REPORT NUMBER: NCAP-MGA-2001-013

NEW CAR ASSESSMENT PROGRAM
FRONTAL BARRIER IMPACT TEST

Nissan Motor Company
2001 Nissan Sentra SE 4 door
NHTSA NUMBER: M15206

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

February 12, 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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Manager, New Car Assessment Program

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Date of Acceptance

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COTR, NCAP Frontal Impact Program

_____
Date of Acceptance

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16. Abstract

A 35 mph (56.3 km/h) frontal barrier impact was conducted on a 2001 Nissan Sentra SE 4 door at MGA Research Corporation on February 12, 2001. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The impact velocity was 56.3 km/h. The ambient temperature at the barrier face at the time of impact was 21degrees Celsius. The vehicle's maximum post test static crush is 529 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:

Measurement Description	Units	Threshold	Driver ATD	Pass. ATD
Head Injury Criteria (HIC)	N/A	1000	409	518
Max. Thorax Accel. (3msec Clip)	G's	60	47.6	43.9
Left Femur force	Newtons	10009	1093	3740
Right Femur force	Newtons	10009	2586	3122

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TABLE OF CONTENTS

Section		Page No.
1	Purpose and Test Procedure	1
2	Occupant and Vehicle Information / Data Sheets	3

Data Sheet No.		Page No.
1	Crash Test Summary	4
2	General Test and Vehicle Parameter Data	5
3	Post Impact Data	7
4	Test Vehicle Information	8
5	Dummy Positioning in Vehicle	10
6	Seat Belt Positioning Data	12
7	Vehicle Accelerometer Location and Data Summary	13
8	Hybrid III ATD Injury Criteria and Sensor Data	14
9	Seat Belt Performance Assessment Test Data	17
10	Summary of FMVSS 212 Data	18
11	Windshield Zone Intrusion FMVSS 219 (Partial) Data	19
12	FMVSS 301 Fuel System Integrity Post Impact Data	20
13	FMVSS 301 Static Rollover Data	21
14	Vehicle Measurements	22
15	Camera Locations	24
16	Photographic Reference Target Locations	26
17	Vehicle Intrusion Measurements	27
18	Load Cell Locations on Fixed Barrier	32
19	Accident Investigation Division Data	33
20	Dummy/Vehicle Temperature Stabilization Chart	34

Appendix		
A	Photographs	A
B	Dummy and Vehicle Response Data Traces	B
C	Dummy Calibration Data Traces and Tables	C
D	Test Equipment and Instrumentation Calibration	D
E	Vehicle Owner's Manual Occupant Restraint Instructions	E
F	Child Seat	F

SECTION 1

PURPOSE AND TEST PROCEDURE

1.1 PURPOSE

This 35 mph (56.3 km/h) frontal barrier impact test is part of the FY' 01 New Car Assessment Program (NCAP) frontal barrier crashworthiness evaluation program 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 frontal barrier impacts. 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 Portection"; 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 February 12, 2001 at a speed of 56.3 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 fifteen (15) 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 three anthropomorphic test devices (ATDs). Two (2) part 572E 50th percentile adult male ATDs and one (1) 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. The child ATD was instrumented with head, chest, and pelvic tri-axial accelerometers, and upper and lower neck load cells. The child ATD was positioned according to the child seat manufacturers instructions. One hundred twenty one (121) 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. 142) and the right-front passenger (Serial No. 192) were calibrated 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 Sentra SE 4 door at a velocity of 56.3 km/h. The test vehicle weight was 1438 kilograms with two (2) part 572E 50th percentile adult male ATDs and one (1) part 572P 3 year old ATDs. Six (6) load cell barrier data channels were obtained in conducting the NCAP Test. The test vehicle is equipped with a laterally mounted 2.0 liter, 4 cylinder engine and a 5 speed manual transmission.

The driver Head Injury Criteria (HIC) was 409. The maximum resultant chest deceleration over three (3) milliseconds was 47.6 g's. The left and right femur loads were 1093 and 2586 Newtons, respectively. Chest defection for the driver ATD peaked at 25 mm. The driver ATD head contacted the airbag and sunvisor, the chest contacted the airbag, the left and right knees contacted the knee bolster and steering column.

The right front passenger's HIC was 518. The maximum resultant chest deceleration over three (3) milliseconds was 43.9 g's. The left and right femur loads were 3740 and 3122 Newtons, respectively. Chest defection for the passenger ATD peaked at 29 mm. The passenger ATD head contacted the airbag and sunvisor, the chest contacted the airbag and left and right knees contacted the glovebox.

Seat belt spool out was not recorded.

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 529 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 Sentra SE 4 door 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/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 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/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
Velocity at Impact	km/h	56.3
Test Weight	kg	1438
Impact Angle	degrees	0
Average Rebound	mm	611
Maximum Static Crush	mm	529

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Front Door Opening	Yes	Yes
Rear Door Opening	Yes	Yes
Seat Track Shift (mm)	0	0
Seat Back Failure	None	None

TEST DUMMY INFORMATION

Description	Driver	Passenger
Dummy Type / Serial No.	192	142
Head Contact	Airbag / sun visor	Airbag / sun visor
Chest Contact	Airbag	Airbag
Abdomen Contact	None noted	None noted
Left Knee Contact	Knee bolster / steering column	Glove box
Right Knee Contact	Knee bolster / steering column	Glove box

16mm MOVIE COVERAGE

High Speed	15
Real Time	1
Total	17

Driver ATD Sensors	44
Passenger ATD Sensors	44
Belt Assessment Sensors	4
Vehicle Structure Accelerometers	9
Rigid Barrier Load Cells	6
Total	107

DATA SHEET NO. 2
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

TEST VEHICLE INFORMATION

Manufacturer	Nissan
Model	Sentra SE
Body Style	4 Door
NHTSA No.	M15206
VIN	3N18851D71L107295
Color	Maroon
Delivery Date	November 1, 2000
Odometer Reading (mile)	45
Dealer	Rosen Nissan, Inc.
Transmission	5 speed manual
Final Drive	Front
Number of Cylinders	4
Engine Displacement (L)	2.0
Engine Placement	Lateral

TEST VEHICLE OPTIONS

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/CD	yes
Anti-theft System	yes
Cruise Control	yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Nissan
Date of Manufacture	9-2000

GVWR (kg)	1657
GAWR Front (kg)	895
GAWR Rear (kg)	791

DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	228	207
Cold Pressure (kPa)	228	207
Recommended Tire Size	P195/55R16	P195/55R16
Tire Size on Vehicle	P195/55R16	P195/55R16
Tire Manufacturer	Firestone	Firestone

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench		
Number of Occupants	2	3		5
Capacity Wt. (VCW) (kg)				374.2
Cargo Weight (RCLW) (kg)				34.0

DATA SHEET NO. 2...(continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	383.3	242.2		428.7	288.9	
Right	kg	390.5	236.8		433.2	287.6	
Ratio	%	61.8	38.2		60.0	40.0	
Totals	kg	773.8	479.0	1252.8	861.9	576.5	1438.4

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1252.8
Weight of 2 P572E ATDs	kg	156.0
Rated Cargo/Luggage Weight (RCLW)	kg	34.0
Calculated Vehicle Target Weight (TVTW)	kg	1442.8

TEST VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	673	670	669	665	967
As Tested	mm	659	655	654	647	1014
Post Test	mm	635	636	638	633	

Vehicle Wheelbase (mm): 2530

Weight of Ballast secured in cargo area (kg): 0

Vehicle Components Removed: Rear bumper, taillights, deck lid, spare tire, trunk interior trim, muffler, rear door panels and side glass

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

FUEL SYSTEM DATA

Fuel System Capacity From Owner's Manual (L): 50.0

Usable Capacity Figure Furnished by COTR (L): 50.0

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: The fuel pump will operate: 1) for 5 seconds after ignition is turned on; 2) while the engine is running; 3) for 1.5 seconds after the engine stops running

DATA SHEET NO. 3

POST IMPACT DATA

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	55.5 - 57.1	56.3
Trap No. 1 Entry Distance	mm	<1524	1300
Trap No. 1 Exit Distance	mm	<1524	300
Trap No. 2 Velocity (Redundant)	km/h	55.5 - 57.1	56.0
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	4186	3802	384
Center	mm	4327	3809	518
Right Side	mm	4179	3791	388

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	620
Center	mm	582
Right Side	mm	630
Average	mm	611

DATA SHEET NO. 4

TEST VEHICLE INFORMATION

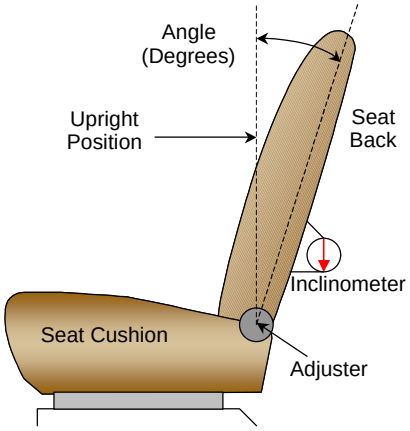
Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

NORMAL DESIGN RIDING POSITION

The driver and passenger seat back is positioned to the manufacturer's designated angle. The procedure is as follows:

Press a bar against the centerline of the seat back. When car attitude angle is 0 the angle of the seat back should be 14.8 from vertical.



FRONT SEAT ASSEMBLY

Driver seat back angle: 14.8

Passenger seat back angle: 14.8

SEAT FORE/AFT POSITIONS

Both driver and passenger seats have manually operated seats. The total travel on the driver is 21 seat positions and the passenger is 21 seat positions. The fore/aft position is set at the middle position for both driver and passenger.

Driver seat fore/aft total travel: 21 positions

Passenger seat fore/aft total travel: 21 positions

Driver seat fore/aft position: 10 positions rearward of the first locking position

Passenger seat fore/aft position 10 positions rearward of the first locking position

SEAT BELT UPPER ANCHORAGE

The test vehicle is equipped with adjustable anchorages for both the driver and passenger seat positions. There are 5 positions or detents. The anchorages were placed in the full up position.

DATA SHEET NO. 4...(continued)

TEST VEHICLE INFORMATION

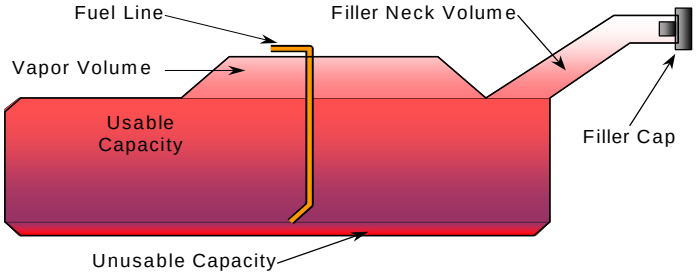
Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

FUEL TANK CAPACITY DATA

The "Usable Capacity" of the standard equipment fuel tank is:	50.0	liters
The "Usable Capacity" of any optional equipment fuel tank is:	N/A	liters
The "Usable Capacity" used for certification to FMVSS 301 requirements:	50.0	liters
Actual amount of Stoddard solvent added to vehicle for certification test:	11.4	liters

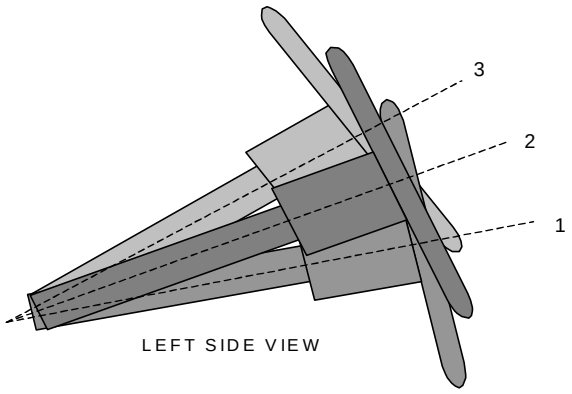
The test vehicle is equipped with an electric fuel pump. The fuel pump operates for 5 seconds after ignition is turned on and when the engine is running. The fuel filler door is located on the left rear fender.



VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes, when 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.



STEERING COLUMN ASSEMBLY

Lowermost, position 1:	22.5 °
Geometric center, position 2 :	24.5 °
Uppermost, position 3:	26.5 °

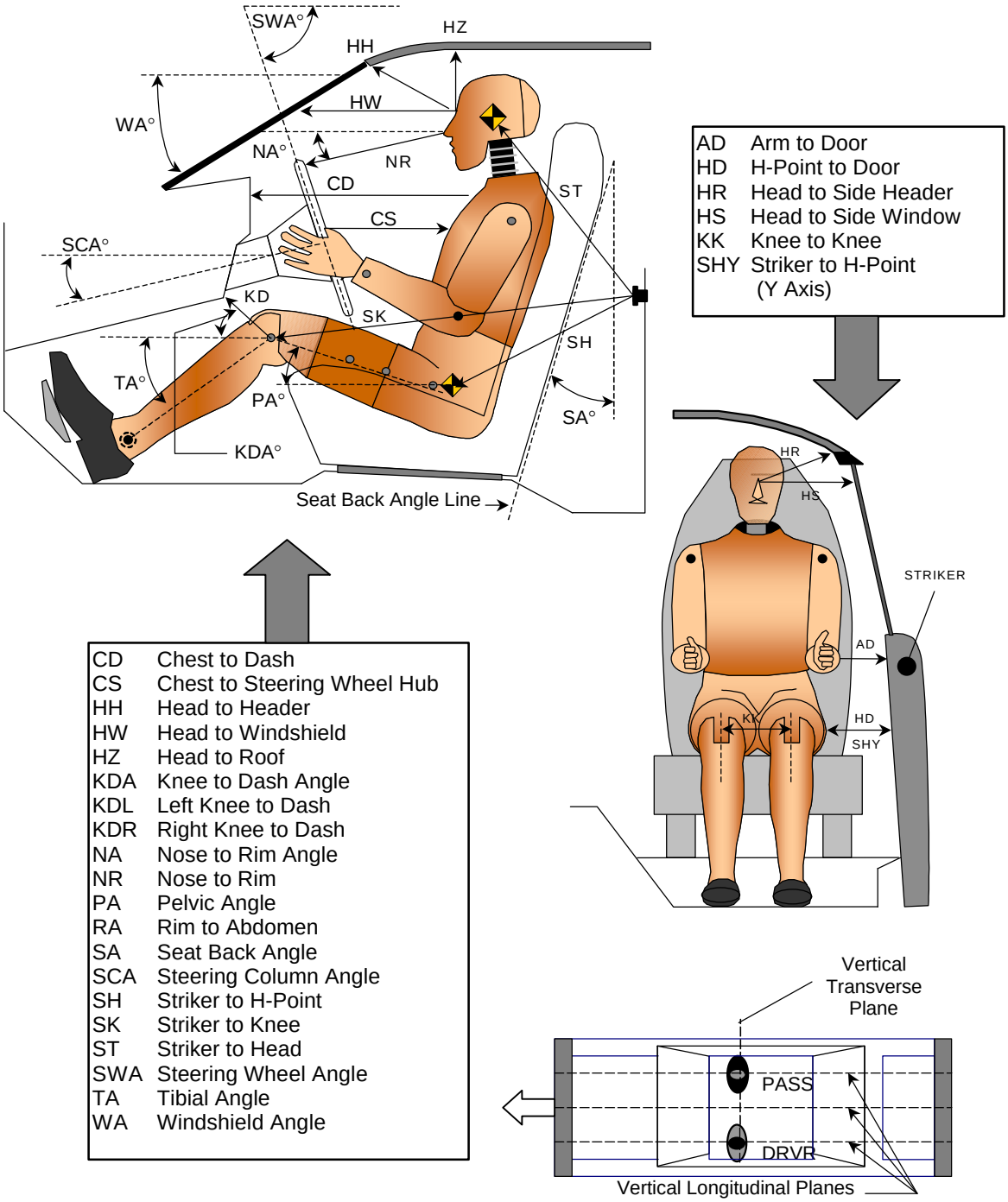
DATA SHEET NO. 5

DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

DUMMY MEASUREMENTS FOR FRONT SEAT OCCUPANTS



DATA SHEET NO. 5...(continued)

DUMMY POSITIONING IN VEHICLE

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

TEST DUMMY POSITION MEASUREMENTS

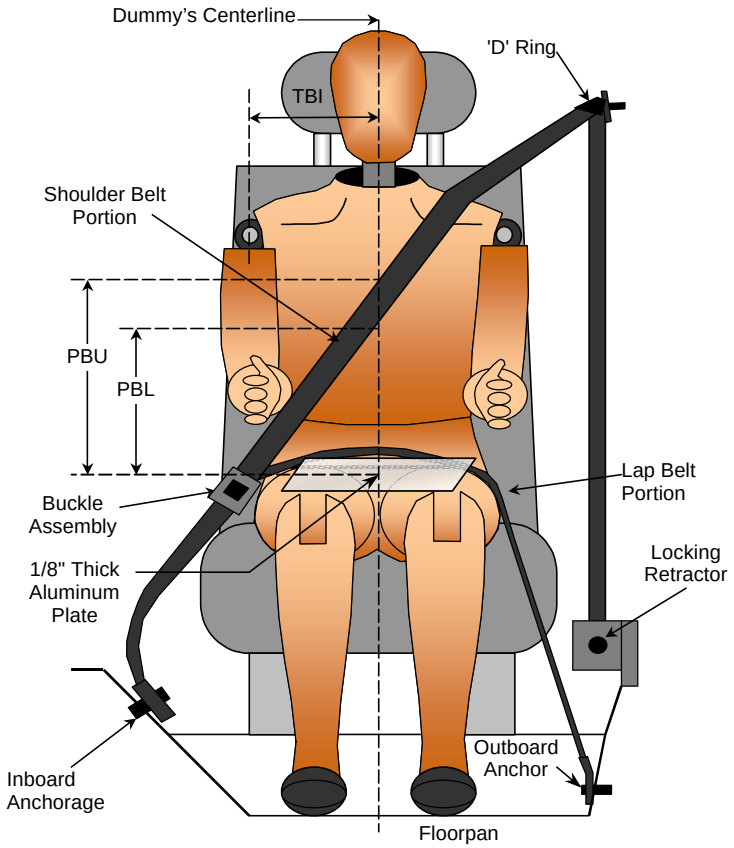
Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA	Windshield Angle		29.2		
SWA	Steering Wheel Angle		65.5		
SCA	Steering Column Angle		25.0		
SA	Seat Back Angle		14.8		14.8
HZ	Head to Roof (Z)	158	90.0	146	90.0
HH	Head to Header	278	34.4	275	34.7
HW	Head to Windshield	552	0.0	532	0.0
HR	Head to Side Header (Y)	247		226	
NR	Nose to Rim	347	11.1		
CD	Chest to Dash	477		552	
CS	Chest to Steering Hub	280	4.2		
RA	Rim to Abdomen	167	0.0		
KDL	Left Knee to Dash	137	13.8	82	
KDR	Right Knee to Dash	155		152	3.0
PA	Pelvic Angle		22.8		23.3
TA	Tibia Angle		41.1		42.0
KK	Knee to Knee (Y)	310		260	
SK	Striker to Knee	605	94.3	600	91.5
ST	Striker to Head	503	15.1	507	17.8
SH	Striker to H-Point	258	127.5	253	124.8
SHY	Striker to H-Point (Y)	243		243	
HS	Head to Side Window	315		292	
HD	H-Point to Door (Y)	138		131	
AD	Arm to Door (Y)	108		88	
AA	Ankle to Ankle	335		273	

DATA SHEET NO. 6

SEAT BELT POSITIONING DATA

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001



SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TBI - Dummy centerline to shoulder bolt	mm	225	230
PBU - Top surface of reference to belt upper edge	mm	338	345
PBL - To surface of reference to belt lower edge	mm	250	265

DATA SHEET NO. 7

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

VEHICLE X-AXIS ACCELEROMETER PEAK DATA AND PRE-TEST LOCATIONS

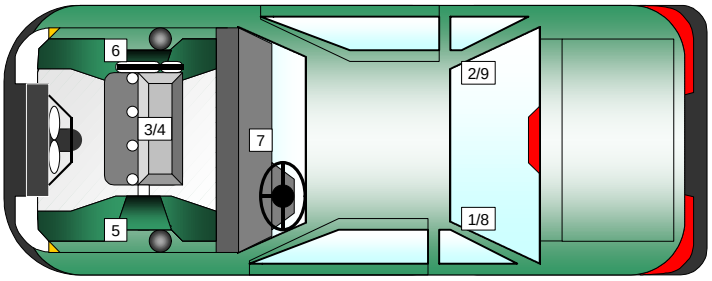
No.	Accelerometer Location	Measurements (mm)			Peak Values				
		X	Y	Z	Units	Max	Time	Min	Time
1	Left Rear X-Member (Primary)	1558	-608	433	G's	4.0	125	-45.0	40
2	Right Rear X-Member (Primary)	1548	611	432	G's	3.4	128	-41.9	42
3	Engine Top	3195	0	822	G's	62.6	42	-153.9	35
4	Engine Bottom	3446	236	212	G's	11.5	42	-146.4	31
5	Left Brake Caliper	3522	-632	193	G's	62.9	65	-177.7	42
6	Right Brake Caliper	3532	632	193	G's	68.5	62	-145.7	43
7	Instrument Panel	2769	0	974	G's	12.4	88	-55.9	43
8	Left Rear X-Member (Redundant)	1558	-608	432	G's	3.9	124	-45.7	40
9	Right Rear X-Member (Redundant)	1548	611	433	G's	**	**	**	**

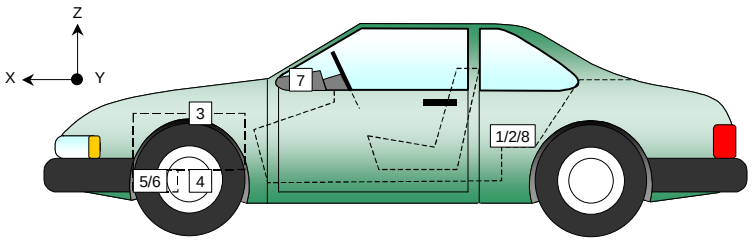
Reference Points: X - From Rear Surface of Vehicle (+ forward)

Y - Vehicle Centerline (+ to right)

Z - Ground Plane (+ up)

** No valid data collected.





DATA SHEET NO. 8

HYBRID III ATD INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	1.9	200	53.8	76	2.0	27	55.0	77
Head CG	Y	G's	6.2	43	12.8	78	21.2	80	2.9	146
Head CG	Z	G's	21.4	49	.9	129	23.1	47	4.7	102
Head CG Resultant	N/A	G's	55.3	77			59.3	81		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	2.1	134	49.2	67	2.4	155	44.7	73
Chest CG	Y	G's	4.7	91	6.1	54	7.0	55	6.0	96
Chest CG	Z	G's	12.5	47	7.3	100	14.9	46	7.1	101
Chest CG Resultant	N/A	G's	49.3	67			44.8	73		

FEMUR PEAK FORCES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Femur	Z	Newtons	1971	67	1093	45	462	38	3740	46
Right Femur	Z	Newtons	1088	47	2586	58	270	37	3122	48

SEAT BELT SENSOR PEAK VALUES

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Lap Belt Force	N/A	Newtons	7647	55			6754	54		
Shoulder Belt Force	N/A	Newtons	6013	69			6103	61		

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 Primary	409	41.9	51.6	87.6	518	46.0	58.9	94.9

CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T^1	T^2	CLIP	T^1	T^2
Chest CG Primary	47.6	65.8	68.9	43.9	71.0	74.1

DATA SHEET NO. 8...(continued)
HYBRID III ATD INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206
Test Program: NCAP Test Date: February 12, 2001

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Pelvis	X	G's	2.9	125	57.4	57	3.3	136	72.8	46
Pelvis	Y	G's	11.3	84	9.6	44	31.2	75	24.9	75
Pelvis	Z	G's	1.9	192	30.3	58	16.4	44	46.1	75

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Neck Force	X	Newtons	526	109	427	67	540	90	300	47
Neck Force	Y	Newtons	125.8	143	90	74	46	74	102	54
Neck Force	Z	Newtons	1432	66	32	19	1232	62	100	120
Neck Moment	X	N•m	8.4	135	11.0	95	7.5	87	7.7	146
Neck Moment	Y	N•m	43.5	124	23.8	48	33.7	89	18.4	62
Neck Moment	Z	N•m	14.1	98	6.2	138	8.1	145	18.5	91

FOOT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Left Foot Aft	X	G's	9.5	62	51.8	43	34.2	60	341.9	43
Left Foot Aft	Z	G's	5.8	60	85.3	44	39.2	63	188.7	42
Left Foot Fore	Z	G's	32.5	40	94.5	44	65.1	46	473.1	42
Right Foot Aft	X	G's	48.1	39	181.8	47	25.3	54	183.6	44
Right Foot Aft	Z	G's	59.6	67	207.5	47	8.5	51	106.7	44
Right Foot Fore	Z	G's	174.7	42	371.6	39	35.9	51	112.5	40

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	29.7	53	17.6	41	37.3	46	21.9	43
Left Lower Moment	Y	N•m	51.2	85	28.6	45	61.2	52	89.0	44
Left Lower Force	Z	Newtons	2077	42	68	128	11961	43	97	175
Left Upper Moment	X	N•m	28.4	75	51.0	46	48.5	70	30.9	45
Left Upper Moment	Y	N•m	25.6	103	98.3	46	20.6	139	322.4	43
Left Upper Force	Z	Newtons	1453	42	86	105	9318	43	142	136
Right Lower Moment	X	N•m	20.0	48	61.2	52	38.6	41	109.2	48
Right Lower Moment	Y	N•m	145.	64	79.5	48	106.6	52	31.9	45
Right Lower Force	Z	Newtons	8585	46	331	22	6174	44	116	170
Right Upper Moment	X	N•m	49.6	47	52.4	54	51.3	44	28.5	48
Right Upper Moment	Y	N•m	51.1	60	259.2	47	15.3	144	151.1	45
Right Upper Force	Z	Newtons	6278	46	276	22	4437	44	130	139

DATA SHEET NO. 8...(continued)
HYBRID III ATD INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2001/Nissan/Sentra SE/4 door
Test Program: NCAP

NHTSA No.: M15206
Test Date: February 12, 2001

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	mm			24.8	79			29.0	91

HEAD REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	2.6	200	52.7	77	2.1	27	54.2	78
Head CG	Y	G's	3.6	33	10.3	80	22.3	84	2.7	146
Head CG	Z	G's	20.7	49	1.6	127	24.1	47	5.1	100
Head CG Resultant	N/A	G's	55.3	77			59.0	81		

CHEST REDUNDANT PEAK ACCELERATIONS

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Chest CG	X	G's	2.0	134	49.2	67	2.2	156	44.6	73
Chest CG	Y	G's	5.3	91	5.6	54	7.2	55	5.9	95
Chest CG	Z	G's	11.4	48	7.7	101	14.6	46	7.0	101
Chest CG Resultant	N/A	G's	49.2	67			44.8	73		

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	398	41.4	51.6	87.6	517	46.0	58.7	94.7

REDUNDANT CHEST CLIP (3MSEC)

Location	Driver			Passenger		
	CLIP	T^1	T^2	CLIP	T^1	T^2
Chest CG Redundant	47.7	65.8	68.9	43.6	71.1	74.2

DATA SHEET NO. 9

SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

SEAT BELT PLACEMENT MEASUREMENTS

Measurement Description	Units	Driver	Passenger
TBI - Dummy centerline to shoulder bolt	mm	225	230
PBU - Top surface of reference to belt upper edge	mm	338	345
PBL - Top surface of reference to belt lower edge	mm	250	265

BELT LENGTH DATA

Measurement Description	Units	Driver	Passenger
Retractor reel to "D" ring	mm	175	175
Shoulder belt length as measured on ATD	mm	892	918
Lap belt length as measured on ATD	mm	828	870
Total belt length for continuous webbing systems	mm	1895	1963

SHOULDER BELT SPOOL-OUT DATA

Measurement Description	Units	Driver	Passenger
As determined mechanically	mm		
As determined electronically	mm		

* Belt spool out data was not recorded at the request of the manufacturer.

DATA SHEET NO. 10

SUMMARY OF FMVSS 212 DATA

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

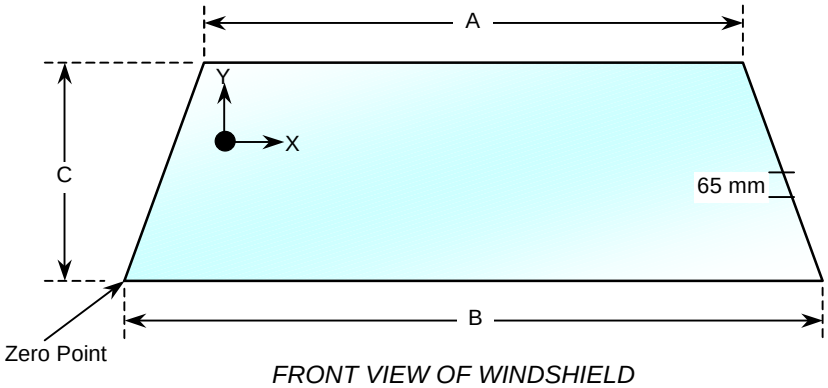
Windshield Mounting Details:
Windshield glass is secured to the vehicle frame with a rubber type adhesive.

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	2031	1966	97
Right Side	2031	2031	100
Total	4062	3997	98



FRONT VIEW OF WINDSHIELD

WINDSHIELD DIMENSIONS

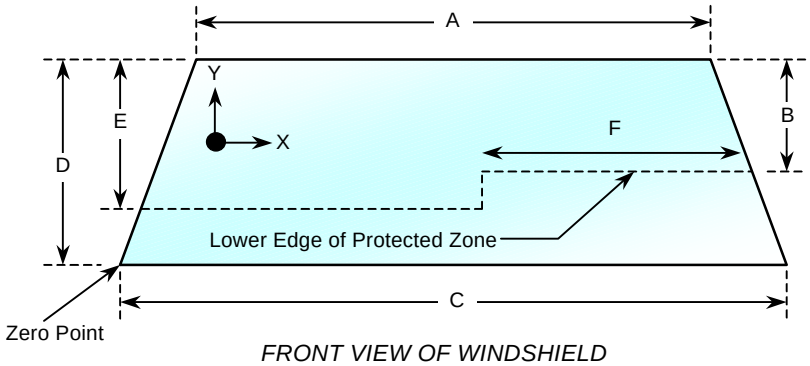
Item	Units	Segment Length	Molding Width
A	mm	1062	18
B	mm	1463	8
C	mm	769	28

DATA SHEET NO. 11

WINDSHIELD ZONE INTRUSION FMVSS 219 (Partial) DATA

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001



FRONT VIEW OF WINDSHIELD

Item	Units	Value
A	mm	1062
B	mm	772
C	mm	1463
D	mm	769
E	mm	530
F	mm	507

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. **None**

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. **None**

X	Y

DATA SHEET NO. 12

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

Test Time: 5:15 p.m. Temperature at Time of Impact: 21 °C

Stoddard Solvent Spillage Measurements

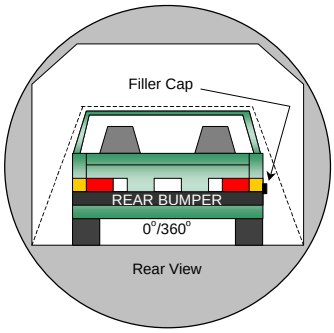
A.	From impact until vehicle motion ceases: (Maximum Allowable = 1 ounce)	0 oz.
B.	For the 5 minute period after motion ceases: (Maximum Allowable = 5 ounces)	0 oz.
C.	For the following 25 minutes: (Maximum Allowable = 1 oz./minute)	0 oz.
D.	Spillage Details:	None

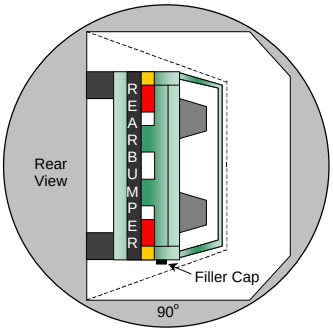
DATA SHEET NO. 13

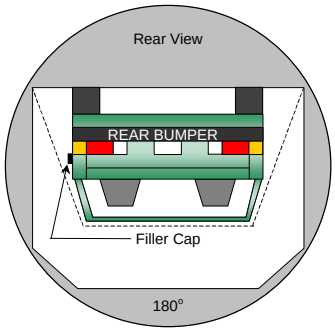
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

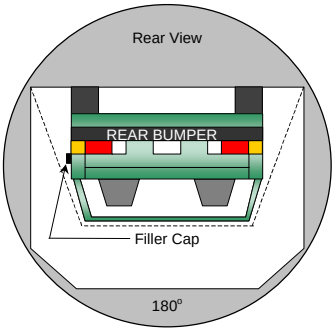
Test Program: NCAP Test Date: February 12, 2001

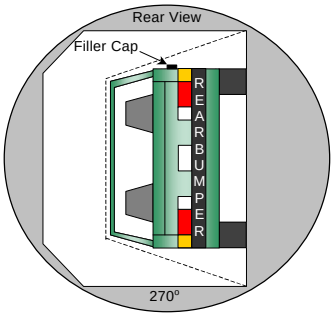


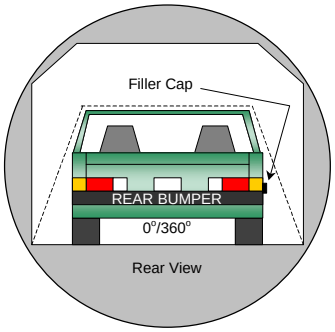




0° TO 90° 90° TO 180°







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°	164	311	0
90° TO 180°	154	326	0
180° TO 270°	139	341	0
270° TO 360°	160	320	0

DATA SHEET NO. 14

VEHICLE MEASUREMENTS

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
1	Total length of vehicle at centerline	mm	4327	3809	518
2	RSOV to front of engine	mm	3745	3479	266
3	RSOV to firewall centerline	mm	3247	3194	53
4	RSOV to leading edge of right door	mm	2891	2878	13
5	RSOV to leading edge of left door	mm	2886	2890	-4
6	RSOV to lower leading edge of right door	mm	2888	2886	2
7	RSOV to lower leading edge of left door	mm	2891	2892	-1
8	RSOV to upper leading edge of right door	mm	1842	1824	18
9	RSOV to upper leading edge of left door	mm	1834	1834	0
10	RSOV to lower trailing edge of right door	mm	1829	1818	11
11	RSOV to lower trailing edge of left door	mm	1826	1825	1
12	RSOV to bottom of right 'A' pillar	mm	2878	2868	10
13	RSOV to bottom of left 'A' pillar	mm	2870	2874	-4
14	RSOV to firewall on right side	mm	3161	3129	32
15	RSOV to firewall on left side	mm	3164	3152	12
16	RSOV to steering column	mm	2422	2391	31
17	Center of steering column to left 'A' pillar	mm	356	362	-6
18	Center of steering column to headlining	mm	444	381	63
19	RSOV to right side of front bumper	mm	4179	3791	388
20	RSOV to left side of front bumper	mm	4186	3802	384
21	Length of engine block	mm	512	512	0
RD	RSOV to right side of dash panel	mm	2736	2701	35
CD	RSOV to center of dash panel	mm	2634	2583	51
LD	RSOV to left side of dash panel	mm	2664	2639	25

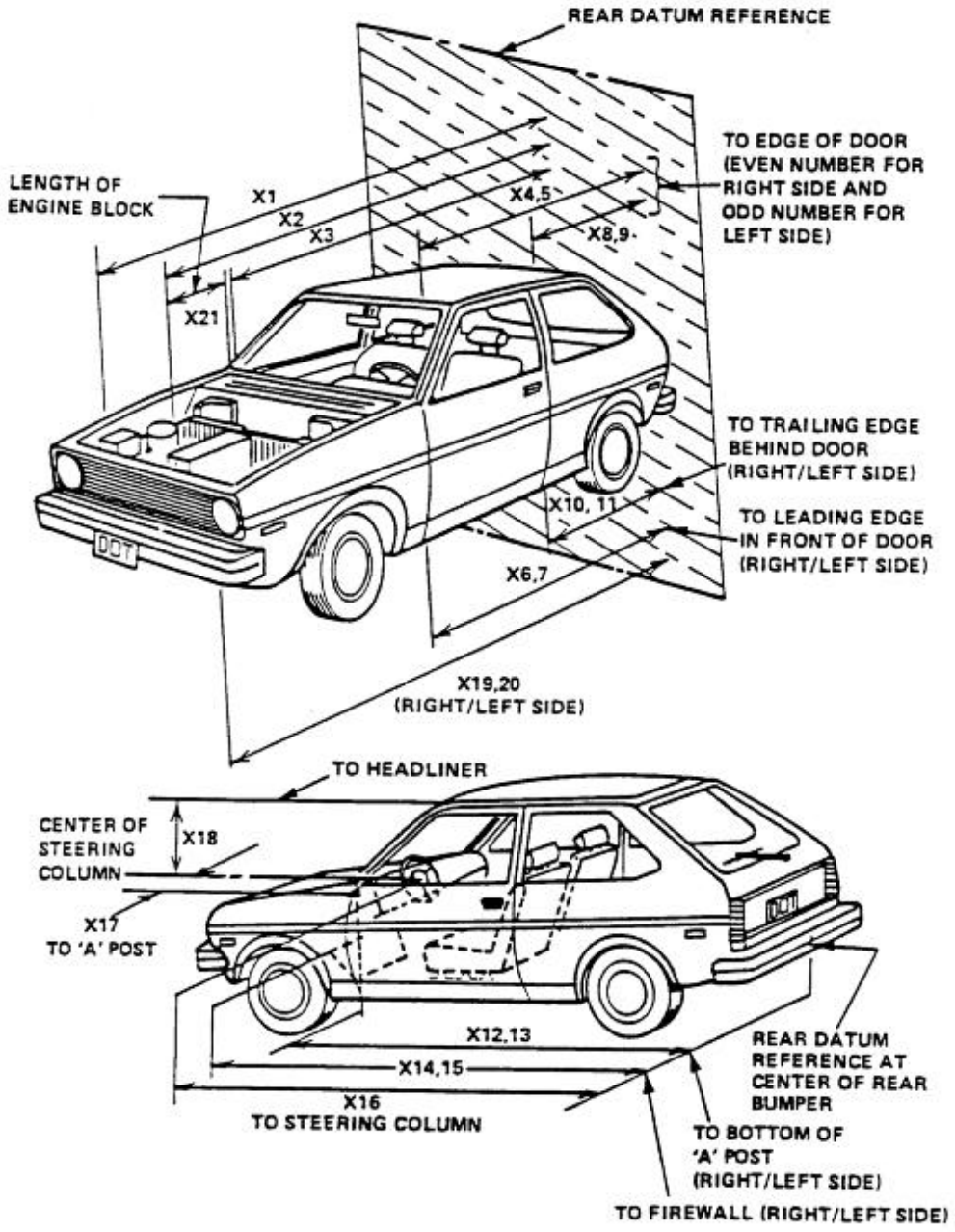
RSOV = Rear Surface of Vehicle

DATA SHEET NO. 14...(continued)

VEHICLE MEASUREMENTS

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001



DATA SHEET NO. 15

CAMERA LOCATIONS

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 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	-8000	1480	25	1026
3	Steering Column Top	2000	-7000	1560	25	1036
4	Steering Column Bottom	2000	-7000	1030	15	909
5	Driver Close-up	1500	-10000	1330	75	893
6	Driver Angle	4810	-523	2030	50	926
7	Onboard Driver				13	513
8	Onboard Passenger					
9	Right Overall	2000	6640	1400	13	**
10	Right Passenger Half	1000	7480	1370	25	**
11	Right Close-up	1430	10380	1320	75	1053
12	Right Angle	4940	5640	2120	50	957
13	Windshield	-450	0	2710	13	926
14	Top Driver	70	-440	1780	13	1015
15	Top Passenger	80	400	1770	13	1015
16	Pit Front	1140	0	-3200	13	1010
17	Pit Rear	2820	0	-3200	13	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.

** No timing marks.

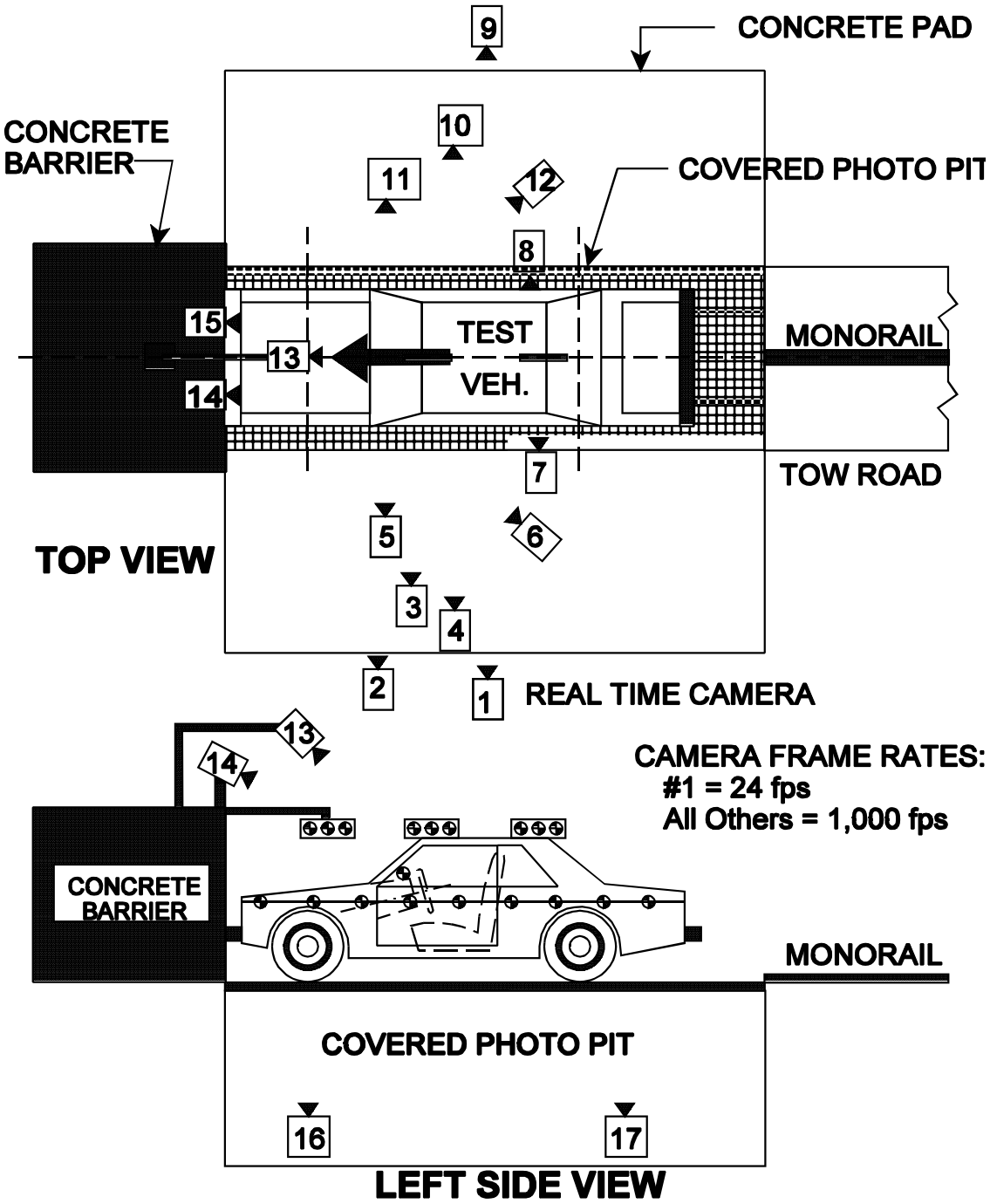
DATA SHEET NO. 15...(continued)

CAMERA LOCATIONS

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

CAMERA POSITIONS FOR FRONTAL IMPACTS



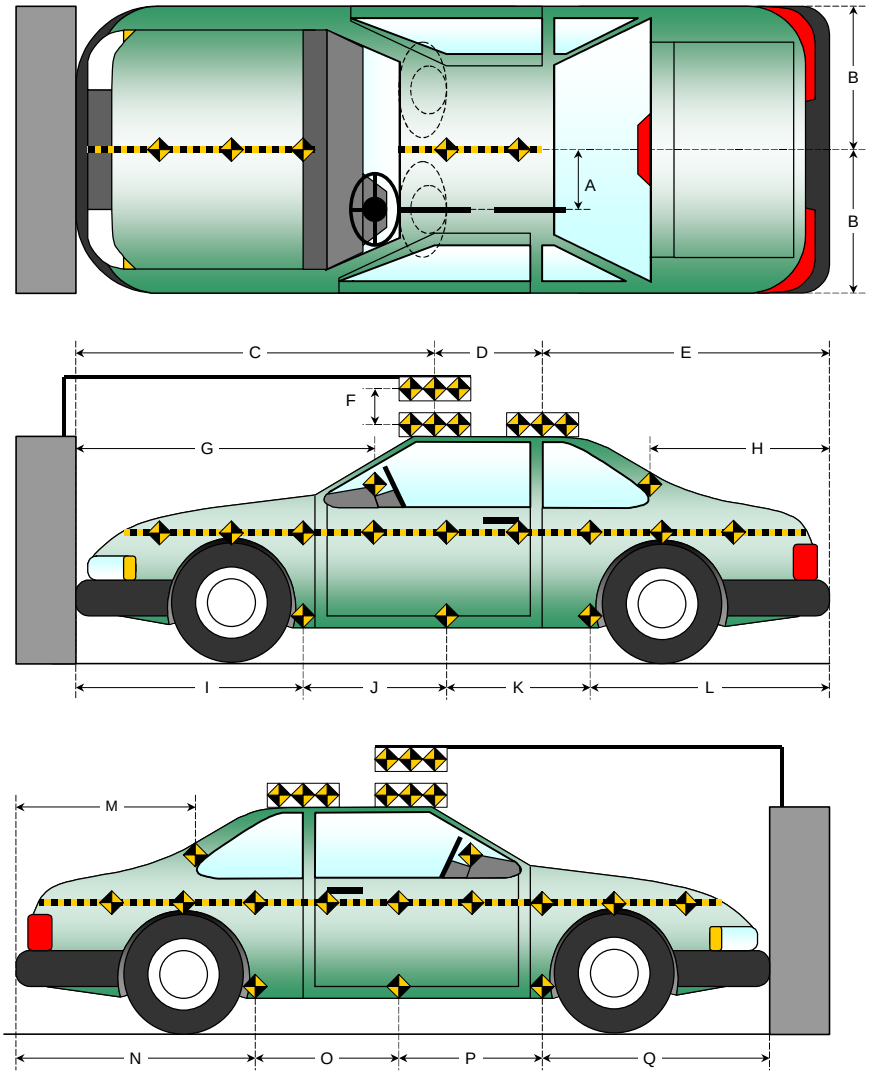
DATA SHEET NO. 16

PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

Item	Value
A	330
B	860
C	2144
D	610
E	1573
F	305
G	1635
H	843
I	1360
J	875
K	874
L	1218
M	840
N	1304
O	875
P	875
Q	1273



DATA SHEET NO. 17

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

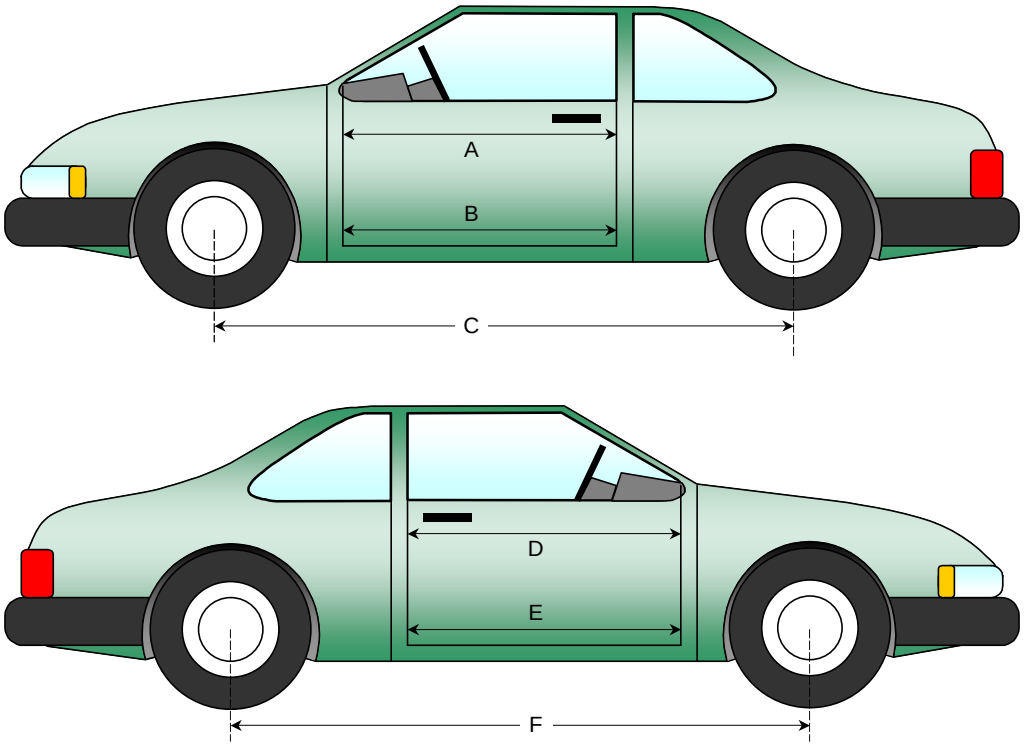
Test Program: NCAP Test Date: February 12, 2001

DOOR OPENING WIDTH

Item	Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	1005	995	10
B	Left Side Lower	mm	947	947	0
D	Right Side Upper	mm	1006	993	13
E	Right Side Lower	mm	947	945	2

WHEELBASE MEASUREMENTS

Item	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheelbase	mm	2530	2431	99
F	Right Side Wheelbase	mm	2530	2436	94



DATA SHEET NO. 17...(continued)

VEHICLE INTRUSION MEASUREMENTS

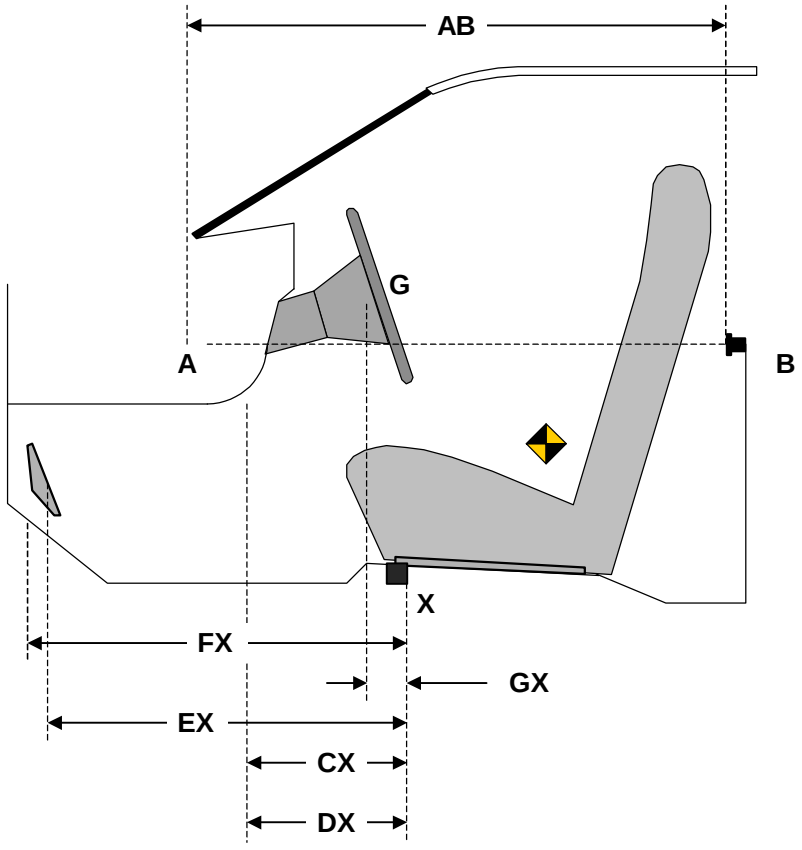
Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

DRIVER COMPARTMENT INTRUSION

Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside window jam)	mm	1005	995	10
CX	Left Knee Bolster to X	mm	425	243	182
DX	Right Knee Bolster to X	mm	535	205	330
EX	Brake Pedal to X	mm	605	395	210
FX	Foot Rest to X	mm	585	541	44
GX	Center of Steering Column Wheel Hub to X	mm	595	566	29

X = Left Front Seat Front Outboard Anchor Bolt Head



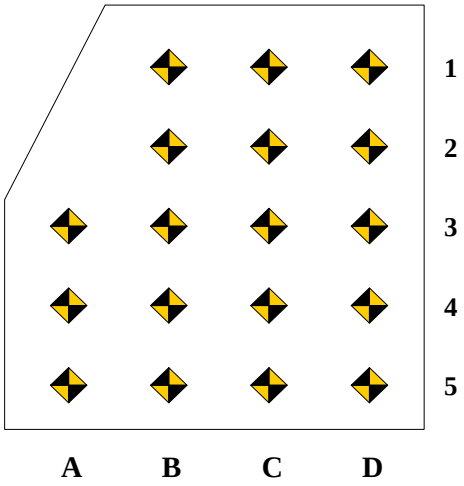
DRIVER COMPARTMENT

DATA SHEET NO. 17...(continued)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 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		664	667	651		549	515	500		115	152	151
2		587	597	585		497	466	437		90	131	148
3	511	504	499	504	473	444	392	390	38	60	107	114
4	329	324	322	N/A	309	308	293	NA	20	16	29	NA
5	143	143	143	144	134	127	129	129	9	16	14	15

DRIVER FLOOR PAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1		12	2	19		2	10	2		-10	8	-17
2		-45	-52	-51		-92	-75	-93		-47	-23	-42
3	-92	-90	-85	-81	-150	-140	-137	-145	-58	-50	-52	-64
4	-109	-108	-115	N/A	-125	-156	-174	NA	-16	-48	-59	NA
5	-104	-102	-105	-119	-75	-80	-93	-118	29	22	12	1

DATA SHEET NO. 17...(continued)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

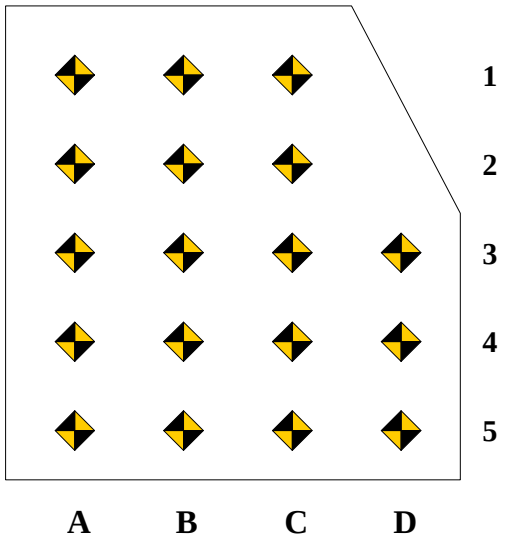
Test Program: NCAP Test Date: February 12, 2001

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	660	664	662		493	513	545		167	151	117	
2	586	591	591		435	459	495		151	132	96	
3	506	507	513		385	399	445		121	108	68	
4	N/A	N/A	335	342	NA	NA	301	332	NA	NA	34	10
5	152	152	157	165	132	137	134	162	20	15	23	3

PASSENGER FLOOR PAN Z-AXIS

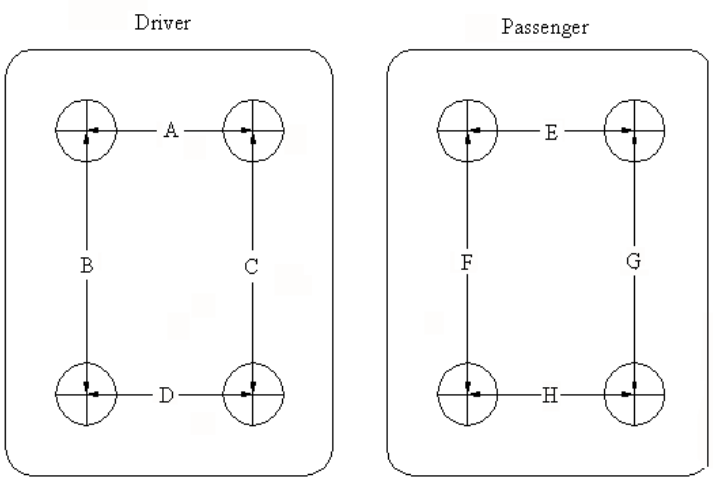
	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	6	8	9		0	2	3		-6	-6	-6	
2	-48	-58	-48		-70	-65	-64		-22	-7	-16	
3	-108	-100	-98		-134	-133	-138		-26	-33	-40	
4	N/A	N/A	-110	-109	NA	NA	-164	-80	NA	NA	-54	29
5	-124	-110	-108	-108	-111	-102	-85	-106	13	8	23	2

DATA SHEET NO. 17...(continued)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001



UNDERBODY FLOORBOARD DEFORMATION

MEASUREMENT	PRE TEST	POST TEST	DIFFERENCE
A	407	406	1
B	351	330	21
C	276	180	96
D	424	397	27
E	407	403	4
F	288	201	87
G	363	340	23
H	367	353	14

DATA SHEET NO. 18

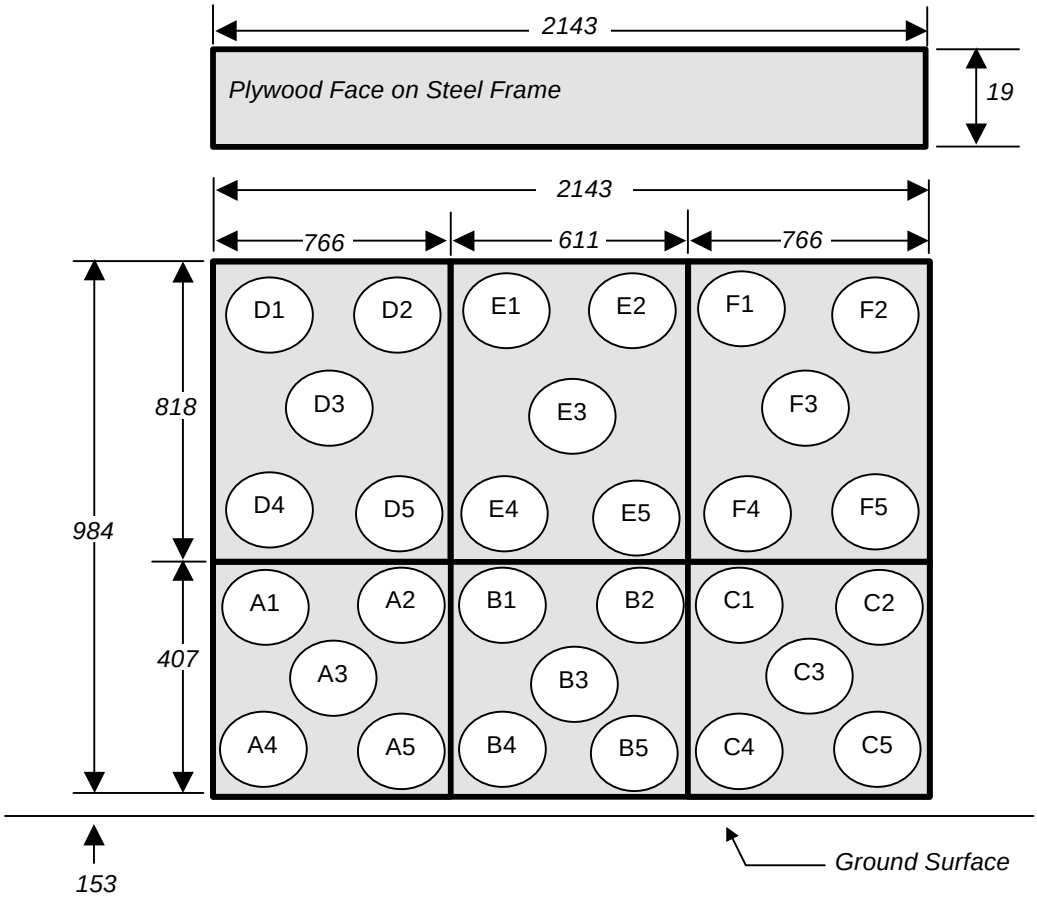
LOAD CELL LOCATIONS ON FIXED BARRIER

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 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. Sum data from 6 groupings shown above (5 cells/group)
2. Total or sum of all 30 individual load cells

DATA SHEET NO. 19

ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

VEHICLE INFORMATION

VIN: 3N18851D7107295 Wheelbase (mm): 2530

Vehicle Size Category: Compact Test Weight (kg): 1438

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): 56.3

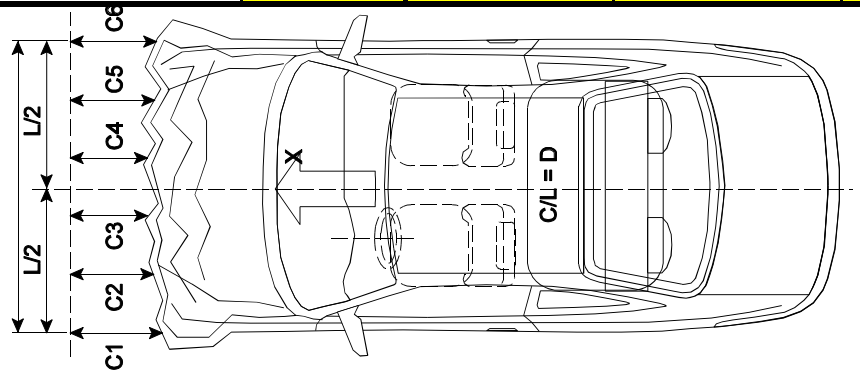
Velocity Change (km/h): 66.0 Time of Separation (msec): 180

CRUSH PROFILE

Collision Deformation Classification: Frontal Midpoint of Damage: Centerline

Damage Region Length (mm): 1360 Impact Mode: Frontal

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	4186	3802	384
C2	Crush zone 2 at left side	mm	4271	3788	483
C3	Crush zone 3 at left side	mm	4312	3805	507
C4	Crush zone 4 at right side	mm	4317	3788	529
C5	Crush zone 5 at right side	mm	4279	3787	492
C6	Crush zone 6 at right side	mm	4179	3791	388

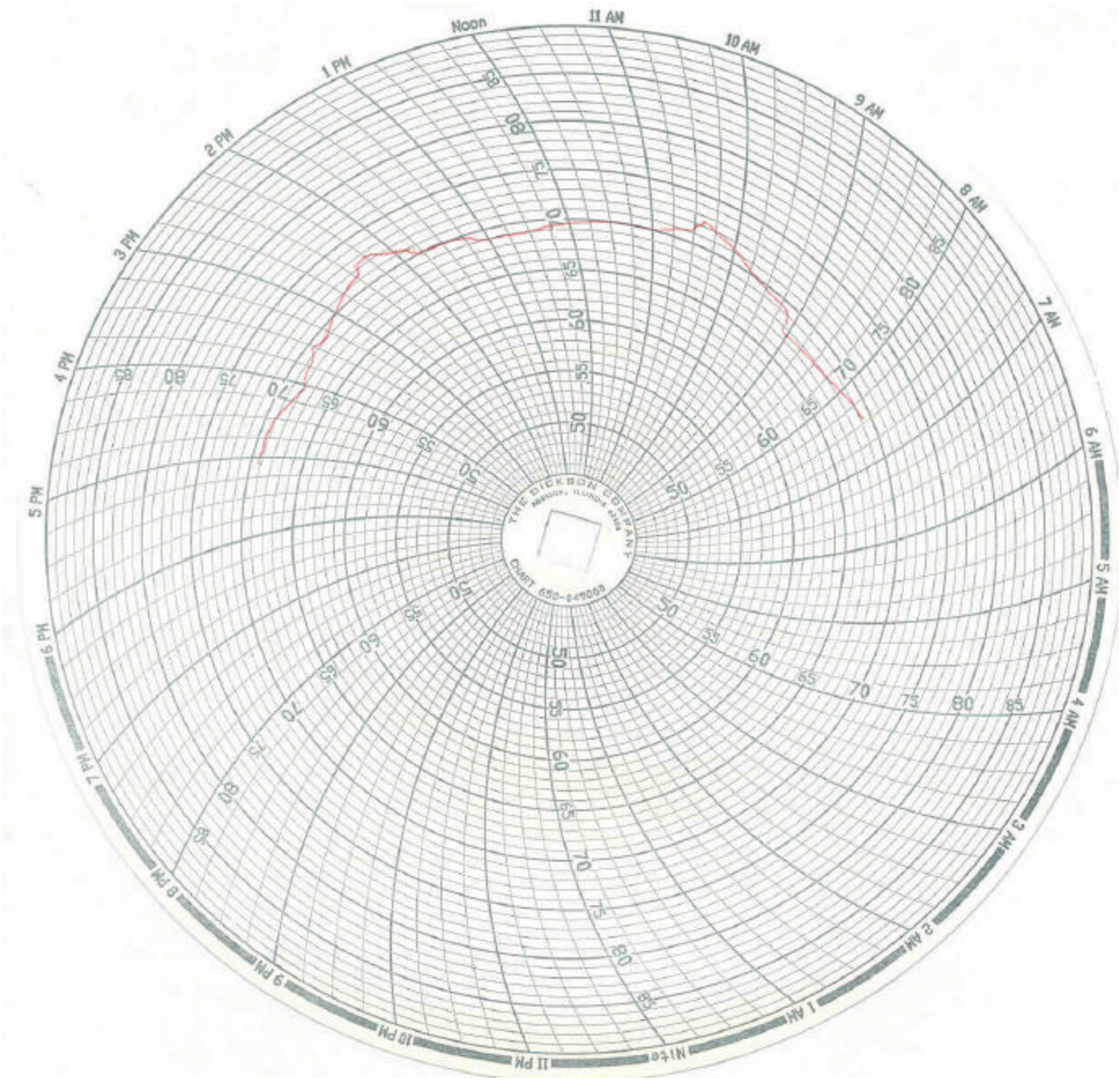


DATA SHEET NO. 20

DUMMY / VEHICLE TEMPERATURE STABILIZATION CHART

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001



A = Dummies installed in vehicle at 7:30 a.m.

B = Test conducted at 5:15 p.m.

APPENDIX A

PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

	Page No.
Photo No. A-1 - Pre-Test Front View of Test Vehicle	A-1
Photo No. A-2 - Post-Test Front View of Test Vehicle	A-2
Photo No. A-3 - Pre-Test Rear View of Test Vehicle	A-3
Photo No. A-4 - Post-Test Rear View of Test Vehicle	A-4
Photo No. A-5 - Pre-Test Left Side View of Test Vehicle	A-5
Photo No. A-6 - Post-Test Left Side View of Test Vehicle	A-6
Photo No. A-7 - Pre-Test Left Rear Three-Quarter View of Test Vehicle	A-7
Photo No. A-8 - Post-Test Left Rear Three-Quarter View of Test Vehicle	A-8
Photo No. A-9 - Pre-Test Right Side View of Test Vehicle	A-9
Photo No. A-10 - Post-Test Right Side View of Test Vehicle	A-10
Photo No. A-11 - Pre-Test Right Front Three-Quarter View of Test Vehicle	A-11
Photo No. A-12 - Post-Test Right Front Three-Quarter View of Test Vehicle	A-12
Photo No. A-13 - Pre-Test Fuel Filler Cap View	A-13
Photo No. A-14 - Pre-Test Engine Compartment View	A-14
Photo No. A-15 - Post-Test Engine Compartment View	A-15
Photo No. A-16 - Pre-Test Front Underbody View	A-16
Photo No. A-17 - Post-Test Front Underbody View	A-17
Photo No. A-18 - Pre-Test Rear Underbody View	A-18
Photo No. A-19 - Post-Test Rear Underbody View	A-19
Photo No. A-20 - Pre-Test Windshield View	A-20
Photo No. A-21 - Post-Test Windshield View	A-21
Photo No. A-22 - Pre-Test Driver Dummy Position Left Side View	A-22
Photo No. A-23 - Post-Test Driver Dummy Position Left Side View	A-23
Photo No. A-24 - Pre-Test Driver Dummy Position Left Side View (Door Open)	A-24
Photo No. A-25 - Post-Test Driver Dummy Position Left Side View (Door Open)	A-25
Photo No. A-26 - Pre-Test Driver Seat Position View	A-26
Photo No. A-27 - Post-Test Driver Seat Position View	A-27
Photo No. A-28 - Pre-Test Driver Dummy Knee Position	A-28
Photo No. A-29 - Post-Test Driver Dummy Knee Position	A-29

TABLE OF PHOTOGRAPHS (Cont'd)

	Page No.
Photo No. A-30 - Post-Test Driver Airbag Contact	A-30
Photo No. A-31 - Post-Test Driver Knee Contact View	A-31
Photo No. A-32 - Pre-Test Driver Windshield View	A-32
Photo No. A-33 - Post-Test Driver Windshield View	A-33
Photo No. A-34 - Pre-Test Passenger Dummy Position Right Side View	A-34
Photo No. A-35 - Post-Test Passenger Dummy Position Right Side View	A-35
Photo No. A-36 - Pre-Test Pass. Dummy Position Right Side View (Door Open)	A-36
Photo No. A-37 - Post-Test Pass. Dummy Position Right Side View (Door Open)	A-37
Photo No. A-38 - Pre-Test Passenger Seat Position View	A-38
Photo No. A-39 - Post-Test Passenger Seat Position View	A-39
Photo No. A-40 - Pre-Test Passenger Dummy Knee Position	A-40
Photo No. A-41 - Post-Test Passenger Dummy Knee Position	A-41
Photo No. A-42 - Post-Test Passenger Airbag Contact	A-42
Photo No. A-43 - Post-Test Passenger Knee Contact View	A-43
Photo No. A-44 - Pre-Test Passenger Windshield View	A-44
Photo No. A-45 - Post-Test Passenger Windshield View	A-45
Photo No. A-46 - Vehicle Certification Label	A-46
Photo No. A-47 - Tire Placard	A-47
Photo No. A-48 - Vehicle Impact	A-48
Photo No. A-49 - Rollover 90E	A-49
Photo No. A-50 - Rollover 180E	A-50
Photo No. A-51 - Rollover 270E	A-51
Photo No. A-52 - Rollover 360E	A-52



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



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

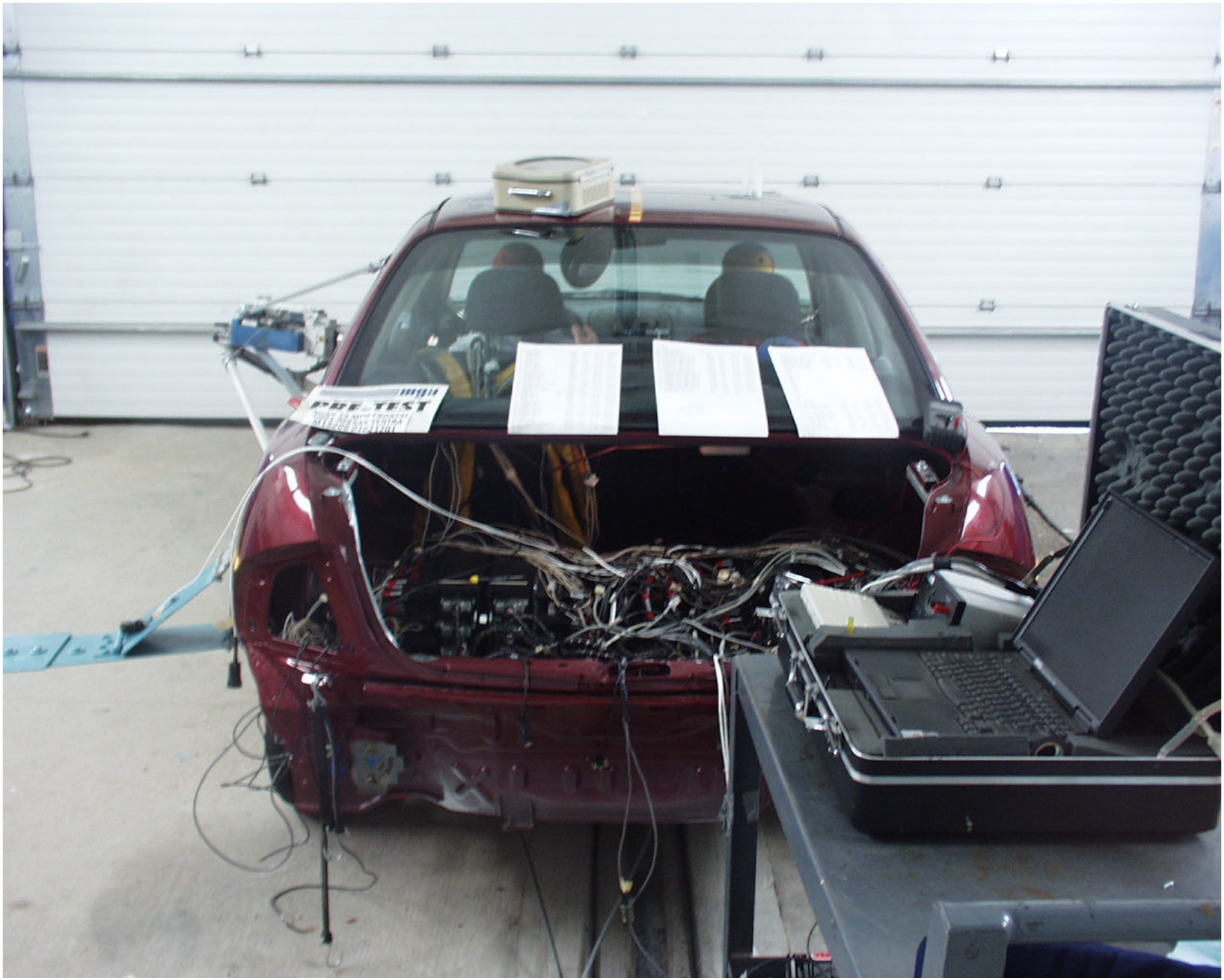


Photo No. A-3 - Pre-Test Rear View of Test Vehicle



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



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



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



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



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



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



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



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



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



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



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

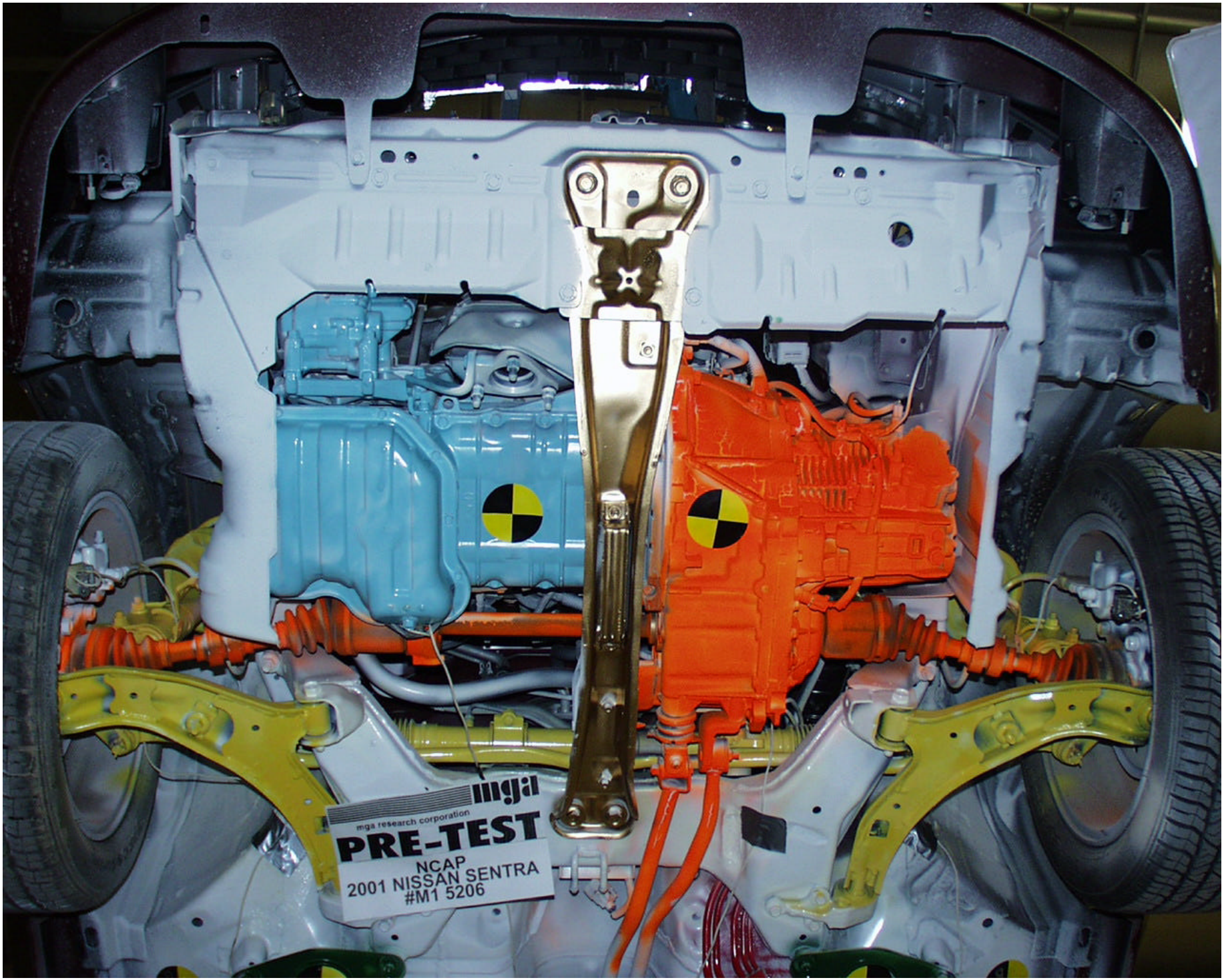


Photo No. A-16 - Pre-Test Front Underbody View

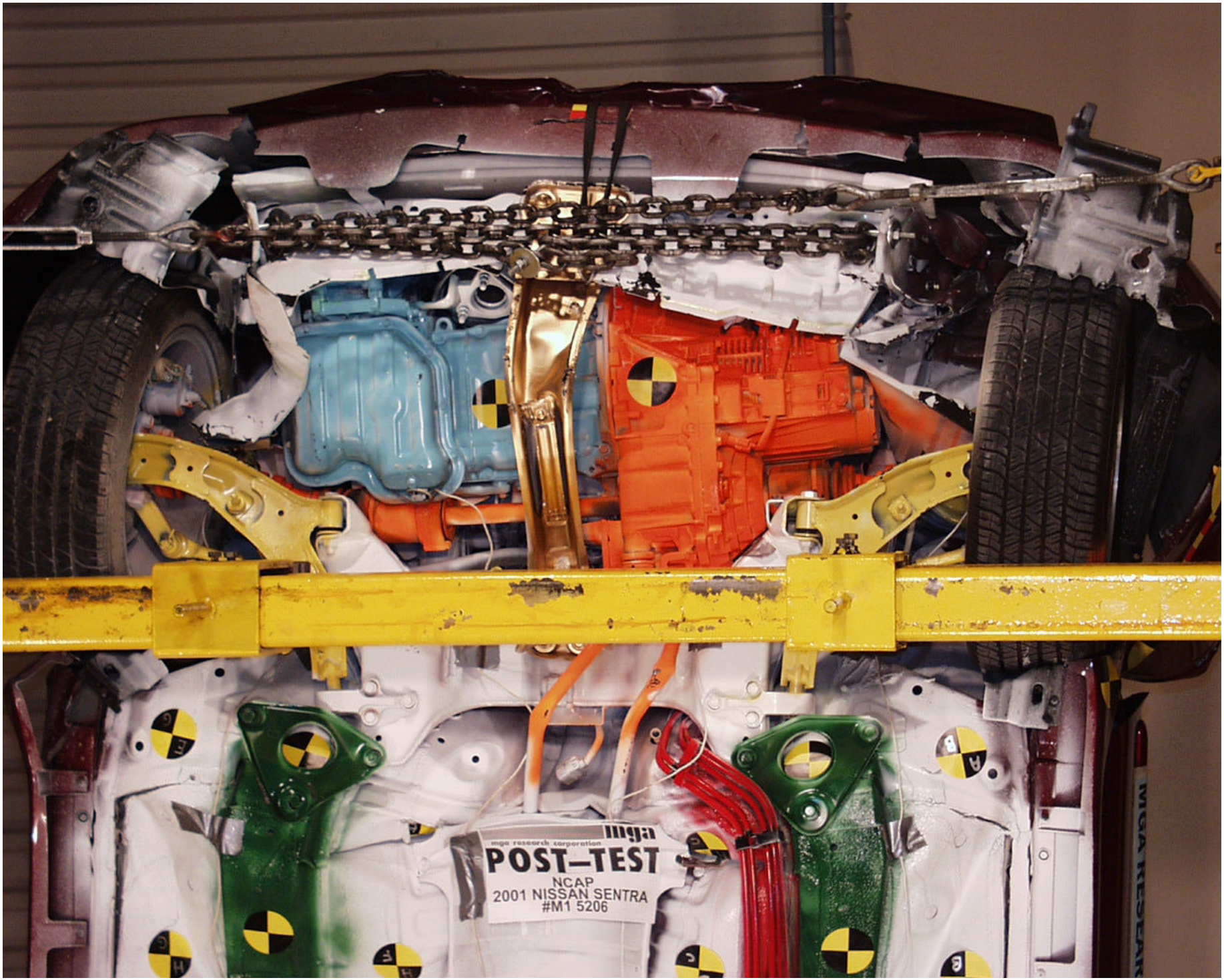


Photo No. A-17 - Post-Test Front Underbody View

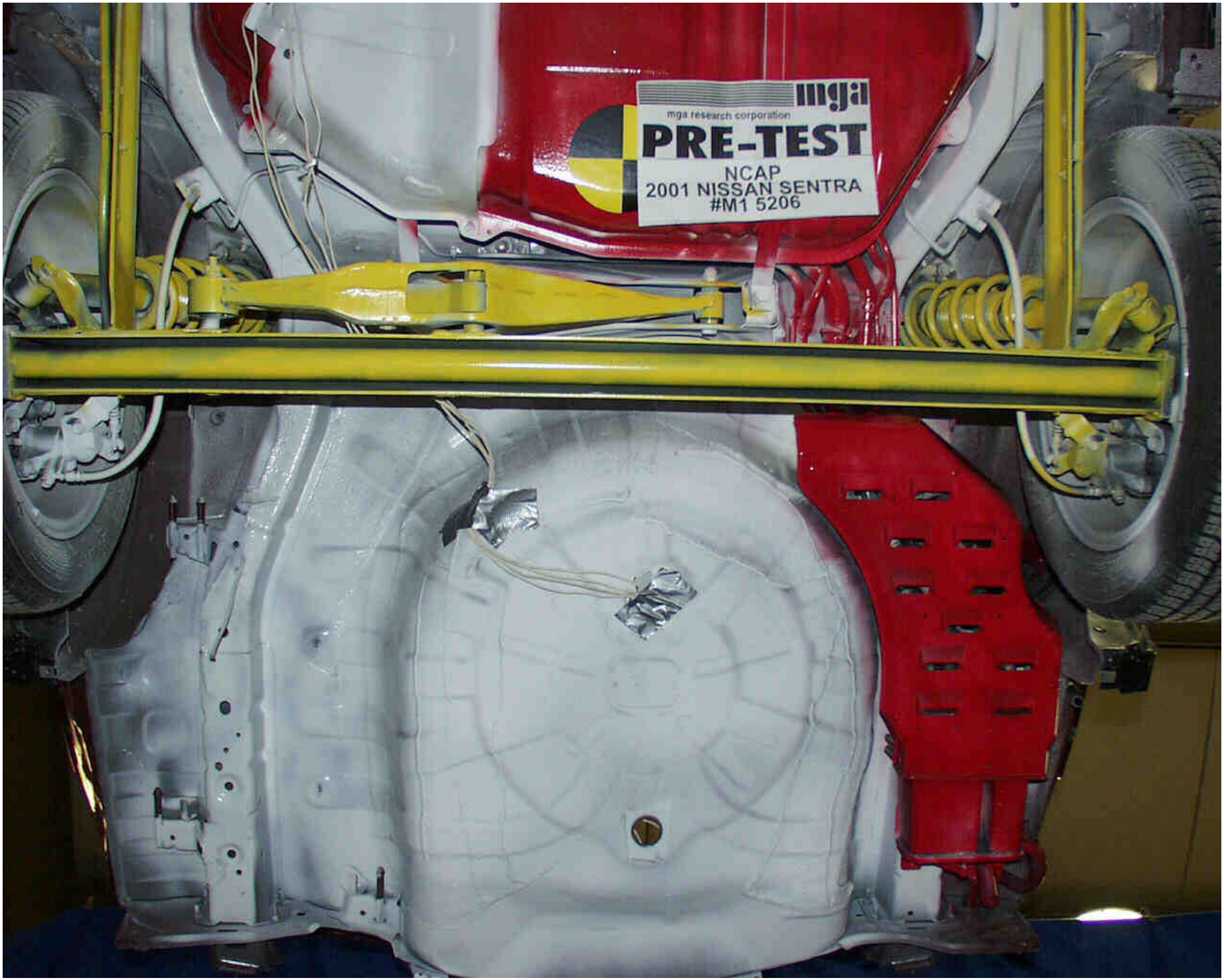


Photo No. A-18 - Pre-Test Rear Underbody View

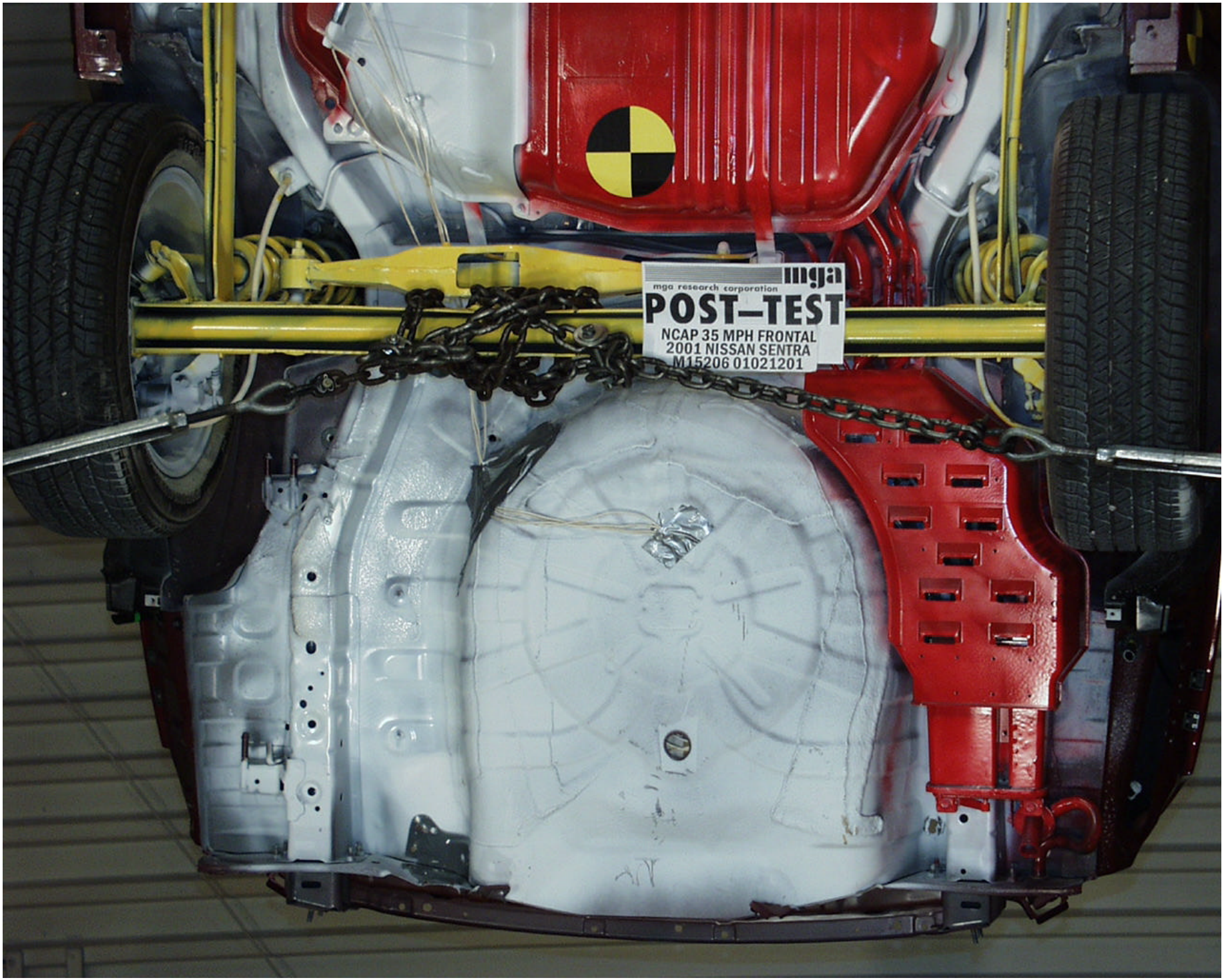


Photo No. A-19 - Post-Test Rear Underbody View



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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



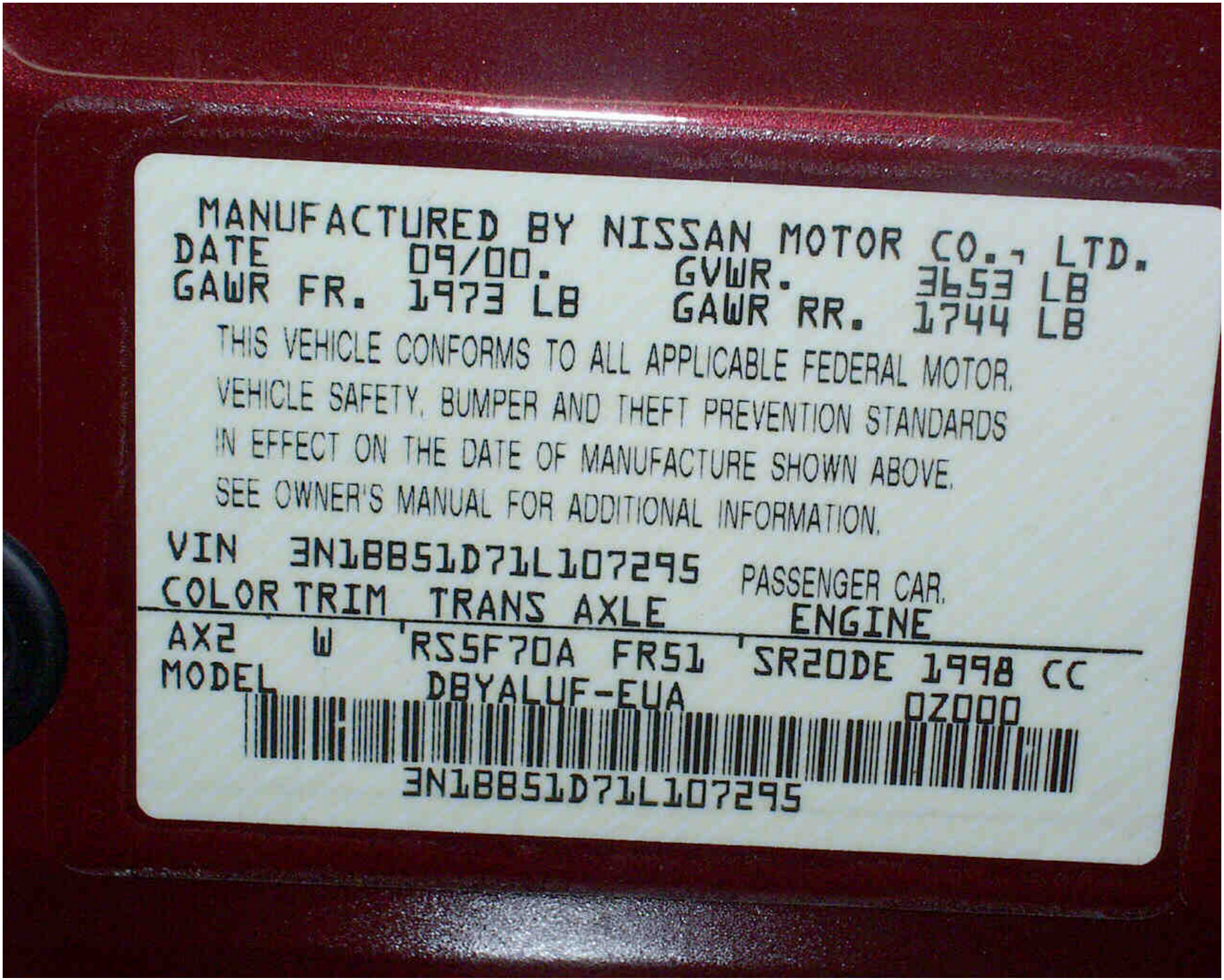
Photo No. A-43 - Post-Test Passenger Knee Contact View



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

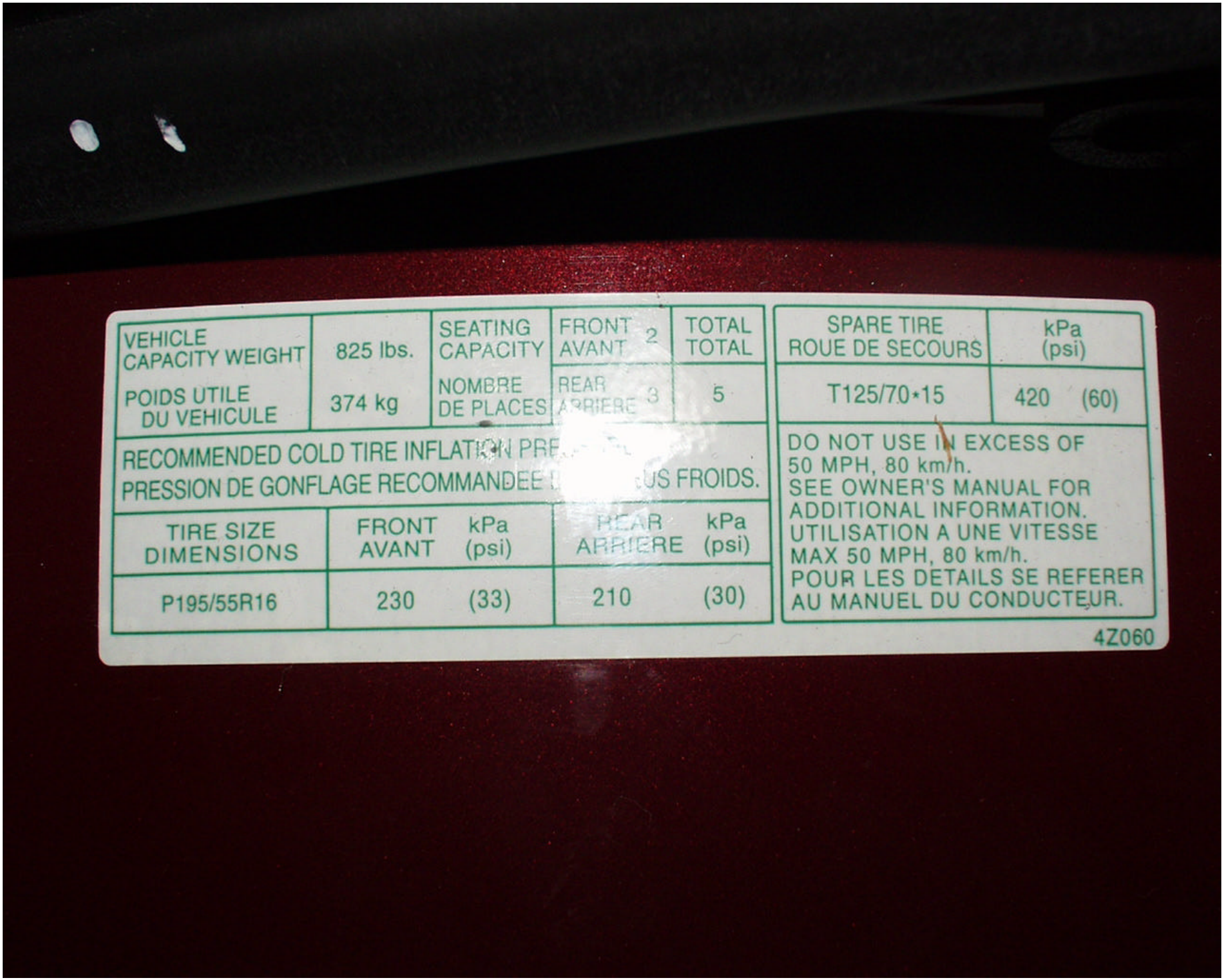


Photo No. A-45 - Post-Test Passenger Windshield View



A-46

Photo No. A-46 - Vehicle Certification Label



VEHICLE CAPACITY WEIGHT / POIDS UTILE DU VEHICULE	825 lbs. / 374 kg	SEATING CAPACITY / NOMBRE DE PLACES	FRONT AVANT 2 / REAR ARRIERE 3	TOTAL TOTAL 5

RECOMMENDED COLD TIRE INFLATION PRE... / PRESSION DE GONFLAGE RECOMMANDEE ... US FROIDS.

TIRE SIZE DIMENSIONS	FRONT AVANT kPa (psi)	REAR ARRIERE kPa (psi)
P195/55R16	230 (33)	210 (30)

SPARE TIRE ROUE DE SECOURS	kPa (psi)
T125/70•15	420 (60)

DO NOT USE IN EXCESS OF 50 MPH, 80 km/h.
SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION.
UTILISATION A UNE VITESSE MAX 50 MPH, 80 km/h.
POUR LES DETAILS SE REFERER AU MANUEL DU CONDUCTEUR.

4Z060

A-47

Photo No. A-47 - Tire Placard



Photo No. A-48 - Vehicle Impact

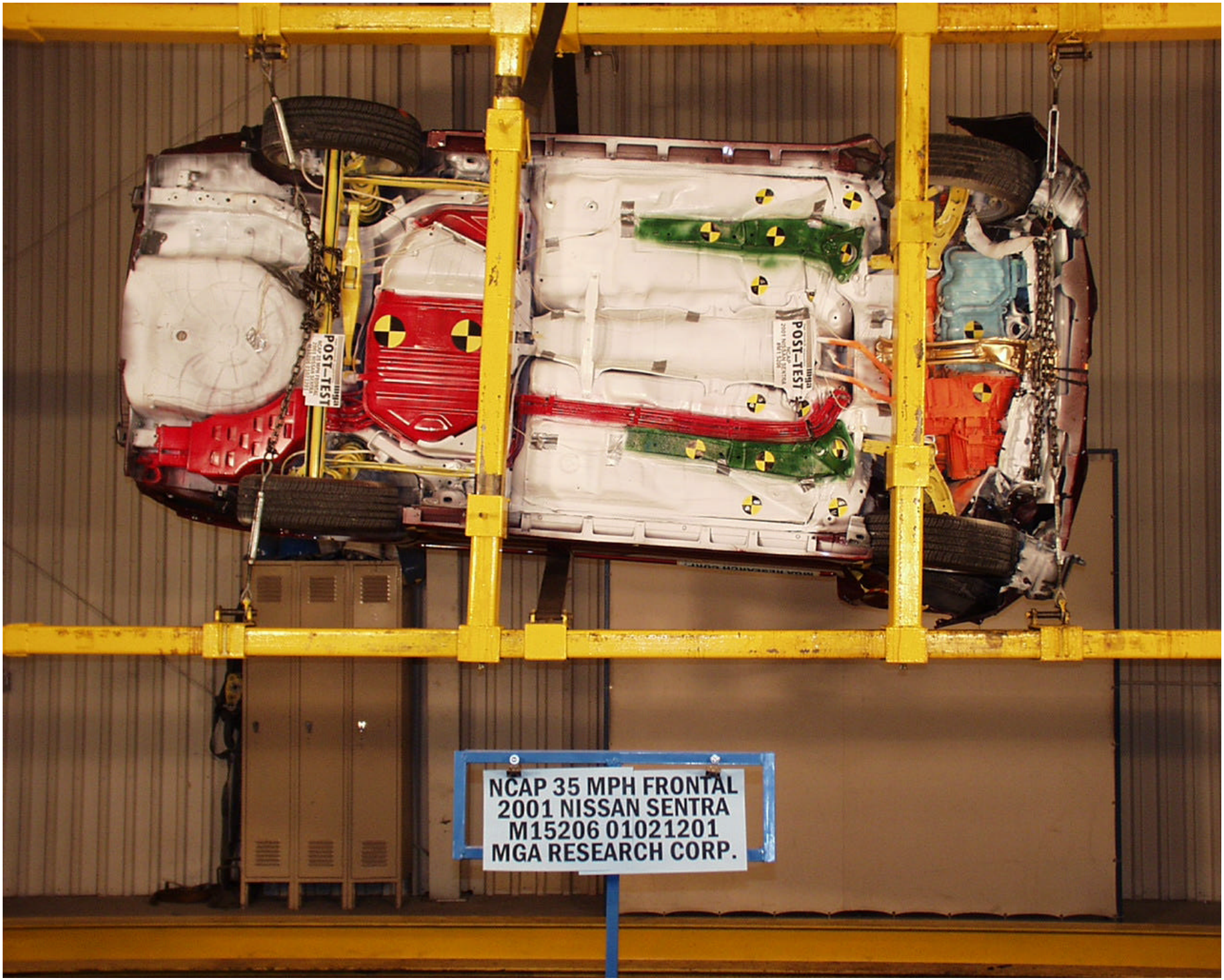


Photo No. A-49 - Rollover 90E



Photo No. A-50 - Rollover 180E



Photo No. A-51 - Rollover 270E



Photo No. A-52 - Rollover 360E

APPENDIX B

DUMMY AND VEHICLE RESPONSE DATA TRACES

TABLE OF DATA PLOTS

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	Page No.
Figure B-1 - Driver Head X Acceleration vs. Time	B-1
Figure B-2 - Driver Head Y Acceleration vs. Time	B-2
Figure B-3 - Driver Head Z Acceleration vs. Time	B-3
Figure B-4 - Driver Head Resultant Acceleration vs. Time	B-4
Figure B-5 - Driver Head X Velocity vs. Time	B-5
Figure B-6 - Driver Head Redundant X Acceleration vs. Time	B-6
Figure B-7 - Driver Head Redundant Y Acceleration vs. Time	B-7
Figure B-8 - Driver Head Redundant Z Acceleration vs. Time	B-8
Figure B-9 - Driver Head Redundant Resultant Acceleration vs. Time	B-9
Figure B-10 - Driver Head Redundant X Velocity vs. Time	B-10
Figure B-11 - Driver Neck Force X vs. Time	B-11
Figure B-12 - Driver Neck Force Y vs. Time	B-12
Figure B-13 - Driver Neck Force Z vs. Time	B-13
Figure B-14 - Driver Neck Force Resultant vs. Time	B-14
Figure B-15 - Driver Neck Moment X vs. Time	B-15
Figure B-16 - Driver Neck Moment Y vs. Time	B-16
Figure B-17 - Driver Neck Moment Z vs. Time	B-17
Figure B-18 - Driver Neck Moment Resultant vs. Time	B-18
Figure B-19 - Driver Chest X Acceleration vs. Time	B-19
Figure B-20 - Driver Chest Y Acceleration vs. Time	B-20
Figure B-21 - Driver Chest Z Acceleration vs. Time	B-21
Figure B-22 - Driver Chest Resultant Acceleration vs. Time	B-22
Figure B-23 - Driver Chest X Velocity vs. Time	B-23
Figure B-24 - Driver Chest Redundant X Acceleration vs. Time	B-24

TABLE OF DATA PLOTS

Occupant Data: (Cont'd)	Page No.
Figure B-25 - Driver Chest Redundant Y Acceleration vs. Time	B-25
Figure B-26 - Driver Chest Redundant Z Acceleration vs. Time	B-26
Figure B-27 - Driver Chest Redundant Resultant Acceleration vs. Time	B-27
Figure B-28 - Driver Chest Redundant X Velocity vs. Time	B-28
Figure B-29 - Driver Chest Compression vs. Time	B-29
Figure B-30 - Driver Pelvis X Acceleration vs. Time	B-30
Figure B-31 - Driver Pelvis Y Acceleration vs. Time	B-31
Figure B-32 - Driver Pelvis Z Acceleration vs. Time	B-32
Figure B-33 - Driver Pelvis Resultant Acceleration vs. Time	B-33
Figure B-34 - Driver Left Femur Force vs. Time	B-34
Figure B-35 - Driver Right Femur Force vs. Time	B-35
Figure B-36 - Driver Left Upper Tibia Moment X vs. Time	B-36
Figure B-37 - Driver Left Upper Tibia Moment Y vs. Time	B-37
Figure B-38 - Driver Left Upper Tibia Force Z vs. Time	B-38
Figure B-39 - Driver Left Lower Tibia Moment X vs. Time	B-39
Figure B-40 - Driver Left Lower Tibia Moment Y vs. Time	B-40
Figure B-41 - Driver Left Lower Tibia Force Z vs. Time	B-41
Figure B-42 - Driver Right Upper Tibia Moment X vs. Time	B-42
Figure B-43 - Driver Right Upper Tibia Moment Y vs. Time	B-43
Figure B-44 - Driver Right Upper Tibia Force Z vs. Time	B-44
Figure B-45 - Driver Right Lower Tibia Moment X vs. Time	B-45
Figure B-46 - Driver Right Lower Tibia Moment Y vs. Time	B-46
Figure B-47 - Driver Right Lower Tibia Force Z vs. Time	B-47
Figure B-48 - Driver Left Knee Sheer vs. Time	B-48
Figure B-49 - Driver Right Knee Sheer vs. Time	B-49
Figure B-50 - Driver Left Foot Ball Z Acceleration vs. Time	B-50
Figure B-51 - Driver Left Heel X Acceleration vs. Time	B-51
Figure B-52 - Driver Left Heel Z Acceleration vs. Time	B-52
Figure B-53 - Driver Right Foot Ball Z Acceleration vs. Time	B-53
Figure B-54 - Driver Right Heel X Acceleration vs. Time	B-54
Figure B-55 - Driver Right Heel Z Acceleration vs. Time	B-55
Figure B-56 - Driver Shoulder Belt Force vs. Time	B-56
Figure B-57 - Driver Lap Belt Force vs. Time	B-57

TABLE OF DATA PLOTS

Occupant Data: (Cont'd)	Page No.
Figure B-58 - Passenger Head X Acceleration vs. Time	B-58
Figure B-59 - Passenger Head Y Acceleration vs. Time	B-59
Figure B-60 - Passenger Head Z Acceleration vs. Time	B-60
Figure B-61 - Passenger Head Resultant Acceleration vs. Time	B-61
Figure B-62 - Passenger Head X Velocity vs. Time	B-62
Figure B-63 - Passenger Head Redundant X Acceleration vs. Time	B-63
Figure B-64 - Passenger Head Redundant Y Acceleration vs. Time	B-64
Figure B-65 - Passenger Head Redundant Z Acceleration vs. Time	B-65
Figure B-66 - Passenger Head Redundant Resultant Acceleration vs. Time	B-66
Figure B-67 - Passenger Head Redundant X Velocity vs. Time	B-67
Figure B-68 - Passenger Neck Force X vs. Time	B-68
Figure B-69 - Passenger Neck Force Y vs. Time	B-69
Figure B-70 - Passenger Neck Force Z vs. Time	B-70
Figure B-71 - Passenger Neck Force Resultant vs. Time	B-71
Figure B-72 - Passenger Neck Moment X vs. Time	B-72
Figure B-73 - Passenger Neck Moment Y vs. Time	B-73
Figure B-74 - Passenger Neck Moment Z vs. Time	B-74
Figure B-75 - Passenger Neck Moment Resultant vs. Time	B-75
Figure B-76 - Passenger Chest X Acceleration vs. Time	B-76
Figure B-77 - Passenger Chest Y Acceleration vs. Time	B-77
Figure B-78 - Passenger Chest Z Acceleration vs. Time	B-78
Figure B-79 - Passenger Chest Resultant Acceleration vs. Time	B-79
Figure B-80 - Passenger Chest X Velocity vs. Time	B-80
Figure B-81 - Passenger Chest Redundant X Acceleration vs. Time	B-81
Figure B-82 - Passenger Chest Redundant Y Acceleration vs. Time	B-82
Figure B-83 - Passenger Chest Redundant Z Acceleration vs. Time	B-83
Figure B-84 - Passenger Chest Redundant Resultant Acceleration vs. Time	B-84
Figure B-85 - Passenger Chest Redundant X Velocity vs. Time	B-85
Figure B-86 - Passenger Chest Compression vs. Time	B-86
Figure B-87 - Passenger Pelvis X Acceleration vs. Time	B-87
Figure B-88 - Passenger Pelvis Y Acceleration vs. Time	B-88
Figure B-89 - Passenger Pelvis Z Acceleration vs. Time	B-89

TABLE OF DATA PLOTS

Occupant Data: (Cont'd)	Page No.
Figure B-90 - Passenger Pelvis Resultant Acceleration vs. Time	B-90
Figure B-91 - Passenger Pelvis X Velocity vs. Time	B-91
Figure B-92 - Passenger Left Femur Force vs. Time	B-92
Figure B-93 - Passenger Right Femur Force vs. Time	B-93
Figure B-94 - Passenger Left Upper Tibia Moment X vs. Time	B-94
Figure B-95 - Passenger Left Upper Tibia Moment Y vs. Time	B-95
Figure B-96 - Passenger Left Upper Tibia Force Z vs. Time	B-96
Figure B-97 - Passenger Left Lower Tibia Moment X vs. Time	B-97
Figure B-98 - Passenger Left Lower Tibia Moment Y vs. Time	B-98
Figure B-99 - Passenger Left Lower Tibia Force Z vs. Time	B-99
Figure B-100 - Passenger Right Upper Tibia Moment X vs. Time	B-100
Figure B-101 - Passenger Right Upper Tibia Moment Y vs. Time	B-101
Figure B-102 - Passenger Right Upper Tibia Force Z vs. Time	B-102
Figure B-103 - Passenger Right Lower Tibia Moment X vs. Time	B-103
Figure B-104 - Passenger Right Lower Tibia Moment Y vs. Time	B-104
Figure B-105 - Passenger Right Lower Tibia Force Z vs. Time	B-105
Figure B-106 - Passenger Left Knee Sheer vs. Time	B-106
Figure B-107 - Passenger Right Knee Sheer vs. Time	B-107
Figure B-108 - Passenger Left Foot Ball Z Acceleration vs. Time	B-108
Figure B-109 - Passenger Left Heel X Acceleration vs. Time	B-109
Figure B-110 - Passenger Left Heel Z Acceleration vs. Time	B-110
Figure B-111 - Passenger Right Foot Ball Z Acceleration vs. Time	B-111
Figure B-112 - Passenger Right Heel X Acceleration vs. Time	B-112
Figure B-113 - Passenger Right Heel Z Acceleration vs. Time	B-113
Figure B-114 - Passenger Shoulder Belt Force vs. Time	B-114
Figure B-115 - Passenger Lap Belt Force vs. Time	B-115

Vehicle and Barrier Data:	
Figure B-116- Left Rear Seat Crossmember X Acceleration vs. Time	B-116
Figure B-117 - Left Rear Seat Crossmember X Velocity vs. Time	B-117
Figure B-118 - Left Rear Seat Crossmember X Displacement vs. Time	B-118
Figure B-119 - Right Rear Seat Crossmember X Acceleration vs. Time	B-119
Figure B-120- Right Rear Seat Crossmember X Velocity vs. Time	B-120
Figure B-121 - Right Rear Seat Crossmember X Displacement vs. Time	B-121

TABLE OF DATA PLOTS

Vehicle and Barrier Data: (Cont'd)	Page No.
Figure B-122 - Top of Engine Block X Acceleration vs. Time	B-122
Figure B-123 - Top of Engine Block X Velocity vs. Time	B-123
Figure B-124 - Top of Engine Block X Displacement vs. Time	B-124
Figure B-125 - Bottom of Engine X Acceleration vs. Time	B-125
Figure B-126 - Bottom of Engine X Velocity vs. Time	B-126
Figure B-127 - Bottom of Engine X Displacement vs. Time	B-127
Figure B-128 - Left Front Brake Caliper X Acceleration vs. Time	B-128
Figure B-129 - Left Front Brake Caliper X Velocity vs. Time	B-129
Figure B-130 - Left Front Brake Caliper X Displacement vs. Time	B-130
Figure B-131 - Right Front Brake Caliper X Acceleration vs. Time	B-131
Figure B-132 - Right Front Brake Caliper X Velocity vs. Time	B-132
Figure B-133 - Right Front Brake Caliper X Displacement vs. Time	B-133
Figure B-134 - Instrument Panel X Acceleration vs. Time	B-134
Figure B-135 - Instrument Panel X Velocity vs. Time	B-135
Figure B-136 - Instrument Panel X Displacement vs. Time	B-136
Figure B-137 - Left Rear Seat Crossmember Redundant X Acceleration vs. Time	B-137
Figure B-138 - Left Rear Seat Crossmember Redundant X Velocity vs. Time	B-138
Figure B-139 - Left Rear Seat Crossmember Redundant X Displacement vs. Time	B-139
Figure B-140 - Right Rear Seat Crossmember Redundant X Acceleration vs. Time*	B-140
Figure B-141 - Right Rear Seat Crossmember Redundant X Velocity vs. Time*	B-141
Figure B-142 - Right Rear Seat Crossmember Redundant X Displacement vs. Time*	B-142
Figure B-143 - Upper Left Barrier Force vs. Time	B-143
Figure B-144 - Upper Center Barrier Force vs. Time	B-144
Figure B-145 - Upper Right Barrier Force vs. Time	B-145
Figure B-146 - Lower Left Barrier Force vs. Time	B-146
Figure B-147 - Lower Center Barrier Force vs. Time	B-147
Figure B-148 - Lower Right Barrier Force vs. Time	B-148
Figure B-149 - Sum of Left Barrier Force vs. Time	B-149
Figure B-150 - Sum of Center Barrier Force vs. Time	B-150
Figure B-151 - Sum of Right Barrier Force vs. Time	B-151
Figure B-152 - Sum of Barrier Force vs. Time	B-152

* No valid data collected.

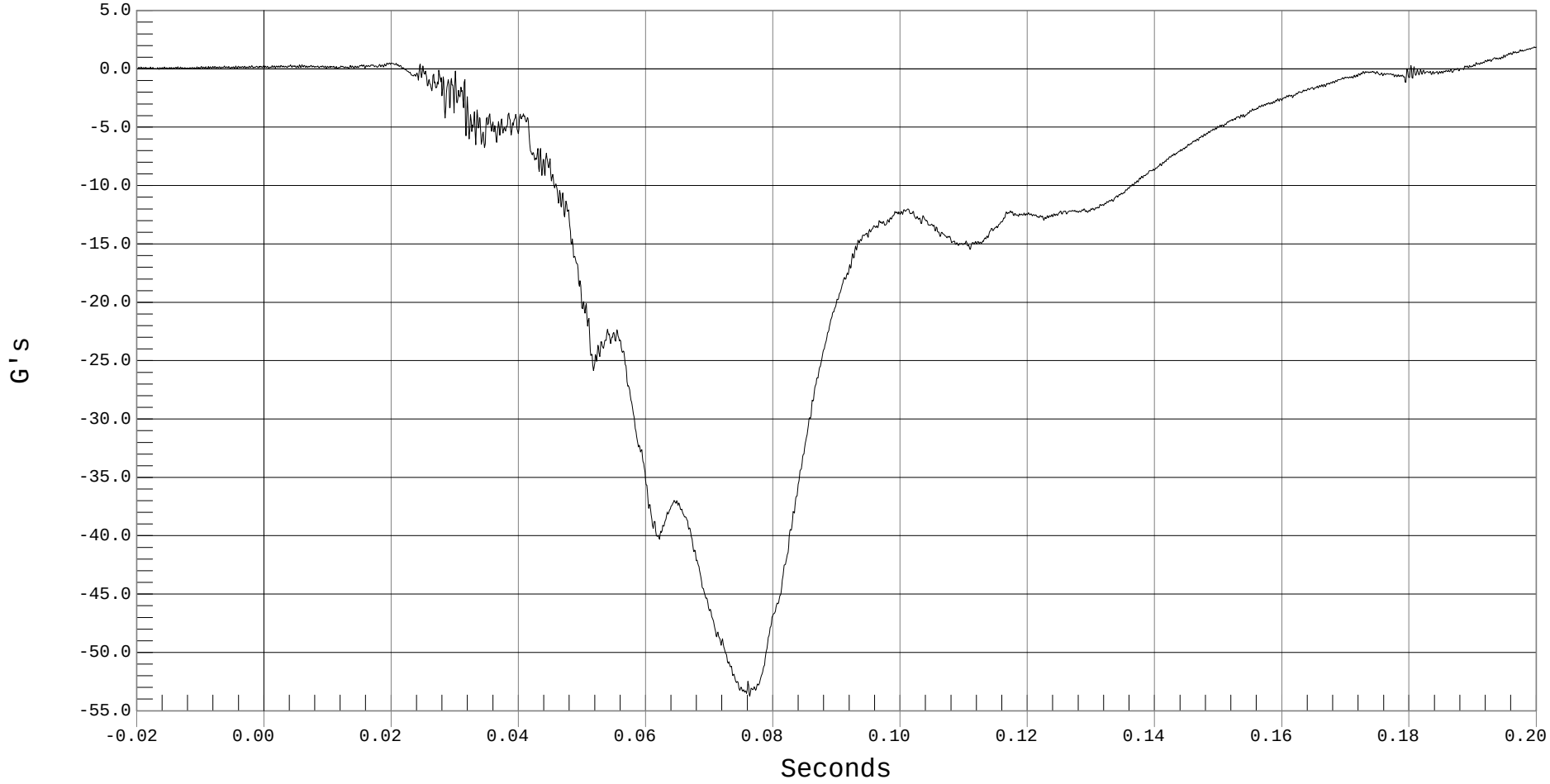
DRIVER HEAD X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 DRIVER HEAD X, B01014AT.A01

Ymin = -53.76 G's @ 0.0763 Seconds, Ymax = 1.88 G's @ 0.1996 Seconds



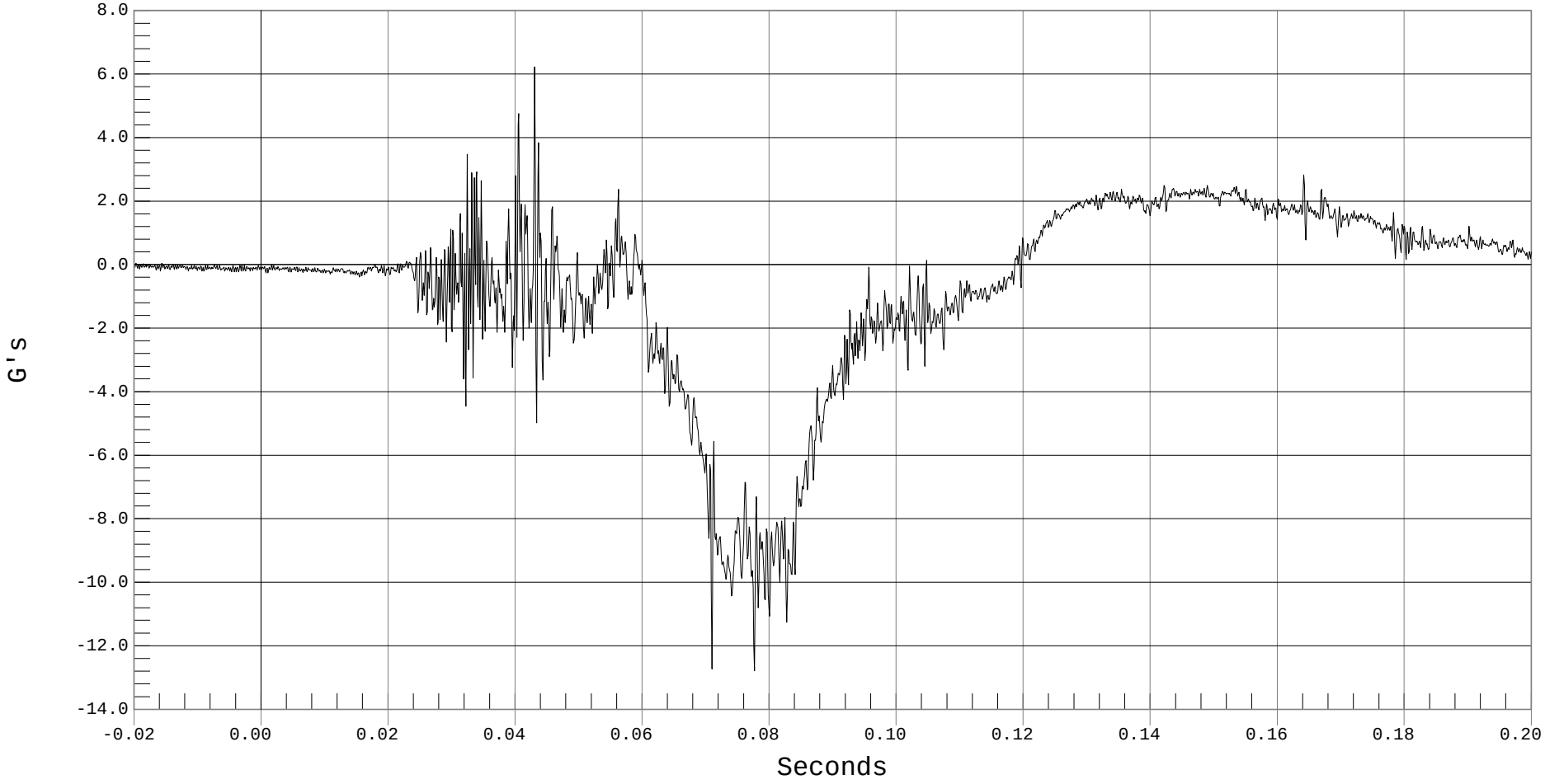
DRIVER HEAD Y ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 DRIVER HEAD Y, B01014AT.A02

Ymin = -12.79 G's @ 0.0776 Seconds, Ymax = 6.23 G's @ 0.0430 Seconds



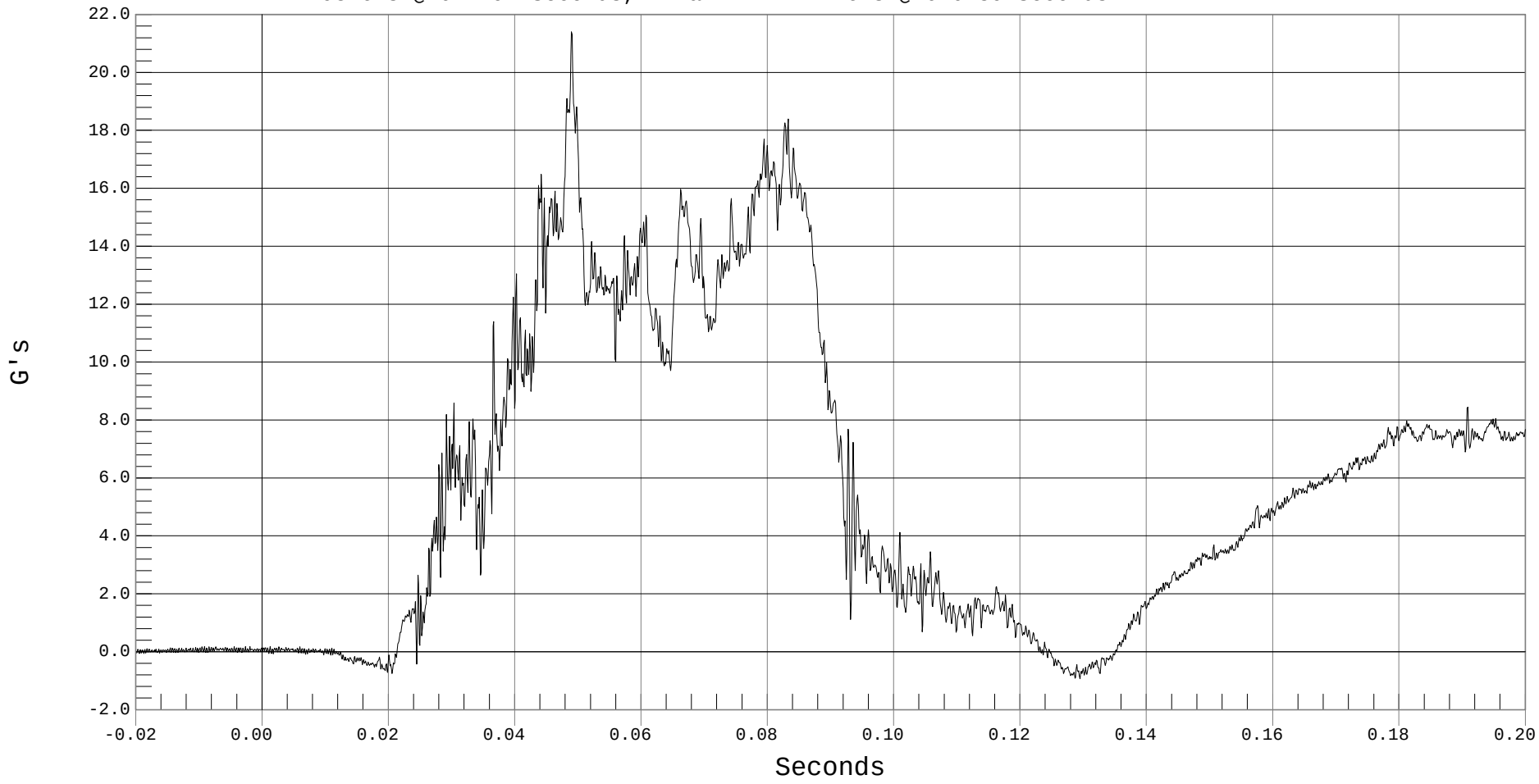
DRIVER HEAD Z ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 DRIVER HEAD Z, B01014AT.A03

Ymin = -.93 G's @ 0.1294 Seconds, Ymax = 21.41 G's @ 0.0489 Seconds



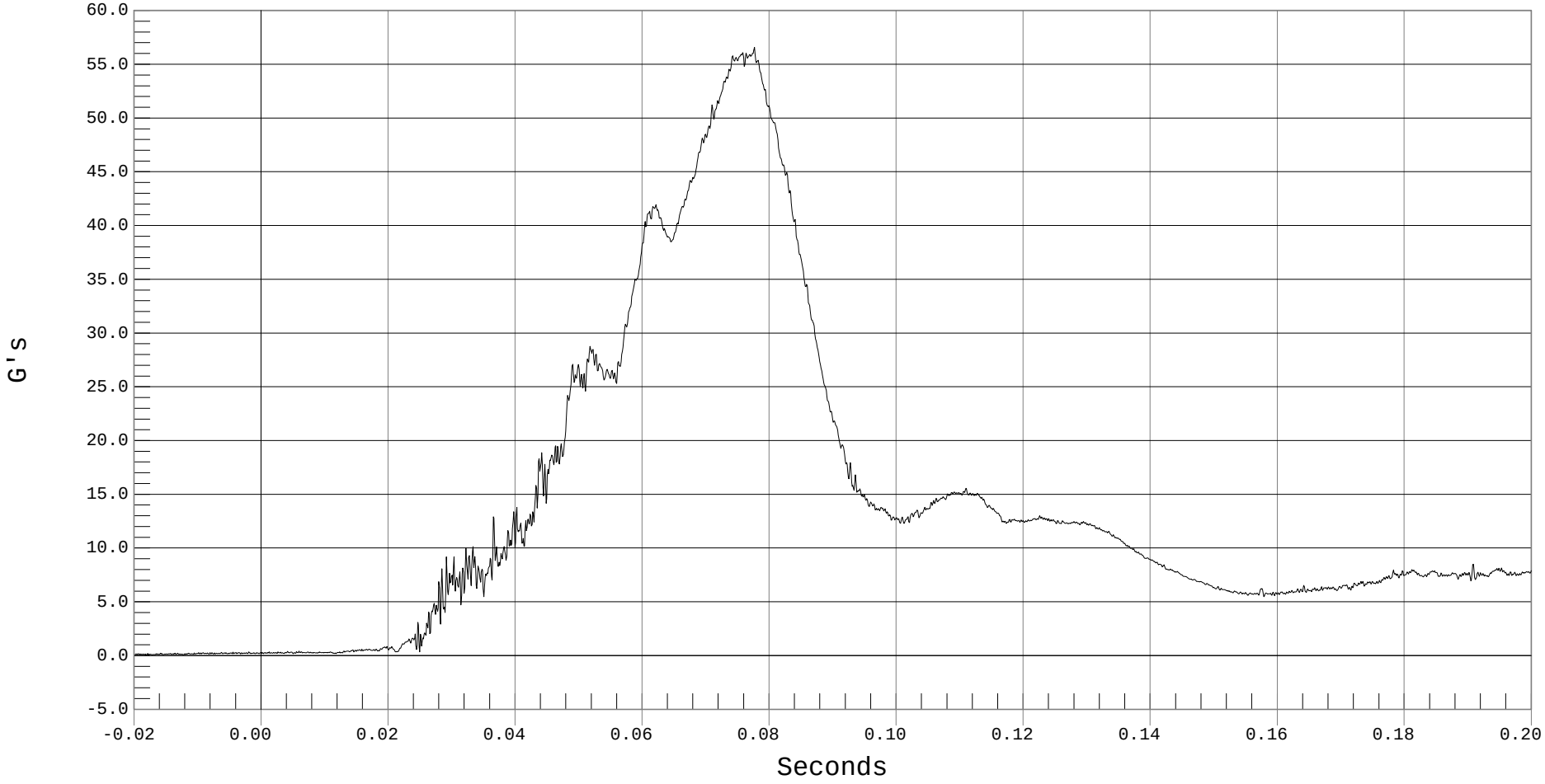
DRIVER HEAD RESULTANT ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 DRIVER HEAD RESULTANT ACCELERATION, B01014AV.A01

Ymin = .03 G's @ -0.0178 Seconds, Ymax = 56.57 G's @ 0.0776 Seconds



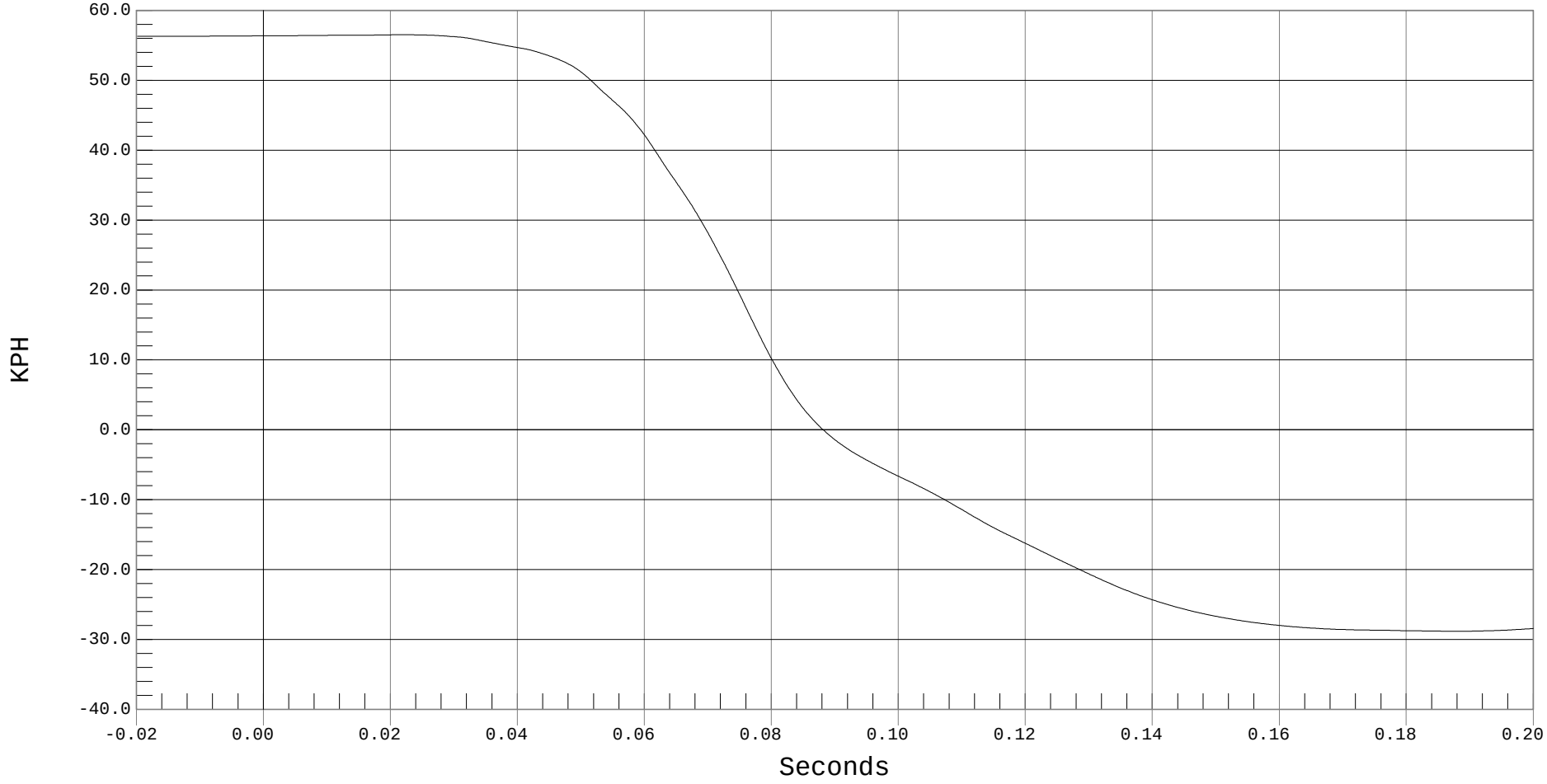
DRIVER HEAD X VELOCITY

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 DRIVER HEAD X VELOCITY, B01014AI.V01

Ymin = -28.83 KPH @ 0.1881 Seconds, Ymax = 56.54 KPH @ 0.0220 Seconds



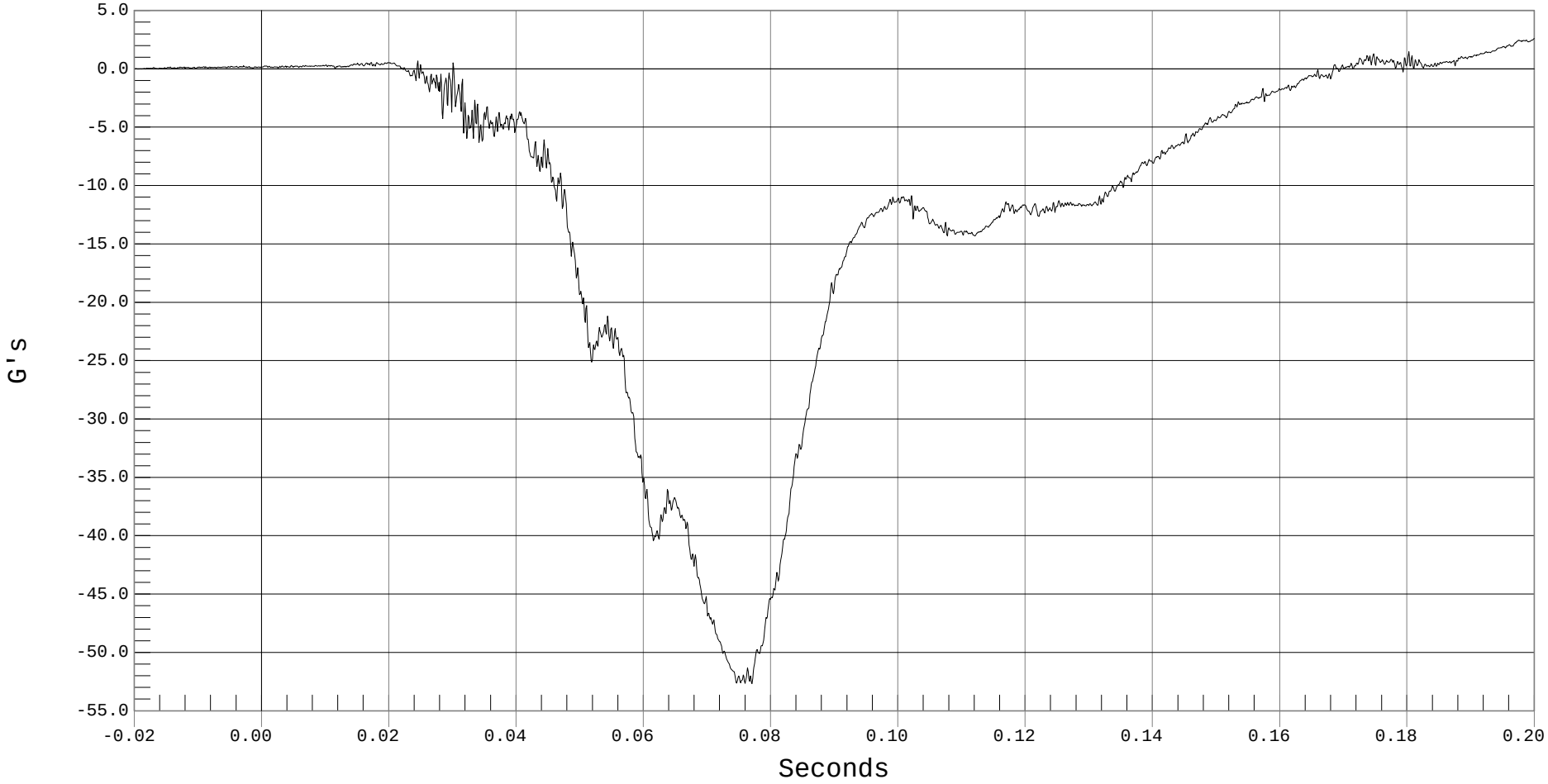
DRIVER HEAD REDUNDANT X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 DRIVER HEAD Xr, B01014AT.A33

Ymin = -52.67 G's @ 0.0770 Seconds, Ymax = 2.63 G's @ 0.2000 Seconds



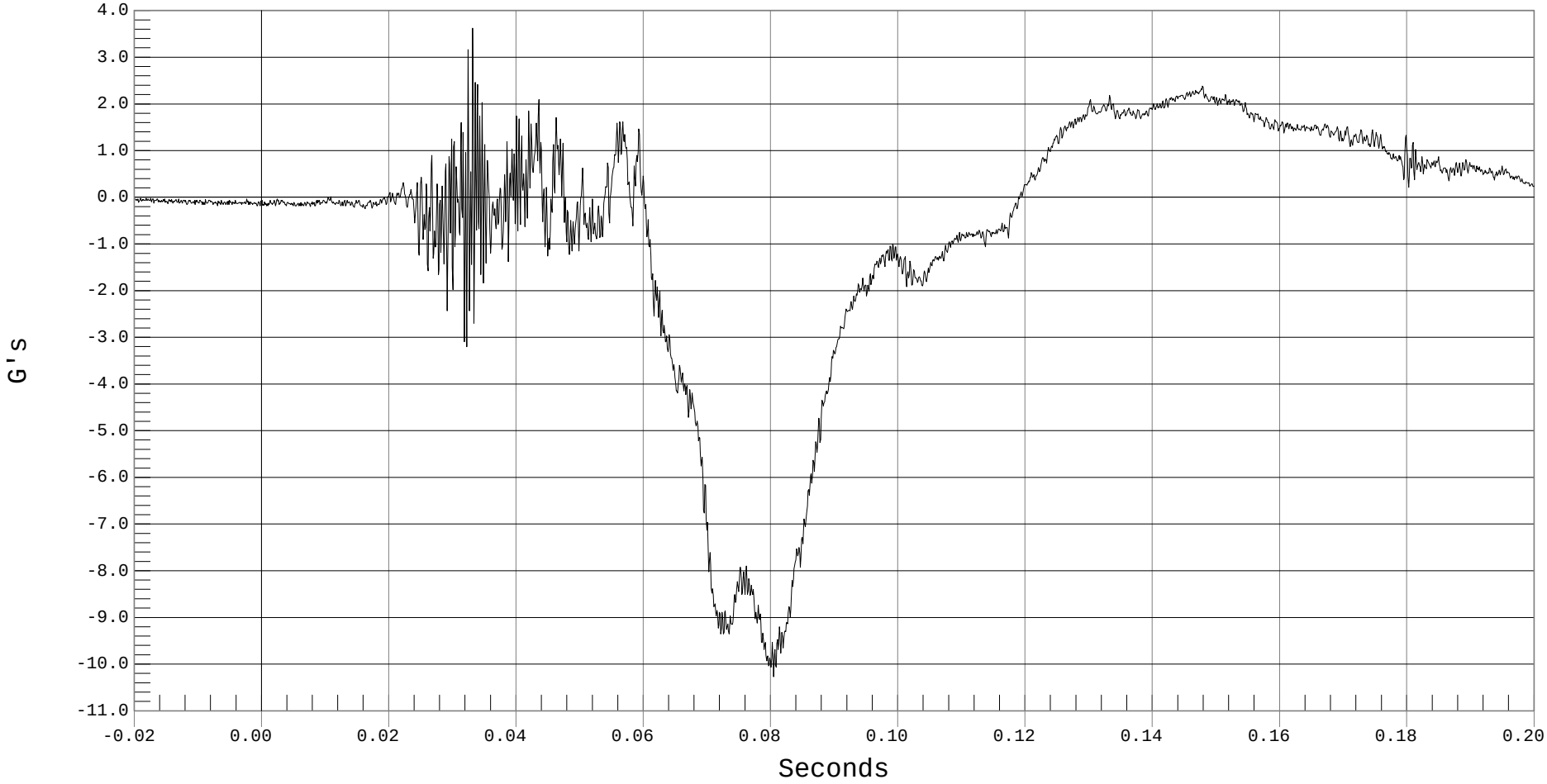
DRIVER HEAD REDUNDANT Y ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 DRIVER HEAD Yr, B01014AT.A34

Ymin = -10.27 G's @ 0.0804 Seconds, Ymax = 3.62 G's @ 0.0331 Seconds



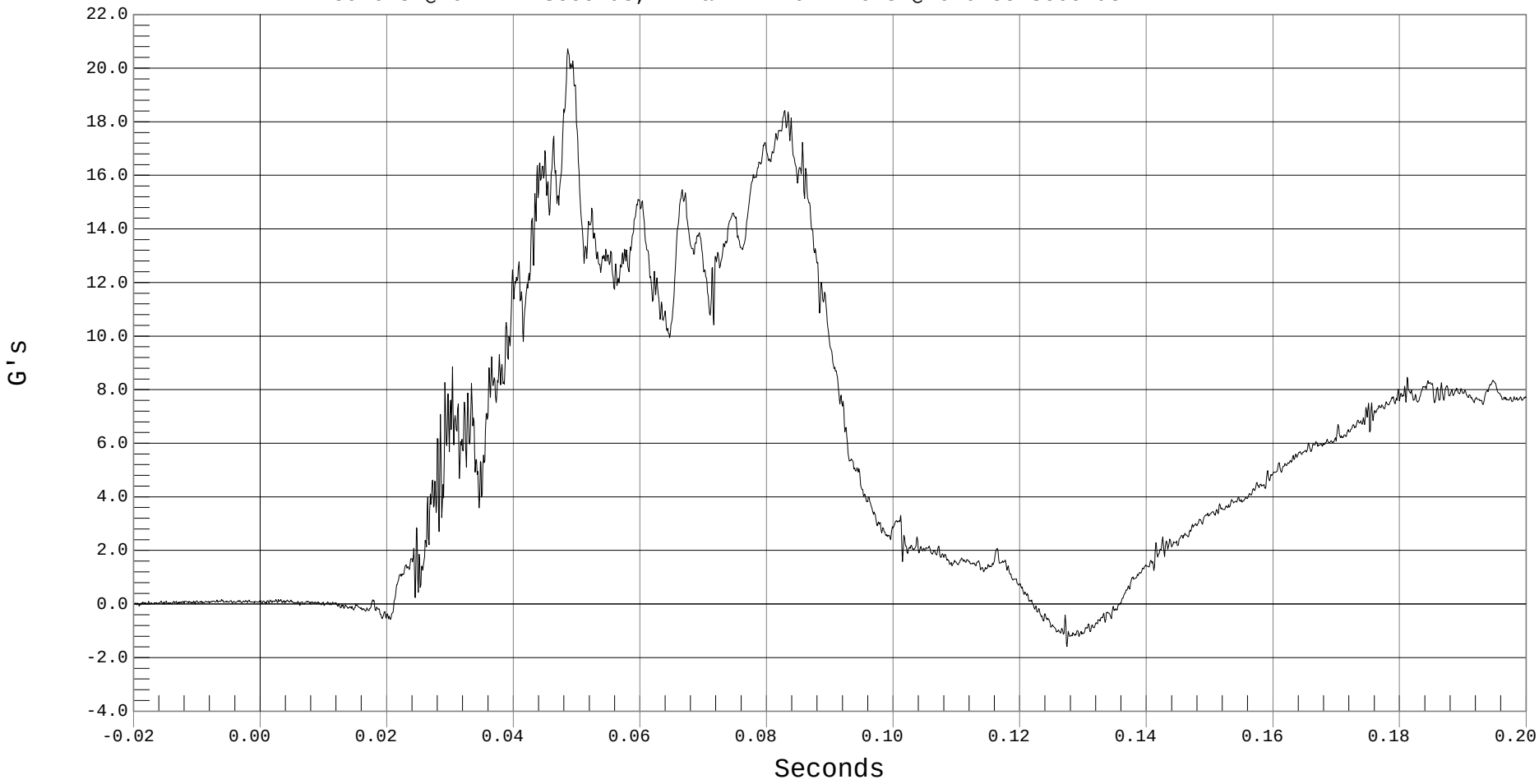
DRIVER HEAD REDUNDANT Z ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 DRIVER HEAD Zr, B01014AT.A35

Ymin = -1.59 G's @ 0.1274 Seconds, Ymax = 20.72 G's @ 0.0485 Seconds



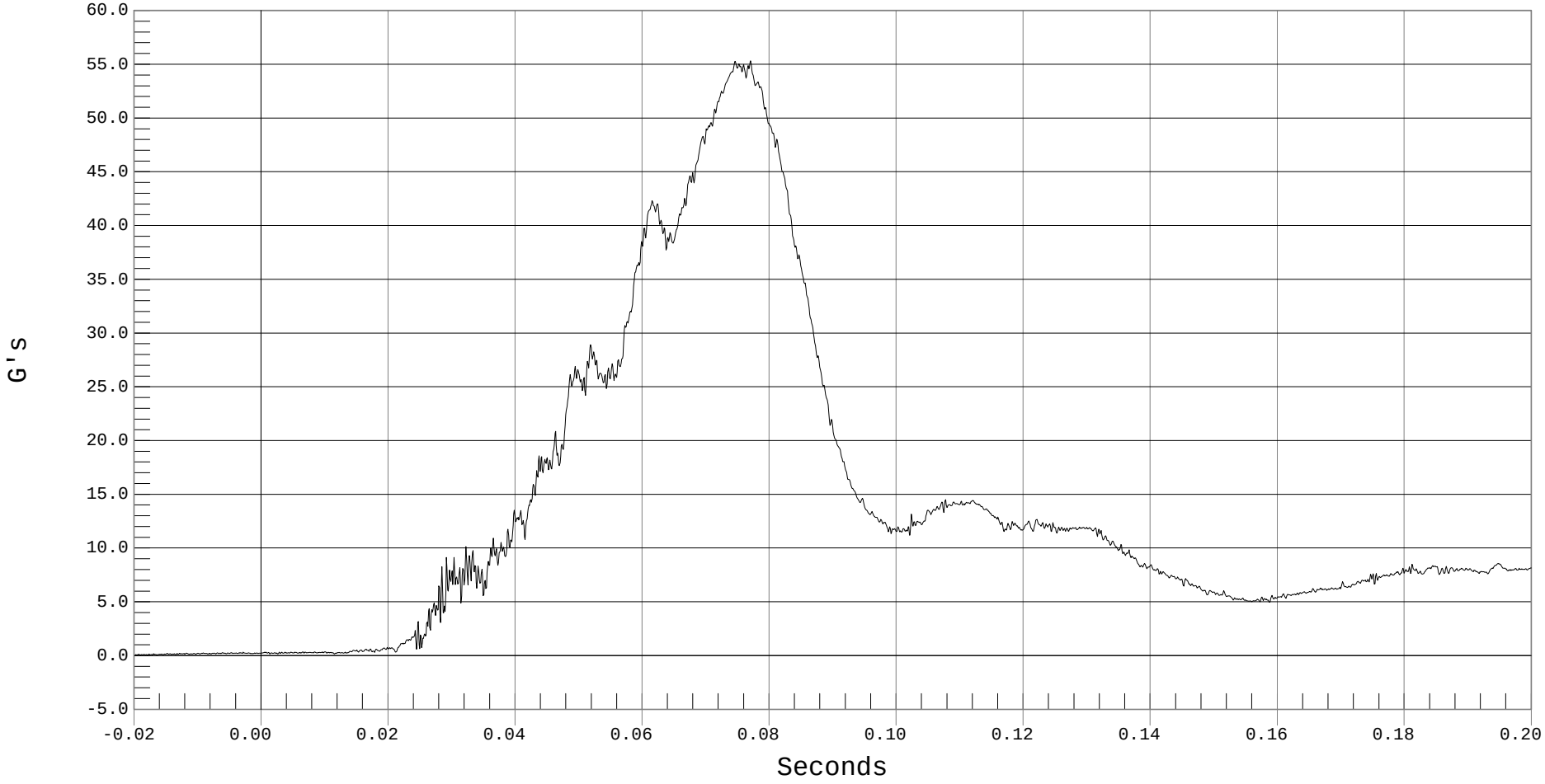
DRIVER HEAD REDUNDANT RESULTANT ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 DRIVER HEAD REDUNDANT RESULTANT ACCELERATION, B01014AV.A33

Ymin = .02 G's @ -0.0191 Seconds, Ymax = 55.31 G's @ 0.0770 Seconds



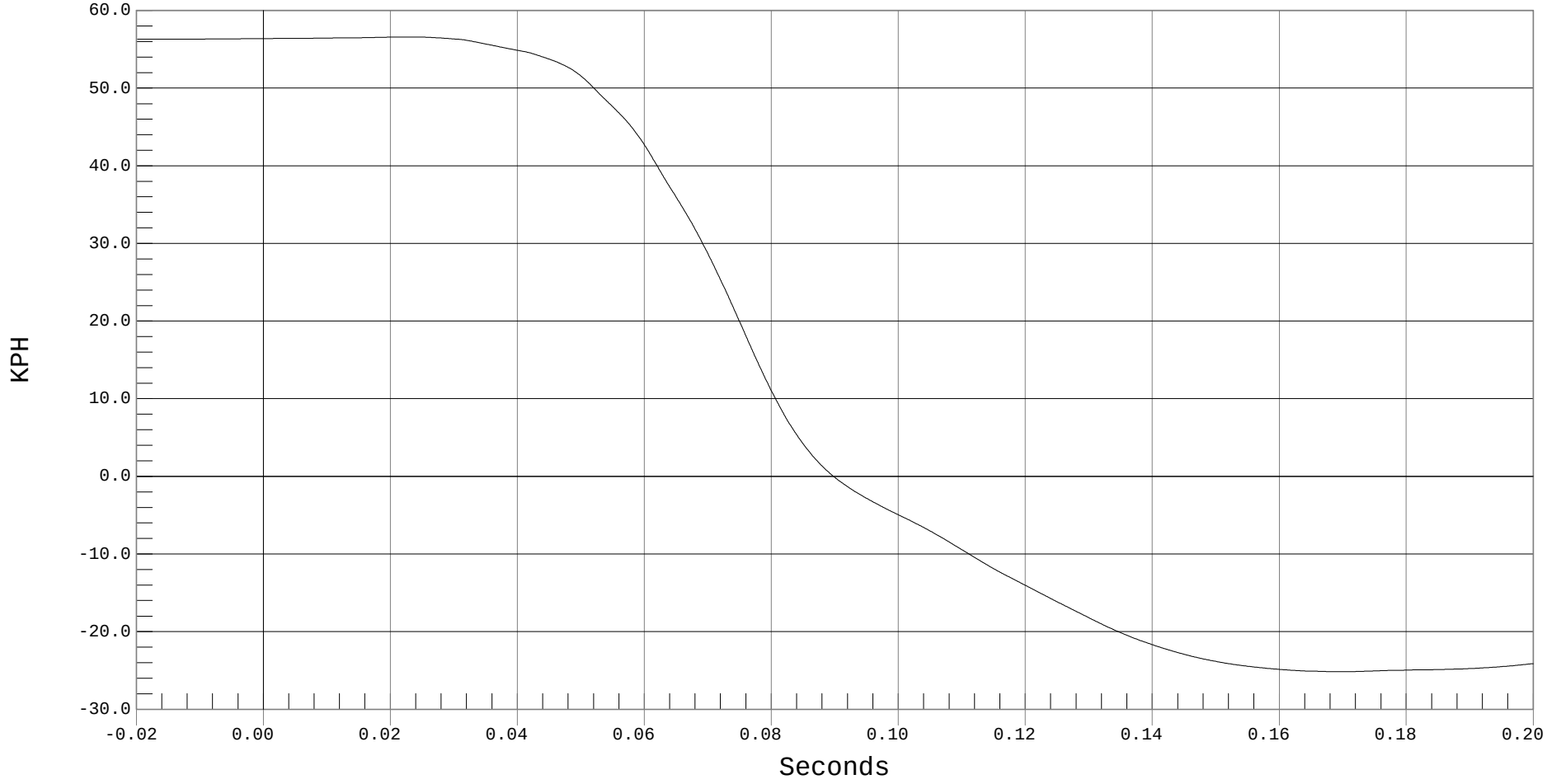
DRIVER HEAD REDUNDANT X VELOCITY

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 DRIVER HEAD REDUNDANT X VELOCITY, B01014AI.V33

Ymin = -25.15 KPH @ 0.1688 Seconds, Ymax = 56.59 KPH @ 0.0222 Seconds



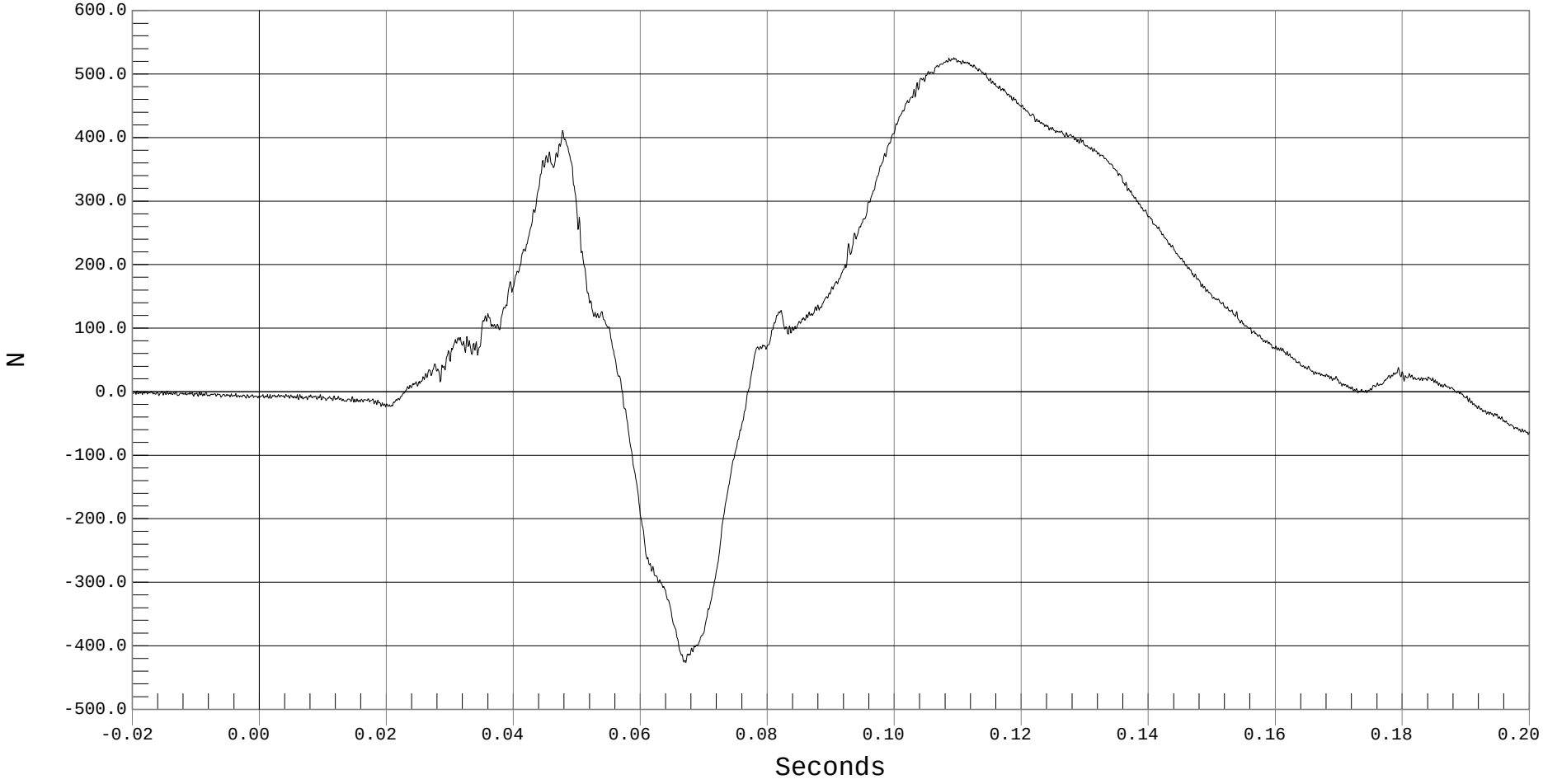
DRIVER NECK FORCE X

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 DRIVER NECK FX, B01014FT.F04

Ymin = -426.72 N @ 0.0671 Seconds, Ymax = 525.56 N @ 0.1093 Seconds



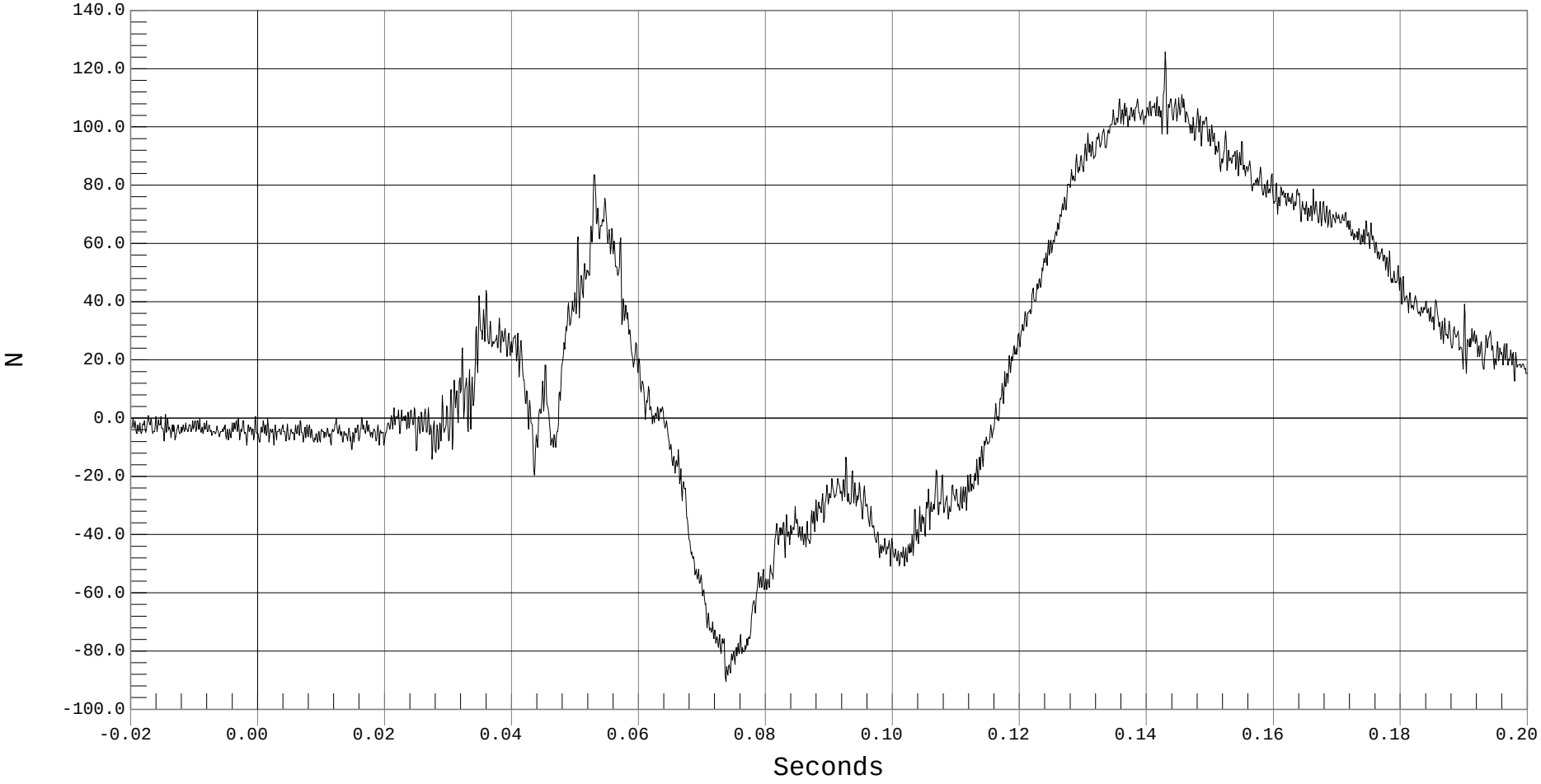
DRIVER NECK FORCE Y

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 DRIVER NECK FY, B01014FT.F05

Ymin = -90.48 N @ 0.0737 Seconds, Ymax = 125.8 N @ 0.1429 Seconds



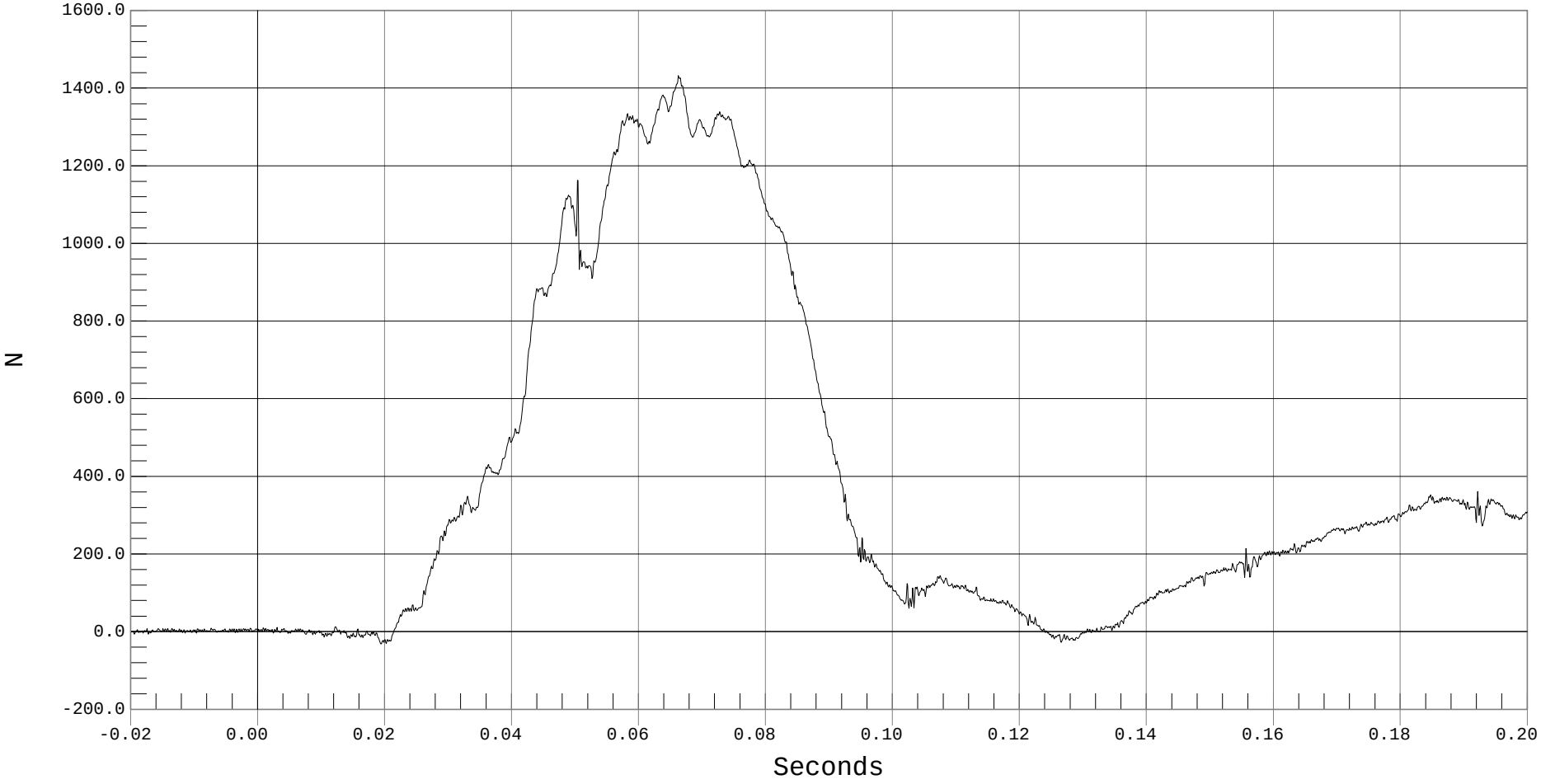
DRIVER NECK FORCE Z

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 DRIVER NECK FZ, B01014FT.F06

Ymin = -31.85 N @ 0.0194 Seconds, Ymax = 1432.04 N @ 0.0662 Seconds



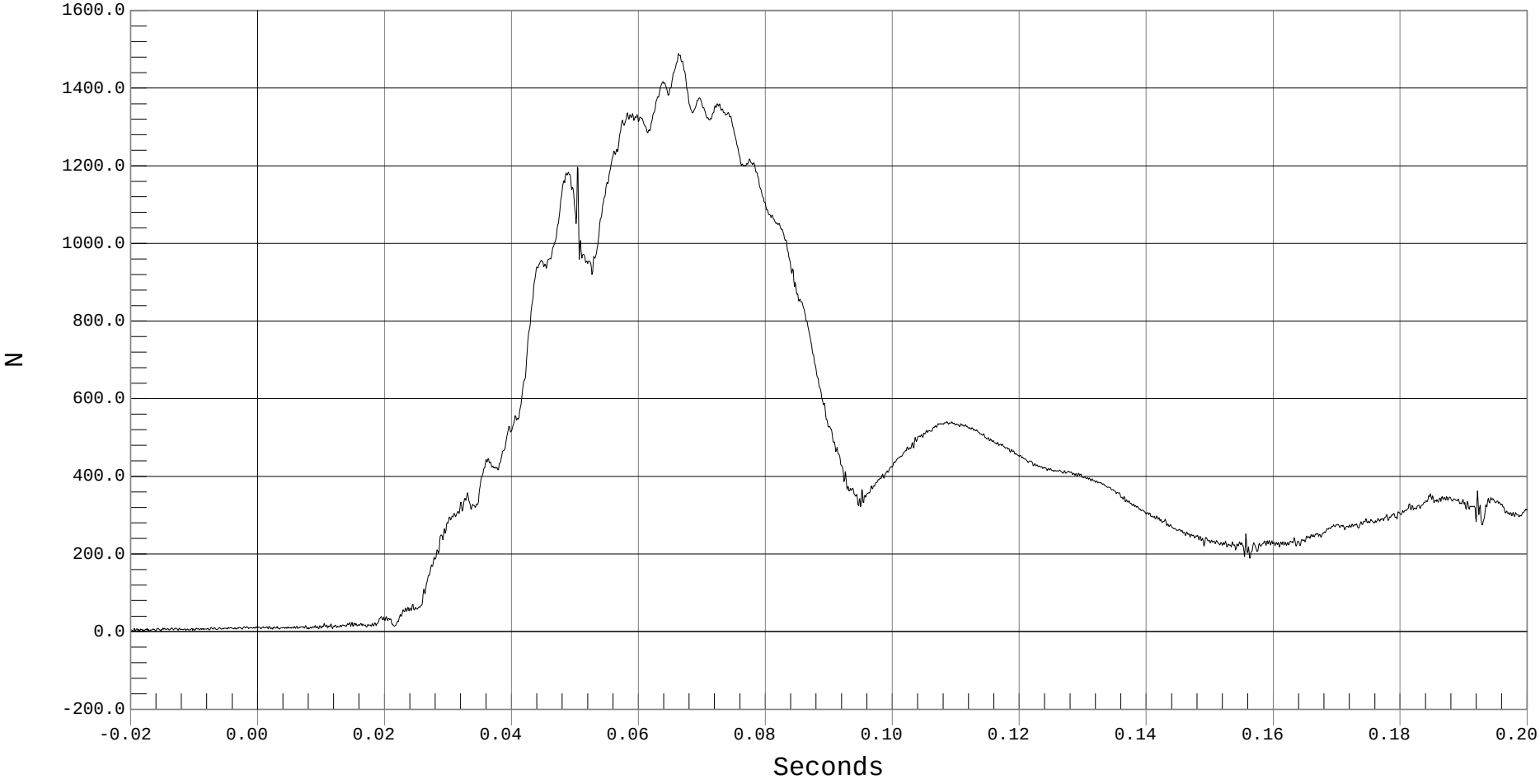
DRIVER NECK FORCE RESULTANT

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 DRIVER NECK FORCE RESULTANT, B01014FV.F04

Ymin = .67 N @ -0.0197 Seconds, Ymax = 1489.35 N @ 0.0662 Seconds



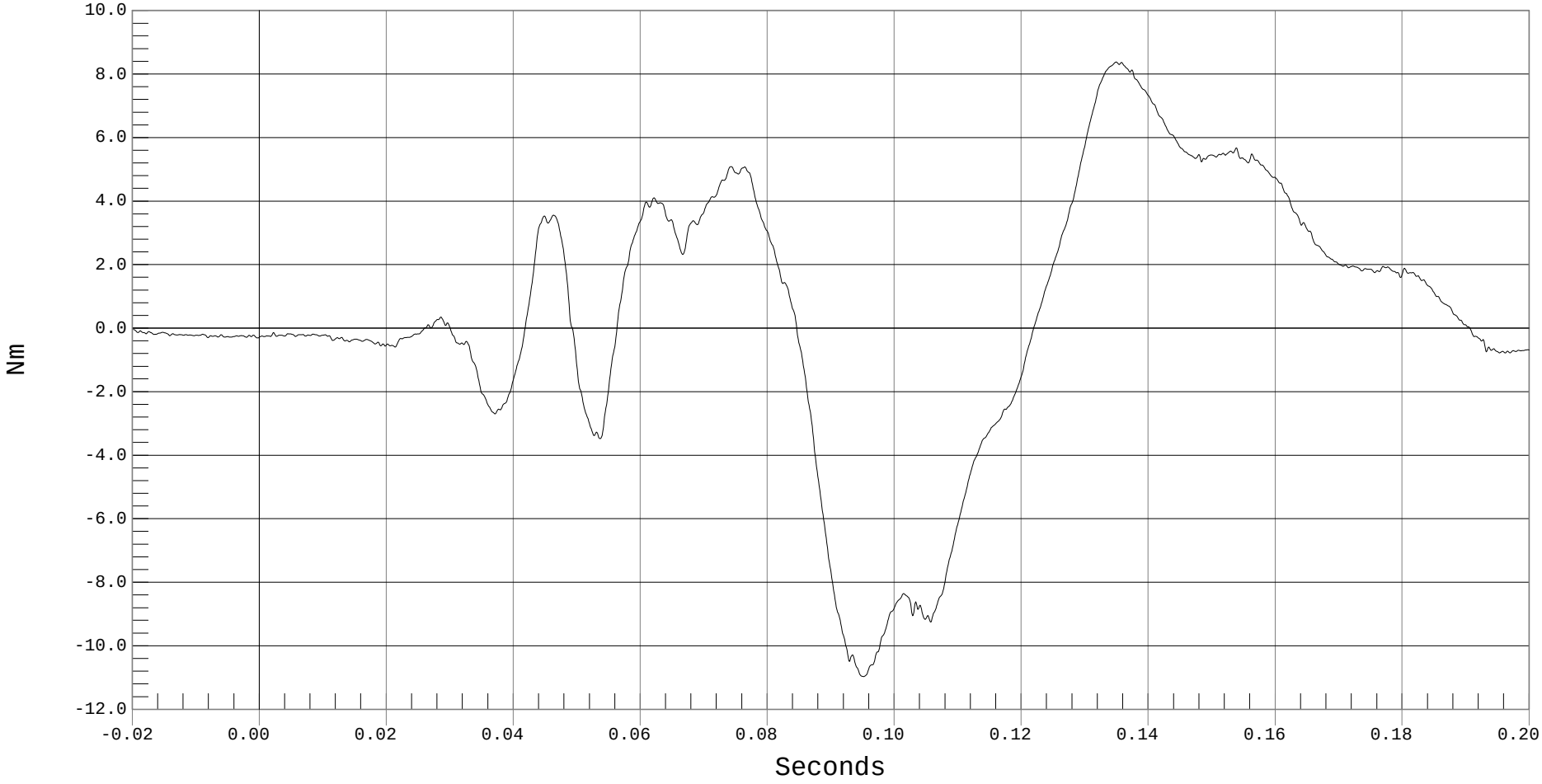
DRIVER NECK MOMENT X

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 DRIVER NECK MX, B01014MF.M07

Ymin = -10.97 Nm @ 0.0951 Seconds, Ymax = 8.38 Nm @ 0.1349 Seconds



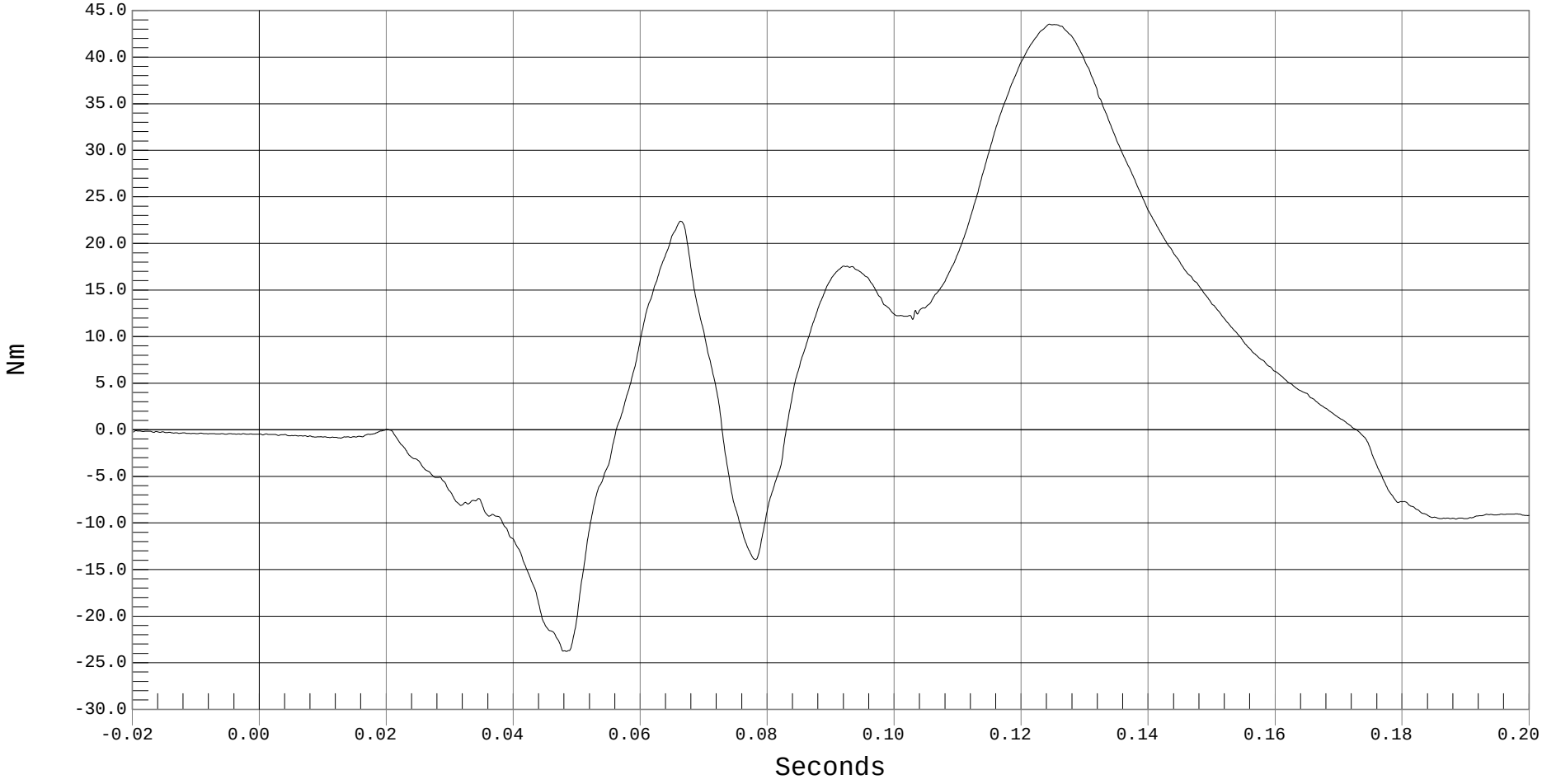
DRIVER NECK MOMENT Y

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 DRIVER NECK MY, B01014MF.M31

Ymin = -23.78 Nm @ 0.0483 Seconds, Ymax = 43.53 Nm @ 0.1244 Seconds



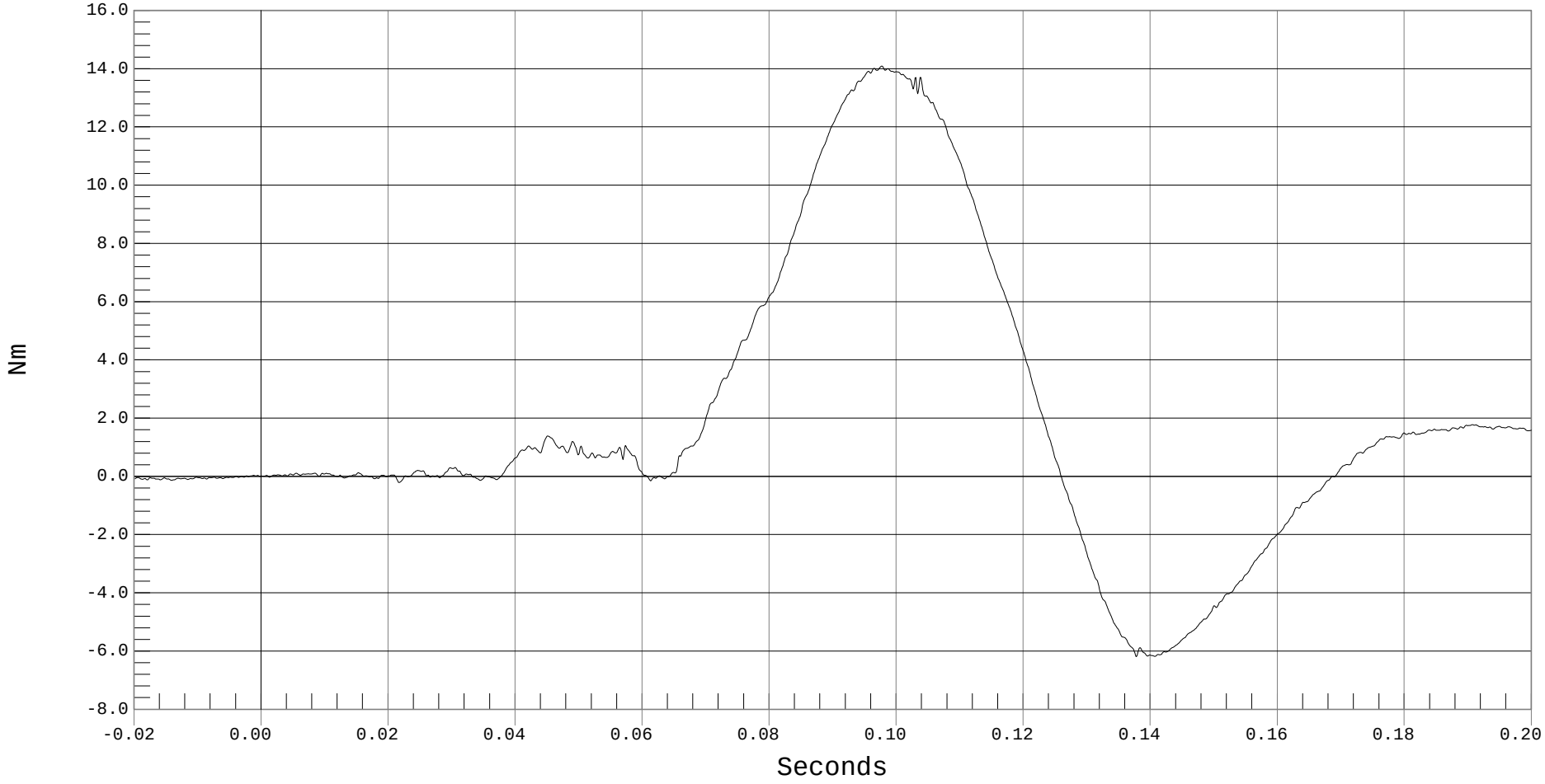
DRIVER NECK MOMENT Z

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 DRIVER NECK MZ, B01014MF.M09

Ymin = -6.19 Nm @ 0.1377 Seconds, Ymax = 14.09 Nm @ 0.0977 Seconds



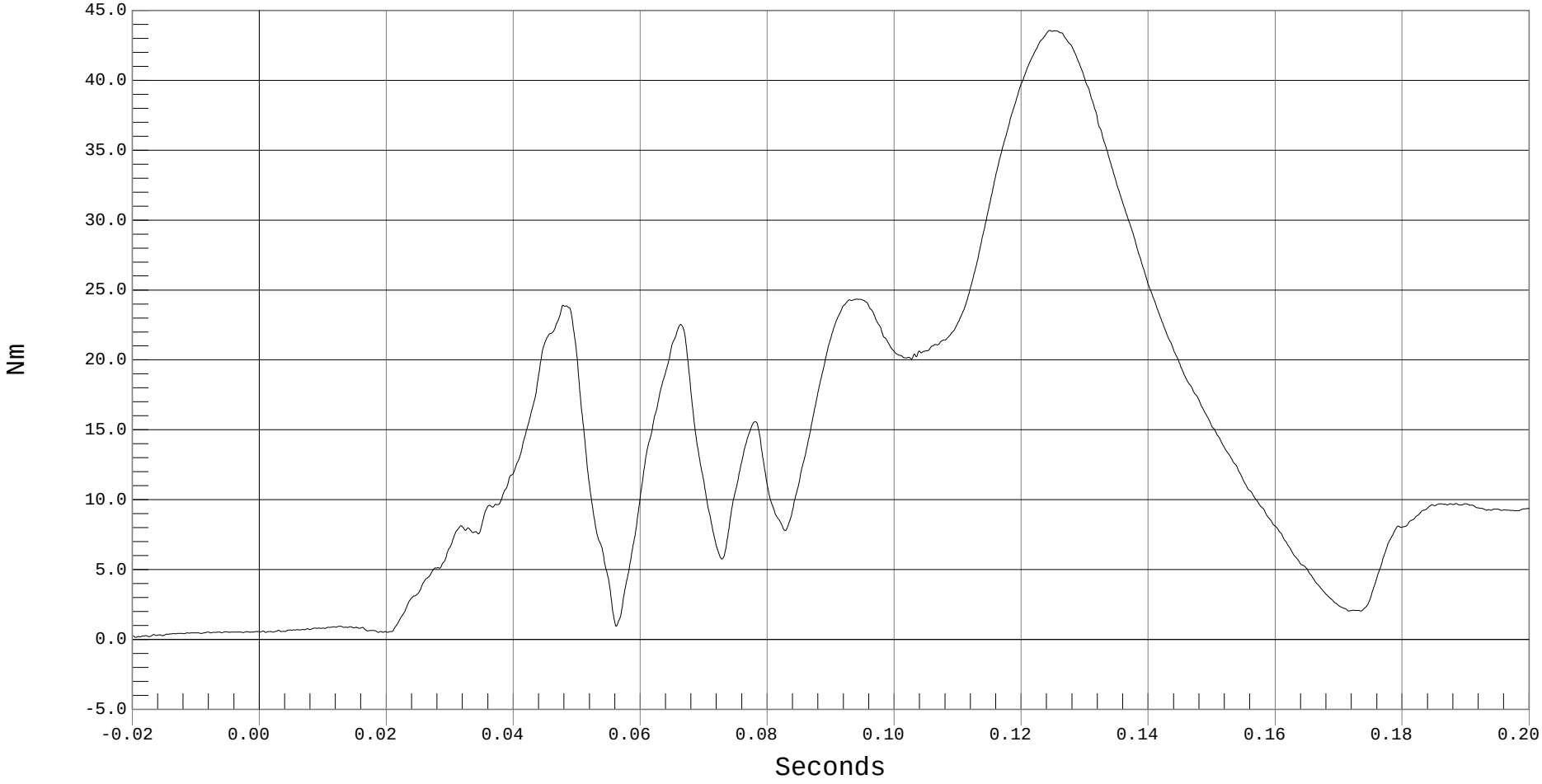
DRIVER NECK MOMENT RESULTANT

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 DRIVER NECK MOMENT RESULTANT, B01014MV.M07

Ymin = .14 Nm @ -0.0196 Seconds, Ymax = 43.57 Nm @ 0.1244 Seconds



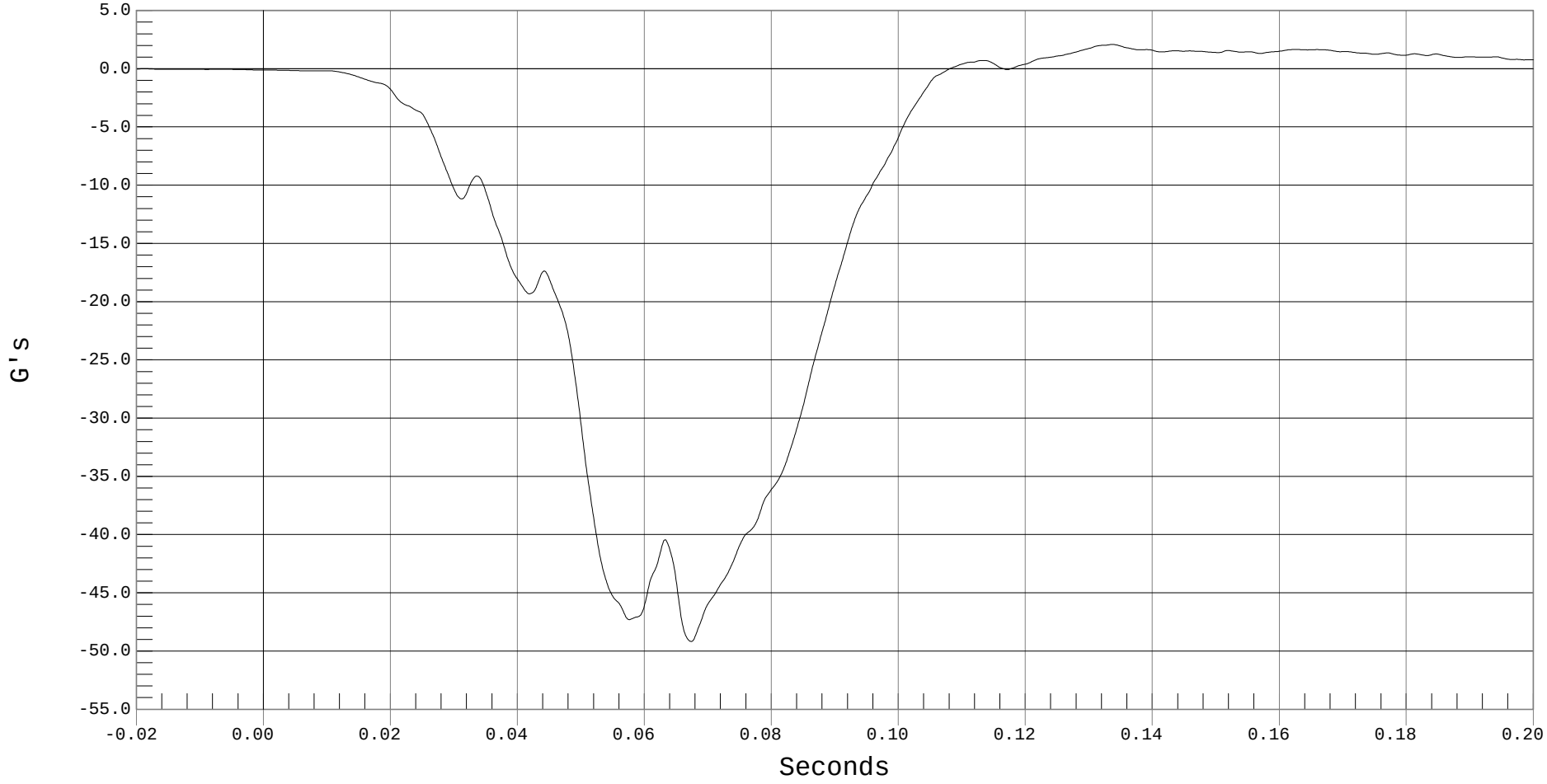
DRIVER CHEST X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 DRIVER CHEST X, B01014AF.A10

Ymin = -49.18 G's @ 0.0673 Seconds, Ymax = 2.08 G's @ 0.1336 Seconds



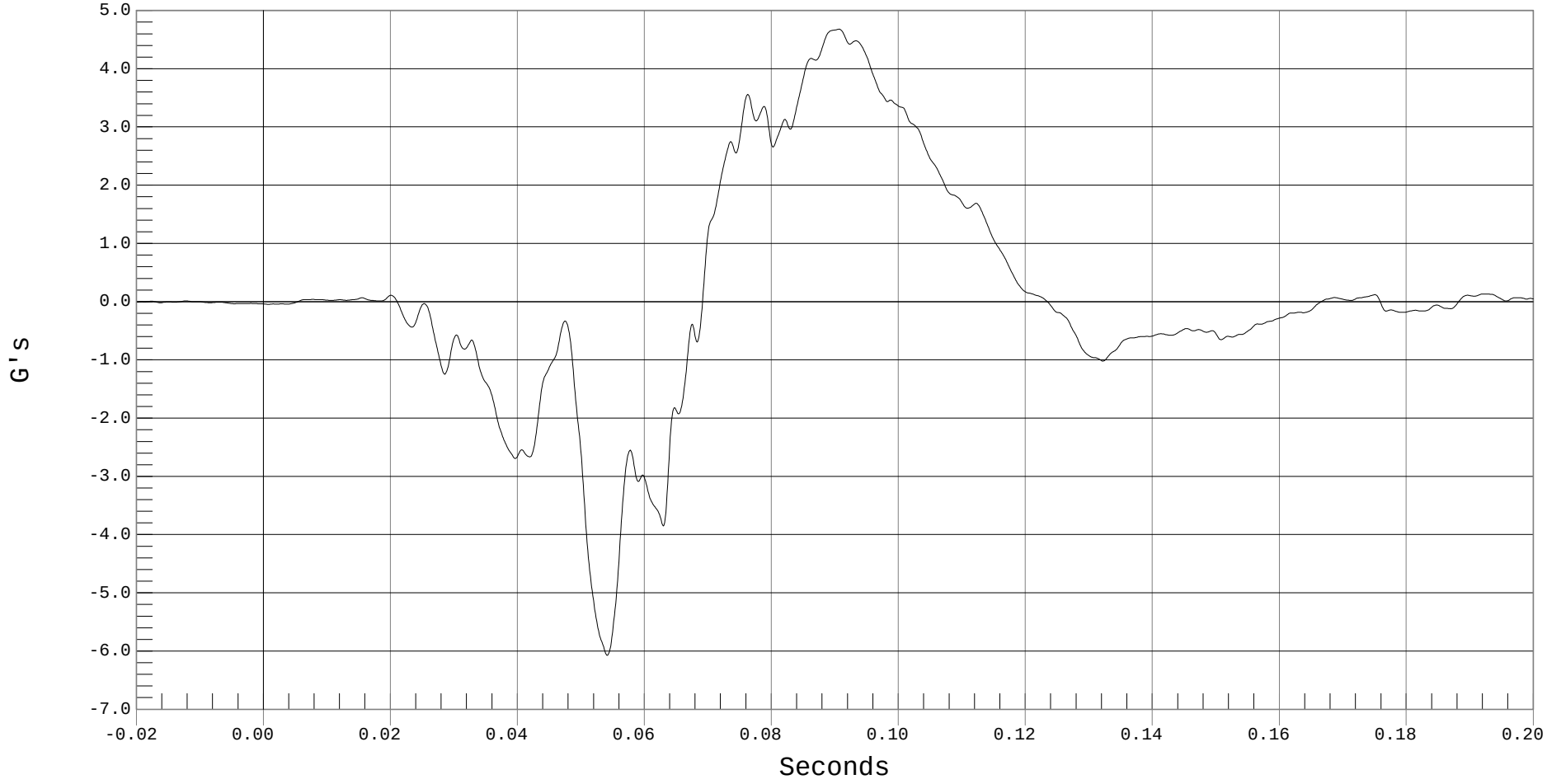
DRIVER CHEST Y ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 DRIVER CHEST Y, B01014AF.A11

Ymin = -6.07 G's @ 0.0541 Seconds, Ymax = 4.68 G's @ 0.0906 Seconds



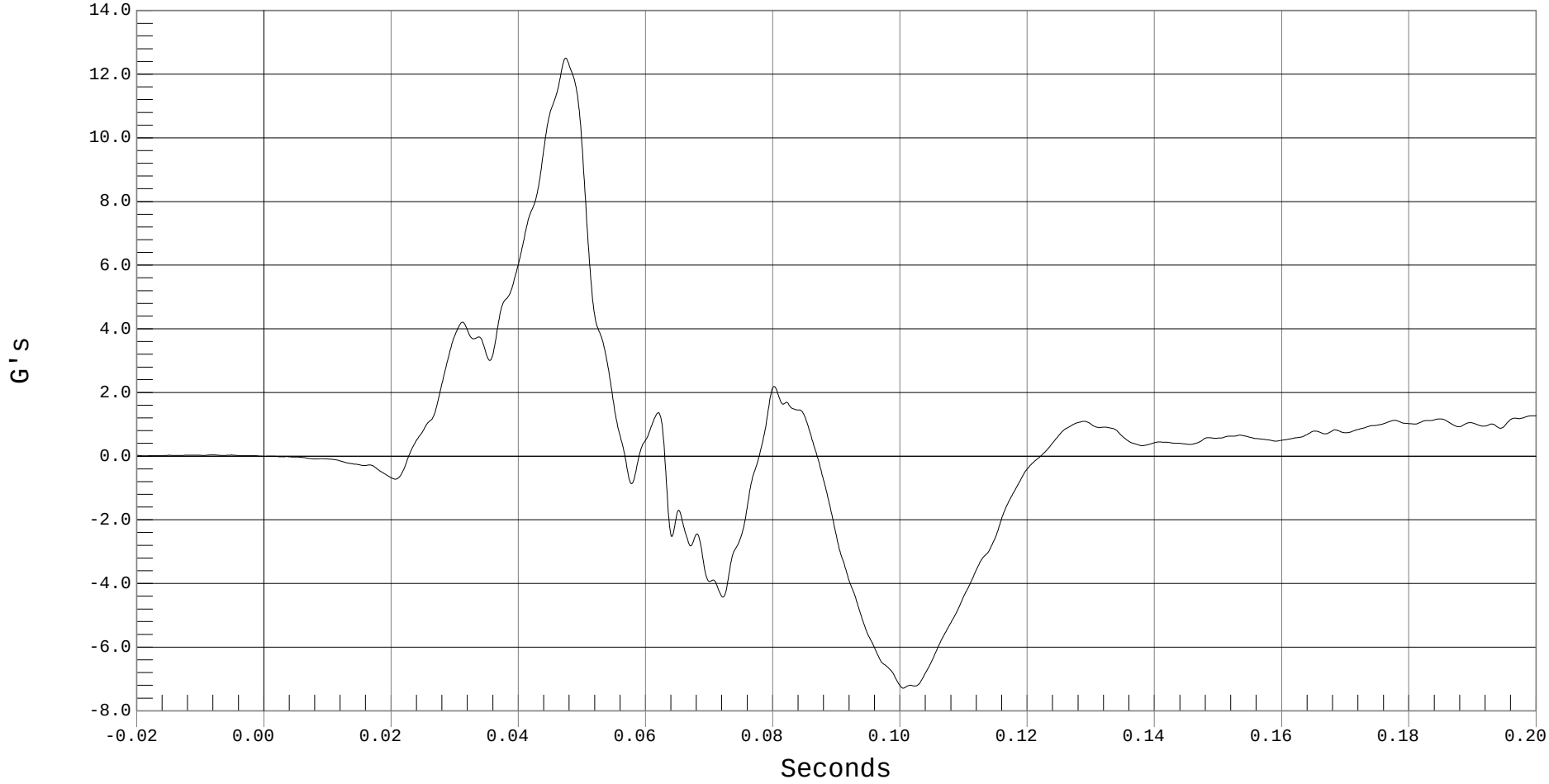
DRIVER CHEST Z ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 DRIVER CHEST Z, B01014AF.A12

Ymin = -7.29 G's @ 0.1004 Seconds, Ymax = 12.5 G's @ 0.0474 Seconds



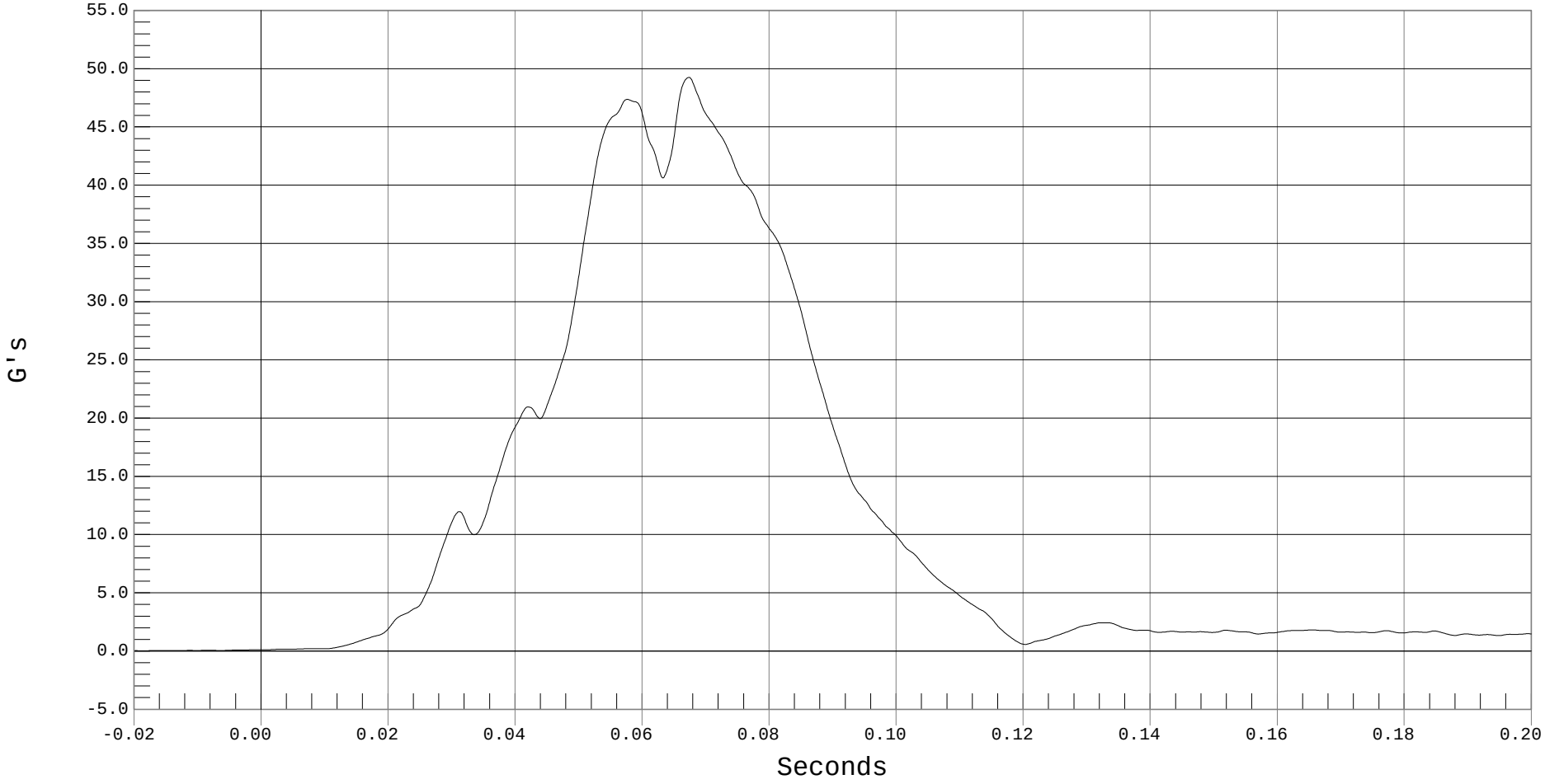
DRIVER CHEST RESULTANT ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 DRIVER CHEST RESULTANT ACCELERATION, B01014AV.A10

Ymin = .01 G's @ -0.0189 Seconds, Ymax = 49.26 G's @ 0.0673 Seconds

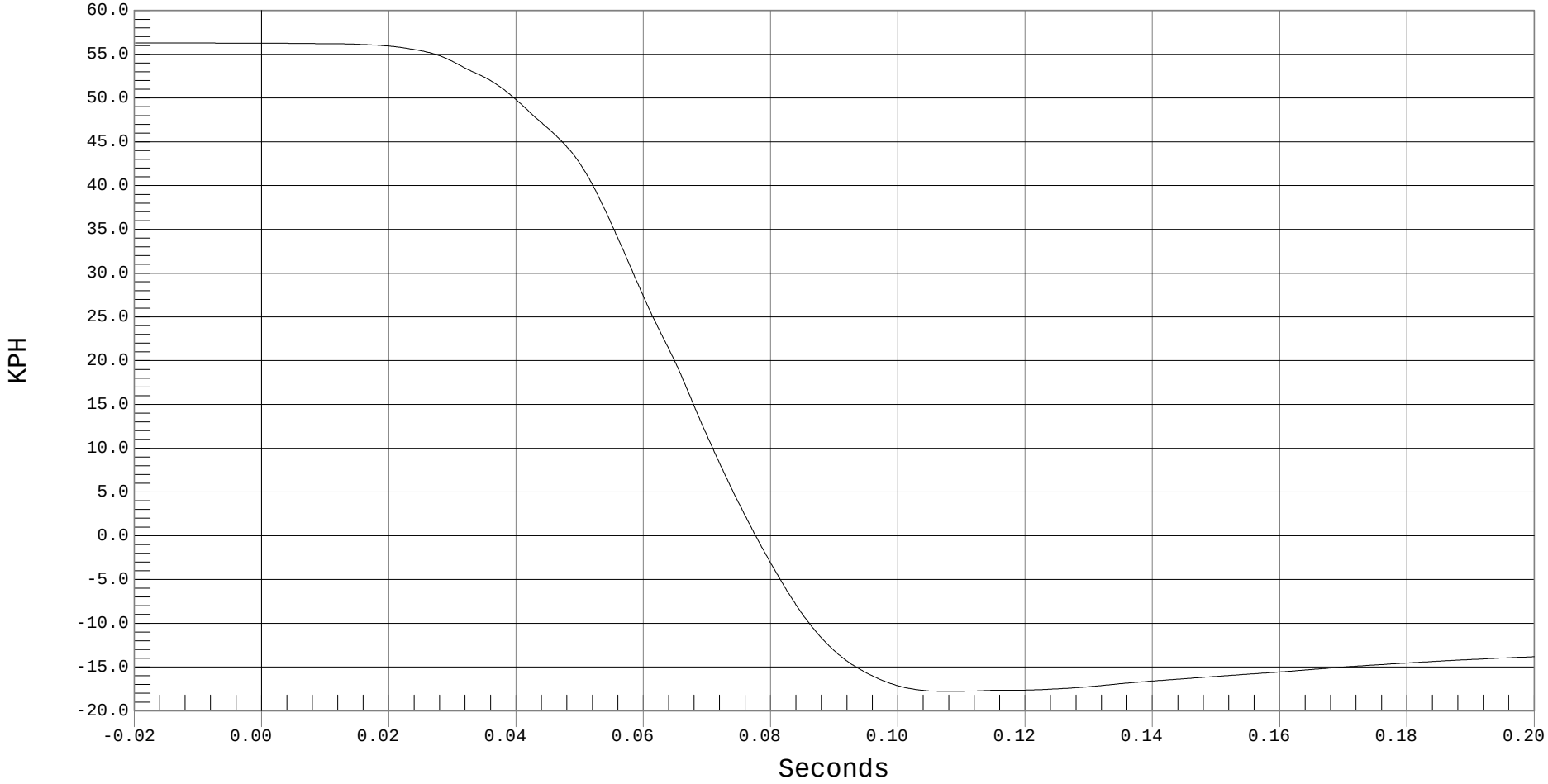


DRIVER CHEST X VELOCITY

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

Ymin = -17.78 KPH @ 0.1080 Seconds, Ymax = 56.3 KPH @ -0.0199 Seconds



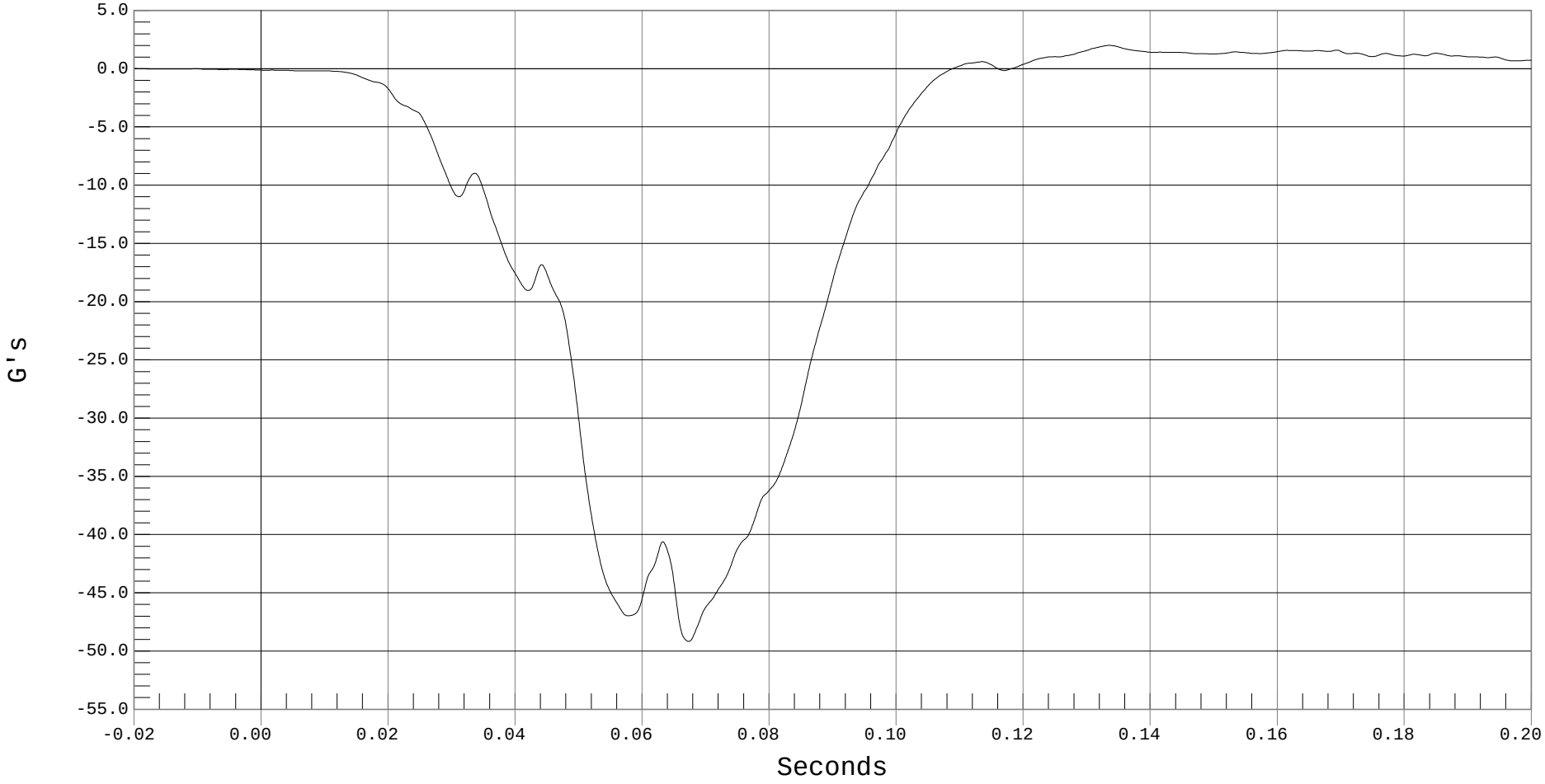
DRIVER CHEST REDUNDANT X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 DRIVER CHEST Xr, B01014AF.A36

Ymin = -49.17 G's @ 0.0673 Seconds, Ymax = 2.01 G's @ 0.1335 Seconds



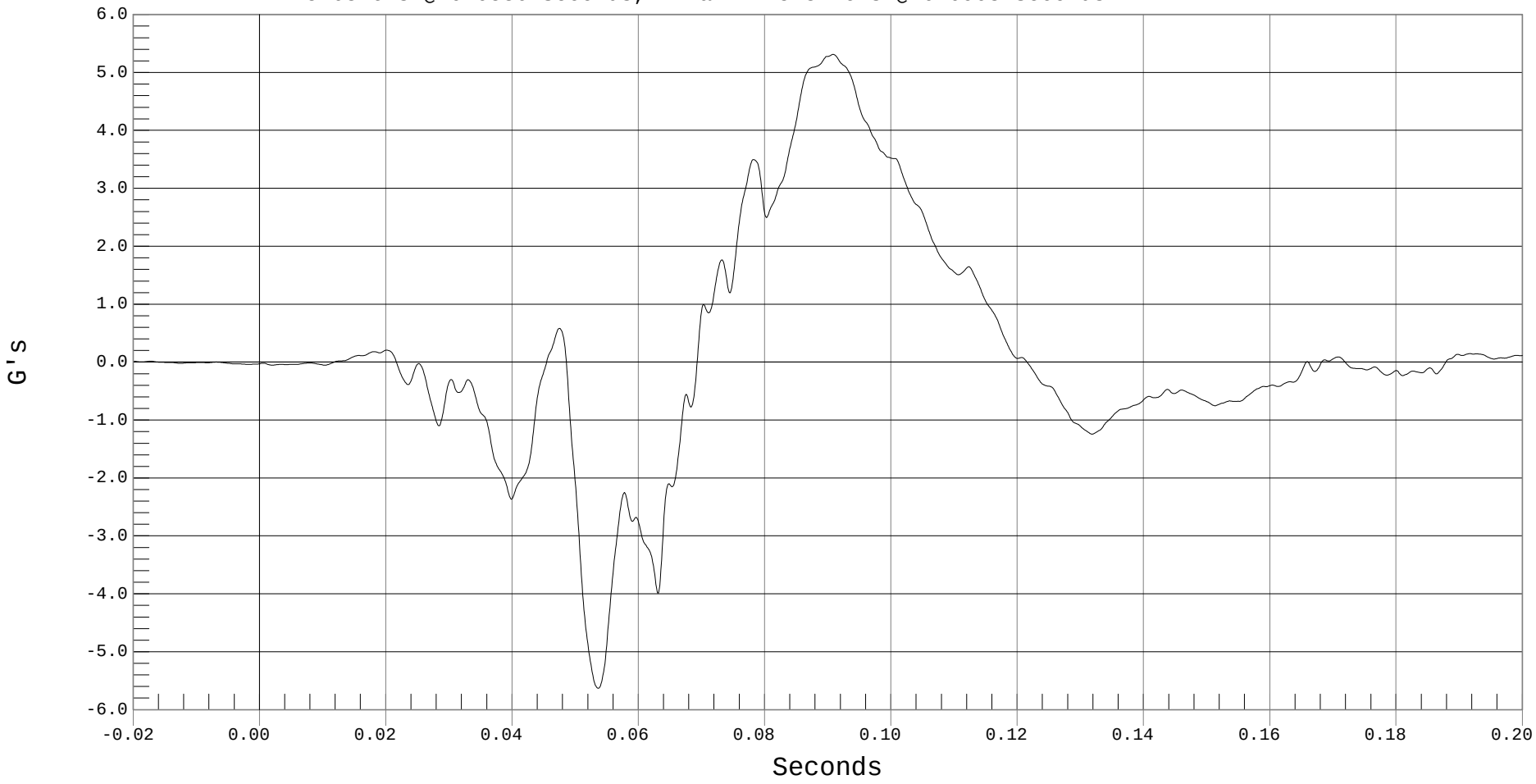
DRIVER CHEST REDUNDANT Y ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 DRIVER CHEST Yr, B01014AF.A37

Ymin = -5.63 G's @ 0.0536 Seconds, Ymax = 5.31 G's @ 0.0908 Seconds



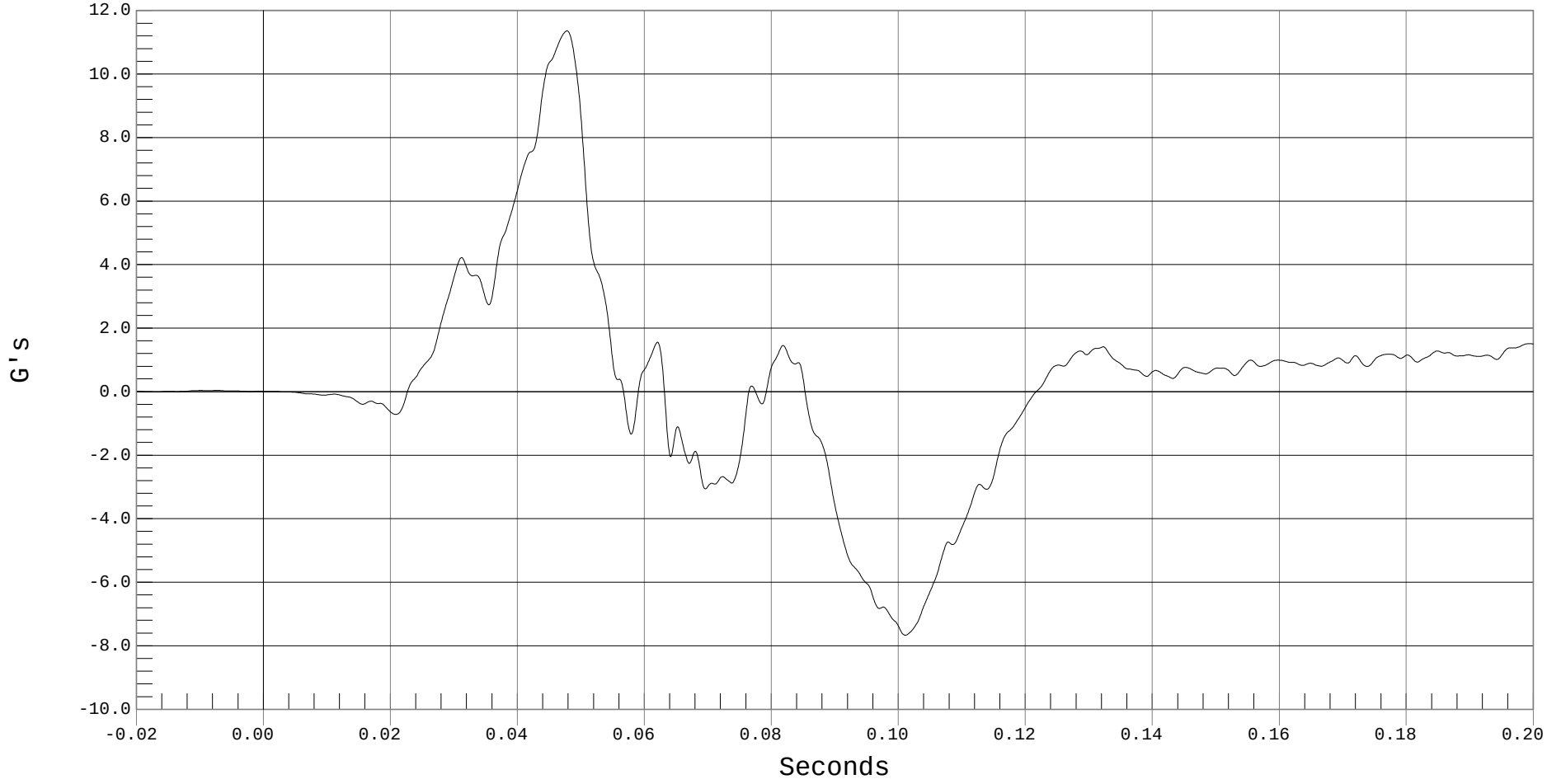
DRIVER CHEST REDUNDANT Z ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 DRIVER CHEST Zr, B01014AF.A38

Ymin = -7.67 G's @ 0.1010 Seconds, Ymax = 11.36 G's @ 0.0477 Seconds



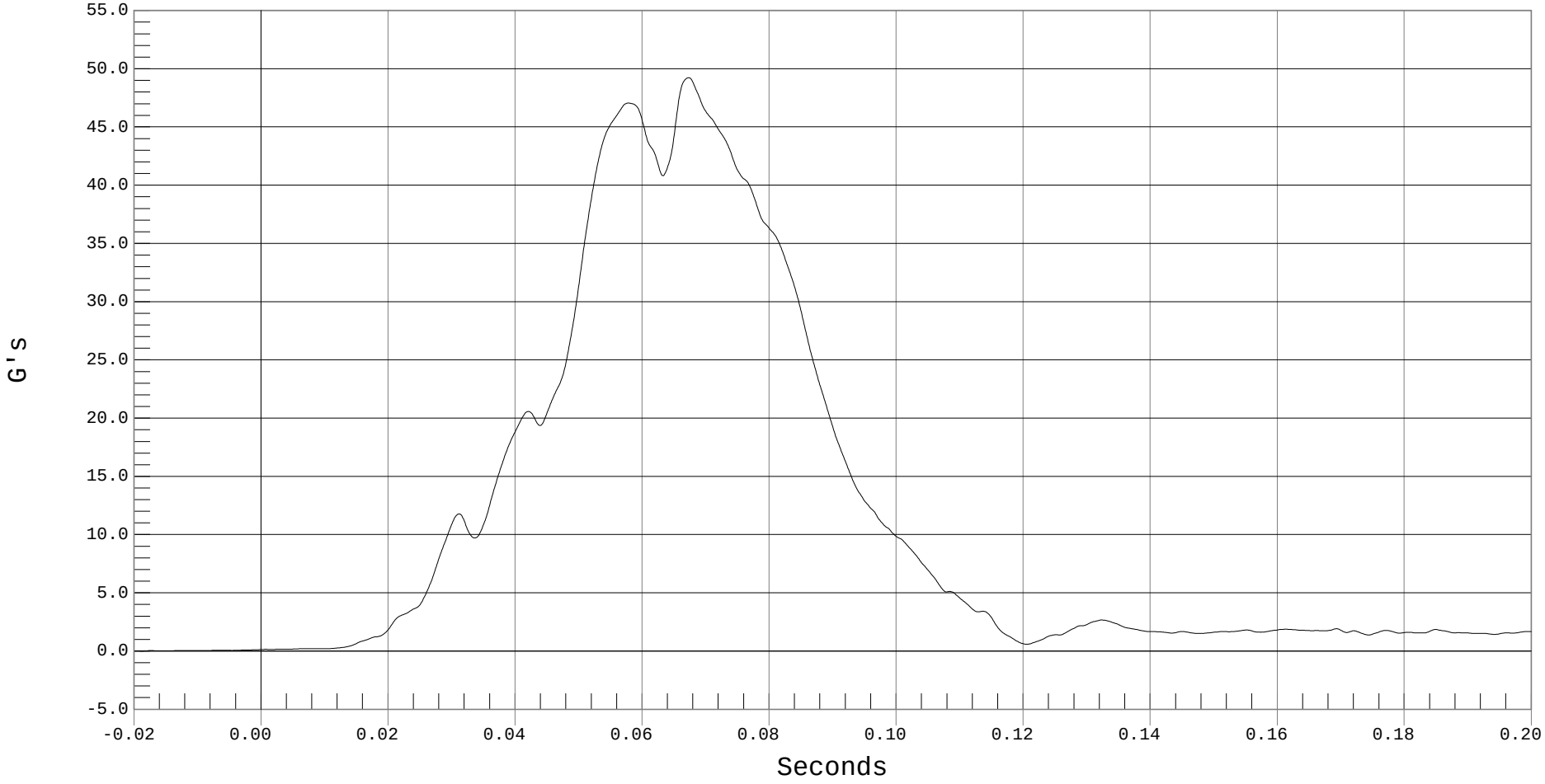
DRIVER CHEST REDUNDANT RESULTANT ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 DRIVER CHEST REDUNDANT RESULTANT ACCELERATION, B01014AV.A36

Ymin = .01 G's @ -0.0189 Seconds, Ymax = 49.23 G's @ 0.0672 Seconds



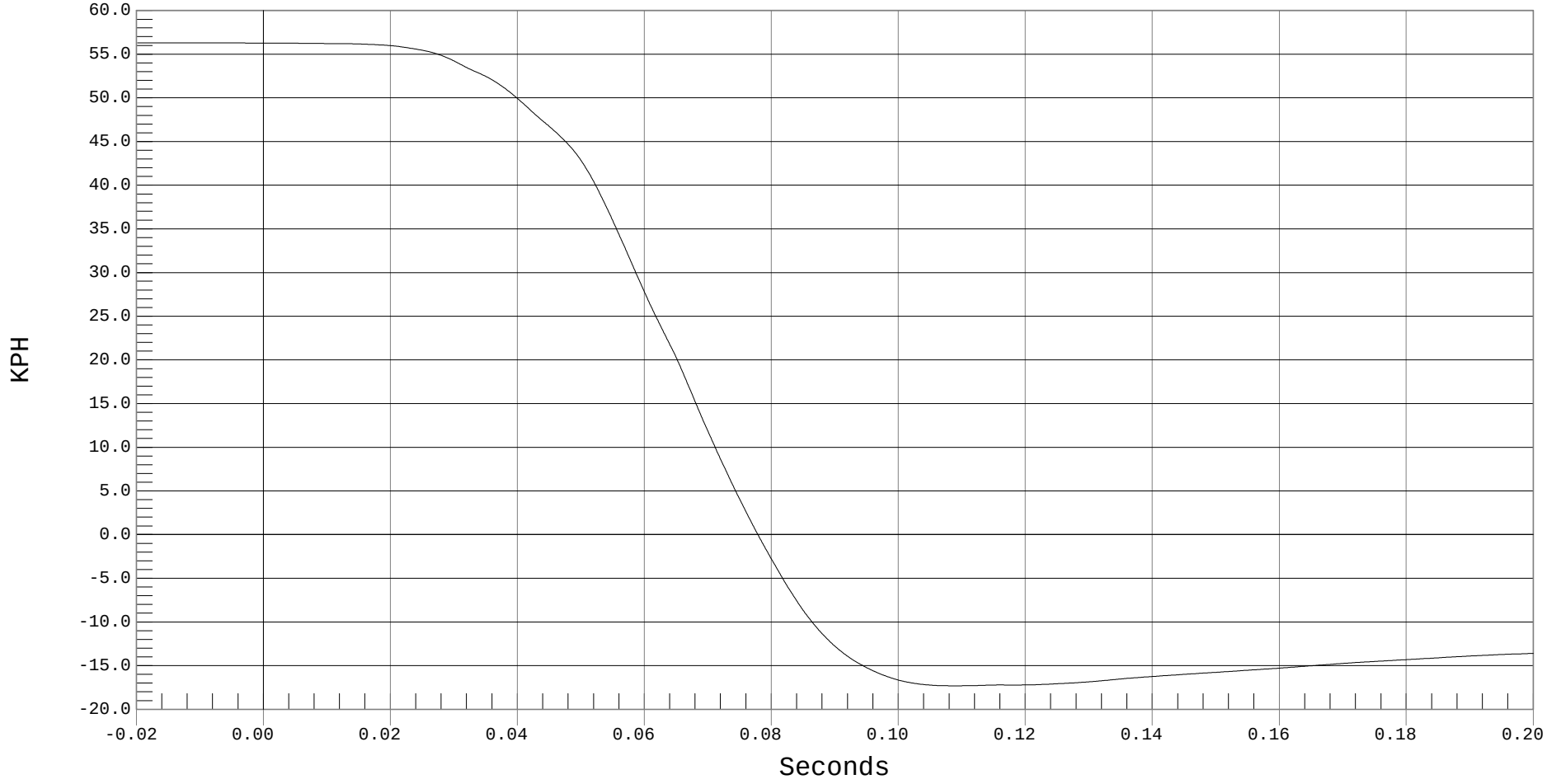
DRIVER CHEST REDUNDANT X VELOCITY

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 DRIVER CHEST REDUNDANT X VELOCITY, B01014AI.V36

Ymin = -17.32 KPH @ 0.1088 Seconds, Ymax = 56.3 KPH @ -0.0187 Seconds



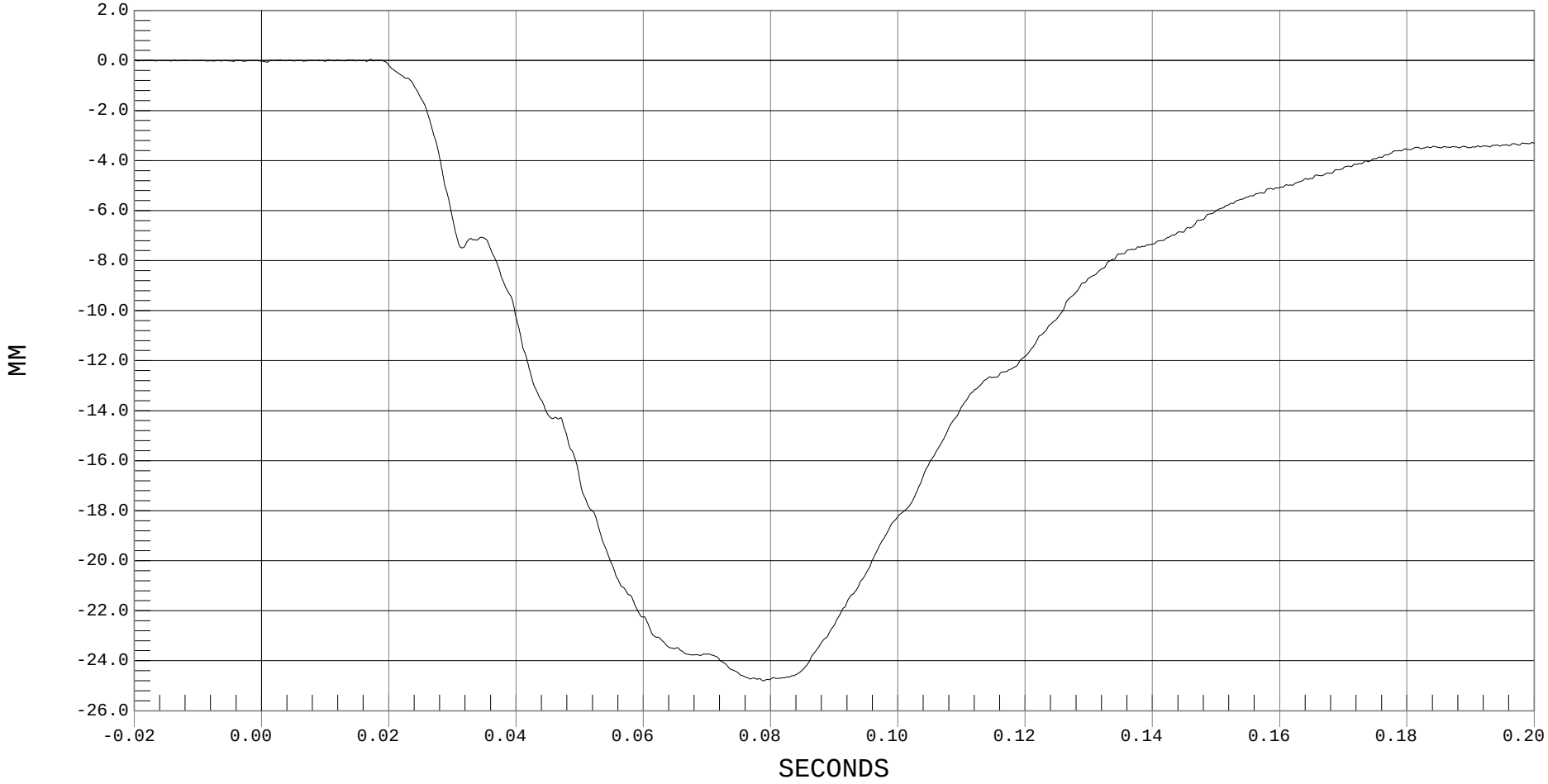
DRIVER CHEST COMPRESSION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 DRIVER CHEST DISP, B01014DF.D13

Ymin = -24.8 MM @ 0.0788 SECONDS, Ymax = .05 MM @ 0.0171 SECONDS



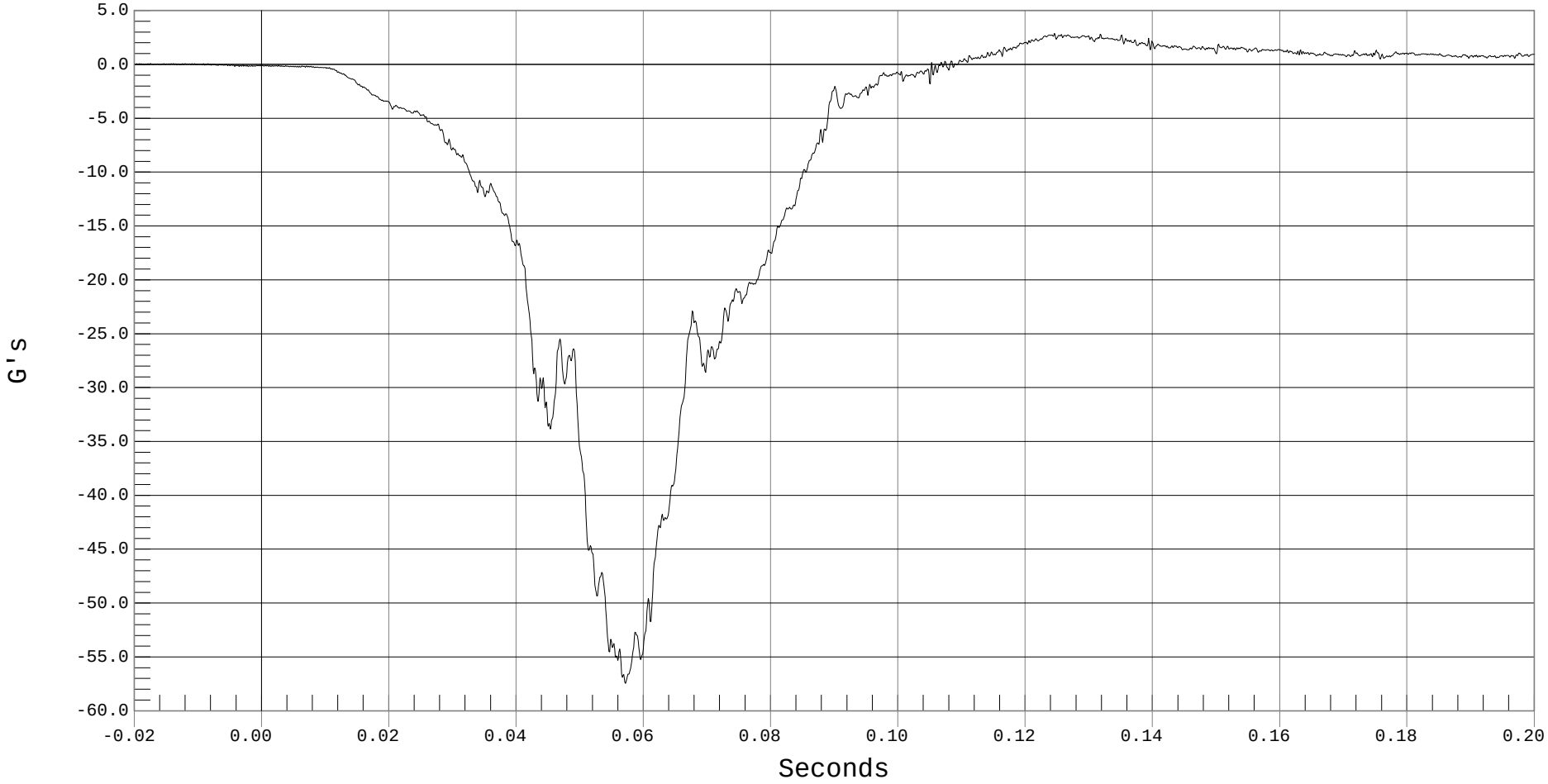
DRIVER PELVIS X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 DRIVER PELVIS X, B01014AT.A14

Ymin = -57.45 G's @ 0.0571 Seconds, Ymax = 2.88 G's @ 0.1245 Seconds



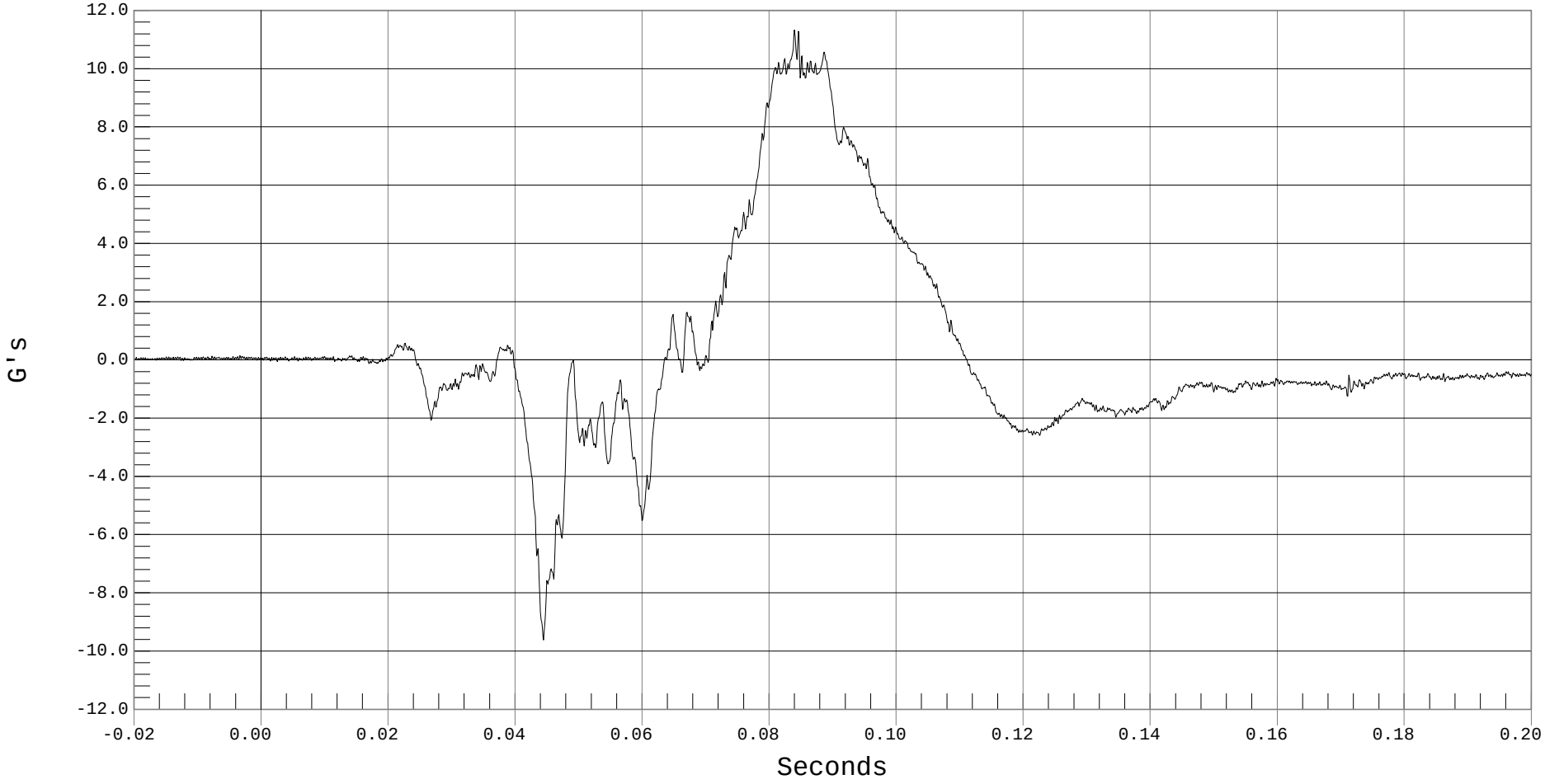
DRIVER PELVIS Y ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 DRIVER PELVIS Y, B01014AT.A15

Ymin = -9.63 G's @ 0.0444 Seconds, Ymax = 11.33 G's @ 0.0839 Seconds



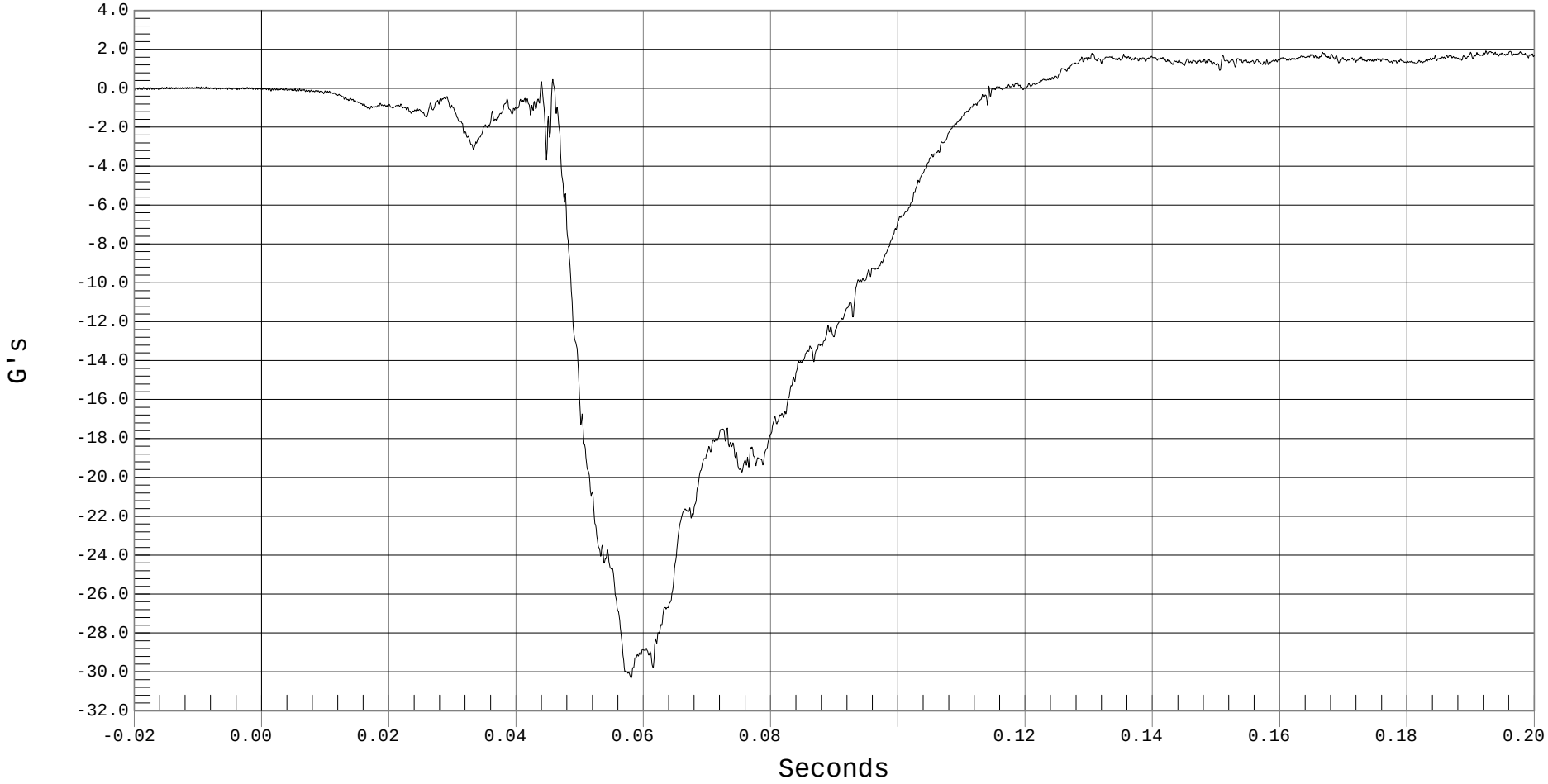
DRIVER PELVIS Z ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 DRIVER PELVIS Z, B01014AT.A16

Ymin = -30.34 G's @ 0.0580 Seconds, Ymax = 1.93 G's @ 0.1923 Seconds



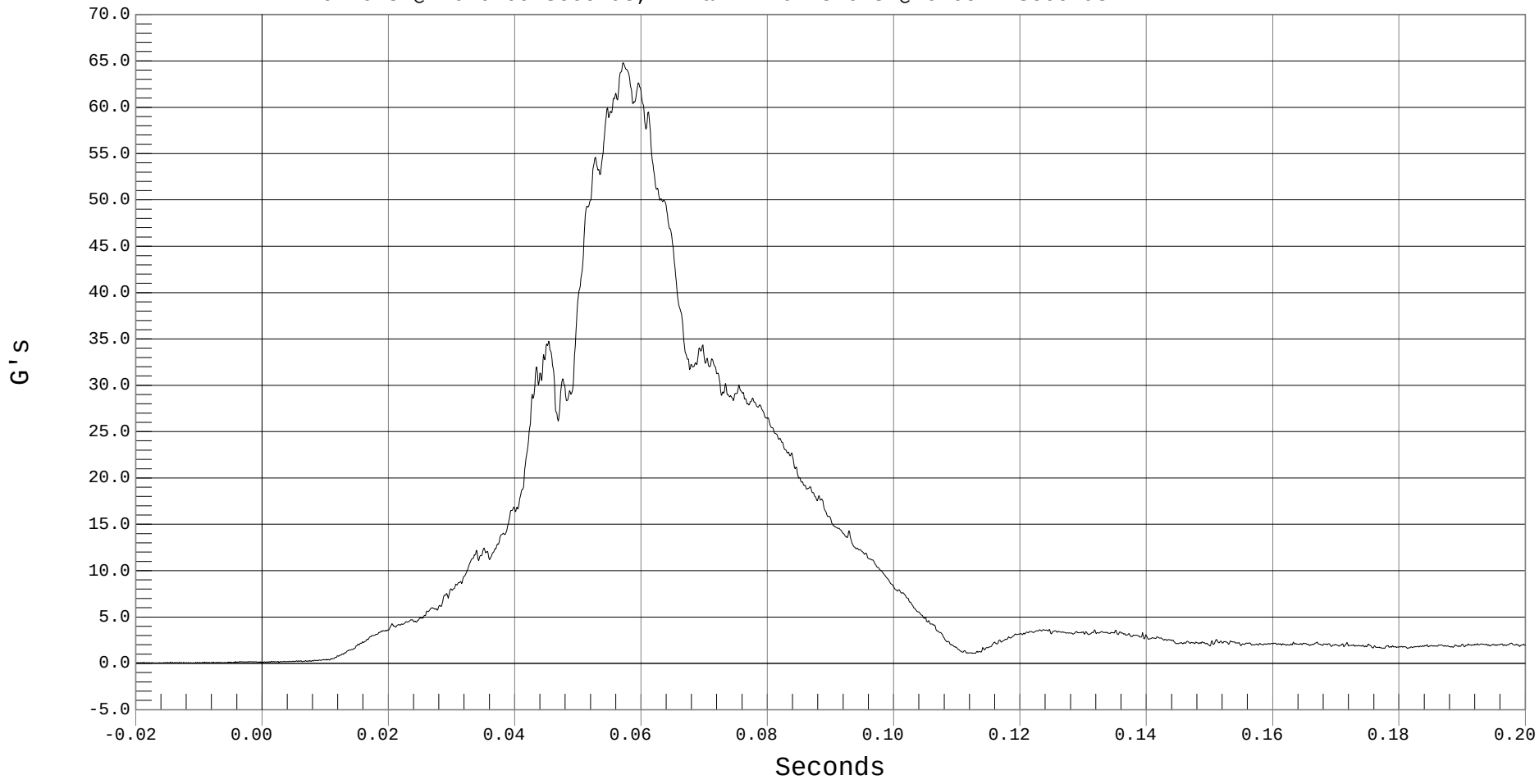
DRIVER PELVIS RESULTANT ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 DRIVER PELVIS RESULTANT ACCELERATION, B01014AV.A14

Ymin = .01 G's @ -0.0109 Seconds, Ymax = 64.8 G's @ 0.0571 Seconds



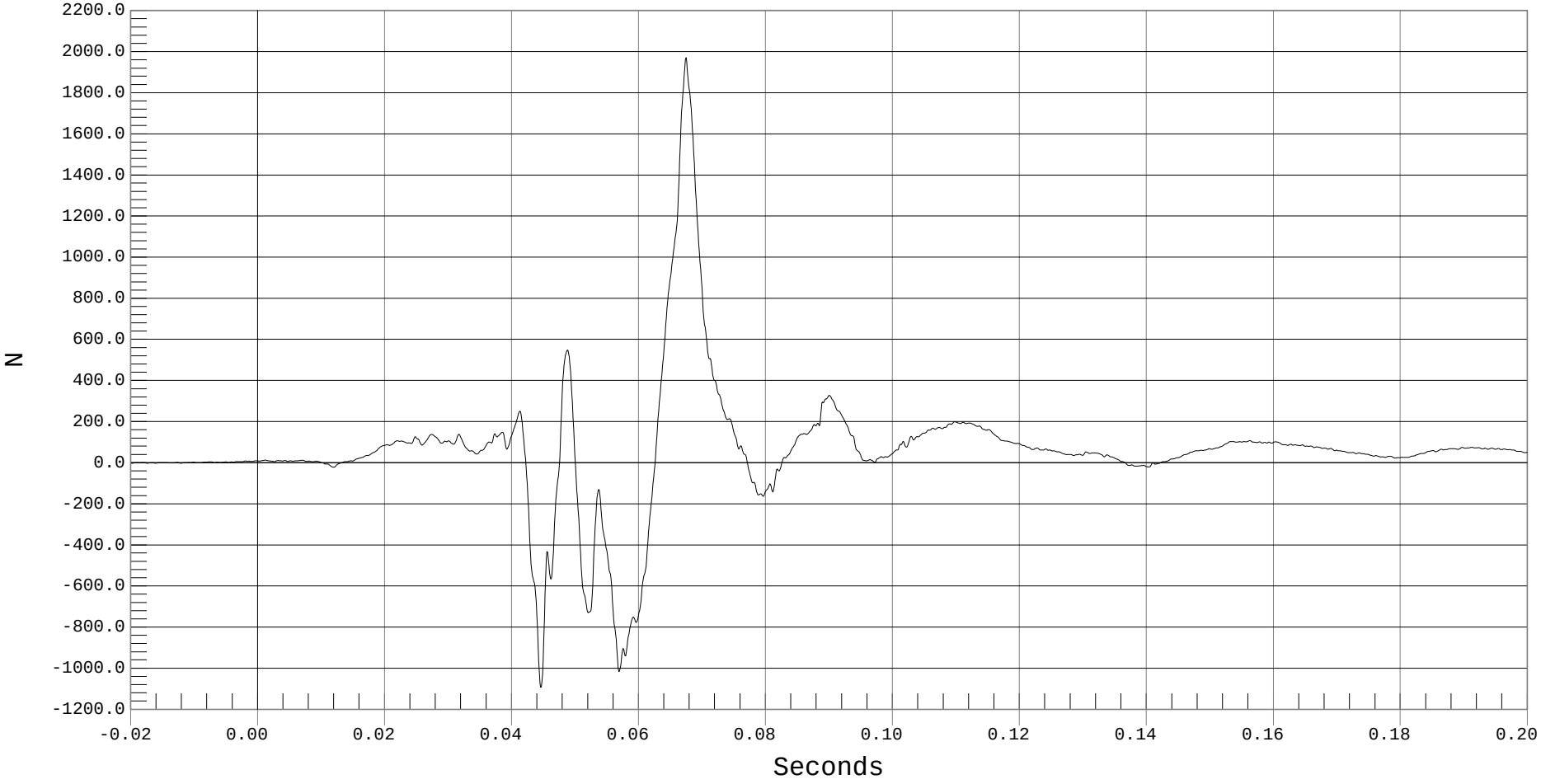
DRIVER LEFT FEMUR FORCE

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 DRIVER LEFT FEMUR, B01014FF.F18

Ymin = -1092.91 N @ 0.0445 Seconds, Ymax = 1971.16 N @ 0.0674 Seconds



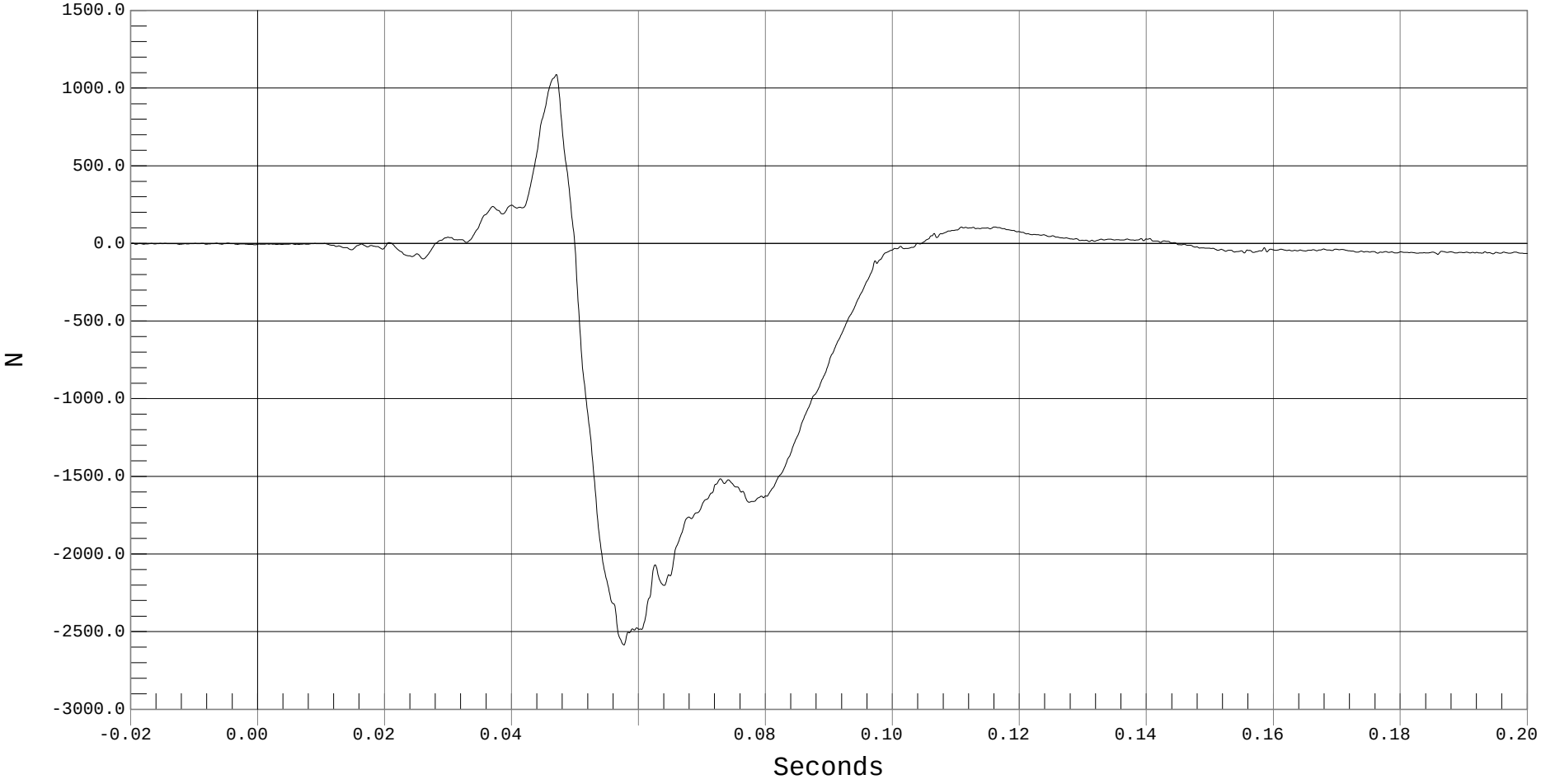
DRIVER RIGHT FEMUR FORCE

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 DRIVER RIGHT FEMUR, B01014FF.F17

Ymin = -2585.89 N @ 0.0576 Seconds, Ymax = 1087.89 N @ 0.0470 Seconds



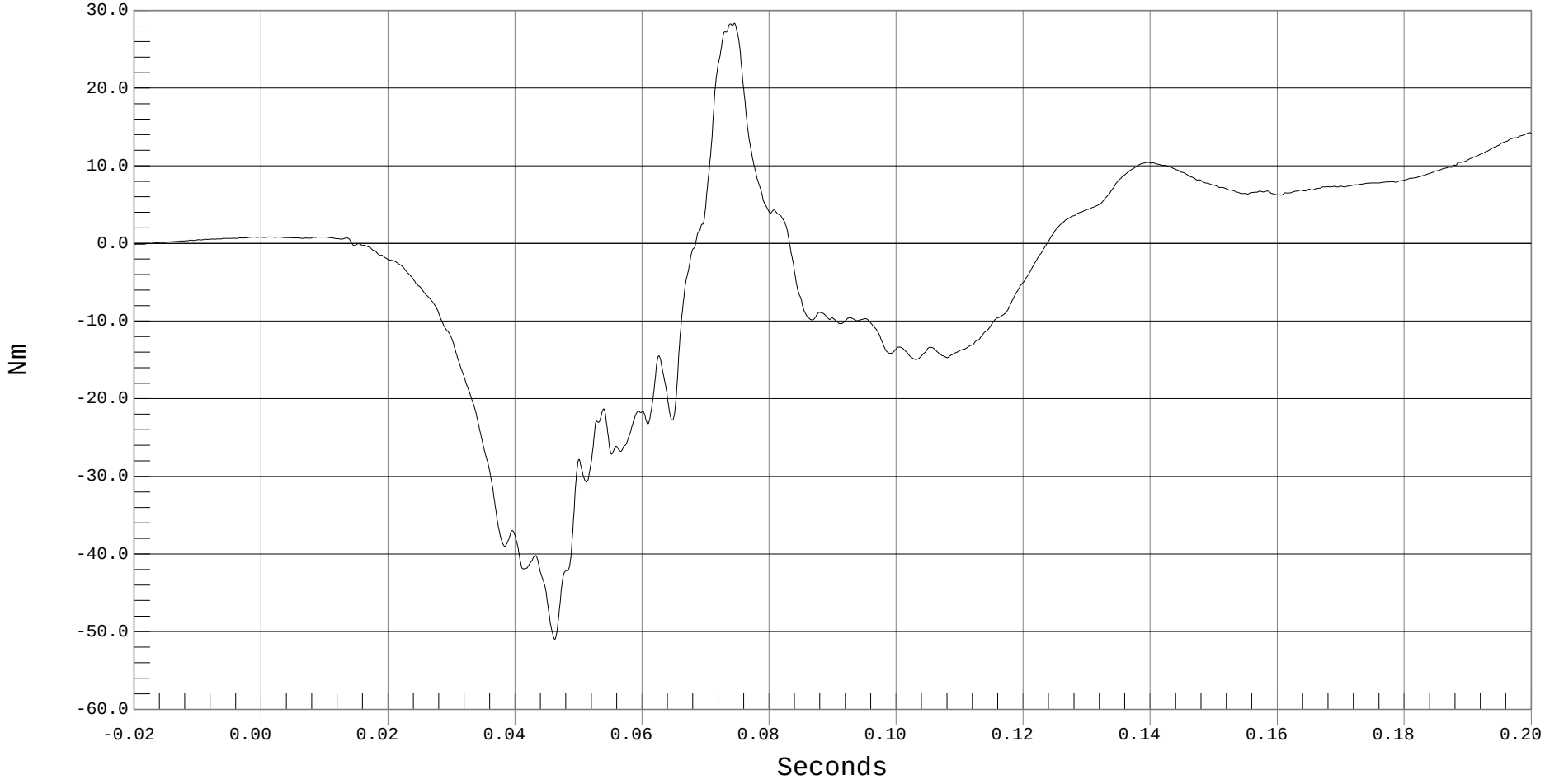
DRIVER LEFT UPPER TIBIA MOMENT X

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 DRIVER LEFT UPPER TIBIA MX, B01014MF.M75

Ymin = -50.97 Nm @ 0.0462 Seconds, Ymax = 28.37 Nm @ 0.0745 Seconds



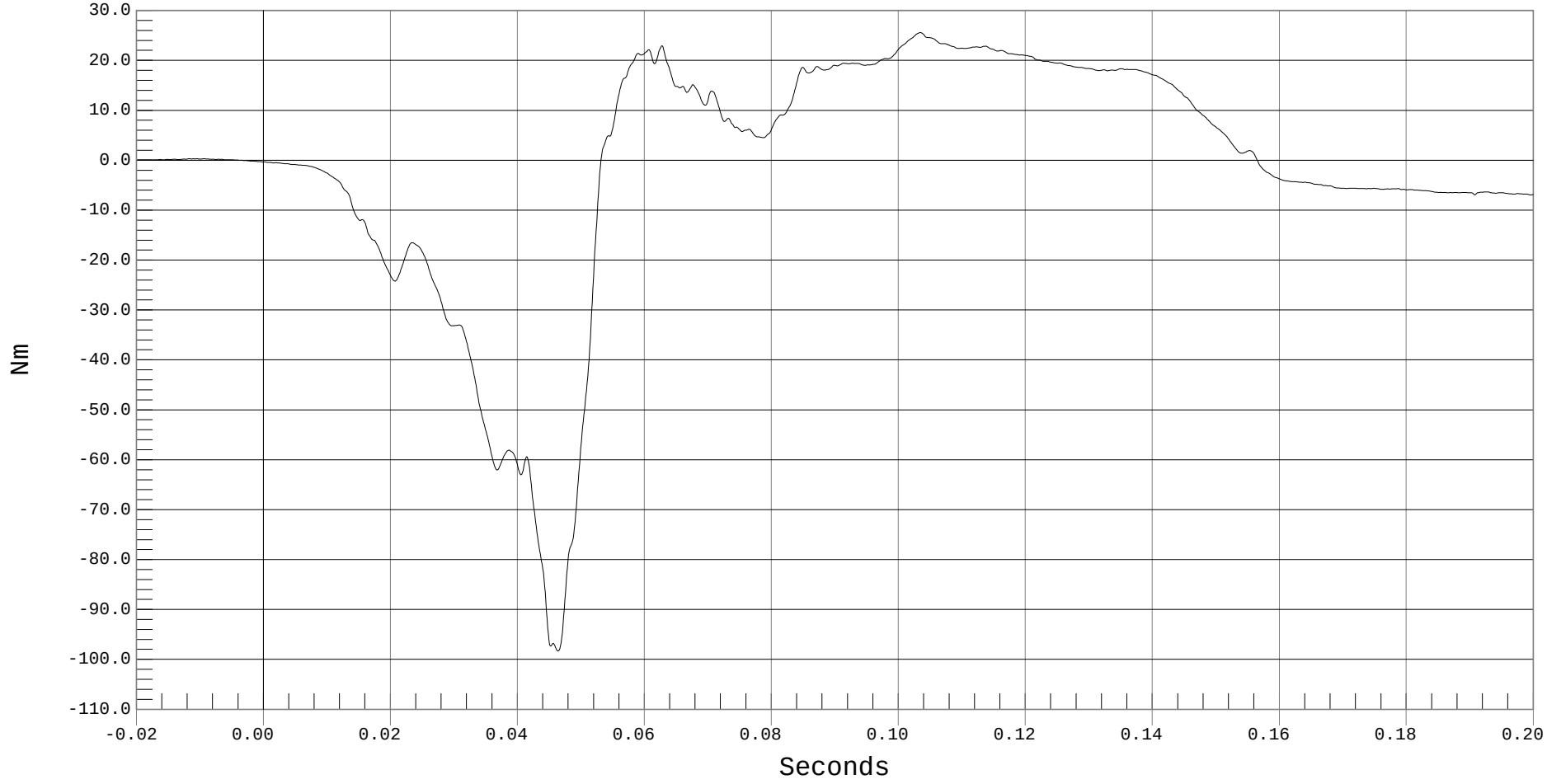
DRIVER LEFT UPPER TIBIA MOMENT Y

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 DRIVER LEFT UPPER TIBIA MY, B01014MF.M76

Ymin = -98.33 Nm @ 0.0463 Seconds, Ymax = 25.56 Nm @ 0.1034 Seconds



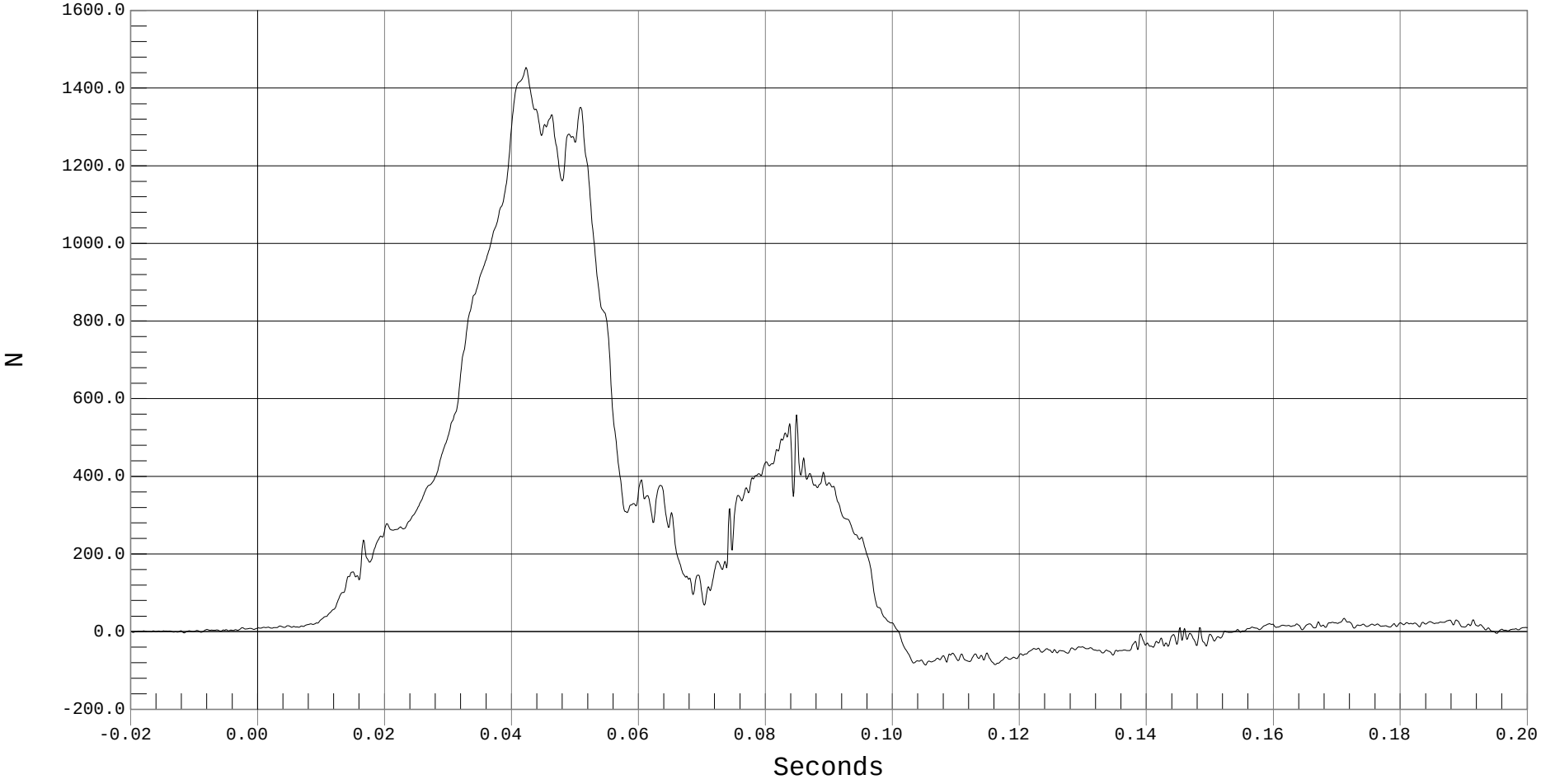
DRIVER LEFT UPPER TIBIA FORCE Z

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 DRIVER LEFT UPPER TIBIA FZ, B01014FF.F77

Ymin = -86.11 N @ 0.1051 Seconds, Ymax = 1452.93 N @ 0.0422 Seconds



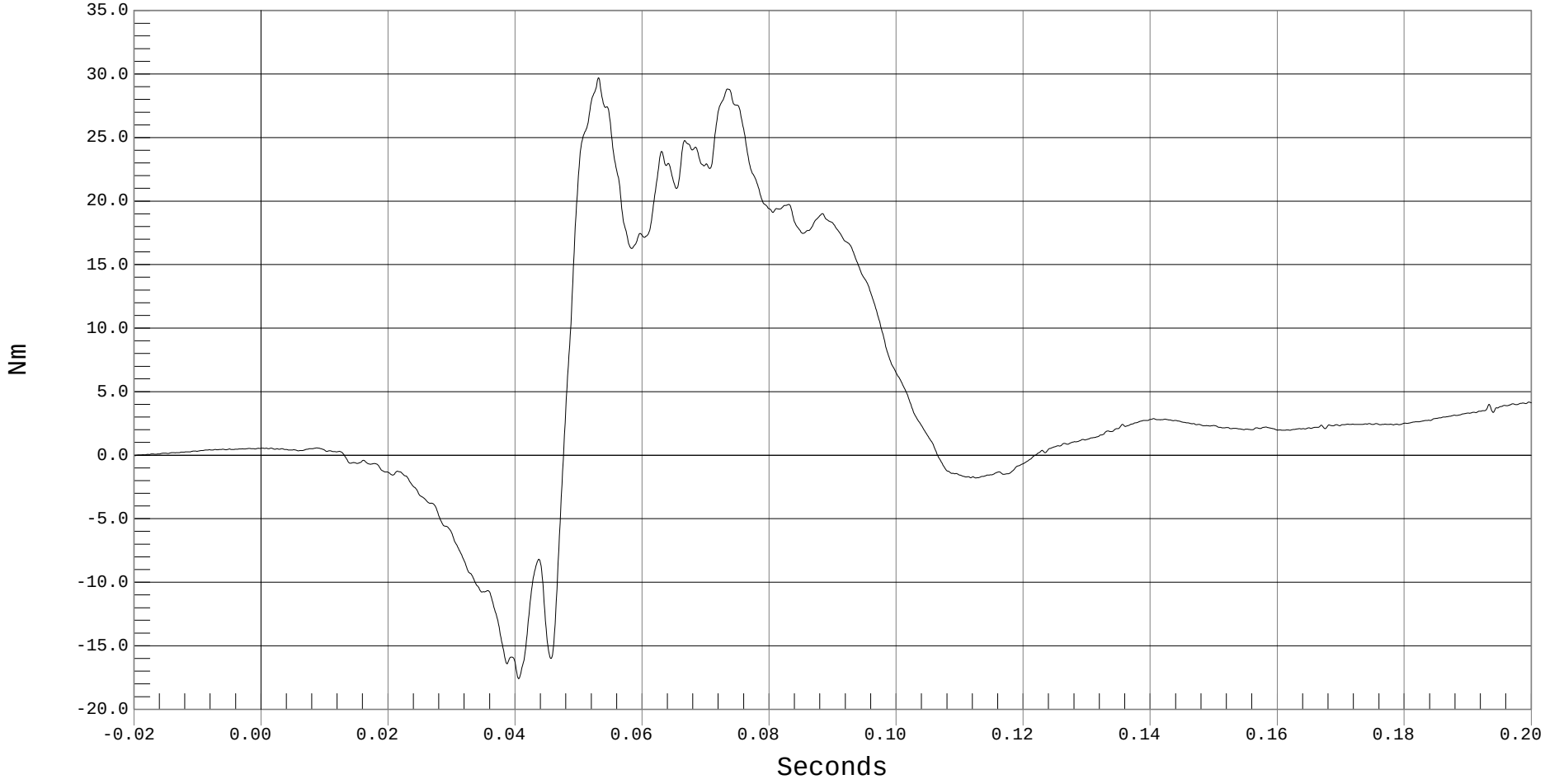
DRIVER LEFT LOWER TIBIA MOMENT X

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 DRIVER LEFT LOWER TIBIA MX, B01014MF.M78

Ymin = -17.6 Nm @ 0.0405 Seconds, Ymax = 29.72 Nm @ 0.0531 Seconds



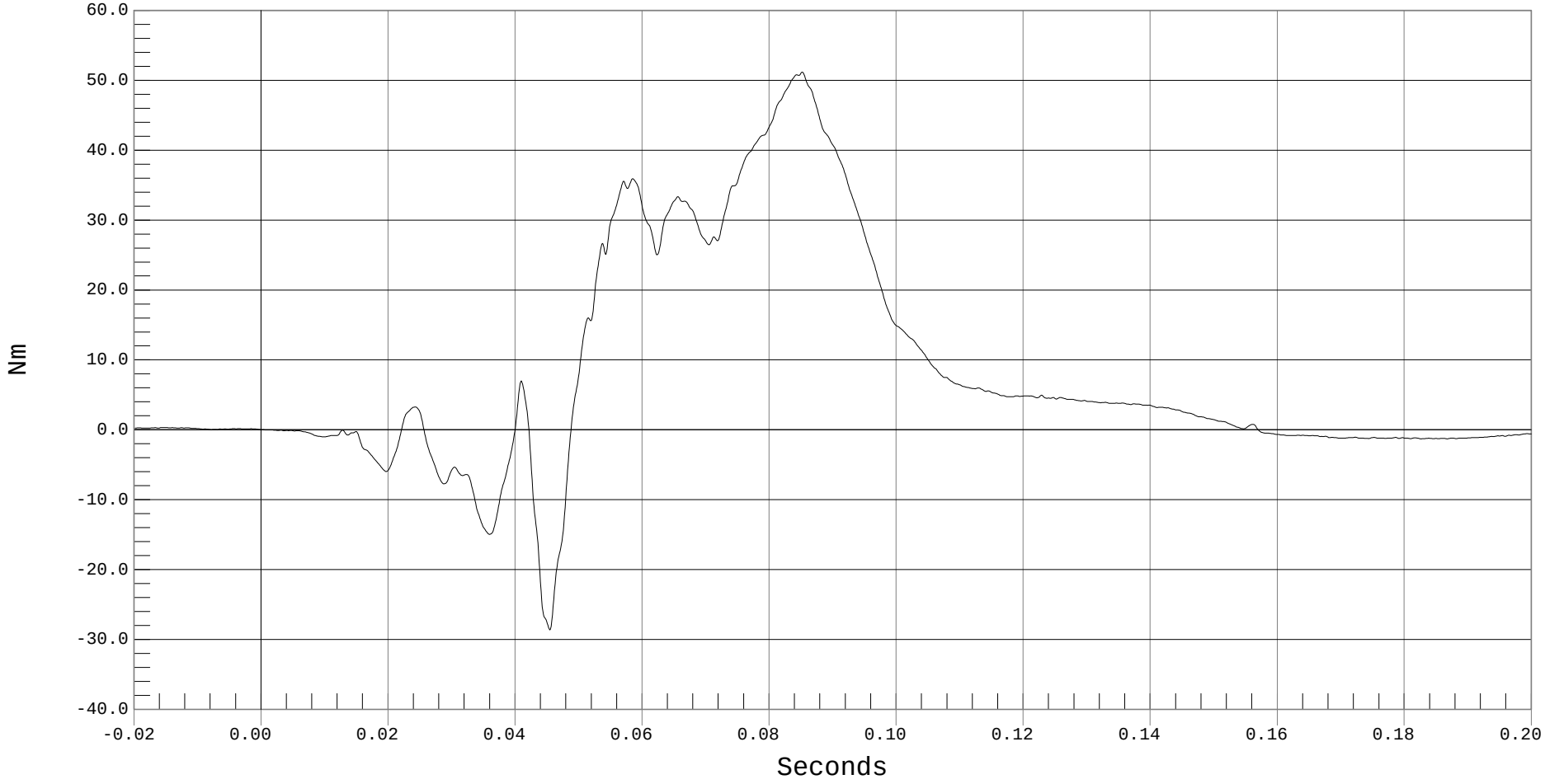
DRIVER LEFT LOWER TIBIA MOMENT Y

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 DRIVER LEFT LOWER TIBIA MY, B01014MF.M79

Ymin = -28.65 Nm @ 0.0454 Seconds, Ymax = 51.19 Nm @ 0.0851 Seconds



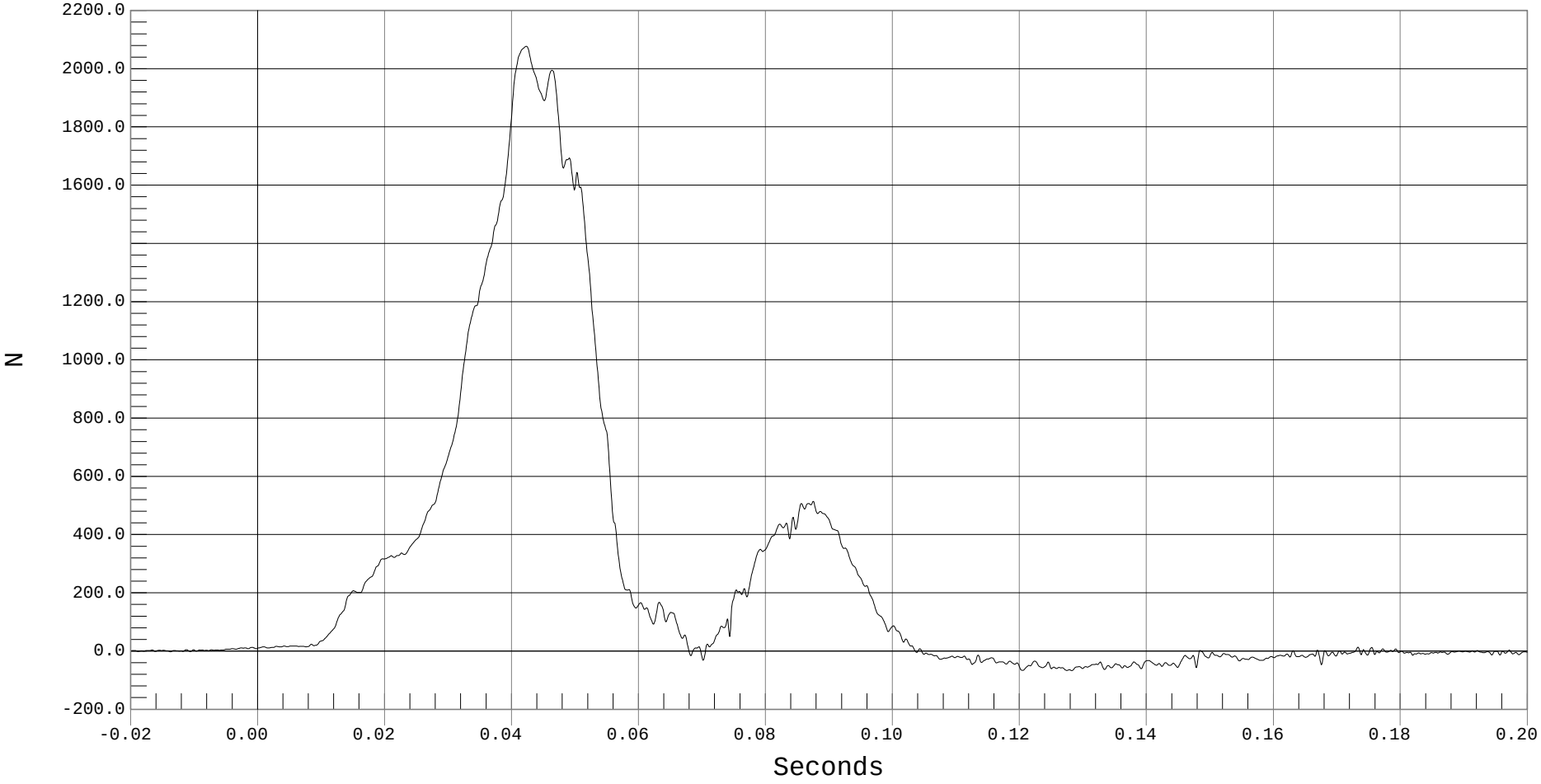
DRIVER LEFT LOWER TIBIA FORCE Z

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 DRIVER LEFT LOWER TIBIA FZ, B01014FF.F80

Ymin = -67.52 N @ 0.1282 Seconds, Ymax = 2076.99 N @ 0.0422 Seconds



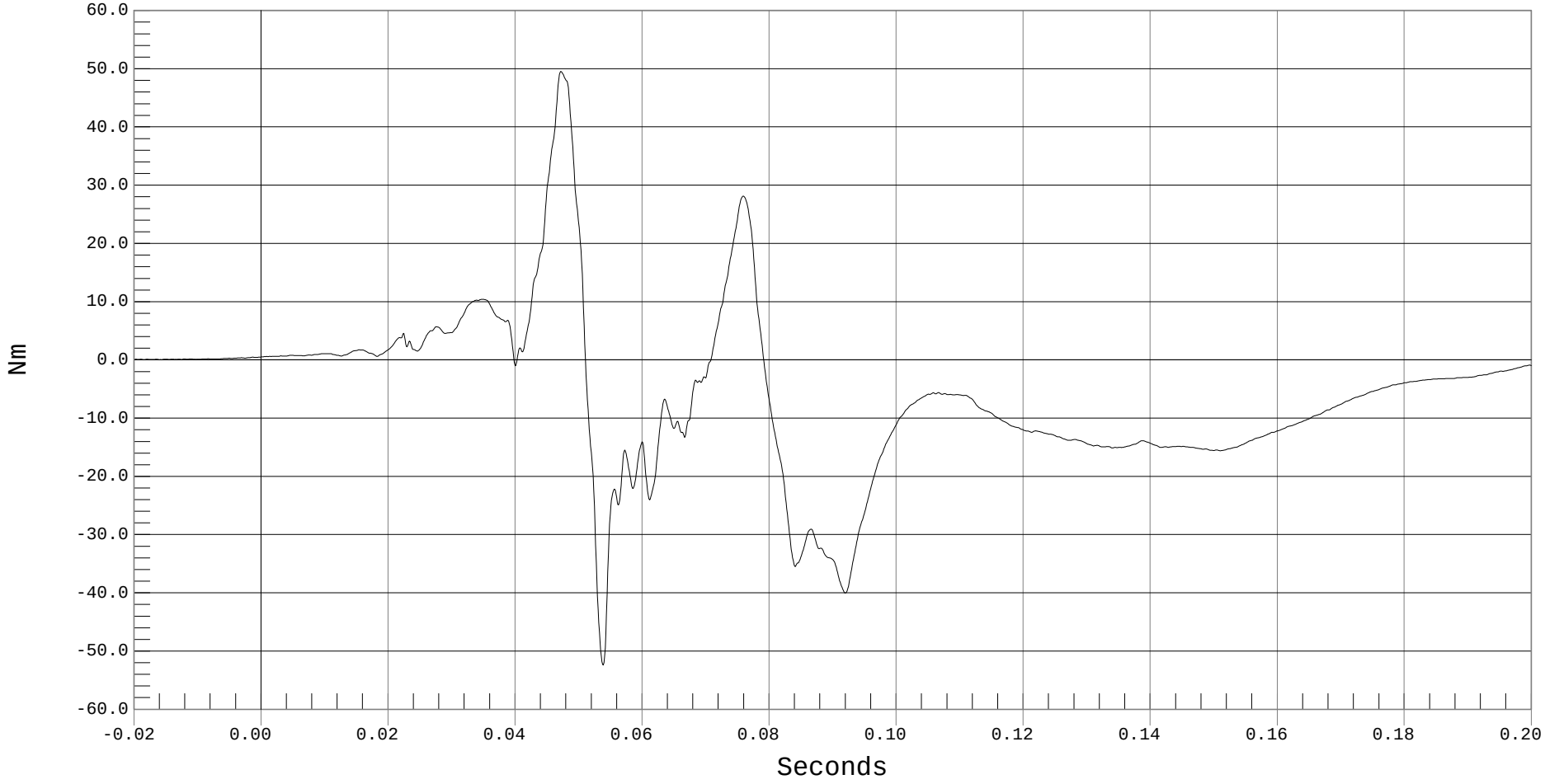
DRIVER RIGHT UPPER TIBIA MOMENT X

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 DRIVER RIGHT UPPER TIBIA MX, B01014MF.M69

Ymin = -52.41 Nm @ 0.0538 Seconds, Ymax = 49.56 Nm @ 0.0471 Seconds



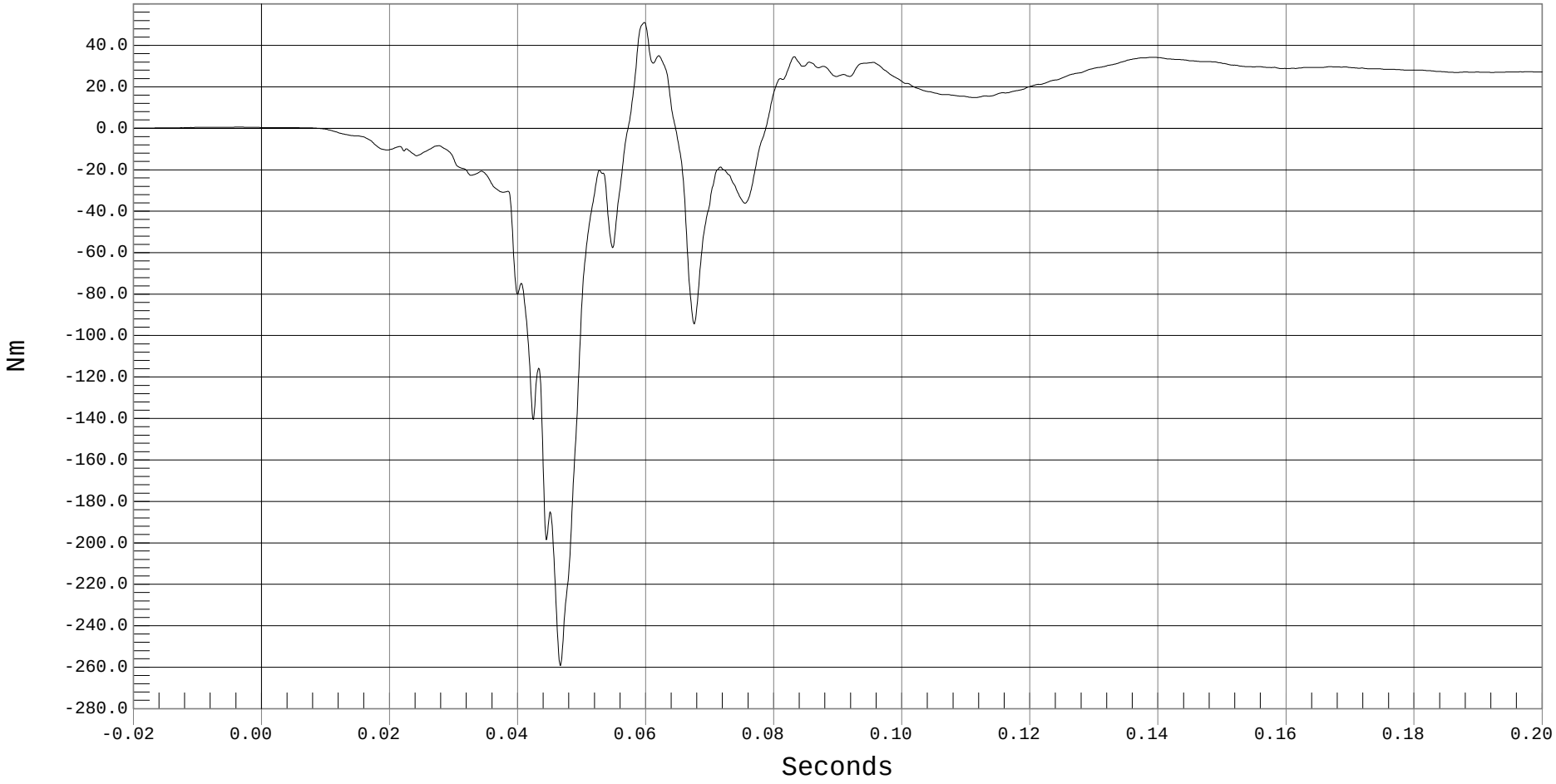
DRIVER RIGHT UPPER TIBIA MOMENT Y

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 DRIVER RIGHT UPPER TIBIA MY, B01014MF.M70

Ymin = -259.21 Nm @ 0.0466 Seconds, Ymax = 51.09 Nm @ 0.0597 Seconds



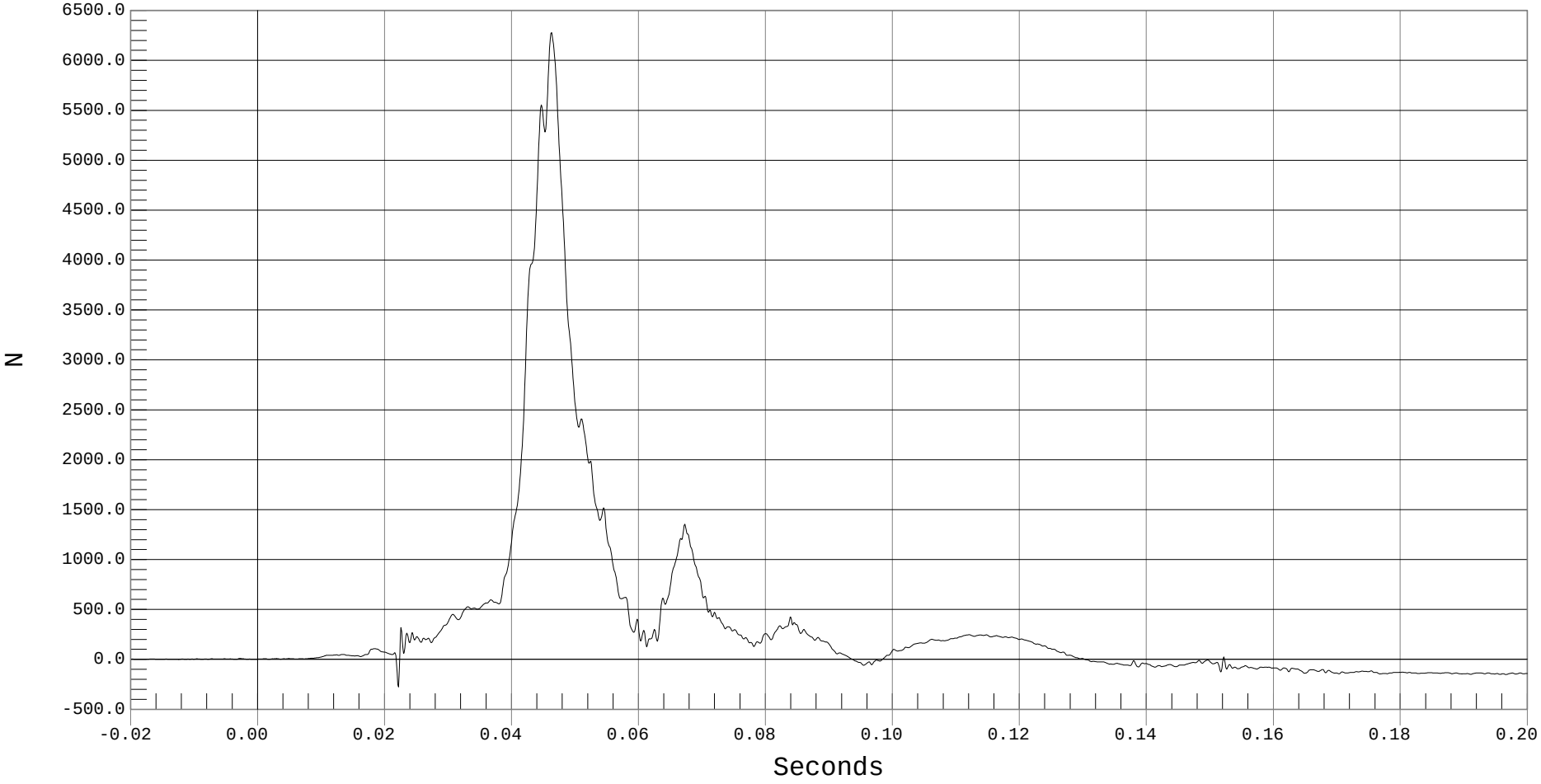
DRIVER RIGHT UPPER TIBIA FORCE Z

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 DRIVER RIGHT UPPER TIBIA FZ, B01014FF.F71

Ymin = -276.37 N @ 0.0221 Seconds, Ymax = 6278.49 N @ 0.0462 Seconds



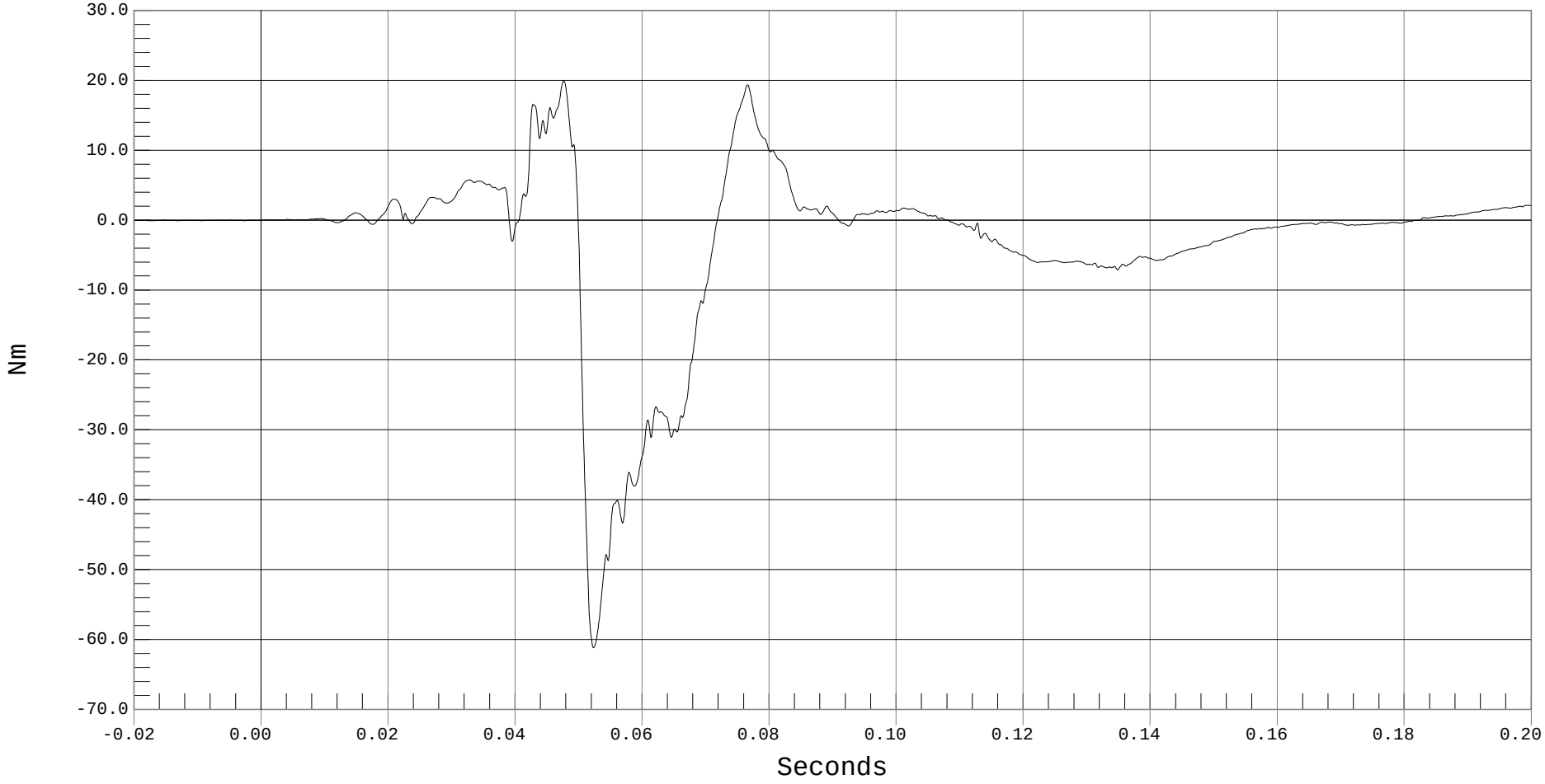
DRIVER RIGHT LOWER TIBIA MOMENT X

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 DRIVER RIGHT LOWER TIBIA MX, B01014MF.M72

Ymin = -61.19 Nm @ 0.0523 Seconds, Ymax = 19.93 Nm @ 0.0476 Seconds



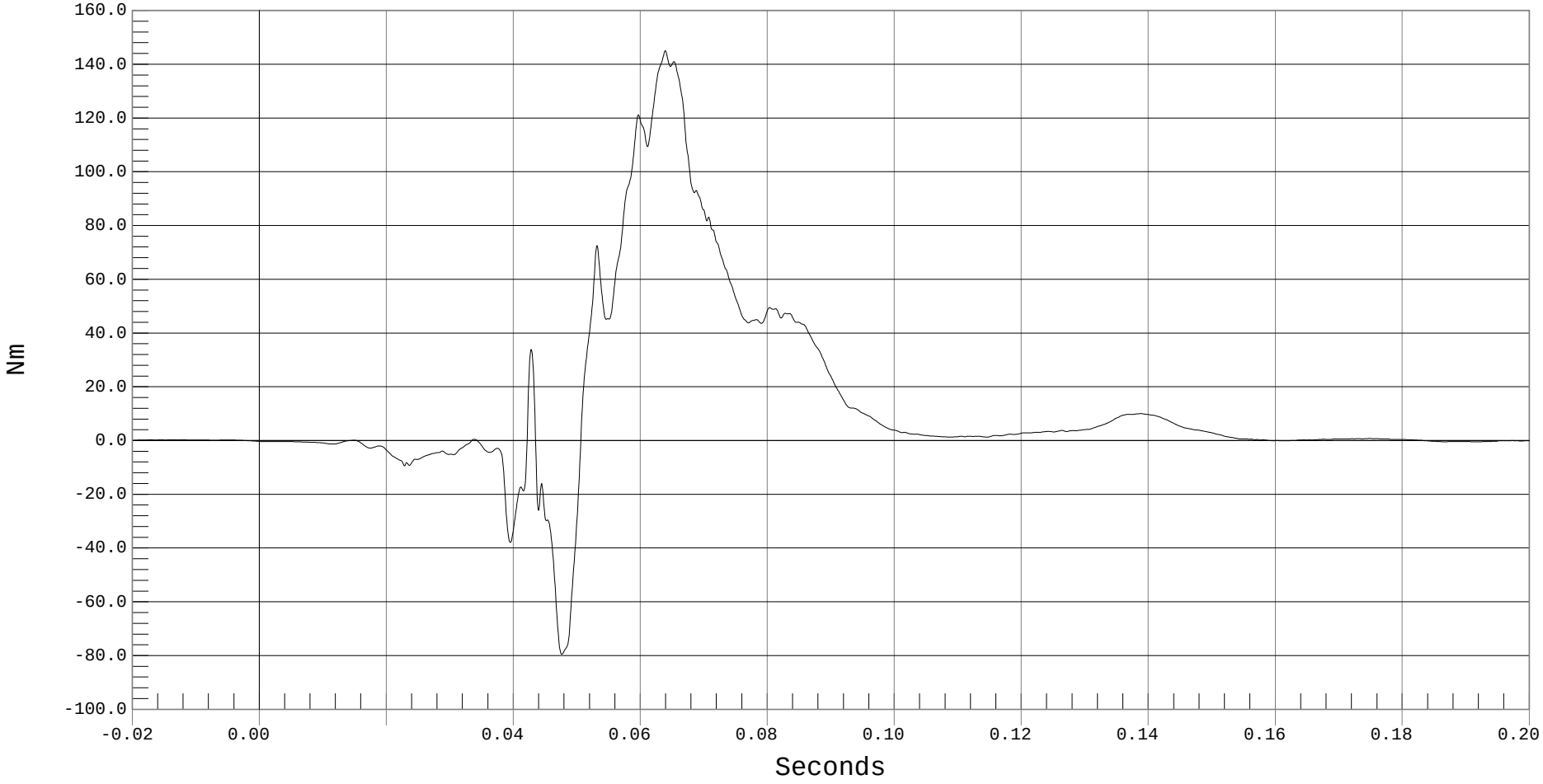
DRIVER RIGHT LOWER TIBIA MOMENT Y

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 DRIVER RIGHT LOWER TIBIA MY, B01014MF.M73

Ymin = -79.53 Nm @ 0.0476 Seconds, Ymax = 145.02 Nm @ 0.0639 Seconds



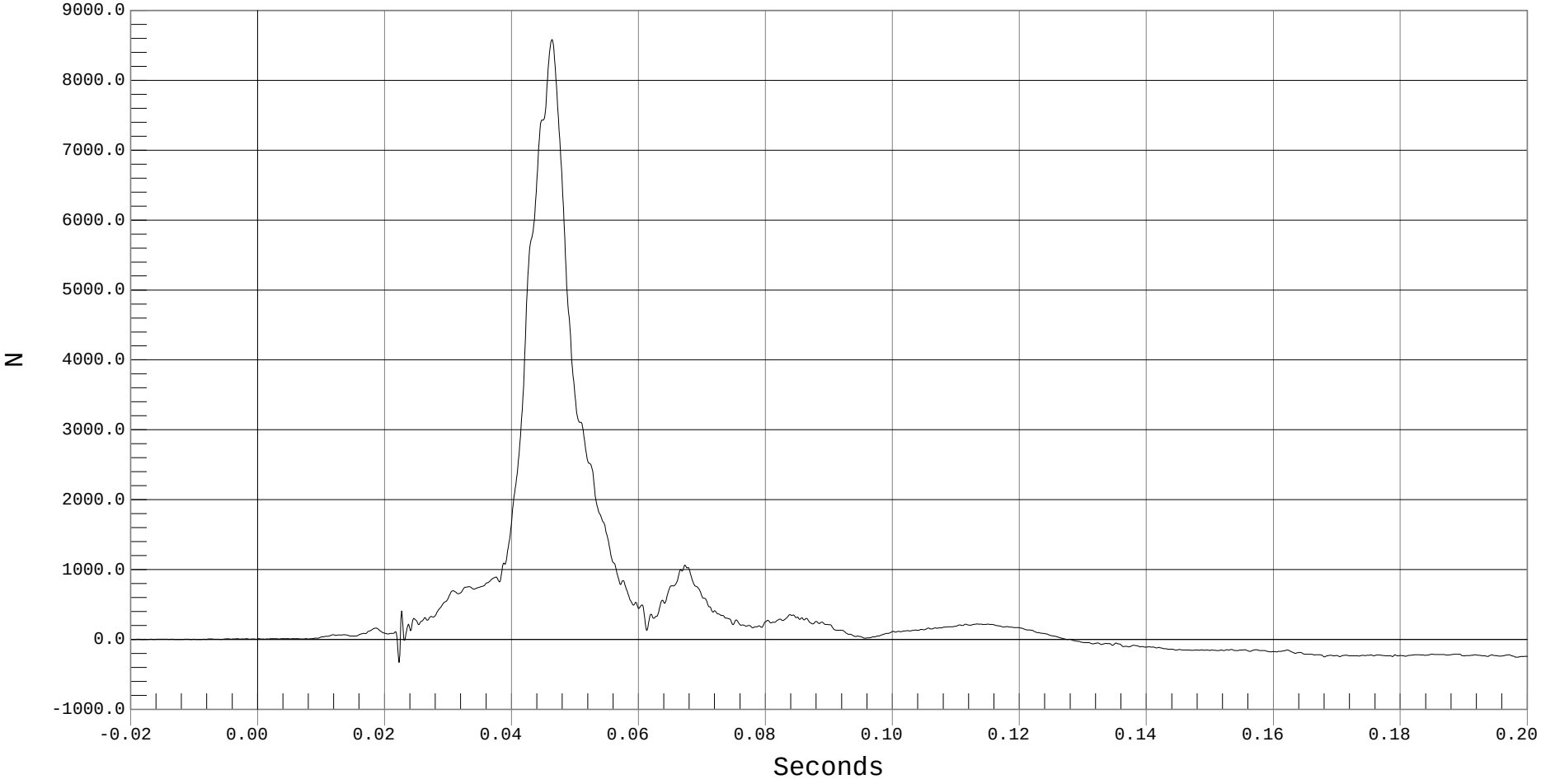
DRIVER RIGHT LOWER TIBIA FORCE Z

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 DRIVER RIGHT LOWER TIBIA FZ, B01014FF.F74

Ymin = -331.01 N @ 0.0222 Seconds, Ymax = 8585.19 N @ 0.0463 Seconds



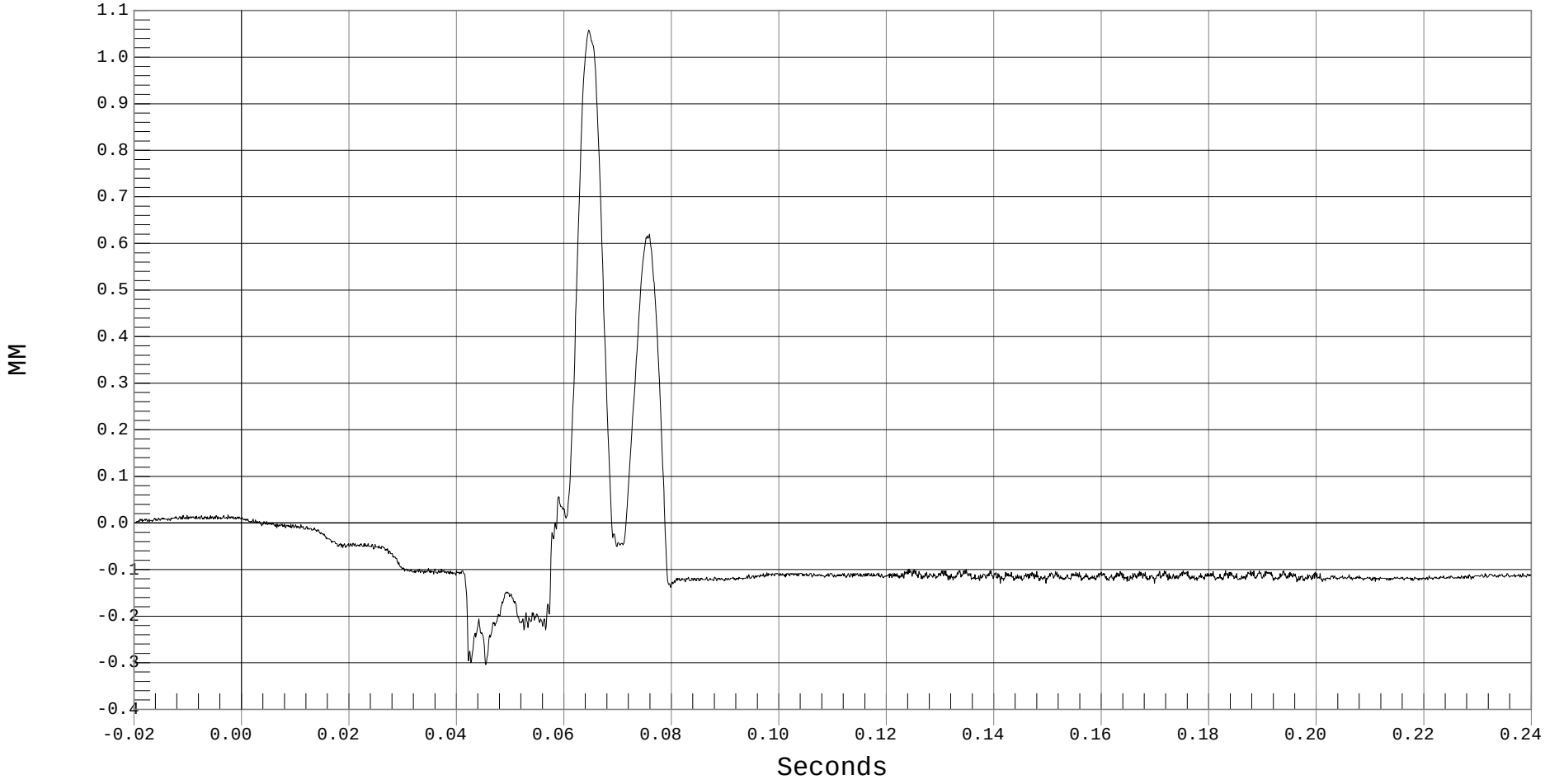
DRIVER LEFT KNEE SHEER

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 DRIVER LEFT KNEE SHEER, B01014DT.D62

Ymin = -.3 MM @ 0.0453 Seconds, Ymax = 1.06 MM @ 0.0645 Seconds



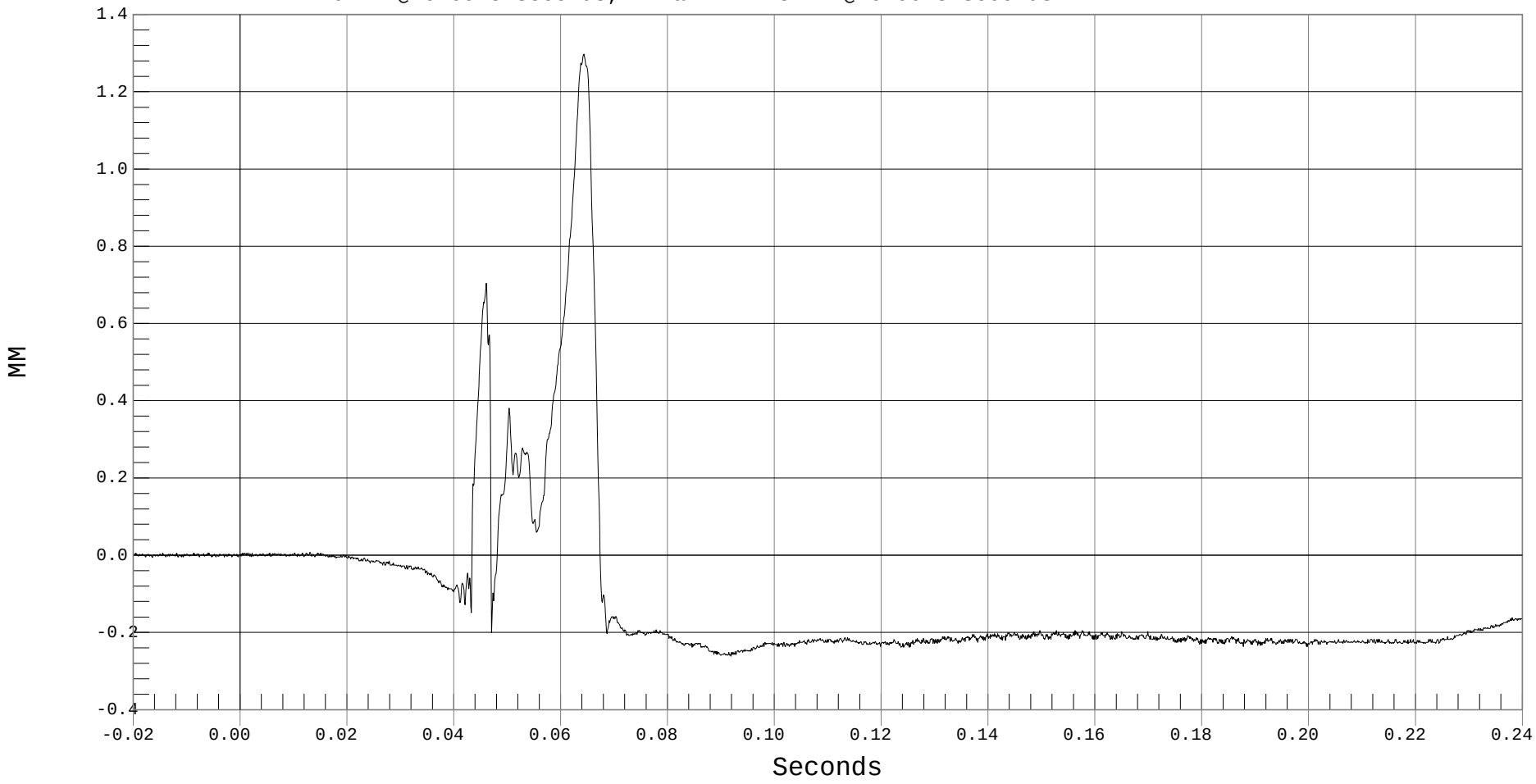
DRIVER RIGHT KNEE SHEER

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 DRIVER RIGHT KNEE SHEER, B01014DT.D61

Ymin = -.26 MM @ 0.0918 Seconds, Ymax = 1.3 MM @ 0.0643 Seconds



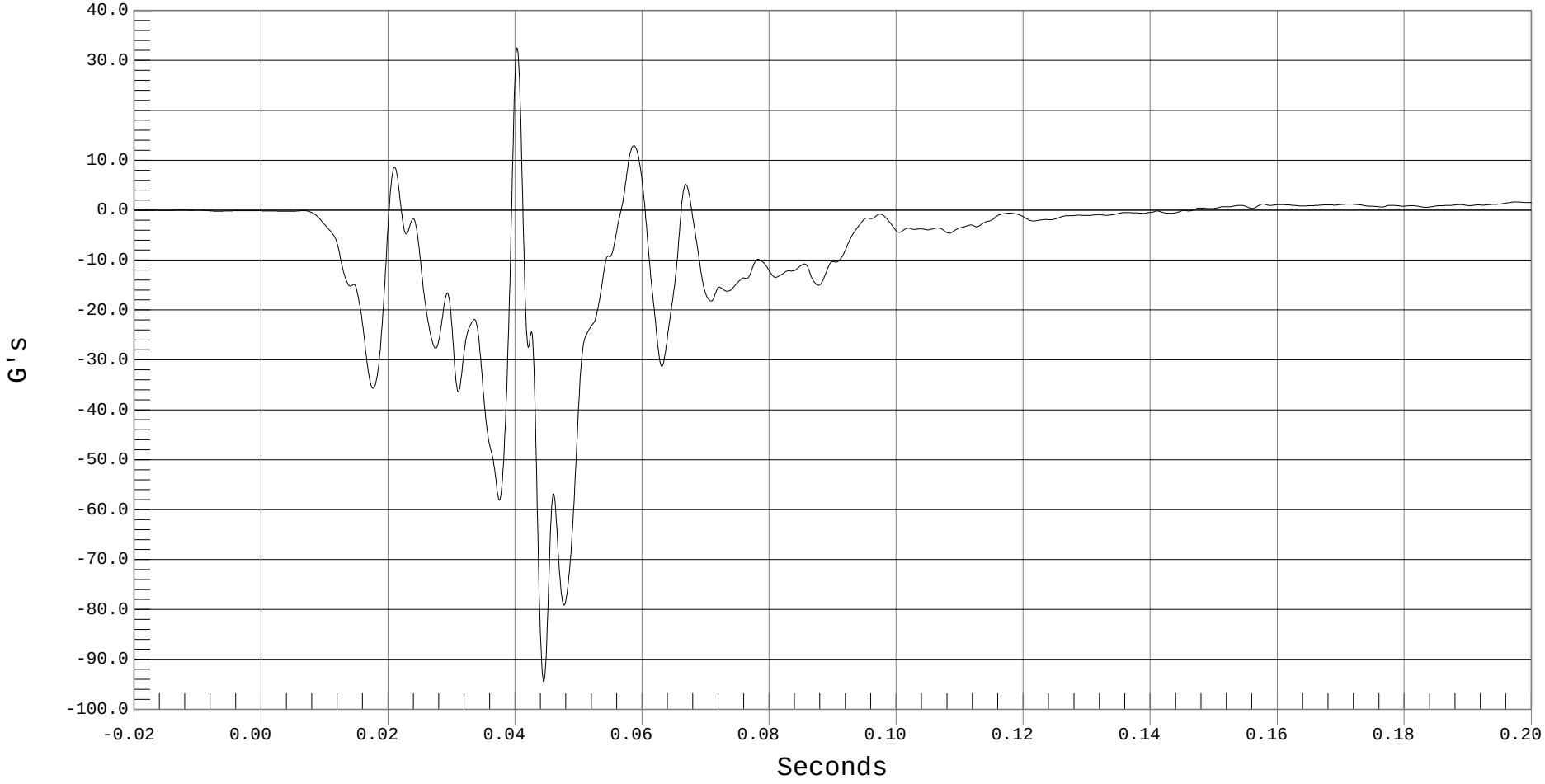
DRIVER LEFT FOOT @ BALL Z ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 DRIVER LEFT FOOT @ BALL Z, B01014AF.A12

Ymin = -94.45 G's @ 0.0444 Seconds, Ymax = 32.52 G's @ 0.0402 Seconds



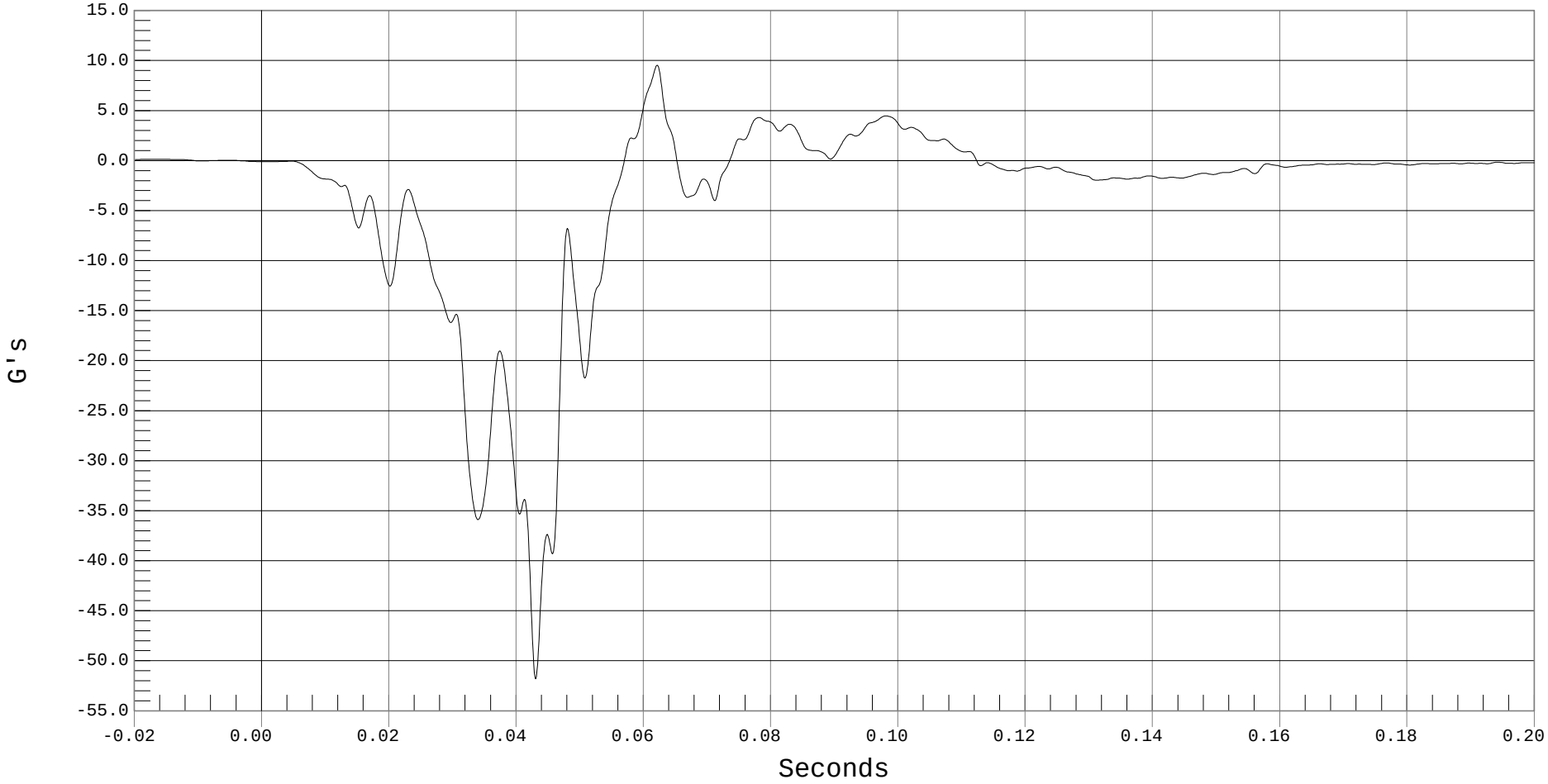
DRIVER LEFT FOOT @ HEEL X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 DRIVER LEFT FOOT @ HEEL X, B01014AF.A10

Ymin = -51.8 G's @ 0.0430 Seconds, Ymax = 9.54 G's @ 0.0621 Seconds



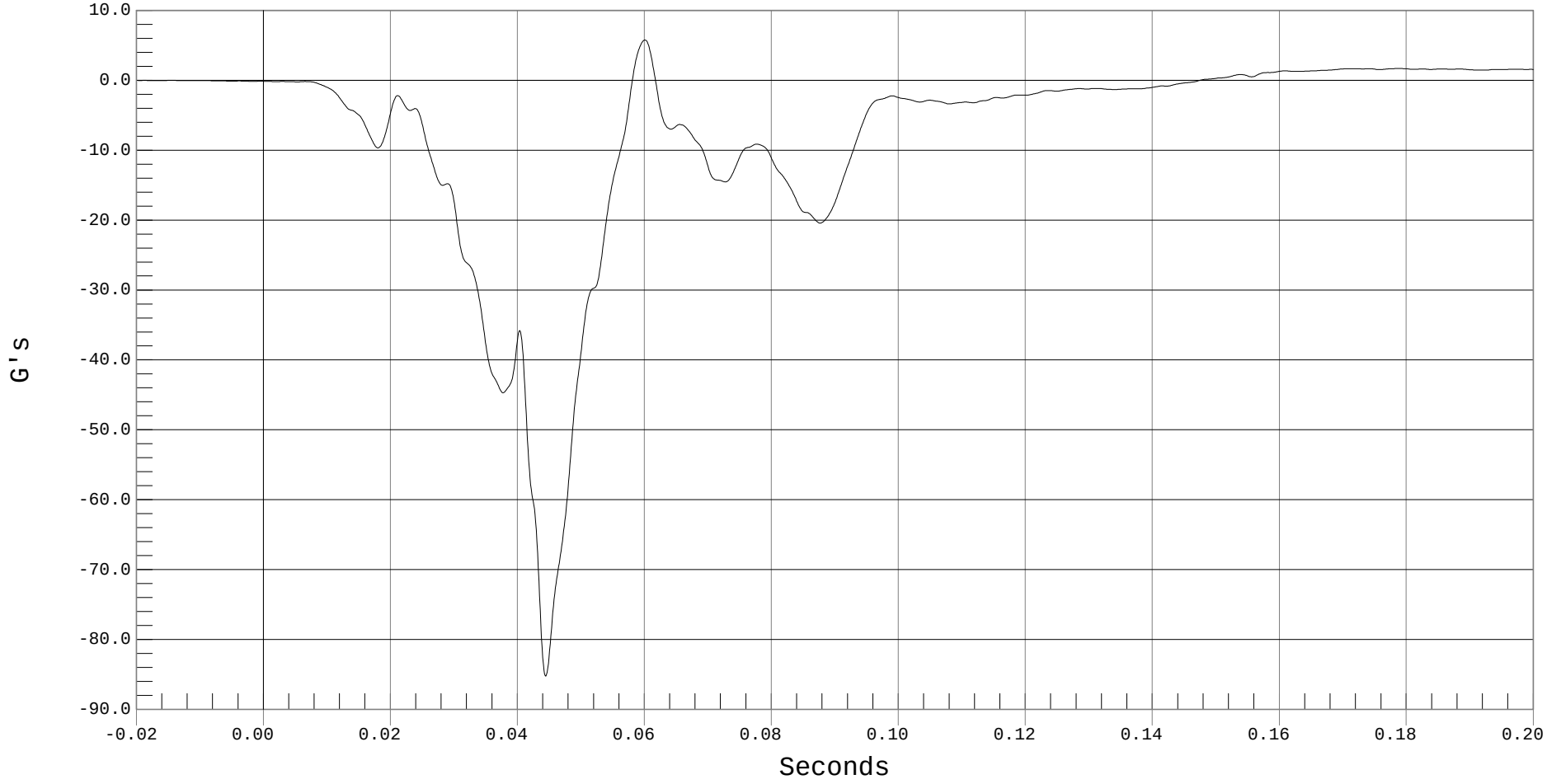
DRIVER LEFT FOOT @ HEEL Z ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 DRIVER LEFT FOOT @ HEEL Z, B01014AF.A11

Ymin = -85.26 G's @ 0.0444 Seconds, Ymax = 5.78 G's @ 0.0600 Seconds



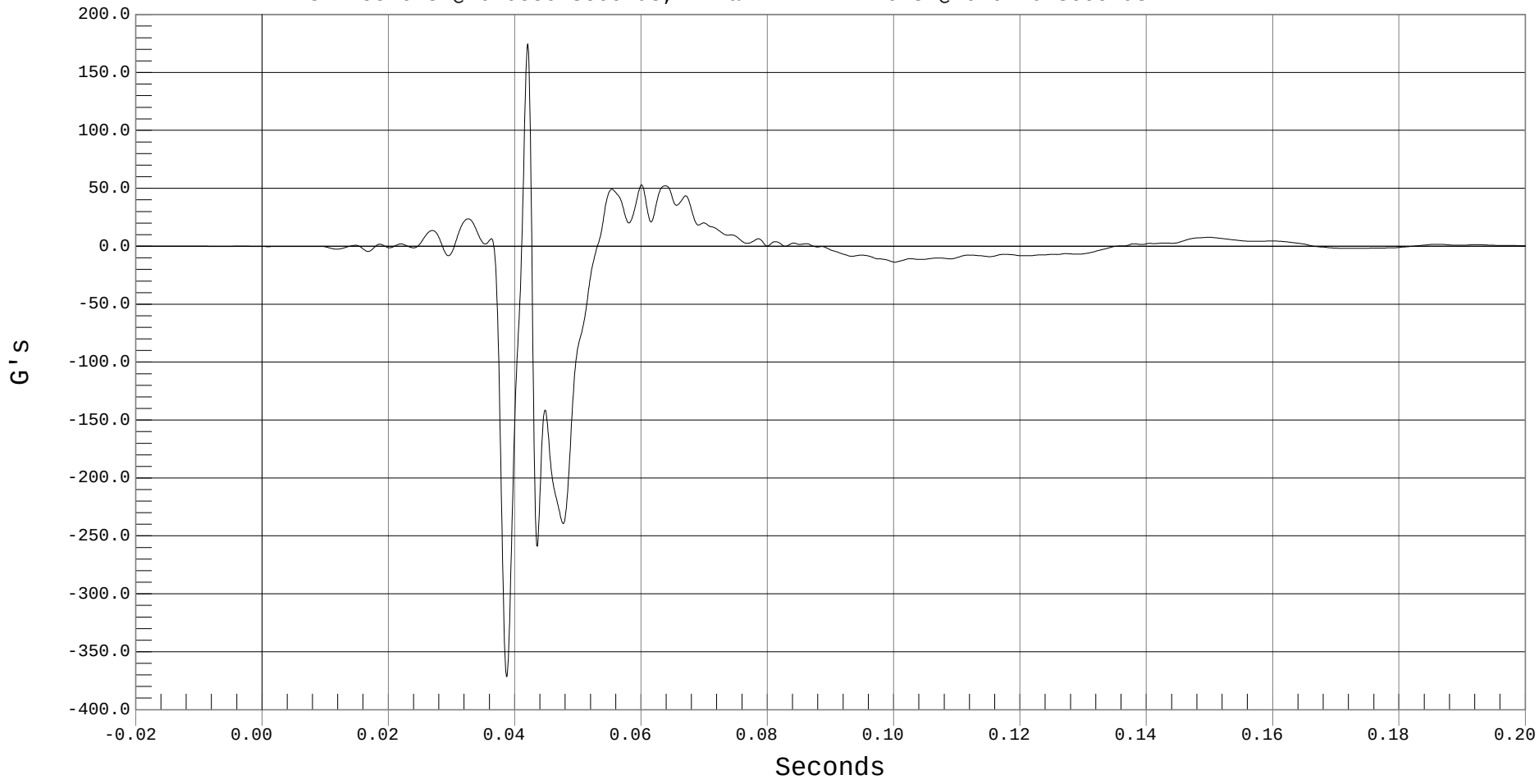
DRIVER RIGHT FOOT @ BALL Z ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 DRIVER RIGHT FOOT @ BALL Z, B01014AF.A95

Ymin = -371.55 G's @ 0.0386 Seconds, Ymax = 174.7 G's @ 0.0420 Seconds



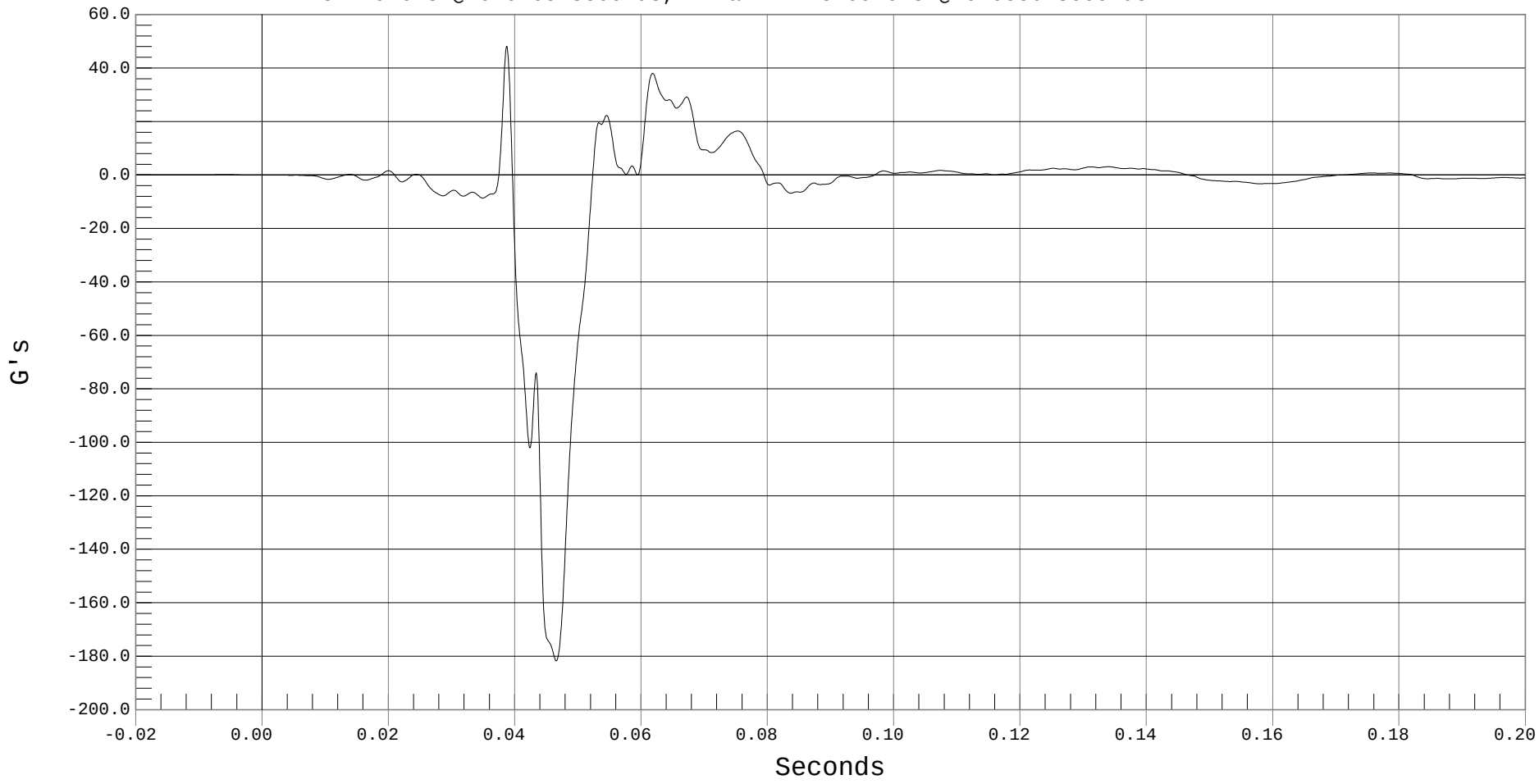
DRIVER RIGHT FOOT @ HEEL X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 DRIVER RIGHT FOOT @ HEEL X, B01014AF.A93

Ymin = -181.79 G's @ 0.0465 Seconds, Ymax = 48.09 G's @ 0.0386 Seconds



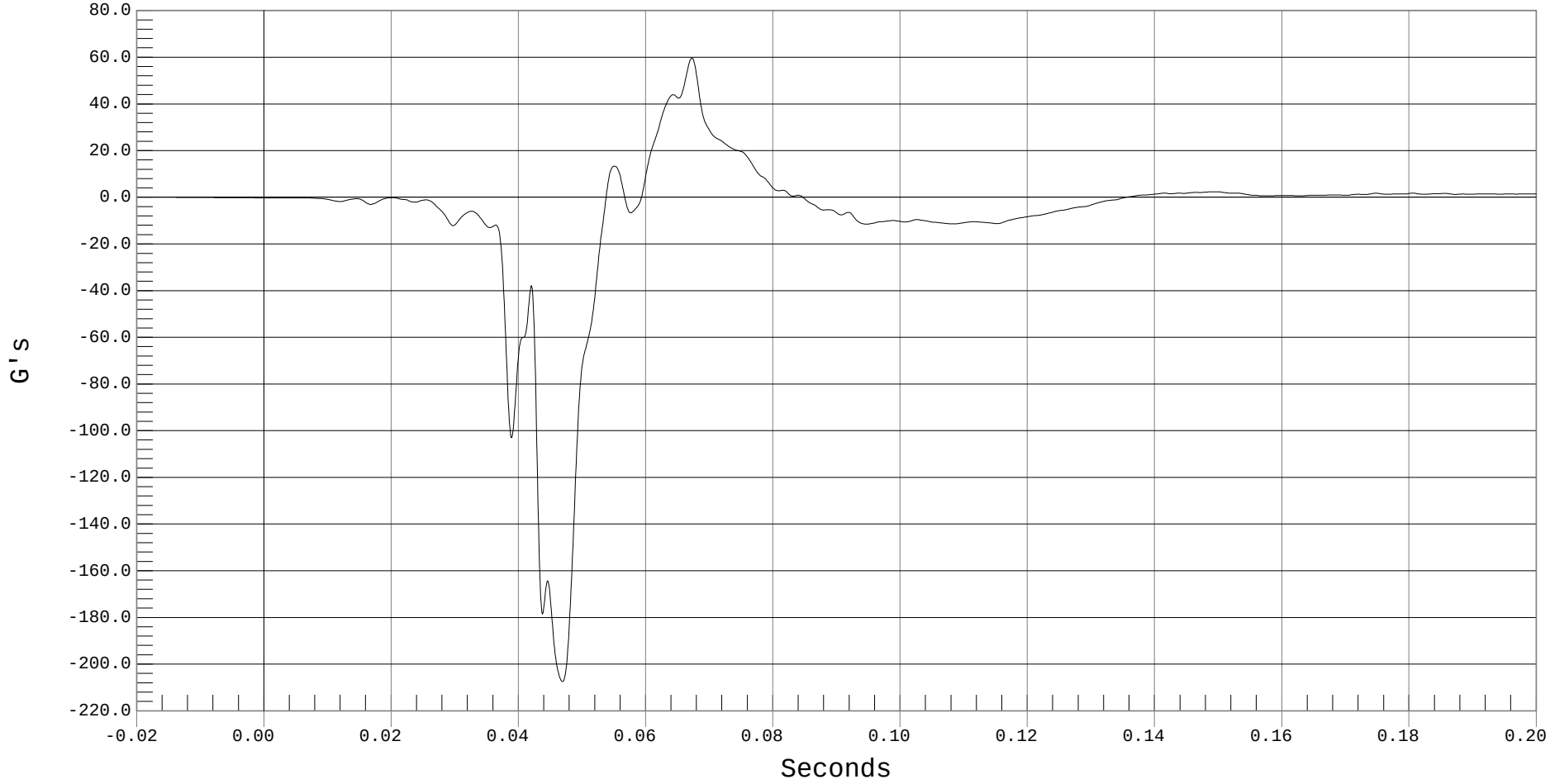
DRIVER RIGHT FOOT @ HEEL Z ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 DRIVER RIGHT FOOT @ HEEL Z, B01014AF.A94

Ymin = -207.49 G's @ 0.0468 Seconds, Ymax = 59.62 G's @ 0.0672 Seconds



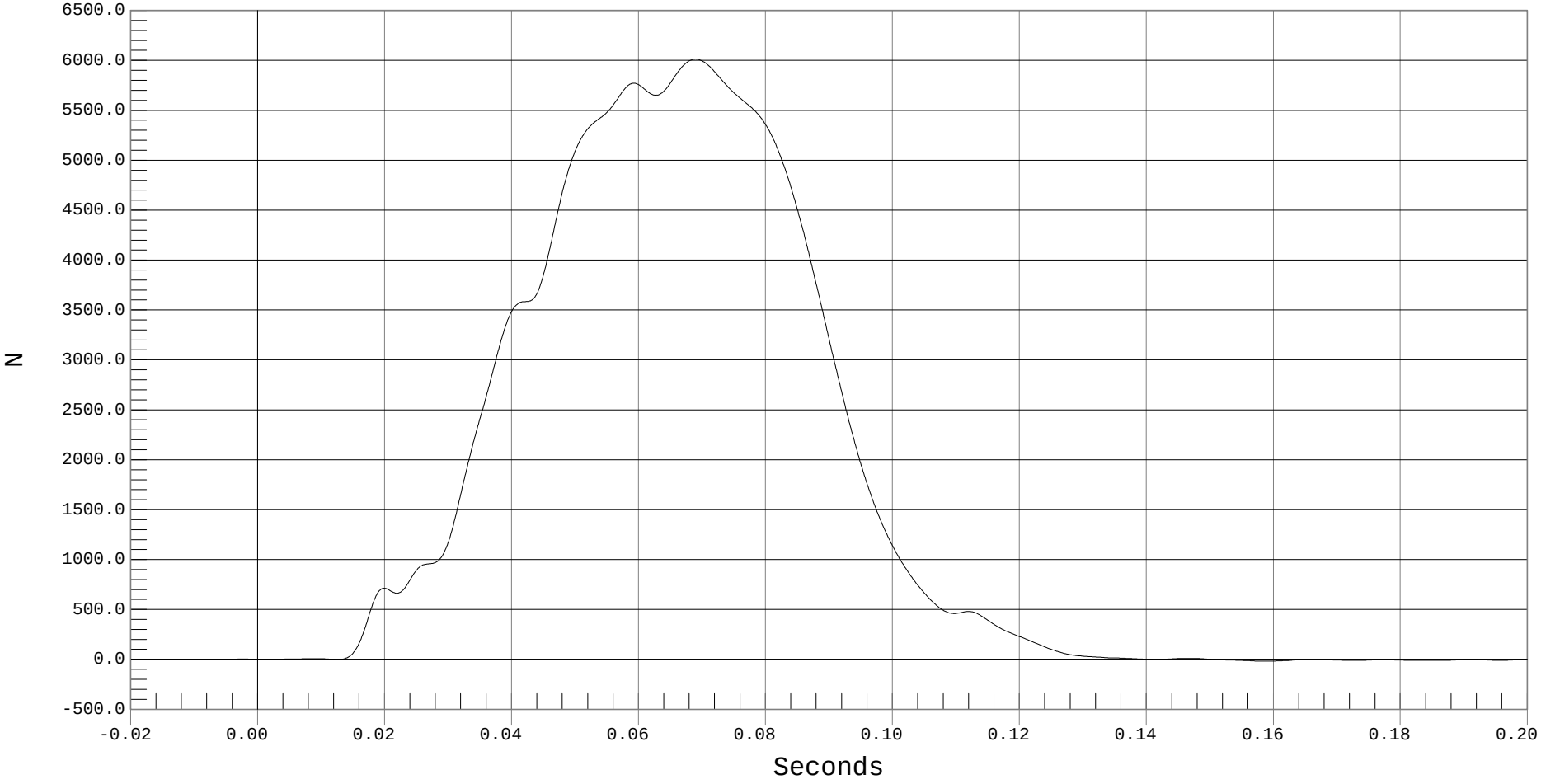
DRIVER SHOULDER BELT FORCE

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 DRIVER SHOULDER BELT, B01014FF.F65

Ymin = -18.12 N @ 0.1585 Seconds, Ymax = 6012.81 N @ 0.0689 Seconds



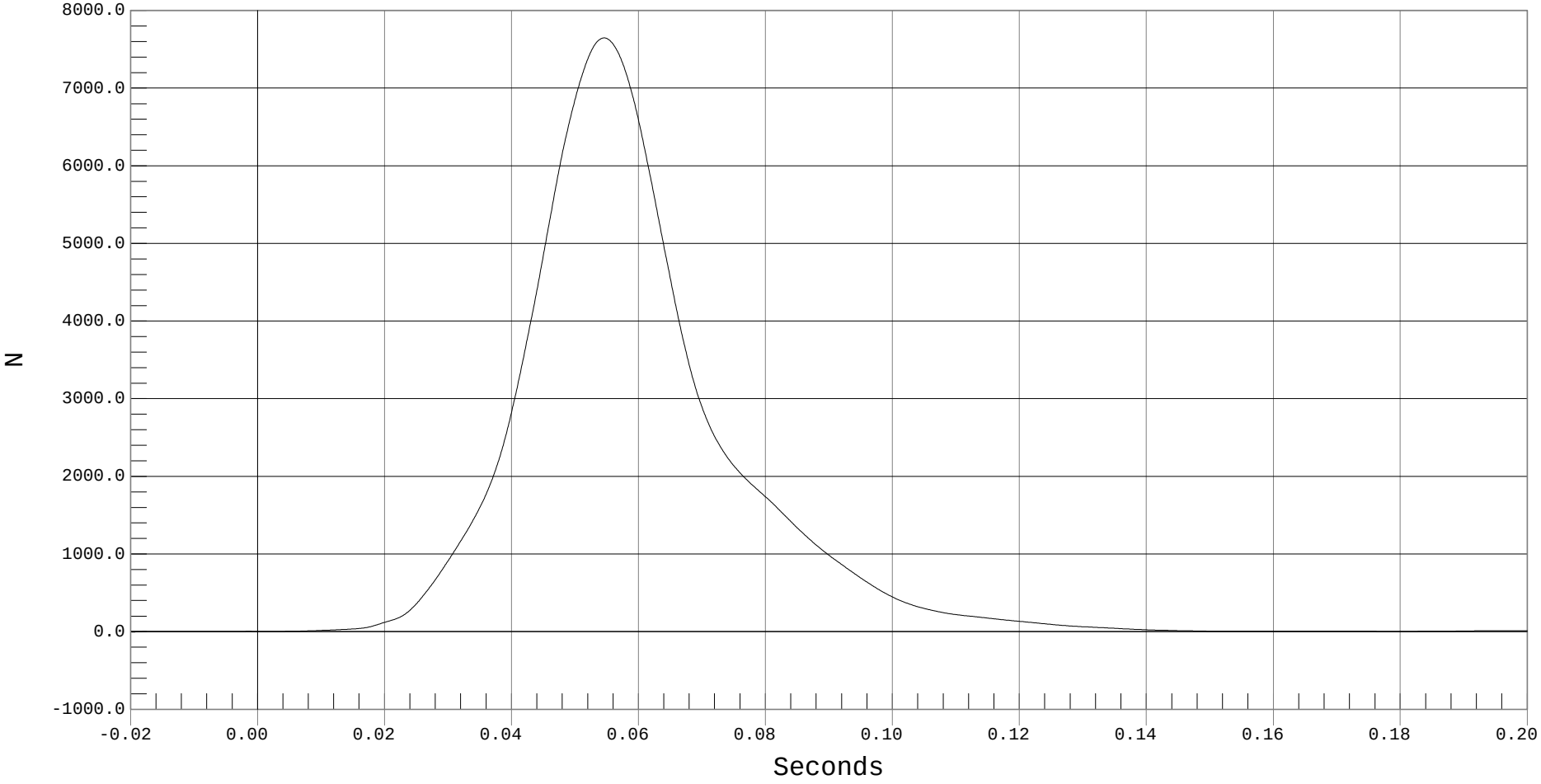
DRIVER LAP BELT FORCE

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 DRIVER LAP BELT, B01014FF.F66

Ymin = -5.75 N @ -0.0199 Seconds, Ymax = 7646.69 N @ 0.0545 Seconds



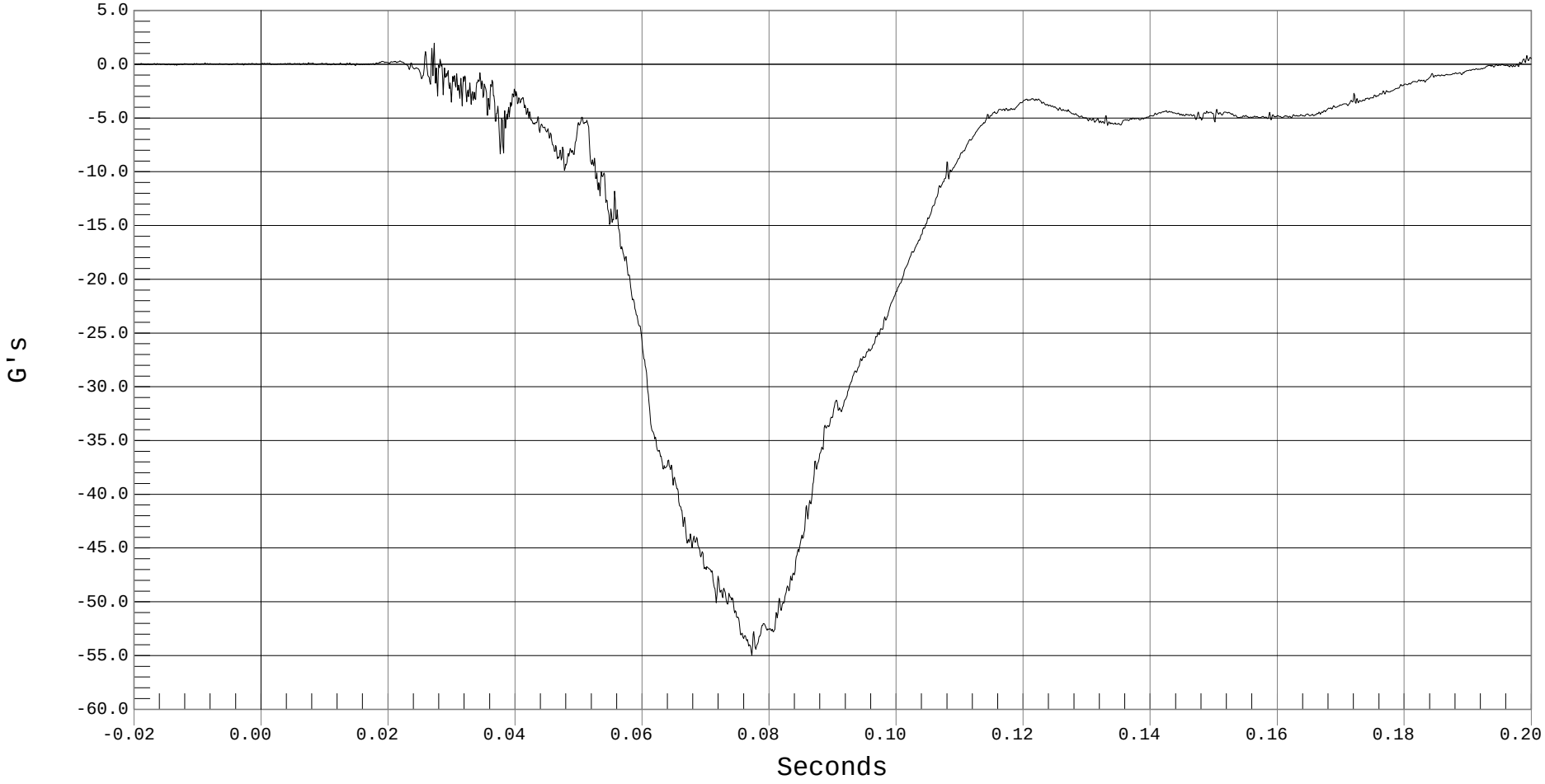
PASSENGER HEAD X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 PASSENGER HEAD X, B01014AT.A19

Ymin = -54.99 G's @ 0.0772 Seconds, Ymax = 1.97 G's @ 0.0272 Seconds



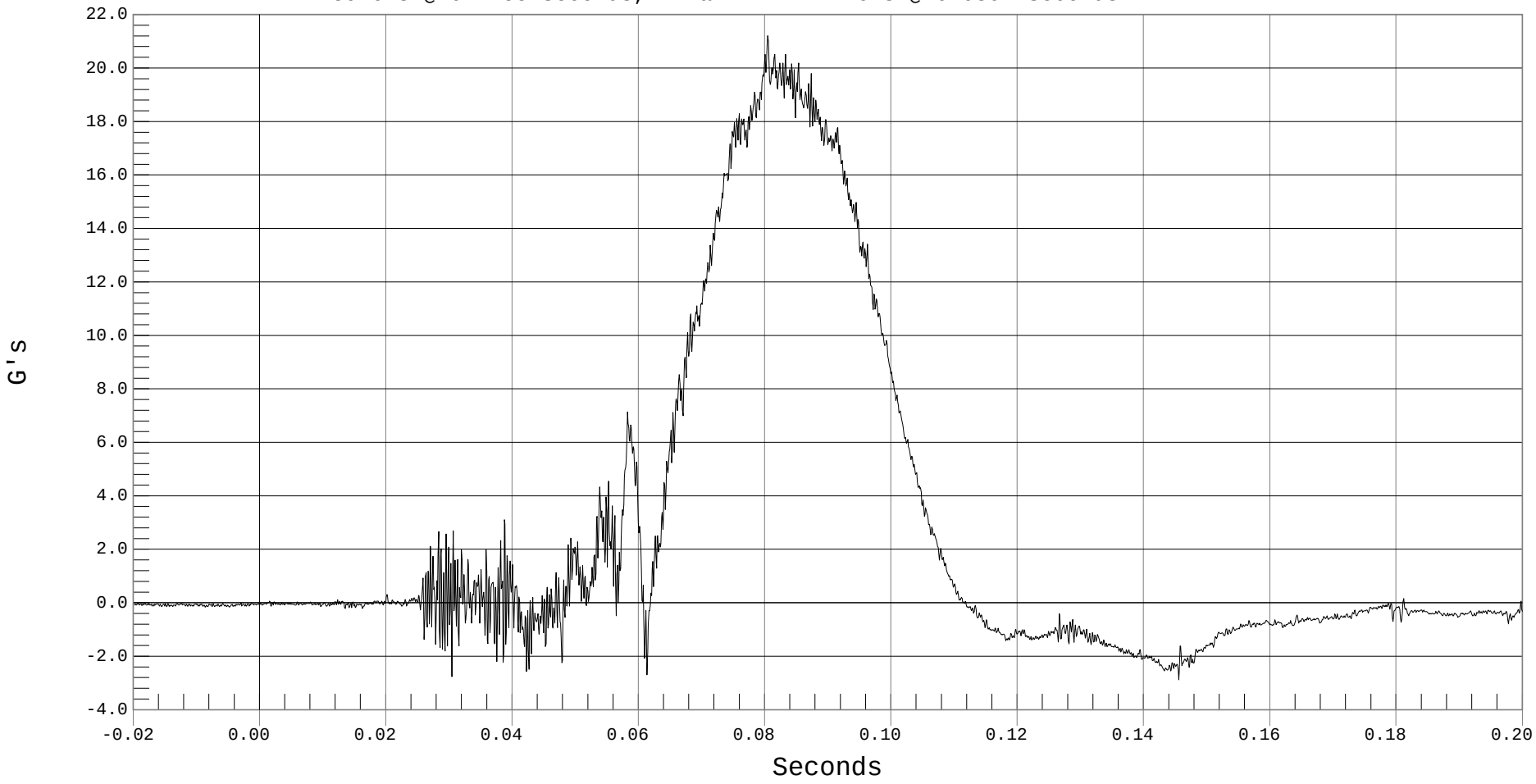
PASSENGER HEAD Y ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 PASSENGER HEAD Y, B01014AT.A20

Ymin = -2.89 G's @ 0.1455 Seconds, Ymax = 21.21 G's @ 0.0804 Seconds



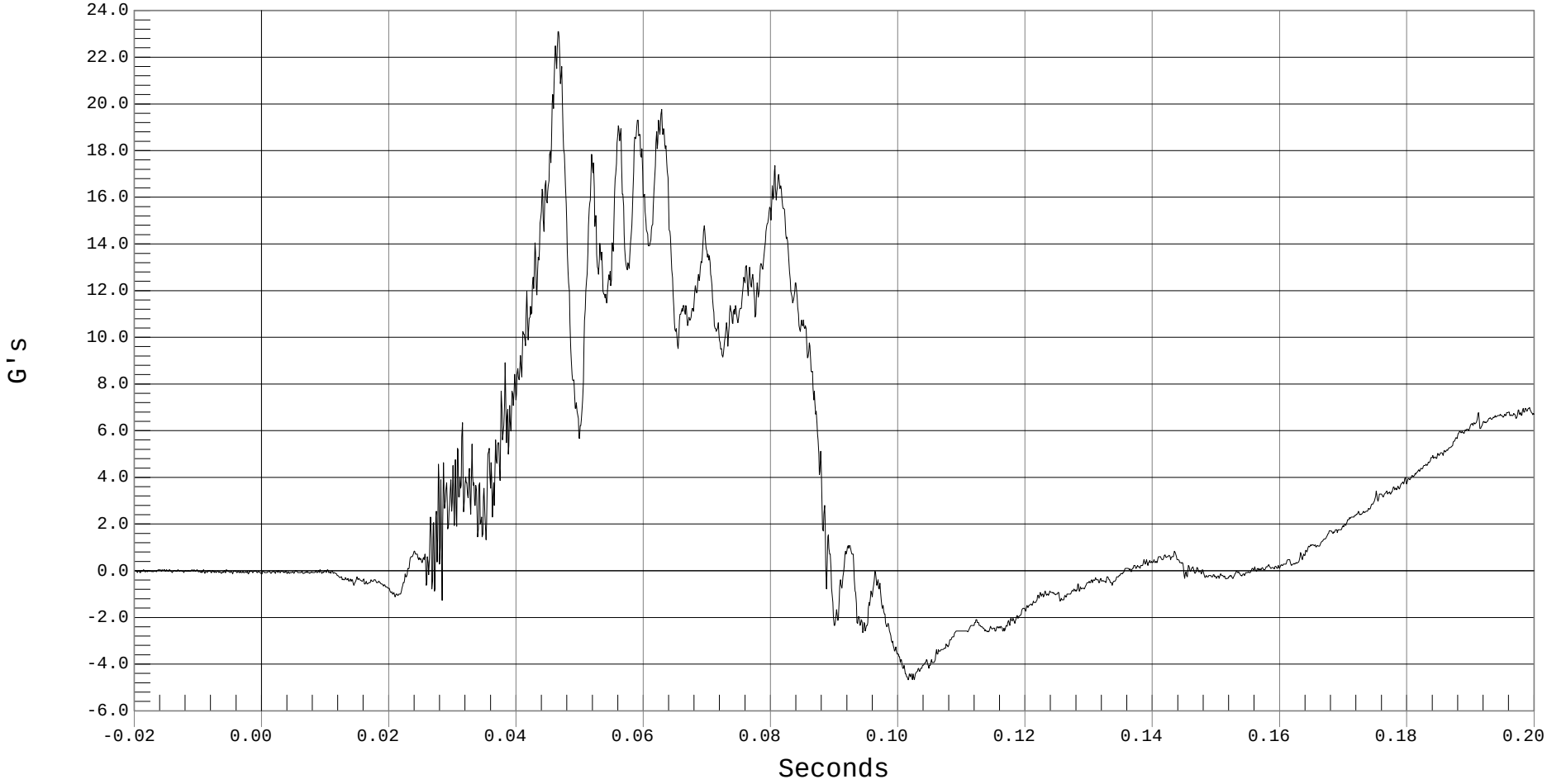
PASSENGER HEAD Z ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 PASSENGER HEAD Z, B01014AT.A21

Ymin = -4.67 G's @ 0.1015 Seconds, Ymax = 23.1 G's @ 0.0465 Seconds



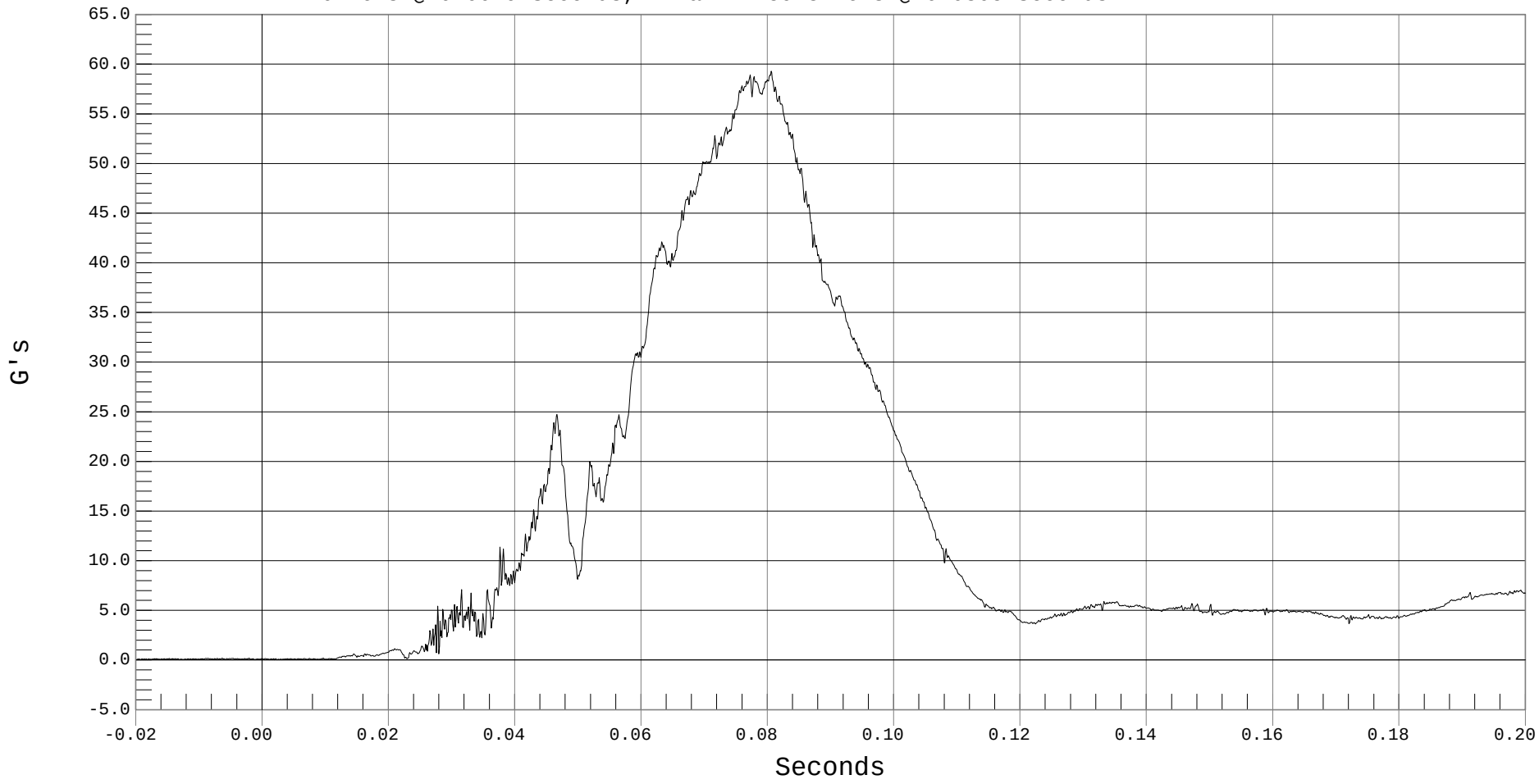
PASSENGER HEAD RESULTANT ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 PASSENGER HEAD RESULTANT ACCELERATION, B01014AV.A19

Ymin = .02 G's @ 0.0019 Seconds, Ymax = 59.31 G's @ 0.0805 Seconds



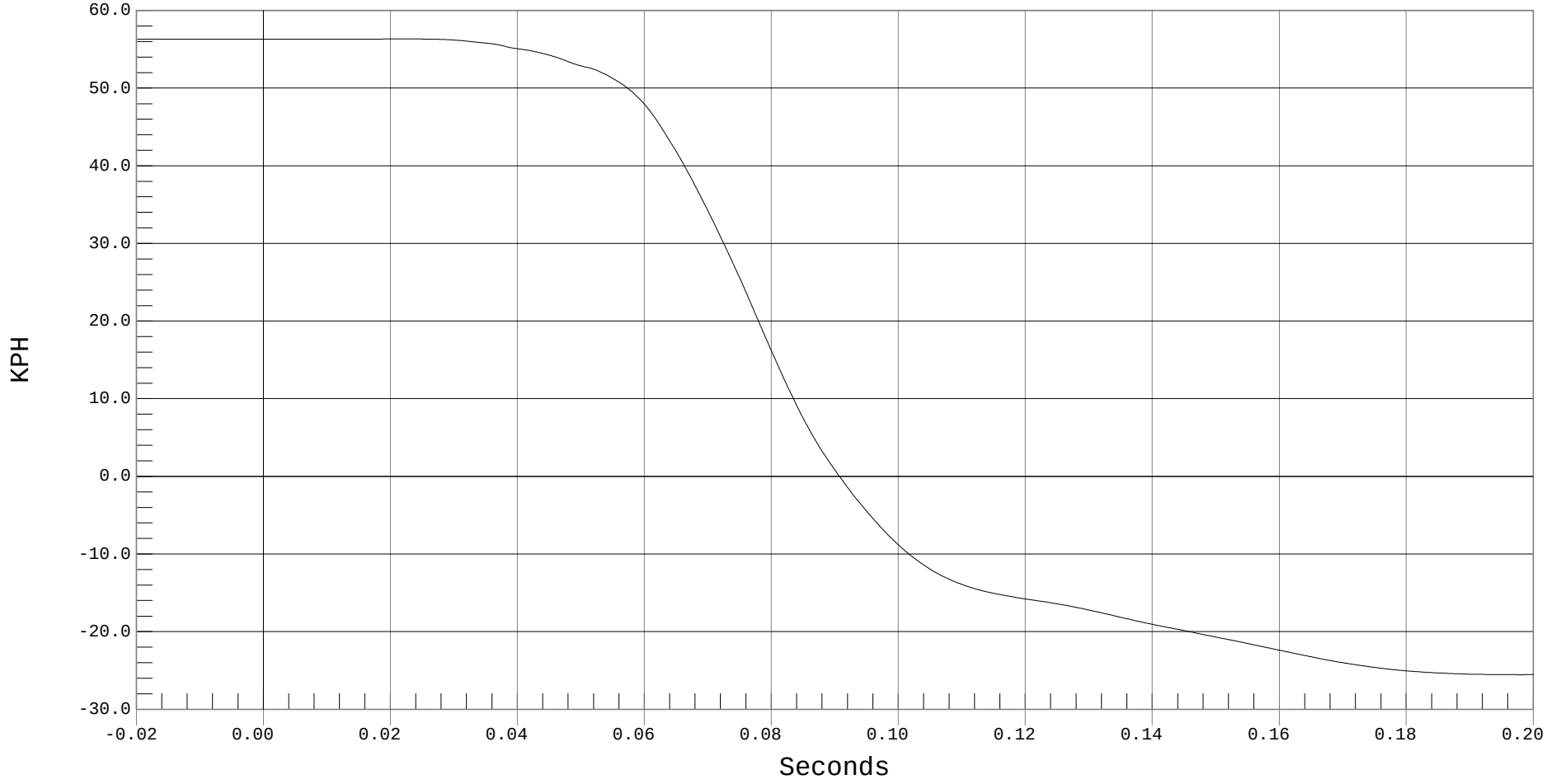
PASSENGER HEAD X VELOCITY

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 PASSENGER HEAD X VELOCITY, B01014AI.V19

Ymin = -25.55 KPH @ 0.1979 Seconds, Ymax = 56.35 KPH @ 0.0227 Seconds



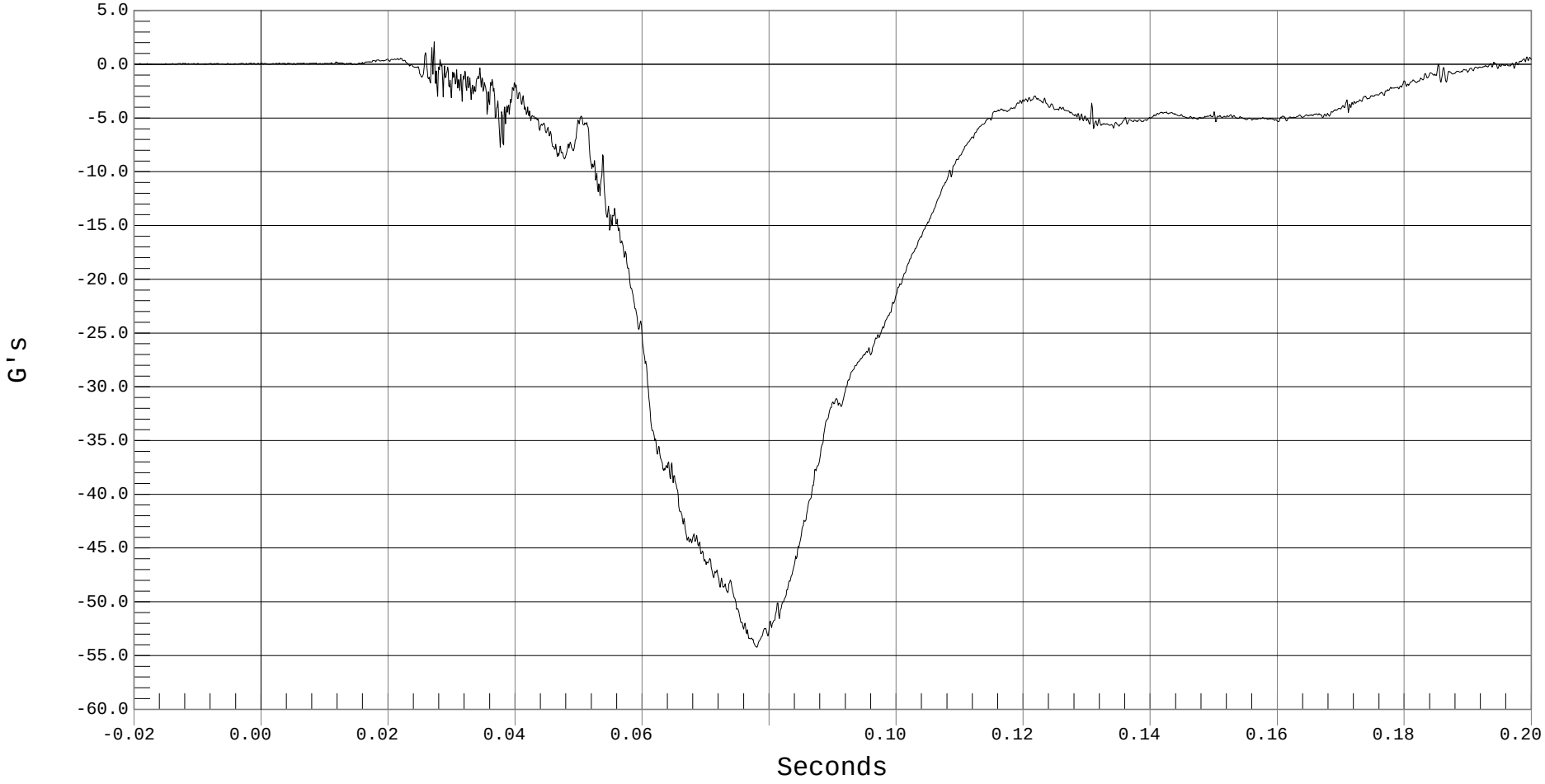
PASSENGER HEAD REDUNDANT X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 PASSENGER HEAD Xr, B01014AT.A41

Ymin = -54.23 G's @ 0.0780 Seconds, Ymax = 2.1 G's @ 0.0272 Seconds



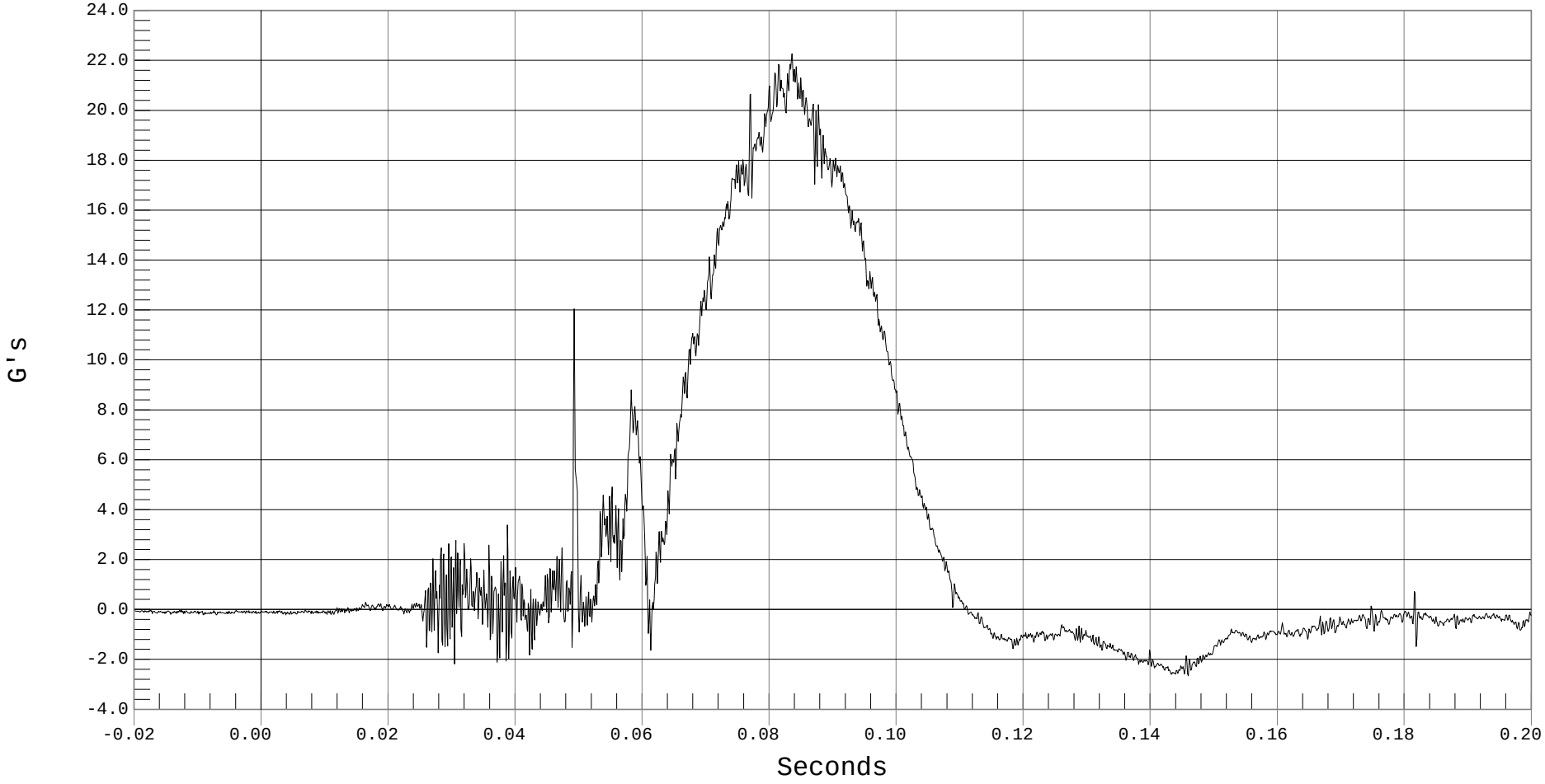
PASSENGER HEAD REDUNDANT Y ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 PASSENGER HEAD Yr, B01014AT.A42

Ymin = -2.66 G's @ 0.1459 Seconds, Ymax = 22.27 G's @ 0.0835 Seconds



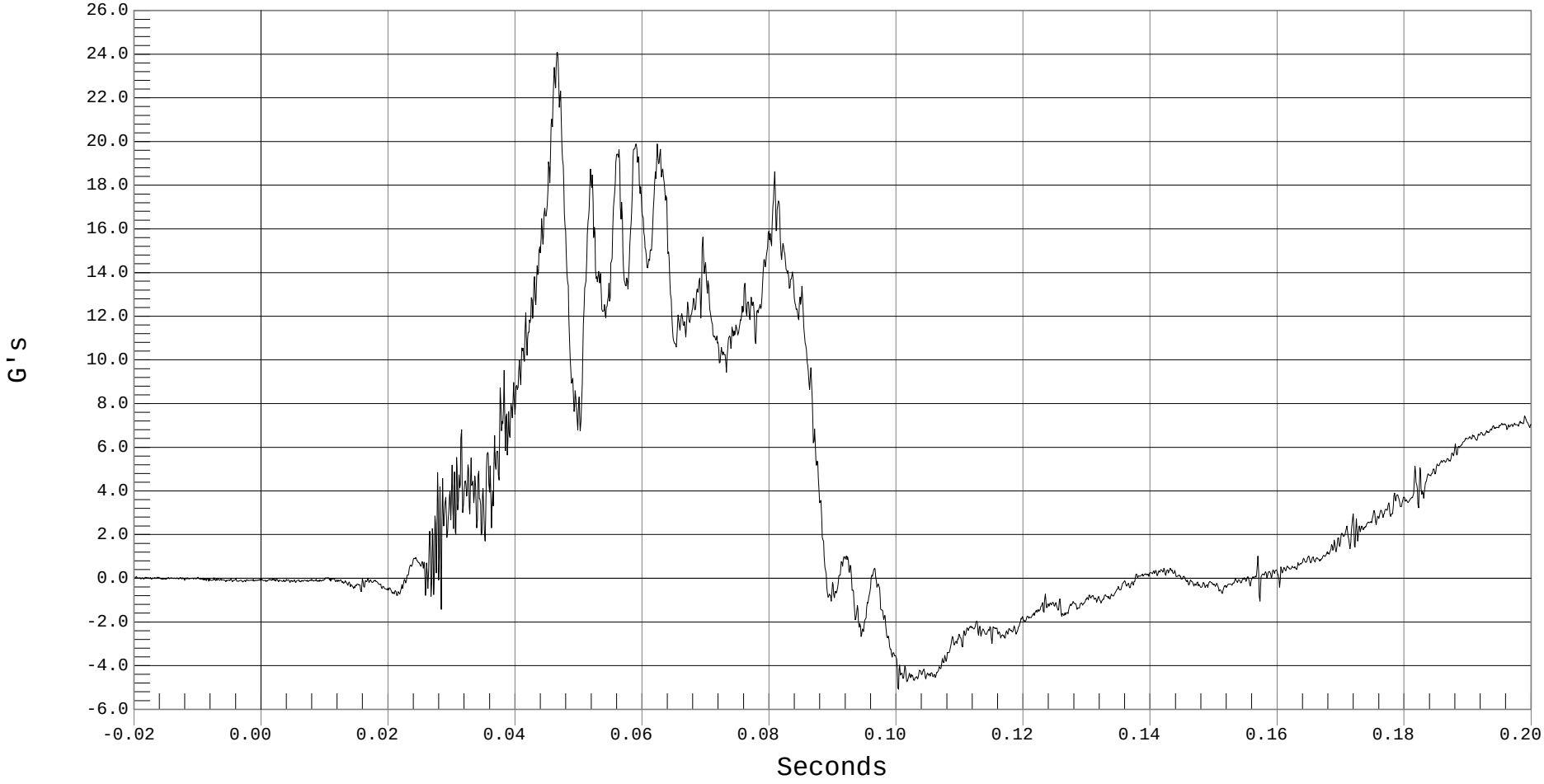
PASSENGER HEAD REDUNDANT Z ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 PASSENGER HEAD Zr, B01014AT.A43

Ymin = -5.09 G's @ 0.1003 Seconds, Ymax = 24.07 G's @ 0.0465 Seconds



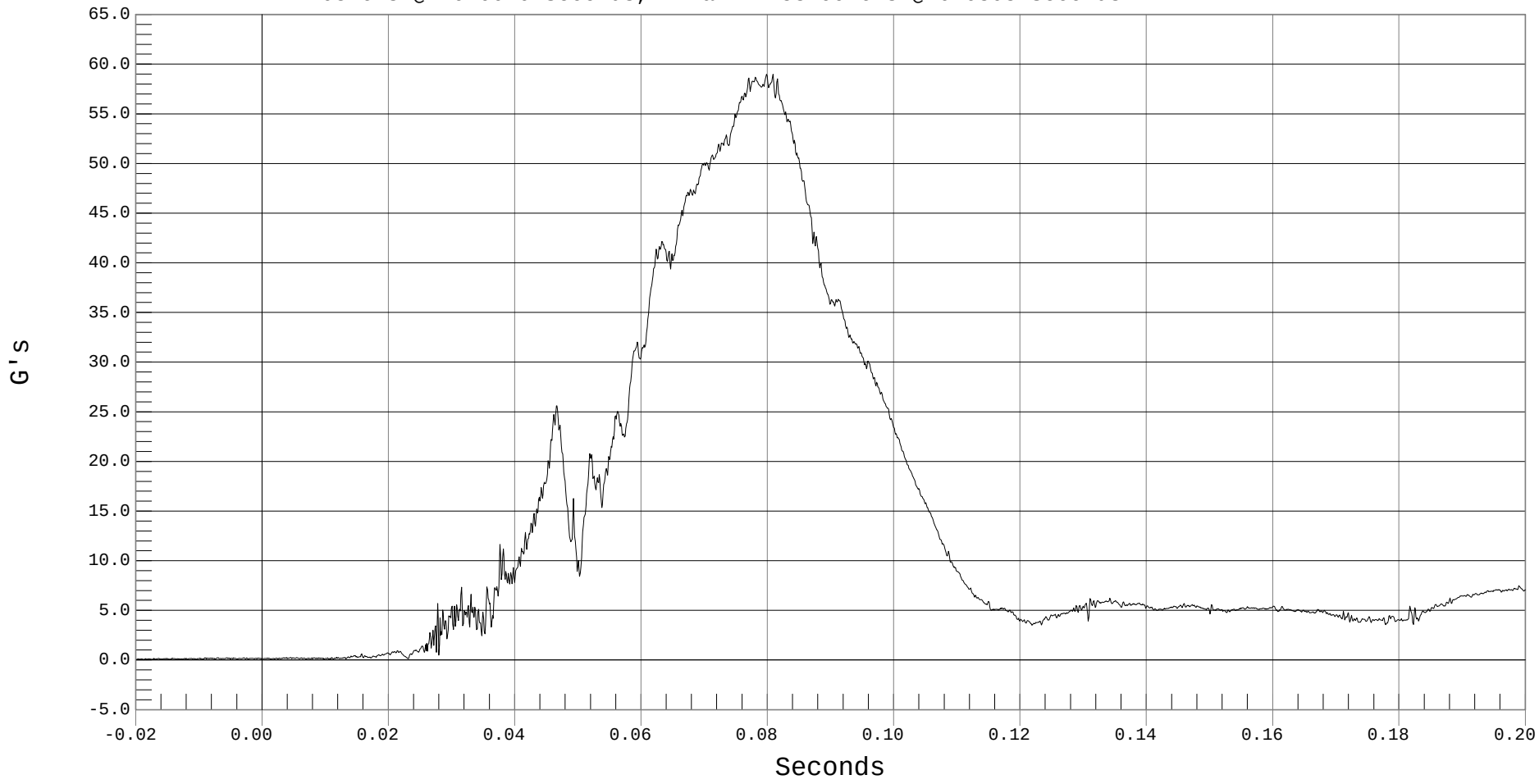
PASSENGER HEAD REDUNDANT RESULTANT ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 PASSENGER HEAD REDUNDANT RESULTANT ACCELERATION, B01014AV.A41

Ymin = .03 G's @ -0.0040 Seconds, Ymax = 58.99 G's @ 0.0808 Seconds



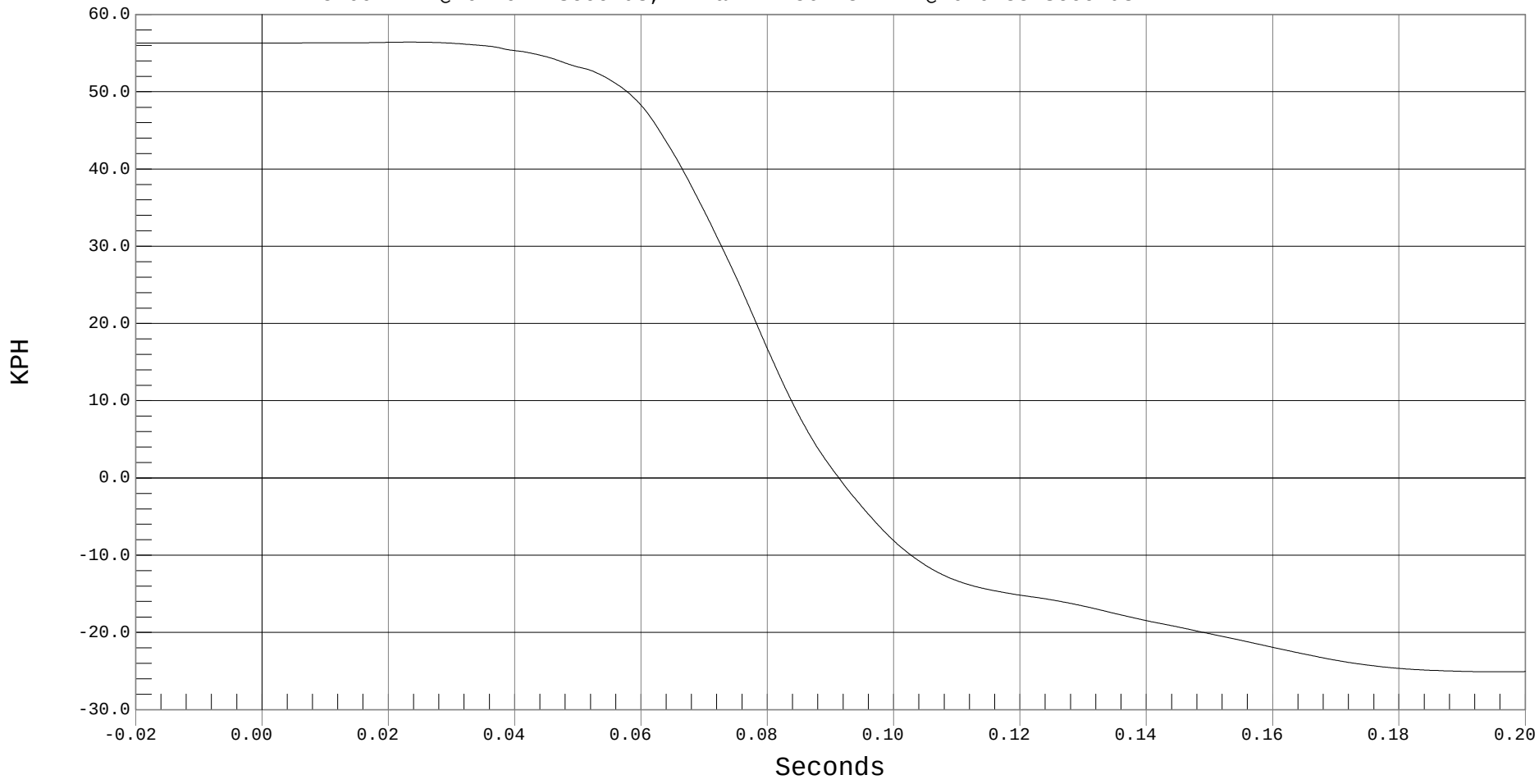
PASSENGER HEAD REDUNDANT X VELOCITY

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 PASSENGER HEAD REDUNDANT X VELOCITY, B01014AI.V41

Ymin = -25.09 KPH @ 0.1974 Seconds, Ymax = 56.43 KPH @ 0.0233 Seconds



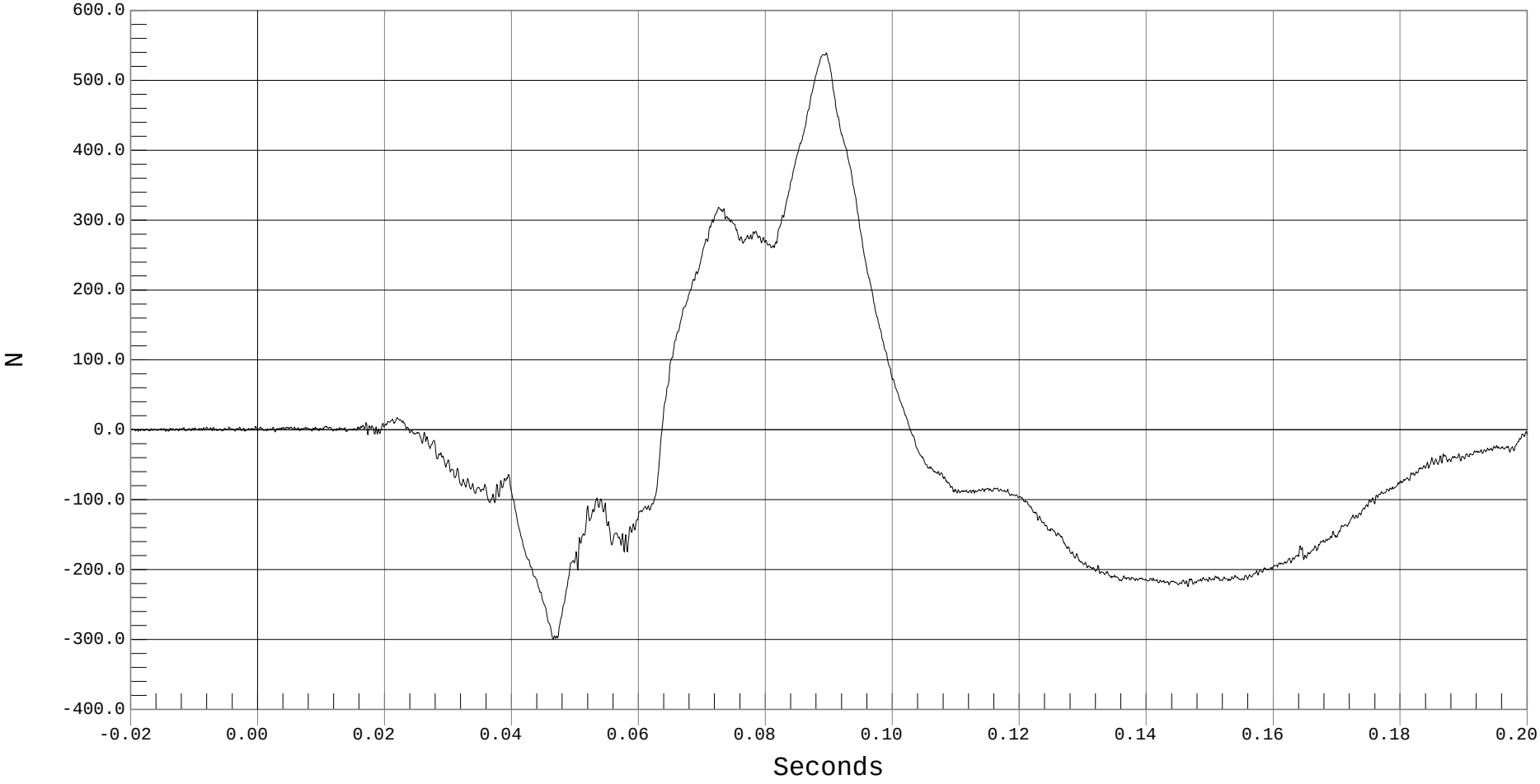
PASSENGER NECK FORCE X

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 PASSENGER NECK FX, B01014FT.F44

Ymin = -300.19 N @ 0.0465 Seconds, Ymax = 539.7 N @ 0.0895 Seconds



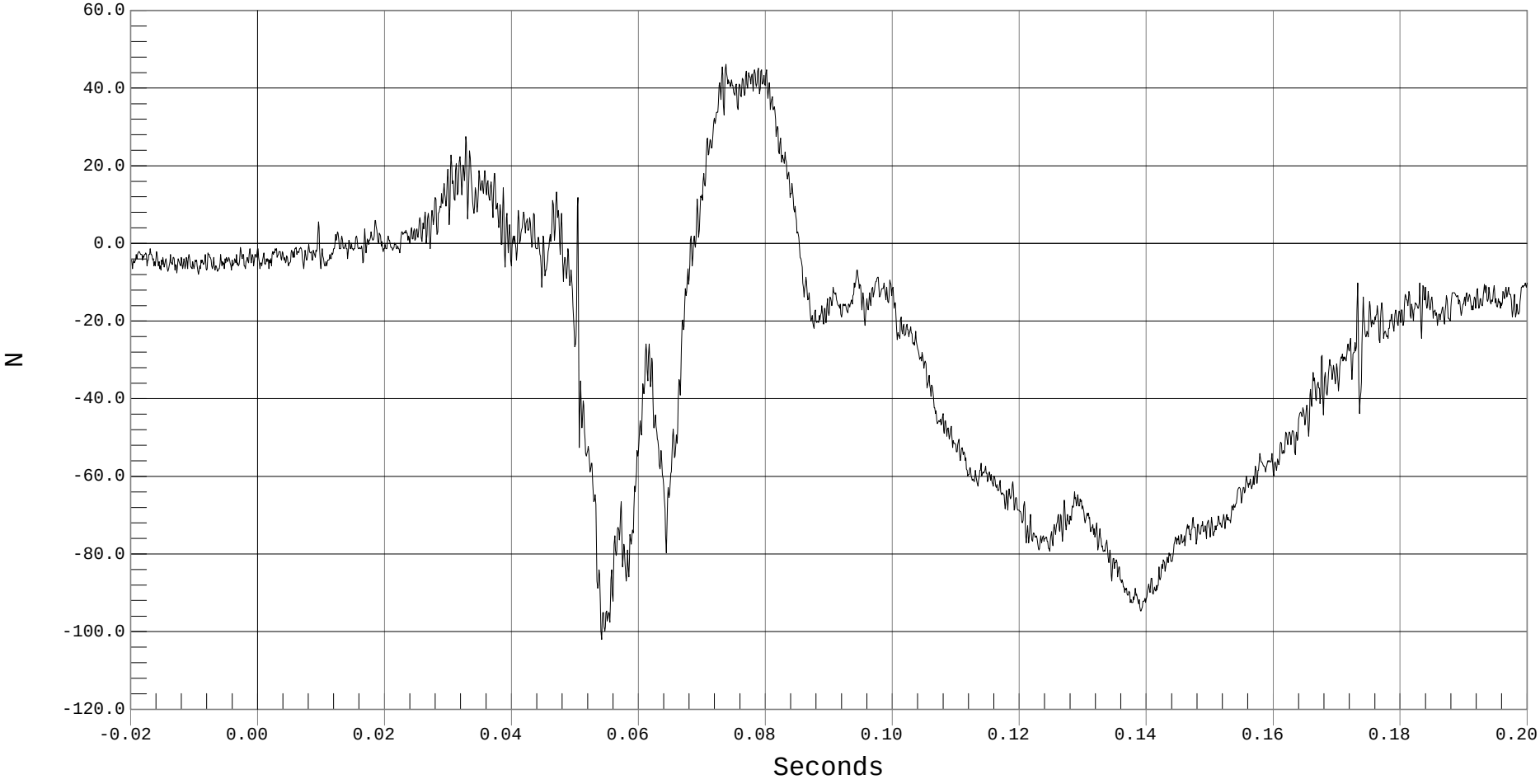
PASSENGER NECK FORCE Y

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 PASSENGER NECK FY, B01014FT.F40

Ymin = -102.02 N @ 0.0541 Seconds, Ymax = 46.19 N @ 0.0737 Seconds



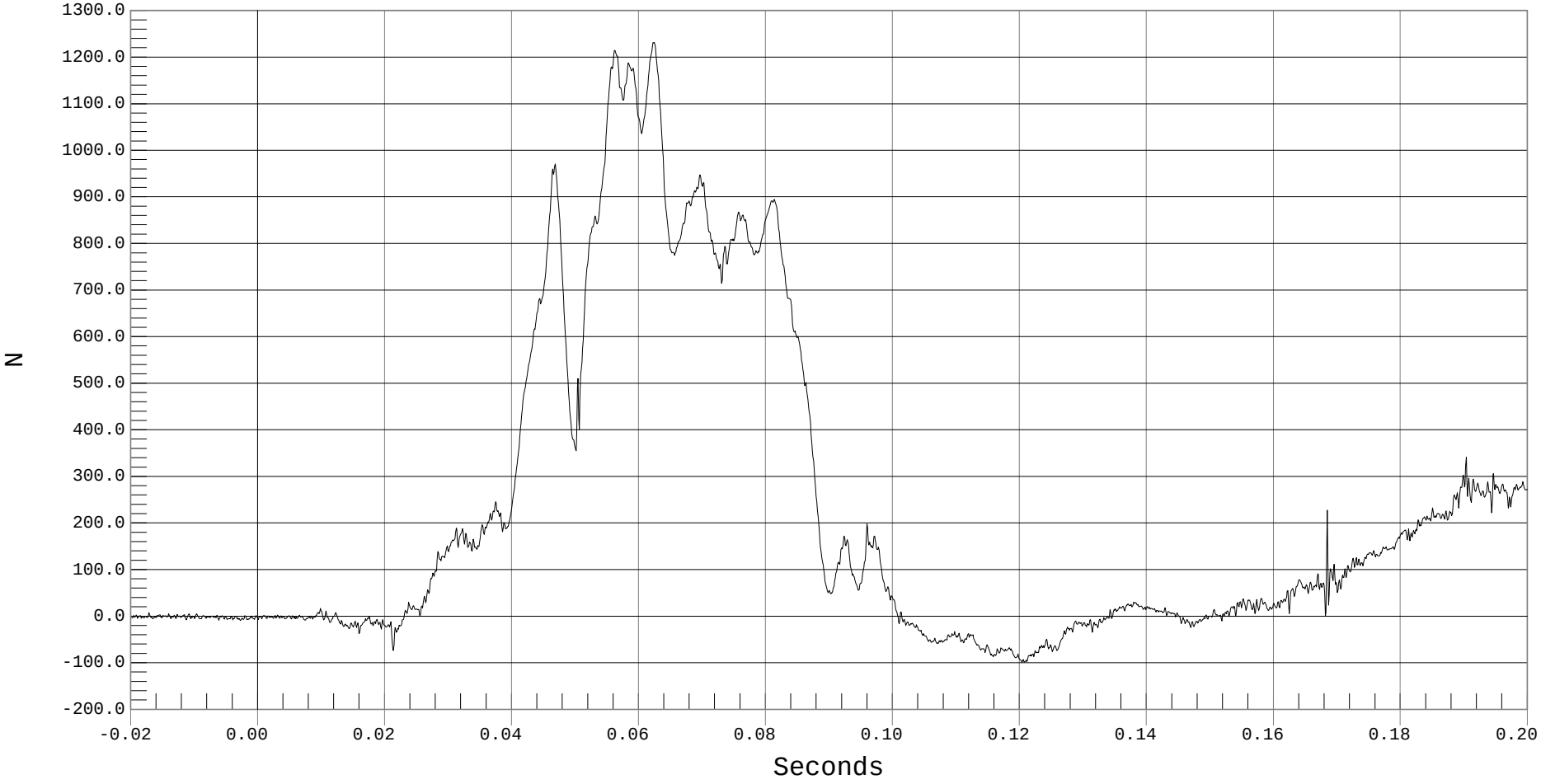
PASSENGER NECK FORCE Z

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 PASSENGER NECK FZ, B01014FT.F46

Ymin = -99.51 N @ 0.1203 Seconds, Ymax = 1231.57 N @ 0.0624 Seconds



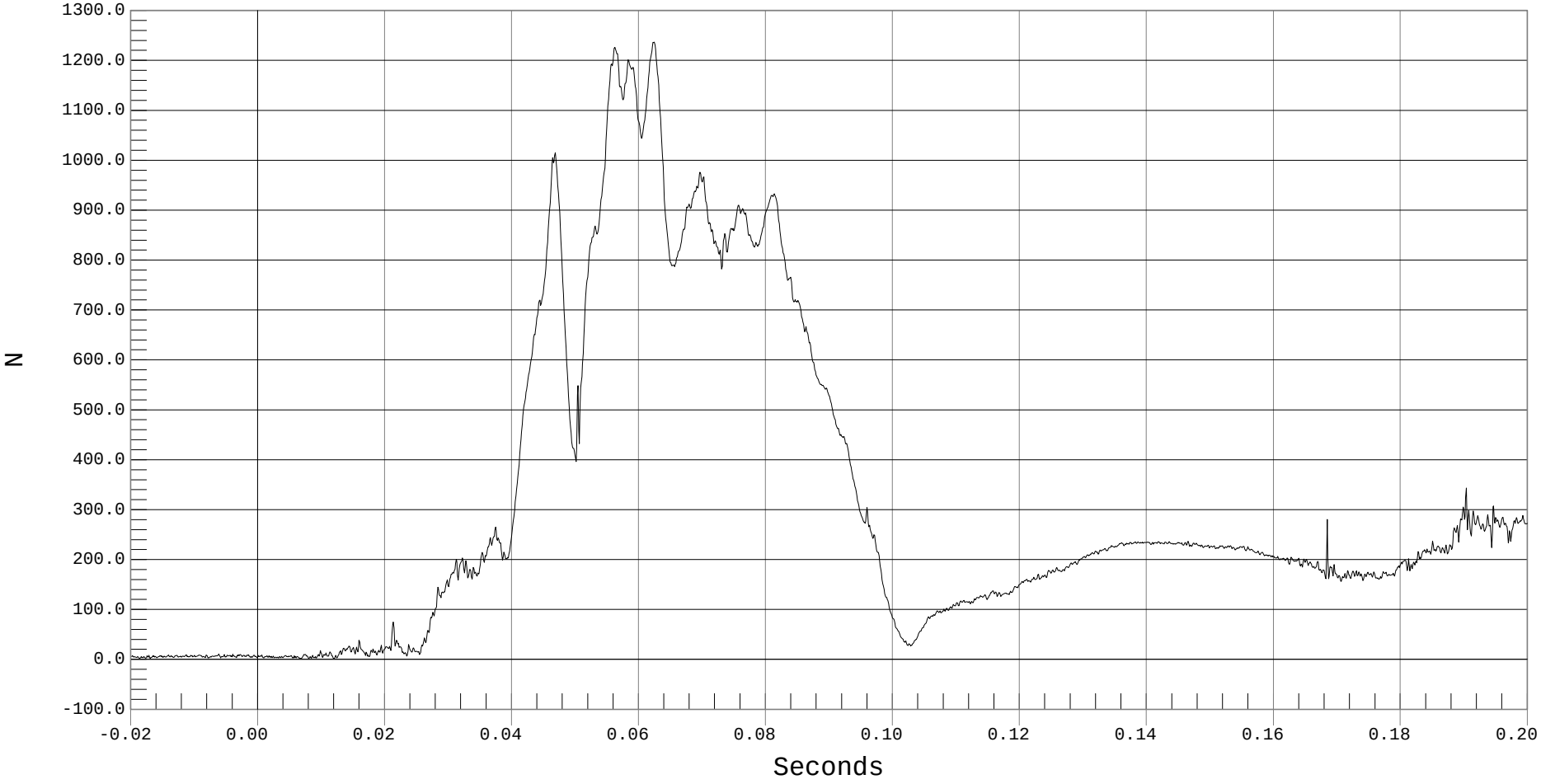
PASSENGER NECK FORCE RESULTANT

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 PASSENGER NECK FORCE RESULTANT, B01014FV.F40

Ymin = 1.43 N @ 0.0120 Seconds, Ymax = 1236.56 N @ 0.0624 Seconds



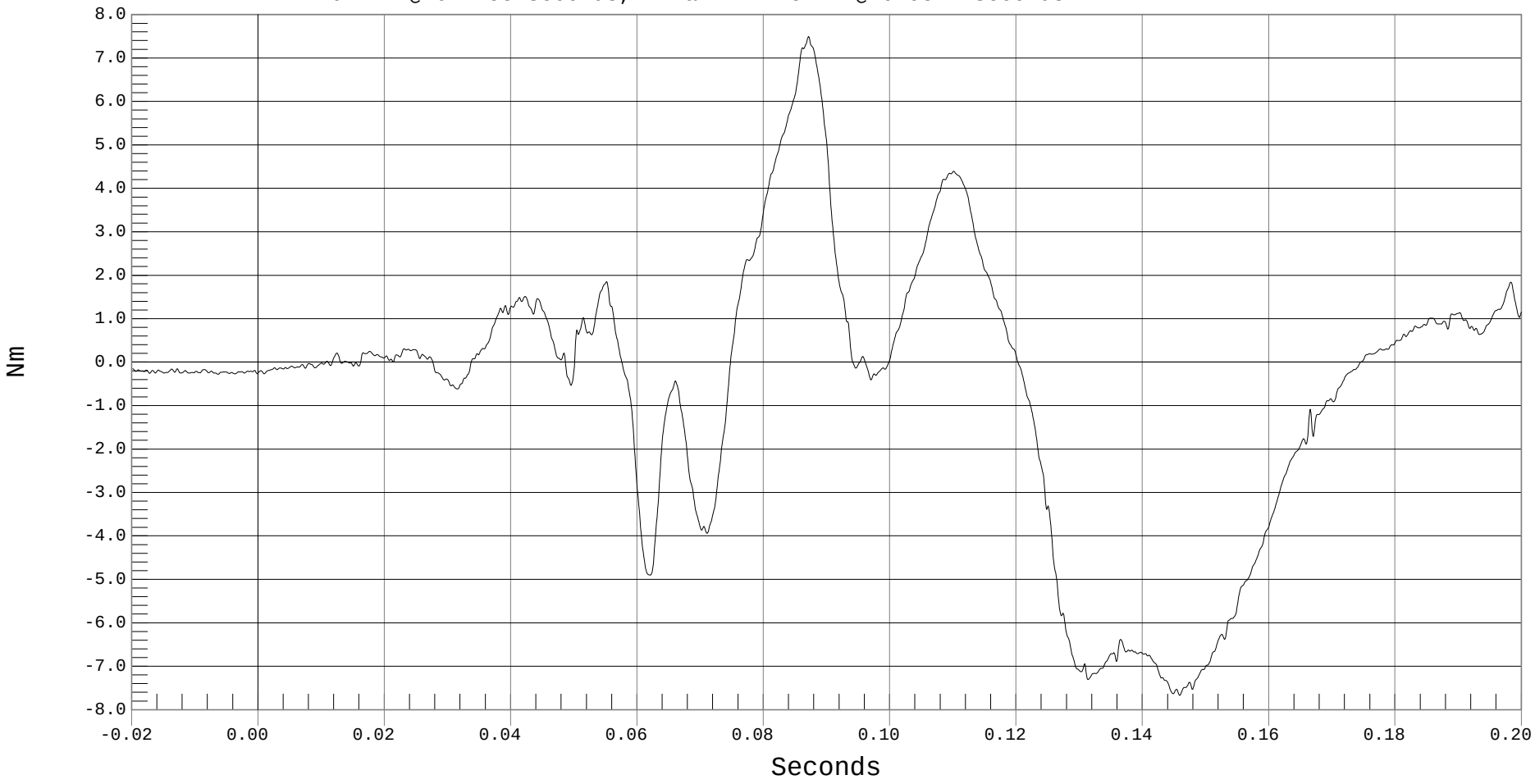
PASSENGER NECK MOMENT X

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 PASSENGER NECK MX, B01014MF.M47

Ymin = -7.67 Nm @ 0.1458 Seconds, Ymax = 7.5 Nm @ 0.0871 Seconds



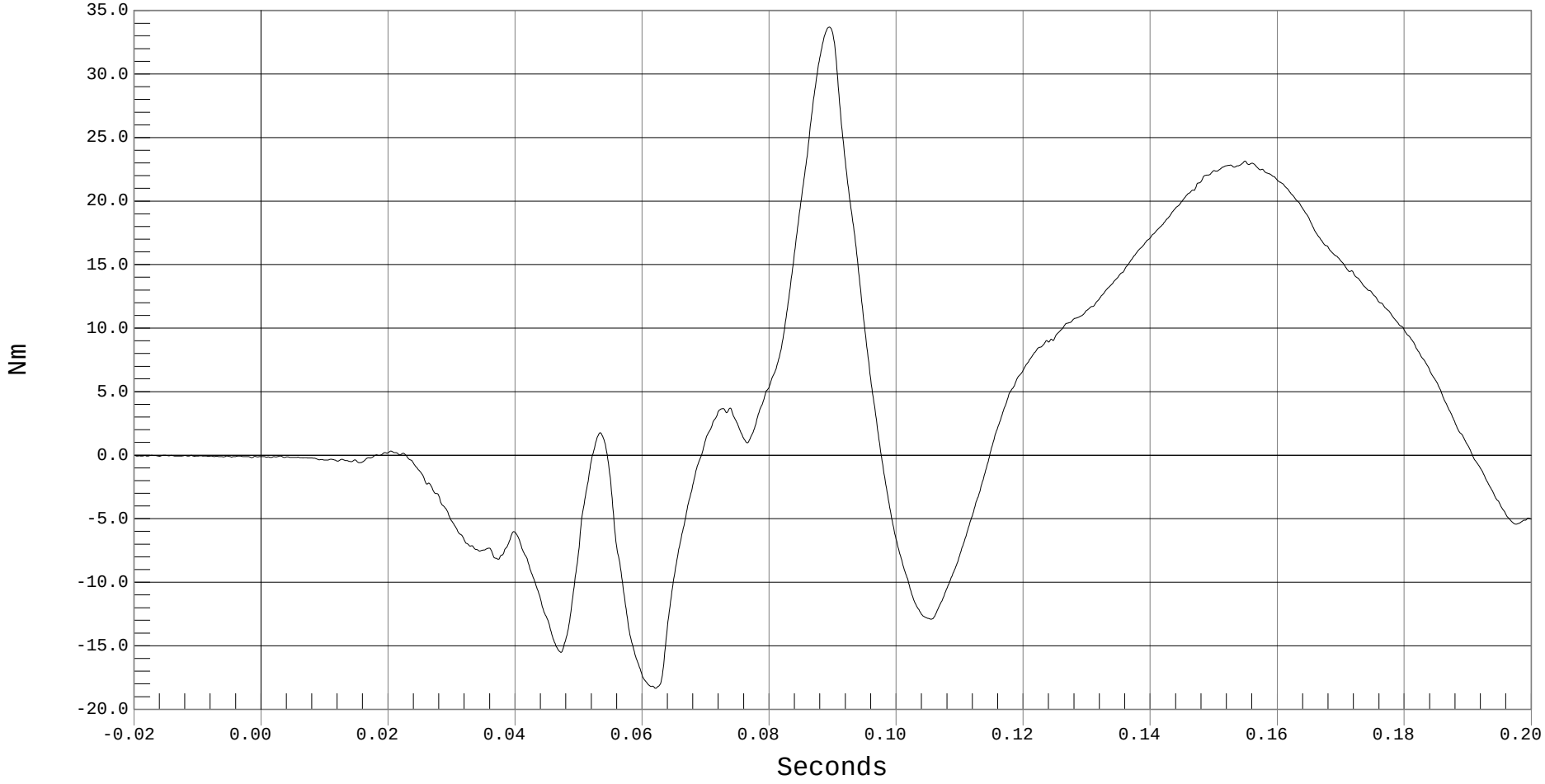
PASSENGER NECK MOMENT Y

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 PASSENGER NECK MY, B01014MF.M48

Ymin = -18.35 Nm @ 0.0620 Seconds, Ymax = 33.69 Nm @ 0.0894 Seconds



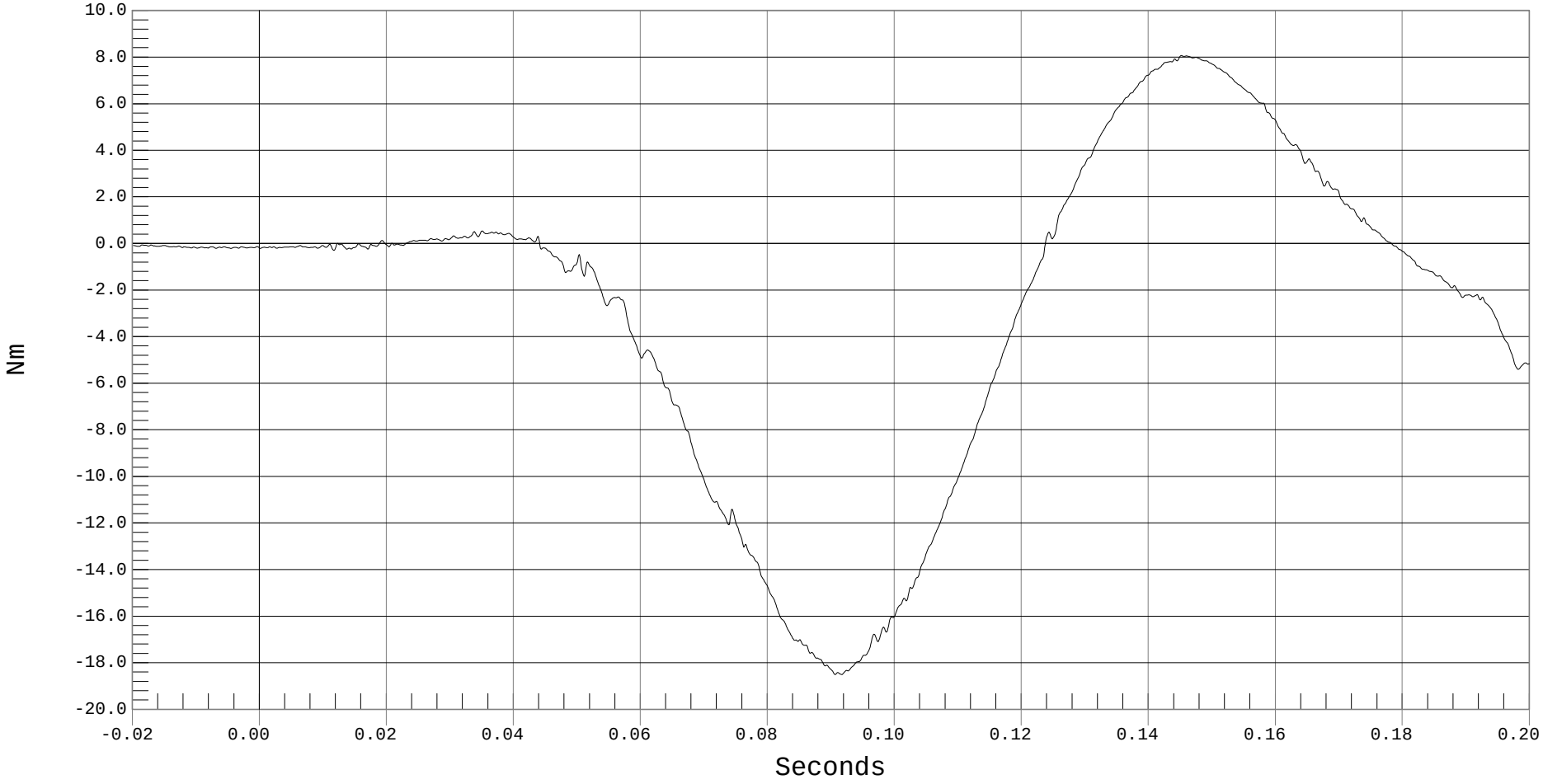
PASSENGER NECK MOMENT Z

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 PASSENGER NECK MZ, B01014MF.M49

Ymin = -18.51 Nm @ 0.0906 Seconds, Ymax = 8.07 Nm @ 0.1451 Seconds



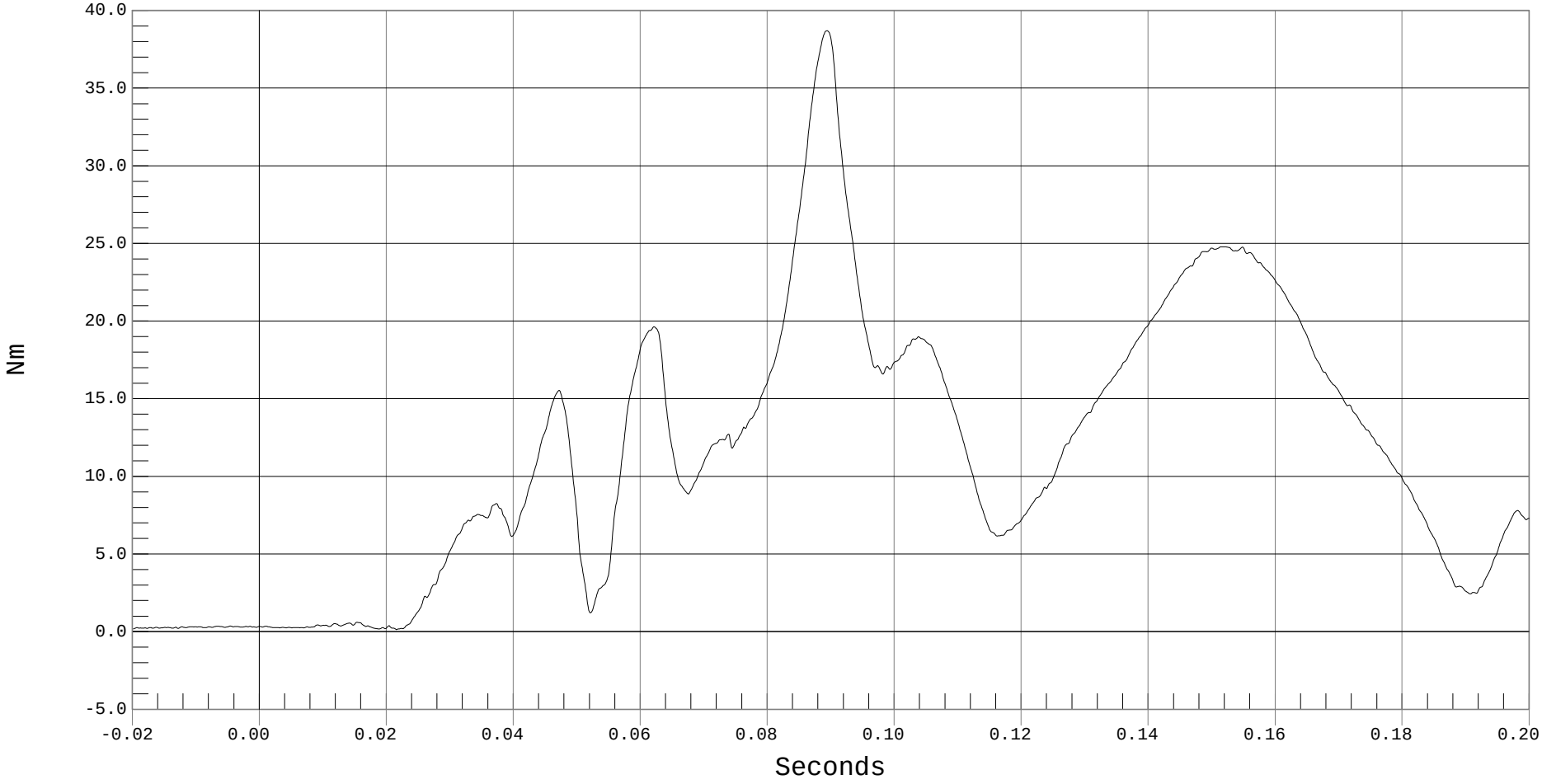
PASSENGER NECK MOMENT RESULTANT

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 PASSENGER NECK MOMENT RESULTANT, B01014MV.M47

Ymin = .13 Nm @ 0.0215 Seconds, Ymax = 38.69 Nm @ 0.0893 Seconds



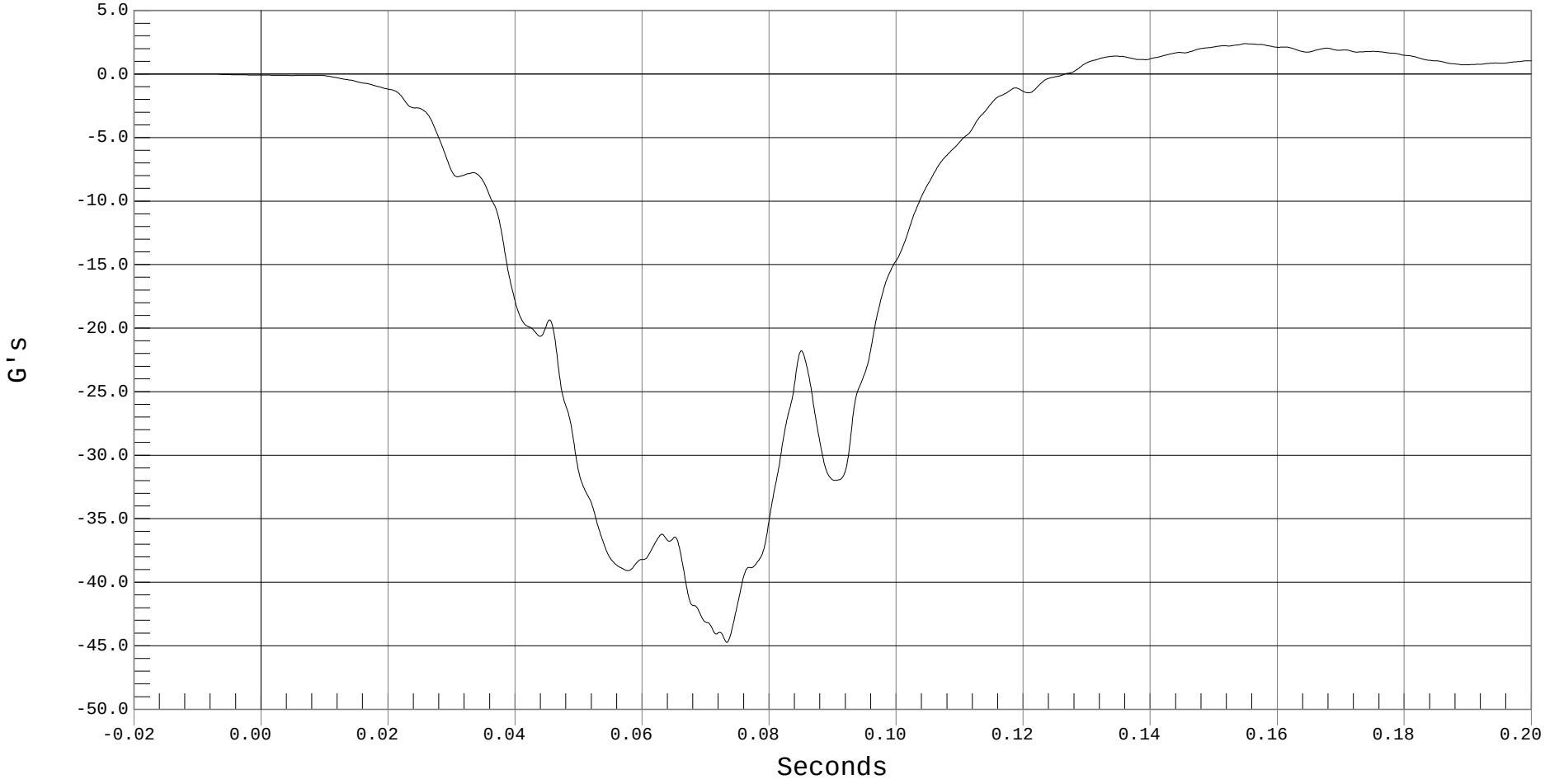
PASSENGER CHEST X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 PASSENGER CHEST X, B01014AF.A22

Ymin = -44.73 G's @ 0.0733 Seconds, Ymax = 2.39 G's @ 0.1548 Seconds



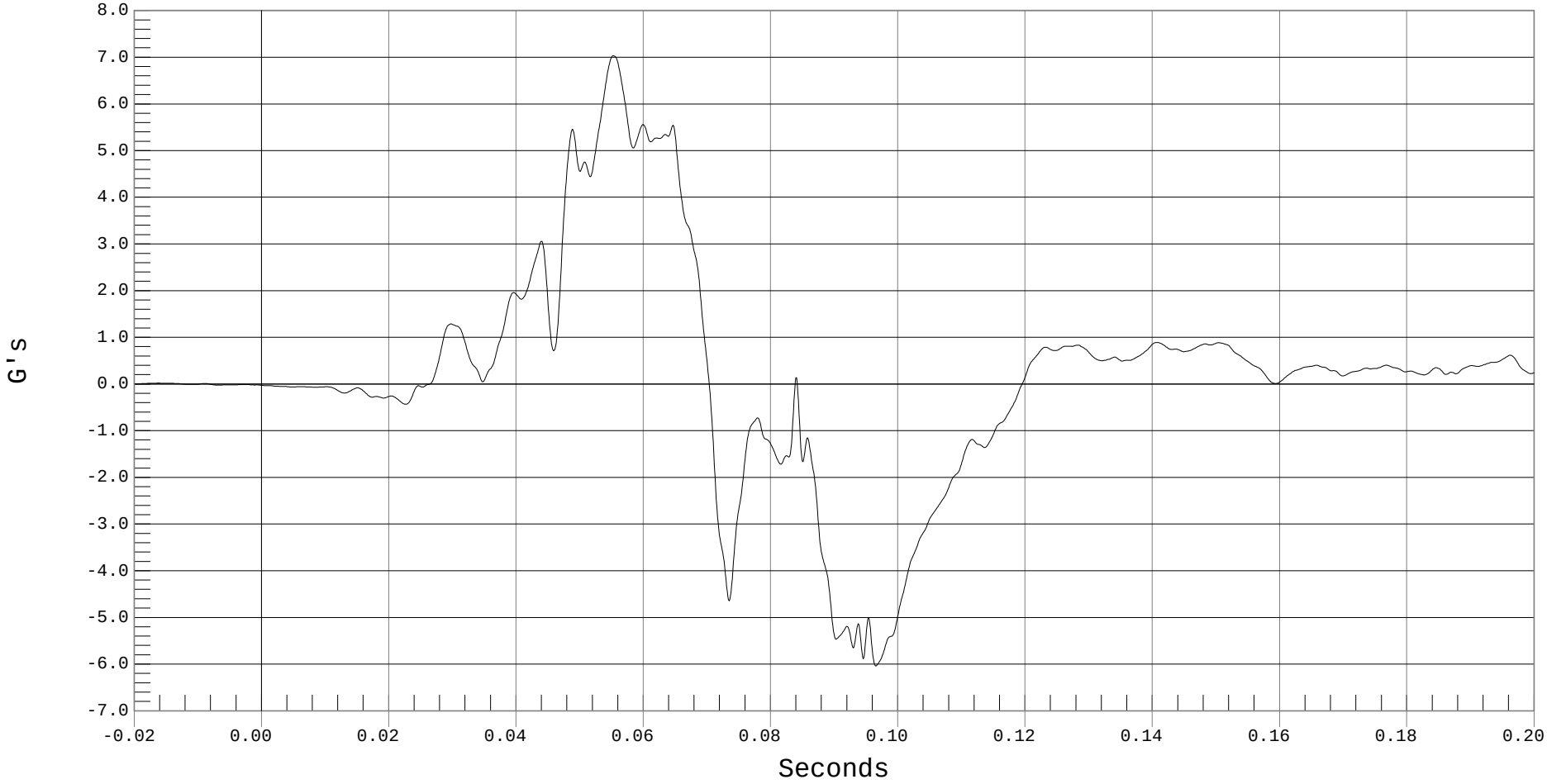
PASSENGER CHEST Y ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 PASSENGER CHEST Y, B01014AF.A23

Ymin = -6.04 G's @ 0.0964 Seconds, Ymax = 7.03 G's @ 0.0552 Seconds



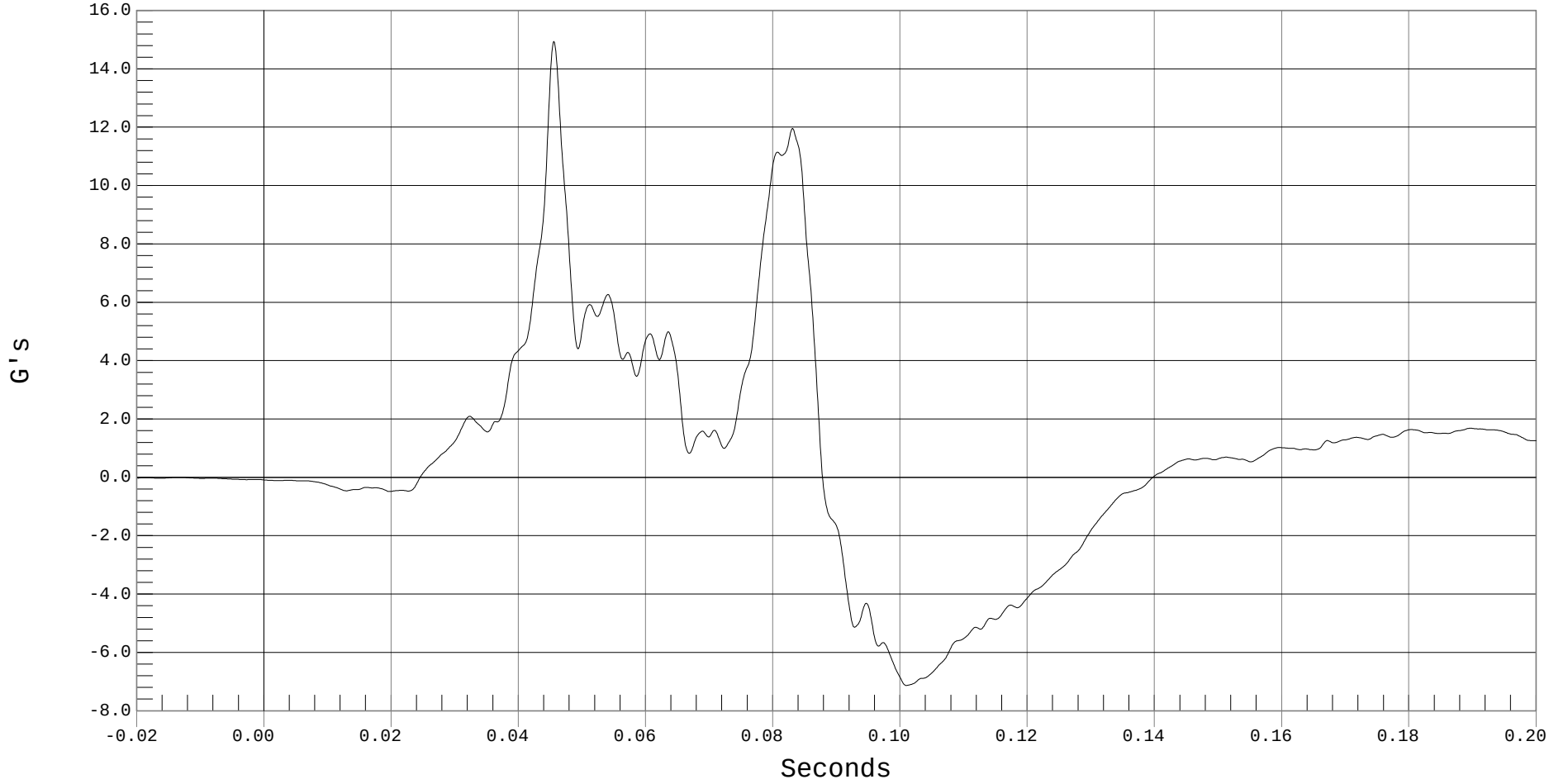
PASSENGER CHEST Z ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 PASSENGER CHEST Z, B01014AF.A53

Ymin = -7.13 G's @ 0.1009 Seconds, Ymax = 14.94 G's @ 0.0455 Seconds



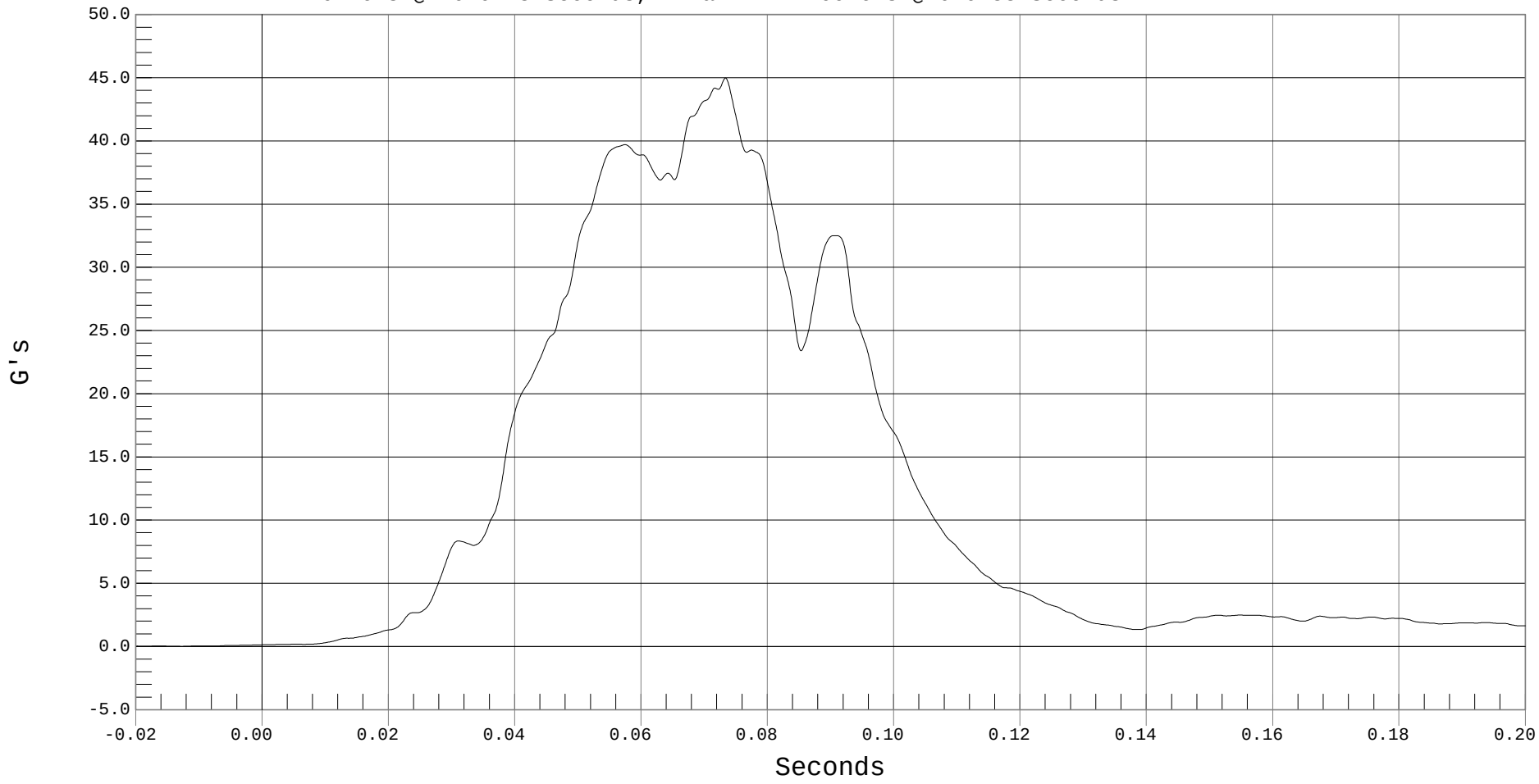
PASSENGER CHEST RESULTANT ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 PASSENGER CHEST RESULTANT ACCELERATION, B01014AV.A22

Ymin = .01 G's @ -0.0128 Seconds, Ymax = 44.99 G's @ 0.0733 Seconds



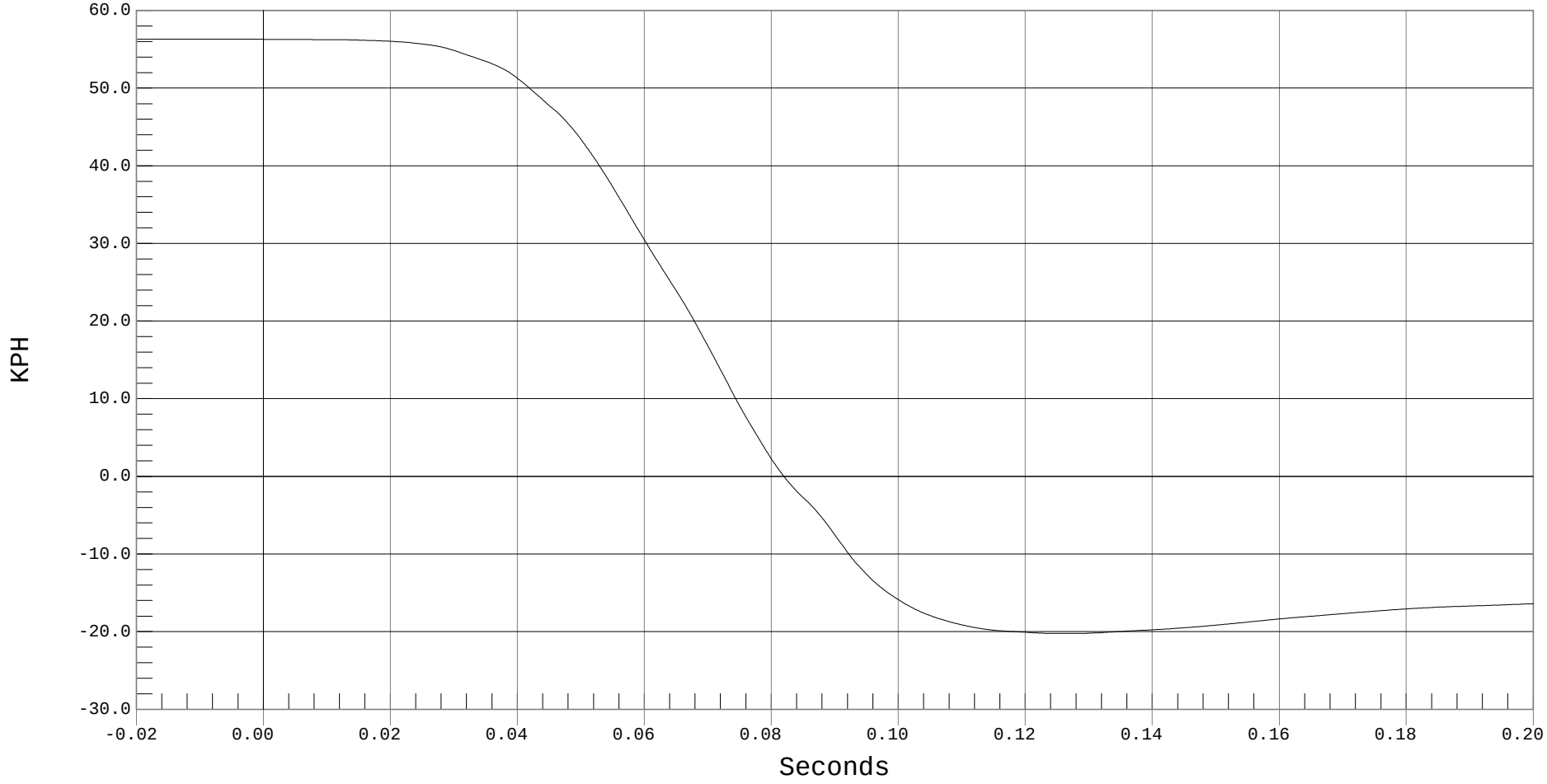
PASSENGER CHEST X VELOCITY

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 PASSENGER CHEST X VELOCITY, B01014AI.V22

Ymin = -20.24 KPH @ 0.1265 Seconds, Ymax = 56.3 KPH @ -0.0199 Seconds



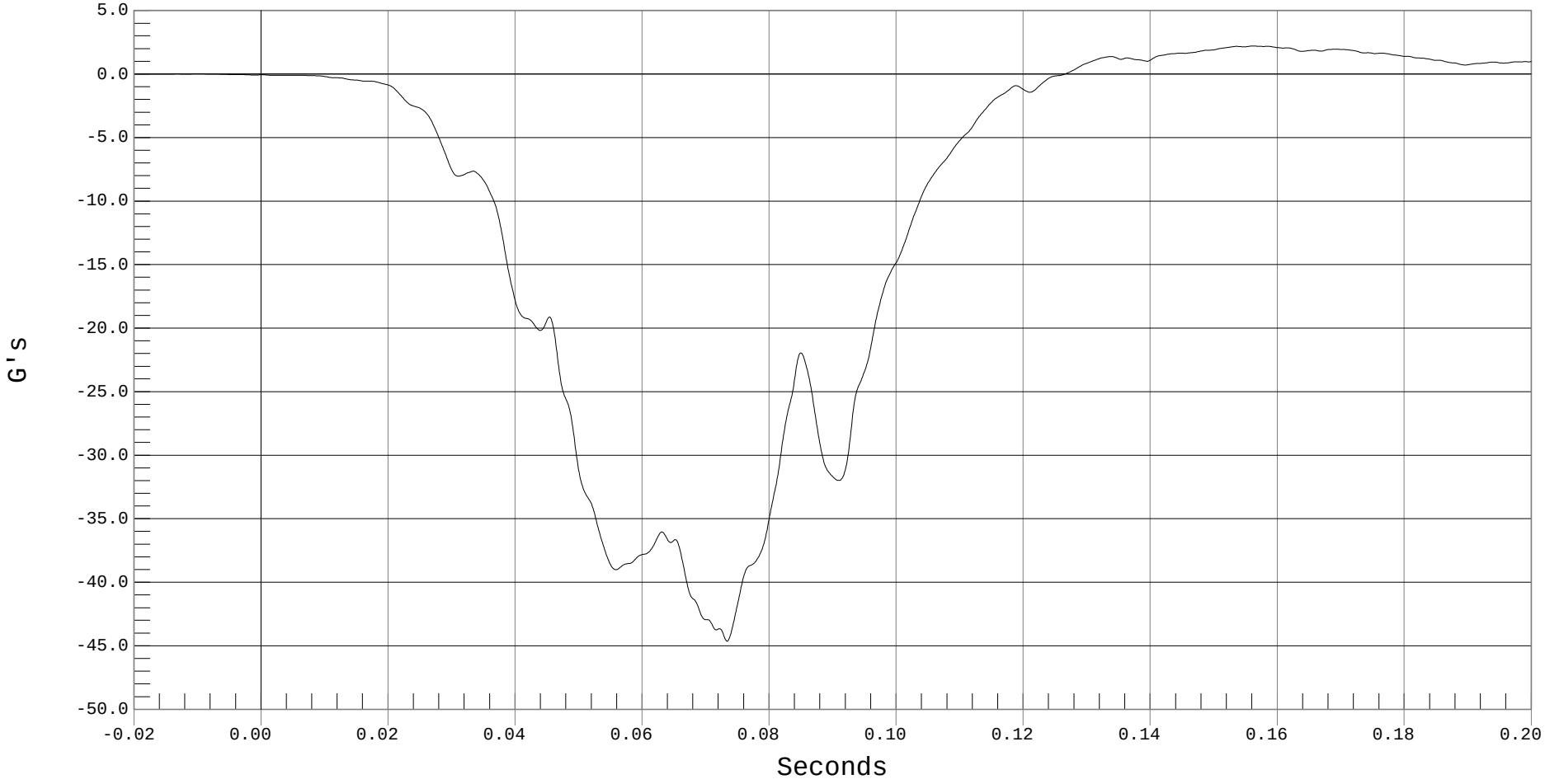
PASSENGER CHEST REDUNDANT X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 PASSENGER CHEST Xr, B01014AF.A50

Ymin = -44.65 G's @ 0.0733 Seconds, Ymax = 2.21 G's @ 0.1561 Seconds



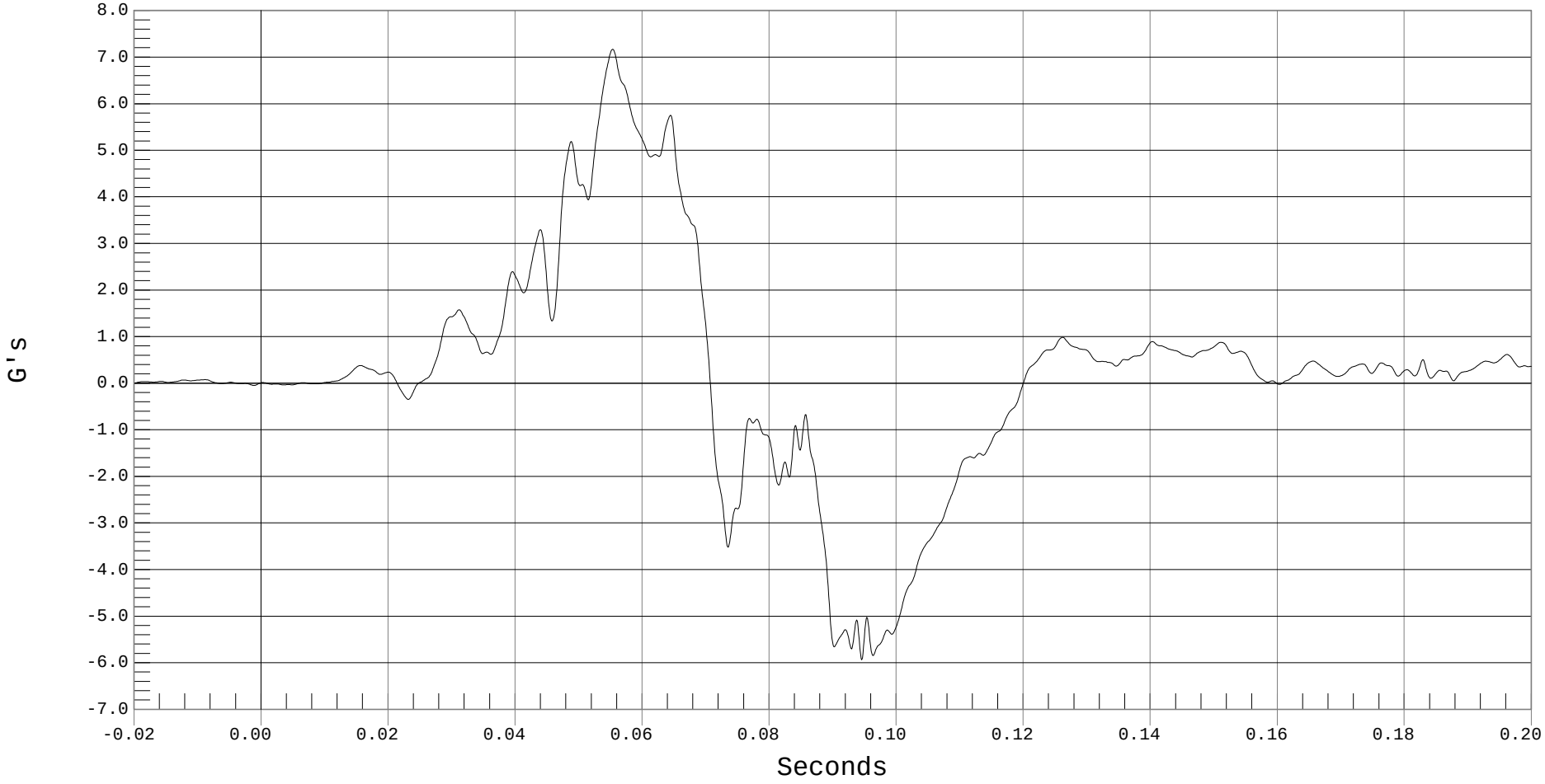
PASSENGER CHEST REDUNDANT Y ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 PASSENGER CHEST Yr, B01014AF.A51

Ymin = -5.94 G's @ 0.0945 Seconds, Ymax = 7.17 G's @ 0.0553 Seconds



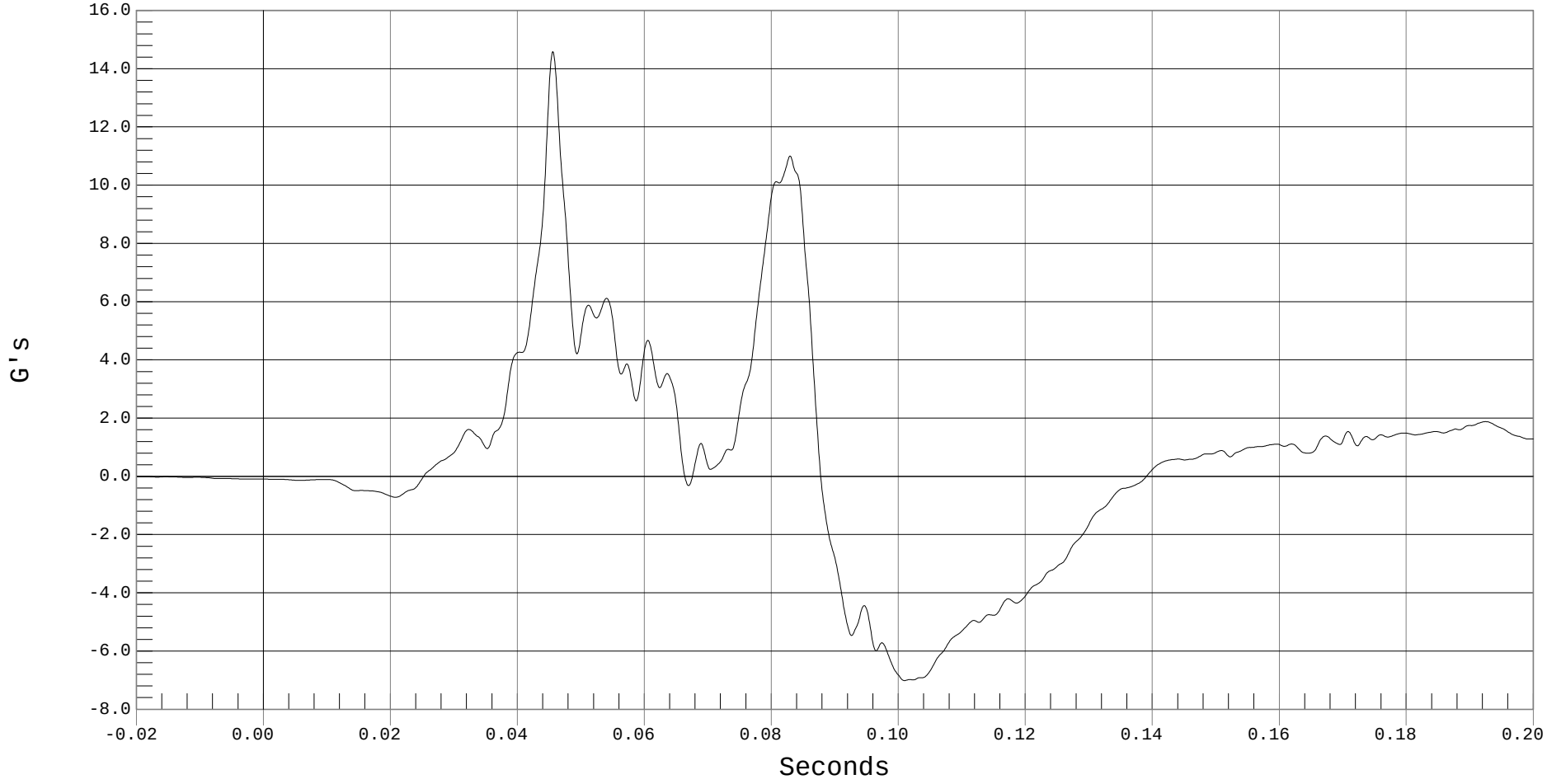
PASSENGER CHEST REDUNDANT Z ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 PASSENGER CHEST Zr, B01014AF.A52

Ymin = -7.02 G's @ 0.1009 Seconds, Ymax = 14.59 G's @ 0.0455 Seconds



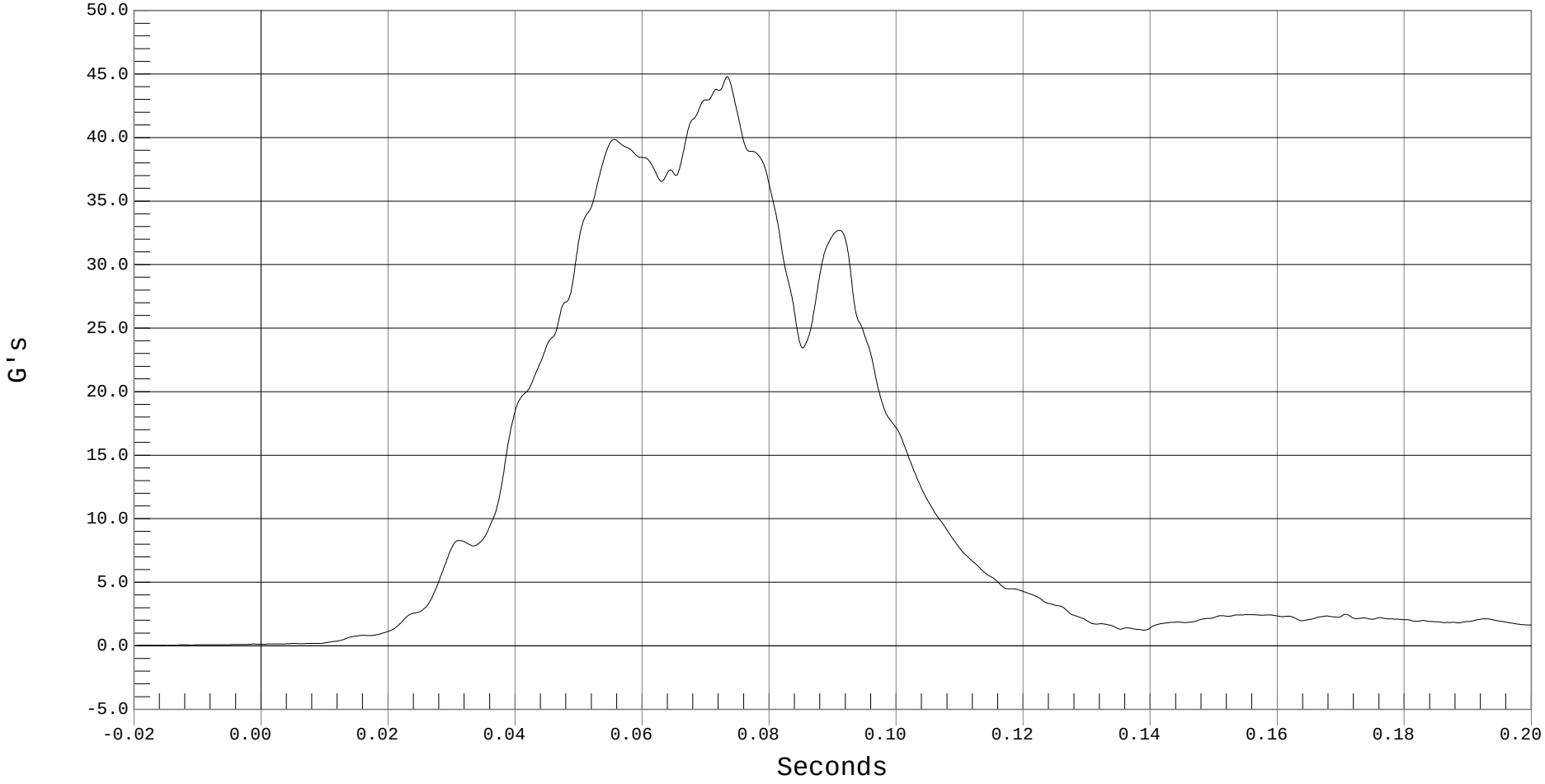
PASSENGER CHEST REDUNDANT RESULTANT ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 PASSENGER CHEST REDUNDANT RESULTANT ACCELERATION, B01014AV.A50

Ymin = .01 G's @ -0.0198 Seconds, Ymax = 44.79 G's @ 0.0733 Seconds



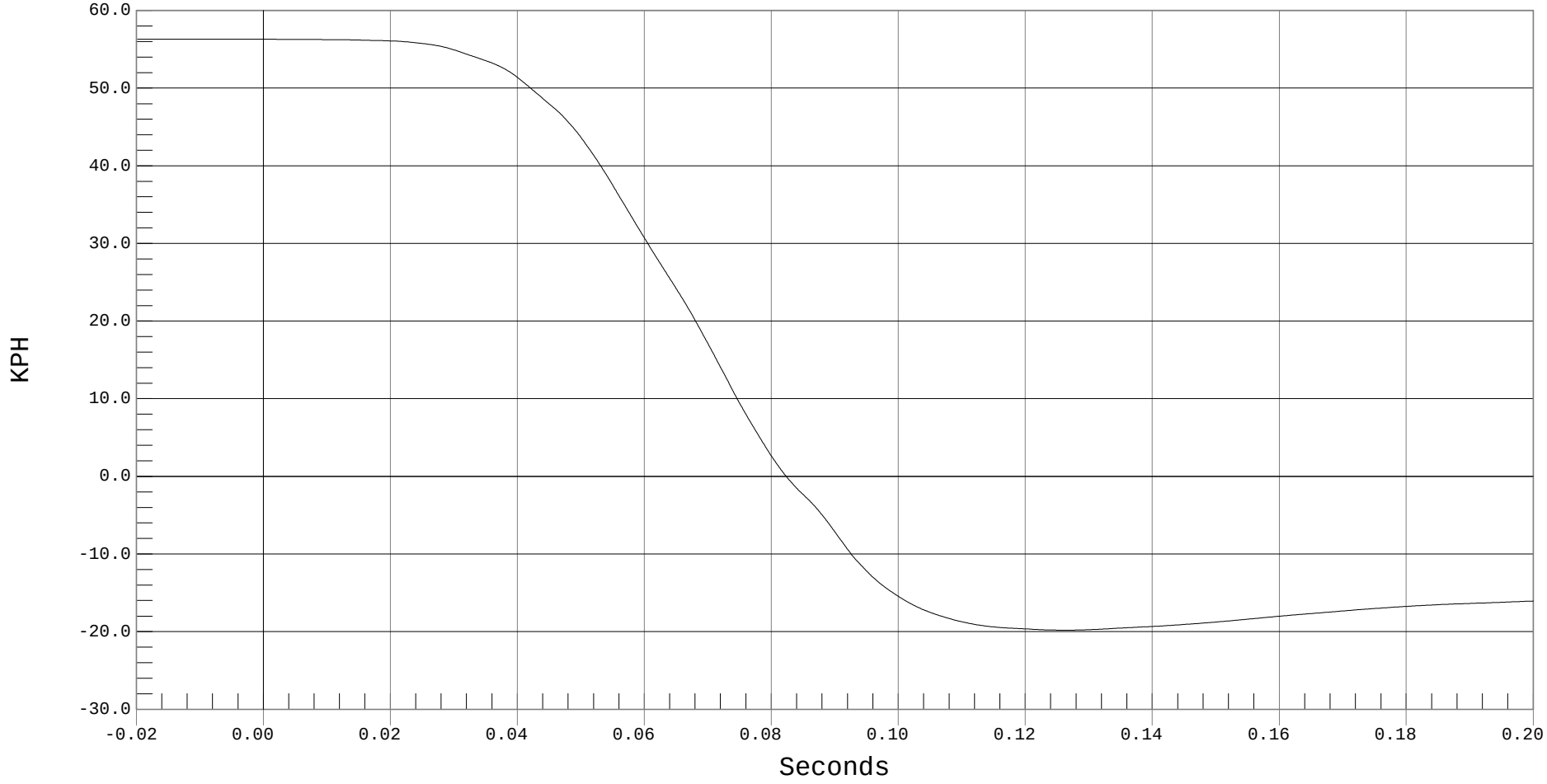
PASSENGER CHEST REDUNDANT X VELOCITY

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 PASSENGER CHEST REDUNDANT X VELOCITY, B01014AI.V50

Ymin = -19.8 KPH @ 0.1265 Seconds, Ymax = 56.3 KPH @ -0.0081 Seconds



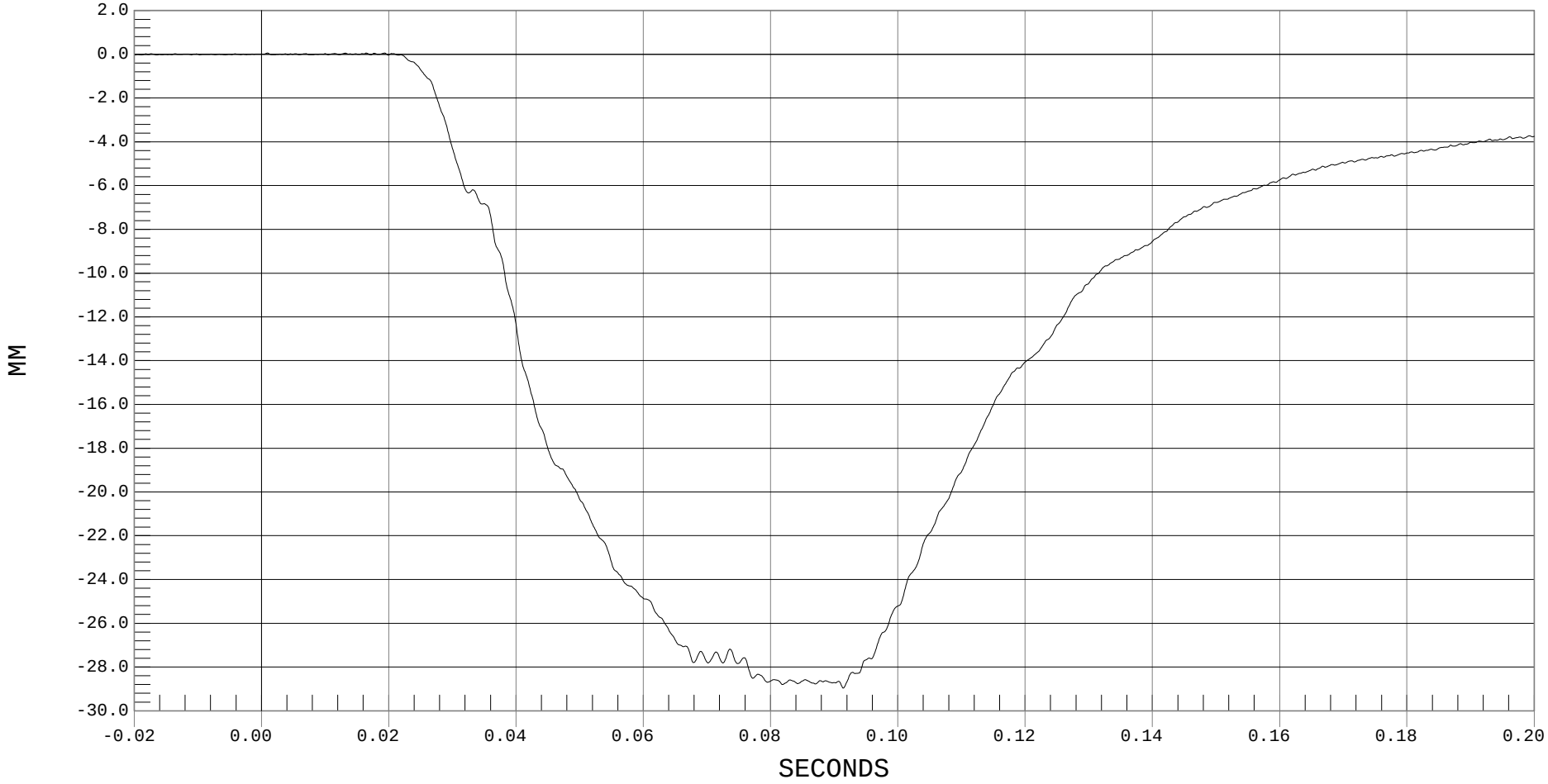
PASSENGER CHEST COMPRESSION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 PASSENGER CHEST DISPLACEMENT, B01014DF.D25

Ymin = -28.96 MM @ 0.0913 SECONDS, Ymax = .06 MM @ 0.0008 SECONDS



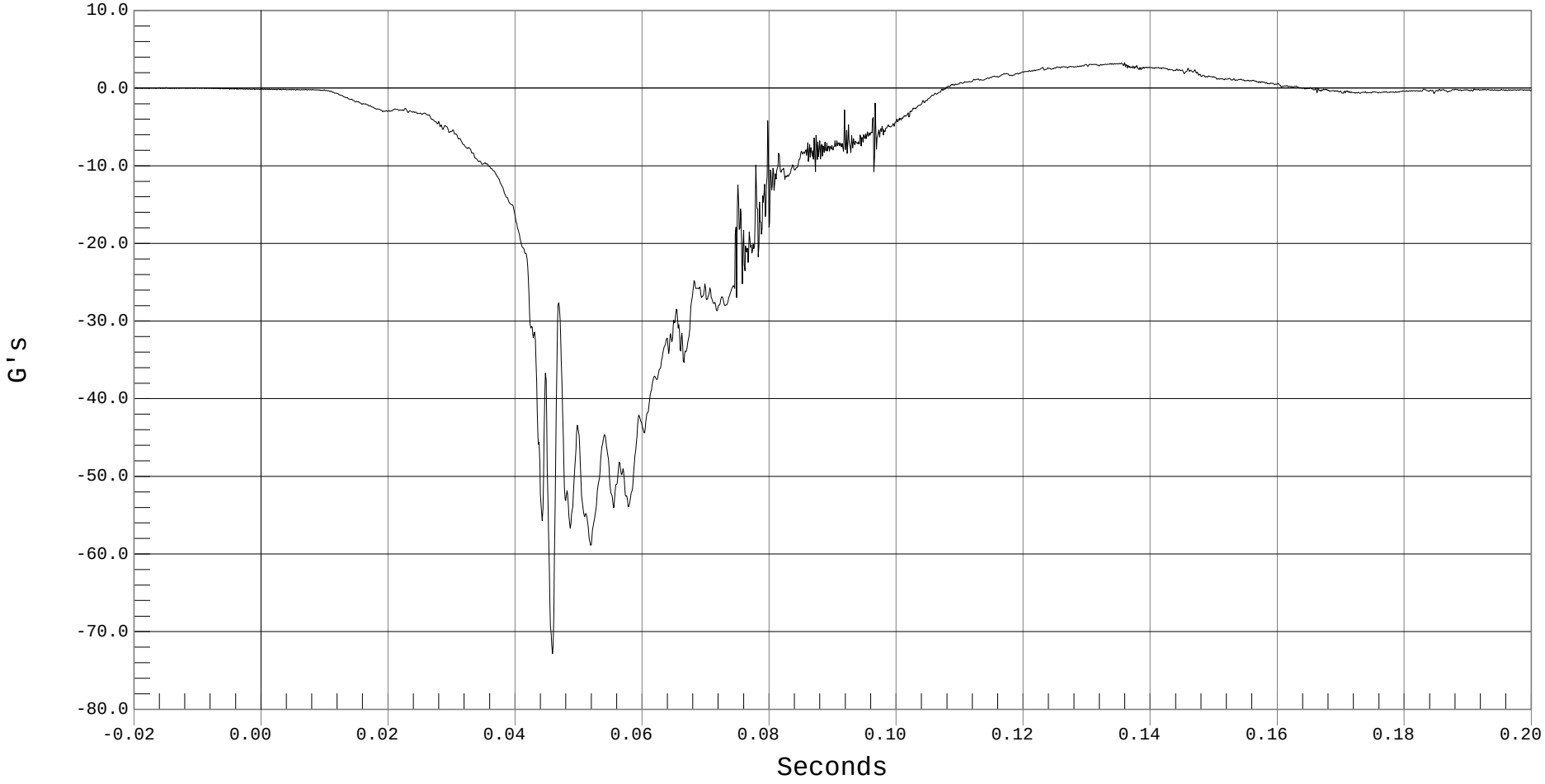
PASSENGER PELVIS X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 PASSENGER PELVIS X, B01014AT.A26

Ymin = -72.83 G's @ 0.0458 Seconds, Ymax = 3.27 G's @ 0.1359 Seconds



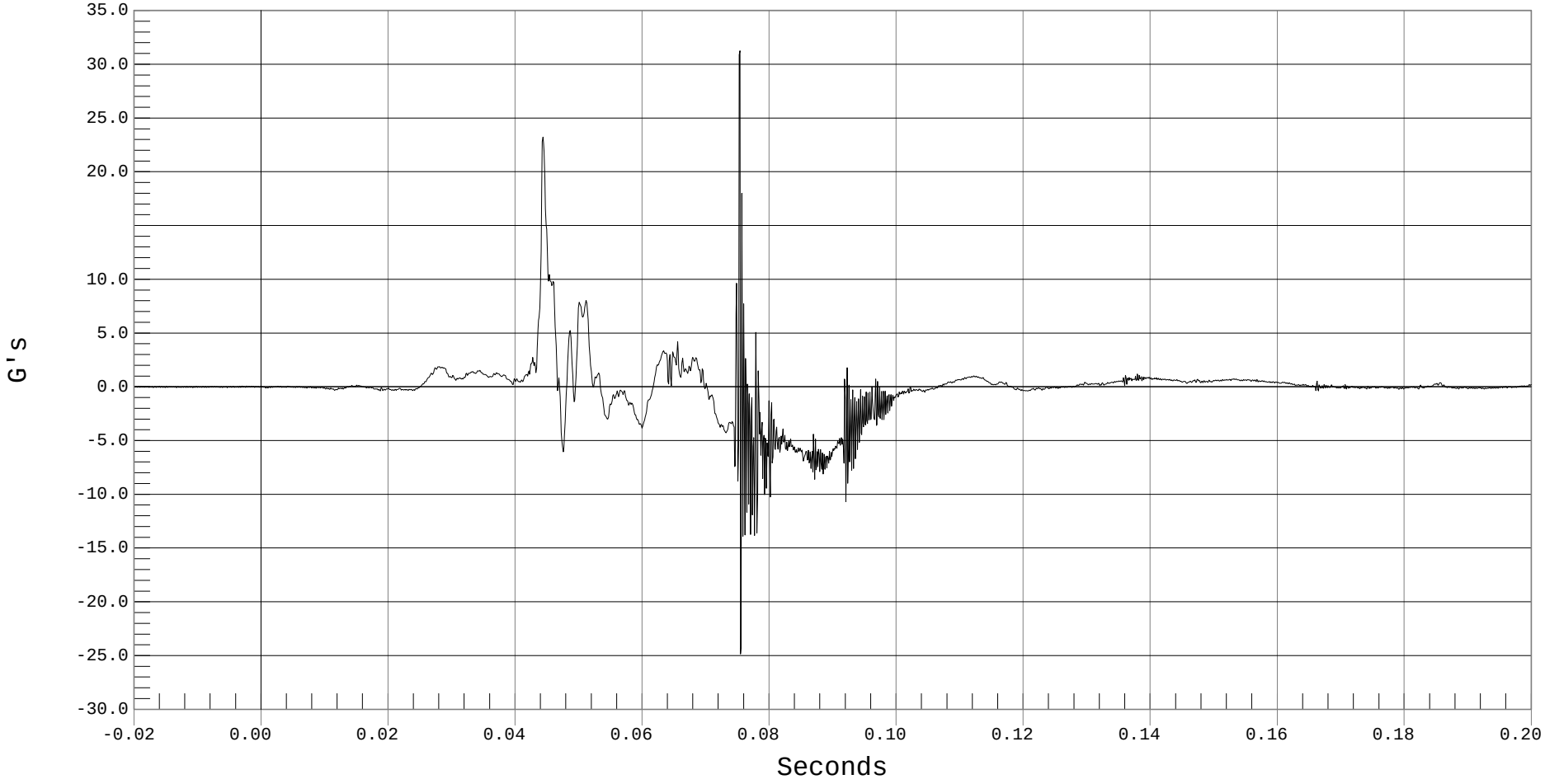
PASSENGER PELVIS Y ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 PASSENGER PELVIS Y, B01014AT.A27

Ymin = -24.85 G's @ 0.0754 Seconds, Ymax = 31.24 G's @ 0.0753 Seconds



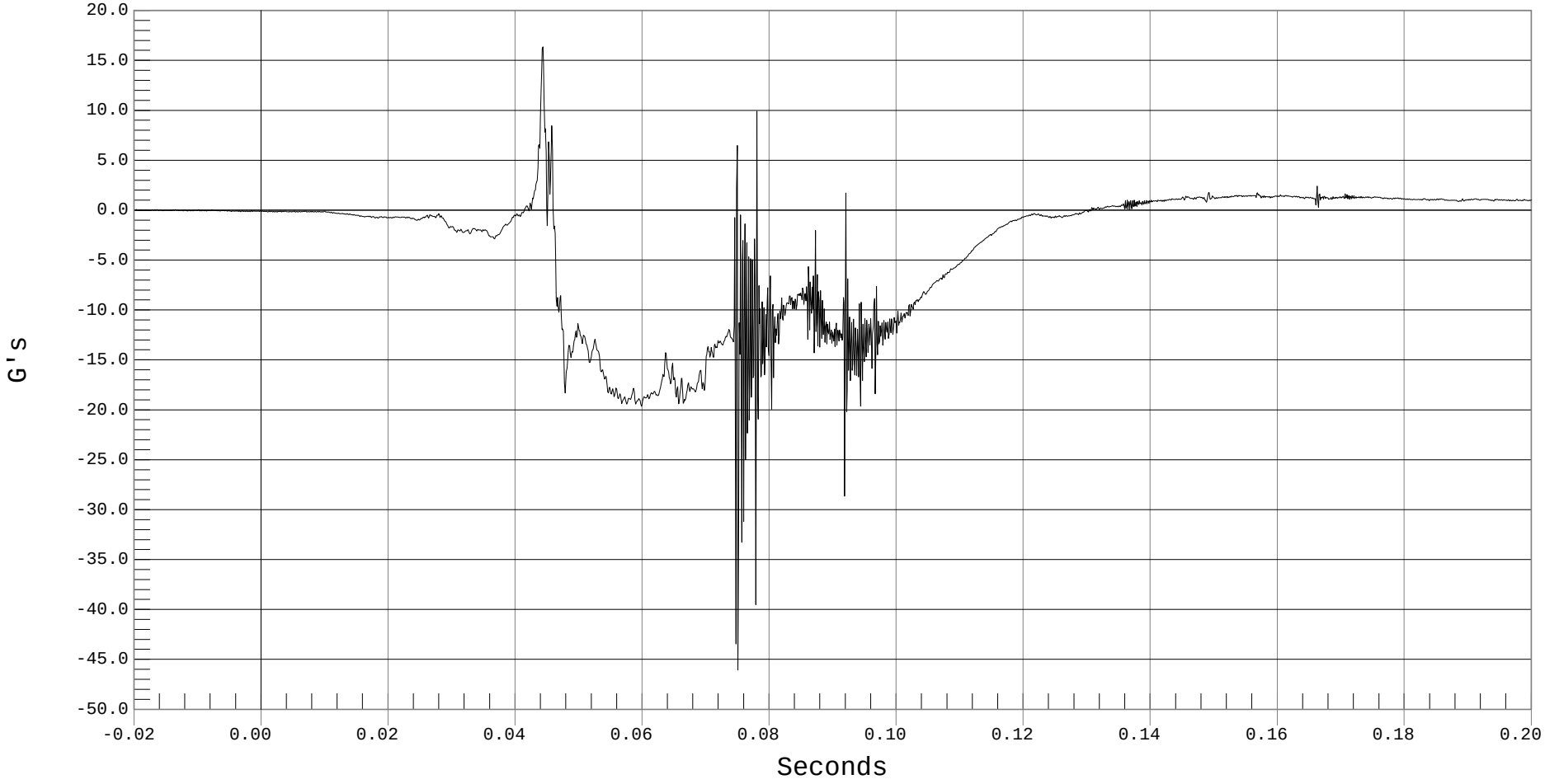
PASSENGER PELVIS Z ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 PASSENGER PELVIS Z, B01014AT.A28

Ymin = -46.06 G's @ 0.0750 Seconds, Ymax = 16.37 G's @ 0.0443 Seconds



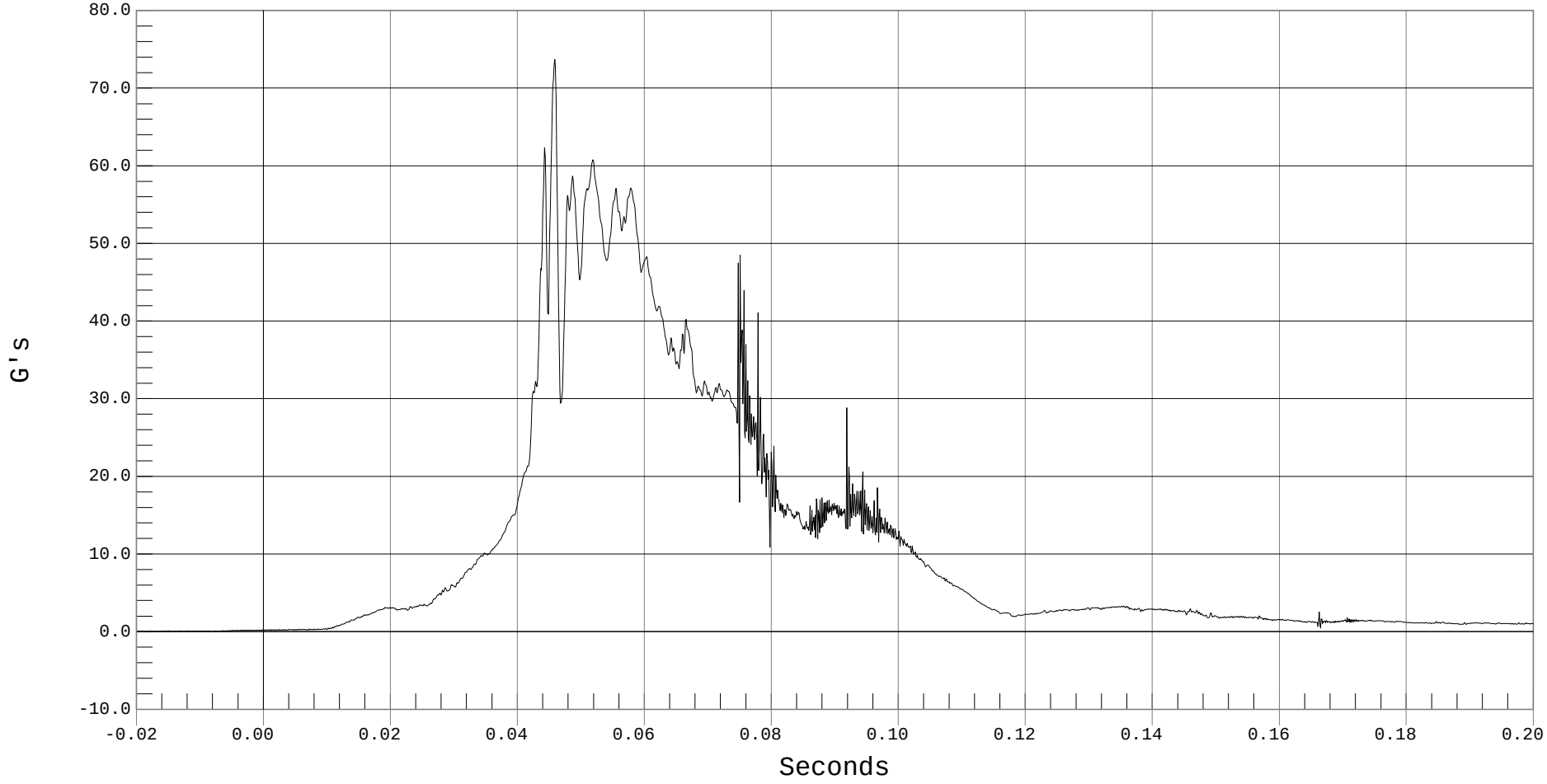
PASSENGER PELVIS RESULTANT ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 PASSENGER PELVIS RESULTANT ACCELERATION, B01014AV.A26

Ymin = .01 G's @ -0.0198 Seconds, Ymax = 73.69 G's @ 0.0458 Seconds



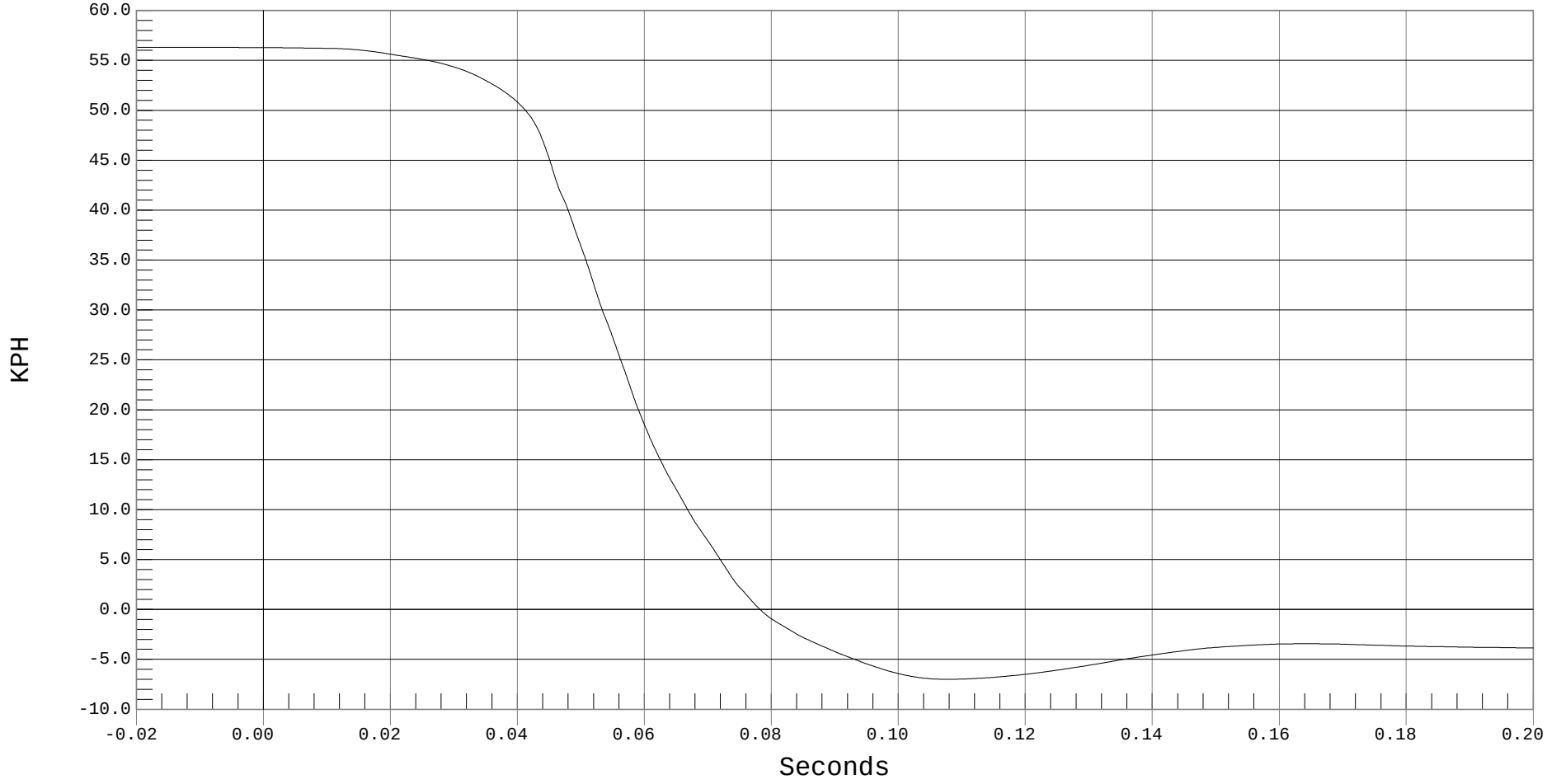
PASSENGER PELVIS X VELOCITY

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 PASSENGER PELVIS X VELOCITY, B01014AI.V26

Ymin = -7 KPH @ 0.1077 Seconds, Ymax = 56.3 KPH @ -0.0091 Seconds



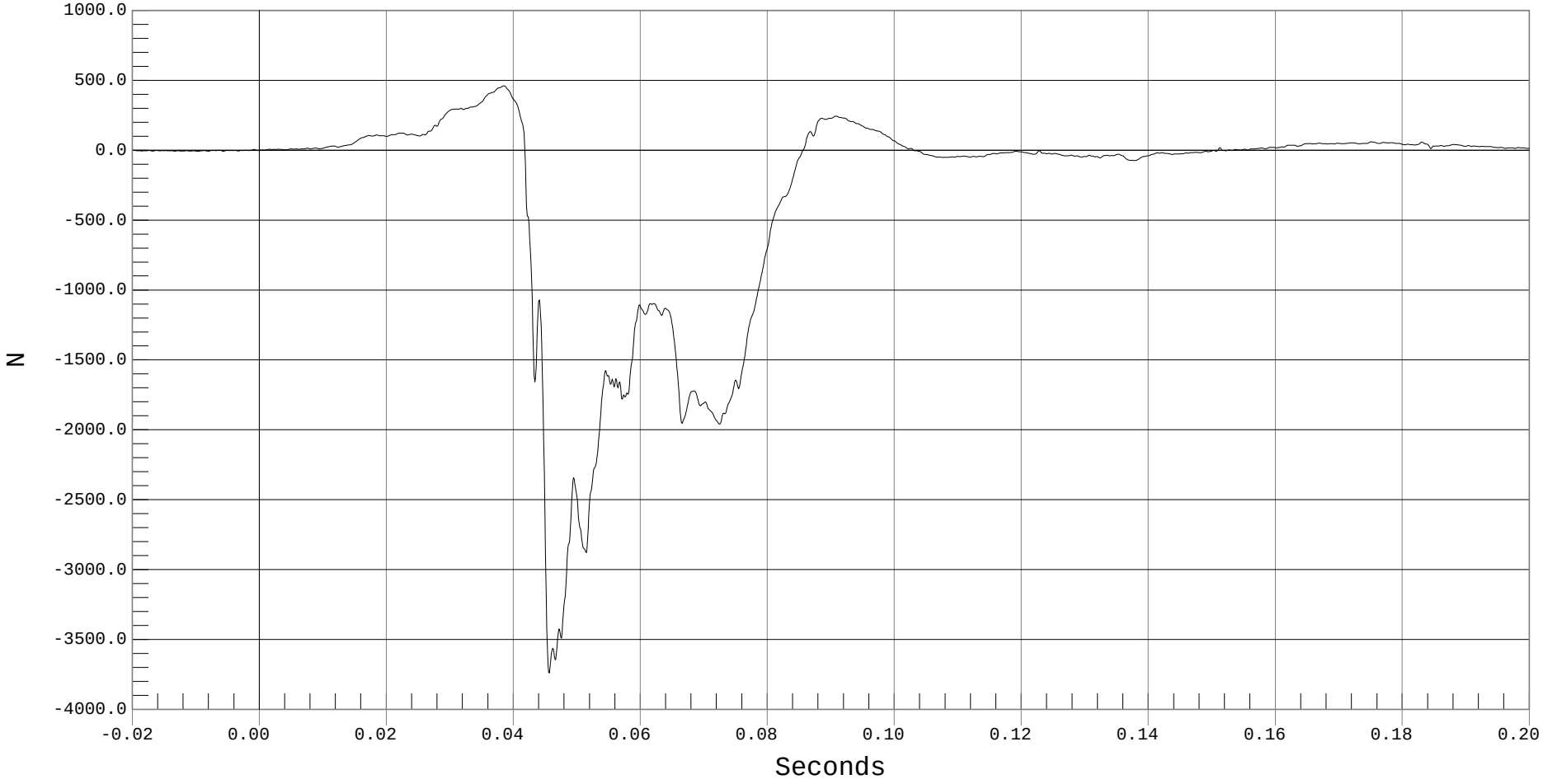
PASSENGER LEFT FEMUR FORCE

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 PASSENGER LEFT FEMUR X, B01014FF.F30

Ymin = -3739.95 N @ 0.0456 Seconds, Ymax = 461.59 N @ 0.0384 Seconds



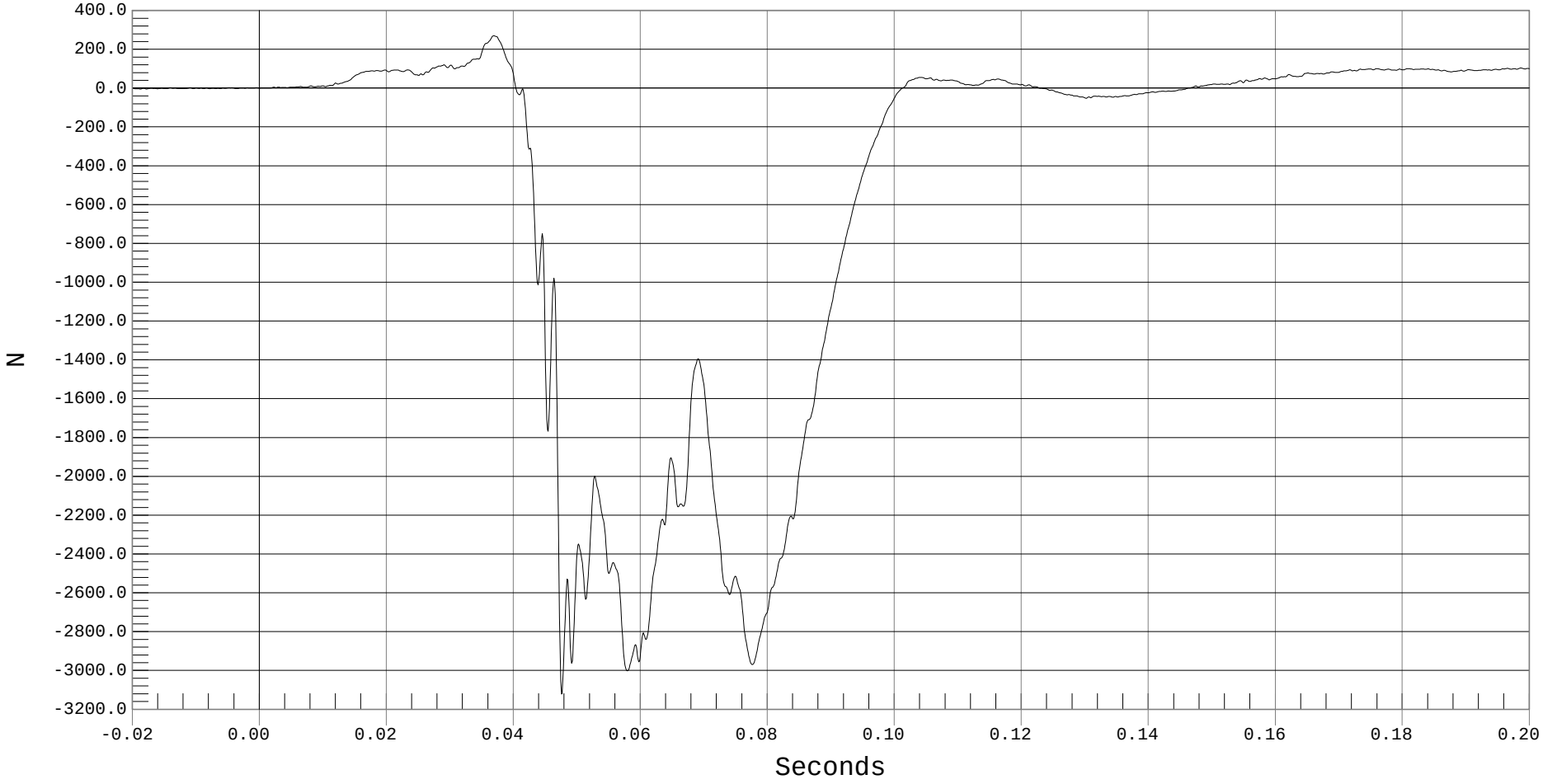
PASSENGER RIGHT FEMUR FORCE

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 PASSENGER RIGHT FEMUR X, B01014FF.F29

Ymin = -3121.92 N @ 0.0475 Seconds, Ymax = 269.99 N @ 0.0368 Seconds



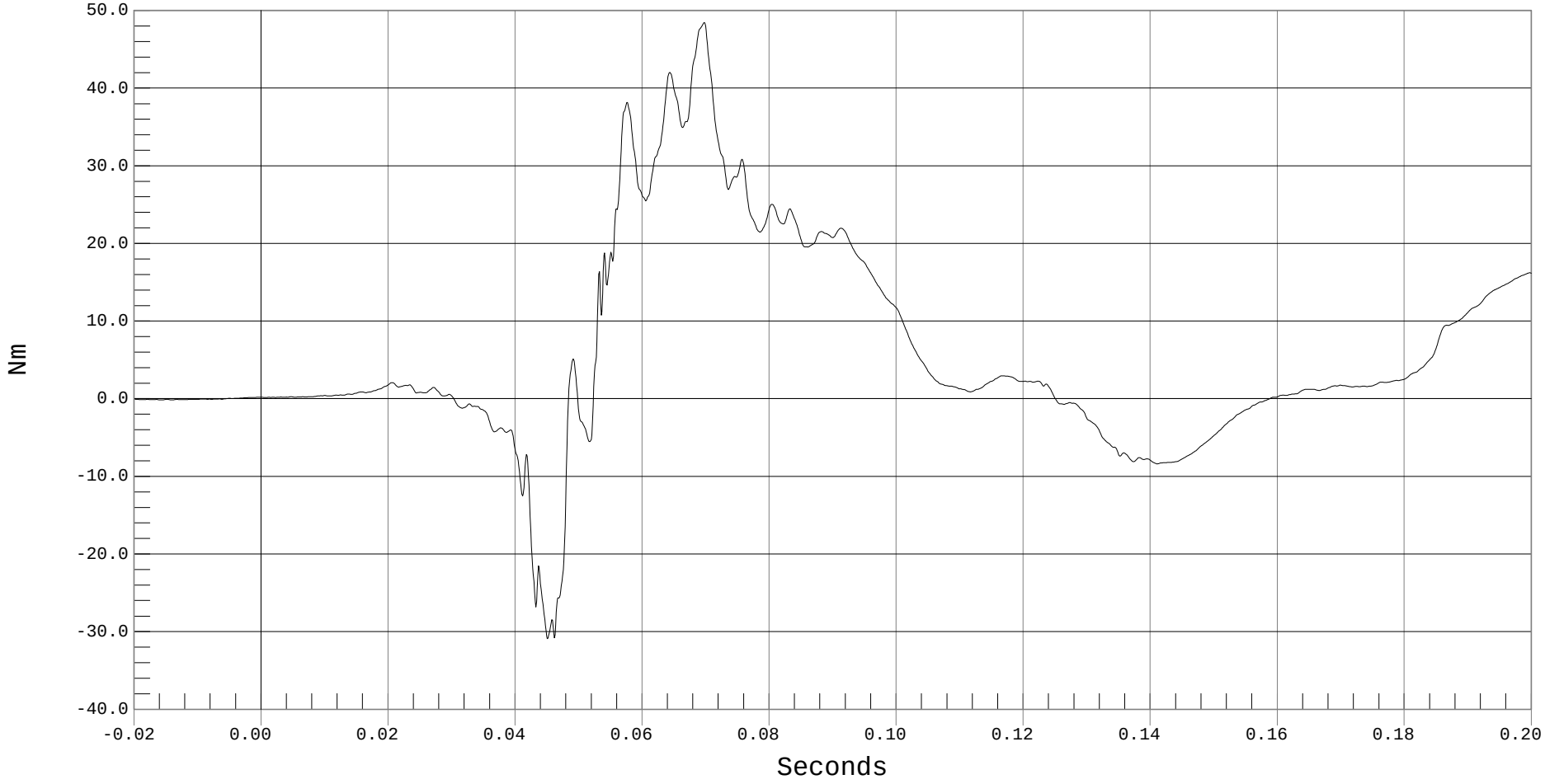
PASSENGER LEFT UPPER TIBIA MOMENT X

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 PASSENGER LEFT UPPER TIBIA MX, B01014MF.M87

Ymin = -30.91 Nm @ 0.0450 Seconds, Ymax = 48.47 Nm @ 0.0697 Seconds



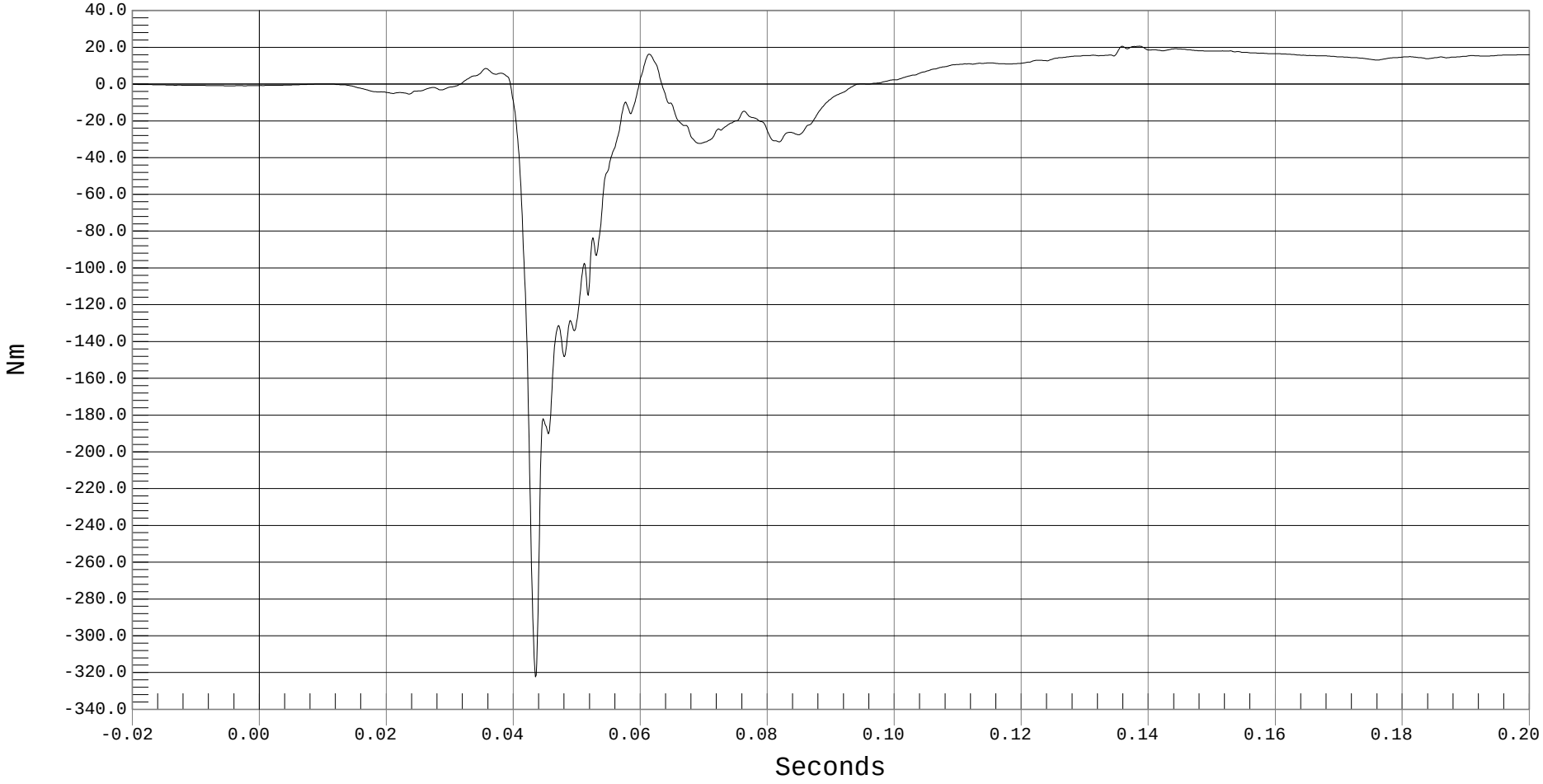
PASSENGER LEFT UPPER TIBIA MOMENT Y

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 PASSENGER LEFT UPPER TIBIA MY, B01014MF.M88

Ymin = -322.43 Nm @ 0.0434 Seconds, Ymax = 20.61 Nm @ 0.1385 Seconds



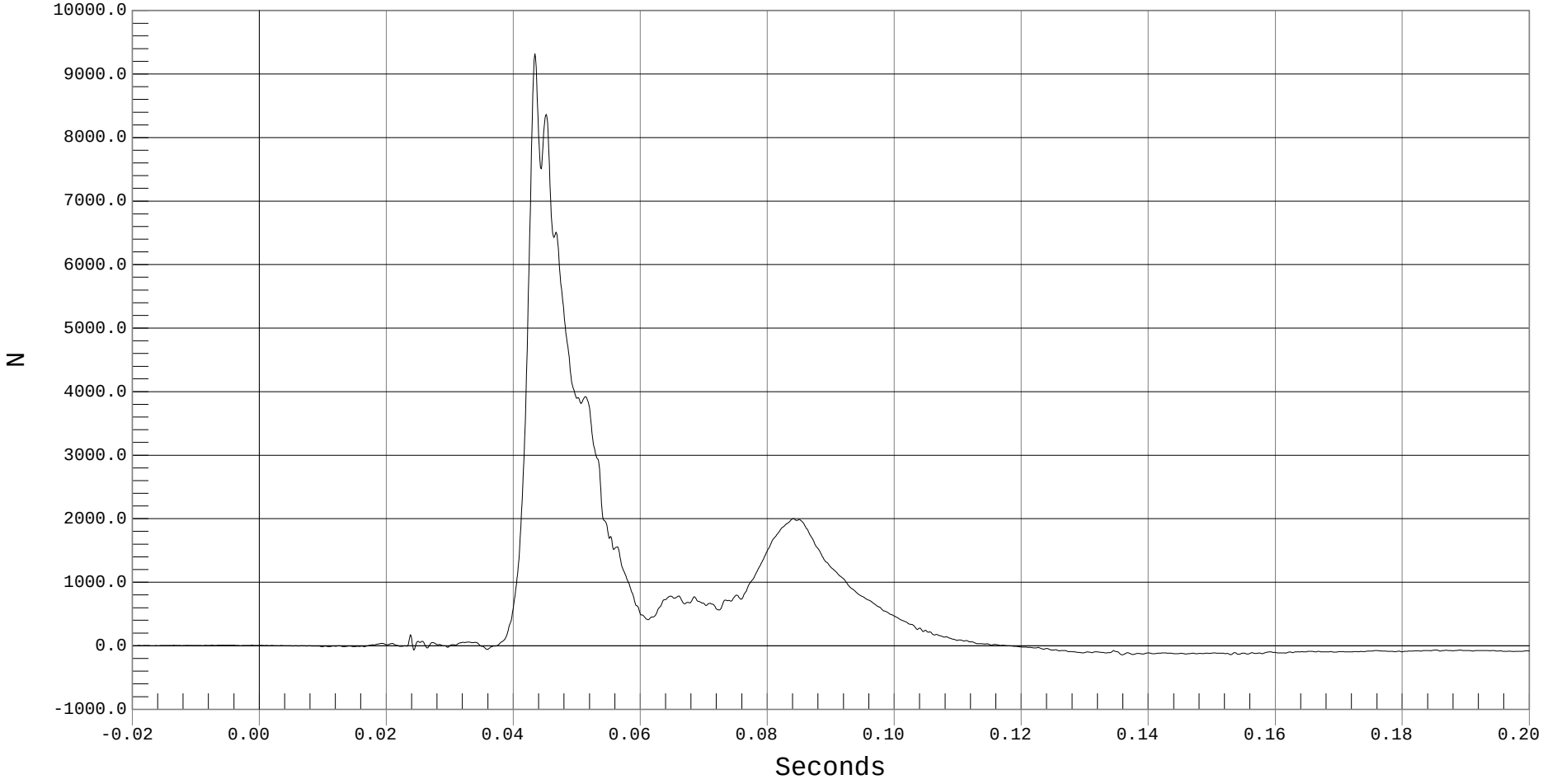
PASSENGER LEFT UPPER TIBIA FORCE Z

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 PASSENGER LEFT UPPER TIBIA FZ, B01014FF.F89

Ymin = -142.06 N @ 0.1358 Seconds, Ymax = 9317.75 N @ 0.0433 Seconds



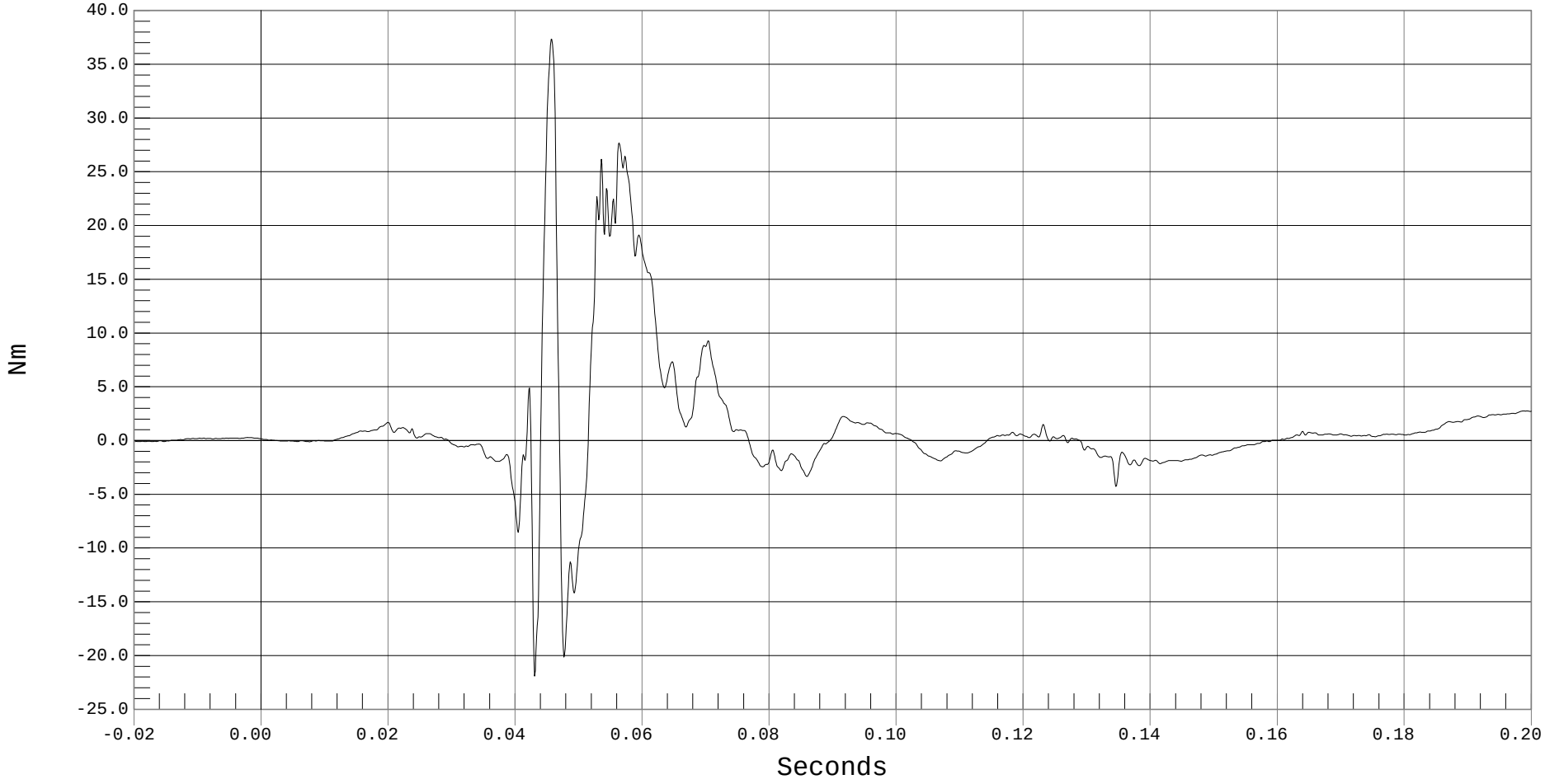
PASSENGER LEFT LOWER TIBIA MOMENT X

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 PASSENGER LEFT LOWER TIBIA MX, B01014MF.M90

Ymin = -21.92 Nm @ 0.0430 Seconds, Ymax = 37.35 Nm @ 0.0456 Seconds



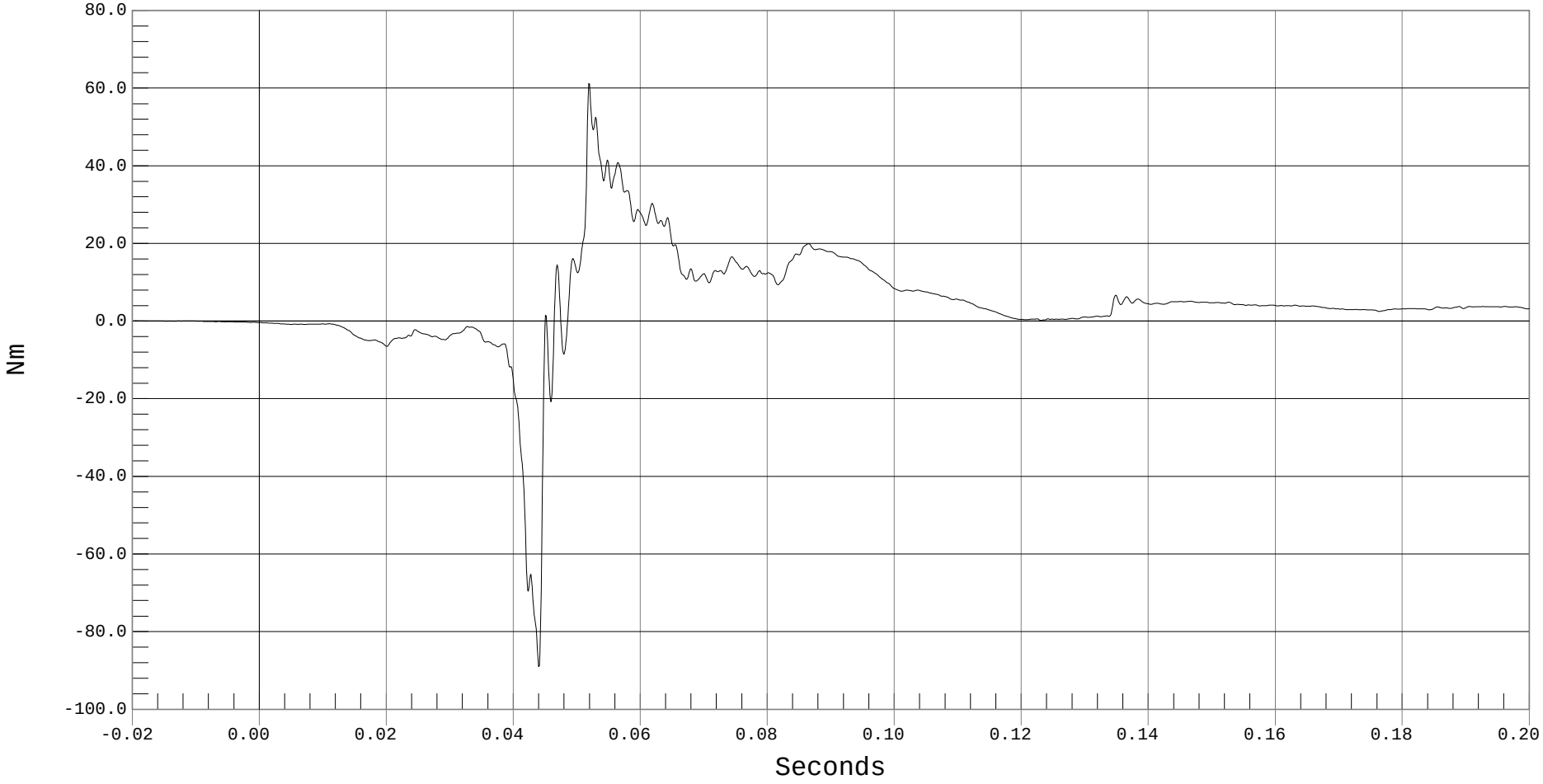
PASSENGER LEFT LOWER TIBIA MOMENT Y

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 PASSENGER LEFT LOWER TIBIA MY, B01014MF.M91

Ymin = -89.02 Nm @ 0.0439 Seconds, Ymax = 61.16 Nm @ 0.0518 Seconds



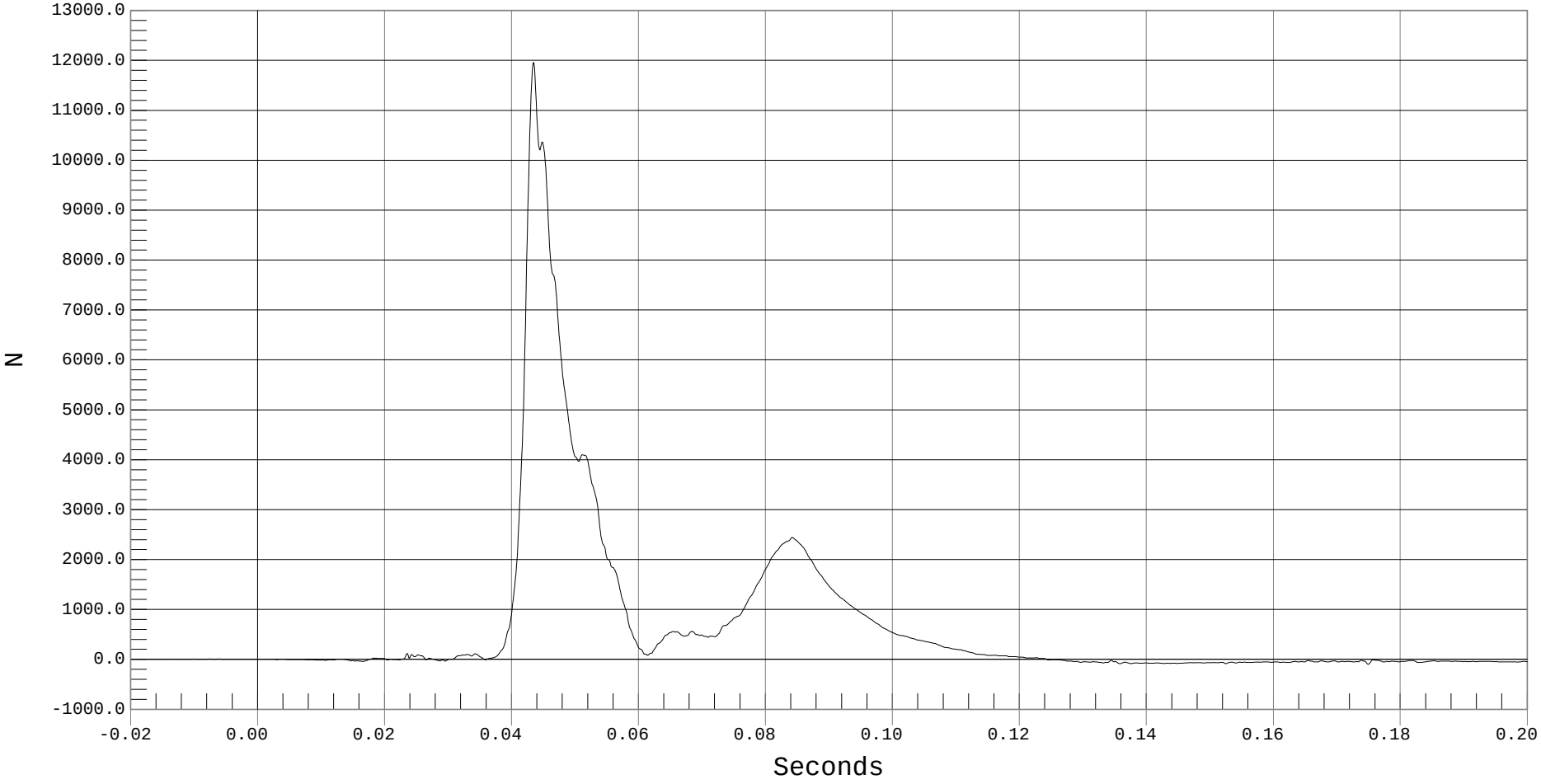
PASSENGER LEFT LOWER TIBIA FORCE Z

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 PASSENGER LEFT LOWER TIBIA FZ, B01014FF.F92

Ymin = -97.14 N @ 0.1749 Seconds, Ymax = 11960.92 N @ 0.0434 Seconds



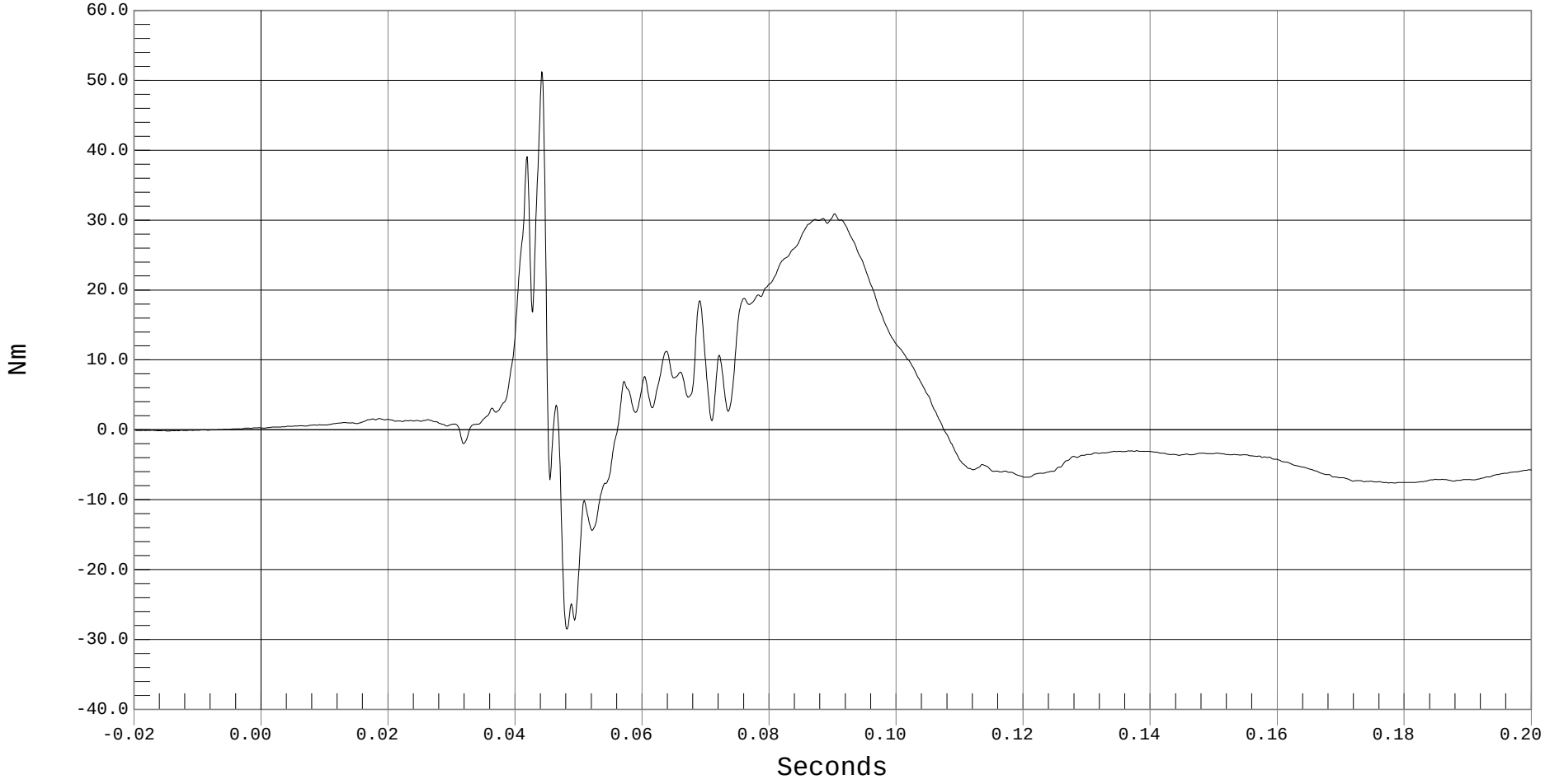
PASSENGER RIGHT UPPER TIBIA MOMENT X

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 PASSENGER RIGHT UPPER TIBIA MX, B01014MF.M81

Ymin = -28.54 Nm @ 0.0481 Seconds, Ymax = 51.25 Nm @ 0.0441 Seconds



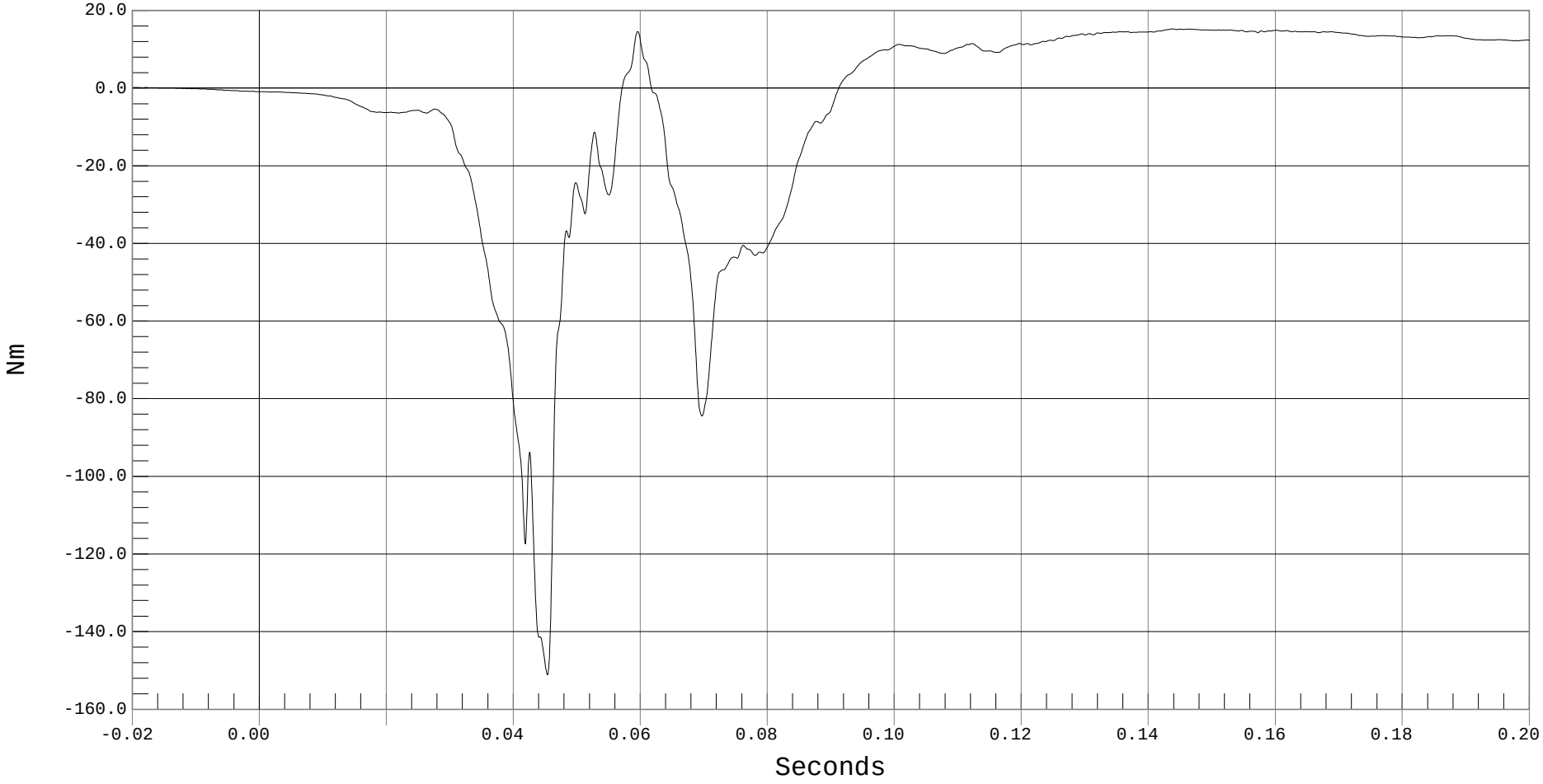
PASSENGER RIGHT UPPER TIBIA MOMENT Y

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 PASSENGER RIGHT UPPER TIBIA MY, B01014MF.M82

Ymin = -151.09 Nm @ 0.0453 Seconds, Ymax = 15.26 Nm @ 0.1437 Seconds



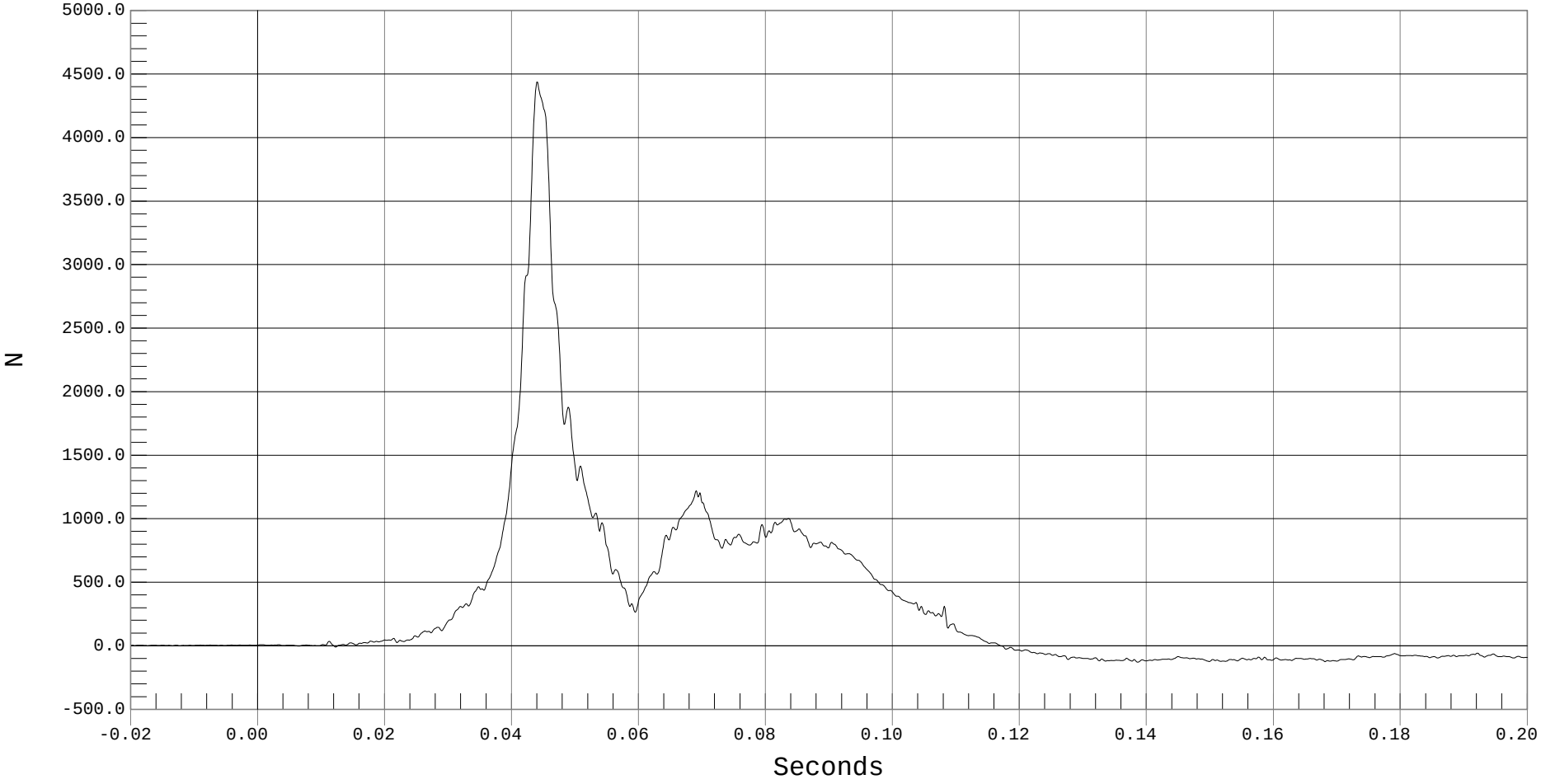
PASSENGER RIGHT UPPER TIBIA FORCE Z

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 PASSENGER RIGHT UPPER TIBIA FZ, B01014FF.F83

Ymin = -129.84 N @ 0.1385 Seconds, Ymax = 4437.47 N @ 0.0439 Seconds



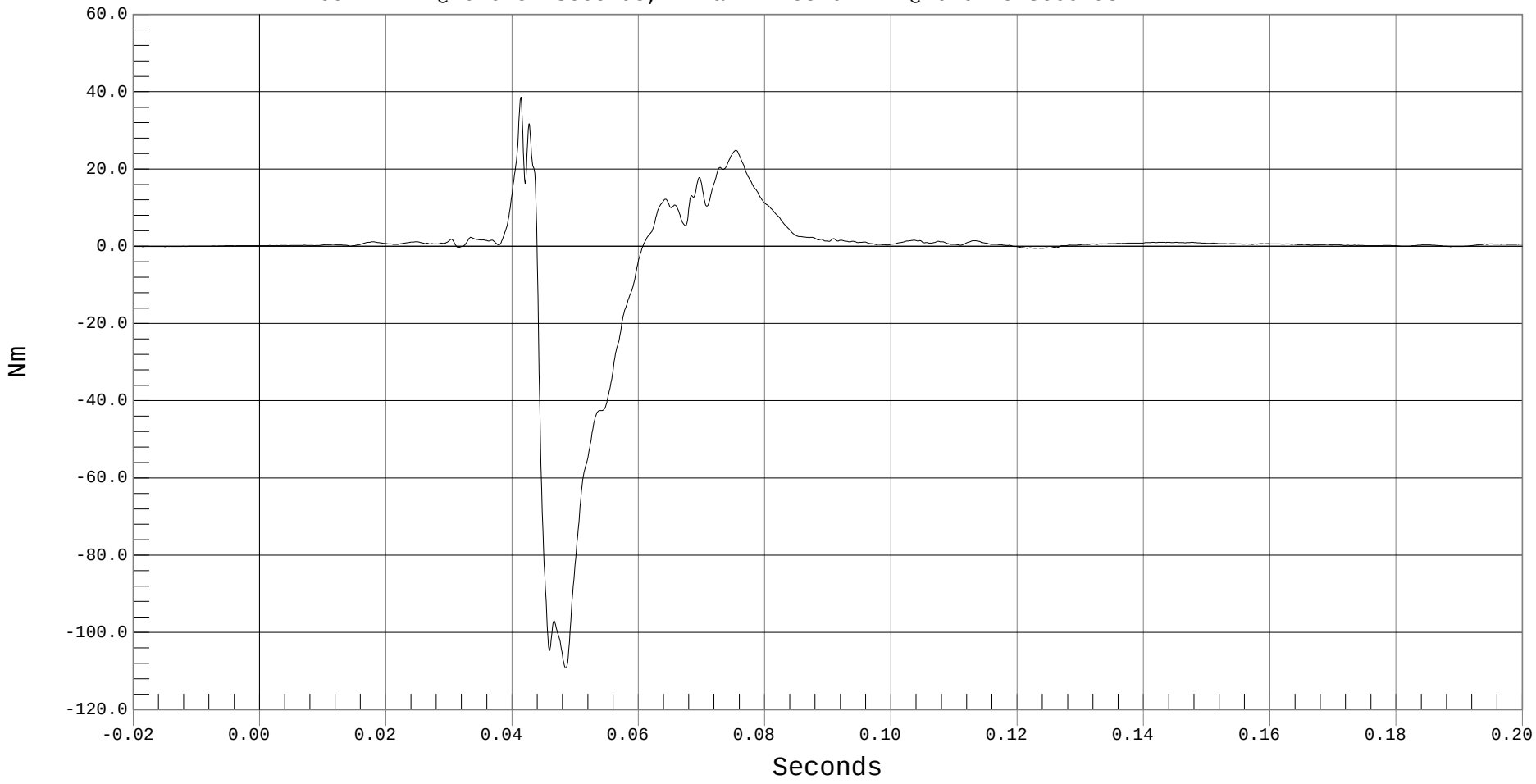
PASSENGER RIGHT LOWER TIBIA MOMENT X

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 PASSENGER RIGHT LOWER TIBIA MX, B01014MF.M84

Ymin = -109.24 Nm @ 0.0484 Seconds, Ymax = 38.61 Nm @ 0.0413 Seconds



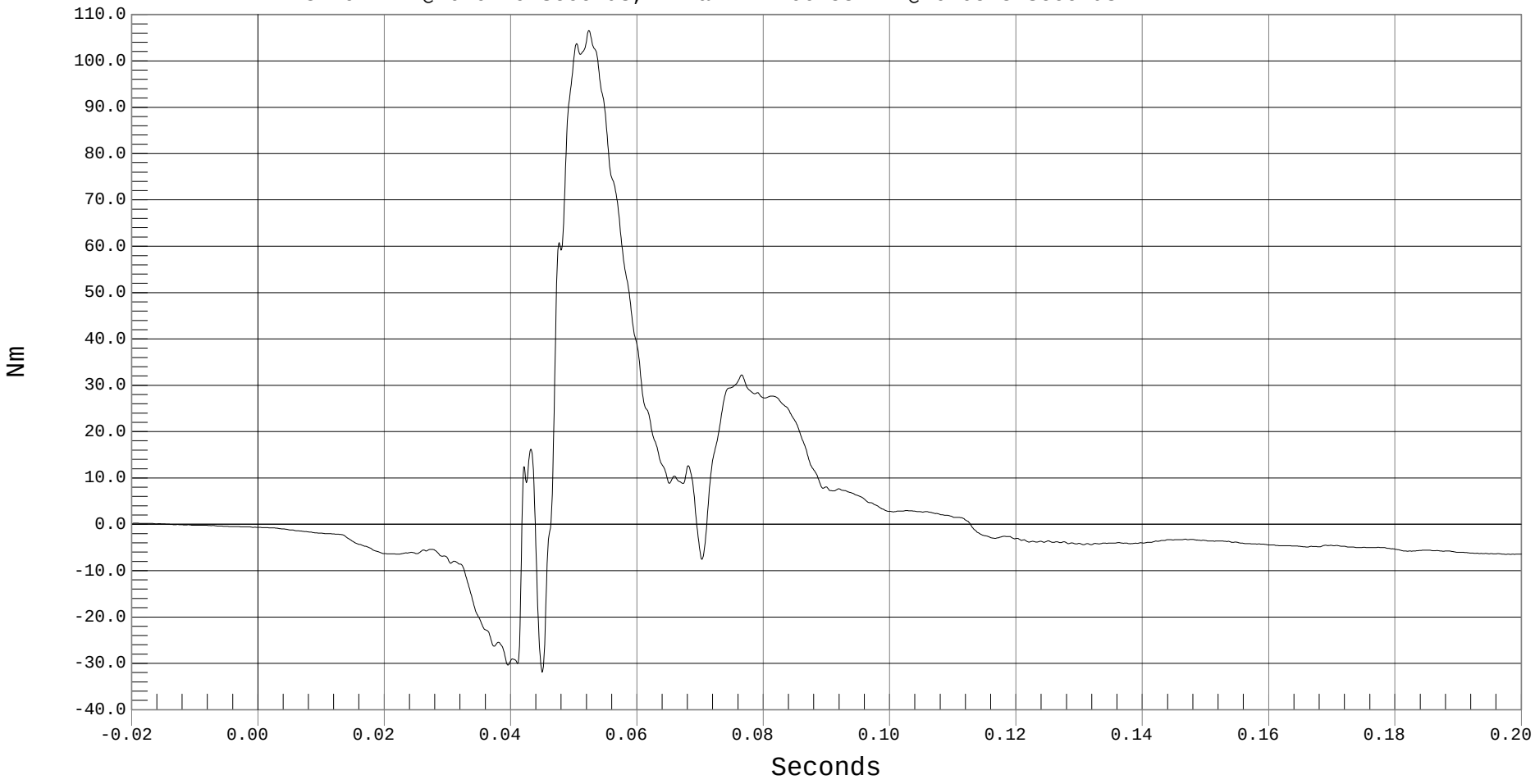
PASSENGER RIGHT LOWER TIBIA MOMENT Y

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 PASSENGER RIGHT LOWER TIBIA MY, B01014MF.M85

Ymin = -31.92 Nm @ 0.0449 Seconds, Ymax = 106.58 Nm @ 0.0523 Seconds



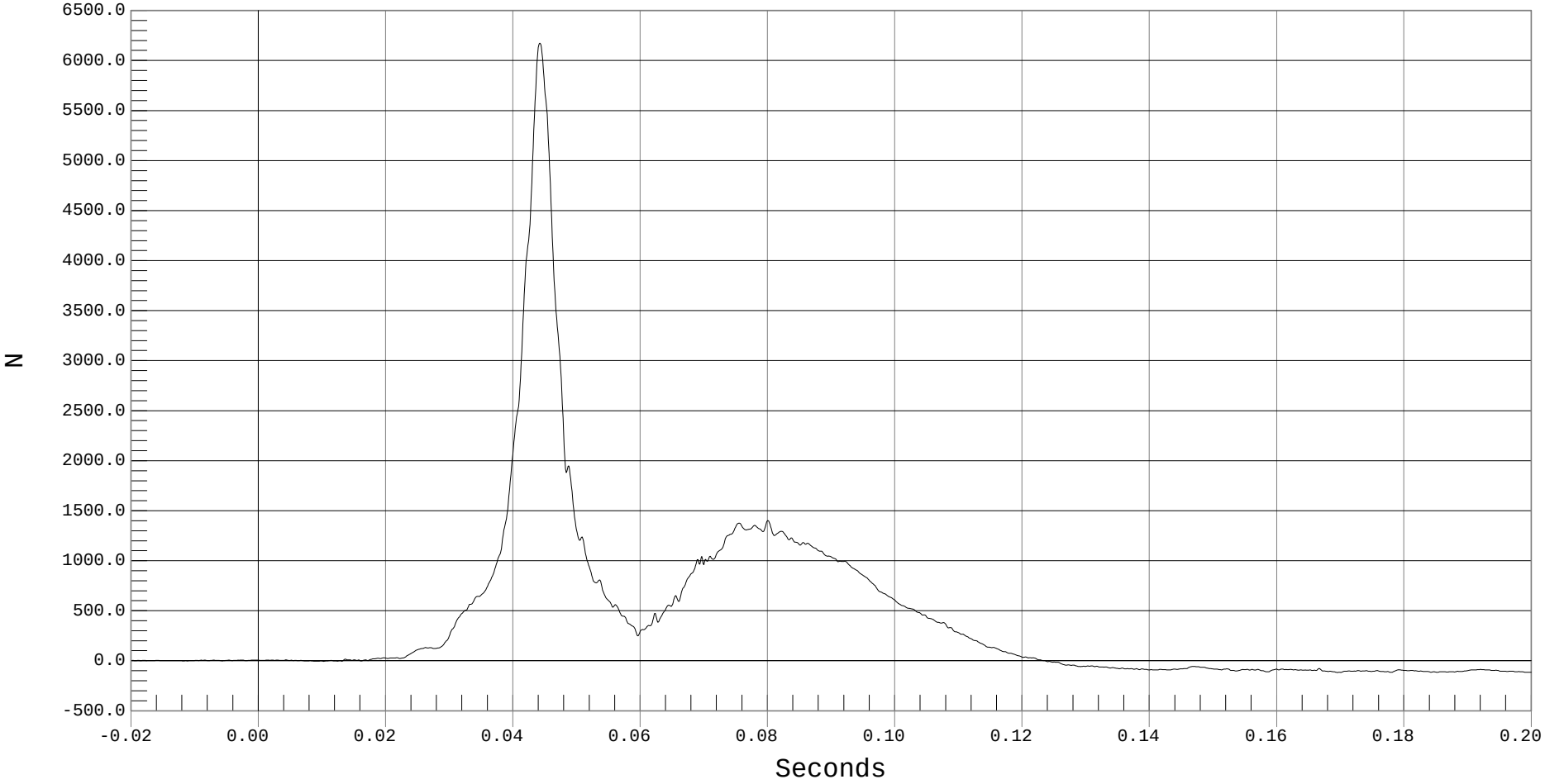
PASSENGER RIGHT LOWER TIBIA FORCE Z

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 PASSENGER RIGHT LOWER TIBIA FZ, B01014FF.F86

Ymin = -116.39 N @ 0.1700 Seconds, Ymax = 6174.12 N @ 0.0441 Seconds



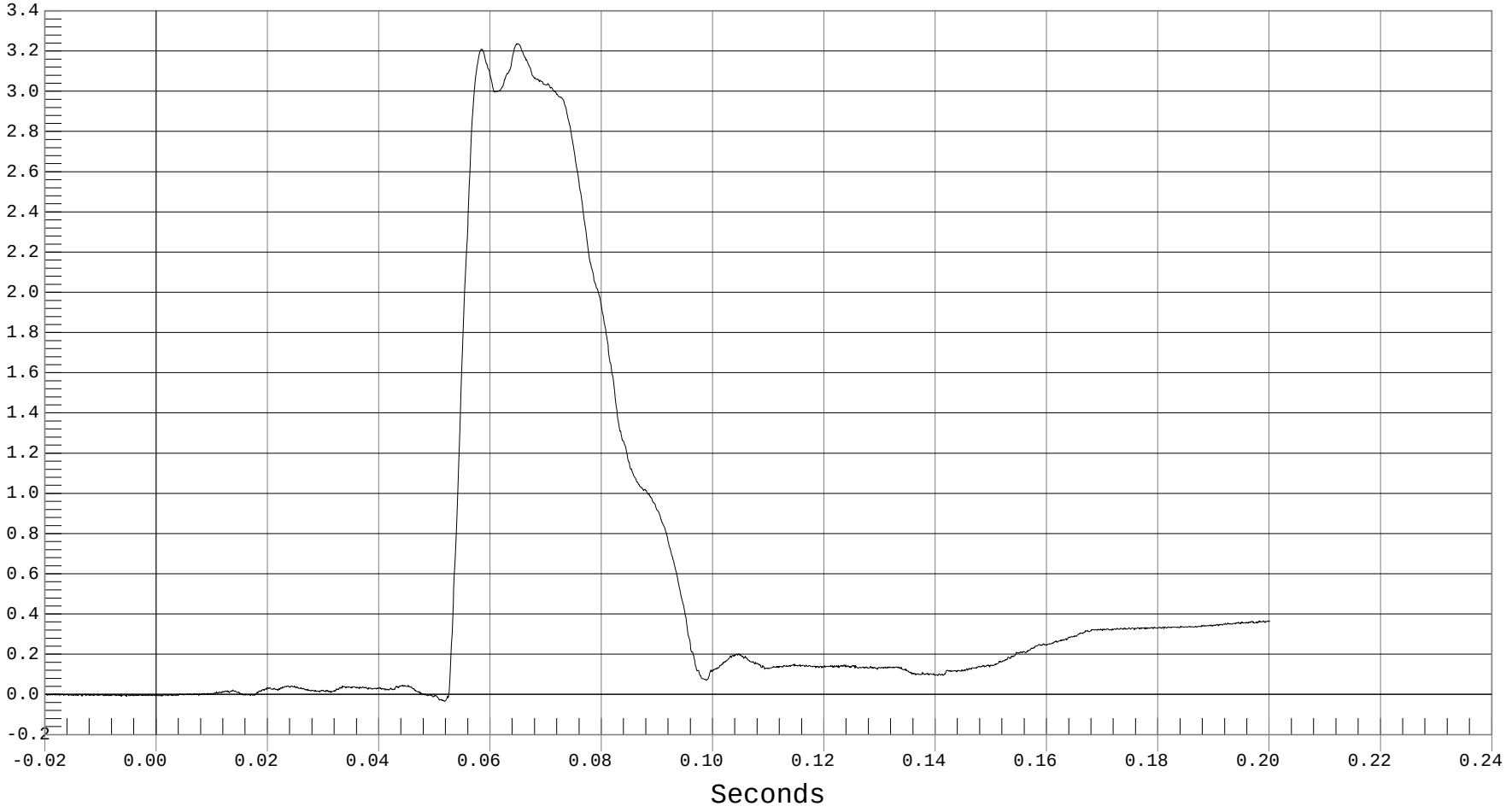
PASSENGER LEFT KNEE SHEER

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 PASSENGER LEFT KNEE SHEER, B01014DT.D63

Ymin = -.04 @ 0.0517 Seconds, Ymax = 3.24 @ 0.0647 Seconds



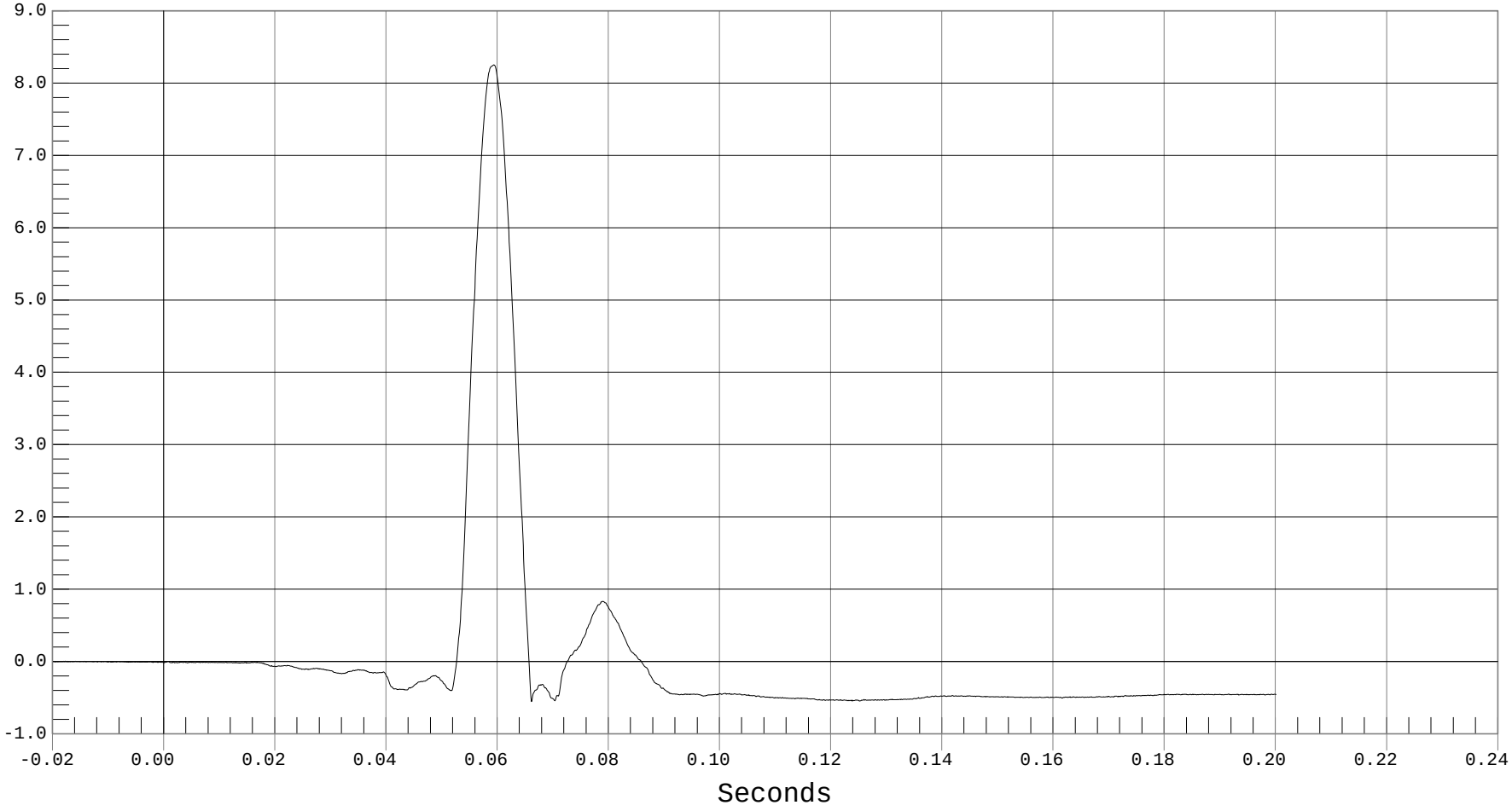
PASSENGER RIGHT KNEE SHEER

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 PASSENGER RIGHT KNEE SHEER, B01014DT.D62

Ymin = -.56 @ 0.0661 Seconds, Ymax = 8.25 @ 0.0593 Seconds



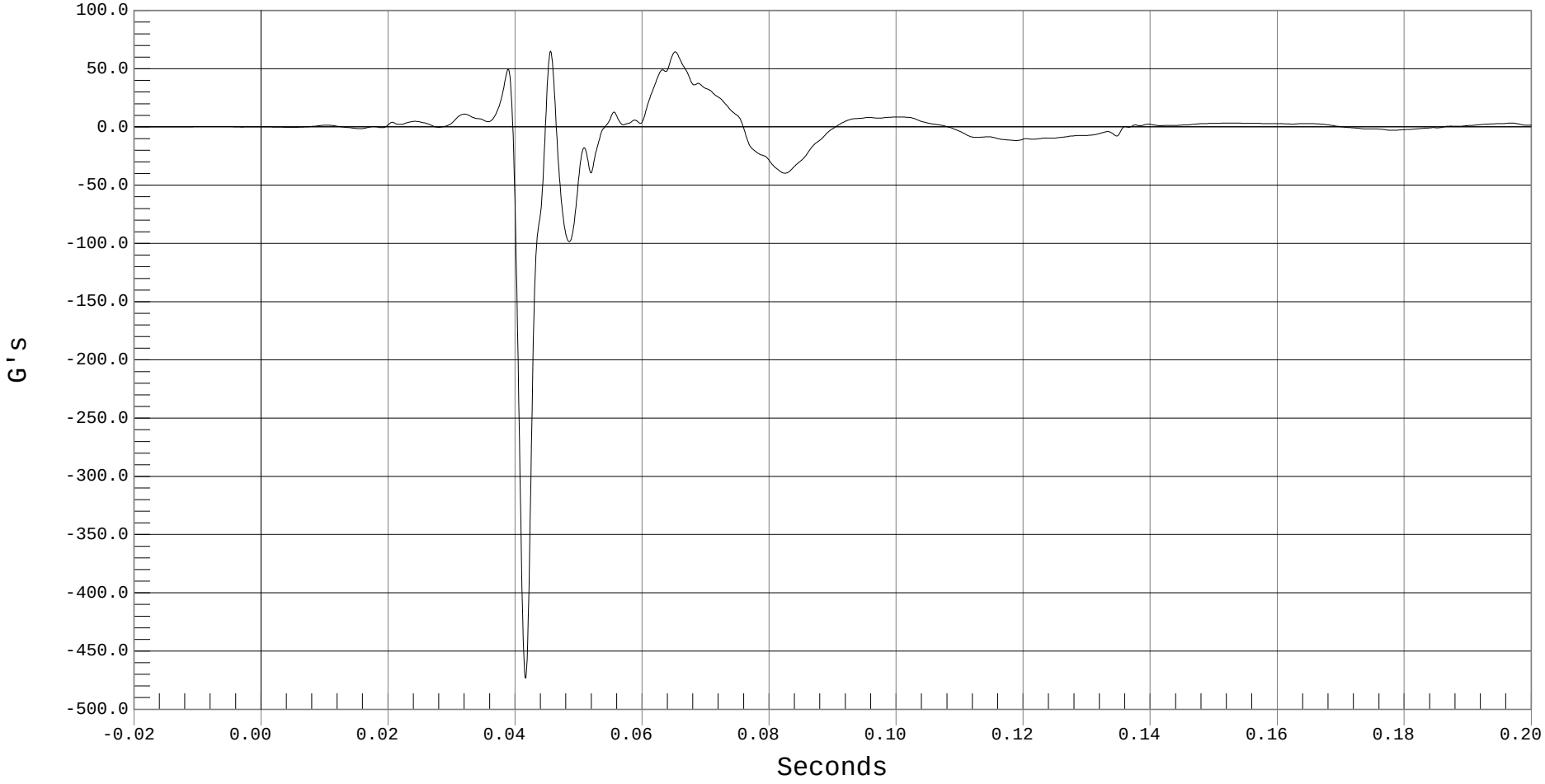
PASSENGER LEFT FOOT @ BALL Z ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 PASSENGER LEFT FOOT @ BALL Z, B01014AF.A09

Ymin = -473.09 G's @ 0.0416 Seconds, Ymax = 65.13 G's @ 0.0455 Seconds



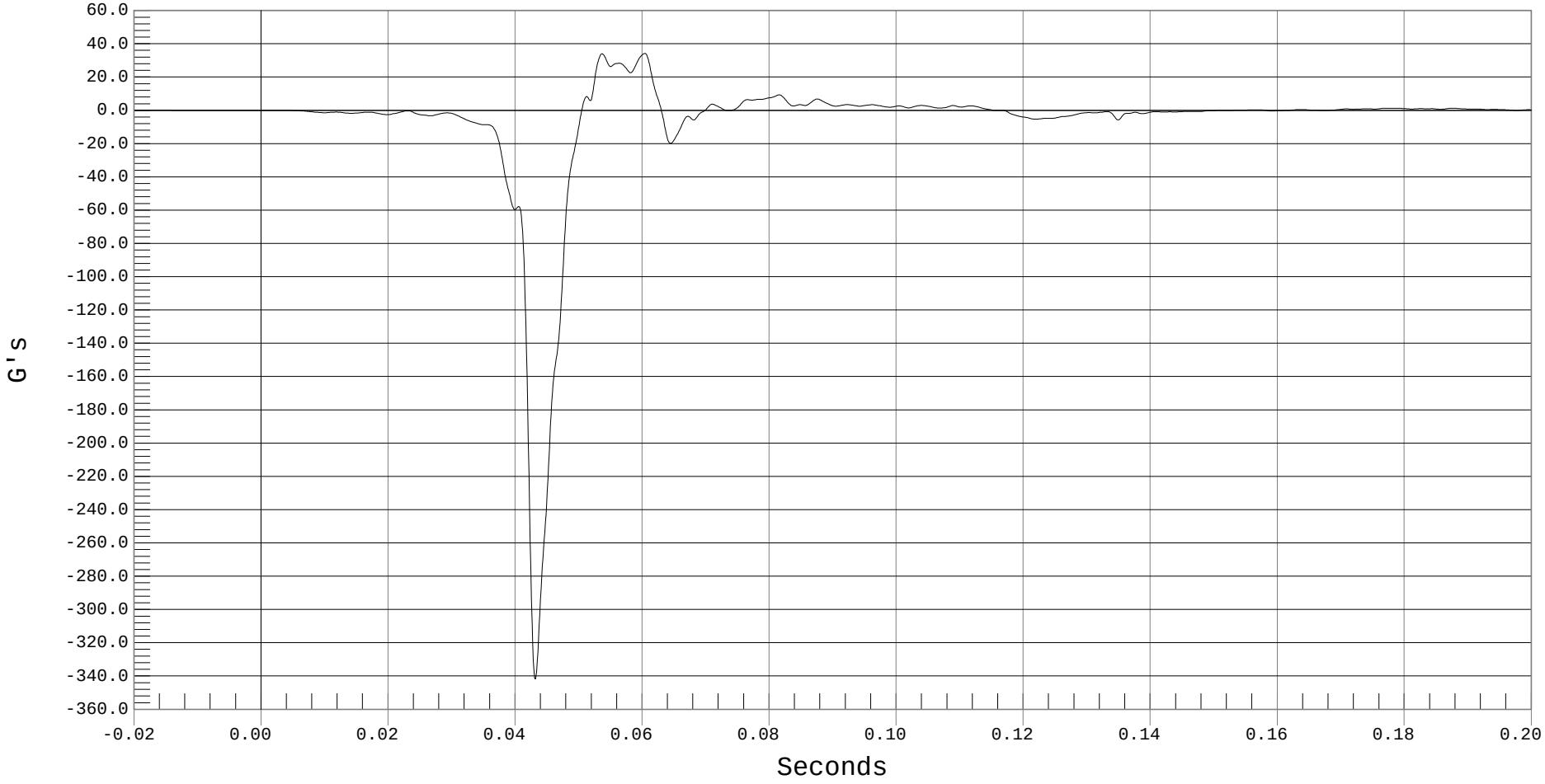
PASSENGER LEFT FOOT @ HEEL X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 PASSENGER LEFT FOOT @ HEEL X, B01014AF.A07

Ymin = -341.9 G's @ 0.0431 Seconds, Ymax = 34.23 G's @ 0.0603 Seconds



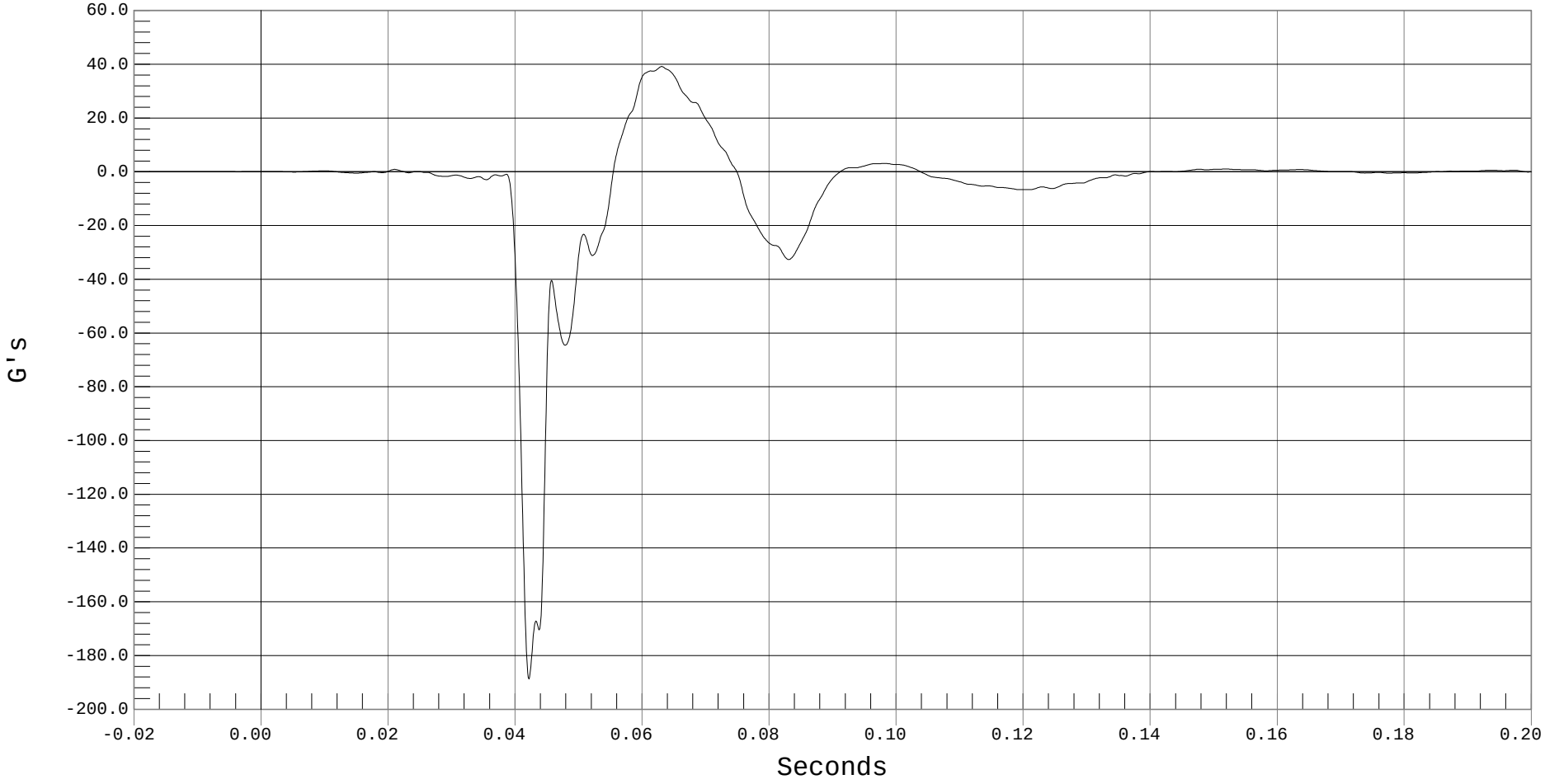
PASSENGER LEFT FOOT @ HEEL Z ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 PASSENGER LEFT FOOT @ HEEL Z, B01014AF.A08

Ymin = -188.71 G's @ 0.0421 Seconds, Ymax = 39.18 G's @ 0.0630 Seconds



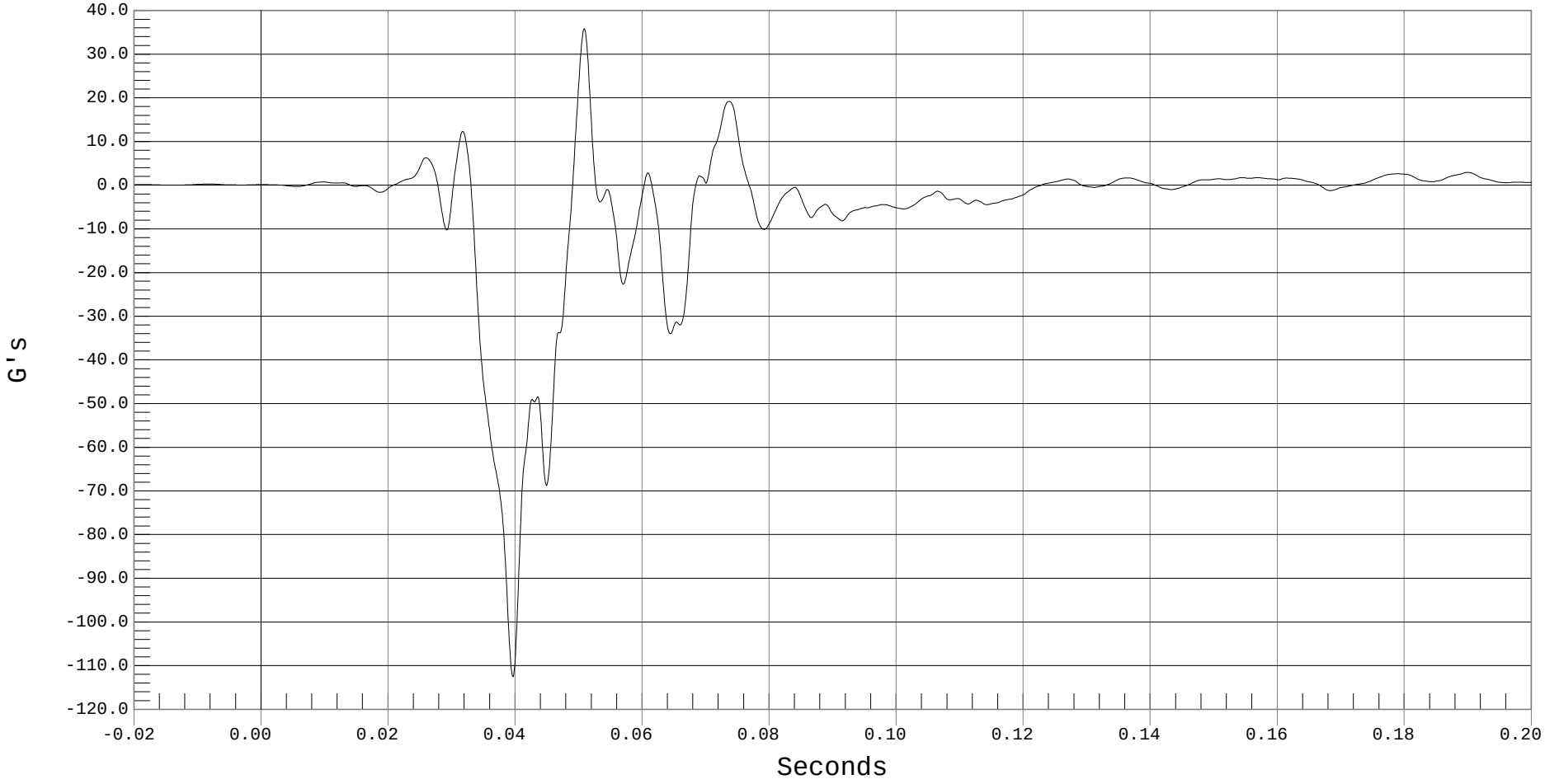
PASSENGER RIGHT FOOT @ BALL Z ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 PASSENGER RIGHT FOOT @ BALL Z, B01014AF.A06

Ymin = -112.53 G's @ 0.0396 Seconds, Ymax = 35.85 G's @ 0.0508 Seconds



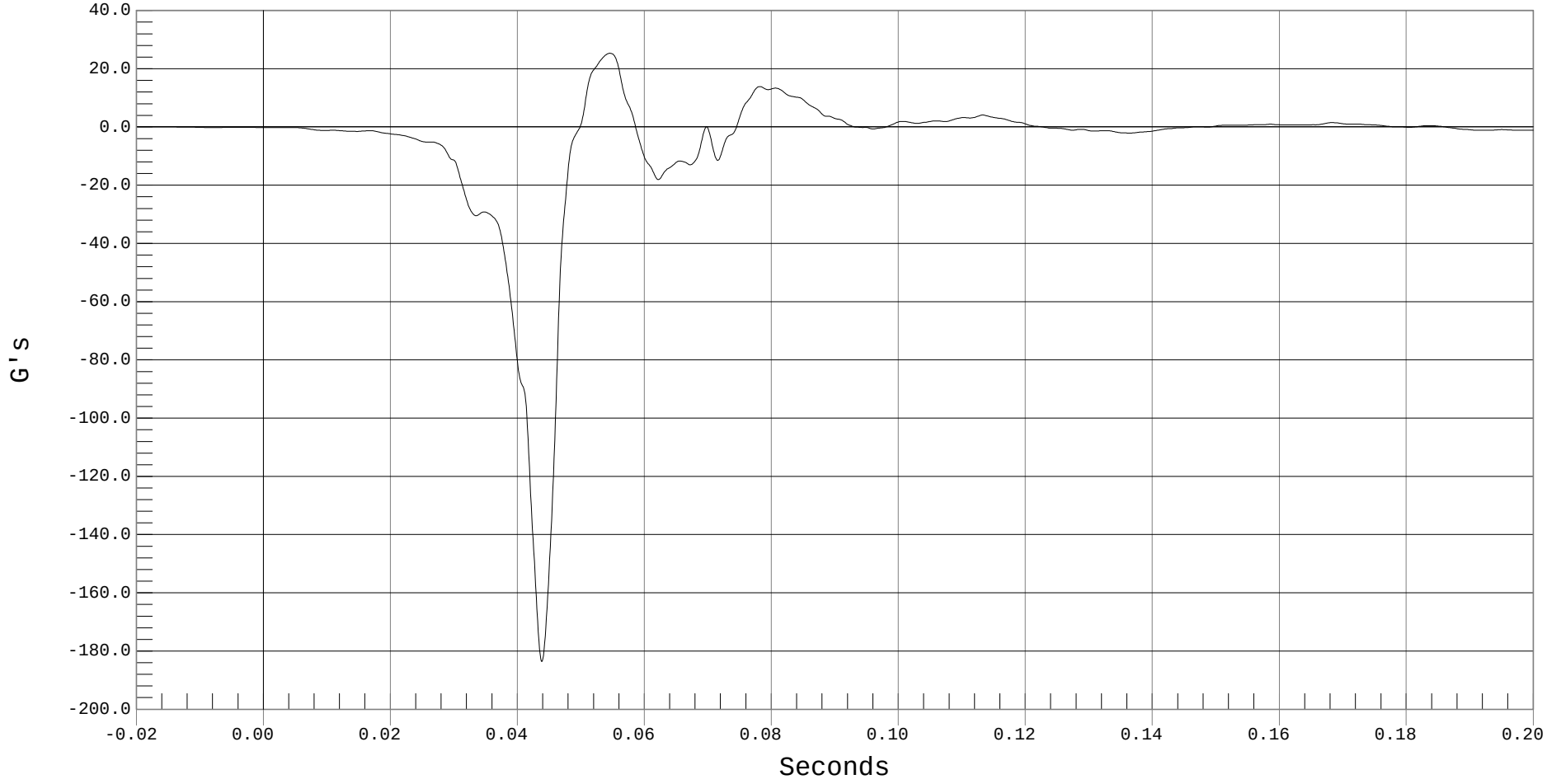
PASSENGER RIGHT FOOT @ HEEL X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 PASSENGER RIGHT FOOT @ HEEL X, B01014AF.A04

Ymin = -183.57 G's @ 0.0438 Seconds, Ymax = 25.3 G's @ 0.0544 Seconds



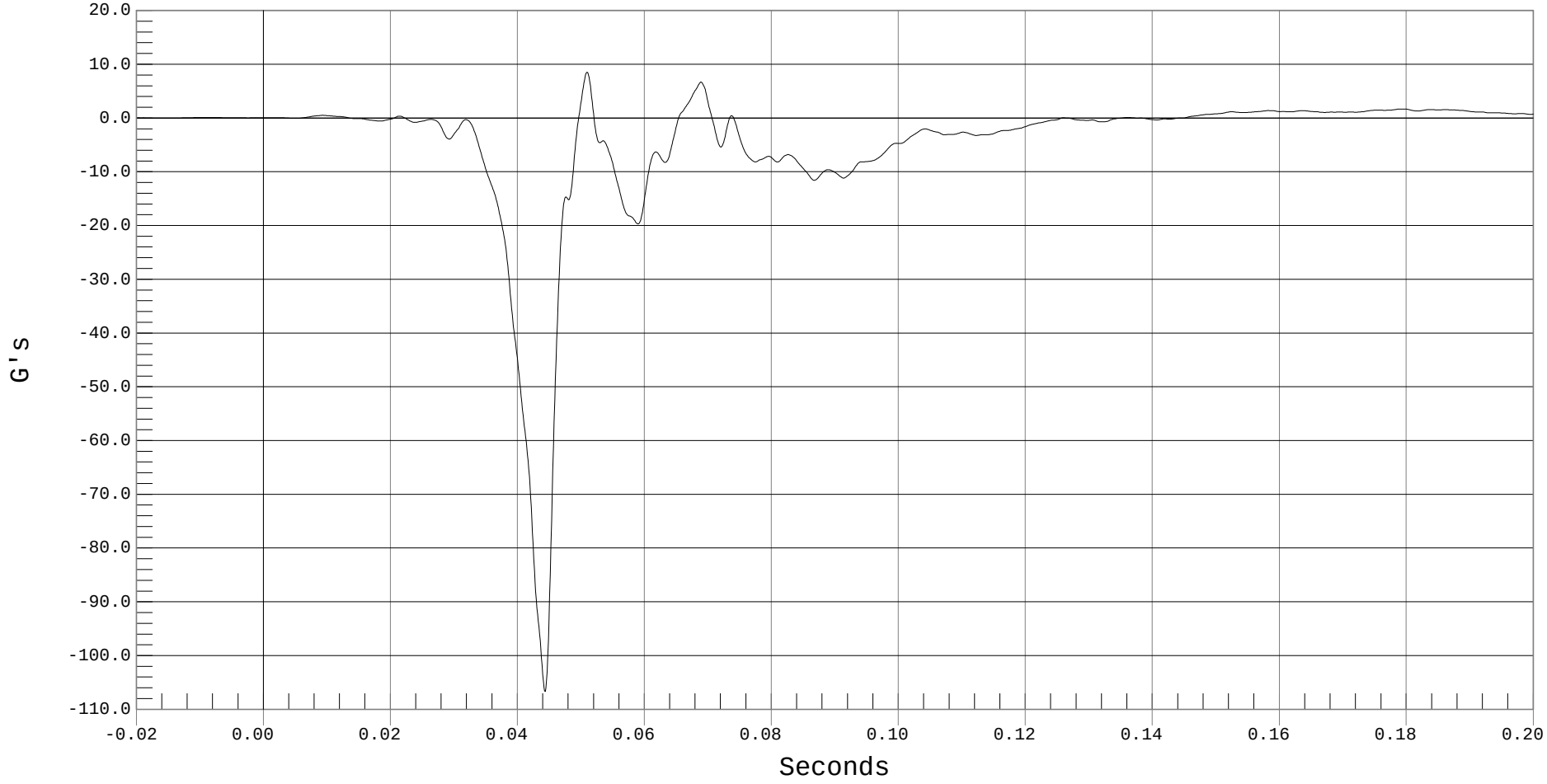
PASSENGER RIGHT FOOT @ HEEL Z ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 PASSENGER RIGHT FOOT @ HEEL Z, B01014AF.A05

Ymin = -106.67 G's @ 0.0443 Seconds, Ymax = 8.53 G's @ 0.0509 Seconds



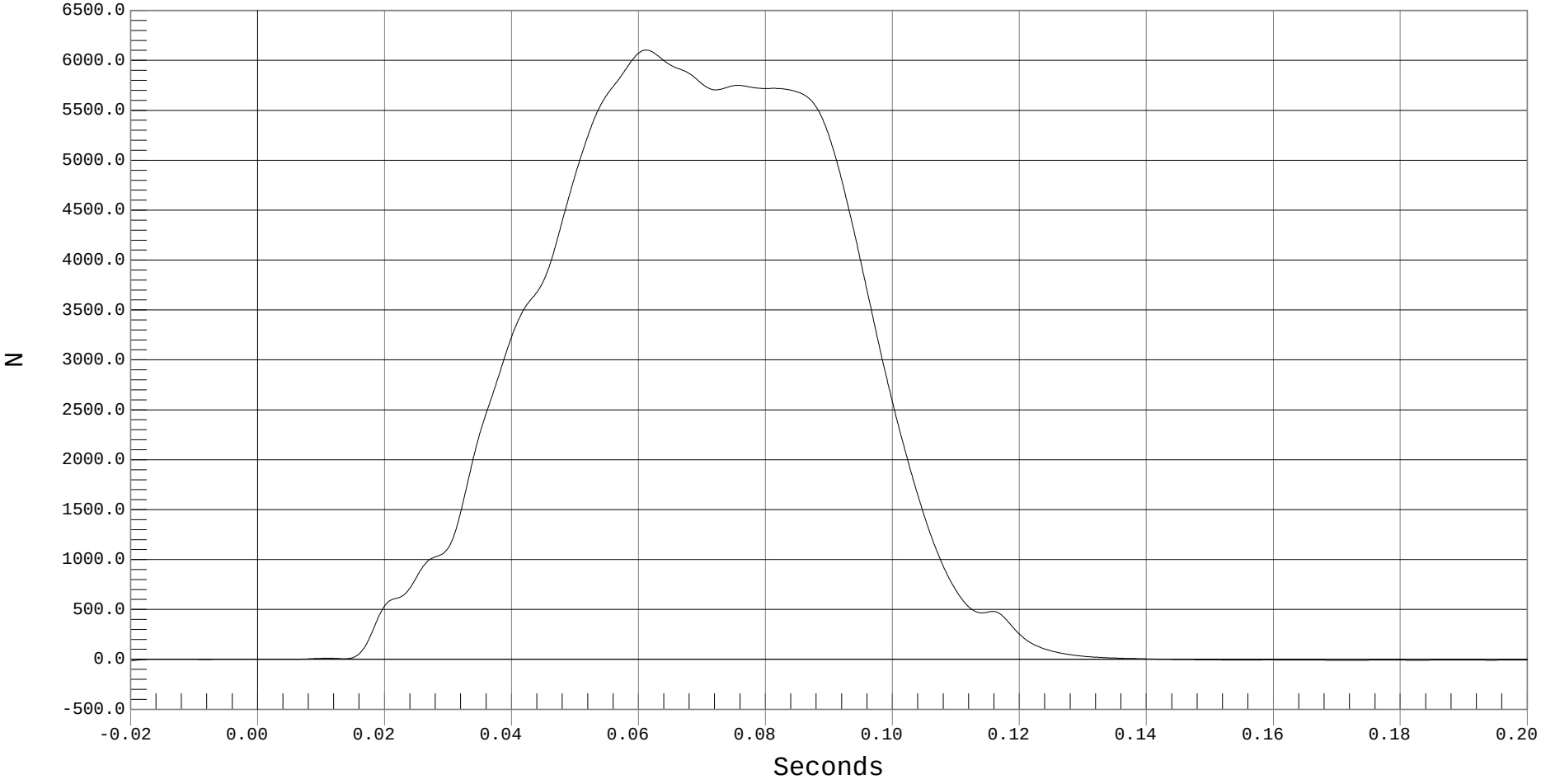
PASSENGER SHOULDER BELT FORCE

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 PASSENGER SHOULDER BELT, B01014FF.F67

Ymin = -13.49 N @ -0.0199 Seconds, Ymax = 6103.45 N @ 0.0611 Seconds



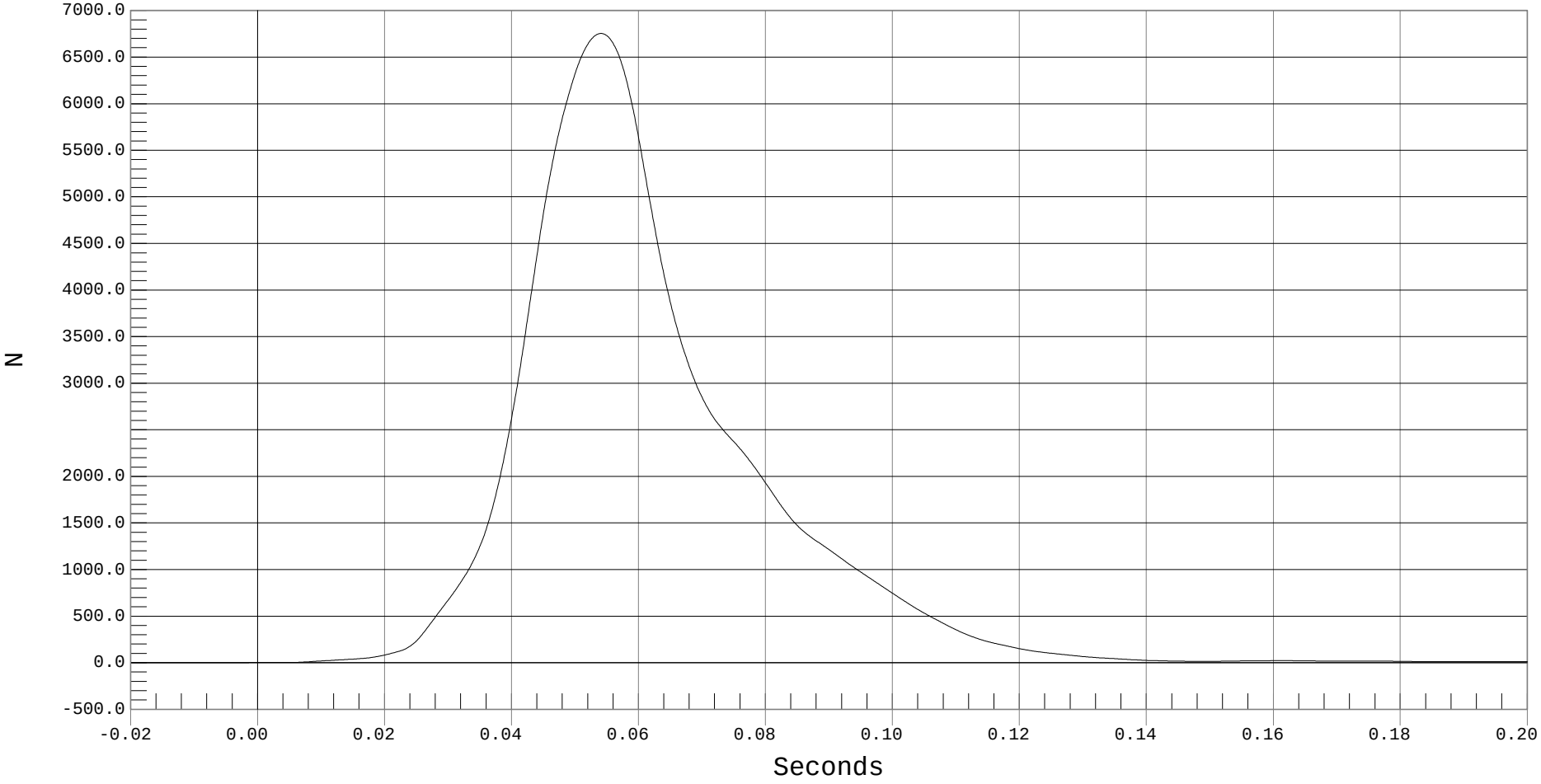
PASSENGER LAP BELT FORCE

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 PASSENGER LAP BELT, B01014FF.F68

Ymin = -1.09 N @ -0.0174 Seconds, Ymax = 6753.59 N @ 0.0540 Seconds



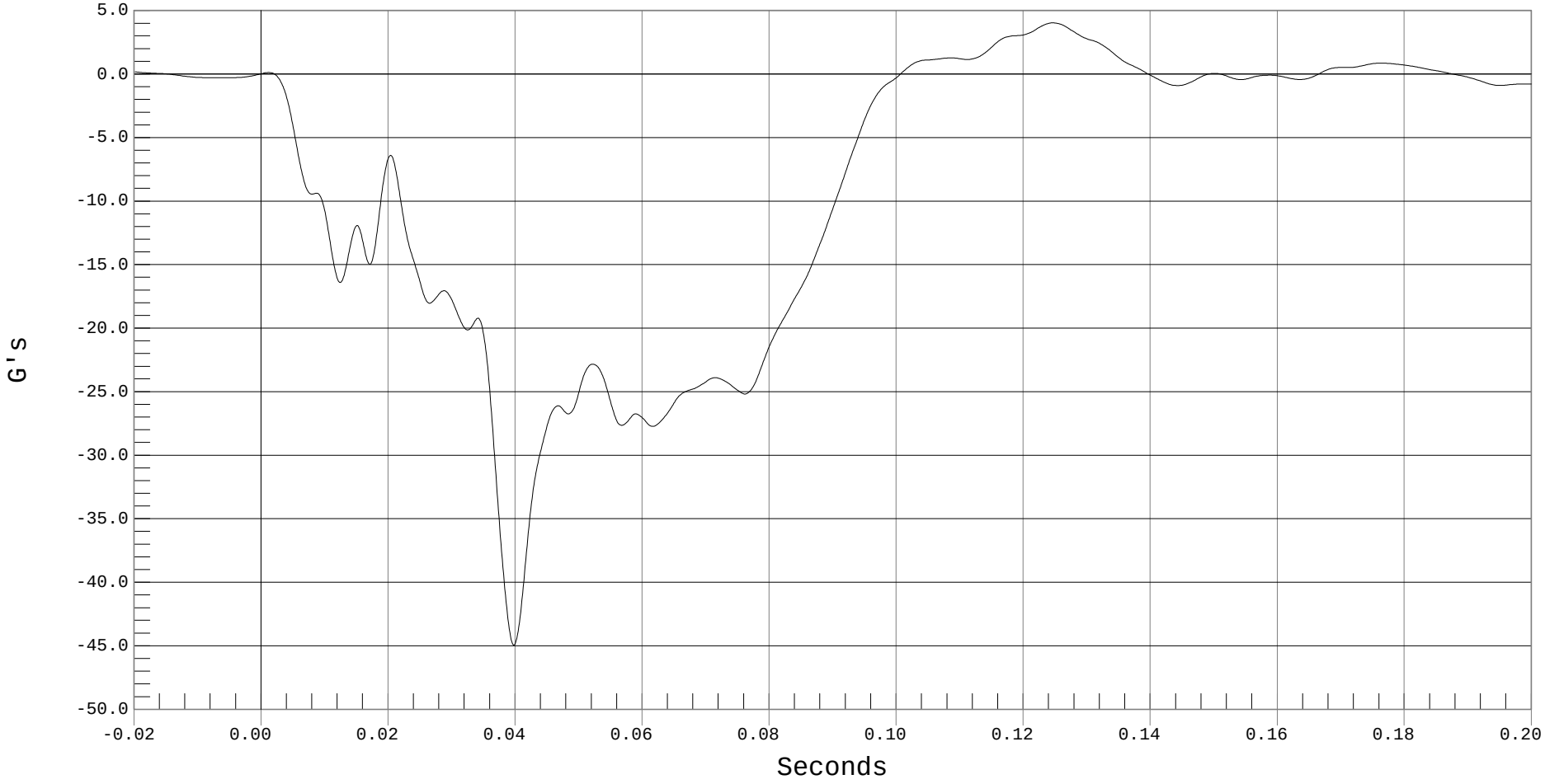
LEFT REAR SEAT CROSSMEMBER X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 LEFT REAR SEAT CROSSMEMBER X, B01014AF.A59

Ymin = -44.95 G's @ 0.0397 Seconds, Ymax = 4.03 G's @ 0.1246 Seconds



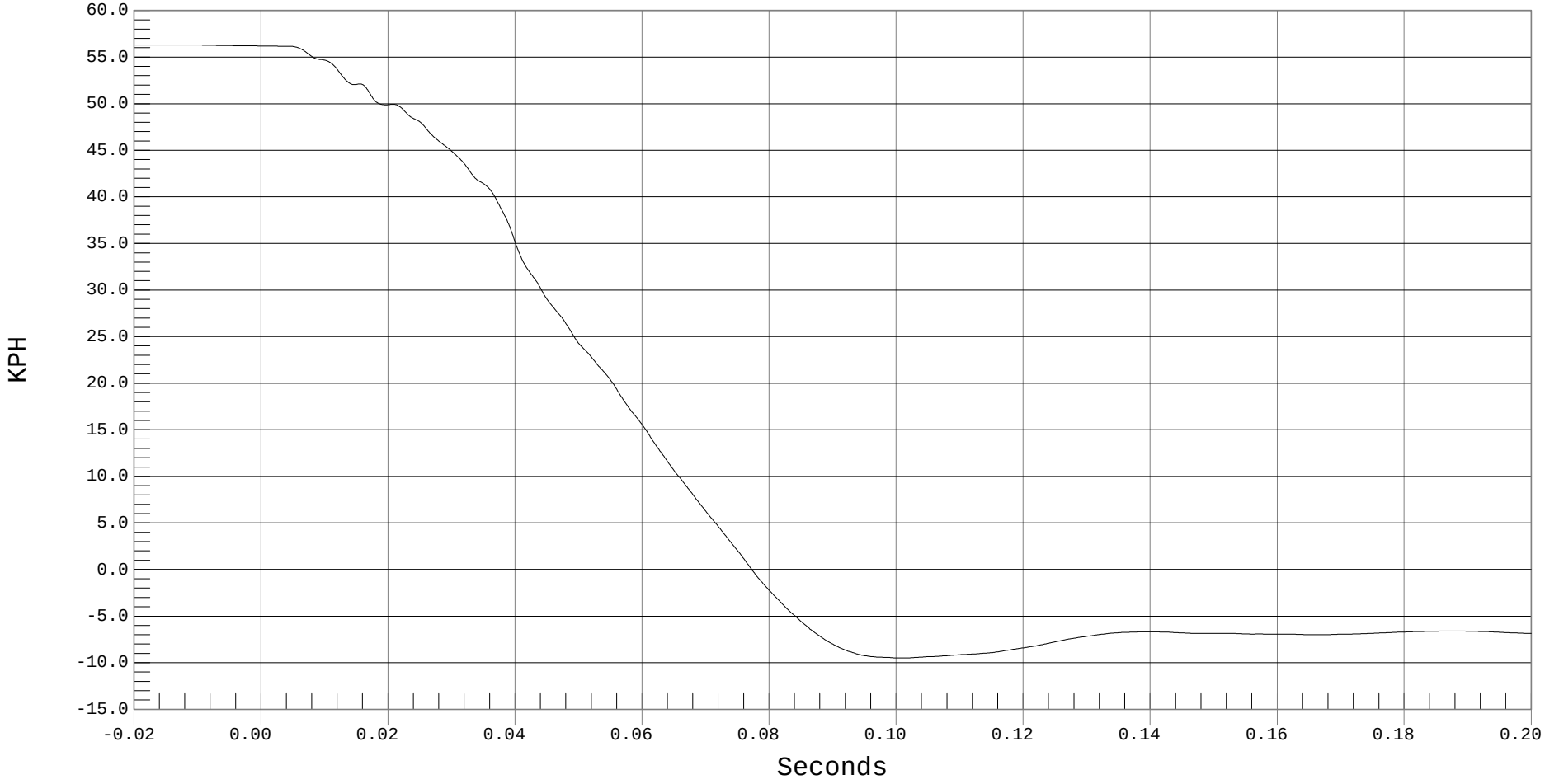
LEFT REAR SEAT CROSSMEMBER X VELOCITY

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 LEFT REAR SEAT CROSSMEMBER X VELOCITY, B01014AI.V59

Ymin = -9.5 KPH @ 0.1007 Seconds, Ymax = 56.31 KPH @ -0.0144 Seconds



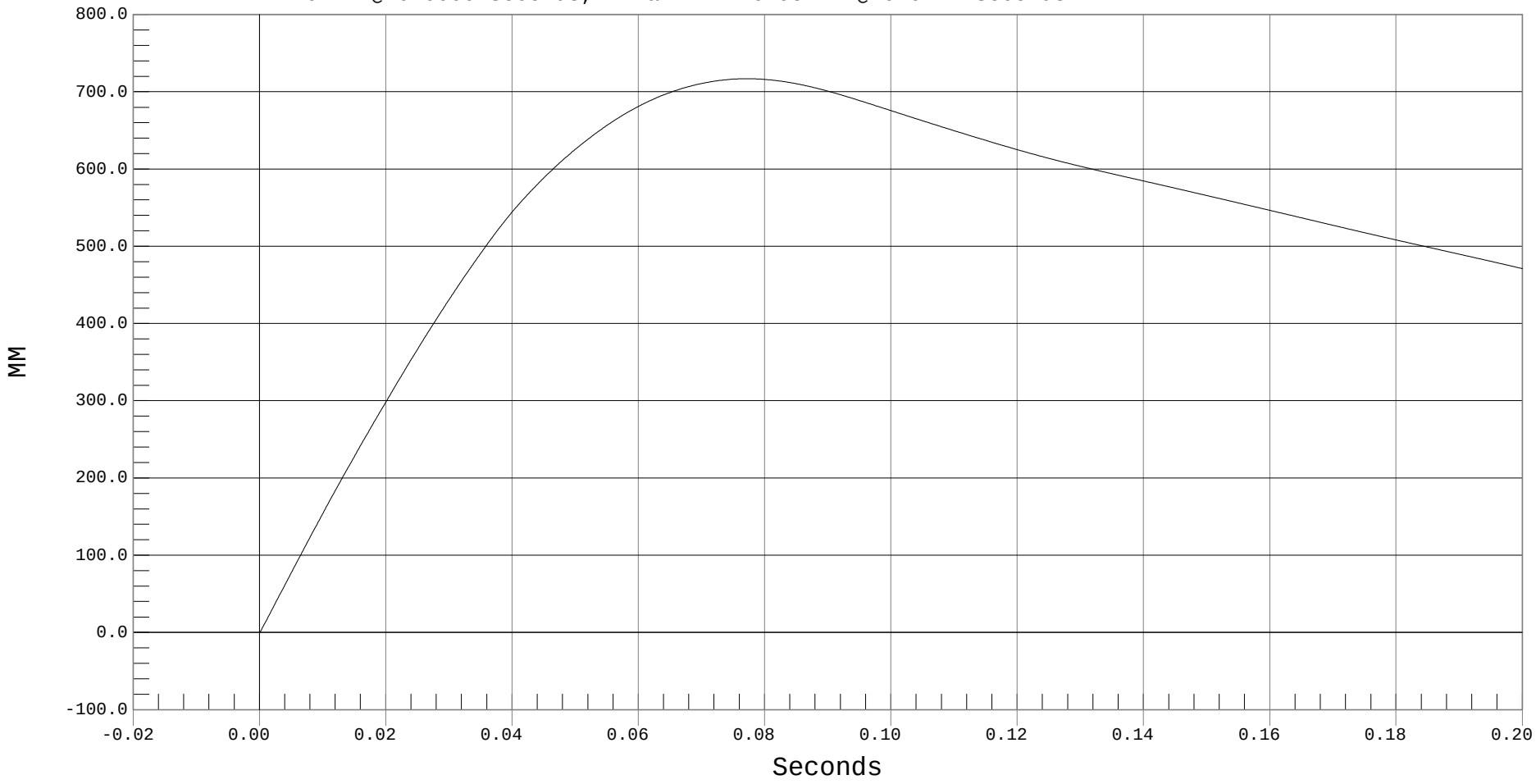
LEFT REAR SEAT CROSSMEMBER X DISPLACEMENT

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 LEFT REAR SEAT CROSSMEMBER X DISPLACEMENT, B01014AI.D59

Ymin = 0 MM @ 0.0000 Seconds, Ymax = 716.95 MM @ 0.0771 Seconds



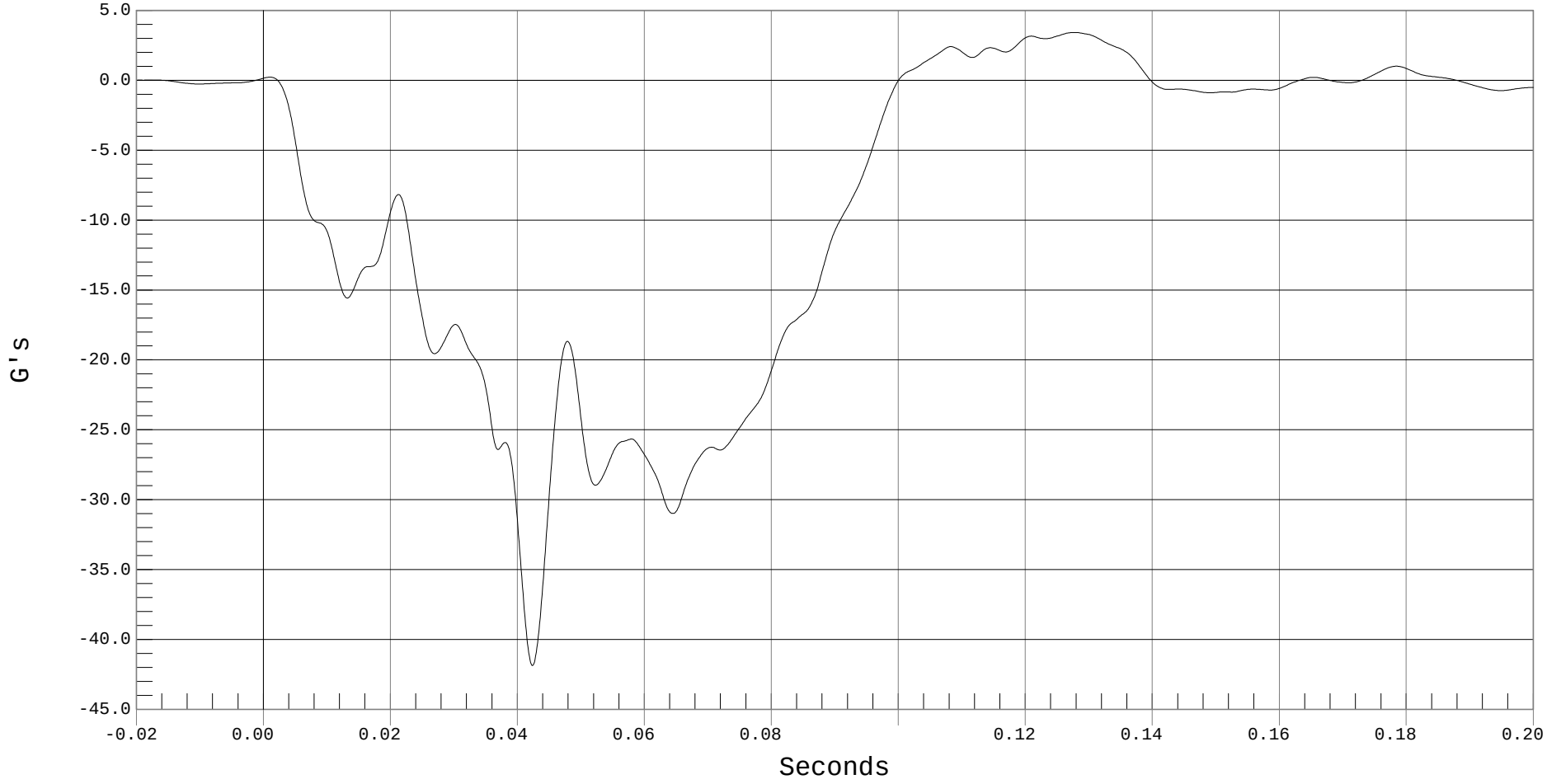
RIGHT REAR SEAT CROSSMEMBER X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 RIGHT REAR SEAT CROSSMEMBER X, B01014AF.A58

Ymin = -41.88 G's @ 0.0423 Seconds, Ymax = 3.43 G's @ 0.1277 Seconds



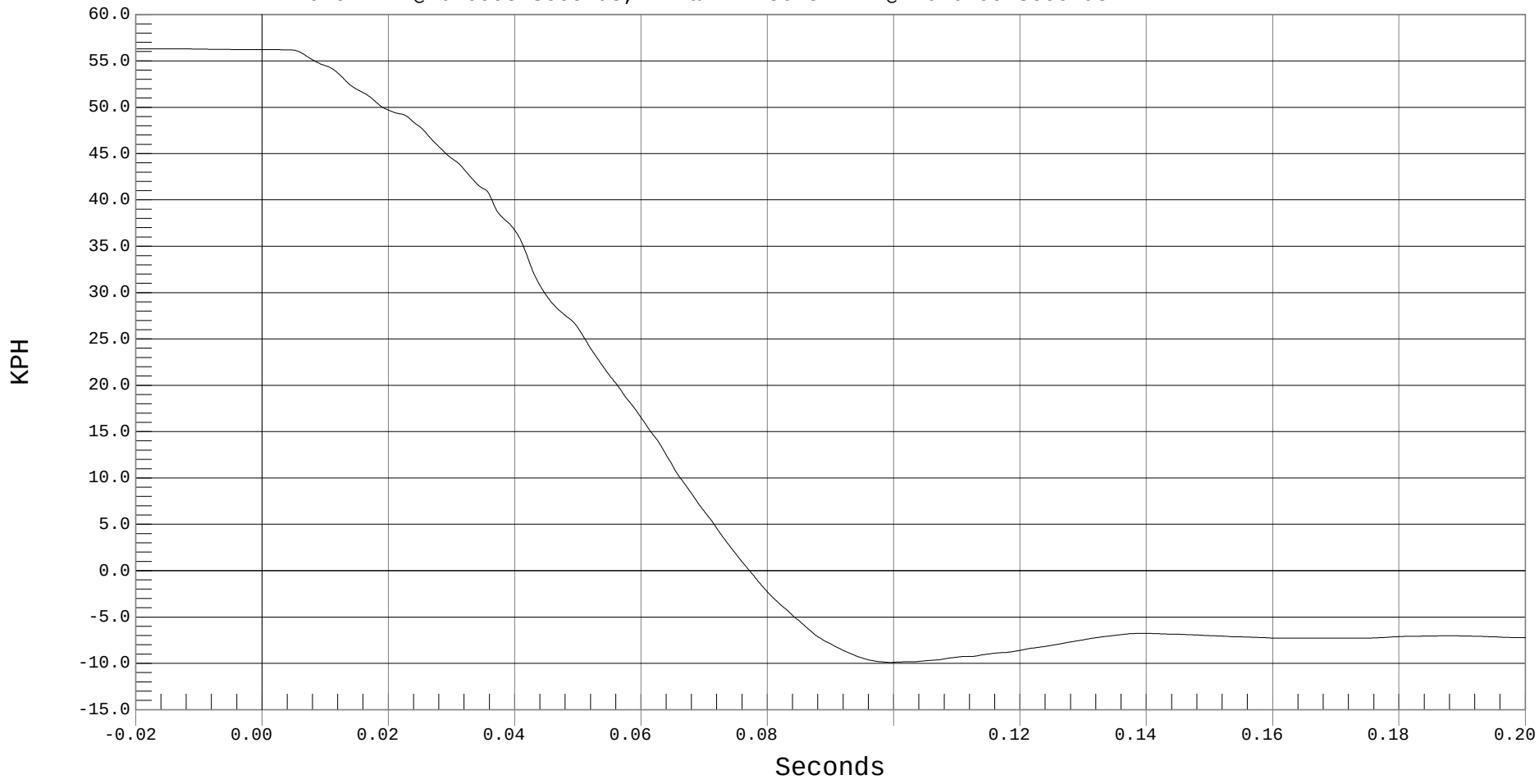
RIGHT REAR SEAT CROSSMEMBER X VELOCITY

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 RIGHT REAR SEAT CROSSMEMBER X VELOCITY, B01014AI.V58

Ymin = -9.9 KPH @ 0.0993 Seconds, Ymax = 56.3 KPH @ -0.0199 Seconds



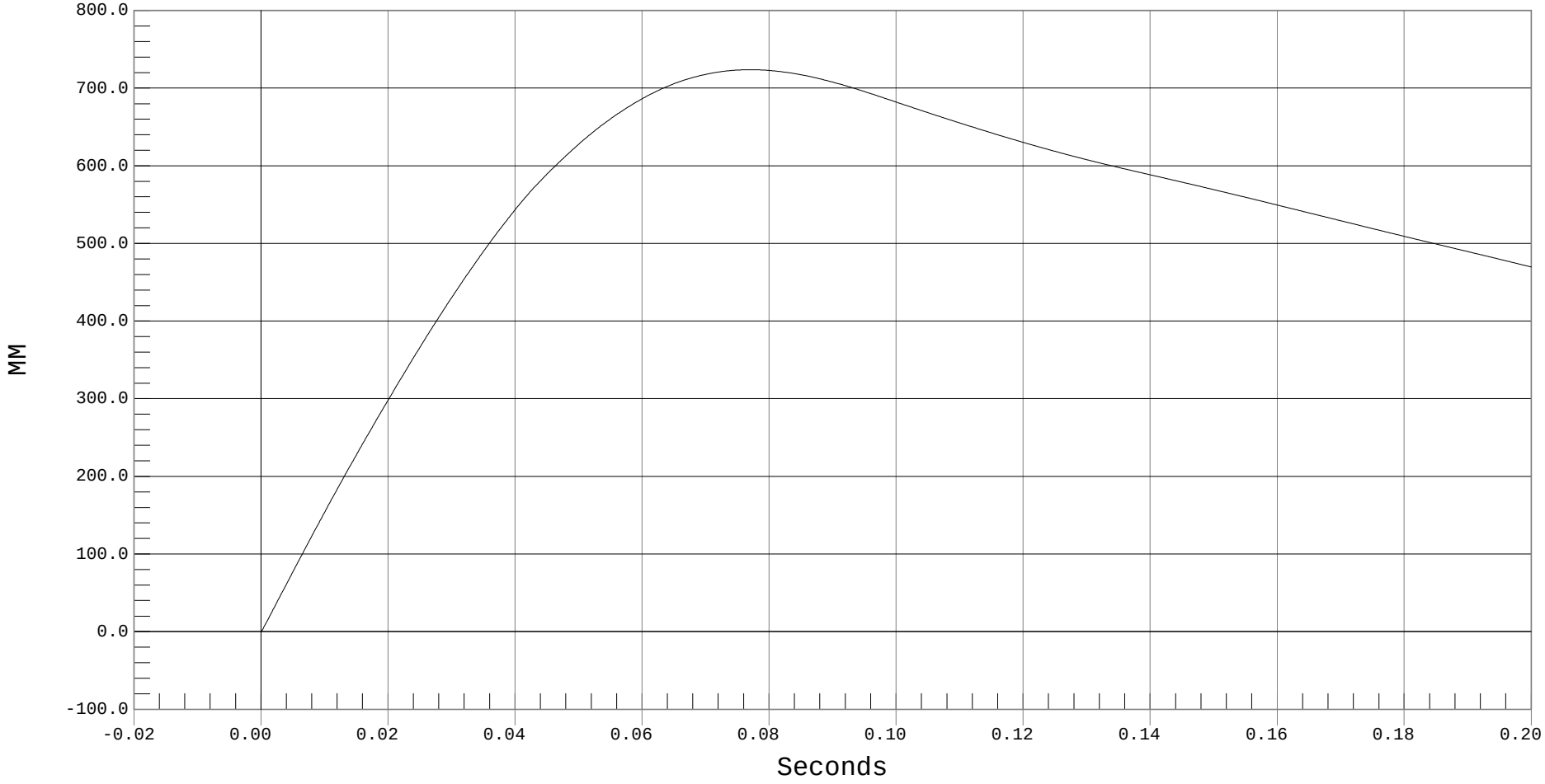
RIGHT REAR SEAT CROSSMEMBER X DISPLACEMENT

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 RIGHT REAR SEAT CROSSMEMBER X DISPLACEMENT, B01014AI.D58

Ymin = 0 MM @ 0.0000 Seconds, Ymax = 723.75 MM @ 0.0770 Seconds



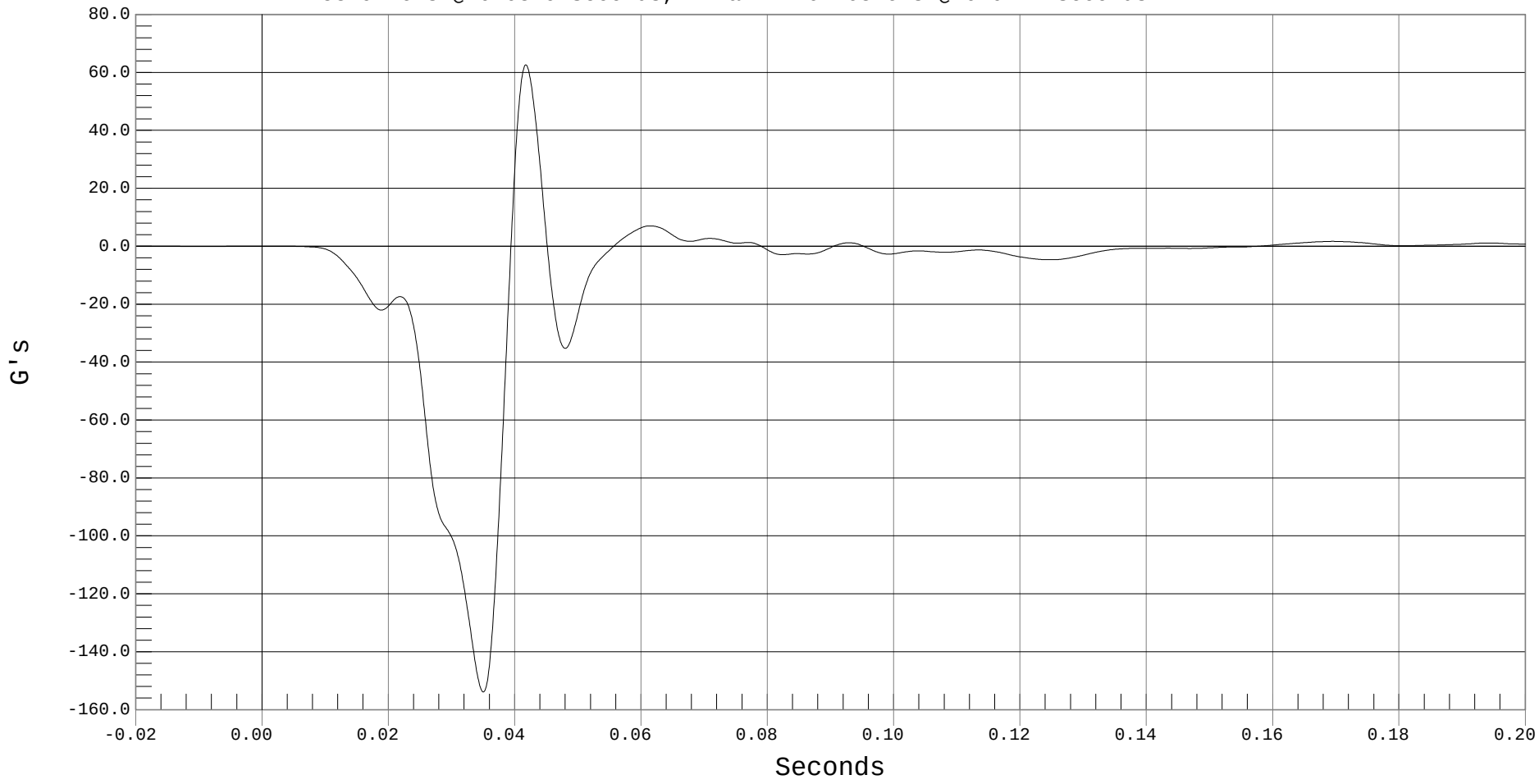
UPPER ENGINE X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 ENGINE UPPER X, B01014AF.A55

Ymin = -153.91 G's @ 0.0349 Seconds, Ymax = 62.63 G's @ 0.0417 Seconds



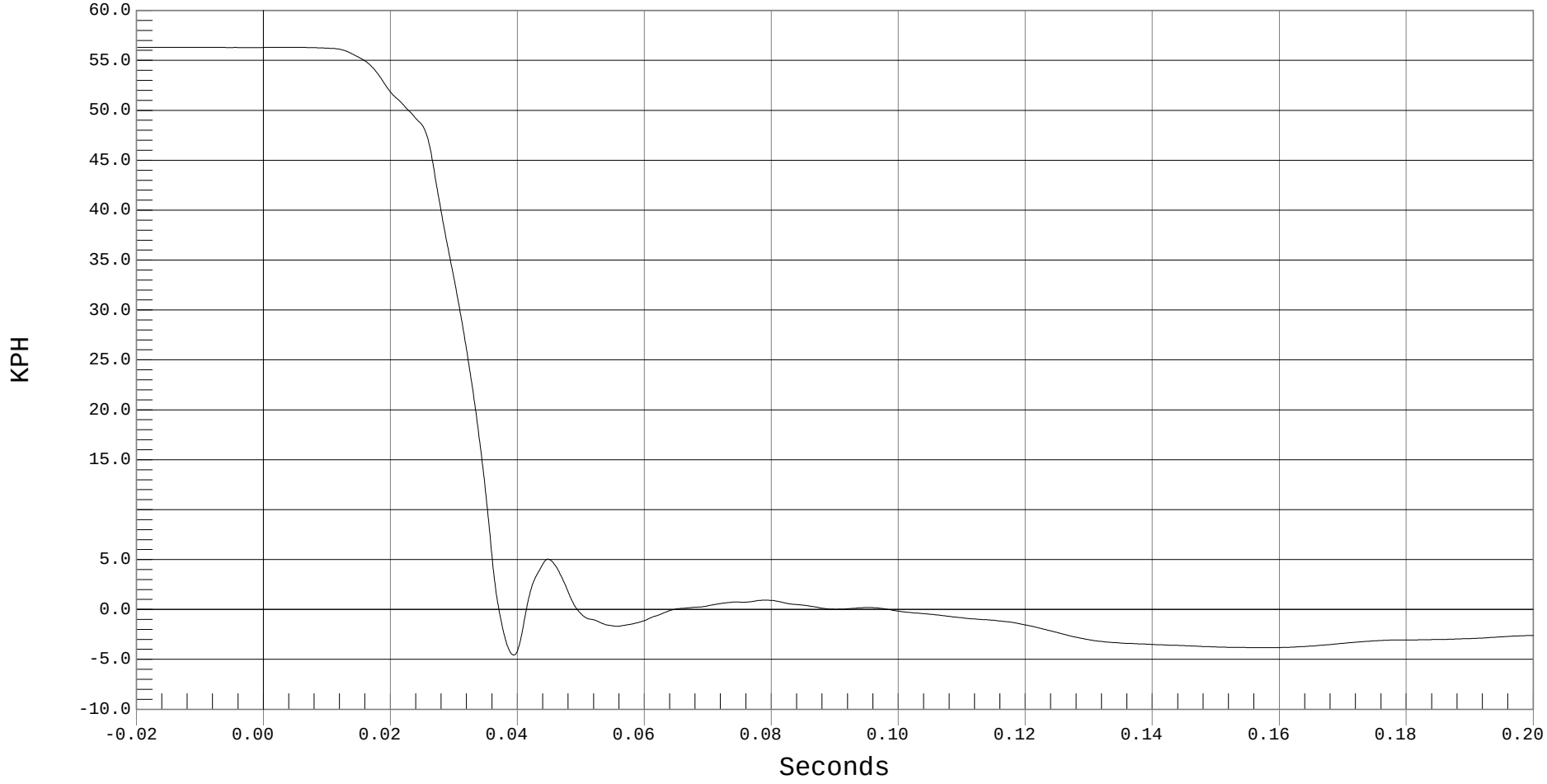
UPPER ENGINE X VELOCITY

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 TOP OF ENGINE BLOCK X VELOCITY, B01014AI.V55

Ymin = -4.57 KPH @ 0.0393 Seconds, Ymax = 56.31 KPH @ -0.0149 Seconds



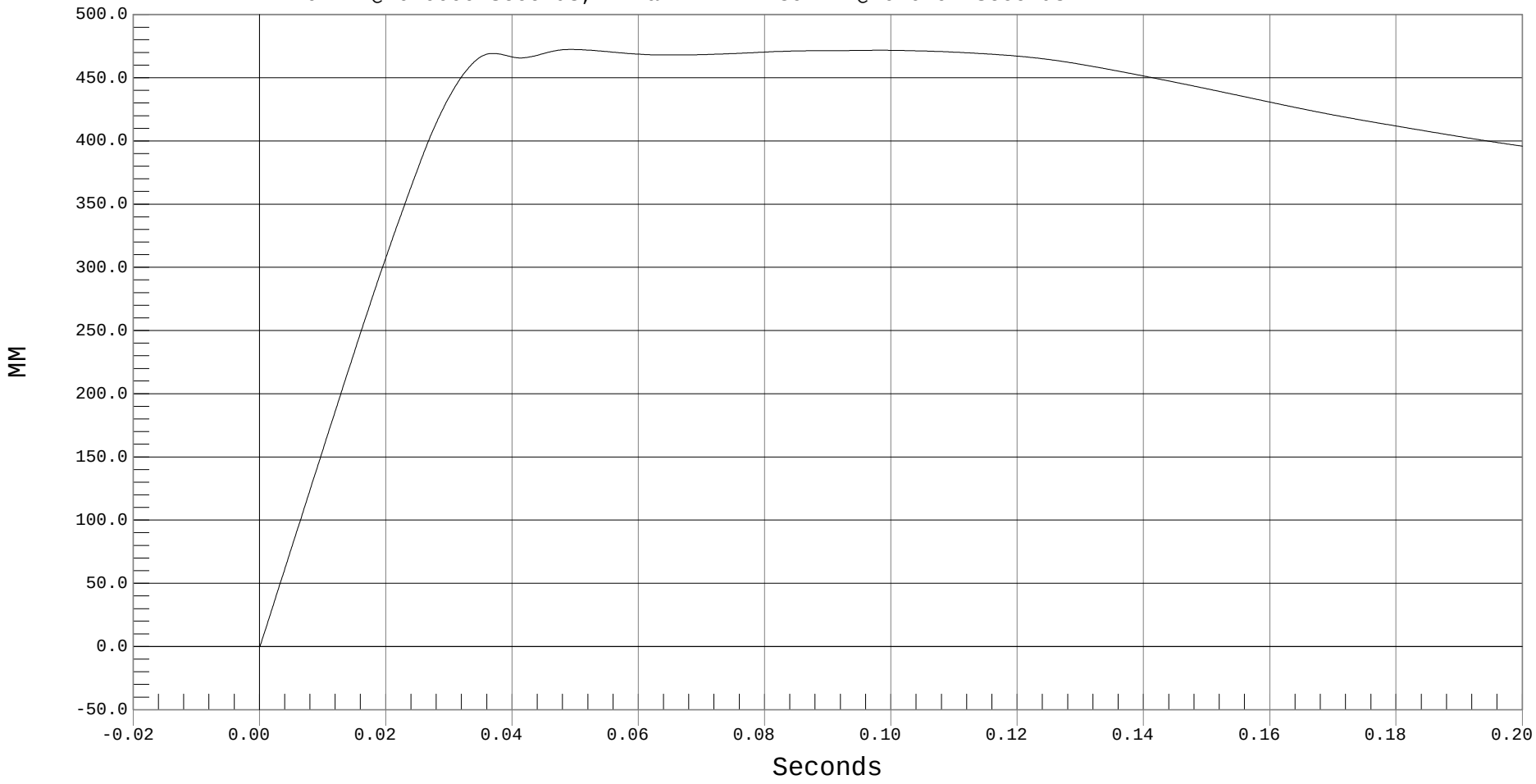
UPPER ENGINE X DISPLACEMENT

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 TOP OF ENGINE BLOCK X DISPLACEMENT, B01014AI.D55

Ymin = 0 MM @ 0.0000 Seconds, Ymax = 472.39 MM @ 0.0492 Seconds



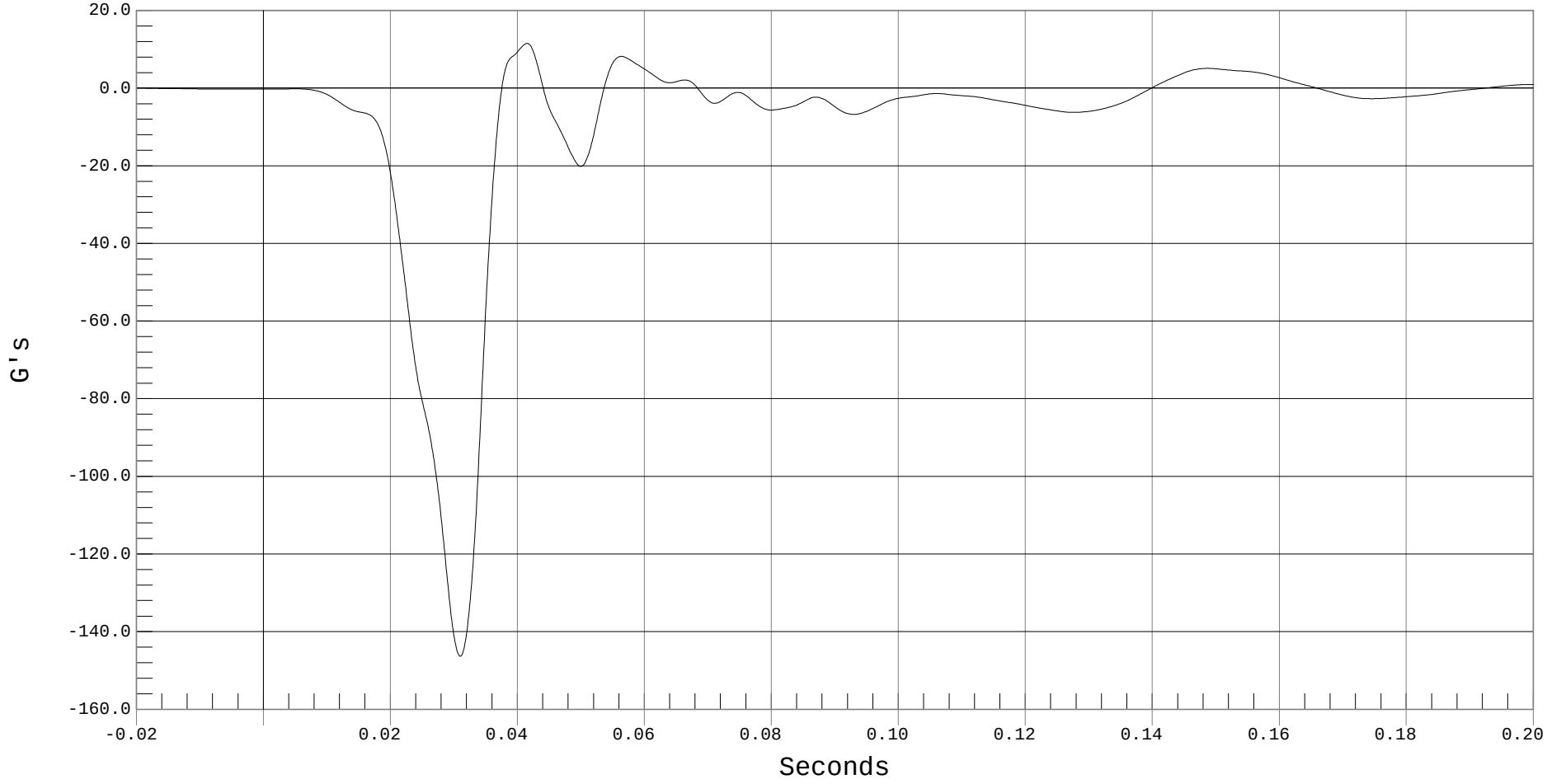
LOWER ENGINE X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 ENGINE LOWER X, B01014AF.A56

Ymin = -146.35 G's @ 0.0309 Seconds, Ymax = 11.53 G's @ 0.0415 Seconds



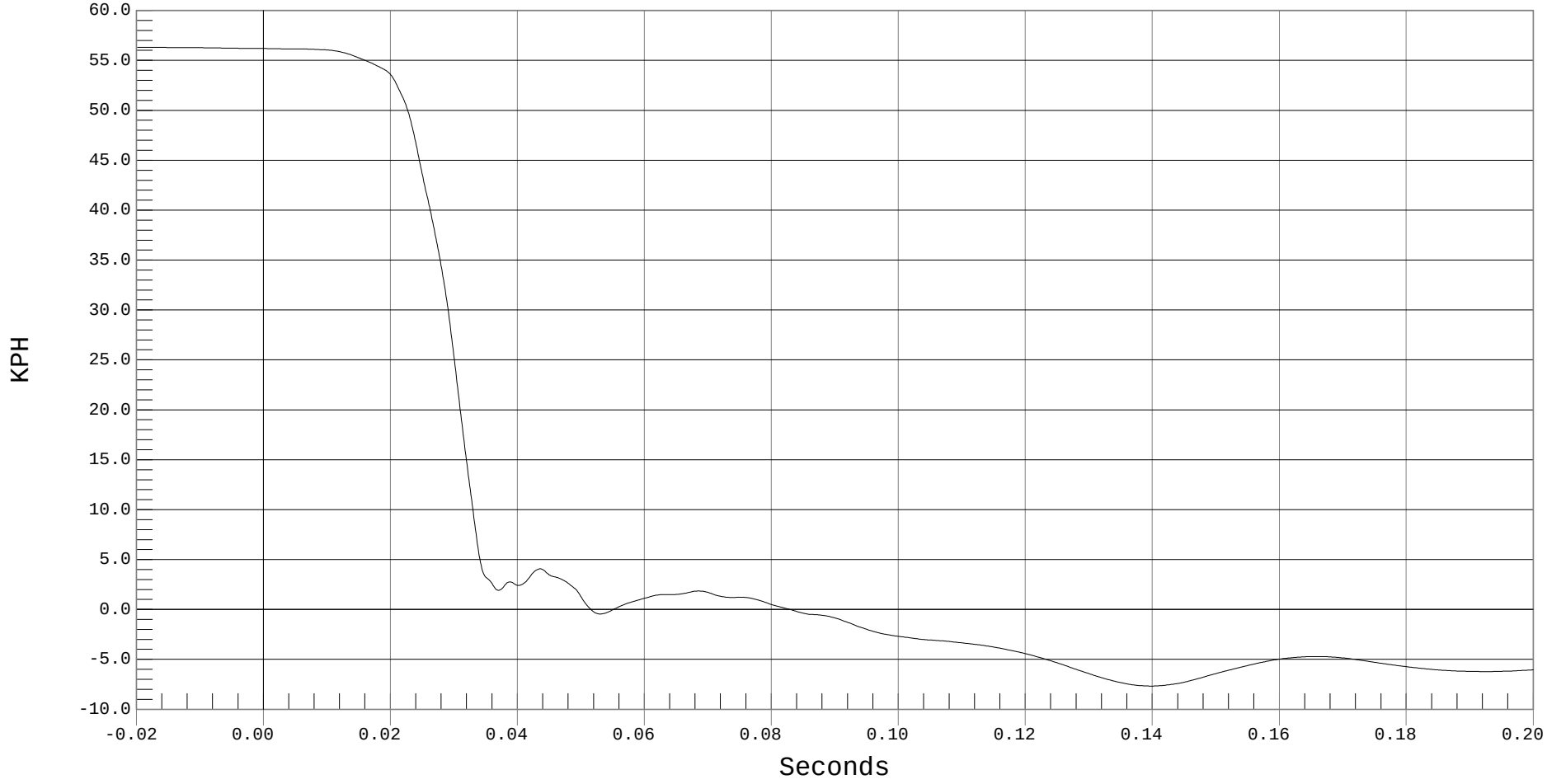
LOWER ENGINE X VELOCITY

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 BOTTOM OF ENGINE X VELOCITY, B01014AI.V56

Ymin = -7.67 KPH @ 0.1398 Seconds, Ymax = 56.3 KPH @ -0.0186 Seconds



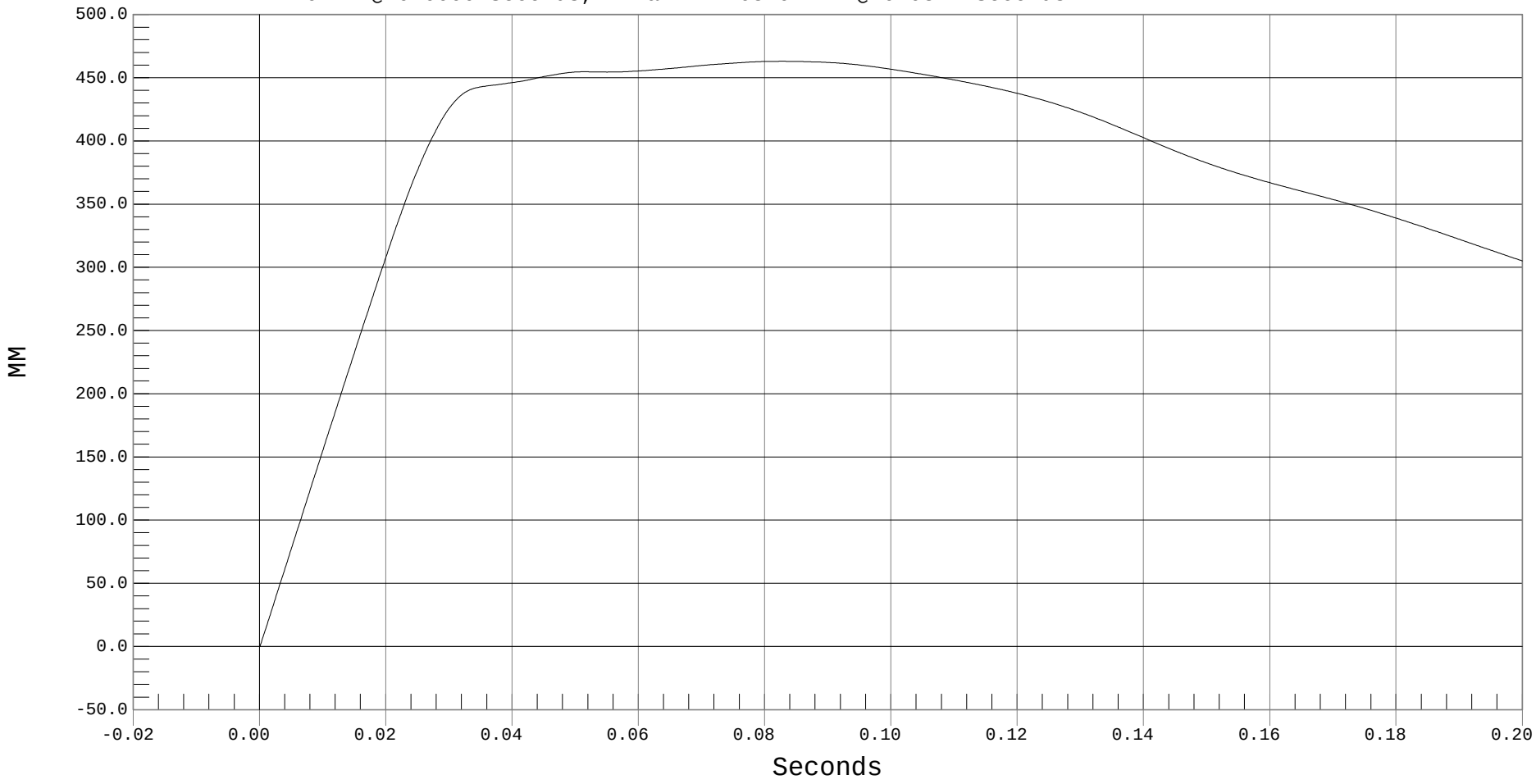
LOWER ENGINE X DISPLACEMENT

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 BOTTOM OF ENGINE X DISPLACEMENT, B01014AI.D56

Ymin = 0 MM @ 0.0000 Seconds, Ymax = 463.02 MM @ 0.0827 Seconds



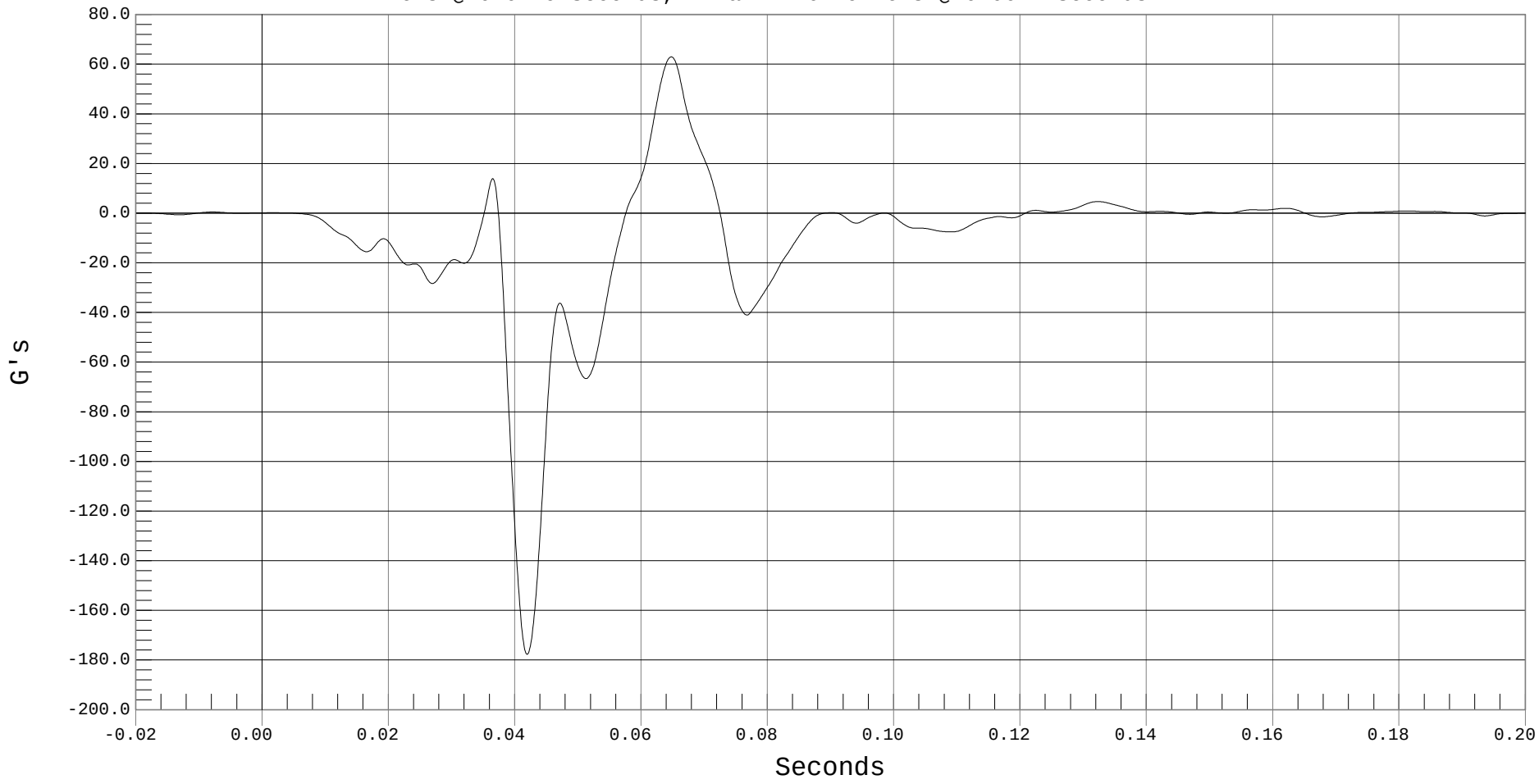
LEFT BRAKE CALIPER X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 LEFT BRAKE CALIPER X, B01014AF.A61

Ymin = -177.72 G's @ 0.0419 Seconds, Ymax = 62.94 G's @ 0.0647 Seconds



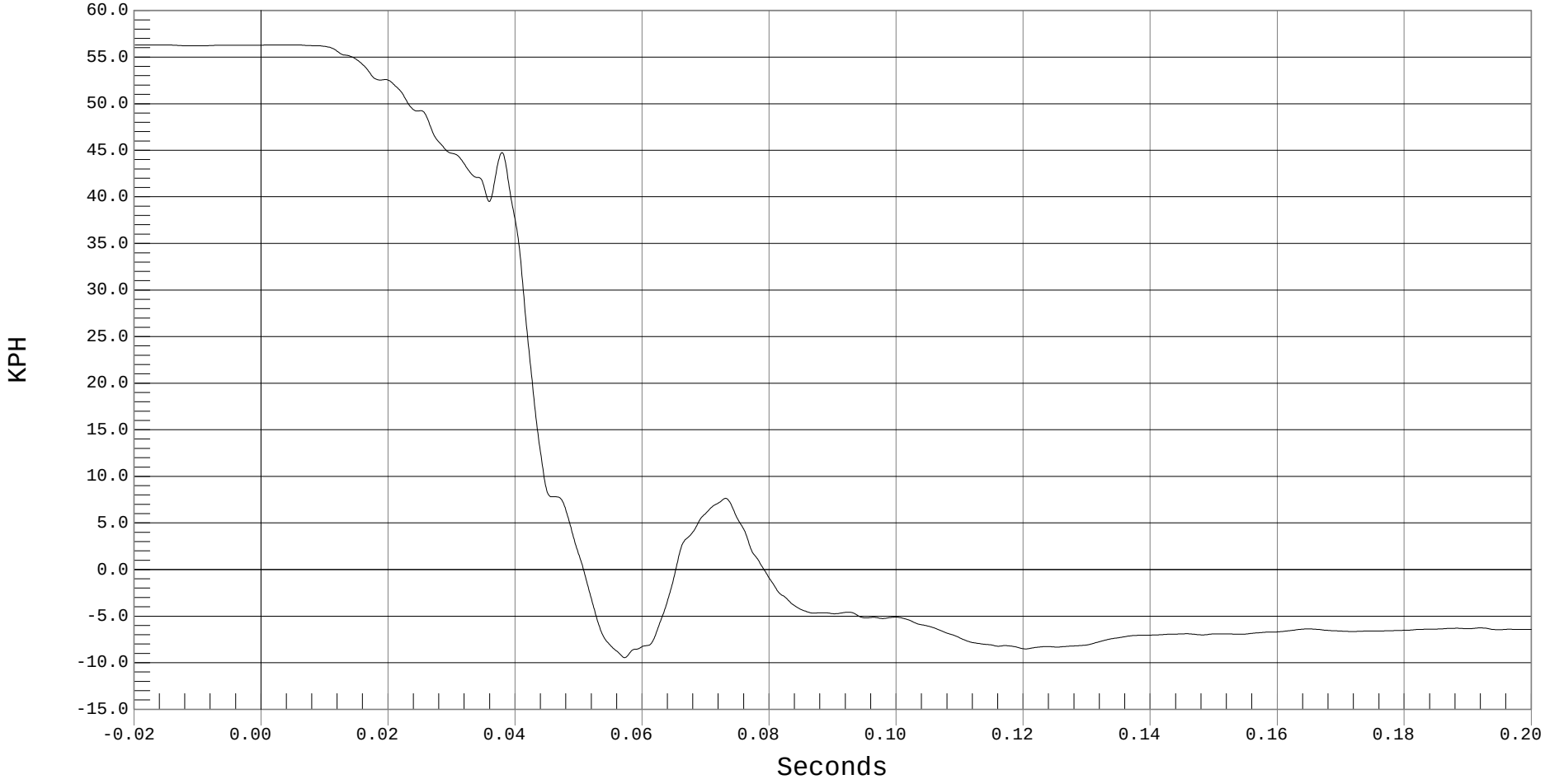
LEFT BRAKE CALIPER X VELOCITY

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 LEFT BRAKE CALIPER X VELOCITY, B01014AI.V61

Ymin = -9.46 KPH @ 0.0572 Seconds, Ymax = 56.3 KPH @ -0.0165 Seconds



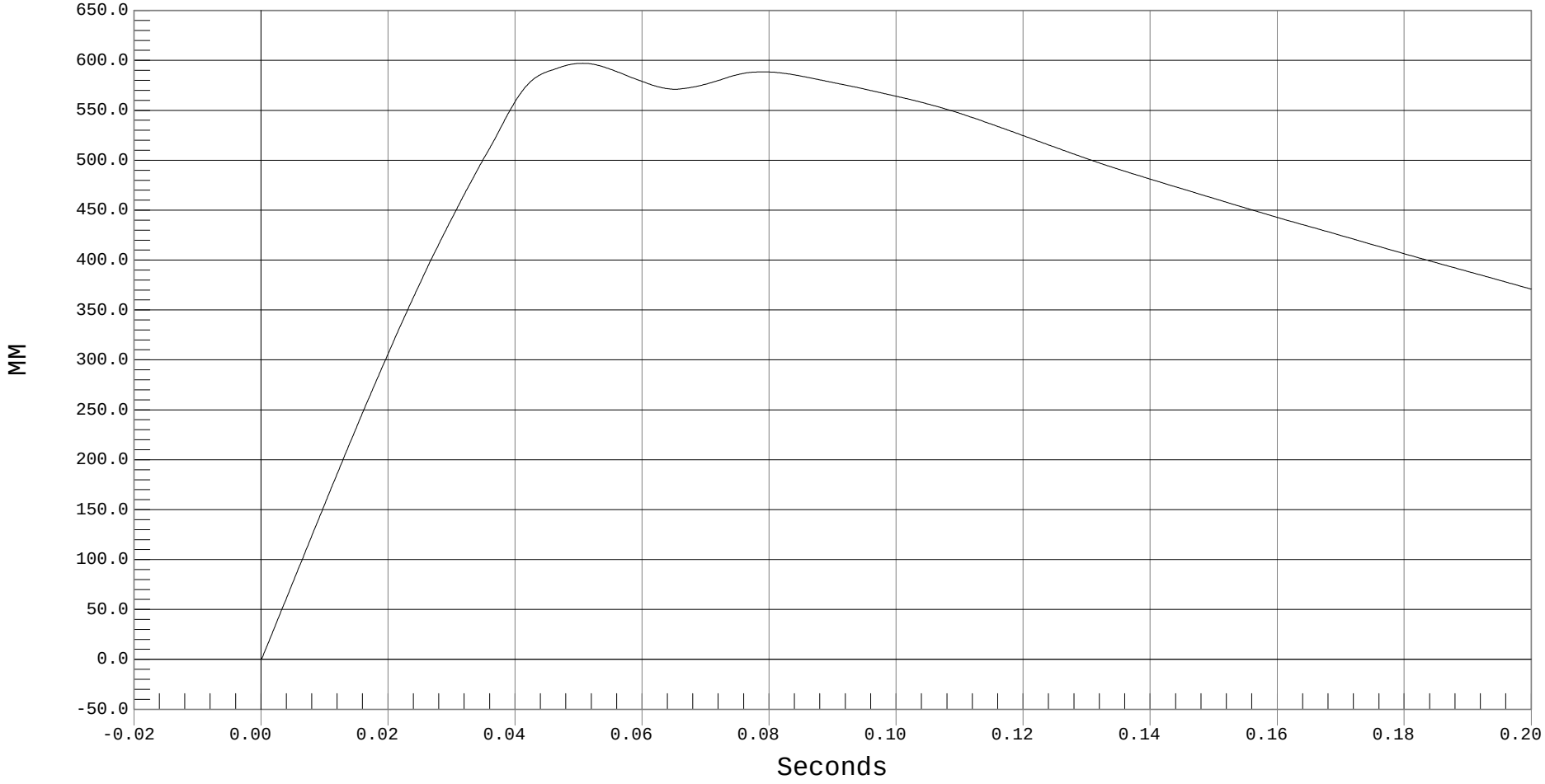
LEFT BRAKE CALIPER X DISPLACEMENT

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 LEFT BRAKE CALIPER X DISPLACEMENT, B01014AI.D61

Ymin = 0 MM @ 0.0000 Seconds, Ymax = 597.09 MM @ 0.0506 Seconds



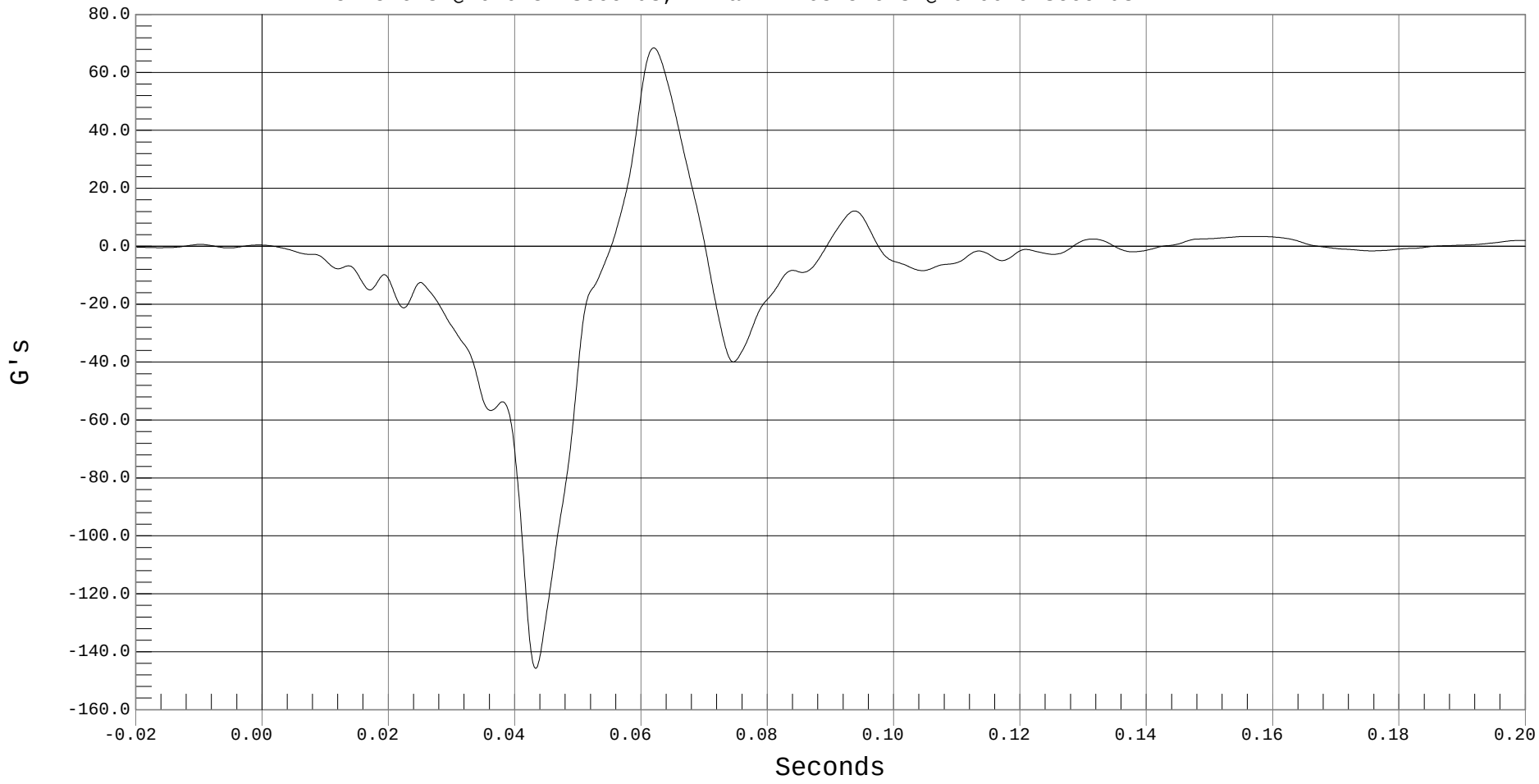
RIGHT BRAKE CALIPER X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 RIGHT BRAKE CALIPER X, B01014AF.A60

Ymin = -145.75 G's @ 0.0432 Seconds, Ymax = 68.5 G's @ 0.0619 Seconds



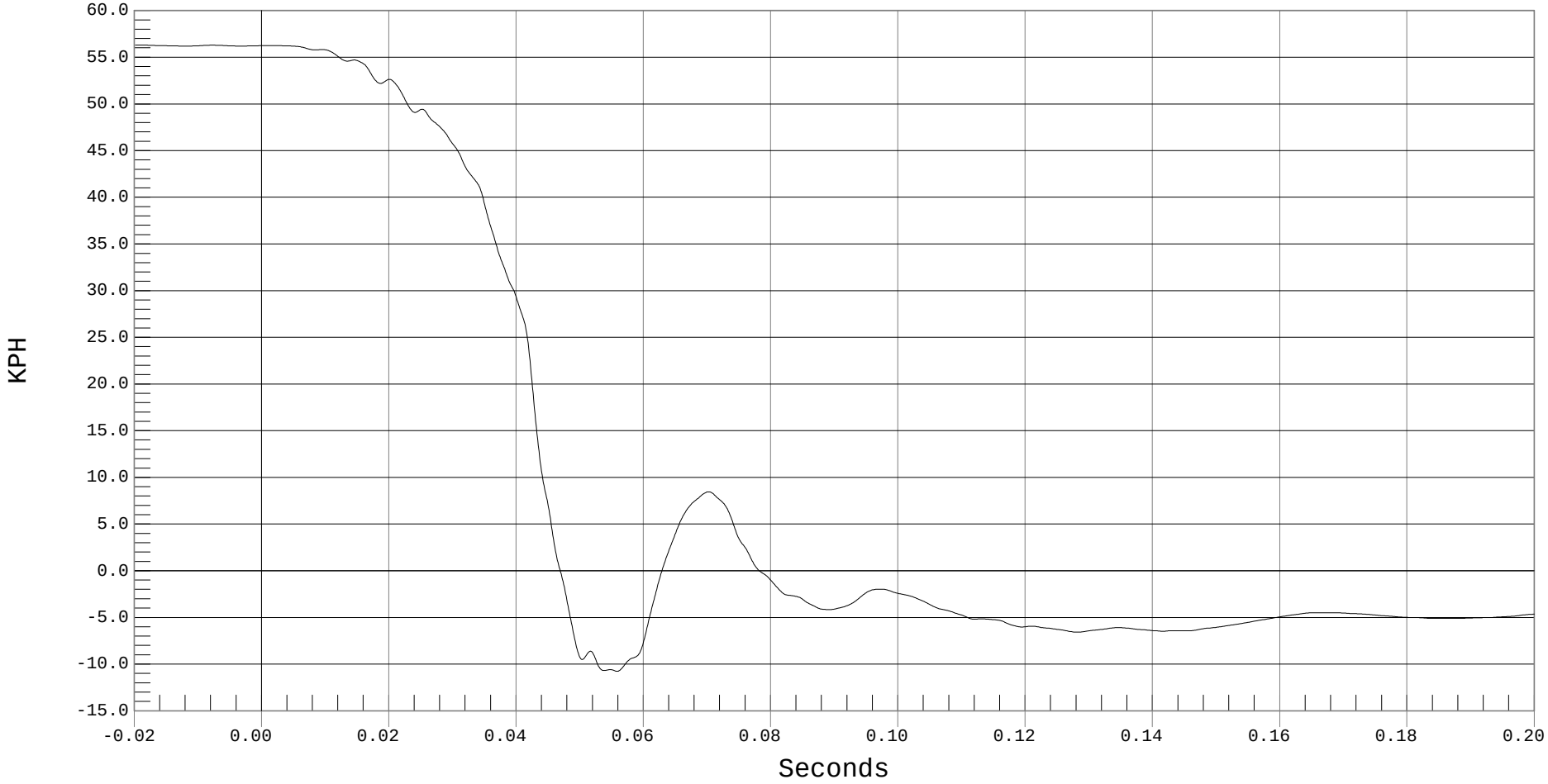
RIGHT BRAKE CALIPER X VELOCITY

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 RIGHT BRAKE CALIPER X VELOCITY, B01014AI.V60

Ymin = -10.78 KPH @ 0.0558 Seconds, Ymax = 56.3 KPH @ -0.0199 Seconds



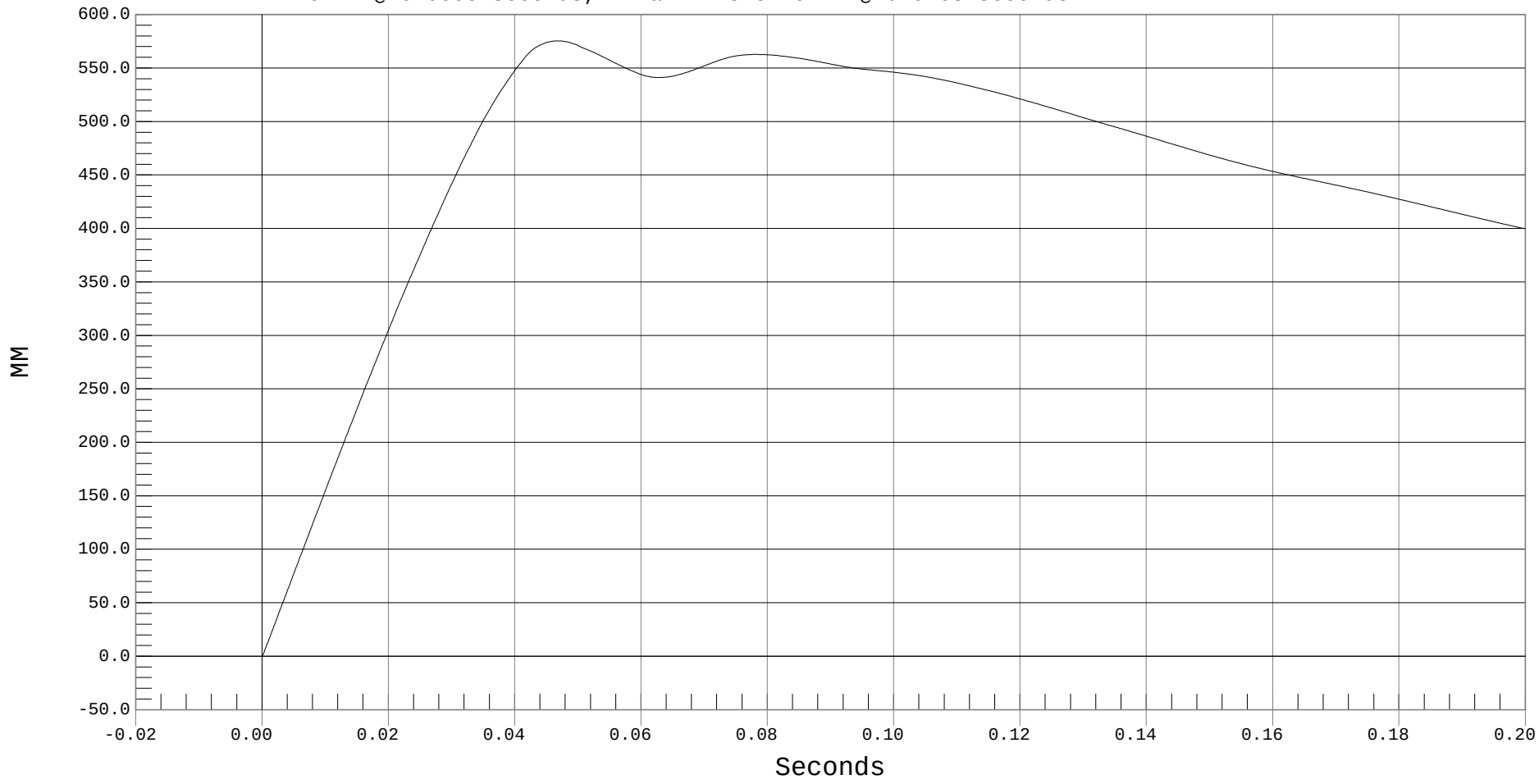
RIGHT BRAKE CALIPER X DISPLACEMENT

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 RIGHT BRAKE CALIPER X DISPLACEMENT, B01014AI.D60

Ymin = 0 MM @ 0.0000 Seconds, Ymax = 575.29 MM @ 0.0468 Seconds



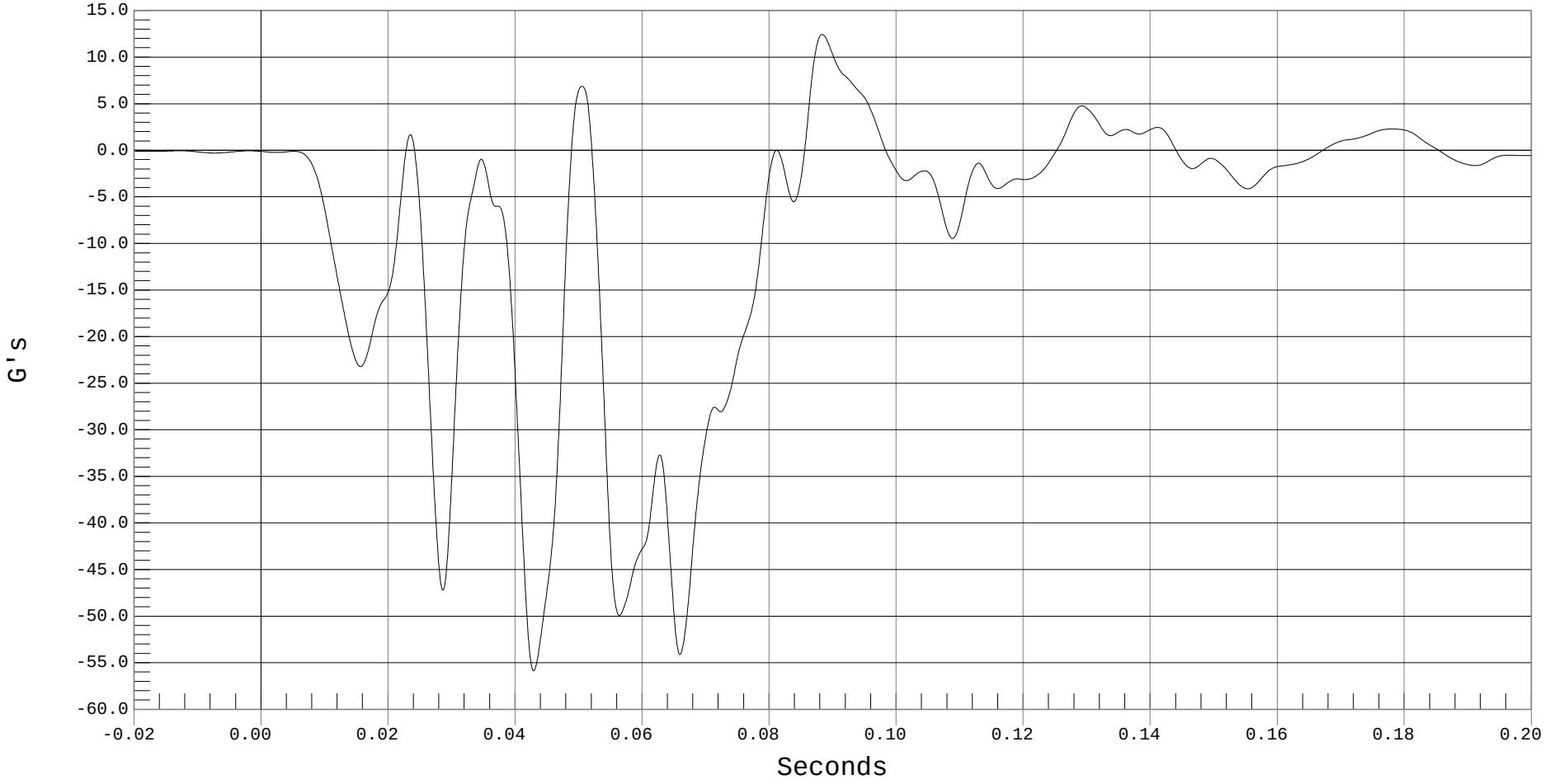
INSTRUMENT PANEL X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 INSTRUMENT PANEL X, B01014AF.A57

Ymin = -55.86 G's @ 0.0428 Seconds, Ymax = 12.43 G's @ 0.0883 Seconds



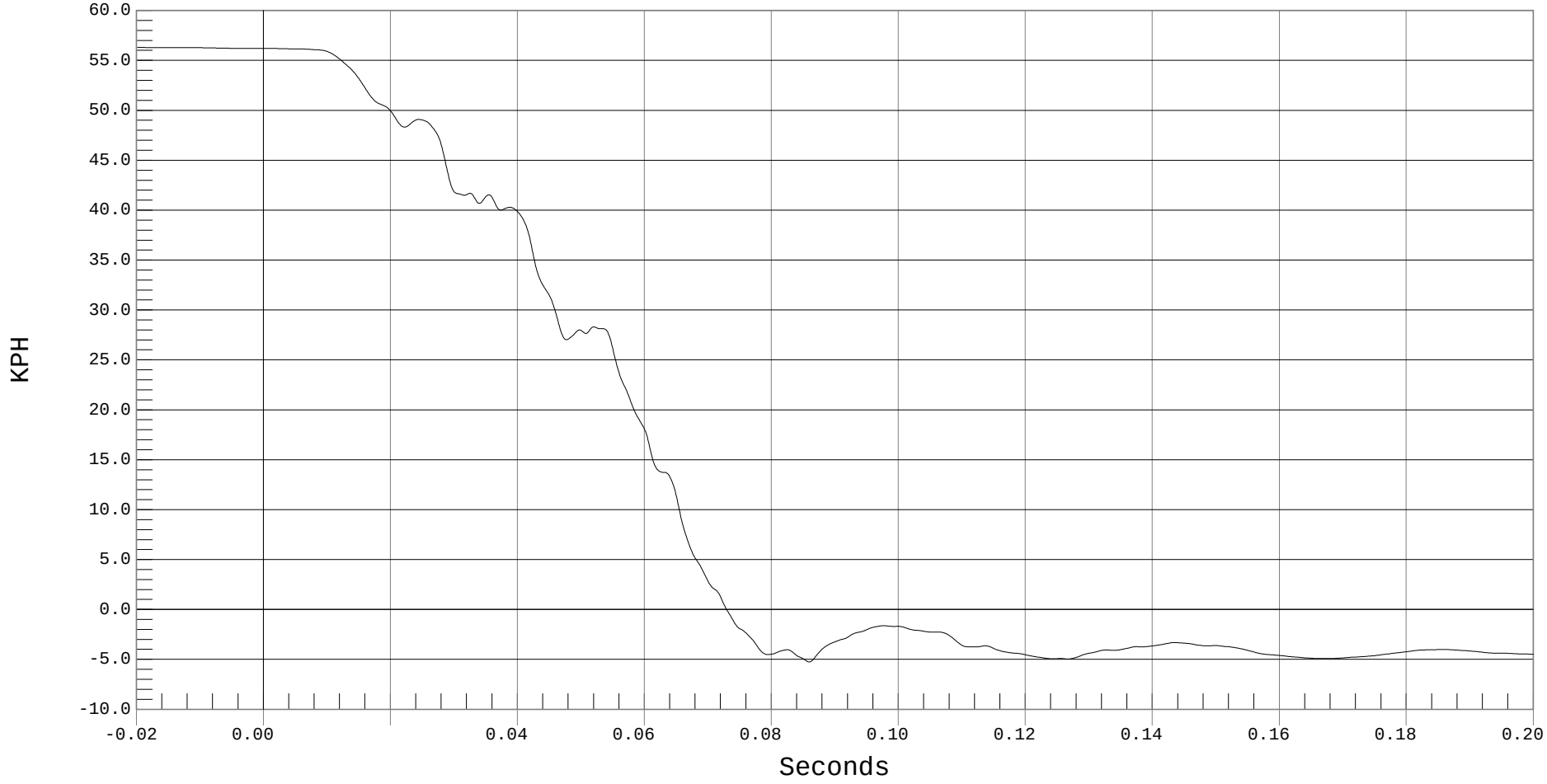
INSTRUMENT PANEL X VELOCITY

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 INSTRUMENT PANEL X VELOCITY, B01014AI.V57

Ymin = -5.26 KPH @ 0.0859 Seconds, Ymax = 56.3 KPH @ -0.0199 Seconds



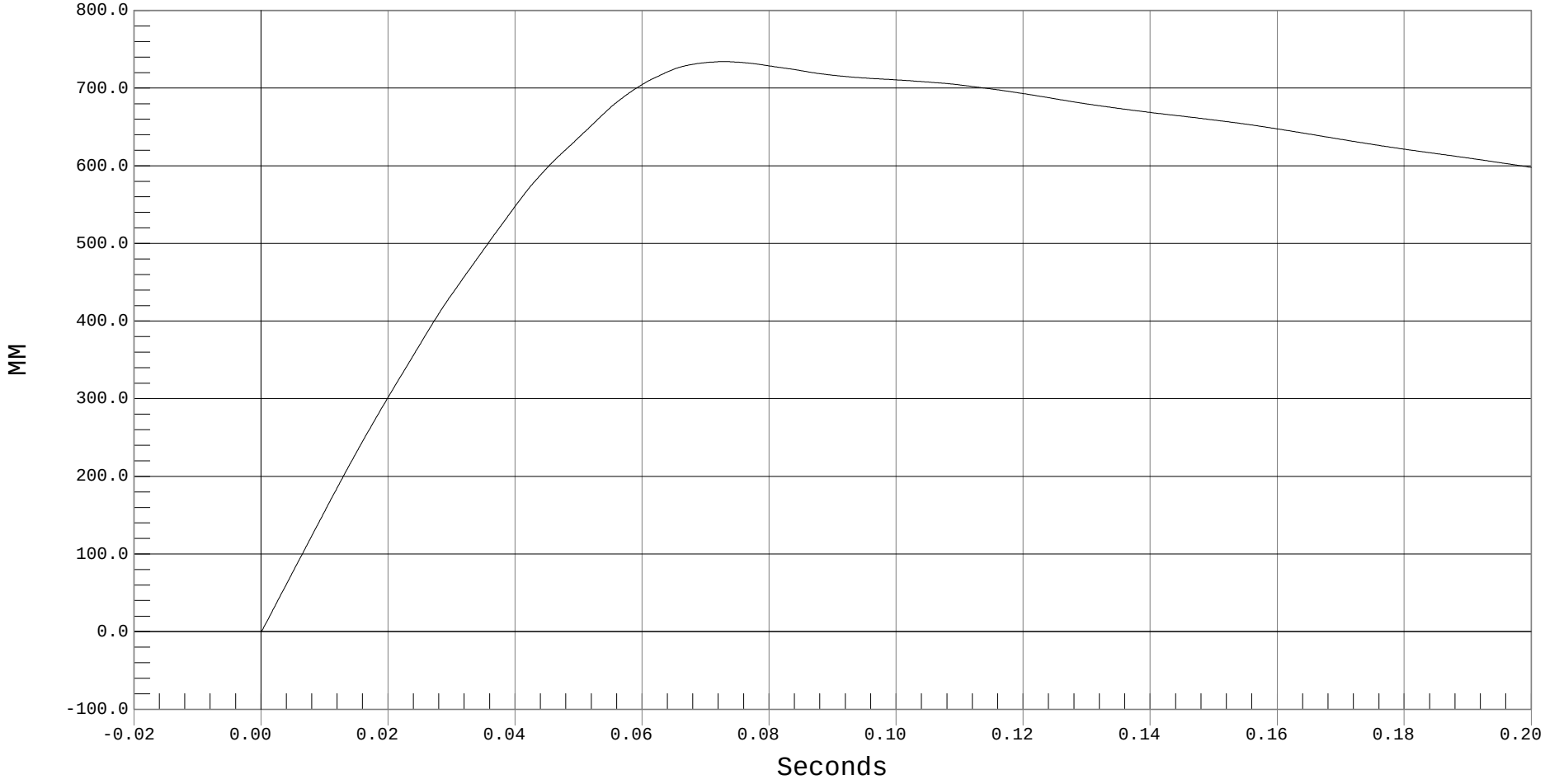
INSTRUMENT PANEL X DISPLACEMENT

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 INSTRUMENT PANEL X DISPLACEMENT, B01014AI.D57

Ymin = 0 MM @ 0.0000 Seconds, Ymax = 734.09 MM @ 0.0727 Seconds



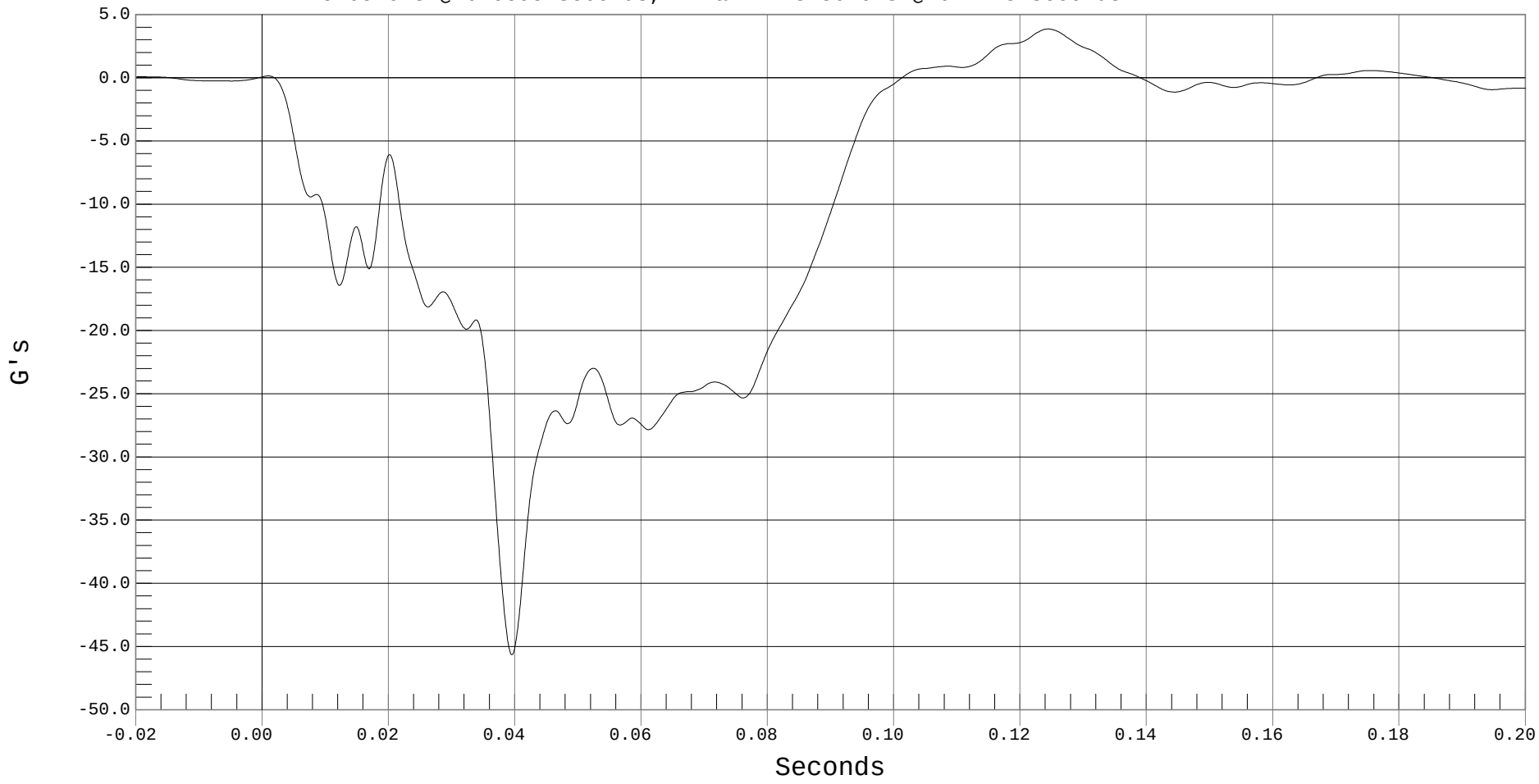
LEFT REAR SEAT CROSSMEMBER REDUNDANT X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 LEFT REAR SEAT X-MEMBER Xr, B01014AF.A03

Ymin = -45.65 G's @ 0.0395 Seconds, Ymax = 3.86 G's @ 0.1243 Seconds



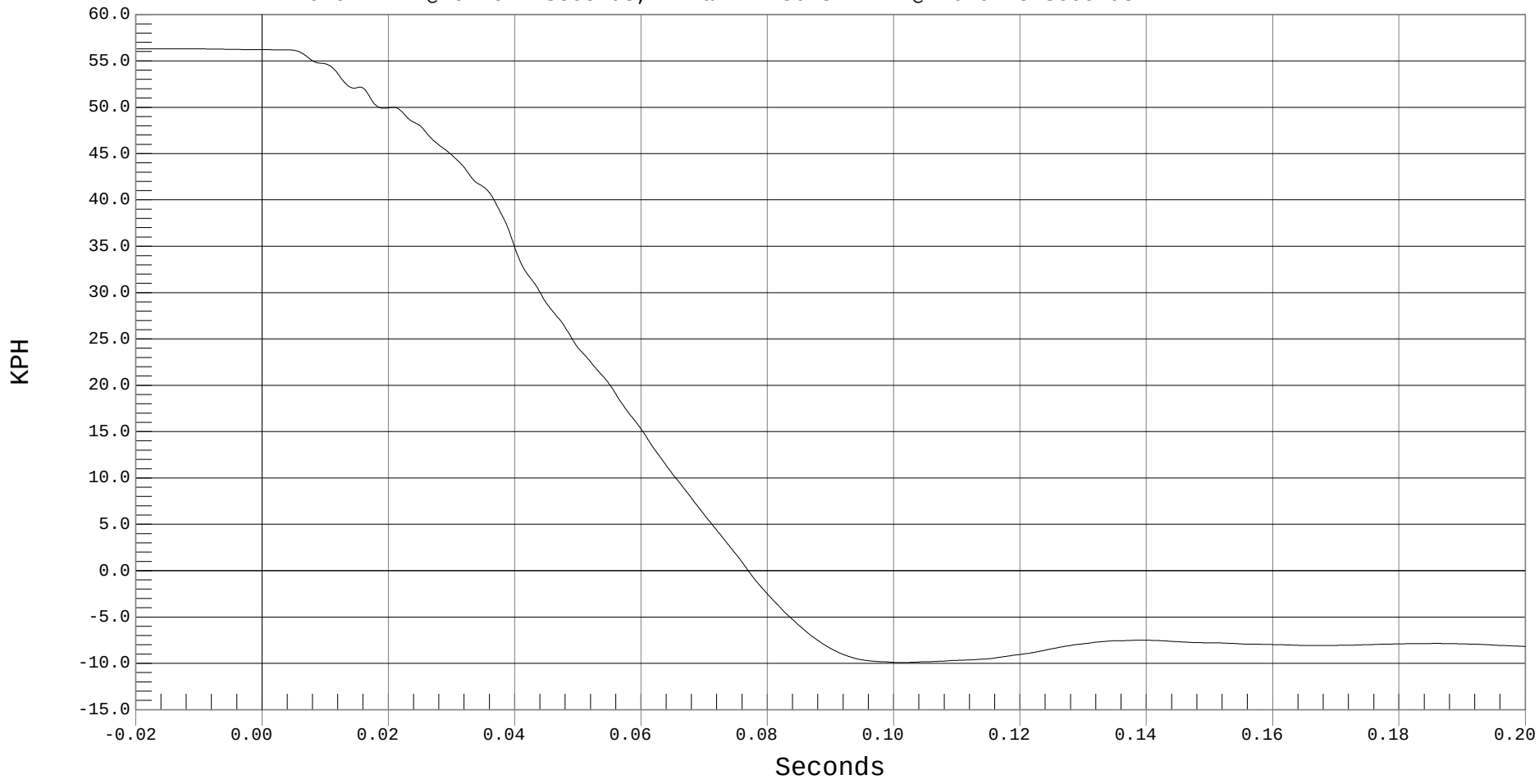
LEFT REAR SEAT CROSSMEMBER REDUNDANT X VELOCITY

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 LEFT REAR SEAT CROSSMEMBER REDUNDANT X VELOCITY, B01014AI.V03

Ymin = -9.91 KPH @ 0.1011 Seconds, Ymax = 56.31 KPH @ -0.0143 Seconds



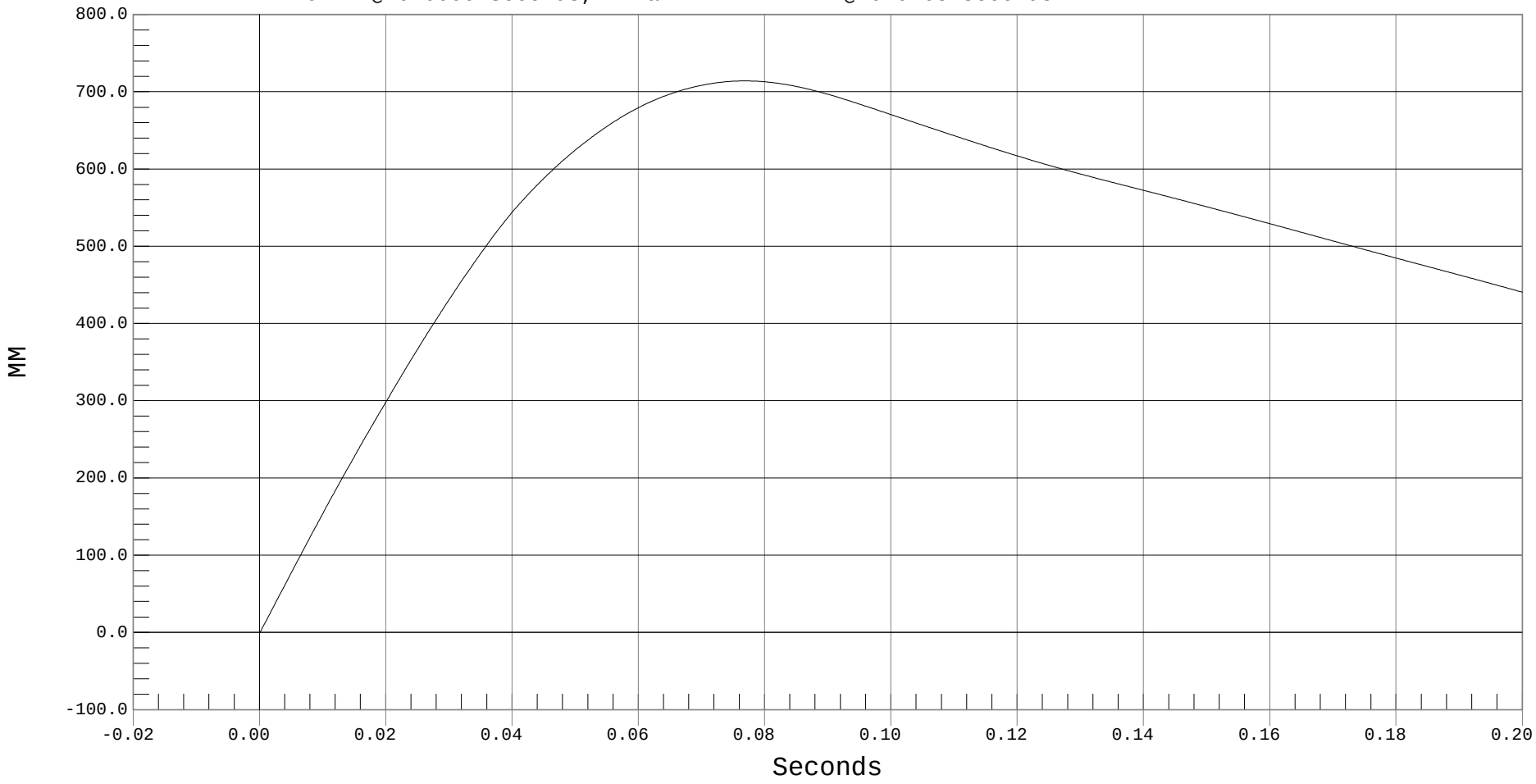
LEFT REAR SEAT CROSSMEMBER REDUNDANT X DISPLACEMENT

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 LEFT REAR SEAT CROSSMEMBER REDUNDANT X DISPLACEMENT, B01014AI.D03

Ymin = 0 MM @ 0.0000 Seconds, Ymax = 714.1 MM @ 0.0768 Seconds



RIGHT REAR SEAT CROSSMEMBER REDUNDANT X ACCELERATION VS. TIME
NO VALID DATA COLLECTED

RIGHT REAR SEAT CROSSMEMBER REDUNDANT X VELOCITY VS. TIME
NO VALID DATA COLLECTED

RIGHT REAR SEAT CROSSMEMBER REDUNDANT X DISPLACEMENT VS. TIME
NO VALID DATA COLLECTED

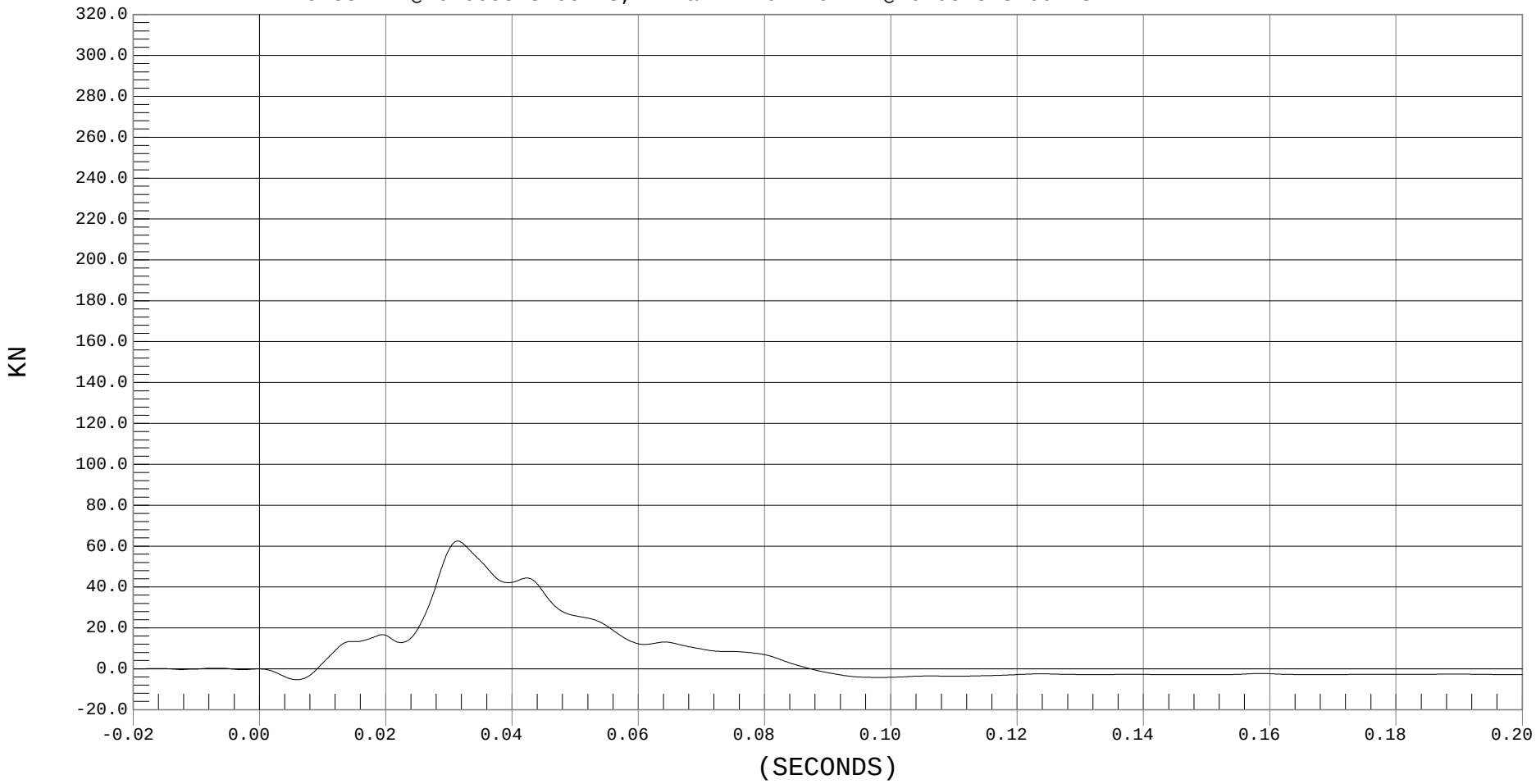
UPPER LEFT BARRIER FORCE

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 BARRIER UPPER LEFT, B01014FF.F02

Ymin = -5.33 KN @ 0.0058 SECONDS, Ymax = 62.49 KN @ 0.0313 SECONDS



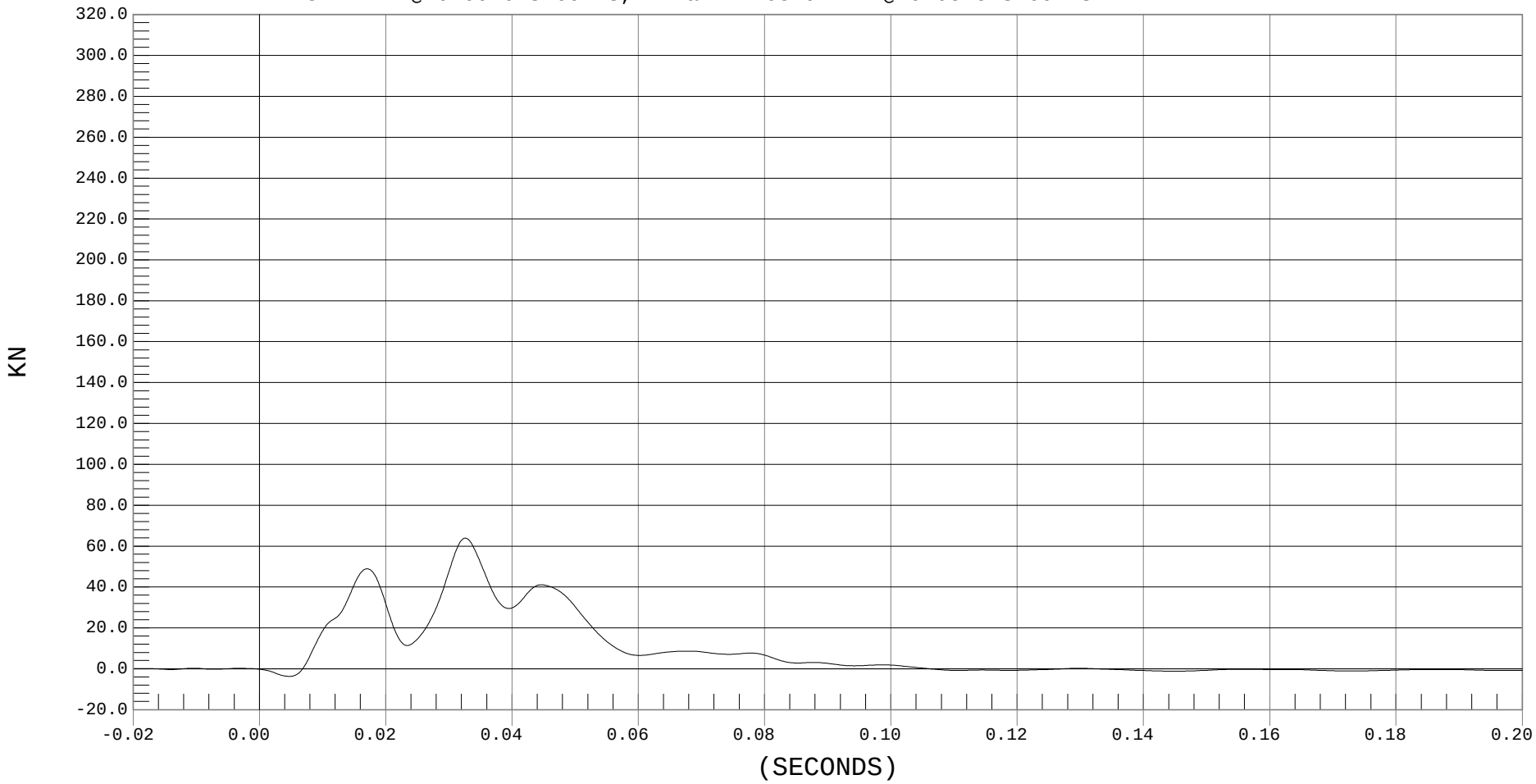
UPPER CENTER BARRIER FORCE

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 BARRIER UPPER CENTER, B01014FF.F03

Ymin = -3.74 KN @ 0.0046 SECONDS, Ymax = 63.92 KN @ 0.0325 SECONDS



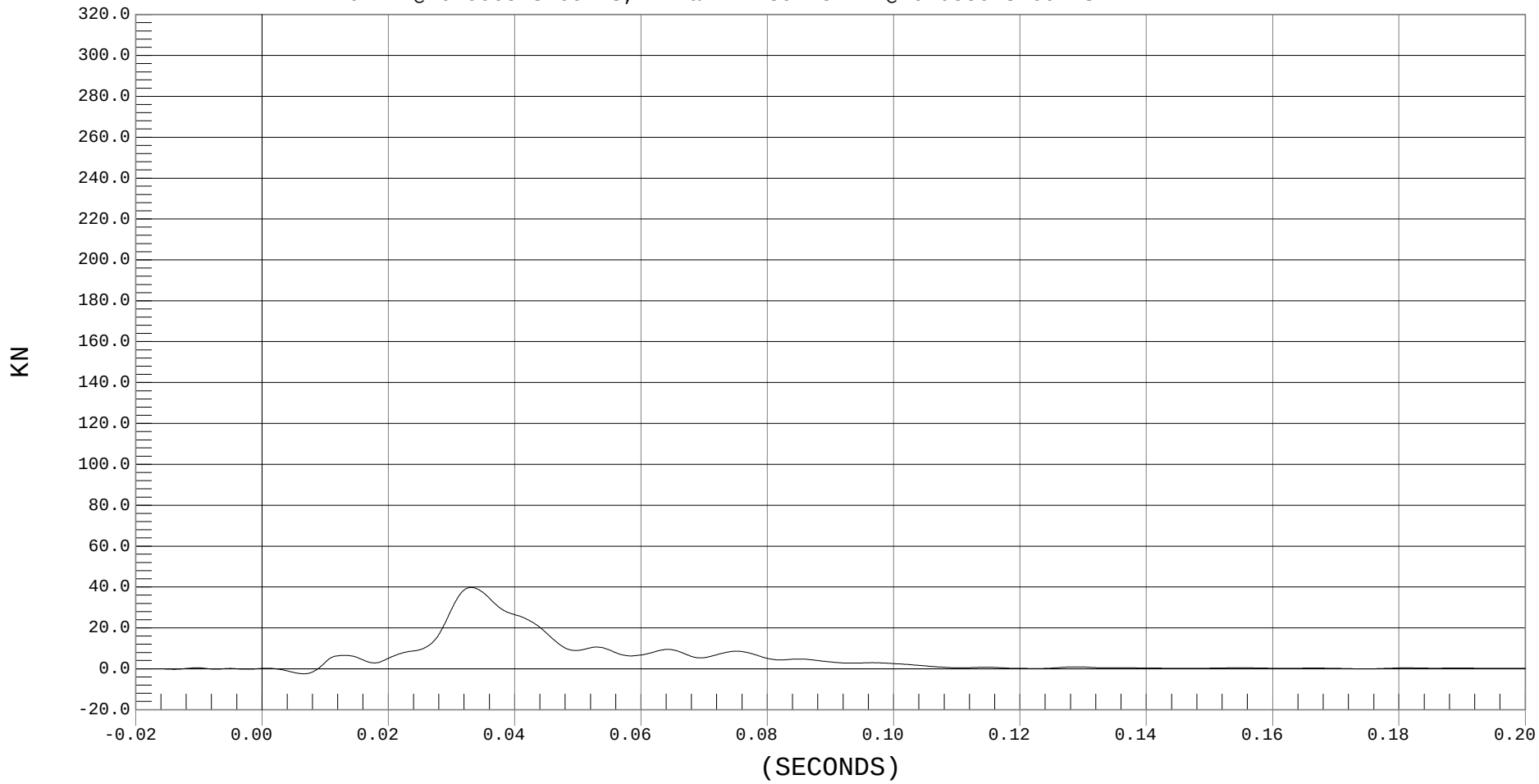
UPPER RIGHT BARRIER FORCE

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 BARRIER UPPER RIGHT, B01014FF.F04

Ymin = -2.46 KN @ 0.0065 SECONDS, Ymax = 39.78 KN @ 0.0330 SECONDS



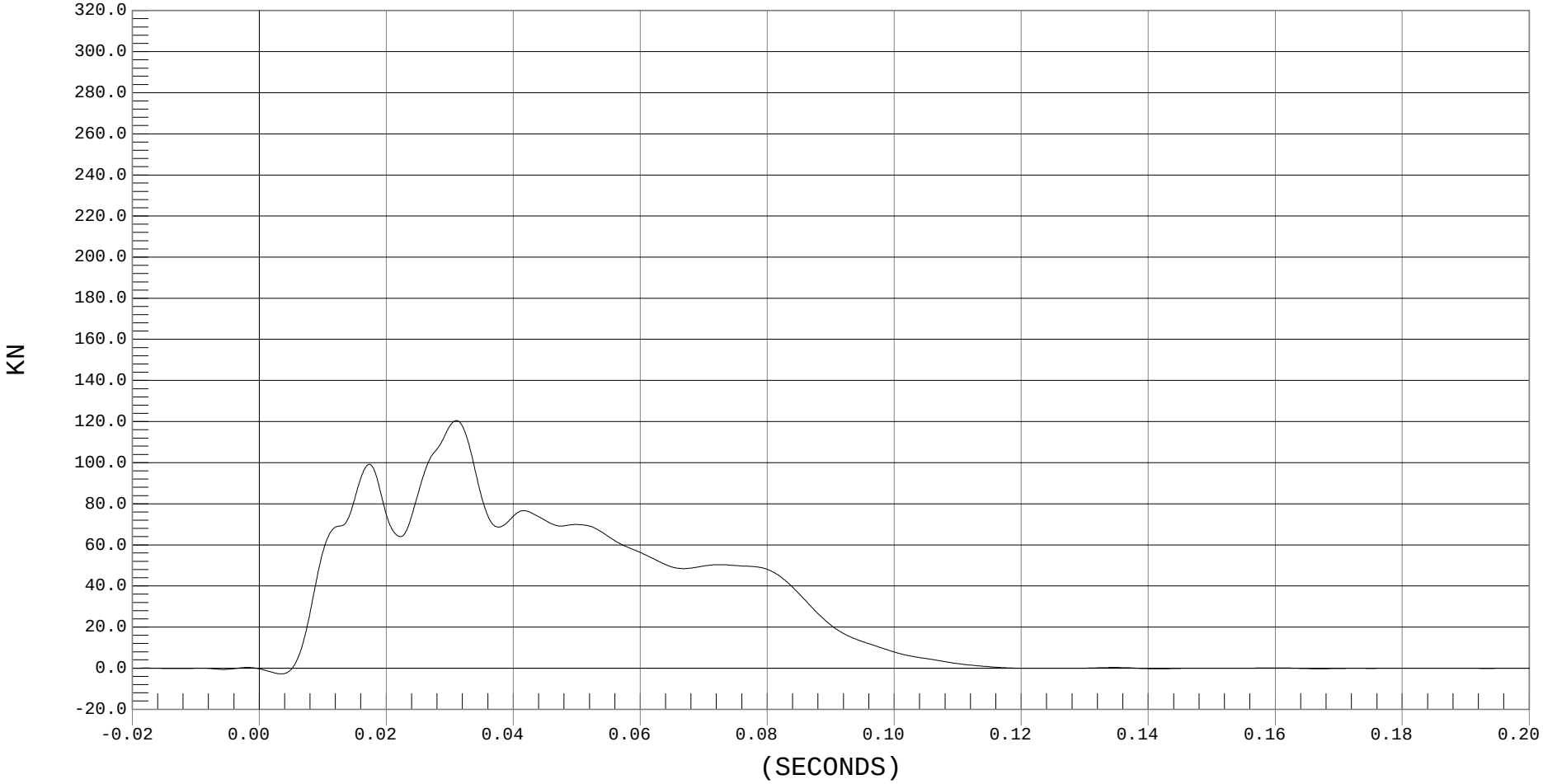
LOWER LEFT BARRIER FORCE

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 BARRIER LOWER LEFT, B01014FF.F05

Ymin = -2.77 KN @ 0.0034 SECONDS, Ymax = 120.48 KN @ 0.0310 SECONDS



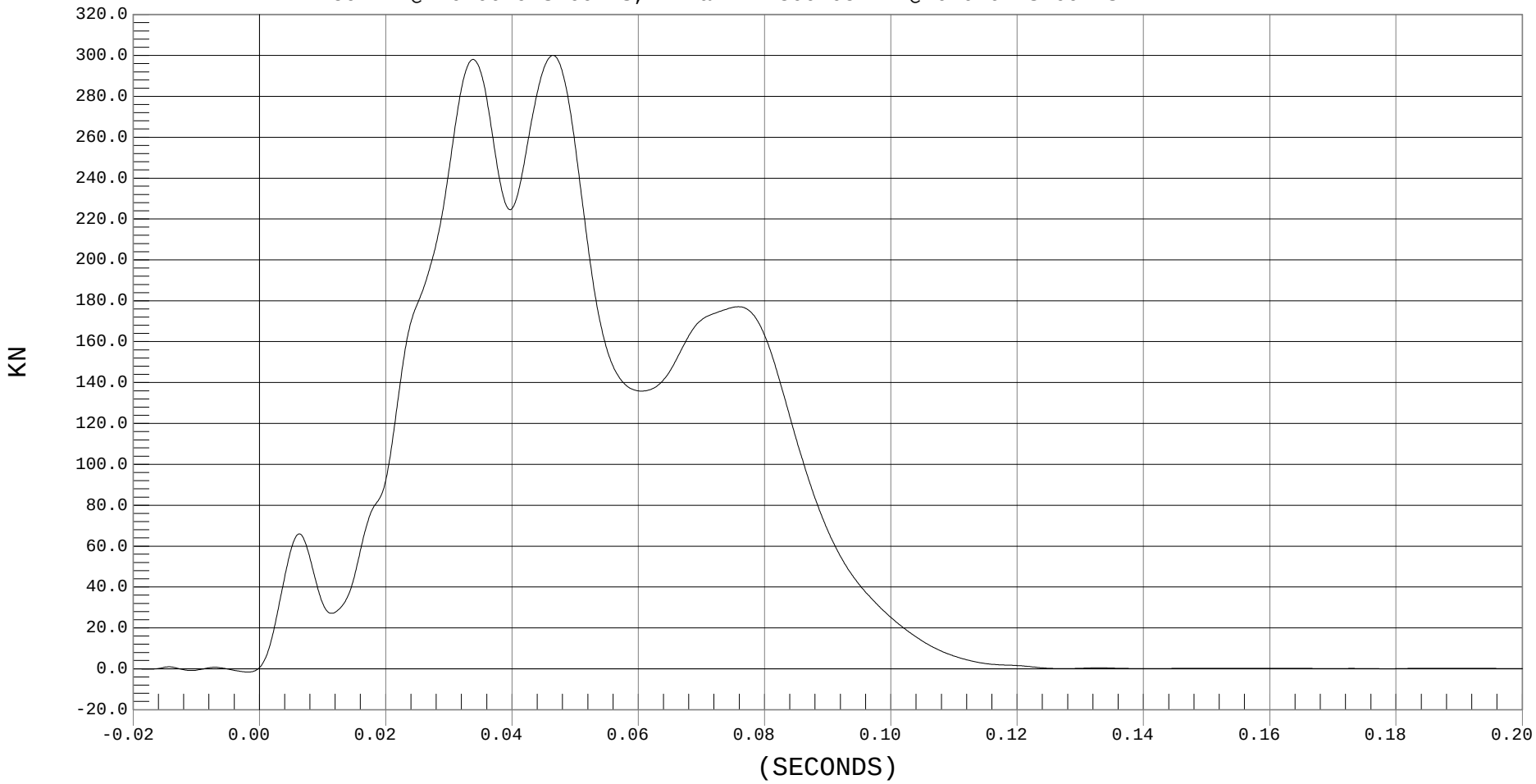
LOWER CENTER BARRIER FORCE

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 BARRIER LOWER CENTER, B01014FF.F06

Ymin = -1.59 KN @ -0.0019 SECONDS, Ymax = 300.05 KN @ 0.0464 SECONDS



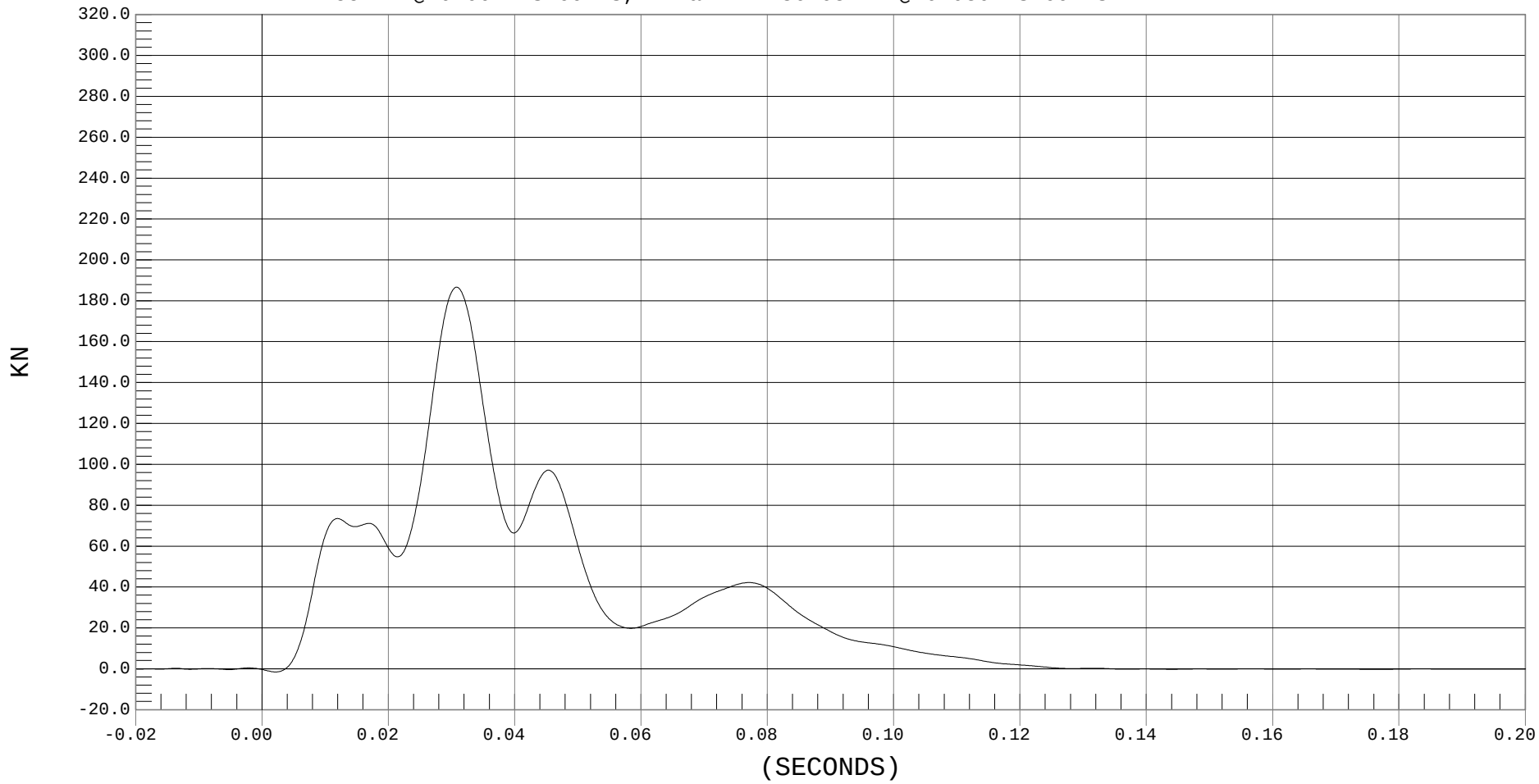
LOWER RIGHT BARRIER FORCE

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 BARRIER LOWER RIGHT, B01014FF.F07

Ymin = -1.55 KN @ 0.0021 SECONDS, Ymax = 186.63 KN @ 0.0307 SECONDS



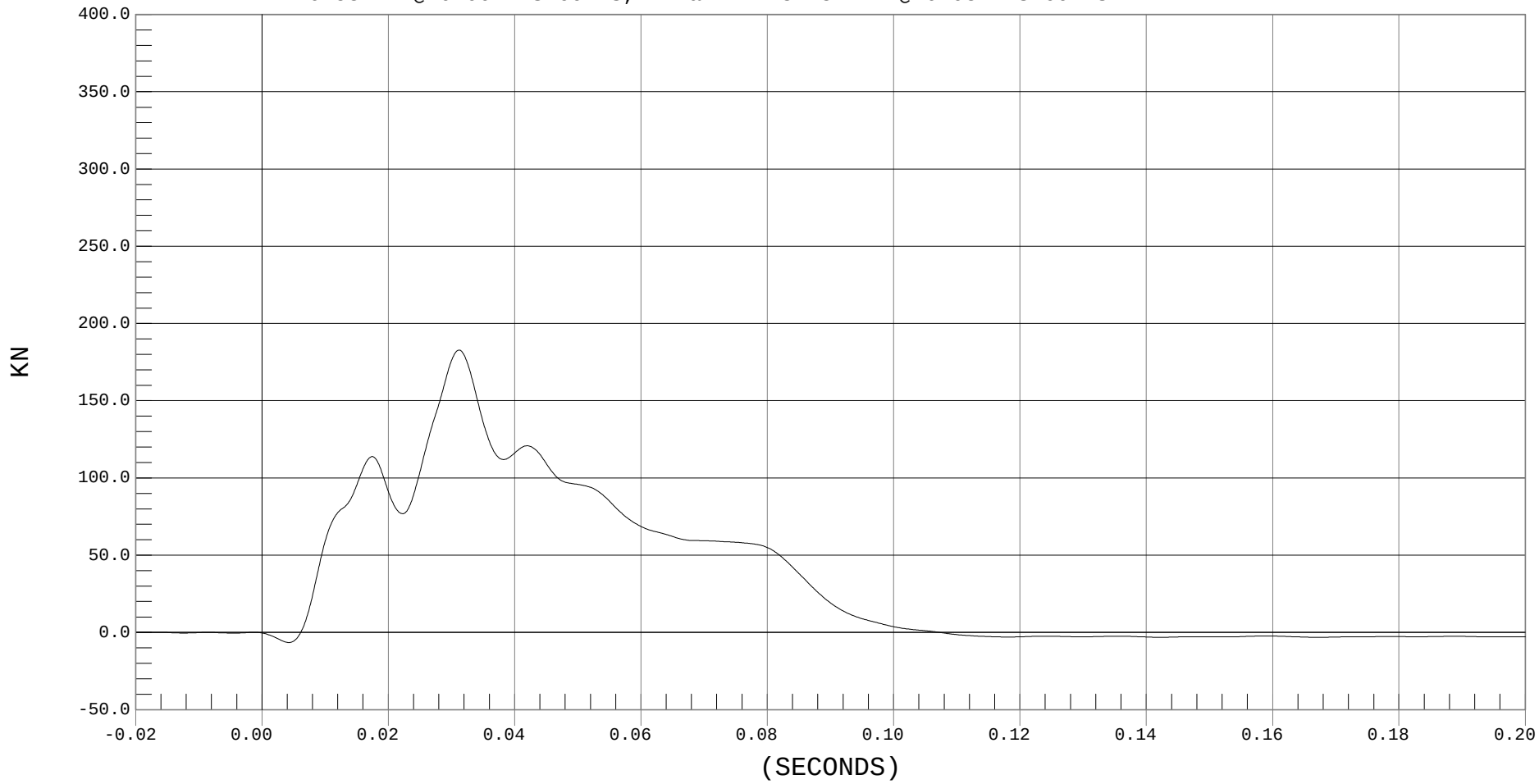
SUM OF LEFT BARRIER FORCES

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 SUM OF LEFT BARRIER FORCES, B01014FU.F02

Ymin = -6.53 KN @ 0.0042 SECONDS, Ymax = 182.82 KN @ 0.0311 SECONDS



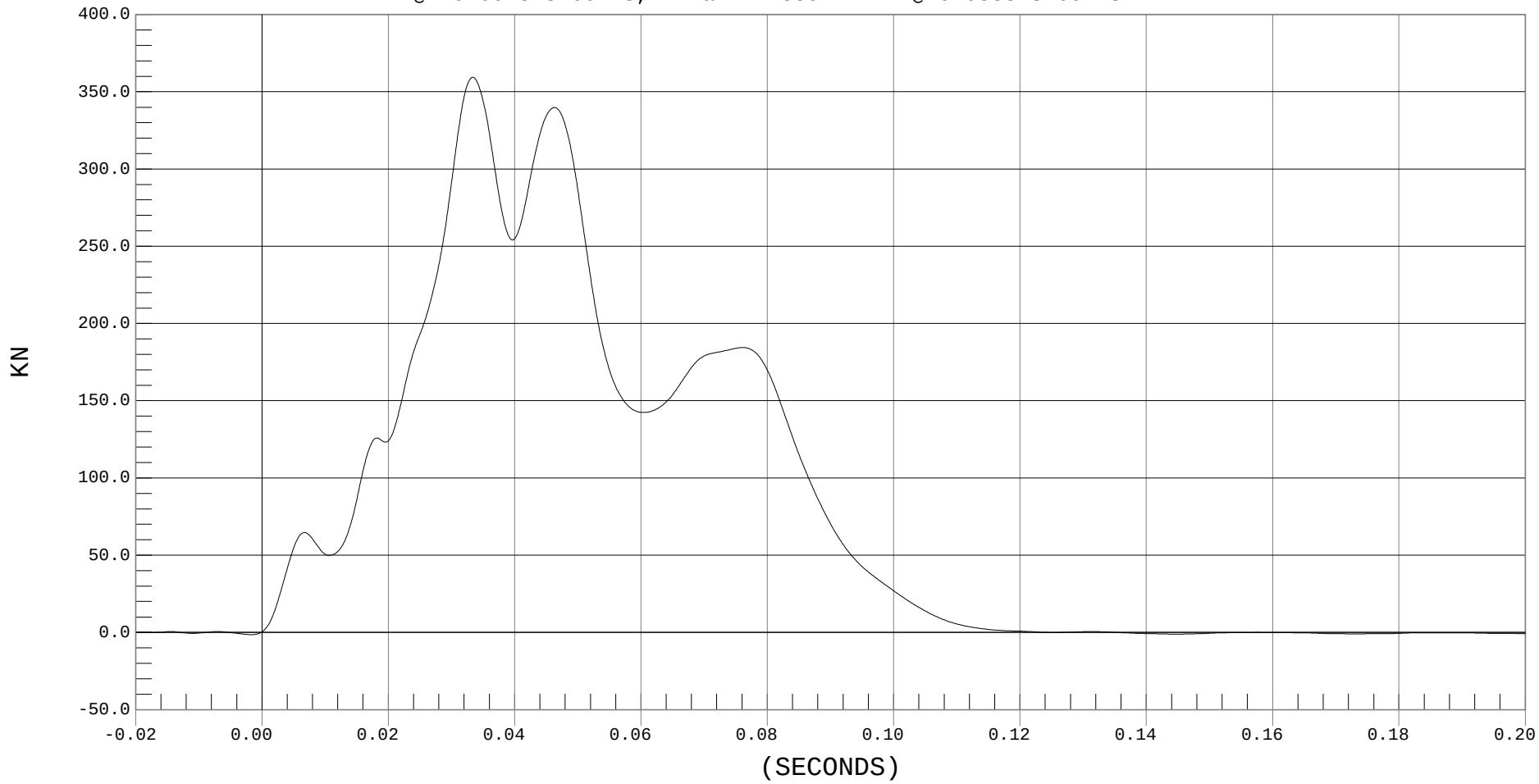
SUM OF CENTER BARRIER FORCES

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 SUM OF CENTER BARRIER FORCES, B01014FU.F03

Ymin = -1.47 KN @ -0.0018 SECONDS, Ymax = 359.41 KN @ 0.0333 SECONDS



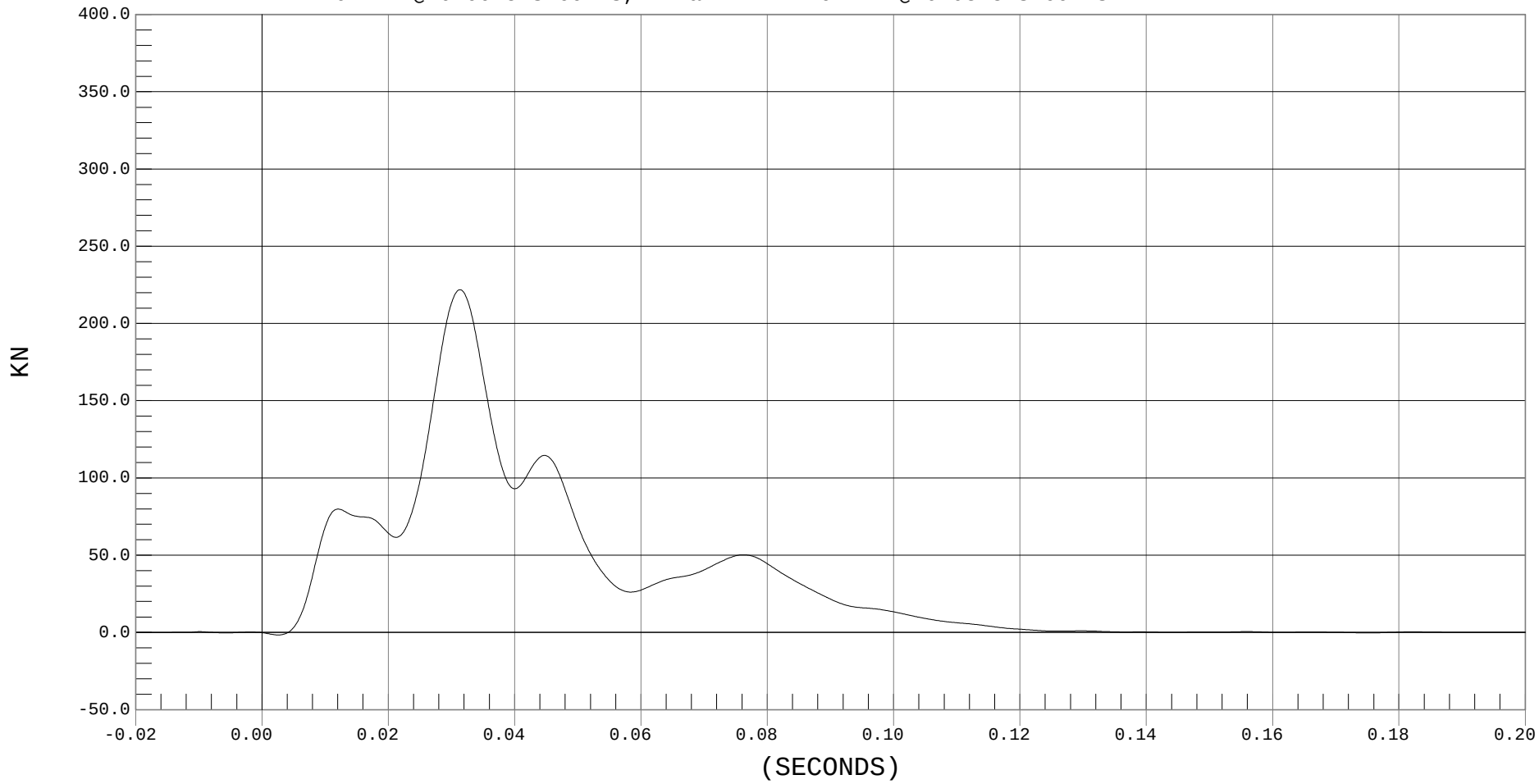
SUM OF RIGHT BARRIER FORCES

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 SUM OF RIGHT BARRIER FORCES, B01014FU.F04

Ymin = -1.61 KN @ 0.0025 SECONDS, Ymax = 221.91 KN @ 0.0313 SECONDS



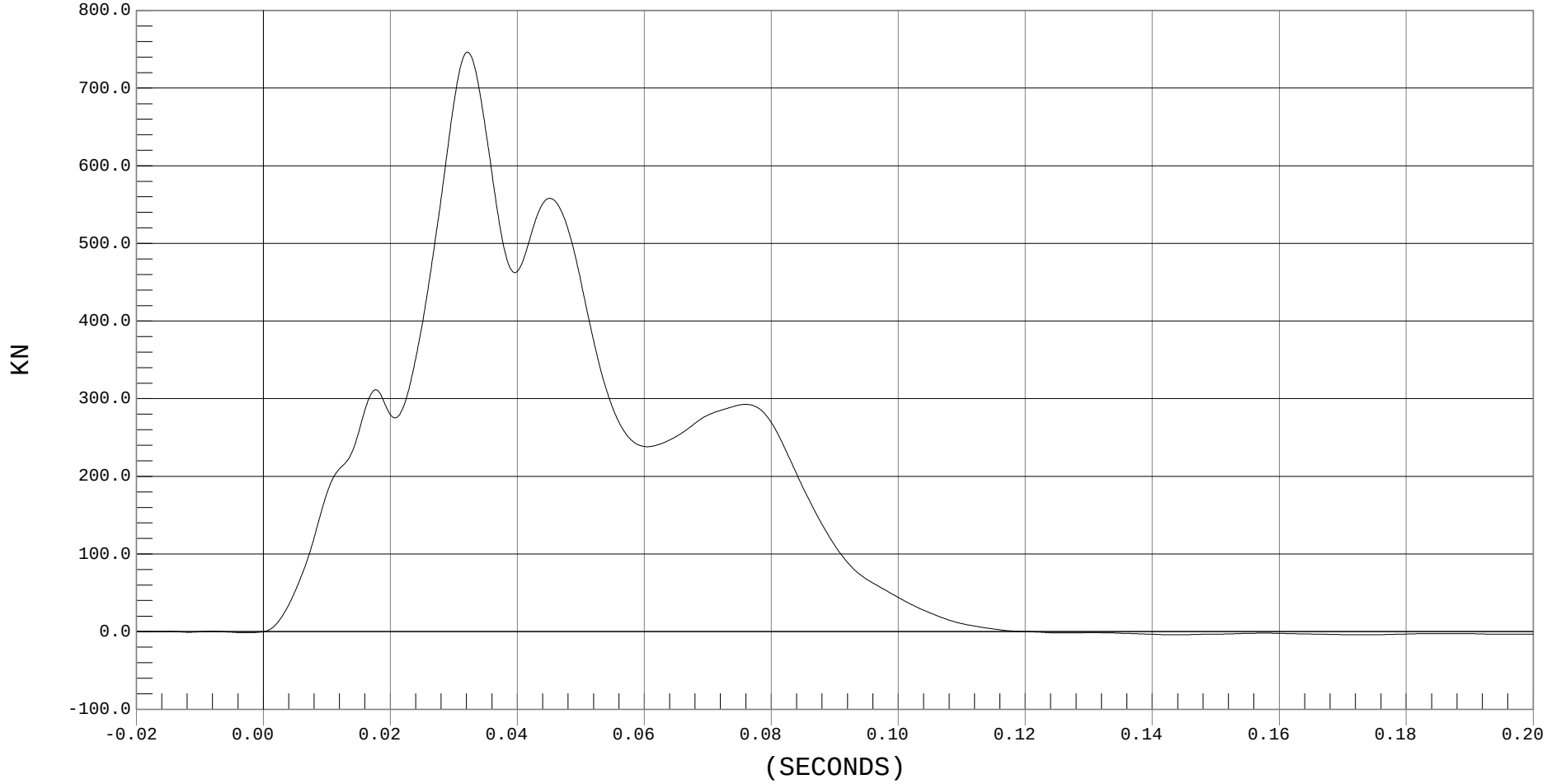
SUM OF BARRIER FORCES

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 60

1 SUM OF BARRIER FORCES, B01014FU.F12

Ymin = -4.07 KN @ 0.1434 SECONDS, Ymax = 746.37 KN @ 0.0321 SECONDS



APPENDIX C

DUMMY CALIBRATION DATA TRACES AND TABLES

Hybrid III Calibration Data Sheet

50th Percentile Male

Left Knee Impact Test

ATD Serial No.: 192 Test I.D.: D01196

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.7	PASS
Laboratory Relative Humidity	%	10 to 70	28	PASS
Probe Velocity	m/s	2.07 to 2.13	2.10	PASS
Peak Probe Force	Newtons	4715 to 5782	5405	PASS
		Overall Test Results		PASS

Laboratory Technician

2/8/01
Test Date

Approved By

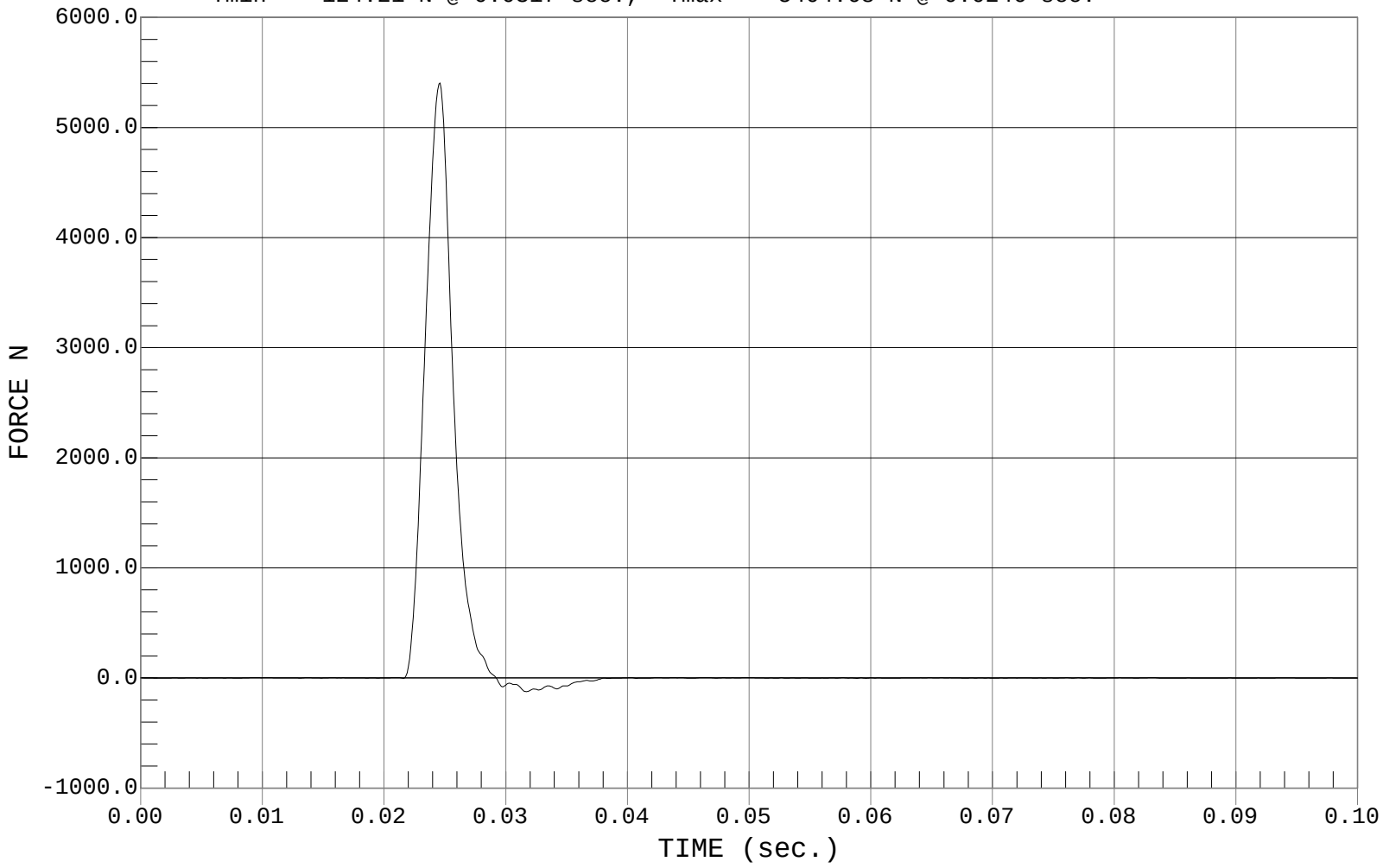
LEFT KNEE IMPACT

Test Desc.: Dummy Calibration - Left Knee Impact
Component: Dummy #192

Test Date: 02-08-01
Speed: 6.90 FT/SEC, 2.10 M/SEC

1 FORCE, D01196FF.F09

Ymin = -124.21 N @ 0.0317 sec., Ymax = 5404.68 N @ 0.0246 sec.



Hybrid III Calibration Data Sheet

50th Percentile Male

Right Knee Impact Test

ATD Serial No.: 192 Test I.D.: D01196

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.7	PASS
Laboratory Relative Humidity	%	10 to 70	28	PASS
Probe Velocity	m/s	2.07 to 2.13	2.12	PASS
Peak Probe Force	Newtons	4715 to 5782	5514	PASS
		Overall Test Results		PASS

Laboratory Technician

2/8/01
Test Date

Approved By

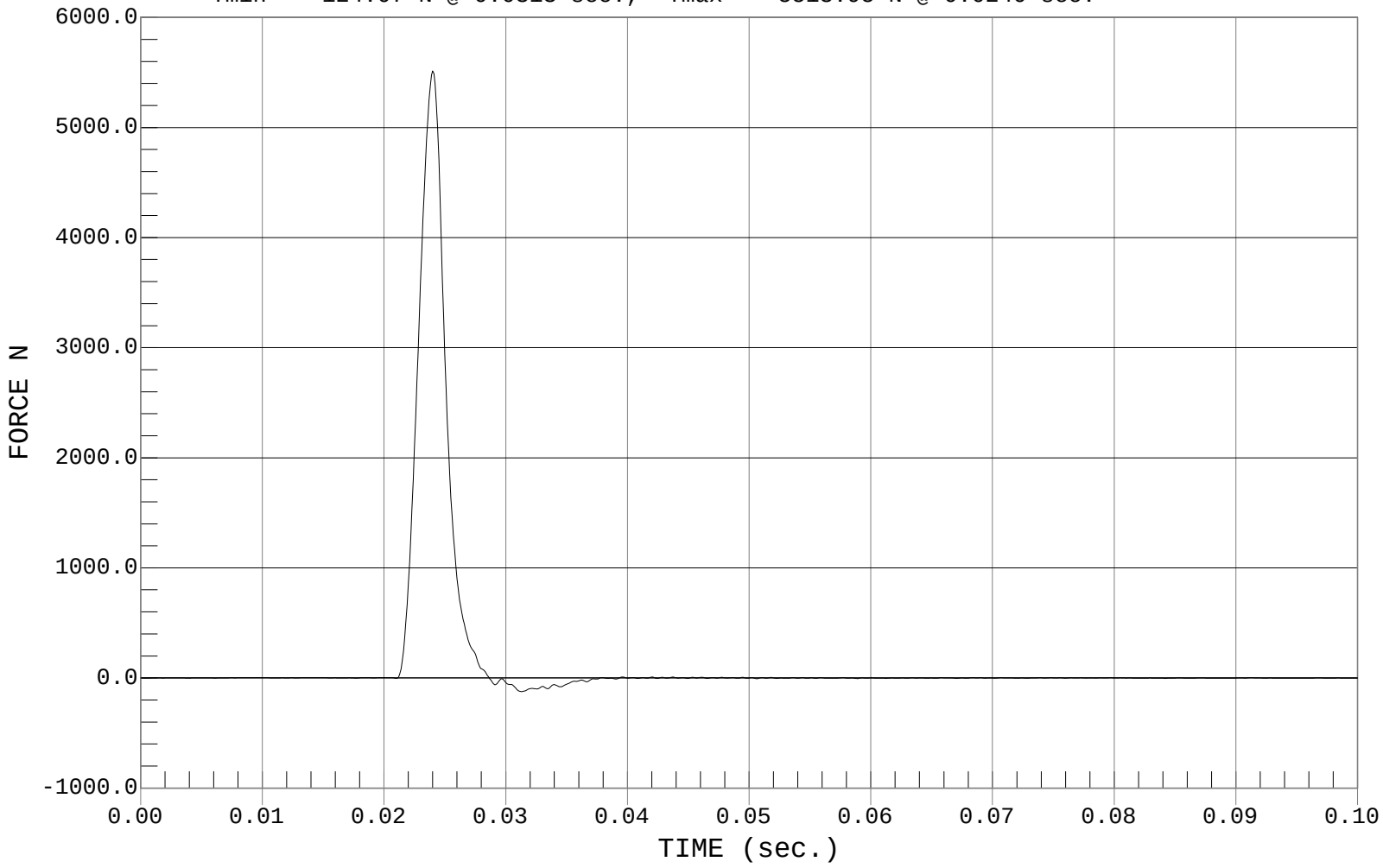
RIGHT KNEE IMPACT

Test Desc.: Dummy Calibration - Right Knee Impact
Component: Dummy #192

Test Date: 02-08-01
Speed: 6.96 FT/SEC, 2.12 M/SEC

1 FORCE, D01195FF.F09

Ymin = -124.07 N @ 0.0313 sec., Ymax = 5513.95 N @ 0.0240 sec.



Hybrid III Calibration Data Sheet

50th Percentile Male

Head Drop Calibration

ATD Serial No.: 192 Test I.D.: D01191

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.5	PASS
Laboratory Relative Humidity	%	10 to 70	33	PASS
Peak Resultant Acceleration	G's	225.0 to 275.0	263	PASS
Peak Lateral Acceleration	G's	≤‡15.0	6	PASS
Is Acceleration Unimodal?	Yes/No	< 10% Peak	Yes	PASS
		Overall Test Results		PASS

2/9/01

Laboratory Technician

Test Date

Approved By

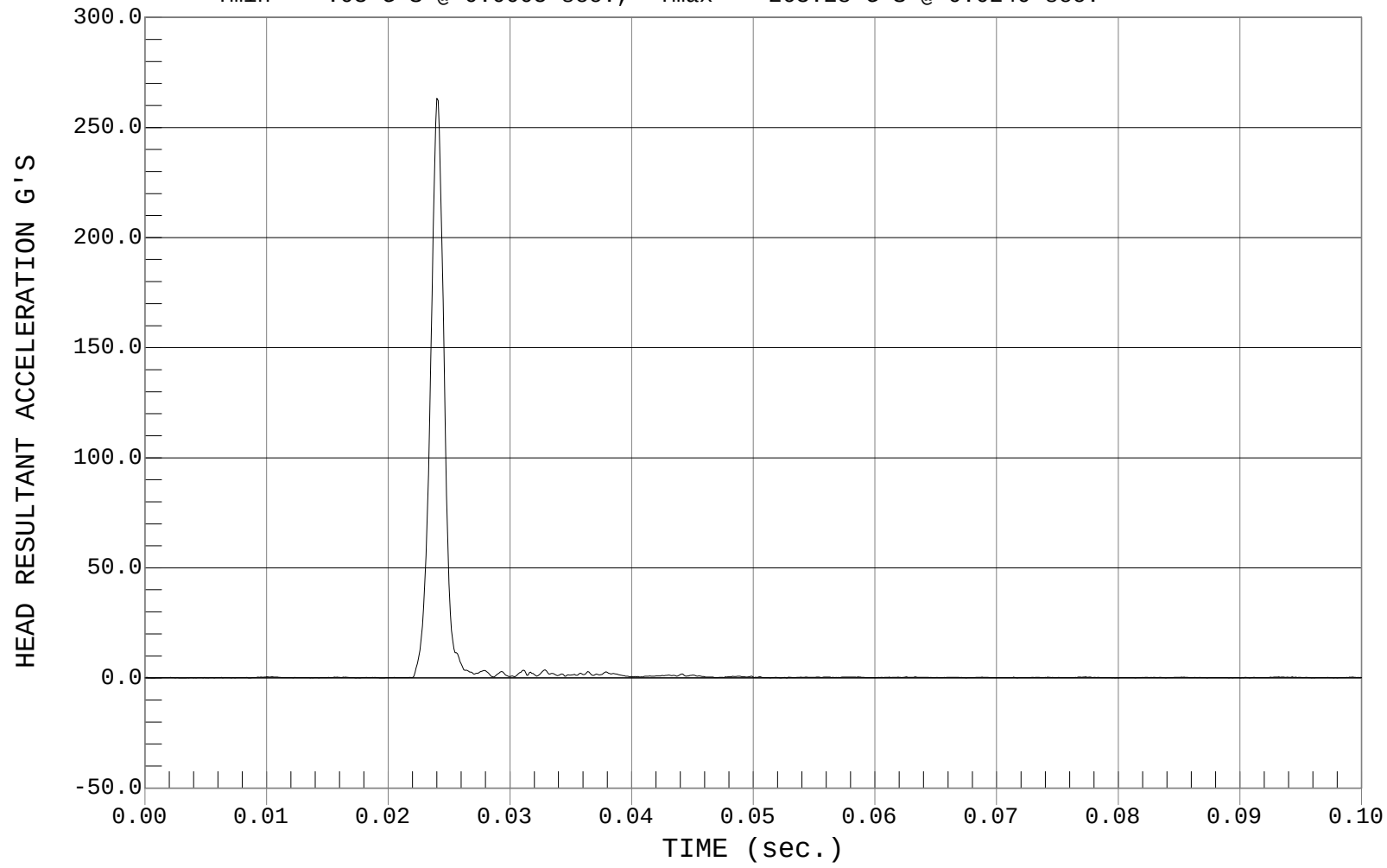
PEAK RESULTANT ACCELERATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #192

Test Date: 02-09-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

1 HEAD RESULTANT ACCELERATION, D01191AV.A01

Ymin = .03 G'S @ 0.0005 sec., Ymax = 263.28 G'S @ 0.0240 sec.



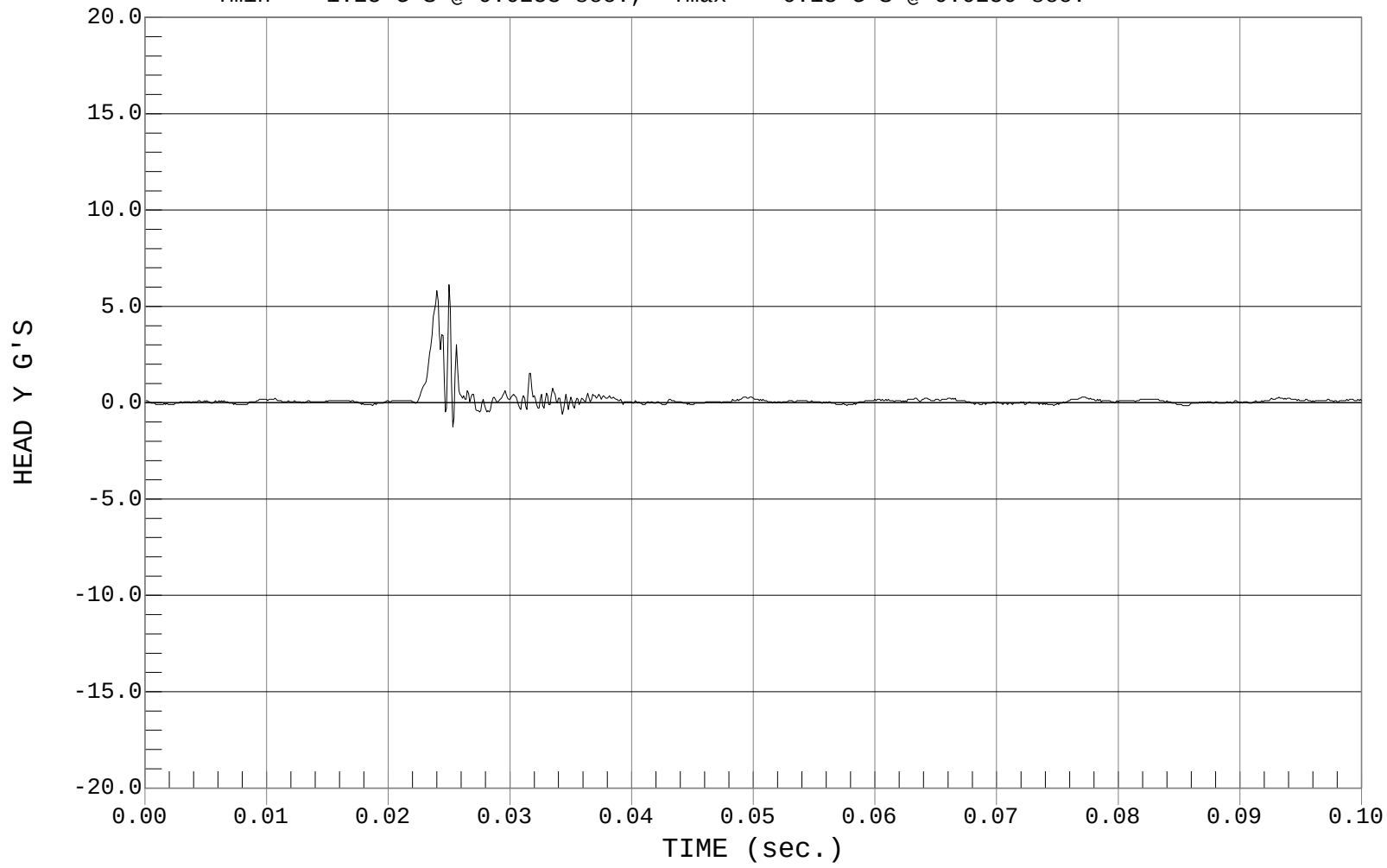
PEAK LATERAL ACCELRATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #192

Test Date: 02-09-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

1 HEAD Y, D01191AR.A02

Ymin = -1.25 G'S @ 0.0253 sec., Ymax = 6.13 G'S @ 0.0250 sec.



Hybrid III Calibration Data Sheet

50th Percentile Male

Thorax Impact Test

ATD Serial No.: 192 Test I.D.: D01194

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.5	PASS
Laboratory Relative Humidity	%	10 to 70	21	PASS
Probe Velocity	m/s	6.58 to 6.82	6.69	PASS
Peak Probe Force	Newtons	5159 to 5893	5685	PASS
Peak Sternum Displacement	CM	6.35 to 7.26	6.72	PASS
Internal Hysteresis	%	69 to 85	75	PASS
		Overall Test Results		PASS

Laboratory Technician

2/6/01
Test Date

Approved By

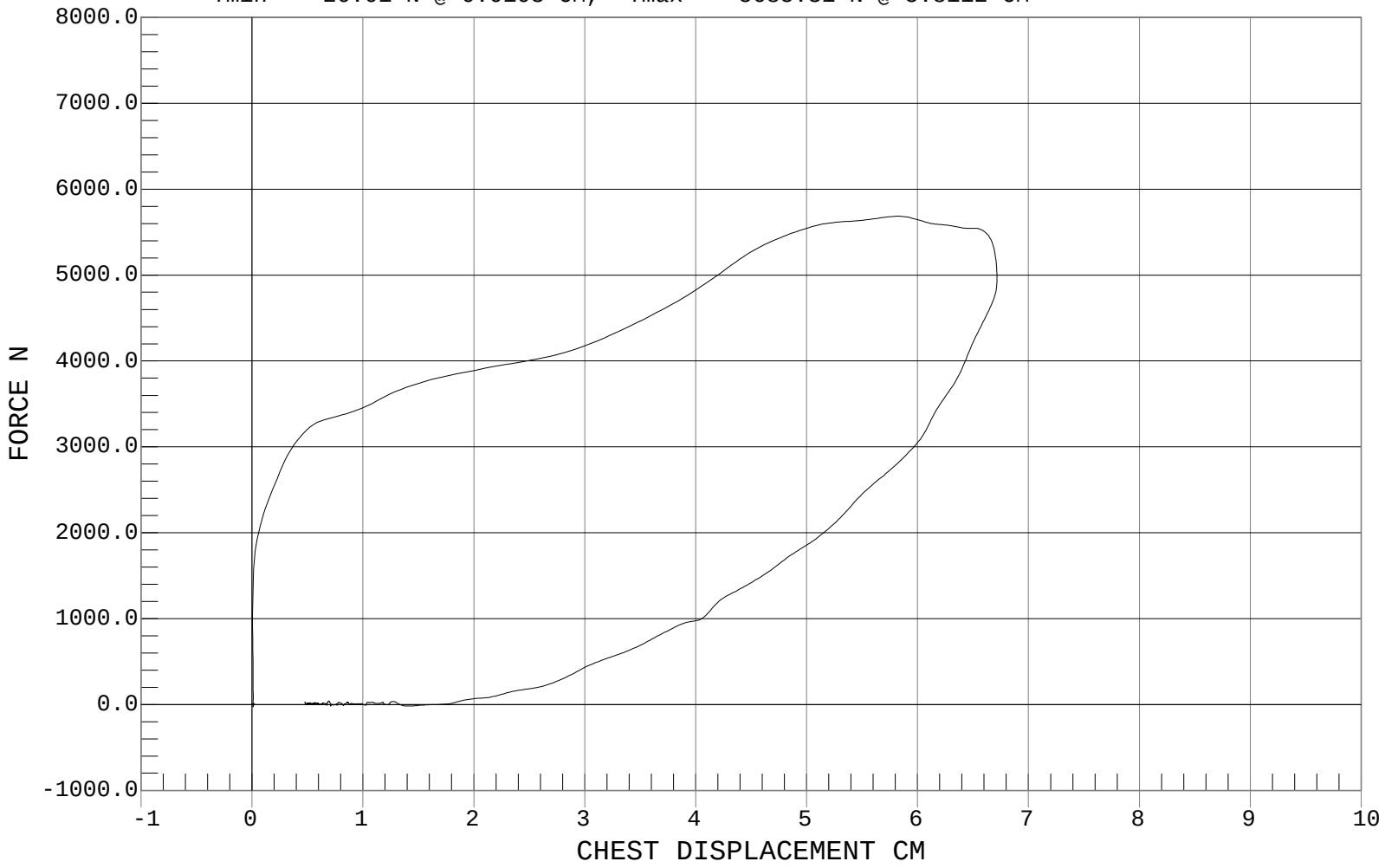
THORAX IMPACT

Test Desc.: Dummy Calibration - Chest Impact
Component: Dummy #192

Test Date: 02-06-01
Speed: 21.93 FT/SEC, 6.69 M/SEC

1 FORCE, D01194CH.FVD

Ymin = -26.01 N @ 0.0103 CM, Ymax = 5685.31 N @ 5.8112 CM



Hybrid III Calibration Data Sheet

50th Percentile Male

Neck Flexion Test

ATD Serial No.: 192 Test I.D.: D01192

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.7	PASS
Laboratory Relative Humidity		%	10 to 70	25	PASS
Pendulum Velocity		m/s	6.89 to 7.13	7.092	PASS
Pendulum Deceleration	10 Msec.	G's	22.50 to 27.50	23.03	PASS
	20 Msec.	G's	17.60 to 22.60	19.82	PASS
	30 Msec.	G's	12.50 to 18.50	13.33	PASS
Peak Pendulum Deceleration After 30 Msec.		G's	≤29.0	13.3	PASS
Deceleration Decay Time to Cross 5 G's		Msec.	34.0 to 42.0	39.3	PASS
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	72.4	PASS
	Time	Msec.	57.0 to 64.0	57.4	PASS
"D" Plane Rotation Decay Time To Zero Crossing		Msec.	113.0 to 128.0	114.2	PASS
Moment About Occipital Condyle	Maximum	N· m	84.1 to 108.5	89.9	PASS
	Time	Msec.	47.0 to 58.0	52.5	PASS
Positive Moment Decay Time To Zero Crossing		Msec.	97.0 to 107.0	97.1	PASS
			Overall Test Results		PASS

Laboratory Technician

2/8/01
Test Date

Approved By

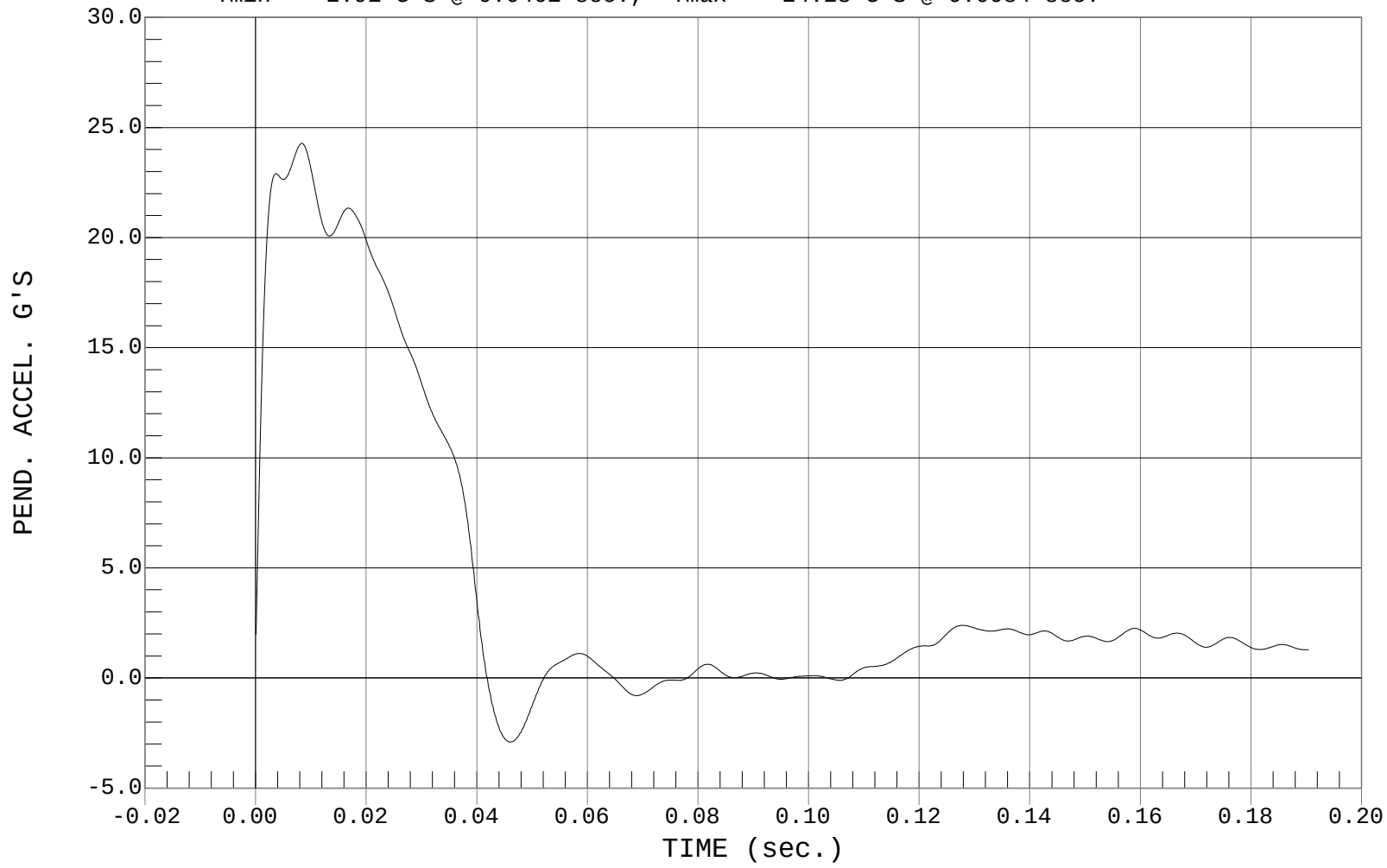
PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #192

Test Date: 02-08-01
Speed: 23.02 FT/SEC, 7.02 M/SEC

1 PEND. ACCEL., D01192AF.A04

Ymin = -2.91 G'S @ 0.0461 sec., Ymax = 24.28 G'S @ 0.0084 sec.



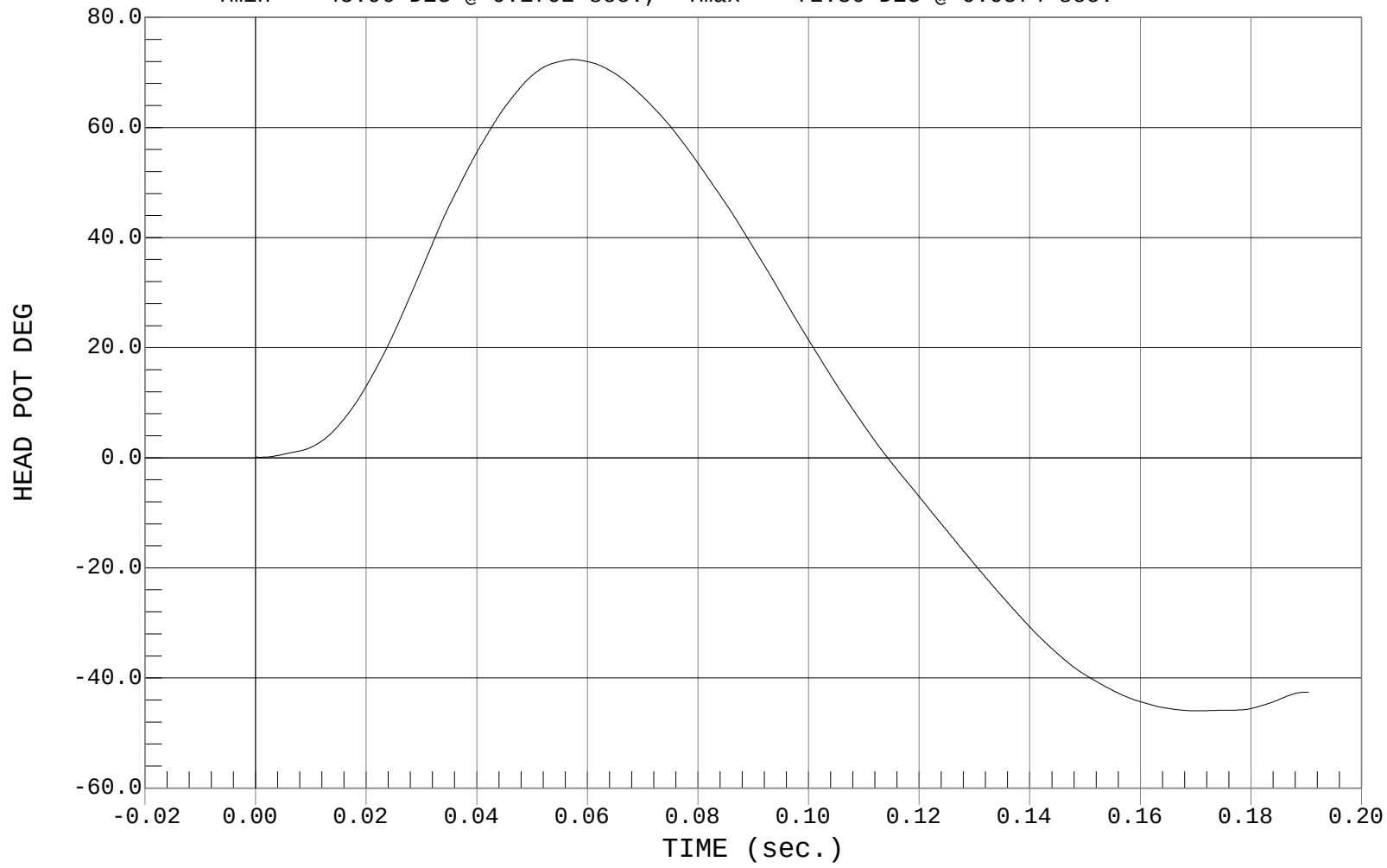
NECK ROTATION

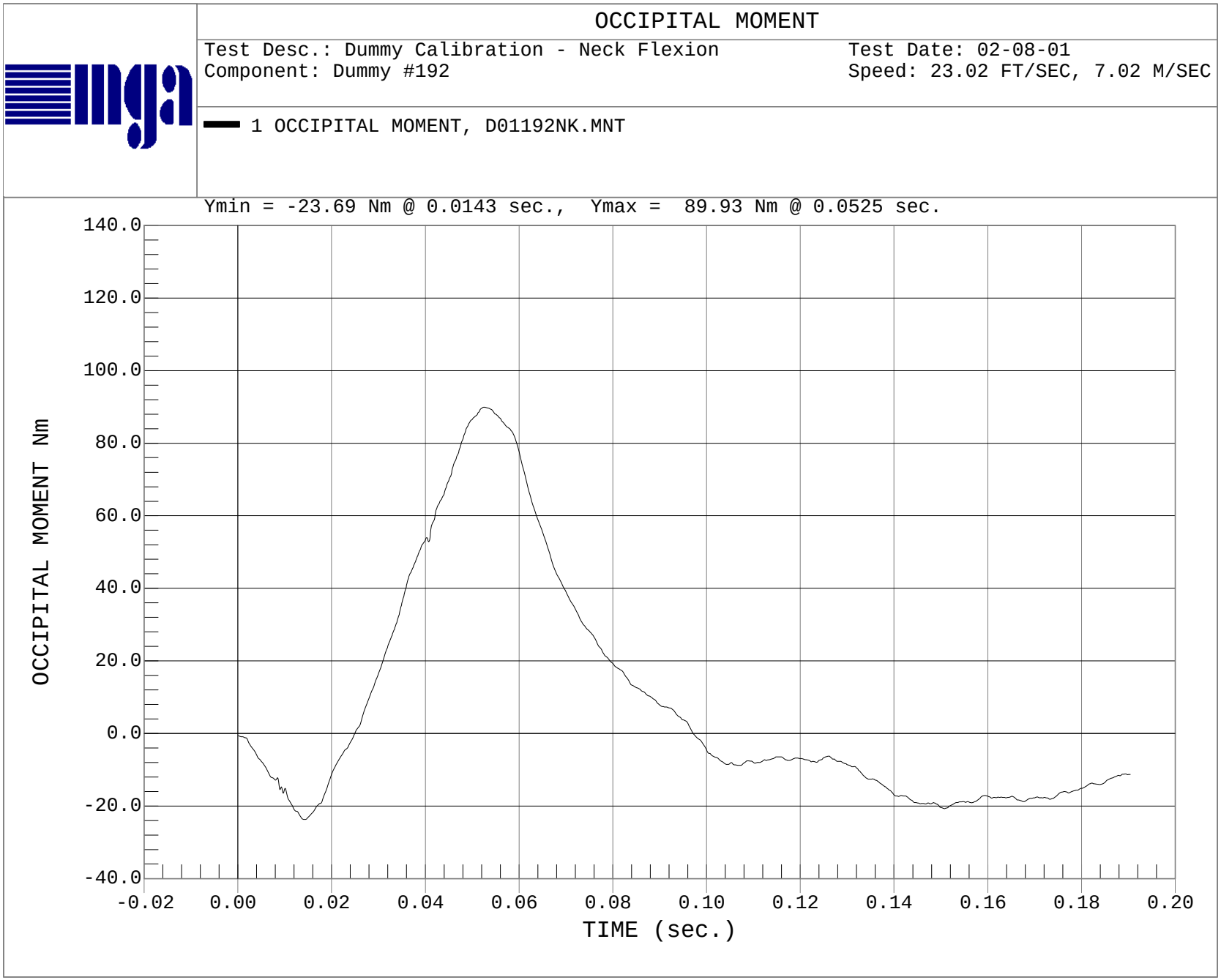
Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #192

Test Date: 02-08-01
Speed: 23.02 FT/SEC, 7.02 M/SEC

1 HEAD POT, D01192DU.D05

Ymin = -45.96 DEG @ 0.1702 sec., Ymax = 72.36 DEG @ 0.0574 sec.




OCCIPITAL MOMENT
Test Desc.: Dummy Calibration - Neck Flexion
Test Date: 02-08-01
Component: Dummy #192
Speed: 23.02 FT/SEC, 7.02 M/SEC
1 OCCIPITAL MOMENT, D01192NK.MNT
Ymin = -23.69 Nm @ 0.0143 sec., Ymax = 89.93 Nm @ 0.0525 sec.
OCCIPITAL MOMENT Nm
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
-20.0
-40.0
-0.02
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.16
0.18
0.20
TIME (sec.)

Hybrid III Calibration Data Sheet

50th Percentile Male

Neck Extension Test

ATD Serial No.: 192 Test I.D.: D01193

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.7°	PASS
Laboratory Relative Humidity		%	10 to 70	25%	PASS
Pendulum Velocity		m/s	5.95 to 6.19	6.16	PASS
Pendulum Deceleration	10 Msec.	G's	17.20 to 21.20	18.27	PASS
	20 Msec.	G's	14.00 to 19.00	15.79	PASS
	30 Msec.	G's	11.00 to 16.00	11.55	PASS
Peak Pendulum Deceleration After 30 Msec.		G's	≤22.0	12.0	PASS
Deceleration Decay Time to Cross 5 G's		Msec.	38.0 to 46.0	43.2	PASS
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	94.4	PASS
	Time	Msec.	72.0 to 82.0	78.0	PASS
"D" Plane Rotation Decay Time To Zero Crossing		Msec.	147.0 to 174.0	156.7	PASS
Moment About Occipital Condyle	Minimum	N· m	-52.9 to –79.9	-57.1	PASS
	Time	Msec.	65.0 to 79.0	73.9	PASS
Negative Moment Decay Time To Zero Crossing		Msec.	120.0 to 148.0	136.4	PASS
			Overall Test Results		PASS

Laboratory Technician

2/8/01
Test Date

Approved By

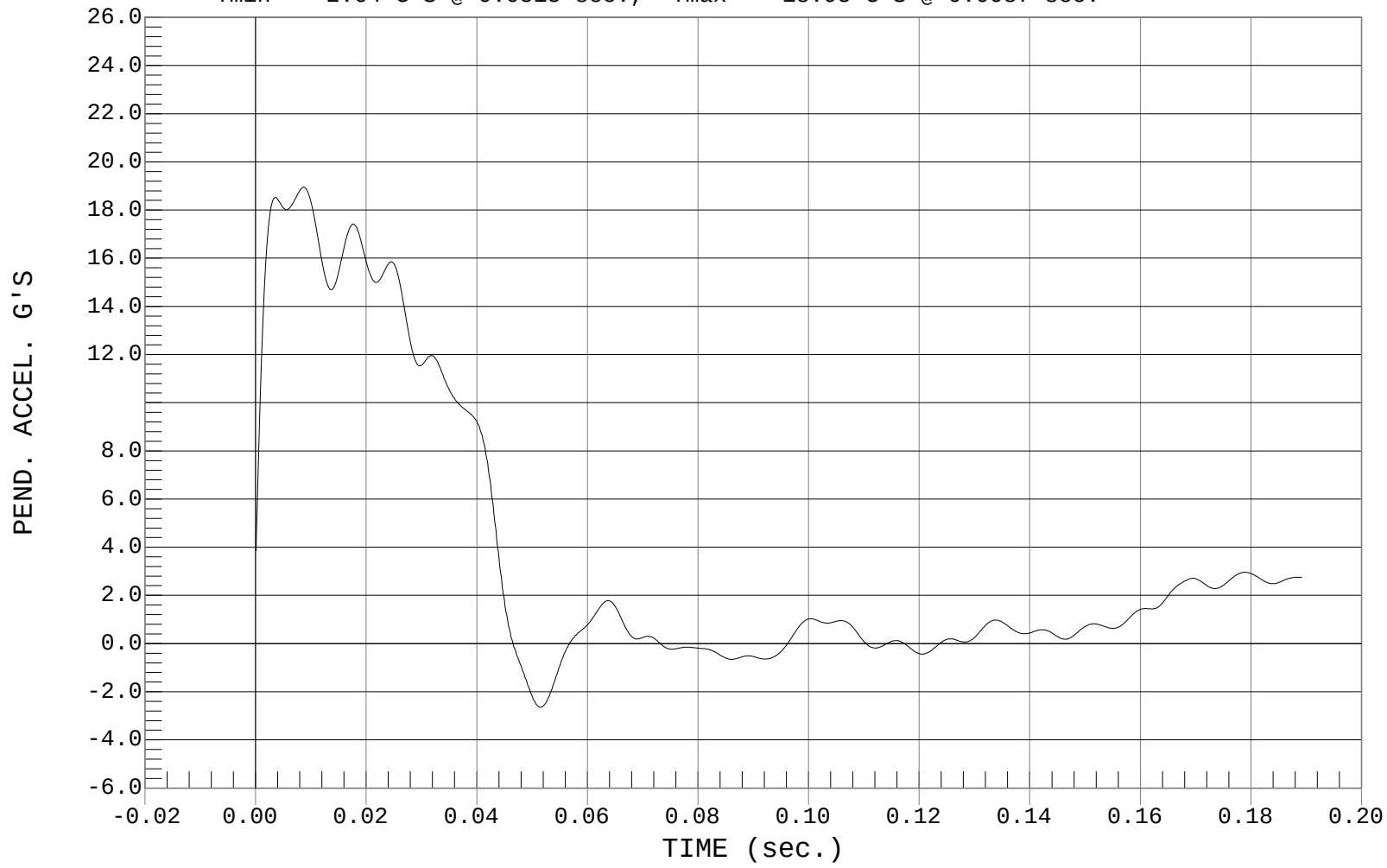
PENDULUM DECELERATION

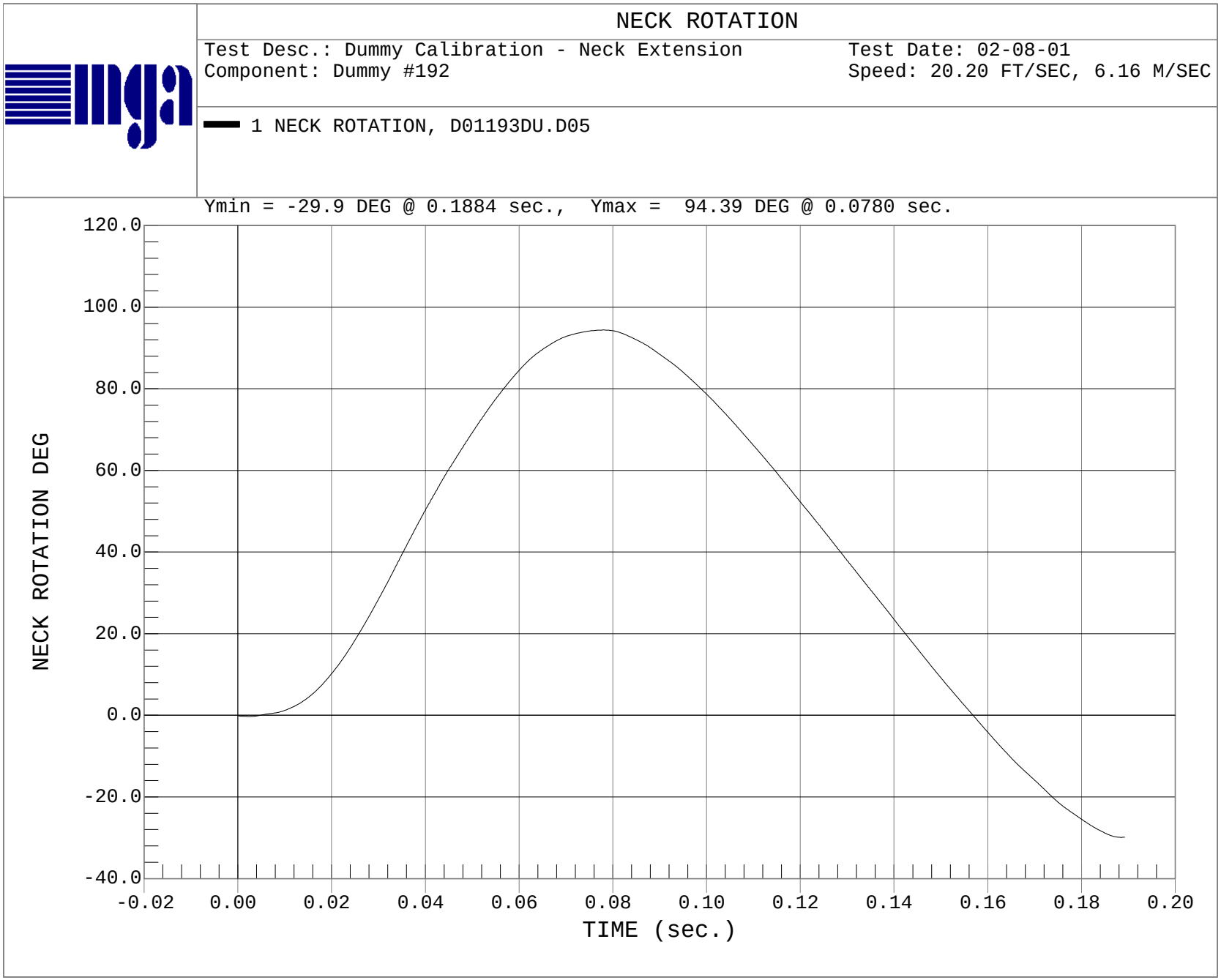
Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #192

Test Date: 02-08-01
Speed: 20.20 FT/SEC, 6.16 M/SEC

1 PEND. ACCEL., D01193AF.A04

Ymin = -2.64 G'S @ 0.0515 sec., Ymax = 18.95 G'S @ 0.0087 sec.




NECK ROTATION
Test Desc.: Dummy Calibration - Neck Extension
Test Date: 02-08-01
Component: Dummy #192
Speed: 20.20 FT/SEC, 6.16 M/SEC
1 NECK ROTATION, D01193DU.D05
Ymin = -29.9 DEG @ 0.1884 sec., Ymax = 94.39 DEG @ 0.0780 sec.
NECK ROTATION DEG
120.0
100.0
80.0
60.0
40.0
20.0
0.0
-20.0
-40.0
-0.02
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.16
0.18
0.20
TIME (sec.)

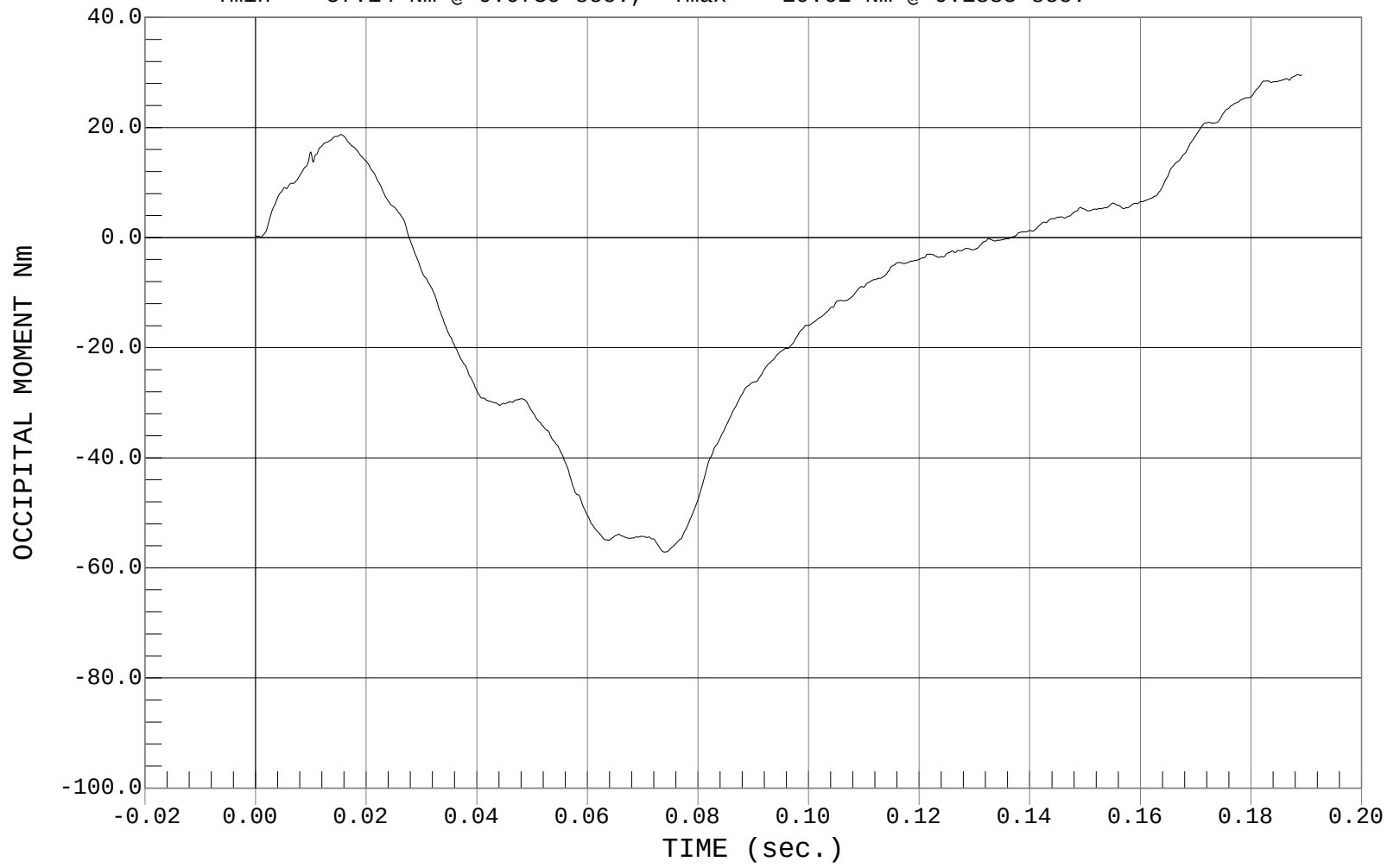
OCCIPITAL MOMENT

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #192

Test Date: 02-08-01
Speed: 20.20 FT/SEC, 6.16 M/SEC

1 OCCIPITAL MOMENT, D01193NK.MNT

Ymin = -57.14 Nm @ 0.0739 sec., Ymax = 29.61 Nm @ 0.1885 sec.



Hybrid III Calibration Data Sheet

50th Percentile Male

Hip-Femur Flexion Test

ATD Serial No.: 192 Test I.D.: D01199/0

Tested Parameter	Units	Specification	Result		Pass/Fail
			Right	Left	
Temperature	°C	18.9 to 25.6	21.8	21.8	PASS
Relative Humidity	%	10 to 70	33	33	PASS
Rotation Rate	deg/sec	5 – 10	Yes	Yes	PASS
30 Degrees	Nm	94.9 Nm Max.	94.1	80.0	PASS
150 ft-lbf / 203.4 Nm	Deg	40 – 50 Degree Max. rotation	44	42	PASS
		Overall Test Results			PASS

Laboratory Technician

2/9/01
Test Date

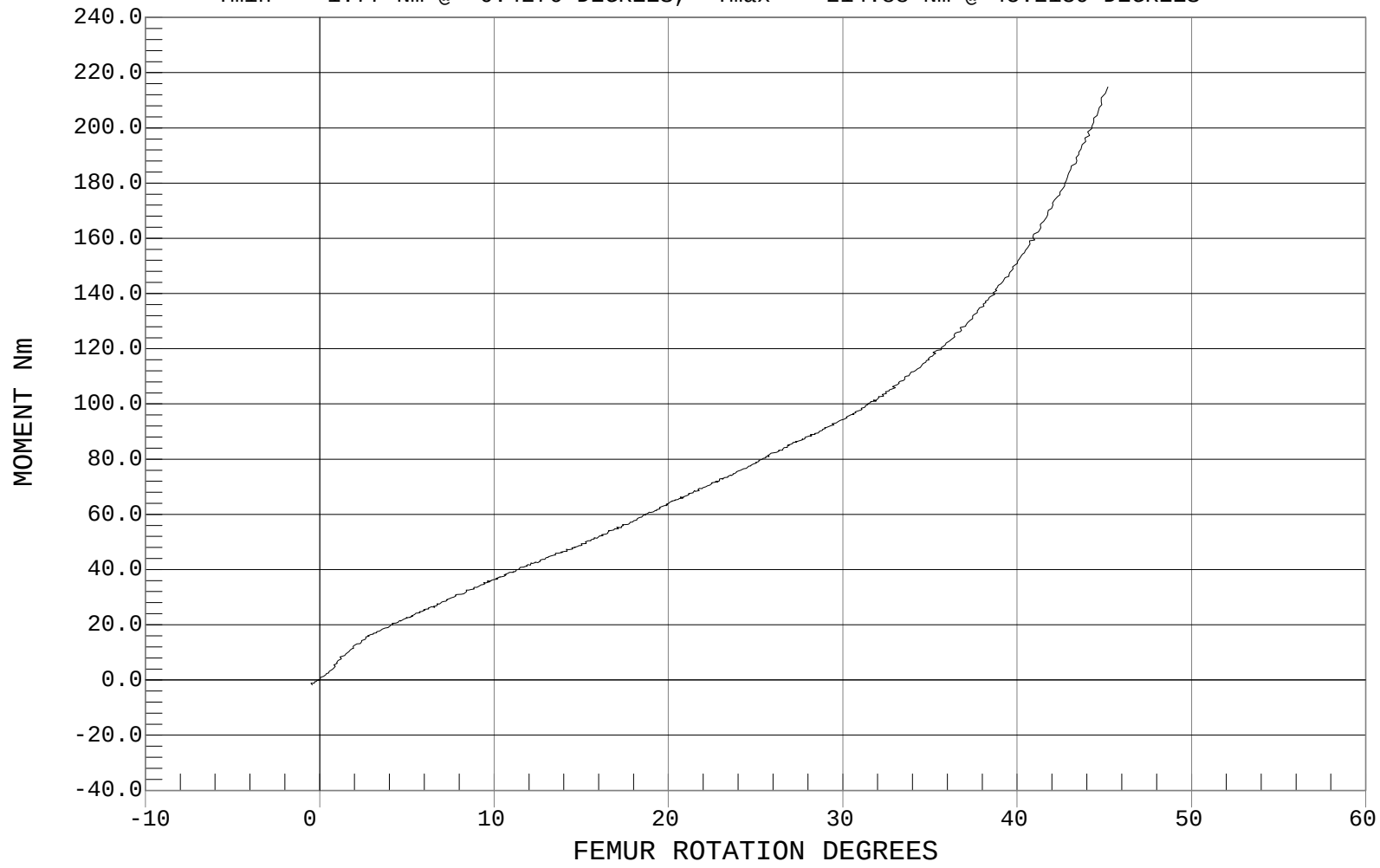
Approved By

HIP-FEMUR FLEXION

Test Desc.: DUMMY CALIBRATION - HIP-FEMUR FLEXION
Test Date: 02-09-01
Component: DUMMY # 192 RIGHT FEMUR
Speed: 0.00 FT/SEC, 0.00 M/SEC

1 MOMENT, D01199FC.F14

Ymin = -1.77 Nm @ -0.4276 DEGREES, Ymax = 214.88 Nm @ 45.2139 DEGREES

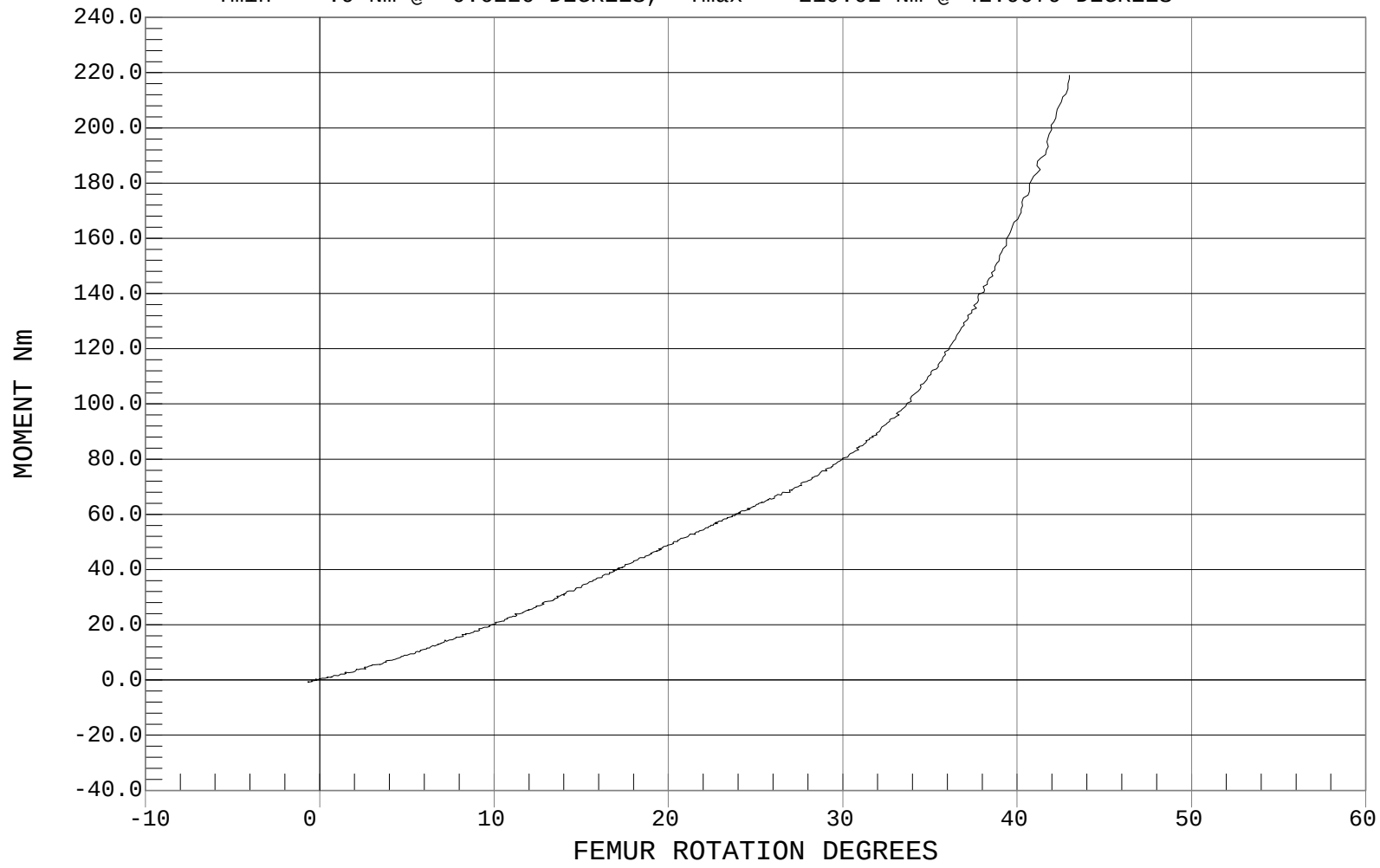


HIP-FEMUR FLEXION

Test Desc.: DUMMY CALIBRATION - HIP-FEMUR FLEXION
Test Date: 02-09-01
Component: DUMMY # 192 LEFT FEMUR
Speed: 0.00 FT/SEC, 0.00 M/SEC

1 MOMENT, D01190FC.F14

Ymin = -.9 Nm @ -0.6220 DEGREES, Ymax = 219.02 Nm @ 42.9979 DEGREES



Hybrid III Calibration Data Sheet

50th Percentile Male

Right Knee Slider

ATD Serial No.: 192 Test I.D.: D01197

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	°C	18.9 to 25.6	21.7	PASS
Relative Humidity	%	10 to 70	34	PASS
Velocity	m/s	2.7 – 2.8	2.8	PASS
Impact Force @ 10 mm	kN	-1.72 to -1.26	-1.34	PASS
Impact Force @ 18 mm	KN	-3.10 to -2.27	-2.32	PASS
		Overall Test Results		PASS

Laboratory Technician

2/9/01

Test Date

Approved By

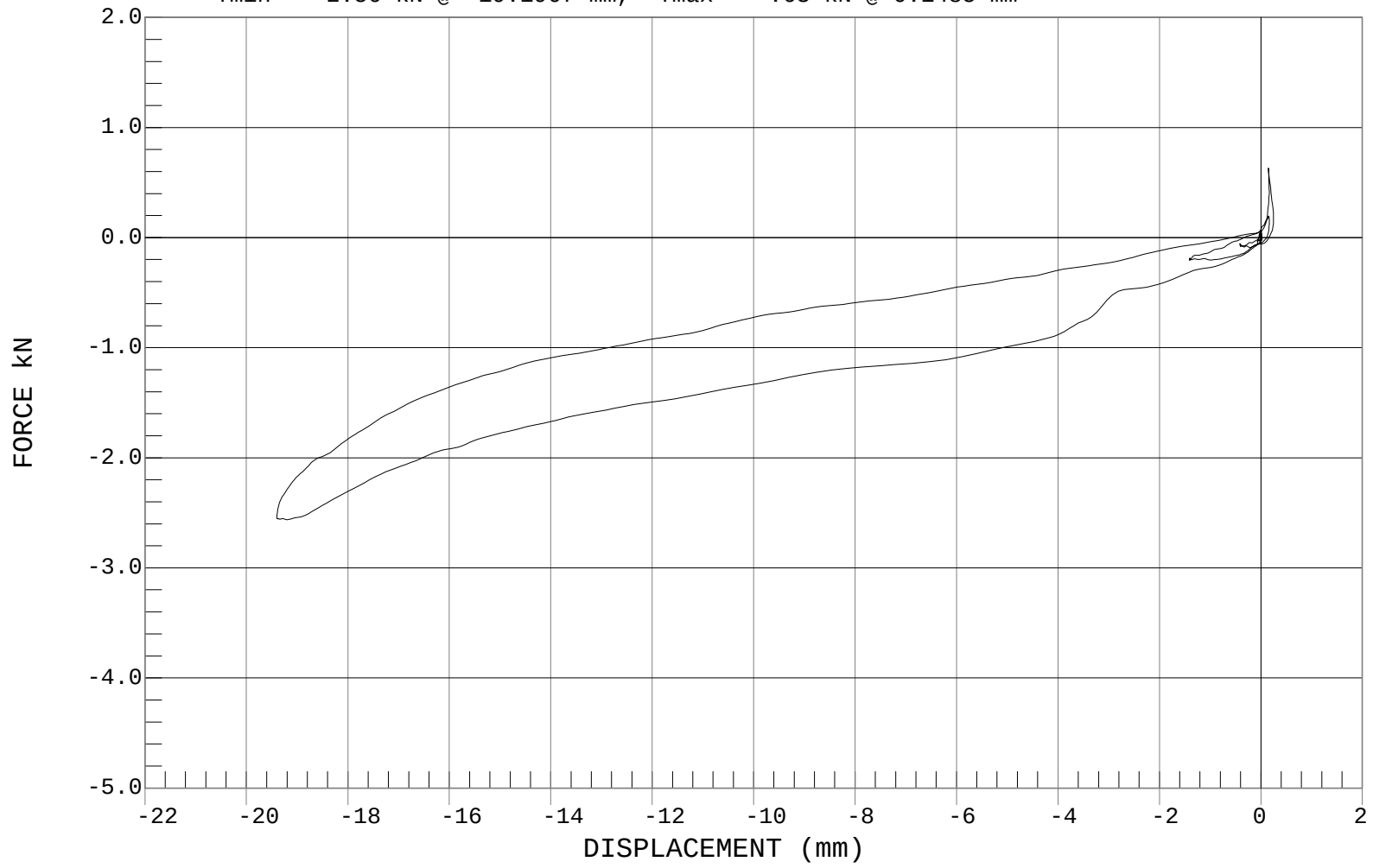
RIGHT KNEE SLIDER

Test Desc.: Dummy Calibration - Right Knee Slider
Component: Dummy #192

Test Date: 02-09-01
Speed: 9.13 FT/SEC, 2.78 M/SEC

1 FORCE, D01197FC.F05

Ymin = -2.56 kN @ -19.1967 mm, Ymax = .63 kN @ 0.1485 mm



Hybrid III Calibration Data Sheet

50th Percentile Male

Left Knee Slider

ATD Serial No.: 192 Test I.D.: D01198

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	°C	18.9 to 25.6	21.7	PASS
Relative Humidity	%	10 to 70	34	PASS
Velocity	m/s	2.7 – 2.8	2.8	PASS
Impact Force @ 10 mm	kN	-1.72 to -1.26	-1.27	PASS
Impact Force @ 18 mm	kN	-3.10 to -2.27	-2.30	PASS
		Overall Test Results		PASS

Laboratory Technician

2/9/01
Test Date

Approved By

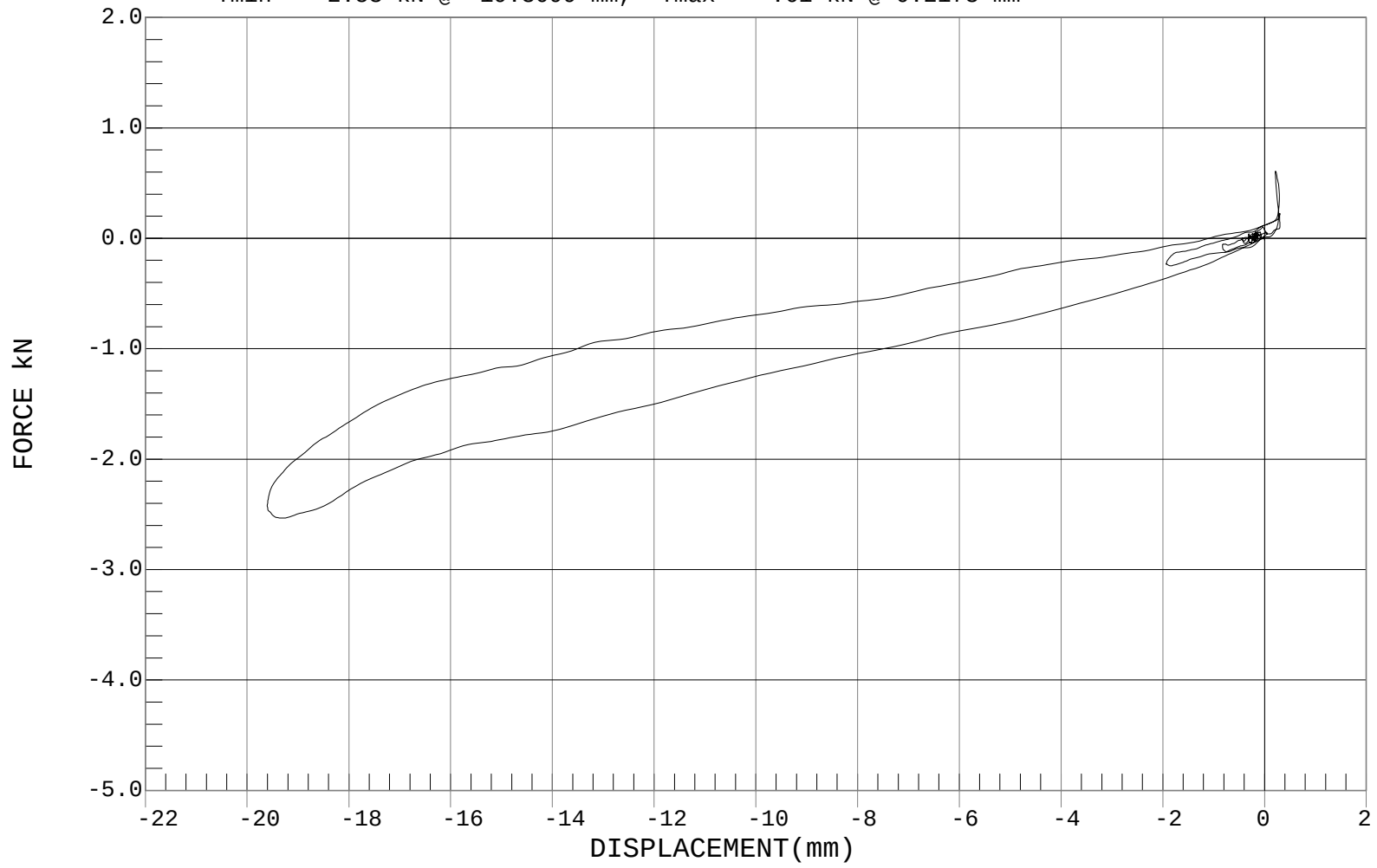
LEFT KNEE SLIDER

Test Desc.: Dummy Calibration - Left Knee Slider
Component: Dummy #192

Test Date: 02-09-01
Speed: 9.13 FT/SEC, 2.78 M/SEC

1 FORCE, D01198FC.F05

Ymin = -2.53 kN @ -19.3099 mm, Ymax = .61 kN @ 0.2173 mm



Hybrid III Calibration Data Sheet

50th Percentile Male

External Measurements

ATD Serial No.: 192 Test I.D.: D00142

External Measurement Data				
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.4 to 22.1	21.8°	PASS
Laboratory Relative Humidity	%	10 to 70	33%	PASS
A – Total sitting height	mm	879 to 889	885	PASS
B – Shoulder pivot height	mm	506 to 521	512	PASS
C – "H" point height	mm	84 to 89	87	PASS
D – "H" point from seat back	mm	135 to 140	138	PASS
E – Shoulder pivot from back	mm	84 to 94	90	PASS
F – Thigh clearance	mm	140 to 156	146	PASS
G – Elbow back to wrist pivot	mm	290 to 305	298	PASS
H – Skull cap to back line	mm	41 to 46	44	PASS
I – Shoulder to elbow length	mm	330 to 345	338	PASS
J – Elbow rest height	mm	191 to 211	201	PASS
K – Buttock to knee length	mm	579 to 605	591	PASS
L – Popliteal length	mm	429 to 455	439	PASS
M – Knee pivot height	mm	485 to 500	492	PASS
N – Buttock popliteal length	mm	452 to 478	463	PASS
O – Chest depth	mm	213 to 229	220	PASS
P – Foot length	mm	252 to 267	264	PASS
V – Shoulder breadth	mm	422 to 437	428	PASS
W – Foot breadth	mm	91 to 107	102	PASS
Y – Chest circumference	mm	970 to 1001	988	PASS
Z – Waist circumference	mm	836 to 866	850	PASS
AA – Location for chest circumference	mm	429 to 434	432	PASS
BB – Location for waist circumference	mm	226 to 231	229	PASS
		Overall Test Results		PASS

2/8/01

Laboratory Technician

Test Date

Approved By

Hybrid III Calibration Data Sheet

50th Percentile Male

Left Knee Impact Test

ATD Serial No.: 142 Test I.D.: D01186

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.7	PASS
Laboratory Relative Humidity	%	10 to 70	28	PASS
Probe Velocity	m/s	2.07 to 2.13	2.11	PASS
Peak Probe Force	Newtons	4715 to 5782	5278	PASS
		Overall Test Results		PASS

2/8/01

Laboratory Technician

Test Date

Approved By

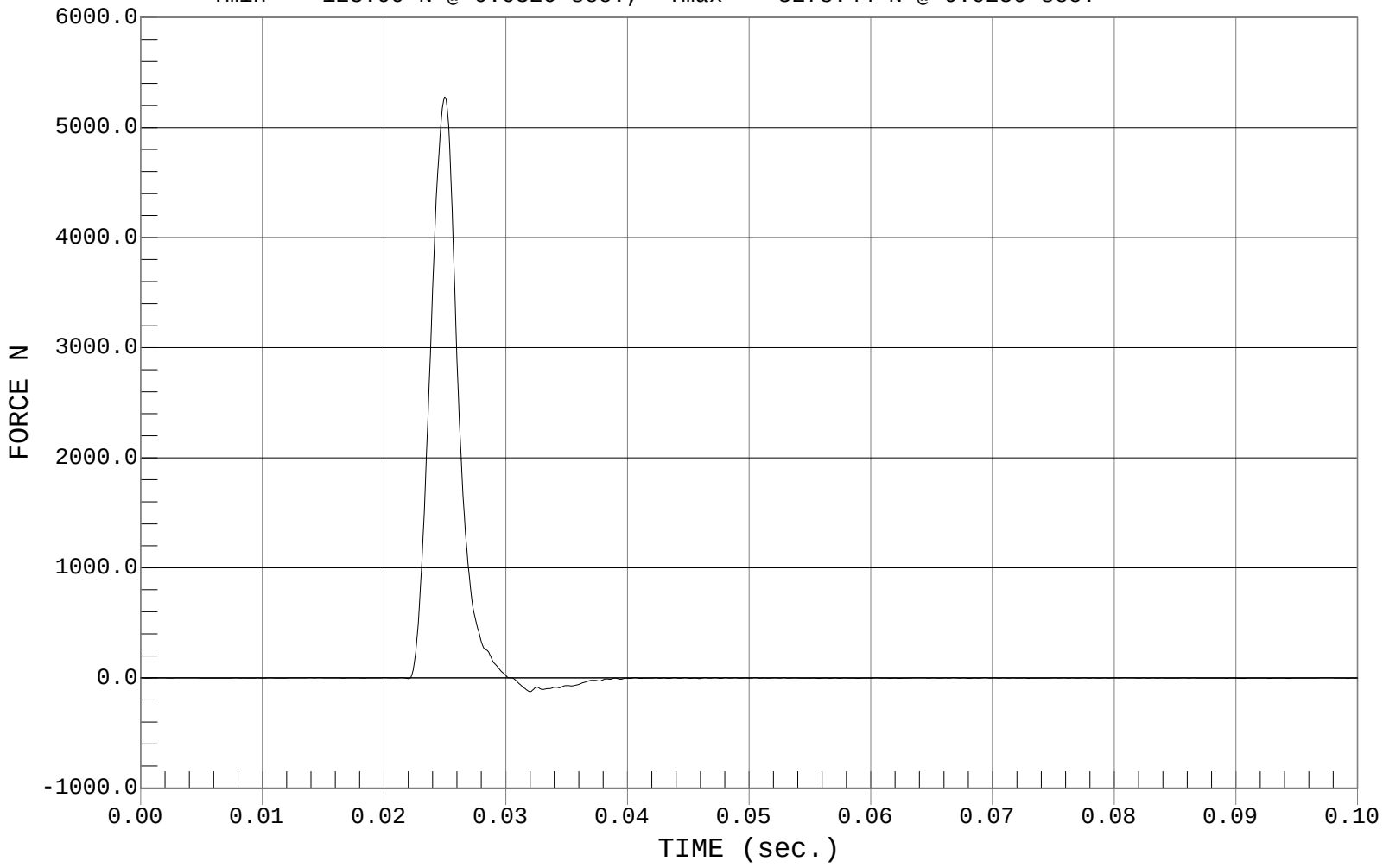
LEFT KNEE IMPACT

Test Desc.: Dummy Calibration - Left Knee Impact
Component: Dummy #142

Test Date: 02-08-01
Speed: 6.91 FT/SEC, 2.11 M/SEC

1 FORCE, D01186FF.F09

Ymin = -123.99 N @ 0.0320 sec., Ymax = 5278.44 N @ 0.0250 sec.



Hybrid III Calibration Data Sheet

50th Percentile Male

Right Knee Impact Test

ATD Serial No.: 142 Test I.D.: D01185

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.7	PASS
Laboratory Relative Humidity	%	10 to 70	28	PASS
Probe Velocity	m/s	2.07 to 2.13	2.10	PASS
Peak Probe Force	Newtons	4715 to 5782	5449	PASS
		Overall Test Results		PASS

Laboratory Technician

2/8/01
Test Date

Approved By

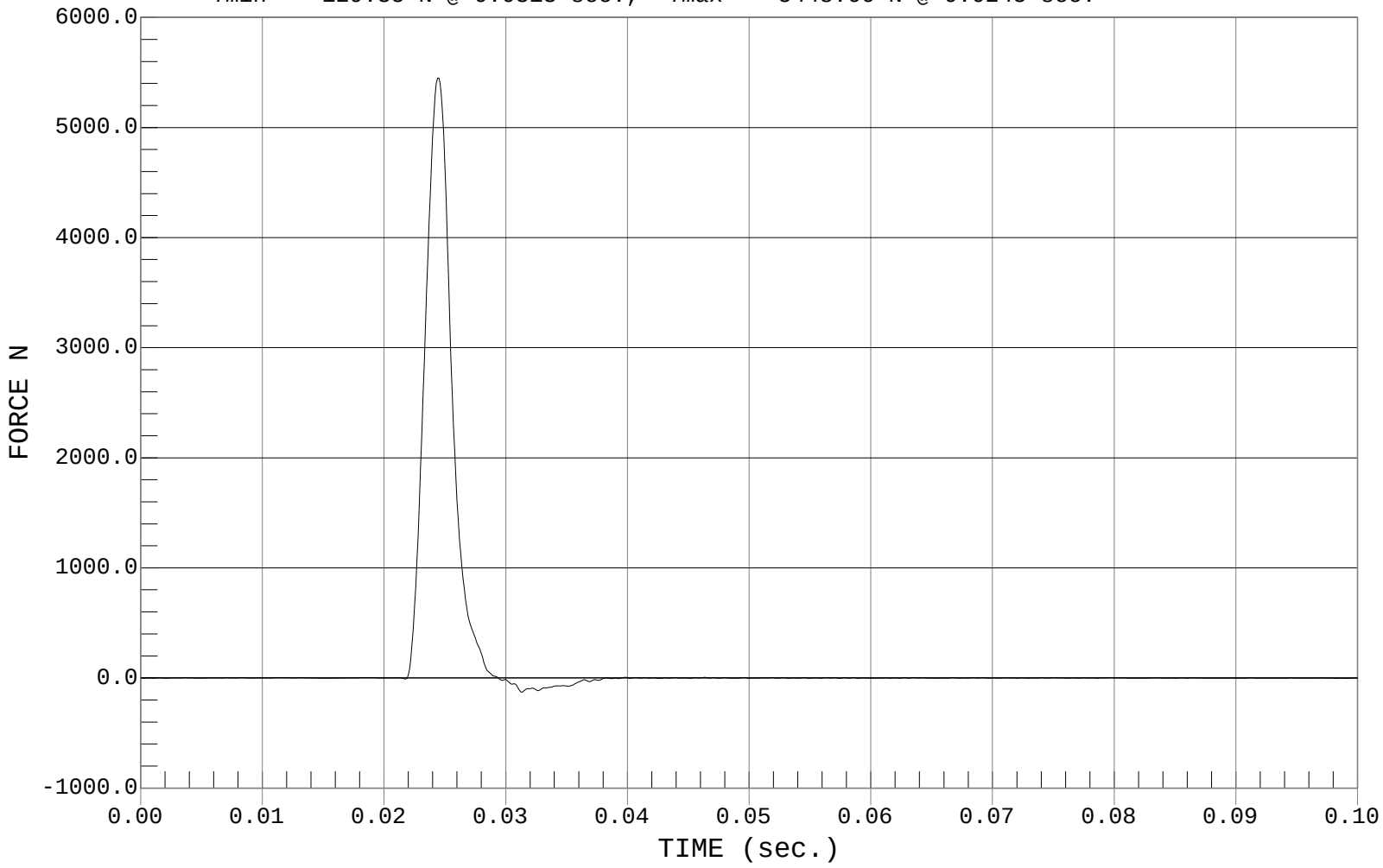
RIGHT KNEE IMPACT

Test Desc.: Dummy Calibration - Right Knee Impact
Component: Dummy #142

Test Date: 02-08-01
Speed: 6.89 FT/SEC, 2.10 M/SEC

1 FORCE, D01185FF.F09

Ymin = -129.35 N @ 0.0313 sec., Ymax = 5448.66 N @ 0.0245 sec.



Hybrid III Calibration Data Sheet

50th Percentile Male

Head Drop Calibration

ATD Serial No.: 142 Test I.D.: D01181

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.5	PASS
Laboratory Relative Humidity	%	10 to 70	33	PASS
Peak Resultant Acceleration	G's	225.0 to 275.0	246.9	PASS
Peak Probe Force	G's	≤15.0	11.5	PASS
Is Acceleration Unimodal?	Yes/No	< 10% Peak	Yes	PASS
		Overall Test Results		PASS

Laboratory Technician

2/9/01
Test Date

Approved By

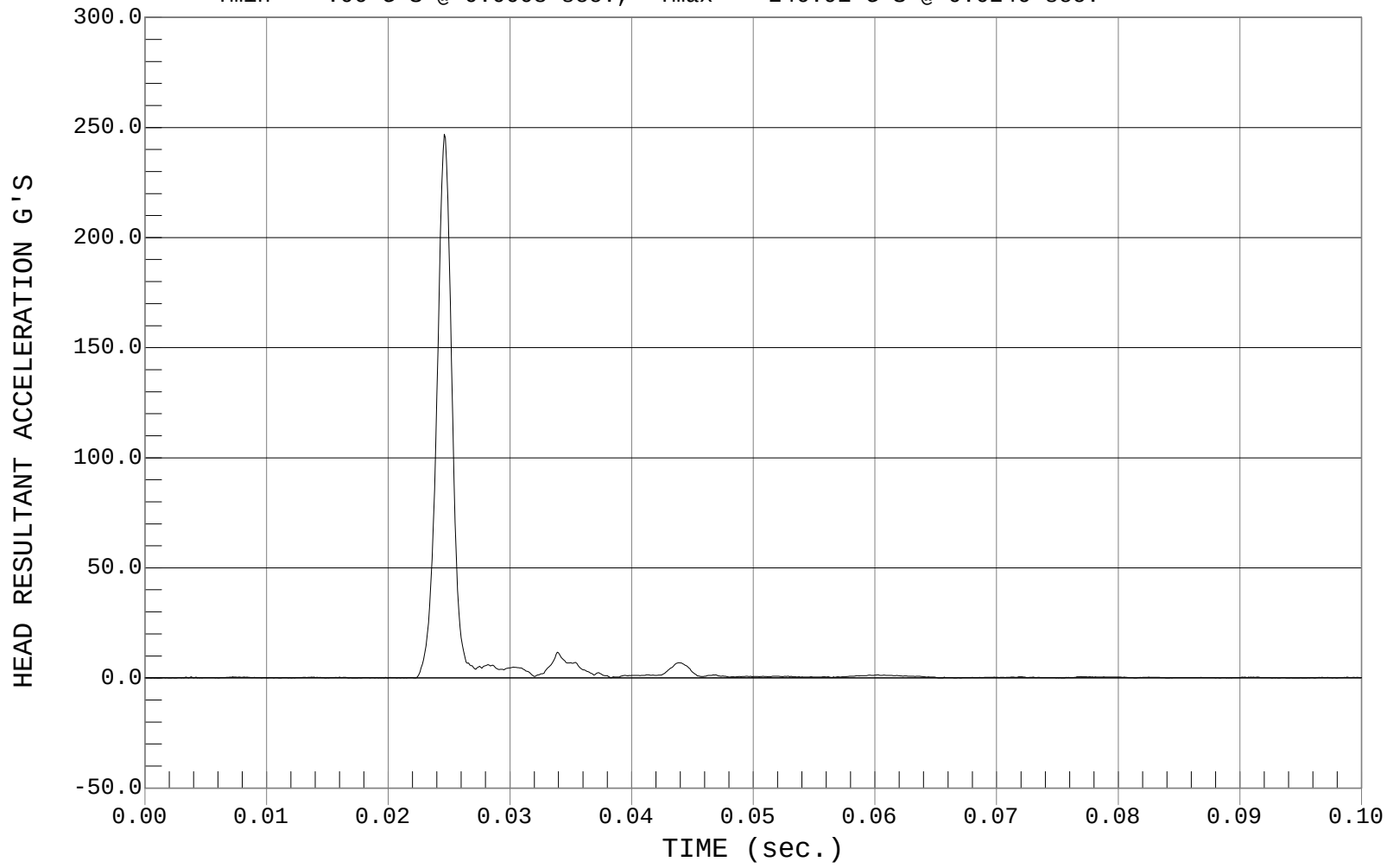
PEAK RESULTANT ACCELERATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #142

Test Date: 02-09-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

1 HEAD RESULTANT ACCELERATION, D01181AV.A01

Ymin = .06 G'S @ 0.0008 sec., Ymax = 246.91 G'S @ 0.0246 sec.



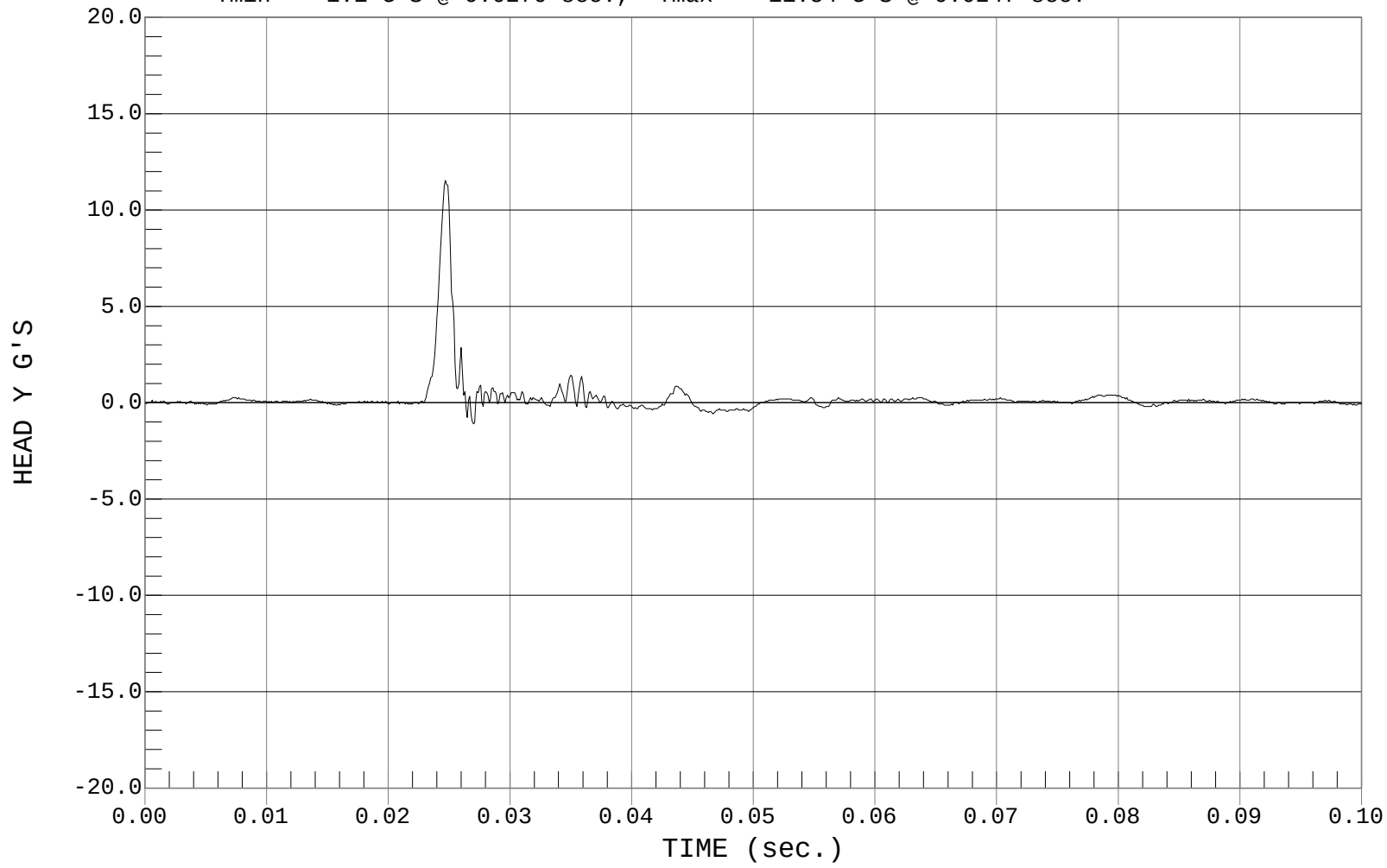
PEAK LATERAL ACCELRATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #142

Test Date: 02-09-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

1 HEAD Y, D01181AR.A02

Ymin = -1.1 G'S @ 0.0270 sec., Ymax = 11.54 G'S @ 0.0247 sec.



Hybrid III Calibration Data Sheet

50th Percentile Male

Thorax Impact Test

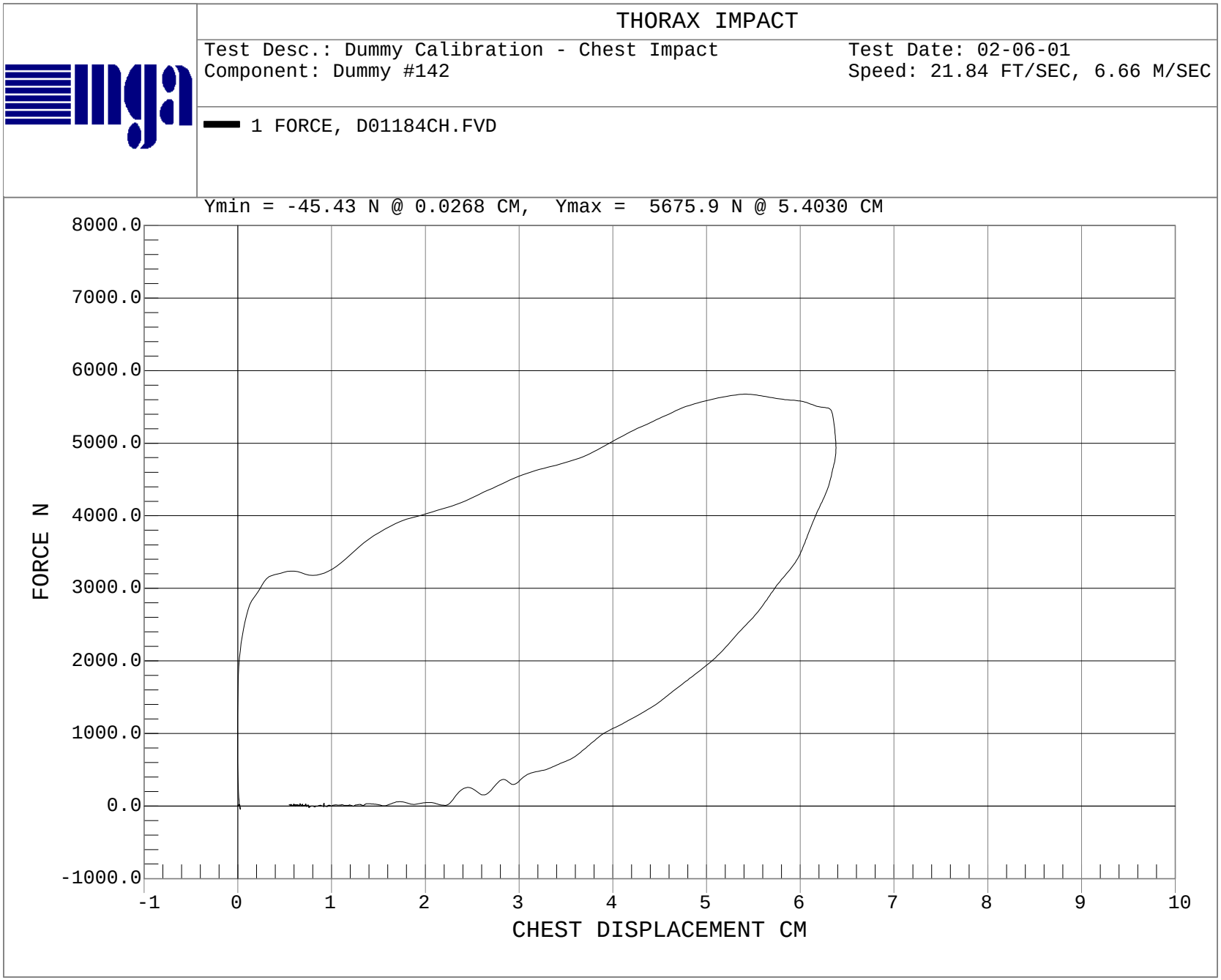
ATD Serial No.: 142 Test I.D.: D01184

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.6	PASS
Laboratory Relative Humidity	%	10 to 70	21	PASS
Probe Velocity	m/s	6.58 to 6.82	6.66	PASS
Peak Probe Force	Newtons	5159 to 5893	5676	PASS
Peak Sternum Displacement	CM	6.35 to 7.26	6.38	PASS
Internal Hysteresis	%	69 to 85	77	PASS
		Overall Test Results		PASS

Laboratory Technician

2/6/01
Test Date

Approved By


THORAX IMPACT
Test Desc.: Dummy Calibration - Chest Impact
Test Date: 02-06-01
Component: Dummy #142
Speed: 21.84 FT/SEC, 6.66 M/SEC
1 FORCE, D01184CH.FVD
Ymin = -45.43 N @ 0.0268 CM, Ymax = 5675.9 N @ 5.4030 CM
FORCE N
8000.0
7000.0
6000.0
5000.0
4000.0
3000.0
2000.0
1000.0
0.0
-1000.0
-1
0
1
2
3
4
5
6
7
8
9
10
CHEST DISPLACEMENT CM

Hybrid III Calibration Data Sheet

50th Percentile Male

Neck Flexion Test

ATD Serial No.: 142 Test I.D.: D01182

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.7	PASS
Laboratory Relative Humidity		%	10 to 70	25	PASS
Pendulum Velocity		m/s	6.89 to 7.13	7.08	PASS
Pendulum Deceleration	10 Msec.	G's	22.50 to 27.50	22.54	PASS
	20 Msec.	G's	17.60 to 22.60	19.56	PASS
	30 Msec.	G's	12.50 to 18.50	16.24	PASS
Peak Pendulum Decel. After 30 Msec.		G's	≤29.0	16.2	PASS
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	39.0	PASS
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	70.2	PASS
	Time	Msec.	57.0 to 64.0	59.8	PASS
"D" Plane Rotation Decay Time To Zero Crossing		Msec.	113.0 to 128.0	116.4	PASS
Moment About Occipital Condyle	Maximum	N· m	84.1 to 108.5	90.9	PASS
	Time	Msec.	47.0 to 58.0	52.0	PASS
Positive Moment Decay Time To Zero Crossing		Msec.	97.0 to 107.0	97.6	PASS
			Overall Test Results		PASS

Laboratory Technician

2/8/01
Test Date

Approved By

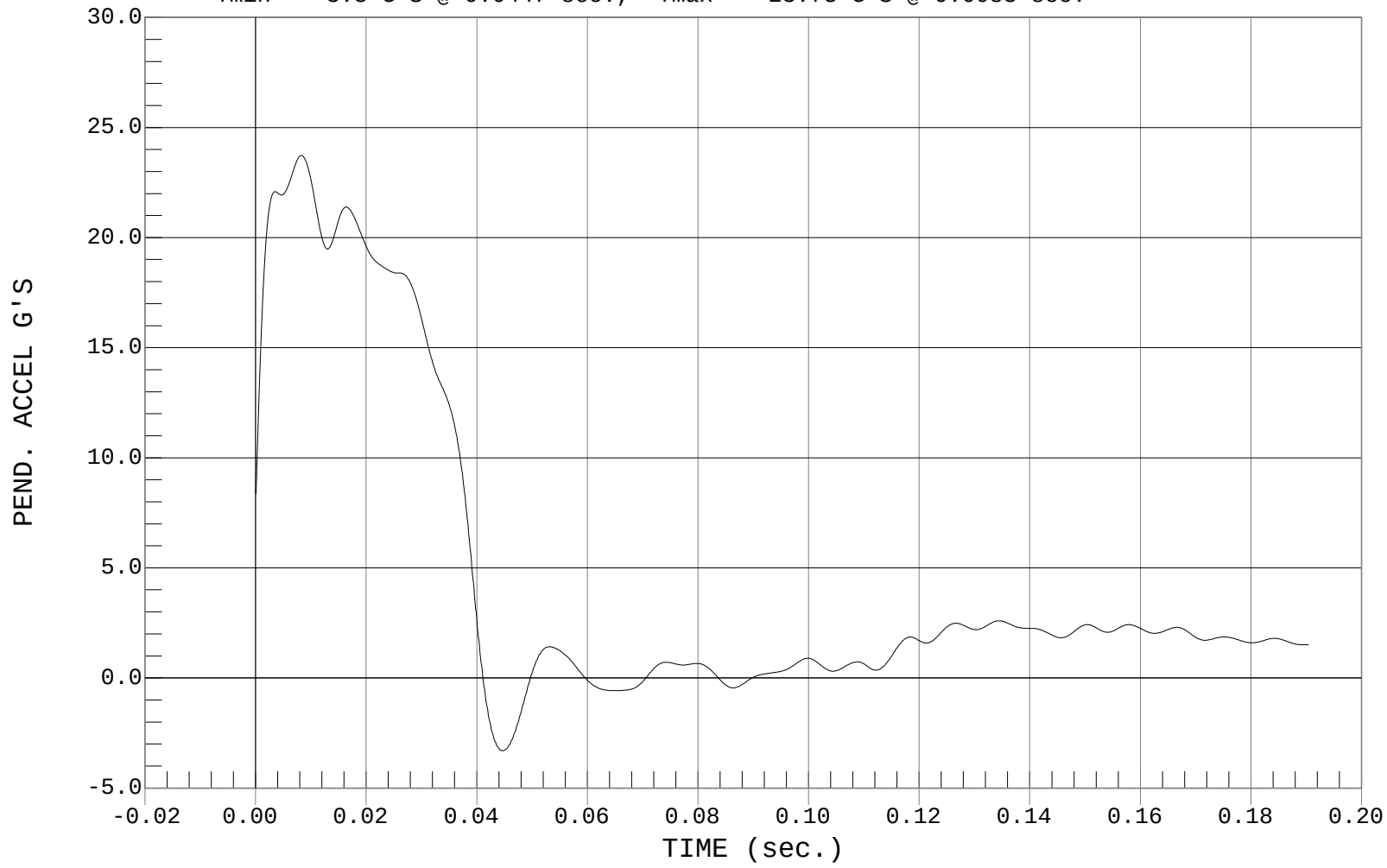
PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #142

Test Date: 02-08-01
Speed: 23.24 FT/SEC, 7.08 M/SEC

1 PEND. ACCEL, D01182AF.A04

Ymin = -3.3 G'S @ 0.0447 sec., Ymax = 23.73 G'S @ 0.0083 sec.



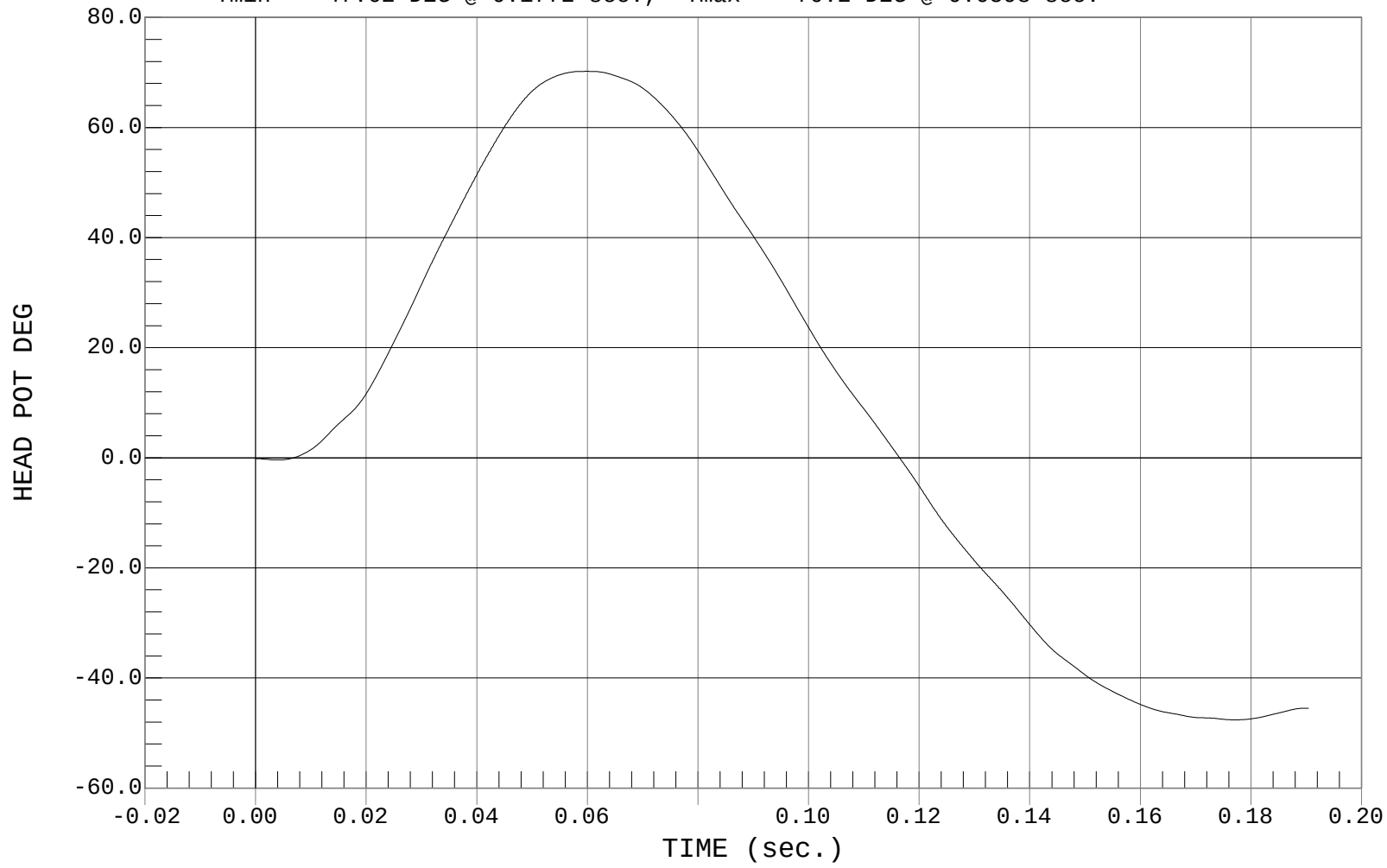
NECK ROTATION

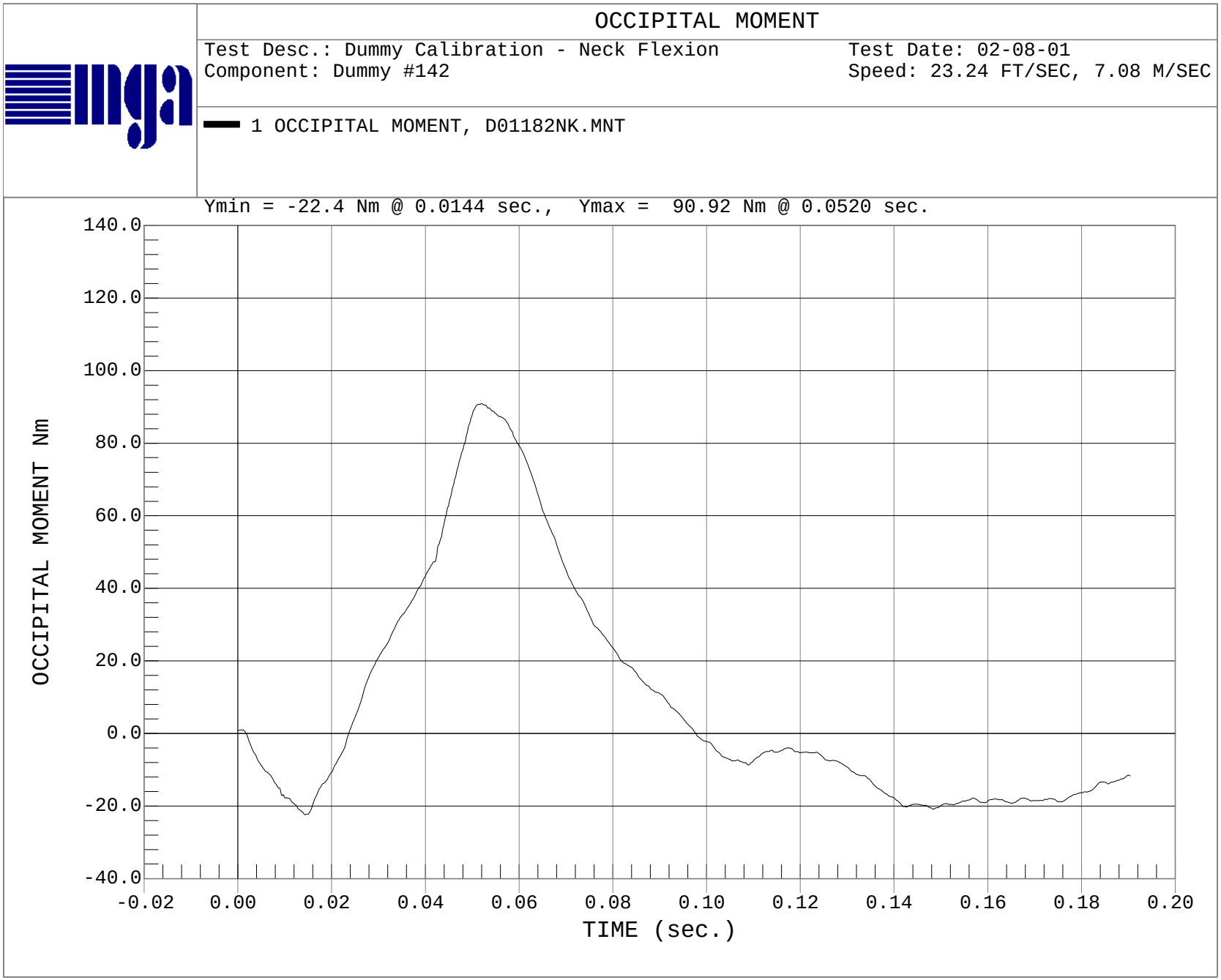
Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #142

Test Date: 02-08-01
Speed: 23.24 FT/SEC, 7.08 M/SEC

1 HEAD POT, D01182DU.D05

Ymin = -47.62 DEG @ 0.1772 sec., Ymax = 70.2 DEG @ 0.0598 sec.




OCCIPITAL MOMENT
Test Desc.: Dummy Calibration - Neck Flexion
Test Date: 02-08-01
Component: Dummy #142
Speed: 23.24 FT/SEC, 7.08 M/SEC
1 OCCIPITAL MOMENT, D01182NK.MNT
Ymin = -22.4 Nm @ 0.0144 sec., Ymax = 90.92 Nm @ 0.0520 sec.
OCCIPITAL MOMENT Nm
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
-20.0
-40.0
-0.02
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.16
0.18
0.20
TIME (sec.)

Hybrid III Calibration Data Sheet

50th Percentile Male

Neck Extension Test

ATD Serial No.: 142 Test I.D.: D01183

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.7	PASS
Laboratory Relative Humidity		%	10 to 70	25	PASS
Pendulum Velocity		m/s	5.95 to 6.19	6.15	PASS
Pendulum Deceleration	10 Msec.	G's	17.20 to 21.20	18.39	PASS
	20 Msec.	G's	14.00 to 19.00	16.57	PASS
	30 Msec.	G's	11.00 to 16.00	12.89	PASS
Peak Pendulum Deceleration After 30 Msec.		G's	≤22.0	13.2	PASS
Deceleration Decay Time to Cross 5 G's		Msec.	38.0 to 46.0	40.0	PASS
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	94.7	PASS
	Time	Msec.	72.0 to 82.0	74.7	PASS
"D" Plane Rotation Decay Time To Zero Crossing		Msec.	147.0 to 174.0	150.9	PASS
Moment About Occipital Condyle	Maximum	N· m	-52.9 to –79.9	-66.1	PASS
	Time	Msec.	65.0 to 79.0	71.9	PASS
Negative Moment Decay Time To Zero Crossing		Msec.	120.0 to 148.0	135.6	PASS
			Overall Test Results		PASS

Laboratory Technician

2/8/01
Test Date

Approved By

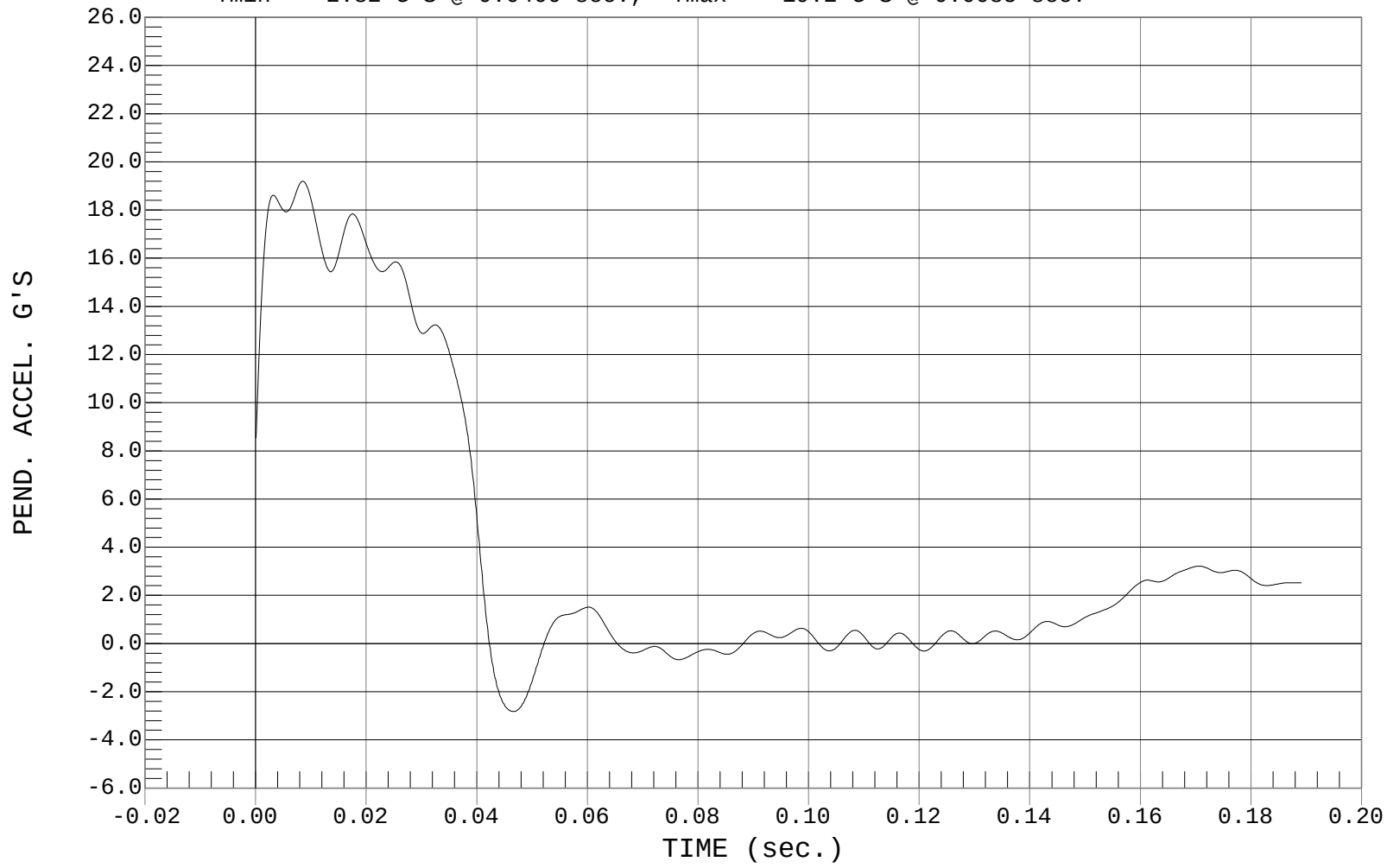
PENDULUM DECELERATION

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #142

Test Date: 02-08-01
Speed: 20.17 FT/SEC, 6.15 M/SEC

1 PEND. ACCEL., D01183AF.A04

Ymin = -2.82 G'S @ 0.0466 sec., Ymax = 19.2 G'S @ 0.0085 sec.



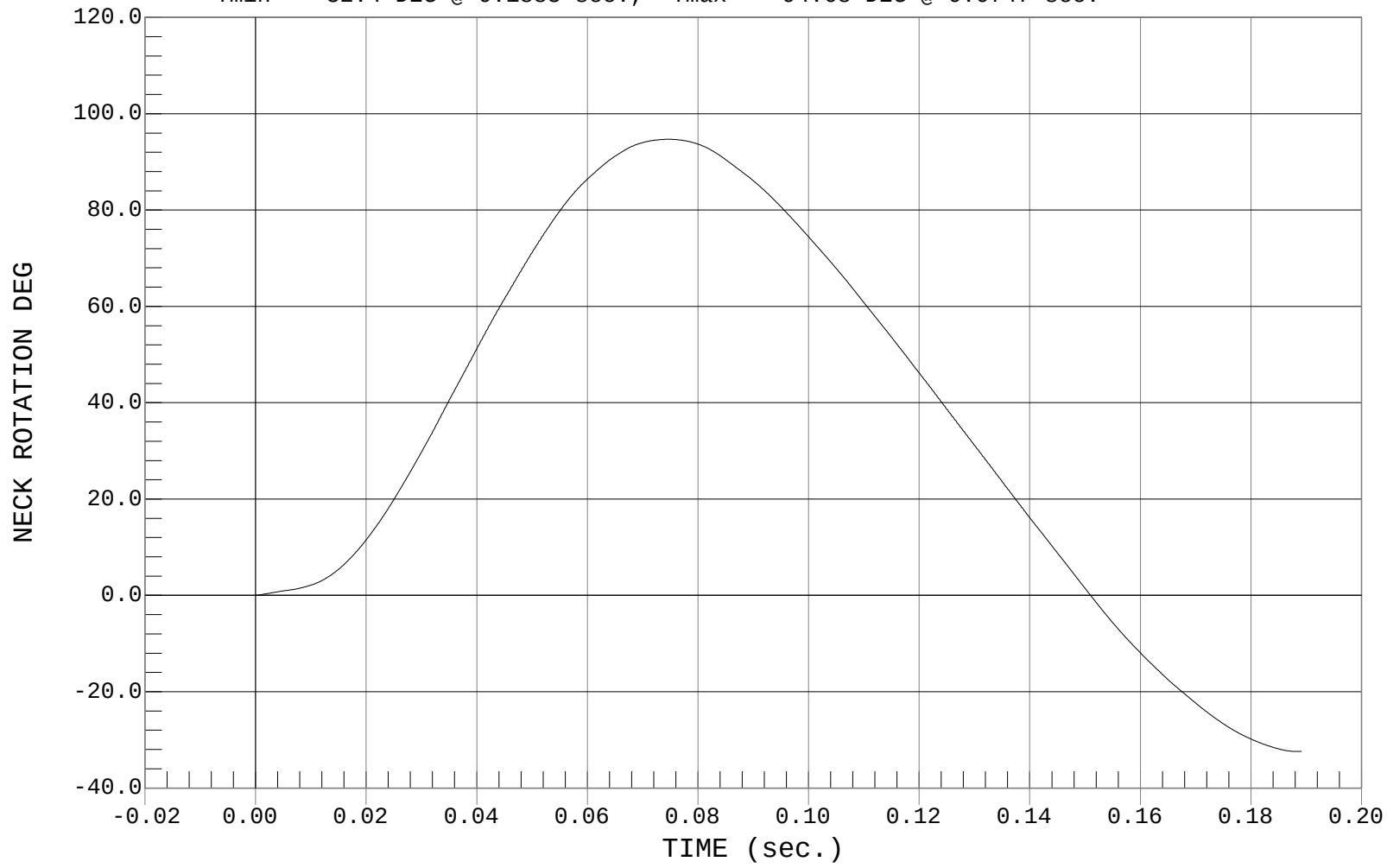
NECK ROTATION

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #142

Test Date: 02-08-01
Speed: 20.17 FT/SEC, 6.15 M/SEC

1 NECK ROTATION, D01183DU.D05

Ymin = -32.4 DEG @ 0.1883 sec., Ymax = 94.68 DEG @ 0.0747 sec.



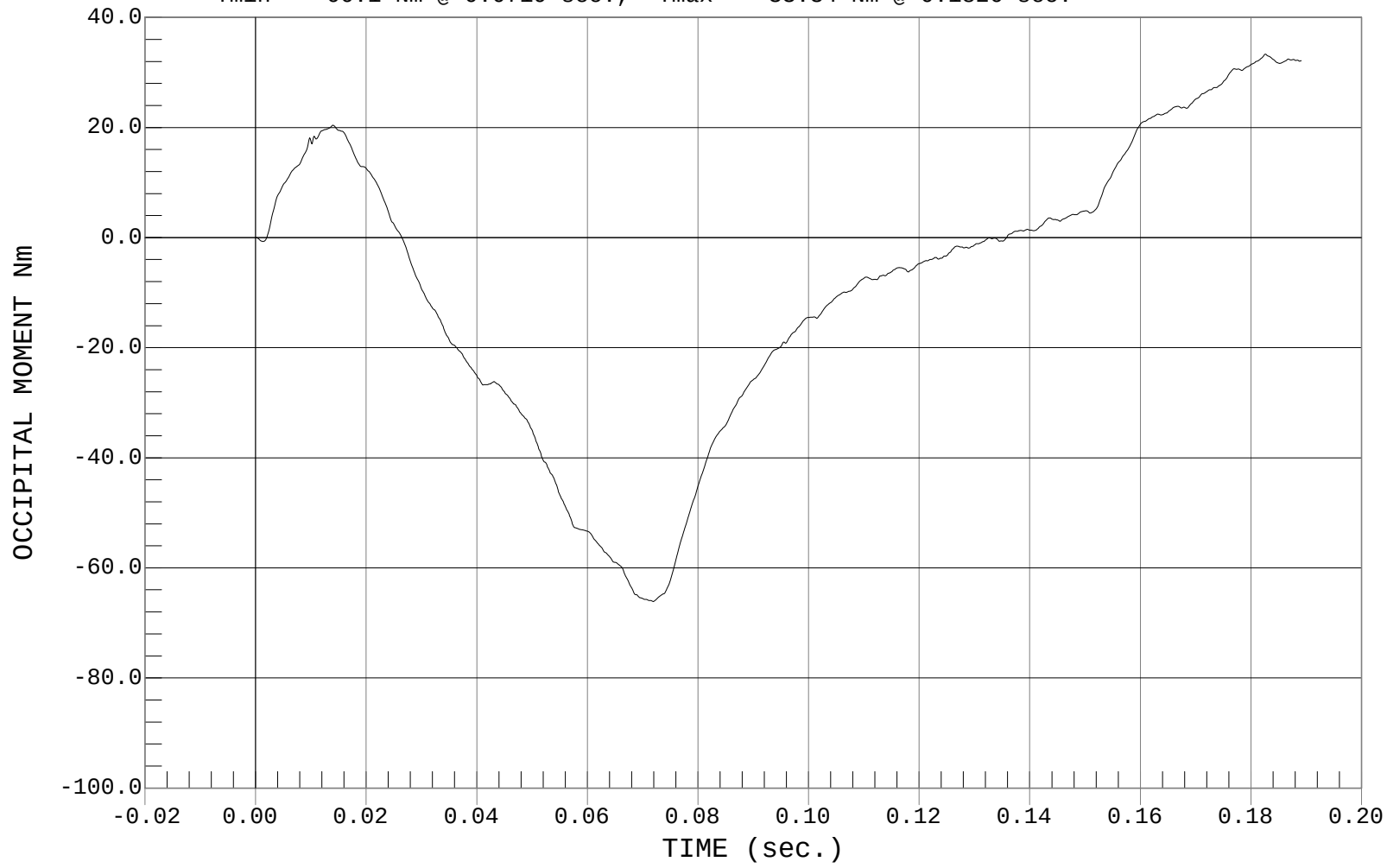
OCCIPITAL MOMENT

Test Desc.: Dummy Calibration - Neck Extension
Component: Dummy #142

Test Date: 02-08-01
Speed: 20.17 FT/SEC, 6.15 M/SEC

1 OCCIPITAL MOMENT, D01183NK.MNT

Ymin = -66.1 Nm @ 0.0719 sec., Ymax = 33.34 Nm @ 0.1826 sec.



Hybrid III Calibration Data Sheet

50th Percentile Male

Hip-Femur Flexion Test

ATD Serial No.: 142 Test I.D.: D01189/0

Tested Parameter	Units	Specification	Result		Pass/Fail
			Right	Left	
Temperature	°C	18.9 to 25.6	21.8	21.8	PASS
Relative Humidity	%	10 to 70	33	33	PASS
Rotation Rate	deg/sec	5 – 10	Yes	Yes	PASS
30 Degrees	Nm	94.9 Nm Max.	68.5	82.3	PASS
150 ft-lbf / 203.4 Nm	Deg	40 – 50 Degree Max. rotation	45	43	PASS
		Overall Test Results			PASS

2/9/01

Laboratory Technician

Test Date

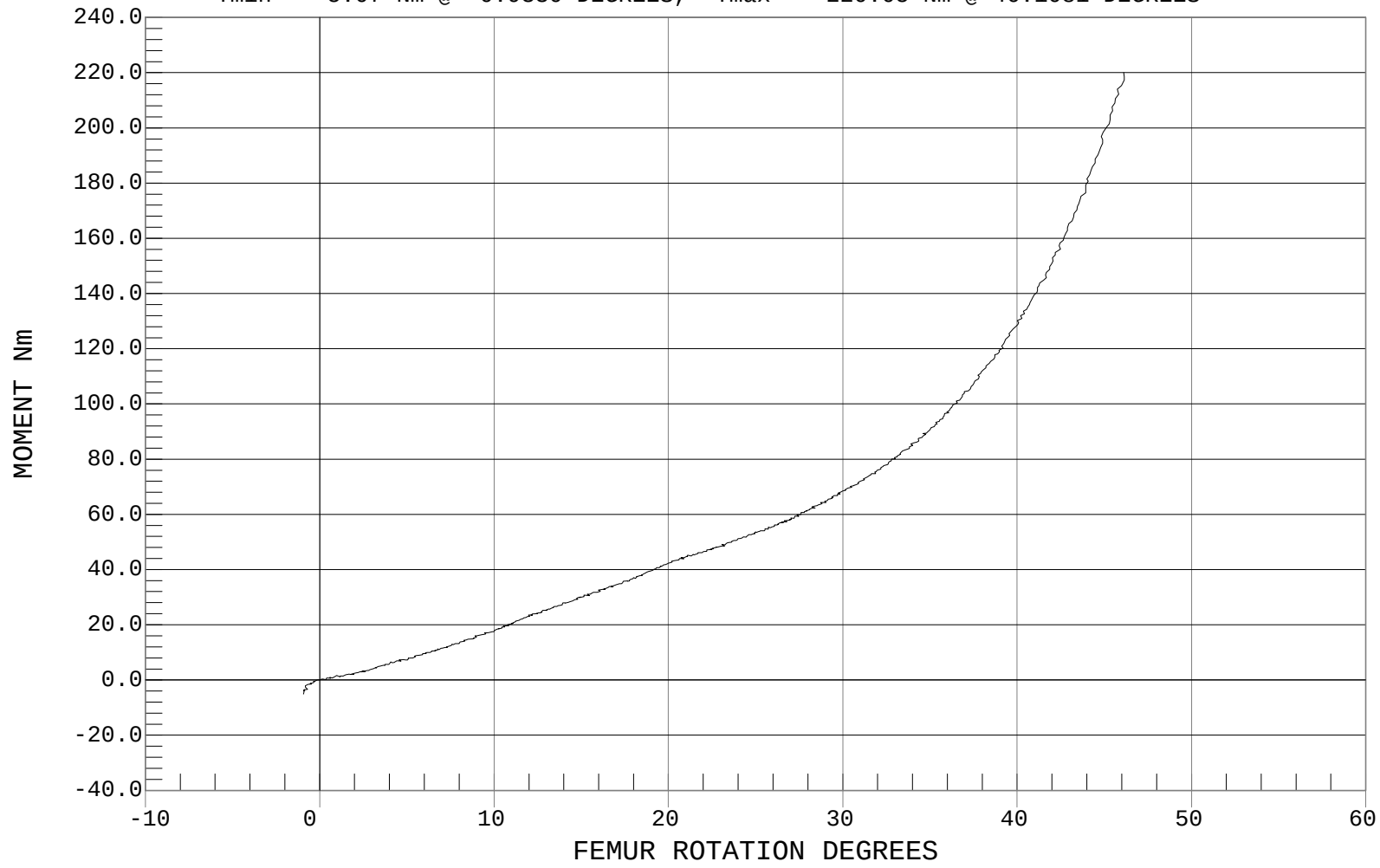
Approved By

HIP-FEMUR FLEXION

Test Desc.: DUMMY CALIBRATION - HIP-FEMUR FLEXION
Test Date: 02-09-01
Component: DUMMY # 142 RIGHT FEMUR
Speed: 0.00 FT/SEC, 0.00 M/SEC

1 MOMENT, D01189FC.F14

Ymin = -5.07 Nm @ -0.9330 DEGREES, Ymax = 220.05 Nm @ 46.1081 DEGREES

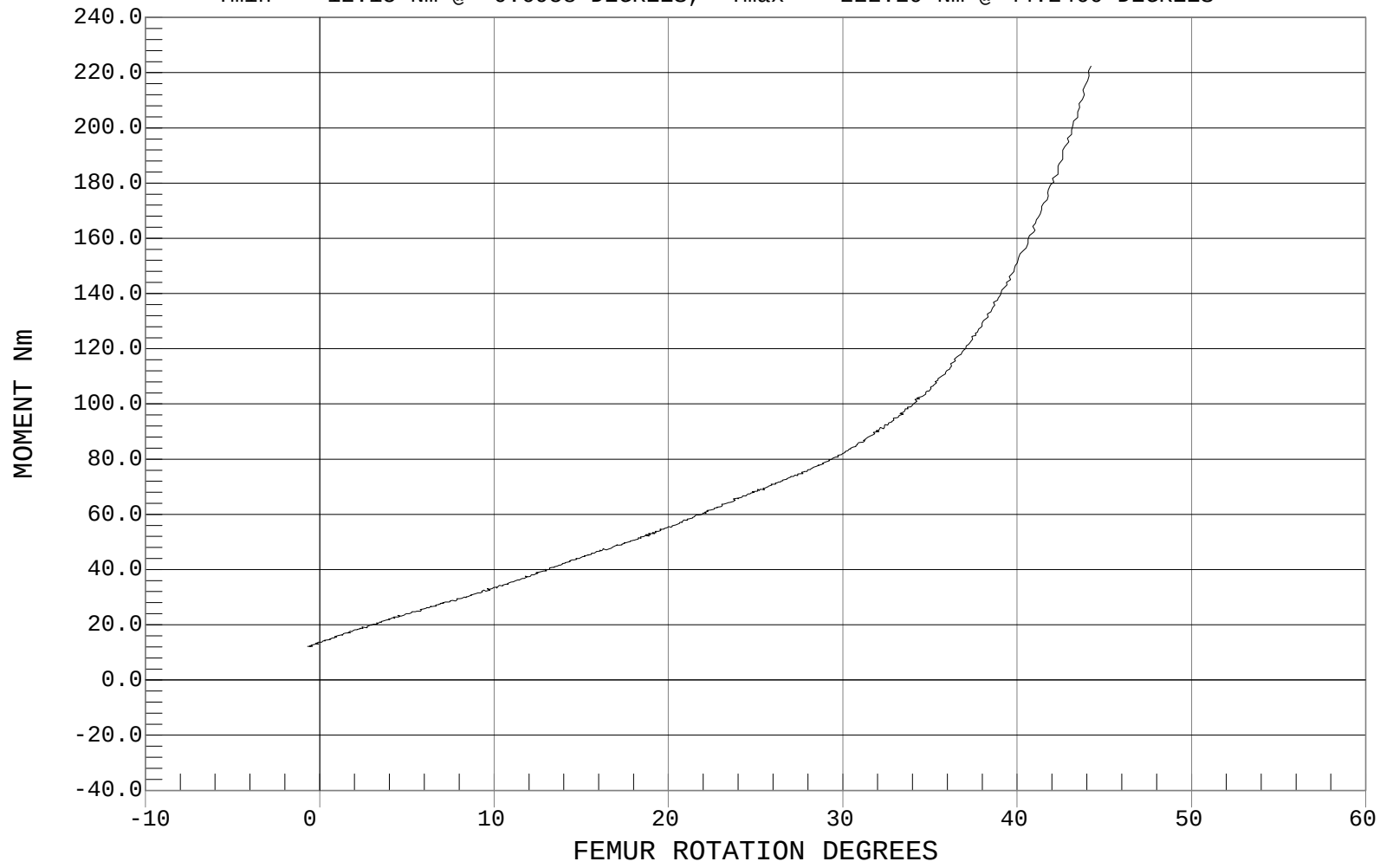


HIP-FEMUR FLEXION

Test Desc.: DUMMY CALIBRATION - HIP-FEMUR FLEXION Test Date: 02-09-01
Component: DUMMY # 142 LEFT FEMUR Speed: 0.00 FT/SEC, 0.00 M/SEC

1 MOMENT, D01180FC.F14

Ymin = 12.15 Nm @ -0.6958 DEGREES, Ymax = 222.29 Nm @ 44.2460 DEGREES



Hybrid III Calibration Data Sheet

50th Percentile Male

Right Knee Slider

ATD Serial No.: 142 Test I.D.: D01187

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	°C	18.9 to 25.6	21.7	PASS
Relative Humidity	%	10 to 70	30	PASS
Velocity	m/s	2.7 – 2.8	2.8	PASS
Impact Force @ 10 mm	kN	-1.72 to -1.26	-1.33	PASS
Impact Force @ 18 mm	kN	-3.10 to -2.27	-2.40	PASS
		Overall Test Results		PASS

Laboratory Technician

2/8/01
Test Date

Approved By

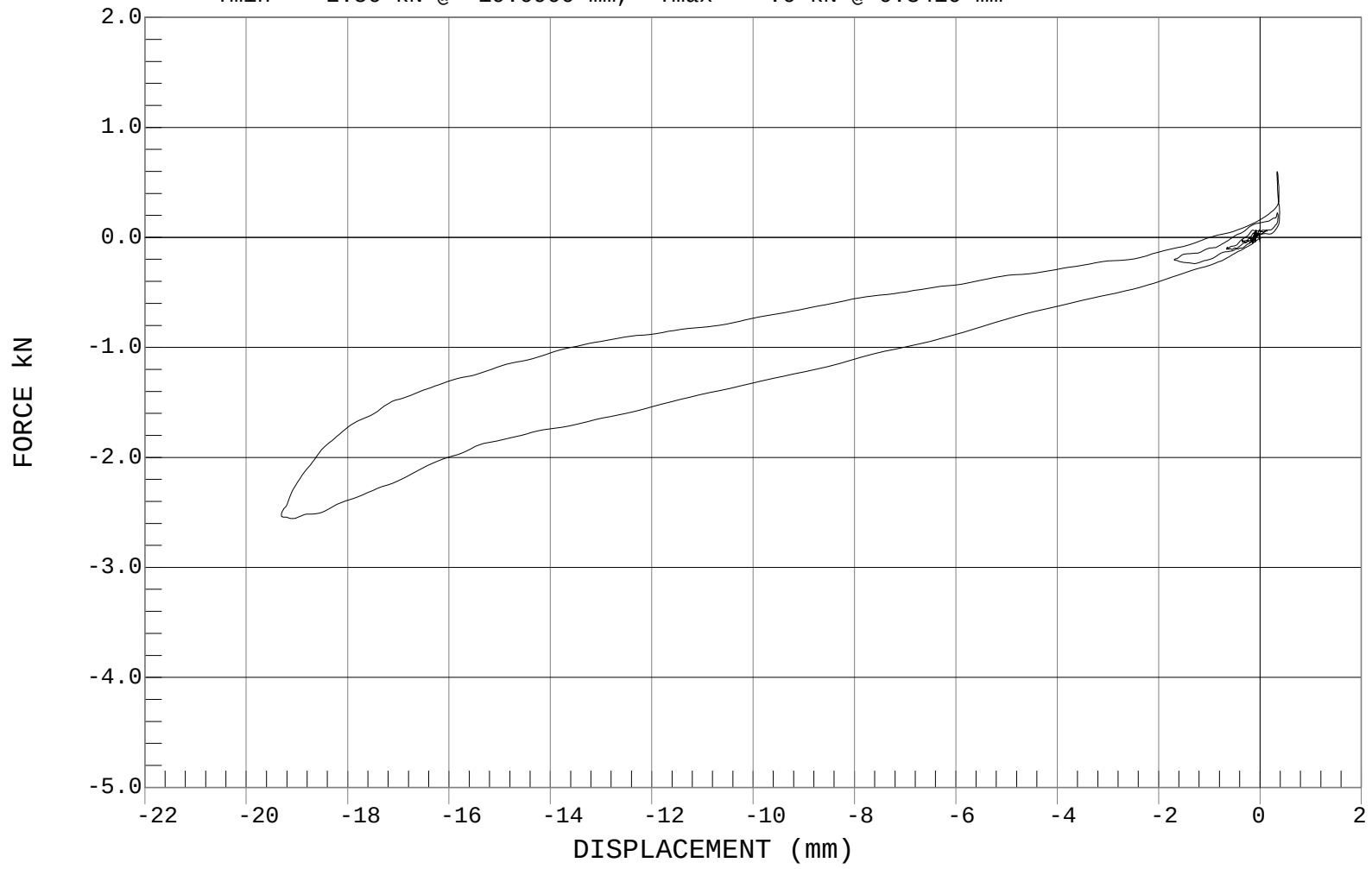
RIGHT KNEE SLIDER

Test Desc.: Dummy Calibration - Right Knee Slider
Component: Dummy #142

Test Date: 02-08-01
Speed: 9.13 FT/SEC, 2.78 M/SEC

1 FORCE, D01187FC.F05

Ymin = -2.56 kN @ -19.0900 mm, Ymax = .6 kN @ 0.3410 mm



Hybrid III Calibration Data Sheet

50th Percentile Male

Left Knee Slider

ATD Serial No.: 142 Test I.D.: D01188

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	°C	18.9 to 25.6	21.8	PASS
Relative Humidity	%	10 to 70	30	PASS
Velocity	m/s	2.7 – 2.8	2.8	PASS
Impact Force @ 10 mm	kN	-1.72 to -1.26	-1.38	PASS
Impact Force @ 18 mm	kN	-3.10 to -2.27	-2.27	PASS
		Overall Test Results		PASS

Laboratory Technician

2/8/01
Test Date

Approved By

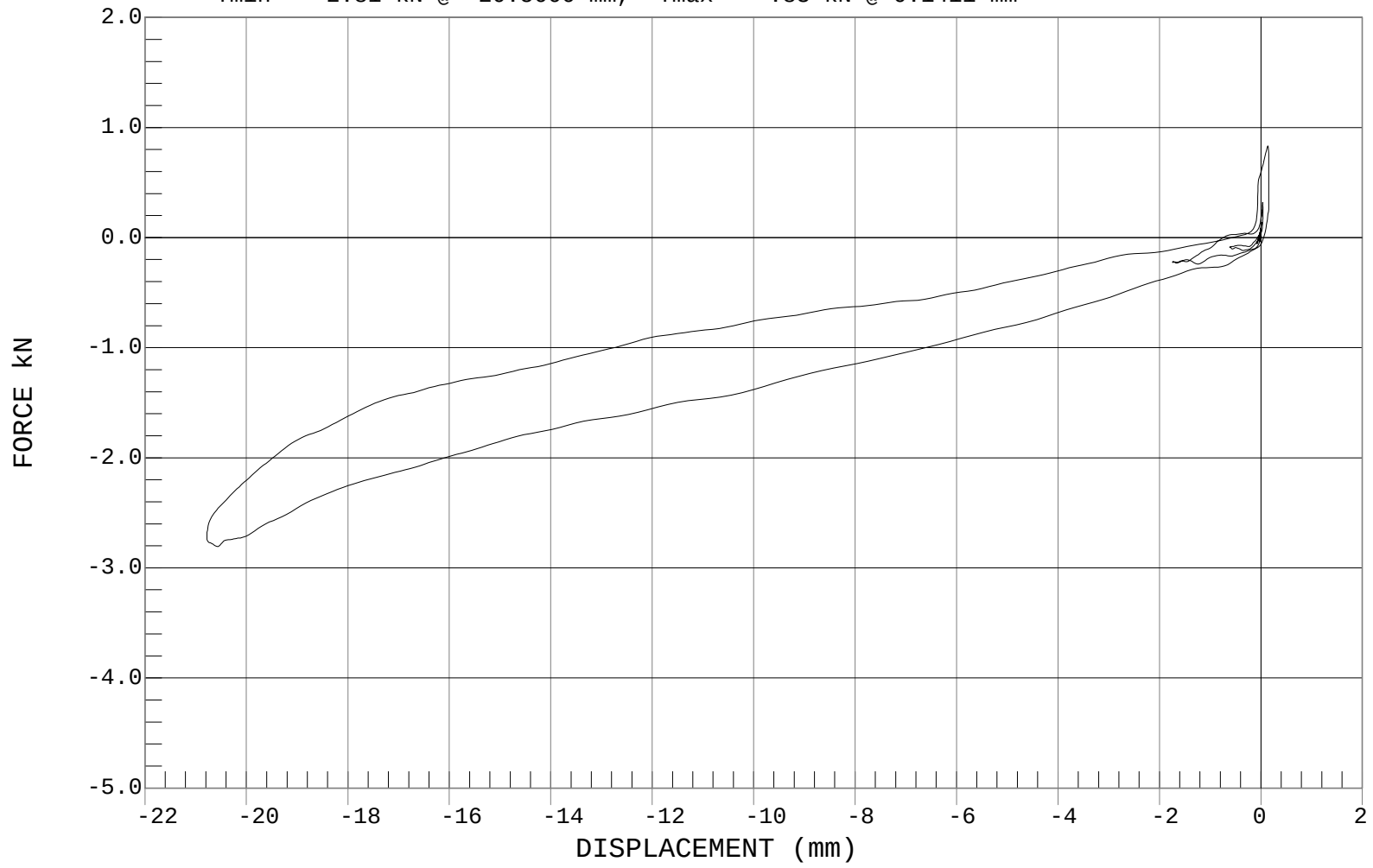
LEFT KNEE SLIDER

Test Desc.: Dummy Calibration - Left Knee Slider
Component: Dummy #142

Test Date: 02-09-01
Speed: 9.14 FT/SEC, 2.79 M/SEC

1 FORCE, D01188FC.F05

Ymin = -2.81 kN @ -20.5666 mm, Ymax = .83 kN @ 0.1411 mm



Hybrid III Calibration Data Sheet

50th Percentile Male

External Measurements

ATD Serial No.: 142 Test I.D.: D0118

External Measurement Data				
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.4 to 22.1	21.8	PASS
Laboratory Relative Humidity	%	10 to 70	33	PASS
A – Total sitting height	mm	879 to 889	884	PASS
B – Shoulder pivot height	mm	506 to 521	514	PASS
C – "H" point height	mm	84 to 89	86	PASS
D – "H" point from seat back	mm	135 to 140	138	PASS
E – Shoulder pivot from back	mm	84 to 94	88	PASS
F – Thigh clearance	mm	140 to 155	144	PASS
G – Elbow back to wrist pivot	mm	290 to 305	296	PASS
H – Skull cap to back line	mm	41 to 46	44	PASS
I – Shoulder to elbow length	mm	330 to 345	339	PASS
J – Elbow rest height	mm	191 to 211	198	PASS
K – Buttock to knee length	mm	579 to 605	585	PASS
L – Popliteal length	mm	429 to 455	444	PASS
M – Knee pivot height	mm	485 to 500	492	PASS
N – Buttock popliteal length	mm	452 to 478	462	PASS
O – Chest depth	mm	213 to 229	219	PASS
P – Foot length	mm	252 to 267	261	PASS
V – Shoulder breadth	mm	422 to 437	432	PASS
W – Foot breadth	mm	91 to 107	102	PASS
Y – Chest circumference	mm	970 to 1001	990	PASS
Z – Waist circumference	mm	836 to 866	852	PASS
AA – Location for chest circumference	mm	429 to 434	432	PASS
BB – Location for waist circumference	mm	226 to 231	229	PASS
		Overall Test Results		PASS

2/8/01

Laboratory Technician

Test Date

Approved By

APPENDIX D

TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION

DUMMY, VEHICLE, AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 142

	INSTRUMENTS FOR DRIVER DUMMY NO. 142		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X	J27523	Endevco	11/15/00
Head Y	J29023	Endevco	11/15/00
Head Z	J29006	Endevco	11/15/00
Head X Redundant	J35562	Endevco	11/15/00
Head Y Redundant	J27461	Endevco	11/15/00
Head Z Redundant	J27457	Endevco	11/15/00
Chest X	J27466	Endevco	11/15/00
Chest Y	J17470	Endevco	11/15/00
Chest Z	J17509	Endevco	11/15/00
Chest X Redundant	AAL32	Endevco	11/15/00
Chest Y Redundant	AGT82	Endevco	11/15/00
Chest Z Redundant	AGR67	Endevco	11/15/00
Right Femur Load Cell	F257FZ	Denton	9/20/00
Left Femur Load Cell	F258FZ	Denton	9/20/00
Pelvis X	AAKA1	Endevco	11/15/00
Pelvis Y	AF9Y5	Endevco	11/15/00
Pelvis Z	AAKA2	Endevco	11/15/00
Neck Force X	N261FX	Denton	8/31/00
Neck Force Y	N261FY	Denton	8/31/00
Neck Force Z	N261FZ	Denton	8/31/00
Neck Moment X	N261MX	Denton	8/31/00
Neck Moment Y	N261MY	Denton	8/31/00
Neck Moment Z	N261MZ	Denton	8/31/00
Chest Deflection Gauge	142	Servo	11/10/00
Lap Belt Load Cell	192	Denton	10/6/00
Shoulder Belt Load Cell	191	Denton	10/6/00

DUMMY, VEHICLE, AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 142

	INSTRUMENTS FOR DRIVER DUMMY NO. 142		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Right Tibia Moment X	T107MX	Denton	9/21/00
Upper Right Tibia Moment Y	T107MY	Denton	9/21/00
Upper Right Tibia Force Z	T107FZ	Denton	9/21/00
Lower Right Tibia Moment X	A136MX	Denton	9/21/00
Lower Right Tibia Moment Y	A136MY	Denton	9/21/00
Lower Right Tibia Force Z	A136FZ	Denton	9/21/00
Upper Left Tibia Moment X	T108MX	Denton	9/21/00
Upper Left Tibia Moment Y	T108MY	Denton	9/21/00
Upper Left Tibia Force Z	T108FZ	Denton	9/21/00
Lower Left Tibia Moment X	A137MX	Denton	9/21/00
Lower Left Tibia Moment Y	A137MY	Denton	9/21/00
Lower Left Tibia Force Z	A137FZ	Denton	9/21/00
Left Foot Ball Z Acceleration	J35564	Endevco	11/16/00
Left Heel X Acceleration	AJ507	Endevco	11/16/00
Left Heel Z Acceleration	J19925	Endevco	11/16/00
Right Foot Ball Z Acceleration	J17988	Endevco	11/16/00
Right Heel X Acceleration	J14232	Endevco	11/16/00
Right Heel Z Acceleration	AJ4R3	Endevco	11/16/00

DUMMY, VEHICLE, AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 192

	INSTRUMENTS FOR PASSENGER DUMMY NO. 192		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X	AFW91	Endevco	11/16/00
Head Y	AAKB3	Endevco	11/16/00
Head Z	AGRP4	Endevco	11/16/00
Head X Redundant	AGRY2	Endevco	11/16/00
Head Y Redundant	ACCO9	Endevco	11/16/00
Head Z Redundant	AGMY3	Endevco	11/16/00
Chest X	AAKE2	Endevco	11/16/00
Chest Y	AGAG0	Endevco	11/16/00
Chest Z	AAJY4	Endevco	11/16/00
Chest X Redundant	AF9Y3	Endevco	11/16/00
Chest Y Redundant	AF973	Endevco	11/16/00
Chest Z Redundant	AGN47	Endevco	11/16/00
Right Femur Load Cell	F263FZ	Denton	9/20/00
Left Femur Load Cell	F264FZ	Denton	9/20/00
Pelvis X	AALG2	Endevco	11/15/00
Pelvis Y	AGN47	Endevco	11/15/00
Pelvis Z	AC9P8	Endevco	11/15/00
Neck Force X	N260FX	Denton	8/30/00
Neck Force Y	N260FY	Denton	8/30/00
Neck Force Z	N260FZ	Denton	8/30/00
Neck Moment X	N260MZ	Denton	8/30/00
Neck Moment Y	N260MY	Denton	8/30/00
Neck Moment Z	N260MZ	Denton	8/30/00
Chest Deflection Gauge	192	Servo	11/10/00
Lap Belt Load Cell	196	Denton	10/6/00
Shoulder Belt Load Cell	193	Denton	10/6/00

DUMMY, VEHICLE, AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR DUMMY NO. 192

	INSTRUMENTS FOR PASSENGER DUMMY NO. 192		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Right Tibia Moment X	T111MX	Denton	9/20/00
Upper Right Tibia Moment Y	T111MY	Denton	9/20/00
Upper Right Tibia Force Z	T111FZ	Denton	9/20/00
Lower Right Tibia Moment X	A142MX	Denton	9/20/00
Lower Right Tibia Moment Y	A142MY	Denton	9/20/00
Lower Right Tibia Force Z	A142FZ	Denton	9/20/00
Upper Left Tibia Moment X	T110MX	Denton	9/20/00
Upper Left Tibia Moment Y	T110MY	Denton	9/20/00
Upper Left Tibia Force Z	T110FZ	Denton	9/20/00
Lower Left Tibia Moment X	A139MX	Denton	9/21/00
Lower Left Tibia Moment Y	A139MY	Denton	9/21/00
Lower Left Tibia Force Z	A139FZ	Denton	9/21/00
Left Foot Ball Z Acceleration	J23772	Endevco	11/15/00
Left Heel X Acceleration	J19873	Endevco	11/15/00
Left Heel Z Acceleration	J19236	Endevco	11/15/00
Right Foot Ball Z Acceleration	FJ66J	Endevco	11/15/00
Right Heel X Acceleration	J23918	Endevco	11/15/00
Right Heel Z Acceleration	EH75J	Endevco	11/15/00

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Left Rear Seat Crossmember X	A08-A10	Entran	2/7/01
Right Rear Seat Crossmember X	G01-J12	Entran	9/12/00
Top of Engine Block X	K19-A15	Entran	1/11/01
Bottom of Engine X	J07-X16	Entran	9/12/00
Left Brake Caliper X	I25-F03	Entran	11/15/01
Right Brake Caliper X	F18-G13	Entran	10/4/00
Instrument Panel X	A08-A11	Entran	2/8/01
Redundant Left Rear Seat Crossmember X	F20-G10	Entran	9/14/00
Redundant Right Rear Seat Crossmember X	D05-R21	Entran	10/4/00

	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 front air bags, supplemental side air bags and pre-tensioner seat belts.

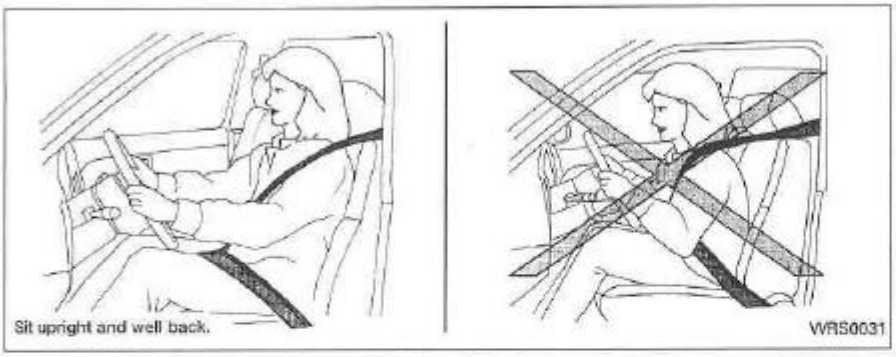
Supplemental front air bag system: This system can help cushion the impact force to the face and chest of the driver and front passenger in certain frontal collisions.

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.)

The supplemental air bags operate only when the ignition switch is in the ON or START position.

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.



Sit upright and well back. WRS0031

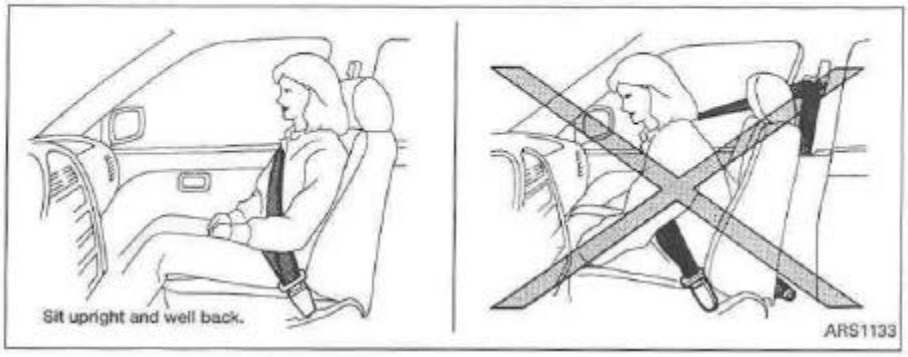
Always sit back against the seatback and as far away as practical from the steering wheel or instrument panel. Always use the seat belts.

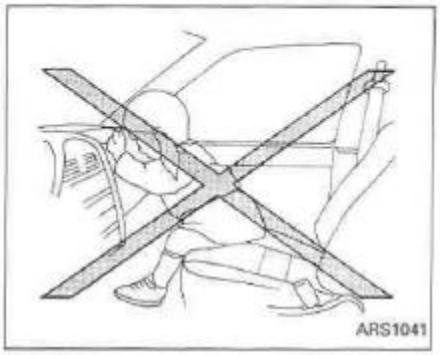
- **Keep hands on the outside of the steering wheel. Placing them inside the steering wheel rim could increase the risk that they are injured when the supplemental front air bag inflates.**

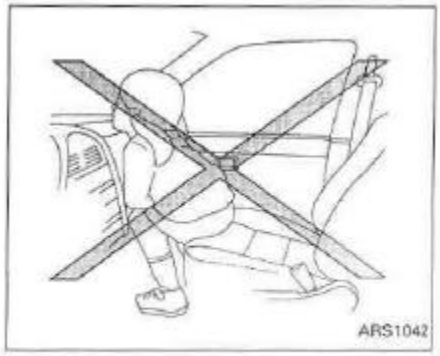
⚠ WARNING

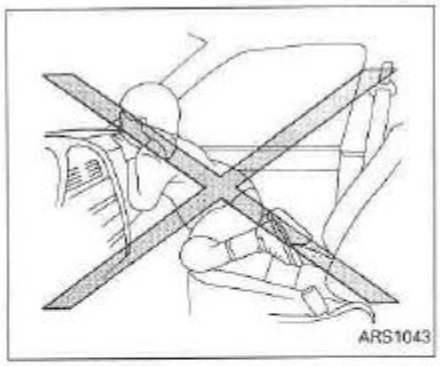
- **The supplemental front air bags ordinarily will not inflate in the event of a side impact, rear impact, roll over, or lower severity frontal collision. Always wear your seat belts to help reduce the risk or severity of injury in various kinds of accidents.**

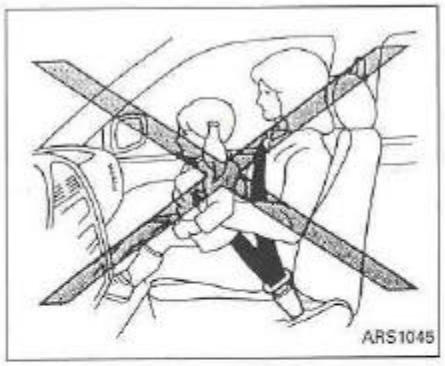
- **The seat belts and the supplemental front air bags are most effective when you are sitting well back and upright in the seat. The front air bags inflate with great force. If you are unrestrained, leaning forward, sitting sideways or out of position in any way, you are at greater risk of injury or 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.**

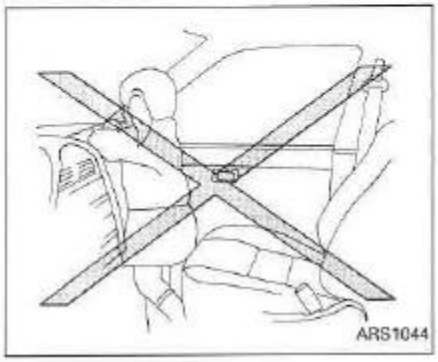


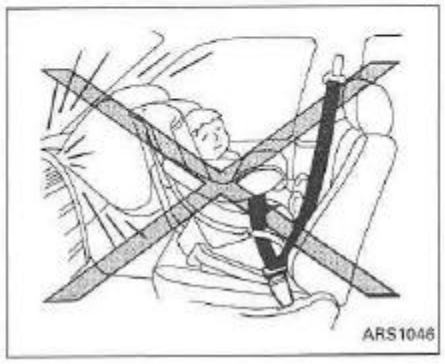








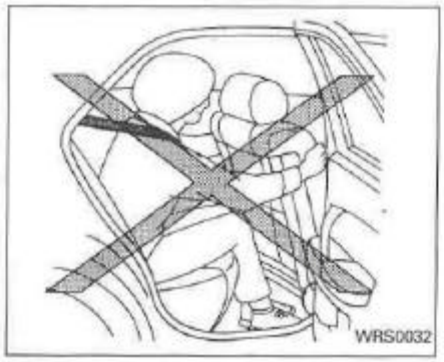


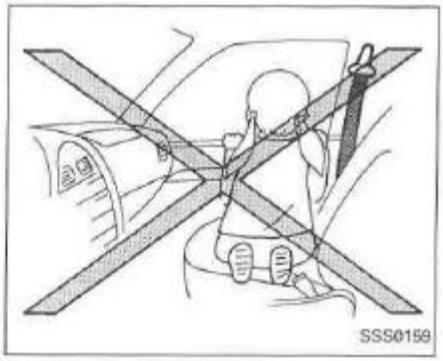


⚠ WARNING

- **Never let children ride unrestrained. Do not attempt to hold them in your lap or arms. Some examples of dangerous riding positions are shown in the illustrations.**
- **Children may be severely injured or killed when the supplemental front air bag inflates if they are not properly restrained.**
- **Never install a rear-facing child restraint in the front seat. An inflating supplemental front air bag could seriously injure or kill your child. See "Child restraints" later in this section for details.**





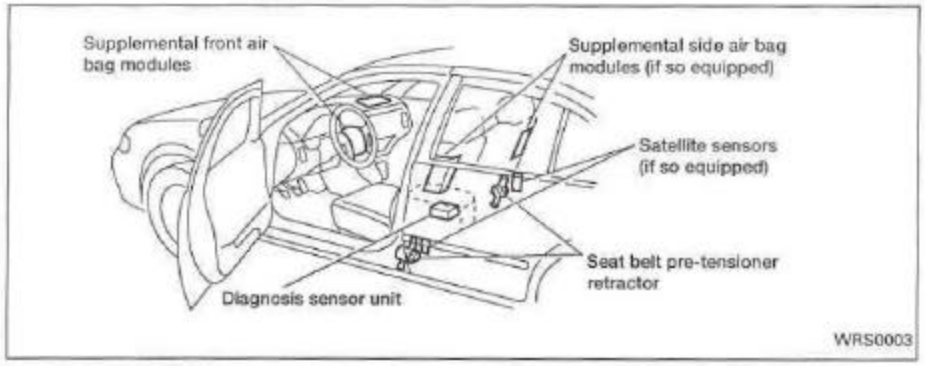


⚠ WARNING

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





Supplemental front air bag system

The driver supplemental front air bag is located in the center of the steering wheel. The passenger supplemental front 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 the 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 bag system is designed to inflate in higher severity frontal collisions, although it may inflate if the forces in another type of collision are similar to those of a higher severity frontal impact. It may not inflate in certain frontal collisions. Vehicle damage (or lack of it) is not always an indication of proper supplemental front air bag system operation.

When the supplemental front air bag inflates, a fairly loud noise may be heard, followed by the release of smoke. This smoke is not harmful and does not indicate

a fire, but care should be taken to not intentionally inhale it, as it may cause irritation and choking. Those with a history of a breathing condition should get fresh air promptly.

The supplemental front air bags, along with the use of seat belts, help to cushion the impact force on the face and chest of the occupant. 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 do not provide restraint to the lower body.

Seat belts should be correctly worn and the driver and passenger seated upright as far as practical away from the steering wheel or instrument panel. 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 front air bag module during inflation.

The front air bags deflate quickly after a collision.

The supplemental front air bags operate only when the ignition switch is in the ON or START position.

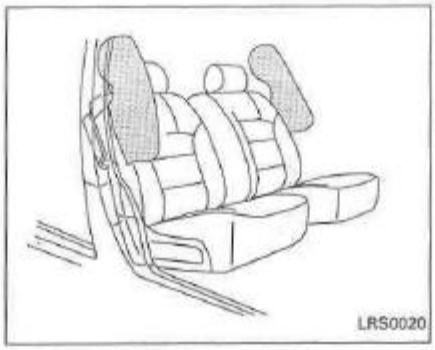
After turning the ignition key to the ON position, the supplemental air bag warning light illuminates. The supplemental air bag warning light will turn off after about 7 seconds if the system is operational.

⚠ 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 front 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 front air bags or damage to the front 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 front 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 and above the dashboard, or by installing additional trim material around the front 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 yellow SRS wiring should not be modified or disconnected. Unauthorized electrical test equipment and probing devices should not be used on the supplemental front 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 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 to not intentionally 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 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 a collision.

The supplemental side air bags operate only when the ignition switch is in the ON or START position.

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 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 side air bag system.
- 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. 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.

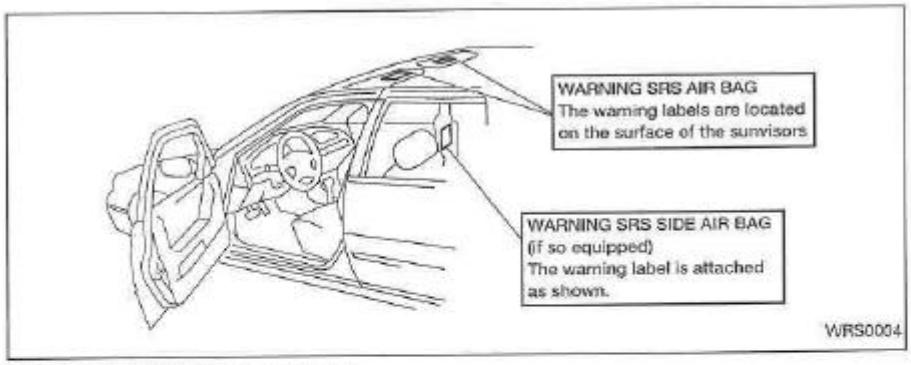
The front seat pre-tensioner seat belt system activates in conjunction with the supplemental front air bag. Working with the seat belt retractor, it helps tighten the seat belt the instant the vehicle becomes involved in certain types of collisions, thereby restraining seat occupants.

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. This smoke is not harmful and does not indicate a fire, but care should be taken to not intentionally inhale it, as it may cause irritation and choking.

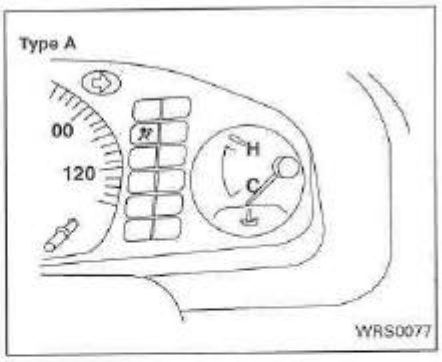
If any abnormality occurs in the pre-tensioner system, the supplemental air bag warning light will flash intermittently after the ignition key is turned to the ON or START position. In this case, the pre-tensioner seat belt will not function properly.

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.



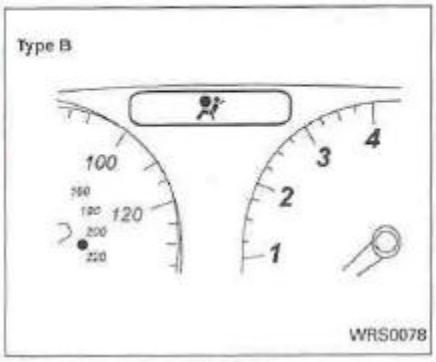
SUPPLEMENTAL AIR BAG WARNING LABELS

Warning labels about the supplemental air bag systems 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 bags, pre-tensioner seat belt and supplemental side air bag (if so equipped) systems. The circuits monitored by the supplemental air bag warning light are the diagnosis sensor unit, supplemental air bag modules, pre-tensioner seat belts and all related wiring.



When the ignition key is in the ON or START position, the supplemental air bag warning light illuminates for about 7 seconds and then turns off. This means the system is operational.

If any of the following conditions occur, the supplemental front air bag, supplemental side air bag and pre-tensioner seat belt systems 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 bag, supplemental side air bag or pre-tensioner seat belt systems may not operate properly. It 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 or supplemental side air bag system will not operate in an accident.

Repair and replacement procedure

The supplemental air bag modules are designed to inflate on a one-time-only basis. As a reminder, unless it is damaged, the supplemental air bag light remains illuminated after inflation has occurred. Repair and replacement of the supplemental air bag system should be done only by an authorized NISSAN dealer.

After a supplemental air bag inflates, the instrument panel assembly should be replaced by an authorized NISSAN dealer if damaged.

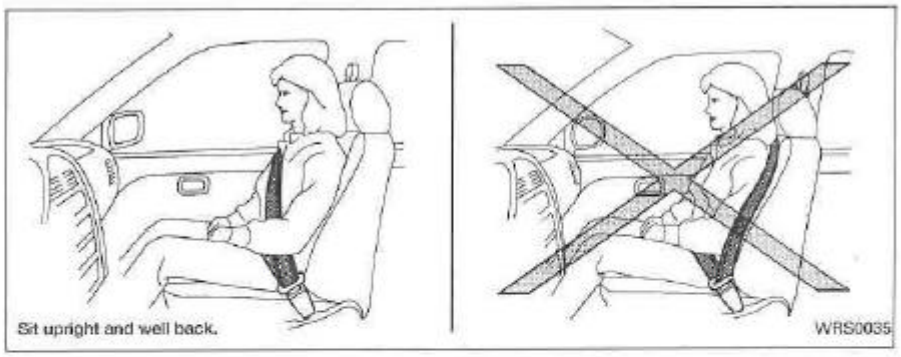
To ensure long-term functioning, the supplemental air bag system must be inspected 10 years after the date of manufacture as noted on the certification label located on the driver side front pillar.

When maintenance work is required on the vehicle, the supplemental air bag system and related parts should be pointed out to the person performing 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 or supplemental side air bag has inflated, the air bag module will not function again and must be replaced. The air bag module should be replaced by an authorized NISSAN dealer. The air bag module cannot be repaired.**

- The supplemental front air bag and supplemental side air bag systems should be inspected by an authorized NISSAN dealer if there is any damage to the front end or side portion of the vehicle, or replaced if the supplemental air bag has inflated.
- If you need to dispose of a supplemental air bag or scrap the vehicle, contact an authorized NISSAN dealer. Correct supplemental air bag disposal procedures are set forth in the appropriate NISSAN Service Manual. Incorrect disposal procedures could cause personal injury.



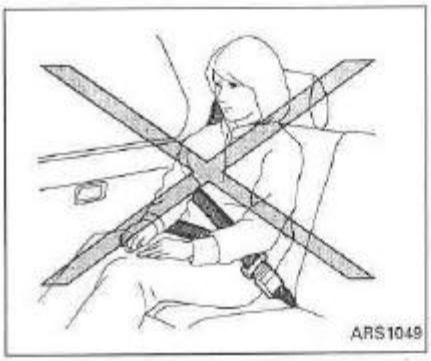
PRECAUTIONS ON SEAT BELT USAGE

If you are wearing your seat belt properly adjusted, your chances of being injured or killed in an accident and/or the severity of injury may be greatly reduced. 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.

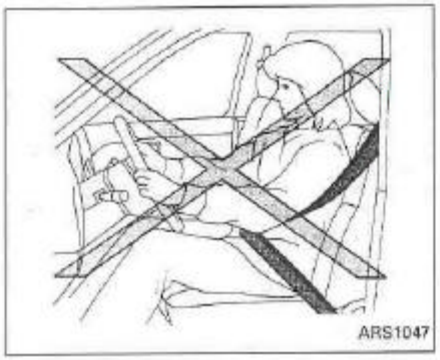
Most states and all Canadian provinces or territories require that seat belts be worn at all times when a vehicle is being driven.

⚠ WARNING

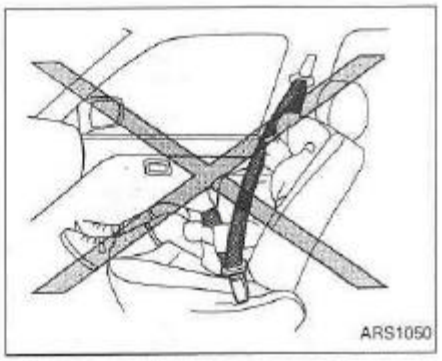
- Every person who drives or rides in this vehicle should use a seat belt at all times. Children should be properly restrained and, if appropriate, in a child restraint.
- The belt should be properly adjusted to a snug fit. Failure to do so may reduce the effectiveness of the entire restraint system 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.
- 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 an authorized NISSAN dealer.



- All seat belt assemblies including retractors and attaching hardware should be inspected after any collision by an authorized 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.

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 one year and less than 20 pounds (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 U.S. states and Canadian provinces or territories 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 pre-teens 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.

Infants and small children

NISSAN recommends that infants and small children be placed in child restraints that comply with Federal Motor Vehicle Safety Standard 213 or Canadian Motor Vehicle Safety Standard 213. You should choose a child restraint that fits your vehicle and always follow the manufacturer's instructions for installation and use.

Larger children

Children who are too large for child restraints 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 Standard 213 or Canadian Motor Vehicle Safety Standard 213. 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

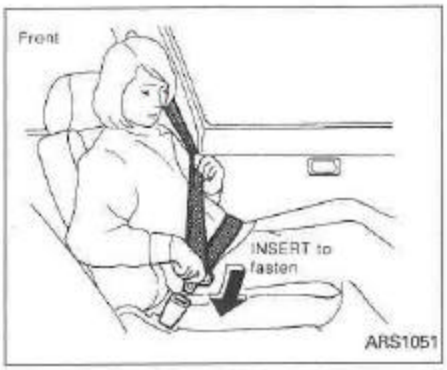
Never let a child stand or kneel on any seat and do not allow a child in the cargo areas while the vehicle is moving. The child could be seriously injured or killed in an accident or sudden stop.

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. 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 wear 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 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 properly. See "Precautions on seat belt usage" earlier in this section.**

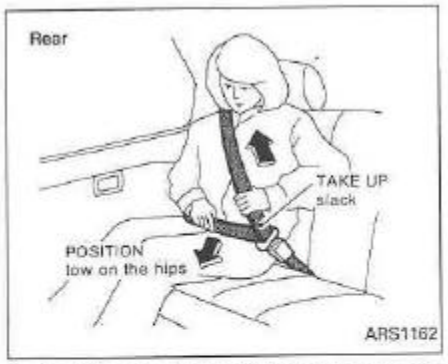




Fastening the seat belts

1. Adjust the seat.
2. Slowly pull the seat belt out of the retractor and insert the tongue into the buckle until you hear and feel the latch engage.

The retractor is designed to lock during a sudden stop or on impact. A slow pulling motion permits the belt to move, and allows 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 seat belt and the rear three-point seat belts have a cinching mechanism for child restraint installation. It is referred to as the automatic locking mode.

When automatic locking mode is activated, the seat belt cannot be withdrawn again until the seat belt tongue is detached from the buckle and fully retracted. Once retracted, the seat belt is in the emergency locking mode. For additional information, see "Child restraints" later in this section.

The automatic locking mode should be used only for child restraint installation. During normal seat belt use by a passenger, the automatic locking mode should not be activated. If it is activated it may cause uncomfortable seat belt tension.



Unfastening the seat belts

To unfasten the seat belt, press the button on the buckle. The seat belt automatically retracts.

Checking seat belt operation

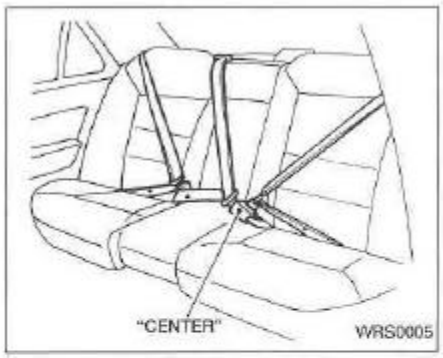
Your seat belt retractors are designed to lock seat belt movement by two separate methods:

1) When the seat belt is pulled quickly from the retractor.
2) When the vehicle slows down rapidly.

To increase your confidence in the seat belts, check the operation as follows.

- Grasp the shoulder belt and pull forward quickly. The retractor should lock and restrict further belt movement.

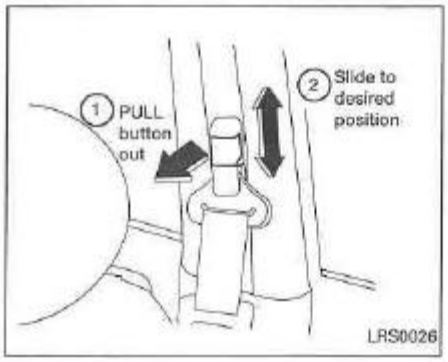
If the retractor does not lock during this check or if you have any question about belt operation, see an authorized NISSAN dealer.



Center of rear seat

Selecting correct set of seat belts:

The center seat belt buckle is identified by the word "CENTER." 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 for you. (See "Precautions on seat belt usage" earlier in this section.) To adjust, pull out the adjustment button and move the shoulder belt anchor to the desired position, so the belt passes over the center of the shoulder. The belt should be away from your face and neck, but not falling off your shoulder. Release the adjustment button to lock the shoulder belt anchor into position.

⚠ WARNING

- **After adjustment, release the adjustment button and try to move the shoulder belt anchor up and 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 an authorized NISSAN dealer for assistance if the extender is required.

⚠ WARNING

- **Only NISSAN seat belt extenders, made by the same company which made the original equipment seat belts, should be used with NISSAN seat 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 carpet. Then wipe with a cloth and allow the seat belts 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 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 seat 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 front air bag could seriously injure or kill your child. A rear-facing child restraint must only be used in the rear seat.**
- **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 a lap belt or the lap portion of a three-point type seat belt. In addition, this vehicle is equipped with a universal child restraint lower anchor system, sometimes referred to as ISOFIX. Some child restraints include two rigid or webbing-mounted attachments that can be connected to these lower anchors. For details, see "Universal Child Restraint Lower Anchors (ISOFIX)" 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:

1) 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.
2) 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.

3) 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 U.S. states and Canadian provinces or territories 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, if the seat position where it is installed has a three-point type lap/shoulder belt, check to make sure the shoulder belt 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 "Installation on front passenger seat" later in this section for details.**
- **When your child restraint is not in use, keep it secured with a seat belt to prevent it from being thrown around in case of a sudden stop or accident.**

⚠ CAUTION

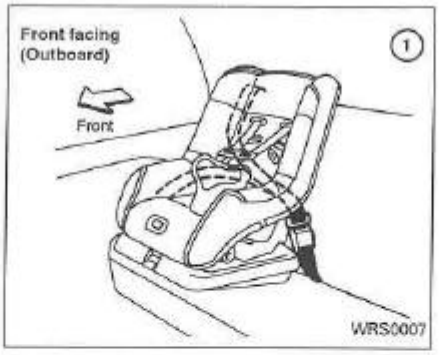
Remember that a child restraint left in a closed vehicle can become very hot. Check the seating surface and buckles before placing your child in the child restraint.

INSTALLATION ON REAR SEAT CENTER OR OUTBOARD POSITIONS

⚠ WARNING

- **The three-point belt in your vehicle is equipped with a locking mode retractor which must be used when installing a child restraint.**

- **Failure to use the retractor's locking mode will result in the child restraint not being properly secured. The restraint could tip over or otherwise be unsecured and cause injury to the child in a sudden stop or collision.**

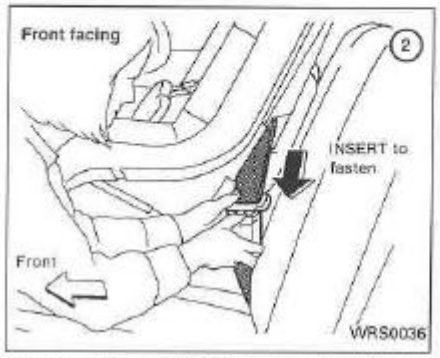




Front facing

When you install a child restraint in the rear 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.

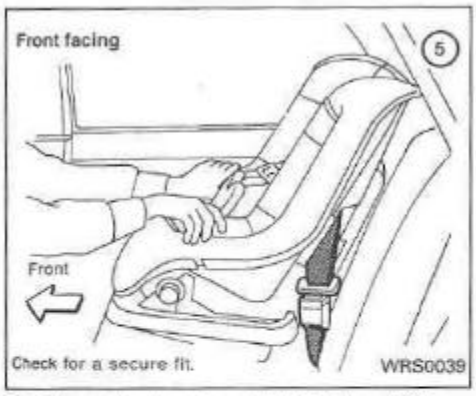
   Be sure to follow the child restraint manufacturer's instructions for belt routing.



3. Pull on the shoulder belt until all of the belt is fully extended. At this time, the seat belt retractor is in the automatic locking mode (child restraint mode). It reverts back to emergency locking mode when the seat belt is fully retracted.



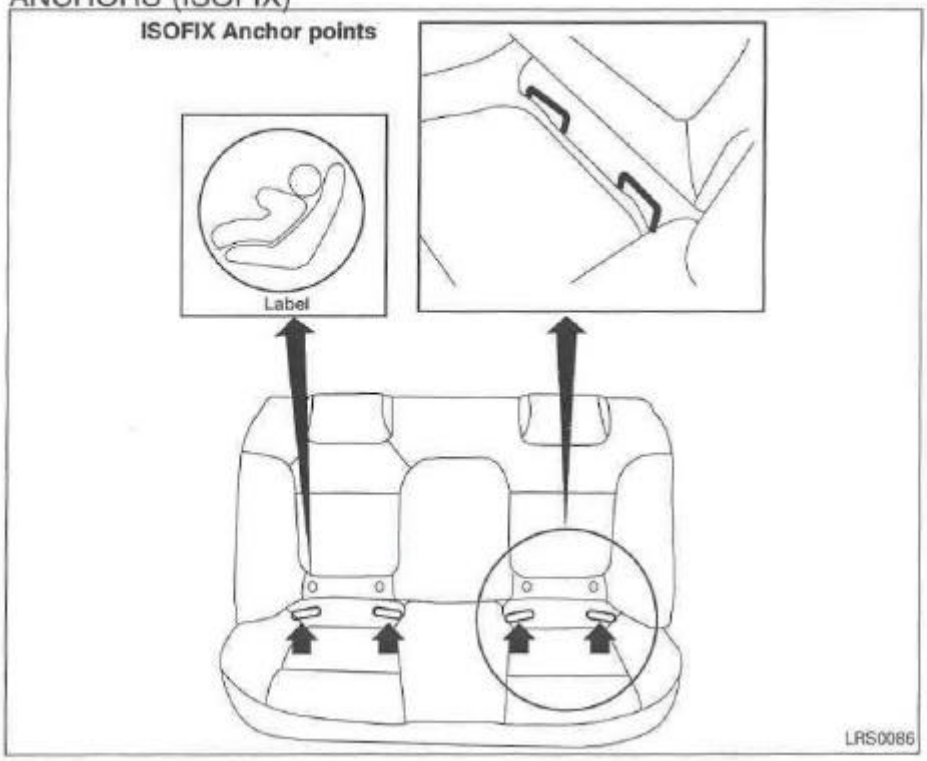
4. Allow the seat belt to retract. Pull up on the seat belt to remove any slack in the belt.

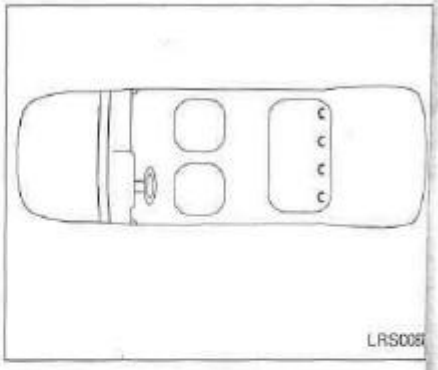


5. Before placing the child in the child restraint, use force to tilt the child restraint from side to side, and tug it forward to make sure that it is securely held in place.
6. Check that the retractor is in the automatic locking mode by trying to pull more seat belt out of the retractor. If you cannot pull any more belt webbing out of the retractor, the seat 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 three through six.

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.

UNIVERSAL CHILD RESTRAINT LOWER ANCHORS (ISOFIX)





⚠ WARNING!

- **Attach lower anchor 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 child restraint lower 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 child restraint lower anchor 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 child restraint lower anchor compatible child restraints. Check your child restraint for a label stating that it is compatible with the child restraint lower anchors. This information may also be in the child restraint owner's manual. If you have such a child restraint, refer to the illustration for the rear seating positions equipped with child restraint lower anchors which can be used to secure the child restraint.

The child restraint lower anchors are located at the rear of the seat cushion near the seatback. A label is attached to the seat back to help you locate the child restraint lower 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.

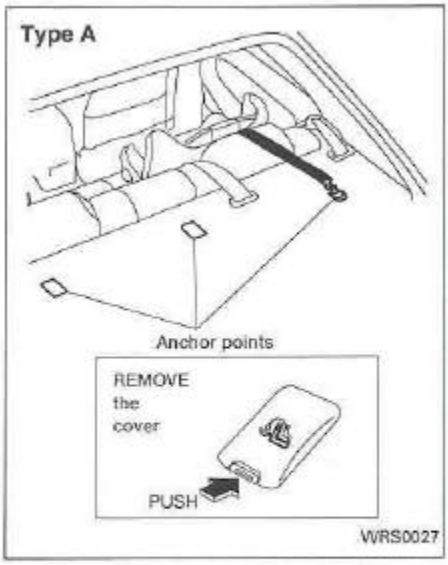
When installing a child restraint, carefully read and follow the instructions in this manual and those supplied with the child restraint.

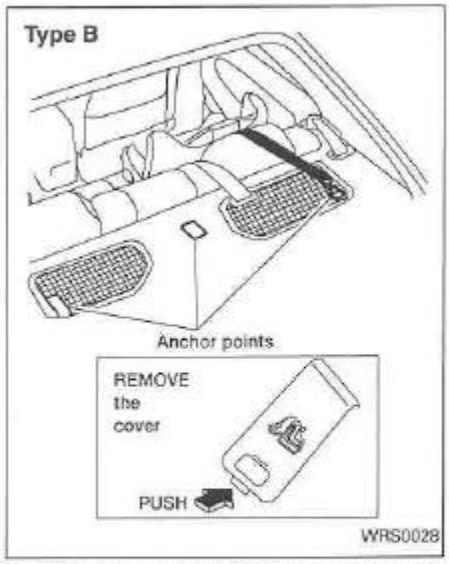
When you install a child restraint with lower anchor attachments in the rear seat, follow these steps:

⚠ 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 child restraint lower anchors, such as seat belt webbing or seat cushion material. The child restraint will not be secured properly if the child restraint lower anchors are obstructed.

1. To install the lower anchor compatible child restraint, insert the child restraint lower 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. Tighten the strap according to manufacturer instructions to remove any slack.

⚠ WARNING

Child restraint anchor points are designed to withstand only those loads imposed by correctly fitted child restraints. Under no circumstances are they 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.

APPENDIX F

CHILD SEAT

POST-TEST OBSERVATIONS

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

	Right Rear Passenger
Child Seat	Cosco Triad Latch
Child Seat Mass (kg)	4.5
Belt Fraying	None
Stress Marks	On seat back by belt
Cracks	On seat back by belt
Buckle Stress	None
Latch Hooks	None*
Contact	Feet to seat back

* Vehicle tether attachment was deformed.

HYBRID III 3 YEAR OLD ATD INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

HEAD PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Right Rear Passenger			
			Max	Time	Min	Time
Head CG	X	G's	57.9	203	-24.0	96
Head CG	Y	G's	7.5	78	-6.4	124
Head CG	Z	G's	53.9	84	-12.7	52
Head CG Resultant	N/A	G's	62.7	204		

CHEST PRIMARY PEAK ACCELERATIONS

Location	Axis	Units	Right Rear Passenger			
			Max	Time	Min	Time
Chest CG	X	G's	11.2	212	-34.7	82
Chest CG	Y	G's	11.4	82	-2.9	201
Chest CG	Z	G's	12.6	207	-36.7	57
Chest CG Resultant	N/A	G's	44.2	57		

HEAD INJURY CRITERIA (HIC)

Location	Right Rear Passenger			
	HIC	Avg G's	T^1	T^2
Head CG Primary (36 msec)	628	49.7	67.8	103.8
Head CG Primary (15 msec)	342	55.4	76.7	91.7

CHEST CLIP (3 MSEC)

Location	Right Rear Passenger		
	CLIP	T^1	T^2
Chest CG Primary	42.8	55.2	58.3

HYBRID III 3 YEAR OLD ATD INJURY CRITERIA AND SENSOR DATA...(continued)

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

PELVIC PEAK ACCELERATIONS

Location	Axis	Units	Right Rear Passenger			
			Max	Time	Min	Time
Pelvis	X	G's	9.0	173	-49.5	71
Pelvis	Y	G's	8.9	77	-5.9	91
Pelvis	Z	G's	15.8	208	-34.5	70

UPPER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Right Rear Passenger			
			Max	Time	Min	Time
Neck Force	X	Newtons	79	184	-629	104
Neck Force	Y	Newtons	170	76	-61	132
Neck Force	Z	Newtons	1618	88	-443	51
Neck Moment	X	N"m	7.8	94	-2.7	138
Neck Moment	Y	N"m	4.5	81	-11.0	212
Neck Moment	Z	N"m	3.2	242	-2.7	175

LOWER NECK PEAK FORCES AND MOMENTS

Location	Axis	Units	Right Rear Passenger			
			Max	Time	Min	Time
Neck Force	X	Newtons	278	198	-974	88
Neck Force	Y	Newtons	83	62	-110	96
Neck Force	Z	Newtons	813	198	-544	55
Neck Moment	X	N"m	**	**	**	**
Neck Moment	Y	N"m	106.4	88	-15.2	200
Neck Moment	Z	N"m	9.3	76	-4.2	183

CHEST PEAK DISPLACEMENTS

Location	Axis	Units	Right Rear Passenger			
			Max	Time	Min	Time
Chest CG	X	mm	9.5	102		

** No valid data collected.

DUMMY DIMENSIONS

Test Vehicle: 2001/Nissan/Sentra SE/4 door NHTSA No.: M15206

Test Program: NCAP Test Date: February 12, 2001

Measurement Description	Right Rear Passenger
	Length (mm)
Head to Roof (Z)	296
Head to Seatback (X)	532
Chest to Door (Y)	307
Left Foot to Seatback	9
Right Foot to Seatback	9

CHILD SEAT PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

Photographs	Page No.
Photo 1 - Pre-Test RRS 3 Year Old Left Side View	F-7
Photo 2 - Post-Test RRS 3 Year Old Left Side View	F-8
Photo 3 - Pre-Test RRS 3 Year Old Left Side View (Door Open)	F-9
Photo 4 - Post-Test RRS 3 Year Old Left Side View (Door Open)	F-10
Photo 5 - Post-Test RRS Child Seat View	F-11
Photo 6 - Post-Test RRS Top Tether View	F-12
Photo 7 - Post-Test RRS Top Tether View	F-13
Photo 8 - Post-Test RRS Top Tether View	F-14
Photo 9 - Post-Test RRS Top Tether View	F-15



Photo 1 - Pre-Test RRS 3 Year Old Left Side View



Photo 2 - Post-Test RRS 3 Year Old Left Side View



Photo 3 - Pre-Test RRS 3 Year Old Left Side View (Door Open)



Photo 4 - Post-Test RRS 3 Year Old Left Side View (Door Open)



Photo 5 - Post-Test RRS Child Seat View



Photo 6 - Post-Test RRS Top Tether View

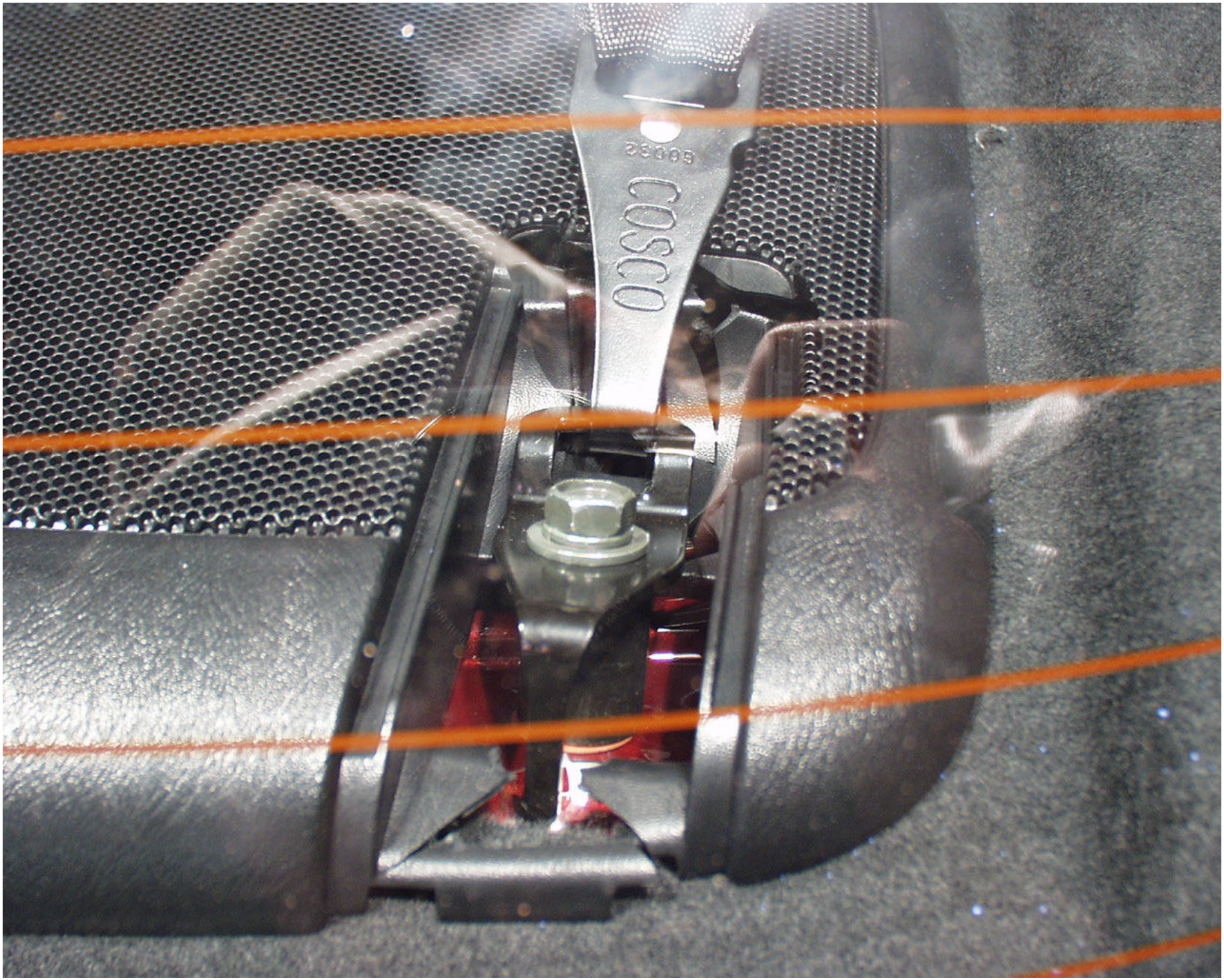


Photo 7 - Post-Test RRS Top Tether View



Photo 8 - Post-Test RRS Top Tether View



Photo 9 - Post-Test RRS Top Tether View

CHILD DATA PLOTS

TABLE OF DATA PLOTS

Data Plots	Page No.
Figure 1 - RRS 3 Year Old Head X Acceleration vs. Time	F-18
Figure 2 - RRS 3 Year Old Head Y Acceleration vs. Time	F-19
Figure 3 - RRS 3 Year Old Head Z Acceleration vs. Time	F-20
Figure 4 - RRS 3 Year Old Head Resultant Acceleration vs. Time	F-21
Figure 5 - RRS 3 Year Old Head X Velocity vs. Time	F-22
Figure 6 - RRS 3 Year Old Upper Neck Force X vs. Time	F-23
Figure 7 - RRS 3 Year Old Upper Neck Force Y vs. Time	F-24
Figure 8 - RRS 3 Year Old Upper Neck Force Z vs. Time	F-25
Figure 9 - RRS 3 Year Old Upper Neck Force Resultant vs. Time	F-26
Figure 10 - RRS 3 Year Old Upper Neck Force Moment X vs. Time	F-27
Figure 11 - RRS 3 Year Old Upper Neck Force Moment Y vs. Time	F-28
Figure 12 - RRS 3 Year Old Upper Neck Force Moment Z vs. Time	F-29
Figure 13 - RRS 3 Year Old Upper Neck Force Moment Resultant vs. Time	F-30
Figure 14 - RRS 3 Year Old Lower Neck Force X vs. Time	F-31
Figure 15 - RRS 3 Year Old Lower Neck Force Y vs. Time	F-32
Figure 16 - RRS 3 Year Old Lower Neck Force Z vs. Time	F-33
Figure 17 - RRS 3 Year Old Lower Neck Force Resultant vs. Time	F-34
Figure 18 - RRS 3 Year Old Lower Neck Moment X vs. Time*	F-35
Figure 19 - RRS 3 Year Old Lower Neck Moment Y vs. Time	F-36
Figure 20 - RRS 3 Year Old Lower Neck Moment Z vs. Time	F-37
Figure 21 - RRS 3 Year Old Chest X Acceleration vs. Time	F-38
Figure 22 - RRS 3 Year Old Chest Y Acceleration vs. Time	F-39
Figure 23 - RRS 3 Year Old Chest Z Acceleration vs. Time	F-40
Figure 24 - RRS 3 Year Old Chest Resultant Acceleration vs. Time	F-41
Figure 25 - RRS 3 Year Old Chest X Velocity vs. Time	F-42
Figure 26 - RRS 3 Year Old Chest Compression vs. Time	F-43
Figure 27 - RRS 3 Year Old Pelvis X Acceleration vs. Time	F-44
Figure 28 - RRS 3 Year Old Pelvis Y Acceleration vs. Time	F-45
Figure 29 - RRS 3 Year Old Pelvis Z Acceleration vs. Time	F-46
Figure 30 - RRS 3 Year Old Pelvis Resultant Acceleration vs. Time	F-47
Figure 31 - RRS 3 Year Old Pelvis X Velocity vs. Time	F-48

* No valid data collected.

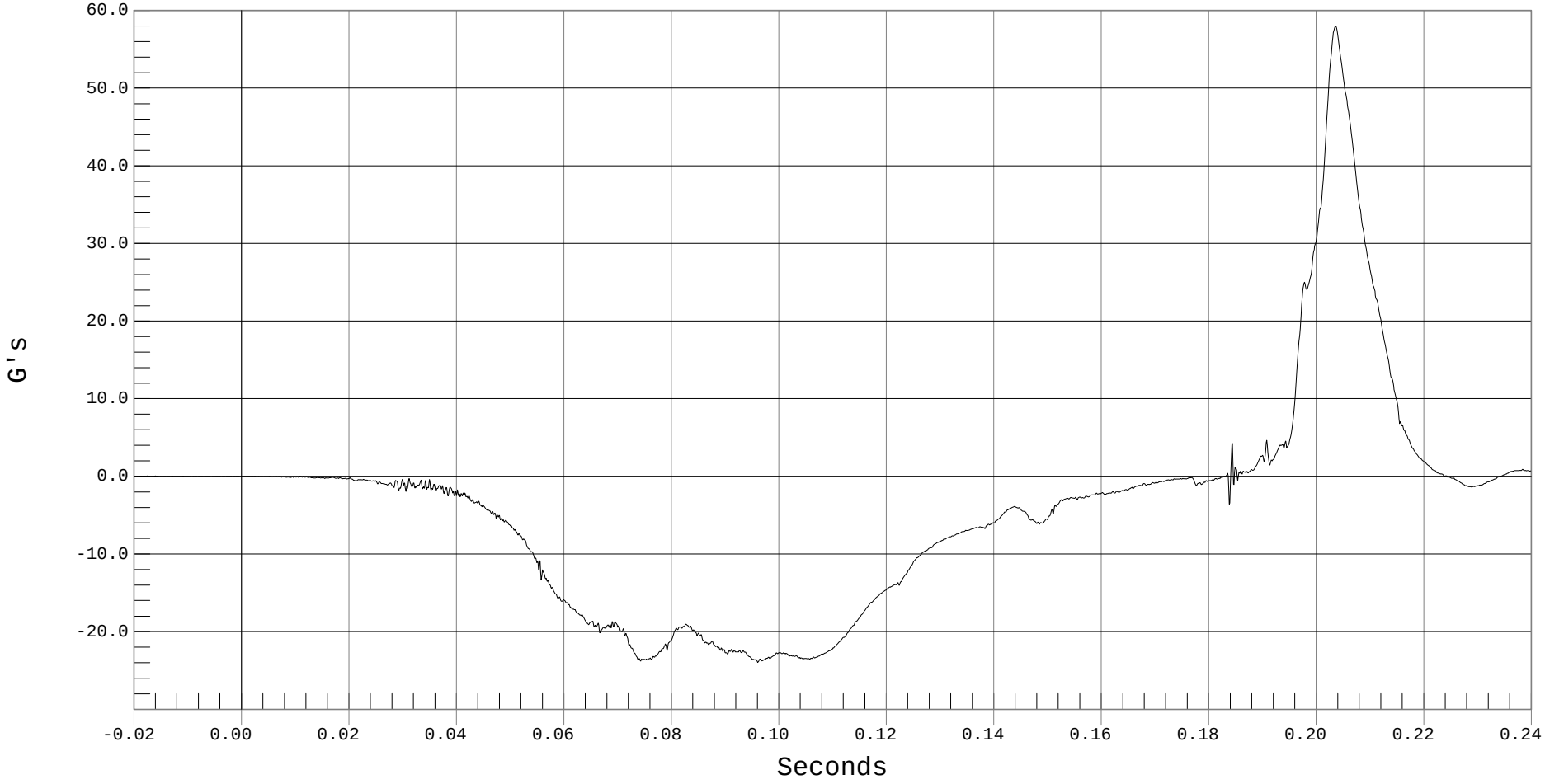
RRS 3 YR OLD HEAD X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 RRS CHILD HEAD X, B01014AT.A37

Ymin = -23.95 G's @ 0.0960 Seconds, Ymax = 57.94 G's @ 0.2035 Seconds



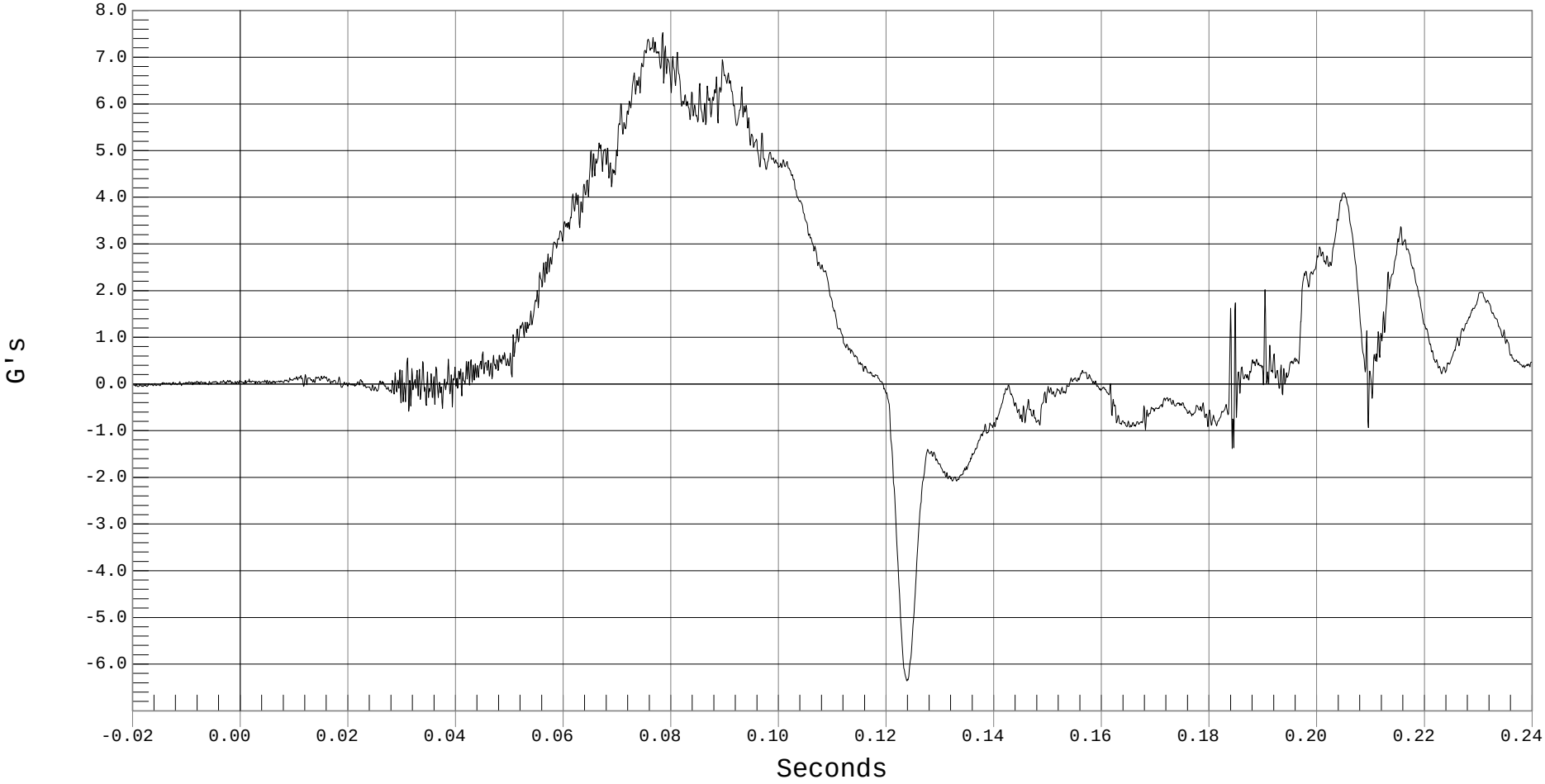
RRS 3 YR OLD HEAD Y ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 RRS CHILD HEAD Y, B01014AT.A38

Ymin = -6.36 G's @ 0.1237 Seconds, Ymax = 7.53 G's @ 0.0784 Seconds



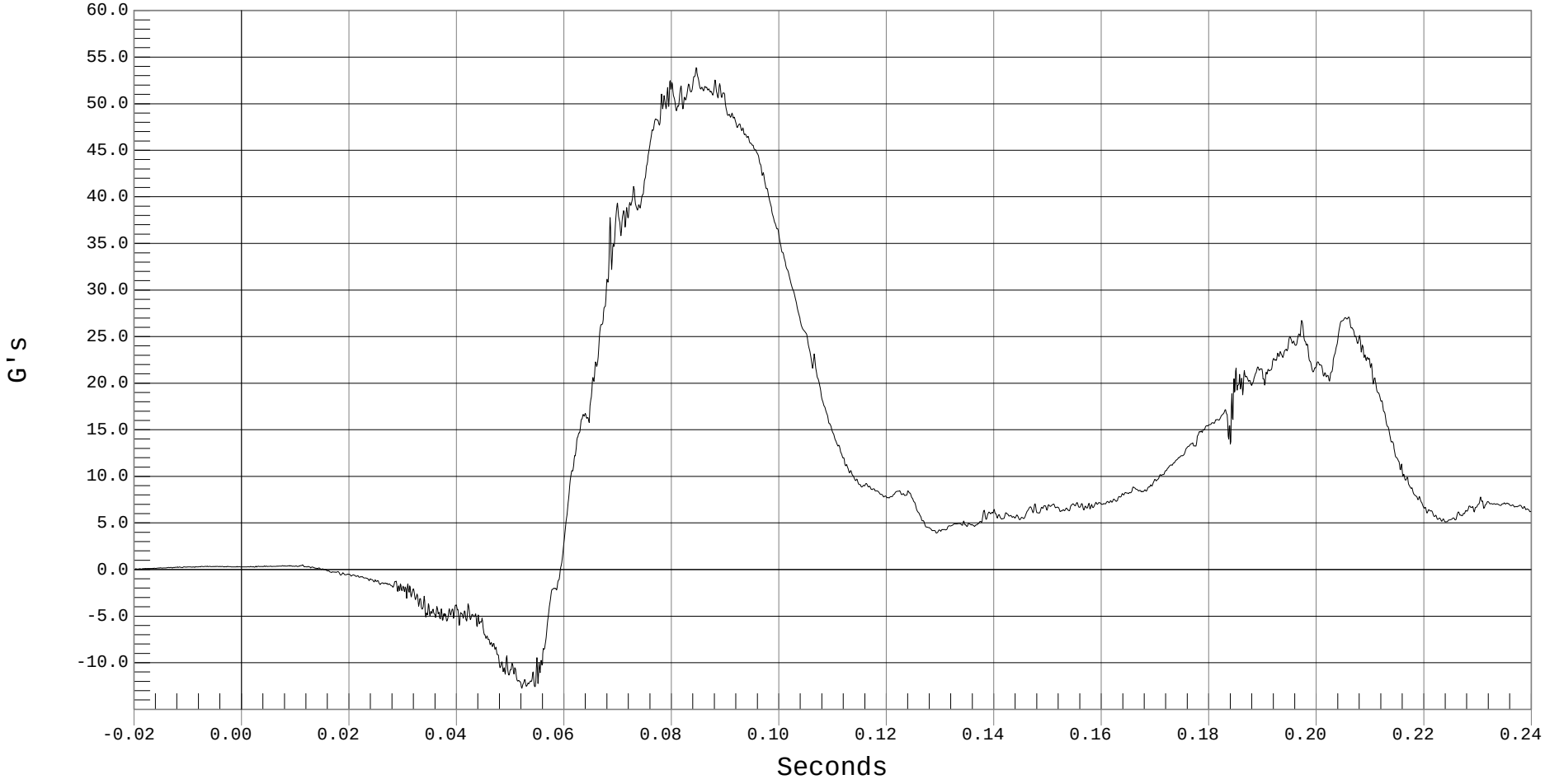
RRS 3 YR OLD HEAD Z ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 RRS CHILD HEAD Z, B01014AT.A39

Ymin = -12.74 G's @ 0.0521 Seconds, Ymax = 53.86 G's @ 0.0845 Seconds



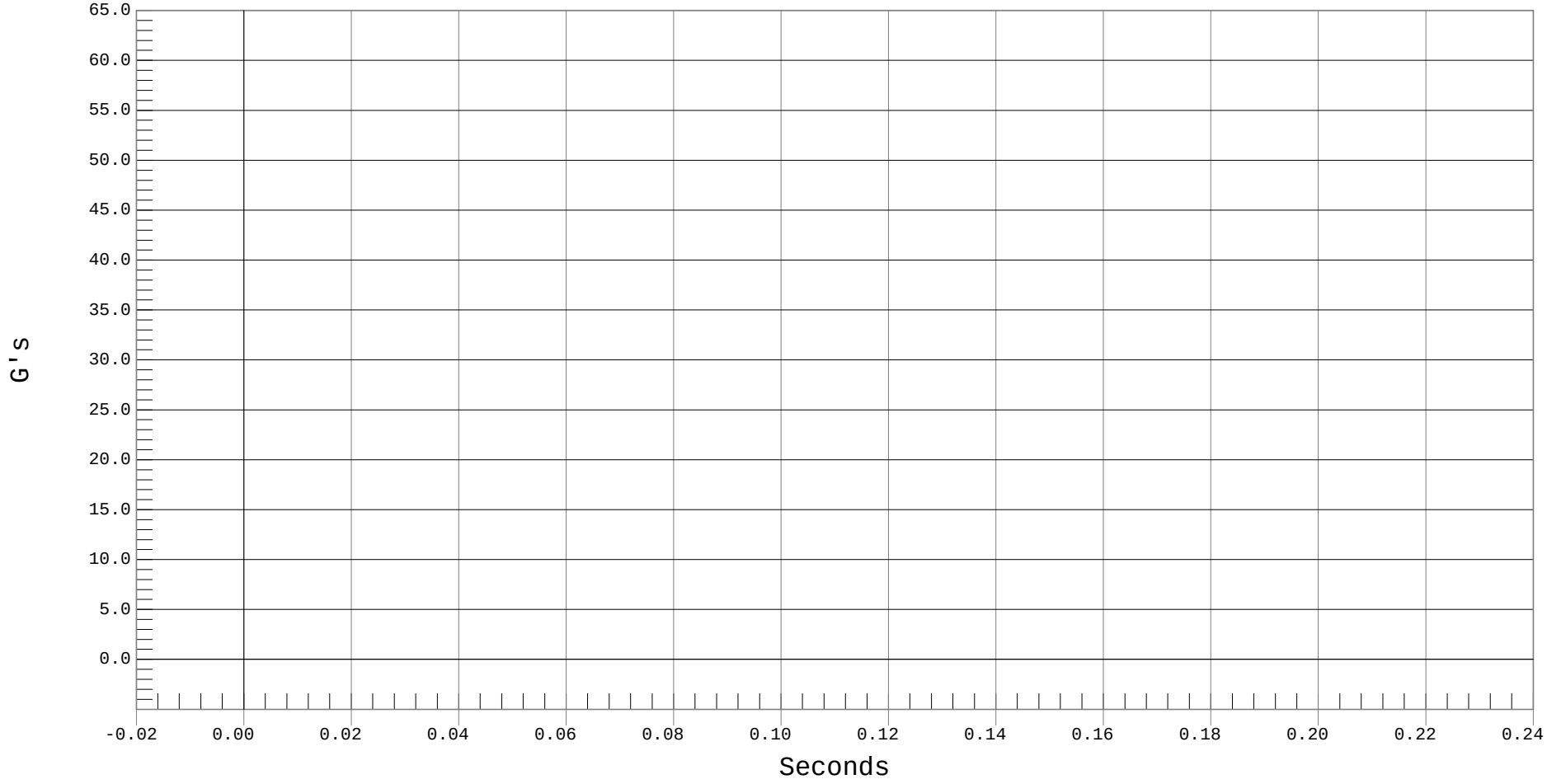
RRS 3 YR OLD HEAD RESULTANT ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 RRS 3 YR OLD HEAD RESULTANT ACCELERATION, B01014AV.A37

Ymin = .04 G's @ -0.0194 Seconds, Ymax = 62.7 G's @ 0.2036 Seconds



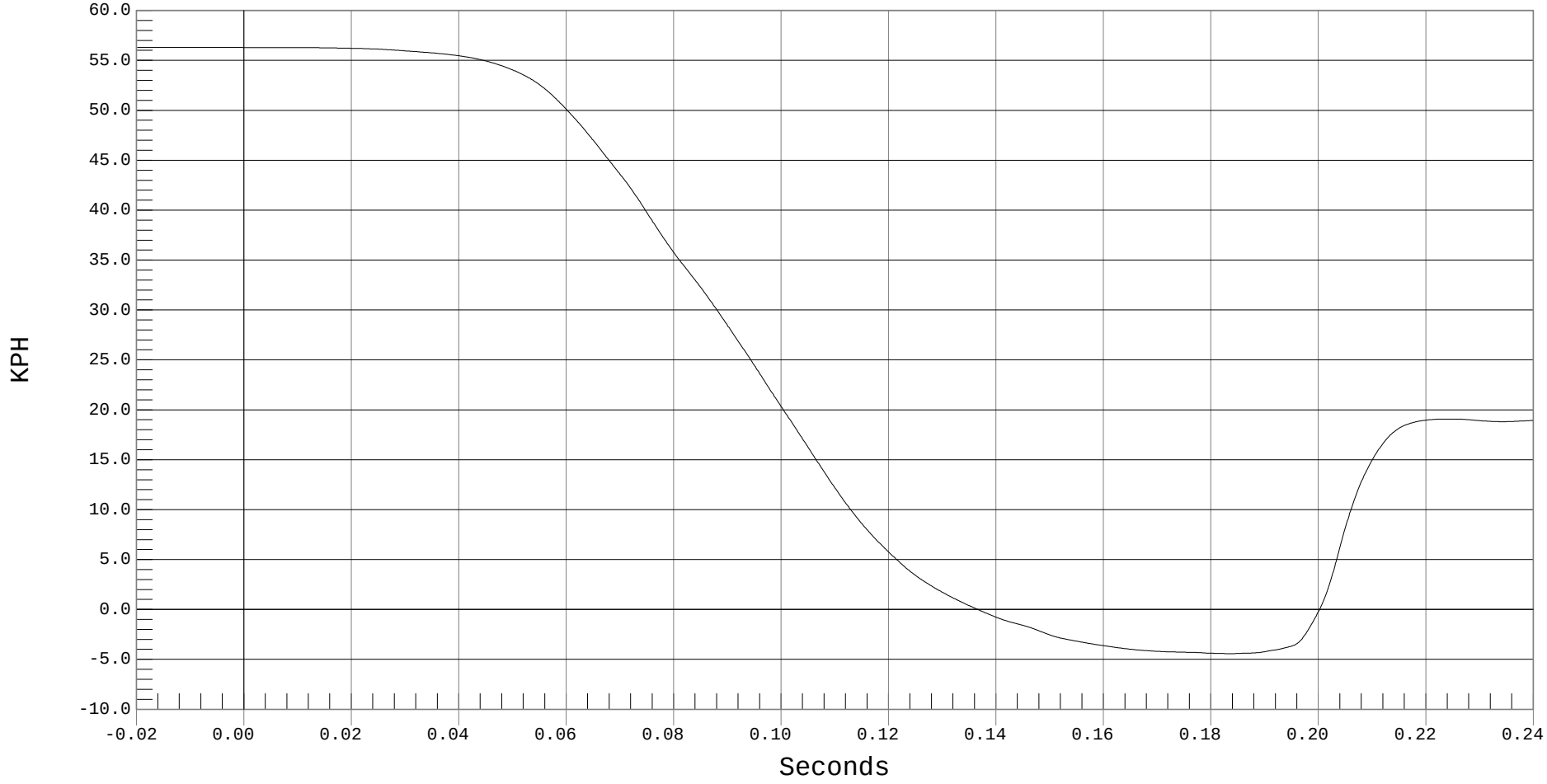
RRS 3 YR OLD HEAD X VELOCITY

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 RRS 3 YR OLD HEAD X VELOCITY, B01014AI.V37

Ymin = -4.43 KPH @ 0.1838 Seconds, Ymax = 56.3 KPH @ -0.0157 Seconds



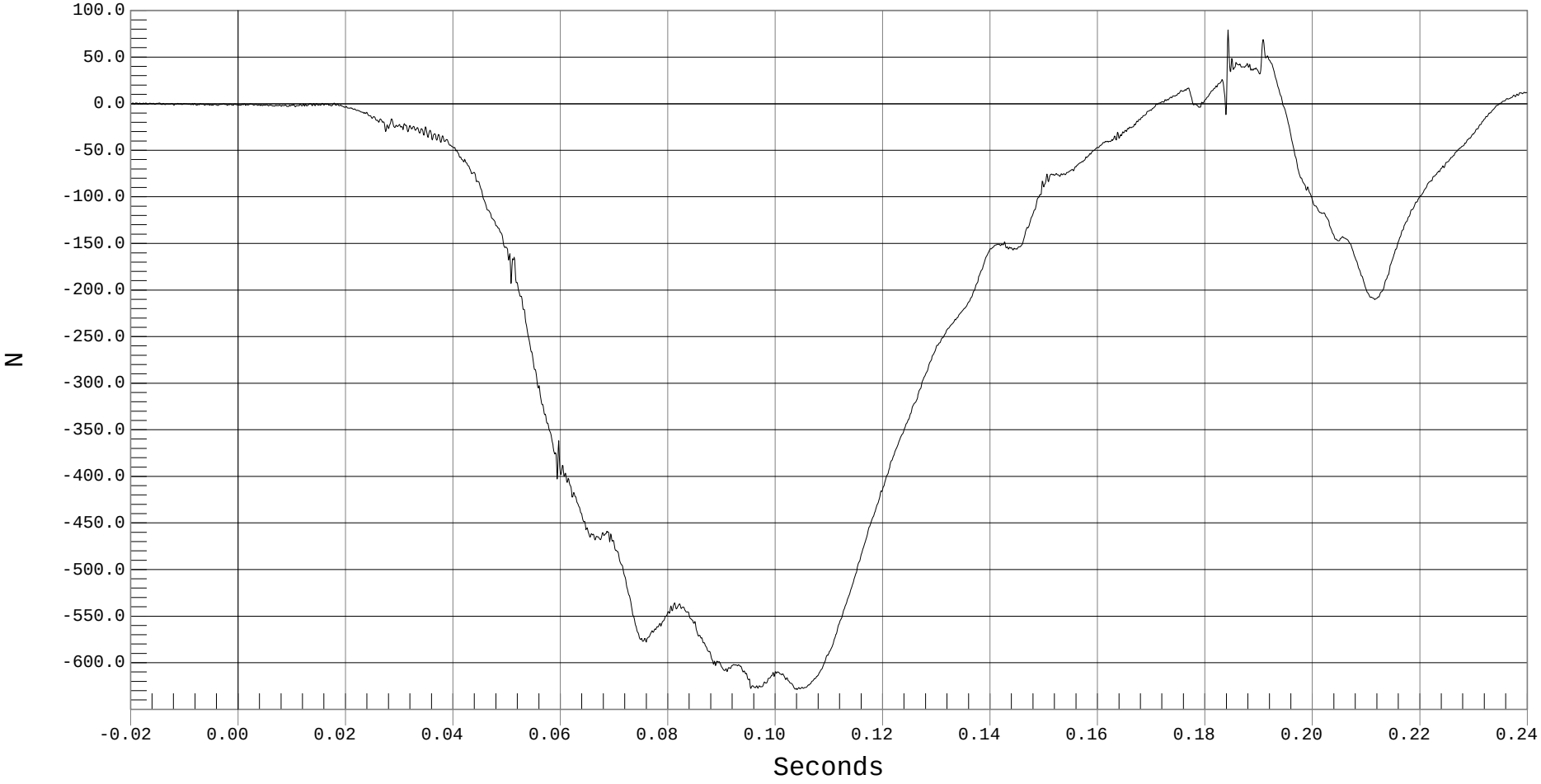
RRS 3 YR OLD UPPER NECK FORCE X

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 RRS CHILD UPPER NECK FORCE X, B01014FT.F40

Ymin = -628.75 N @ 0.1040 Seconds, Ymax = 79.13 N @ 0.1842 Seconds



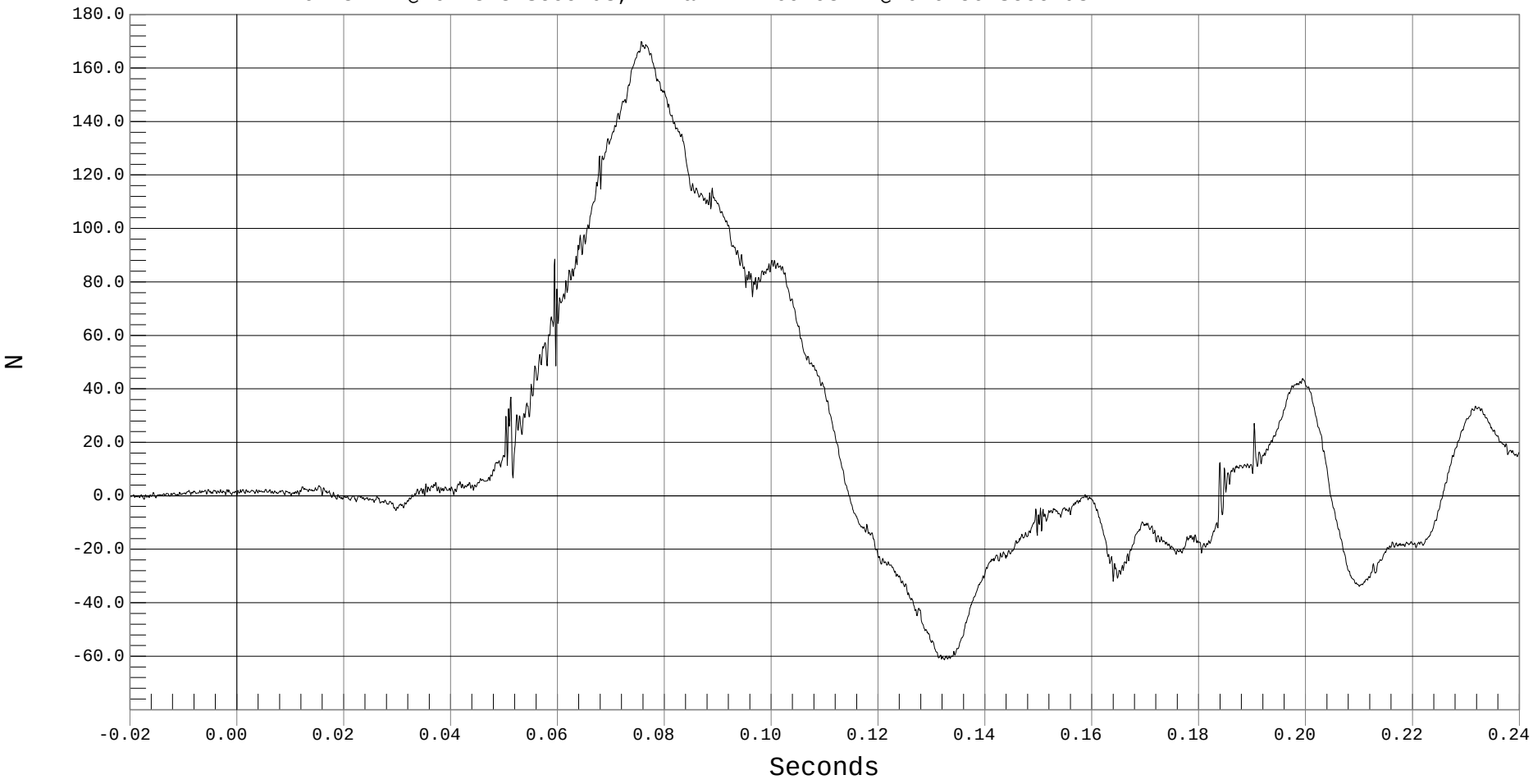
RRS 3 YR OLD UPPER NECK FORCE Y

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 RRS CHILD UPPER NECK FORCE Y, B01014FT.F41

Ymin = -61.32 N @ 0.1323 Seconds, Ymax = 169.93 N @ 0.0756 Seconds



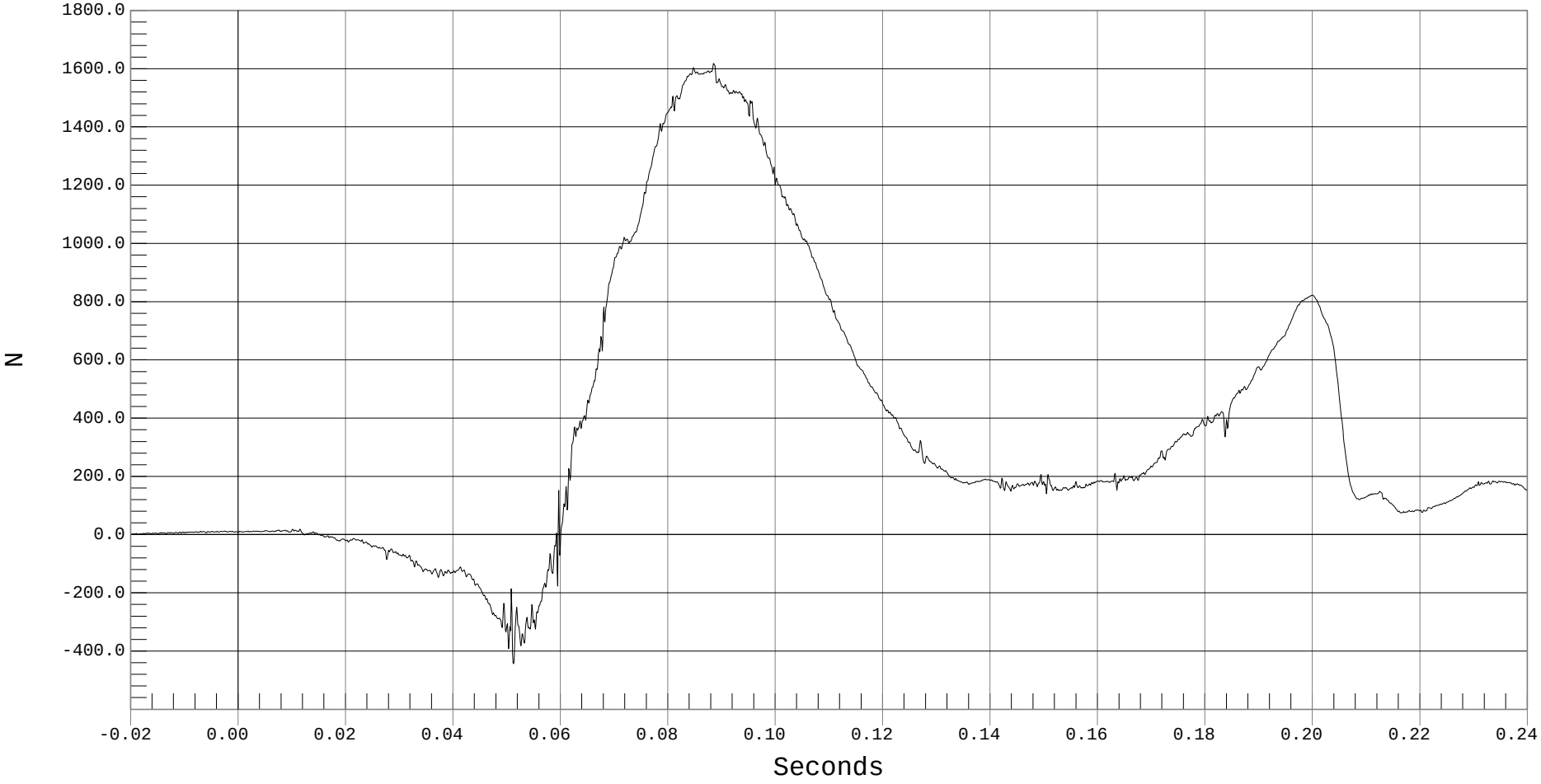
RRS 3 YR OLD UPPER NECK FORCE Z

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 RRS CHILD UPPER NECK FORCE Z, B01014FT.F42

Ymin = -443.1 N @ 0.0512 Seconds, Ymax = 1617.71 N @ 0.0884 Seconds



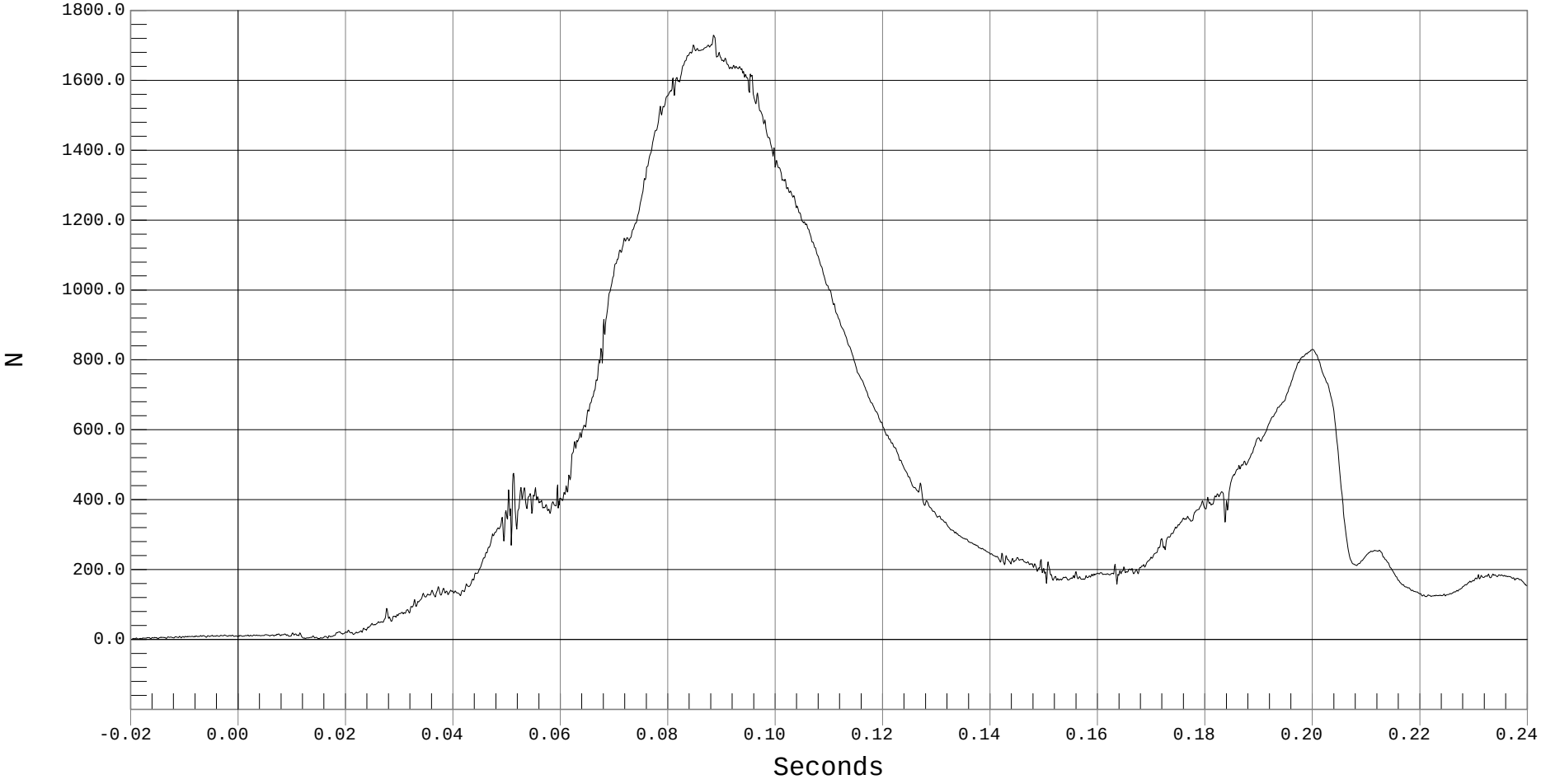
RRS 3 YR OLD UPPER NECK FORCE RESULTANT

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 RRS 3 YR OLD UPPER NECK FORCE RESULTANT, B01014FV.F40

Ymin = .47 N @ -0.0188 Seconds, Ymax = 1729.65 N @ 0.0884 Seconds



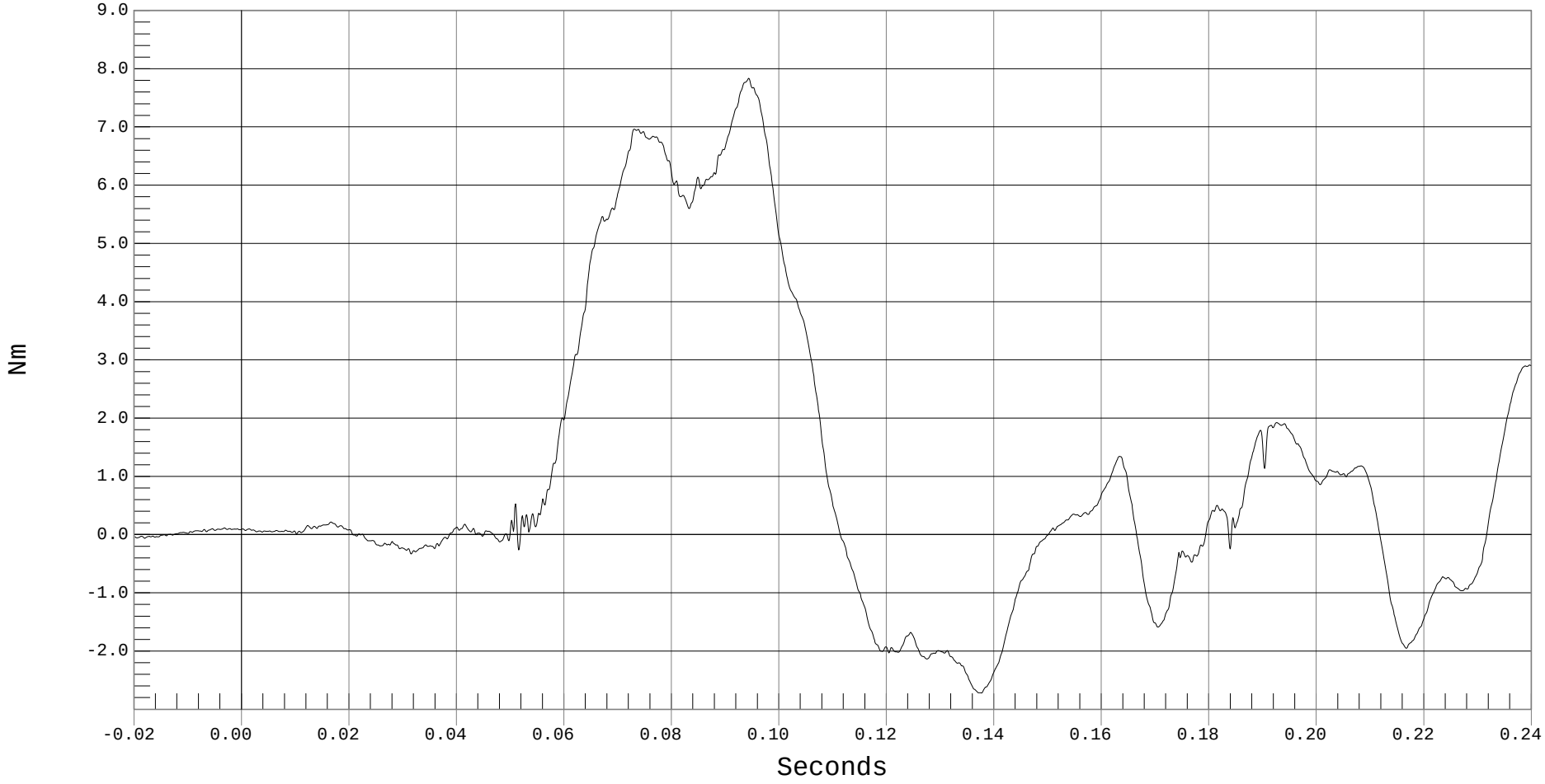
RRS 3 YR OLD UPPER NECK MOMENT X

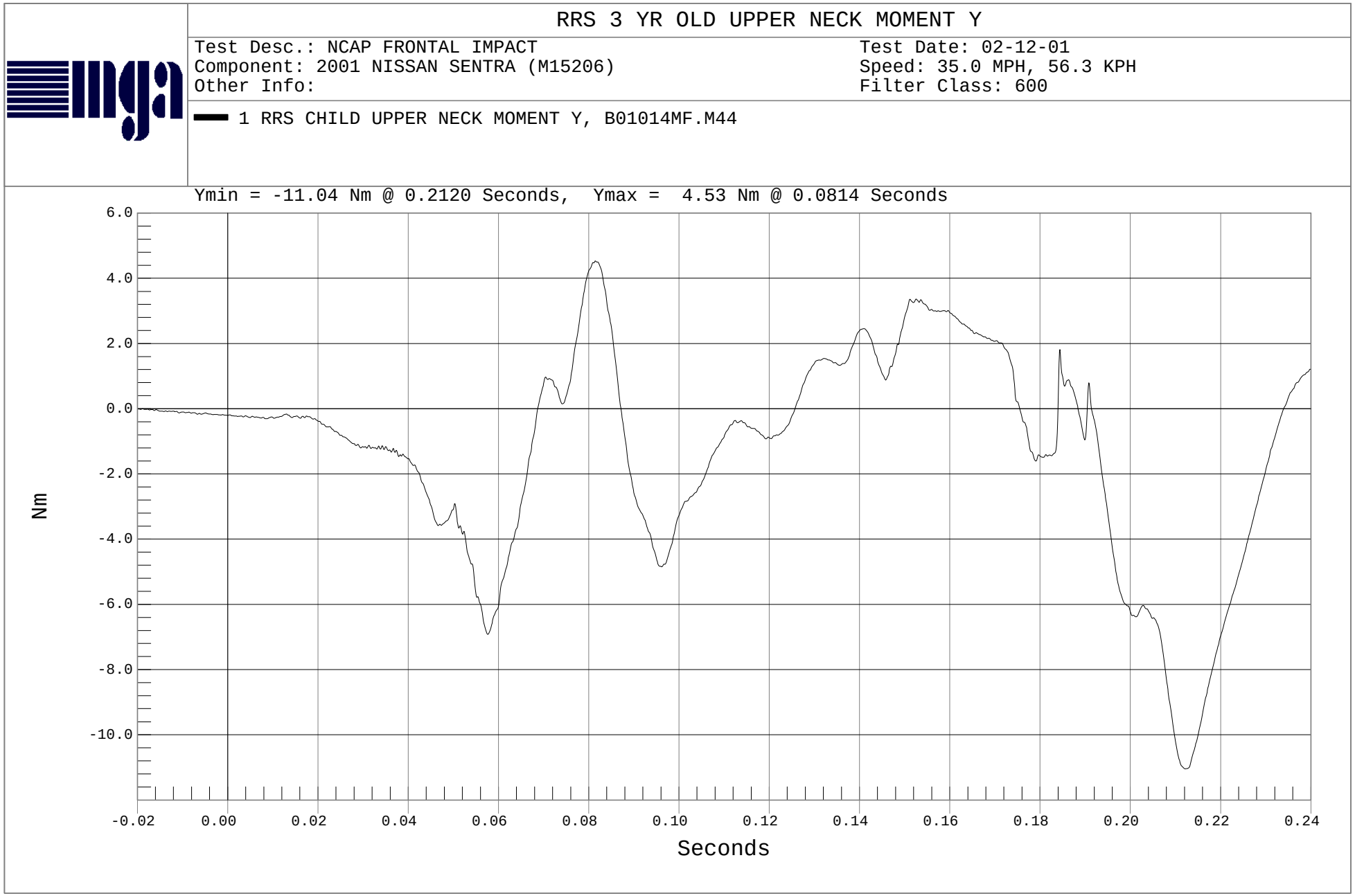
Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 RRS CHILD UPPER NECK MOMENT X, B01014MF.M43

Ymin = -2.72 Nm @ 0.1376 Seconds, Ymax = 7.84 Nm @ 0.0943 Seconds




RRS 3 YR OLD UPPER NECK MOMENT Y
Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:
Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600
1 RRS CHILD UPPER NECK MOMENT Y, B01014MF.M44
Ymin = -11.04 Nm @ 0.2120 Seconds, Ymax = 4.53 Nm @ 0.0814 Seconds
Nm
6.0
4.0
2.0
0.0
-2.0
-4.0
-6.0
-8.0
-10.0
-0.02
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.16
0.18
0.20
0.22
0.24
Seconds

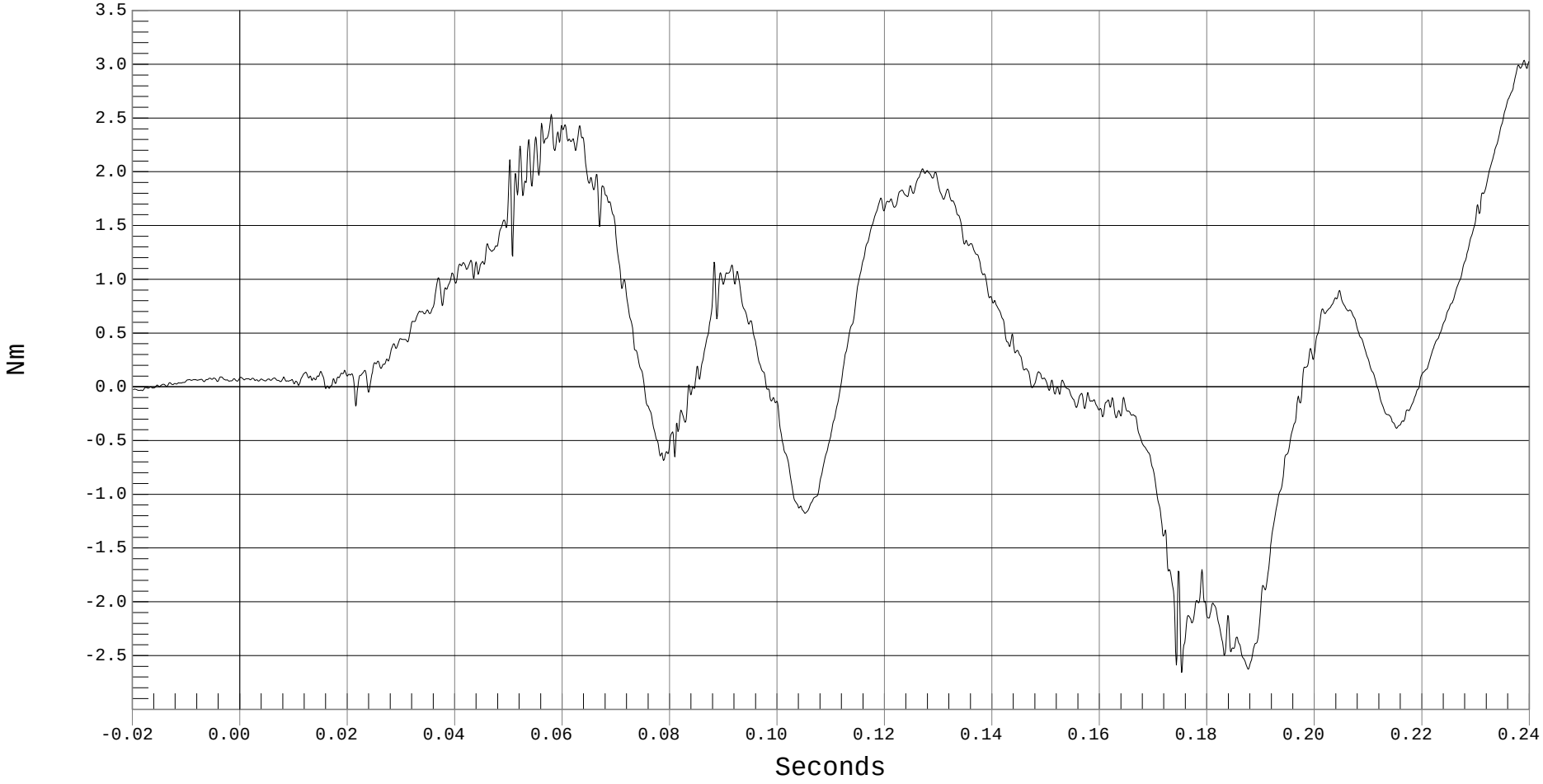
RRS 3 YR OLD UPPER NECK MOMENT Z

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 RRS CHILD UPPER NECK MOMENT Z, B01014MF.M59

Ymin = -2.66 Nm @ 0.1752 Seconds, Ymax = 3.17 Nm @ 0.2421 Seconds



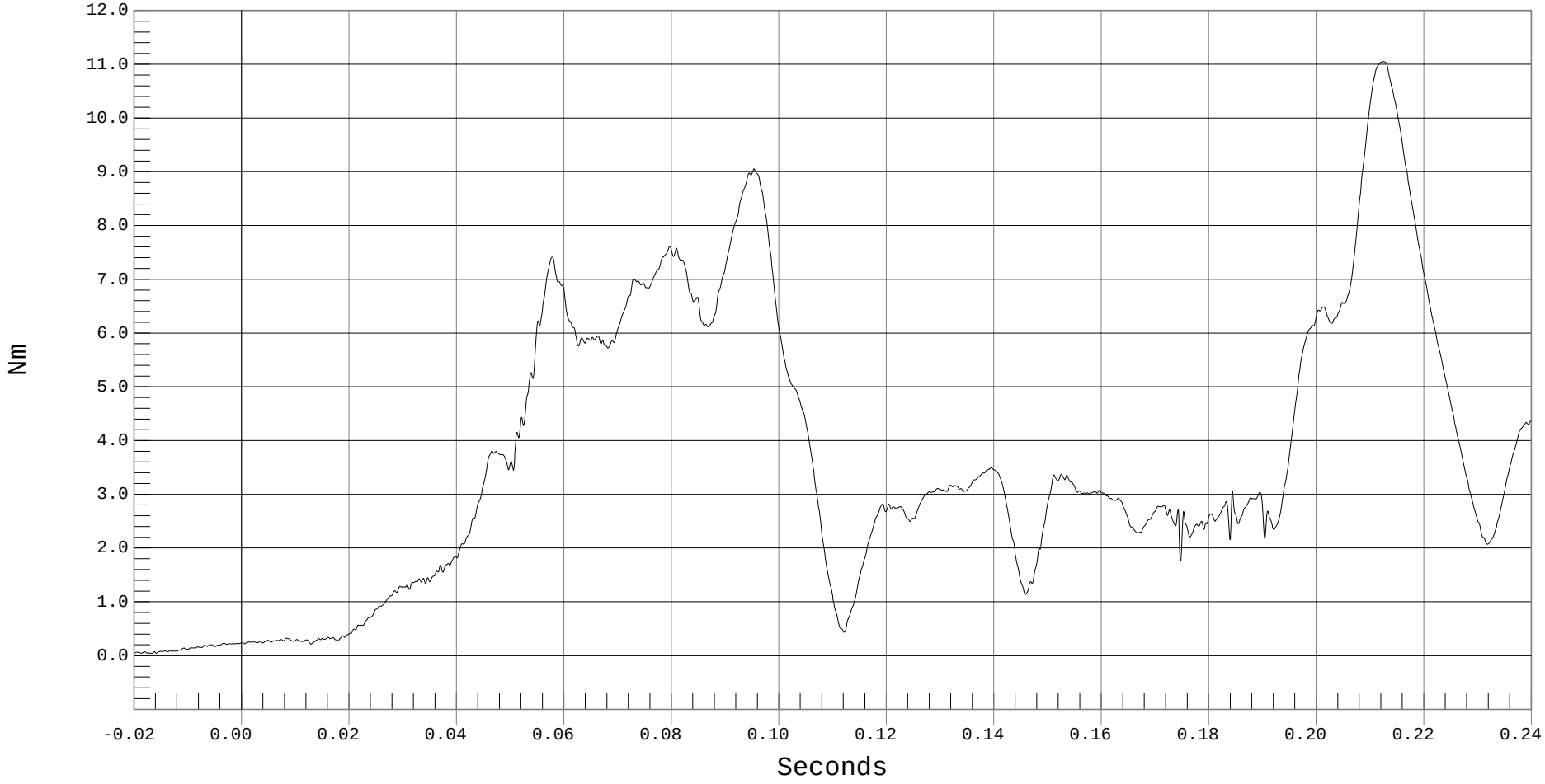
RRS 3 YR OLD UPPER NECK MOMENT RESULTANT

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 RRS 3 YR OLD UPPER NECK MOMENT RESULTANT, B01014MV.M43

Ymin = .04 Nm @ -0.0167 Seconds, Ymax = 11.05 Nm @ 0.2125 Seconds



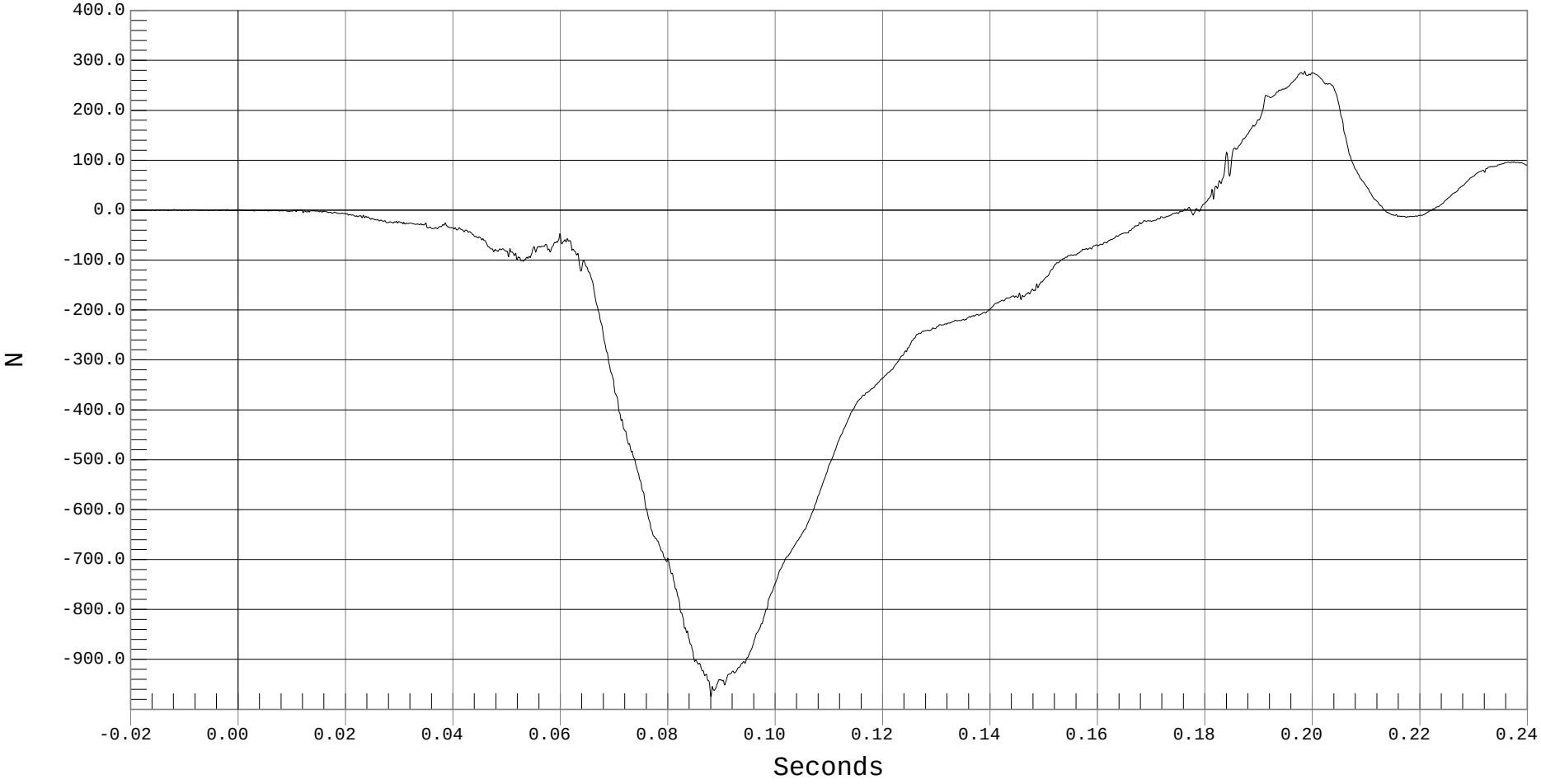
RRS 3 YR OLD LOWER NECK FORCE X

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 RRS CHILD LOWER NECK FORCE X, B01014FT.F46

Ymin = -974.44 N @ 0.0879 Seconds, Ymax = 278.39 N @ 0.1985 Seconds



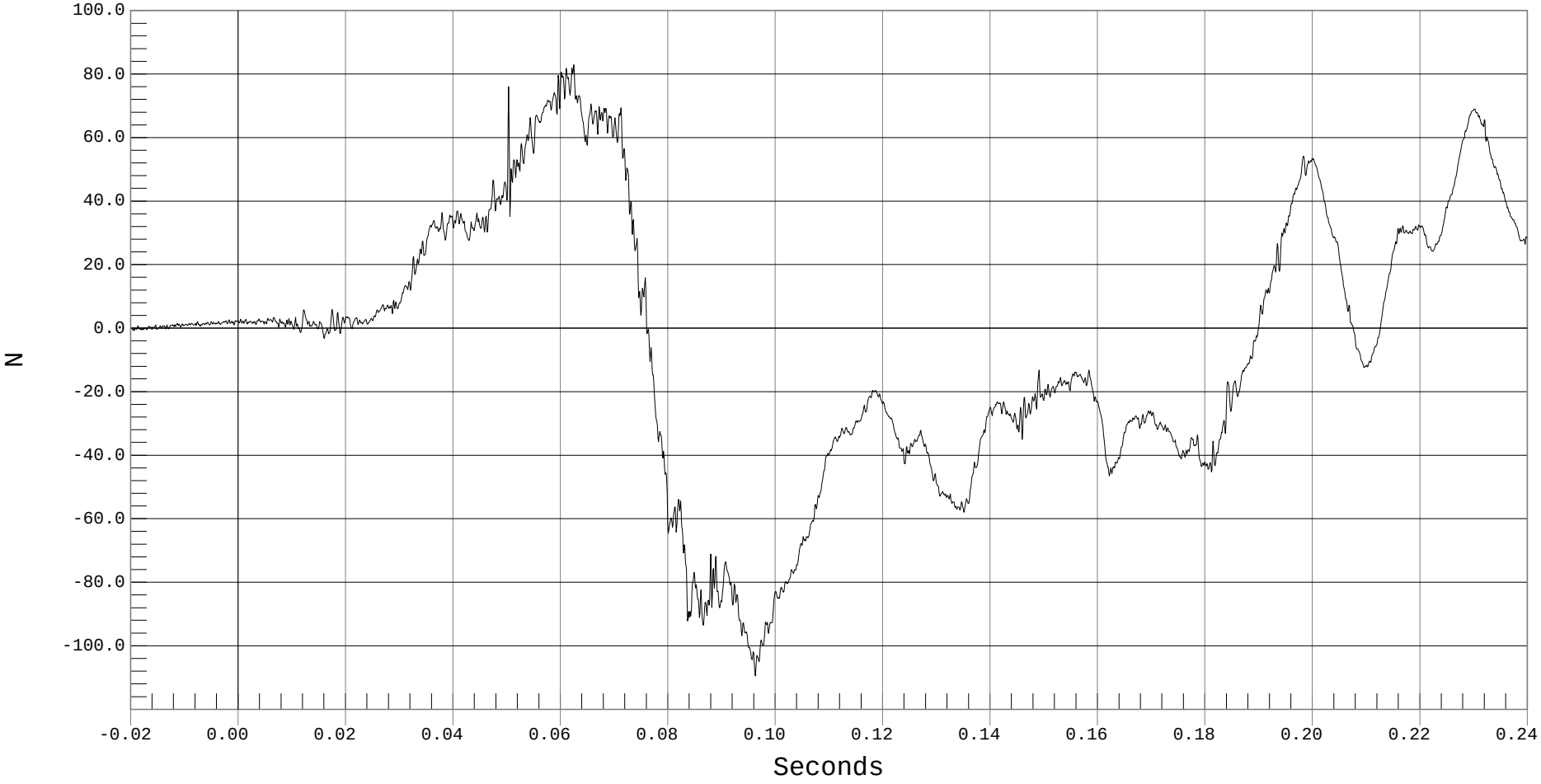
RRS 3 YR OLD LOWER NECK FORCE Y

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 RRS CHILD LOWER NECK FORCE Y, B01014FT.F47

Ymin = -109.5 N @ 0.0962 Seconds, Ymax = 82.9 N @ 0.0624 Seconds



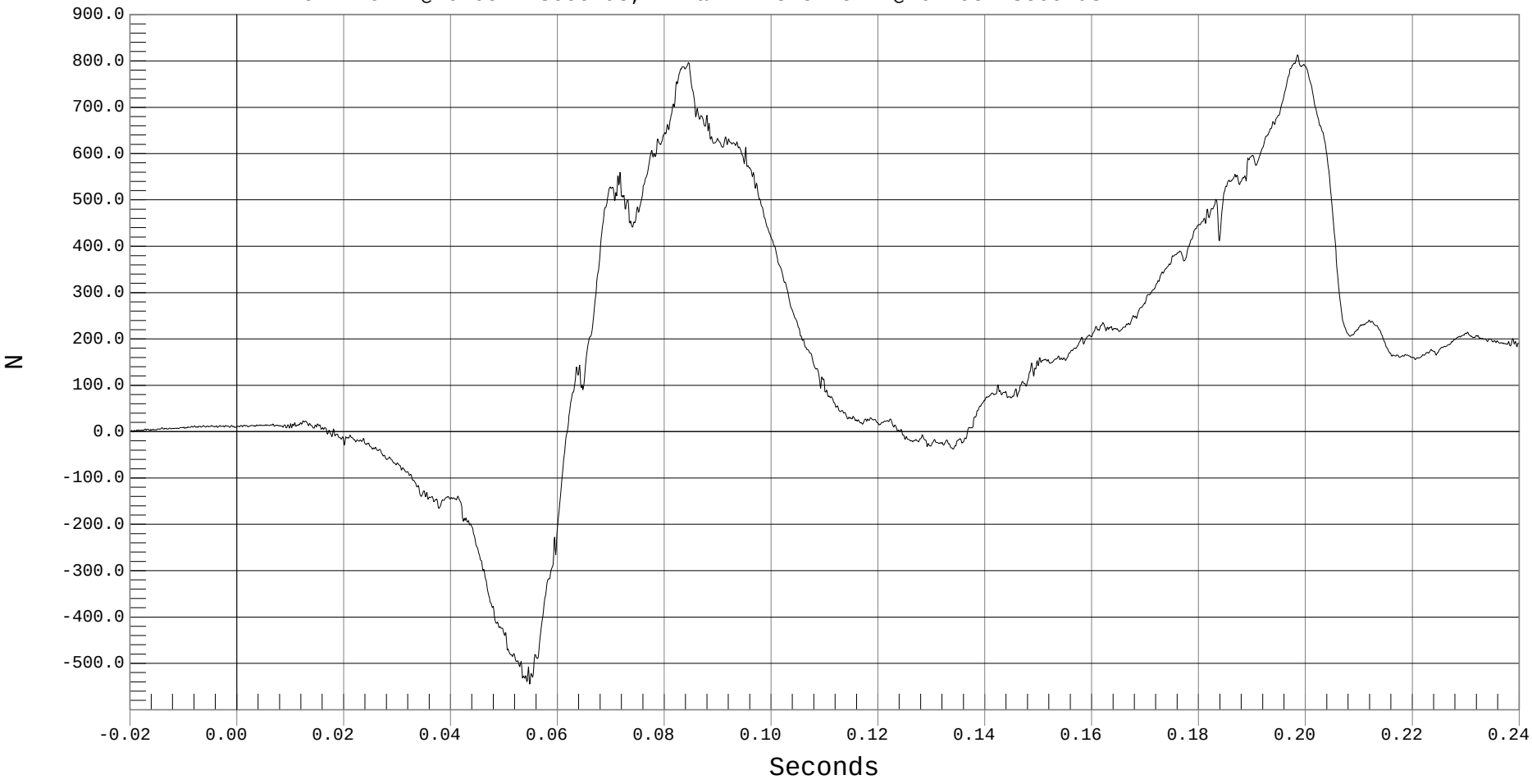
RRS 3 YR OLD LOWER NECK FORCE Z

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 RRS CHILD LOWER NECK FORCE Z, B01014FT.F48

Ymin = -544.46 N @ 0.0547 Seconds, Ymax = 813.15 N @ 0.1984 Seconds



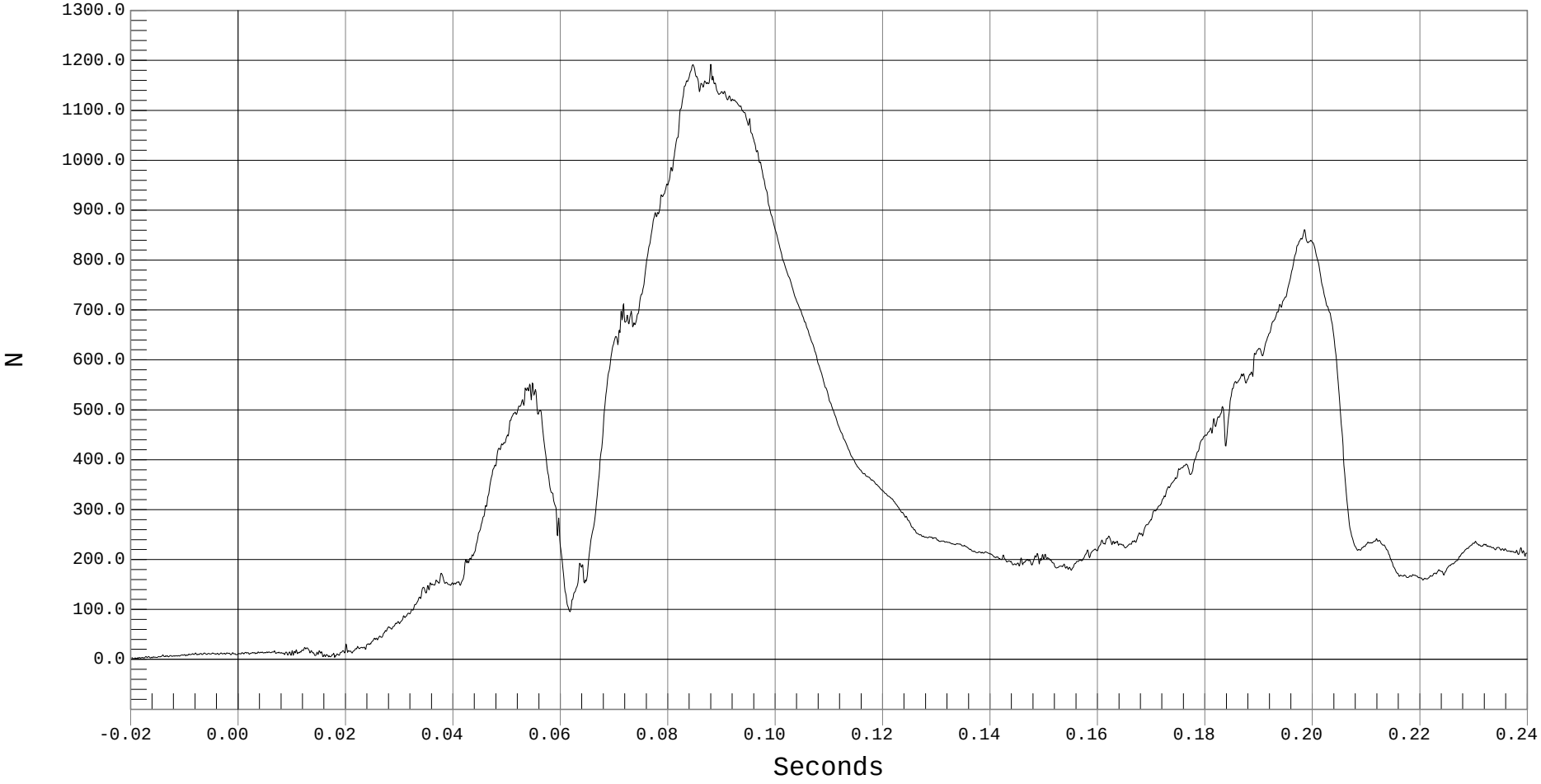
RRS 3 YR OLD LOWER NECK FORCE RESULTANT

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 RRS 3 YR OLD LOWER NECK FORCE RESULTANT, B01014FV.F46

Ymin = .87 N @ -0.0194 Seconds, Ymax = 1192.09 N @ 0.0879 Seconds



RRS 3 YEAR OLD LOWER NECK MOMENT X VS. TIME
NO VALID DATA COLLECTED

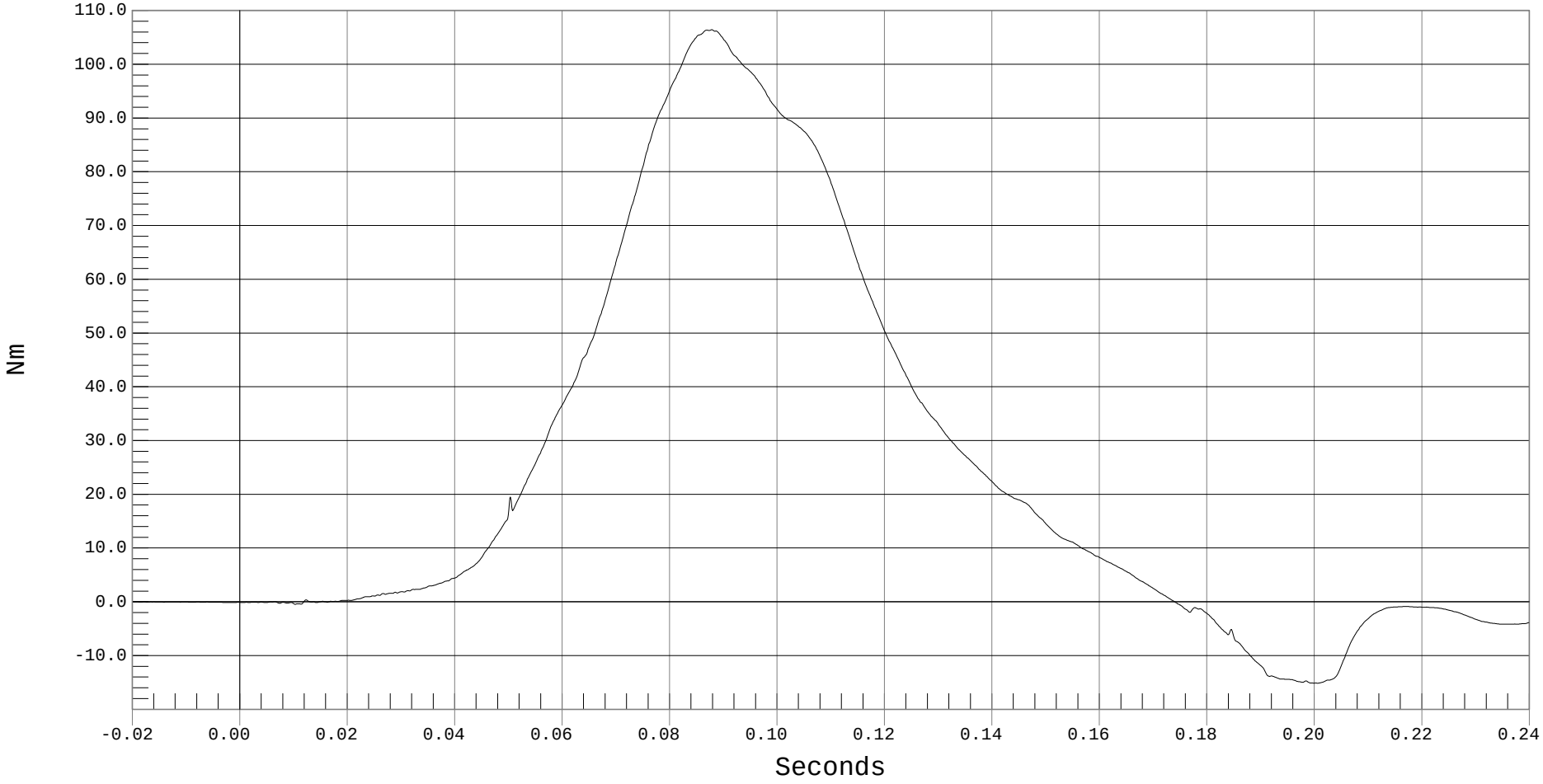
RRS 3 YR OLD LOWER NECK MOMENT Y

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 RRS CHILD LOWER NECK MOMENT Y, B01014MF.M50

Ymin = -15.15 Nm @ 0.2005 Seconds, Ymax = 106.44 Nm @ 0.0878 Seconds



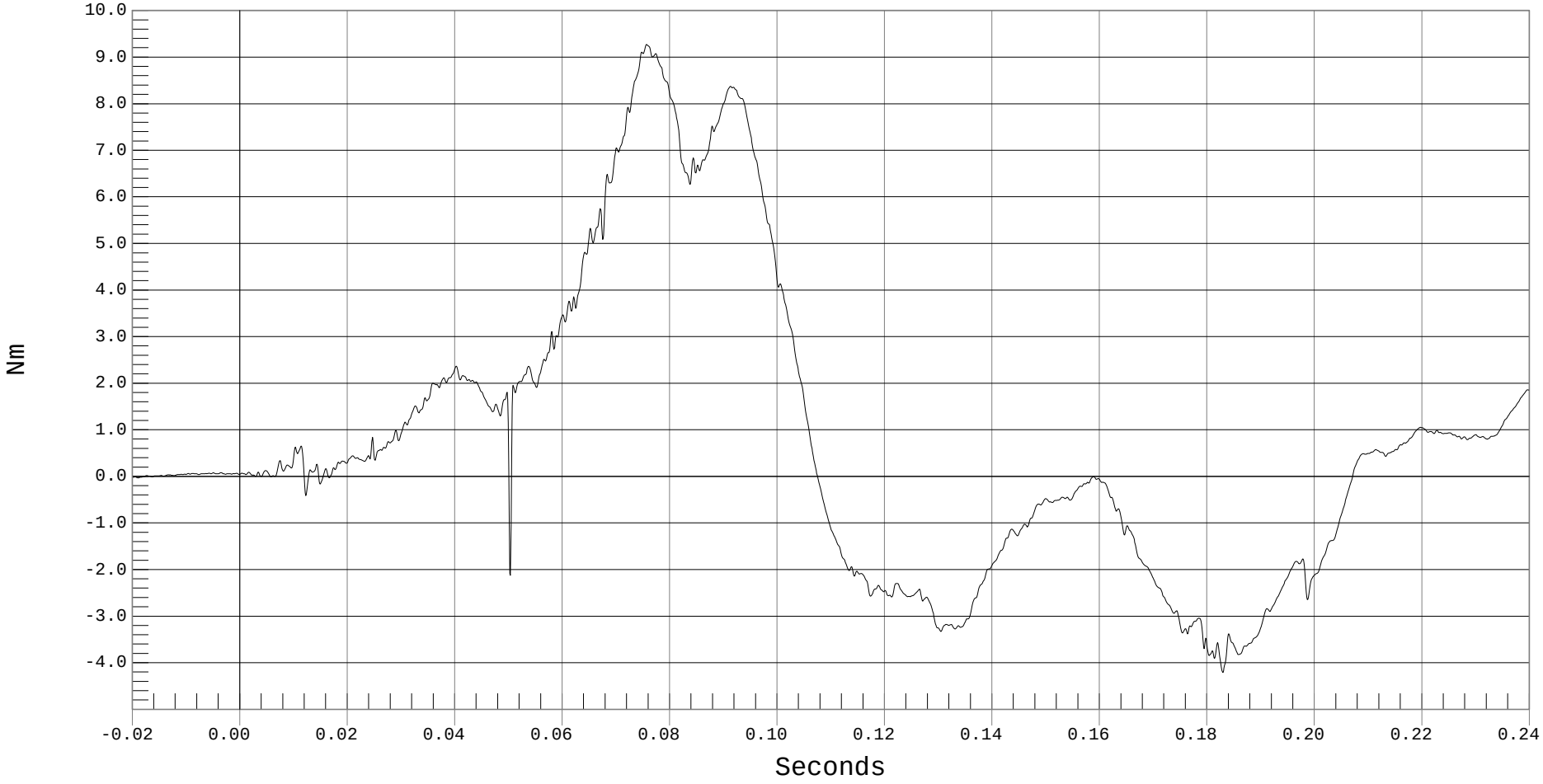
RRS 3 YR OLD LOWER NECK MOMENT Z

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 RRS CHILD LOWER NECK MOMENT Z, B01014MF.M51

Ymin = -4.21 Nm @ 0.1829 Seconds, Ymax = 9.27 Nm @ 0.0756 Seconds



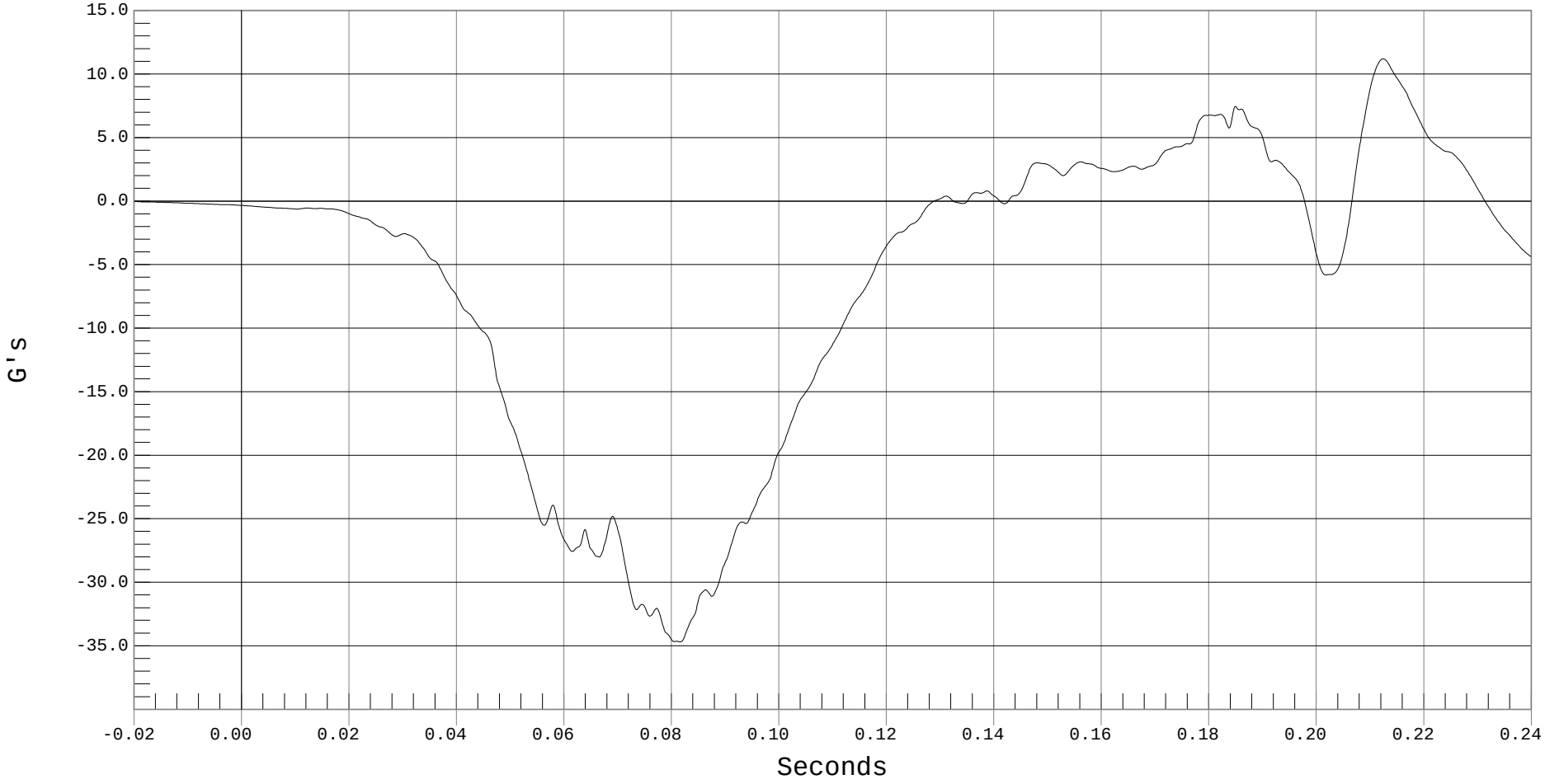
RRS 3 YR OLD CHEST X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 RRS CHILD CHEST X, B01014AF.A52

Ymin = -34.69 G's @ 0.0816 Seconds, Ymax = 11.2 G's @ 0.2123 Seconds



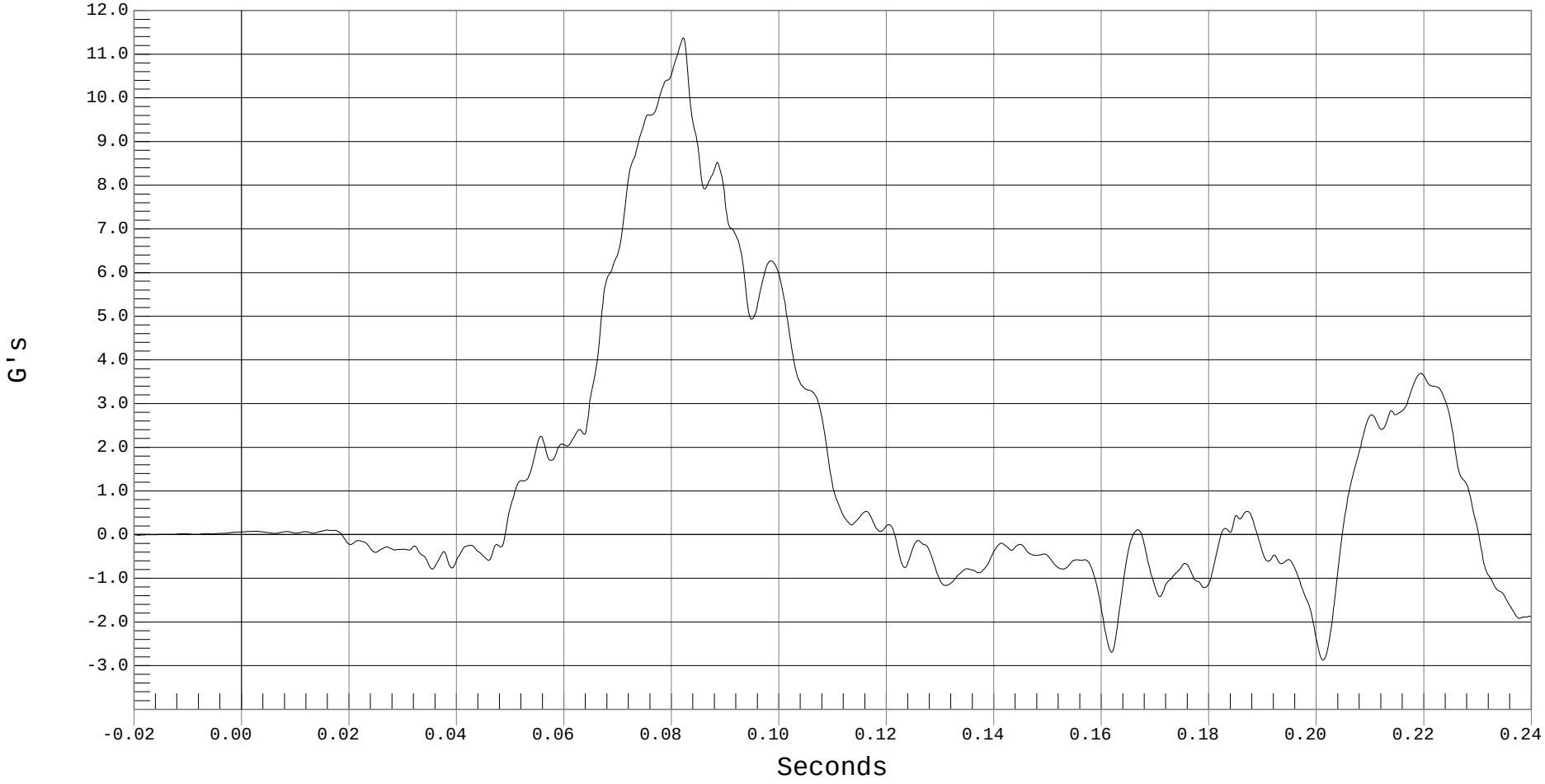
RRS 3 YR OLD CHEST Y ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 RRS CHILD CHEST Y, B01014AF.A53

Ymin = -2.87 G's @ 0.2012 Seconds, Ymax = 11.37 G's @ 0.0821 Seconds



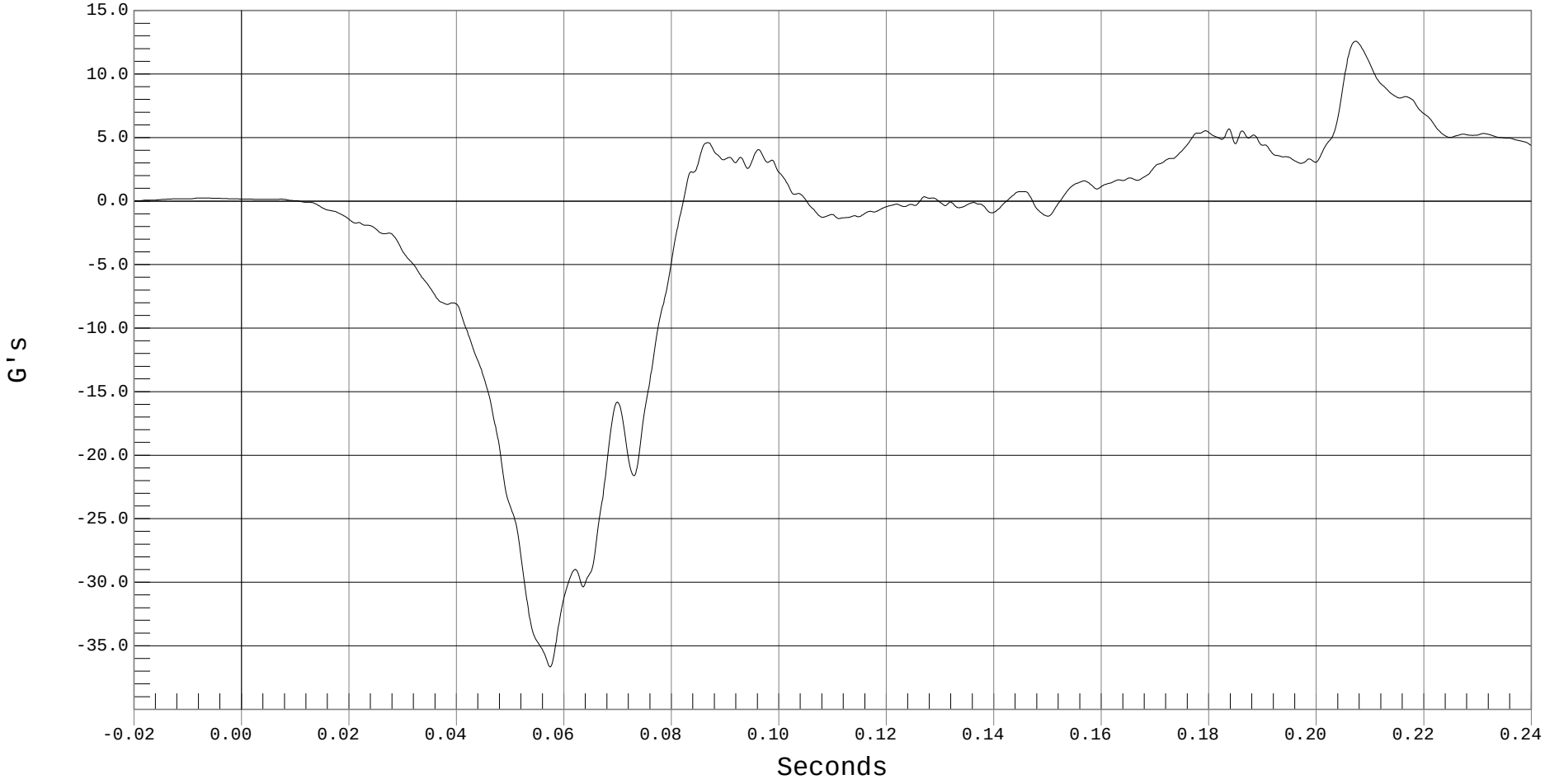
RRS 3 YR OLD CHEST Z ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 RRS CHILD CHEST Z, B01014AF.A54

Ymin = -36.66 G's @ 0.0573 Seconds, Ymax = 12.58 G's @ 0.2072 Seconds



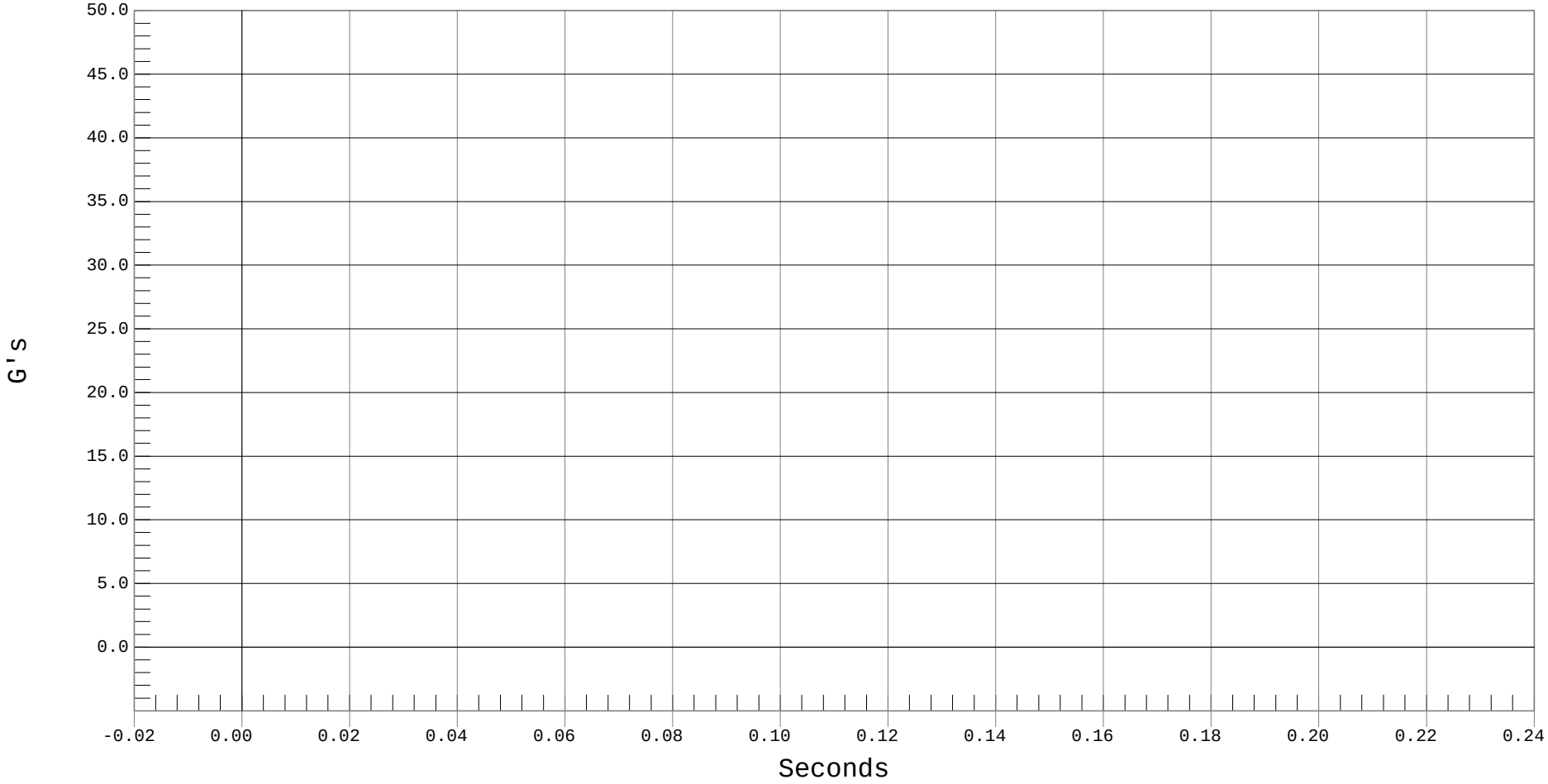
RRS 3 YR OLD CHEST RESULTANT ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 RRS 3 YR OLD CHEST RESULTANT ACCELERATION, B01014AV.A52

Ymin = .05 G's @ -0.0199 Seconds, Ymax = 44.21 G's @ 0.0570 Seconds



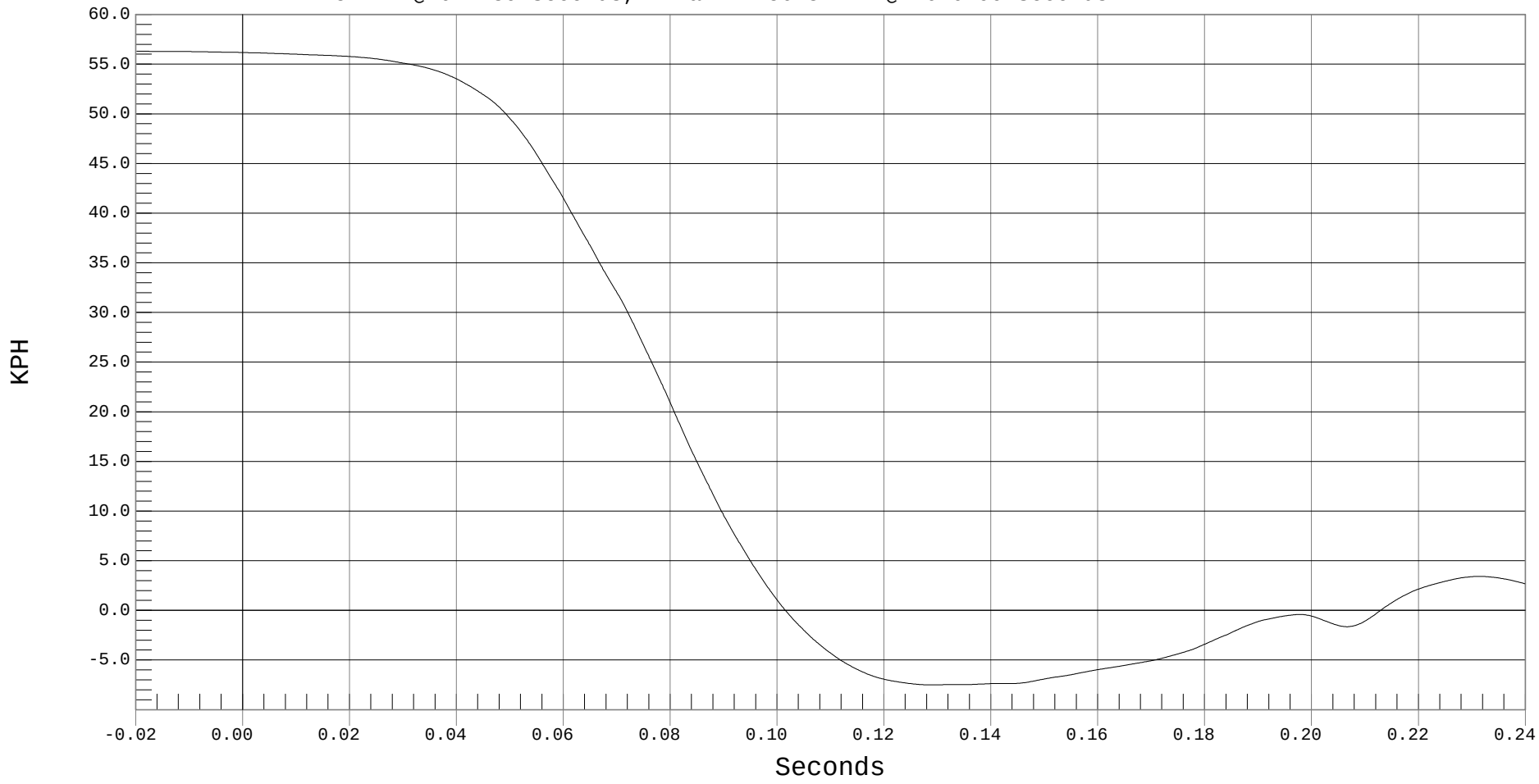
RRS 3 YR OLD CHEST X VELOCITY

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 RRS 3 YR OLD CHEST X VELOCITY, B01014AI.V52

Ymin = -7.5 KPH @ 0.1289 Seconds, Ymax = 56.3 KPH @ -0.0199 Seconds



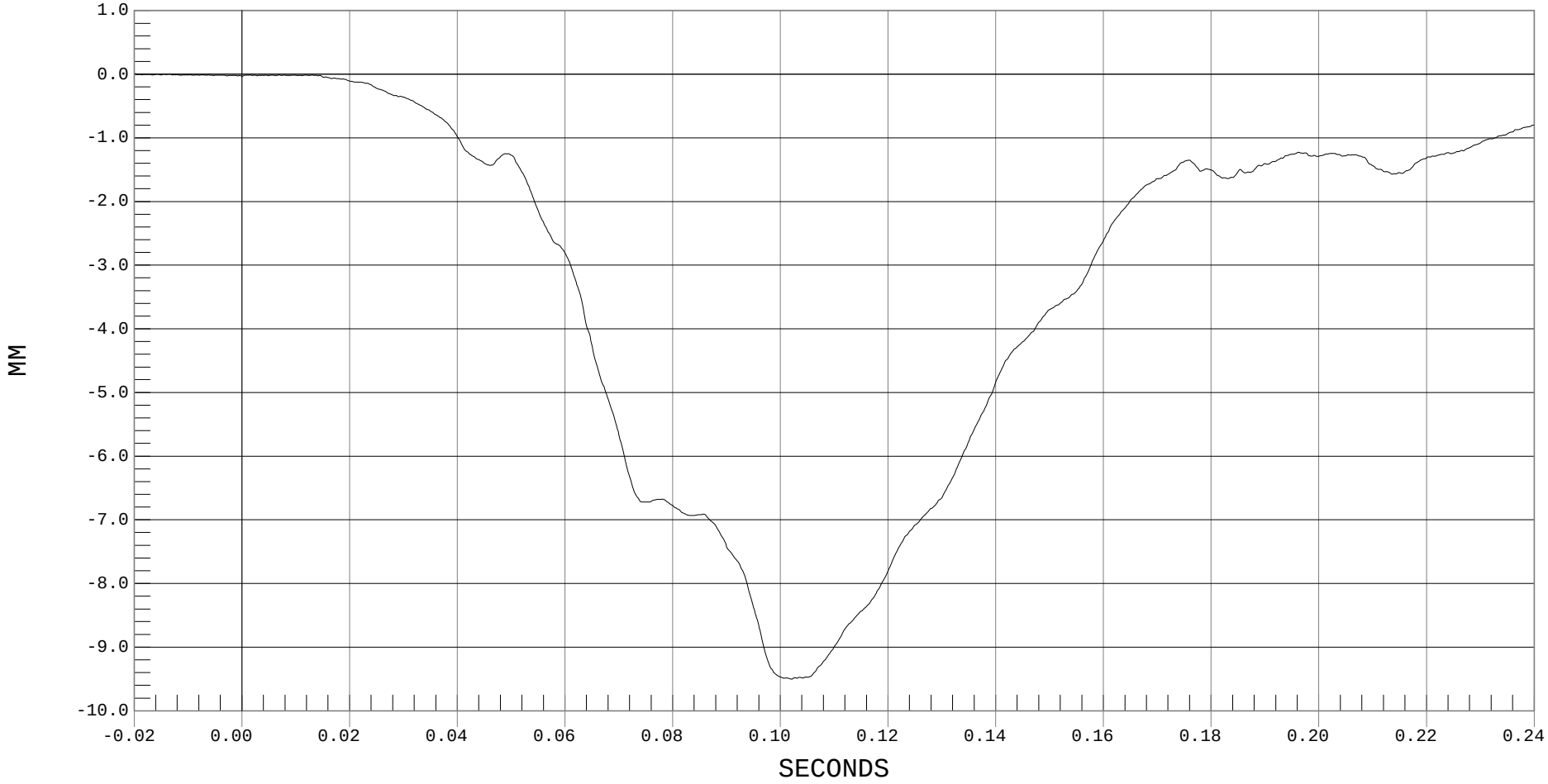
RRS 3 YR OLD CHEST COMPRESSION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 600

1 DISPLACEMENT, B01014DF.D55

Ymin = -9.5 MM @ 0.1020 SECONDS, Ymax = .01 MM @ -0.0199 SECONDS



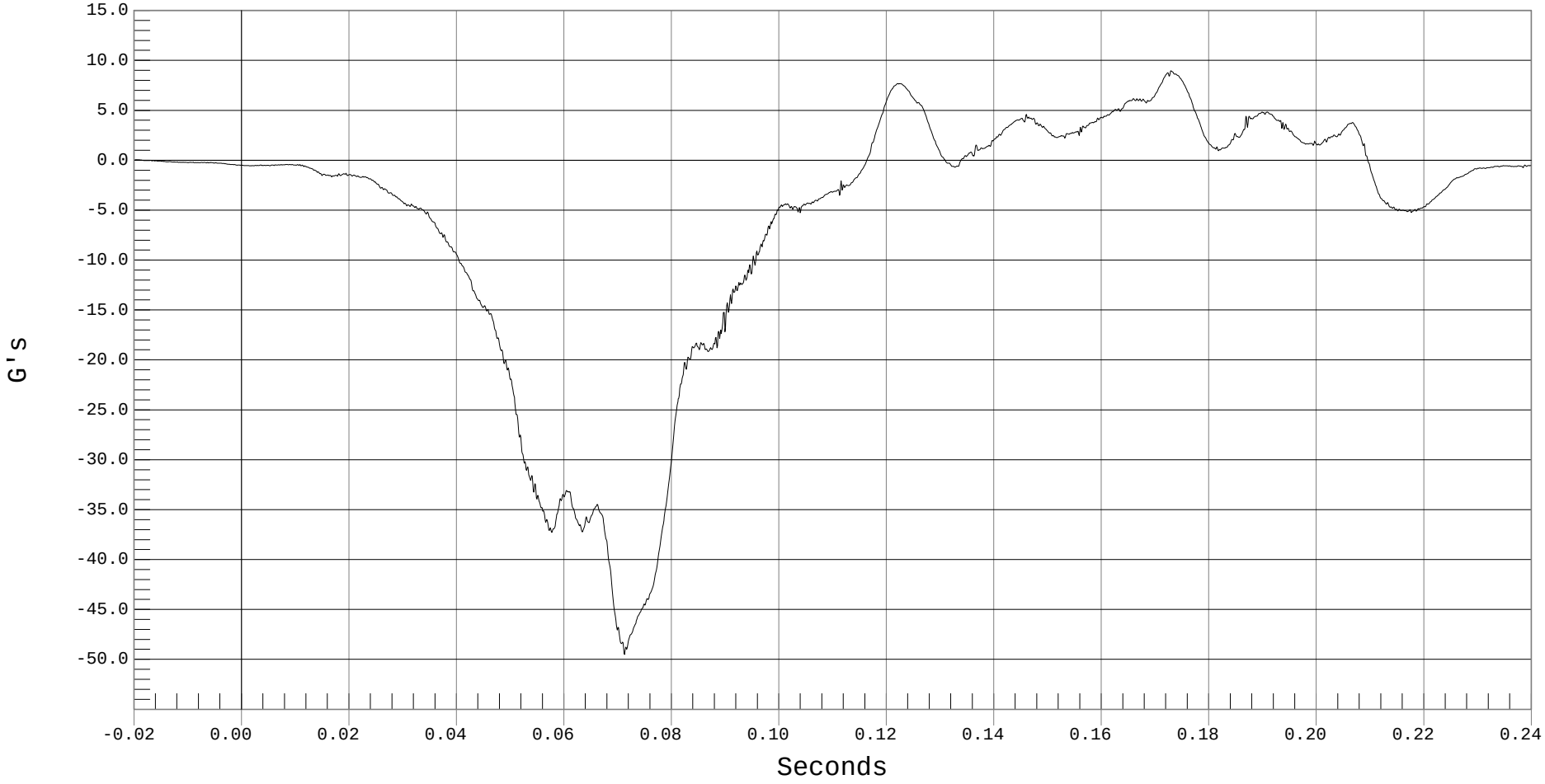
RRS 3 YR OLD PELVIS X ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 RRS CHILD PELVIS X, B01014AT.A56

Ymin = -49.5 G's @ 0.0712 Seconds, Ymax = 8.97 G's @ 0.1729 Seconds



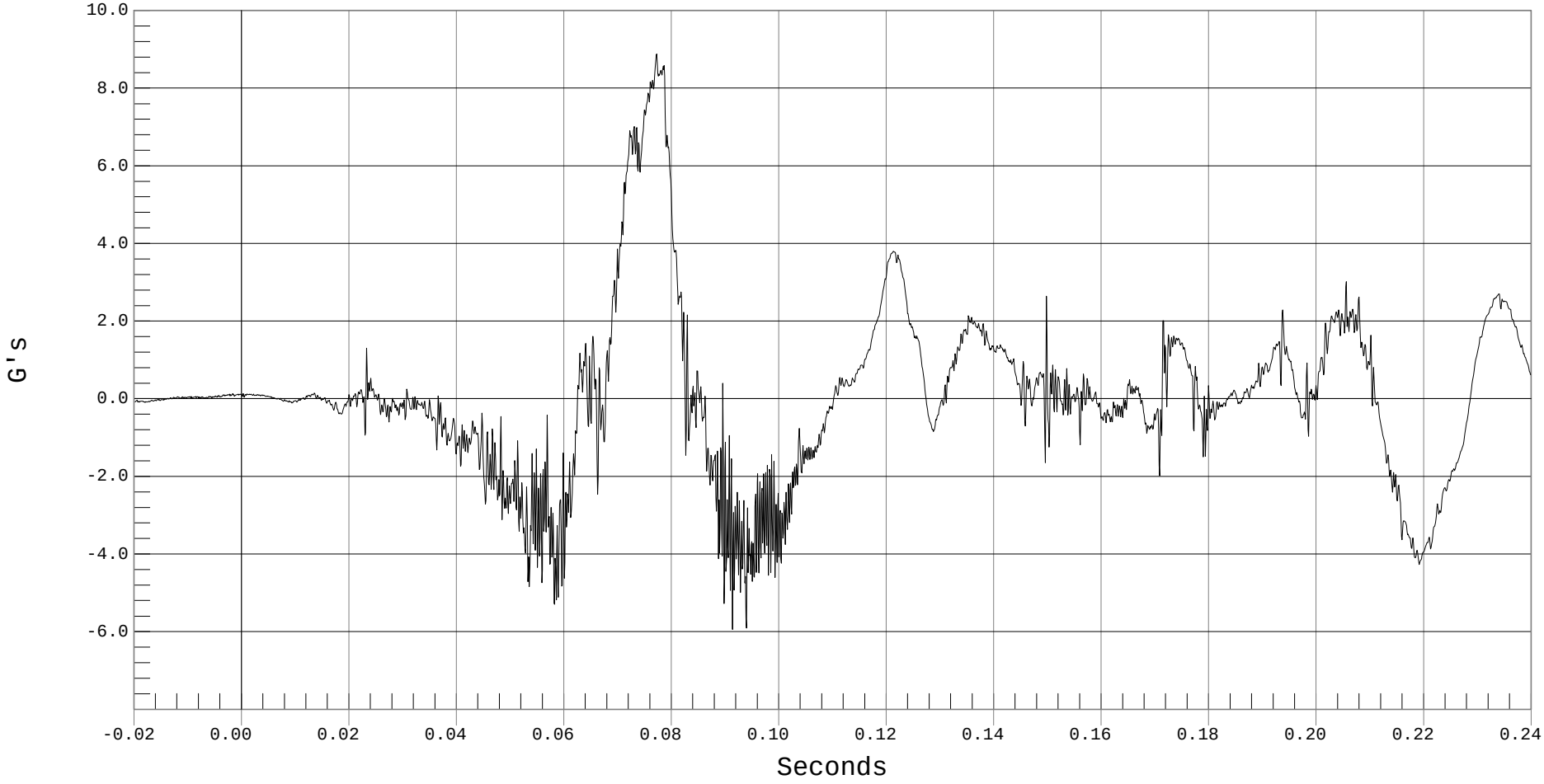
RRS 3 YR OLD PELVIS Y ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 RRS CHILD PELVIS Y, B01014AT.A57

Ymin = -5.94 G's @ 0.0913 Seconds, Ymax = 8.88 G's @ 0.0772 Seconds



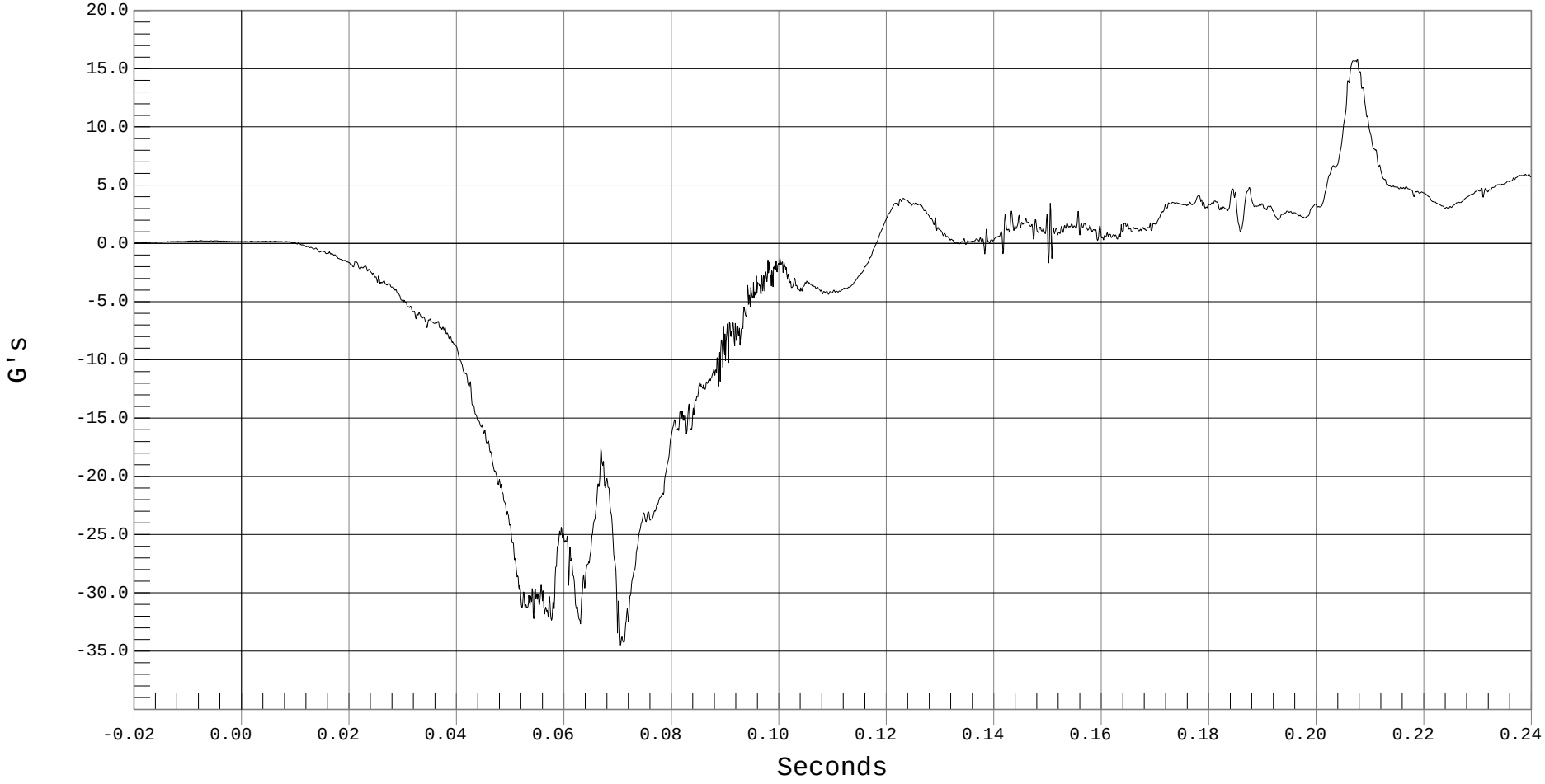
RRS 3 YR OLD PELVIS Z ACCELERATION

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 RRS CHILD PELVIS Z, B01014AT.A58

Ymin = -34.47 G's @ 0.0704 Seconds, Ymax = 15.78 G's @ 0.2076 Seconds

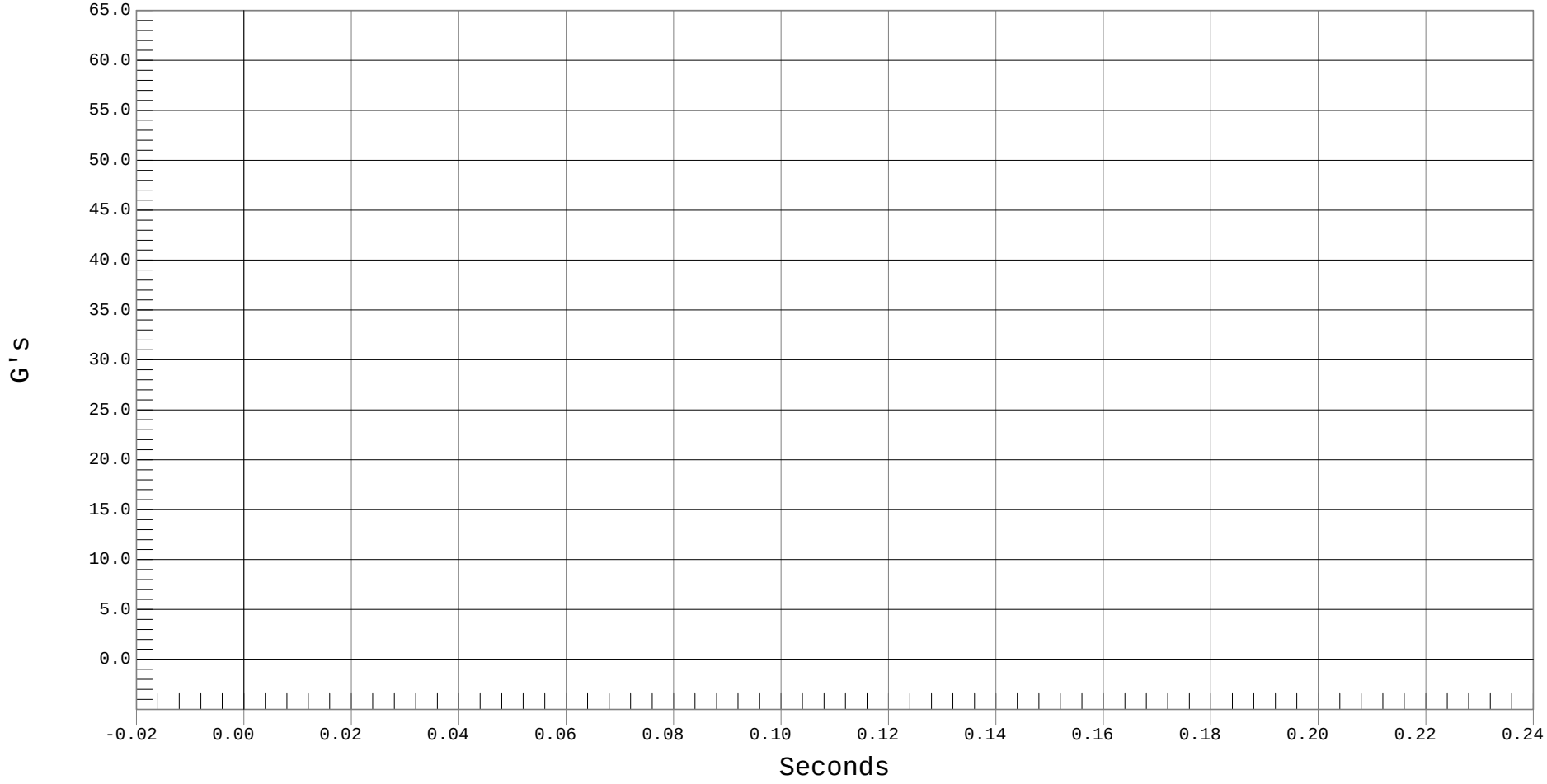


Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 1000

1 RRS 3 YR OLD PELVIS RESULTANT ACCELERATION, B01014AV.A56

Ymin = .07 G's @ -0.0196 Seconds, Ymax = 60.38 G's @ 0.0711 Seconds



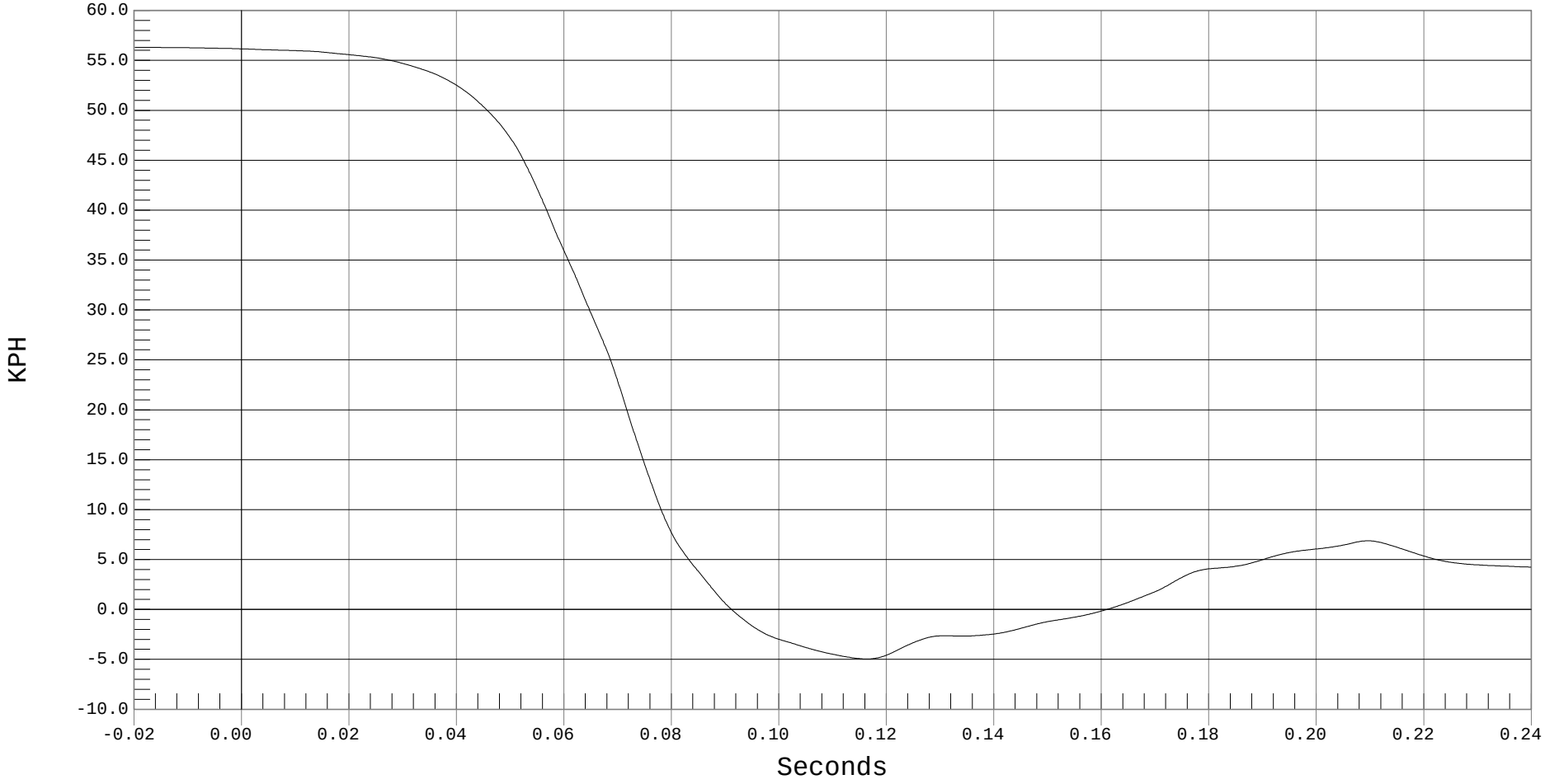
RRS 3 YR OLD PELVIS X VELOCITY

Test Desc.: NCAP FRONTAL IMPACT
Component: 2001 NISSAN SENTRA (M15206)
Other Info:

Test Date: 02-12-01
Speed: 35.0 MPH, 56.3 KPH
Filter Class: 180

1 RRS 3 YR OLD PELVIS X VELOCITY, B01014AI.V56

Ymin = -4.96 KPH @ 0.1163 Seconds, Ymax = 56.3 KPH @ -0.0186 Seconds



CHILD DUMMY CALIBRATION DATA TRACES AND TABLES

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

1/11/01

Laboratory Technician Test Date

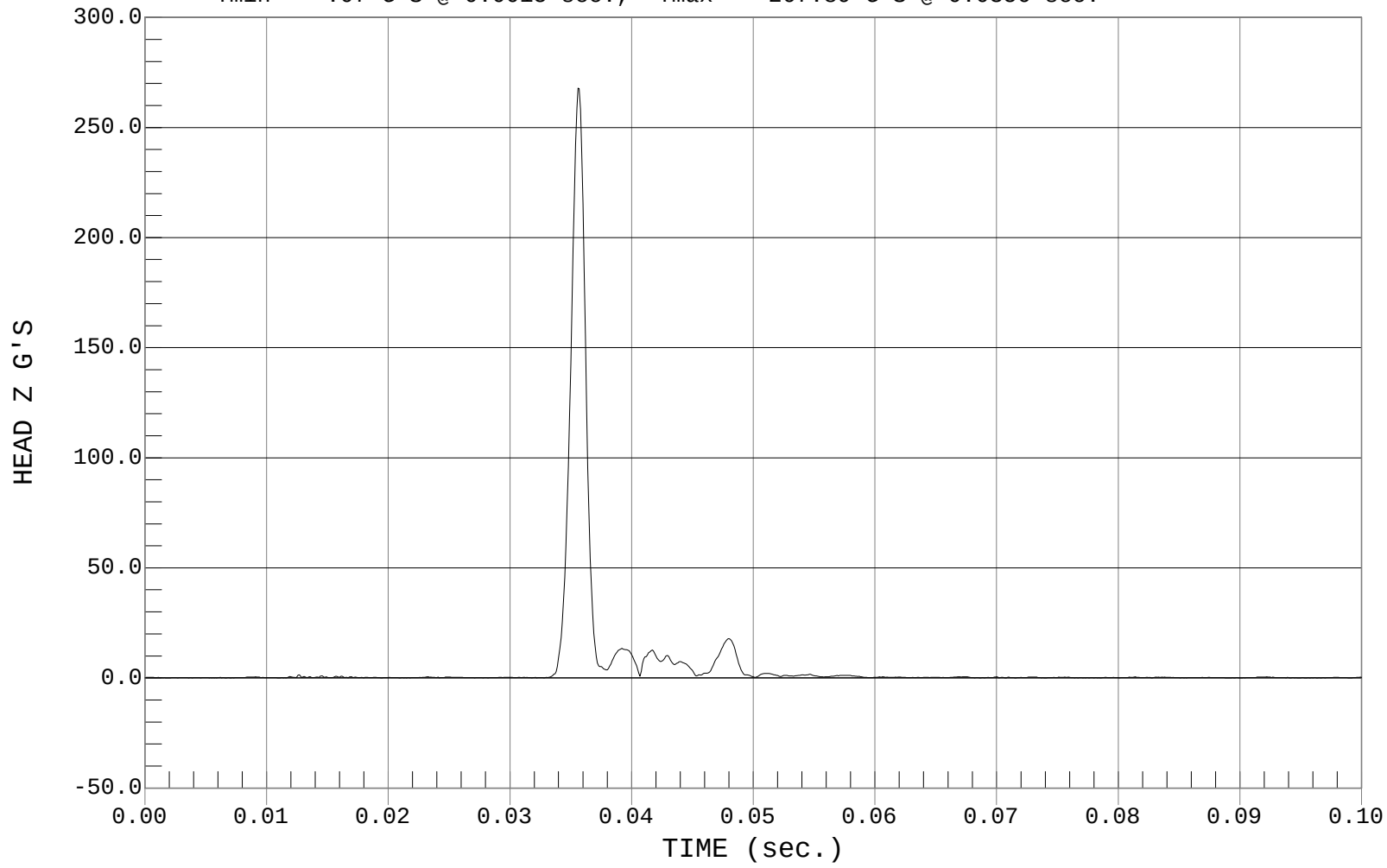
Approved By

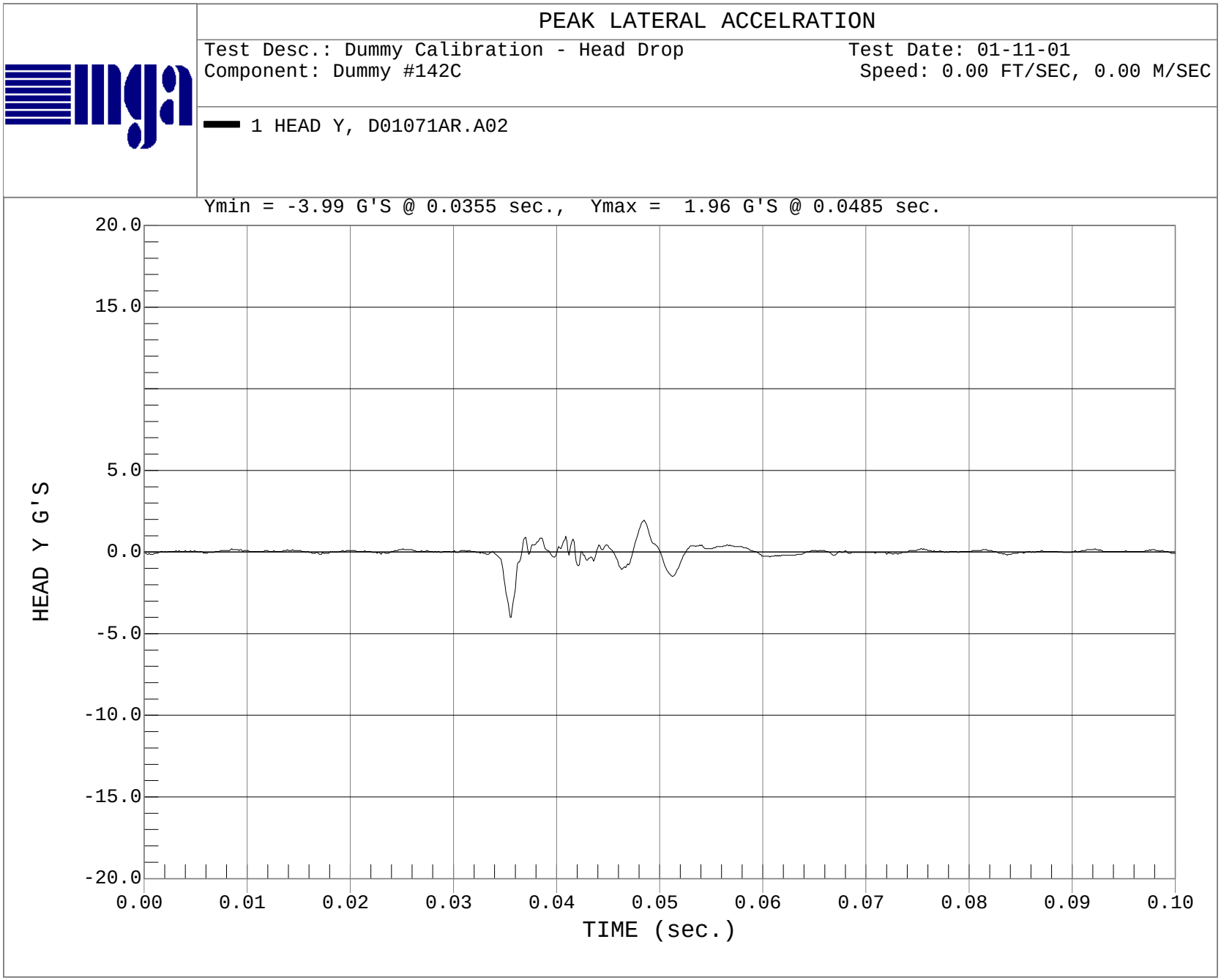
PEAK RESULTANT ACCELERATION

Test Desc.: Dummy Calibration - Head Drop
Test Date: 01-11-01
Component: Dummy #142C
Speed: 0.00 FT/SEC, 0.00 M/SEC

1 HEAD Z, D01071AV.A01

Ymin = .07 G'S @ 0.0015 sec., Ymax = 267.89 G'S @ 0.0356 sec.




PEAK LATERAL ACCELRATION
Test Desc.: Dummy Calibration - Head Drop
Test Date: 01-11-01
Component: Dummy #142C
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.
HEAD Y G'S
20.0
15.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.10
TIME (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	6.58 to 6.82	6.0	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
Test Date: 01-14-01
Component: Dummy #142C
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
FORCE N
1200.0
1000.0
800.0
600.0
400.0
200.0
0.0
-200.0
-5
0
5
10
15
20
25
30
35
40
DISPLACEMENT mm

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

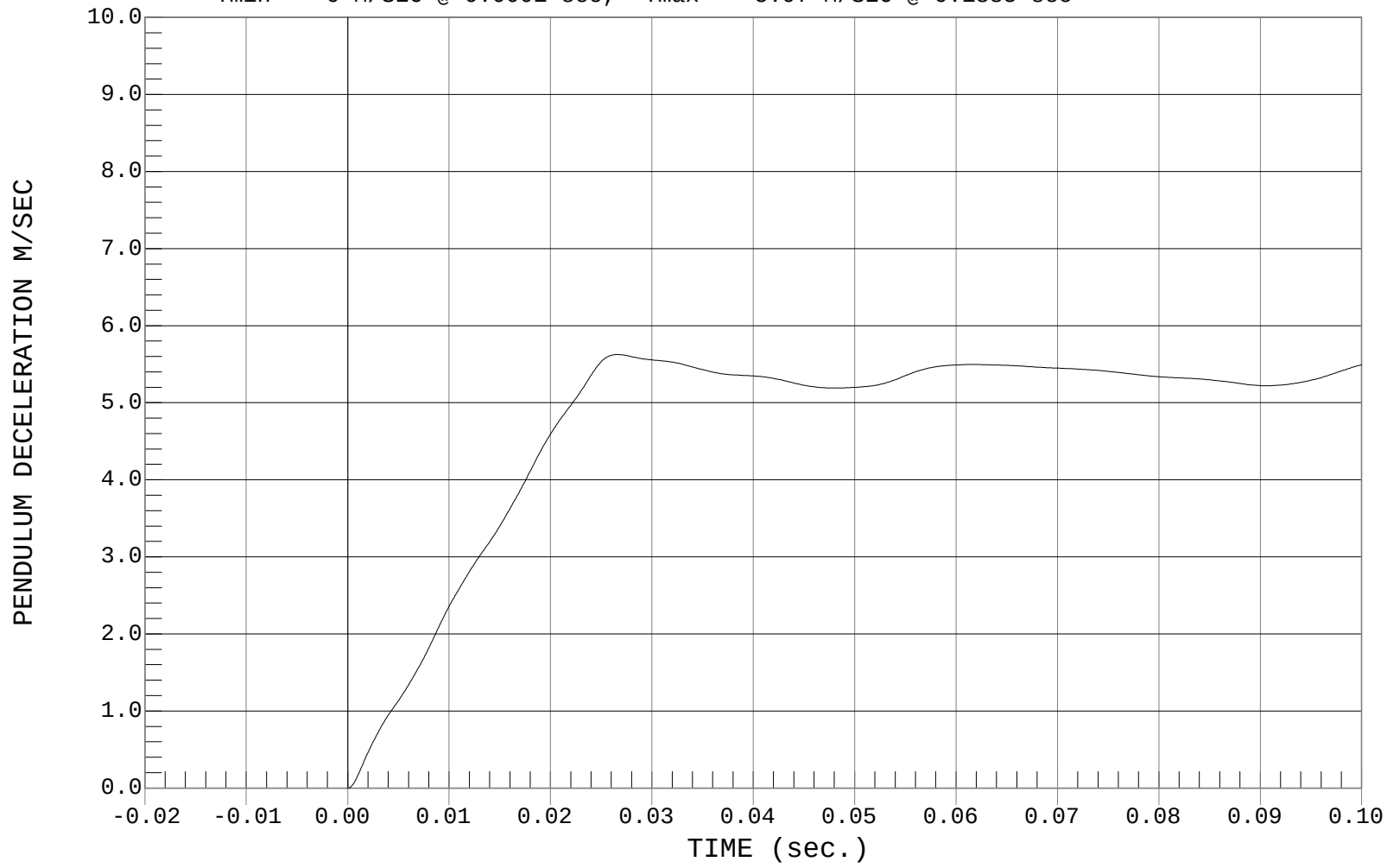
PENDULUM DECELERATION

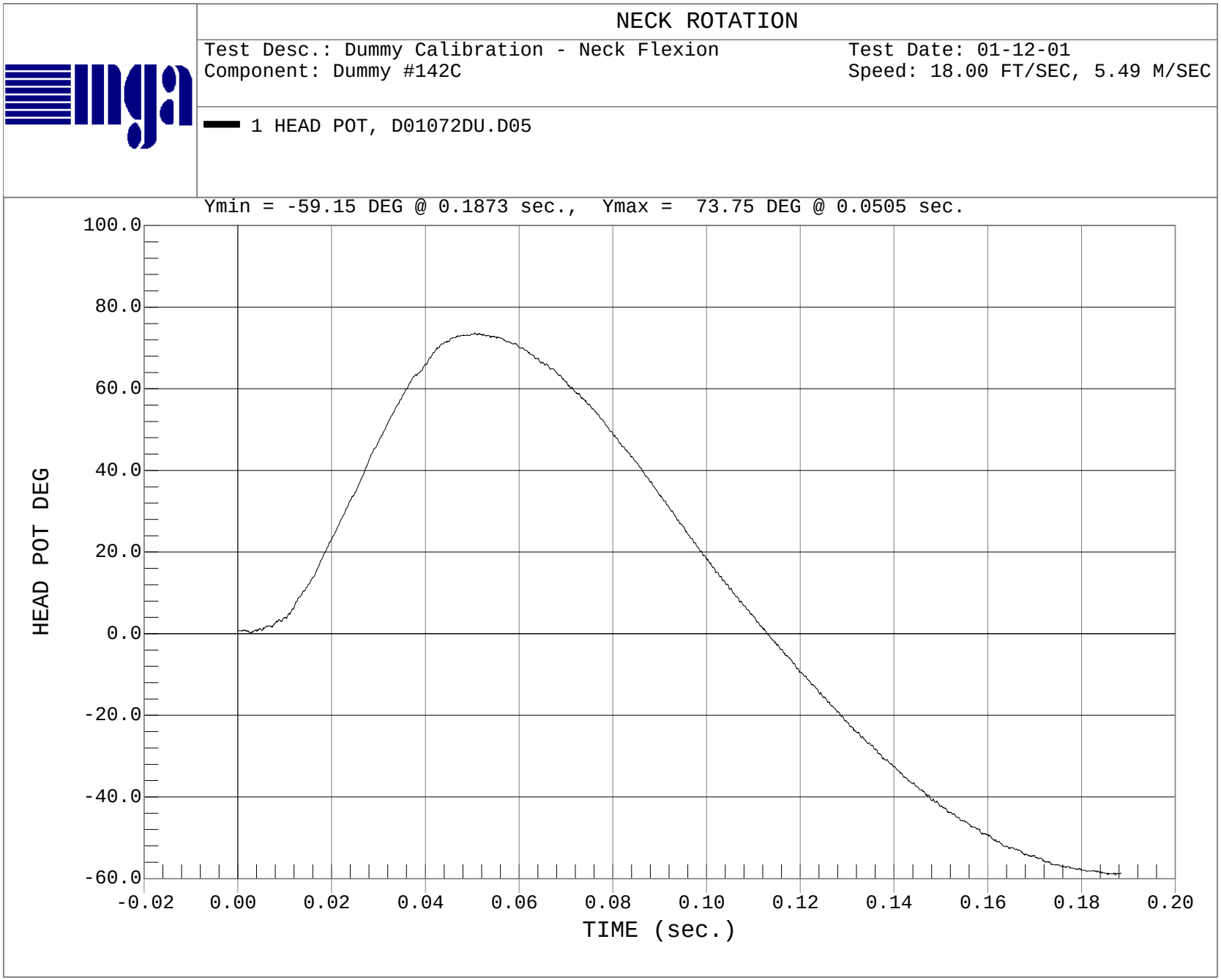
Test Desc.: Dummy Calibration - Neck Flexion
Component: Dummy #142C

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
Test Date: 01-12-01
Component: Dummy #142C
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.
HEAD POT DEG
100.0
80.0
60.0
40.0
20.0
0.0
-20.0
-40.0
-60.0
-0.02
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.16
0.18
0.20
TIME (sec.)

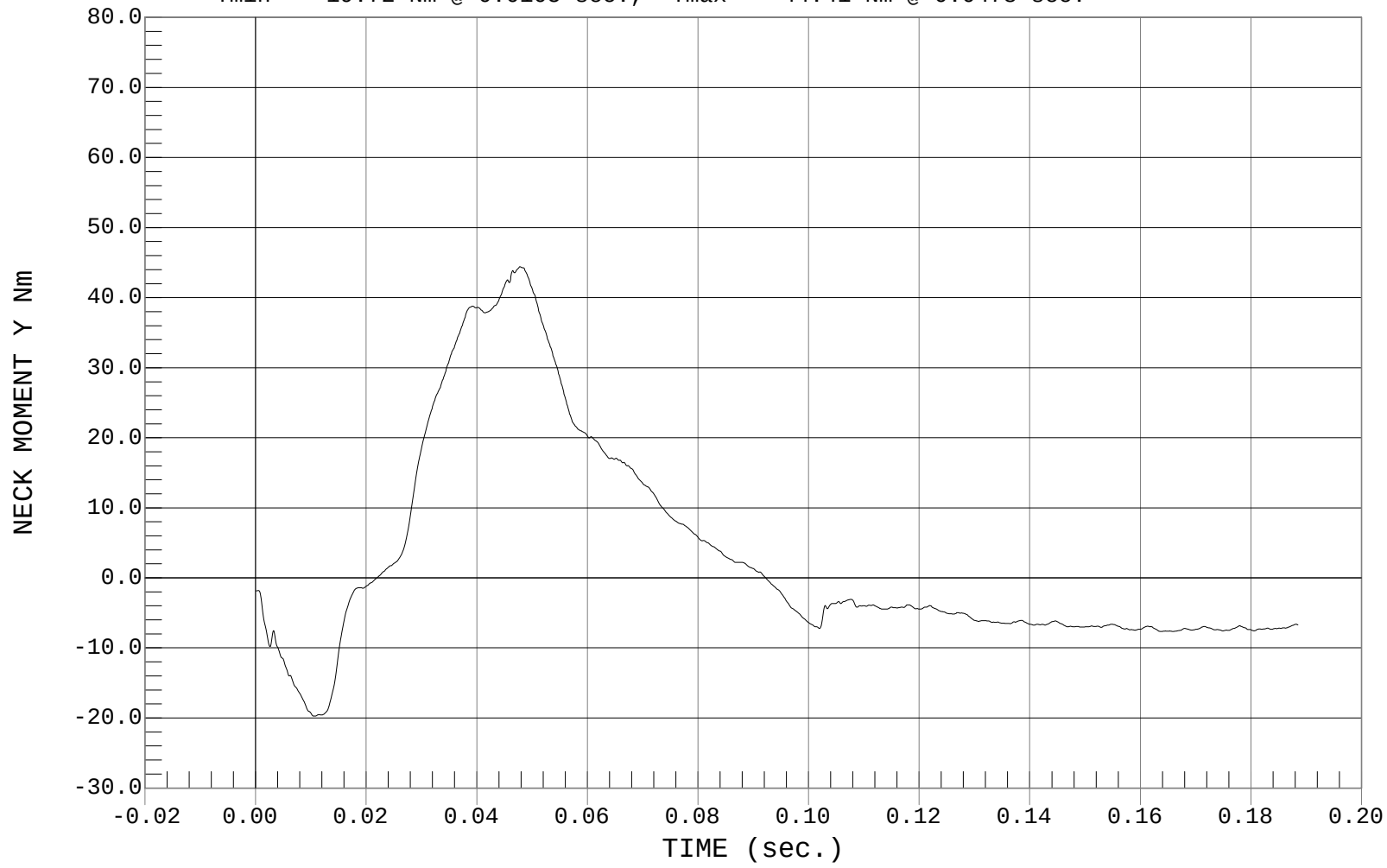
OCCIPITAL MOMENT

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
Test Date: 01-12-01
Component: Dummy #142C
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
PENDULUM DECELERATION M/SEC
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.02
-0.01
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.10
TIME (sec.)


NECK ROTATION
Test Desc.: Dummy Calibration - Neck Extension
Test Date: 01-12-01
Component: Dummy #142C
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.
HEAD POT DEG
100.0
80.0
60.0
40.0
20.0
0.0
-20.0
-40.0
-0.02
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.16
0.18
0.20
TIME (sec.)

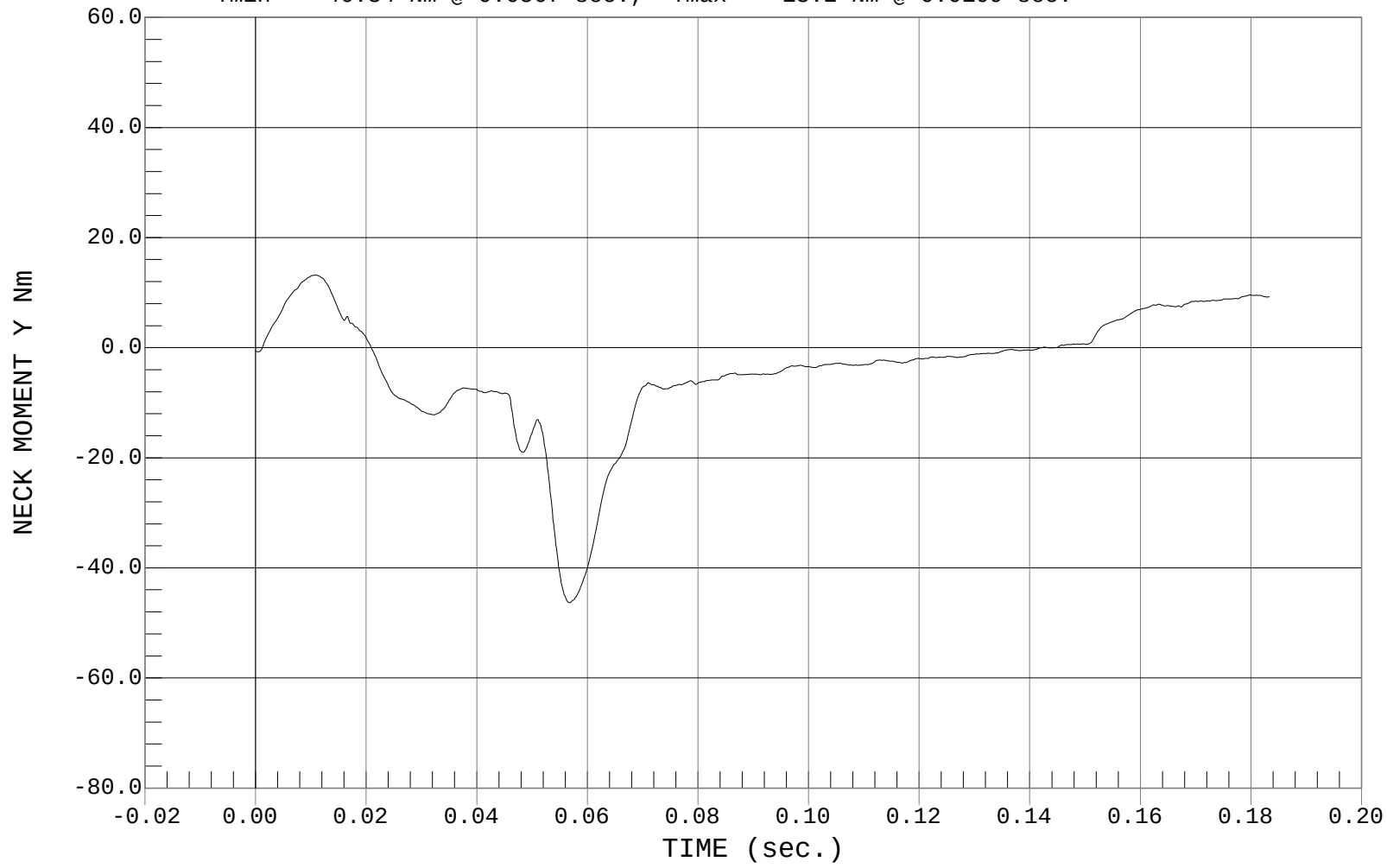
OCCIPITAL MOMENT

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

1/12/01

Laboratory Technician Test Date

Approved By

TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION

DUMMY AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENTS FOR CHILD DUMMY NO. 142C

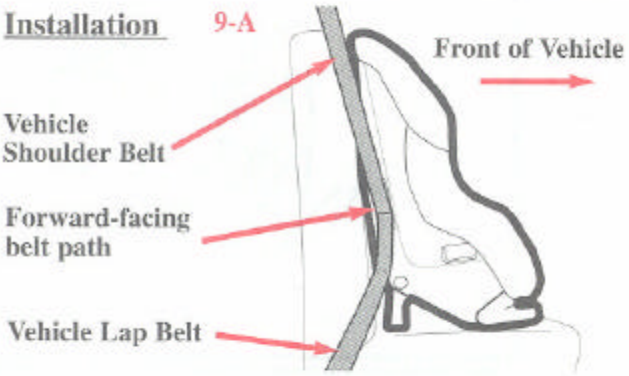
	INSTRUMENTS FOR DUMMY NO. 142C		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X	J19927	Endevco	1/4/01
Head Y	J18736	Endevco	1/4/01
Head Z	J14674	Endevco	1/4/01
Chest X	J14235	Endevco	1/4/01
Chest Y	J18724	Endevco	1/4/01
Chest Z	AJ5R0	Endevco	1/4/01
Pelvis X	J19440	Endevco	1/4/01
Pelvis Y	AJ4W2	Endevco	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	142C	Servo	1/12/01

CHILD SEAT OWNER'S MANUAL RESTRAINT INSTRUCTIONS

Toddler Installation: over 22 and up to 40 lbs (over 10 and up to 18 kg) and 40" (102 cm) or less

In the forward-facing toddler position, the shoulder harness must be just at or above the child's shoulders. You must change the harness height before installing the seat in the vehicle. See "To Change Harness Height" on Page 3. Read general warnings on page 2 and seat belt compatibility information on pages 6 and 7 before installing this child restraint.

Installation 9-A



9-B

WRONG



To Install:

1. Toddlers over 22 up to 35 pounds (over 10 up to 15.9 kg) who are over 1 year old may ride facing the front of the vehicle. Toddlers 35-40 pounds (15.9-18 kg) and under 40 inches (102 cm) tall must ride facing the front of the vehicle (Fig 9-A.). Either the upright or a reclined position may be used forward-facing. To change positions, see Page 3.
2. Thread the vehicle lap belt through the forward-facing belt path as shown in Fig. 9-A. If the lap and shoulder belts are attached, pass both through the belt path.
3. Buckle the vehicle belt and adjust as tightly as possible. Put one knee in the seat and push down firmly on the car seat while pulling up on the shoulder belt until the lap belt is tight. It is not necessary to make the seat completely immobile. Some "play" from front to back is acceptable. The car seat should not move more than an inch or two from side to side. If it does, you may need to use a locking clip or move the seat; use of the tether will also help stabilize the car seat. See information on pages 6, 7 and 10.
4. Place your toddler in the car seat. Secure and adjust the harness system as described in "Putting Your Child in the Restraint" on page 4.

Do not use the child restraint in any vehicle seat where the lap belt cannot be tightened securely and properly or where it can be loosened by pulling on it. (See Pages 2, and 6-7).

Tether strap installation and removal

Vehicles manufactured after 1989 have pre-drilled holes but need to have the anchor hardware installed. Some dealers may offer free installation. Vehicles made after 9/1/99 have the anchor hardware already installed. Refer to your owner's manual or call your dealer.

⚠ You must follow the threading diagram exactly. Failure to follow these steps could cause the strap to loosen in a crash, which could result in injury to your child.

#1 Thread end down in between the pad and the shell, out through the top center slot of shell, around reinforcement and through lower slot, then back up between shell and pad.

#2 Thread end back up through both adjuster slides and then down through both adjusters.

#3 Loop tether end up and over the adjuster slides. Thread down between adjuster slides. Tighten.

To adjust tether:

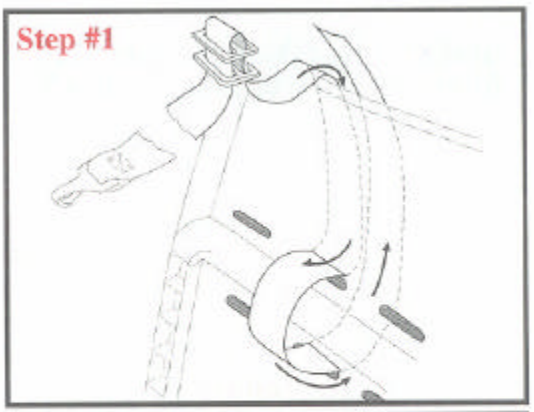
Loosen slides. Pull on the end of the strap (A) to tighten. Pull on the anchor attachment (B) to loosen. Tighten strap completely so there is no slack or play.

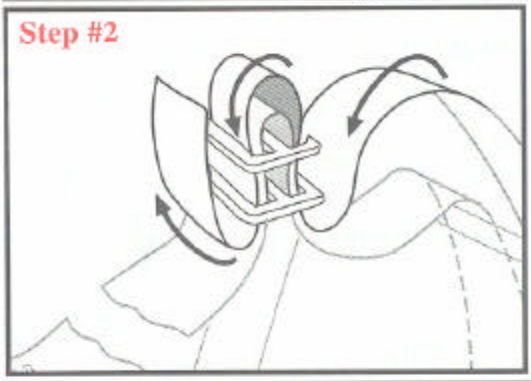
Use and storage:

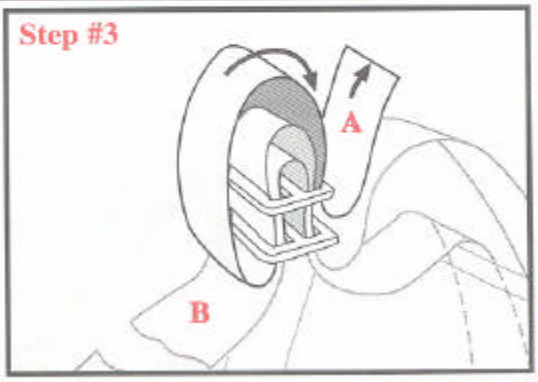
The tether is used for the forward-facing position, 22-40 lbs (10-18 kg) **only**. When not in use, it is preferable for the tether to be removed. To do so, reverse steps 1-3 above.

If the tether is attached and the car seat is used in the rear-facing infant position, the tether should be placed over the back of the car seat with the anchor hook secured under the base or recline stand of the car seat.

NOTE: If you need a longer tether (for example, to tether a car seat in a van), call Cosco's Consumer Relations Department, 1-800-544-1108.







LATCH (Lower Anchors and Tether for CHildren) Attachment System

This car seat is also equipped with the LATCH attachment system. These are the two extra sets of belts already threaded through the belt paths. The LATCH attachment system can ***only*** be used in vehicles that already have the anchor bars installed in the vehicle seat bight. These anchor bars ***cannot*** be retrofit onto the vehicle.

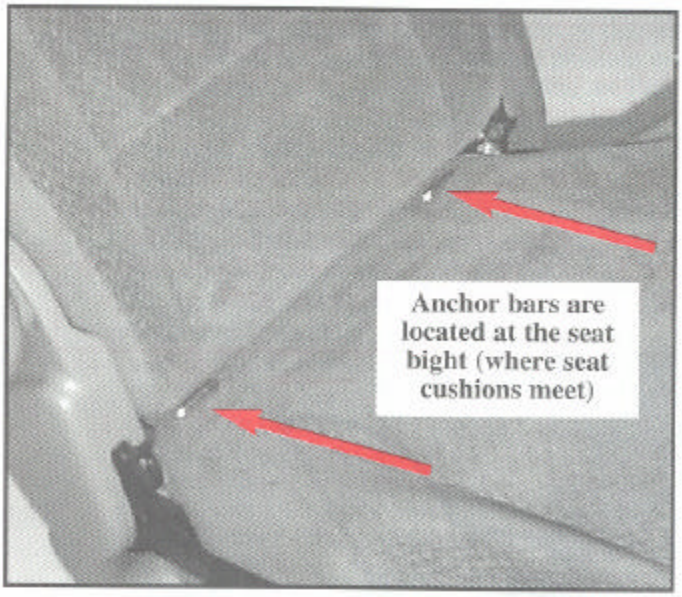
The LATCH system allows a car seat to be secured in the vehicle without using the vehicle belt system, which may not be compatible with car seats. No extra parts, such as a locking clip, are required.

If your vehicle is equipped with this system, the bars should either be visible or clearly marked. Refer to you vehicle owner's manual to see which seating positions may be equipped with the LATCH system. The owner's manual may refer to it as a universal attachment system.

The car seat is used with the LATCH system the same way as it is for the vehicle belt system. The LATCH system does not, for example, allow an infant to be placed rear facing in the front passenger seat with an active air bag. See warnings on page 2.

Refer to pages 12-14 for specific installation instructions.

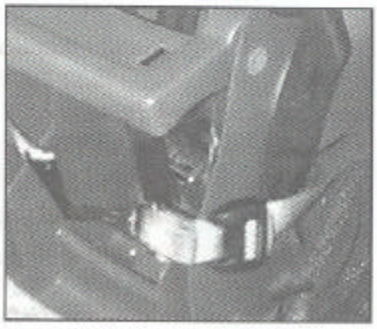
⚠ WARNING! Make sure that LATCH hooks that are NOT in use are securely hooked together or they could seriously injure someone in a crash or sudden stop.



The back belt hooks should be hooked together behind the seat when using the seat rear-facing.



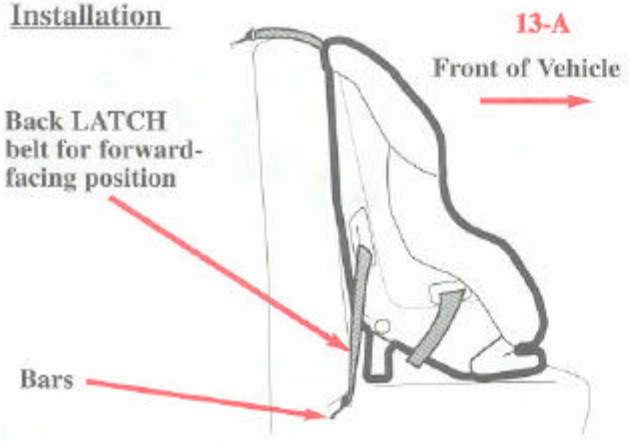
The front belt hooks should be hooked together under the seat when using the seat forward-facing.



Toddler Installation–LATCH system ONLY
over 22 and up to 40 lbs
(over 10 and up to 18 kg) and 40" (102 cm) or less

In the forward-facing toddler position, the shoulder harness must be just at or above the child's shoulders. You must change the harness height before installing the seat in the vehicle. See "To Change Harness Height" on Page 3. Read general warnings on page 2 and information on page 11 before installing this car seat.

Installation



WARNING! Make sure LATCH hooks are securely fastened or car seat will come out and child will be injured or killed. If you cannot get the seat to remain tight, do not use the car seat in this seating location with this LATCH attachment system.
Do not use the LATCH system along with the adult lap or lap/shoulder belt.

To Install:

1. Toddlers over 22 up to 35 pounds (10-15.9 kg) who are over 1 year old may ride facing the front of the vehicle. Toddlers 35-40 pounds (15.9-18 kg) and under 40 inches (102 cm) tall must ride facing the front of the vehicle (Fig 9-A.). Either the upright or a reclined position may be used forward-facing. To change positions, see Page 3.
2. The shoulder harness must be threaded properly at or just below the child's shoulders. (See "To Change Harness Height", page 3).
3. Lengthen the back belt by pushing in on button and pulling on harness. Always pull slowly to make sure belt remains flat so it doesn't twist and get stuck.
4. Fasten both LATCH hooks onto the bars (Fig. 13-B); see your vehicle owner's manual and page 11 for location and information.



5. Push down firmly on the car seat while pulling up on the loop to tighten belt securely (Fig. 13-C). Putting one knee in the seat and pushing down firmly while pulling up on the belt may provide a tighter fit, but it is not necessary to make the seat completely immobile. All vehicles with these attachment bars also have a built-in tether anchor for use with a forward-facing car seat. You should secure and tighten the tether as shown on page 14.



6. Place your toddler in the car seat. Secure and adjust the harness system as described in "Putting Your Child in the Restraint" on page 4.
7. To remove car seat, push down on release button and pull away from car seat (Fig. 13-D). Remove the LATCH hooks from bars.

