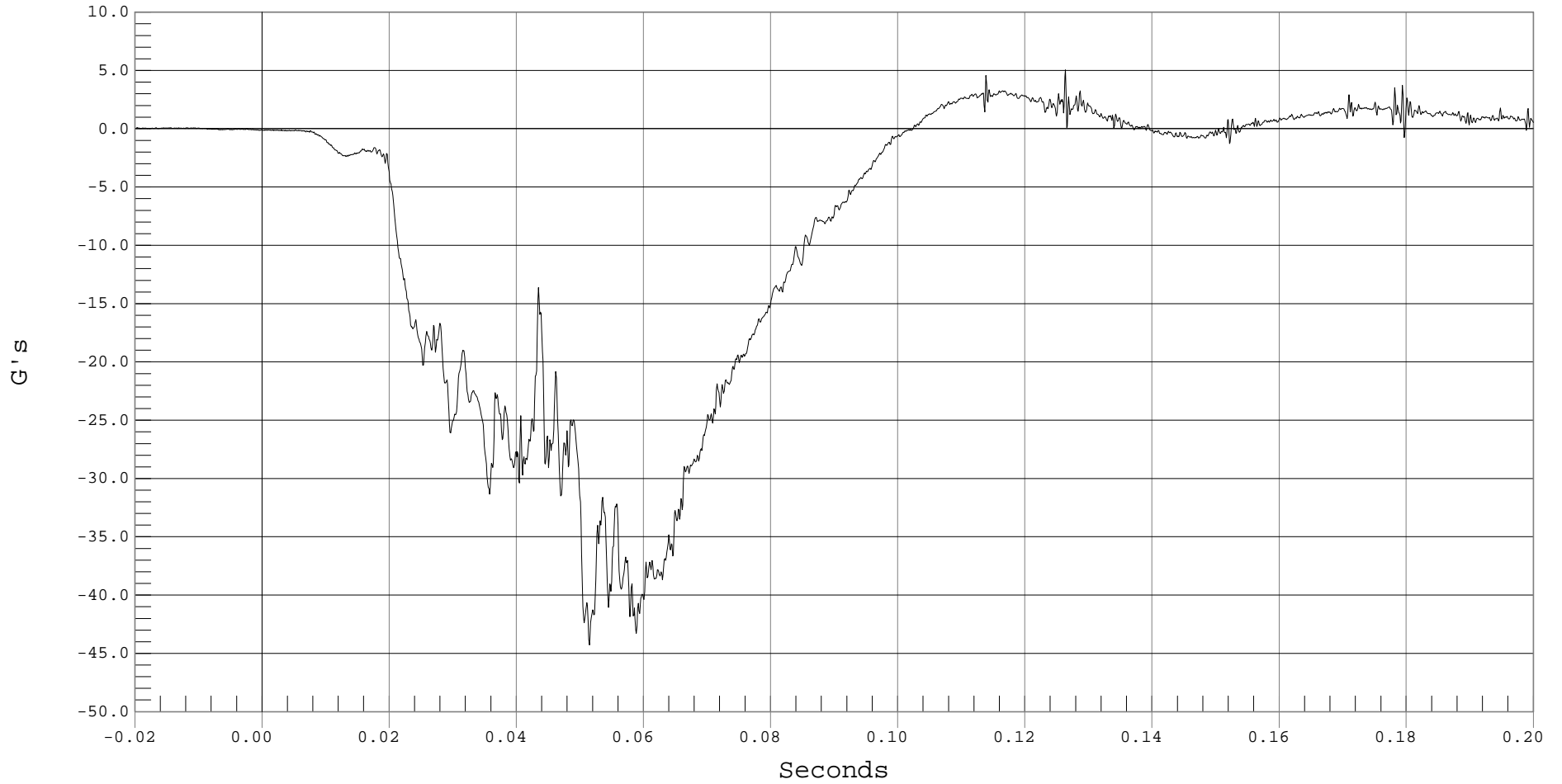
PASSENGER PELVIS X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 PASSENGER PELVIS X, B01032AT.A26

Ymin = -44.27 G's @ 0.0514 Seconds, Ymax = 5.06 G's @ 0.1263 Seconds





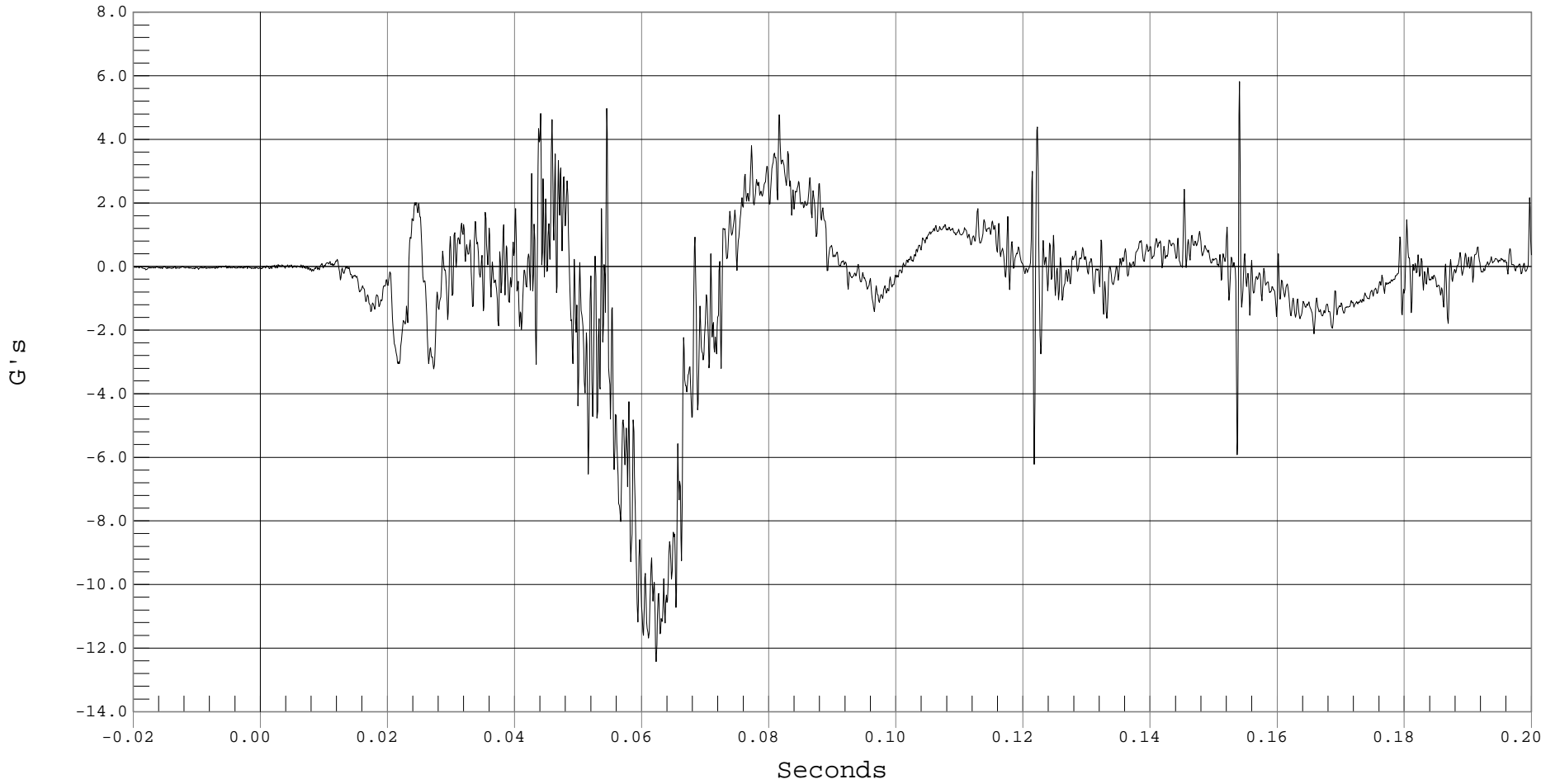
PASSENGER PELVIS Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 PASSENGER PELVIS Y, B01032AT.A27

Ymin = -12.43 G's @ 0.0622 Seconds, Ymax = 5.82 G's @ 0.1540 Seconds



B-87



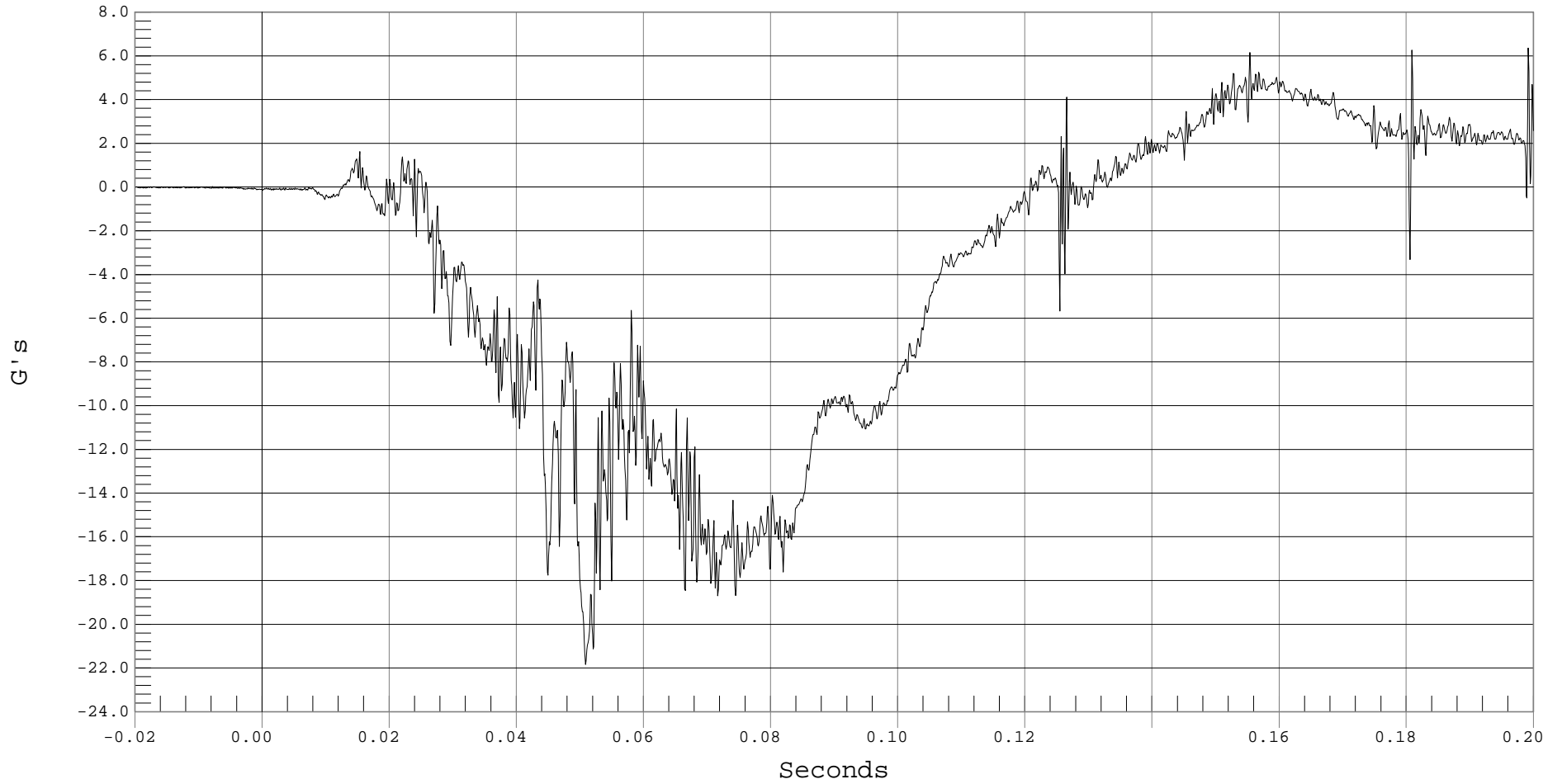
PASSENGER PELVIS Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 PASSENGER PELVIS Z, B01032AT.A28

Ymin = -21.84 G's @ 0.0508 Seconds, Ymax = 6.35 G's @ 0.1991 Seconds



B-88



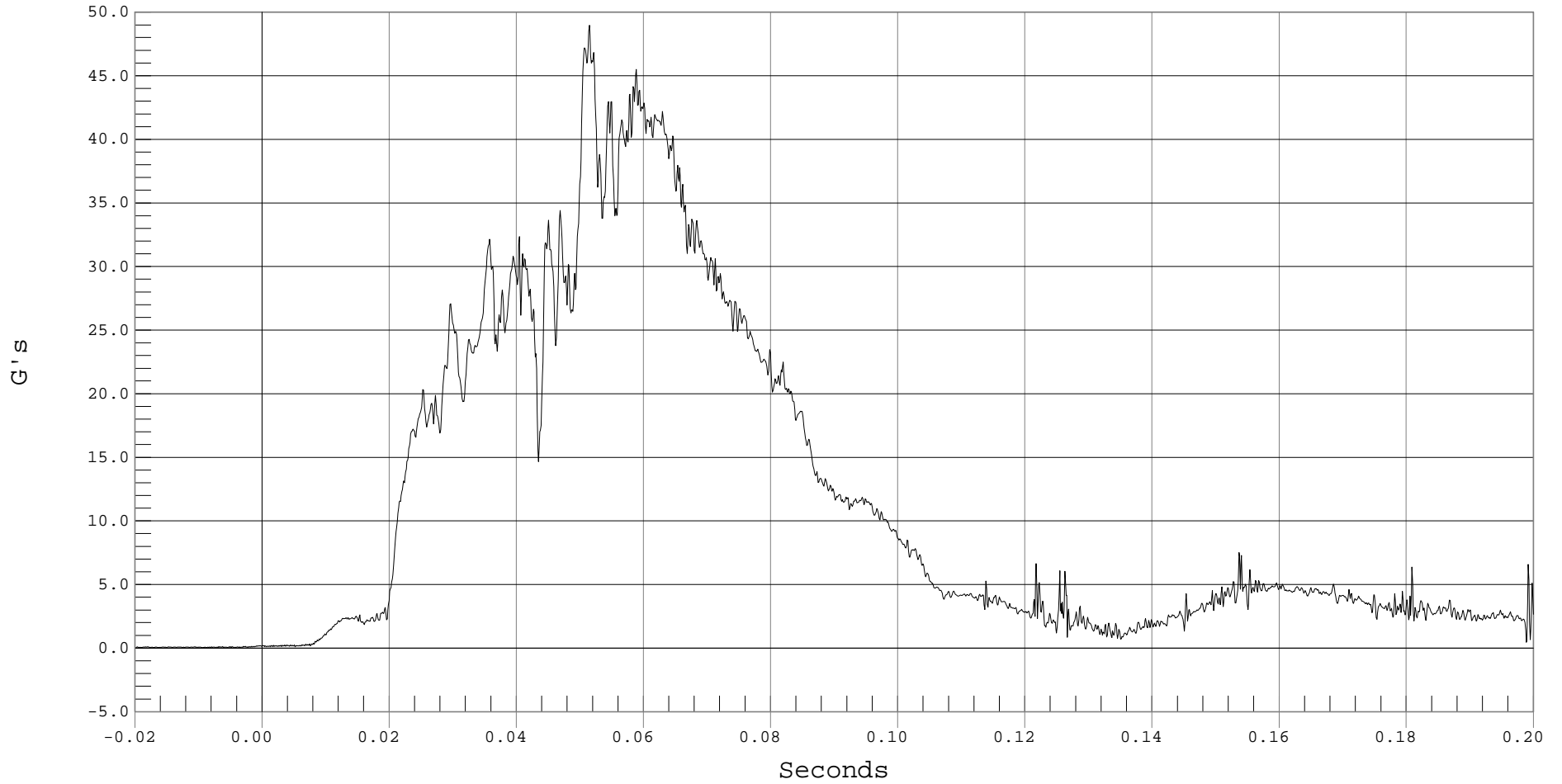
PASSENGER PELVIS RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 PASSENGER PELVIS RESULTANT ACCELERATION, B01032AV.A26

Ymin = .02 G's @ -0.0070 Seconds, Ymax = 48.96 G's @ 0.0514 Seconds





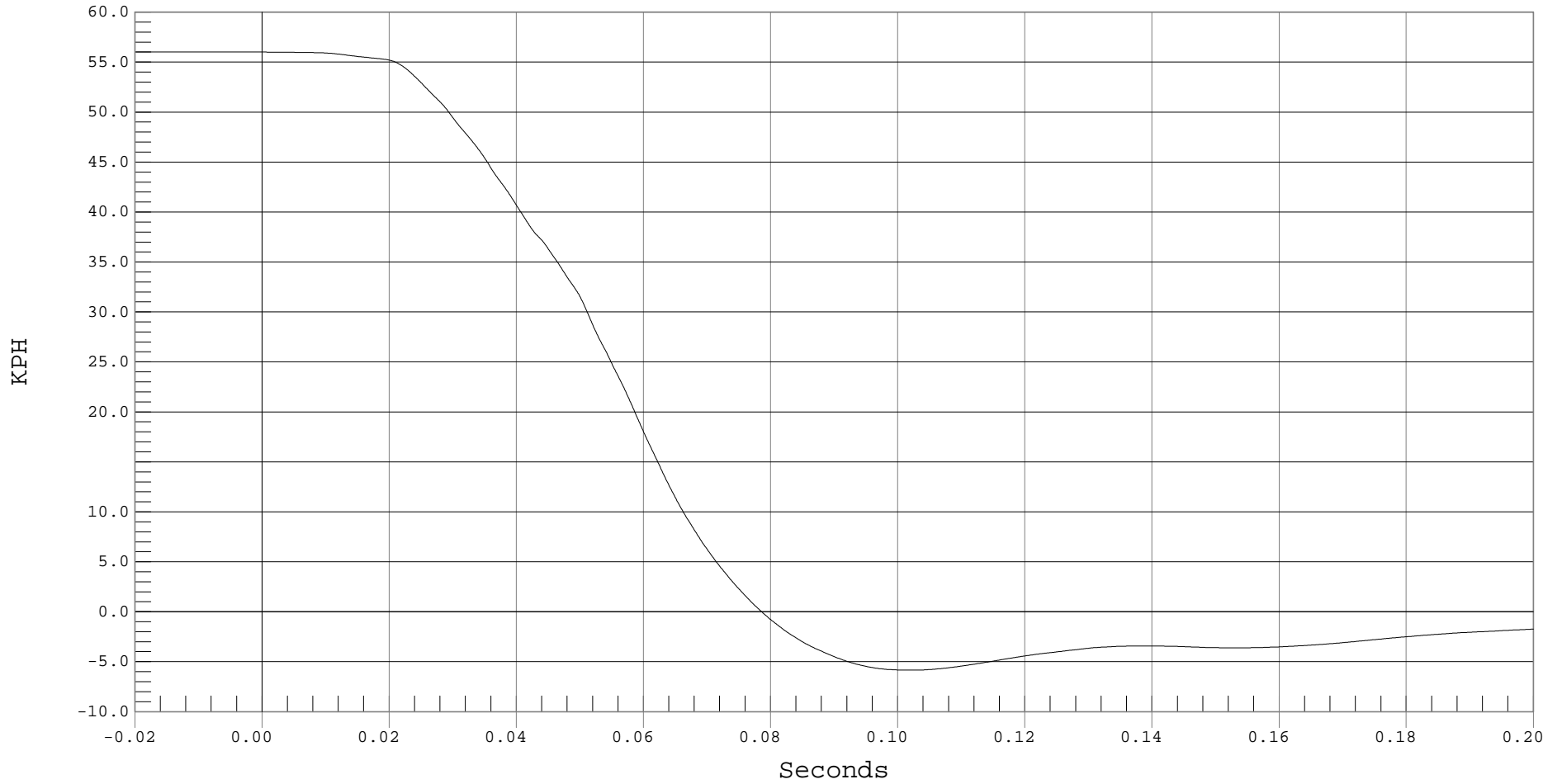
PASSENGER PELVIS X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 PASSENGER PELVIS X VELOCITY, B01032AI.V26

Ymin = -5.85 KPH @ 0.1021 Seconds, Ymax = 56.02 KPH @ -0.0087 Seconds



B-90



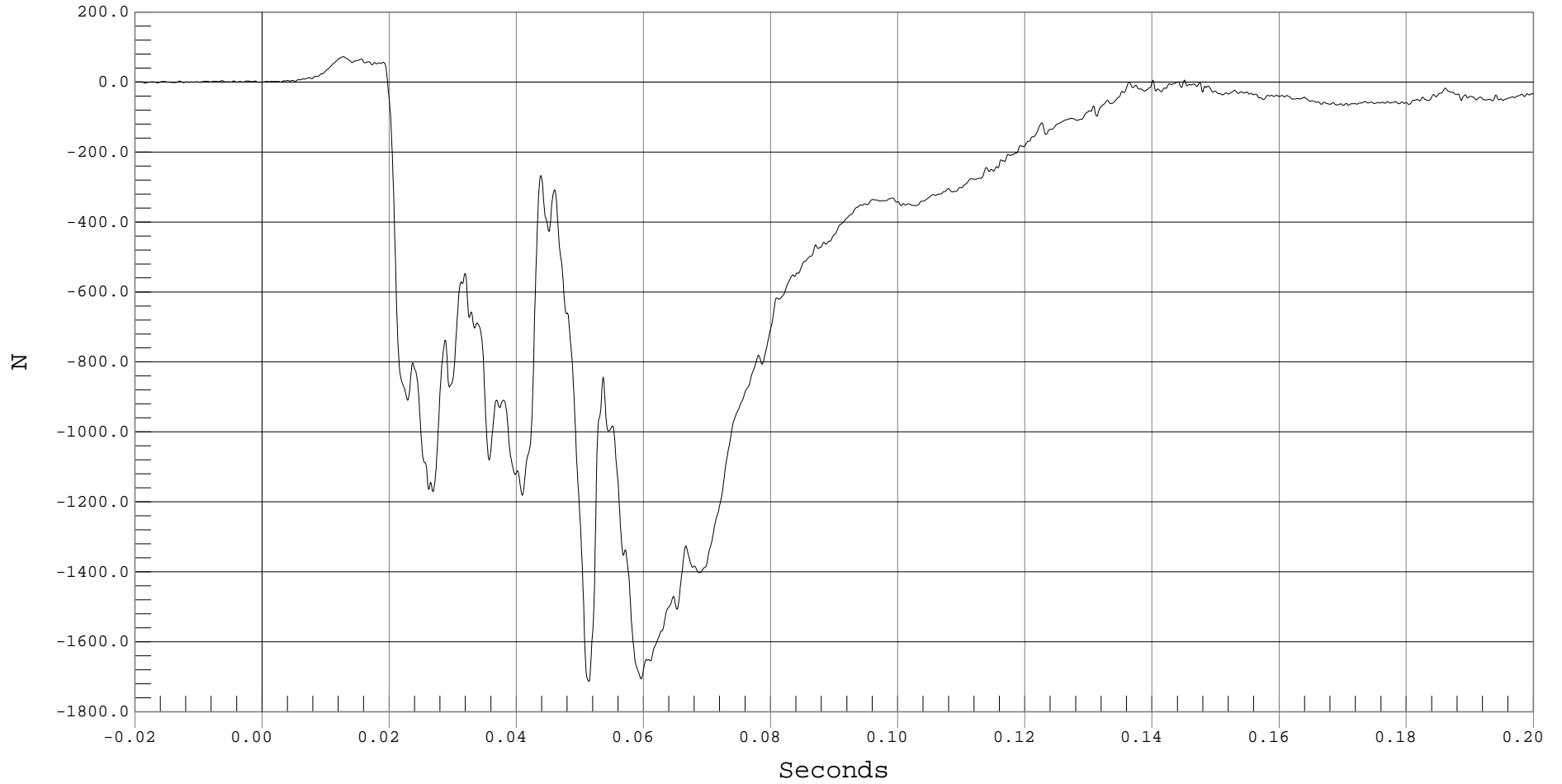
PASSENGER LEFT FEMUR FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 PASSENGER LEFT FEMUR, B01032FF.F30

Ymin = -1713.13 N @ 0.0513 Seconds, Ymax = 72.56 N @ 0.0127 Seconds



B-91



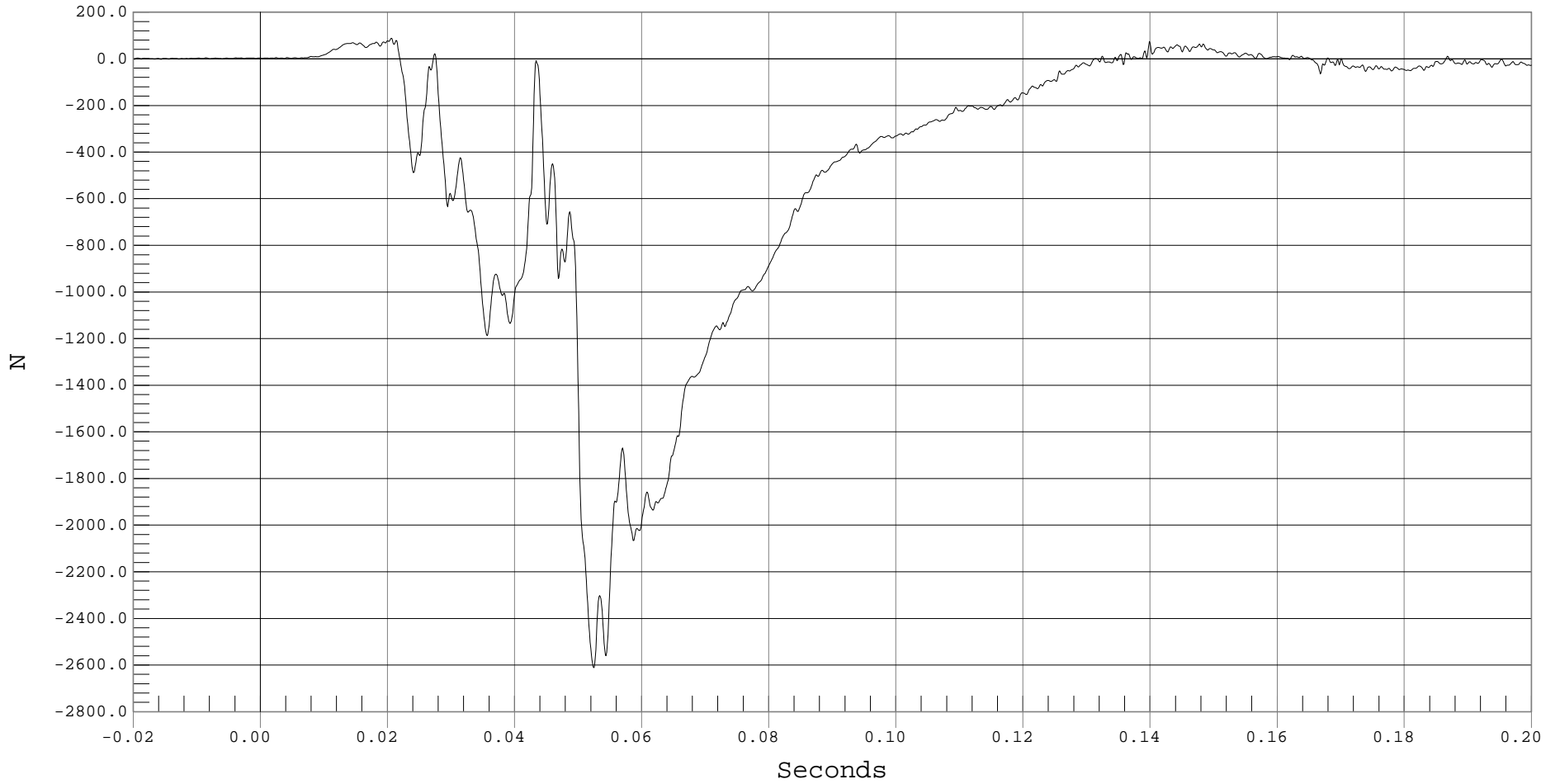
PASSENGER RIGHT FEMUR FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 PASSENGER RIGHT FEMUR, B01032FF.F29

Ymin = -2611.06 N @ 0.0524 Seconds, Ymax = 88.54 N @ 0.0205 Seconds



B-92



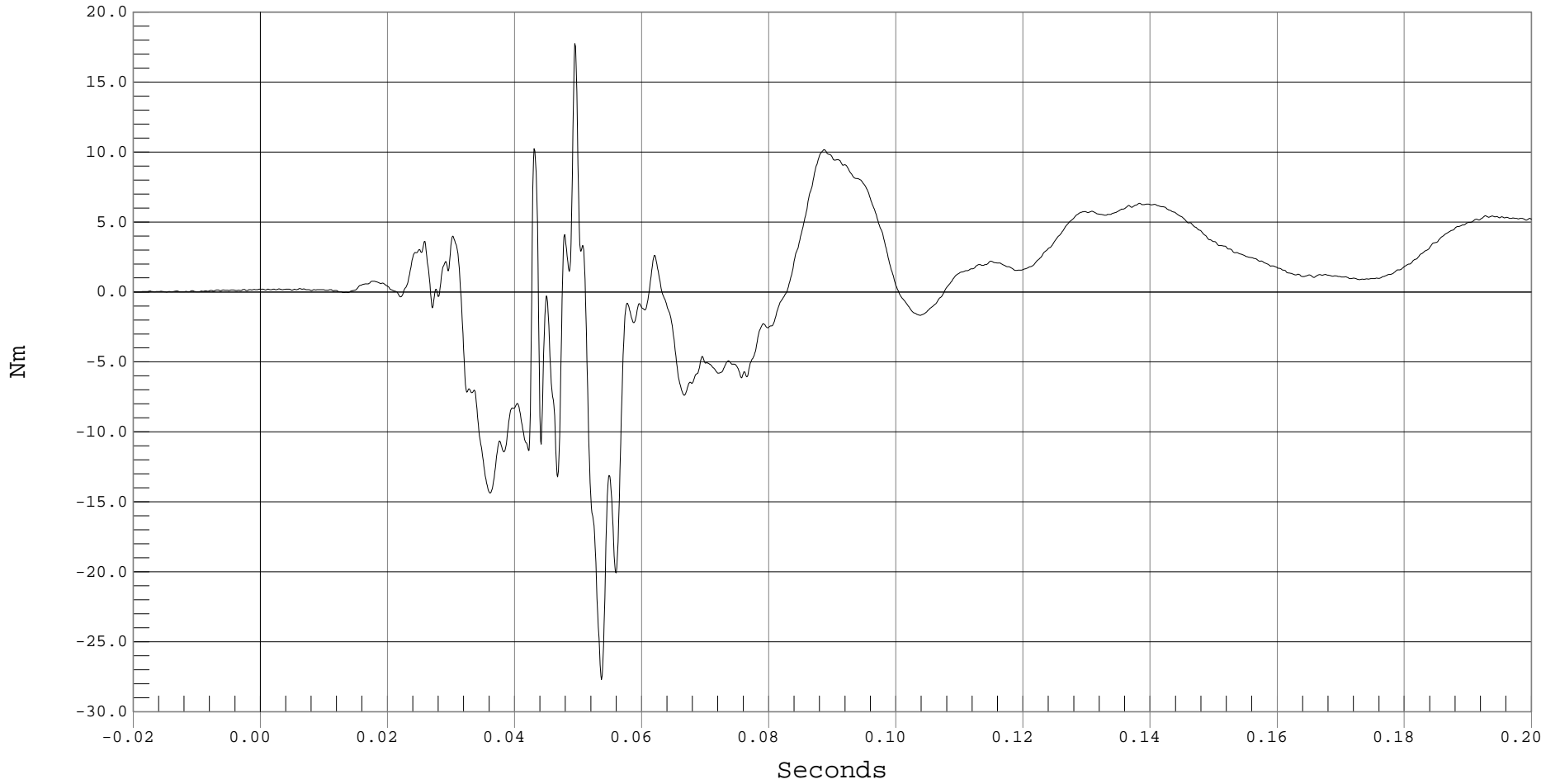
PASSENGER LEFT UPPER TIBIA MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 PASSENGER LEFT UPPER TIBIA MX, B01032MF.M87

Ymin = -27.71 Nm @ 0.0536 Seconds, Ymax = 17.76 Nm @ 0.0494 Seconds



B-93



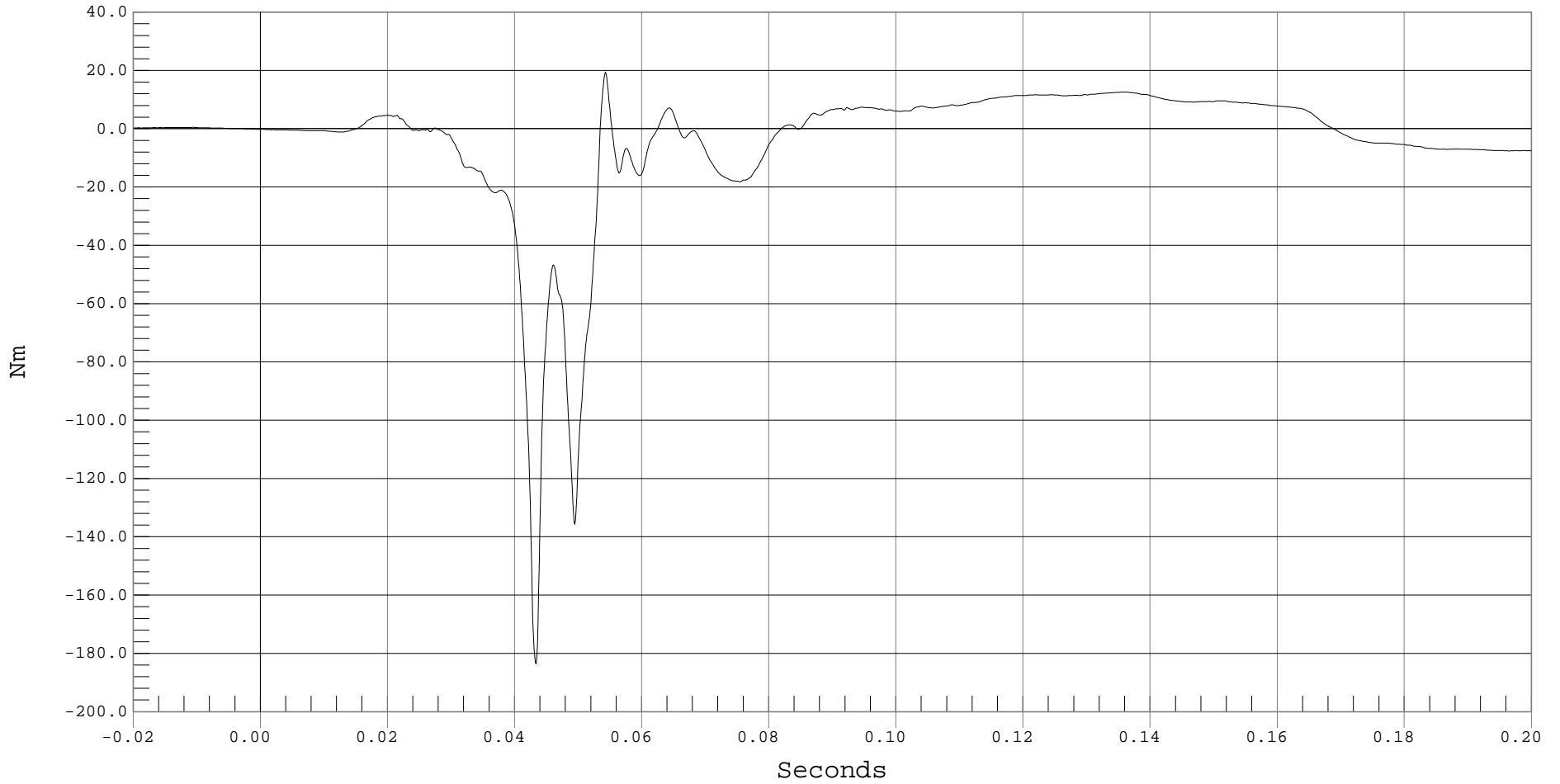
PASSENGER LEFT UPPER TIBIA MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 PASSENGER LEFT UPPER TIBIA MY, B01032MF.M88

Ymin = -183.65 Nm @ 0.0433 Seconds, Ymax = 19.42 Nm @ 0.0542 Seconds



B-94



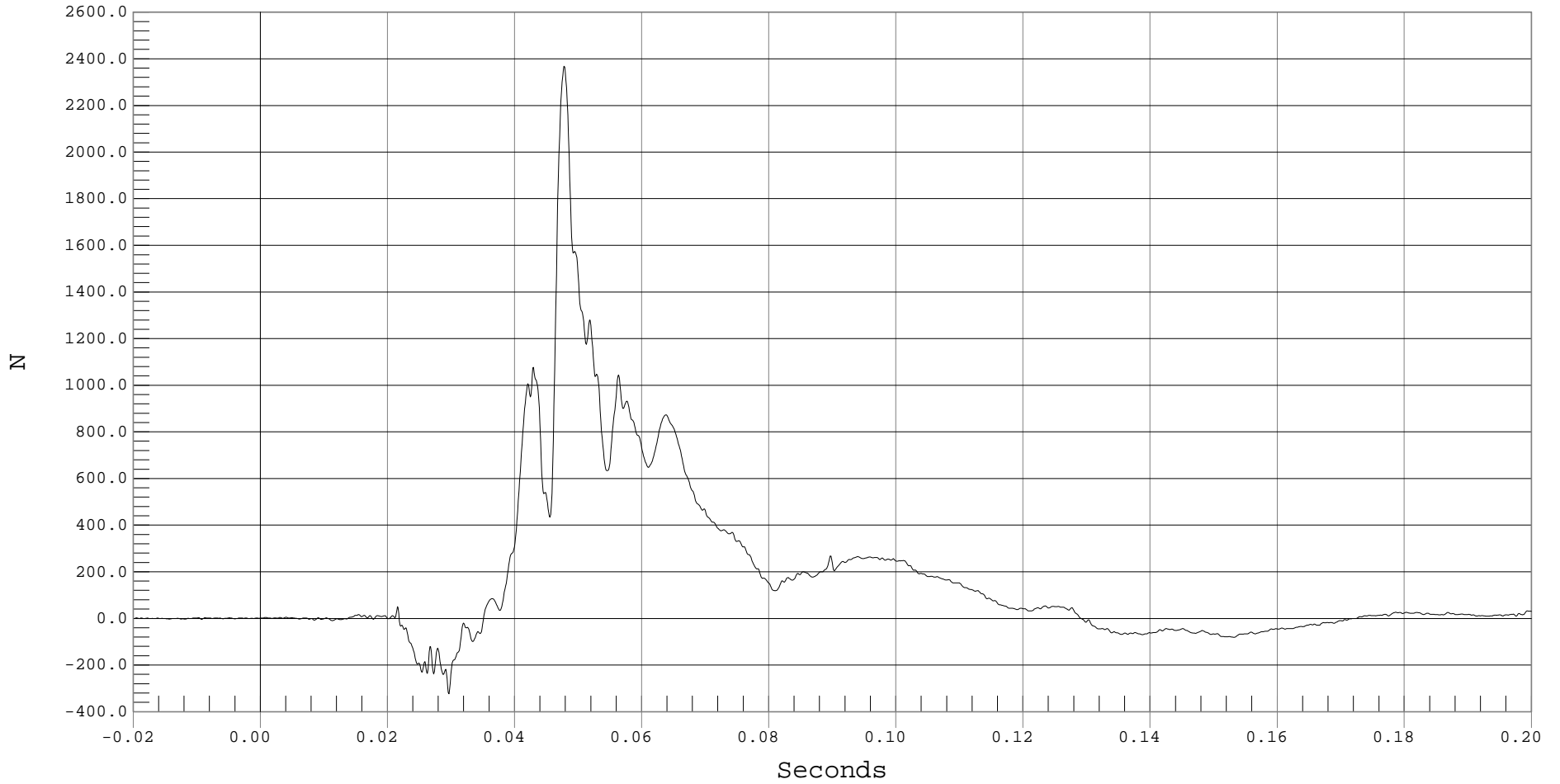
PASSENGER LEFT UPPER TIBIA FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 PASSENGER LEFT UPPER TIBIA FZ, B01032FF.F89

Ymin = -322.93 N @ 0.0296 Seconds, Ymax = 2368.24 N @ 0.0477 Seconds



B-95



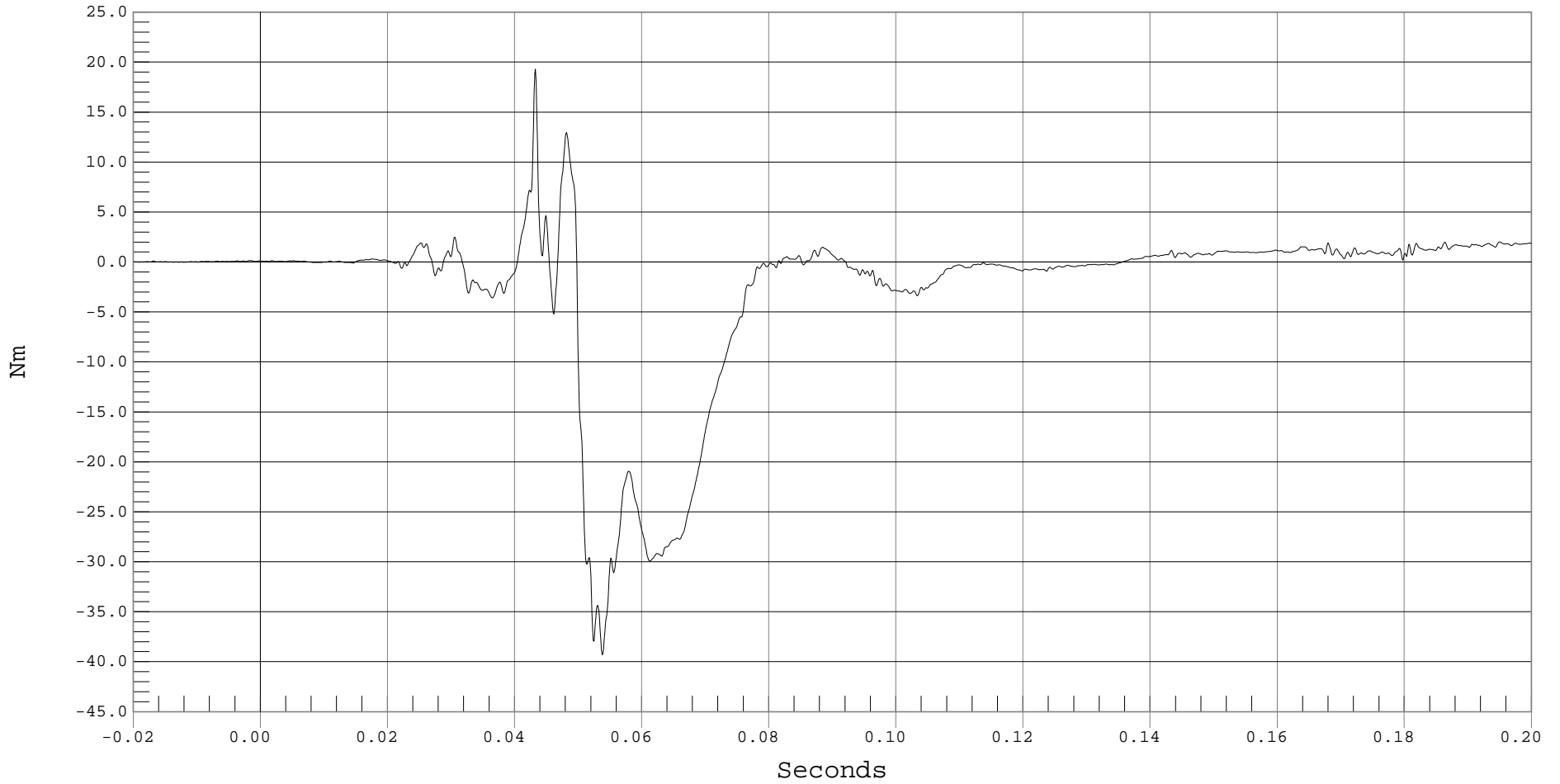
PASSENGER LEFT LOWER TIBIA MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 PASSENGER LEFT LOWER TIBIA MX, B01032MF.M90

Ymin = -39.31 Nm @ 0.0537 Seconds, Ymax = 19.3 Nm @ 0.0432 Seconds





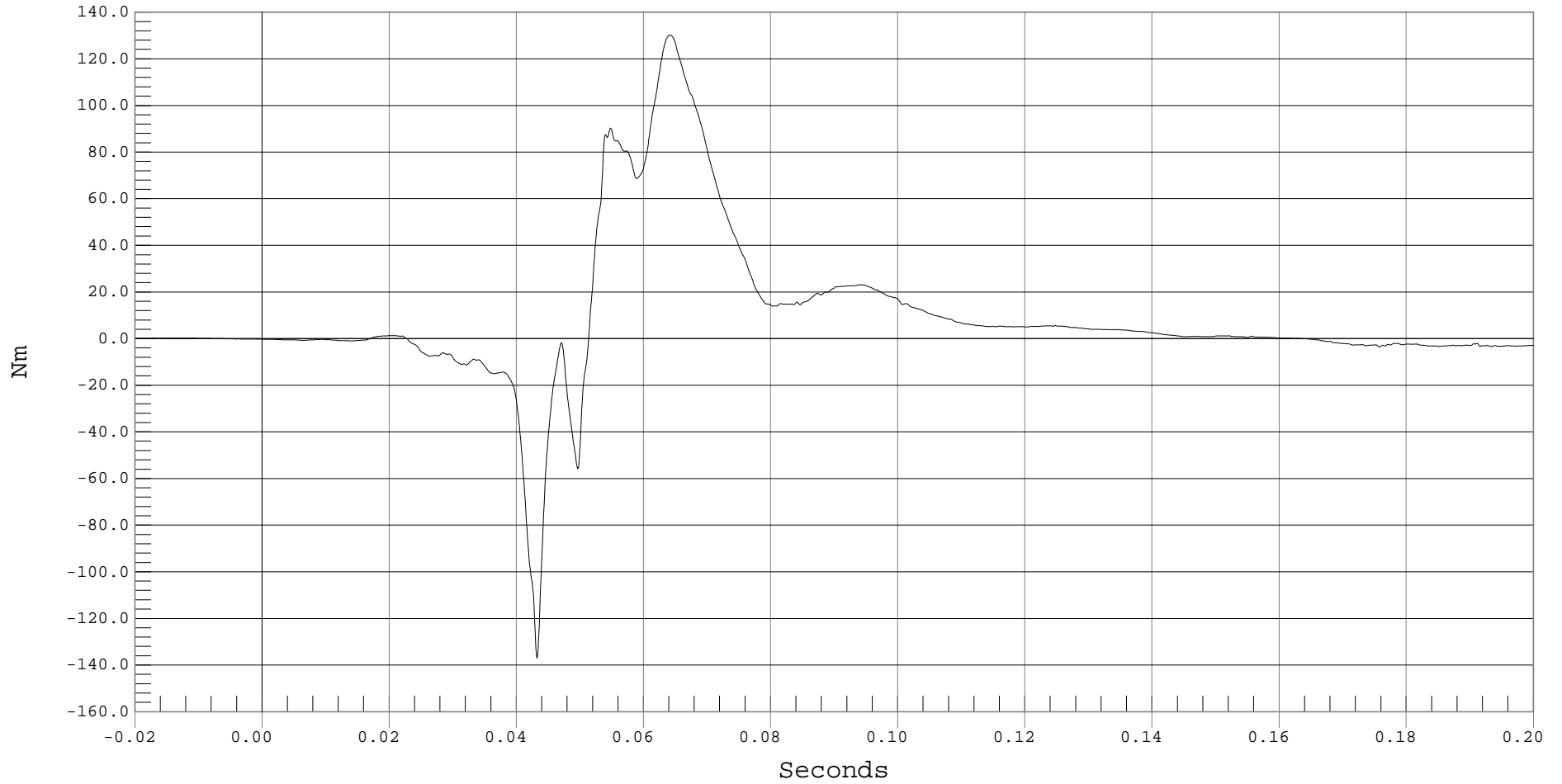
PASSENGER LEFT LOWER TIBIA MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 PASSENGER LEFT LOWER TIBIA MY, B01032MF.M91

Ymin = -137.01 Nm @ 0.0432 Seconds, Ymax = 130.2 Nm @ 0.0641 Seconds



B-97



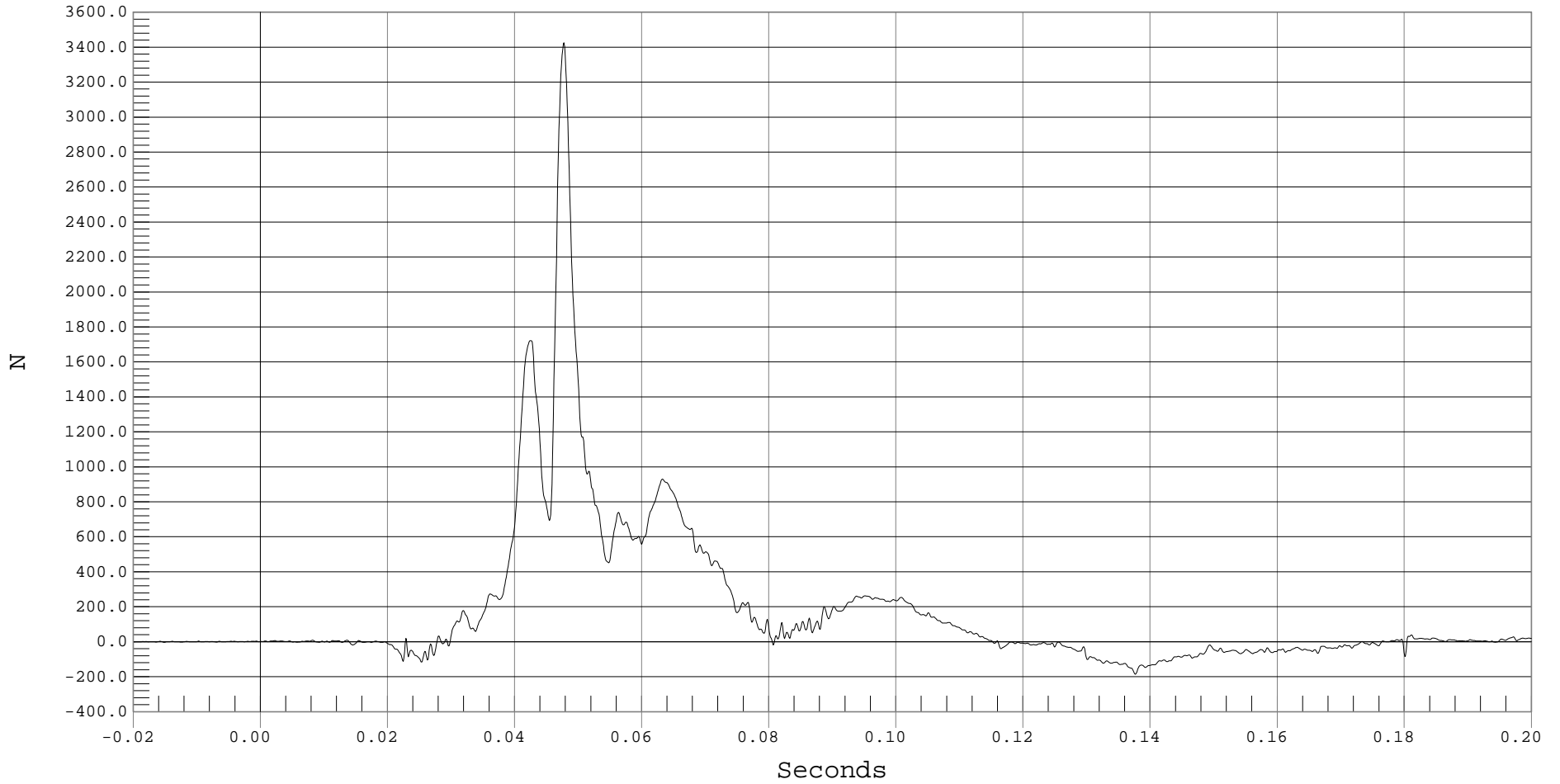
PASSENGER LEFT LOWER TIBIA FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 PASSENGER LEFT LOWER TIBIA FZ, B01032FF.F92

Ymin = -186.24 N @ 0.1376 Seconds, Ymax = 3425.7 N @ 0.0477 Seconds



B-98



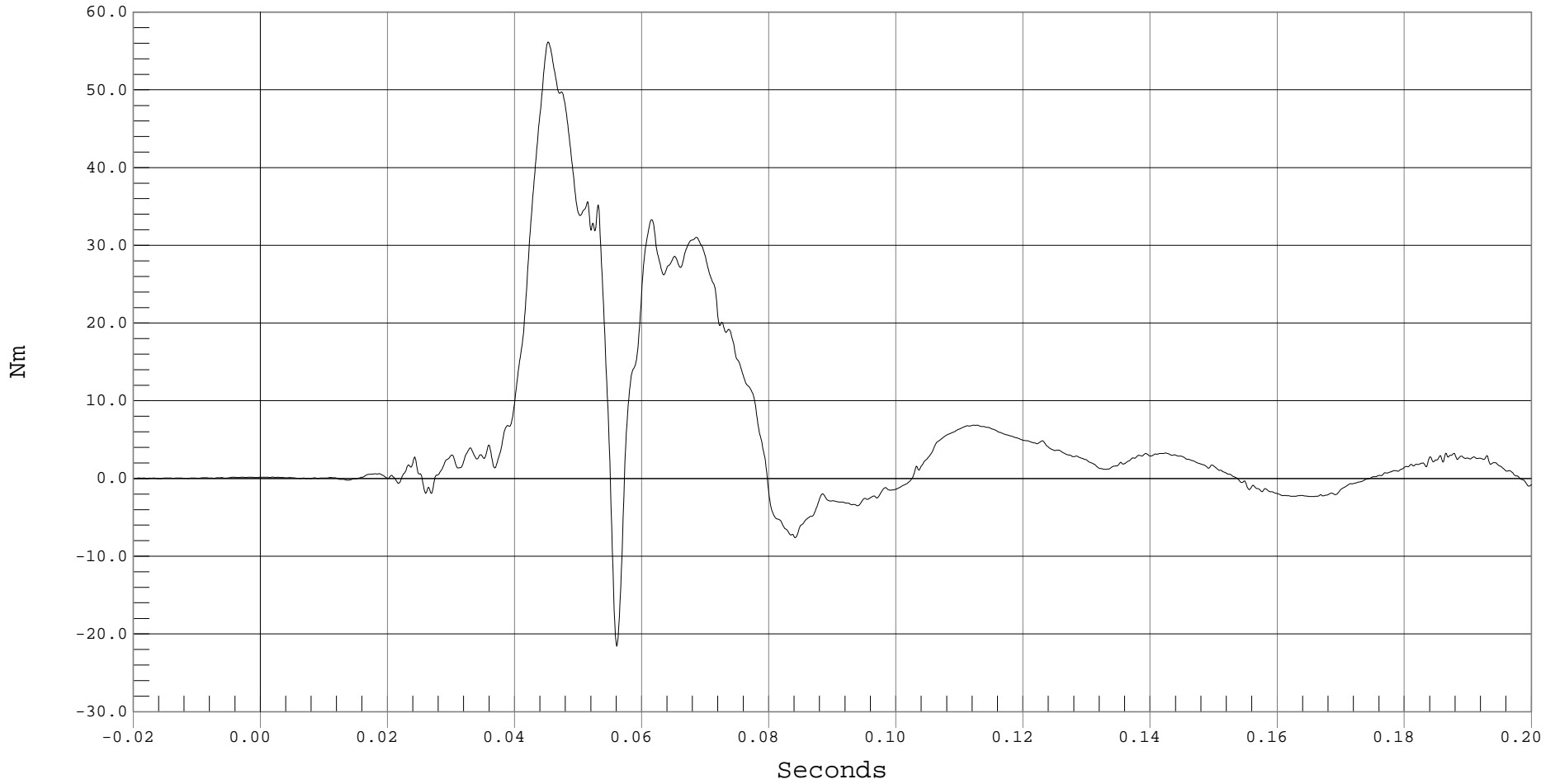
PASSENGER RIGHT UPPER TIBIA MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 PASSENGER RIGHT UPPER TIBIA MX, B01032MF.M81

Ymin = -21.57 Nm @ 0.0560 Seconds, Ymax = 56.16 Nm @ 0.0452 Seconds





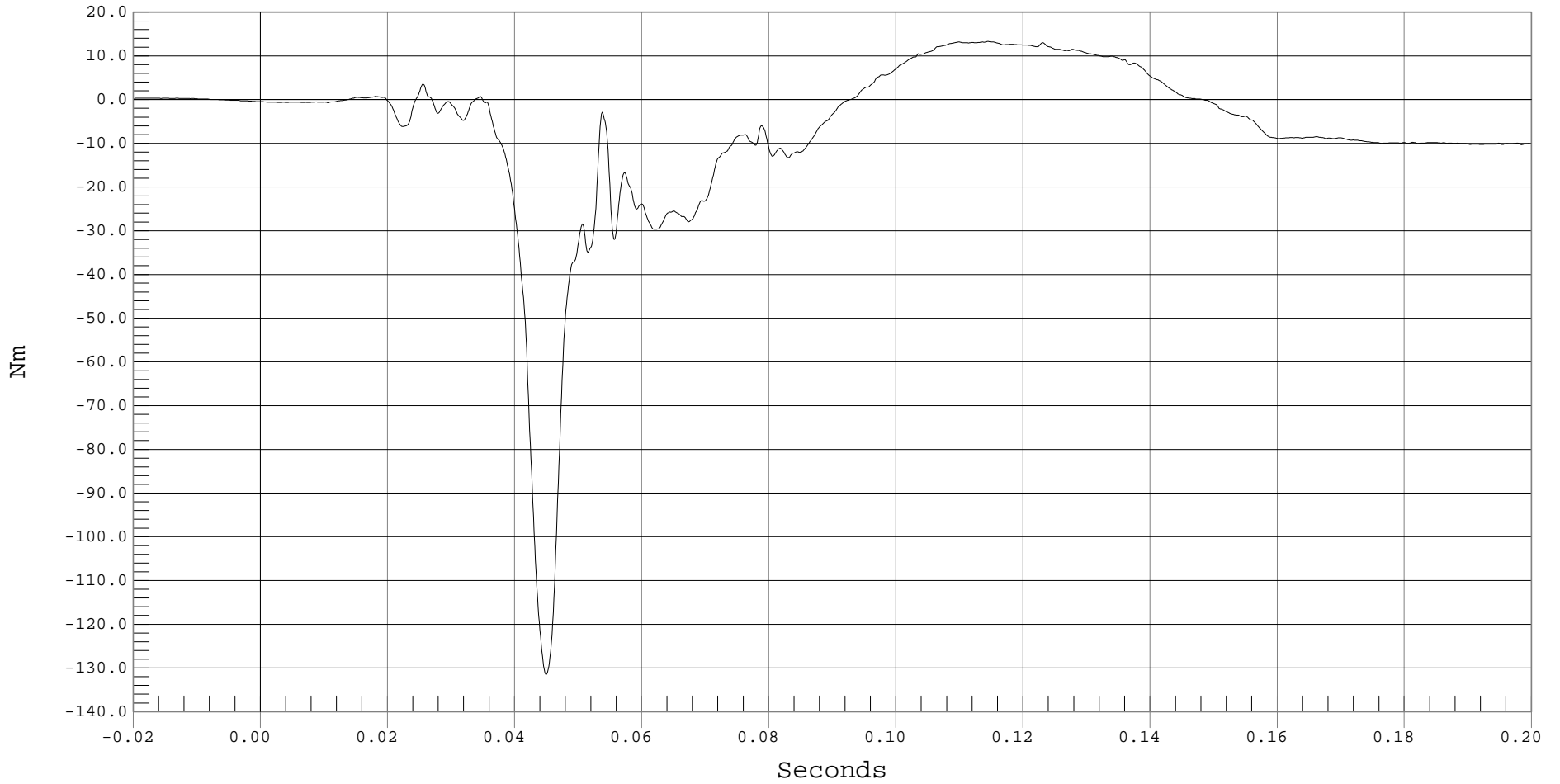
PASSENGER RIGHT UPPER TIBIA MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 PASSENGER RIGHT UPPER TIBIA MY, B01032MF.M82

Ymin = -131.52 Nm @ 0.0449 Seconds, Ymax = 13.29 Nm @ 0.1144 Seconds



B-100



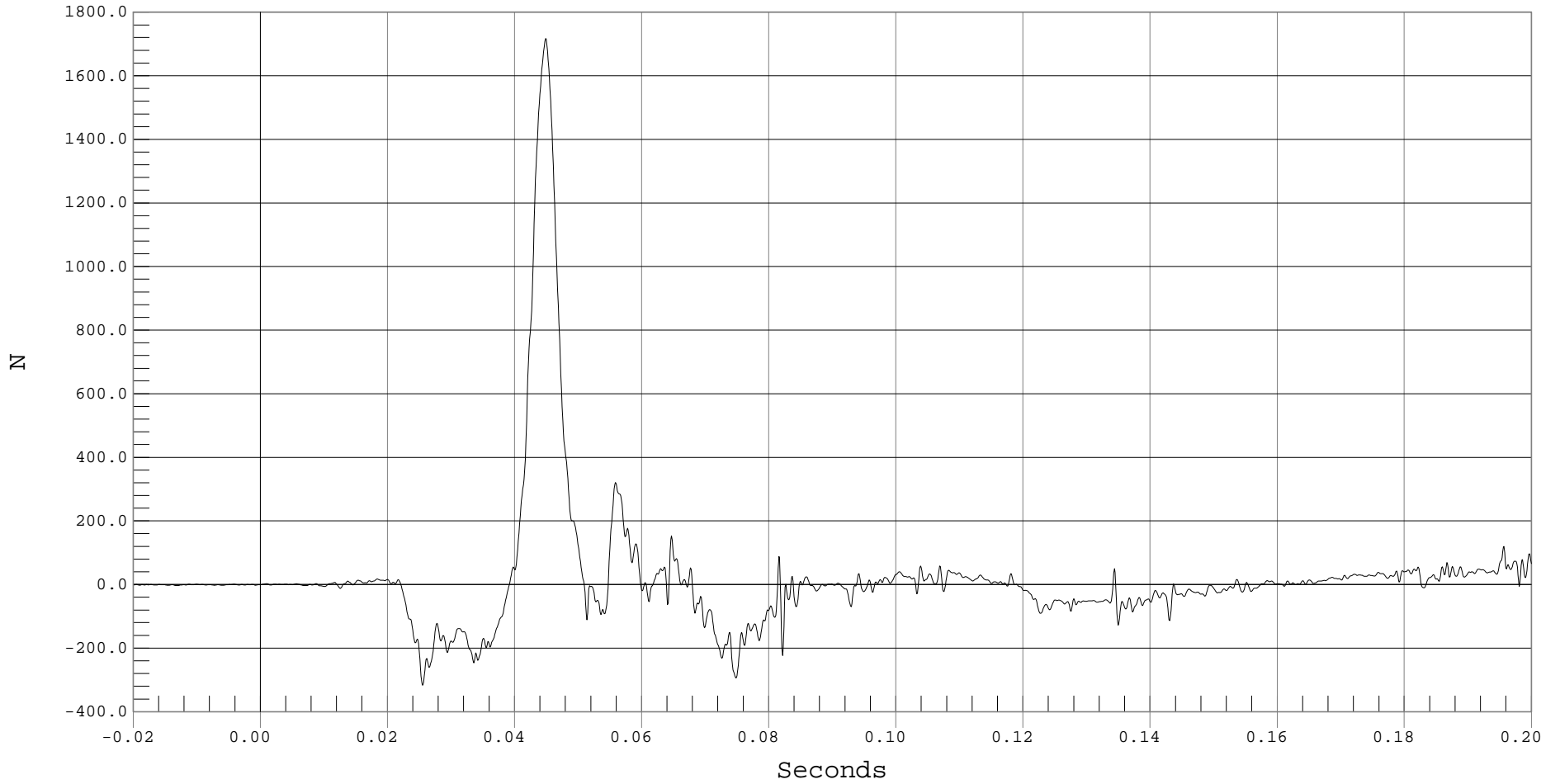
PASSENGER RIGHT UPPER TIBIA FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 PASSENGER RIGHT UPPER TIBIA FZ, B01032FF.F83

Ymin = -316.46 N @ 0.0255 Seconds, Ymax = 1717.28 N @ 0.0448 Seconds



B-101



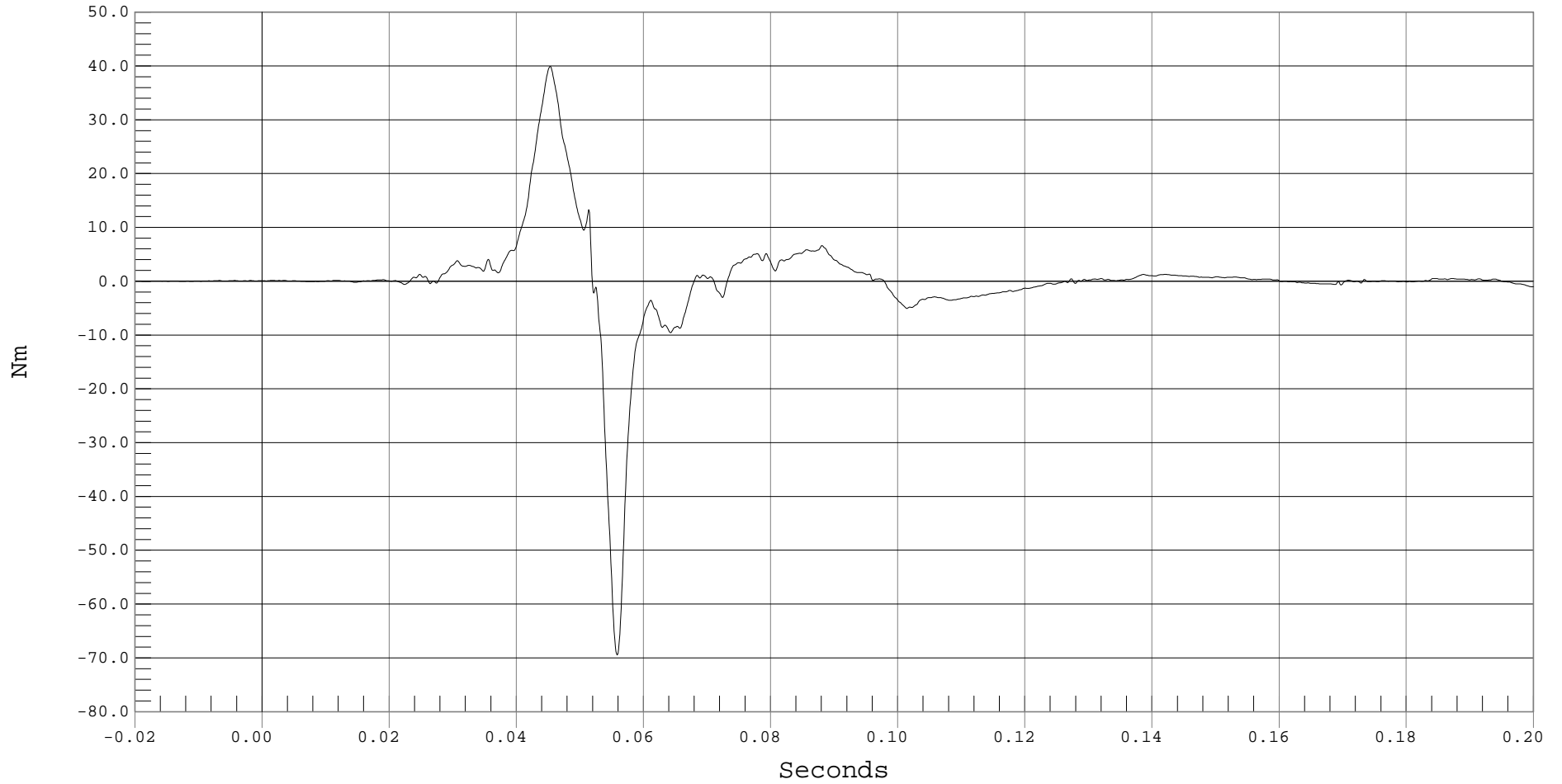
PASSENGER RIGHT LOWER TIBIA MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 PASSENGER RIGHT LOWER TIBIA MX, B01032MF.M84

Ymin = -69.46 Nm @ 0.0558 Seconds, Ymax = 39.9 Nm @ 0.0453 Seconds





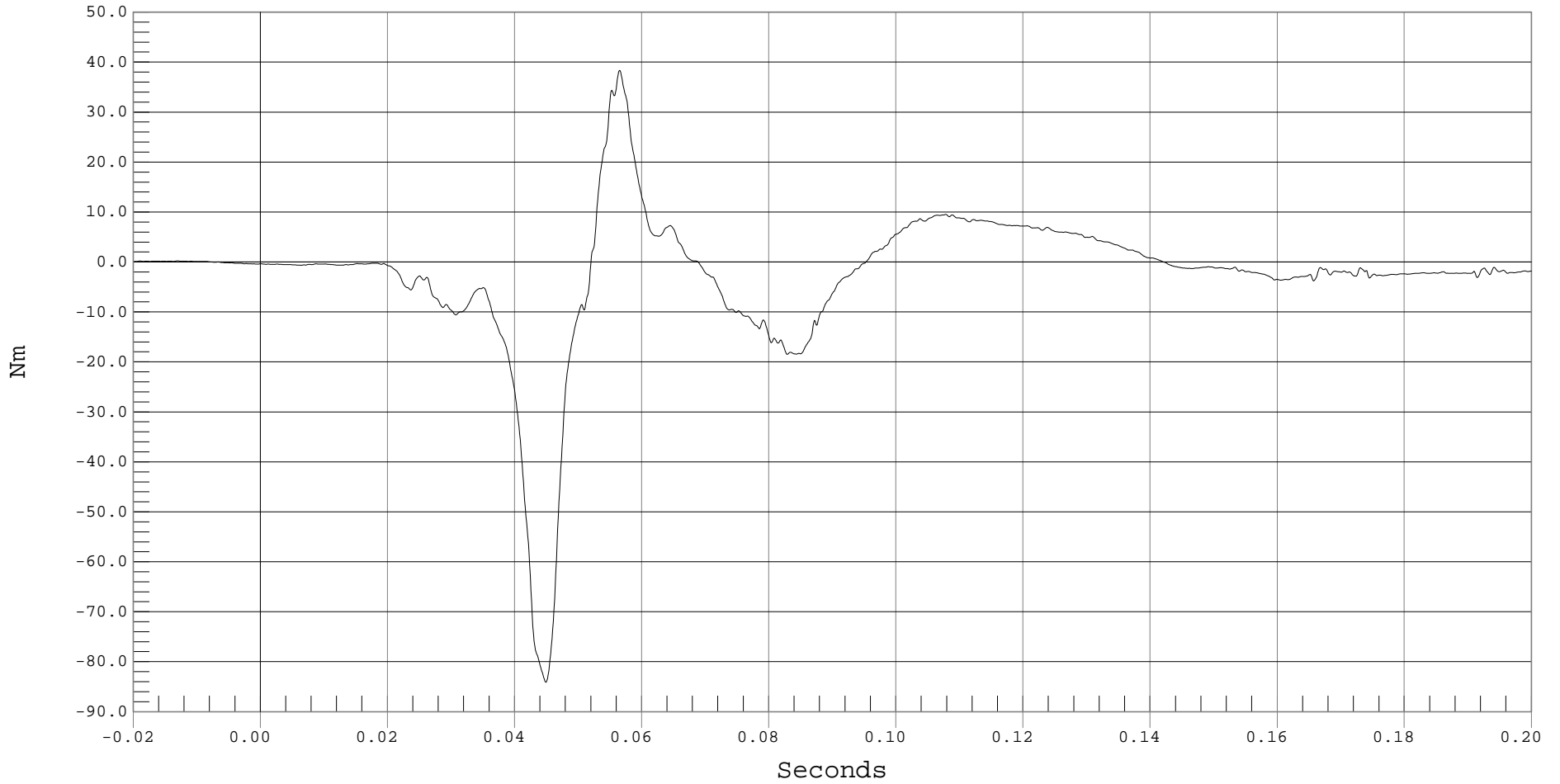
PASSENGER RIGHT LOWER TIBIA MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 PASSENGER RIGHT LOWER TIBIA MY, B01032MF.M85

Ymin = -84.09 Nm @ 0.0448 Seconds, Ymax = 38.36 Nm @ 0.0564 Seconds





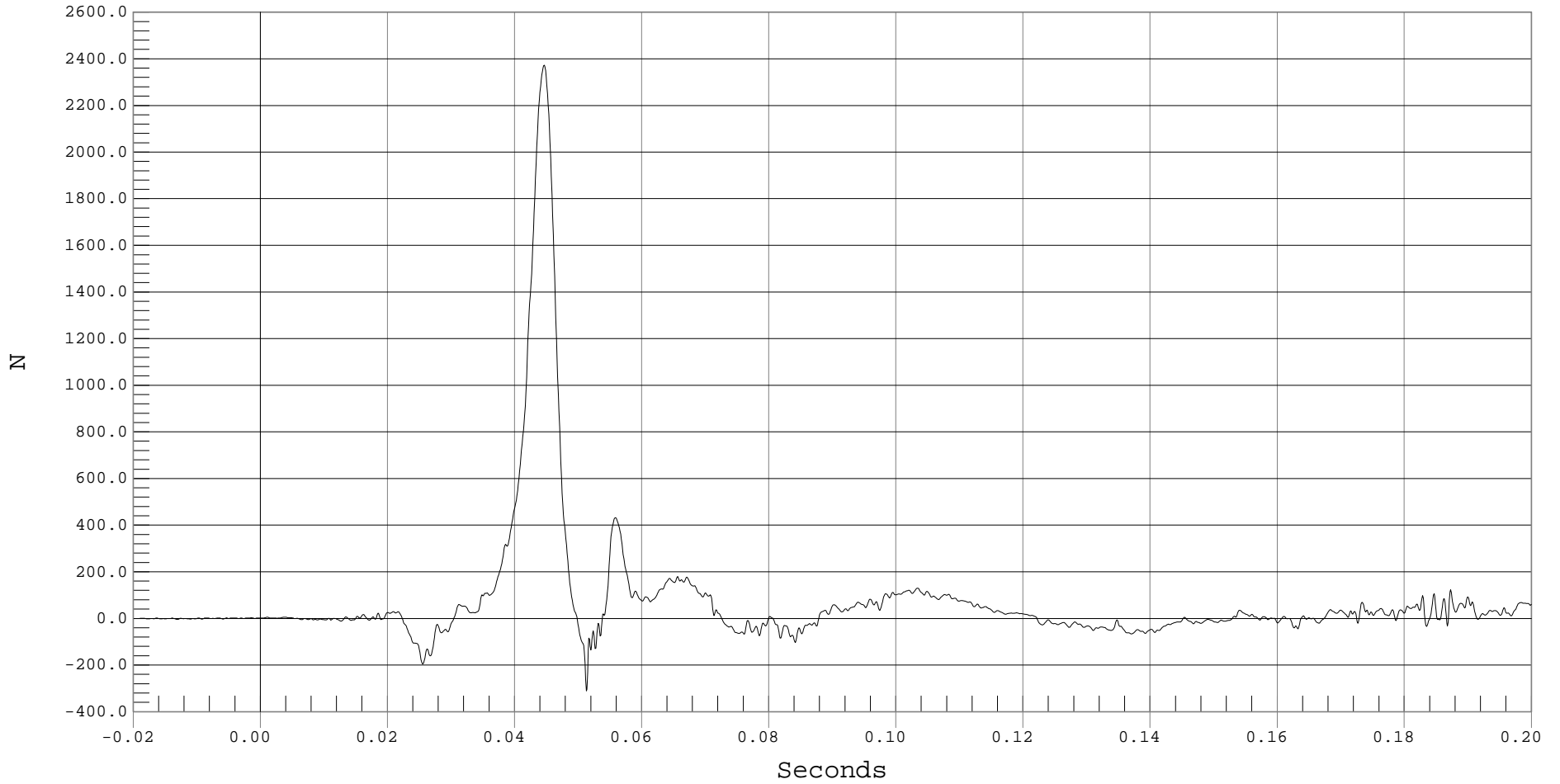
PASSENGER RIGHT LOWER TIBIA FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 PASSENGER RIGHT LOWER TIBIA FZ, B01032FF.F86

Ymin = -311.03 N @ 0.0512 Seconds, Ymax = 2372.24 N @ 0.0446 Seconds



B-104



PASSENGER LEFT FOOT @ BALL Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT

Test Date: 03-21-01

Component: 2001 NISSAN MAXIMA (M15207)

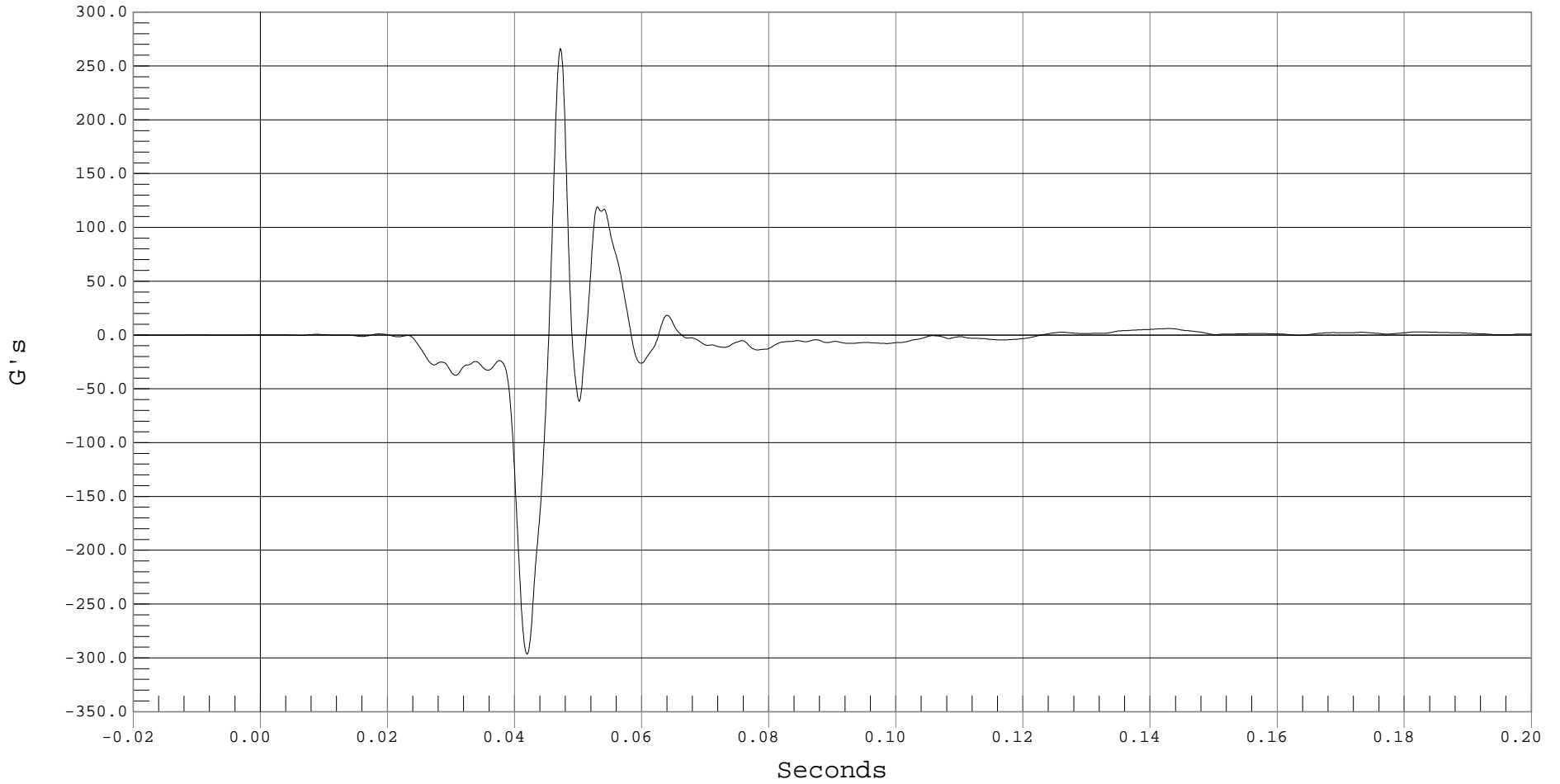
Speed: 34.8 MPH, 56.0 KPH

Other Info:

Filter Class: 180

— 1 PASSENGER LEFT FOOT @ BALL Z, B01032AF.A09

Ymin = -296.51 G's @ 0.0419 Seconds, Ymax = 266.18 G's @ 0.0471 Seconds



B-105



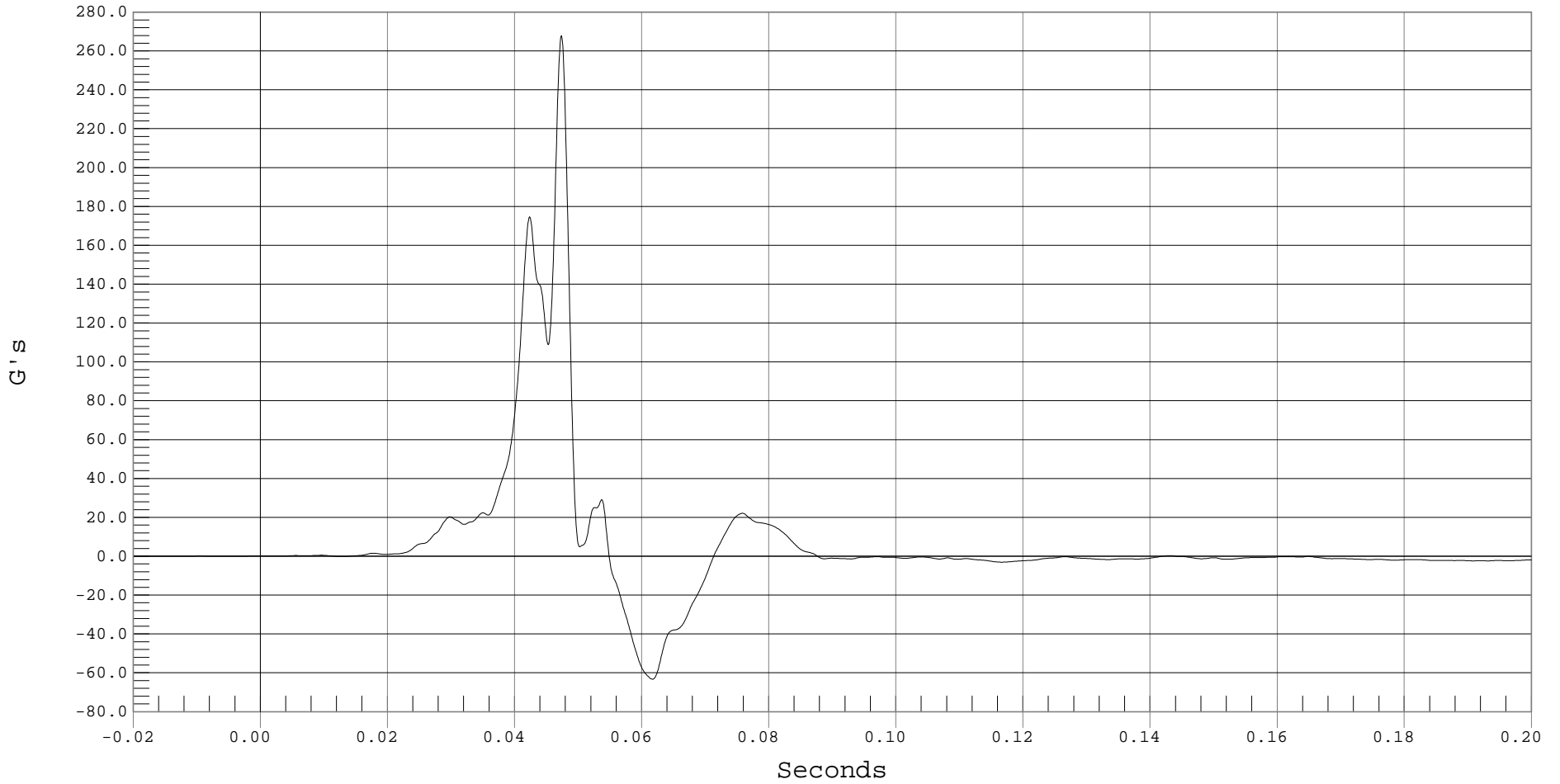
PASSENGER LEFT FOOT @ HEEL X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 PASSENGER LEFT FOOT @ HEEL X, B01032AF.A07

Ymin = -63.32 G's @ 0.0616 Seconds, Ymax = 267.89 G's @ 0.0473 Seconds





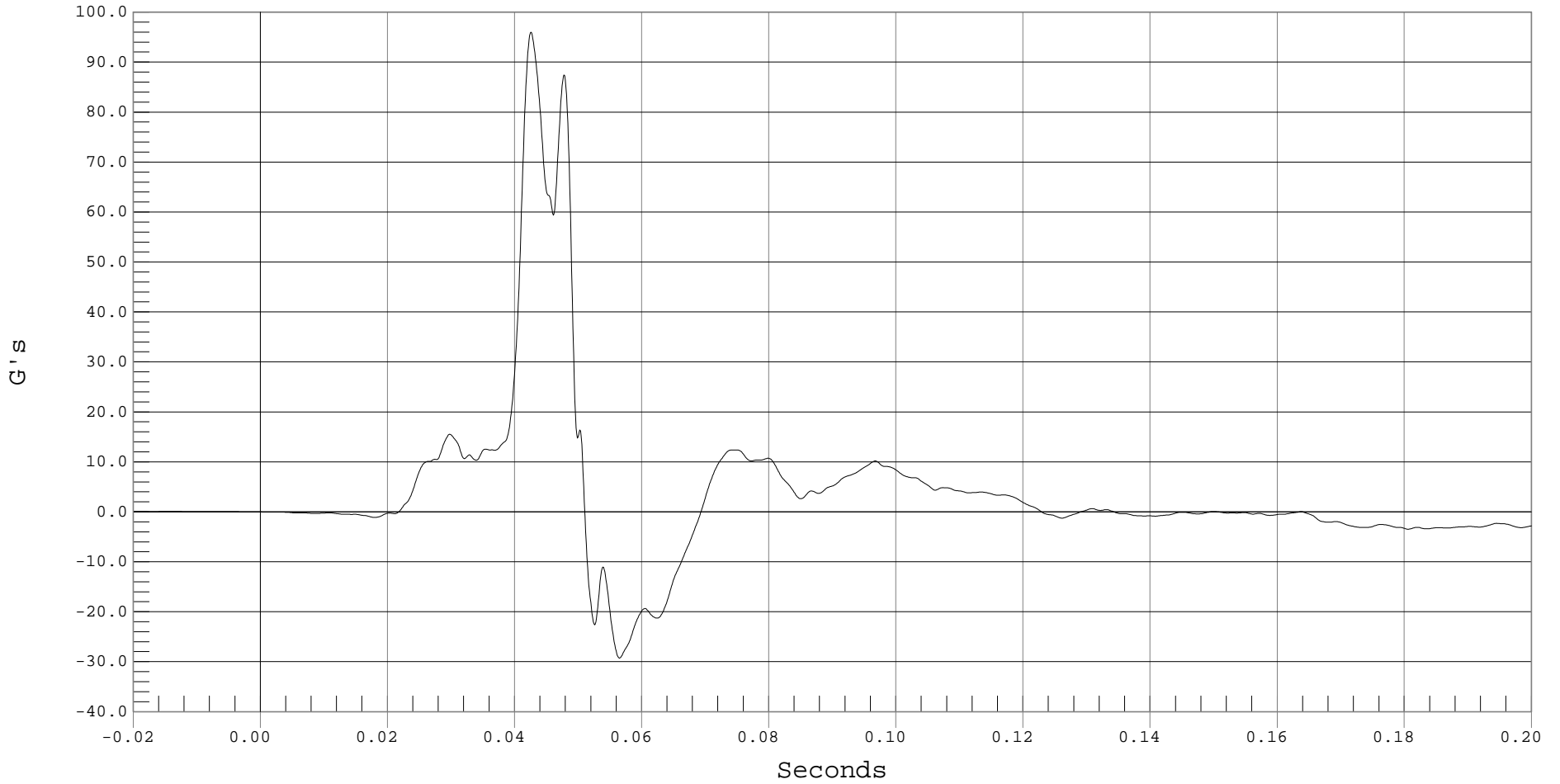
PASSENGER LEFT FOOT @ HEEL Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 PASSENGER LEFT FOOT @ HEEL Z, B01032AF.A08

Ymin = -29.26 G's @ 0.0564 Seconds, Ymax = 96 G's @ 0.0425 Seconds



B-107



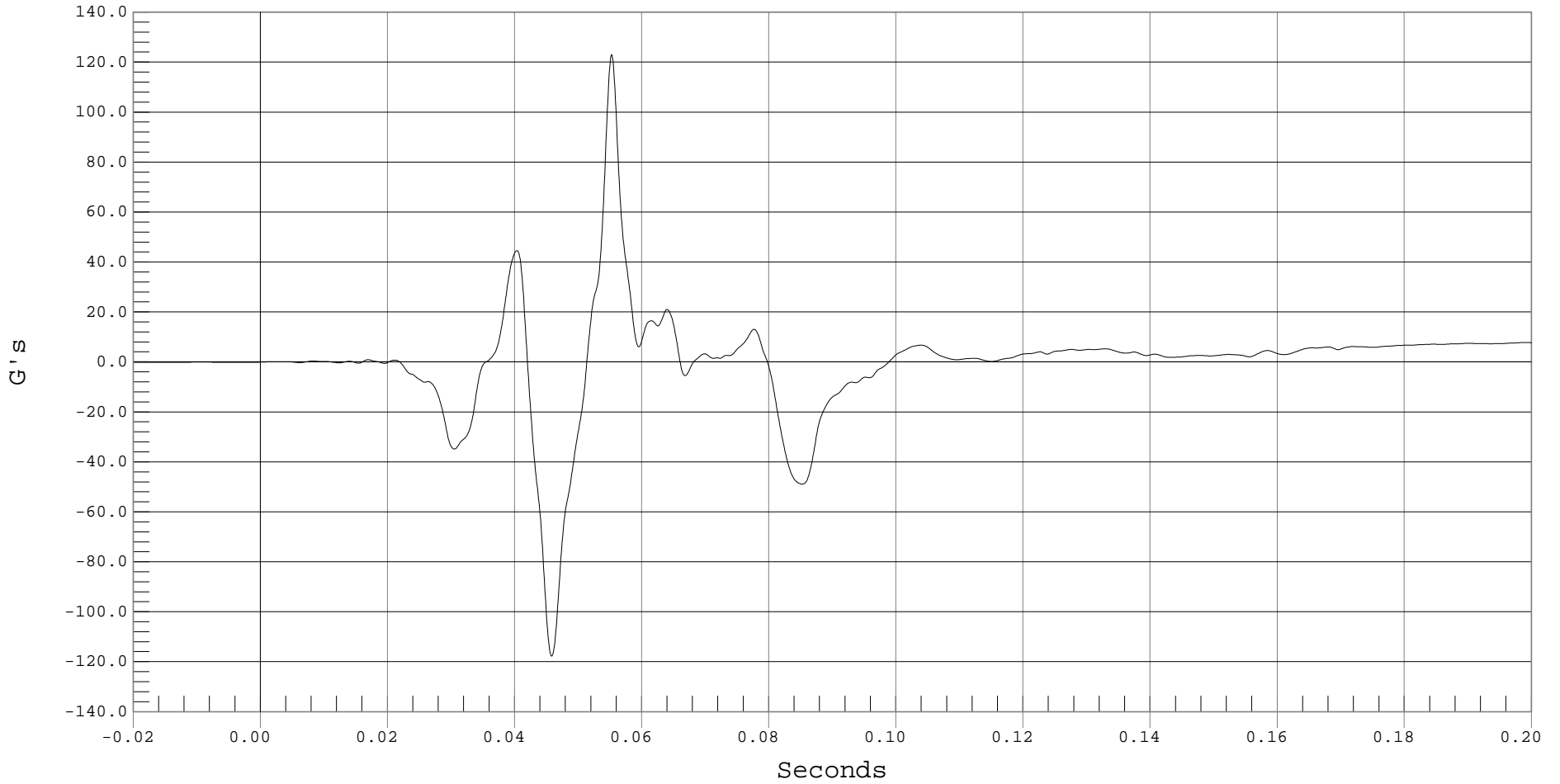
PASSENGER RIGHT FOOT @ BALL Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 PASSENGER RIGHT FOOT @ BALL Z, B01032AF.A06

Ymin = -117.71 G's @ 0.0457 Seconds, Ymax = 122.94 G's @ 0.0552 Seconds



B-108



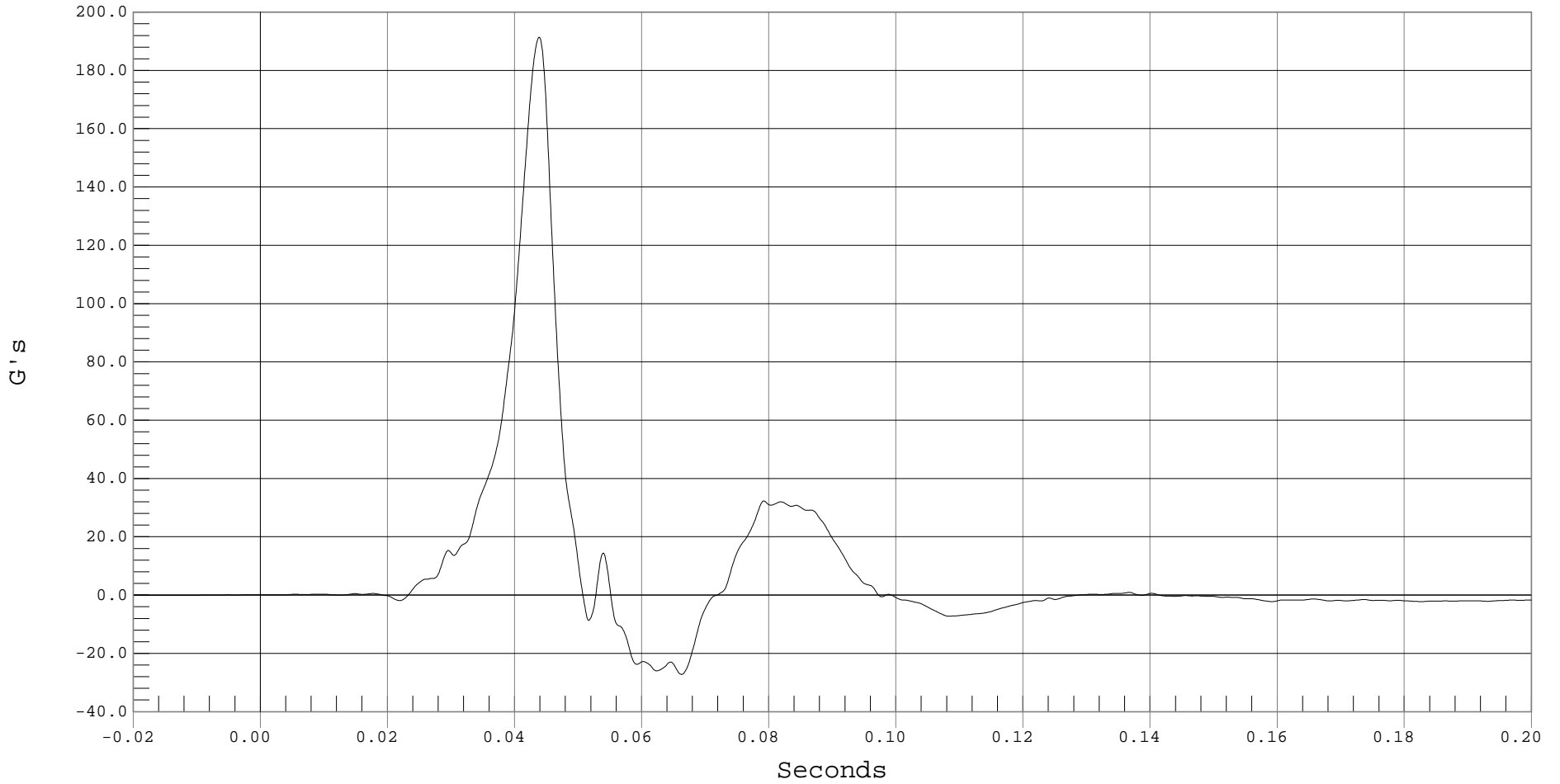
PASSENGER RIGHT FOOT @ HEEL X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 PASSENGER RIGHT FOOT @ HEEL X, B01032AF.A04

Ymin = -27.23 G's @ 0.0662 Seconds, Ymax = 191.38 G's @ 0.0438 Seconds



B-109



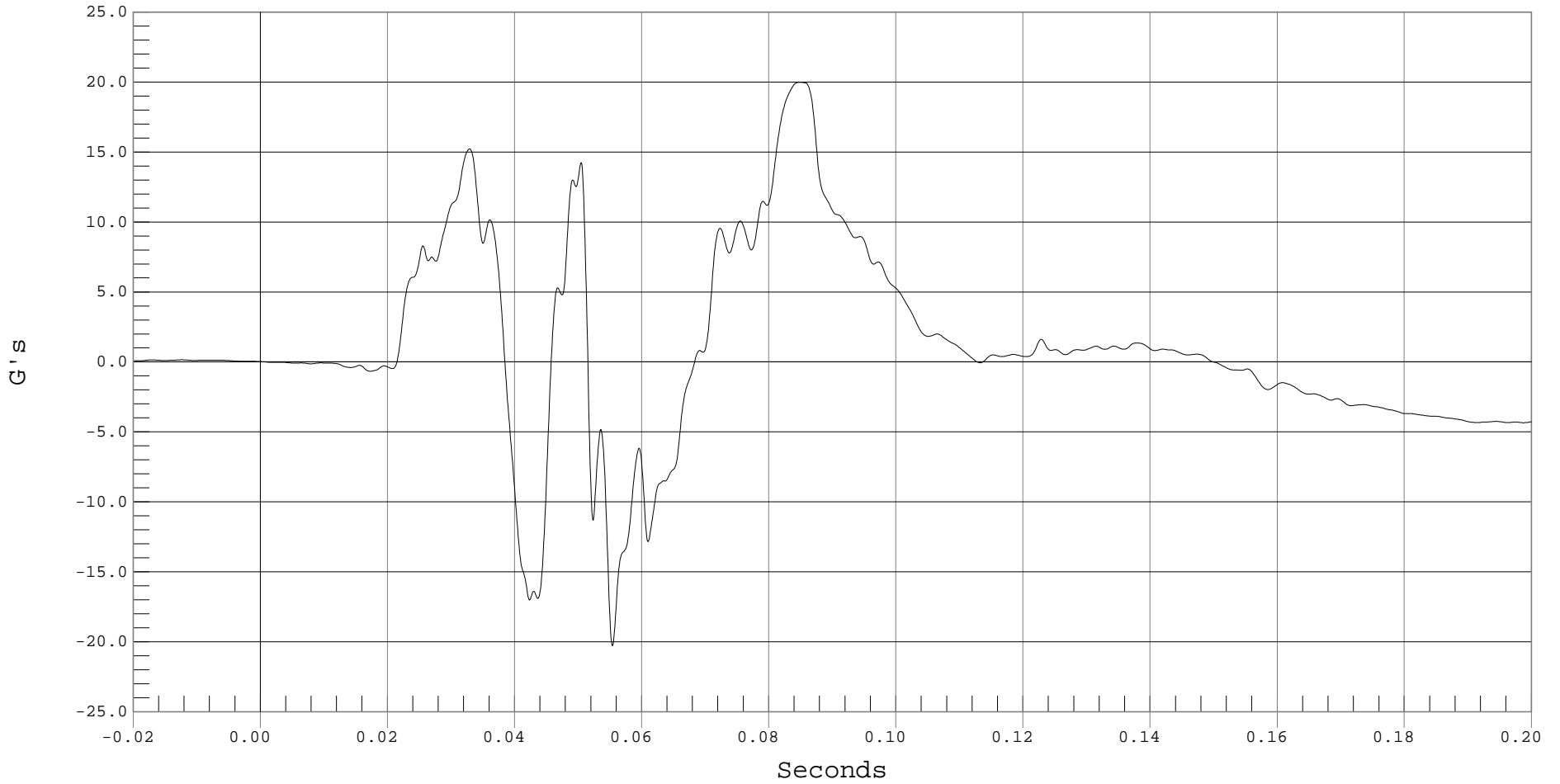
PASSENGER RIGHT FOOT @ HEEL Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 PASSENGER RIGHT FOOT @ HEEL Z, B01032AF.A05

Ymin = -20.29 G's @ 0.0553 Seconds, Ymax = 19.98 G's @ 0.0847 Seconds



B-110



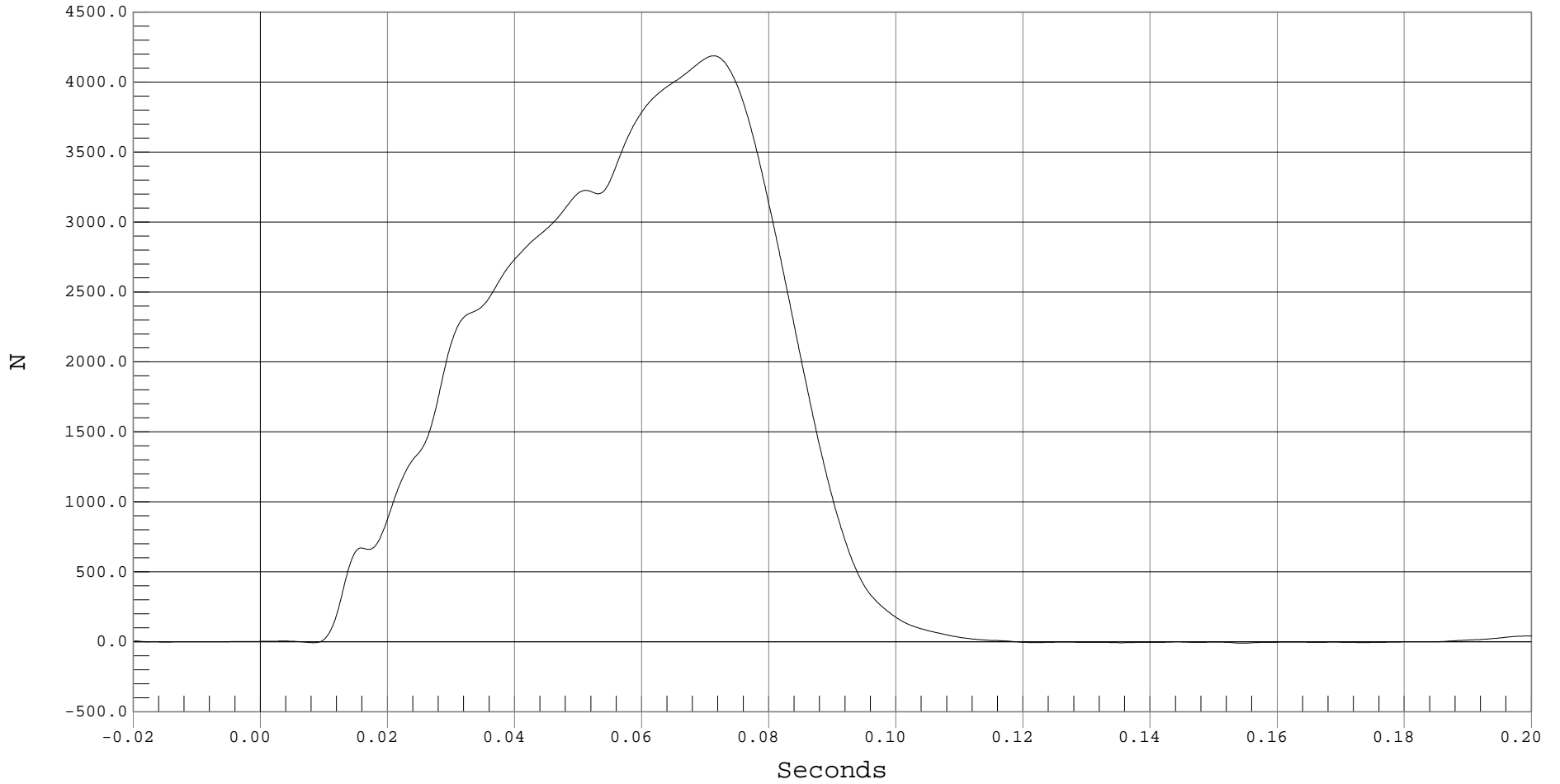
PASSENGER SHOULDER BELT FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 PASSENGER SHOULDER BELT, B01032FF.F67

Ymin = -9.81 N @ 0.1544 Seconds, Ymax = 4188.17 N @ 0.0712 Seconds



B-111



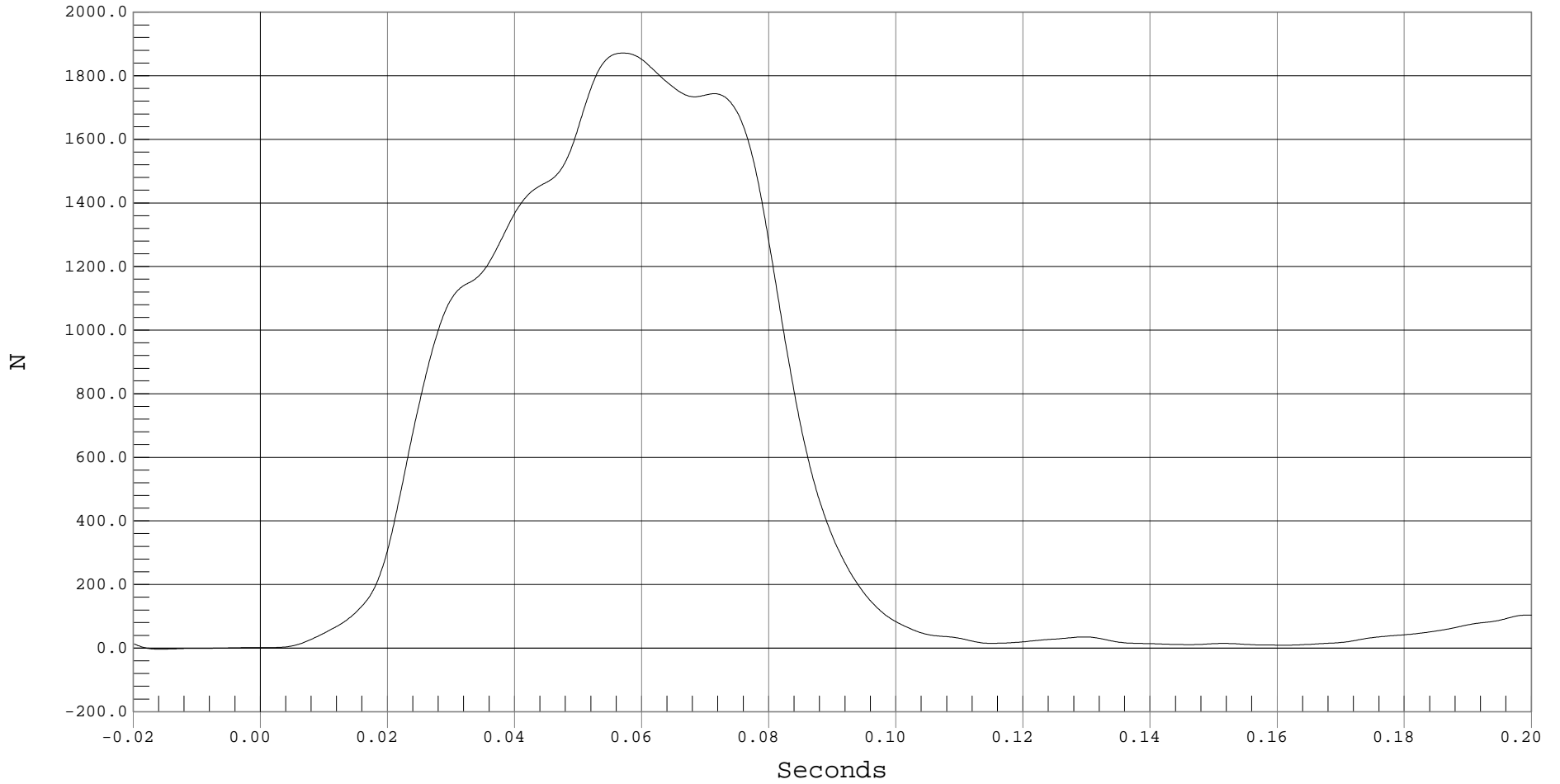
PASSENGER LAP BELT FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 PASSENGER LAP BELT, B01032FF.F68

Ymin = -3.61 N @ -0.0158 Seconds, Ymax = 1871.4 N @ 0.0570 Seconds



B-112



LEFT REAR SEAT CROSSMEMBER X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT

Test Date: 03-21-01

Component: 2001 NISSAN MAXIMA (M15207)

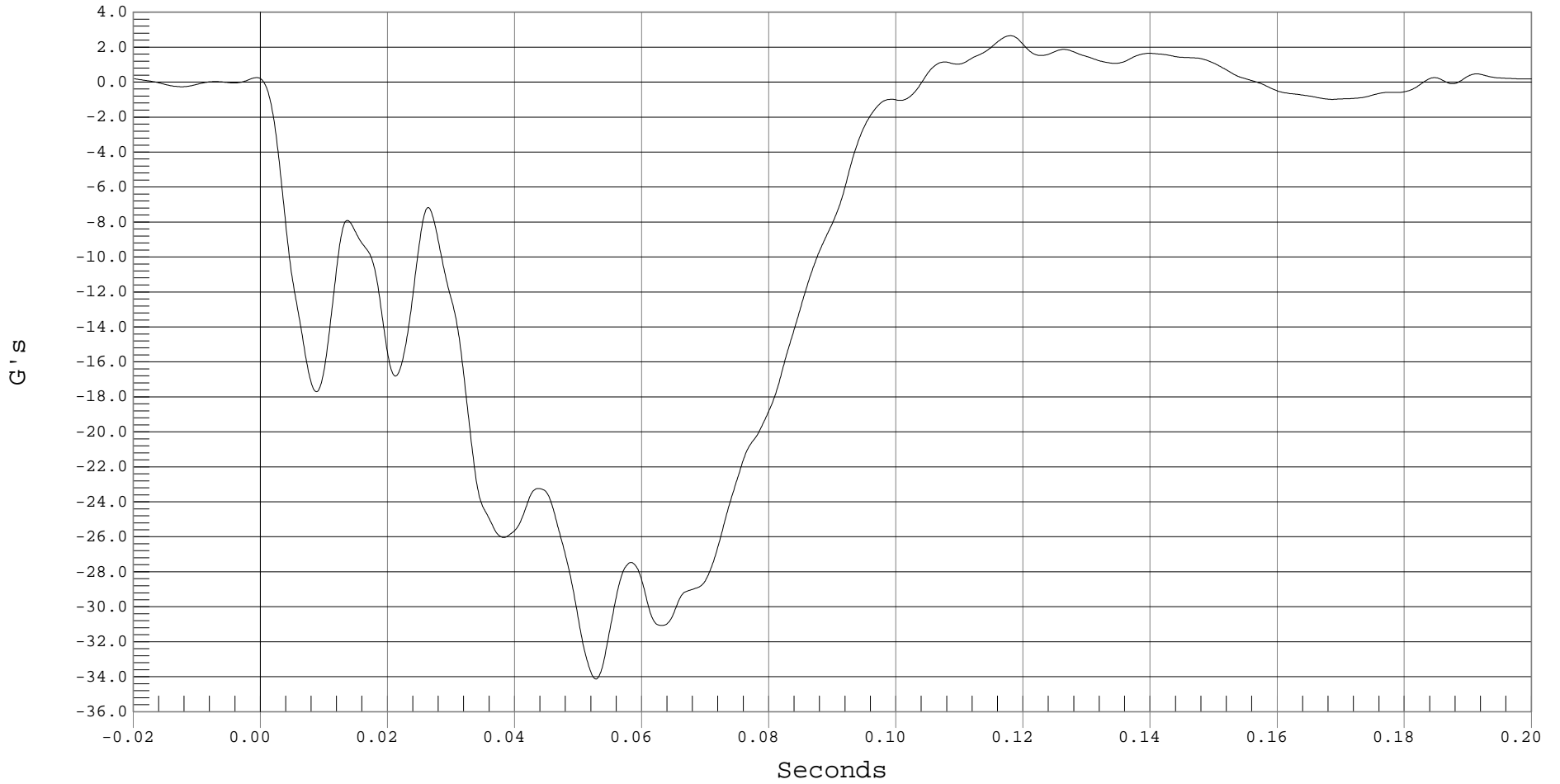
Speed: 34.8 MPH, 56.0 KPH

Other Info:

Filter Class: 60

— 1 LEFT REAR SEAT CROSSMEMBER X, B01032AF.A59

Ymin = -34.14 G's @ 0.0527 Seconds, Ymax = 2.65 G's @ 0.1179 Seconds



B-113



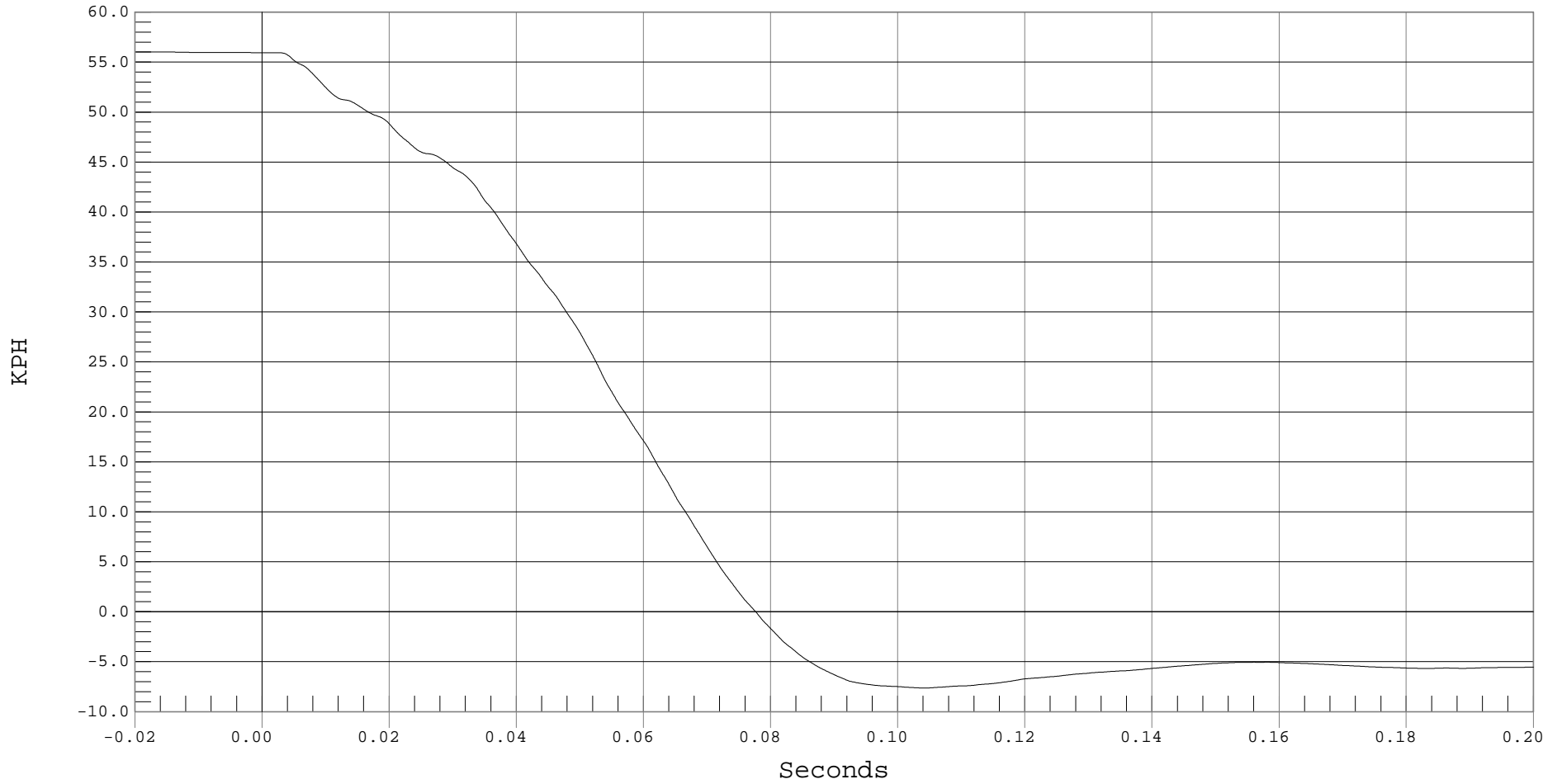
LEFT REAR SEAT CROSSMEMBER X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 LEFT REAR SEAT CROSSMEMBER X VELOCITY, B01032AI.V59

Ymin = -7.63 KPH @ 0.1041 Seconds, Ymax = 56.01 KPH @ -0.0159 Seconds



B-114



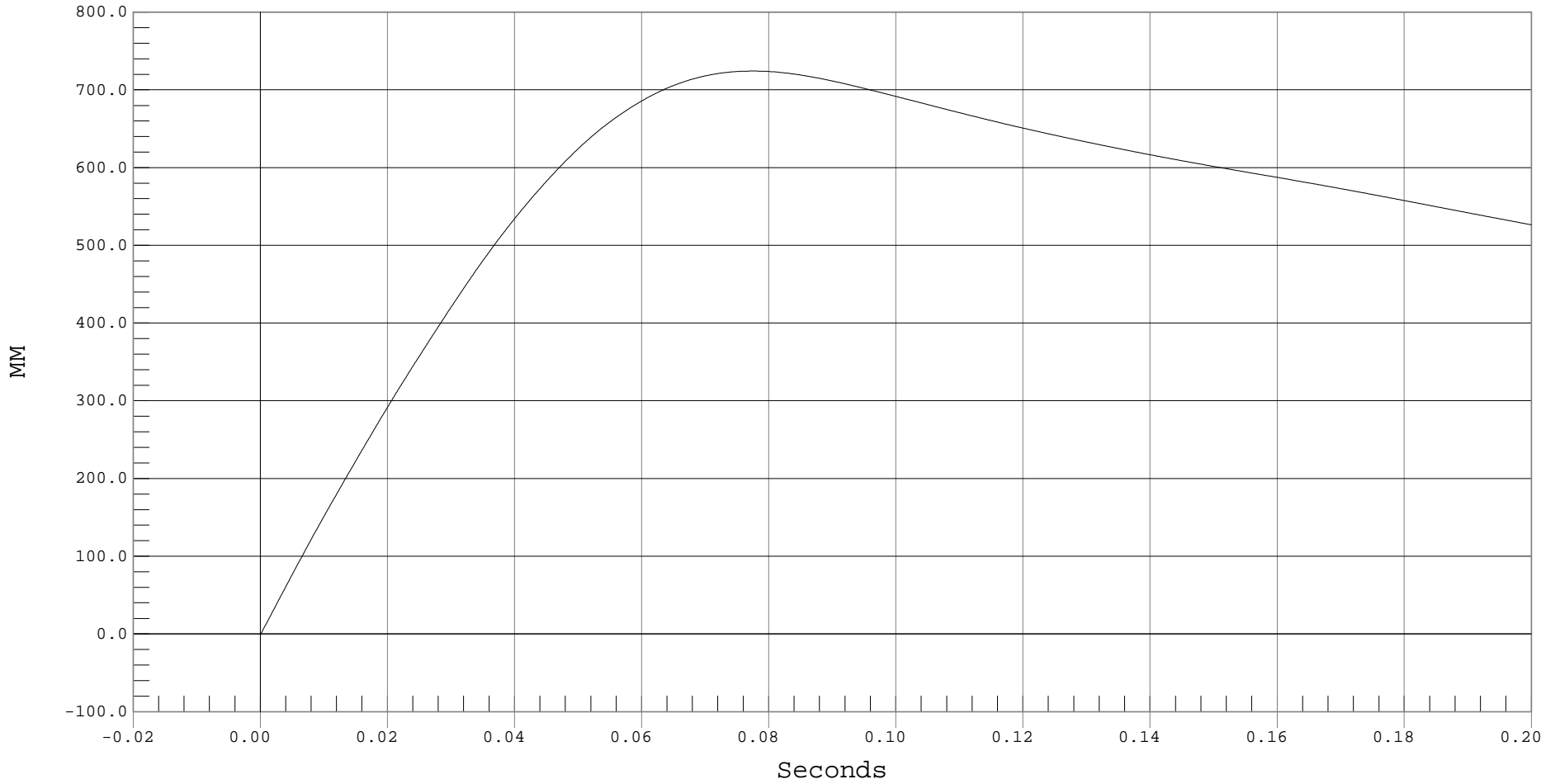
LEFT REAR SEAT CROSSMEMBER X DISPLACEMENT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 LEFT REAR SEAT CROSSMEMBER X DISPLACEMENT, B01032AI.D59

Ymin = 0 MM @ 0.0000 Seconds, Ymax = 724.24 MM @ 0.0775 Seconds



B-115



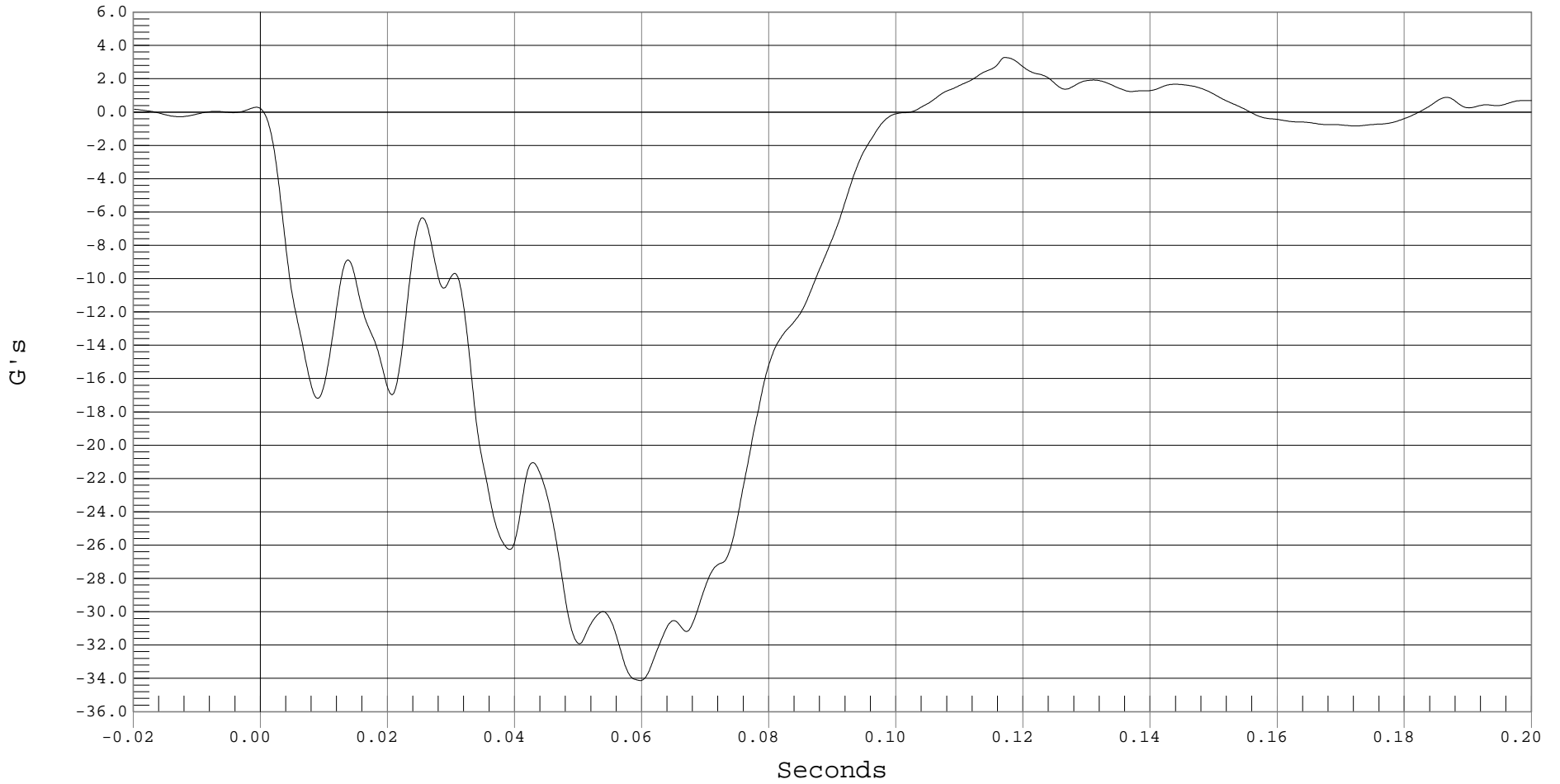
RIGHT REAR SEAT CROSSMEMBER X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 RIGHT REAR SEAT CROSSMEMBER X, B01032AF.A58

Ymin = -34.13 G's @ 0.0597 Seconds, Ymax = 3.28 G's @ 0.1171 Seconds



B-116



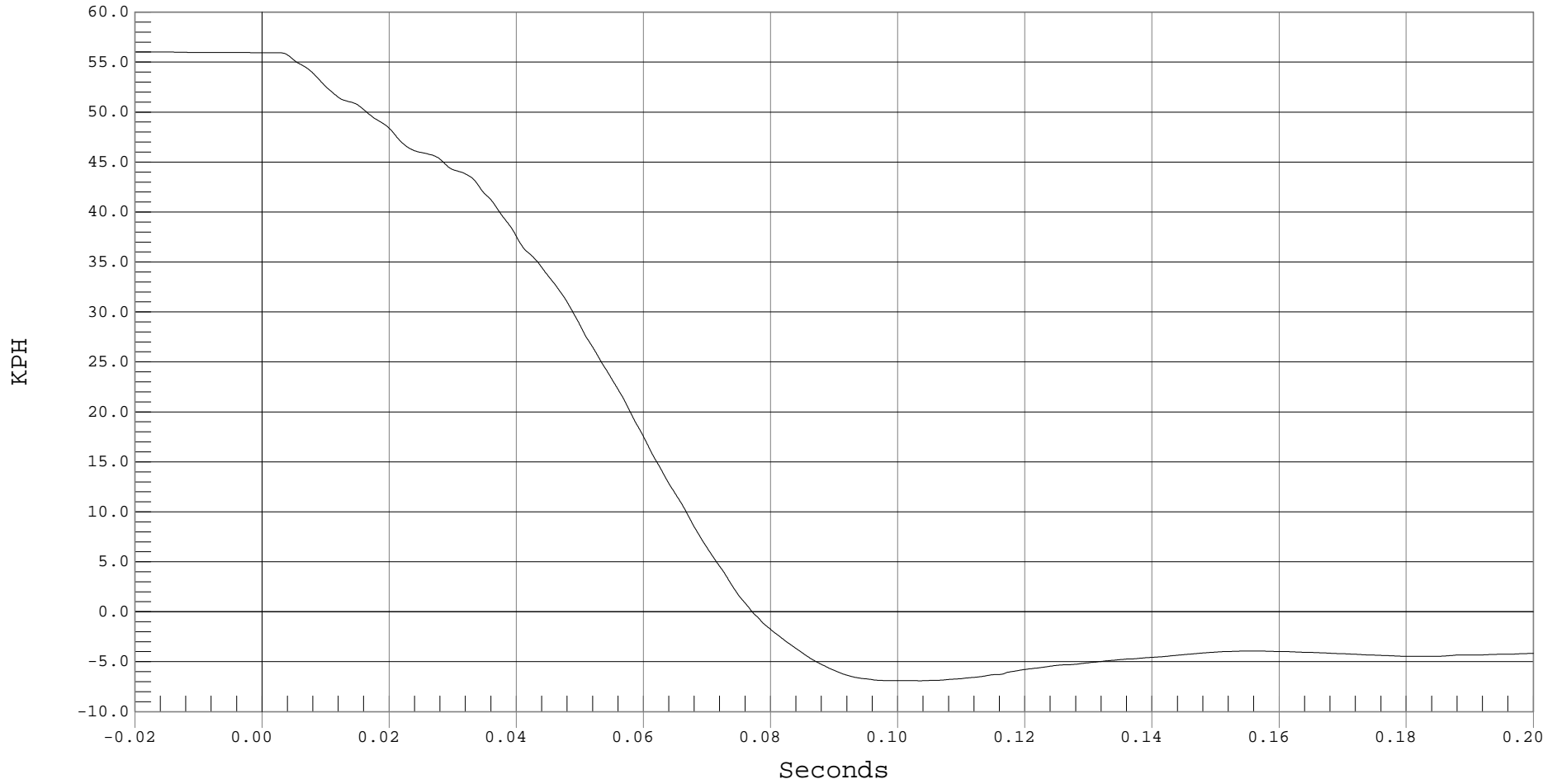
RIGHT REAR SEAT CROSSMEMBER X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 RIGHT REAR SEAT CROSSMEMBER X VELOCITY, B01032AI.V58

Ymin = -6.91 KPH @ 0.1035 Seconds, Ymax = 56.01 KPH @ -0.0159 Seconds



B-117



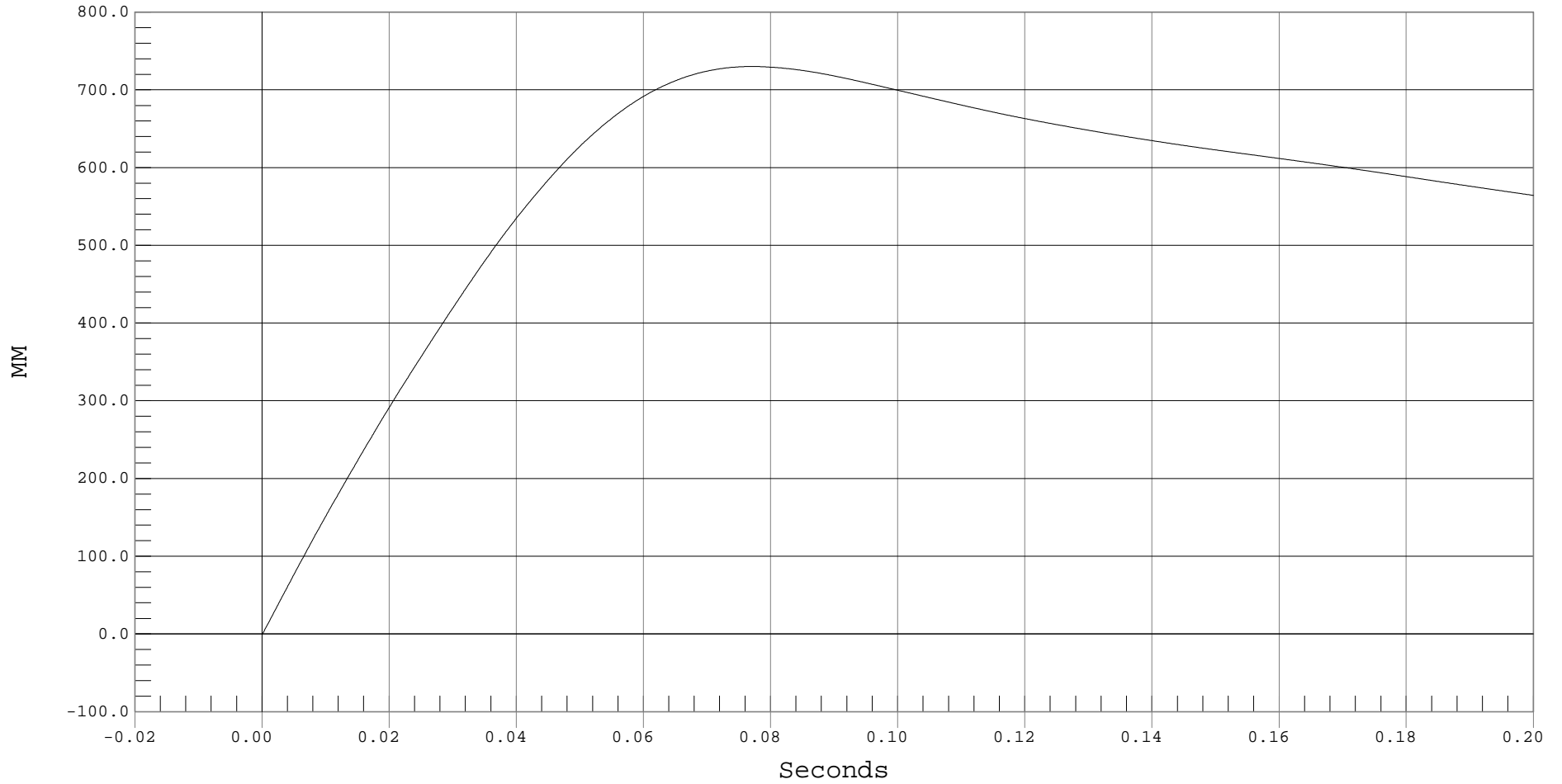
RIGHT REAR SEAT CROSSMEMBER X DISPLACEMENT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 RIGHT REAR SEAT CROSSMEMBER X DISPLACEMENT, B01032AI.D58

Ymin = 0 MM @ 0.0000 Seconds, Ymax = 730.02 MM @ 0.0769 Seconds



B-118



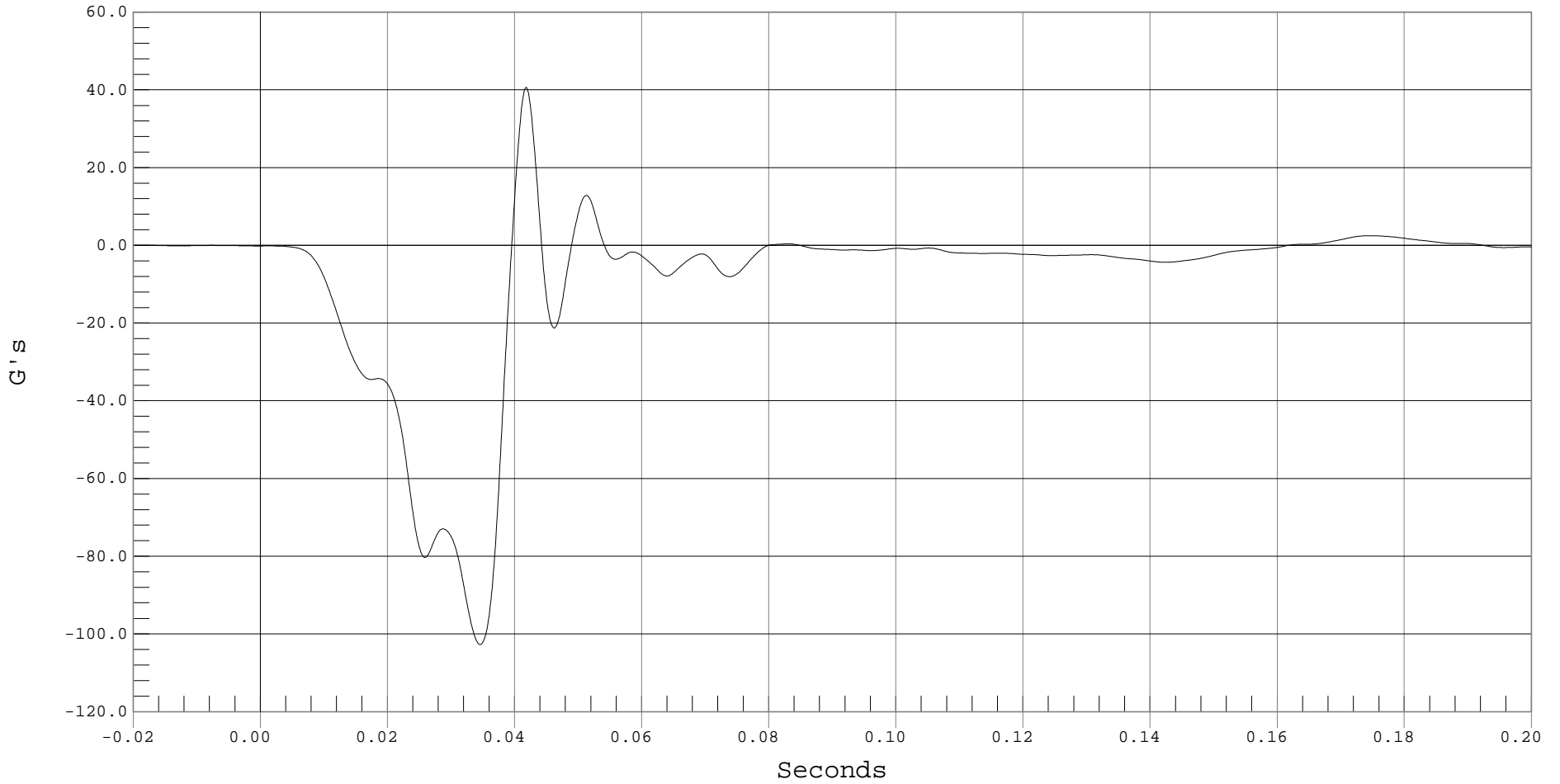
UPPER ENGINE X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 ENGINE UPPER X, B01032AF.A55

Ymin = -102.74 G's @ 0.0345 Seconds, Ymax = 40.64 G's @ 0.0417 Seconds



B-119



UPPER ENGINE X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT

Test Date: 03-21-01

Component: 2001 NISSAN MAXIMA (M15207)

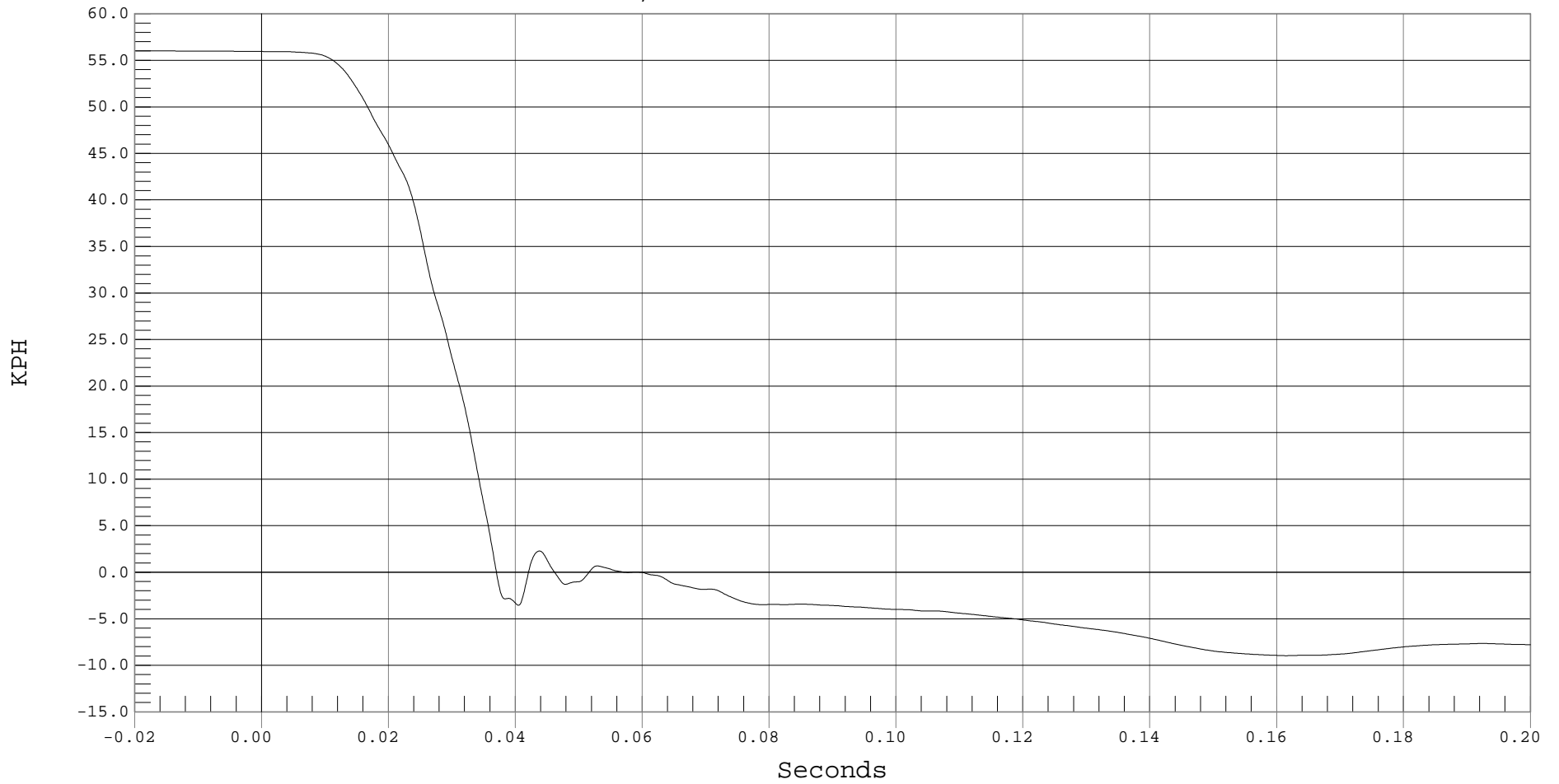
Speed: 34.8 MPH, 56.0 KPH

Other Info:

Filter Class: 180

— 1 ENGINE UPPER X VELOCITY, B01032AI.V55

Ymin = -8.96 KPH @ 0.1614 Seconds, Ymax = 56 KPH @ -0.0162 Seconds



B-120



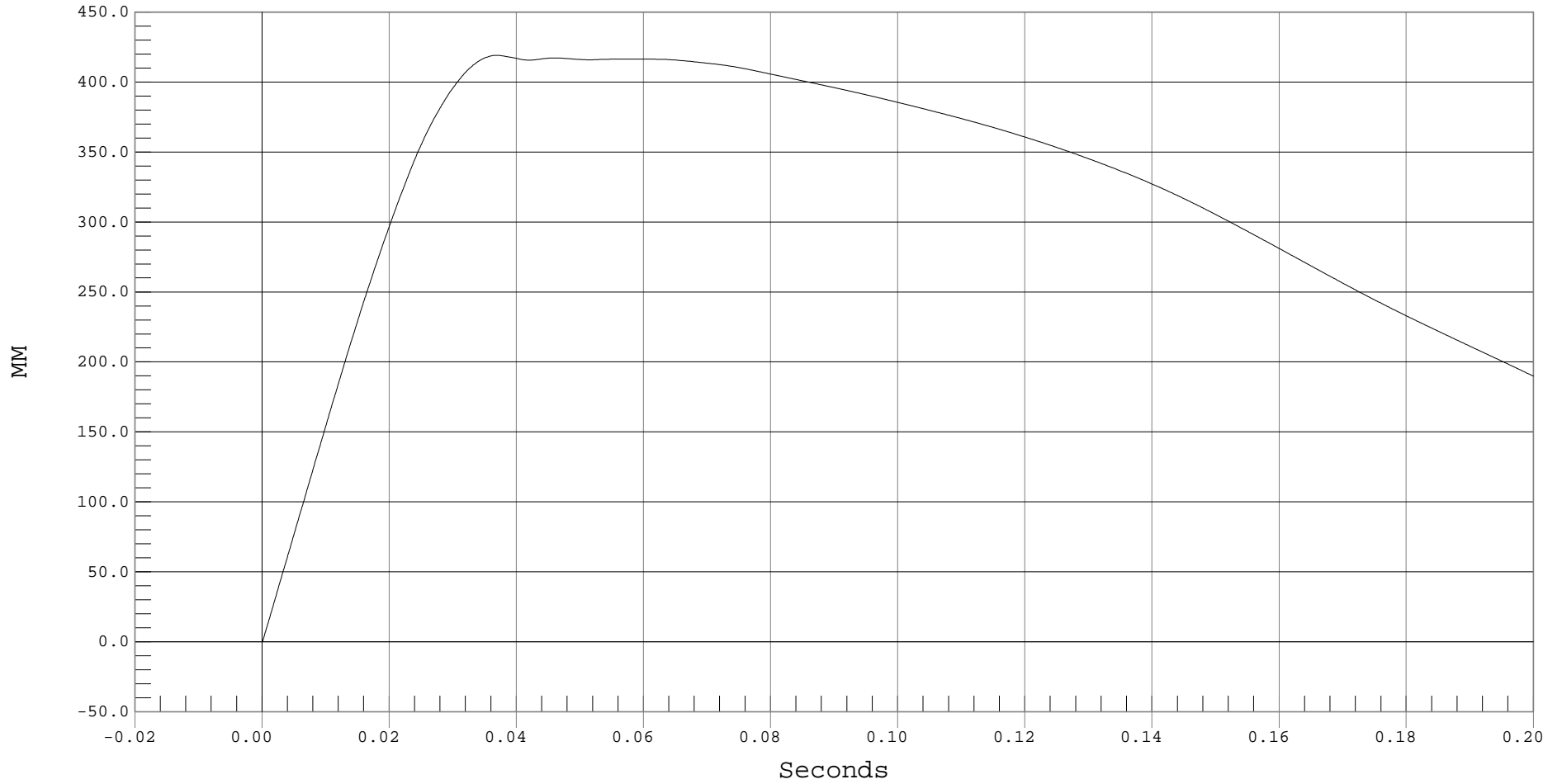
UPPER ENGINE X DISPLACEMENT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 ENGINE UPPER X DISPLACEMENT, B01032AI.D55

Ymin = 0 MM @ 0.0000 Seconds, Ymax = 419.13 MM @ 0.0368 Seconds



B-121



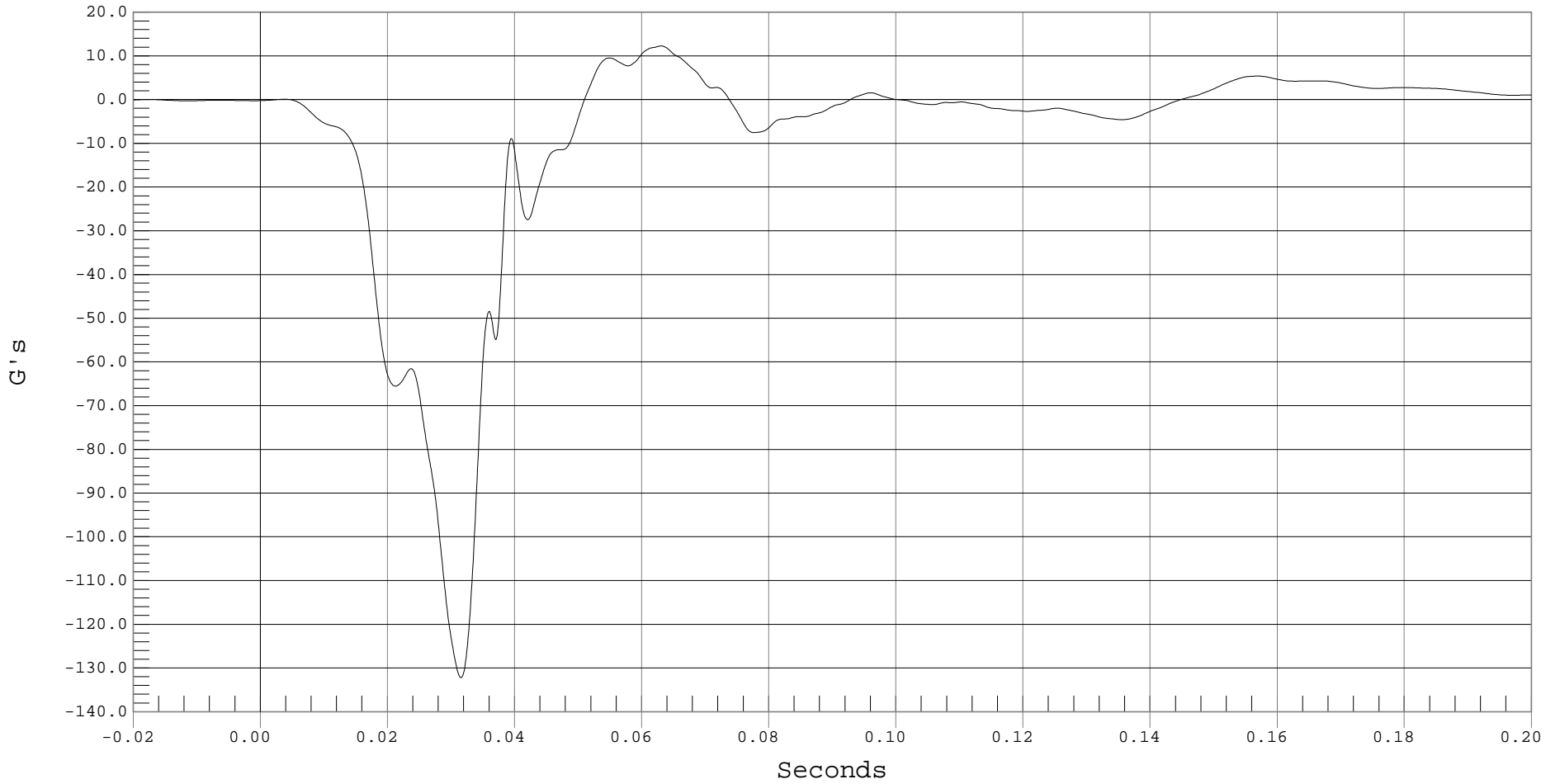
LOWER ENGINE X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 ENGINE LOWER X, B01032AF.A56

Ymin = -132.21 G's @ 0.0315 Seconds, Ymax = 12.28 G's @ 0.0630 Seconds



B-122



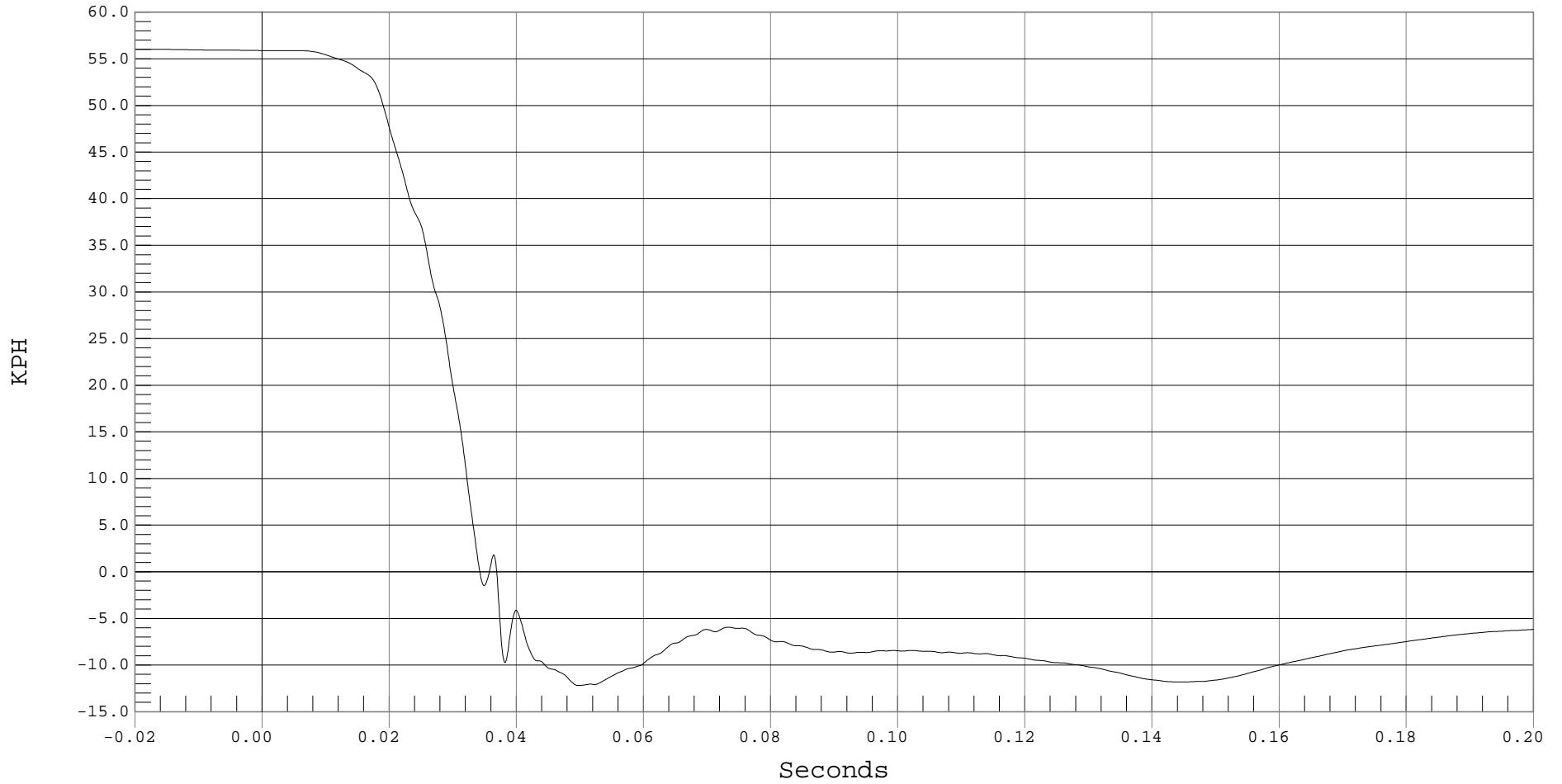
LOWER ENGINE X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 ENGINE LOWER X VELOCITY, B01032AI.V56

Ymin = -12.18 KPH @ 0.0497 Seconds, Ymax = 56 KPH @ -0.0160 Seconds



B-123



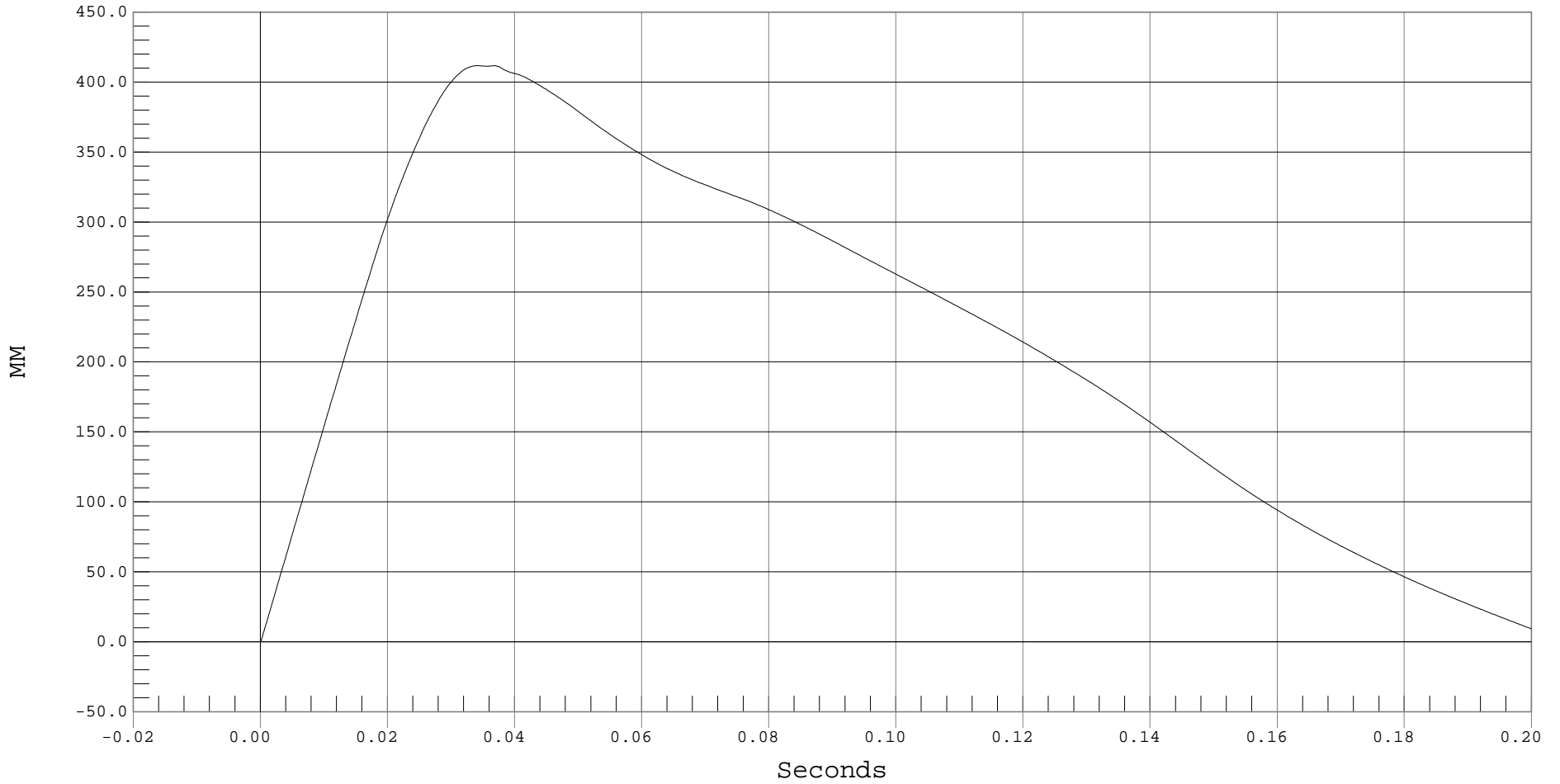
LOWER ENGINE X DISPLACEMENT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 ENGINE LOWER X DISPLACEMENT, B01032AI.D56

Ymin = 0 MM @ 0.0000 Seconds, Ymax = 411.75 MM @ 0.0341 Seconds



B-124



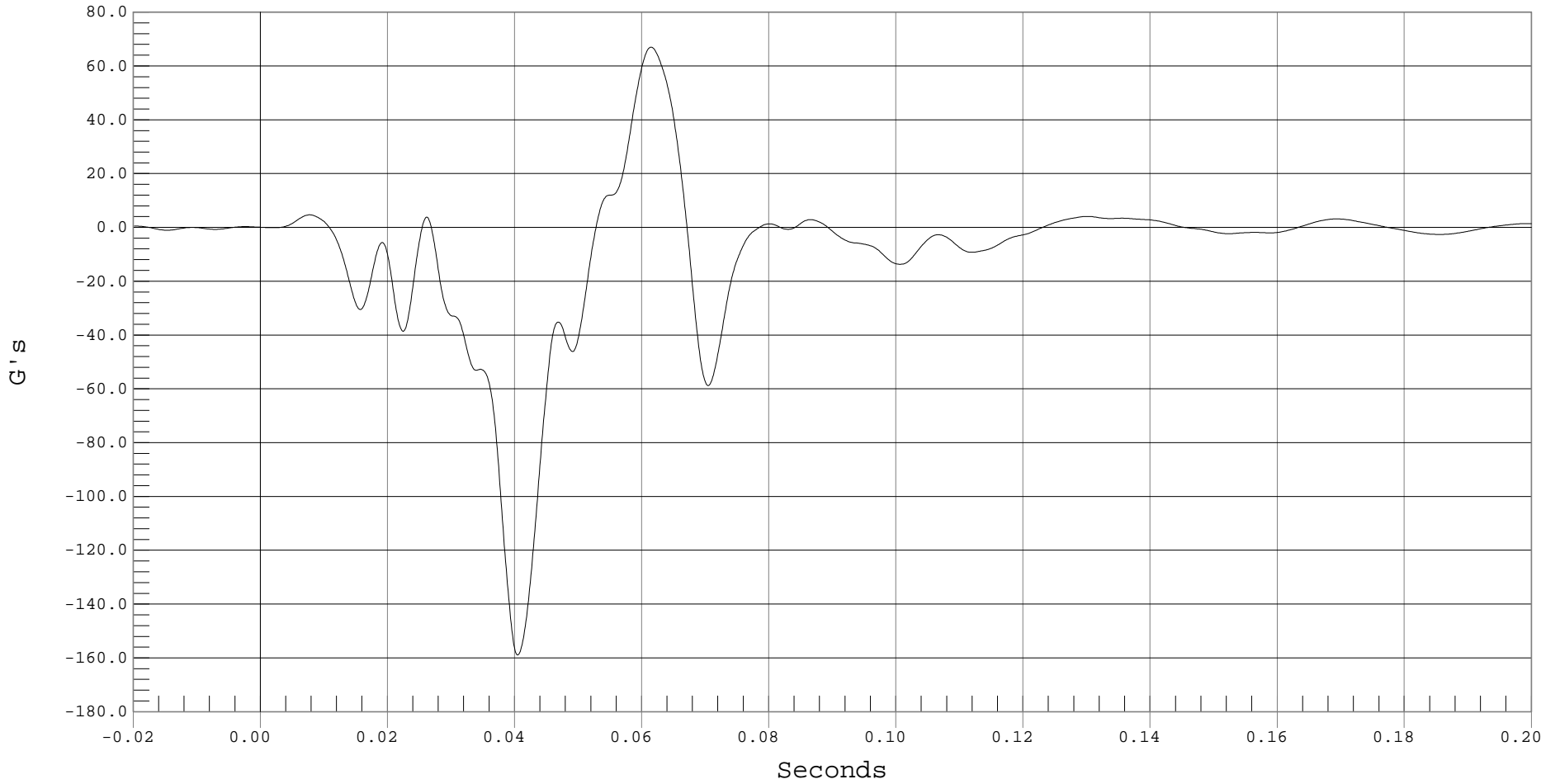
LEFT BRAKE CALIPER X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 LEFT BRAKE CALIPER X, B01032AF.A61

Ymin = -158.89 G's @ 0.0404 Seconds, Ymax = 67 G's @ 0.0614 Seconds



B-125



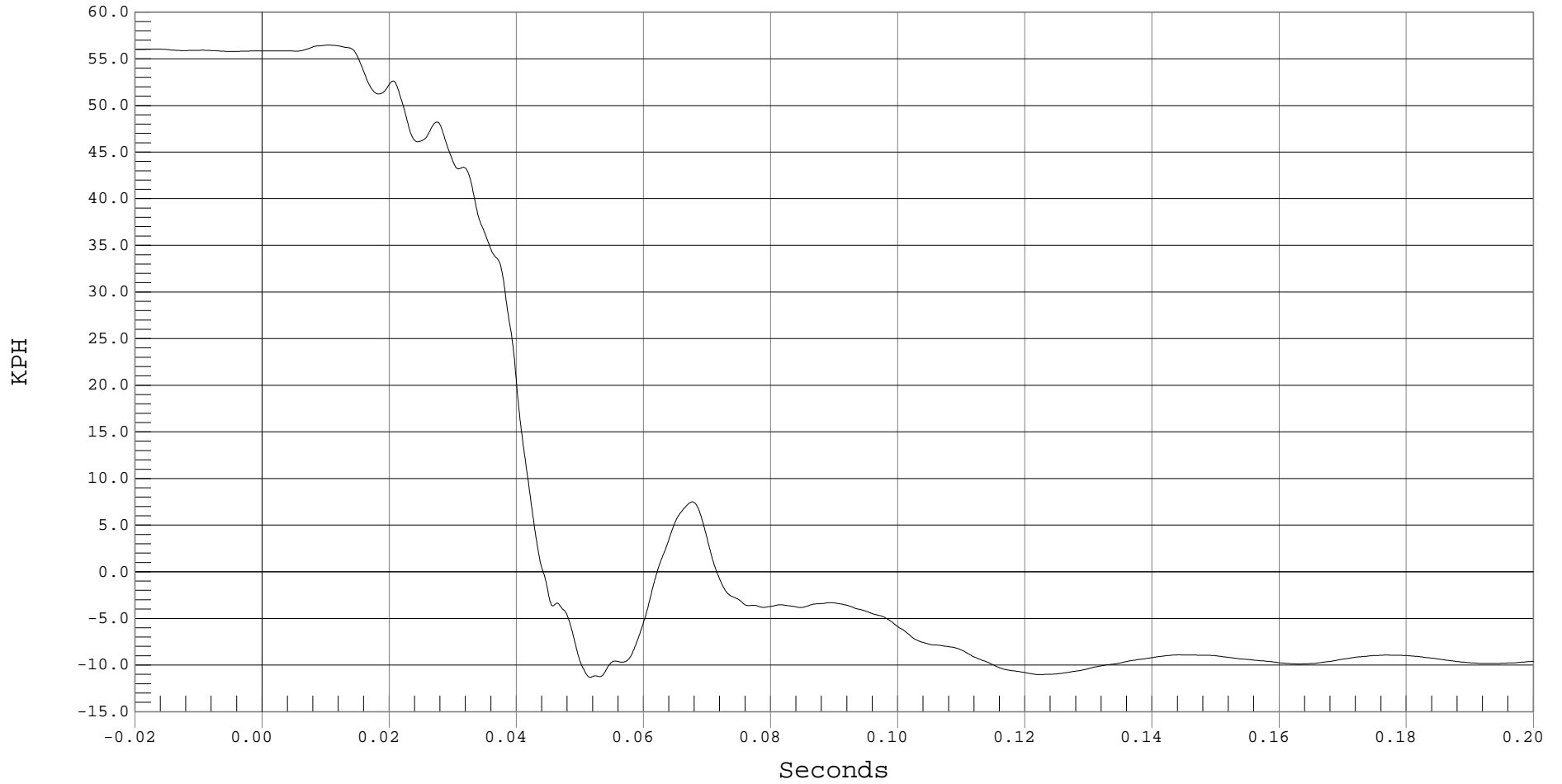
LEFT BRAKE CALIPER X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 LEFT BRAKE CALIPER X VELOCITY, B01032AI.V61

Ymin = -11.31 KPH @ 0.0515 Seconds, Ymax = 56.48 KPH @ 0.0104 Seconds



B-126



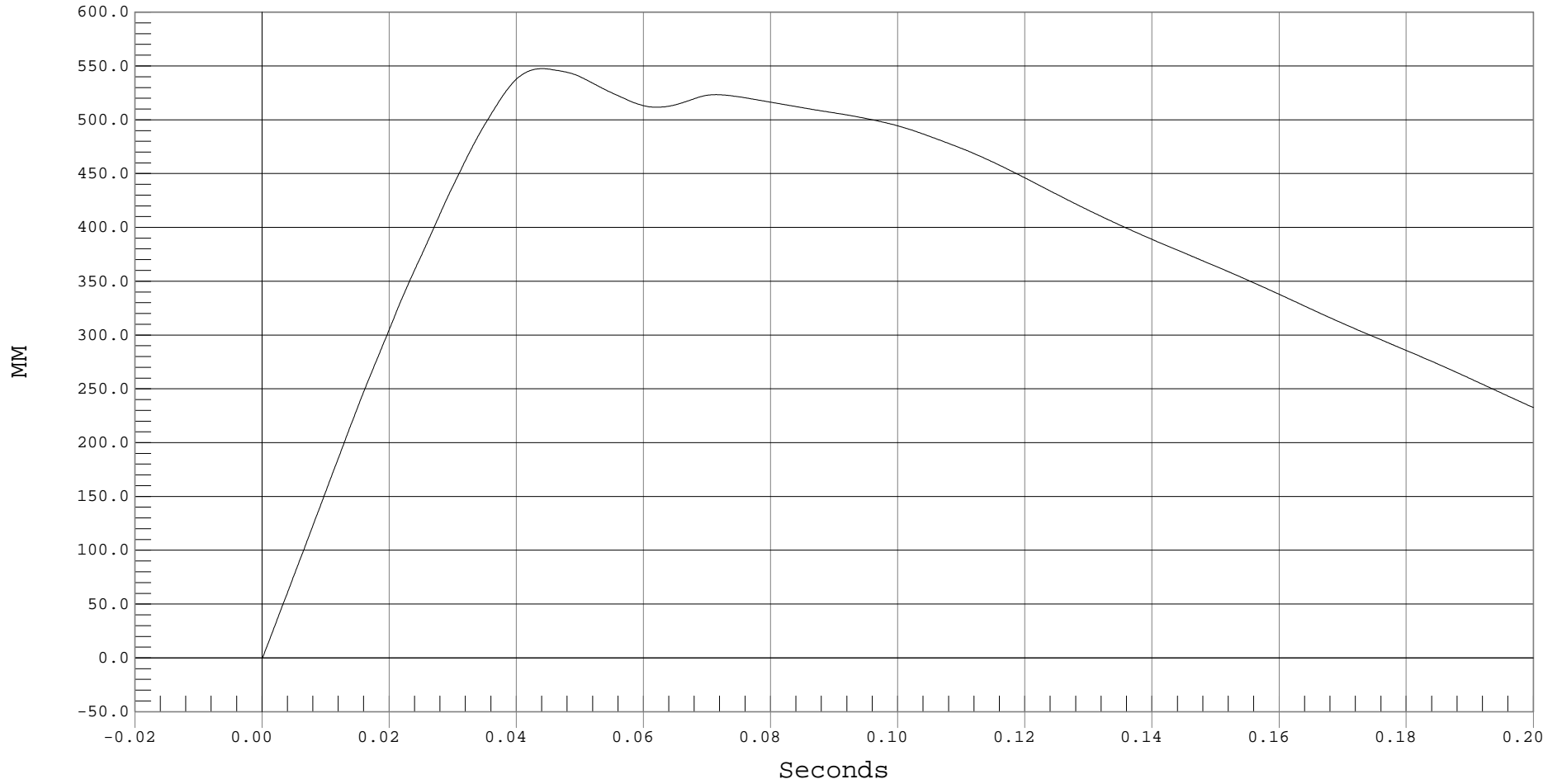
LEFT BRAKE CALIPER X DISPLACEMENT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 LEFT BRAKE CALIPER X DISPLACEMENT, B01032AI.D61

Ymin = 0 MM @ 0.0000 Seconds, Ymax = 547.45 MM @ 0.0440 Seconds



B-127



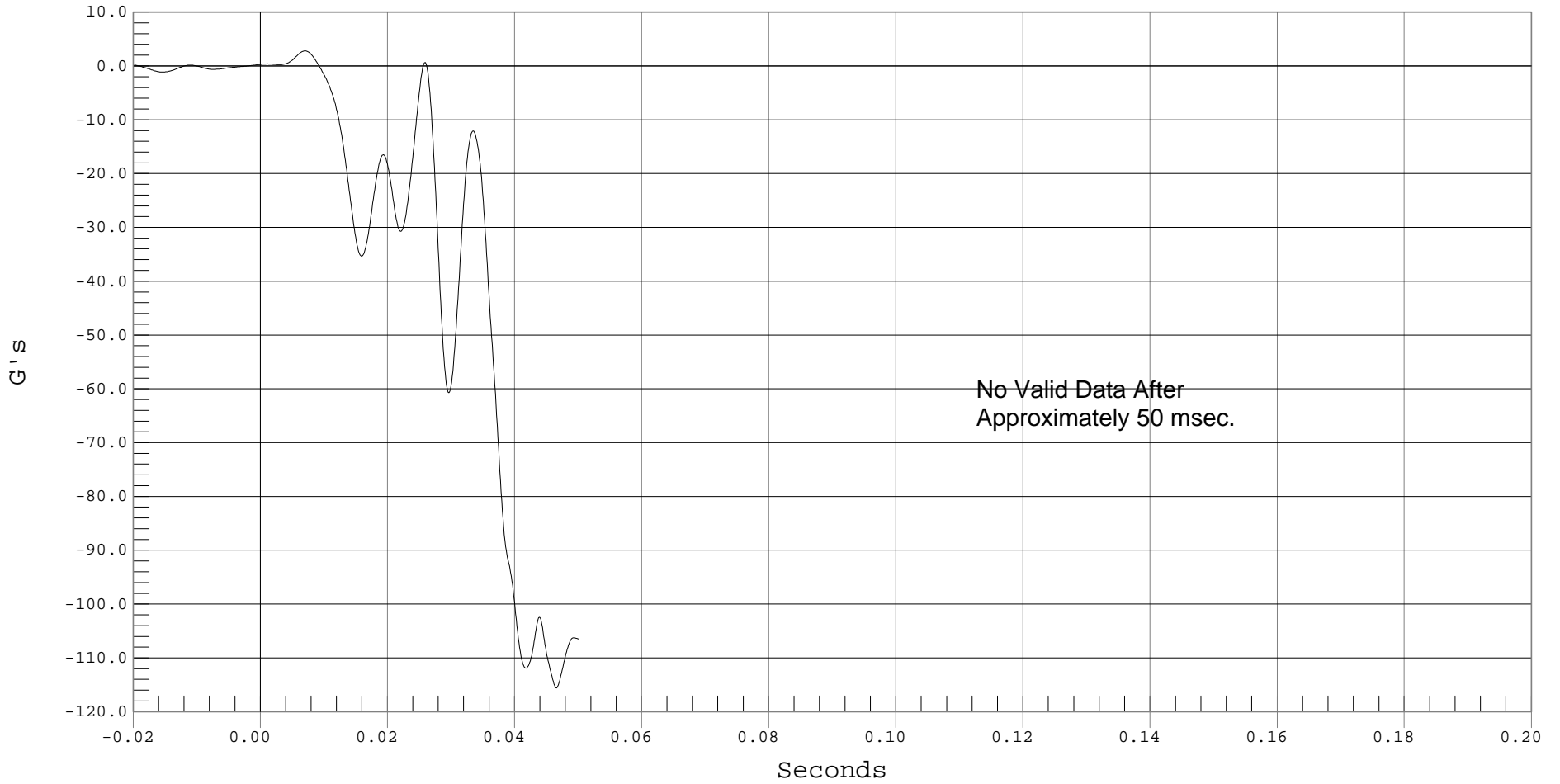
RIGHT BRAKE CALIPER X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 RIGHT BRAKE CALIPER X, B01032AF.A60

Ymin = -115.59 G's @ 0.0465 Seconds, Ymax = 2.8 G's @ 0.0069 Seconds



B-128



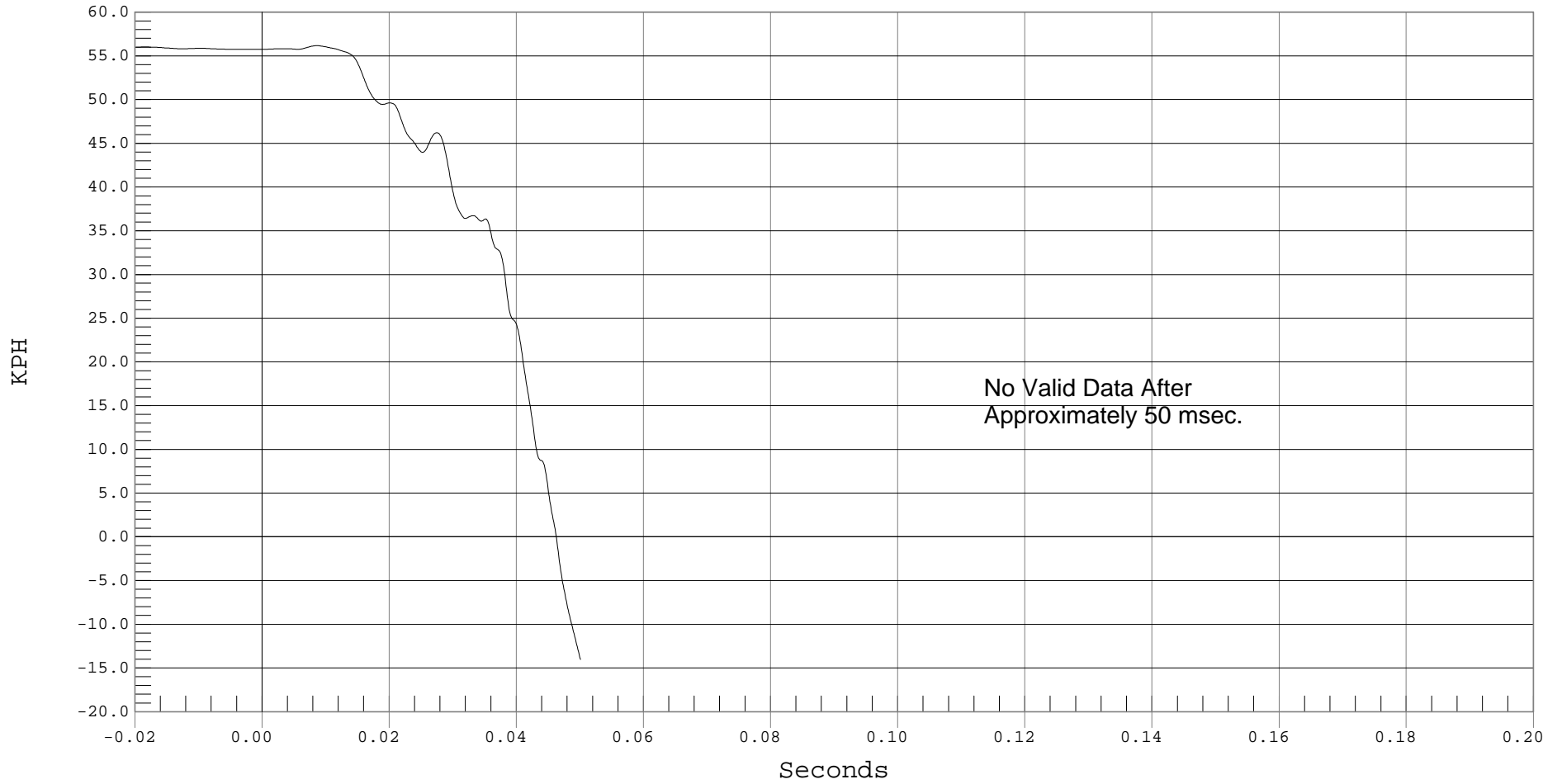
RIGHT BRAKE CALIPER X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 RIGHT BRAKE CALIPER X VELOCITY, B01032AI.V60

Ymin = -14.04 KPH @ 0.0500 Seconds, Ymax = 56.17 KPH @ 0.0085 Seconds



No Valid Data After
Approximately 50 msec.



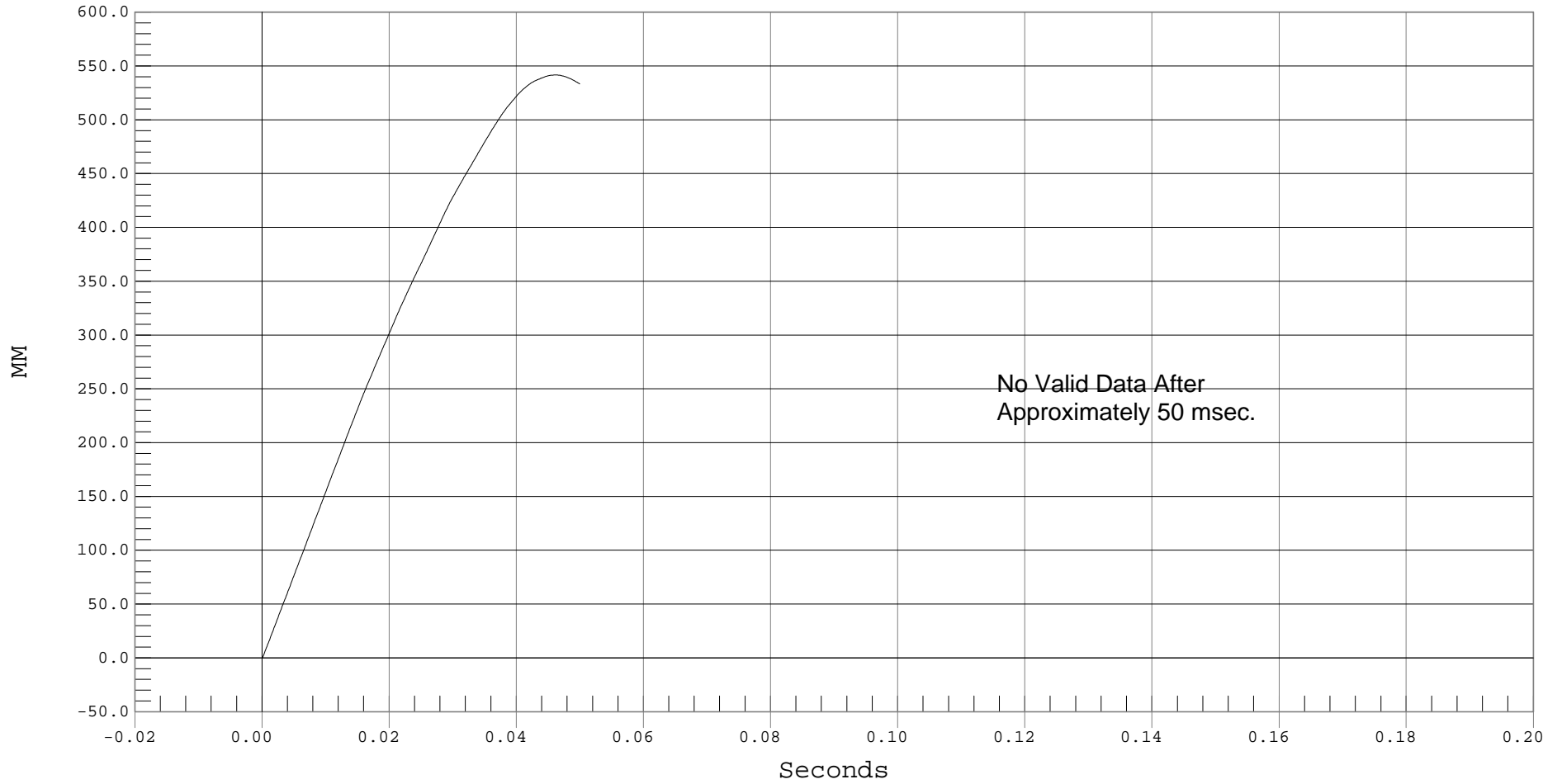
RIGHT BRAKE CALIPER X DISPLACEMENT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 RIGHT BRAKE CALIPER X DISPLACEMENT, B01032AI.D60

Ymin = 0 MM @ 0.0000 Seconds, Ymax = 541.65 MM @ 0.0461 Seconds



B-130



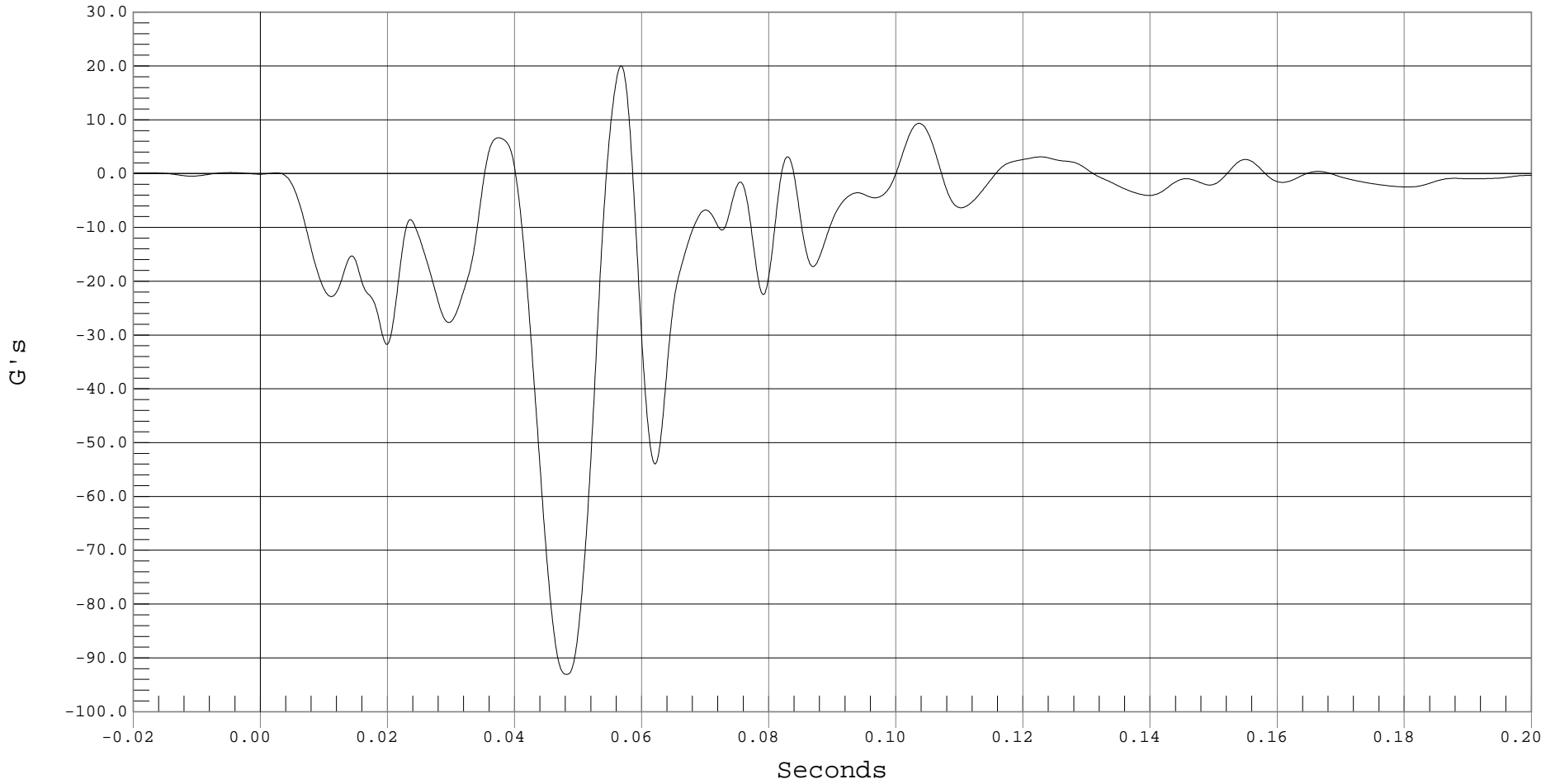
INSTRUMENT PANEL X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 INSTRUMENT PANEL X, B01032AF.A57

Ymin = -93.08 G's @ 0.0481 Seconds, Ymax = 20.01 G's @ 0.0567 Seconds



B-131



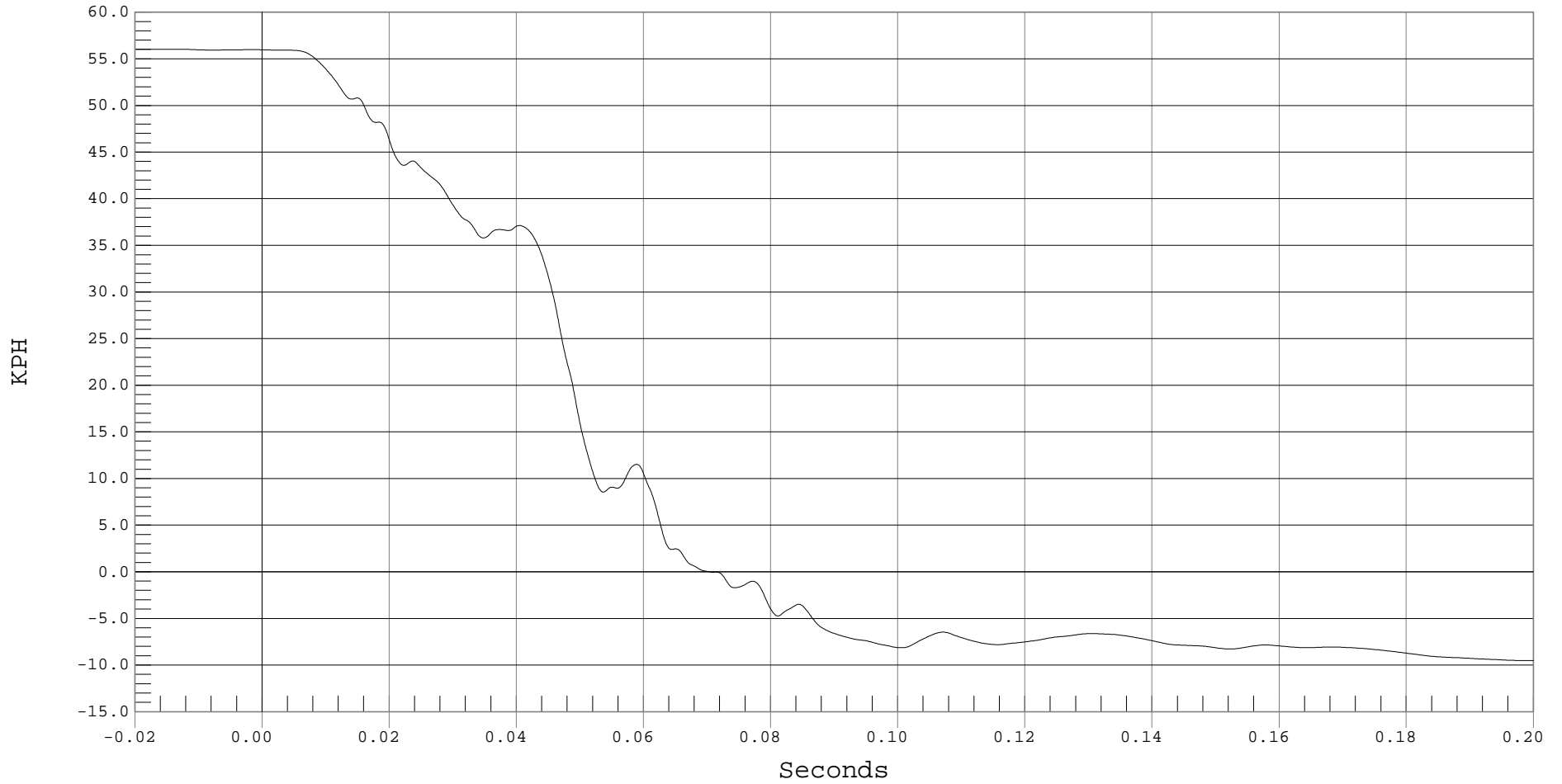
INSTRUMENT PANEL X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 INSTRUMENT PANEL X VELOCITY, B01032AI.V57

Ymin = -9.52 KPH @ 0.2000 Seconds, Ymax = 56.02 KPH @ -0.0137 Seconds





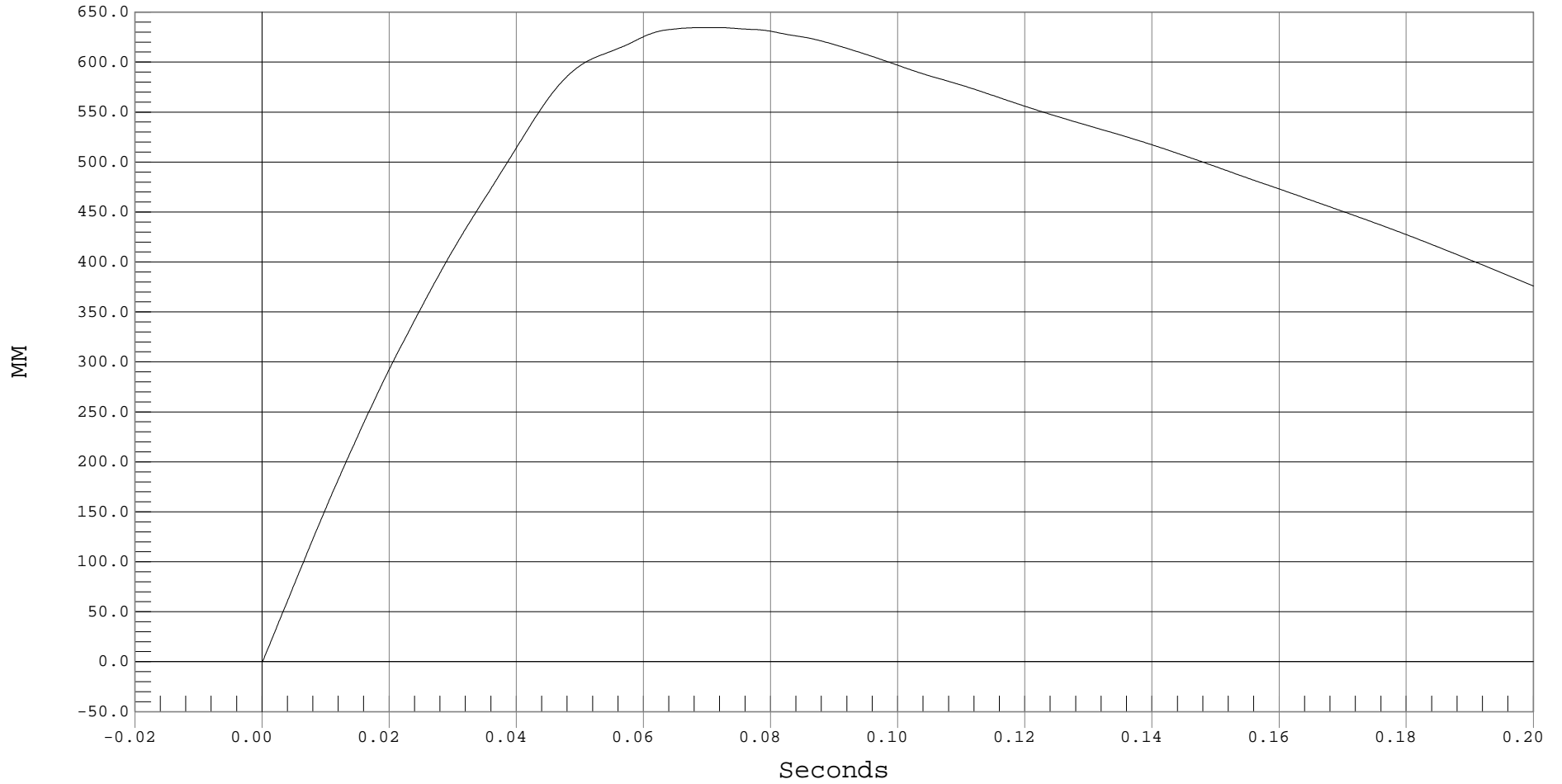
INSTRUMENT PANEL X DISPLACEMENT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 INSTRUMENT PANEL X DISPLACEMENT, B01032AI.D57

Ymin = 0 MM @ 0.0000 Seconds, Ymax = 634.51 MM @ 0.0702 Seconds



B-133



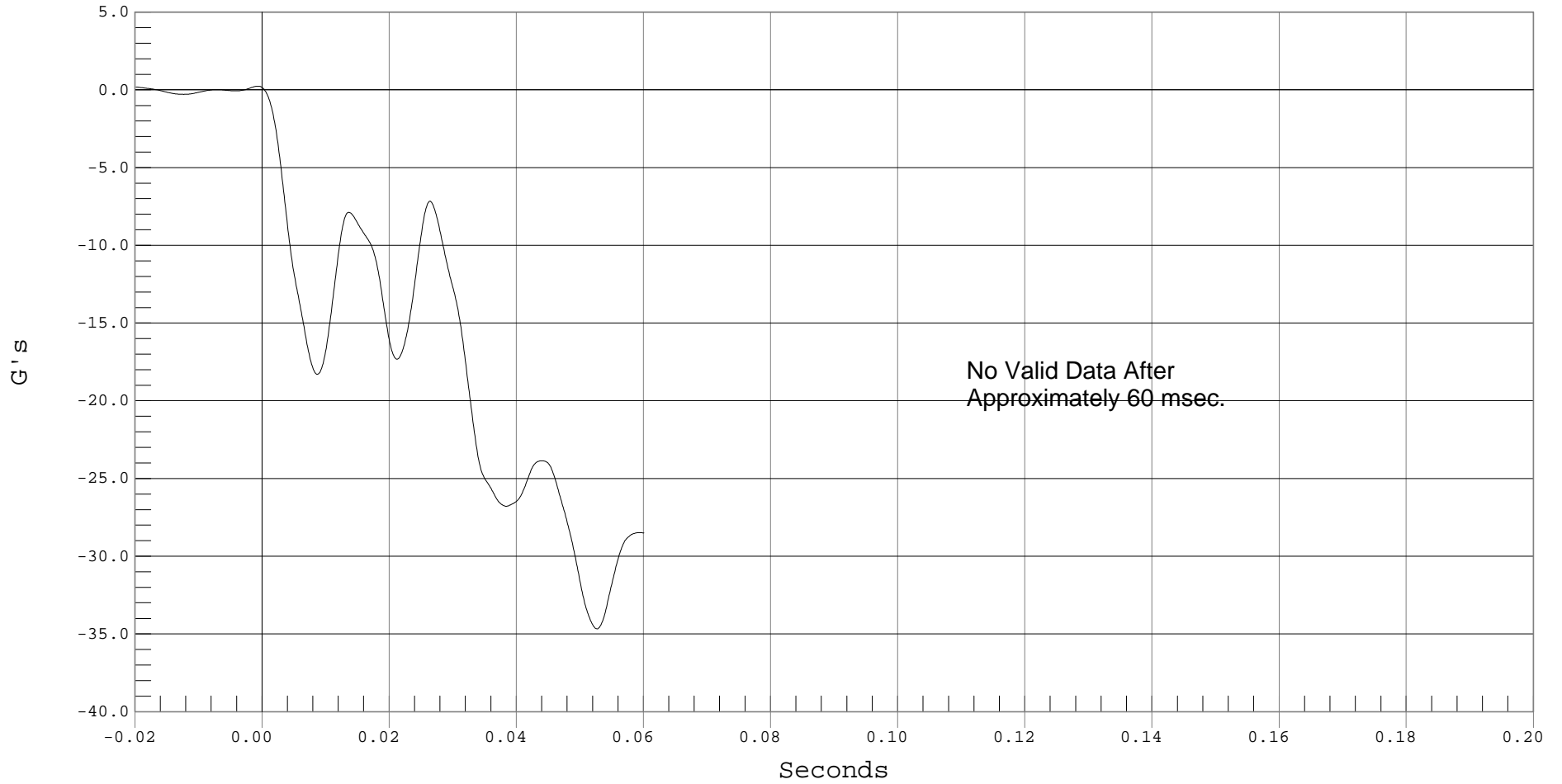
LEFT REAR SEAT CROSSMEMBER REDUNDANT X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 LEFT REAR SEAT X-MEMBER Xr, B01032AF.A03

Ymin = -34.67 G's @ 0.0526 Seconds, Ymax = .24 G's @ -0.0007 Seconds



B-134



LEFT REAR SEAT CROSSMEMBER REDUNDANT X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT

Test Date: 03-21-01

Component: 2001 NISSAN MAXIMA (M15207)

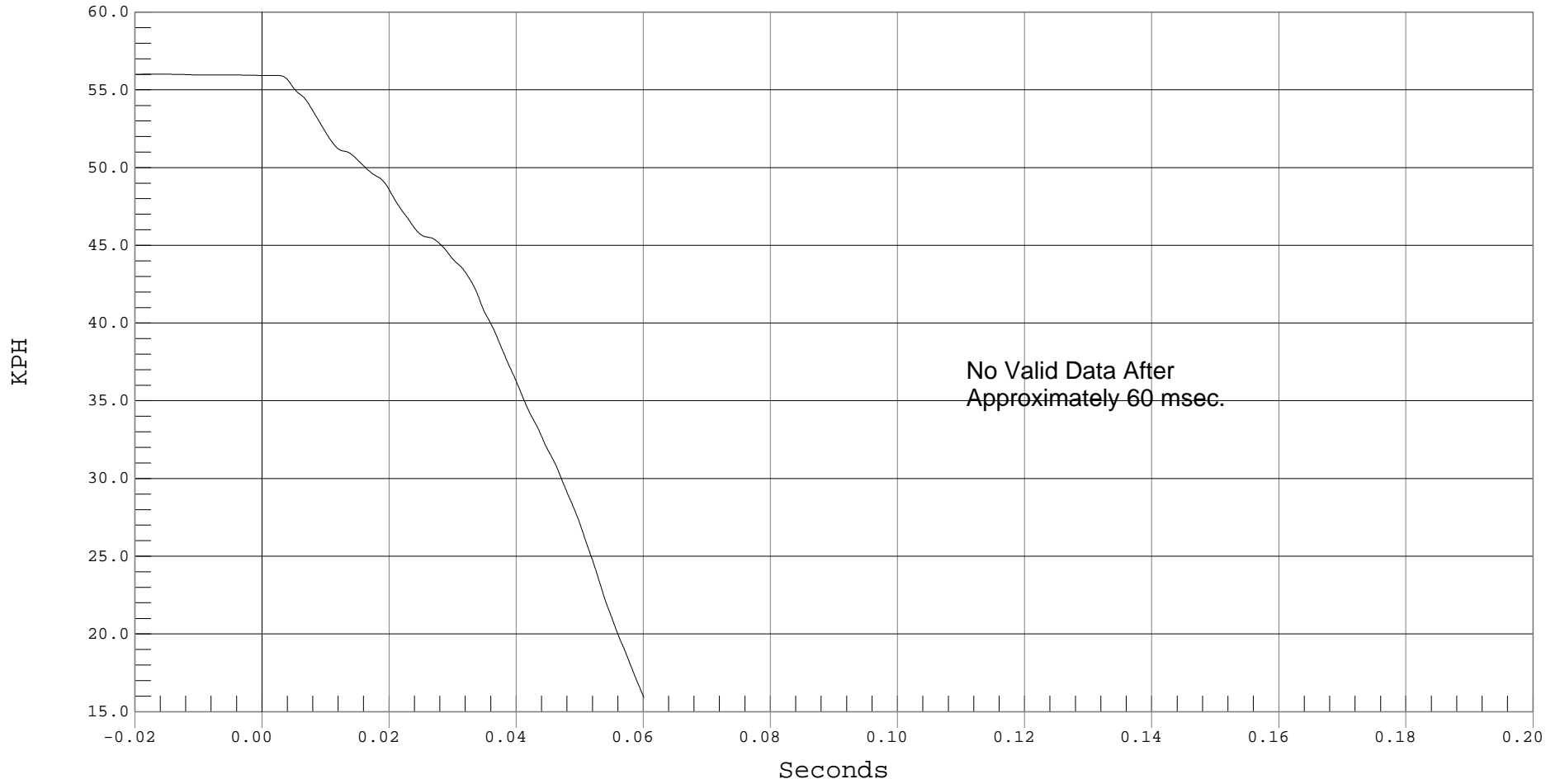
Speed: 34.8 MPH, 56.0 KPH

Other Info:

Filter Class: 180

— 1 LEFT REAR SEAT CROSSMEMBER REDUNDANT X VELOCITY, B01032AI.V03

Ymin = 15.91 KPH @ 0.0600 Seconds, Ymax = 56.01 KPH @ -0.0160 Seconds



B-135



LEFT REAR SEAT CROSSMEMBER REDUNDANT X DISPLACEMENT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT

Test Date: 03-21-01

Component: 2001 NISSAN MAXIMA (M15207)

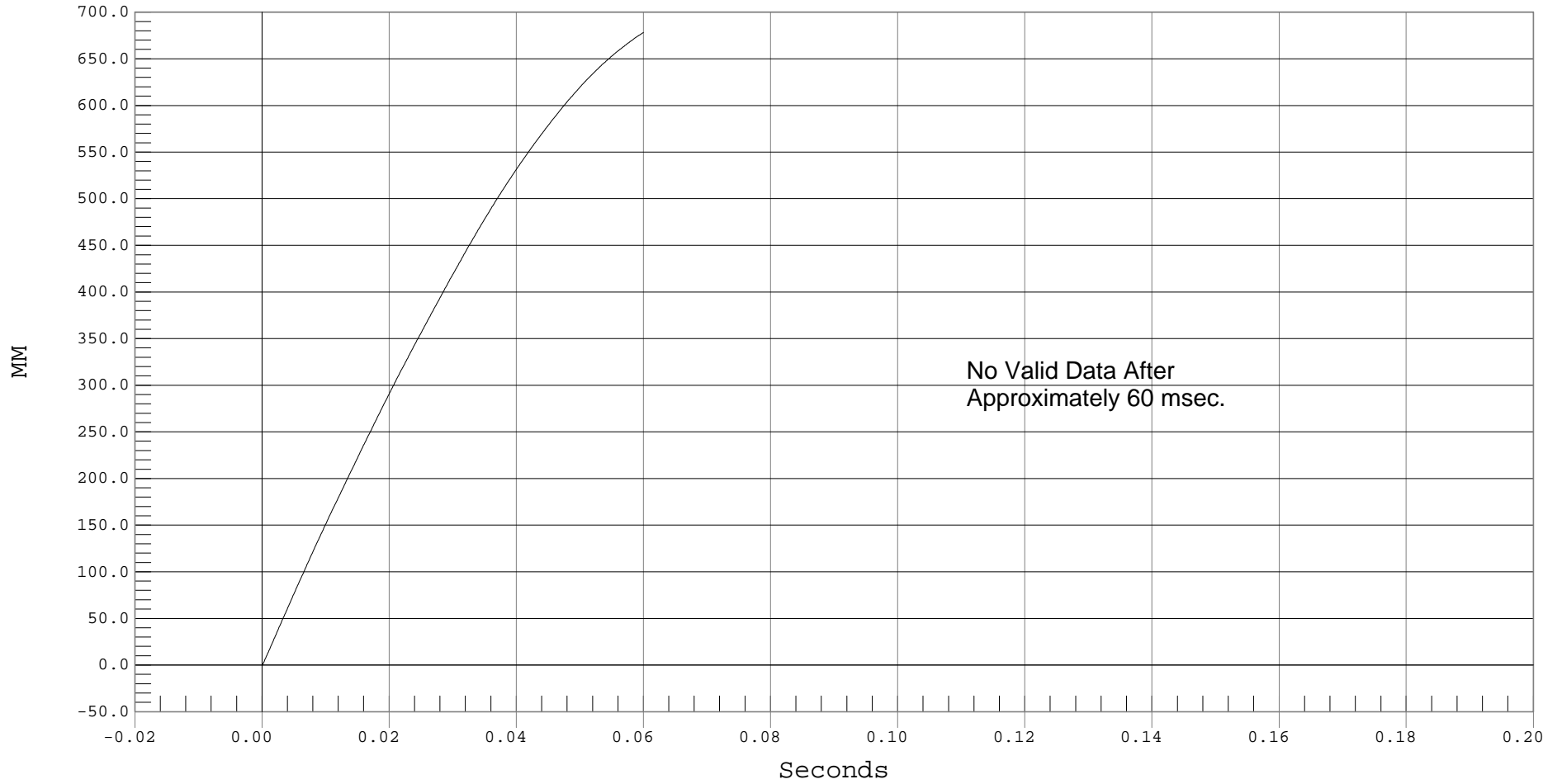
Speed: 34.8 MPH, 56.0 KPH

Other Info:

Filter Class: 180

— 1 LEFT REAR SEAT CROSSMEMBER REDUNDANT X DISPLACEMENT, B01032AI.D03

Ymin = 0 MM @ 0.0000 Seconds, Ymax = 678.22 MM @ 0.0599 Seconds





RIGHT REAR SEAT CROSSMEMBER REDUNDANT X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT

Test Date: 03-21-01

Component: 2001 NISSAN MAXIMA (M15207)

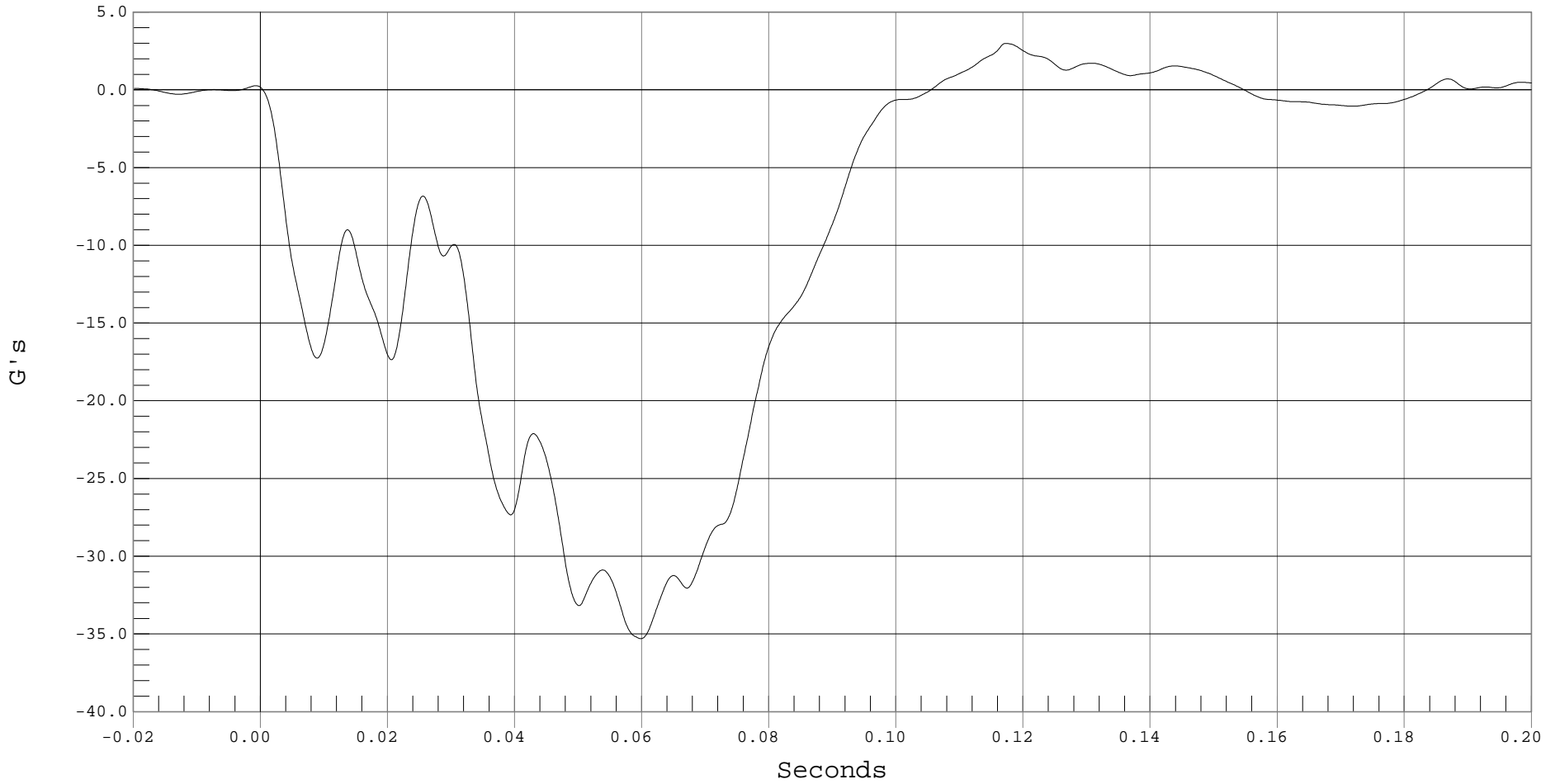
Speed: 34.8 MPH, 56.0 KPH

Other Info:

Filter Class: 60

— 1 RIGHT REAR SEAT X-MEMBER Xr, B01032AF.A02

Ymin = -35.31 G's @ 0.0598 Seconds, Ymax = 2.98 G's @ 0.1172 Seconds



B-137



RIGHT REAR SEAT CROSSMEMBER REDUNDANT X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT

Test Date: 03-21-01

Component: 2001 NISSAN MAXIMA (M15207)

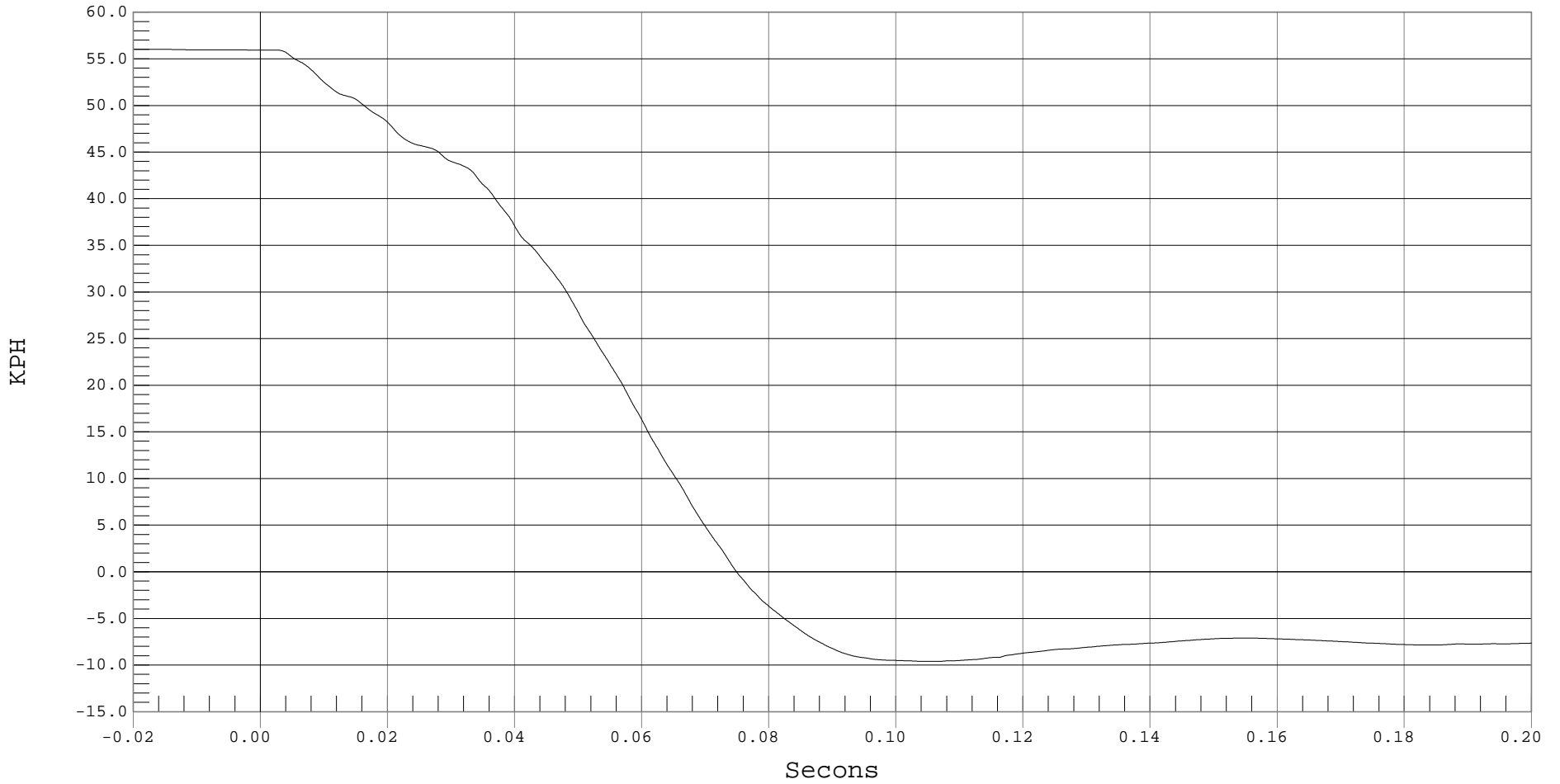
Speed: 34.8 MPH, 56.0 KPH

Other Info:

Filter Class: 180

— 1 RIGHT REAR SEAT CROSSMEMBER REDUNDANT X VELOCITY, B01032AI.V02

Ymin = -9.61 KPH @ 0.1062 Secons, Ymax = 56.01 KPH @ -0.0161 Secons





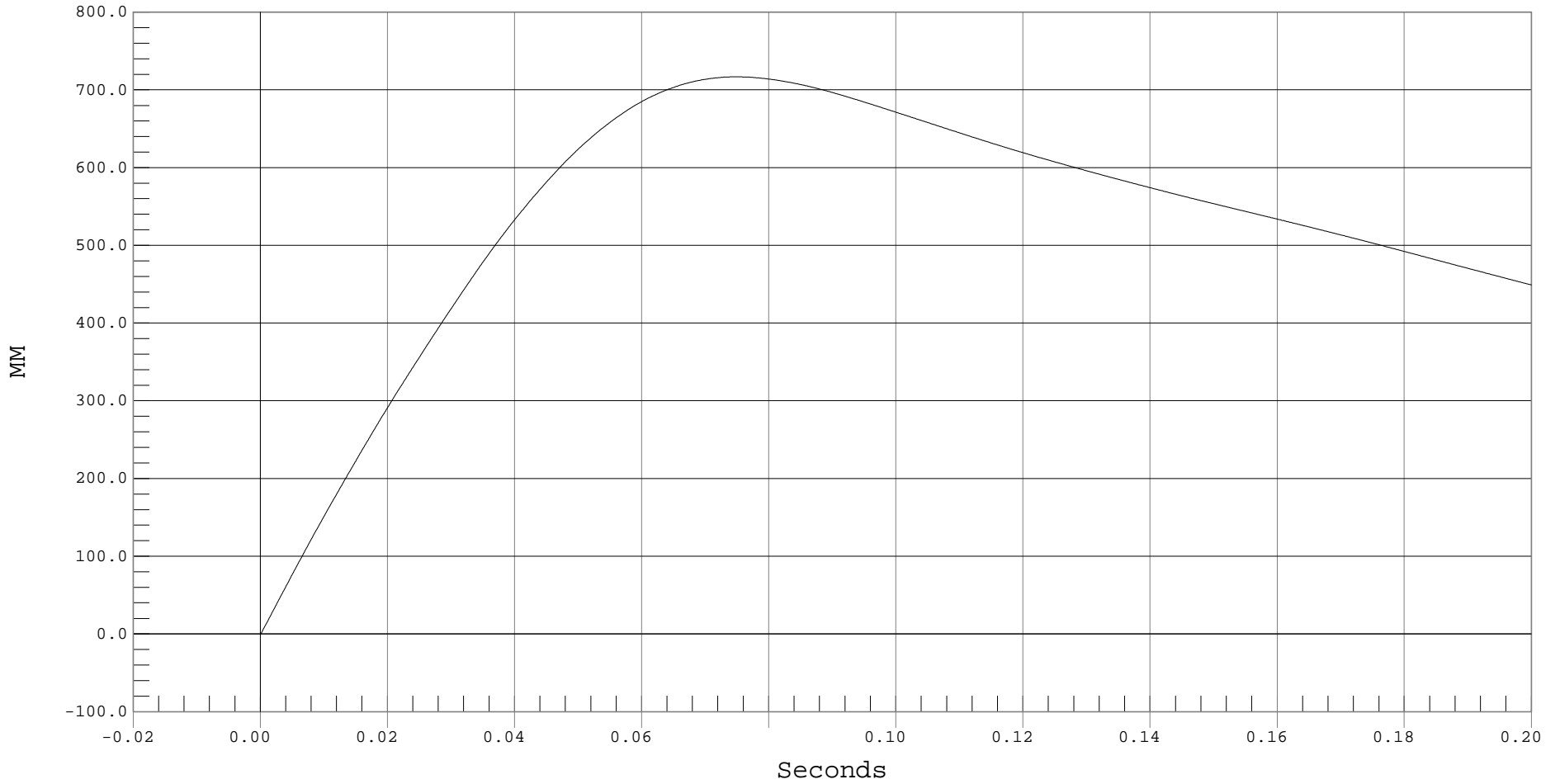
RIGHT REAR SEAT CROSSMEMBER REDUNDANT X DISPLACEMENT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 RIGHT REAR SEAT CROSSMEMBER REDUNDANT X DISPLACEMENT, B01032AI.D02

Ymin = 0 MM @ 0.0000 Seconds, Ymax = 716.81 MM @ 0.0747 Seconds





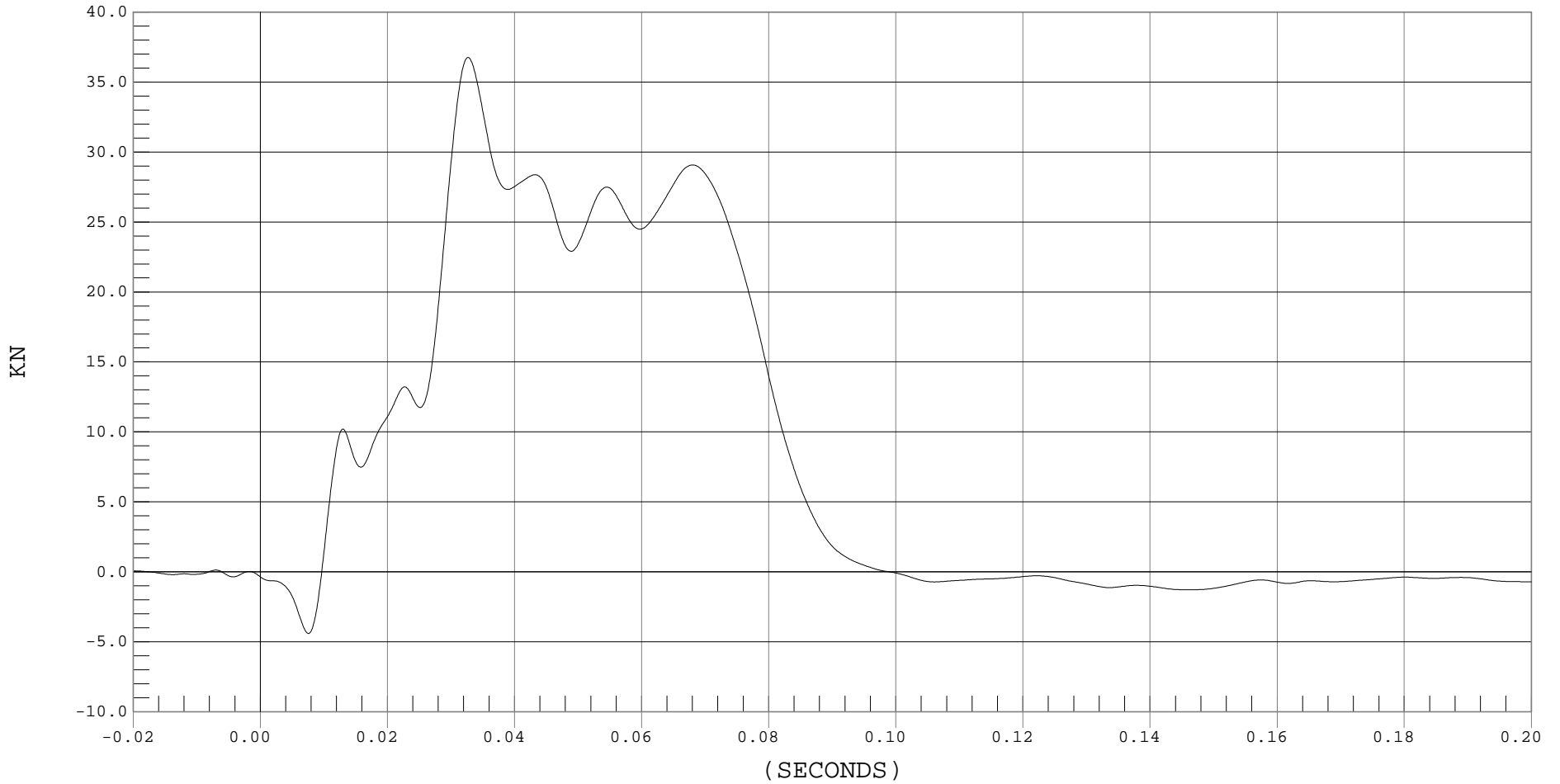
UPPER LEFT BARRIER FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 BARRIER UPPER LEFT, B01032FF.F02

Ymin = -4.41 KN @ 0.0075 SECONDS, Ymax = 36.76 KN @ 0.0326 SECONDS



B-140



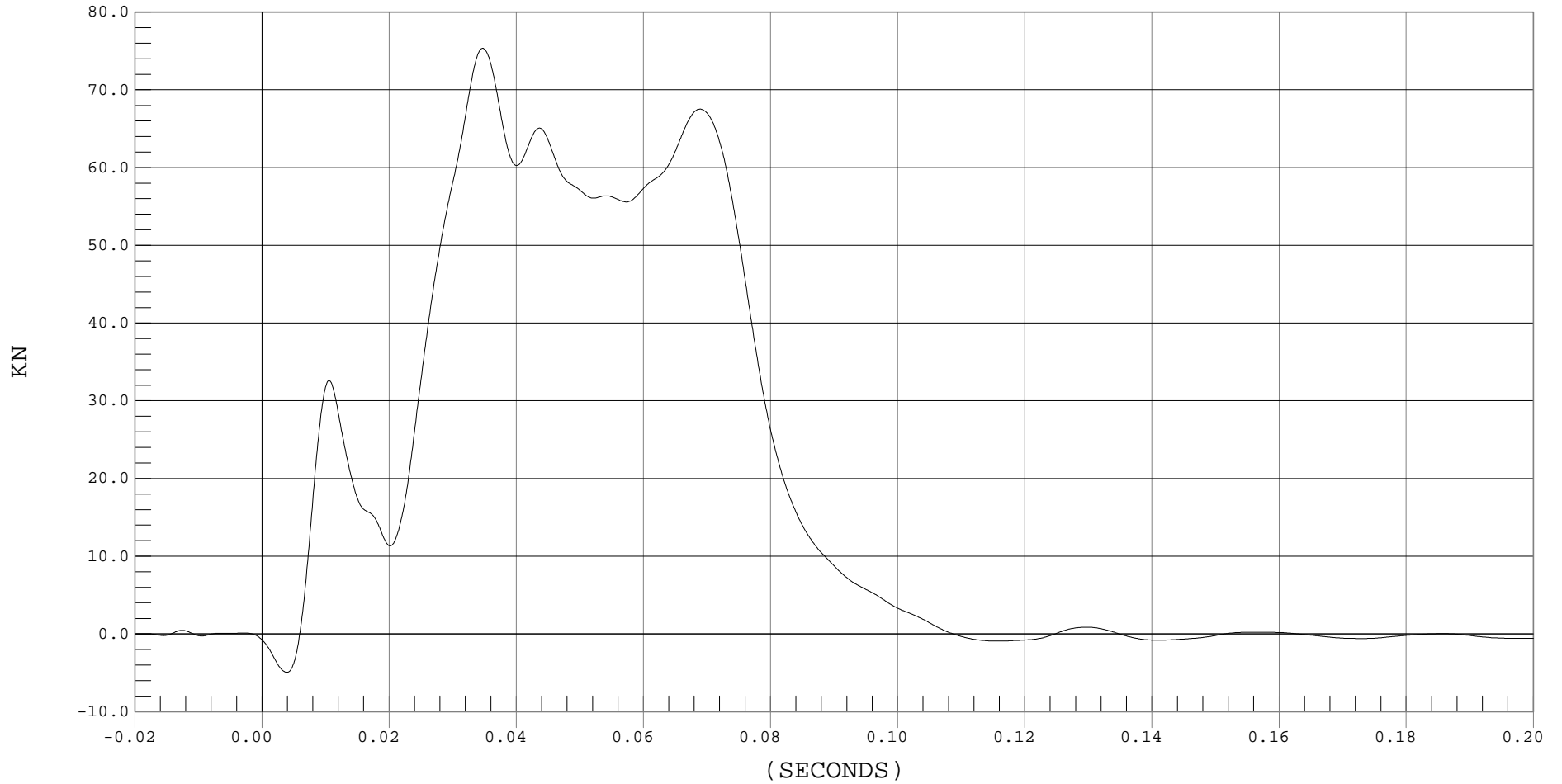
UPPER CENTER BARRIER FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 BARRIER UPPER CENTER, B01032FF.F03

Ymin = -4.93 KN @ 0.0038 SECONDS, Ymax = 75.34 KN @ 0.0346 SECONDS



B-141



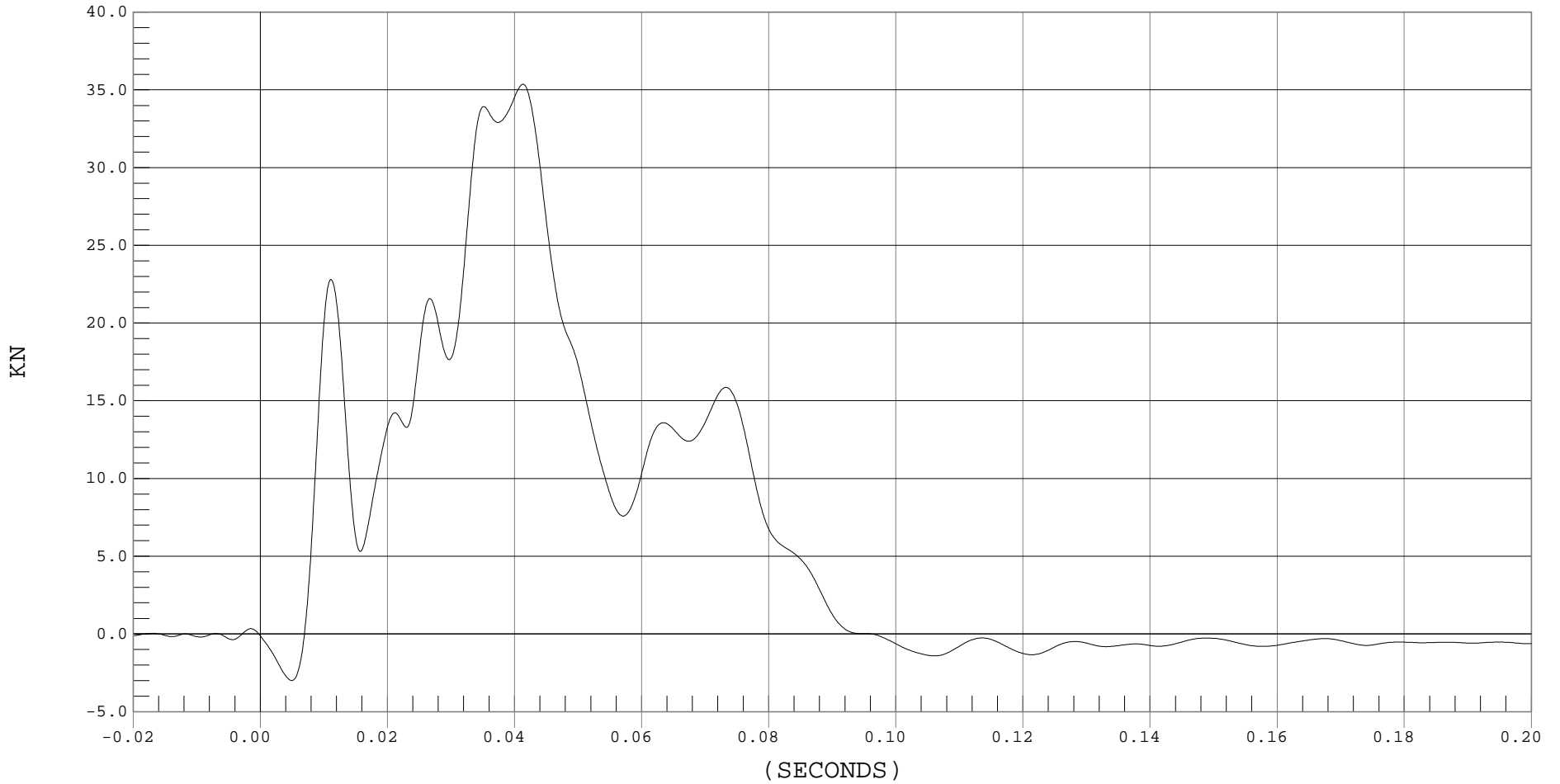
UPPER RIGHT BARRIER FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 BARRIER UPPER RIGHT, B01032FF.F04

Ymin = -3 KN @ 0.0049 SECONDS, Ymax = 35.36 KN @ 0.0412 SECONDS



B-142



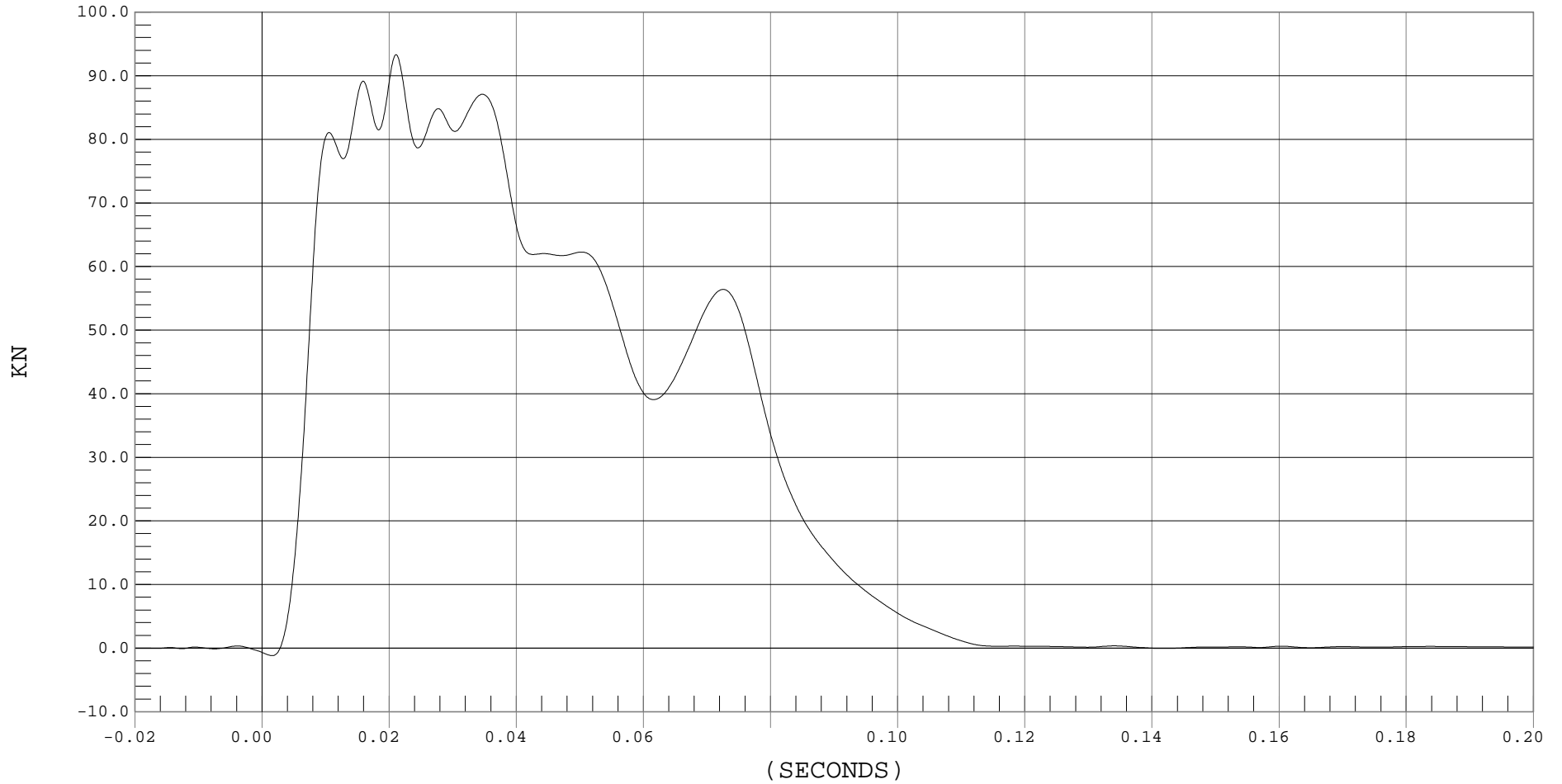
LOWER LEFT BARRIER FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 BARRIER LOWER LEFT, B01032FF.F05

Ymin = -1.2 KN @ 0.0015 SECONDS, Ymax = 93.32 KN @ 0.0210 SECONDS





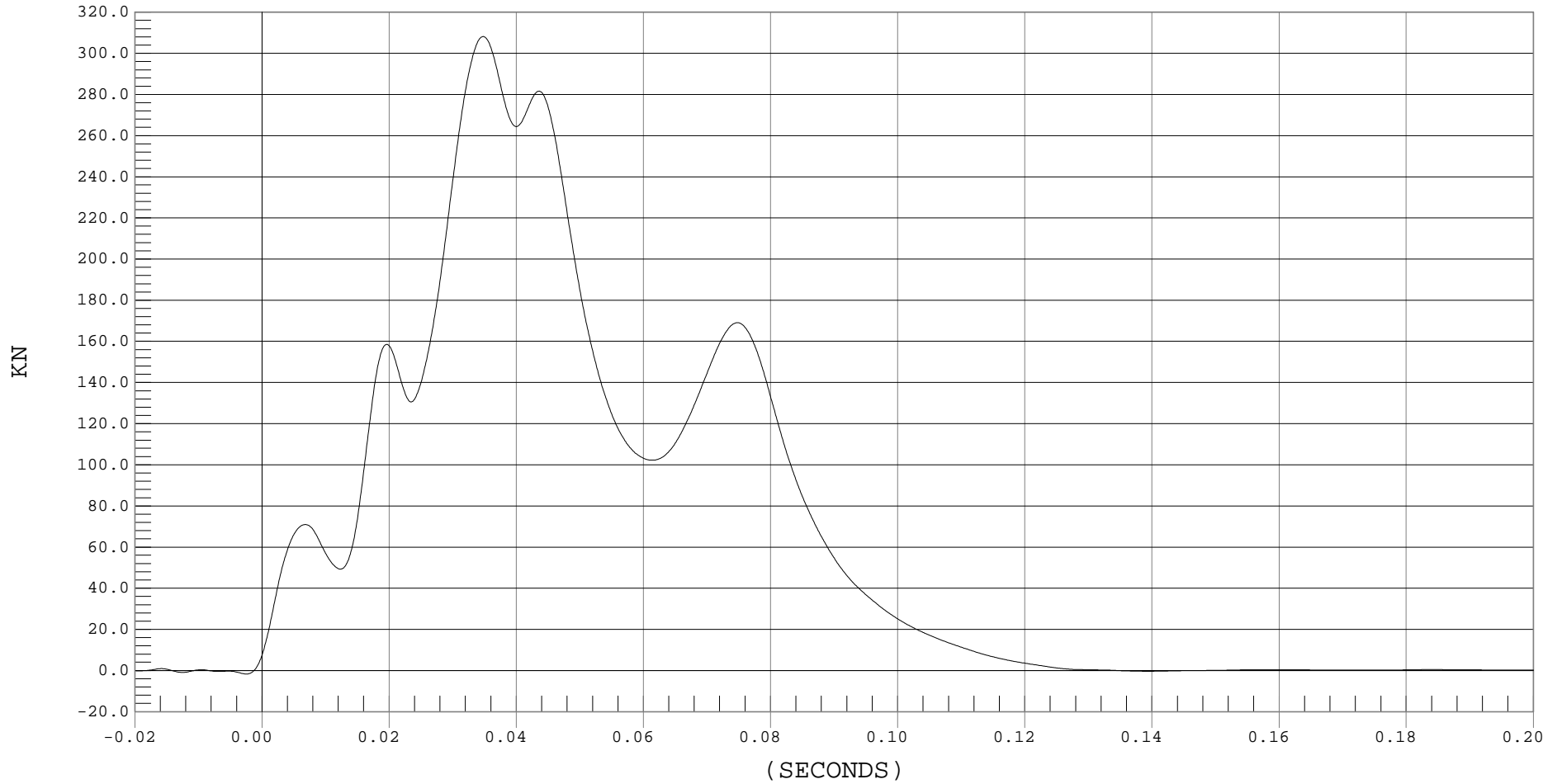
LOWER CENTER BARRIER FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 BARRIER LOWER CENTER, B01032FF.F06

Ymin = -1.68 KN @ -0.0026 SECONDS, Ymax = 308.18 KN @ 0.0347 SECONDS



B-144



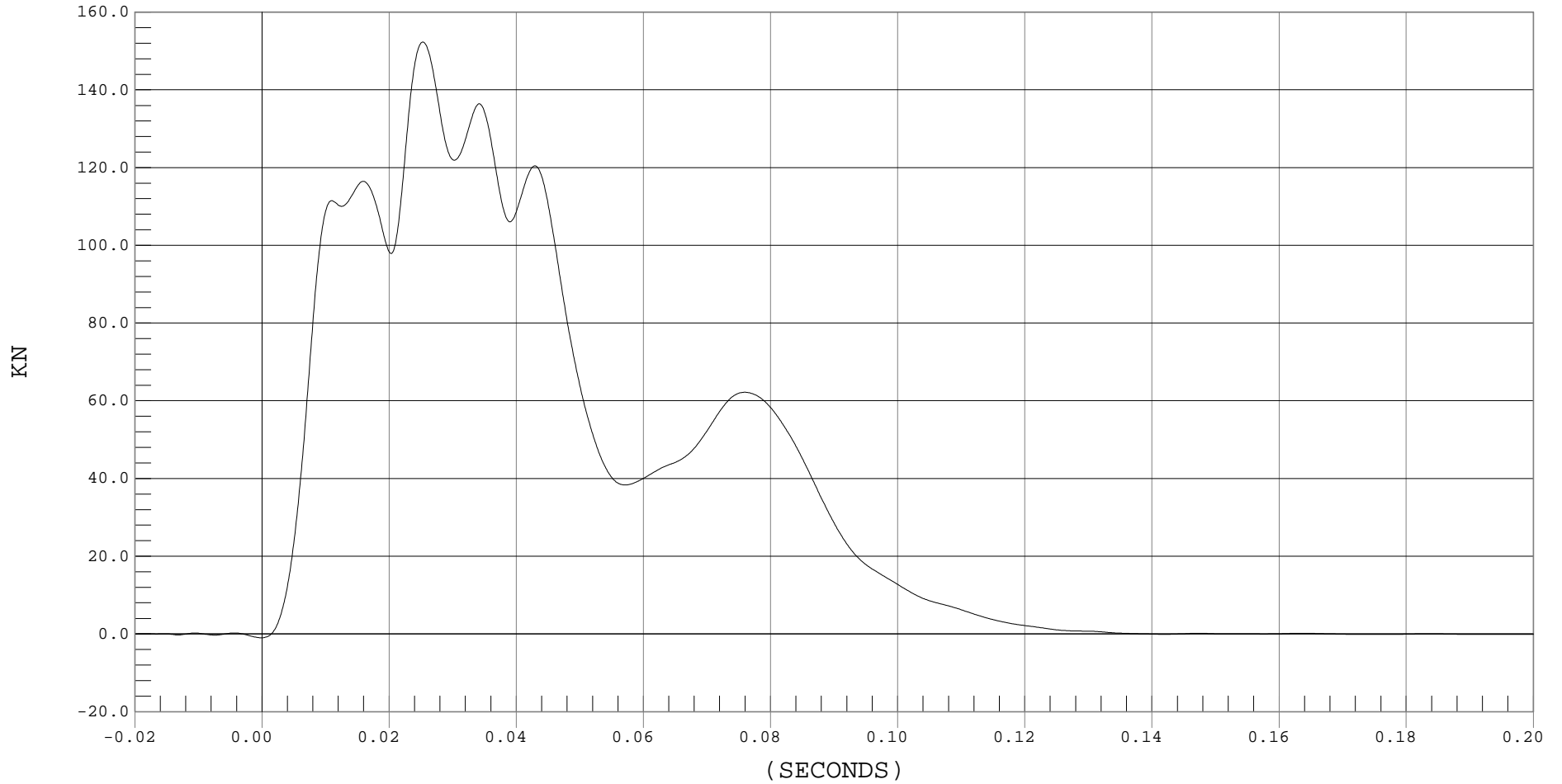
LOWER RIGHT BARRIER FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 BARRIER LOWER RIGHT, B01032FF.F07

Ymin = -0.98 KN @ -0.0002 SECONDS, Ymax = 152.34 KN @ 0.0252 SECONDS



B-145



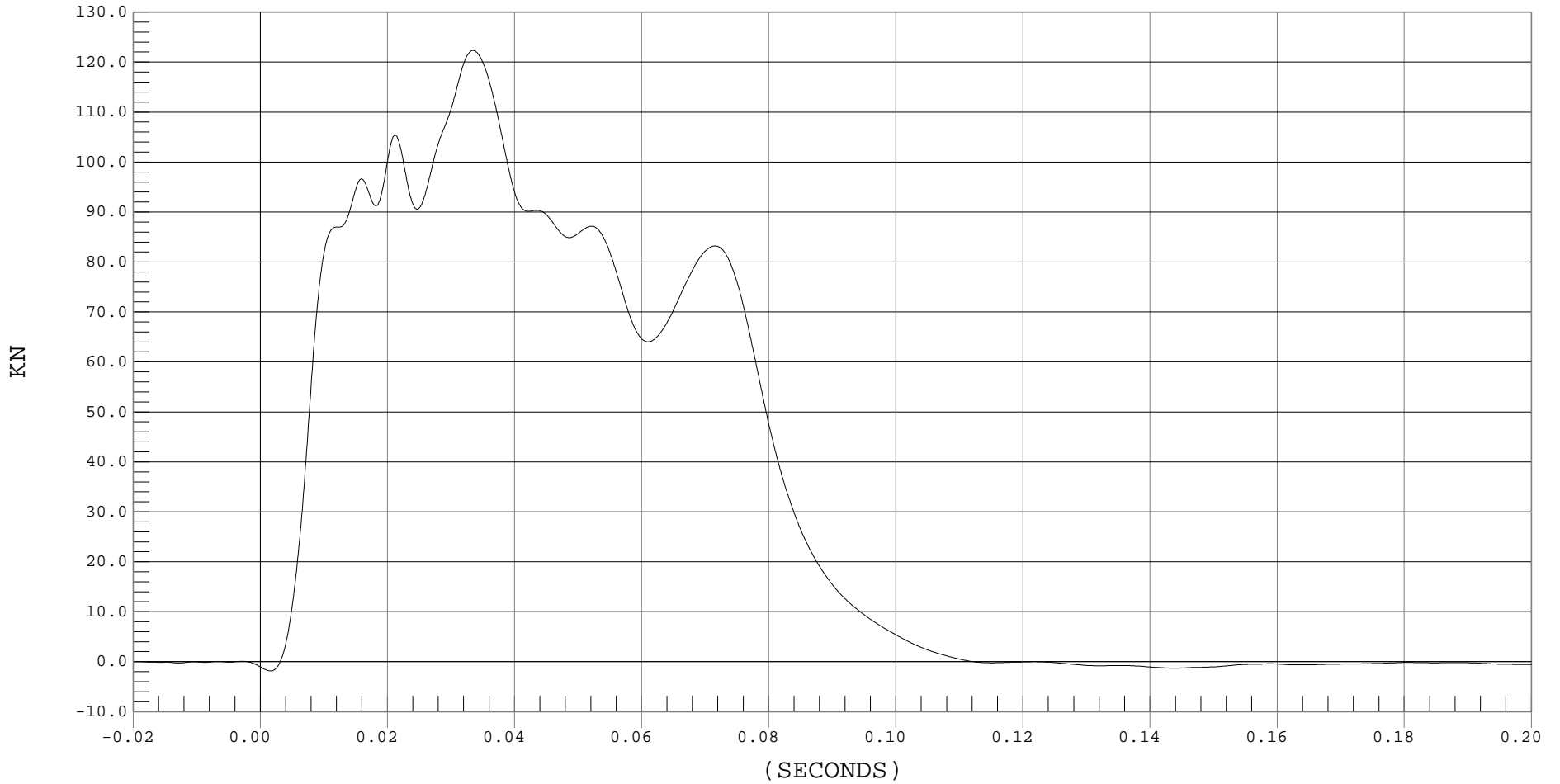
SUM OF LEFT BARRIER FORCES

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 SUM OF LEFT BARRIER FORCES, B01032FU.F02

Ymin = -1.84 KN @ 0.0015 SECONDS, Ymax = 122.34 KN @ 0.0334 SECONDS





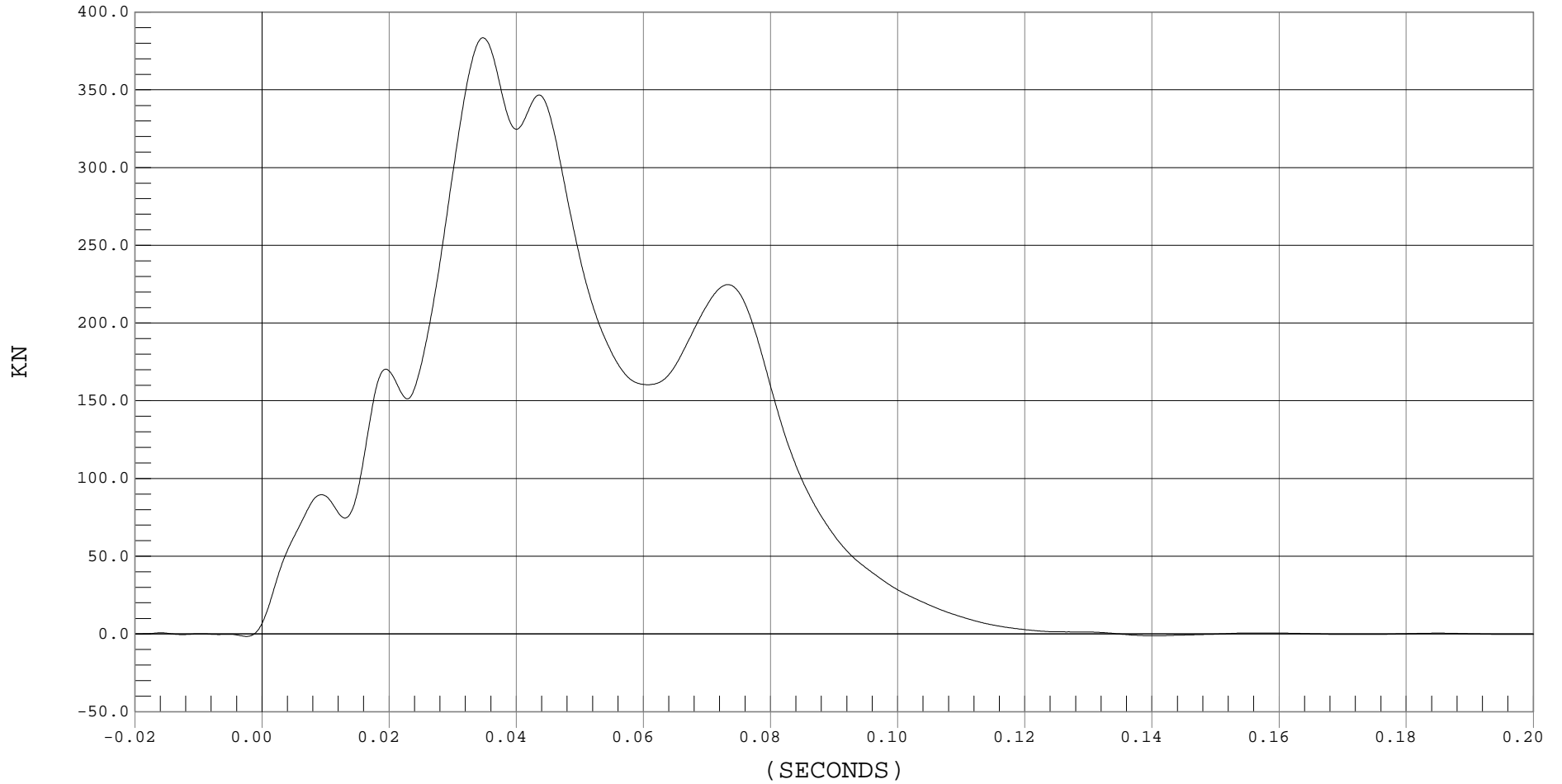
SUM OF CENTER BARRIER FORCES

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 SUM OF CENTER BARRIER FORCES, B01032FU.F03

Ymin = -1.55 KN @ -0.0025 SECONDS, Ymax = 383.52 KN @ 0.0347 SECONDS



B-147



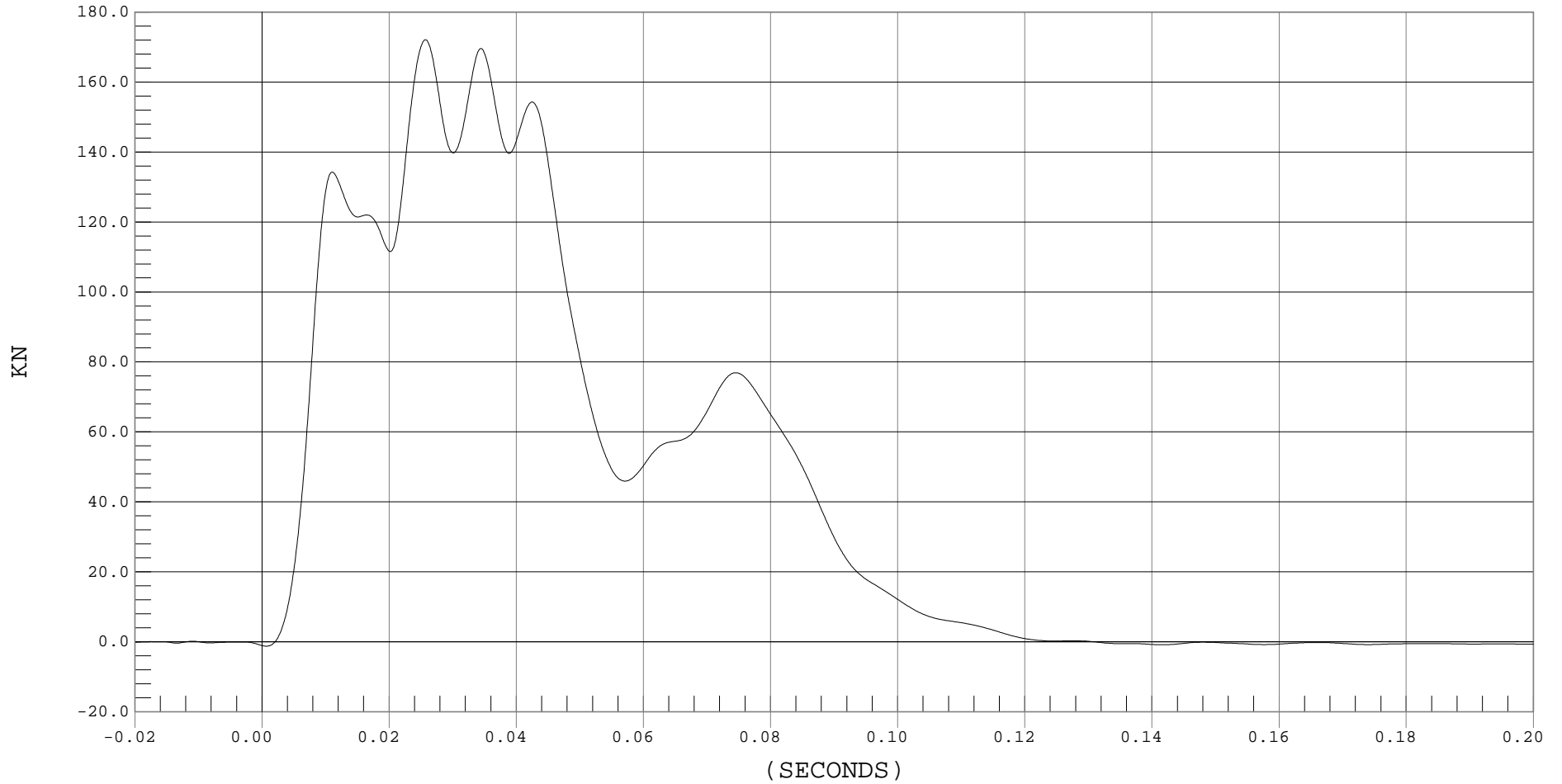
SUM OF RIGHT BARRIER FORCES

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 SUM OF RIGHT BARRIER FORCES, B01032FU.F04

Ymin = -1.27 KN @ 0.0006 SECONDS, Ymax = 172.12 KN @ 0.0256 SECONDS





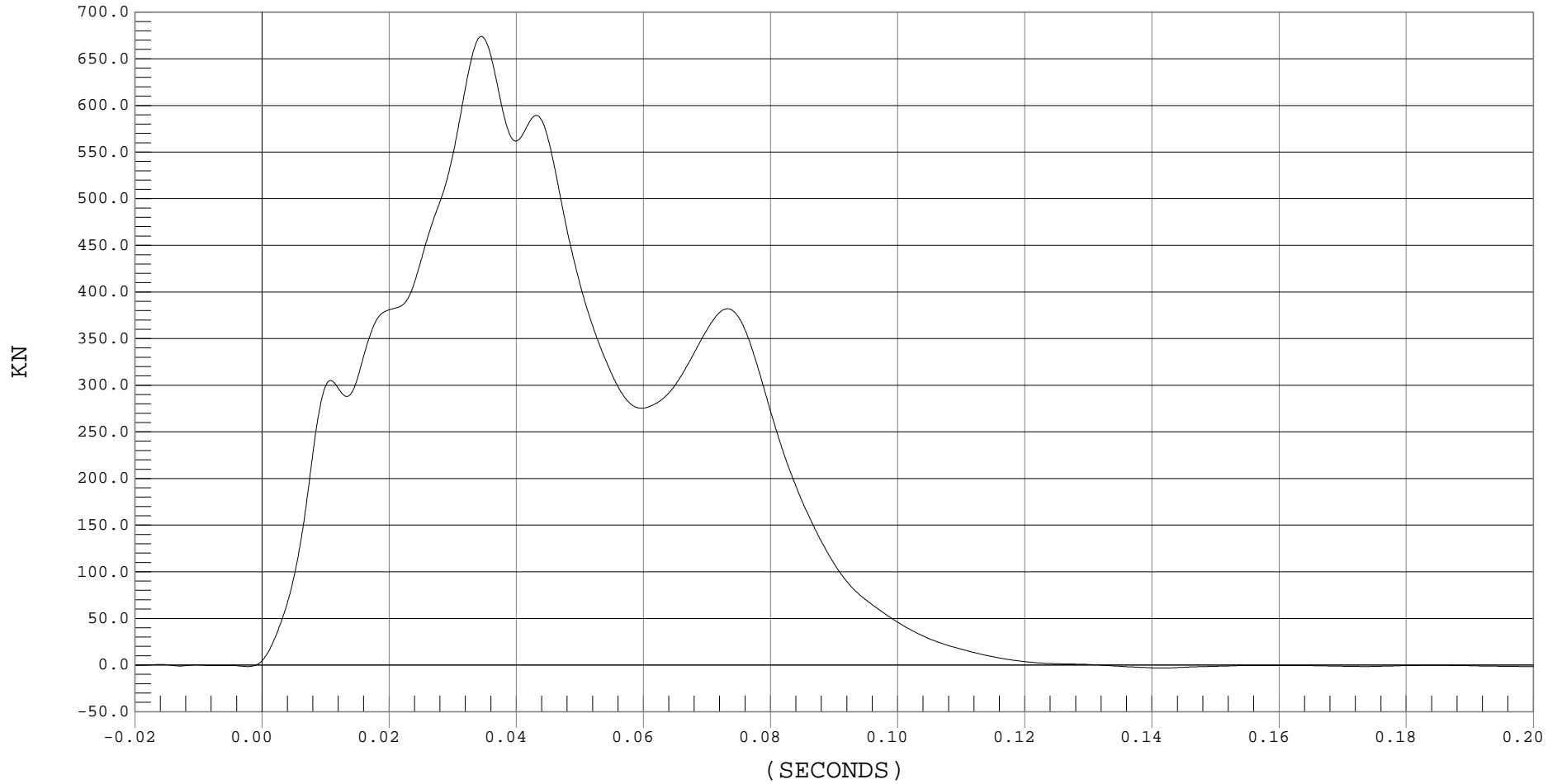
SUM OF BARRIER FORCES

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 SUM OF BARRIER FORCES, B01032FU.F05

Ymin = -3.15 KN @ 0.1415 SECONDS, Ymax = 673.99 KN @ 0.0344 SECONDS



APPENDIX C

DUMMY CALIBRATION DATA TRACES AND TABLES

Hybrid III Calibration Data Sheet
5th Percentile Female
Left Knee Impact Test

ATD Serial No.: 288

Test I.D.: D01296

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.6	PASS
Laboratory Relative Humidity	%	10 to 70	27	PASS
Probe Velocity	m/s	2.07 to 2.13	2.12	PASS
Peak Probe Force	kN	3.45 – 4.06	3.68	PASS
Overall Test Results				PASS

 Laboratory Technician

 3/8/01
 Test Date

 Approved By



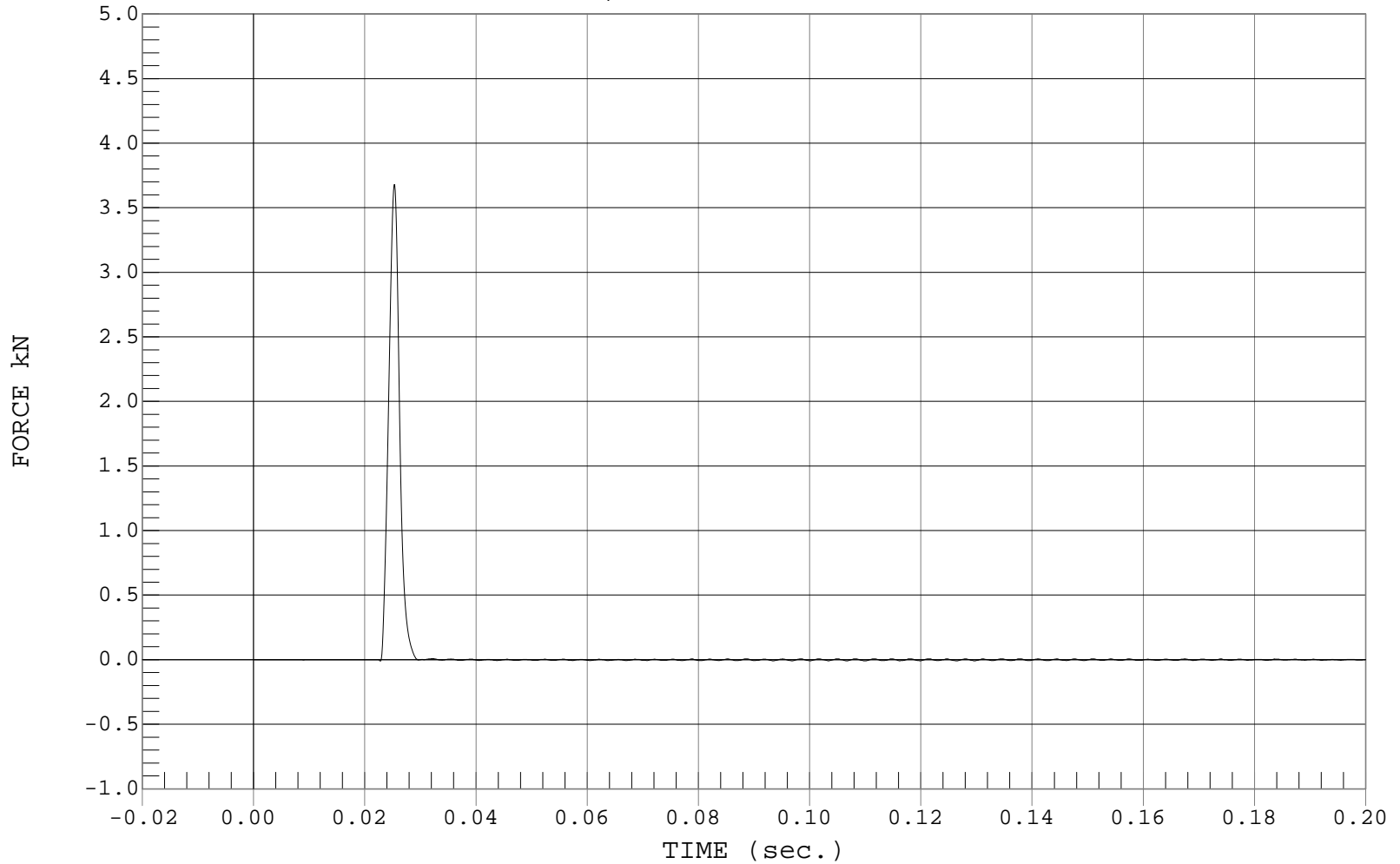
LEFT KNEE IMPACT

Test Desc.: Dummy Calibration - Left Knee Impact
Component: Dummy #288

Test Date: 03-08-01
Speed: 6.94 FT/SEC, 2.12 M/SEC

— 1 FORCE, D01296FF.F09

Ymin = -.01 kN @ 0.0228 sec., Ymax = 3.68 kN @ 0.0254 sec.



Hybrid III Calibration Data Sheet
5th Percentile Female
Right Knee Impact Test

ATD Serial No.: 288

Test I.D.: D01295

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.2	PASS
Laboratory Relative Humidity	%	10 to 70	27	PASS
Probe Velocity	m/s	2.07 to 2.13	2.12	PASS
Peak Probe Force	kN	3.45 – 4.06	3.67	PASS
Overall Test Results				PASS

 Laboratory Technician

3/8/01
 Test Date

 Approved By



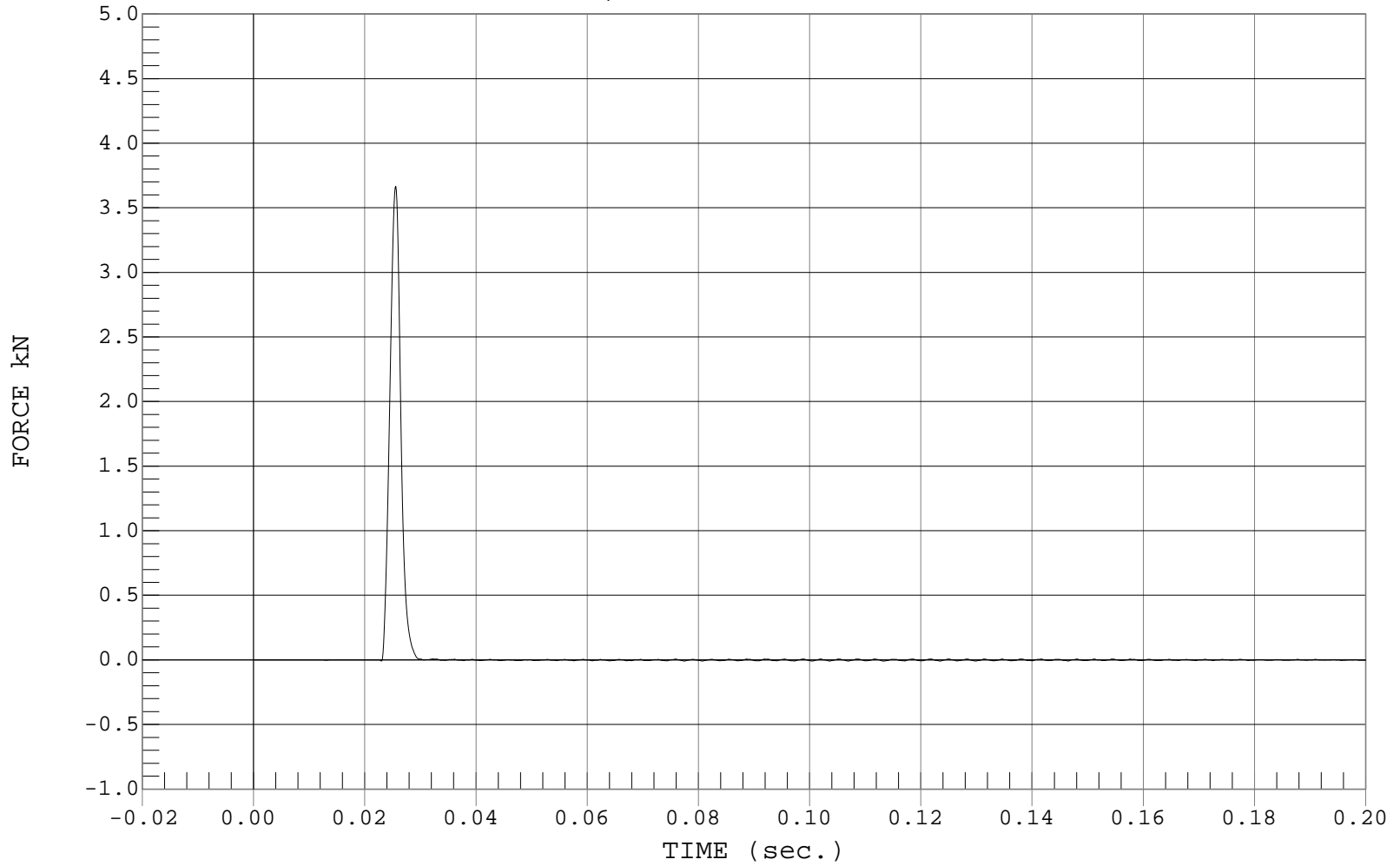
RIGHT KNEE IMPACT

Test Desc.: Dummy Calibration - Right Knee Impact
Component: Dummy #288

Test Date: 03-08-01
Speed: 6.94 FT/SEC, 2.12 M/SEC

— 1 FORCE, D01295FF.F09

Ymin = -.01 kN @ 0.0230 sec., Ymax = 3.67 kN @ 0.0256 sec.



Hybrid III Calibration Data Sheet
5th Percentile Female
Head Drop Calibration

ATD Serial No.: 288

Test I.D.: D01291

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.0	PASS
Laboratory Relative Humidity	%	10 to 70	15	PASS
Peak Resultant Acceleration	G's	250 to 300	269	PASS
Peak Lateral Acceleration	G's	≤±15.0	-2	PASS
Is Acceleration Unimodal?	Yes/No	< 10% Peak	Yes	PASS
Overall Test Results				PASS

 Laboratory Technician

 3/6/01
 Test Date

 Approved By



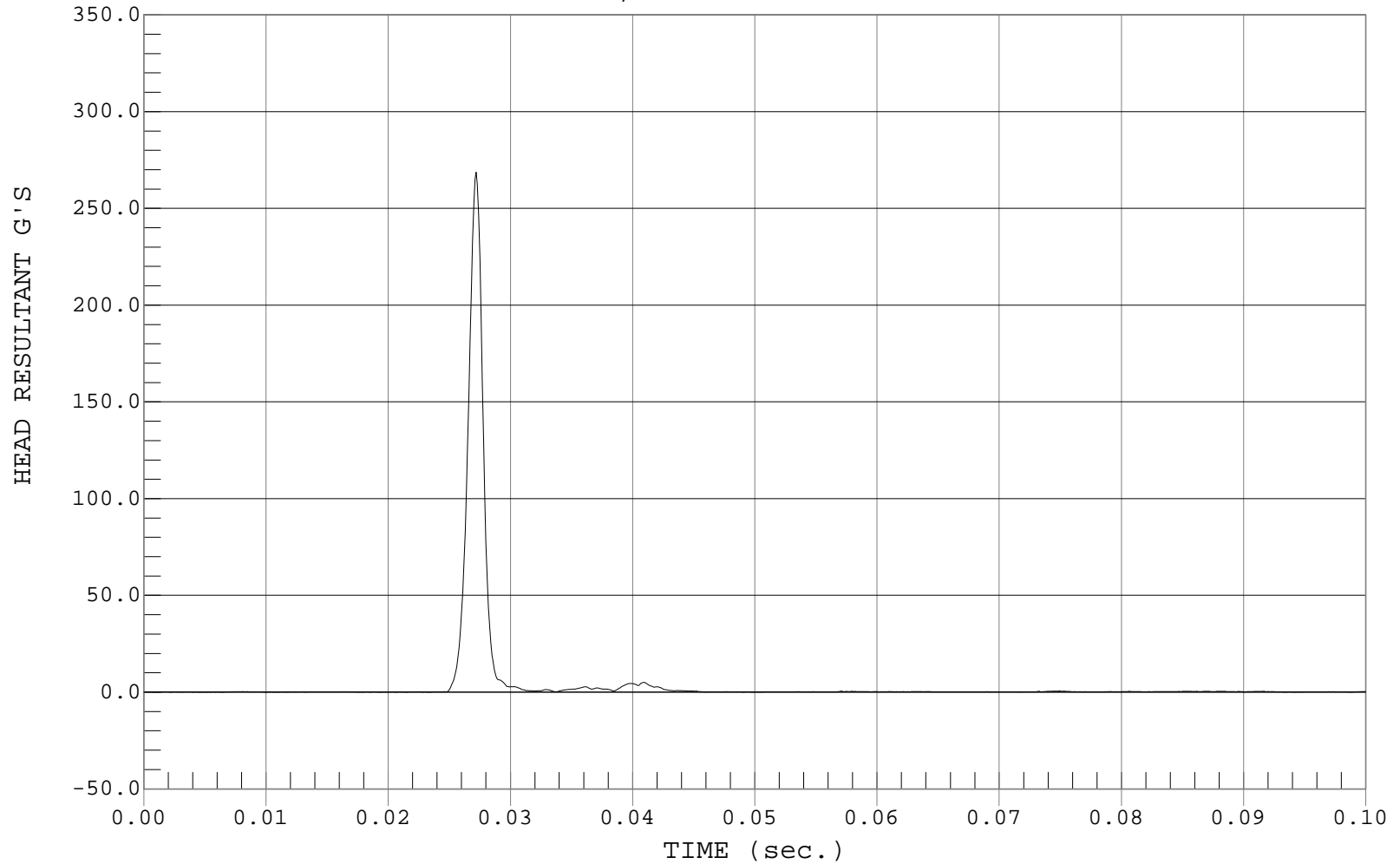
PEAK RESULTANT ACCELERATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #288

Test Date: 03-06-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

— 1 HEAD RESULTANT, D01291AV.A01

Ymin = .04 G'S @ 0.0010 sec., Ymax = 268.73 G'S @ 0.0272 sec.





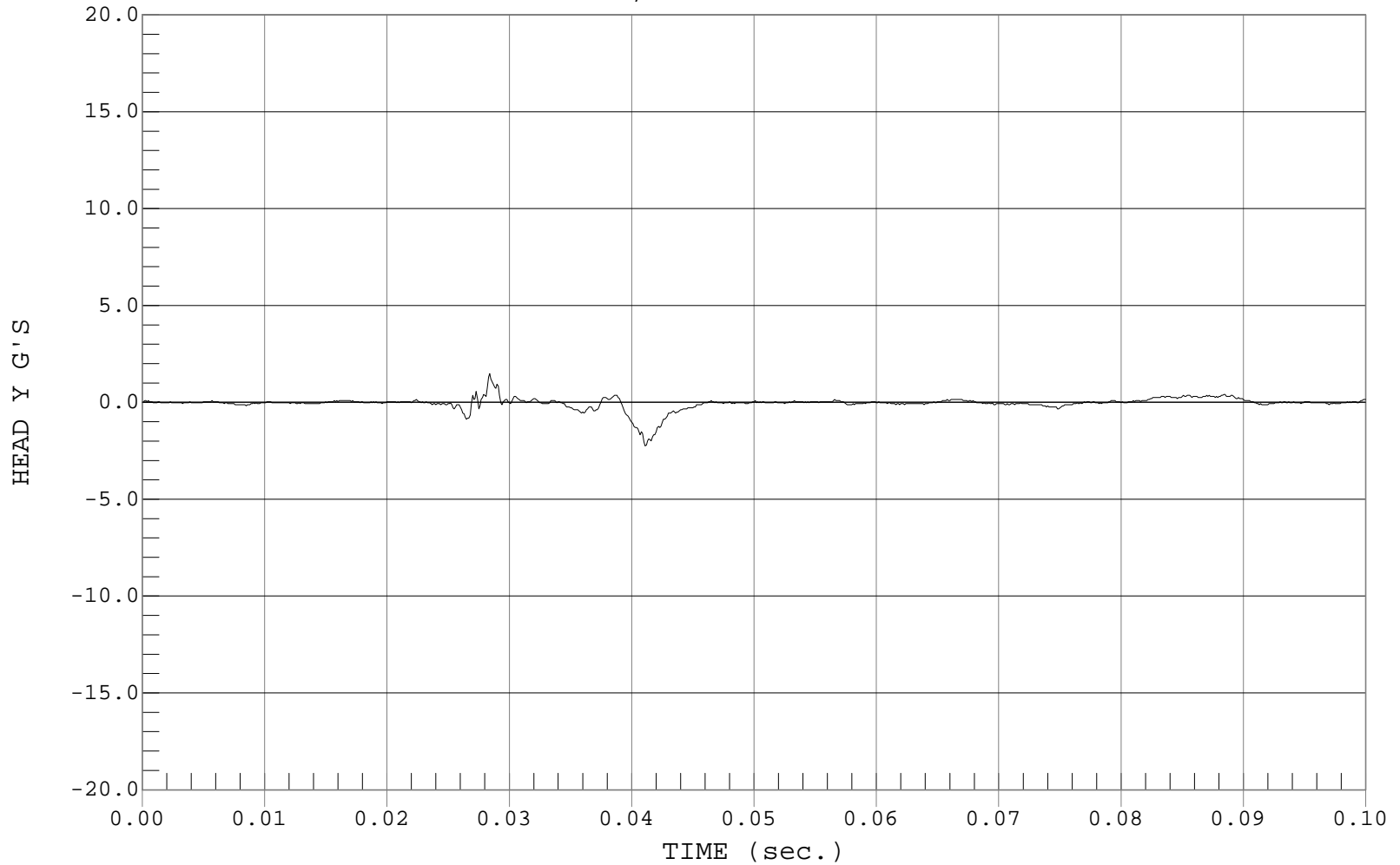
PEAK LATERAL ACCELARATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #288

Test Date: 03-06-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

— 1 HEAD Y, D01291AR.A02

Ymin = -2.26 G'S @ 0.0411 sec., Ymax = 1.58 G'S @ 0.1869 sec.



Hybrid III Calibration Data Sheet
5th Percentile Female
Thorax Impact Test

ATD Serial No.: 288

Test I.D.: D01294

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.8	PASS
Laboratory Relative Humidity	%	10 to 70	22	PASS
Probe Velocity	m/s	6.59 to 6.83	6.68	PASS
Peak Deflection	mm	50 – 58	52	PASS
Peak Resistive Force within Deflection Corridor	kN	3.9 – 4.4	4.1	PASS
Peak Force 18mm – 50mm		<105% of Peak Force in Deflection Corridor	100%	PASS
Internal Hysteresis	%	69 to 85	74%	PASS
Overall Test Results				PASS

Laboratory Technician

3/11/01
Test Date

Approved By



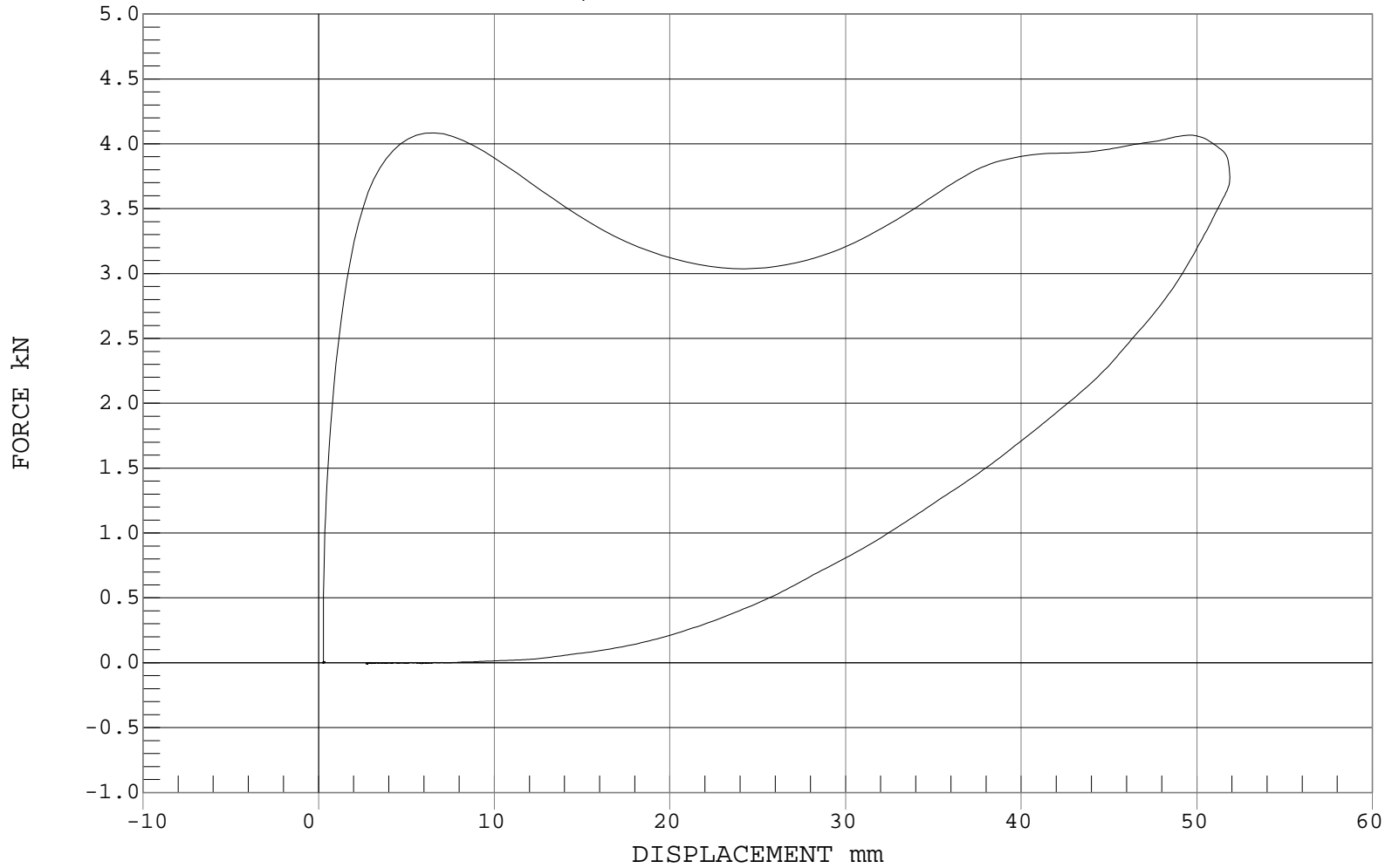
THORAX IMPACT

Test Desc.: Dummy Calibration - Chest Impact
Component: Dummy #288

Test Date: 03-11-01
Speed: 21.91 FT/SEC, 6.68 M/SEC

— 1 FORCE, D01294CH.FVD

Ymin = -.01 kN @ 2.7826 mm, Ymax = 4.08 kN @ 6.5740 mm



Hybrid III Calibration Data Sheet
5th Percentile Female
Neck Flexion Test

ATD Serial No.: 288

Test I.D.: D01292

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.6	PASS
Laboratory Relative Humidity		%	10 to 70	17	PASS
Pendulum Velocity		m/s	6.89 to 7.13	7.0	PASS
Pendulum Deceleration	10 msec	m/s	2.1 to 2.5	2.2	PASS
	20 msec	m/s	4.0 to 5.0	4.5	PASS
	30 msec	m/s	5.8 to 7.0	6.4	PASS
Maximum "D" Plane Rotation	Maximum	Degrees	77 – 91	82	PASS
Moment About Occipital Condyle within Deflection Corridor	Maximum	Nm	69 – 83	73	PASS
Positive Moment Time Curve Decay to 10 Nm		ms	80 – 100	87	PASS
Overall Test Results					PASS

Laboratory Technician

3/6/01
Test Date

Approved By



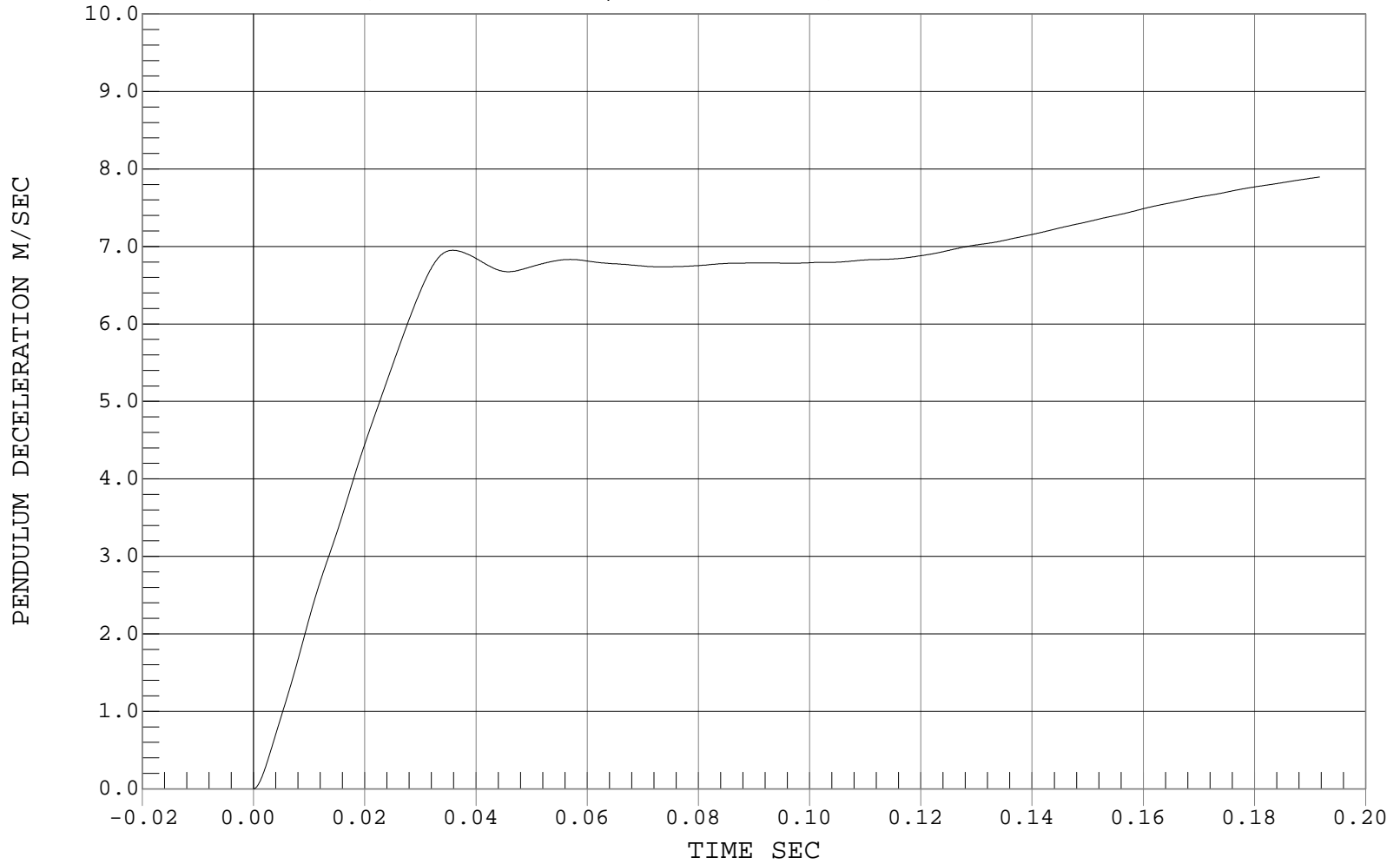
PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #288

Test Date: 03-06-01
Speed: 22.95 FT/SEC, 7.00 M/SEC

— 1 PENDULUM DECELERATION, D01292AI.V04

Ymin = 0 M/SEC @ 0.0001 SEC, Ymax = 7.9 M/SEC @ 0.1917 SEC





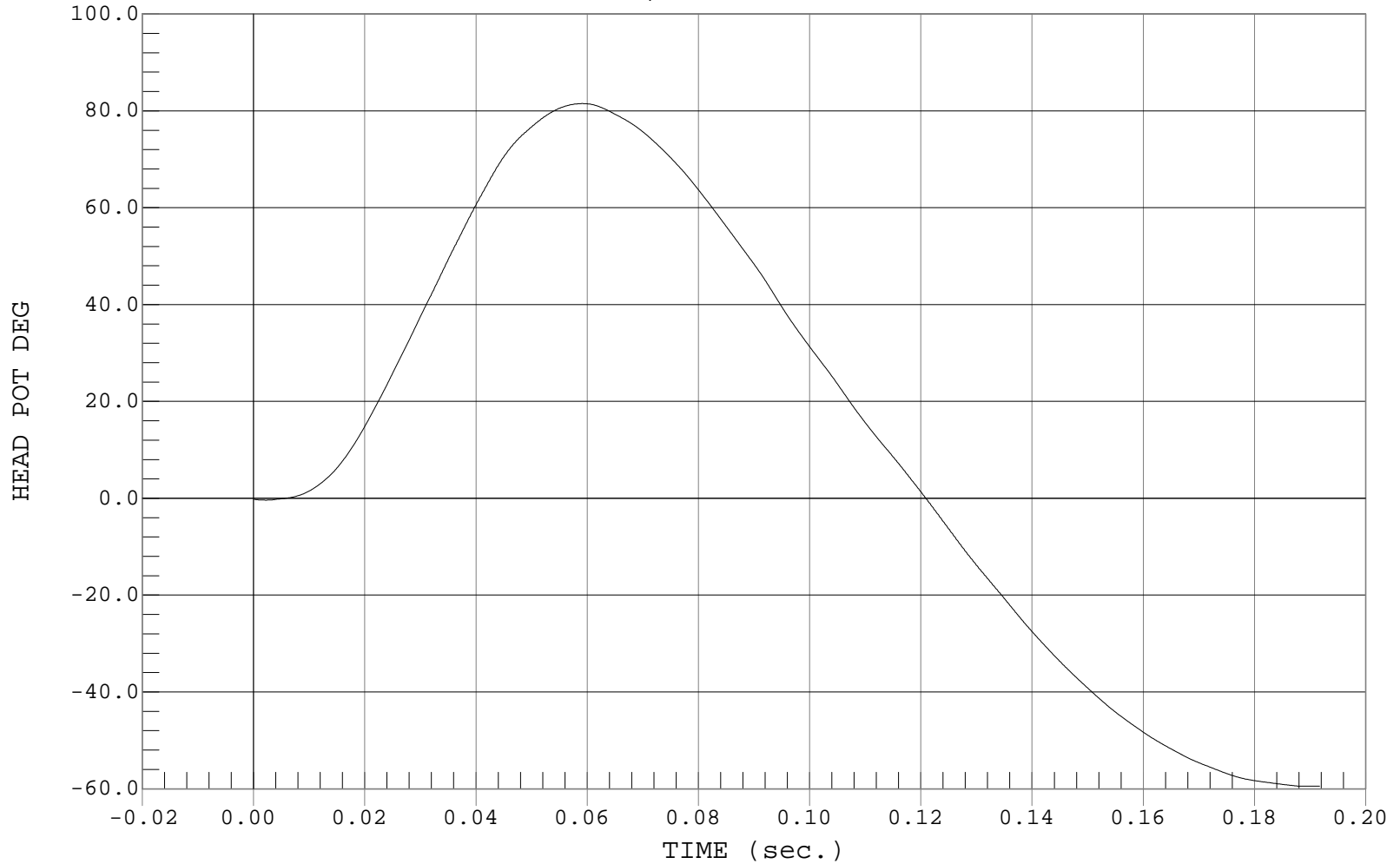
NECK ROTATION

Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #288

Test Date: 03-06-01
Speed: 22.95 FT/SEC, 7.00 M/SEC

— 1 HEAD POT, D01292DU.D05

Ymin = -59.48 DEG @ 0.1892 sec., Ymax = 81.51 DEG @ 0.0591 sec.





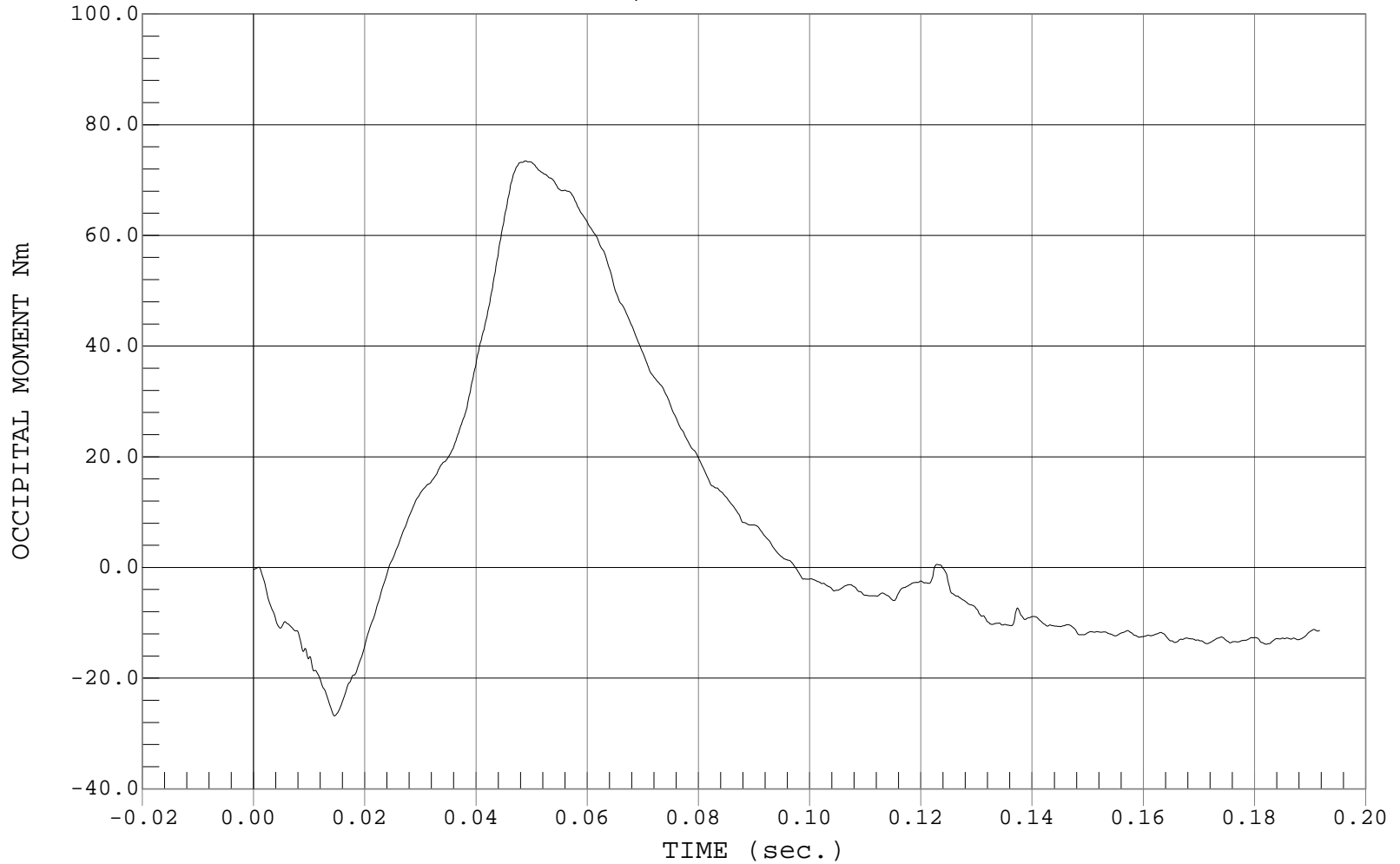
OCCIPITAL MOMENT

Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #288

Test Date: 03-06-01
Speed: 22.95 FT/SEC, 7.00 M/SEC

— 1 OCCIPITAL MOMENT, D01292NK.MNT

Ymin = -26.82 Nm @ 0.0146 sec., Ymax = 73.45 Nm @ 0.0489 sec.



Hybrid III Calibration Data Sheet
5th Percentile Female
Neck Extension Test

ATD Serial No.: 288

Test I.D.: D01293

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.3	21.6	PASS
Laboratory Relative Humidity		%	10 to 70	17	PASS
Pendulum Velocity		m/s	5.95 to 6.19	6.06	PASS
Pendulum Deceleration	10 msec	m/sec	1.5 – 1.9	1.8	PASS
	20 msec	m/sec	3.1 – 3.9	3.7	PASS
	30 msec	m/sec	4.6 – 5.6	5.3	PASS
Maximum “D” Plane Rotation	Maximum	Degrees	99 – 114	106	PASS
Moment About Occipital Condyle in Deflection Corridor	Minimum	Nm	-65 - -53	-56	PASS
Negative Moment Time Curve Decay to -10 Nm		msec	94 – 114	98	PASS
Overall Test Results					PASS

Laboratory Technician

3/6/01
Test Date

Approved By



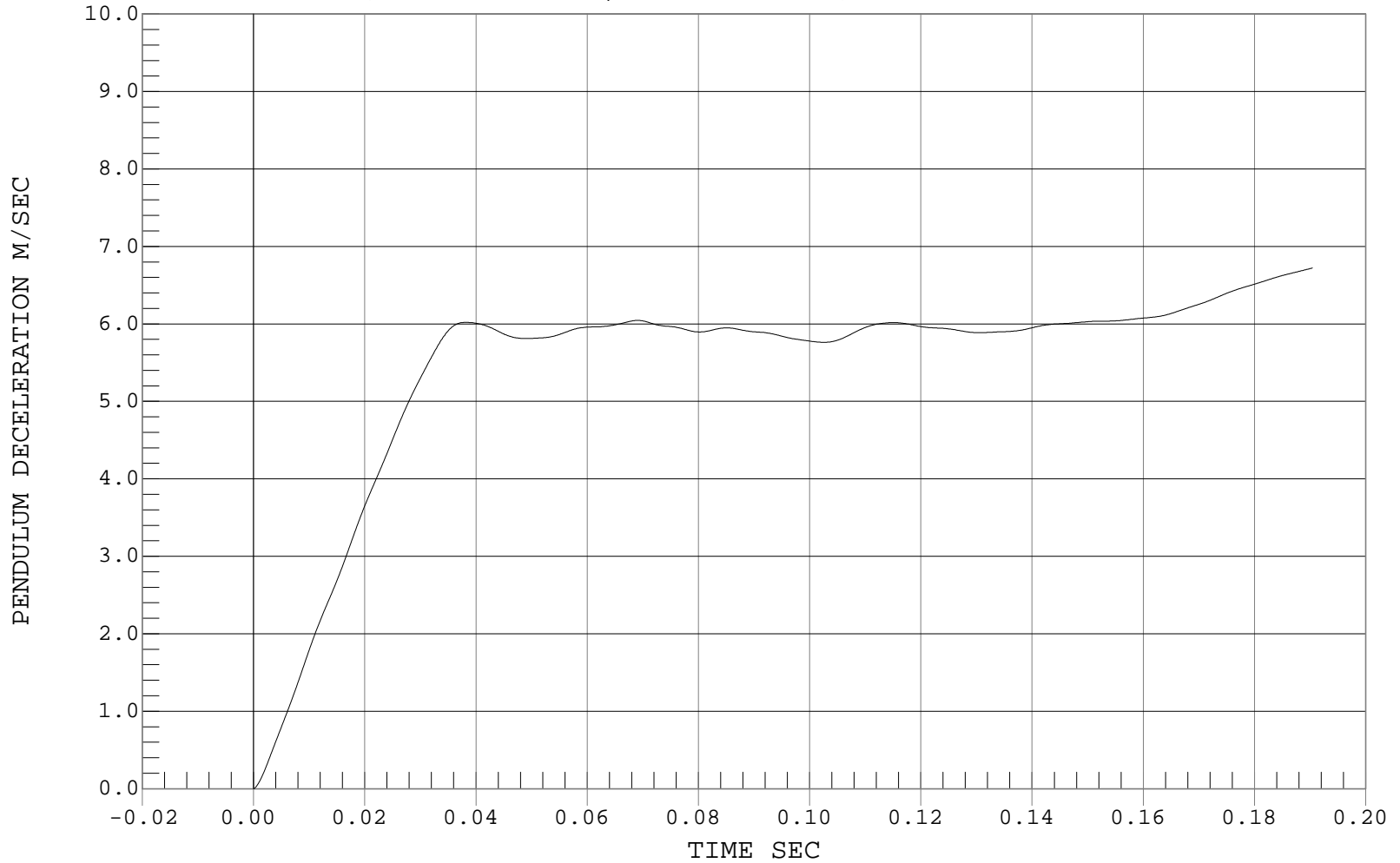
PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #288

Test Date: 03-06-01
Speed: 19.87 FT/SEC, 6.06 M/SEC

— 1 PENDULUM DECELERATION, D01293AI.V04

Ymin = 0 M/SEC @ 0.0001 SEC, Ymax = 6.72 M/SEC @ 0.1904 SEC





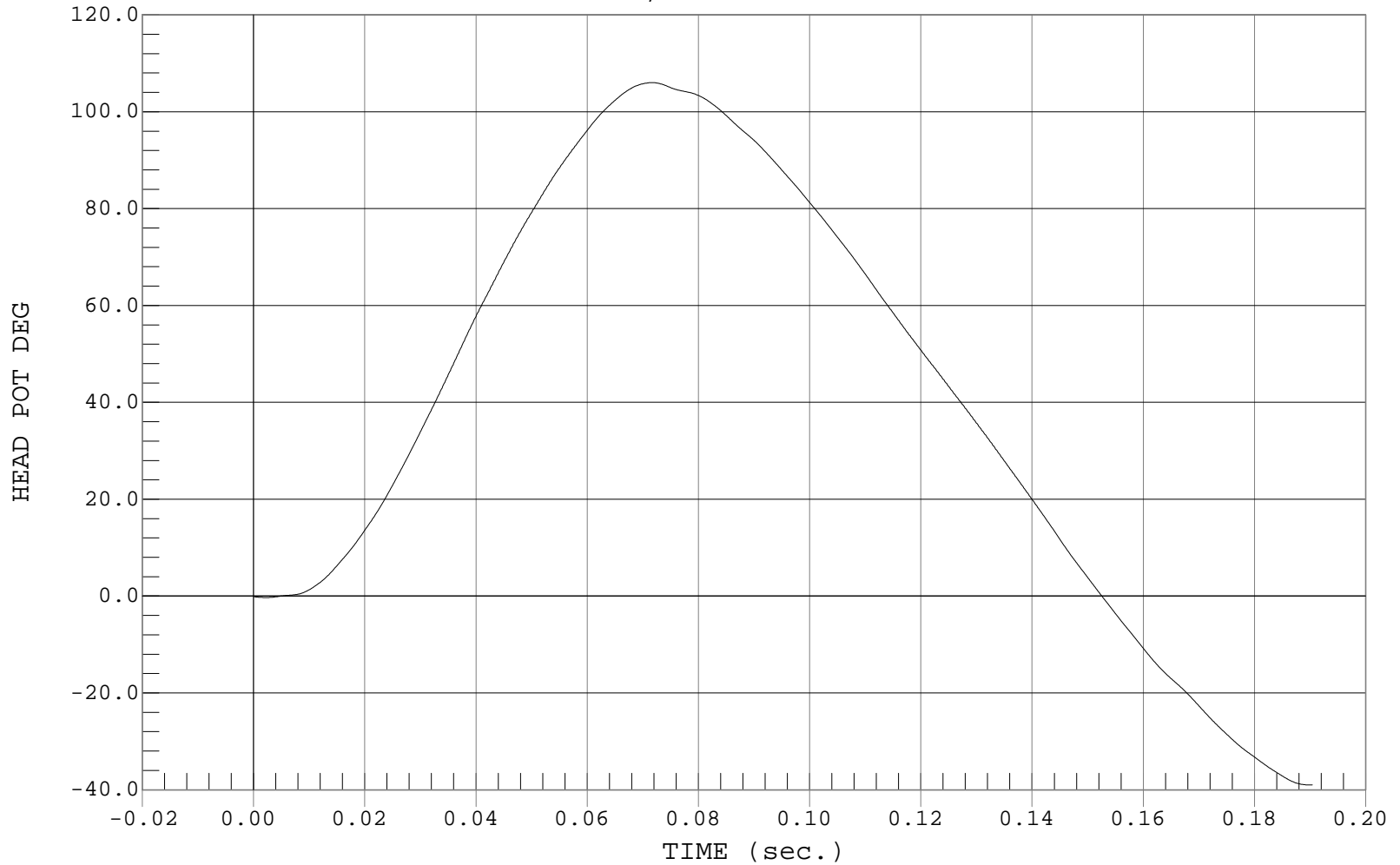
NECK ROTATION

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #288

Test Date: 03-06-01
Speed: 19.87 FT/SEC, 6.06 M/SEC

— 1 HEAD POT, D01293DU.D05

Ymin = -38.97 DEG @ 0.1897 sec., Ymax = 106.01 DEG @ 0.0717 sec.





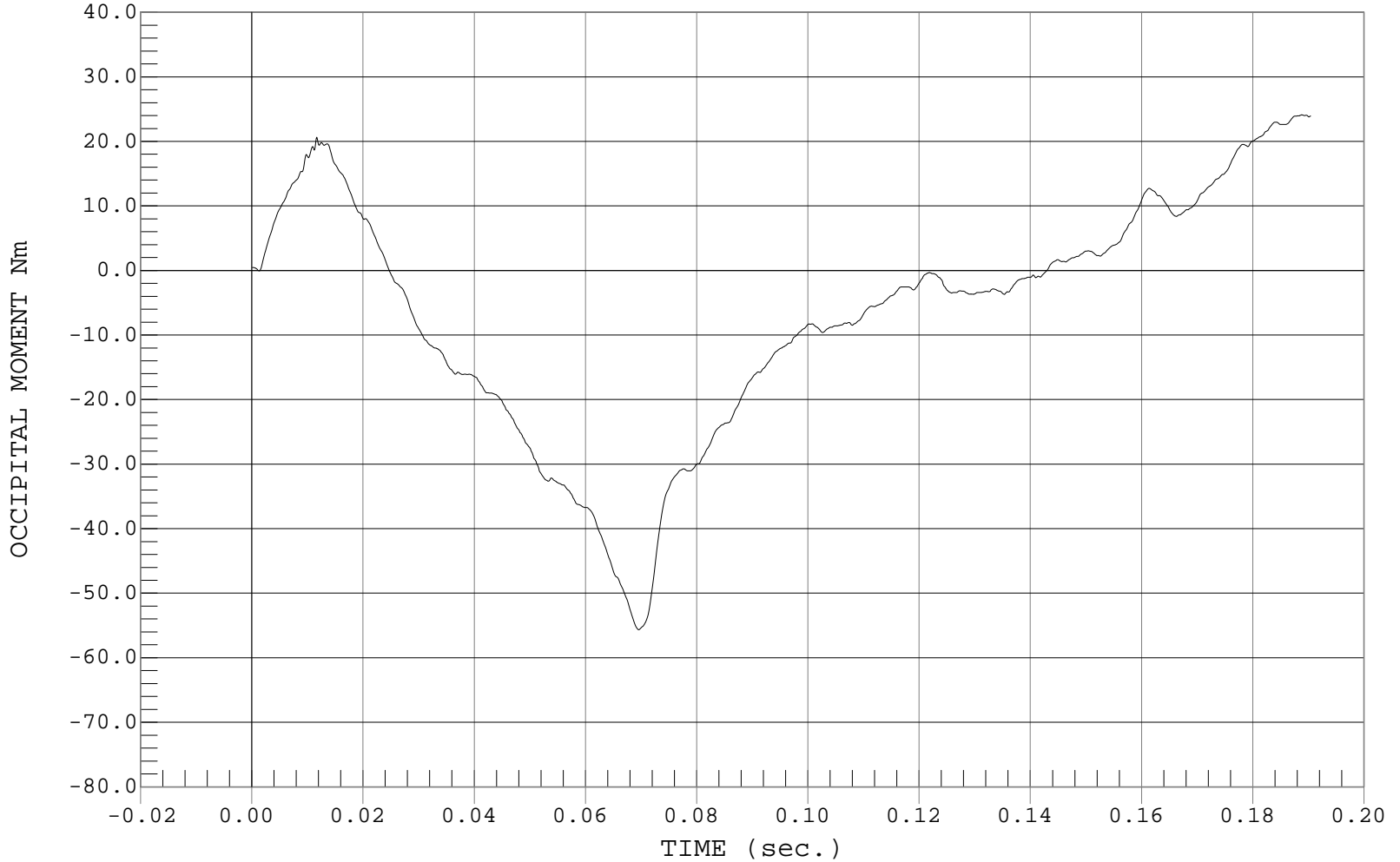
OCCIPITAL MOMENT

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #288

Test Date: 03-06-01
Speed: 19.87 FT/SEC, 6.06 M/SEC

— 1 OCCIPITAL MOMENT, D01293NK.MNT

Ymin = -55.67 Nm @ 0.0696 sec., Ymax = 24.11 Nm @ 0.1888 sec.



Hybrid III Calibration Data Sheet
5th Percentile Female
Torso Flexion Test

ATD Serial No.: 288

Test I.D.: D0129A

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	°C	18.9 to 25.6	21.8	PASS
Relative Humidity	%	10 to 70	22	PASS
Initial Angle	Deg	0 – 20	7	PASS
Return Angle	Deg	0 – 8	2	PASS
Force @ 45°	N	320 – 390	346	PASS
Overall Test Results				PASS

 Laboratory Technician

 3/11/01
 Test Date

 Approved By

Hybrid III Calibration Data Sheet

5th Percentile Female

External Measurements

ATD Serial No.: 288

Test I.D.: D0129

External Measurement Data				
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6-22.2	21.8	PASS
Laboratory Relative Humidity	%	10-70	22	PASS
A – Total sitting height	mm	775 – 800	787	PASS
B – Shoulder pivot height	mm	432 – 457	446	PASS
C – “H” point height	mm	81 – 86	84	PASS
D – “H” point from back line	mm	145 – 150	147	PASS
E – Shoulder pivot from back line	mm	69 – 84	75	PASS
F – Thigh clearance	mm	119 – 135	128	PASS
G – Back of elbow to wrist pivot	mm	244 – 259	252	PASS
H – Head back from back line	mm	43 – 48	46	PASS
I – Shoulder to elbow length	mm	277 – 297	292	PASS
J – Elbow rest height	mm	183 – 203	191	PASS
K – Buttock to knee length	mm	521 – 546	537	PASS
L – Popliteal length	mm	356 – 376	362	PASS
M – Knee pivot height	mm	394 – 419	405	PASS
N – Buttock popliteal length	mm	414 – 439	422	PASS
O – Chest depth without jacket	mm	175 – 191	186	PASS
P – Foot length	mm	218 – 234	226	PASS
R – Buttock to knee pivot length	mm	457 – 483	471	PASS
S – Head breadth	mm	137 – 147	144	PASS
T – Head depth	mm	178 – 188	181	PASS
U – Hip breadth	mm	300 – 315	307	PASS
V – Shoulder breadth	mm	351 – 366	359	PASS
W – Foot breadth	mm	79 – 94	86	PASS
X – Head circumference	mm	528 – 549	535	PASS
Y – Chest circumference with jacket	mm	851 – 881	862	PASS
Z – Waist circumference	mm	759 – 790	772	PASS
AA – Location for chest circumference	mm	300 – 310	305	PASS
BB – Location for waist circumference	mm	160 – 170	165	PASS
Overall Test Results				PASS

Laboratory Technician

3/11/01
Test Date

Approved By

Hybrid III Calibration Data Sheet
5th Percentile Female
Left Knee Impact Test

ATD Serial No.: 273

Test I.D.: D01286

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.2	PASS
Laboratory Relative Humidity	%	10 to 70	27	PASS
Probe Velocity	m/s	2.07 to 2.13	2.12	PASS
Peak Probe Force	kN	3.45 – 4.06	3.54	PASS
Overall Test Results				PASS

 Laboratory Technician

 3/8/01
 Test Date

 Approved By



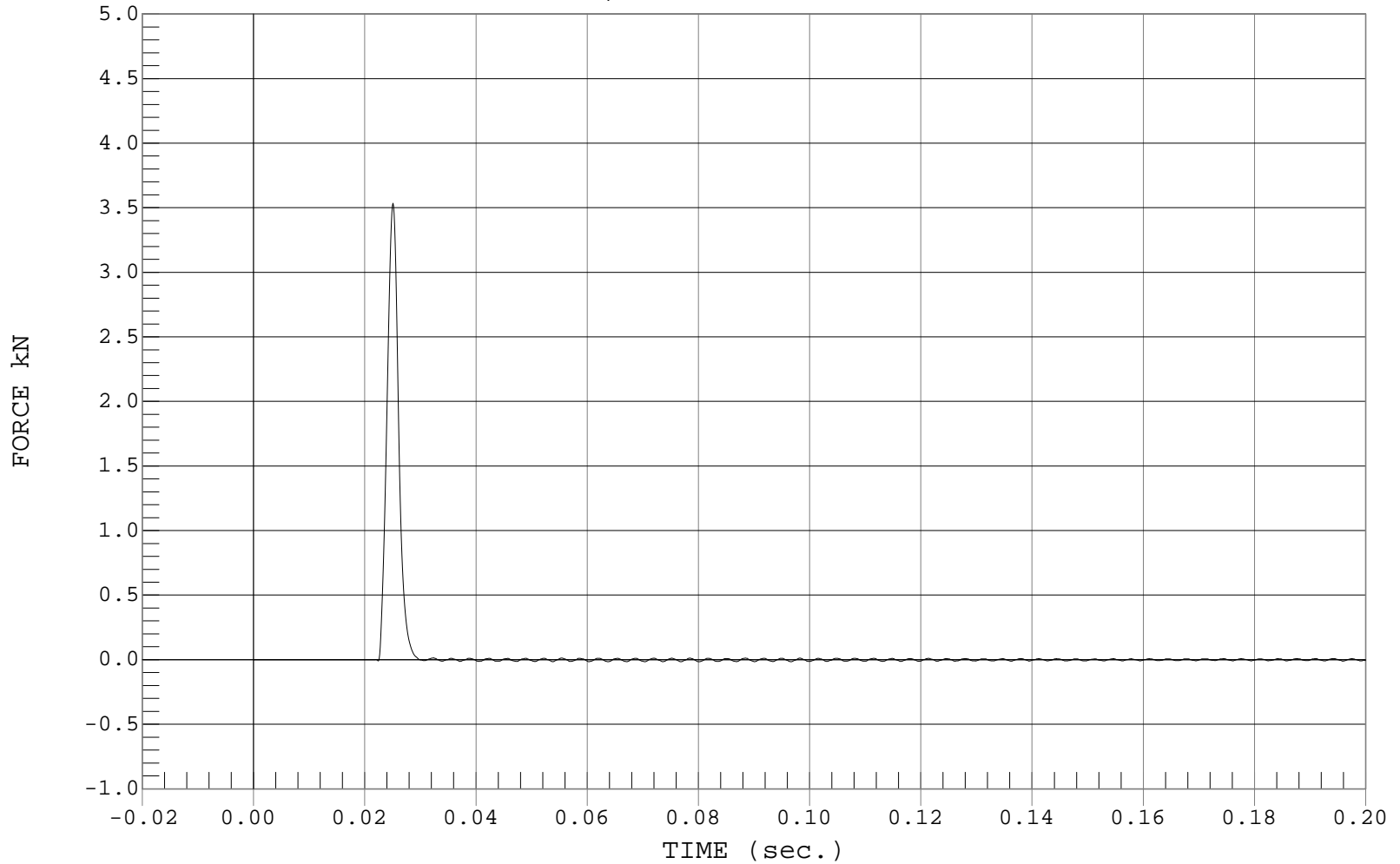
LEFT KNEE IMPACT

Test Desc.: Dummy Calibration - Left Knee Impact
Component: Dummy #273

Test Date: 03-08-01
Speed: 6.95 FT/SEC, 2.12 M/SEC

— 1 FORCE, D01286FF.F09

Ymin = -.02 kN @ 0.0801 sec., Ymax = 3.54 kN @ 0.0251 sec.



Hybrid III Calibration Data Sheet
5th Percentile Female
Right Knee Impact Test

ATD Serial No.: 273

Test I.D.: D01285

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.2	PASS
Laboratory Relative Humidity	%	10 to 70	27	PASS
Probe Velocity	m/s	2.07 to 2.13	2.12	PASS
Peak Probe Force	kN	3.45 – 4.06	3.81	PASS
Overall Test Results				PASS

 Laboratory Technician

3/8/01
 Test Date

 Approved By



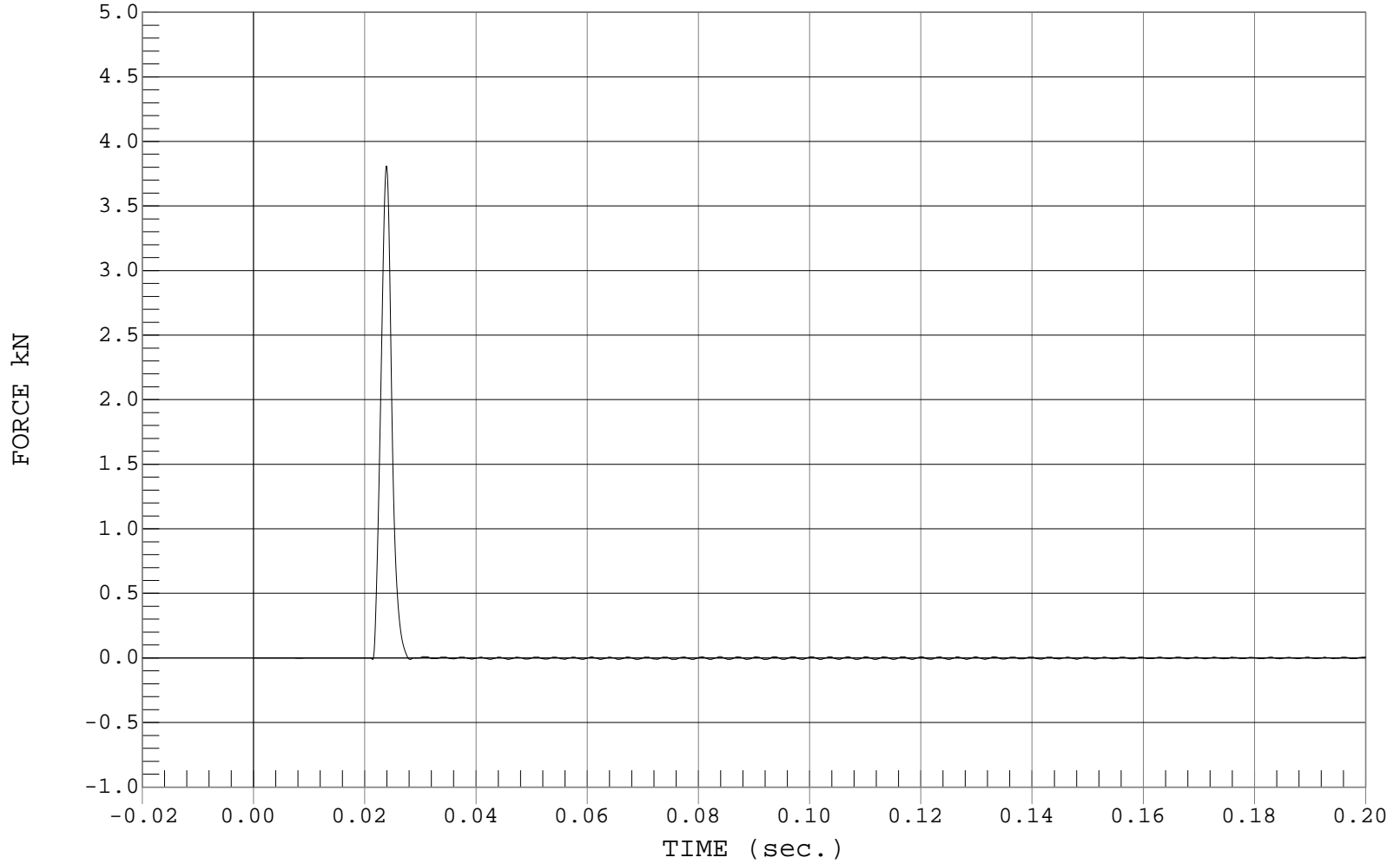
RIGHT KNEE IMPACT

Test Desc.: Dummy Calibration - Right Knee Impact
Component: Dummy #273

Test Date: 03-08-01
Speed: 6.97 FT/SEC, 2.12 M/SEC

— 1 FORCE, D01285FF.F09

Ymin = -.01 kN @ 0.0855 sec., Ymax = 3.81 kN @ 0.0239 sec.



Hybrid III Calibration Data Sheet
5th Percentile Female
Head Drop Calibration

ATD Serial No.: 273

Test I.D.: D01281

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.0	PASS
Laboratory Relative Humidity	%	10 to 70	15	PASS
Peak Resultant Acceleration	G's	250 to 300	267	PASS
Peak Lateral Acceleration	G's	≤±15.0	5	PASS
Is Acceleration Unimodal?	Yes/No	< 10% Peak	Yes	PASS
Overall Test Results				PASS

 Laboratory Technician

 3/6/01
 Test Date

 Approved By



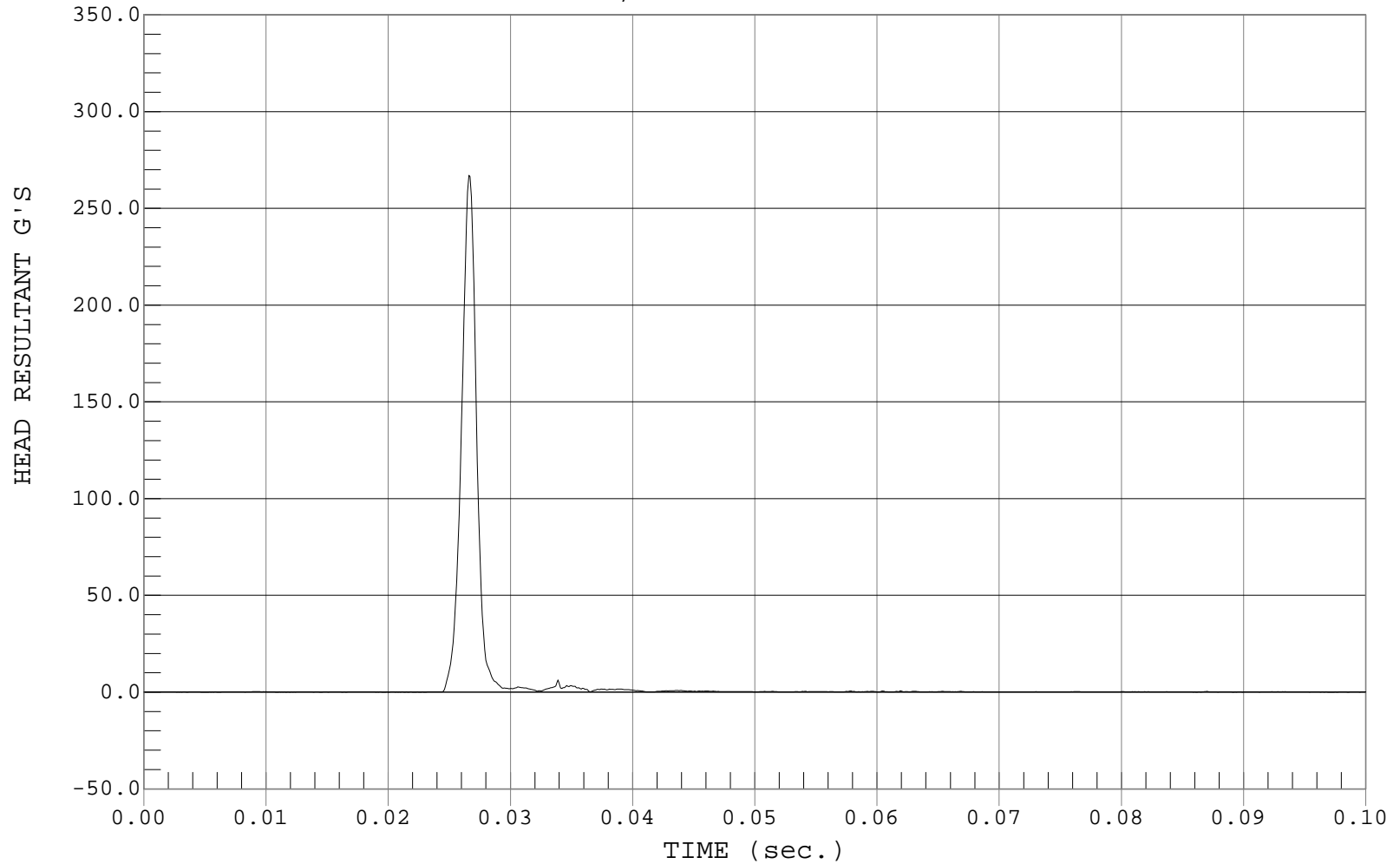
PEAK RESULTANT ACCELERATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #273

Test Date: 03-06-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

— 1 HEAD RESULTANT, D01281AV.A01

Ymin = .07 G'S @ 0.0027 sec., Ymax = 267.13 G'S @ 0.0266 sec.





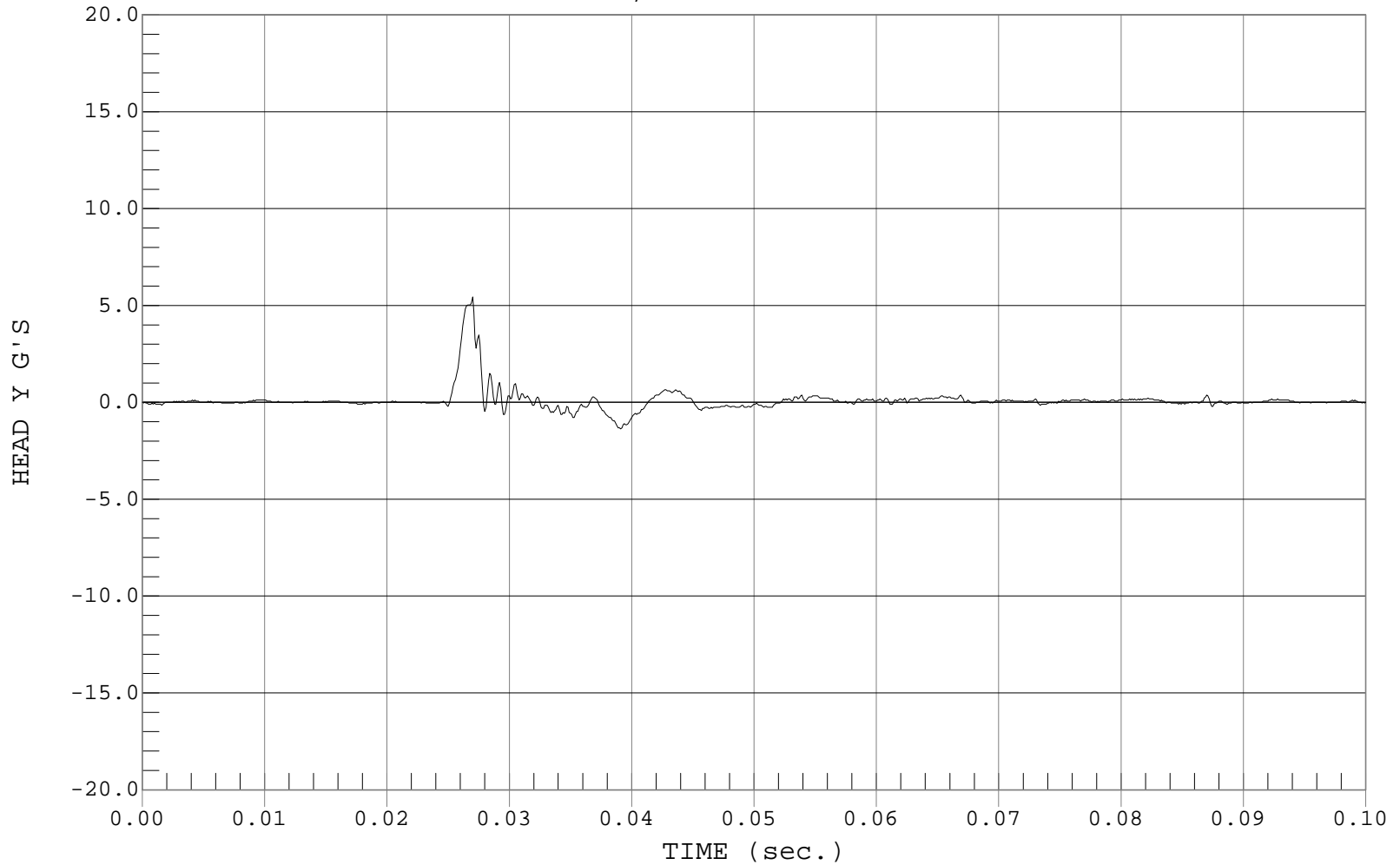
PEAK LATERAL ACCELARATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #273

Test Date: 03-06-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

— 1 HEAD Y, D01281AR.A02

Ymin = -1.37 G'S @ 0.0391 sec., Ymax = 5.45 G'S @ 0.0270 sec.



Hybrid III Calibration Data Sheet
5th Percentile Female
Thorax Impact Test

ATD Serial No.: 273

Test I.D.: D01284

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.8	PASS
Laboratory Relative Humidity	%	10 to 70	22	PASS
Probe Velocity	m/s	6.59 to 6.83	6.69	PASS
Peak Deflection	mm	50 – 58	52	PASS
Peak Resistive Force within Deflection Corridor	kN	3.9 – 4.4	4.4	PASS
Peak Force 18mm – 50mm		<105% of Peak Force in Deflection Corridor	100%	PASS
Internal Hysteresis	%	69 to 85	74%	PASS
Overall Test Results				PASS

 Laboratory Technician

 3/11/01
 Test Date

 Approved By



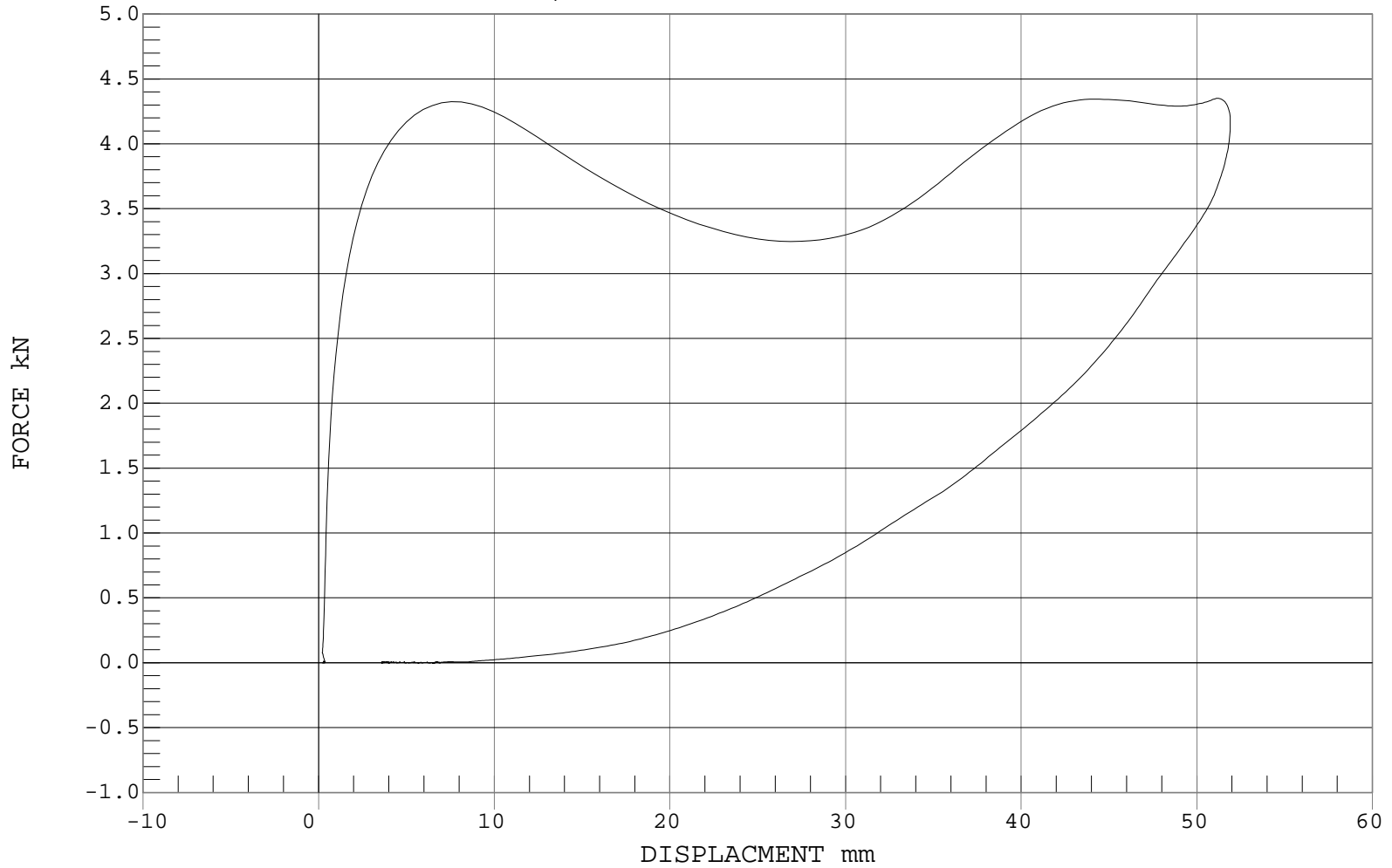
THORAX IMPACT

Test Desc.: Dummy Calibration - Chest Impact
Component: Dummy #273

Test Date: 03-11-01
Speed: 21.96 FT/SEC, 6.69 M/SEC

— 1 FORCE, D01284CH.FVD

Ymin = 0 kN @ 3.6188 mm, Ymax = 4.35 kN @ 51.1753 mm



Hybrid III Calibration Data Sheet
5th Percentile Female
Neck Flexion Test

ATD Serial No.: 273

Test I.D.: D01282

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.3	PASS
Laboratory Relative Humidity		%	10 to 70	16	PASS
Pendulum Velocity		m/s	6.89 to 7.13	7.10	PASS
Pendulum Deceleration	10 msec	m/s	2.1 to 2.5	2.2	PASS
	20 msec	m/s	4.0 to 5.0	4.3	PASS
	30 msec	m/s	5.8 to 7.0	6.3	PASS
Maximum "D" Plane Rotation	Maximum	Degrees	77 – 91	78	PASS
Moment About Occipital Condyle within Deflection Corridor	Maximum	Nm	69 – 83	73	PASS
Positive Moment Time Curve Decay to 10 Nm		ms	80 – 100	87	PASS
Overall Test Results					PASS

Laboratory Technician

3/6/01
Test Date

Approved By



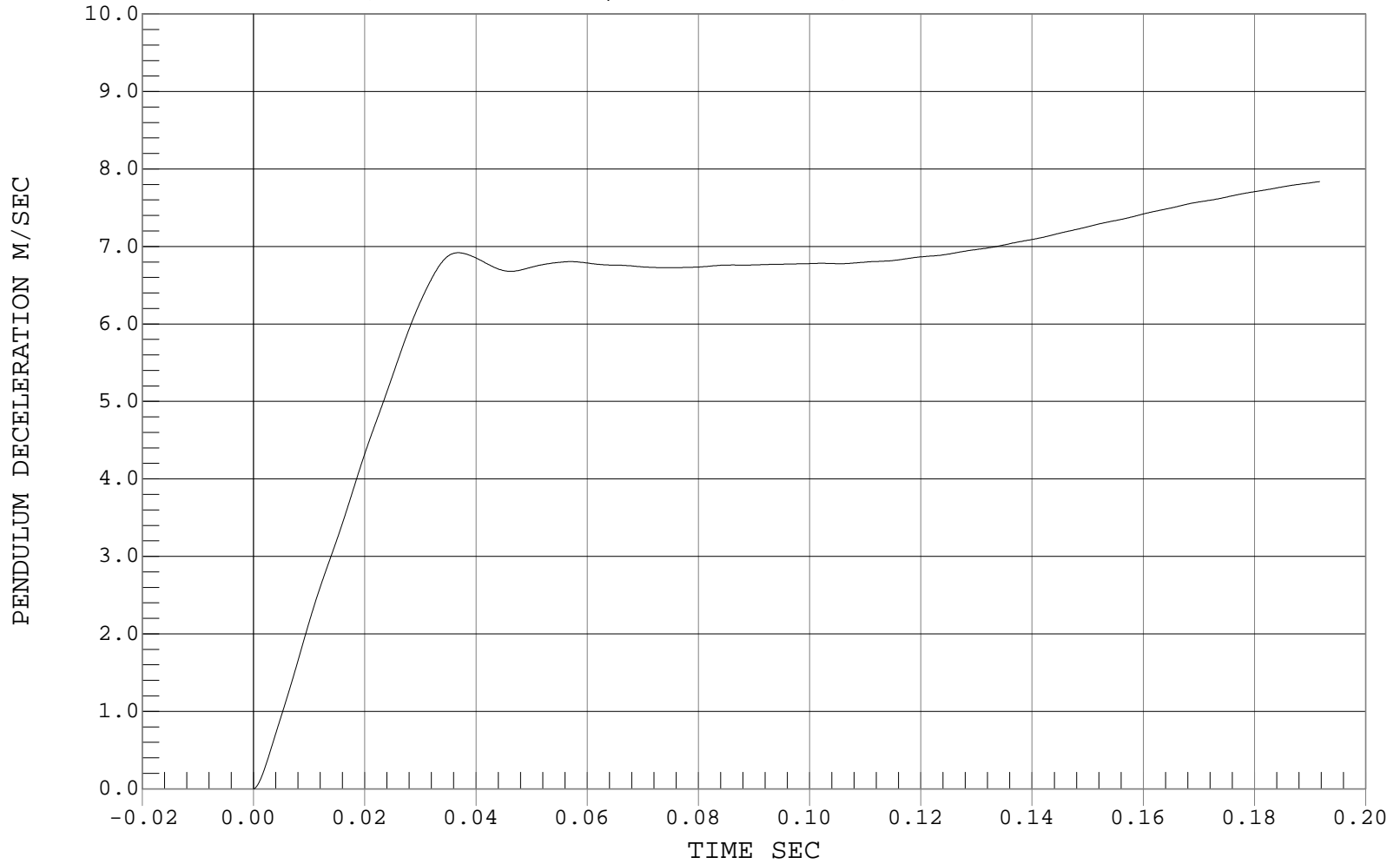
PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #273

Test Date: 03-06-01
Speed: 23.30 FT/SEC, 7.10 M/SEC

— 1 PENDULUM DECELERATION, D01282AI.V04

Ymin = 0 M/SEC @ 0.0001 SEC, Ymax = 7.84 M/SEC @ 0.1917 SEC





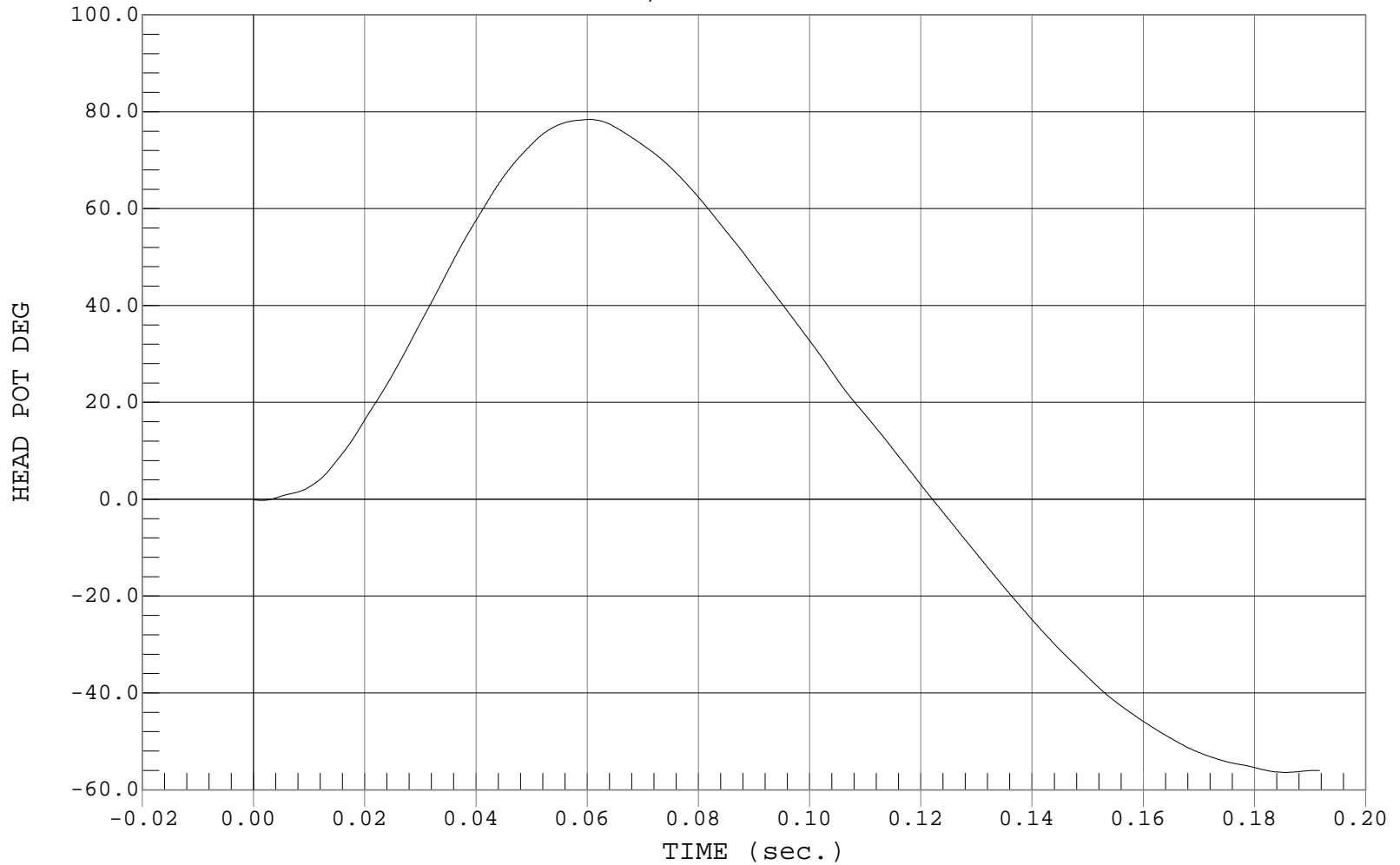
NECK ROTATION

Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #273

Test Date: 03-06-01
Speed: 23.30 FT/SEC, 7.10 M/SEC

— 1 HEAD POT, D01282DU.D05

Ymin = -56.38 DEG @ 0.1856 sec., Ymax = 78.41 DEG @ 0.0604 sec.





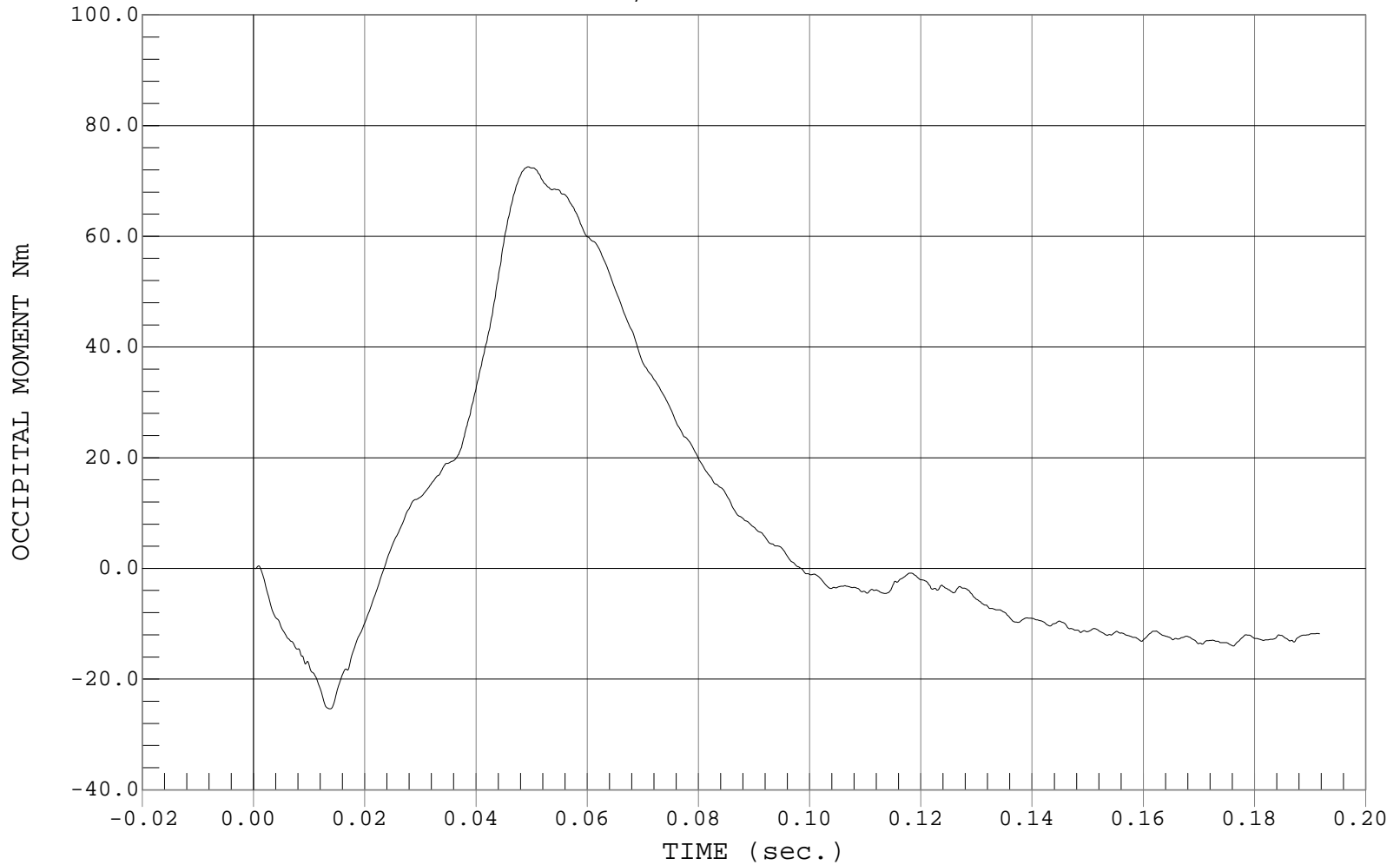
OCCIPITAL MOMENT

Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #273

Test Date: 03-06-01
Speed: 23.30 FT/SEC, 7.10 M/SEC

— 1 OCCIPITAL MOMENT, D01282NK.MNT

Ymin = -25.36 Nm @ 0.0138 sec., Ymax = 72.54 Nm @ 0.0494 sec.



Hybrid III Calibration Data Sheet
5th Percentile Female
Neck Extension Test

ATD Serial No.: 273

Test I.D.: D01283

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.3	21.3	PASS
Laboratory Relative Humidity		%	10 to 70	16	PASS
Pendulum Velocity		m/s	5.95 to 6.19	6.09	PASS
Pendulum Deceleration	10 msec	m/sec	1.5 – 1.9	1.6	PASS
	20 msec	m/sec	3.1 – 3.9	3.3	PASS
	30 msec	m/sec	4.6 – 5.6	4.9	PASS
Maximum “D” Plane Rotation	Maximum	Degrees	99 – 114	104	PASS
Moment About Occipital Condyle in Deflection Corridor	Minimum	Nm	-65 - -53	-55	PASS
Negative Moment Time Curve Decay to -10 Nm		msec	94 – 114	106	PASS
Overall Test Results					PASS

 Laboratory Technician

3/6/01
 Test Date

 Approved By



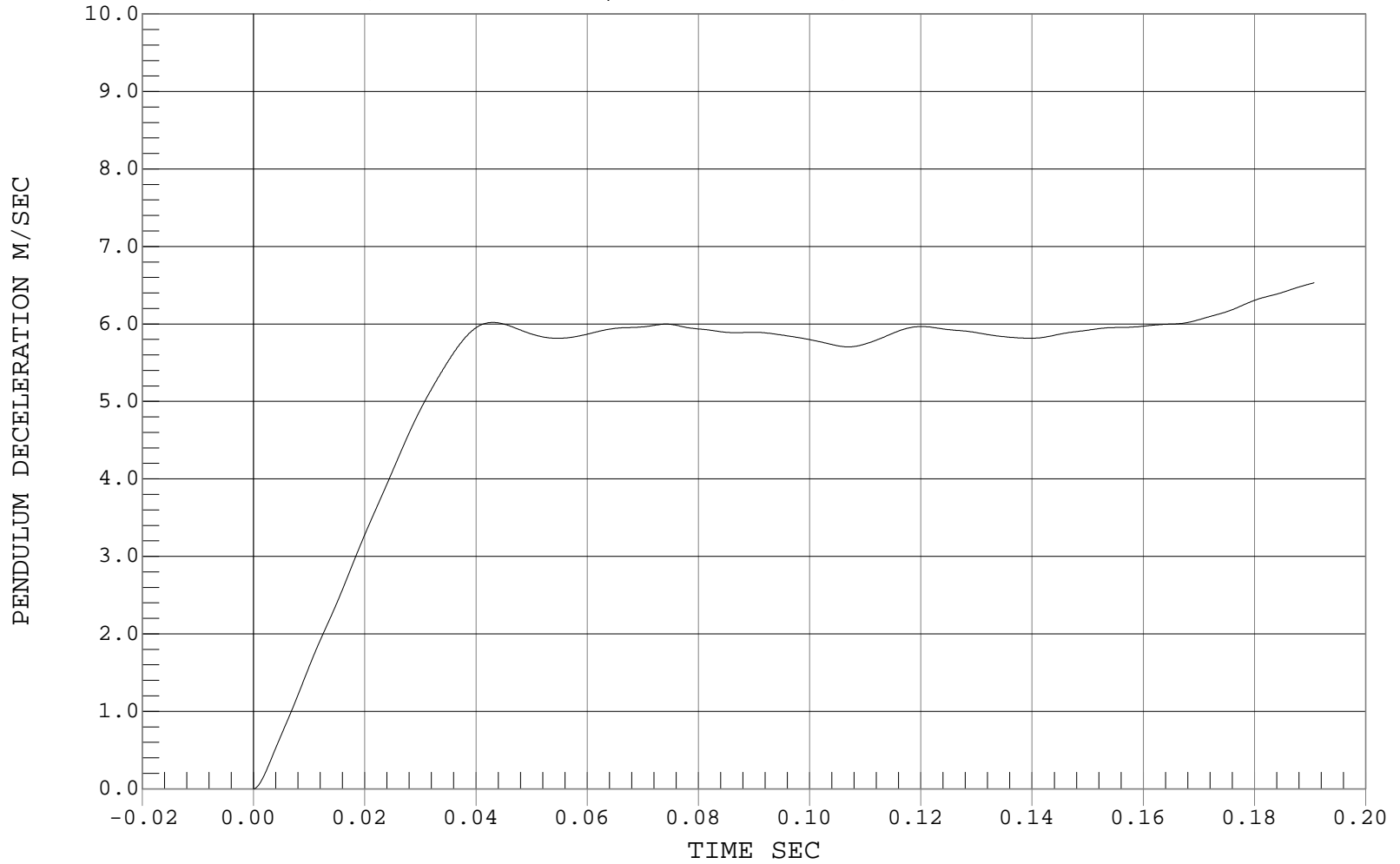
PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #273

Test Date: 03-06-01
Speed: 19.98 FT/SEC, 6.09 M/SEC

— 1 PENDULUM DECELERATION, D01283AI.V04

Ymin = 0 M/SEC @ 0.0001 SEC, Ymax = 6.53 M/SEC @ 0.1907 SEC





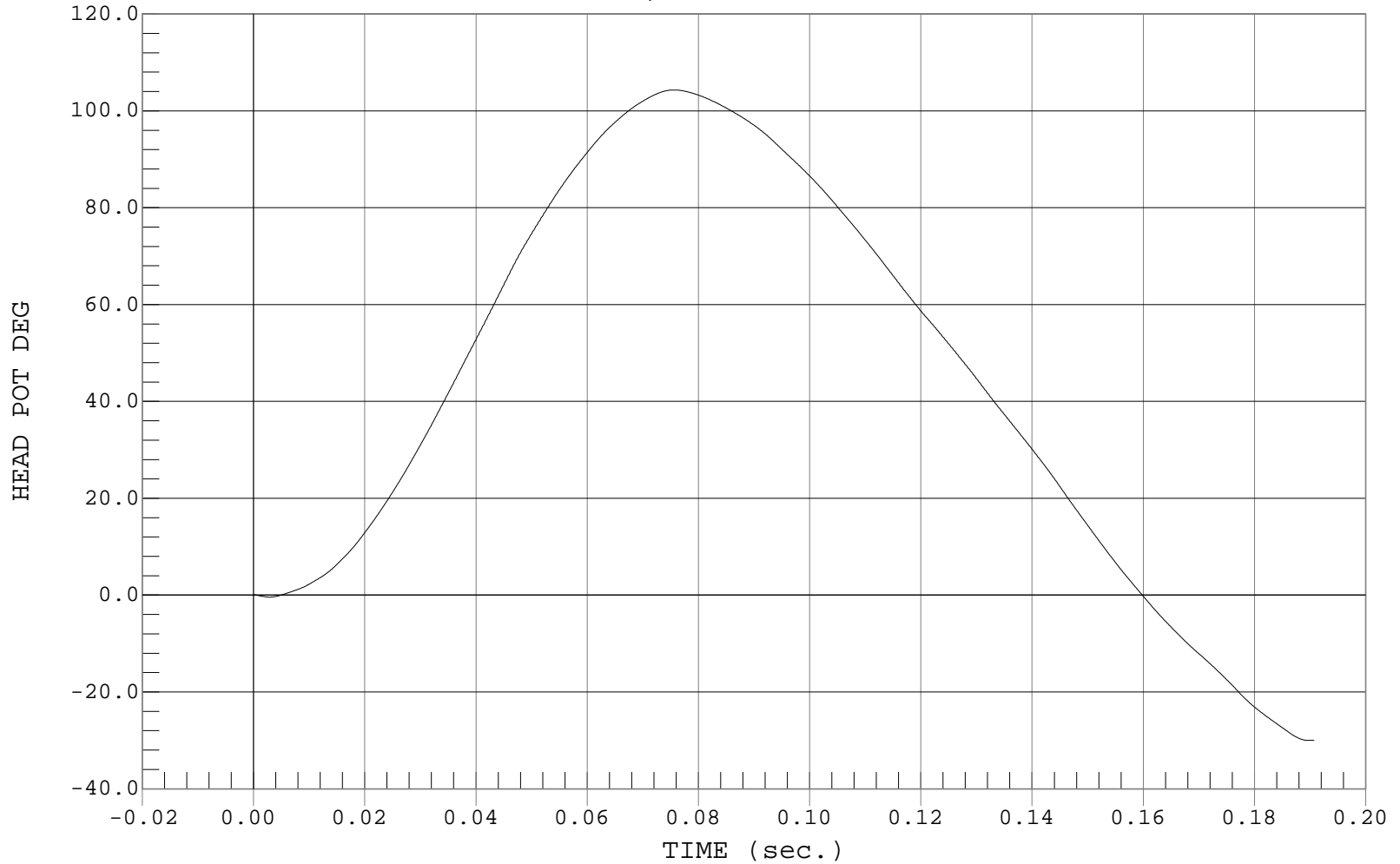
NECK ROTATION

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #273

Test Date: 03-06-01
Speed: 19.98 FT/SEC, 6.09 M/SEC

— 1 HEAD POT, D01283DU.D05

Ymin = -30.01 DEG @ 0.1900 sec., Ymax = 104.32 DEG @ 0.0756 sec.





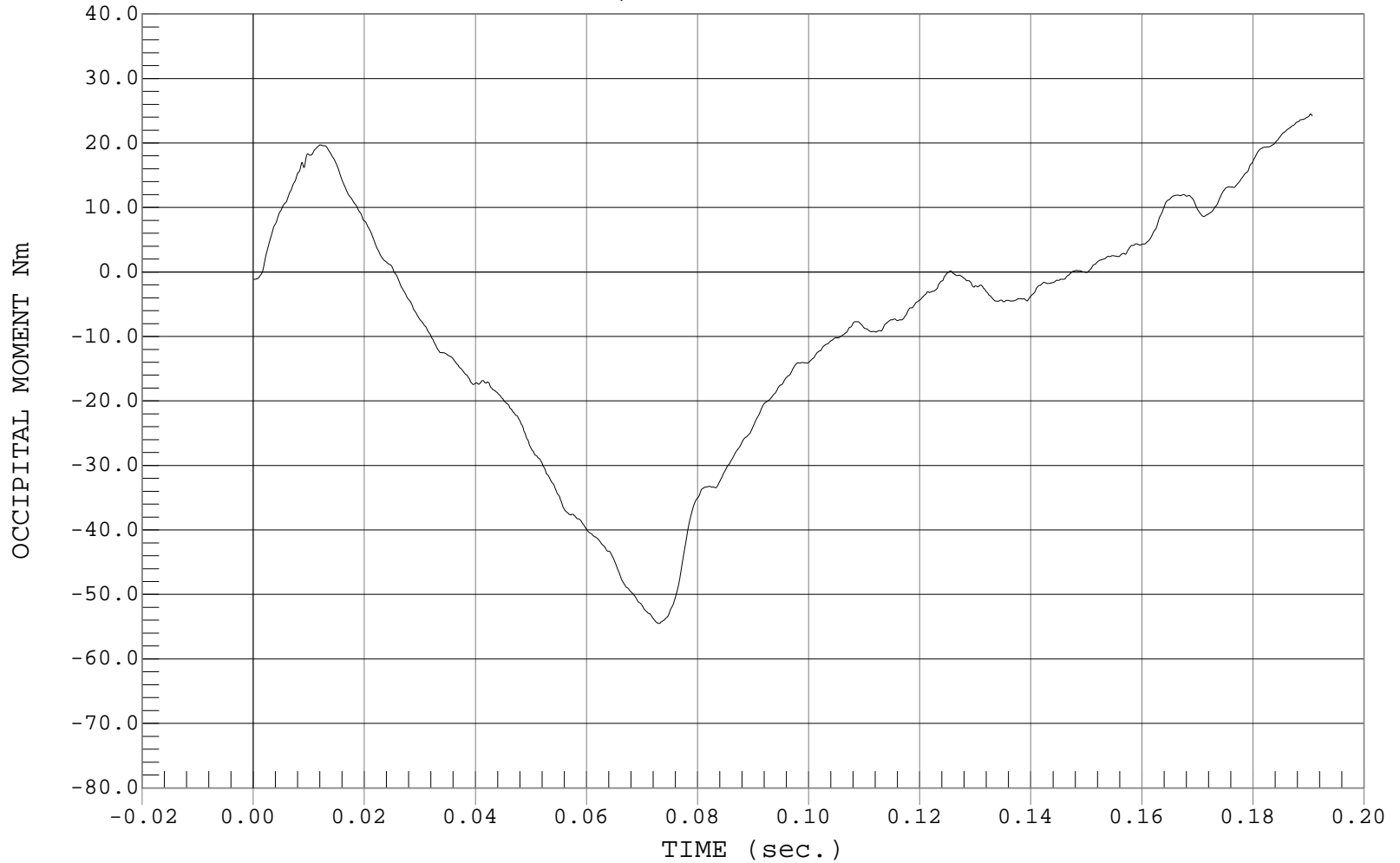
OCCIPITAL MOMENT

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #273

Test Date: 03-06-01
Speed: 19.98 FT/SEC, 6.09 M/SEC

— 1 OCCIPITAL MOMENT, D01283NK.MNT

Ymin = -54.5 Nm @ 0.0731 sec., Ymax = 24.53 Nm @ 0.1904 sec.



Hybrid III Calibration Data Sheet
5th Percentile Female
Torso Flexion Test

ATD Serial No.: 273

Test I.D.: D0128A

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	°C	18.9 to 25.6	21.8	PASS
Relative Humidity	%	10 to 70	22	PASS
Initial Angle	Deg	0 – 20	6	PASS
Return Angle	Deg	0 – 8	3	PASS
Force @ 45°	N	320 – 390	352	PASS
Overall Test Results				PASS

Laboratory Technician

3/11/01
Test Date

Approved By

Hybrid III Calibration Data Sheet

5th Percentile Female

External Measurements

ATD Serial No.: 273

Test I.D.: D0128

External Measurement Data				
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6-22.2	21.8	PASS
Laboratory Relative Humidity	%	10-70	22	PASS
A – Total sitting height	mm	775 – 800	785	PASS
B – Shoulder pivot height	mm	432 – 457	442	PASS
C – “H” point height	mm	81 – 86	84	PASS
D – “H” point from back line	mm	145 – 150	147	PASS
E – Shoulder pivot from back line	mm	69 – 84	74	PASS
F – Thigh clearance	mm	119 – 135	125	PASS
G – Back of elbow to wrist pivot	mm	244 – 259	254	PASS
H – Head back from back line	mm	43 – 48	46	PASS
I – Shoulder to elbow length	mm	277 – 297	290	PASS
J – Elbow rest height	mm	183 – 203	196	PASS
K – Buttock to knee length	mm	521 – 546	536	PASS
L – Popliteal length	mm	356 – 376	366	PASS
M – Knee pivot height	mm	394 – 419	406	PASS
N – Buttock popliteal length	mm	414 – 439	432	PASS
O – Chest depth without jacket	mm	175 – 191	183	PASS
P – Foot length	mm	218 – 234	226	PASS
R – Buttock to knee pivot length	mm	457 – 483	470	PASS
S – Head breadth	mm	137 – 147	145	PASS
T – Head depth	mm	178 – 188	183	PASS
U – Hip breadth	mm	300 – 315	310	PASS
V – Shoulder breadth	mm	351 – 366	358	PASS
W – Foot breadth	mm	79 – 94	87	PASS
X – Head circumference	mm	528 – 549	536	PASS
Y – Chest circumference with jacket	mm	851 – 881	866	PASS
Z – Waist circumference	mm	759 – 790	775	PASS
AA – Location for chest circumference	mm	300 – 310	305	PASS
BB – Location for waist circumference	mm	160 – 170	165	PASS
Overall Test Results				PASS

Laboratory Technician

3/11/01

Test Date

Approved By

APPENDIX D

TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION

DUMMY, VEHICLE, AND LABORATORY INSTRUMENT CALIBRATION
INSTRUMENTS FOR DUMMY NO. 288

INSTRUMENTS FOR DRIVER DUMMY NO. 288			
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X	AJ9H0	Endevco	1/5/01
Head Y	ANAN3	Endevco	1/5/01
Head Z	ANAN6	Endevco	1/5/01
Head X Redundant	AP120	Endevco	1/5/01
Head Y Redundant	ALEK9	Endevco	1/5/01
Head Z Redundant	AP042	Endevco	1/5/01
Chest X	AMRR4	Endevco	1/8/01
Chest Y	ALCR0	Endevco	1/8/01
Chest Z	AMP44	Endevco	1/8/01
Chest X Redundant	AC9B7	Endevco	1/8/01
Chest Y Redundant	AMR94	Endevco	1/8/01
Chest Z Redundant	AMTB1	Endevco	1/8/01
Right Femur Load Cell	261	Denton	10/13/00
Left Femur Load Cell	262	Denton	10/13/00
Pelvis X	AHY98	Endevco	1/8/01
Pelvis Y	AHTW6	Endevco	1/8/01
Pelvis Z	AHWP2	Endevco	1/8/01
Neck Force X	443	Denton	11/11/00
Neck Force Y	443	Denton	11/11/00
Neck Force Z	443	Denton	11/11/00
Neck Moment X	443	Denton	11/11/00
Neck Moment Y	443	Denton	11/11/00
Neck Moment Z	443	Denton	11/11/00
Chest Deflection Gauge	288	Servo	3/9/01
Lap Belt Load Cell	191	Denton	10/6/00
Shoulder Belt Load Cell	190	Denton	10/6/00

DUMMY, VEHICLE, AND LABORATORY INSTRUMENT CALIBRATION
INSTRUMENTS FOR DUMMY NO. 288

INSTRUMENTS FOR DRIVER DUMMY NO. 288			
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Right Tibia Moment X	696	Denton	12/8/00
Upper Right Tibia Moment Y	696	Denton	12/8/00
Upper Right Tibia Force Z	696	Denton	12/8/00
Lower Right Tibia Moment X	556	Denton	12/14/00
Lower Right Tibia Moment Y	556	Denton	12/14/00
Lower Right Tibia Force Z	556	Denton	12/14/00
Upper Left Tibia Moment X	705	Denton	1/10/01
Upper Left Tibia Moment Y	705	Denton	1/10/01
Upper Left Tibia Force Z	705	Denton	1/10/01
Lower Left Tibia Moment X	557	Denton	12/14/00
Lower Left Tibia Moment Y	557	Denton	12/14/00
Lower Left Tibia Force Z	557	Denton	12/14/00
Left Foot Ball Z Acceleration	AH0A5	Endevco	11/16/00
Left Heel X Acceleration	AJ9C4	Endevco	11/16/00
Left Heel Z Acceleration	AN8A4	Endevco	11/16/00
Right Foot Ball Z Acceleration	ALDD6	Endevco	11/16/00
Right Heel X Acceleration	J20392	Endevco	11/16/00
Right Heel Z Acceleration	AGT18	Endevco	11/16/00

DUMMY, VEHICLE, AND LABORATORY INSTRUMENT CALIBRATION
INSTRUMENTS FOR DUMMY NO. 273

	INSTRUMENTS FOR PASSENGER DUMMY NO. 273		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X	ACCY6	Endevco	10/3/00
Head Y	ACCH1	Endevco	10/3/00
Head Z	AAMW5	Endevco	10/3/00
Head X Redundant	AJ9D2	Endevco	10/3/00
Head Y Redundant	AH1E2	Endevco	10/3/00
Head Z Redundant	AJ7K3	Endevco	10/3/00
Chest X	ACC78	Endevco	10/3/00
Chest Y	ACCE6	Endevco	10/3/00
Chest Z	ACCY3	Endevco	10/3/00
Chest X Redundant	AJ9J7	Endevco	10/3/00
Chest Y Redundant	AJ7A2	Endevco	10/3/00
Chest Z Redundant	AJ819	Endevco	10/3/00
Right Femur Load Cell	259	Denton	10/13/00
Left Femur Load Cell	260	Denton	10/13/00
Pelvis X	AM748	Endevco	9/19/00
Pelvis Y	ALCH7	Endevco	9/19/00
Pelvis Z	AALH1	Endevco	9/19/00
Neck Force X	442	Denton	1/3/01
Neck Force Y	442	Denton	1/3/01
Neck Force Z	442	Denton	1/3/01
Neck Moment X	442	Denton	1/3/01
Neck Moment Y	442	Denton	1/3/01
Neck Moment Z	442	Denton	1/3/01
Chest Deflection Gauge	273	Servo	2/22/01
Lap Belt Load Cell	196	Denton	10/6/00
Shoulder Belt Load Cell	192	Denton	10/6/00

DUMMY, VEHICLE, AND LABORATORY INSTRUMENT CALIBRATION
INSTRUMENTS FOR DUMMY NO. 273

	INSTRUMENTS FOR PASSENGER DUMMY NO. 273		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Right Tibia Moment X	694	Denton	12/8/00
Upper Right Tibia Moment Y	694	Denton	12/8/00
Upper Right Tibia Force Z	694	Denton	12/8/00
Lower Right Tibia Moment X	554	Denton	12/14/00
Lower Right Tibia Moment Y	554	Denton	12/14/00
Lower Right Tibia Force Z	554	Denton	12/14/00
Upper Left Tibia Moment X	695	Denton	12/8/00
Upper Left Tibia Moment Y	695	Denton	12/8/00
Upper Left Tibia Force Z	695	Denton	12/8/00
Lower Left Tibia Moment X	555	Denton	12/14/00
Lower Left Tibia Moment Y	555	Denton	12/14/00
Lower Left Tibia Force Z	555	Denton	12/14/00
Left Foot Ball Z Acceleration	AGMT2	Endevco	11/16/00
Left Heel X Acceleration	AH0A2	Endevco	11/16/00
Left Heel Z Acceleration	AJ837	Endevco	11/16/00
Right Foot Ball Z Acceleration	AP2D6	Endevco	11/16/00
Right Heel X Acceleration	J11548	Endevco	11/16/00
Right Heel Z Acceleration	J10866	Endevco	11/16/00

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Left Rear Seat Crossmember X	I25-F03	Entran	11/15/00
Right Rear Seat Crossmember X	A08-A09	Entran	2/8/01
Top of Engine Block X	H07-A04	Entran	12/14/00
Bottom of Engine X	F18-G08	Entran	2/15/01
Left Brake Caliper X	G13-B03	Entran	10/2/00
Right Brake Caliper X	I25-J08	Entran	11/17/00
Instrument Panel X	A08-A14	Entran	2/8/01
Redundant Left Rear Seat Crossmember X	E10-F18	Entran	2/15/01
Redundant Right Rear Seat Crossmember X	A08-A04	Entran	2/8/01

	LABORATORY INSTRUMENTS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Neck Bending Pendulum Accelerometer	C12885	Endevco	1/17/01
Neck Bending Head Rotary Potentiometer	018	Spectrol	10/2/00
Neck Bending Pendulum Rotary Potentiometer	019	Spectrol	10/2/00
Chest Probe Accelerometer	J14396	Endevco	1/11/01
Knee Impact Accelerometer	J14398	Endevco	1/11/01

APPENDIX E

VEHICLE OWNER'S MANUAL OCCUPANT RESTRAINT INSTRUCTIONS

SUPPLEMENTAL RESTRAINT SYSTEM

PRECAUTIONS ON SUPPLEMENTAL RESTRAINT SYSTEM

This Supplemental Restraint System (SRS) section contains important information concerning the driver and passenger supplemental air bags, supplemental side air bags and pre-tensioner seat belts.

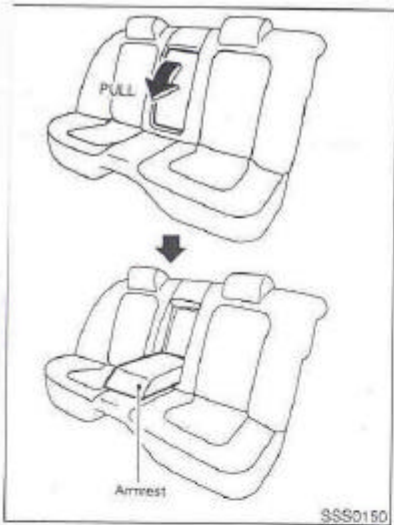
Supplemental front air bag system: This system can help cushion the impact force to the face and chest of the driver and front passenger in certain frontal collisions.

Supplemental side air bag system (if so equipped): This system can help cushion the impact force to the head and the chest area of the driver and front passenger in certain side impact collisions. The supplemental side air bag is designed to inflate on the side where the vehicle is impacted.

These supplemental restraint systems are designed to **supplement** the crash protection provided by the driver and front passenger seat belts and are **not a substitute** for them. Seat belts should always be correctly worn and the driver and front passenger seated a suitable distance away from the steering wheel, instrument panel and front door finishers. (See "Seat belts" later in this section for

instructions and precautions on seat belt usage.)

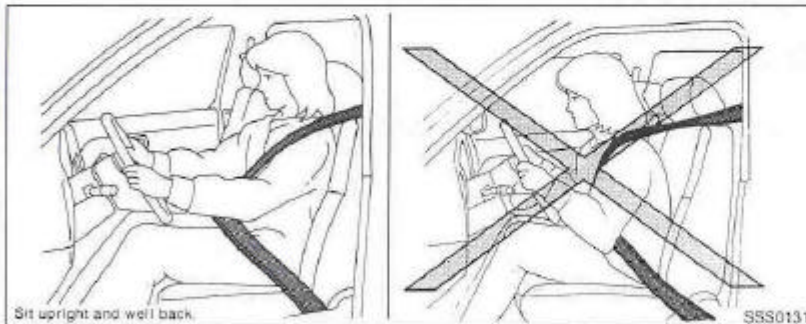
After turning the ignition key to the ON position, the supplemental air bag warning light illuminates. The supplemental air bag warning light will turn off after about 7 seconds if the system is operational.



ARMREST

Pull the armrest forward until it is horizontal.

Seats, restraints and supplemental air bag systems 1-9



WARNING

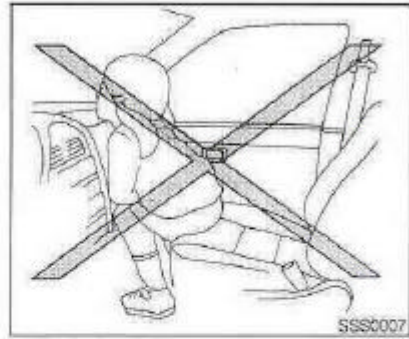
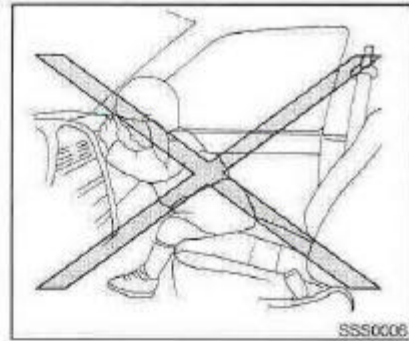
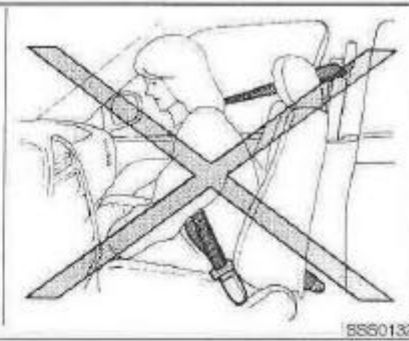
- The supplemental front air bags ordinarily will not inflate in the event of a side impact, rear impact, roll over, or lower severity frontal collision. Always wear your seat belts to help reduce the risk or severity of injury in various kinds of accidents.
- The seat belts and the supplemental front air bags are most effective when

you are sitting well back and upright in the seat. Front air bags inflate with great force. If you are unrestrained, leaning forward, sitting sideways or out of position in any way, you are at greater risk of injury or death in a crash and may also receive serious or fatal injuries from the supplemental front air bag if you are up against it when it inflates. Always sit back against the seatback and as far away as practical from the steering

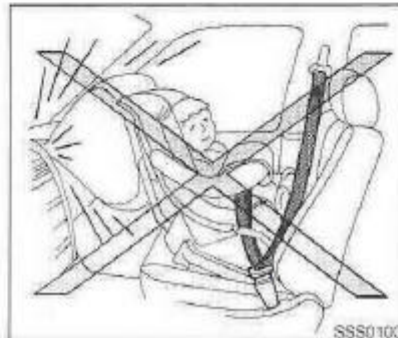
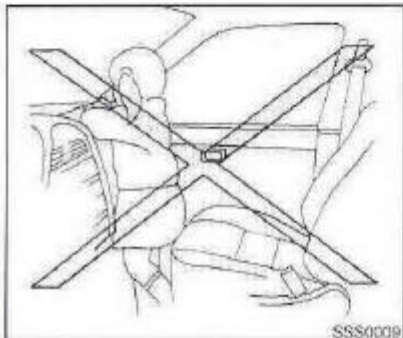
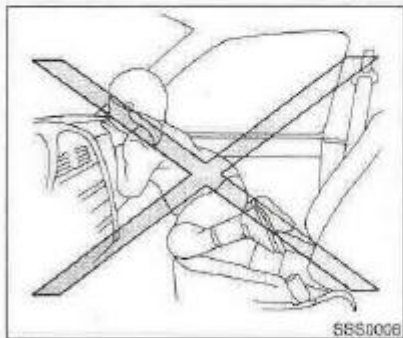
wheel or instrument panel. Always use the seat belts.

- Keep hands on the outside of the steering wheel. Placing them inside the steering wheel rim could increase the risk that they are injured when the supplemental front air bag inflates.

1-10 Seats, restraints and supplemental air bag systems



Seats, restraints and supplemental air bag systems 1-11



⚠ WARNING

- Never let children ride unrestrained or extend their hands or face out of the window. Do not attempt to hold them in your lap or arms. Some examples of dangerous riding positions are shown in the previous illustrations.
- Children may be severely injured or killed when the supplemental front air bag or supplemental side air bag inflates if they are not properly restrained.
- Also never install a rear facing child restraint in the front seat. An inflating supplemental front air bag could seriously injure or kill your child. For additional information, see "Child restraints" later in this section.

1-12 Seats, restraints and supplemental air bag systems



⚠ WARNING

Supplemental side air bag (if so equipped):

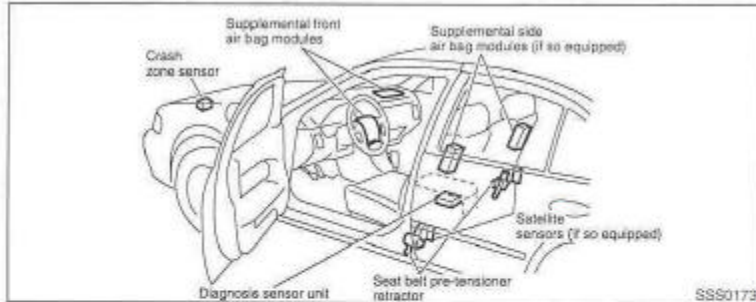
- The supplemental side air bag ordinarily will not inflate in the event of a frontal impact, rear impact or lower severity side collision. Always wear your seat belts to help reduce the risk or severity of injury in various kinds of accidents.

- The seat belts and the supplemental side air bag are most effective when you are sitting well back and upright in the seat. The side air bag inflates with great force. Do not allow anyone to place their hand, leg or face near the side air bag on the side of the seatback of the front seat. Do not allow anyone sitting in the front seat to extend their hand out of the window or lean against the door. Some examples of dangerous riding positions are shown in the previous illustrations.

trations.

- When sitting in the rear seat, do not hold onto the seatback of the front seat. If the supplemental side air bag inflates, the occupant may be seriously injured. Be especially careful with children, who should always be properly restrained.
- Do not use seat covers on the front seatbacks. They may interfere with supplemental side air bag inflation.

Seats, restraints and supplemental air bag systems 1-13



Supplemental front air bag system

The driver supplemental air bag is located in the center of the steering wheel; the front passenger supplemental air bag is mounted in the dashboard above the glove box. These systems are designed to meet optional certification requirements under U.S. regulations. They are also permitted in Canada. The optional certification allows front air bags to be designed to inflate somewhat less forcefully than previously. **However, all of the information, cautions and warnings in this manual still apply and must be followed.** The front air bags are designed to inflate in higher

severity frontal collisions, although they may inflate if the forces in another type of collision are similar to those of a higher severity frontal impact. They may not inflate in certain frontal collisions. Vehicle damage (or lack of it) is not always an indication of proper supplemental air bag operation.

When the supplemental front air bag inflates, a fairly loud noise may be heard, followed by release of smoke. This smoke is not harmful and does not indicate a fire, but care should be taken not to inhale it, as it may cause irritation and choking. Those with a history of a breathing condition should get fresh air promptly.

1-14 Seats, restraints and supplemental air bag systems

Supplemental front air bags along with the use of seat belts, helps to cushion the impact force on the face and chest of the front occupants. They can help save lives and reduce serious injuries. However, an inflating front air bag may cause facial abrasions or other injuries. Front air bags and supplemental side air bags do not provide restraint to the lower body.

The seat belts should be correctly worn and the driver and passenger seated upright as far as practical away from the steering wheel or dash board. Since the supplemental front air bags inflate quickly in order to help protect the front occupants, the force of the front air bag inflating can increase the risk of injury if the occupant is too close to or is against the air bag module during inflation. The air bag will deflate quickly after the collision is over.

After turning the ignition key to the ON position, the supplemental air bag warning light illuminates. The supplemental air bag warning light will turn off after about 7 seconds if the system is operational.

WARNING

- Do not place any objects on the steering wheel pad or on the instrument

panel. Also, do not place any objects between any occupant and the steering wheel or instrument panel. Such objects may become dangerous projectiles and cause injury if the supplemental front air bag inflates.

- Right after inflation, several air bag system components will be hot. Do not touch them; you may severely burn yourself.
- No unauthorized changes should be made to any components or wiring of the supplemental front air bag system. This is to prevent accidental inflation of the air bag or damage to the air bag system.
- Do not make unauthorized changes to your vehicle's electrical system, suspension system or front end structure. This could affect proper operation of the supplemental air bag system.
- Tampering with the supplemental front air bag system may result in

serious personal injury. Tampering includes changes to the steering wheel and the instrument panel assembly by placing material over the steering wheel pad, above the dashboard, or by installing additional trim material around the air bag system.

- Work around and on the supplemental front air bag system should be done by an authorized NISSAN dealer. Installation of electrical equipment should also be done by an authorized NISSAN dealer. The SRS wiring harnesses* should not be modified or disconnected. Unauthorized electrical test equipment and probing devices should not be used on the air bag system.
- * The SRS wiring harnesses are covered with yellow insulation either just before the harness connectors or over the complete harness for easy identification.

When selling your vehicle, we request that you inform the buyer about the supplemental front

Seats, restraints and supplemental air bag systems 1-15

air bag system and guide the buyer to the appropriate sections in this Owner's Manual.



Supplemental side air bag system (if so equipped)

The supplemental side air bags are located in the outside of the seatback of the front seats. The supplemental side air bag (on the driver or front passenger seat) is designed to inflate in higher severity side collisions, although it may inflate if the forces in another type of collision are similar to those of a higher severity side impact. It is designed to inflate on the side where the vehicle is impacted. It may not inflate in certain side collisions. Vehicle damage (or lack of it) is not always an indication of proper supplemental side air bag operation.

When the supplemental side air bag inflates, a fairly loud noise may be heard, followed by release of smoke. This smoke is not harmful and does not indicate a fire, but care should be taken not to inhale it, as it may cause irritation and choking. Those with a history of a breathing condition should get fresh air promptly.

Supplemental side air bags along with the use of seat belts, help to cushion the impact force on the head and the chest of the front occupants. They can help save lives and reduce serious injuries. However, an inflating side air bag may cause abrasions or other injuries.

The seat belts should be correctly worn and the driver and passenger seated upright as far as practical away from the supplemental side air bag. Since the side air bag inflates quickly in order to help protect the front occupants, the force of the side air bag inflating can increase the risk of injury if the occupant is too close to or is against the side air bag module during inflation. The side air bag will deflate quickly after the collision is over.

After turning the ignition key to the ON position, the supplemental air bag warning light illuminates. The supplemental air bag warning light will turn off after about 7 seconds if the system is operational.

1-16 Seats, restraints and supplemental air bag systems

WARNING

- Do not place any objects near the seatback of the front seats. Also, do not place any objects (an umbrella, bag, etc.) between the front door finisher and the front seat. Such objects may become dangerous projectiles and cause injury if the supplemental side air bag inflates.
- Right after inflation, several supplemental side air bag system components will be hot. Do not touch them; you may severely burn yourself.
- No unauthorized changes should be made to any components or wiring of the supplemental side air bag system. This is to prevent accidental inflation of the side air bag or damage to the side air bag system.
- Do not make unauthorized changes to your vehicle's electrical system, suspension system or side panel. This could affect proper operation of the supplemental side air bag system.

tem.

- Tampering with the supplemental side air bag system may result in serious personal injury. Tampering includes changes to the front seats assembly by placing material near the seatback of the front seat, or by installing additional trim material, such as seat covers, around the side air bag system.
- Work around and on the supplemental side air bag system should be done by an authorized NISSAN dealer. Installation of electrical equipment should also be done by an authorized NISSAN dealer. The SRS wiring harnesses* should not be modified or disconnected. Unauthorized electrical test equipment and probing devices should not be used on the side air bag system.
- * The SRS wiring harnesses are covered with yellow insulation either just before the harness connectors or over the complete harness for easy

identification.

When selling your vehicle, we request that you inform the buyer about the supplemental side air bag system and guide the buyer to the appropriate sections in this Owner's Manual.

Pre-tensioner seat belt system (For front seats)

WARNING

- The pre-tensioner seat belt cannot be reused after activation. It must be replaced together with the retractor as a unit.
- If the vehicle becomes involved in a frontal collision but the pre-tensioner is not activated, be sure to have the pre-tensioner system checked and, if necessary, replaced by your NISSAN dealer.
- No unauthorized changes should be made to any components or wiring of the pre-tensioner seat belt system.

Seats, restraints and supplemental air bag systems 1-17


This is to prevent accidental activation of the pre-tensioner seat belt or damage to the pre-tensioner seat belt operation. Tampering with the pre-tensioner seat belt system may result in serious personal injury.

- Work around and on the pre-tensioner system should be done by an authorized NISSAN dealer. Installation of electrical equipment should also be done by an authorized NISSAN dealer. Unauthorized electrical test equipment and probing devices should not be used on the pre-tensioner seat belt system.
- If you need to dispose of the pre-tensioner or scrap the vehicle, contact an authorized NISSAN dealer. Correct pre-tensioner disposal procedures are set forth in the appropriate NISSAN Service Manual. Incorrect disposal procedures could cause personal injury.

front air bag. Working with the seat belt retractor, it helps tighten the seat belt the instant the vehicle becomes involved in certain types of collisions, thereby restraining seat occupants.

The pre-tensioner is encased with the seat belt's retractor. These seat belts are used the same as conventional seat belts.

When the pre-tensioner seat belt activates, smoke is released and a loud noise may be heard. The smoke is not harmful, but care should be taken not to inhale it as it may cause irritation and choking.

If any abnormality occurs in the pre-tensioner system, the supplemental air bag warning light  will not come on, will flash intermittently or will turn on for 7 seconds and remain on after the ignition key has been turned to the ON or START position. In this case, the pre-tensioner seat belt may not function properly.

When selling your vehicle, we request that you inform the buyer about the pre-tensioner seat belt system and guide the buyer to the appropriate sections in this Owner's Manual.

The front seat pre-tensioner seat belt system activates in conjunction with the supplemental


1-18 Seats, restraints and supplemental air bag systems



SUPPLEMENTAL AIR BAG WARNING LABELS

Warning labels about the supplemental air bag system are placed in the vehicle as shown in the illustration.

SUPPLEMENTAL AIR BAG WARNING LIGHT

The supplemental air bag warning light, displaying  in the instrument panel, monitors the circuits of the supplemental front air bag and supplemental side air bag systems, and pre-tensioner seat belt. The circuits monitored by the air bag warning light are the diagnosis sensor unit, satellite sensors, front air bag modules, side air bag modules and all related wiring, and pre-tensioner seat belt.

After turning the ignition key to the ON position, the supplemental air bag warning light illuminates. The supplemental air bag warning

Seats, restraints and supplemental air bag systems 1-19

light will turn off after about 7 seconds if the system is operational.

If any of the following conditions occur, the supplemental front air bag system, supplemental side air bag system, and pre-tensioner seat belt need servicing:

- The supplemental air bag warning light remains on after approximately 7 seconds.
- The supplemental air bag warning light flashes intermittently.
- The supplemental air bag warning light does not come on at all.

Under these conditions, the supplemental front air bags, supplemental side air bags and/or pre-tensioner seat belt may not operate properly. They must be checked and repaired. Take your vehicle to the nearest authorized NISSAN dealer.

WARNING

If the supplemental air bag warning light is on, it could mean that the supplemental front air bag system, supplemental side air bag system and/or pre-tensioner seat belt will not operate in an accident.

Repair and replacement procedure

The supplemental front air bags, supplemental side air bags and pre-tensioner seat belt are designed to inflate on a one-time-only basis. As a reminder, unless it is damaged, the supplemental air bag warning light will remain illuminated after inflation has occurred. Repair and replacement of these systems should be done only by authorized NISSAN dealers.

To ensure long-term functioning, these systems must be inspected 10 years after the date of manufacture noted on the certification label located on the driver side center pillar.

When maintenance work is required on the vehicle, the supplemental front air bags, supplemental side air bags, related parts and pre-tensioner seat belt should be pointed out to the person conducting the maintenance. The ignition key should always be in the LOCK position when working under the hood or inside the vehicle.

WARNING

- Once the supplemental front air bag, supplemental side air bag and/or pre-

tensioner seat belt has inflated, the air bag module will not function again and must be replaced. The module should be replaced by an authorized NISSAN dealer. The supplemental front air bag module or supplemental side air bag module cannot be repaired.

- The supplemental front air bag system, supplemental side air bag system and pre-tensioner seat belt should be inspected by an authorized NISSAN dealer if there is any damage to the front end or side portion of the vehicle.
- If you need to dispose of these supplemental systems or scrap the vehicle, contact an authorized NISSAN dealer.

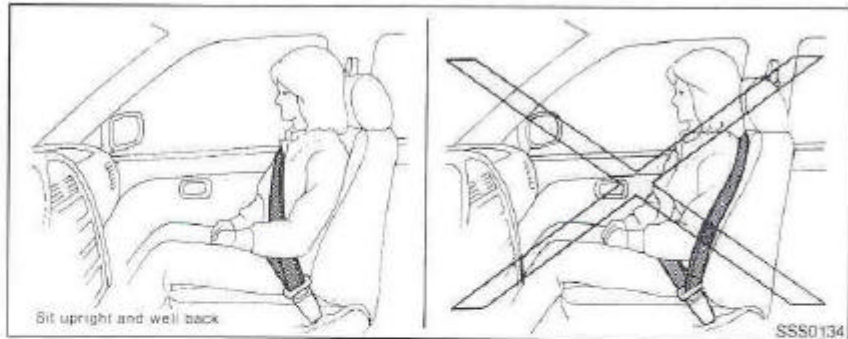
Correct disposal procedures are set forth in the appropriate NISSAN Service Manual. Incorrect disposal procedures could cause personal injury.

SEAT BELTS

PRECAUTIONS ON SEAT BELT USAGE

Your chances of being injured or killed in an accident and/or the severity of injury may be greatly reduced if you are wearing your seat belt and it is properly adjusted. NISSAN strongly encourages you and all of your passengers to buckle up every time you drive, even if your seating position includes a supplemental air bag.

Most states, provinces or territories require that seat belts be worn at all times when a vehicle is being driven.



⚠ WARNING

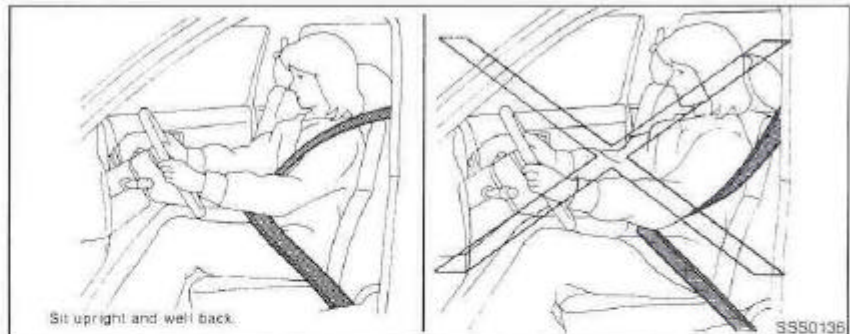
- Every person who drives or rides in this vehicle should use a seat belt at all times. Children should be properly restrained and, if appropriate, in a child restraint.
- The belt should be properly adjusted to a snug fit. Failure to do so may reduce the effectiveness of the entire restraint system and increase the

chance or severity of injury in an accident. Serious injury or death can occur if the seat belt is not worn properly.

- Always route the shoulder belt over your shoulder and across your chest. Never run the belt behind your back under your arm or across your neck. The belt should be away from your face and neck, but not falling off your shoulder.

Seats, restraints and supplemental air bag systems 1-21

- Position the lap belt as low and snug as possible around the hips, not the waist. A lap belt worn too high could increase the risk of internal injuries in an accident.
- Be sure the seat belt tongue is securely fastened to the proper buckle.
- Do not wear the belt inside out or twisted. Doing so may reduce its effectiveness.
- Do not allow more than one person to use the same belt.
- Never carry more people in the vehicle than there are seat belts.
- If the seat belt warning light glows continuously while the ignition is turned ON with all doors closed and all seat belts fastened, it may indicate a malfunction in the system. Have the system checked by your NISSAN dealer.
- Once the pre-tensioner seat belt has activated, it cannot be reused and

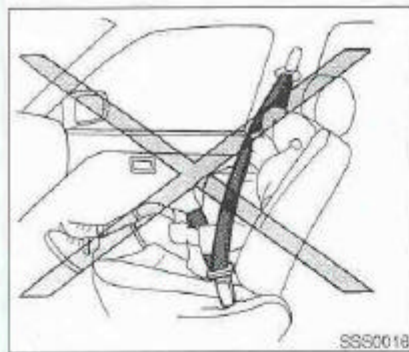


must be replaced together with the retractor. See your NISSAN dealer.

- Removal and installation of the pretensioner seat belt system components should be done by an authorized NISSAN dealer.
- All seat belt assemblies including retractors and attaching hardware should be inspected after any collision by your NISSAN dealer. NISSAN recommends that all seat belt assemblies in use during a collision be

replaced unless the collision was minor and the belts show no damage and continue to operate properly. Seat belt assemblies not in use during a collision should also be inspected and replaced if either damage or improper operation is noted.

1-22 Seats, restraints and supplemental air bag systems



CHILD SAFETY

Children need adults to help protect them. They need to be properly restrained.

The proper restraint depends on the child's size. Generally, infants (up to about 1 year and less than 20 lb (9 kg)) should be placed in rear facing child restraints. Front facing child restraints are available for children who outgrow rear facing child restraints.



⚠ WARNING

Infants and children need special protection. The vehicle's seat belts may not fit them properly. The shoulder belt may come too close to the face or neck. The lap belt may not fit over their small hip bones. In an accident, an improperly fitting seat belt could cause serious or fatal injury. Always use appropriate child restraints.

All US states and provinces of Canada require the use of approved child restraints for infants and small children. (See "Child restraints" later in this section.)

In addition, there are many types of child restraints available for larger children which should be used for maximum protection.

NISSAN recommends that all preteens and children be restrained in the rear seat if possible. According to accident statistics, children are safer when properly restrained in the rear seat than in the front seat.

This is especially important because your vehicle has a supplemental restraint system (air bag system) for the front passenger (see "Supplemental Restraint System" earlier in this section for precautions).

Infants and small children

NISSAN recommends that infants and small children be placed in child restraints that comply with Federal Motor Vehicle Safety Standards or Canadian Motor Vehicle Safety Standards. You should choose a child restraint that fits your vehicle and always follow the manufacturer's instructions for installation and use.

Seats, restraints and supplemental air bag systems 1-23

Larger children

Children who are too large for child restraint systems should be seated and restrained by the seat belts which are provided.

If the child's seating position has a shoulder belt that fits close to the face or neck, the use of a booster seat (commercially available) may help overcome this. The booster seat should raise the child so that the shoulder belt is properly positioned across the top, middle portion of the shoulder and the lap belt is low on the hips. The booster seat should fit the vehicle seat and have a label certifying that it complies with Federal Motor Vehicle Safety Standards or Canadian Motor Vehicle Safety Standards. Once the child has grown so the shoulder belt is no longer on or near the face and neck, use the shoulder belt without the booster seat.

⚠ WARNING

Never let a child stand or kneel on any seat and do not allow a child in the cargo areas while the vehicle is moving. The child could be seriously injured or killed in an accident or a sudden stop.

PREGNANT WOMEN

NISSAN recommends that pregnant women use seat belts. The seat belt should be worn snug, and always position the lap belt as low as possible around the hips, not the waist. Place the shoulder belt over your shoulder and across your chest. Never run the lap/shoulder belt over your abdominal area. Contact your doctor for specific recommendations.

INJURED PERSONS

NISSAN recommends that injured persons use seat belts, depending on the injury. Check with your doctor for specific recommendations.



THREE-POINT TYPE SEAT BELT WITH RETRACTOR

⚠ WARNING

- Every person who drives or rides in this vehicle should use a seat belt at all times.
- Do not ride in a moving vehicle when the seatback is reclined. This can be dangerous. The shoulder belt will not be against your body. In an accident

1-24 Seats, restraints and supplemental air bag systems



you could be thrown into it and receive neck or other serious injuries. You could also slide under the lap belt and receive serious internal injuries.

- For most effective protection when the vehicle is in motion, the seat should be upright. Always sit well back in the seat and adjust the seat belt properly.



Fastening the seat belts

1. Adjust the seat.
2. Slowly pull the seat belt out of the retractor and insert the tongue into the buckle until it snaps.

The retractor is designed to lock during a sudden stop or on impact. A slow pulling motion will permit the belt to move, and allow you some freedom of movement in the seat.



3. Position the lap belt portion **low and snug on the hips** as shown.
4. Pull the shoulder belt portion toward the retractor to take up extra slack.

The front passenger and rear seat belts have a cinching mechanism for child restraint installation. It is referred to as the automatic locking mode.

When the cinching mechanism is activated the seat belt cannot be withdrawn again until the seat belt tongue is detached from the buckle and fully retracted. For additional information, see "Child restraints" later in this section.

Seats, restraints and supplemental air bag systems 1-25

The automatic locking mode should be used only for child restraint installation. During normal seat belt use by a passenger, the locking mode should not be activated. If it is activated it may cause uncomfortable seat belt tension.

WARNING

When fastening the seat belts, be certain that seatbacks are completely secured in the latched position. If they are not completely secured in the right position, passengers may be injured in an accident or sudden stop.



Unfastening the seat belts

To unfasten the belt, press the button on the buckle. The seat belt will automatically retract.

Checking seat belt operation

Your seat belt retractors are designed to lock belt movement using two separate methods:

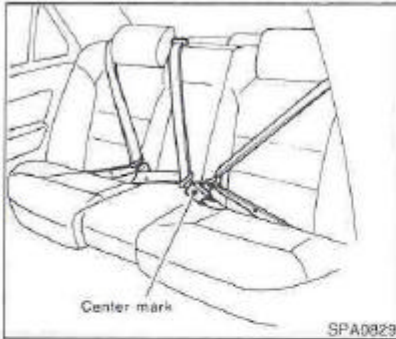
- when the belt is pulled quickly from the retractor.
- when the vehicle slows down rapidly.

You can check their operation as follows:

- grasp the shoulder belt and pull quickly

forward. The retractor should lock and restrict further belt movement.

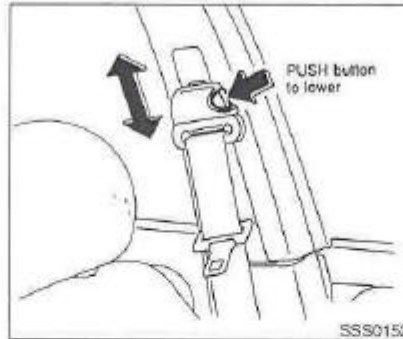
If the retractor does not lock during this check or if you have any questions about belt operation, see your NISSAN dealer.



Center of rear seat (if so equipped)

Selecting correct set of seat belts:

The center seat belt buckle is identified by the CENTER mark. The center seat belt tongue can be fastened **only** into the center seat belt buckle.



Shoulder belt height adjustment (For front seats)

The shoulder belt anchor height should be adjusted to the position best suited for you. (See "Precautions on seat belt usage" earlier in this section.) To lower, push the release button, and then move the shoulder belt anchor to the desired position, so that the belt passes over the shoulder. Release the adjustment button to lock the shoulder belt anchor into position.

To raise, move the adjuster up to the desired position without pushing the button.

! WARNING

- After adjustment, release the adjustment button and try to move the shoulder belt down to make sure it is securely fixed in position.
- The shoulder belt anchor height should be adjusted to the position best for you. Failure to do so may reduce the effectiveness of the entire restraint system and increase the chance or severity of injury in an accident.

SEAT BELT EXTENDERS

If, because of body size or driving position, it is not possible to properly fit the lap-shoulder belt and fasten it, an extender is available which is compatible with the installed seat belts. The extender adds approximately 8 inches (200 mm) of length and may be used for either the driver or front passenger seating position. See your NISSAN dealer for assistance if the extender is required.

Seats, restraints and supplemental air bag systems 1-27

! WARNING

- Only NISSAN belt extenders, made by the same company which made the original equipment belts, should be used with NISSAN belts.
- Persons who can use the standard seat belt should not use an extender. Such unnecessary use could result in serious personal injury in the event of an accident.

SEAT BELT MAINTENANCE

- To clean the seat belt webbings, apply a mild soap solution or any solution recommended for cleaning upholstery or carpets. Then brush the webbing, wipe it with a cloth and allow it to dry in the shade. Do not allow the seat belts to retract until they are completely dry.
- If dirt builds up in the shoulder belt guide of the seat belt anchors, the seat belts may retract slowly. Wipe the shoulder belt guide with a clean, dry cloth.
- Periodically check to see that the seat belt and the metal components such as

buckles, tongues, retractors, flexible wires and anchors work properly. If loose parts, deterioration, cuts or other damage on the webbing is found, the entire belt assembly should be replaced.

CHILD RESTRAINTS

PRECAUTIONS ON CHILD RESTRAINTS

! WARNING

- Infants and small children should always be placed in an appropriate child restraint while riding in the vehicle. Failure to use a child restraint can result in serious injury or death.
- Infants and small children should never be carried on your lap. It is not possible for even the strongest adult to resist the forces of a severe accident. The child could be crushed between the adult and parts of the vehicle. Also, do not put the same seat belt around both your child and yourself.
- Never install a rear facing child restraint in the front seat. An inflating supplemental air bag could seriously injure or kill your child. A rear facing child restraint must only be used in the rear seat.

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- NISSAN recommends that the child restraint be installed in the rear seat. According to accident statistics, children are safer when properly restrained in the rear seat than in the front seat.
- An improperly installed child restraint could lead to serious injury or death in an accident.

In general, child restraints are designed to be installed with the lap portion of a three-point type seat belt. In addition, this vehicle is equipped with a universal child restraint lower anchor system, referred to as the LATCH (Lower Anchors and Tether for Children) system. Some child restraints include two rigid or webbing-mounted attachments that can be connected to these lower anchors. For details, see "LATCH (Lower Anchors and Tether for Children) SYSTEM" later in this section.

Child restraints for infants and children of various sizes are offered by several manufacturers. When selecting any child restraint, keep the following points in mind:

- choose only a restraint with a label certifying that it complies with Federal Motor

Vehicle Safety Standard 213 or Canadian Motor Vehicle Safety Standard 213.

- check the child restraint in your vehicle to be sure it is compatible with the vehicle's seat and seat belt system. Choose a child restraint that meets the guidelines of the Society of Automotive Engineers recommended practice J1819 for child restraint installation.
- if the child restraint is compatible with your vehicle, place your child in the child restraint and check the various adjustments to be sure the child restraint is compatible with your child. Always follow all recommended procedures.

All US states and Canadian provinces require that infants and small children be restrained in approved child restraints at all times while the vehicle is being operated.

WARNING

- Improper use of a child restraint can result in increased injuries for both the infant or child and other occupants in the vehicle.

- Follow all of the child restraint manufacturer's instructions for installation and use. When purchasing a child restraint, be sure to select one which will fit your child and vehicle. It may not be possible to properly install some types of child restraints in your vehicle.
- If the child restraint is not anchored properly, the risk of a child being injured in a collision or a sudden stop greatly increases.
- Adjustable seatbacks should be positioned to fit the child restraint, but as upright as possible.
- After attaching the child restraint, test it before you place the child in it. Tilt it from side to side. Try to tug it forward and check to see if the belt holds the restraint in place. If the restraint is not secure, tighten the belt as necessary, or put the restraint in another seat and test it again.
- For a front facing child restraint, check to make sure the shoulder belt

Seats, restraints and supplemental air bag systems 1-29

does not go in front of the child's face or neck. If it does, put the shoulder belt behind the child restraint. If you must install a front facing child restraint in the front seat, see instructions later in this section.

- When your child restraint is not in use, store it in the trunk or keep it secured with a seat belt to prevent it from being thrown around in case of a sudden stop or accident.

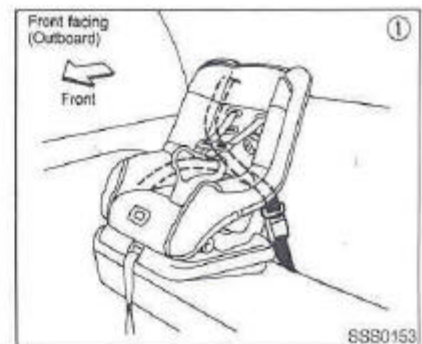
CAUTION

Remember that a child restraint left in a closed vehicle can become very hot. Check the seating surface and buckles before placing your child in the child restraint.

INSTALLATION ON REAR SEAT OUTBOARD OR CENTER POSITIONS

WARNING

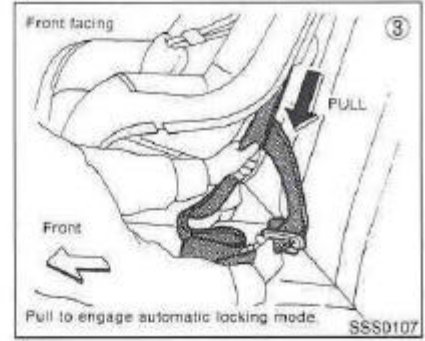
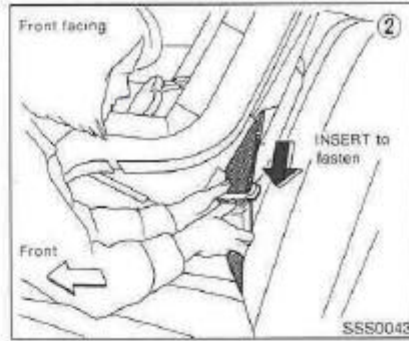
- The three-point belt on your vehicle is equipped with a locking mode retractor which must be used when installing a child restraint.
- Failure to do so will result in the child restraint not being properly secured. It could tip over or otherwise be unsecured and cause injury to the child in a sudden stop or collision.



Front facing

When you install a child restraint in a rear outboard or center seat, follow these steps:

1. Position the child restraint on the seat. It can be placed in a front facing direction, depending on the size of the child. Always follow the restraint manufacturer's instructions.



2. Route the seat belt tongue through the child restraint and insert it into the buckle until you hear and feel the latch engage. Be sure to follow the child restraint manufacturer's instructions for belt routing.

3. Pull on the shoulder belt until all of the belt is fully extended. At this time, the belt retractor is in the automatic locking mode (child restraint mode). It reverts back to emergency locking mode when the belt is fully retracted.

Seats, restraints and supplemental air bag systems 1-31



4. Allow the belt to retract. Pull up on the belt to remove any slack in the belt.



5. Before placing the child in the child restraint, use force to tilt the child restraint from side to side, and tug it forward to make sure that it is securely held in place.

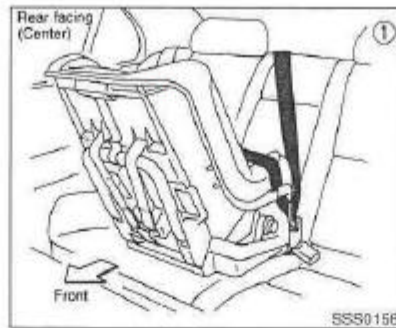
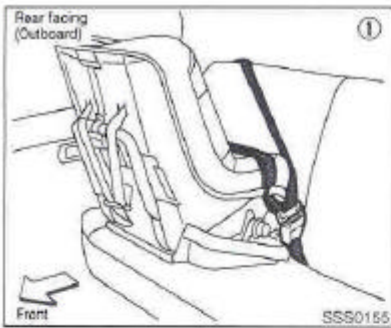
6. Check that the retractor is in the automatic locking mode by trying to pull more belt out of the retractor. If you cannot pull any more belt webbing out of the retractor, the belt is in the automatic locking mode.

7. Check to make sure that the child restraint is properly secured prior to each use. If the belt is not locked, repeat steps 3 through 6.

After the child restraint is removed and the seat belt is allowed to wind back into the

retractor, the automatic locking mode (child restraint mode) is canceled; the seat belt only locks during a sudden stop or impact.

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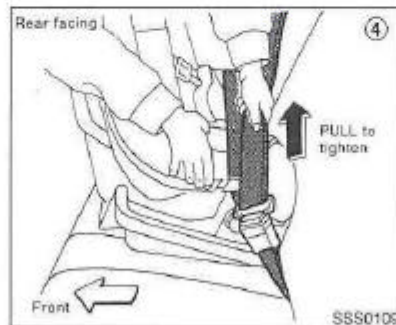
Rear facing

When you install a child restraint in a rear outboard or center seat, follow these steps:

1. Position the child restraint on the seat. The direction of the child restraint depends on the type of the child restraint and the size of the child. Always follow the restraint manufacturer's instructions.

2. Route the seat belt tongue through the child restraint and insert it into the buckle until you hear and feel the latch engage. Be sure to follow the child restraint manufacturer's instructions for belt routing.

Seats, restraints and supplemental air bag systems 1-33



3. Pull on the shoulder belt until all of the belt is fully extended. At this time, the belt retractor is in the automatic locking mode (child restraint mode). It reverts back to emergency locking mode when the belt is fully retracted.

4. Allow the belt to retract. Pull up on the belt to remove any slack in the belt.

5. Before placing the child in the child restraint, use force to tilt the child restraint from side to side, and tug it forward to make sure that it is securely held in place.

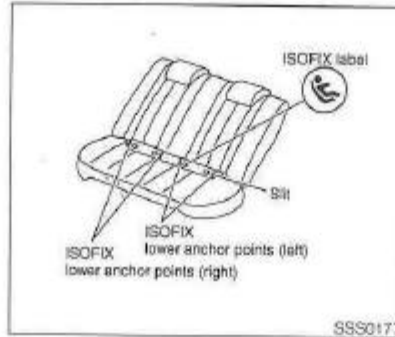
6. Check that the retractor is in the automatic locking mode by trying to pull more belt out of the retractor. If you cannot pull any more belt webbing out of the retractor, the belt is in the automatic locking mode.

7. Check to make sure that the child restraint is properly secured prior to each use. If the belt is not locked, repeat steps 3 through 6.

After the child restraint is removed and the seat belt is allowed to wind back into the

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retractor, the automatic locking mode (child restraint mode) is canceled; the seat belt only locks during a sudden stop or impact.



LATCH (LOWER ANCHORS AND TETHER FOR CHILDREN) SYSTEM

WARNING

- Attach LATCH system compatible child restraints only at the locations shown. If a child restraint is not secured properly, your child could be seriously injured or killed in an accident.

- Do not secure a child restraint in the center rear seating position using the child restraint lower anchors. The child restraint will not be secured properly.
- The LATCH system anchors are designed to withstand only those loads imposed by correctly fitted child restraints. Under no circumstance are they to be used for adult seat belts or harnesses.

Some child restraints include two rigid or webbing-mounted attachments that can be connected to two anchors located at certain seating positions in your vehicle. This system is known as the LATCH (Lower Anchors and Tether for Children) system. This system may also be referred to as the ISOFIX or ISOFIX compatible system. With this system, you do not have to use a vehicle seat belt to secure the child restraint. Your vehicle is equipped with special anchor points that are used with LATCH system compatible child restraints. Check your child restraint for a label stating that it is compatible with the LATCH system. This information may also be in the child restraint owner's manual. If you have such a

Seats, restraints and supplemental air bag systems 1-35

child restraint, refer to the illustration for the rear seating positions equipped with LATCH system anchors which can be used to secure the child restraint.

The LATCH system anchors are located at the rear of the seat cushion near the seatback. A label is attached to the seatback to help you locate the LATCH system anchors.

Some child restraints may also require the use of a top tether strap. See "Top tether strap child restraint" later in this section for installation instructions.

When installing a child restraint, carefully read and follow the instructions in this manual and those supplied with the child restraint.

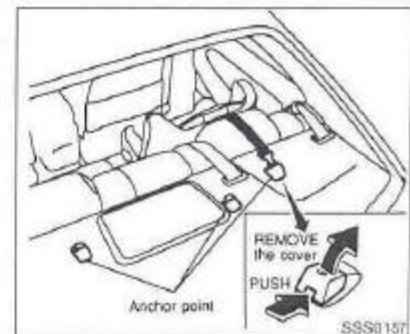
When you install a LATCH system compatible child restraint to the lower anchor attachments in the rear seat, follow these steps.

WARNING

Inspect the lower anchors by inserting your fingers into the lower anchor area and feeling to make sure there are no obstructions over the LATCH system anchors, such as seat belt webbing or seat cushion material. The child

restraint will not be secured properly if the LATCH system anchors are obstructed.

1. To install the LATCH system compatible child restraint, insert the child restraint LATCH system anchor attachments into the anchor points on the rear seat. If the child restraint is equipped with a top tether, see "Top tether strap child restraint" later in this section for installation instructions.
2. After attaching the child restraint and before placing the child in it, use force to tilt the child restraint from side to side and tug it forward to make sure that the child restraint is securely held in place.
3. Check to make sure that the child restraint is properly secured prior to each use.



TOP TETHER STRAP CHILD RESTRAINT

If your child restraint has a top tether strap, it must be secured to the provided anchor point. First, secure the child restraint with the rear seat belt.

Remove the anchor cover from the anchor point which is located directly behind the child seat.

Secure the top tether strap to the anchor bracket.

Keep the removed cover in a secured place to prevent loss or damage to the cover.

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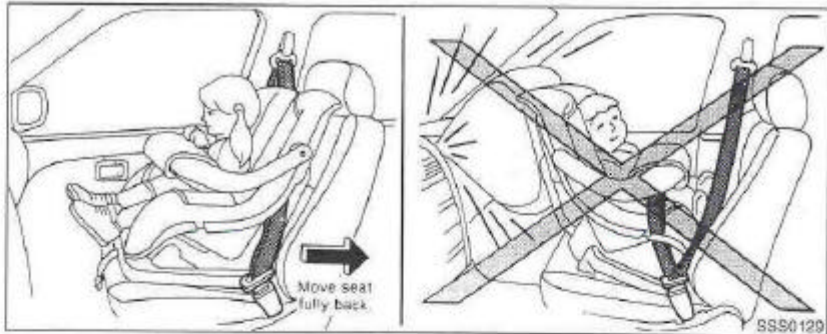
⚠ WARNING

The child restraint anchor point is designed to withstand only those loads imposed by correctly fitted child restraints. Under no circumstance is it to be used for adult seat belts or harnesses.

Anchor point locations

Anchor points are located on the rear parcel shelf finisher.

If you have any questions when installing a top strap child restraint on the rear seat, consult your NISSAN dealer for details.



INSTALLATION ON FRONT PASSENGER SEAT

⚠ WARNING

- Never install a rear facing child restraint in the front passenger seat. Supplemental air bags inflate with great force. A rear facing child restraint could be struck by the supplemental air bag in a crash and could seriously injure or kill your child.

- NISSAN recommends that child restraints be installed in the rear seat. However, if you must install a front facing child restraint in the front passenger seat, move the passenger seat to the rearmost position.
- A child restraint with a top tether strap should not be used in the front passenger seat.
- The three-point belt in your vehicle is equipped with a locking mode retractor which must be used when install-

ing a child restraint.

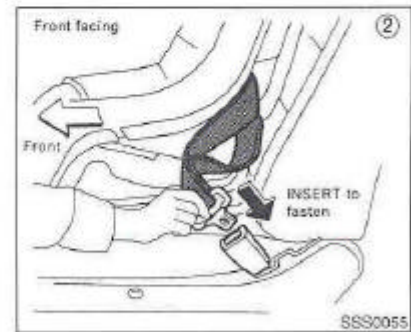
- Failure to use the retractor's locking mode will result in the child restraint not being properly secured. The child restraint could tip over or otherwise be unsecured and cause injury to the child in a sudden stop or collision.



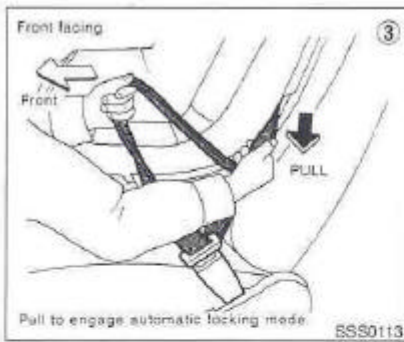
Front facing

If you must install a child restraint in the front seat, follow these steps:

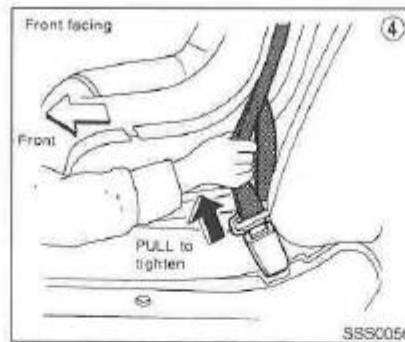
1. Position the child restraint on the front passenger seat. **It should be placed in a front facing direction only.** Move the seat to the rearmost position. Always follow the child restraint manufacturer's instructions. **Child restraints for infants must be used in the rear facing direction and therefore must not be used in the front seat.**



2. Route the seat belt tongue through the child restraint and insert it into the buckle until you hear and feel the latch engage. Be sure to follow the child restraint manufacturer's instructions for belt routing.



3. Pull on the shoulder belt until all of the belt is fully extended. At this time, the belt retractor is in the automatic locking mode (child restraint mode). It reverts back to emergency locking mode when the belt is fully retracted.



4. Allow the belt to retract. Pull up on the belt to remove any slack in the belt.



5. Before placing the child in the child restraint, use force to tilt the child restraint from side to side, and tug it forward to make sure that it is securely held in place.

6. Check that the retractor is in the automatic locking mode by trying to pull more belt out of the retractor. If you cannot pull any more belt webbing out of the retractor, the belt is in the automatic locking mode.

7. Check to make sure that the child restraint is properly secured prior to each use. If the lap belt is not locked, repeat steps 3 through 6.

After the child restraint is removed and the

Seats, restraints and supplemental air bag systems 1-39

seat belt is allowed to wind back into the retractor, the automatic locking mode (child restraint mode) is canceled; the seat belt only locks during a sudden stop or impact.

APPENDIX F

CHILD SEAT

POST-TEST OBSERVATIONS

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

	Left Rear Passenger	Right Rear Passenger
Child Seat	Evenflo Horizon V Belted	Evenflo Horizon V Latch
Child Seat Mass (kg)	4.5	4.5
Belt Fraying	no	no
Stress Marks	no	no
Cracks	no	no
Buckle Stress	no	no
Latch Hooks	N/A	no
Contact	feet to seatback	right foot to seatback

HYBRID III 3 YEAR OLD ATD INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Left Rear Passenger				Right Rear Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	41.5	203	44.2	99	31.2	202	50.2	104
Head CG	Y	G's	10.7	99	12.5	109	14.1	103	7.0	203
Head CG	Z	G's	77.2	87	5.5	54	80.1	92	4.1	33
Head CG Resultant	N/A	G's	82.0	87			85.0	92		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Left Rear Passenger				Right Rear Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	15.7	187	42.8	65	11.0	211	41.6	75
Chest CG	Y	G's	5.0	215	15.3	93	5.3	122	3.3	76
Chest CG	Z	G's	23.3	99	27.9	72	20.6	202	26.8	74
Chest CG Resultant	N/A	G's	50.6	71			49.2	75		

SEAT BELT SENSOR PEAK VALUES

Location	Axis	Units	Left Rear Passenger				Right Rear Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Tether	N/A	Newtons	5205	80			5452	84		

HEAD INJURY CRITERIA (HIC)

Location	Left Rear Passenger				Right Rear Passenger			
	HIC	Avg G's	T ¹	T ²	HIC	Avg G's	T ¹	T ²
Head CG Primary (36 msec)	1079	62.1	70.8	106.3	1241	65.3	73.2	109.2
Head CG Primary (15 msec)	742	75.5	81.4	96.4	777	76.9	82.0	97.0

CHEST CLIP (3 MSEC)

Location	Left Rear Passenger			Right Rear Passenger		
	Clip	T ¹	T ²	Clip	T ¹	T ²
Chest CG Primary	49.5	69.4	72.5	47.9	73.3	76.4

HYBRID III 3 YEAR OLD ATD INJURY CRITERIA AND SENSOR DATA...(continued)

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Left Rear Passenger				Right Rear Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	12.8	124	58.4	72	13.8	144	50.2	77
Pelvis	Y	G's	6.2	204	12.0	78	5.5	95	11.2	86
Pelvis	Z	G's	18.6	205	42.6	75	21.3	202	42.3	78

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Left Rear Passenger				Right Rear Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	73	191	719	103	100	237	968	103
Neck Force	Y	Newtons	44	200	321	92	49	140	102	85
Neck Force	Z	Newtons	2079	93	181	57	2120	93	388	213
Neck Moment	X	N"m	5.0	136	12.3	97	4.3	139	4.4	124
Neck Moment	Y	N"m	17.5	97	17.0	213	14.3	98	28.8	211
Neck Moment	Z	N"m	3.9	102	4.1	188	5.1	92	2.3	211

LOWER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Left Rear Passenger				Right Rear Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	240	197	1287	92	197	240	1900	101
Neck Force	Y	Newtons	399	84	122	97	53	143	458	98
Neck Force	Z	Newtons	989	81	288	57	803	88	138	108
Neck Moment	X	N"m	7.5	200	68.3	96	7.9	141	16.6	87
Neck Moment	Y	N"m	14.9	192	140.2	99	11.2	237	176.1	102
Neck Moment	Z	N"m	4.7	140	26.1	95	7.0	108	4.5	86

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Left Rear Passenger				Right Rear Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	mm			16	97			21	104

DUMMY DIMENSIONS

Test Vehicle: 2001/Nissan/Maxima/4 Door Sedan

NHTSA No.: M15207

Test Program: 35 mph Frontal Barrier Impact

Test Date: March 21, 2001

Measurement Description	Left Rear Passenger	Right Rear Passenger
	Length (mm)	Length (mm)
Head to Roof (Z)	328	326
Head to Seatback (X)	806	834
Chest to Door (Y)	410	454
Left Foot to Seatback	280	296
Right Foot to Seatback	280	297

CHILD SEAT PHOTOGRAPHS

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Photo 1 - Pre-Test LRS 3 Year Old Left Side View



Photo 2 - Post-Test LRS 3 Year Old Left Side View



Photo 3 - Pre-Test LRS 3 Year Old Left Side View (Door Open)



Photo 4 - Post-Test LRS 3 Year Old Left Side View (Door Open)

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Photo 5 - Pre-Test RRS 3 Year Old Right Side View

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Photo 6 - Post-Test RRS 3 Year Old Right Side View



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Photo 7 - Pre-Test RRS 3 Year Old Right Side View (Door Open)

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Photo 8 - Post-Test RRS 3 Year Old Right Side View (Door Open)



Photo 9 - Post-Test Tether View

CHILD DATA PLOTS

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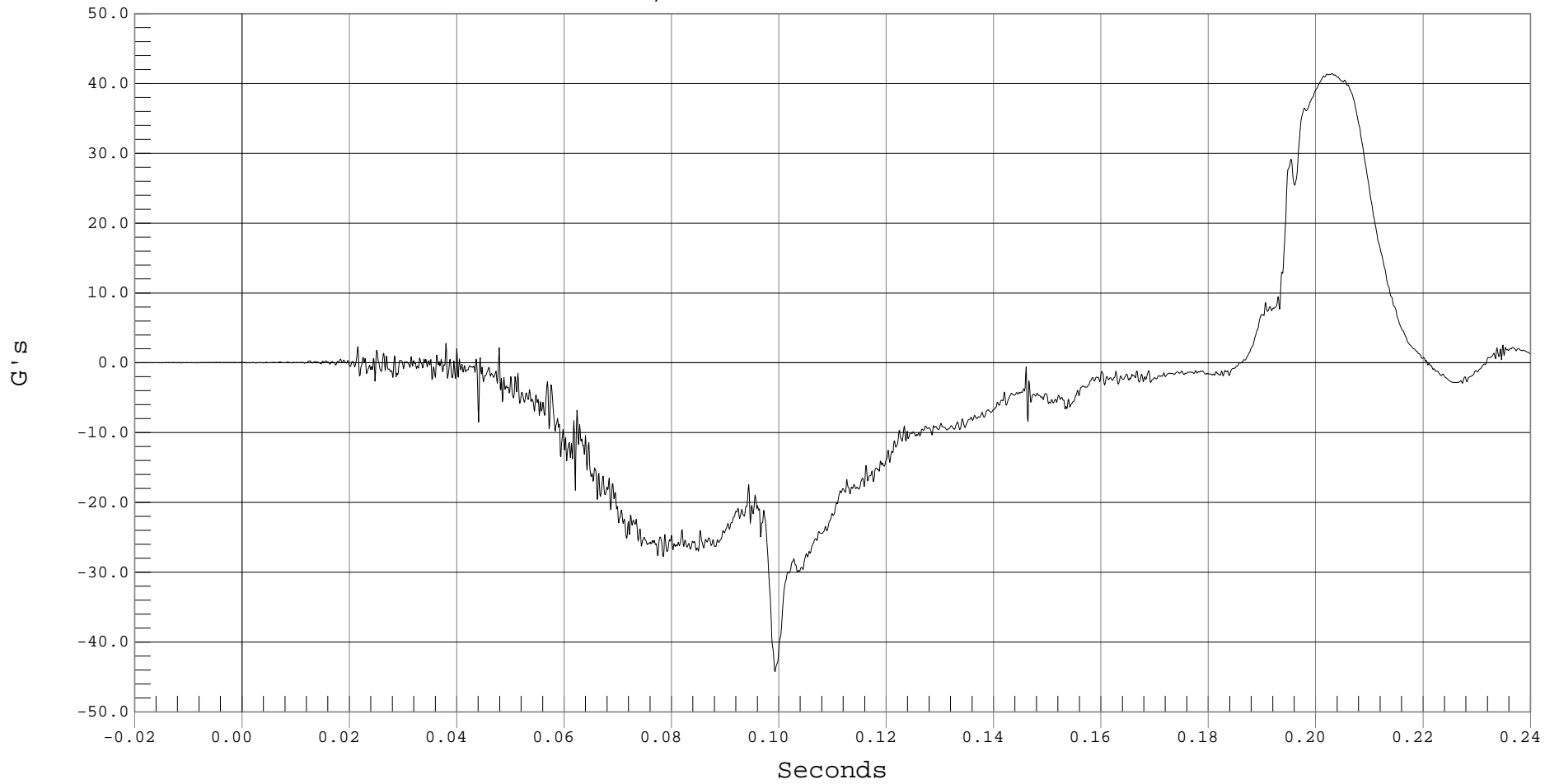
LRS 3 YR OLD HEAD X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 LRS CHILD HEAD X, b01032AT.A13

Ymin = -44.24 G's @ 0.0992 Seconds, Ymax = 41.45 G's @ 0.2030 Seconds



F-19



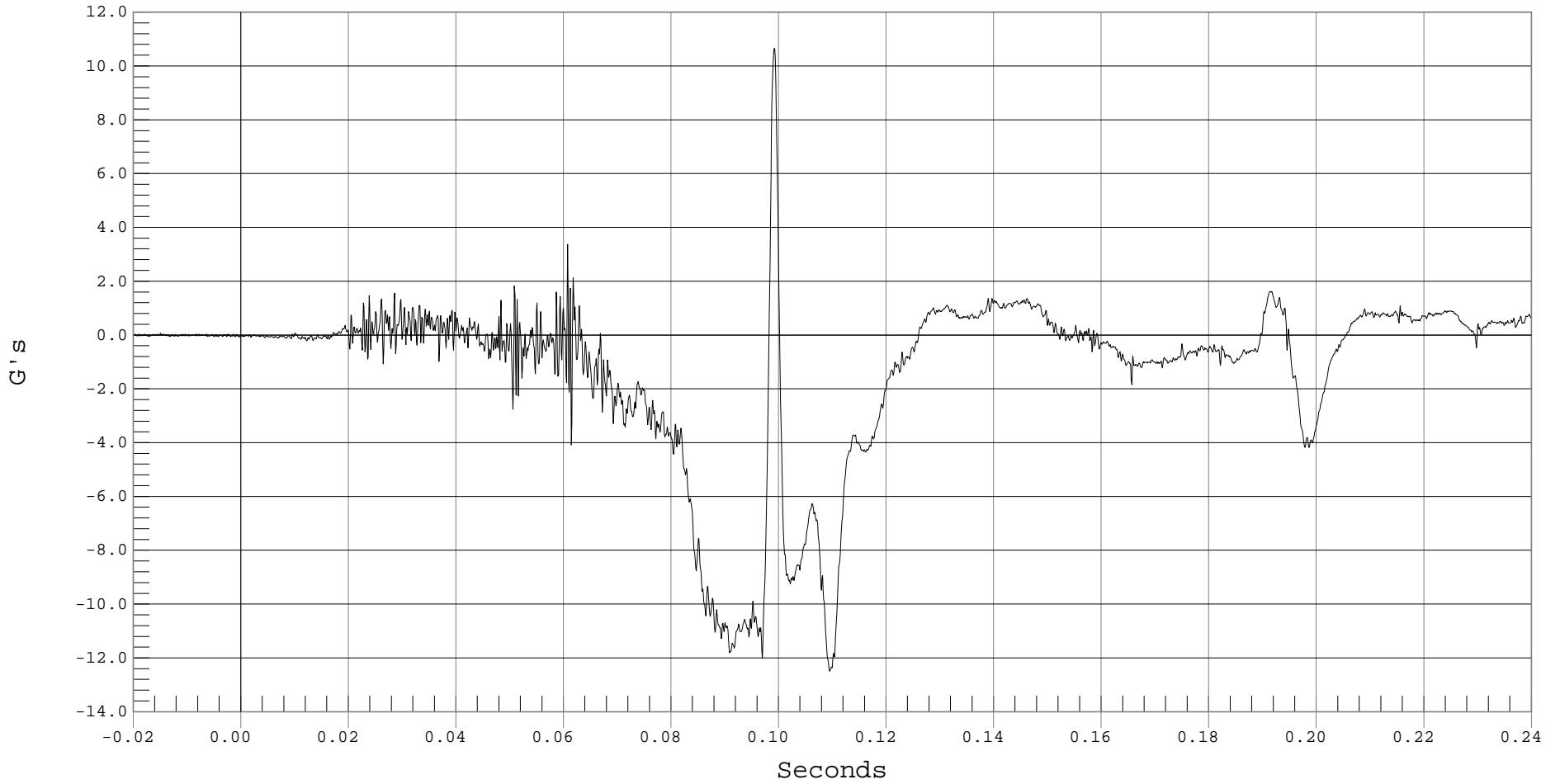
LRS 3 YR OLD HEAD Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 LRS CHILD HEAD Y, b01032AT.A14

Ymin = -12.49 G's @ 0.1094 Seconds, Ymax = 10.65 G's @ 0.0991 Seconds



F-20



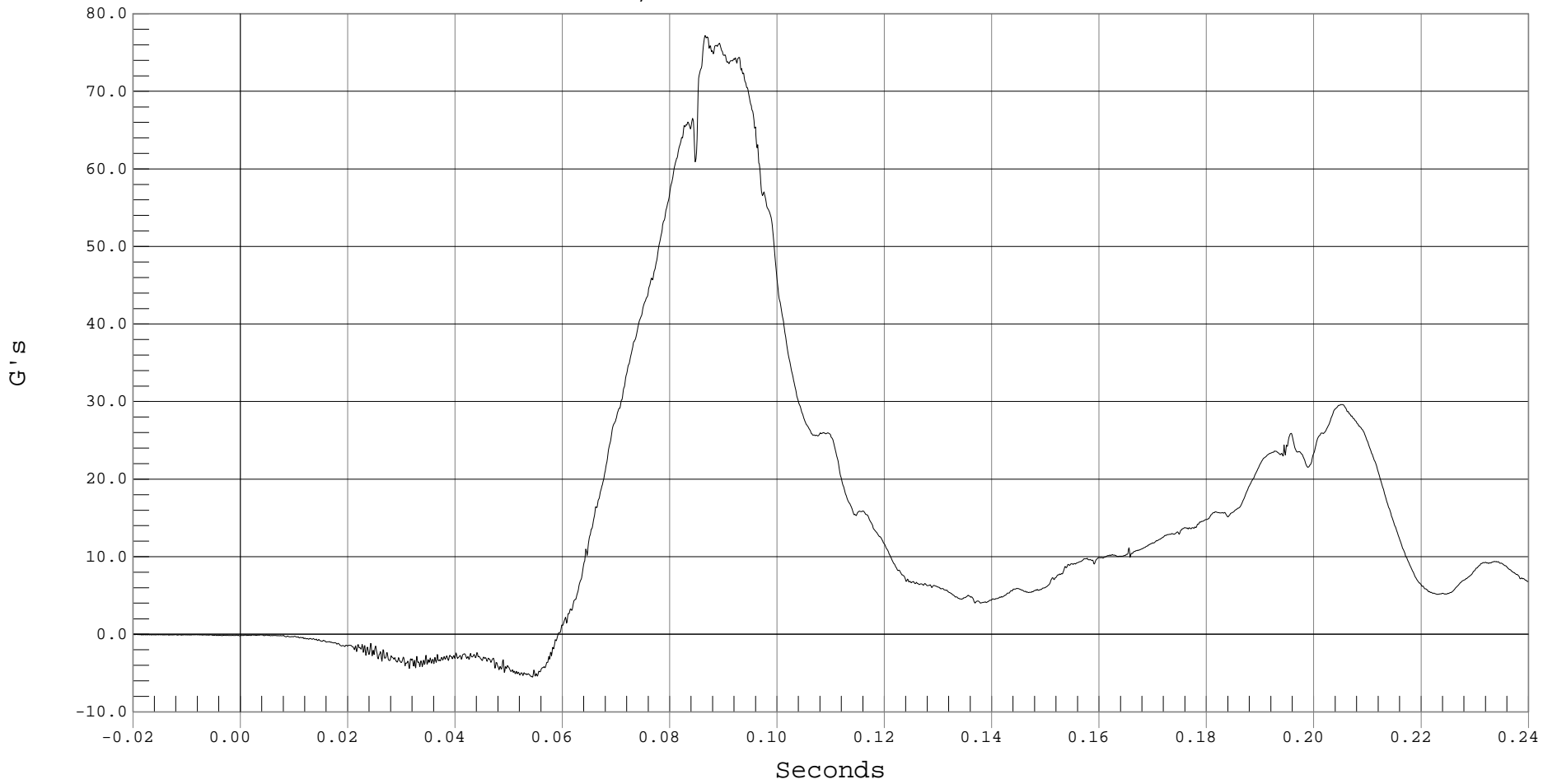
LRS 3 YR OLD HEAD Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 LRS CHILD HEAD Z, b01032AT.A15

Ymin = -5.53 G's @ 0.0543 Seconds, Ymax = 77.2 G's @ 0.0865 Seconds



F-21



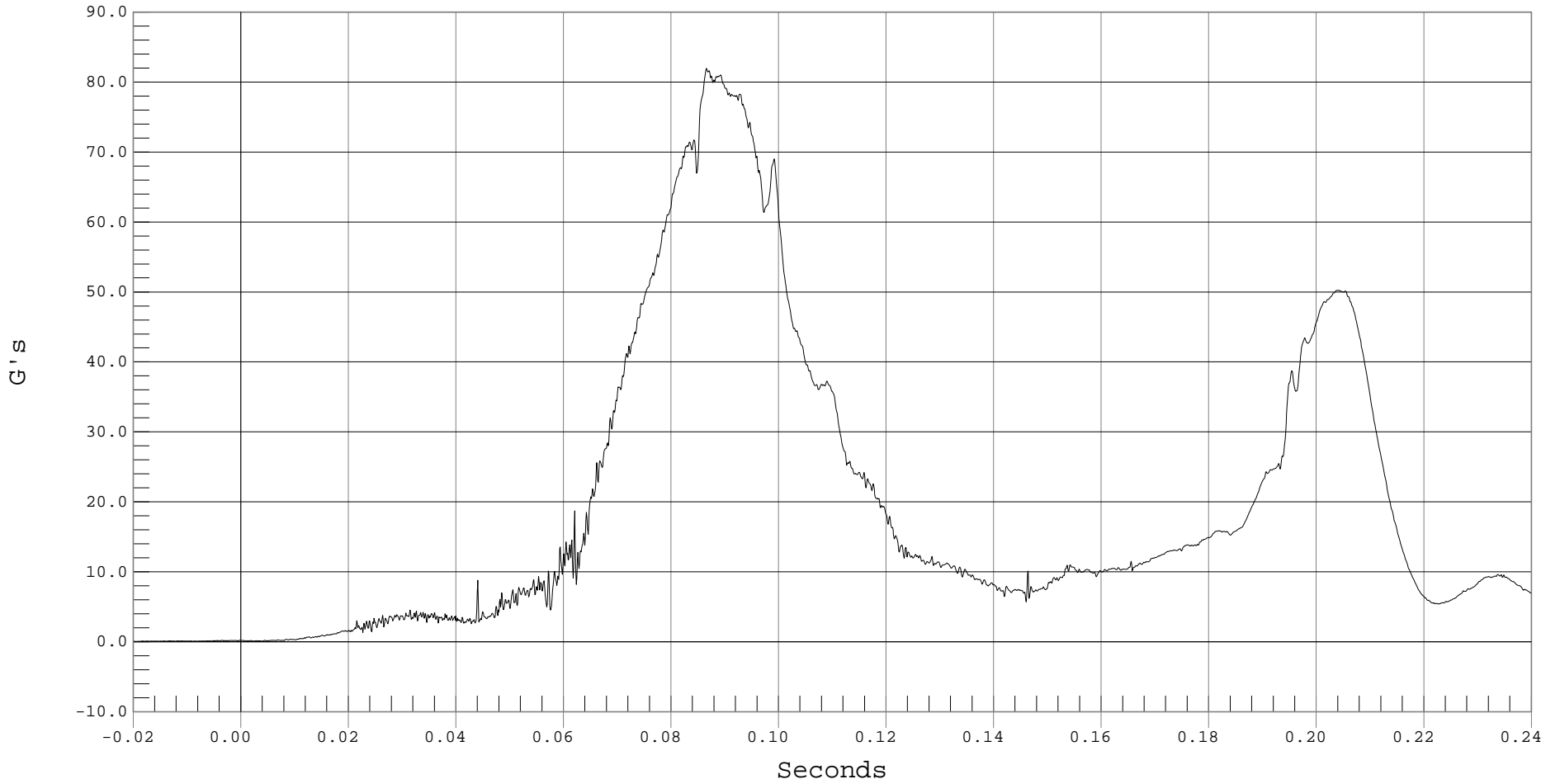
LRS 3 YR OLD HEAD RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 LRS 3 YR OLD HEAD RESULTANT ACCELERATION, b01032AV.A13

Ymin = .02 G's @ -0.0186 Seconds, Ymax = 81.98 G's @ 0.0865 Seconds





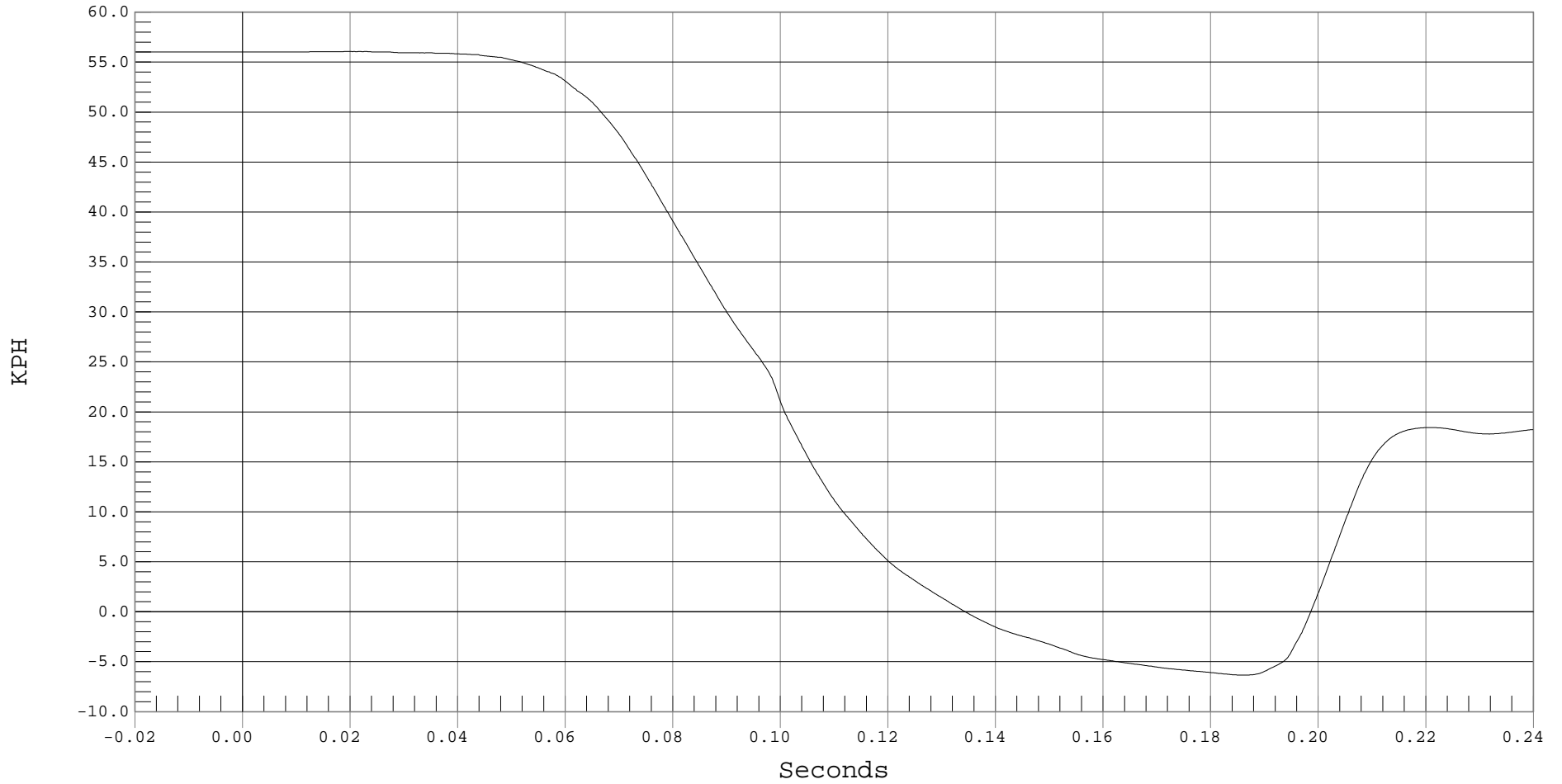
LRS 3 YR OLD HEAD X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 LRS 3 YR OLD HEAD X VELOCITY, b01032AI.V13

Ymin = -6.34 KPH @ 0.1857 Seconds, Ymax = 56.07 KPH @ 0.0217 Seconds





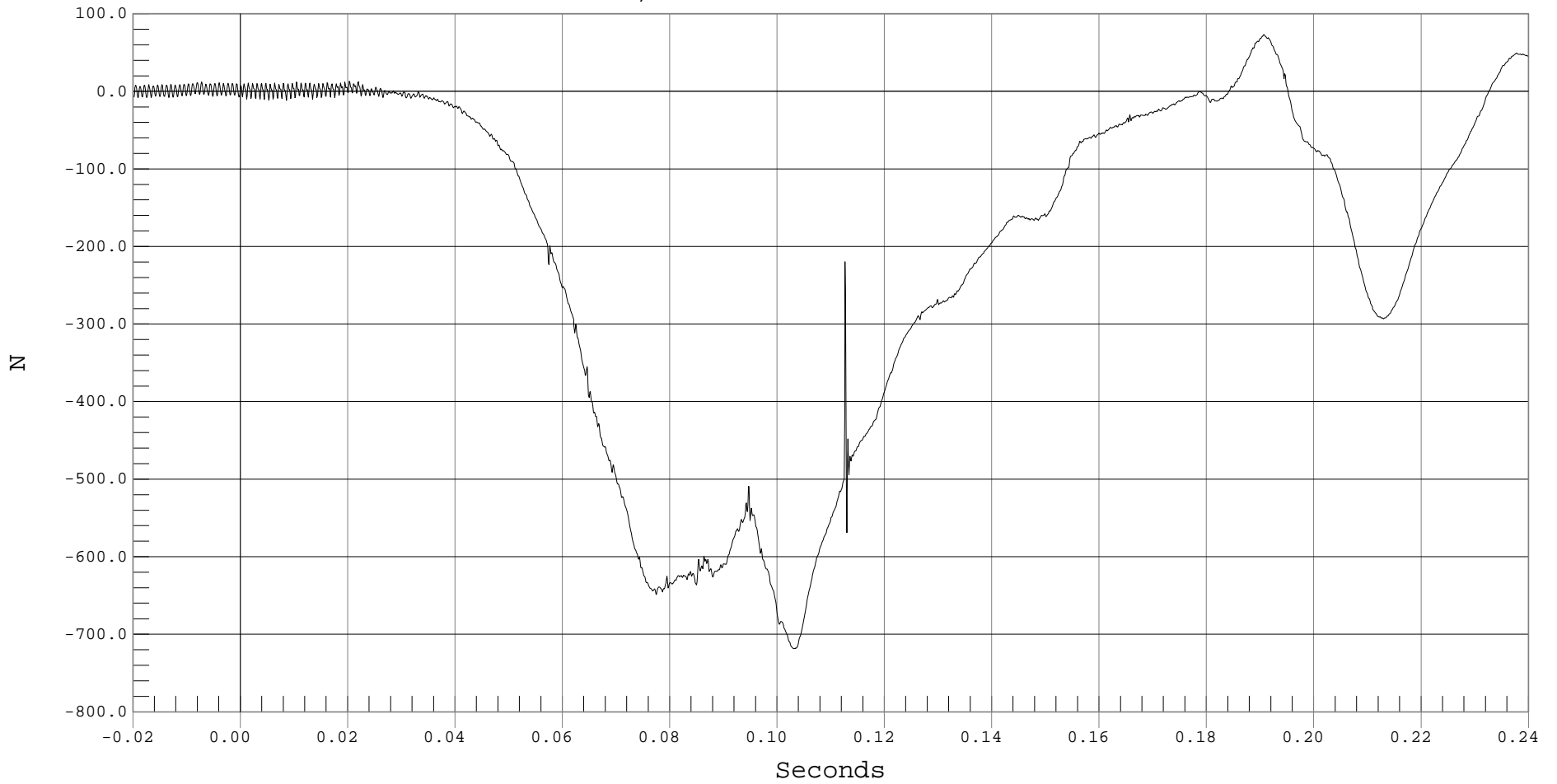
LRS 3 YR OLD UPPER NECK FORCE X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 LRS CHILD UPPER NECK FORCE X, b01032FT.F16

Ymin = -718.52 N @ 0.1031 Seconds, Ymax = 73.05 N @ 0.1906 Seconds



F-24



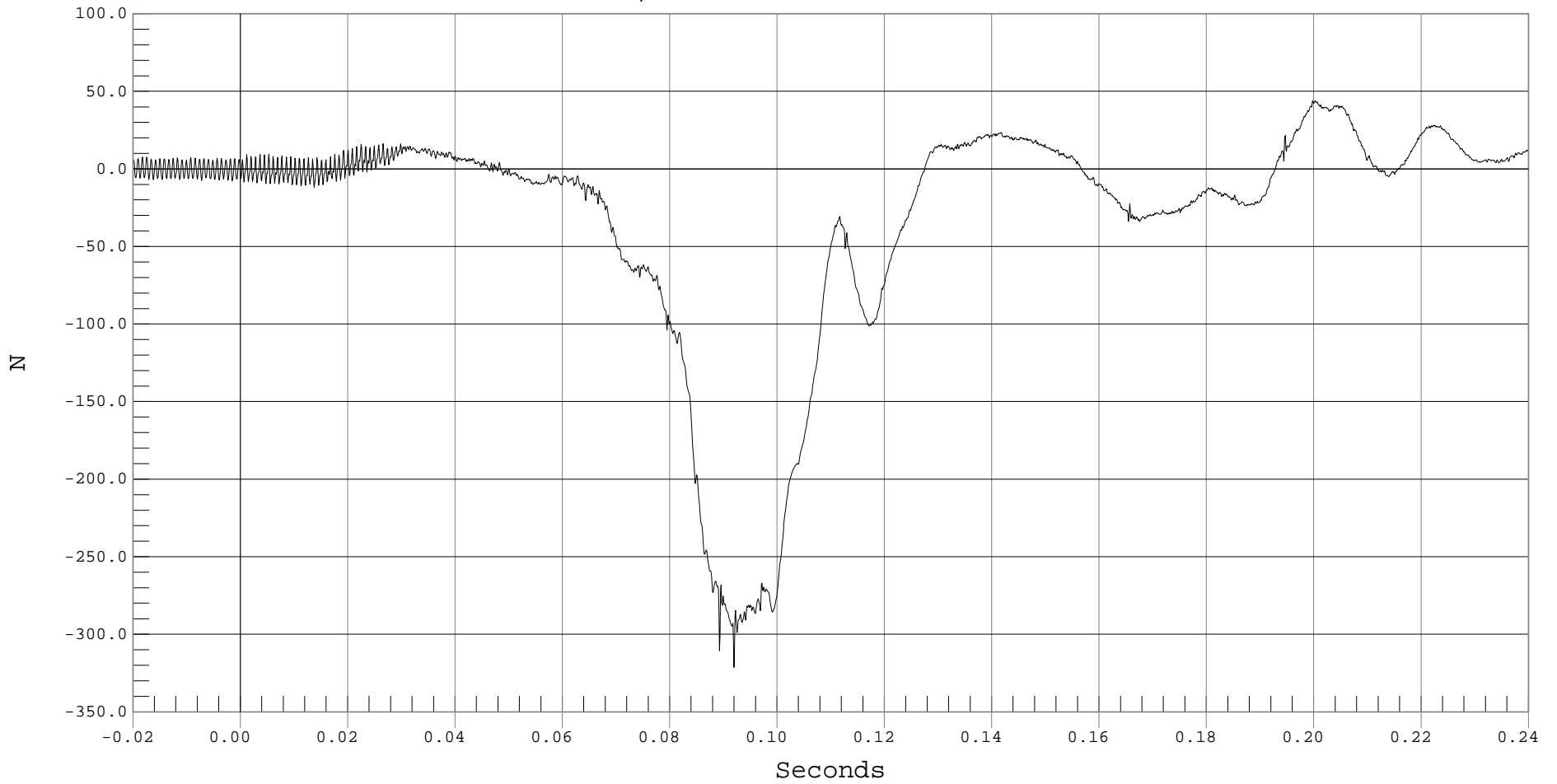
LRS 3 YR OLD UPPER NECK FORCE Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 LRS CHILD UPPER NECK FORCE Y, b01032FT.F17

Ymin = -321.41 N @ 0.0919 Seconds, Ymax = 43.79 N @ 0.1997 Seconds



F-25



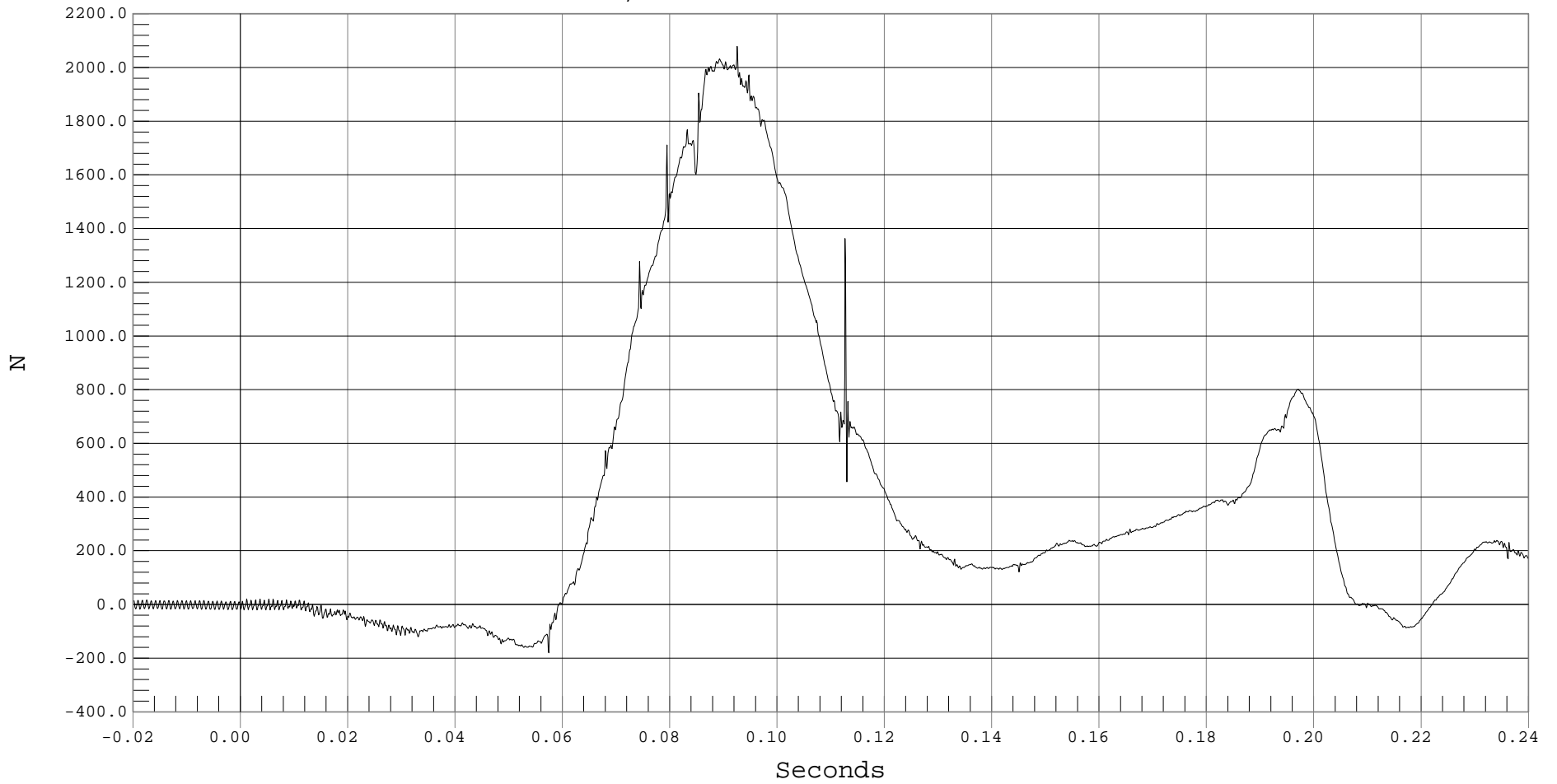
LRS 3 YR OLD UPPER NECK FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 LRS CHILD UPPER NECK FORCE Z, b01032FT.F18

Ymin = -180.8 N @ 0.0574 Seconds, Ymax = 2078.59 N @ 0.0925 Seconds





LRS 3 YR OLD UPPER NECK FORCE RESULTANT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT

Test Date: 03-21-01

Component: 2001 NISSAN MAXIMA (M15207)

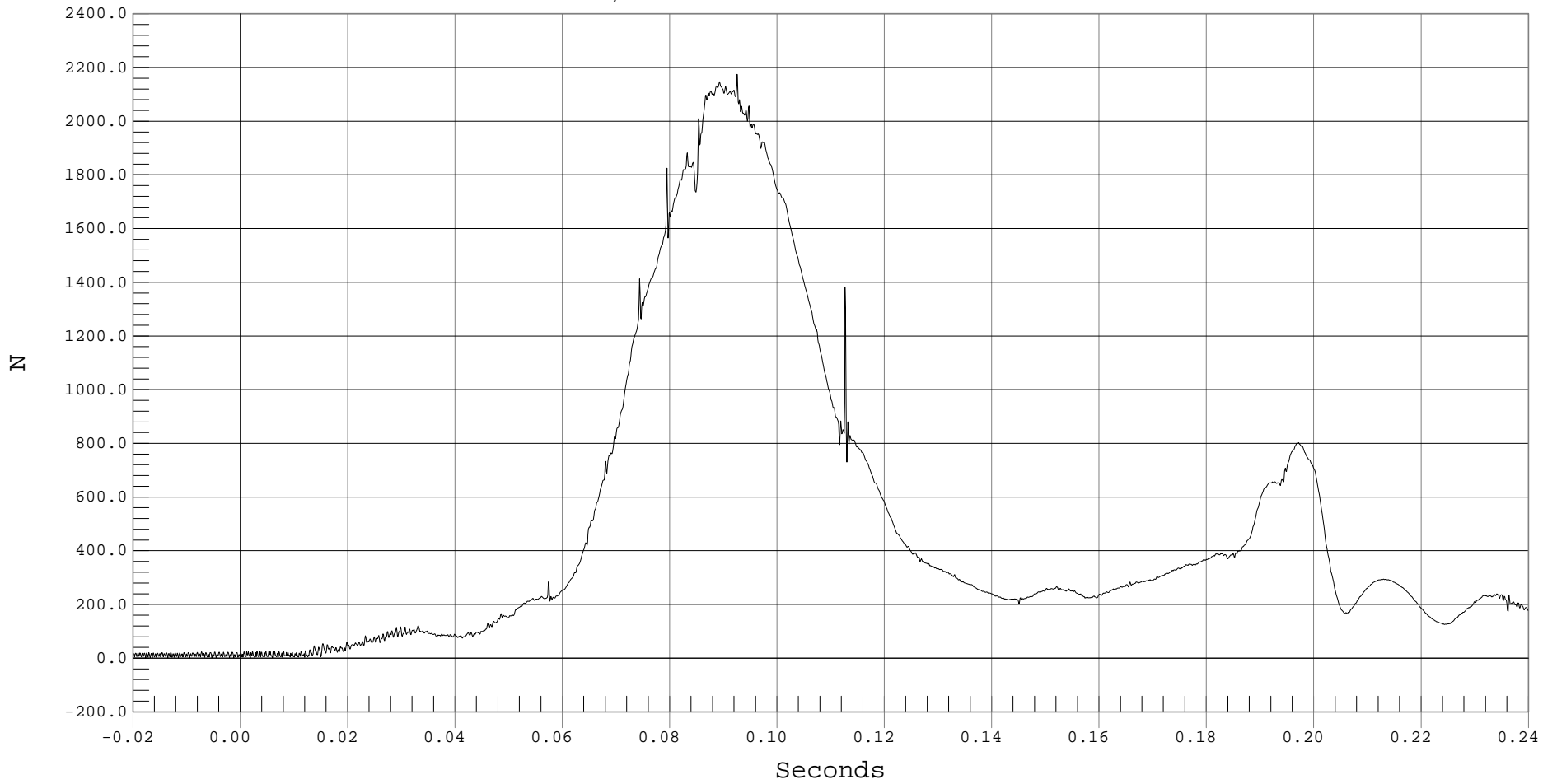
Speed: 34.8 MPH, 56.0 KPH

Other Info:

Filter Class: 1000

— 1 LRS 3 YR OLD UPPER NECK FORCE RESULTANT, b01032FV.F16

Ymin = .87 N @ -0.0095 Seconds, Ymax = 2174.49 N @ 0.0925 Seconds



F-27



LRS 3 YR OLD UPPER NECK MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT

Test Date: 03-21-01

Component: 2001 NISSAN MAXIMA (M15207)

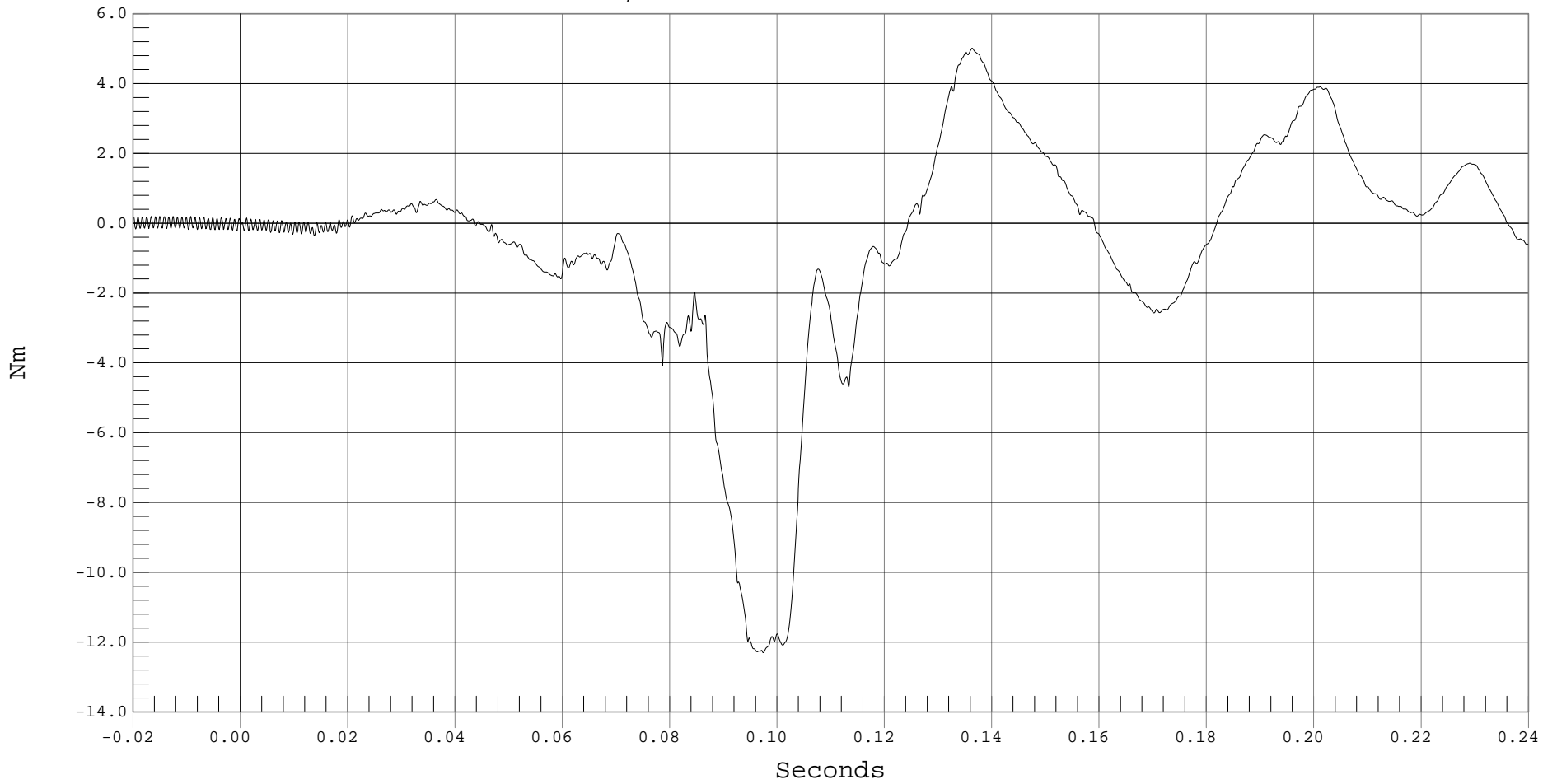
Speed: 34.8 MPH, 56.0 KPH

Other Info:

Filter Class: 600

— 1 LRS CHILD UPPER NECK MOMENT X, b01032MF.M19

Ymin = -12.3 Nm @ 0.0974 Seconds, Ymax = 5.01 Nm @ 0.1363 Seconds



F-28



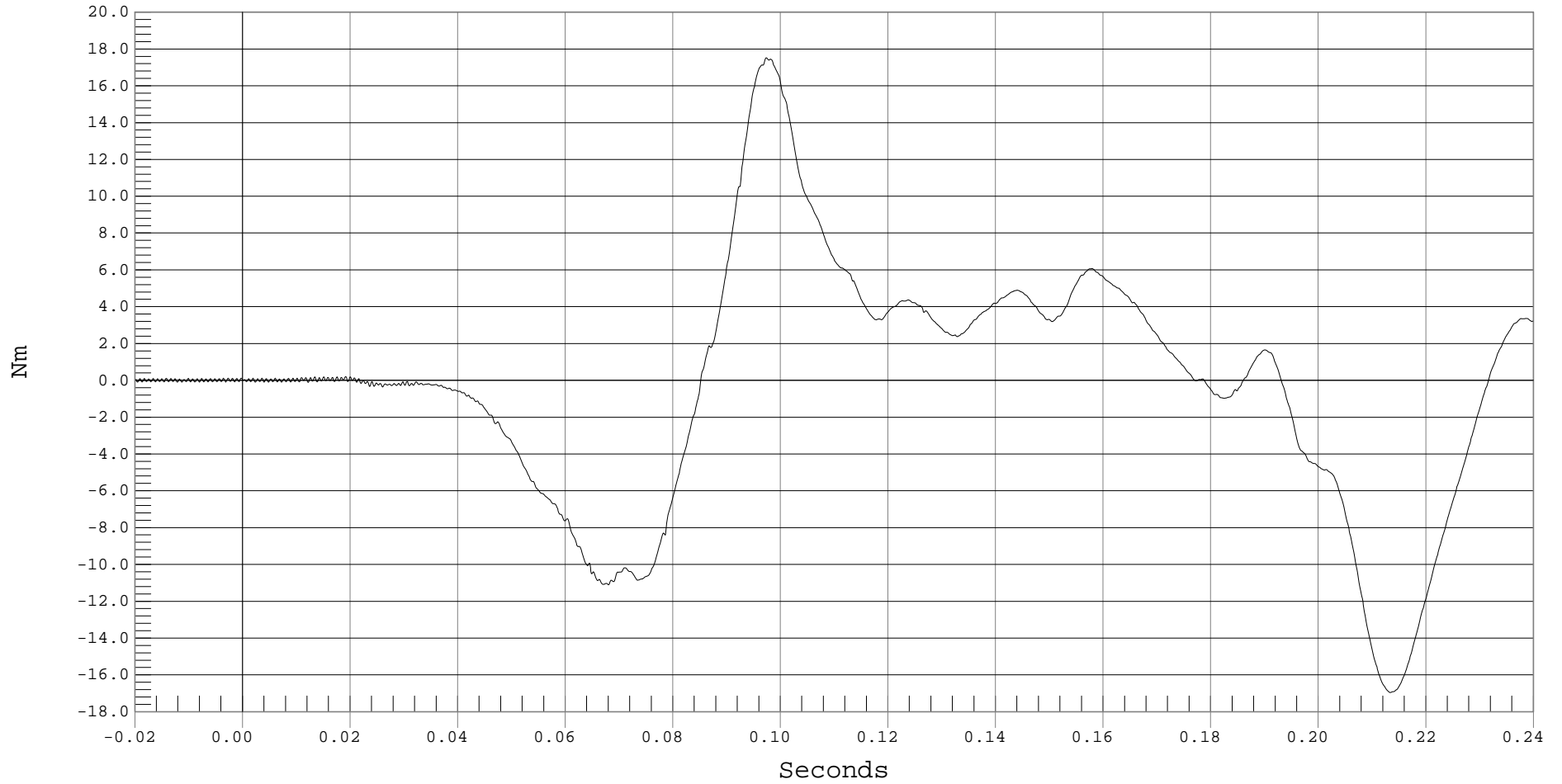
LRS 3 YR OLD UPPER NECK MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 LRS CHILD UPPER NECK MOMENT Y, b01032MF.M20

Ymin = -16.96 Nm @ 0.2133 Seconds, Ymax = 17.53 Nm @ 0.0973 Seconds





LRS 3 YR OLD UPPER NECK MOMENT Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT

Test Date: 03-21-01

Component: 2001 NISSAN MAXIMA (M15207)

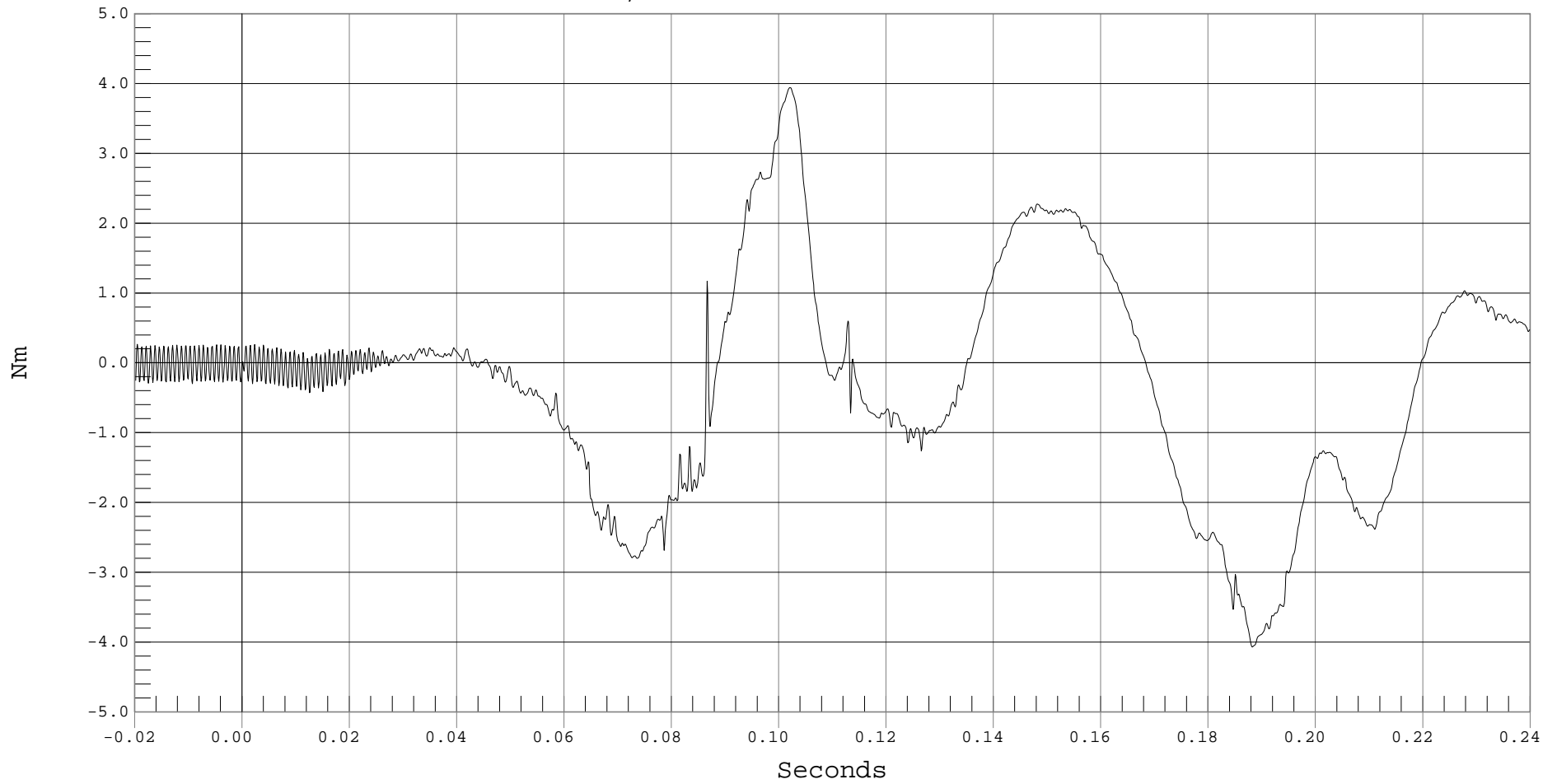
Speed: 34.8 MPH, 56.0 KPH

Other Info:

Filter Class: 600

— 1 LRS CHILD UPPER NECK MOMENT Z, b01032MF.M21

Ymin = -4.07 Nm @ 0.1882 Seconds, Ymax = 3.94 Nm @ 0.1020 Seconds



F-30



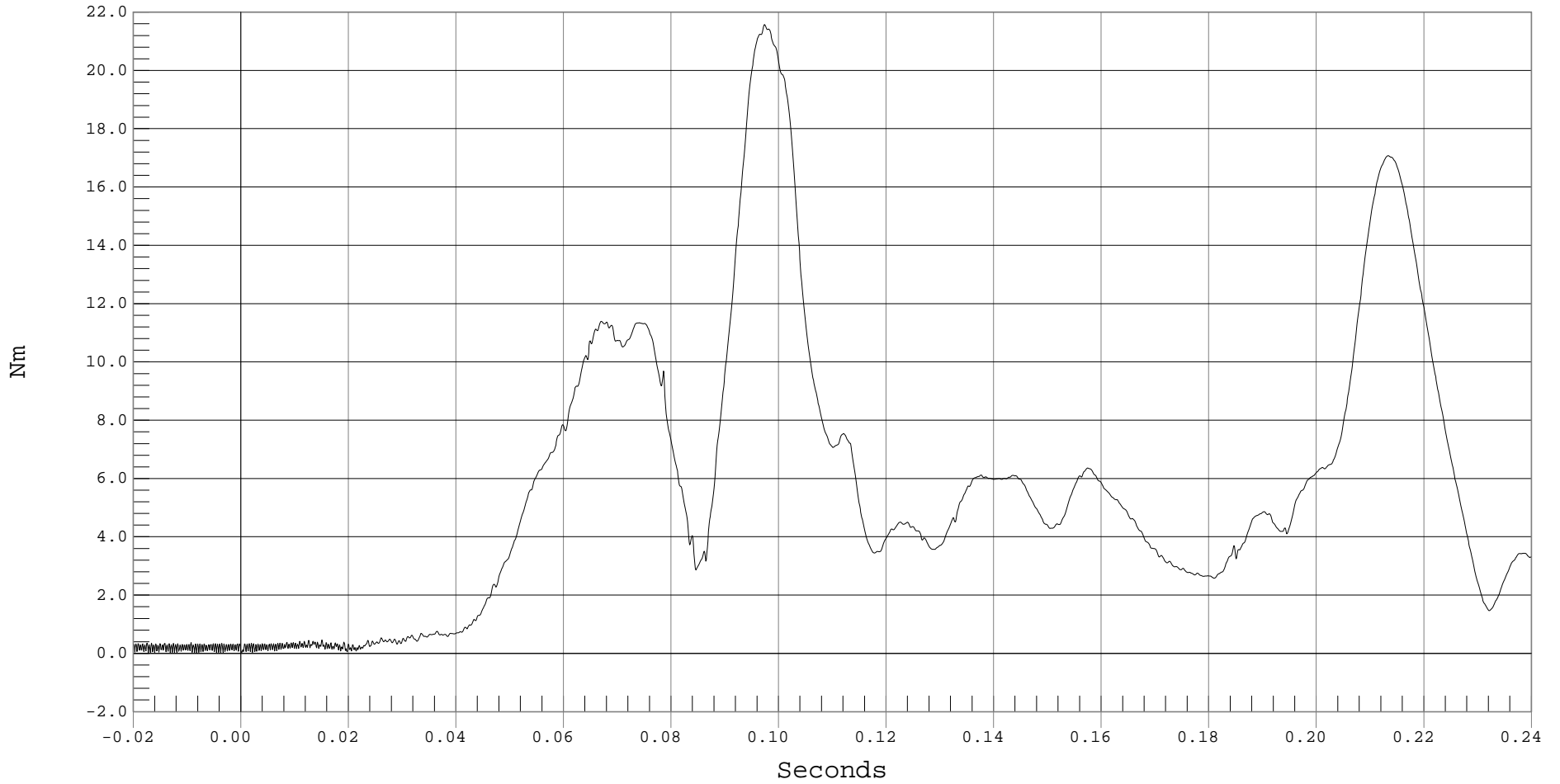
LRS 3 YR OLD UPPER NECK MOMENT RESULTANT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 LRS 3 YR OLD UPPER NECK MOMENT RESULTANT, b01032MV.M19

Ymin = .01 Nm @ -0.0083 Seconds, Ymax = 21.57 Nm @ 0.0973 Seconds



F-31



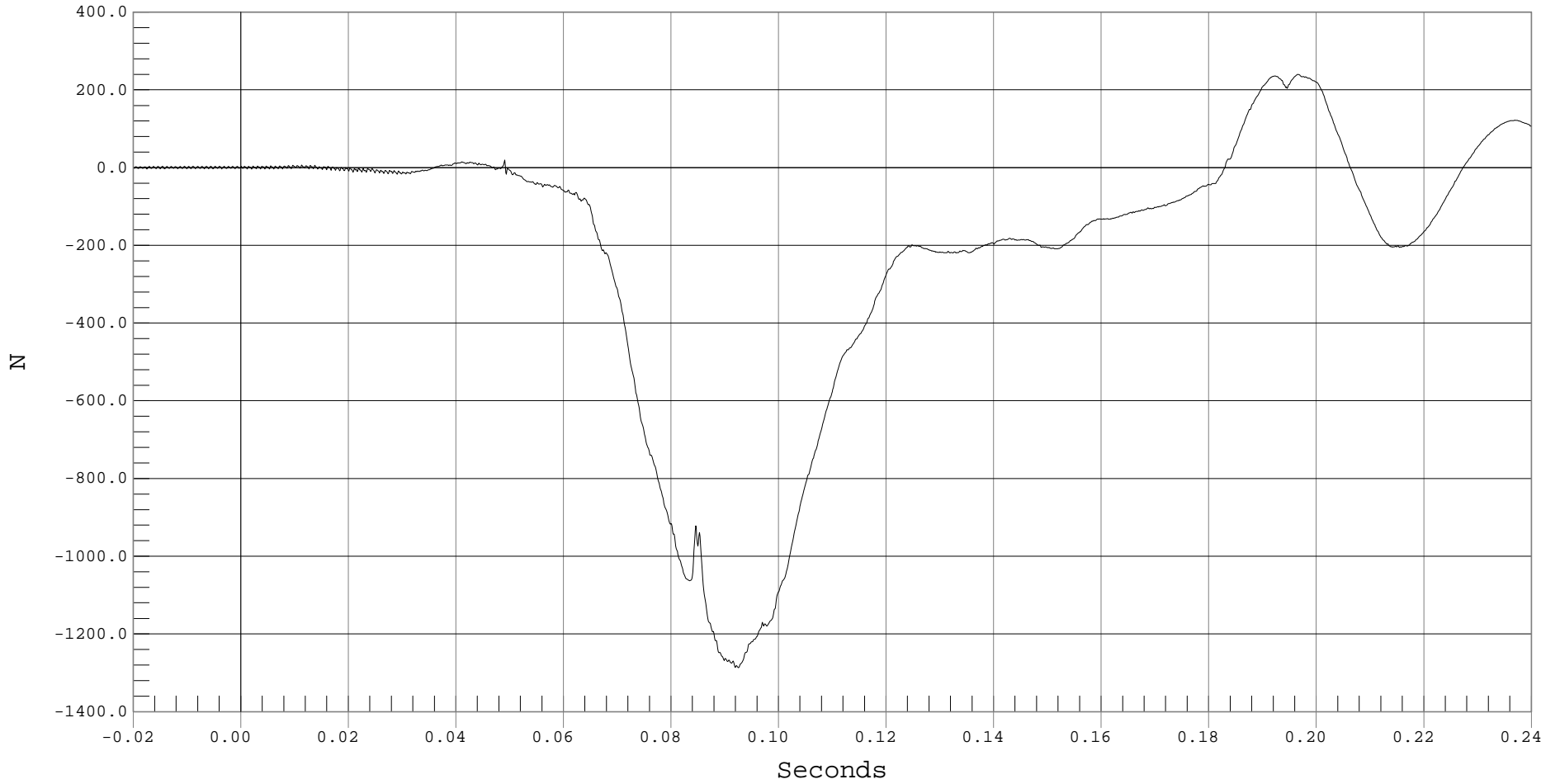
LRS 3 YR OLD LOWER NECK FORCE X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 LRS CHILD LOWER NECK FORCE X, b01032FT.F22

Ymin = -1286.97 N @ 0.0924 Seconds, Ymax = 240.14 N @ 0.1965 Seconds



F-32



LRS 3 YR OLD LOWER NECK FORCE Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT

Test Date: 03-21-01

Component: 2001 NISSAN MAXIMA (M15207)

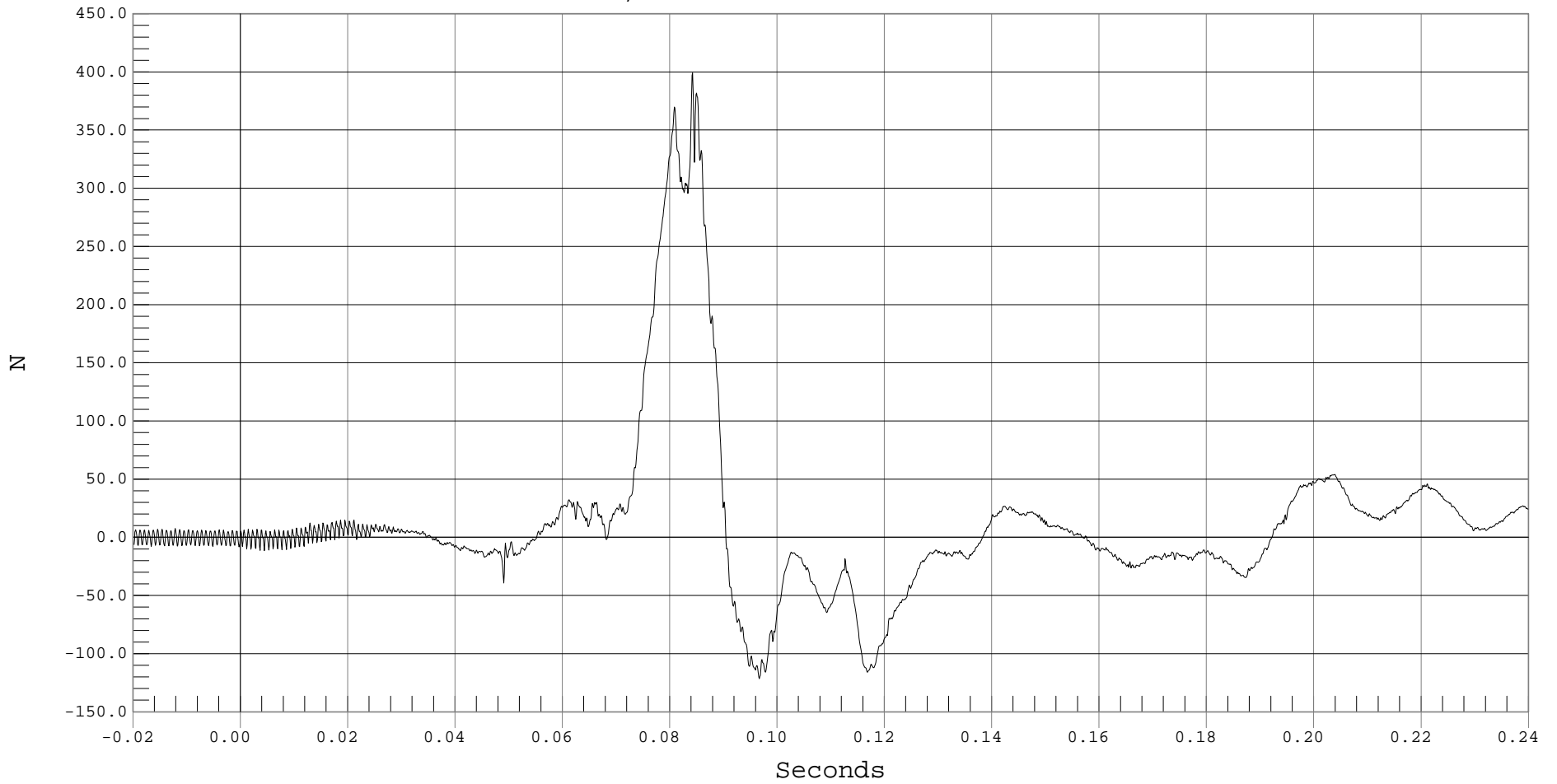
Speed: 34.8 MPH, 56.0 KPH

Other Info:

Filter Class: 1000

— 1 LRS CHILD LOWER NECK FORCE Y, b01032FT.F23

Ymin = -121.5 N @ 0.0966 Seconds, Ymax = 399.15 N @ 0.0842 Seconds



F-33



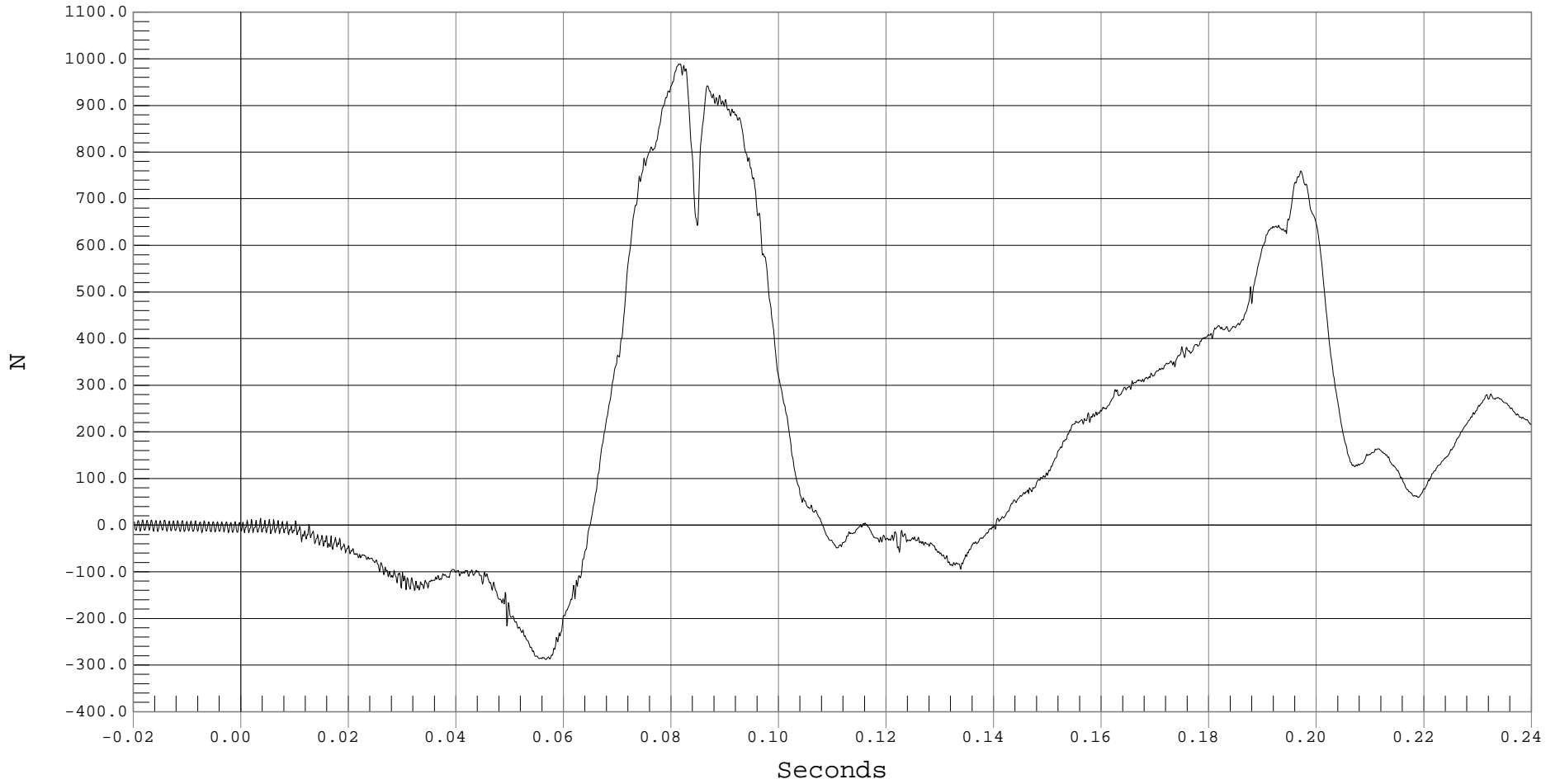
LRS 3 YR OLD LOWER NECK FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 LRS CHILD LOWER NECK FORCE Z, b01032FT.F24

Ymin = -287.92 N @ 0.0566 Seconds, Ymax = 988.94 N @ 0.0814 Seconds





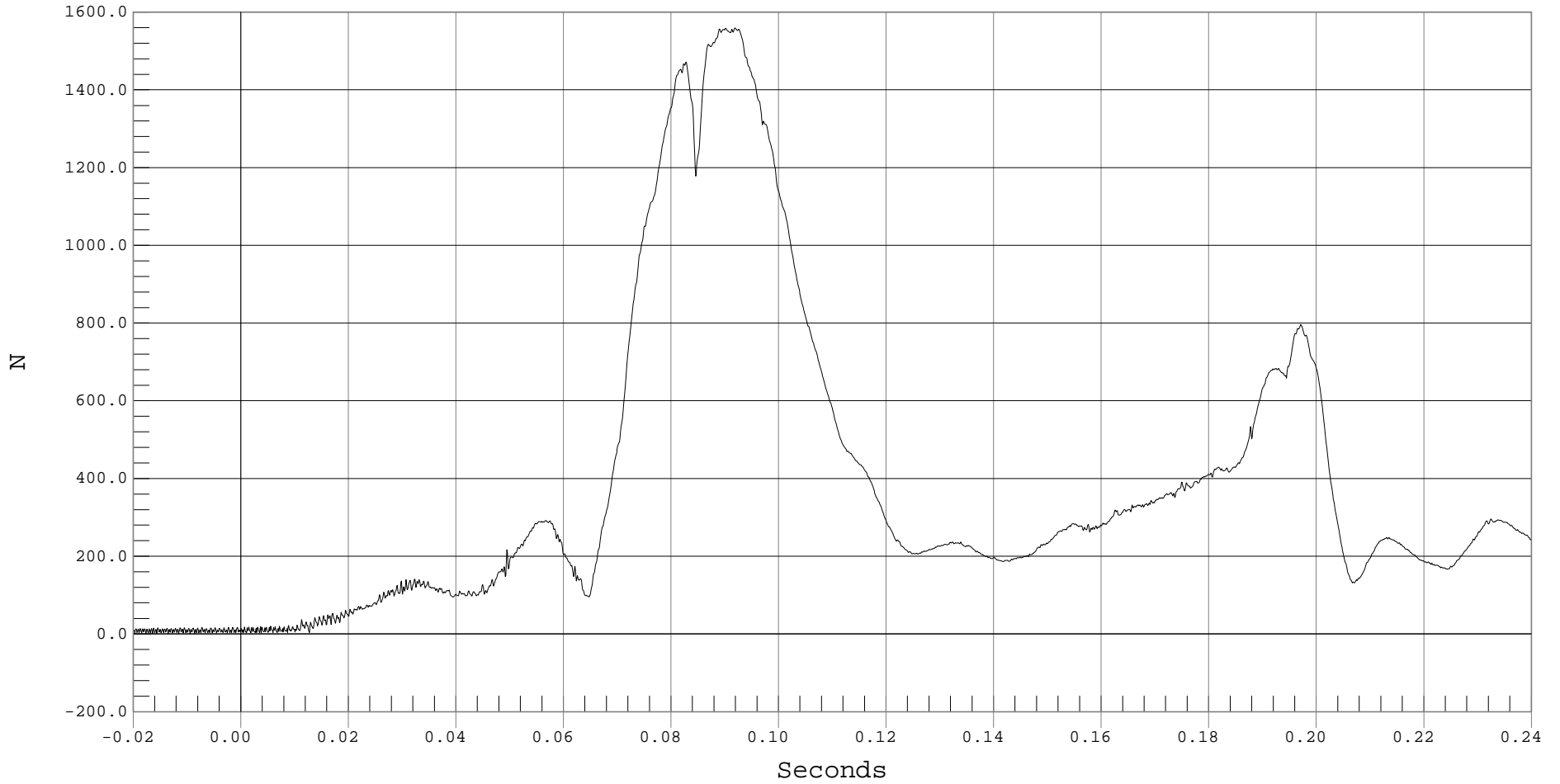
LRS 3 YR OLD LOWER NECK FORCE RESULTANT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 LRS 3 YR OLD LOWER NECK FORCE RESULTANT, b01032FV.F22

Ymin = .38 N @ -0.0169 Seconds, Ymax = 1559.19 N @ 0.0918 Seconds



F-35



LRS 3 YR OLD LOWER NECK MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT

Test Date: 03-21-01

Component: 2001 NISSAN MAXIMA (M15207)

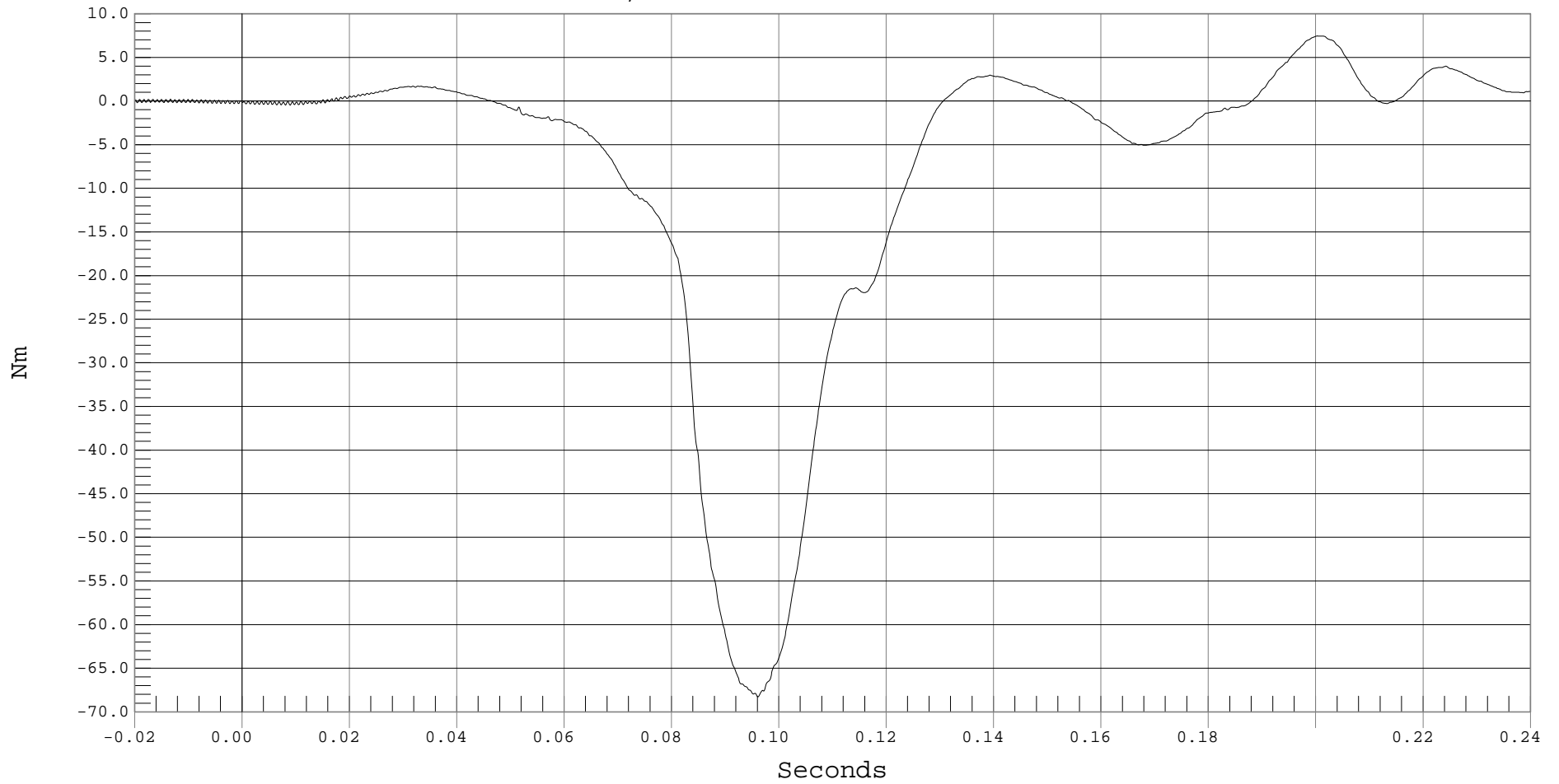
Speed: 34.8 MPH, 56.0 KPH

Other Info:

Filter Class: 600

— 1 LRS CHILD LOWER NECK MOMENT X, b01032MF.M25

Ymin = -68.3 Nm @ 0.0960 Seconds, Ymax = 7.45 Nm @ 0.2002 Seconds





LRS 3 YR OLD LOWER NECK MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT

Test Date: 03-21-01

Component: 2001 NISSAN MAXIMA (M15207)

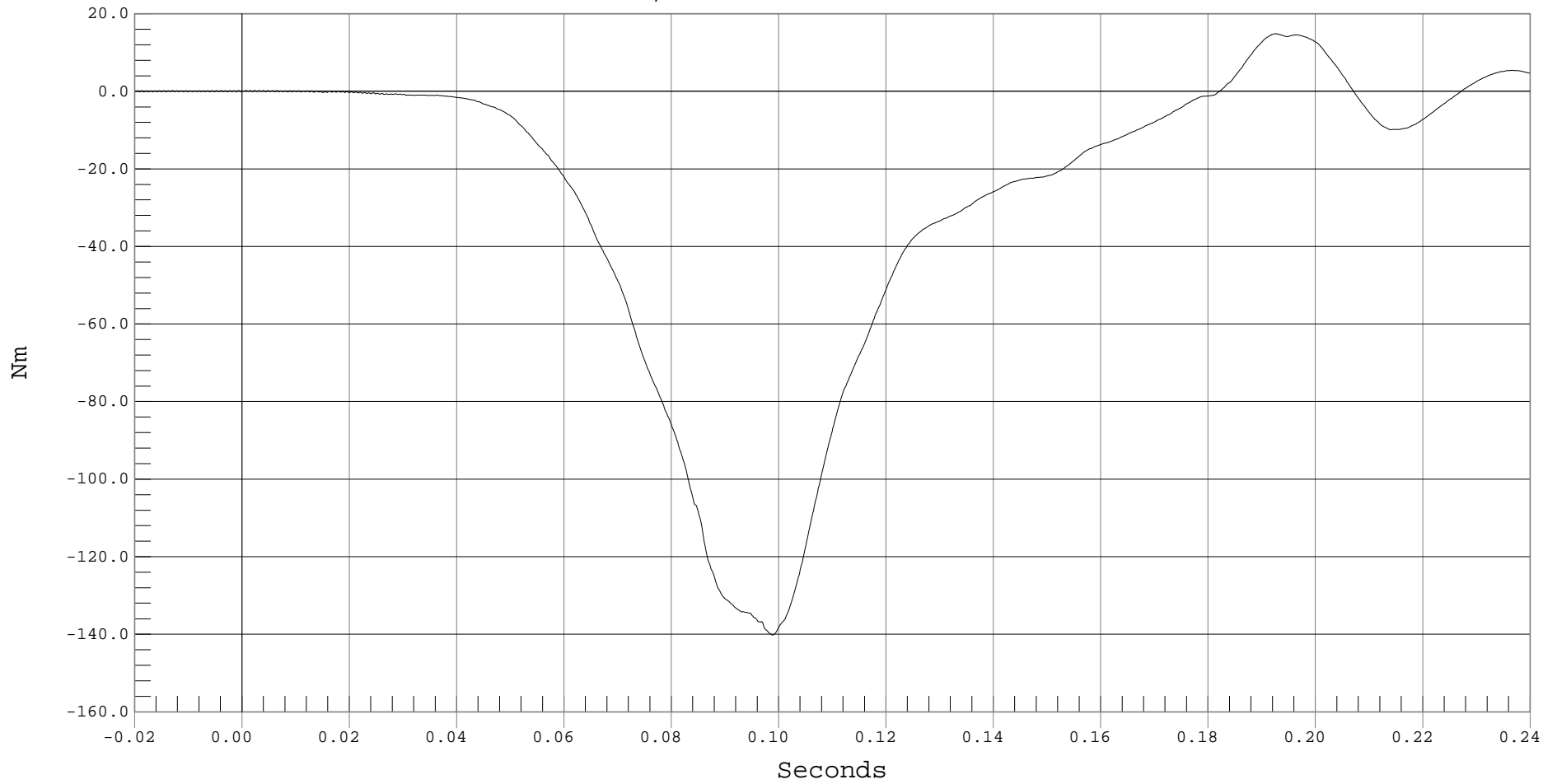
Speed: 34.8 MPH, 56.0 KPH

Other Info:

Filter Class: 600

— 1 LRS CHILD LOWER NECK MOMENT Y, b01032MF.M26

Ymin = -140.19 Nm @ 0.0988 Seconds, Ymax = 14.85 Nm @ 0.1924 Seconds





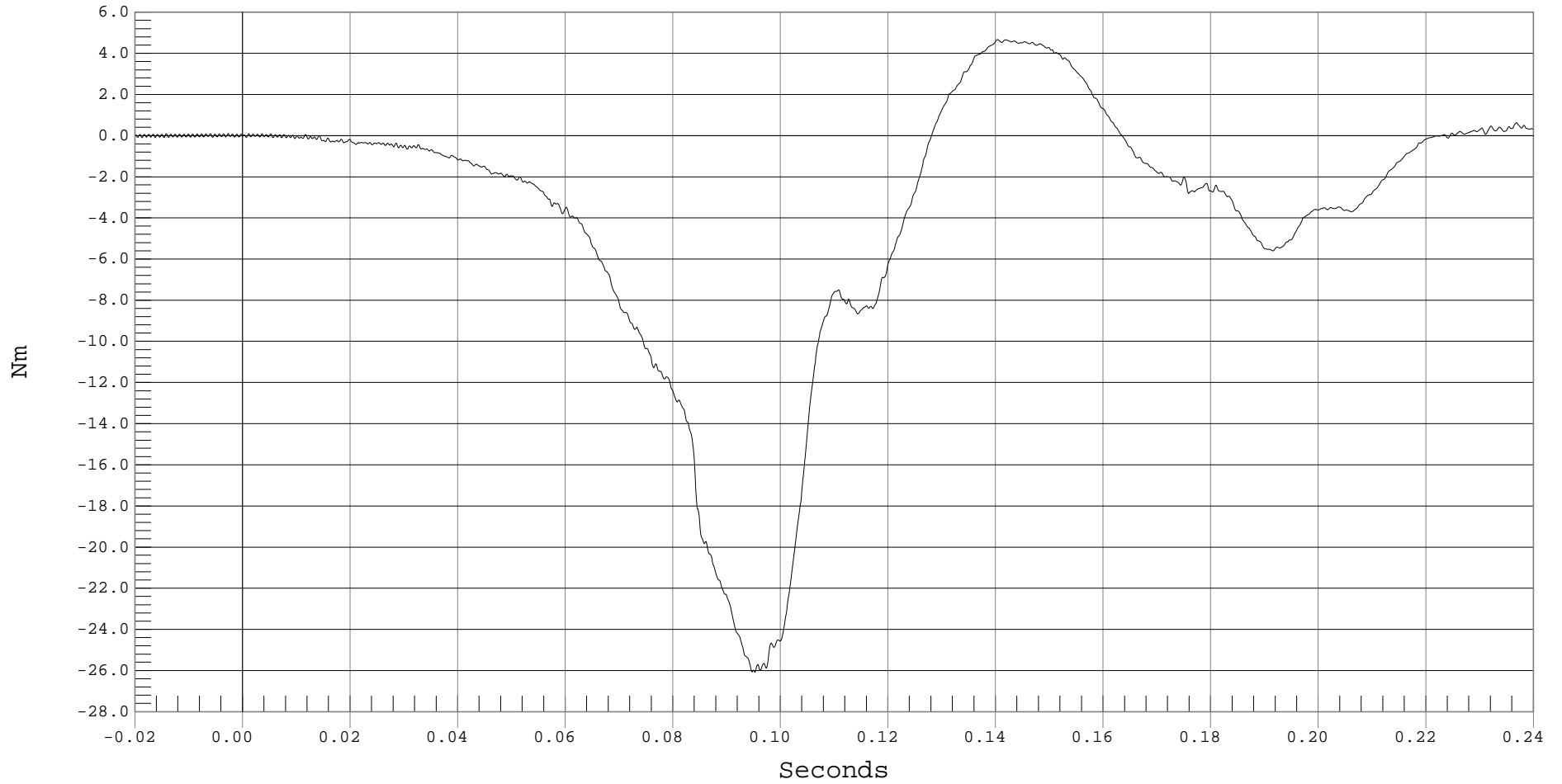
LRS 3 YR OLD LOWER NECK MOMENT Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 LRS CHILD LOWER NECK MOMENT Z, b01032MF.M27

Ymin = -26.08 Nm @ 0.0952 Seconds, Ymax = 4.66 Nm @ 0.1403 Seconds





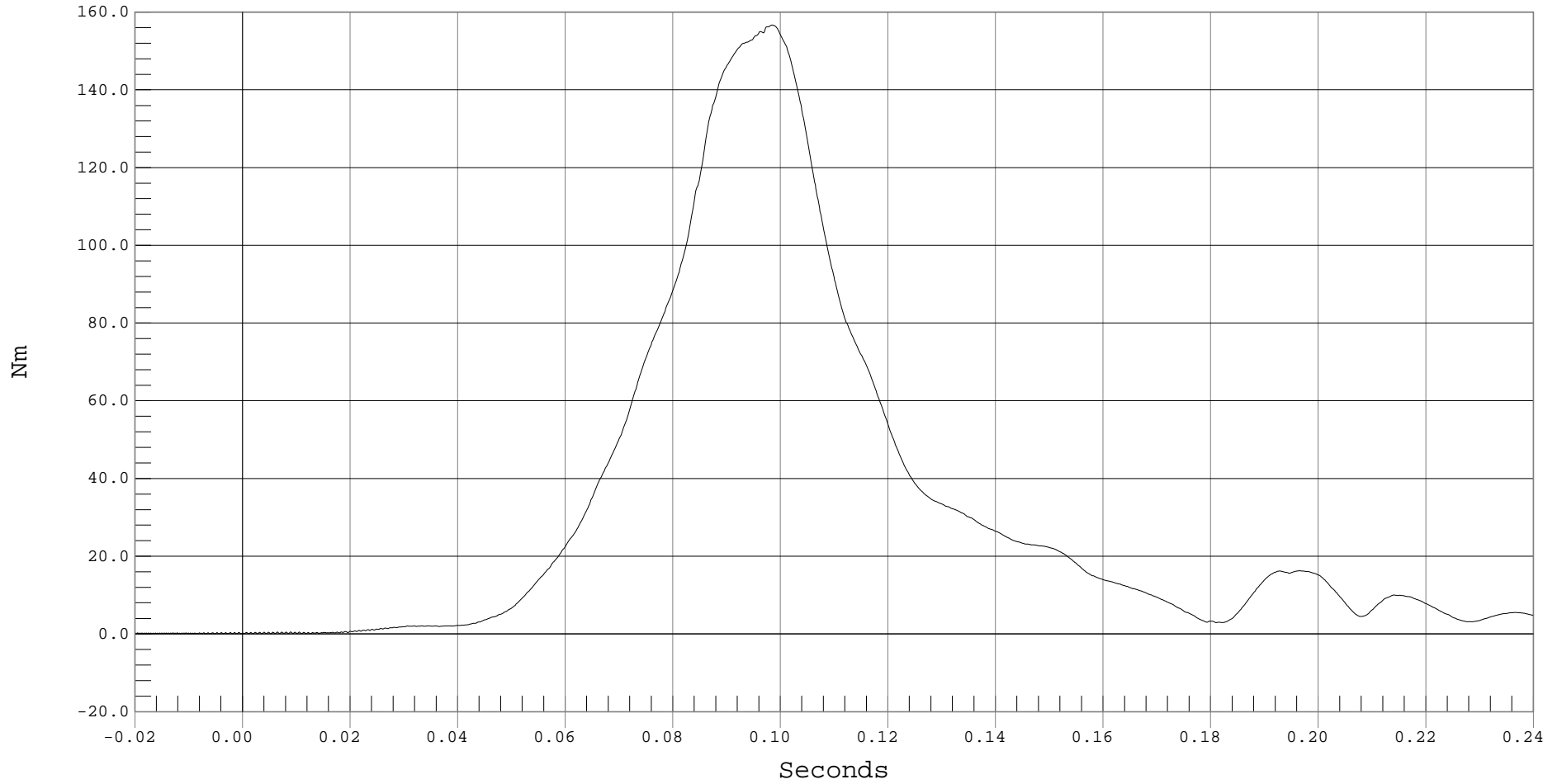
LRS 3 YR OLD LOWER NECK MOMENT RESULTANT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 LRS 3 YR OLD LOWER NECK MOMENT RESULTANT, b01032MV.M25

Ymin = .02 Nm @ -0.0198 Seconds, Ymax = 156.67 Nm @ 0.0984 Seconds





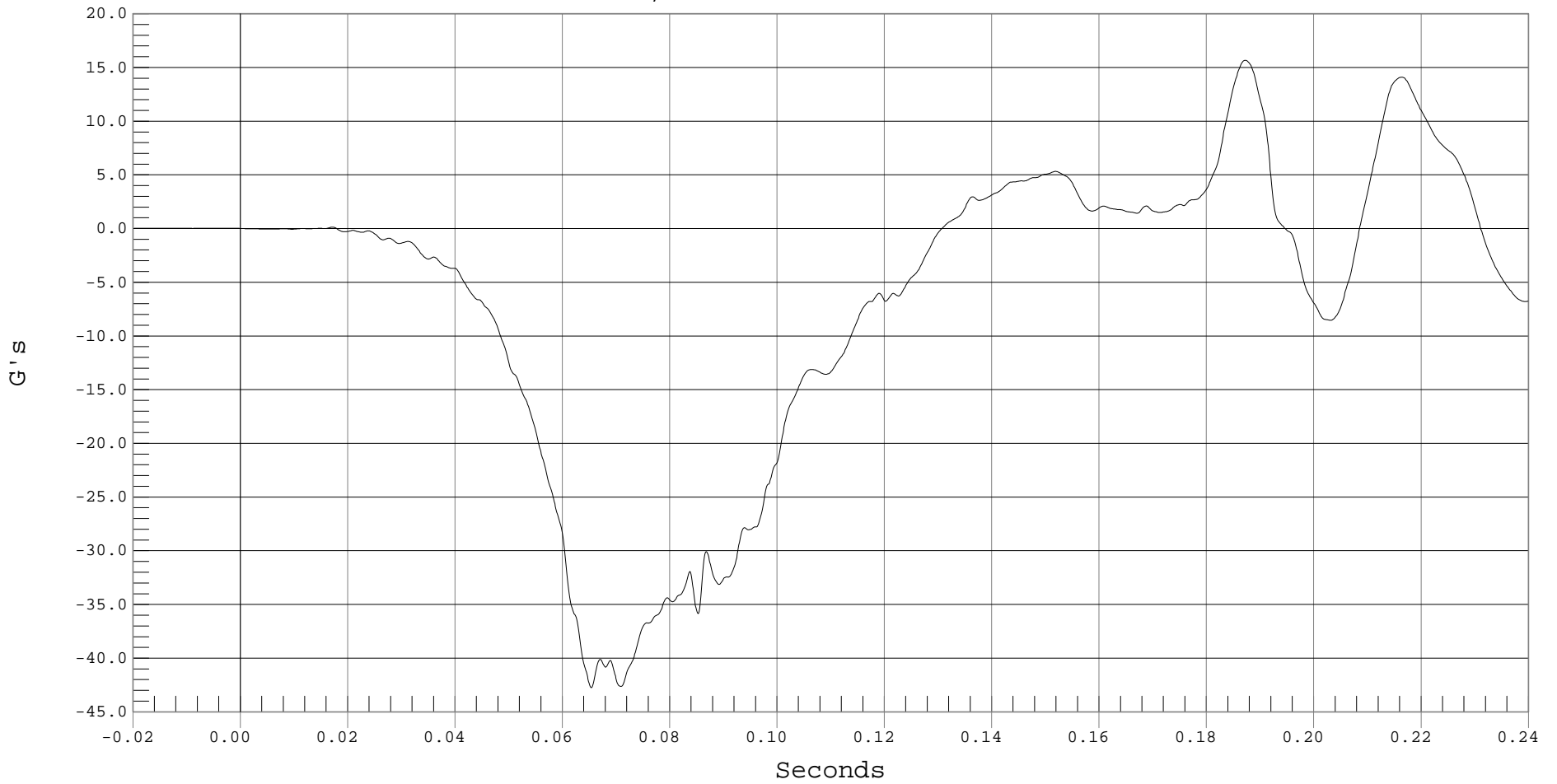
LRS 3 YR OLD CHEST X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 LRS CHILD CHEST X, b01032AF.A28

Ymin = -42.75 G's @ 0.0653 Seconds, Ymax = 15.67 G's @ 0.1871 Seconds



F-40



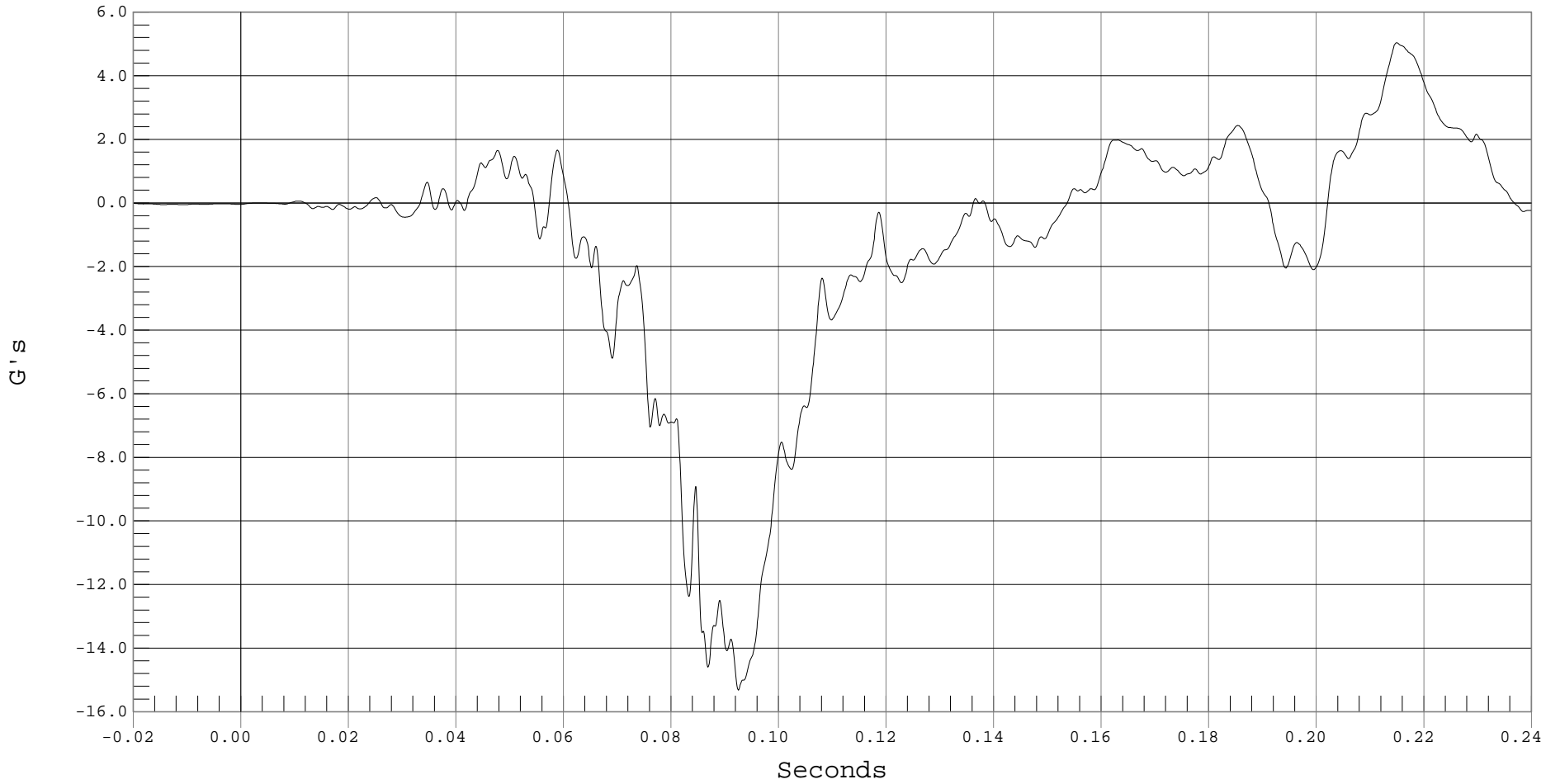
LRS 3 YR OLD CHEST Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 LRS CHILD CHEST Y, b01032AF.A29

Ymin = -15.32 G's @ 0.0925 Seconds, Ymax = 5.04 G's @ 0.2148 Seconds



F-41



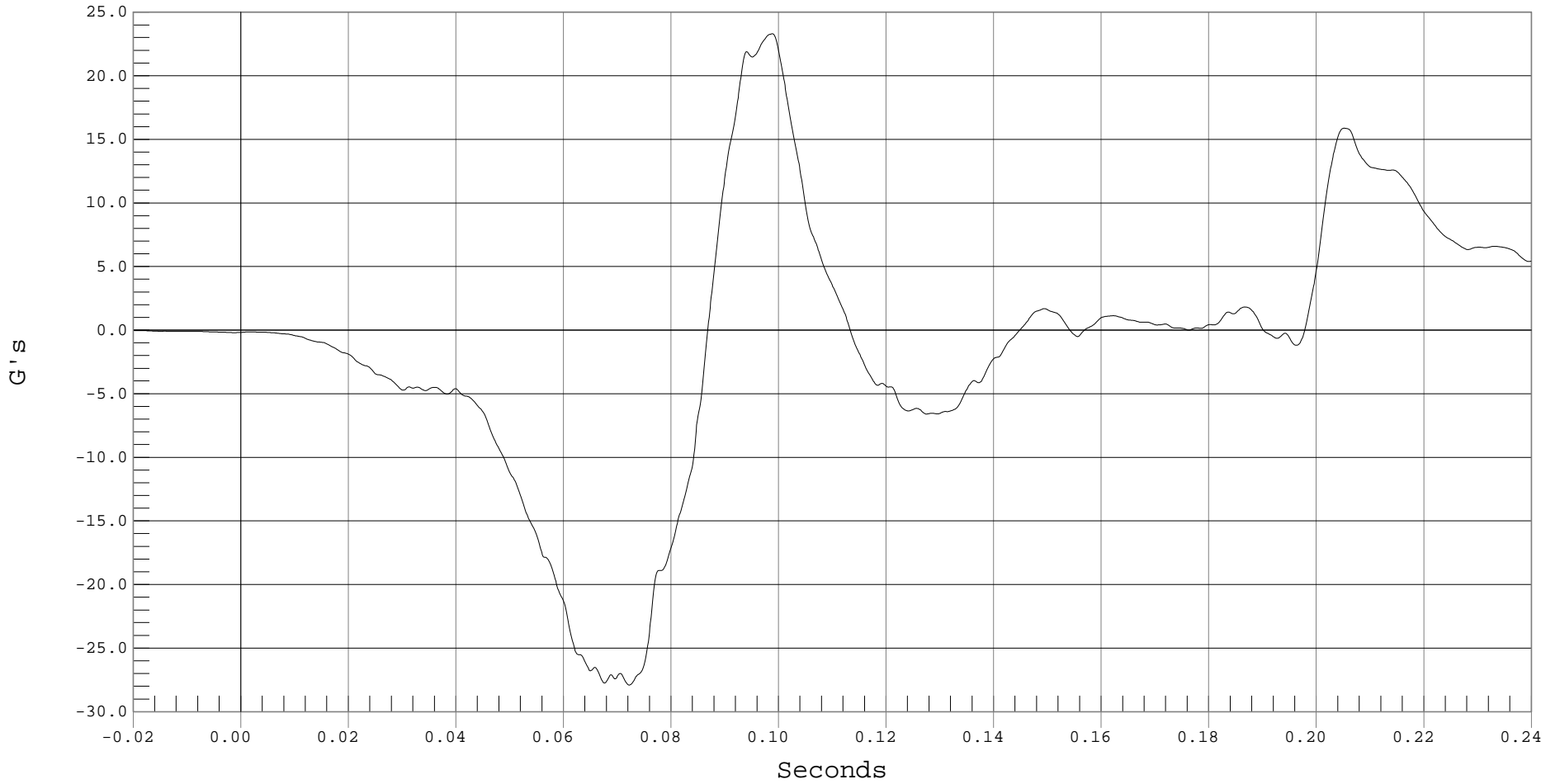
LRS 3 YR OLD CHEST Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 LRS CHILD CHEST Z, b01032AF.A30

Ymin = -27.91 G's @ 0.0722 Seconds, Ymax = 23.29 G's @ 0.0988 Seconds



F-42



LRS 3 YR OLD CHEST RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT

Test Date: 03-21-01

Component: 2001 NISSAN MAXIMA (M15207)

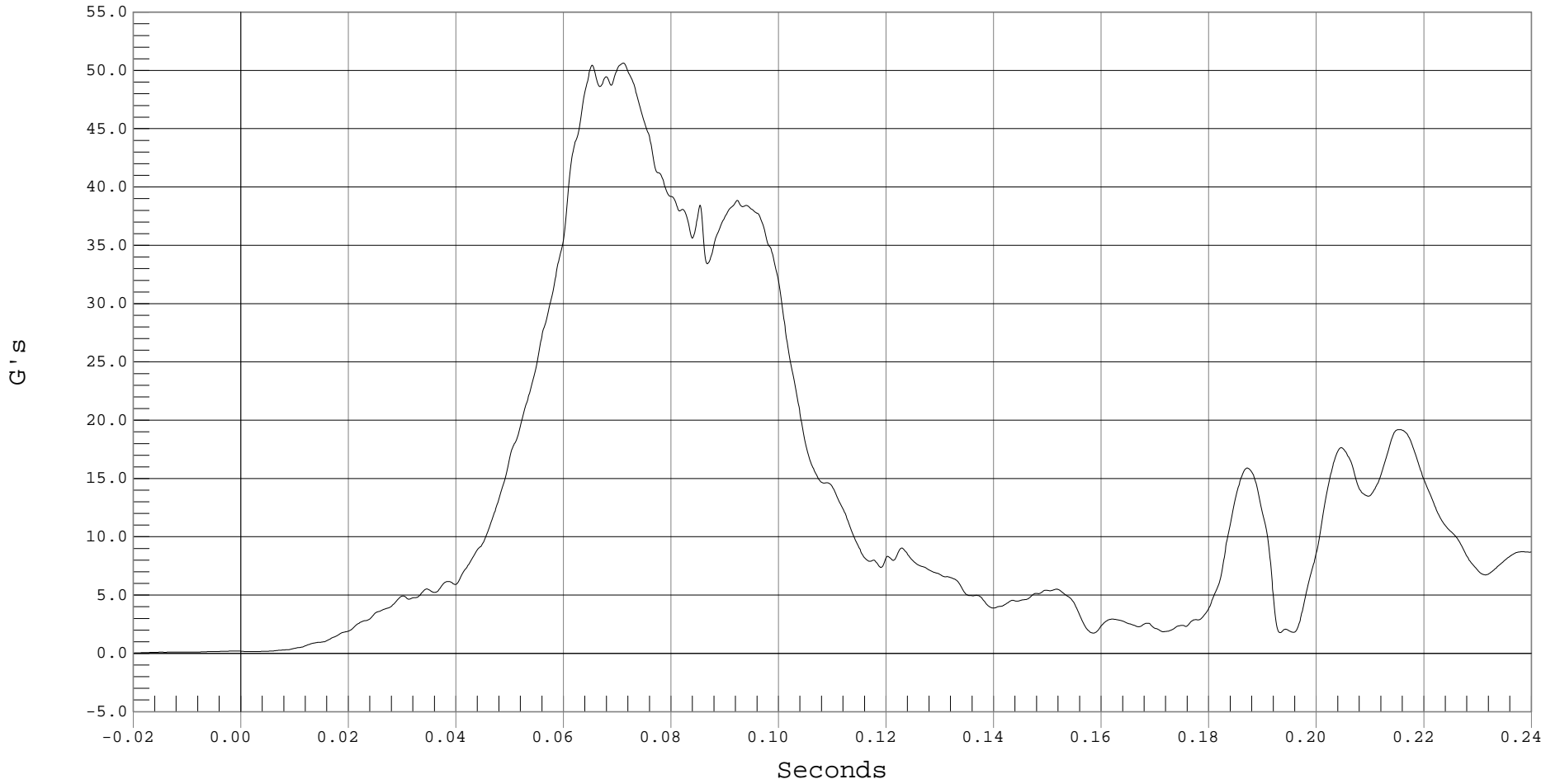
Speed: 34.8 MPH, 56.0 KPH

Other Info:

Filter Class: 180

— 1 LRS 3 YR OLD CHEST RESULTANT ACCELERATION, b01032AV.A28

Ymin = .05 G's @ -0.0193 Seconds, Ymax = 50.64 G's @ 0.0711 Seconds



F-43



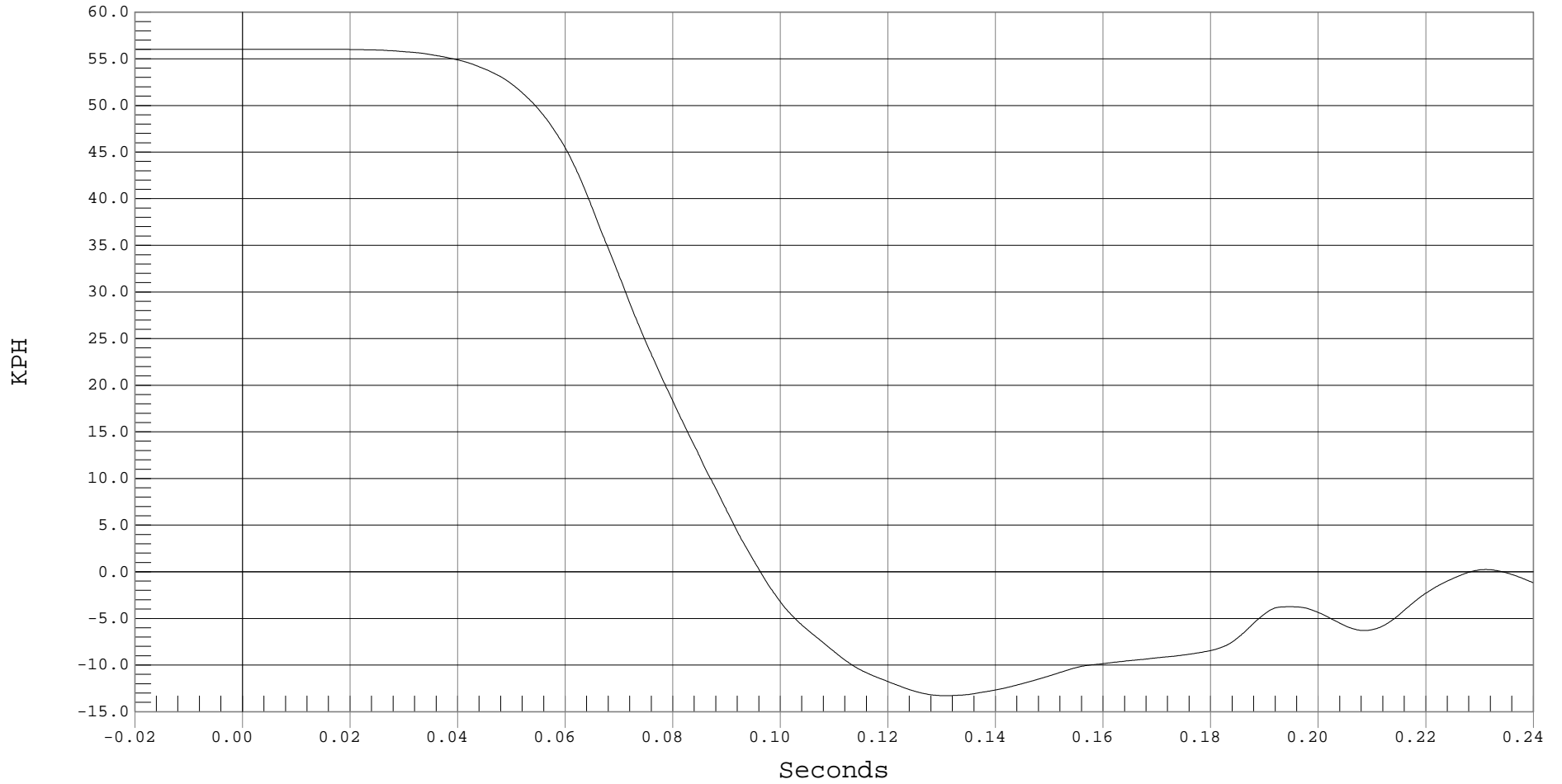
LRS 3 YR OLD CHEST X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 LRS 3 YR OLD CHEST X VELOCITY, b01032AI.V28

Ymin = -13.28 KPH @ 0.1306 Seconds, Ymax = 56.02 KPH @ 0.0003 Seconds



F-44



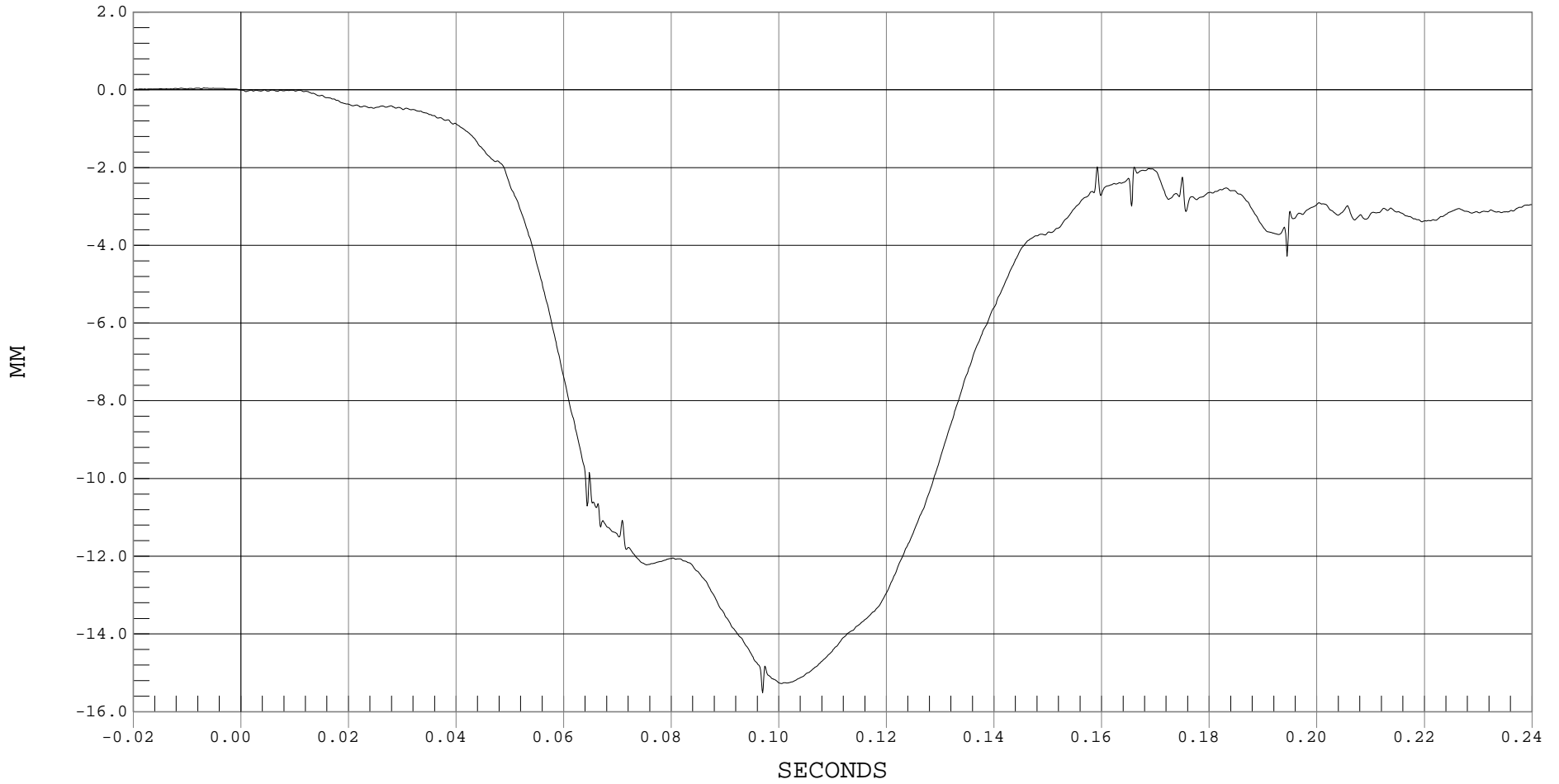
LRS 3 YR OLD CHEST COMPRESSION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 DISPLACEMENT, b01032DF.D31

Ymin = -15.52 MM @ 0.0969 SECONDS, Ymax = .05 MM @ -0.0070 SECONDS



F-45



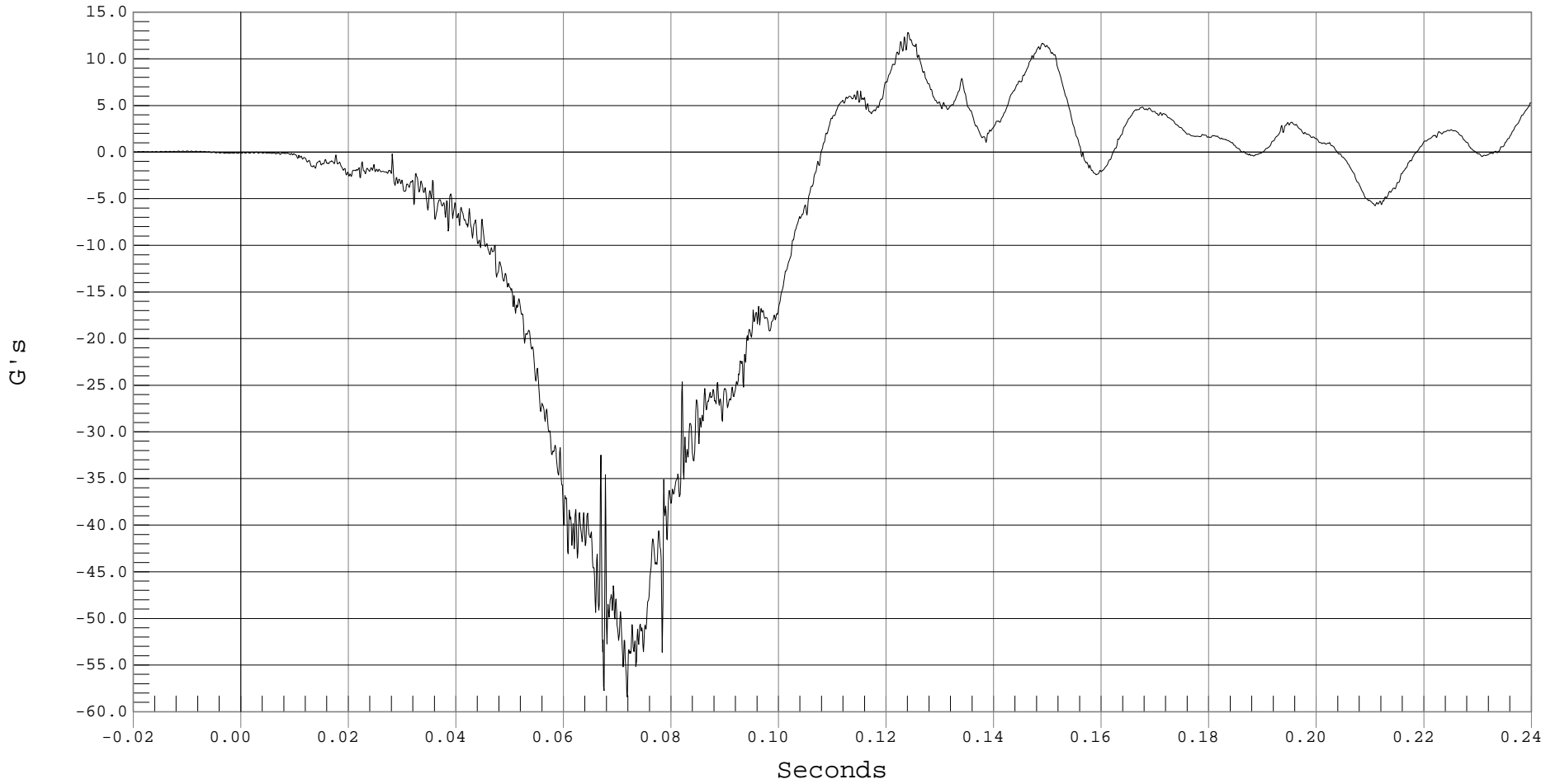
LRS 3 YR OLD PELVIS X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 LRS CHILD PELVIS X, b01032AT.A34

Ymin = -58.43 G's @ 0.0718 Seconds, Ymax = 12.83 G's @ 0.1240 Seconds



F-46



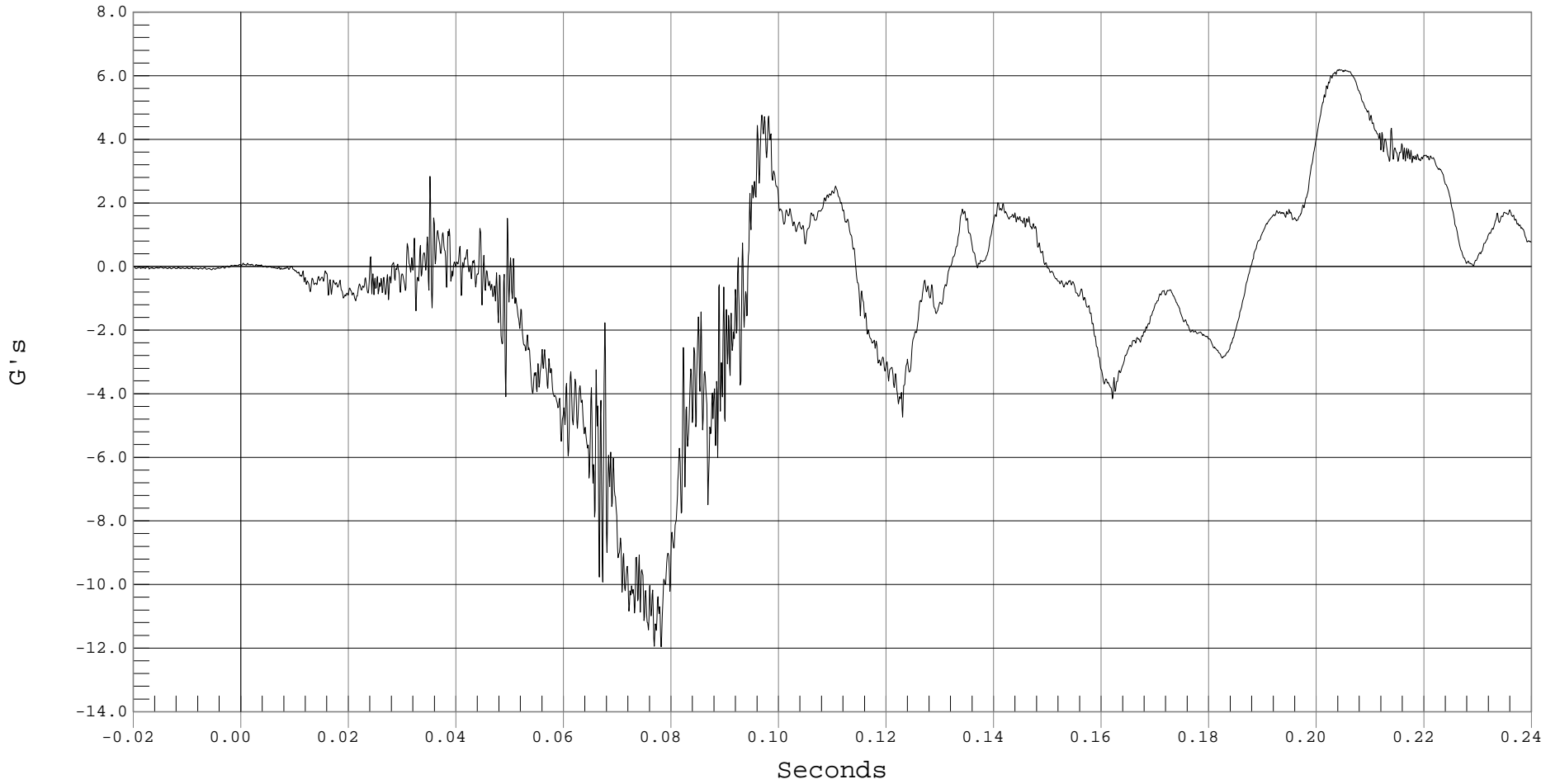
LRS 3 YR OLD PELVIS Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 LRS CHILD PELVIS Y, b01032AT.A35

Ymin = -11.96 G's @ 0.0781 Seconds, Ymax = 6.2 G's @ 0.2042 Seconds



F-47



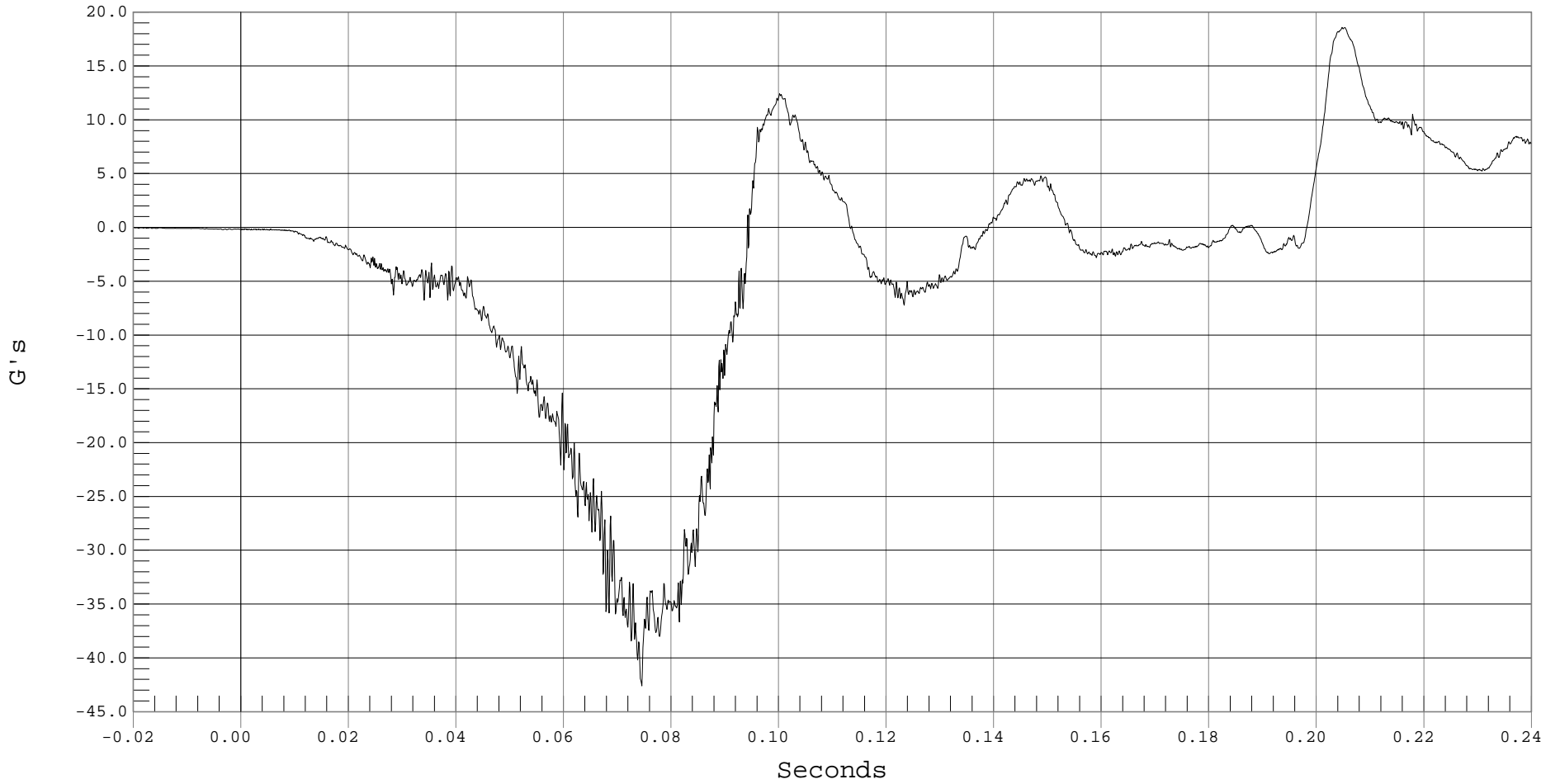
LRS 3 YR OLD PELVIS Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 LRS CHILD PELVIS Z, b01032AT.A36

Ymin = -42.6 G's @ 0.0745 Seconds, Ymax = 18.58 G's @ 0.2047 Seconds



F-48



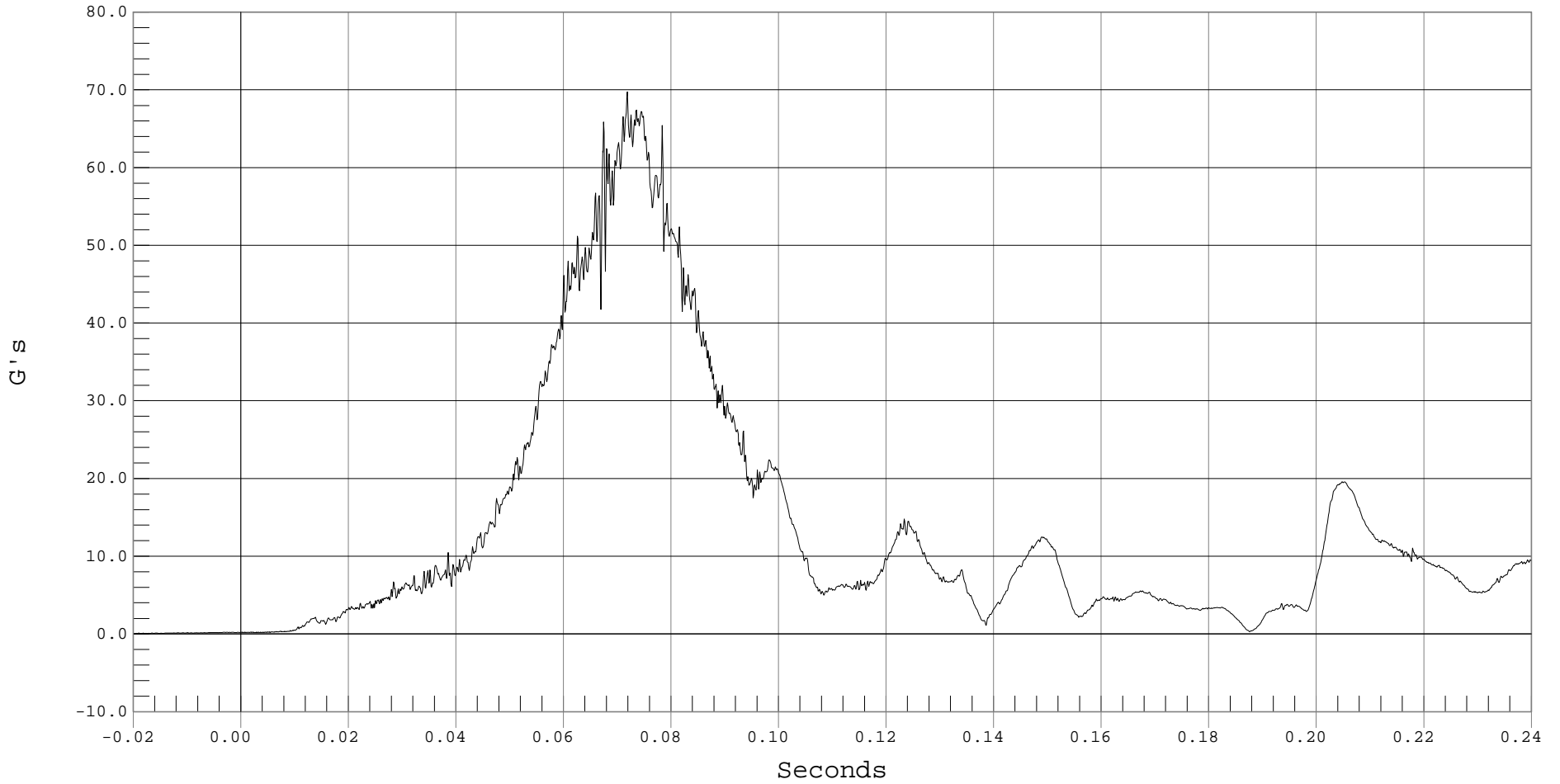
LRS 3 YR OLD PELVIS RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 LRS 3 YR OLD PELVIS RESULTANT ACCELERATION, b01032AV.A34

Ymin = .05 G's @ -0.0188 Seconds, Ymax = 69.75 G's @ 0.0718 Seconds





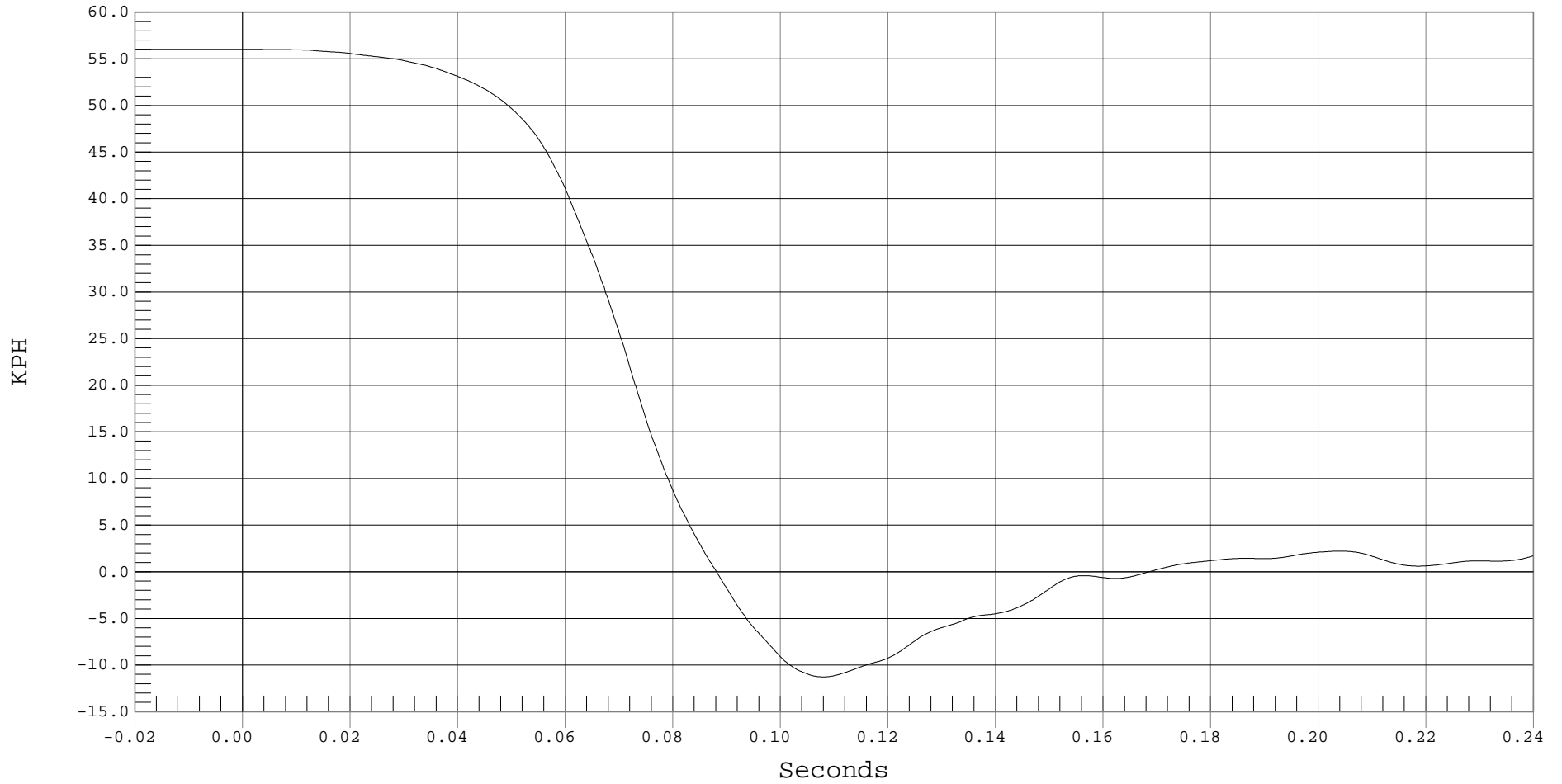
LRS 3 YR OLD PELVIS X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 3 YR OLD PELVIS X VELOCITY, b01032AI.V34

Ymin = -11.28 KPH @ 0.1078 Seconds, Ymax = 56.02 KPH @ -0.0058 Seconds



F-50



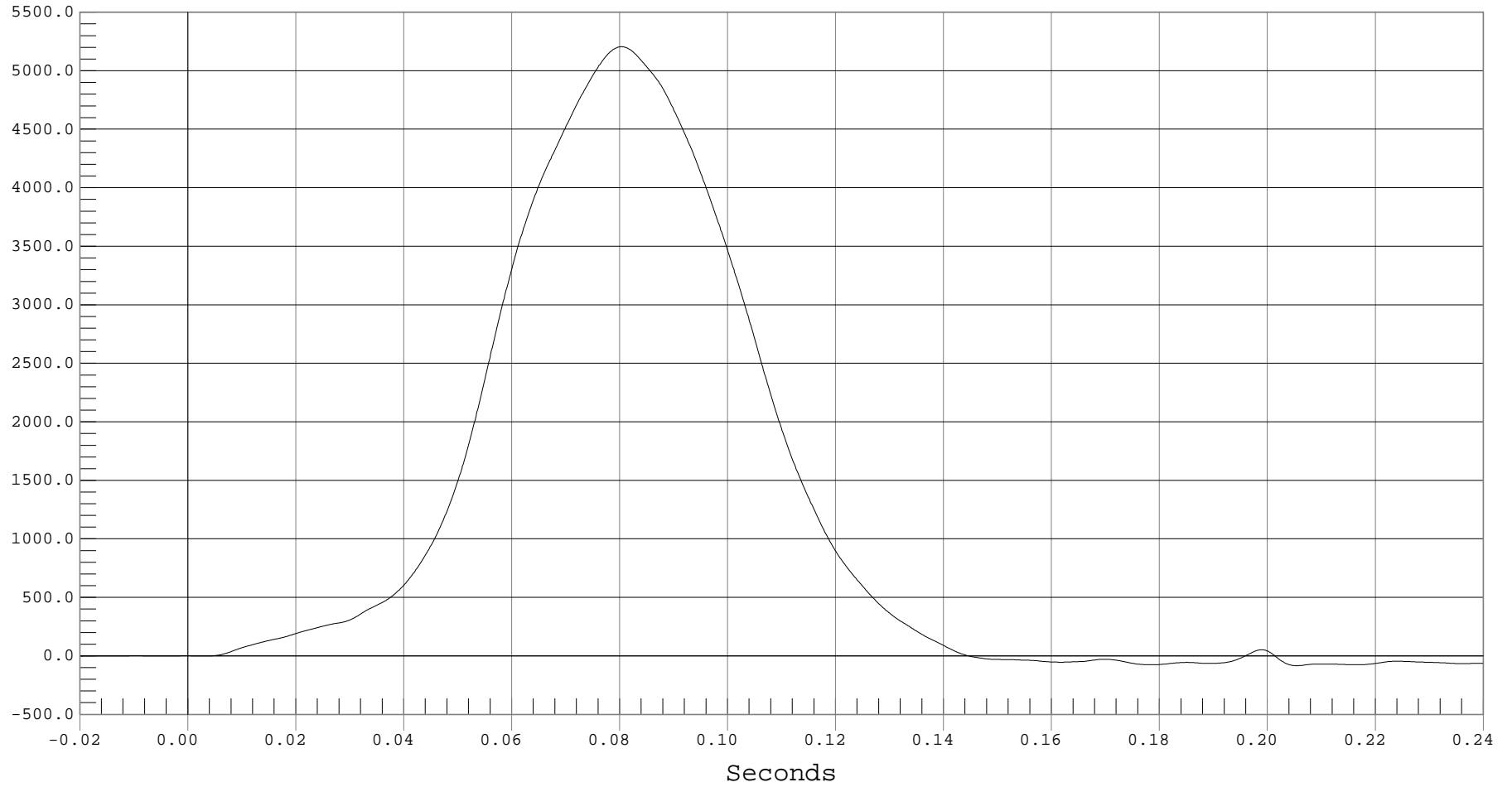
LRS TETHER FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 LRS TETHER FORCE, b01032FF.F62

Ymin = -84.28 @ 0.2053 Seconds, Ymax = 5205.15 @ 0.0802 Seconds



F-51



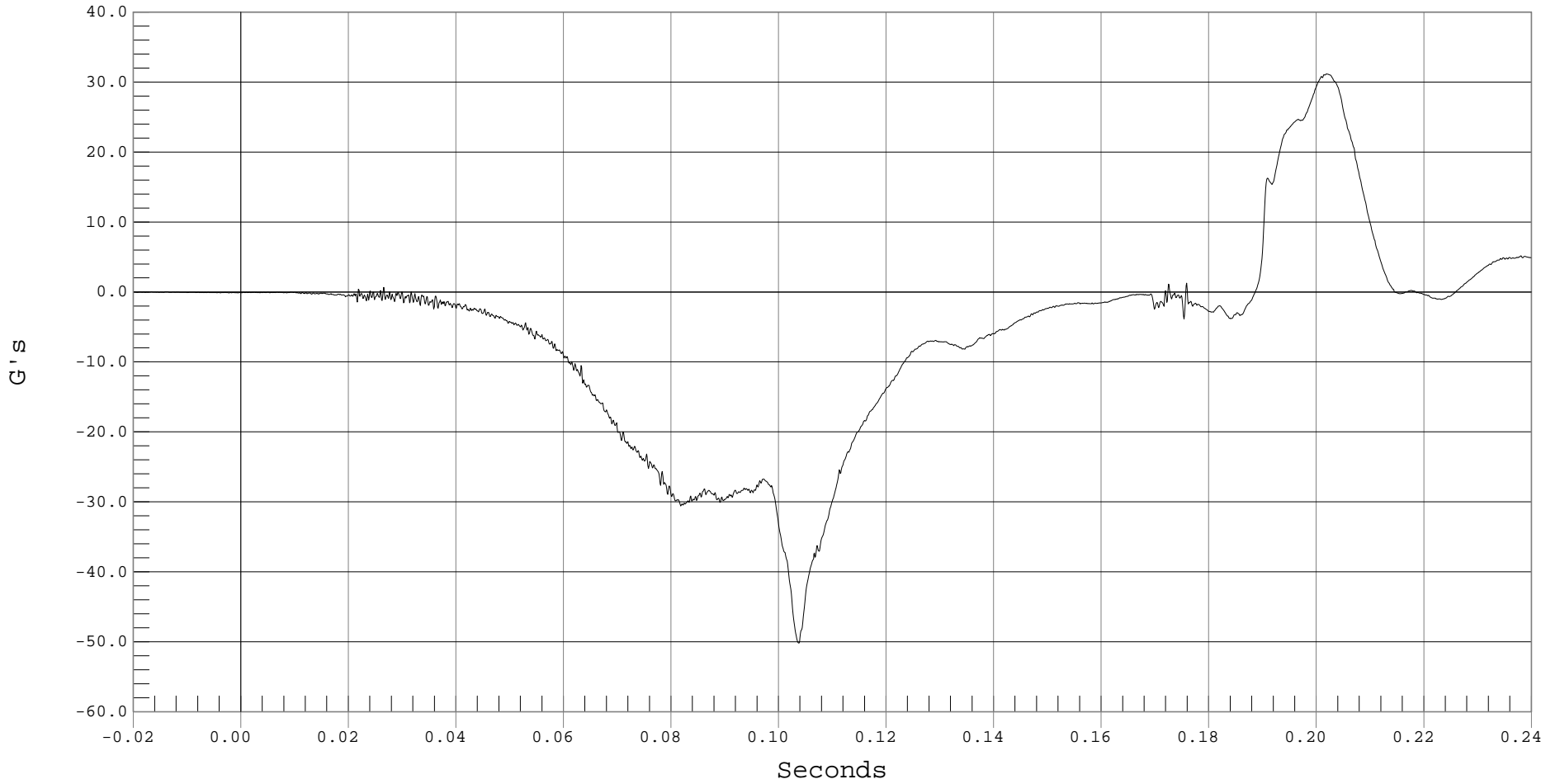
RRS 3 YR OLD HEAD X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 RRS CHILD HEAD X, b01032AT.A37

Ymin = -50.18 G's @ 0.1037 Seconds, Ymax = 31.17 G's @ 0.2018 Seconds



F-52



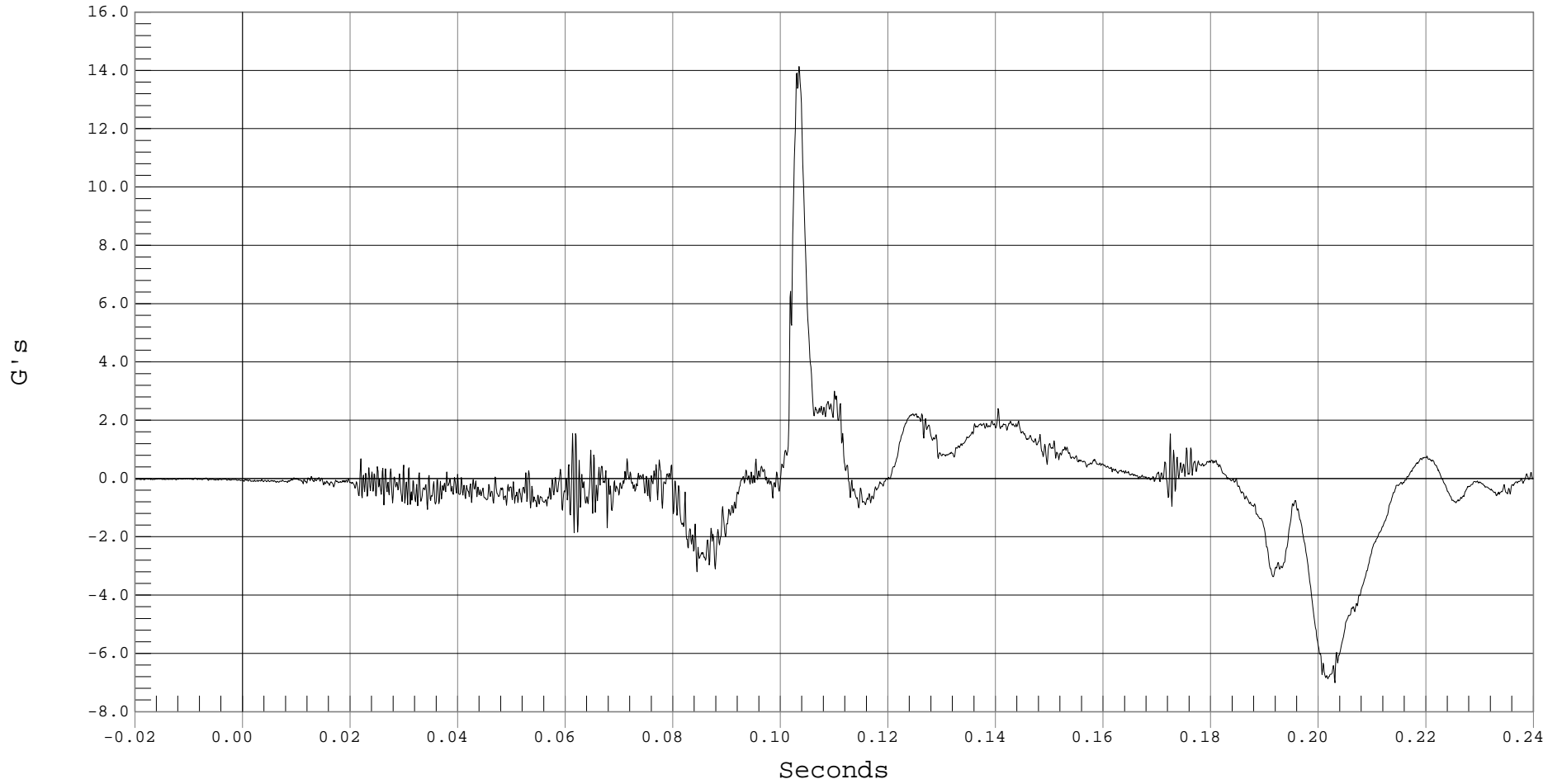
RRS 3 YR OLD HEAD Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 RRS CHILD HEAD Y, b01032AT.A38

Ymin = -7 G's @ 0.2030 Seconds, Ymax = 14.13 G's @ 0.1034 Seconds





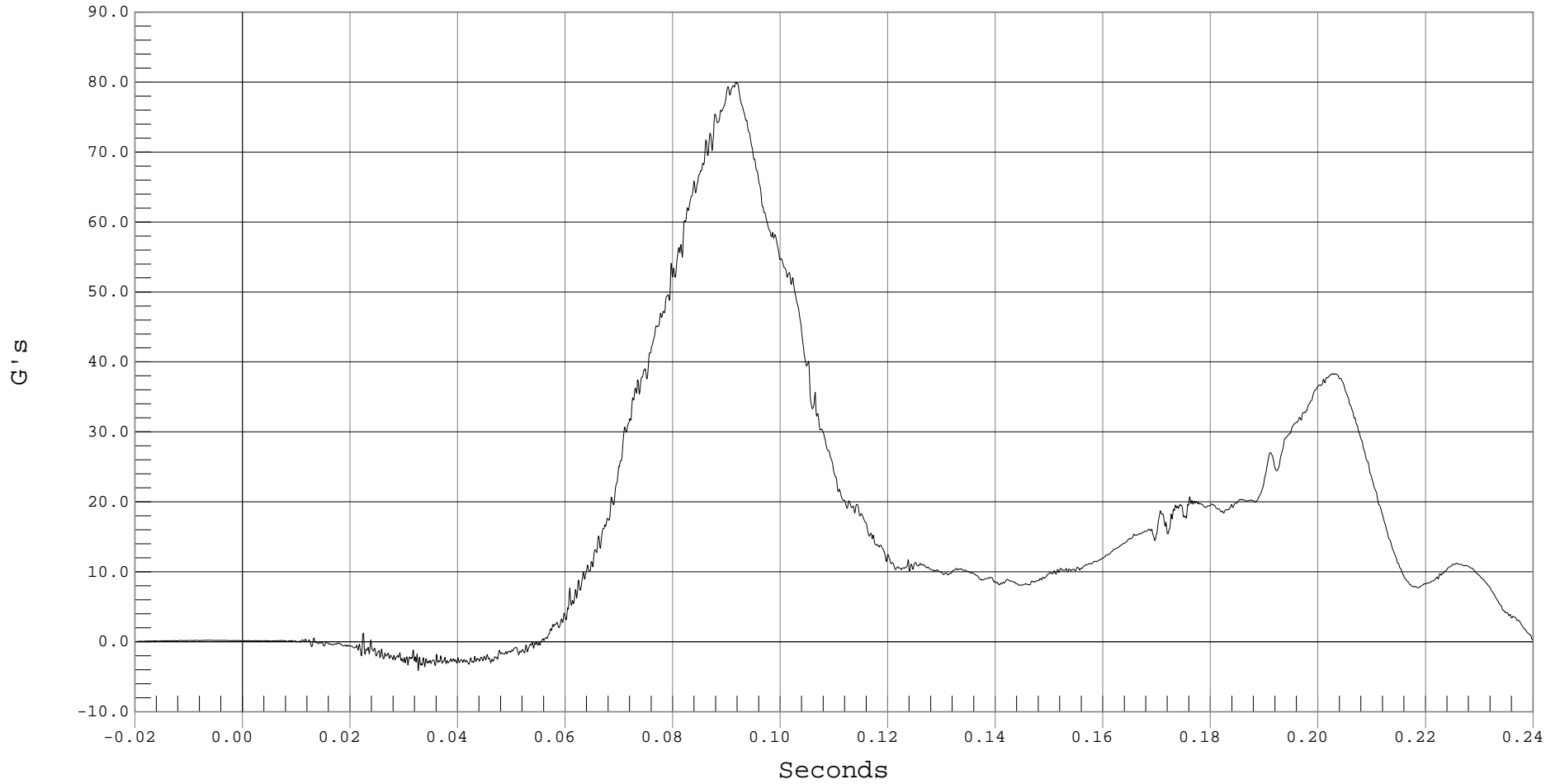
RRS 3 YR OLD HEAD Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 RRS CHILD HEAD Z, b01032AT.A39

Ymin = -4.12 G's @ 0.0326 Seconds, Ymax = 80.06 G's @ 0.0917 Seconds



F-54



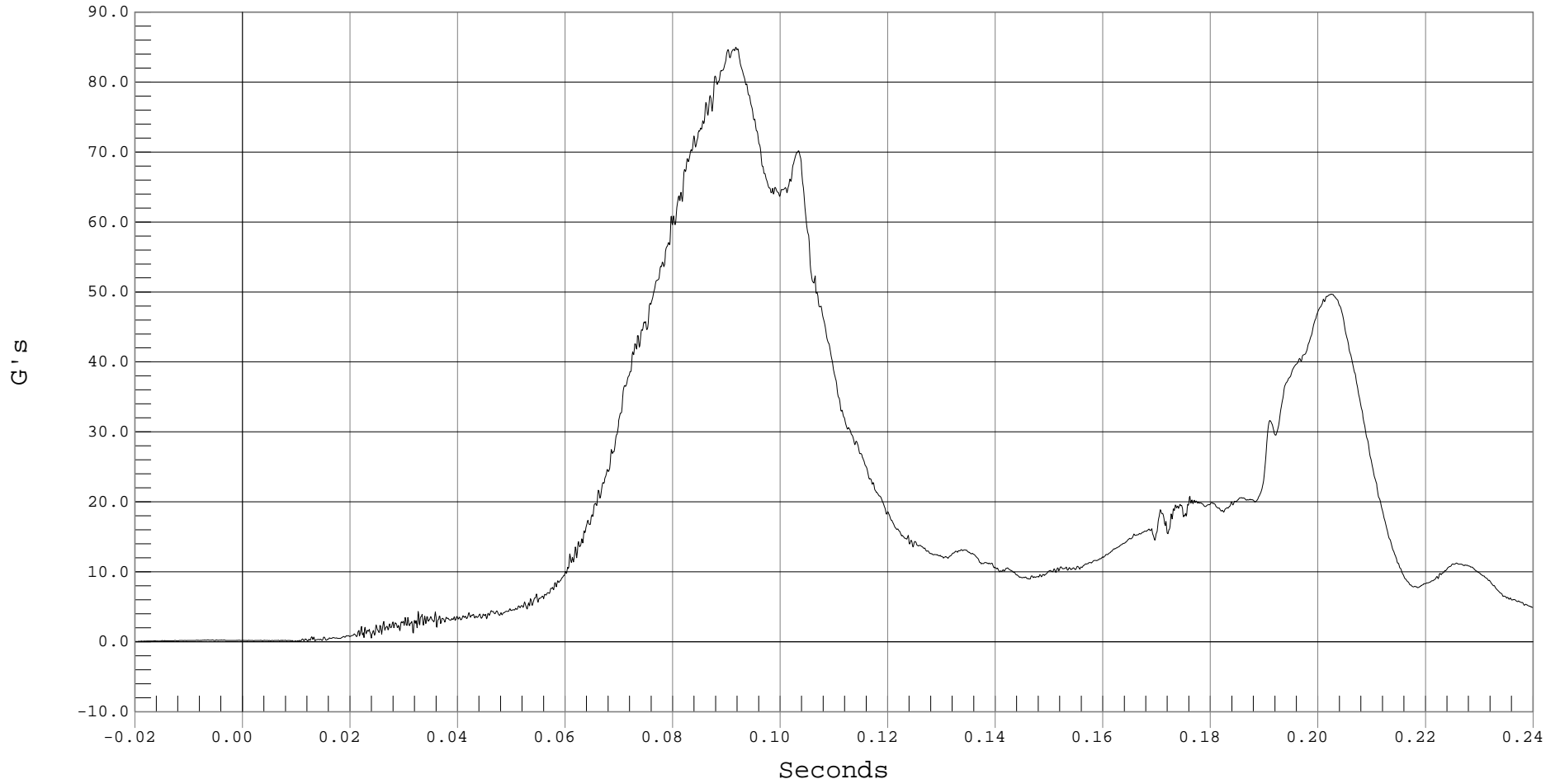
RRS 3 YR OLD HEAD RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 RRS 3 YR OLD HEAD RESULTANT ACCELERATION, b01032AV.A37

Ymin = .03 G's @ -0.0197 Seconds, Ymax = 84.98 G's @ 0.0917 Seconds



F-55



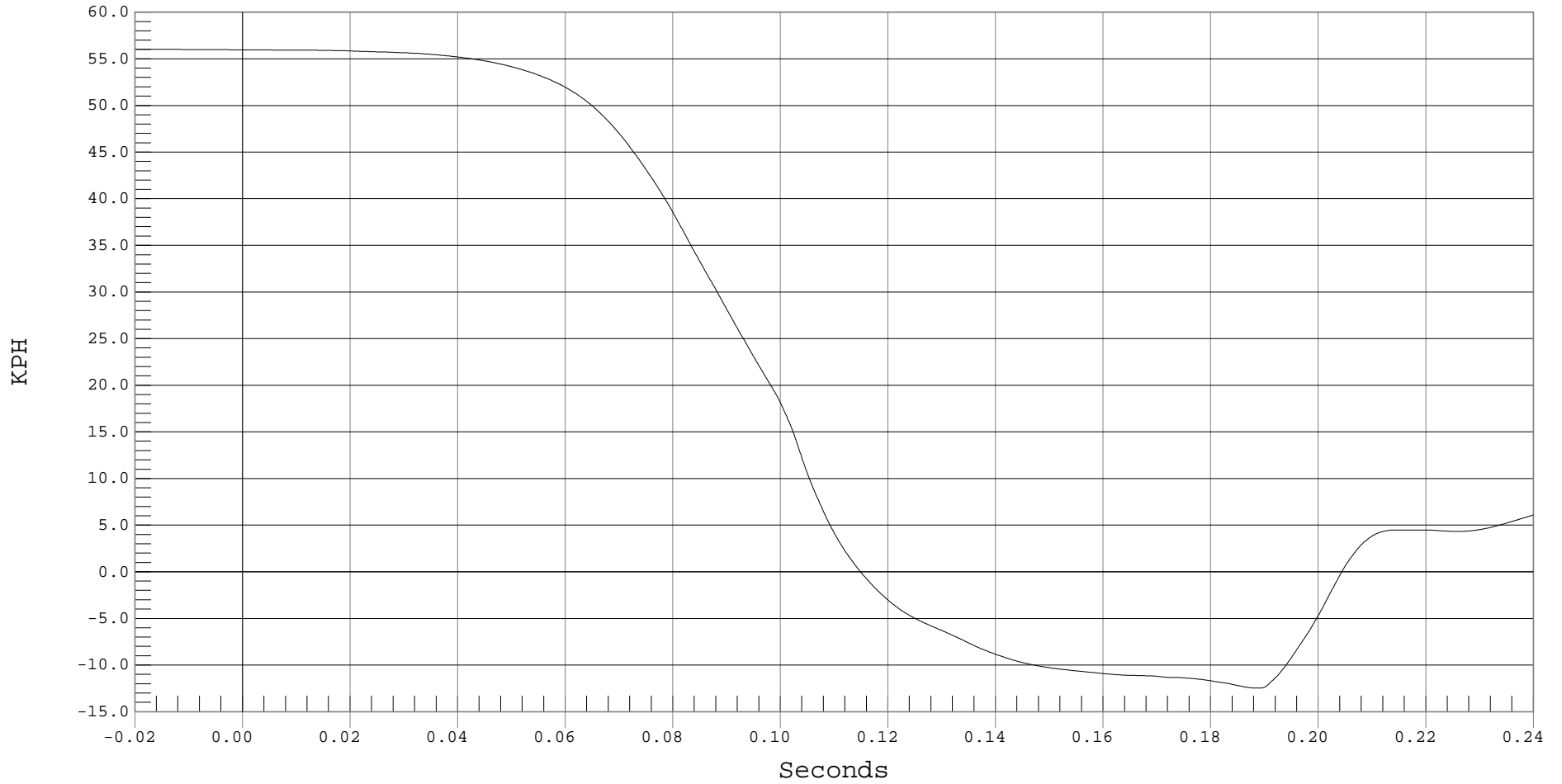
RRS 3 YR OLD HEAD X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 RRS 3 YR OLD HEAD X VELOCITY, b01032AI.V37

Ymin = -12.47 KPH @ 0.1886 Seconds, Ymax = 56 KPH @ -0.0197 Seconds



F-56



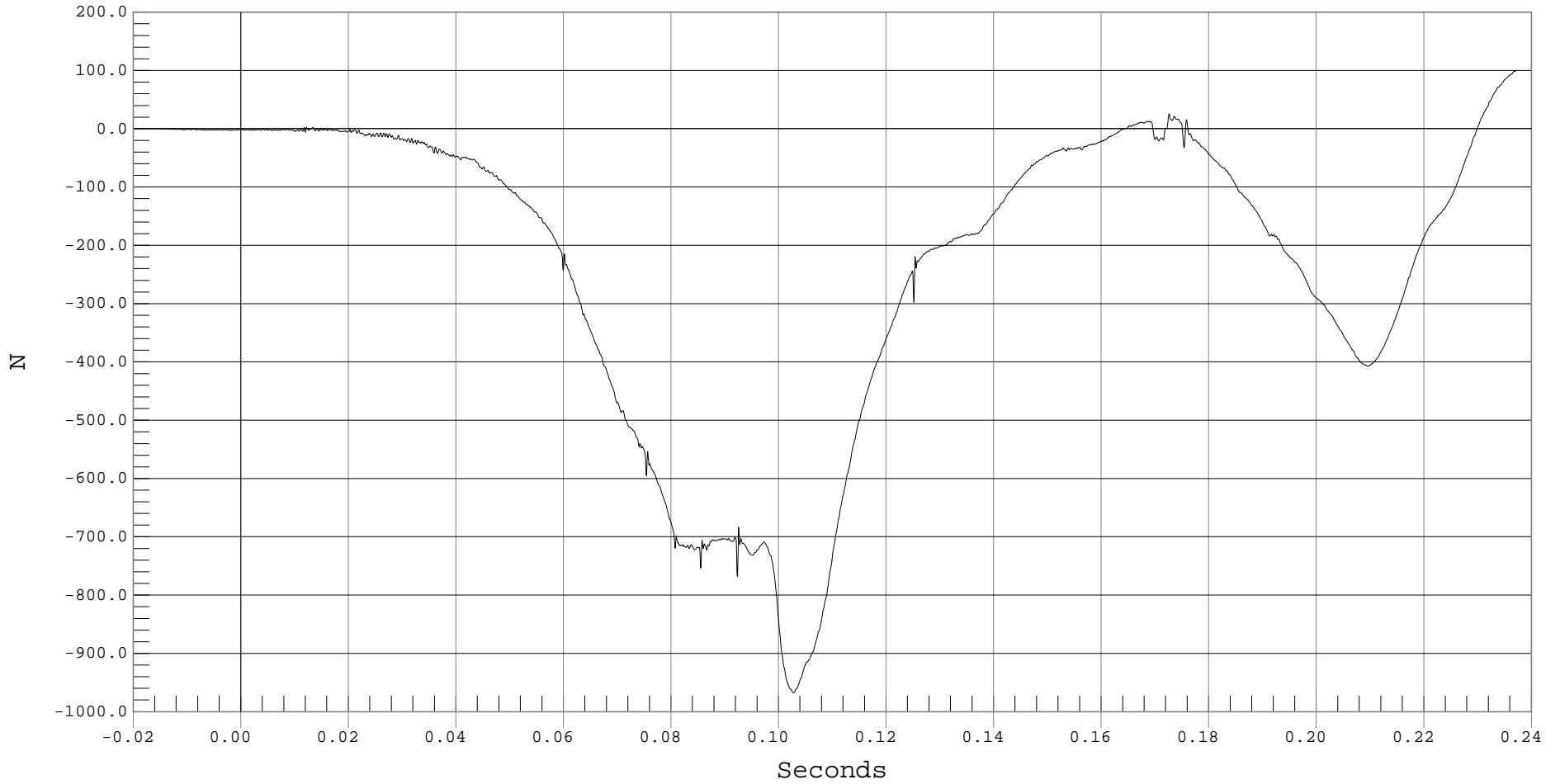
RRS 3 YR OLD UPPER NECK FORCE X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 RRS CHILD UPPER NECK FORCE X, b01032FT.F40

Ymin = -967.88 N @ 0.1027 Seconds, Ymax = 99.69 N @ 0.2370 Seconds



F-57



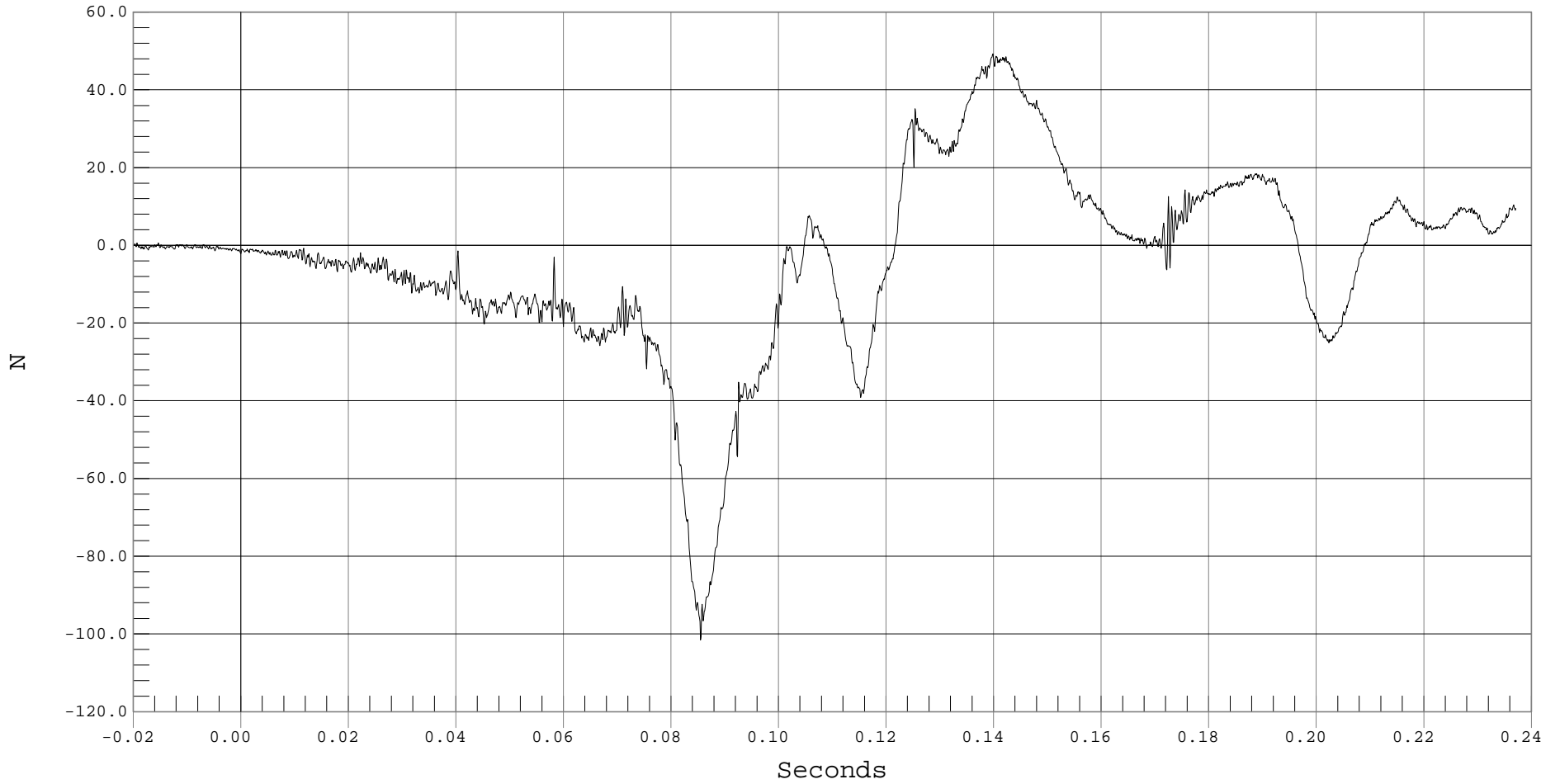
RRS 3 YR OLD UPPER NECK FORCE Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 RRS CHILD UPPER NECK FORCE Y, b01032FT.F41

Ymin = -101.53 N @ 0.0854 Seconds, Ymax = 49.27 N @ 0.1398 Seconds



F-58



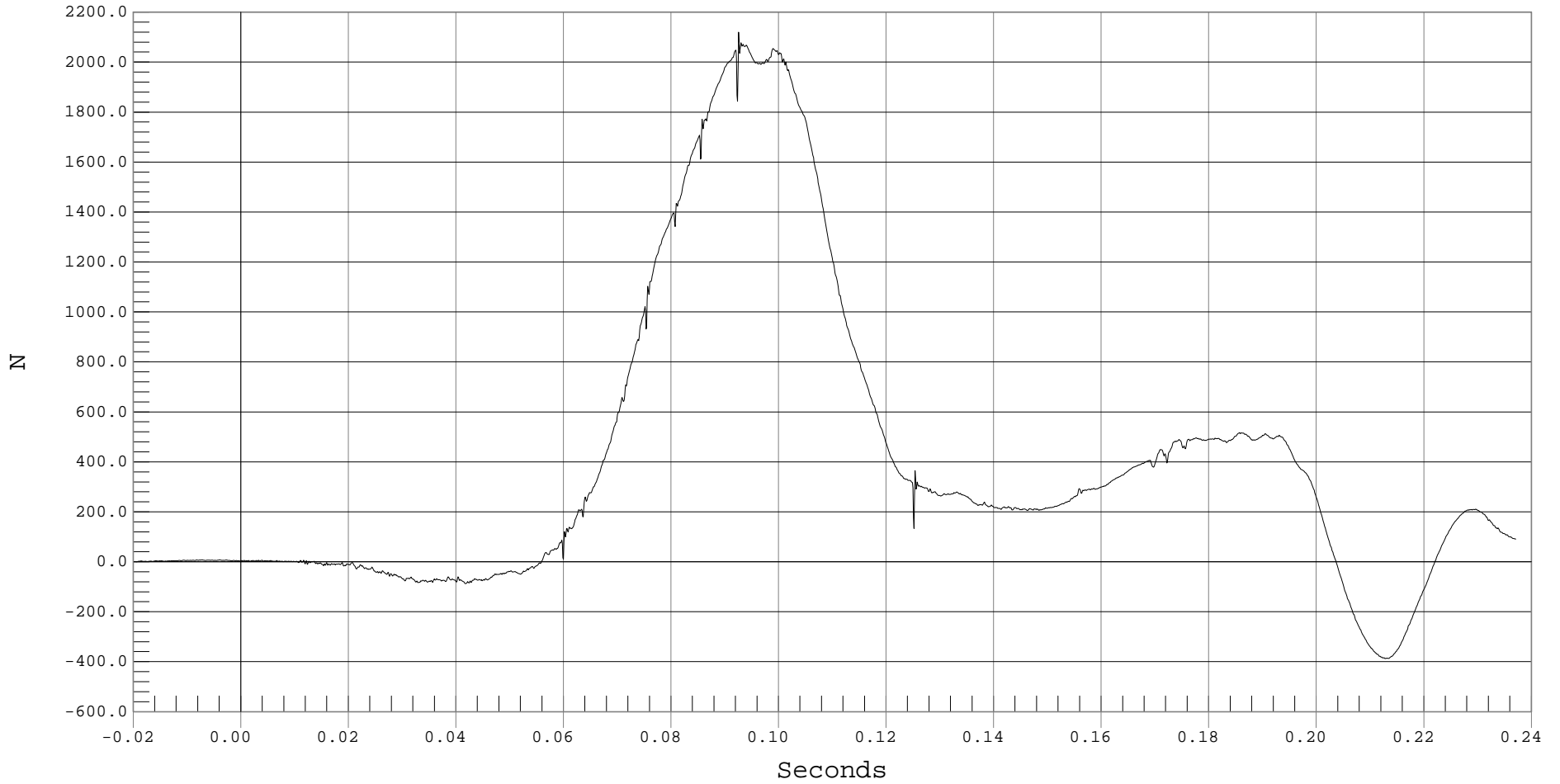
RRS 3 YR OLD UPPER NECK FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 RRS CHILD UPPER NECK FORCE Z, b01032FT.F42

Ymin = -388.09 N @ 0.2127 Seconds, Ymax = 2119.86 N @ 0.0925 Seconds



F-59



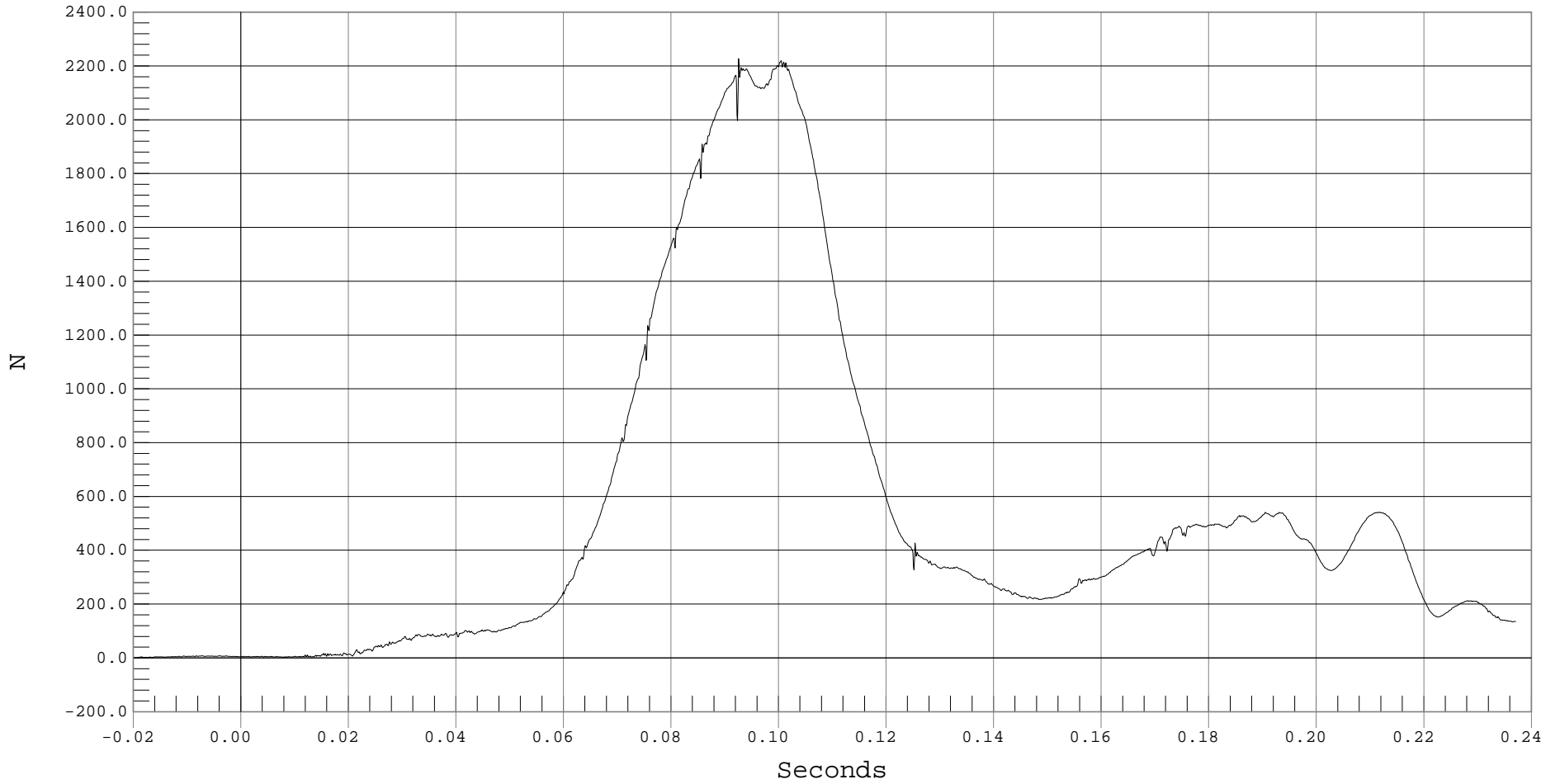
RRS 3 YR OLD UPPER NECK FORCE RESULTANT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 RRS 3 YR OLD UPPER NECK FORCE RESULTANT, b01032FV.F40

Ymin = .31 N @ -0.0199 Seconds, Ymax = 2227.65 N @ 0.0925 Seconds



F-60



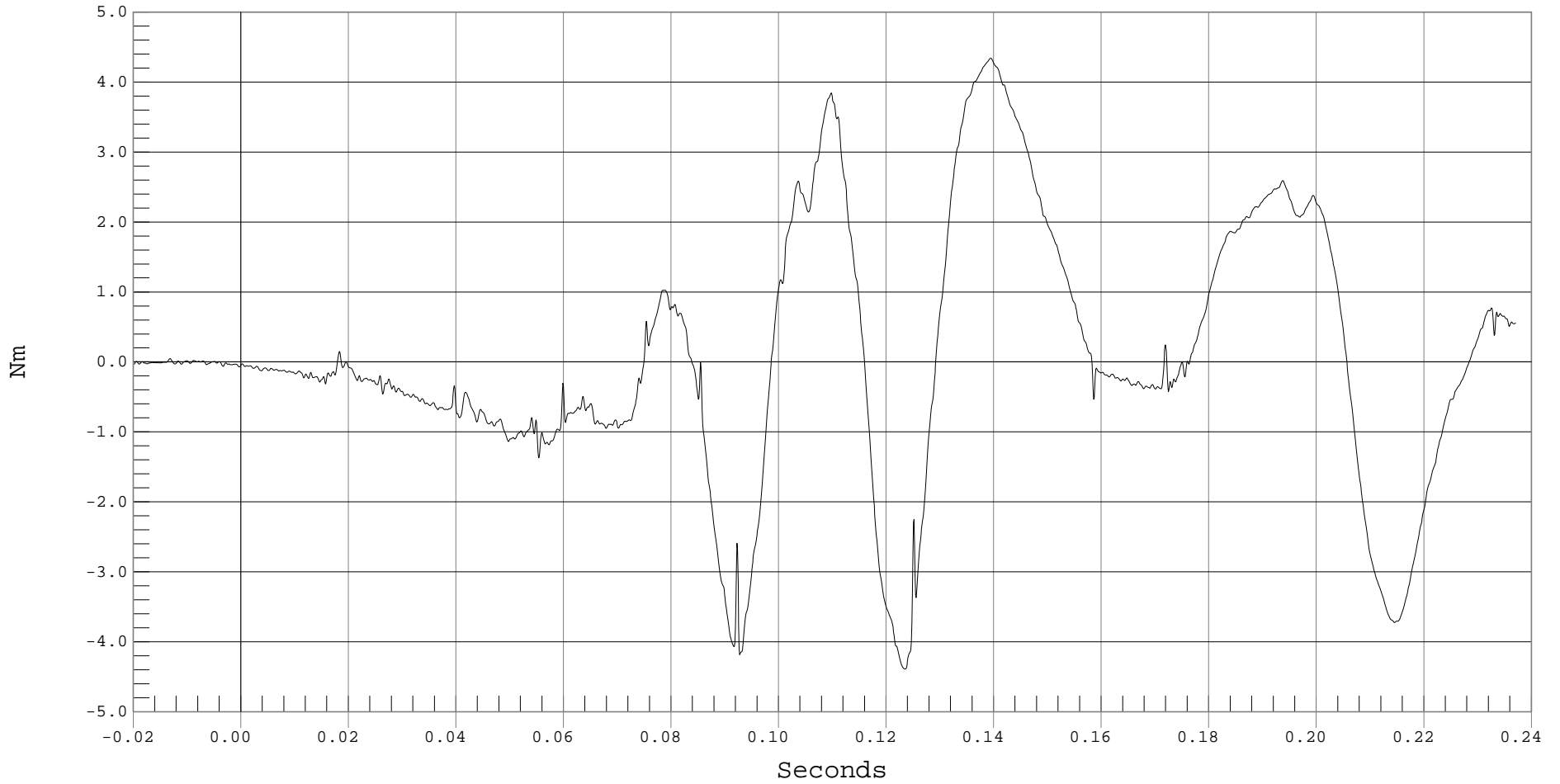
RRS 3 YR OLD UPPER NECK MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 RRS CHILD UPPER NECK MOMENT X, b01032MF.M43

Ymin = -4.39 Nm @ 0.1235 Seconds, Ymax = 4.34 Nm @ 0.1394 Seconds



F-61



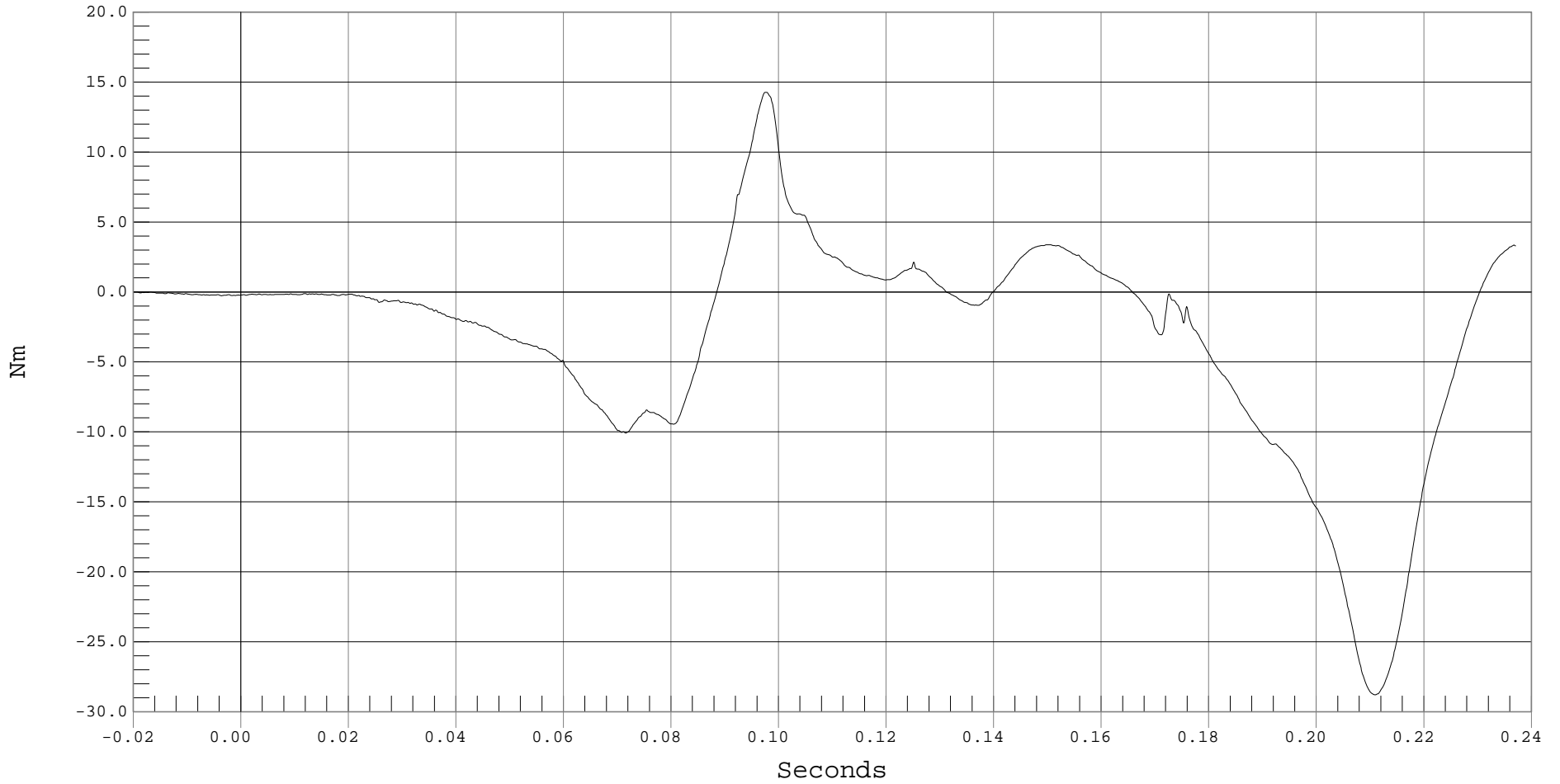
RRS 3 YR OLD UPPER NECK MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 RRS CHILD UPPER NECK MOMENT Y, b01032MF.M44

Ymin = -28.8 Nm @ 0.2109 Seconds, Ymax = 14.27 Nm @ 0.0976 Seconds



F-62



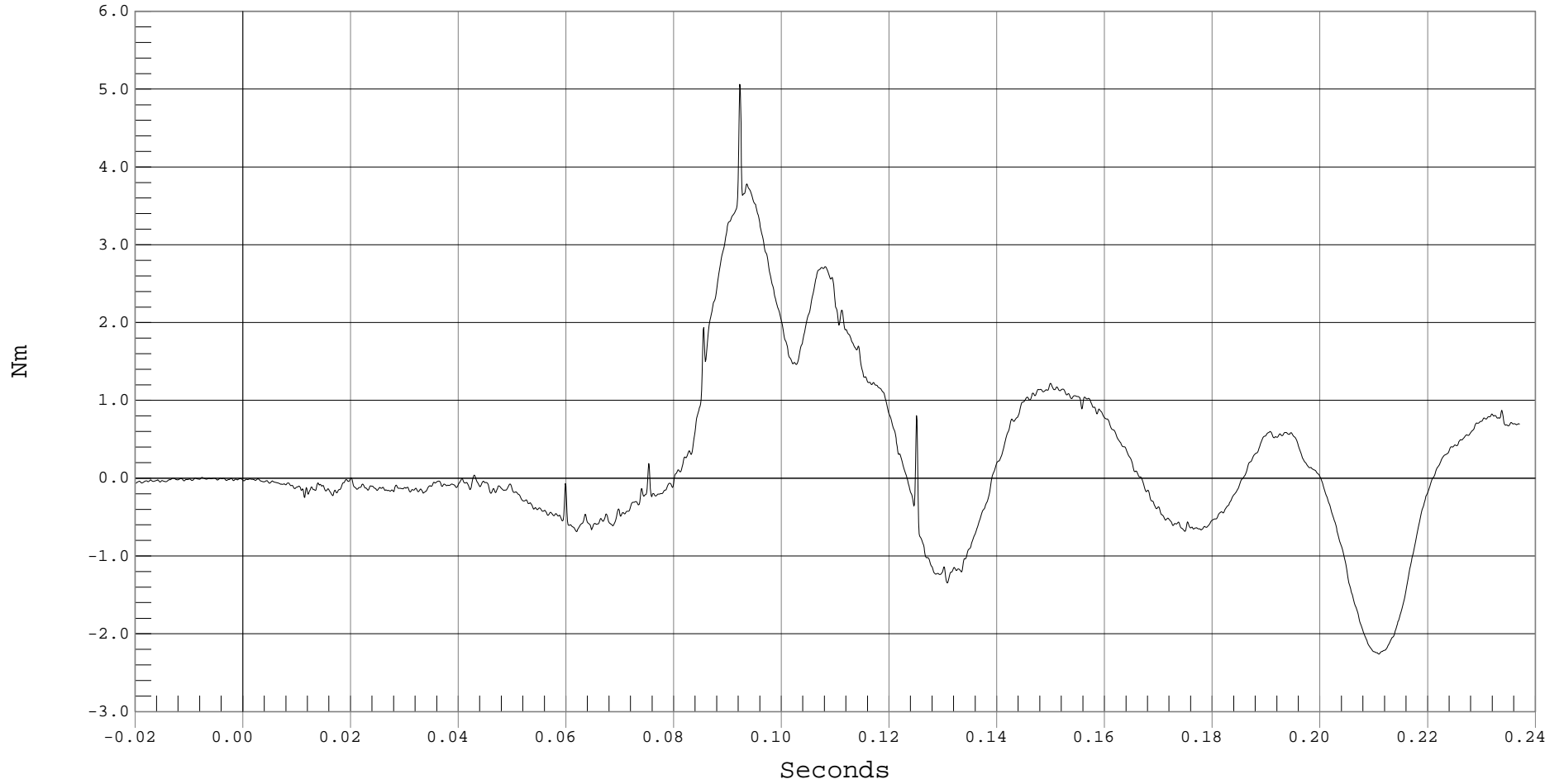
RRS 3 YR OLD UPPER NECK MOMENT Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 RRS CHILD UPPER NECK MOMENT Z, b01032MF.M45

Ymin = -2.26 Nm @ 0.2109 Seconds, Ymax = 5.06 Nm @ 0.0922 Seconds





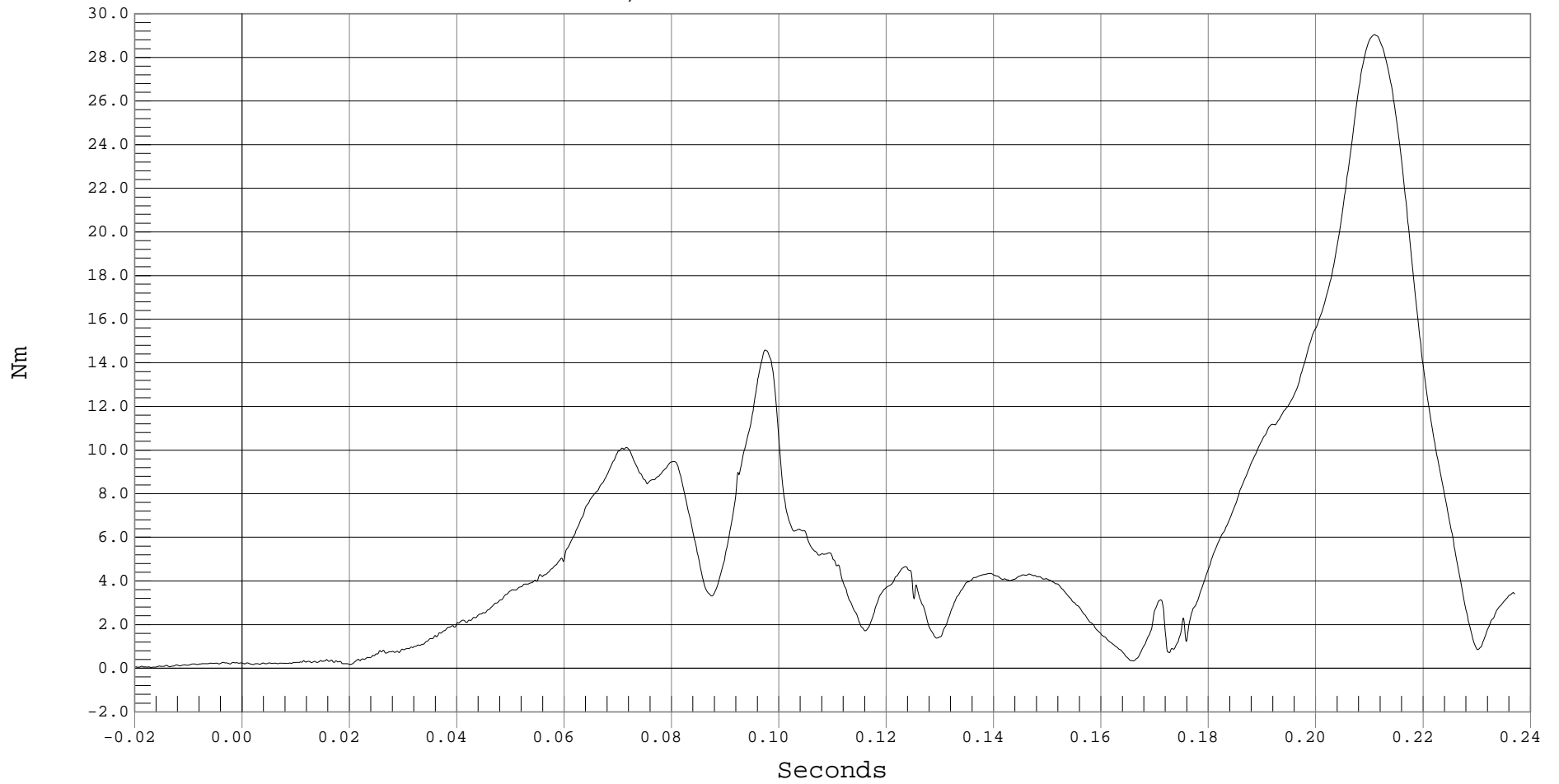
RRS 3 YR OLD UPPER NECK MOMENT RESULTANT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 RRS 3 YR OLD UPPER NECK MOMENT RESULTANT, b01032MV.M43

Ymin = .04 Nm @ -0.0171 Seconds, Ymax = 29.05 Nm @ 0.2109 Seconds



F-64



RRS 3 YR OLD LOWER NECK FORCE X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT

Test Date: 03-21-01

Component: 2001 NISSAN MAXIMA (M15207)

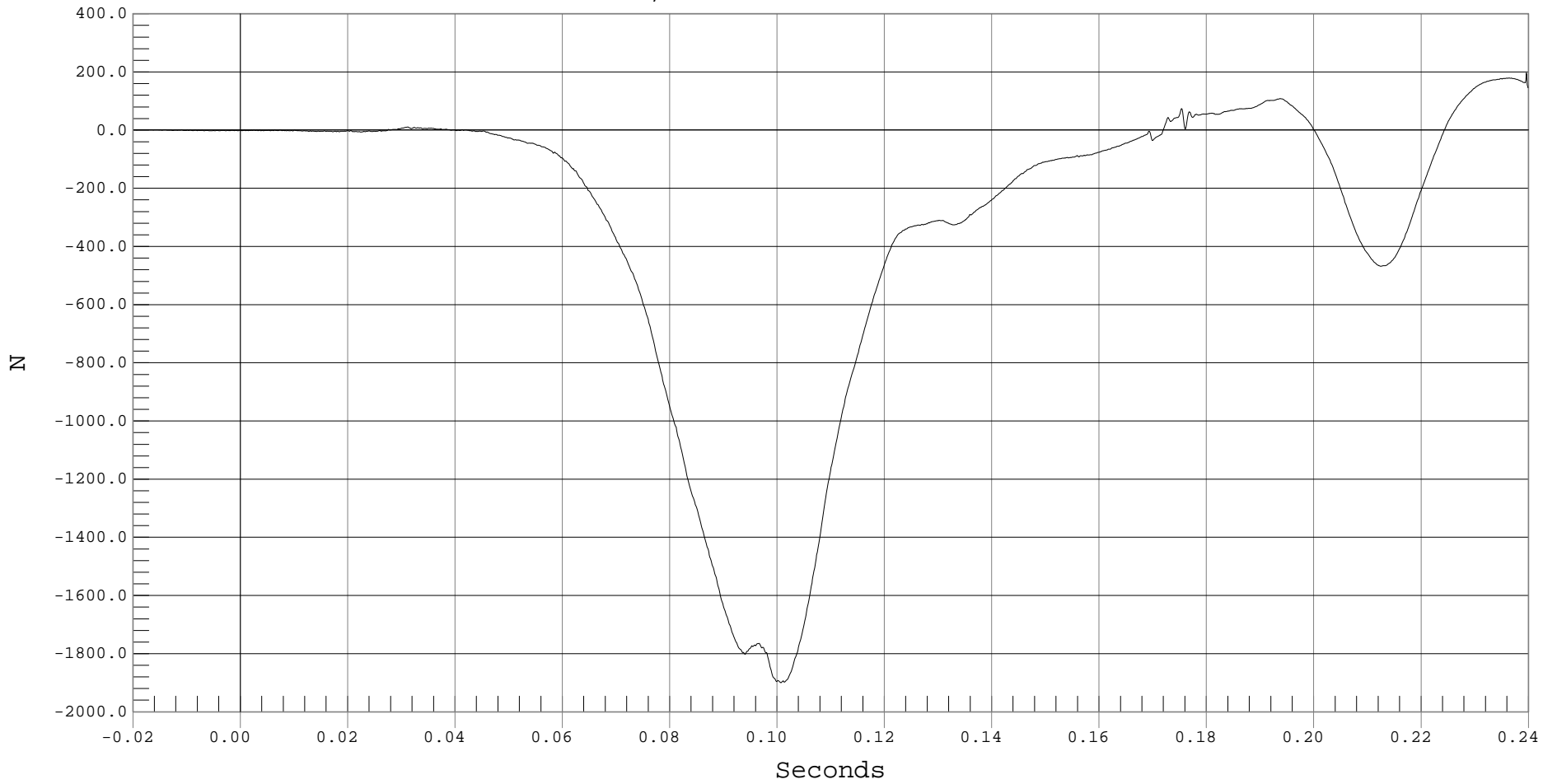
Speed: 34.8 MPH, 56.0 KPH

Other Info:

Filter Class: 1000

— 1 RRS CHILD LOWER NECK FORCE X, b01032FT.F46

Ymin = -1899.77 N @ 0.1006 Seconds, Ymax = 196.61 N @ 0.2395 Seconds



F-65



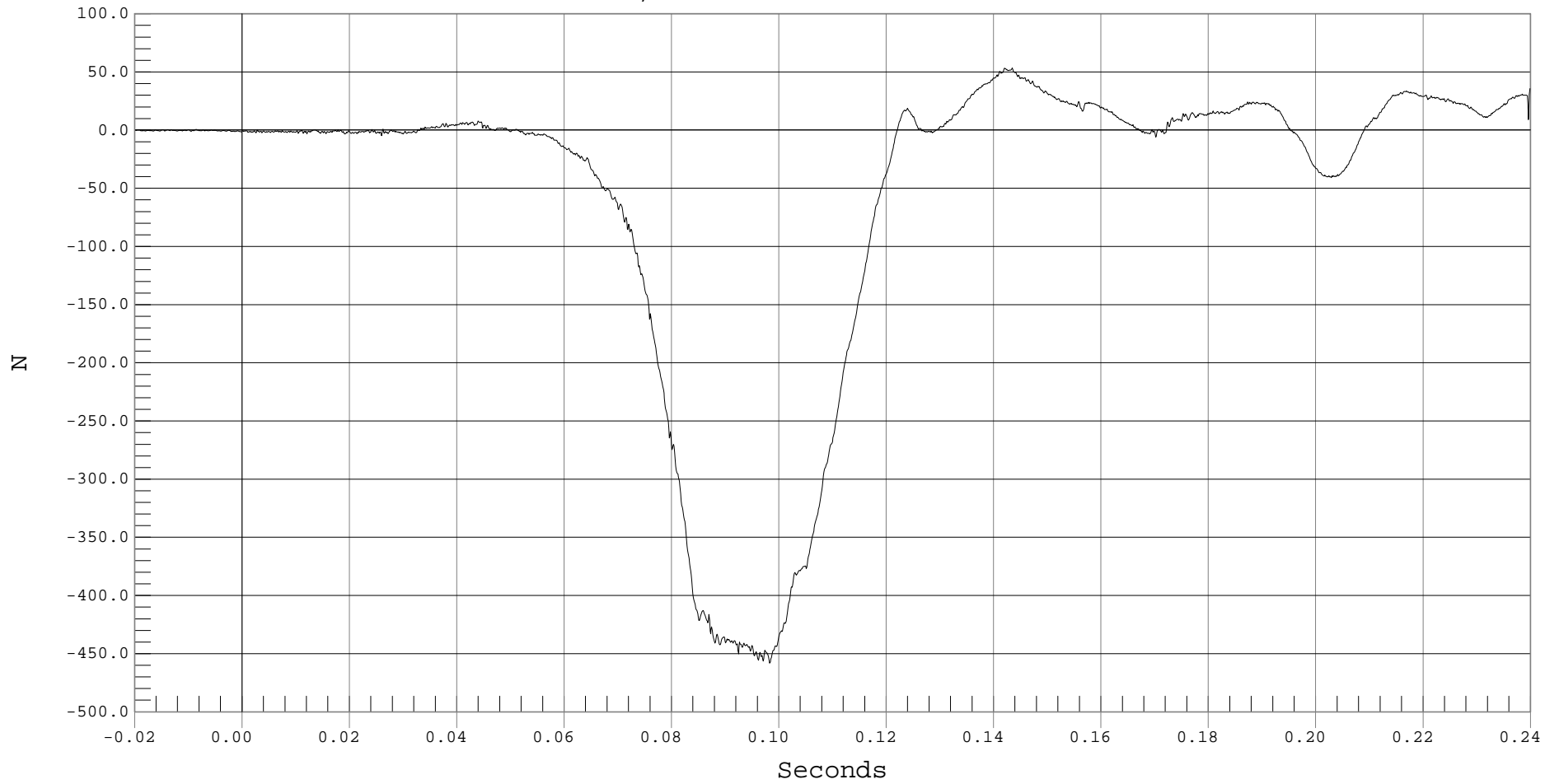
RRS 3 YR OLD LOWER NECK FORCE Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 RRS CHILD LOWER NECK FORCE Y, b01032FT.F47

Ymin = -458.21 N @ 0.0982 Seconds, Ymax = 53.31 N @ 0.1434 Seconds



F-66



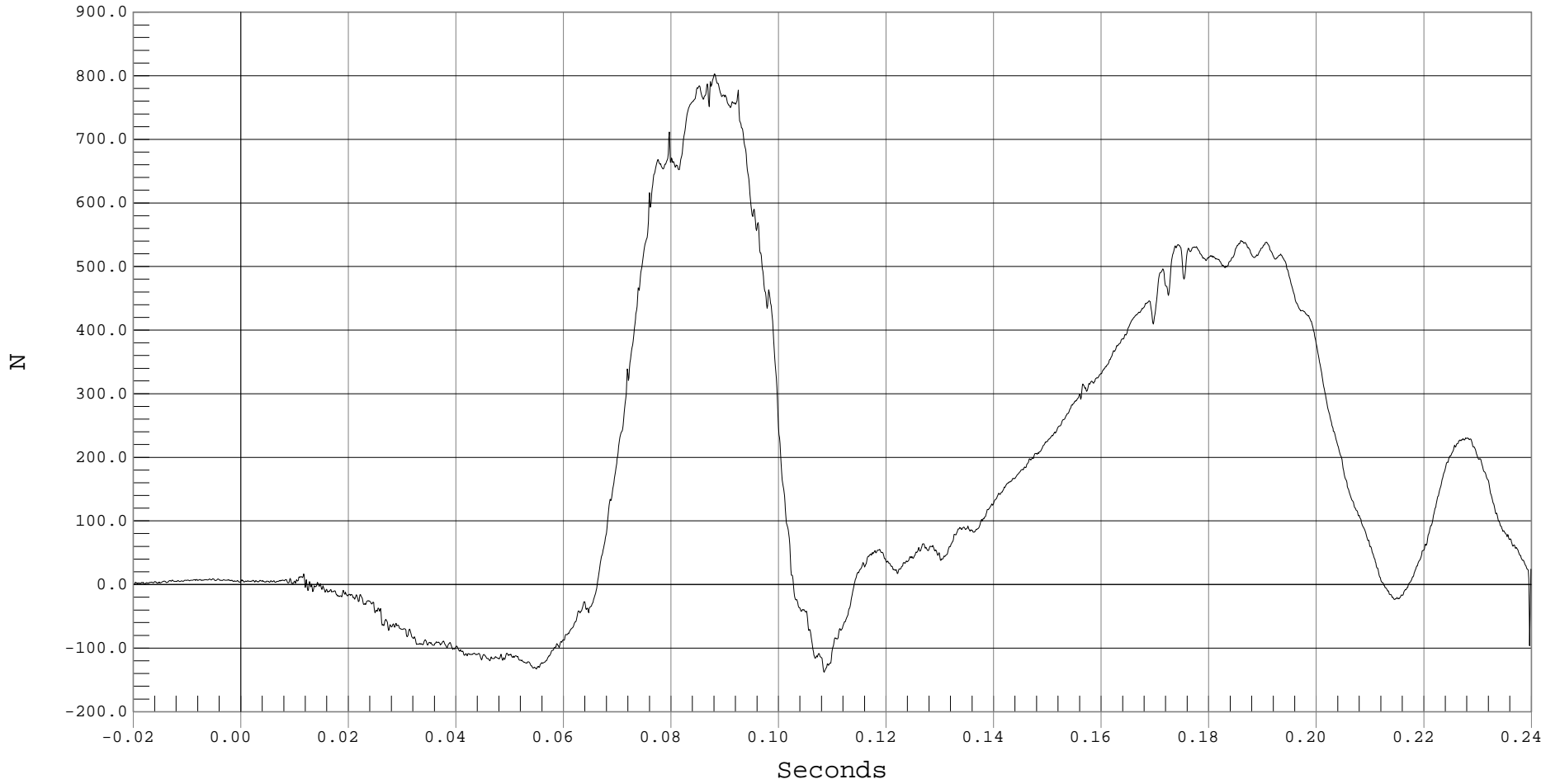
RRS 3 YR OLD LOWER NECK FORCE Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 RRS CHILD LOWER NECK FORCE Z, b01032FT.F48

Ymin = -137.71 N @ 0.1084 Seconds, Ymax = 803 N @ 0.0880 Seconds



F-67



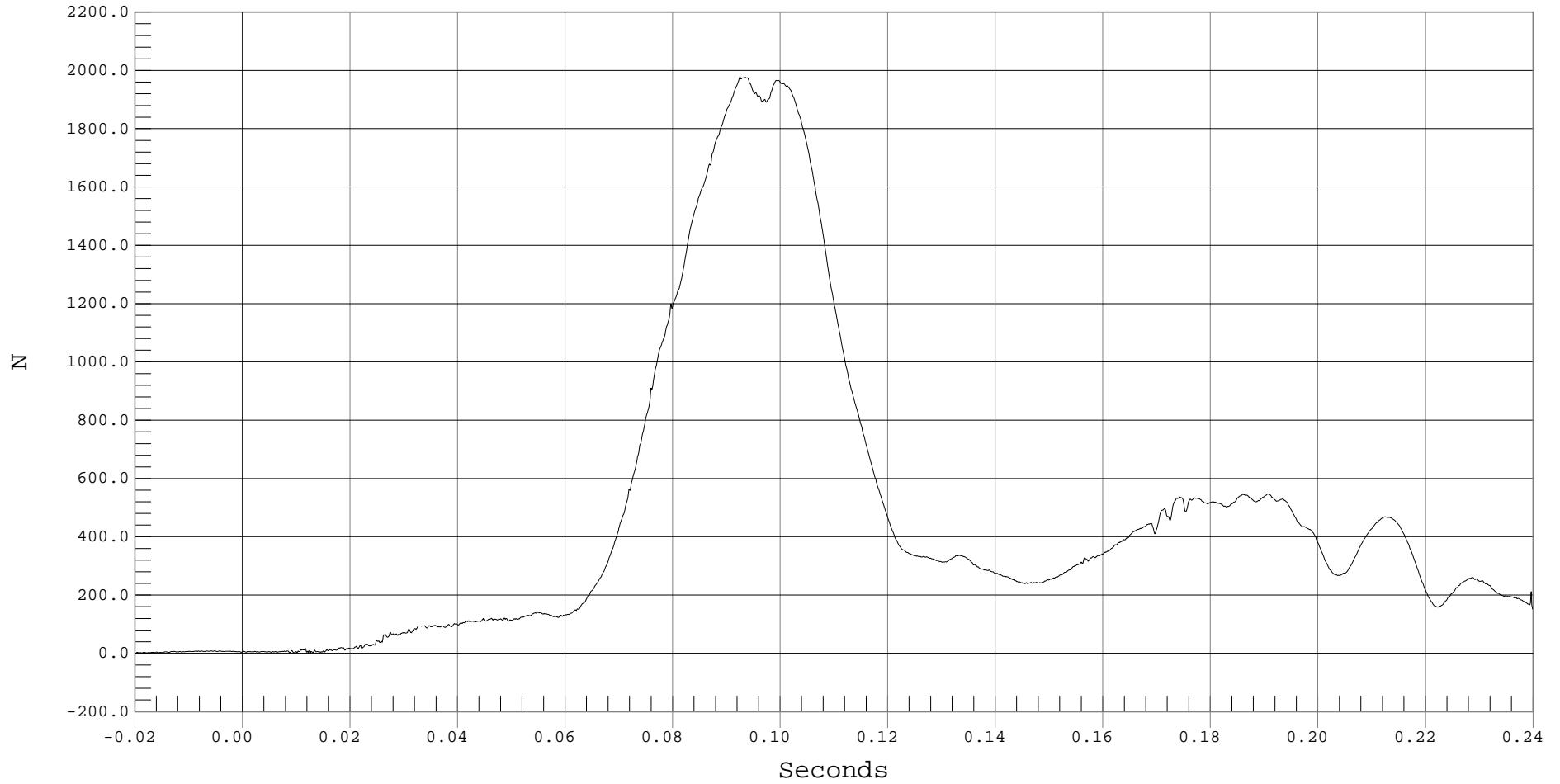
RRS 3 YR OLD LOWER NECK FORCE RESULTANT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 RRS 3 YR OLD LOWER NECK FORCE RESULTANT, b01032FV.F46

Ymin = .75 N @ -0.0199 Seconds, Ymax = 1979.3 N @ 0.0924 Seconds



F-68



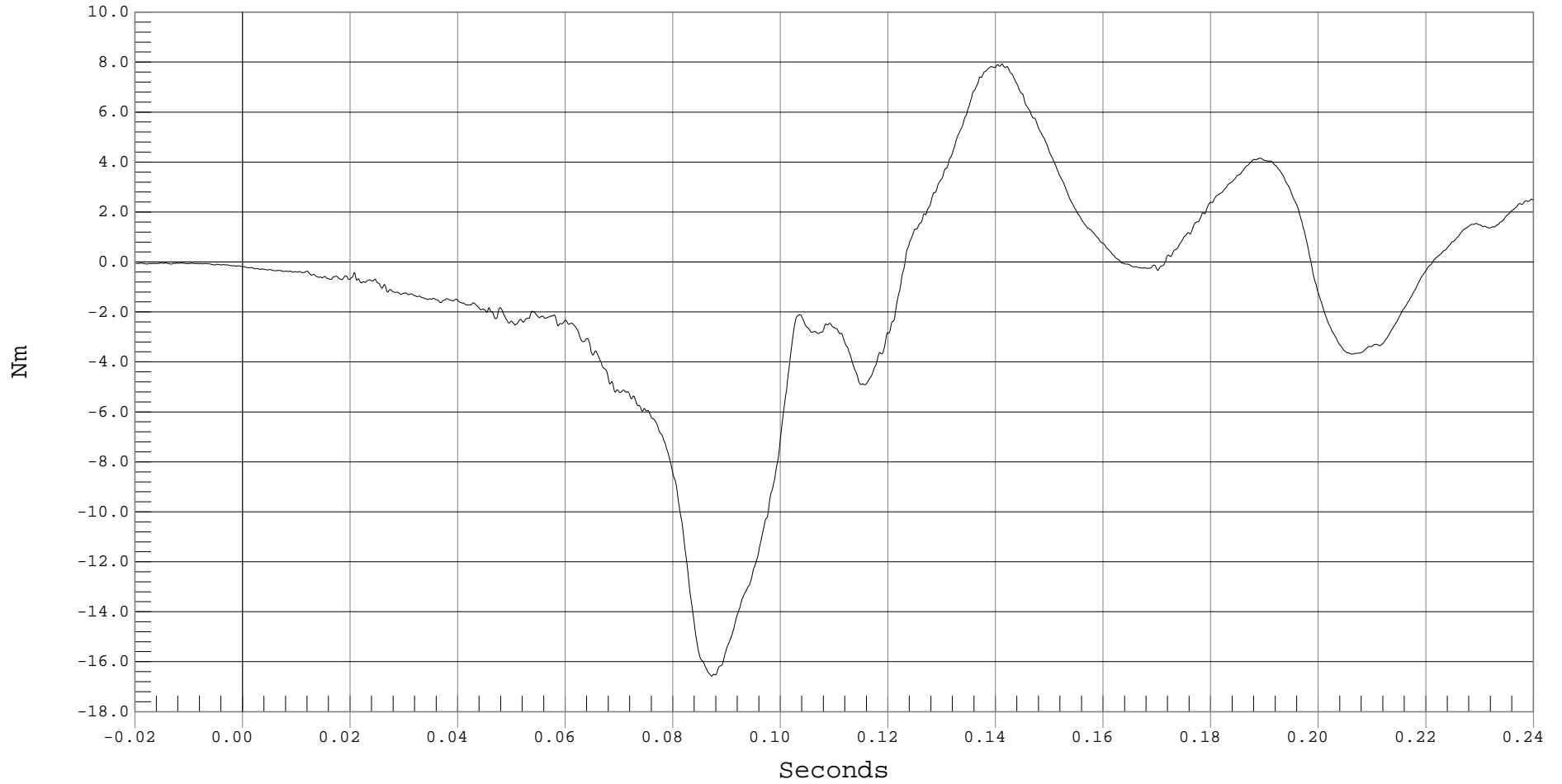
RRS 3 YR OLD LOWER NECK MOMENT X

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 RRS CHILD LOWER NECK MOMENT X, b01032MF.M49

Ymin = -16.58 Nm @ 0.0871 Seconds, Ymax = 7.93 Nm @ 0.1411 Seconds





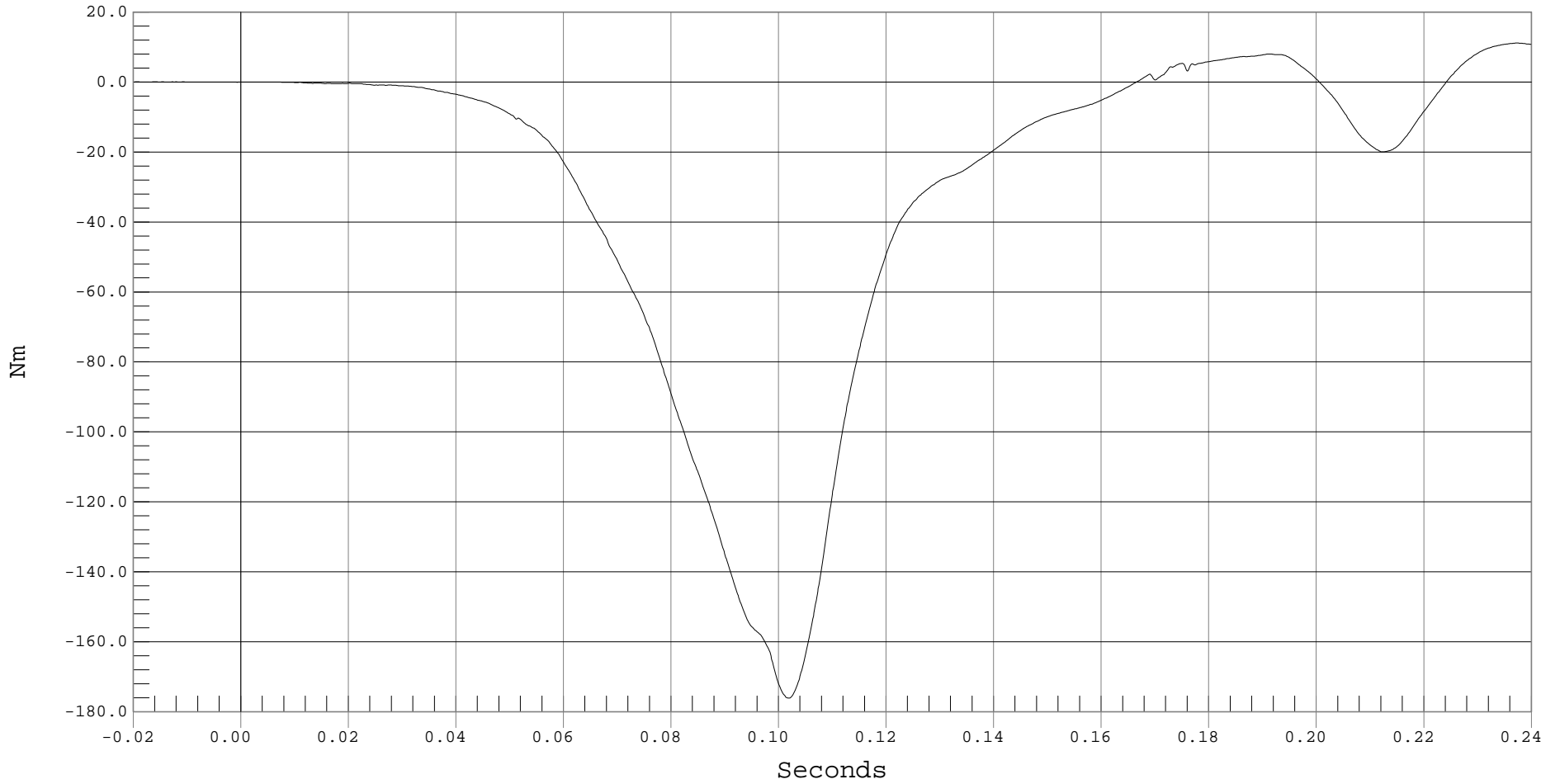
RRS 3 YR OLD LOWER NECK MOMENT Y

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 RRS CHILD LOWER NECK MOMENT Y, b01032MF.M50

Ymin = -176.13 Nm @ 0.1018 Seconds, Ymax = 11.2 Nm @ 0.2372 Seconds



F-70



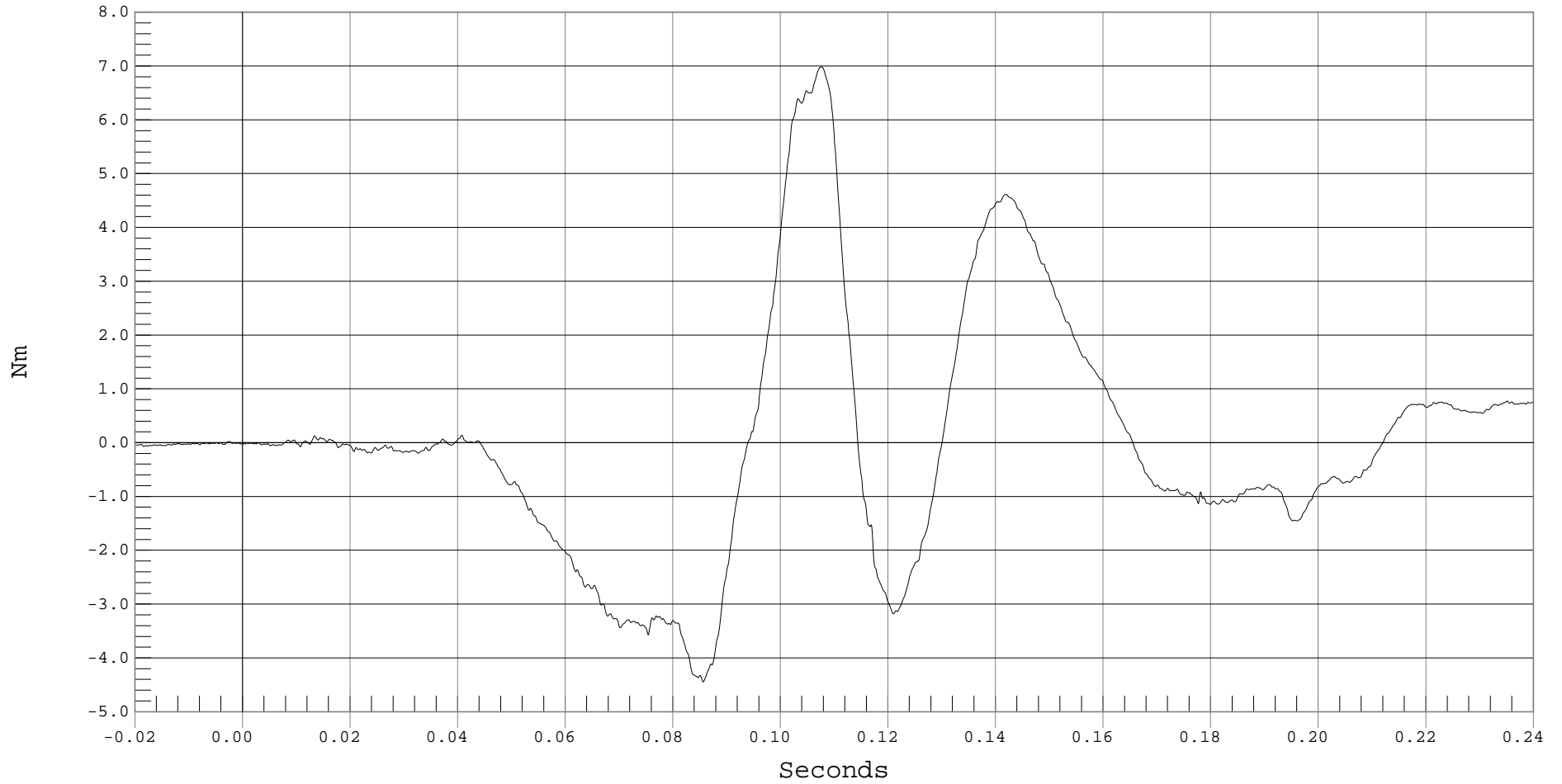
RRS 3 YR OLD LOWER NECK MOMENT Z

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 RRS CHILD LOWER NECK MOMENT Z, b01032MF.M51

Ymin = -4.45 Nm @ 0.0856 Seconds, Ymax = 6.98 Nm @ 0.1075 Seconds



F-71



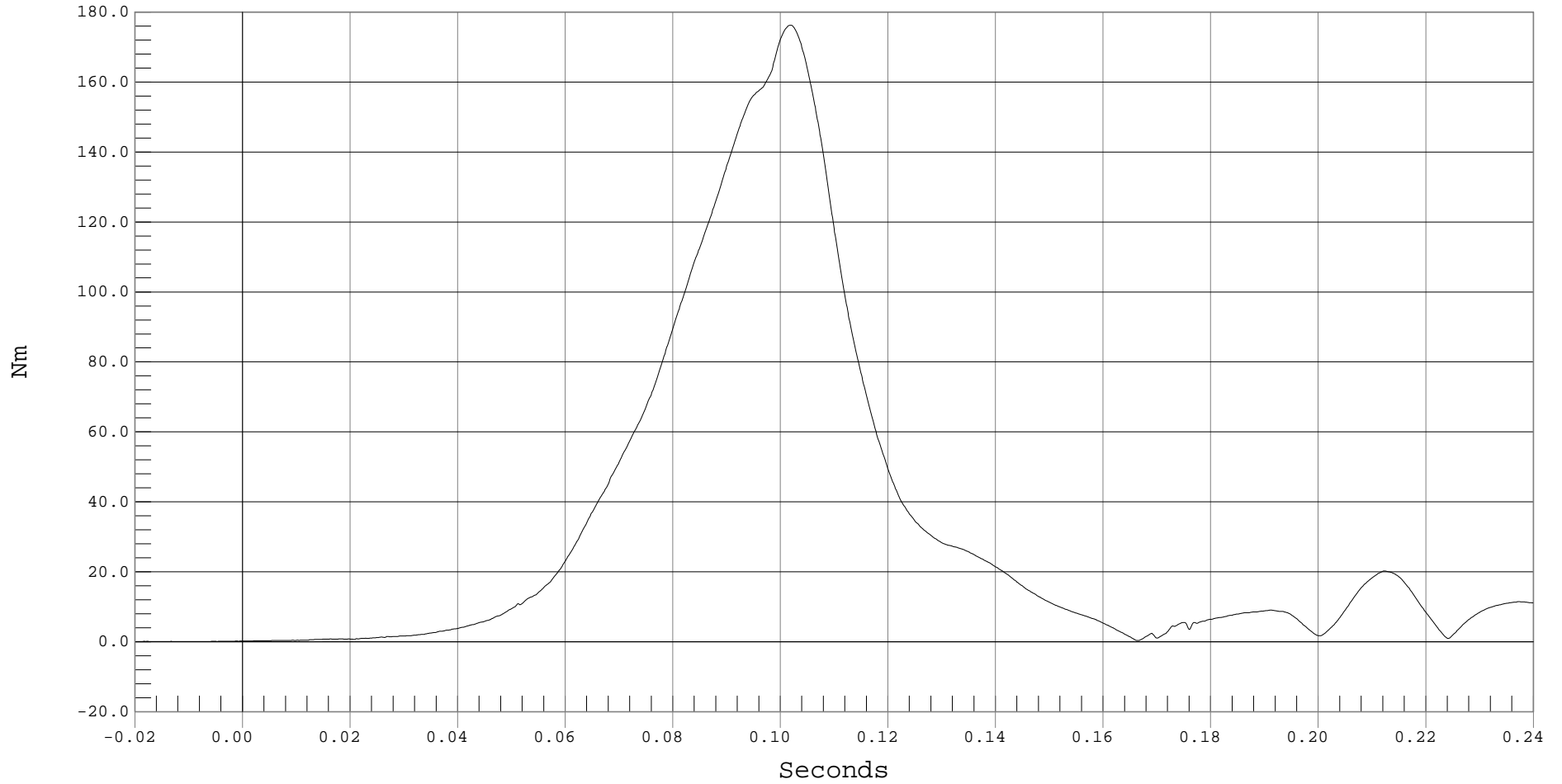
RRS 3 YR OLD LOWER NECK MOMENT RESULTANT

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 RRS 3 YR OLD LOWER NECK MOMENT RESULTANT, b01032MV.M49

Ymin = .05 Nm @ -0.0114 Seconds, Ymax = 176.26 Nm @ 0.1018 Seconds



F-72



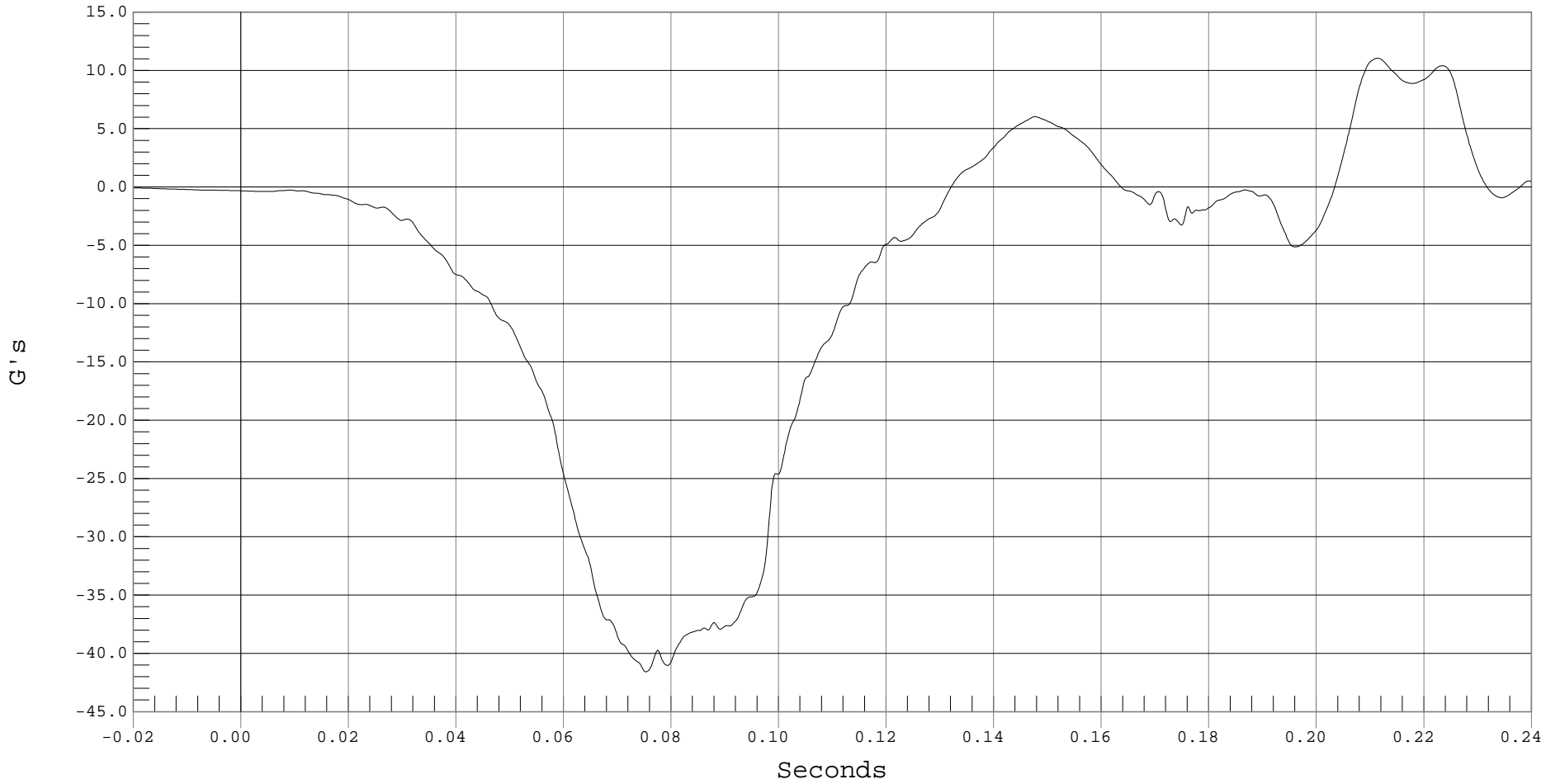
RRS 3 YR OLD CHEST X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 RRS CHILD CHEST X, b01032AF.A52

Ymin = -41.58 G's @ 0.0752 Seconds, Ymax = 11.04 G's @ 0.2113 Seconds



F-73



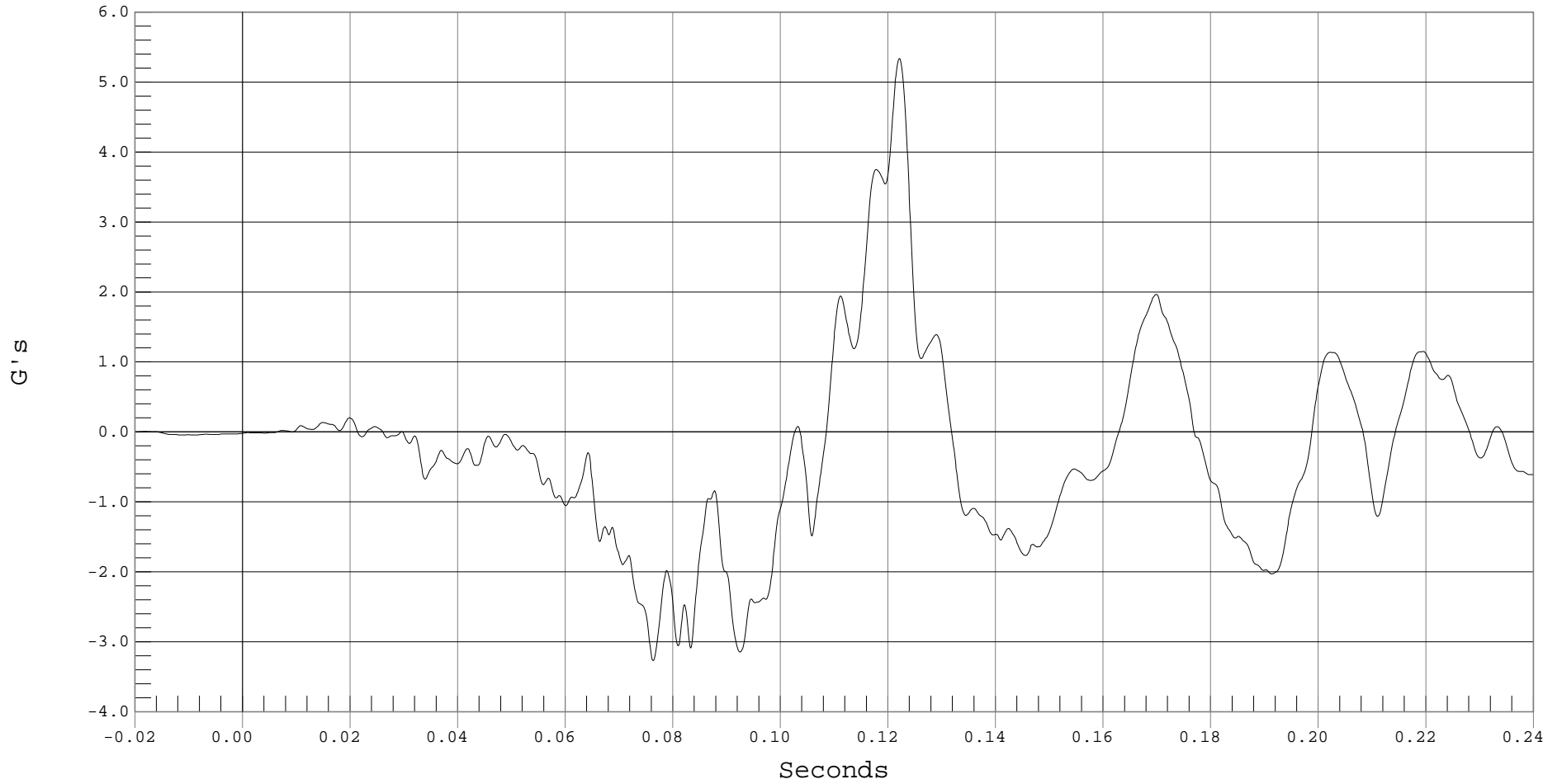
RRS 3 YR OLD CHEST Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 RRS CHILD CHEST Y, b01032AF.A53

Ymin = -3.27 G's @ 0.0763 Seconds, Ymax = 5.34 G's @ 0.1220 Seconds





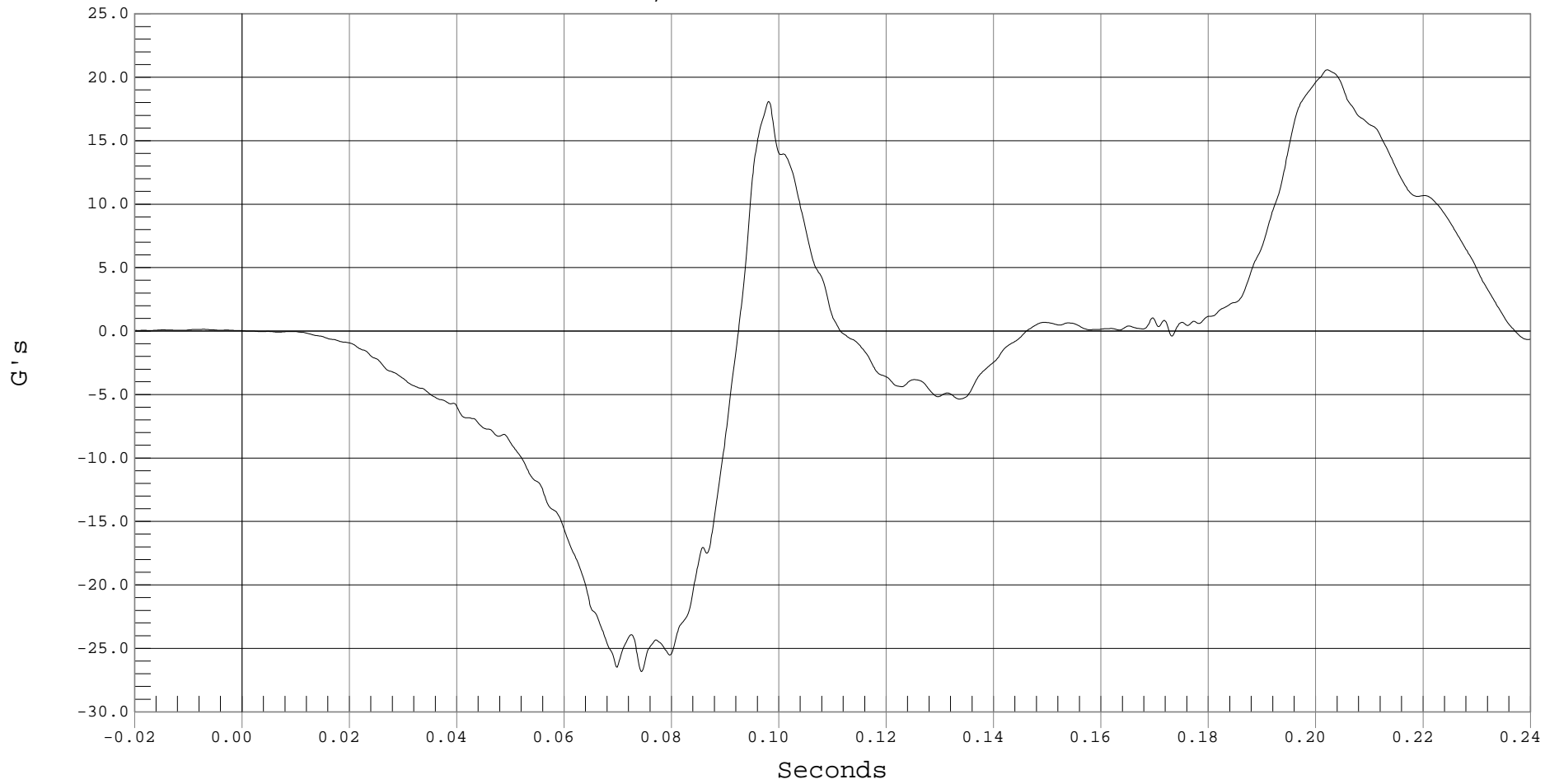
RRS 3 YR OLD CHEST Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 RRS CHILD CHEST Z, b01032AF.A54

Ymin = -26.82 G's @ 0.0743 Seconds, Ymax = 20.59 G's @ 0.2021 Seconds



F-75



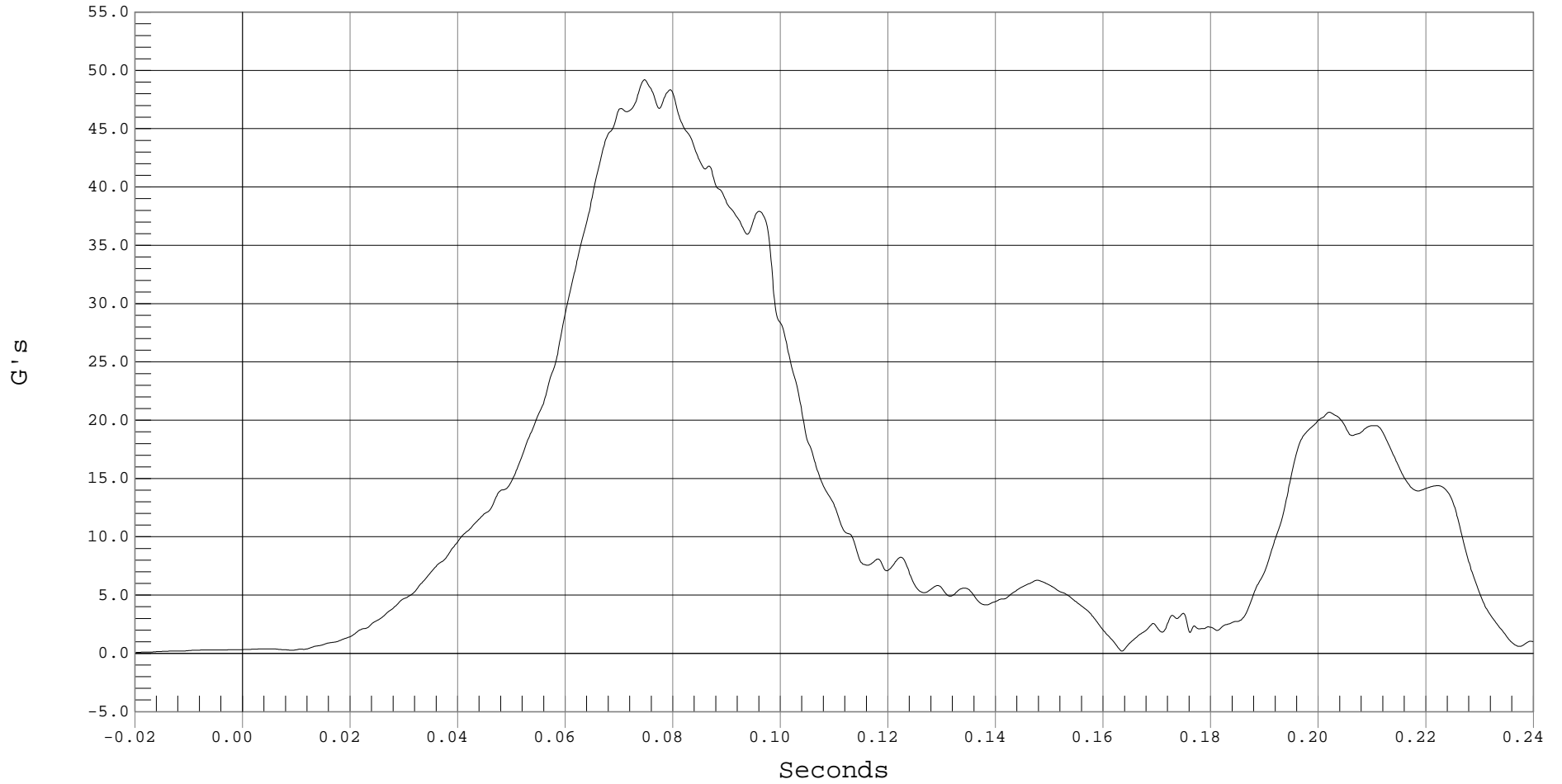
RRS 3 YR OLD CHEST RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 180

— 1 RRS 3 YR OLD CHEST RESULTANT ACCELERATION, b01032AV.A52

Ymin = .09 G's @ -0.0199 Seconds, Ymax = 49.2 G's @ 0.0747 Seconds



F-76



RRS 3 YR OLD CHEST X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT

Test Date: 03-21-01

Component: 2001 NISSAN MAXIMA (M15207)

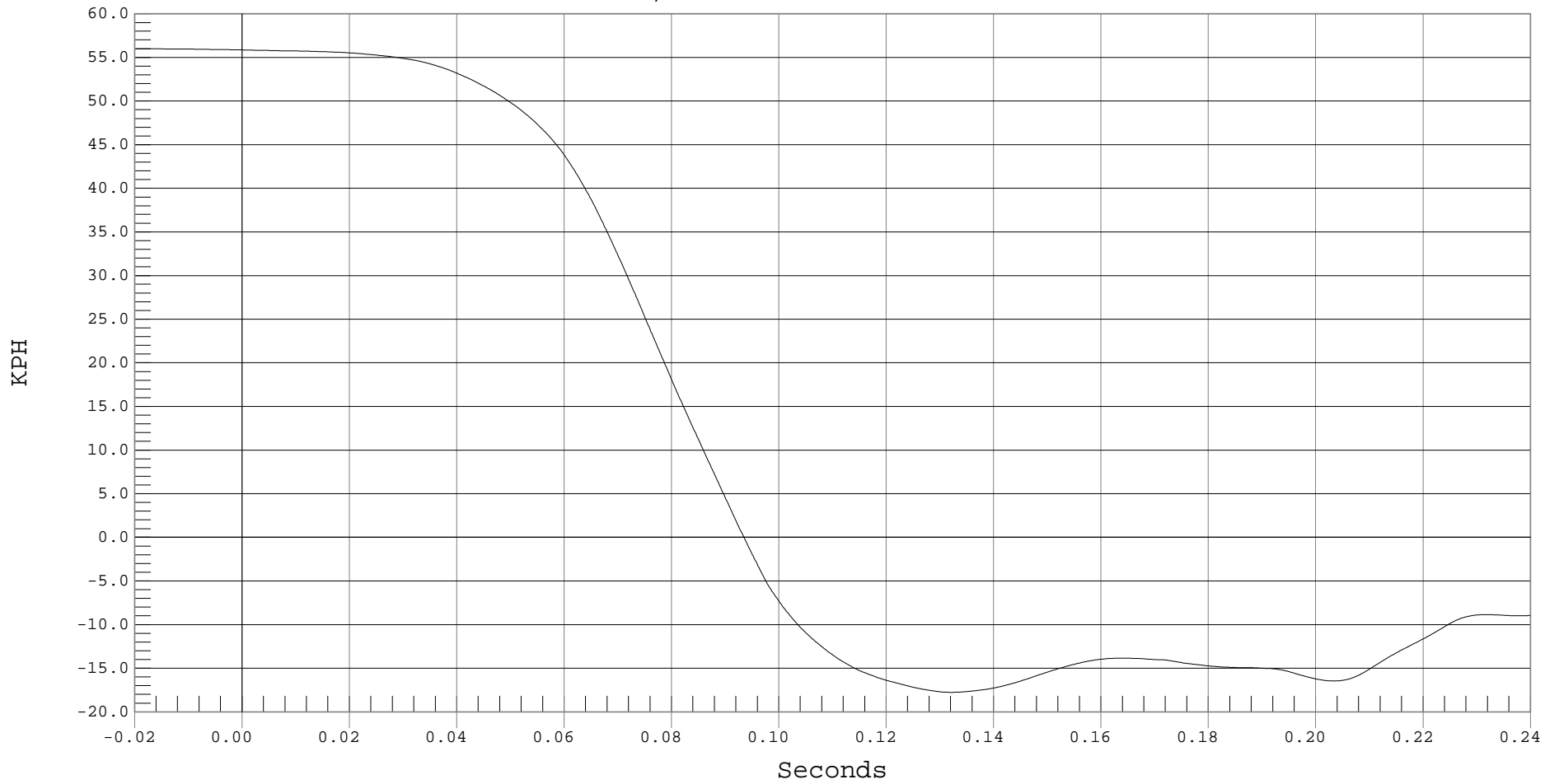
Speed: 34.8 MPH, 56.0 KPH

Other Info:

Filter Class: 180

— 1 RRS 3 YR OLD CHEST X VELOCITY, b01032AI.V52

Ymin = -17.77 KPH @ 0.1320 Seconds, Ymax = 56 KPH @ -0.0199 Seconds



F-77



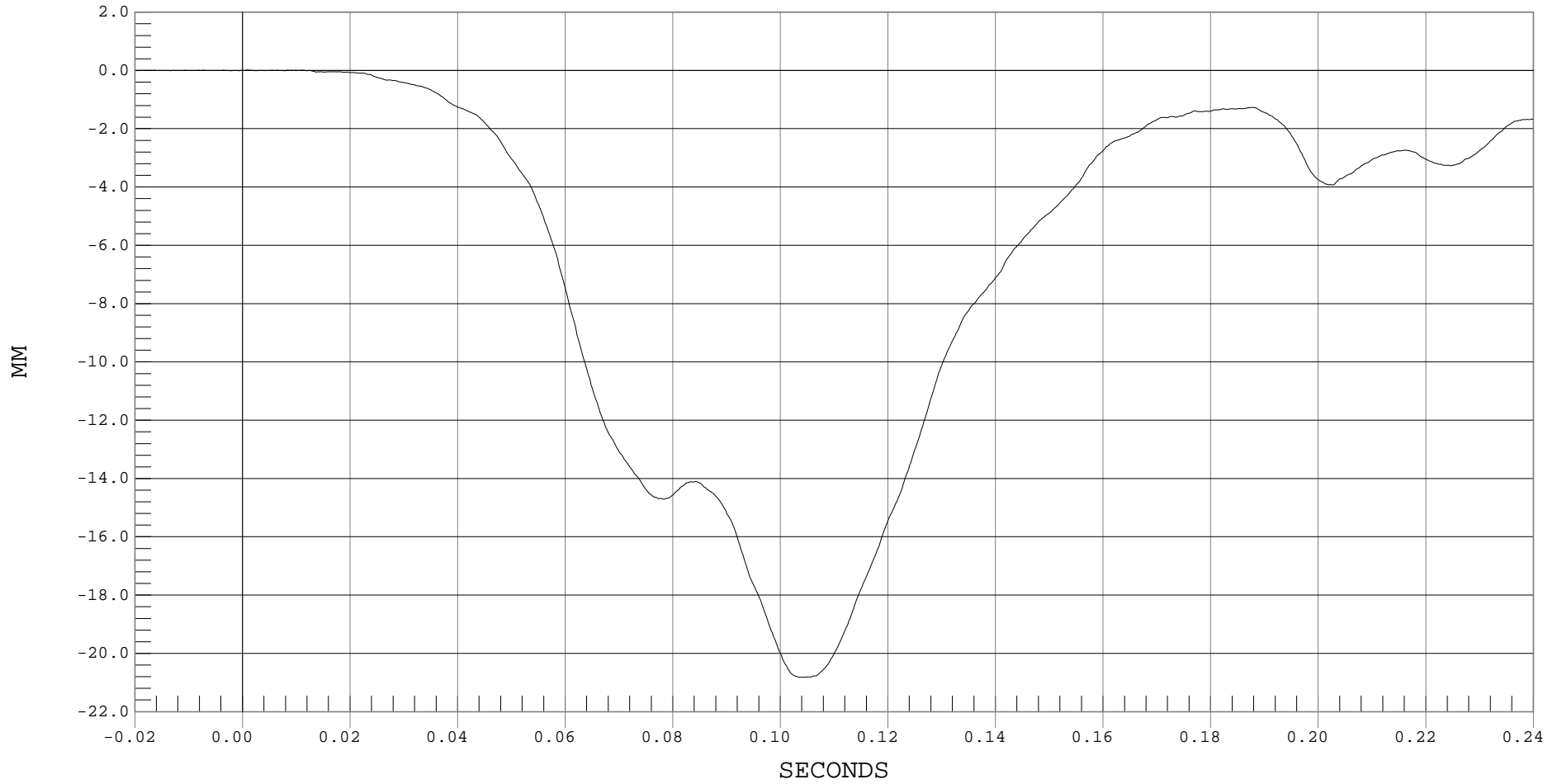
RRS 3 YR OLD CHEST COMPRESSION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 600

— 1 DISPLACEMENT, b01032DF.D55

Ymin = -20.82 MM @ 0.1042 SECONDS, Ymax = .01 MM @ 0.0008 SECONDS



F-78



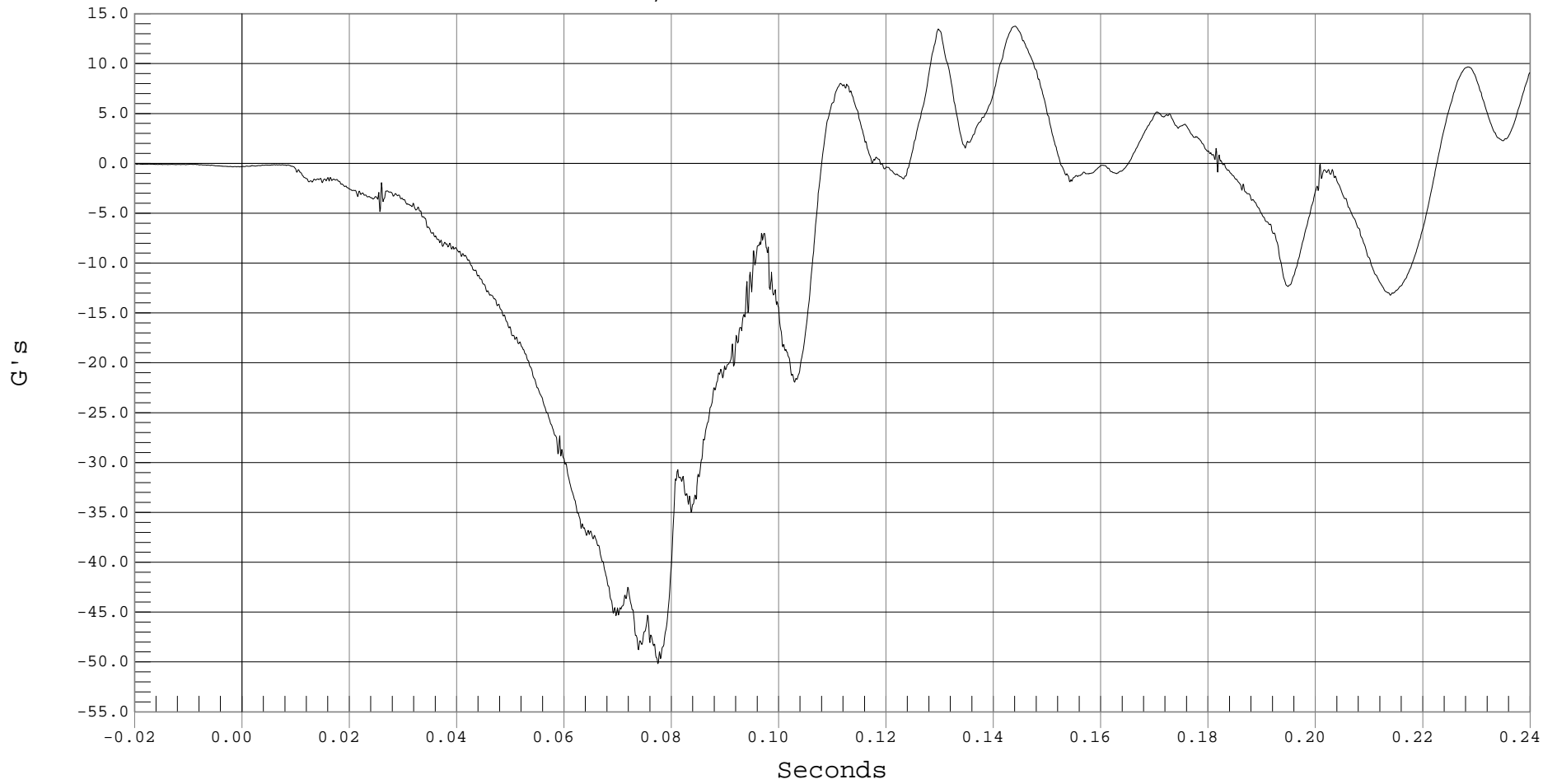
RRS 3 YR OLD PELVIS X ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 RRS CHILD PELVIS X, b01032AT.A56

Ymin = -50.18 G's @ 0.0774 Seconds, Ymax = 13.76 G's @ 0.1440 Seconds



F-79



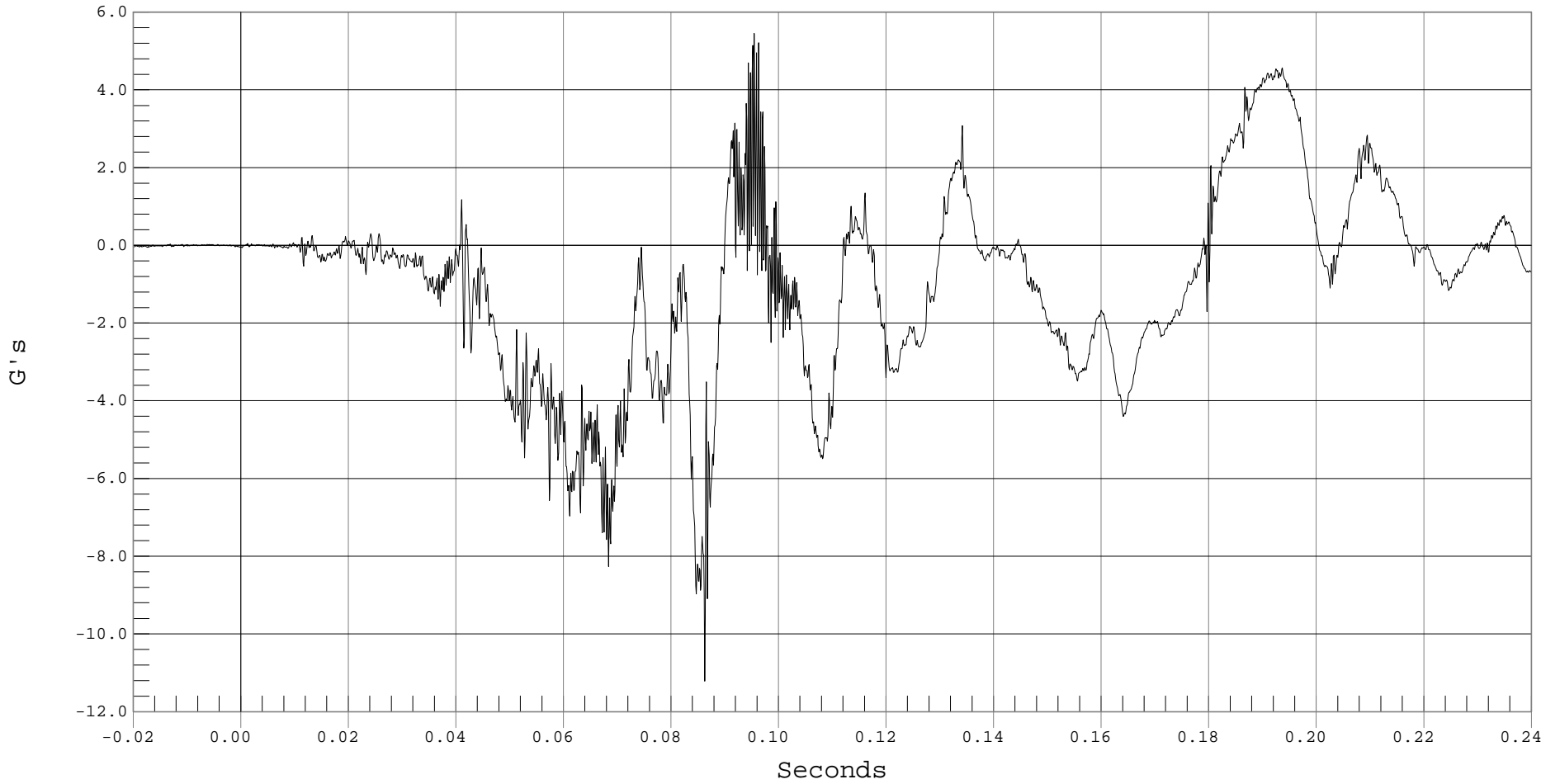
RRS 3 YR OLD PELVIS Y ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 RRS CHILD PELVIS Y, b01032AT.A57

Ymin = -11.21 G's @ 0.0862 Seconds, Ymax = 5.45 G's @ 0.0954 Seconds



F-80



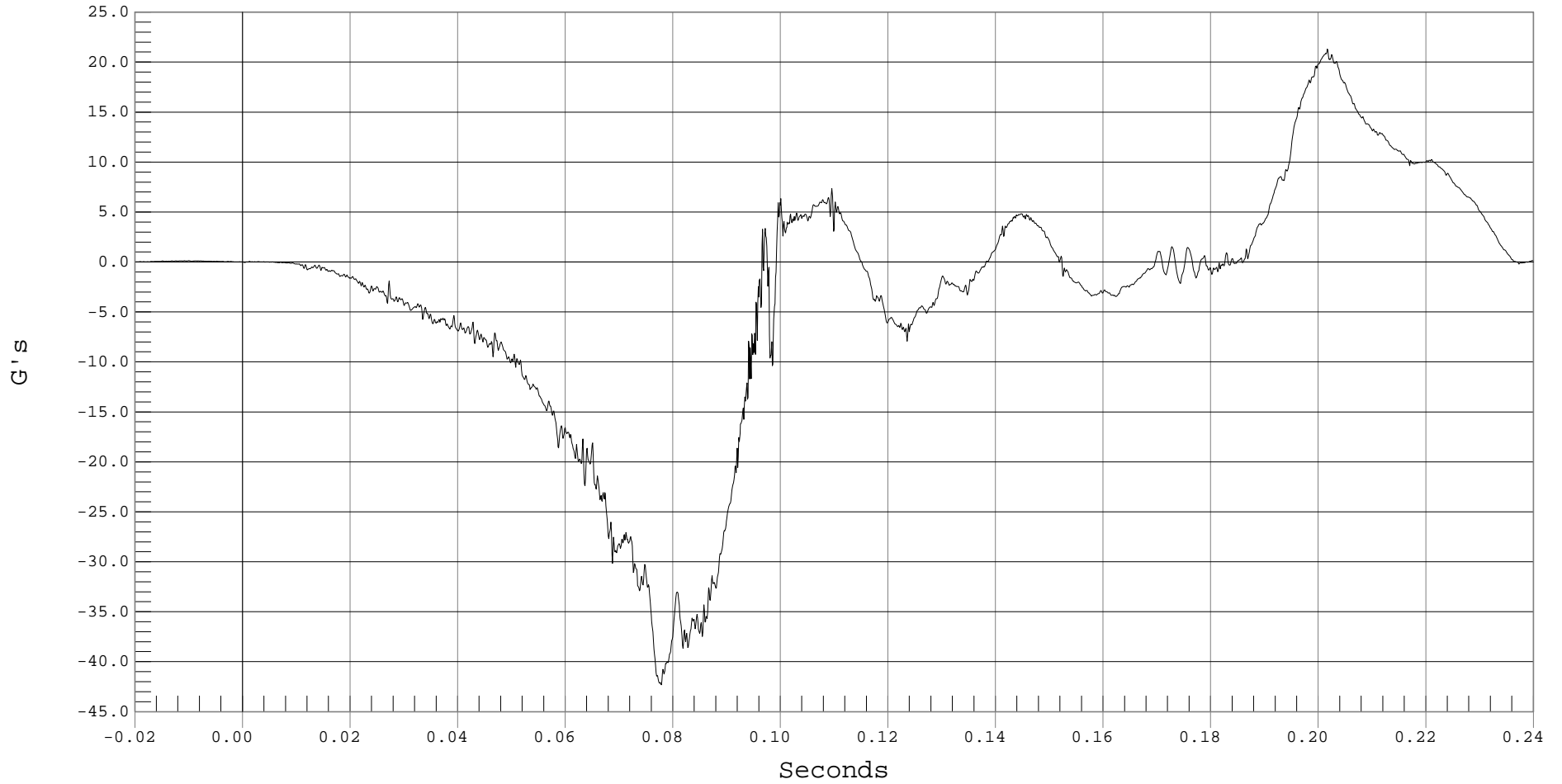
RRS 3 YR OLD PELVIS Z ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 RRS CHILD PELVIS Z, b01032AT.A58

Ymin = -42.33 G's @ 0.0778 Seconds, Ymax = 21.3 G's @ 0.2016 Seconds



F-81



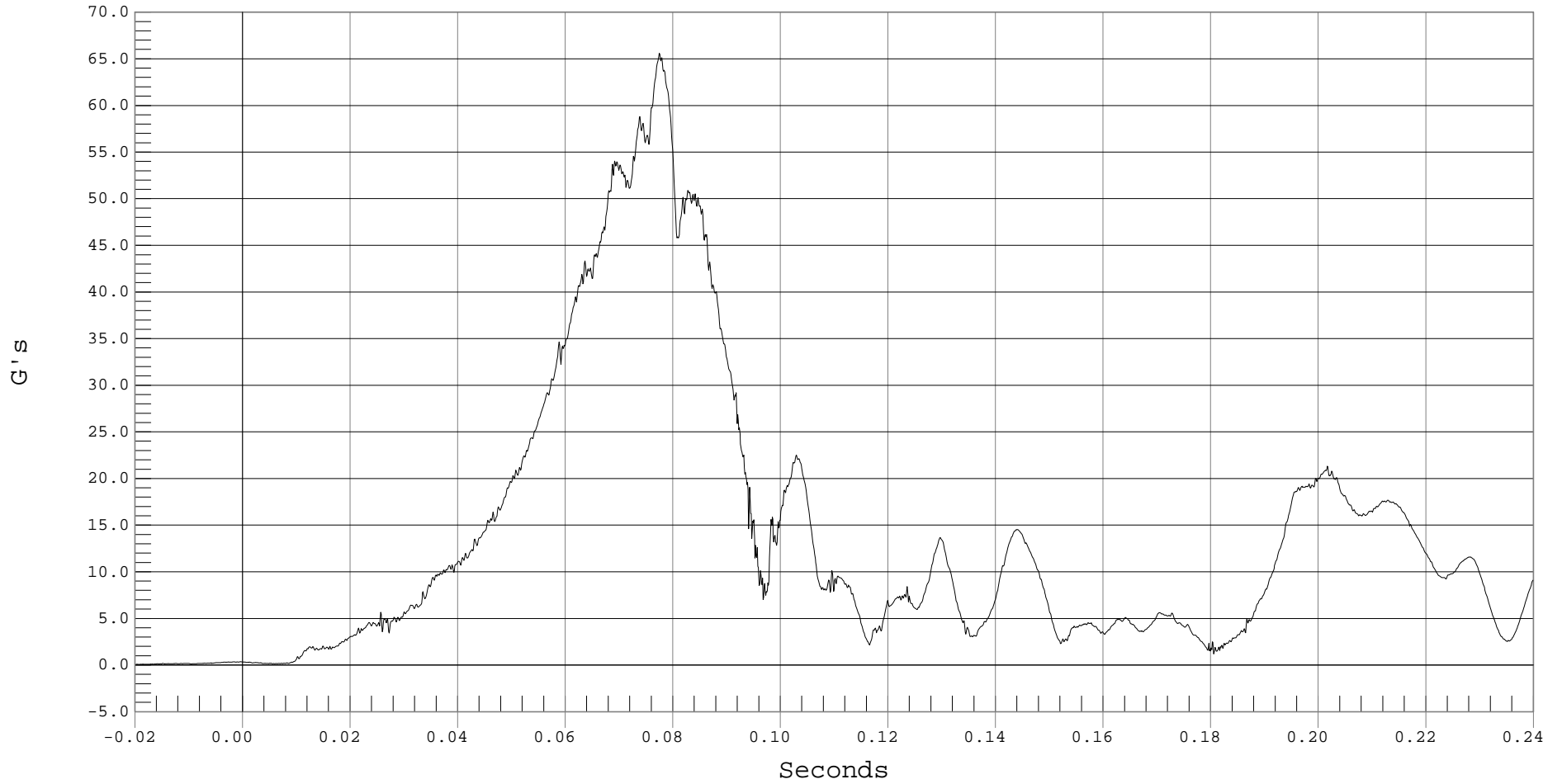
RRS 3 YR OLD PELVIS RESULTANT ACCELERATION

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 RRS 3 YR OLD PELVIS RESULTANT ACCELERATION, b01032AV.A56

Ymin = .06 G's @ -0.0194 Seconds, Ymax = 65.58 G's @ 0.0774 Seconds





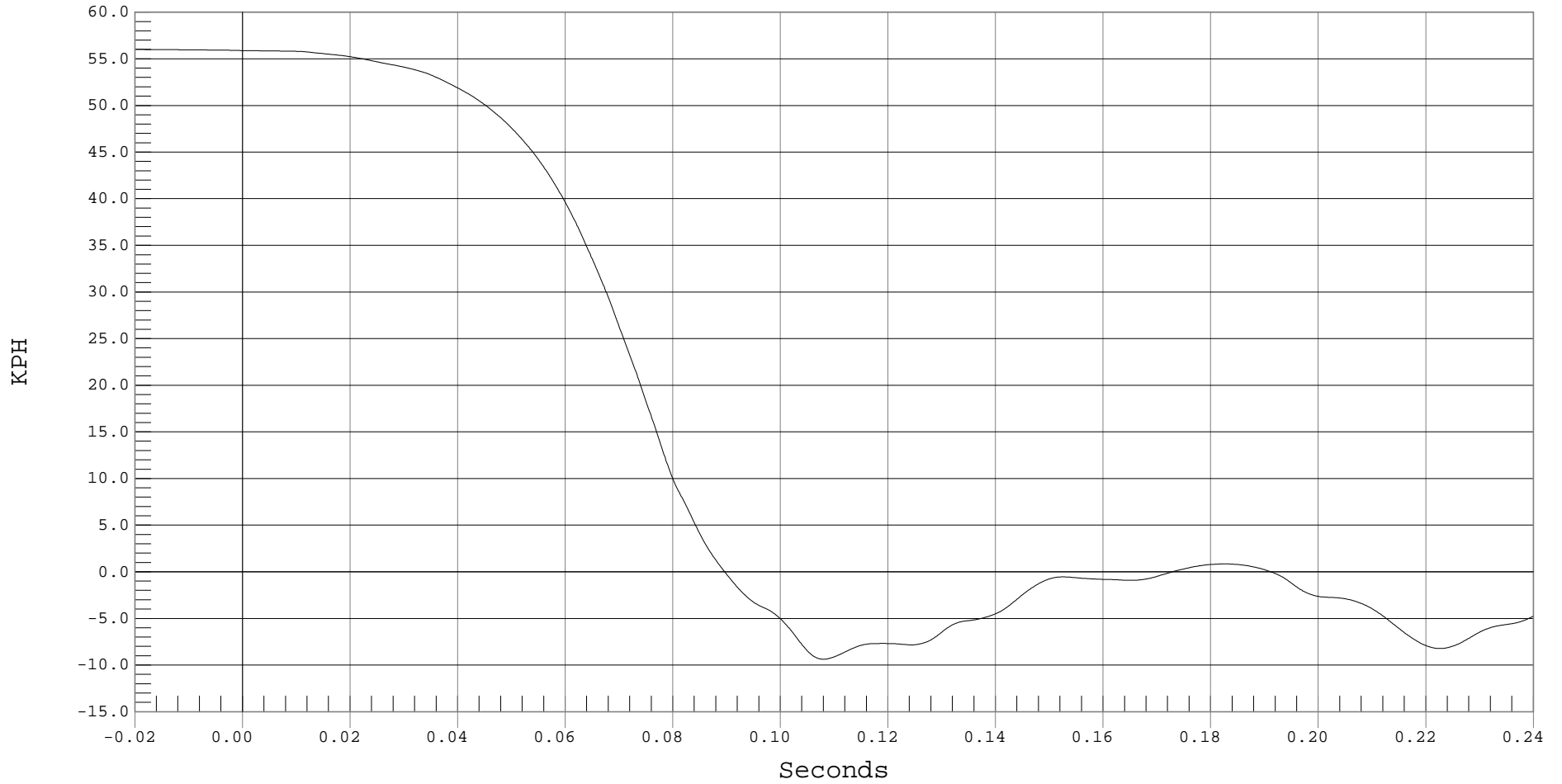
RRS 3 YR OLD PELVIS X VELOCITY

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 1000

— 1 RRS 3 YR OLD PELVIS X VELOCITY, b01032AI.V56

Ymin = -9.38 KPH @ 0.1079 Seconds, Ymax = 56 KPH @ -0.0199 Seconds





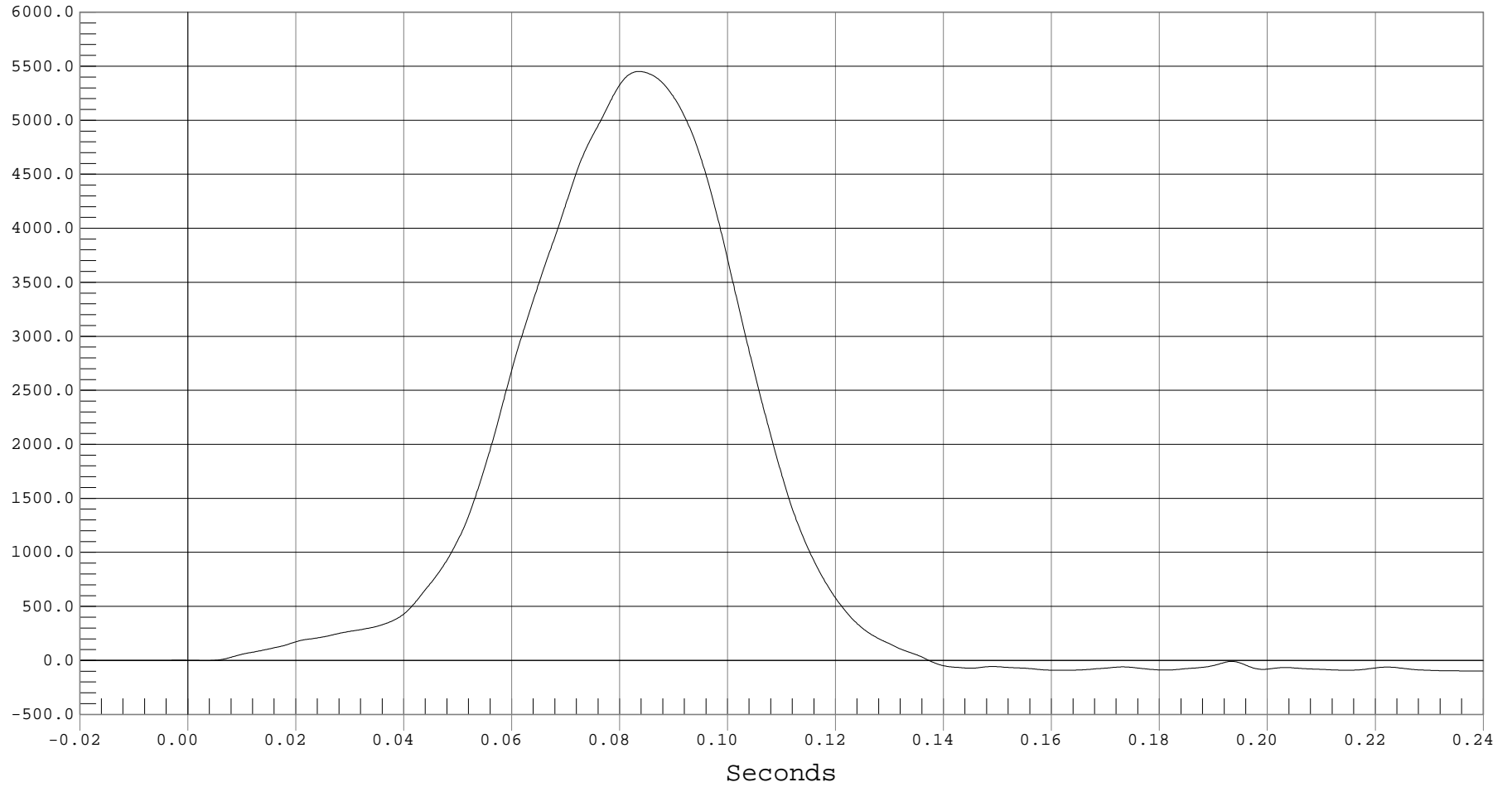
RRS TETHER FORCE

Test Desc.: 35 MPH NCAP FRONTAL IMPACT
Component: 2001 NISSAN MAXIMA (M15207)
Other Info:

Test Date: 03-21-01
Speed: 34.8 MPH, 56.0 KPH
Filter Class: 60

— 1 RRS TETHER FORCE, b01032FF.F63

Ymin = -98.39 @ 0.2377 Seconds, Ymax = 5451.88 @ 0.0835 Seconds



CHILD DUMMY CALIBRATION DATA TRACES AND TABLES

Hybrid III Calibration Data Sheet
3 Year Old
Head Drop Calibration

ATD Serial No.: 139

Test I.D.: D01061

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.7	PASS
Laboratory Relative Humidity	%	10 to 70	23	PASS
Peak Resultant Acceleration	G's	250.0 to 280.0	261.7	PASS
Peak Lateral Acceleration	G's	≤ ±15.0	1.7	PASS
Is Acceleration Unimodal?	Yes/No	< 10% Peak	Yes	PASS
Overall Test Results				PASS

 Laboratory Technician

 1/11/01
 Test Date

 Approved By



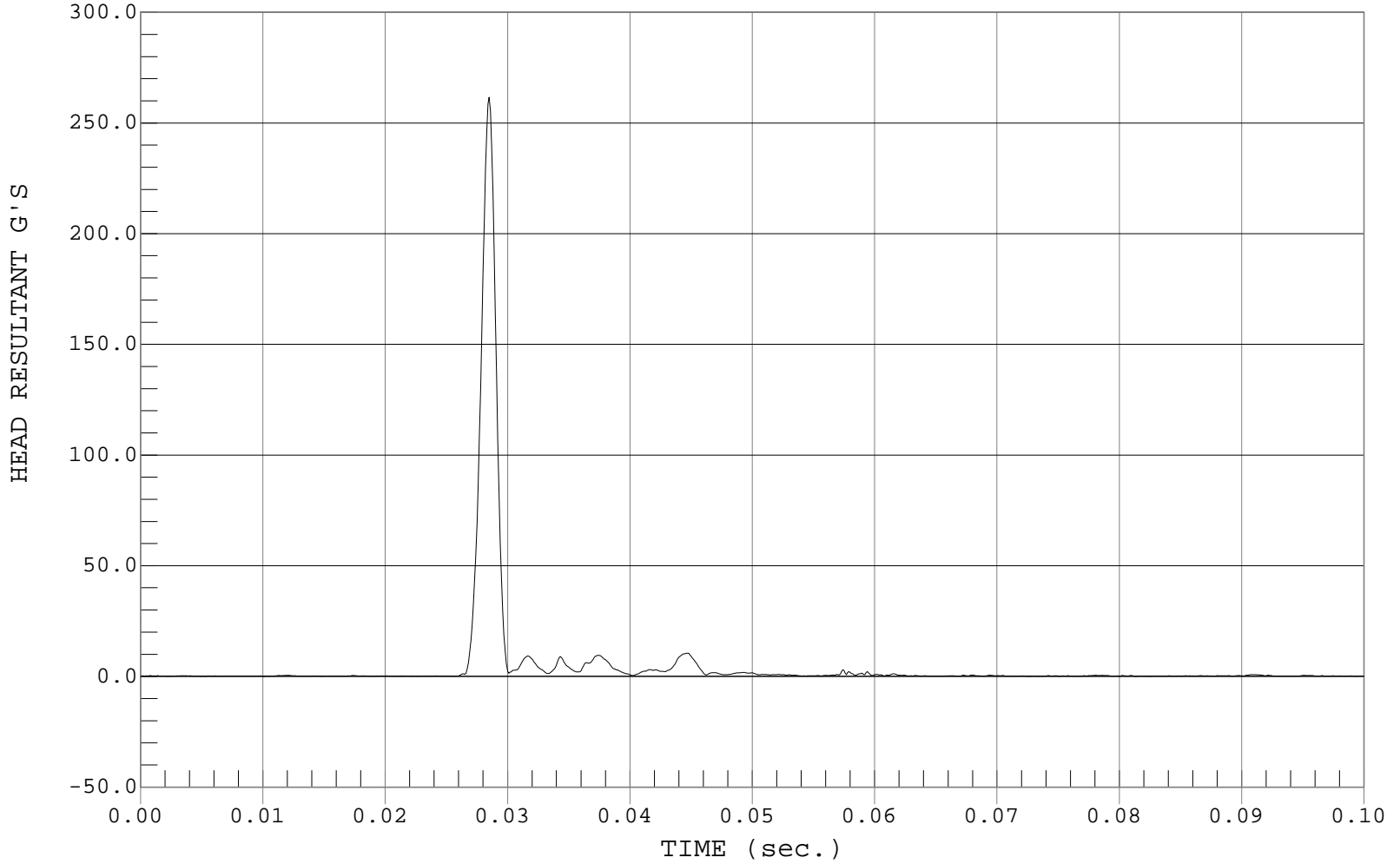
PEAK RESULTANT ACCELERATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #139

Test Date: 01-11-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

— 1 HEAD RESULTANT, D01061AV.A01

Ymin = .07 G'S @ 0.0022 sec., Ymax = 261.67 G'S @ 0.0285 sec.





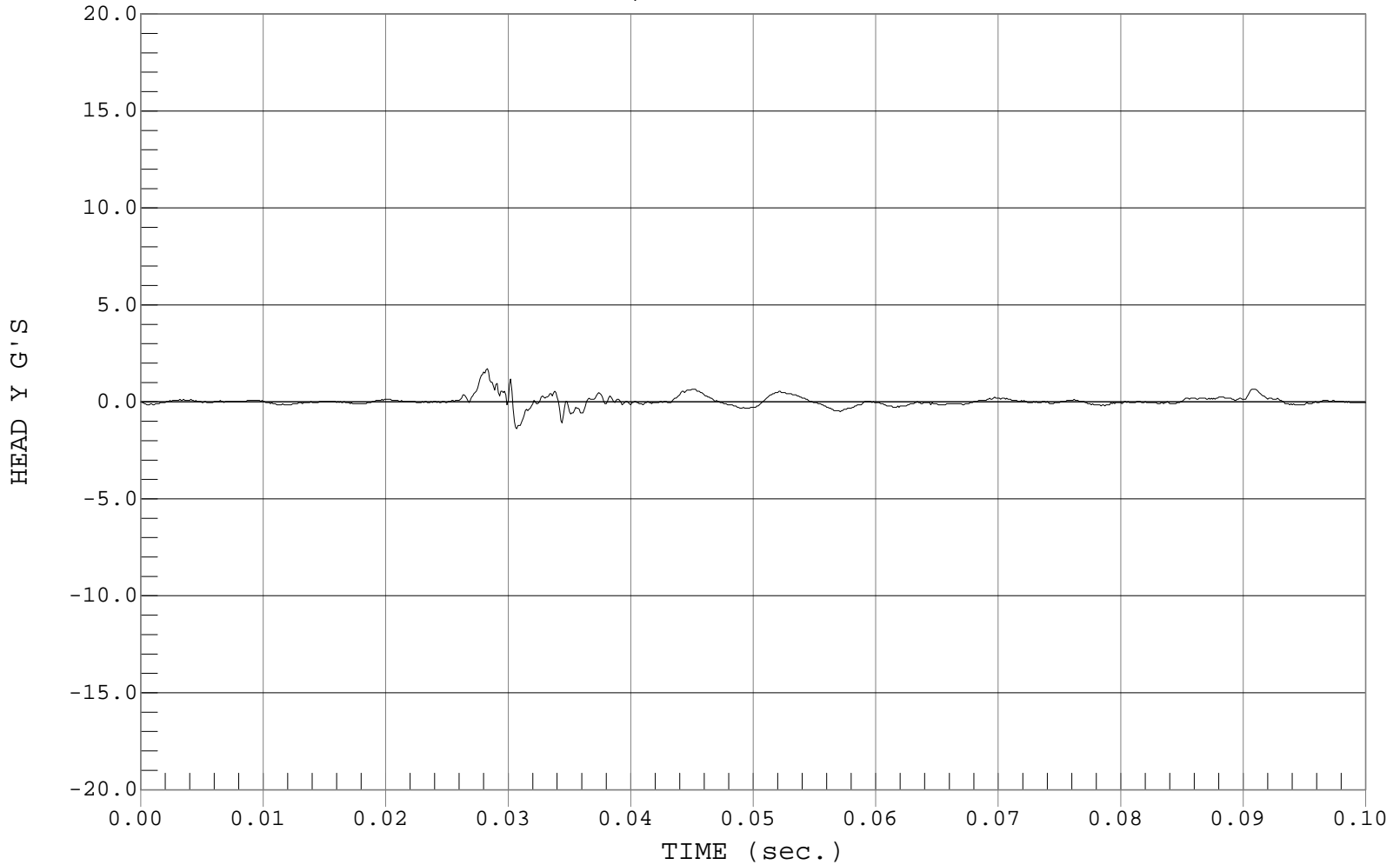
PEAK LATERAL ACCELARATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #139

Test Date: 01-11-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

— 1 HEAD Y, D01061AR.A02

Ymin = -1.38 G'S @ 0.0307 sec., Ymax = 1.71 G'S @ 0.0283 sec.



Hybrid III Calibration Data Sheet
3 Year Old
Thorax Impact Test

ATD Serial No.: 139

Test I.D.: D01064

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.7	PASS
Laboratory Relative Humidity	%	10 to 70	29	PASS
Probe Velocity	m/s	5.9 to 6.1	6.0	PASS
Peak Deflection	mm	32 to 38	33	PASS
Peak Resistive Force Within Deflection Corridor	kN	.68 to .81	.78	PASS
Internal Hysteresis	%	65 to 85	71	PASS
Max Force 12.5 mm – 32 mm Deflection	kN	Max .86	.83	PASS
Overall Test Results				PASS

Laboratory Technician

1/14/01

Test Date

Approved By



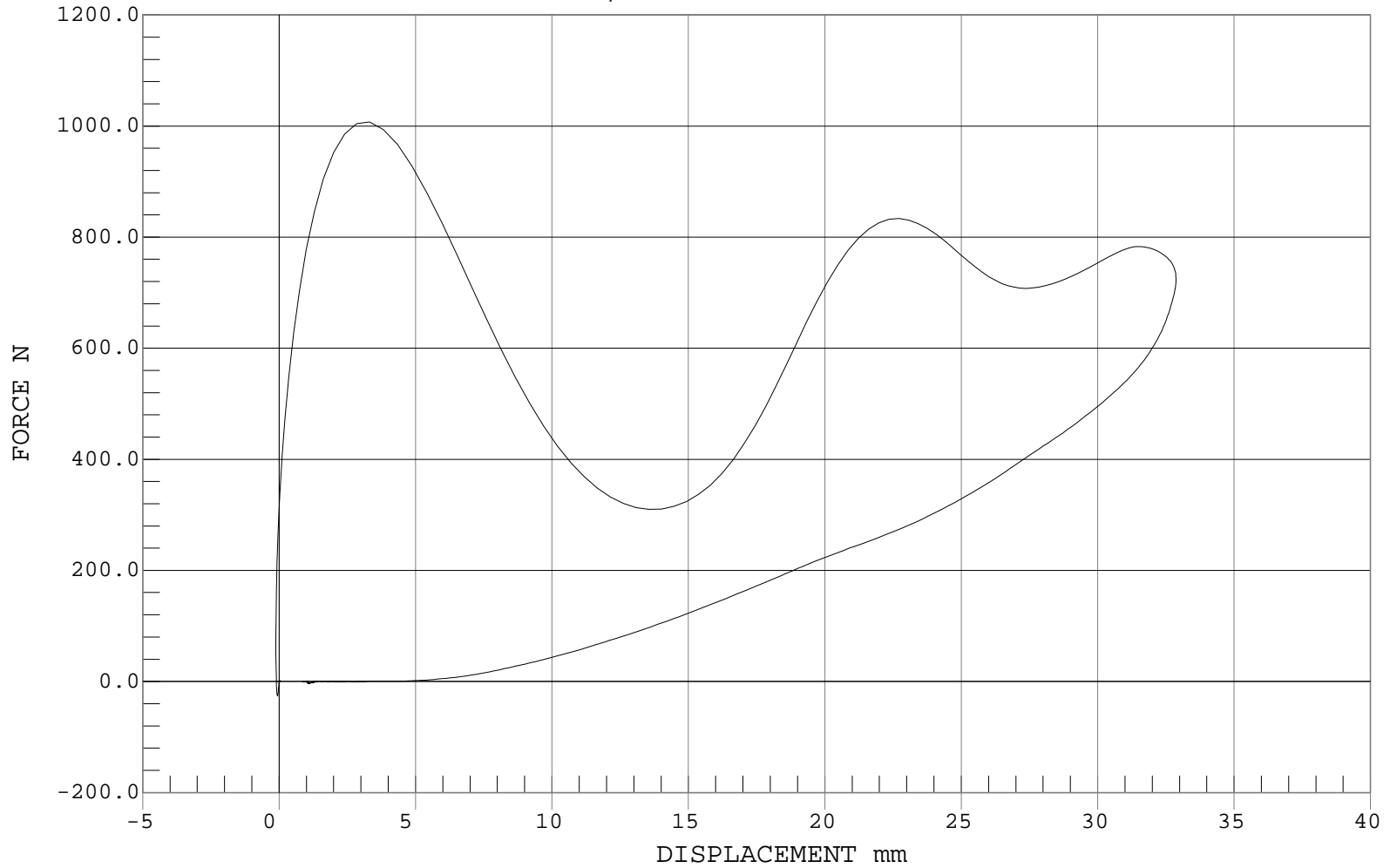
THORAX IMPACT

Test Desc.: Dummy Calibration - Chest Impact
Component: Dummy #139

Test Date: 01-14-01
Speed: 19.62 FT/SEC, 5.98 M/SEC

— 1 FORCE, D01064CH.FVD

Ymin = -25.96 N @ -0.0615 mm, Ymax = 1007.07 N @ 3.3156 mm



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Hybrid III Calibration Data Sheet
3 Year Old
Neck Flexion Test

ATD Serial No.: 139

Test I.D.: D01062

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.7	PASS
Laboratory Relative Humidity		%	10 to 70	23	PASS
Pendulum Velocity		m/s	5.4 to 5.6	5.5	PASS
Pendulum Deceleration	10 Msec.	m/s	2.0 to 2.7	2.4	PASS
	15 Msec.	m/s	3.0 to 4.0	3.5	PASS
	20 Msec.	m/s	4.0 to 5.1	4.7	PASS
"D" Plane Rotation	Maximum	Deg.	70.0 to 82.0	73.1	PASS
Moment About Occipital Condyle	Maximum	Nm	42.0 to 53.0	43.4	PASS
Positive Moment Decay Time To 10 Nm		Msec.	60.0 to 80.0	71.3	PASS
Overall Test Results					PASS

Laboratory Technician

1/11/01
Test Date

Approved By



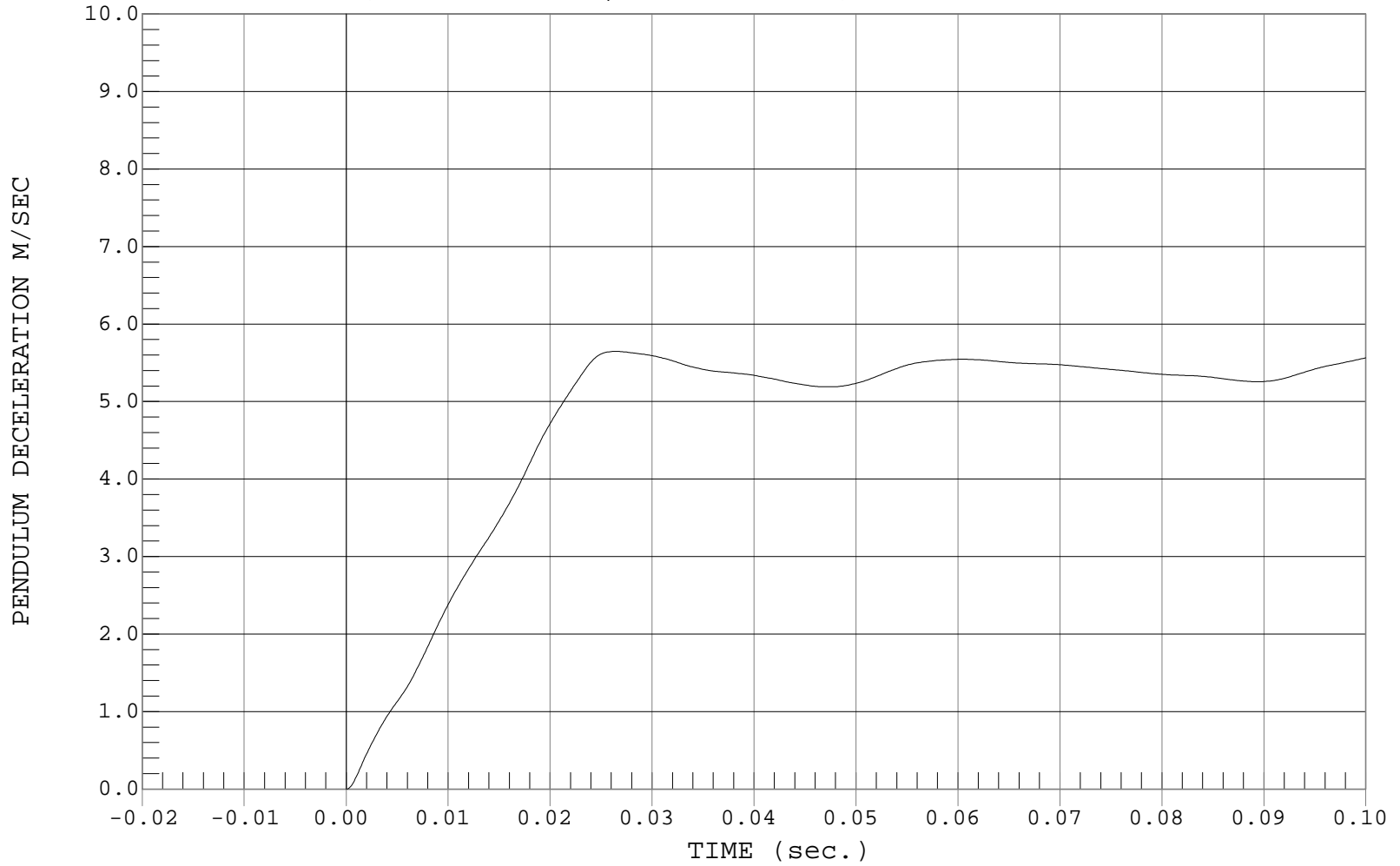
PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #139

Test Date: 01-11-01
Speed: 18.00 FT/SEC, 5.49 M/SEC

— 1 PENDULUM DECELERATION, D01062AI.A04

Ymin = 0 M/SEC @ 0.0001 sec, Ymax = 6.06 M/SEC @ 0.1886 sec





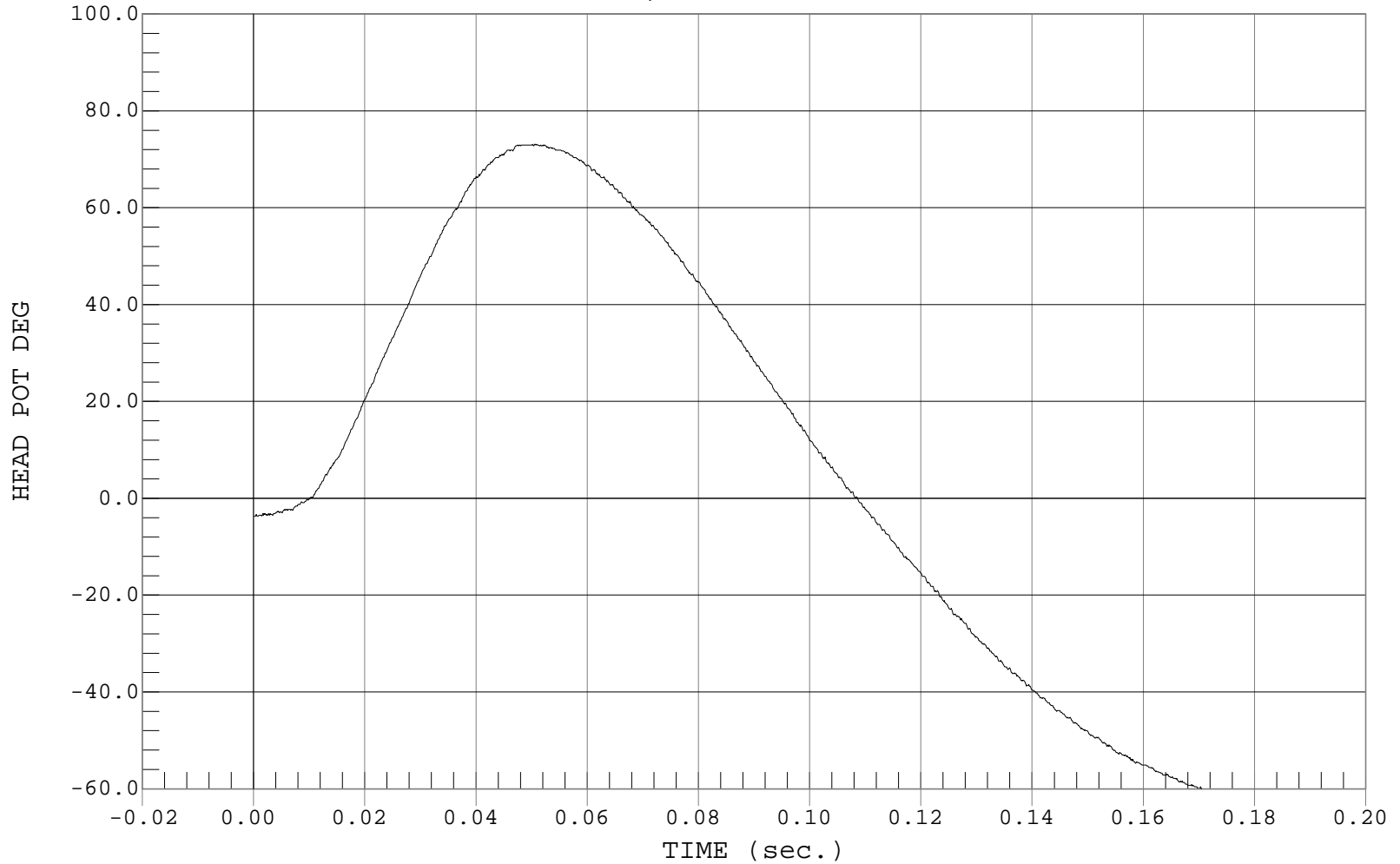
NECK ROTATION

Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #139

Test Date: 01-11-01
Speed: 18.00 FT/SEC, 5.49 M/SEC

— 1 HEAD POT, D01062DU.D05

Ymin = -62.89 DEG @ 0.1864 sec., Ymax = 73.12 DEG @ 0.0502 sec.





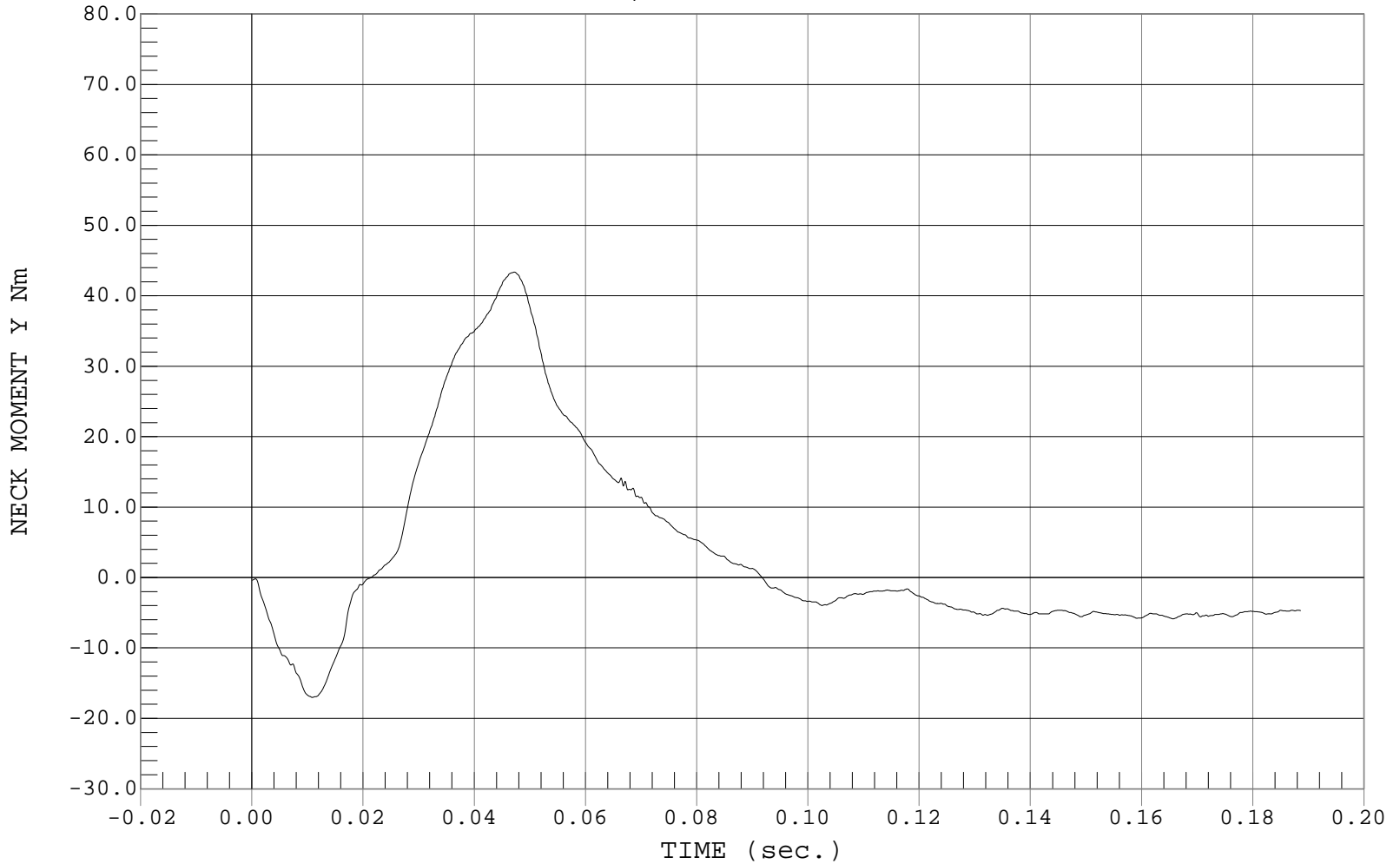
OCCIPITAL MOMENT

Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #139

Test Date: 01-11-01
Speed: 18.00 FT/SEC, 5.49 M/SEC

— 1 NECK MOMENT Y, D01062MF.M01

Ymin = -17.02 Nm @ 0.0109 sec., Ymax = 43.36 Nm @ 0.0472 sec.



Hybrid III Calibration Data Sheet

3 Year Old

Neck Extension Test

ATD Serial No.: 139

Test I.D.: D01063

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.5	PASS
Laboratory Relative Humidity		%	10 to 70	24	PASS
Pendulum Velocity		m/s	3.55 to 3.75	3.66	PASS
Pendulum Deceleration	6 Msec.	m/s	1.0 to 1.4	1.2	PASS
	10 Msec.	m/s	1.9 to 2.5	2.1	PASS
	14 Msec.	m/s	2.8 to 3.5	2.9	PASS
"D" Plane Rotation	Maximum	Deg.	83.0 to 93.0	88.5	PASS
Moment About Occipital Condyle	Minimum	Nm	-53.3 to -43.7	-46.4	PASS
Negative Moment Decay Time To -10Nm		Msec.	60.0 to 80.0	68.9	PASS
Overall Test Results					PASS

Laboratory Technician

1/11/01

Test Date

Approved By



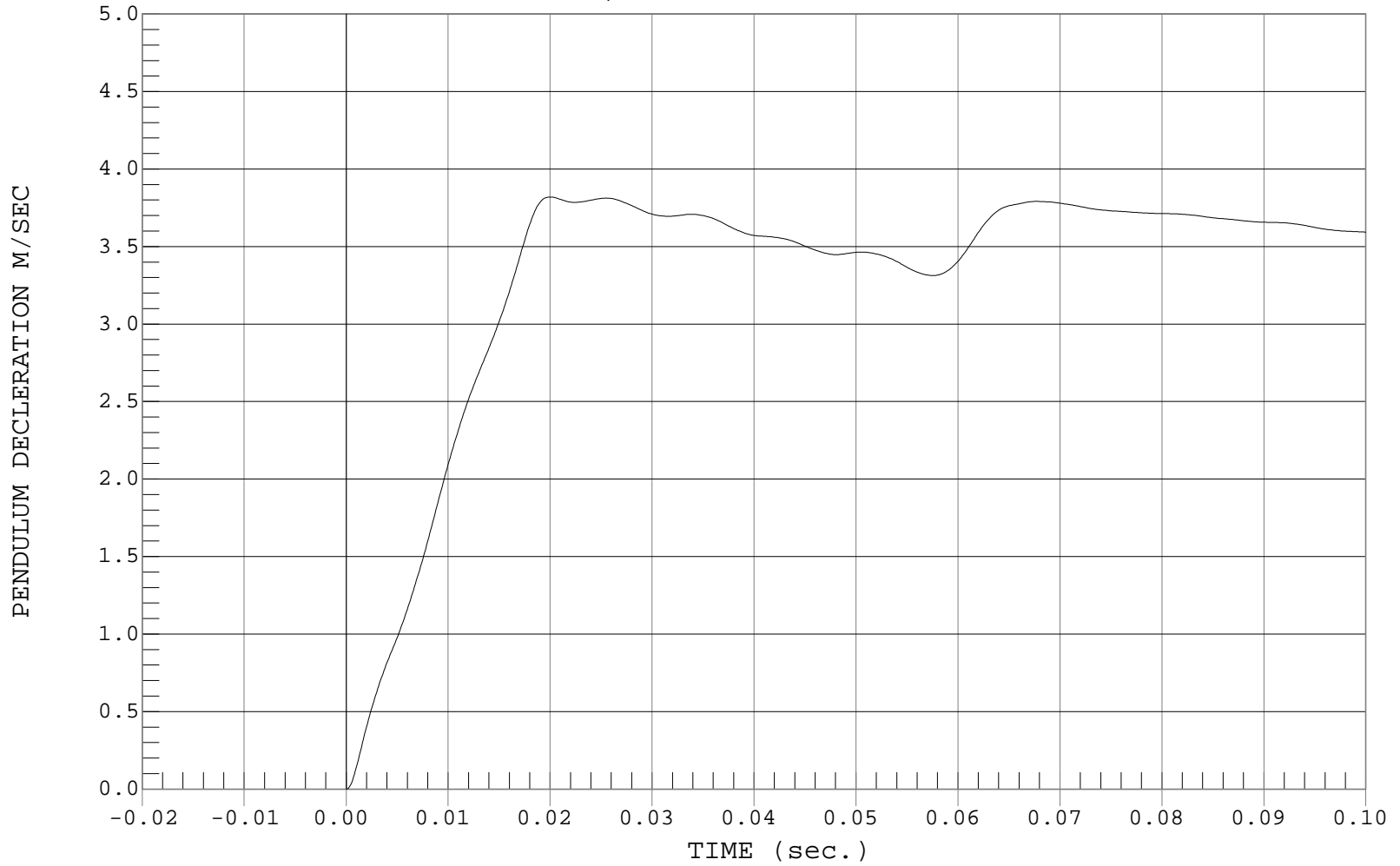
PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #139

Test Date: 01-11-01
Speed: 12.00 FT/SEC, 3.66 M/SEC

— 1 PENDULUM DECLERATION, D01063AI.A04

Ymin = 0 M/SEC @ 0.0001 sec, Ymax = 4 M/SEC @ 0.1886 sec





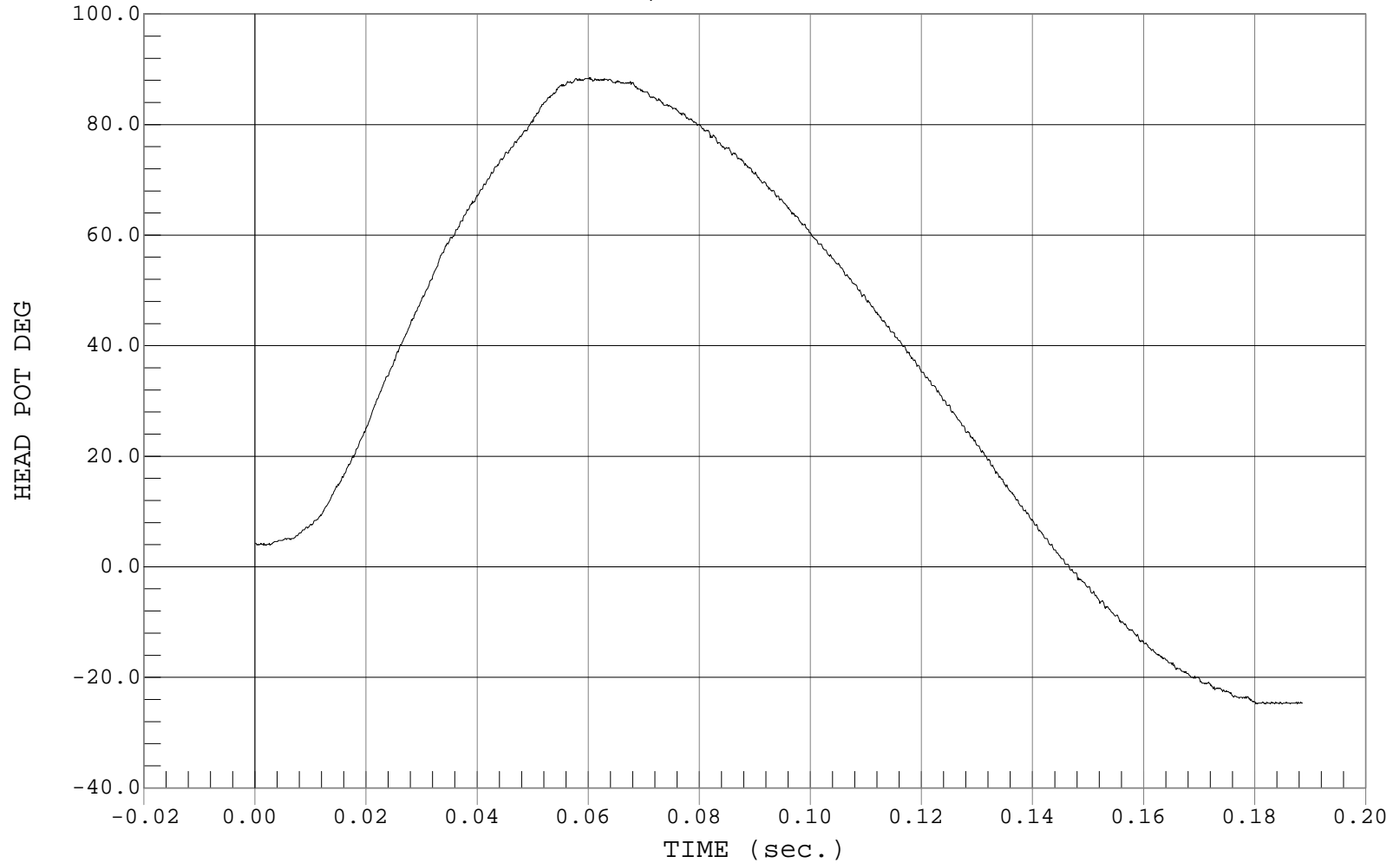
NECK ROTATION

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #139

Test Date: 01-11-01
Speed: 12.00 FT/SEC, 3.66 M/SEC

— 1 HEAD POT, D01063DU.D05

Ymin = -24.83 DEG @ 0.1805 sec., Ymax = 88.49 DEG @ 0.0602 sec.





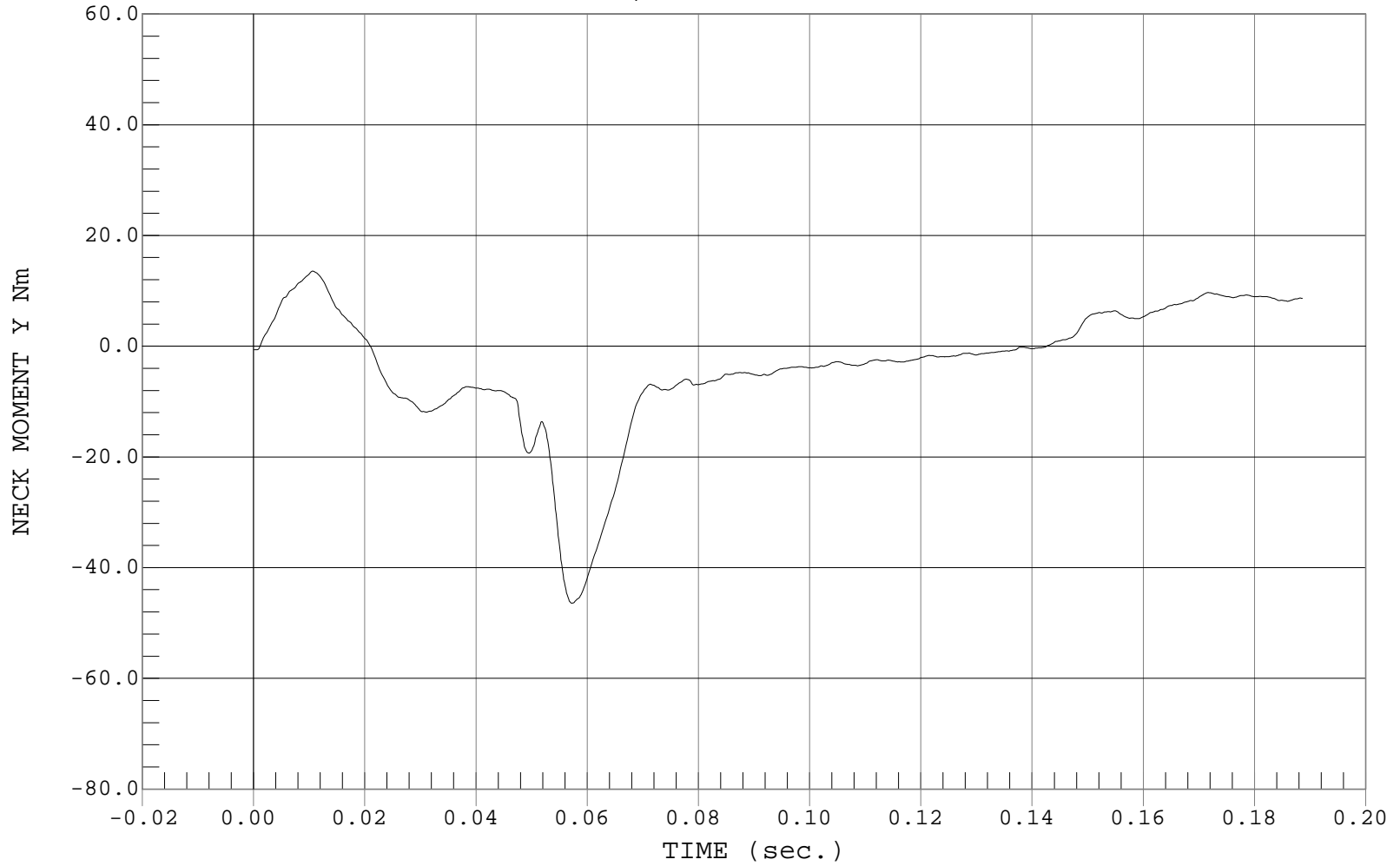
OCCIPITAL MOMENT

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #139

Test Date: 01-11-01
Speed: 12.00 FT/SEC, 3.66 M/SEC

— 1 NECK MOMENT Y, D01063MF.M01

Ymin = -46.42 Nm @ 0.0572 sec., Ymax = 13.55 Nm @ 0.0107 sec.



Hybrid III Calibration Data Sheet
3 Year Old
Torso Flexion Test

ATD Serial No.: 139

Test I.D.: D01065

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	°C	18.9 to 25.6	21.4	PASS
Relative Humidity	%	10 to 70	24	PASS
Force @ 45°	N	130 to 180	161	PASS
Initial Angle	Deg	0-15	10	PASS
Return Angle	Deg	0-10	2	PASS
Overall Test Results				PASS

Laboratory Technician

1/12/01
Test Date

Approved By

Hybrid III Calibration Data Sheet
3 Year Old
Head Drop Calibration

ATD Serial No.: 142C

Test I.D.: D01071

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	22.1	PASS
Laboratory Relative Humidity	%	10 to 70	23	PASS
Peak Resultant Acceleration	G's	250.0 to 280.0	267.9	PASS
Peak Lateral Acceleration	G's	≤±15.0	-4.0	PASS
Is Acceleration Unimodal?	Yes/No	<10% Peak	Yes	PASS
Overall Test Results				PASS

 Laboratory Technician

 1/11/01
 Test Date

 Approved By



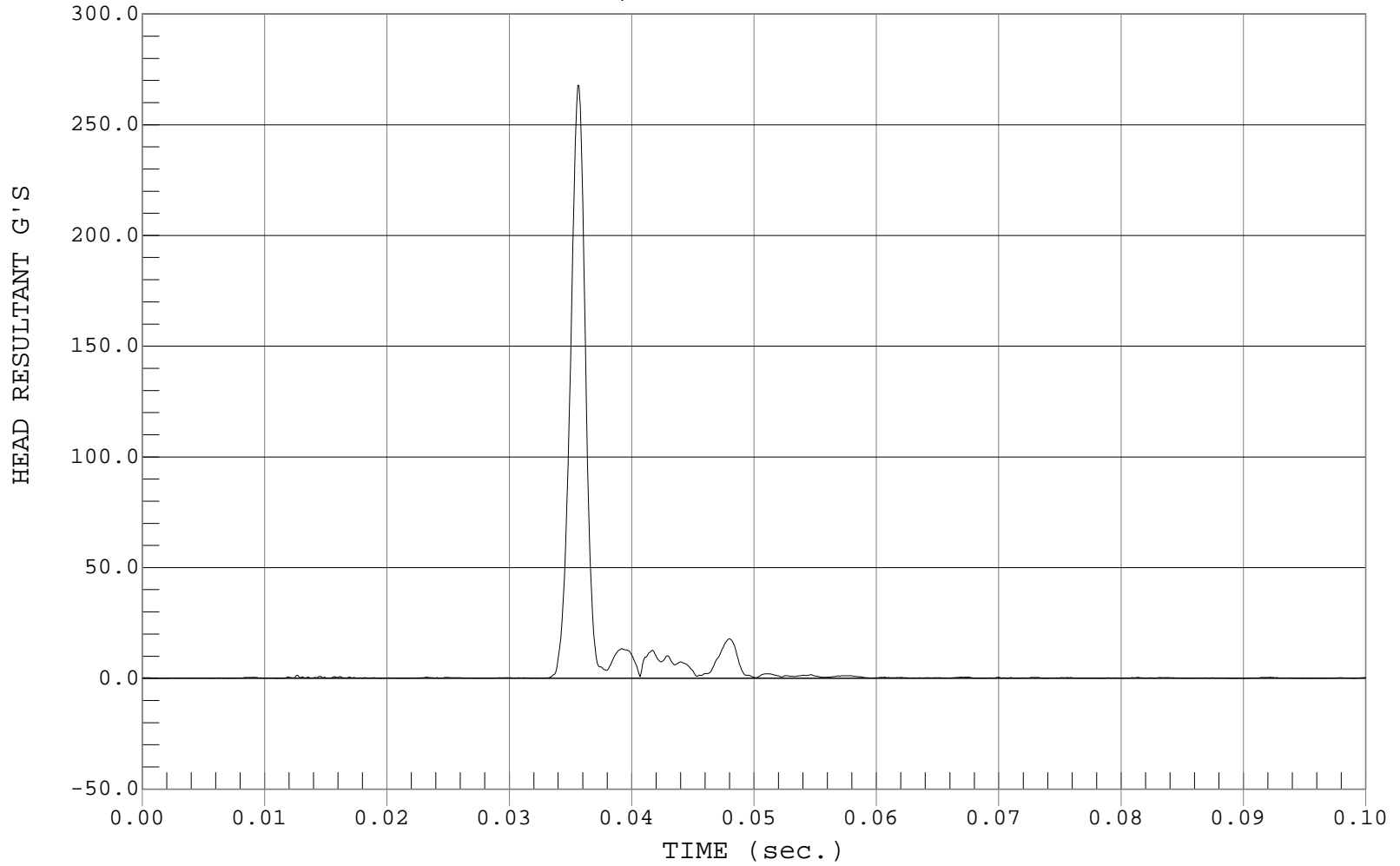
PEAK RESULTANT ACCELERATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #142C

Test Date: 01-11-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

— 1 HEAD RESULTANT, D01071AV.A01

Ymin = .07 G'S @ 0.0015 sec., Ymax = 267.89 G'S @ 0.0356 sec.





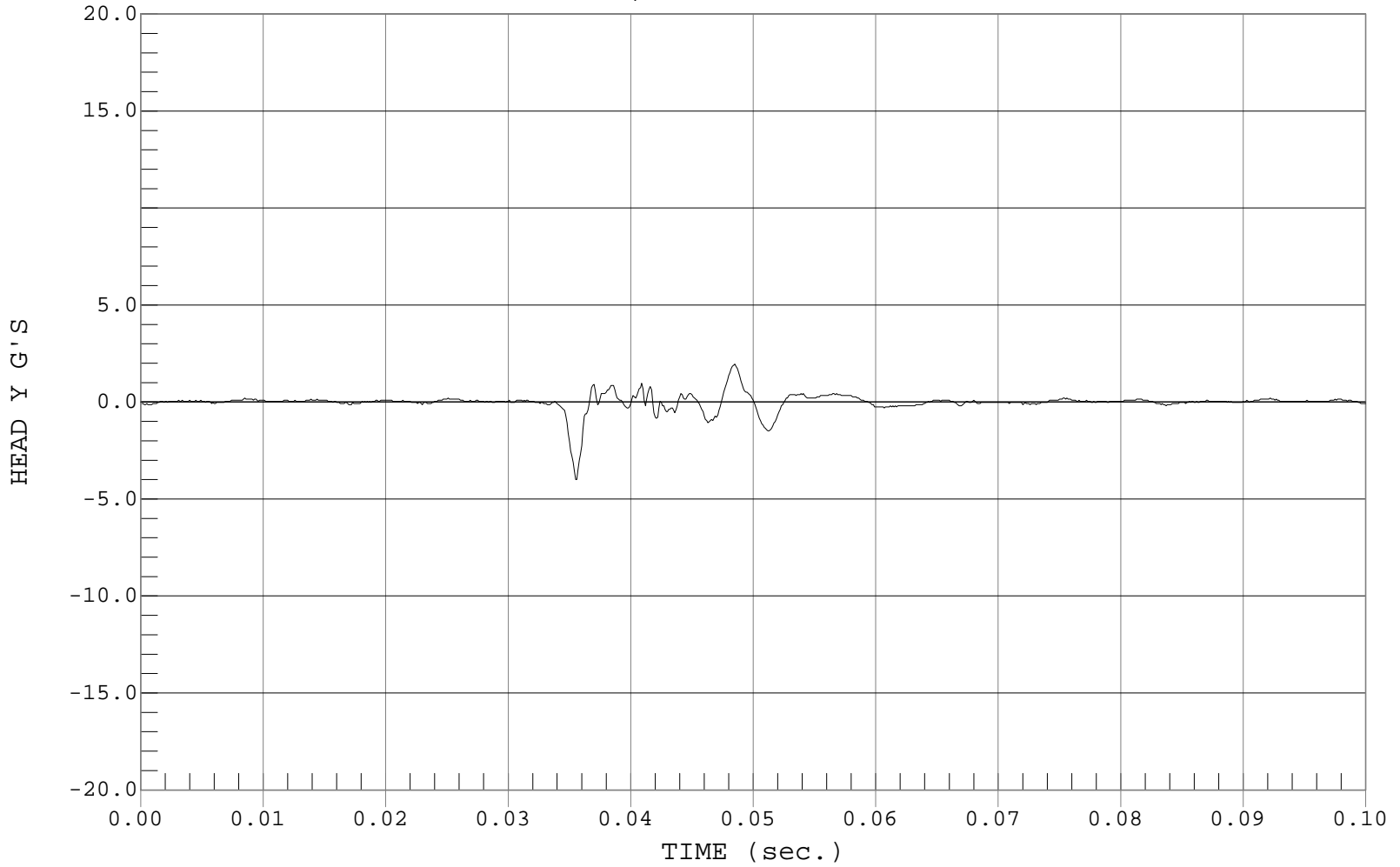
PEAK LATERAL ACCELARATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #142C

Test Date: 01-11-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

— 1 HEAD Y, D01071AR.A02

Ymin = -3.99 G'S @ 0.0355 sec., Ymax = 1.96 G'S @ 0.0485 sec.



Hybrid III Calibration Data Sheet
3 Year Old
Thorax Impact Test

ATD Serial No.: 142C

Test I.D.: D01074

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.7	PASS
Laboratory Relative Humidity	%	10 to 70	29	PASS
Probe Velocity	m/s	5.9 to 6.1	6.01	PASS
Peak Resistive Force Within Deflection Corridor	kN	.68 to .81	.80	PASS
Internal Hysteresis	%	65 to 85%	73	PASS
Max Force 12.5 mm to 32 mm Deflection	kN	Max .86	.88*	FAIL
Overall Test Results				FAIL

* TEST DOES NOT MEET SPECIFICATION

Laboratory Technician

1/14/01
Test Date

Approved By



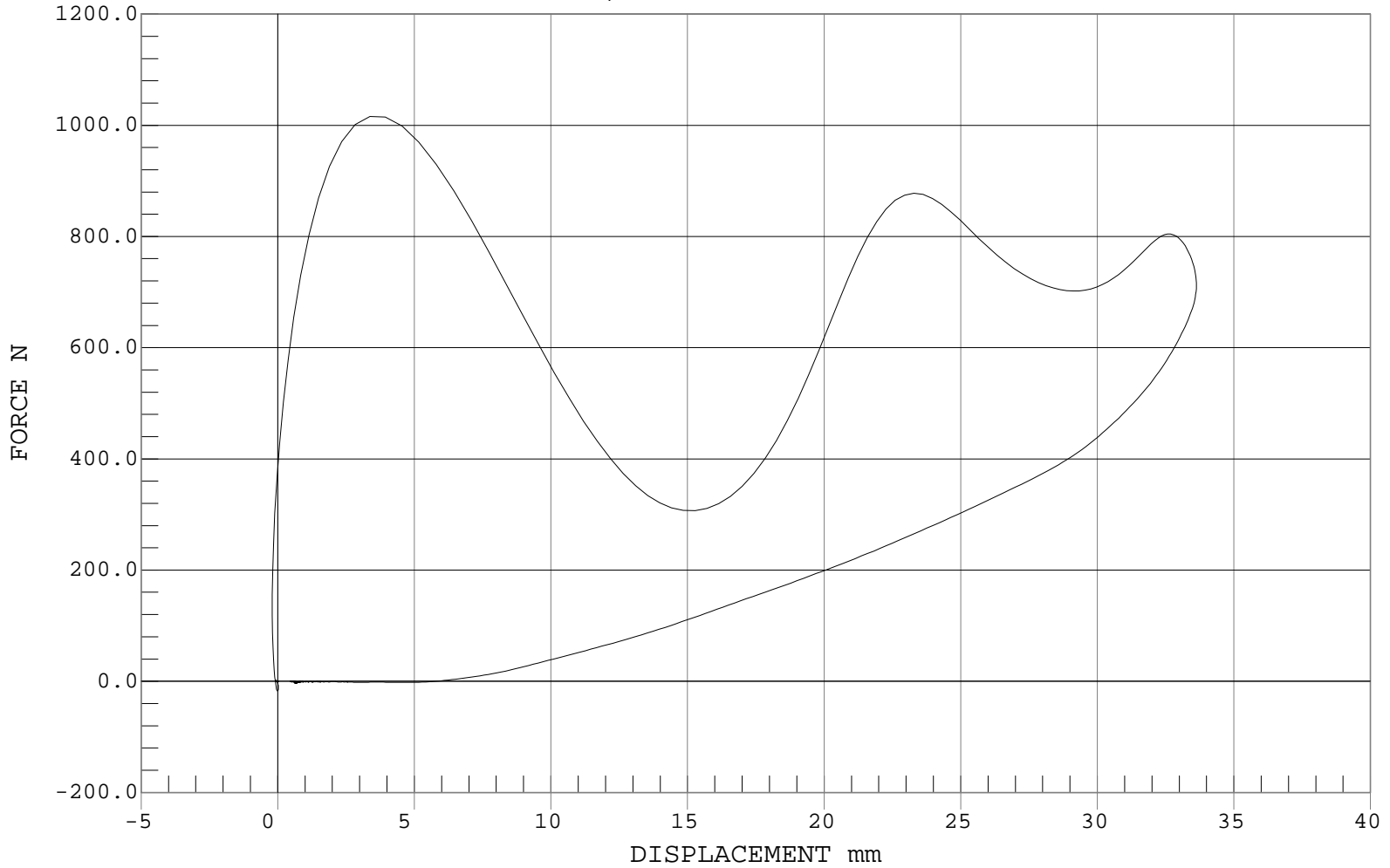
THORAX IMPACT

Test Desc.: Dummy Calibration - Chest Impact
Component: Dummy #142C

Test Date: 01-14-01
Speed: 19.72 FT/SEC, 6.01 M/SEC

— 1 FORCE, D01074CH.FVD

Ymin = -17.47 N @ -0.0122 mm, Ymax = 1015.88 N @ 3.3697 mm



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Hybrid III Calibration Data Sheet
3 Year Old
Neck Flexion Test

ATD Serial No.: 142C

Test I.D.: D01072

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.3	PASS
Laboratory Relative Humidity		%	10 to 70	22	PASS
Pendulum Velocity		m/s	5.4 to 5.6	5.5	PASS
Pendulum Deceleration	10 Msec.	m/s	2.0 to 2.7	2.4	PASS
	15 Msec.	m/s	3.0 to 4.0	3.4	PASS
	20 Msec.	m/s	4.0 to 5.1	4.6	PASS
"D" Plane Rotation	Maximum	Deg.	70.0 to 82.0	73.8	PASS
Moment About Occipital Condyle	Maximum	Nm	42.0 to 53.0	44.4	PASS
Positive Moment Decay Time to 10Nm		Msec.	60.0 to 80.0	73.4	PASS
				Overall Test Results	PASS

 Laboratory Technician

1/12/01
 Test Date

 Approved By



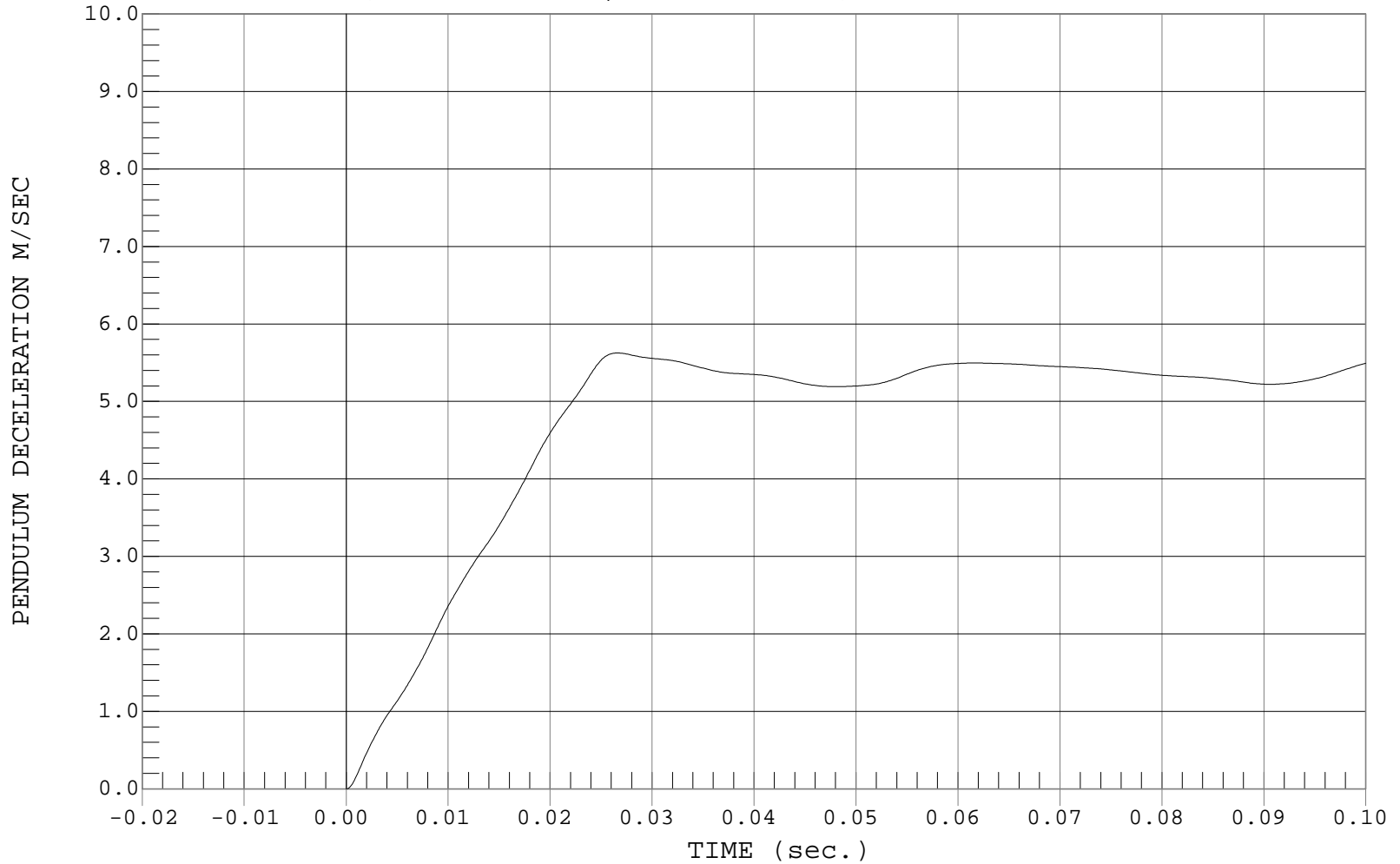
PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #142C

Test Date: 01-12-01
Speed: 18.00 FT/SEC, 5.49 M/SEC

— 1 PENDULUM DECELERATION, D01072AI.A04

Ymin = 0 M/SEC @ 0.0001 sec, Ymax = 5.97 M/SEC @ 0.1885 sec





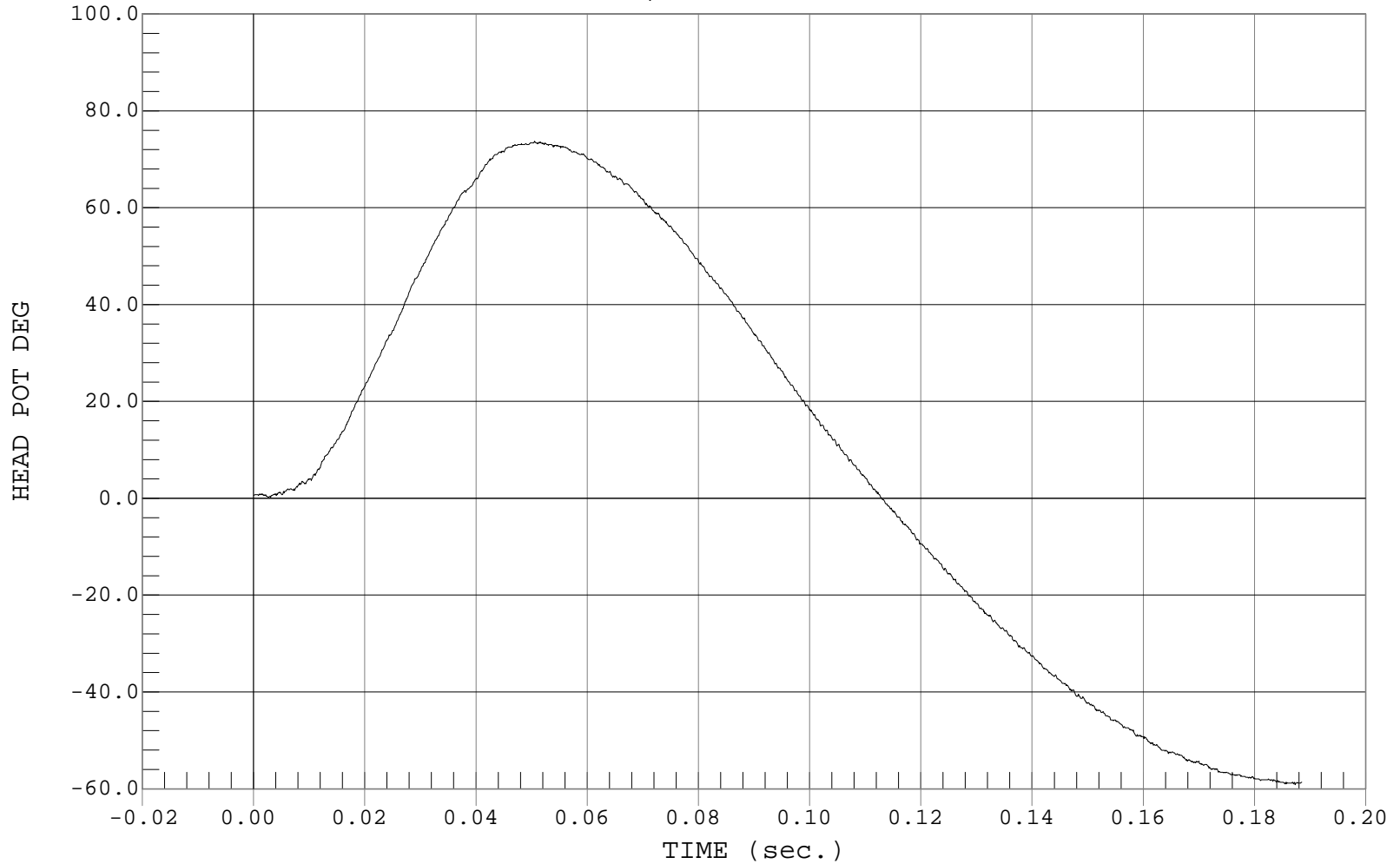
NECK ROTATION

Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #142C

Test Date: 01-12-01
Speed: 18.00 FT/SEC, 5.49 M/SEC

— 1 HEAD POT, D01072DU.D05

Ymin = -59.15 DEG @ 0.1873 sec., Ymax = 73.75 DEG @ 0.0505 sec.





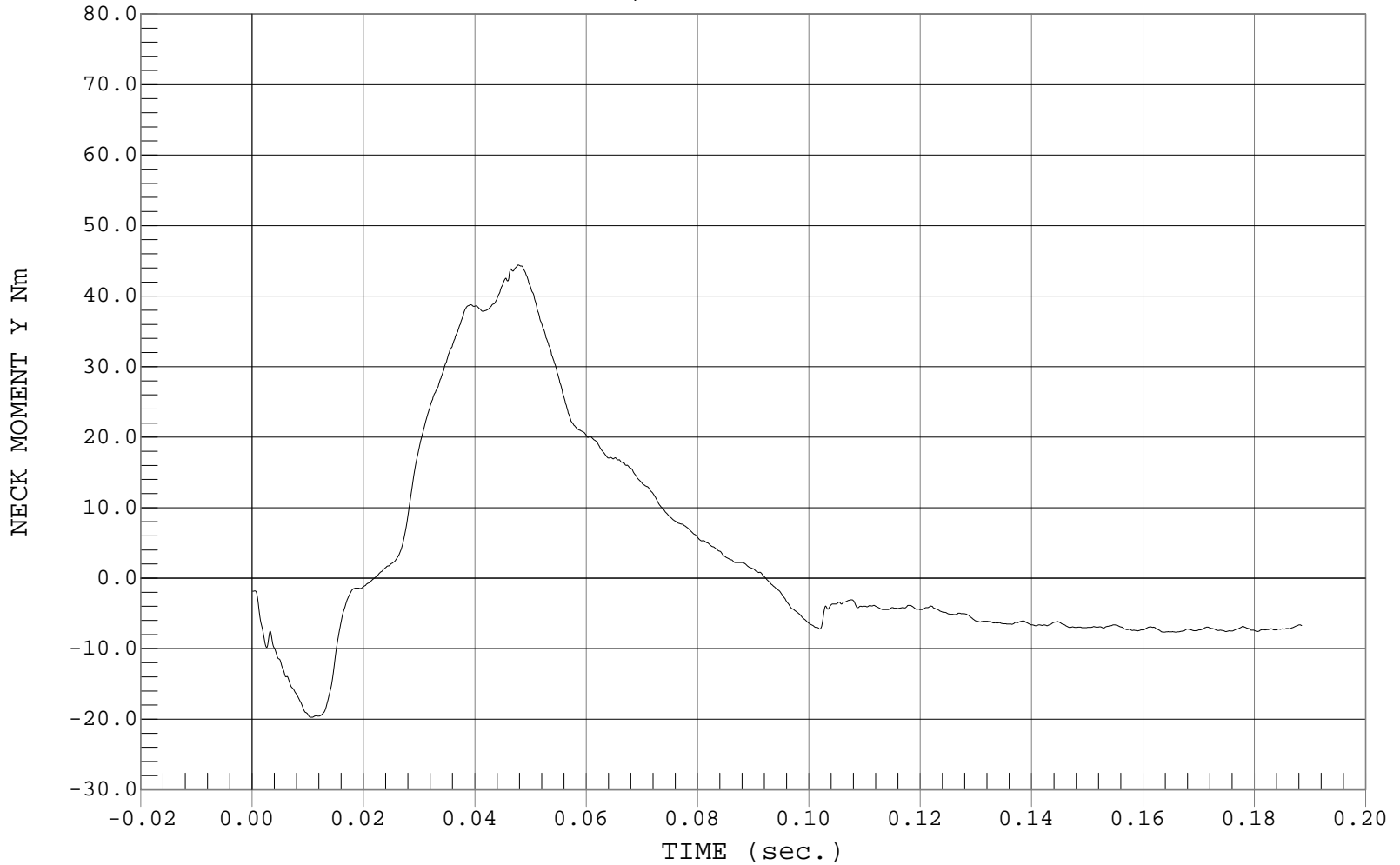
OCCIPITAL MOMENT

Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #142C

Test Date: 01-12-01
Speed: 18.00 FT/SEC, 5.49 M/SEC

— 1 NECK MOMENT Y, D01072MF.M01

Ymin = -19.72 Nm @ 0.0105 sec., Ymax = 44.41 Nm @ 0.0478 sec.



Hybrid III Calibration Data Sheet
3 Year Old
Neck Extension Test

ATD Serial No.: 142C

Test I.D.: D01073

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.3	PASS
Laboratory Relative Humidity		%	10 to 70	22	PASS
Pendulum Velocity		m/s	3.55 to 3.75	3.66	PASS
Pendulum Deceleration	6 Msec.	m/s	1.0 to 1.4	1.2	PASS
	10 Msec.	m/s	1.9 to 2.5	2.1	PASS
	14 Msec.	m/s	2.8 to 3.5	2.9	PASS
"D" Plane Rotation	Maximum	Deg.	83.0 to 93.0	88.8	PASS
Moment About Occipital Condyle	Minimum	Nm	-53.3 to -43.7	-46.3	PASS
Negative Moment Decay Time to -10 Nm		Msec.	60.0 to 80.0	68.8	PASS
Overall Test Results					PASS

Laboratory Technician

1/12/01
Test Date

Approved By



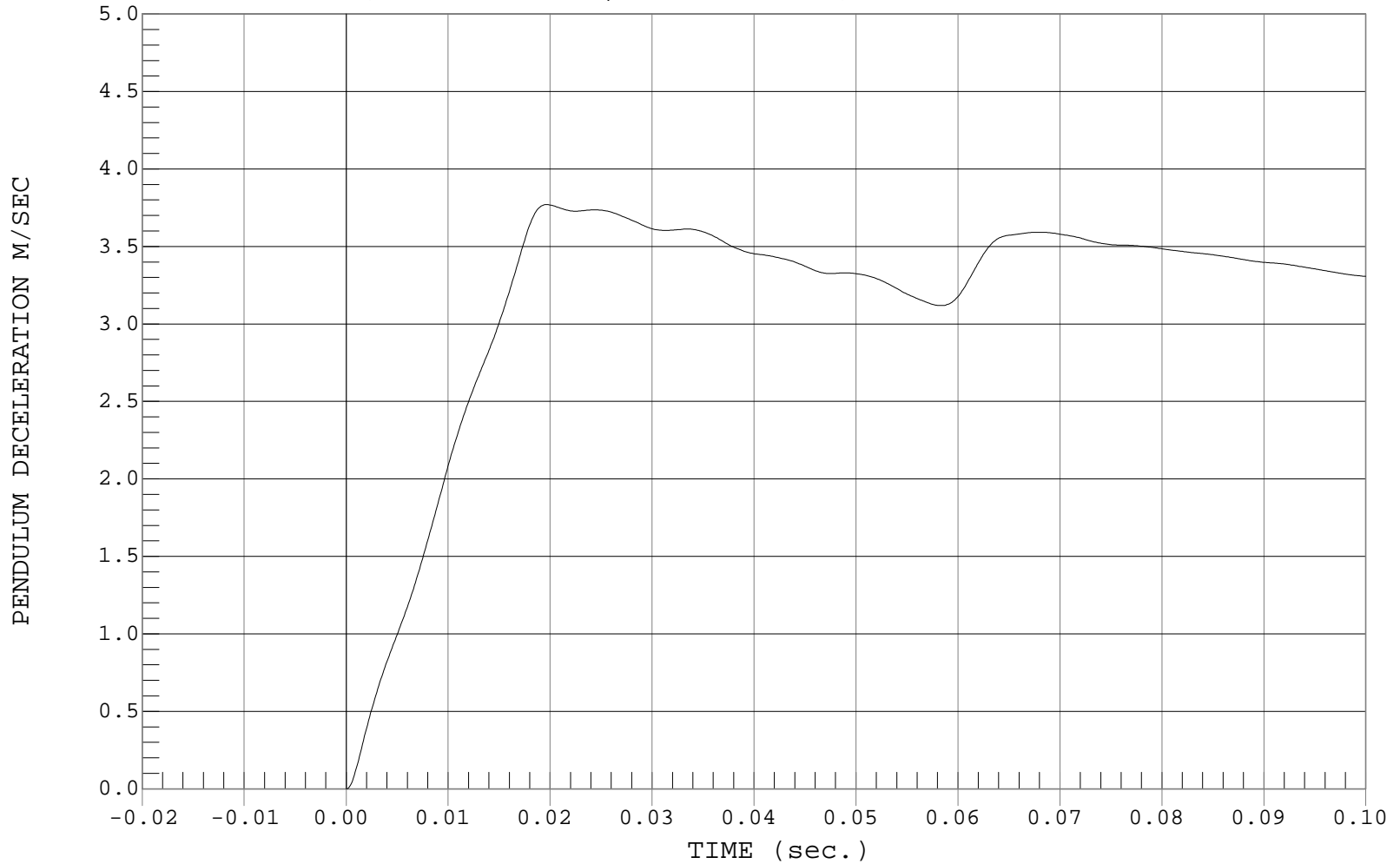
PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #142C

Test Date: 01-12-01
Speed: 12.00 FT/SEC, 3.66 M/SEC

— 1 PENDULUM DECELERATION, D01073AI.A04

Ymin = 0 M/SEC @ 0.0001 sec, Ymax = 3.77 M/SEC @ 0.0197 sec





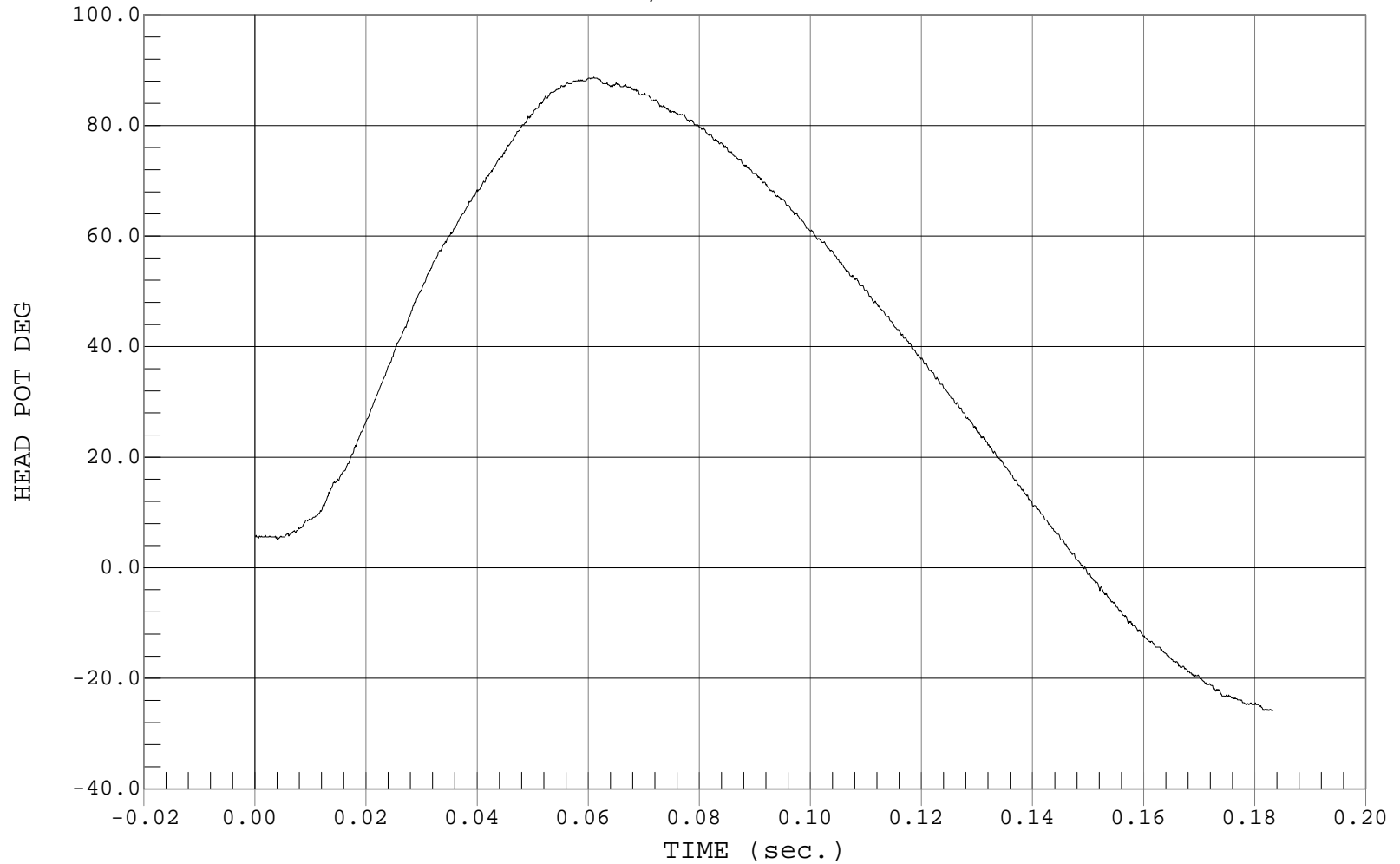
NECK ROTATION

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #142C

Test Date: 01-12-01
Speed: 12.00 FT/SEC, 3.66 M/SEC

— 1 HEAD POT, D01073DU.D05

Ymin = -25.79 DEG @ 0.1815 sec., Ymax = 88.75 DEG @ 0.0610 sec.



F-111



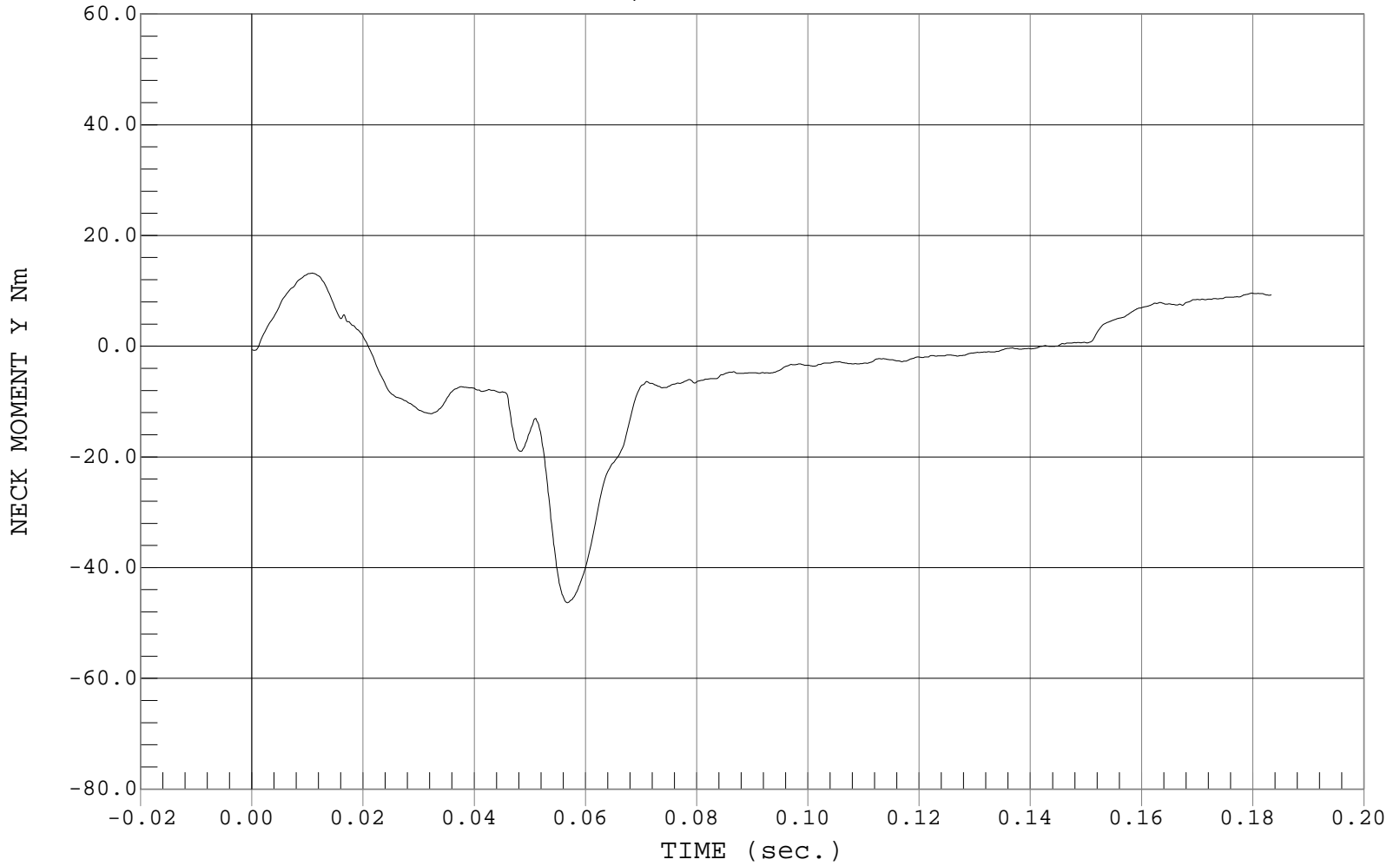
OCCIPITAL MOMENT

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #142C

Test Date: 01-12-01
Speed: 12.00 FT/SEC, 3.66 M/SEC

— 1 NECK MOMENT Y, D01073MF.M01

Ymin = -46.34 Nm @ 0.0567 sec., Ymax = 13.2 Nm @ 0.0109 sec.



Hybrid III Calibration Data Sheet
3 Year Old
Torso Flexion Test

ATD Serial No.: 142C

Test I.D.: D01075

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	°C	18.9 to 25.6	21.4	PASS
Relative Humidity	%	10 to 70	25	PASS
Force @ 45°	N	130 to 180	158	PASS
Initial Angle	Deg	0 to 15	6	PASS
Return Angle	Deg	0 to 10	2	PASS
Overall Test Results				PASS

 Laboratory Technician

 1/12/01
 Test Date

 Approved By

TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION

DUMMY AND LABORATORY INSTRUMENT CALIBRATION
INSTRUMENTS FOR CHILD DUMMY NO. 139

	INSTRUMENTS FOR DUMMY NO. <u>139</u>		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X	AJ7F6	Endevco	1/4/01
Head Y	J19843	Endevco	1/4/01
Head Z	J19244	Endevco	1/4/01
Chest X	AJ7F7	Endevco	1/4/01
Chest Y	AJ454	Endevco	1/4/01
Chest Z	J23757	Endevco	1/4/01
Pelvis X	AJ8C0	Endevco	1/4/01
Pelvis Y	J14189	Endevco	1/4/01
Pelvis Z	J23943	Endevco	1/4/01
Upper Neck Force X	114	FTSS	11/7/00
Upper Neck Force Y	114	FTSS	11/7/00
Upper Neck Force Z	114	FTSS	11/7/00
Upper Neck Moment X	114	FTSS	11/7/00
Upper Neck Moment Y	114	FTSS	11/7/00
Upper Neck Moment Z	114	FTSS	11/7/00
Lower Neck Force X	119	FTSS	11/8/00
Lower Neck Force Y	119	FTSS	11/8/00
Lower Neck Force Z	119	FTSS	11/8/00
Lower Neck Moment X	119	FTSS	11/8/00
Lower Neck Moment Y	119	FTSS	11/8/00
Lower Neck Moment Z	119	FTSS	11/8/00
Chest Deflection Gauge	139	Servo	1/8/01

DUMMY AND LABORATORY INSTRUMENT CALIBRATION
INSTRUMENTS FOR CHILD DUMMY NO. 142C

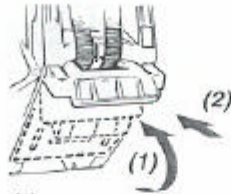
	INSTRUMENTS FOR DUMMY NO. <u>142C</u>		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X	J19927	Endevco	1/4/01
Head Y	J18736	Endevco	1/4/01
Head Z	J14674	Endevco	1/4/01
Chest X	J14235	Endevco	1/4/01
Chest Y	J18724	Endevco	1/4/01
Chest Z	AJ5R0	Endevco	1/4/01
Pelvis X	J19440	Endevco	1/4/01
Pelvis Y	AJ4W2	Endevco	1/4/01
Pelvis Z	J20093	Endevco	1/4/01
Upper Neck Force X	120	FTSS	11/6/00
Upper Neck Force Y	120	FTSS	11/6/00
Upper Neck Force Z	120	FTSS	11/6/00
Upper Neck Moment X	120	FTSS	11/6/00
Upper Neck Moment Y	120	FTSS	11/6/00
Upper Neck Moment Z	120	FTSS	11/6/00
Lower Neck Force X	121	FTSS	11/8/00
Lower Neck Force Y	121	FTSS	11/8/00
Lower Neck Force Z	121	FTSS	11/8/00
Lower Neck Moment X	121	FTSS	11/8/00
Lower Neck Moment Y	121	FTSS	11/8/00
Lower Neck Moment Z	121	FTSS	11/8/00
Chest Deflection Gauge	68.514	Servo	1/12/01

CHILD SEAT OWNER'S MANUAL RESTRAINT INSTRUCTIONS

FORWARD-FACING TODDLER - MORE THAN 20 LBS. (9 KG)

*** Car Seat MUST Be In Upright Position**

- Rotate recline stand to upright position (1).
- Push recline stand in (2).



Be sure stand locks into position.

! WARNING

When locking recline stand into upright position, make certain straps do not get pinched between recline stand and bottom of car seat, as this will prevent adjustment of harness system.

*** Car Seat Installation**

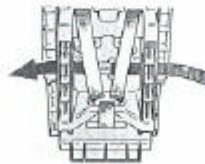
Never put car seat in a front vehicle seat unless recommended in vehicle owner's manual.

- 1 Place car seat forward-facing on vehicle seat firmly against vehicle seat back.

Belt here forward-facing



- 2 Thread vehicle seat belt through openings and behind harness straps as shown; then buckle vehicle seat belt.



- 3 Press down firmly in center of car seat to compress vehicle's cushion as you tighten vehicle lap belt.

HINT: Use your knee to press down in center of car seat.



FORWARD-FACING TODDLER - MORE THAN 20 LBS. (9 KG) continued

4 Test for secure installation:

- Pull front to back.
- Pull left to right.



If vehicle seat belt does not hold car seat securely, see "Vehicle Seat Belts" section or move car seat to another seating location and repeat steps 1 through 4.

*** Placing Child In Car Seat**

! WARNING

Harness straps **MUST** be in the top slots for forward-facing use to prevent serious injury or death.

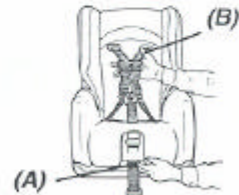
Do not use strap covers (shown), blankets, thick cushions, or padding under harness straps or child. They interfere with proper fit of harness straps and child could be ejected on impact.



- 1 Harness straps must be in the top slots. If straps must be moved, see "Changing Harness Strap Slots" section.

2 Loosen harness straps:

- Lift adjuster lever (A) to release harness straps.
- Pull harness straps (B).



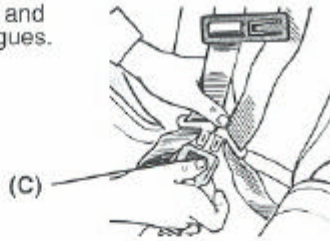
- 3 Unhook harness tie from harness strap on child's left.

Harness Tie



FORWARD-FACING TODDLER - MORE THAN 20 LBS. (9 KG) continued

- 4 Press red button (C) and remove harness tongues.



- 5 Place child in car seat. Child's bottom and back must be firmly against the car seat.



- 6 Place child's arms through harness straps and insert both tongues into buckle.

Make sure harness straps are not twisted.



- 7 Pull up on tongues to be sure buckle is locked.

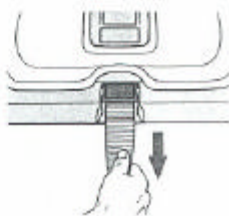


- 8 From back of harness tie, slide harness strap over harness tie tab.

Harness Tie Tab



- 9 Pull lower belt in front of car seat to tighten harness straps.



FORWARD-FACING TODDLER - MORE THAN 20 LBS. (9 KG) continued

⚠ WARNING

Do not use harness straps that are loose or unbuckled. Harness straps must be snug and positioned over shoulders or child could be seriously injured.

- 10 Position harness tie at mid chest or 3 inches (8 cm) below child's chin.

IMPORTANT: The harness tie keeps the harness straps close and snug on child's shoulders to help prevent ejection.



- 11 Harness straps must be snug against child with just enough room for you to insert one finger between each harness strap and child's chest.

NOTE: Forward-facing - Must use top slots only.



- 12 Be sure crotch strap is in the opening *closest* to but not under child. For children over 30 lbs. (13.6 kg) move the crotch strap to the forward opening. This will give a larger child more room and comfort. See "Changing Crotch Strap Slots" section.

VEHICLE SEAT BELTS

Identify your vehicle seat belt. Car seat must be used with a vehicle seat belt that will stay tight while driving. If vehicle does not have a lap belt that will stay tight, see dealer.

NOTE: #1 The locking latch plate on some seat belts may slip and loosen after being buckled through car seat. If this happens, flip latch plate over as shown and re-buckle. Test installation again to see if vehicle belt stays tight. If not, move car seat to another seating position.



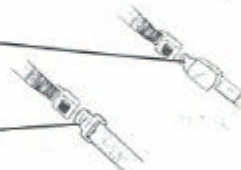
*** Combination Lap/Shoulder Belt with Locking Latch Plate**

- Install car seat per instructions. See **NOTE #1** above.



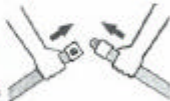
*** Lap-Only Belts**

- Manually Adjustable Lap-Only Belts. See **NOTE #1** above.
- Retractor Lap-Only Belts.



To determine if a lap-only belt can be used, follow the steps below:

1) Pull on both halves of vehicle seat belts.



- If one belt gets longer, see step 2.
- If neither belt gets longer, install car seat according to instructions.

2) Pull end that gets longer all the way out, allow belt to retract 4 - 6 inches (10 - 15 cm) and pull again.

- If belt gets longer, do not install car seat. Check vehicle owner's manual or contact auto dealer for options.
- If belt does not get longer, install car seat per instructions on page 9 or page 13 substituting the instruction below for those in steps 3.
 - Pull lap belt that moves all the way out and thread through belt slots. Buckle lap belt. Release lap belt and remove slack in lap belt by pushing lap belt that moves into the retractor while pushing down on car seat to compress vehicle cushion.

19

VEHICLE SEAT BELTS continued

*** Continuous Loop Combination Lap/Shoulder Belt with Sliding Latch Plate**

Pull on latch plate. If belt slides freely through latch plate, a locking clip **must** be used (stored on top back of car seat).



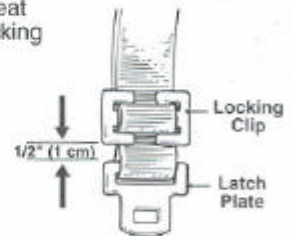
! WARNING

Failure to use locking clip where required will result in car seat not being securely held in place and child being seriously injured or killed in a sudden stop or accident.

- 1 Place car seat in seating position to be used.
- 2 Thread vehicle seat belt through openings in car seat and tighten lap belt.
- 3 With vehicle lap belt properly tightened, hold the combination lap/shoulder belts together just behind the sliding latch plate, and unbuckle belt.



- 4 Continue holding vehicle seat belts together and slide locking clip on vehicle seat belt approximately 1/2 inch (1 cm) away from latch plate.



- 5 Rebuckle vehicle seat belt. **HINT:** It may be necessary to press car seat into vehicle cushion in order to rebuckle.

Test installation again to see if car seat is secure. If it is not, remove locking clip, adjust vehicle seat belt and re-attach locking clip.

! WARNING

Remove locking clip from vehicle seat belt when not being used with a car seat. The vehicle seat belt will not properly restrain an adult or child and serious injury could occur. Do not use locking clip as a vehicle seat belt shortener.

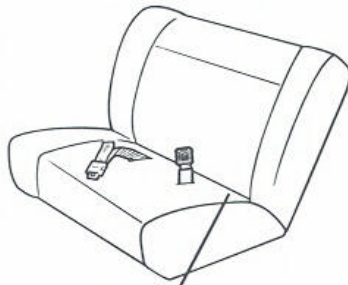
20

VEHICLE SEAT BELTS continued

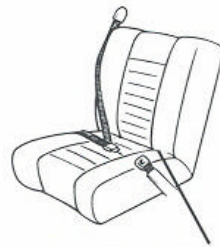
*** Belts Anchored Forward of Seat Crease**

Belts anchored forward of seat crease (as shown below) may not securely hold car seat. Check vehicle owner's manual or auto dealer.

- Do not use unless approved by vehicle manufacturer.
- After installation, check that car seat stays securely fastened.



Seat Crease



Seat Crease

*** Do Not Use These Vehicle Seat Belts**

The following vehicle seat belts **MUST NOT** be used. They will not restrain a car seat and child will be seriously injured or killed.

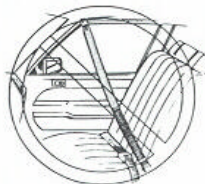
Lap/Shoulder Belt with Sewn Latch Plate

Do not use. This type of vehicle seat belt stays loose while driving. In a sudden stop or accident it will lock, but car seat may move forward and cause serious injury. See your vehicle dealer for options.



Automatic (Passive) Seat Belts

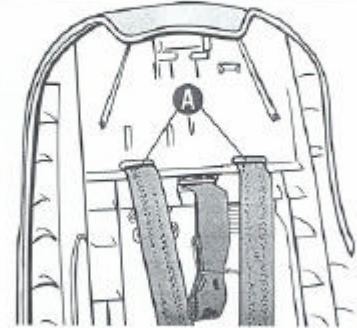
Do not use this type of vehicle seat belt to anchor your car seat.



FORWARD FACING TODDLER USE

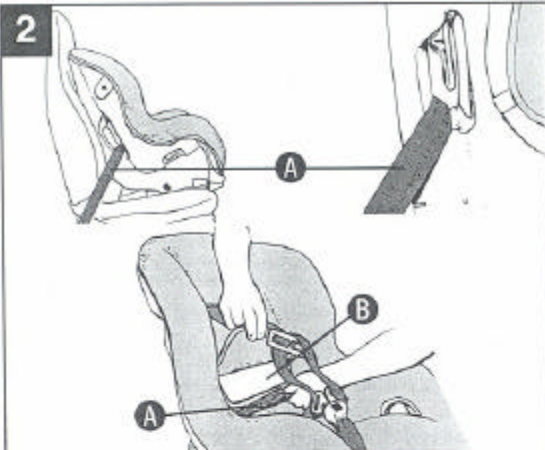
Weight: 20 to 40 pounds, (9 to 18 kg)
Maximum Height: 40 inches (101 cm) or if child's ears are at top of seat back.

1

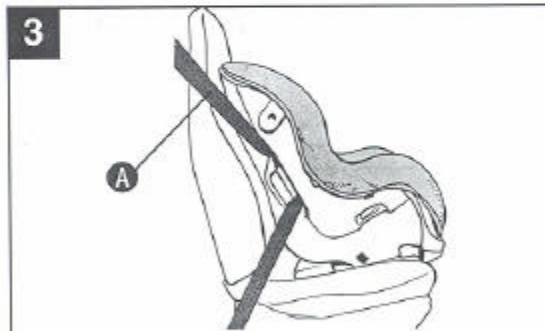


Adjust the child restraint to either the upright or recline position and **place the harness straps through the upper slots.**

EVENFLO HORIZON V



Put the child restraint in your vehicle forward facing and buckle the vehicle seat belt **A** as shown. Use the "Belt Trac"[™] **B** for easy access and seat belt routing.



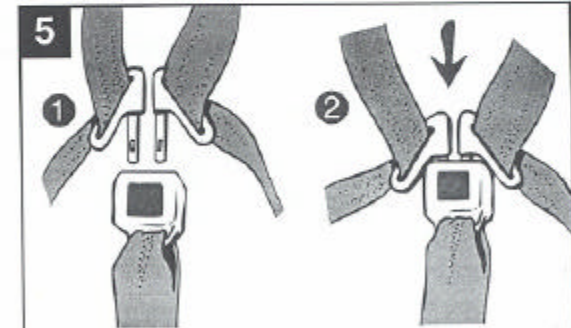
If your vehicle seat belt has a shoulder belt **A** it must be located as shown.

Note: See instructions under "Using a Metal Locking Clip", when using a lap/shoulder belt **A** combination.



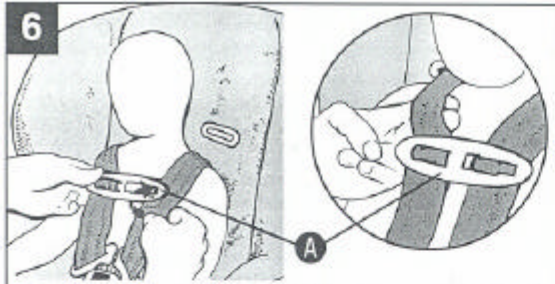
It is very important to put the vehicle seat belt in the right place. If the belt is put anywhere else, the child restraint will not protect your child in a crash. The seat belt must be as tight as possible. Using your knee, put your full weight on the seat as you tighten the belt.

If you can pull the top of the child restraint more than one inch (25 mm) forward or 1 to 2 inches (25 mm - 50 mm) to the side, the belt is not tight enough. Tighten again, try a different seating position or see section titled "Tether Strap".



Place child in seat, place straps over shoulders and snap each of two tongues into crotch strap buckle as shown.

Check that the buckle has engaged by pulling up on the harness straps. Tighten the harness by pulling the strap at the front of the seat.



Position the harness tie on baby's chest at armpit level. The vehicle seat belt must be tight and the child restraint must be firmly secured to the vehicle seat. The child restraint harness must be fastened and tight with no more than two fingers-width of slack between the strap and child. The harness tie **A** must be on and properly positioned at armpit level.

TETHER STRAP (Factory installed)

IMPORTANT INFORMATION ABOUT TETHER STRAP. PLEASE READ CAREFULLY.

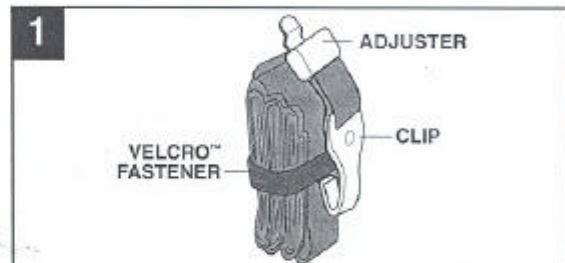
Failure to properly follow these instructions could result in serious injury to your child or to other occupants in the vehicle.

- Your child restraint has been manufactured with a top tether strap to comply with new Federal regulations.



Use the tether strap only when using the child restraint in the forward-facing position. A properly used top tether strap may help limit movement of the child's head in a crash, thereby reducing the risk of injury. A top tether strap must always be used with a vehicle whose lap belts only lock during a sudden stop or crash or seat belts with buckles located forward of the seat bight **A**.

- The tether strap is to be used in addition to the vehicle seat belt system.
- The length of the tether strap has been developed using federal regulations. As a result, depending on your model of the vehicle, you may experience several inches or more of excess strap after connecting the tether strap to the anchor. Because you may wish to install the child restraint in more than one particular model of vehicle, **DO NOT CUT** off the excess length from the tether strap. If you do, you may not have enough length to attach the tether strap in a different model vehicle.



Excess tether strap can be a hazard to the child or others if not properly stored. Tightly fold or roll the excess tether strap and secure with Velcro™ fastener. When the tether strap is not in use, keep strap tightly rolled or folded with Velcro™ fastener. Keep tether clip and strap as close to the tether attachment point as possible.

- Strap should be wound as tight as possible to limit its size and limit its ability to swing around the child restraint in the event of a crash. This will help prevent the clip from becoming a projectile in the event of a crash or becoming a strangulation hazard.

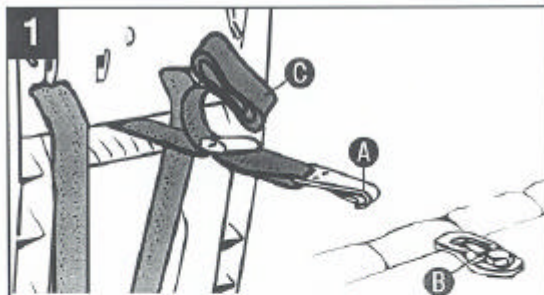
Failure to properly store an unused tether could result in serious injury to the child or other occupants in the vehicle.

Please check the vehicle owner's manual to determine if an attachment point for a top tether has already been installed by the vehicle manufacturer. If your vehicle does not have an anchor bracket for attachment of the top tether strap to the vehicle, you must contact an authorized dealer of the vehicle manufacturer.

TOP TETHER STRAP INSTALLATION

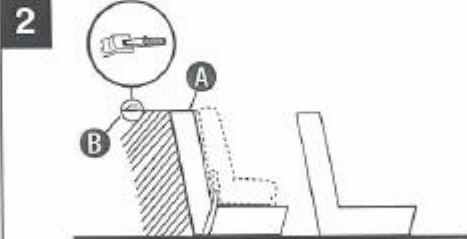
- Install the child restraint per the instructions **FORWARD-FACING USE** in this booklet.
- See your vehicle owner's manual for location of the anchor bracket for attachment of the top tether strap to the vehicle. If there is no anchor bracket, please contact an authorized dealer of the vehicle manufacturer to have an anchor bracket installed.

WARNING: An improperly installed anchor can cause serious injury.



1 Attach tether clip **A** to anchor bracket **B** and tighten tether strap securely. Pull loose end of strap to tighten. Remove slack **C** so that the tether strap does not move more than 1 inch (25 mm) forward or 1 to 2 inches (25 mm to 50 mm) to the side.

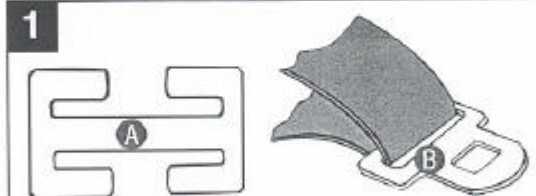
IMPORTANT: Fold into small loops or tightly roll the excess tether strap and secure it with attached Velcro™ fasteners. Then tuck the rolled excess strap between the child restraint and the vehicle seat to prevent access by the child or other vehicle occupants.



2 For typical installation of tether **A** and anchor bracket **B** system.

If there are any questions regarding the location of the anchor brackets which are not answered by the vehicle owner's manual, please contact an authorized dealer of vehicle manufacturer. If you still have questions, please call evenflo® at 1-800-233-5921.

USING A METAL LOCKING CLIP



1 You must use a metal locking clip **A** with seat belt whose buckle tongue **B** slides freely along the belt. A metal locking clip **A** is attached to the back of the child restraint.