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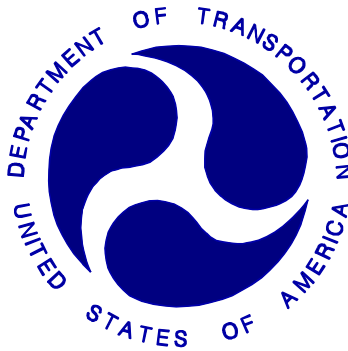
**NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST**

DAIMLERCHRYSLER
2001 DODGE GRAND CARAVAN
MPV

NHTSA NUMBER: M10307

VERIDIAN ENGINEERING TEST NUMBER: 8506-16

VERIDIAN ENGINEERING
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February 20, 2001

FINAL REPORT

U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Safety Performance Standards
Office of Crashworthiness Standards
Mail Code: NPS-10
400 Seventh Street, SW, Room No. 5313
Washington, DC 20590

This Final Test Report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, under Contract No. DTNH22-98-C-02001. This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof.

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				14. Sponsoring Agency Code NPS-10																															
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16. Abstract <p>A 55/28 kph 90° Impact Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2001 Dodge Grand Caravan MPV in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. This test was conducted at the Veridian Engineering Crash Test Facility in Buffalo, New York, on February 20, 2001.</p> <p>The impact velocity of the Moving Deformable Barrier (MDB) was 62.12 kph, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21.1°C. The target vehicle post-test maximum crush was 348 mm at level 2.</p> <p>The test or target vehicle's performance is given below:</p> <table border="0" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>Front SID</u></th> <th></th> <th style="text-align: center;"><u>Rear SID</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib Acceleration:</td> <td style="text-align: center;"><u>52</u></td> <td style="text-align: center;">g's</td> <td style="text-align: center;"><u>45</u></td> <td style="text-align: center;">g's</td> </tr> <tr> <td>Left Lower Rib Acceleration:</td> <td style="text-align: center;"><u>53</u></td> <td style="text-align: center;">g's</td> <td style="text-align: center;"><u>52</u></td> <td style="text-align: center;">g's</td> </tr> <tr> <td>Lower Spine Acceleration:</td> <td style="text-align: center;"><u>59</u></td> <td style="text-align: center;">g's</td> <td style="text-align: center;"><u>62</u></td> <td style="text-align: center;">g's</td> </tr> <tr> <td>Thoracic Trauma Index (TTI):</td> <td style="text-align: center;"><u>56</u></td> <td style="text-align: center;">g's</td> <td style="text-align: center;"><u>57</u></td> <td style="text-align: center;">g's</td> </tr> <tr> <td>Pelvis Acceleration (PEV):</td> <td style="text-align: center;"><u>50</u></td> <td style="text-align: center;">g's</td> <td style="text-align: center;"><u>92</u></td> <td style="text-align: center;">g's</td> </tr> </tbody> </table> <p>The front door on the struck side of the vehicle did not separate from the body at the hinges or latches during the side impact event. The left side sliding door unlatched and the upper and middle door trolleys detached during the side impact event. The opposite doors did not open during the impact and remained operable following the test.</p>							<u>Front SID</u>		<u>Rear SID</u>		Left Upper Rib Acceleration:	<u>52</u>	g's	<u>45</u>	g's	Left Lower Rib Acceleration:	<u>53</u>	g's	<u>52</u>	g's	Lower Spine Acceleration:	<u>59</u>	g's	<u>62</u>	g's	Thoracic Trauma Index (TTI):	<u>56</u>	g's	<u>57</u>	g's	Pelvis Acceleration (PEV):	<u>50</u>	g's	<u>92</u>	g's
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17. Key Words New Car Assessment Program (NCAP) Side Impact MDB Side Impact Dummy (SID)			18. Distribution Statement <u>Copies of this report are available from:</u> National Highway Traffic Safety Administration Technical Reference Division Room 5108 (NAD-52) 400 Seventh St., S.W. Washington, D.C. 20590 Telephone No. (202) 366-4946 ATTN: Robert Hornicle																																
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TABLE OF CONTENTS

<u>Section</u>		<u>Page No.</u>
1	PURPOSE AND TEST PROCEDURE	1-1
2	SUMMARY OF SIDE IMPACT TEST	2-1
3	VEHICLE TEST DATA	3-1
	Data Sheet 1 - General Vehicle Test Parameter Data	3-2
	Data Sheet 2 - Test Vehicle Summary of Results	3-5
	Data Sheet 3 - Moving Deformable Barrier (MDB) Summary	3-6
	Data Sheet 4 - Post Test Observations	3-7
4	OCCUPANT AND VEHICLE INFORMATION	4-1
	Data Sheet 5 - SID Instrumentation Data	4-2
	Data Sheet 6 - Vehicle Pre- And Post Test Measurements	4-3
	Data Sheet 7 - SID Longitudinal Clearance Dimensions	4-4
	Data Sheet 8 - SID Lateral Clearance Dimensions	4-5
	Data Sheet 9 - Vehicle Side Measurements	4-6
	Data Sheet 10 - Vehicle Exterior Crush Profiles - All Levels	4-7
	Data Sheet 11 - Vehicle Damage Profile Distances	4-8
	Data Sheet 12 - Exterior Static Crush For Impactor Face	4-9
	Data Sheet 13 - Test Vehicle Accelerometer Locations And Data Summary	4-10
	Data Sheet 14 - MDB Accelerometer Locations and Data Summary	4-13
	Data Sheet 15 - High Speed Camera Locations and Data	4-14
5	VEHICLE FUEL SYSTEM INTEGRITY	5-1
	Data Sheet 16 - FMVSS 301 Fuel System Integrity Data	5-2
	Data Sheet 17 - FMVSS 301 Rollover Data	5-3
APPENDIX A	PHOTOGRAPHS	A-1
APPENDIX B	VEHICLE, MDB AND SID RESPONSE DATA	B-1
APPENDIX C	SID CONFIGURATION AND PERFORMANCE VERIFICATION DATA	C-1
APPENDIX D	TEST EQUIPMENT LIST AND CALIBRATION INFORMATION	D -1

SECTION 1

PURPOSE AND TEST PROCEDURE

This side impact test is part of the FY2001 New Car Assessment Program Side Impact Protection sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-98-C-02001. The purpose of this test was to generate comparative side impact performance in a 2001 Dodge Grand Caravan MPV. The test was conducted in accordance with the Office of Crashworthiness Standards's Laboratory Test Procedure dated July, 1997.

SECTION 2

SUMMARY OF SIDE IMPACT TEST

A 2001 Dodge Grand Caravan MPV was impacted on the left or driver's side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the monorail at a velocity of 62.12 kph (38.6 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by the Veridian Engineering Transportation Sciences Center in Buffalo, New York on February 20, 2001. Pre- and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the side impact dummies (SIDs) are included in Appendix A.

Two restrained Side Impact Dummies (SIDs) were placed in the driver (Pos. #1) and left rear (Pos. #4) designated seating positions according to the instructions specified in the OCWS Side Impact Laboratory Test Procedure which is dated July, 1997. The side impact test was documented by one real-time camera and 9 high-speed cameras. Camera locations and other pertinent camera information are included in this report.

The SIDs were instrumented with the following accelerometers:

1. Left Upper Rib (LUR) uniaxial and redundant accelerometer (Y-direction)
2. Left Lower Rib (LLR) uniaxial and redundant accelerometer (Y-direction)
3. Lower Thoracic Spine (T₁₂) uniaxial and redundant accelerometer (Y-direction)
4. Pelvic (PEV) section uniaxial and redundant accelerometer (Y-direction)
5. Head triaxial accelerometers (X-, Y- and Z-direction)

A summary of the side impact dummy (SID) configuration and verification test data can be found in Appendix C. A total of 54 channels of data were recorded. Appendix B contains the vehicle, MDB and dummy response data traces.

The following table summarizes the results of the test.

Injury Criteria	Front SID	Rear SID
TTI (g)	56	57
PEV (g)	50	92

SECTION 3

SUMMARY OF TEST RESULTS

DATA SHEET 1

GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 2001 Dodge Grand Caravan MPV

Vehicle Body Color: Gold VIN: 2B4GP44371R238406

Vehicle NHTSA No.: M10307 Month & Year of Manufacture: 12/00

Engine Data: 6 Cylinders; - CID; 3.3 Liters; - cc

Engine Placement: - Longitudinal; or X Lateral

Transmission: 4 Speed; - Manual; X Automatic; X Overdrive

Final Drive: - Rear Wheel Drive; X Front Wheel Drive; - Four Wheel

Odometer Reading 114 km

Options: X A/C; X Power Steering; X Pwr.Brakes; X Pwr. Windows

DATA FROM TIRE PLACARD

Tire Pressure* (at capacity); 248 kPa FRONT
248 kPa REAR

Recommended Tire Size: P215/70 R15

Tires on Test Vehicle: P215/70 R15 ; Manufacturer: Goodyear

Vehicle Capacity Data:

Number of Occupants: 2 Front; 2 Rear; 3 3rd Seat; 7 Total

Type of Front Seats: X Bucket; - Bench; - Split Bench

Type of Front Seat Back: - Fixed; X Adjustable with X Lever or - Knob

Vehicle Max Capacity Loading = 522 kg (A)

No. of Occupants x 68.04 kg. = 476.3 kg (B)

Vehicle Cargo Capacity = 45.7 kg (A-B)

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

Left Front	=	<u>563.5</u> kg	Left Rear	=	<u>404.0</u> kg
Right Front	=	<u>509.5</u> kg	Right Rear	=	<u>405.5</u> kg
TOTAL FRONT	=	<u>1073.0</u> kg	TOTAL REAR	=	<u>809.5</u> kg
% of Total Weight	=	<u>57.0</u> %	% of Total Weight	=	<u>43.0</u> %
TOTAL WEIGHT	=	<u>1882.5</u> kg			

* Tire pressure used in test.

DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2001 Dodge Grand Caravan

NHTSA No. M10307

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Max. Fluids	=	<u>1882.5</u>	kg (A)
Maximum Cargo Carrying Capacity of Test Vehicle	=	<u>45.7</u>	kg (B)
Weight of instrumented Side Impact Dummies (1 or 2 X <u>81.2</u> kg)	=	<u>162.4</u>	kg (C)
TEST VEHICLE TARGET WEIGHT:	=	<u>2090.6</u>	kg (A+B+C)

FULLY LOADED TEST VEHICLE (UDVW + 1 or 2 SID(s) + CARGO):

Left Front	=	<u>631.5</u>	kg	Left Rear	=	<u>486.0</u>	kg
Right Front	=	<u>507.0</u>	kg	Right Rear	=	<u>466.0</u>	kg
TOTAL FRONT	=	<u>1138.5</u>	kg	TOTAL REAR	=	<u>952.0</u>	kg
% of Total Weight	=	<u>54.5</u>	%	% of Total Weight	=	<u>45.5</u>	%
TOTAL TEST WEIGHT	=	<u>2090.5</u>	kg				

AS TESTED WEIGHT OF TEST VEHICLE (1 OR 2 SID(s) + CARGO + EQUIPMENT & INSTRUMENTATION):

Left Front	=	<u>619.0</u>	kg	Left Rear	=	<u>488.0</u>	kg
Right Front	=	<u>504.0</u>	kg	Right Rear	=	<u>474.5</u>	kg
TOTAL FRONT	=	<u>1123.0</u>	kg	TOTAL REAR	=	<u>962.5</u>	kg
% of Total Weight	=	<u>53.8</u>	%	% of Total Weight	=	<u>46.2</u>	%
TOTAL TEST WEIGHT	=	<u>2085.5</u>	kg				

TEST VEHICLE ATTITUDE (all dimensions in millimeters):

AS DELIVERED:

Left Front	<u>777</u>	Right Front	<u>773</u>	Left Rear	<u>789</u>	Right Rear	<u>790</u>
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FULLY LOADED:

Left Front	<u>756</u>	Right Front	<u>761</u>	Left Rear	<u>754</u>	Right Rear	<u>766</u>
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READY FOR TEST:

Left Front	<u>760</u>	Right Front	<u>767</u>	Left Rear	<u>755</u>	Right Rear	<u>767</u>
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Test Vehicle Wheelbase: 3028 millimeters

C.G. = 1397 millimeters rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side	=	<u>4938</u>	millimeters
Left Side	=	<u>4938</u>	millimeters
Centerline	=	<u>5094</u>	millimeters

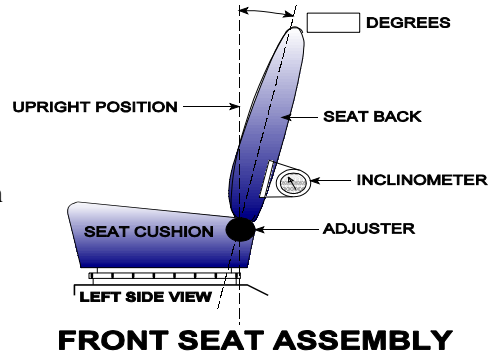
DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2001 Dodge Grand Caravan

NHTSA No. M10307

Nominal Design Riding Position for adjustable driver and passenger seat backs. Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent, if applicable.



FRONT SEAT CUSHION PLACEMENT: Mid-position (detent 11, where the forward most detent is defined as 0)

Total Length of Adjustment Travel: 218 millimeters

Total Number of Adjustment Positions or Detents: 23

FRONT SEAT BACK ADJUSTMENT POSITION: 4 degrees back from full upright

Seat Back Torso Angle: 18 degrees

SECOND POSITION SEAT:

Total Length of Fore/Aft Adjustment Travel: Fixed millimeters

Seat Back Adjustment Position: 6 degrees back from full upright

ADJUSTABLE STEERING COLUMN POSITION: Mid-position

WINDOW POSITIONS: Left Front: Closed Left Rear: Closed

Right Front: Removed Right Rear: Removed

Note: Windows will be in closed position on struck side of test vehicle and in open position on opposite side.

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

75.7 liters (Fuel Tank Usable Capacity)

70.0 liters used for test (92%-94% of Fuel Tank Usable Capacity)

LOCATION OF IMPACT POINT ON TEST VEHICLE SIDE TO BE IMPACTED:

Wheelbase = 3028 millimeters

Impact Point is 508 millimeters rearward of front axle centerline

(for vehicle with wheelbase >2896 mm)

Actual Impact Point is 510 millimeters rearward of front axle centerline

DATA SHEET 2

TEST VEHICLE SUMMARY OF RESULTS

VEHICLE IDENTIFICATION:

Vehicle Year/Make/Model: 2001 Dodge Grand Caravan

Body Style: MPV

VIN: 2B4GP44371R238406

NHTSA No.: M10307

Test Date: February 20, 2001

Overall Length = 5094 millimeters; Overall Width = 1953 millimeters

VEHICLE TEST WEIGHT (Pre-Test):

Left Front = 619.0 kg Left Rear = 488.0 kg

Right Front = 504.0 kg Right Rear = 474.5 kg

TOTAL FRONT = 1123.0 kg TOTAL REAR = 962.5 kg

TOTAL VEHICLE WEIGHT 2085.5 kg

Wheelbase = 3028 millimeters

Longitudinal C.G. from Center of Front Axle = 1397.5 millimeters

Impact Angle with Respect to Impactor = 90 degrees

ACTUAL IMPACT POINT

Actual Impact Point is 2 mm rearward of nominal impact ref. line (Lateral)

Actual Impact Point is 2 mm below nominal impact point (Vertical)

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 (275 mm above ground) = 154 millimeters

2. LEVEL 2 (758 mm above ground) = 348 millimeters

3. LEVEL 3 (659 mm above ground) = 306 millimeters

4. LEVEL 4 (960 mm above ground) = 282 millimeters

5. LEVEL 5 (1643 mm above ground) = 45 millimeters

Maximum Post-Test Intrusion = 348 millimeters

OCCUPANTS:

Front Passenger:

Rear Passenger:

Dummy Identification 015

016

Restraints Used Active 3-point seatbelt system

Active 3-point seatbelt system

INSTRUMENTATION:

Number of Vehicle Data Channels: = 49

Number of Cameras: Onboard = 3

Offboard = 8

TOTAL = 11

DATA SHEET 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY

Vehicle: 2001 Dodge Grand Caravan

NHTSA No. M10307

MDB FACE MANUFACTURER AND SERIAL NUMBER:

Plascore: FMVSS 214 US 077C1200-4; 001B1200

POSITION OF IMPACT (MDB) ON MONORAIL:

Crabbed 27° to left

MDB DETAILS:

Overall Width of Framework Carriage	=	<u>1250</u>	millimeters
Overall Length of MDB (incl. honeycomb impact face)	=	<u>4120</u>	millimeters
Wheelbase of Framework Carriage	=	<u>2590</u>	millimeters
Tread of Framework Carriage (Front & Rear)	=	<u>1875</u>	millimeters
C.G. Location Rearward of Front Axle	=	<u>1104</u>	millimeters

MDB WEIGHT:

Left Front	=	<u>409.5</u>	kg	Left Rear	=	<u>281.5</u>	kg
Right Front	=	<u>372.5</u>	kg	Right Rear	=	<u>299.0</u>	kg
TOTAL FRONT	=	<u>782.0</u>	kg	TOTAL REAR	=	<u>580.5</u>	kg
TOTAL MDB WEIGHT	=	<u>1362.5</u>	kg				
Impact Angle (MDB C/L to Target Vehicle C/L)	=	<u>90</u>	degrees				
Impact Speed	=	<u>62.12</u>	kph				

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

1. Row A at Center of Bumper Level	=	<u>154</u>	millimeters
2. Row B at Top of Bumper Level	=	<u>100</u>	millimeters
3. Row C at Mid Level	=	<u>109</u>	millimeters
4. Row D at Top of Stack Level	=	<u>127</u>	millimeters

INSTRUMENTATION:

Number of MDB Data Channels	=	<u>5</u>
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DATA SHEET 4

POST-TEST OBSERVATIONS

Vehicle: 2001 Dodge Grand Caravan

NHTSA No. M10307

VISIBLE DUMMY CONTACT POINTS:

	<u>LEFT FRONT SID</u>	<u>LEFT REAR SID</u>
Head:	<u>Top of head to side window</u>	<u>Top of head to side window</u>
Upper Torso:	<u>Arm to rear section of front door trim above armrest</u>	<u>Arm to rear section of sliding door trim</u>
Lower Torso:	<u>Pelvis to rear section of front door trim below armrest</u>	<u>Pelvis to rear section of sliding door trim</u>
Left Knee:	<u>Left knee to front section of door trim below switch cluster</u>	<u>Left knee to front section of door trim below door stop</u>
Right Knee:	<u>Right knee to left knee</u>	<u>Right knee to left knee</u>

DOOR OPENING:

	<u>LEFT DOOR</u>	<u>RIGHT DOOR</u>
Front:	<u>Closed / Inoperable</u>	<u>Closed / Operable</u>
Rear:	<u>See "OTHER NOTABLE IMPACT EFFECTS"</u>	<u>Closed / Operable</u>

MDB DISTANCE FROM TARGET IMPACT POINT:

<u>Vertical: 2 mm below target</u>
<u>Horizontal: 2 mm rear of target</u>

ARM REST LOCATIONS:

Front:	<u>130 mm below side window opening</u>
Rear:	<u>None</u>

SEAT MOVEMENT:

Front:	<u>Seat was deformed inboard slightly</u>
Rear:	<u>None</u>

GLAZING DAMAGE:

Windshield:	<u>Windshield cracked at its top left edge</u>
Window:	<u>None</u>

PILLAR PERFORMANCE:

No visible tears or separations

SILL SEPARATION:

None

AIR BAG DEPLOYMENT STATUS:

	DRIVER	FRONT PASSENGER	REAR PASSENGER
FRONT	No	No	N/A
SIDE	N/A	N/A	N/A

OTHER NOTABLE IMPACT EFFECTS:

The left side sliding door unlatched and the upper and middle door trolleys detached during the side impact event. The lower door trolley remained attached during the impact.

The secondary impact point (MDB right side) was 2 mm rearward and 4 mm below target as determined from film analysis.

SECTION 4

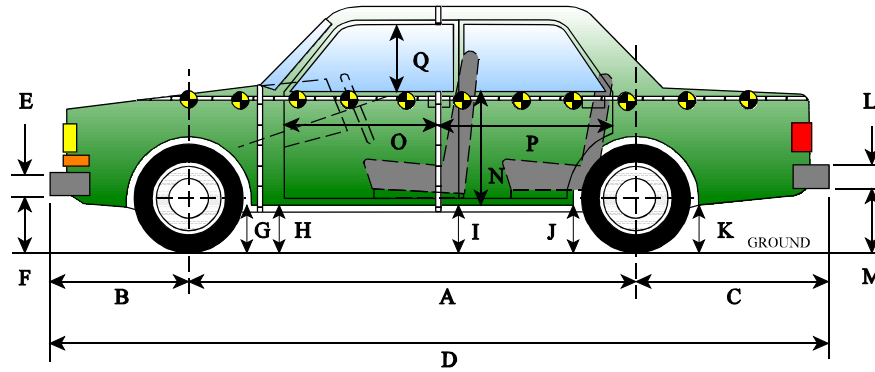
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET 6

VEHICLE SIDE MEASUREMENTS

Vehicle: 2001 Dodge Grand Caravan

NHTSA No. M10307



LEFT SIDE VIEW

NOTE: all dimensions are in millimeters with tolerance of ± 3 mm

	PRE-TEST (as delivered)	PRE-TEST (as tested)	POST-TEST (as tested)	Δ CHANGE
A	3026	3028	3012	-16
B	963	960	974	14
C	1105	1106	1090	-16
D	5094	-	5076	-18
E	203	-	203	0
F	370	362	410	48
G	255	235	252	17
H	255	236	253	17
I	263	238	249	11
J1	264	235	227	-8
J2	286	256	250	-6
K	290	255	230	-25
L	219	-	219	0
M	342	318	253	-65
N	760	-	717	-43
O	926	-	894	-32
P	1104	-	1046	-58
Q	598	-	597	-1
R	4938	-	4943	5
S	4938	-	4895	-43
T	1953	-	1692	-261

D = Length at Centerline
T = Width at B-Pillar

E&L = Bumper Thickness
J1 = To Pinch Weld

R = Right Side Length
J2 = To Sill

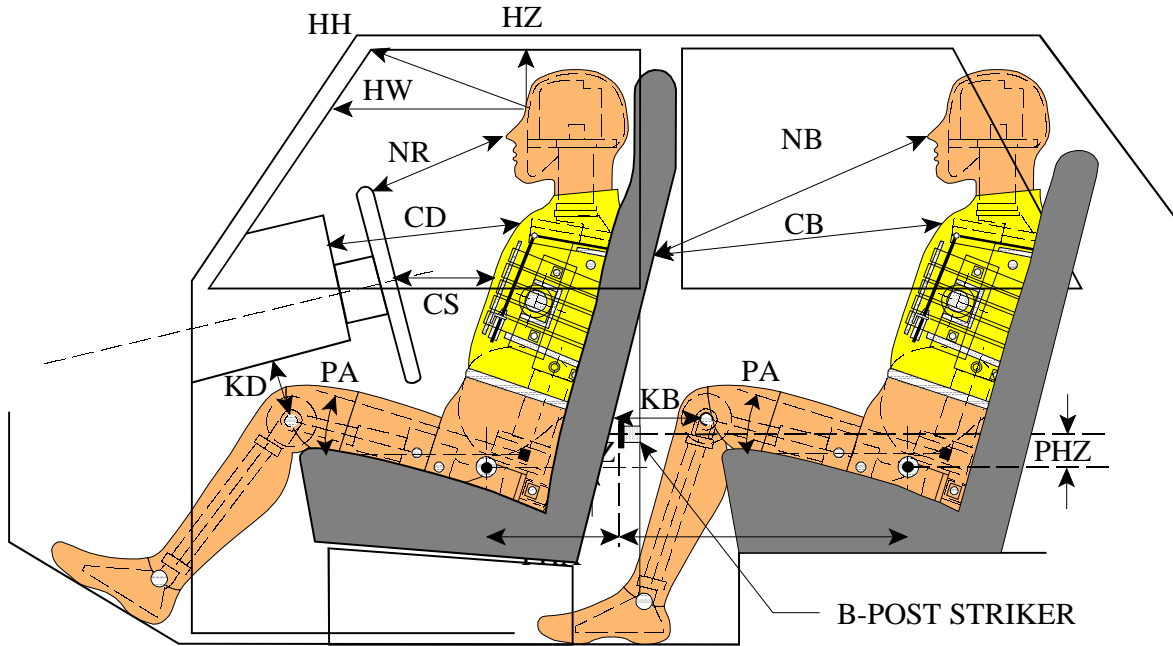
S = Left Side Length

DATA SHEET 7

SID LONGITUDINAL CLEARANCE DIMENSIONS

Vehicle: 2001 Dodge Grand Caravan

NHTSA No. M10307



LEFT SIDE VIEW

NOTE: 2-DOOR VEHICLE SHOWN.
REAR DUMMY PHX & PHZ
MEASUREMENTS FOR A 4-DOOR
VEHICLE WOULD USE THE C-POST
STRIKER AS A REFERENCE POINT

NOTE: All dimensions are in millimeters with tolerance of ± 3 mm

	DRIVER ID# <u>015</u>	LEFT REAR PASS. ID# <u>016</u>
HH	336	N/A
HW	578	N/A
HZ	178	201
NR/NB	400	682
CD/CB	538	611
CS	270	N/A
KDL(KDA°)/KBL(KDA°)	177 / (25 °)	279 / (26 °)
KDR(KBA°)/KBR(KBA°)	205 / (23 °)	272 / (21 °)
PA°	23.0 °	23.2 °
PHX	193	185
PHZ	17	56

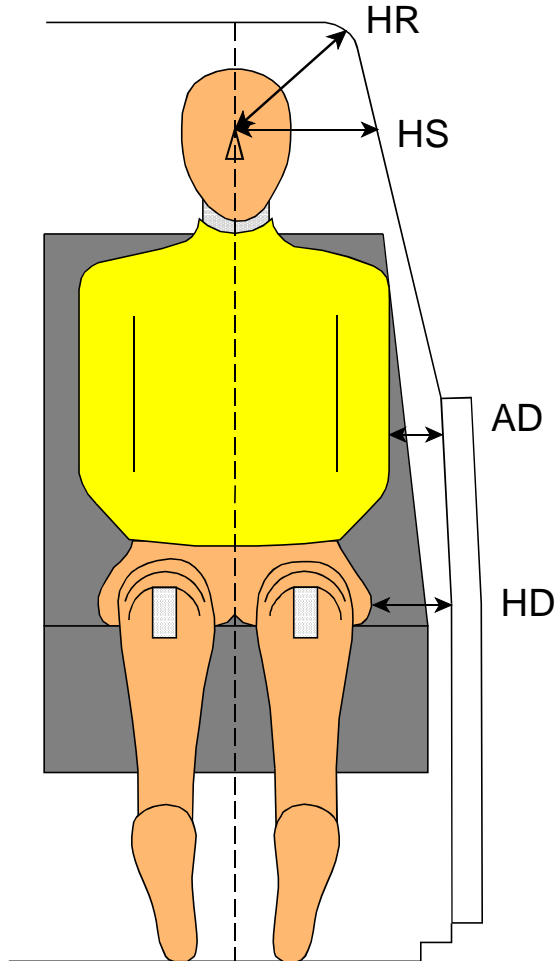
Note: 2-door vehicle shown. Rear dummy PHX & PHZ measurements for 4-door vehicle would use the C-post striker as a reference point.

DATA SHEET 8

SID LATERAL CLEARANCE DIMENSIONS

Vehicle: 2001 Dodge Grand Caravan

NHTSA No. M10307



NOTE: All dimensions are in millimeters with tolerance of ± 3 mm

	DRIVER ID # <u>015</u>		LEFT REAR PASS. ID # <u>016</u>	
HR	230		260	
HS	340		296	
AD*	LOWER: 163	UPPER: 222	LOWER: 209	UPPER: 262†
HD	168		295	

* Lower measurement is taken laterally at the center of the lower rib accelerometer height from the SID arm segment to the closest part of the vehicle side.
 Upper measurement is taken laterally at the center of the upper rib accelerometer height from the SID arm segment to the closest part of the vehicle side.

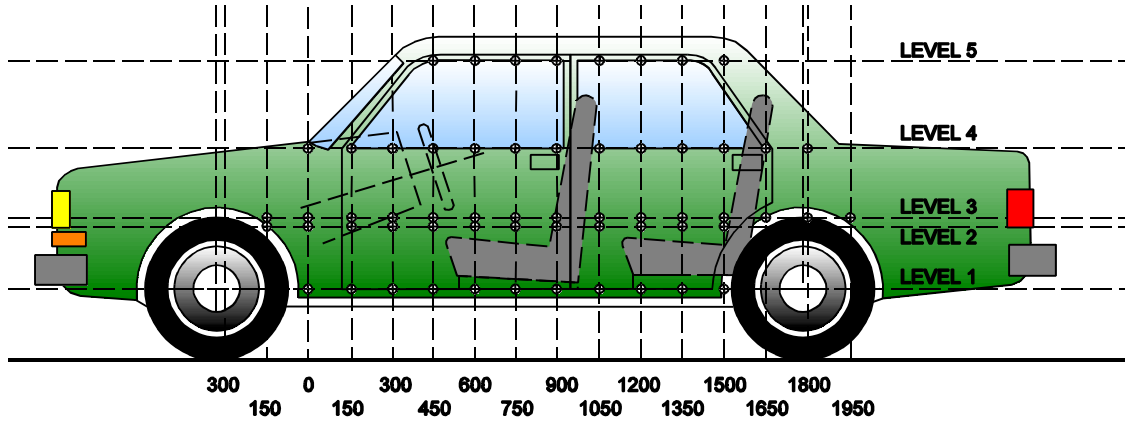
† Measured laterally to side window glass.

DATA SHEET 9

VEHICLE SIDE MEASUREMENTS

Vehicle: 2001 Dodge Grand Caravan

NHTSA No. M10307



LEFT SIDE VIEW

NOTE: All measurements are in millimeters (mm)

- LEVEL 5 - WINDOW TOP**
- LEVEL 4 - WINDOW SILL**
- LEVEL 3 - MID-DOOR**
- LEVEL 2 - OCCUPANT H-POINT**
- LEVEL 1 - AXLE CENTERLINE HEIGHT OR SILL TOP HEIGHT**

MEASUREMENTS ARE TAKEN WHEN THE VEHICLE IS IN THE "AS TESTED" CONFIGURATION.

Measurements Along the Vertical 750 mm Line Shown Above:

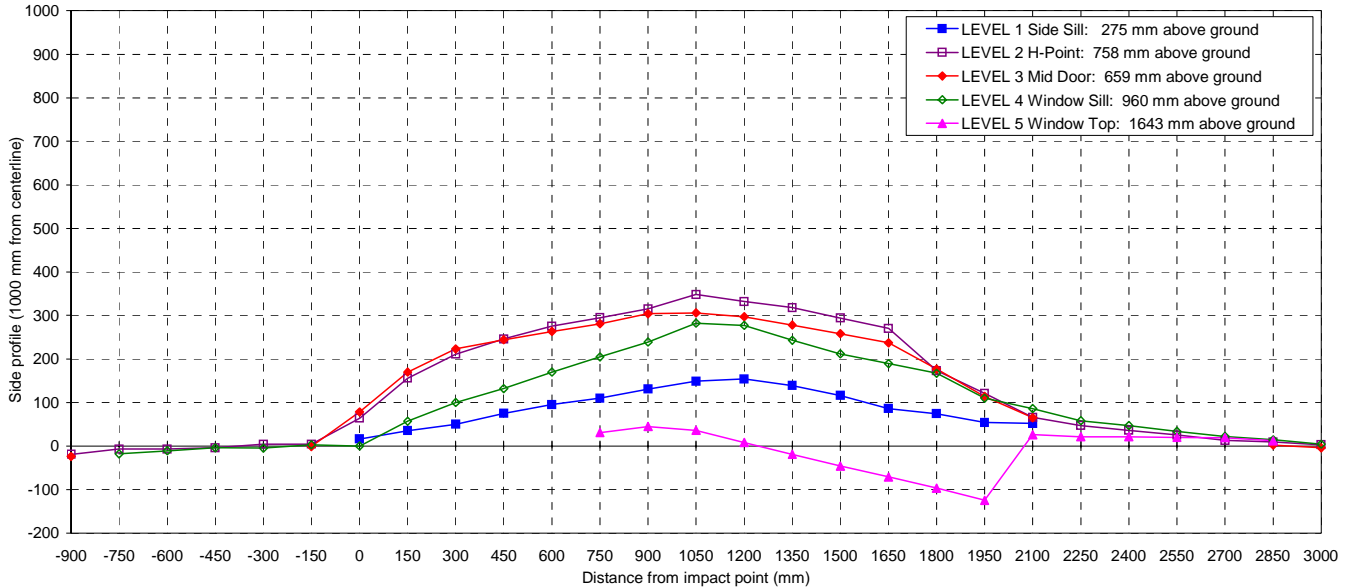
Level 5 @ Window Top	=	<u>1643</u>	millimeters
Level 4 @ Window Sill	=	<u>960</u>	millimeters
Level 3 @ Mid Door	=	<u>659</u>	millimeters
Level 2 @ Occupant H-Point	=	<u>758</u>	millimeters
Level 1 @ Axle Centerline Height (or Sill Top Height)	=	<u>275</u>	millimeters

DATA SHEET 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Vehicle: 2001 Dodge Grand Caravan

NHTSA No. M10307



NOTE: All dimensions are in millimeters with a tolerance of ±3 mm

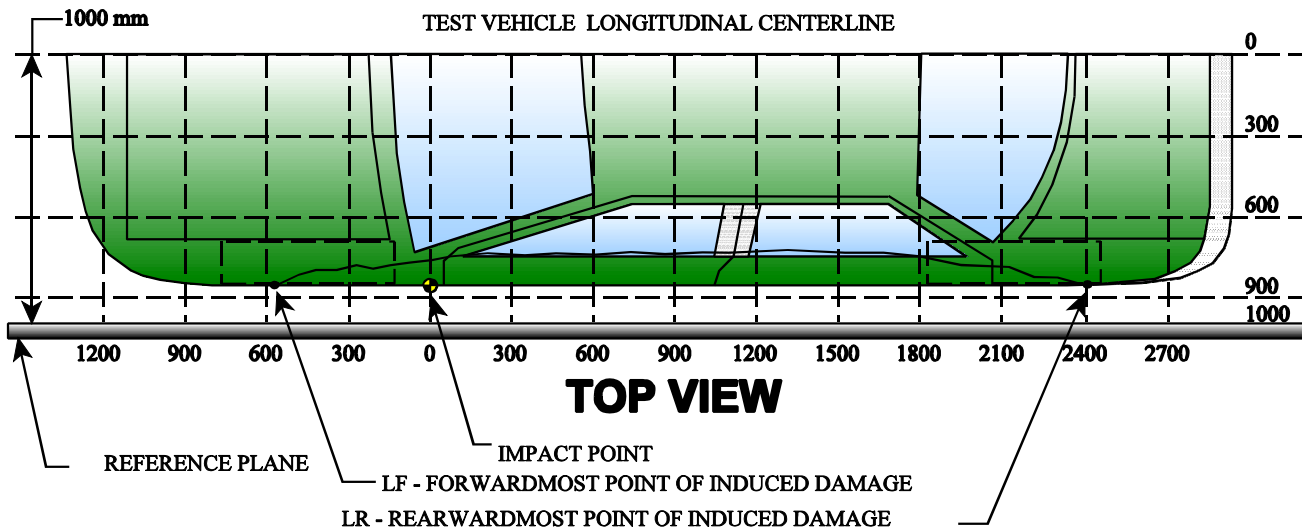
LEVEL	HEIGHT (mm)		DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT																											
			-900	-750	-600	-450	-300	-150	0	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700	2850	3000	
LEVEL 1 SIDE SILL	275	PRE	--	--	--	--	--	165	160	160	155	152	157	153	153	157	150	151	161	162	161	166	--	--	--	--	--	--		
		POST	--	--	--	--	--	181	195	210	230	247	267	284	302	311	289	267	247	236	215	218	--	--	--	--	--	--		
		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	16	35	50	75	95	110	131	149	154	139	116	86	74	54	52	N/A	N/A	N/A	N/A	N/A	N/A	
LEVEL 2 H POINT	758	PRE	160	110	83	73	65	68	66	57	49	50	43	41	40	36	39	37	40	42	46	51	55	50	42	40	43	79	87	
		POST	141	103	76	69	69	72	130	213	260	296	318	336	355	384	371	355	334	312	219	172	121	97	78	65	56	88	90	
		CRUSH	-19	-7	-7	-4	4	4	64	156	211	246	275	295	315	348	332	318	294	270	173	121	66	47	36	25	13	9	3	
LEVEL 3 MID DOOR	659	PRE	144	--	--	--	--	68	68	63	55	53	48	48	43	43	41	44	45	47	52	55	59	--	--	--	--	58	94	
		POST	120	--	--	--	--	67	146	233	278	297	311	329	347	349	338	322	303	284	229	169	124	--	--	--	--	60	90	
		CRUSH	-24	N/A	N/A	N/A	N/A	-1	78	170	223	244	263	281	304	306	297	278	258	237	177	114	65	N/A	N/A	N/A	N/A	2	-4	
LEVEL 4 WINDOW SILL	960	PRE	--	240	182	149	133	112	102	86	74	70	58	50	44	41	41	38	43	46	52	55	58	63	66	72	78	83	91	
		POST	--	222	171	145	128	115	102	143	174	202	228	255	283	323	318	281	255	235	219	165	144	121	113	106	100	97	95	
		CRUSH	N/A	-18	-11	-4	-5	3	0	57	100	132	170	205	239	282	277	243	212	189	167	110	86	58	47	34	22	14	4	
LEVEL 5 WINDOW TOP	1643	PRE	--	--	--	--	--	--	--	--	--	--	--	378	359	347	340	332	328	325	323	325	326	331	334	339	348	370	--	
		POST	--	--	--	--	--	--	--	--	--	--	--	--	409	404	383	348	313	282	254	226	200	352	352	355	359	367	382	--
		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31	45	36	8	-19	-46	-71	-97	-125	26	21	21	20	19	12	N/A

DATA SHEET 11

VEHICLE DAMAGE PROFILE DISTANCES

Vehicle: 2001 Dodge Grand Caravan

NHTSA No. M10307



MEASUREMENT CONVENTIONS:
 Forward of the impact point (towards front of vehicle) is considered negative (—).
 Rearward of the impact point (toward rearend of vehicle) is considered positive (+).

NOTE: All dimensions are in millimeters with tolerance of ± 3 mm.

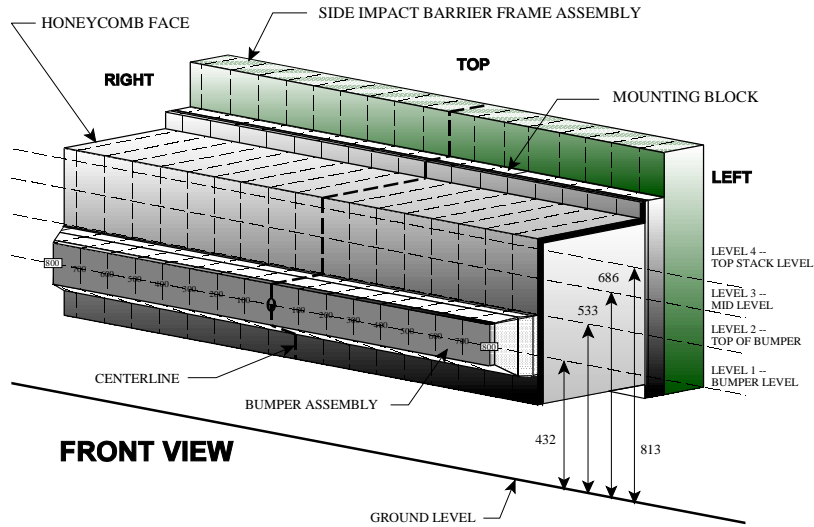
DPD MEASUREMENTS		POST TEST (mm)	PRETEST (mm)	STATIC CRUSH (mm)
1	(LR = <u>3000</u> mm)	95	91	4
2	2340	116	65	51
3	1680	293	43	250
4	1020	378	37	341
5	360	286	54	232
6	(LF = <u>-300</u> mm)	69	65	4

DATA SHEET 12

EXTERIOR STATIC CRUSH FOR IMPACTOR FACE

Vehicle: 2001 Dodge Grand Caravan

NHTSA No. M10307



NOTE: Dimensions are shown in millimeters, mm

NOTE: All dimensions are in millimeters with a tolerance of ± 3 mm

LEVEL	HEIGHT AT CL (mm)*		DISTANCE RIGHT OF CENTER (mm)								0	DISTANCE LEFT OF CENTER (mm)							
			800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
LEVEL 4 TOP STACK	813	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	
		POST	713	679	659	644	623	623	633	633	640	643	651	648	657	668	687	713	746
		CRUSH	94	60	40	25	4	4	14	14	21	24	32	29	38	49	68	94	127
LEVEL 3 MID LEVEL	686	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	
		POST	687	676	661	649	633	627	629	635	641	638	633	631	633	642	651	685	728
		CRUSH	68	57	42	30	14	8	10	16	22	19	14	12	14	23	32	66	109
LEVEL 2 TOP BUMPER	533	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	
		POST	719	711	703	700	696	692	693	689	686	675	676	674	677	672	677	680	699
		CRUSH	100	92	84	81	77	73	74	70	67	56	57	55	58	53	58	61	80
LEVEL 1 MID BUMPER	432	PRE	535	519	518	518	518	518	518	518	518	518	518	518	518	518	519	535	
		POST	689	664	651	649	646	640	642	639	635	624	618	617	615	612	613	617	638
		CRUSH	154	145	133	131	128	122	124	121	117	106	100	99	97	94	95	98	103

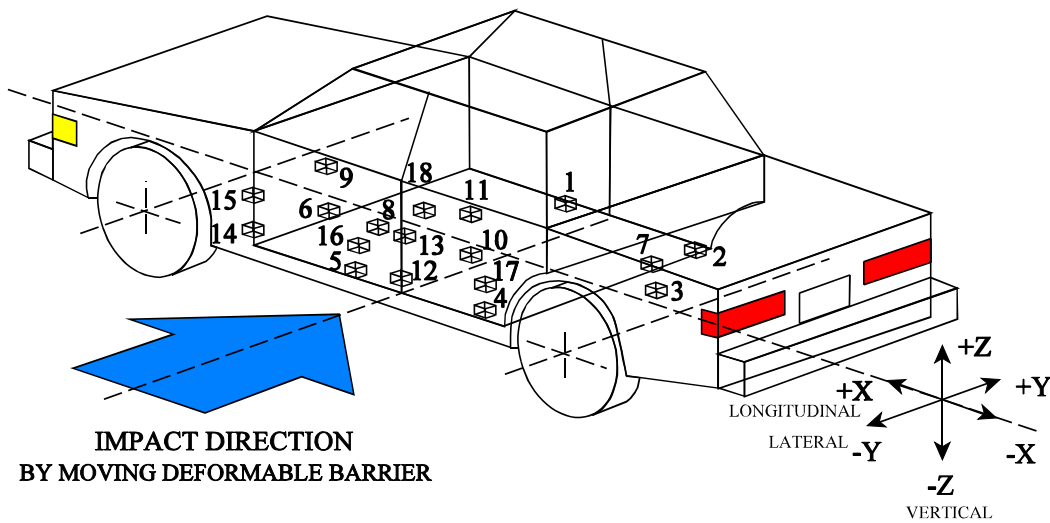
*Heights measured above ground level.

DATA SHEET 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2001 Dodge Grand Caravan

NHTSA No. M10307



- 1-Right Side Sill @ Front Seat
- 2-Right Side Sill @ Rear Seat
- 3-Rear Floorpan Above Axle
- 4-Left Side Sill @ Rear Seat
- 5-Left Side Sill @ Front Seat
- 6-Left Front Door on Centerline
- 7-Right Rear Occupant Compartment
- 8-Midrear of Left Front Door
- 9-Left Front Door Upper Centerline

- 10-Midrear of Left Rear Door
- 11-Left Rear Door Upper Centerline
- 12-Left Lower B-Pillar
- 13-Left Middle B-Pillar
- 14-Left Lower A-Pillar
- 15-Left Middle A-Pillar
- 16-Front Seat Track
- 17-Rear Seat Track
- 18-Vehicle CG

DATA SHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2001 Dodge Grand Caravan

NHTSA No. M10307

Accel. No.	Location	Coordinates (mm)±3				Long. (x)		Lat. (y)		Vert. (z)		Resultant	
		mm				Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
		X*	Y*	Z*									
1	Right Side Sill at Front Seat	3238	-642	-409	pos.	3.1	61.9	18.7	7.1	20.1	35.2	20.2	35.2
					neg.	-6.5	20.8	-3.1	147.9	-6.4	12.3	-	-
2	Right Side Sill at Rear Seat	2231	-665	-466	pos.	3.3	59.3	22.0	6.8	5.4	10.2	22.6	6.9
					neg.	-5.9	19.2	-3.1	149.4	-10.6	15.7	-	-
3	Rear Floorpan Above Axle	1100	-91	-428	pos.	1.3	123.5	17.6	7.2	9.9	43.6	18.3	6.9
					neg.	-4.2	19.9	-2.4	149.3	-10.0	15.4	-	-
4	Left Side Sill at Rear Seat	2235	665	-451	pos.	-	-	195.4	9.4	-	-	-	-
					neg.	-	-	-39.5	23.9	-	-	-	-
5	Left Side Sill at Front Seat	3241	639	-394	pos.	-	-	46.2	17.5	-	-	-	-
					neg.	-	-	-40.7	22.4	-	-	-	-
6	Left Front Door on Centerline	2194	824	-759	pos.	-	-	252.8	6.3	-	-	-	-
					neg.	-	-	-305.5	13.5	-	-	-	-
7	Right Rear Occupant Compartment	2399	-180	-428	pos.	-	-	19.8	6.3	-	-	-	-
					neg.	-	-	-7.2	60.4	-	-	-	-
8 †	Midrear of Left Front Door	-	-	-	pos.	-	-	-	-	-	-	-	-
					neg.	-	-	-	-	-	-	-	-
9	Left Front Door Upper Centerline	3117	796	-993	pos.	-	-	167.3	15.9	-	-	-	-
					neg.	-	-	-178.9	24.4	-	-	-	-
10 †	Midrear of Left Rear Door	-	-	-	pos.	-	-	-	-	-	-	-	-
					neg.	-	-	-	-	-	-	-	-
11	Left Rear Door Upper Centerline	2196	824	-1062	pos.	-	-	††	-	-	-	-	-
					neg.	-	-	††	-	-	-	-	-

*Reference: X - Rear Bumper (+ Forward)

Y - Vehicle Centerline (+ To Right)

Z - Ground Level (+ Down)

**Accelerometer was not requested by COTR.

† The transducer was deleted from test due to its location.

†† The transducer cable was severed at approximately 20 milliseconds into the impact.

4-11

8506-16

DATA SHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2001 Dodge Grand Caravan

NHTSA No. M10307

Accel. No.	Location	Coordinates (mm)±3				Long. (x)		Lat. (y)		Vert. (z)		Resultant	
		mm				Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
		X*	Y*	Z*									
12	Left Lower B-Pillar	2679	659	-481	pos.	-	-	132.8	10.5	-	-	-	-
					neg.	-	-	-228.1	20.7	-	-	-	-
13	Left Middle B-Pillar	2636	765	-992	pos.	-	-	213.7	4.6	-	-	-	-
					neg.	-	-	-207.3	16.6	-	-	-	-
14	Left Lower A-Pillar	3755	678	-612	pos.	-	-	45.6	8.7	-	-	-	-
					neg.	-	-	-26.6	26.8	-	-	-	-
15	Left Middle A-Pillar	3664	706	-1129	pos.	-	-	31.3	12.8	-	-	-	-
					neg.	-	-	-9.4	35.0	-	-	-	-
16	Front Seat Track	2818	584	-536	pos.	-	-	35.2	12.3	-	-	-	-
					neg.	-	-	-14.1	30.7	-	-	-	-
17	Rear Seat Track	1858	476	-589	pos.	-	-	92.2	26.1	-	-	-	-
					neg.	-	-	-28.4	57.4	-	-	-	-
18	Vehicle CG	2762	-96	-409	pos.	7.8	59.6	19.3	6.7	14.6	22.8	24.5	60.6
					neg.	-6.5	20.3	-3.0	147.9	-23.1	60.9	-	-

*Reference: X - Rear Bumper (+ Forward)

Y - Vehicle Centerline (+ To Right)

Z - Ground Level (+ Down)

4-12

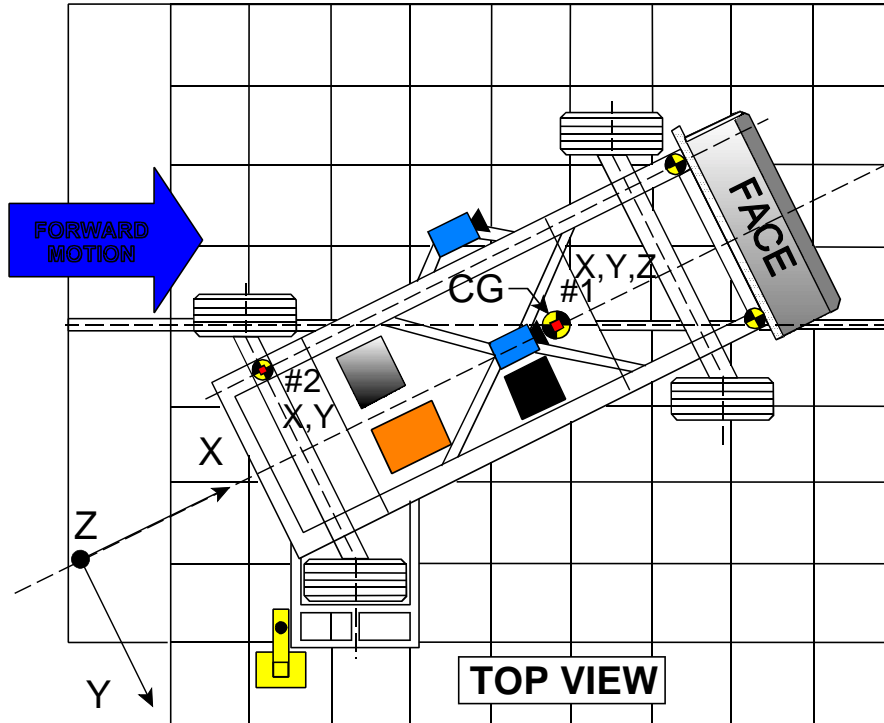
8506-16

DATA SHEET 14

MDB ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2001 Dodge Grand Caravan

NHTSA No. M10307



Accel. No.	Location	Coordinates (millimeters)			Pos. Direct.		Neg. Direct.	
		X*	Y*	Z*	Max (g)	Time (msec)	Max (g)	Time (msec)
1	MDB Center of Gravity							
	Longitudinal... X				1.3	119.8	-23.0	42.7
	Lateral..... Y	1859	0	-330	1.3	60.5	-10.2	13.1
	Vertical..... Z				13.0	26.8	-15.3	21.1
	Resultant..... R				25.1	33.2	-	-
2	Rear Frame Member							
	Longitudinal... X	386	-660	-660	1.8	113.4	-22.6	34.5
	Lateral..... Y				6.7	18.1	-2.2	69.4

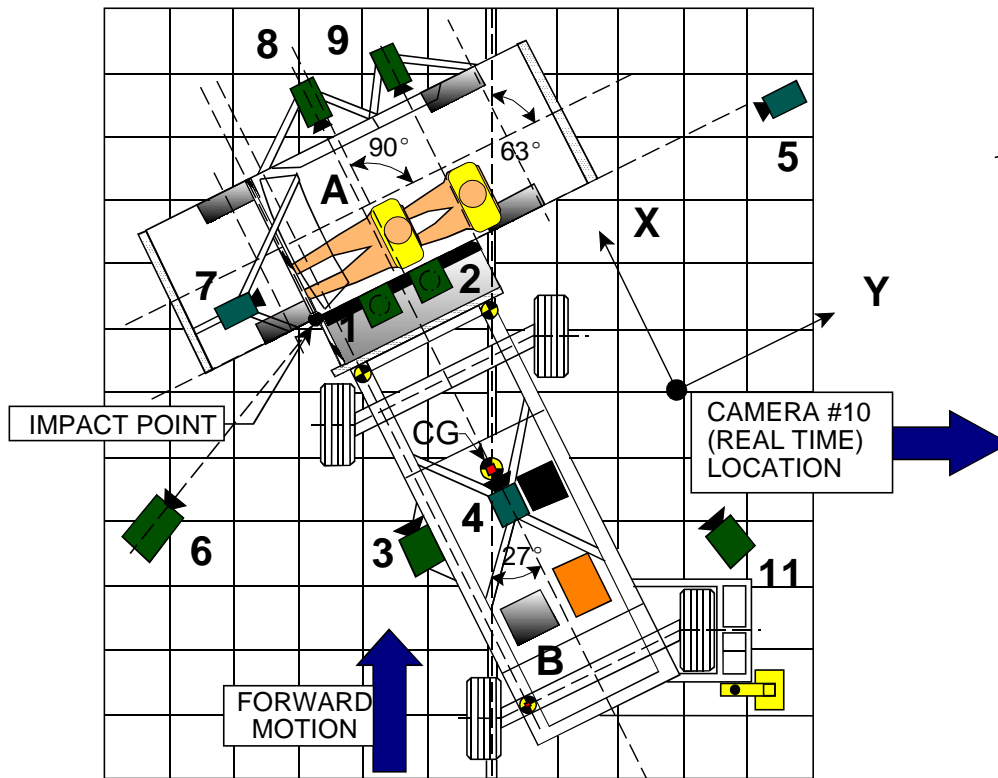
*Reference: X = Rear Bumper (+ Forward)
 Y = Vehicle Centerline (+ To Right)
 Z = Ground Level (+ Down)
 All measurements accurate to within ±3 mm.

DATA SHEET 15

HIGH SPEED CAMERA LOCATIONS AND DATA SUMMARY

Vehicle: 2001 Dodge Grand Caravan

NHTSA No. M10307



Camera No.	View	Coordinates (millimeters)			Angle (deg.)	Lens (mm)	Film Speed (fps)
		X*	Y*	Z*			
1	Overhead view of test vehicle	58	800	-4880	-90	8	1055
2	Overhead closeup view of impact plane	194	865	-4880	-90	12.5	1005
3	MDB onboard closeup view of impact point	-1470	0	-847	0	13	1025
4	MDB onboard view of driver dummy	-1140	838	-1586	-17	7.5	1035
5	Right side ground level overall view	165	9798	-1100	-1.6	25	1020
6	Left side ground level overall view	-1761	-1692	-1098	-6.0	13	1010
7	Test vehicle onboard driver front view	493	-732	-1388	-2.9	13	1005
8	Test vehicle onboard driver side view	1880	544	-1112	-6.7	8	995
9	Test vehicle onboard passenger side view	1911	1479	-1155	-5.4	8	1010
10	Real time film coverage of test	-	-	-	-	-	24
11	Secondary impact point view	-4095	-3230	-1060	-2.9	25	1005

* Reference (from point of impact); all measurements accurate to within ±6 mm.

X = (Impact Point) + Forward

Y = (Impact Point) + To Right

Z = (Ground Level) + Down

SECTION 5

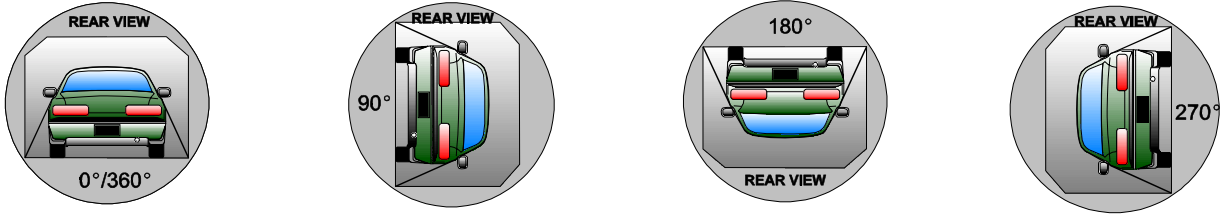
FUEL SYSTEM INTEGRITY

DATA SHEET 17

ROLLOVER DATA

Vehicle: 2001 Dodge Grand Caravan

NHTSA No. M10307



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Stage	Rotation Time (spec. 1 -3 min)				FMVSS 301 Hold Time		Total Time				Next Whole Minute Interval	
	1	minutes	14	seconds	5	minutes	6	minutes	14	seconds	7	minutes
0° - 90°	1	minutes	14	seconds	5	minutes	6	minutes	14	seconds	7	minutes
90° - 180°	1	minutes	7	seconds	5	minutes	6	minutes	7	seconds	7	minutes
180° - 270°	1	minutes	5	seconds	5	minutes	6	minutes	5	seconds	7	minutes
270° - 360°	1	minutes	1	seconds	5	minutes	6	minutes	1	seconds	7	minutes

II. FMVSS 301 REQUIREMENTS: (Maximum allowable solvent spillage):

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
142 g	28 g	28 g	28 g

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

Rollover Stage	First 5 minutes from onset of rotation (g)	6th min. (g)	7th min. (g)	8th min. (if required) (g)
0° - 90°	0	0	0	N/A
90° - 180°	0	0	0	N/A
180° - 270°	0	0	0	N/A
270° - 360°	0	0	0	N/A

Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S):

Rollover Stage	Spillage Location
0° - 90°	-
90° - 180°	-
180° - 270°	-
270° - 360°	-

APPENDIX A

PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

<u>Figure</u>	<u>Photograph Title</u>	<u>Page</u>
Figure A- 1	PRE-TEST FRONTAL VIEW OF TEST VEHICLE	A- 3
Figure A- 2	POST-TEST FRONTAL VIEW OF TEST VEHICLE	A- 4
Figure A- 3	PRE-TEST REAR VIEW OF TEST VEHICLE	A- 5
Figure A- 4	POST-TEST REAR VIEW OF TEST VEHICLE	A- 6
Figure A- 5	PRE-TEST IMPACTED SIDE VIEW OF TEST VEHICLE	A- 7
Figure A- 6	POST-TEST IMPACTED SIDE VIEW OF TEST VEHICLE	A- 8
Figure A- 7	PRE-TEST FRONTAL VIEW OF IMPACTOR FACE	A- 9
Figure A- 8	POST-TEST FRONTAL VIEW OF IMPACTOR FACE	A- 10
Figure A- 9	PRE-TEST LEFT SIDE VIEW OF IMPACTOR FACE	A- 11
Figure A- 10	POST-TEST LEFT SIDE VIEW OF IMPACTOR FACE	A- 12
Figure A- 11	PRE-TEST RIGHT SIDE VIEW OF IMPACTOR FACE	A- 13
Figure A- 12	POST-TEST RIGHT SIDE VIEW OF IMPACTOR FACE	A- 14
Figure A- 13	PRE-TEST TOP VIEW OF IMPACTOR FACE	A- 15
Figure A- 14	POST-TEST TOP VIEW OF IMPACTOR FACE	A- 16
Figure A- 15	PRE-TEST OVERHEAD VIEW OF ALIGNED MDB AND VEHICLE	A- 17
Figure A- 16	POST-TEST OVERHEAD VIEW OF MDB AND VEHICLE	A- 18
Figure A- 17	PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID	A- 19
Figure A- 18	POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID	A- 20
Figure A- 19	PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF REAR SID	A- 21
Figure A- 20	POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF REAR SID	A- 22
Figure A- 21	PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID	A- 23
Figure A- 22	POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID	A- 24
Figure A- 23	PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SID	A- 25
Figure A- 24	POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SID	A- 26
Figure A- 25	PRE-TEST INTERIOR OF FRONT DOOR	A- 27
Figure A- 26	POST-TEST INTERIOR OF FRONT DOOR SHOWING SID IMPACT LOCATIONS	A- 28
Figure A- 27	PRE-TEST INTERIOR OF REAR DOOR	A- 29
Figure A- 28	POST-TEST INTERIOR OF REAR DOOR SHOWING SID IMPACT LOCATIONS	A- 30
Figure A- 29	PRE-TEST LEFT SIDE VIEW OF MDB WITH IMPACTOR FACE IN POSITION	A- 31
Figure A- 30	PRE-TEST RIGHT SIDE VIEW OF MDB WITH IMPACTOR FACE IN POSITION	A- 32
Figure A- 31	POST-TEST CLOSE-UP VIEW OF IMPACT POINT TARGET	A- 33
Figure A- 32	CLOSE-UP VIEW OF VEHICLE'S CERTIFICATION LABEL	A- 34
Figure A- 33	CLOSE-UP VIEW OF VEHICLE'S TIRE PLACARD LABEL	A- 35
Figure A- 34	IMPACT PHOTO	A- 36
Figure A- 35	ROLLOVER 90 DEGREES	A- 37
Figure A- 36	ROLLOVER 180 DEGREES	A- 38
Figure A- 37	ROLLOVER 270 DEGREES	A- 39
Figure A- 38	ROLLOVER 360 DEGREES	A- 40



Figure A-1: PRE-TEST FRONTAL VIEW OF TEST VEHICLE



Figure A-2: POST-TEST FRONTAL VIEW OF TEST VEHICLE



Figure A-3: PRE-TEST REAR VIEW OF TEST VEHICLE



Figure A-4: POST-TEST REAR VIEW OF TEST VEHICLE



Figure A-5: PRE-TEST IMPACTED SIDE VIEW OF TEST VEHICLE



Figure A-6: POST-TEST IMPACTED SIDE VIEW OF TEST VEHICLE



Figure A-7: PRE-TEST FRONTAL VIEW OF IMPACTOR FACE



Figure A-8: POST-TEST FRONTAL VIEW OF IMPACTOR FACE



Figure A-9: PRE-TEST LEFT SIDE VIEW OF IMPACTOR FACE



Figure A-10: POST-TEST LEFT SIDE VIEW OF IMPACTOR FACE



Figure A-11: PRE-TEST RIGHT SIDE VIEW OF IMPACTOR FACE



Figure A-12: POST-TEST RIGHT SIDE VIEW OF IMPACTOR FACE



M10307

Figure A-13: PRE-TEST TOP VIEW OF IMPACTOR FACE



Figure A-14: POST-TEST TOP VIEW OF IMPACTOR FACE



Figure A-15: PRE-TEST OVERHEAD VIEW OF ALIGNED MDB AND VEHICLE



Figure A-16: POST-TEST OVERHEAD VIEW OF MDB AND VEHICLE



Figure A-17: PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID



Figure A-18: POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID



Figure A-19: PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF REAR SID



Figure A-20: POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF REAR SID



Figure A-21: PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID



Figure A-22: POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID



Figure A-23: PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SID



Figure A-24: POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SID



Figure A-25: PRE-TEST FRONT INTERIOR TRIM



Figure A-26: POST-TEST FRONT INTERIOR TRIM SHOWING SID IMPACT LOCATIONS



Figure A-27: PRE-TEST REAR INTERIOR TRIM



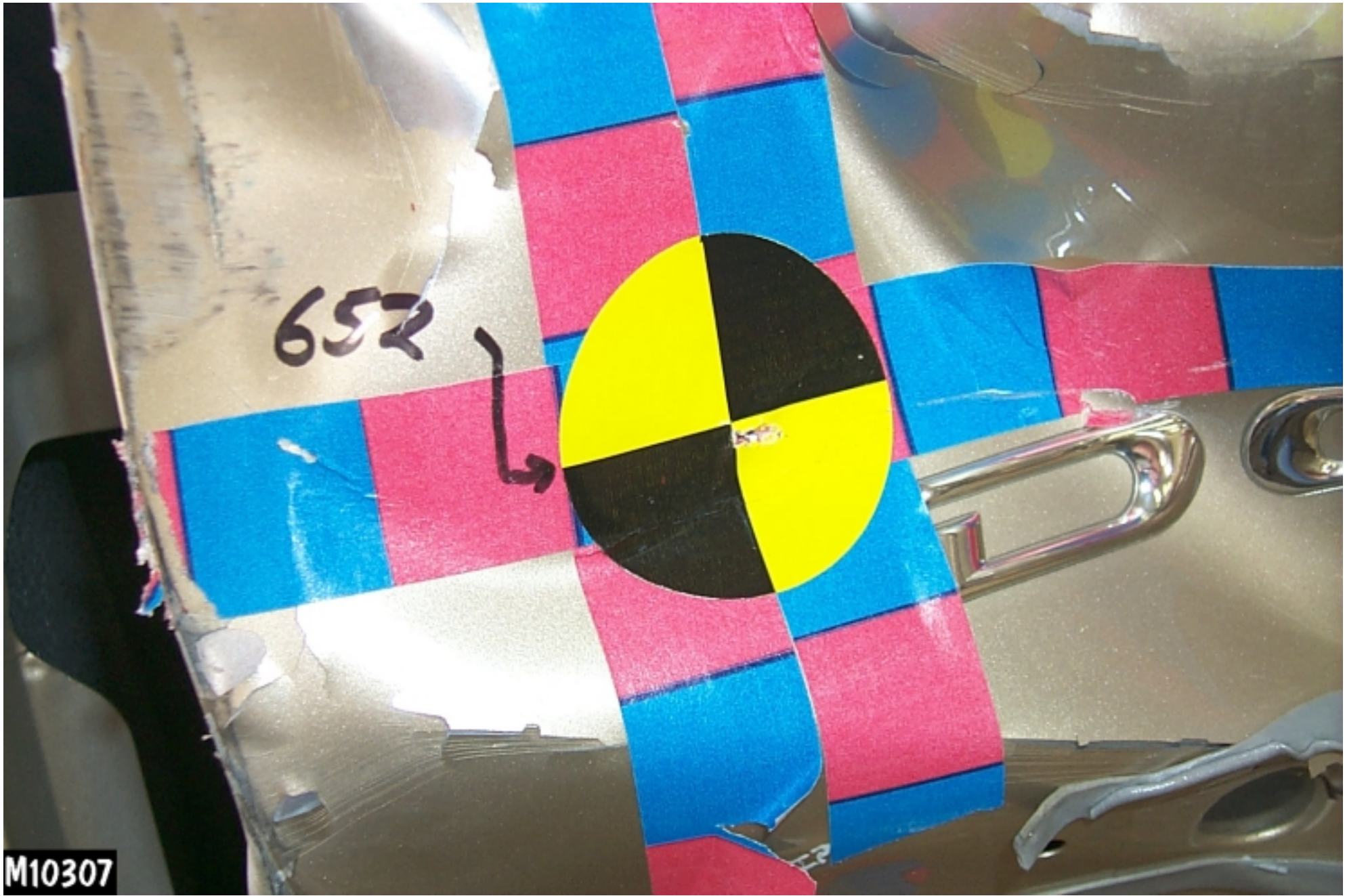
Figure A-28: POST-TEST REAR INTERIOR TRIM SHOWING SID IMPACT LOCATIONS



Figure A-29: PRE-TEST LEFT SIDE VIEW OF MDB WITH IMPACTOR FACE IN POSITION



Figure A-30: PRE-TEST RIGHT SIDE VIEW OF MDB WITH IMPACTOR FACE IN POSITION



M10307

Figure A-31: POST-TEST CLOSE-UP VIEW OF IMPACT POINT TARGET

MFD BY DAIMLERCHRYSLER CORPORATION DATE OF MFG 12-06 GVWR 2495 KG(05500 LB)

GAWR FRONT	WITH TIRES	RIMS AT	COLD
1293 KG(2850 LB)	215/70R15 A/S	15X6.5	248 KPA(36 PSI)
GAWR REAR	WITH TIRES	RIMS AT	COLD
1293 KG(2850 LB)	215/70R15 A/S	15X6.5	248 KPA(36 PSI)

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

VIN: 2B4GP44371R238406 TYPE: MPV SINGLE X DUAL



MDH: 120717 474AA PNT:PTE VEHICLE MADE IN CANADA TRM:E7L5 4648505

M10307

Figure A-32: CLOSE-UP VIEW OF VEHICLE'S CERTIFICATION LABEL

RECOMMENDED COLD TIRE INFLATION PRESSURE		VEHICLE CAPACITY 1150LB/522kg		
FRONT	REAR	SEATING CAPACITY		
36 psi 250 kPa	36 psi 250 kPa	SEAT POSITION	7 PASS	5 PASS
MINIMUM TIRE SIZE		1ST SEAT	2	2
STANDARD LOAD 215/70R15		2ND SEAT	2	3
PRINTED IN USA	04472551AD	3RD SEAT	3	
SEE OWNERS MANUAL FOR OPTIONAL TIRES, HIGH SPEED OPERATION AND ADDITIONAL DATA.				

M10307

Figure A-33: CLOSE-UP VIEW OF VEHICLE'S TIRE PLACARD LABEL



Figure A-34: IMPACT PHOTO

A-37

8506-16



M10307

Figure A-35: ROLLOVER 90 DEGREES

A-38

8506-16



Figure A-36: ROLLOVER 180 DEGREES



M10307

Figure A-37: ROLLOVER 270 DEGREES



Figure A-38: ROLLOVER 360 DEGREES

APPENDIX B

VEHICLE, MDB AND SID RESPONSE DATA

TABLE OF DATA PLOTS

DRIVER AND PASSENGER DUMMY INSTRUMENTATION PLOTS
 ACCELERATION DATA - FILTER CLASS 1000, LOWER SPINE - FILTER CLASS 180
 INTEGRATION DATA - FILTER CLASS 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
1	DRIVER HEAD (X) ACCELERATION VS TIME	B- 6
2	DRIVER HEAD (X) VELOCITY VS TIME	B- 7
3	DRIVER HEAD (Y) ACCELERATION VS TIME	B- 8
4	DRIVER HEAD (Y) VELOCITY VS TIME	B- 9
5	DRIVER HEAD (Z) ACCELERATION VS TIME	B- 10
6	DRIVER HEAD (Z) VELOCITY VS TIME	B- 11
7	DRIVER HEAD RESULTANT ACCELERATION VS TIME	B- 12
8	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 13
9	DRIVER UPPER RIB (Y) VELOCITY VS TIME	B- 14
10	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 15
11	DRIVER LOWER RIB (Y) VELOCITY VS TIME	B- 16
12	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 17
13	DRIVER LOWER SPINE (Y) VELOCITY VS TIME	B- 18
14	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 19
15	DRIVER PELVIC (Y) VELOCITY VS TIME	B- 20
16	PASSENGER HEAD (X) ACCELERATION VS TIME	B- 21
17	PASSENGER HEAD (X) VELOCITY VS TIME	B- 22
18	PASSENGER HEAD (Y) ACCELERATION VS TIME	B- 23
19	PASSENGER HEAD (Y) VELOCITY VS TIME	B- 24
20	PASSENGER HEAD (Z) ACCELERATION VS TIME	B- 25
21	PASSENGER HEAD (Z) VELOCITY VS TIME	B- 26
22	PASSENGER HEAD RESULTANT ACCELERATION VS TIME	B- 27
23	PASSENGER UPPER RIB (Y) ACCELERATION VS TIME	B- 28
24	PASSENGER UPPER RIB (Y) VELOCITY VS TIME	B- 29
25	PASSENGER LOWER RIB (Y) ACCELERATION VS TIME	B- 30
26	PASSENGER LOWER RIB (Y) VELOCITY VS TIME	B- 31
27	PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME	B- 32
28	PASSENGER LOWER SPINE (Y) VELOCITY VS TIME	B- 33
29	PASSENGER PELVIC (Y) ACCELERATION VS TIME	B- 34
30	PASSENGER PELVIC (Y) VELOCITY VS TIME	B- 35

DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS
 ACCELERATION DATA - FIR FILTERED

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
31	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 36
32	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 37
33	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 38
34	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 39
35	PASSENGER UPPER RIB (Y) ACCELERATION VS TIME	B- 40
36	PASSENGER LOWER RIB (Y) ACCELERATION VS TIME	B- 41
37	PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME	B- 42
38	PASSENGER PELVIC (Y) ACCELERATION VS TIME	B- 43

TEST VEHICLE INSTRUMENTATION PLOTS
 ACCELERATION DATA - FILTER CLASS 60
 INTEGRATION DATA - FILTER CLASS 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
39	RIGHT SIDE SILL AT FRONT SEAT (X) ACCELERATION VS TIME	B- 44
40	RIGHT SIDE SILL AT FRONT SEAT (X) VELOCITY VS TIME	B- 45
41	RIGHT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME	B- 46
42	RIGHT SIDE SILL AT FRONT SEAT (Y) VELOCITY VS TIME	B- 47
43	RIGHT SIDE SILL AT FRONT SEAT (Z) ACCELERATION VS TIME	B- 48
44	RIGHT SIDE SILL AT FRONT SEAT (Z) VELOCITY VS TIME	B- 49
45	RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION VS TIME	B- 50
46	RIGHT SIDE SILL AT REAR SEAT (X) ACCELERATION VS TIME	B- 51
47	RIGHT SIDE SILL AT REAR SEAT (X) VELOCITY VS TIME	B- 52
48	RIGHT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME	B- 53
49	RIGHT SIDE SILL AT REAR SEAT (Y) VELOCITY VS TIME	B- 54
50	RIGHT SIDE SILL AT REAR SEAT (Z) ACCELERATION VS TIME	B- 55
51	RIGHT SIDE SILL AT REAR SEAT (Z) VELOCITY VS TIME	B- 56
52	RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION VS TIME	B- 57
53	REAR FLOORPAN ABOVE AXLE (X) ACCELERATION VS TIME	B- 58
54	REAR FLOORPAN ABOVE AXLE (X) VELOCITY VS TIME	B- 59
55	REAR FLOORPAN ABOVE AXLE (Y) ACCELERATION VS TIME	B- 60
56	REAR FLOORPAN ABOVE AXLE (Y) VELOCITY VS TIME	B- 61
57	REAR FLOORPAN ABOVE AXLE (Z) ACCELERATION VS TIME	B- 62
58	REAR FLOORPAN ABOVE AXLE (Z) VELOCITY VS TIME	B- 63
59	REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION VS TIME	B- 64
60	LEFT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME	B- 65
61	LEFT SIDE SILL AT REAR SEAT (Y) VELOCITY VS TIME	B- 66
62	LEFT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME	B- 67
63	LEFT SIDE SILL AT FRONT SEAT (Y) VELOCITY VS TIME	B- 68
64	LEFT FRONT DOOR ON CENTERLINE (Y) ACCELERATION VS TIME	B- 69
65	LEFT FRONT DOOR ON CENTERLINE (Y) VELOCITY VS TIME	B- 70
66	RIGHT REAR OCCUPANT COMPARTMENT (Y) ACCELERATION VS TIME	B- 71
67	RIGHT REAR OCCUPANT COMPARTMENT (Y) VELOCITY VS TIME	B- 72
68	LEFT FRONT DOOR UPPER CENTERLINE (Y) ACCELERATION VS TIME	B- 73
69	LEFT FRONT DOOR UPPER CENTERLINE (Y) VELOCITY VS TIME	B- 74
70	LEFT REAR DOOR UPPER CENTERLINE (Y) ACCELERATION VS TIME	B- 75
71	LEFT REAR DOOR UPPER CENTERLINE (Y) VELOCITY VS TIME	B- 76
72	LOWER B-POST (Y) ACCELERATION VS TIME	B- 77
73	LOWER B-POST (Y) VELOCITY VS TIME	B- 78
74	UPPER B-POST (Y) ACCELERATION VS TIME	B- 79
75	UPPER B-POST (Y) VELOCITY VS TIME	B- 80
76	LOWER A-POST (Y) ACCELERATION VS TIME	B- 81

TEST VEHICLE INSTRUMENTATION PLOTS

ACCELERATION DATA - FILTER CLASS 60

INTEGRATION DATA - FILTER CLASS 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
77	LOWER A-POST (Y) VELOCITY VS TIME	B- 82
78	UPPER A-POST (Y) ACCELERATION VS TIME	B- 83
79	UPPER A-POST (Y) VELOCITY VS TIME	B- 84
80	FRONT SEAT TRACK (Y) ACCELERATION VS TIME	B- 85
81	FRONT SEAT TRACK (Y) VELOCITY VS TIME	B- 86
82	REAR SEAT TRACK (Y) ACCELERATION VS TIME	B- 87
83	REAR SEAT TRACK (Y) VELOCITY VS TIME	B- 88
84	VEHICLE CENTER OF GRAVITY (X) ACCELERATION VS TIME	B- 89
85	VEHICLE CENTER OF GRAVITY (X) VELOCITY VS TIME	B- 90
86	VEHICLE CENTER OF GRAVITY (Y) ACCELERATION VS TIME	B- 91
87	VEHICLE CENTER OF GRAVITY (Y) VELOCITY ACCELERATION VS TIME	B- 92
88	VEHICLE CENTER OF GRAVITY (Z) ACCELERATION VS TIME	B- 93
89	VEHICLE CENTER OF GRAVITY (Z) VELOCITY VS TIME	B- 94
90	VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME	B- 95

MDB INSTRUMENTATION PLOTS

ACCELERATION DATA - FILTER CLASS 60

INTEGRATION DATA - FILTER CLASS 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
91	MDB CENTER OF GRAVITY (X) ACCELERATION VS TIME	B- 96
92	MDB CENTER OF GRAVITY (X) VELOCITY VS TIME	B- 97
93	MDB CENTER OF GRAVITY (Y) ACCELERATION VS TIME	B- 98
94	MDB CENTER OF GRAVITY (Y) VELOCITY VS TIME	B- 99
95	MDB CENTER OF GRAVITY (Z) ACCELERATION VS TIME	B- 100
96	MDB CENTER OF GRAVITY (Z) VELOCITY VS TIME	B- 101
97	MDB CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME	B- 102
98	MDB REAR (X) ACCELERATION VS TIME	B- 103
99	MDB REAR (X) VELOCITY VS TIME	B- 104
100	MDB REAR (Y) ACCELERATION VS TIME	B- 105
101	MDB REAR (Y) VELOCITY VS TIME	B- 106

DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS (REDUNDANT)
 ACCELERATION DATA - FILTER CLASS 1000, LOWER SPINE - FILTER CLASS 180
 INTEGRATION DATA - FILTER CLASS 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
102	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 107
103	DRIVER UPPER RIB (Y) VELOCITY VS TIME	B- 108
104	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 109
105	DRIVER LOWER RIB (Y) VELOCITY VS TIME	B- 110
106	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 111
107	DRIVER LOWER SPINE (Y) VELOCITY VS TIME	B- 112
108	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 113
109	DRIVER PELVIC (Y) VELOCITY VS TIME	B- 114
110	PASSENGER UPPER RIB (Y) ACCELERATION VS TIME	B- 115
111	PASSENGER UPPER RIB (Y) VELOCITY VS TIME	B- 116
112	PASSENGER LOWER RIB (Y) ACCELERATION VS TIME	B- 117
113	PASSENGER LOWER RIB (Y) VELOCITY VS TIME	B- 118
114	PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME	B- 119
115	PASSENGER LOWER SPINE (Y) VELOCITY VS TIME	B- 120
116	PASSENGER PELVIC (Y) ACCELERATION VS TIME	B- 121
117	PASSENGER PELVIC (Y) VELOCITY VS TIME	B- 122

DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS (REDUNDANT)
 ACCELERATION DATA - FIR FILTERED

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
118	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 123
119	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 124
120	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 125
121	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 126
122	PASSENGER UPPER RIB (Y) ACCELERATION VS TIME	B- 127
123	PASSENGER LOWER RIB (Y) ACCELERATION VS TIME	B- 128
124	PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME	B- 129
125	PASSENGER PELVIC (Y) ACCELERATION VS TIME	B- 130

SNCAP Test 16 - 2001 Dodge Grand Caravan

Max: 4.4 [g] at 0.166 [s]

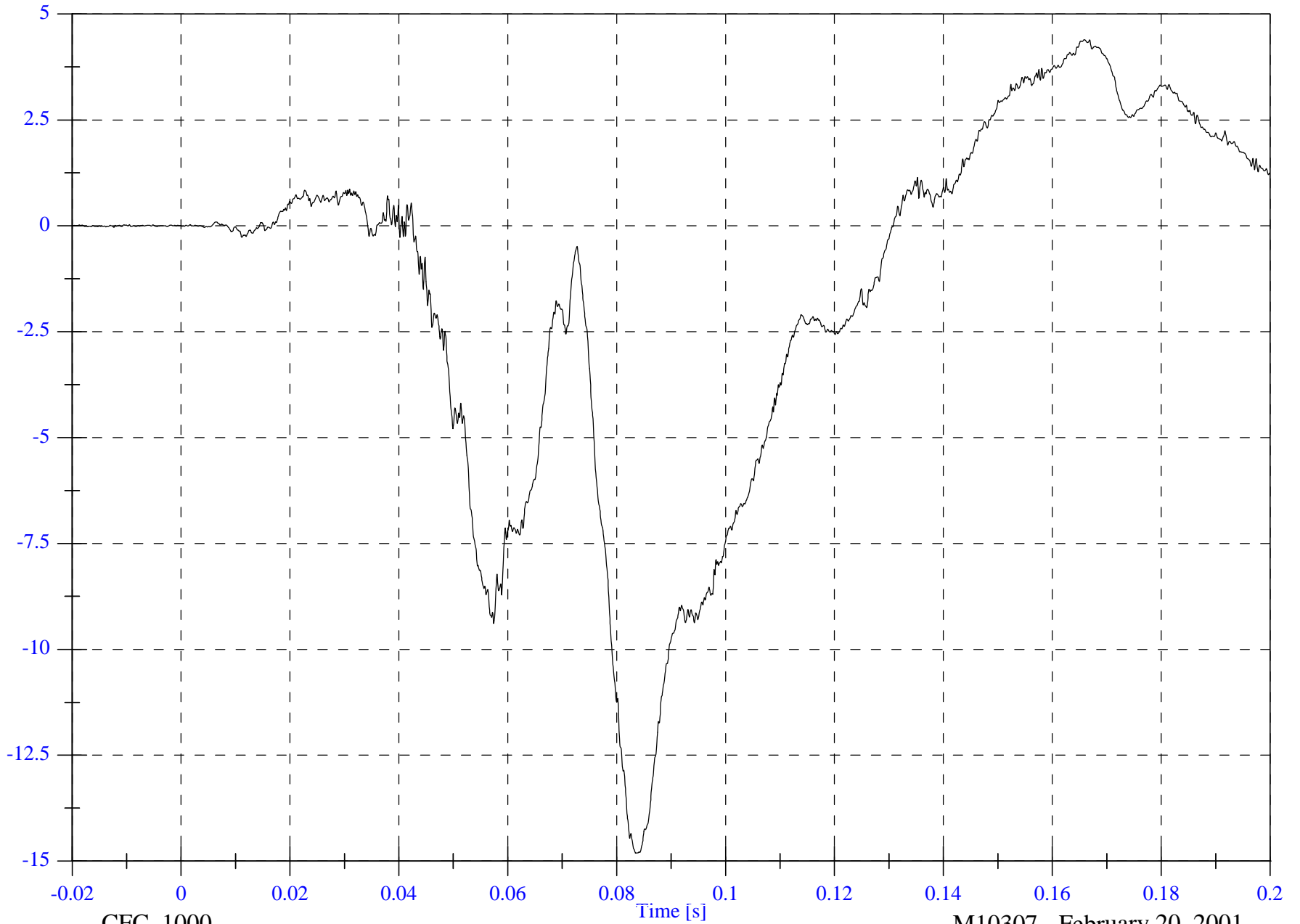
P1 Head x

Min: -14.8 [g] at 0.084 [s]

B-6

g

8506-16



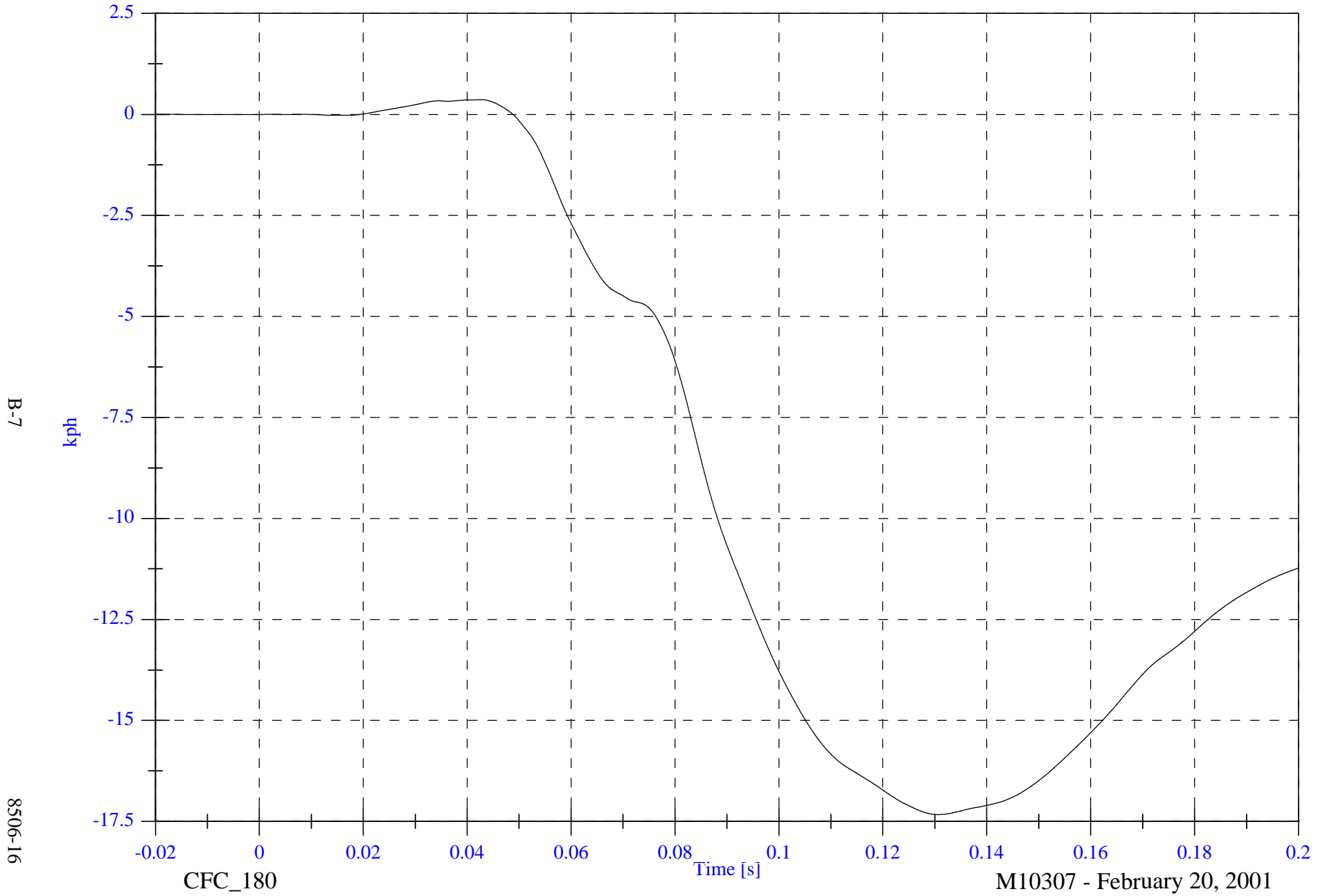
M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

Max: 0.4 [kph] at 0.043 [s]

P1 Head x Velocity

Min: -17.3 [kph] at 0.131 [s]



B-7

8506-16

CFC_180

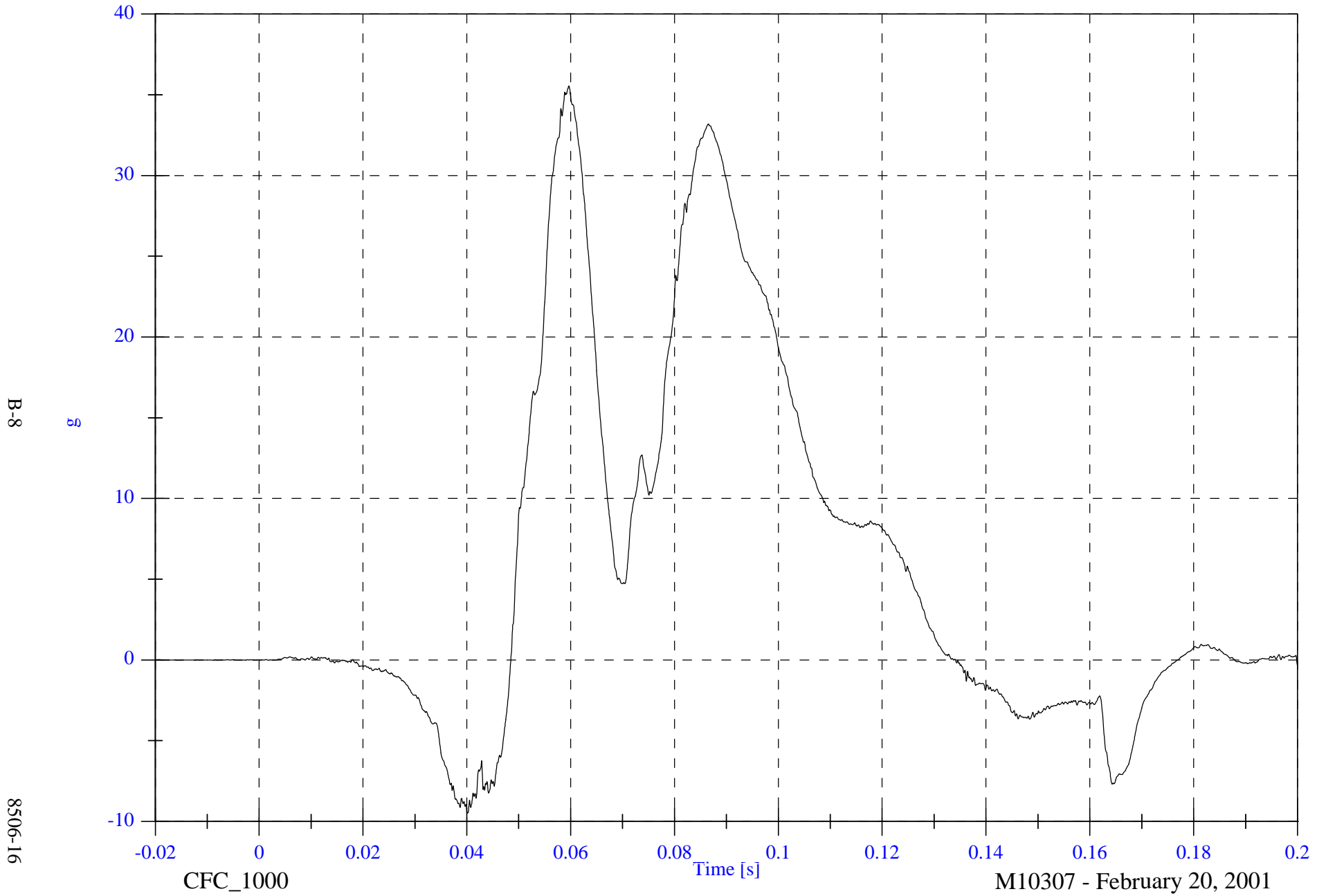
M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

Max: 35.5 [g] at 0.060 [s]

Min: -9.5 [g] at 0.040 [s]

P1 Head y



B-8

g

8506-16

CFC_1000

Time [s]

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

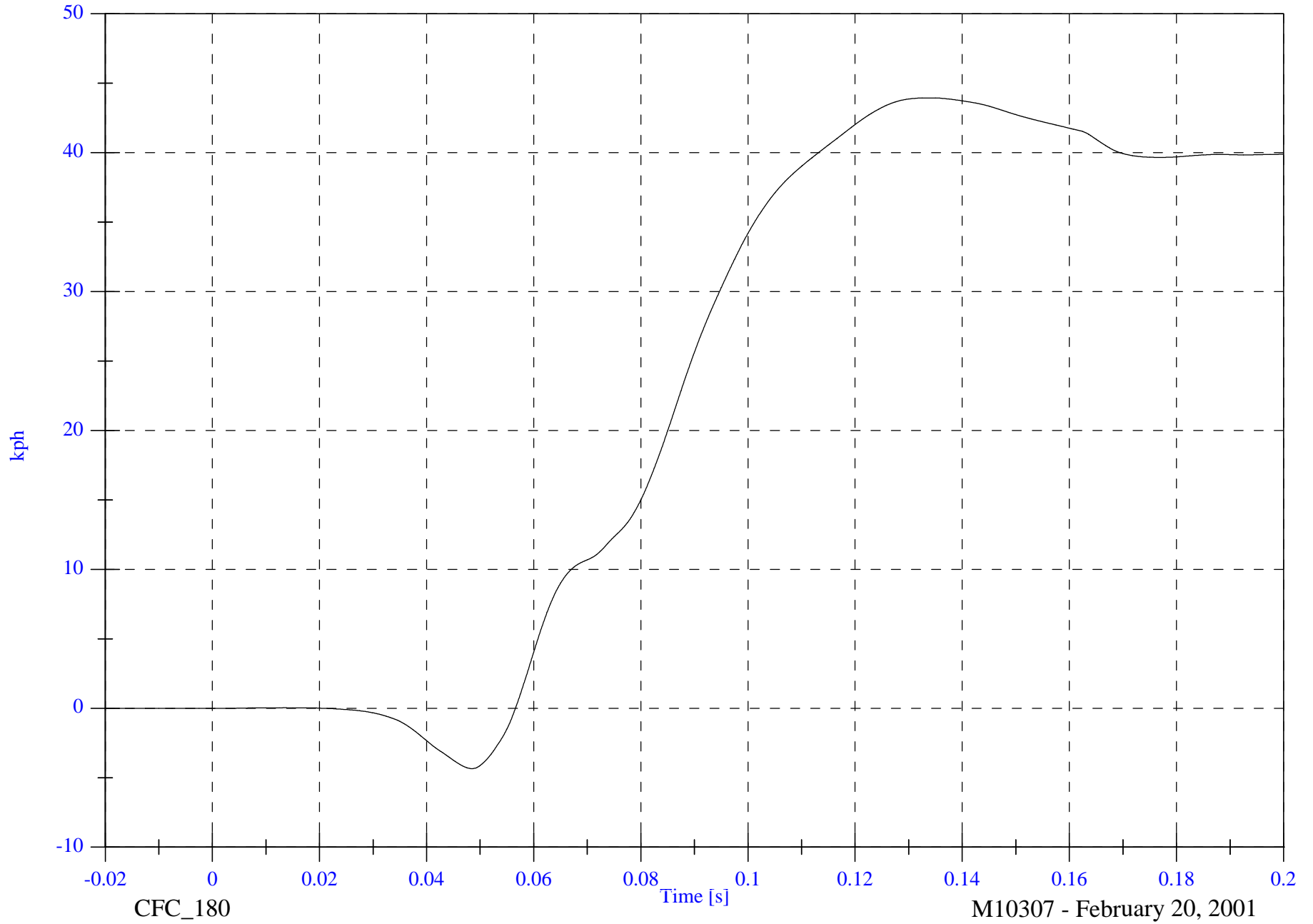
Max: 43.9 [kph] at 0.134 [s]

P1 Head y Velocity

Min: -4.4 [kph] at 0.048 [s]

B-9

8506-16



CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

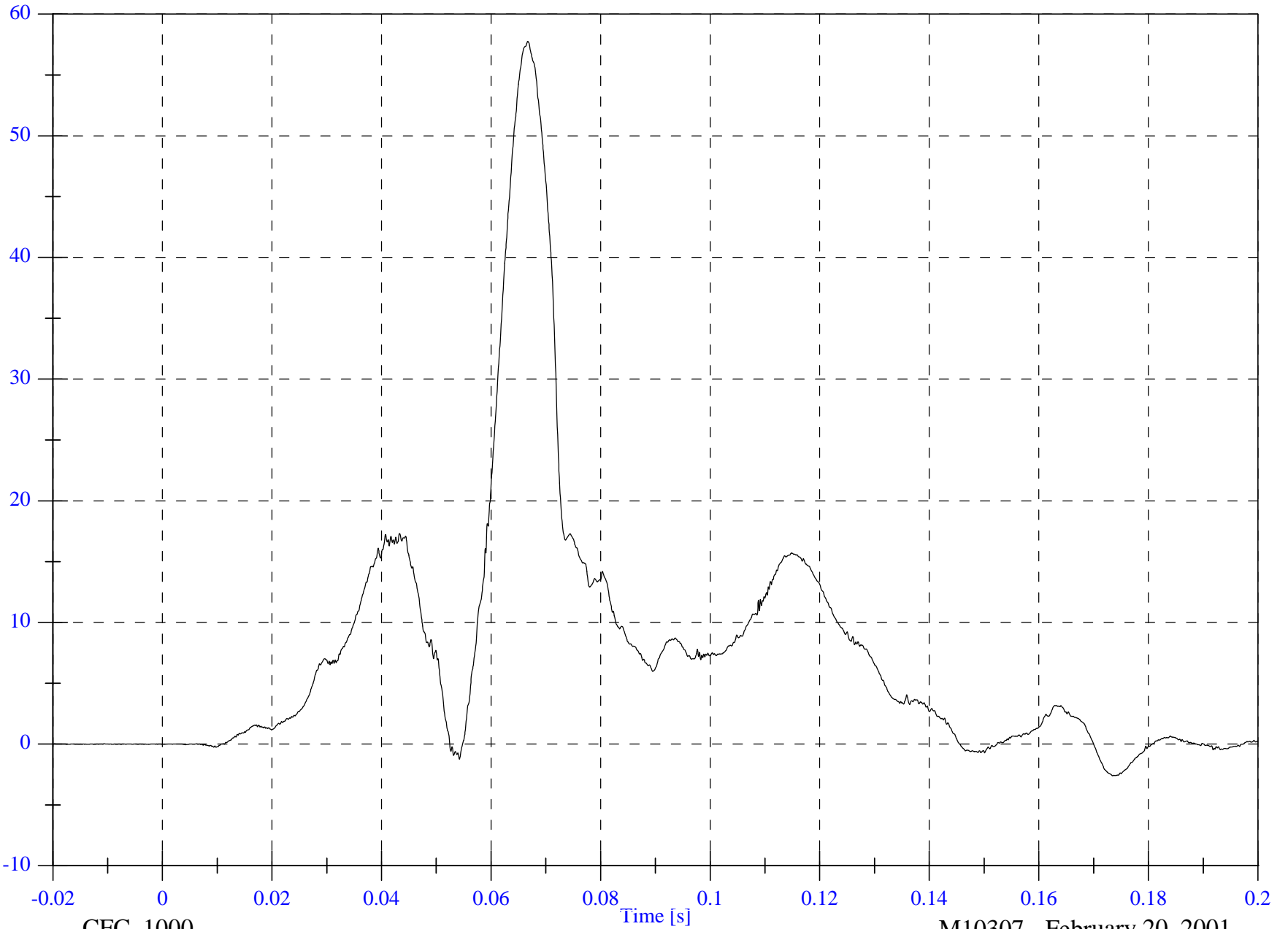
Max: 57.8 [g] at 0.067 [s]

P1 Head z

Min: -2.6 [g] at 0.173 [s]

B-10

g



8506-16

CFC_1000

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

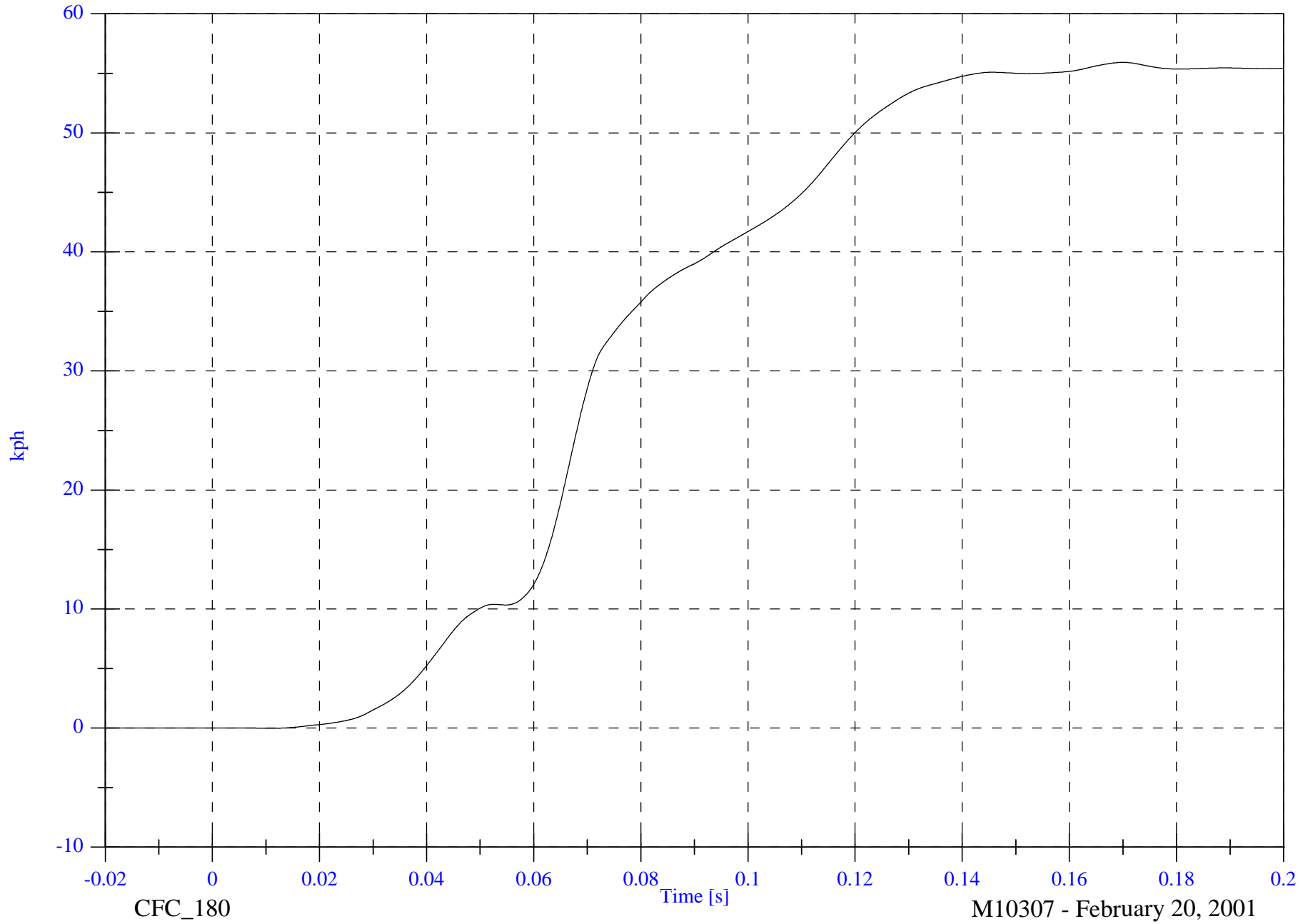
P1 Head z Velocity

Max: 55.9 [kph] at 0.170 [s]

Min: -0.0 [kph] at 0.011 [s]

B-11

8506-16



CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

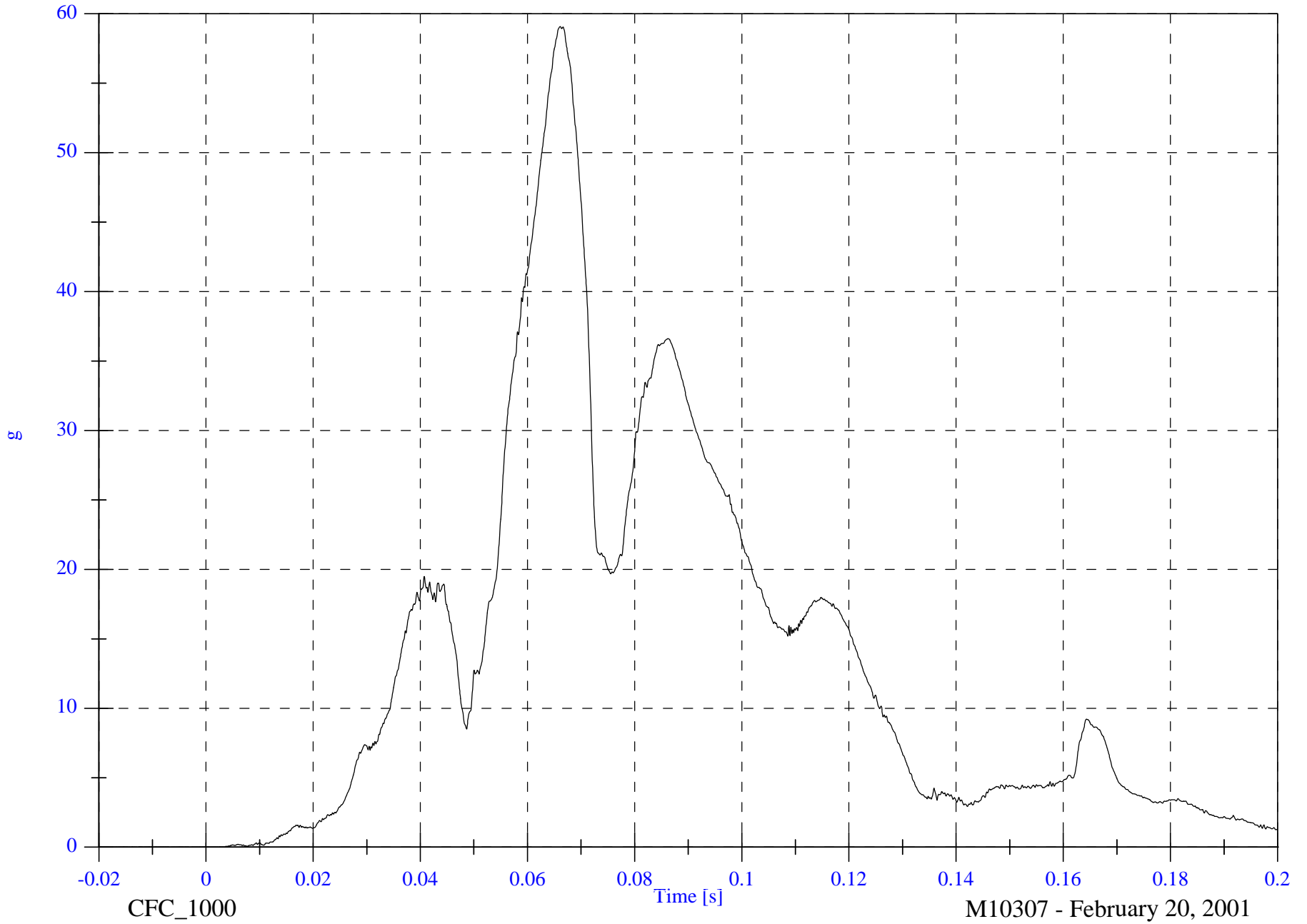
P1 Head Resultant

Max: 59.1 [g] at 0.066 [s]

Min: 0.0 [g] at 0.003 [s]

B-12

8506-16

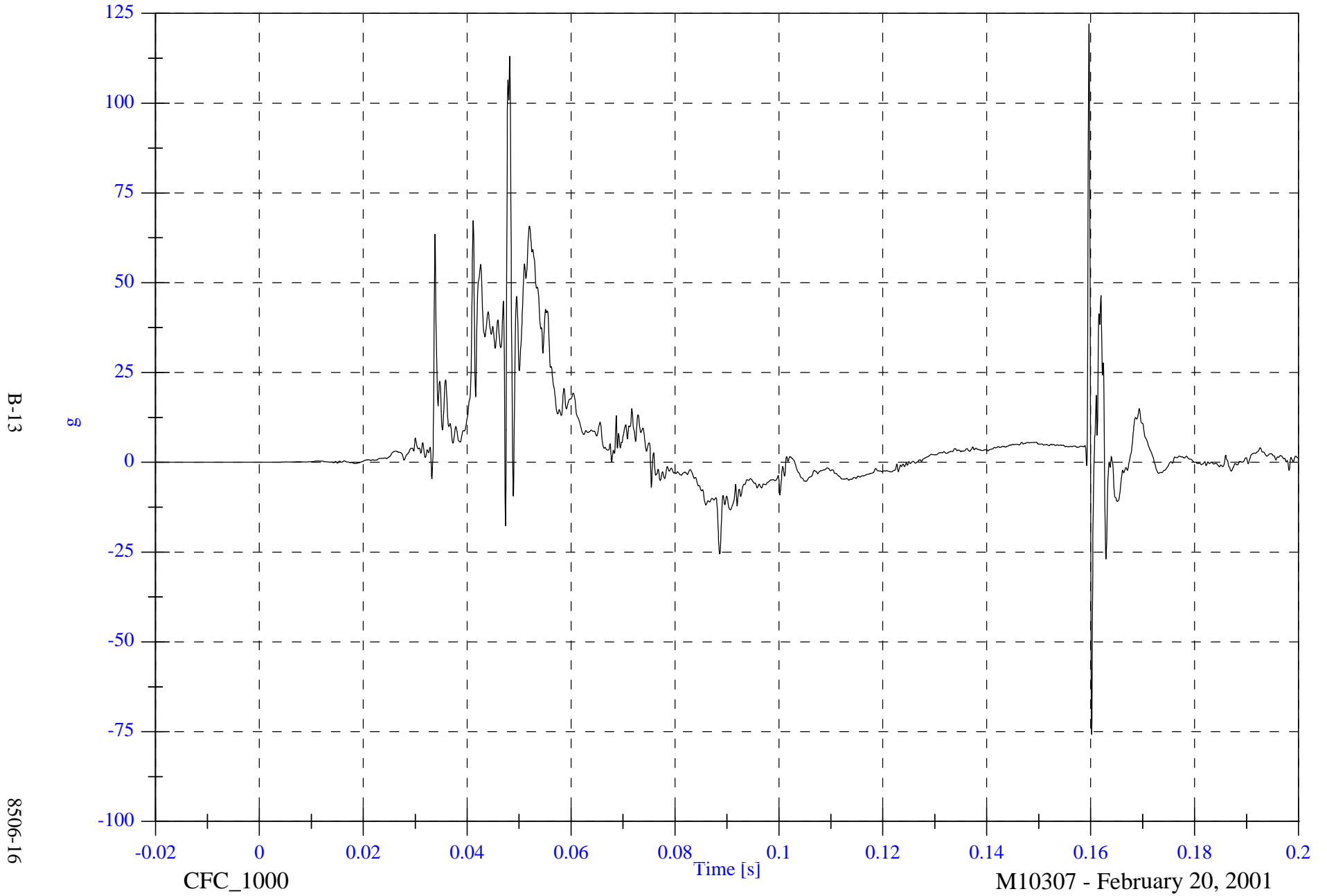


SNCAP Test 16 - 2001 Dodge Grand Caravan

P1 Upper Rib y

Max: 122.1 [g] at 0.160 [s]

Min: -75.8 [g] at 0.160 [s]



B-13

8506-16

CFC_1000

Time [s]

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

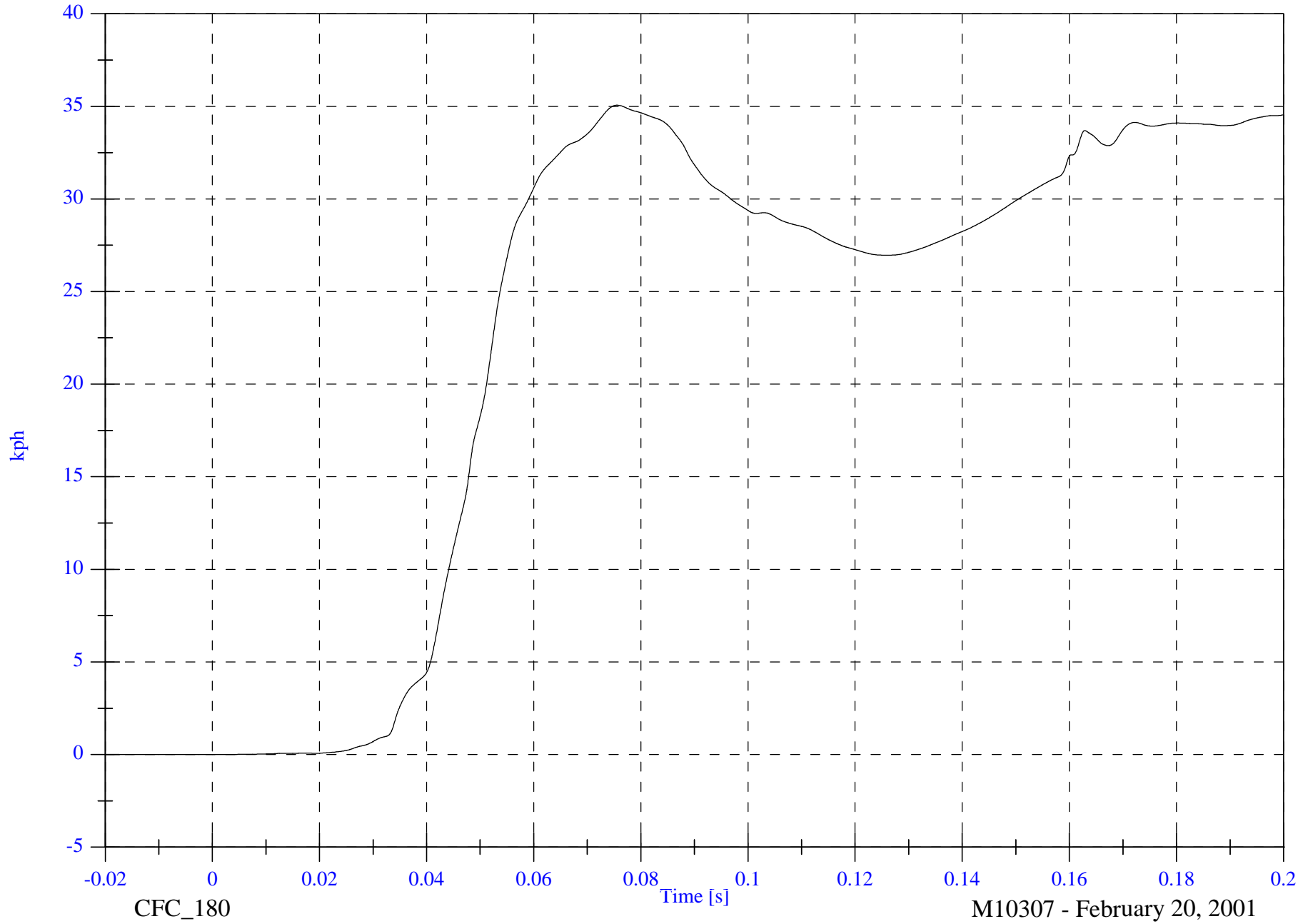
Max: 35.1 [kph] at 0.076 [s]

P1 Upper Rib y Velocity

Min: -0.0 [kph] at -0.020 [s]

B-14

8506-16

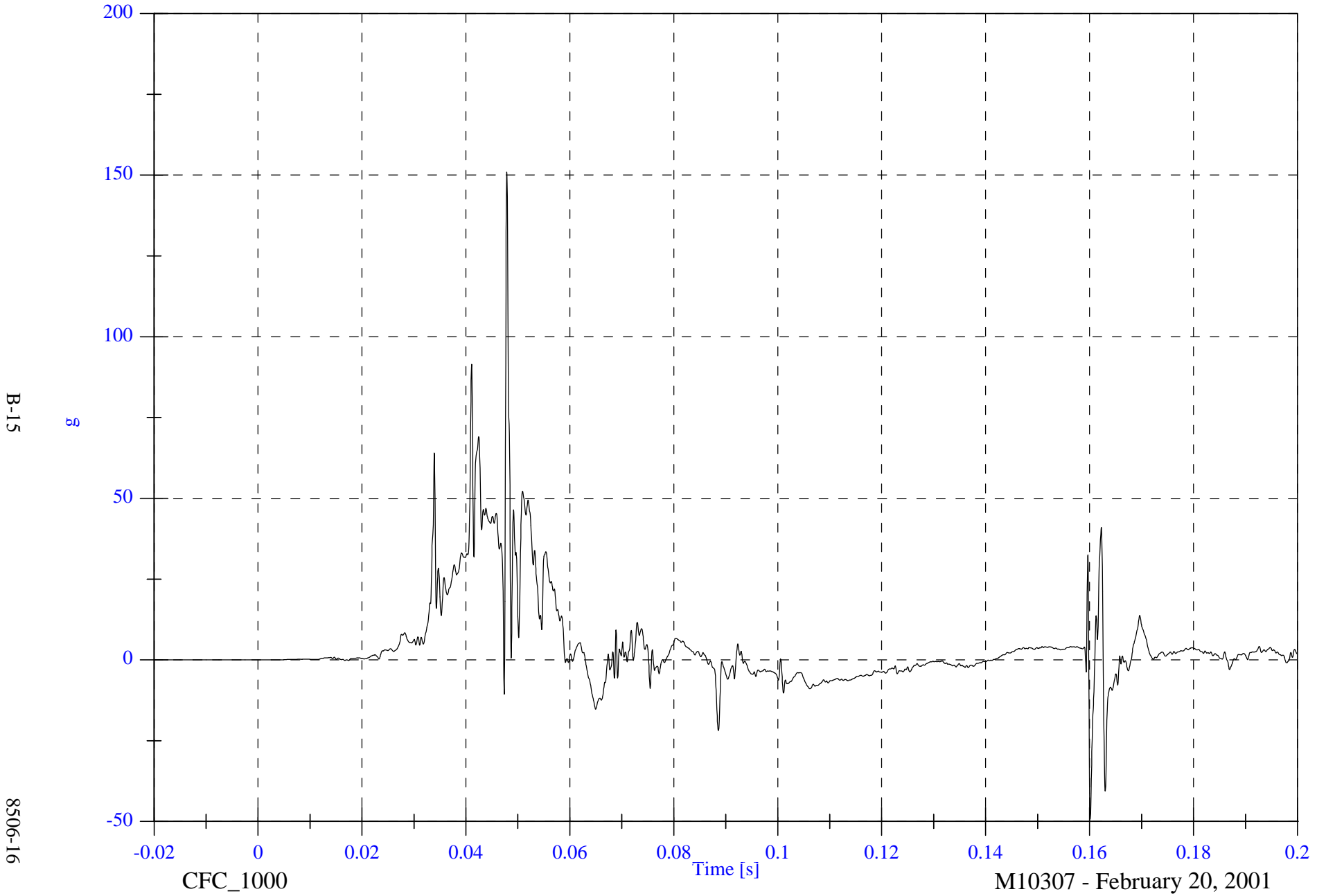


SNCAP Test 16 - 2001 Dodge Grand Caravan

Max: 150.9 [g] at 0.048 [s]

P1 Lower Rib y

Min: -49.3 [g] at 0.160 [s]



SNCAP Test 16 - 2001 Dodge Grand Caravan

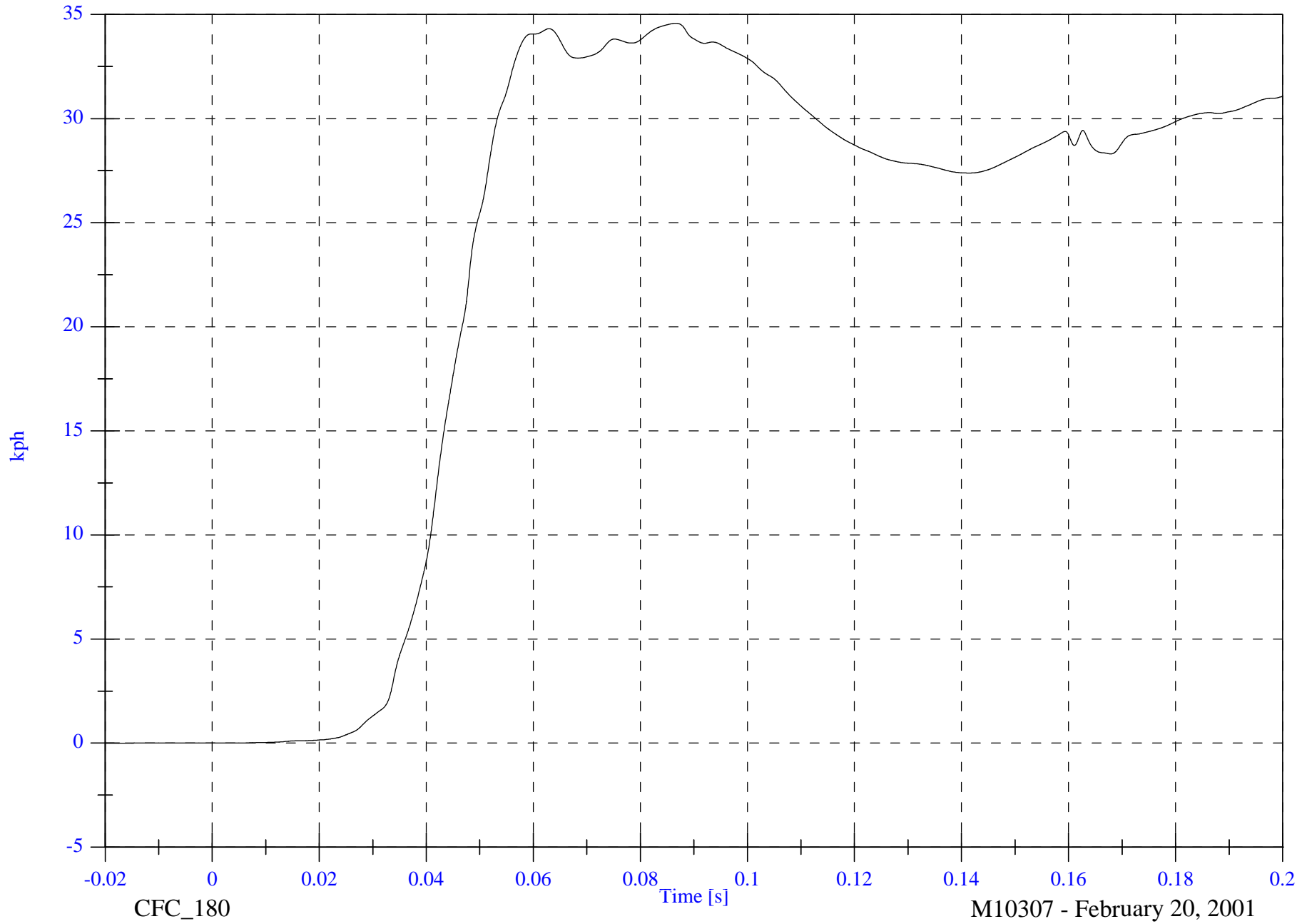
Max: 34.6 [kph] at 0.087 [s]

P1 Lower Rib y Velocity

Min: -0.0 [kph] at -0.020 [s]

B-16

8506-16



CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

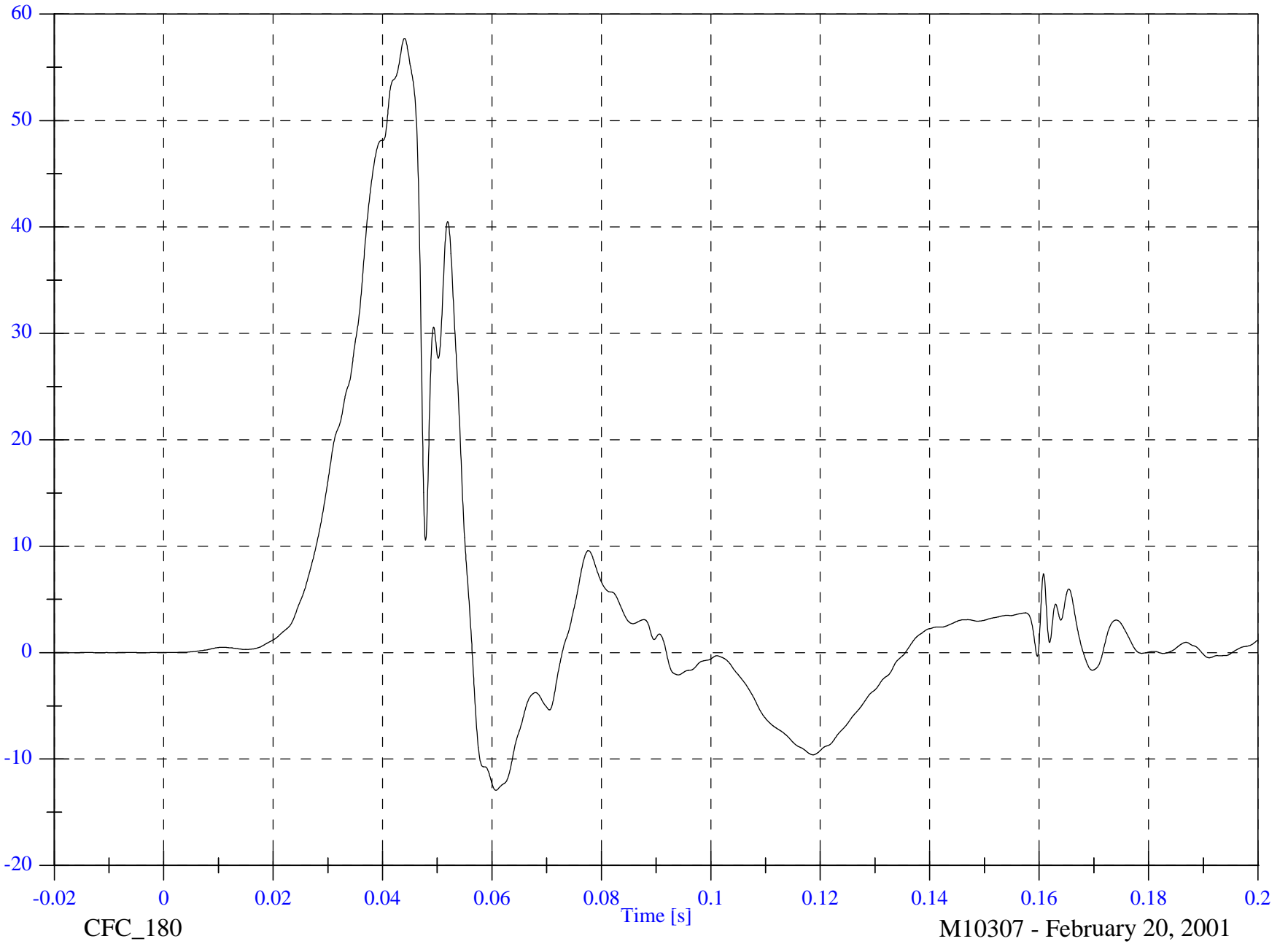
P1 Lower Spine y

Max: 57.7 [g] at 0.044 [s]

Min: -12.9 [g] at 0.061 [s]

B-17

g



8506-16

CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

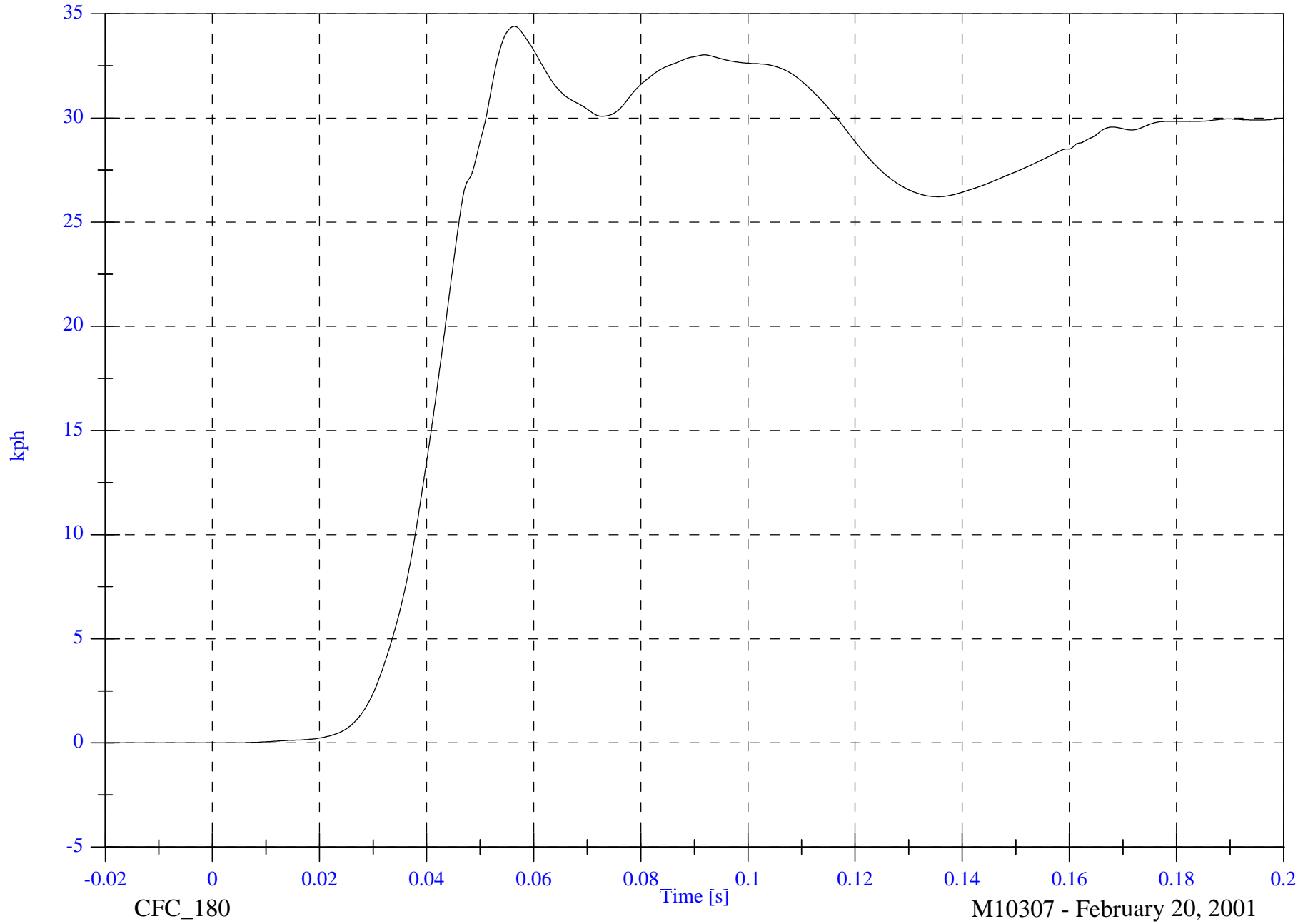
Max: 34.4 [kph] at 0.056 [s]

P1 Lower Spine y Velocity

Min: -0.0 [kph] at -0.020 [s]

B-18

8506-16



CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

Max: 51.3 [g] at 0.039 [s]

P1 Pelvic y

Min: -13.3 [g] at 0.052 [s]

B-19

g



8506-16

CFC_1000

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

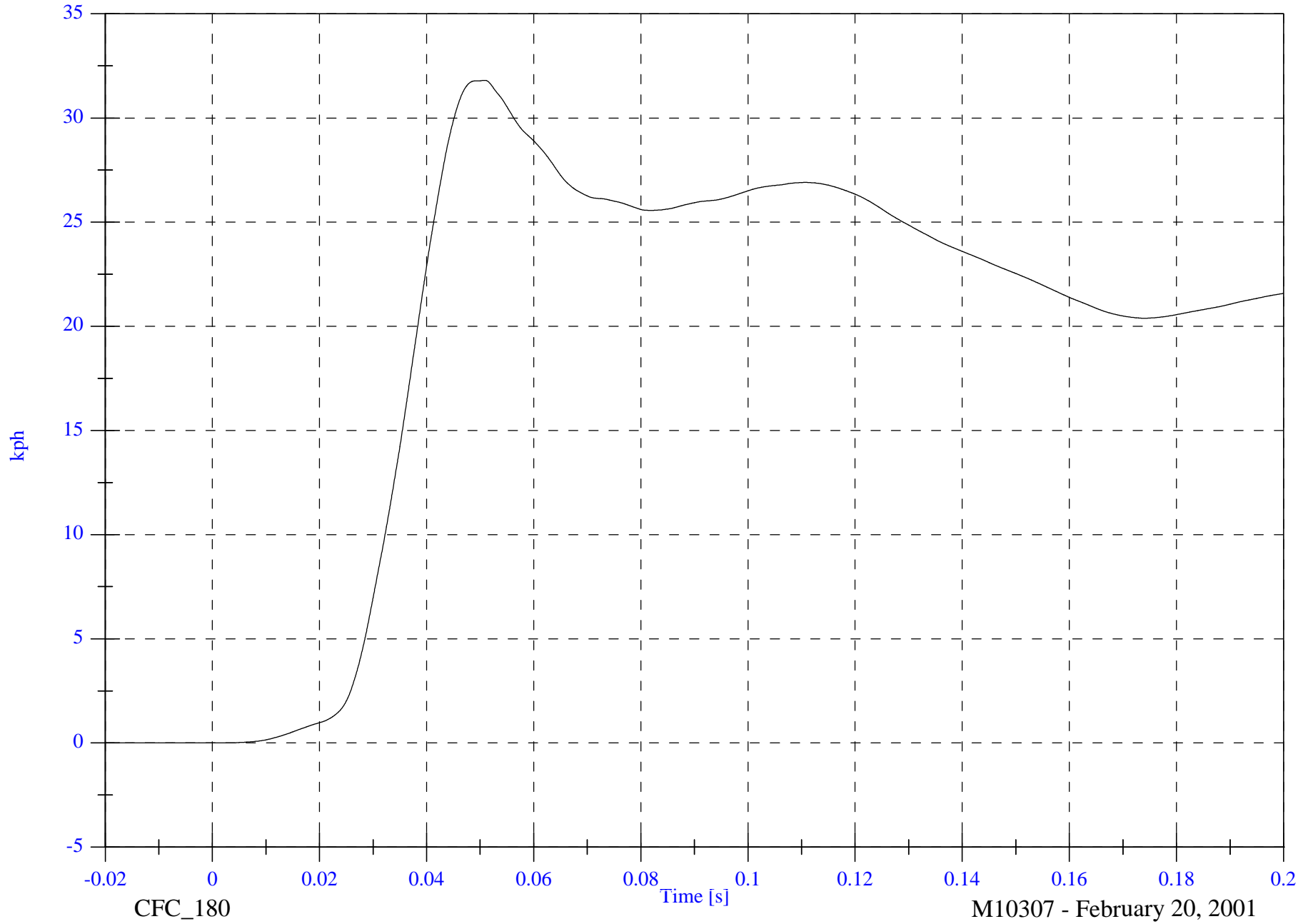
Max: 31.8 [kph] at 0.051 [s]

P1 Pelvic y Velocity

Min: -0.0 [kph] at -0.020 [s]

B-20

8506-16



CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

P4 Head x

Max: 33.5 [g] at 0.151 [s]

Min: -8.5 [g] at 0.064 [s]

B-21

8506-16



CFC_1000

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

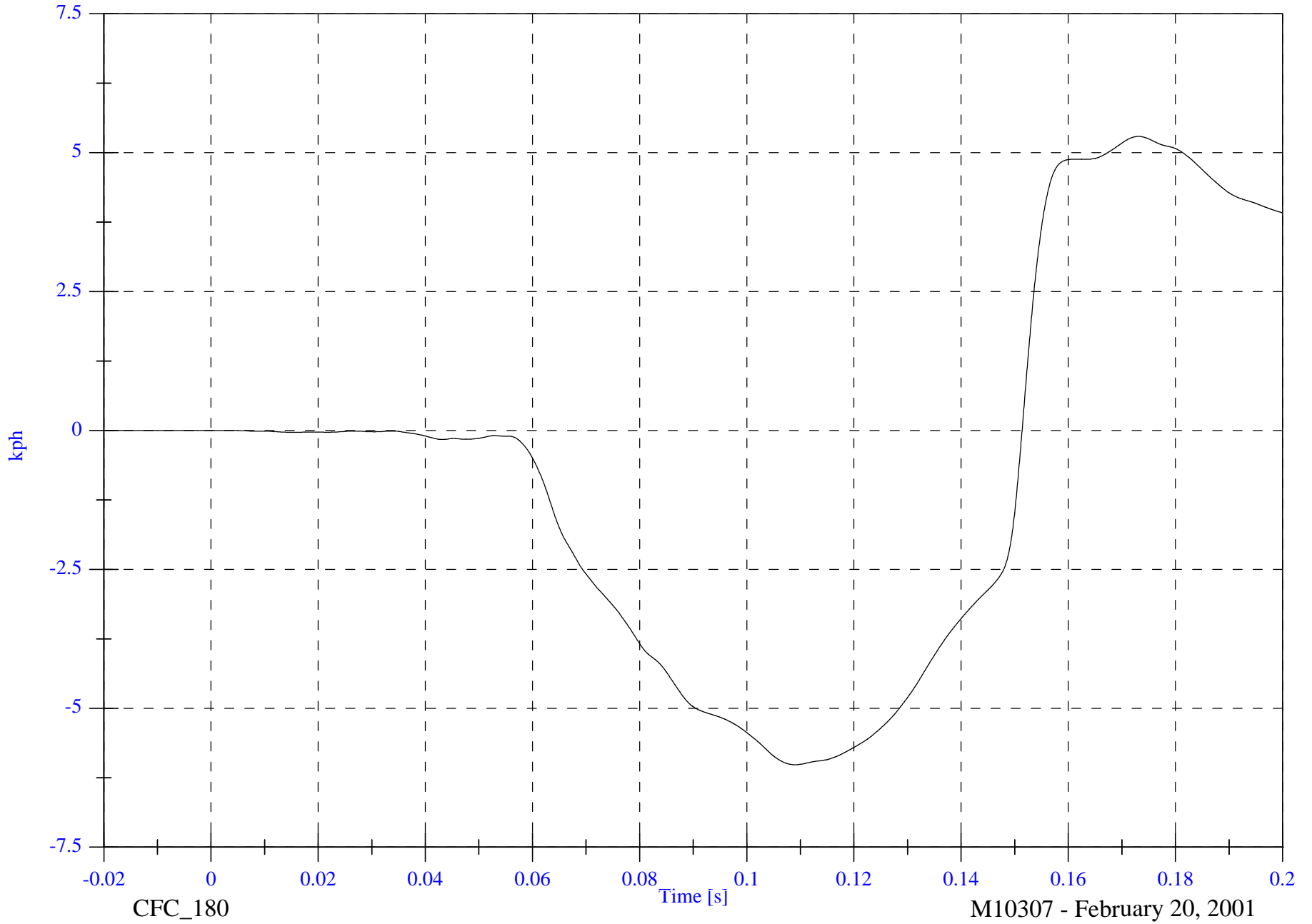
P4 Head x Velocity

Max: 5.3 [kph] at 0.173 [s]

Min: -6.0 [kph] at 0.109 [s]

B-22

8506-16



CFC_180

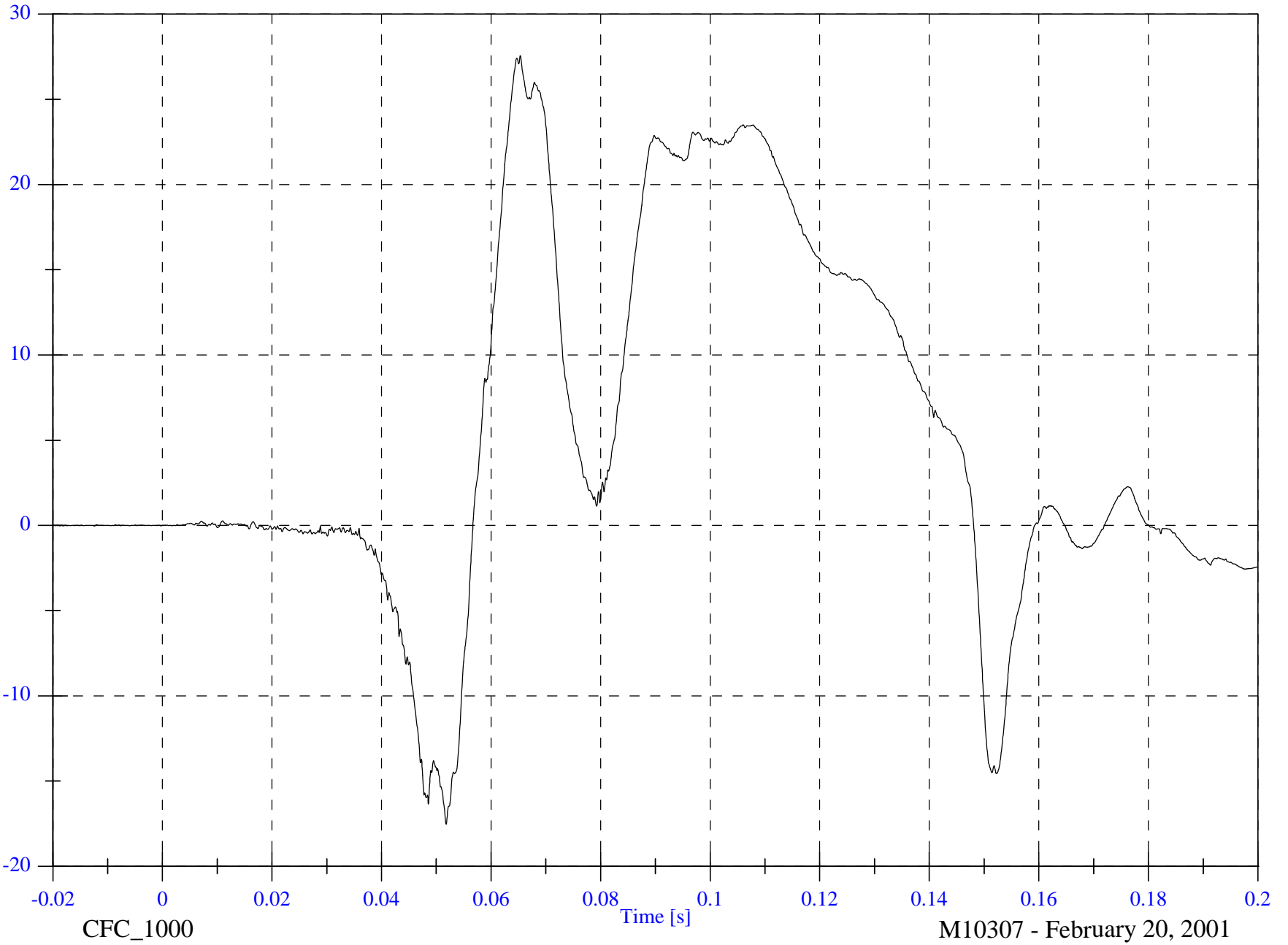
M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

Max: 27.6 [g] at 0.065 [s]

Min: -17.5 [g] at 0.052 [s]

P4 Head y



B-23

8506-16

SNCAP Test 16 - 2001 Dodge Grand Caravan

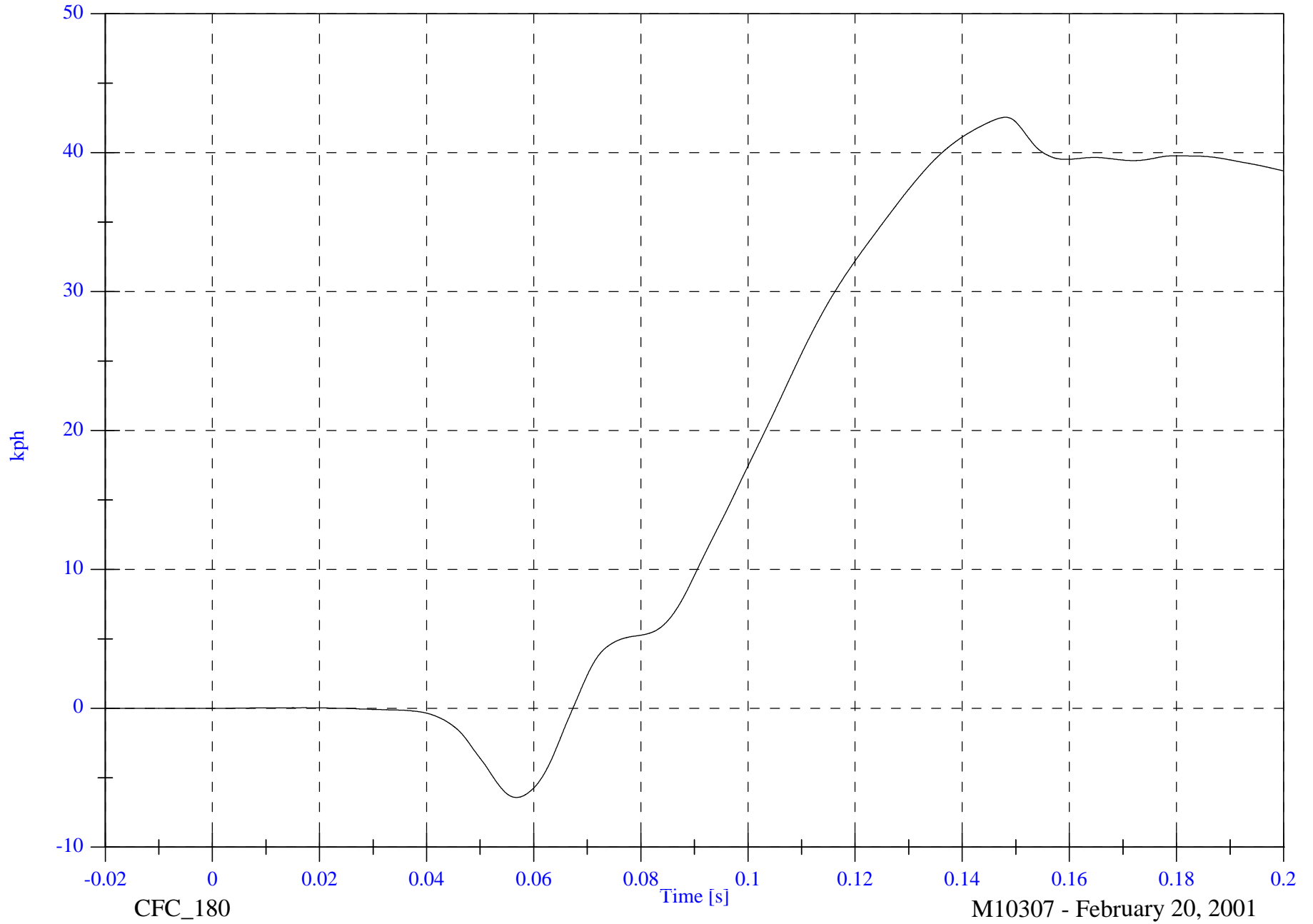
Max: 42.6 [kph] at 0.148 [s]

P4 Head y Velocity

Min: -6.4 [kph] at 0.057 [s]

B-24

8506-16



CFC_180

Time [s]

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

Max: 53.2 [g] at 0.077 [s]

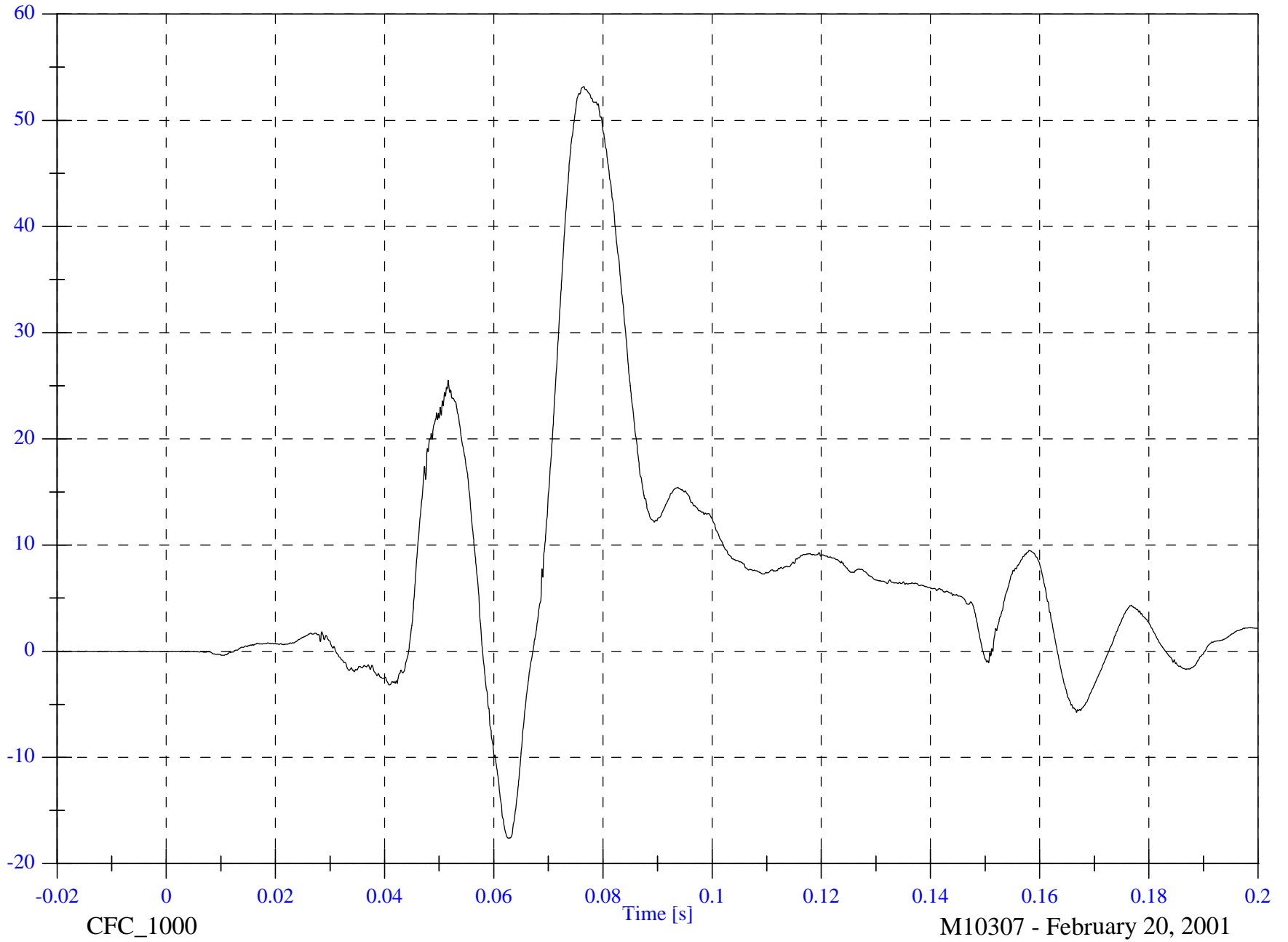
P4 Head z

Min: -17.6 [g] at 0.063 [s]

B-25

g

8506-16



CFC_1000

Time [s]

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

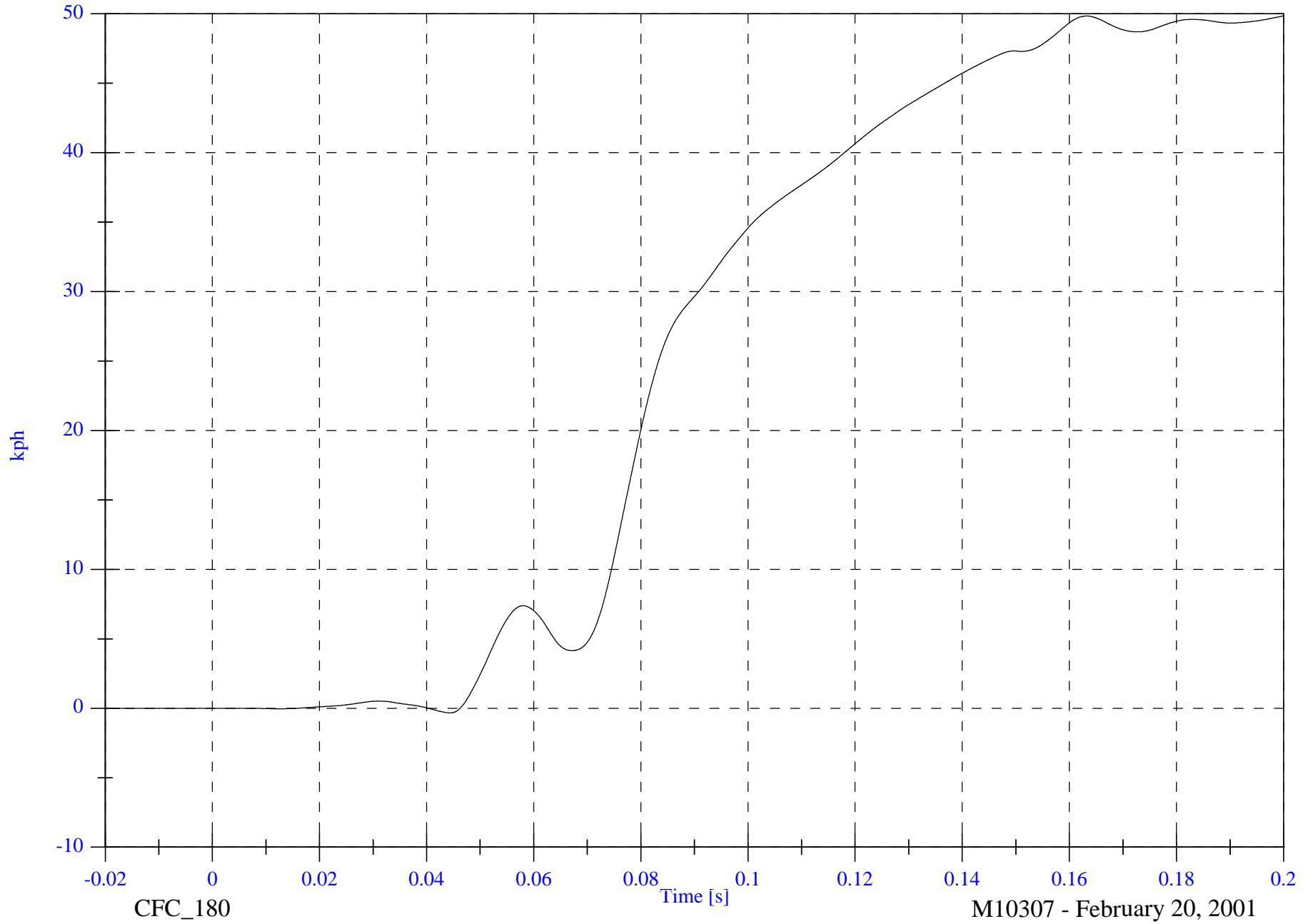
P4 Head z Velocity

Max: 49.8 [kph] at 0.200 [s]

Min: -0.3 [kph] at 0.044 [s]

B-26

8506-16



CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

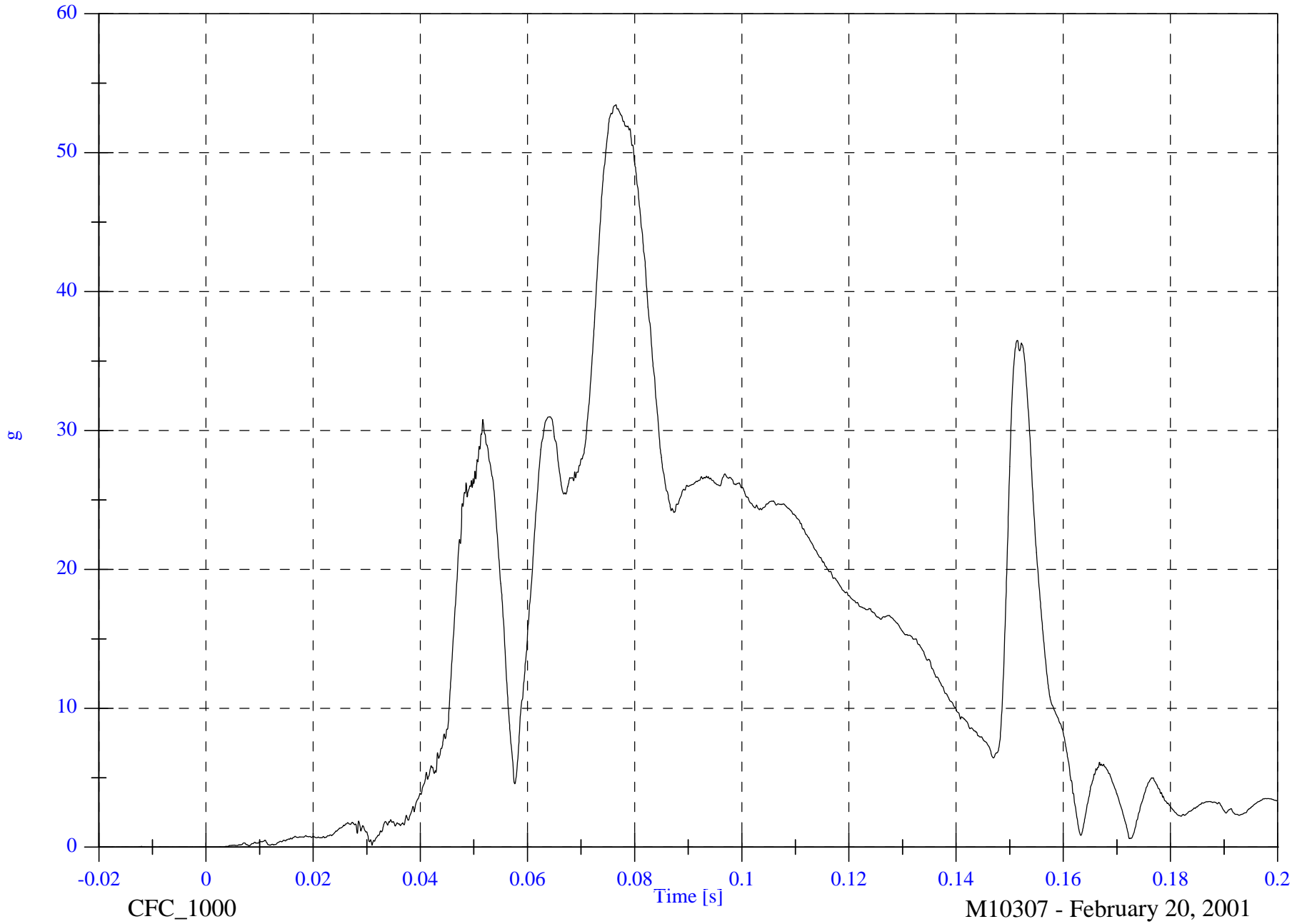
P4 Head Resultant

Max: 53.5 [g] at 0.077 [s]

Min: 0.0 [g] at -0.011 [s]

B-27

8506-16



CFC_1000

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

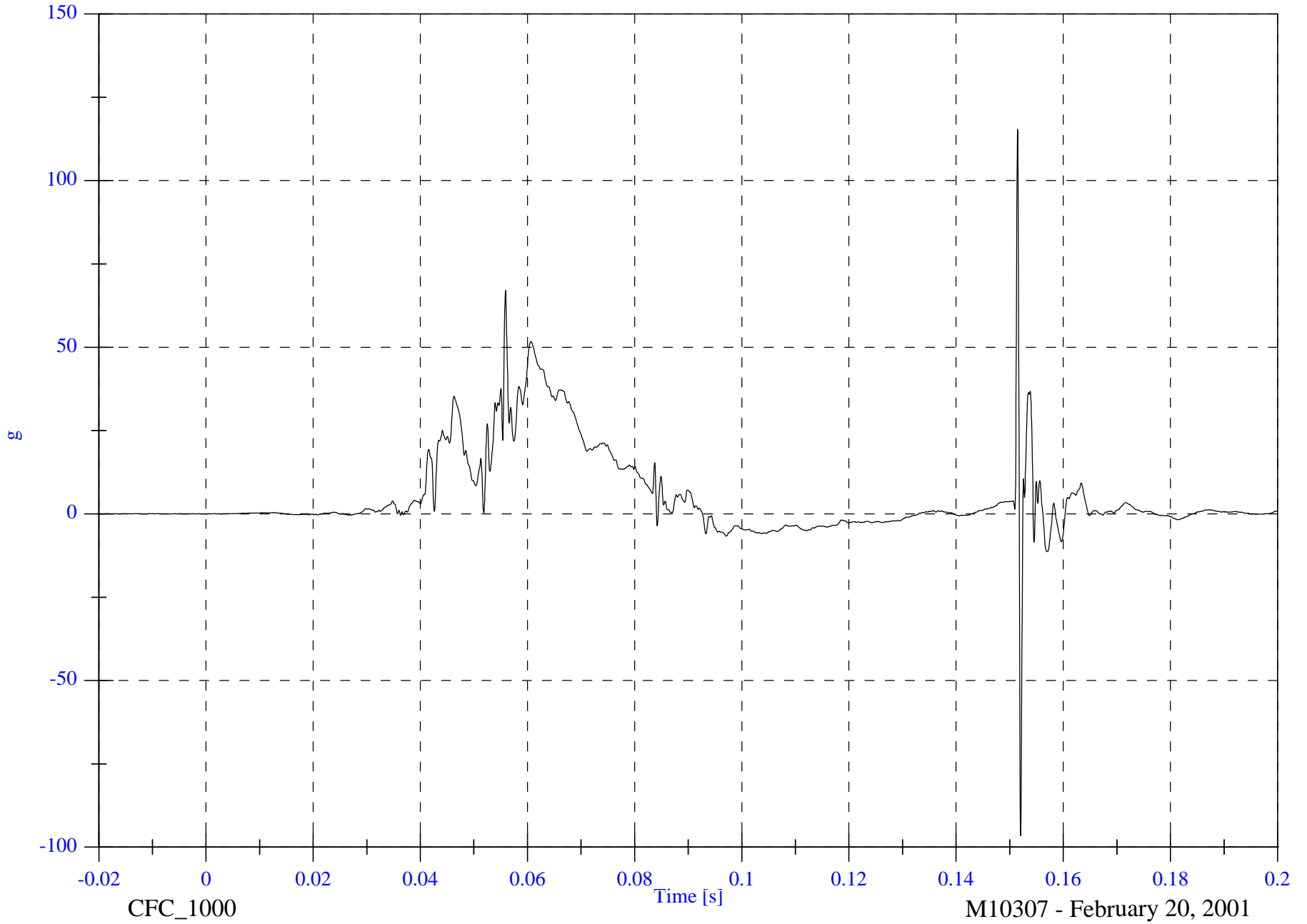
P4 Upper Rib y

Max: 115.3 [g] at 0.151 [s]

Min: -96.6 [g] at 0.152 [s]

B-28

8506-16

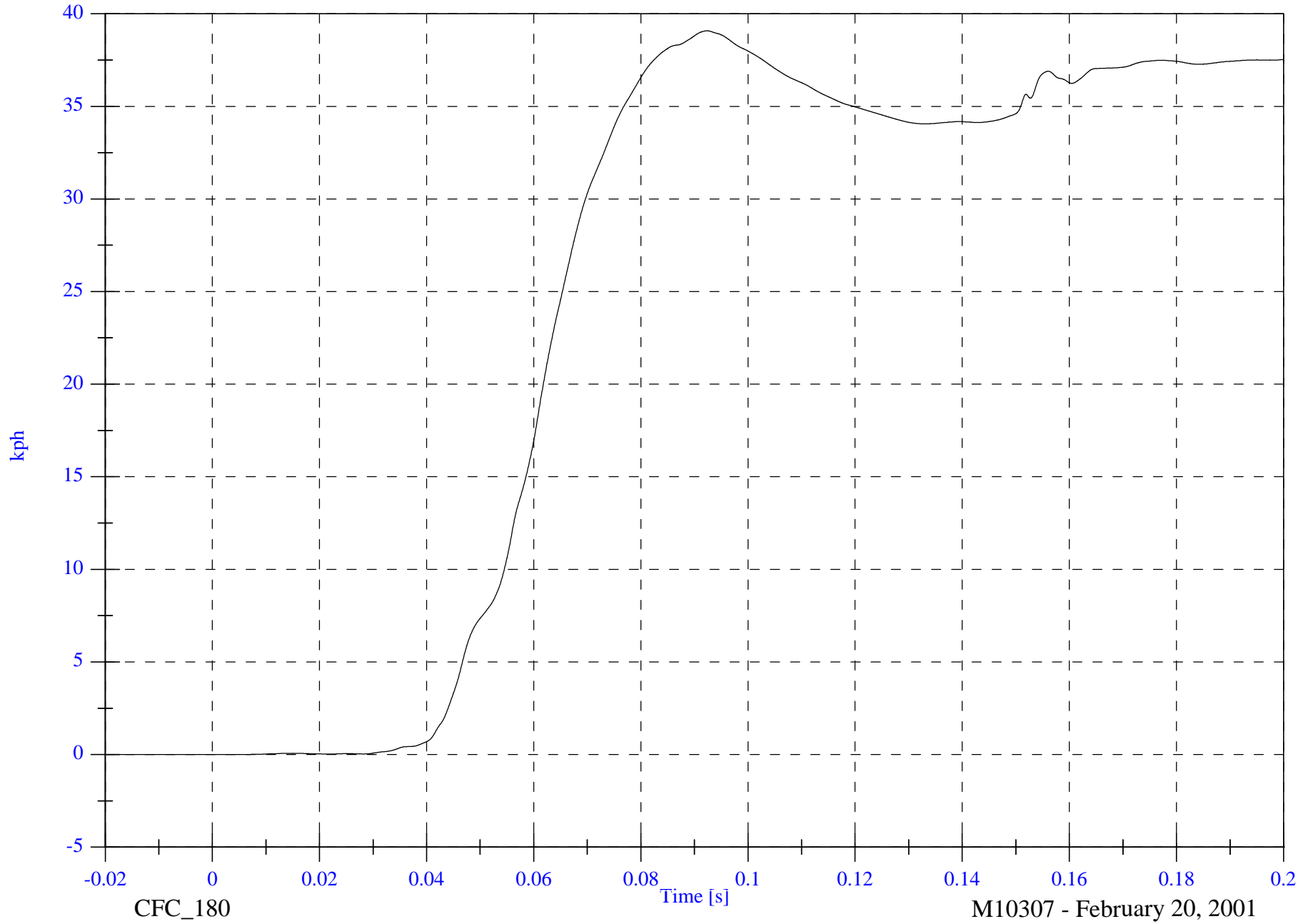


SNCAP Test 16 - 2001 Dodge Grand Caravan

Max: 39.1 [kph] at 0.092 [s]

P4 Upper Rib y Velocity

Min: -0.0 [kph] at 0.003 [s]



B-29

8506-16

CFC_180

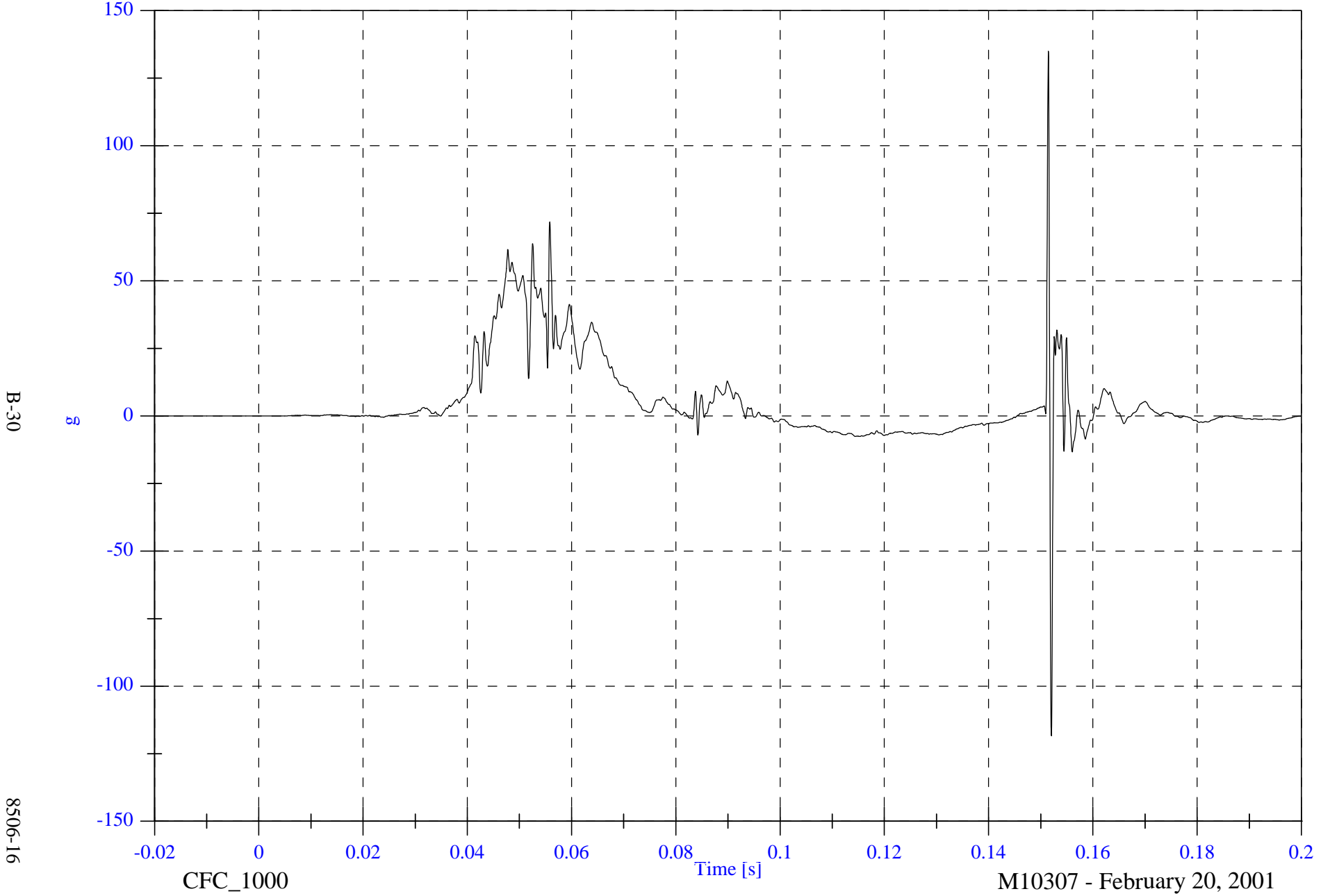
M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

P4 Lower Rib y

Max: 135.0 [g] at 0.151 [s]

Min: -118.4 [g] at 0.152 [s]



B-30

8506-16

CFC_1000

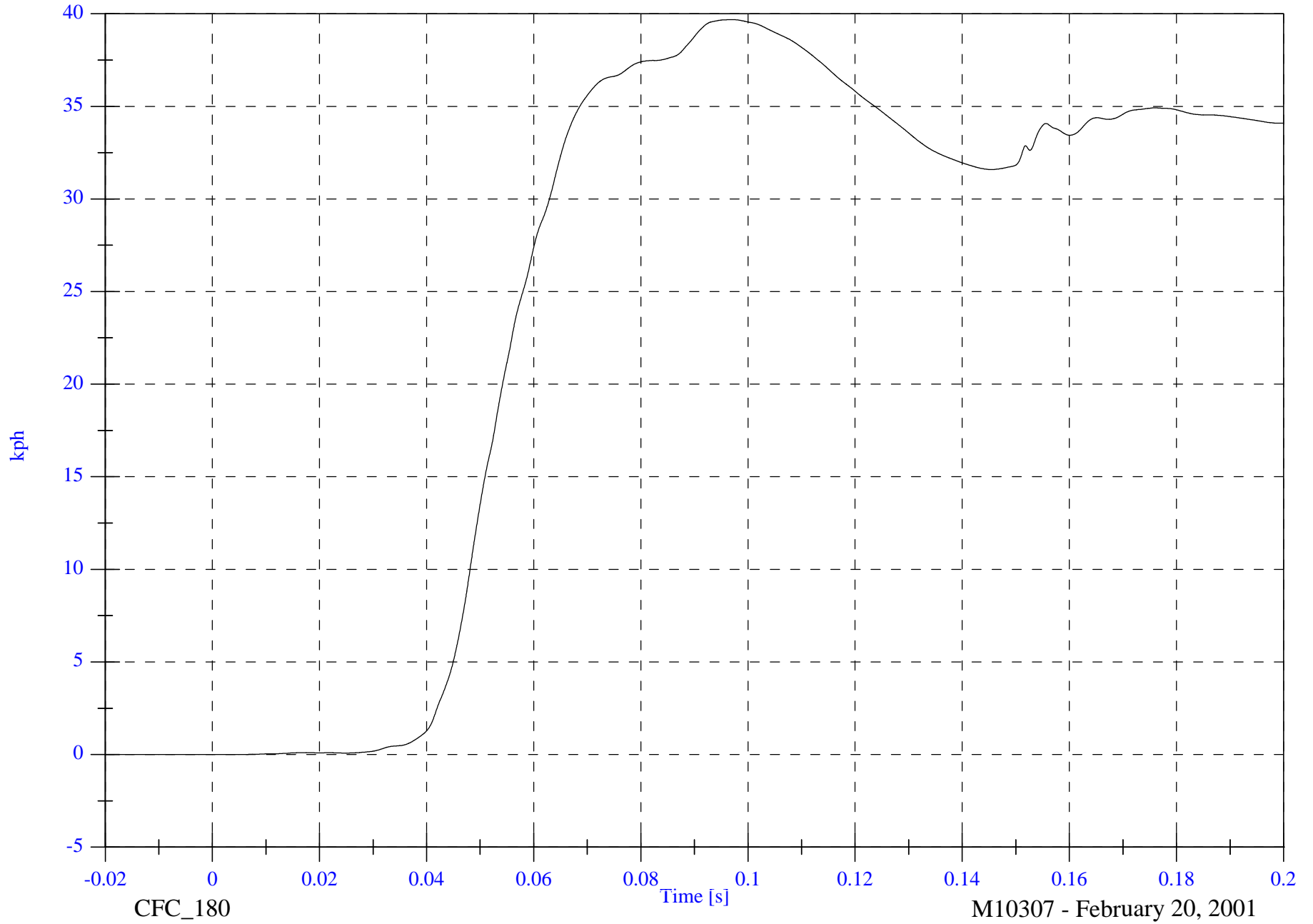
M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

Max: 39.7 [kph] at 0.097 [s]

P4 Lower Rib y Velocity

Min: -0.0 [kph] at -0.020 [s]



B-31

8506-16

CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

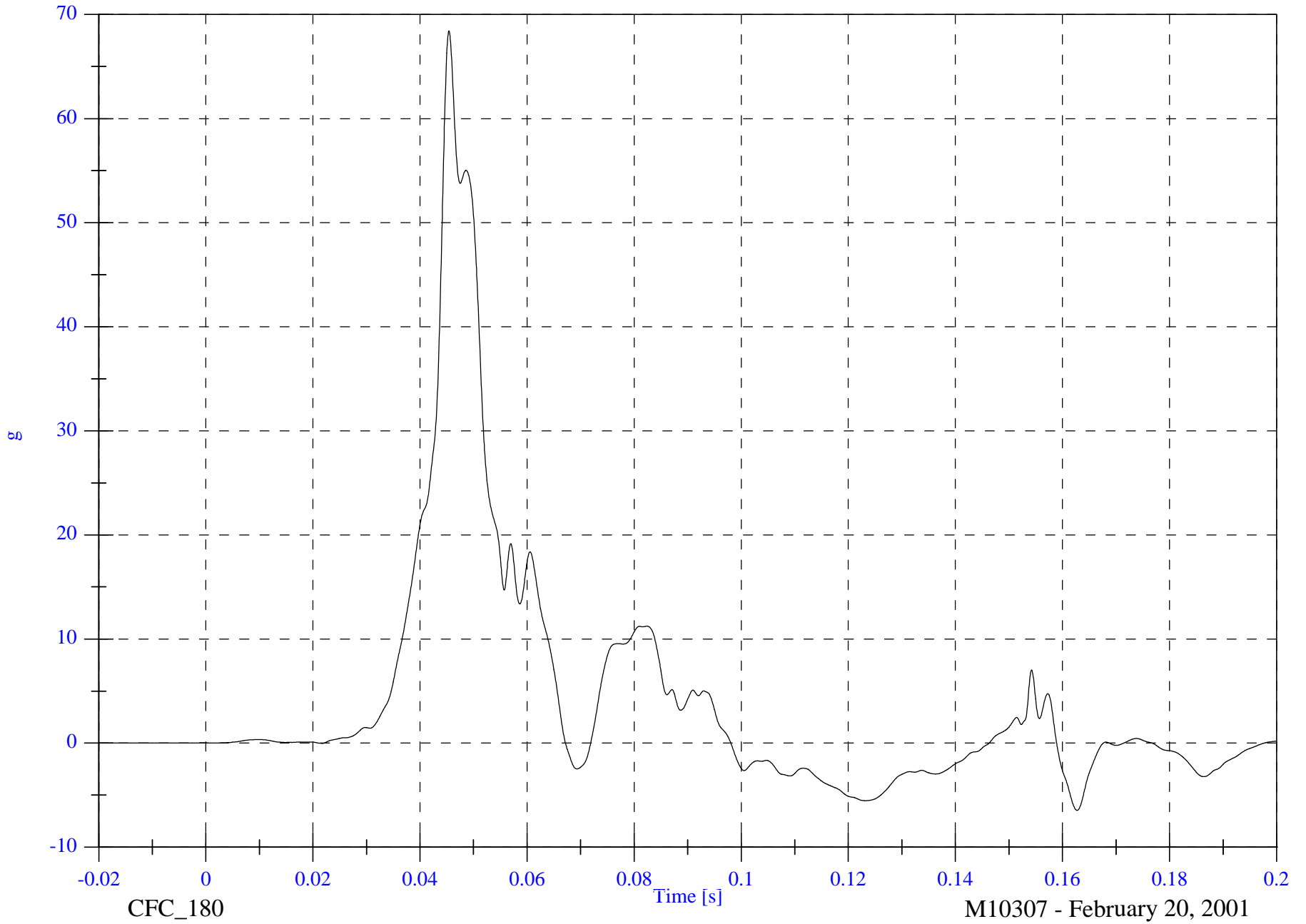
P4 Lower Spine y

Max: 68.4 [g] at 0.045 [s]

Min: -6.5 [g] at 0.163 [s]

B-32

8506-16

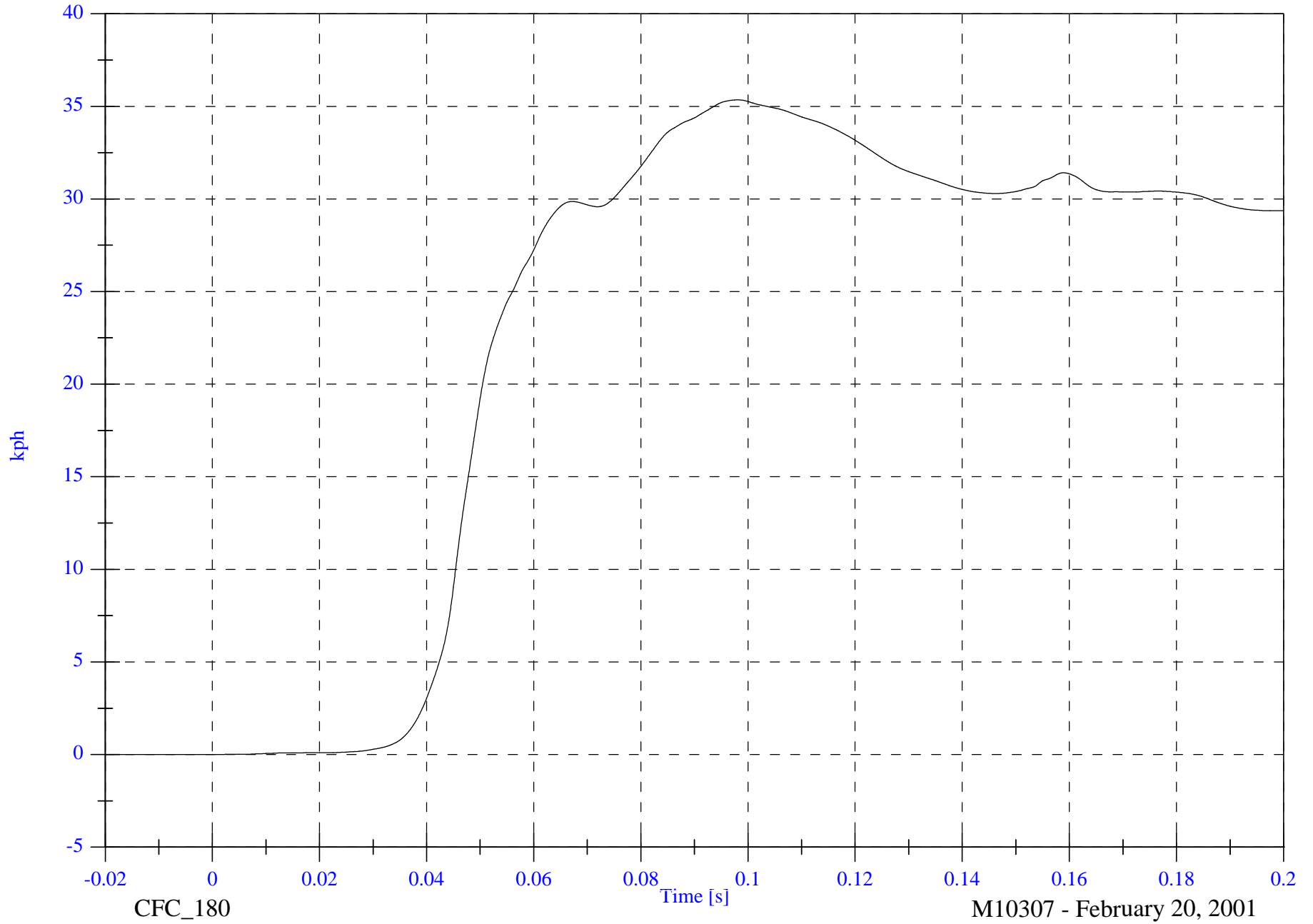


SNCAP Test 16 - 2001 Dodge Grand Caravan

P4 Lower Spine y Velocity

Max: 35.4 [kph] at 0.098 [s]

Min: -0.0 [kph] at -0.020 [s]



B-33

8506-16

CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

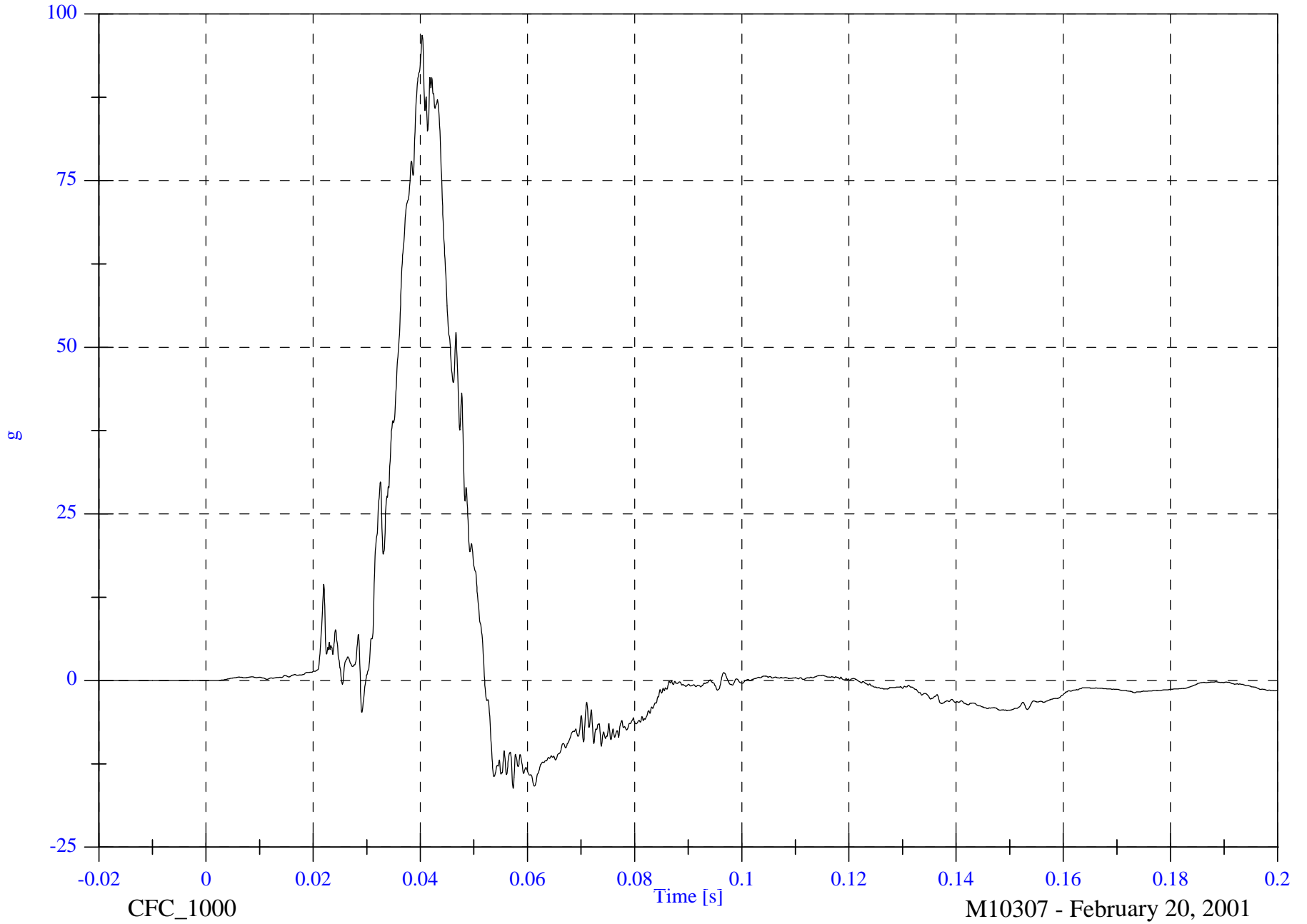
P4 Pelvic y

Max: 96.8 [g] at 0.040 [s]

Min: -16.2 [g] at 0.057 [s]

B-34

8506-16



SNCAP Test 16 - 2001 Dodge Grand Caravan

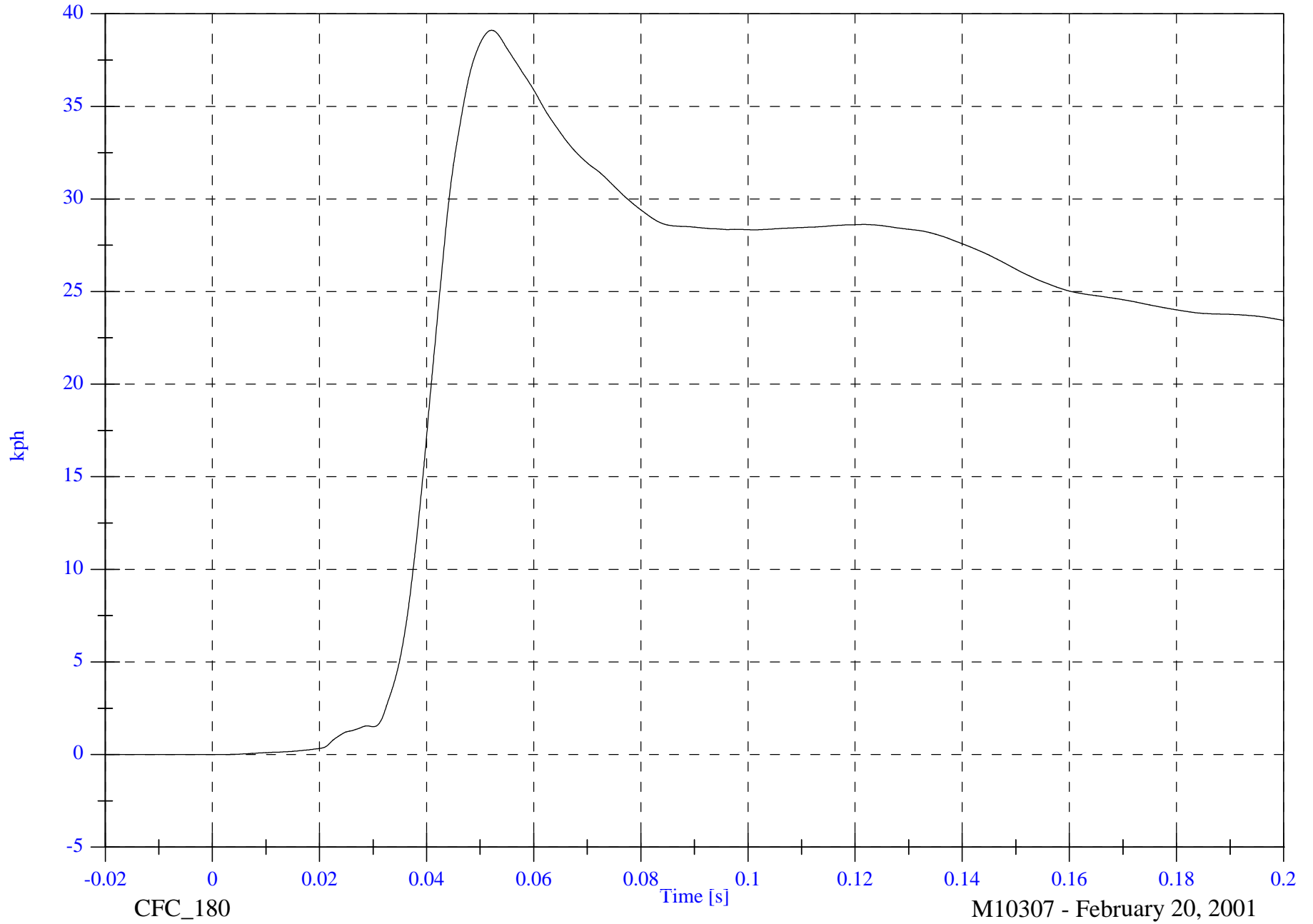
Max: 39.1 [kph] at 0.052 [s]

P4 Pelvic y Velocity

Min: -0.0 [kph] at -0.020 [s]

B-35

8506-16



CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

P1 Upper Rib y

Max: 52.2 [g] at 0.053 [s]

Min: -14.0 [g] at 0.089 [s]

B-36

8506-16



SNCAP Test 16 - 2001 Dodge Grand Caravan

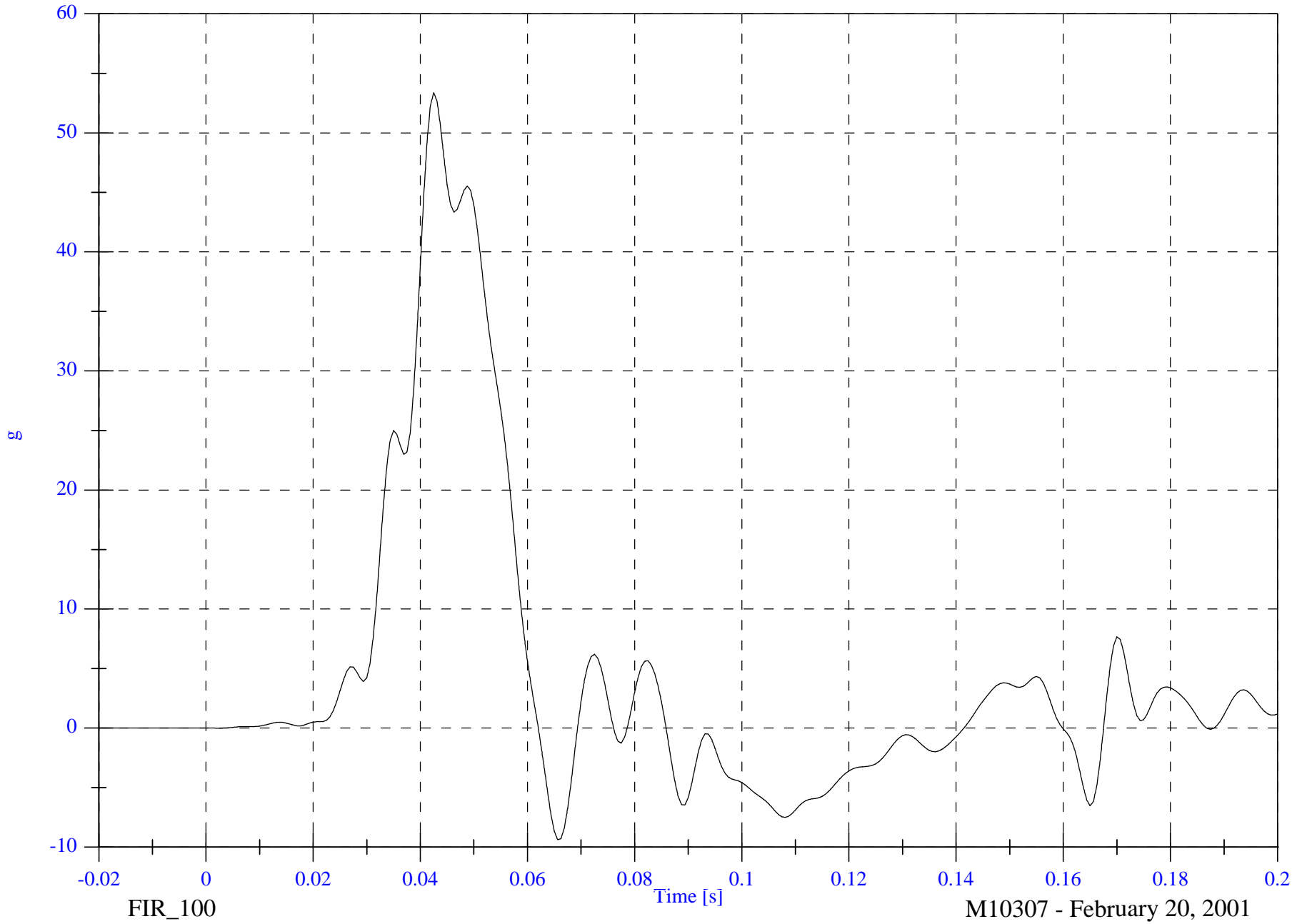
P1 Lower Rib y

Max: 53.4 [g] at 0.043 [s]

Min: -9.4 [g] at 0.066 [s]

B-37

8506-16



SNCAP Test 16 - 2001 Dodge Grand Caravan

P1 Lower Spine y

Max: 58.7 [g] at 0.044 [s]

Min: -12.7 [g] at 0.061 [s]

B-38

8506-16



SNCAP Test 16 - 2001 Dodge Grand Caravan

Max: 50.0 [g] at 0.038 [s]

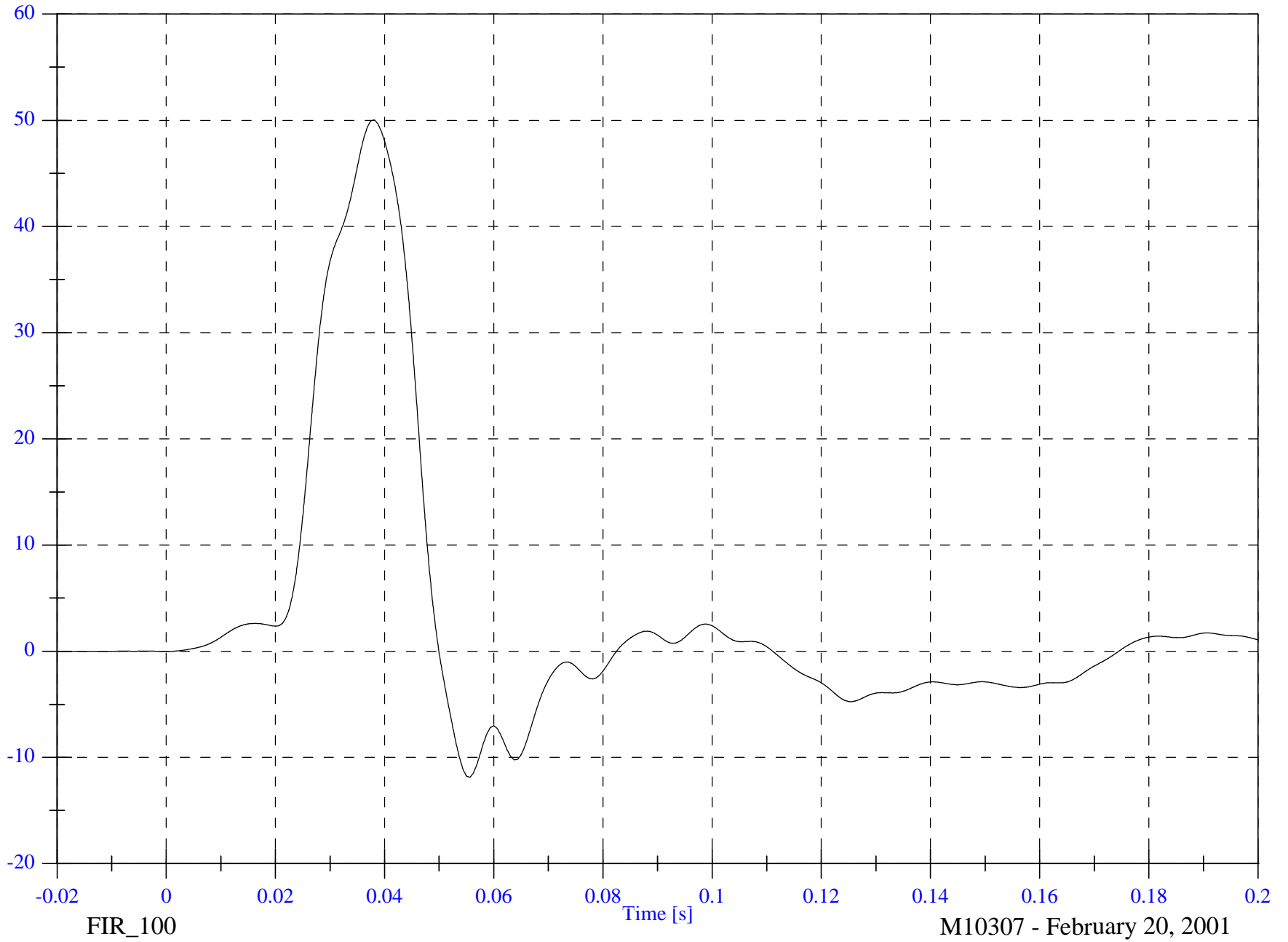
P1 Pelvic y

Min: -11.9 [g] at 0.056 [s]

B-39

g

8506-16



FIR_100

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

P4 Upper Rib y

Max: 44.9 [g] at 0.062 [s]

Min: -5.9 [g] at 0.104 [s]



B-40

8506-16

FIR_100

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

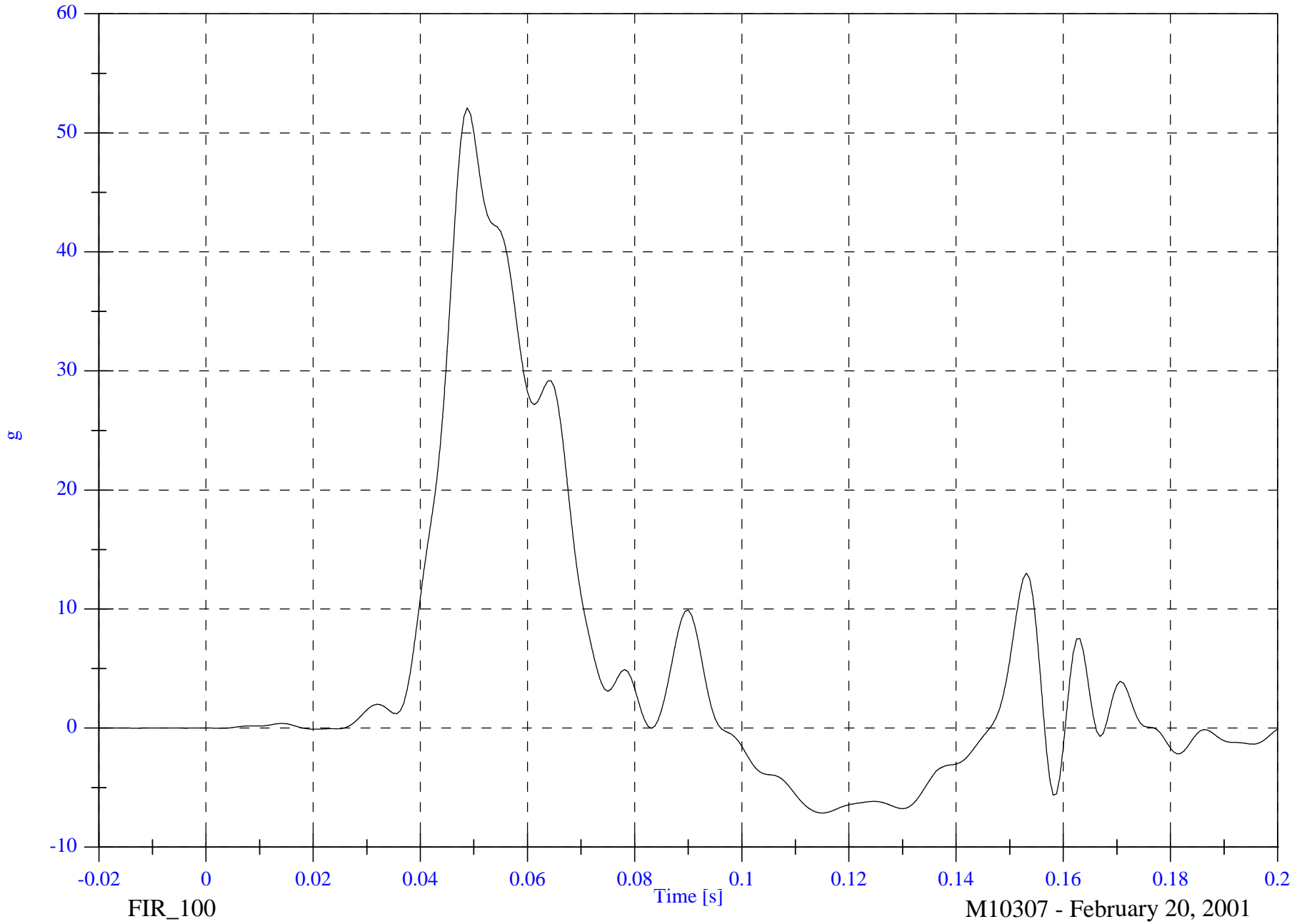
P4 Lower Rib y

Max: 52.1 [g] at 0.049 [s]

Min: -7.1 [g] at 0.115 [s]

B-41

8506-16



SNCAP Test 16 - 2001 Dodge Grand Caravan

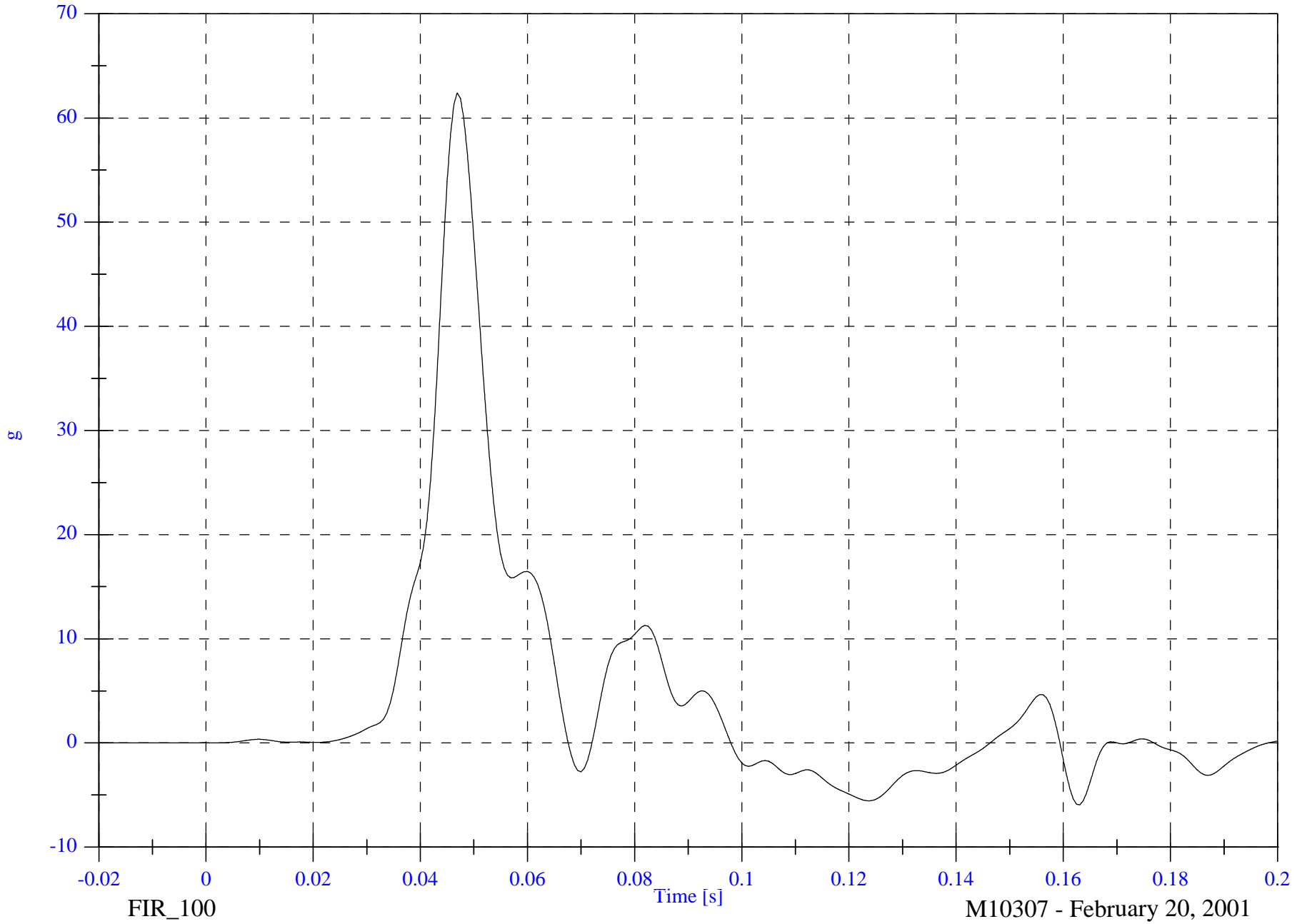
P4 Lower Spine y

Max: 62.4 [g] at 0.047 [s]

Min: -5.9 [g] at 0.163 [s]

B-42

8506-16



SNCAP Test 16 - 2001 Dodge Grand Caravan

Max: 92.1 [g] at 0.041 [s]

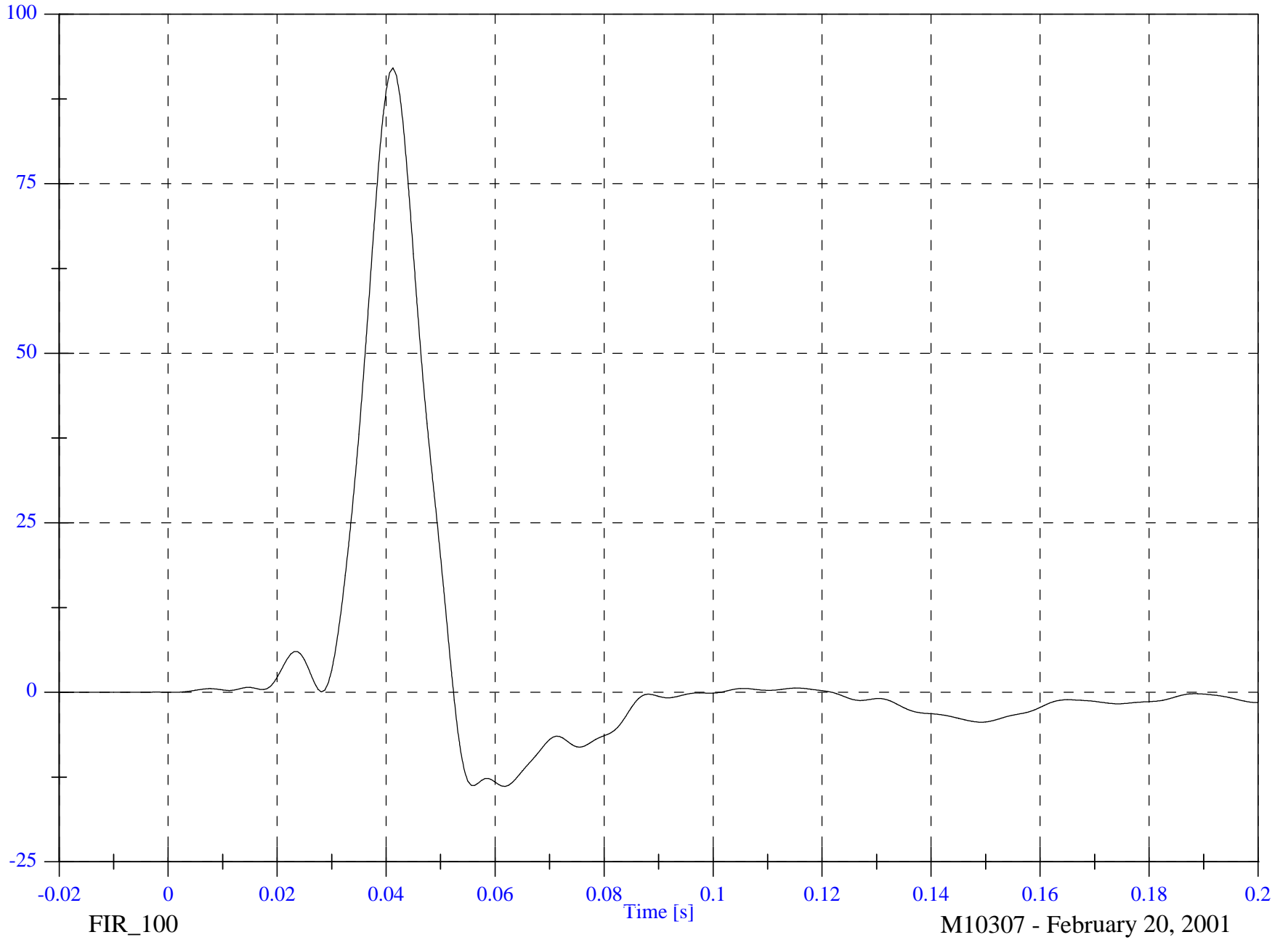
P4 Pelvic y

Min: -13.9 [g] at 0.062 [s]

B-43

g

8506-16



FIR_100

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

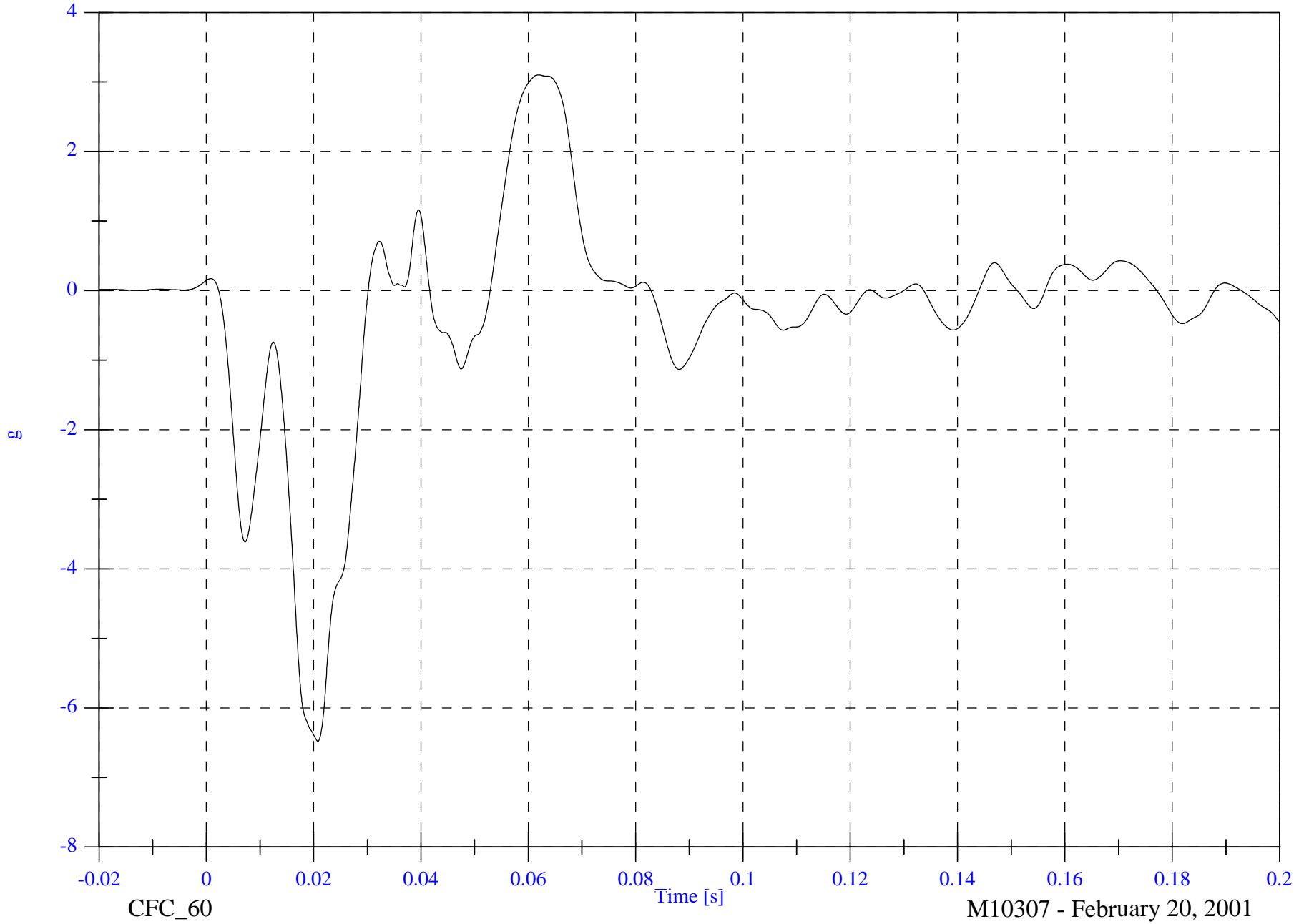
A1 Right Front Sill X

Max: 3.1 [g] at 0.062 [s]

Min: -6.5 [g] at 0.021 [s]

B-44

8506-16



CFC_60

Time [s]

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

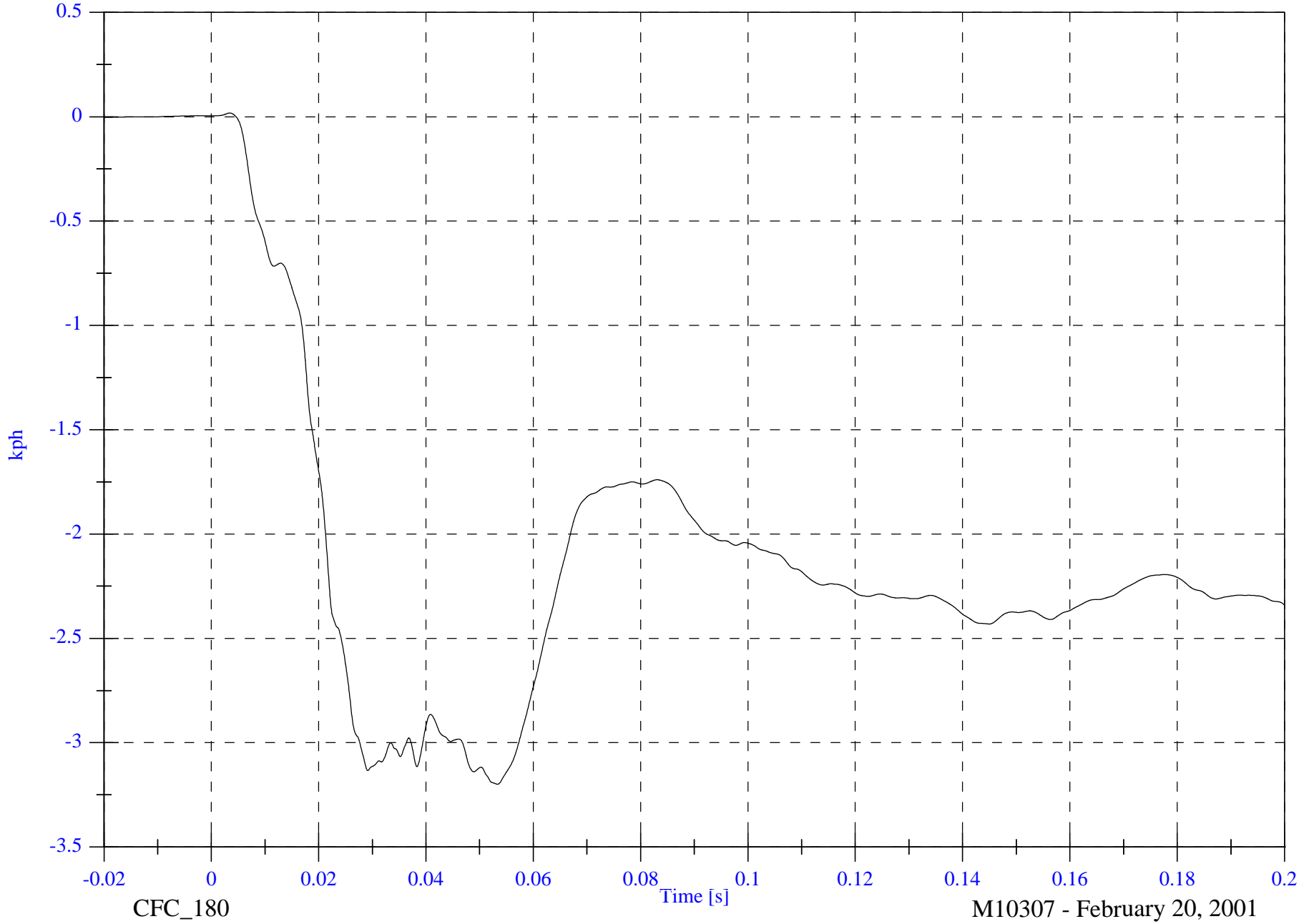
A1 Right Front Sill X Velocity

Max: 0.0 [kph] at 0.003 [s]

Min: -3.2 [kph] at 0.053 [s]

B-45

8506-16



SNCAP Test 16 - 2001 Dodge Grand Caravan

A1 Right Front Sill Y

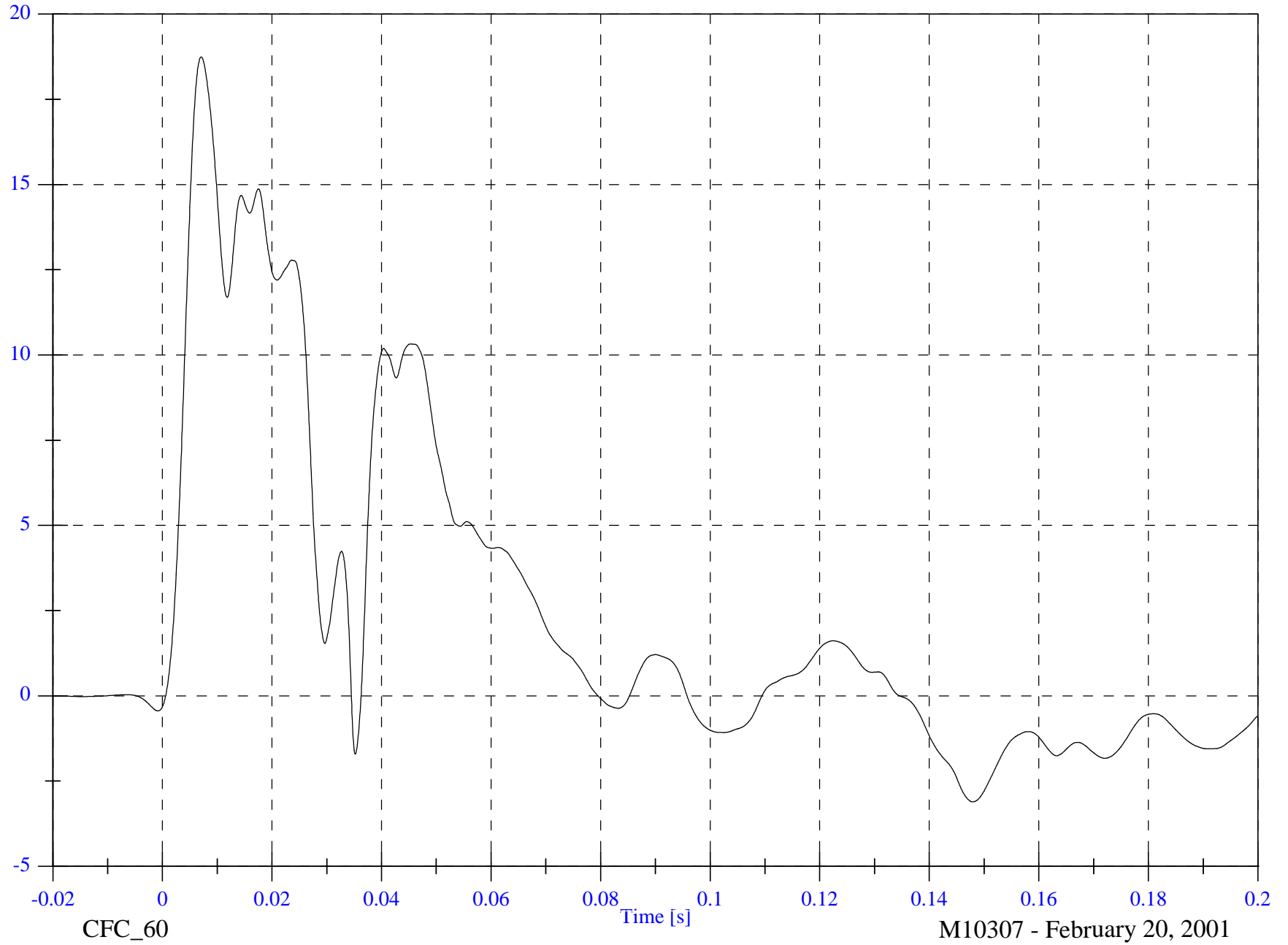
Max: 18.7 [g] at 0.007 [s]

Min: -3.1 [g] at 0.148 [s]

B-46

g

8506-16



SNCAP Test 16 - 2001 Dodge Grand Caravan

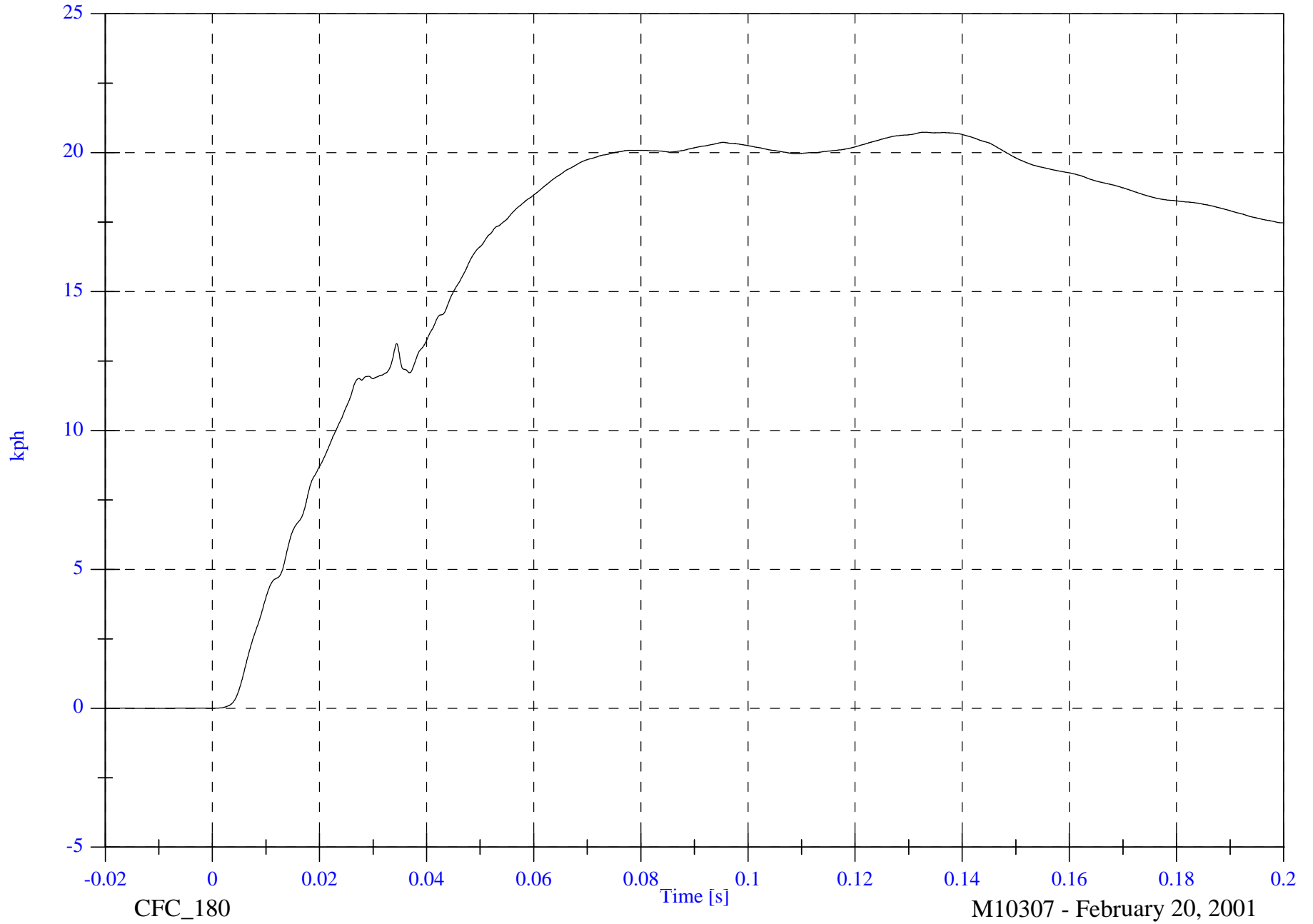
A1 Right Front Sill Y Velocity

Max: 20.7 [kph] at 0.133 [s]

Min: -0.0 [kph] at -0.010 [s]

B-47

8506-16



SNCAP Test 16 - 2001 Dodge Grand Caravan

A1 Right Front Sill Z

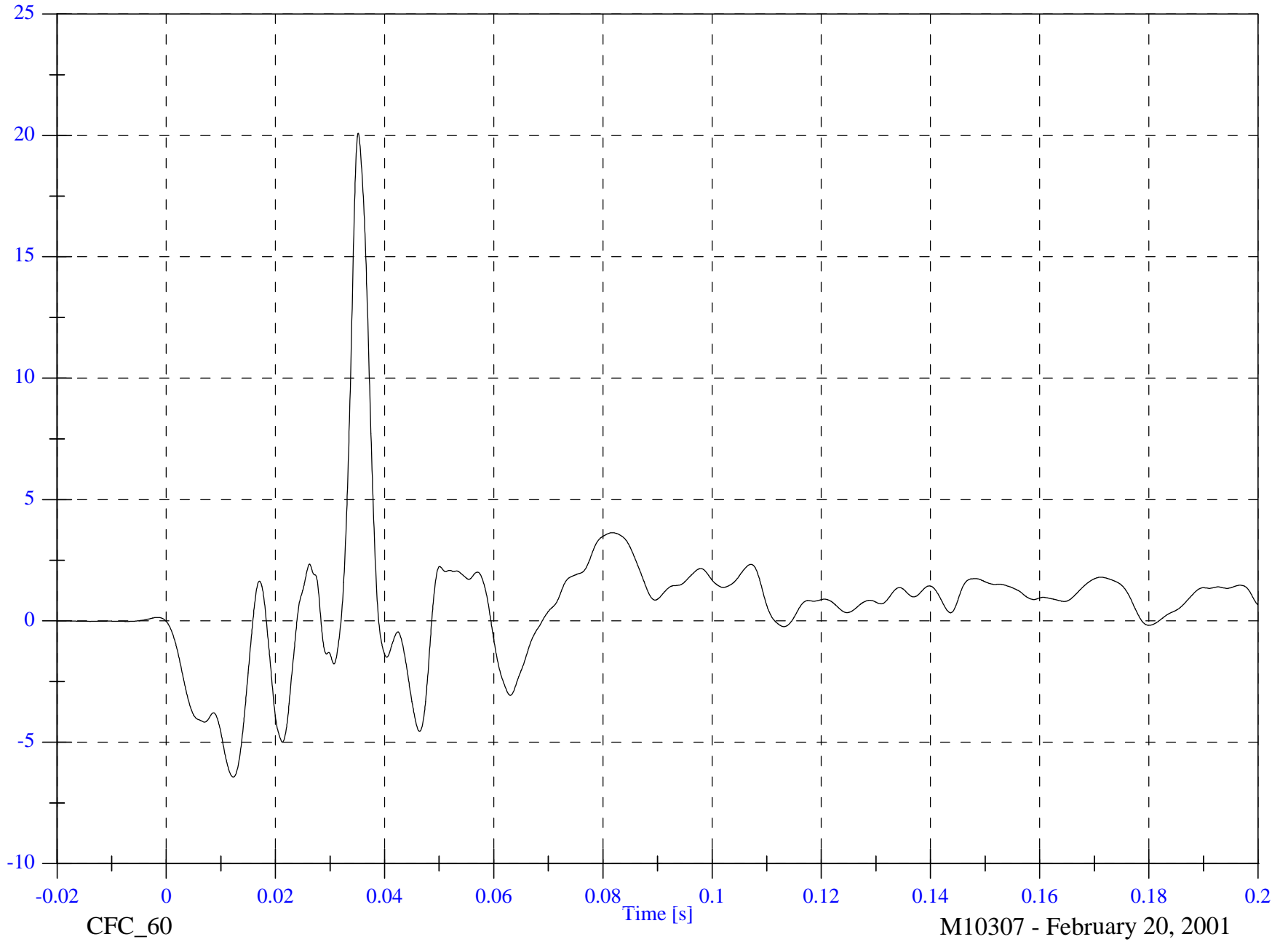
Max: 20.1 [g] at 0.035 [s]

Min: -6.4 [g] at 0.012 [s]

B-48

g

8506-16



CFC_60

Time [s]

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

A1 Right Front Sill Z Velocity

Max: 5.3 [kph] at 0.199 [s]

Min: -3.1 [kph] at 0.034 [s]

B-49

8506-16



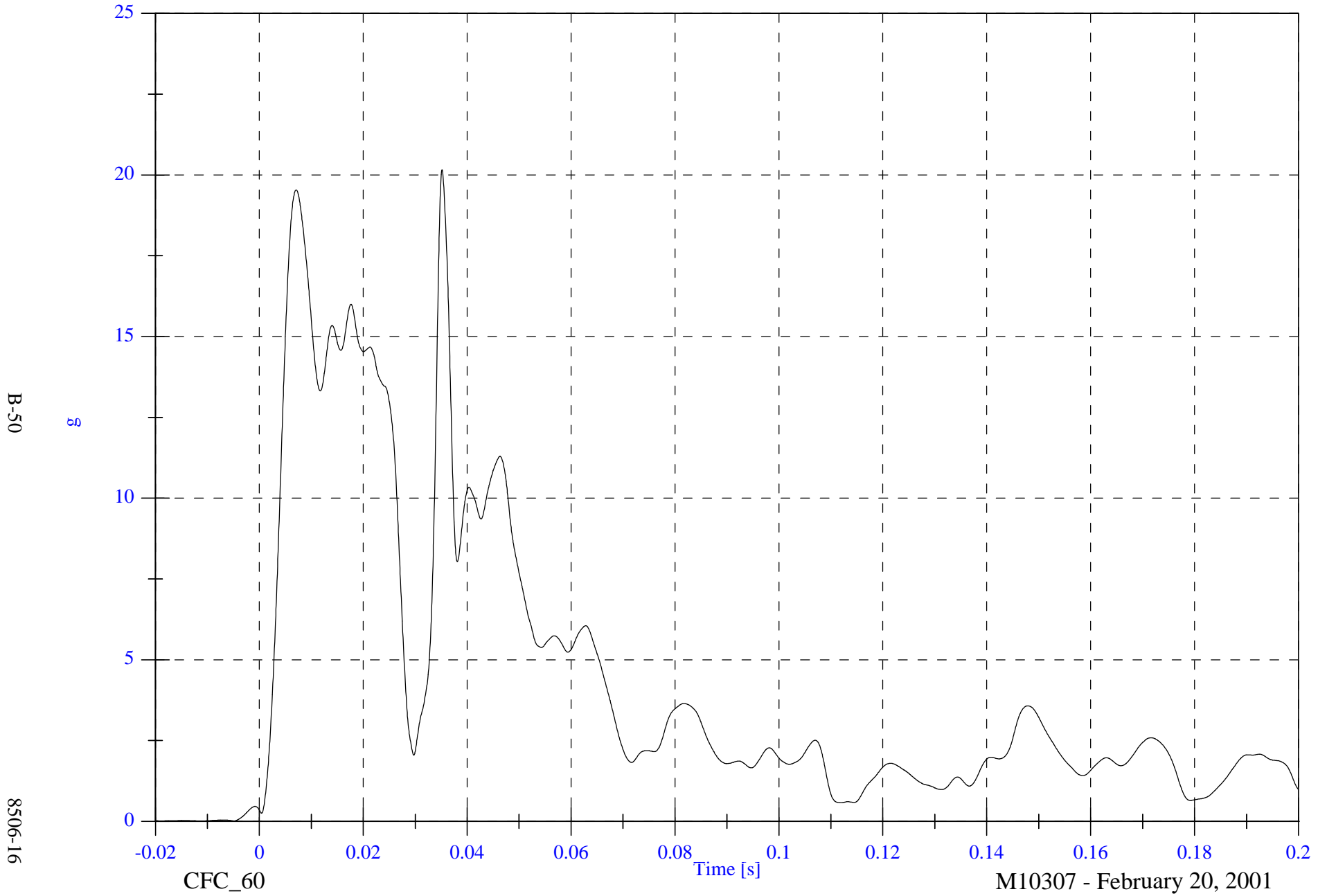
M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

A1 Right Front Sill Resultant

Max: 20.2 [g] at 0.035 [s]

Min: 0.0 [g] at -0.011 [s]

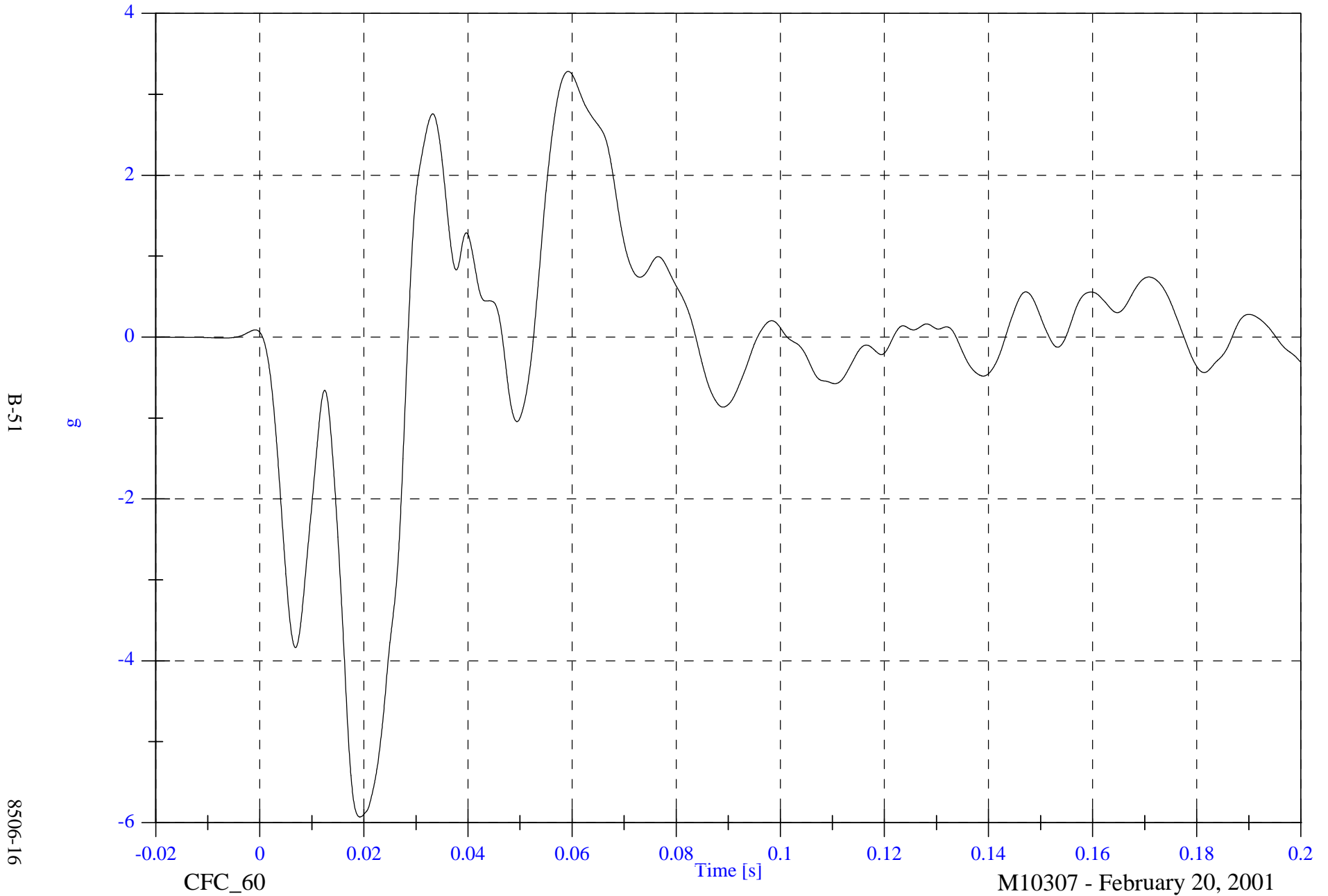


SNCAP Test 16 - 2001 Dodge Grand Caravan

A2 Right Rear Sill X

Max: 3.3 [g] at 0.059 [s]

Min: -5.9 [g] at 0.019 [s]



SNCAP Test 16 - 2001 Dodge Grand Caravan

A2 Right Rear Sill X Velocity

Max: 0.0 [kph] at -0.017 [s]

Min: -3.1 [kph] at 0.028 [s]

B-52

8506-16



M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

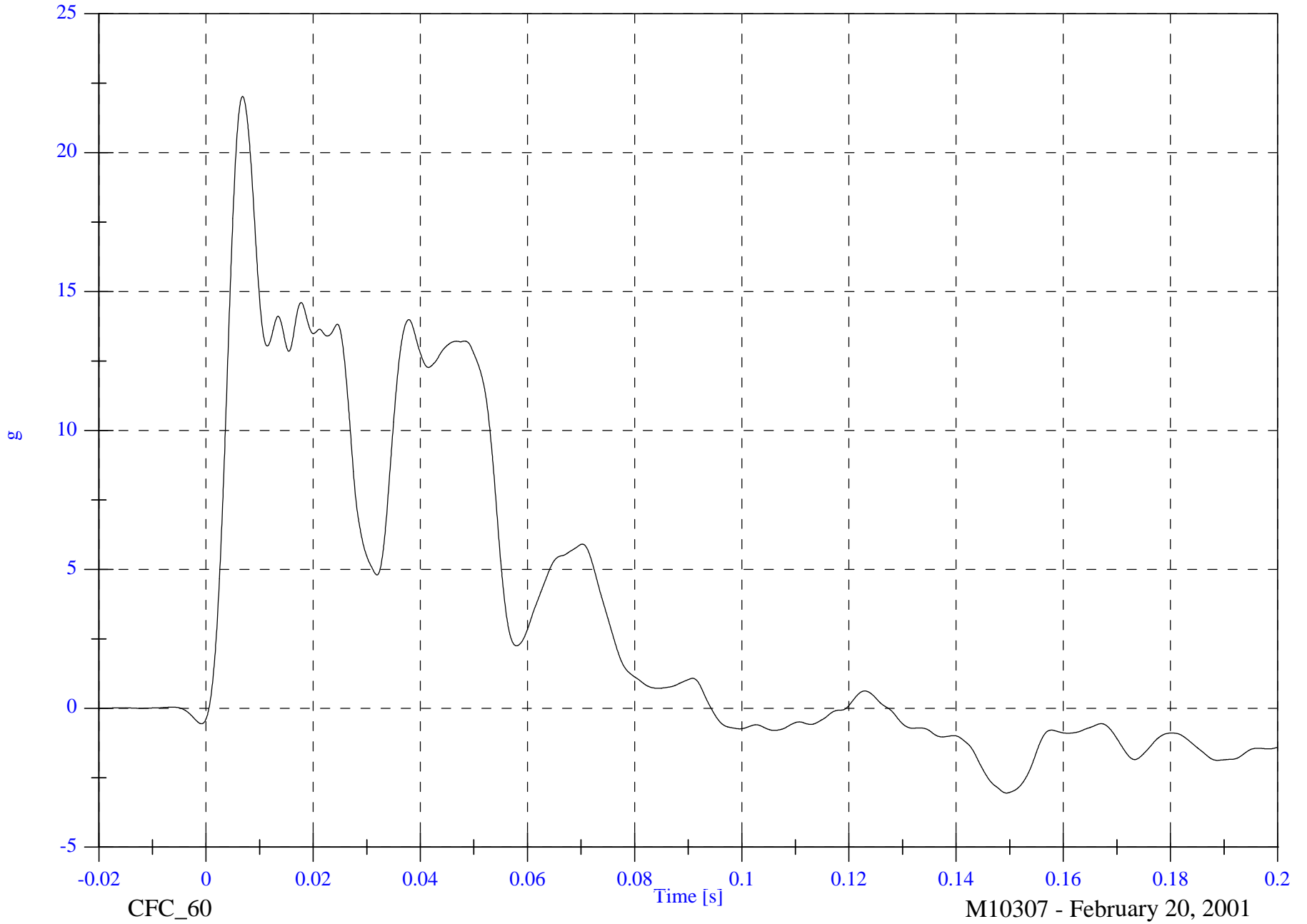
A2 Right Rear Sill Y

Max: 22.0 [g] at 0.007 [s]

Min: -3.1 [g] at 0.149 [s]

B-53

8506-16



SNCAP Test 16 - 2001 Dodge Grand Caravan

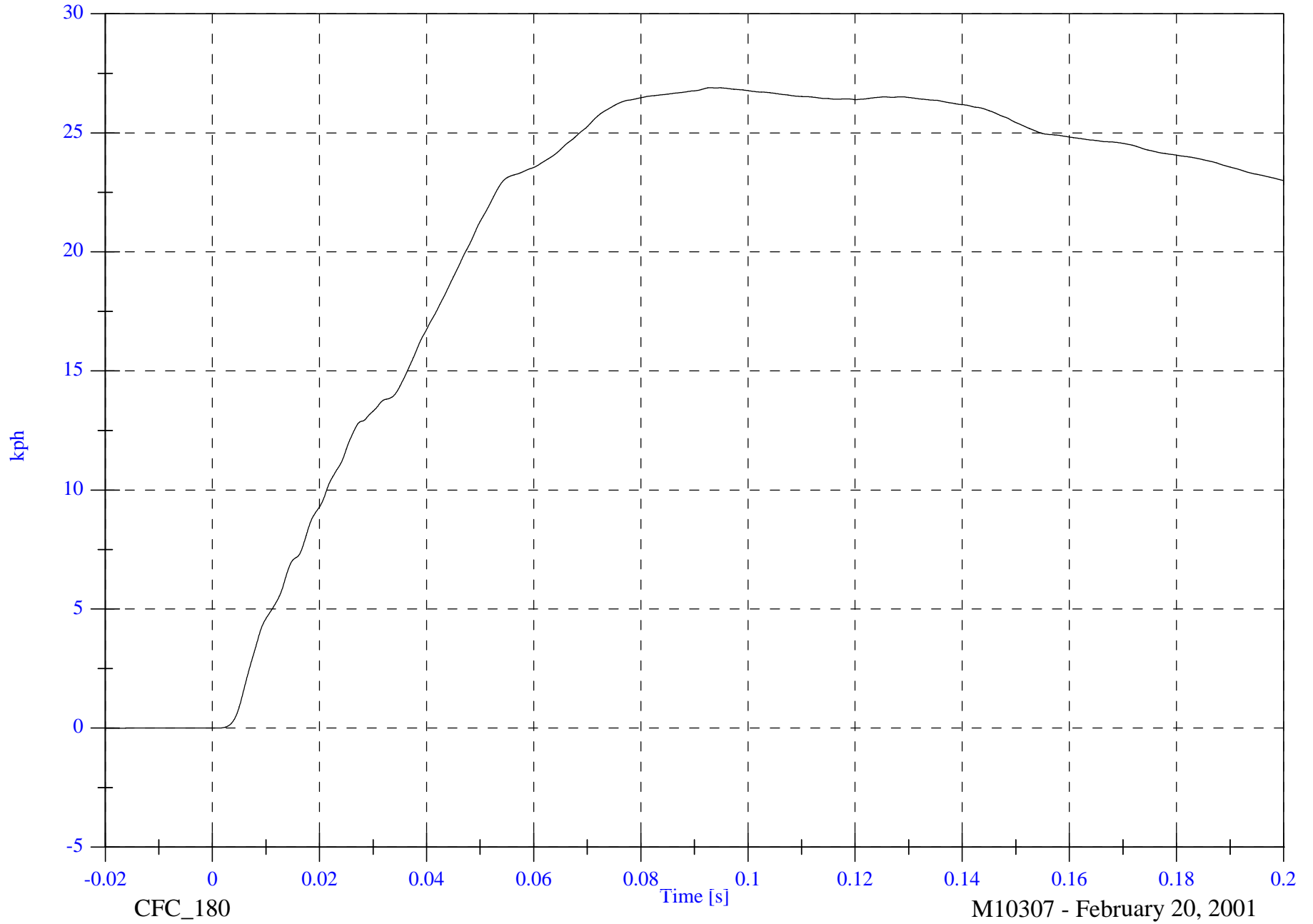
Max: 26.9 [kph] at 0.093 [s]

A2 Right Rear Sill Y Velocity

Min: -0.0 [kph] at -0.018 [s]

B-54

8506-16



CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

A2 Right Rear Sill Z

Max: 5.4 [g] at 0.010 [s]

Min: -10.6 [g] at 0.016 [s]



B-55

8506-16

CFC_60

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

A2 Right Rear Sill Z Velocity

Max: 5.5 [kph] at 0.200 [s]

Min: -3.9 [kph] at 0.033 [s]

B-56

8506-16



CFC_180

Time [s]

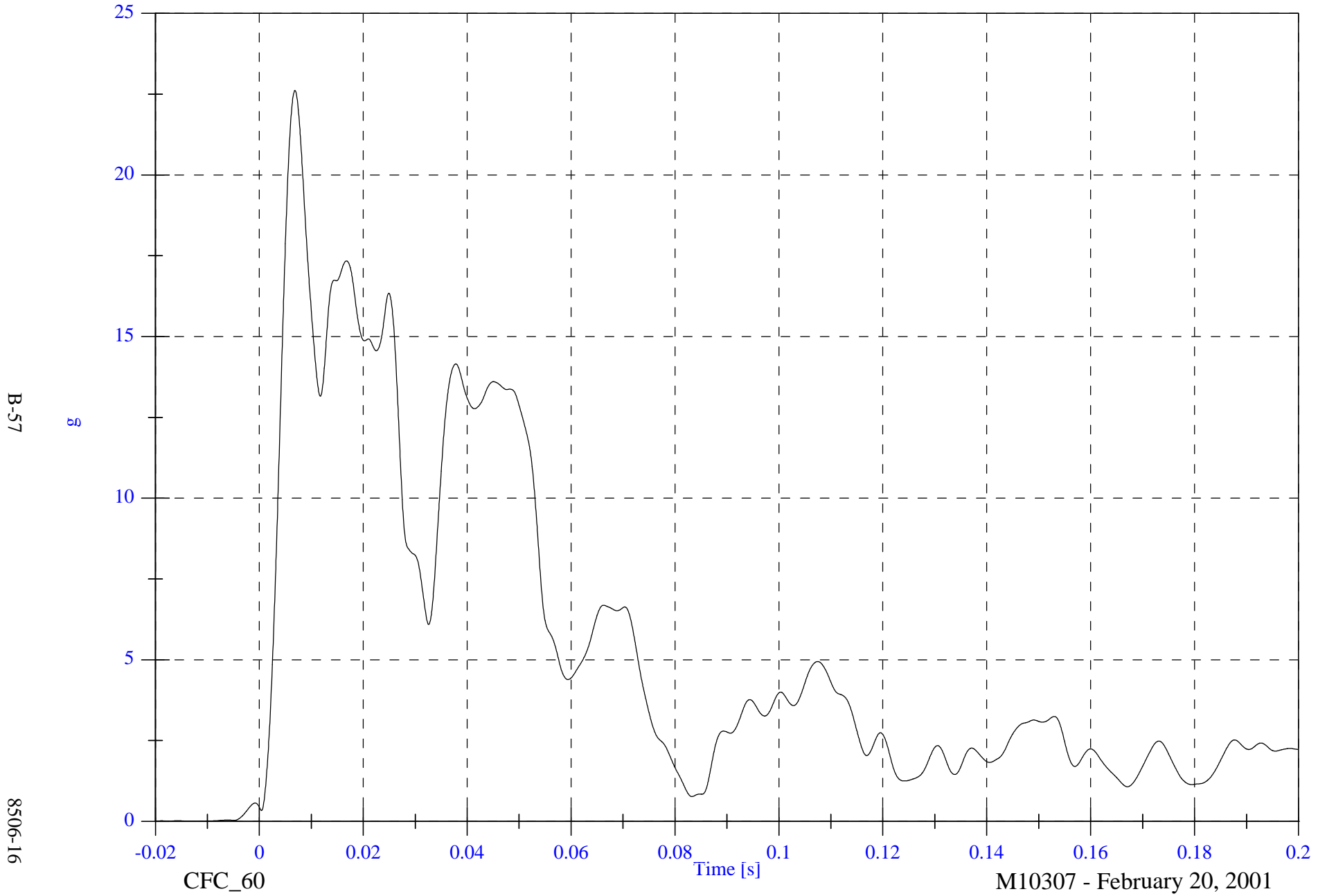
M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

A2 Right Rear Sill Resultant

Max: 22.6 [g] at 0.007 [s]

Min: 0.0 [g] at -0.012 [s]



SNCAP Test 16 - 2001 Dodge Grand Caravan

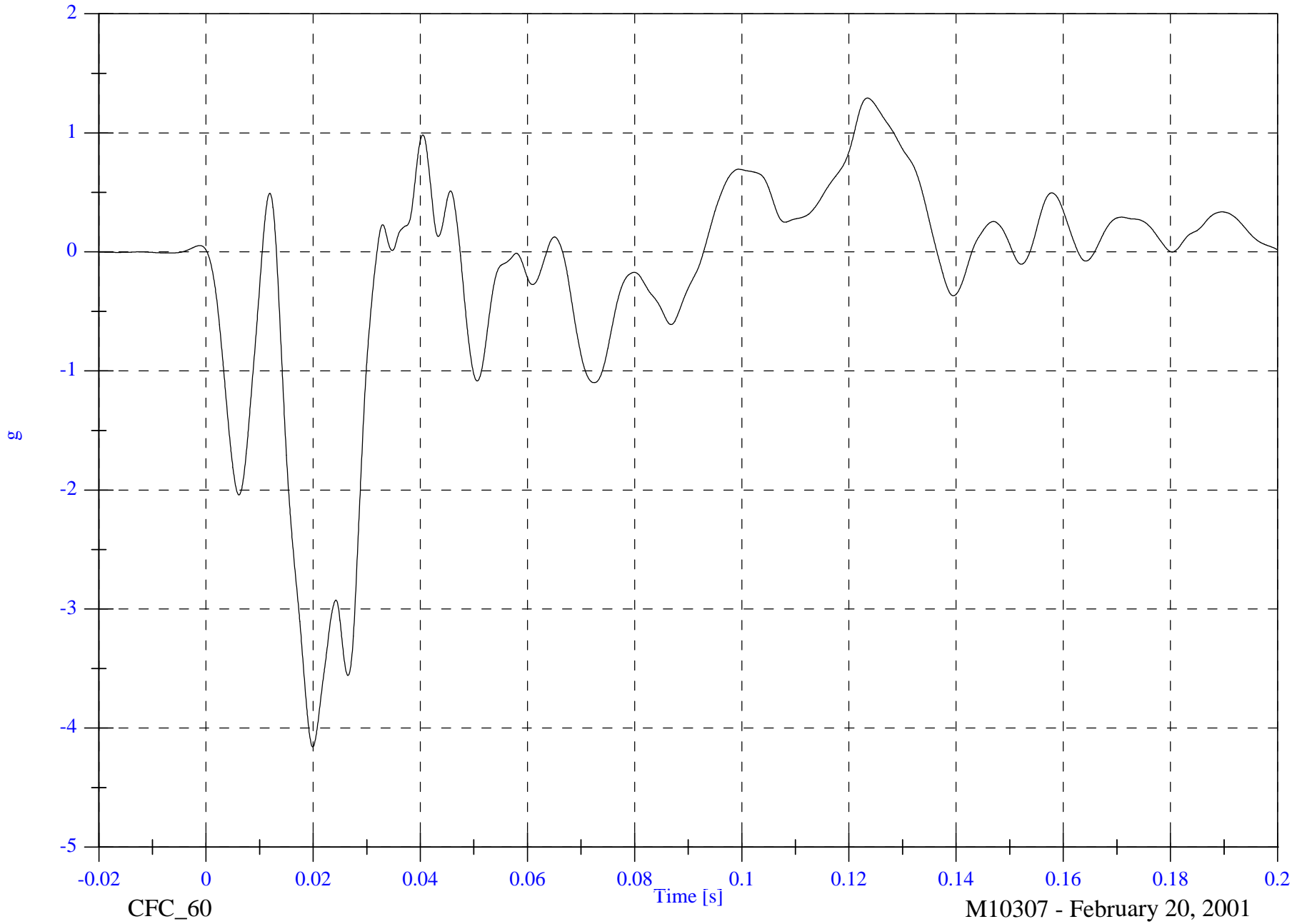
A3 Rear Floorpan X

Max: 1.3 [g] at 0.123 [s]

Min: -4.2 [g] at 0.020 [s]

B-58

8506-16



CFC_60

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

A3 Rear Floorpan X Velocity

Max: 0.0 [kph] at -0.018 [s]

Min: -2.5 [kph] at 0.093 [s]

B-59

8506-16



CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

A3 Rear Floorpan Y

Max: 17.6 [g] at 0.007 [s]

Min: -2.4 [g] at 0.149 [s]



B-60

g

8506-16

CFC_60

Time [s]

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

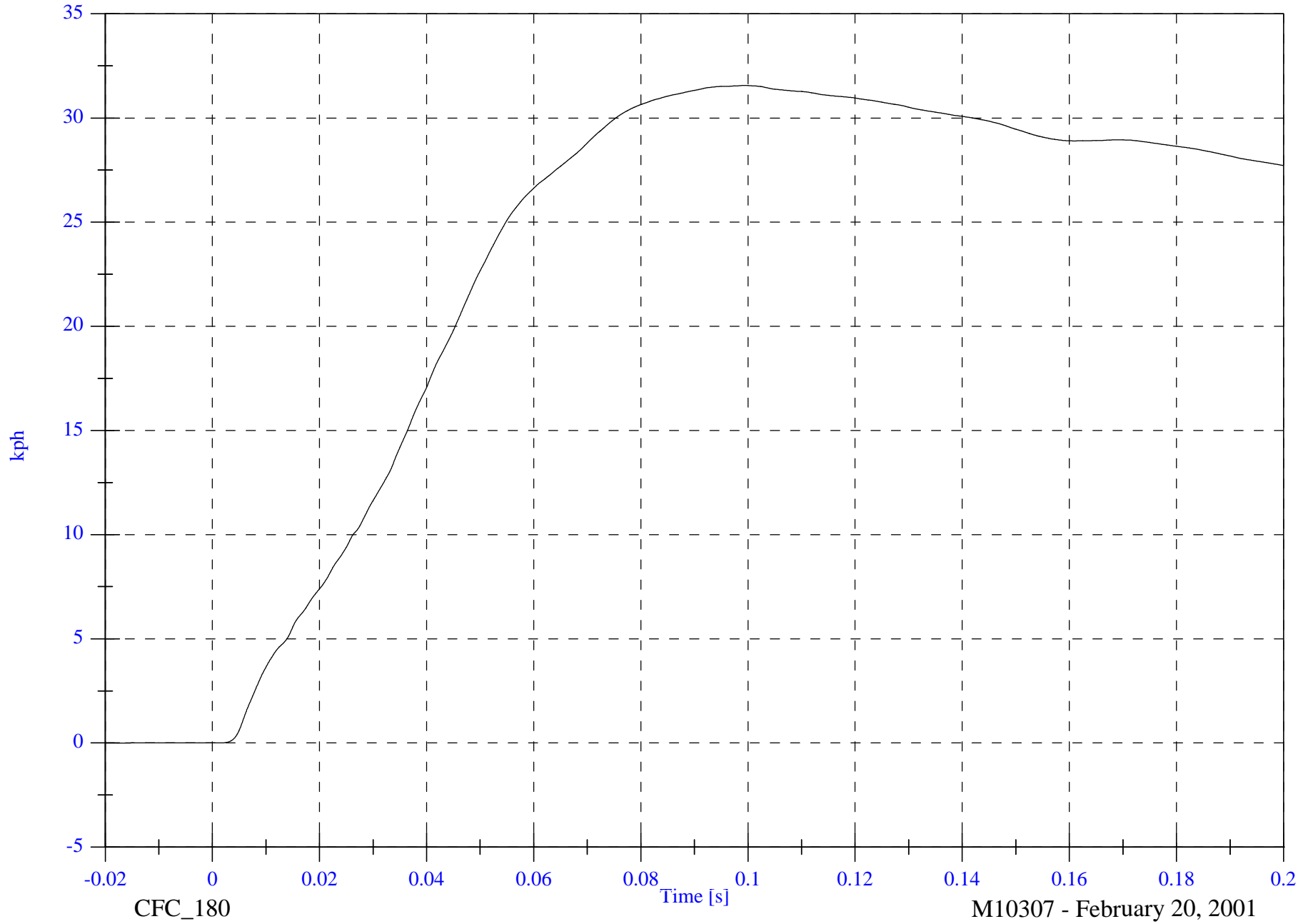
A3 Rear Floorpan Y Velocity

Max: 31.6 [kph] at 0.099 [s]

Min: -0.0 [kph] at -0.020 [s]

B-61

8506-16



CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

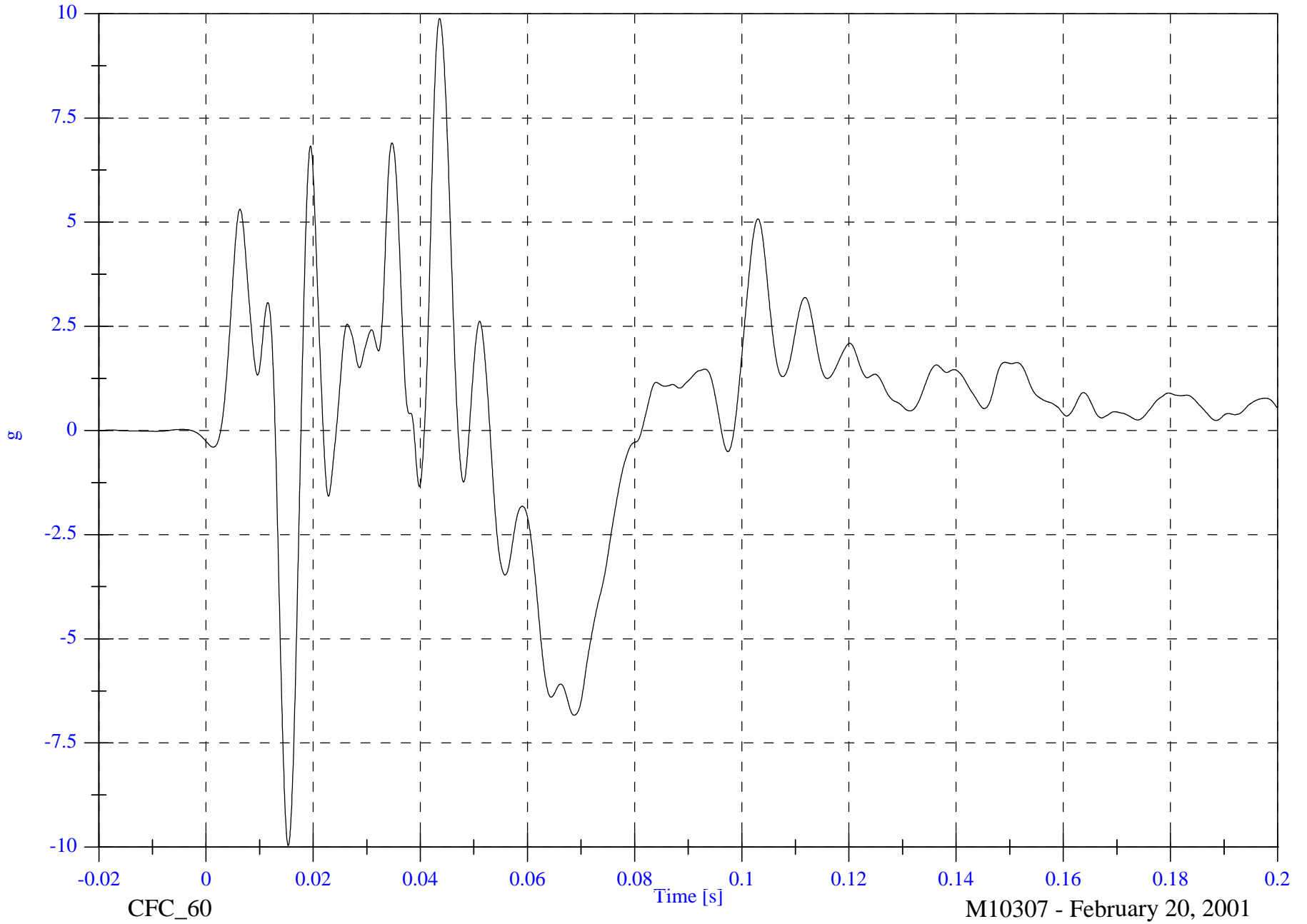
A3 Rear Floorplan Z

Max: 9.9 [g] at 0.044 [s]

Min: -10.0 [g] at 0.015 [s]

B-62

8506-16



SNCAP Test 16 - 2001 Dodge Grand Caravan

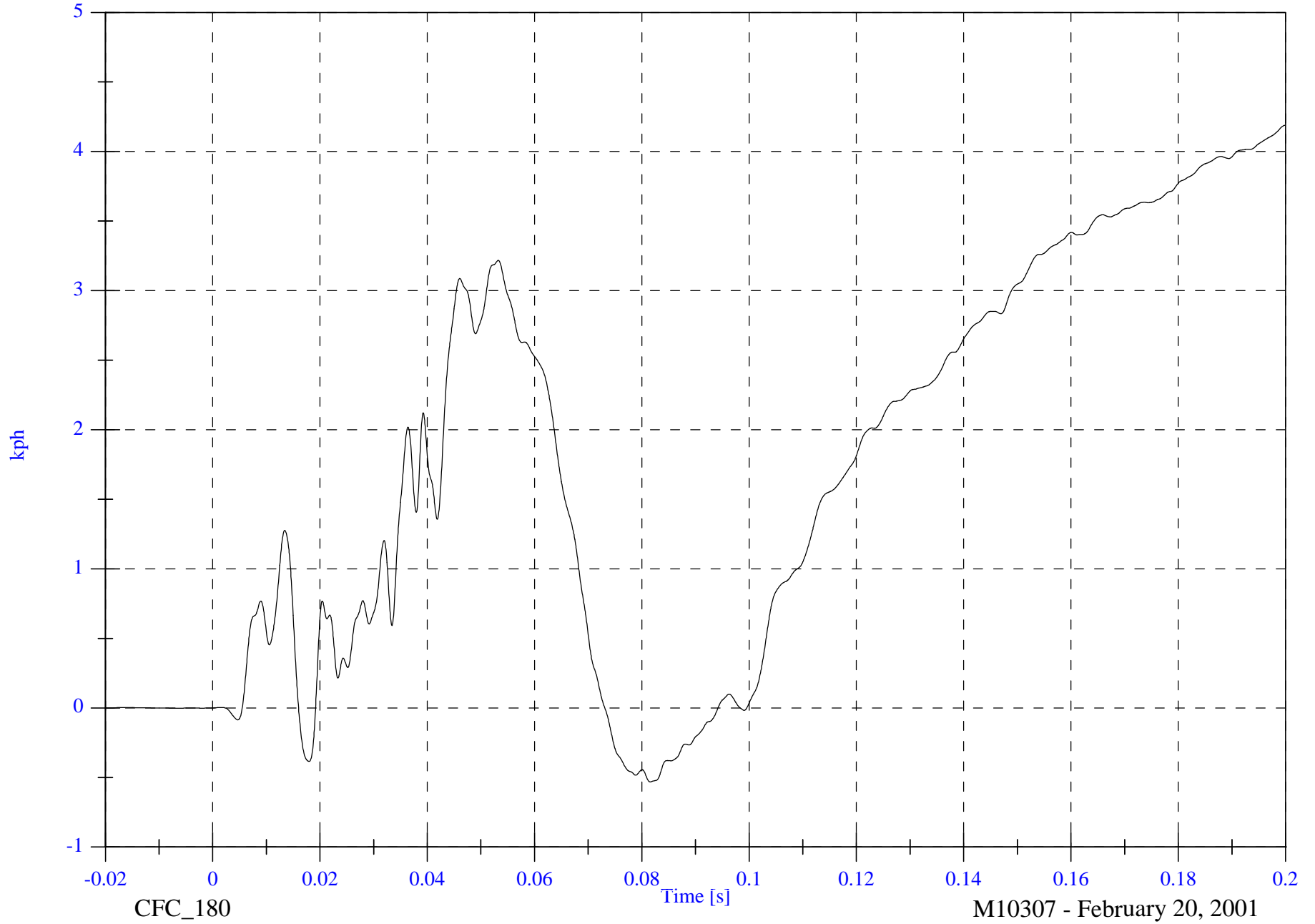
A3 Rear Floorplan Z Velocity

Max: 4.2 [kph] at 0.200 [s]

Min: -0.5 [kph] at 0.082 [s]

B-63

8506-16



CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

A3 Rear Floorpan Resultant

Max: 18.3 [g] at 0.007 [s]

Min: 0.0 [g] at -0.016 [s]

B-64

8506-16

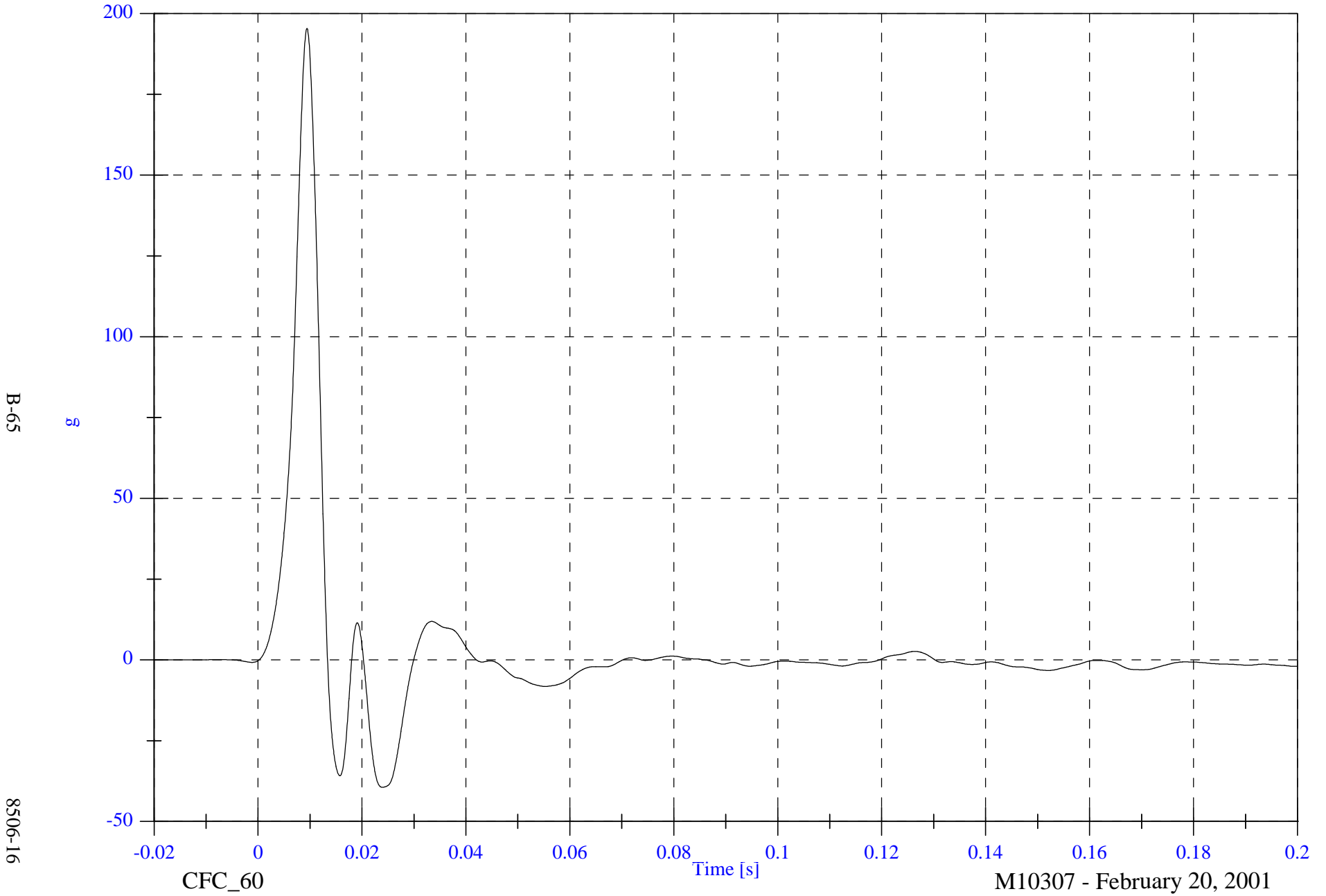


SNCAP Test 16 - 2001 Dodge Grand Caravan

A4 Left Rear Sill Y

Max: 195.4 [g] at 0.009 [s]

Min: -39.5 [g] at 0.024 [s]



B-65

8506-16

CFC_60

Time [s]

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

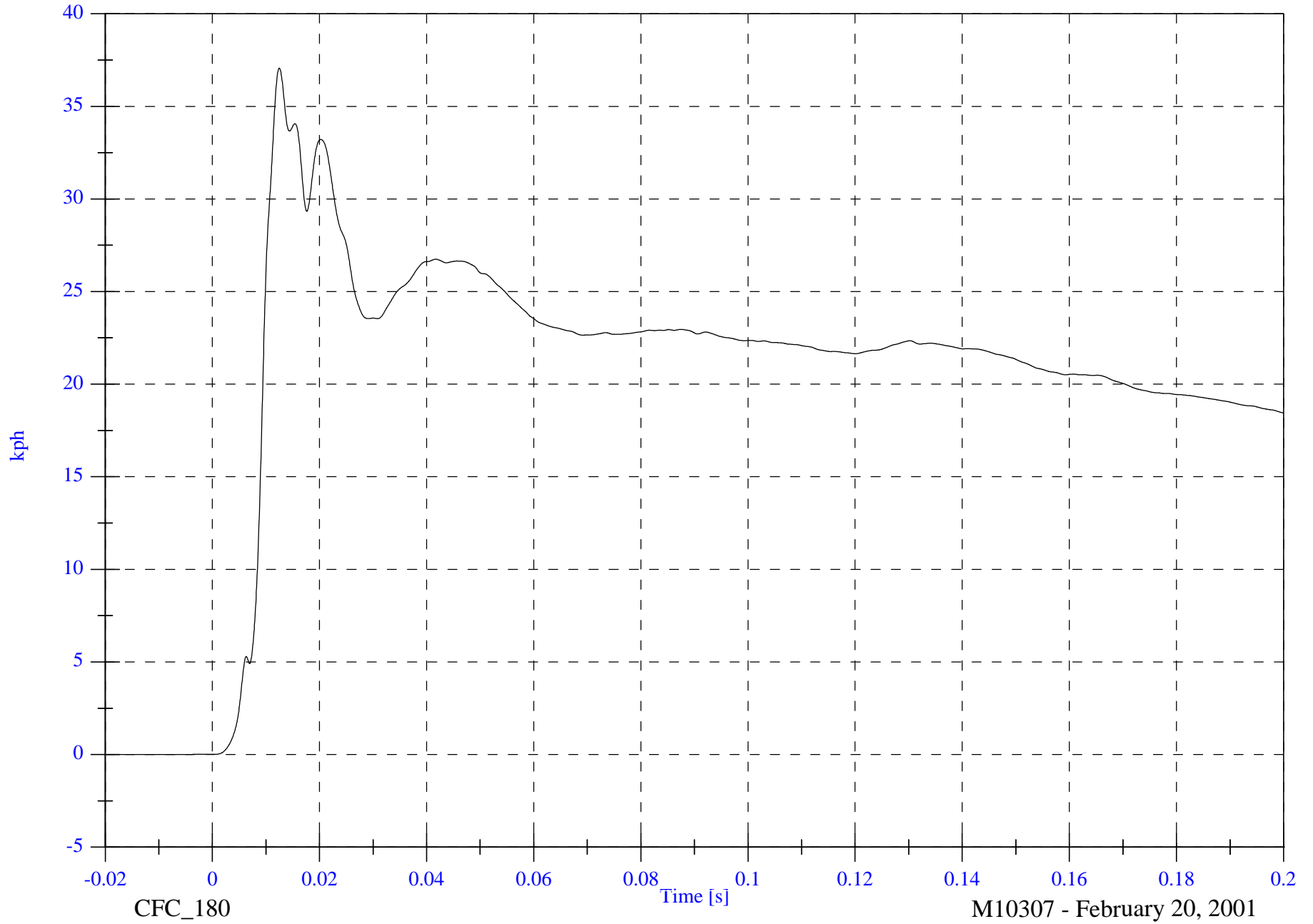
A4 Left Rear Sill Y Velocity

Max: 37.1 [kph] at 0.013 [s]

Min: -0.0 [kph] at -0.017 [s]

B-66

8506-16



CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

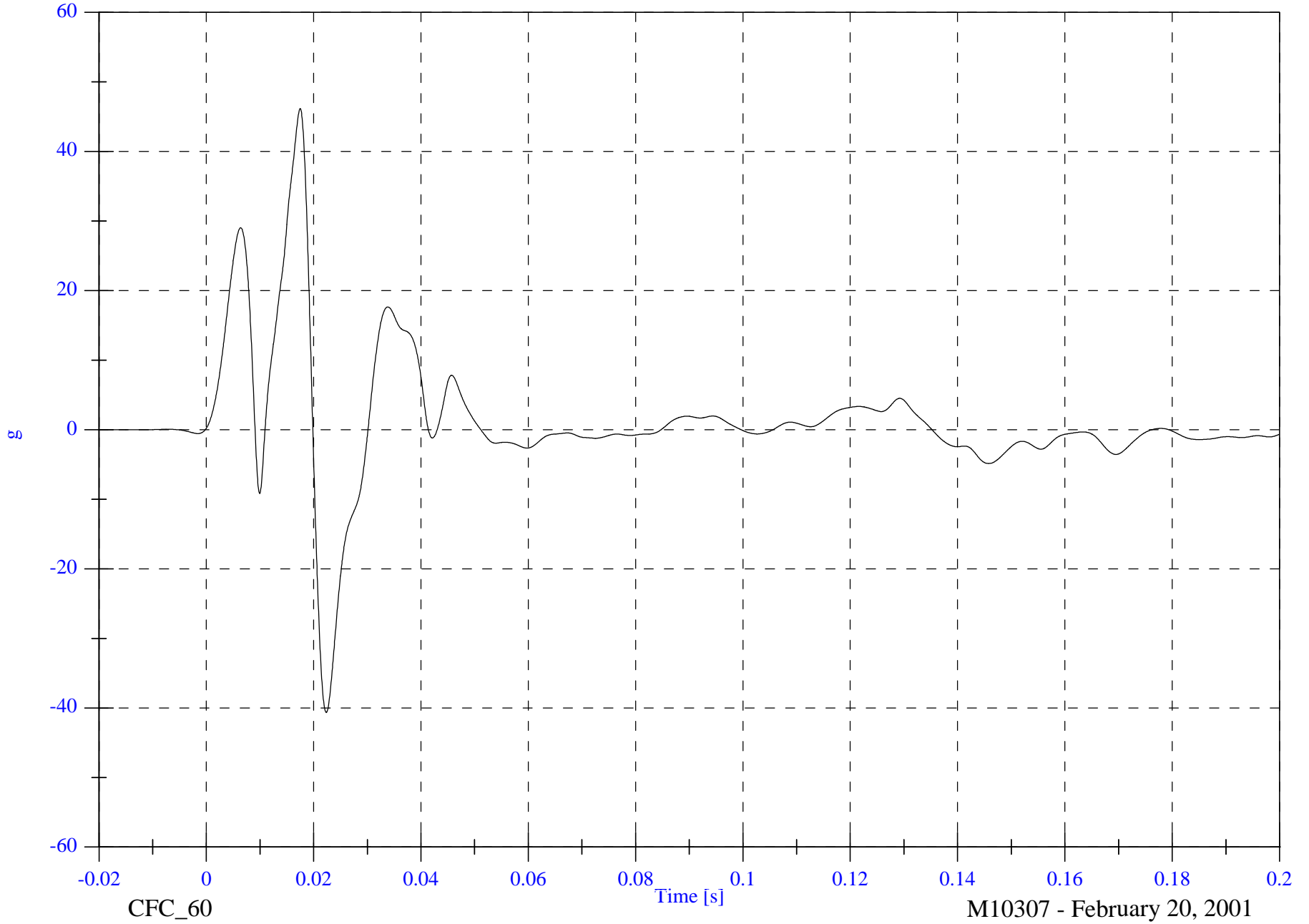
A5 Left Front Sill Y

Max: 46.2 [g] at 0.018 [s]

Min: -40.7 [g] at 0.022 [s]

B-67

8506-16



SNCAP Test 16 - 2001 Dodge Grand Caravan

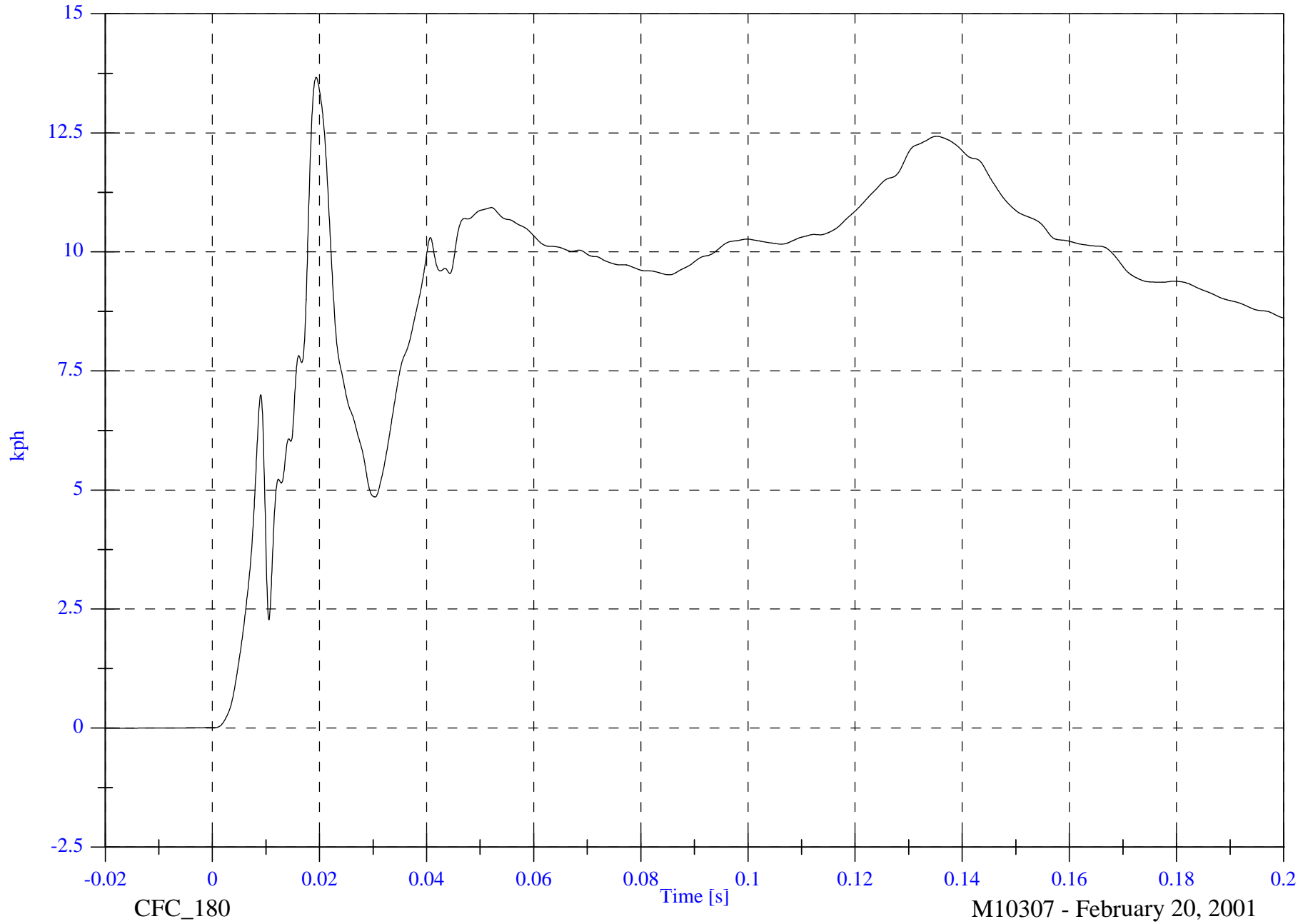
A5 Left Front Sill Y Velocity

Max: 13.7 [kph] at 0.019 [s]

Min: -0.0 [kph] at -0.020 [s]

B-68

8506-16

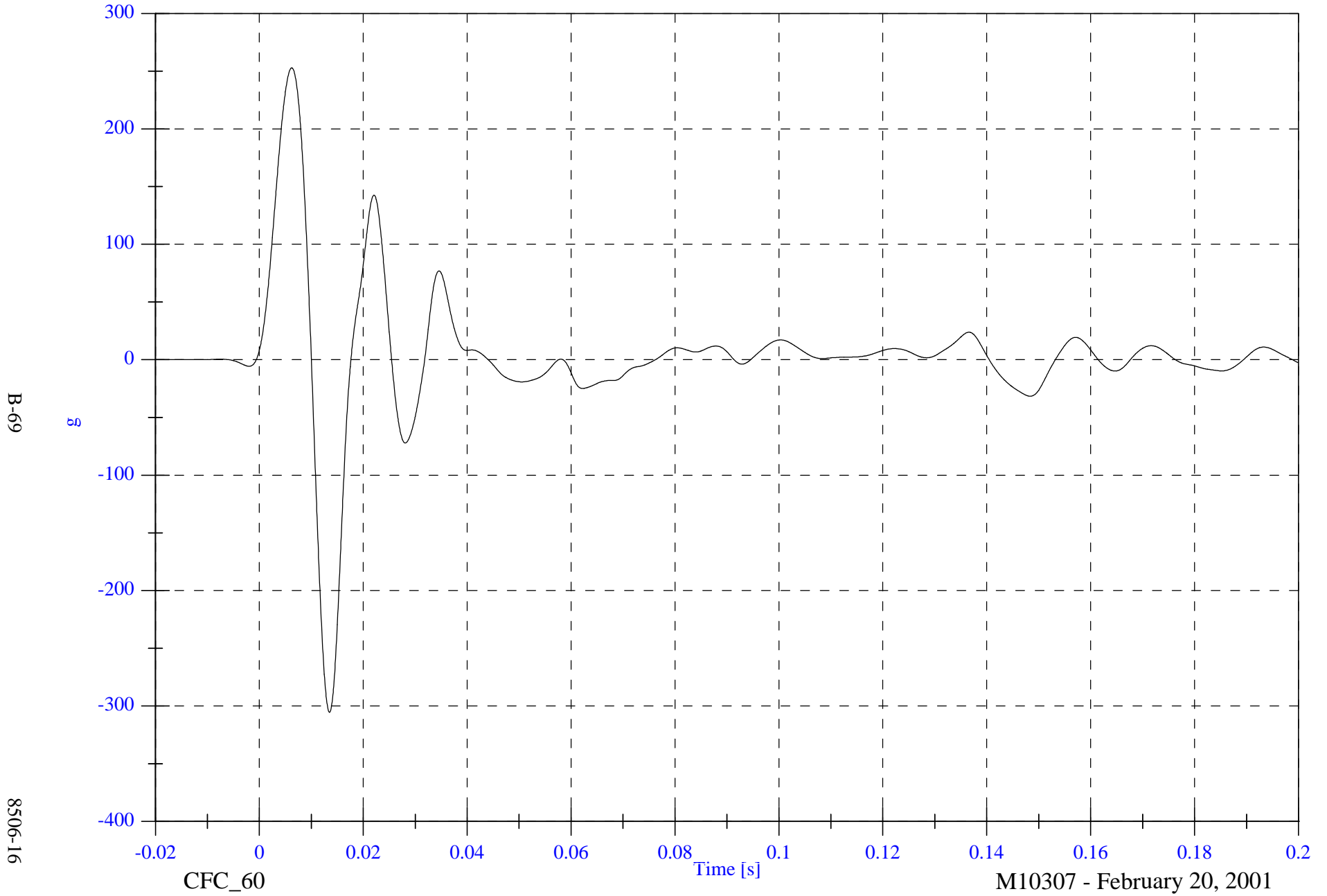


SNCAP Test 16 - 2001 Dodge Grand Caravan

A6 Left Front Door CL Y

Max: 252.8 [g] at 0.006 [s]

Min: -305.5 [g] at 0.014 [s]



B-69

8506-16

CFC_60

Time [s]

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

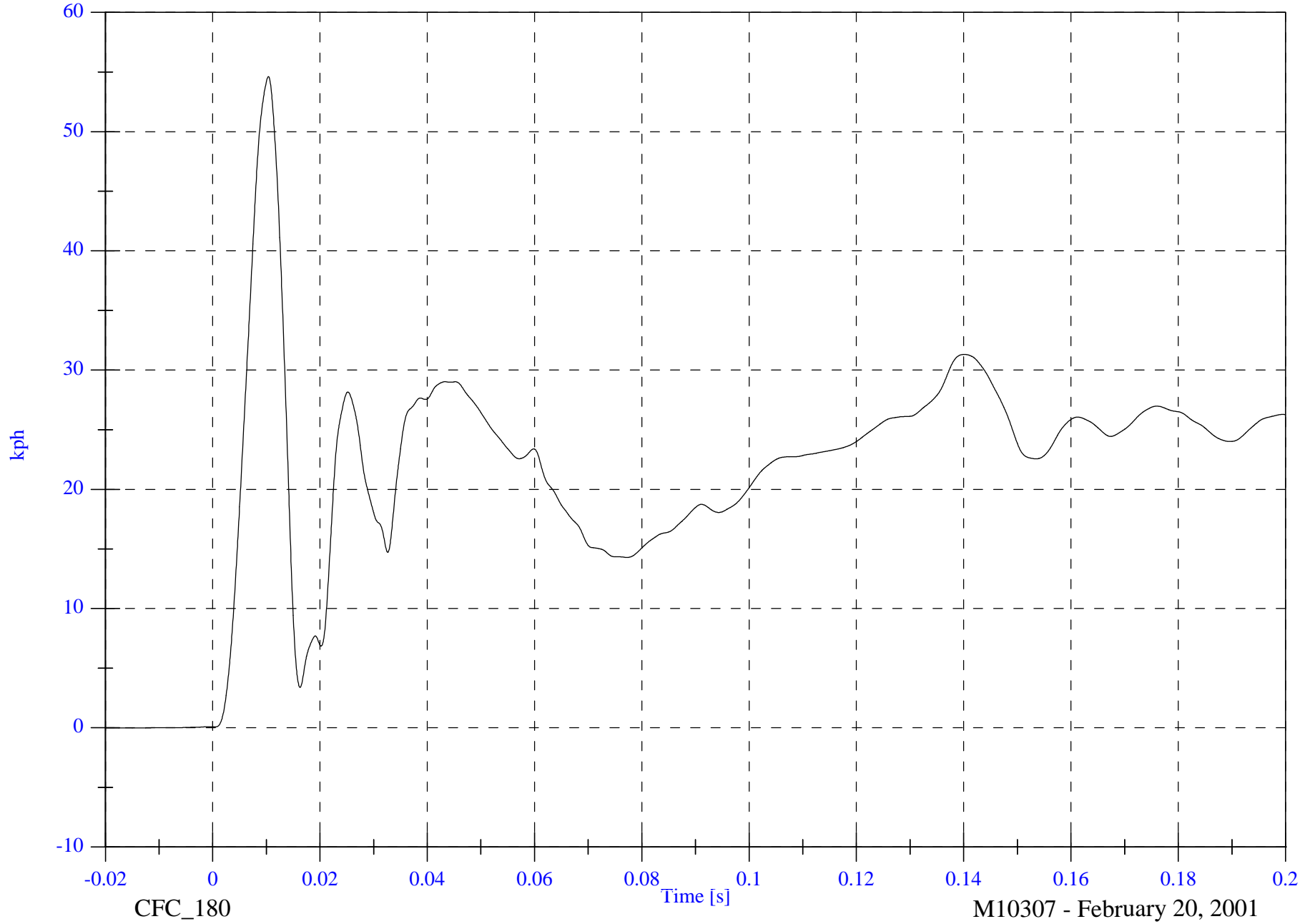
A6 Left Front Door CL Y Velocity

Max: 54.6 [kph] at 0.010 [s]

Min: -0.0 [kph] at -0.020 [s]

B-70

8506-16



CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

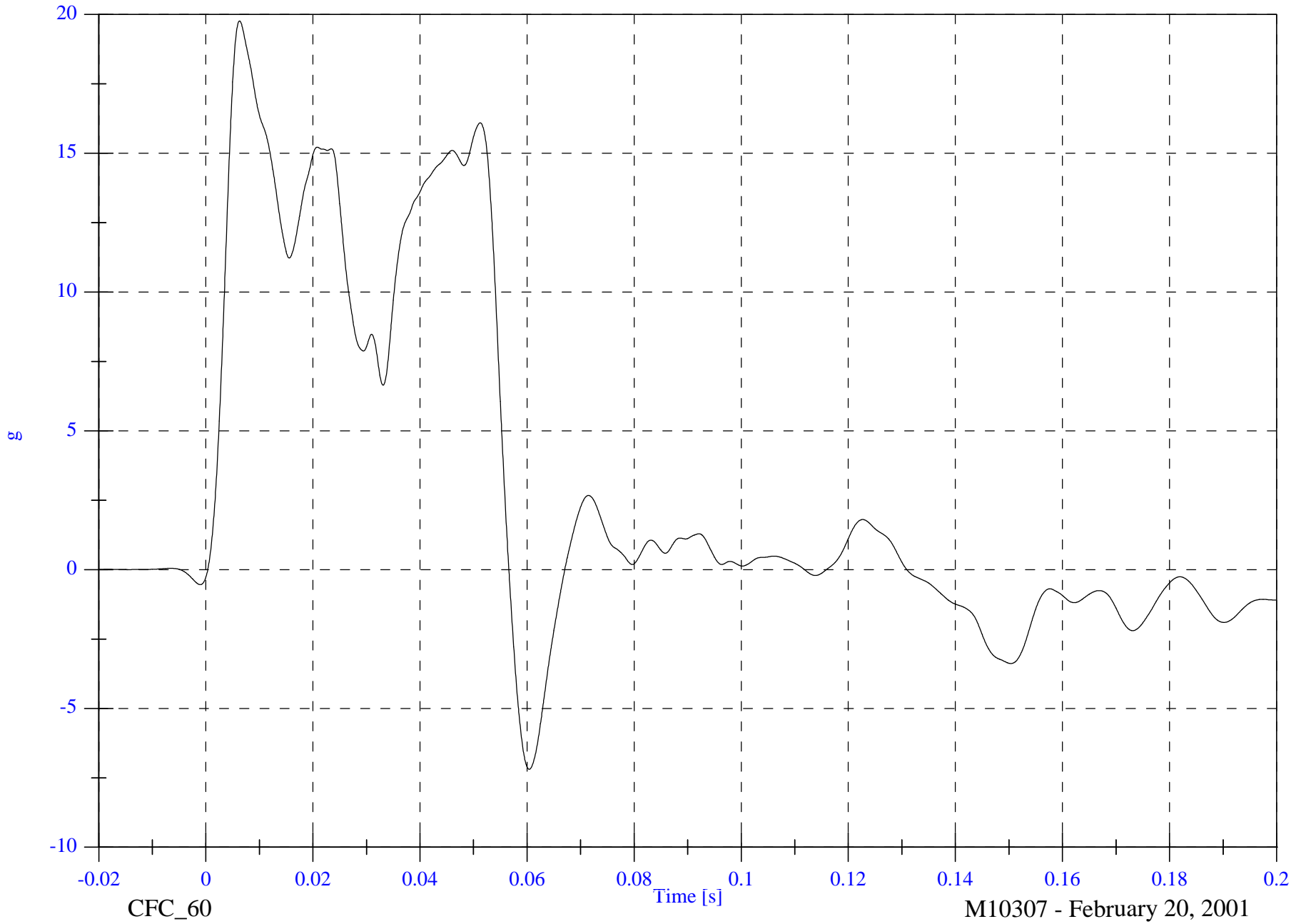
A7 Right Rear Compartment Y

Max: 19.8 [g] at 0.006 [s]

Min: -7.2 [g] at 0.060 [s]

B-71

8506-16



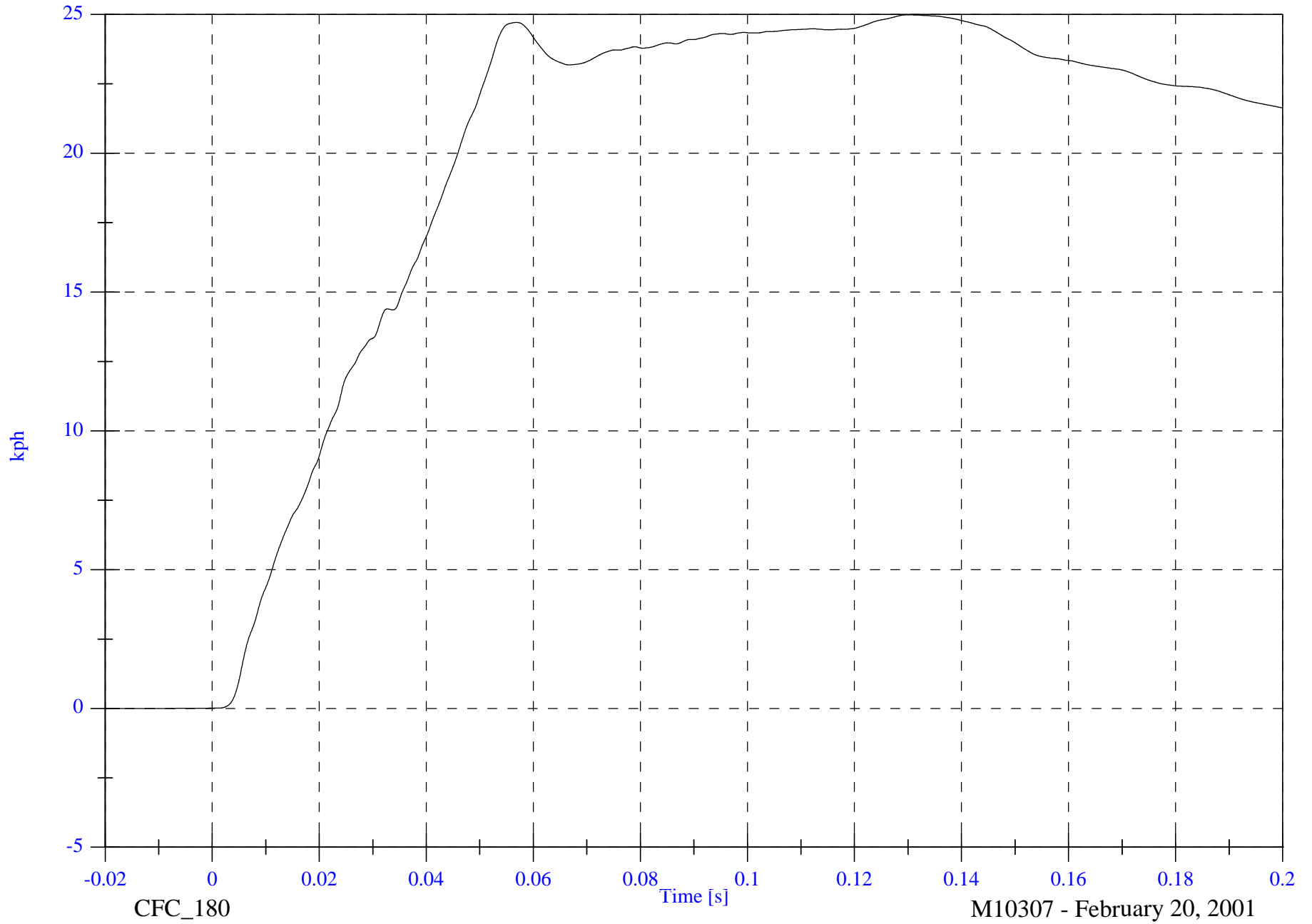
M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

A7 Right Rear Compartment Y Velocity

Max: 25.0 [kph] at 0.130 [s]

Min: -0.0 [kph] at -0.020 [s]



B-72

8506-16

CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

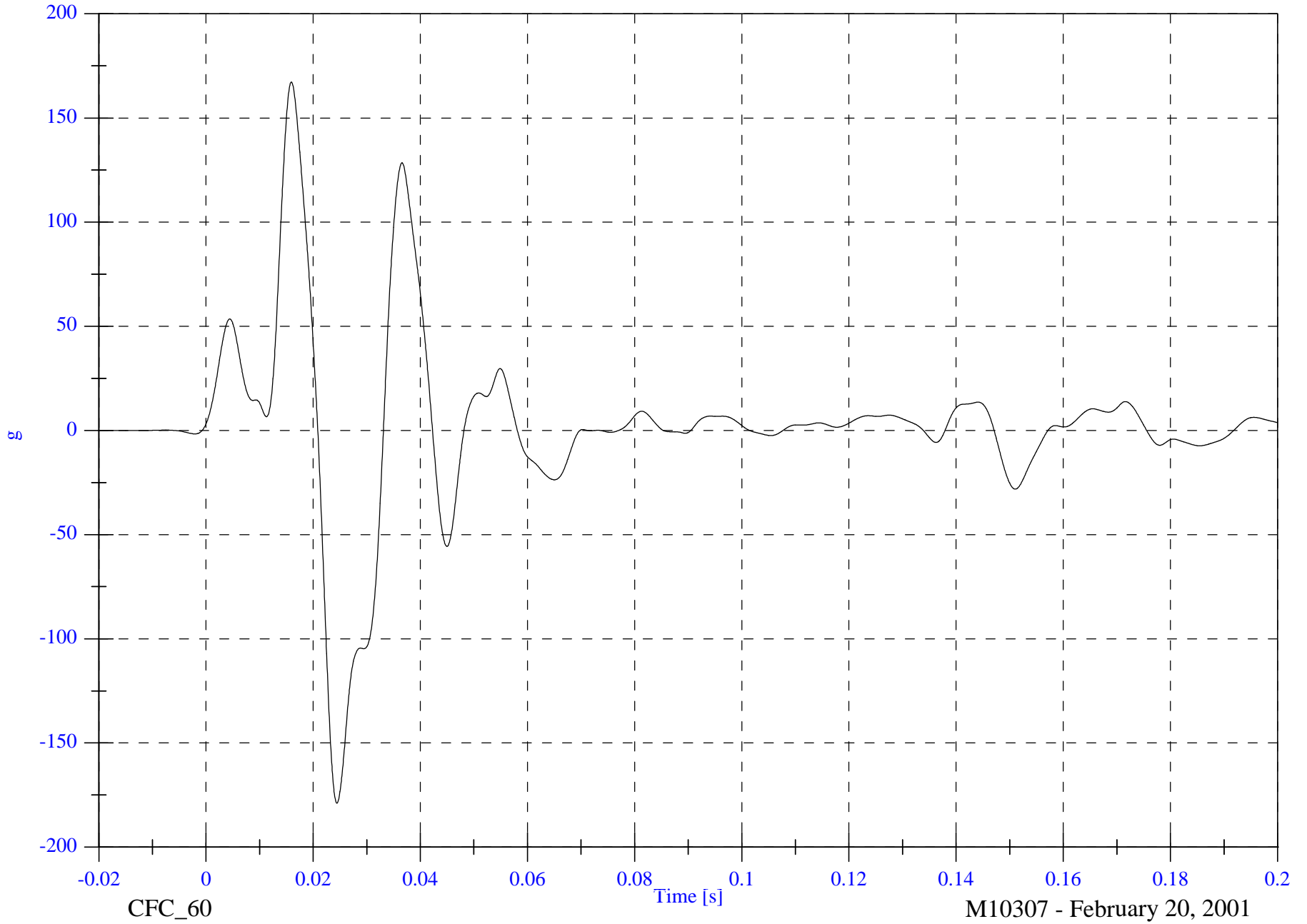
A9 Left Front Door Upper C/L Y

Max: 167.3 [g] at 0.016 [s]

Min: -178.9 [g] at 0.024 [s]

B-73

8506-16



CFC_60

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

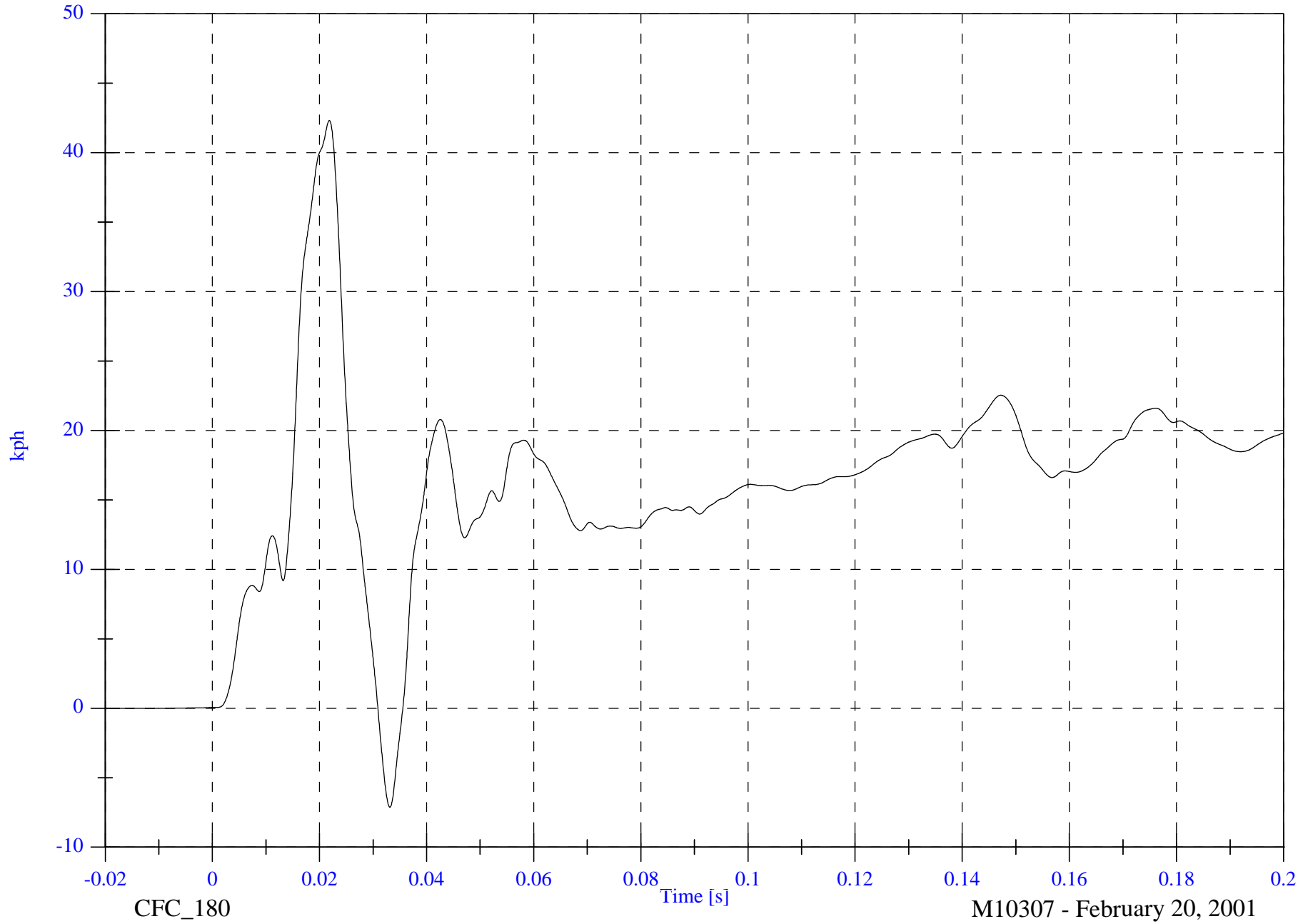
A9 Left Front Door Upper C/L Y Velocity

Max: 42.3 [kph] at 0.022 [s]

Min: -7.1 [kph] at 0.033 [s]

B-74

8506-16



CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

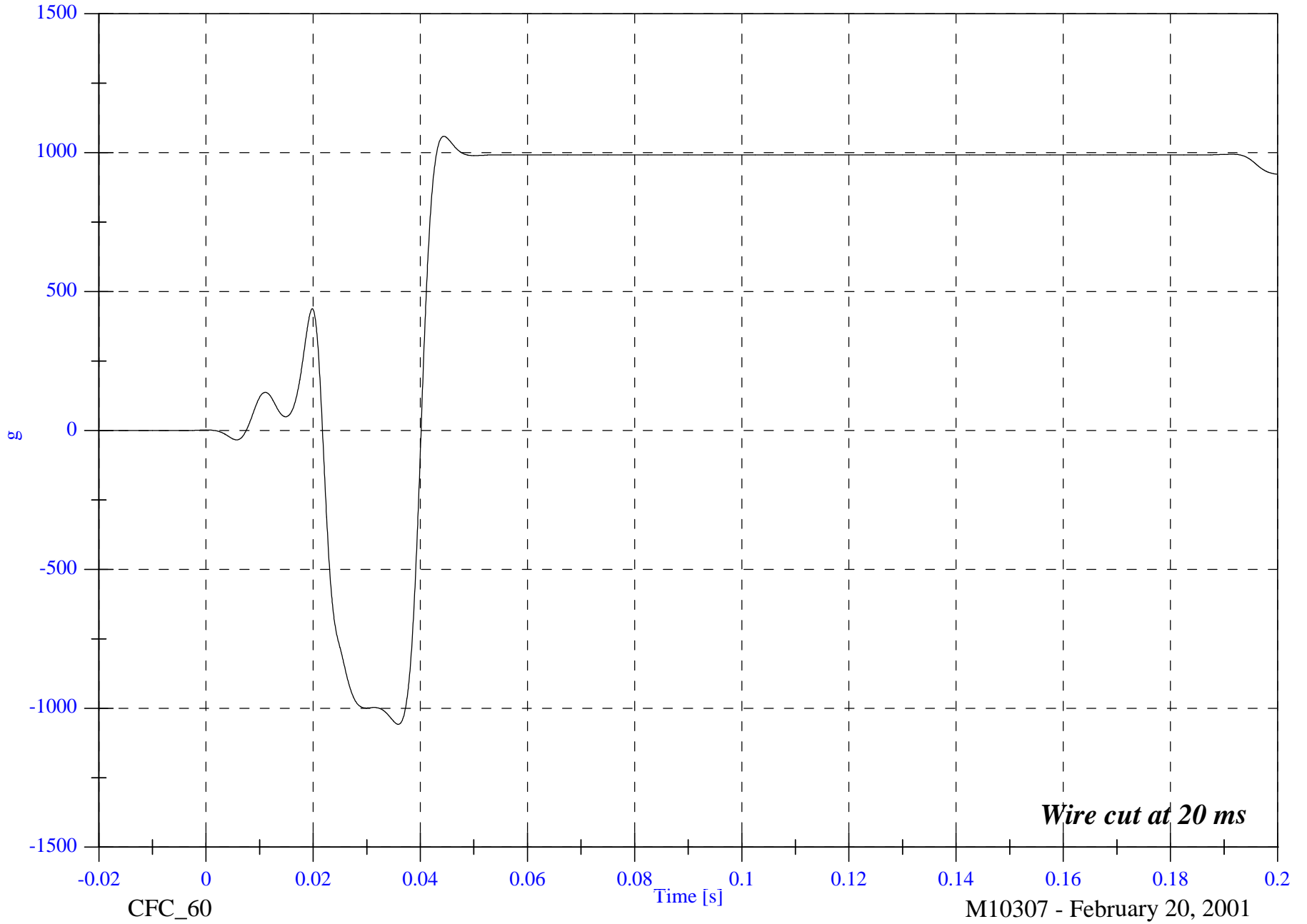
A11 Left Rear Door Upper C/L Y

Max: 1058.9 [g] at 0.044 [s]

Min: -1058.0 [g] at 0.036 [s]

B-75

8506-16



SNCAP Test 16 - 2001 Dodge Grand Caravan

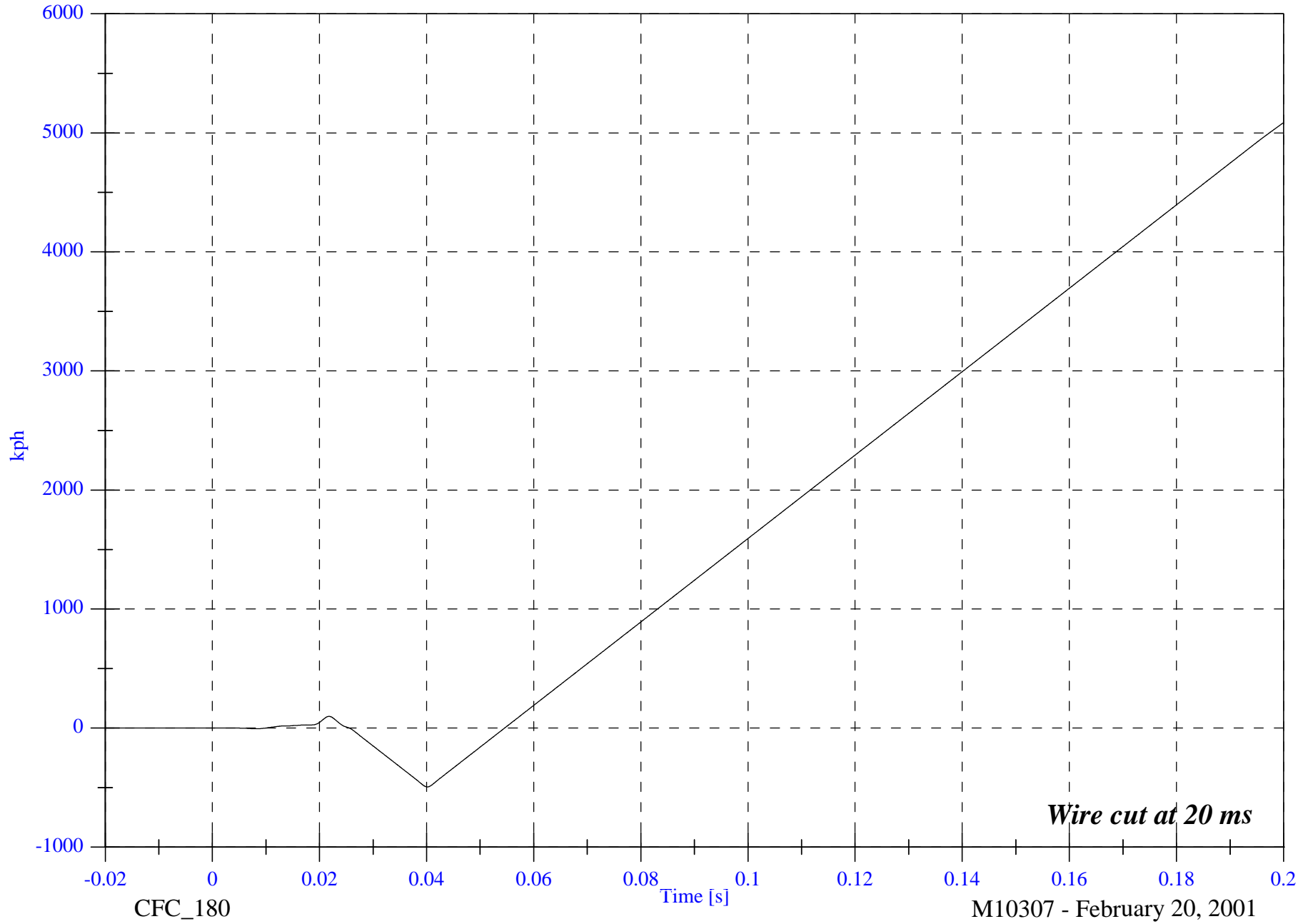
A11 Left Rear Door Upper C/L Y Velocity

Max: 5084.5 [kph] at 0.200 [s]

Min: -494.6 [kph] at 0.040 [s]

B-76

8506-16



Wire cut at 20 ms

CFC_180

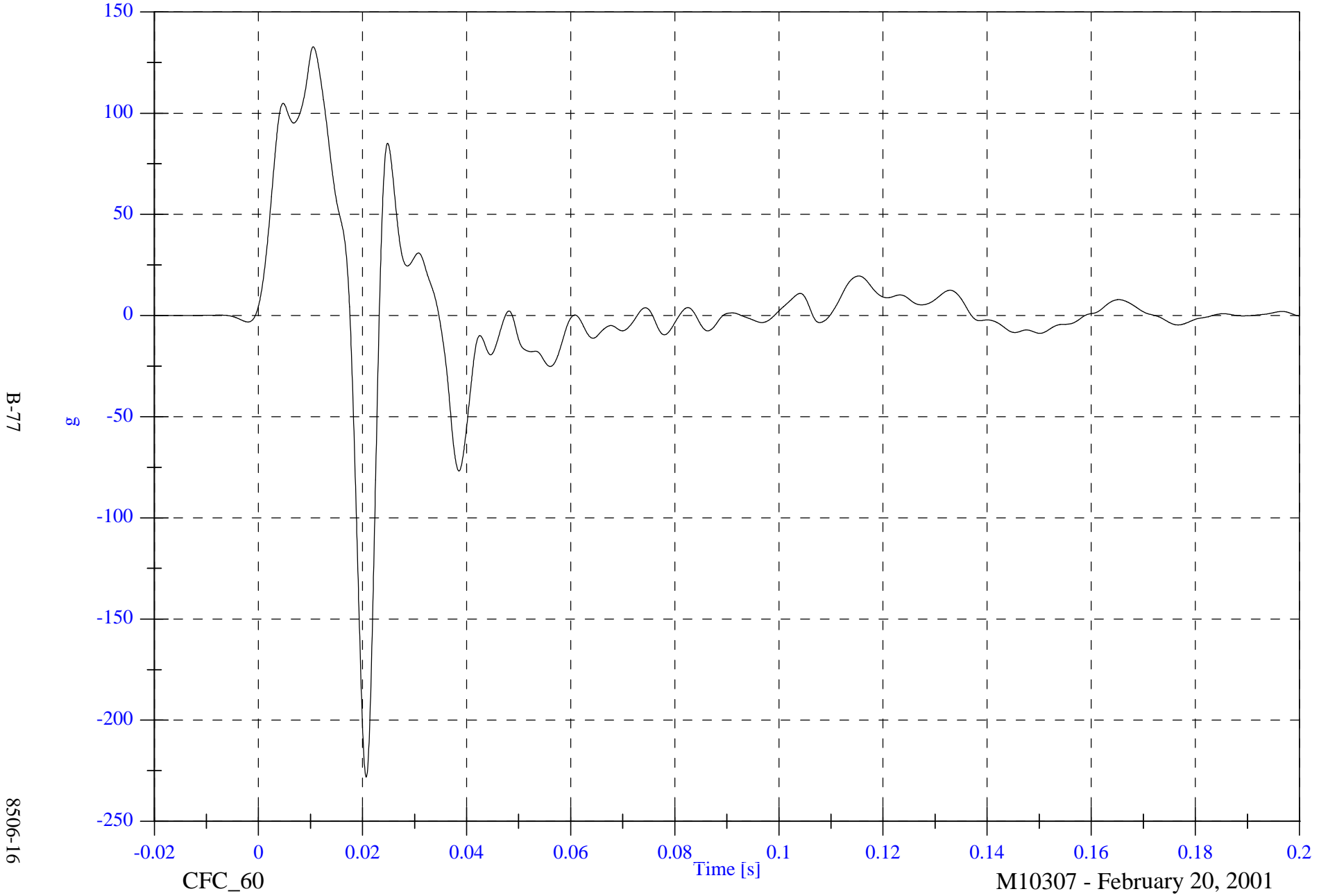
M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

Max: 132.8 [g] at 0.011 [s]

A12 Left Lower B Post Y

Min: -228.1 [g] at 0.021 [s]



B-77

8506-16

CFC_60

Time [s]

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

Max: 52.2 [kph] at 0.019 [s]

A12 Left Lower B Post Y Velocity

Min: -0.0 [kph] at -0.020 [s]

B-78

8506-16



CFC_180

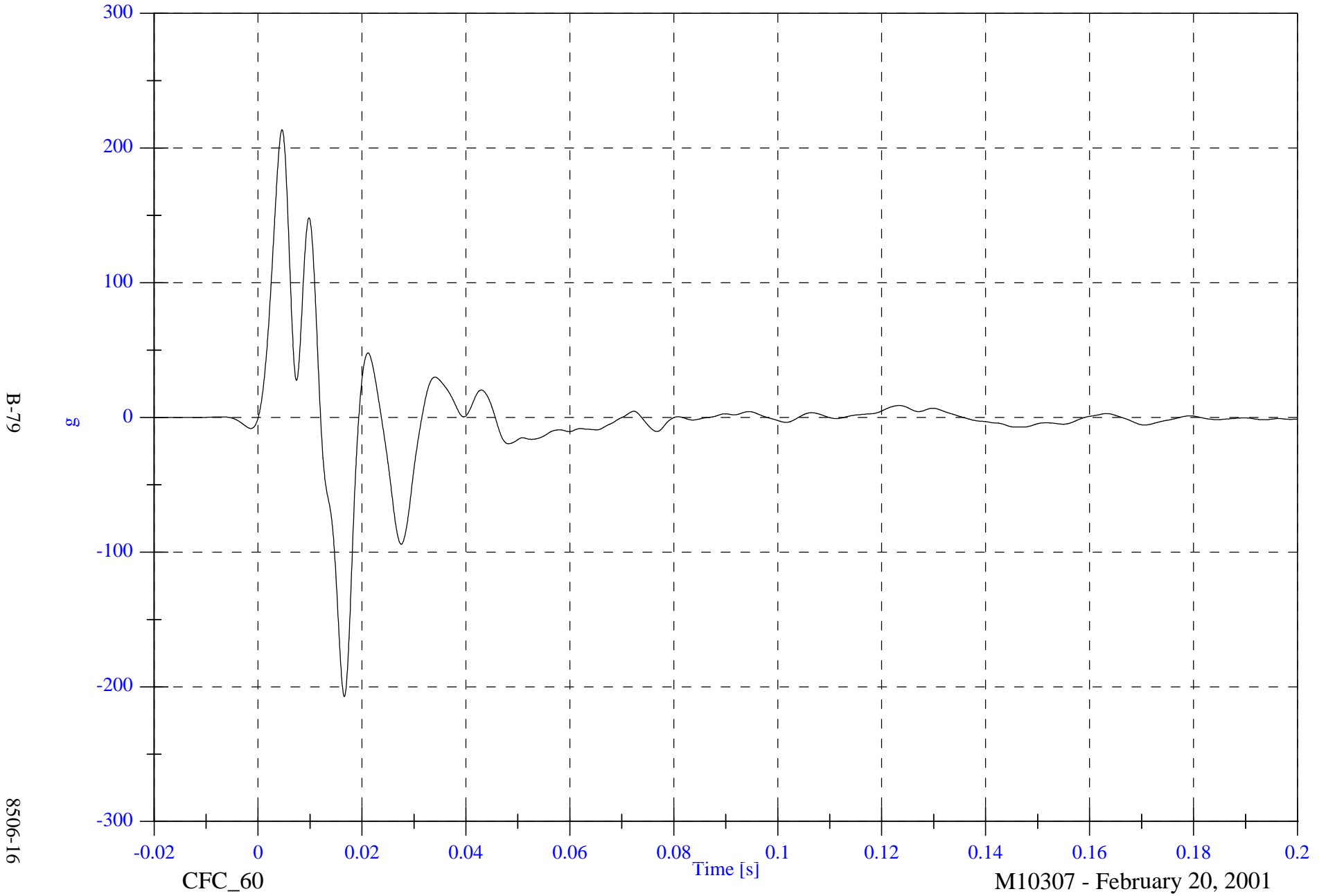
M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

A13 Left Mid B Post Y

Max: 213.7 [g] at 0.005 [s]

Min: -207.3 [g] at 0.017 [s]



B-79

8506-16

CFC_60

Time [s]

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

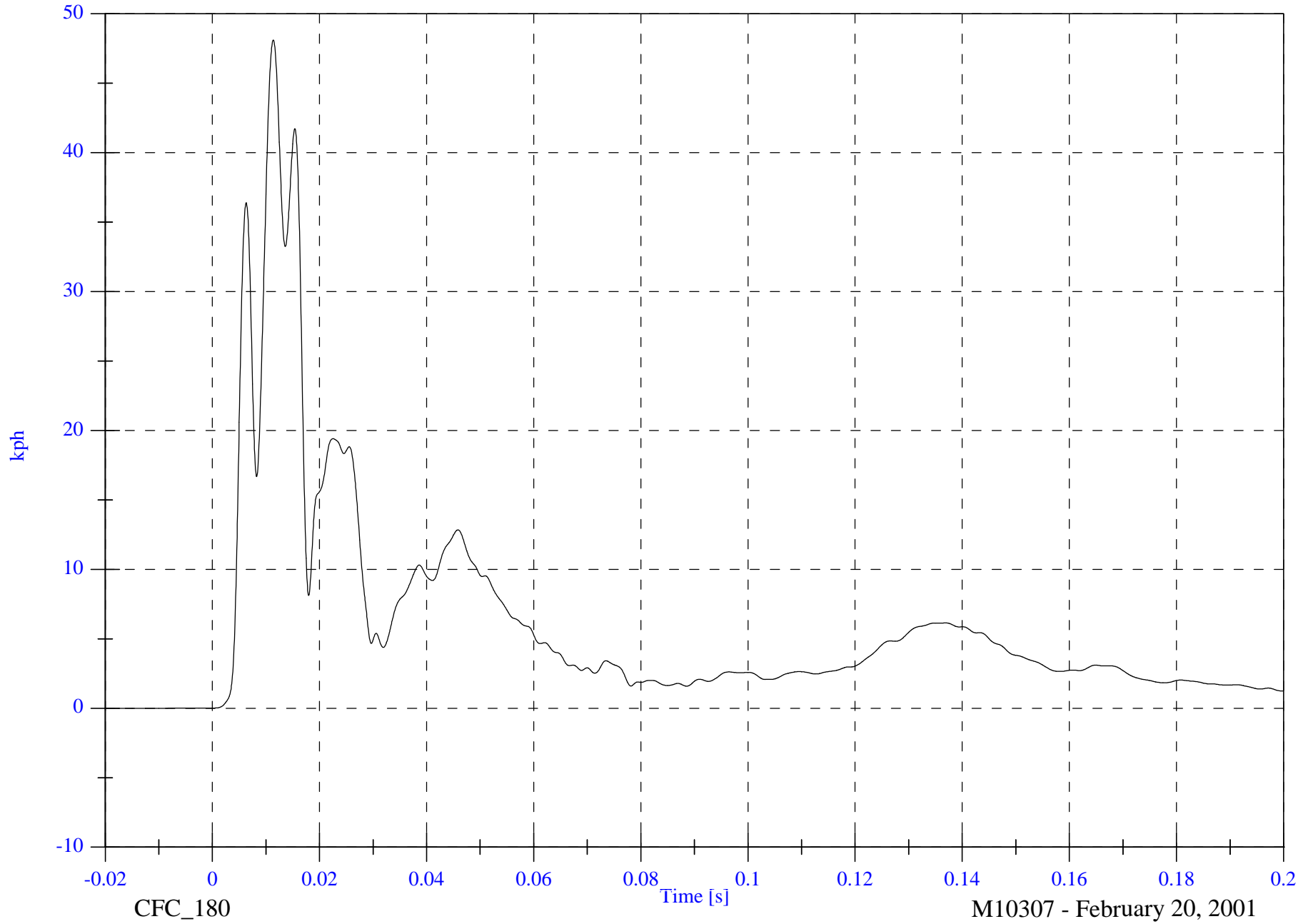
A13 Left Mid B Post Y Velocity

Max: 48.1 [kph] at 0.011 [s]

Min: -0.0 [kph] at -0.018 [s]

B-80

8506-16

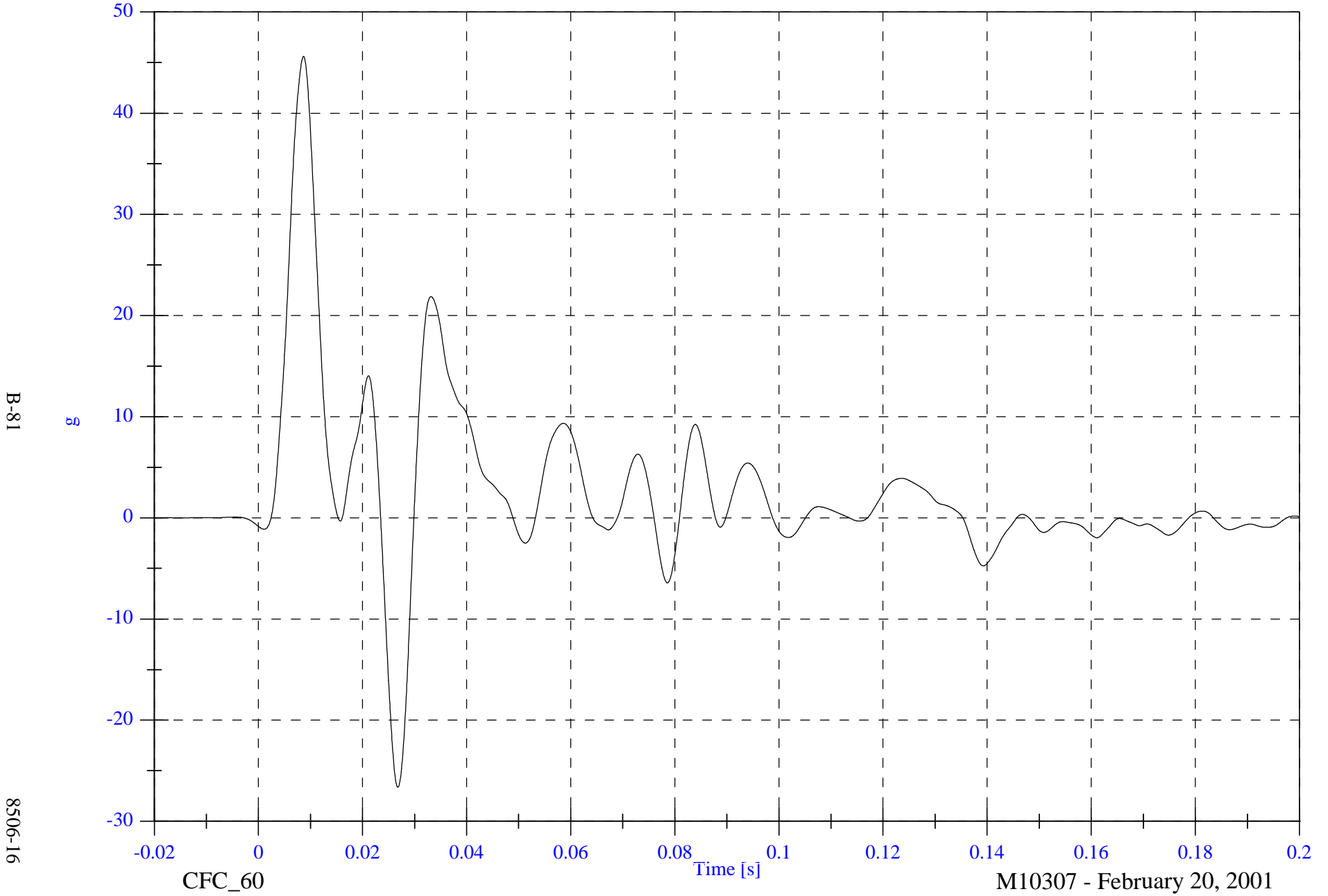


SNCAP Test 16 - 2001 Dodge Grand Caravan

A14 Left Lower A Post Y

Max: 45.6 [g] at 0.009 [s]

Min: -26.6 [g] at 0.027 [s]



B-81

8506-16

CFC_60

Time [s]

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

A14 Left Lower A Post Y Velocity

Max: 20.5 [kph] at 0.136 [s]

Min: -0.2 [kph] at 0.004 [s]

B-82

8506-16



CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

A15 Left Mid A Post Y

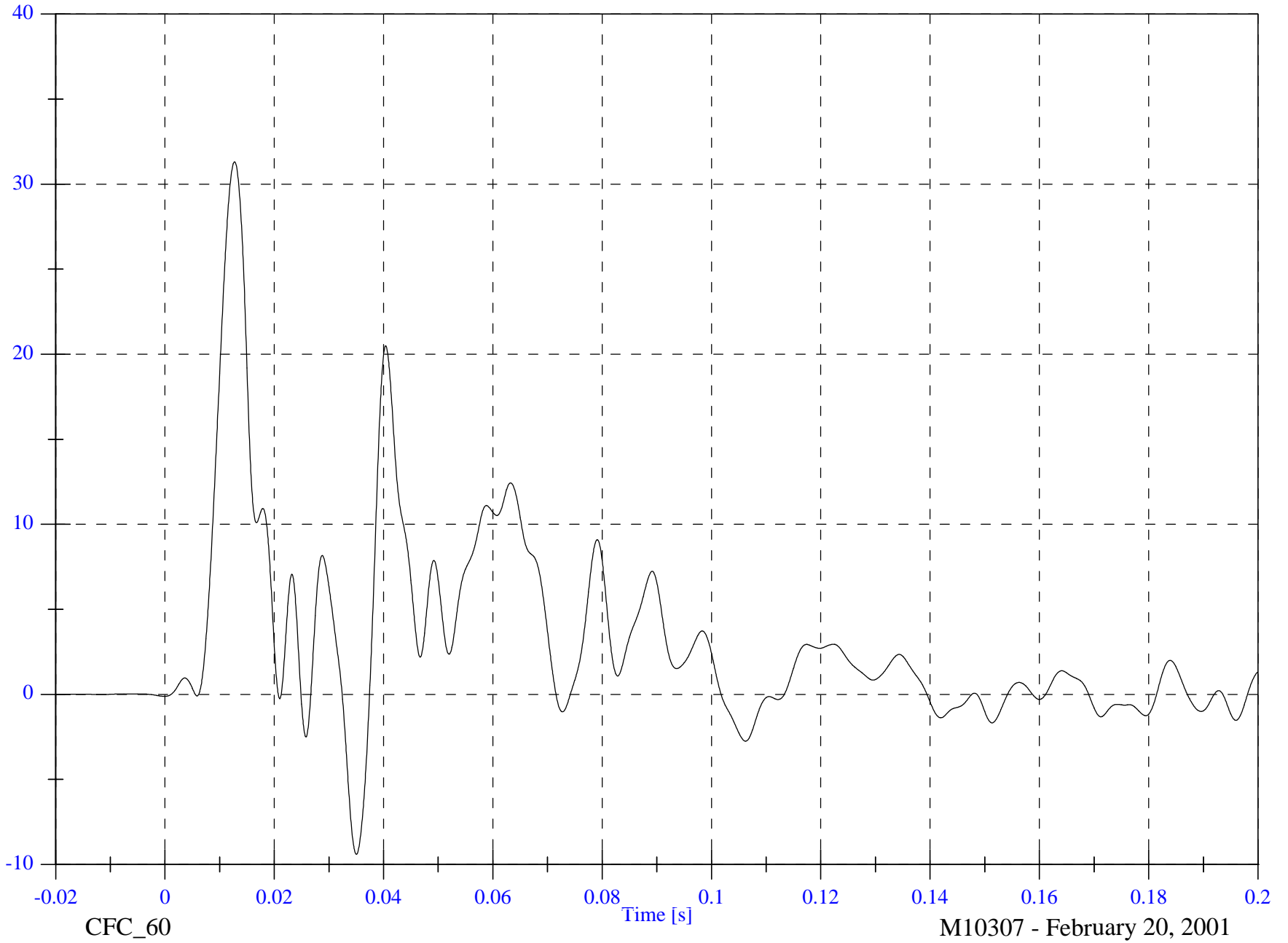
Max: 31.3 [g] at 0.013 [s]

Min: -9.4 [g] at 0.035 [s]

B-83

g

8506-16



SNCAP Test 16 - 2001 Dodge Grand Caravan

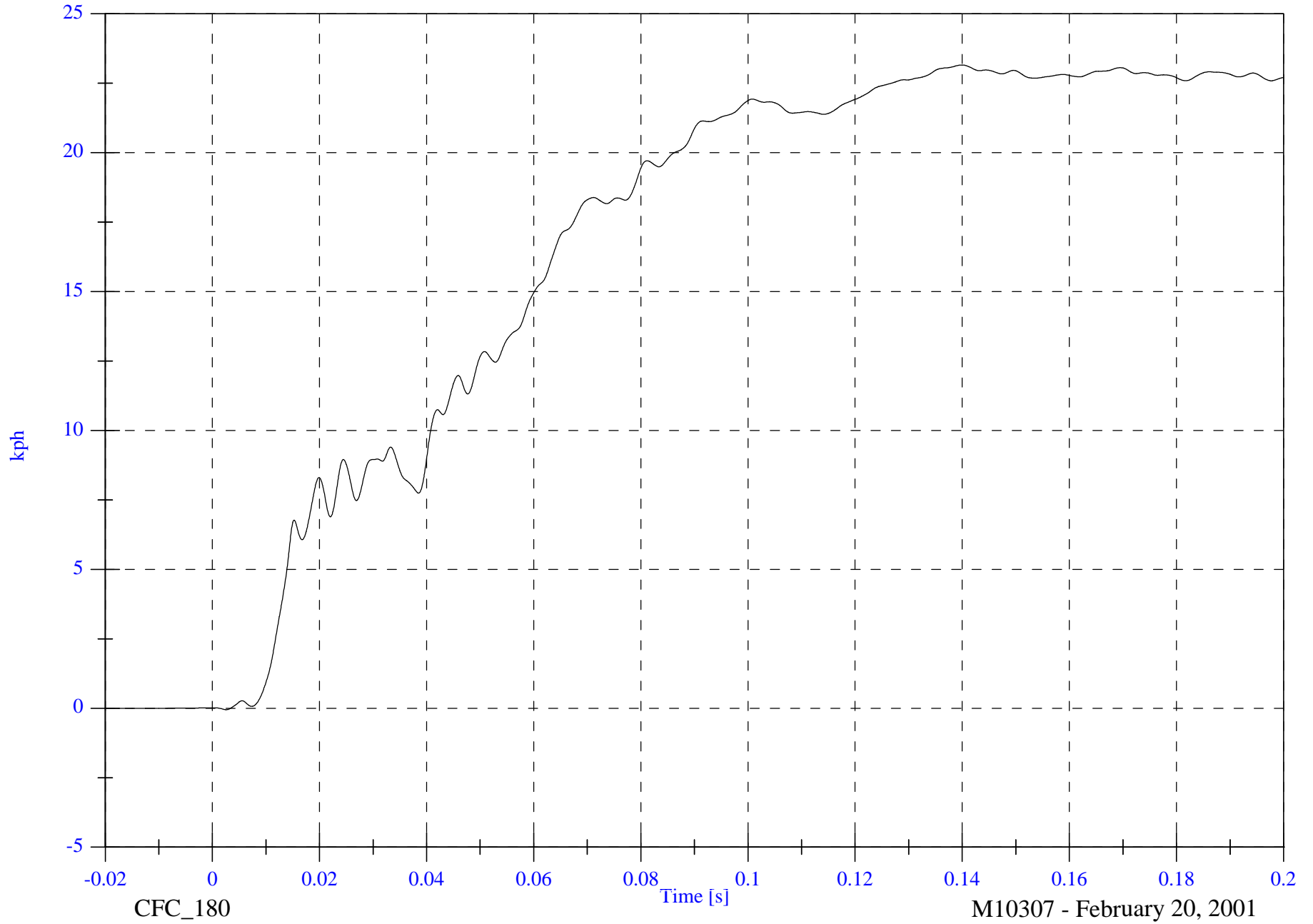
Max: 23.2 [kph] at 0.140 [s]

A15 Left Mid A Post Y Velocity

Min: -0.1 [kph] at 0.003 [s]

B-84

8506-16

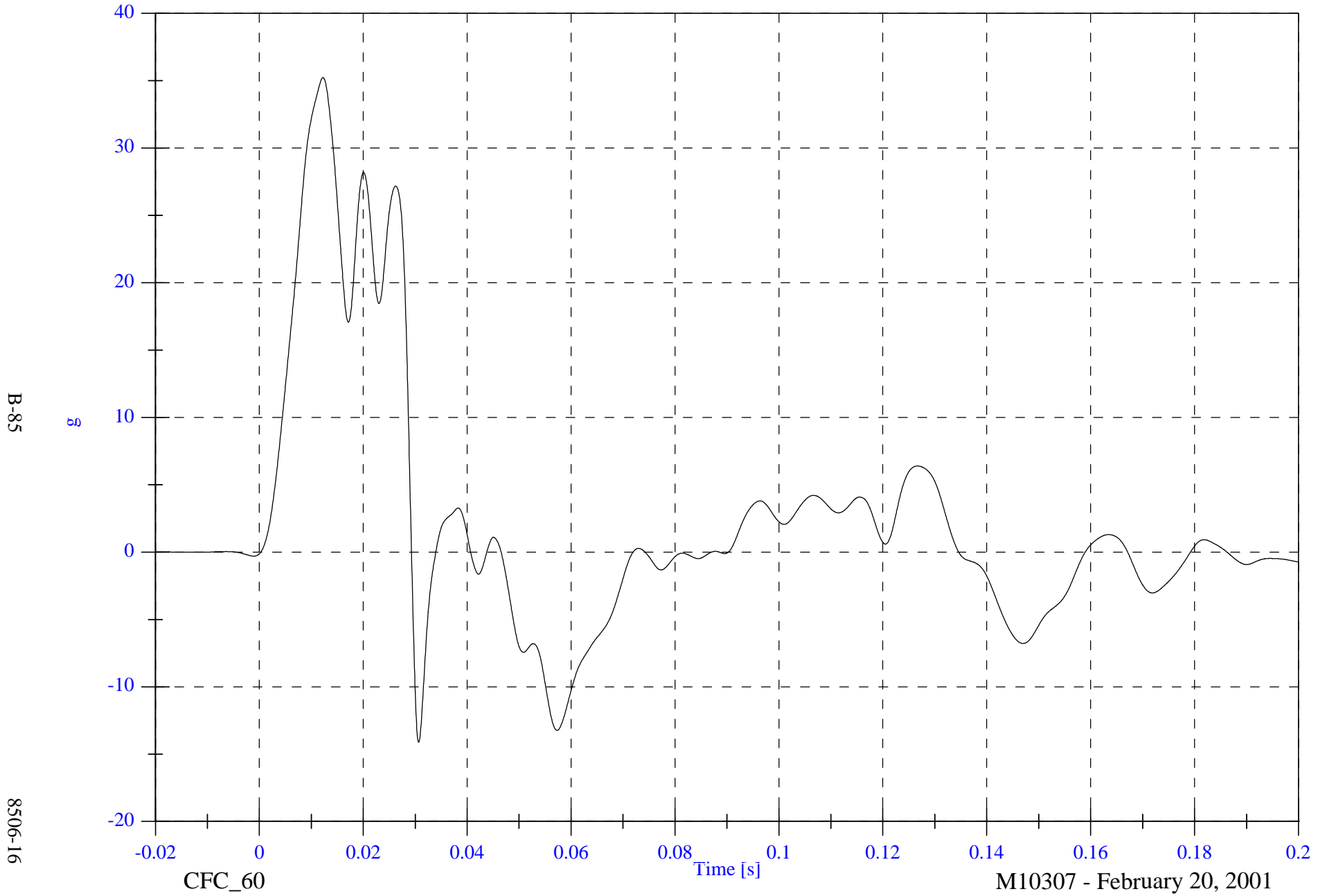


SNCAP Test 16 - 2001 Dodge Grand Caravan

A16 Front Seat Track Y

Max: 35.2 [g] at 0.012 [s]

Min: -14.1 [g] at 0.031 [s]



B-85

8506-16

CFC_60

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

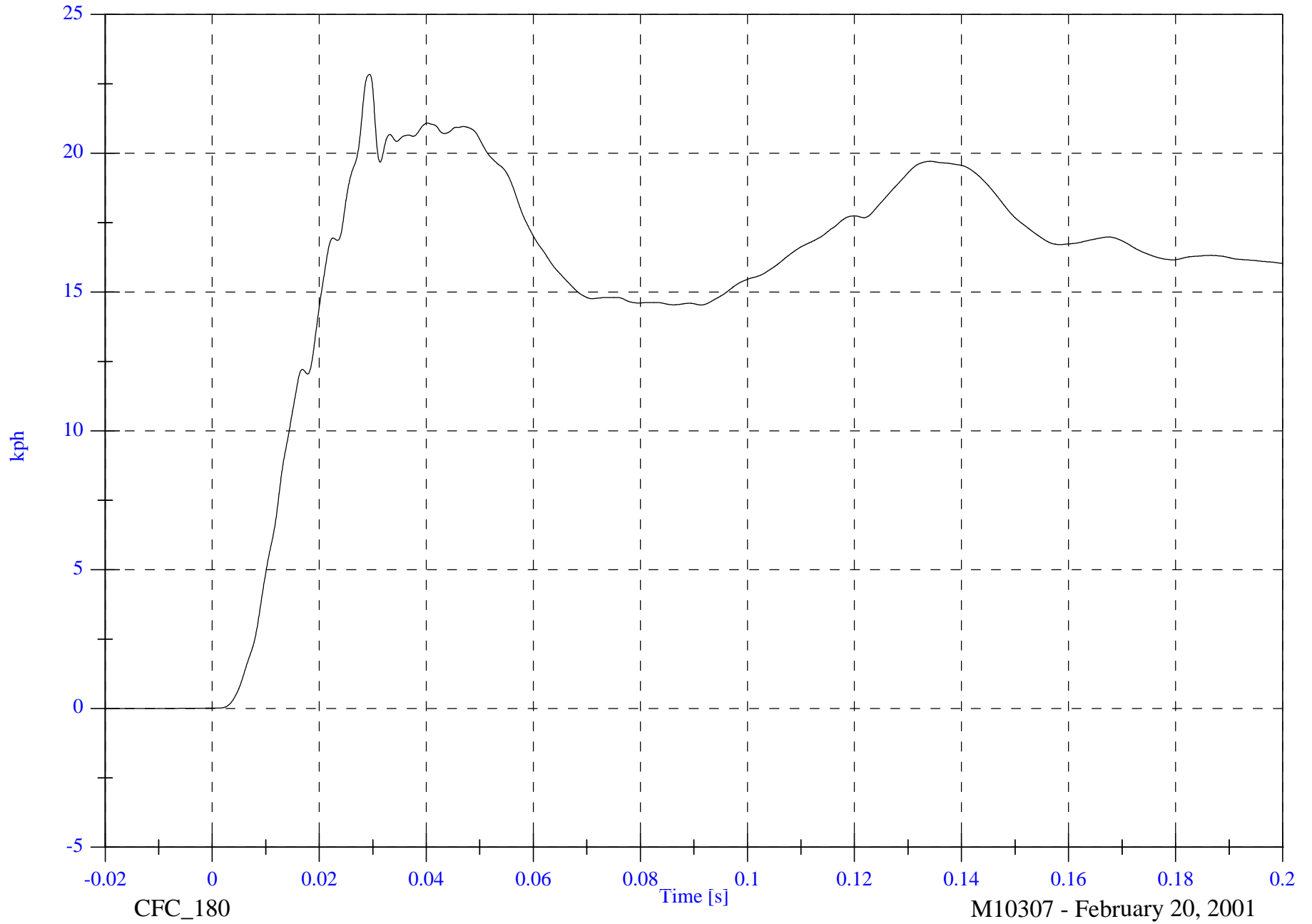
A16 Front Seat Track Y Velocity

Max: 22.8 [kph] at 0.029 [s]

Min: -0.0 [kph] at -0.020 [s]

B-86

8506-16



CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

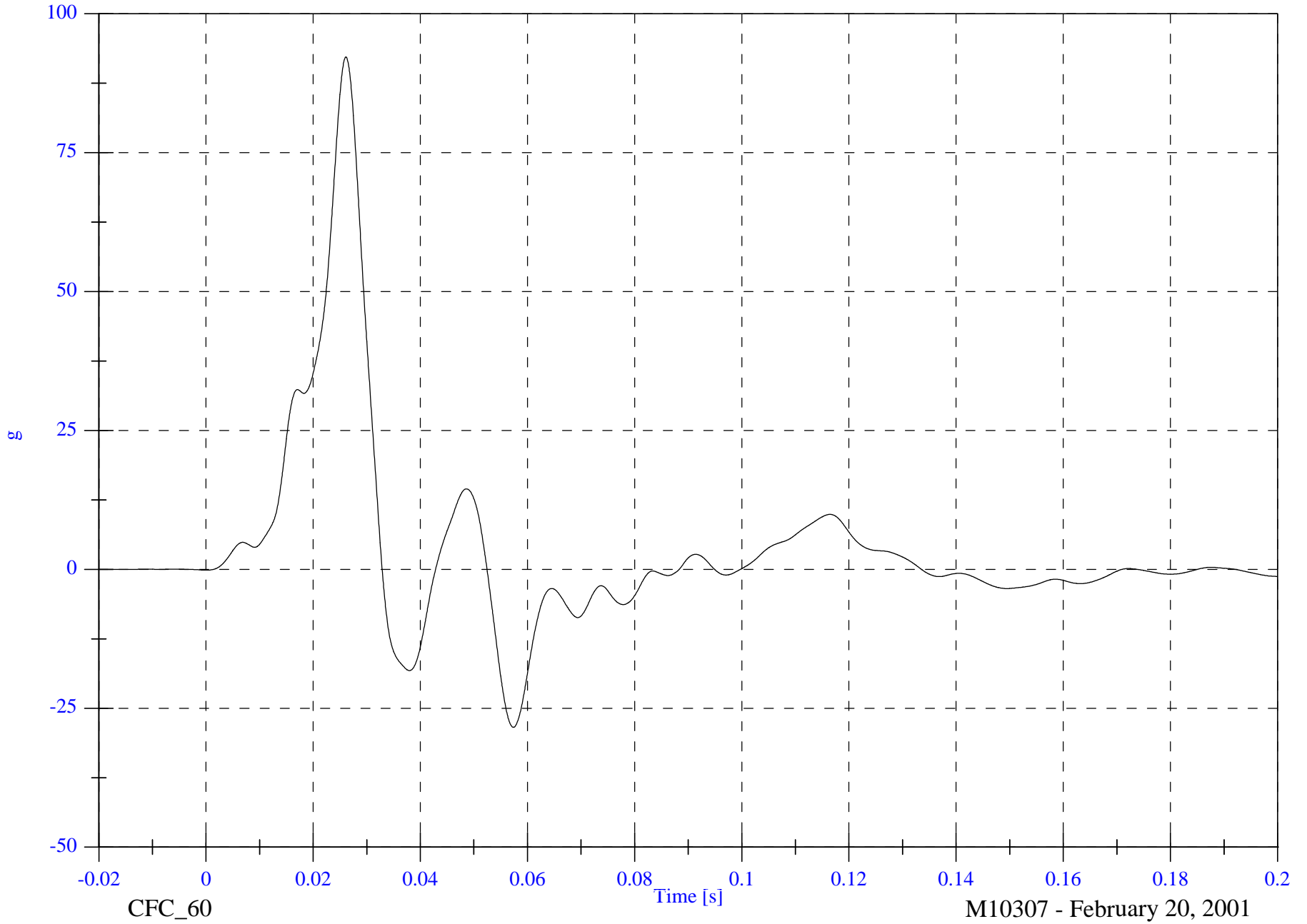
A17 Rear Seat Track Y

Max: 92.2 [g] at 0.026 [s]

Min: -28.4 [g] at 0.057 [s]

B-87

8506-16



CFC_60

Time [s]

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

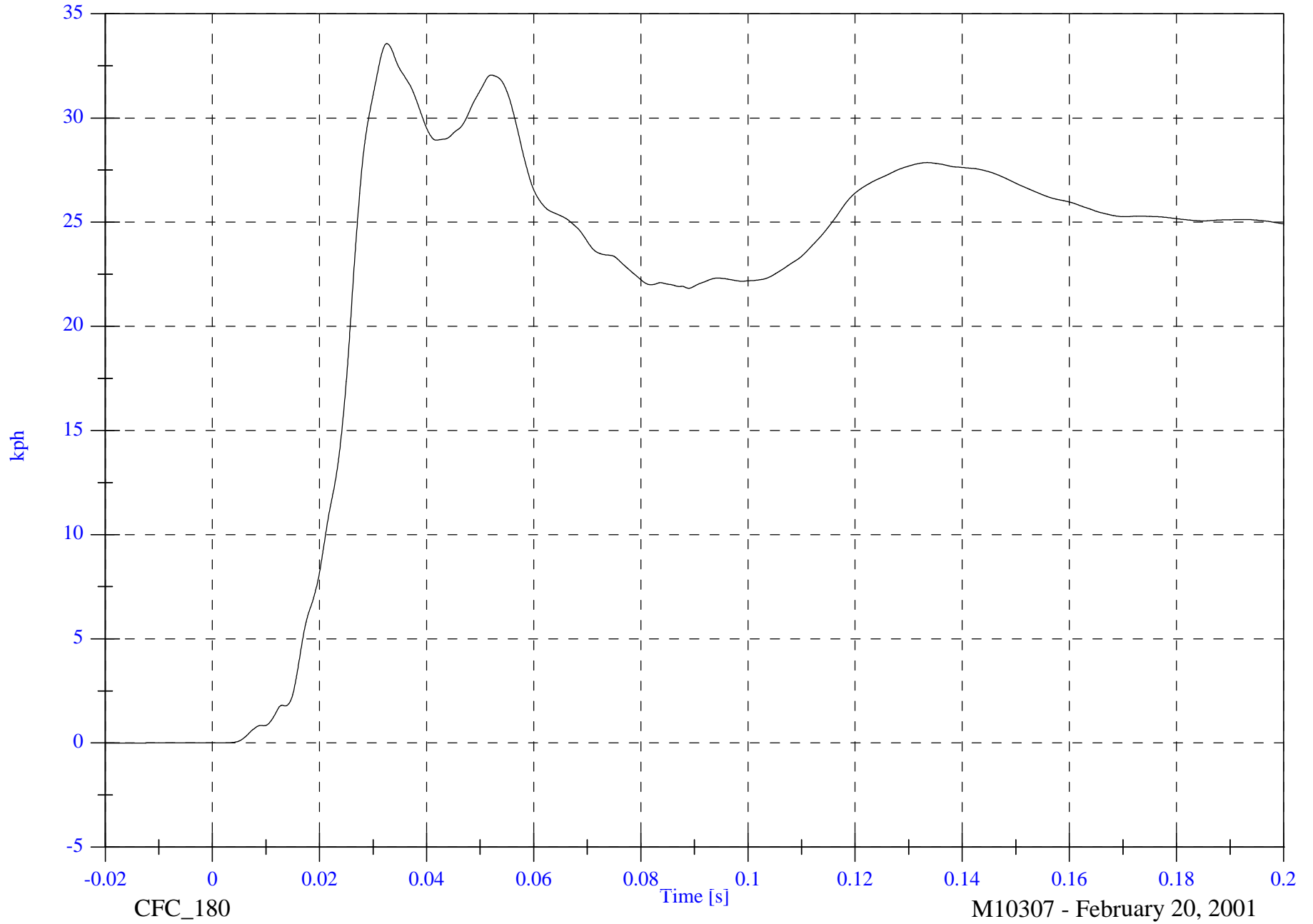
A17 Rear Seat Track Y Velocity

Max: 33.6 [kph] at 0.033 [s]

Min: -0.0 [kph] at -0.014 [s]

B-88

8506-16



CFC_180

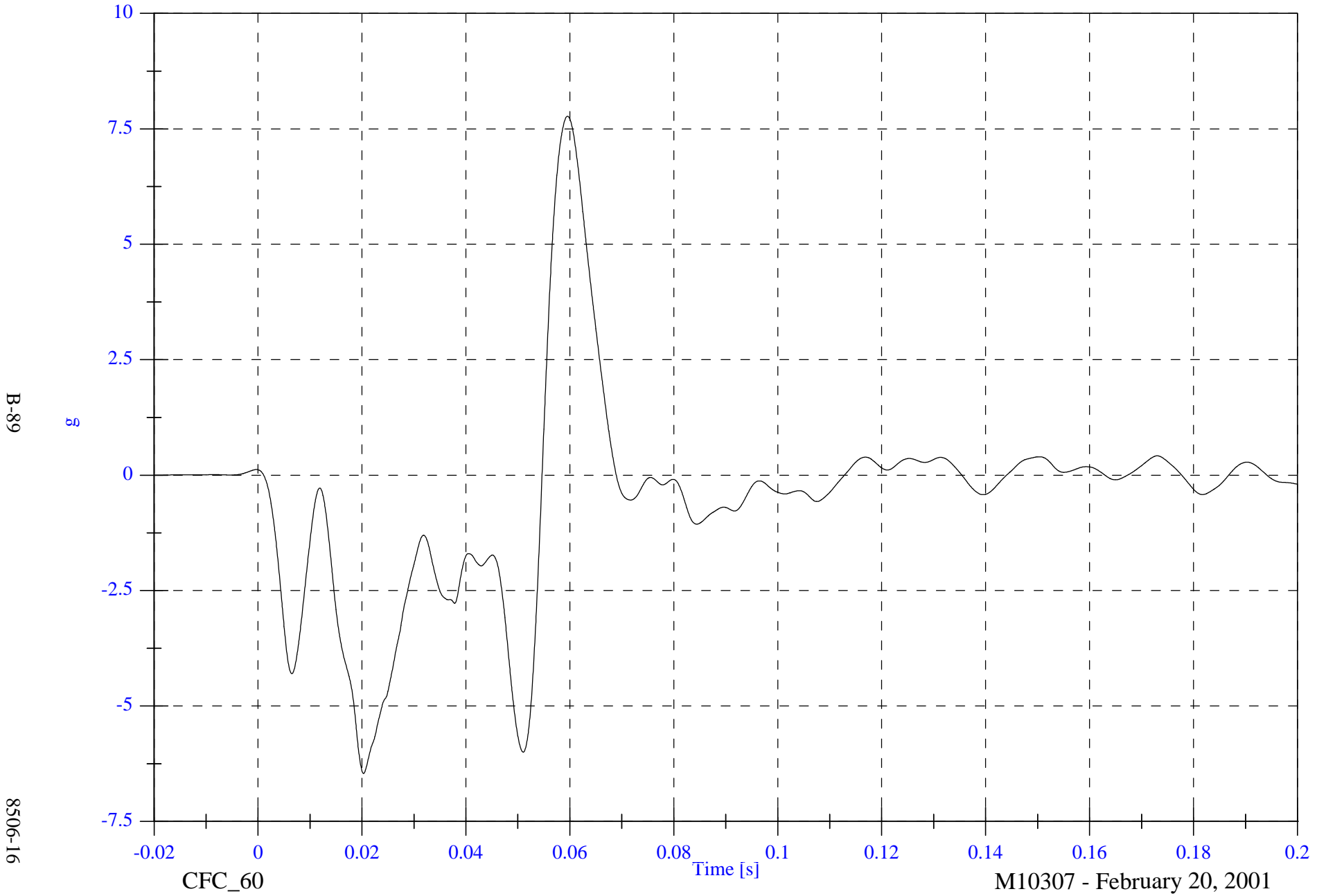
M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

A18 Target CG X

Max: 7.8 [g] at 0.060 [s]

Min: -6.5 [g] at 0.020 [s]



SNCAP Test 16 - 2001 Dodge Grand Caravan

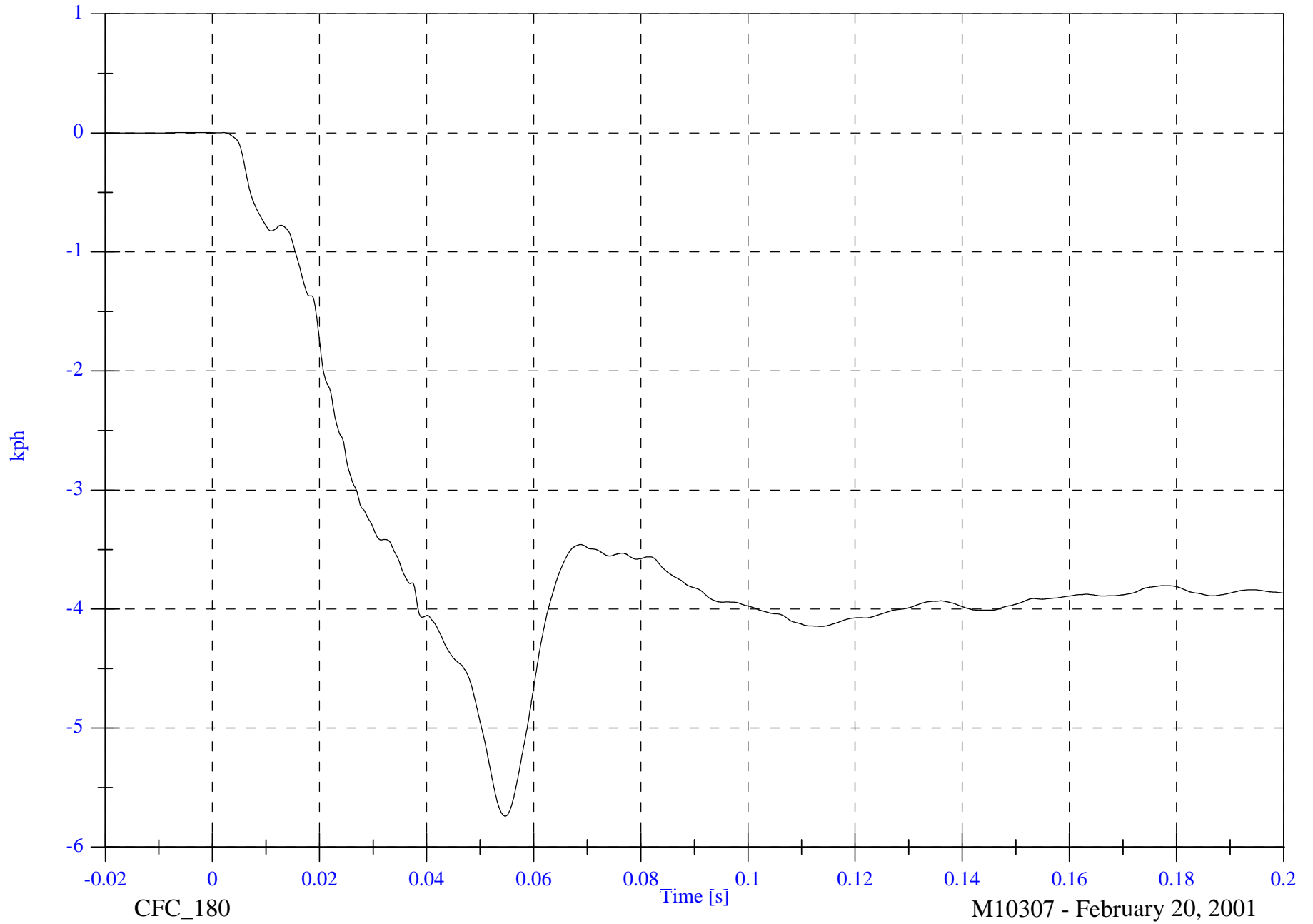
A18 Target CG X Velocity

Max: 0.0 [kph] at -0.002 [s]

Min: -5.7 [kph] at 0.055 [s]

B-90

8506-16



CFC_180

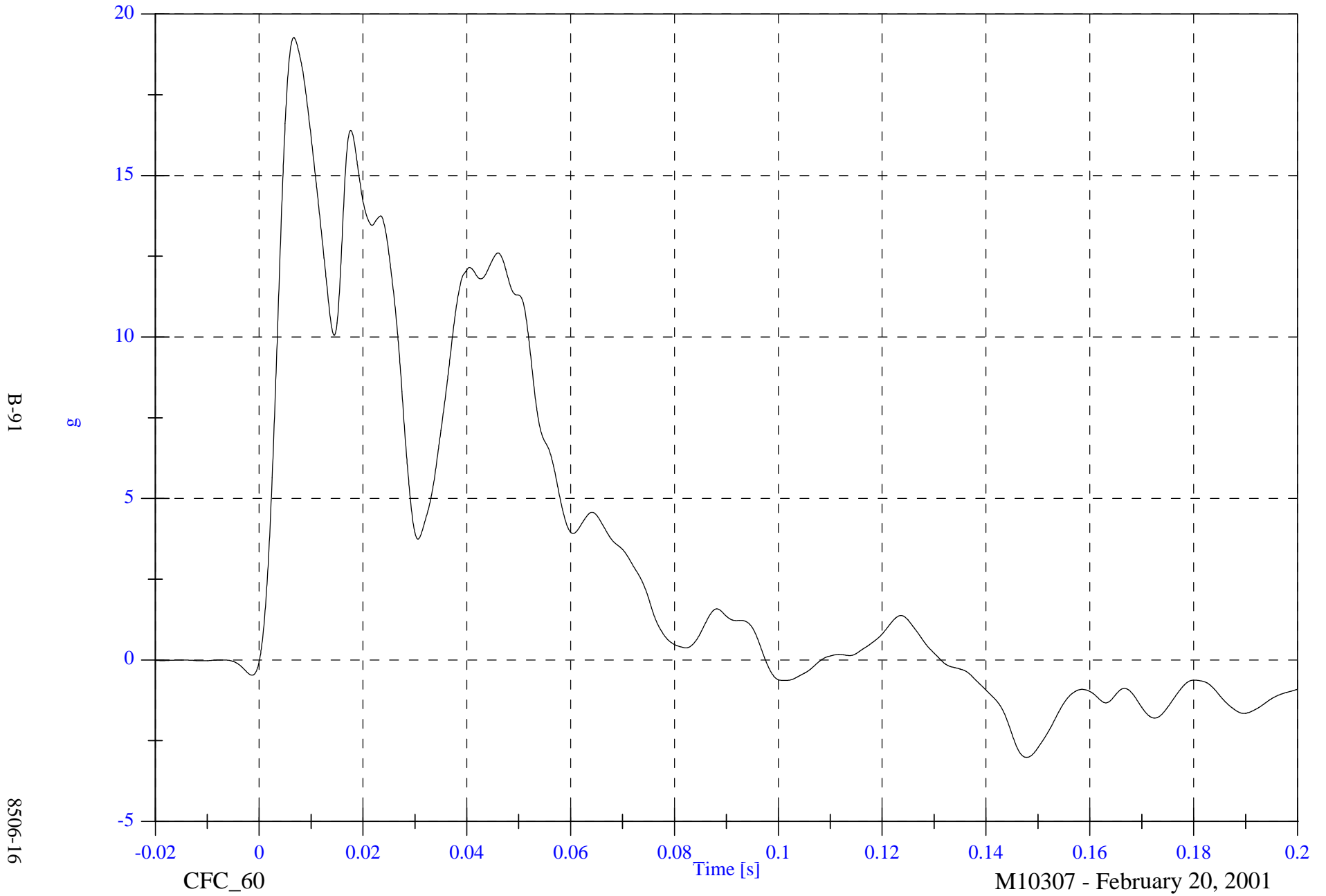
M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

A18 Target CG Y

Max: 19.3 [g] at 0.007 [s]

Min: -3.0 [g] at 0.148 [s]



SNCAP Test 16 - 2001 Dodge Grand Caravan

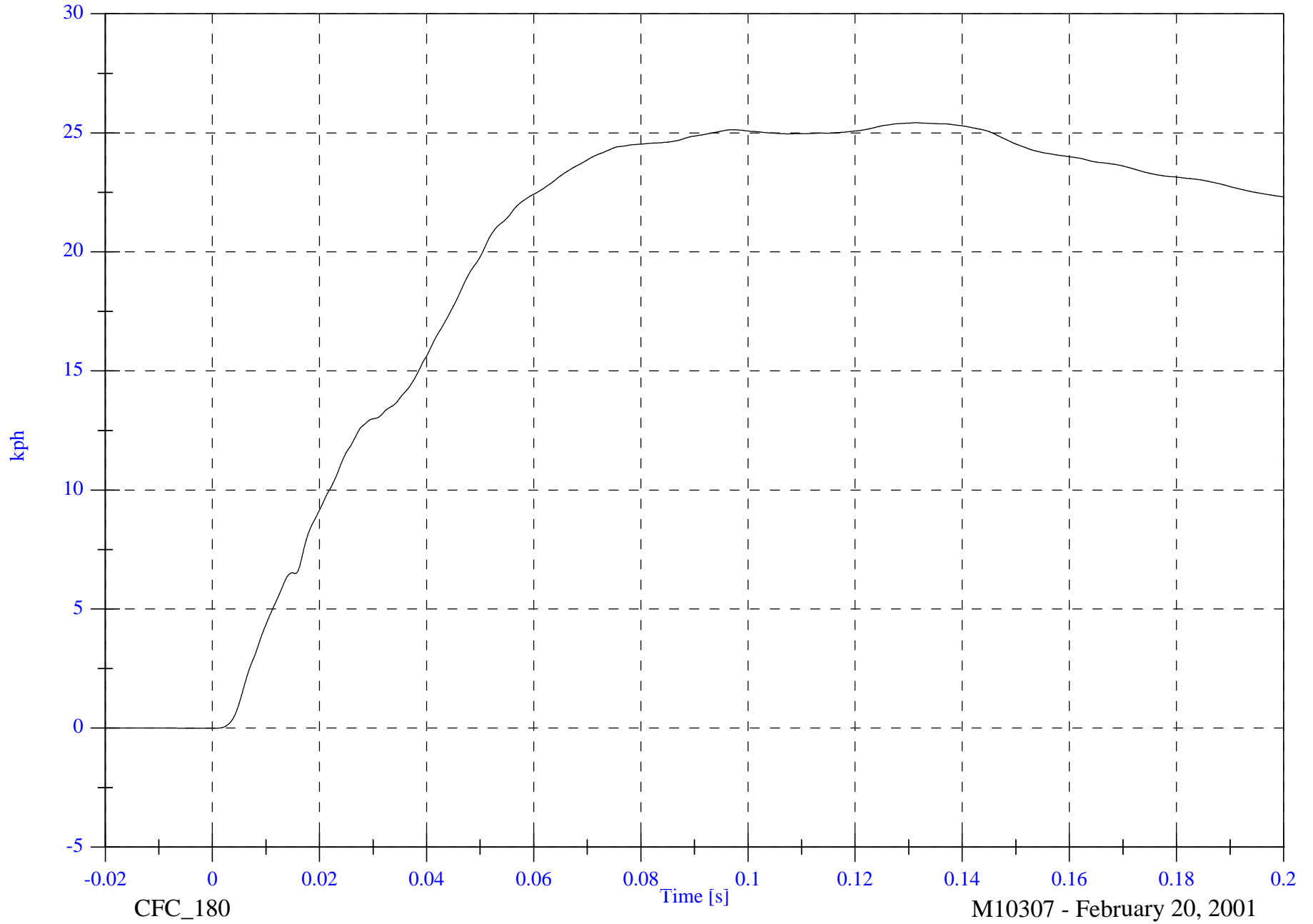
Max: 25.4 [kph] at 0.131 [s]

A18 Target CG Y Velocity

Min: -0.0 [kph] at 0.001 [s]

B-92

8506-16



SNCAP Test 16 - 2001 Dodge Grand Caravan

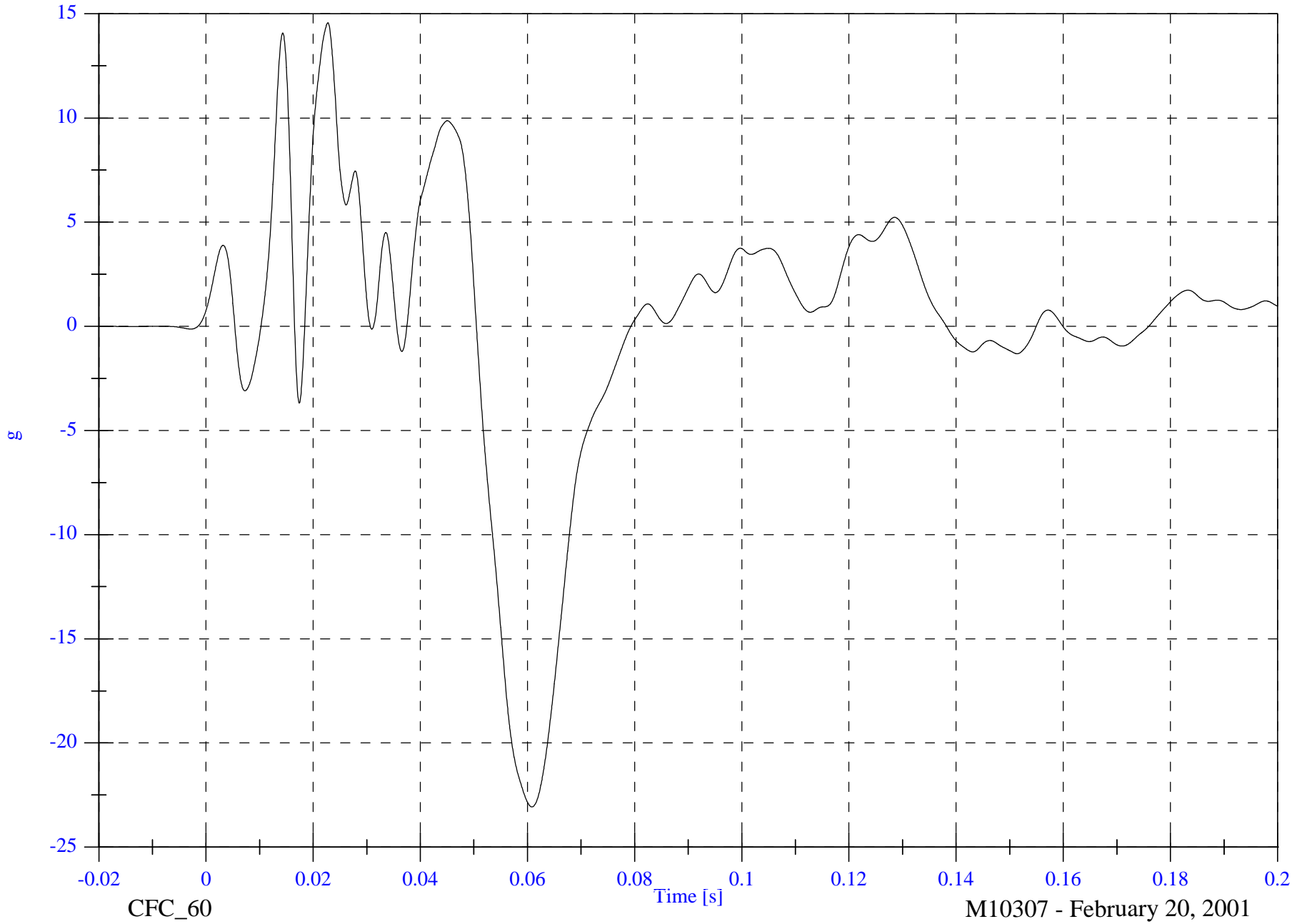
A18 Target CG Z

Max: 14.6 [g] at 0.023 [s]

Min: -23.1 [g] at 0.061 [s]

B-93

8506-16



CFC_60

Time [s]

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

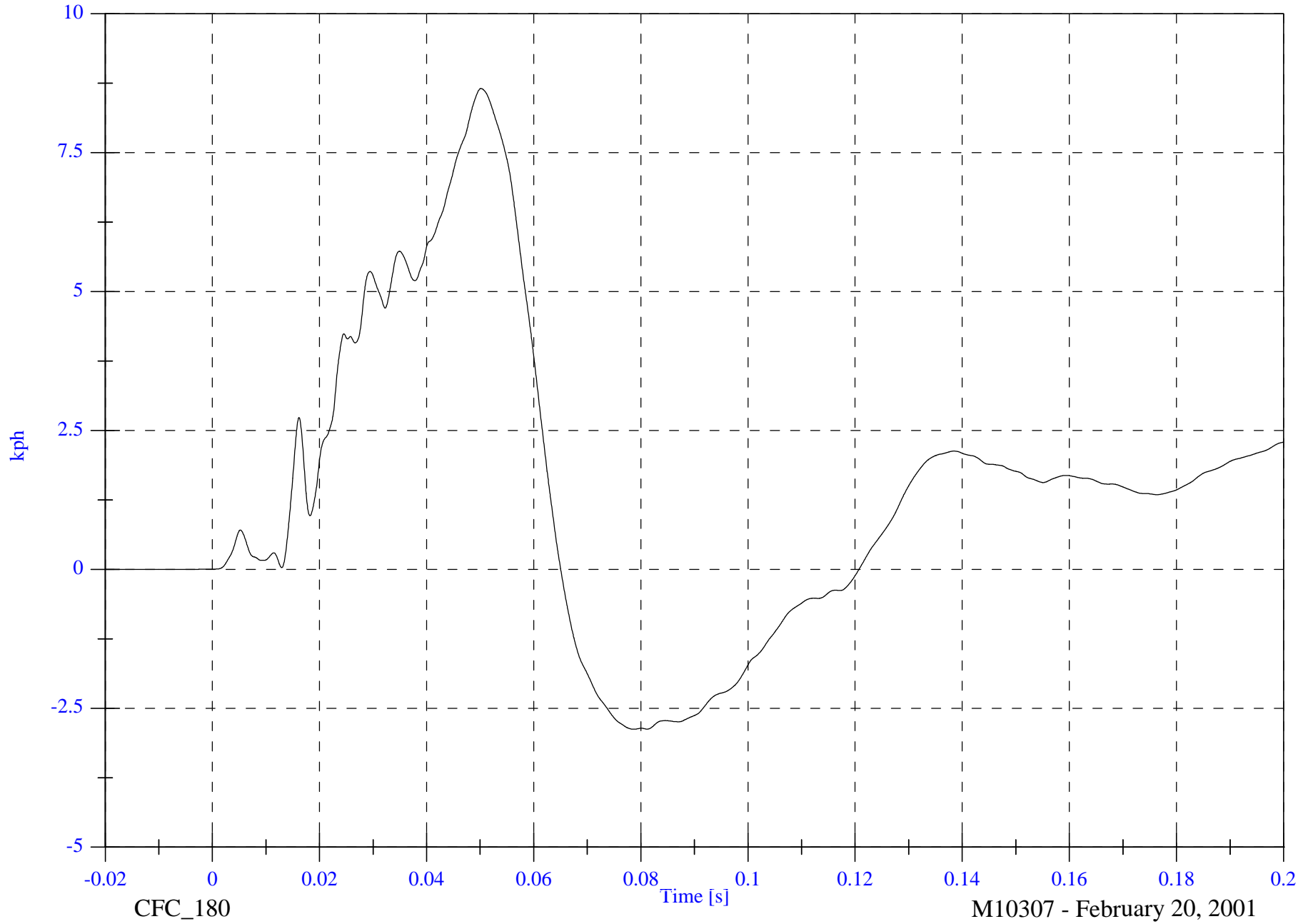
Max: 8.7 [kph] at 0.050 [s]

A18 Target CG Z Velocity

Min: -2.9 [kph] at 0.079 [s]

B-94

8506-16



CFC_180

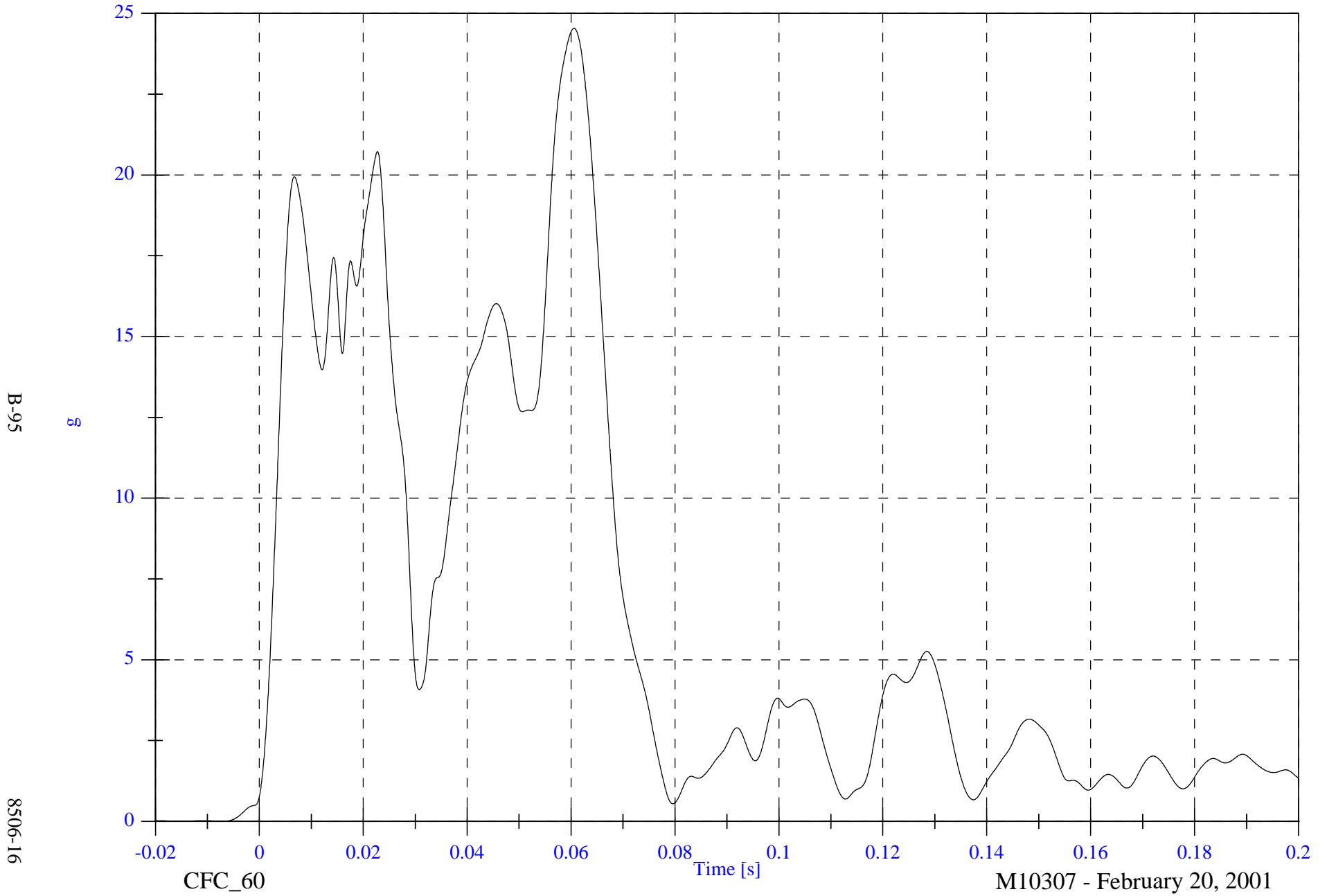
M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

A18 Target CG Resultant

Max: 24.5 [g] at 0.061 [s]

Min: 0.0 [g] at -0.007 [s]



B-95

8506-16

CFC_60

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

Moving Barrier CG X

Max: 1.3 [g] at 0.120 [s]

Min: -23.0 [g] at 0.043 [s]

B-96

8506-16



SNCAP Test 16 - 2001 Dodge Grand Caravan

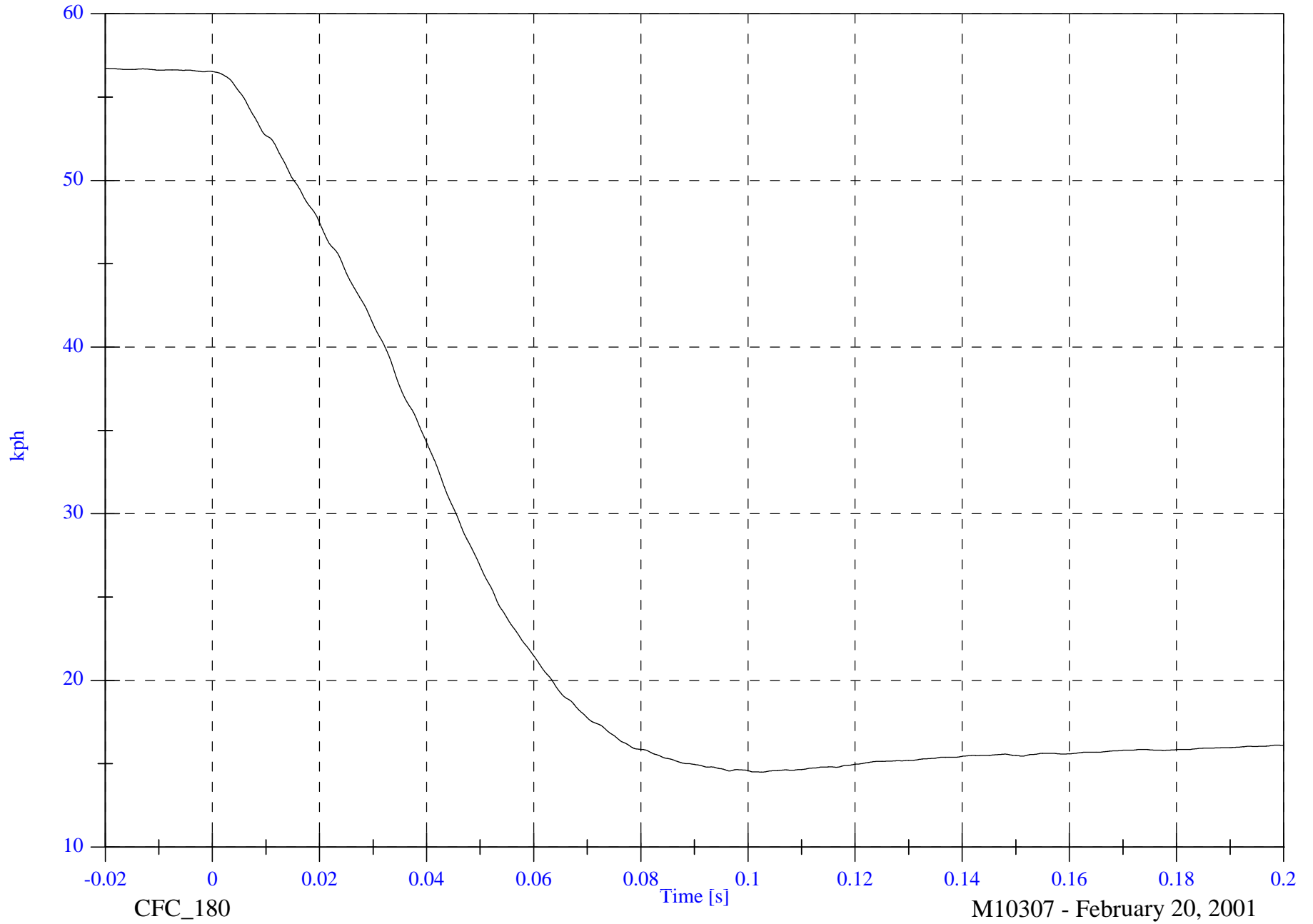
Max: 56.7 [kph] at -0.020 [s]

Moving Barrier CG X Velocity

Min: 14.5 [kph] at 0.103 [s]

B-97

8506-16



CFC_180

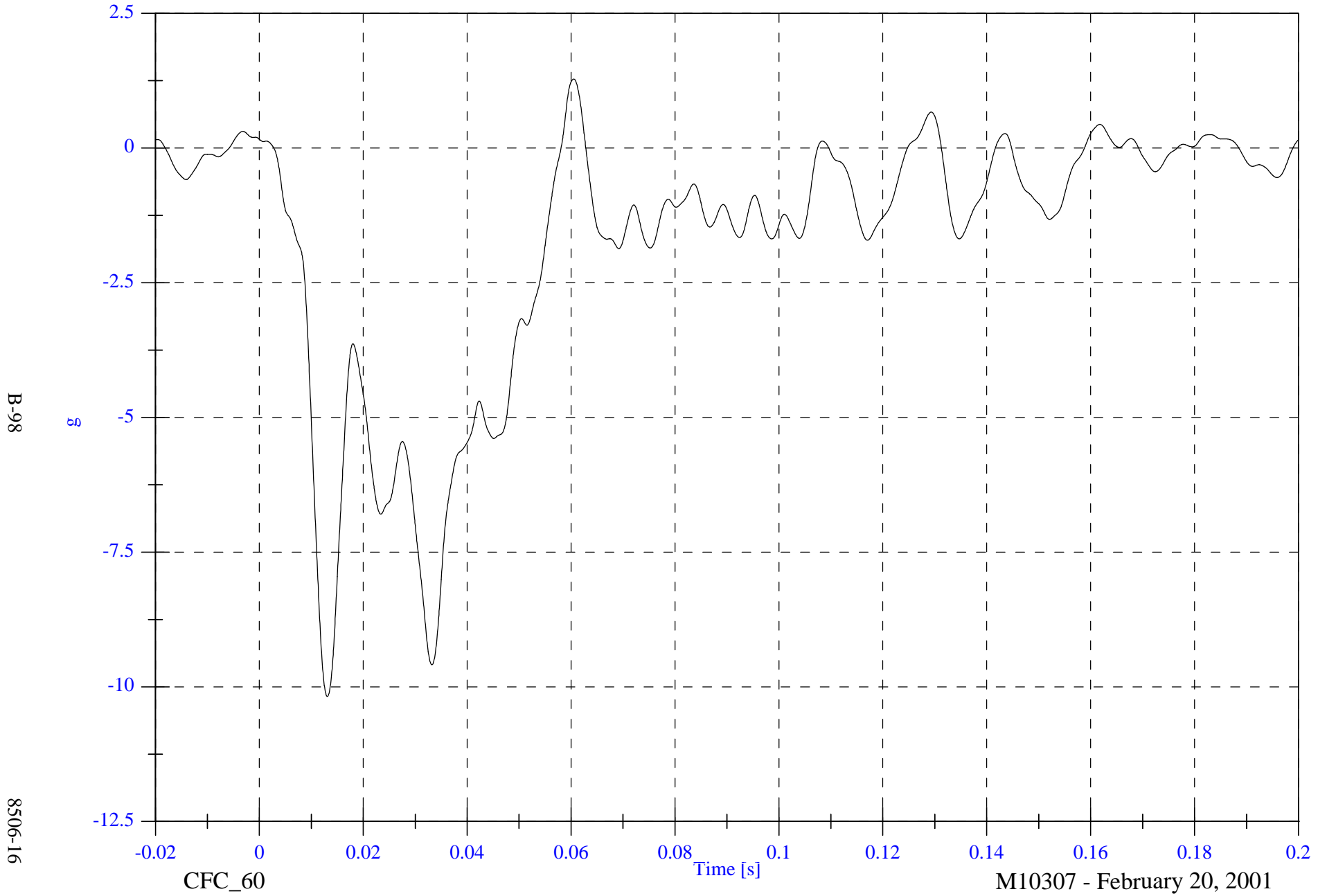
M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

Moving Barrier CG Y

Max: 1.3 [g] at 0.061 [s]

Min: -10.2 [g] at 0.013 [s]

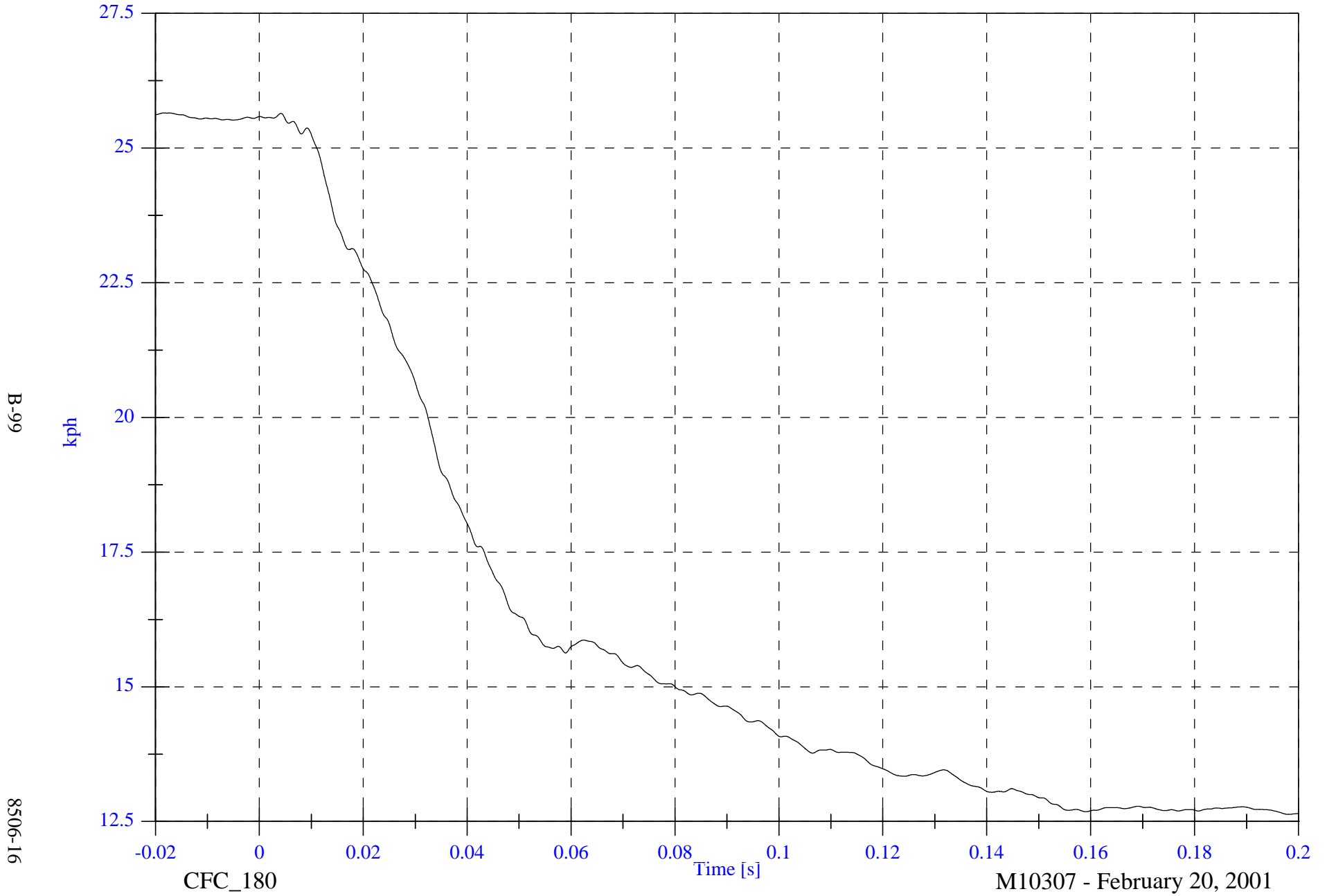


SNCAP Test 16 - 2001 Dodge Grand Caravan

Max: 25.7 [kph] at -0.018 [s]

Moving Barrier CG Y Velocity

Min: 12.6 [kph] at 0.198 [s]



B-99

8506-16

CFC_180

Time [s]

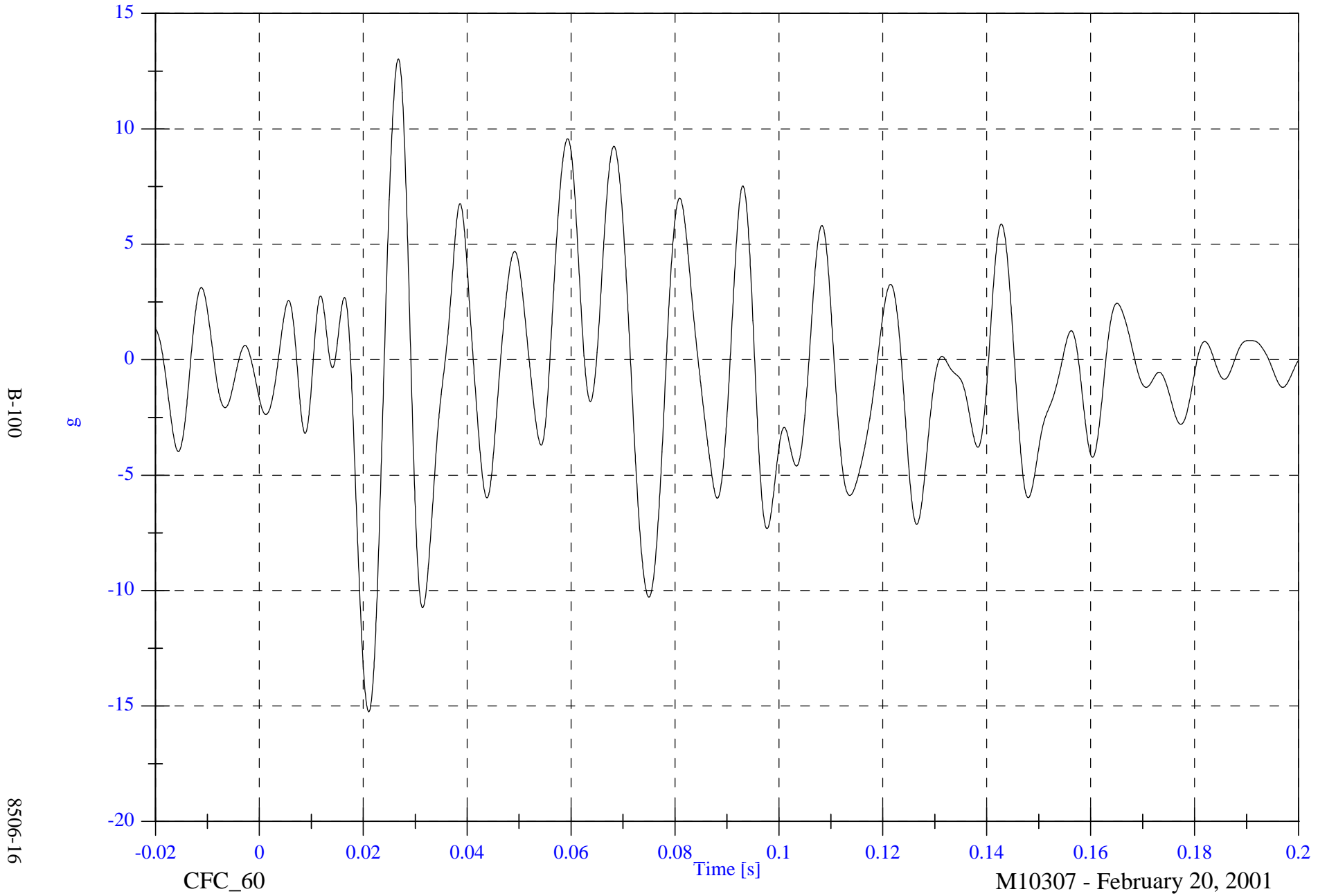
M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

Moving Barreir CG Z

Max: 13.0 [g] at 0.027 [s]

Min: -15.3 [g] at 0.021 [s]



SNCAP Test 16 - 2001 Dodge Grand Caravan

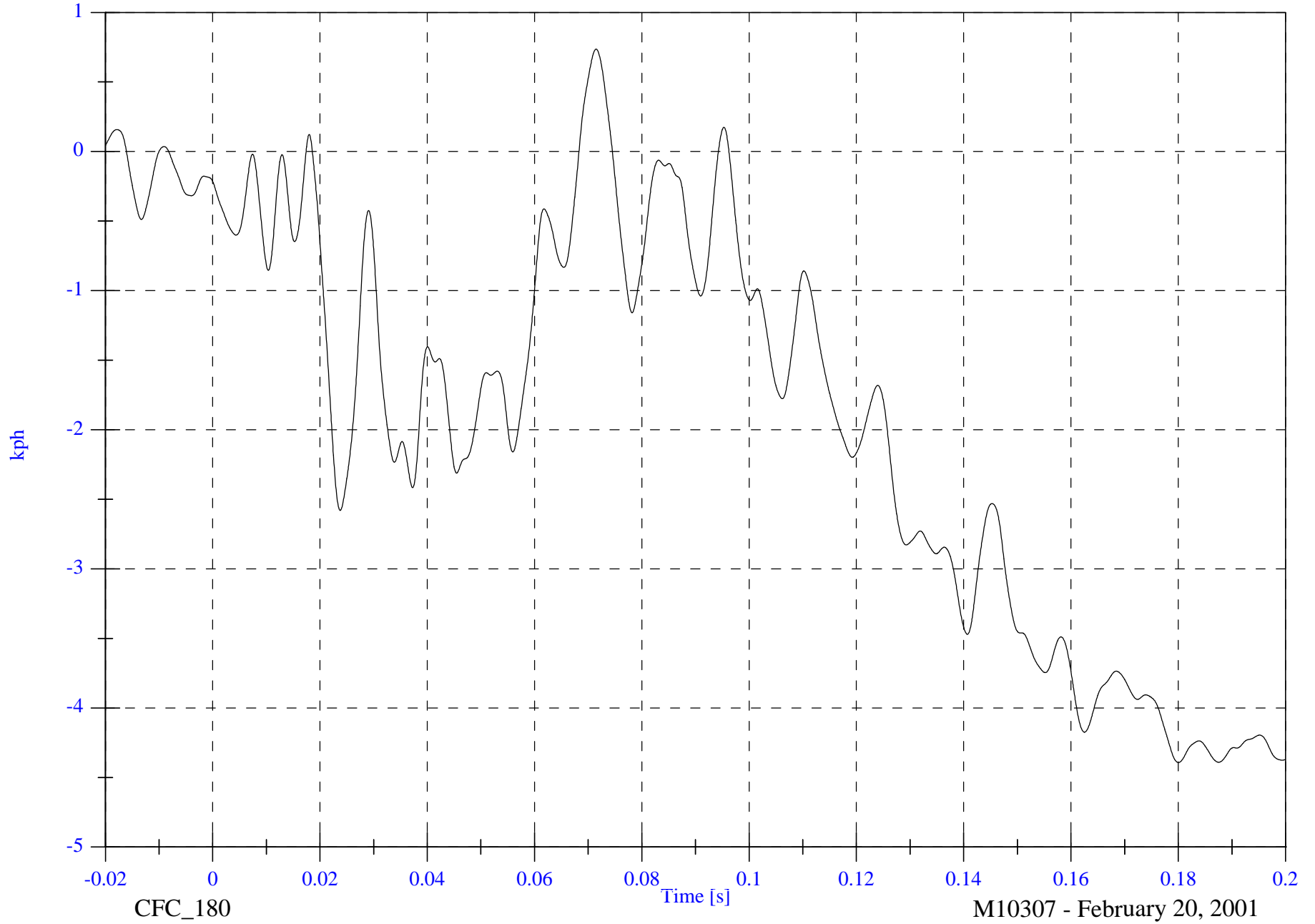
Max: 0.7 [kph] at 0.071 [s]

Moving Barreir CG Z Velocity

Min: -4.4 [kph] at 0.180 [s]

B-101

8506-16



SNCAP Test 16 - 2001 Dodge Grand Caravan

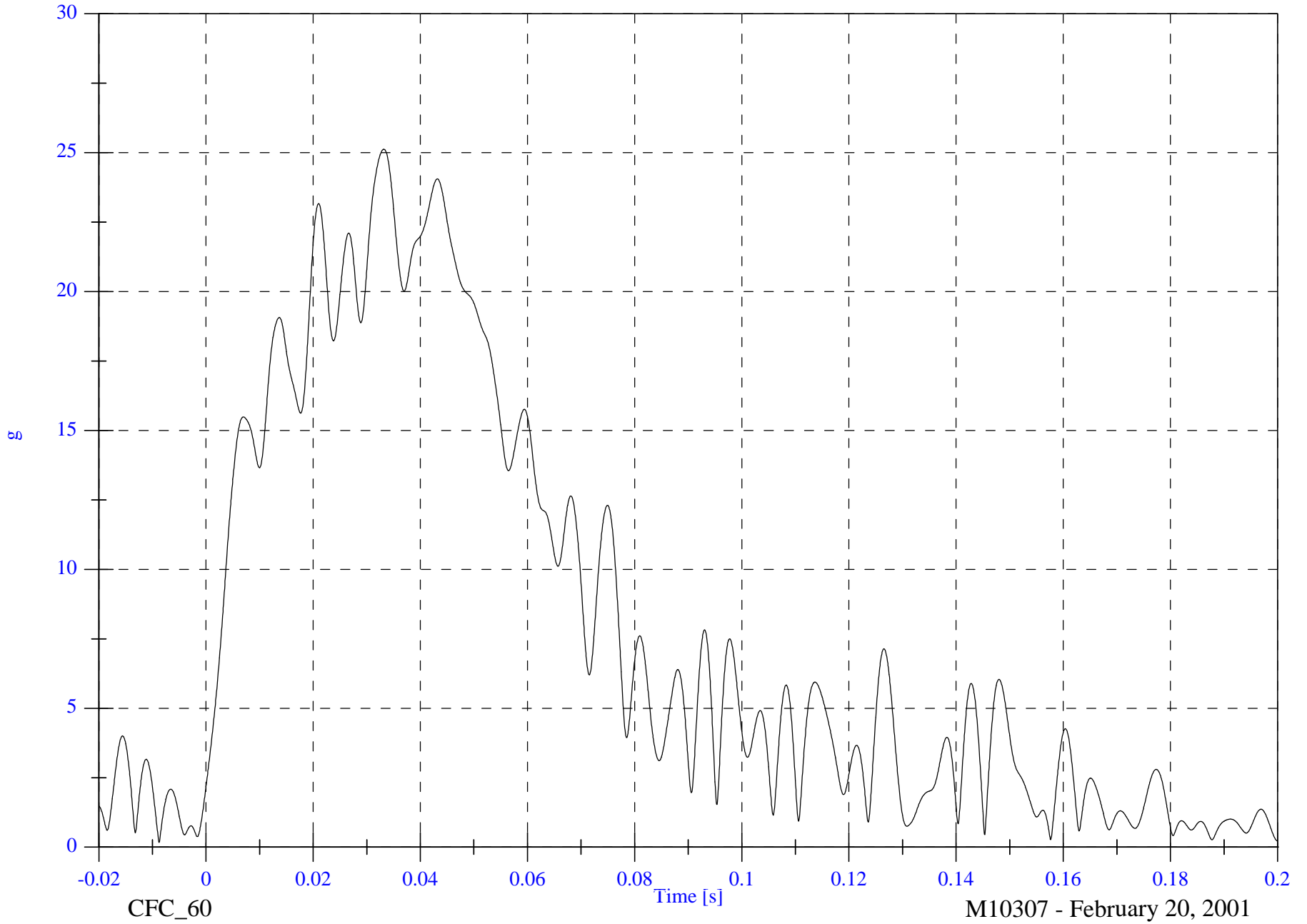
Moving Barrier CG Resultant

Max: 25.1 [g] at 0.033 [s]

Min: 0.2 [g] at -0.009 [s]

B-102

8506-16



M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

Moving Barrier Left Rail X

Max: 1.8 [g] at 0.113 [s]

Min: -22.6 [g] at 0.035 [s]



SNCAP Test 16 - 2001 Dodge Grand Caravan

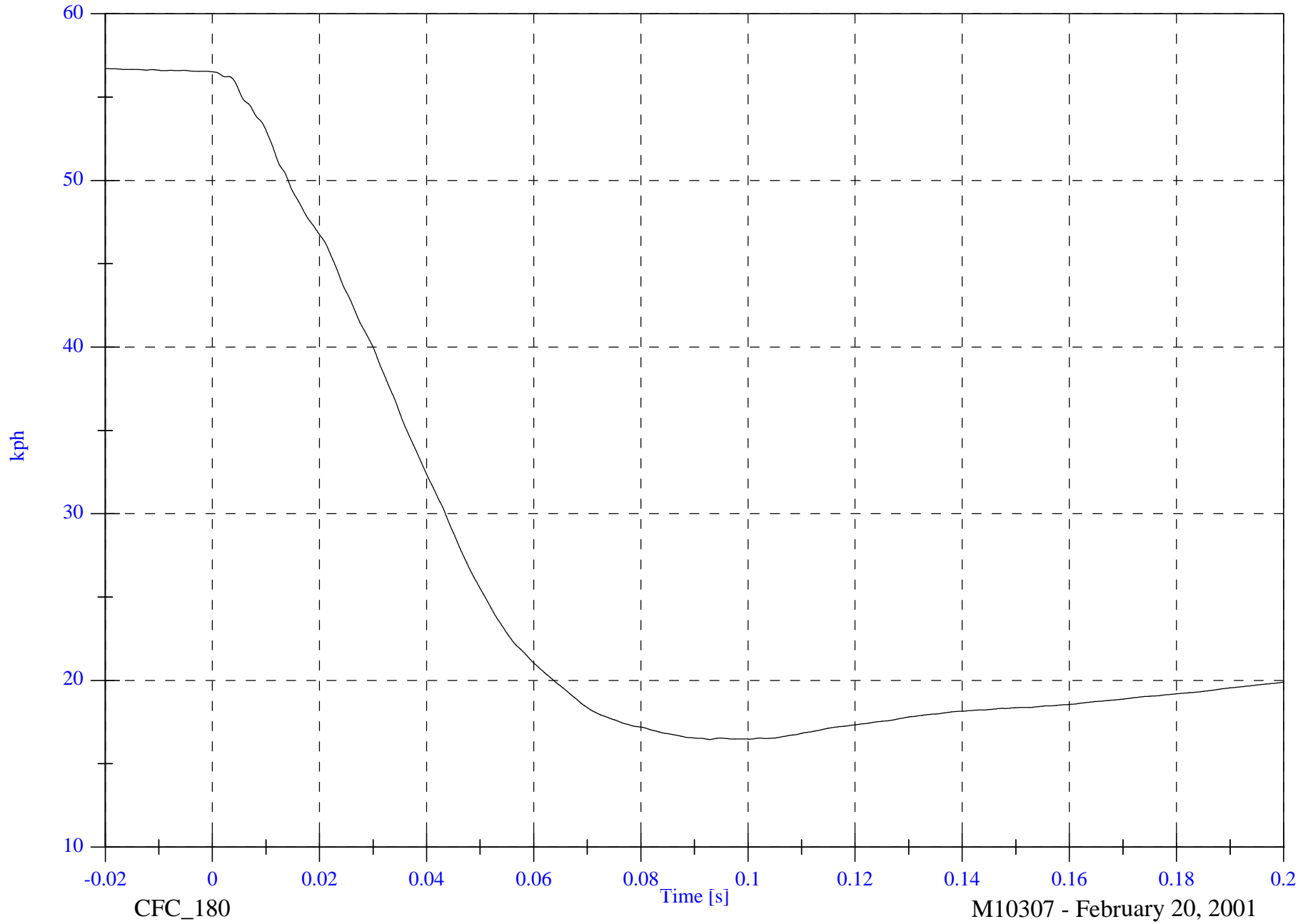
Max: 56.7 [kph] at -0.020 [s]

Moving Barrier Left Rail X Velocity

Min: 16.5 [kph] at 0.093 [s]

B-104

8506-16



CFC_180

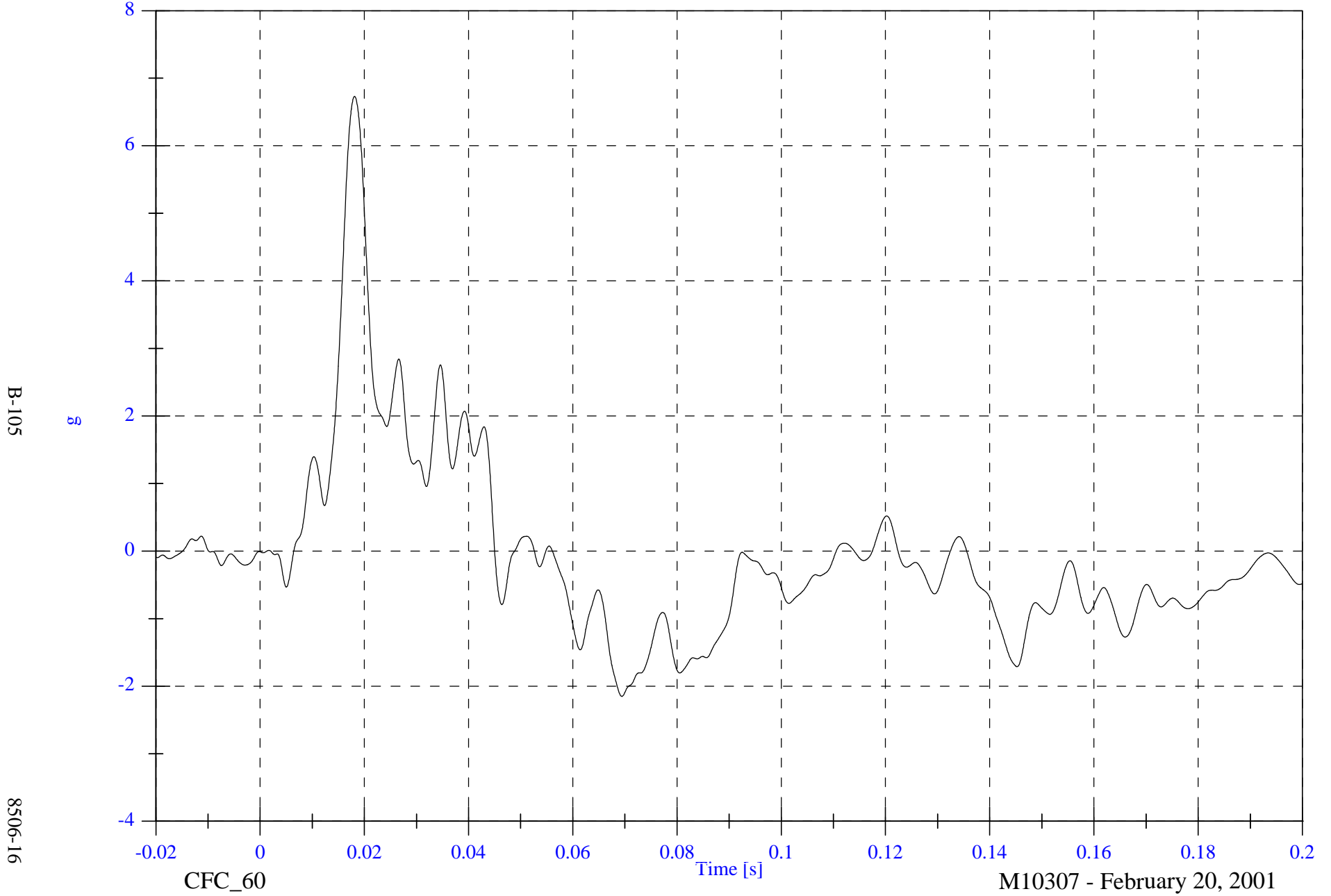
M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

Moving Barrier Left Rail Y

Max: 6.7 [g] at 0.018 [s]

Min: -2.2 [g] at 0.069 [s]



SNCAP Test 16 - 2001 Dodge Grand Caravan

Moving Barrier Left Rail Y Velocity

Max: 28.5 [kph] at 0.045 [s]

Min: 24.9 [kph] at 0.200 [s]



B-106

8506-16

CFC_180

Time [s]

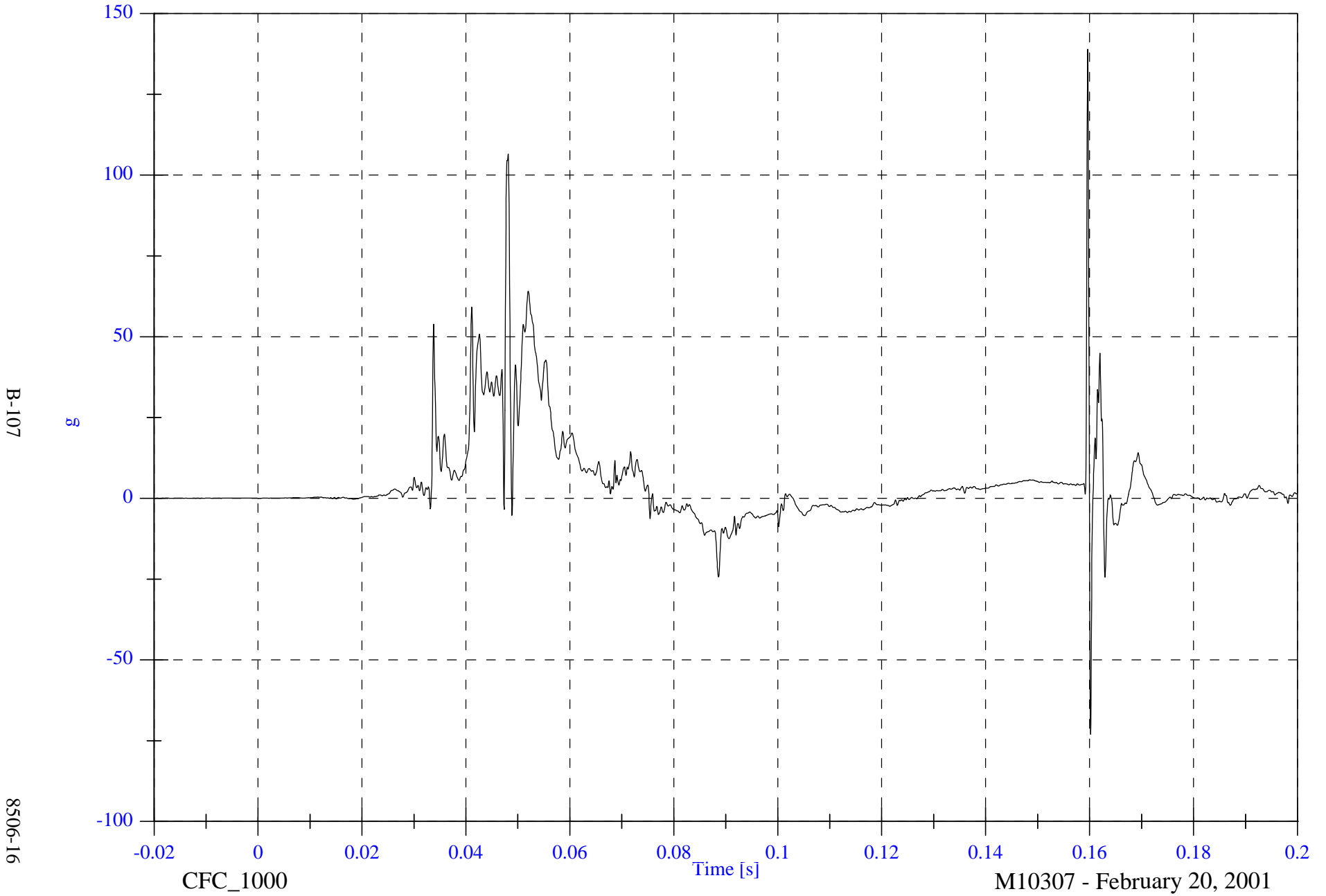
M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

P1 Upper Rib Ry

Max: 139.0 [g] at 0.160 [s]

Min: -73.0 [g] at 0.160 [s]



B-107

8506-16

CFC_1000

Time [s]

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

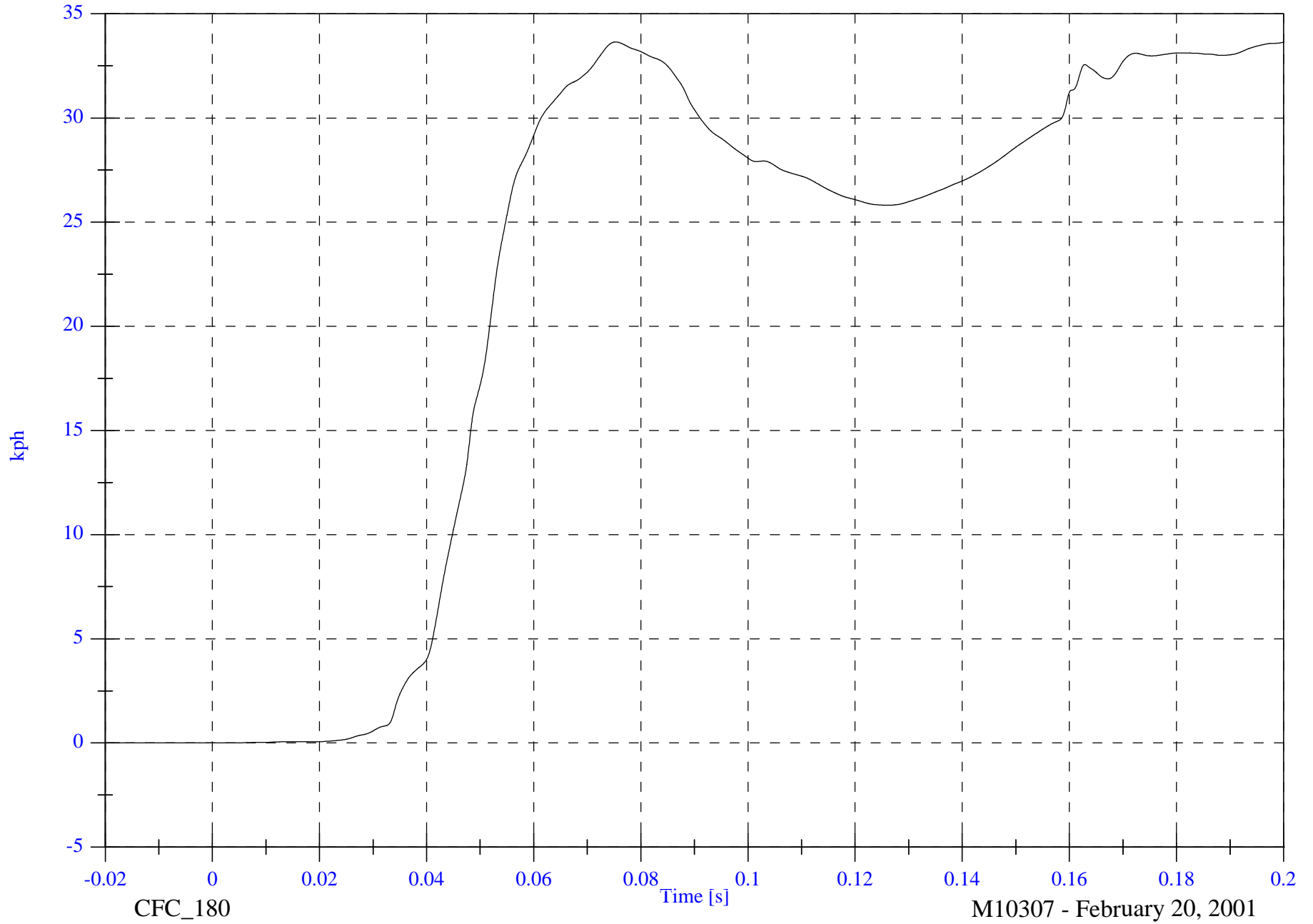
P1 Upper Rib Ry Velocity

Max: 33.7 [kph] at 0.075 [s]

Min: -0.0 [kph] at -0.019 [s]

B-108

8506-16



CFC_180

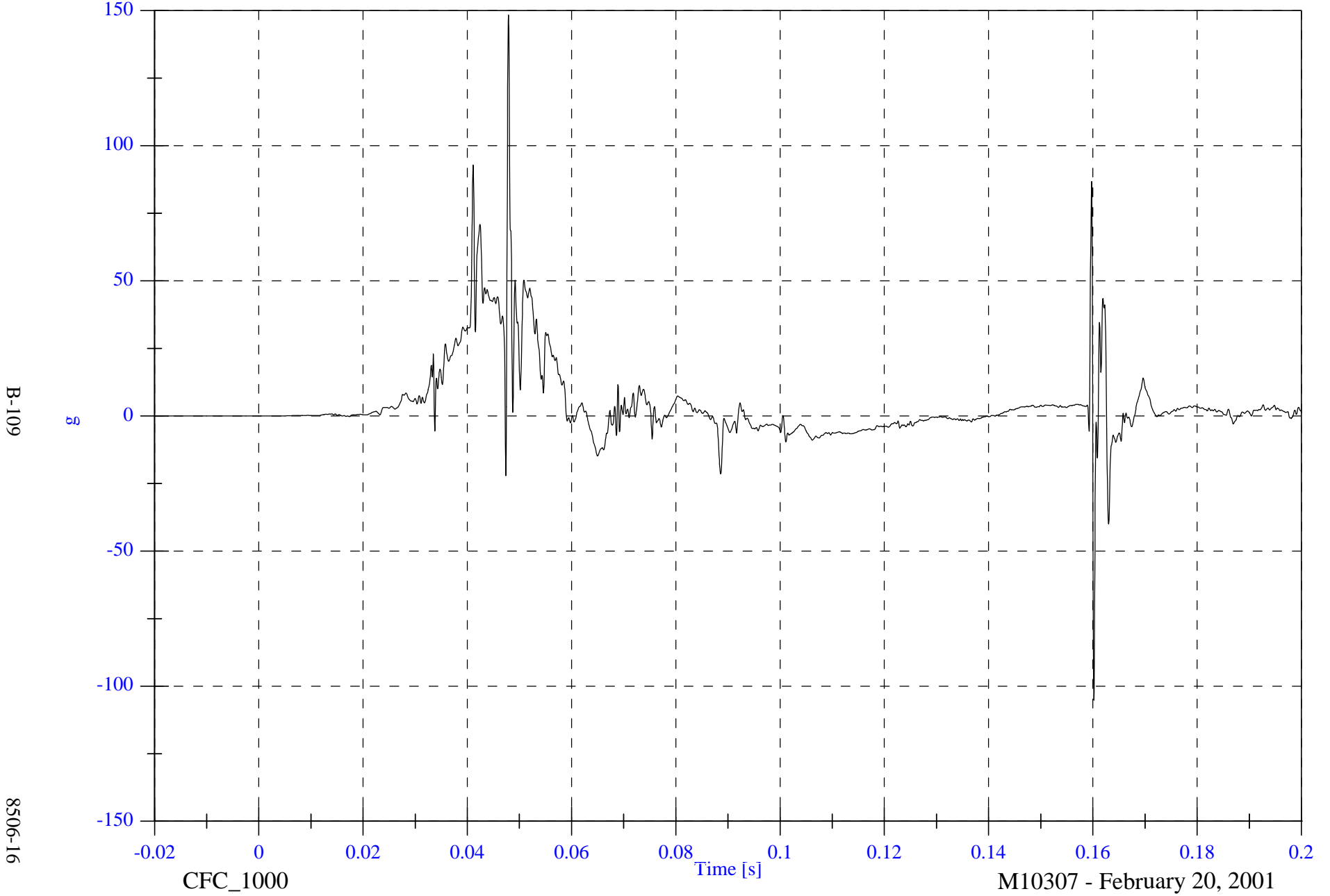
M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

P1 Lower Rib Ry

Max: 148.3 [g] at 0.048 [s]

Min: -105.2 [g] at 0.160 [s]



SNCAP Test 16 - 2001 Dodge Grand Caravan

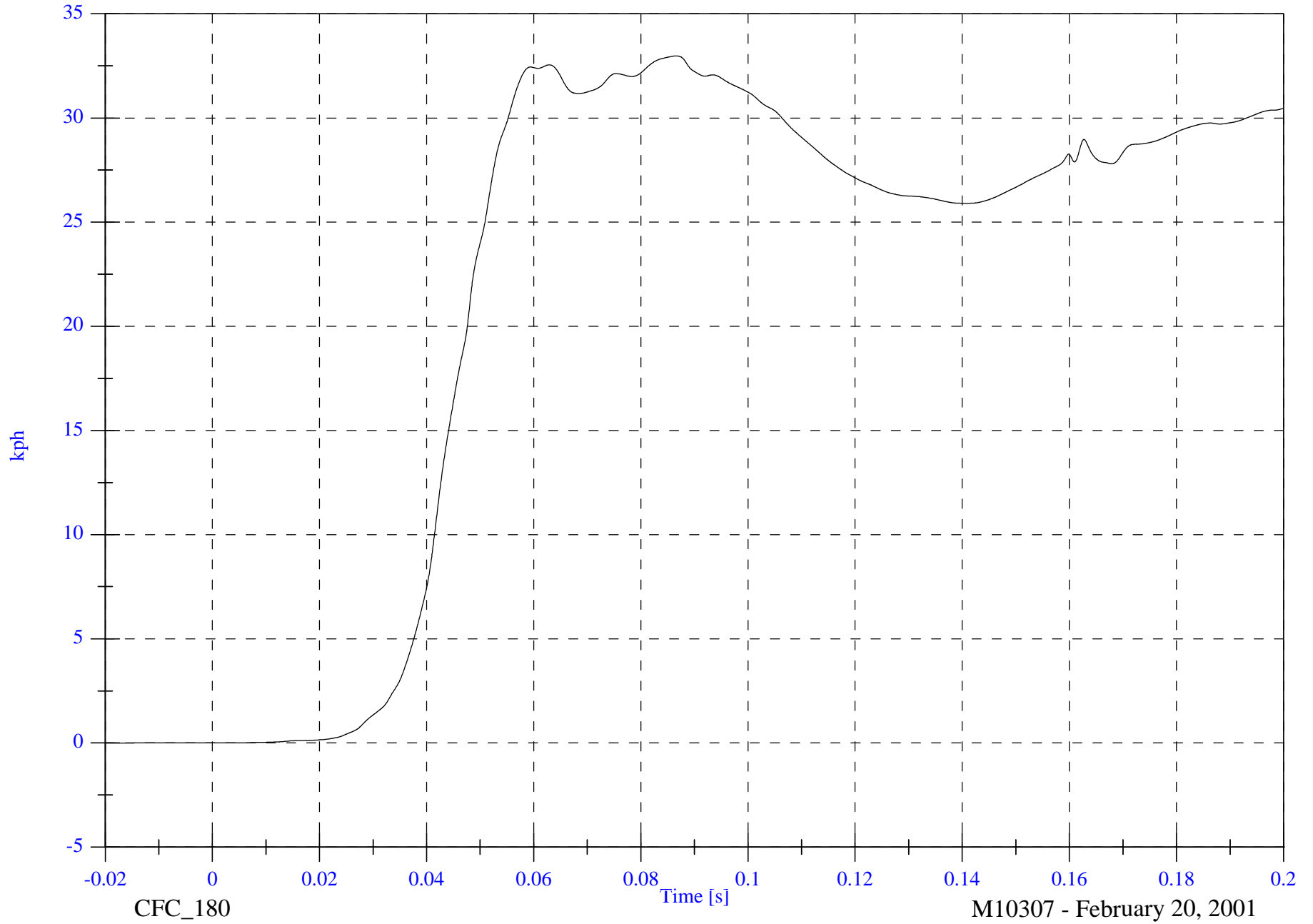
Max: 33.0 [kph] at 0.087 [s]

P1 Lower Rib Ry Velocity

Min: -0.0 [kph] at -0.018 [s]

B-110

8506-16



CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

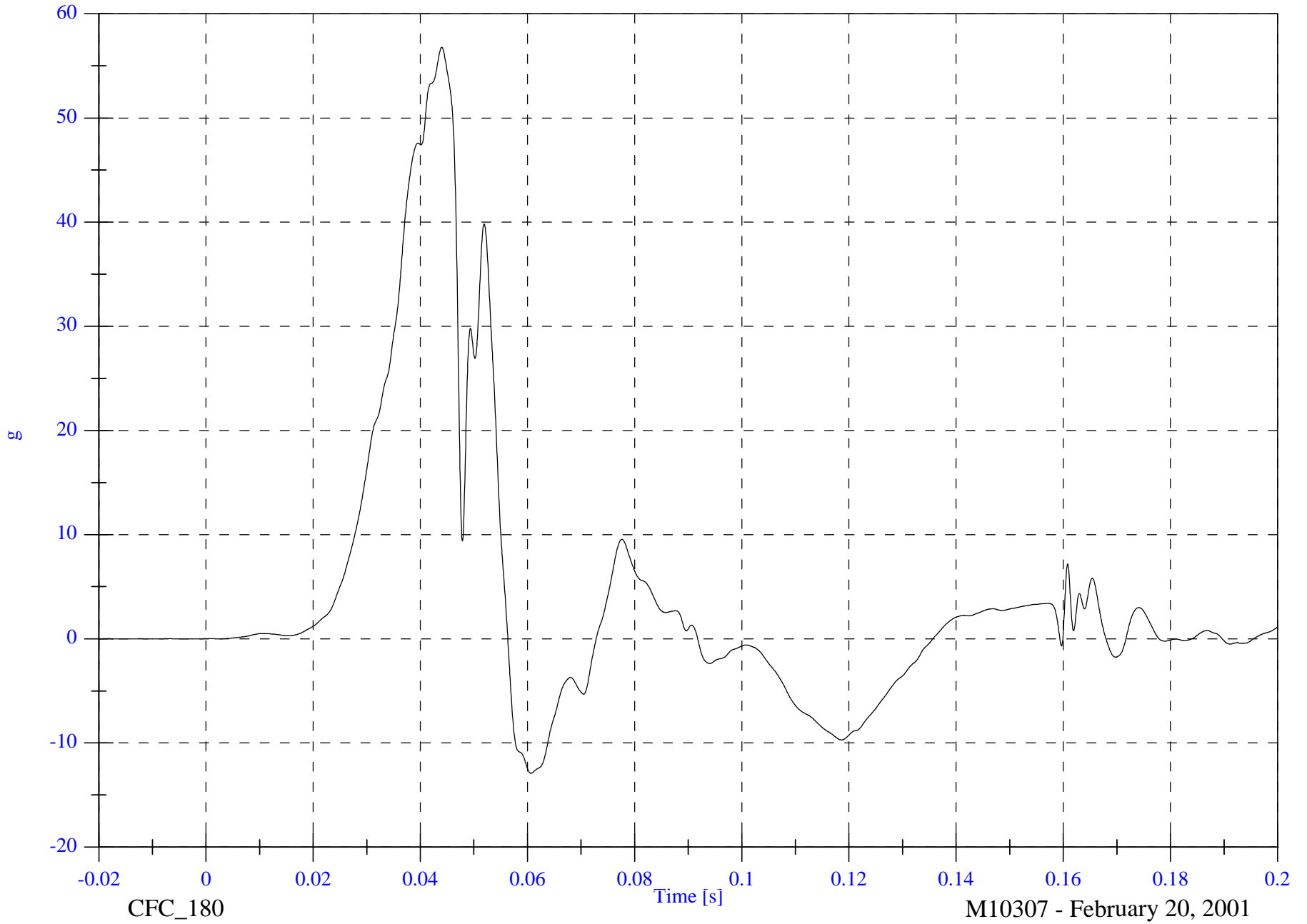
P1 Lower Spine Ry

Max: 56.8 [g] at 0.044 [s]

Min: -12.9 [g] at 0.061 [s]

B-111

8506-16



SNCAP Test 16 - 2001 Dodge Grand Caravan

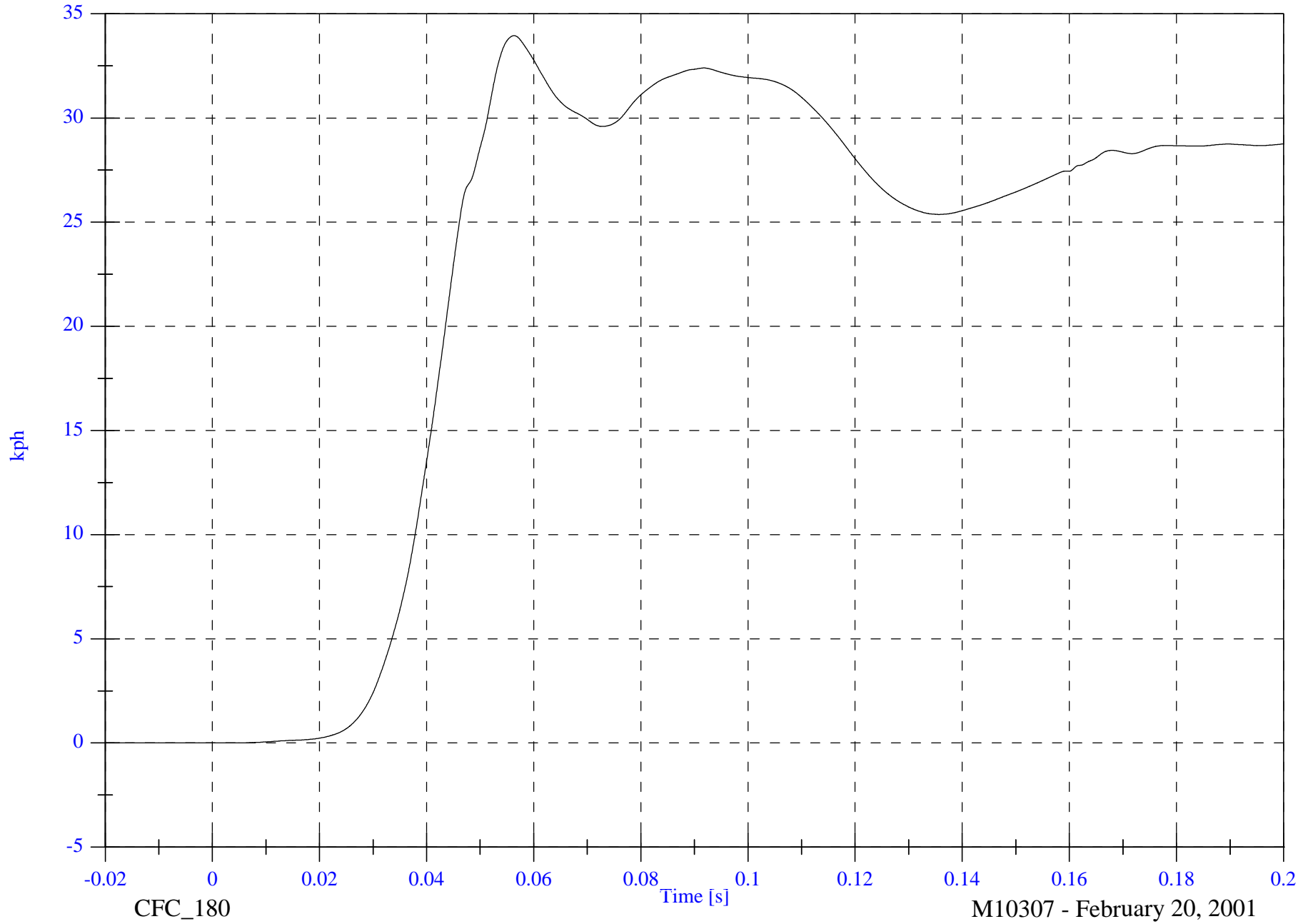
P1 Lower Spine Ry Velocity

Max: 34.0 [kph] at 0.056 [s]

Min: -0.0 [kph] at -0.020 [s]

B-112

8506-16



CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

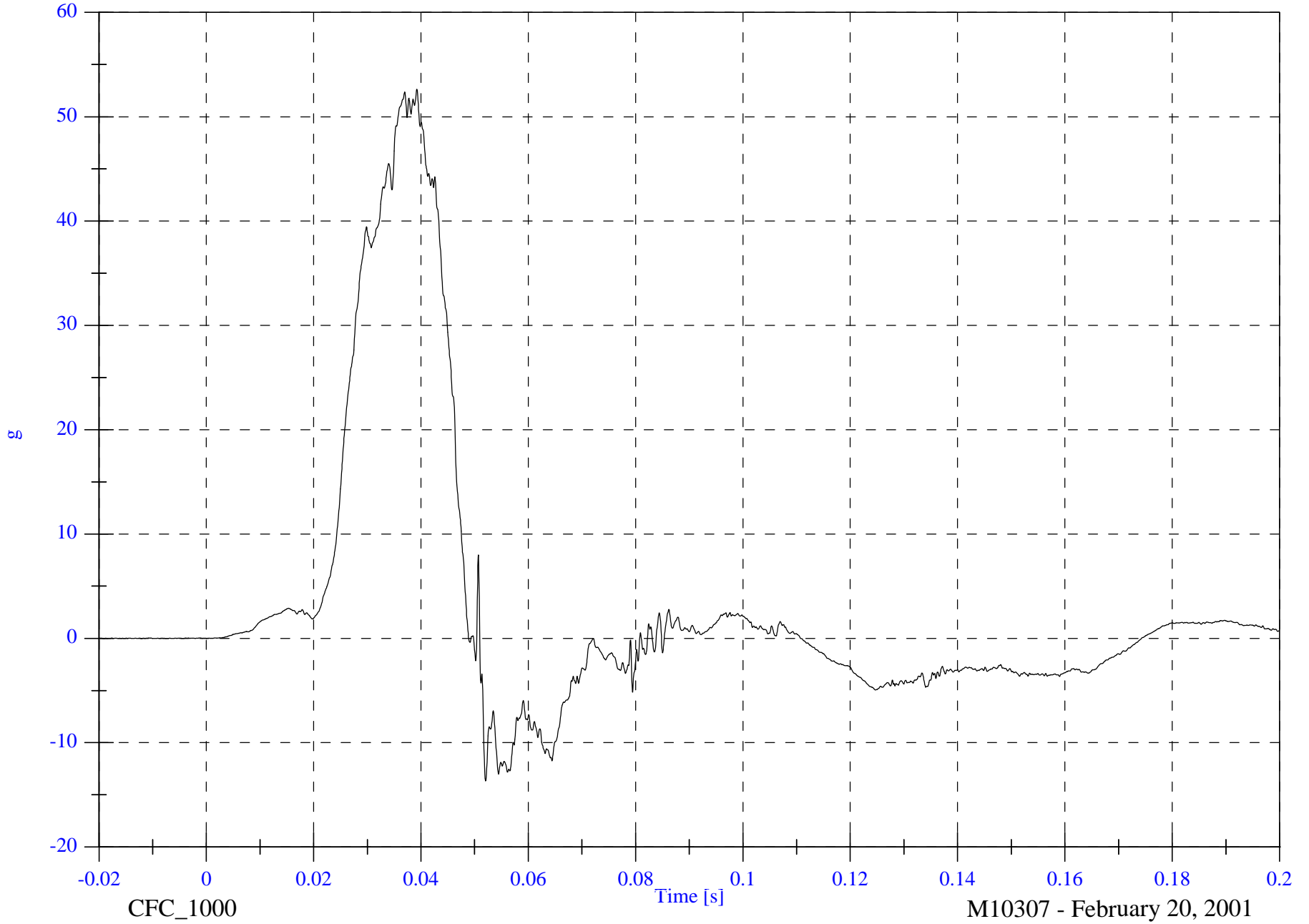
P1 Pelvic Ry

Max: 52.6 [g] at 0.039 [s]

Min: -13.7 [g] at 0.052 [s]

B-113

8506-16



CFC_1000

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

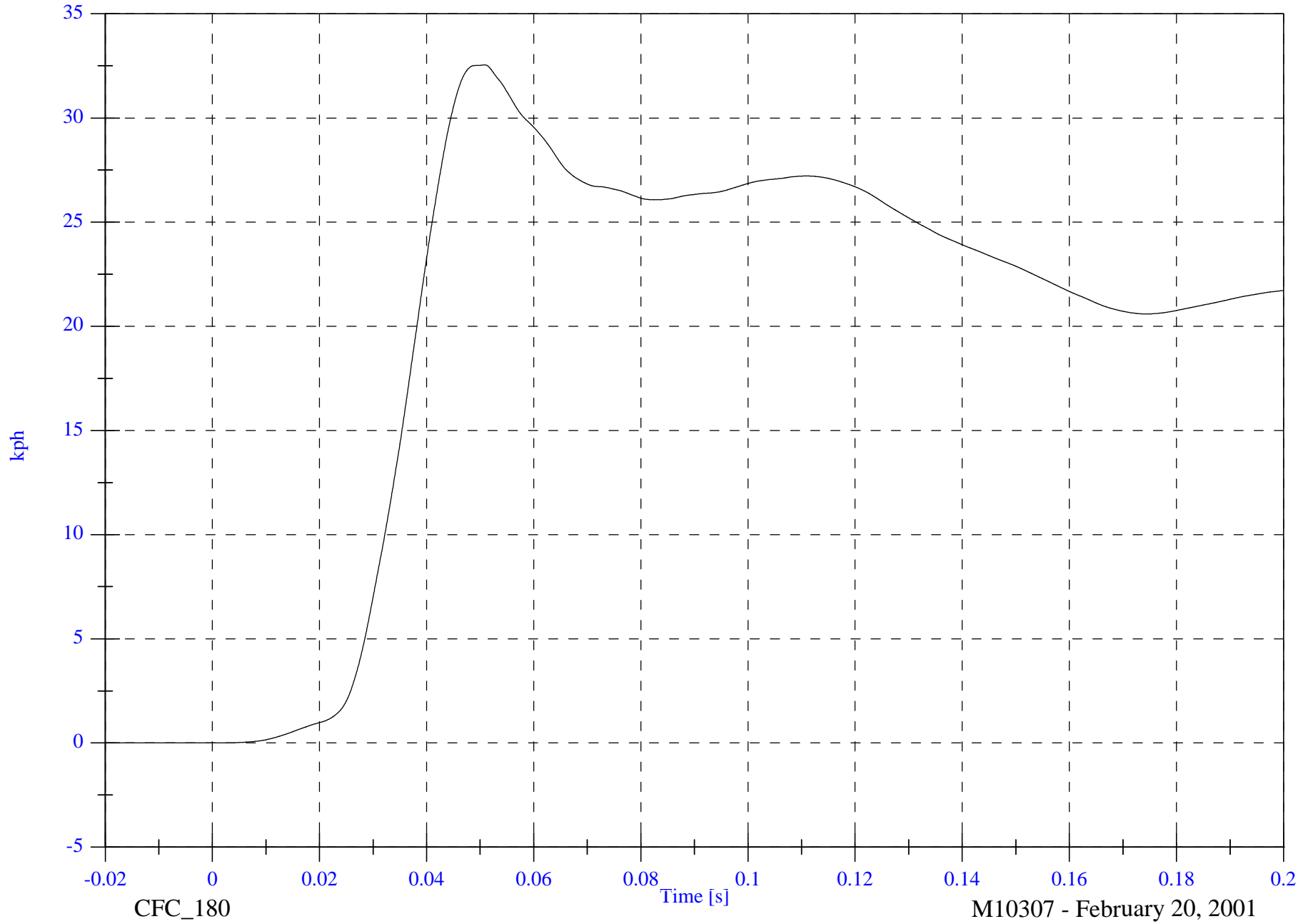
P1 Pelvic Ry Velocity

Max: 32.6 [kph] at 0.051 [s]

Min: -0.0 [kph] at -0.018 [s]

B-114

8506-16

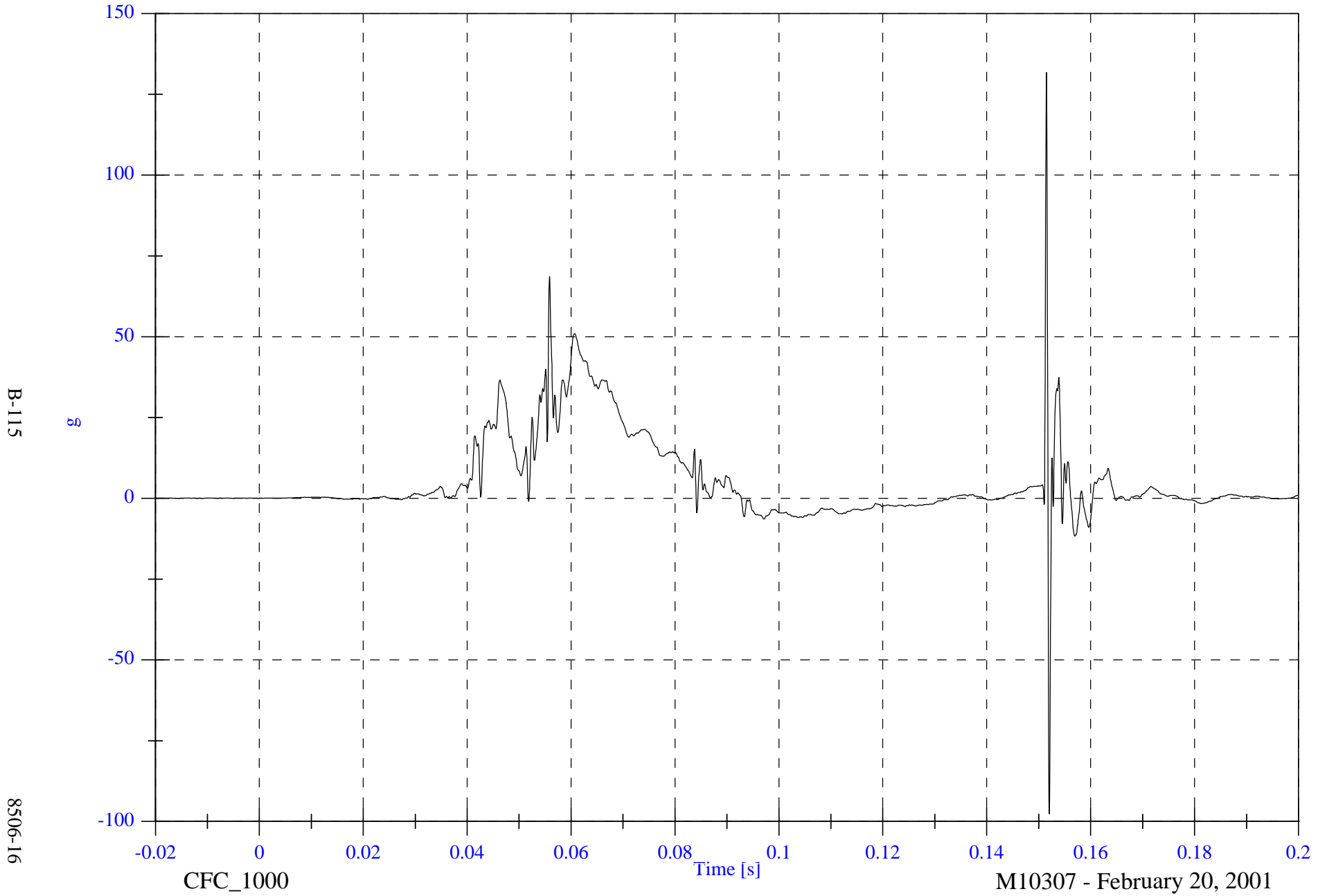


SNCAP Test 16 - 2001 Dodge Grand Caravan

P4 Upper Rib Ry

Max: 131.7 [g] at 0.151 [s]

Min: -97.7 [g] at 0.152 [s]



SNCAP Test 16 - 2001 Dodge Grand Caravan

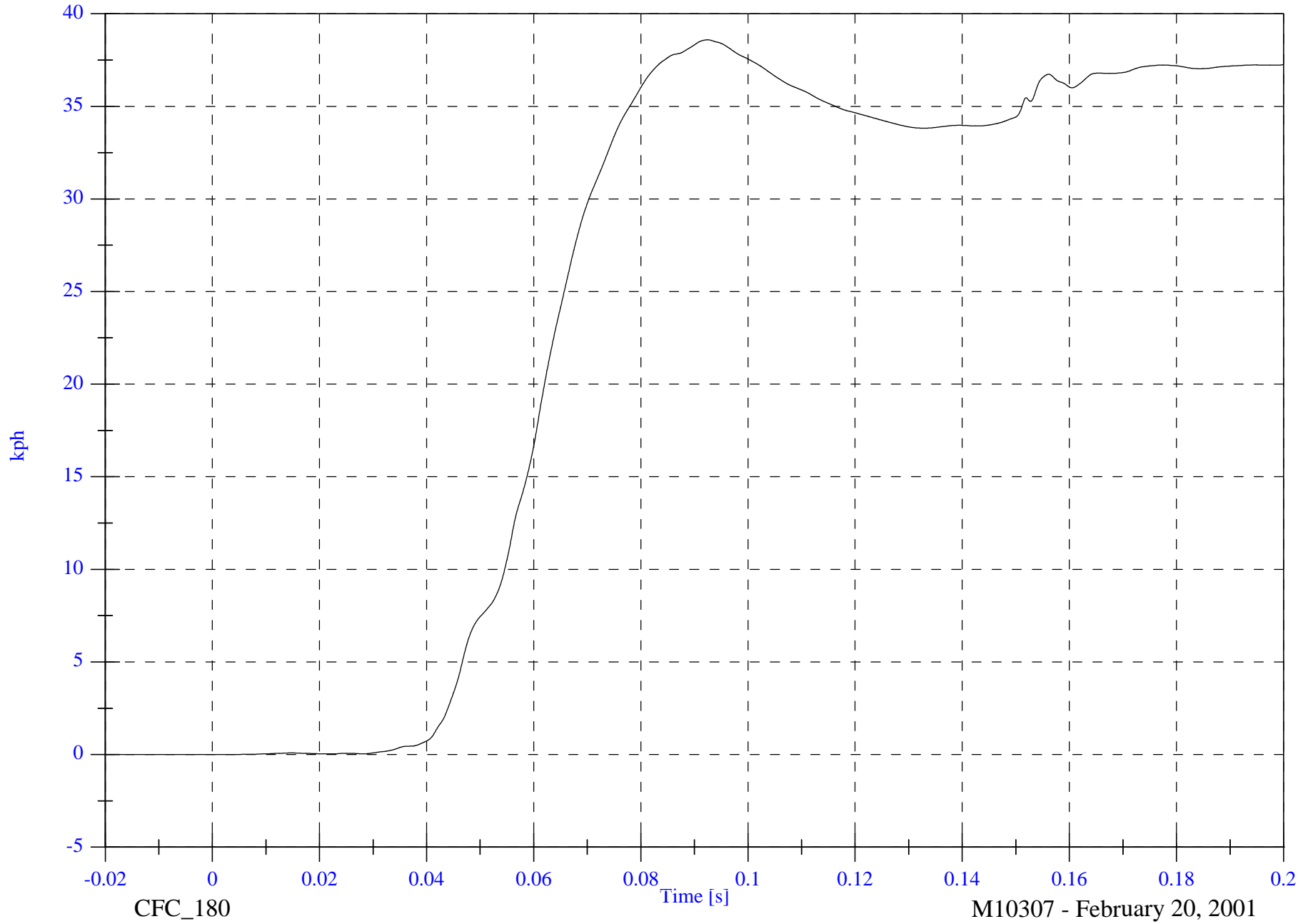
P4 Upper Rib Ry Velocity

Max: 38.6 [kph] at 0.092 [s]

Min: -0.0 [kph] at -0.020 [s]

B-116

8506-16



CFC_180

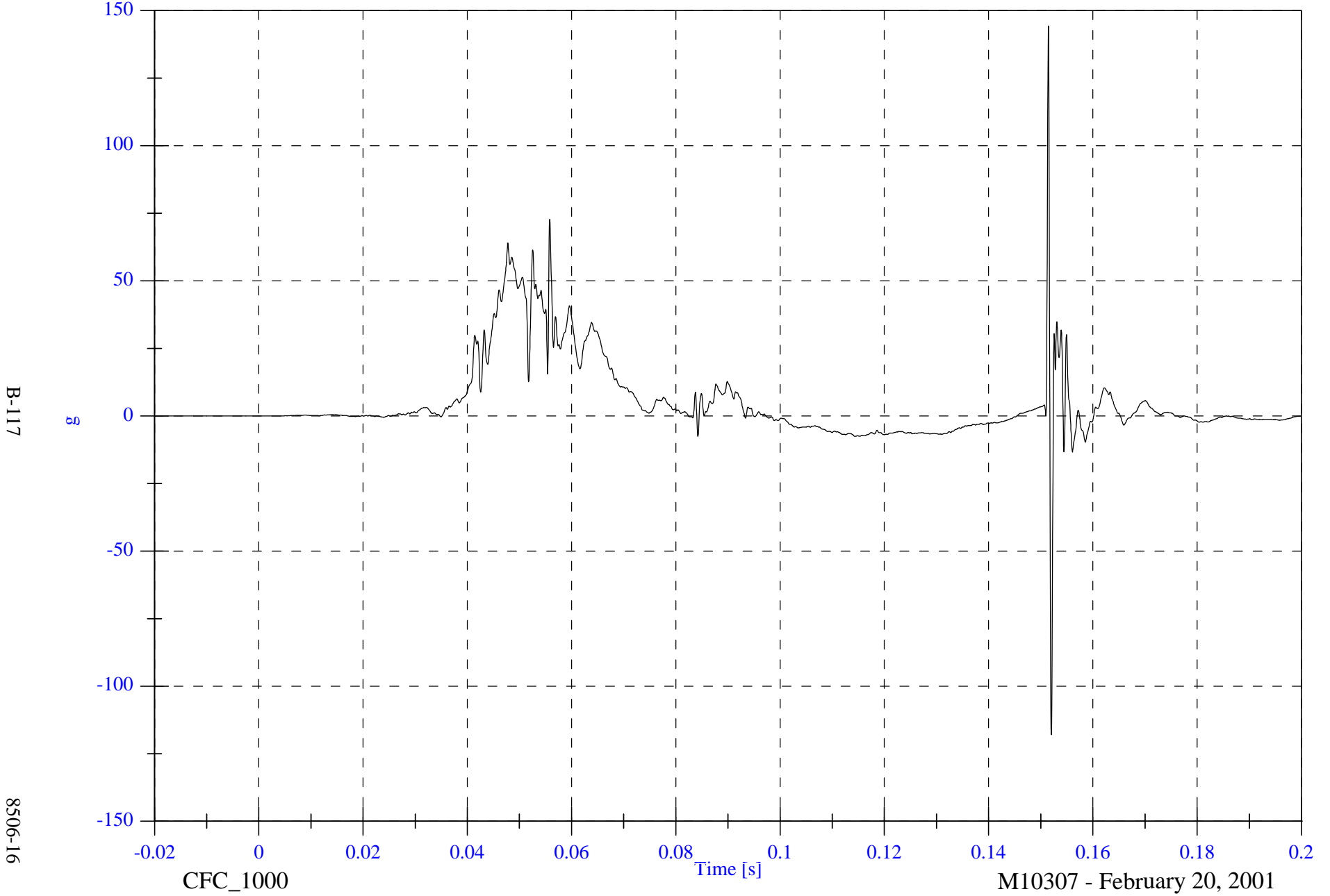
M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

P4 Lower Rib Ry

Max: 144.4 [g] at 0.151 [s]

Min: -118.0 [g] at 0.152 [s]



SNCAP Test 16 - 2001 Dodge Grand Caravan

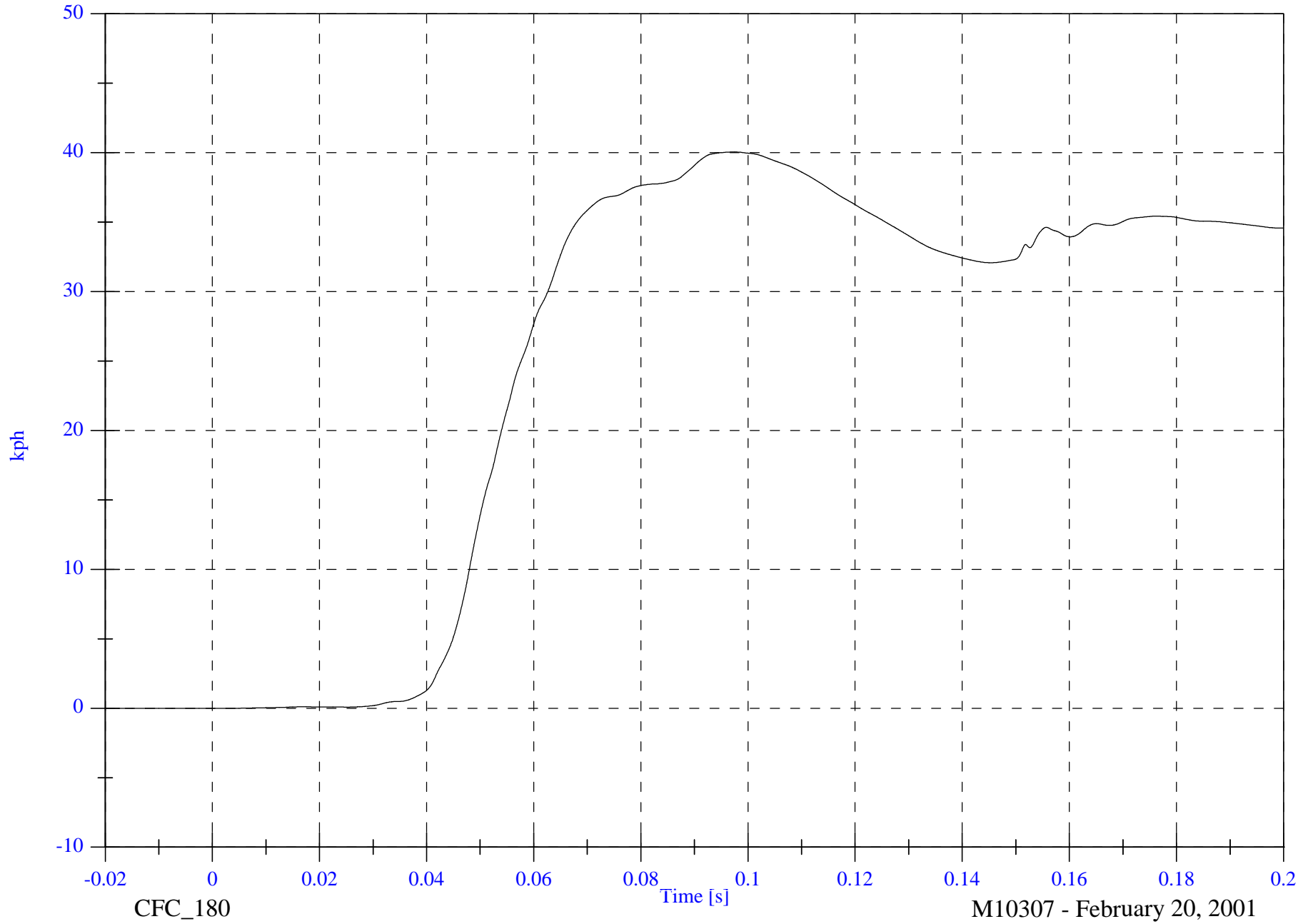
P4 Lower Rib Ry Velocity

Max: 40.1 [kph] at 0.097 [s]

Min: -0.0 [kph] at -0.020 [s]

B-118

8506-16



CFC_180

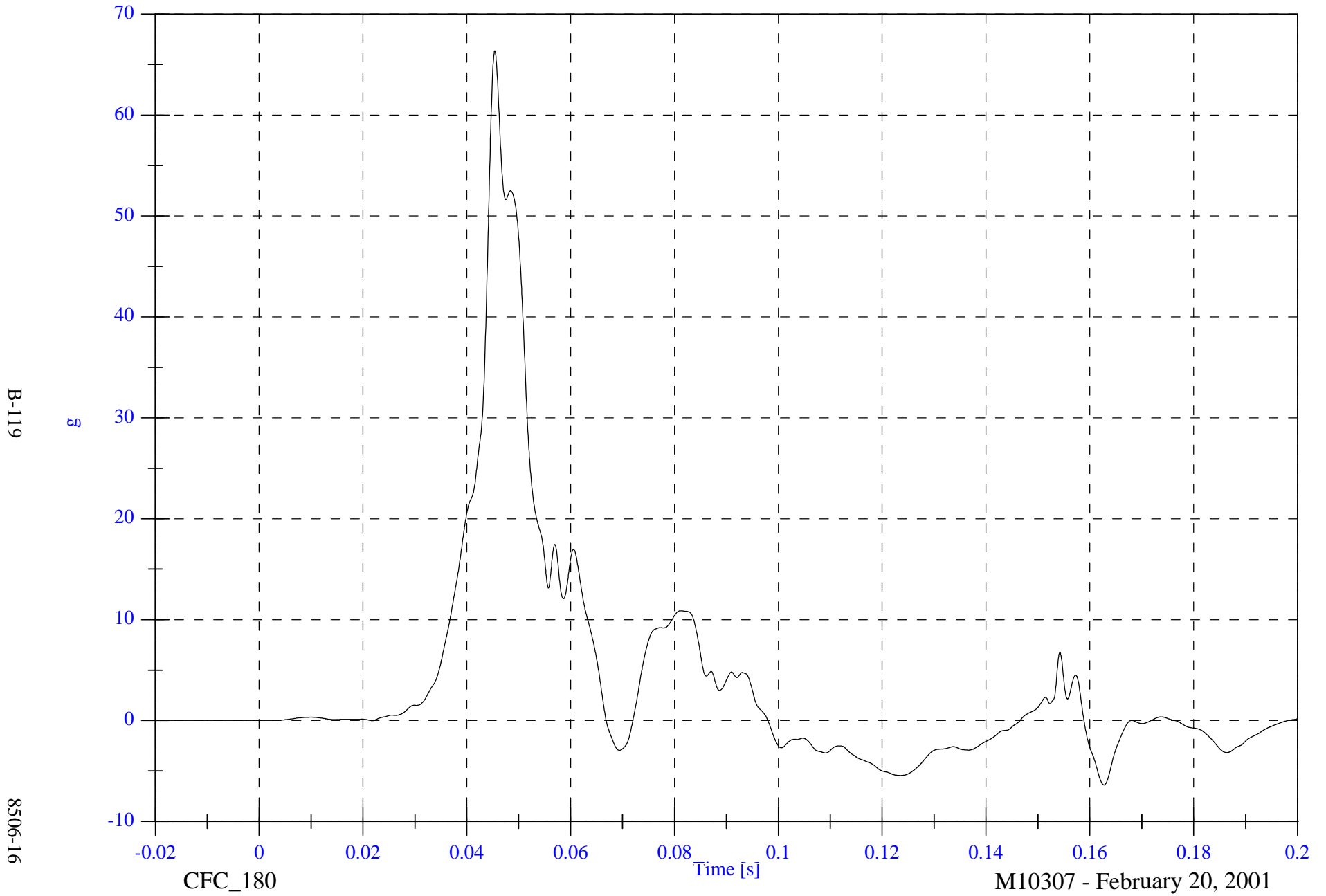
M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

P4 Lower Spine Ry

Max: 66.4 [g] at 0.045 [s]

Min: -6.4 [g] at 0.163 [s]



B-119

8506-16

CFC_180

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

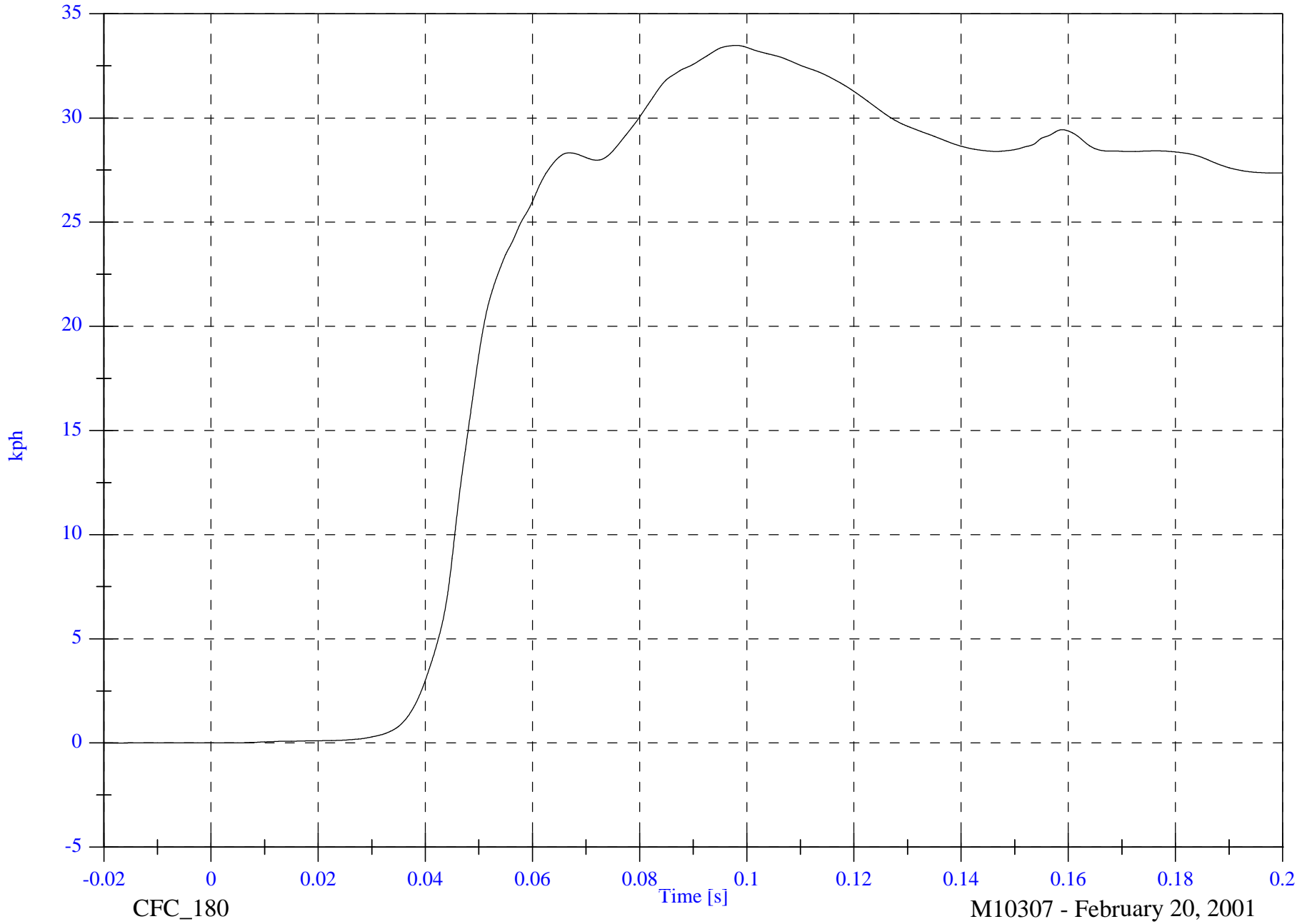
P4 Lower Spine Ry Velocity

Max: 33.5 [kph] at 0.098 [s]

Min: -0.0 [kph] at -0.020 [s]

B-120

8506-16



CFC_180

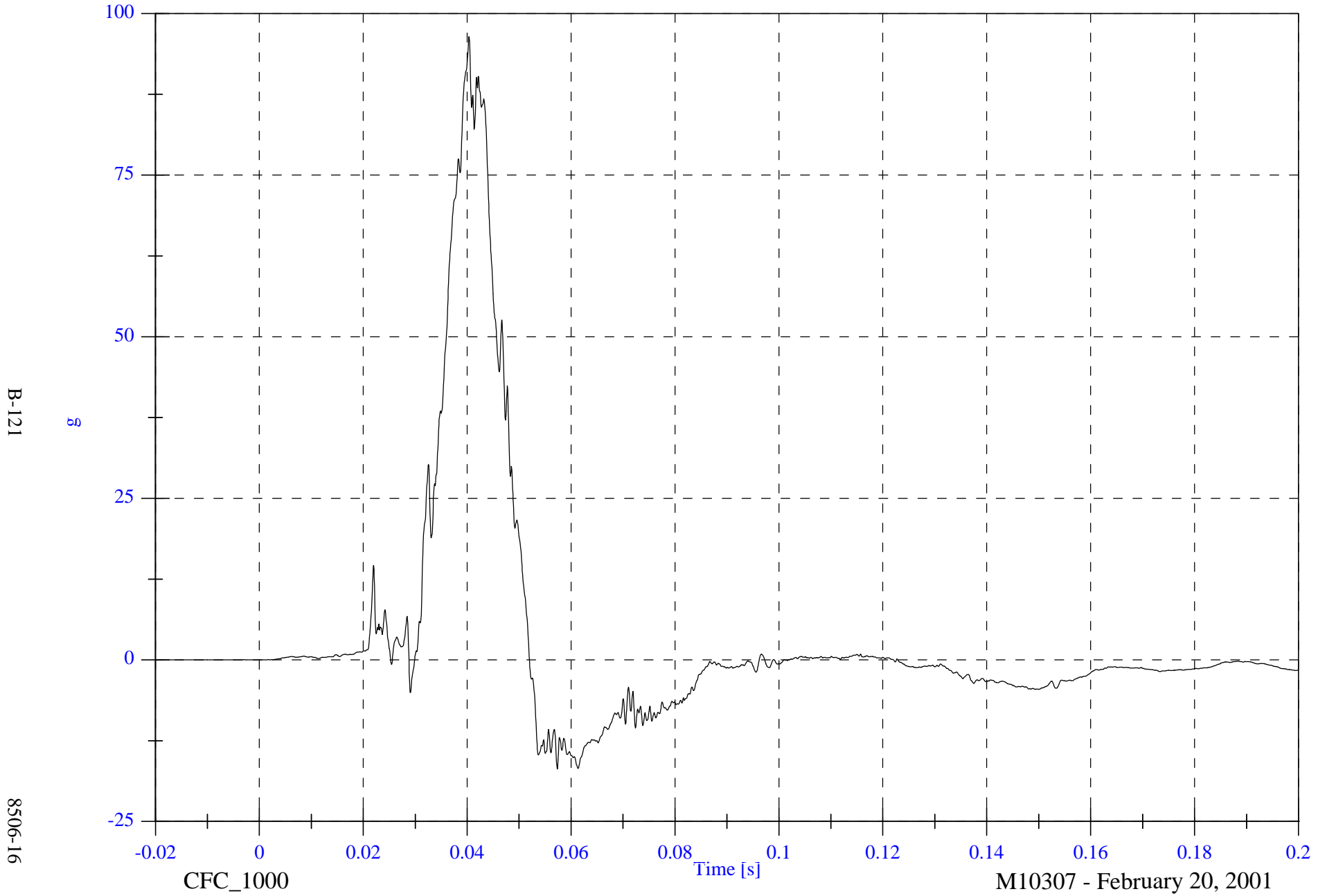
M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

P4 Pelvic Ry

Max: 96.4 [g] at 0.040 [s]

Min: -16.9 [g] at 0.057 [s]



B-121

8506-16

CFC_1000

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

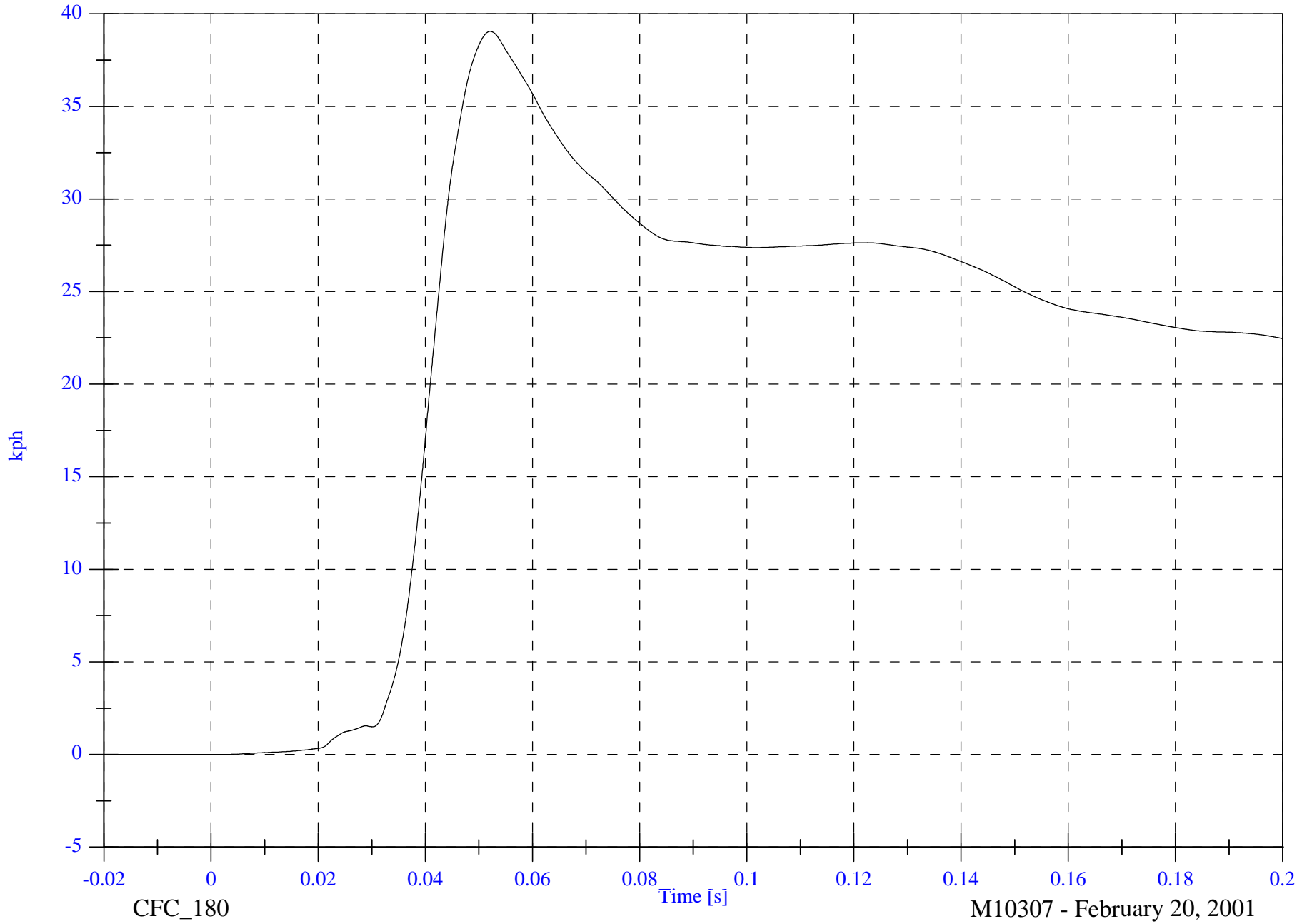
Max: 39.1 [kph] at 0.052 [s]

P4 Pelvic Ry Velocity

Min: -0.0 [kph] at -0.015 [s]

B-122

8506-16



SNCAP Test 16 - 2001 Dodge Grand Caravan

P1 Upper Rib Ry

Max: 49.5 [g] at 0.053 [s]

Min: -13.6 [g] at 0.089 [s]



B-123

8506-16

FIR_100

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

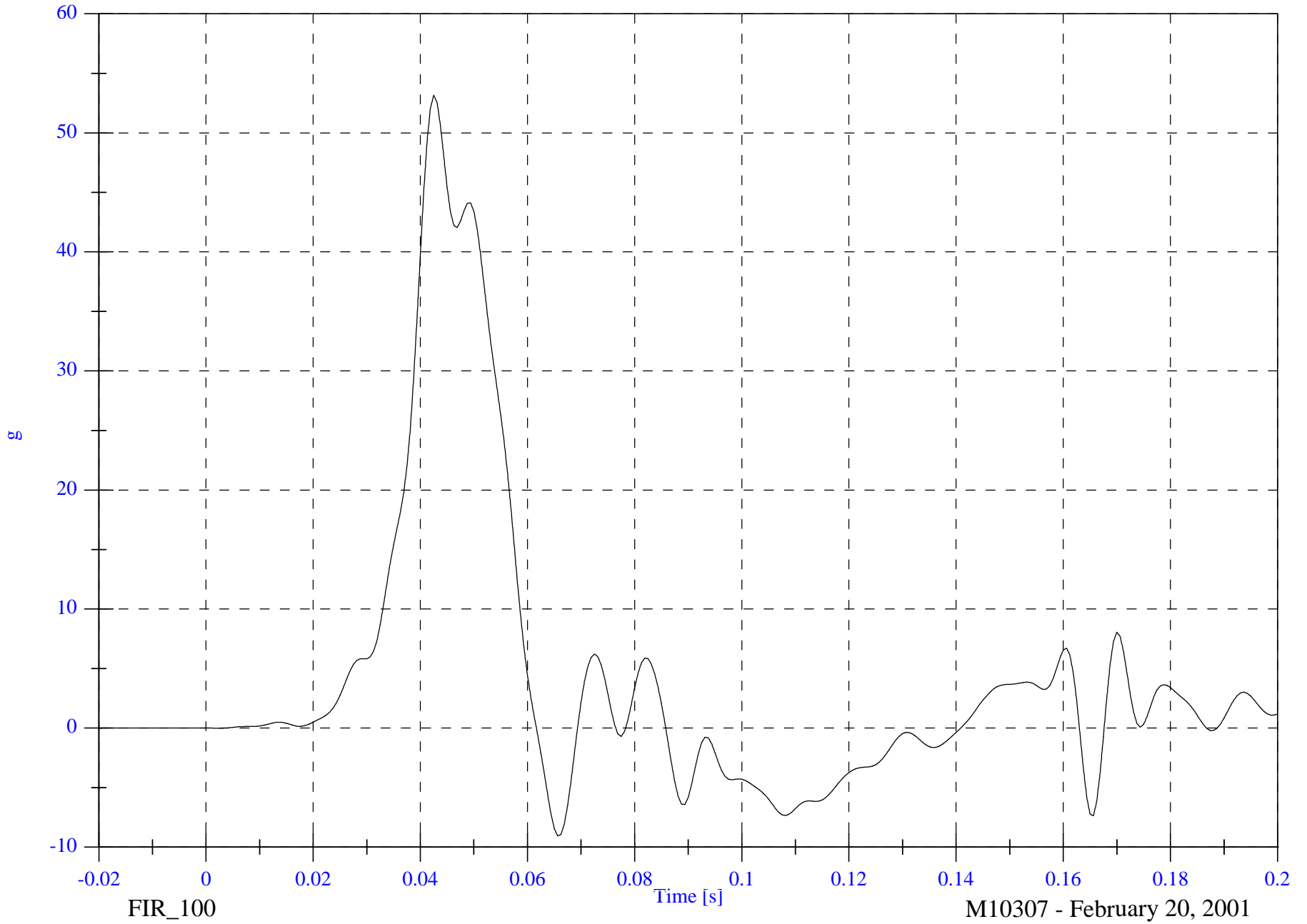
P1 Lower Rib Ry

Max: 53.2 [g] at 0.043 [s]

Min: -9.1 [g] at 0.066 [s]

B-124

8506-16



FIR_100

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

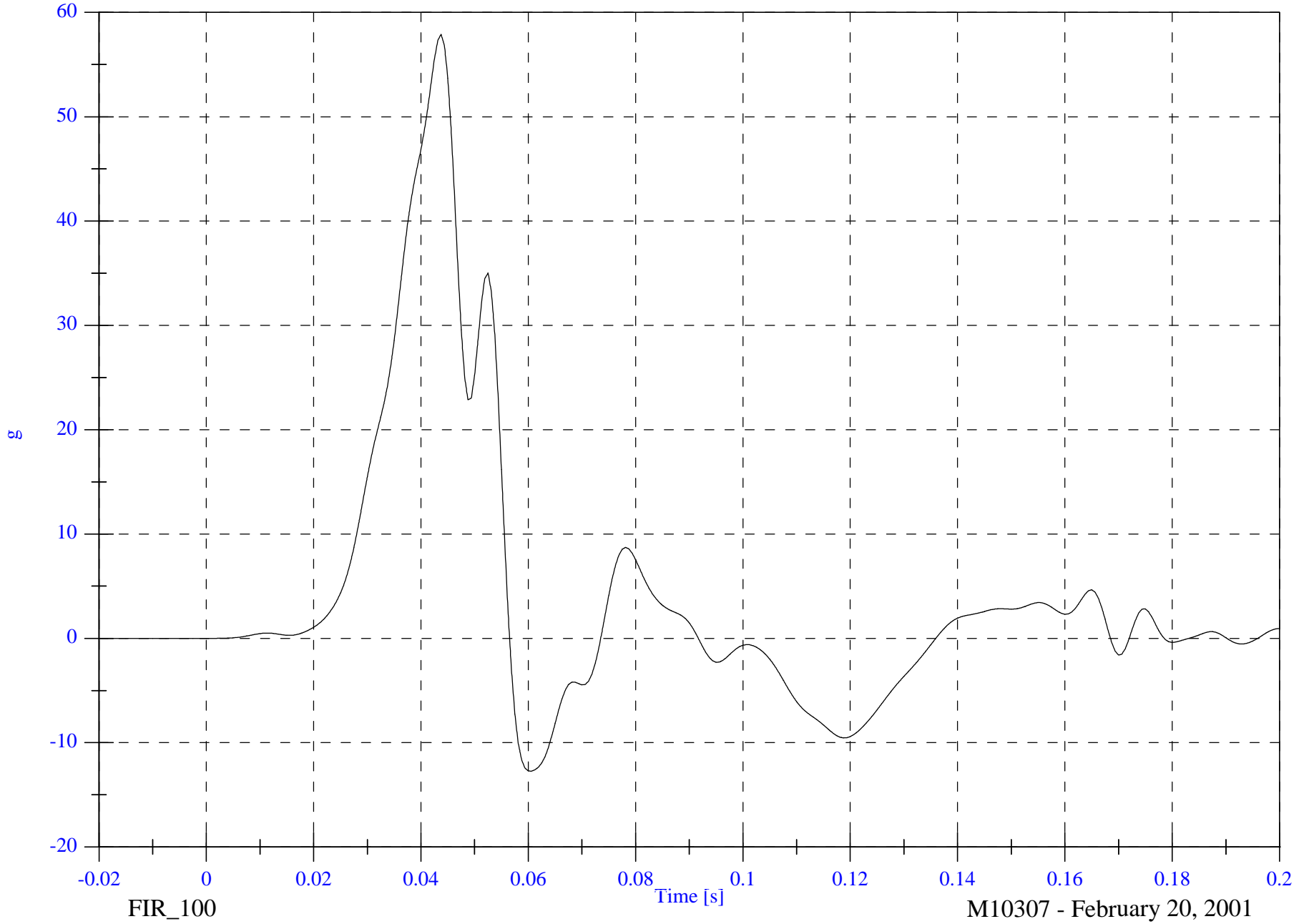
P1 Lower Spine Ry

Max: 57.9 [g] at 0.044 [s]

Min: -12.7 [g] at 0.061 [s]

B-125

8506-16



SNCAP Test 16 - 2001 Dodge Grand Caravan

P1 Pelvic Ry

Max: 51.7 [g] at 0.038 [s]

Min: -12.2 [g] at 0.056 [s]

B-126

8506-16



FIR_100

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

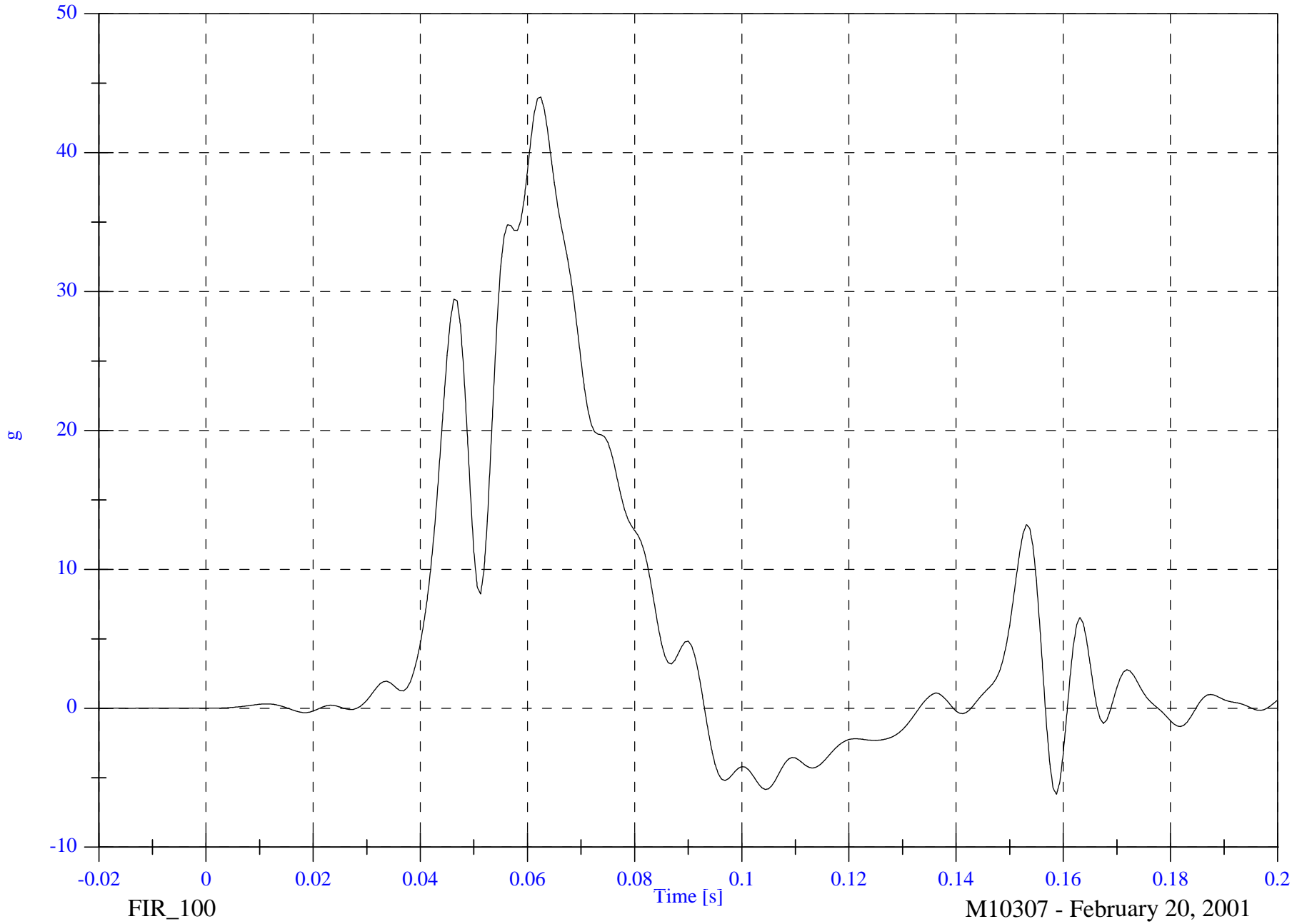
P4 Upper Rib Ry

Max: 44.0 [g] at 0.063 [s]

Min: -6.2 [g] at 0.159 [s]

B-127

8506-16



SNCAP Test 16 - 2001 Dodge Grand Caravan

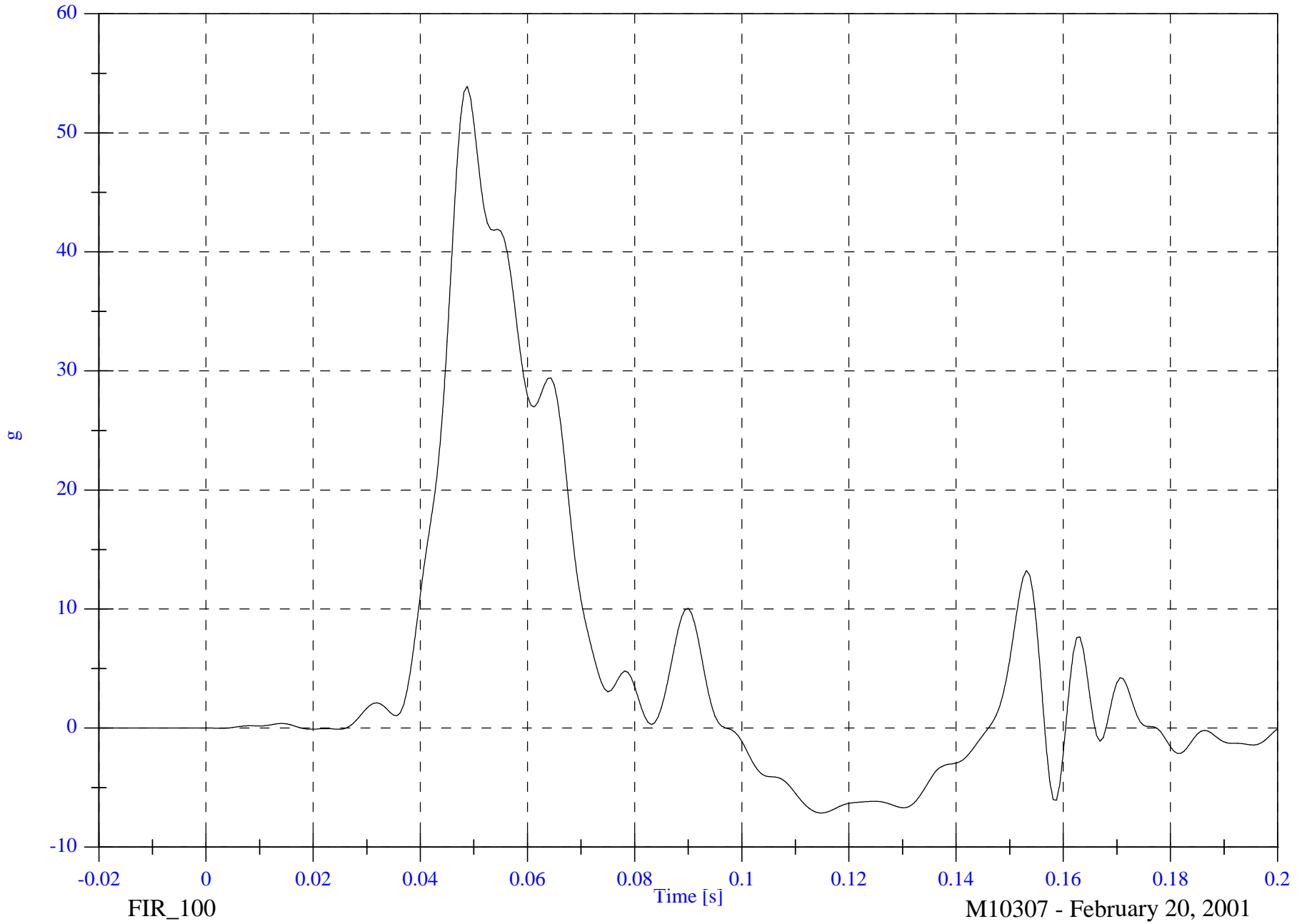
P4 Lower Rib Ry

Max: 53.9 [g] at 0.049 [s]

Min: -7.1 [g] at 0.115 [s]

B-128

8506-16



FIR_100

M10307 - February 20, 2001

SNCAP Test 16 - 2001 Dodge Grand Caravan

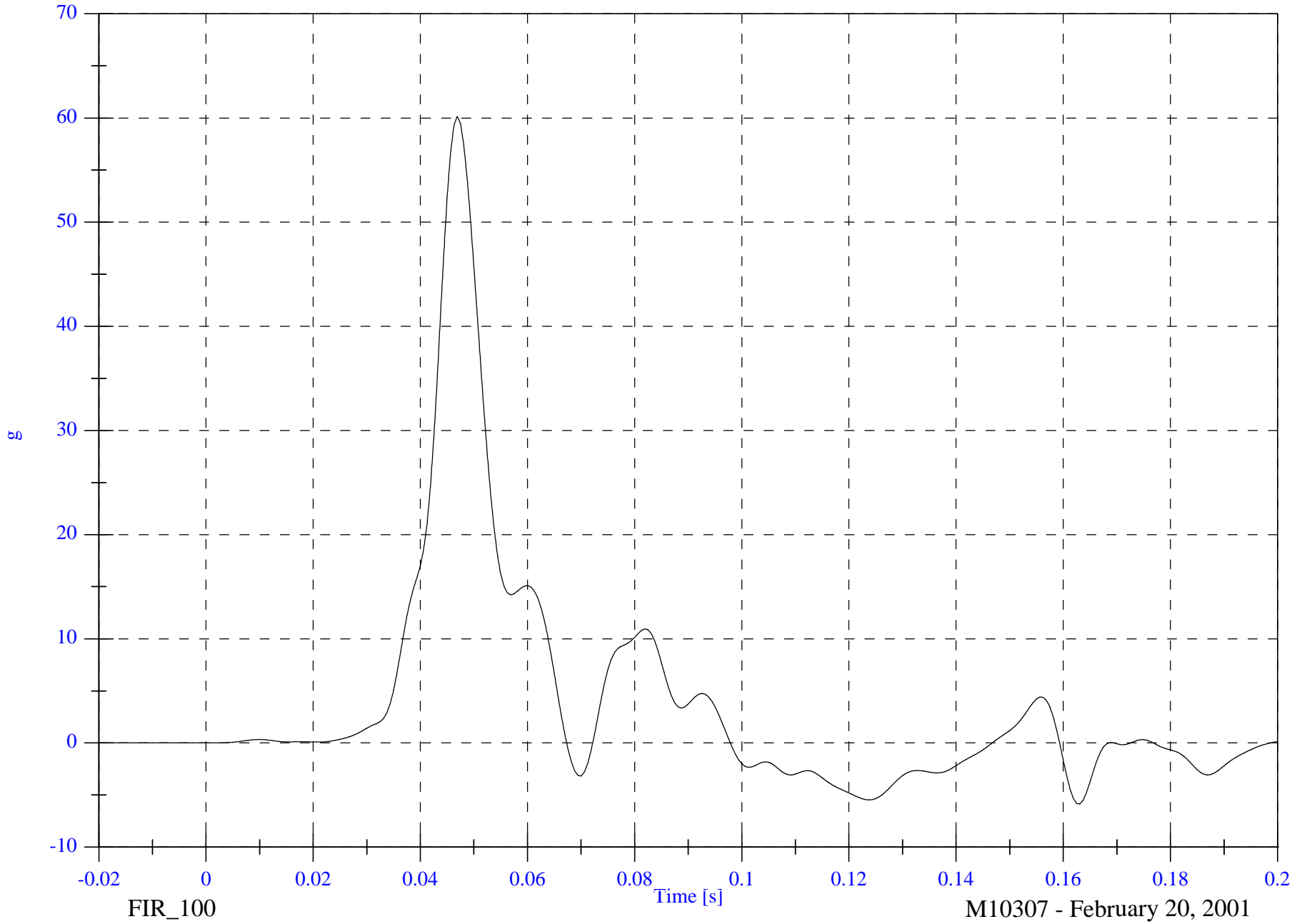
P4 Lower Spine Ry

Max: 60.2 [g] at 0.047 [s]

Min: -5.9 [g] at 0.163 [s]

B-129

8506-16

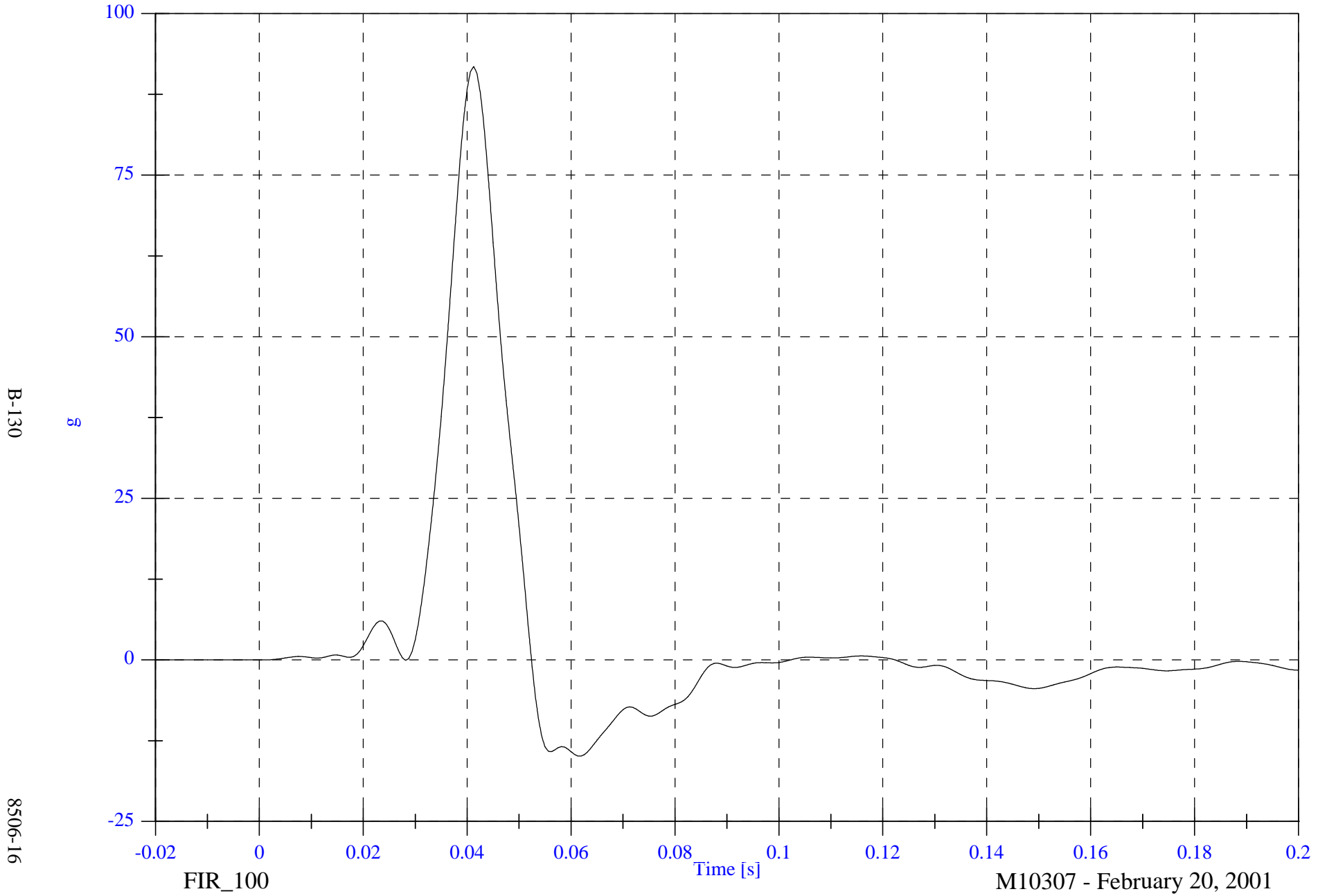


SNCAP Test 16 - 2001 Dodge Grand Caravan

P4 Pelvic Ry

Max: 91.8 [g] at 0.041 [s]

Min: -14.9 [g] at 0.062 [s]



APPENDIX C

SID CONFIGURATION AND PERFORMANCE VERIFICATION DATA

**SUMMARY
SID PRE & POST TEST CALIBRATION**

CONFIGURED FOR LEFT SIDE IMPACT

Date: 2/23/01; 2/23/01 Sequential Test Number: 1.2; 1.1
 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	SID NO.: 015		SID NO.: 016	
		PRE TEST	POST TEST	PRE TEST	POST TEST
SH- Seated Height (mm)	889 - 909	902	902	902	902
RH- Rib Height (mm)	501 - 521	512	513	512	513
HP- Hip Pivot Height (mm)	99 ref.	99	99	99	99
RD- Rib from Back Line (mm)	229 - 241	239	239	239	239
KV- Knee Pivot from Back Line (mm)	511 - 526	521	521	521	526
SW- Knee Pivot to Floor (mm)	490 - 505	493	493	493	495
HW- Hip Width (mm)	356 - 391	375	373	375	366
THORAX IMPACTS					
TEMPERATURE (°C)	18.9 - 25.5	21.7	21.7	21.7	21.7
RELATIVE HUMIDITY (%)	10 - 70	32	31	32	31
PROBE SPEED (m/s)	4.27 - 4.33	4.28	4.28	4.28	4.29
UPPER RIB (g's)	37 - 46	41.3	38.5	41.8	41.3
LOWER RIB (g's)	37 - 46	37.8	39.9	40.3	39.9
LOWER SPINE (g's)	15 - 22	20.5	21.7	21.8	22.3
PELVIS IMPACT					
TEMPERATURE (°C)	18.9 - 25.5	21.7	21.7	21.7	21.7
RELATIVE HUMIDITY (%)	10 - 70	32	31	32	31
PROBE SPEED (m/s)	4.27 - 4.33	4.32	4.27	4.27	4.27
PELVIS (g's)	40 - 60	59.1	46.9	52.3	63.1

REMARKS: None

**CALIBRATION TEST RESULTS
PRE-TEST**

SID NO.: 015

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: 2/13/01 Laboratory Technician: B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
THORACIC SHOCK ABSORBER TEST	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: 2/13/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	512
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	239
KH- Knee Pivot from Back Line (mm)	511 - 526	521
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	375

REMARKS: None

**THORACIC SHOCK ABSORBER TESTS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1.2
 Date: 1/20/01 Laboratory Technician: B. Swiecicki

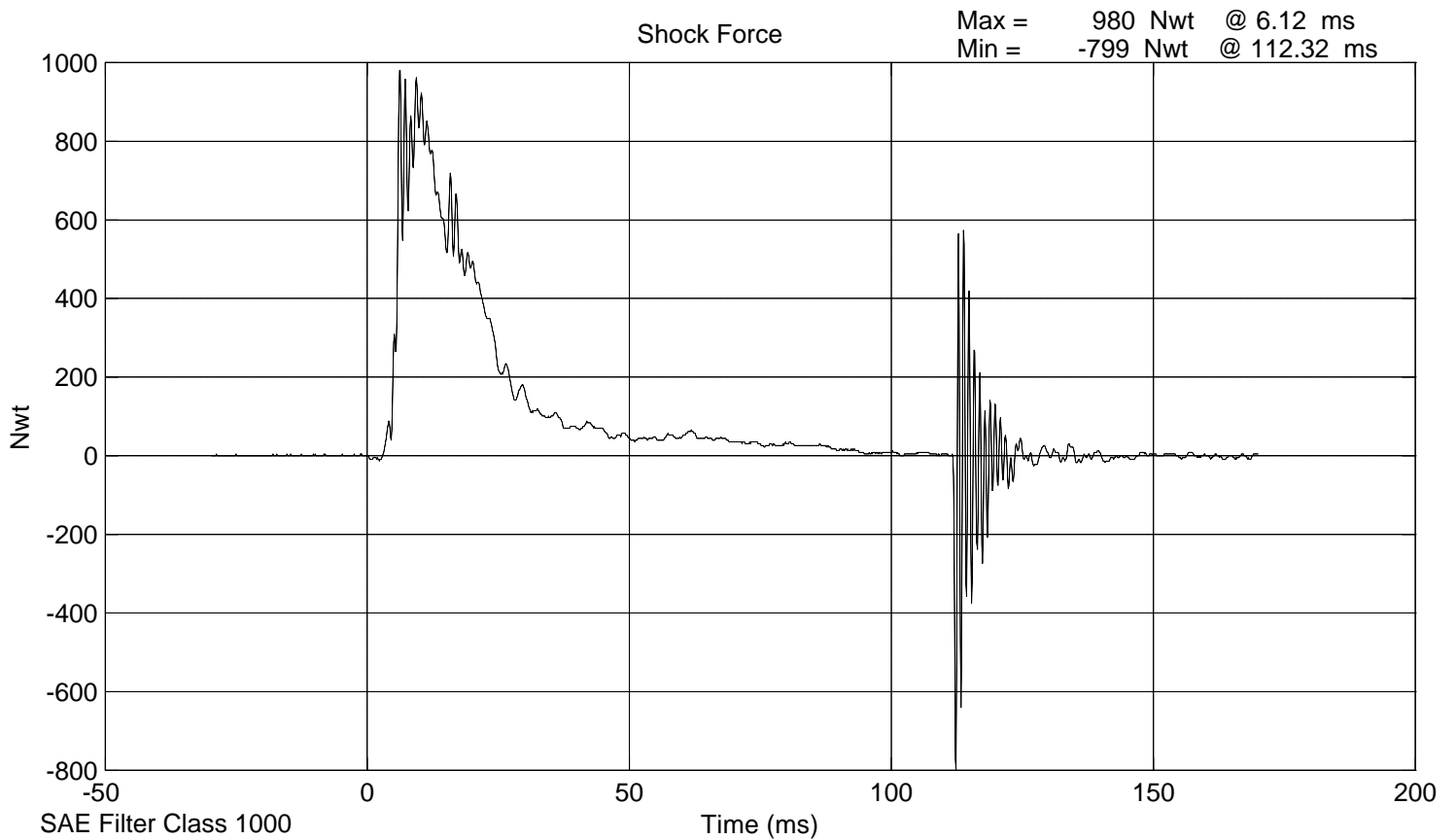
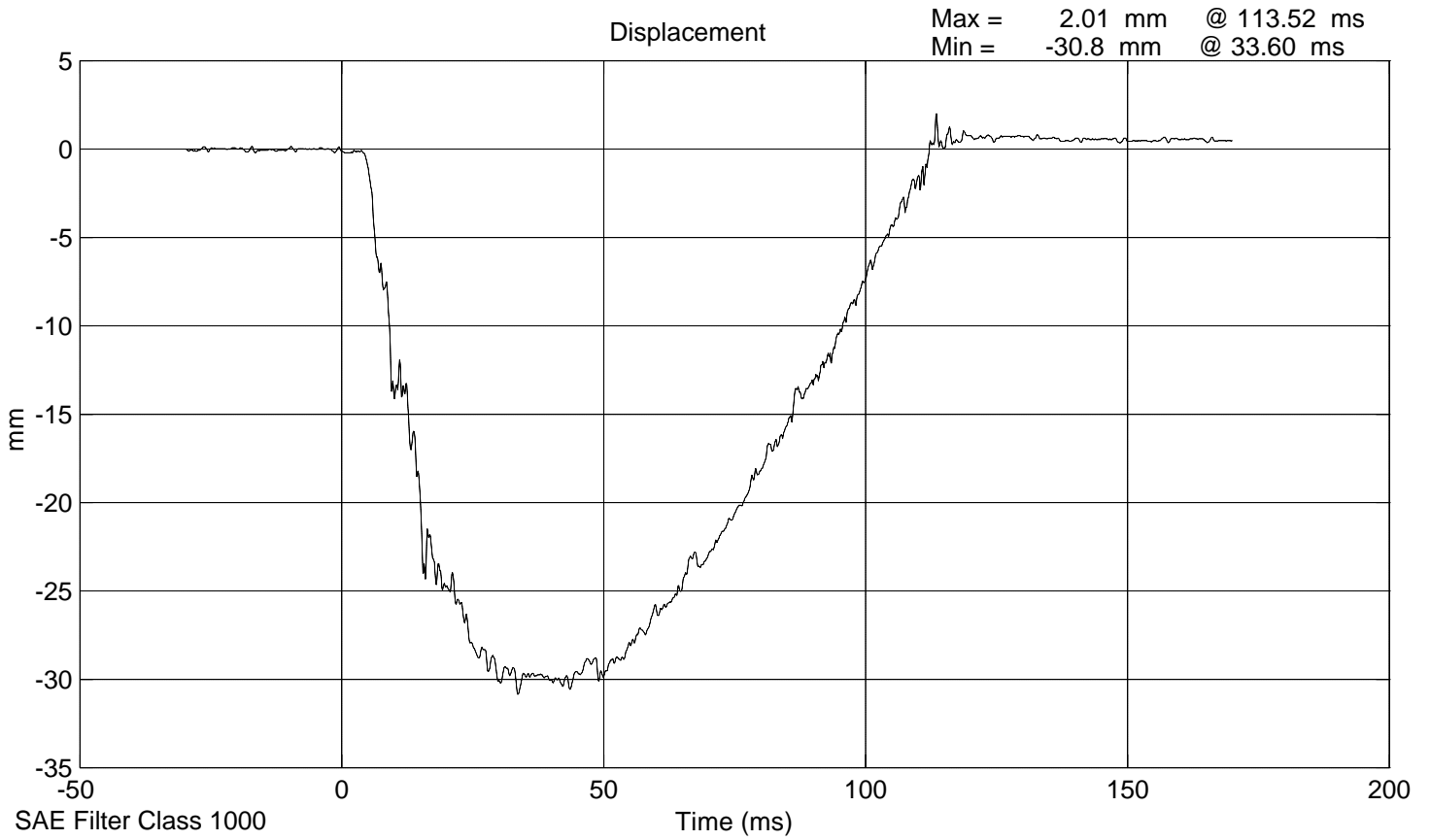
DAMPER IDENTIFICATION: 015

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)		18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)		10 - 70	30
VELOCITY 3.05 m/s	FORCE (N)	836 - 1125	980
	DISPLACEMENT (mm)	30 - 35	30.8
VELOCITY 4.27 m/s	FORCE (N)	1730 - 2099	1893
	DISPLACEMENT (mm)	32 - 37	33.8
VELOCITY 6.10 m/s	FORCE (N)	3741 - 4448	3800
	DISPLACEMENT (mm)	33 - 40	37.0

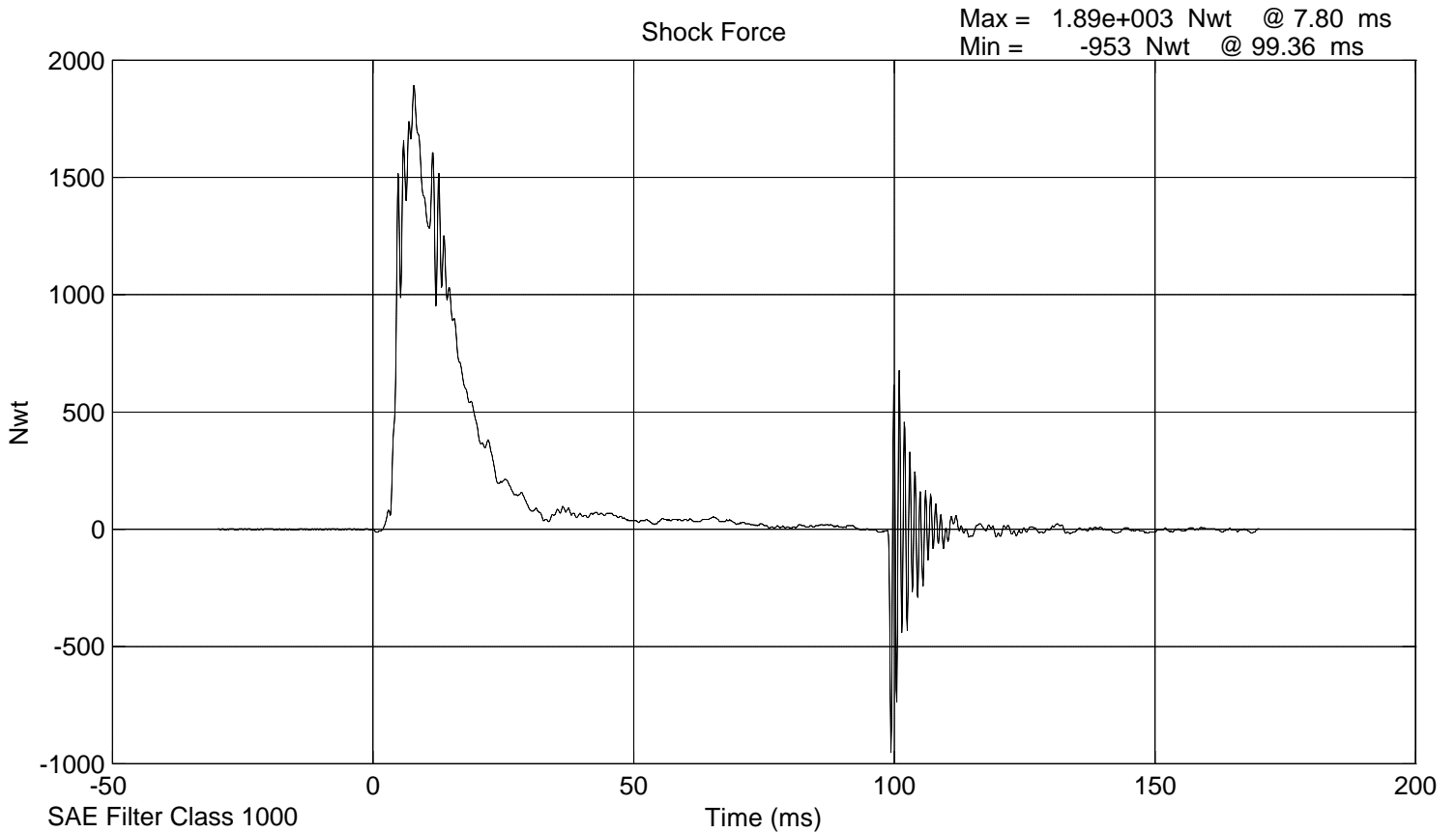
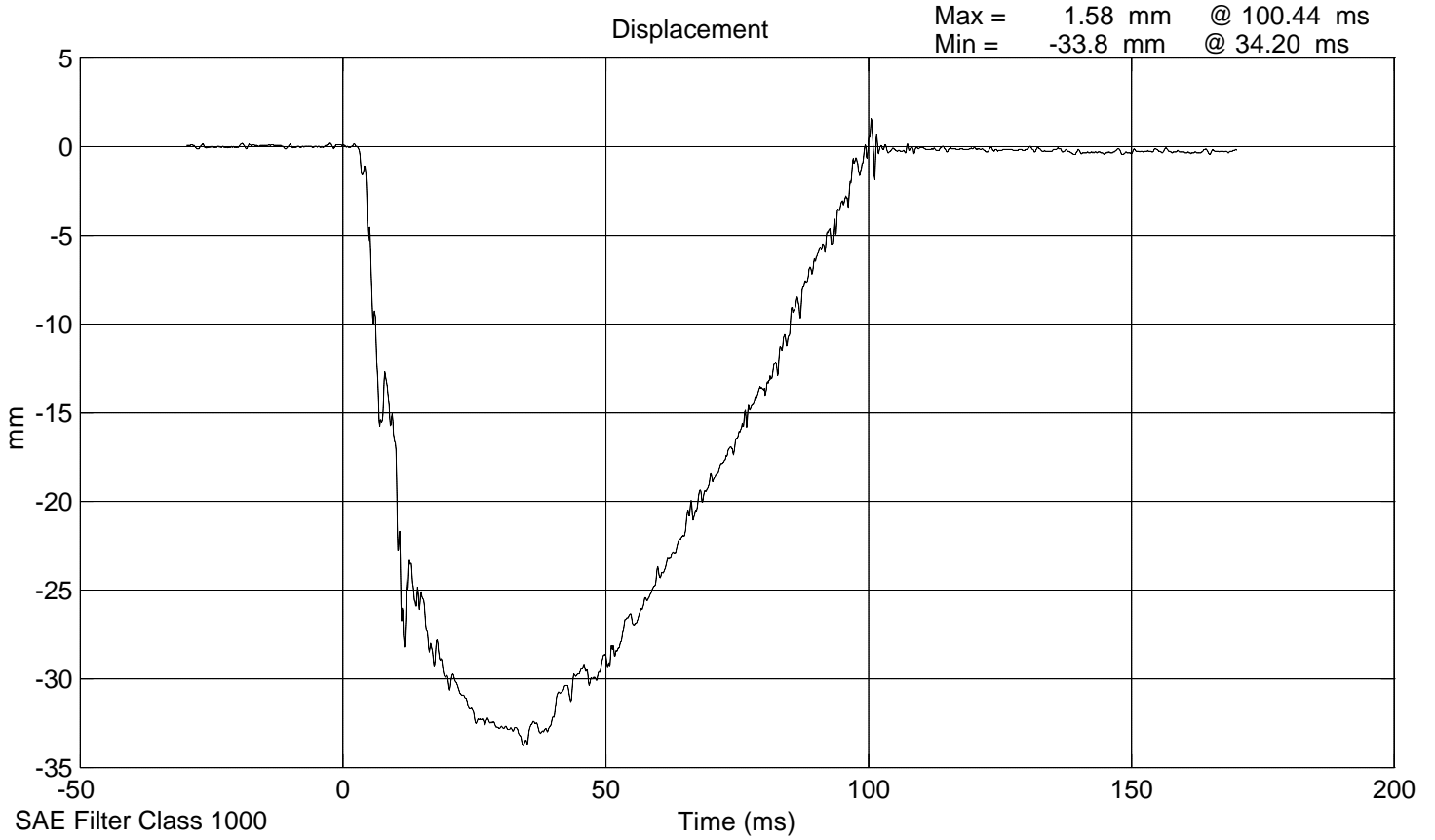
DAMPER SETTING: 5

REMARKS: None

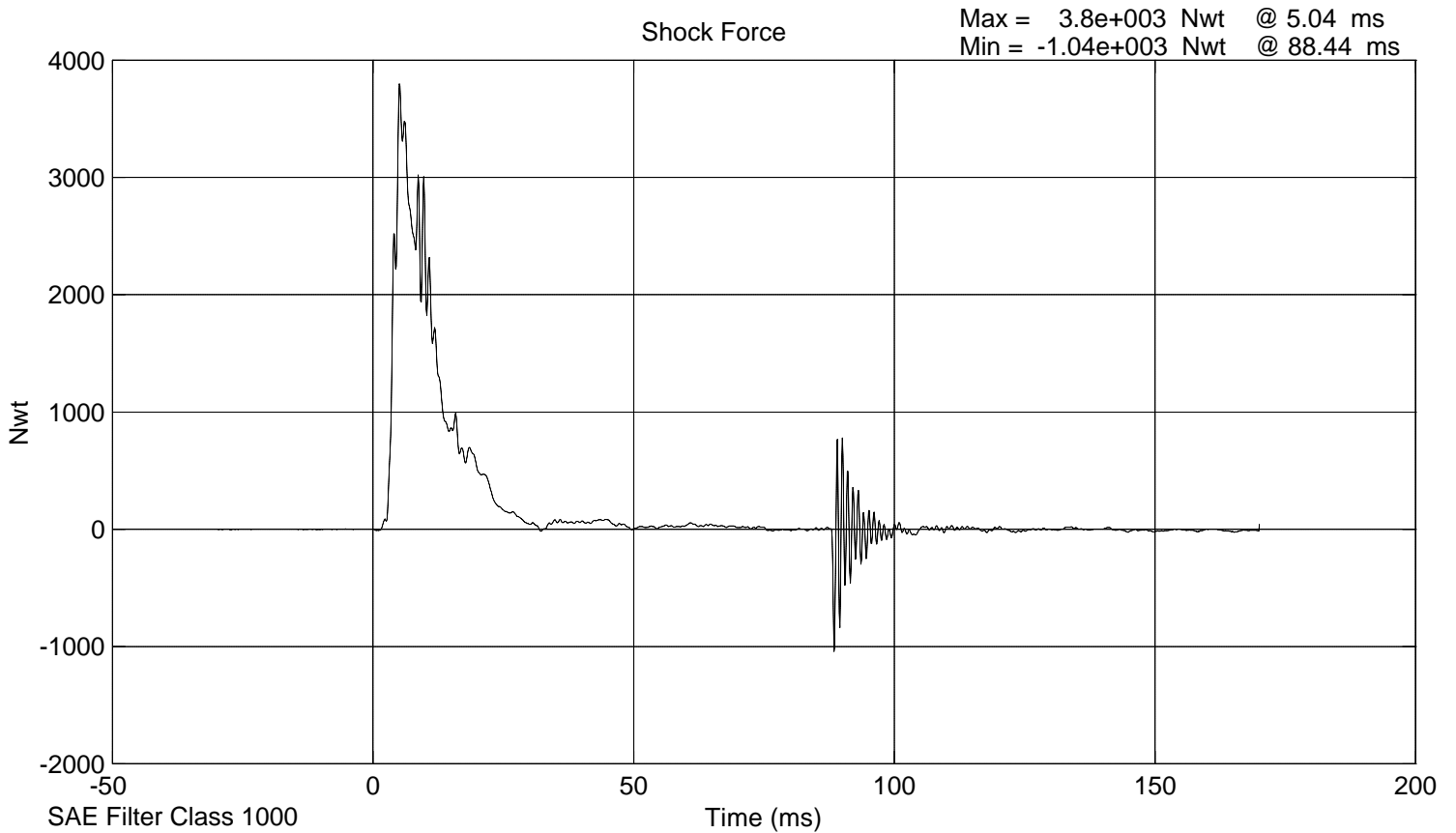
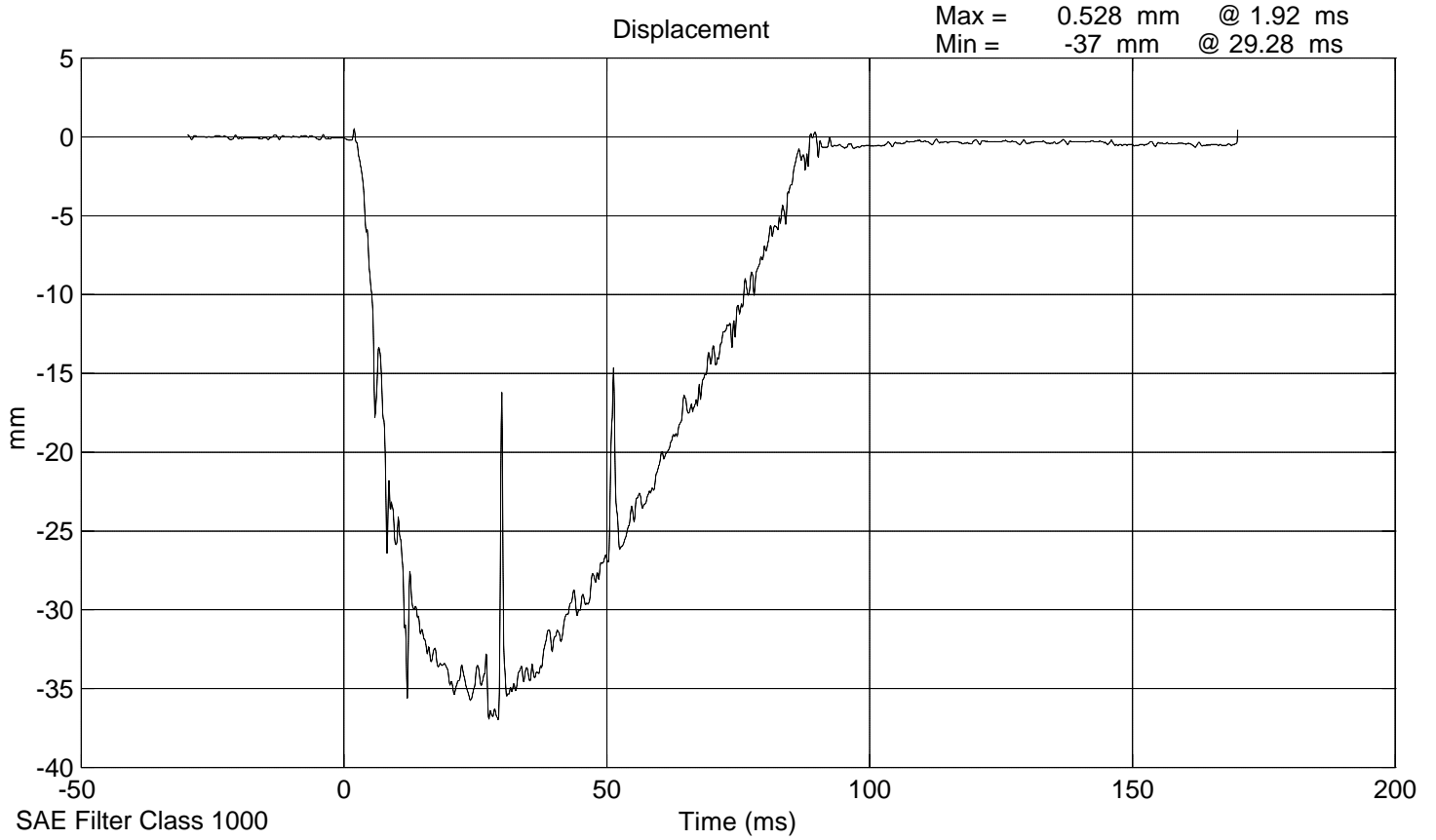
SID 015 Shock Absorber Impact Test @ 3.048 m/s



SID 015 Shock Absorber Impact Test @ 4.2672 m/s



SID 015 Shock Absorber Impact Test @ 6.096 m/s



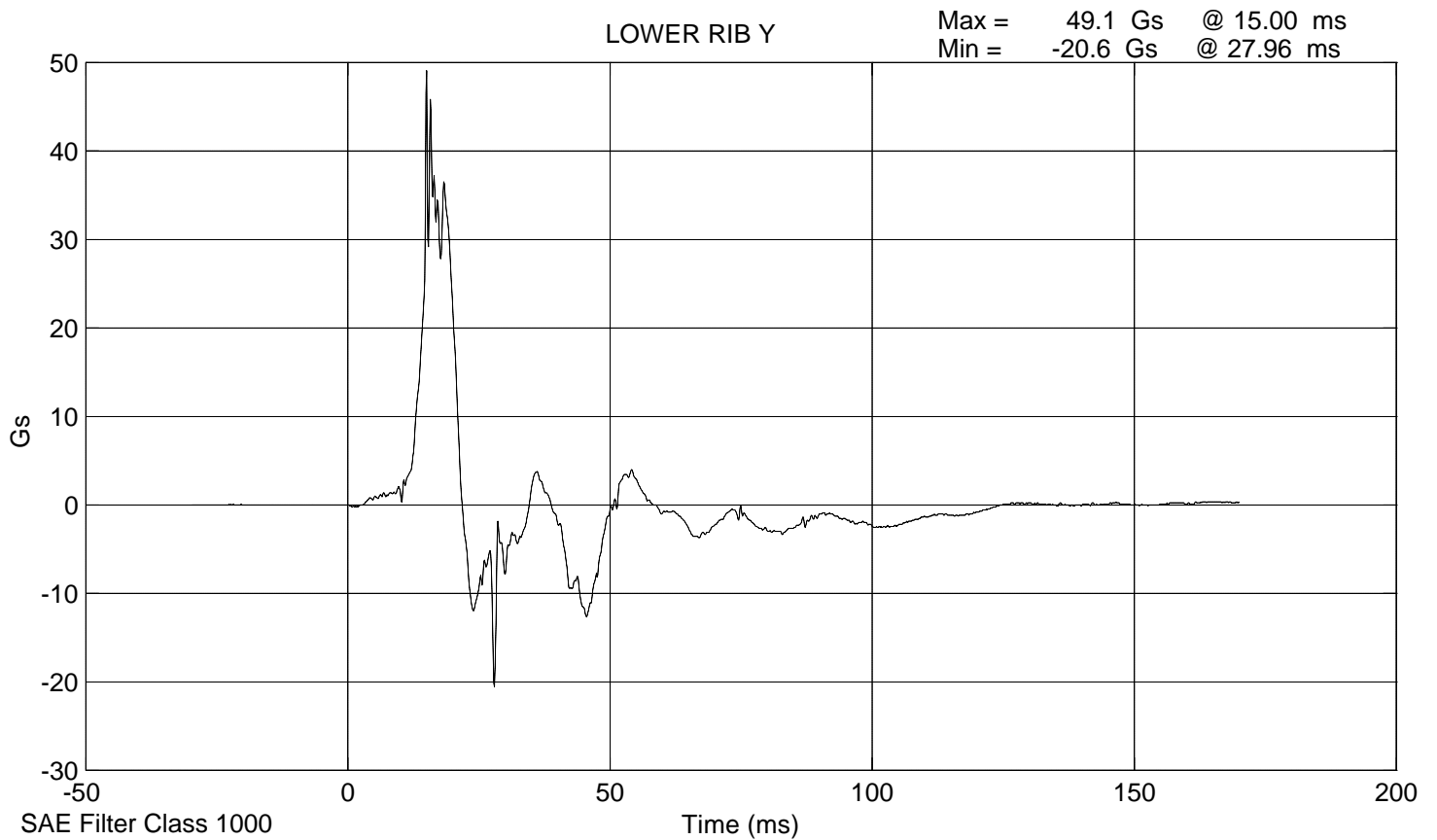
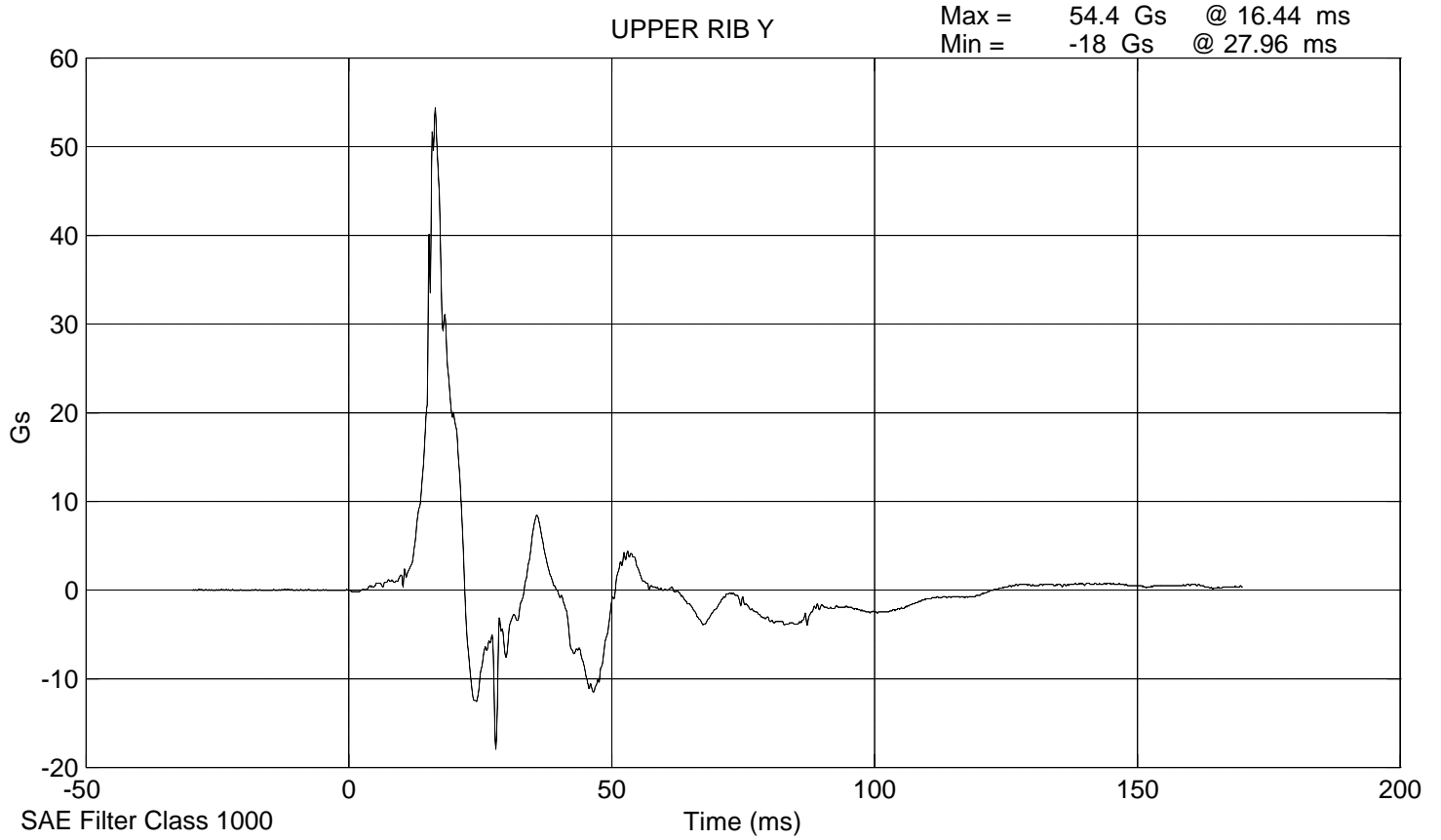
**LATERAL THORAX IMPACT TEST
PRE-TEST**

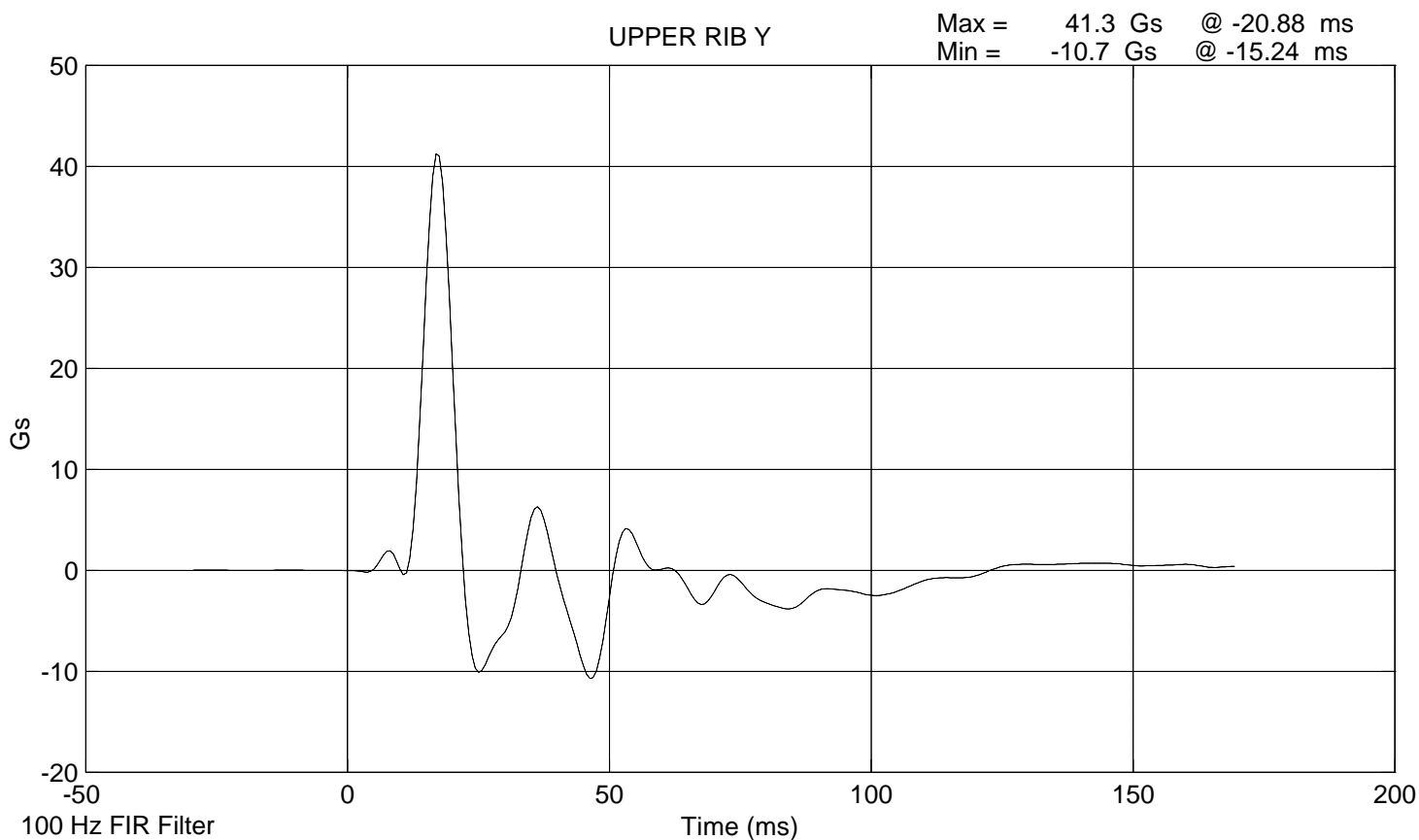
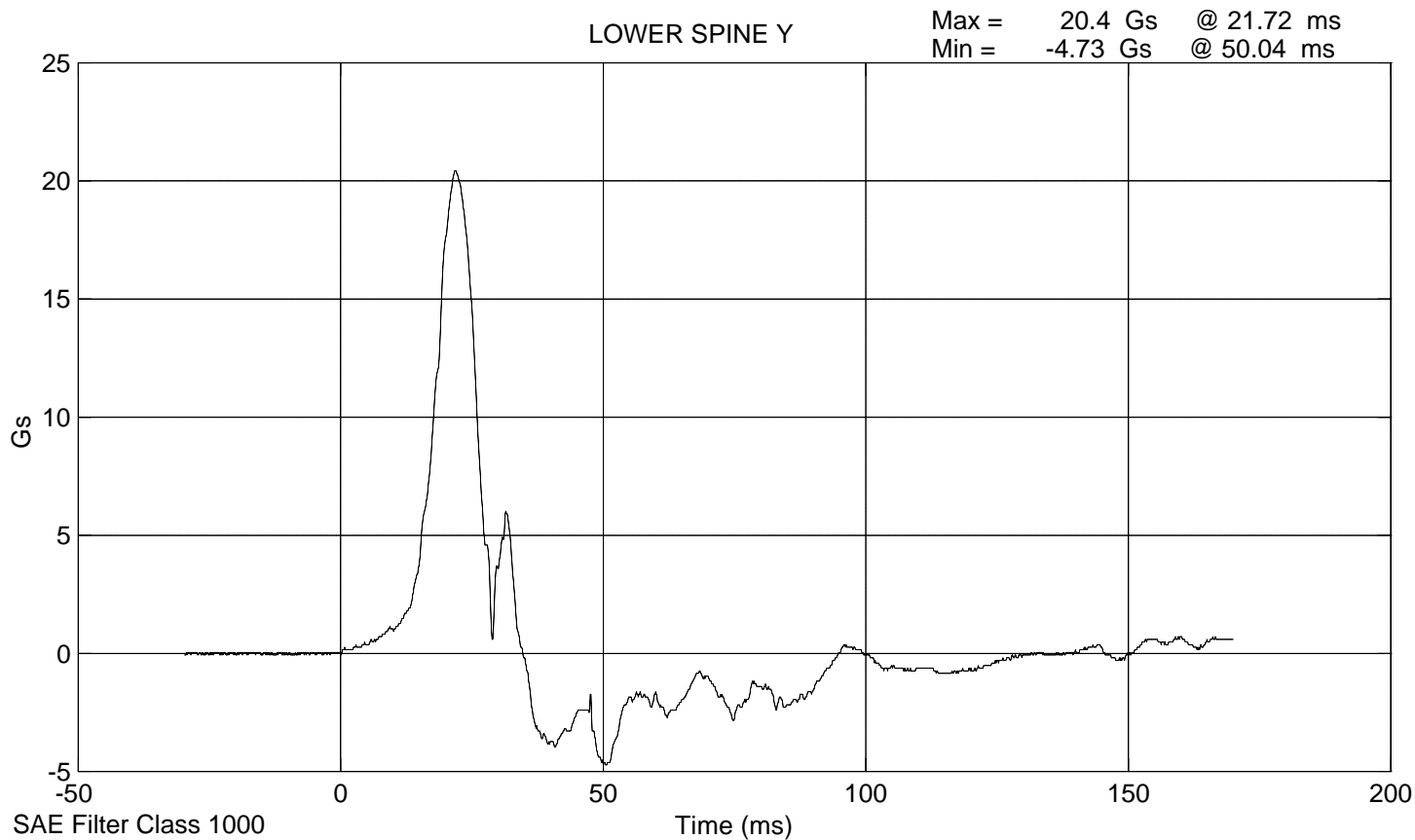
CONFIGURED FOR LEFT SIDE IMPACT

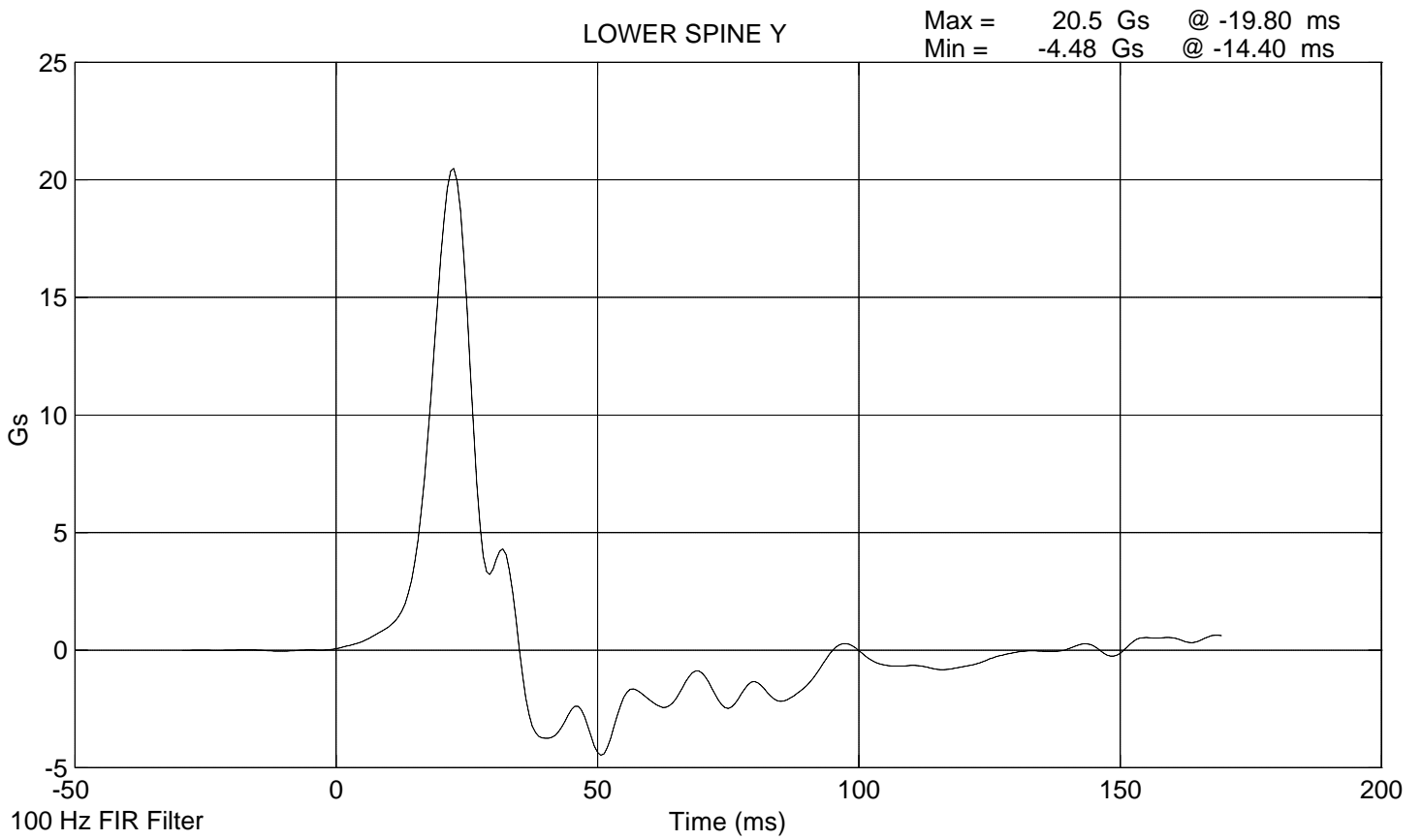
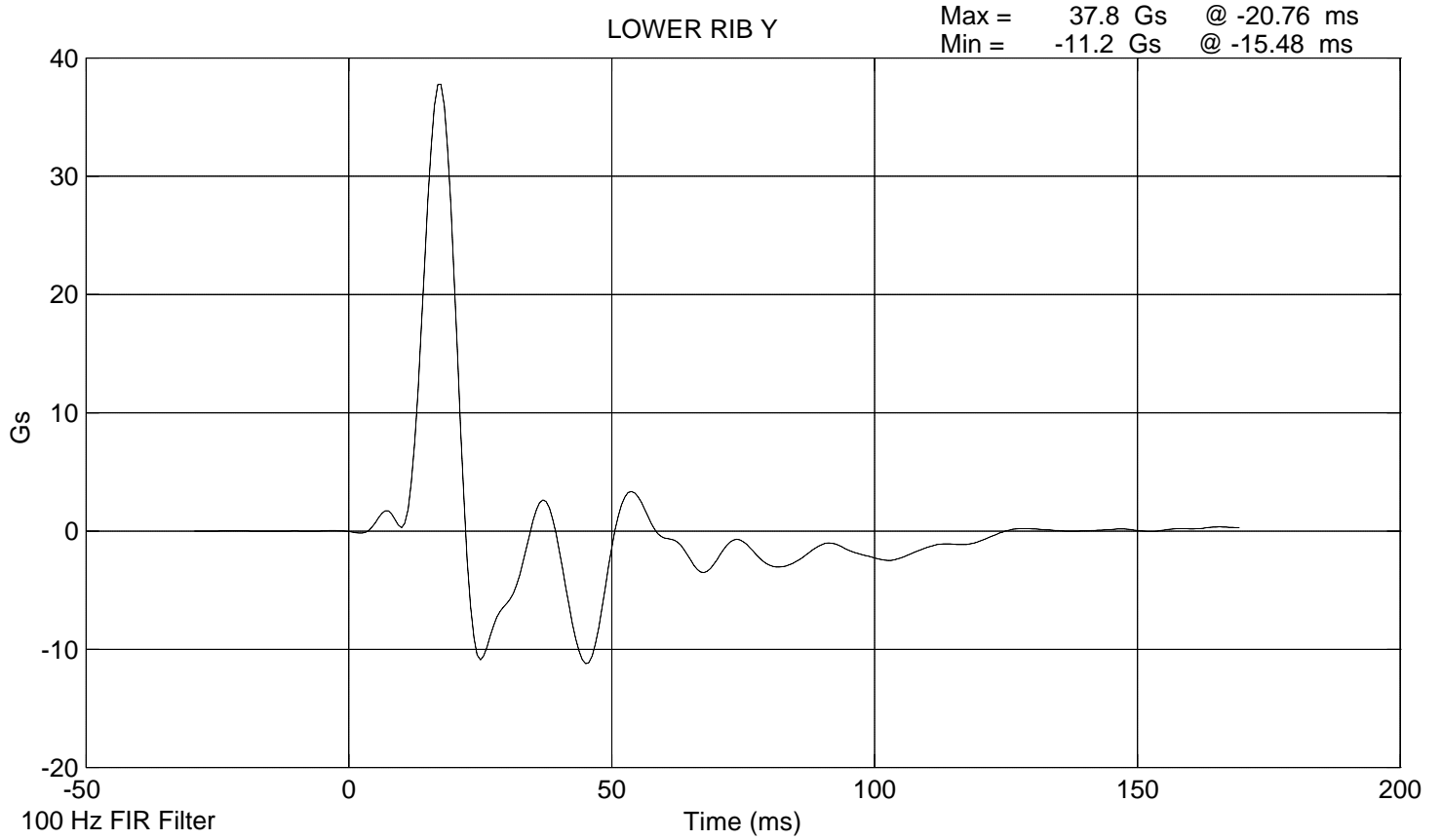
SID Serial No.: 015 Sequential Test Number: 1
Date: 2/13/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	32
PROBE SPEED (m/s)	4.27 - 4.33	4.28
UPPER RIB (g's)	37 - 46	41.3
LOWER RIB (g's)	37 - 46	37.8
LOWER SPINE (g's)	15 - 22	20.5

REMARKS: None







**LATERAL PELVIS IMPACT TEST
PRE-TEST**

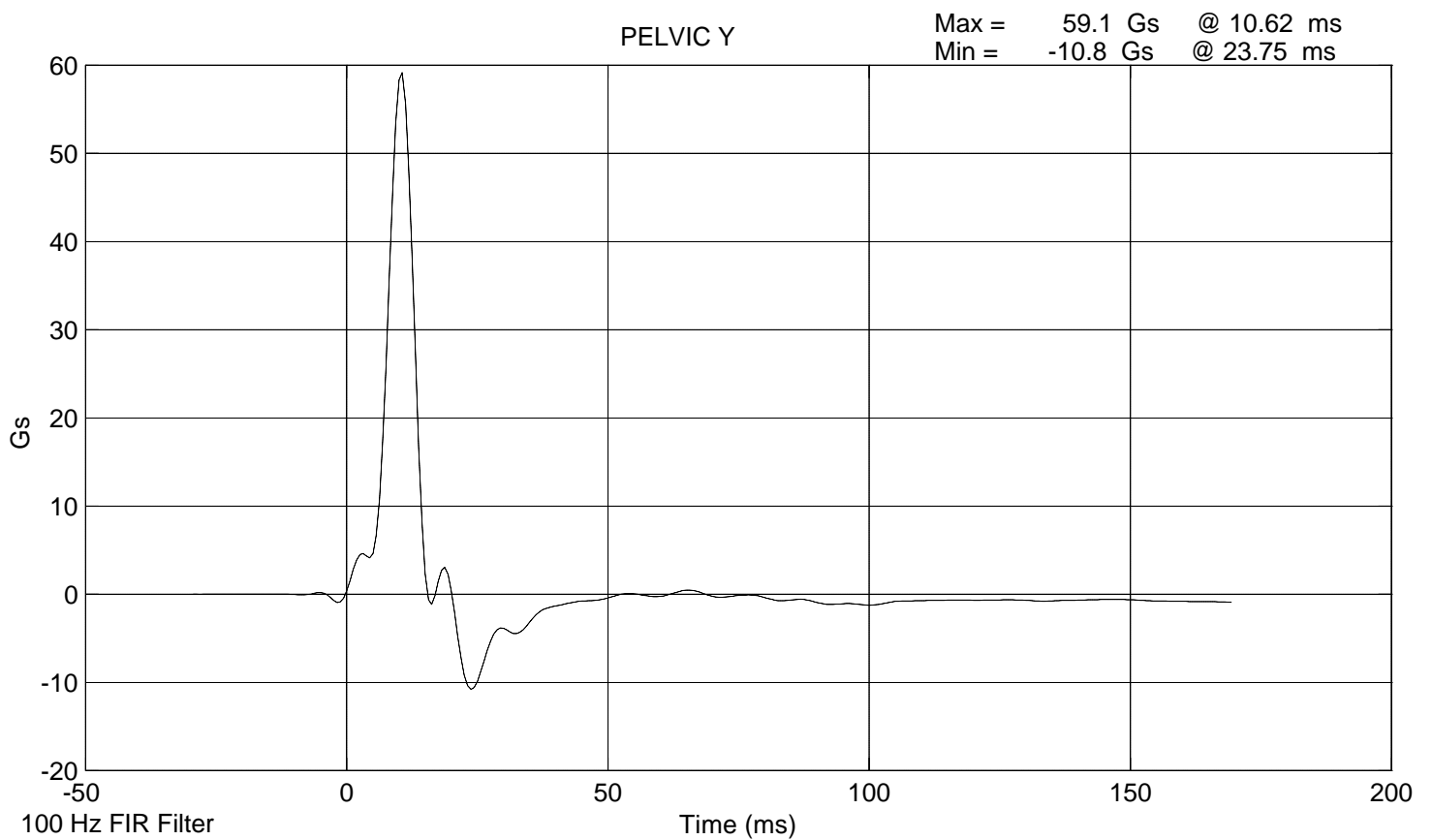
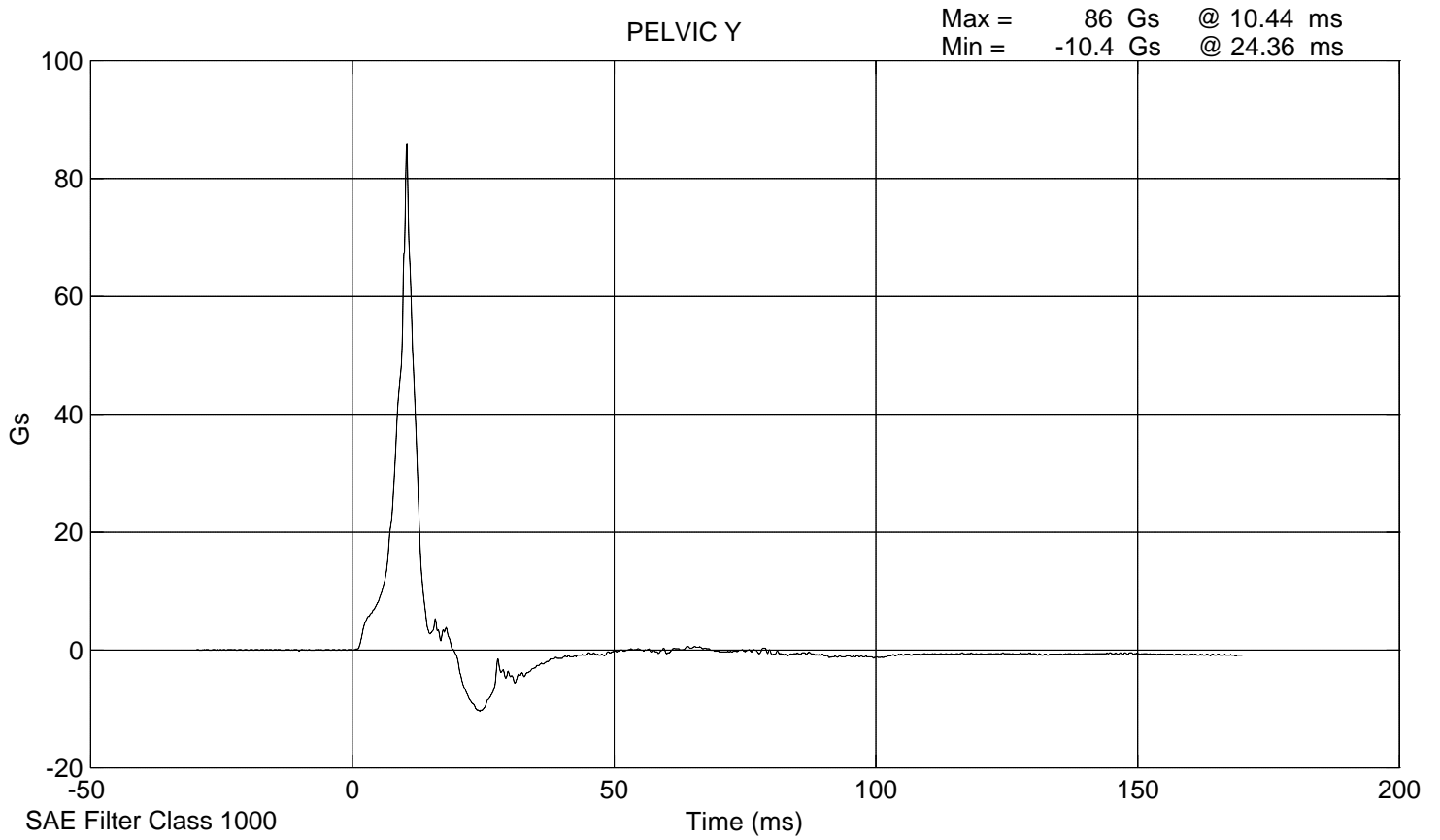
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: 2/13/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	32
PROBE SPEED (m/s)	4.27 - 4.33	4.32
PELVIS ACCELERATION (g's)	40 - 60	59.1

REMARKS: None

SID 015 Pelvic Impact Test @ 4.316 m/s



HEAD DROP TEST

PRE-TEST

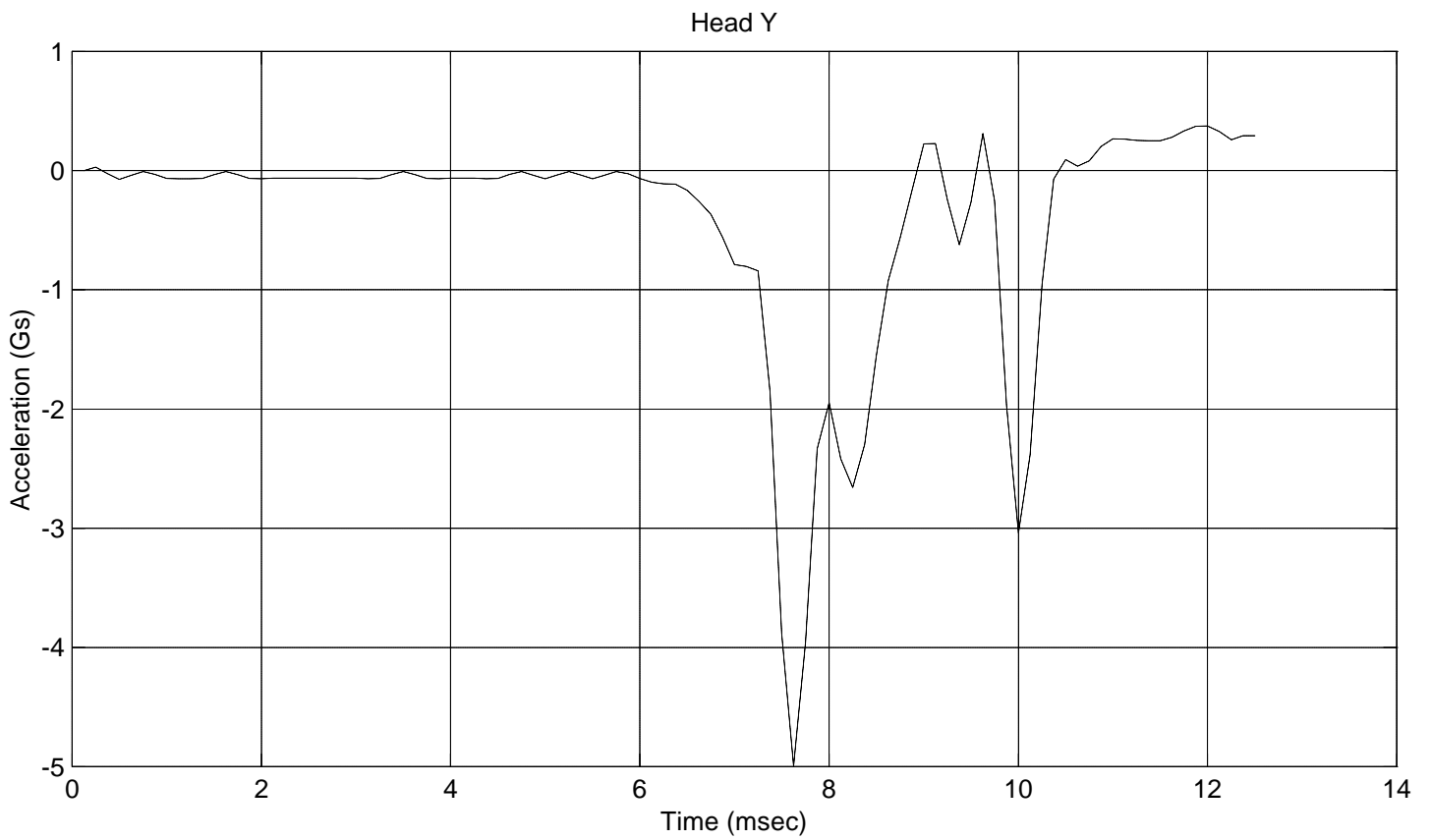
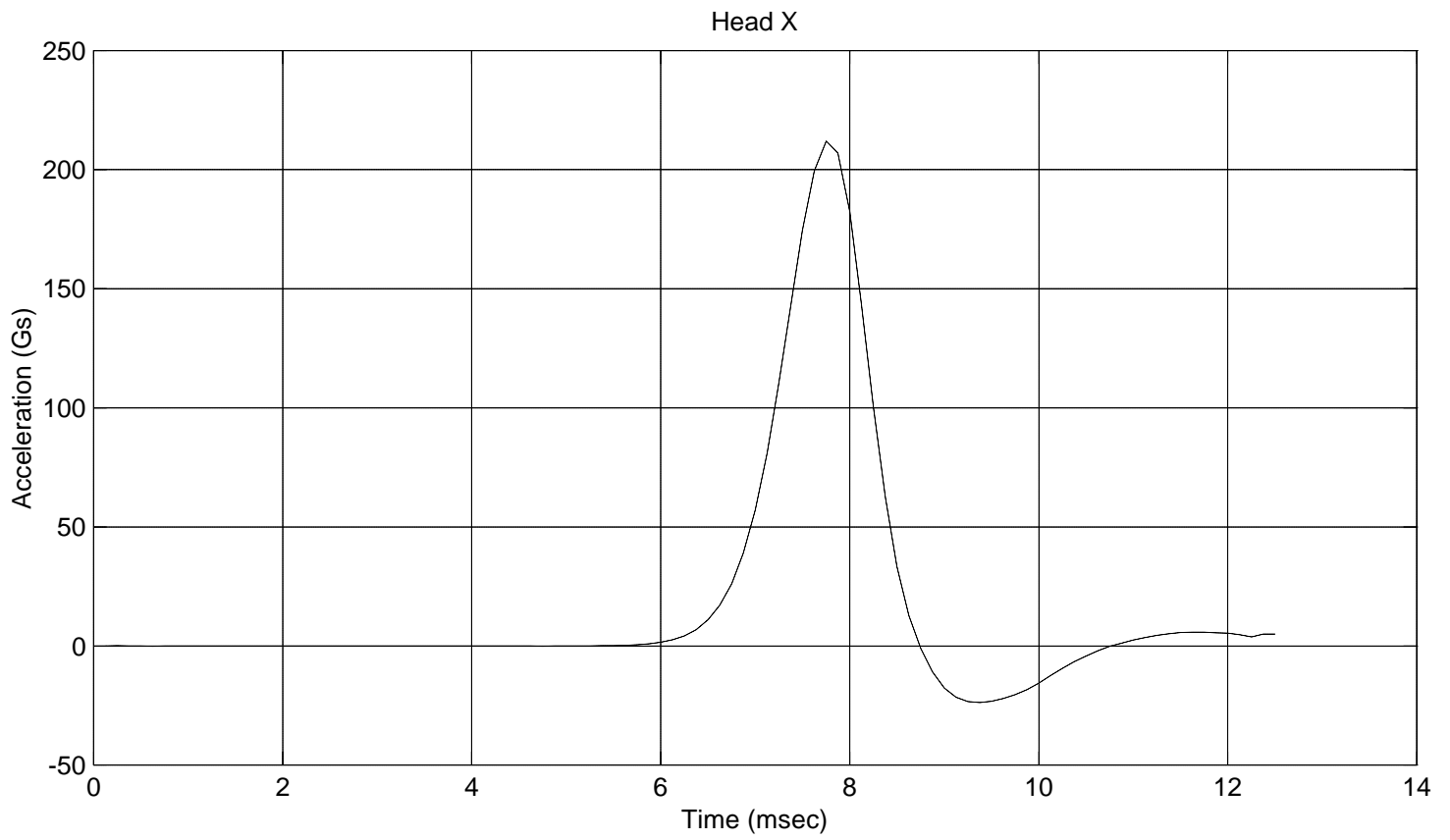
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

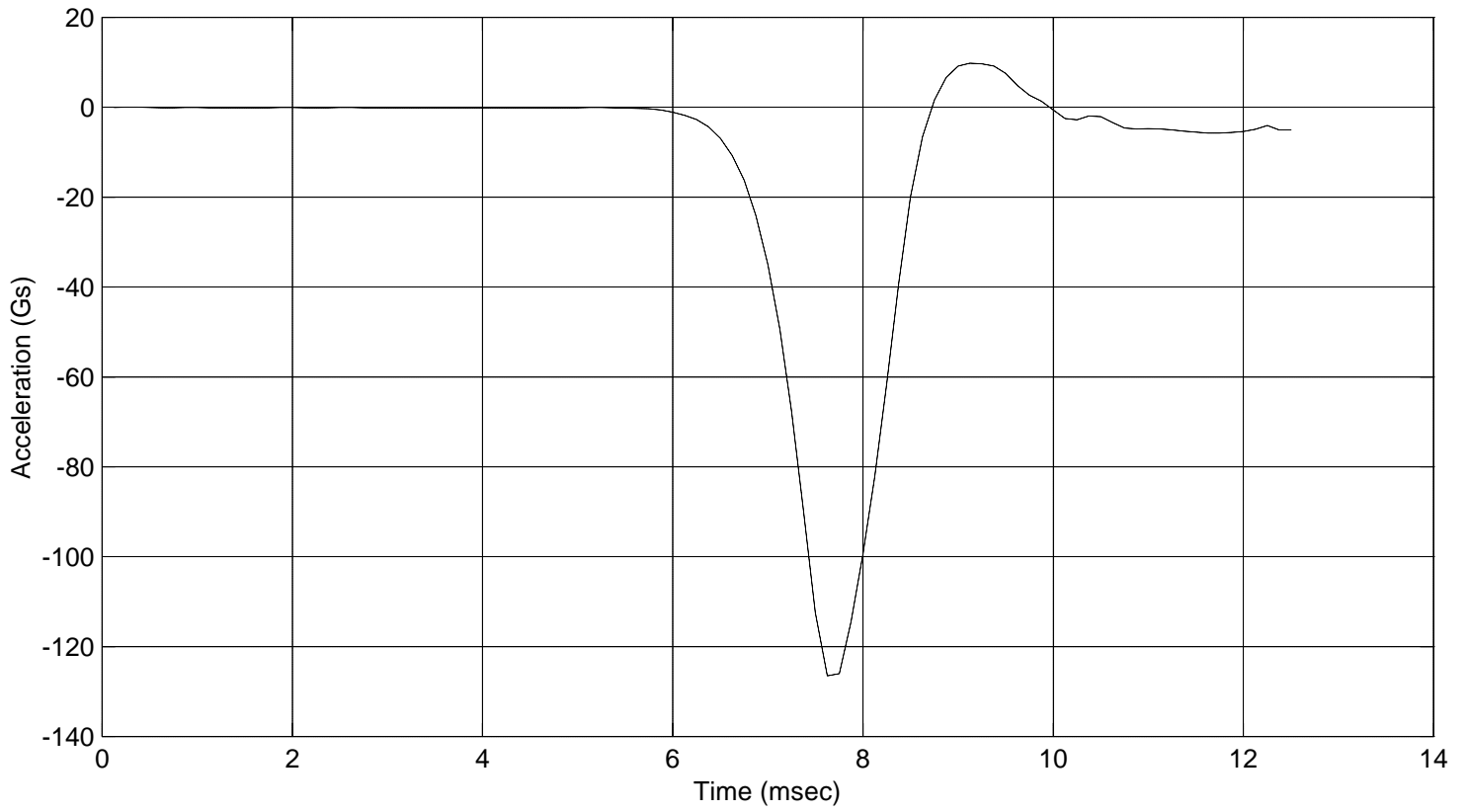
SID Serial No.: 015 Sequential Test Number: 1
Date: 2/12/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	246.7
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	5.0
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.1

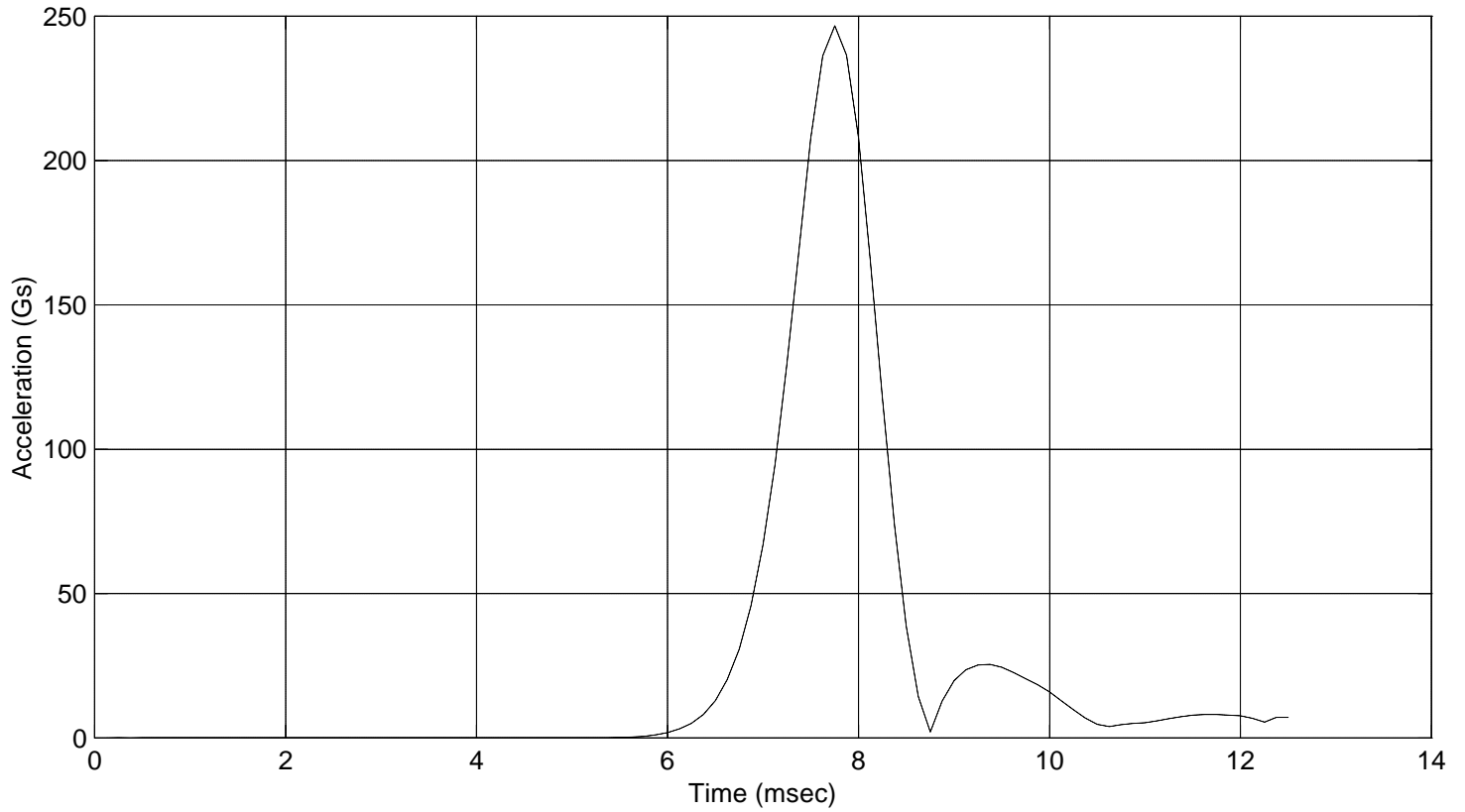
REMARKS: None



Head Z



Head Resultant



**ABDOMINAL COMPRESSION TEST
PRE-TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: 2/13/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	32
FORCE @ 13 mm (N)	104 - 162	113
FORCE @ 19 mm (N)	163 - 221	177
FORCE @ 25 mm (N)	222 - 280	258
FORCE @ 33 mm (N)	325 - 391	372

REMARKS: None

Dummy S/N 015

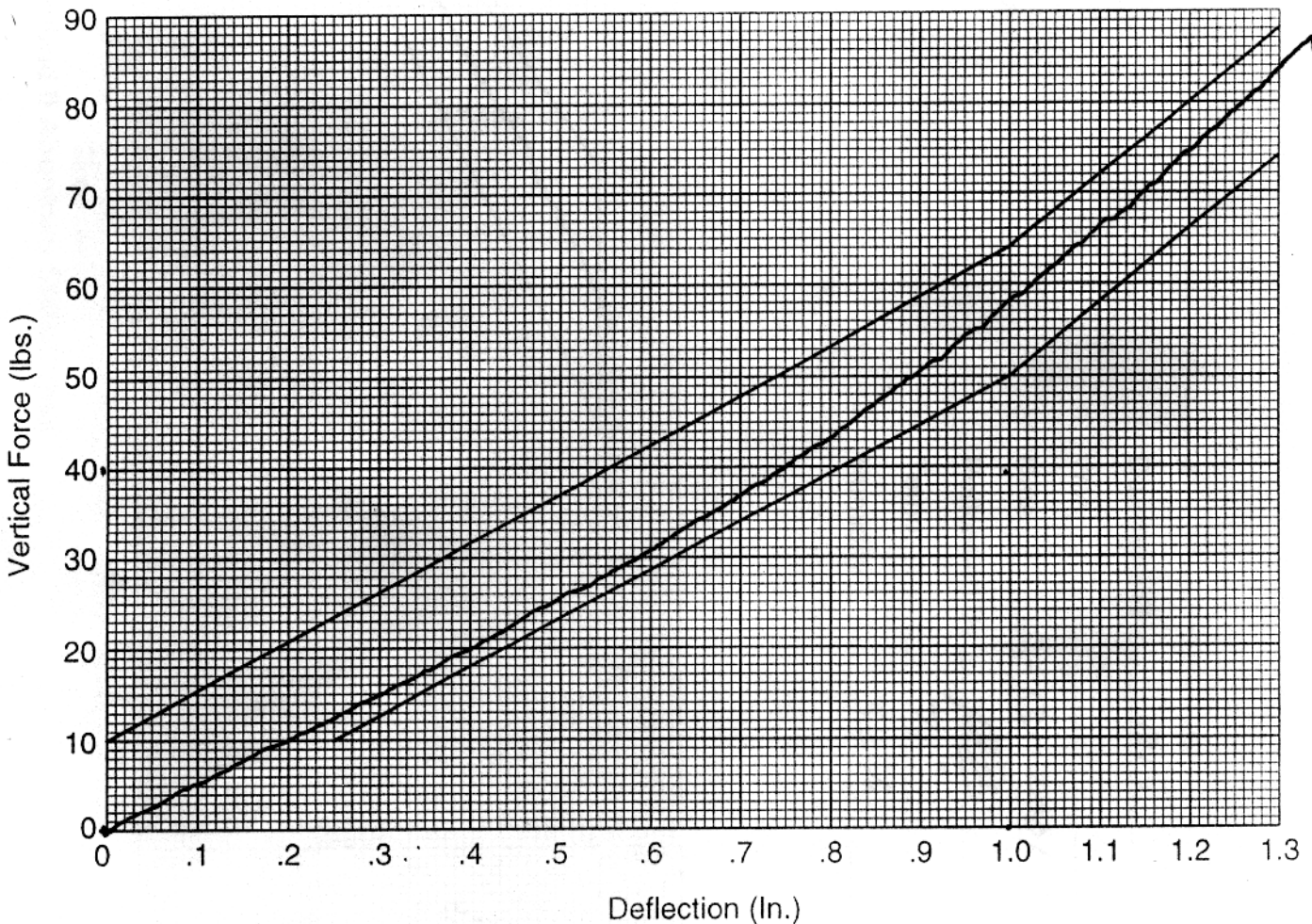
W/A _____

Date 2-13-2001

Performed By BD

Temp. 71°

Humidity 32%



**Hybrid II
Abdomen Static Press**

LUMBAR FLEXION TEST
PRE-TEST
(Test not required for SID certification)

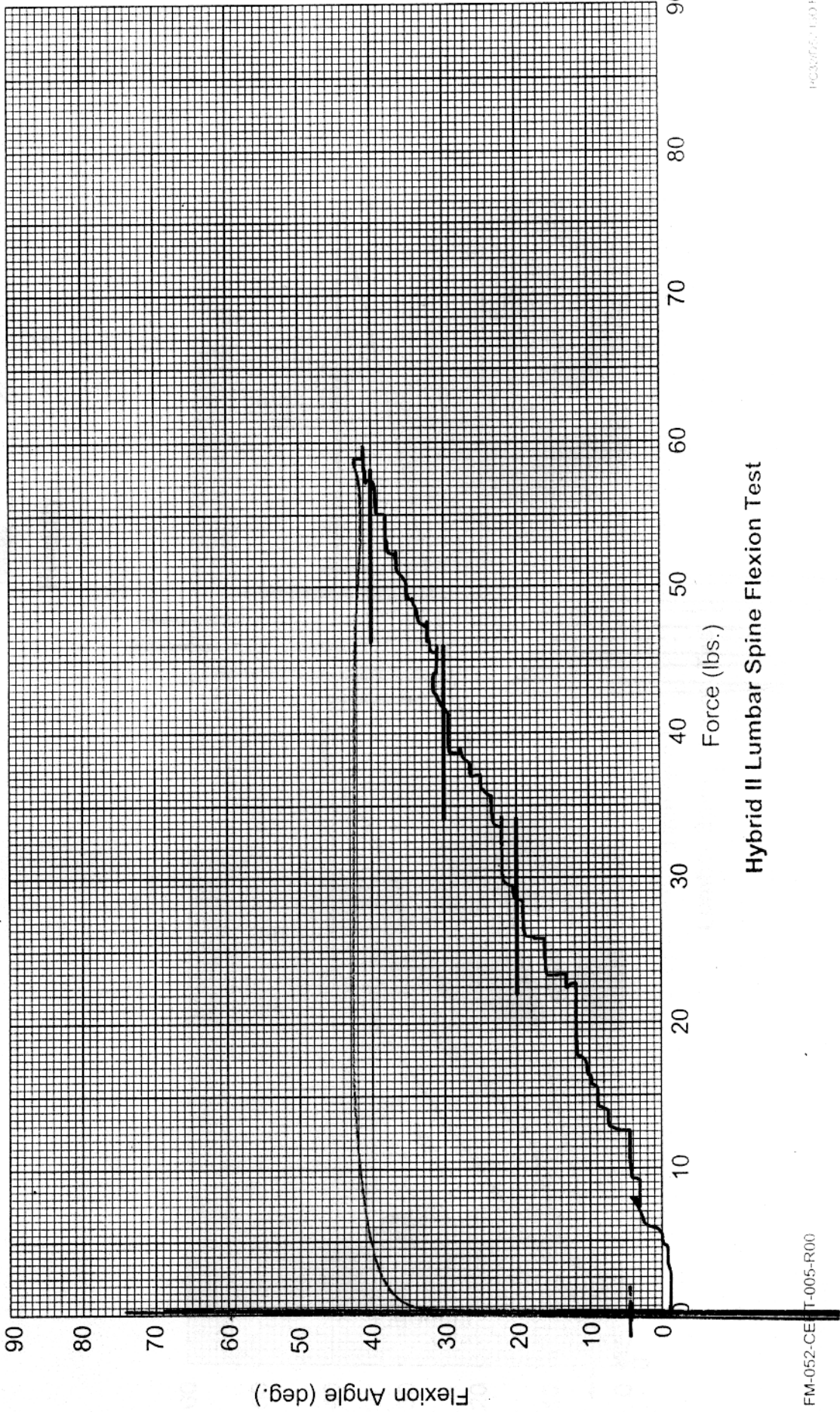
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: 2/13/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	32
FORCE @ 0° (N)	0 - 26.7	0
FORCE @ 20° (N)	97.8 - 151.2	127
FORCE @ 30° (N)	151.2 - 204.6	185
FORCE @ 40° (N)	204.6 - 258	255
RETURN ANGLE	12° max.	4.5°

REMARKS: None

Dummy S/N 015
 W/A _____
 Date 2-13-2001
 Performed By [Signature]
 Temp. 71°
 Humidity 32%



Hybrid II Lumbar Spine Flexion Test

PRE-TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
 Date: 2/13/01 Laboratory Technician: B. Swiecicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

**CALIBRATION TEST RESULTS
PRE-TEST**

SID NO.: 016

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
Date: 2/13/01 Laboratory Technician: B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
THORACIC SHOCK ABSORBER TEST	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
Date: 2/13/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	512
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	239
KH- Knee Pivot from Back Line (mm)	511 - 526	521
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	375

REMARKS: None

**THORACIC SHOCK ABSORBER TESTS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1.1
 Date: 2/12/01 Laboratory Technician: B. Swiecicki

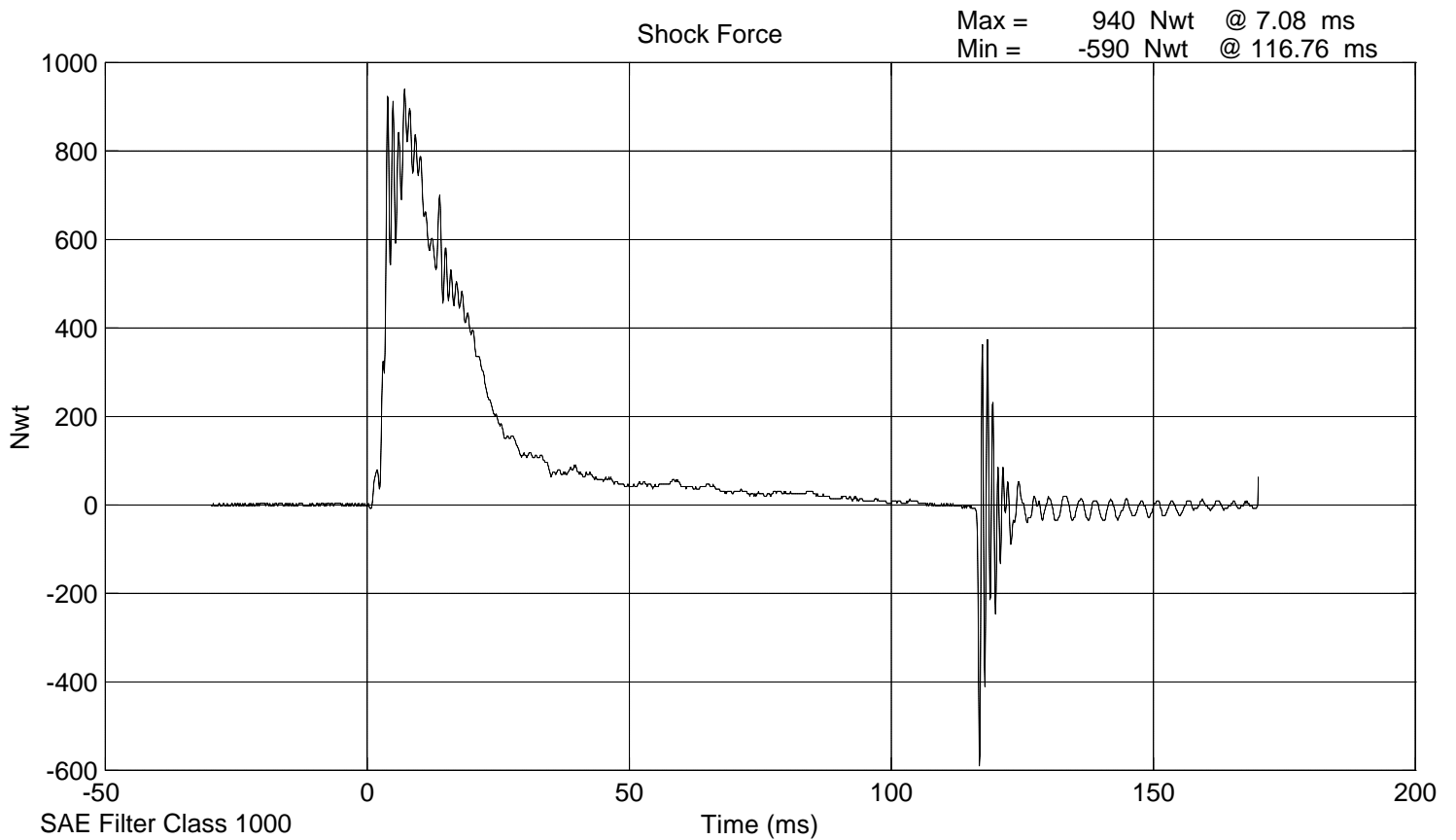
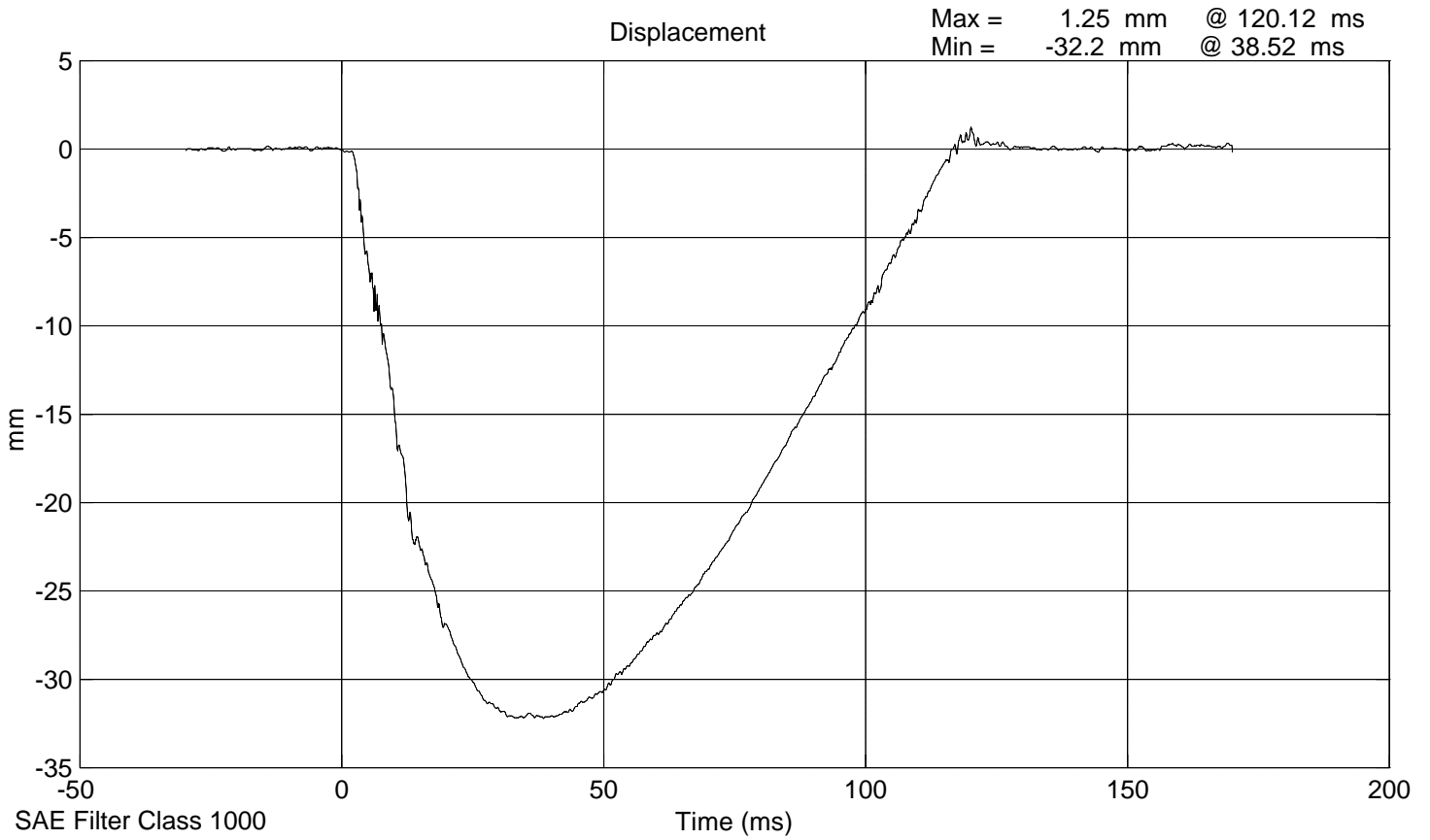
DAMPER IDENTIFICATION: 016

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)		18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)		10 - 70	31
VELOCITY 3.05 m/s	FORCE (N)	836 - 1125	940
	DISPLACEMENT (mm)	30 - 35	32.2
VELOCITY 4.27 m/s	FORCE (N)	1730 - 2099	1769
	DISPLACEMENT (mm)	32 - 37	35.4
VELOCITY 6.10 m/s	FORCE (N)	3741 - 4448	4044
	DISPLACEMENT (mm)	33 - 40	39.4

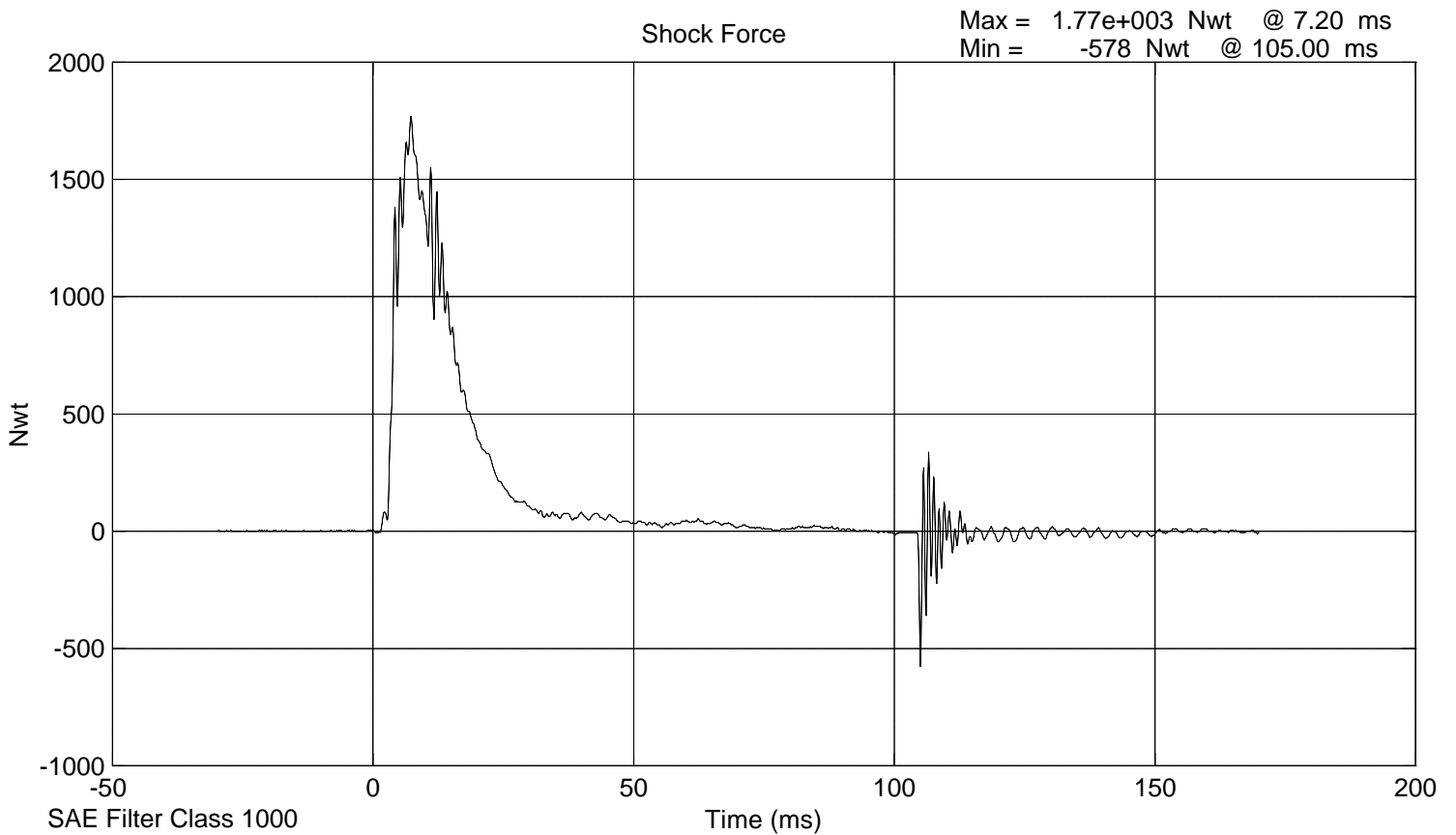
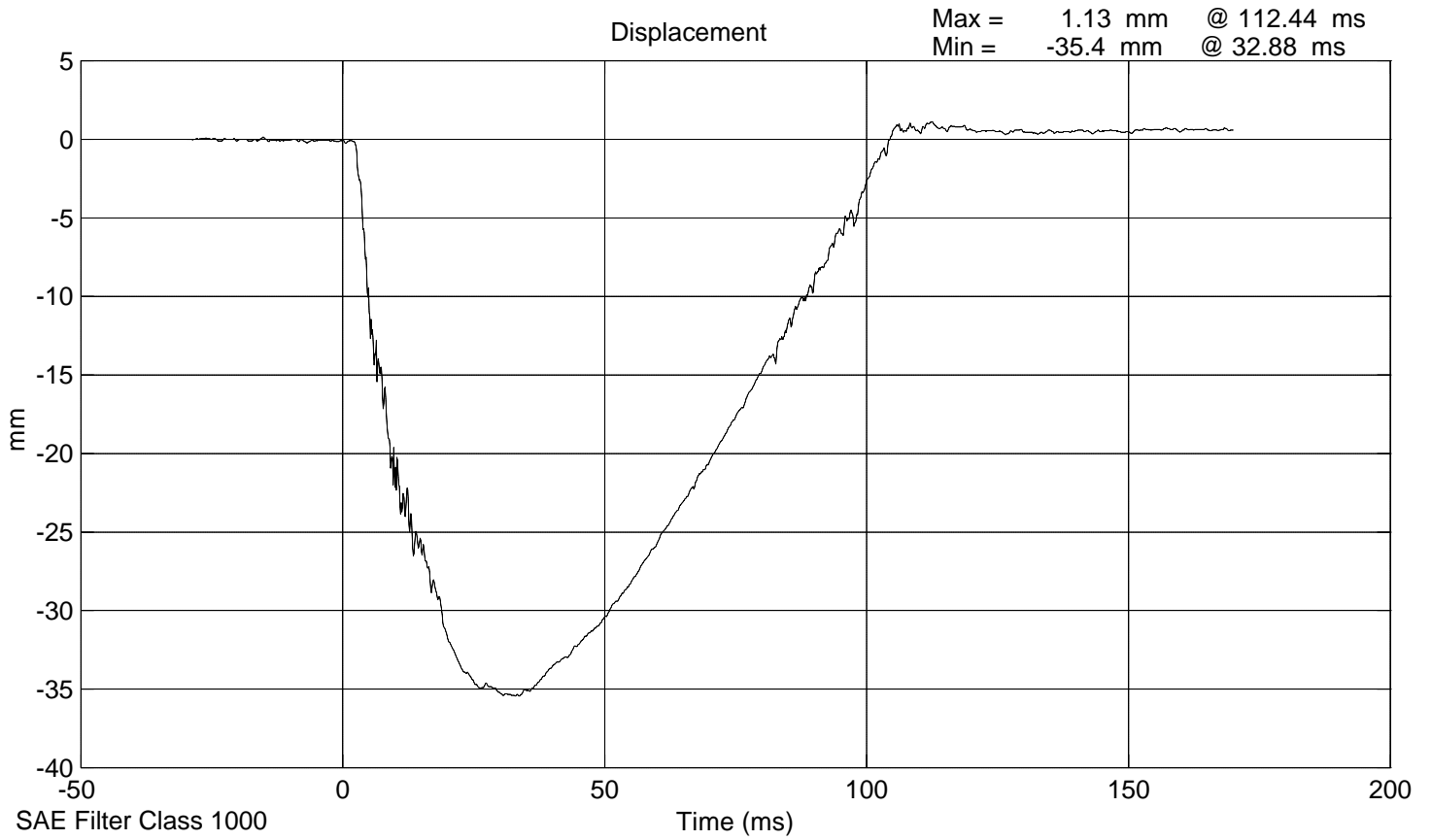
DAMPER SETTING: 5

REMARKS: None

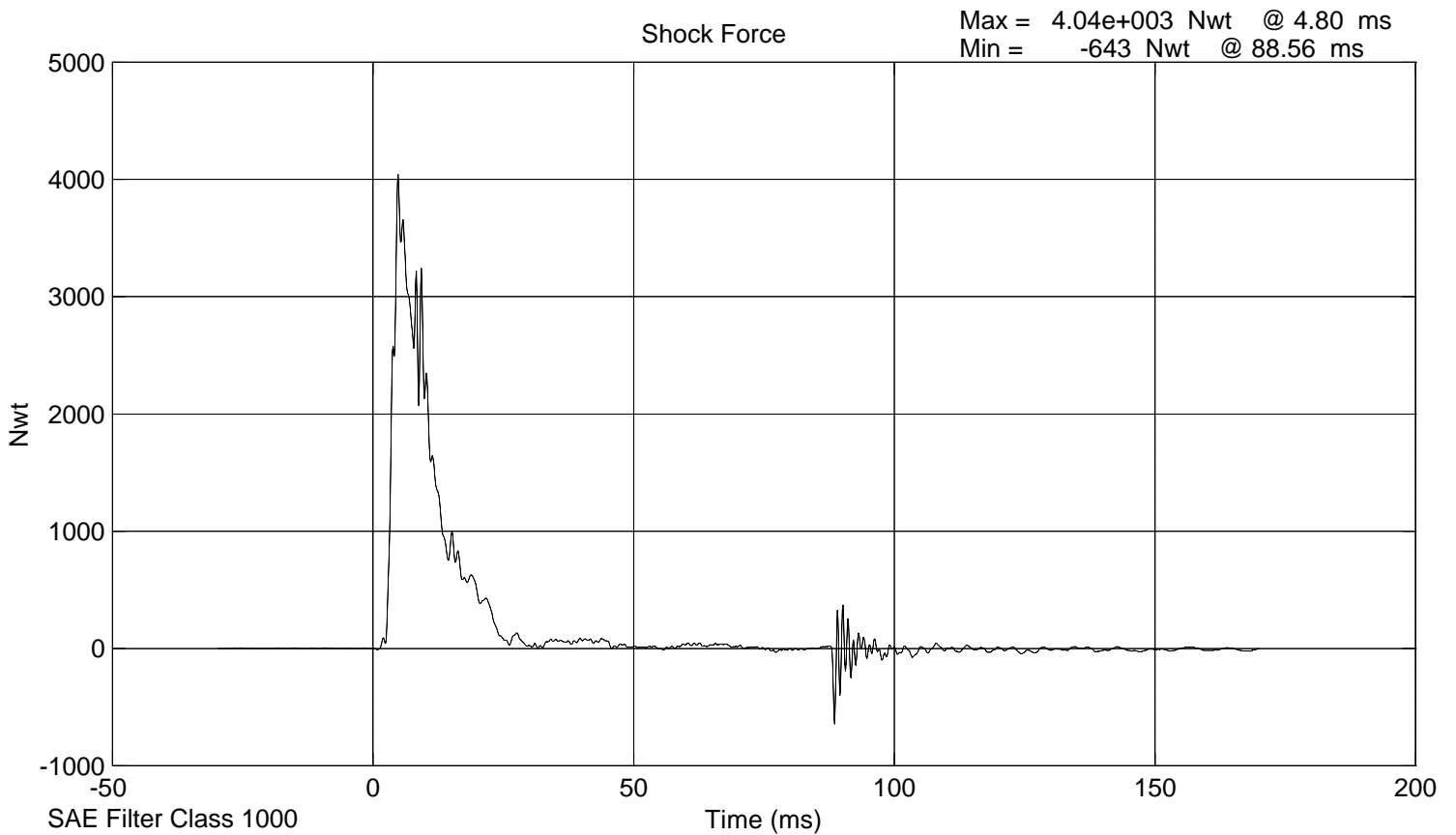
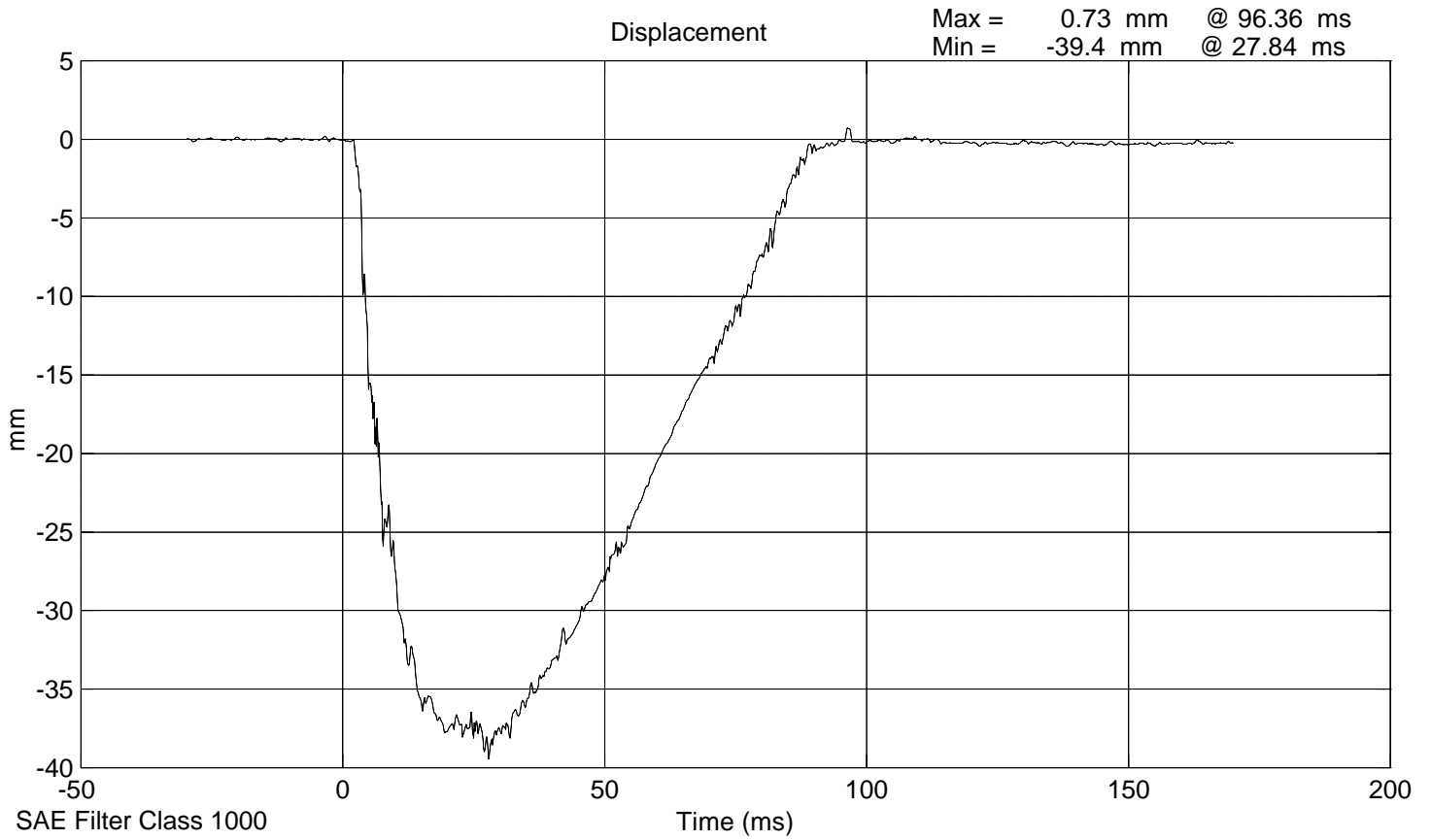
SID 016 Shock Absorber Impact Test @ 3.048 m/s



SID 016 Shock Absorber Impact Test @ 4.2672 m/s



SID 016 Shock Absorber Impact Test @ 6.096 m/s



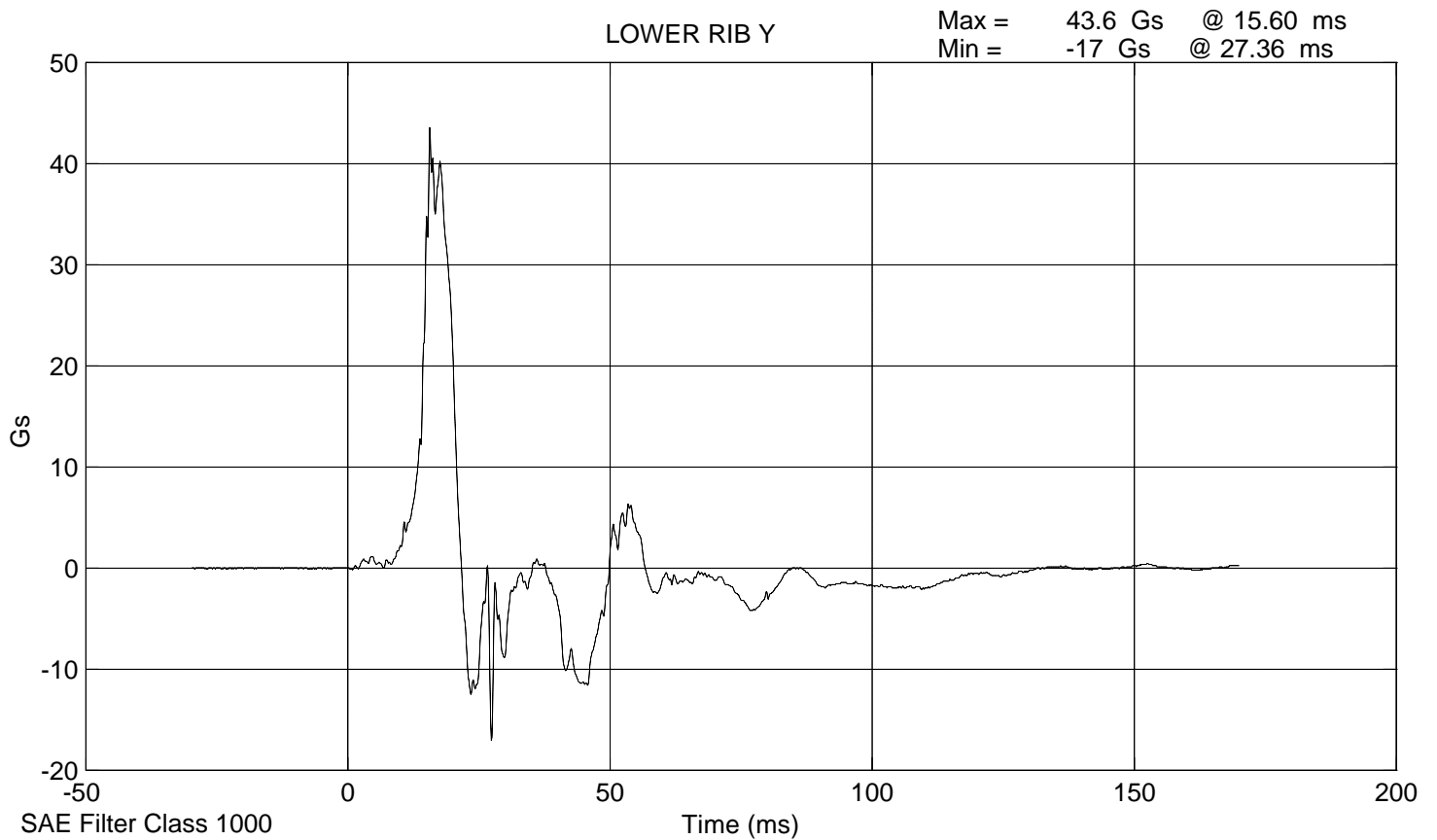
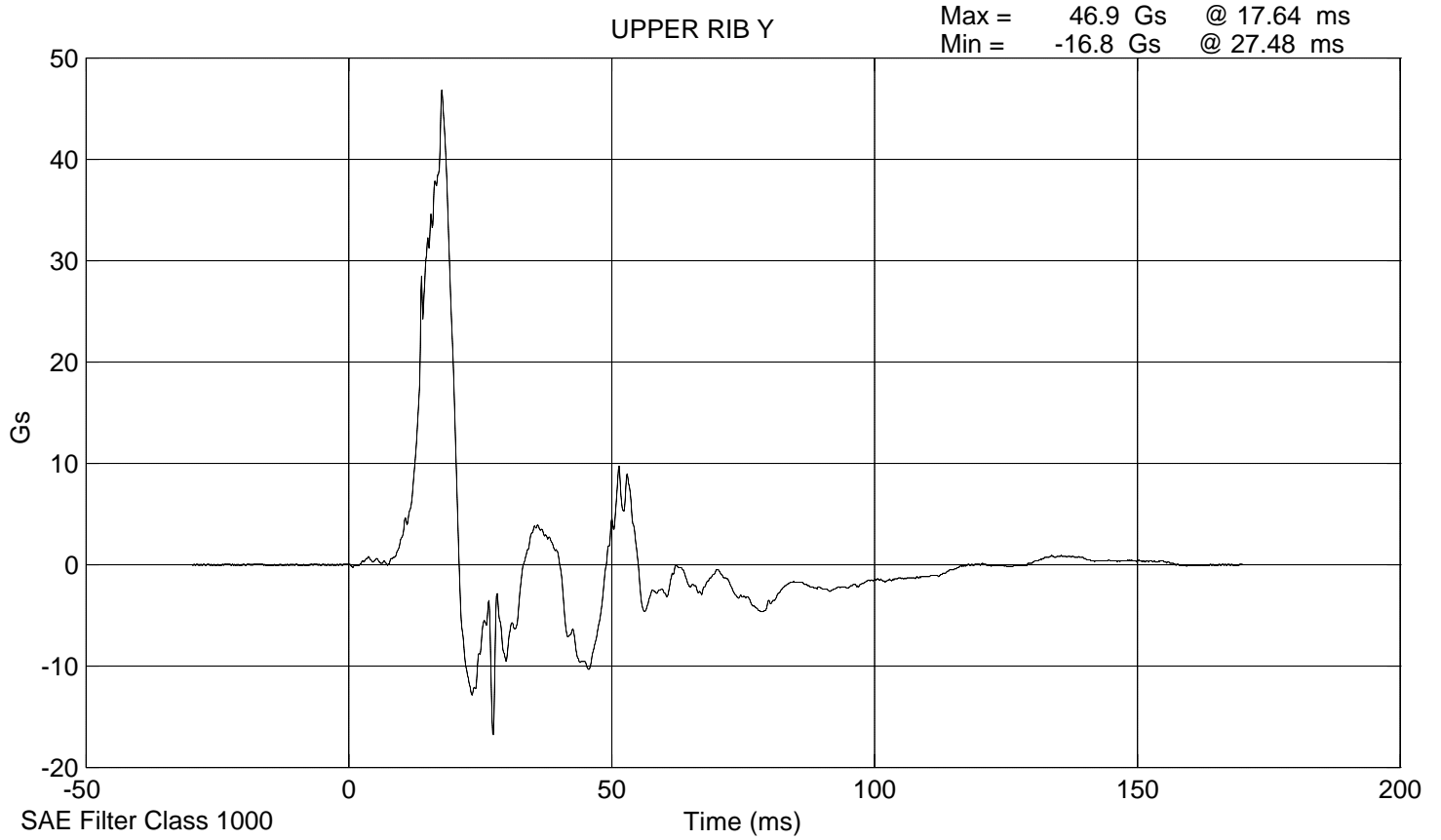
**LATERAL THORAX IMPACT TEST
PRE-TEST**

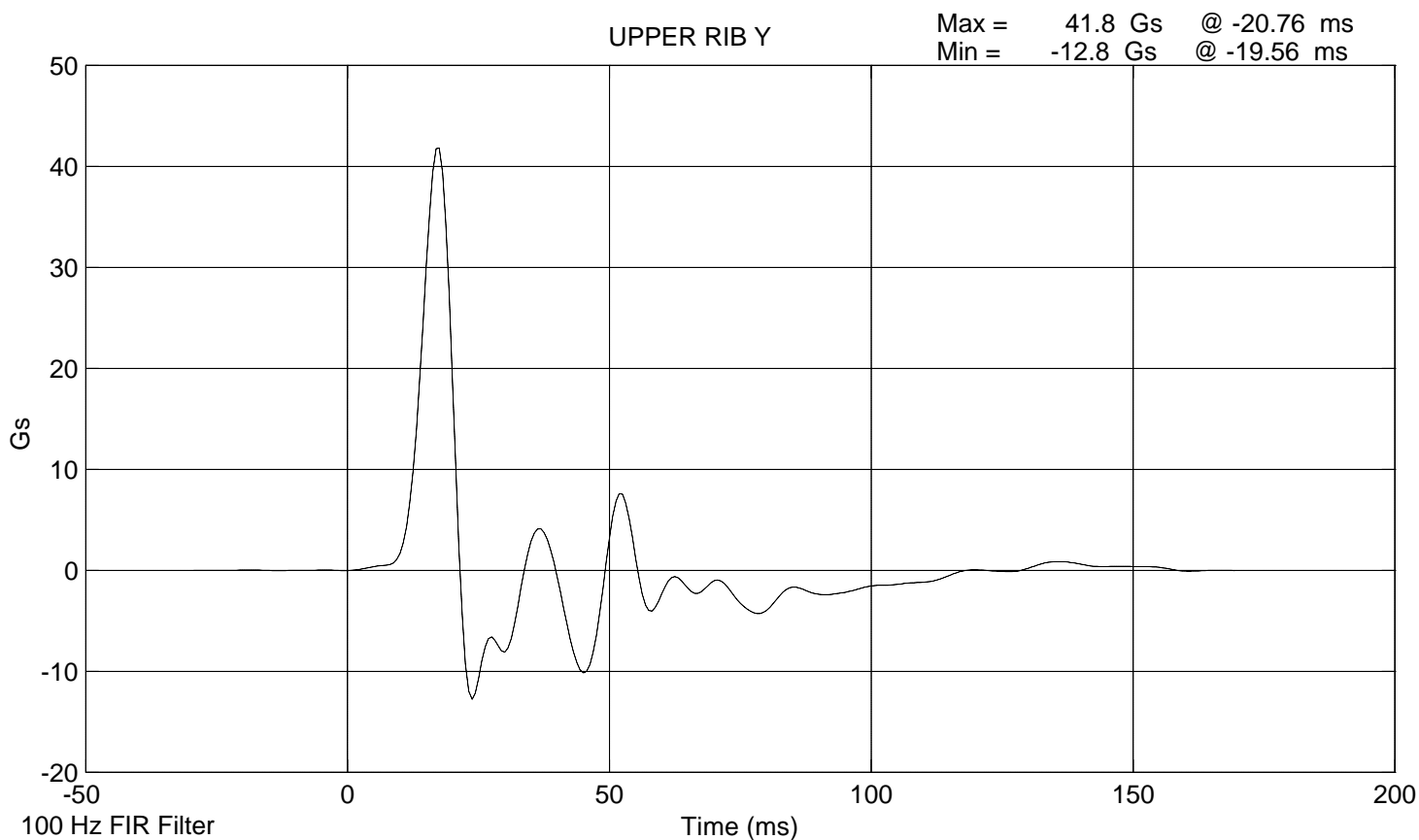
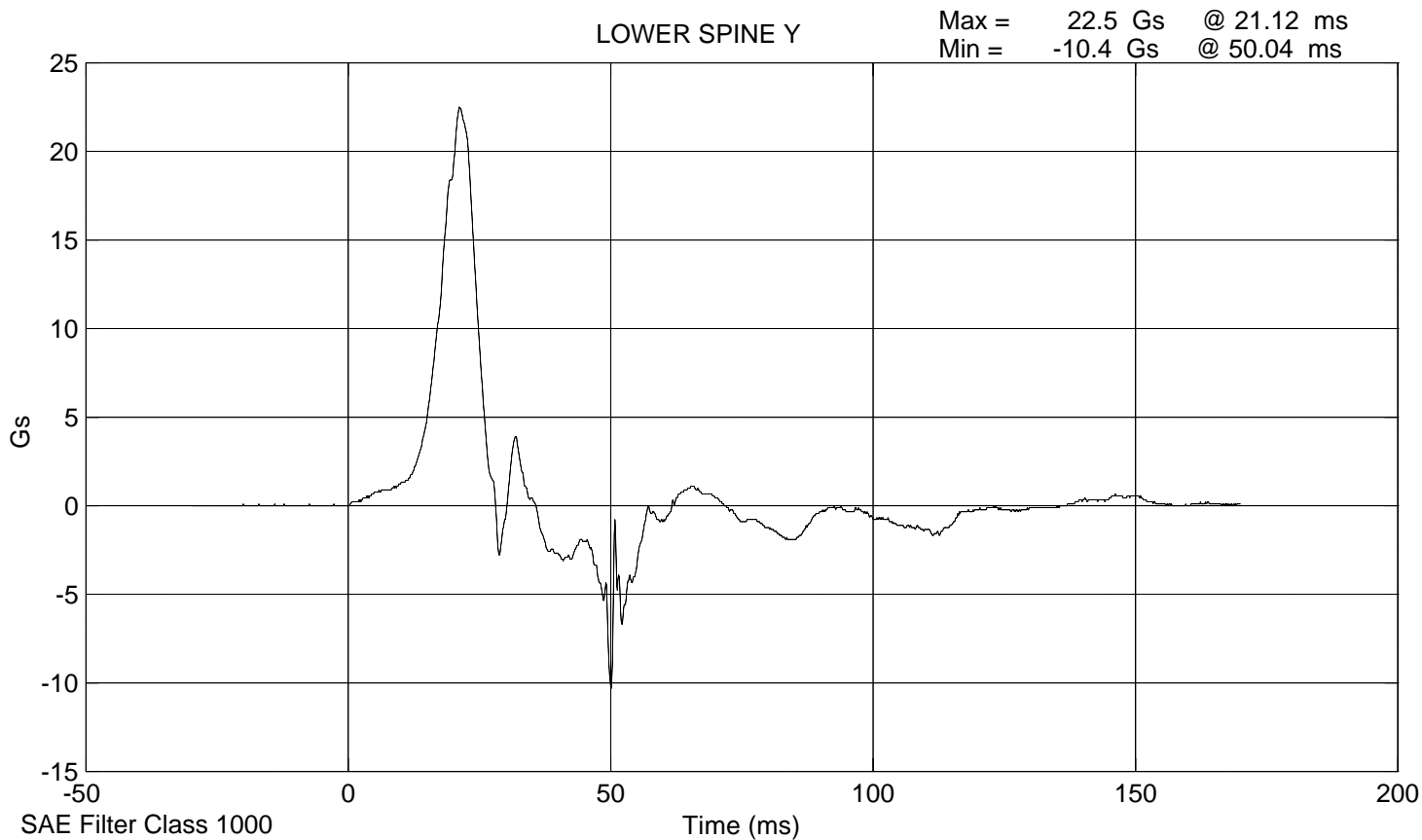
CONFIGURED FOR LEFT SIDE IMPACT

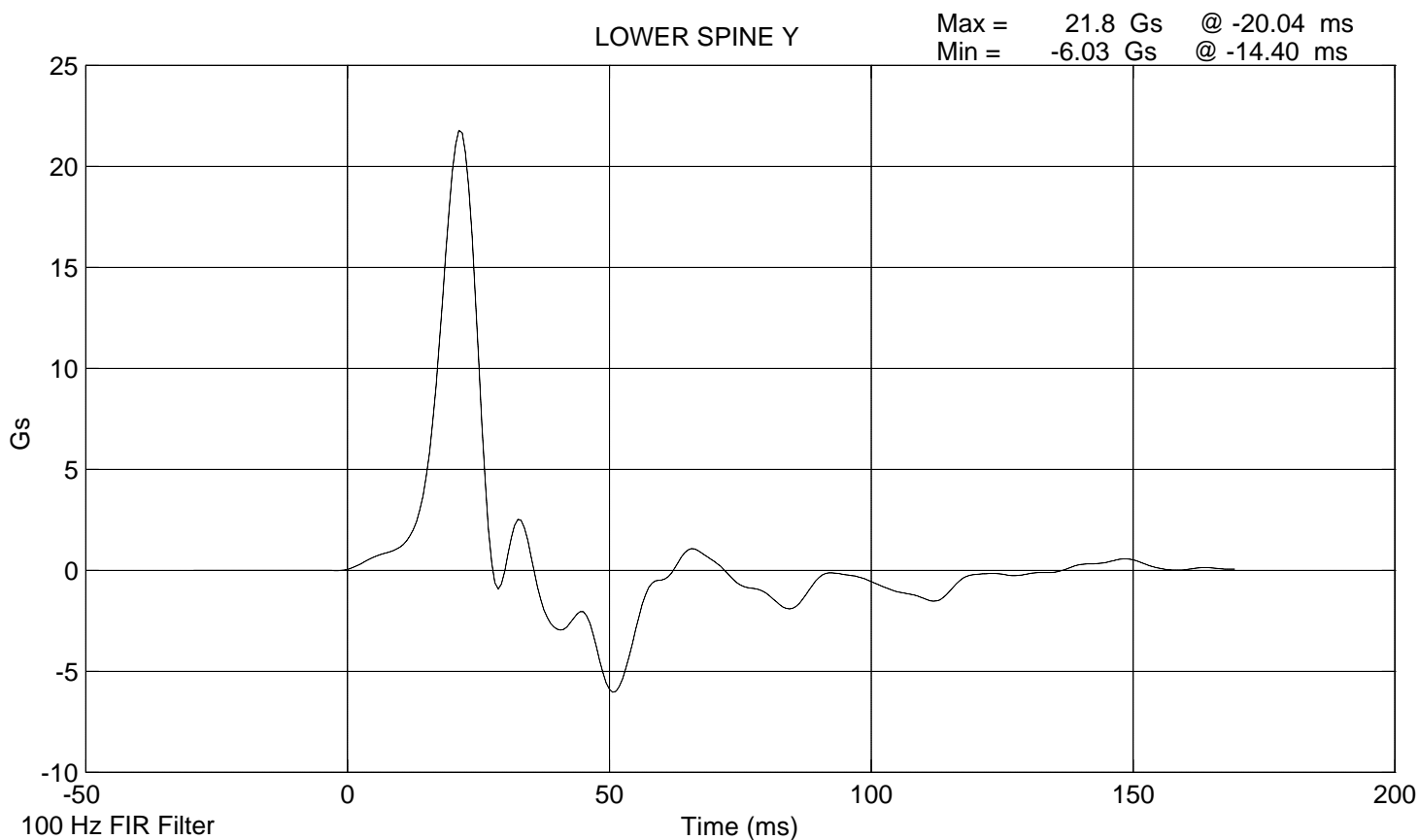
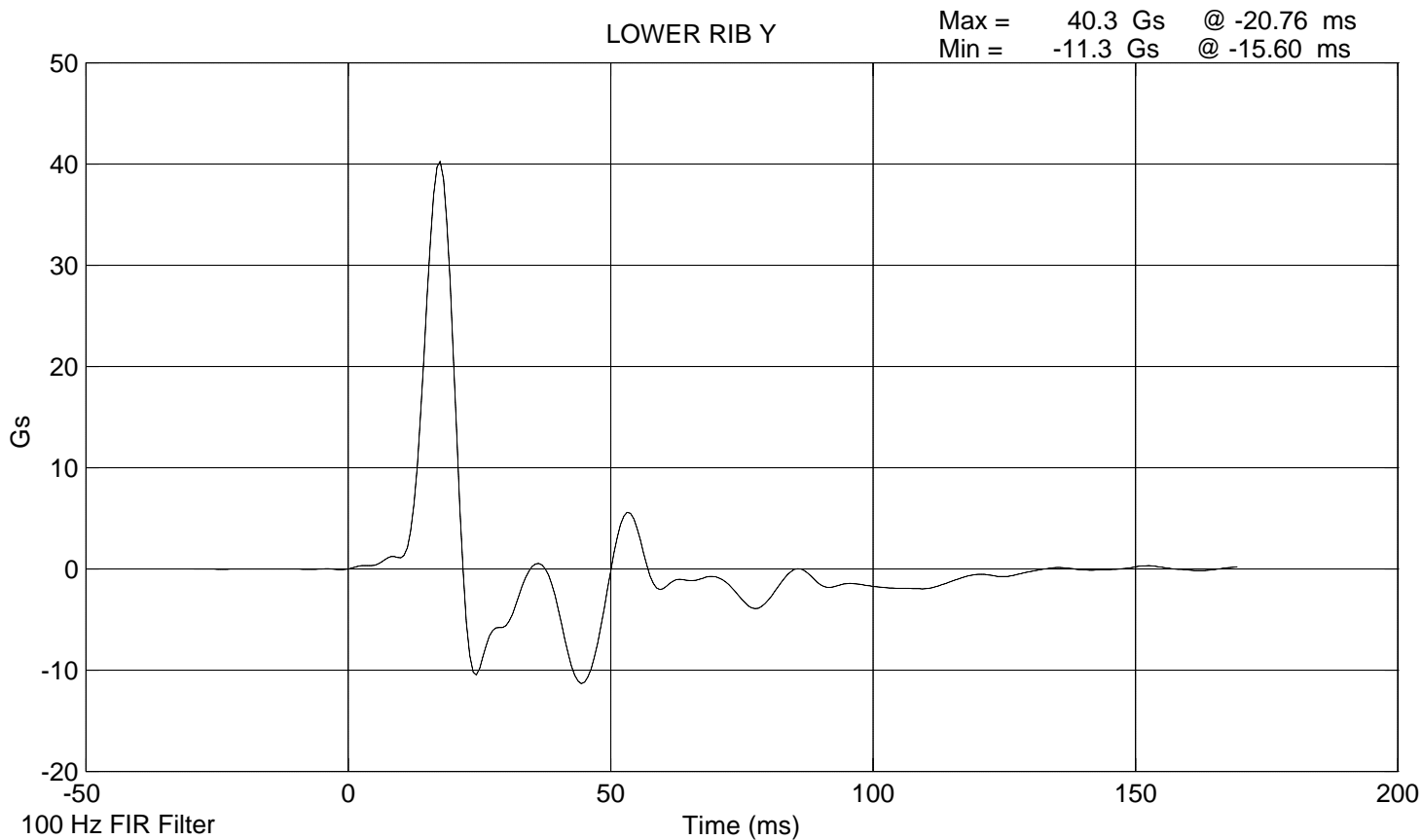
SID Serial No.: 016 Sequential Test Number: 1
Date: 2/13/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	32
PROBE SPEED (m/s)	4.27 - 4.33	4.28
UPPER RIB (g's)	37 - 46	41.8
LOWER RIB (g's)	37 - 46	40.3
LOWER SPINE (g's)	15 - 22	21.8

REMARKS: None







**LATERAL PELVIS IMPACT TEST
PRE-TEST**

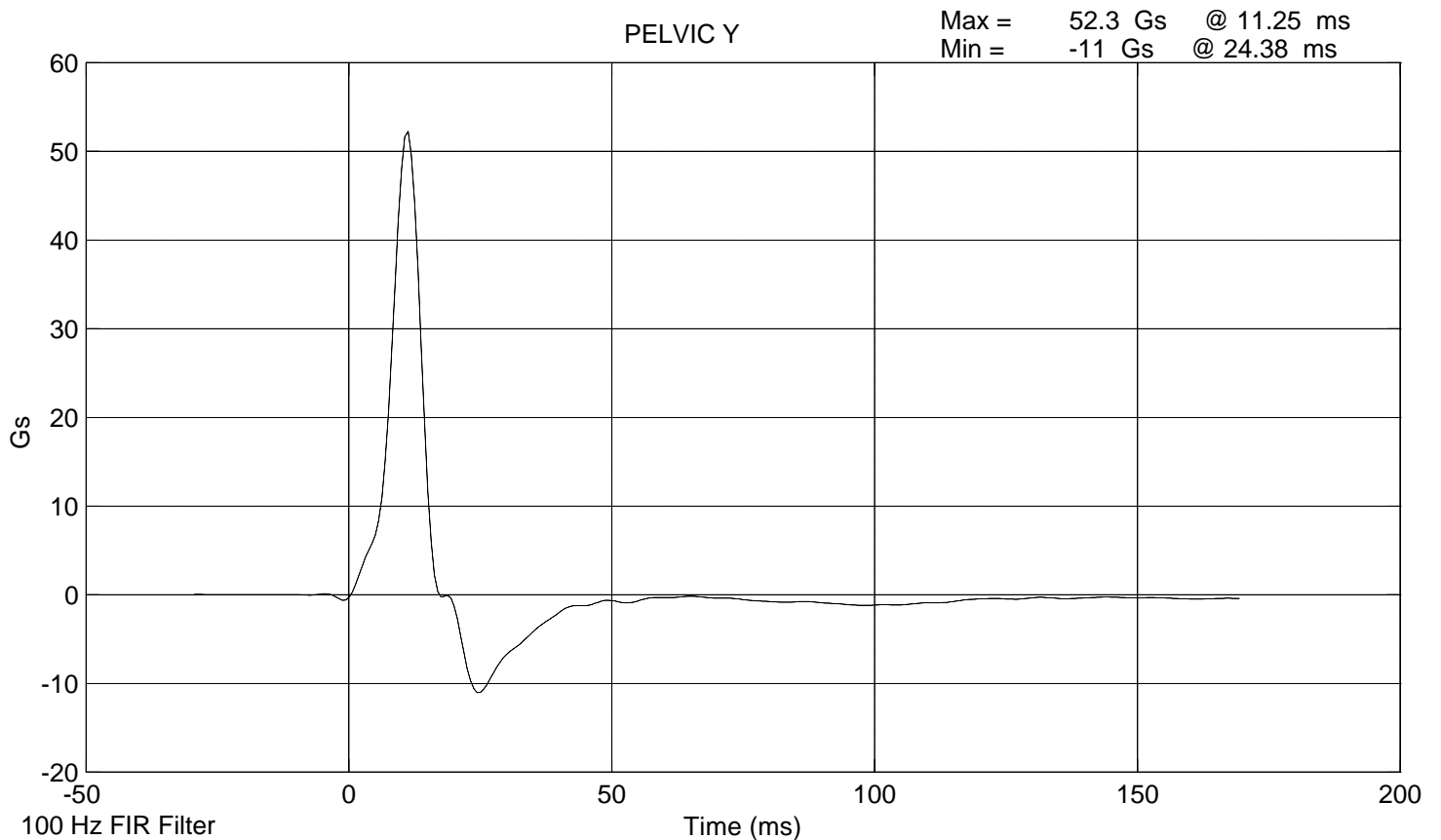
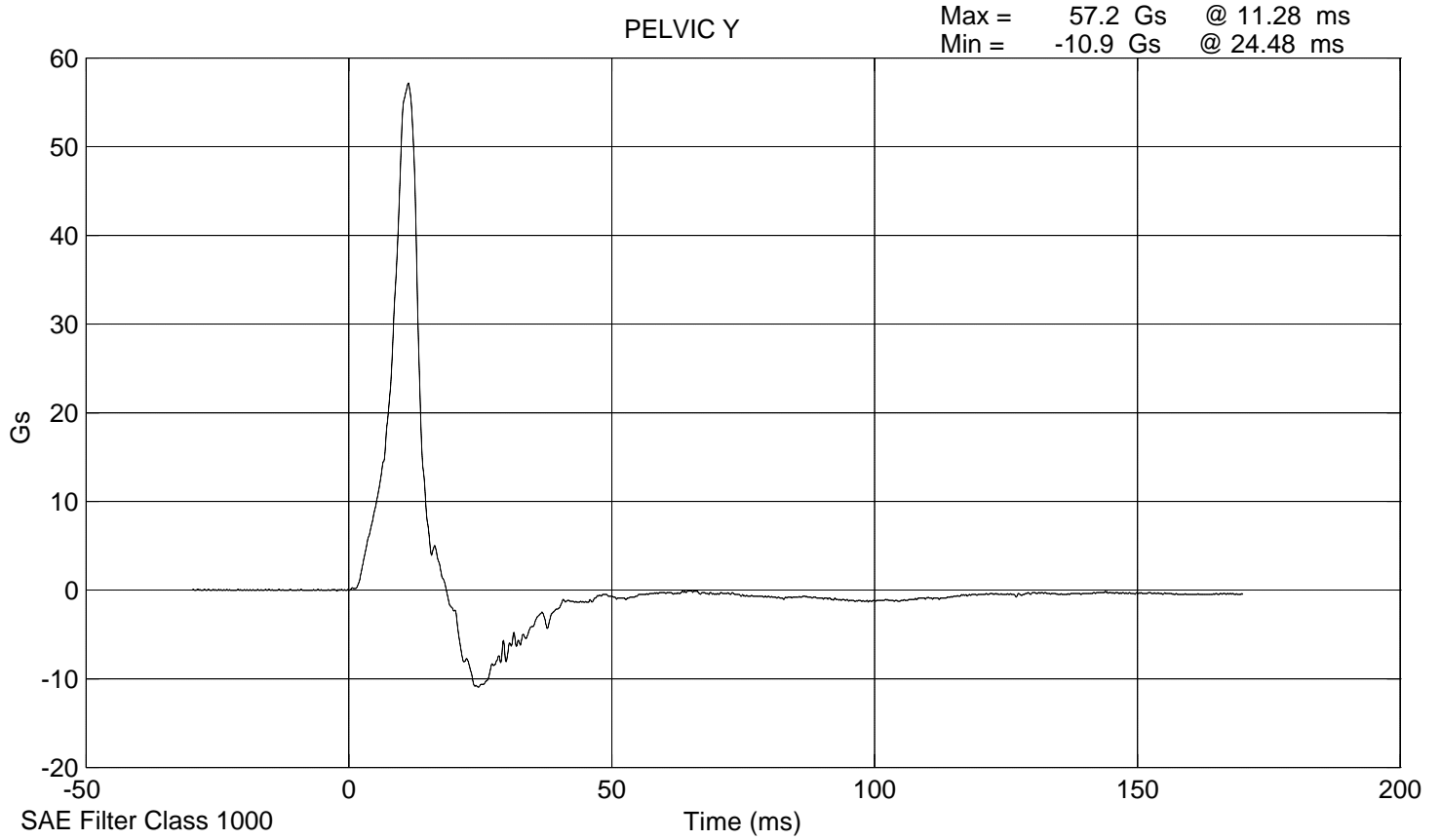
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
Date: 2/13/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	32
PROBE SPEED (m/s)	4.27 - 4.33	4.27
PELVIS ACCELERATION (g's)	40 - 60	52.3

REMARKS: None

SID 016 Pelvic Impact Test @ 4.2672 m/s



HEAD DROP TEST

PRE-TEST

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016

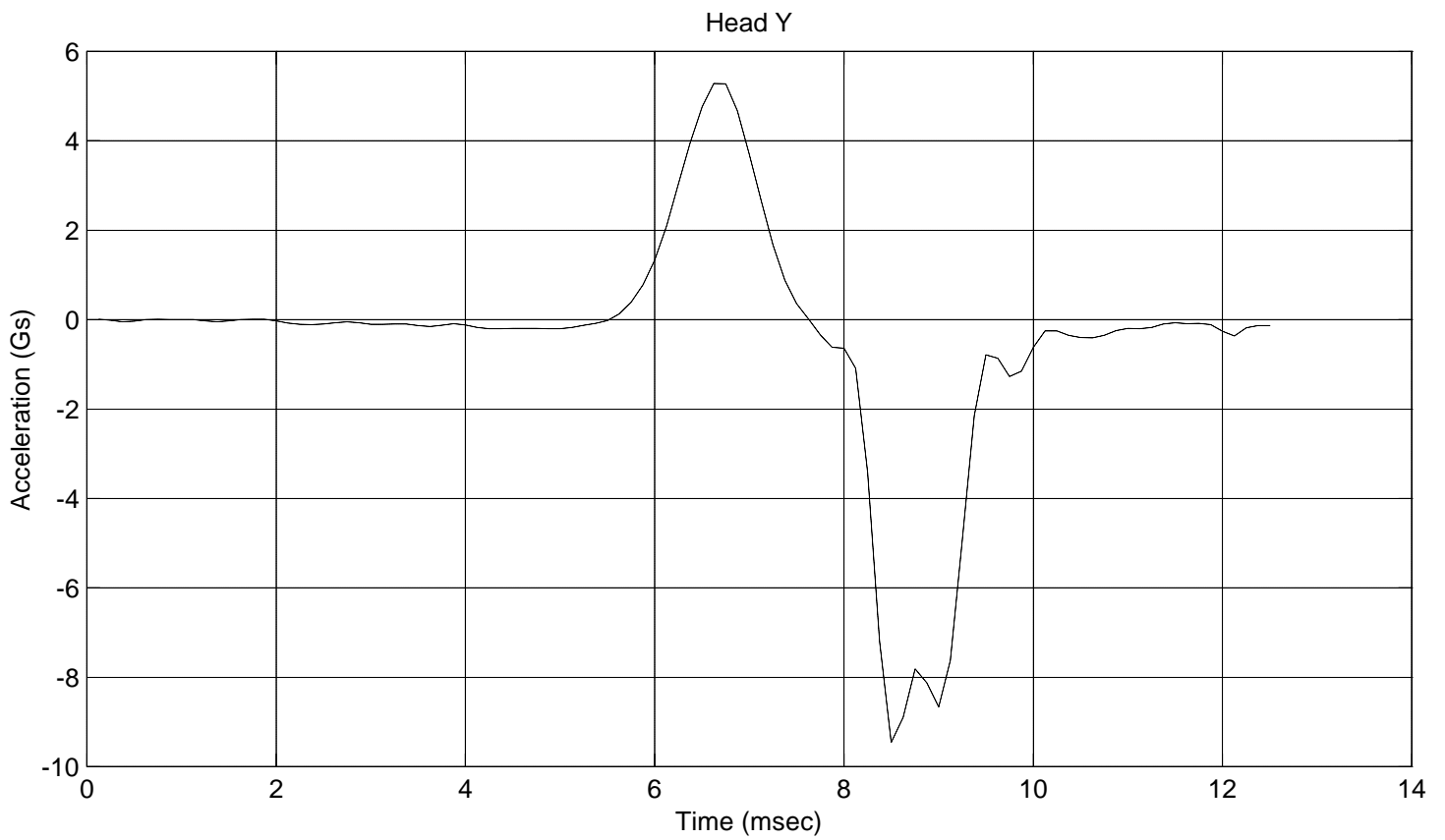
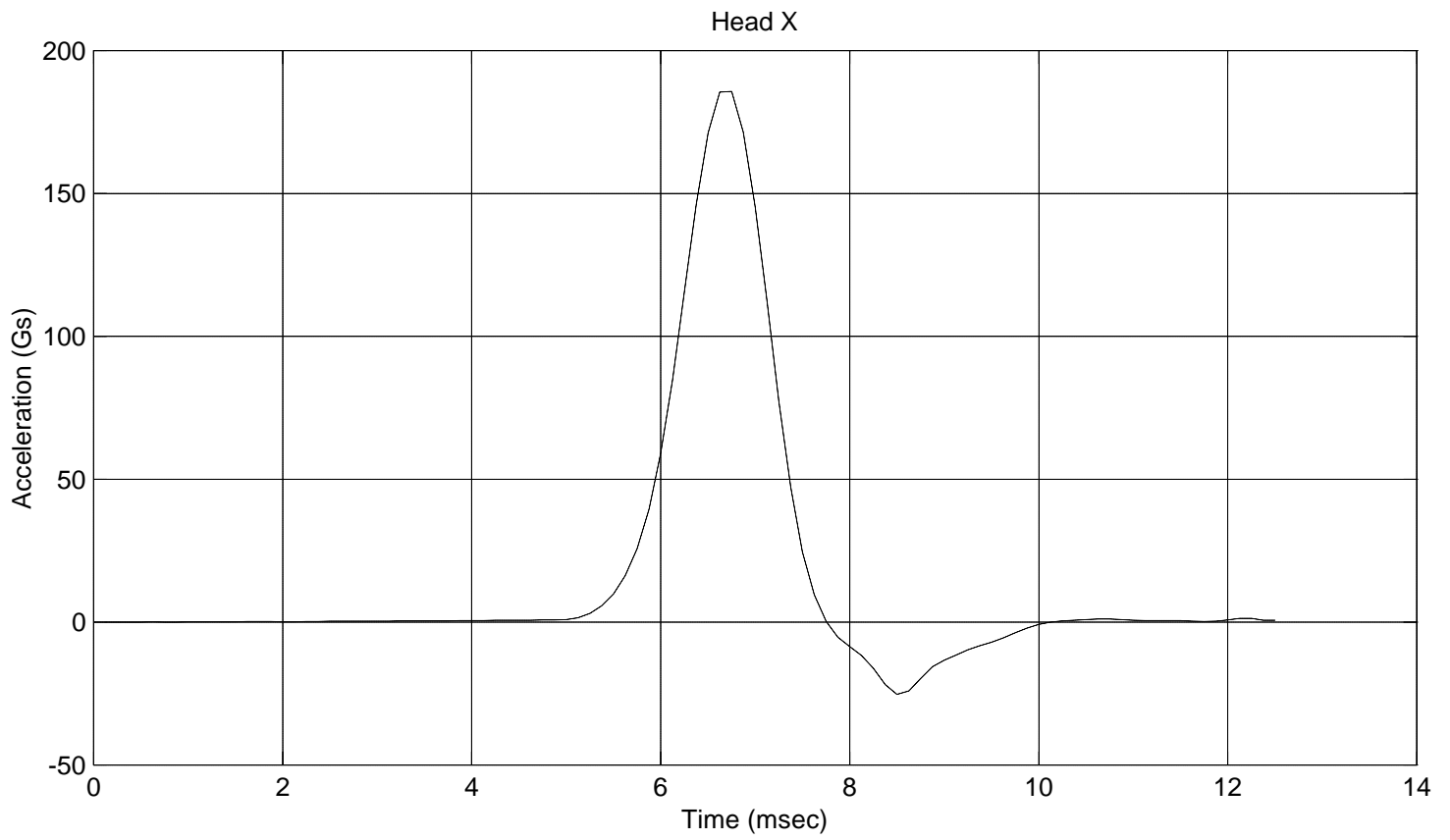
Sequential Test Number: 1

Date: 2/12/01

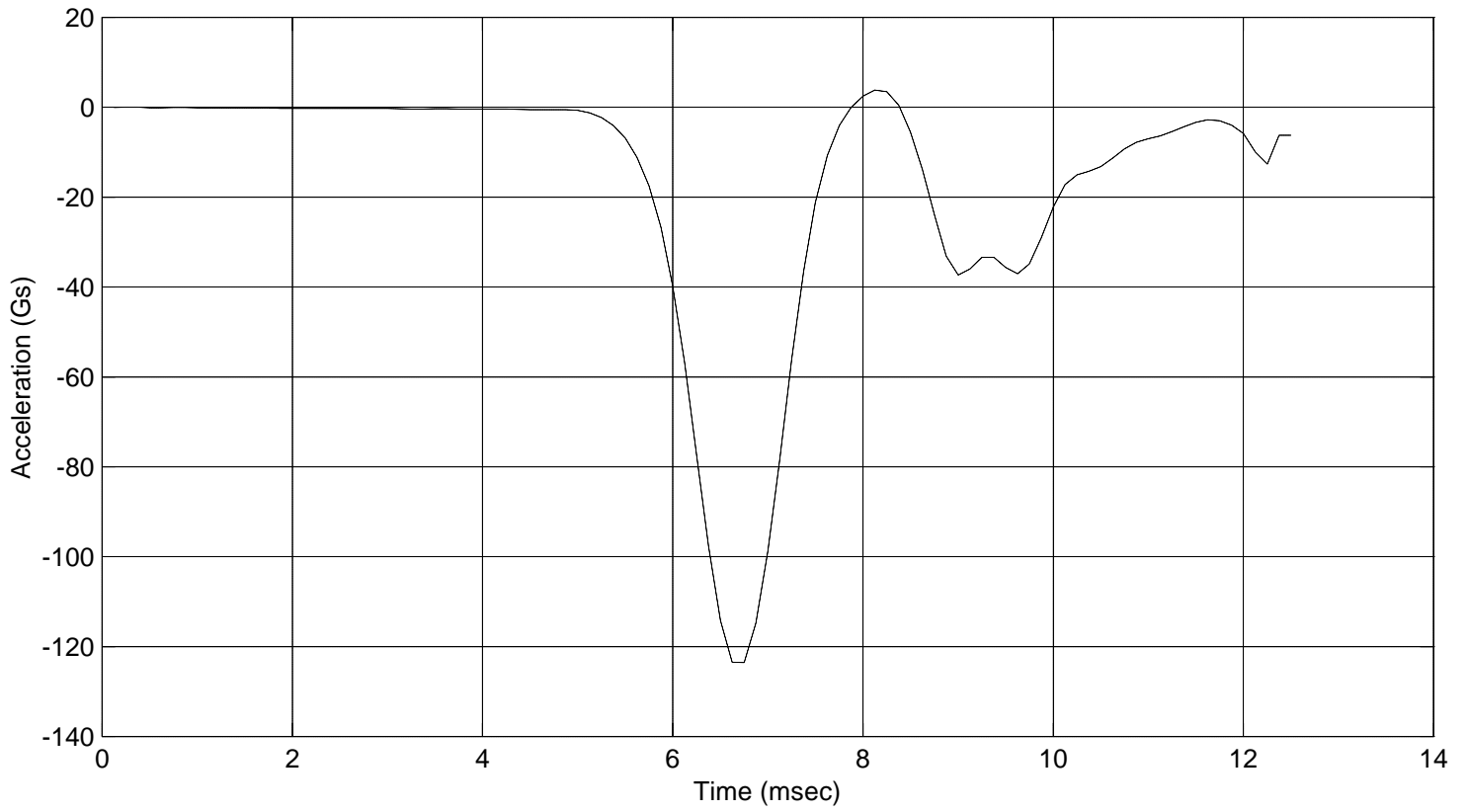
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	223.1
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	9.5
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.1

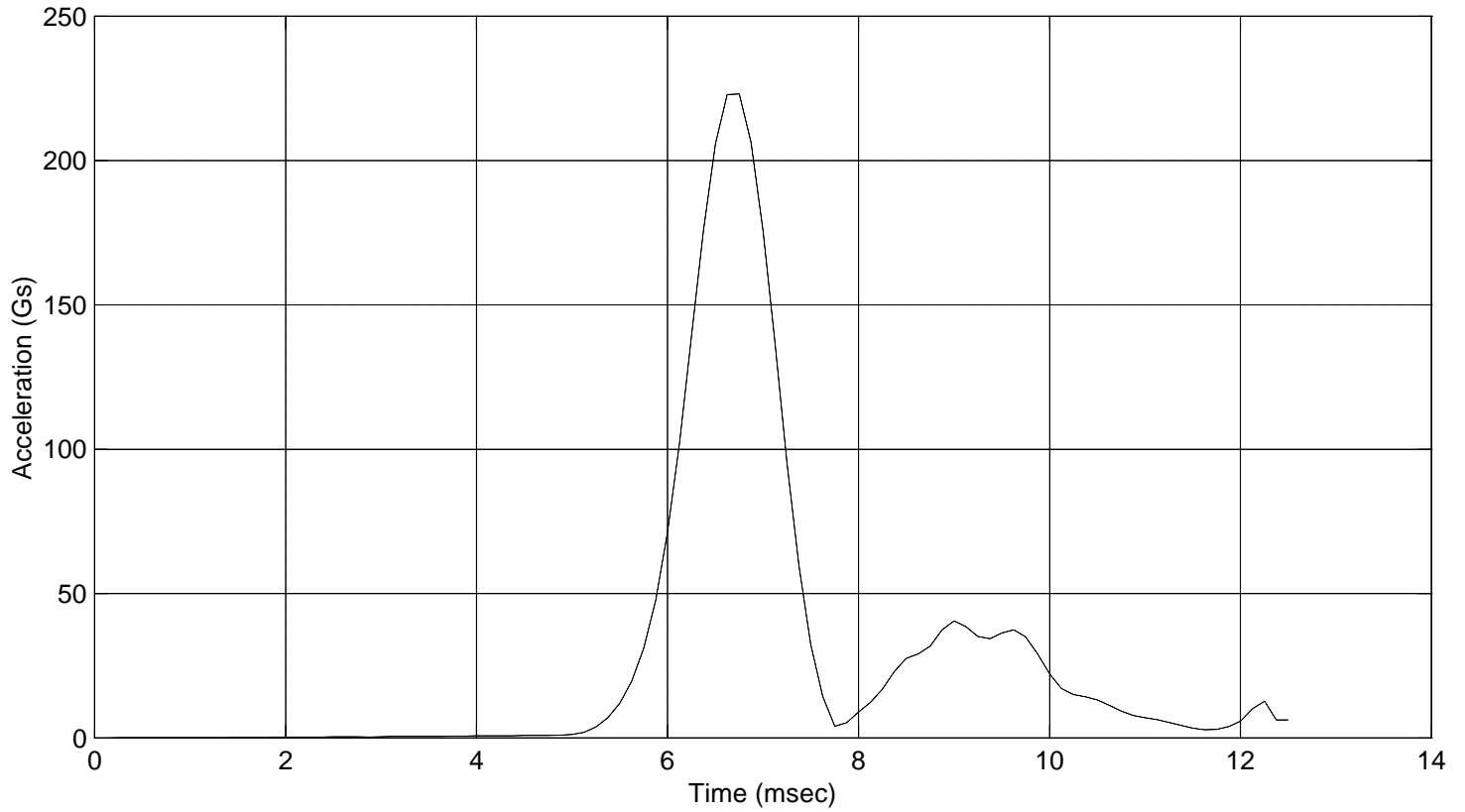
REMARKS: None



Head Z



Head Resultant



**ABDOMINAL COMPRESSION TEST
PRE-TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
Date: 2/13/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	32
FORCE @ 13 mm (N)	104 - 162	109
FORCE @ 19 mm (N)	163 - 221	170
FORCE @ 25 mm (N)	222 - 280	253
FORCE @ 33 mm (N)	325 - 391	370

REMARKS: None

Dummy S/N 016

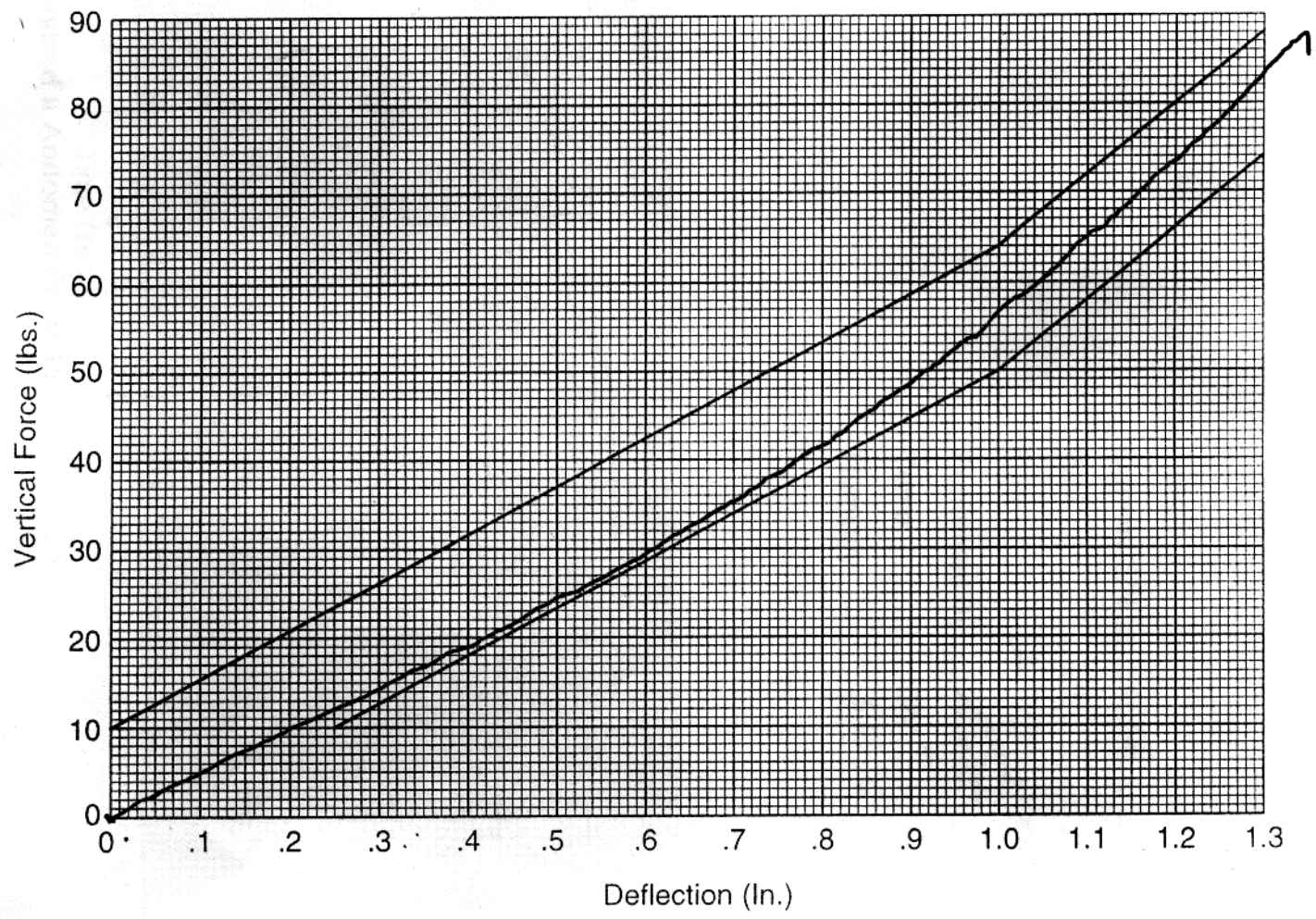
W/A _____

Date 2-13-2001

Performed By [Signature]

Temp. 71°

Humidity 32%



Hybrid II
Abdomen Static Press

LUMBAR FLEXION TEST
PRE-TEST
 (Test not required for SID certification)

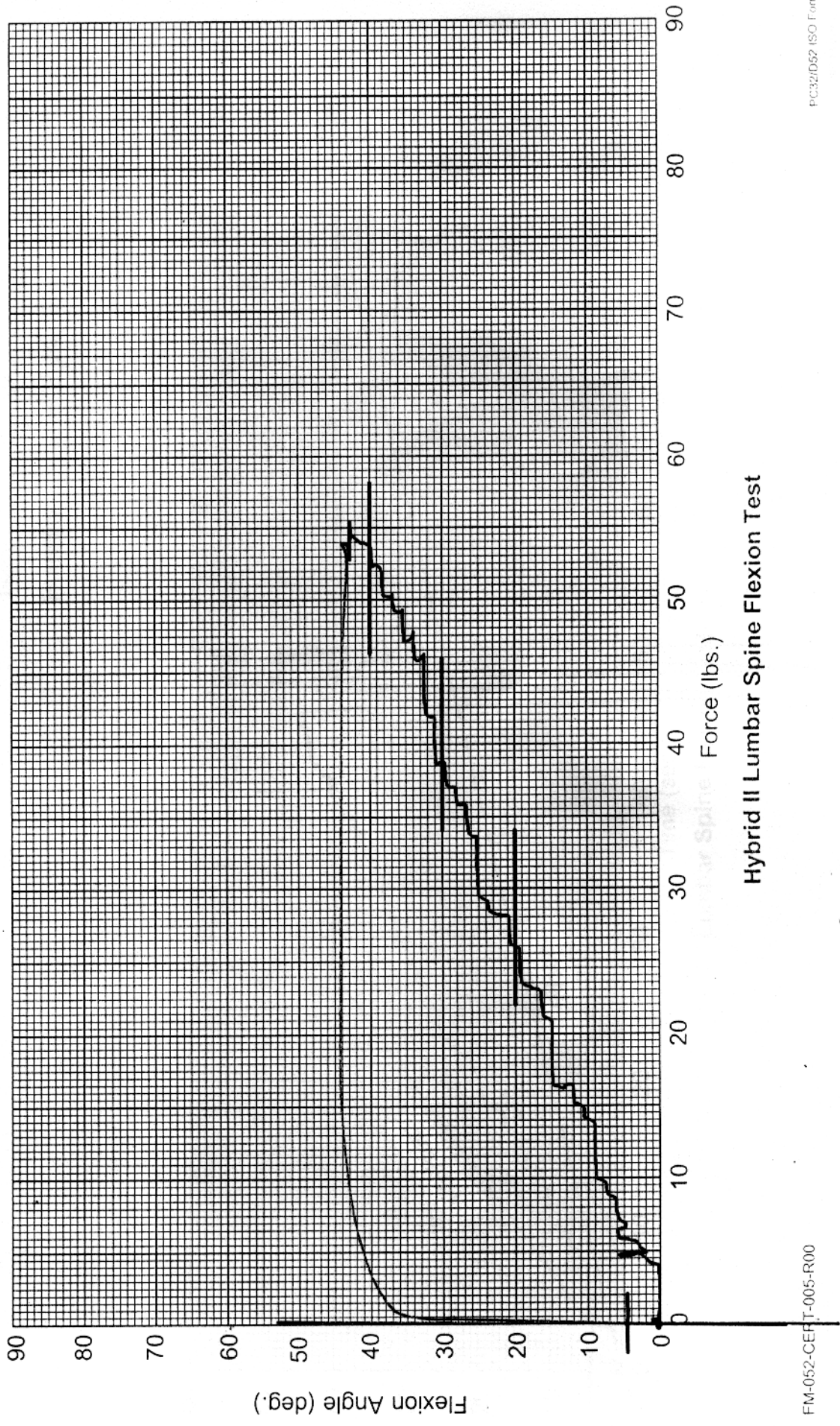
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
 Date: 2/13/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	32
FORCE @ 0° (N)	0 - 26.7	0
FORCE @ 20° (N)	97.8 - 151.2	115
FORCE @ 30° (N)	151.2 - 204.6	172
FORCE @ 40° (N)	204.6 - 258	239
RETURN ANGLE	12° max.	4.7°

REMARKS: None

Dummy S/N 016
 W/A _____
 Date 2-13-2007
 Performed By [Signature]
 Temp. 71°
 Humidity 32%



Hybrid II Lumbar Spine Flexion Test

PRE-TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
 Date: 2/13/01 Laboratory Technician: B. Swiecicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

**CALIBRATION TEST RESULTS
POST TEST**

SID NO.: 015

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: 2/23/01 Laboratory Technician: B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: 2/23/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	513
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	239
KH- Knee Pivot from Back Line (mm)	511 - 526	521
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	373

REMARKS: None

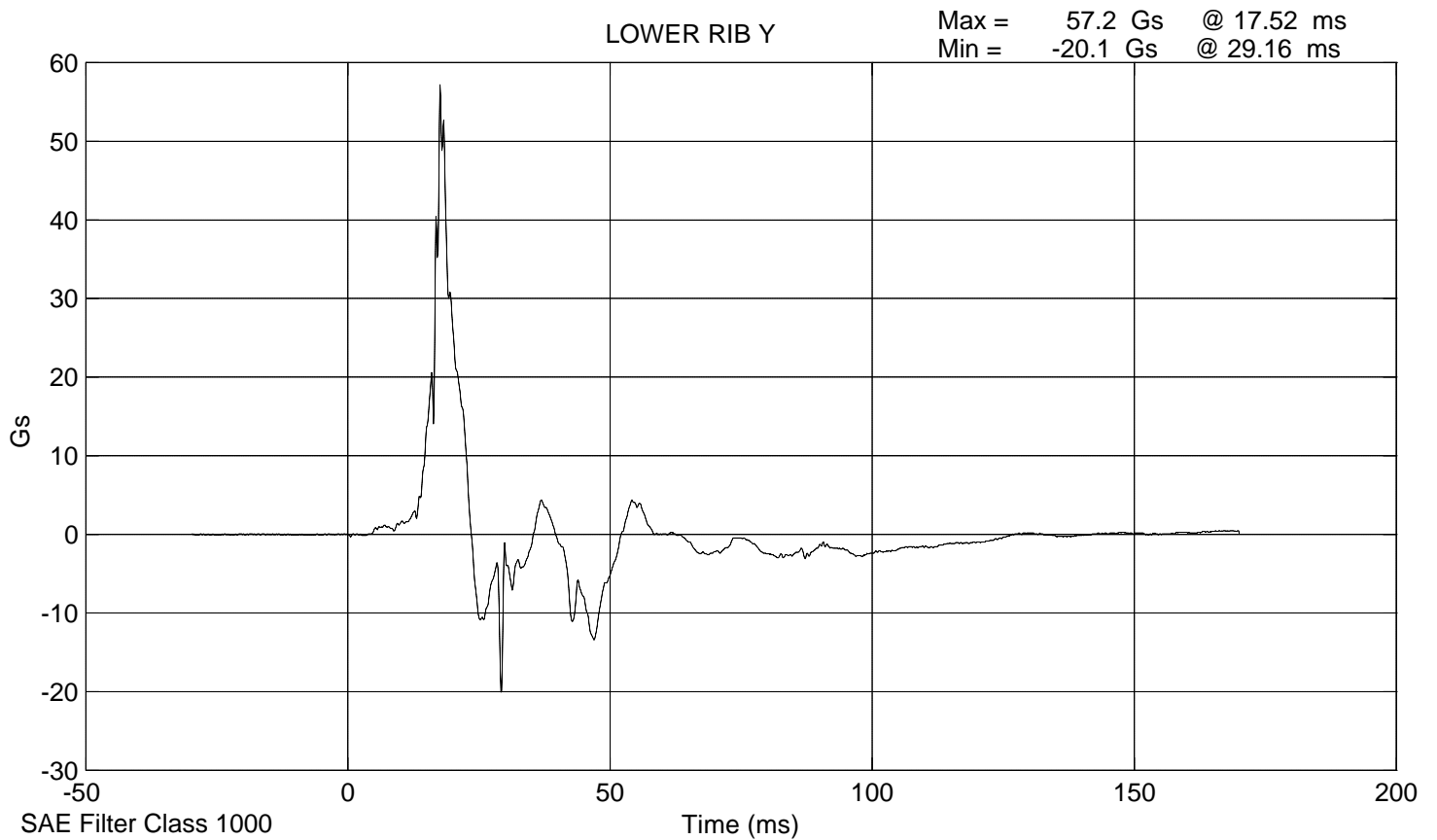
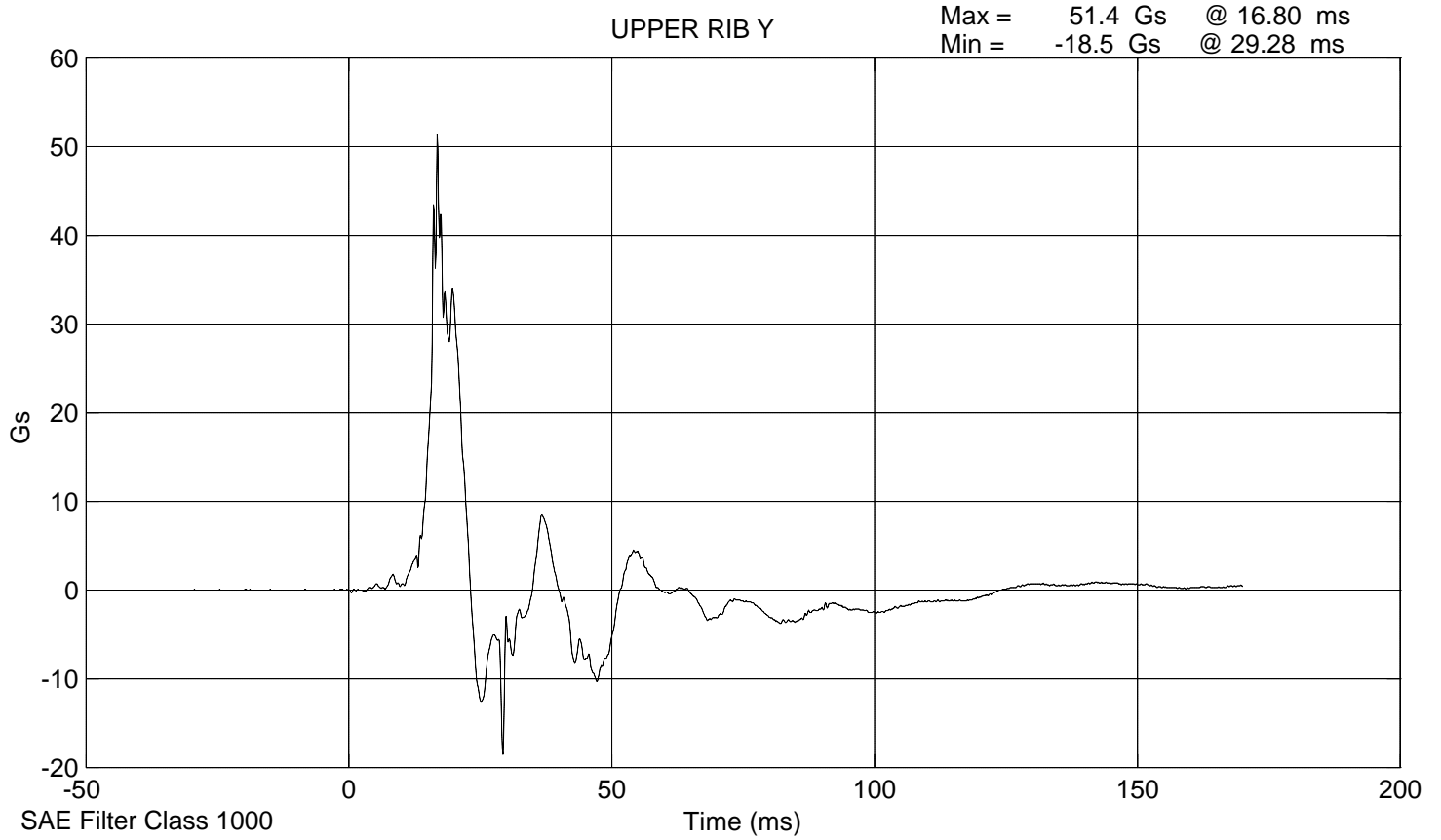
**LATERAL THORAX IMPACT TEST
POST TEST**

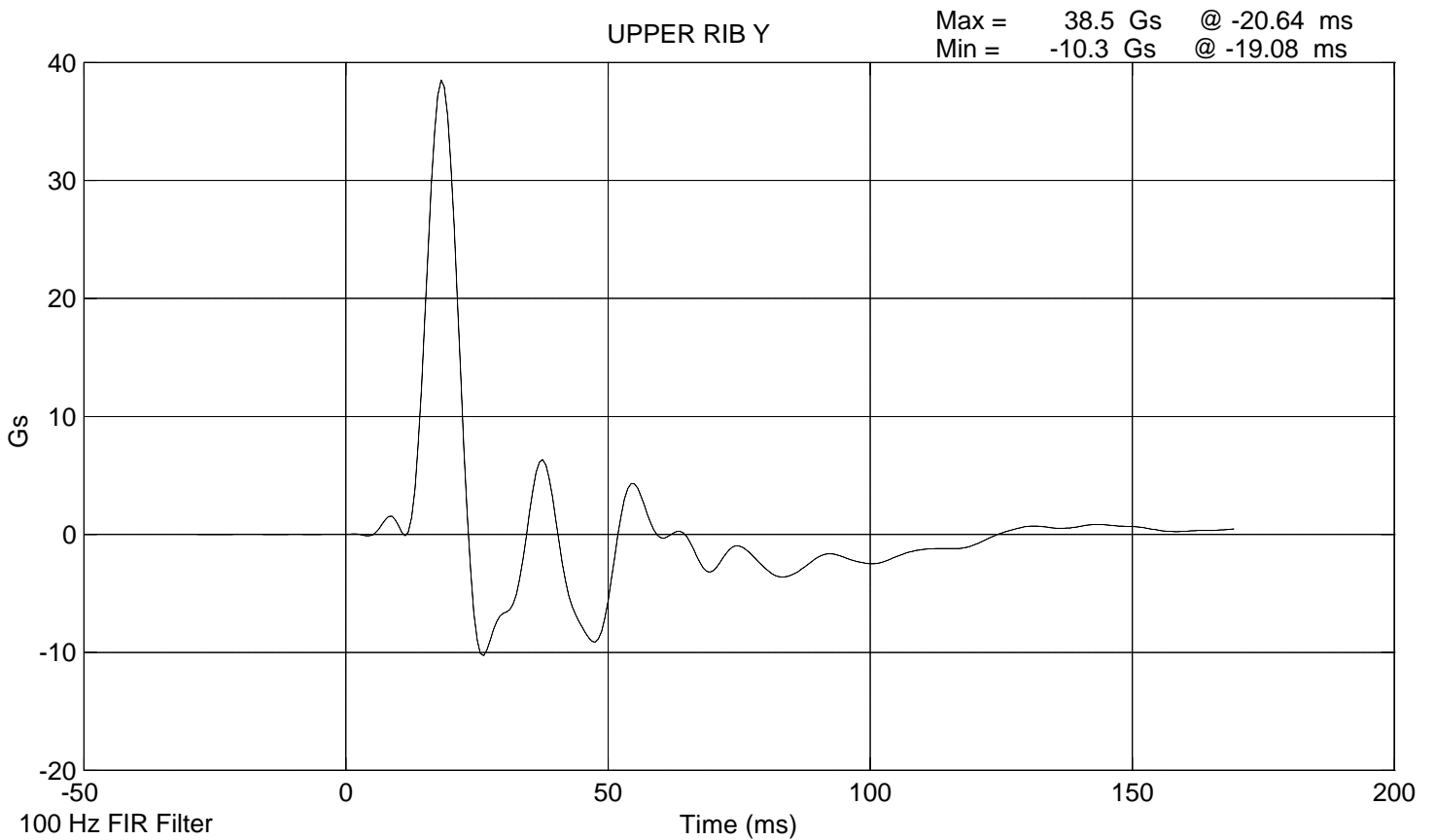
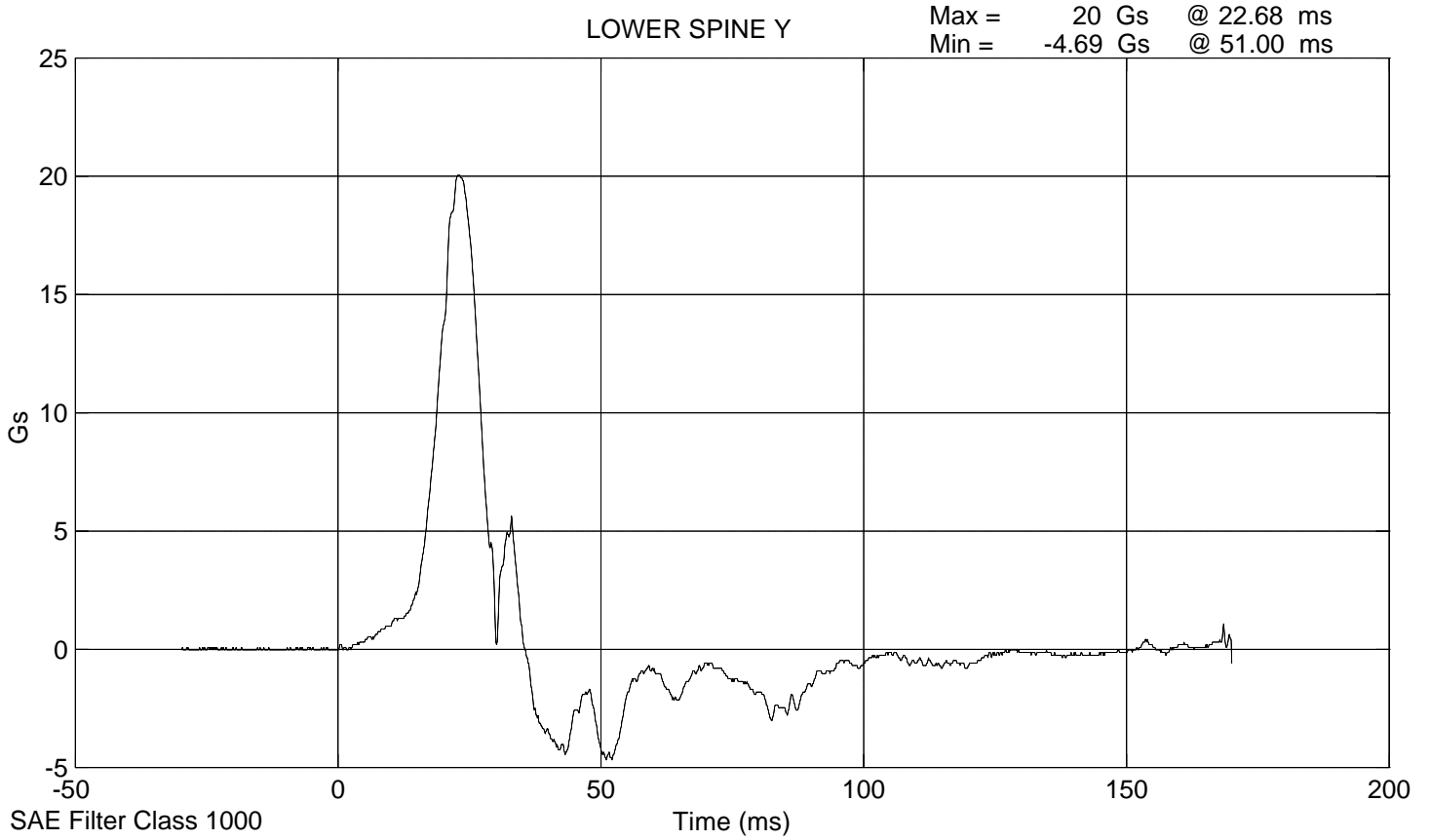
CONFIGURED FOR LEFT SIDE IMPACT

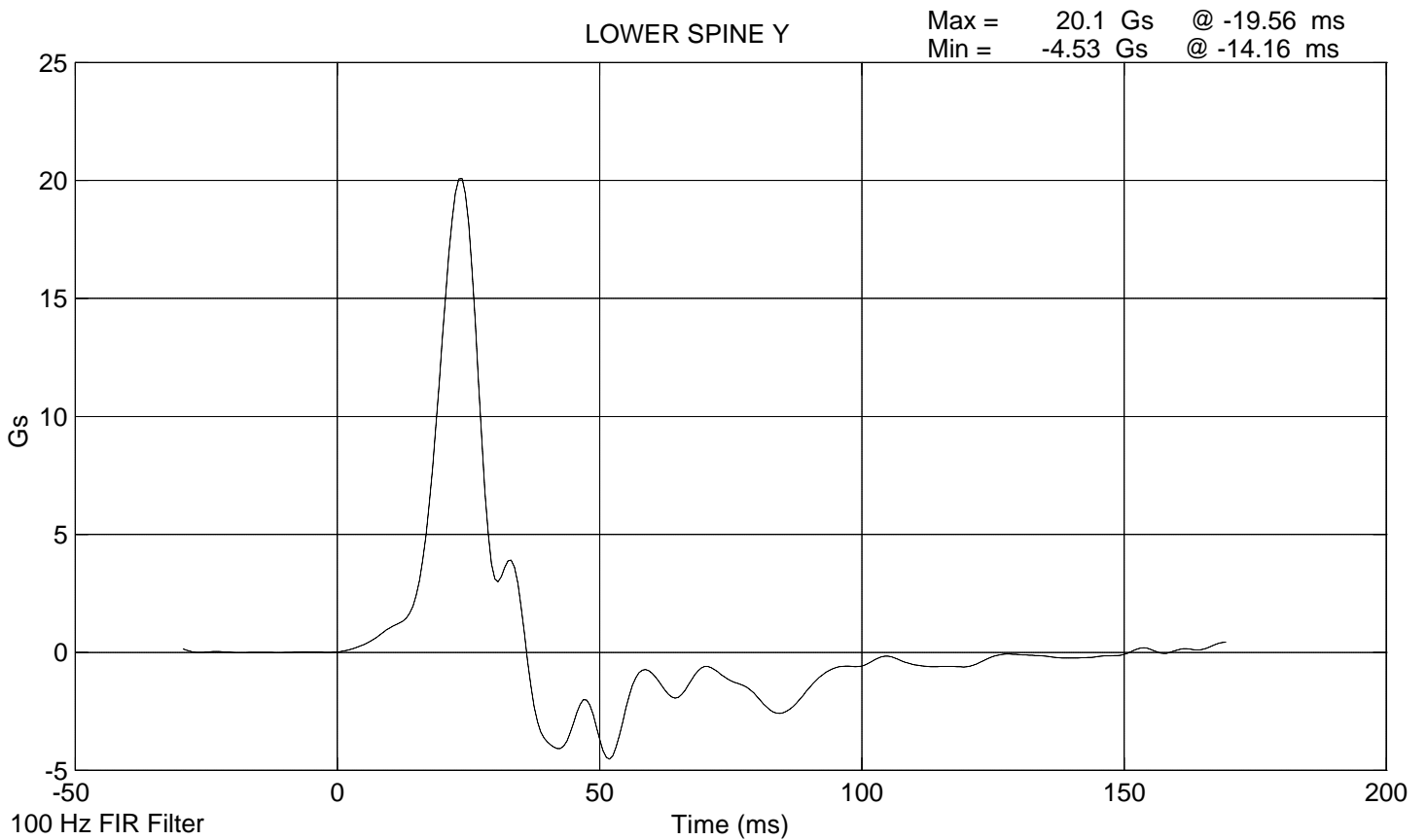
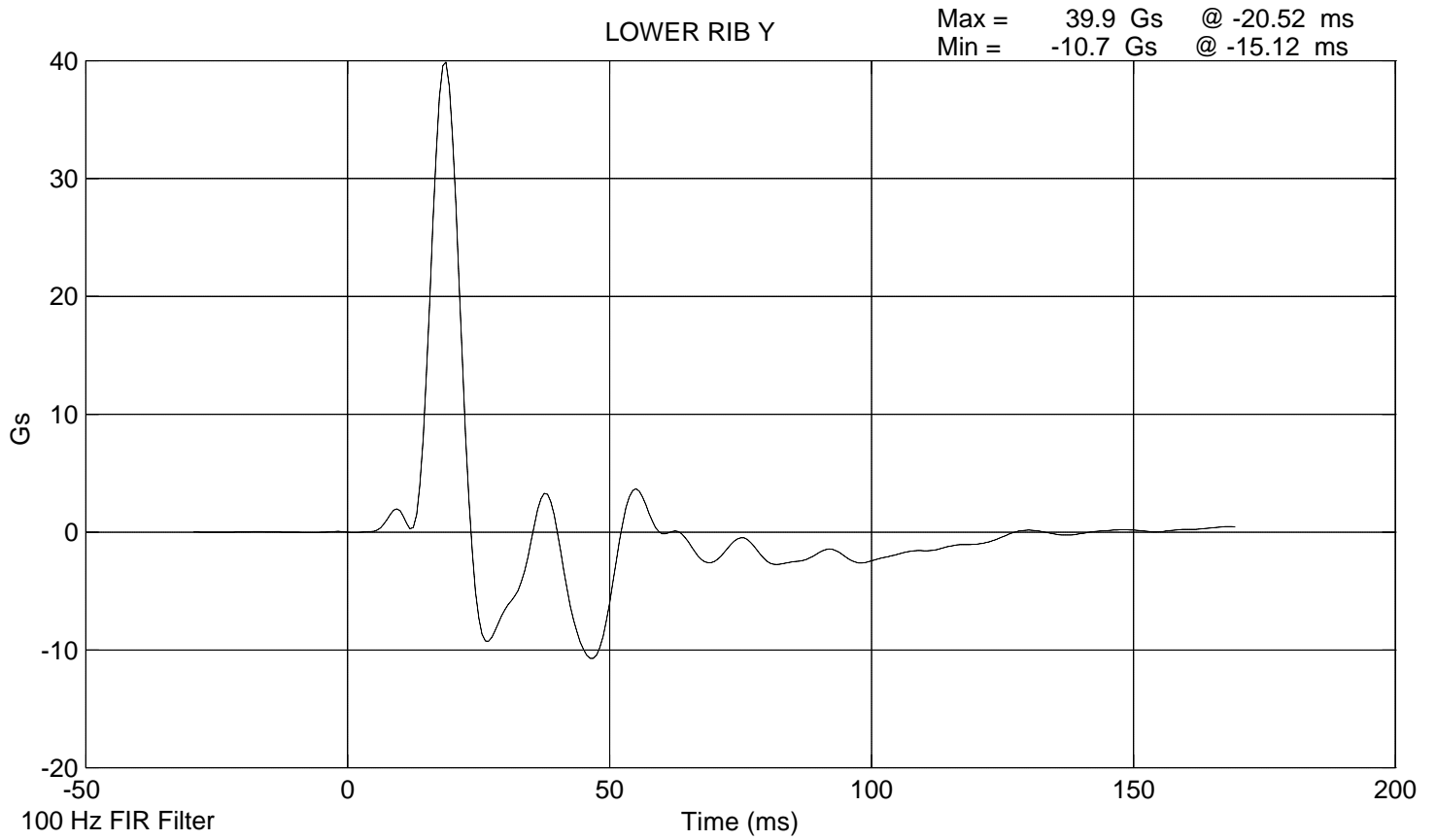
SID Serial No.: 015 Sequential Test Number: 1
Date: 2/23/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
PROBE SPEED (m/s)	4.27 - 4.33	4.28
UPPER RIB (g's)	37 - 46	38.5
LOWER RIB (g's)	37 - 46	39.9
LOWER SPINE (g's)	15 - 22	20.1

REMARKS: None







**LATERAL PELVIS IMPACT TEST
POST TEST**

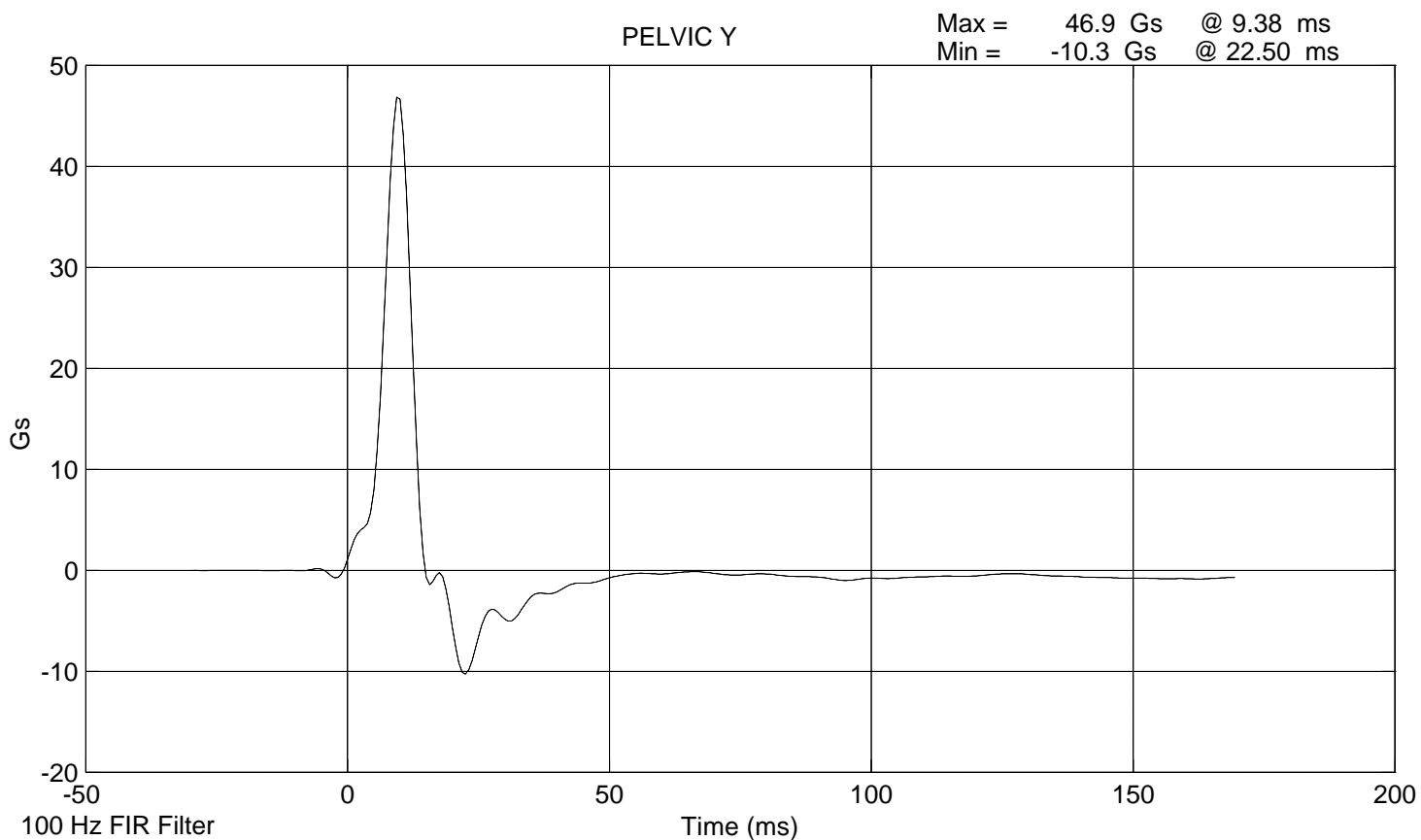
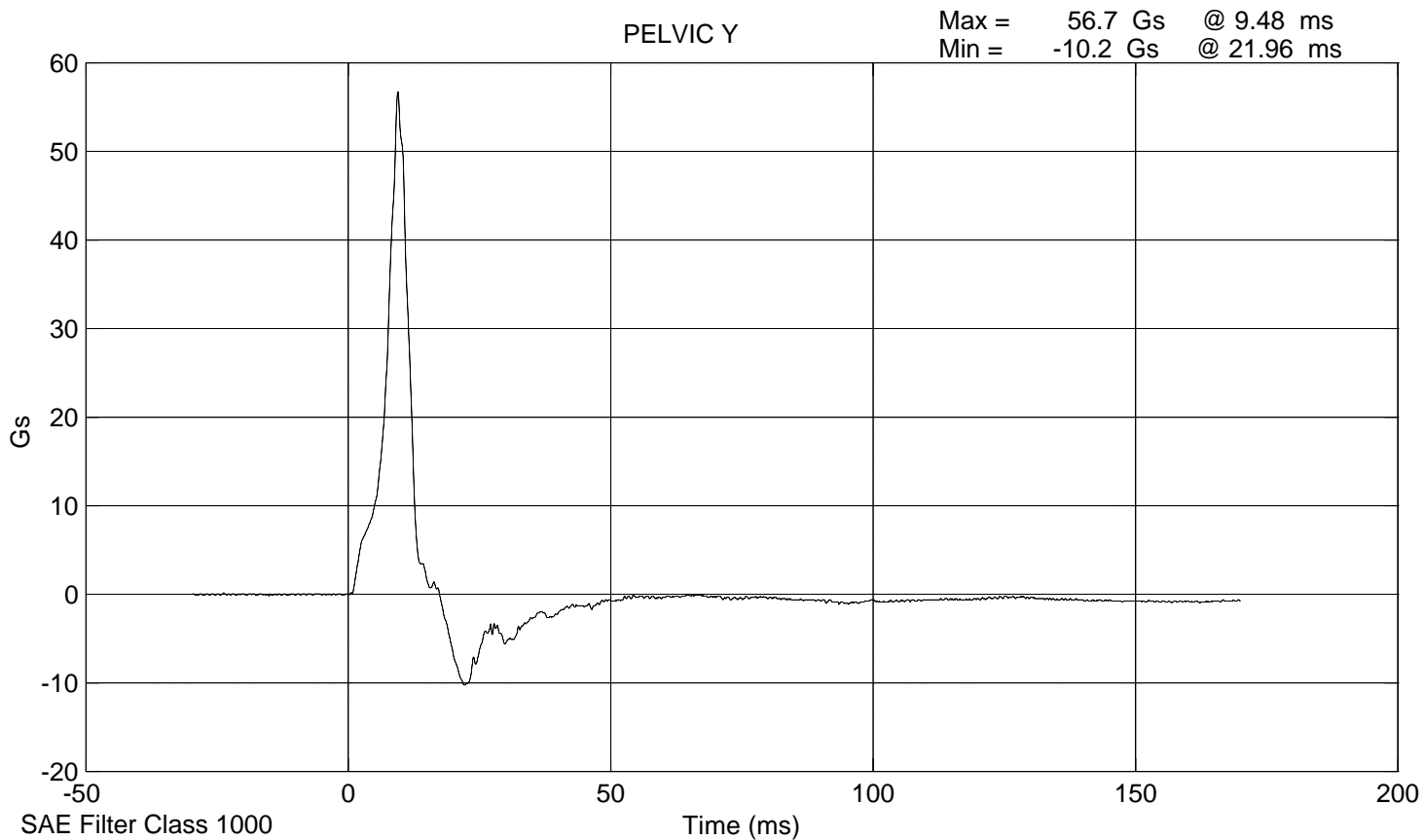
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: 2/23/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
PROBE SPEED (m/s)	4.27 - 4.33	4.27
PELVIS ACCELERATION (g's)	40 - 60	46.9

REMARKS: None

SID 015 Pelvic Impact Test @ 4.2733 m/s



HEAD DROP TEST

POST-TEST

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015

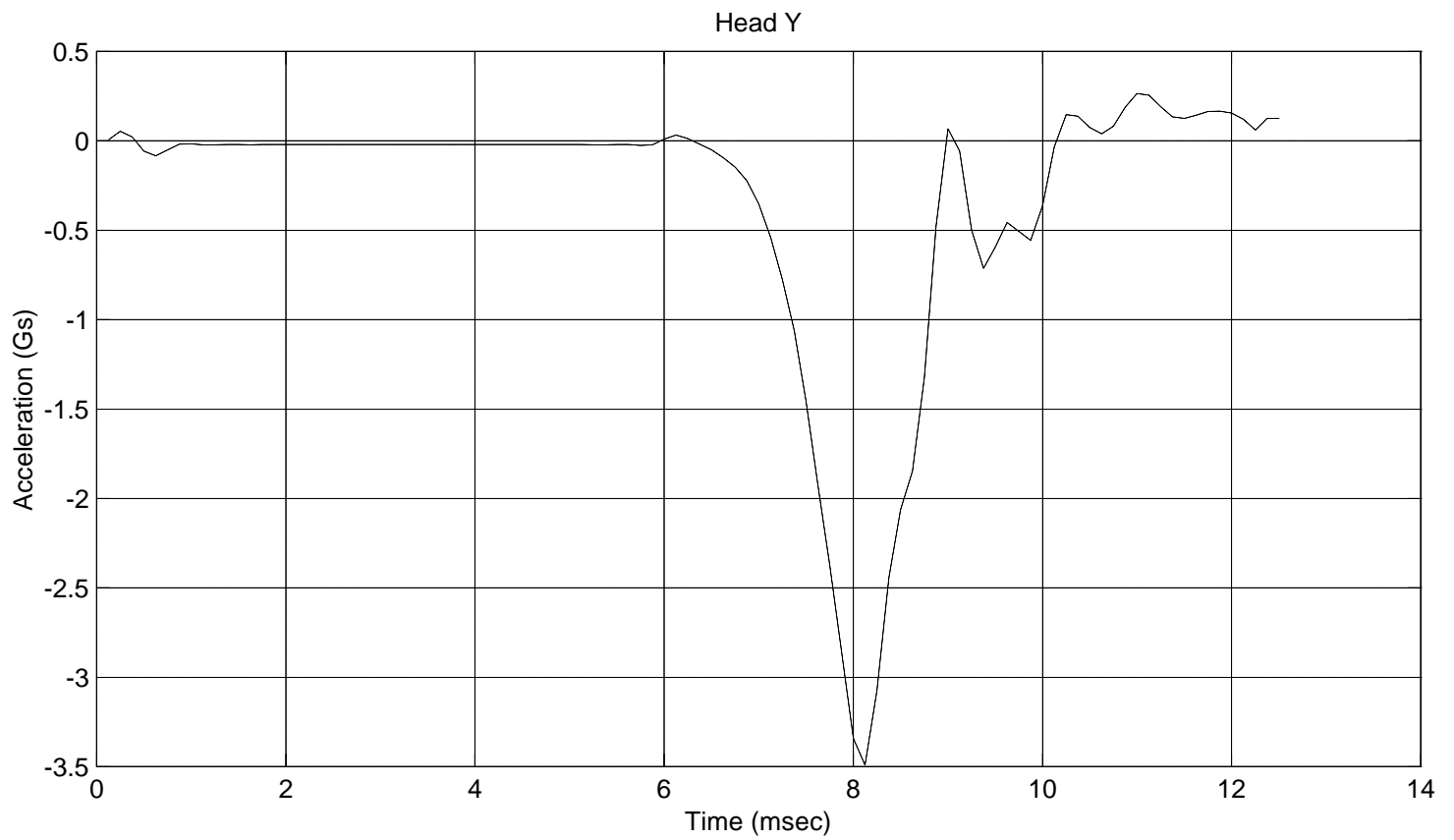
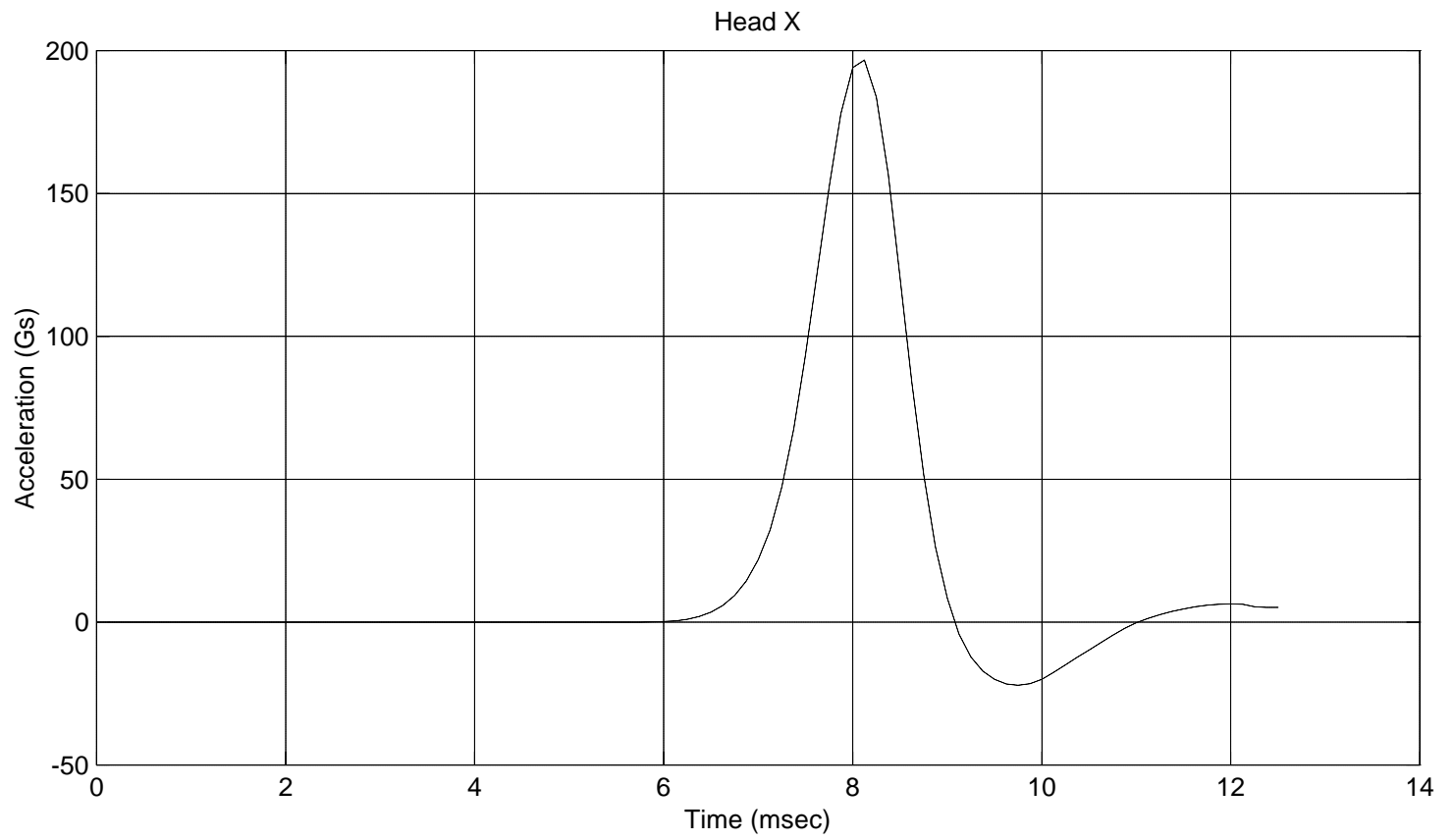
Sequential Test Number: 1

Date: 2/22/01

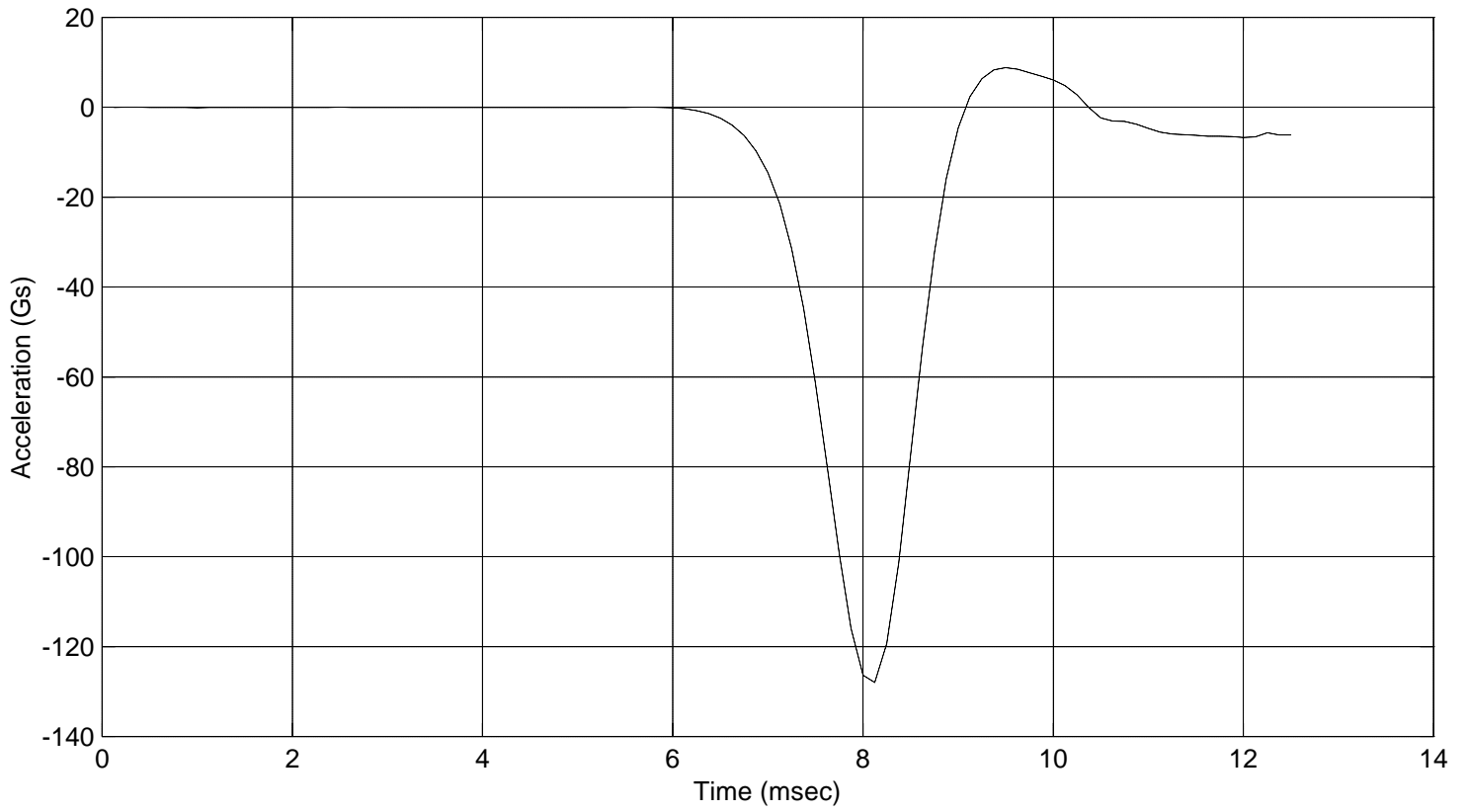
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	32
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	234.7
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	3.5
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.1

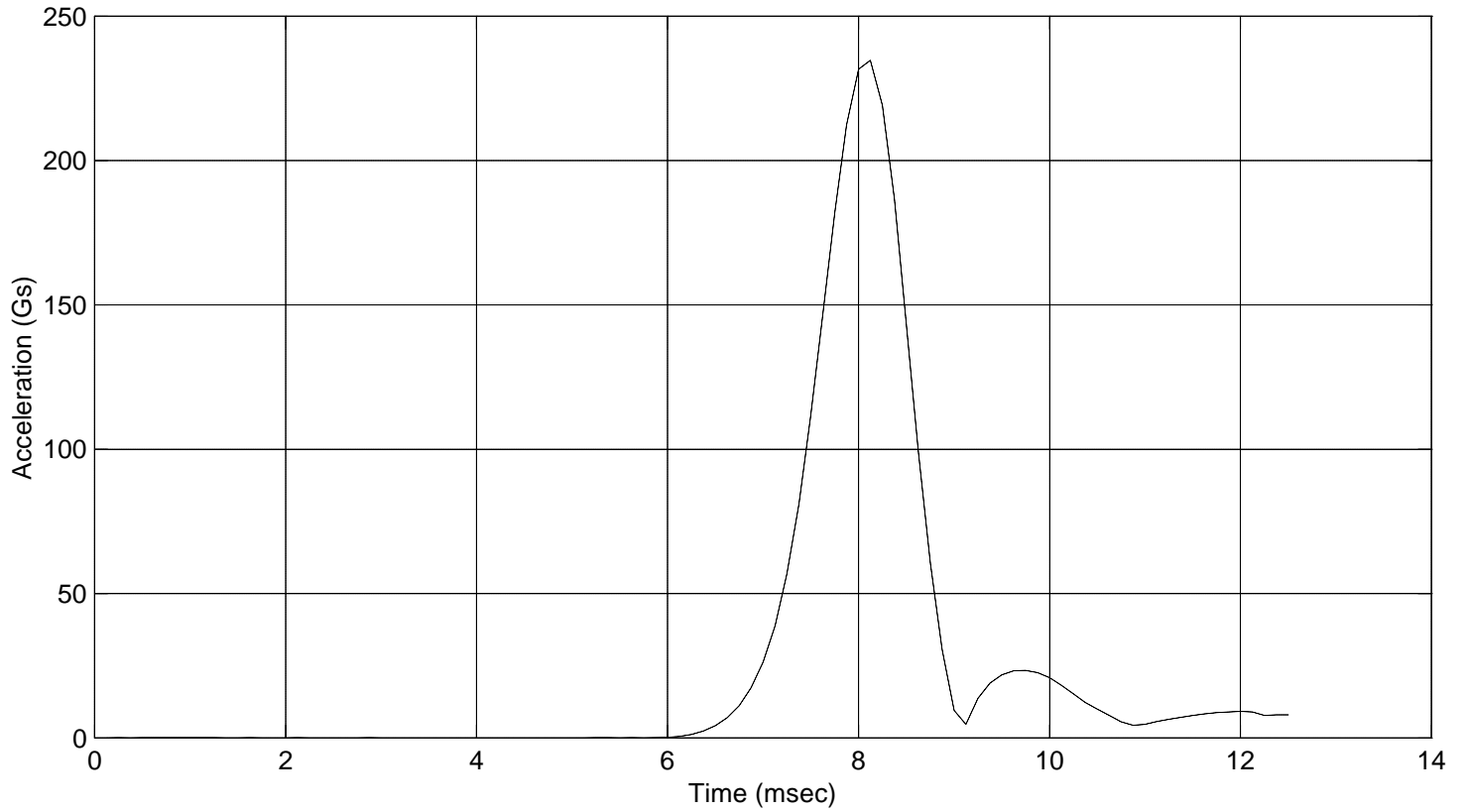
REMARKS: None



Head Z



Head Resultant



**ABDOMINAL COMPRESSION TEST
POST TEST**

(Test not required for SID certification)

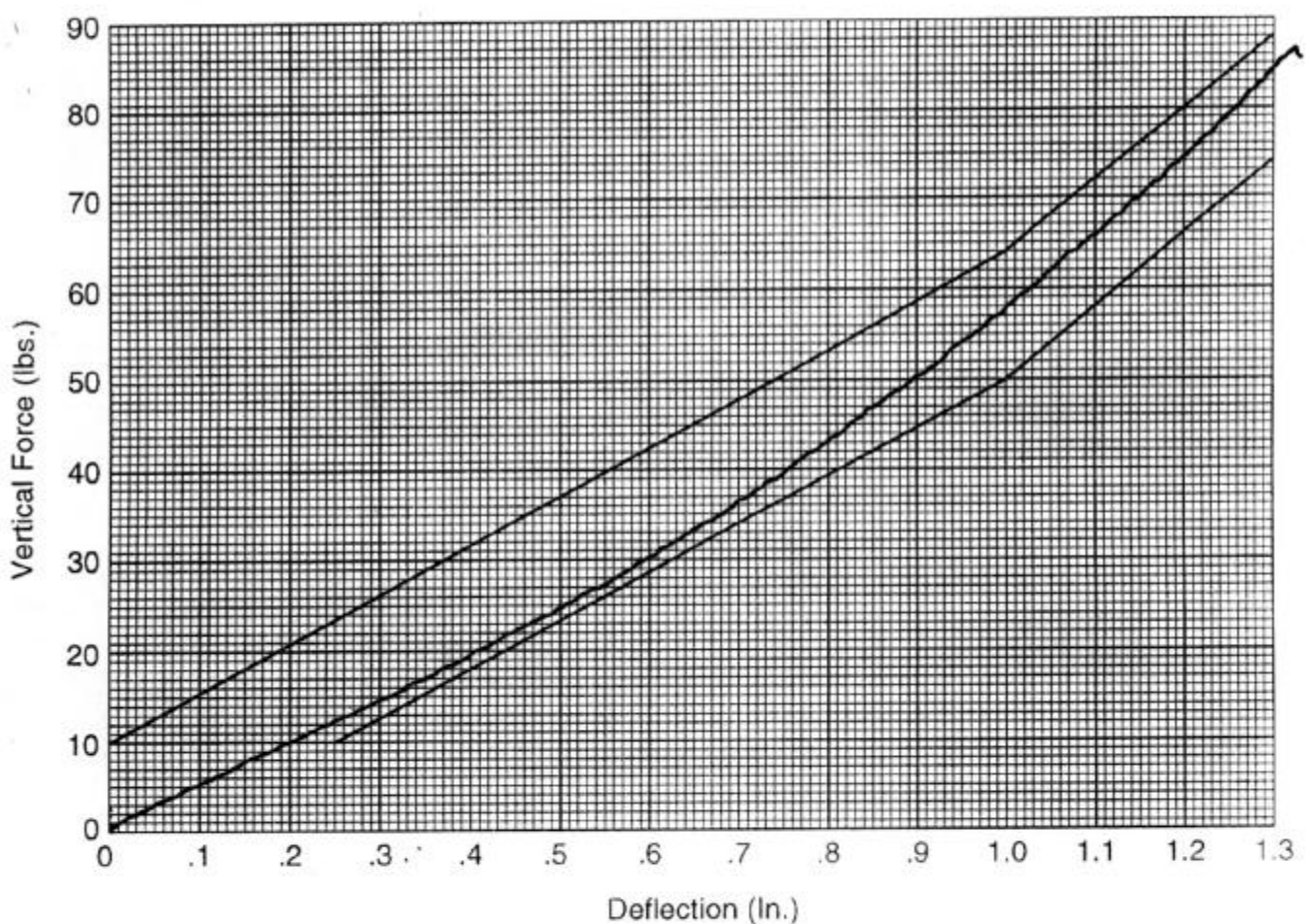
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: 2/23/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
FORCE @ 13 mm (N)	104 - 162	110
FORCE @ 19 mm (N)	163 - 221	176
FORCE @ 25 mm (N)	222 - 280	257
FORCE @ 33 mm (N)	325 - 391	375

REMARKS: None

Dummy S/N 015
W/A _____
Date 2-23-2001
Performed By [Signature]
Temp. 71°
Humidity 31%



**Hybrid II
Abdomen Static Press**

LUMBAR FLEXION TEST
POST TEST
(Test not required for SID certification)

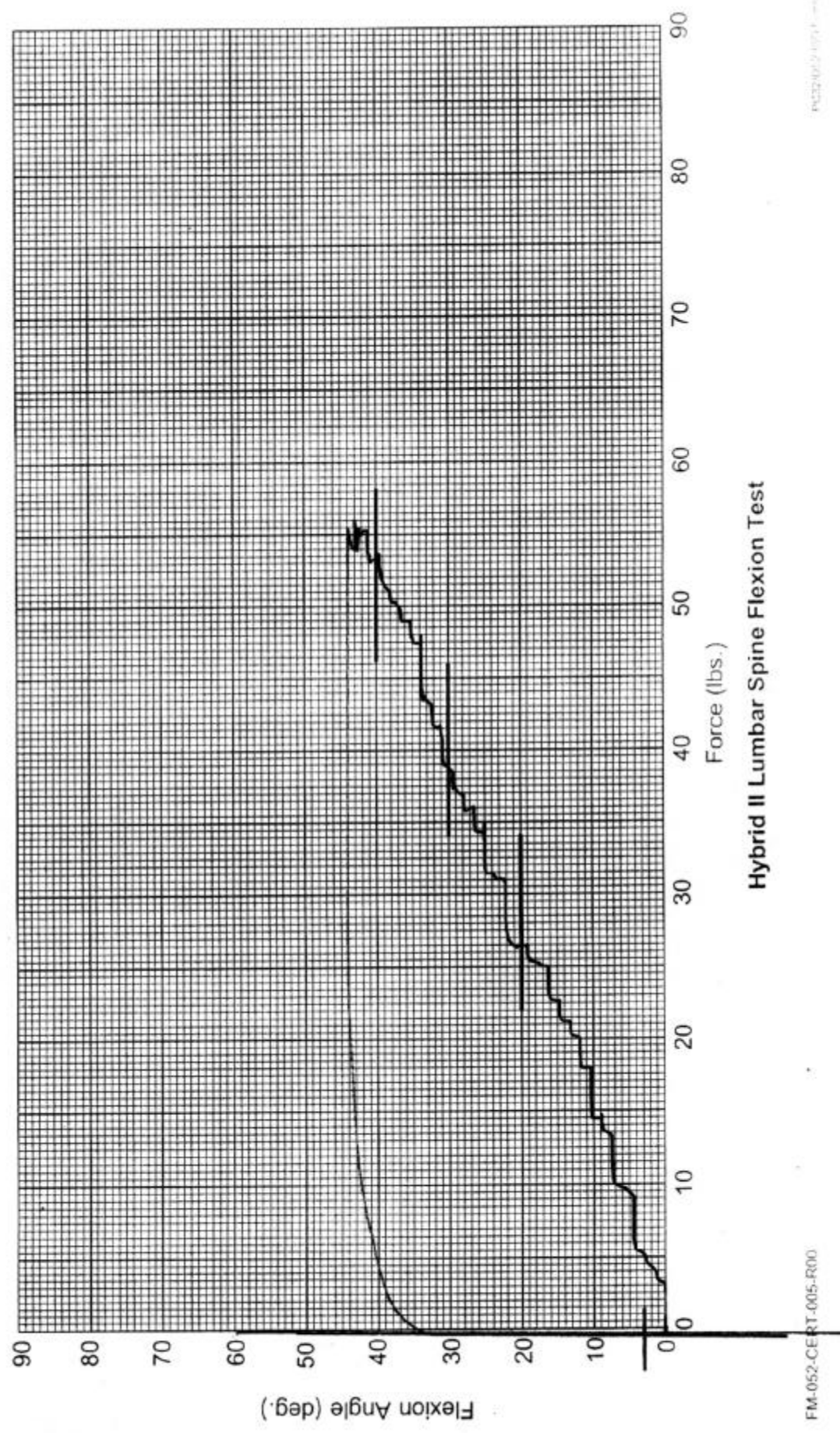
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: 2/23/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
FORCE @ 0° (N)	0 - 26.7	0.0
FORCE @ 20° (N)	97.8 - 151.2	117.4
FORCE @ 30° (N)	151.2 - 204.6	172.4
FORCE @ 40° (N)	204.6 - 258	236.9
RETURN ANGLE	12° max.	3.0°

REMARKS: None

Dummy S/N 015
 W/A _____
 Date 2-23-2001
 Performed By [Signature]
 Temp. 71%
 Humidity 31%



Hybrid II Lumbar Spine Flexion Test

POST TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
 Date: 2/23/01 Laboratory Technician: B. Swiecicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

**CALIBRATION TEST RESULTS
POST TEST**

SID NO.: 016

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
Date: 2/23/01 Laboratory Technician: B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
LATERAL THORAX IMPACT TEST	Did not pass lower spine acceleration requirement.
LATERAL PELVIS IMPACT TEST	Did not pass pelvis acceleration requirement.
HEAD DROP TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: The SID did not meet the thorax (lower spine) and pelvis post test certification requirements. The SID has been removed from service until replacement parts are installed and the ATD meets the certification requirements.

**EXTERNAL DIMENSIONS
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
Date: 2/23/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	513
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	239
KH- Knee Pivot from Back Line (mm)	511 - 526	526
KV- Knee Pivot to Floor (mm)	490 - 505	495
HW- Hip Width (mm)	356 - 391	366

REMARKS: None

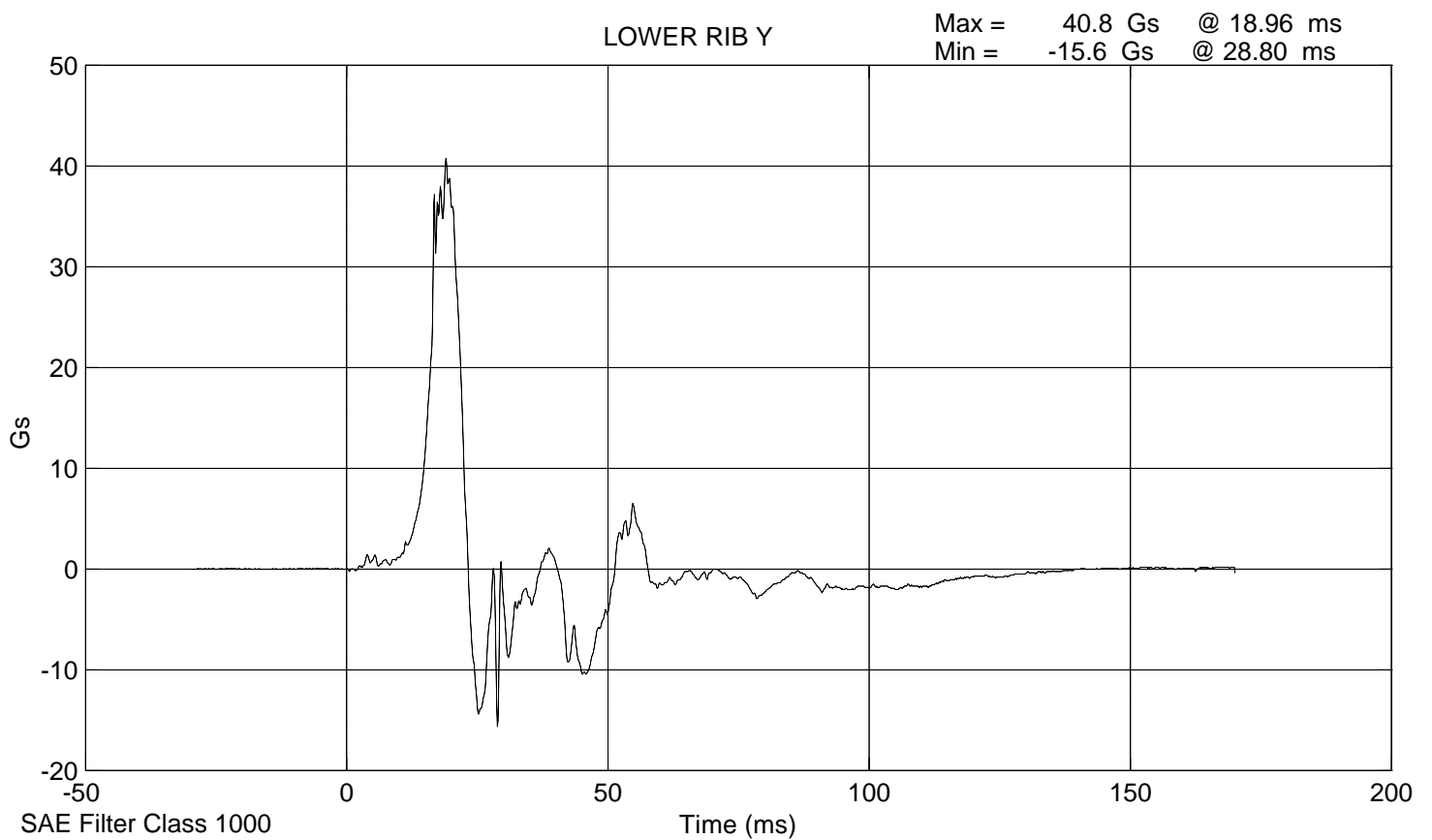
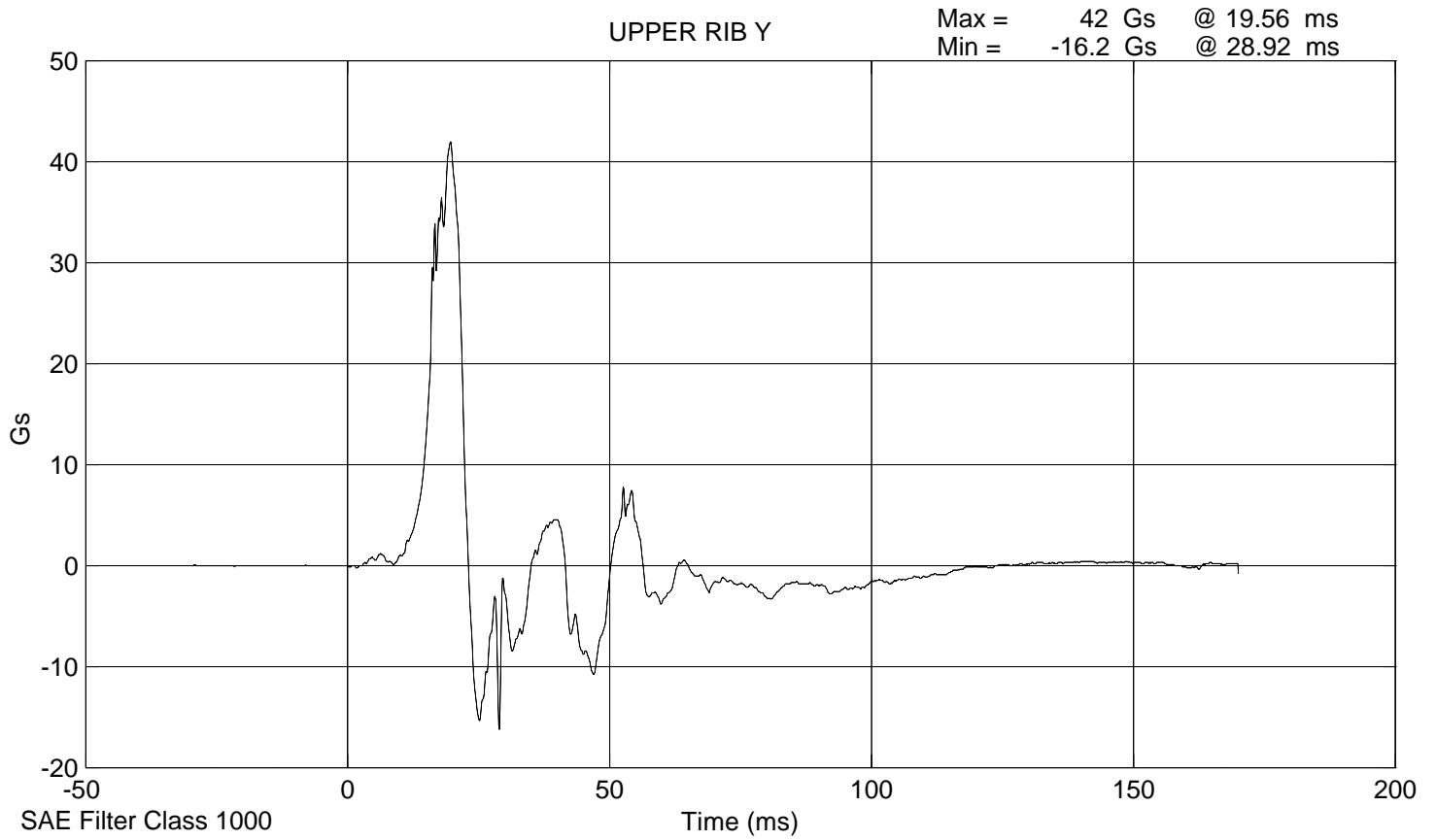
**LATERAL THORAX IMPACT TEST
POST TEST**

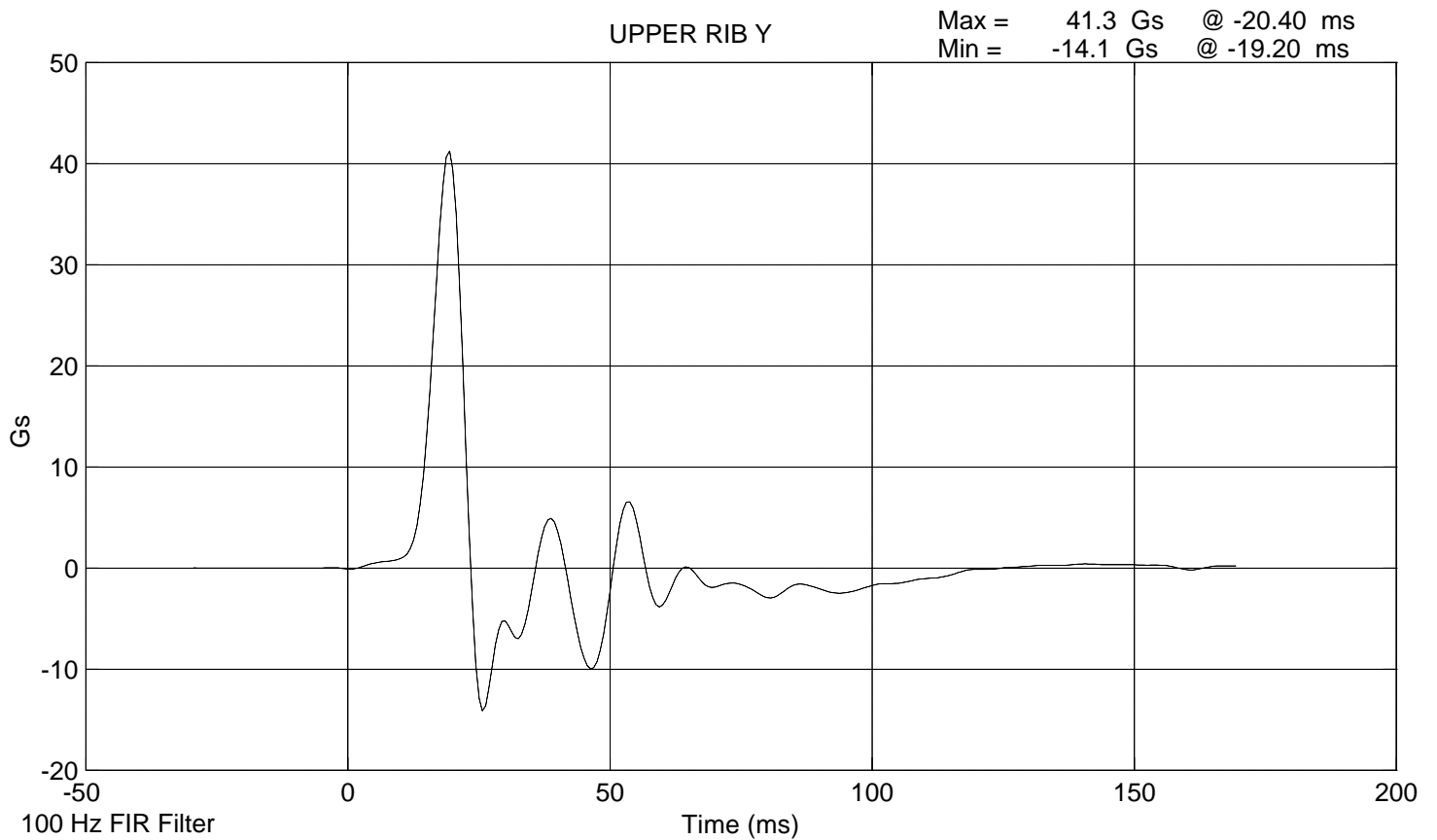
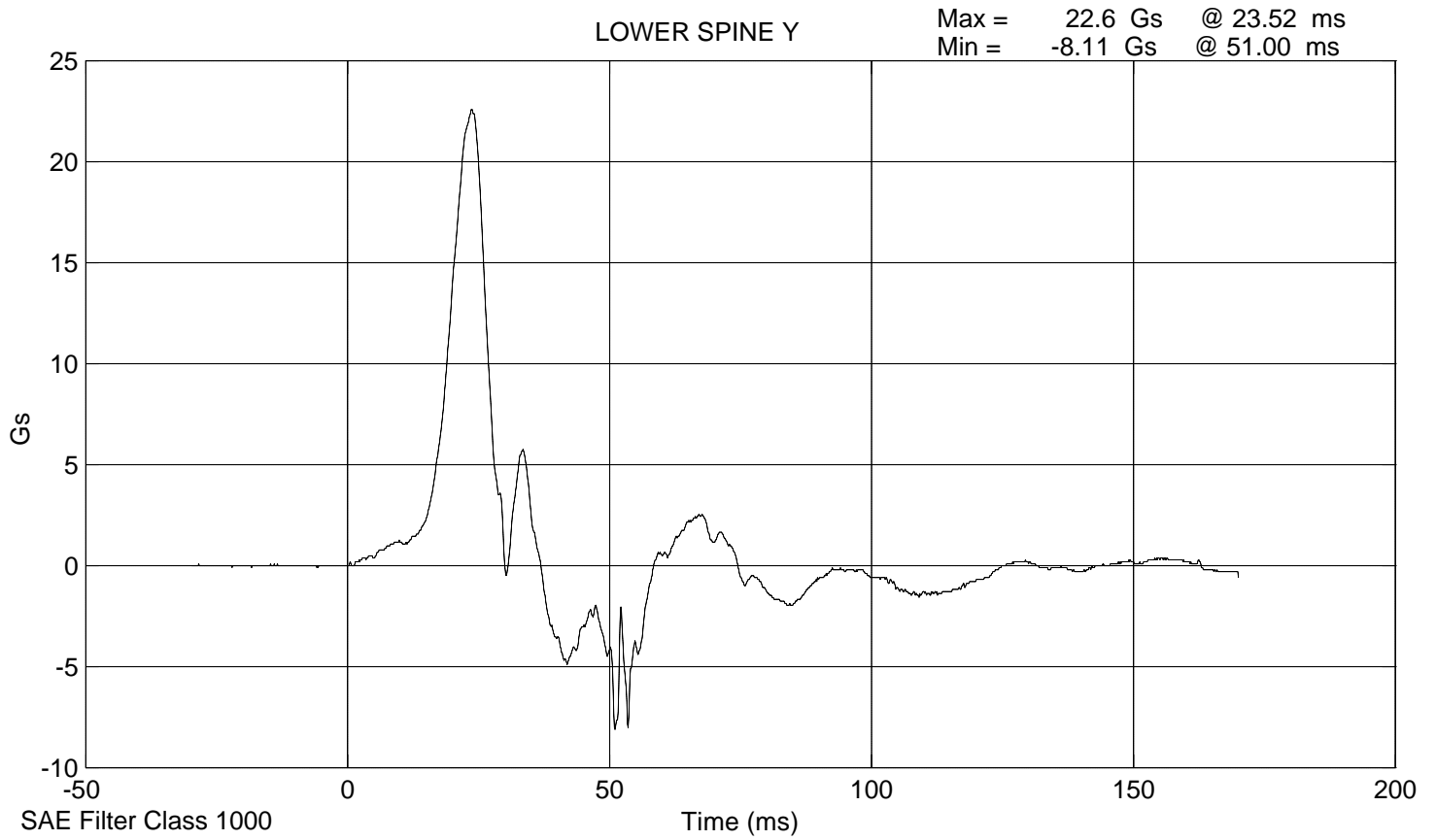
CONFIGURED FOR LEFT SIDE IMPACT

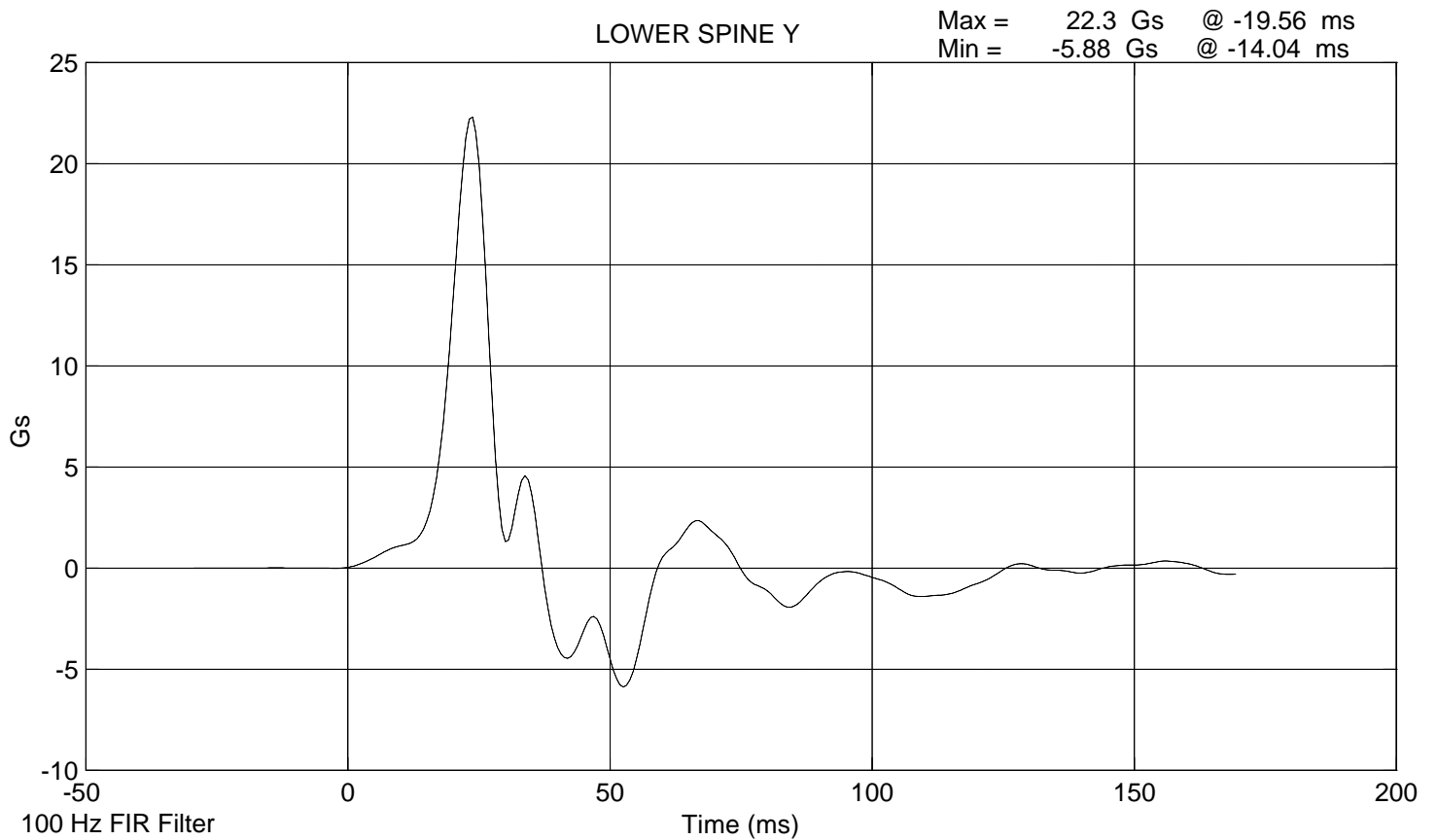
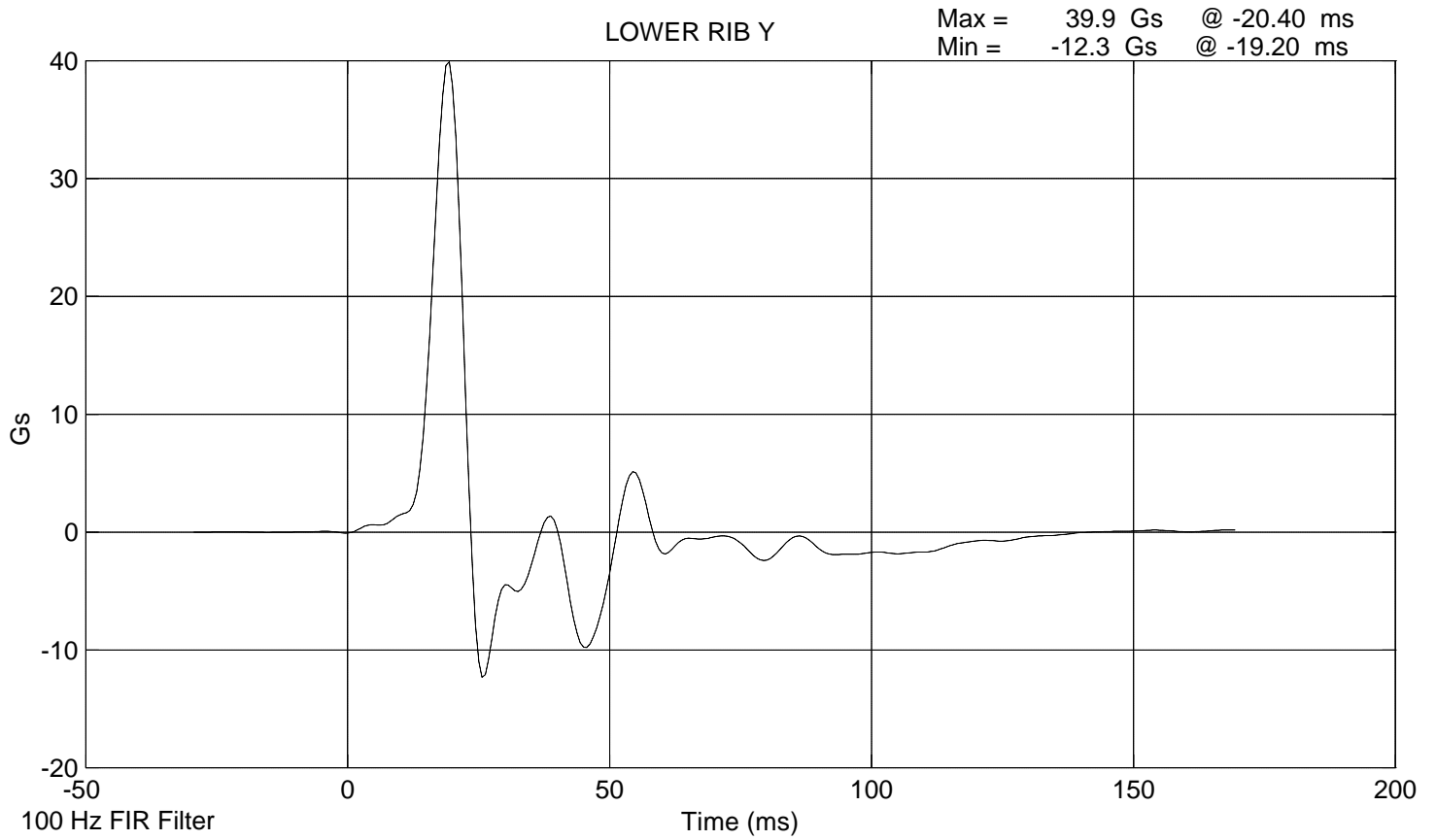
SID Serial No.: 016 Sequential Test Number: 1
Date: 2/23/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
PROBE SPEED (m/s)	4.27 - 4.33	4.29
UPPER RIB (g's)	37 - 46	41.3
LOWER RIB (g's)	37 - 46	39.9
LOWER SPINE (g's)	15 - 22	22.3

REMARKS: Lower spine acceleration did meet post test certification requirements. SID has been removed from service until replacement parts are installed the ATD meets certification.







**LATERAL PELVIS IMPACT TEST
POST TEST**

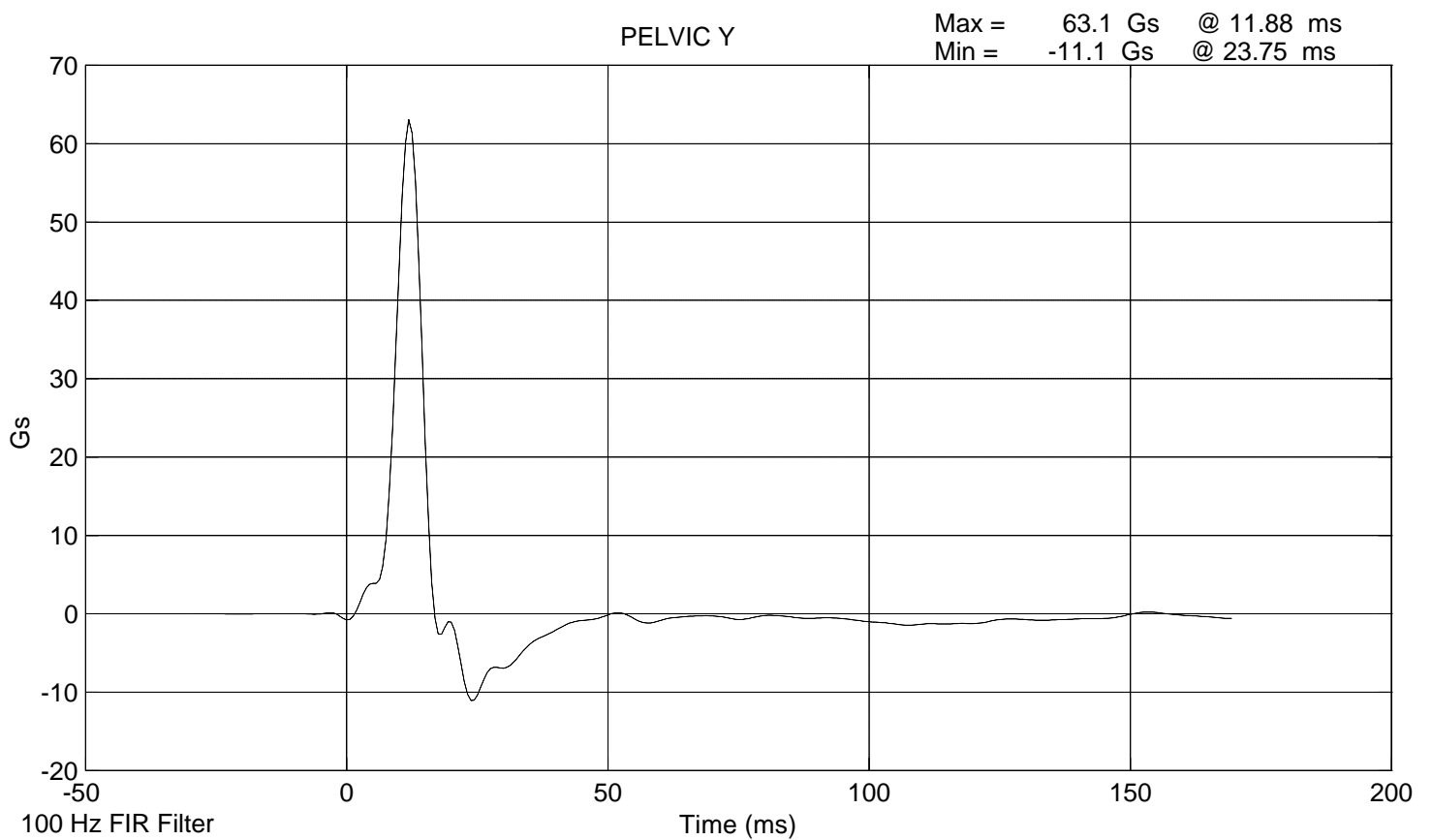
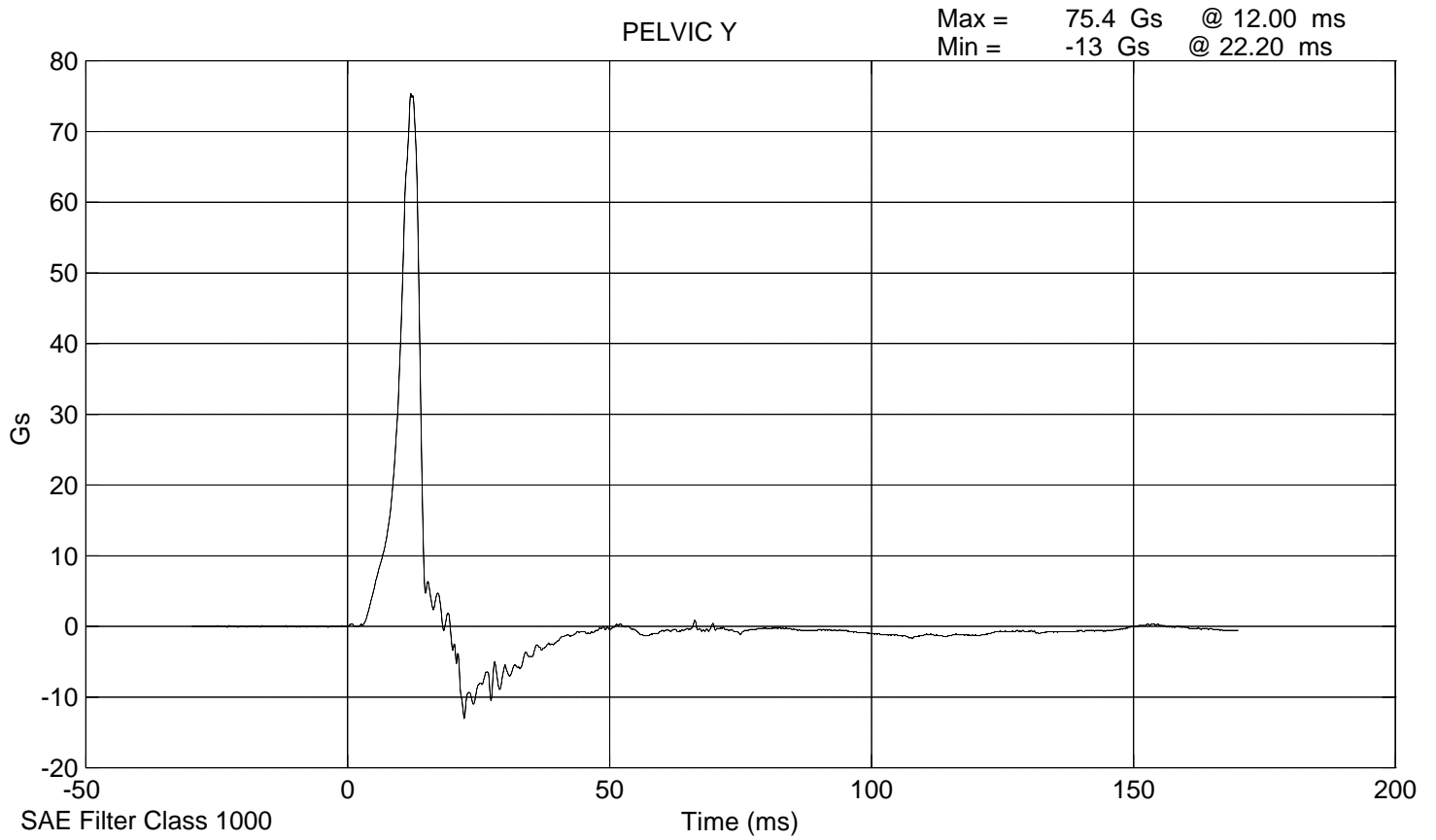
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
Date: 2/23/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
PROBE SPEED (m/s)	4.27 - 4.33	4.27
PELVIS ACCELERATION (g's)	40 - 60	63.1

REMARKS: Pelvis acceleration did not meet post test certification requirements. SID has been removed from service until replacement parts are installed and the ATD meets certification.

SID 016 Pelvic Impact Test @ 4.2733 m/s



HEAD DROP TEST

POST-TEST

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016

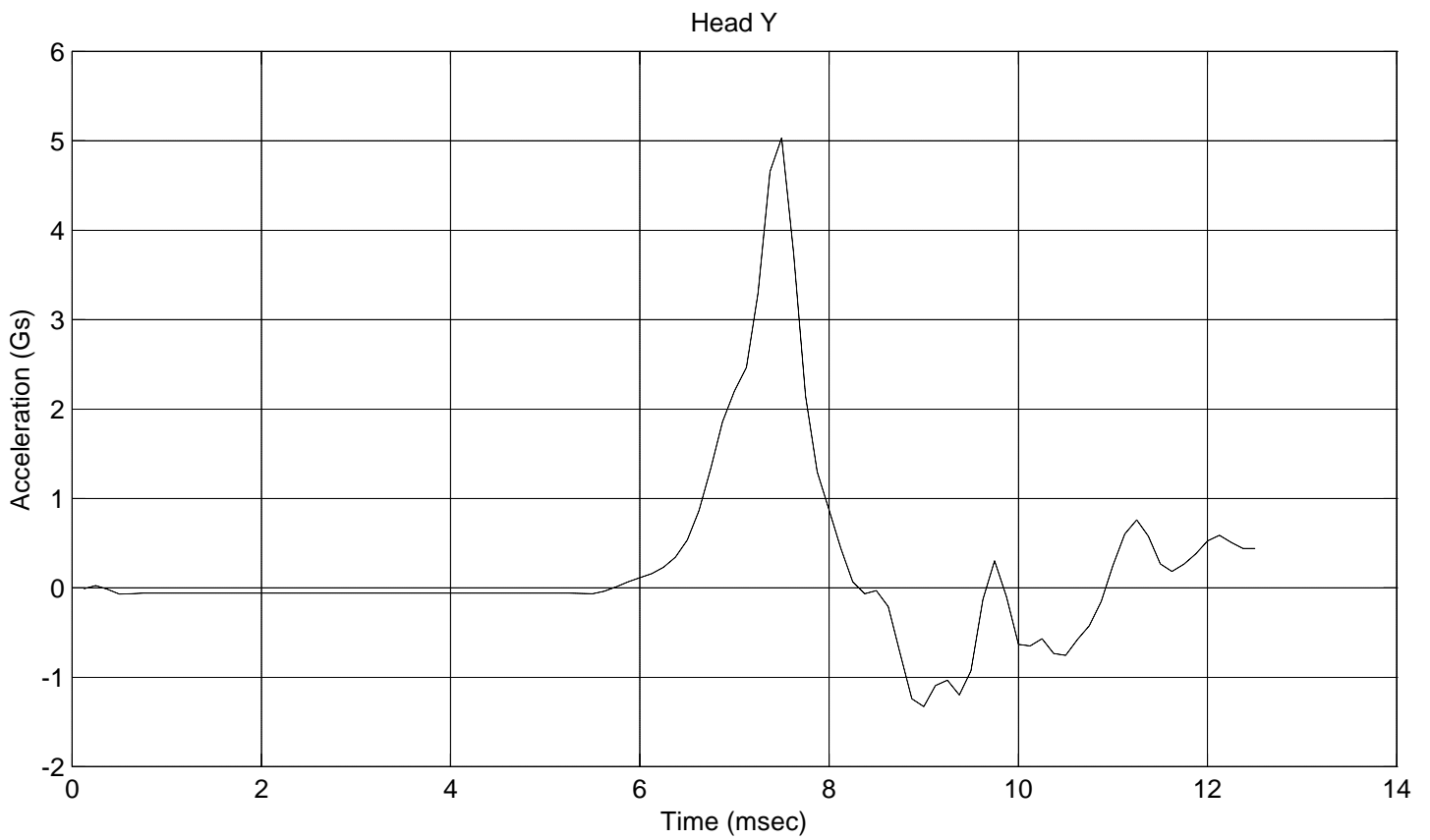
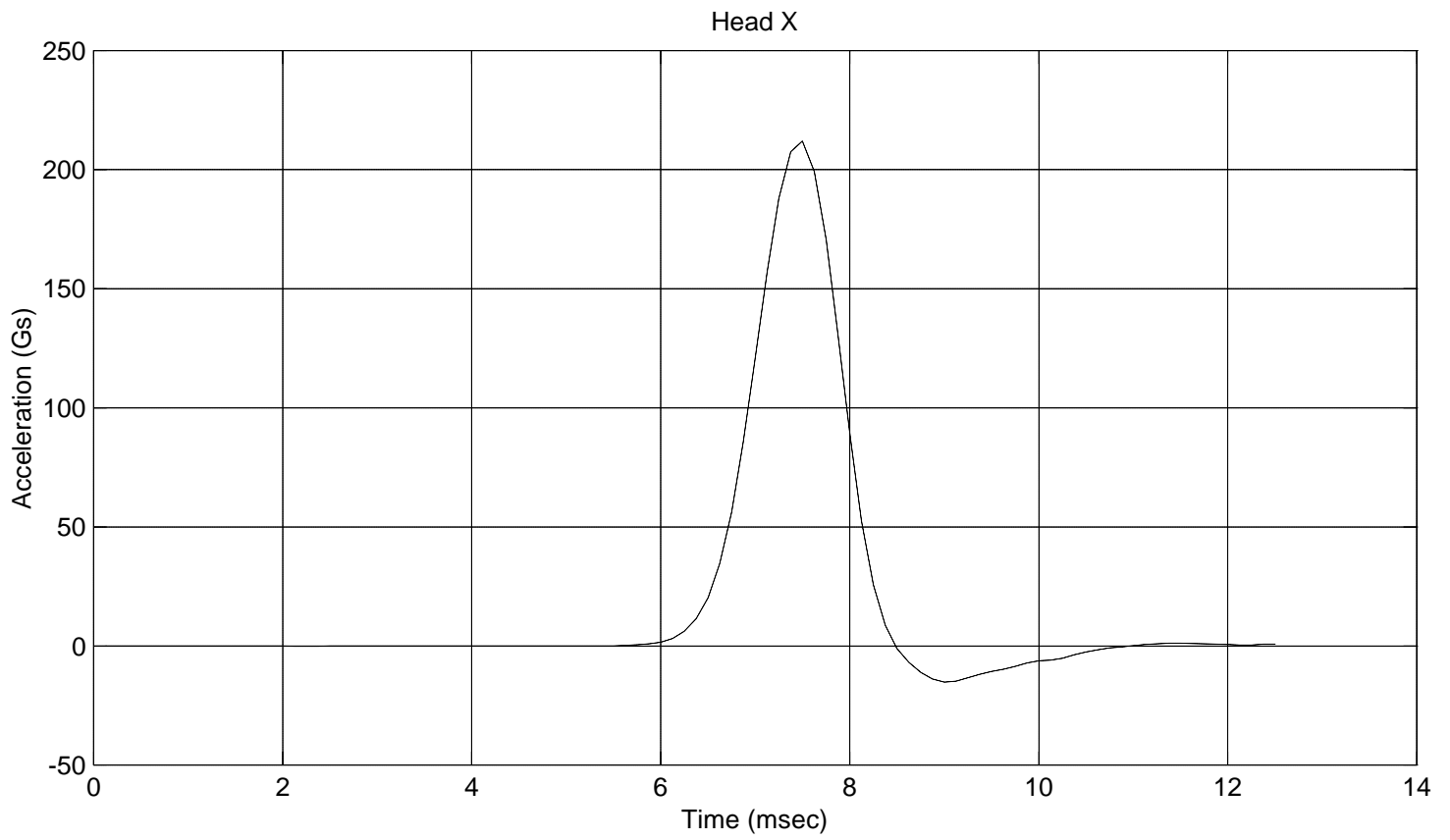
Sequential Test Number: 1

Date: 2/23/01

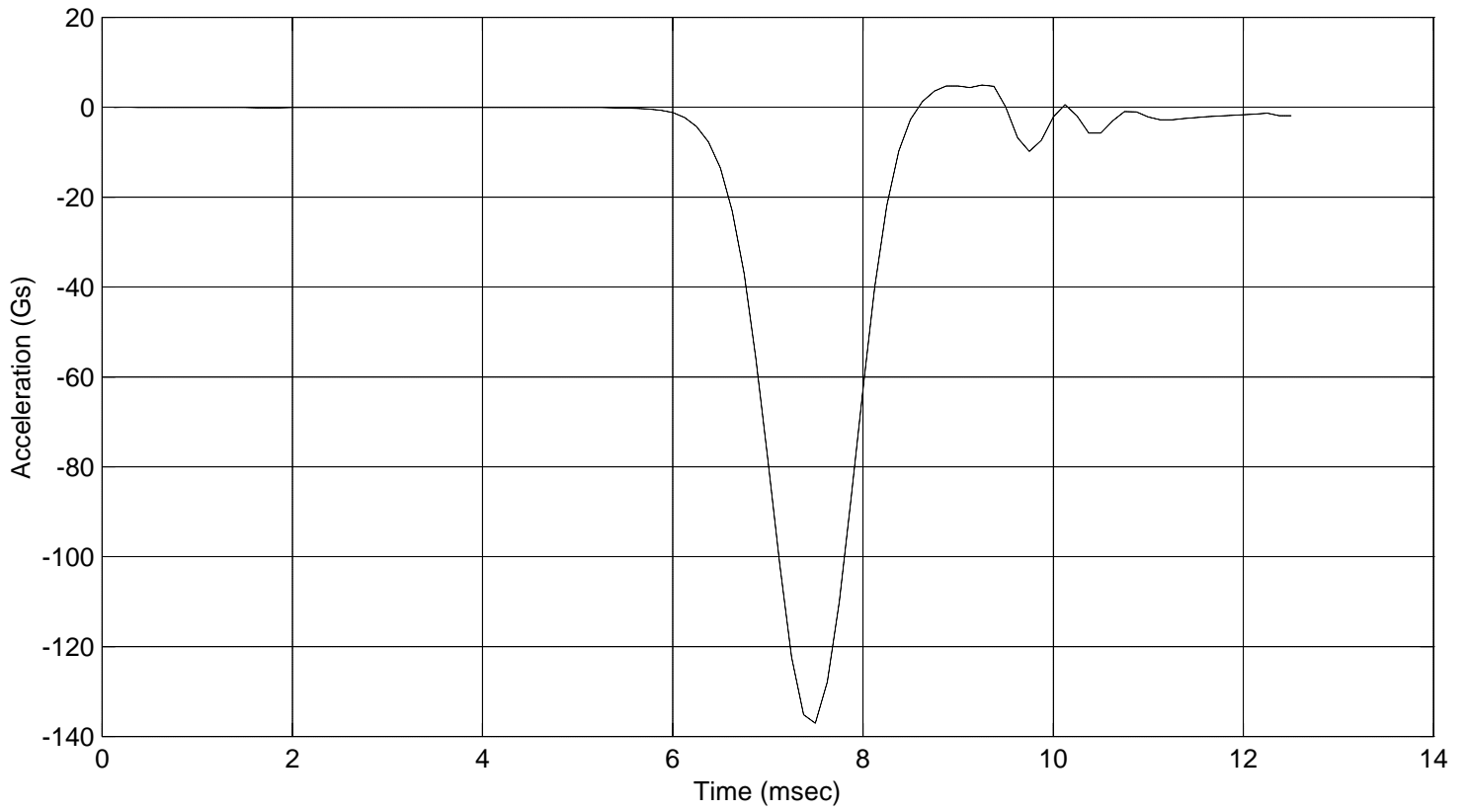
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	32
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	252.5
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	5.0
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.1

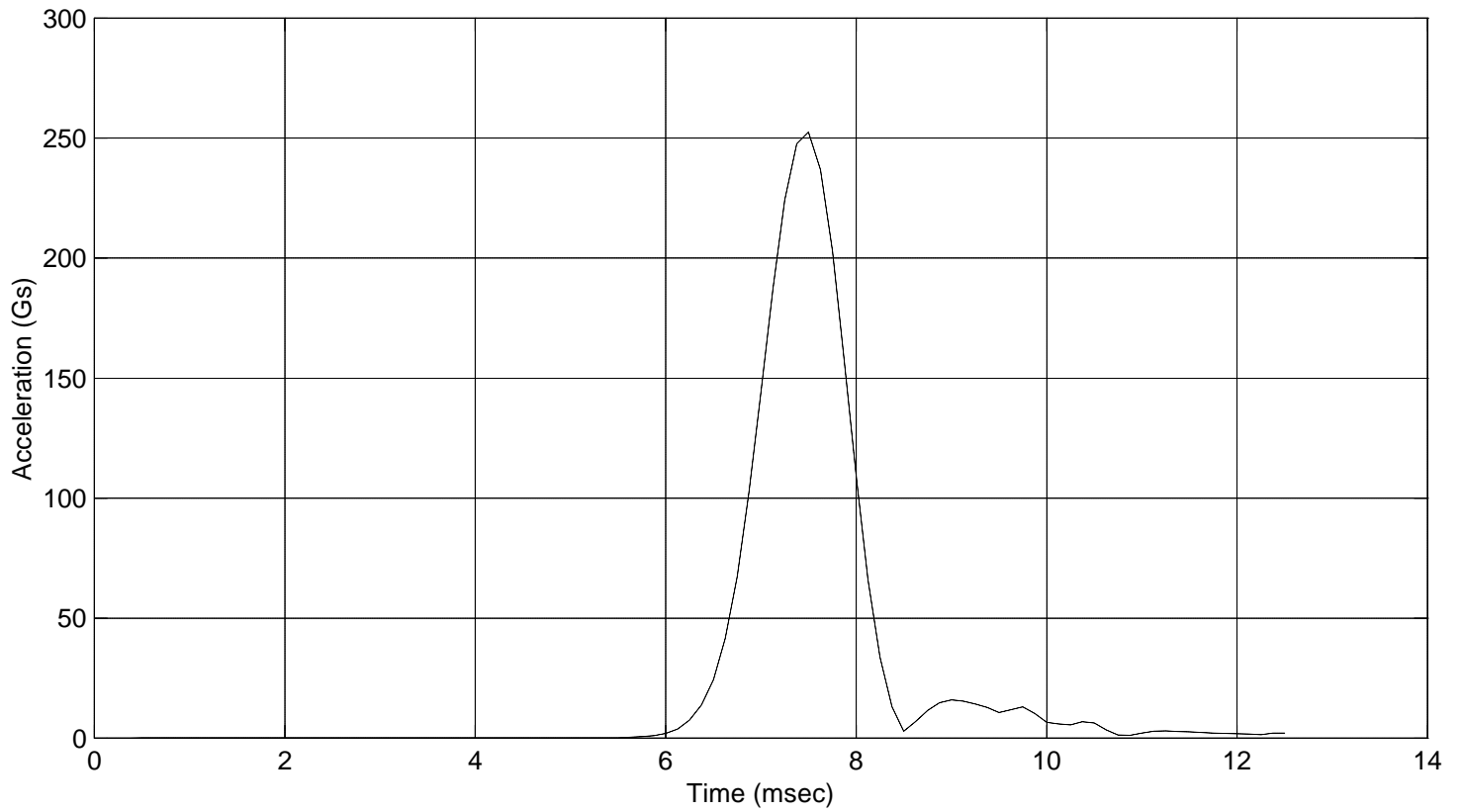
REMARKS: None



Head Z



Head Resultant



**ABDOMINAL COMPRESSION TEST
POST TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
Date: 2/23/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
FORCE @ 13 mm (N)	104 - 162	108
FORCE @ 19 mm (N)	163 - 221	169
FORCE @ 25 mm (N)	222 - 280	241
FORCE @ 33 mm (N)	325 - 391	348

REMARKS: None

Dummy S/N 016

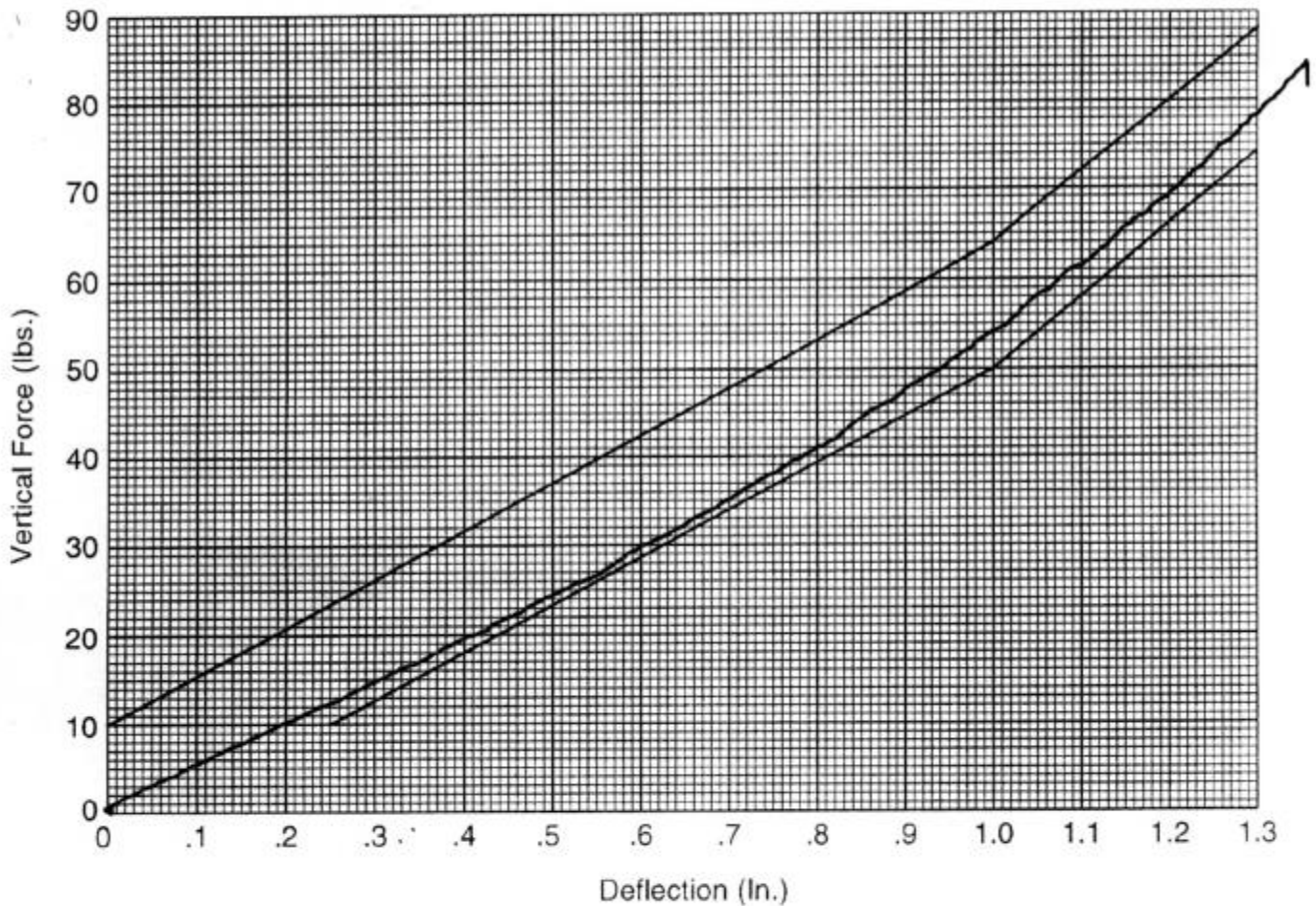
W/A _____

Date 2-23-2001

Performed By [Signature]

Temp. 71°

Humidity 31%



Hybrid II
Abdomen Static Press

LUMBAR FLEXION TEST
POST TEST
(Test not required for SID certification)

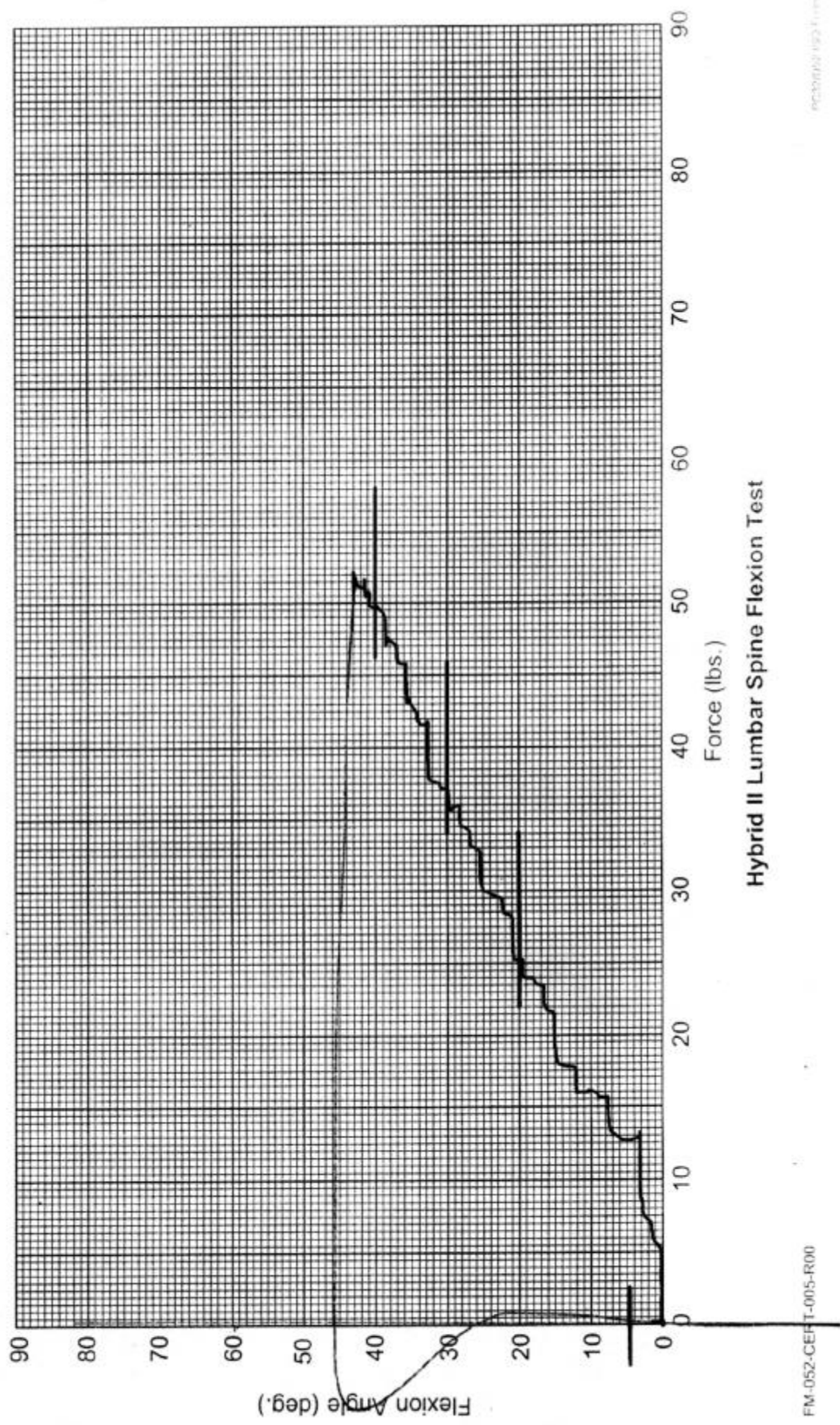
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
Date: 2/23/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
FORCE @ 0° (N)	0 - 26.7	0.0
FORCE @ 20° (N)	97.8 - 151.2	112.0
FORCE @ 30° (N)	151.2 - 204.6	164.6
FORCE @ 40° (N)	204.6 - 258	220.6
RETURN ANGLE	12° max.	4.7°

REMARKS: None

Dummy S/N 014
 W/A _____
 Date 2-23-2004
 Performed By [Signature]
 Temp. 71°
 Humidity 31%



Hybrid II Lumbar Spine Flexion Test

POST TEST DUMMY INSPECTION LIST

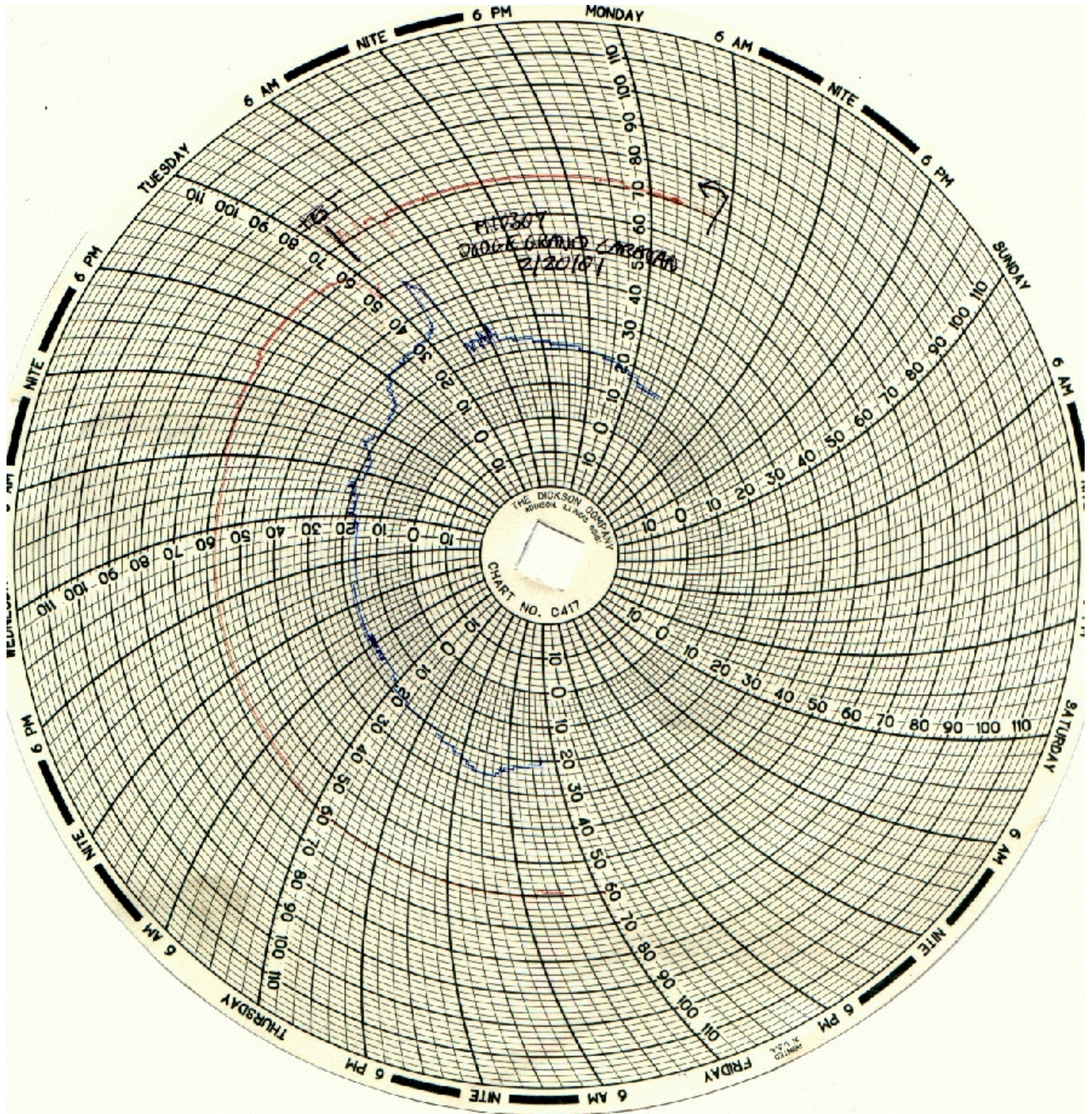
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
 Date: 2/23/01 Laboratory Technician: B. Swiecicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

TEMPERATURE TRACE



APPENDIX D

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

SID INSTRUMENTATION

	FRONT SID NO.: 015		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P13331	ENDEVCO	11/20/00
HEAD AY	AC-P13356	ENDEVCO	11/20/00
HEAD AZ	AC-P13323	ENDEVCO	11/20/00
UPPER RIB	AC-P16862	ENDEVCO	1/16/01
LOWER RIB	AC-P16656	ENDEVCO	1/16/01
LOWER SPINE	AC-P16866	ENDEVCO	1/16/01
PELVIS	AC-P16676	ENDEVCO	1/16/01
UPPER RIB REDUNDANT	AC-J32779	ENDEVCO	1/16/01
LOWER RIB REDUNDANT	AC-P16645	ENDEVCO	1/16/01
LOWER SPINE REDUNDANT	AC-P16823	ENDEVCO	1/16/01
PELVIS REDUNDANT	AC-P16843	ENDEVCO	1/16/01

	REAR SID NO.: 016		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P18785	ENDEVCO	1/9/01
HEAD AY	AC-P18516	ENDEVCO	1/9/01
HEAD AZ	AC-P18537	ENDEVCO	1/9/01
UPPER RIB	AC-P18524	ENDEVCO	1/6/01
LOWER RIB	AC-P18533	ENDEVCO	1/9/01
LOWER SPINE	AC-P18514	ENDEVCO	1/9/01
PELVIS	AC-P18515	ENDEVCO	1/9/01
UPPER RIB REDUNDANT	AC-P18528	ENDEVCO	1/6/01
LOWER RIB REDUNDANT	AC-P18518	ENDEVCO	1/9/01
LOWER SPINE REDUNDANT	AC-P18688	ENDEVCO	1/9/01
PELVIS REDUNDANT	AC-P18529	ENDEVCO	1/9/01

REMARKS: None

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

VEHICLE AND MDB INSTRUMENTATION

	VEHICLE AND MDB INSTRUMENTS		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
RIGHT FRONT SILL (X)	AC-J33021	ENDEVCO	1/16/01
RIGHT FRONT SILL (Y)	AC-J33030	ENDEVCO	1/16/01
RIGHT FRONT SILL (Z)	AC-J27941	ENDEVCO	2/15/01
RIGHT REAR SILL (X)	AC-B11407	ENDEVCO	2/14/01
RIGHT REAR SILL (Y)	AC-B10827	ENDEVCO	2/14/01
RIGHT REAR SILL (Z)	AC-B11408	ENDEVCO	2/14/01
REAR FLOORPAN ABOVE AXLE (X)	AC-J32174	ENDEVCO	9/5/00
REAR FLOORPAN ABOVE AXLE (Y)	AC-J32143	ENDEVCO	11/30/00
REAR FLOORPAN ABOVE AXLE (Z)	AC-J32838	ENDEVCO	11/30/00
LEFT REAR SILL (Y)	AC-H20	ICS	2/15/01
LEFT FRONT SILL (Y)	AC-D29	ICS	2/15/01
LEFT FRONT DOOR CENTERLINE (Y)	AC-B10954	ENDEVCO	2/15/01
RIGHT REAR SEAT OCCUPANT COMP. (Y)	AC-X86	ICS	2/15/01
MID REAR OF LEFT FRONT DOOR (Y)	-	-	-
LEFT FRONT DOOR UPPER C/L (Y)	AC-D03	ENTRAN	2/15/01
MID REAR OF LEFT REAR DOOR (Y)	-	-	-
LEFT REAR DOOR UPPER C/L (Y)	AC-A14433	ENDEVCO	2/15/01
LOWER LEFT B- PILLAR (Y)	AC-B11073	ENDEVCO	2/15/01
MIDDLE LEFT B-PILLAR (Y)	AC-A13883	ENDEVCO	11/27/00
LOWER LEFT A-PILLAR (Y)	AC-A13513	ENDEVCO	1/12/01
UPPER LEFT A-PILLAR (Y)	AC-A14126	ENDEVCO	11/27/00
FRONT SEAT TRACK (Y)	AC-BA80	ENDEVCO	9/28/00
REAR SEAT TRACK (Y)	AC-P16964	ENDEVCO	9/13/00
VEHICLE CG (X)	AC-AP064	ENDEVCO	9/18/00
VEHICLE CG (Y)	AC-BB14	ENDEVCO	9/18/00
VEHICLE CG (Z)	AC-B10955	ENDEVCO	9/18/00
MDB CG (X)	AC-CL60	ENDEVCO	8/31/00
MDB CG (Y)	AC-CJ54	ENDEVCO	8/31/00
MDB CG (Z)	AC-GK12	ENDEVCO	8/31/00
MDB REAR FRAME MEMBER (X)	AC-CX05	ENDEVCO	8/31/00
MDB REAR FRAME MEMBER (Y)	AC-A27F	ENDEVCO	8/31/00

REMARKS: None