REPORT NUMBER: 201-MGA-2001-001

SAFETY COMPLIANCE TESTING FOR FMVSS 201
RIGID POLE SIDE IMPACT TEST

Toyota Motor Corporation
2001 Lexus GS300 4 Door Sedan
NHTSA NUMBER:C15105

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

June 6, 2001

FINAL REPORT

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF VEHICLE SAFETY COMPLIANCE
400 SEVENTH STREET, SW, ROOM 6111 (NSA-30)
WASHINGTON, D.C. 20590

This final test report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, in response to Contract Number DTNH22-97-C-11033.

Prepared by:_____ Date: _____
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FINAL REPORT ACCEPTED BY:

_____
COTR, Side Impact

_____
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15. Supplementary Notes

16. Abstract

A rigid pole side impact test was conducted on the subject 2001 Lexus GS300 in accordance with FMVSS 201, "Occupant Protection in Interior Impact", S6(b)(3) and the Office of Vehicle Safety Compliance Test Procedure No. TP-201P-02 "Rigid Pole Side Impact Test". The test was conducted at MGA Research Corporation, in Burlington, Wisconsin, on June 6, 2001.

The impact velocity of the vehicle was 28.3 kph, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21°C. The post-test maximum crush was 522 mm at level 3. The test vehicle's occupant performance is as follows:

	REQUIREMENTS	DRIVER
HIC	≤ 1000	339

The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.

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SECTION 1
PURPOSE AND TEST PROCEDURE

1.1 PURPOSE

This rigid pole side impact test is conducted as part of the FY' 2001 test program sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract No. DTNH22-97-C-11033. The purpose of this test was to evaluate occupant protection in interior impact in a 2001 Lexus GS300 4 door sedan manufactured by Toyota Motor Corporation.

1.2 TEST PROCEDURE

The rigid pole side impact test was conducted in accordance with the current National Highway Traffic Safety Administration (NHTSA), Office of Vehicle Safety Compliance (OVSC), laboratory test procedure TP-201P-02, dated April 21, 2000 and the corresponding MGA Research Corporation Test Procedure MGA-NHTSA8. The procedures for receiving, inspection, testing, and reporting of test results are described in the test procedures and are not repeated in this report.

MGA does not endorse or certify products. The manufacturer's name appears solely for identification purposes.

SECTION 2

SUMMARY OF RIGID POLE SIDE IMPACT TEST

2.1 SUMMARY OF SIDE IMPACT TEST

A rigid pole side impact test was performed on a model year 2001 Lexus GS300 4 door sedan. The subject vehicle was towed into a rigid pole at a velocity of 28.3 km/h. The specified impact velocity range is from 27.2 to 28.8 km/h. The test vehicle was positioned 90° to the line of forward motion. The weight of the vehicle as tested was 1829.8 kg. The test was conducted at MGA Research Corporation in Burlington, Wisconsin, on June 6, 2001.

One (1) real-time motion picture camera and twelve (12) high-speed motion picture cameras were used to document the impact event. Camera locations and pertinent camera information are documented in the data sheets. Pre- and post-test photographs of the vehicle and SID/HIII can be found in Appendix A. One SID/HIII was placed in the left front outboard designated seating position according to instructions specified in TP-201P-02 dated April 21, 2000. The SID/HIII was instrumented in the following locations:

- Head Center of Gravity (CG) tri-axial accelerometers (X, Y, and Z axes)
- Upper Neck 6 channel load cell (X, Y, and Z force and moment)
- Left Upper Rib (LUR) uni-axial accelerometer (Y-axis and redundant)
- Left Lower Rib (LLR) uni-axial accelerometer (Y-axis and redundant)
- Lower Thoracic Spine (T12) uni-axial accelerometer (Y-axis primary and redundant)
- Pelvic (PEV) section uni-axial accelerometer (Y-axis primary and redundant)

The test vehicle was instrumented with twenty (20) structural accelerometers. All data channels were recorded with a fully self contained on-board EME Data Acquisition System. The data was digitally sampled at 10,000 samples per second and processed per Appendix V of the Test Procedure.

2.2 GENERAL COMMENTS

The test vehicle sustained a maximum static crush of 522 mm at level 3, at the impact point. The driver SID/HIII, Serial No. 36, was calibrated just prior to this test. The SID/HIII's injury criteria is summarized as follows:

Measurements	Units	Driver
HIC		336
TTI*	G	51
Pelvis*	G	55.7
Neck Force X*	N	-326
Neck Force Y*	N	580
Neck Force Z*	N	809
Neck Moment X*	Nm	81.9
Neck Moment Y*	Nm	-26.1
Neck Moment Z*	Nm	22.2

* Information Purposes Only.

Test summaries and post-test observations are presented in Section 3. The vehicle, camera, and occupant measurements are presented in Section 4. Appendix A contains the still photograph prints. Appendix B contains the SID/HIII and vehicle data traces. Appendix C contains the SID/HIII's configuration and performance verification data. Appendix D contains the test equipment information.

TEST NOTES

The following accelerometers were not used for this test:

A Pillar Upper
B Pillar Upper
Left Roof
Right Roof

SECTION 3

SIDE IMPACT DUMMY (SID/HIII) AND VEHICLE TEST DATA

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105

Test Program: FMVSS 201 Test Date: June 6, 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

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105

Test Program: FMVSS 201 Test Date: June 6, 2001

TEST VEHICLE INFORMATION

Make	Lexus
Model	GS 300
Body Style	4 door sedan
NHTSA No.	C15105
VIN	JT8BD69S710134363
Color	millennium silver
Delivery Date	3/29/01
Odometer Reading (mile)	29
Dealer	Arlington Lexus Palantine
Transmission	5 speed automatic
Final Drive	rear wheel drive
Number of Cylinders	6
Engine Displacement (L)	3.0
Engine Placement	longitudinal

TEST VEHICLE OPTIONS

Front Airbags	yes
Side Airbags	yes
Power Windows	yes
Power Steering	yes
Power Door Locks	yes
Tilt Wheel	yes (power)
Air Conditioning	yes
Power Brakes	yes
Disc Brakes, Front	yes
Disc Brakes, Rear	yes
Anti-lock Brakes	yes
AM/FM/Cassette	yes
Anti-theft System	yes
Cruise Control	yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Toyota Motor Corporation
Date of Manufacture	12/00

GVWR (kg)	2100
GAWR Front (kg)	1170
GAWR Rear (kg)	1146

DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	210	210
Cold Pressure (kPa)	210	210
Recommend Tire Size	215/60R16	215/60R16
Tire Size on Vehicle	215/60R16	215/60R16
Tire Manufacturer	Goodyear	Goodyear

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench		
Number of Occupants	2	3		5
Capacity Wt. (VCW) (kg)				400
Cargo Weight (RCLW) (kg)				59

DATA SHEET NO. 1...(continued)
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105
Test Program: FMVSS 201 Test Date: June 6, 2001

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	452.7	406.4		479.9	445.9	
Right	kg	449.1	386.9		476.3	427.7	
Ratio	%	53.2	46.8		52.3	47.7	
Totals	kg	901.8	793.3	1695.1	956.2	873.6	1829.8

TARGET TEST WEIGHT CALCULATION*

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1695.1
Weight of SID/HIII Side Impact Dummy	kg	80.7
Rated Cargo/Luggage Weight (RCLW)	kg	59.0
Calculated Vehicle Target Weight (TVTW)	kg	1834.8

*Actual As Tested Weight (ATW) will be TVTW -5/-10 kg

TEST VEHICLE ATTITUDES AND CG

	Units	As Delivered	Fully Loaded	Ready for Test
Right Front	mm	720	717	716
Left Front	mm	715	706	708
Right Rear	mm	702	682	689
Left Rear	mm	698	674	678
Right Door Sill Angle	deg	0.2 NU	0.2 ND	0.1 ND
Left Door Sill Angle	deg	0.2 NU	0.1 ND	0.1 ND
Front Bumper Angle	deg	0.6 RU	0.5 RU	0.5 RU
Rear Bumper Angle	deg	0.2 LD	0.8 LD	0.7 LD

ND = Nose Down, BD = Back Down, LD = Left Down, RD = Right Down

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2800
Total Vehicle Length at Left Side	mm	4219
Total Vehicle Length at Centerline	mm	4791
Total Vehicle Length at Right Side	mm	4219
Total Vehicle Width	mm	1798
Weight of Ballast in Cargo Area	kg	0
Amount of Stoddard Solvent in Fuel Tank	liters	69.6

DATA SHEET NO. 1...(continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105

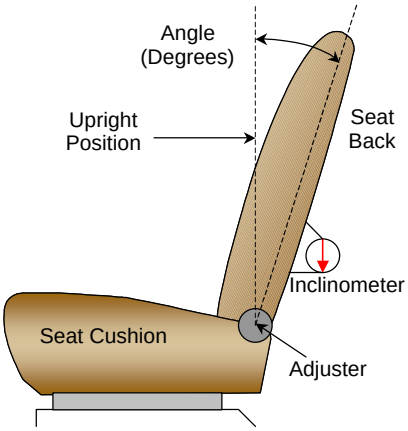
Test Program: FMVSS 201 Test Date: June 6, 2001

TEST VEHICLE VERTICAL IMPACT LINE DATA

Measurement Description	Units	Value
Target Impact Point Aft of Front Axle	mm	1748
Actual Impact Point Aft of Front Axle	mm	1762

NORMAL DESIGN RIDING POSITION

Driver seat back angle: 4.7 degrees at headrest post



FRONT SEAT ASSEMBLY

SEAT FORE/AFT POSITIONS

The driver's seat is electronically operated. The fore/aft is set to the middle position for the driver's seat.

Driver seat fore/aft total travel: 240 mm

Driver seat fore/aft position: 120 mm

SEAT BELT UPPER ANCHORAGE

The test vehicle is equipped with adjustable "D" ring anchorage for the driver's seat position. There are 5 positions or detents, with the uppermost position numbered "1". The driver's "D" ring anchorage is placed in position 3 or middle position.

DATA SHEET NO. 1...(continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105

Test Program: FMVSS 201 Test Date: June 6, 2001

FUEL TANK CAPACITY DATA

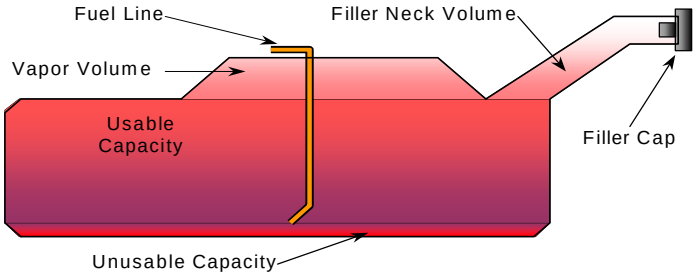
The "Usable Capacity" of the standard equipment fuel tank is: 74.9 liters

The "Usable Capacity" of any optional equipment fuel tank is: N/A liters

92-94% of "Usable Capacity" for certification to FMVSS 301 requirement: 68.9 to 70.4 liters

Actual amount of Stoddard solvent added to vehicle for certification test: 69.6 liters

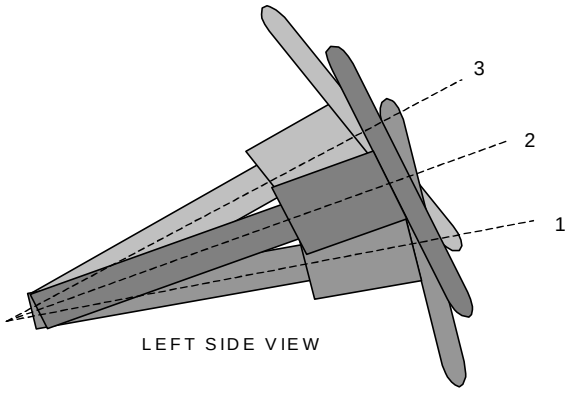
The test vehicle is equipped with an electric fuel pump. The fuel filler door is located on the left rear fender.



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 square is placed across the rim of the steering wheel, and inclinometer is placed onto the square and the angle is measured.



STEERING COLUMN ASSEMBLY

Lowermost, position 1: 20.8°

Geometric center, position 2: 27.2°

Uppermost, position 3: 33.7°

DATA SHEET NO. 2

TEST VEHICLE SUMMARY OF RESULTS

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105

Test Program: FMVSS 201 Test Date: June 6, 2001

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	452.7	406.4		479.9	445.9	
Right	kg	449.1	386.9		476.3	427.7	
Weight Ratio	%	53.2	46.8		52.3	47.7	
Totals	kg	901.8	793.3	1695.1	956.2	873.6	1829.8

MAXIMUM EXTERIOR STATIC CRUSH

Level	Measured Parameter	Units	Maximum Crush	Above Ground
Level 1	Sill Top Height	mm	482	330
Level 2	Occupant H-Point	mm	521	507
Level 3	Mid Door	mm	522	612
Level 4	Window Sill	mm	472	888
Level 5	Window Top	mm	241	1396
N/A	Maximum Penetration	mm	522	612

INSTRUMENTATION

SID/HIII Instrumentation	20
Vehicle Structure Accelerometers	20
Total	40

CAMERAS

Onboard Vehicle	3
Offboard Vehicle	10
Total	13

IMPACT POINT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	14 rearward

DATA SHEET NO. 3

POST TEST OBSERVATIONS

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105

Test Program: FMVSS 201 Test Date: June 6, 2001

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Driver
Dummy Type / Serial No.	SID/HIII / 036
Head Contact	side curtain air bag
Upper Torso Contact	seat mounted air bag
Lower Torso Contact	left door panel
Left Knee Contact	left door panel
Right Knee Contact	left knee

POST TEST DOOR OPENING

Description	Front	Rear
Left Side Door Opening	remained closed	remained closed
Right Side Door Opening	remained closed	remained closed

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	no failure
Sill Separation	no separation
Windshield Damage	windshield broken on entire surface
Window Damage	left front window
Other Notable Effects	none

AIRBAG DEPLOYMENT

	Driver
Front	no
Side	yes
Curtain	yes

ARM REST LOCATION AND SEAT CRUSH

	Driver
Front Armrest (from bottom of window) (mm)	239
Front Seat Back Crush (mm)	128
Front Seat Cushion Crush (mm)	189

SECTION 4

OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 4

SID/HIII INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105

Test Program: FMVSS 201 Test Date: June 6, 2001

THORAX AND PELVIS PEAK ACCELERATIONS (FIR 100 Filtered)

Location	Axis	Units	Driver			
			Max	Time	Min	Time
Upper Rib (LUR)	Y	G's	44.1	26	14.2	137
Upper Rib (LUR) (R)	Y	G's	41.8	26	13.6	137
Lower Rib (LLR)	Y	G's	44.7	26	20.1	138
Lower Rib (LLR) (R)	Y	G's	42.4	26	18.8	138
Lower Spine (T_{12})	Y	G's	57.8	44	11.1	92
Lower Spine (T_{12}) (R)	Y	G's	57.7	44	11.7	91
Pelvis (PEV)	Y	G's	55.7	39	17.9	83
Pelvis (PEV) (R)	Y	G's	56.1	39	18.0	83

THORACIC TRAUMA INDEX (TTI) AND PELVIC ACCELERATION (FIR 100 Filtered)

Location	Driver			
	LLR	T_{12}	TTI(g)	PEV(g)
Rib, Spine, and Pelvis	44.7	57.8	51.3	55.7
Rib, Spine, and Pelvis (R)	42.4	55.7	49.1	56.1

UPPER NECK FORCES AND MOMENTS (SAE CLASS 1000/600 Filtered)

Location	Axis	Units	Driver			
			Max	Time	Min	Time
Neck Force	X	N	107.4	173	326.3	60
Neck Force	Y	N	580.2	56	515.5	164
Neck Force	Z	N	809.2	136	500.8	69
Neck Moment	X	Nm	18.2	110	81.9	55
Neck Moment	Y	Nm	17.3	110	26.1	60
Neck Moment	Z	Nm	22.2	67	11.3	164

HEAD CG PEAK ACCELERATIONS (SAE CLASS 1000 Filtered)

Location	Axis	Units	Driver			
			Max	Time	Min	Time
Head CG	X	G's	3.6	174	11.6	61
Head CG	Y	G's	59.5	59	12.5	137
Head CG	Z	G's	18.1	136	8.8	38
Head CG Resultant		G's	60.6	59		

HEAD INJURY CRITERIA (SAE CLASS 1000 Filtered)

Location	Driver			
	HIC	T^1	T^2	Avg G's
Head CG	336	49.4	68.8	49.6

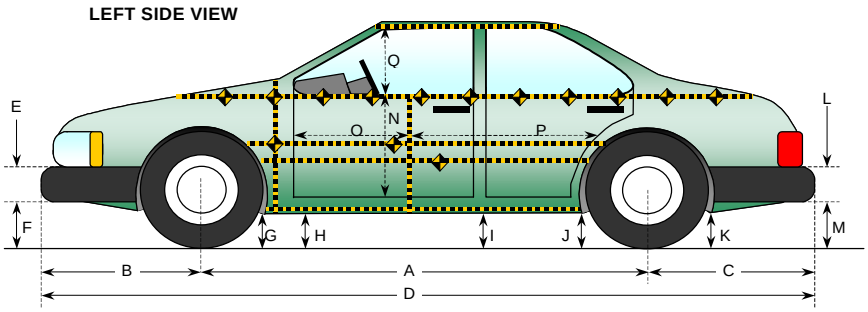
Positive Acceleration Polarities: Longitudinal (X) = + Forward
(Conforms to SAE J211) Lateral (Y) = + Right
Vertical (Z) = + Down

DATA SHEET NO. 5

VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105

Test Program: FMVSS 201 Test Date: June 6, 2001



All Measurements in mm

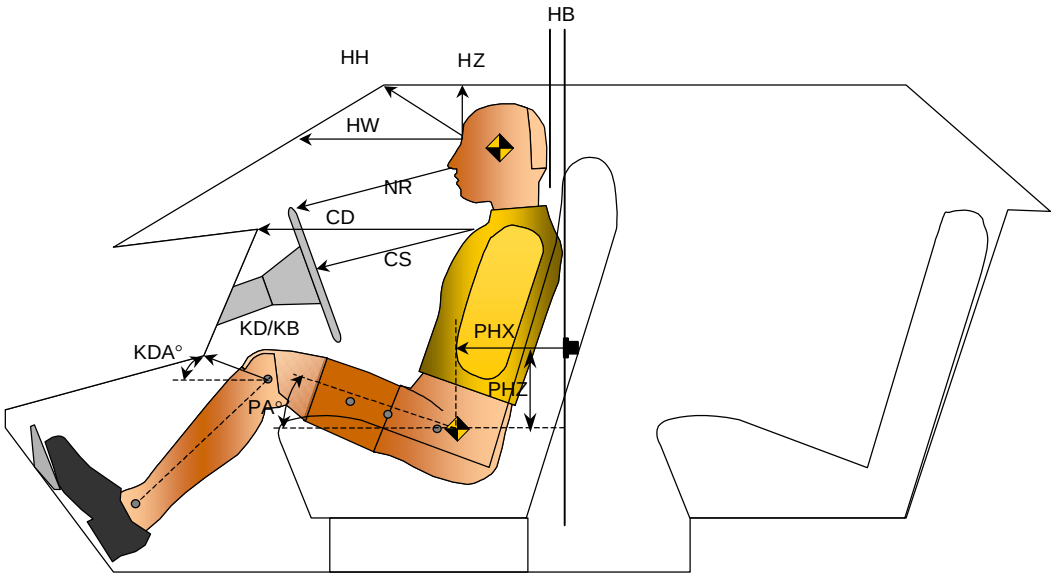
Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2794	2650	-144
B	Front Axle to FSOV	818	868	50
C	Rear Axle to RSOV	1179	1175	-4
D	Total Length at Centerline	4791	4693	-98
E	Front Bumper Thickness	275	275	0
F	Front Bumper Bottom to Ground	276	310	34
G	Sill Height at Front Wheel Well	189	180	-9
H	Sill Height at Front Door Leading Edge	225	190	-35
I	Sill Height at "B" Pillar	227	161	-66
J1	Sill Height at Rear Wheel Well	225	243	18
J2	Pinch Weld Height at Rear Wheel Well	230	242	12
K	Sill Height Aft of Rear Wheel Well	259	267	8
L	Rear Bumper Thickness	304	304	0
M	Rear Bumper Bottom to Ground	362	374	12
N	Sill Height to Window Bottom Sill	648	666	18
O	Front Door Leading Edge to Impact CL	958	970	12
P	Rear Door Trailing Edge to Impact CL	988	974	-14
Q	Front Window Opening	460	432	-28
R	Right Side Length	4219	4260	41
S	Left Side Length	4219	4064	-155
T	Vehicle Width at "B" Post	1798	1474	-324

DATA SHEET NO. 6

SID/HIII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105

Test Program: FMVSS 201 Test Date: June 6, 2001



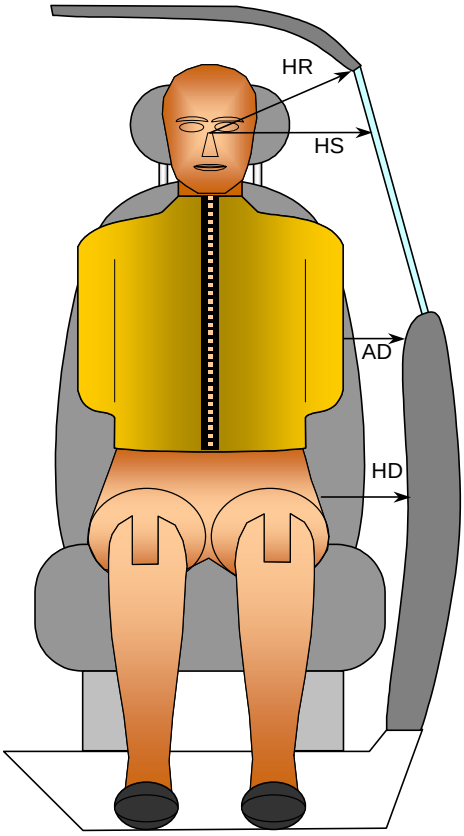
Driver Code	Measurement Description	Driver 036	
		Length(mm)	Angle(°)
HB	Back of Head to Back of Window @ Head CG	50	
HH	Head to Header	296	
HW	Head to Windshield	553	
HZ	Head to Roof	165	
NR	Nose to Rim	443	
CD	Chest to Dash	545	
CS	Chest to Steering Wheel	325	
KDL	Left Knee to Dash	219	0
KDR	Right Knee to Dash	252	0
PA	Pelvic Angle		23.7
PHX	H-Point to Striker (X-Axis)	189	
PHZ	H-Point to Striker (Z-Axis)	181	

DATA SHEET NO. 7

SID/HIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105

Test Program: FMVSS 201 Test Date: June 6, 2001



FRONT VIEW OF DUMMY

Code	Measurement Description	Units	Driver 036
HR	Head to Side Header	mm	190
HS	Head to Side Window	mm	313
AD	Arm to Door	mm	104
HD	H-Point to Door	mm	142

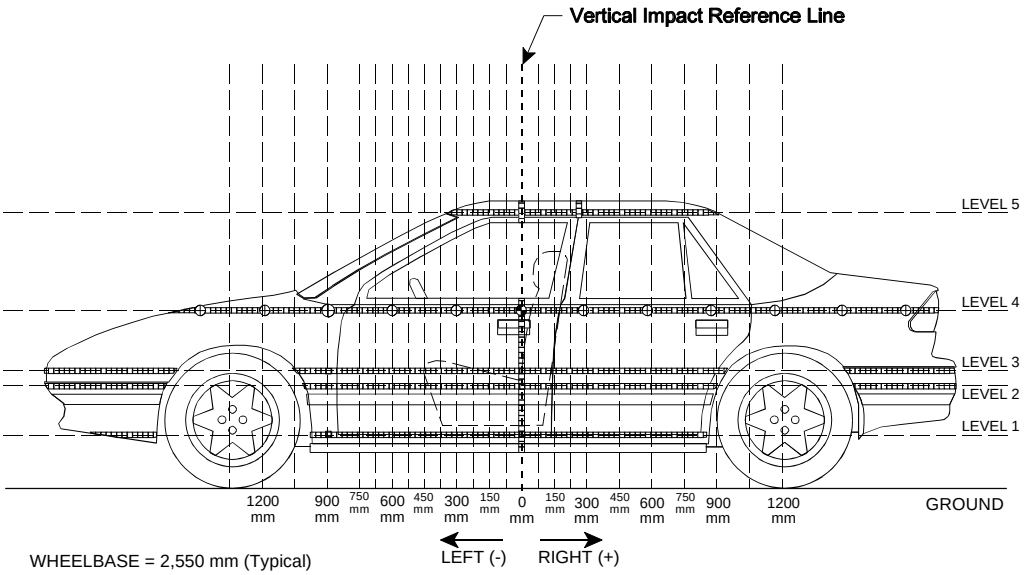
DATA SHEET NO. 8

VEHICLE SIDE MEASUREMENTS

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105

Test Program: FMVSS 201 Test Date: June 6, 2001

PRETEST AND POST TEST EXTERIOR PROFILE MEASUREMENTS



LEFT SIDE VIEW

Measurements are taken with vehicle in the as tested condition.

Measurements along the vertical 800 mm.

Note: Measurements taken on factory wheels not dollies.

Level	Measurement Description	Units	Height Above Ground
5	Window	mm	1396
4	Window Sill	mm	888
3	Mid Door	mm	612
2	Occupant H-Point	mm	507
1	Sill Top	mm	330

DATA SHEET NO. 9

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105

Test Program: FMVSS 201 Test Date: June 6, 2001

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-1950			552					569					17		
-1800			501	605				532	616				31	11	
-1650				586					609					23	
-1500				577					611					34	
-1350				568					615					47	
-1200				561					618					57	
-1050	525	505	505	557		621	596	586	626		96	91	81	69	
-900	530	506	505	556		653	613	602	628		123	107	97	72	
-825	530	505	504	553		676	636	628	639		146	131	124	86	
-750	529	505	504	552		698	661	651	658		169	156	147	106	
-675	529	504	501	551		721	683	676	680		192	179	175	129	
-600	528	502	500	553		741	707	700	713		213	205	200	160	
-525	527	501	499	550		760	731	728	748		233	230	229	198	
-450	526	501	496	550		781	759	775	784		255	258	279	234	
-375	526	500	496	550		804	790	821	821		278	290	325	271	
-300	526	499	496	548		826	835	866	861		300	336	370	313	
-225	526	498	496	548	815	854	884	912	901	991	328	386	416	353	176
-150	526	496	496	546	821	906	931	951	941	1016	380	435	455	395	195
-75	525	496	495	546	822	965	982	983	988	1039	440	486	488	442	217
0	523	495	494	547	824	1005	1016	1016	1019	1065	482	521	522	472	241
75	521	494	493	545	826	1003	1005	1012	1004	1074	482	511	519	459	248
150	521	494	492	545	830	955	965	965	958	1088	434	471	473	413	258
225	522	495	492	545	830	984	885	892	924	1081	462	390	400	379	251
300	522	495	493	546	832	802	840	868	870	1074	280	345	375	324	242
450	525	496	494	546	838	730	768	808	816	1038	205	272	314	270	200
600	522	496	494	548	840	659	708	741	763	998	137	212	247	215	158
750	523	496	495	550	840	592	646	674	711	960	69	150	179	161	120
900		496	495	554	837		585	612	665	918		89	117	111	81
1050			491	557	831			583	622	872			92	65	41
1200				563					622					59	
1350				572					618					46	
1500			493	582				549	670				56	88	
1650		505	510	596			554	555	616			49	45	20	
1800		524	530	611			562	566	627			38	36	16	
1950		538	546	634			568	574	640			30	28	6	
2100		553	565	650			576	586	660			23	21	10	

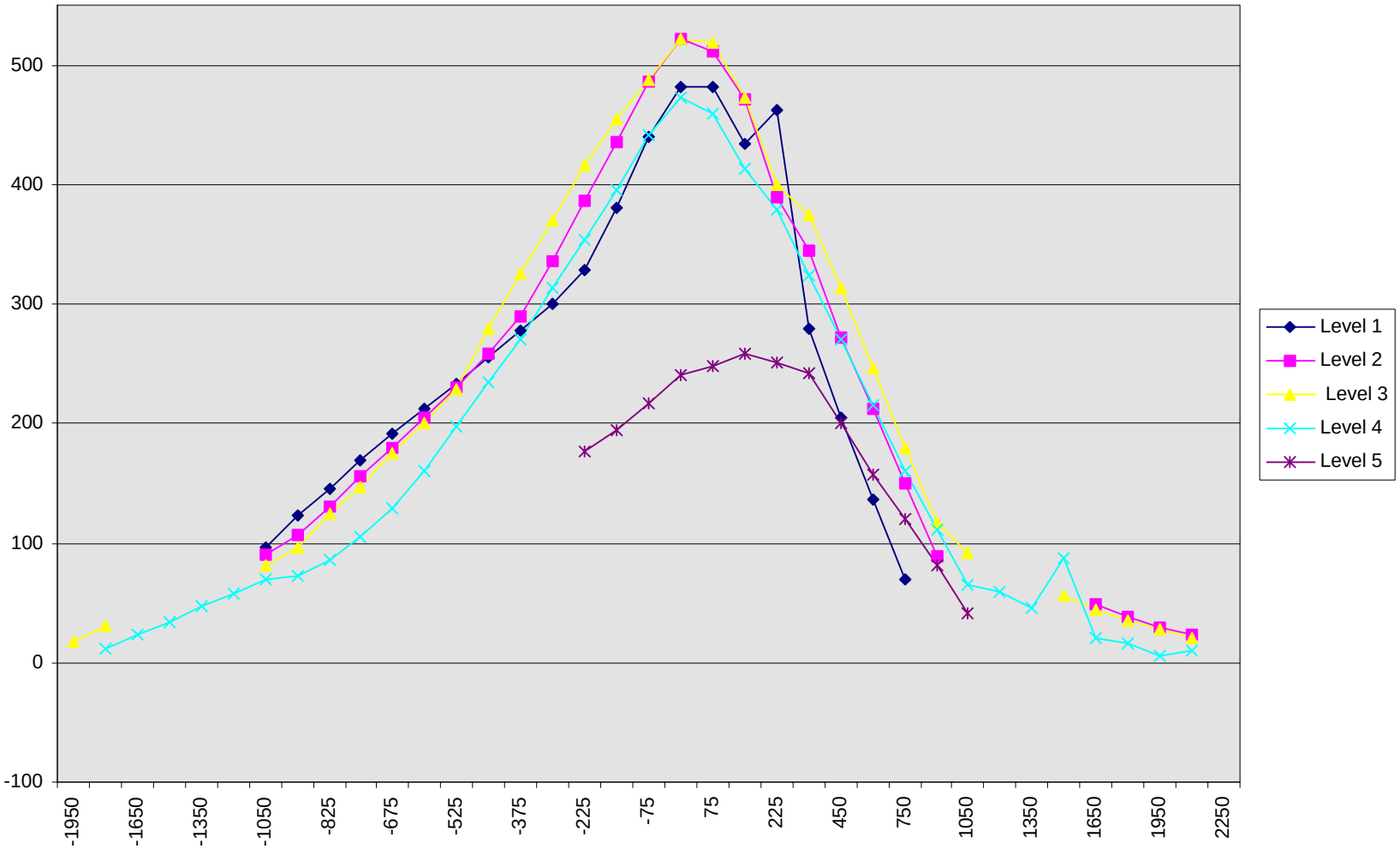
Reference plane is parallel to test vehicle longitudinal centerline
Given dimensions = Reference plane to car body

DATA SHEET NO. 9...(continued)

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105

Test Program: FMVSS 201 Test Date: June 6, 2001

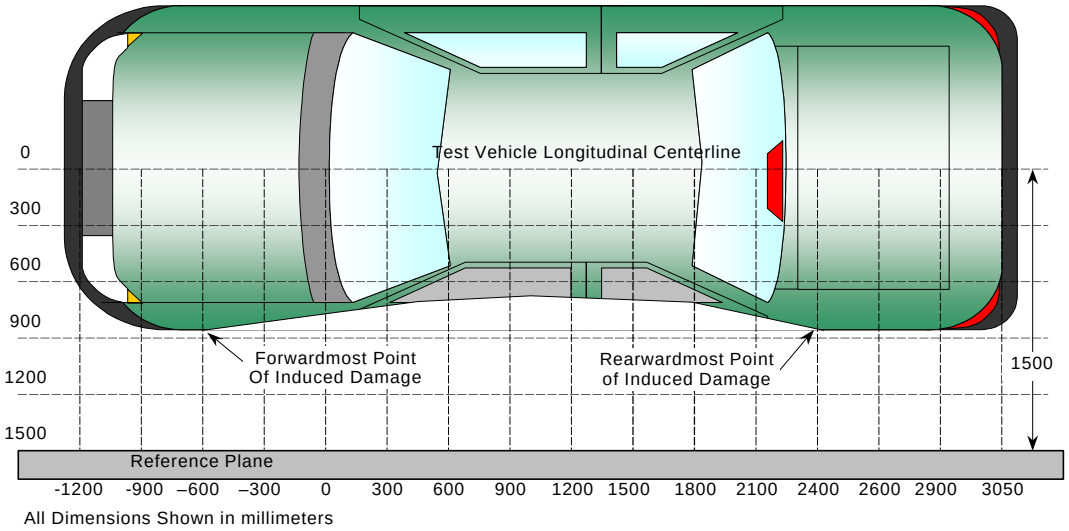


DATA SHEET NO. 10

VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105

Test Program: FMVSS 201 Test Date: June 6, 2001



TOP VIEW

Damage Profile Distances

DPD	Distance from Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max Static Crush (mm)
1	1275 mm	4	563	563	0
2	828 mm	3	495	535	40
3	354 mm	3	493	750	257
4	-262 mm	2	499	774	275
5	-760 mm	2	505	558	53
6	-1200 mm	4	561	561	0

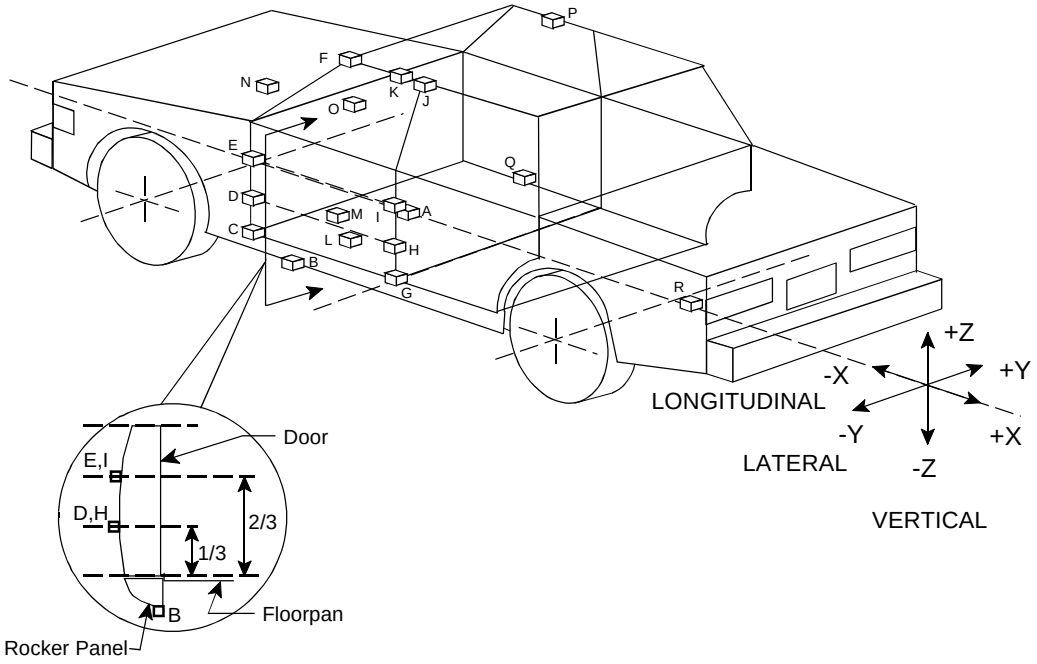
Reference plane is parallel to test vehicle longitudinal centerline
Given dimensions = Reference plane to car body

DATA SHEET NO. 11

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105

Test Program: FMVSS 201 Test Date: June 6, 2001



No.	Location
A	Vehicle CG
B	Left Floor Sill
C	A Pillar Sill
D	A Pillar Low
E	A Pillar Mid
G	B Pillar Sill
H	B Pillar Low
I	B Pillar Low

No.	Location
L	Driver Seat
M1	Driver Door Upper
M2	Driver Door Mid
M3	Driver Door Lower
N	Engine
O	Firewall
Q	Right Floor Sill
R	Rear Deck

DATA SHEET NO. 11...(continued)

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105

Test Program: FMVSS 201 Test Date: June 6, 2001

VEHICLE ACCELEROMETER PEAK DATA

Loc. No.	Accelerometer Location	Peak Values (G's)				
		Axis	Max	Time	Min	Time
A	Vehicle CG	X	8.0	51	7.1	36
		Y	47.8	35	17.7	41
		Z	24.7	37	23.8	46
		RES	50.3	36		
B	Left Floor Sill	Y	24.8	15	5.4	43
C	A Pillar Sill	Y	14.5	7	7.2	11
D	A Pillar Low	Y	25.7	7	4.0	10
E	A Pillar Mid	Y	10.5	55	2.7	3
G	B Pillar Sill	Y	36.6	24	6.6	13
H	B Pillar Low	Y	78.0	8	29.3	48
I	B Pillar Mid*	Y	79.8	8	1.9	1
L	Driver Seat**	Y	79.2	50	29.3	55
M1	Driver Door Upper	Y	71.2	10	23.7	27
M2	Driver Door Mid	Y	57.3	12	35.7	24
M3	Driver Door Lower	Y	42.8	14	23.5	21
N	Engine	X	2.2	104	5.3	51
		Y	13.2	72	1.9	43
O	Firewall	Y	8.1	56	1.1	5
Q	Right Floor Sill	Y	11.1	42	0.2	199
R	Rear Deck	X	3.3	34	1.7	7
		Y	9.4	48	0.3	20

Reference Points X - Rear of Vehicle (+ forward)
Y - Vehicle Centerline (+ to right)
Z - Ground Plane (+ up)

* No valid data after 21 msec
** No valid data after 80 msec

DATA SHEET NO. 11...(continued)

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105

Test Program: FMVSS 201 Test Date: June 6, 2001

VEHICLE ACCELEROMETER LOCATIONS

Loc. No.	Accelerometer Location	Measurements (mm)			
		Axis	Pre-Test	Post-Test	Difference
A	Vehicle CG	X	2600	2499	101
		Y	0	78	-78
		Z	656	594	62
B	Left Floor Sill	X	2955	2793	162
		Y	-717	-653	-64
		Z	280	220	60
C	A Pillar Sill	X	3316	3205	111
		Y	-636	-629	-7
		Z	374	309	65
D	A Pillar Low	X	3323	3202	-121
		Y	-684	-680	-4
		Z	642	540	102
E	A Pillar Mid	X	3380	3259	121
		Y	-805	-797	-8
		Z	888	831	57
G	B Pillar Sill	X	2205	2156	49
		Y	-733	-438	-295
		Z	350	309	41
H	B Pillar Low	X	2232	2132	100
		Y	-744	-422	-322
		Z	640	509	131
I	B Pillar Mid	X	2206	2165	41
		Y	-737	-429	-308
		Z	896	860	36
L	Driver Seat	X	2505	2328	177
		Y	-636	-378	-258
		Z	338	290	48

DATA SHEET NO. 11...(continued)

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105

Test Program: FMVSS 201 Test Date: June 6, 2001

VEHICLE ACCELEROMETER LOCATIONS

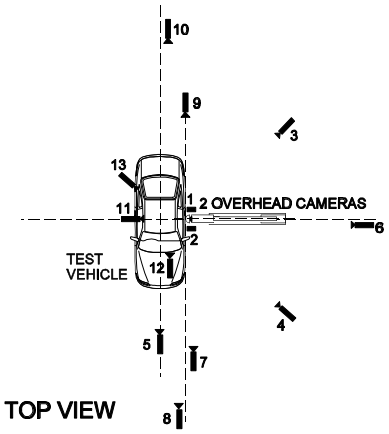
Loc. No.	Accelerometer Location	Measurements (mm)			
		Axis	Pre-Test	Post-Test	Difference
M1	Driver Door Upper	X	2924	2789	135
		Y	-763	-636	-127
		Z	942	882	60
M2	Driver Door Mid	X	2914	2765	149
		Y	-760	-602	-158
		Z	780	740	40
M3	Driver Door Lower	X	2919	2732	187
		Y	-772	-594	-178
		Z	565	582	-17
N	Engine	X	4017	3882	135
		Y	63	22	41
		Z	934	863	71
O	Firewall	X	3656	3445	211
		Y	10	0	10
		Z	944	880	64
Q	Right Floor Sill	X	2435	2430	5
		Y	717	720	-3
		Z	284	255	29
R	Rear Deck	X	1160	1160	0
		Y	0	0	0
		Z	735	633	102

DATA SHEET NO. 12

HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105

Test Program: FMVSS 201 Test Date: June 6, 2001



No.	Camera View	Location (mm)			Lens (mm)	Film Speed (fps)
		X	Y	Z		
1	Overhead Overall	-580	0	5140	7.5	504
2	Overhead Close-up	0	0	5140	13	*
3	Left Side 45° Rearward Pole View	4500	-7500	1490	50	1010
4	Left Side 45° Forward Pole View	4440	6850	1460	50	909
5	Real Time				13	32
6	Left Side Rear Pole View	2800	0	2600	8	1042
7	Front Ground Level Vehicle/Pole Impact	320	8600	1670	25	1036
8	Front Ground Level Vehicle Roof Targets and Vehicle/Pole Impact	-740	8540	1700	25	1005
9	Rear Ground Level Vehicle/Pole Impact	590	-7800	1550	25	1020
10	Rear Ground Level	-770	-8510	1520	25	1015
11	Test Vehicle Onboard Driver Side View				8	1036
12	Test Vehicle Onboard Driver Front View				13	1000
13	Test Vehicle Onboard Driver 3/4 Rear View				13	877

Reference Points

X - + Forward of Impact
Y - + Right of Impact
Z - + Up from Ground

* No timing marks

DATA SHEET NO. 13

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105

Test Program: FMVSS 201 Test Date: June 6, 2001

Test Time: 4:20 p.m. Temperature at Time of Impact: 21.1 °C

Stoddard Solvent Spillage Measurements

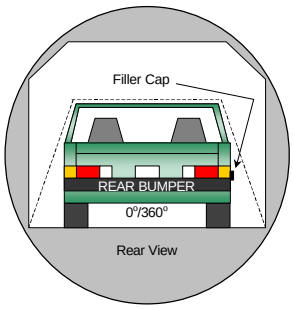
A.	From impact until vehicle motion ceases: (Maximum Allowable = 1 ounce)	0 oz.
B.	For the 5 minute period after motion ceases: (Maximum Allowable = 5 ounces)	0 oz.
C.	For the following 25 minutes: (Maximum Allowable = 1 oz./minute)	0 oz.
D.	Spillage Details:	None

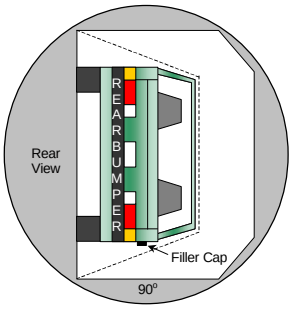
DATA SHEET NO. 14

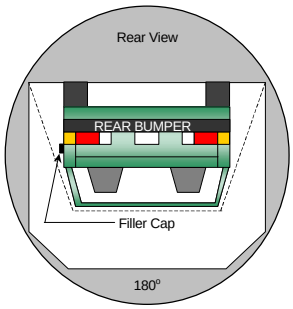
FMVSS 301 STATIC ROLLOVER DATA SHEET

Test Vehicle: 2001/Lexus/GS300/4 door sedan NHTSA No.: C15105

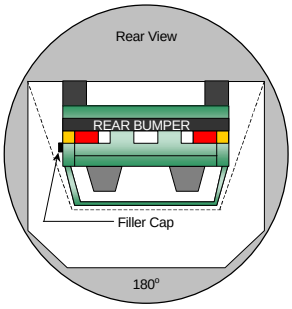
Test Program: FMVSS 201 Test Date: June 6, 2001

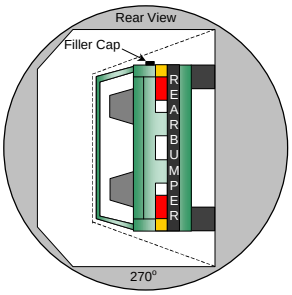


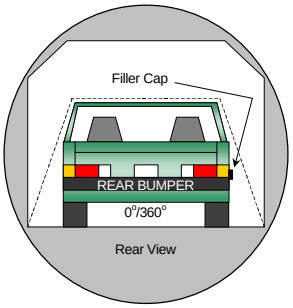




0° TO 90° 90° TO 180°







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:

Rollover Test Phase	Rotation Time (sec.)	Hold Time (sec.)	Spillage (oz.)
0° TO 90°	165	300	0
90° TO 180°	149	300	0
180° TO 270°	150	300	0
270° TO 360°	163	300	0

APPENDIX A

PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

A-1

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

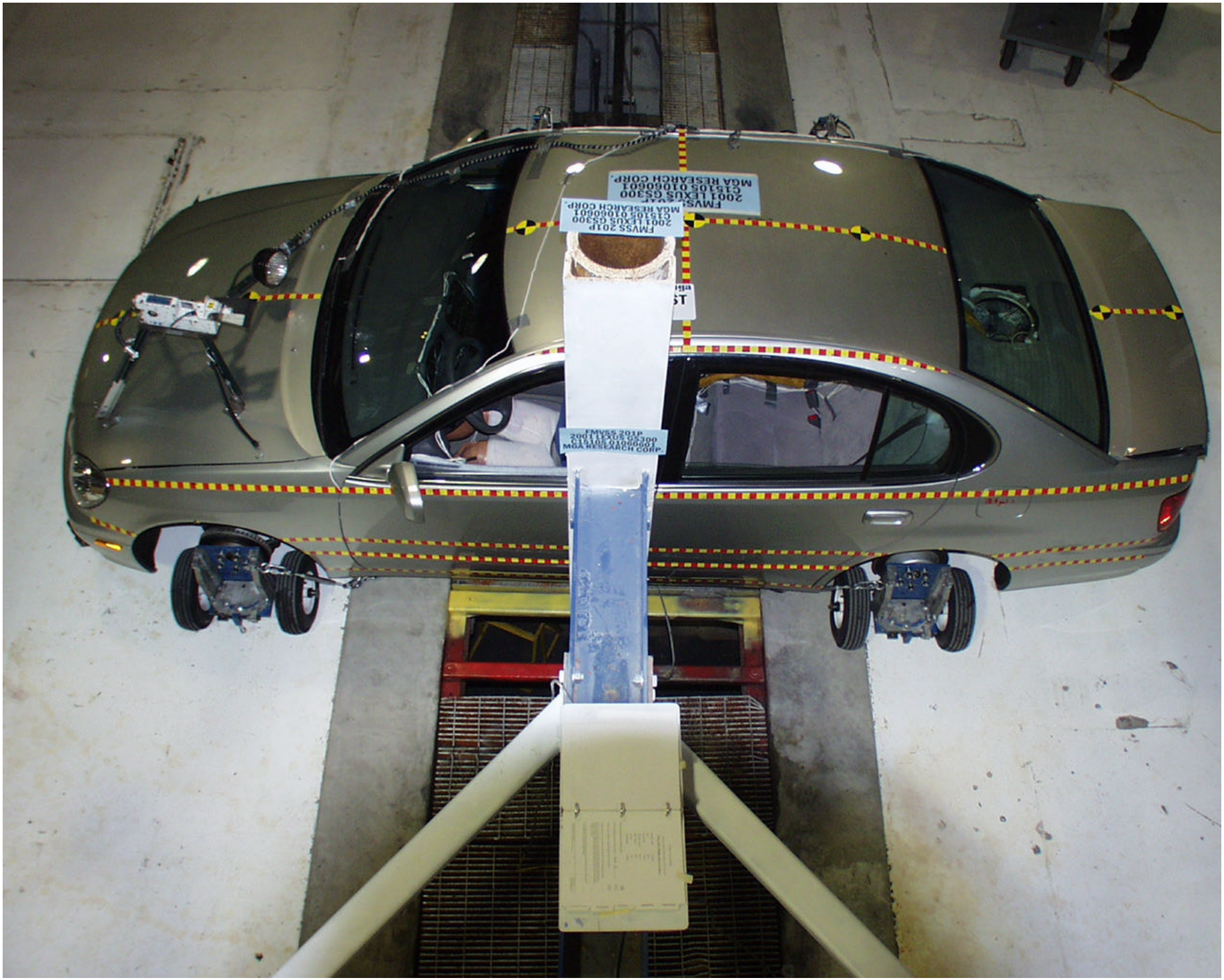


Photo No. A-5 - Pre-Test Left Side View of Test Vehicle

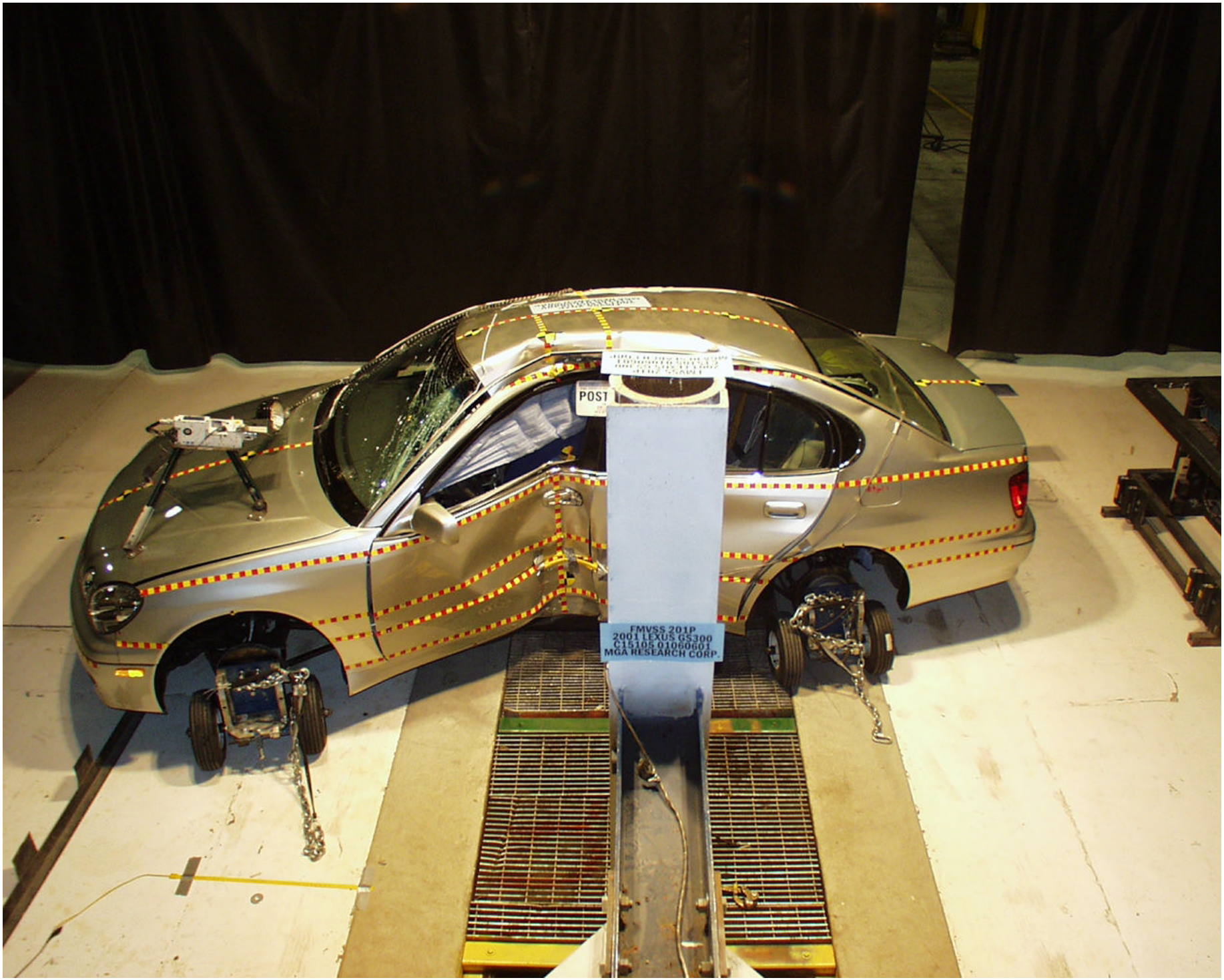


Photo No. A-6 - Post-Test Left Side View of Test Vehicle

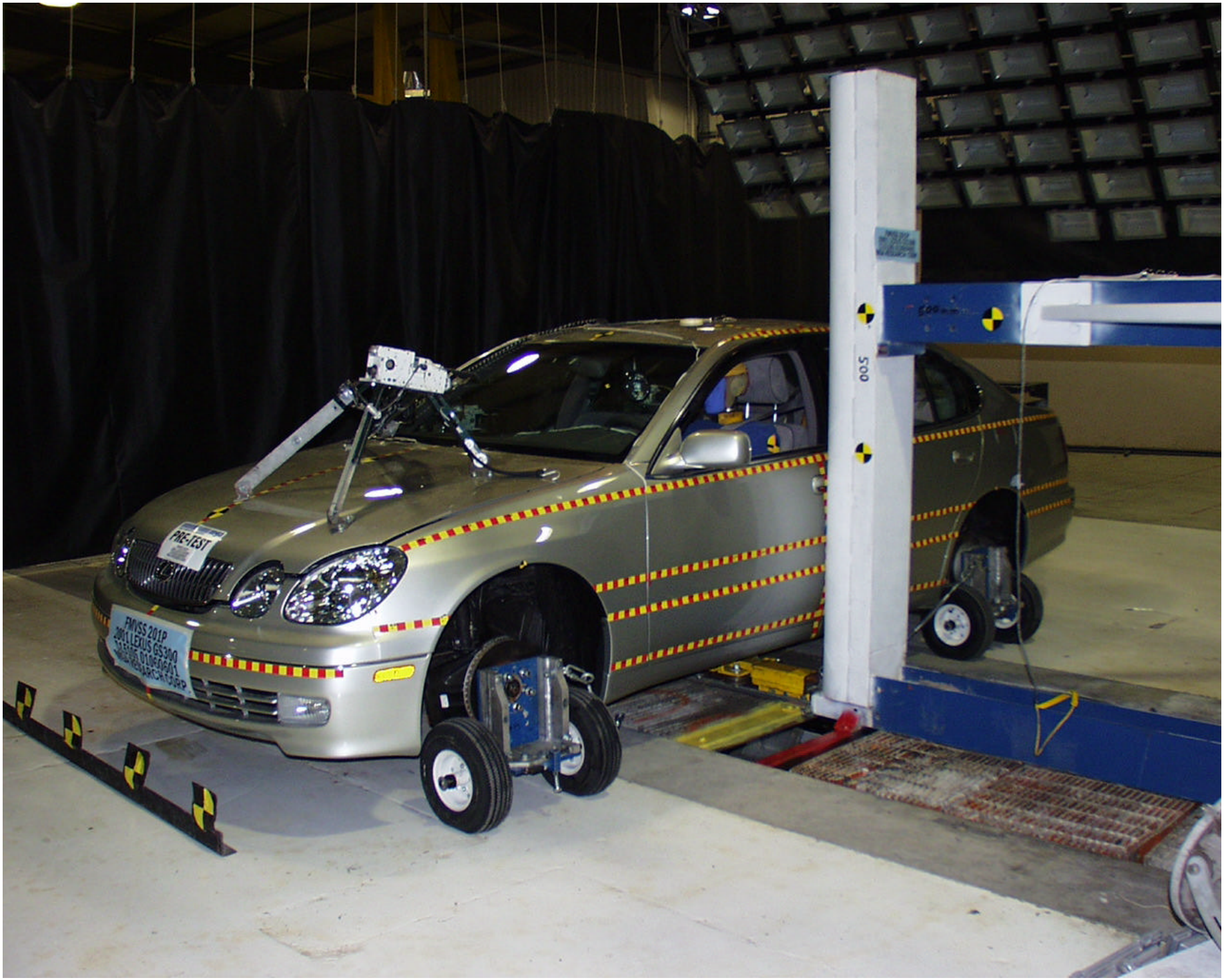


Photo No. A-7 - Pre-Test Left Front View of Test Vehicle

Photo No. A-8 - Post-Test Left Front View of Test Vehicle

Photo No. A-9 - Pre-Test Left Rear View of Test Vehicle

Photo No. A-10 - Post-Test Left Rear View of Test Vehicle

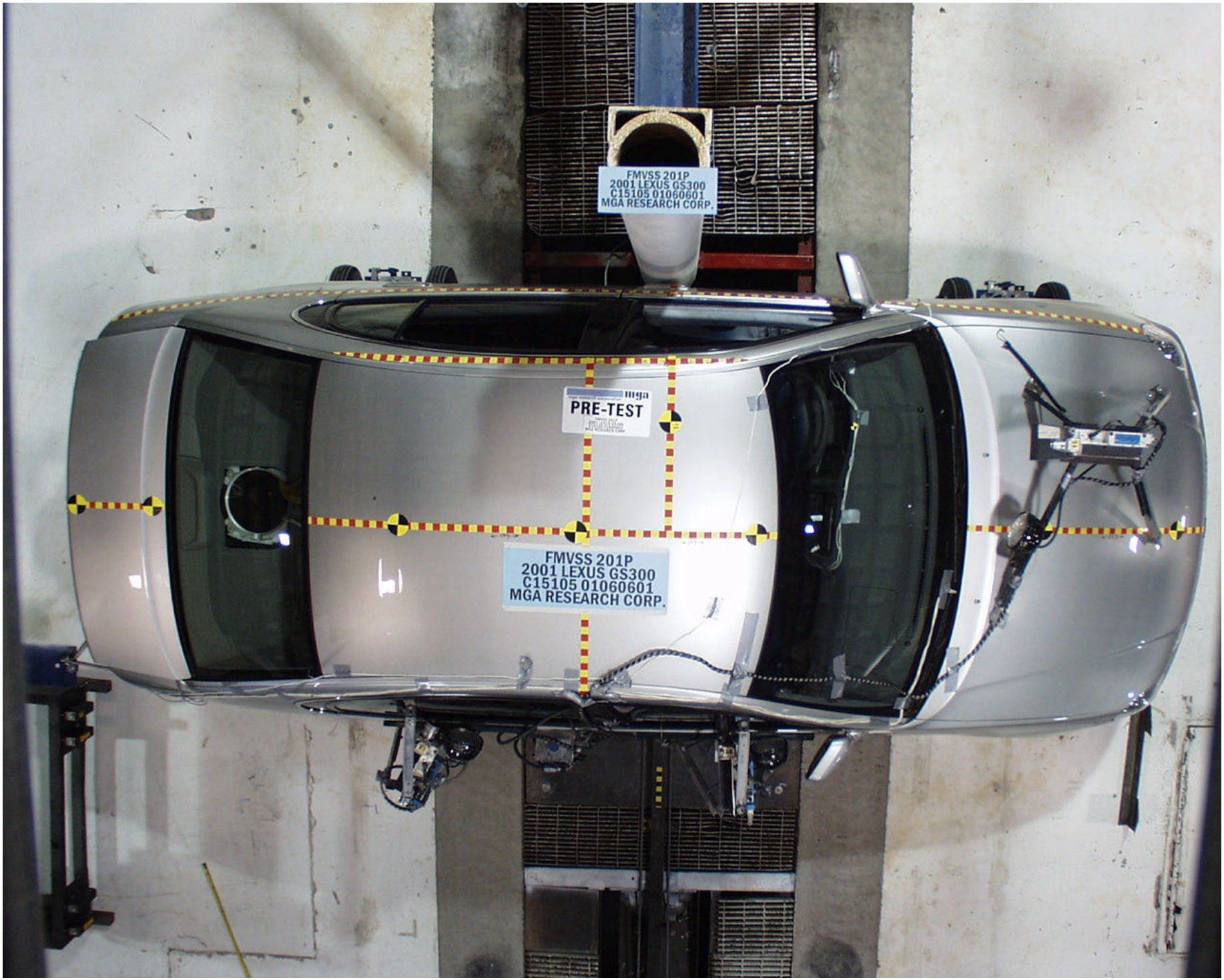


Photo No. A-11 - Pre-Test Overhead View of Test Vehicle

Photo No. A-12 - Post-Test Overhead View of Test Vehicle

Photo No. A-13 - Pre-Test Overhead View of Test Vehicle (Close-up)

Photo No. A-14 - Post-Test Overhead View of Test Vehicle (Close-up)

Photo No. A-15 - Post-Test Driver Dummy Right Side

Photo No. A-16 - Pre-Test Driver Dummy Left Side

Photo No. A-17 - Post-Test Driver Dummy Left Side

Photo No. A-18 - Pre-Test Driver Dummy Left Side (Door Open)

Photo No. A-19 – Impact

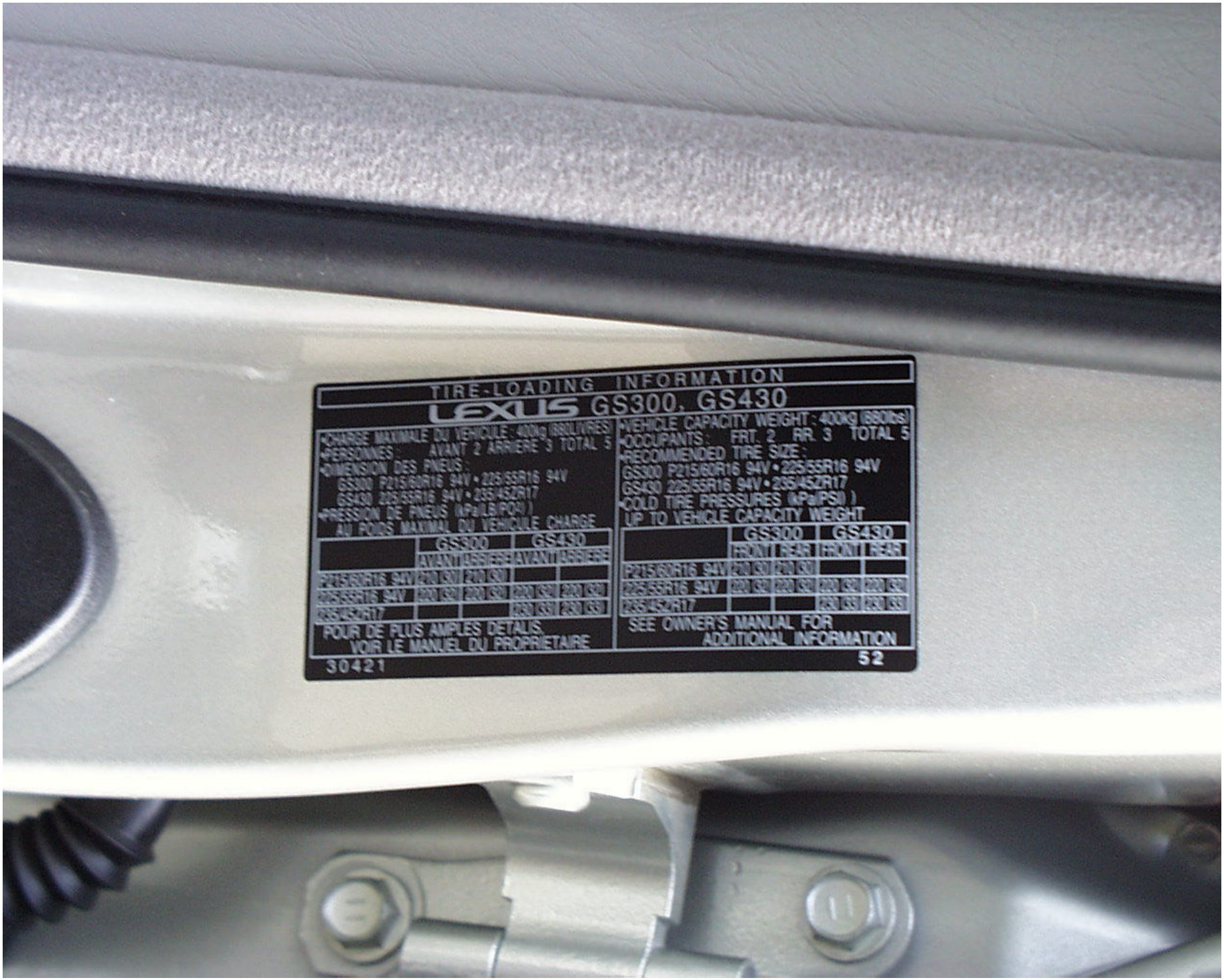
Photo No. A-20 - Post-Test Driver Dummy Head Contact

Photo No. A-21 - Post-Test Driver Dummy Thorax Contact

A-22

Photo No. A-22 - Post-Test Impact Zone Side Close-up View

Photo No. A-23 - Vehicle Certification Label



A-24

Photo No. A-24 - Tire Placard

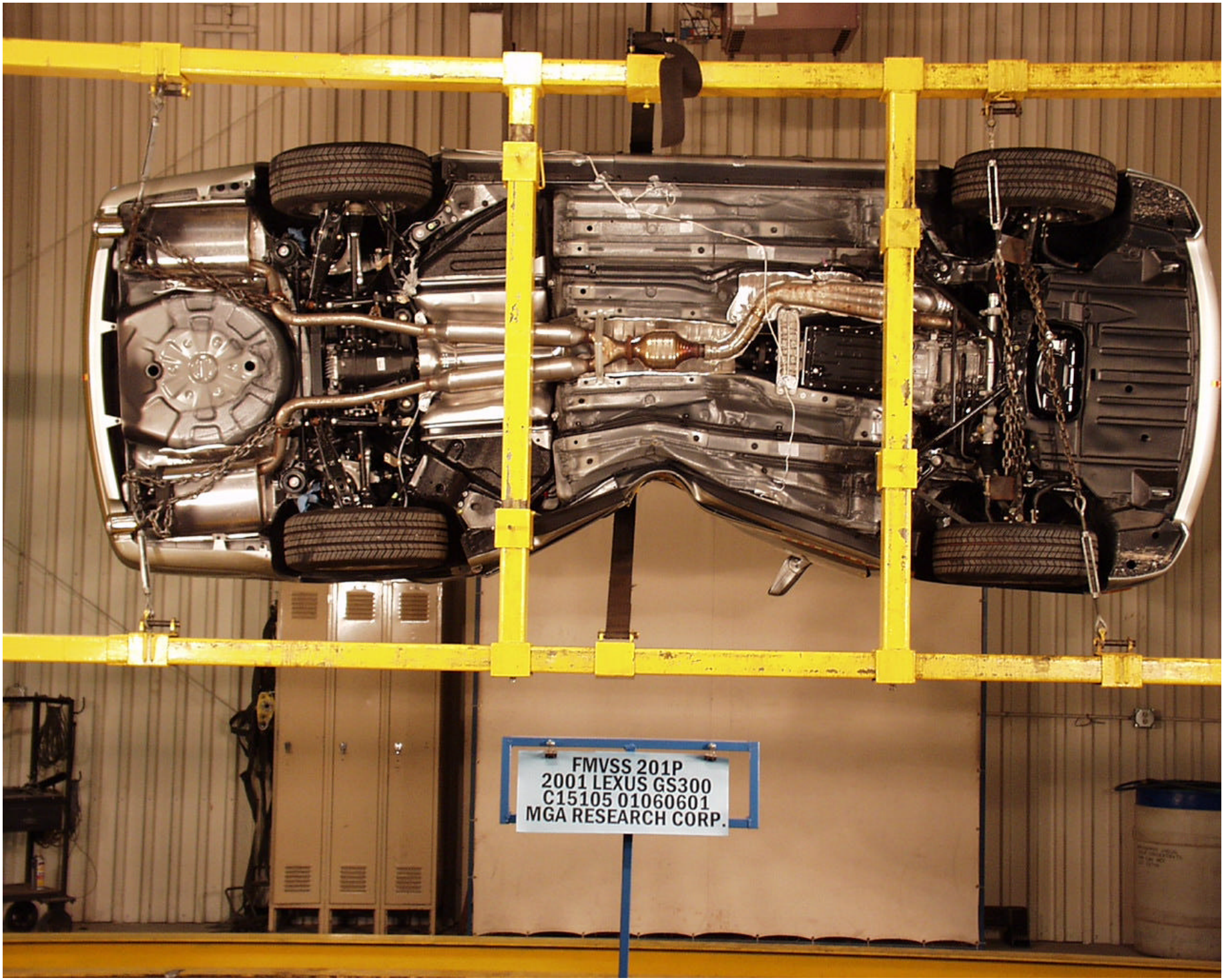


Photo No. A-25 - Rollover 90°

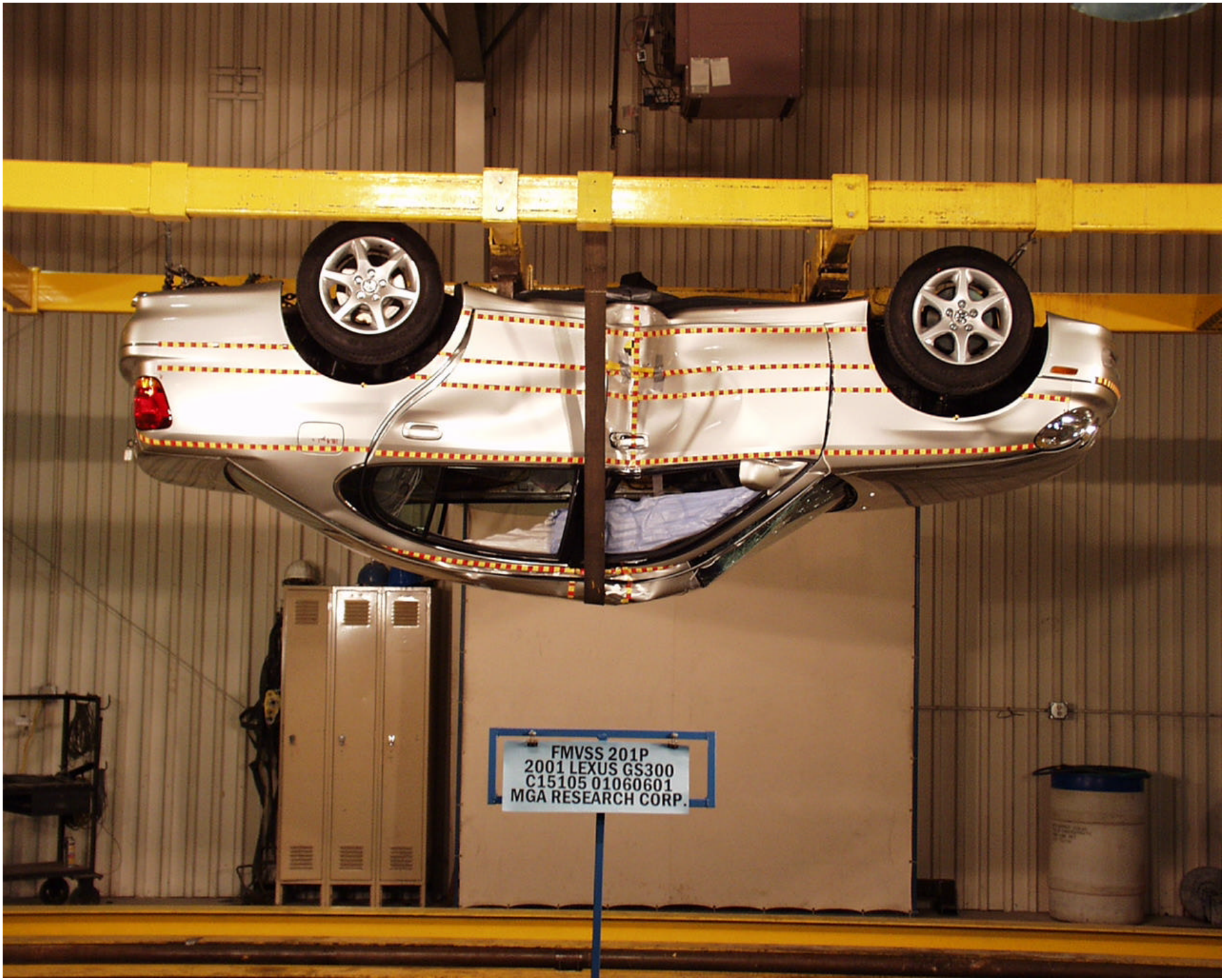


Photo No. A-26 - Rollover 180°

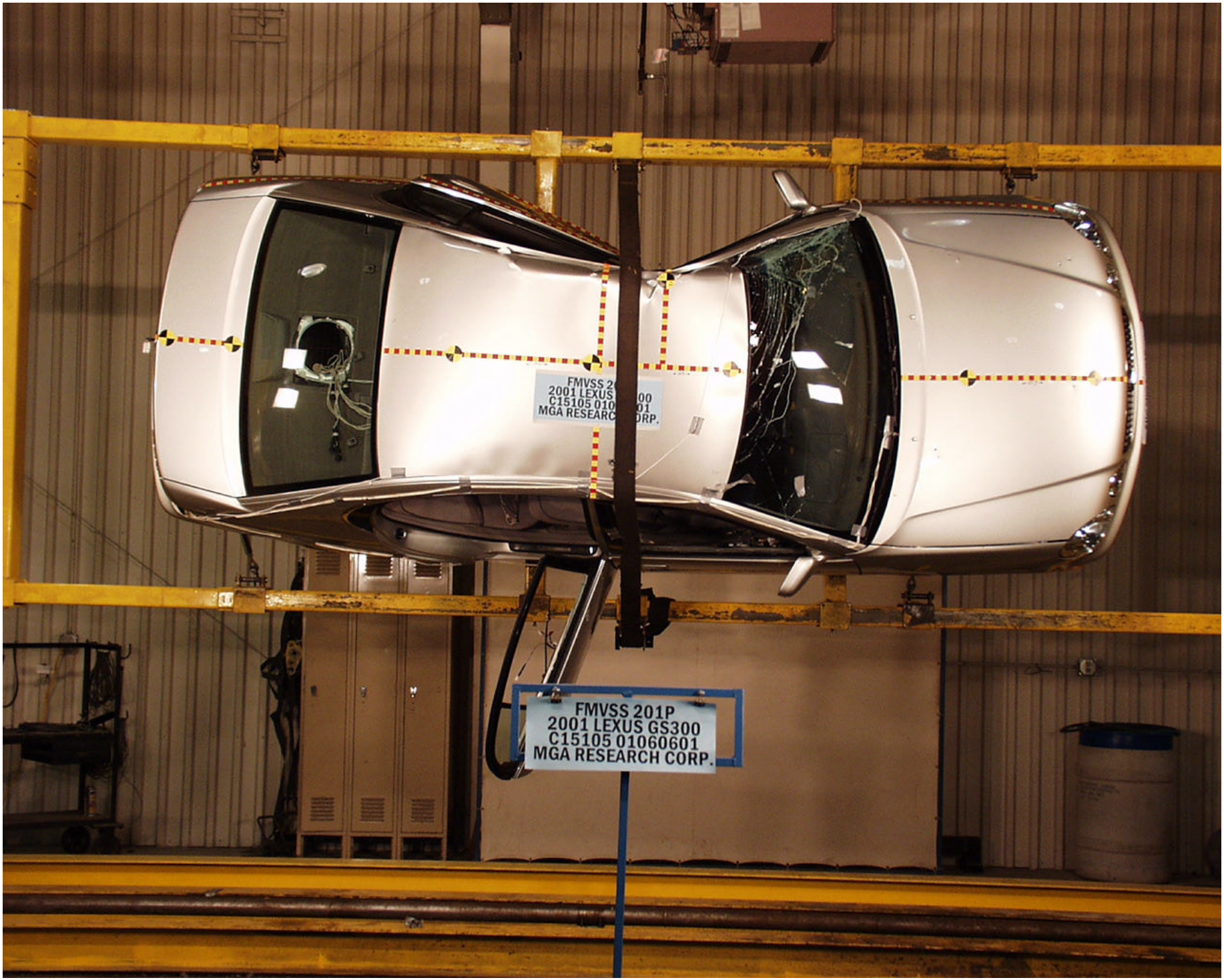


Photo No. A-27 - Rollover 270°

Photo No. A-28 - Rollover 360°

APPENDIX B

SID, VEHICLE, AND MDB RESPONSE DATA

Table of Data Plots

Table of Data Plots (Continued)

* Data not valid after 21 msec.

**Data not valid after 80 msec.

Table of Data Plots (Continued)

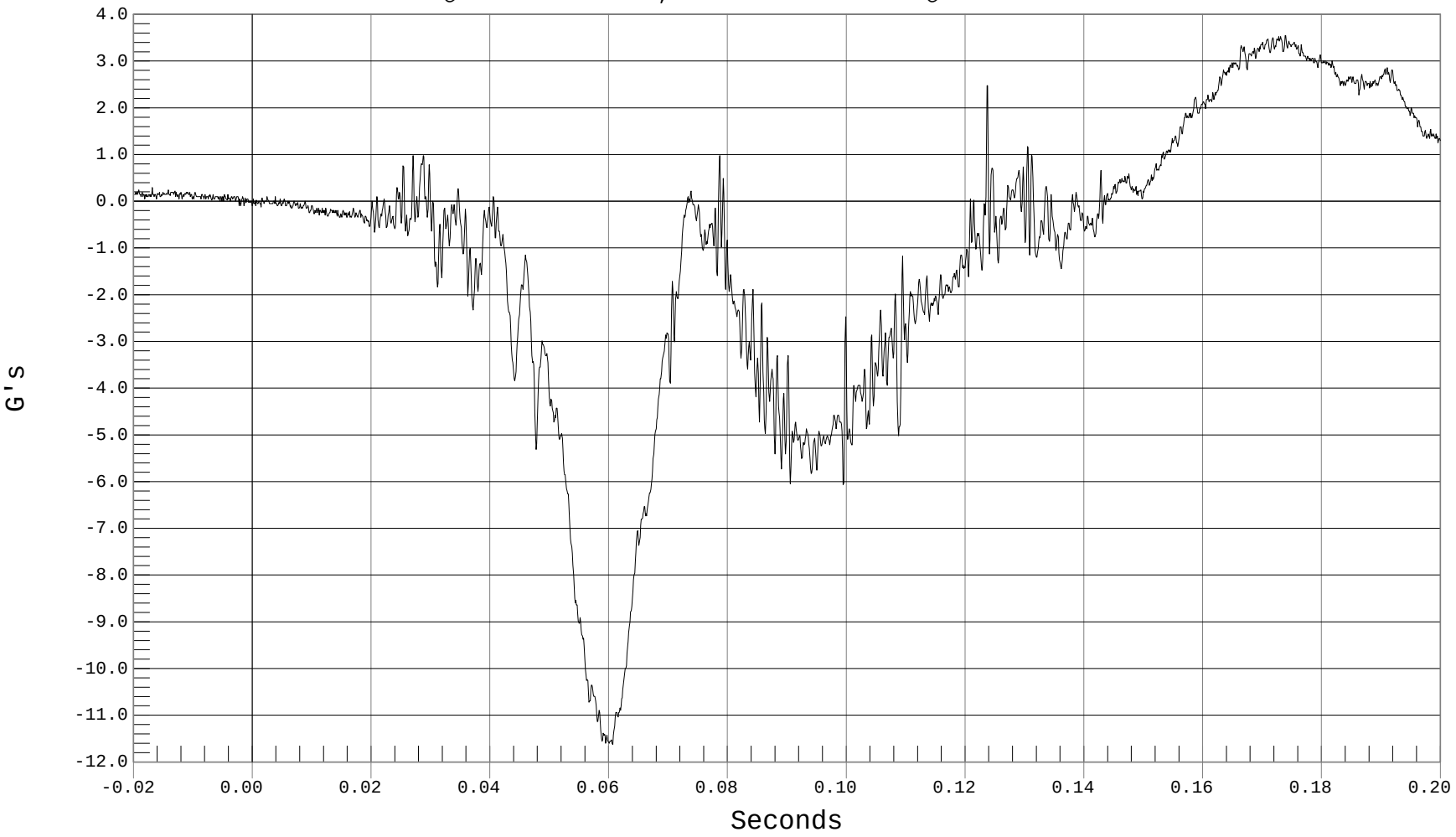
DRIVER HEAD X ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 1000

1 DRIVER HEAD X, b01062AT.A01

Ymin = -11.63 G's @ 0.0606 Seconds, Ymax = 3.55 G's @ 0.1738 Seconds



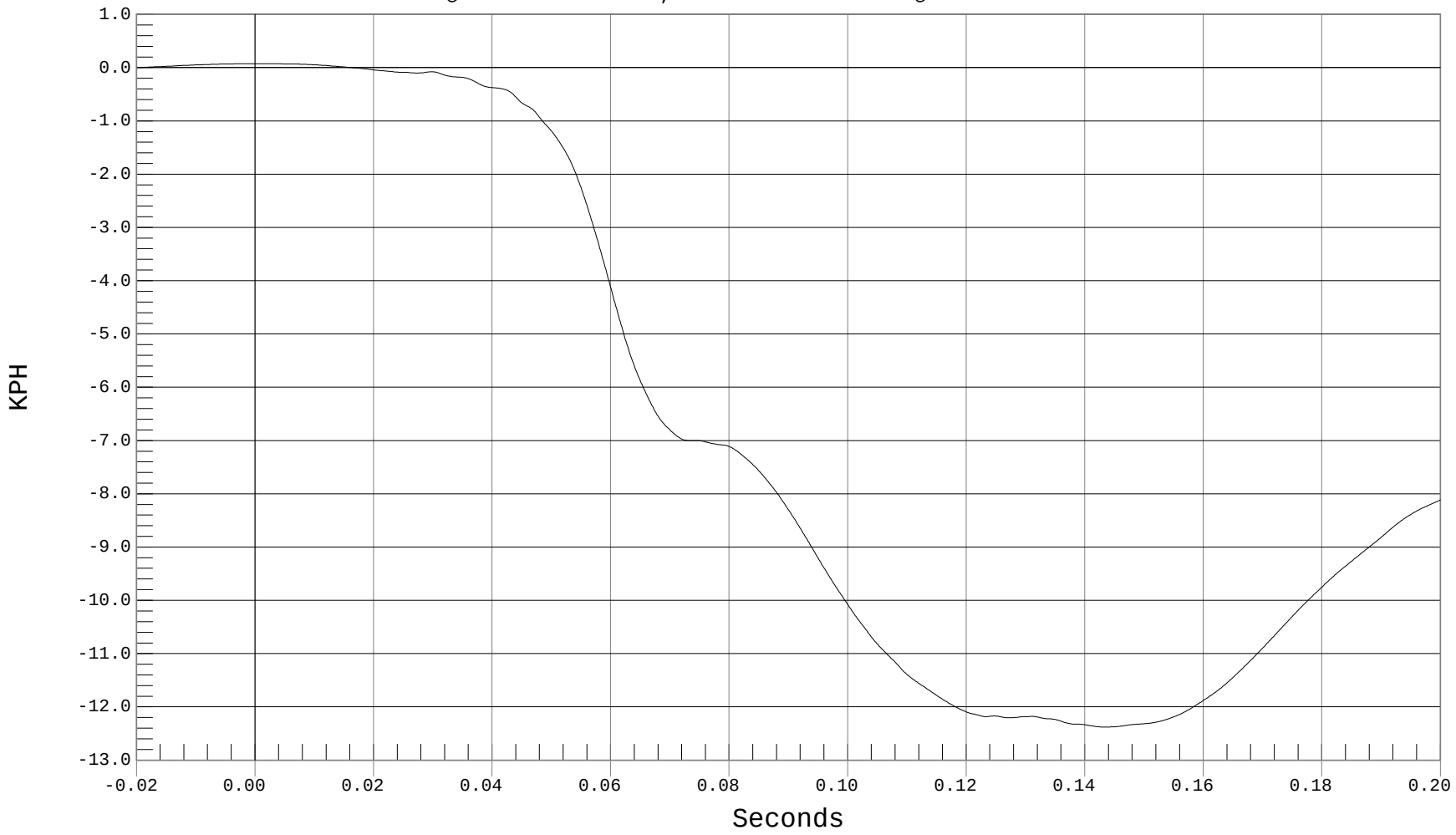
DRIVER HEAD X VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 DRIVER HEAD X VELOCITY, b01062AI.V01

Ymin = -12.38 KPH @ 0.1433 Seconds, Ymax = .07 KPH @ -0.0007 Seconds



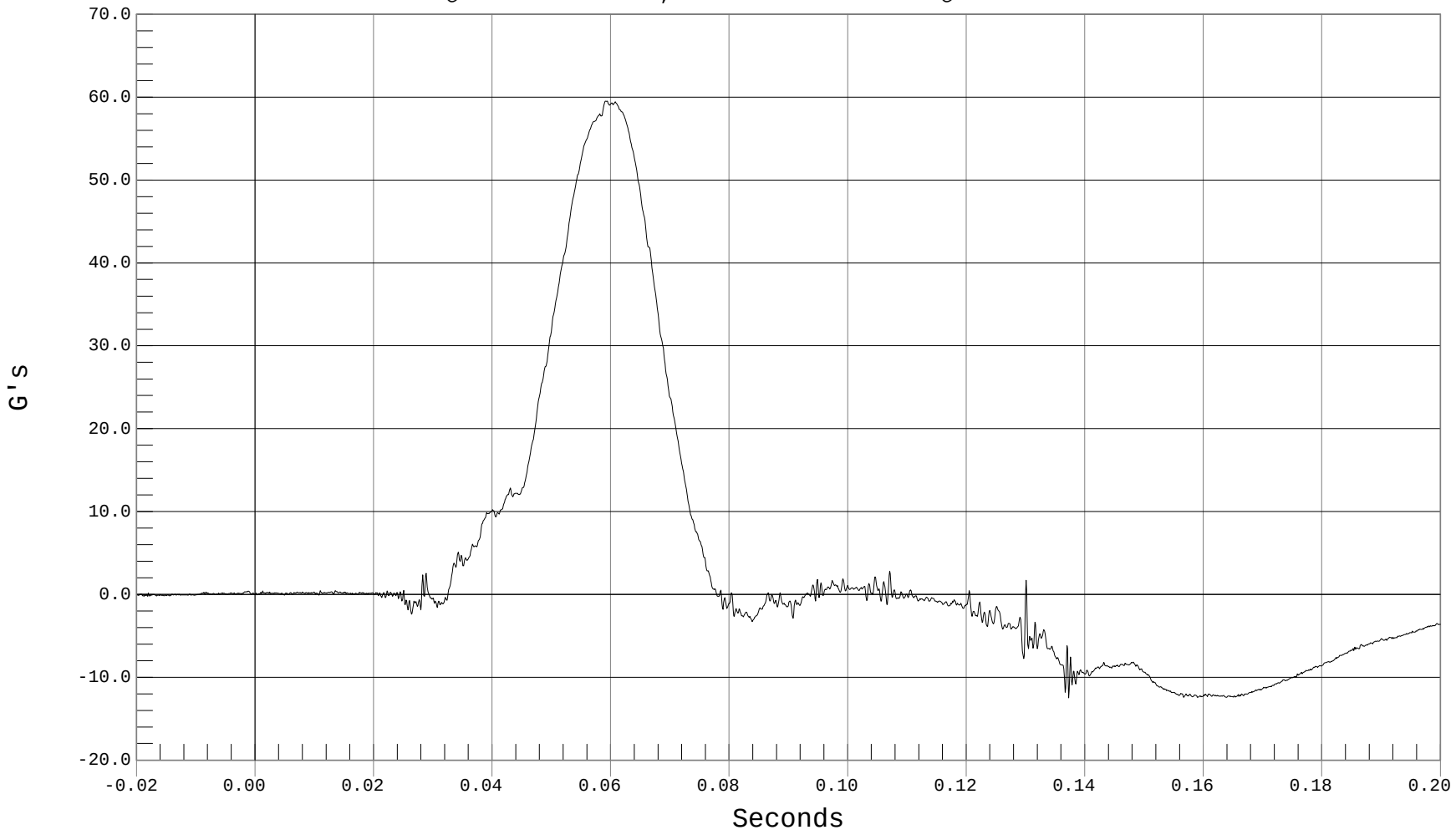
DRIVER HEAD Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 1000

1 DRIVER HEAD Y, b01062AT.A02

Ymin = -12.49 G's @ 0.1372 Seconds, Ymax = 59.53 G's @ 0.0590 Seconds



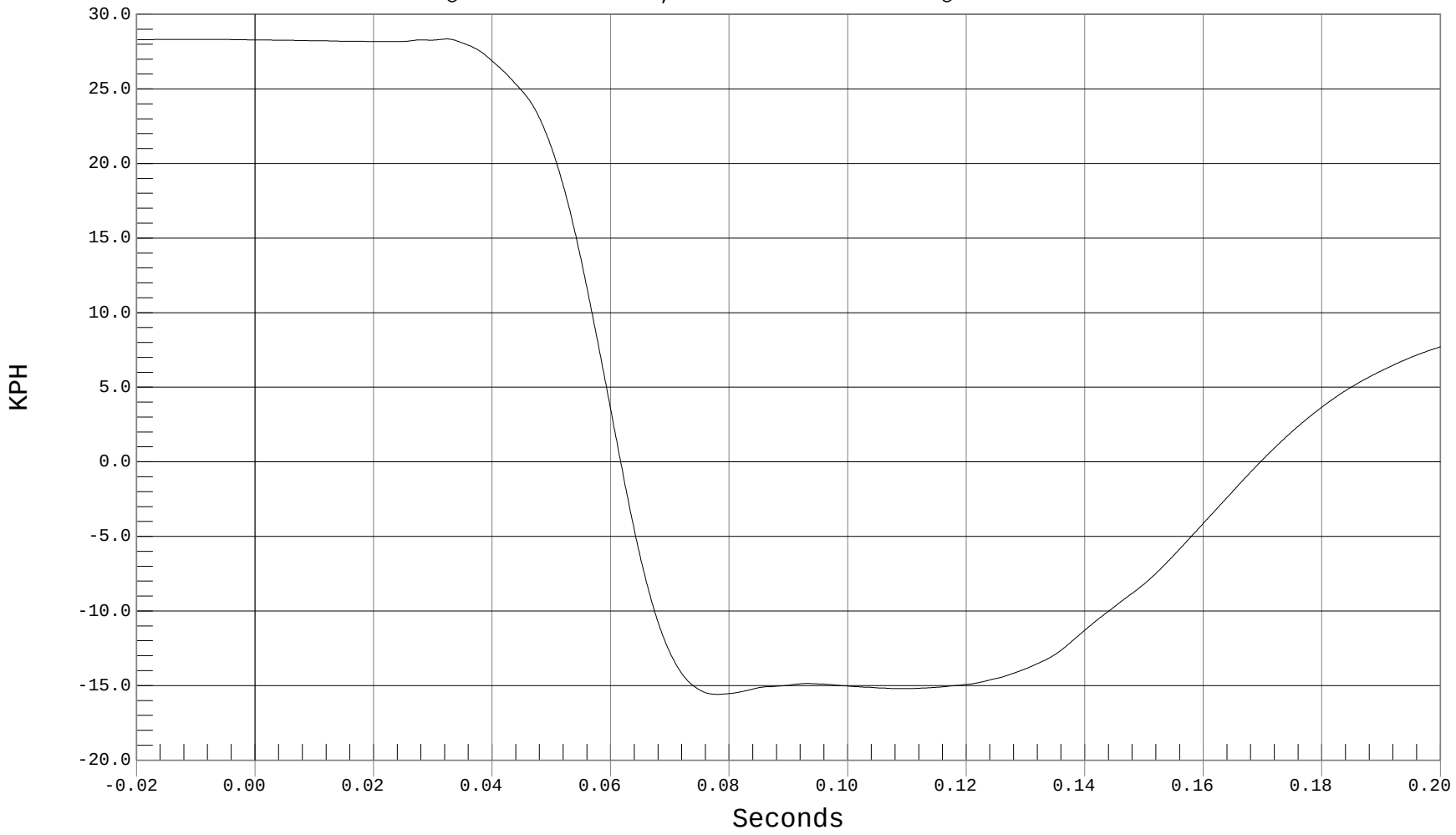
DRIVER HEAD Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 DRIVER HEAD Y VELOCITY, b01062AI.V02

Ymin = -15.59 KPH @ 0.0779 Seconds, Ymax = 28.35 KPH @ 0.0323 Seconds



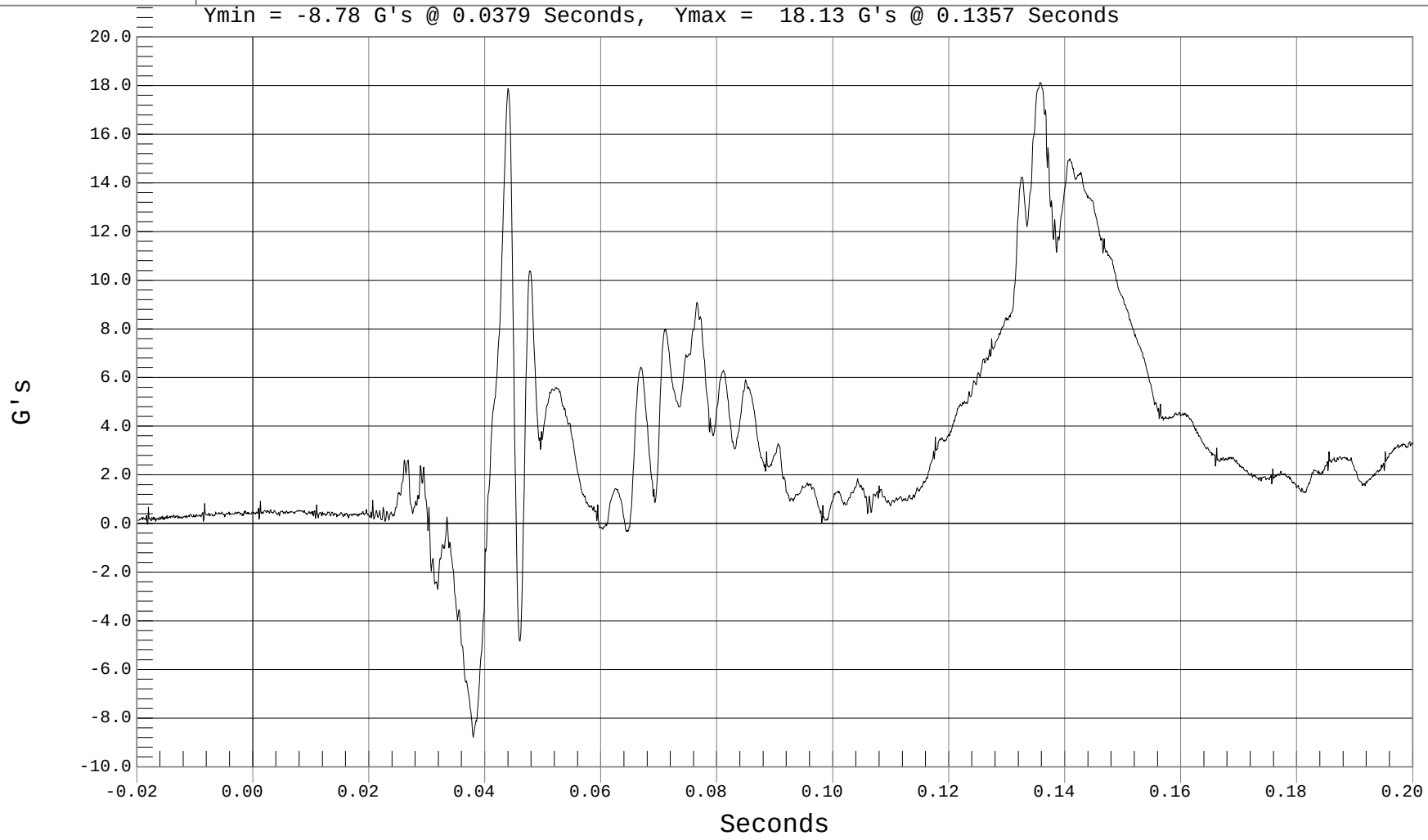
DRIVER HEAD Z ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 1000

1 DRIVER HEAD Z, b01062AT.A03

Ymin = -8.78 G's @ 0.0379 Seconds, Ymax = 18.13 G's @ 0.1357 Seconds



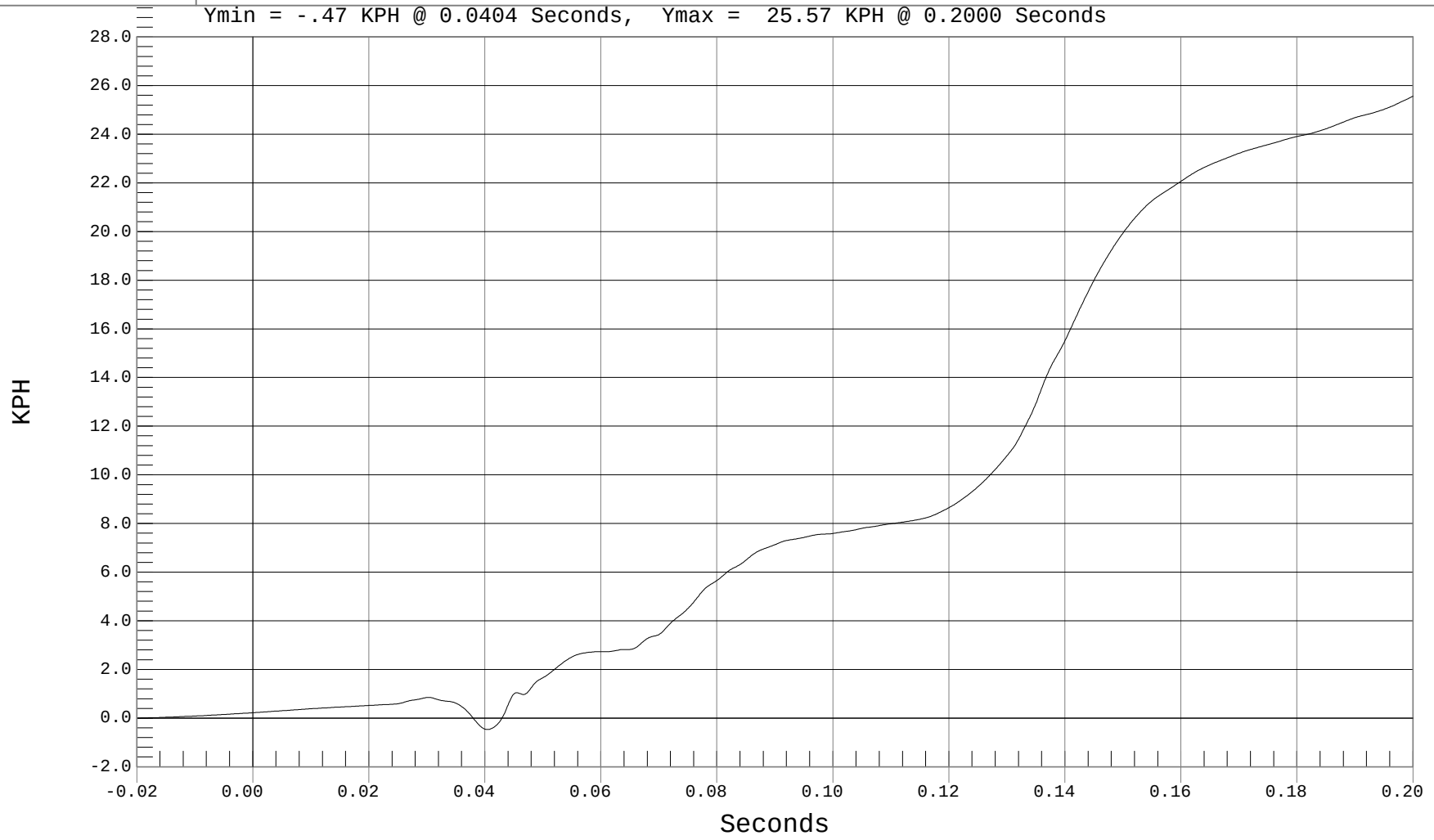
DRIVER HEAD Z VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 DRIVER HEAD Z VELOCITY, b01062AI.V03

Ymin = -.47 KPH @ 0.0404 Seconds, Ymax = 25.57 KPH @ 0.2000 Seconds



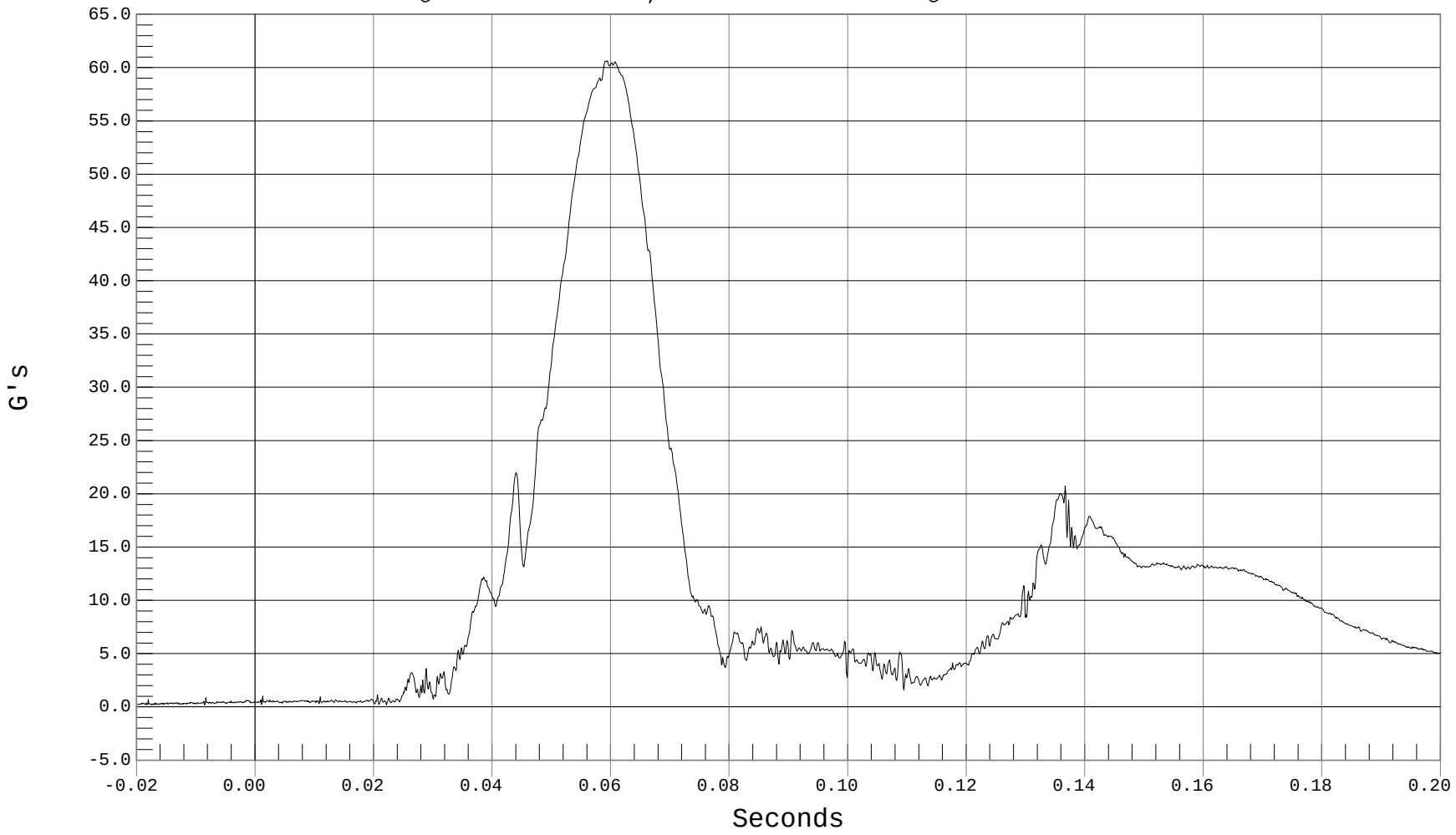
DRIVER HEAD RESULTANT ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 1000

1 DRIVER HEAD RESULTANT, b01062AV.A01

Ymin = .18 G's @ -0.0176 Seconds, Ymax = 60.63 G's @ 0.0594 Seconds



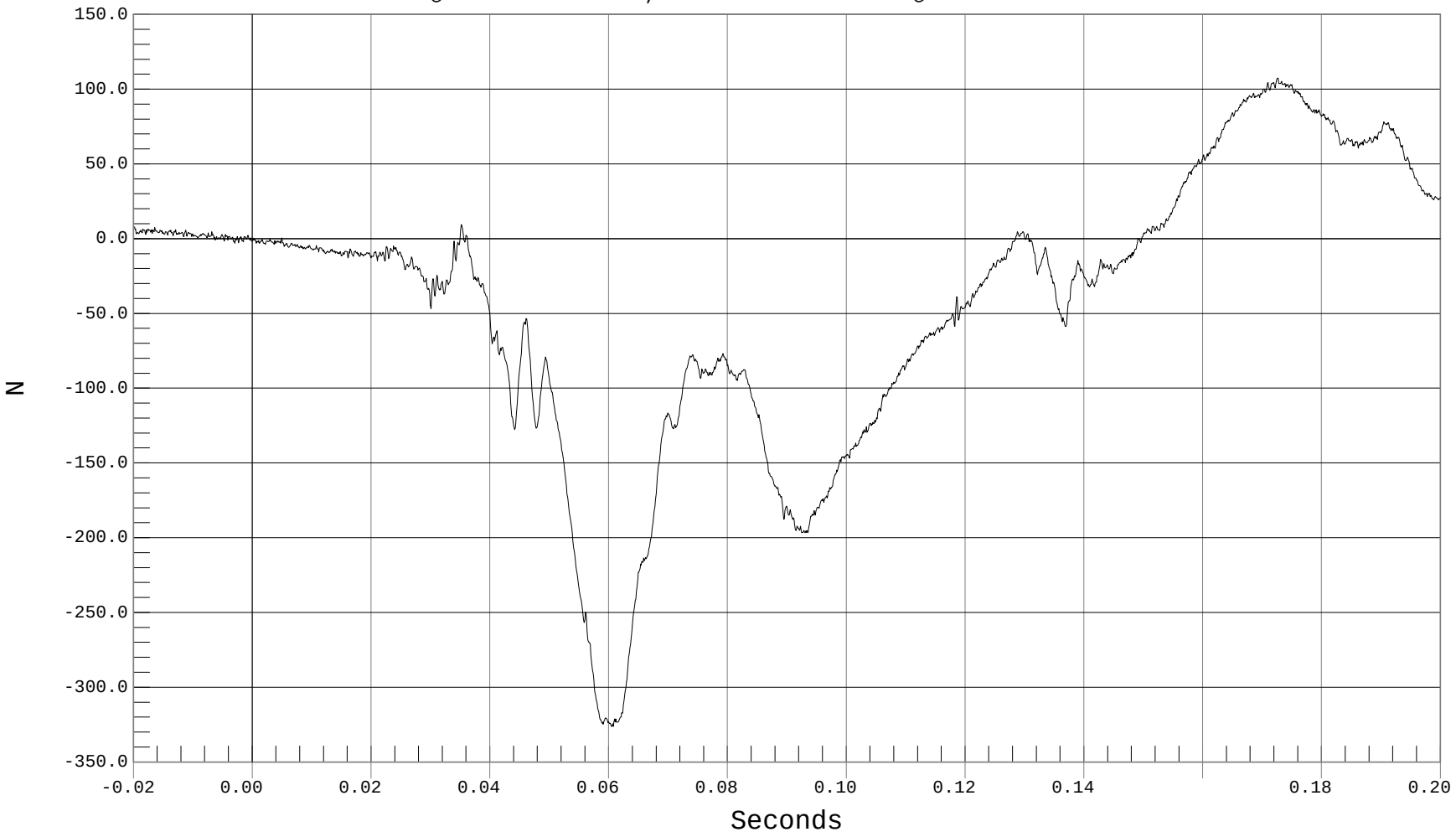
DRIVER NECK FORCE X

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 1000

1 DRIVER NECK FORCE X, b01062FT.F04

Ymin = -326.26 N @ 0.0604 Seconds, Ymax = 107.42 N @ 0.1725 Seconds



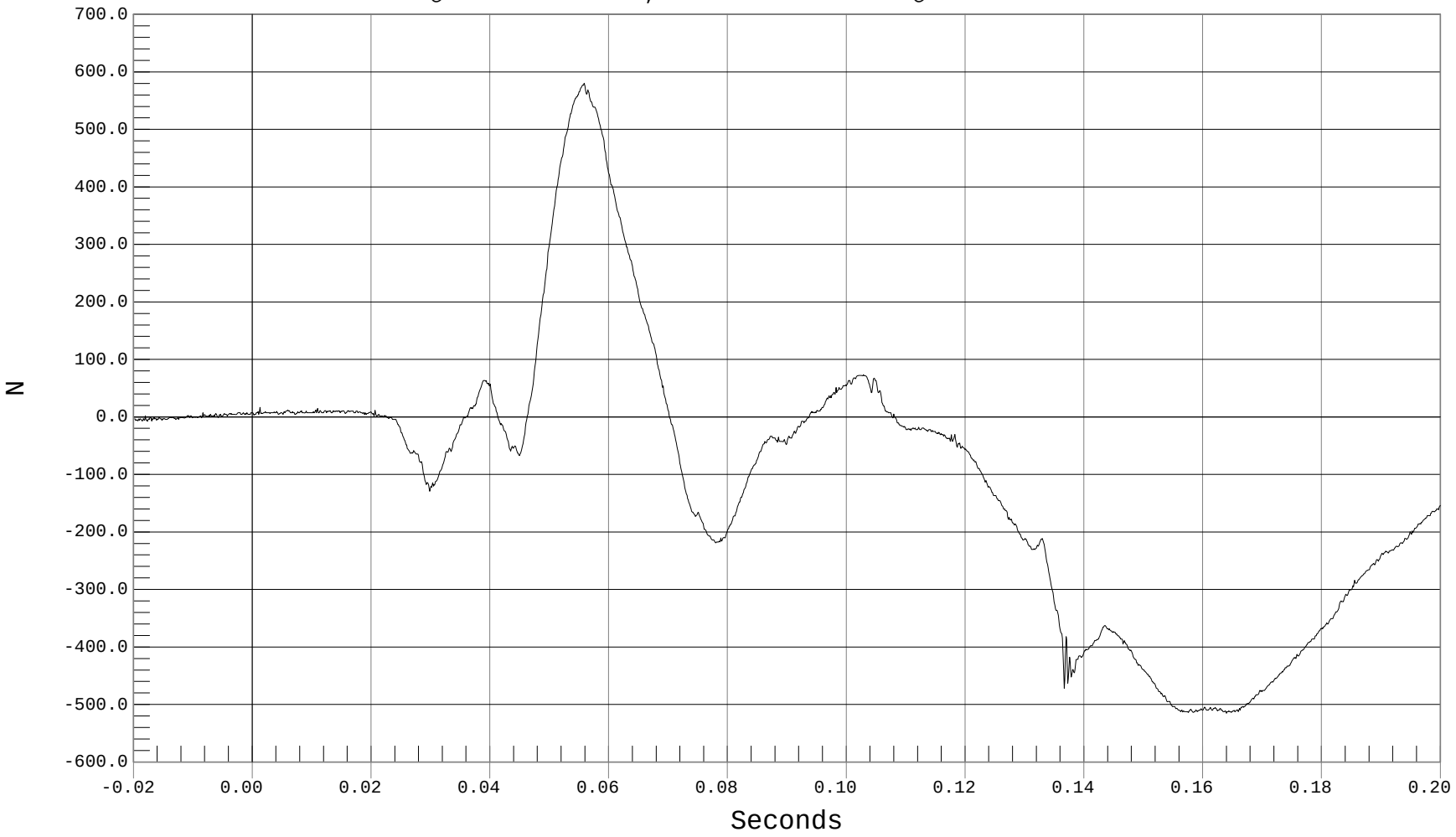
DRIVER NECK FORCE Y

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 1000

1 DRIVER NECK FORCE Y, b01062FT.F05

Ymin = -515.54 N @ 0.1639 Seconds, Ymax = 580.19 N @ 0.0558 Seconds



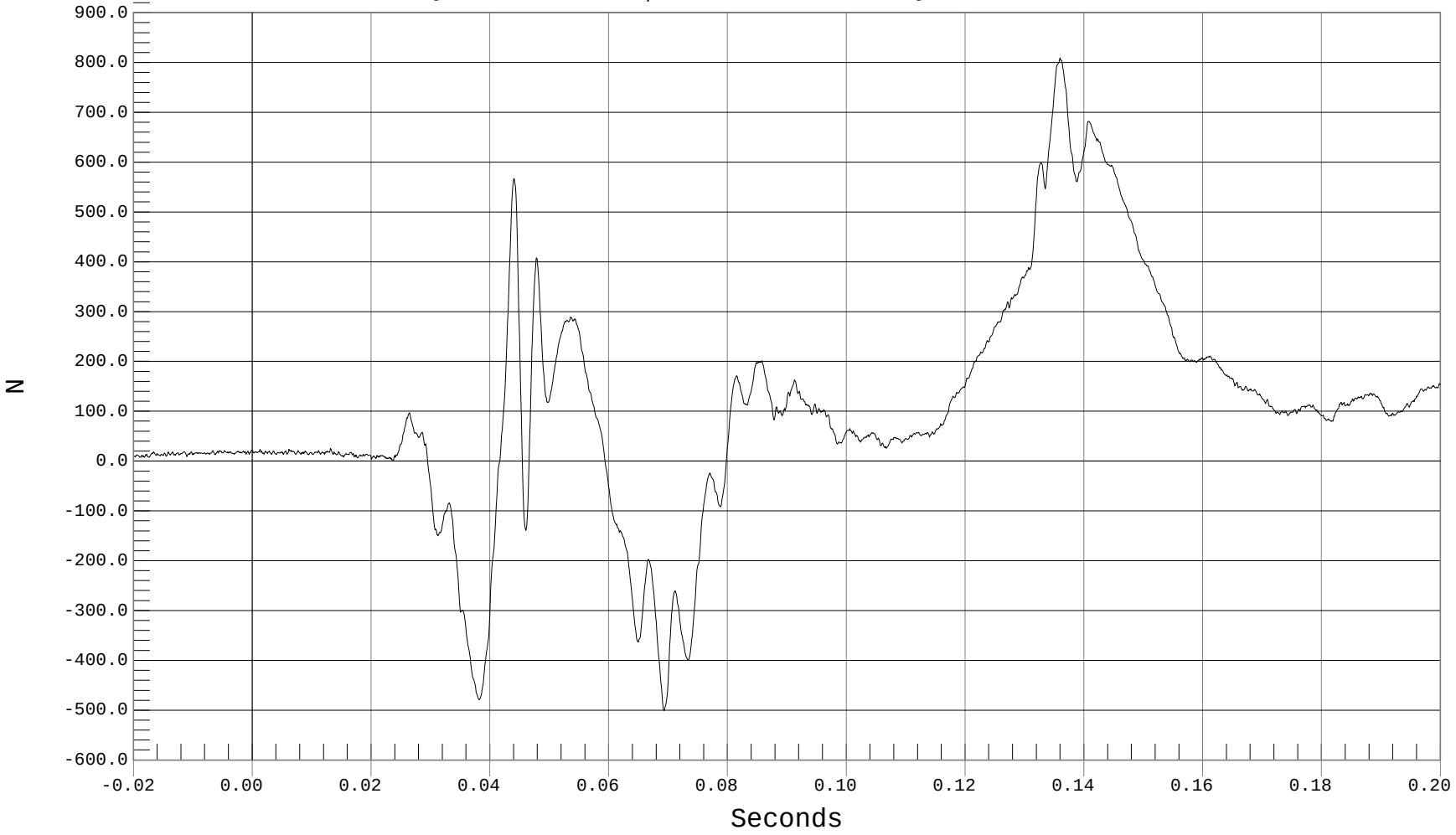
DRIVER NECK FORCE Z

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 1000

1 DRIVER NECK FORCE Z, b01062FT.F06

Ymin = -500.77 N @ 0.0692 Seconds, Ymax = 809.23 N @ 0.1359 Seconds



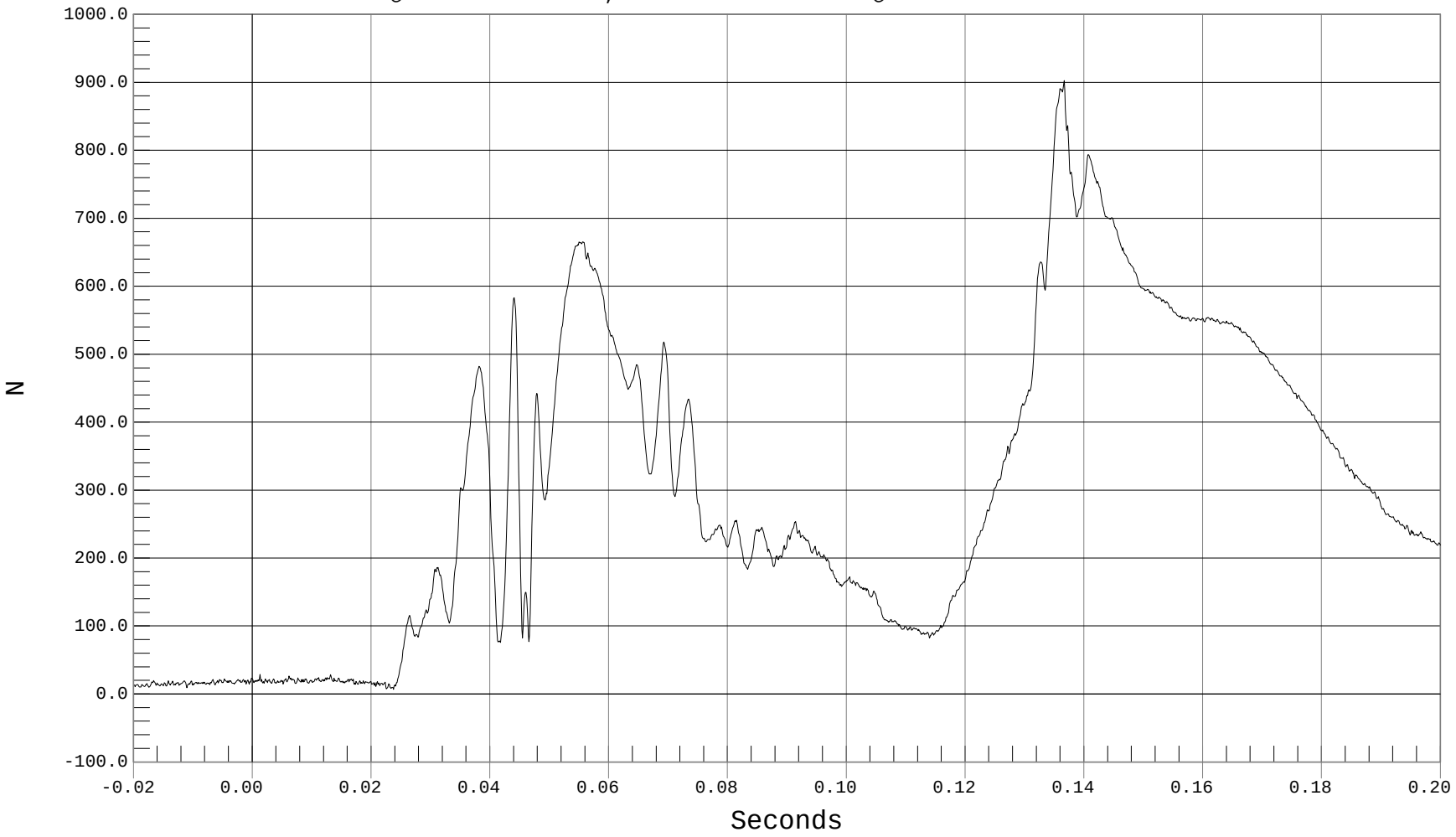
DRIVER NECK FORCE RESULTANT

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 1000

1 DRIVER NECK FORCE RESULTANT, b01062FV.F04

Ymin = 6.7 N @ 0.0237 Seconds, Ymax = 902.75 N @ 0.1366 Seconds



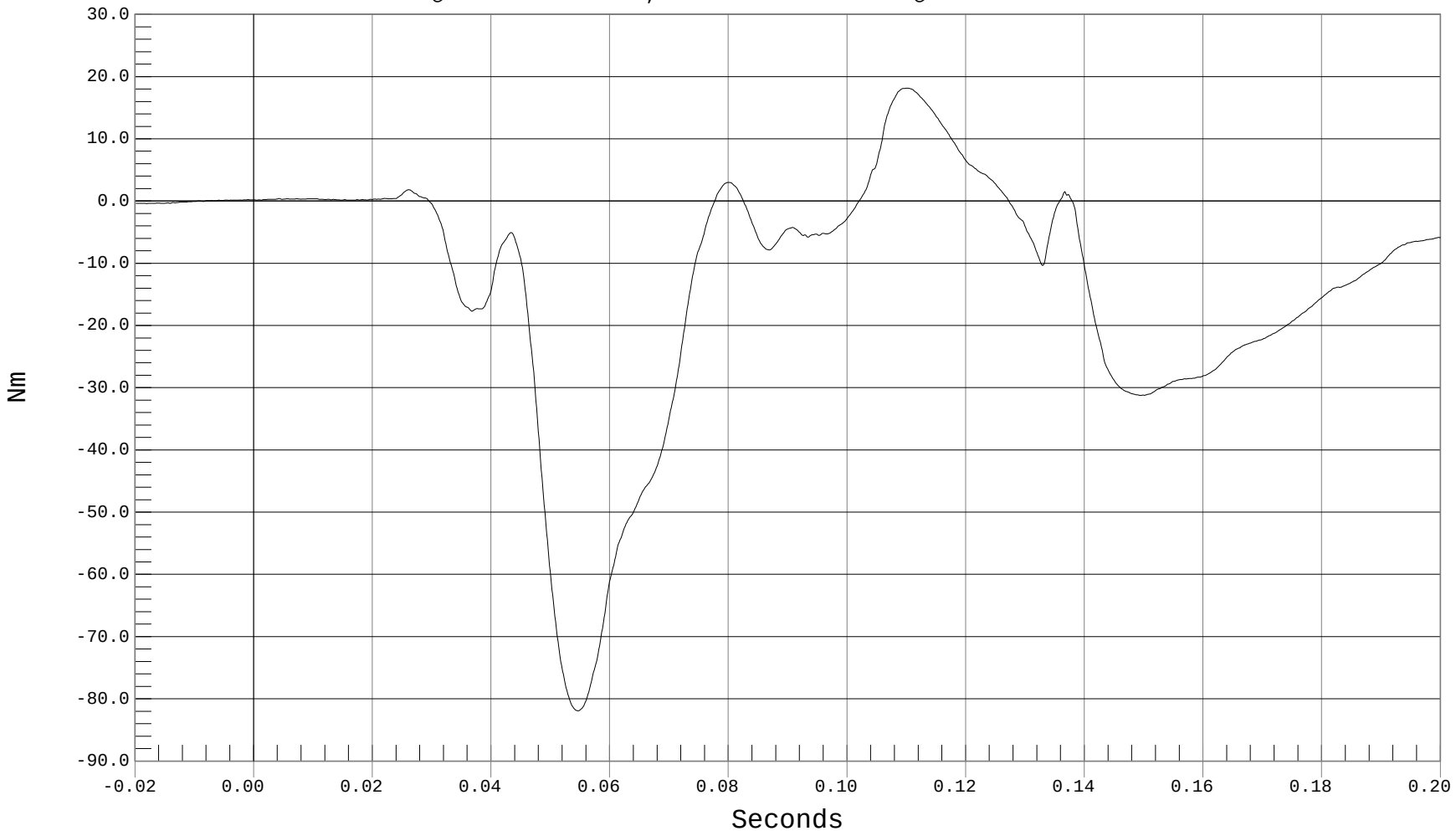
DRIVER NECK MOMENT X

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 600

1 DRIVER NECK MOMENT X, b01062MF.M07

Ymin = -81.92 Nm @ 0.0546 Seconds, Ymax = 18.15 Nm @ 0.1100 Seconds



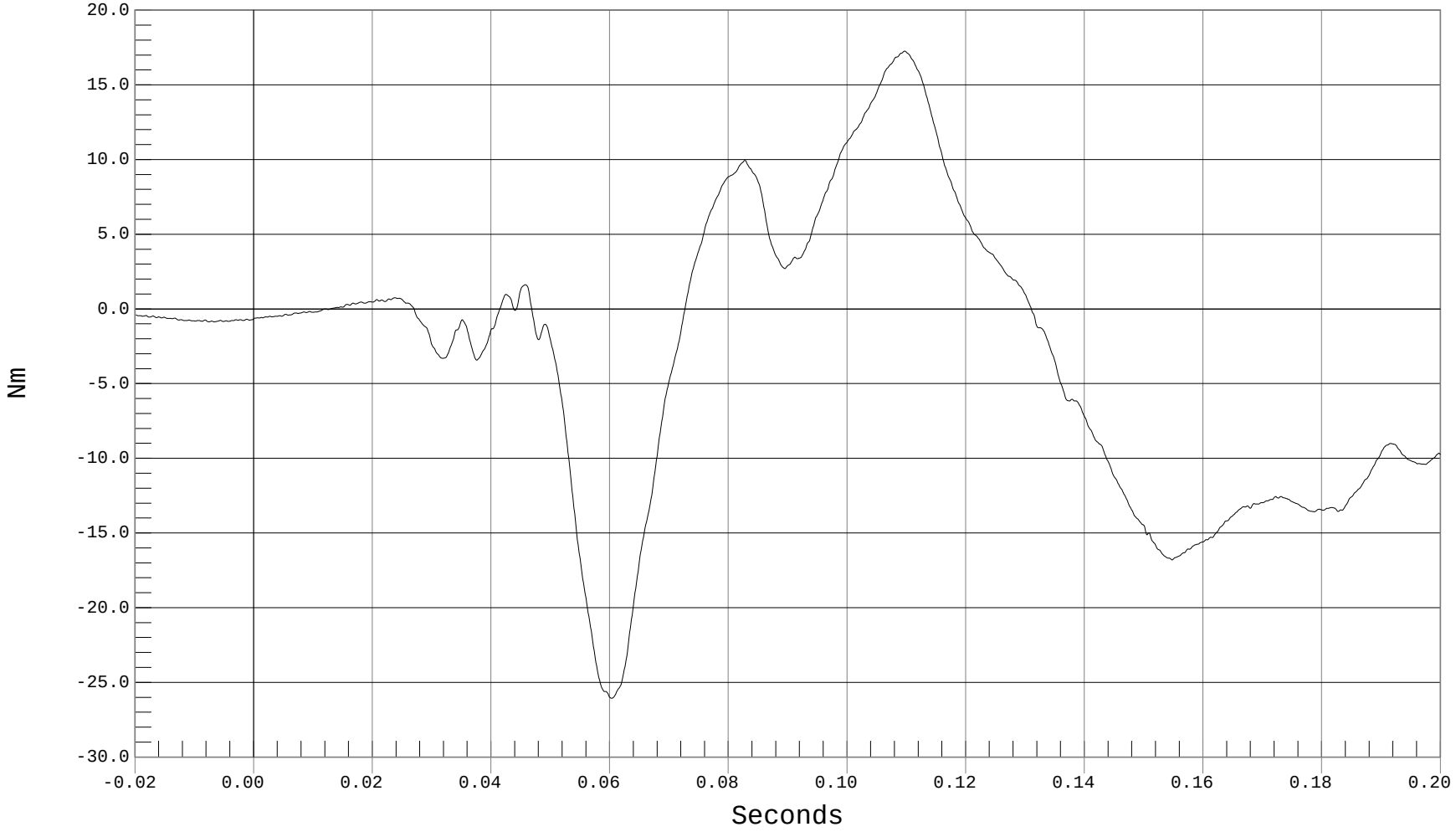
DRIVER NECK MOMENT Y

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 600

1 DRIVER NECK MOMENT Y, b01062MF.M08

Ymin = -26.07 Nm @ 0.0602 Seconds, Ymax = 17.26 Nm @ 0.1096 Seconds



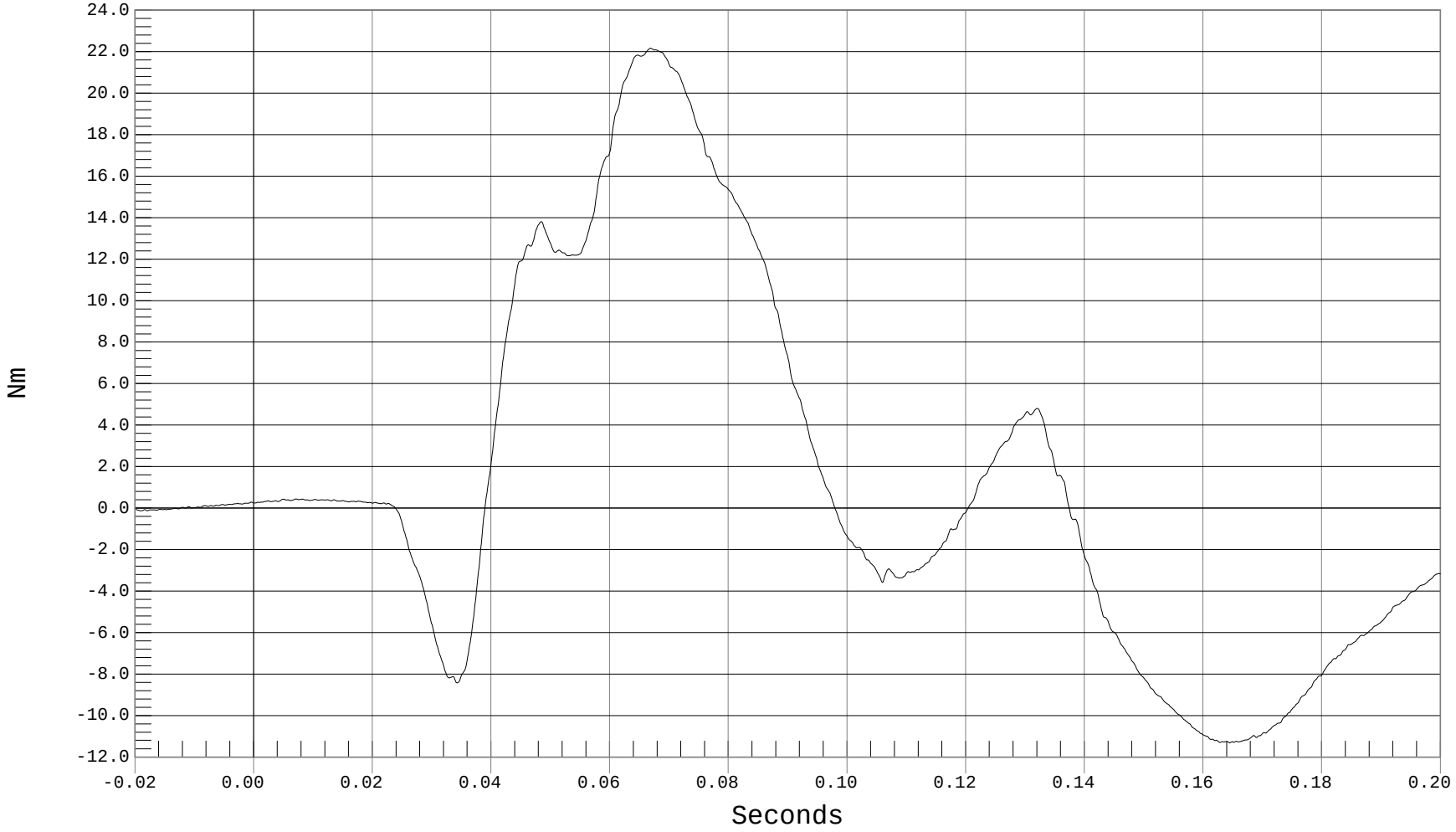
DRIVER NECK MOMENT Z

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 600

1 DRIVER NECK MOMENT Z, b01062MF.M09

Ymin = -11.32 Nm @ 0.1644 Seconds, Ymax = 22.16 Nm @ 0.0668 Seconds



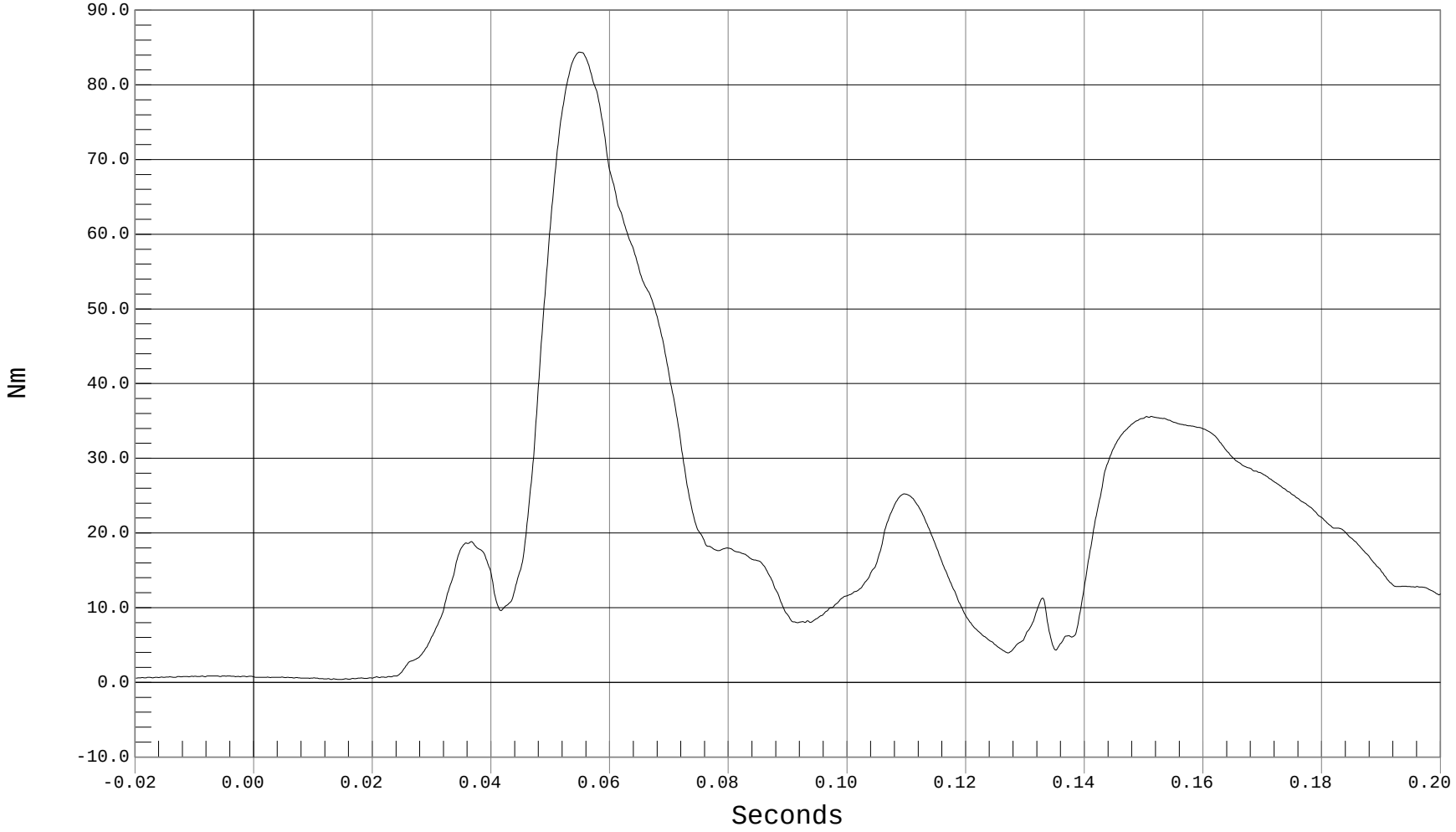
DRIVER NECK MOMENT RESULTANT

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 600

1 DRIVER NECK MOMENT RESULTANT, b01062MV.M07

Ymin = .39 Nm @ 0.0142 Seconds, Ymax = 84.38 Nm @ 0.0548 Seconds



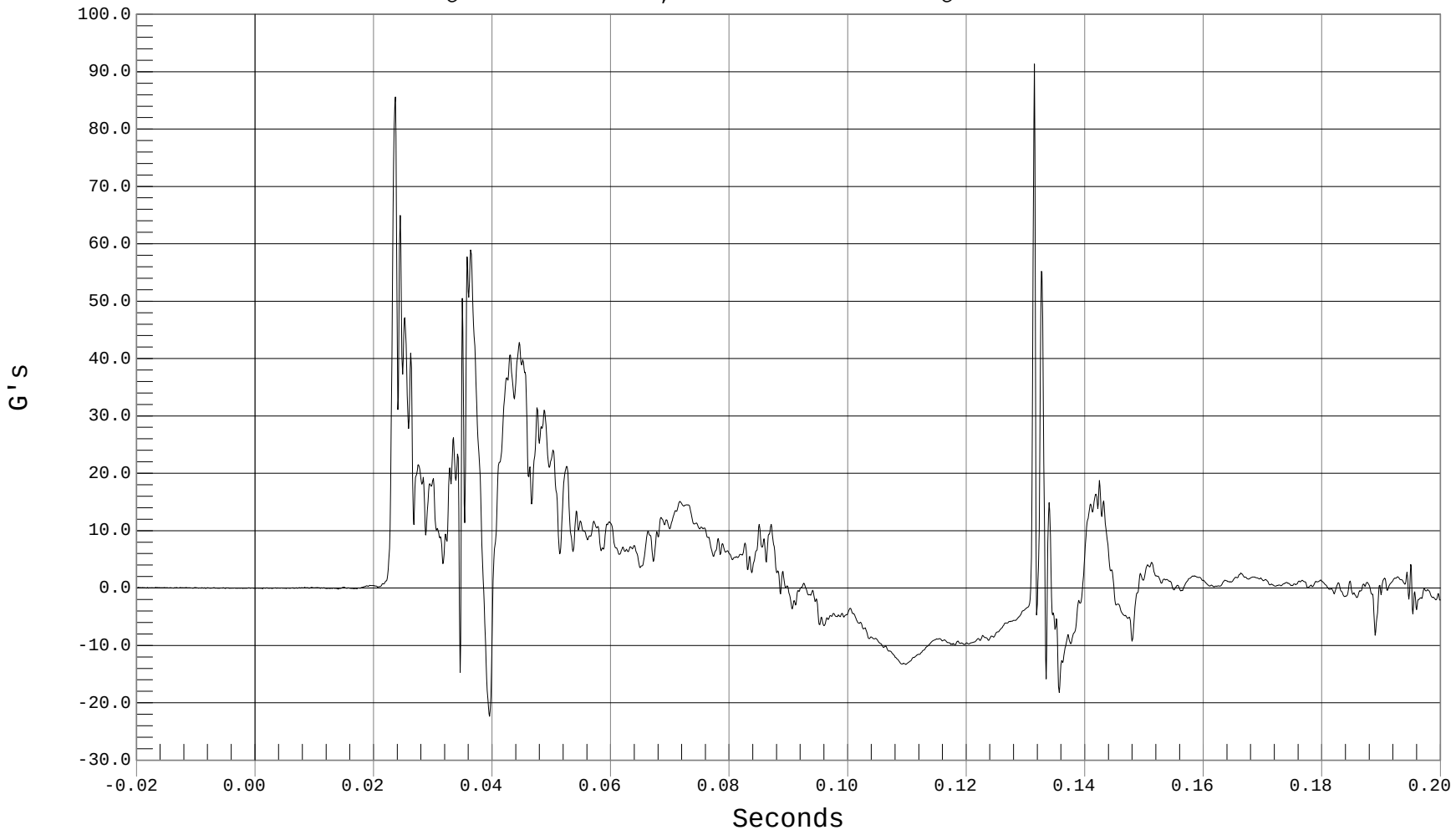
DRIVER UPPER RIB Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 1000

1 DRIVER UPPER RIB Y, b01062AT.A10

Ymin = -22.38 G's @ 0.0395 Seconds, Ymax = 91.36 G's @ 0.1314 Seconds



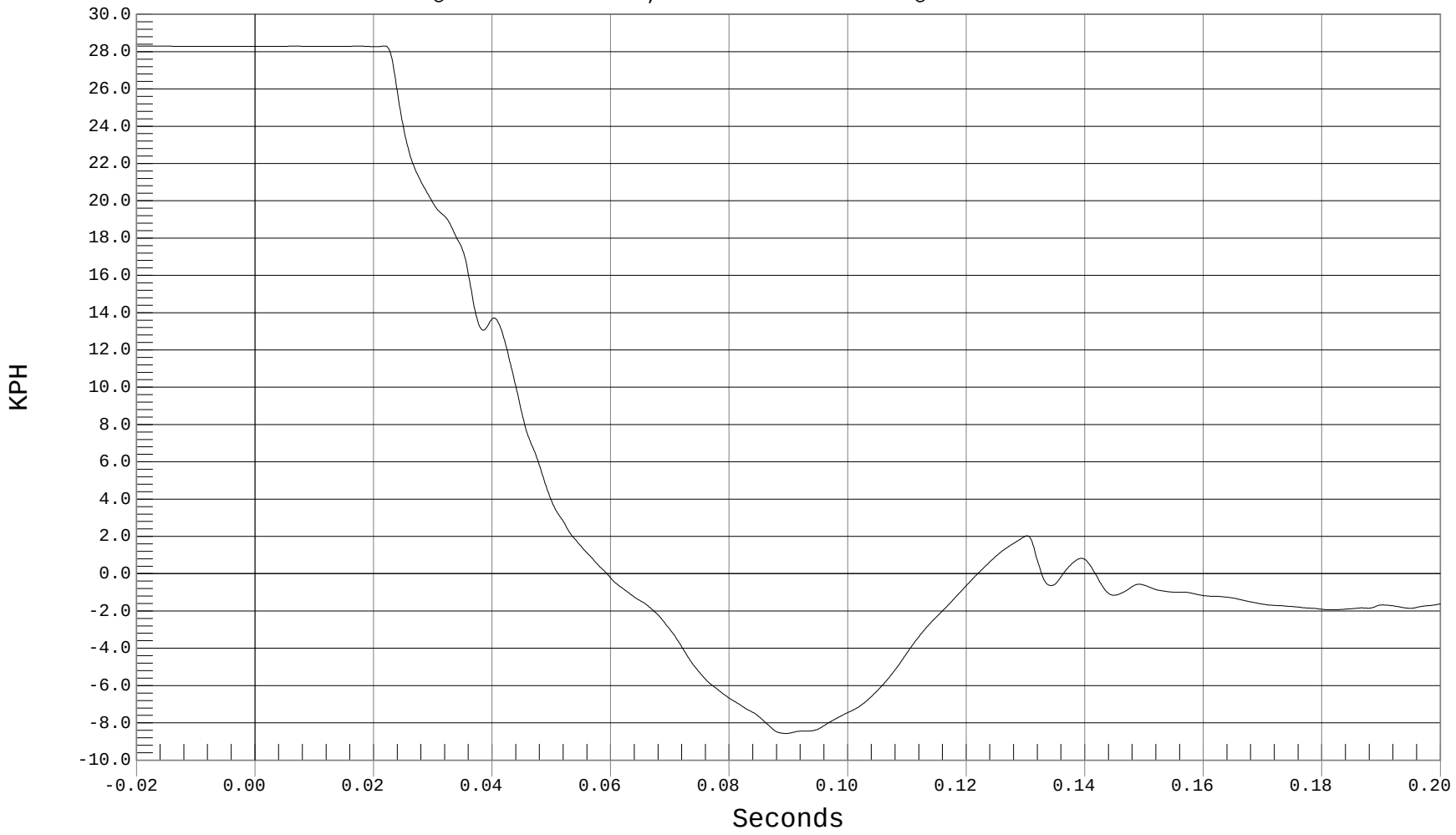
DRIVER UPPER RIB Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 DRIVER UPPER RIB Y VELOCITY, b01062AI.V10

Ymin = -8.57 KPH @ 0.0895 Seconds, Ymax = 28.3 KPH @ 0.0218 Seconds



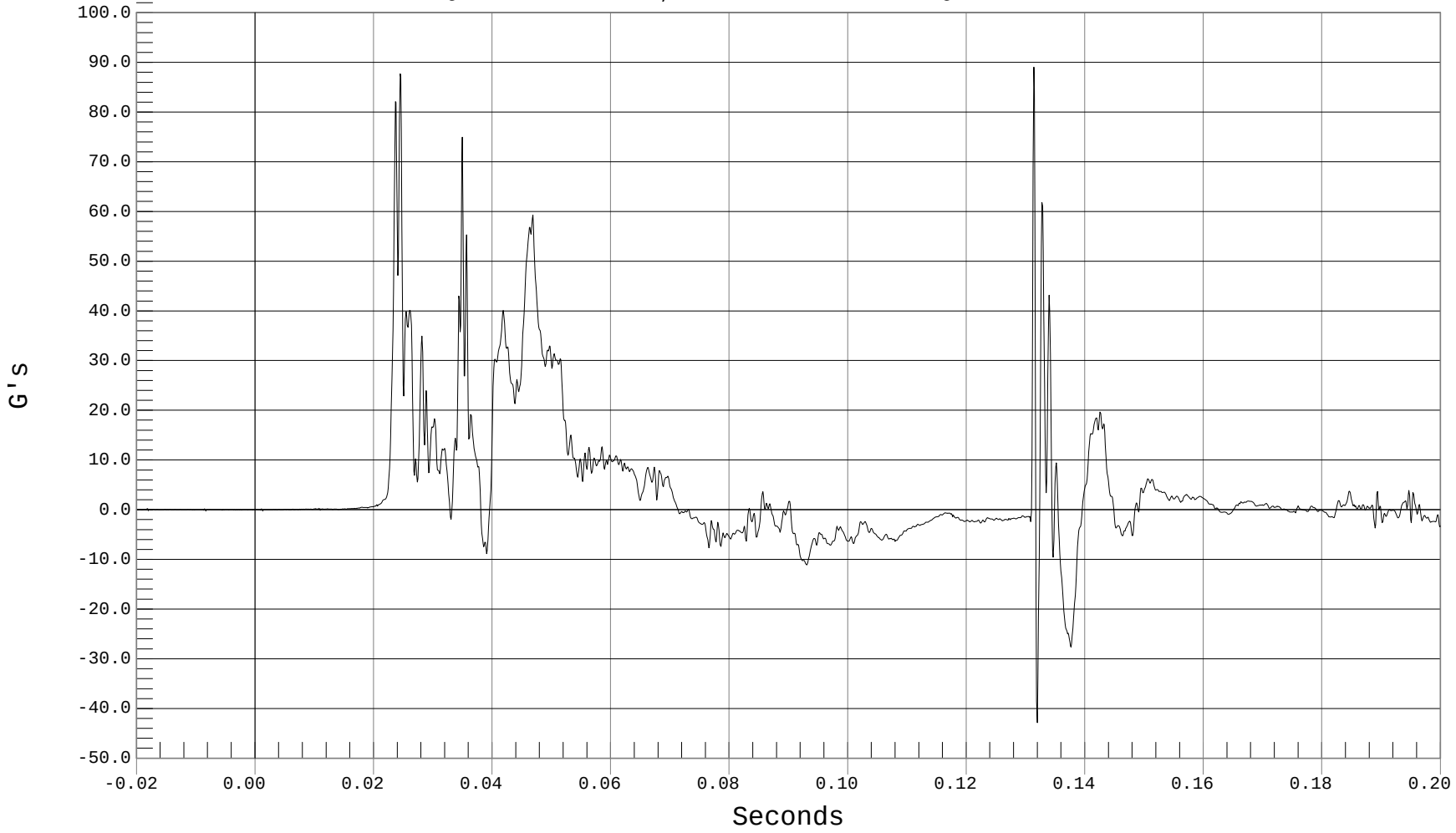
DRIVER LOWER RIB Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 1000

1 DRIVER LOWER RIB Y, b01062AT.A11

Ymin = -42.88 G's @ 0.1319 Seconds, Ymax = 89.01 G's @ 0.1313 Seconds



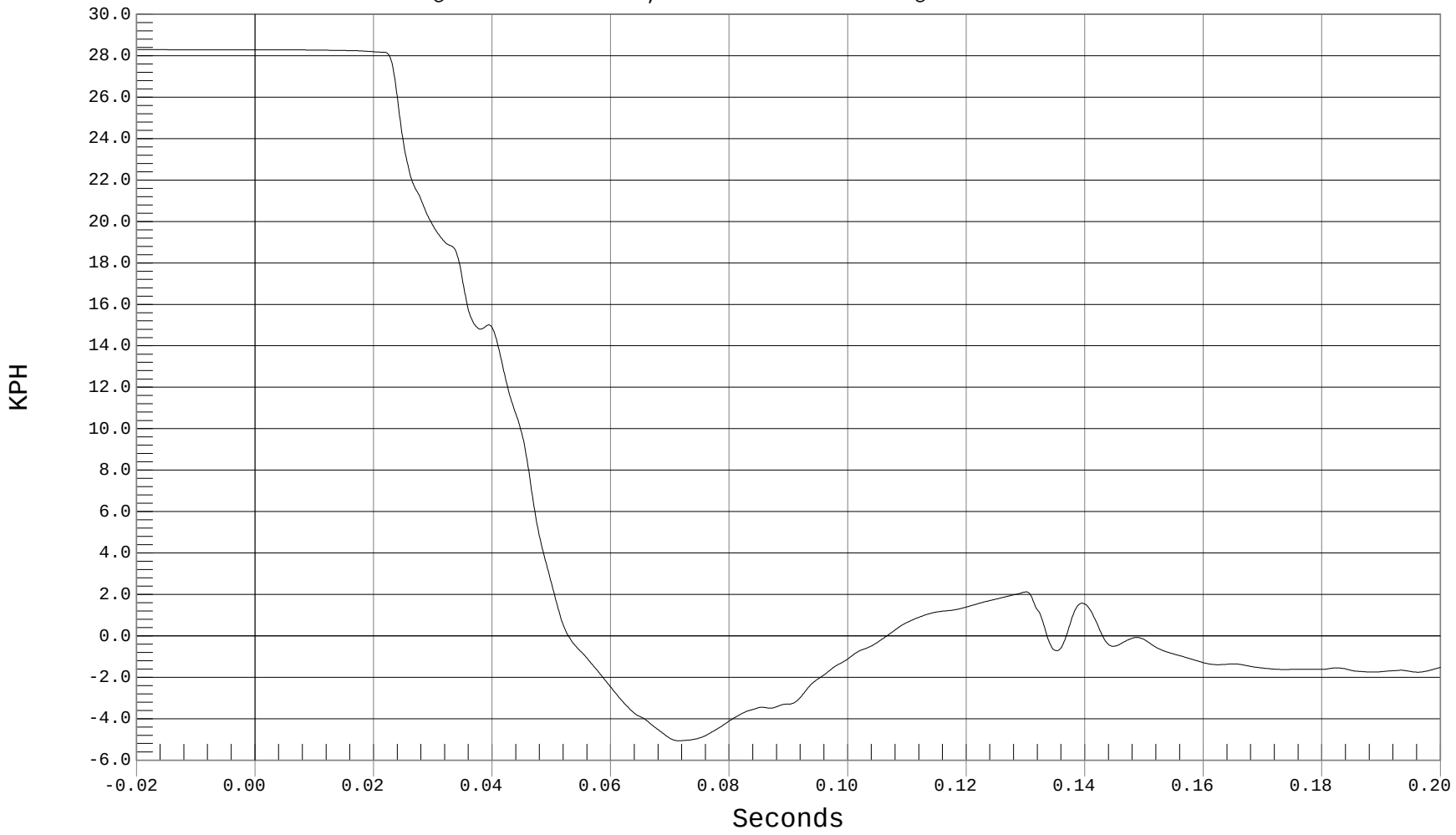
DRIVER LOWER RIB Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 DRIVER LOWER RIB Y VELOCITY, b01062AI.V11

Ymin = -5.06 KPH @ 0.0714 Seconds, Ymax = 28.3 KPH @ -0.0199 Seconds



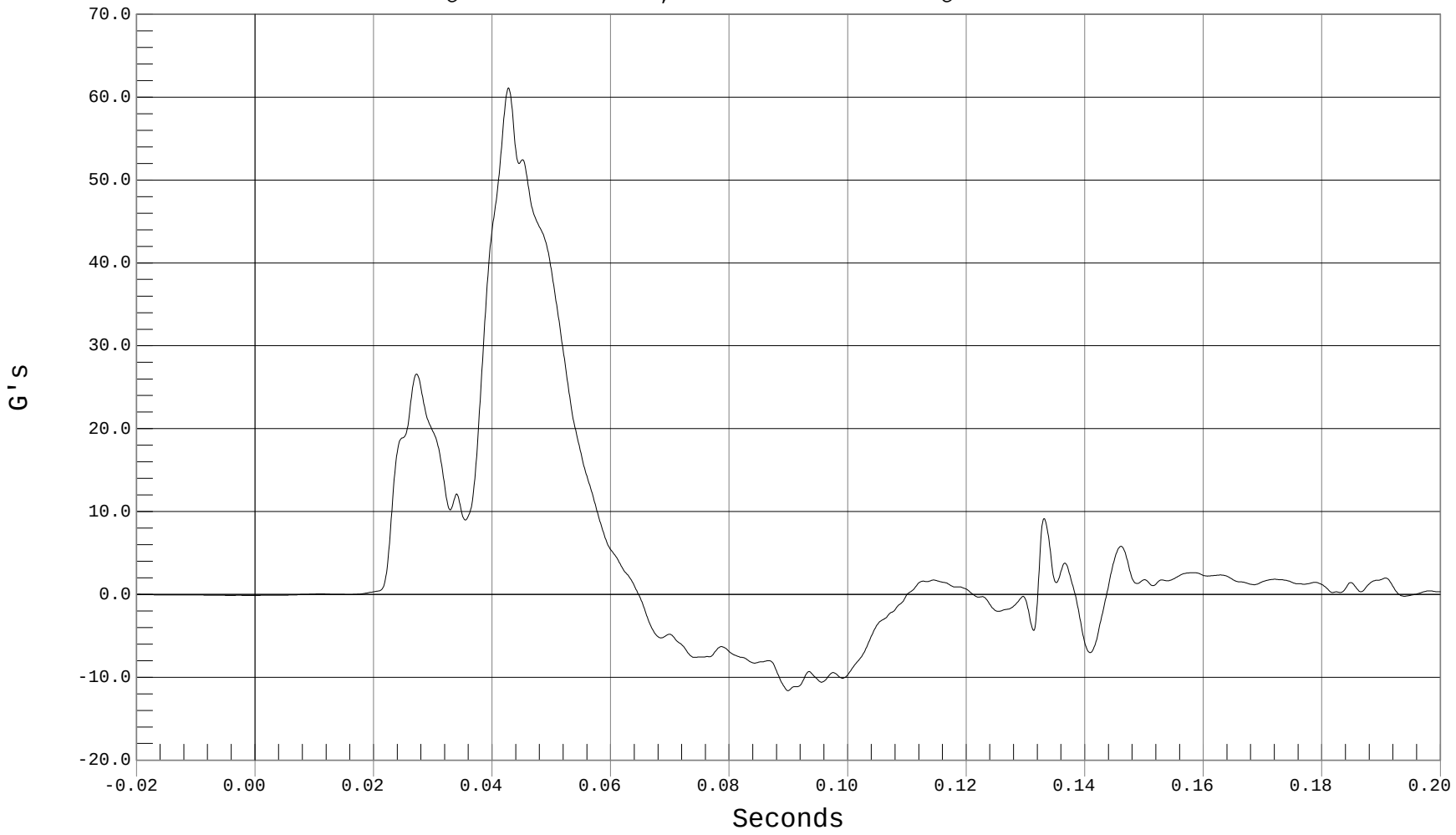
DRIVER LOWER SPINE Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 DRIVER LOWER SPINE Y, b01062AF.A12

Ymin = -11.61 G's @ 0.0898 Seconds, Ymax = 61.13 G's @ 0.0427 Seconds

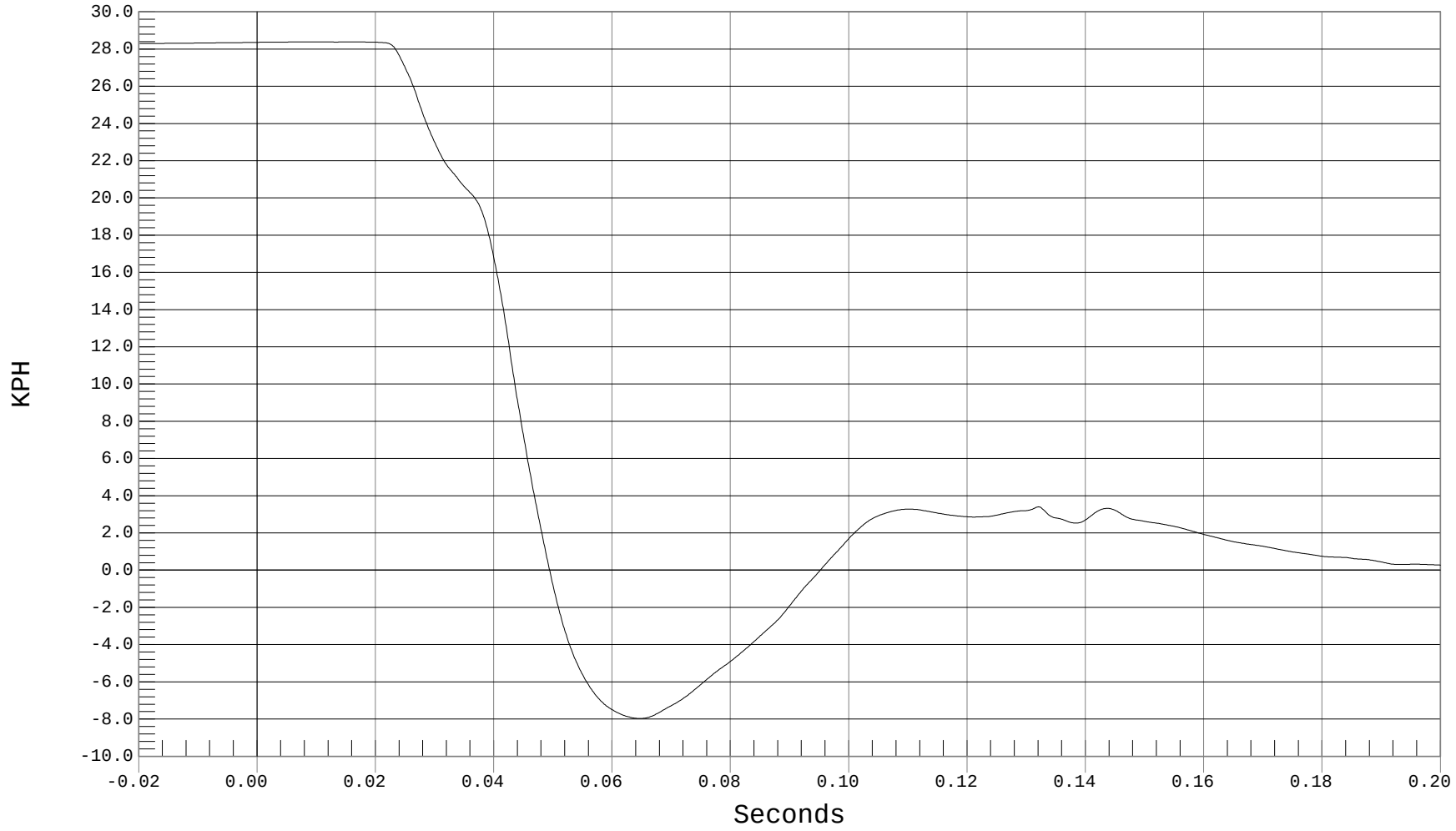


DRIVER LOWER SPINE Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 DRIVER LOWER SPINE Y VELOCITY, b01062AI.V12



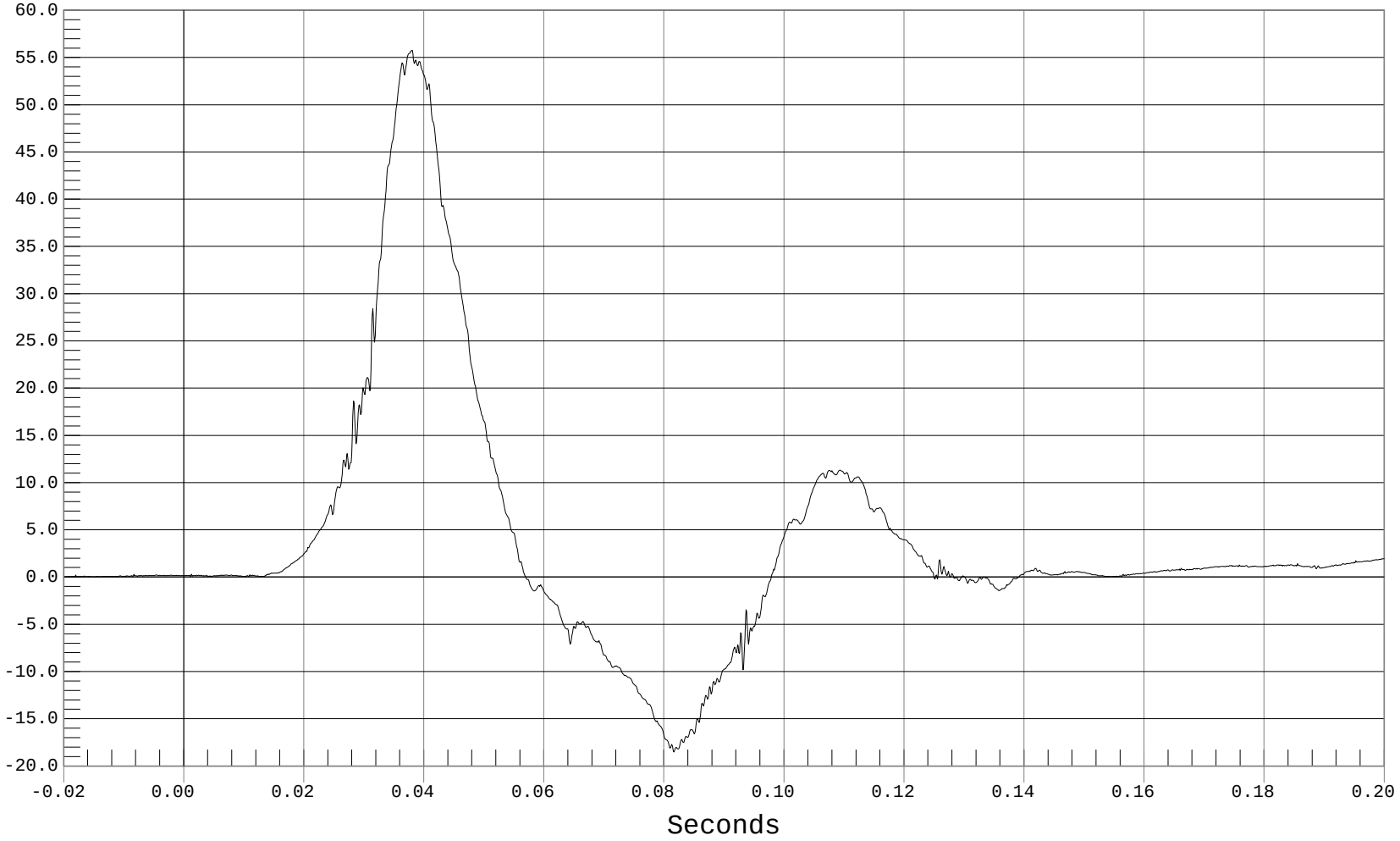
DRIVER PELVIS Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 1000

1 DRIVER PELVIS Y, b01062AT.A13

Ymin = -18.52 G's @ 0.0816 Seconds, Ymax = 55.76 G's @ 0.0380 Seconds



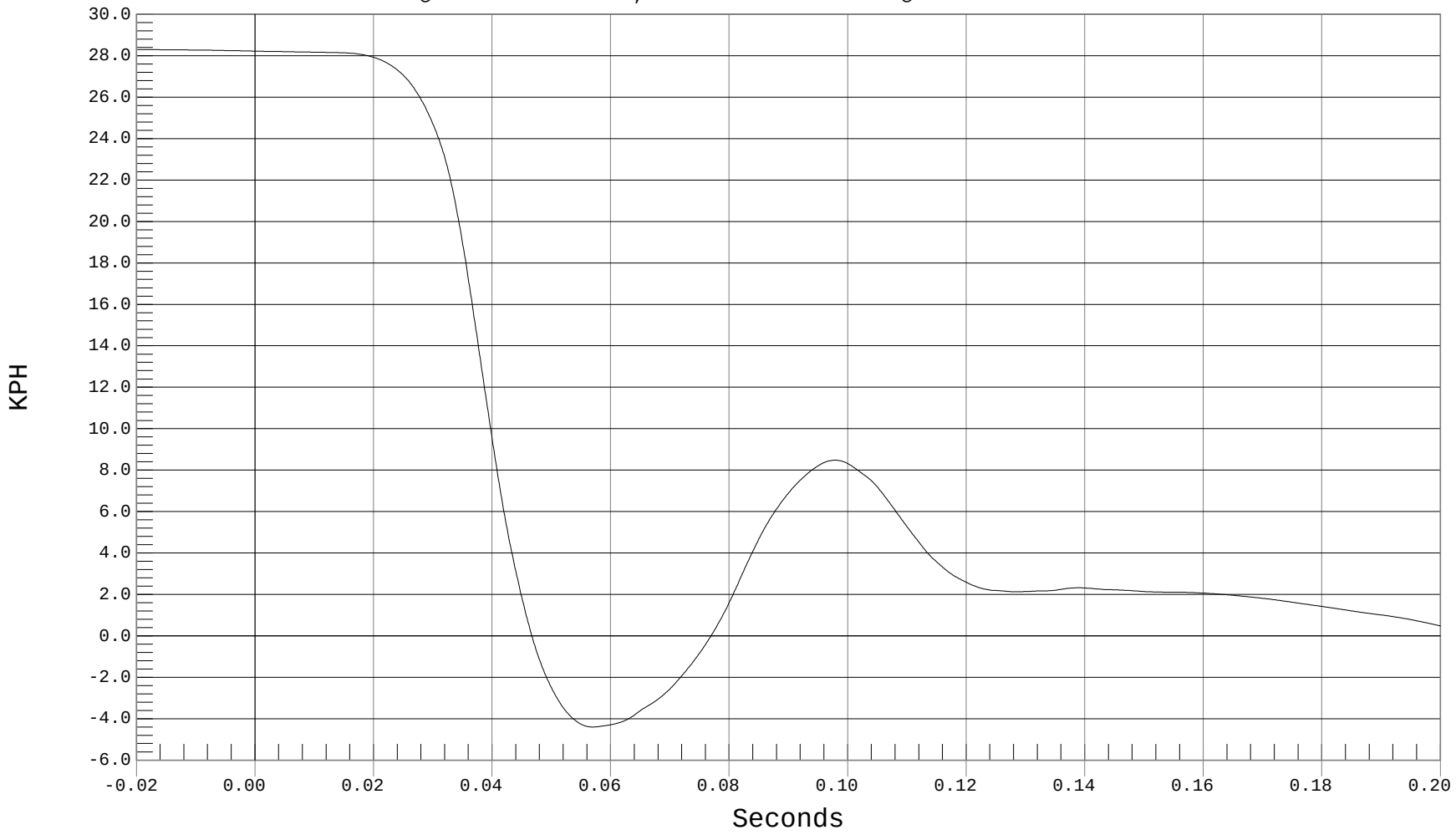
DRIVER PELVIS Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 DRIVER PELVIS Y VELOCITY, b01062AI.V13

Ymin = -4.4 KPH @ 0.0569 Seconds, Ymax = 28.3 KPH @ -0.0199 Seconds



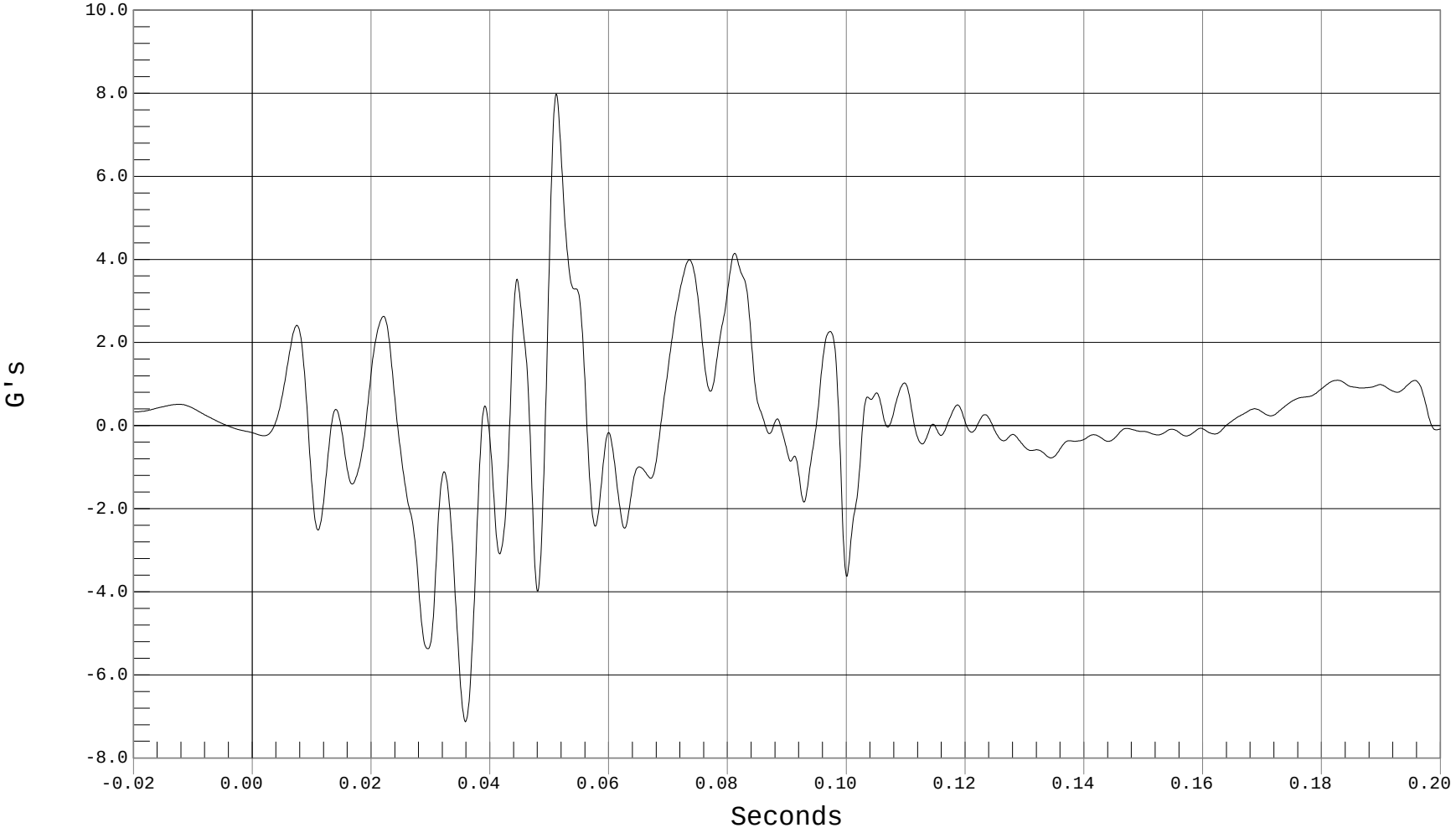
VEHICLE CG X ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 60

1 VEHICLE CG X, b01062AF.A14

Ymin = -7.13 G's @ 0.0358 Seconds, Ymax = 7.98 G's @ 0.0511 Seconds



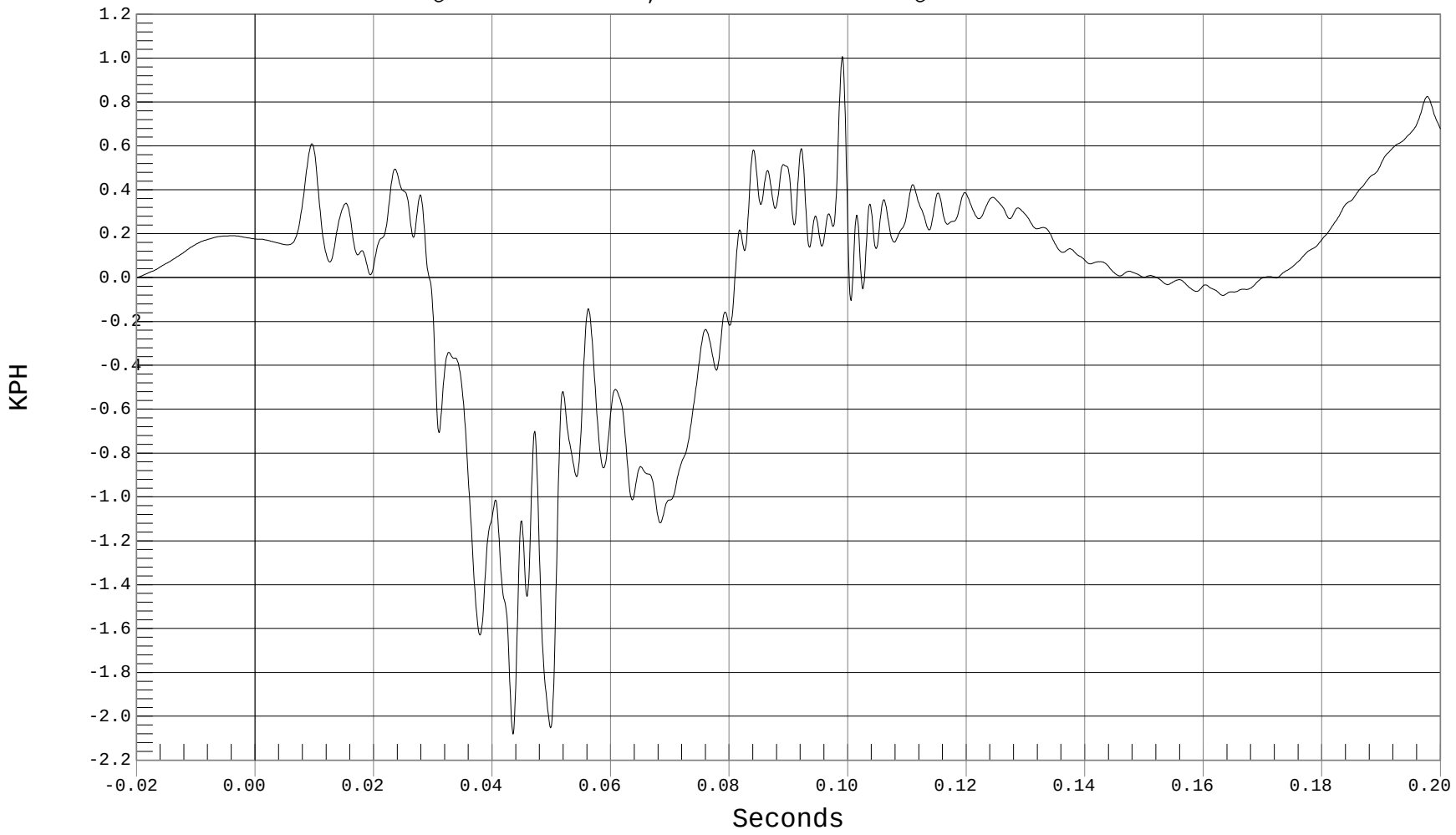
VEHICLE CG X VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 VEHICLE CG X VELOCITY, b01062AI.V14

Ymin = -2.08 KPH @ 0.0434 Seconds, Ymax = 1.01 KPH @ 0.0990 Seconds



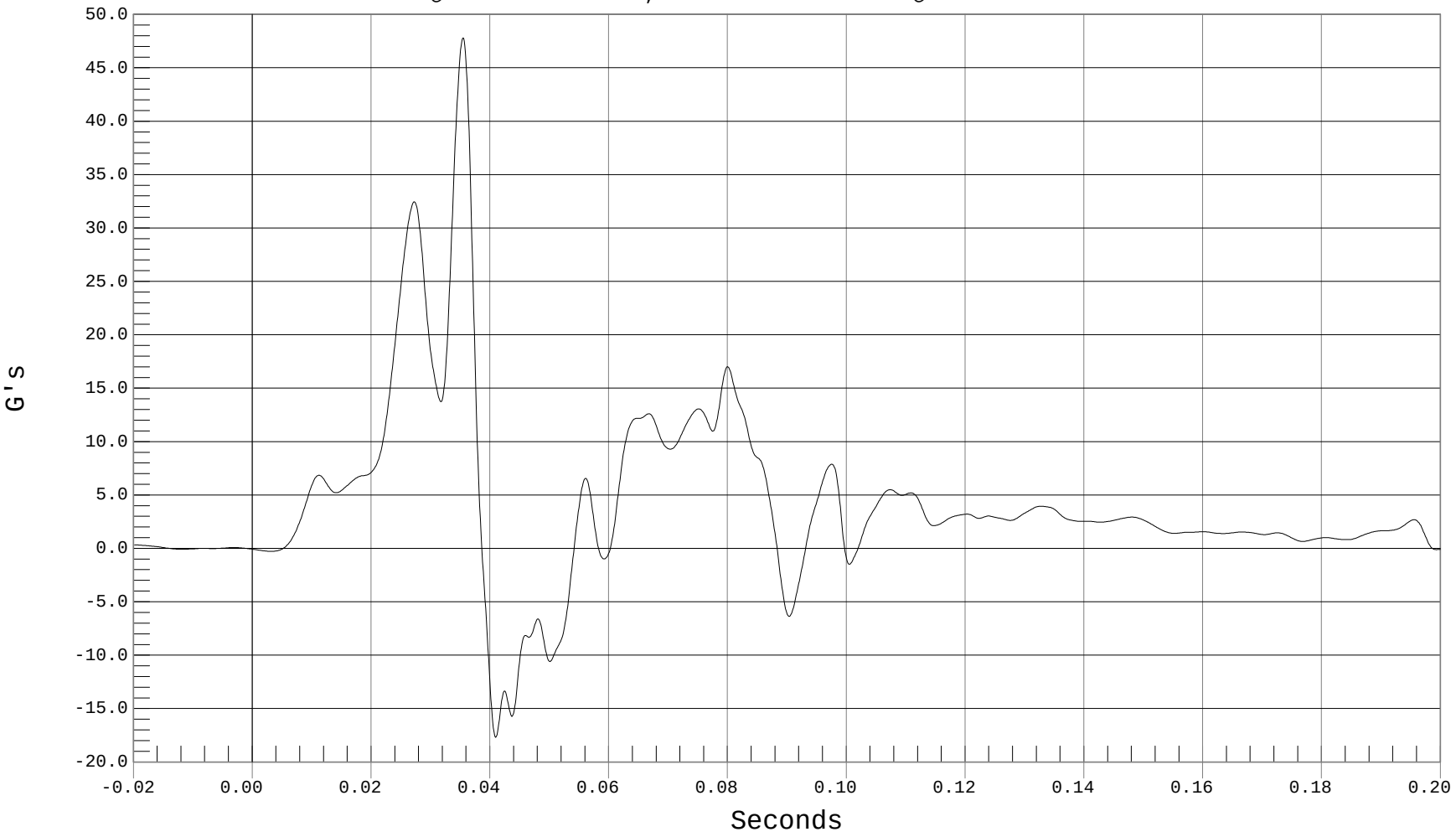
VEHICLE CG Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 60

1 VEHICLE CG Y, b01062AF.A15

Ymin = -17.7 G's @ 0.0409 Seconds, Ymax = 47.8 G's @ 0.0354 Seconds



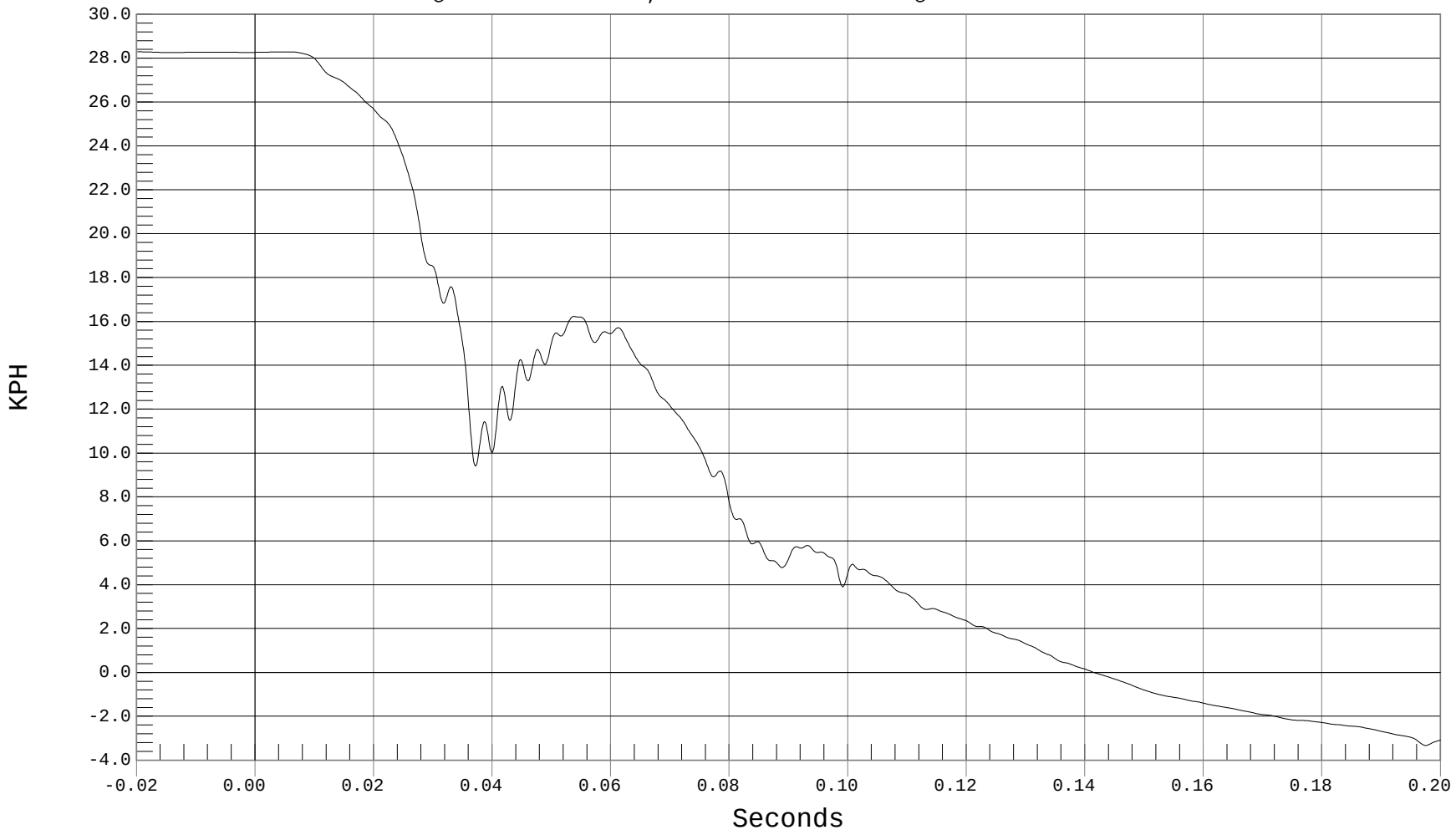
VEHICLE CG Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 VEHICLE CG Y VELOCITY, b01062AI.V15

Ymin = -3.33 KPH @ 0.1974 Seconds, Ymax = 28.3 KPH @ -0.0199 Seconds



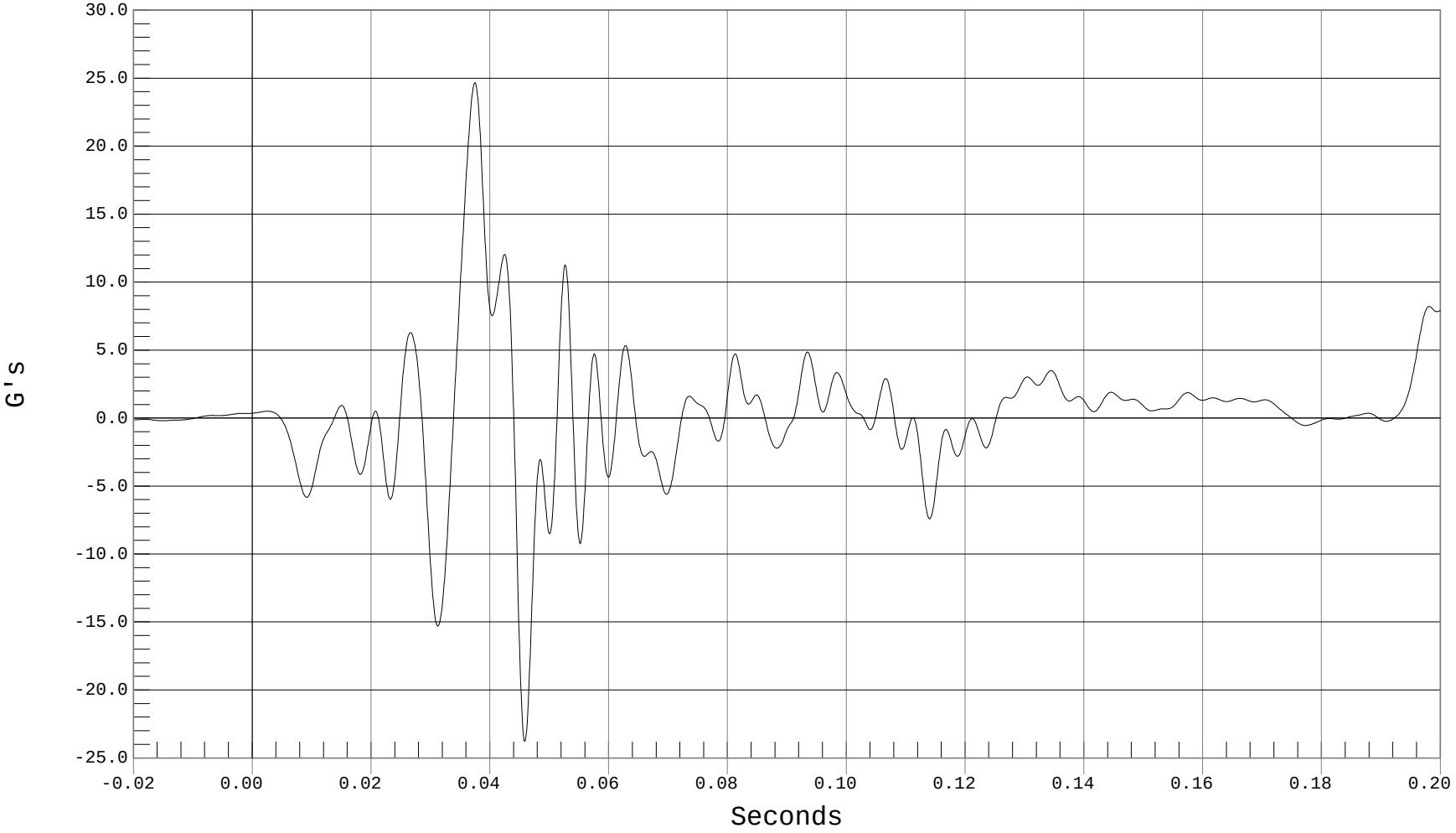
VEHICLE CG Z ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 60

1 VEHICLE CG Z, b01062AF.A16

Ymin = -23.79 G's @ 0.0458 Seconds, Ymax = 24.68 G's @ 0.0374 Seconds



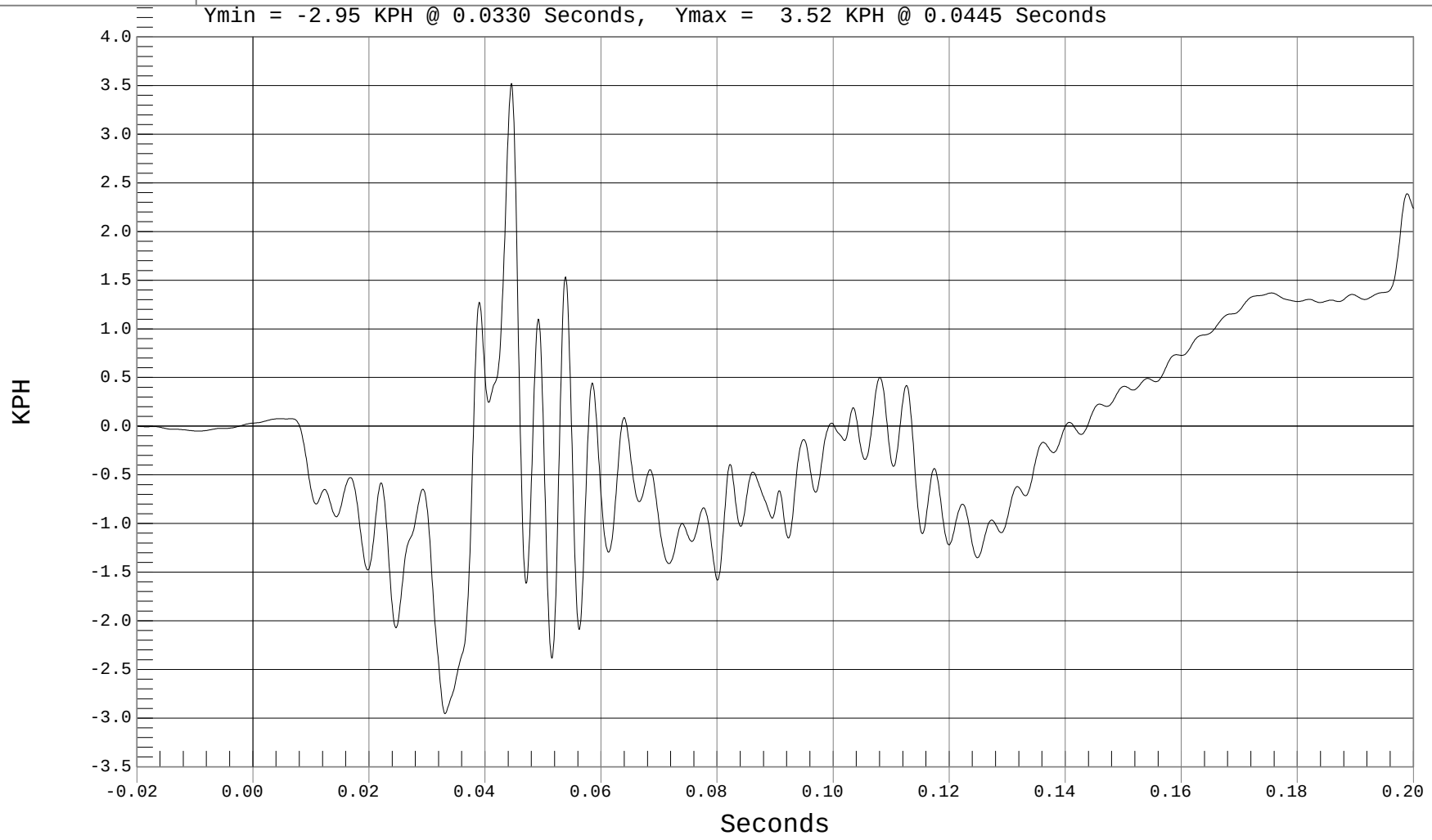
VEHICLE CG Z VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 VEHICLE CG Z VELOCITY, b01062AI.V16

Ymin = -2.95 KPH @ 0.0330 Seconds, Ymax = 3.52 KPH @ 0.0445 Seconds

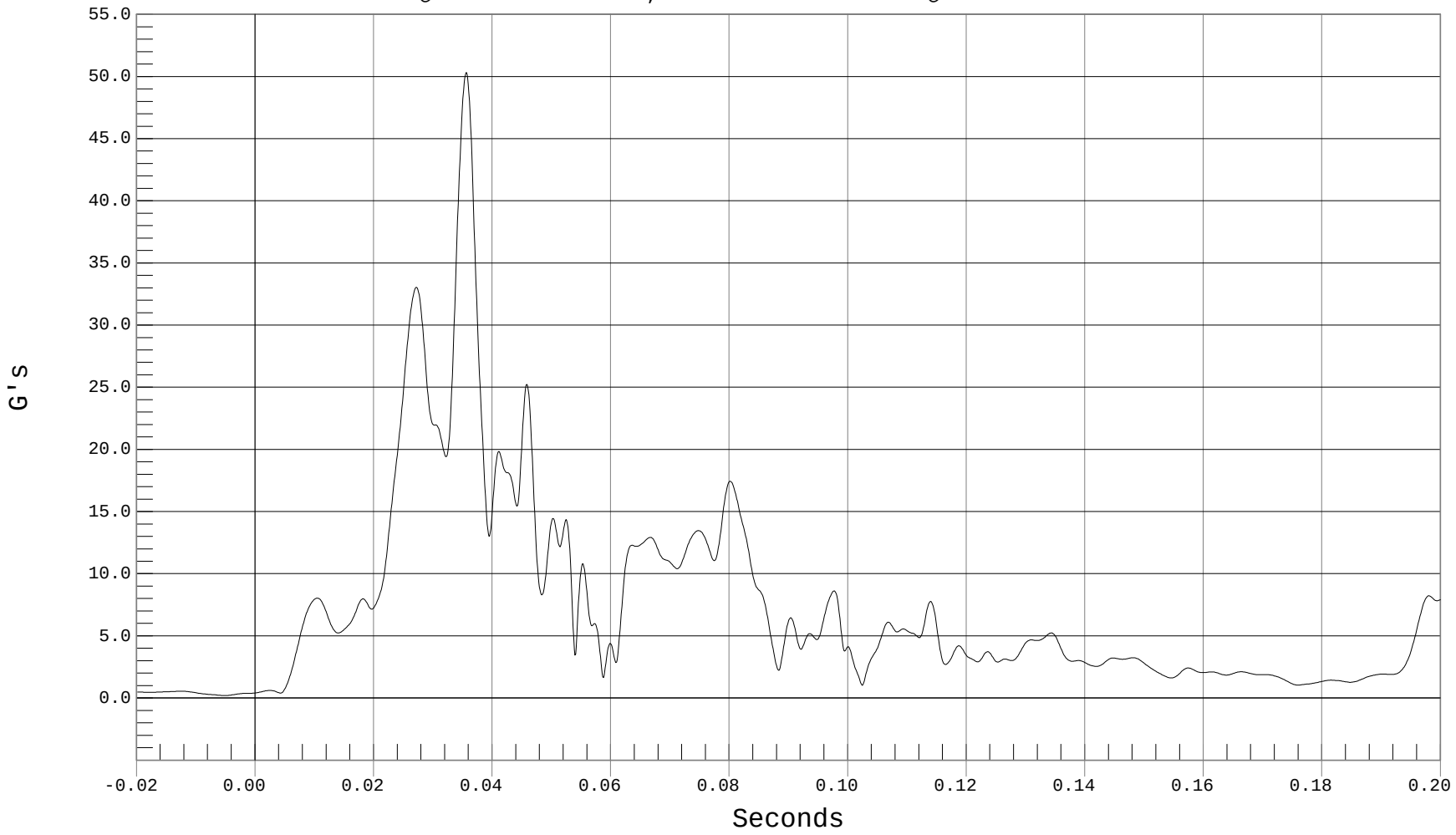


VEHICLE CG RESULTANT ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105) | Test Date: 06-06-01
Component: 2001 LEXUS GS300 4 DOOR SEDAN | Speed: 17.6 MPH, 28.3 KPH
Other Info: | Filter Class: 60

1 VEHICLE CG RESULTANT ACCELERATION, b01062AV.A14

Ymin = .19 G's @ -0.0052 Seconds, Ymax = 50.32 G's @ 0.0356 Seconds



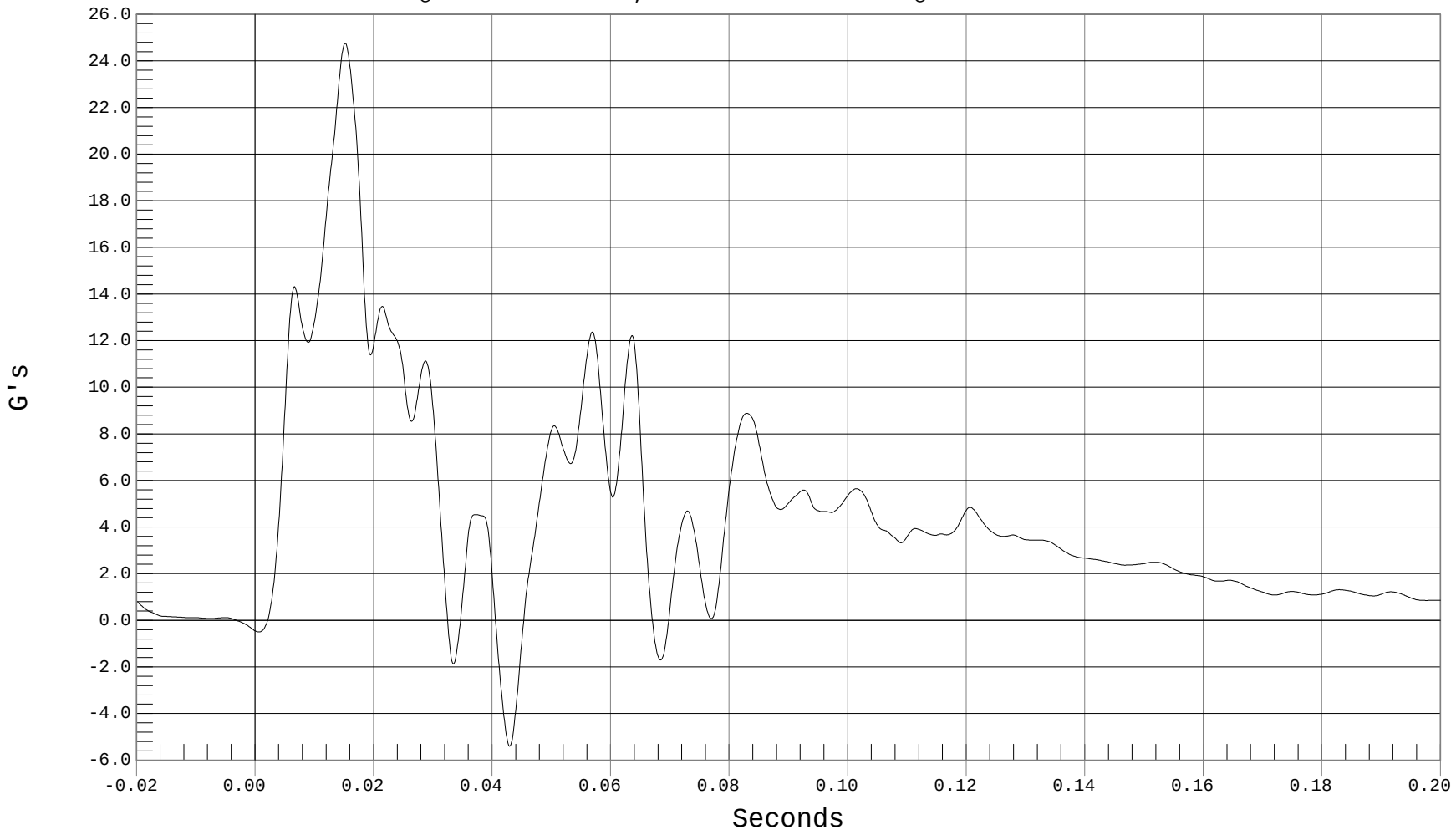
LEFT FLOOR @ SILL Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 60

1 LEFT FLOOR SILL Y, b01062AF.A17

Ymin = -5.4 G's @ 0.0429 Seconds, Ymax = 24.75 G's @ 0.0151 Seconds



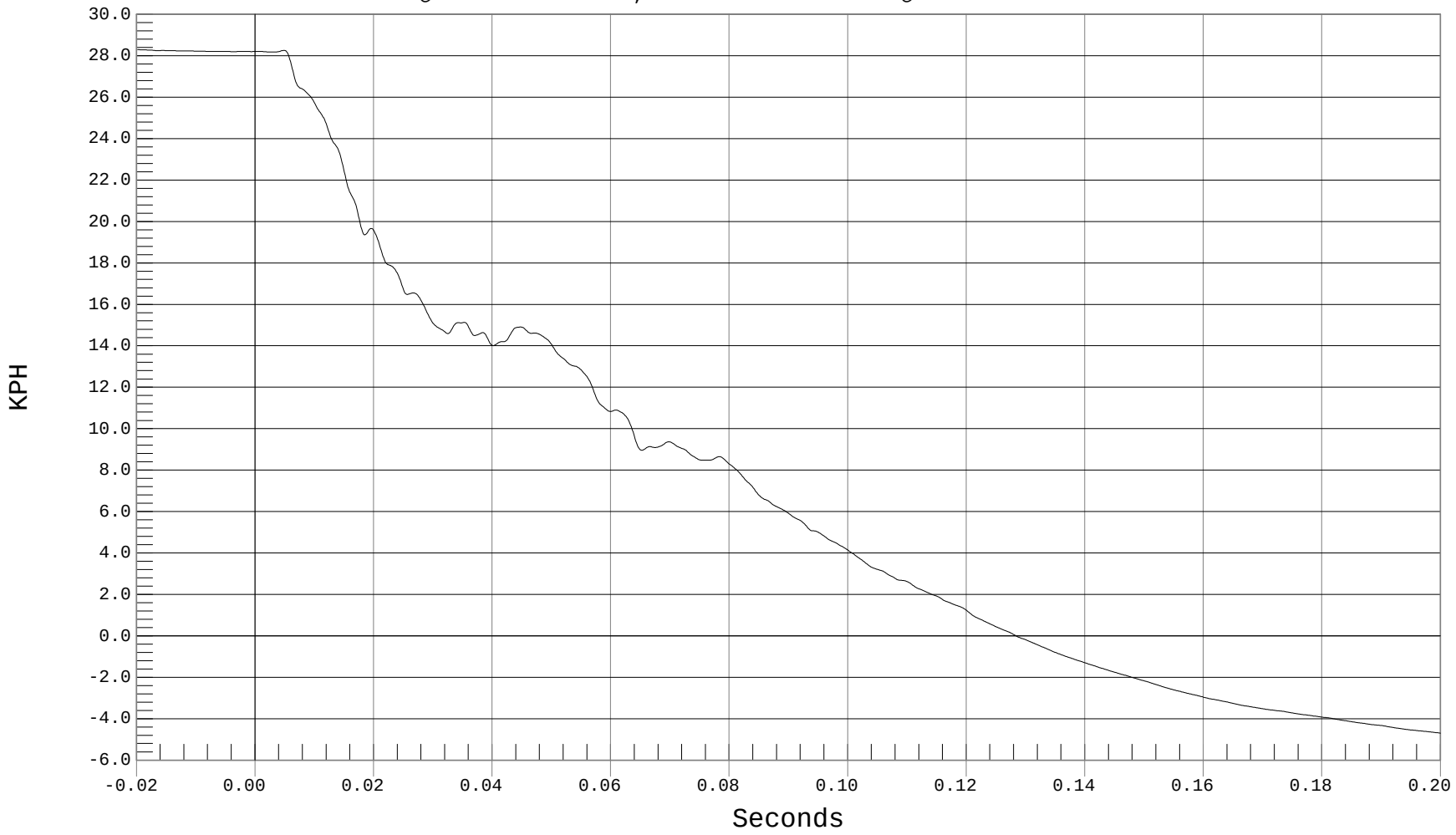
LEFT FLOOR @ SILL Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 LEFT FLOOR SILL Y VELOCITY, b01062AI.V17

Ymin = -4.7 KPH @ 0.2000 Seconds, Ymax = 28.3 KPH @ -0.0199 Seconds



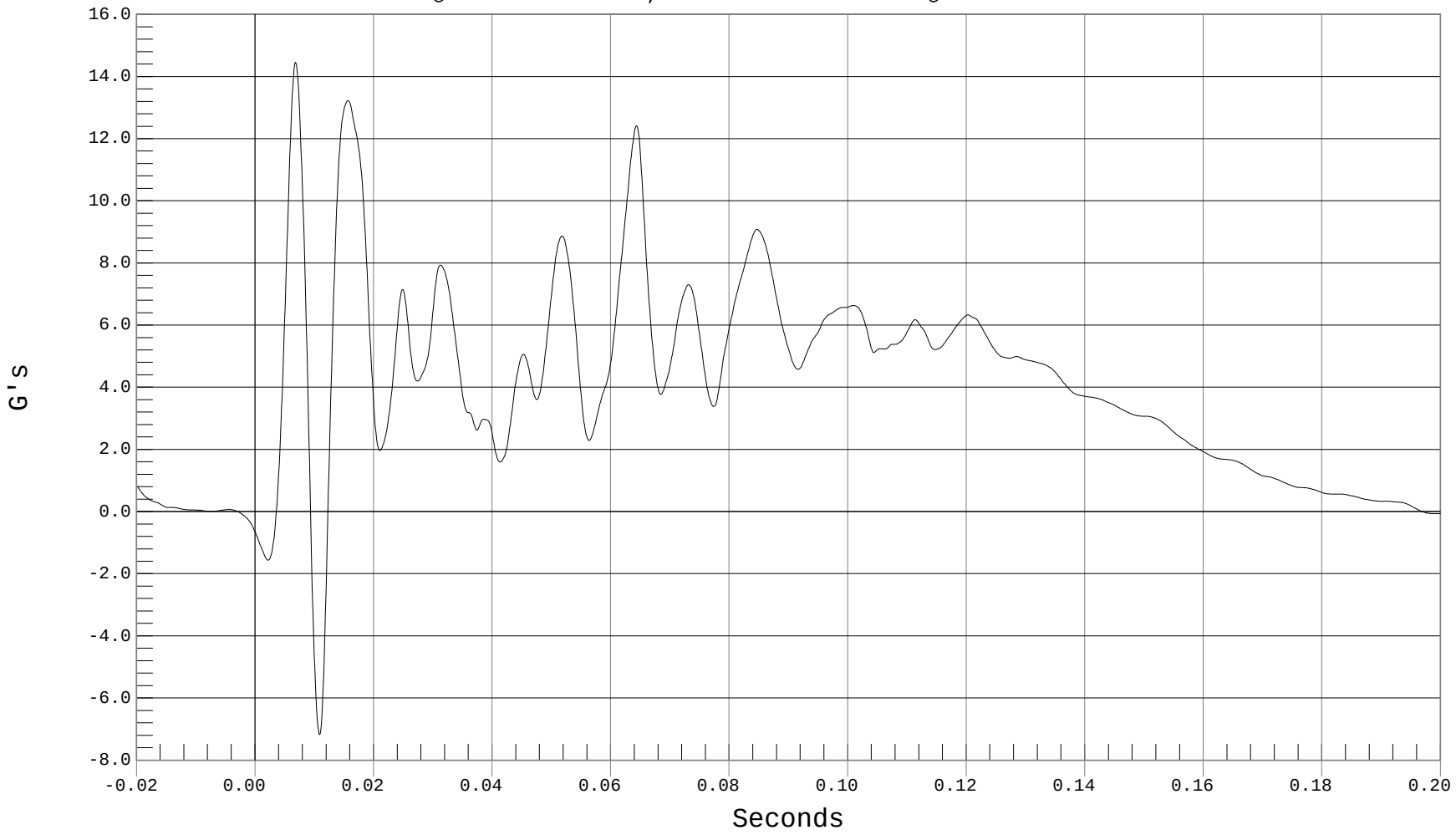
LEFT A-PILLAR @ SILL Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 60

1 LEFT A-PILLAR @ SILL Y, b01062AF.A18

Ymin = -7.17 G's @ 0.0108 Seconds, Ymax = 14.45 G's @ 0.0068 Seconds



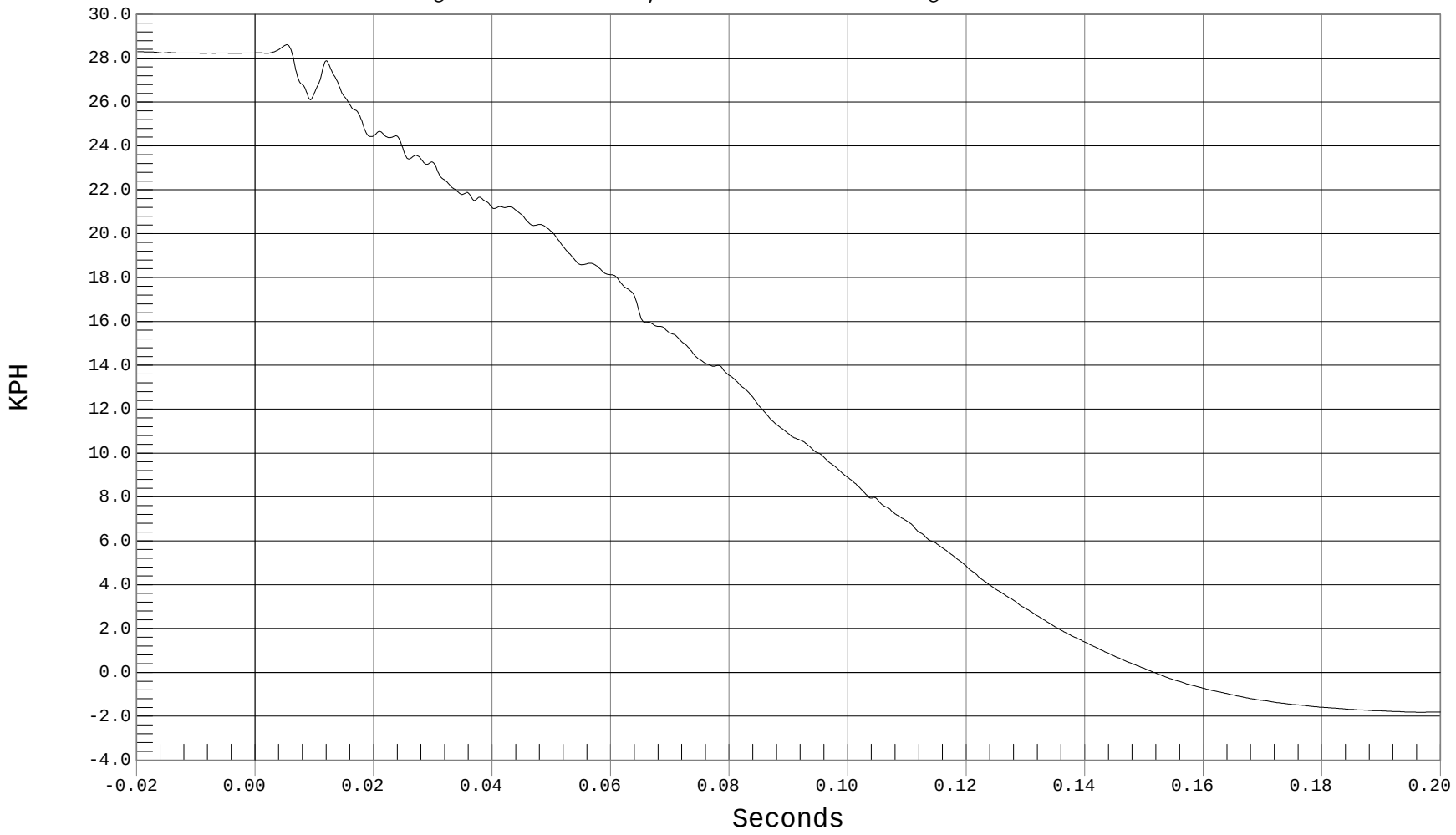
LEFT A-PILLAR @ SILL Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 A PILLAR SILL Y VELOCITY, b01062AI.V18

Ymin = -1.82 KPH @ 0.1968 Seconds, Ymax = 28.61 KPH @ 0.0053 Seconds



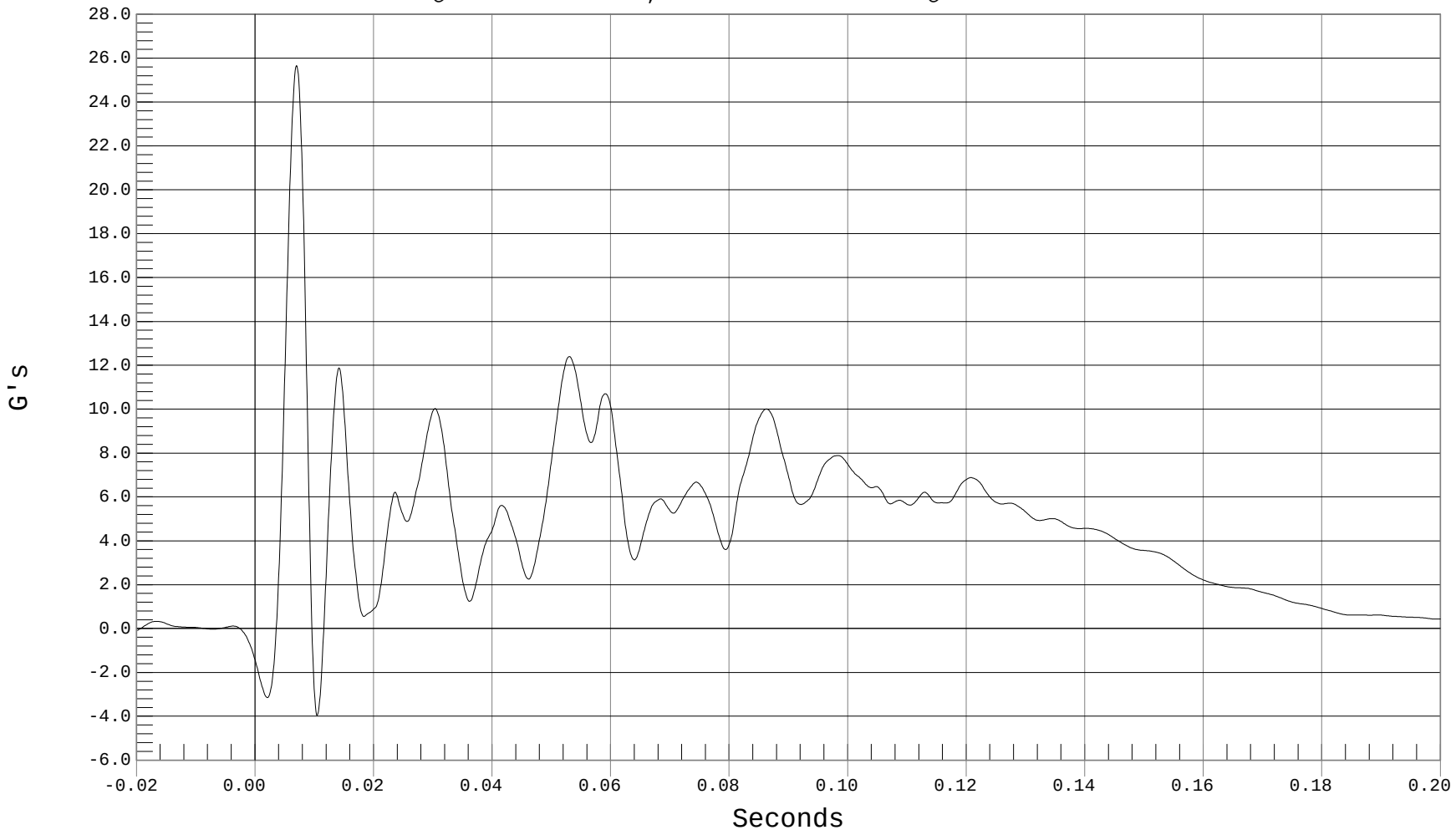
LEFT A-PILLAR LOWER Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 60

1 LEFT A-PILLAR LOWER Y, b01062AF.A19

Ymin = -3.97 G's @ 0.0104 Seconds, Ymax = 25.66 G's @ 0.0069 Seconds



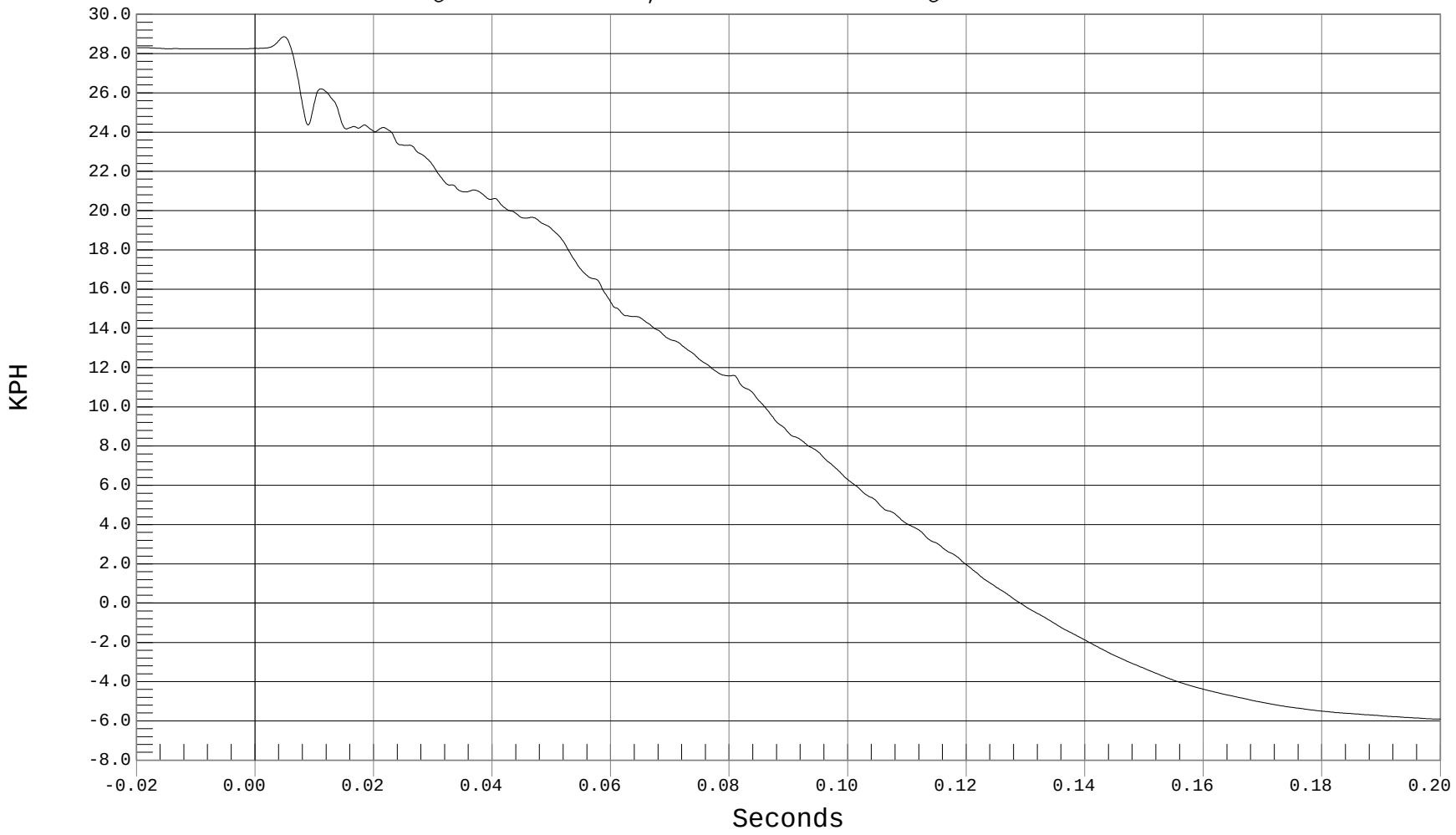
LEFT A-PILLAR LOWER Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 A PILLAR LOW Y VELOCITY, b01062AI.V19

Ymin = -5.91 KPH @ 0.2000 Seconds, Ymax = 28.86 KPH @ 0.0048 Seconds



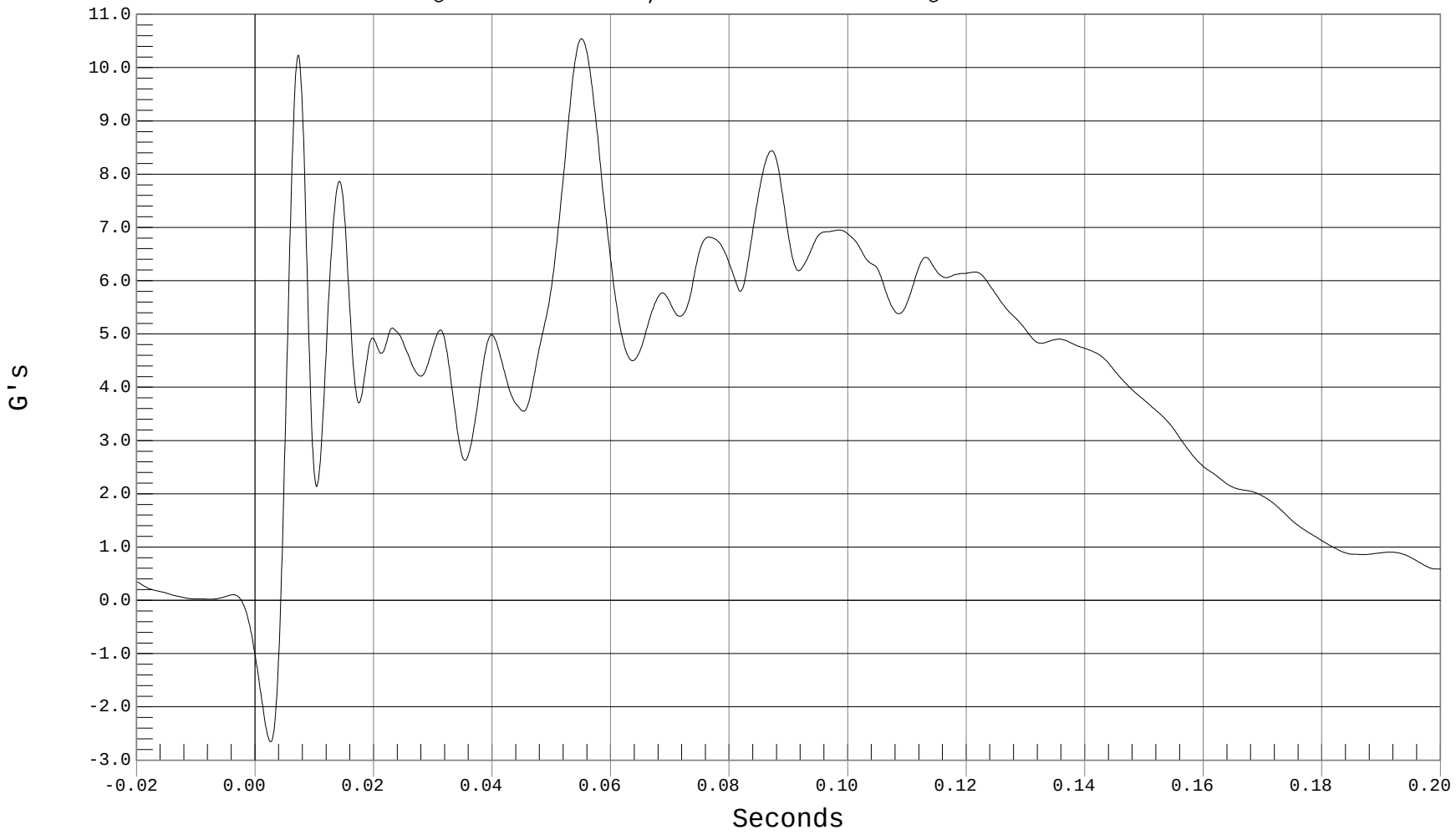
LEFT A-PILLAR MID Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 60

1 LEFT A-PILLAR MID Y, b01062AF.A20

Ymin = -2.66 G's @ 0.0025 Seconds, Ymax = 10.54 G's @ 0.0550 Seconds



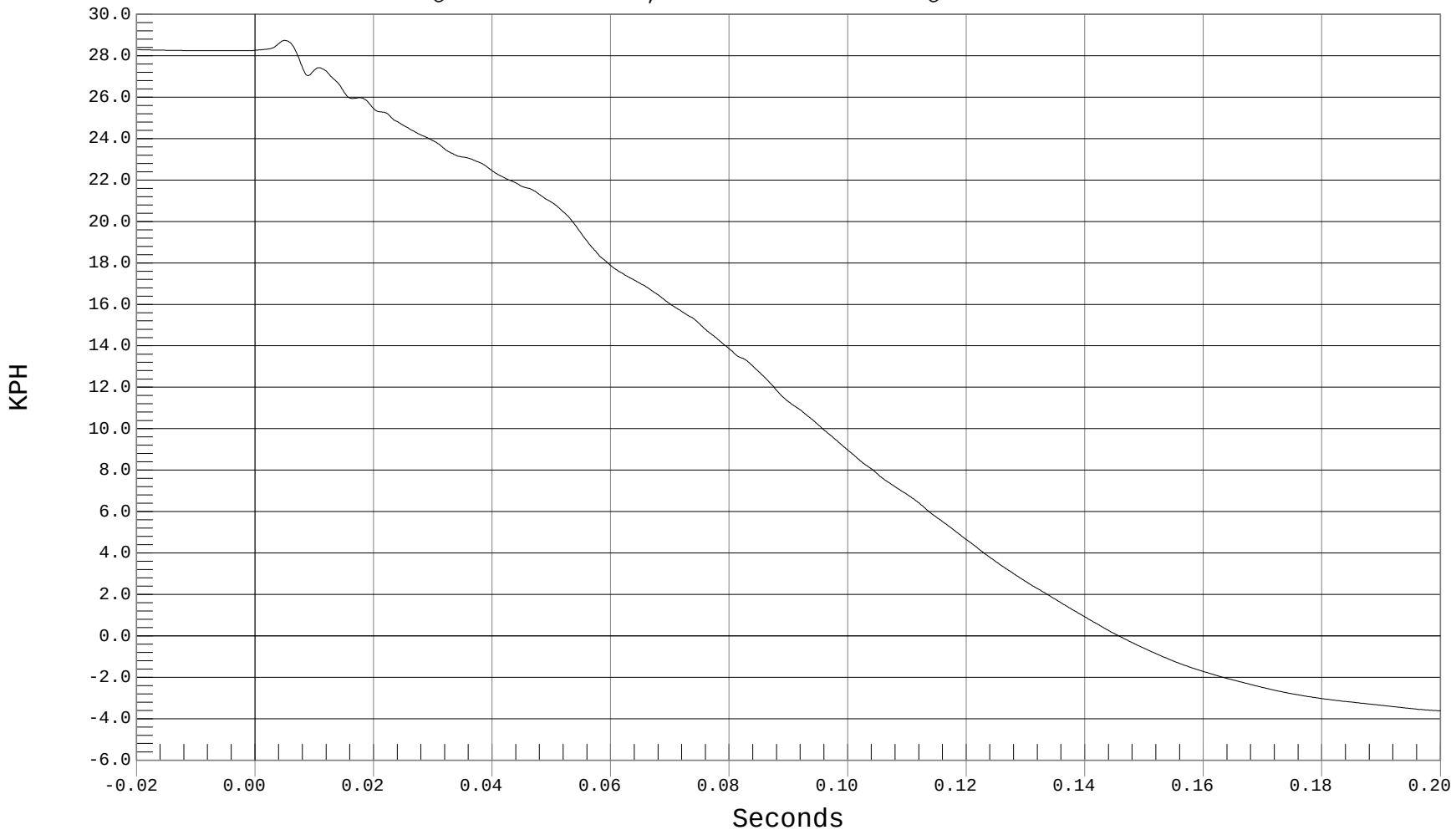
LEFT A-PILLAR MID Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 A PILLAR MID Y VELOCITY, b01062AI.V20

Ymin = -3.62 KPH @ 0.2000 Seconds, Ymax = 28.74 KPH @ 0.0049 Seconds



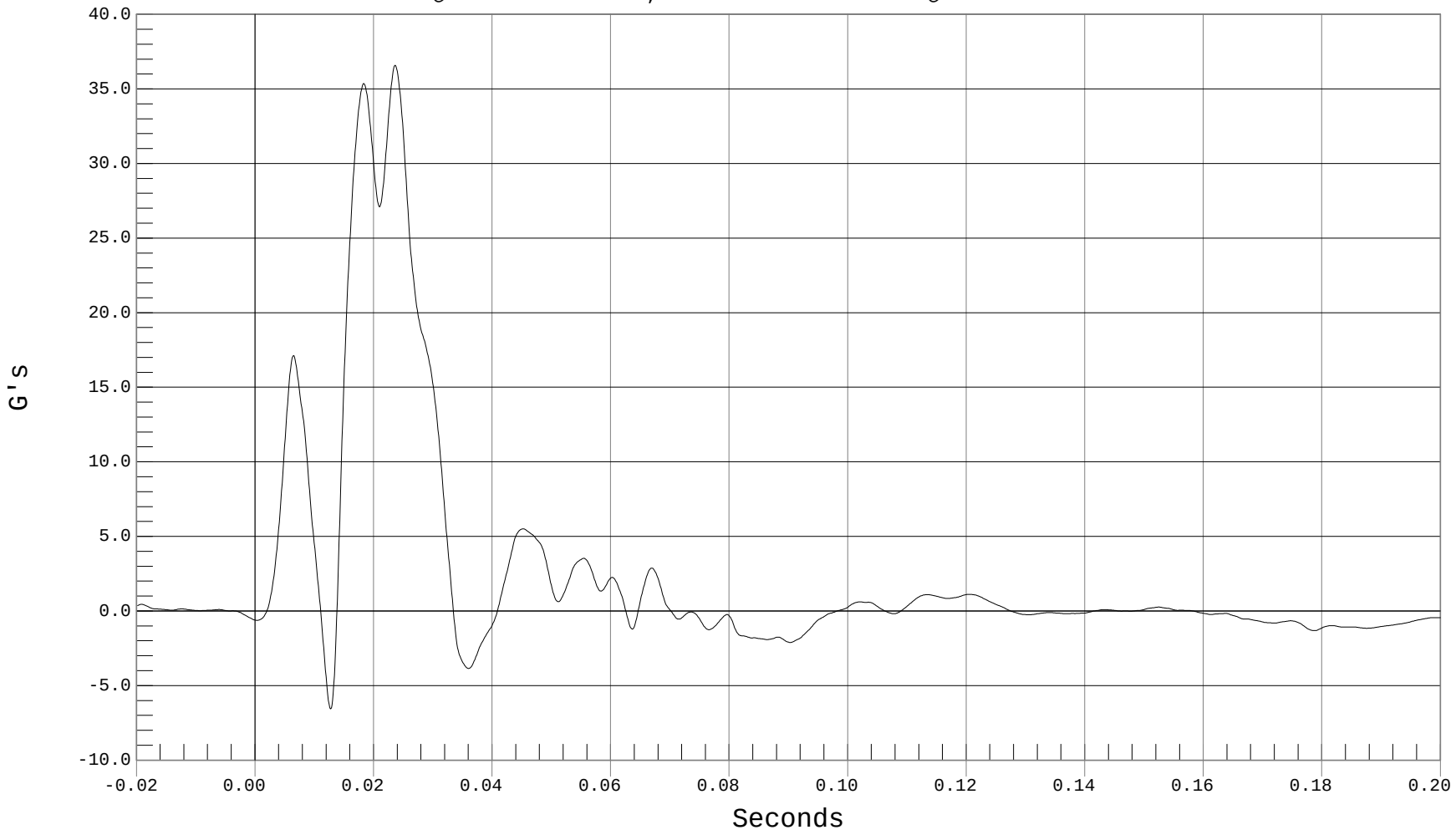
LEFT B-PILLAR @ SILL Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 60

1 LEFT B-PILLAR @ SILL Y, b01062AF.A22

Ymin = -6.57 G's @ 0.0127 Seconds, Ymax = 36.58 G's @ 0.0236 Seconds



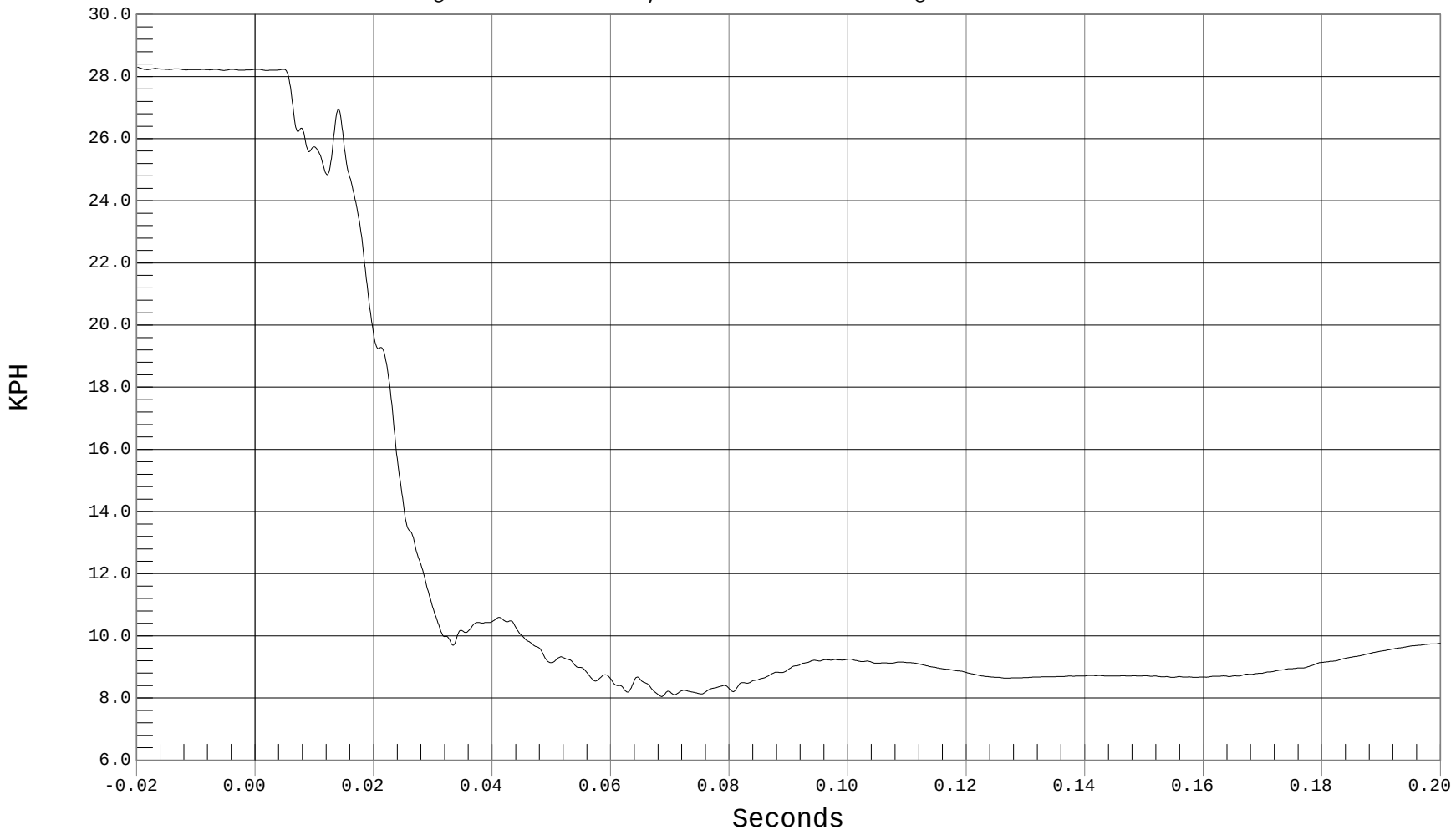
LEFT B-PILLAR @ SILL Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 B PILLAR SILL Y VELOCITY, b01062AI.V22

Ymin = 8.05 KPH @ 0.0685 Seconds, Ymax = 28.3 KPH @ -0.0199 Seconds



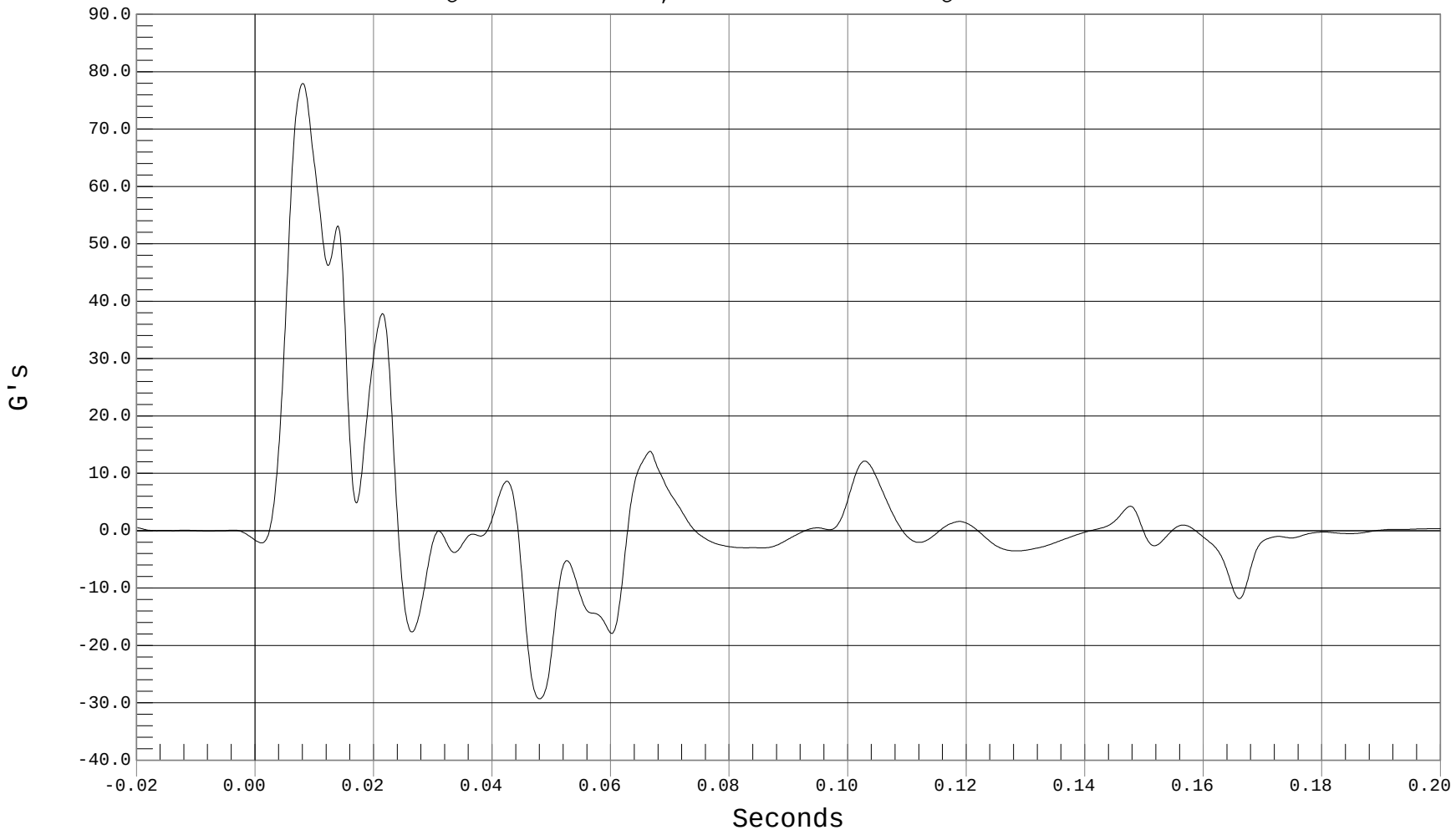
LEFT B-PILLAR LOWER Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 60

1 LEFT B-PILLAR LOWER Y, b01062AF.A23

Ymin = -29.32 G's @ 0.0479 Seconds, Ymax = 77.97 G's @ 0.0080 Seconds



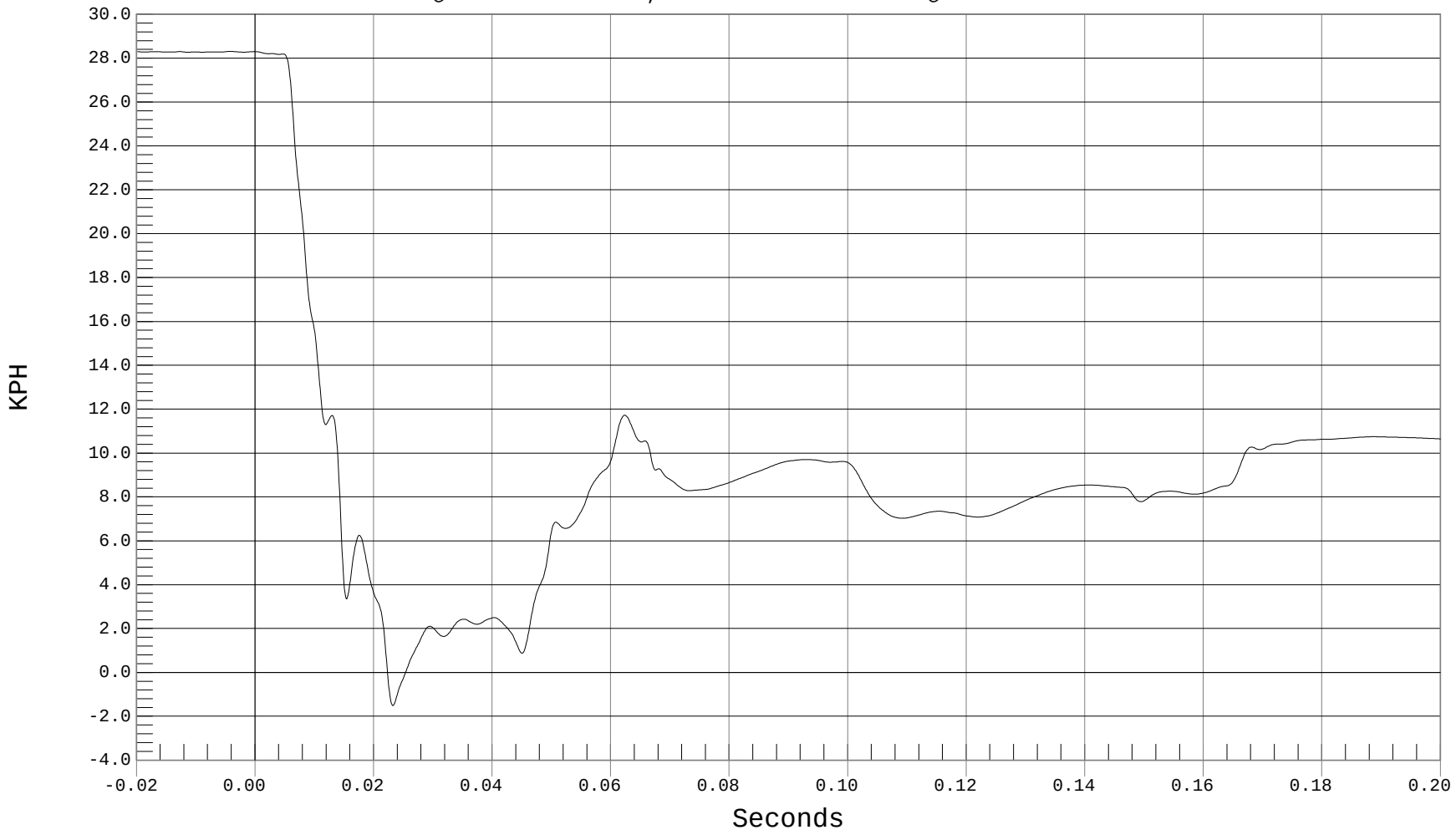
LEFT B-PILLAR LOWER Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 B PILLAR LOW Y VELOCITY, b01062AI.V23

Ymin = -1.52 KPH @ 0.0232 Seconds, Ymax = 28.31 KPH @ -0.0043 Seconds



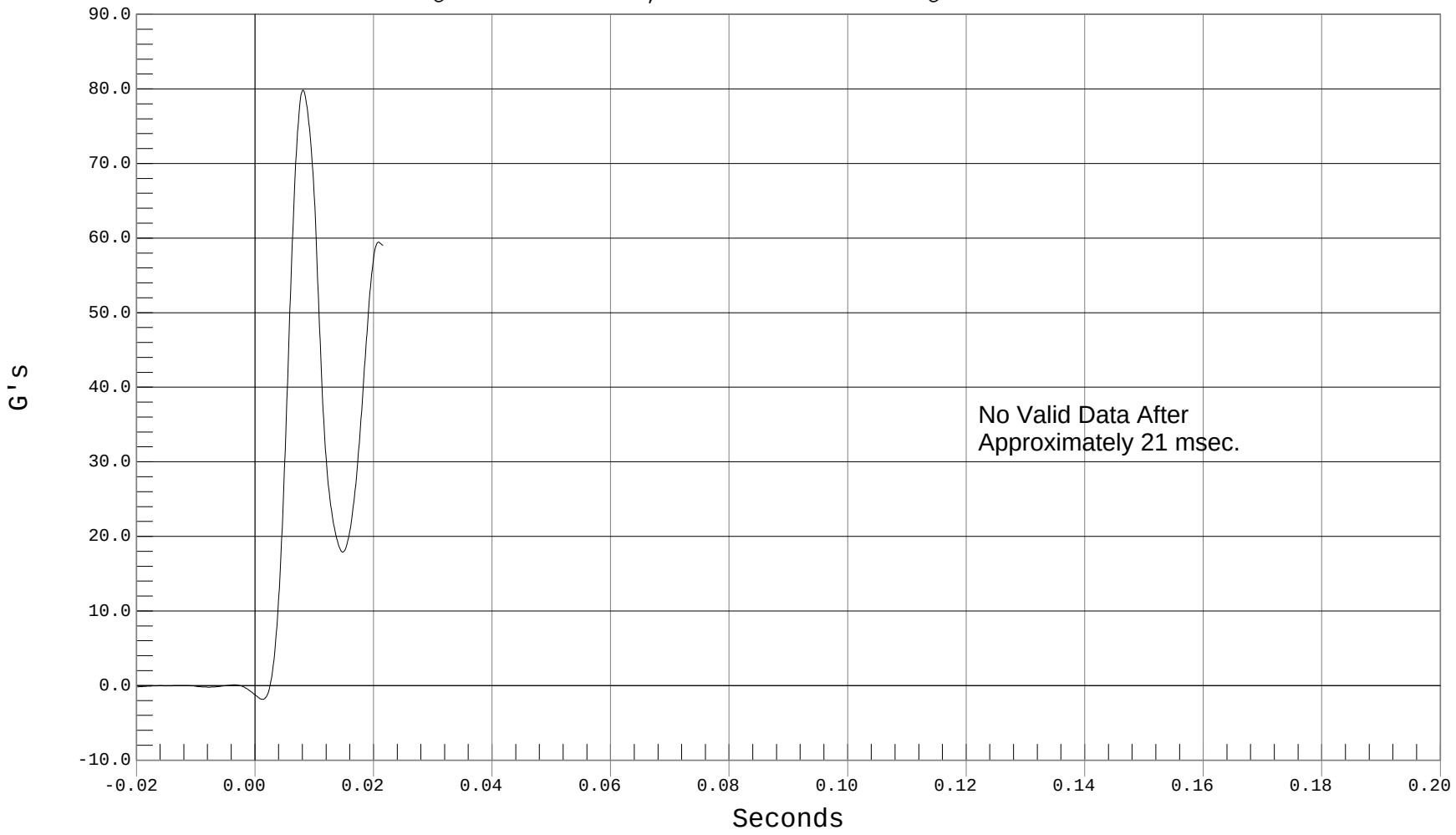
LEFT B-PILLAR MID Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 60

1 LEFT B-PILLAR MID Y, b01062AF.A24

Ymin = -1.85 G's @ 0.0012 Seconds, Ymax = 79.84 G's @ 0.0080 Seconds



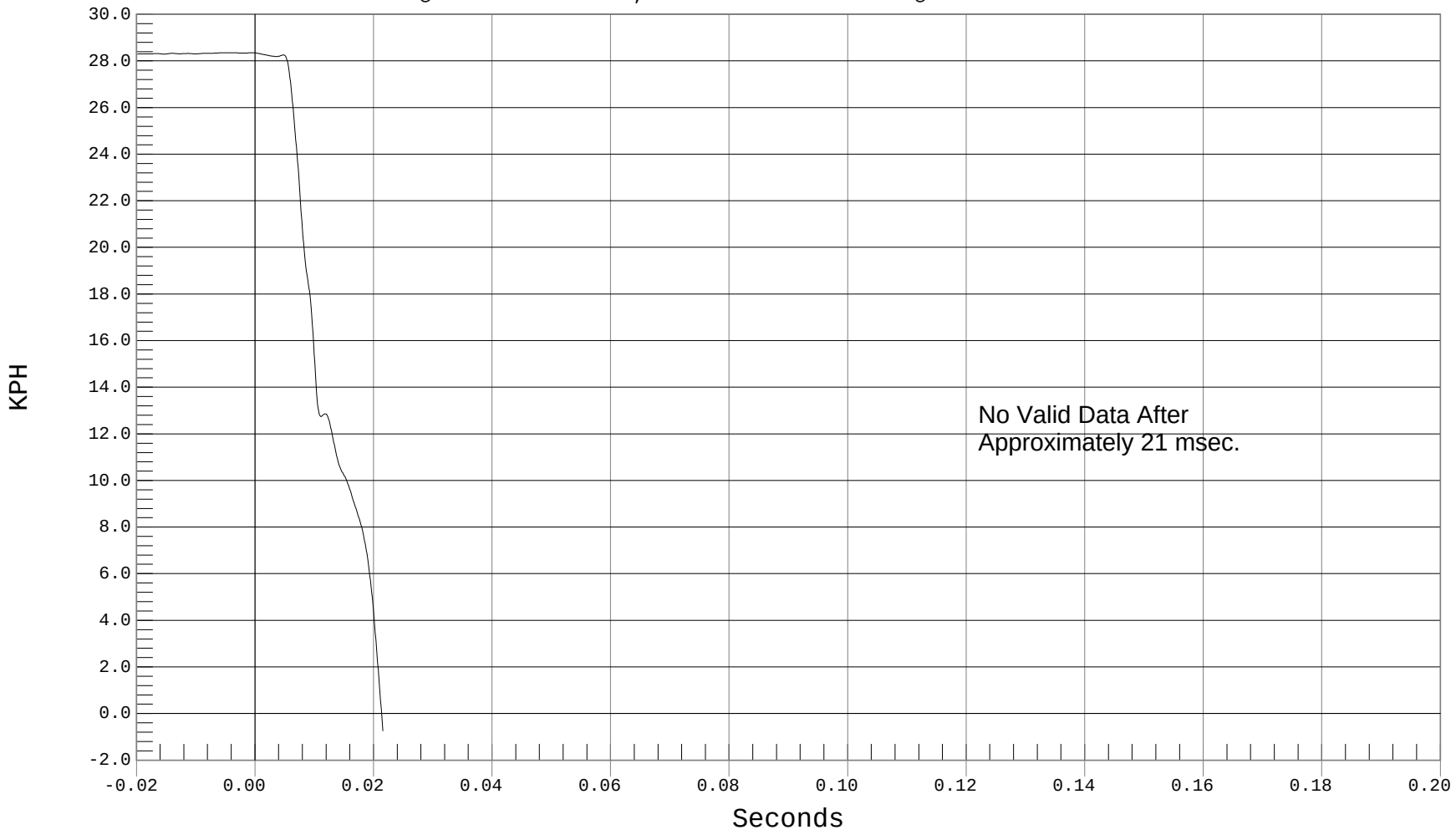
LEFT B-PILLAR MID Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 B PILLAR MID Y VELOCITY, b01062AI.V24

Ymin = -.74 KPH @ 0.0215 Seconds, Ymax = 28.36 KPH @ -0.0039 Seconds



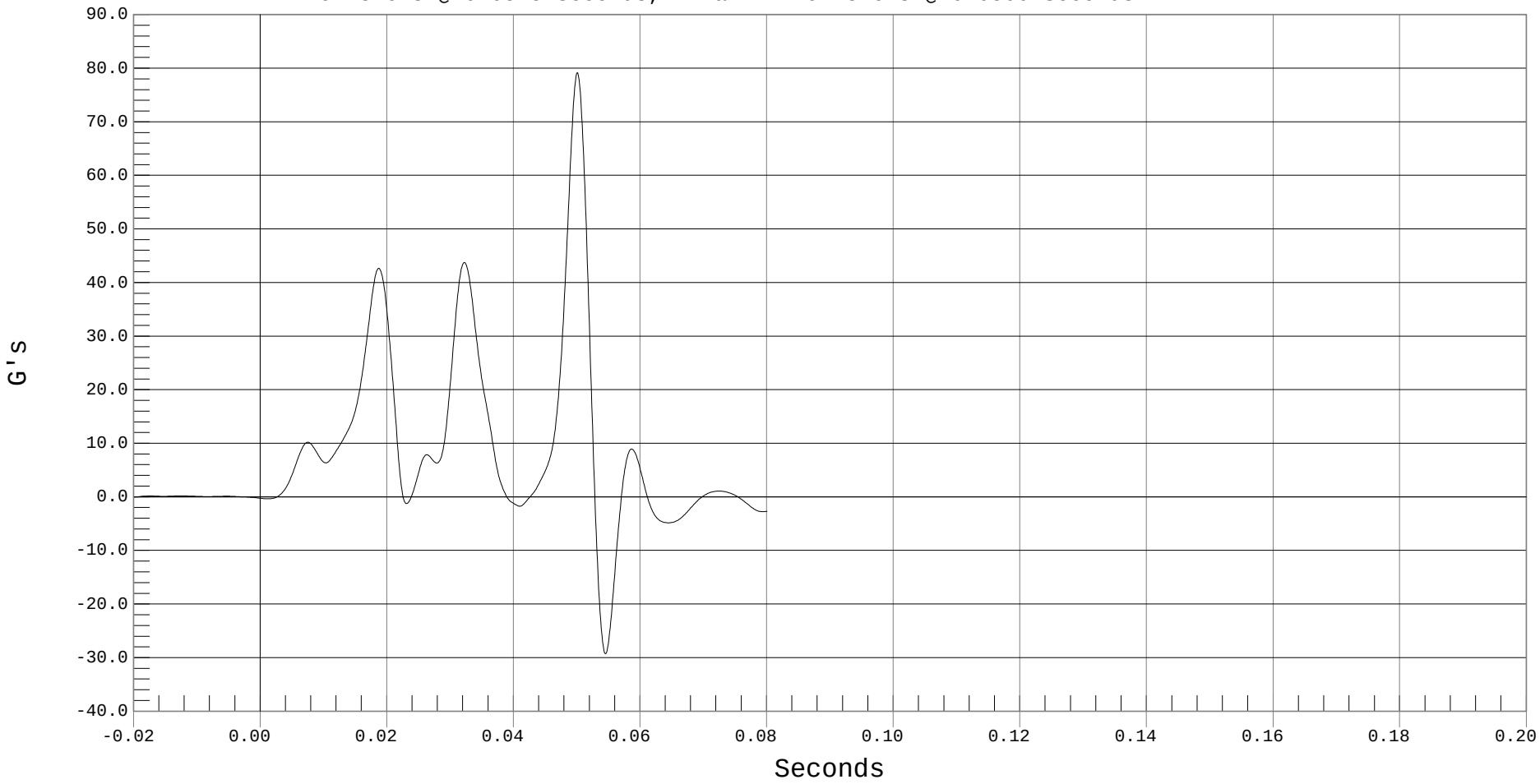
LEFT DRIVER SEAT TRACK Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 60

1 DRIVER SEAT Y, b01062AF.A27

Ymin = -29.28 G's @ 0.0545 Seconds, Ymax = 79.18 G's @ 0.0500 Seconds



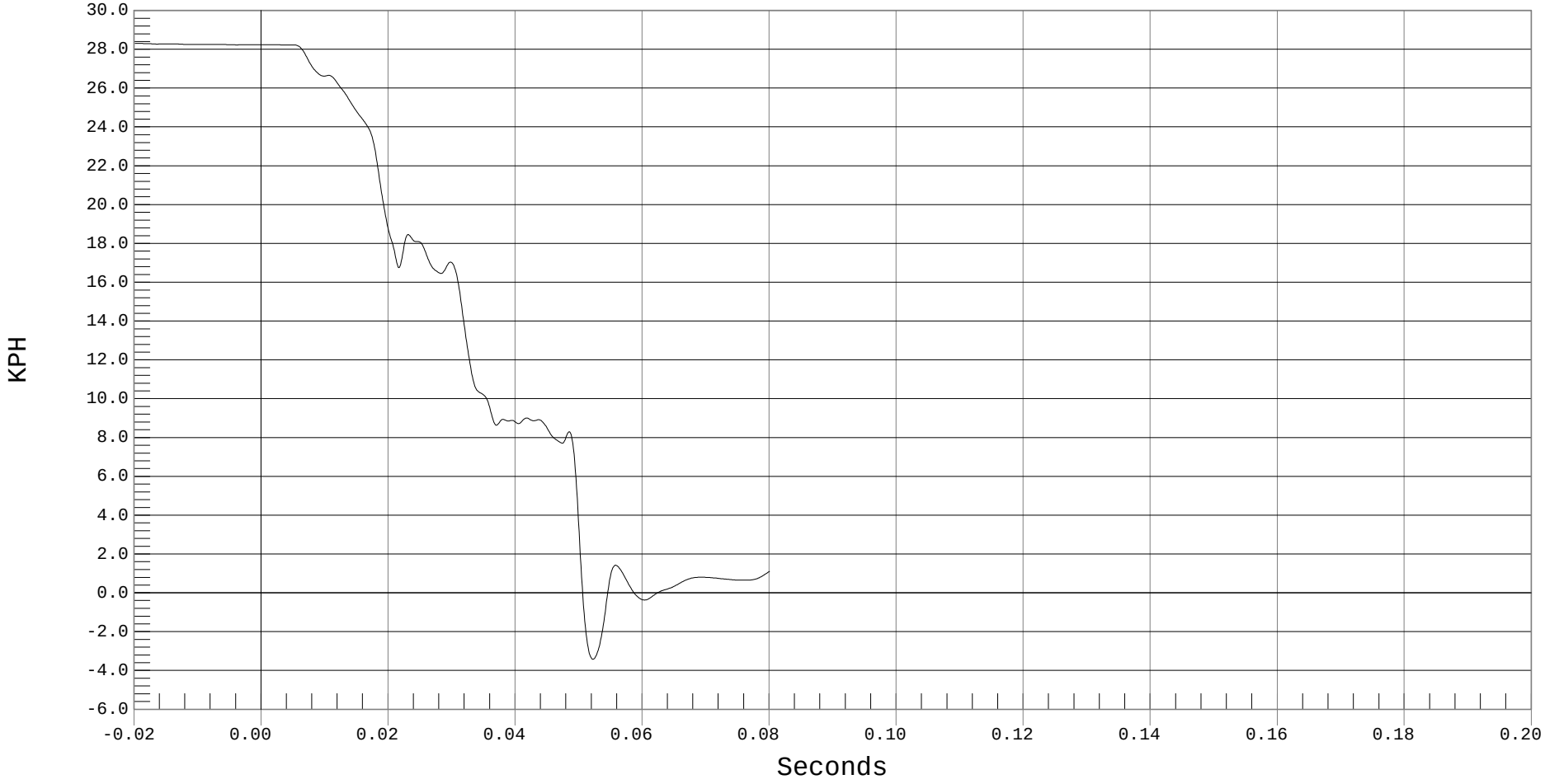
LEFT DRIVER SEAT TRACK Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 DRIVER SEAT Y VELOCITY, b01062AI.V27

Ymin = -3.42 KPH @ 0.0522 Seconds, Ymax = 28.3 KPH @ -0.0195 Seconds



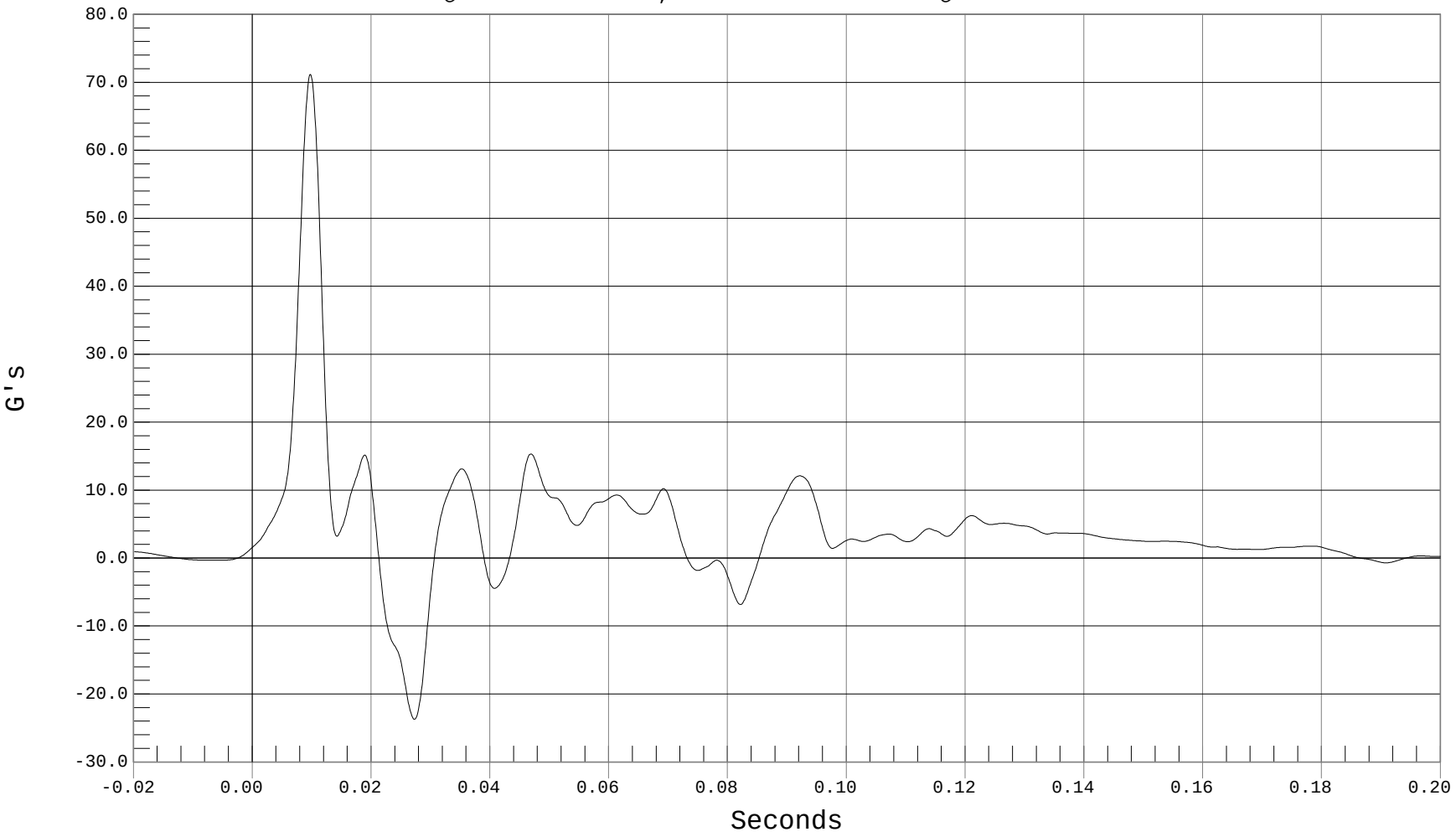
DRIVER DOOR UPPER Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 60

1 DRIVER DOOR UPPER Y, b01062AF.A28

Ymin = -23.72 G's @ 0.0272 Seconds, Ymax = 71.17 G's @ 0.0097 Seconds



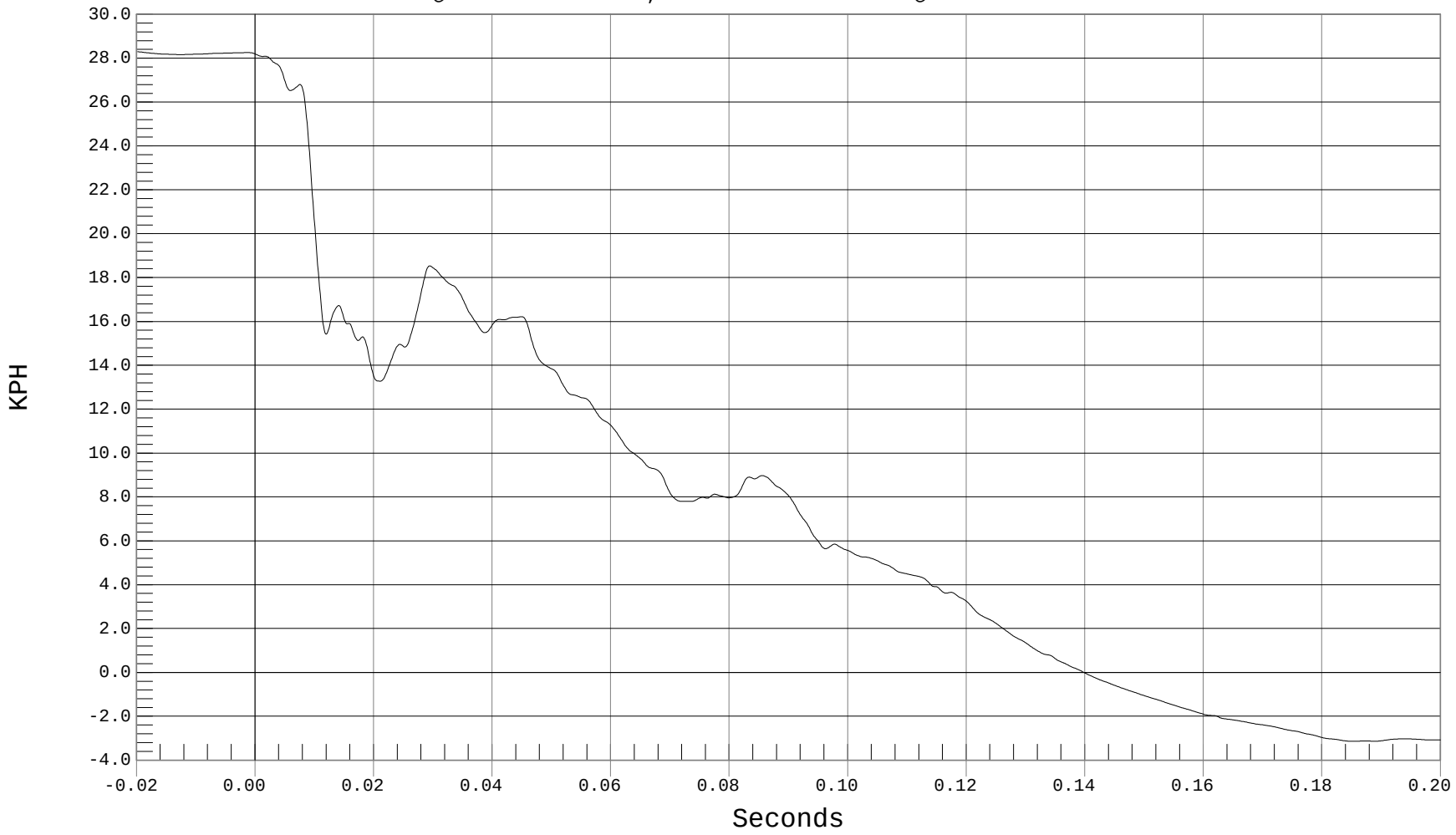
DRIVER DOOR UPPER Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 DRIVER DOOR UPPER Y VELOCITY, b01062AI.V28

Ymin = -3.14 KPH @ 0.1849 Seconds, Ymax = 28.3 KPH @ -0.0199 Seconds



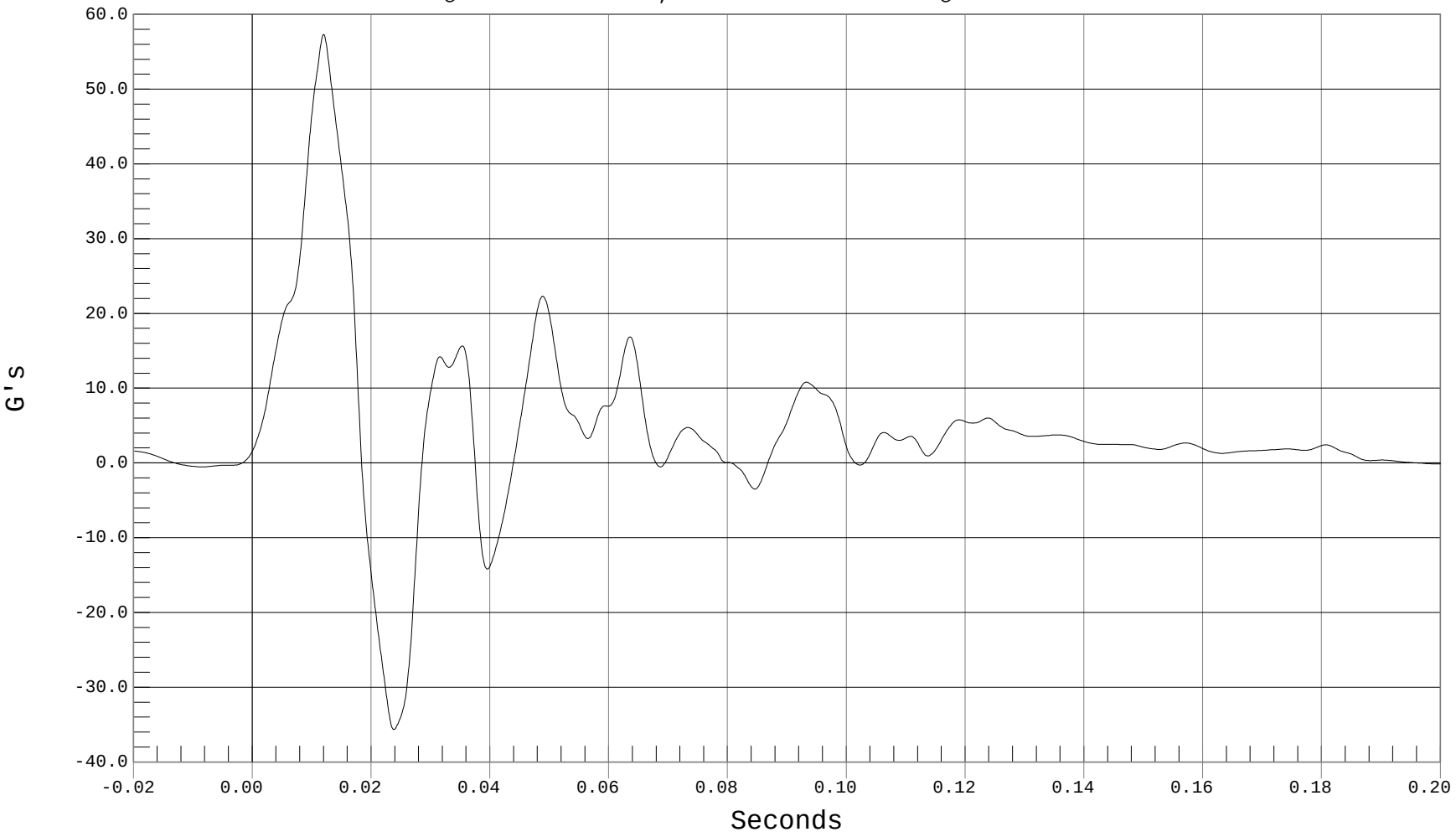
DRIVER DOOR MID Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 60

1 DRIVER DOOR MID Y, b01062AF.A29

Ymin = -35.68 G's @ 0.0237 Seconds, Ymax = 57.32 G's @ 0.0119 Seconds



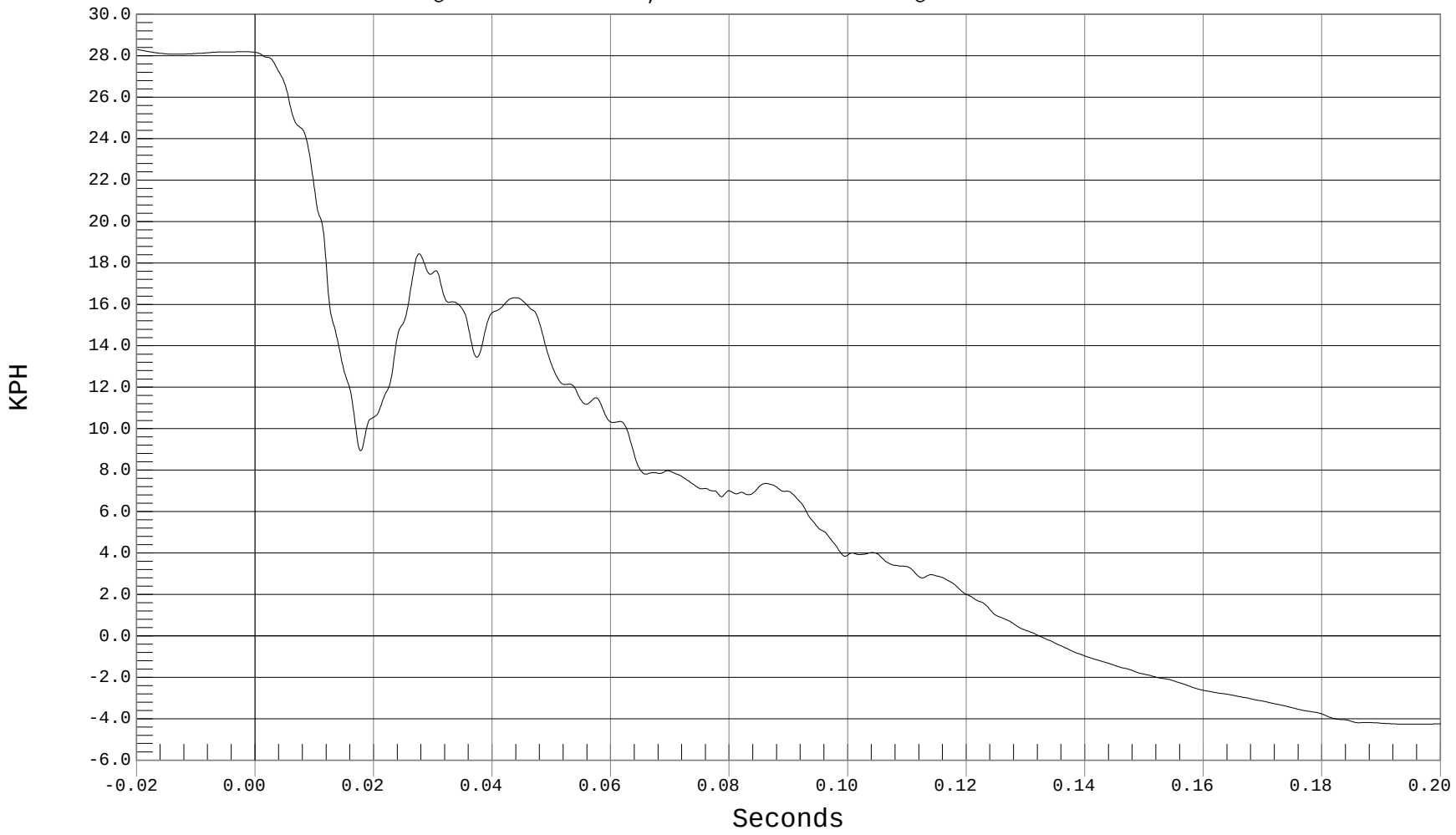
DRIVER DOOR MID Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 DRIVER DOOR MID Y VELOCITY, b01062AI.V29

Ymin = -4.27 KPH @ 0.1973 Seconds, Ymax = 28.3 KPH @ -0.0199 Seconds



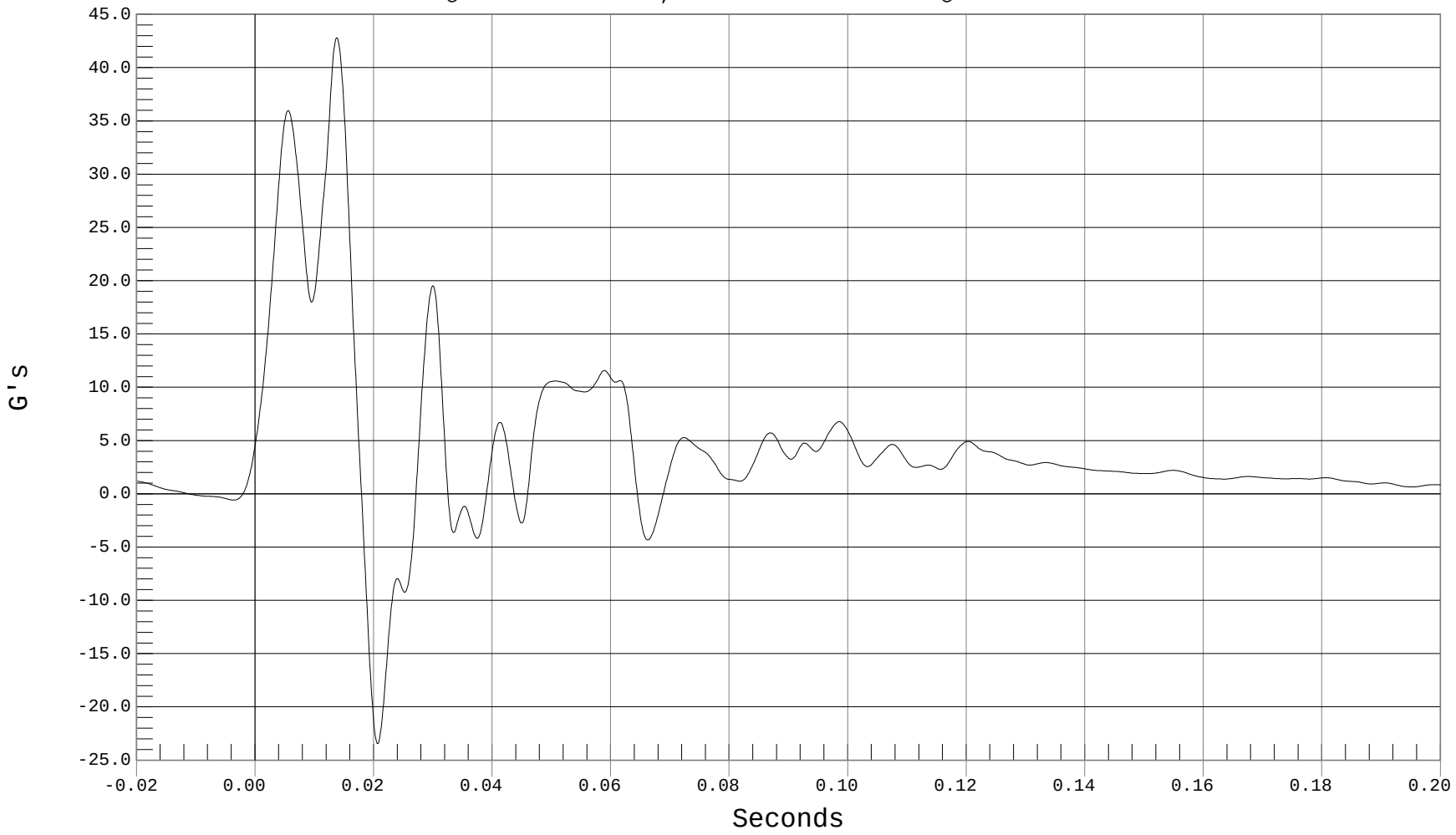
DRIVER DOOR LOWER Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 60

1 DRIVER DOOR LOWER Y, b01062AF.A30

Ymin = -23.46 G's @ 0.0206 Seconds, Ymax = 42.81 G's @ 0.0137 Seconds



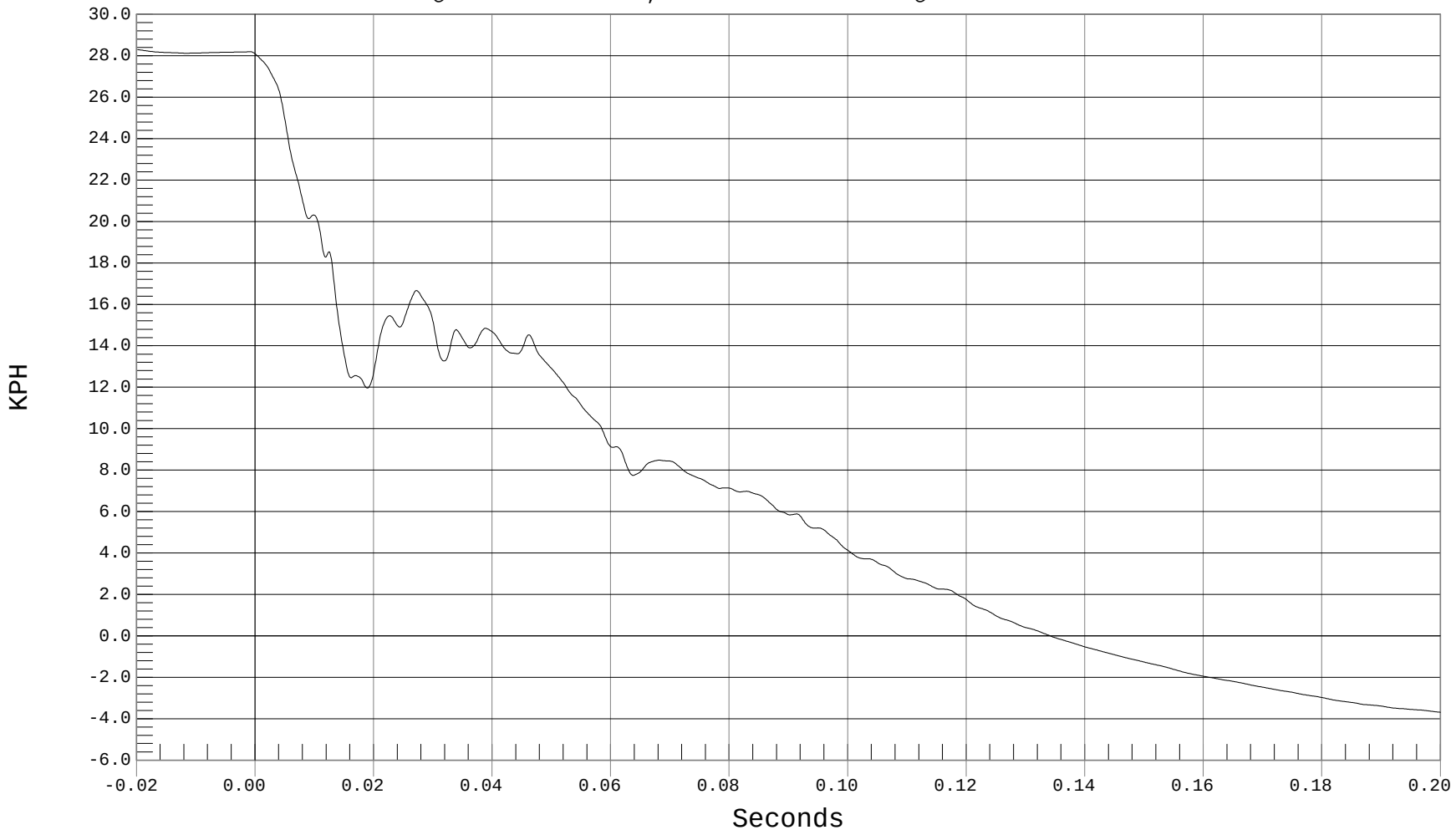
DRIVER DOOR Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 DRIVER DOOR LOWER Y VELOCITY, b01062AI.V30

Ymin = -3.69 KPH @ 0.2000 Seconds, Ymax = 28.3 KPH @ -0.0199 Seconds



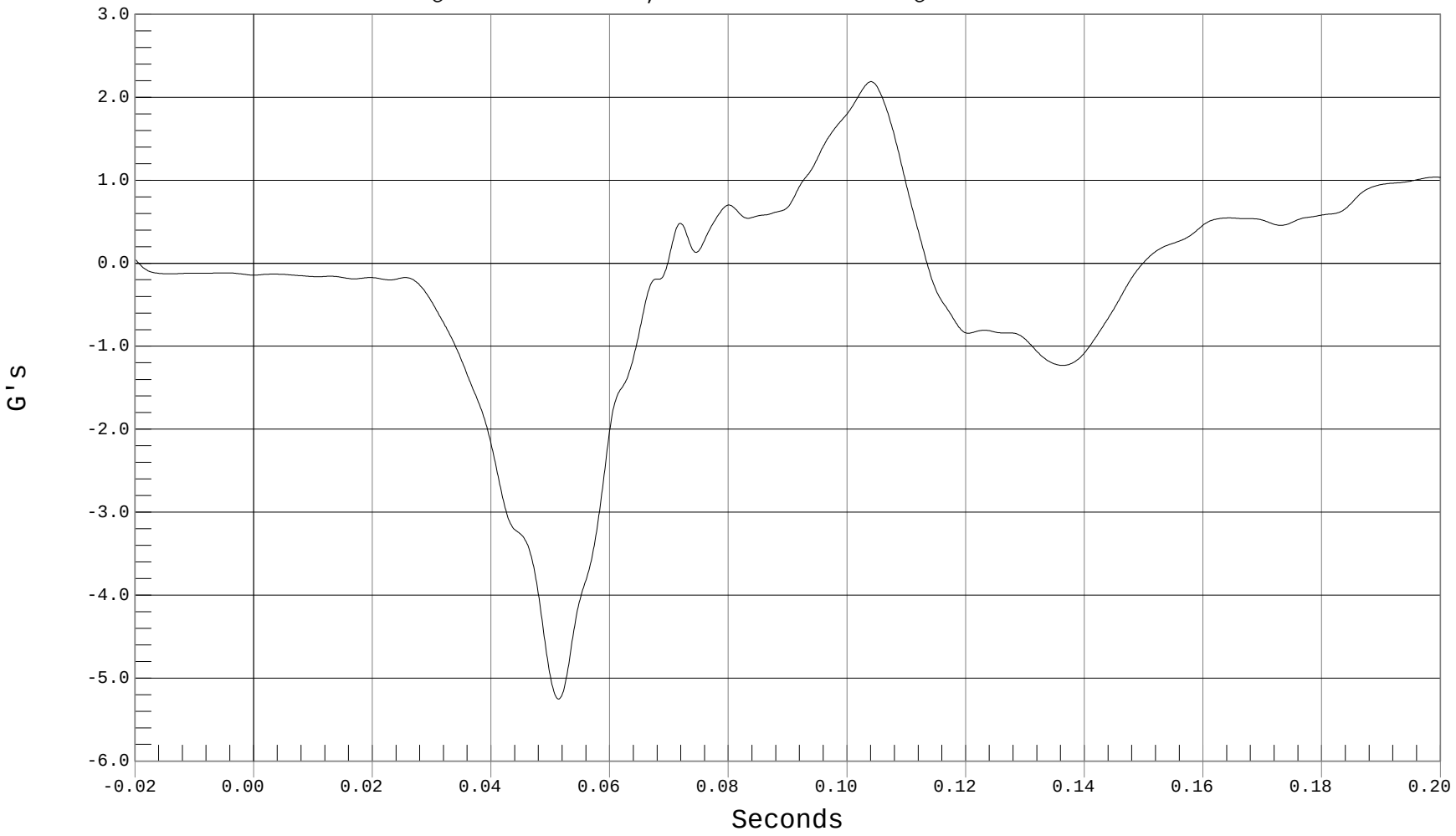
ENGINE X ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 60

1 ENGINE X, b01062AF.A31

Ymin = -5.25 G's @ 0.0513 Seconds, Ymax = 2.19 G's @ 0.1039 Seconds



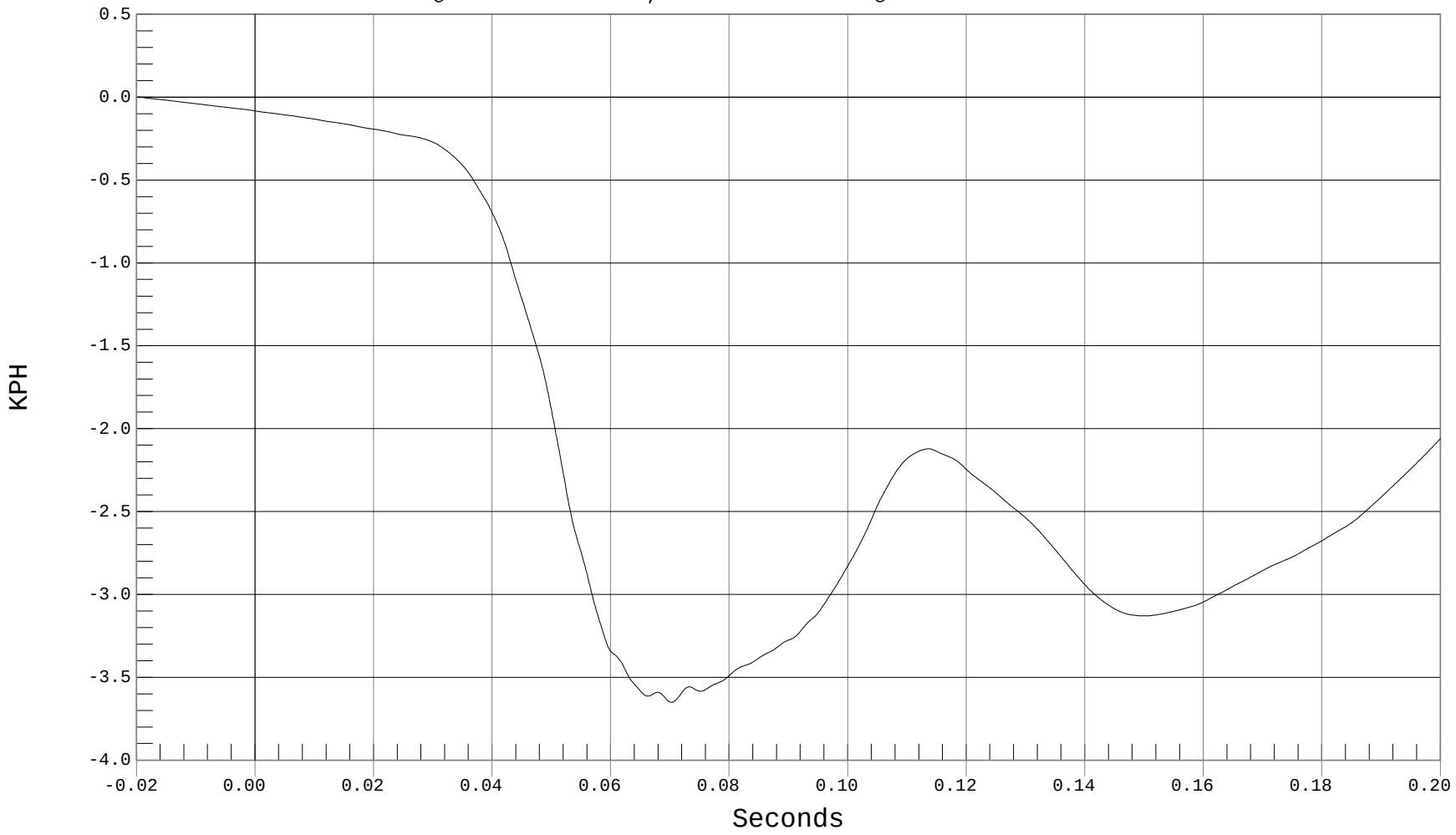
ENGINE X VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 ENGINE X VELOCITY, b01062AI.V31

Ymin = -3.65 KPH @ 0.0702 Seconds, Ymax = 0 KPH @ -0.0197 Seconds



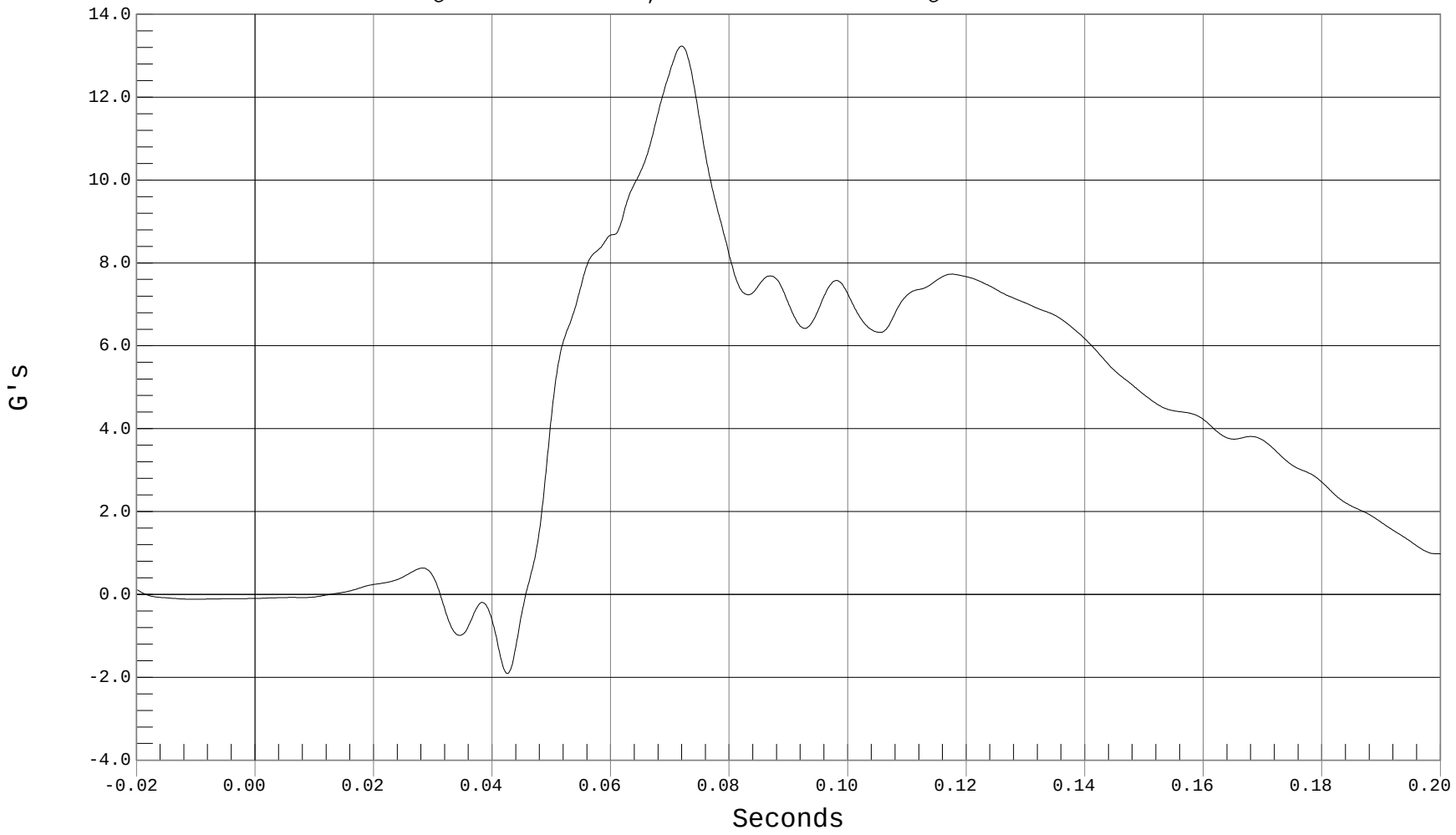
ENGINE Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 60

1 ENGINE Y, b01062AF.A33

Ymin = -1.91 G's @ 0.0425 Seconds, Ymax = 13.24 G's @ 0.0719 Seconds



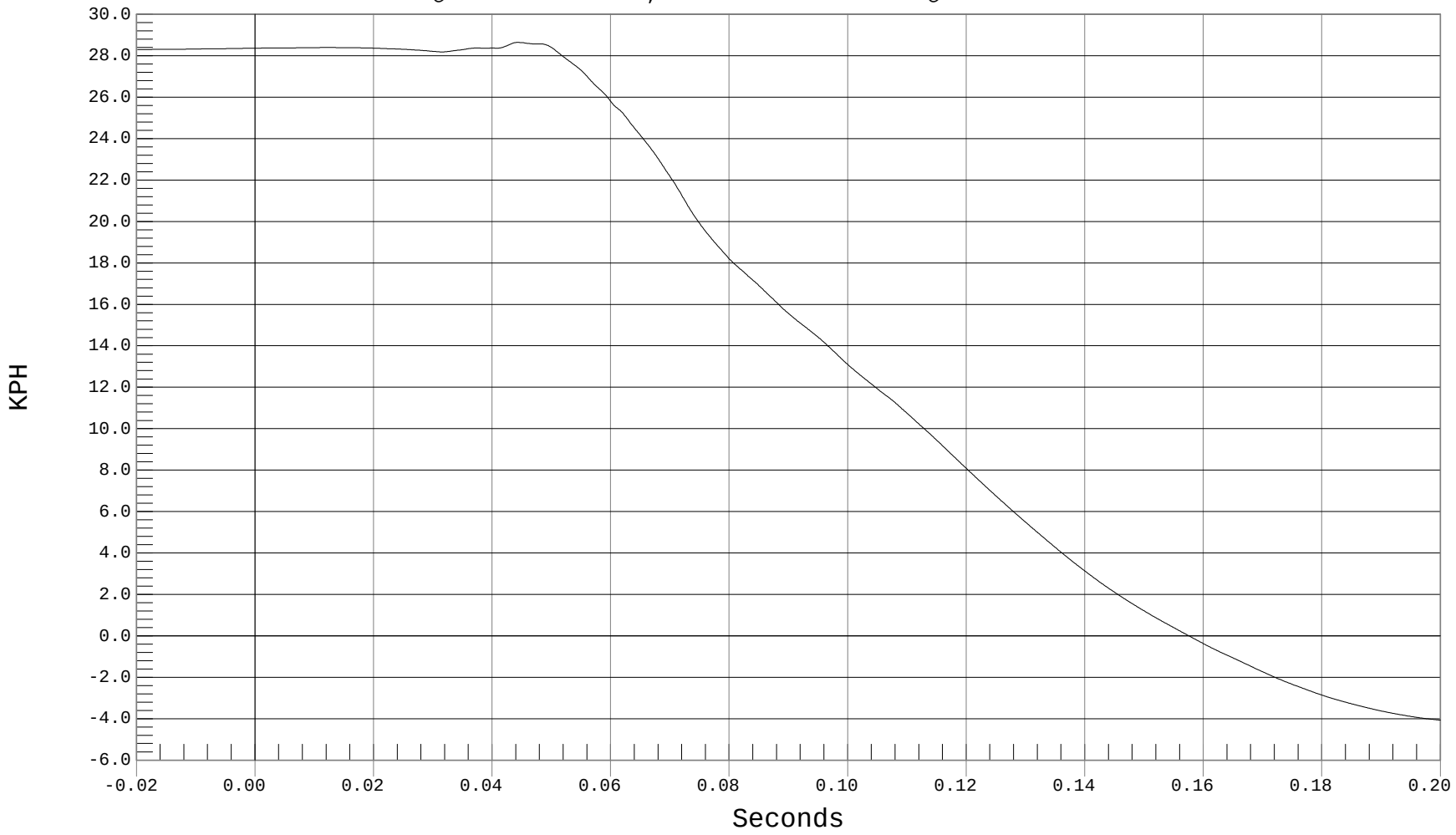
ENGINE Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 ENGINE Y VELOCITY, b01062AI.V33

Ymin = -4.07 KPH @ 0.2000 Seconds, Ymax = 28.65 KPH @ 0.0443 Seconds



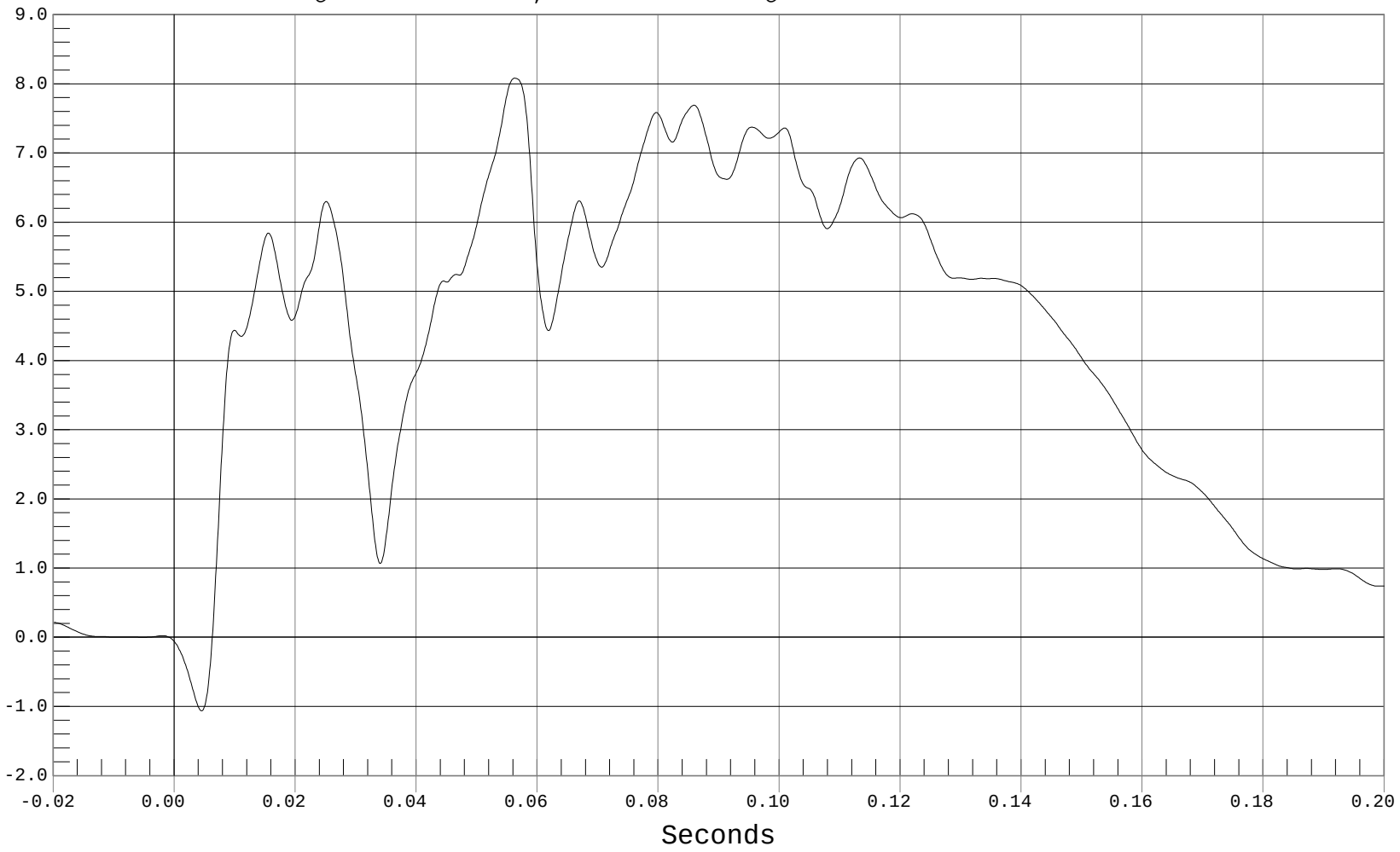
FIREWALL Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 60

1 FIREWALL Y, b01062AF.A34

Ymin = -1.06 @ 0.0045 Seconds, Ymax = 8.08 @ 0.0562 Seconds



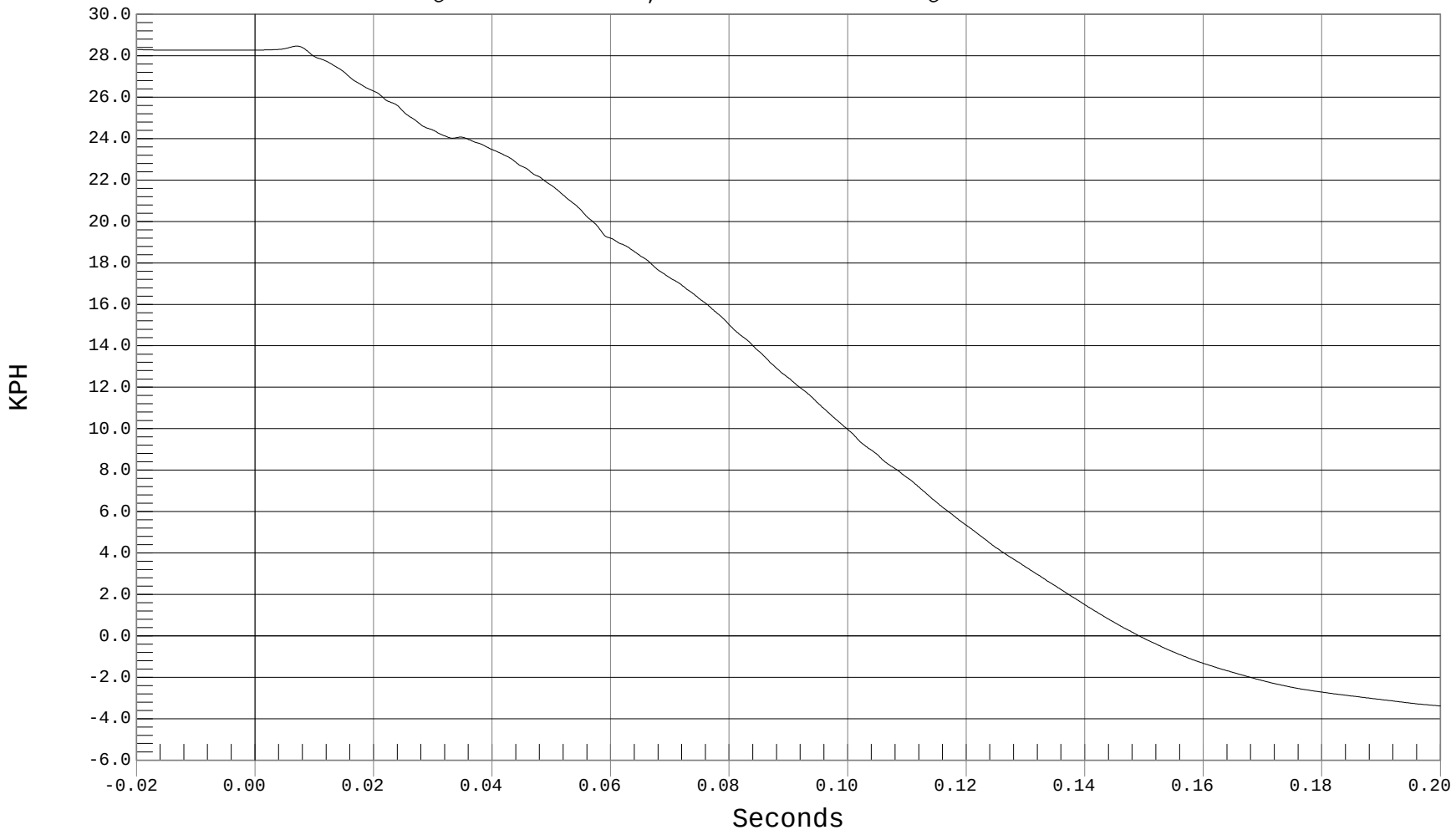
FIREWALL Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 FIREWALL Y VELOCITY, b01062AI.V34

Ymin = -3.39 KPH @ 0.2000 Seconds, Ymax = 28.47 KPH @ 0.0069 Seconds



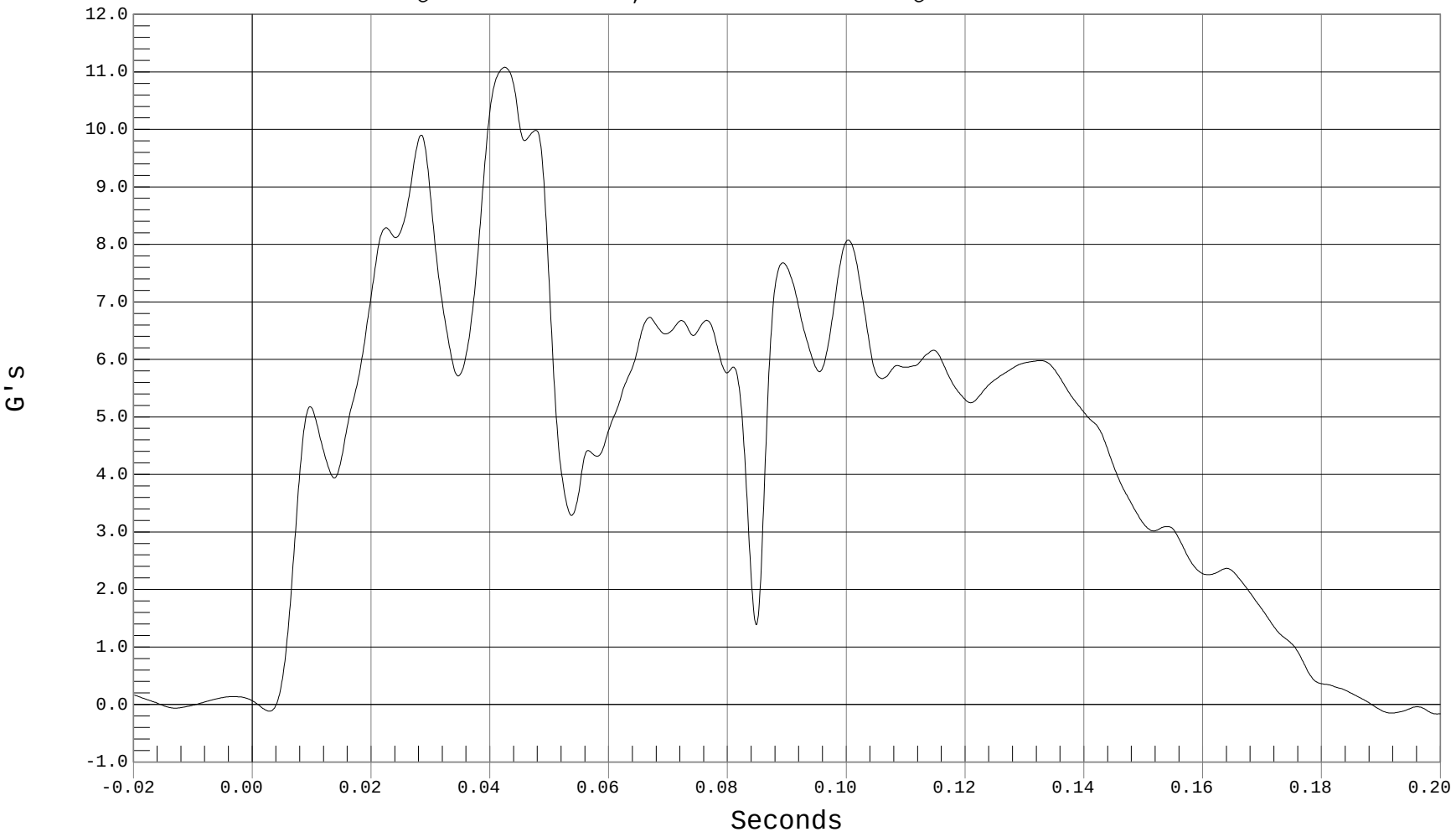
RIGHT FLOOR @ SILL Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 60

1 RIGHT FLOOR @ SILL Y, b01062AF.A36

Ymin = -.17 G's @ 0.1993 Seconds, Ymax = 11.08 G's @ 0.0424 Seconds



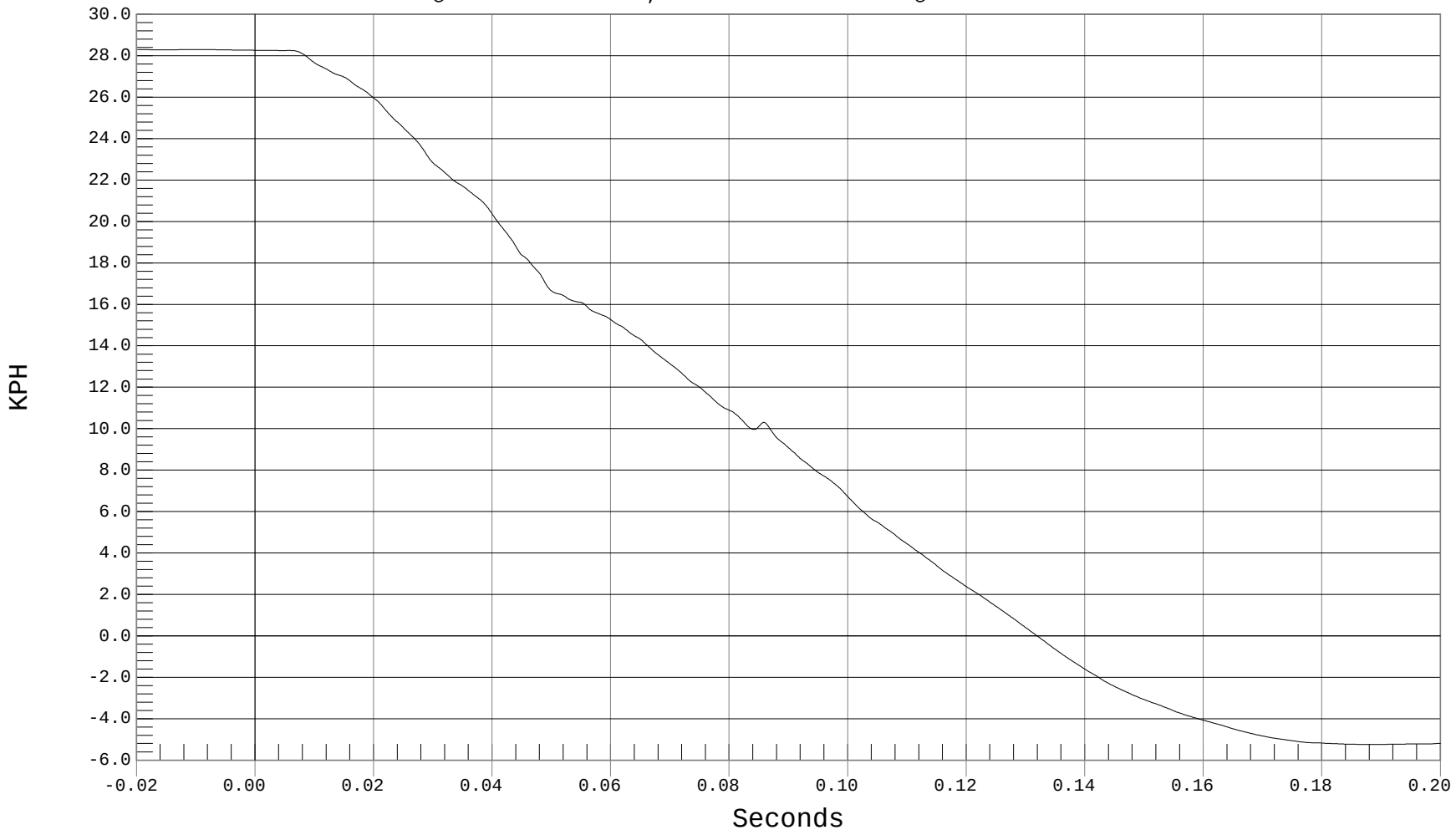
RIGHT FLOOR @ SILL Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 RIGHT FLOOR SILL Y VELOCITY, b01062AI.V36

Ymin = -5.25 KPH @ 0.1883 Seconds, Ymax = 28.3 KPH @ -0.0199 Seconds



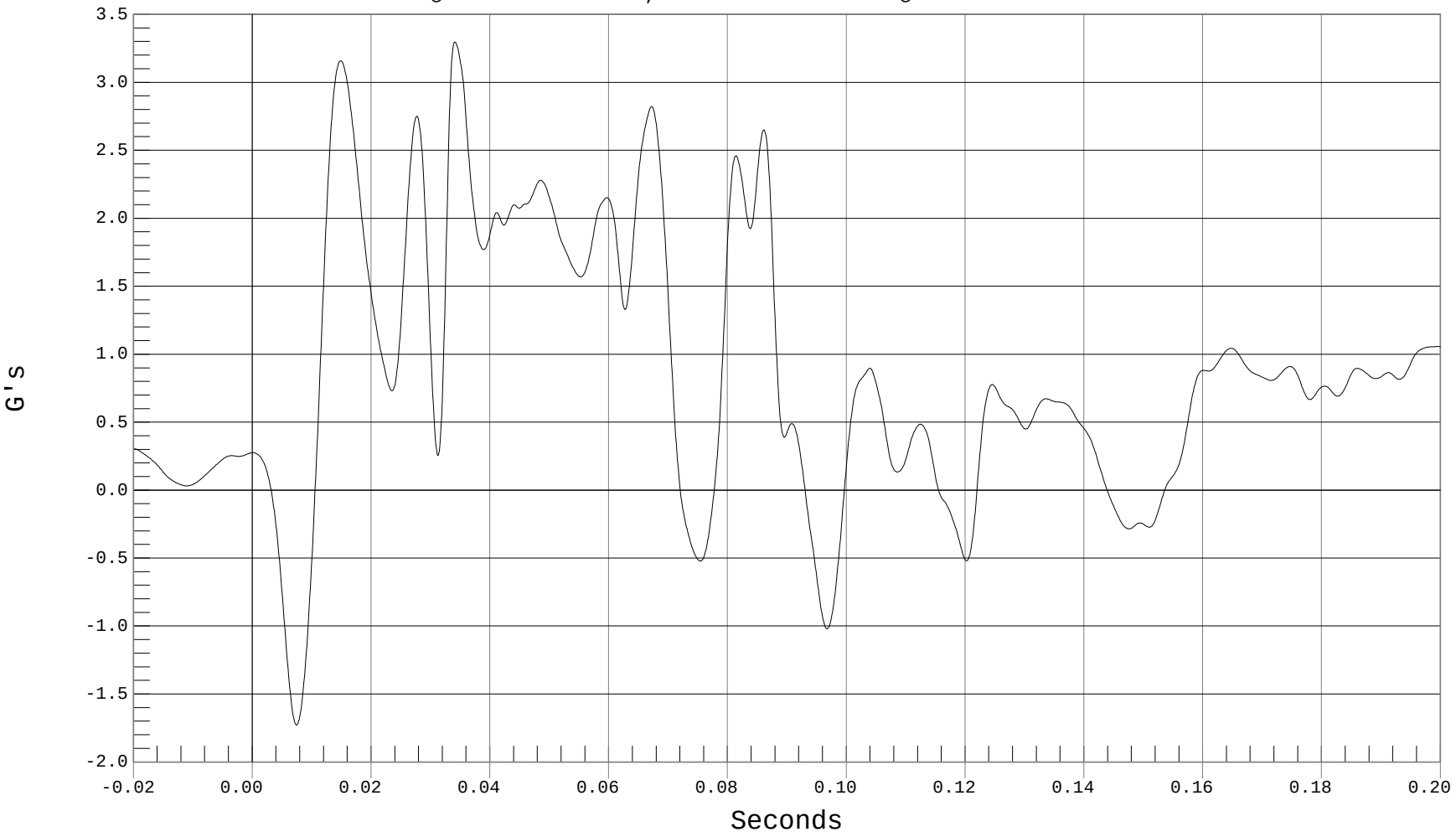
REAR DECK X ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 60

1 REAR DECK X, b01062AF.A37

Ymin = -1.73 G's @ 0.0074 Seconds, Ymax = 3.3 G's @ 0.0340 Seconds



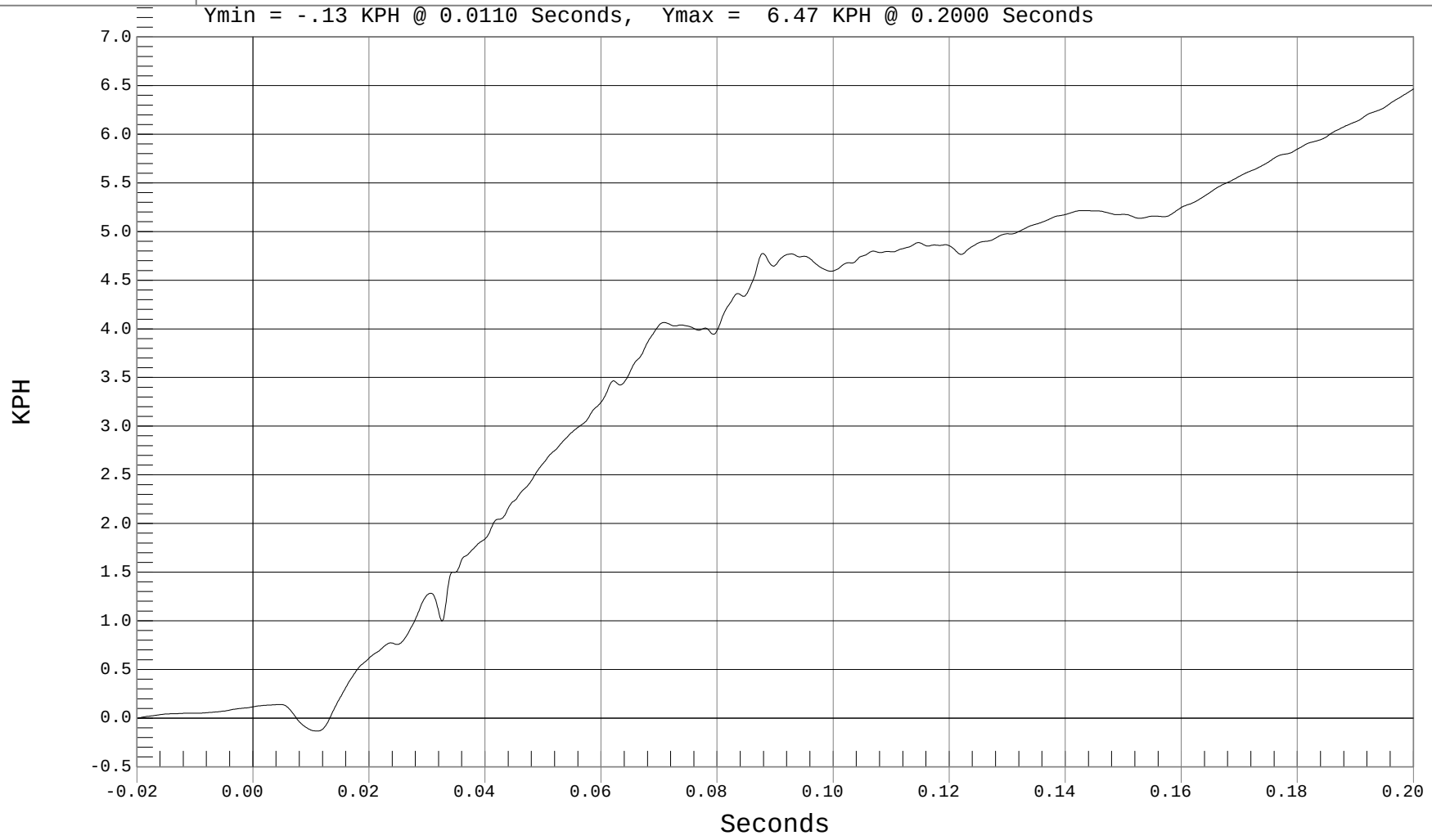
REAR DECK X VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 REAR DECK X VELOCITY, b01062AI.V37

Ymin = -.13 KPH @ 0.0110 Seconds, Ymax = 6.47 KPH @ 0.2000 Seconds



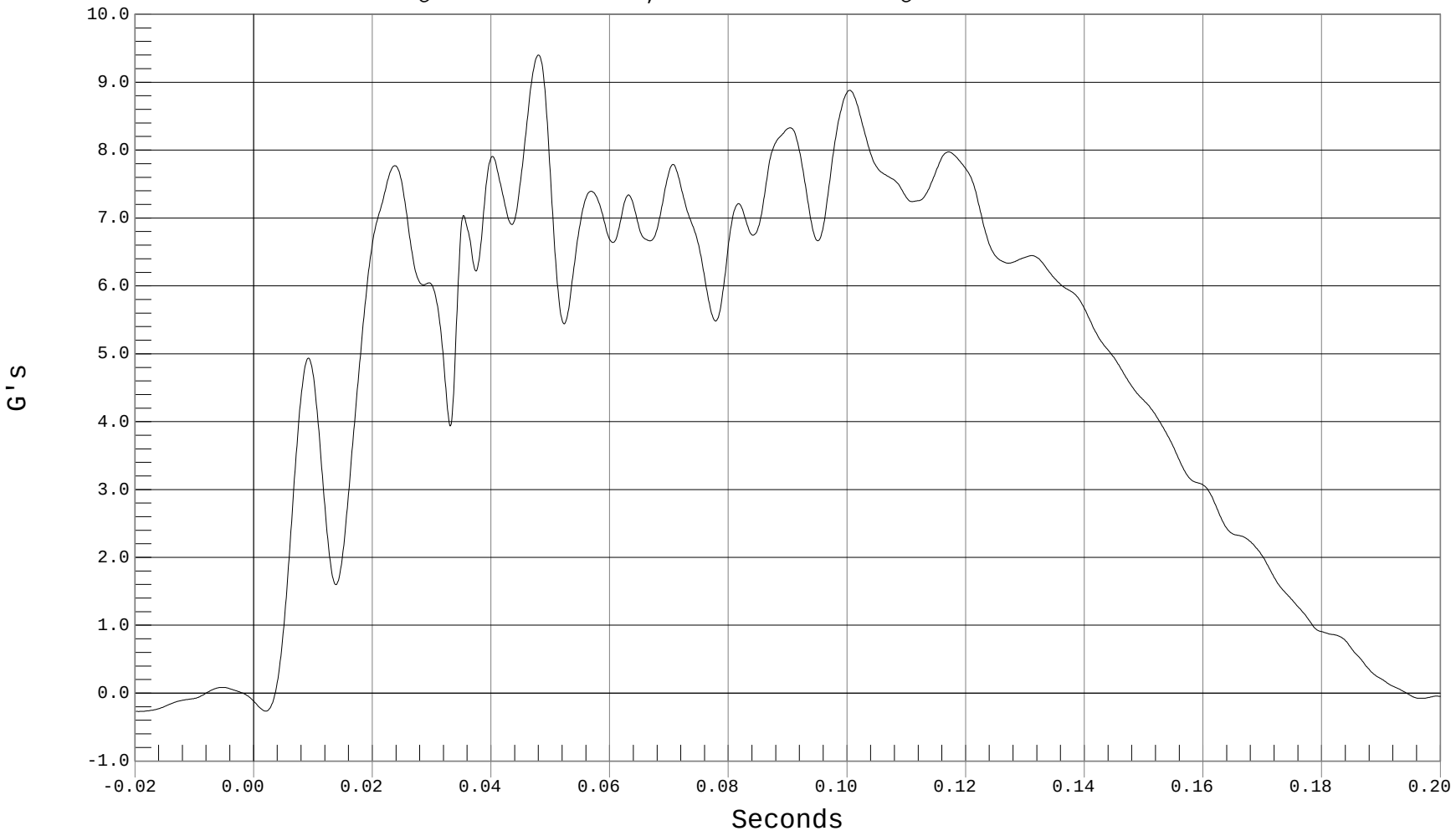
REAR DECK Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 60

1 REAR DECK Y, b01062AF.A38

Ymin = -.27 G's @ -0.0195 Seconds, Ymax = 9.4 G's @ 0.0479 Seconds



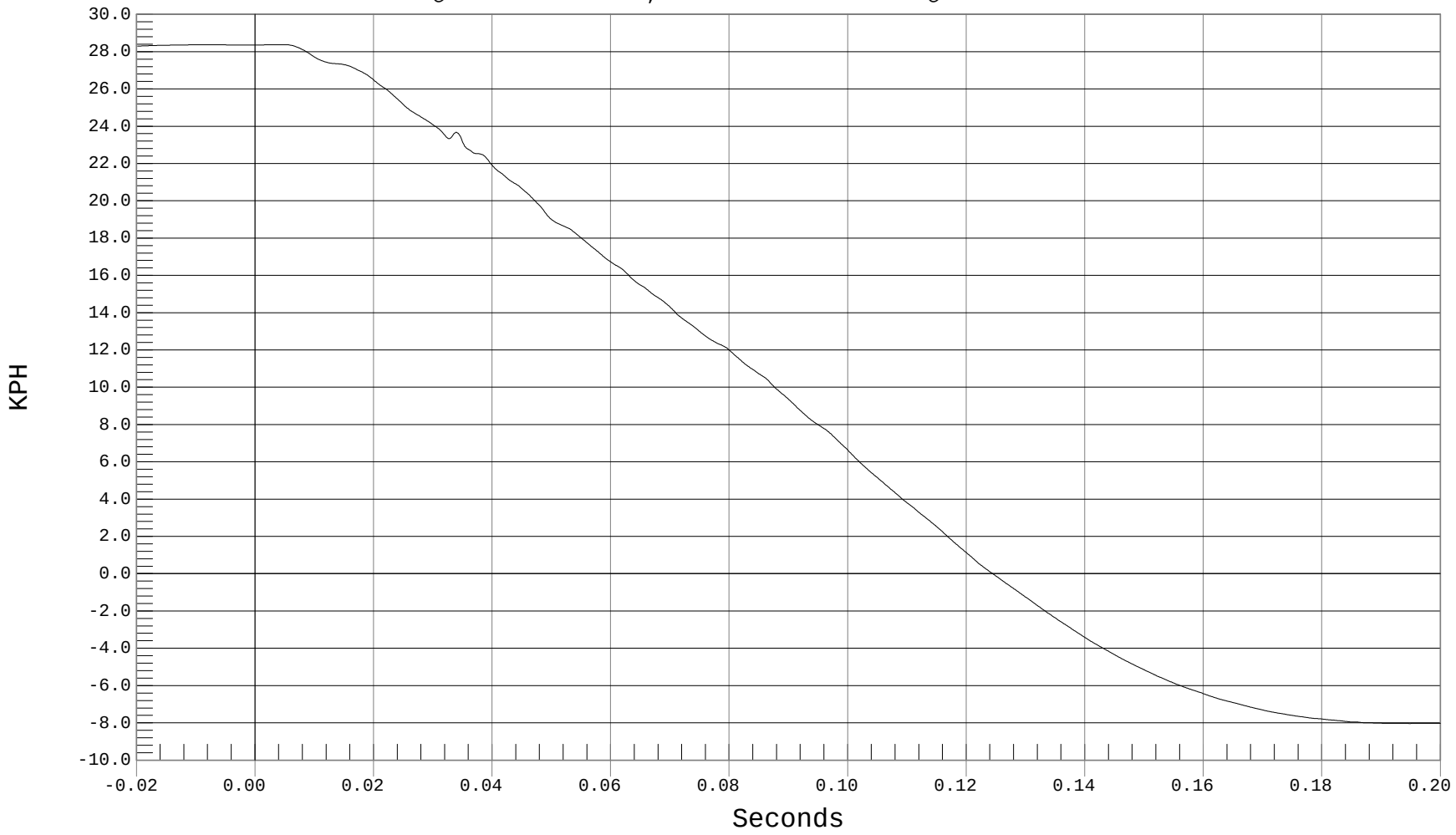
REAR DECK Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 REAR DECK Y VELOCITY, b01062AI.V38

Ymin = -8.04 KPH @ 0.1948 Seconds, Ymax = 28.38 KPH @ 0.0046 Seconds



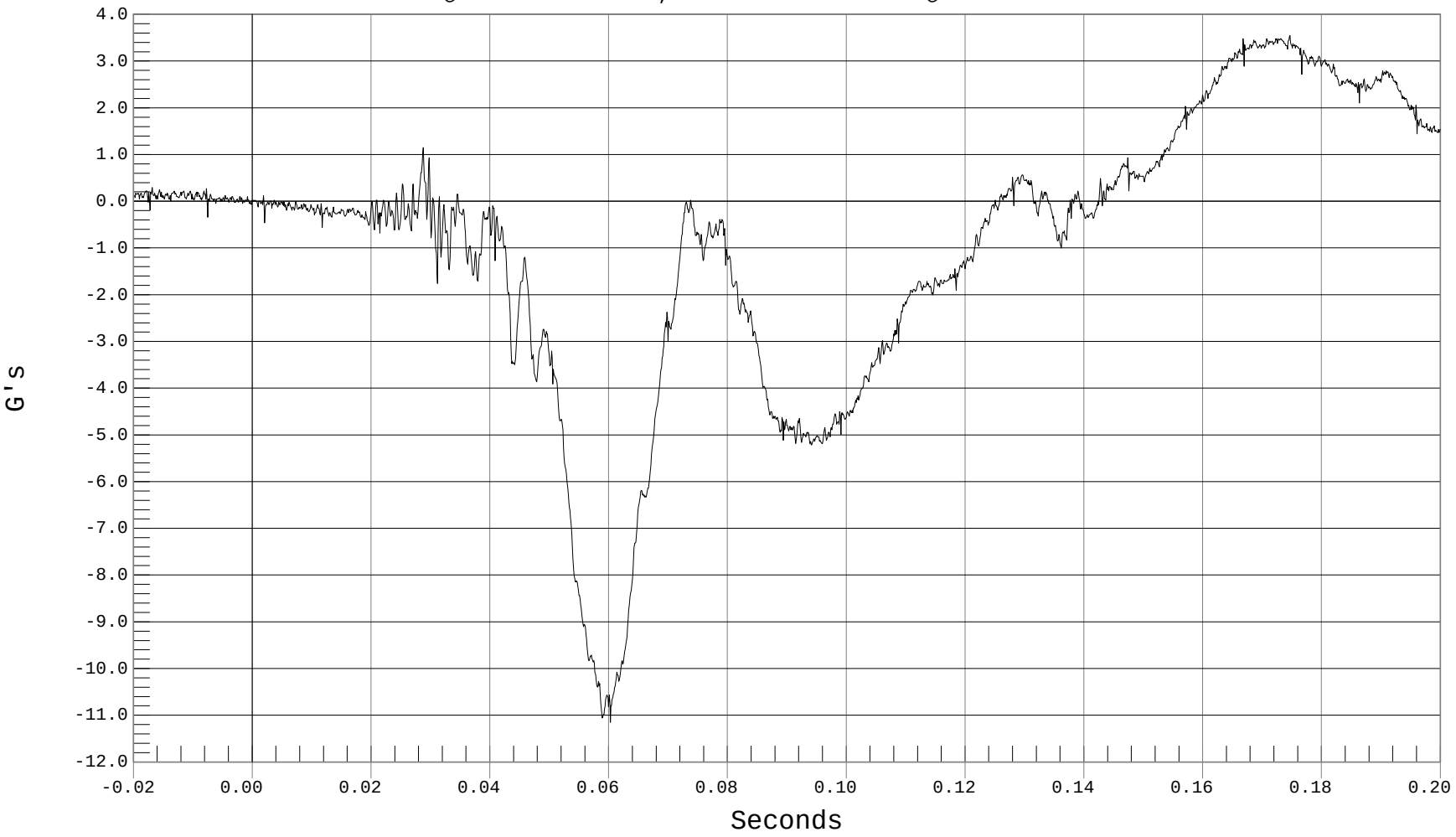
DRIVER HEAD REDUNDANT X ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 1000

1 DRIVER HEAD Xr, b01062AT.A39

Ymin = -11.16 G's @ 0.0602 Seconds, Ymax = 3.55 G's @ 0.1746 Seconds



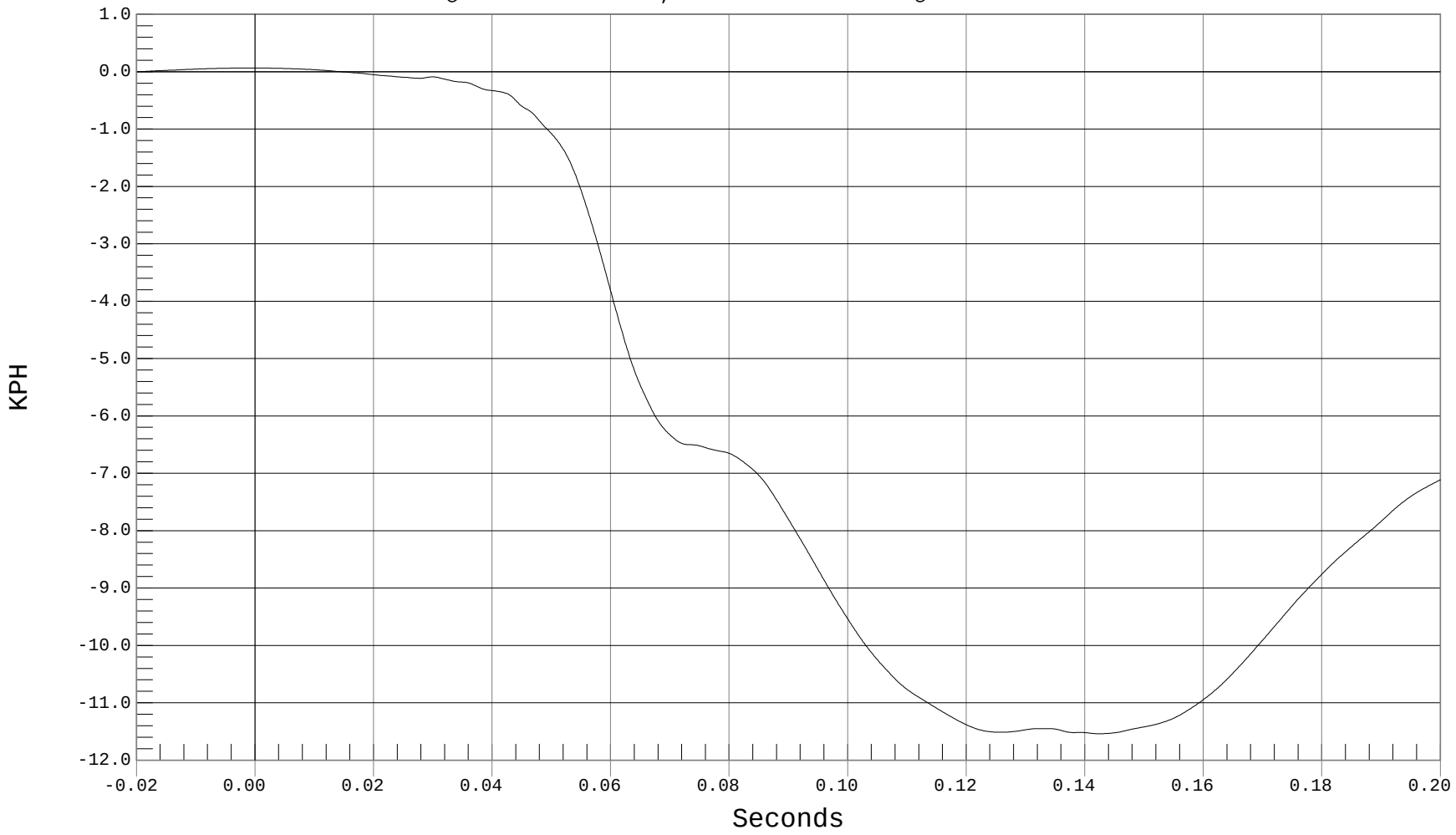
DRIVER HEAD REDUNDANT X VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 DRIVER HEAD X REDUNDANT VELOCITY, b01062AI.V39

Ymin = -11.54 KPH @ 0.1423 Seconds, Ymax = .06 KPH @ -0.0006 Seconds



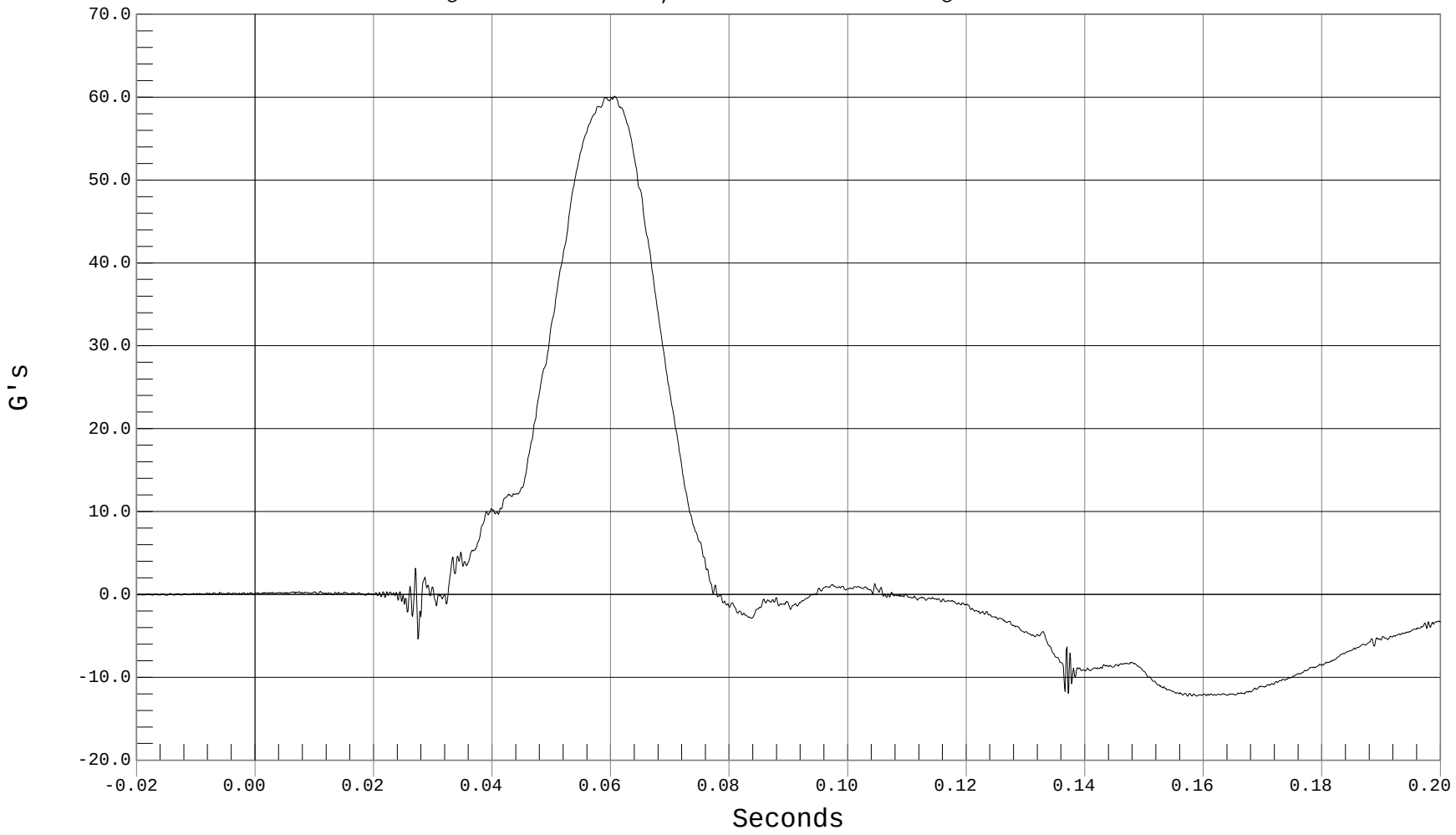
DRIVER HEAD REDUNDANT Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 1000

1 DRIVER HEAD Yr, b01062AT.A40

Ymin = -12.27 G's @ 0.1573 Seconds, Ymax = 60.12 G's @ 0.0606 Seconds



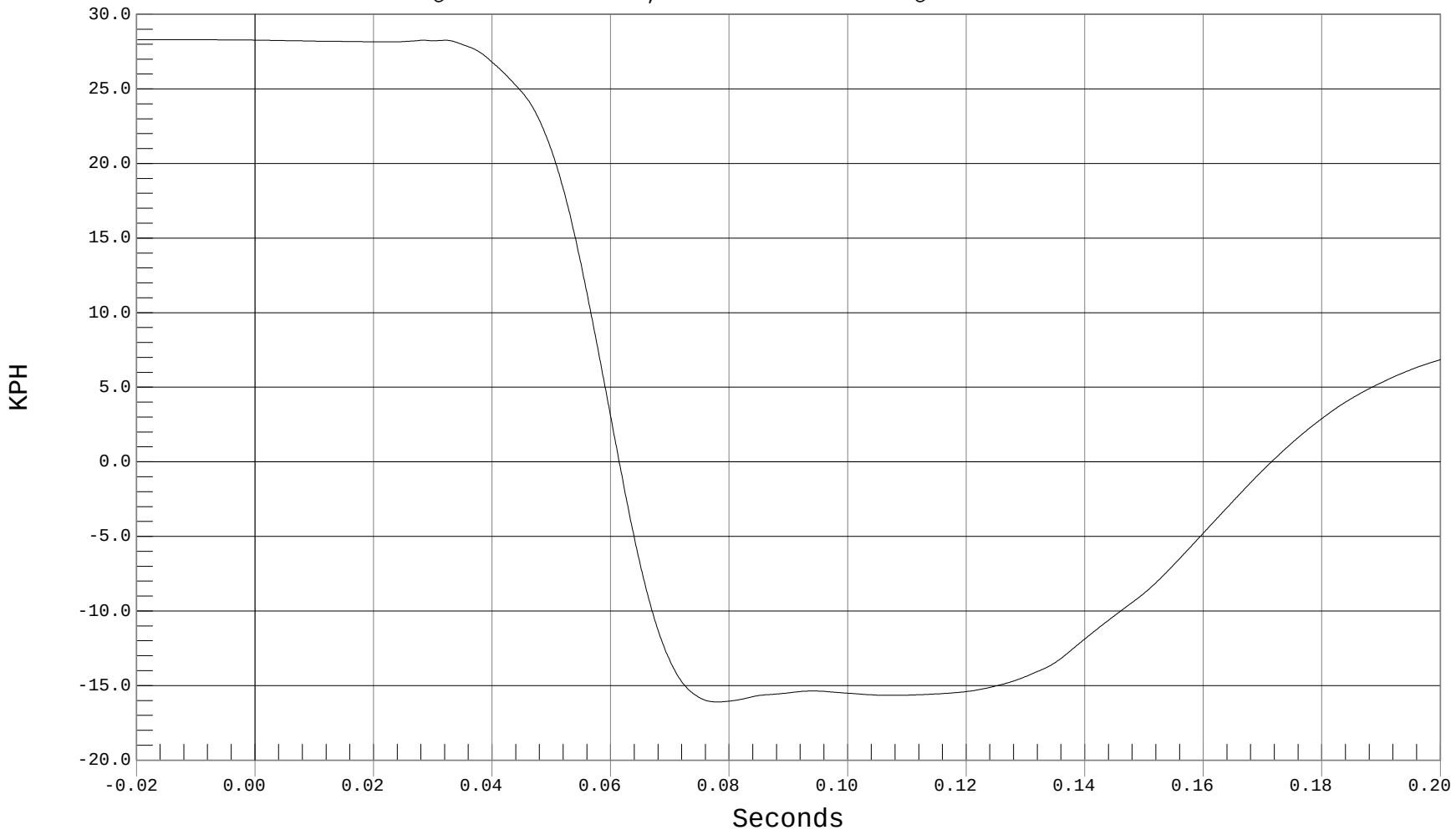
DRIVER HEAD REDUNDANT Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 DRIVER HEAD Y REDUNDANT VELOCITY, b01062AI.V40

Ymin = -16.1 KPH @ 0.0780 Seconds, Ymax = 28.3 KPH @ -0.0142 Seconds



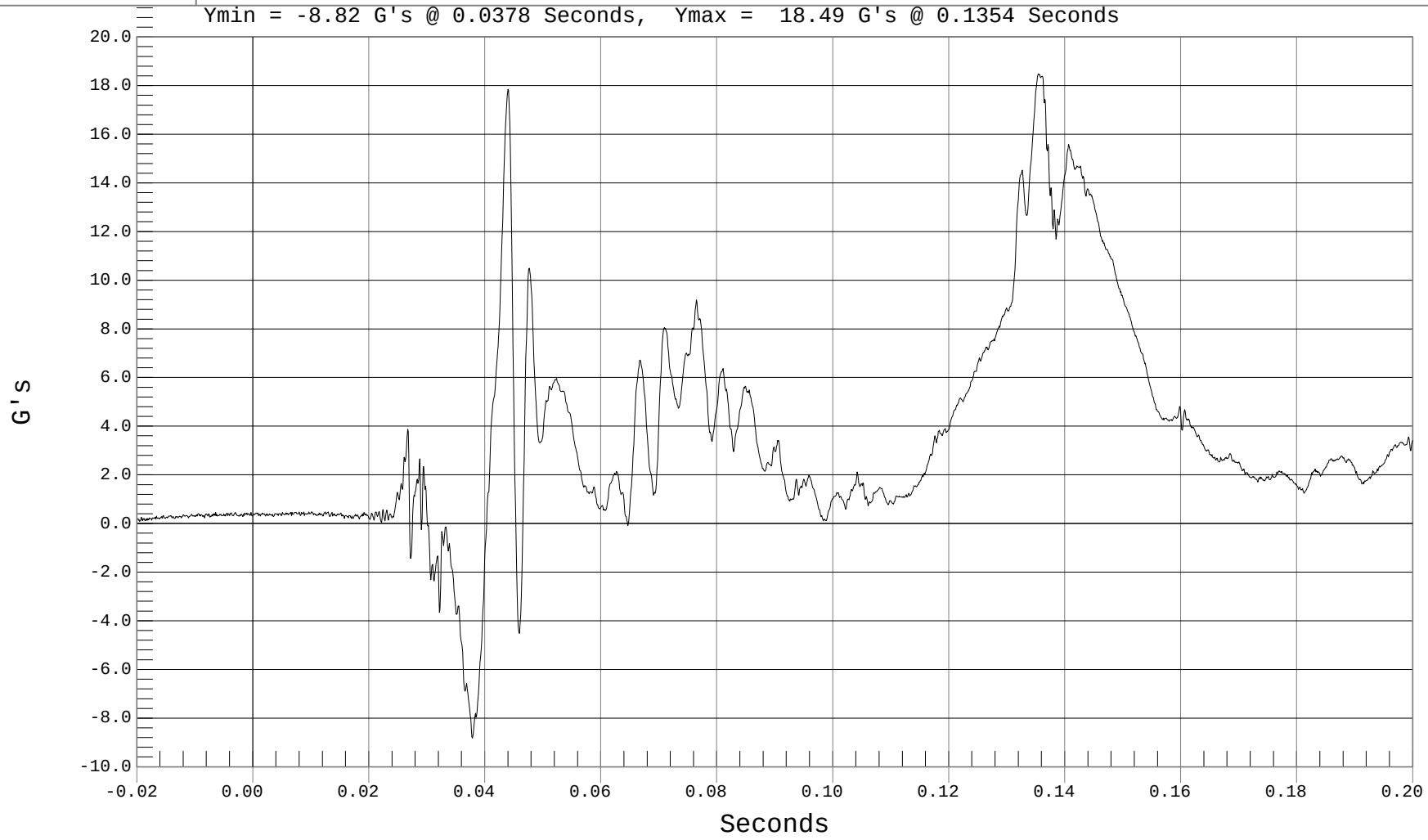
DRIVER HEAD REDUNDANT Z ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 1000

1 DRIVER HEAD Zr, b01062AT.A41

Ymin = -8.82 G's @ 0.0378 Seconds, Ymax = 18.49 G's @ 0.1354 Seconds



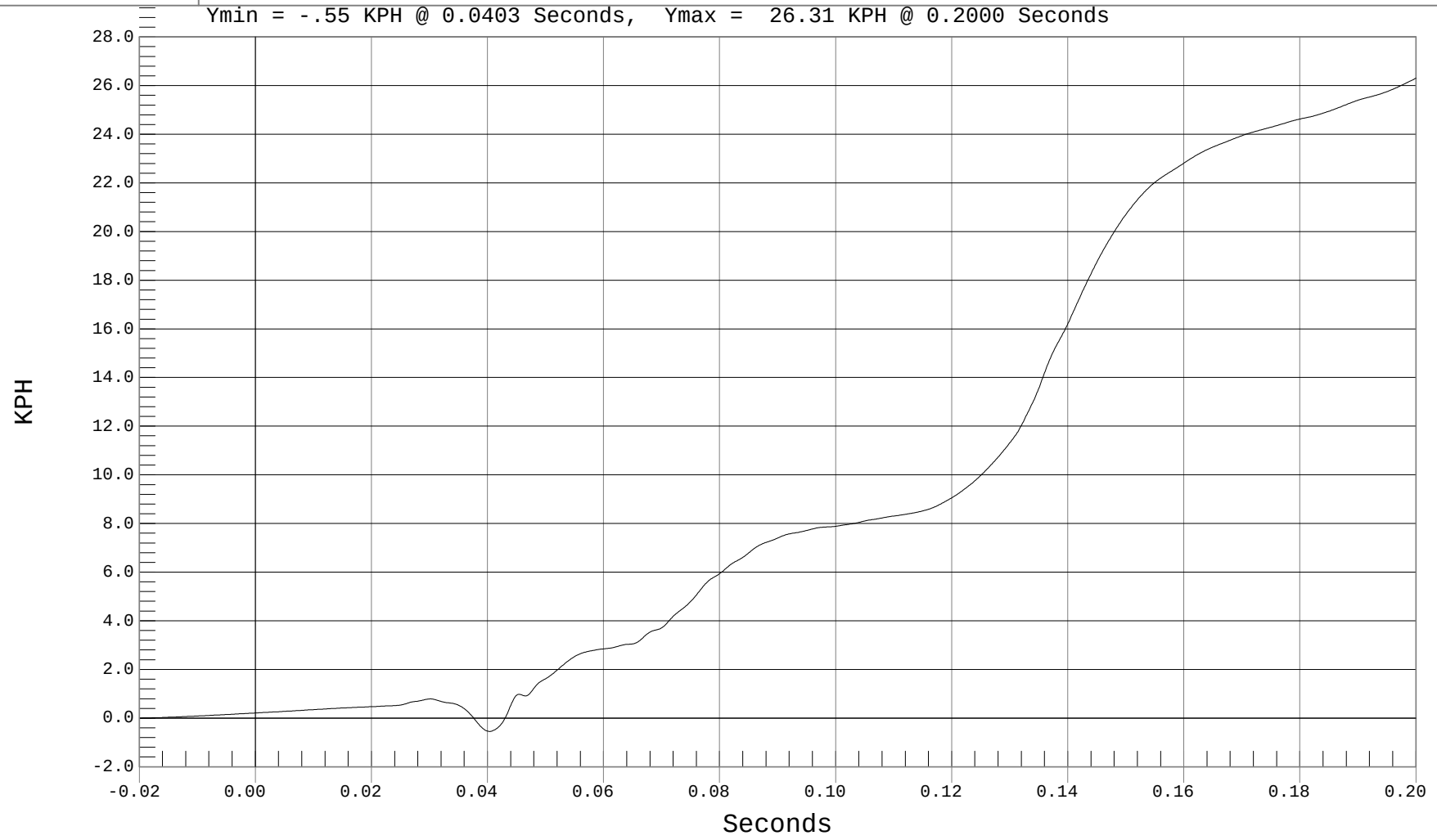
DRIVER HEAD REDUNDANT Z VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 DRIVER HEAD Z REDUNDANT VELOCITY, b01062AI.V41

Ymin = -.55 KPH @ 0.0403 Seconds, Ymax = 26.31 KPH @ 0.2000 Seconds

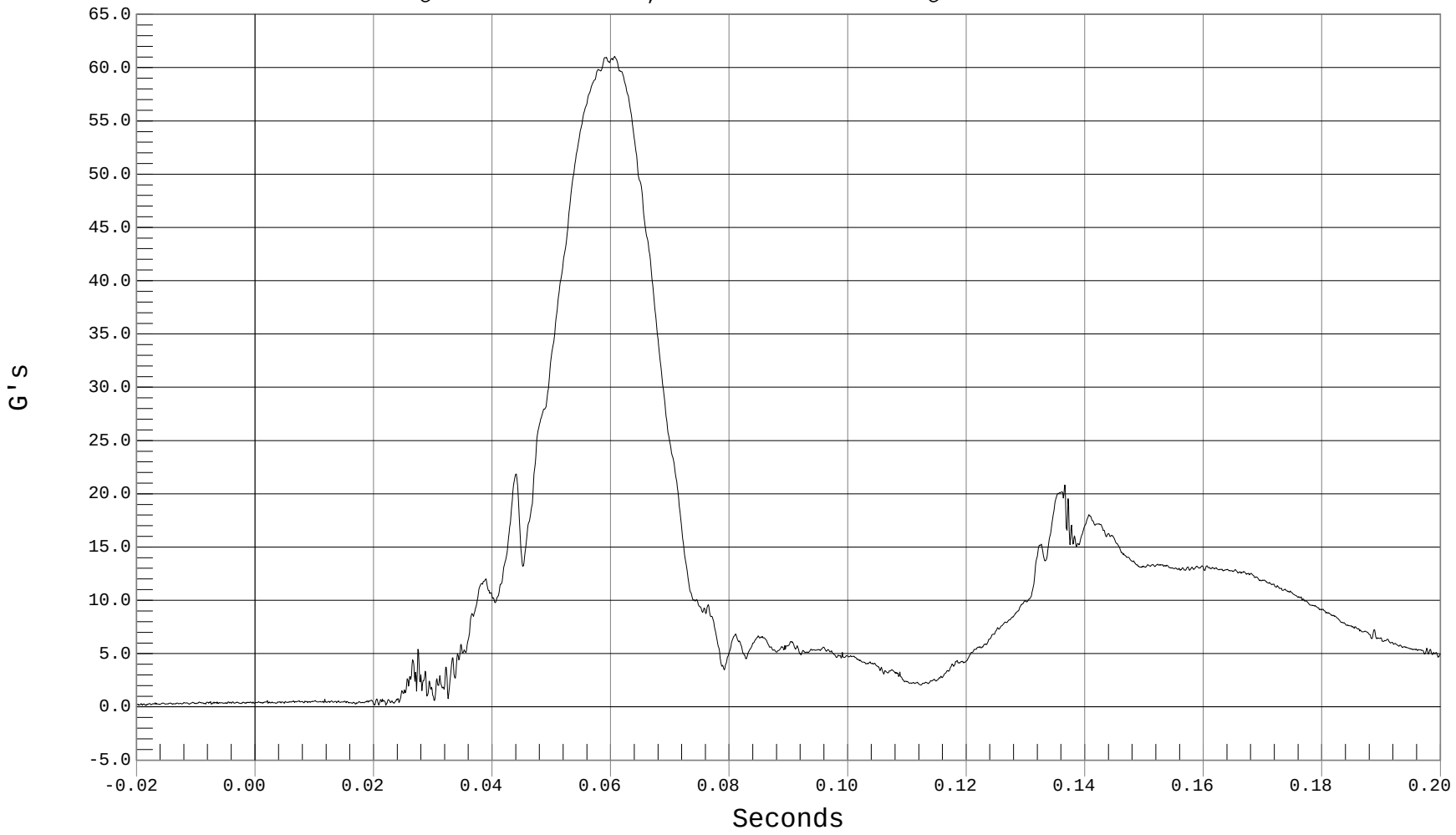


DRIVER HEAD REDUNDANT RESULTANT ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105) | Test Date: 06-06-01
Component: 2001 LEXUS GS300 4 DOOR SEDAN | Speed: 17.6 MPH, 28.3 KPH
Other Info: | Filter Class: 1000

1 DRIVER HEAD REDUNDANT RESULTANT, b01062AV.A39

Ymin = .13 G's @ -0.0191 Seconds, Ymax = 61.06 G's @ 0.0606 Seconds



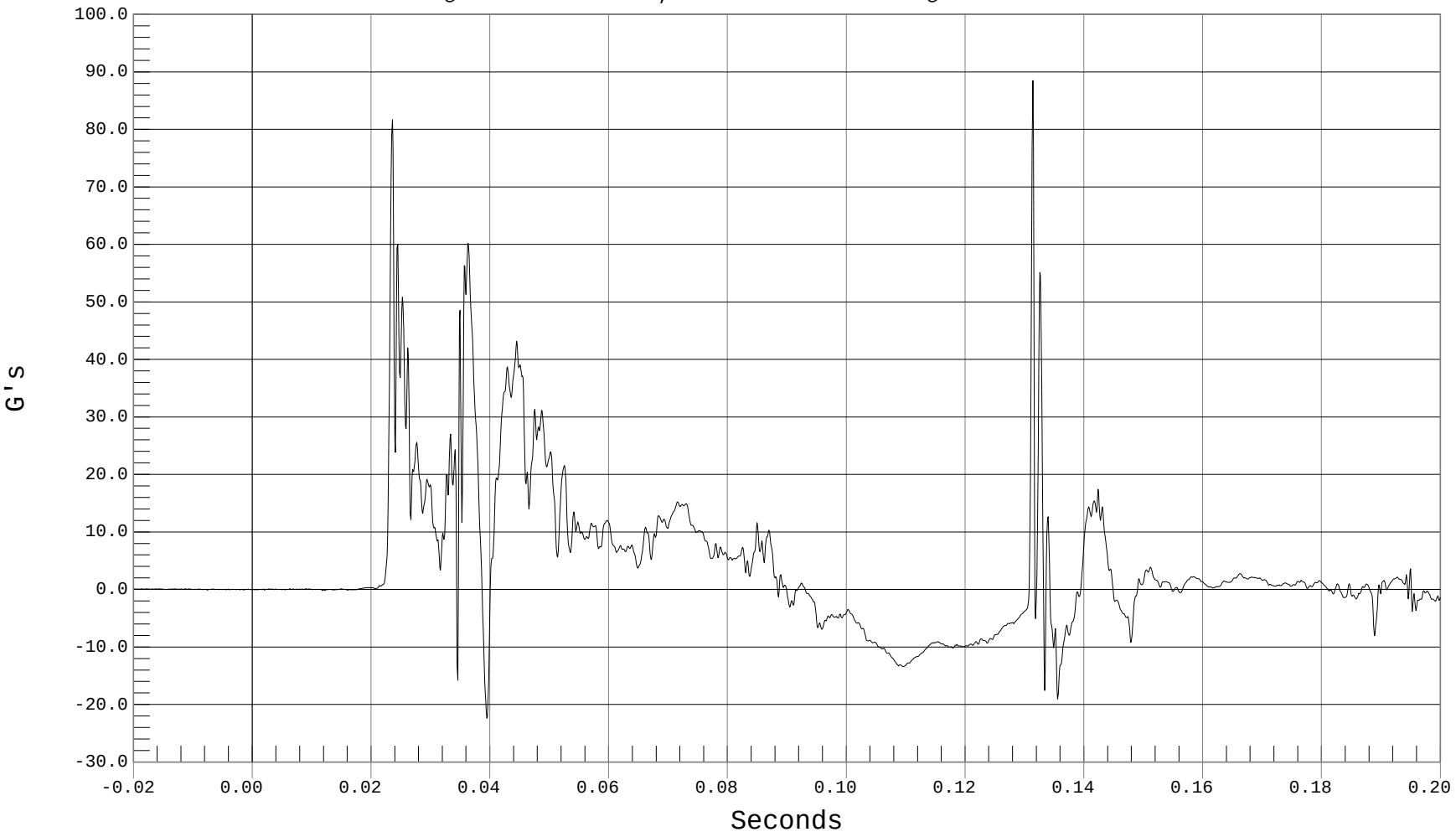
DRIVER UPPER RIB REDUNDANT Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 1000

1 DRIVER UPPER RIB Yr, b01062AT.A42

Ymin = -22.44 G's @ 0.0394 Seconds, Ymax = 88.5 G's @ 0.1313 Seconds

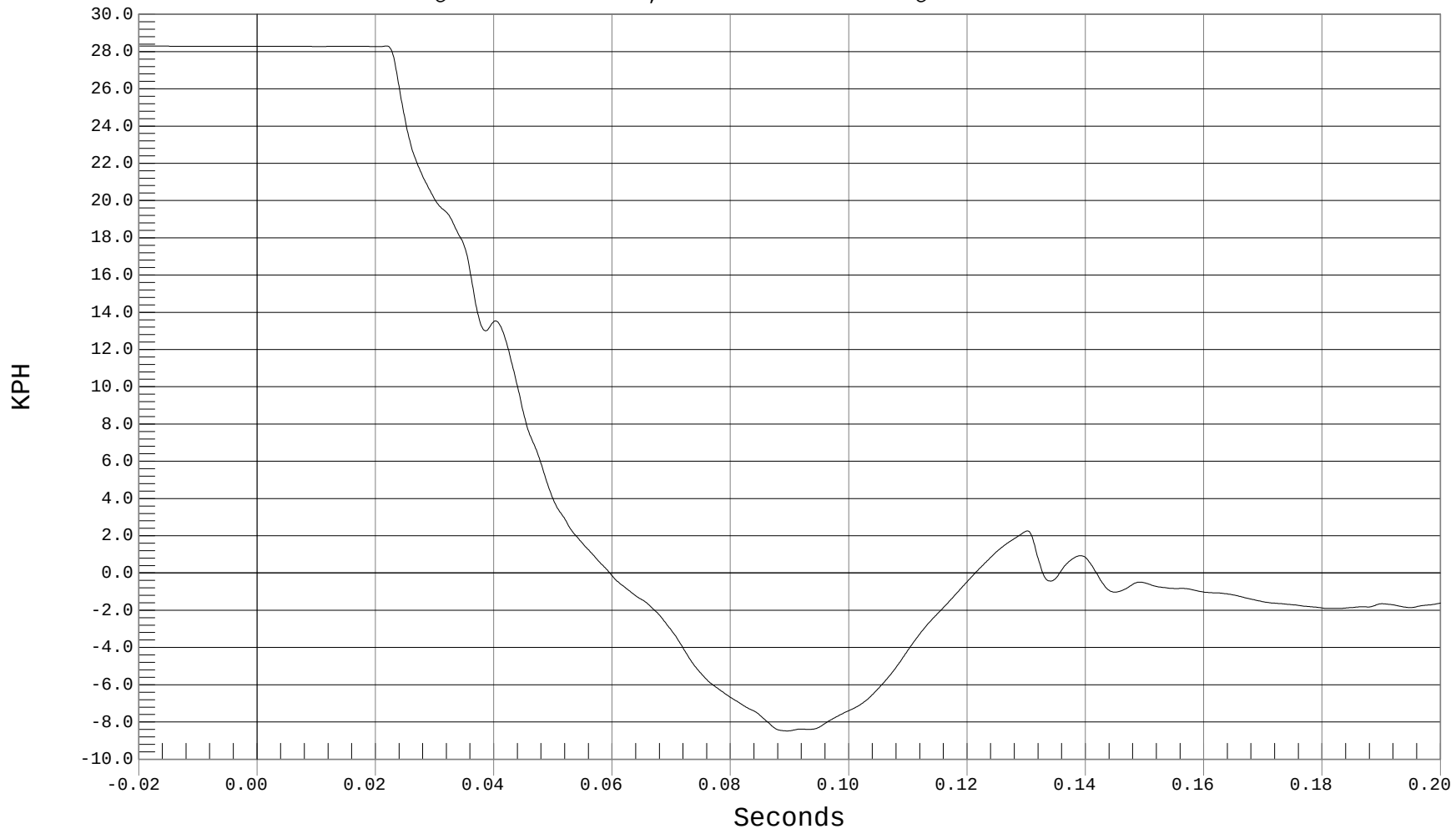


DRIVER UPPER RIB REDUNDANT Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105) | Test Date: 06-06-01
Component: 2001 LEXUS GS300 4 DOOR SEDAN | Speed: 17.6 MPH, 28.3 KPH
Other Info: | Filter Class: 180

1 DRIVER UPPER RIB Y REDUNDANT VELOCITY, b01062AI.V42

Ymin = -8.48 KPH @ 0.0895 Seconds, Ymax = 28.3 KPH @ -0.0199 Seconds



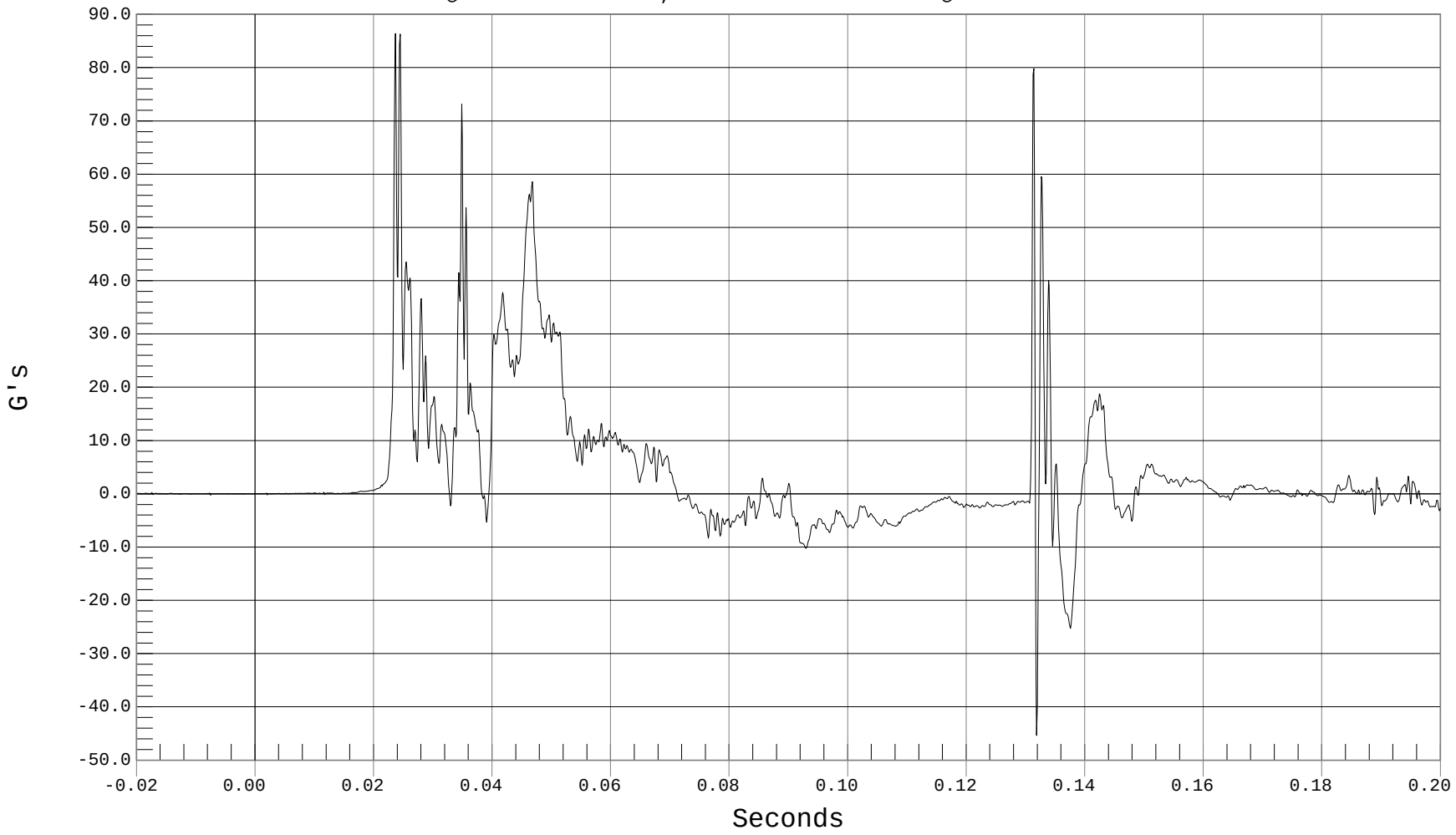
DRIVER LOWER RIB REDUNDANT Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 1000

1 DRIVER LOWER RIB Yr, b01062AT.A43

Ymin = -45.38 G's @ 0.1318 Seconds, Ymax = 86.37 G's @ 0.0236 Seconds



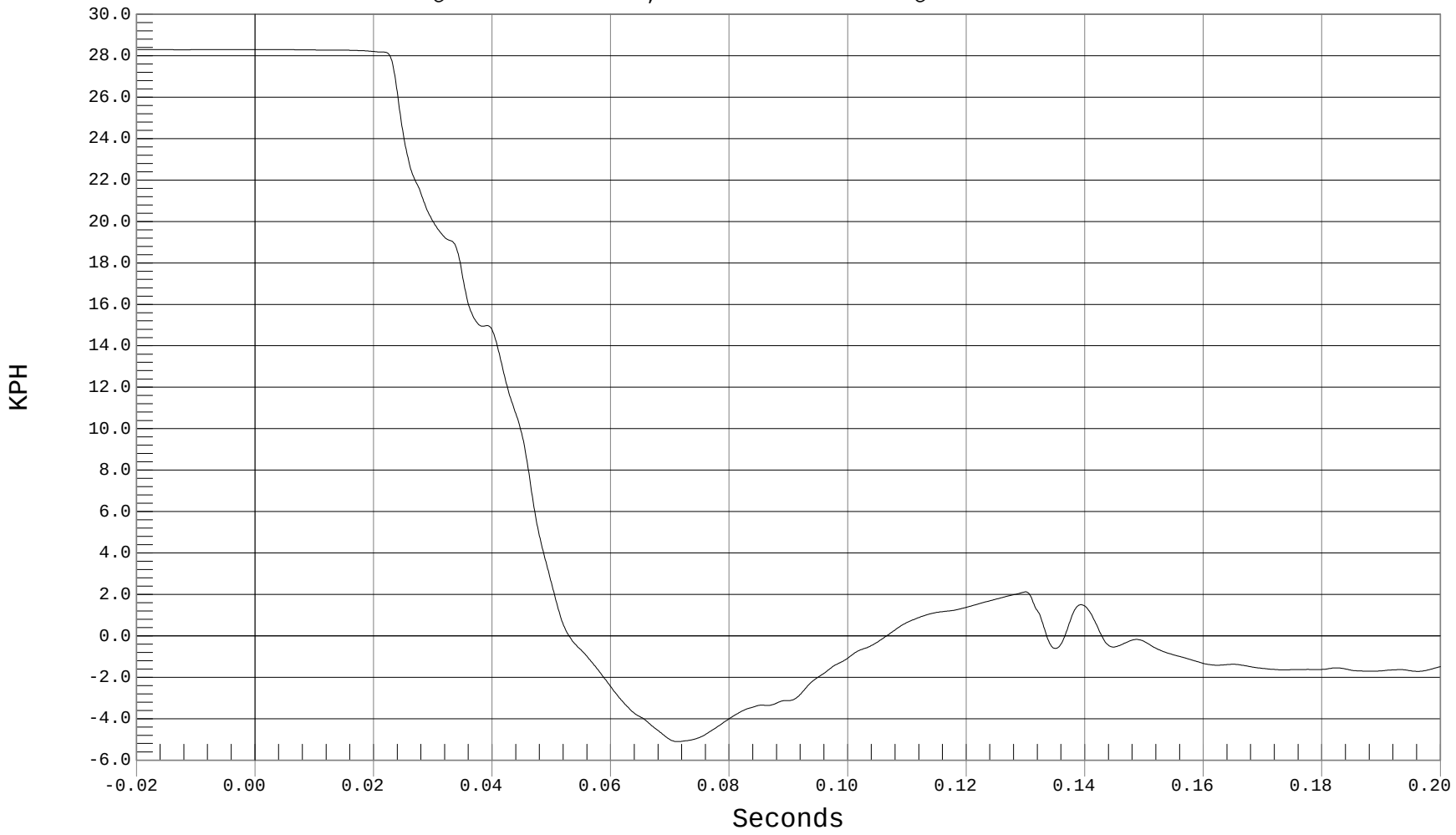
DRIVER LOWER RIB REDUNDANT Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 180

1 DRIVER LOWER RIB Y REDUNDANT VELOCITY, b01062AI.V43

Ymin = -5.11 KPH @ 0.0712 Seconds, Ymax = 28.3 KPH @ -0.0199 Seconds

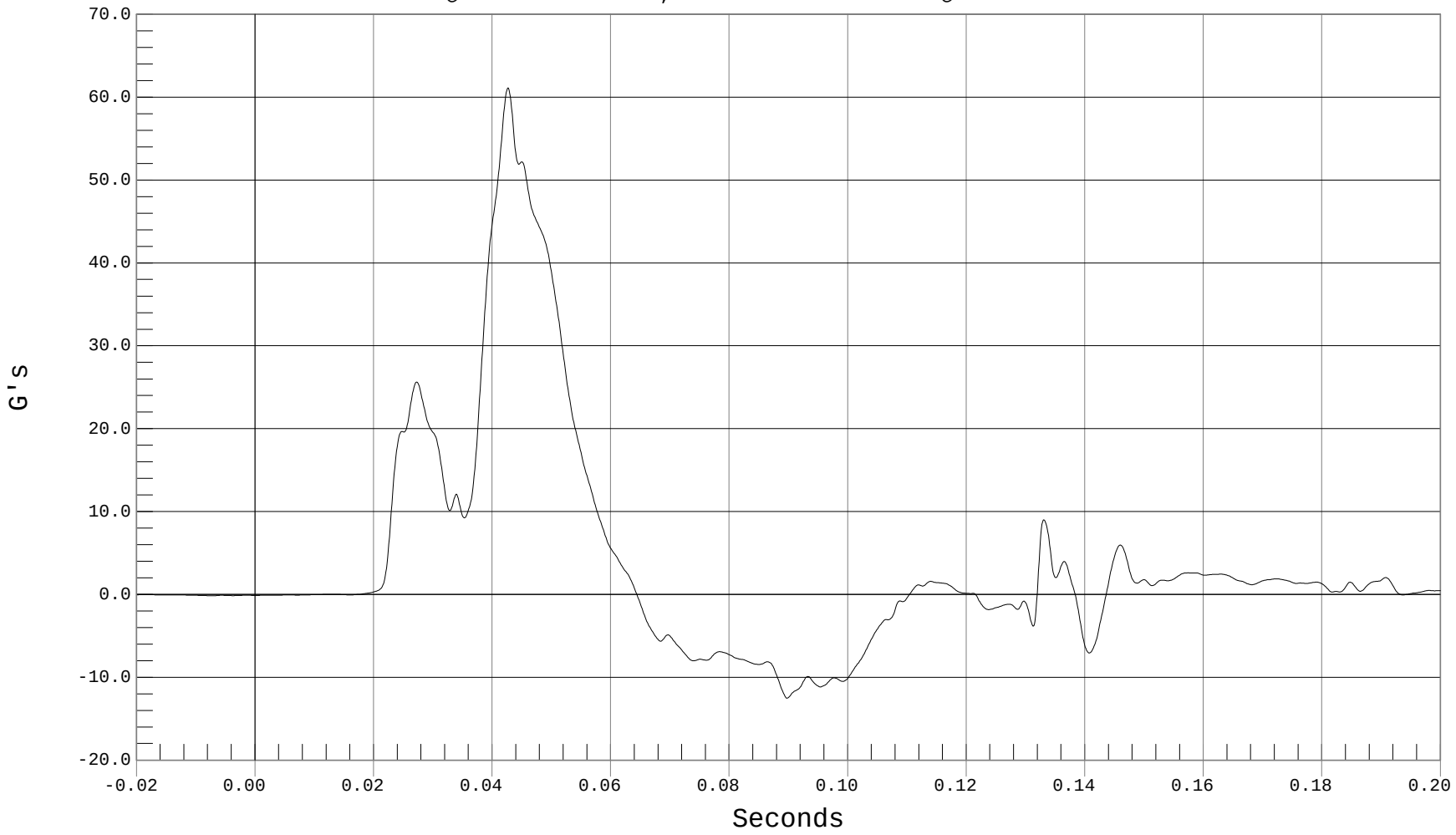


DRIVER LOWER SPINE REDUNDANT Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105) Test Date: 06-06-01
Component: 2001 LEXUS GS300 4 DOOR SEDAN Speed: 17.6 MPH, 28.3 KPH
Other Info: Filter Class: 180

1 DRIVER LOWER SPINE Yr, b01062AF.A44

Ymin = -12.53 G's @ 0.0897 Seconds, Ymax = 61.14 G's @ 0.0426 Seconds

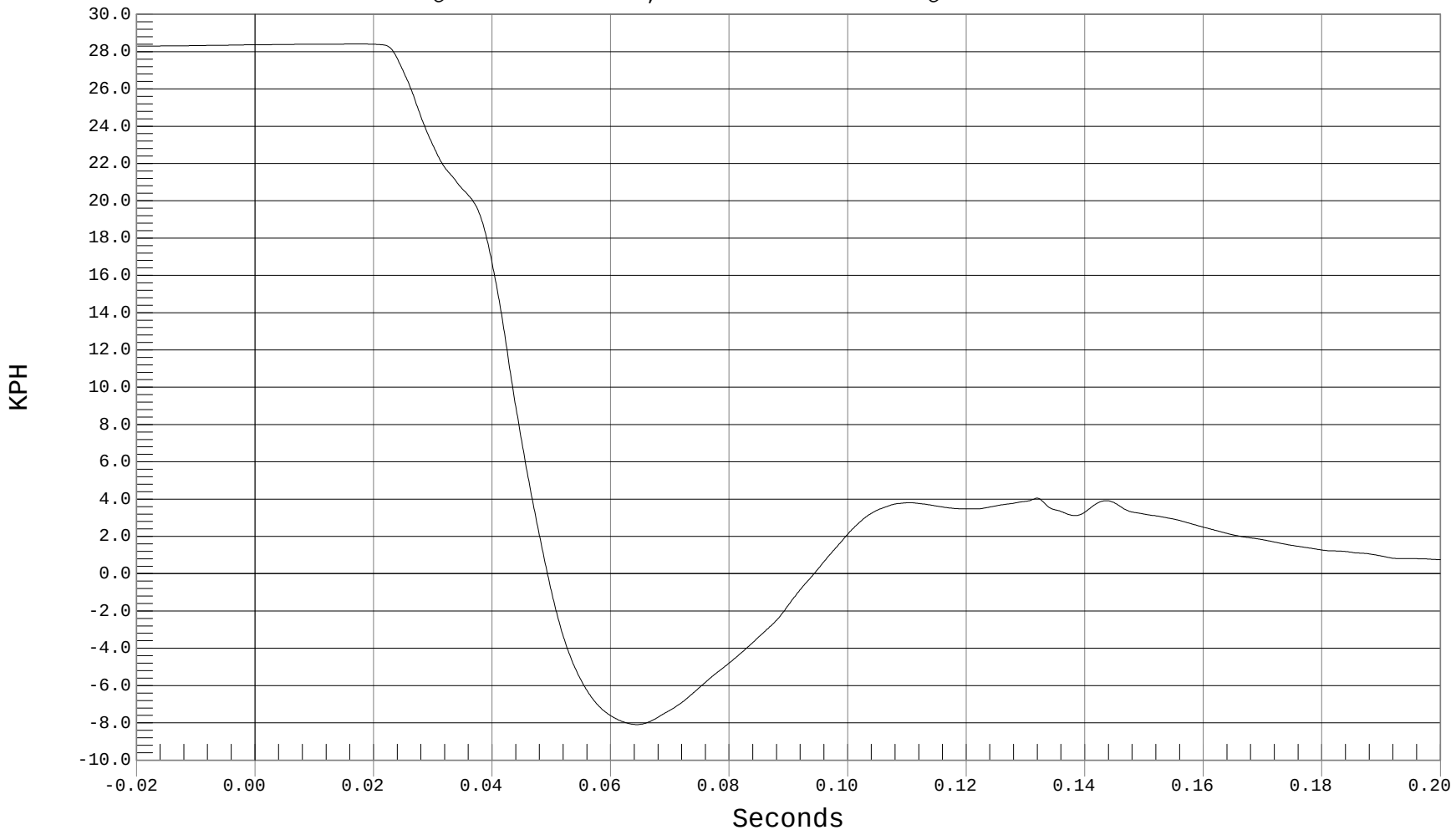


DRIVER LOWER SPINE REDUNDANT Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105) | Test Date: 06-06-01
Component: 2001 LEXUS GS300 4 DOOR SEDAN | Speed: 17.6 MPH, 28.3 KPH
Other Info: | Filter Class: 180

1 DRIVER LOWER SPINE Y REDUNDANT VELOCITY, b01062AI.V44

Ymin = -8.09 KPH @ 0.0643 Seconds, Ymax = 28.41 KPH @ 0.0175 Seconds



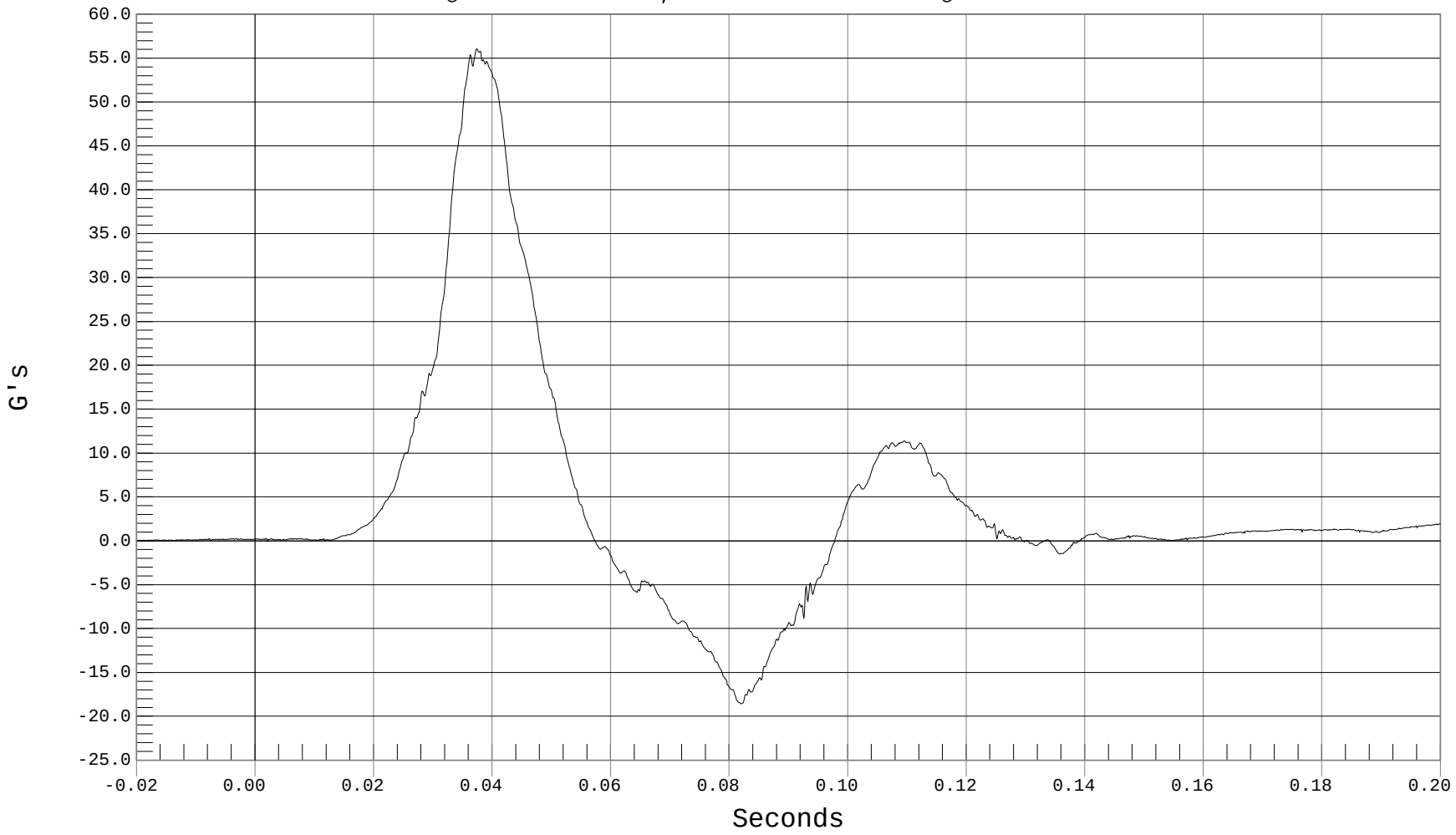
DRIVER PELVIS REDUNDANT Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Filter Class: 1000

1 DRIVER PELVIS Yr, b01062AT.A45

Ymin = -18.58 G's @ 0.0819 Seconds, Ymax = 56.07 G's @ 0.0373 Seconds

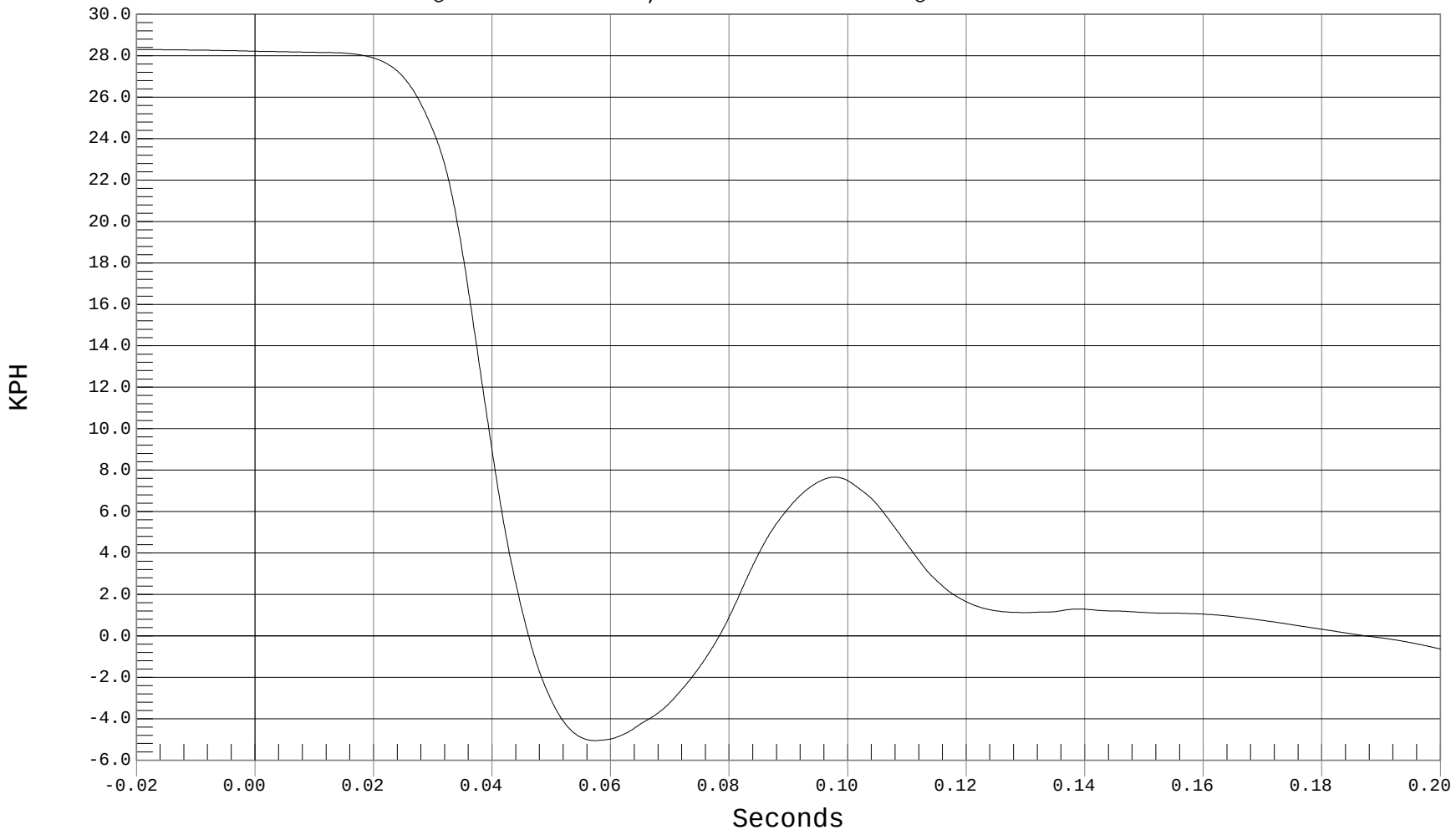


DRIVER PELVIS REDUNDANT Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105) | Test Date: 06-06-01
Component: 2001 LEXUS GS300 4 DOOR SEDAN | Speed: 17.6 MPH, 28.3 KPH
Other Info: | Filter Class: 180

1 DRIVER PELVIS Y REDUNDANT VELOCITY, b01062AI.V45

Ymin = -5.06 KPH @ 0.0572 Seconds, Ymax = 28.3 KPH @ -0.0199 Seconds



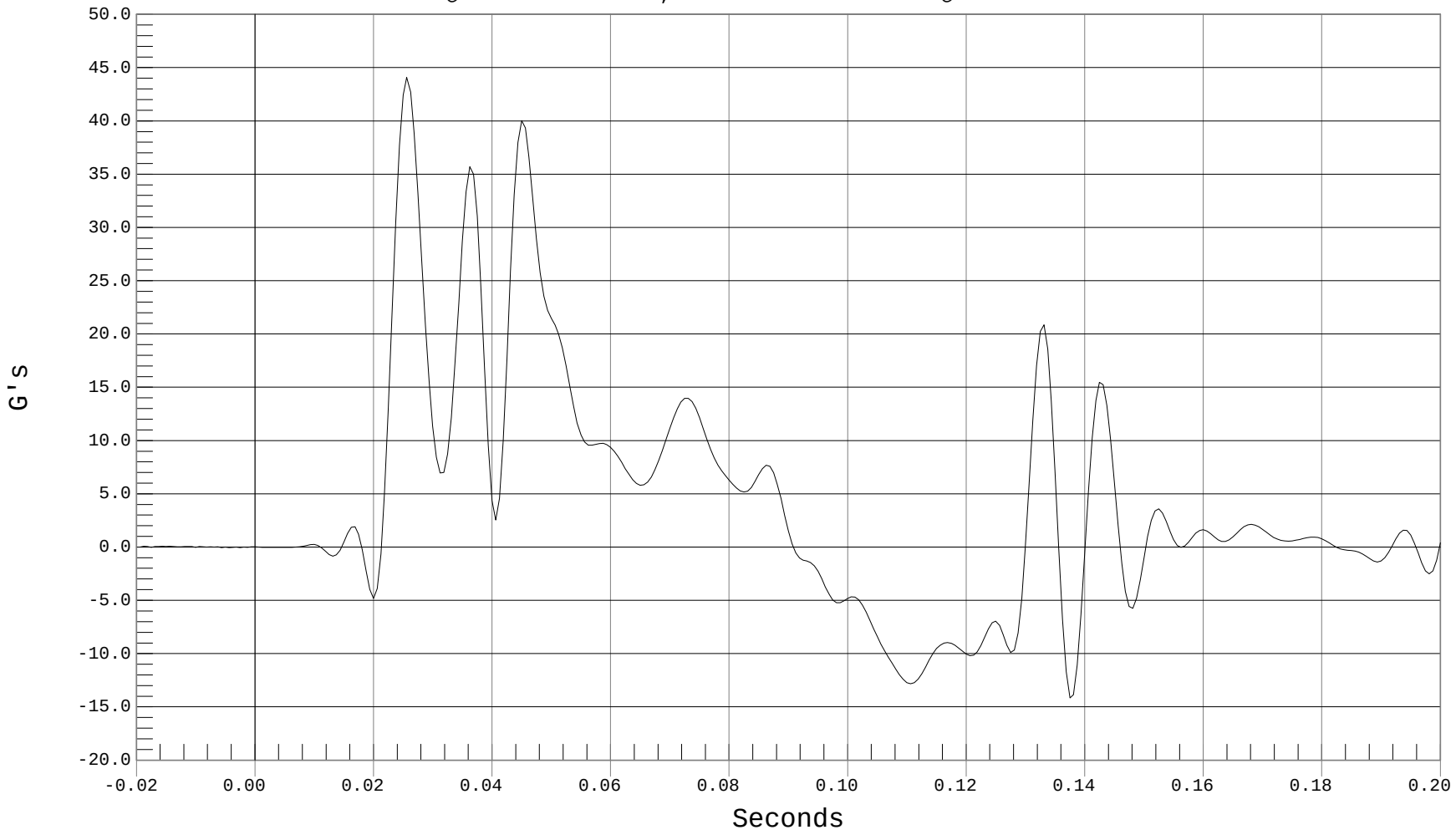
DRIVER UPPER RIB Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Fir Filtered

1 DRIVER UPPER RIB Y, b01062FI.R10

Ymin = -14.15 G's @ 0.1374 Seconds, Ymax = 44.09 G's @ 0.0255 Seconds



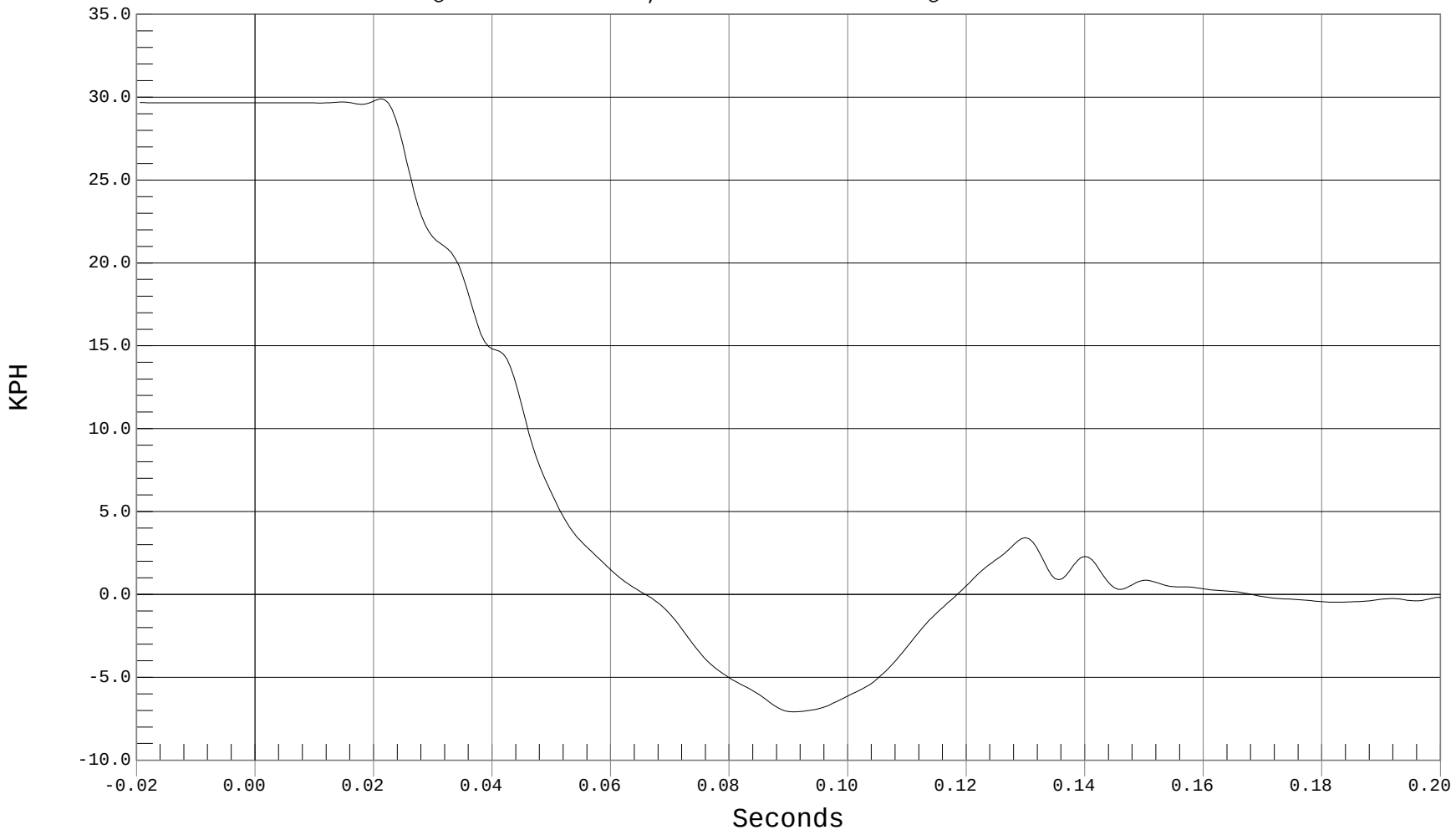
DRIVER UPPER RIB Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Fir Filtered

1 DRIVER UPPER RIB Y VELOCITY, b01062FI.V10

Ymin = -7.09 KPH @ 0.0905 Seconds, Ymax = 29.91 KPH @ 0.0212 Seconds



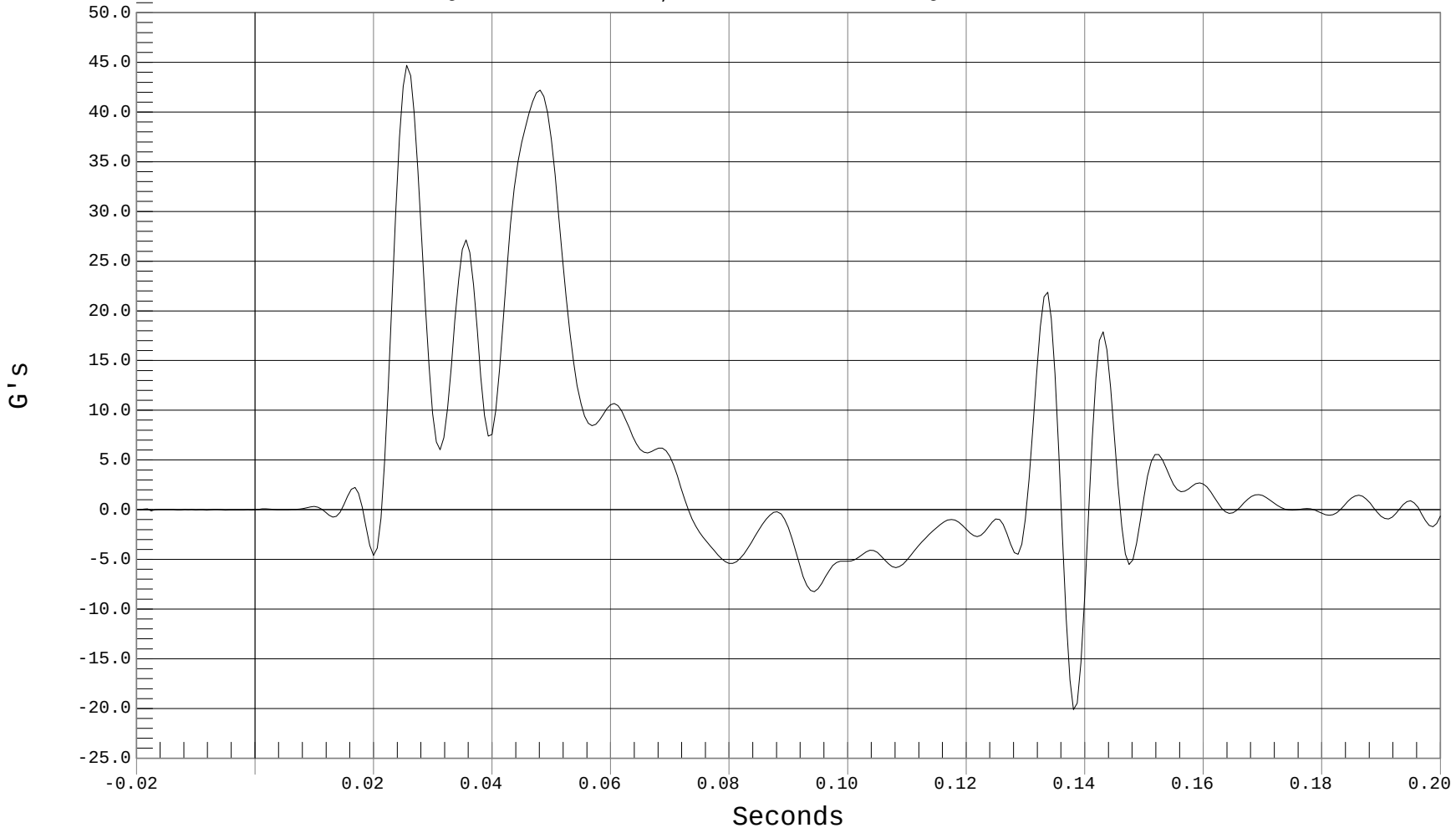
DRIVER LOWER RIB Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Fir Filtered

1 DRIVER LOWER RIB Y, b01062FI.R11

Ymin = -20.13 G's @ 0.1380 Seconds, Ymax = 44.7 G's @ 0.0255 Seconds



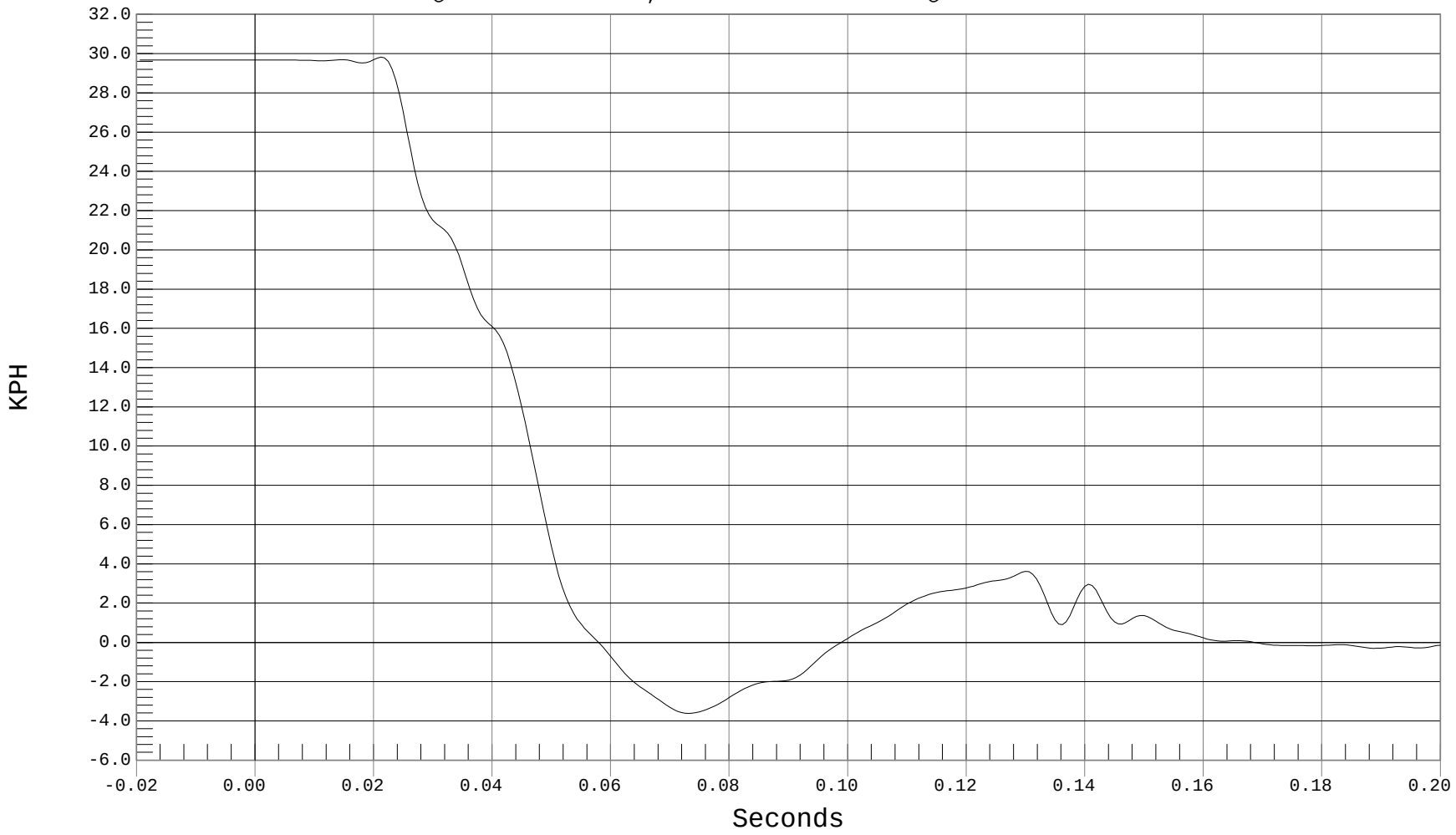
DRIVER LOWER RIB Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Fir Filtered

1 DRIVER LOWER RIB Y VELOCITY, b01062FI.V11

Ymin = -3.62 KPH @ 0.0730 Seconds, Ymax = 29.83 KPH @ 0.0212 Seconds

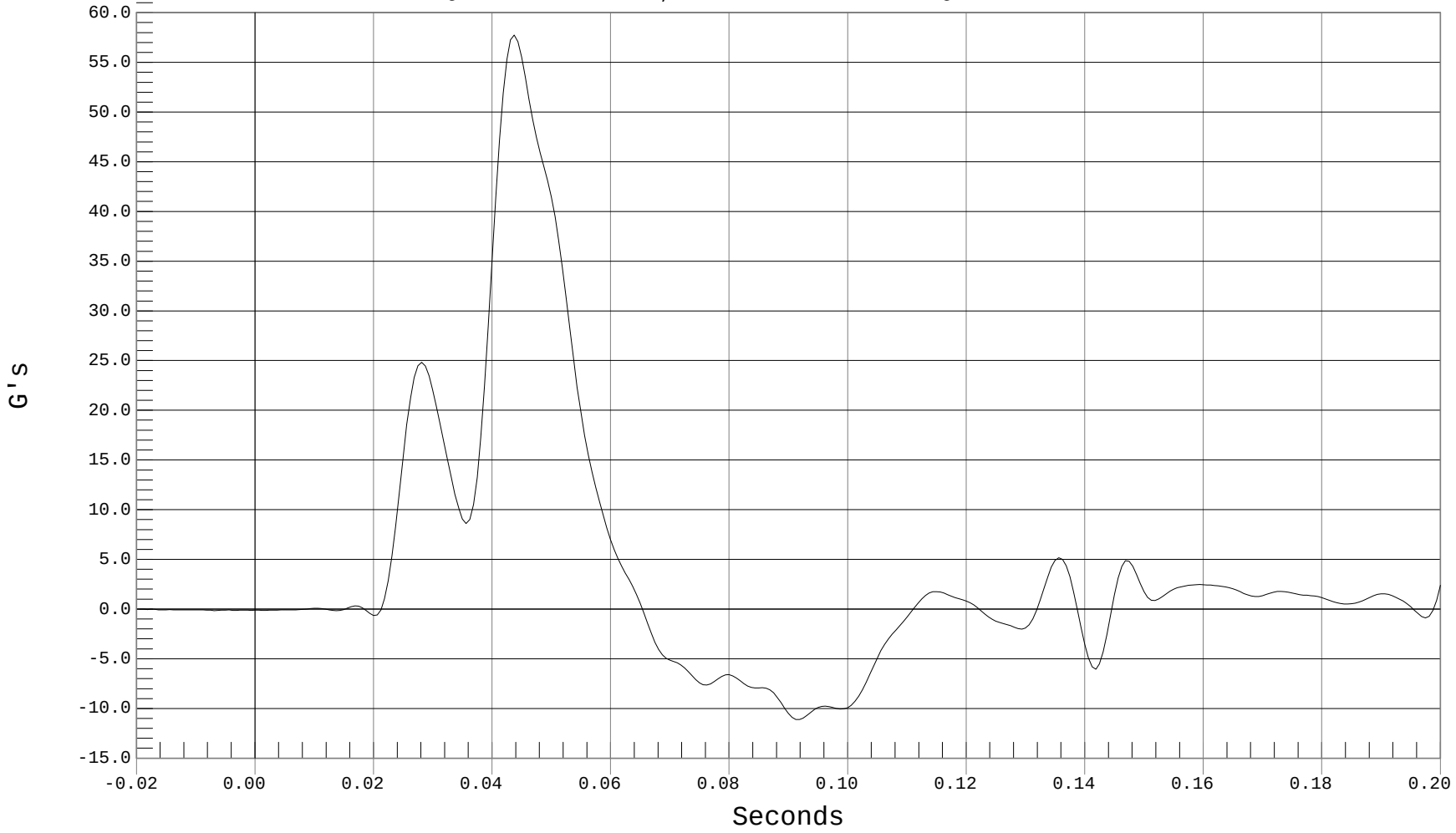


DRIVER LOWER SPINE Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105) Test Date: 06-06-01
Component: 2001 LEXUS GS300 4 DOOR SEDAN Speed: 17.6 MPH, 28.3 KPH
Other Info: Fir Filtered

1 DRIVER LOWER SPINE Y, b01062FI.R12

Ymin = -11.12 G's @ 0.0918 Seconds, Ymax = 57.76 G's @ 0.0437 Seconds

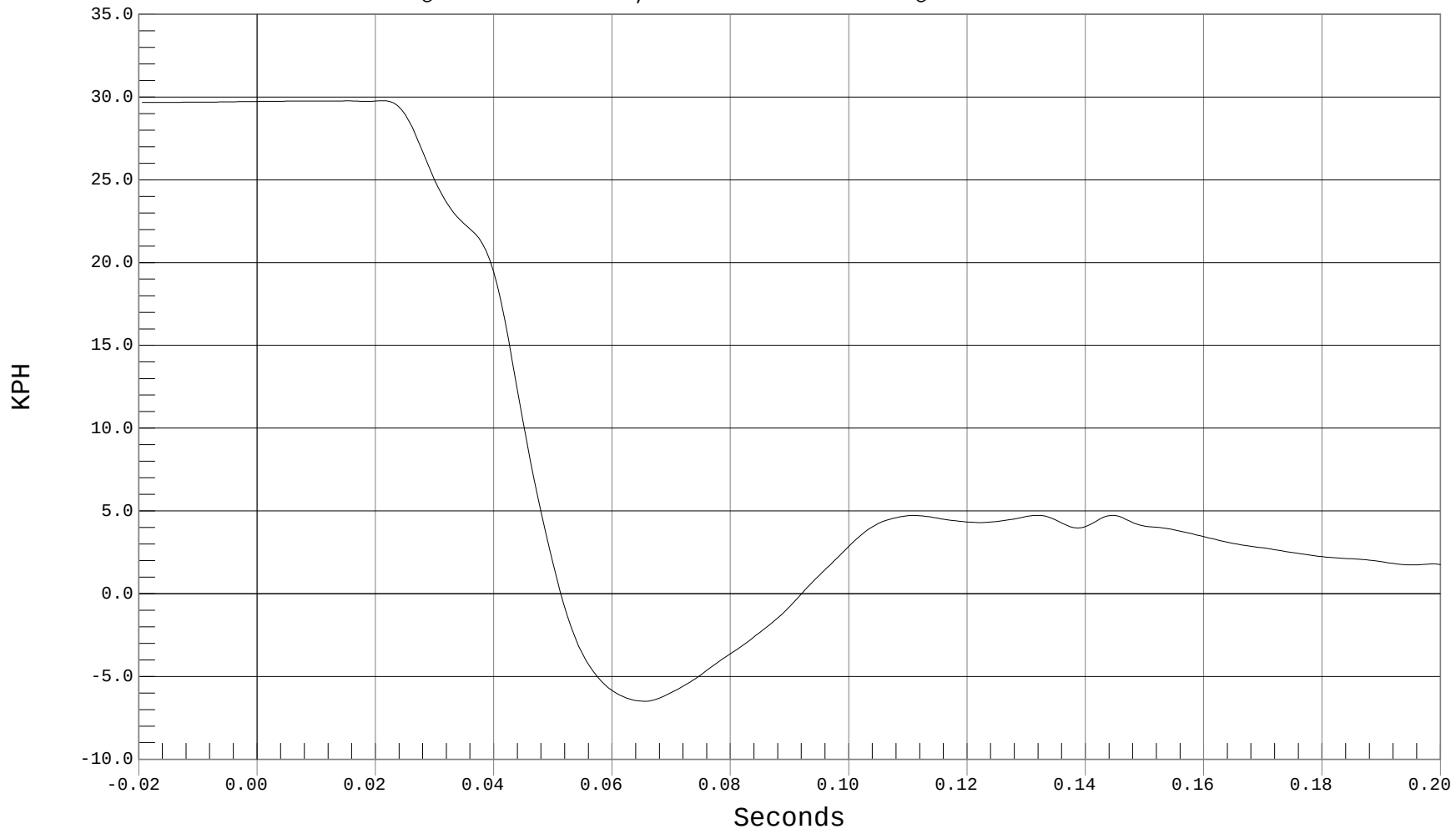


DRIVER LOWER SPINE Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105) Test Date: 06-06-01
Component: 2001 LEXUS GS300 4 DOOR SEDAN Speed: 17.6 MPH, 28.3 KPH
Other Info: Fir Filtered

1 DRIVER LOWER SPINE Y VELOCITY, b01062FI.V12

Ymin = -6.5 KPH @ 0.0655 Seconds, Ymax = 29.78 KPH @ 0.0212 Seconds



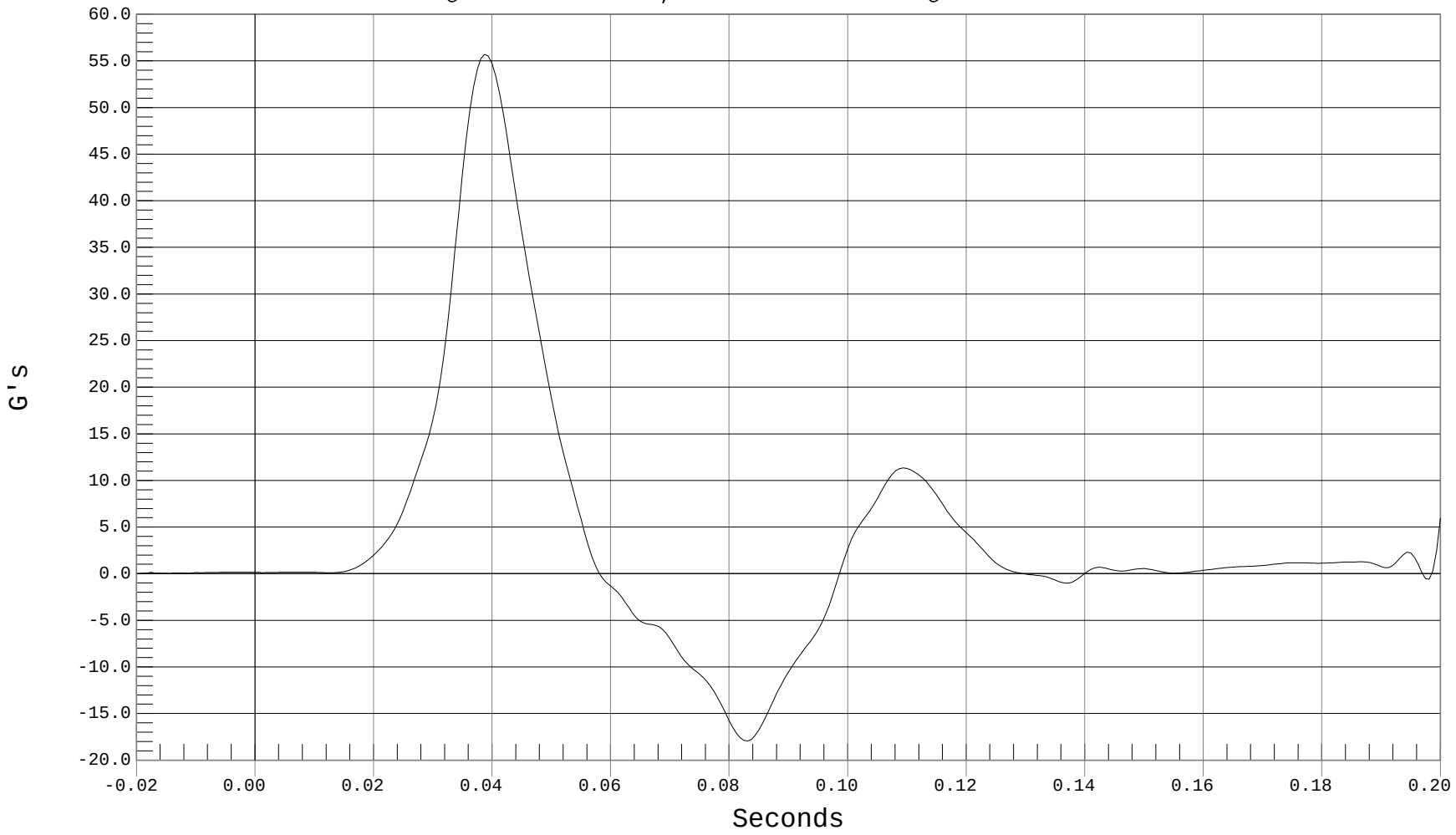
DRIVER PELVIS Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Fir Filtered

1 DRIVER PELVIS Y, b01062FI.R13

Ymin = -17.94 G's @ 0.0830 Seconds, Ymax = 55.7 G's @ 0.0387 Seconds



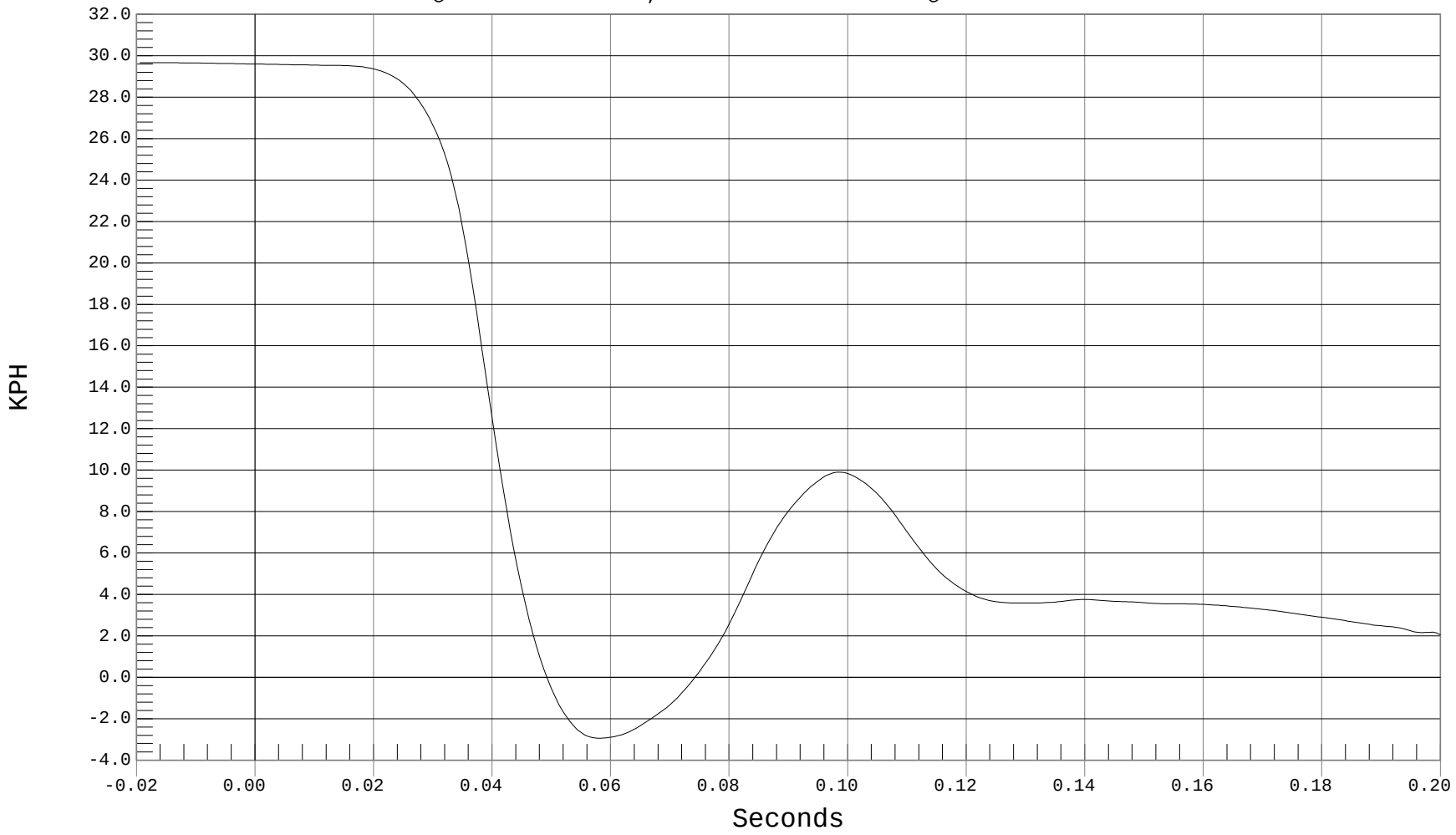
DRIVER PELVIS Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Fir Filtered

1 DRIVER PELVIS Y VELOCITY, b01062FI.V13

Ymin = -2.94 KPH @ 0.0580 Seconds, Ymax = 29.67 KPH @ -0.0195 Seconds

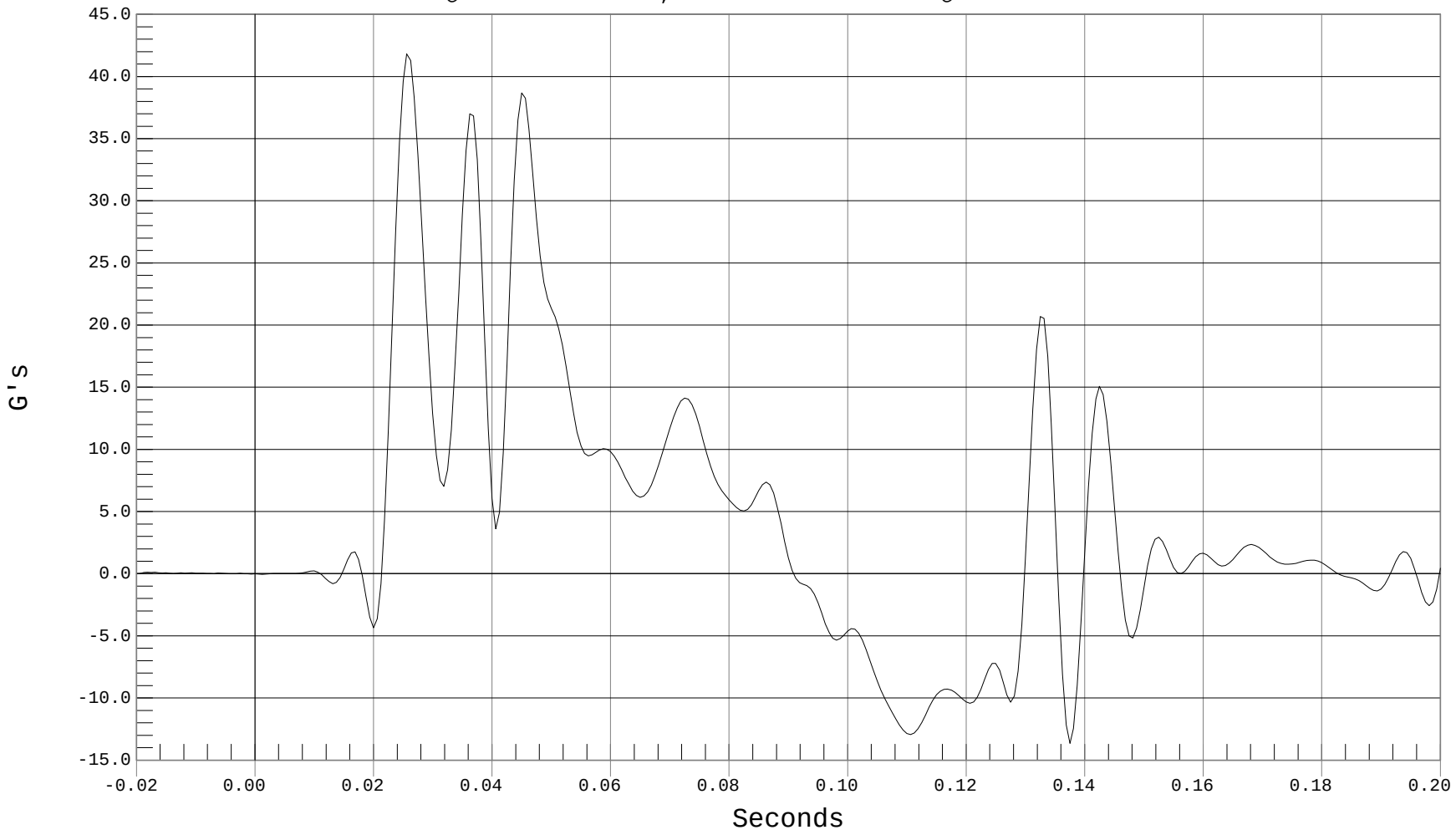


DRIVER UPPER RIB REDUNDANT Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105) | Test Date: 06-06-01
Component: 2001 LEXUS GS300 4 DOOR SEDAN | Speed: 17.6 MPH, 28.3 KPH
Other Info: | Fir Filtered

1 DRIVER UPPER RIB Yr, b01062FI.R42

Ymin = -13.64 G's @ 0.1374 Seconds, Ymax = 41.83 G's @ 0.0255 Seconds

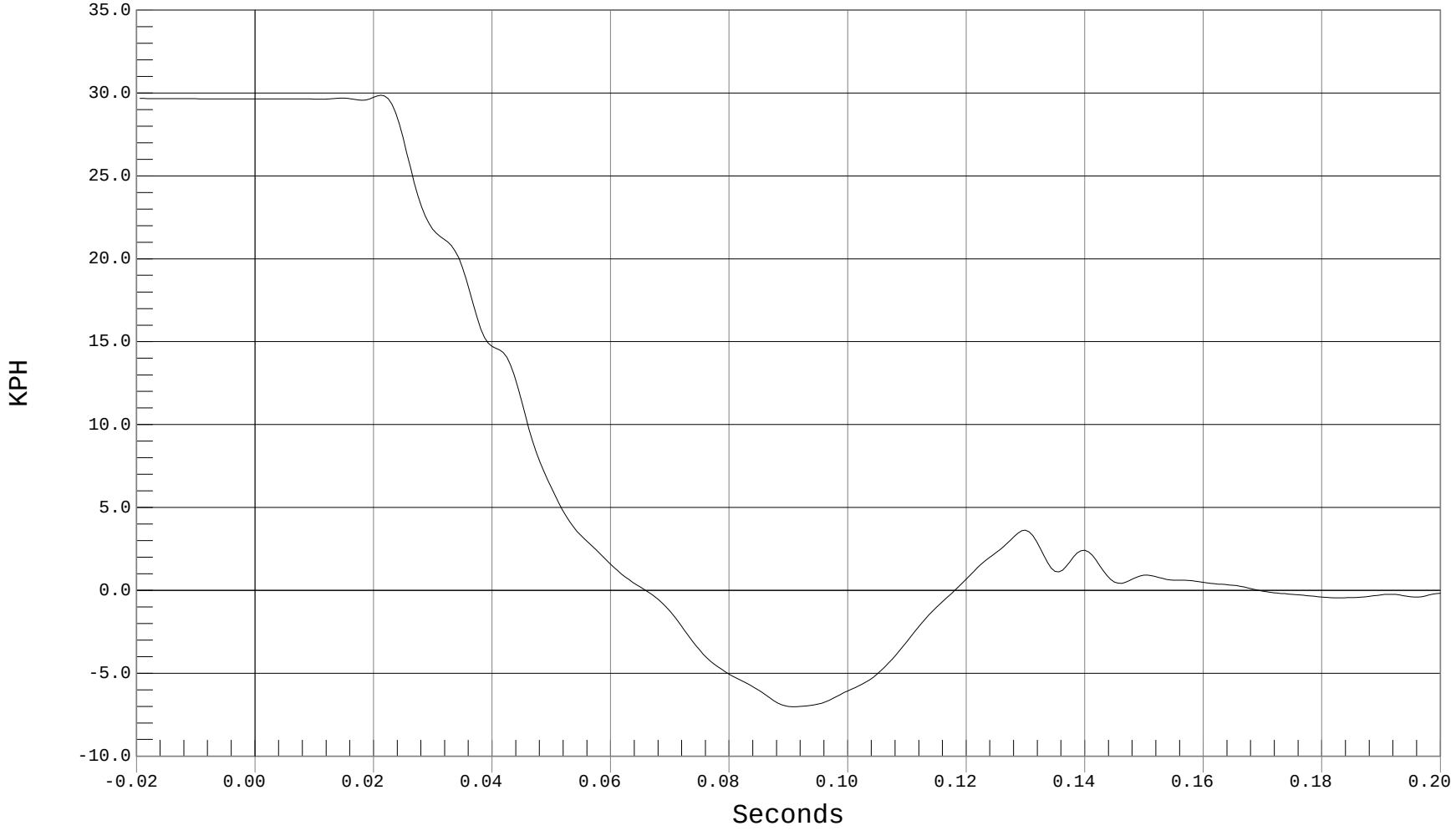


DRIVER UPPER RIB REDUNDANT Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105) | Test Date: 06-06-01
Component: 2001 LEXUS GS300 4 DOOR SEDAN | Speed: 17.6 MPH, 28.3 KPH
Other Info: | Fir Filtered

1 DRIVER UPPER RIB Y REDUNDANT VELOCITY, b01062FI.V42

Ymin = -7.02 KPH @ 0.0905 Seconds, Ymax = 29.87 KPH @ 0.0212 Seconds

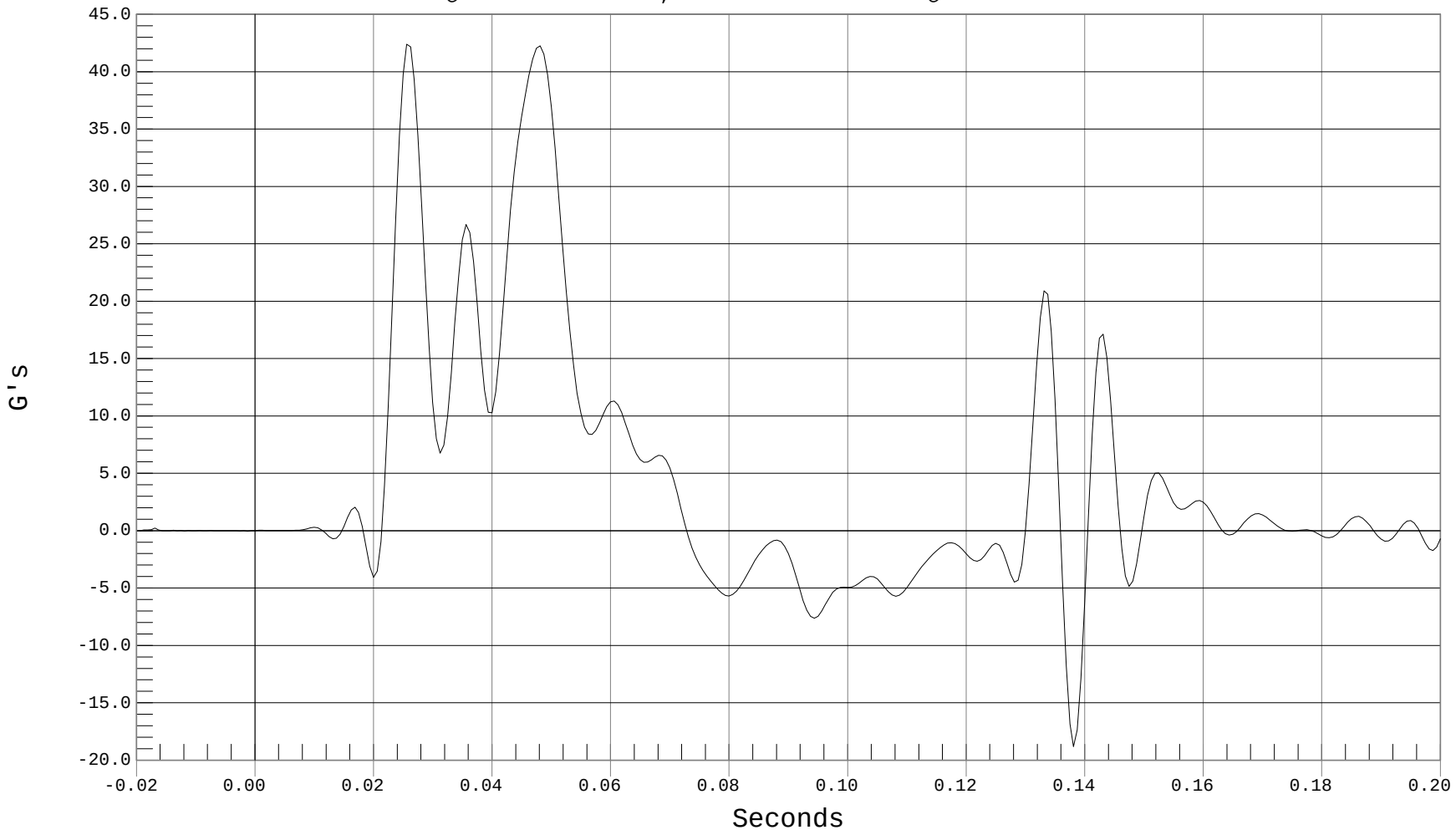


DRIVER LOWER RIB REDUNDANT Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105) | Test Date: 06-06-01
Component: 2001 LEXUS GS300 4 DOOR SEDAN | Speed: 17.6 MPH, 28.3 KPH
Other Info: | Fir Filtered

1 DRIVER LOWER RIB Yr, b01062FI.R43

Ymin = -18.82 G's @ 0.1380 Seconds, Ymax = 42.4 G's @ 0.0255 Seconds

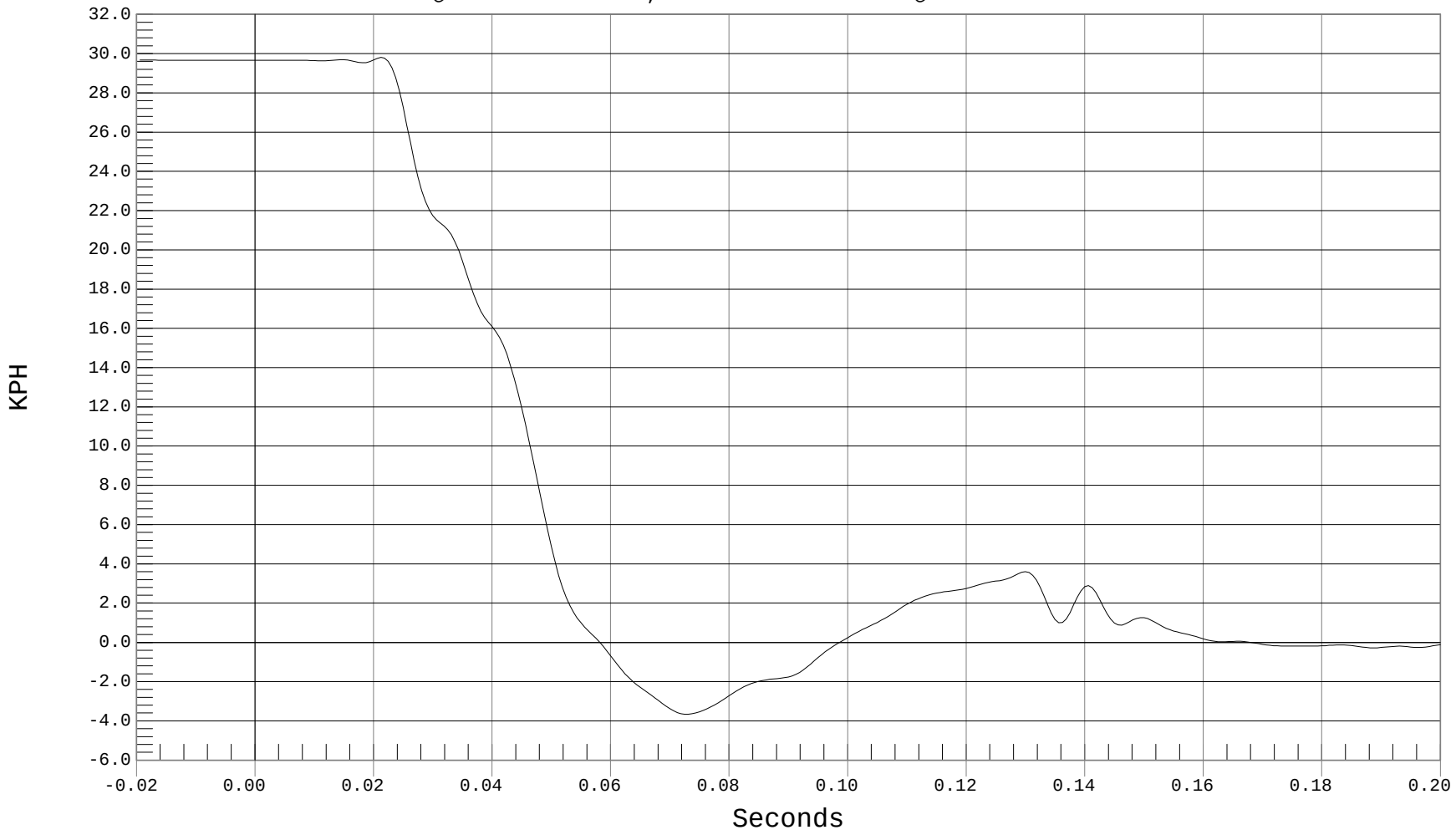


DRIVER LOWER RIB REDUNDANT Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105) Test Date: 06-06-01
Component: 2001 LEXUS GS300 4 DOOR SEDAN Speed: 17.6 MPH, 28.3 KPH
Other Info: Fir Filtered

1 DRIVER LOWER RIB Y REDUNDANT VELOCITY, b01062FI.V43

Ymin = -3.66 KPH @ 0.0730 Seconds, Ymax = 29.8 KPH @ 0.0212 Seconds

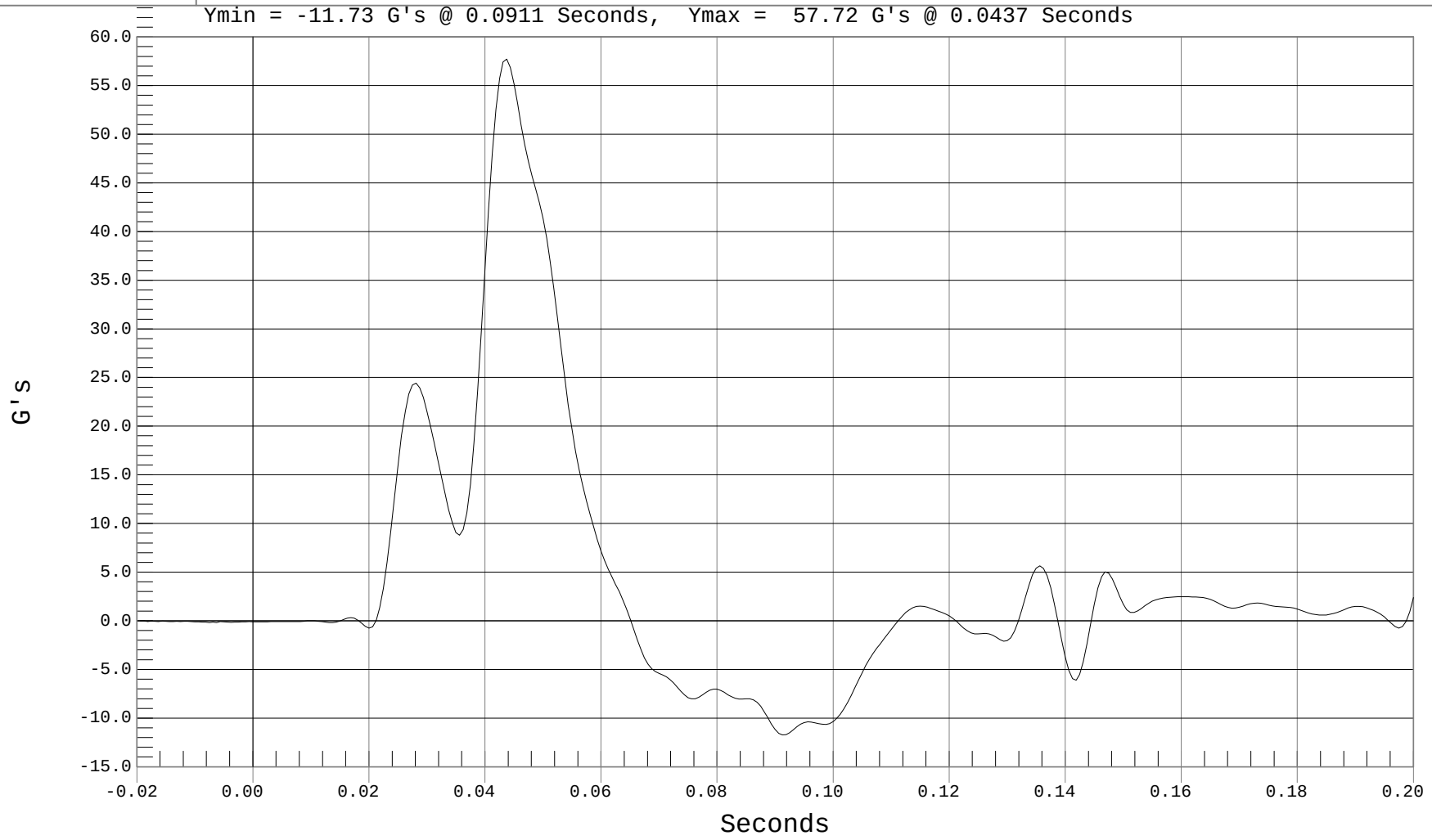


DRIVER LOWER SPINE REDUNDANT Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105) Test Date: 06-06-01
Component: 2001 LEXUS GS300 4 DOOR SEDAN Speed: 17.6 MPH, 28.3 KPH
Other Info: Fir Filtered

1 DRIVER LOWER SPINE Yr, b01062FI.R44

Ymin = -11.73 G's @ 0.0911 Seconds, Ymax = 57.72 G's @ 0.0437 Seconds

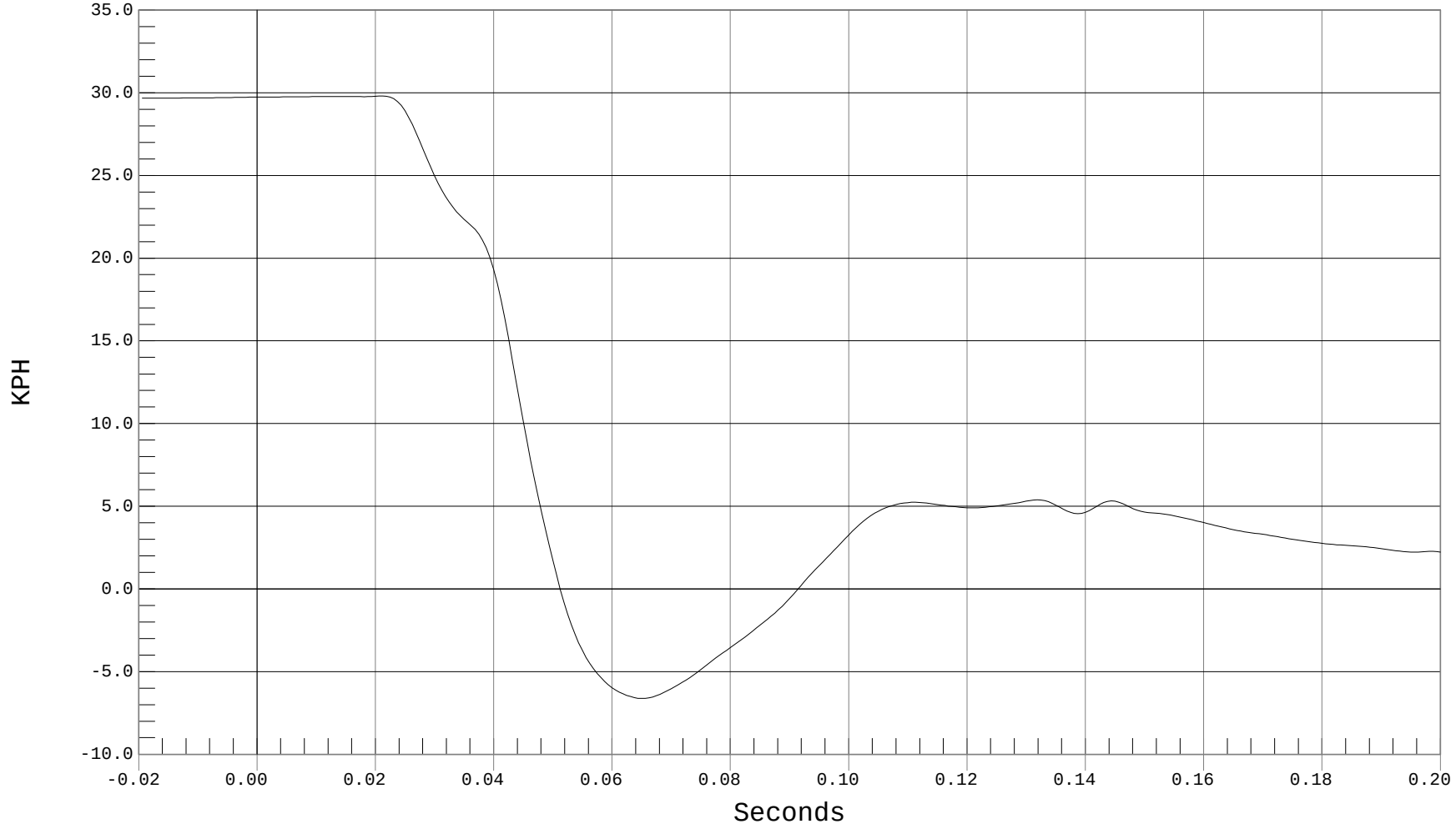


DRIVER LOWER SPINE REDUNDANT Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105) Test Date: 06-06-01
Component: 2001 LEXUS GS300 4 DOOR SEDAN Speed: 17.6 MPH, 28.3 KPH
Other Info: Fir Filtered

1 DRIVER LOWER SPINE Y REDUNDANT VELOCITY, b01062FI.V44

Ymin = -6.62 KPH @ 0.0649 Seconds, Ymax = 29.81 KPH @ 0.0212 Seconds

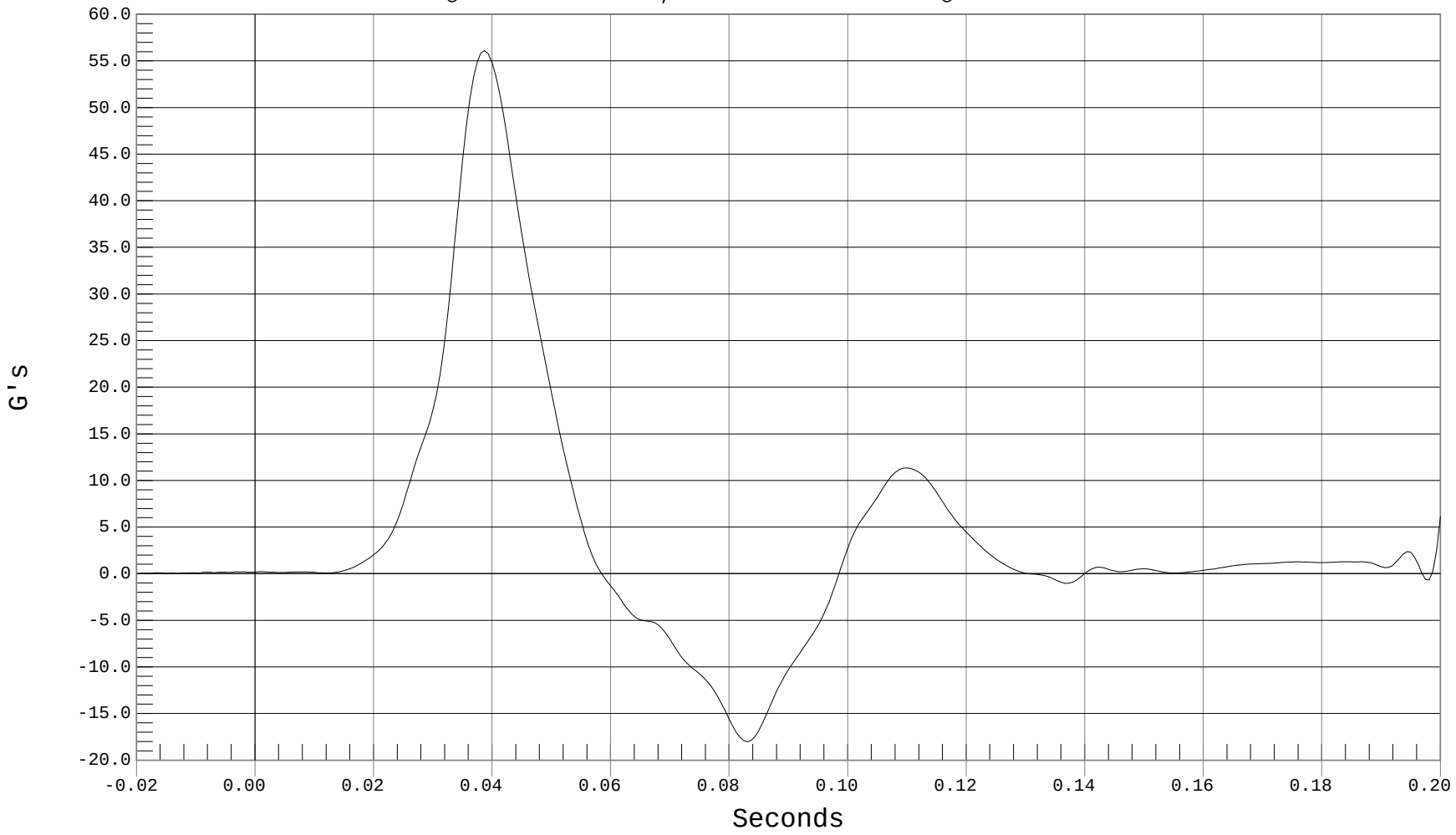


DRIVER PELVIS REDUNDANT Y ACCELERATION

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105) | Test Date: 06-06-01
Component: 2001 LEXUS GS300 4 DOOR SEDAN | Speed: 17.6 MPH, 28.3 KPH
Other Info: | Fir Filtered

1 DRIVER PELVIS Yr, b01062FI.R45

Ymin = -18.03 G's @ 0.0830 Seconds, Ymax = 56.11 G's @ 0.0387 Seconds



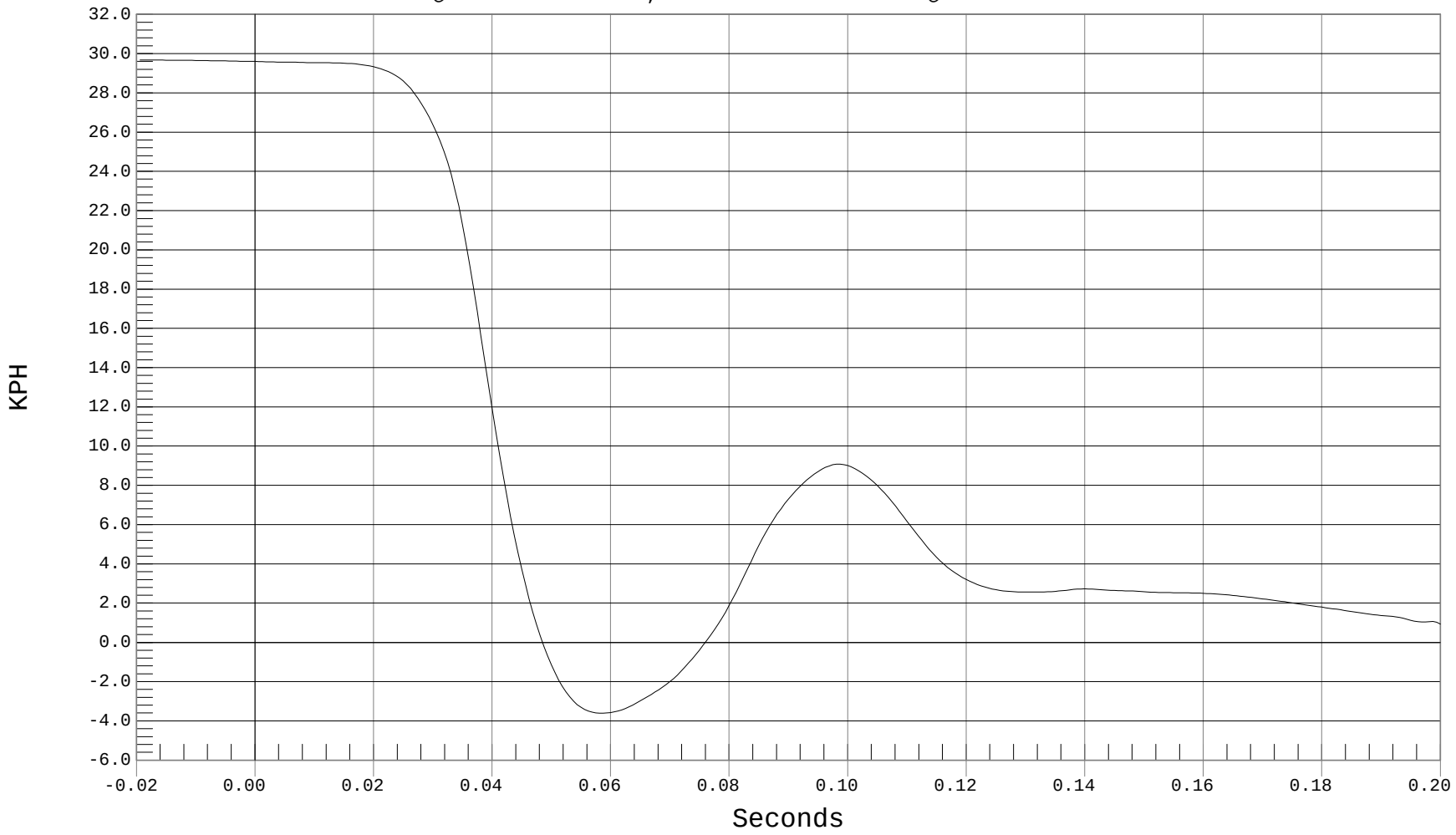
DRIVER PELVIS REDUNDANT Y VELOCITY

Test Desc.: FMVSS 201P SIDE POLE IMPACT (C15105)
Component: 2001 LEXUS GS300 4 DOOR SEDAN
Other Info:

Test Date: 06-06-01
Speed: 17.6 MPH, 28.3 KPH
Fir Filtered

1 DRIVER PELVIS Y REDUNDANT VELOCITY, b01062FI.V45

Ymin = -3.61 KPH @ 0.0587 Seconds, Ymax = 29.67 KPH @ -0.0195 Seconds



APPENDIX C

SID CONFIGURATION AND PERFORMANCE VERIFICATION DATA

SID/HIII Calibration Data Sheet

Side Impact Dummy

Configured to Left Side Impact

Calibration Date: 6/5/01 Technician: Tim Michnay

Tested Parameter	Units	Specification	Dummy Serial Number:036	
			Pre-Test	Post-Test
SH – Seated Height	mm	889 - 909	905	905
RH – Rib Height	mm	501 – 521	505	505
HP – Hip Pivot Height	mm	99 ref.	99	99
RD-Rib from Back Line	mm	229 – 241	234	234
KV – Knee Pivot from Back Line	mm	511 – 526	520	520
SW – Knee Pivot to Floor	mm	490 – 505	496	496
HW – Hip Width	mm	356 – 391	372	372
Laboratory Temperature	°C	18.9 to 25.5	22.1	21.7
Laboratory Relative Humidity	%	10 to 70	50	54
Probe Velocity	m/s	4.27 – 4.33	4.28	4.29
Upper Rib	G's	37 – 46	44	46
Lower Rib	G's	37 – 46	46	46
Lower Spine	G's	15 – 22	20	20
Laboratory Temperature	°C	18.9 to 25.5	22.1	21.7
Laboratory Relative Humidity	%	10 to 70	50	52
Probe Velocity	m/s	4.27 – 4.33	4.28	4.29
Pelvis	G's	40 - 60	45	45

SID/HIII Calibration Data Sheet

Side Impact Dummy

Pre-Test External Measurements

ATD Serial No.: 036 Test Number:D0178

Tested Parameter	Units	Specification	Result	Pass/Fail
SH – Seated Height	mm	889 - 909	905	Pass
RH – Rib Height	mm	501 – 521	505	Pass
HP – Hip Pivot Height	mm	99 ref.	99	Pass
RD-Rib from Back Line	mm	229 – 241	234	Pass
KV – Knee Pivot from Back Line	mm	511 – 526	520	Pass
SW – Knee Pivot to Floor	mm	490 – 505	496	Pass
HW – Hip Width	mm	356 – 391	372	Pass
		Overall Test Results		Pass

6/5/01

Laboratory Technician

Test Date

Approved By

SID/HIII Calibration Data Sheet

Side Impact Dummy

Pre-Test Head Drop (Lateral) Calibration

ATD Serial No.: 036 Test I.D.:D01781

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	46	Pass
Peak Resultant Acceleration	G's	120 to 150	149	Pass
Peak Longitudinal Acceleration	G's	±15.0	-8	Pass
Is Resultant Curve Unimodal?	Yes/No	within 15% of Peak	Yes	Pass
		Overall Test Results		Pass

6/5/01

Laboratory Technician Test Date

Approved By

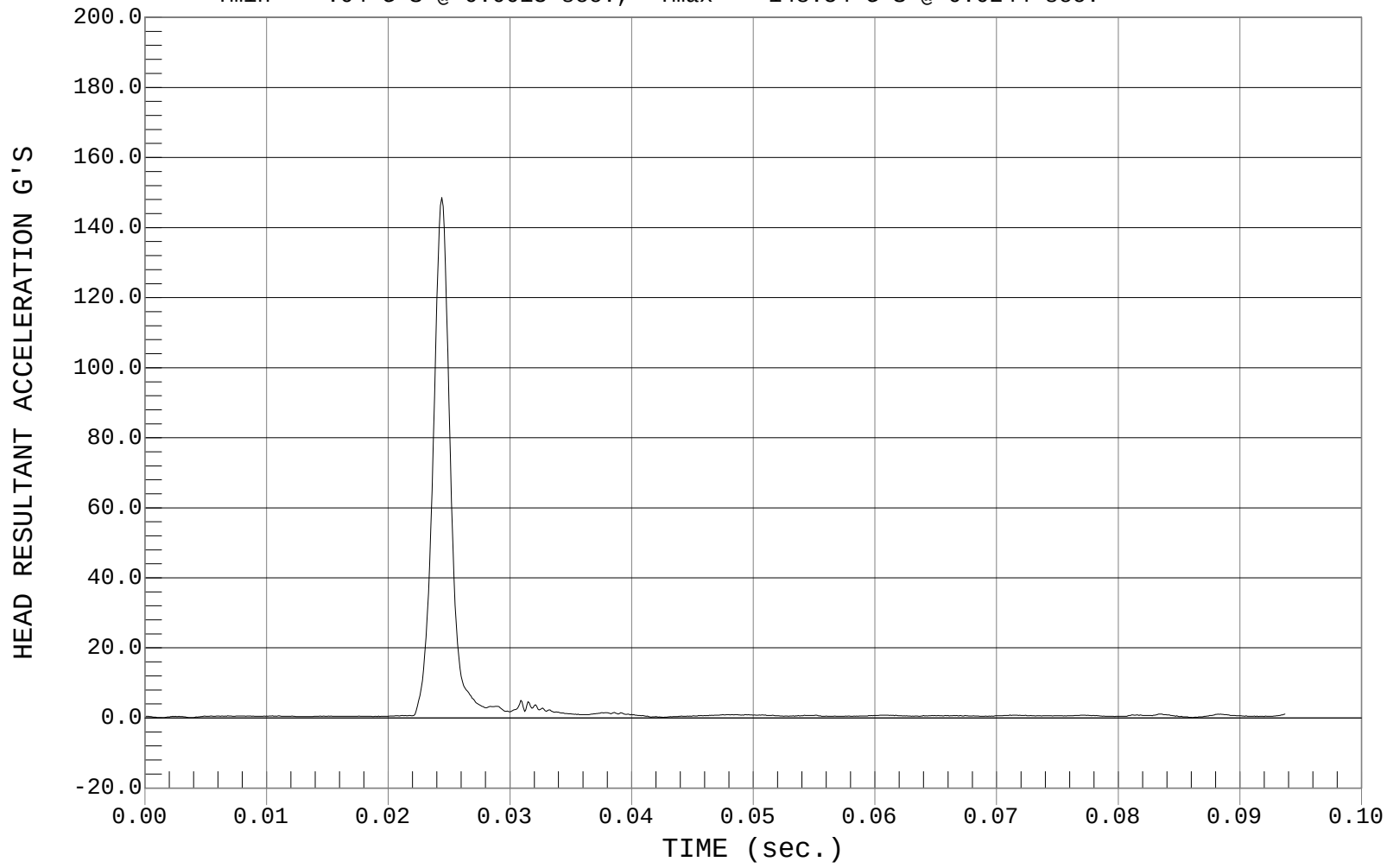
PEAK RESULTANT ACCELERATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #036

Test Date: 06-05-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

1 HEAD RESULTANT ACCELERATION, D01781AV.A01

Ymin = .04 G'S @ 0.0013 sec., Ymax = 148.54 G'S @ 0.0244 sec.



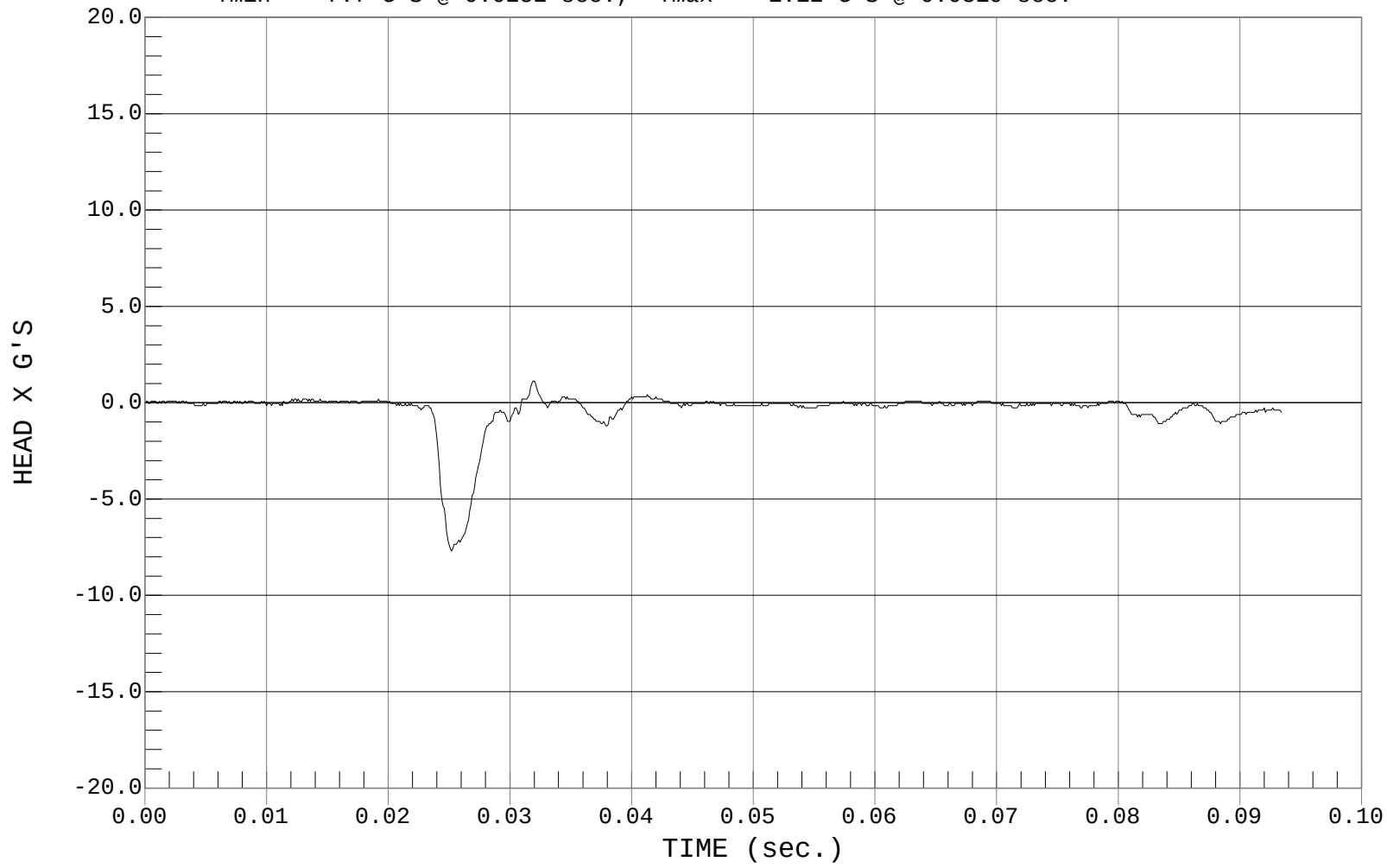
PEAK LONGITUDINAL ACCELERATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #036

Test Date: 06-05-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

1 HEAD X, D01781AT.A01

Ymin = -7.7 G'S @ 0.0252 sec., Ymax = 1.12 G'S @ 0.0319 sec.



SID/HIII Calibration Data Sheet

Side Impact Dummy

Pre-Test Neck Pendulum Calibration

ATD Serial No.: 036 Test I.D.:D01789

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 – 22.2	22.1	Pass
Laboratory Relative Humidity		%	10 to 70	50	Pass
Impact Velocity		m/s	6.89 to 7.13	7.04	Pass
Pendulum Deceleration	10 ms	ms	1.96 – 2.55	2.29	Pass
	20 ms	ms	4.12 – 5.10	4.72	Pass
	30 ms	ms	5.73 – 7.01	6.59	Pass
	40 - 70 ms	ms	6.27 – 7.64	6.83	Pass
Midsaggital Plane Max Rotation		Degrees	66 - 82	73	Pass
Head Rotation Peak to Zero – Decay Time		ms	58 – 67	59	Pass
Max. M_x at Occipital Condyles		Nm	73 – 88	74	Pass
M_x Peak to Zero – Decay Time		ms	49 – 64	56	Pass
M_x Peak to Max. Head Rotation		ms	2 - 16	12	Pass
			Overall Test Results		Pass

Laboratory Technician

6/5/01
Test Date

Approved By

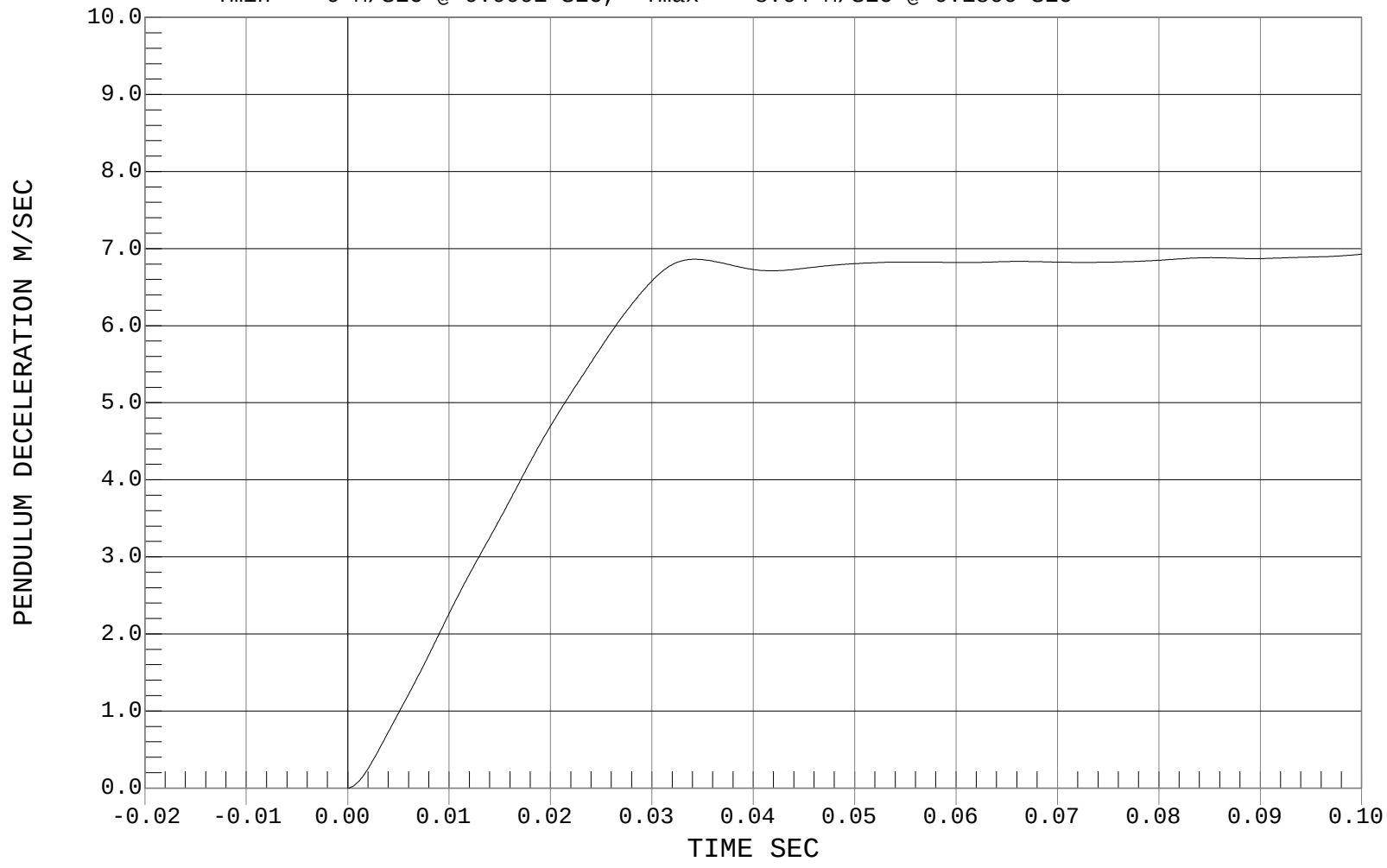
PENDULUM DECELERATION

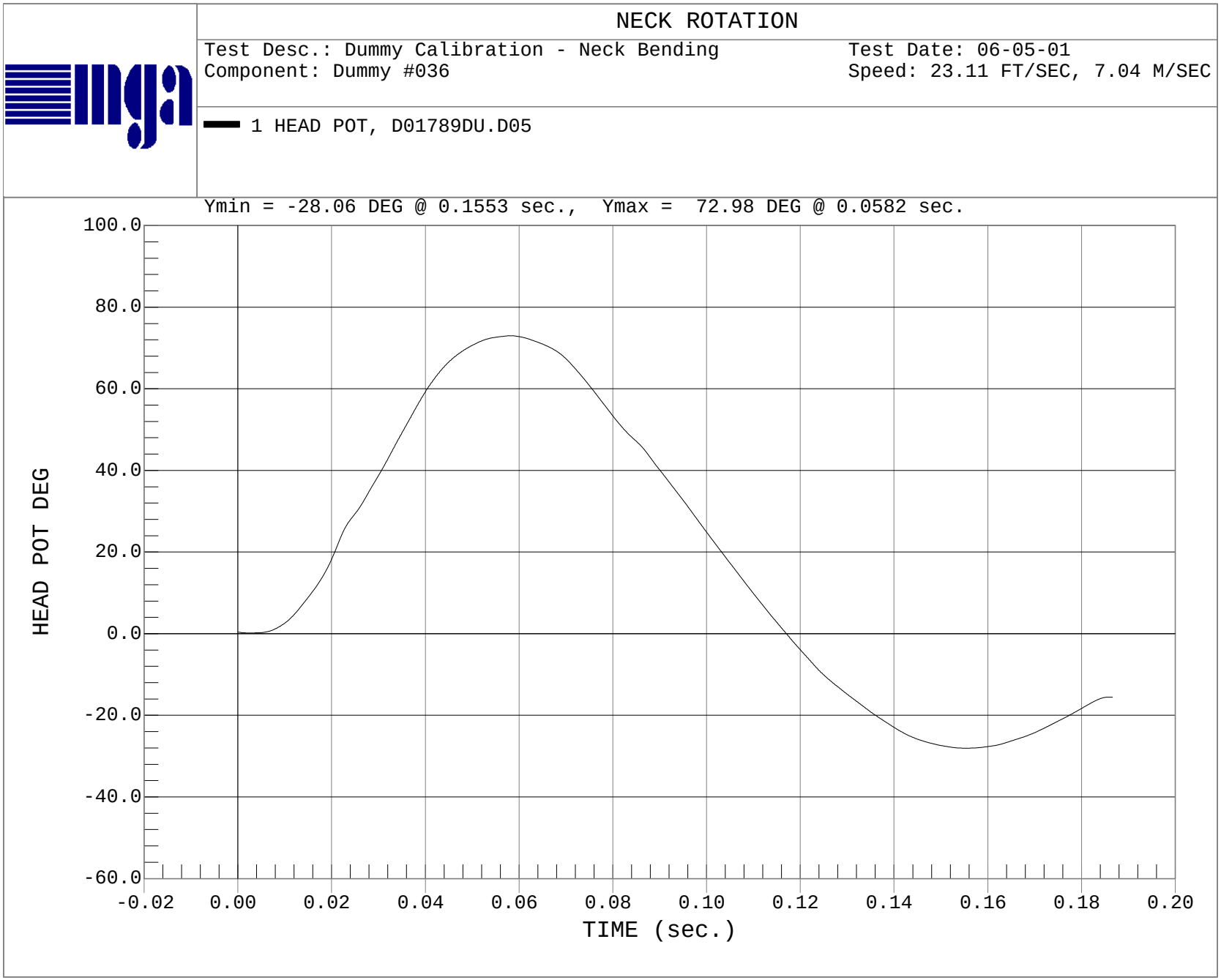
Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #036

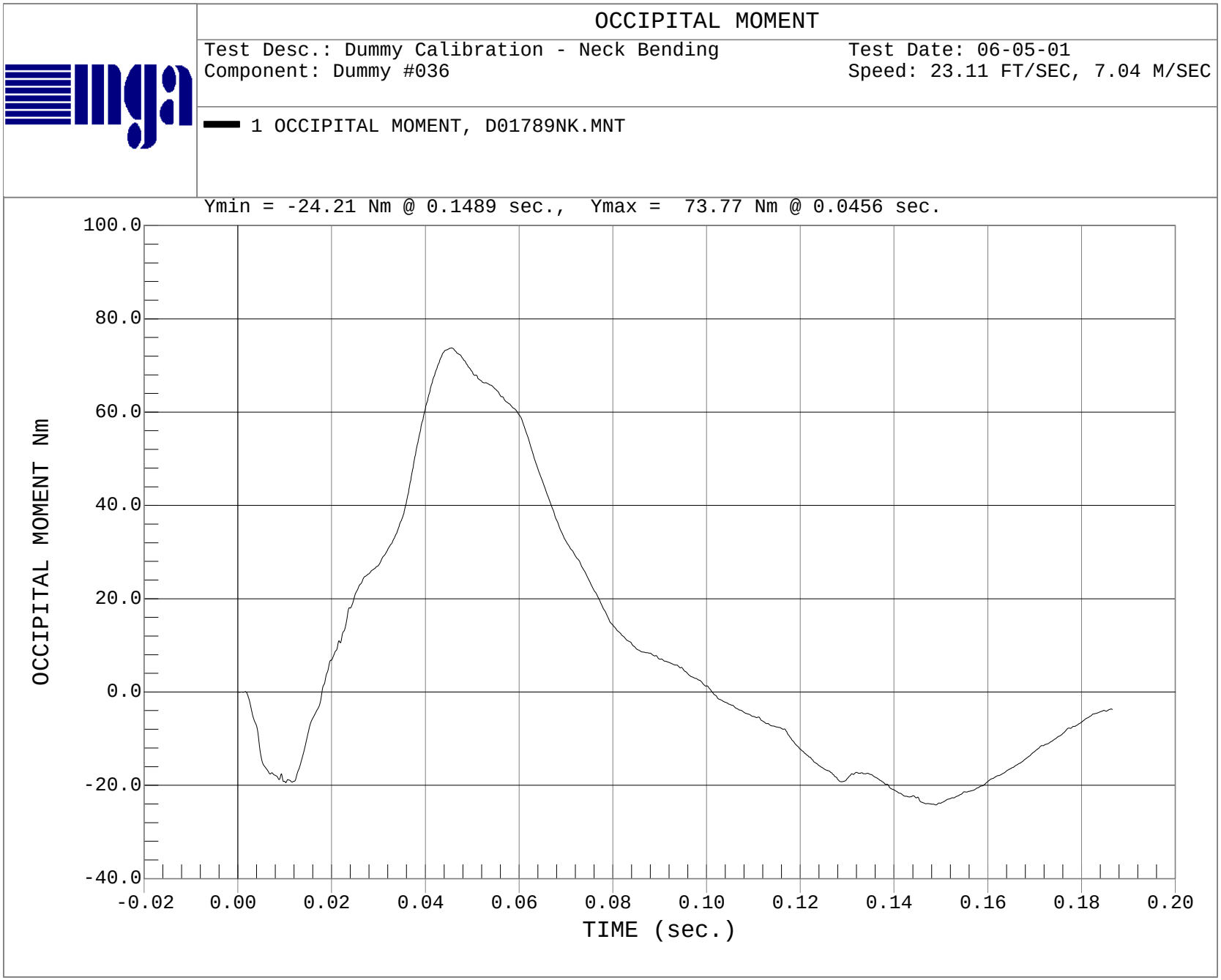
Test Date: 06-05-01
Speed: 23.11 FT/SEC, 7.04 M/SEC

1 PENDULUM DECELERATION, D01789AI.V04

Ymin = 0 M/SEC @ 0.0001 SEC, Ymax = 8.64 M/SEC @ 0.1866 SEC




NECK ROTATION
Test Desc.: Dummy Calibration - Neck Bending
Test Date: 06-05-01
Component: Dummy #036
Speed: 23.11 FT/SEC, 7.04 M/SEC
1 HEAD POT, D01789DU.D05
Ymin = -28.06 DEG @ 0.1553 sec., Ymax = 72.98 DEG @ 0.0582 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 Bending
Test Date: 06-05-01
Component: Dummy #036
Speed: 23.11 FT/SEC, 7.04 M/SEC
1 OCCIPITAL MOMENT, D01789NK.MNT
Ymin = -24.21 Nm @ 0.1489 sec., Ymax = 73.77 Nm @ 0.0456 sec.
OCCIPITAL MOMENT Nm
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.)

SID/HIII Calibration Data Sheet

Side Impact Dummy

Pre-Test Thorax Impact Calibration

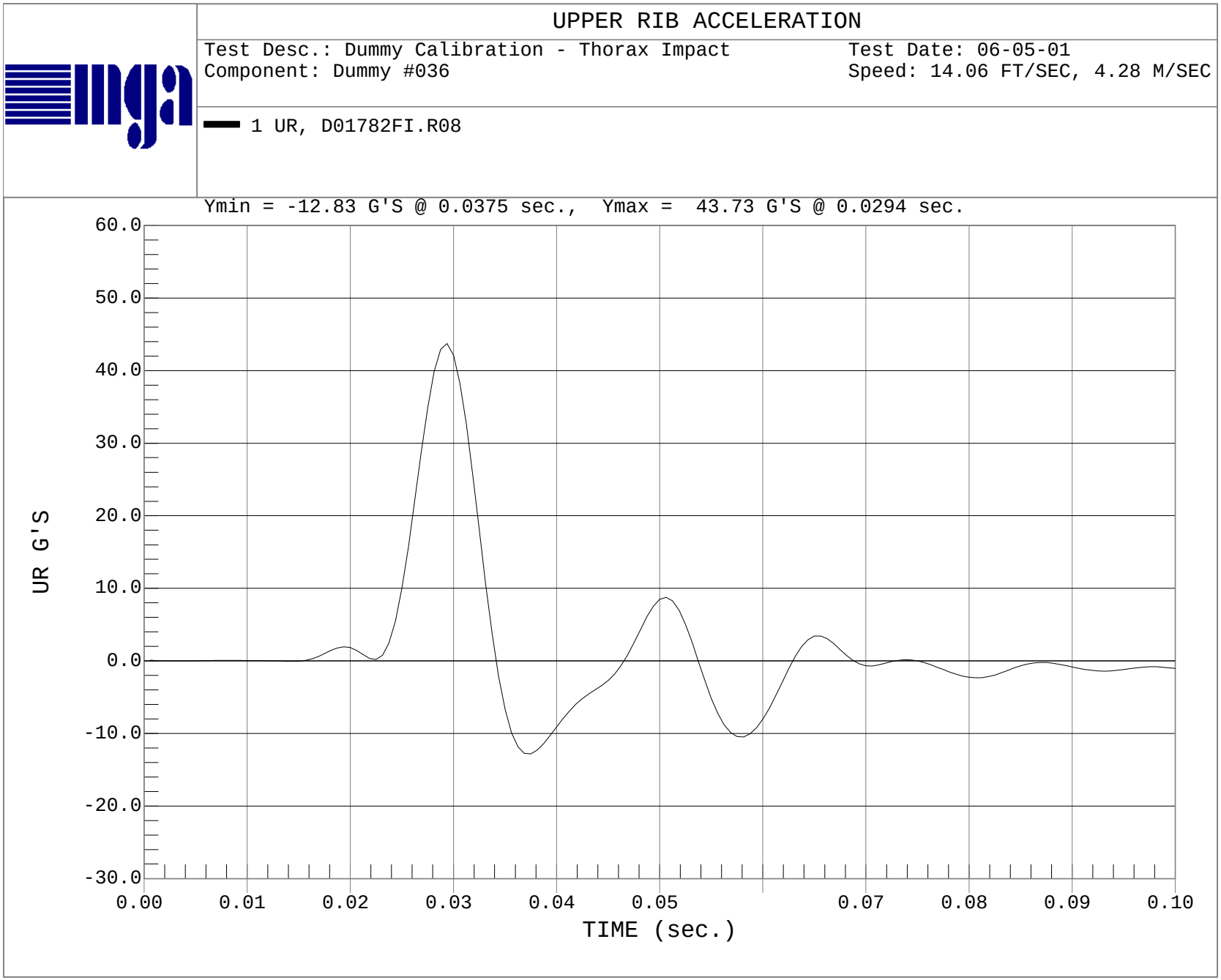
ATD Serial No.: 036 Test I.D.:D01782

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 – 25.5	22.1	Pass
Laboratory Relative Humidity	%	10 to 70	50	Pass
Probe Velocity	m/s	4.27 – 4.33	4.28	Pass
Upper Rib	G's	37 – 46	44	Pass
Lower Rib	G's	37 – 46	46	Pass
Lower Spine	G's	15 - 22	20	Pass
		Overall Test Results		Pass

Laboratory Technician

6/5/01
Test Date

Approved By


UPPER RIB ACCELERATION
Test Desc.: Dummy Calibration - Thorax Impact
Test Date: 06-05-01
Component: Dummy #036
Speed: 14.06 FT/SEC, 4.28 M/SEC
1 UR, D01782FI.R08
Ymin = -12.83 G'S @ 0.0375 sec., Ymax = 43.73 G'S @ 0.0294 sec.
UR G'S
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
0.00
0.01
0.02
0.03
0.04
0.05
0.07
0.08
0.09
0.10
TIME (sec.)

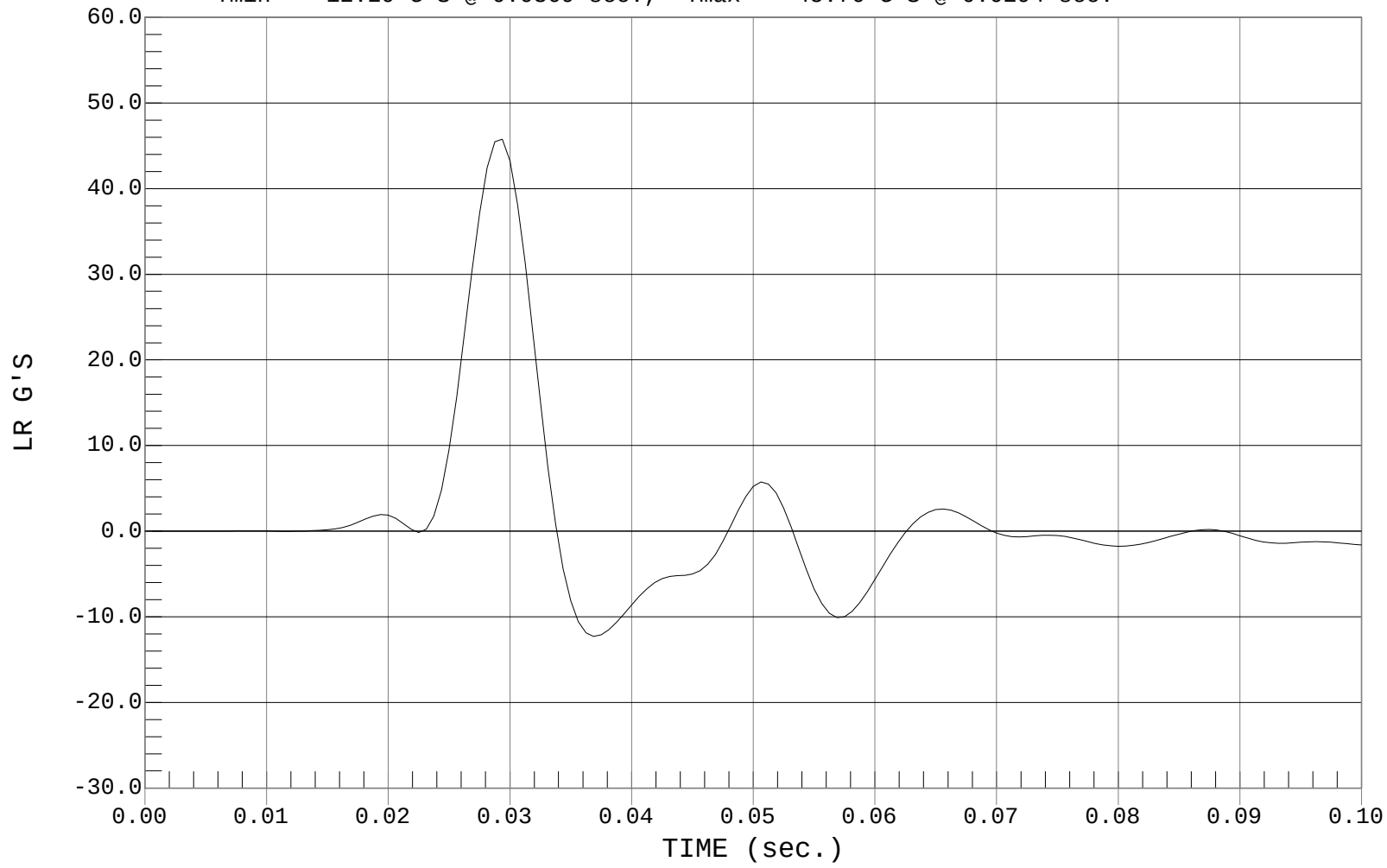
LOWER RIB ACCELERATION

Test Desc.: Dummy Calibration - Thorax Impact
Component: Dummy #036

Test Date: 06-05-01
Speed: 14.06 FT/SEC, 4.28 M/SEC

1 LR, D01782FI.R09

Ymin = -12.29 G'S @ 0.0369 sec., Ymax = 45.76 G'S @ 0.0294 sec.



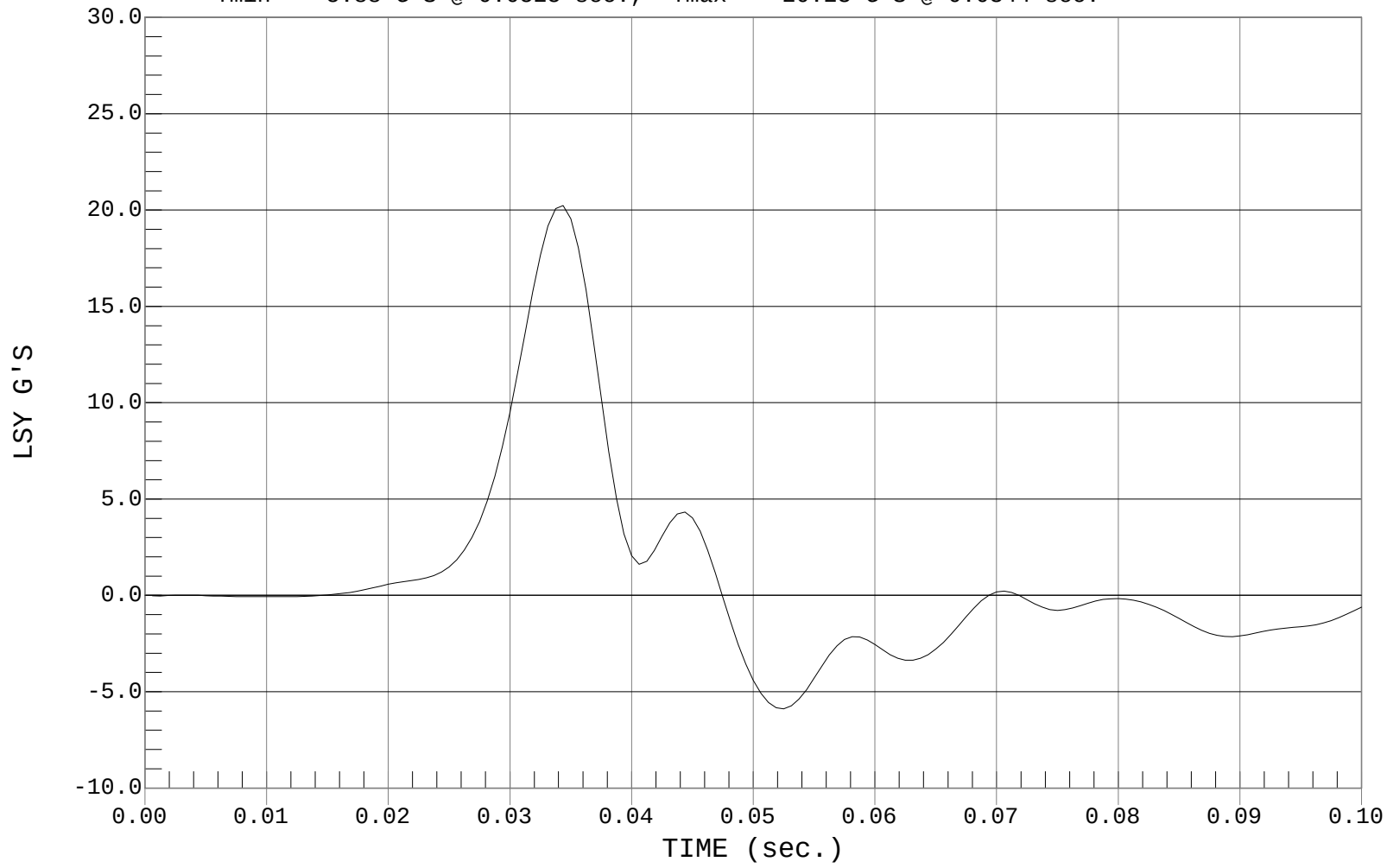
LOWER SPINE ACCELERATION

Test Desc.: Dummy Calibration - Thorax Impact
Component: Dummy #036

Test Date: 06-05-01
Speed: 14.06 FT/SEC, 4.28 M/SEC

1 LSY, D01782FI.R10

Ymin = -5.88 G'S @ 0.0525 sec., Ymax = 20.23 G'S @ 0.0344 sec.



SID/HIII Calibration Data Sheet

Side Impact Dummy

Pre-Test Pelvis Impact Calibration

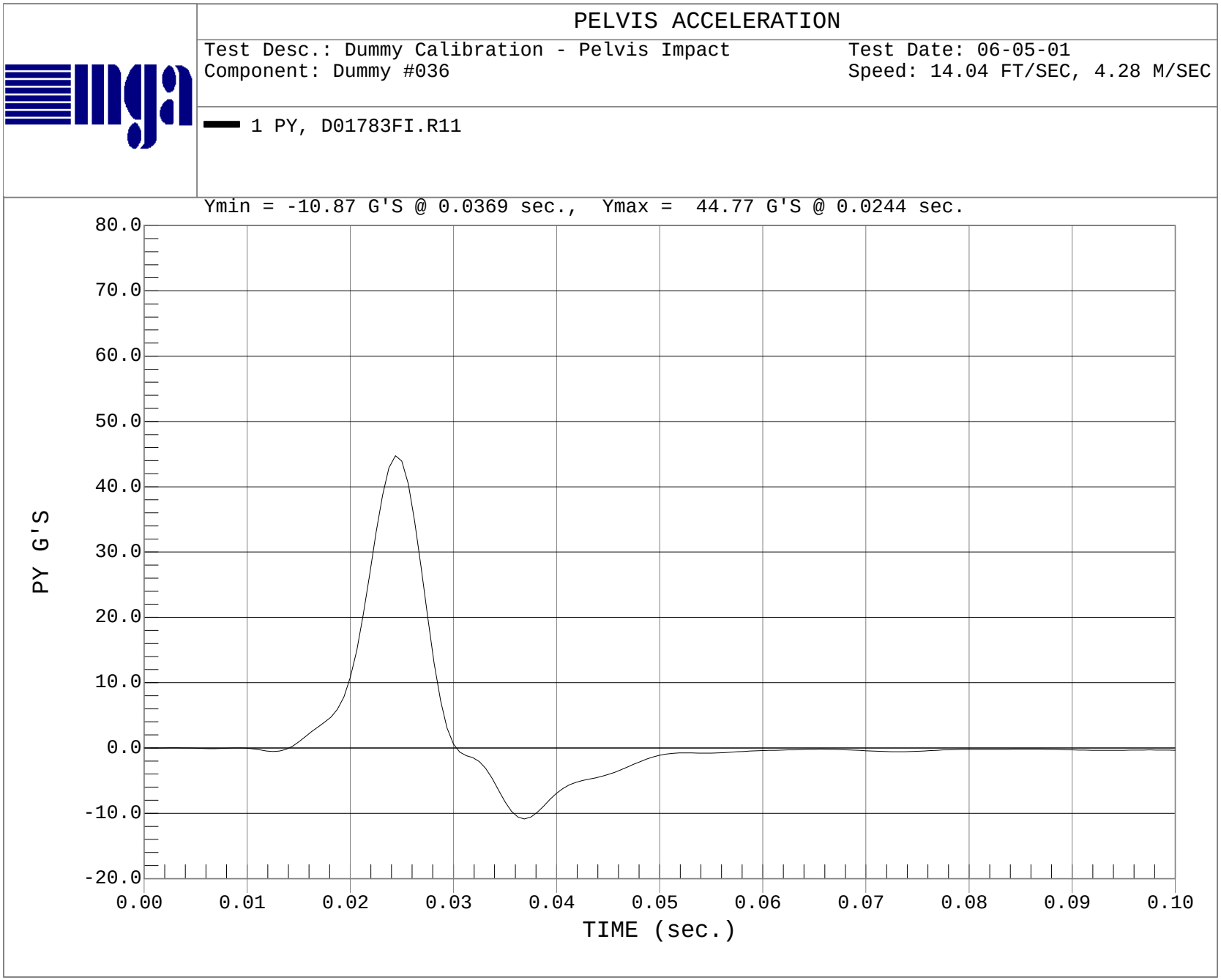
ATD Serial No.: 036 Test I.D.:D01783

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 – 25.5	22.1	Pass
Laboratory Relative Humidity	%	10 to 70	50	Pass
Probe Speed	m/s	4.27 – 4.33	4.28	Pass
Pelvis Acceleration	G's	40 - 60	45	Pass
		Overall Test Results		Pass

Laboratory Technician

6/5/01
Test Date

Approved By


PELVIS ACCELERATION
Test Desc.: Dummy Calibration - Pelvis Impact
Test Date: 06-05-01
Component: Dummy #036
Speed: 14.04 FT/SEC, 4.28 M/SEC
1 PY, D01783FI.R11
Ymin = -10.87 G'S @ 0.0369 sec., Ymax = 44.77 G'S @ 0.0244 sec.
PY G'S
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-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.)

SID/HIII Calibration Data Sheet

Side Impact Dummy

Pre-Test Abdominal Compression Calibration (Preload = 10 lbs)

ATD Serial No.: 036 Test I.D.:D01784

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 – 25.5	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	45	Pass
Force @ 12.7 mm	N	104 – 162	146	Pass
Force @ 19 mm	N	163 – 222	204	Pass
Force @ 25.4 mm	N	222 – 280	272	Pass
Force @ 33 mm	N	325 - 391	372	Pass
		Overall Test Results		Pass

Laboratory Technician

6/5/01
Test Date

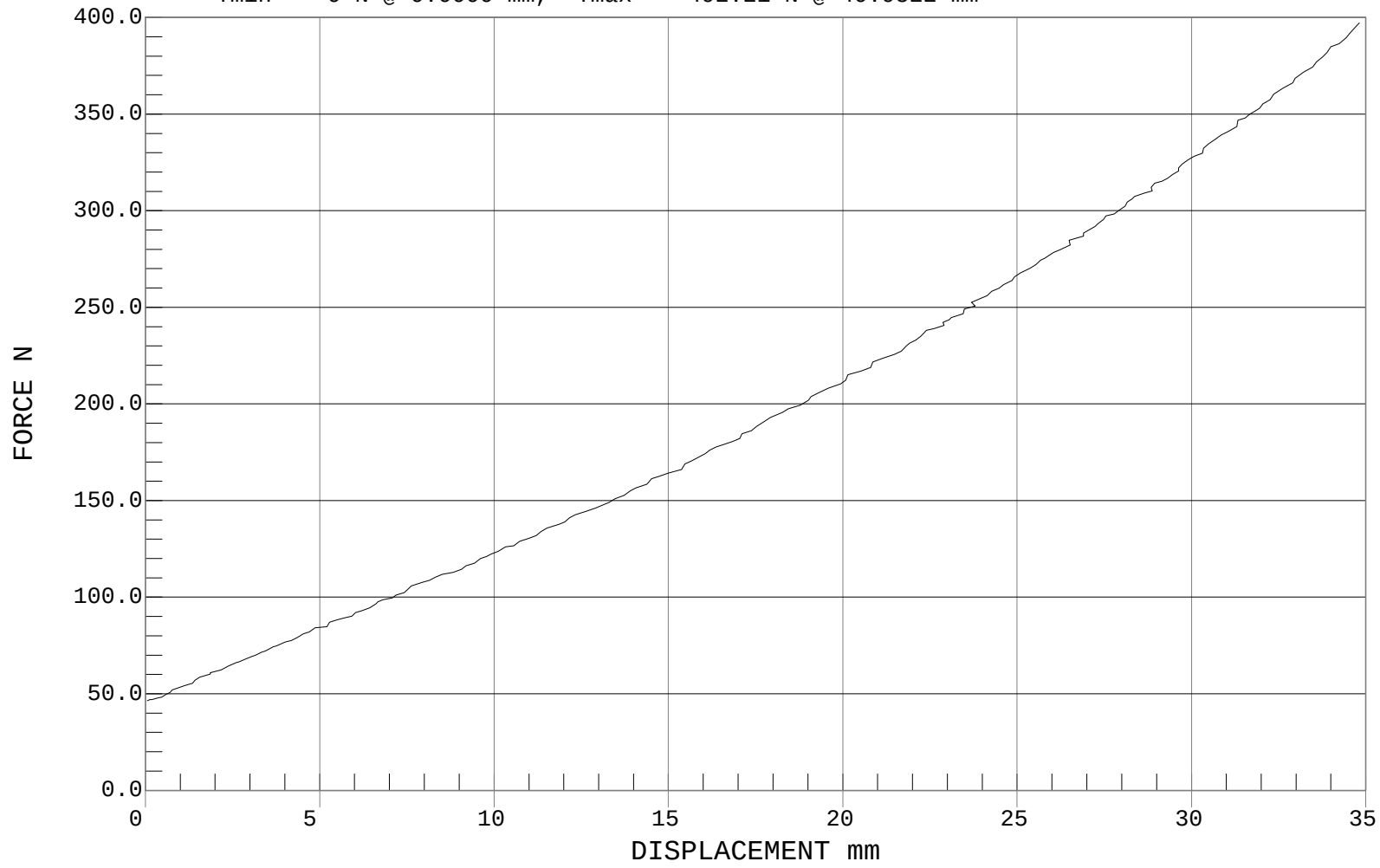
Approved By

ABDOMEN COMPRESSION

Test Desc.: DUMMY CALIBRATION - ABDOMEN COMPRESSION Test Date: 06-05-01
Component: DUMMY # 036 Speed: 0.00 FT/SEC, 0.00 M/SEC

1 FORCE, D01784FC.F16

Ymin = 0 N @ 0.0000 mm, Ymax = 492.21 N @ 40.9522 mm



SID/HIII Calibration Data Sheet

Side Impact Dummy

Pre-Test Lumbar Flexion Calibration

ATD Serial No.: 036 Test I.D.:D01785

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 – 25.5	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	42	Pass
Force @ 0º	N	0 – 26.7	0	Pass
Force @ 20º	N	97.9 – 151.2	103.1	Pass
Force @ 30º	N	151.2 – 204.6	171.8	Pass
Force @ 40º	N	204.6 – 258.0	220.3	Pass
Return Angle	Degrees	12° Maximum	4	Pass
		Overall Test Results		Pass

Laboratory Technician

6/5/01
Test Date

Approved By

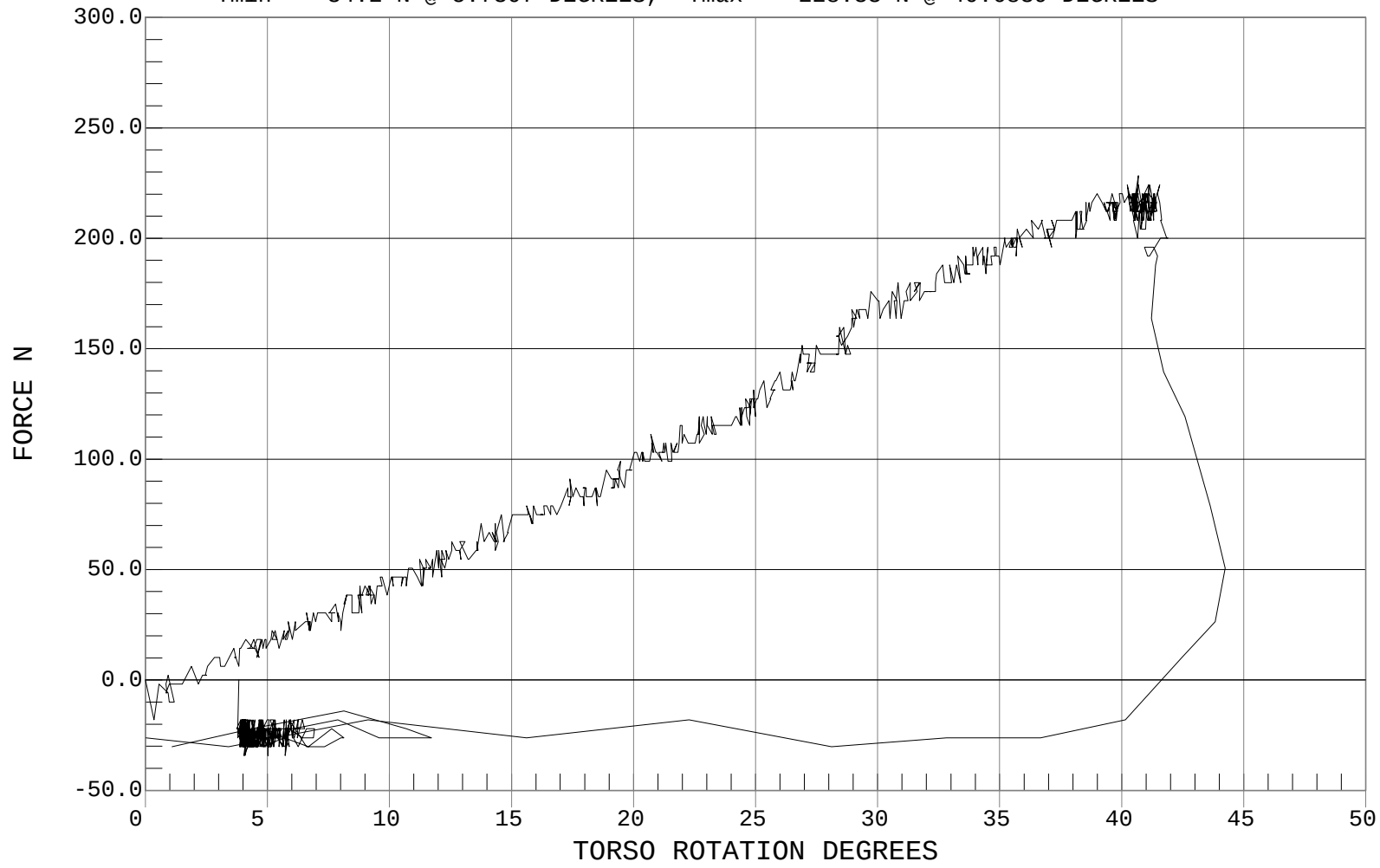
LUMBAR FLEXION

Test Desc.: DUMMY CALIBRATION - LUMBAR FLEXION
Component: DUMMY # 036

Test Date: 06-05-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

1 FORCE, D01785FC.F14

Ymin = -34.2 N @ 5.7307 DEGREES, Ymax = 228.33 N @ 40.6839 DEGREES



SID/HIII Calibration Data Sheet

Side Impact Dummy

Pre-Test Inspection Checklist

ATD Serial No.: 036

Test Part	Items Checked	Result
Skin	Visual inspection	Pass
Head	Visual, ballast, accelerometer mount	Pass
Neck	Visual	Pass
Spine Box	Visual, ballast, weldment, accelerometer mount	Pass
Rib Cage	Visual, measure	Pass
Sternum	Visual	Pass
Lumbar Spine	Visual	Pass
Abdomen	Visual	Pass
Pelvis	Visual, palpate, accelerometer mount	Pass
Upper Legs	Visual	Pass
Knees	Visual	Pass
Lower Legs	Visual, range of motion	Pass
Ankles	Visual, range of motion	Pass
Feet	Visual, range of motion	Pass
Joints	1 to 2 g range	Pass
Other		

Notes (include component/problem/section/reason):

Laboratory Technician

6/5/01
Test Date

Approved By

SID/HIII Calibration Data Sheet

Side Impact Dummy

Post-Test External Measurements

ATD Serial No.: 036 Test Number:D0184

Tested Parameter	Units	Specification	Result	Pass/Fail
SH – Seated Height	mm	889 - 909	905	Pass
RH – Rib Height	mm	501 – 521	505	Pass
HP – Hip Pivot Height	mm	99 ref.	99	Pass
RD-Rib from Back Line	mm	229 – 241	234	Pass
KV – Knee Pivot from Back Line	mm	511 – 526	520	Pass
SW – Knee Pivot to Floor	mm	490 – 505	496	Pass
HW – Hip Width	mm	356 – 391	372	Pass
		Overall Test Results		Pass

6/11/01

Laboratory Technician Test Date

Approved By

SID/HIII Calibration Data Sheet

Side Impact Dummy

Post-Test Head Drop (Lateral) Calibration

ATD Serial No.: 036 Test I.D.:D01841

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.5	22.5	Pass
Laboratory Relative Humidity	%	10 to 70	49	Pass
Peak Resultant Acceleration	G's	120 to 150	148	Pass
Peak Longitudinal Acceleration	G's	±15.0	-8	Pass
Is Resultant Curve Unimodal?	Yes/No	within 15% of Peak	Yes	Pass
		Overall Test Results		Pass

6/11/01

Laboratory Technician Test Date

Approved By

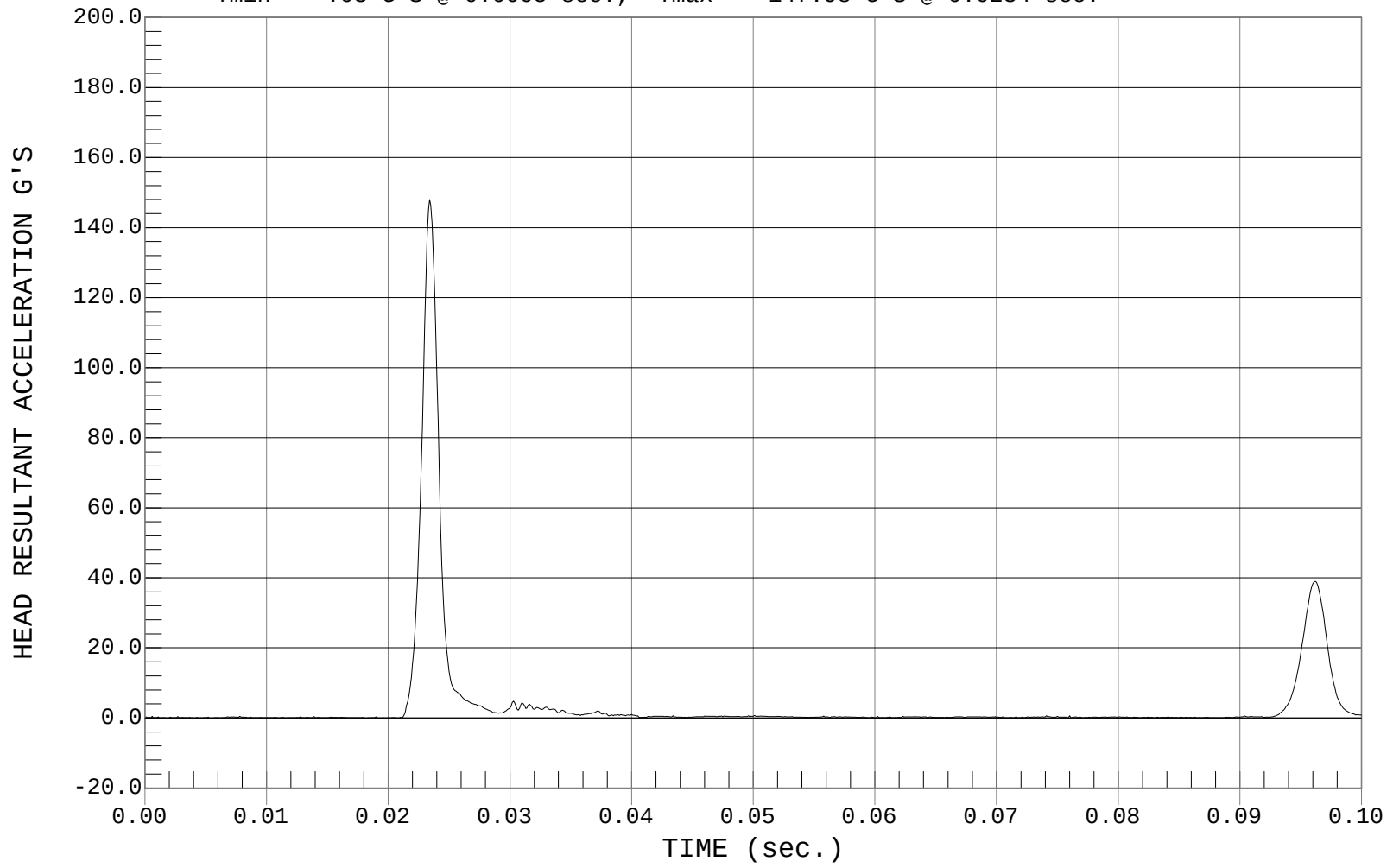
PEAK RESULTANT ACCELERATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #036

Test Date: 06-11-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

1 HEAD RESULTANT ACCELERATION, D01841AV.A01

Ymin = .03 G'S @ 0.0005 sec., Ymax = 147.98 G'S @ 0.0234 sec.



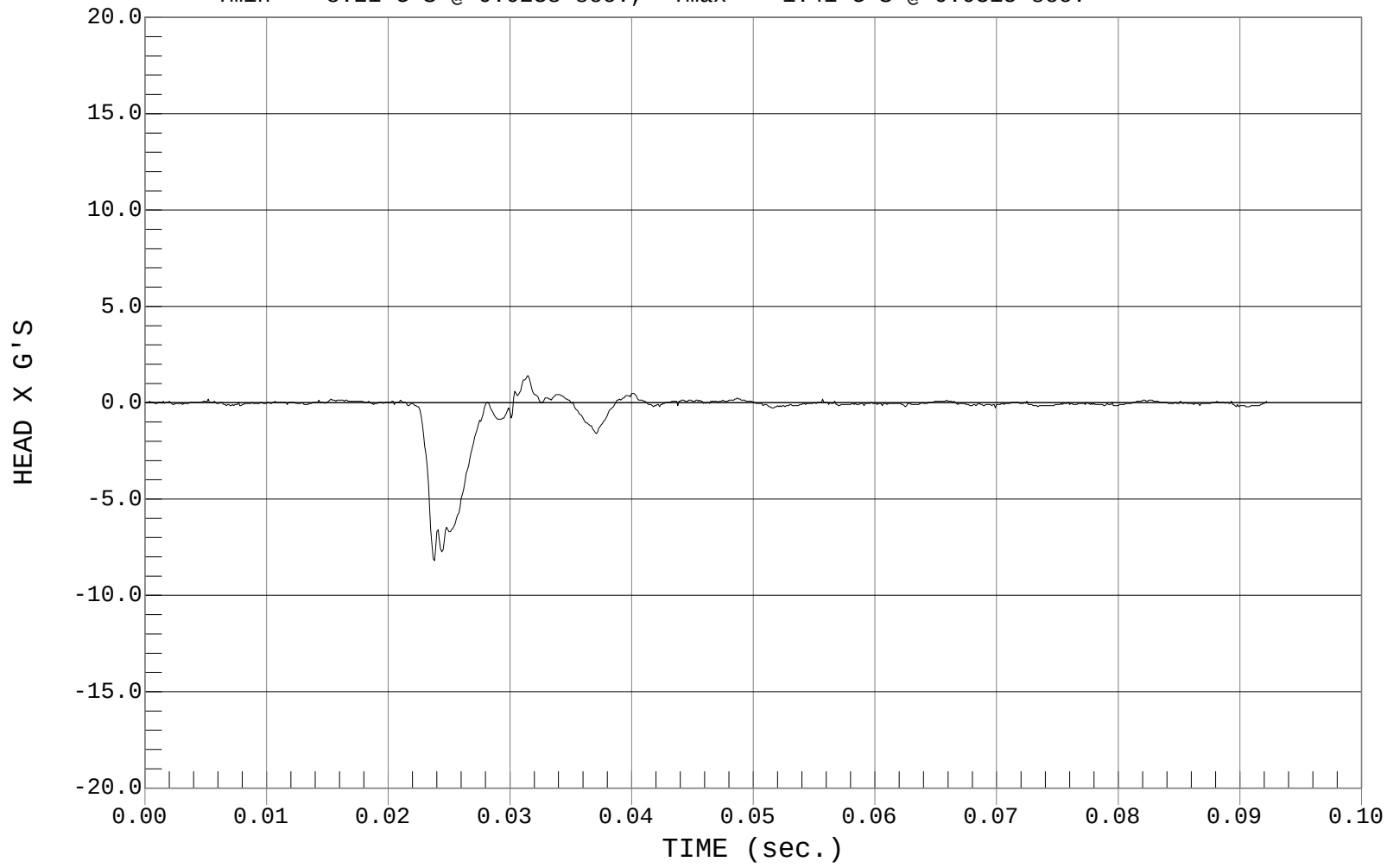
PEAK LONGITUDINAL ACCELERATION

Test Desc.: Dummy Calibration - Head Drop
Component: Dummy #036

Test Date: 06-11-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

1 HEAD X, D01841AT.A01

Ymin = -8.21 G'S @ 0.0238 sec., Ymax = 1.41 G'S @ 0.0315 sec.



SID/HIII Calibration Data Sheet

Side Impact Dummy

Post-Test Neck Pendulum Calibration

ATD Serial No.: 036 Test I.D.:D01849

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 – 22.2	20.9	Pass
Laboratory Relative Humidity		%	10 to 70	51	Pass
Impact Velocity		m/s	6.89 to 7.13	7.03	Pass
Pendulum Deceleration	10 ms	ms	1.96 – 2.55	2.40	Pass
	20 ms	ms	4.12 – 5.10	4.84	Pass
	30 ms	ms	5.73 – 7.01	6.69	Pass
	40 - 70 ms	ms	6.27 – 7.64	6.72	Pass
Midsaggital Plane Max Rotation		Degrees	66 - 82	77	Pass
Head Rotation Peak to Zero – Decay Time		ms	58 – 67	60	Pass
Max. M_x at Occipital Condyles		Nm	73 – 88	80	Pass
M_x Peak to Zero – Decay Time		ms	49 – 64	57	Pass
M_x Peak to Max. Head Rotation		ms	2 - 16	14	Pass
			Overall Test Results		Pass

Laboratory Technician

6/11/01
Test Date

Approved By

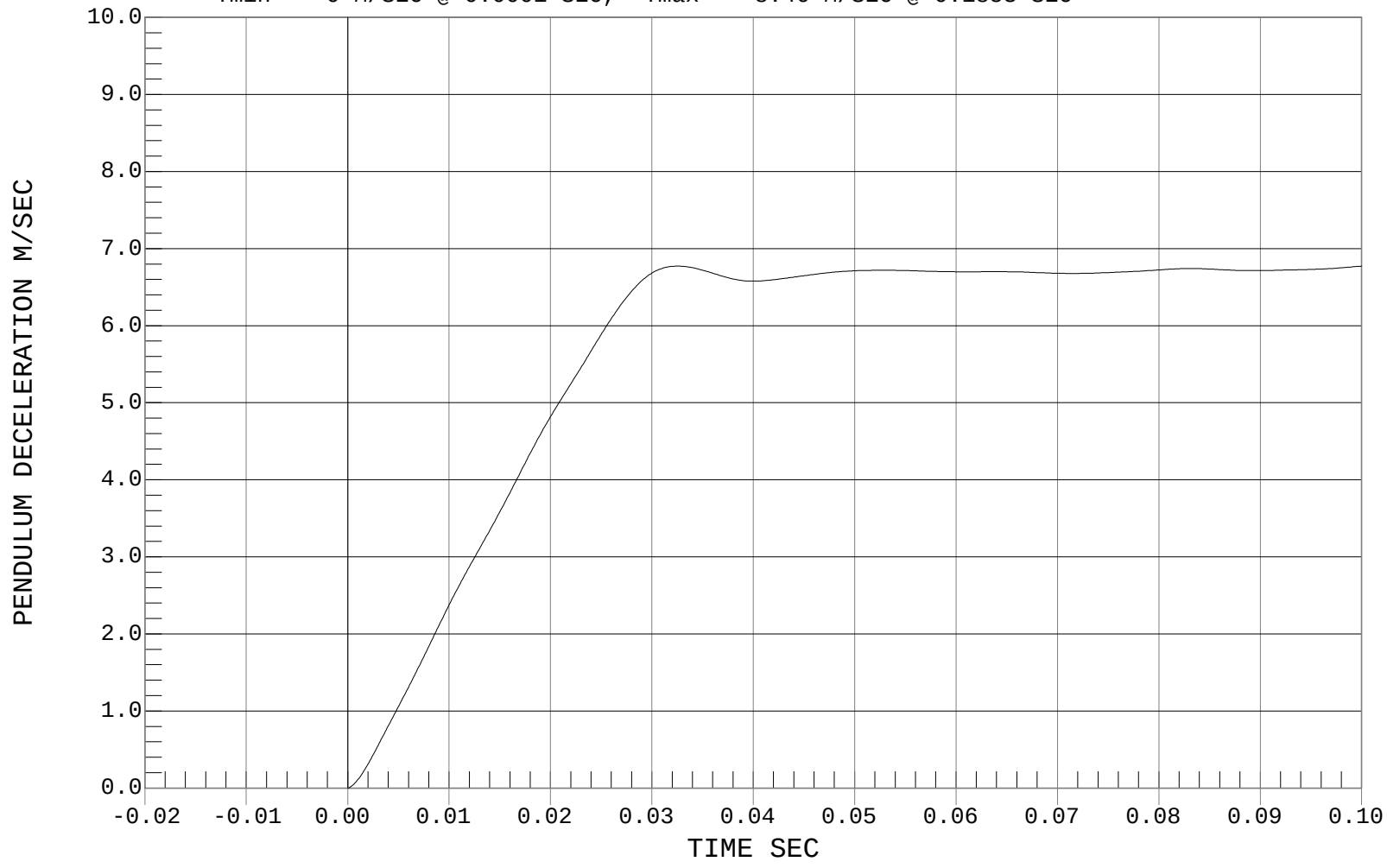
PENDULUM DECELERATION

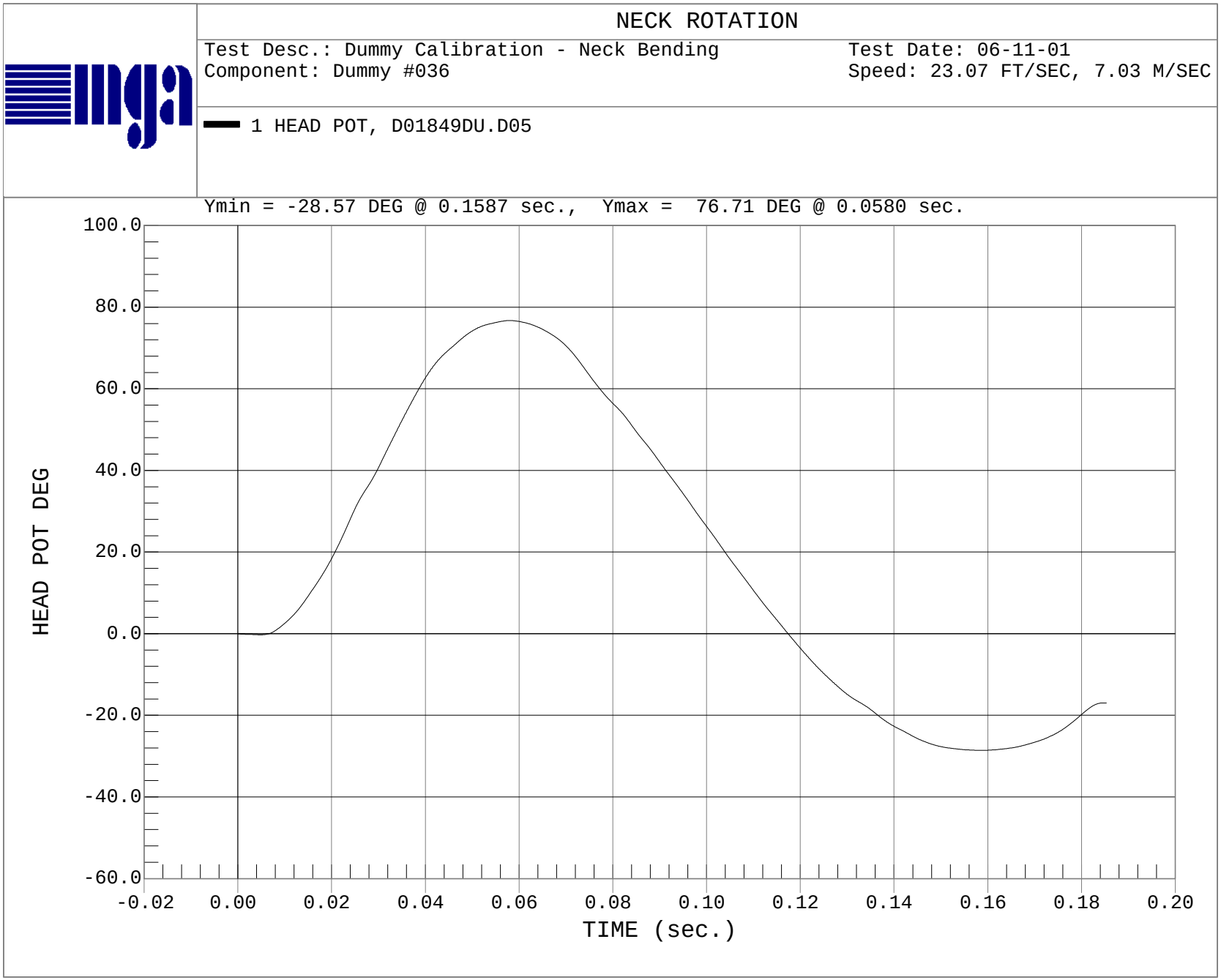
Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #036

Test Date: 06-11-01
Speed: 23.07 FT/SEC, 7.03 M/SEC

1 PENDULUM DECELERATION, D01849AI.V04

Ymin = 0 M/SEC @ 0.0001 SEC, Ymax = 8.46 M/SEC @ 0.1853 SEC




NECK ROTATION
Test Desc.: Dummy Calibration - Neck Bending
Test Date: 06-11-01
Component: Dummy #036
Speed: 23.07 FT/SEC, 7.03 M/SEC
1 HEAD POT, D01849DU.D05
Ymin = -28.57 DEG @ 0.1587 sec., Ymax = 76.71 DEG @ 0.0580 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.)

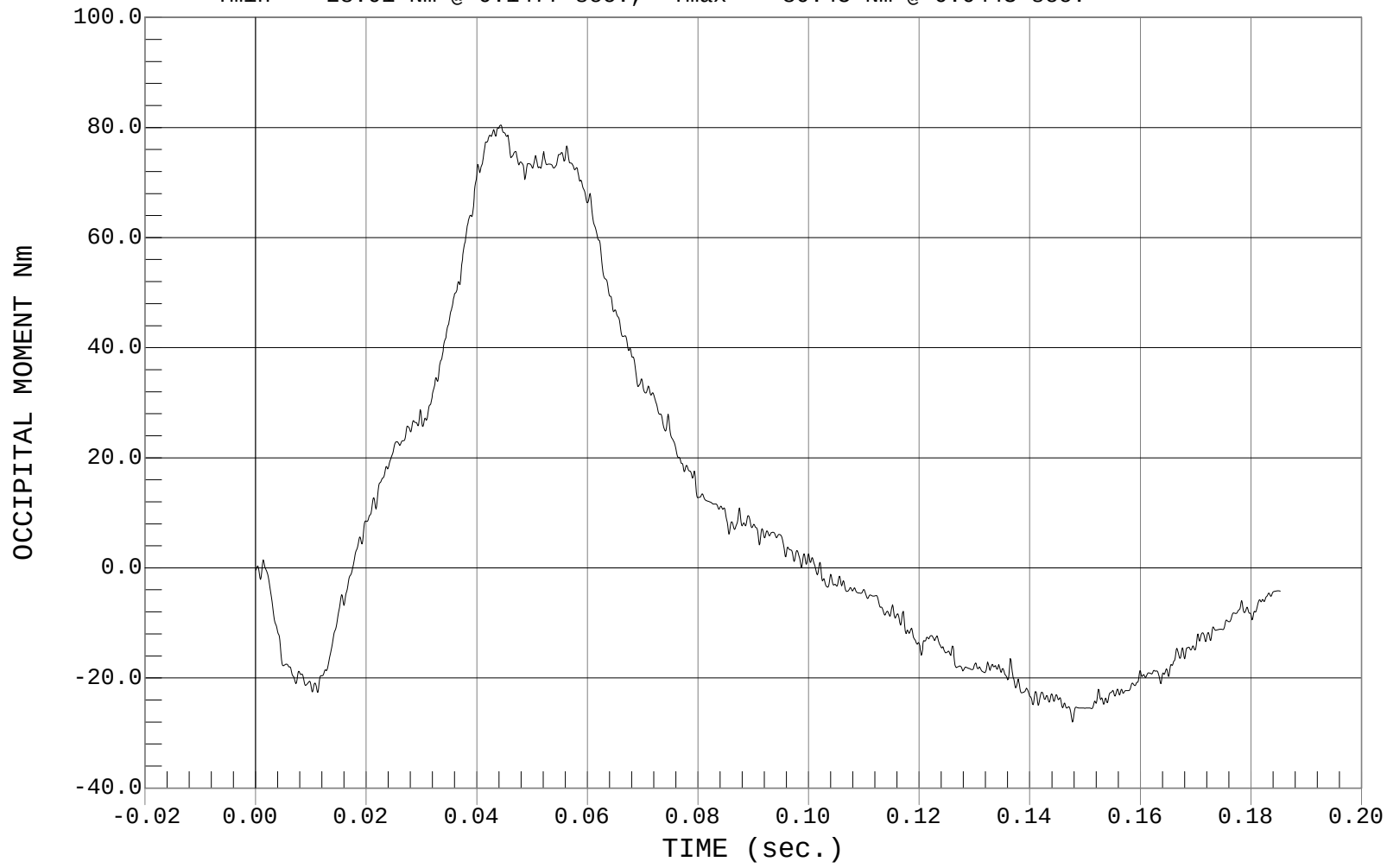
OCCIPITAL MOMENT

Test Desc.: Dummy Calibration - Neck Bending
Component: Dummy #036

Test Date: 06-11-01
Speed: 23.07 FT/SEC, 7.03 M/SEC

1 OCCIPITAL MOMENT, D01849NK.MNT

Ymin = -28.01 Nm @ 0.1477 sec., Ymax = 80.45 Nm @ 0.0443 sec.



SID/HIII Calibration Data Sheet

Side Impact Dummy

Post-Test Thorax Impact Calibration

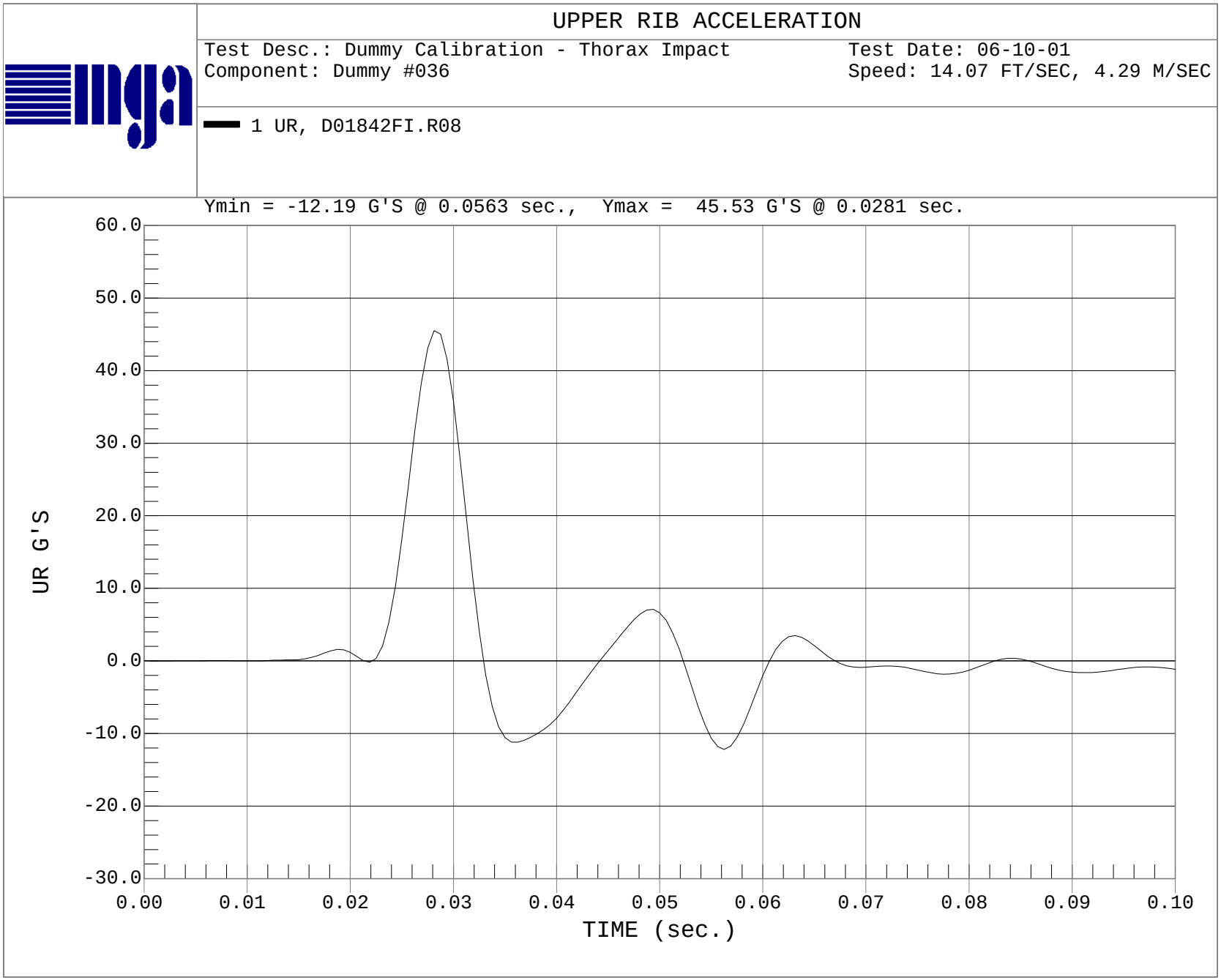
ATD Serial No.: 036 Test I.D.:D01842

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 – 25.5	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	54	Pass
Probe Velocity	m/s	4.27 – 4.33	4.29	Pass
Upper Rib	G's	37 – 46	46	Pass
Lower Rib	G's	37 – 46	46	Pass
Lower Spine	G's	15 - 22	20	Pass
		Overall Test Results		Pass

Laboratory Technician

6/10/01
Test Date

Approved By


UPPER RIB ACCELERATION
Test Desc.: Dummy Calibration - Thorax Impact
Test Date: 06-10-01
Component: Dummy #036
Speed: 14.07 FT/SEC, 4.29 M/SEC
1 UR, D01842FI.R08
Ymin = -12.19 G'S @ 0.0563 sec., Ymax = 45.53 G'S @ 0.0281 sec.
UR G'S
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-20.0
-30.0
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.10
TIME (sec.)

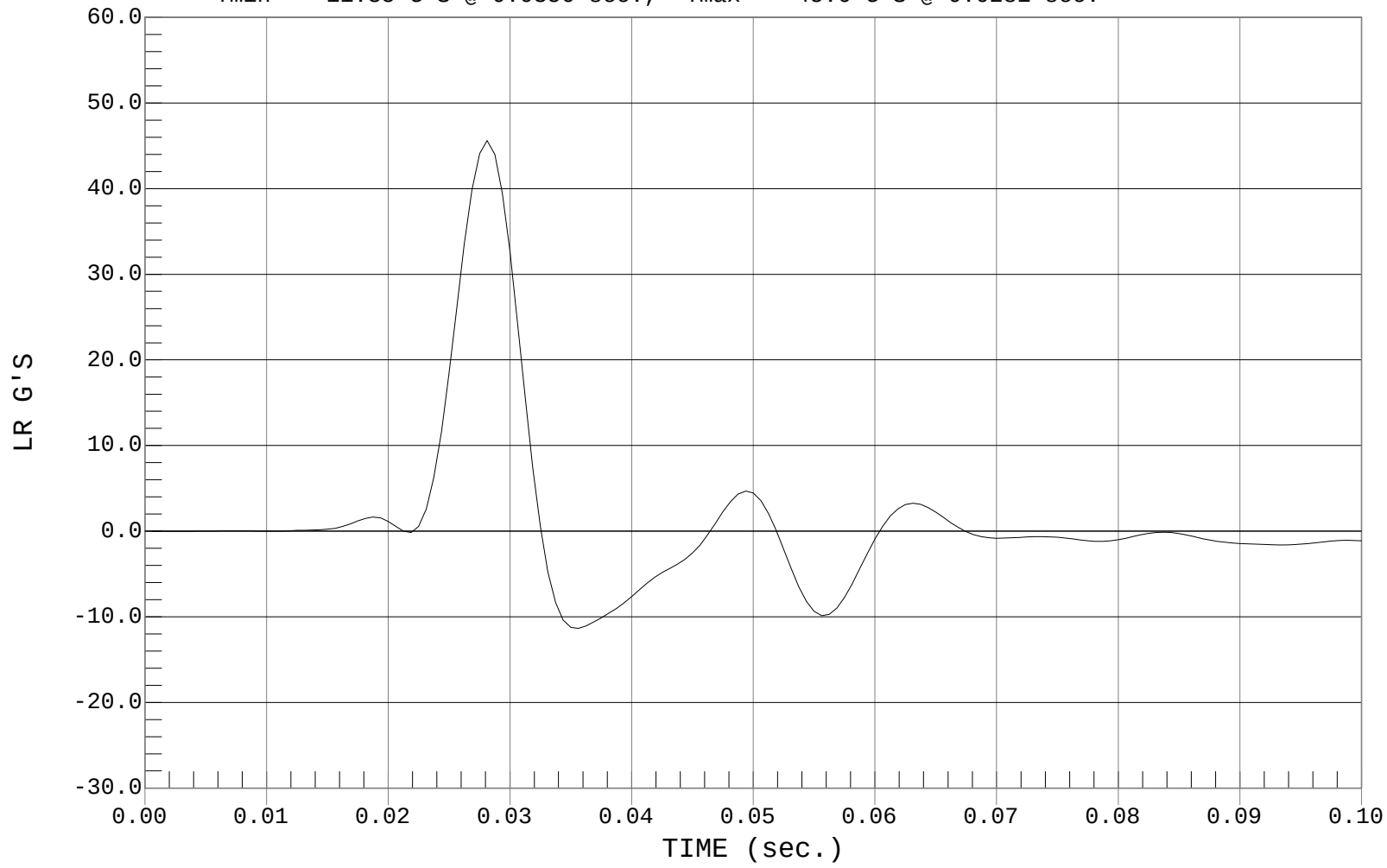
LOWER RIB ACCELERATION

Test Desc.: Dummy Calibration - Thorax Impact
Component: Dummy #036

Test Date: 06-10-01
Speed: 14.07 FT/SEC, 4.29 M/SEC

1 LR, D01842FI.R09

Ymin = -11.35 G'S @ 0.0356 sec., Ymax = 45.6 G'S @ 0.0281 sec.



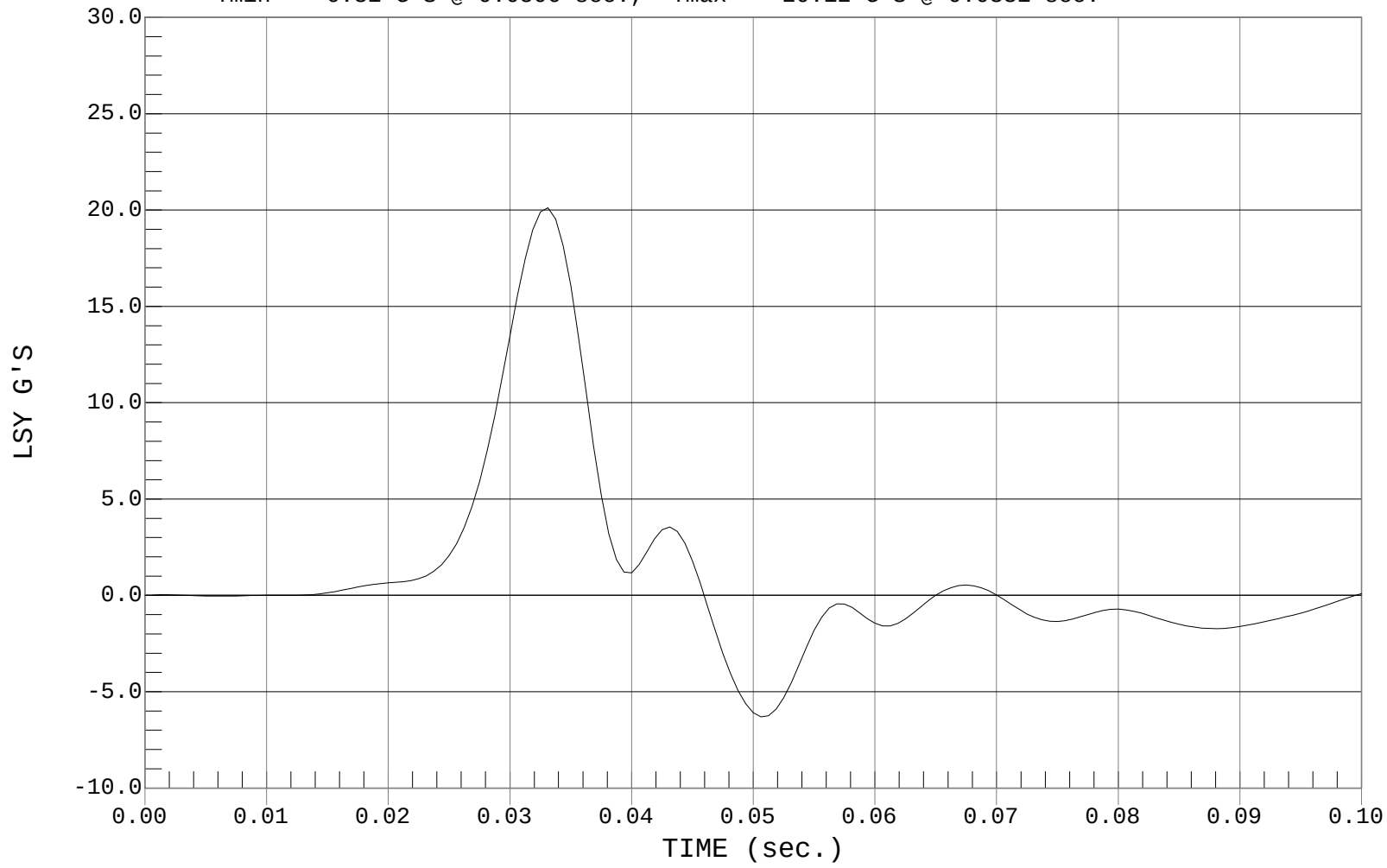
LOWER SPINE ACCELERATION

Test Desc.: Dummy Calibration - Thorax Impact
Component: Dummy #036

Test Date: 06-10-01
Speed: 14.07 FT/SEC, 4.29 M/SEC

1 LSY, D01842FI.R10

Ymin = -6.31 G'S @ 0.0506 sec., Ymax = 20.12 G'S @ 0.0331 sec.



SID/HIII Calibration Data Sheet

Side Impact Dummy

Post-Test Pelvis Impact Calibration

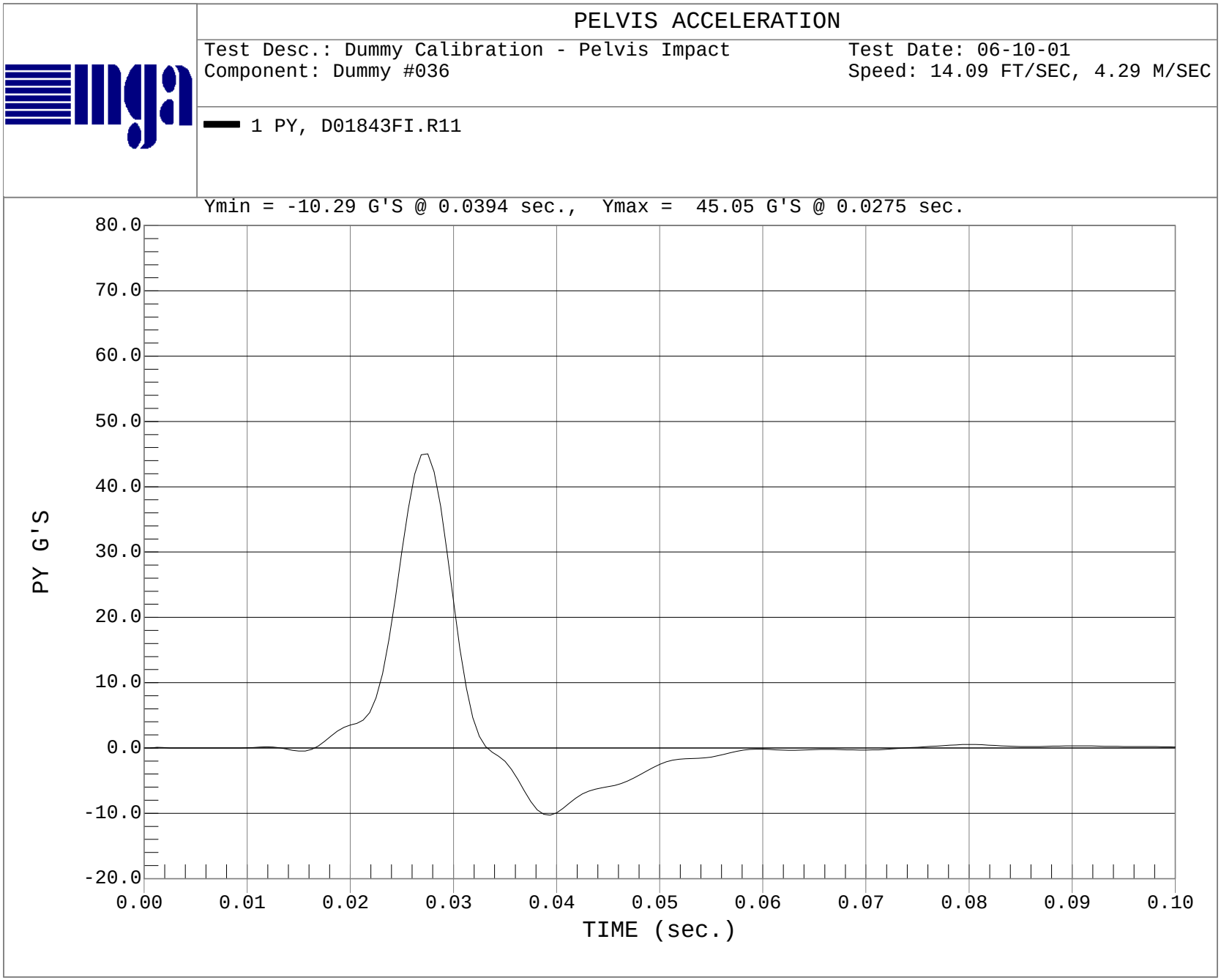
ATD Serial No.: 036 Test I.D.:D01843

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 – 25.5	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	52	Pass
Probe Speed	m/s	4.27 – 4.33	4.29	Pass
Pelvis Acceleration	G's	40 - 60	45	Pass
		Overall Test Results		Pass

Laboratory Technician

6/10/01
Test Date

Approved By


PELVIS ACCELERATION
Test Desc.: Dummy Calibration - Pelvis Impact
Test Date: 06-10-01
Component: Dummy #036
Speed: 14.09 FT/SEC, 4.29 M/SEC
1 PY, D01843FI.R11
Ymin = -10.29 G'S @ 0.0394 sec., Ymax = 45.05 G'S @ 0.0275 sec.
PY G'S
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-10.0
-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.)

SID/HIII Calibration Data Sheet

Side Impact Dummy

Post-Test Abdominal Compression Calibration (Preload = 10 lbs)

ATD Serial No.: 036 Test I.D.:D01844

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 – 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	50	Pass
Force @ 12.7 mm	N	104 – 162	144	Pass
Force @ 19 mm	N	163 – 222	199	Pass
Force @ 25.4 mm	N	222 – 280	257	Pass
Force @ 33 mm	N	325 - 391	353	Pass
		Overall Test Results		Pass

Laboratory Technician

6/11/01
Test Date

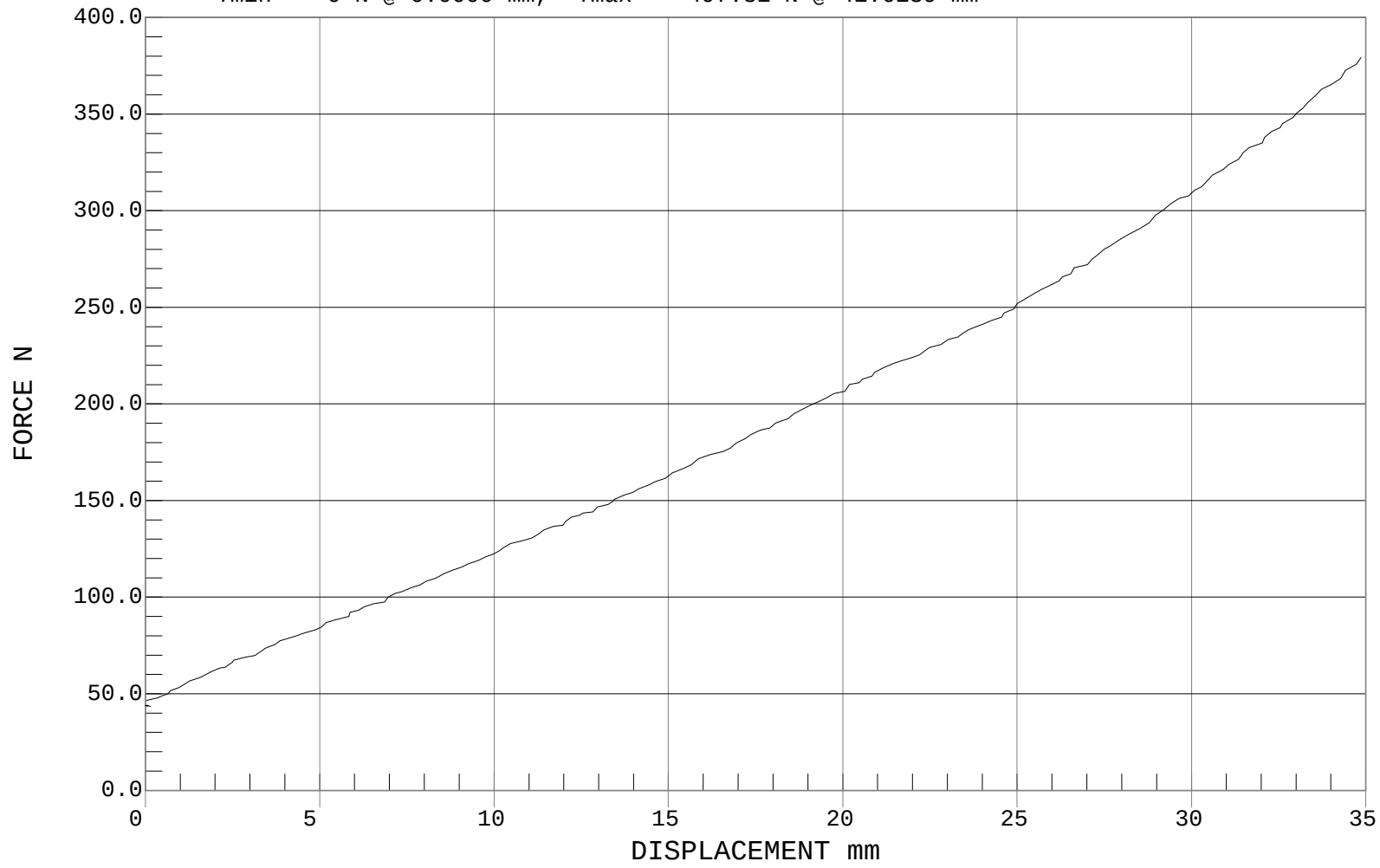
Approved By

ABDOMEN COMPRESSION

Test Desc.: DUMMY CALIBRATION - ABDOMEN COMPRESSION Test Date: 06-11-01
Component: DUMMY # 036 Speed: 0.00 FT/SEC, 0.00 M/SEC

1 FORCE, D01844FC.F16

Ymin = 0 N @ 0.0000 mm, Ymax = 497.31 N @ 41.6139 mm



SID/HIII Calibration Data Sheet

Side Impact Dummy

Post-Test Lumbar Flexion Calibration

ATD Serial No.: 036 Test I.D.:D01845

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 – 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	50	Pass
Force @ 0º	N	0 – 26.7	0	Pass
Force @ 20º	N	97.9 – 151.2	98.0	Pass
Force @ 30º	N	151.2 – 204.6	154.6	Pass
Force @ 40º	N	204.6 – 258.0	219.2	Pass
Return Angle	Degrees	12° Maximum	3	Pass
		Overall Test Results		Pass

Laboratory Technician

6/11/01
Test Date

Approved By

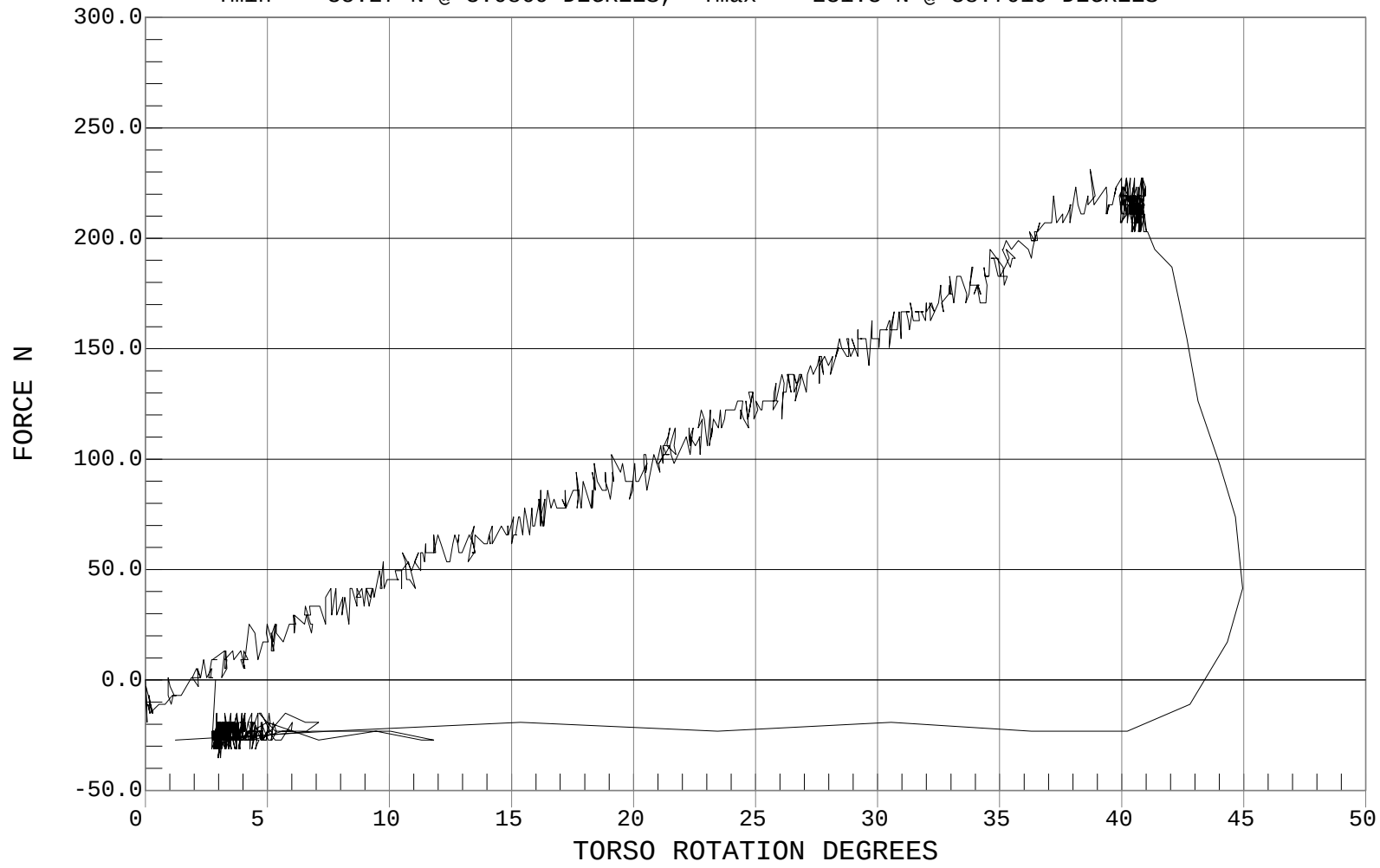
LUMBAR FLEXION

Test Desc.: DUMMY CALIBRATION - LUMBAR FLEXION
Component: DUMMY # 036

Test Date: 06-11-01
Speed: 0.00 FT/SEC, 0.00 M/SEC

1 FORCE, D01845FC.F14

Ymin = -35.27 N @ 3.0869 DEGREES, Ymax = 231.3 N @ 38.7019 DEGREES



SID/HIII Calibration Data Sheet

Side Impact Dummy

Post-Test Inspection Checklist

ATD Serial No.: 036

Test Part	Items Checked	Result
Skin	Visual inspection	Pass
Head	Visual, ballast, accelerometer mount	Pass
Neck	Visual	Pass
Spine Box	Visual, ballast, weldment, accelerometer mount	Pass
Rib Cage	Visual, measure	Pass
Sternum	Visual	Pass
Lumbar Spine	Visual	Pass
Abdomen	Visual	Pass
Pelvis	Visual, palpate, accelerometer mount	Pass
Upper Legs	Visual	Pass
Knees	Visual	Pass
Lower Legs	Visual, range of motion	Pass
Ankles	Visual, range of motion	Pass
Feet	Visual, range of motion	Pass
Joints	1 to 2 g range	Pass
Other		

Notes (include component/problem/section/reason):

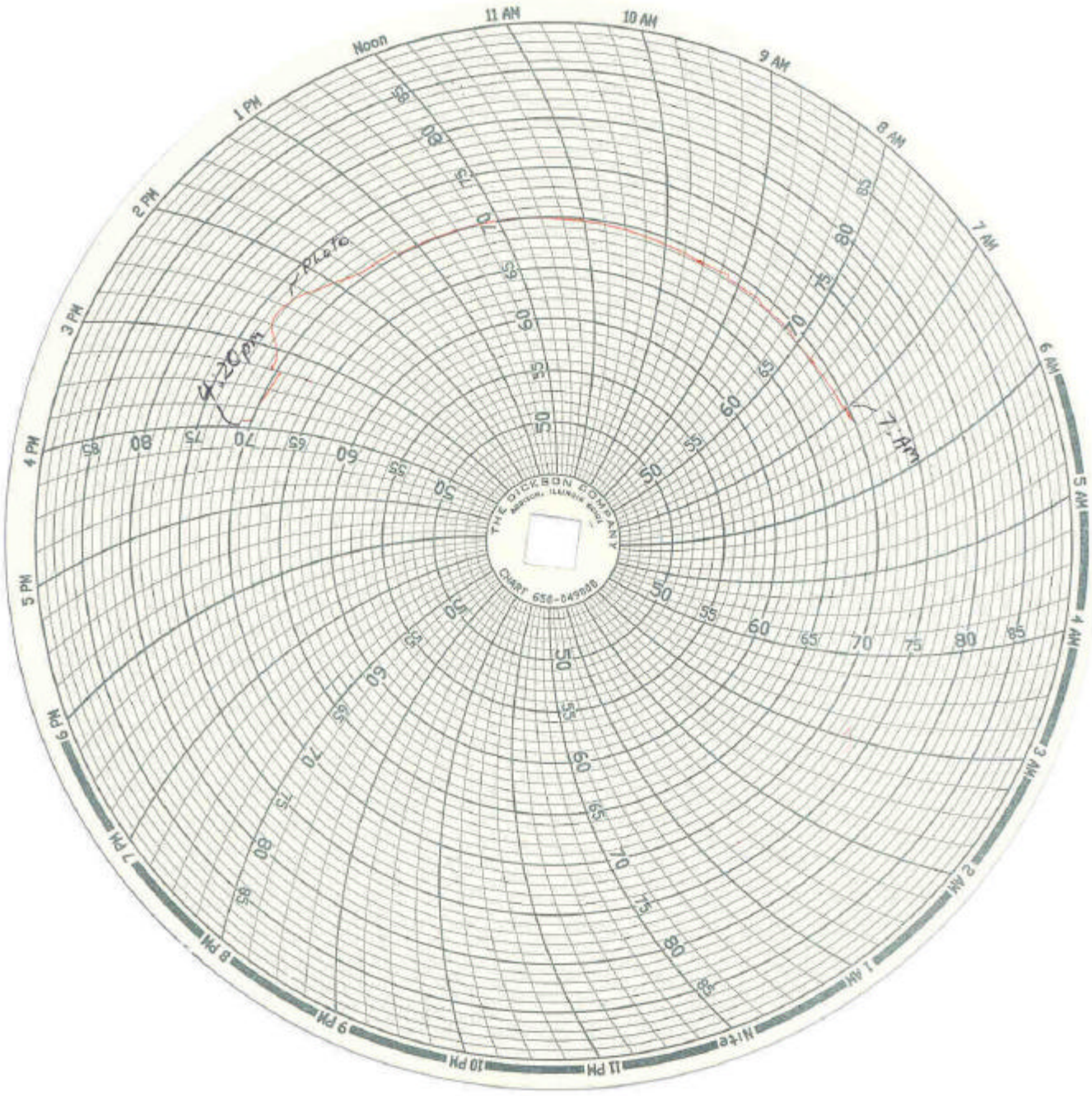
_____ 6/11/01

Laboratory Technician Test Date

_____

Approved By

VEHICLE AND DUMMY TEMPERATURE



Dummy installed at 7:00 a.m.

Test conducted at 4:20 p.m.

APPENDIX D

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

DUMMY AND VEHICLE CALIBRATION DATA

INSTRUMENTS FOR DRIVER DUMMY

	INSTRUMENTS FOR DRIVER DUMMY NO. 036		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head CG X	AHTW6	Endevco	1/8/01
Head CG Y	AHWP2	Endevco	1/8/01
Head CG Z	AHY98	Endevco	1/8/01
Neck Force X	252FX	Denton	3/23/01
Neck Force Y	252FY	Denton	3/23/01
Neck Force Z	252FZ	Denton	3/23/01
Neck Moment X	252MX	Denton	3/23/01
Neck Moment Y	252MY	Denton	3/23/01
Neck Moment Z	252MZ	Denton	3/23/01
Head CG Redundant X	AMTB8	Endevco	5/30/01
Head CG Redundant Y	AP1Y1	Endevco	5/30/01
Head CG Redundant Z	ACC81	Endevco	5/30/01
Upper Rib Y	AP138	Endevco	12/19/00
Lower Rib Y	J18260	Endevco	1/8/01
Lower Spine Y	AHT13	Endevco	12/12/00
Pelvis Y	J11166	Endevco	6/1/01
Upper Rib Redundant Y	APOG2	Endevco	12/19/00
Lower Rib Redundant Y	AKAH1	Endevco	1/8/01
Lower Spine Redundant Y	ADAB3	Endevco	12/12/00
Pelvis Redundant Y	J11630	Endevco	6/1/01

	VEHICLE ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Vehicle CG X	K11-J08	Entran	2/7/01
Vehicle CG Y	J10-E12	Entran	3/21/01
Vehicle CG Z	D05-R10	Entran	2/15/01
Left Floor Sill Y	I25-F01	Entran	11/15/00
A Pillar Sill Y	D11-F14	Entran	5/30/01
A Pillar Low Y	D11-F12	Entran	5/30/01
A Pillar Mid Y	D11-F15	Entran	5/30/01
B Pillar Sill Y	E10-F07	Entran	8/8/00
B Pillar Low Y	G01-J04	Entran	12/14/00
B Pillar Mid Y	I26-D11	Entran	2/7/01
Driver Seat Y	G13-F01	Entran	2/7/01
Driver Door Upper Y	D11-F13	Entran	5/30/01
Engine X	G13-F07	Entran	2/15/01
Engine Y	A08-A11	Entran	2/8/01
Firewall Y	D05-R16	Entran	2/7/01
Driver Door Mid Y	D11-F04	Entran	5/30/01
Driver Door Lower Y	D11-F03	Entran	5/30/01
Right Floor Sill Y	I25-F02	Entran	11/15/00
Rear Deck X	D11-F02	Entran	5/30/01
Rear Deck Y	D11-F06	Entran	5/30/01

Note: All Endevco accelerometers are Model No. 7264-2000.
All Entran accelerometers are Model No. EGE-72.