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REPORT NUMBER: 214-CAL-00-01

**SAFETY COMPLIANCE TESTING FOR FMVSS 214
SIDE IMPACT PROTECTION
INDICANT**

GENERAL MOTORS CORP.
2000 PONTIAC GRAND AM
2-DOOR COUPE

NHTSA NUMBER: CY0103

VERIDIAN ENGINEERING
TRANSPORTATION SCIENCES CENTER
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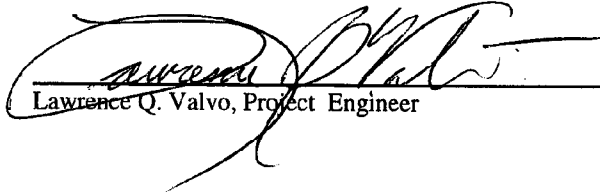
December 9, 1999

FINAL REPORT

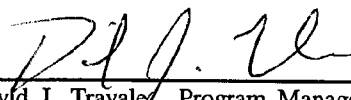
U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Safety Assurance
Office of Vehicle Compliance
400 Seventh Street, SW
Room 6115 (NSA-30)
Washington, DC 20590

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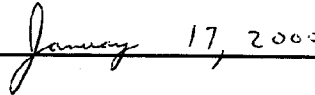
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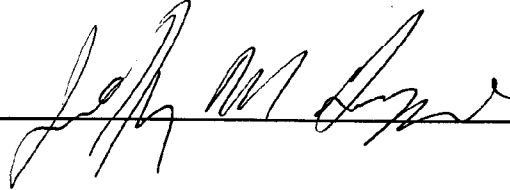

David J. Travale, Program Manager
Transportation Sciences Center

Approval Date:

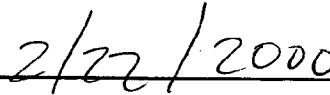


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15. Supplementary Notes																																			
16. Abstract A 55/28 kph 90° Side Impact (Moving Deformable Barrier) Indicant Test was conducted on the subject 2000 Pontiac Grand Am 2-Door Coupe. This test was performed at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-04, dated September 1, 1995). This test was conducted at the Veridian Engineering Crash Test Facility in Buffalo, New York, on December 9, 1999. The impact velocity of the Moving Deformable Barrier (MDB) was 62.1 kph, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 22.2°C. The target vehicle post-test maximum crush was 381 mm at level 2. The test or target vehicle's performance is given below: <table border="0"> <thead> <tr> <th></th> <th align="center"><u>Front SID</u></th> <th></th> <th align="center"><u>Rear SID</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib Acceleration:</td> <td align="center"><u>117</u></td> <td align="center">g's</td> <td align="center"><u>73</u></td> <td align="center">g's</td> </tr> <tr> <td>Left Lower Rib Acceleration:</td> <td align="center"><u>109</u></td> <td align="center">g's</td> <td align="center"><u>72</u></td> <td align="center">g's</td> </tr> <tr> <td>Lower Spine Acceleration:</td> <td align="center"><u>104</u></td> <td align="center">g's</td> <td align="center"><u>63</u></td> <td align="center">g's</td> </tr> <tr> <td>Thoracic Trauma Index (TTI):</td> <td align="center"><u>110</u></td> <td align="center">g's</td> <td align="center"><u>68</u></td> <td align="center">g's</td> </tr> <tr> <td>Pelvis Acceleration (PEV):</td> <td align="center"><u>98</u></td> <td align="center">g's</td> <td align="center"><u>101</u></td> <td align="center">g's</td> </tr> </tbody> </table> The door on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite door did not open during the side impact event.							<u>Front SID</u>		<u>Rear SID</u>		Left Upper Rib Acceleration:	<u>117</u>	g's	<u>73</u>	g's	Left Lower Rib Acceleration:	<u>109</u>	g's	<u>72</u>	g's	Lower Spine Acceleration:	<u>104</u>	g's	<u>63</u>	g's	Thoracic Trauma Index (TTI):	<u>110</u>	g's	<u>68</u>	g's	Pelvis Acceleration (PEV):	<u>98</u>	g's	<u>101</u>	g's
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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	4-13
Data Sheet 12 - Exterior Static Crush For Impactor Face	4-14
Data Sheet 13 - Test Vehicle Accelerometer Locations And Data Summary	4-16
Data Sheet 14 - MDB Accelerometer Locations and Data Summary	4-19
Data Sheet 15 - High Speed Camera Locations and Data	4-20
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 Indicant Test is part of the FMVSS 214 Side Impact Protection Compliance Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-97-C-01033. The purpose of this indicant test was to evaluate side impact protection in a 2000 Pontiac Grand Am 2-Door Coupe when tested at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-04, dated September 1, 1995).

SECTION 2

SUMMARY OF SIDE IMPACT TEST

This Side Impact Protection Indicant Test was performed at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-04, dated September 1, 1995).

A 2000 Pontiac Grand Am 2-Door Coupe 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 62.1 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 December 9, 1999. 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 OVSC Side Impact Laboratory Test Procedure. Both SIDs were certified prior to this test. 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. Head triaxial accelerometer (X,Y,Z-direction)
2. Left Upper Rib (LUR) uniaxial and redundant accelerometer (Y-direction)
3. Left Lower Rib (LLR) uniaxial and redundant accelerometer (Y-direction)
4. Lower Thoracic Spine (T₁₂) uniaxial and redundant accelerometer (Y-direction)
5. Pelvic (PEV) section uniaxial and redundant accelerometer (Y-direction)

A summary of the side impact dummy (SID) configuration and verification test data can be found in Appendix C. A total of 47 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)	110	68
PEV (g)	98	101

SECTION 3

SUMMARY OF TEST RESULTS

DATA SHEET 1

GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 2000 Pontiac Grand Am 2-Door Coupe
 Vehicle Body Color: Red VIN: 1G2NE12T1YM727306
 Vehicle NHTSA No.: CY0103 Month & Year of Manufacture: 09/99
 Engine Data: 4 Cylinders; - CID; 2.4 Liters; - cc
 Engine Placement: - Longitudinal; or X Lateral
 Transmission: 4 Speed; - Manual; X Automatic; - Overdrive
 Final Drive: - Rear Wheel Drive; X Front Wheel Drive; - Four Wheel
 Odometer Reading 32 km
 Options: X A/C; X Power Steering; X Pwr.Brakes; X Pwr. Windows

DATA FROM TIRE PLACARD

Tire Pressure* (at capacity); 207 kPa FRONT
207 kPa REAR

Recommended Tire Size: P215/60R15
 Tires on Test Vehicle: P215/60R15 ; Manufacturer: BFGoodrich
 Vehicle Capacity Data:
 Number of Occupants: 2 Front; 3 Rear; - 3rd Seat; 5 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 = 408 kg (A)
 No. of Occupants x 68.04 kg. = 340.2 kg (B)
 Vehicle Cargo Capacity = 67.8 kg (A-B)

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

Left Front	=	<u>443.0</u> kg	Left Rear	=	<u>242.0</u> kg
Right Front	=	<u>442.5</u> kg	Right Rear	=	<u>239.0</u> kg
TOTAL FRONT	=	<u>885.5</u> kg	TOTAL REAR	=	<u>481.0</u> kg
% of Total Weight	=	<u>64.8</u> %	% of Total Weight	=	<u>35.2</u> %
TOTAL WEIGHT	=	<u>1366.5</u> kg			

* Tire pressure used in test.

DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2000 Pontiac Grand Am

NHTSA No. CY0103

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Max. Fluids	=	<u>1366.5</u>	kg (A)
Maximum Cargo Carrying Capacity of Test Vehicle	=	<u>67.8</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>1596.7</u>	kg (A+B+C)

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

Left Front	=	<u>484.5</u>	kg	Left Rear	=	<u>343.0</u>	kg
Right Front	=	<u>458.0</u>	kg	Right Rear	=	<u>311.5</u>	kg
TOTAL FRONT	=	<u>942.5</u>	kg	TOTAL REAR	=	<u>654.5</u>	kg
% of Total Weight	=	<u>59.0</u>	%	% of Total Weight	=	<u>41.0</u>	%
TOTAL TEST WEIGHT	=	<u>1597.0</u>	kg				

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

Left Front	=	<u>473.5</u>	kg	Left Rear	=	<u>350.0</u>	kg
Right Front	=	<u>456.5</u>	kg	Right Rear	=	<u>311.0</u>	kg
TOTAL FRONT	=	<u>930.0</u>	kg	TOTAL REAR	=	<u>661.0</u>	kg
% of Total Weight	=	<u>58.5</u>	%	% of Total Weight	=	<u>41.5</u>	%
TOTAL TEST WEIGHT	=	<u>1591.0</u>	kg				

TEST VEHICLE ATTITUDE (all dimensions in millimeters):

AS DELIVERED:

Left Front	<u>695</u>	Right Front	<u>697</u>	Left Rear	<u>715</u>	Right Rear	<u>717</u>
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FULLY LOADED:

Left Front	<u>675</u>	Right Front	<u>687</u>	Left Rear	<u>658</u>	Right Rear	<u>671</u>
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READY FOR TEST:

Left Front	<u>677</u>	Right Front	<u>688</u>	Left Rear	<u>662</u>	Right Rear	<u>672</u>
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Test Vehicle Wheelbase: 2720 millimeters

C.G. = 1130 millimeters rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side	=	<u>4584</u>	millimeters
Left Side	=	<u>4584</u>	millimeters
Centerline	=	<u>4718</u>	millimeters

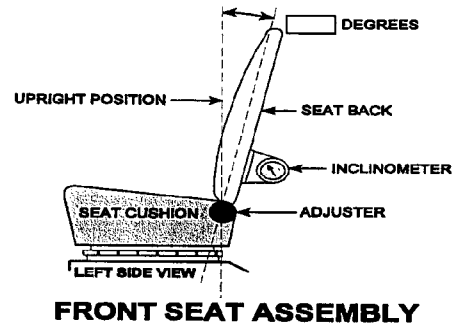
DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2000 Pontiac Grand Am

NHTSA No. CY0103

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

Total Length of Adjustment Travel: 238 millimeters

Total Number of Adjustment Positions or Detents: 25

FRONT SEAT BACK ADJUSTMENT POSITION: The seat back was positioned so that an inclinometer placed on the rearward surface of the outboard seat frame 4-5" above the seat back pivot point would read 27 degrees with the vehicle sills level.

Seat Back Torso Angle: 27 degrees

SECOND POSITION SEAT:

Total Length of Fore/Aft Adjustment Travel: 0 millimeters

Seat Back Adjustment Position: Fixed

ADJUSTABLE STEERING COLUMN POSITION: Mid-position

WINDOW POSITIONS: Left Front: Closed Left Rear: Closed

Right Front: Open Right Rear: Open

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:

54.1 liters (Fuel Tank Usable Capacity)

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

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

Wheelbase = 2720 millimeters

Impact Point is 420 millimeters rearward of front axle centerline

(which is 940 millimeters forward of the wheelbase midpoint)

Actual Impact Point is 412 millimeters rearward of front axle centerline

DATA SHEET 2

TEST VEHICLE SUMMARY OF RESULTS

VEHICLE IDENTIFICATION:

Vehicle Year/Make/Model: 2000 Pontiac Grand Am

Body Style: 2-Door Coupe

VIN: 1G2NE12T1YM727306

NHTSA No.: CY0103

Test Date: December 9, 1999

Overall Length = 4718 millimeters; Overall Width = 1754 millimeters

VEHICLE TEST WEIGHT (Pre-Test):

Left Front	=	<u>473.5</u>	kg	Left Rear	=	<u>350.0</u>	kg
Right Front	=	<u>456.5</u>	kg	Right Rear	=	<u>311.0</u>	kg

TOTAL FRONT	=	<u>930.0</u>	kg	TOTAL REAR	=	<u>661.0</u>	kg
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TOTAL VEHICLE WEIGHT 1591.0 kg

Wheelbase = 2720 millimeters

Longitudinal C.G. from Center of Front Axle = 1130.1 millimeters

Impact Angle with Respect to Impactor = 90 degrees

ACTUAL IMPACT POINT

Actual Impact Point is 8 mm forward of nominal impact ref. line (Lateral)

Actual Impact Point is 3 mm above nominal impact point (Vertical)

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 (	<u>227</u>	mm above ground)	=	<u>188</u>	millimeters
2. LEVEL 2 (	<u>482</u>	mm above ground)	=	<u>381</u>	millimeters
3. LEVEL 3 (	<u>599</u>	mm above ground)	=	<u>360</u>	millimeters
4. LEVEL 4 (	<u>838</u>	mm above ground)	=	<u>350</u>	millimeters
5. LEVEL 5 (	<u>1318</u>	mm above ground)	=	<u>84</u>	millimeters

Maximum Post-Test Intrusion = 381 millimeters

OCCUPANTS:

Front Passenger:

Rear Passenger:

Dummy Identification	<u>015</u>	<u>016</u>
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Restraints Used	<u>3-point active seat belt</u>	<u>3-point active seat belt</u>
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INSTRUMENTATION:

Number of Vehicle Data Channels: = 20

Number of Cameras: Onboard = 3

Offboard = 6

TOTAL = 9

DATA SHEET 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY

Vehicle: 2000 Pontiac Grand Am

NHTSA No. CY0103

MDB FACE MANUFACTURER AND SERIAL NUMBER:

Plascore: 129A1098-2; 083C1098; 2324-01

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>62.1</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>84</u>	millimeters
3. Row C at Mid Level	=	<u>121</u>	millimeters
4. Row D at Top of Stack Level	=	<u>158</u>	millimeters

INSTRUMENTATION:

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

POST-TEST OBSERVATIONS

Vehicle: 2000 Pontiac Grand Am

NHTSA No. CY0103

VISIBLE DUMMY CONTACT POINTS:

LEFT FRONT SID

Head: Left side of head to left shoulder and window sill

Upper Torso: Shoulder to rear portion of door trim above armrest

Lower Torso: Pelvis to rear portion of door trim below armrest

Left Knee: Left knee to center of window crank

Right Knee: Right knee to left knee

LEFT REAR SID

Left side and top of head to center of C-pillar trim

Shoulder to rear portion of interior trim above armrest

Pelvis to rear portion of door trim below armrest and left seat bolster

Left knee to lower B-pillar trim

Right knee to left knee

DOOR OPENING:

LEFT DOOR

Front: Closed / Inoperable

Rear: N/A

RIGHT DOOR

Closed / Inoperable

N/A

MDB DISTANCE FROM TARGET IMPACT POINT:

Vertical: 3 above

Horizontal: 8 forward

ARM REST LOCATIONS:

Front: 240 mm below bottom of window opening

Rear: 320 mm below bottom of window opening

SEAT MOVEMENT:

Front: Seat was pushed inboard against center console

Rear: Left seat bolster was pushed inboard

GLAZING DAMAGE:

Windshield: Windshield cracked along its left edge during the impact

Window: Left door window and vehicle rear window shattered during the impact

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 outer door skin separated from door along its forward, bottom, and rear edges and the trunk lid opened as a result of the impact.

SECTION 4

OCCUPANT AND VEHICLE INFORMATION

DATA SHEET 5

SID INSTRUMENTATION DATA

Vehicle: 2000 Pontiac Grand Am

NHTSA No. CY0103

	Front Dummy ID# 015				Rear Dummy ID# 016			
	Pos. Direction		Neg. Direction		Pos. Direction		Neg. Direction	
	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
HEAD ACCELERATIONS:								
Longitudinal X	13.3	182.5	-100.1	70.7	17.9	143.1	-20.7	54.2
Lateral Y	110.2	70.7	-12.6	32.7	130.2	53.4	-23.8	143.2
Vertical Z	92.4	54.3	-14.7	43.4	28.0	43.7	-42.6	58.1
Resultant R	150.0	70.7	-	-	134.6	53.4	-	-
HIC	1532.2				1020.2			
RIB ACCELERATIONS:								
Upper Rib Lateral . . Y	117.2	37.5	-17.8	66.3	73.1	36.9	-8.6	129.3
Upper Rib Lateral . . Y(R)	126.0	37.5	-23.1	32.5	77.3	36.9	-10.0	128.8
Lower Rib Lateral . . Y	108.8	37.5	-16.8	86.3	71.8	37.5	-17.3	63.8
Lower Rib Lateral . . Y(R)	110.2	37.5	-16.1	77.5	65.9	37.5	-24.0	64.4
SPINE ACCELERATIONS:								
Lower Lateral Y	103.5	31.9	-28.5	60.7	63.2	40.0	-20.0	68.8
Lower Lateral Y(R)	103.9	31.9	-28.3	60.7	63.3	40.0	-20.7	68.8
PELVIC ACCELERATIONS:								
Lateral Y	98.5	26.3	-31.8	43.8	100.6	33.8	-12.1	73.8
Lateral Y(R)	97.6	26.3	-30.5	43.8	100.9	33.8	-12.0	73.1

REFERENCE: Positive Direction - Longitudinal (X) = forward
 Lateral (Y) = to right
 Vertical (Z) = up
 Negative Direction - Longitudinal (X) = rearward
 Lateral (Y) = to left
 Vertical (Z) = down

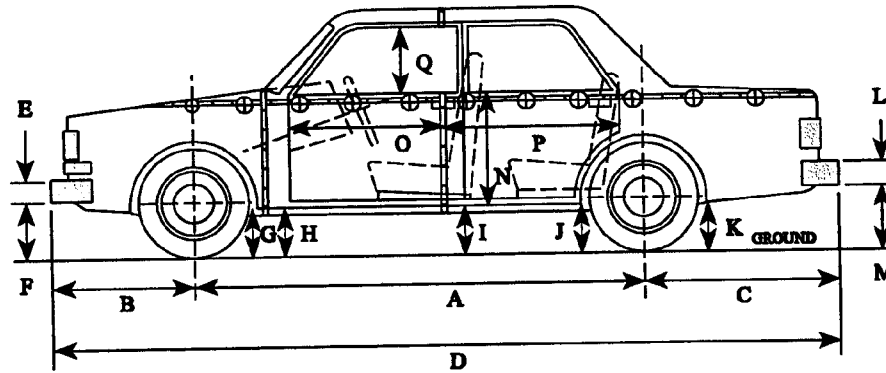
Note: Above data has been FIR filtered, Y(R) denotes redundant Y direction accelerometer.
 Head Accelerations are filtered at SAE Class 1000.

DATA SHEET 6

VEHICLE SIDE MEASUREMENTS

Vehicle: 2000 Pontiac Grand Am

NHTSA No. CY0103



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	2720	-	2671	-49
B	997	-	1025	28
C	1001	-	995	-6
D	4718	-	4691	-27
E	281	-	281	0
F	273	271	309	38
G	249	224	251	27
H	248	221	240	19
I	257	212	172	-40
J1	235	184	170	-14
J2	260	209	190	-19
K	292	230	239	9
L	379	-	379	0
M	354	293	298	5
N	670	-	615	-55
O	774	-	761	-13
P	620	-	618	-2
Q	462	-	420	-42
R	4584	-	4581	-3
S	4584	-	4514	-70
T	1754	-	1565	-189

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

E&L = Bumper Thickness
J1 = To Pinch Weld

R = Right Side Length
J2 = To Sill

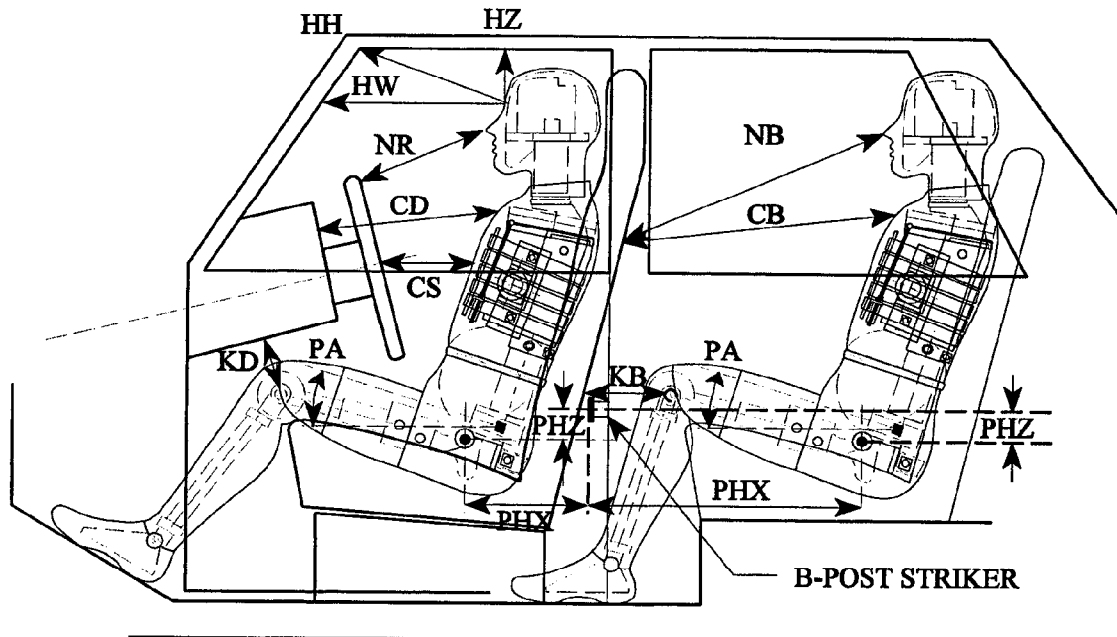
S = Left Side Length

DATA SHEET 7

SID LONGITUDINAL CLEARANCE DIMENSIONS

Vehicle: 2000 Pontiac Grand Am

NHTSA No. CY0103



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	340	N/A
HW	636	N/A
HZ	142	136
NR/NB	460	607
CD/CB	544	555
CS	328	N/A
KDL(KDA°)/KBL(KDA°)	147 / (39°)	220 / (28°)
KDR(KBA°)/KBR(KBA°)	155 / (41°)	222 / (28°)
PA°	24°	24°
PHX	522	380
PHZ	119	130

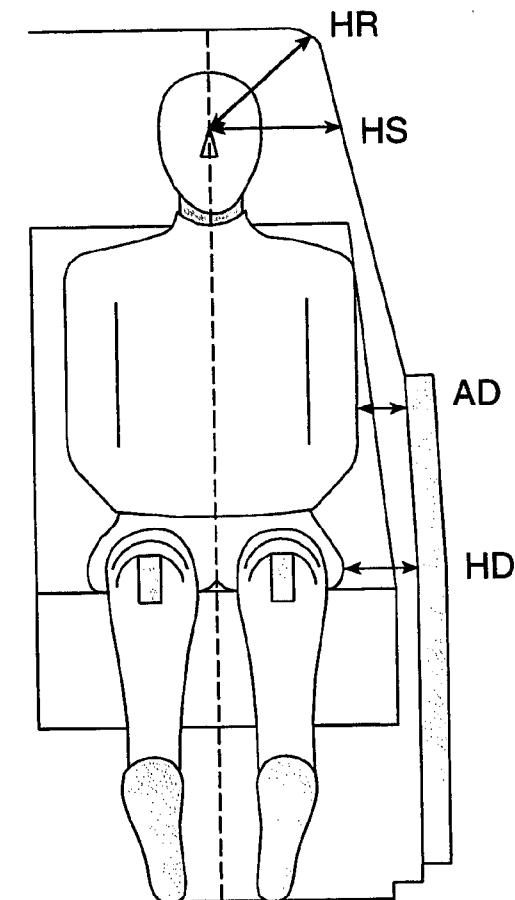
Note: 2-door vehicle shown. Rear dummy PHX & PHZ measurements for 4-door vehicle would use the C-post striker as a reference point.

DATA SHEET 8

SID LATERAL CLEARANCE DIMENSIONS

Vehicle: 2000 Pontiac Grand Am

NHTSA No. CY0103



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

	DRIVER ID # <u>015</u>		LEFT REAR PASS. ID # <u>016</u>	
HR	155		192	
HS	302		320	
AD*	LOWER: 122	UPPER: 90	LOWER: 180	UPPER: 104
HD	137		137	

* 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.

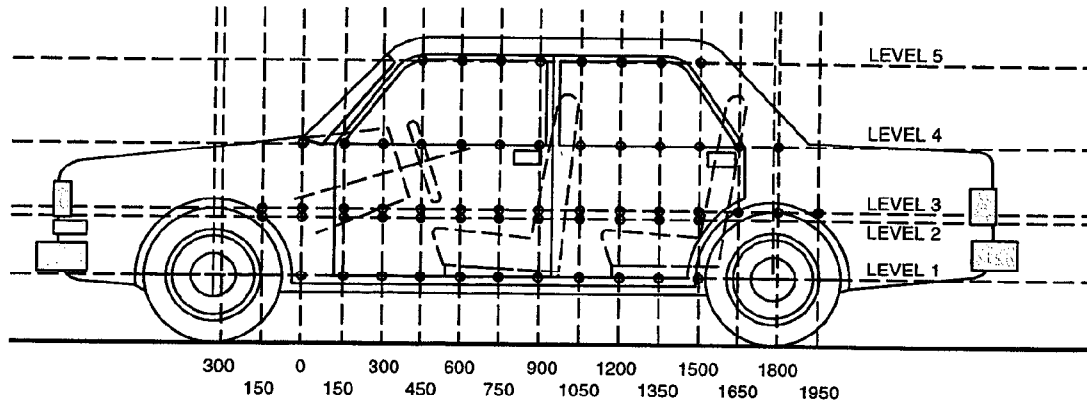
Upper measurement is taken laterally at the center of the upper rib accelerometer height from the SID arm segment to the closest part of the vehicle side.

DATA SHEET 9

VEHICLE SIDE MEASUREMENTS

Vehicle: 2000 Pontiac Grand Am

NHTSA No. CY0103



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 - 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>1318</u>	millimeters
Level 4 @ Window Sill	=	<u>838</u>	millimeters
Level 3 @ Mid Door	=	<u>599</u>	millimeters
Level 2 @ Occupant H-Point	=	<u>482</u>	millimeters
Level 1 @ Sill Top Height	=	<u>227</u>	millimeters

DATA SHEET 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

NHTSA No. CY0103

Vehicle: 2000 Pontiac Grand Am

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

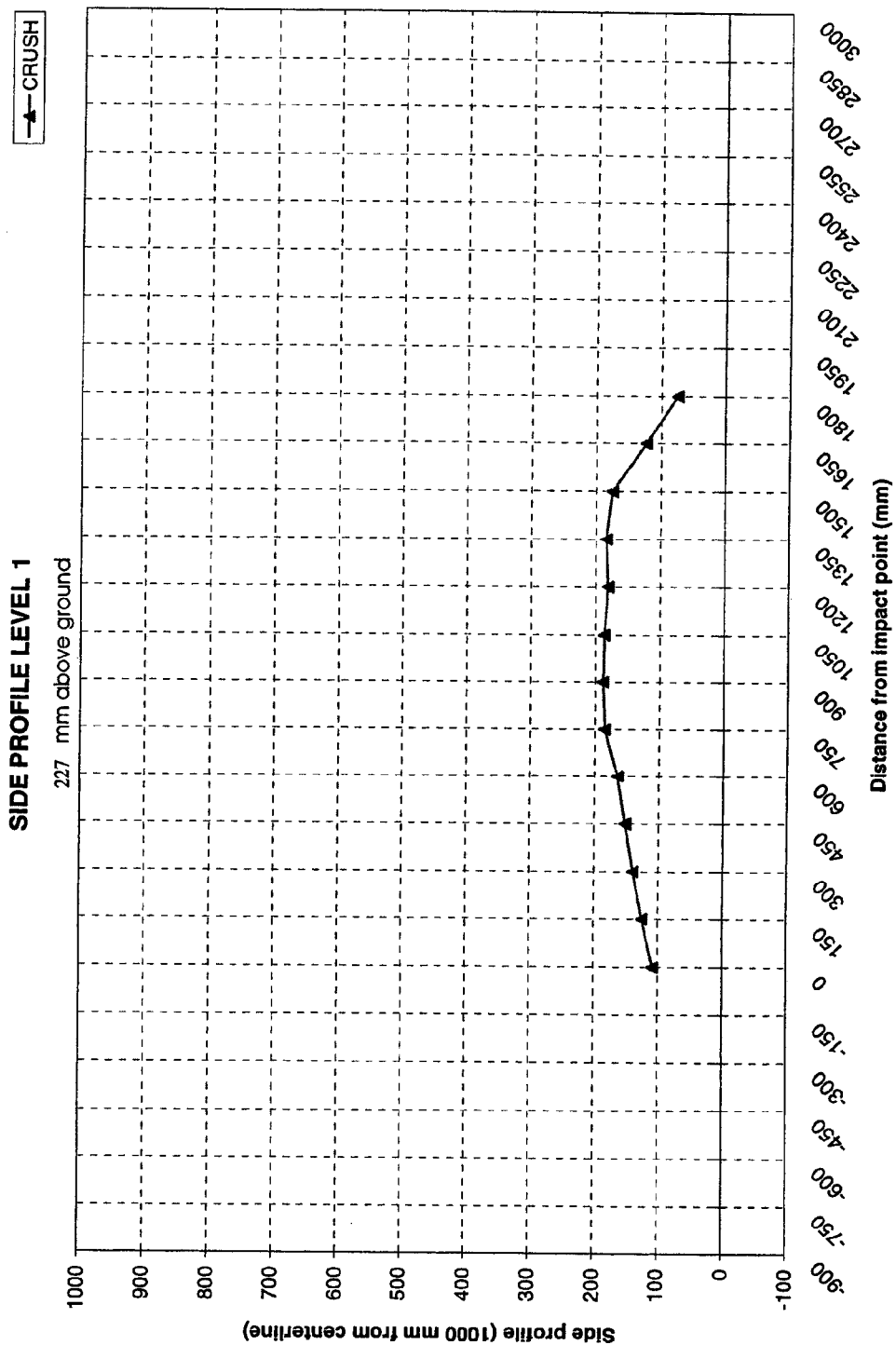
DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT																													
LEVEL	HEIGHT T (mm)		-900	-750	-600	-450	-300	-150	0	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700	2850	3000
LEVEL 1 SIDE SILL	227	PRE	--	--	--	--	--	--	172	214	215	212	210	200	197	196	195	195	198	198	204	--	--	--	--	--	--	--	--
		POST	--	--	--	--	--	--	280	339	355	364	374	385	385	382	376	379	373	321	279	--	--	--	--	--	--	--	
		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	108	125	140	152	164	185	188	186	181	184	175	123	75	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LEVEL 2 H POINT	482	PRE	176	--	--	--	--	--	138	148	146	142	140	139	141	139	136	141	146	150	150	136	--	--	--	--	161	173	192
		POST	181	--	--	--	--	--	206	416	430	437	448	458	461	473	478	480	527	483	387	250	--	--	--	--	181	183	195
		CRUSH	5	N/A	N/A	N/A	N/A	N/A	68	268	284	295	308	319	320	334	342	339	381	333	237	114	N/A	N/A	N/A	N/A	20	10	3
LEVEL 3 MID DOOR	599	PRE	198	158	--	--	--	119	157	158	158	155	152	150	144	141	142	142	148	149	150	142	--	--	--	137	159	172	189
		POST	199	156	--	--	--	165	189	423	445	457	474	467	475	484	480	478	508	503	431	304	--	--	--	164	160	168	181
		CRUSH	1	-2	N/A	N/A	N/A	N/A	46	32	265	287	302	322	317	331	343	338	336	360	354	281	162	N/A	N/A	N/A	27	1	-4
LEVEL 4 WINDOW SILL	838	PRE	--	--	304	257	224	207	197	192	188	183	181	177	175	173	170	167	169	170	170	170	171	173	185	185	198	208	250
		POST	--	--	285	251	238	225	327	388	413	446	464	476	490	501	507	519	517	422	322	281	236	211	200	197	197	237	
		CRUSH	N/A	N/A	-19	-6	14	18	25	135	200	230	265	287	301	317	331	340	350	347	252	152	110	63	26	15	-1	-11	-13
LEVEL 5 WINDOW TOP	1318	PRE	--	--	--	--	--	--	--	--	--	--	--	526	464	451	449	451	455	481	--	--	--	--	--	--	--	--	--
		POST	--	--	--	--	--	--	--	--	--	--	--	--	527	349	365	391	417	539	505	--	--	--	--	--	--	--	--
		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	1	-115	-86	-58	-34	84	24	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2000 Pontiac Grand Am

NHTSA No. CY0103



DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

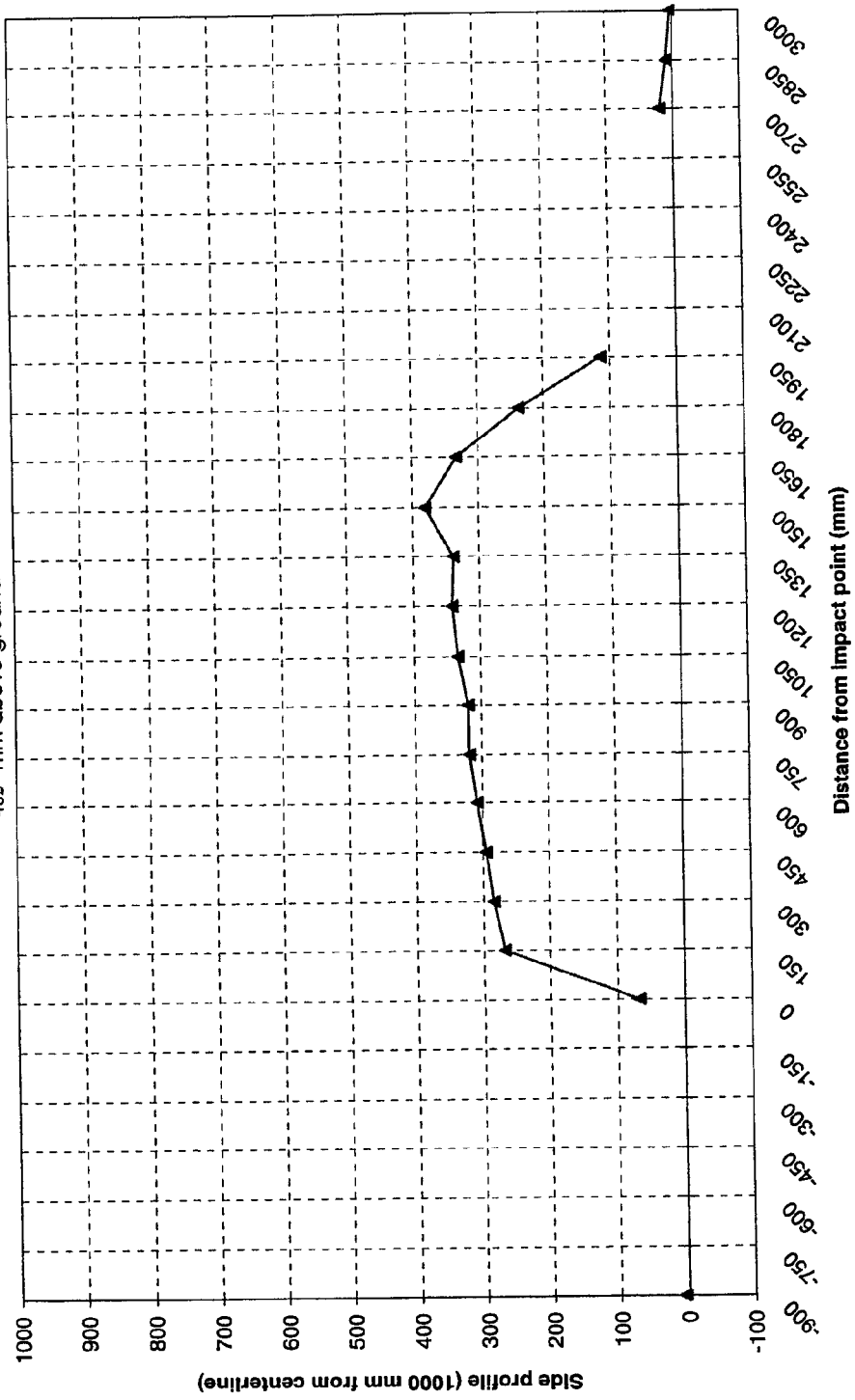
NHTSA No. CY0103

Vehicle: 2000 Pontiac Grand Am

—▲— CRUSH

SIDE PROFILE LEVEL 2

482 mm above ground

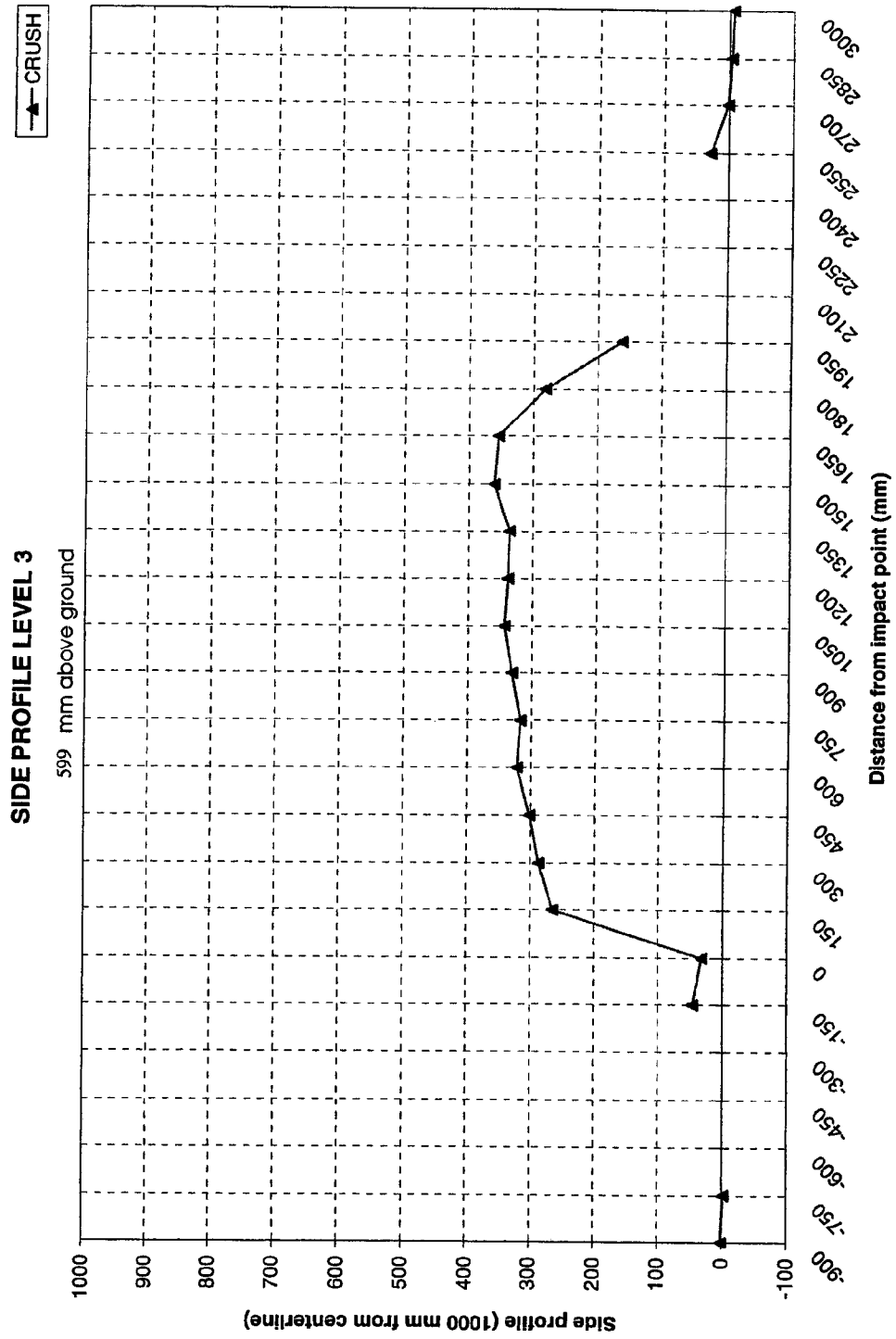


DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2000 Pontiac Grand Am

NHTSA No. CY0103



DATA SHEET 10 (continued)

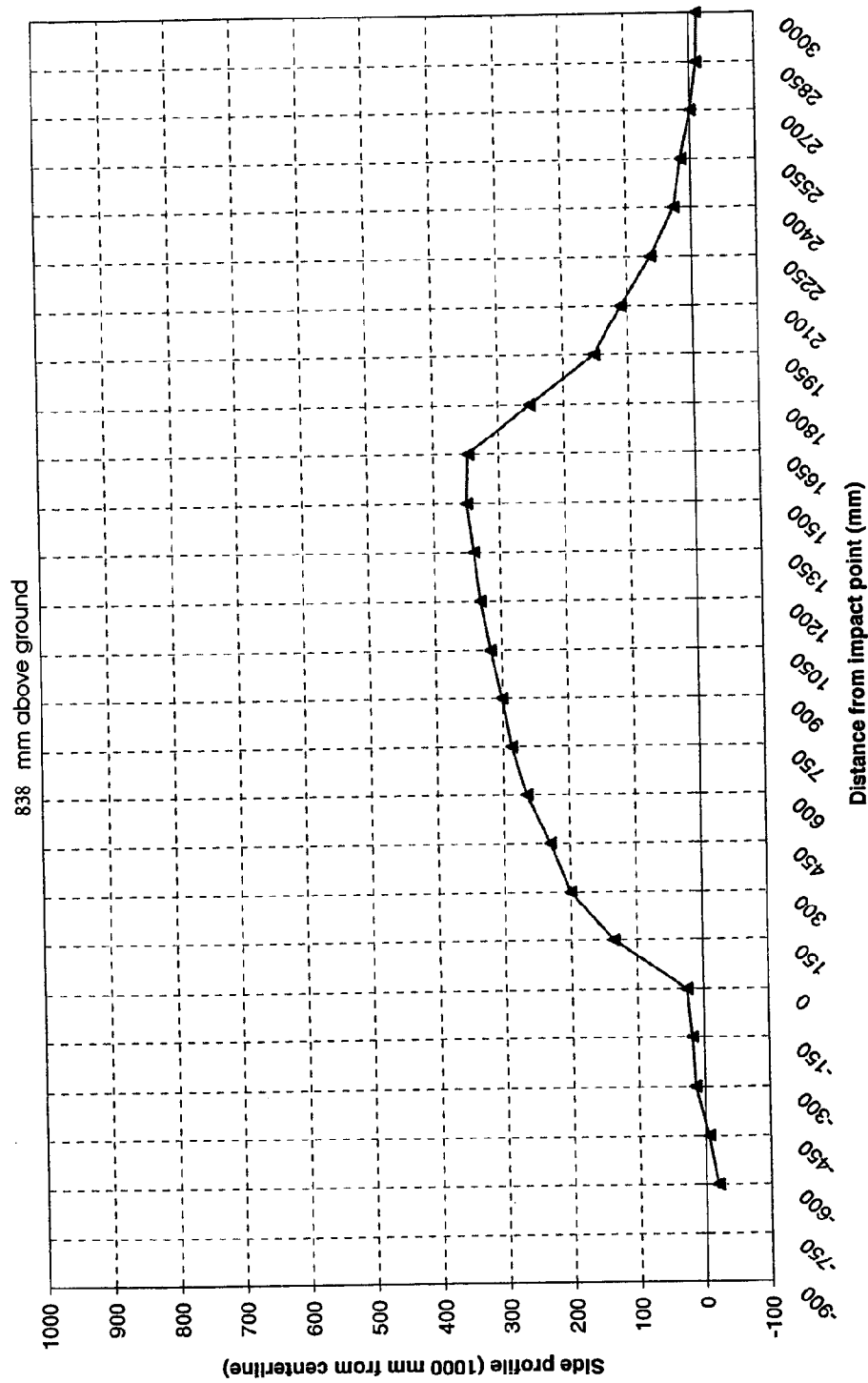
VEHICLE EXTERIOR CRUSH PROFILES

NHTSA No. CY0103

Vehicle: 2000 Pontiac Grand Am

—▲— CRUSH

SIDE PROFILE LEVEL 4

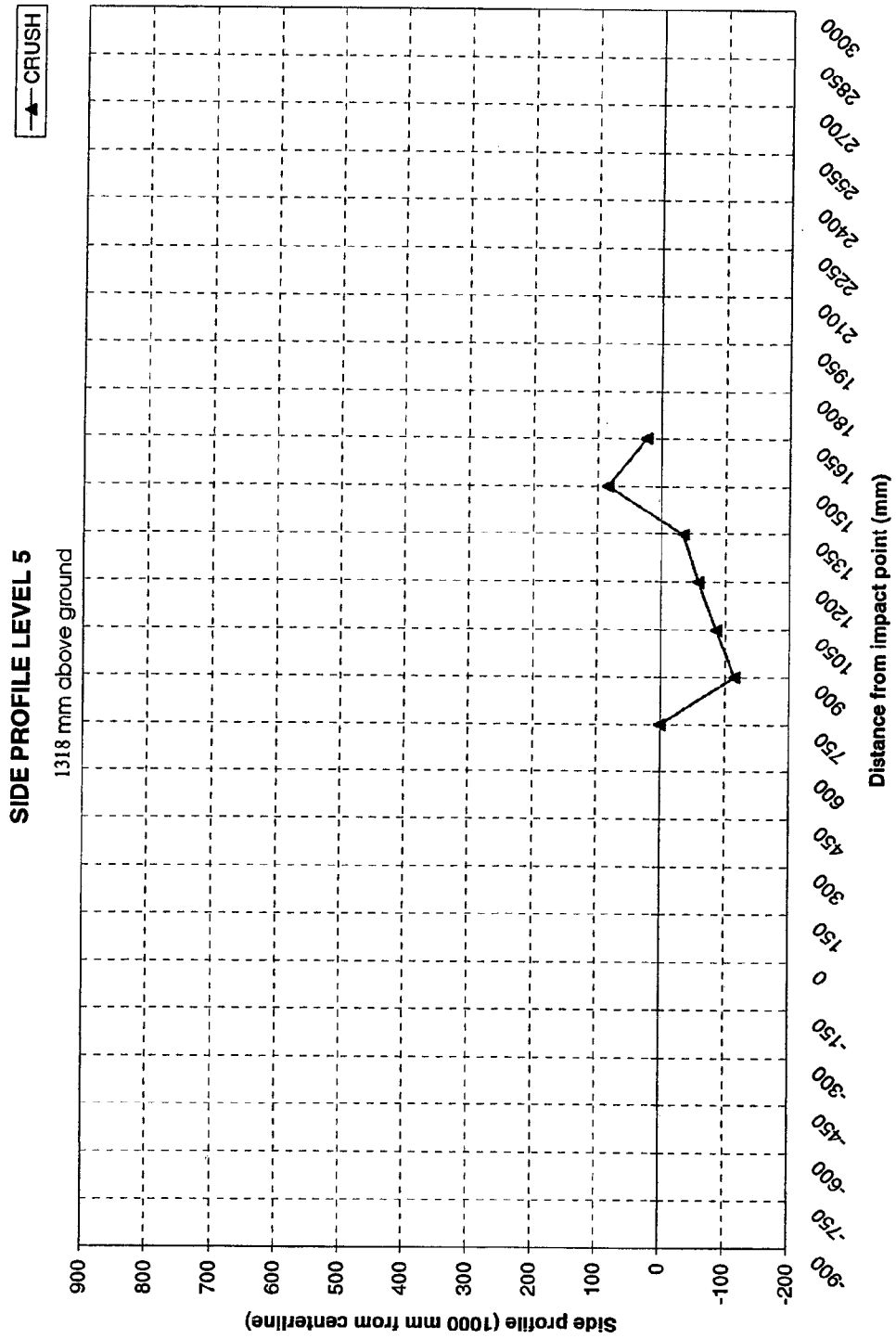


DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2000 Pontiac Grand Am

NHTSA No. CY0103

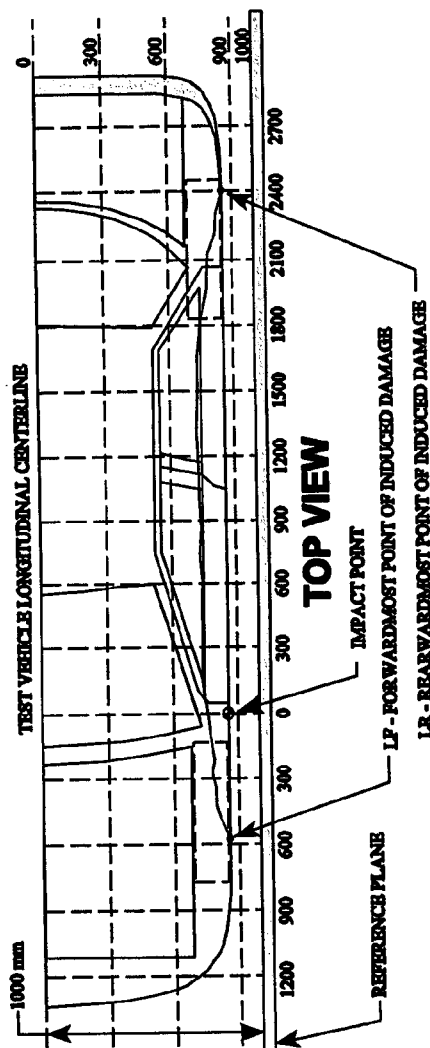


DATA SHEET 11

VEHICLE DAMAGE PROFILE DISTANCES

NHTSA No. CY0103

Vehicle: 2000 Pontiac Grand Am



MEASUREMENT CONVENTIONS:
 Forward of the impact point (towards front of vehicle) is considered negative (-).
 Rearward of the impact point (towards rear 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 = 2900 mm)	162	149	13
2	2218	301	171	130
3	1536	504	144	360
4	854	471	147	324
5	172	434	158	276
6	(LF = -510 mm)	245	242	3

DATA SHEET 12

EXTERIOR STATIC CRUSH FOR IMPACTOR FACE (Grid as looking at MDB from front)

Vehicle: 2000 Pontiac Grand Am

NHTSA No. CY0103

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

		DISTANCE RIGHT OF CENTER (mm)								DISTANCE LEFT OF CENTER (mm)										
LEVEL	HEIGHT AT CL (mm)*		800	700	600	500	400	300	200	100	0		100	200	300	400	500	600	700	800
LEVEL 4			619	619	619	619	619	619	619	619	619		619	619	619	619	619	619	619	619
TOP	813	PRE	691	635	619	625	616	616	617	621	625		628	632	640	650	664	683	712	777
STACK		CRUSH	72	16	0	6	-3	-3	-2	2	6		9	13	21	31	45	64	93	158
LEVEL 3			619	619	619	619	619	619	619	619	619		619	619	619	619	619	619	619	619
MID	686	POST	661	629	625	622	618	616	618	619	619		621	623	624	628	633	641	674	740
LEVEL		CRUSH	42	10	6	3	-1	-3	-1	0	0		2	4	5	9	14	22	55	121
LEVEL 2			619	619	619	619	619	619	619	619	619		619	619	619	619	619	619	619	619
TOP	533	POST	703	689	679	670	663	656	652	651	654		657	660	663	665	662	667	681	694
BUMPER		CRUSH	84	70	60	51	44	37	33	32	35		38	41	44	46	43	48	62	75
LEVEL 1			535	519	518	518	518	518	518	518	518		518	518	518	518	518	518	519	535
MID	432	POST	689	660	638	622	608	599	589	584	585		585	588	589	590	596	605	625	649
BUMPER		CRUSH	154	141	120	104	90	81	71	66	67		67	70	71	72	78	87	106	114

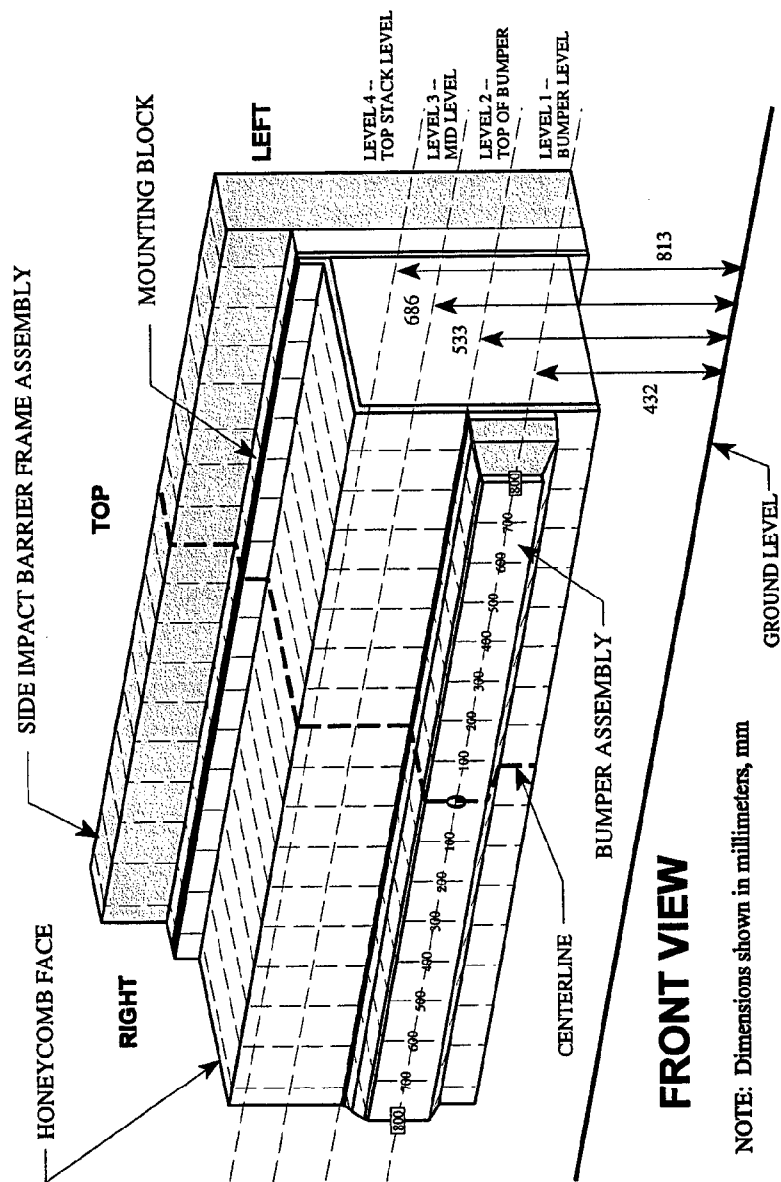
*Heights measured above ground level.

DATA SHEET 12 (continued)

EXTERIOR STATIC CRUSH FOR IMPACTOR FACE

NHTSA No. CY0103

Vehicle: 2000 Pontiac Grand Am



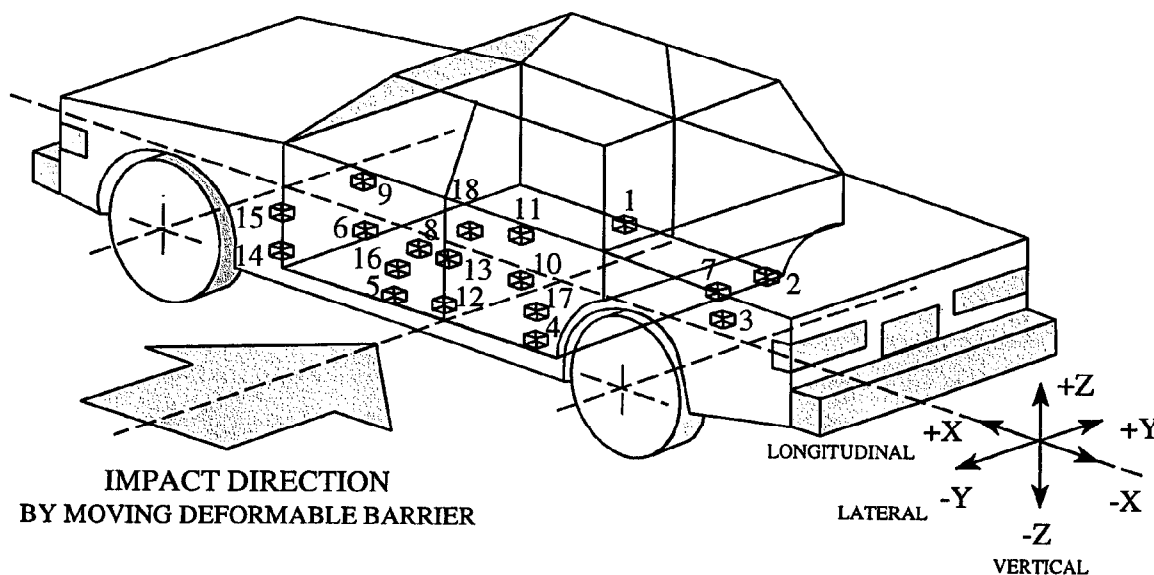
NOTE: Dimensions shown in millimeters, mm

DATA SHEET 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2000 Pontiac Grand Am

NHTSA No. CY0103



- 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: 2000 Pontiac Grand Am

NHTSA No. CY0103

Accel. No.	Location	Coordinates (mm)±3			Long. (x)		Lat. (y)		Vert. (z)		Resultant	
		X*	Y*	Z*	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
1	Right Side Sill at Front Seat	2814	642	296	pos. 2.1 neg. -5.2	33.6 13.5	26.8 -2.9	7.7 161.2	3.3 -7.0	41.6 13.6	27.2 -	7.7 -
2	Right Side Sill at Rear Seat	1969	648	299	pos. 3.0 neg. -5.9	33.6 13.7	25.4 -3.7	18.2 125.6	4.5 -6.7	75.8 14.8	25.5 -	18.2 -
3	Rear Floorpan Above Axle	1120	0	460	pos. 4.4 neg. -7.1	29.0 8.8	19.9 -4.0	7.9 125.4	7.3 †	36.1 †	69.8 -	468.4 -
4	Left Side Sill at Rear Seat	1969	-648	285	pos. - neg. -	- -	95.4 -56.3	14.9 21.7	- -	- -	- -	- -
5	Left Side Sill at Front Seat	2814	-642	286	pos. - neg. -	- -	56.6 -20.6	13.7 23.9	- -	- -	- -	- -
6**	Left Front Door on Centerline	-	-	-	pos. - neg. -	- -	- -	- -	- -	- -	- -	- -
7	Right Rear Occupant Compartment	1943	346	210	pos. - neg. -	- -	20.9 -2.9	20.4 125.6	- -	- -	- -	- -
8**	Midrear of Left Front Door	-	-	-	pos. - neg. -	- -	- -	- -	- -	- -	- -	- -
9**	Left Front Door Upper Centerline	-	-	-	pos. - neg. -	- -	- -	- -	- -	- -	- -	- -
10**	Midrear of Left Rear Door	-	-	-	pos. - neg. -	- -	- -	- -	- -	- -	- -	- -
11**	Left Rear Door Upper Centerline	-	-	-	pos. - neg. -	- -	- -	- -	- -	- -	- -	- -

* Reference: X - Rear Bumper (+ Forward)

** Accelerometer was not requested by COTR.

† Data is invalid after 126 ms.

Y - Vehicle Centerline (+ To Right)

Z - Ground Level (+ Up)

DATA SHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2000 Pontiac Grand Am

NHTSA No. CY0103

Accel. No.	Location	Coordinates (mm)±3			Lat. (y)		Vert. (z)		Resultant	
		X*	Y*	Z*	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
12	Left Lower B-Pillar	1924	-713	465	pos. neg.	-	138.9 -50.4	4.2 22.2	-	-
13†	Left Middle B-Pillar	1915	-703	743	pos. neg.	-	-	-	-	-
14	Left Lower A-Pillar	3238	-686	570	pos. neg.	-	51.0 ††	4.6 ††	-	-
15	Left Middle A-Pillar	3150	-652	892	pos. neg.	-	22.0 -2.5	4.1 6.9	-	-
16	Front Seat Track	2851	-536	292	pos. neg.	-	68.9 ††	35.2 ††	-	-
17	Rear Seat Track	1148	-382	459	pos. neg.	-	21.1 -4.0	8.0 125.5	-	-
18	Vehicle CG	2485	0	492	pos. neg.	6.3 -11.8	51.8 14.7	43.8 93.0	† †	43.7 -

* Reference: X - Rear Bumper (+ Forward)

Y - Vehicle Centerline (+ To Right)

Z - Ground Level (+ Up)

† Data not available.

†† Data is questionable after 48 ms.

‡ Transducer failed.

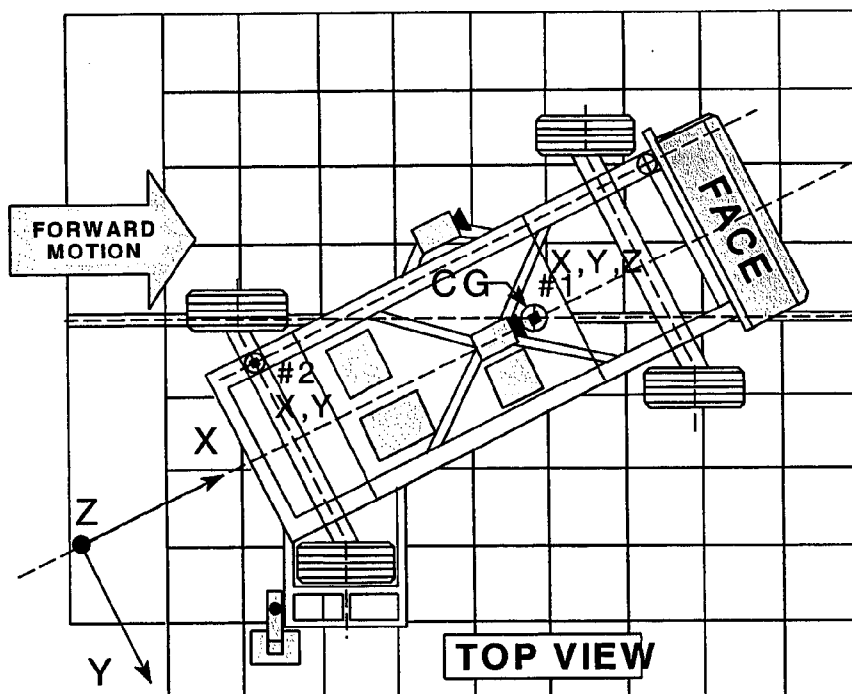
‡‡ Data not valid after 21 ms

DATA SHEET 14

MDB ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2000 Pontiac Grand Am

NHTSA No. CY0103



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	1859	0	330	1.7	104.4	-20.1	43.2
	Lateral..... Y				1.1	307.3	-9.4	12.8
	Vertical..... Z				13.5	54.2	-14.0	47.6
	Resultant..... R				22.3	42.5	-	-
2	Rear Frame Member							
	Longitudinal... X	386	-660	660	1.9	101.9	-19.0	31.8
	Lateral..... Y				3.7	26.6	-1.3	68.1

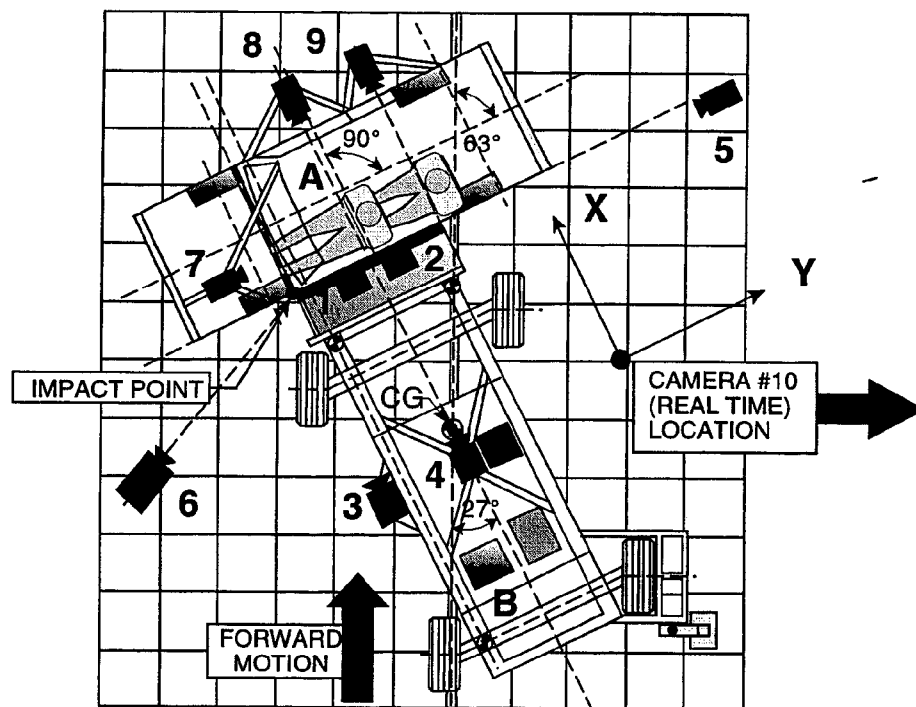
*Reference: X = Rear Bumper (+ Forward)
Y = Vehicle Centerline (+ To Right)
Z = Ground Level (+ Up)
All measurements accurate to within ± 3 mm.

DATA SHEET 15

HIGH SPEED CAMERA LOCATIONS AND DATA SUMMARY

Vehicle: 2000 Pontiac Grand Am

NHTSA No. CY0103



Camera No.	View	Coordinates (millimeters)			Angle (deg.)	Lens (mm)	Film Speed (fps)
		X*	Y*	Z*			
1	Overhead view of test vehicle	65	805	4880	-90	8	1015
2	Overhead closeup view of impact plane	201	872	4880	-90	12.5	1005
3	MDB onboard closeup view of impact point	-1470	0	847	0	13	1020
4	MDB onboard view of driver dummy	-1140	838	1586	-17	7.5	1015
5	Right side ground level overall view	128	9150	1030	-3	25	1010
6	Left side ground level overall view	-1922	-1610	1045	-6	13	1000
7	Test vehicle onboard driver front view	500	-282	1265	-15	13	800
8	Test vehicle onboard driver side view	1658	927	986	-15	8	1005
9	Test vehicle onboard passenger side view	1632	1822	1045	-16	8	1000
10	Real time film coverage of test	-	-	-	-	-	24

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

+X = Forward

+Y = To Right

+Z = Upward

SECTION 5

FUEL SYSTEM INTEGRITY

DATA SHEET 16

FMVSS 301 FUEL SYSTEM INTEGRITY DATA

NHTSA No.: CY0103

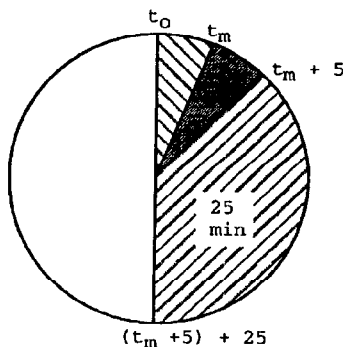
TEST DATE: December 9, 1999

Vehicle Mfr./Make/Model : 2000 Pontiac Grand Am 2-Door Coupe

TEST VEHICLE IMPACT TYPE :

- Frontal (48.28 kph)
- Oblique (48.28 kph) with " barrier face first
contacting the - side
(driver/passenger)
- Rear Moving Barrier (48.28 kph)
- Lateral Moving Barrier (32.19 kph)
- X Side Impact Moving Deformable Barrier (61.96 kph)
contacting the driver side side
(driver/passenger)

FUEL SPILLAGE MEASUREMENT:



1. From impact until vehicle motion ceases
2. For five minute period after vehicle motion ceases
3. For next 25 minutes

ACTUAL	MAX ALLOWED
0 g	28 g
0 g	142 g
0 g	28 g/1 min.

SOLVENT SPILLAGE DETAILS :

None

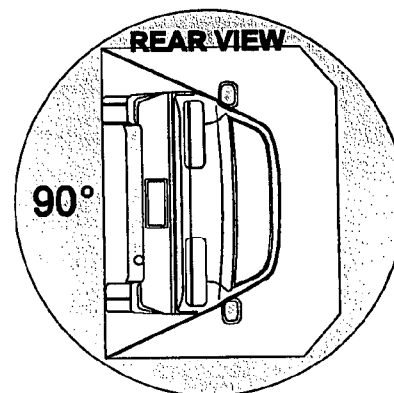
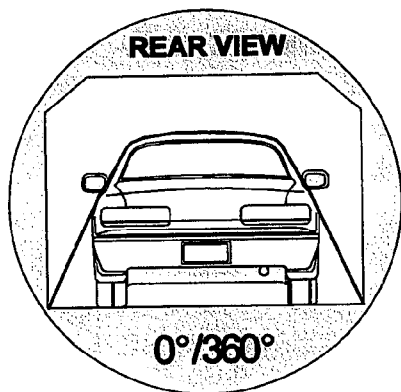
DATA SHEET 17

ROLLOVER DATA

Vehicle: 2000 Pontiac Grand Am

NHTSA No. CY0103

0 - 90 Degrees



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time	<u>1</u> minutes <u>20</u> seconds
(Spec. Range = 1 to 3 minutes)	
FMVSS 301 Position Hold Time +	<u>5</u> minutes <u>0</u> seconds
TOTAL	<u>6</u> minutes <u>20</u> seconds
Next whole minute interval	<u>7</u> minutes

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

First 5 minutes FROM onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

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

IV. SOLVENT SPILLAGE LOCATION(S) :

None

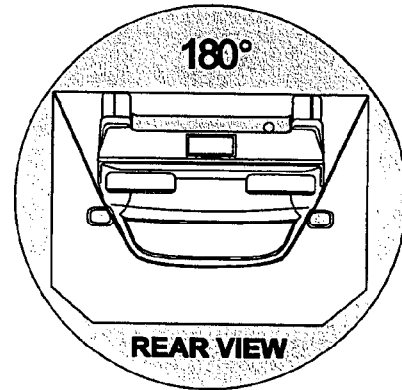
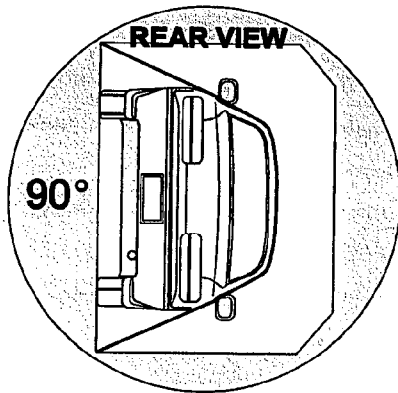
DATA SHEET 17 (continued)

ROLLOVER DATA

Vehicle: 2000 Pontiac Grand Am

NHTSA No. CY0103

90 - 180 Degrees



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time (Spec. Range = 1 to 3 minutes)	<u>1</u> minutes <u>3</u> seconds
FMVSS 301 Position Hold Time +	<u>5</u> minutes <u>0</u> seconds
TOTAL	<u>6</u> minutes <u>3</u> seconds
Next whole minute interval	<u>7</u> minutes

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

First 5 minutes FROM onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

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

IV. SOLVENT SPILLAGE LOCATION(S) :

None

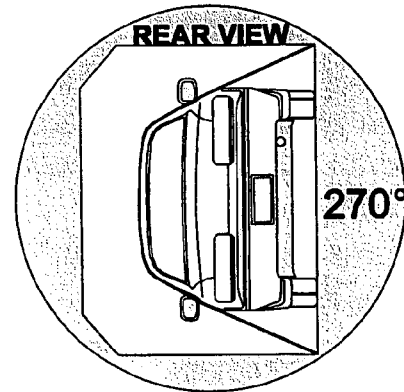
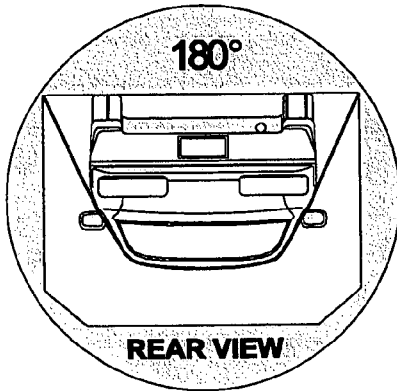
DATA SHEET 17 (continued)

ROLLOVER DATA

Vehicle: 2000 Pontiac Grand Am

NHTSA No. CY0103

180 - 270 Degrees



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time	<u>1</u> minutes <u>7</u> seconds
(Spec. Range = 1 to 3 minutes)	
FMVSS 301 Position Hold Time +	<u>5</u> minutes <u>0</u> seconds
TOTAL	<u>6</u> minutes <u>7</u> seconds
Next whole minute interval	<u>7</u> minutes

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

First 5 minutes FROM onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

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

IV. SOLVENT SPILLAGE LOCATION(S) :

None

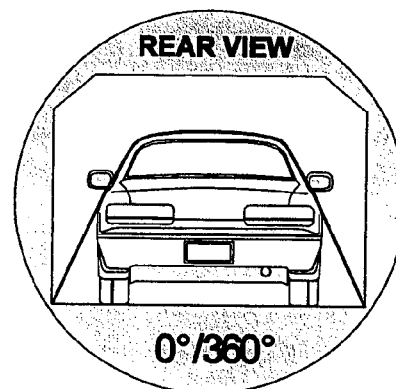
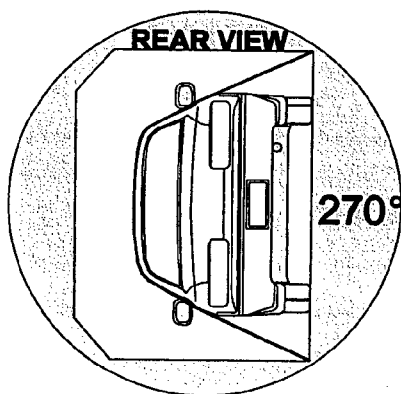
DATA SHEET 17 (continued)

ROLLOVER DATA

Vehicle: 2000 Pontiac Grand Am

NHTSA No. CY0103

270 - 360 Degrees



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time +

TOTAL

Next whole minute interval

1 minutes 10 seconds

5 minutes 0 seconds

6 minutes 10 seconds

7 minutes

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

First 5 minutes FROM onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

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

IV. SOLVENT SPILLAGE LOCATION(S) :

None

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

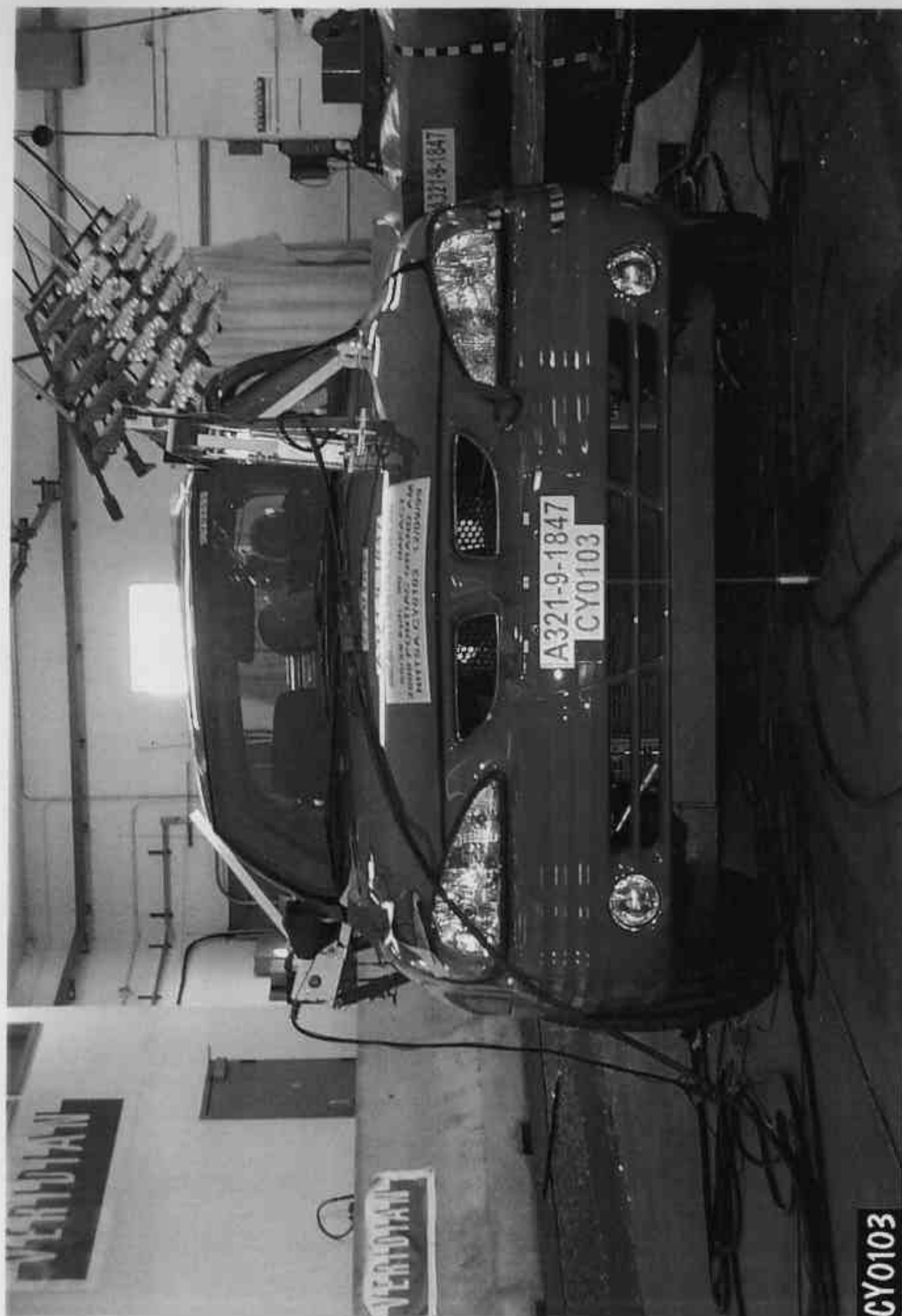


Figure A-2: POST-TEST FRONTAL VIEW OF TEST VEHICLE



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

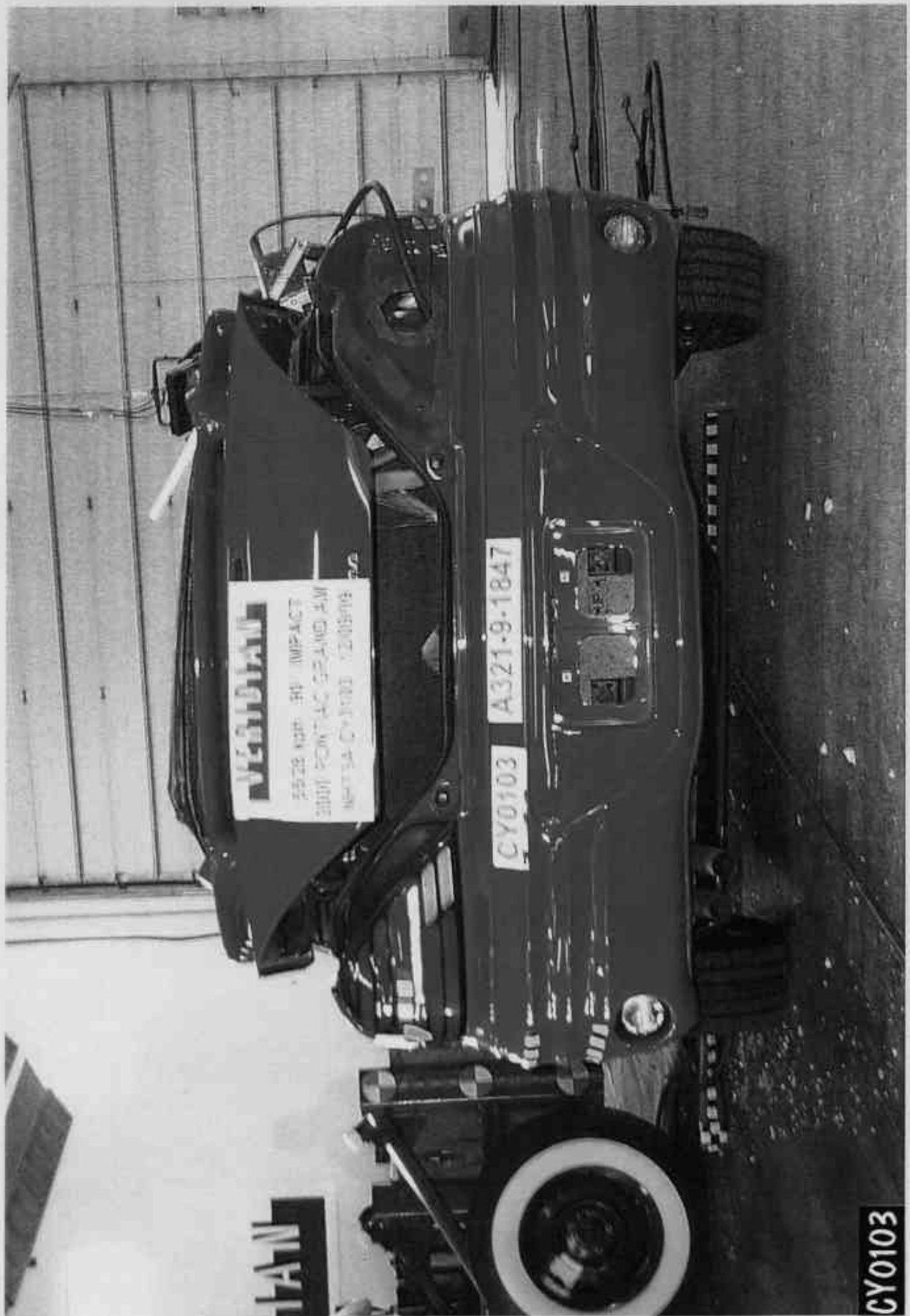


Figure A-4: POST-TEST REAR VIEW OF TEST VEHICLE

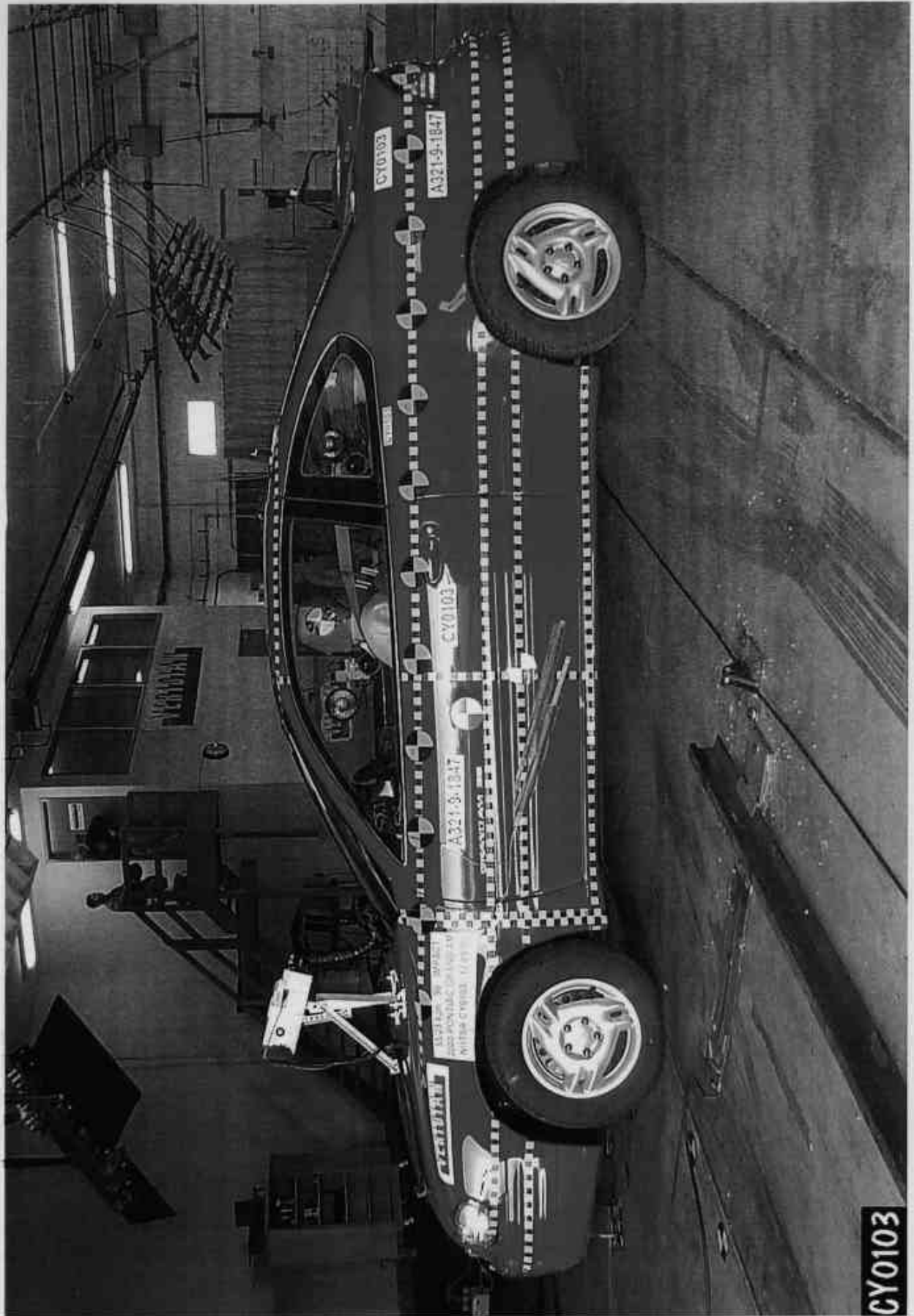


Figure A-5: PRE-TEST IMPACTED SIDE VIEW OF TEST VEHICLE



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

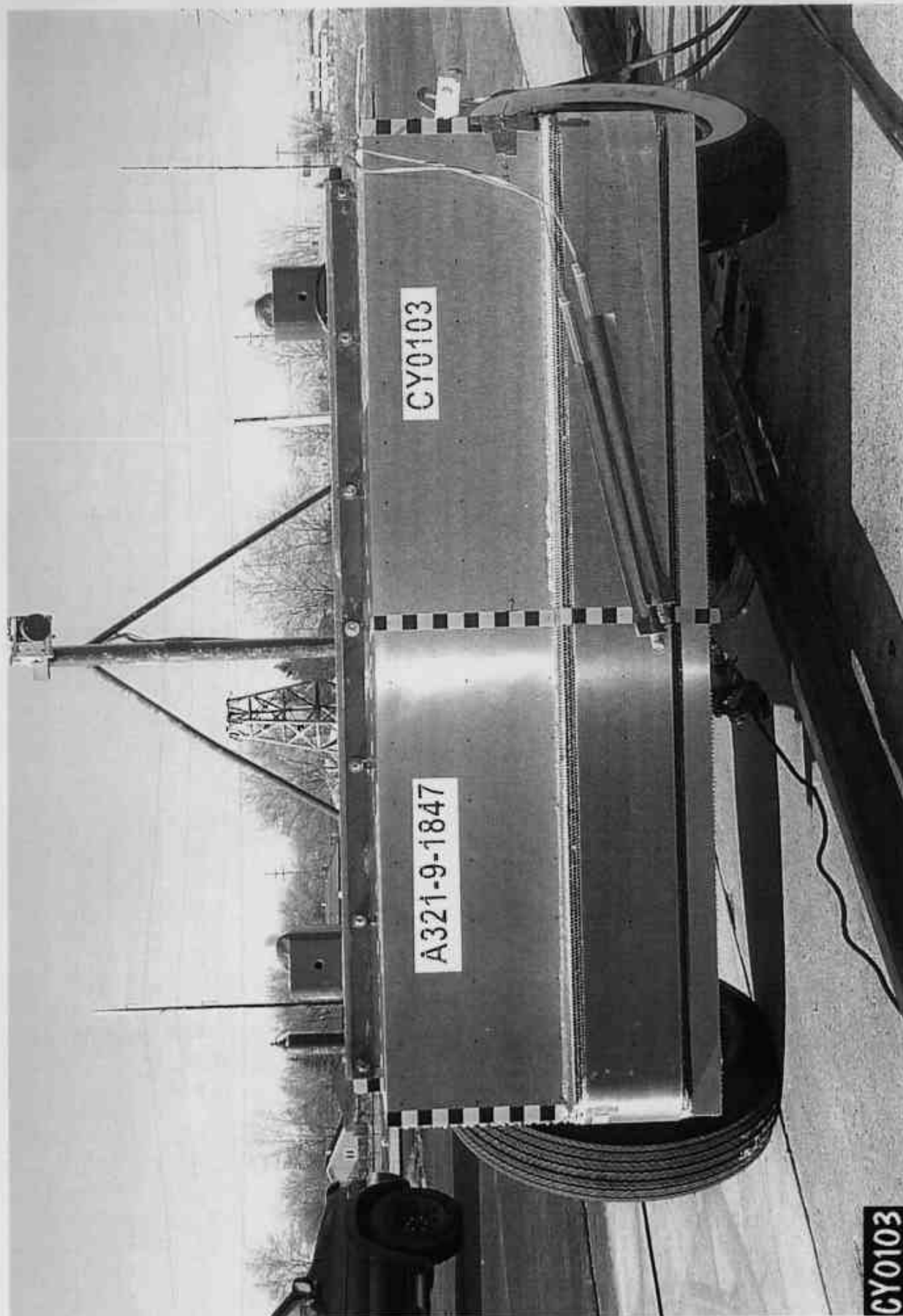


Figure A-7: PRE-TEST FRONTAL VIEW OF IMPACTOR FACE

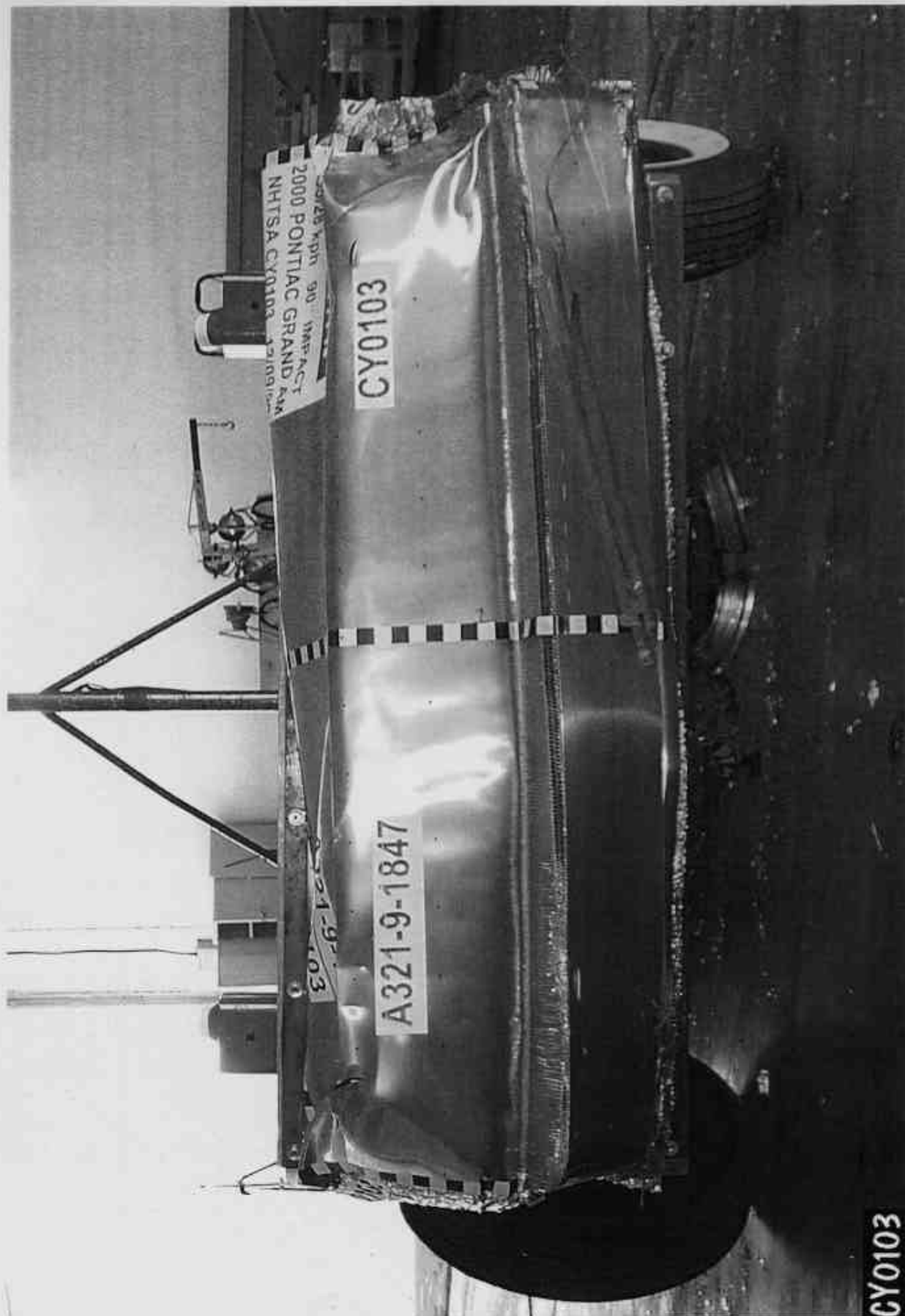


Figure A-8. POST-TEST FRONTAL VIEW OF IMPACTOR FACE



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

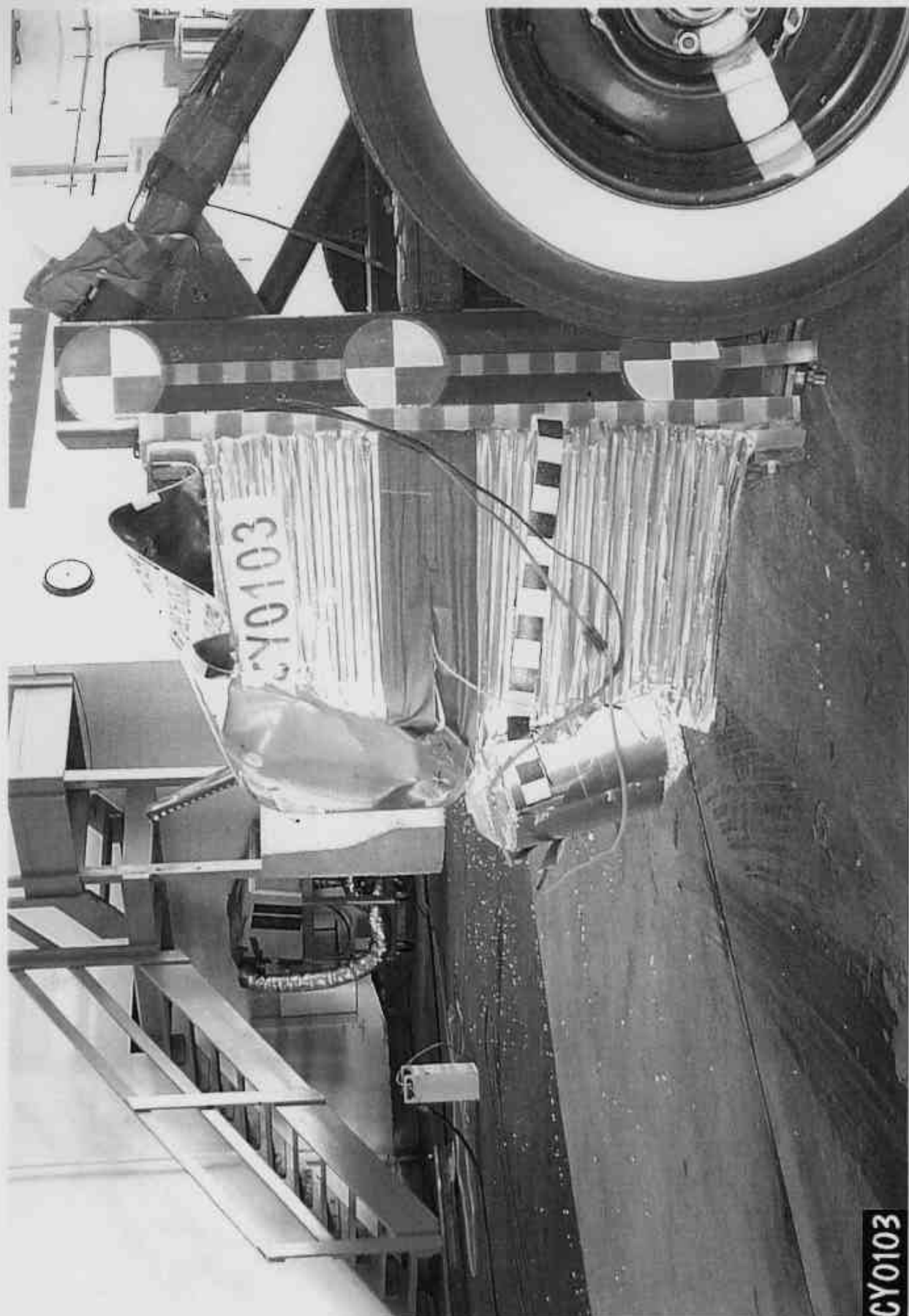


Figure A-10: POST-TEST LEFT SIDE VIEW OF IMPACTOR FACE

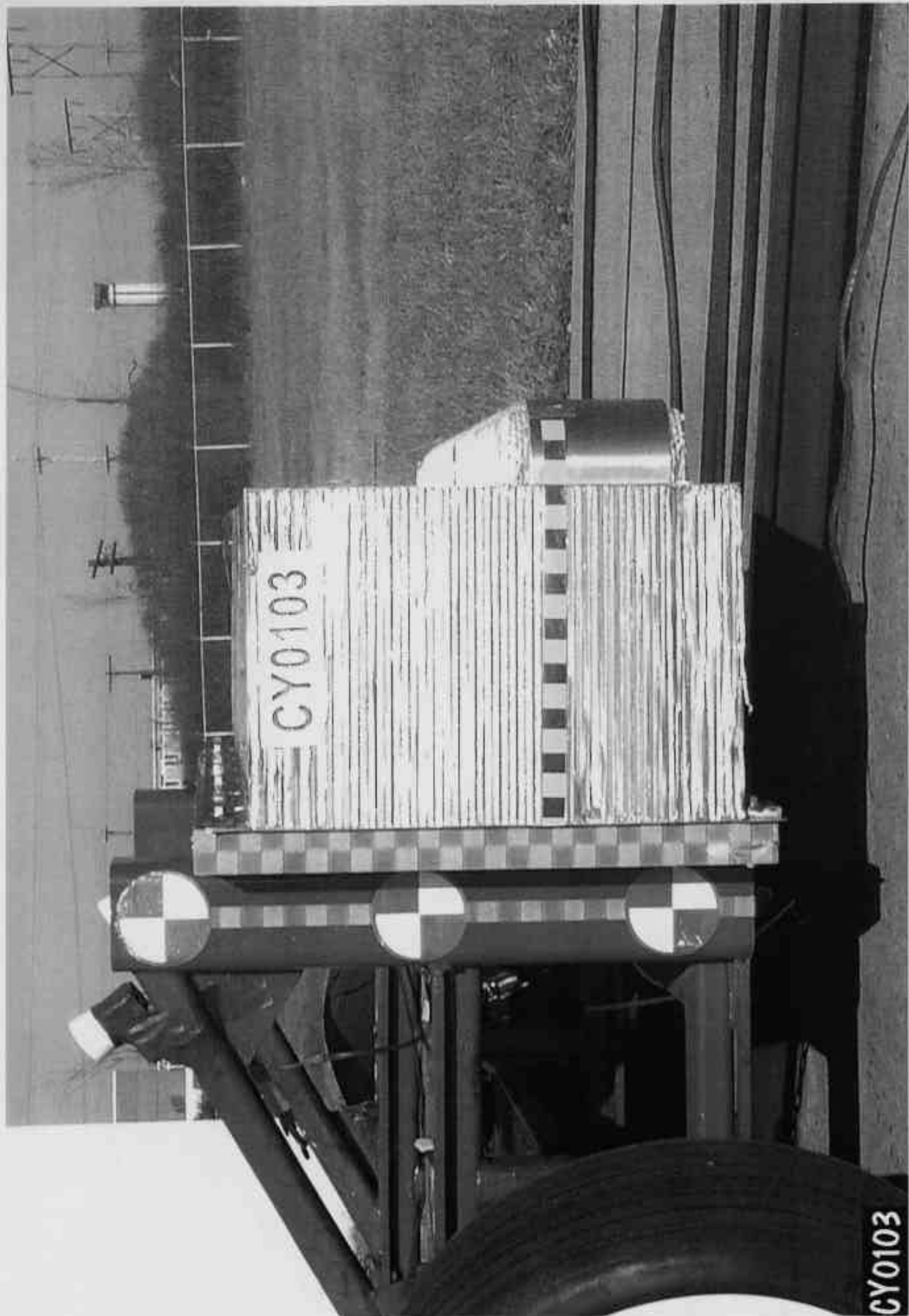


Figure A-11: PRE-TEST RIGHT SIDE VIEW OF IMPACTOR FACE



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

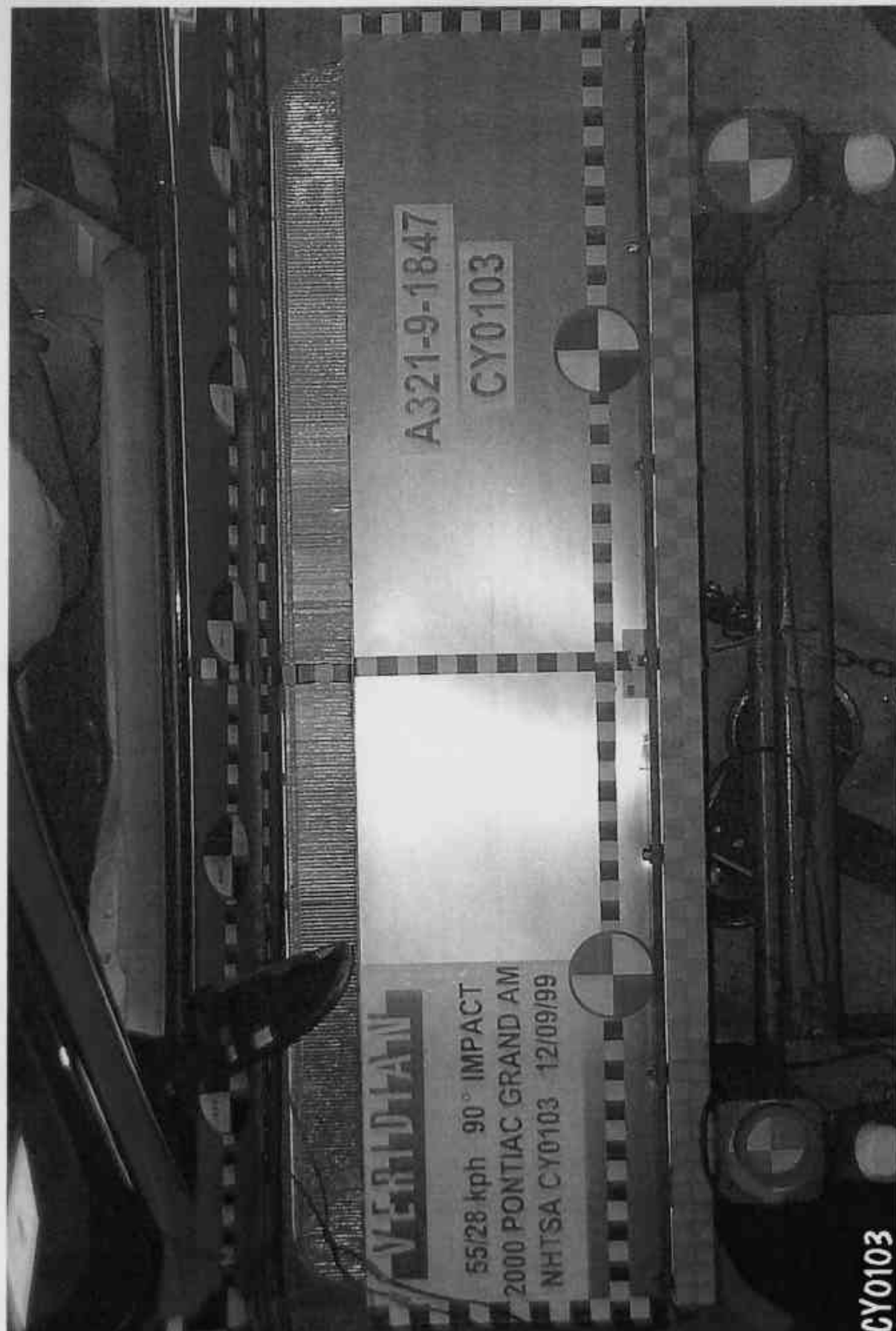


Figure A-13: PRE-TEST TOP VIEW OF IMPACTOR FACE

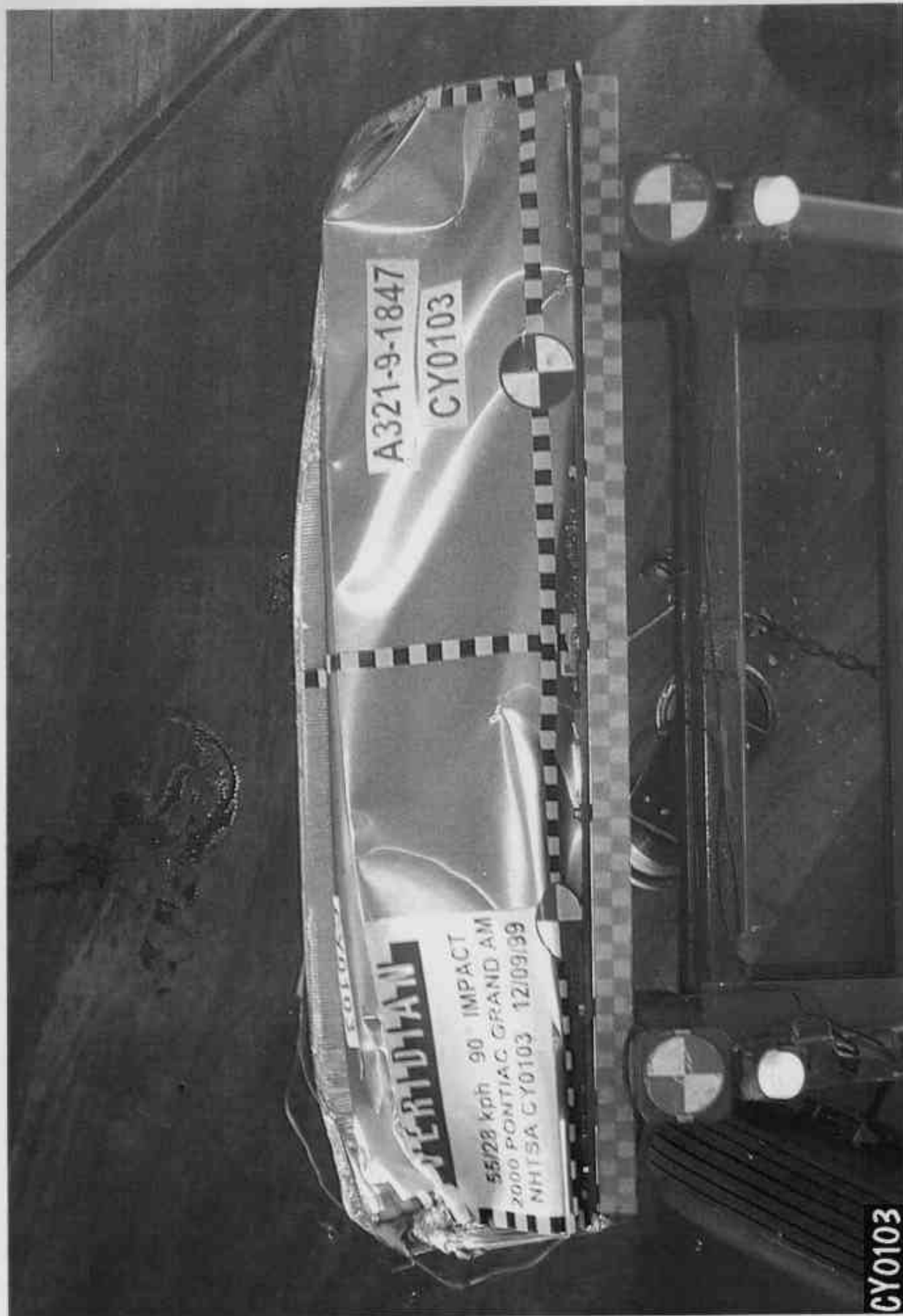


Figure A-14: POST-TEST TOP VIEW OF IMPACTOR FACE



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



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

CY0103



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

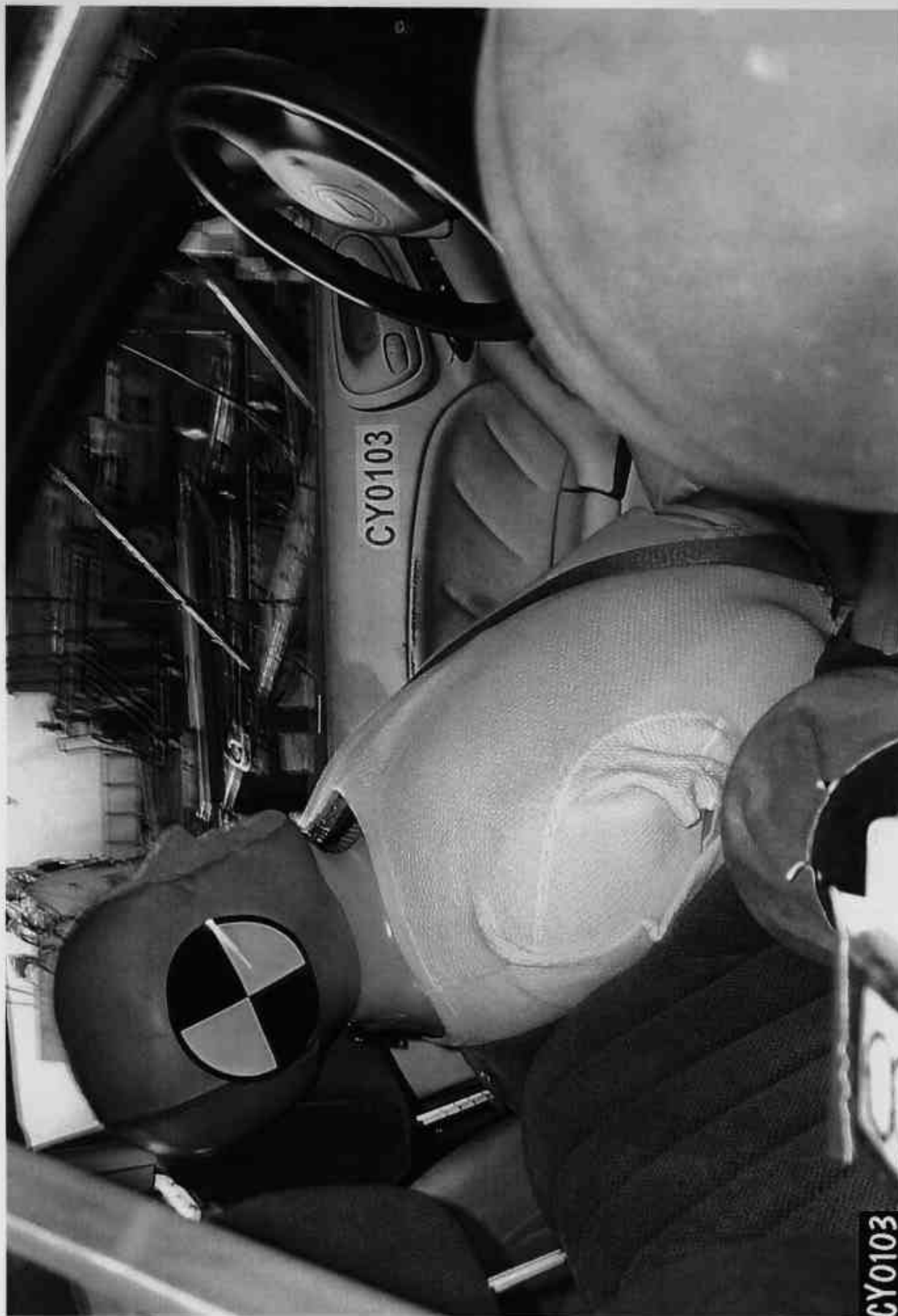


Figure A-18: POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID



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

CY0103



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

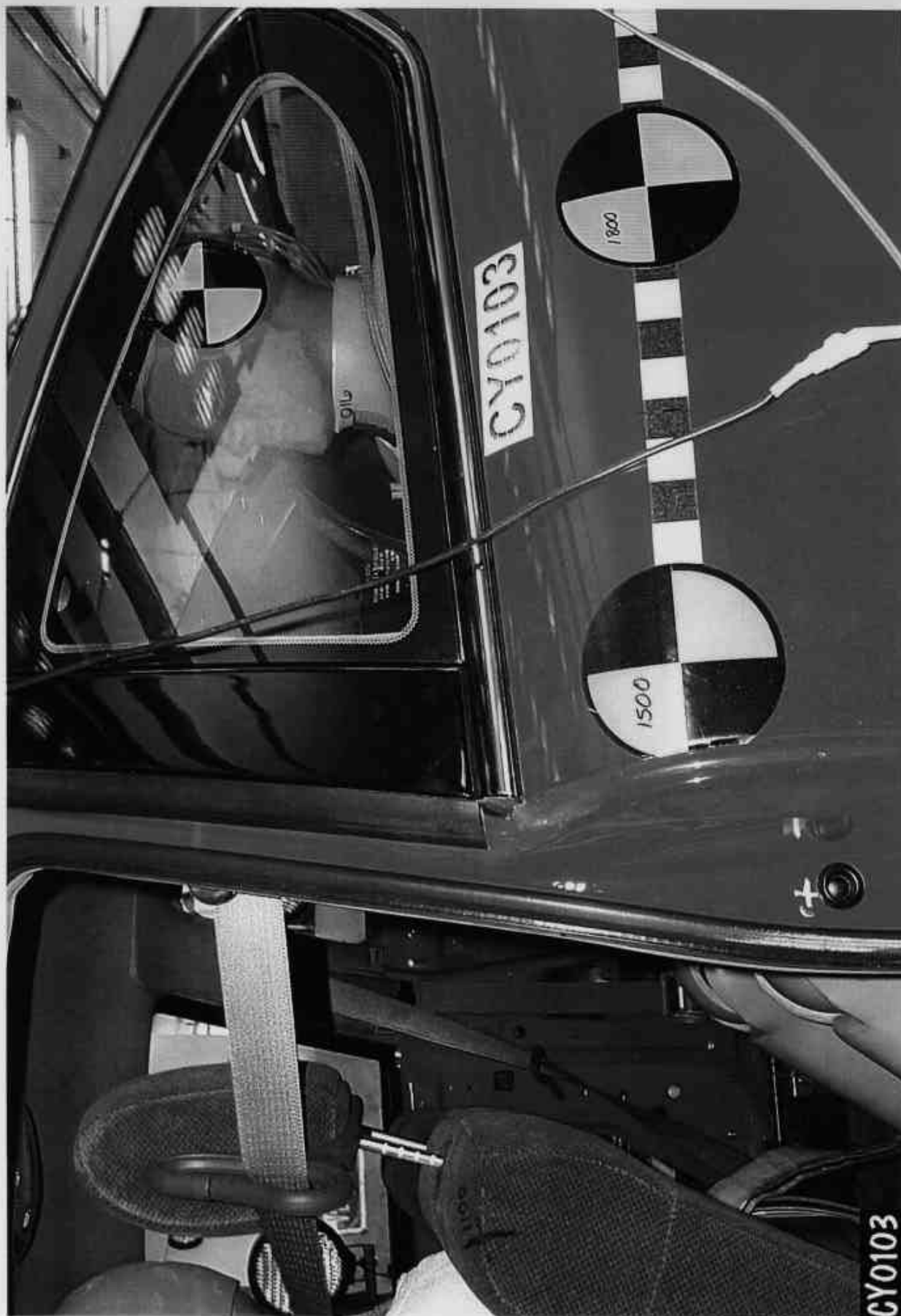


Figure A-23: PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SID



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

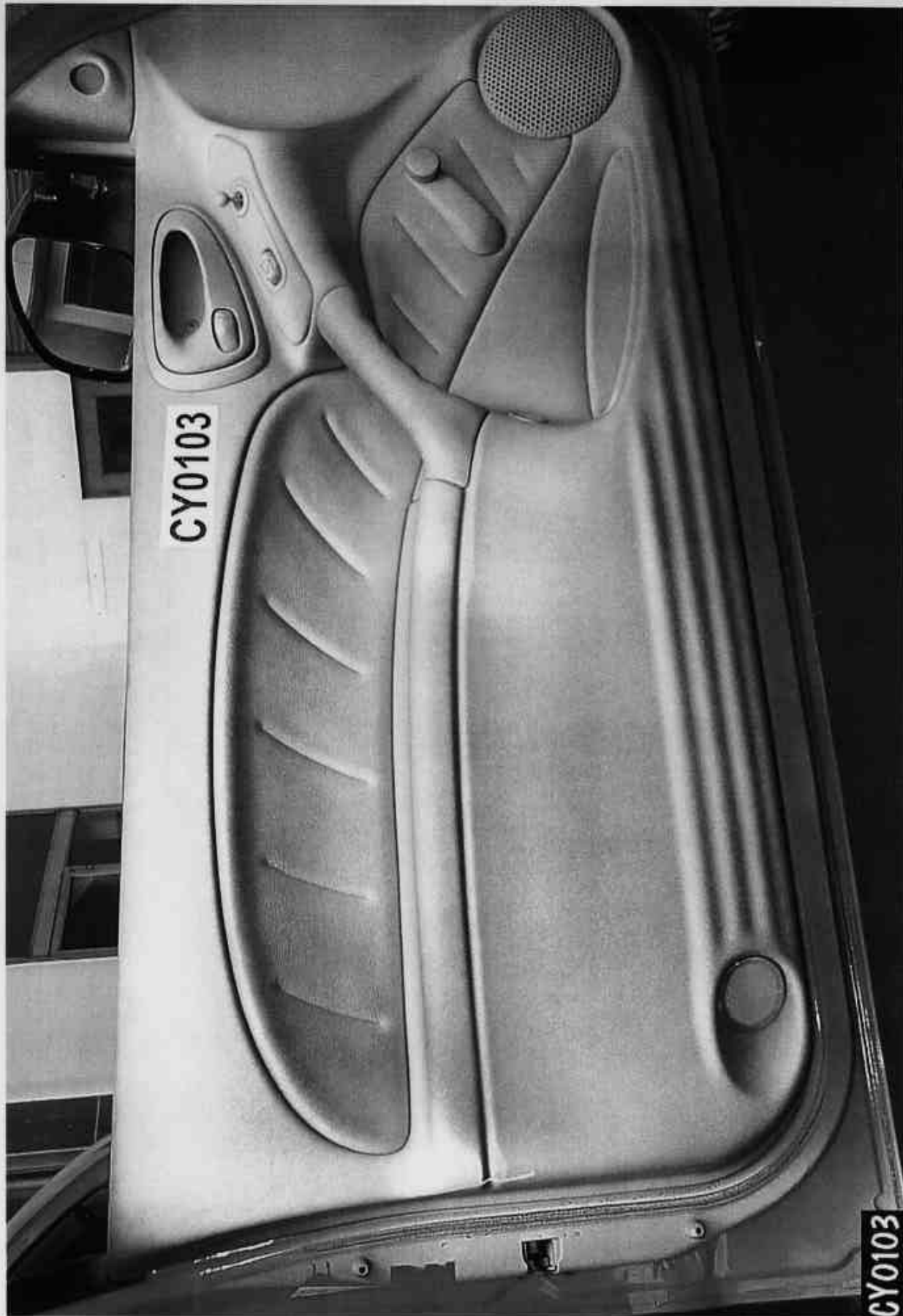


Figure A-25: PRE-TEST INTERIOR OF FRONT DOOR

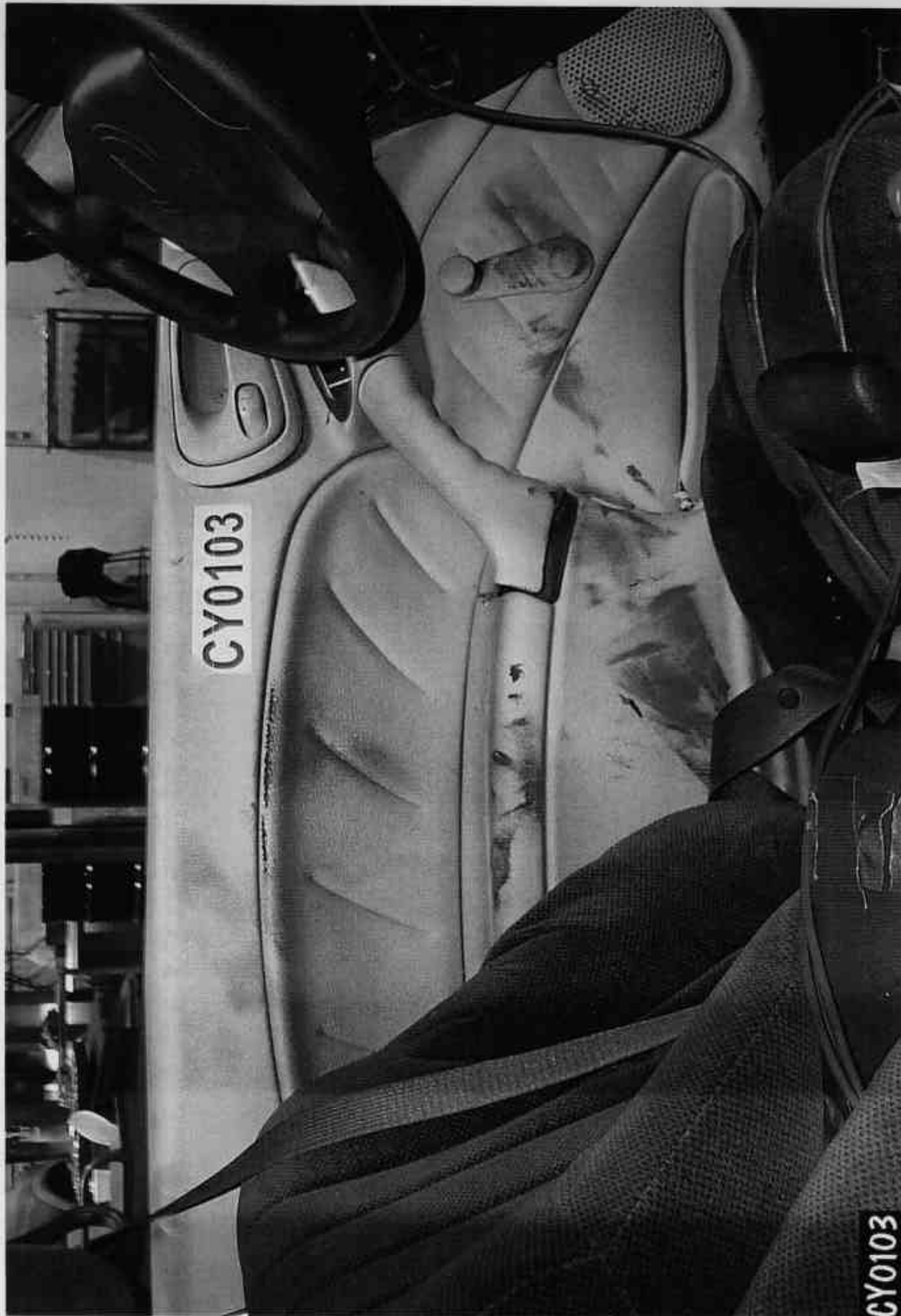


Figure A-26: POST-TEST INTERIOR OF FRONT DOOR SHOWING SID IMPACT LOCATIONS



Figure A-27: PRE-TEST INTERIOR OF REAR DOOR

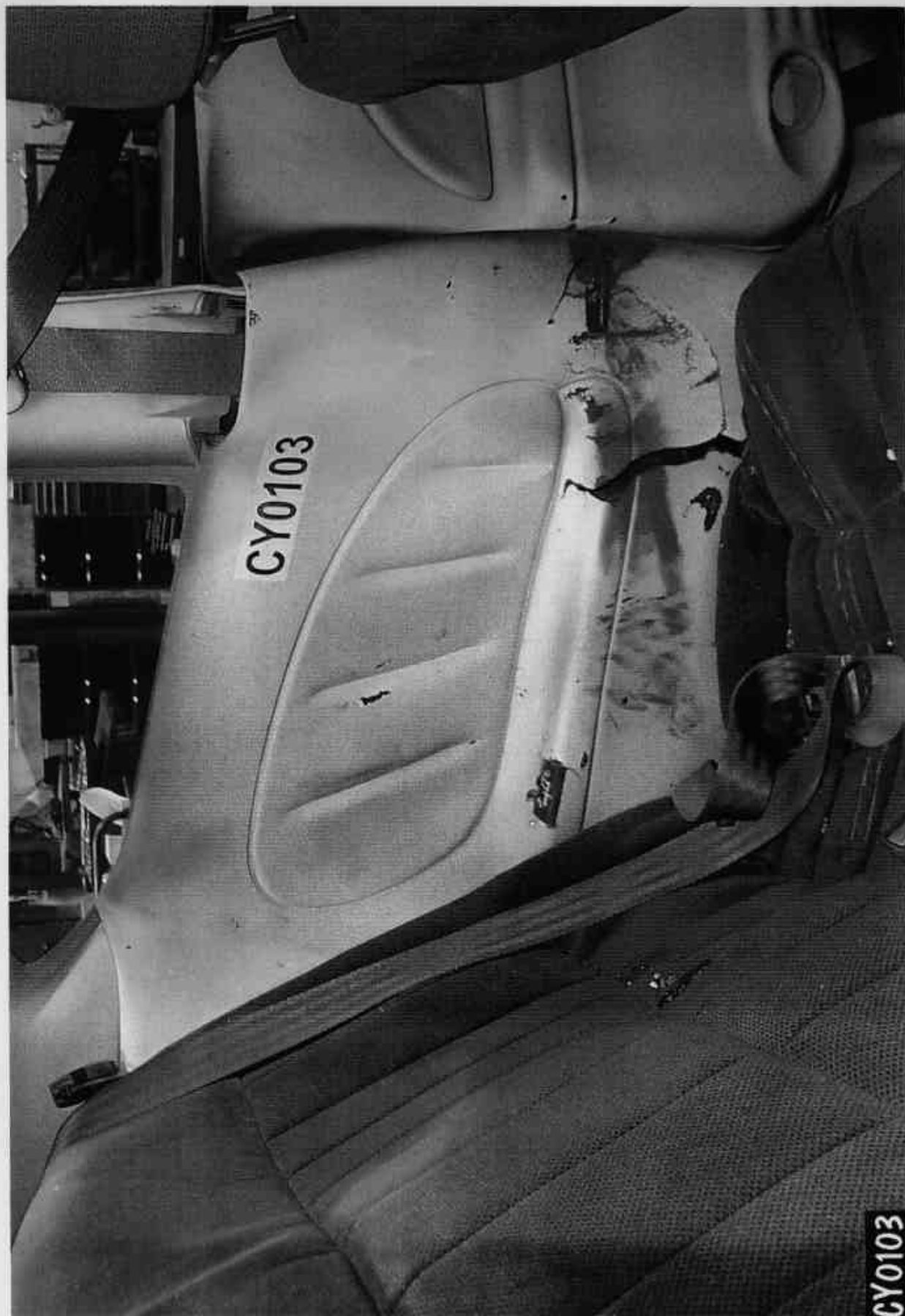


Figure A-28: POST-TEST INTERIOR OF REAR DOOR SHOWING SID IMPACT LOCATIONS



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

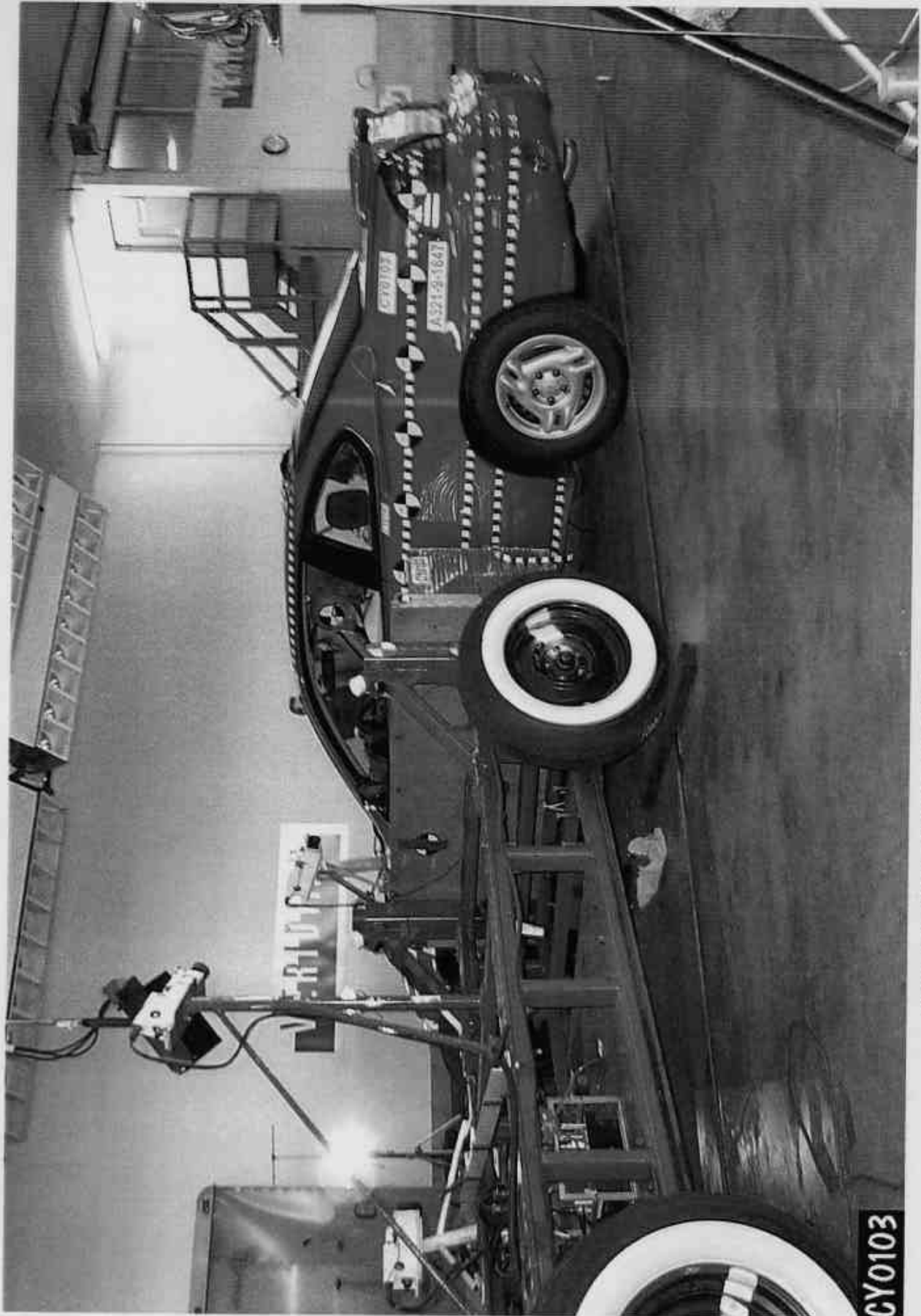


Figure A-30: PRE-TEST RIGHT SIDE VIEW OF MDB WITH IMPACTOR FACE IN POSITION

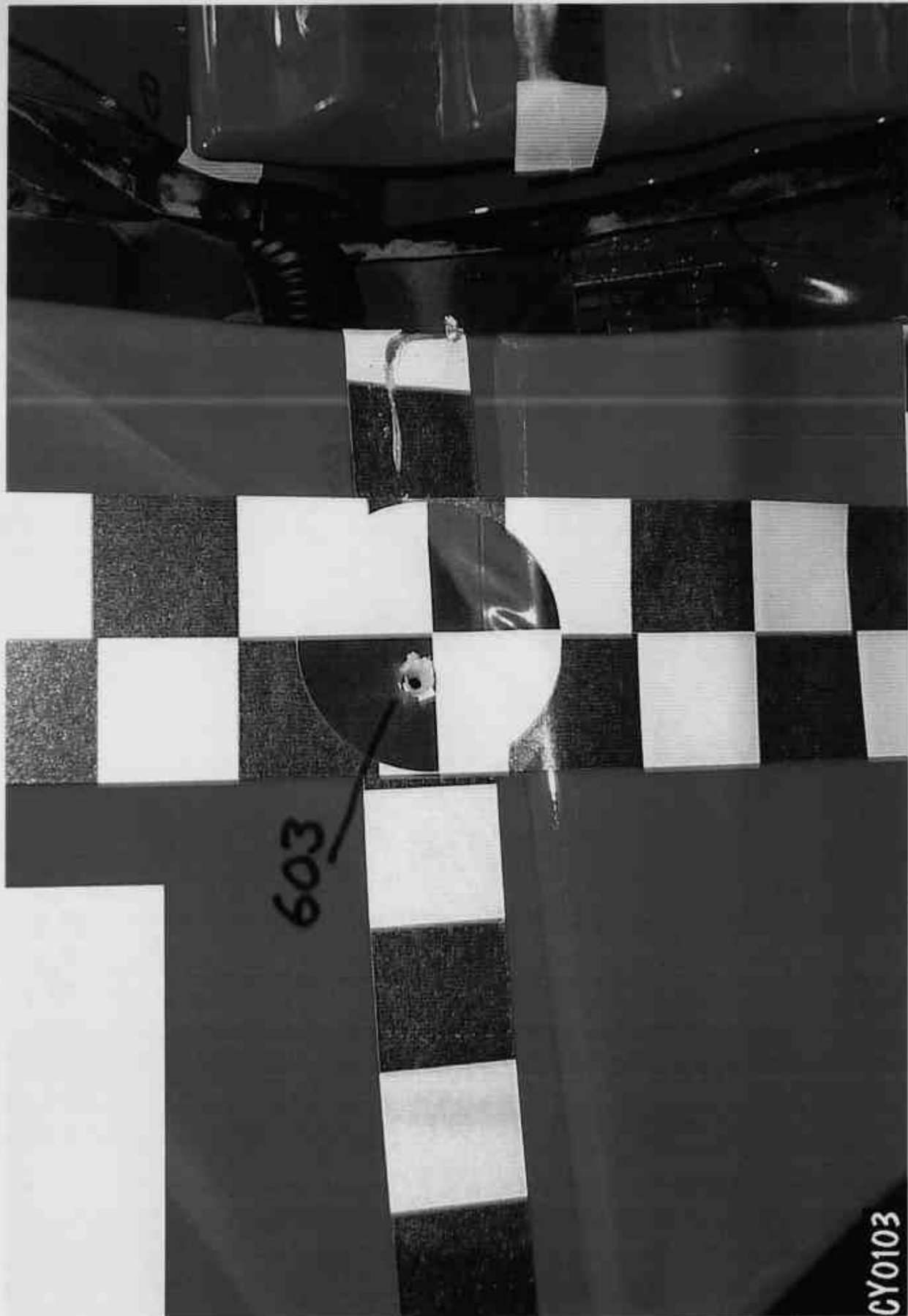


Figure A-31: POST-TEST CLOSE-UP VIEW OF IMPACT POINT TARGET



MFD BY GENERAL MOTORS CORP

DATE	GVWR	GAWR FRT	GAWR RR
09/99	1765 KG	980 KG	785 KG
	3890 LB	2161 LB	1729 LB

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

1G2NE12T1YM727306 TYPE: PASS CAR

CY0103

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



TIRE - LOADING INFORMATION

OCCUPANTS			VEHICLE CAP. WT.	
FRT.	CTR.	RR.	TOTAL	
2	0	3	5	
				LBS
				899

MAX. LOADING @ GVWR SAME AS VEHICLE CAPACITY WEIGHT.
1G2NE12T1YM727306
MODEL: NE37 NBJ

TIRE SIZE		SPEED RTG	COLD TIRE PRESSURE
FRT	P215/60R15	S	210KPA(30PSI)
RR	P215/60R15	S	210KPA(30PSI)
SPA	T125/70D15	M	420KPA(60PSI)

IF TIRES ARE HOT, ADD 28KPA(4PSI)
SEE OWNER'S MANUAL FOR MORE INFORMATION

CY0103

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

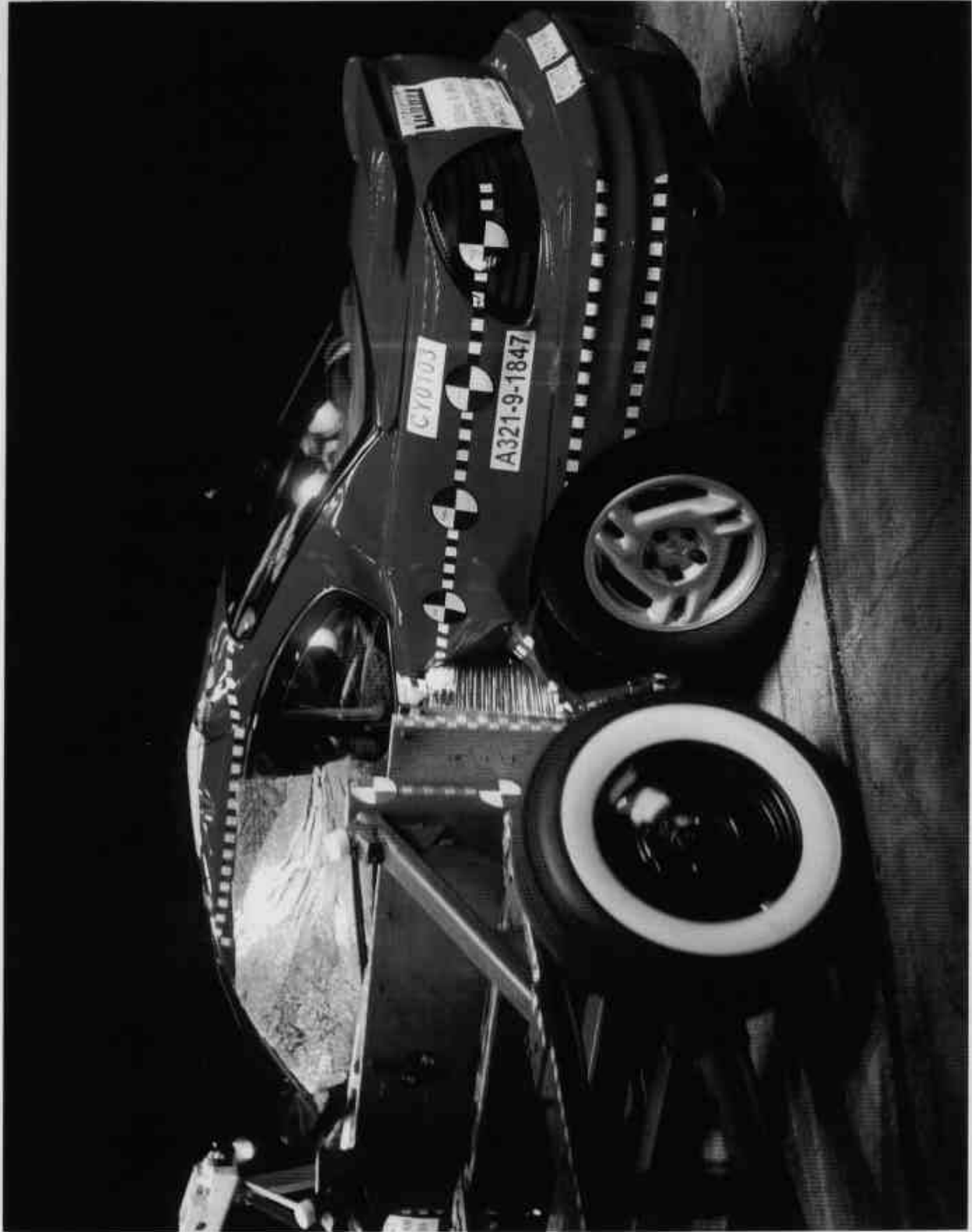


Figure A-34: IMPACT PHOTO

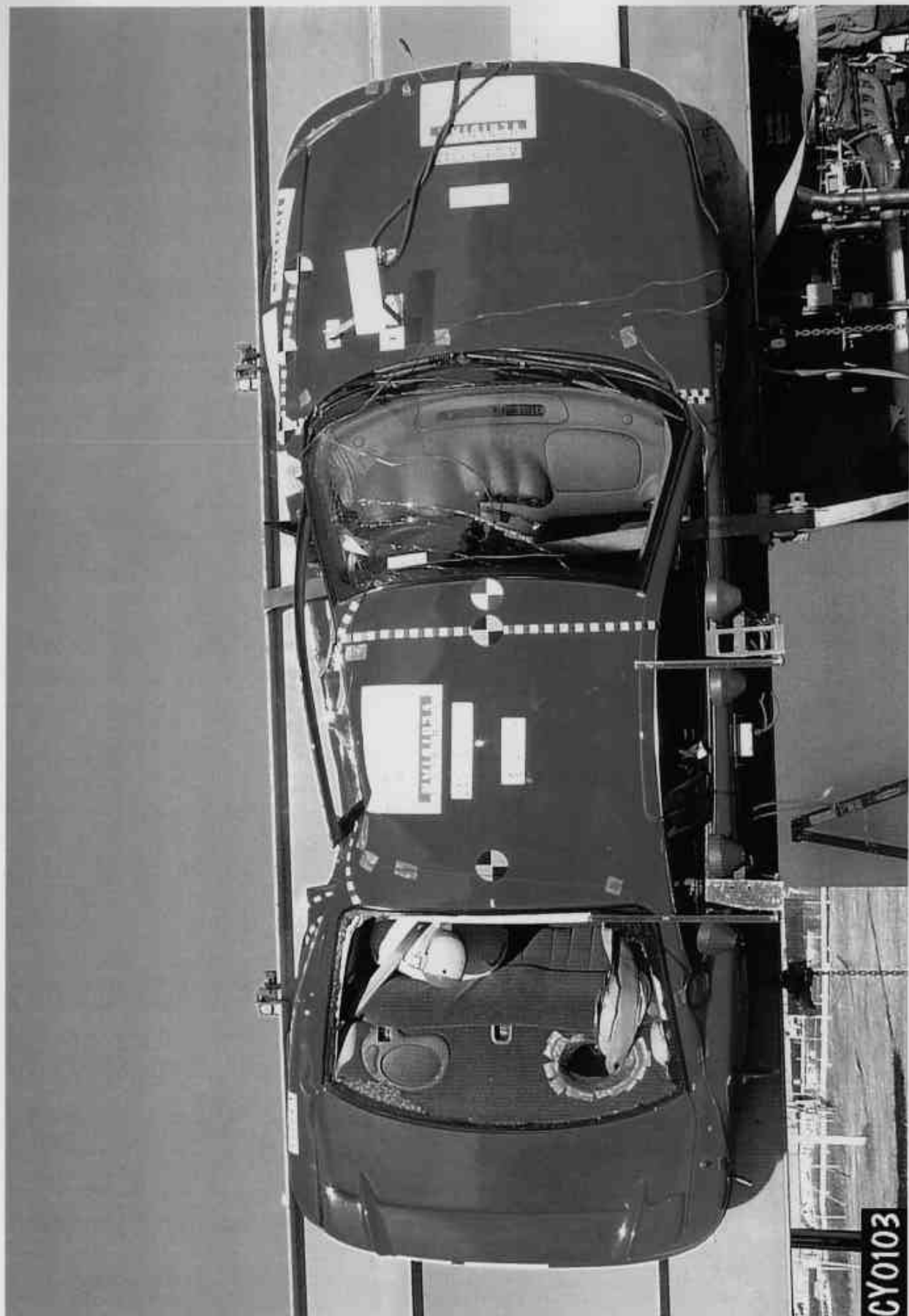


Figure A-35: ROLLOVER 90 DEGREES

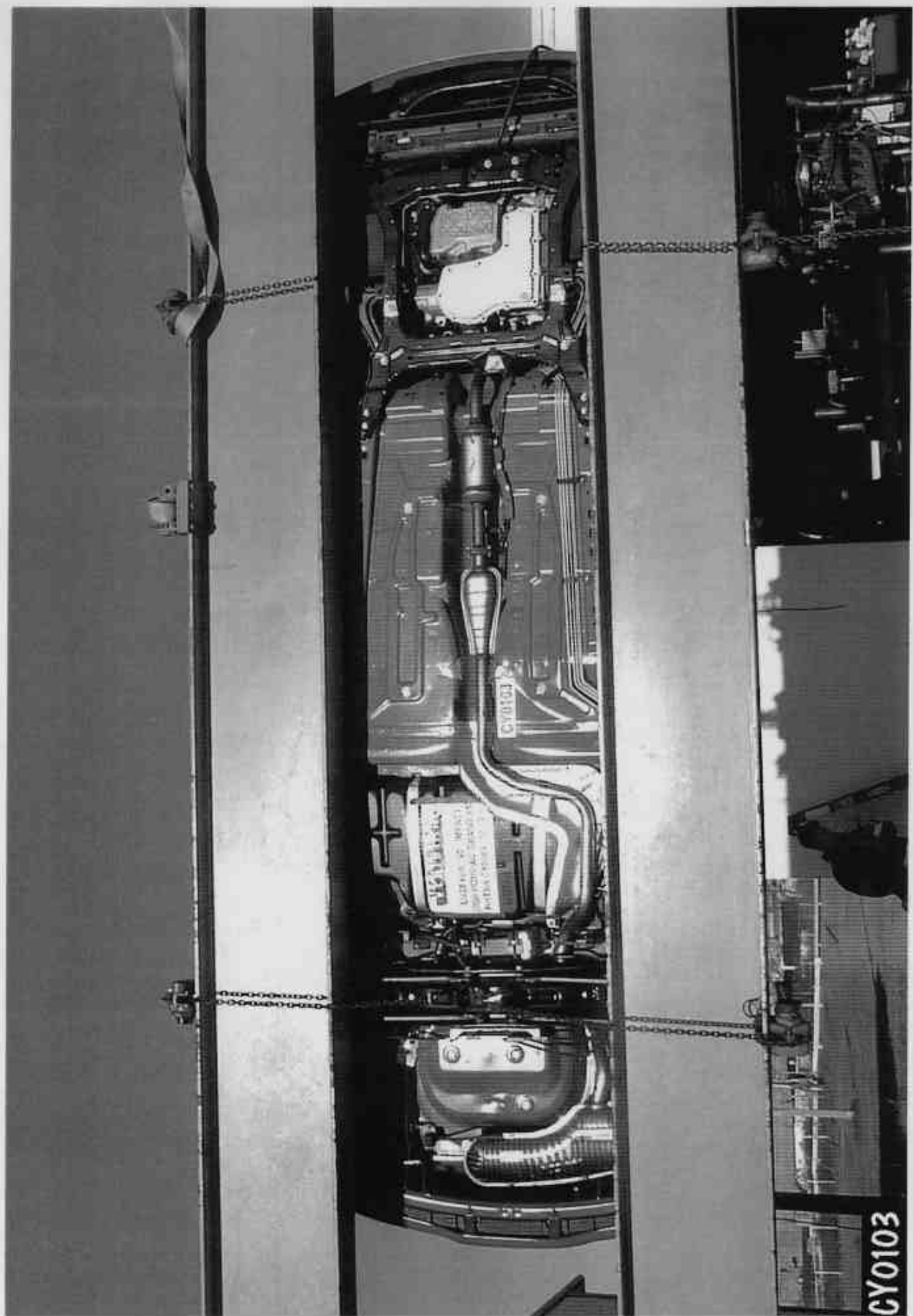


Figure A-37: ROLLOVER 270 DEGREES



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 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	RIGHT REAR OCCUPANT COMPARTMENT (Y) ACCELERATION VS TIME	B- 69
65	RIGHT REAR OCCUPANT COMPARTMENT (Y) VELOCITY VS TIME	B- 70
66	LOWER B-POST (Y) ACCELERATION VS TIME	B- 71
67	LOWER B-POST (Y) VELOCITY VS TIME	B- 72
68	LOWER A-POST (Y) ACCELERATION VS TIME	B- 73
69	LOWER A-POST (Y) VELOCITY VS TIME	B- 74
70	UPPER A-POST (Y) ACCELERATION VS TIME	B- 75
71	UPPER A-POST (Y) VELOCITY VS TIME	B- 76
72	FRONT SEAT TRACK (Y) ACCELERATION VS TIME	B- 77
73	FRONT SEAT TRACK (Y) VELOCITY VS TIME	B- 78
74	REAR SEAT TRACK (Y) ACCELERATION VS TIME	B- 79
75	REAR SEAT TRACK (Y) VELOCITY VS TIME	B- 80

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>
76	VEHICLE CENTER OF GRAVITY (X) ACCELERATION VS TIME	B- 81
77	VEHICLE CENTER OF GRAVITY (X) VELOCITY VS TIME	B- 82
78	VEHICLE CENTER OF GRAVITY (Y) ACCELERATION VS TIME	B- 83
79	VEHICLE CENTER OF GRAVITY (Y) VELOCITY ACCELERATION VS TIME	B- 84
80	VEHICLE CENTER OF GRAVITY (Z) ACCELERATION VS TIME	B- 85
81	VEHICLE CENTER OF GRAVITY (Z) VELOCITY VS TIME	B- 86
82	VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME	B- 87

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>
83	MDB CENTER OF GRAVITY (X) ACCELERATION VS TIME	B- 88
84	MDB CENTER OF GRAVITY (X) VELOCITY VS TIME	B- 89
85	MDB CENTER OF GRAVITY (Y) ACCELERATION VS TIME	B- 90
86	MDB CENTER OF GRAVITY (Y) VELOCITY VS TIME	B- 91
87	MDB CENTER OF GRAVITY (Z) ACCELERATION VS TIME	B- 92
88	MDB CENTER OF GRAVITY (Z) VELOCITY VS TIME	B- 93
89	MDB CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME	B- 94
90	MDB REAR (X) ACCELERATION VS TIME	B- 95
91	MDB REAR (X) VELOCITY VS TIME	B- 96
92	MDB REAR (Y) ACCELERATION VS TIME	B- 97
93	MDB REAR (Y) VELOCITY VS TIME	B- 98

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

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
94	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 99
95	DRIVER UPPER RIB (Y) VELOCITY VS TIME	B- 100
96	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 101
97	DRIVER LOWER RIB (Y) VELOCITY VS TIME	B- 102
98	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 103
99	DRIVER LOWER SPINE (Y) VELOCITY VS TIME	B- 104
100	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 105
101	DRIVER PELVIC (Y) VELOCITY VS TIME	B- 106
102	PASSENGER UPPER RIB (Y) ACCELERATION VS TIME	B- 107
103	PASSENGER UPPER RIB (Y) VELOCITY VS TIME	B- 108
104	PASSENGER LOWER RIB (Y) ACCELERATION VS TIME	B- 109
105	PASSENGER LOWER RIB (Y) VELOCITY VS TIME	B- 110
106	PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME	B- 111
107	PASSENGER LOWER SPINE (Y) VELOCITY VS TIME	B- 112
108	PASSENGER PELVIC (Y) ACCELERATION VS TIME	B- 113
109	PASSENGER PELVIC (Y) VELOCITY VS TIME	B- 114

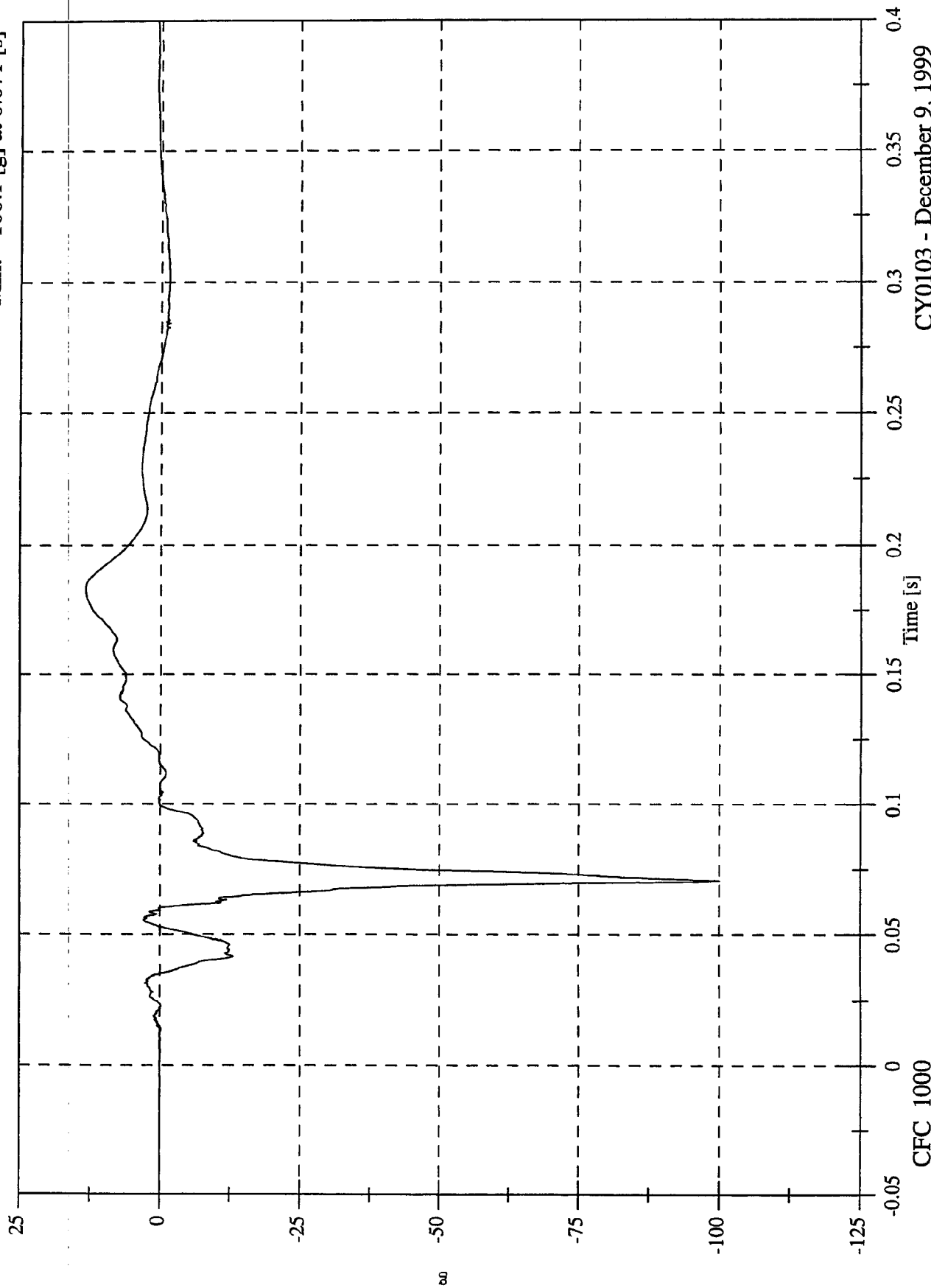
DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS (REDUNDANT)
 ACCELERATION DATA - FIR FILTERED

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

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Head x

Max: 13.3 [g] at 0.183 [s]
Min: -100.1 [g] at 0.071 [s]

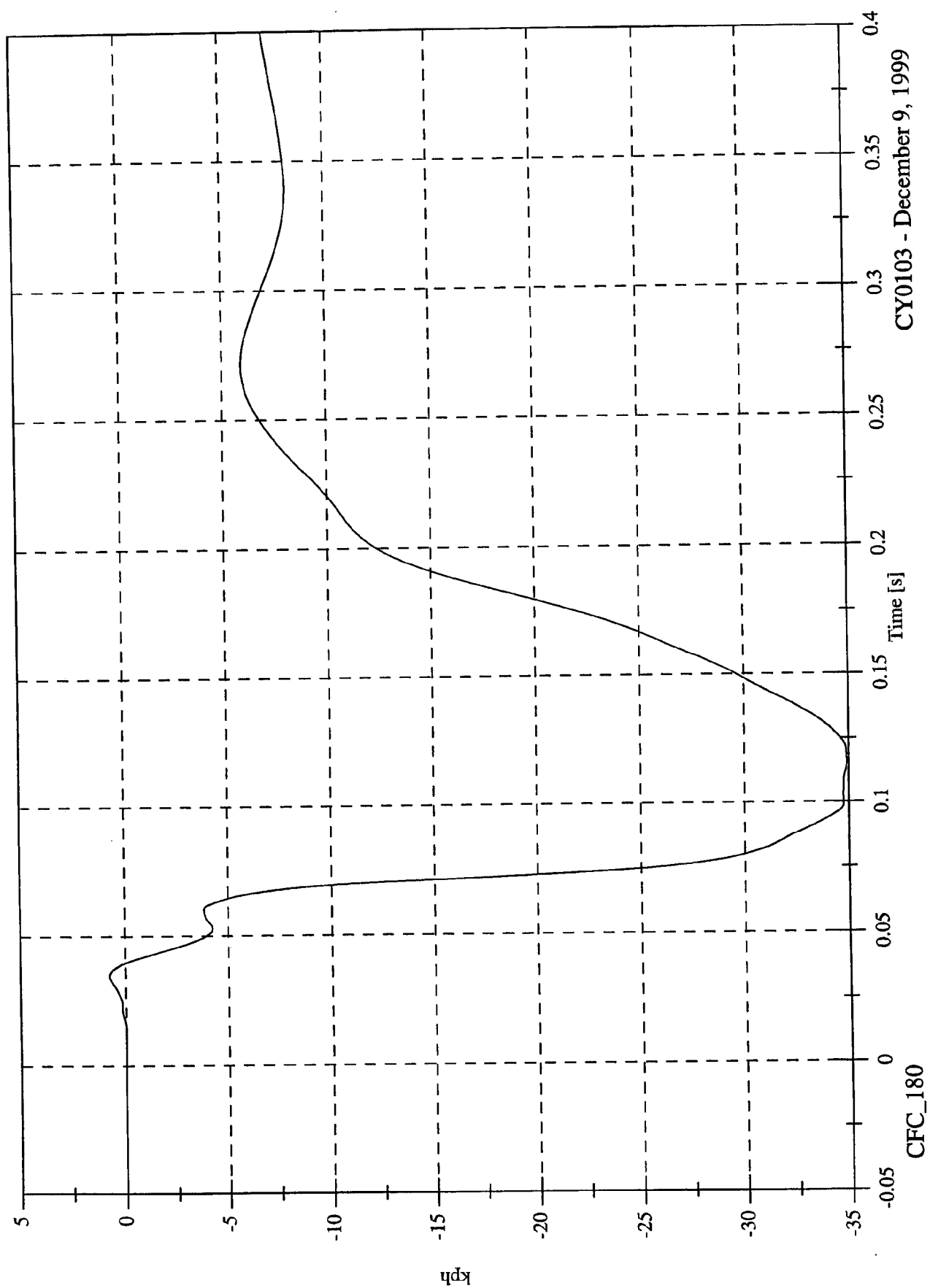


CFC_1000

CY0103 - December 9, 1999

Max: 0.8 [kph] at 0.035 [s]
Min: -34.9 [kph] at 0.115 [s]

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am
P1 Head x Velocity



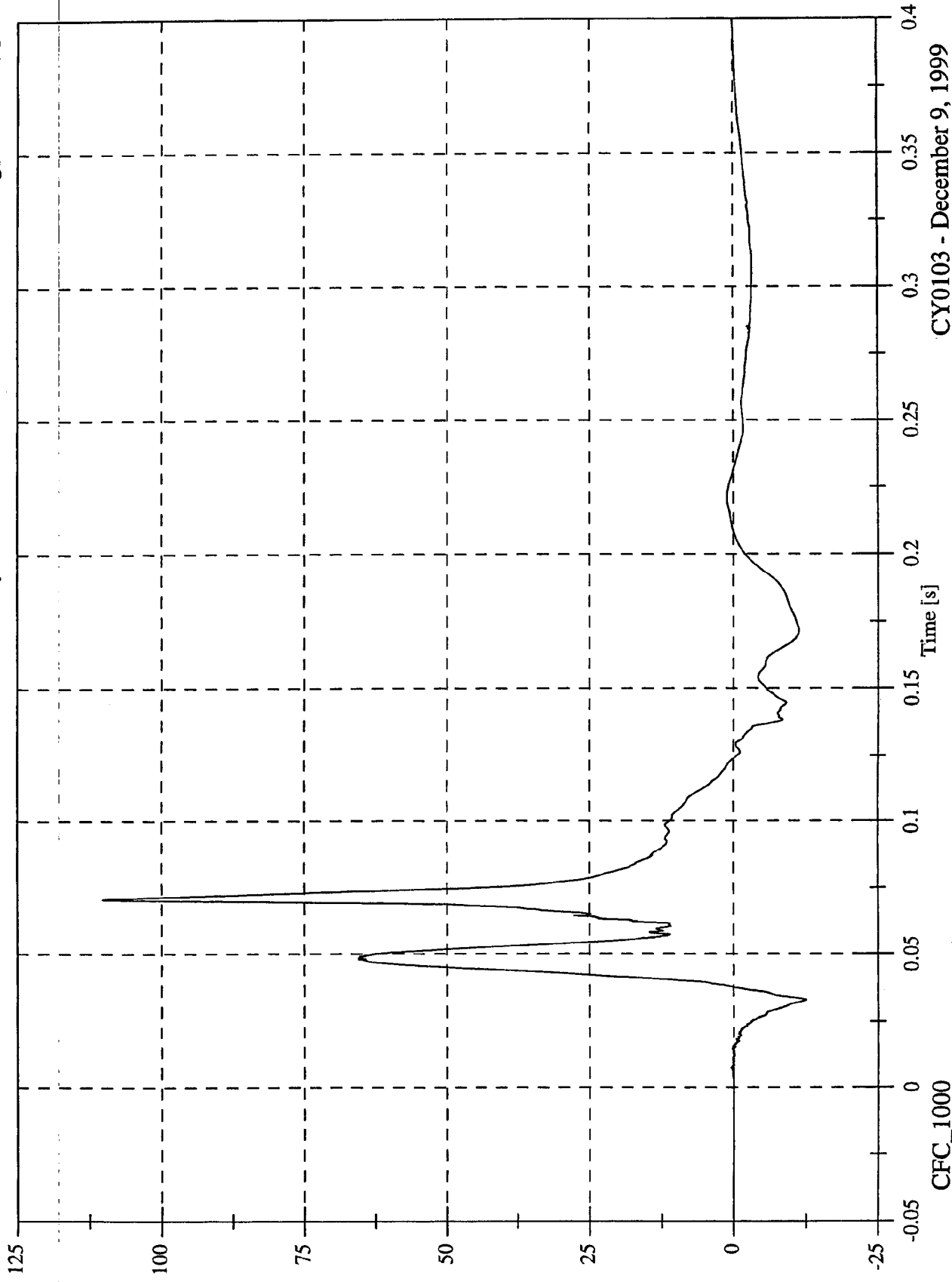
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 110.2 [g] at 0.071 [s]

Min: -12.6 [g] at 0.033 [s]

P1 Head y



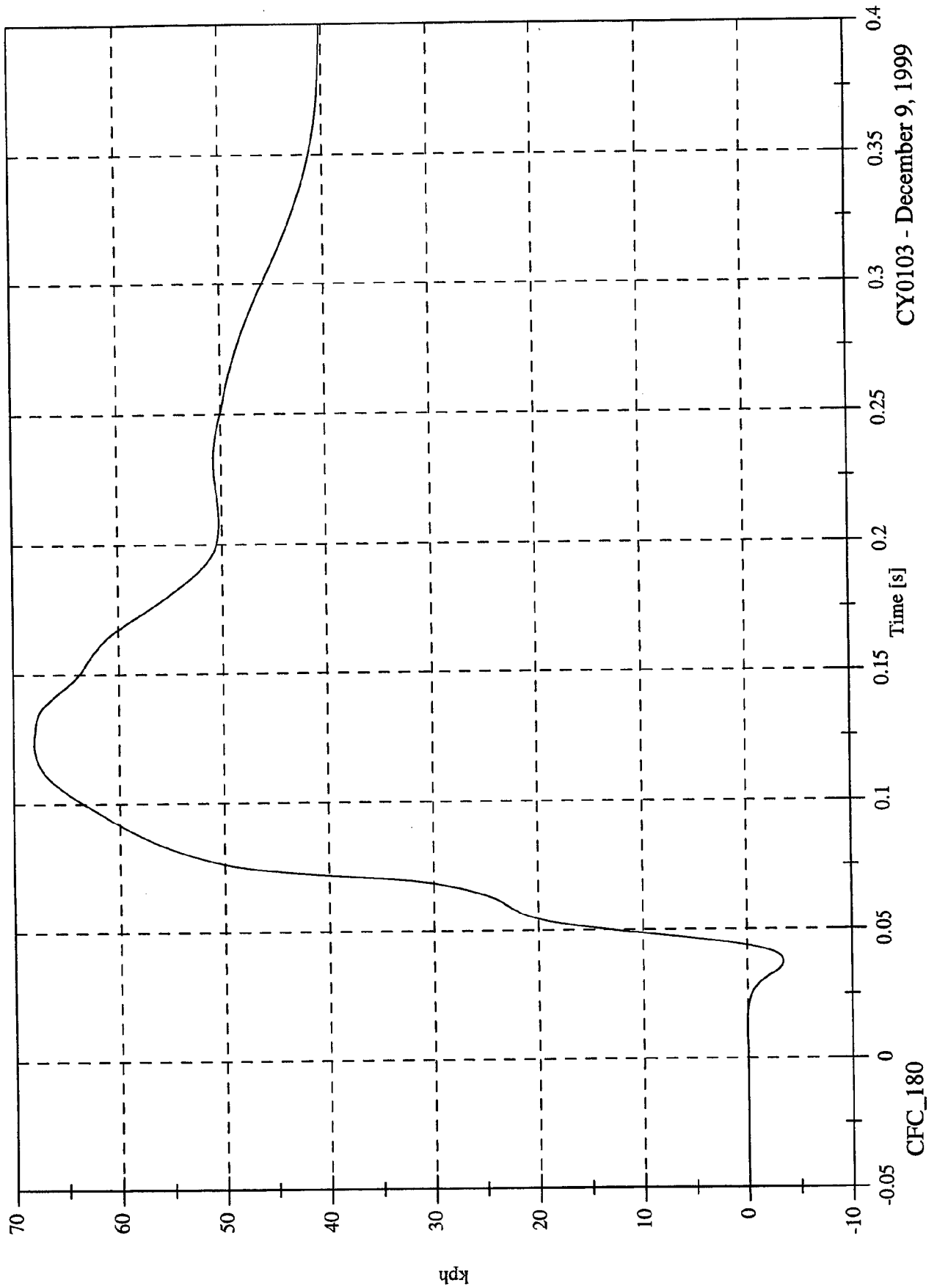
CFC_1000

CY0103 - December 9, 1999

Max: 68.1 [kph] at 0.124 [s]
Min: -3.4 [kph] at 0.037 [s]

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Head y Velocity



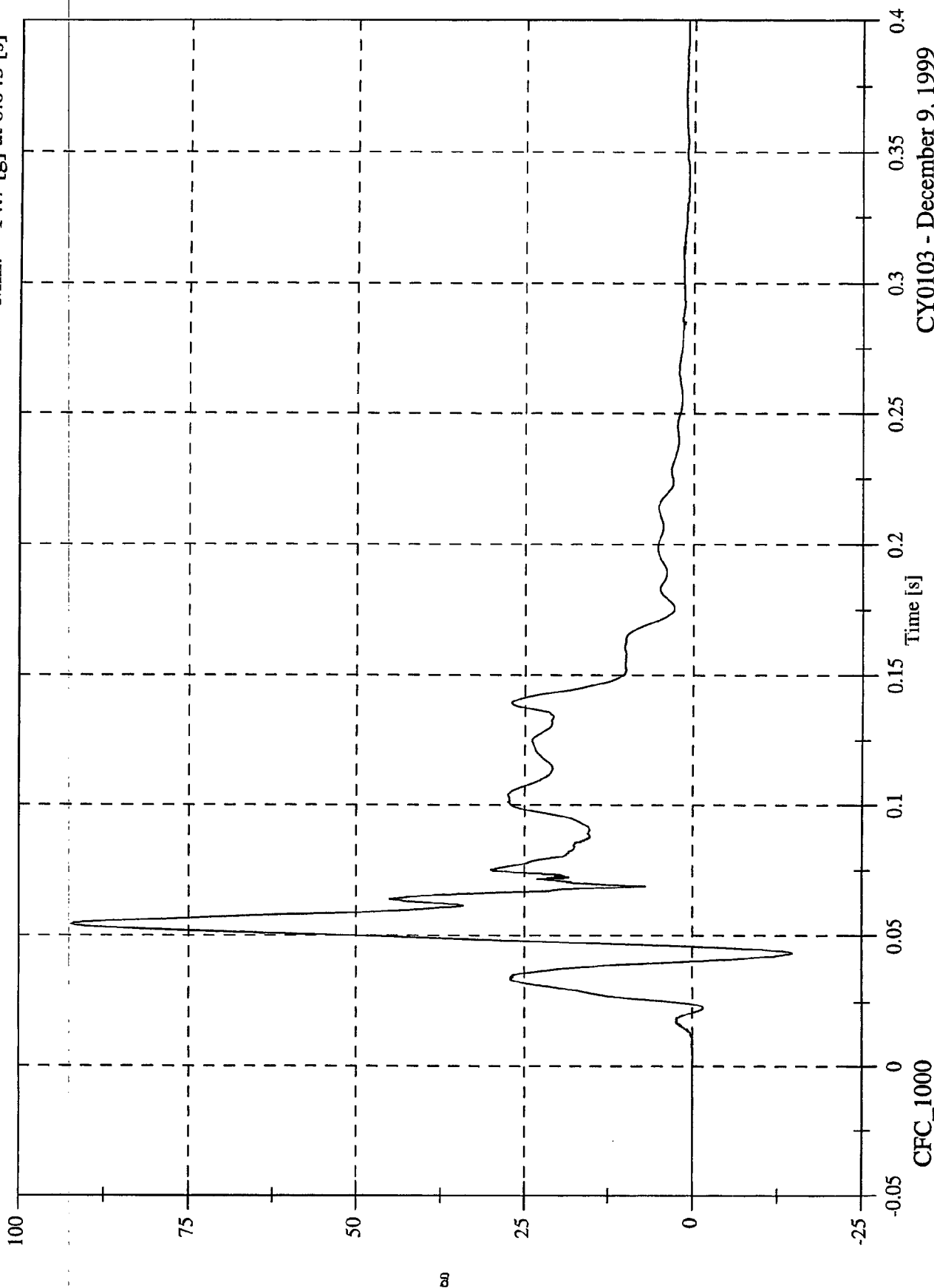
CY0103 - December 9, 1999

CFC_180

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 92.4 [g] at 0.054 [s]
Min: -14.7 [g] at 0.043 [s]

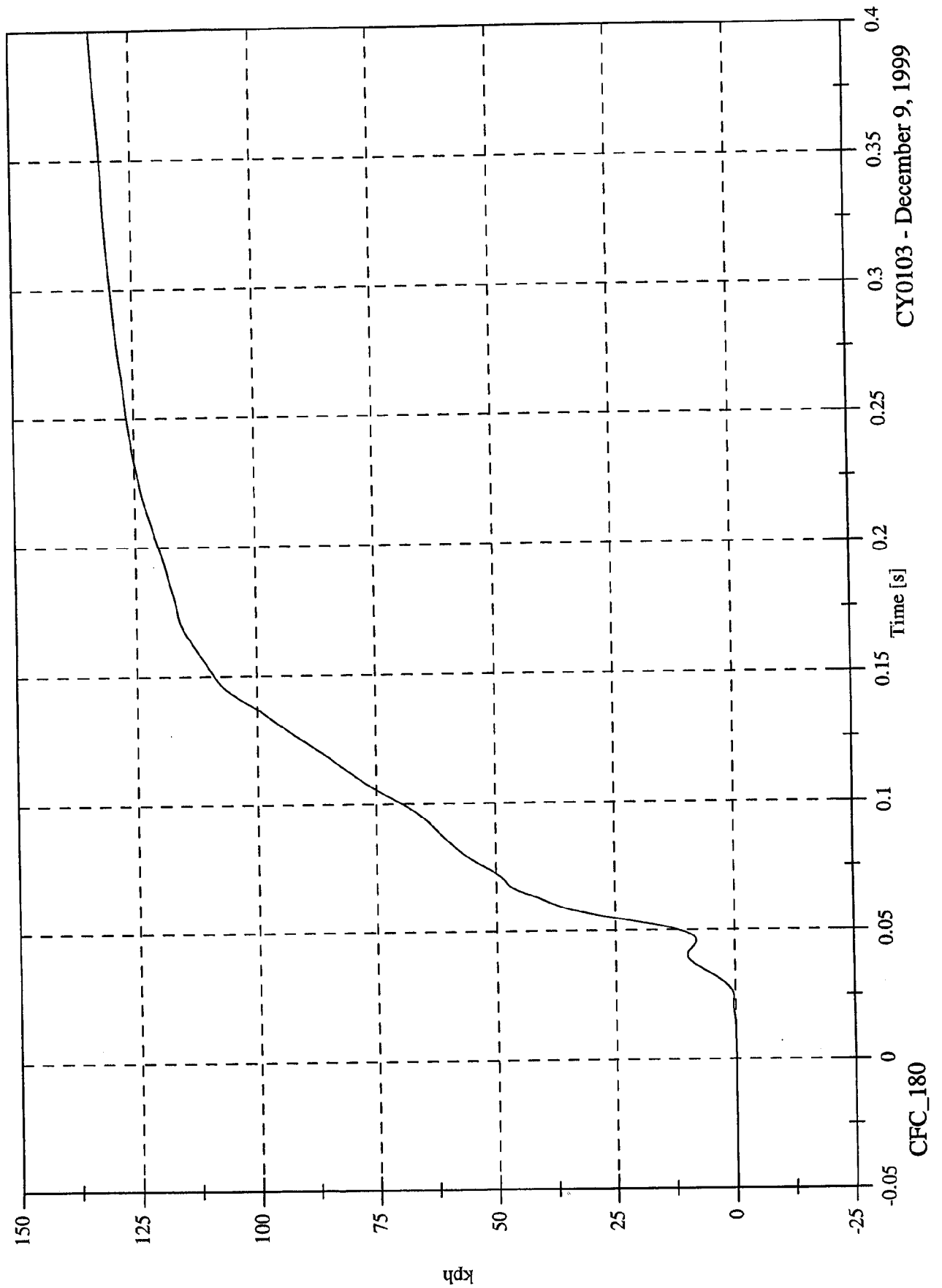
P1 Head z



CFC_1000

CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am
P1 Head z Velocity
Max: 133.2 [kph] at 0.400 [s]
Min: -0.0 [kph] at 0.004 [s]



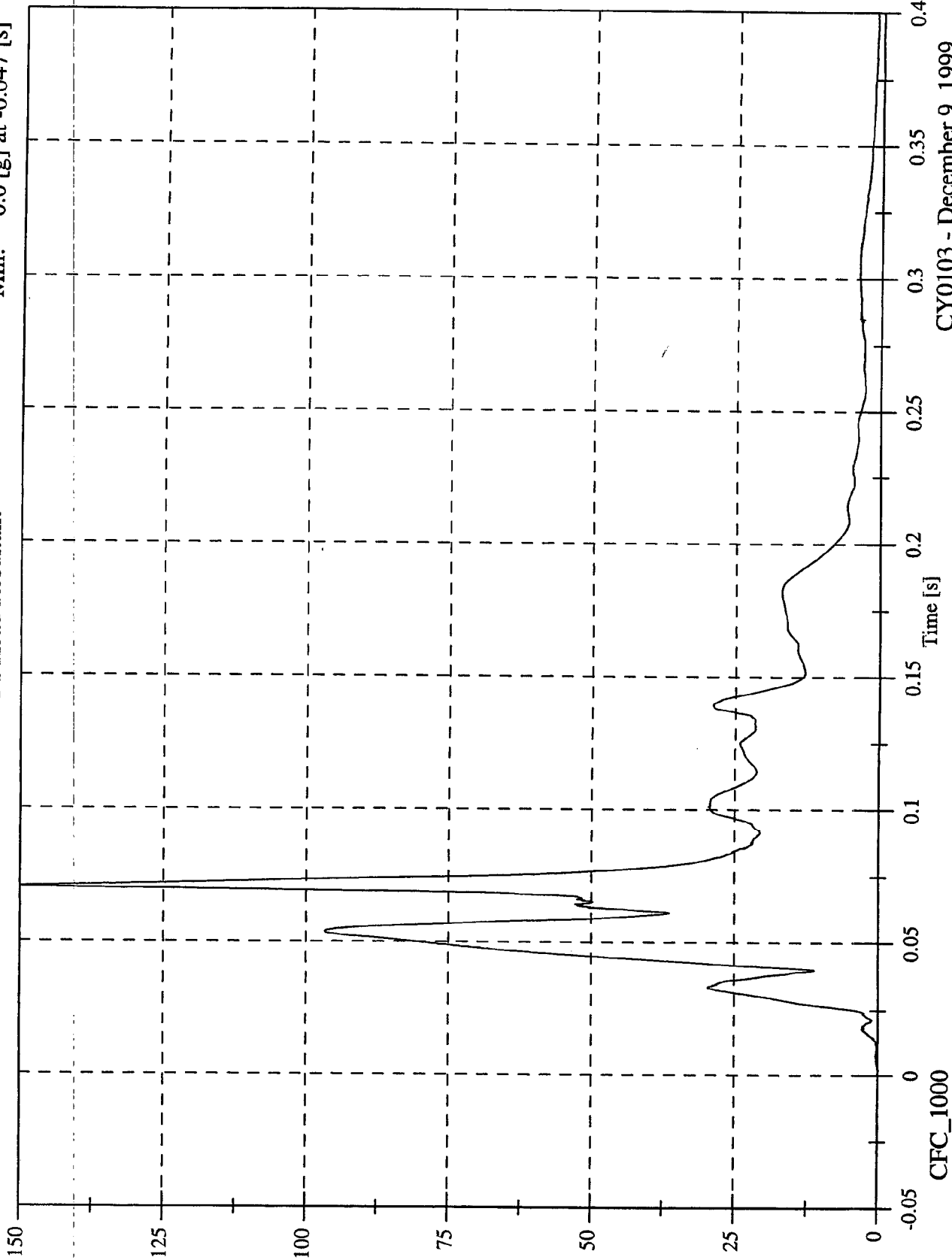
CY0103 - December 9, 1999

CFC_180

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Head Resultant

Max: 150.0 [g] at 0.071 [s]
Min: 0.0 [g] at -0.047 [s]

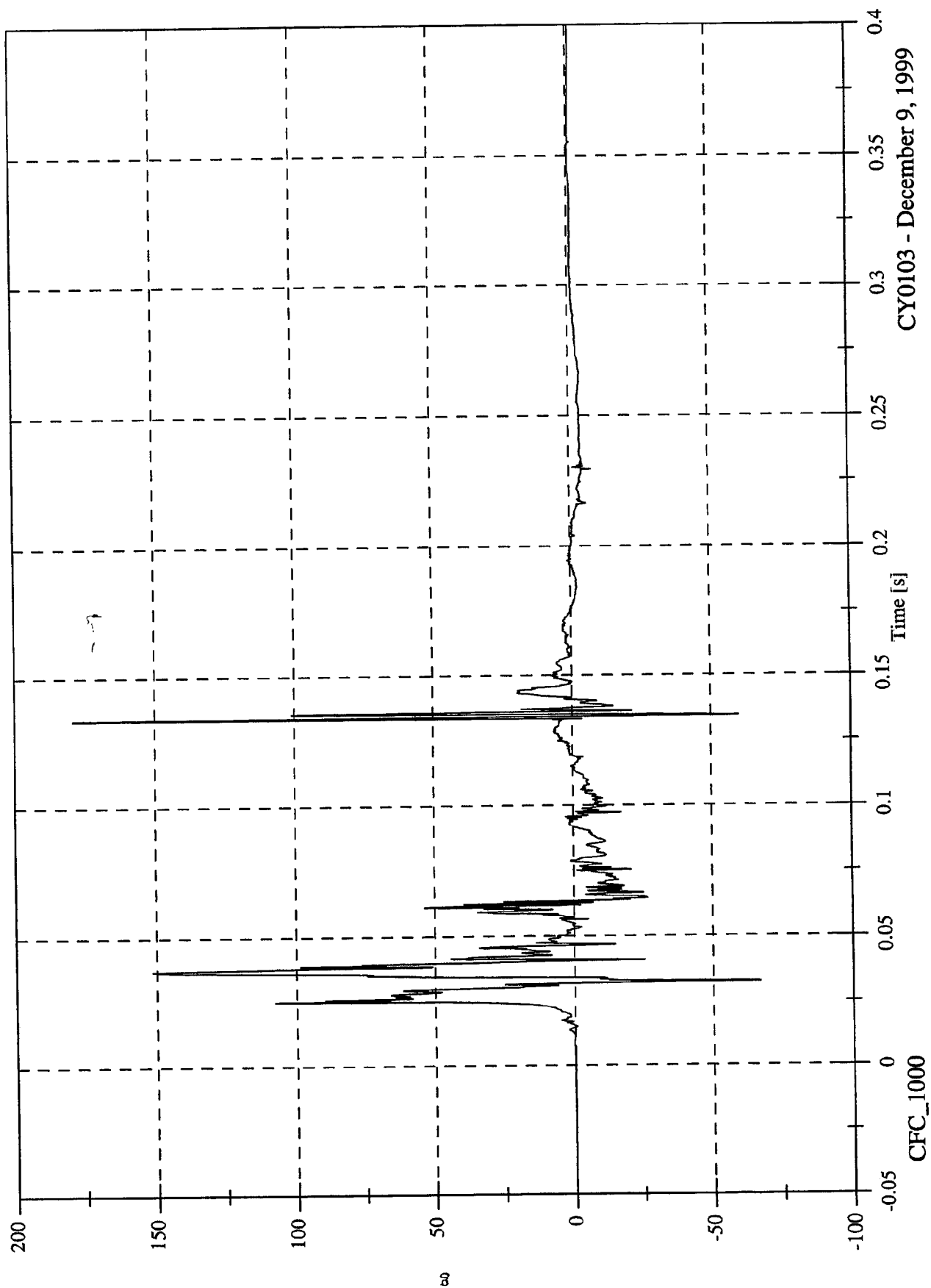


CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Upper Rib y

Max: 179.1 [g] at 0.134 [s]
Min: -66.8 [g] at 0.033 [s]

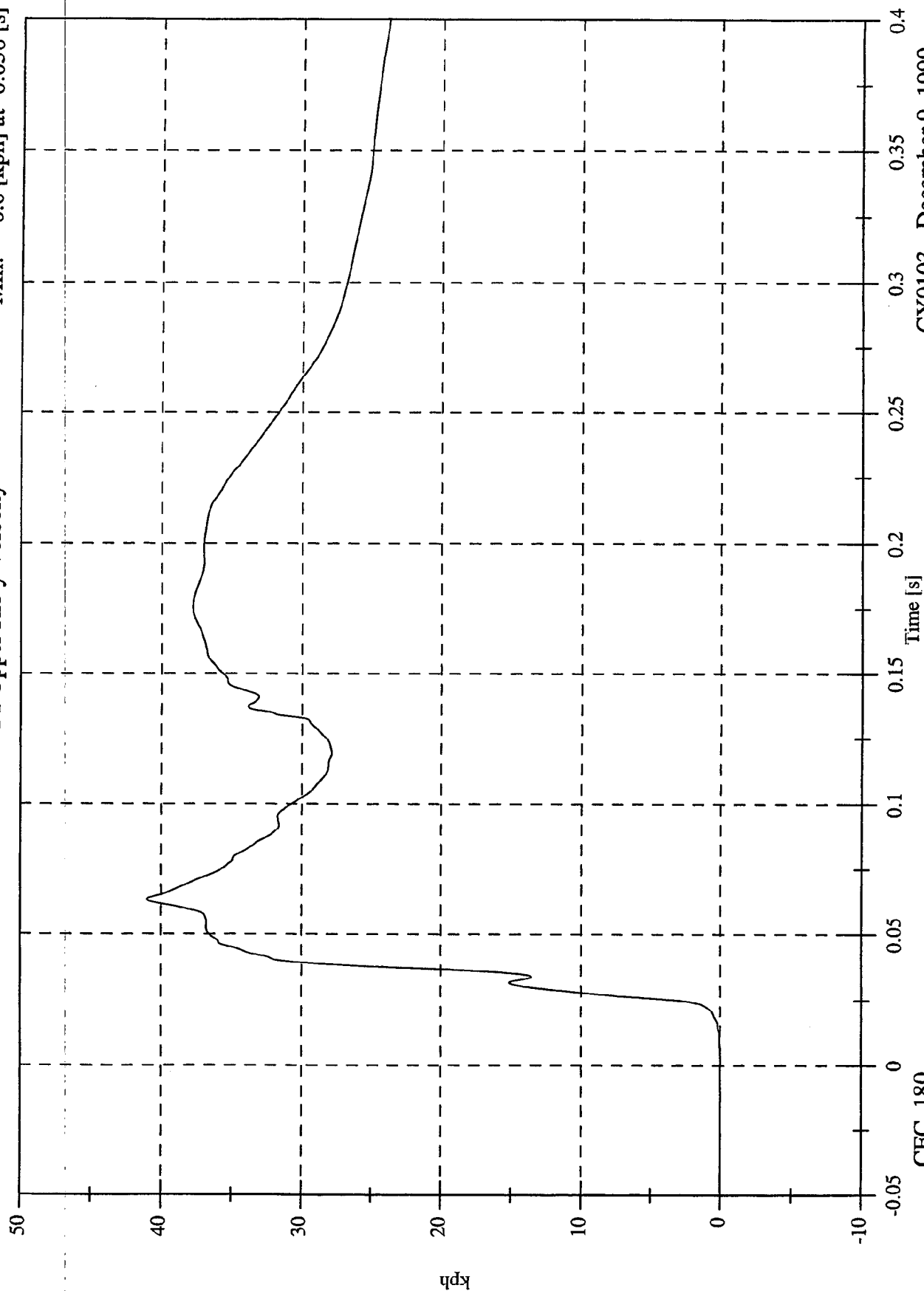


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FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Upper Rib y Velocity

Max: 41.0 [kph] at 0.063 [s]
Min: -0.0 [kph] at -0.050 [s]

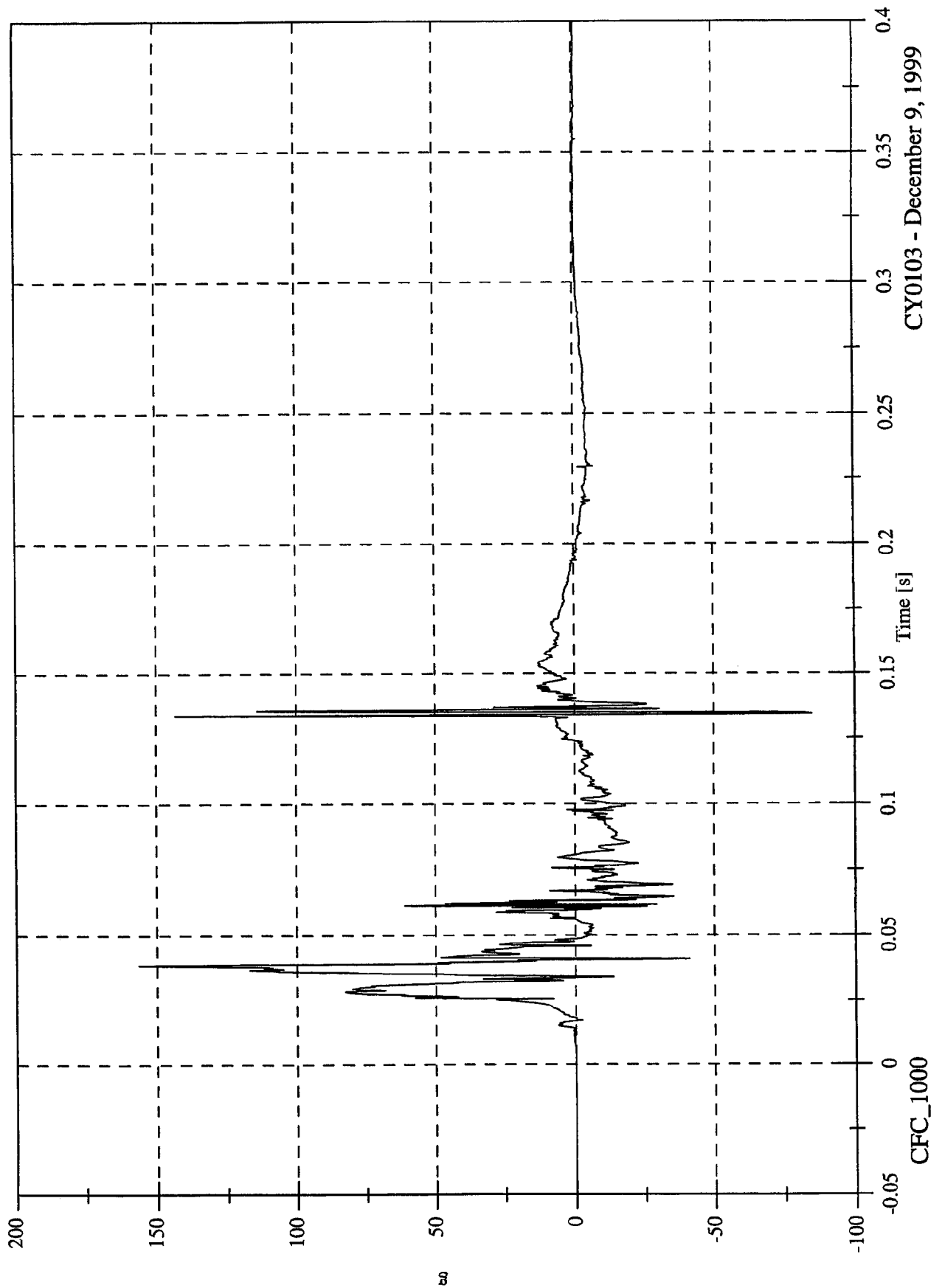


CFC_180

CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am
P1 Lower Rib y

Max: 156.5 [g] at 0.039 [s]
Min: -84.9 [g] at 0.134 [s]

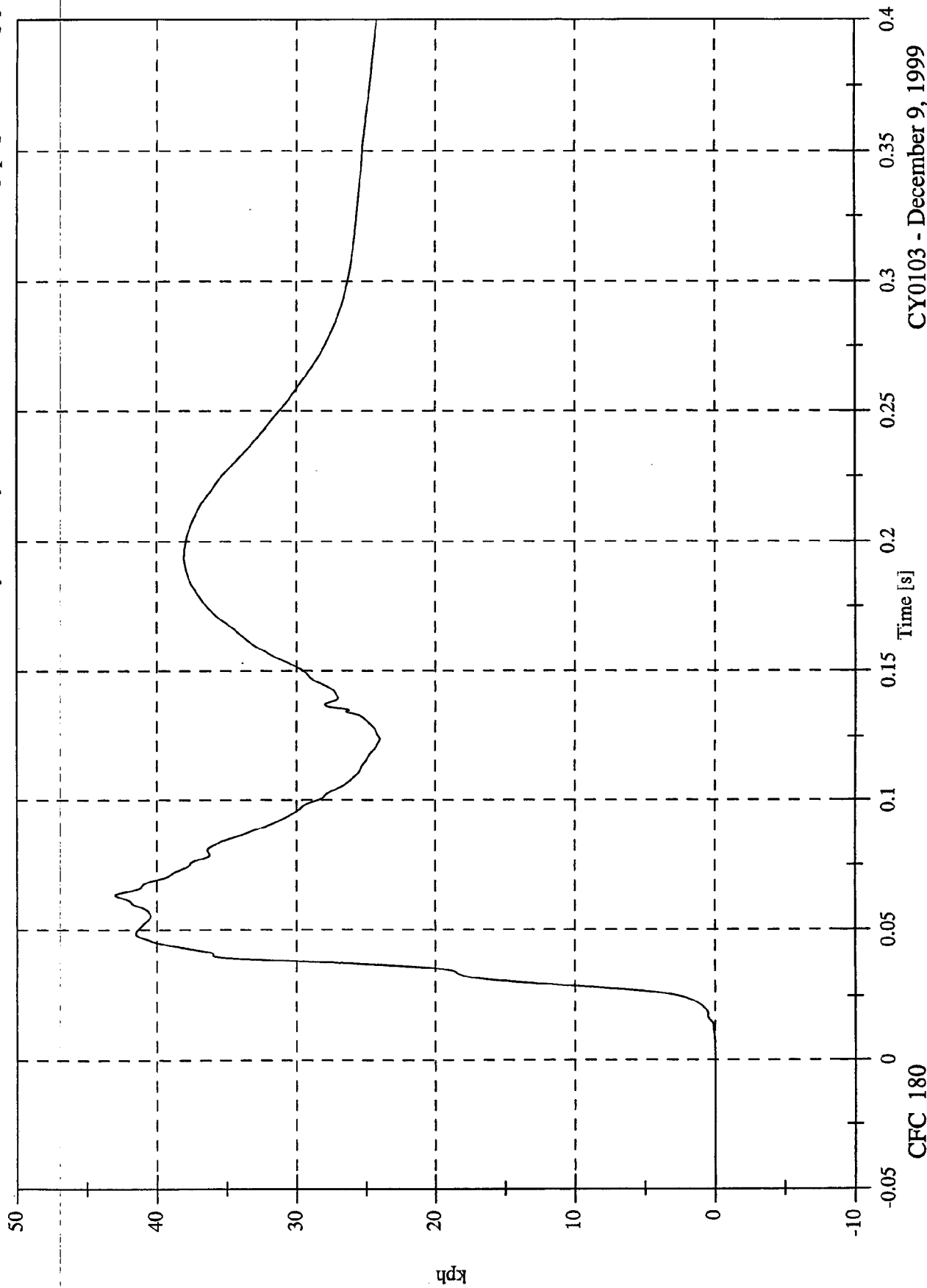


CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Lower Rib y Velocity

Max: 43.0 [kph] at 0.064 [s]
Min: -0.0 [kph] at -0.044 [s]

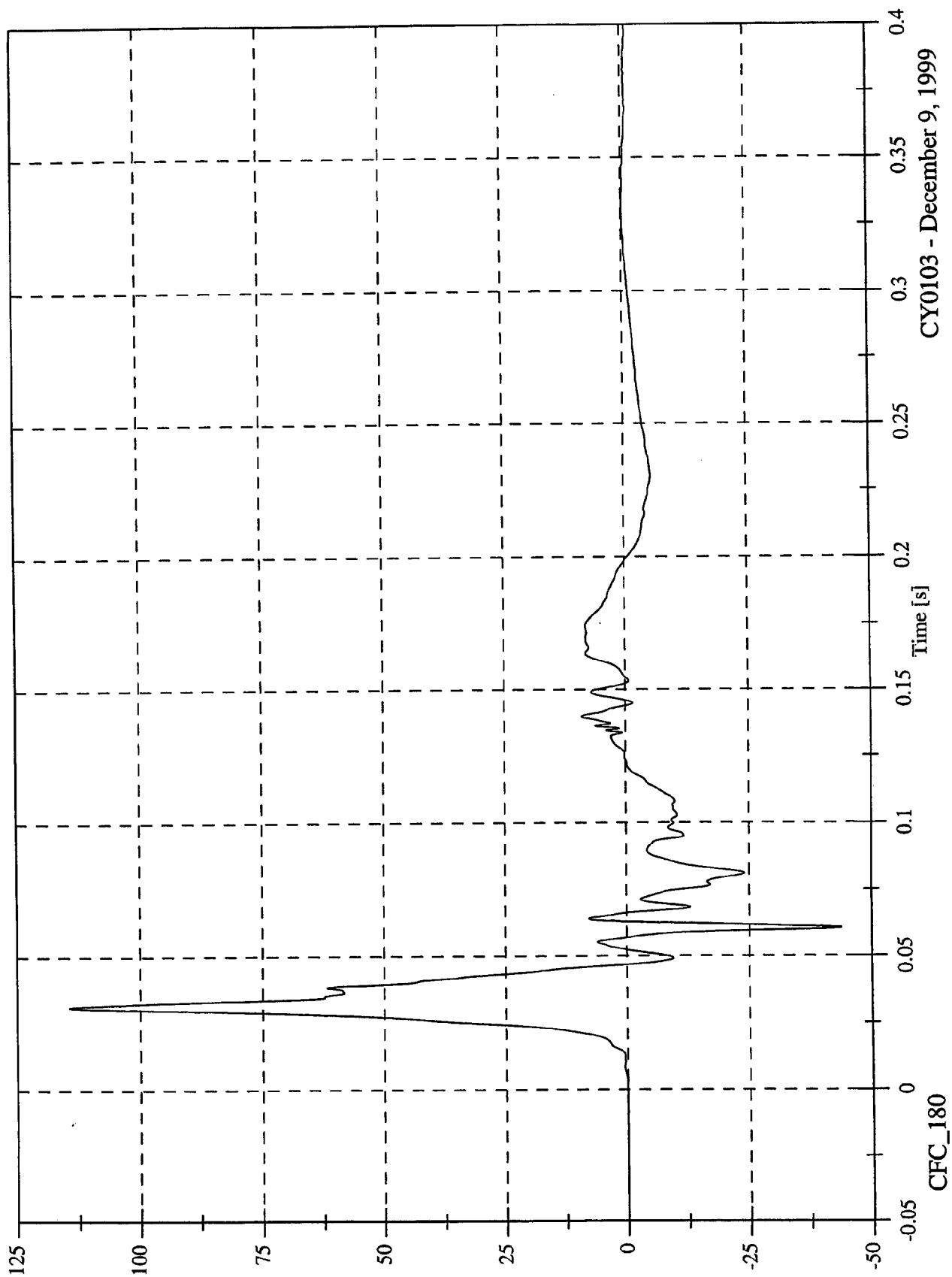


CFC_180

CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am
P1 Lower Spine y

Max: 114.4 [g] at 0.031 [s]
Min: -43.8 [g] at 0.061 [s]



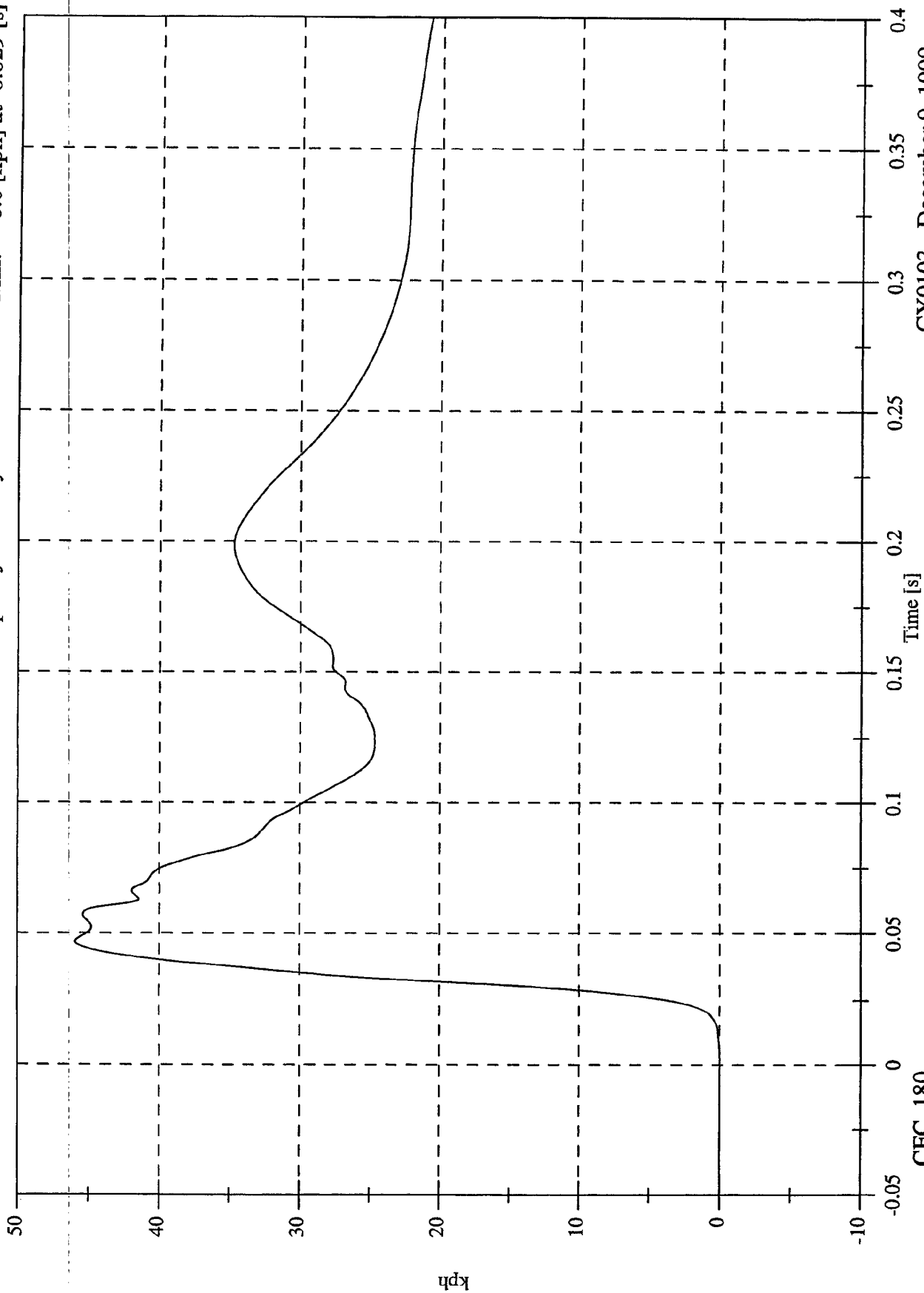
CY0103 - December 9, 1999

CFC_180

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Lower Spine y Velocity

Max: 46.0 [kph] at 0.047 [s]
Min: -0.0 [kph] at -0.029 [s]



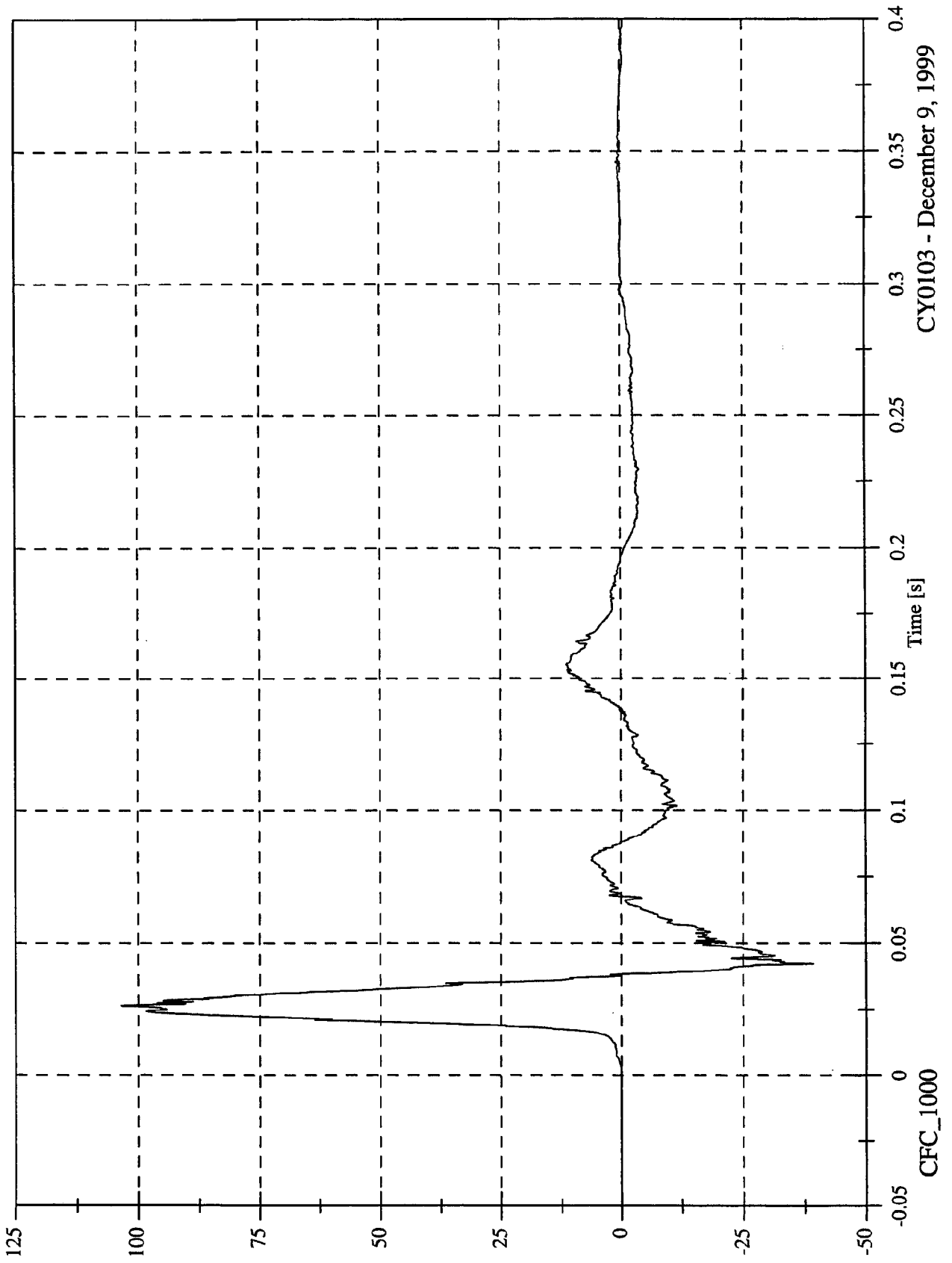
CFC_180

CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Pelvic y

Max: 103.5 [g] at 0.026 [s]
Min: -39.2 [g] at 0.042 [s]



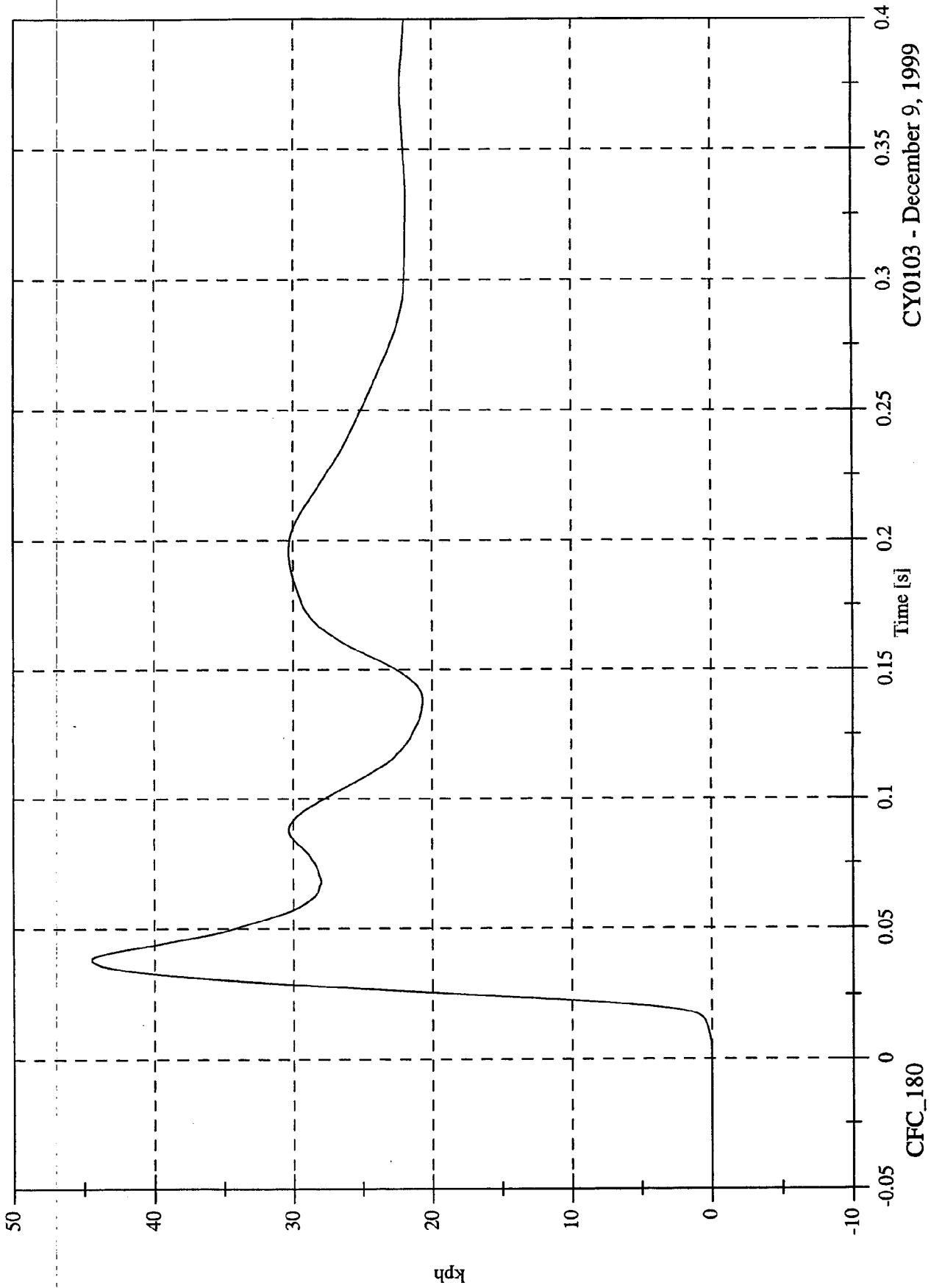
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Pelvic y Velocity

Max: 44.4 [kph] at 0.038 [s]

Min: -0.0 [kph] at -0.024 [s]



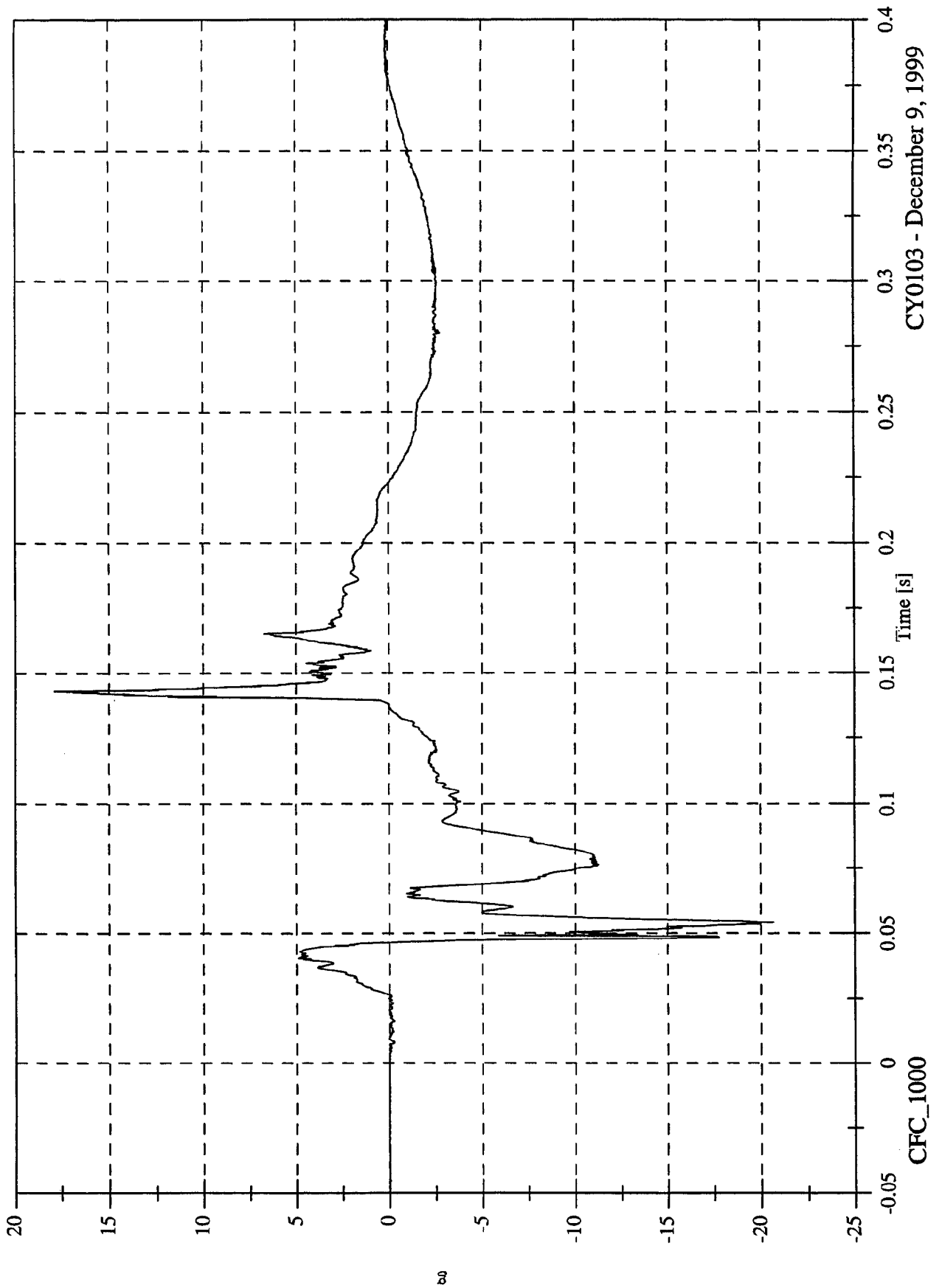
CFC_180

CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 17.9 [g] at 0.143 [s]
Min: -20.7 [g] at 0.054 [s]

P4 Head x

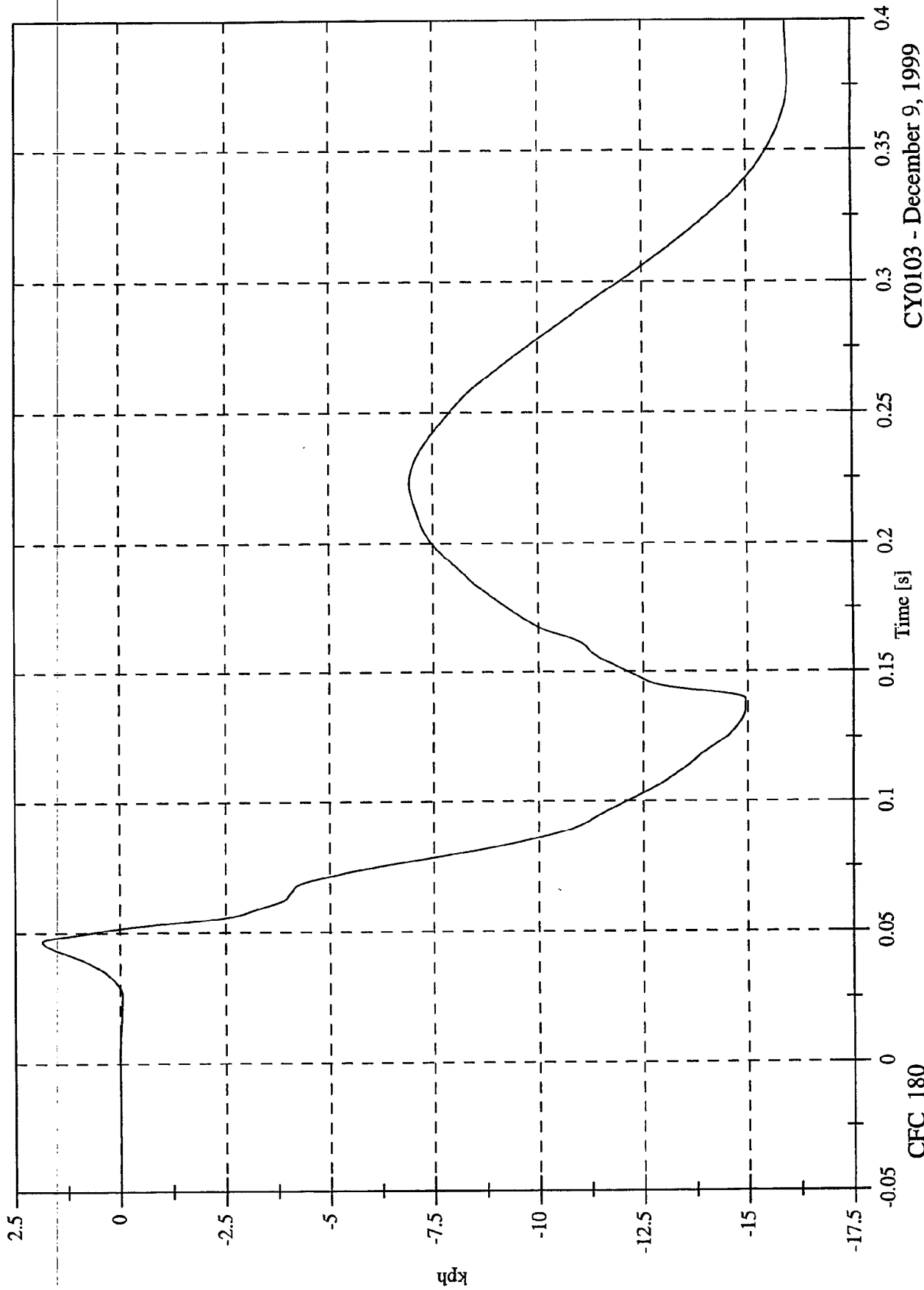


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FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P4 Head x Velocity

Max: 1.9 [kph] at 0.047 [s]
Min: -16.0 [kph] at 0.378 [s]

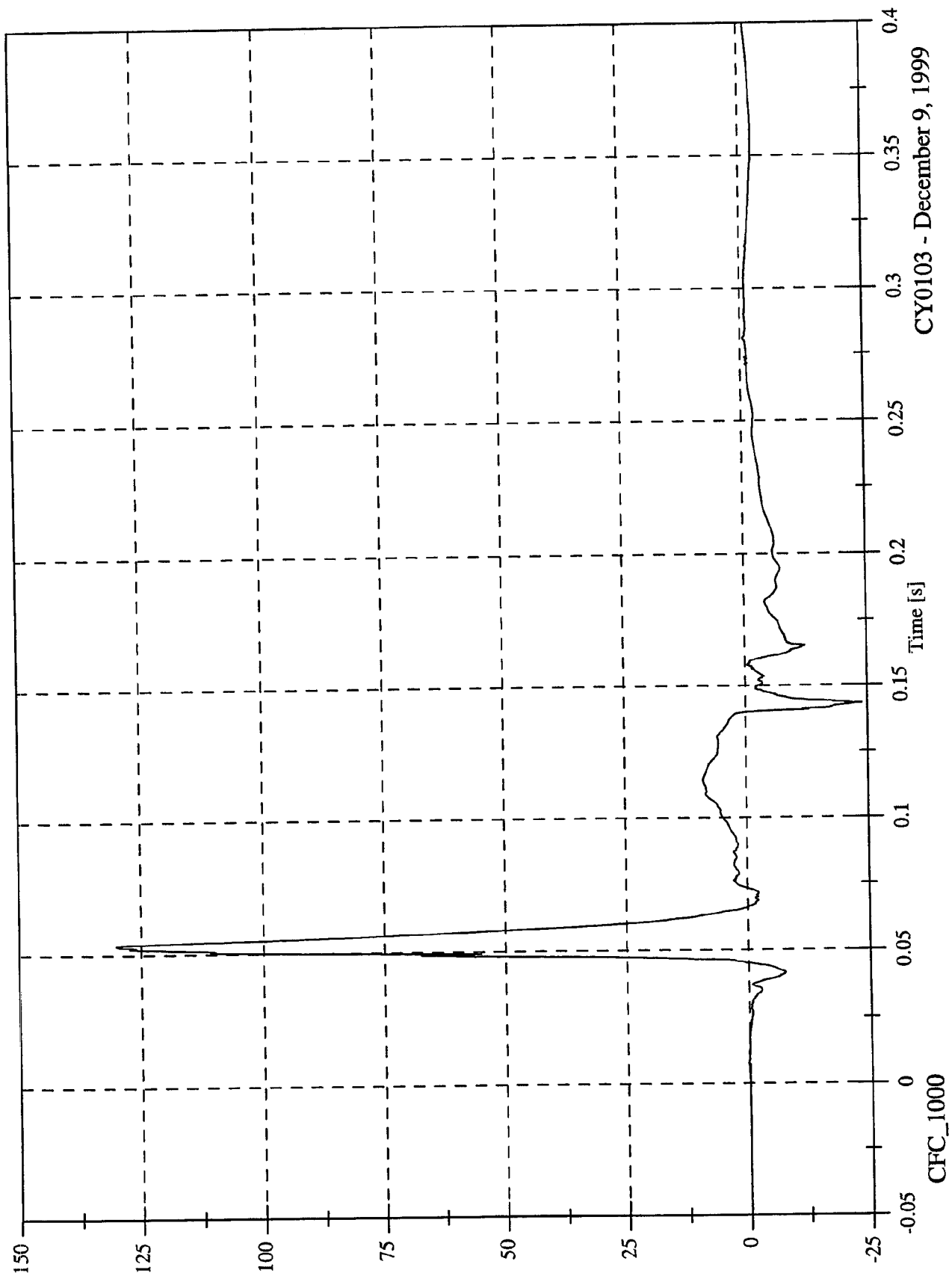


CFC_180

CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am
P4 Head y

Max: 130.2 [g] at 0.053 [s]
Min: -23.8 [g] at 0.143 [s]

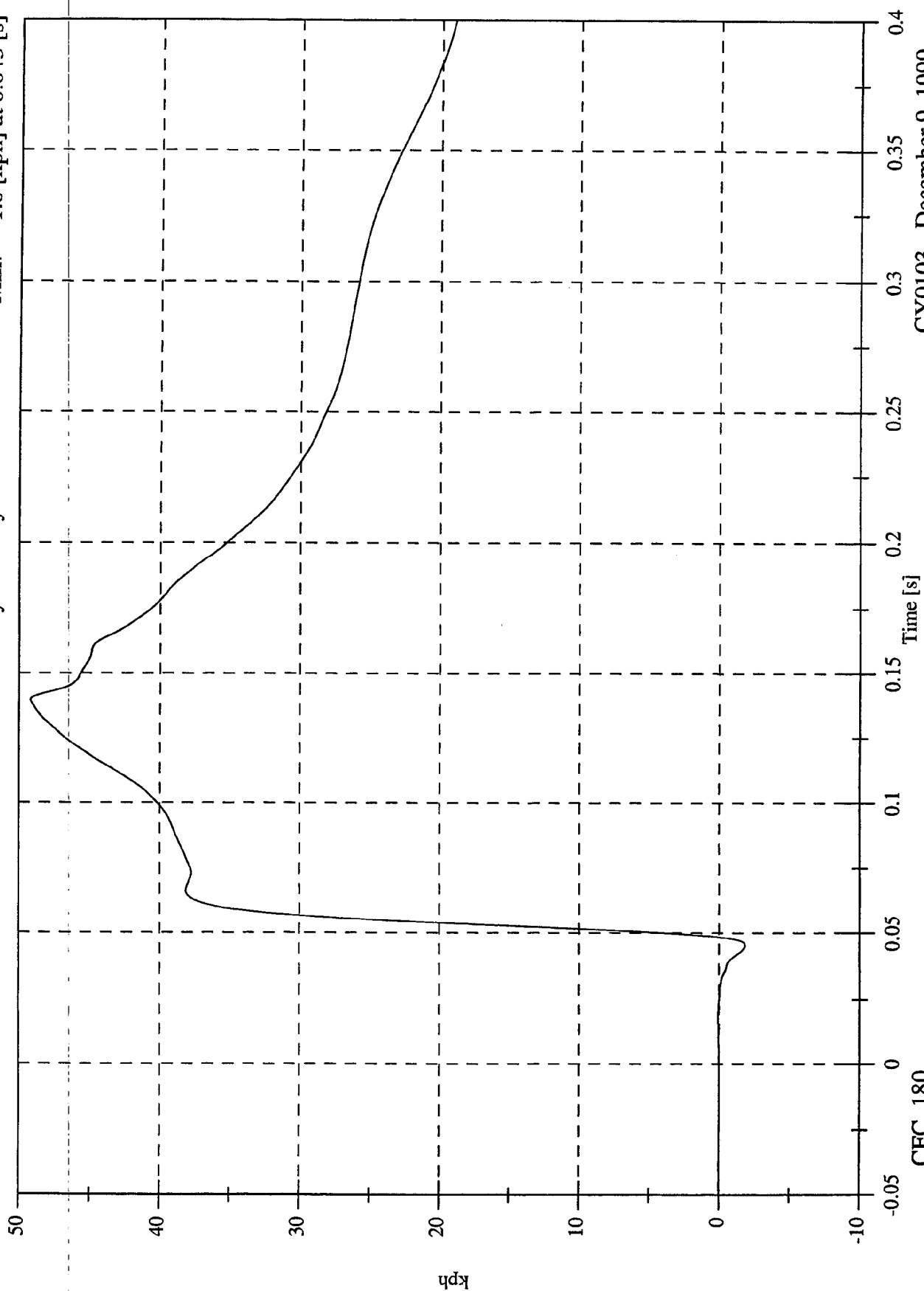


CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P4 Head y Velocity

Max: 49.2 [kph] at 0.140 [s]
Min: -1.8 [kph] at 0.045 [s]



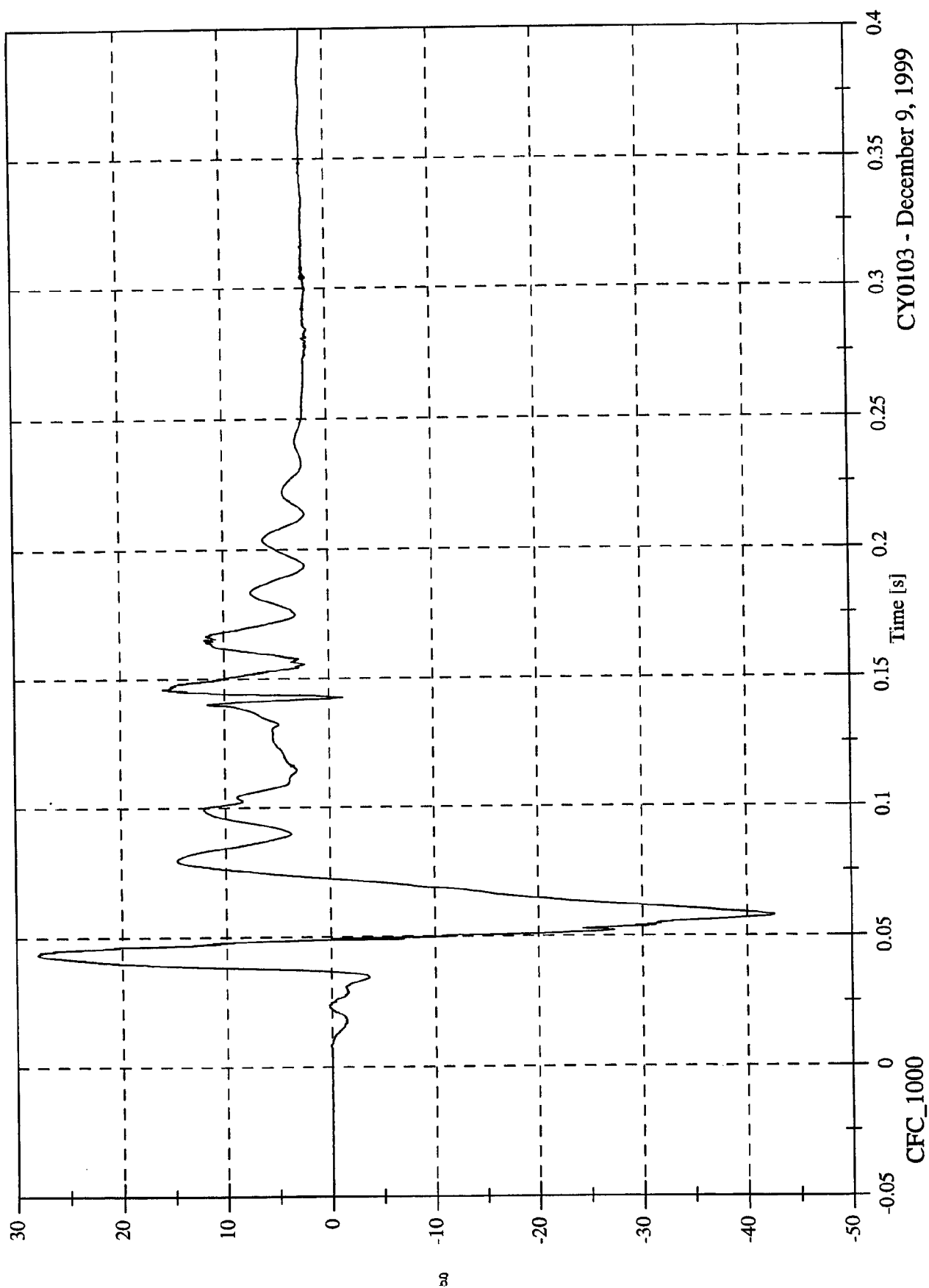
CFC_180

CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 28.0 [g] at 0.044 [s]
Min: -42.6 [g] at 0.058 [s]

P4 Head z

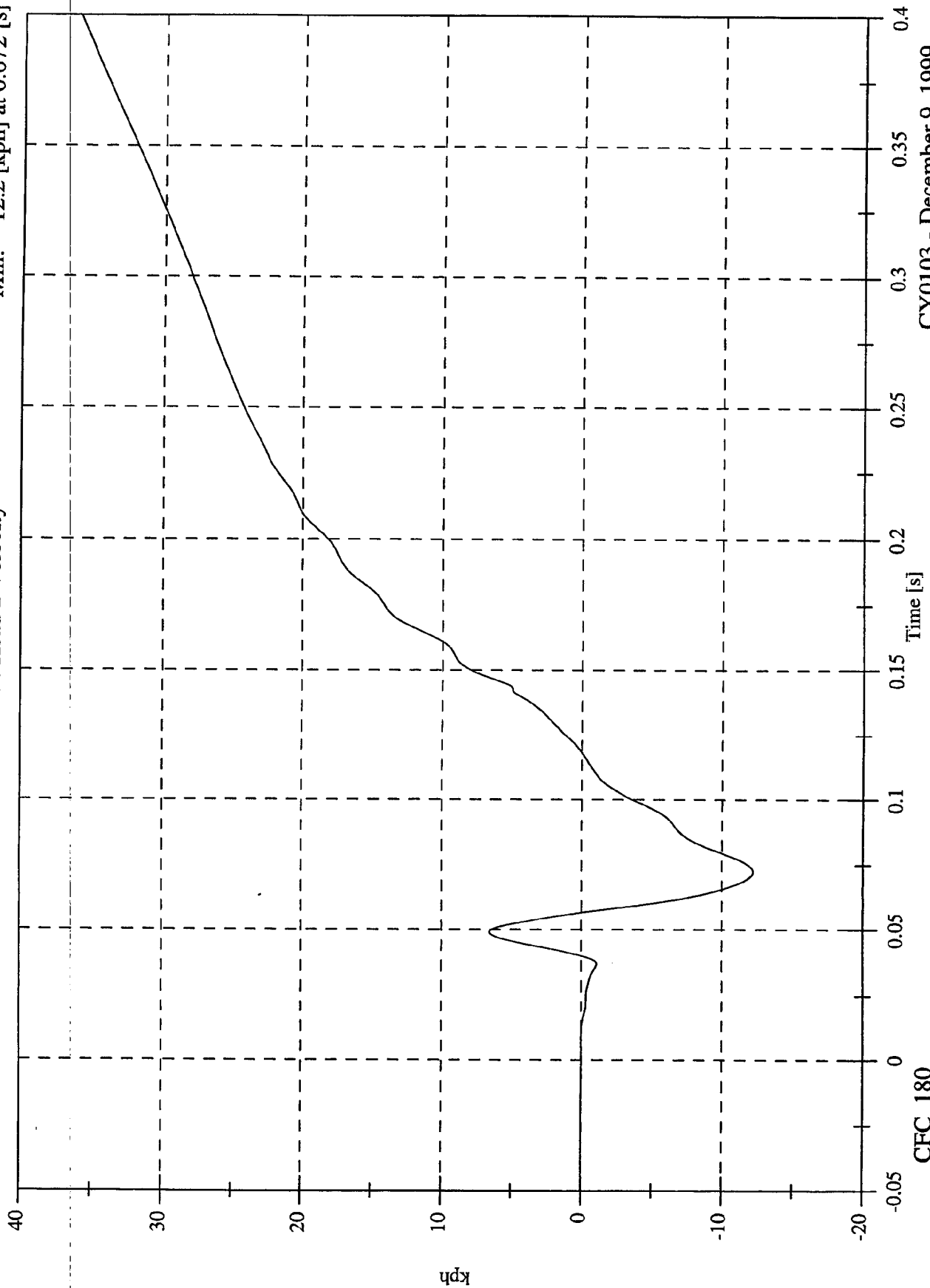


CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P4 Head z Velocity

Max: 36.1 [kph] at 0.400 [s]
Min: -12.2 [kph] at 0.072 [s]

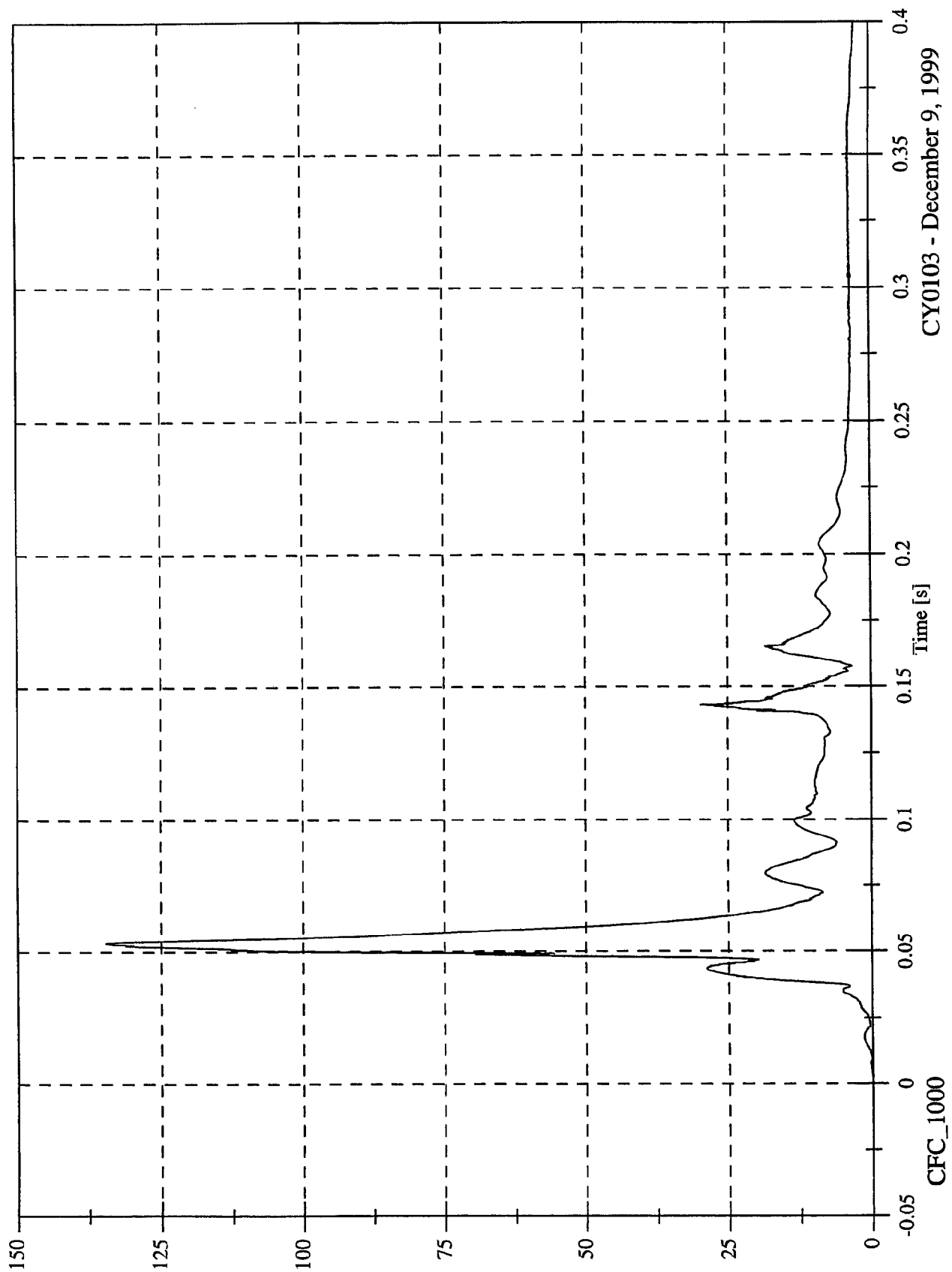


CFC_180

CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am
P4 Head Resultant

Max: 134.6 [g] at 0.053 [s]
Min: 0.0 [g] at -0.047 [s]

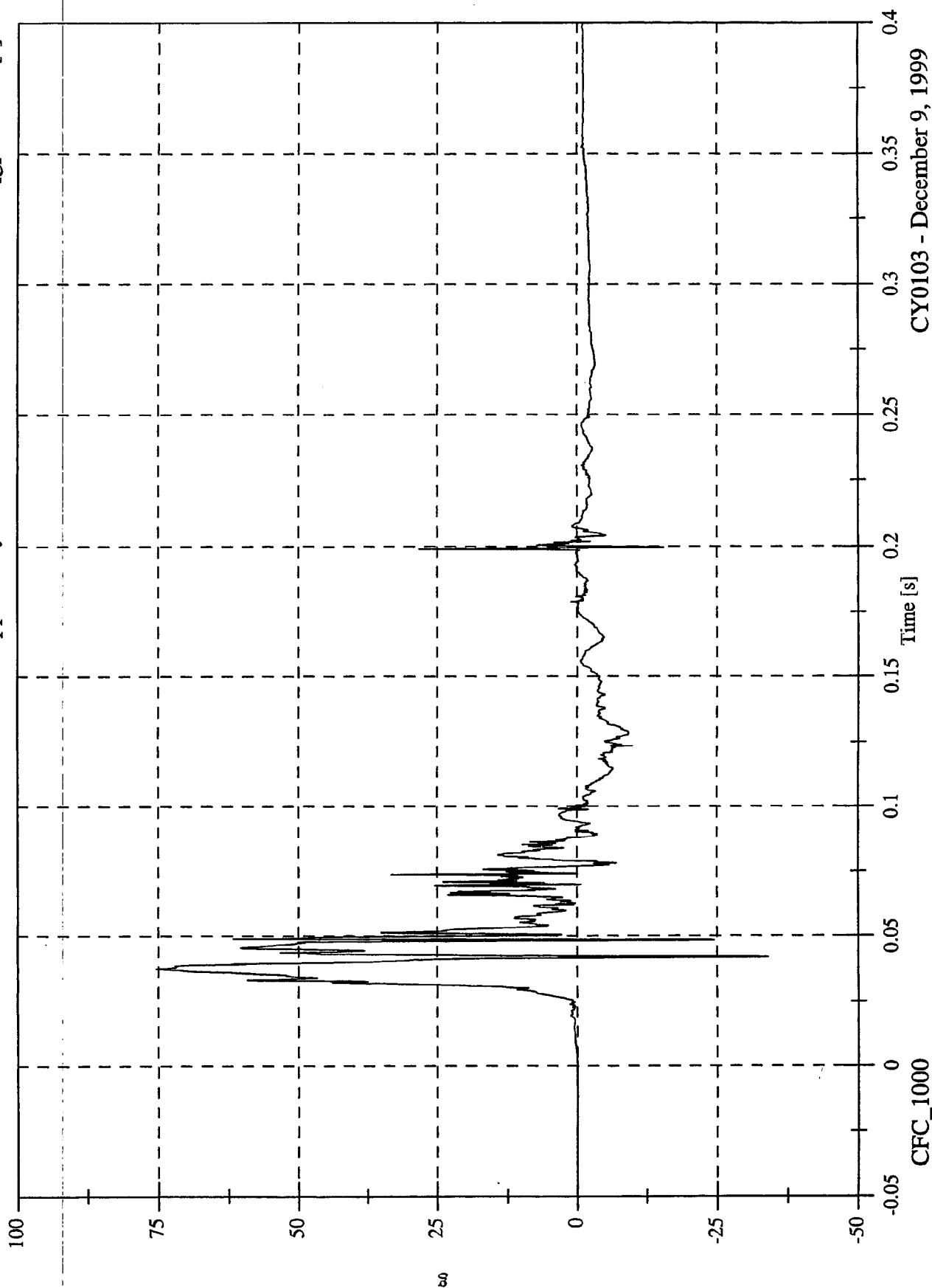


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FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P4 Upper Rib y

Max: 75.4 [g] at 0.037 [s]
Min: -34.0 [g] at 0.042 [s]



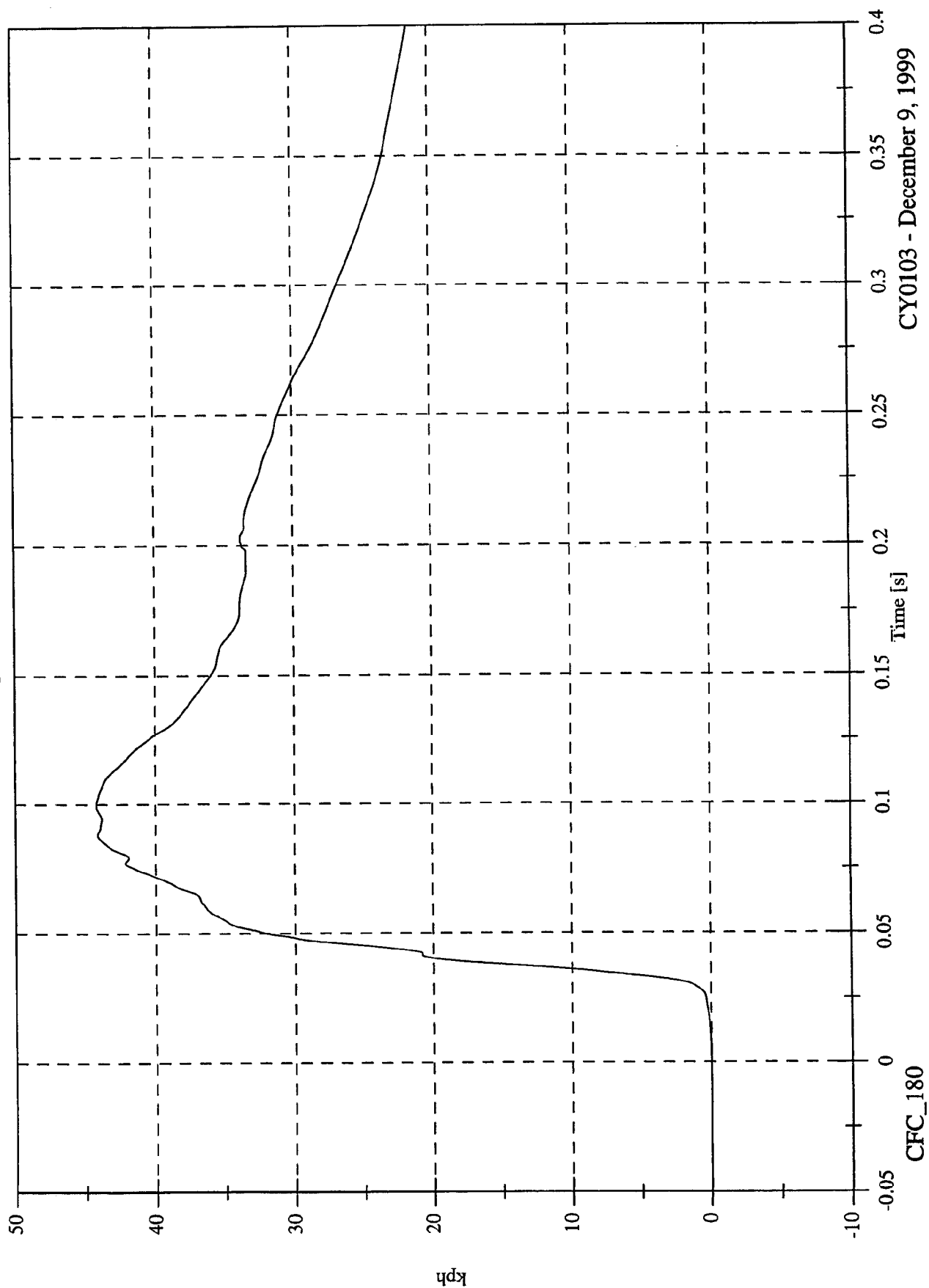
CFC_1000

CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P4 Upper Rib y Velocity

Max: 44.2 [kph] at 0.100 [s]
Min: -0.0 [kph] at -0.044 [s]



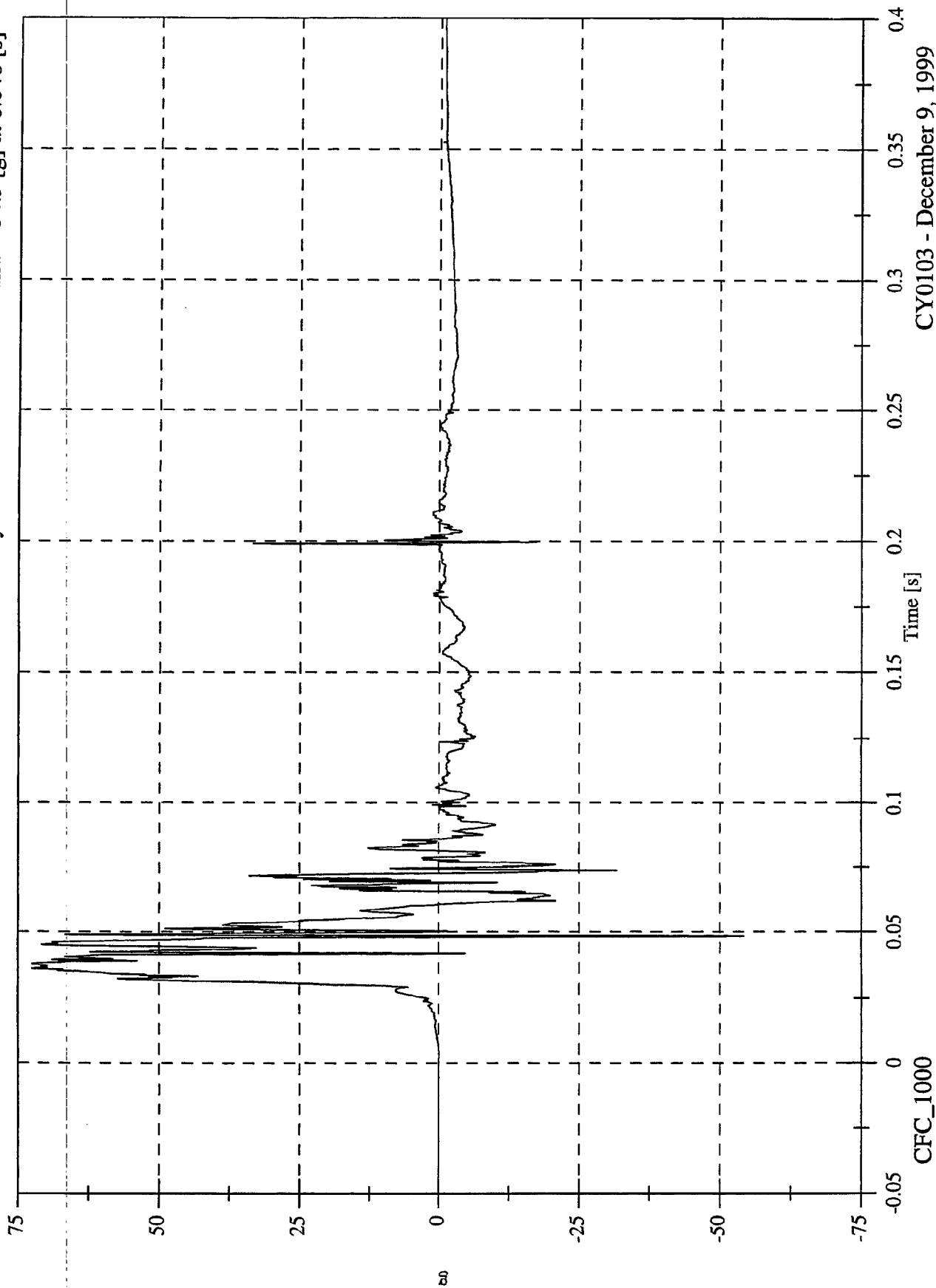
CY0103 - December 9, 1999

CFC_180

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P4 Lower Rib y

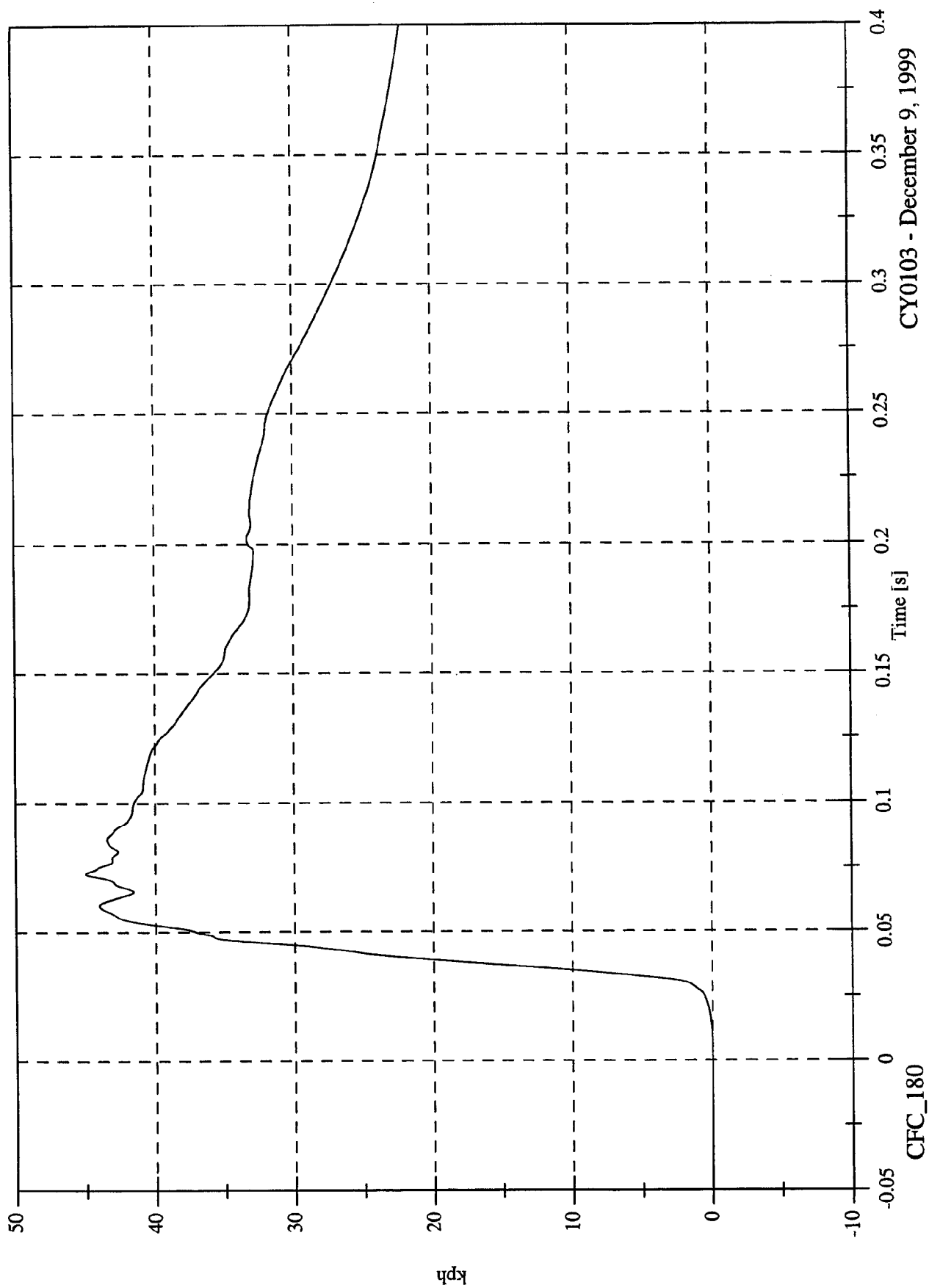
Max: 72.5 [g] at 0.036 [s]
Min: -54.3 [g] at 0.048 [s]



CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am
P4 Lower Rib y Velocity

Max: 45.0 [kph] at 0.073 [s]
Min: -0.0 [kph] at -0.040 [s]

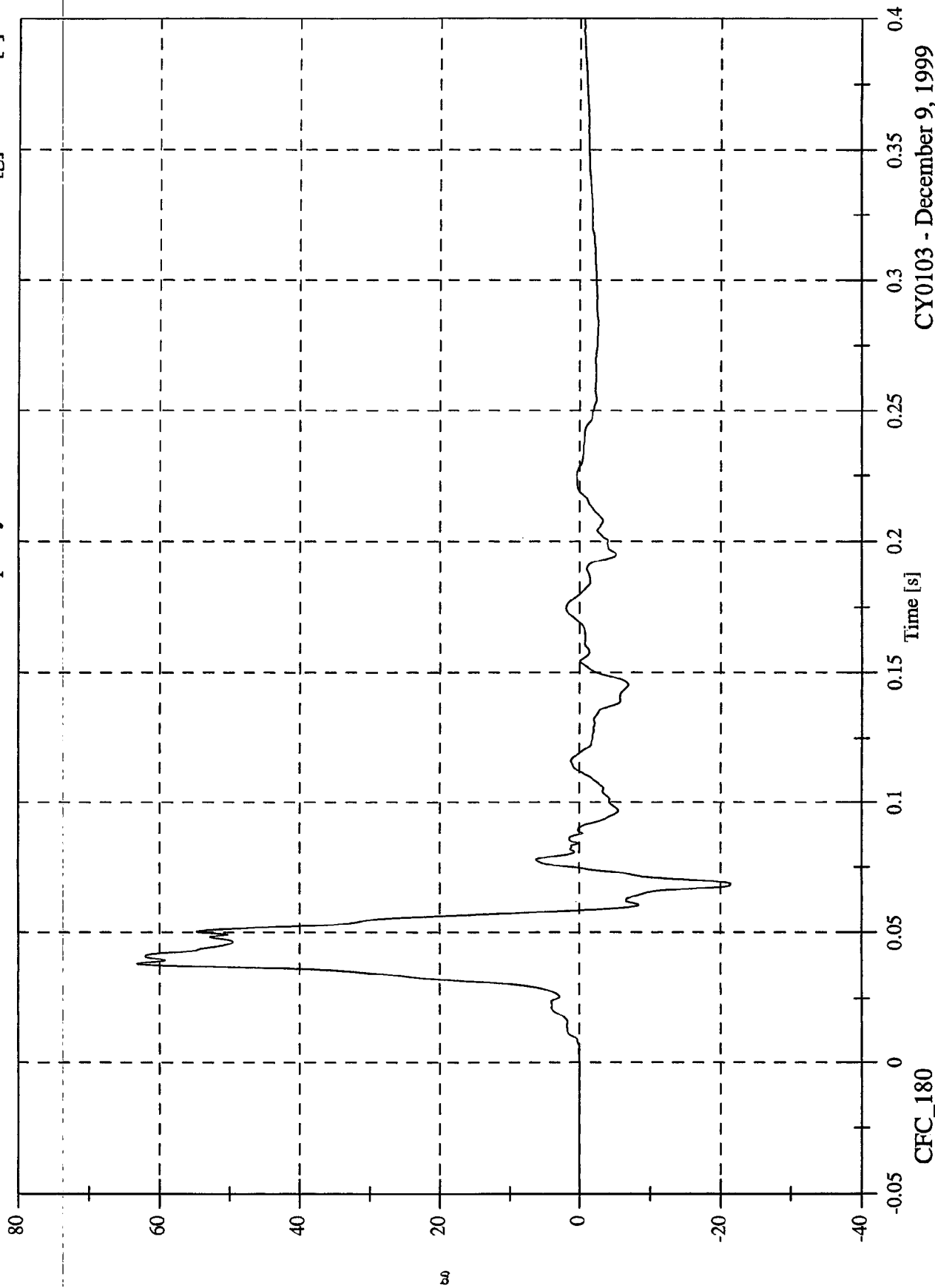


CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P4 Lower Spine y

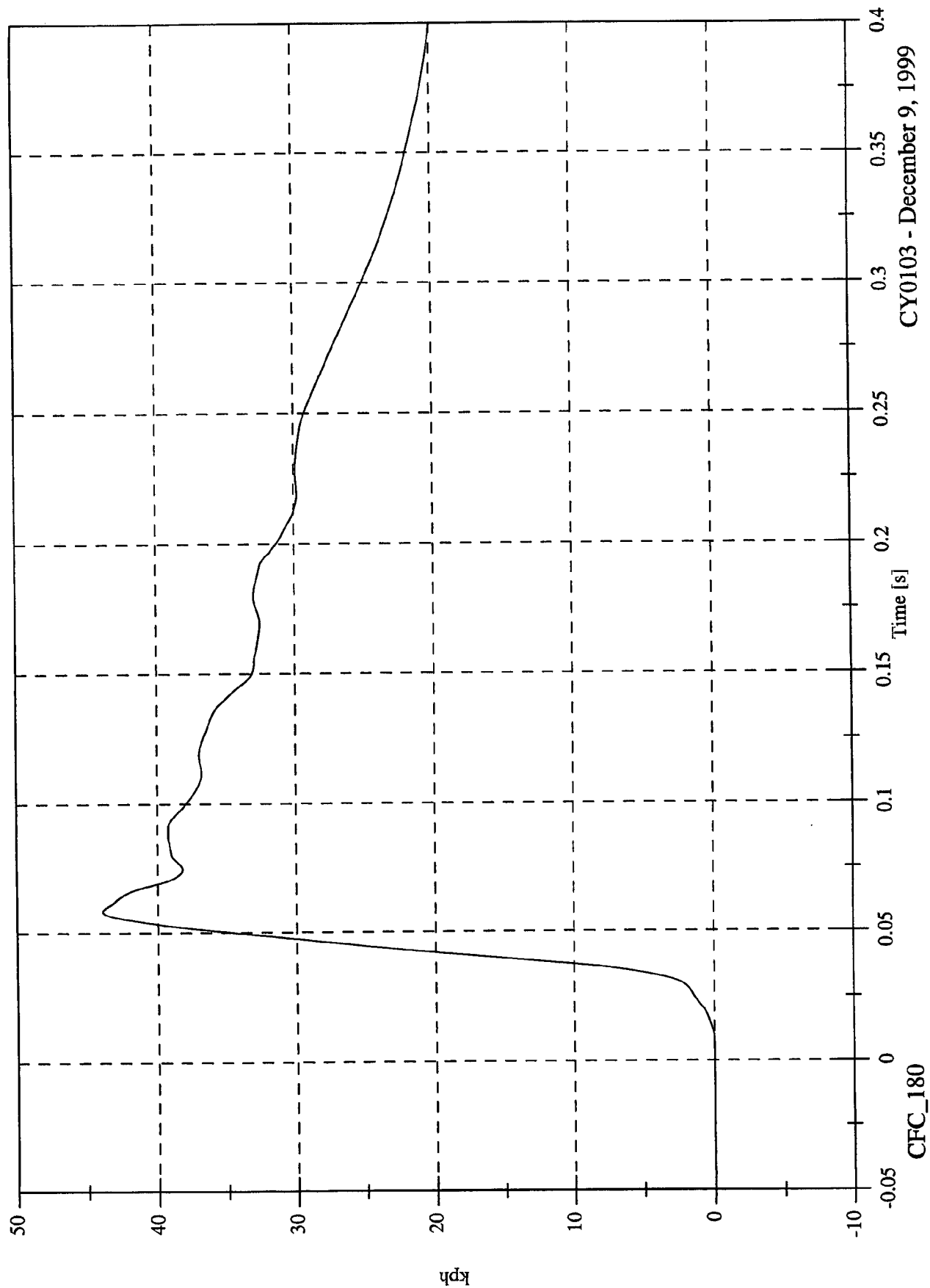
Max: 63.2 [g] at 0.038 [s]
Min: -21.4 [g] at 0.069 [s]



CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am
P4 Lower Spine y Velocity

Max: 43.9 [kph] at 0.059 [s]
Min: -0.0 [kph] at -0.046 [s]

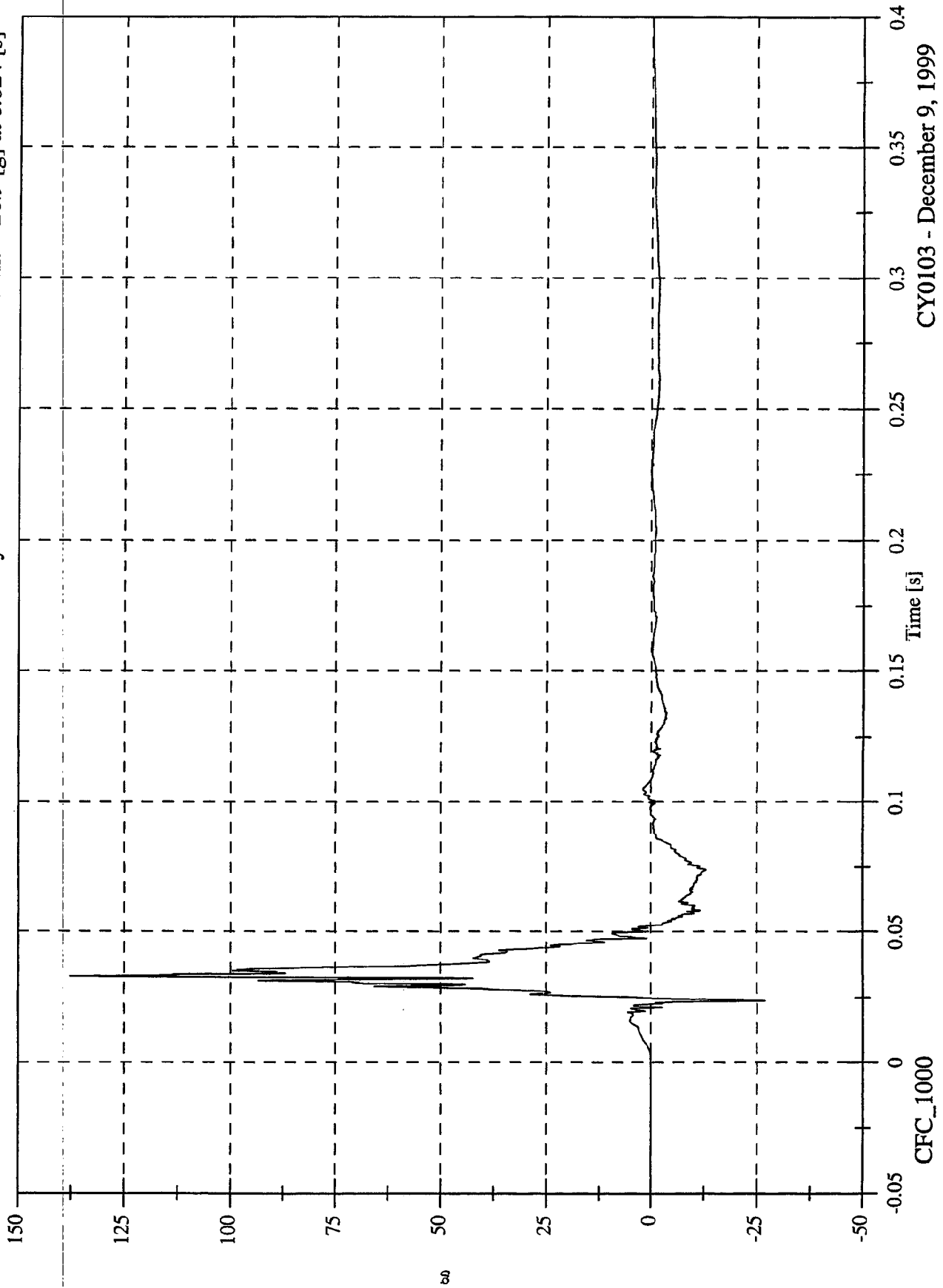


CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P4 Pelvic y

Max: 137.6 [g] at 0.033 [s]
Min: -26.9 [g] at 0.024 [s]

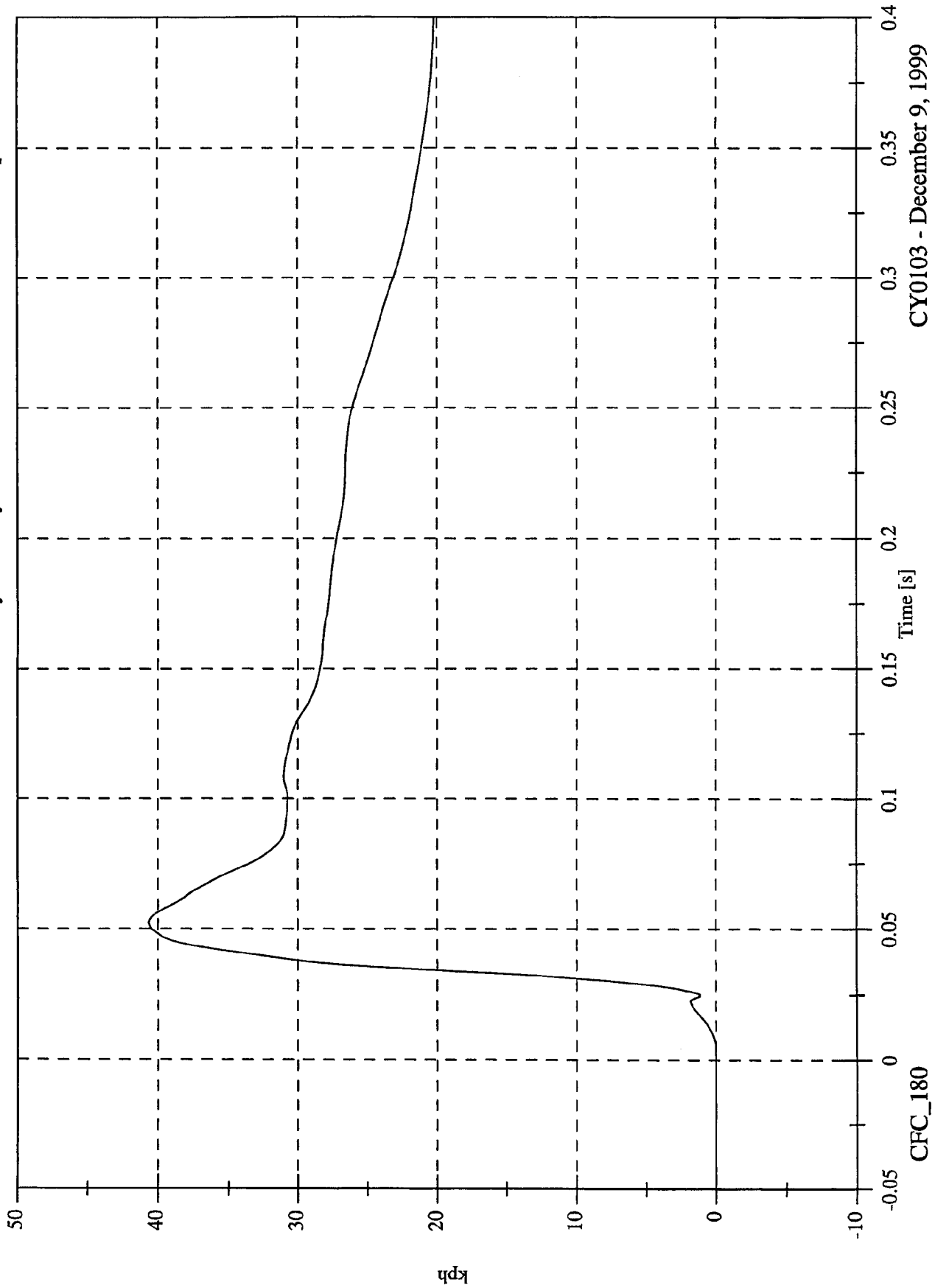


CFC_1000

CY0103 - December 9, 1999

Max: 40.6 [kph] at 0.052 [s]
Min: -0.0 [kph] at -0.043 [s]

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am
P4 Pelvic y Velocity

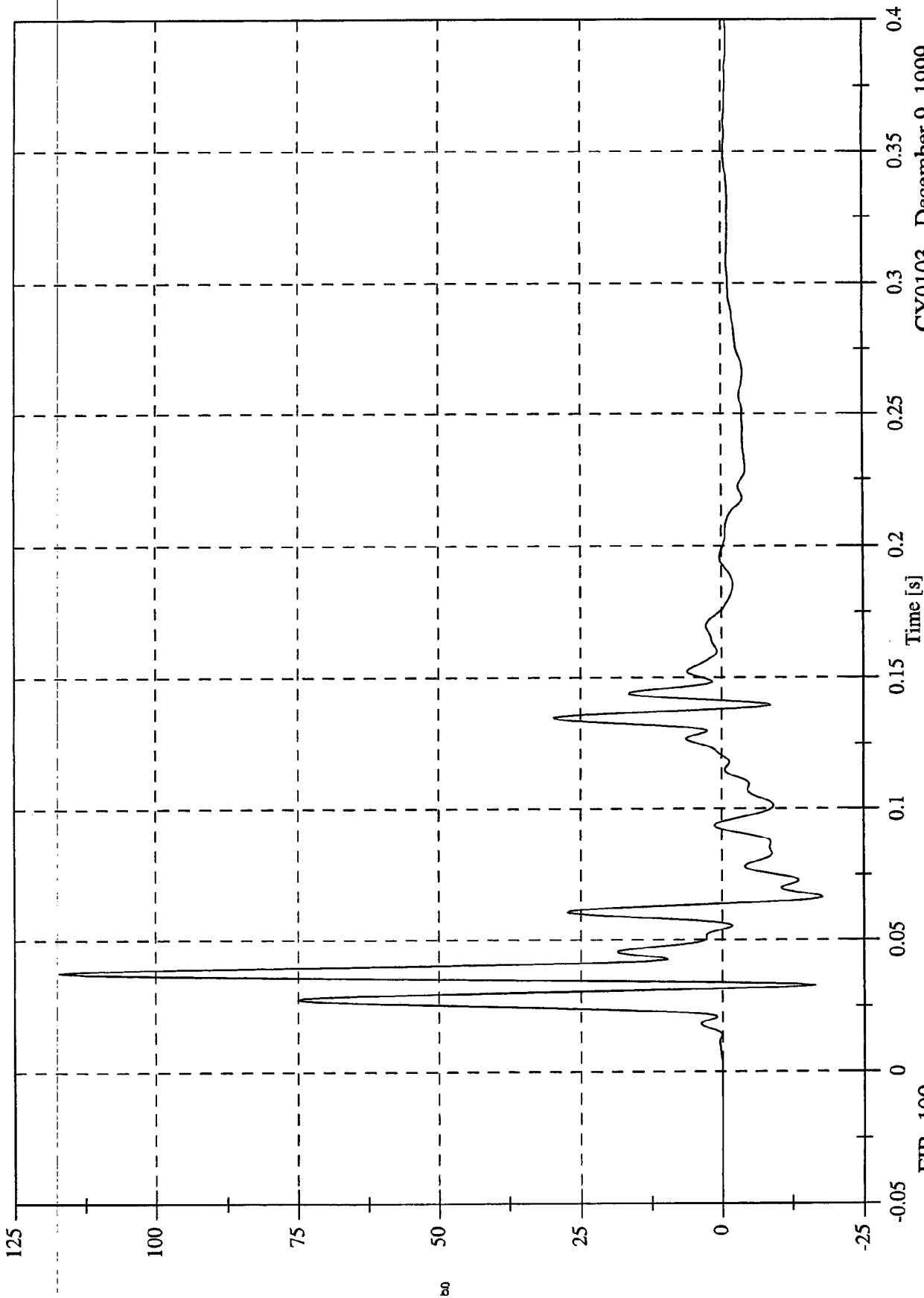


CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Upper Rib y

Max: 117.2 [g] at 0.038 [s]
Min: -17.8 [g] at 0.066 [s]



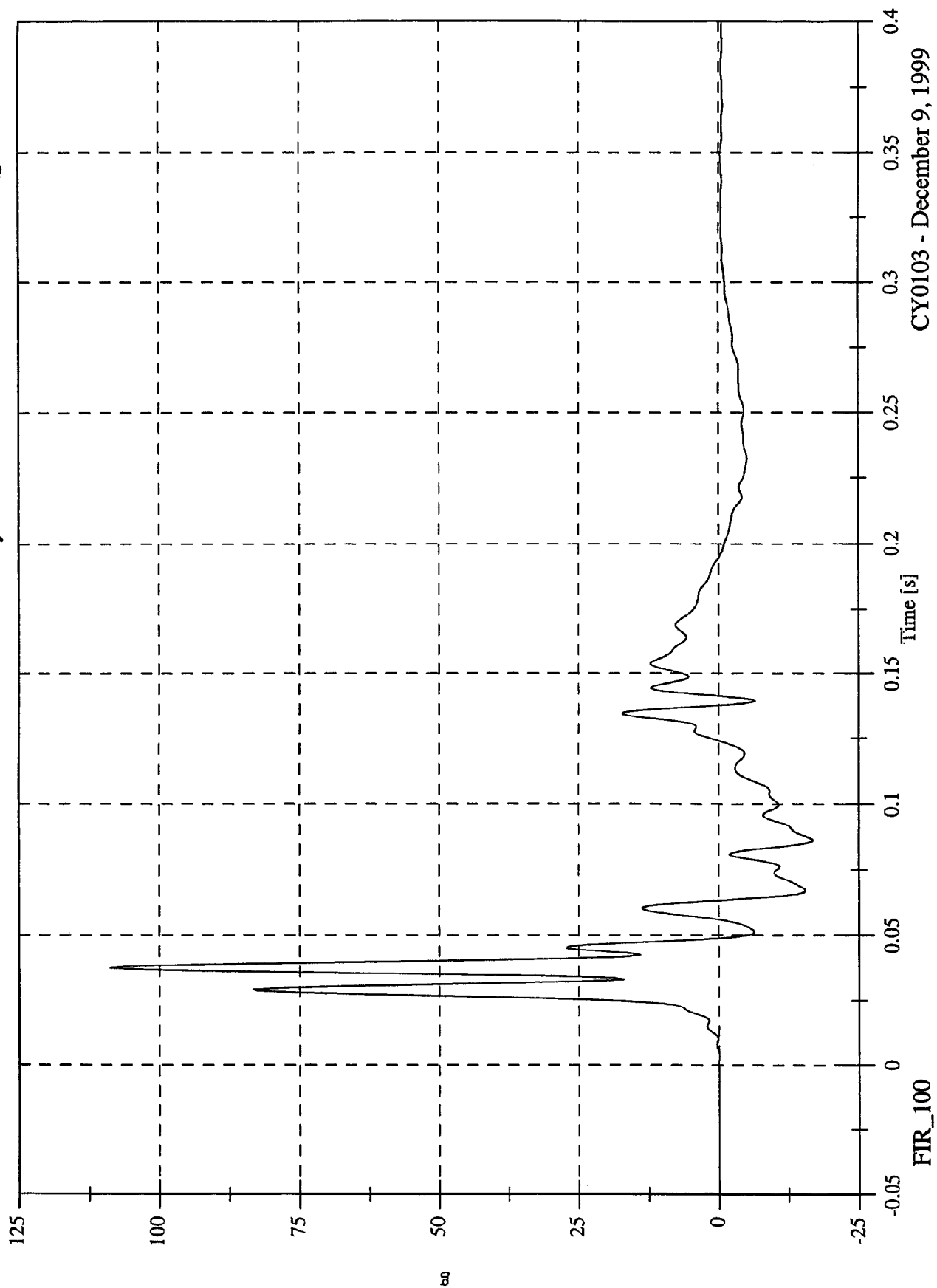
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Lower Rib y

Max: 108.8 [g] at 0.038 [s]

Min: -16.8 [g] at 0.086 [s]

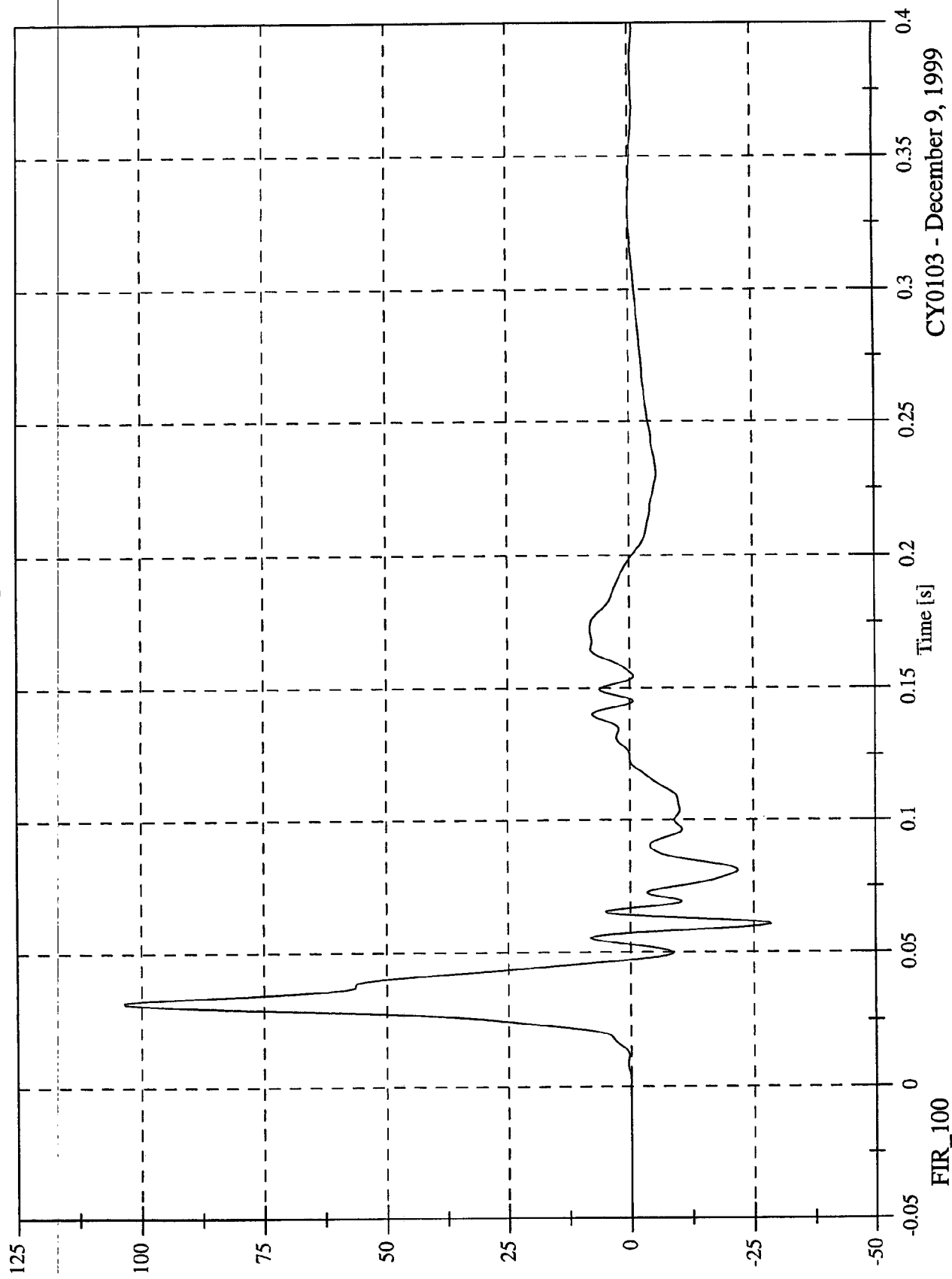


CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Lower Spine y

Max: 103.5 [g] at 0.032 [s]
Min: -28.5 [g] at 0.061 [s]



FIR_100

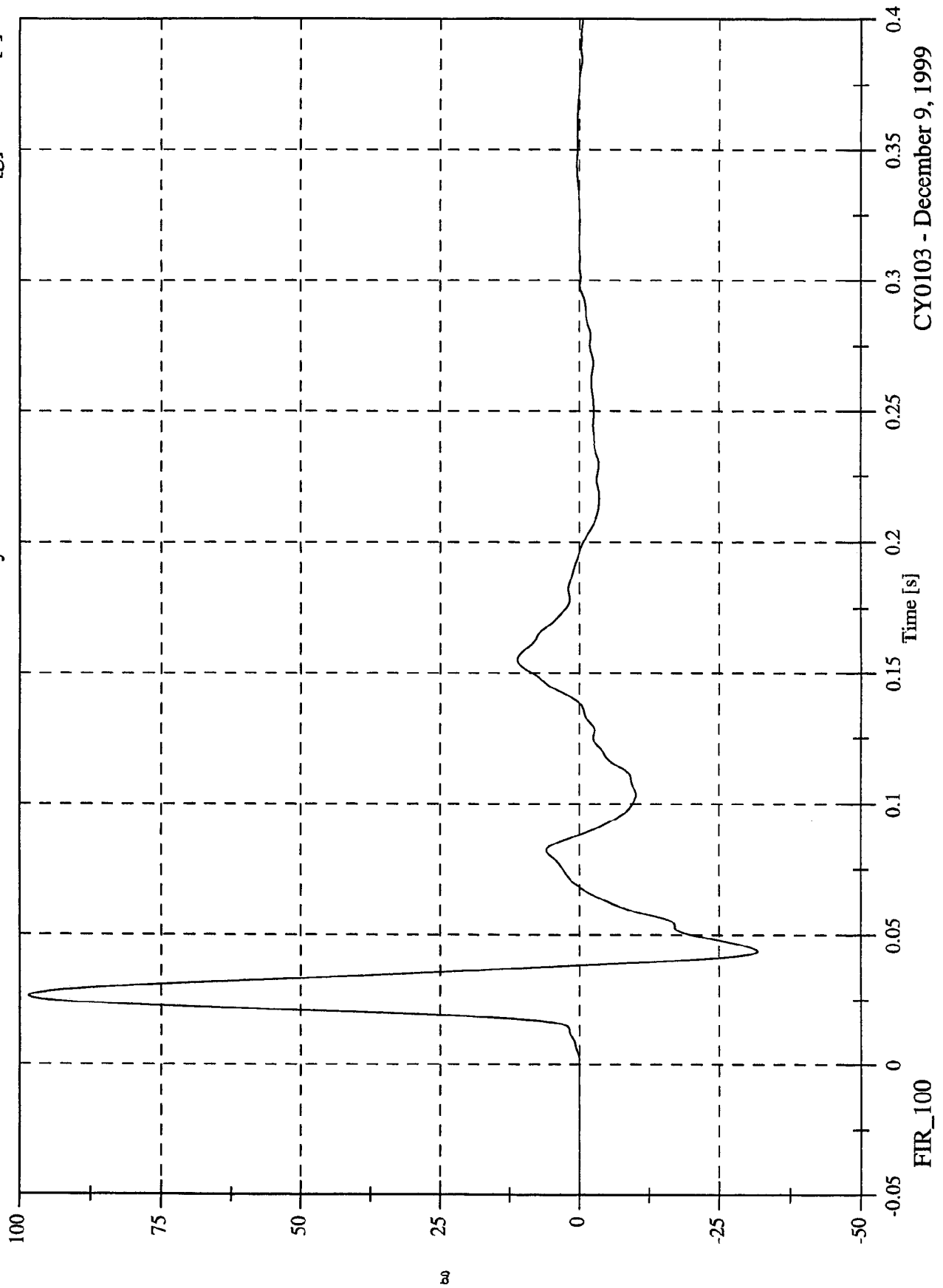
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Pelvic y

Max: 98.5 [g] at 0.026 [s]

Min: -31.8 [g] at 0.044 [s]

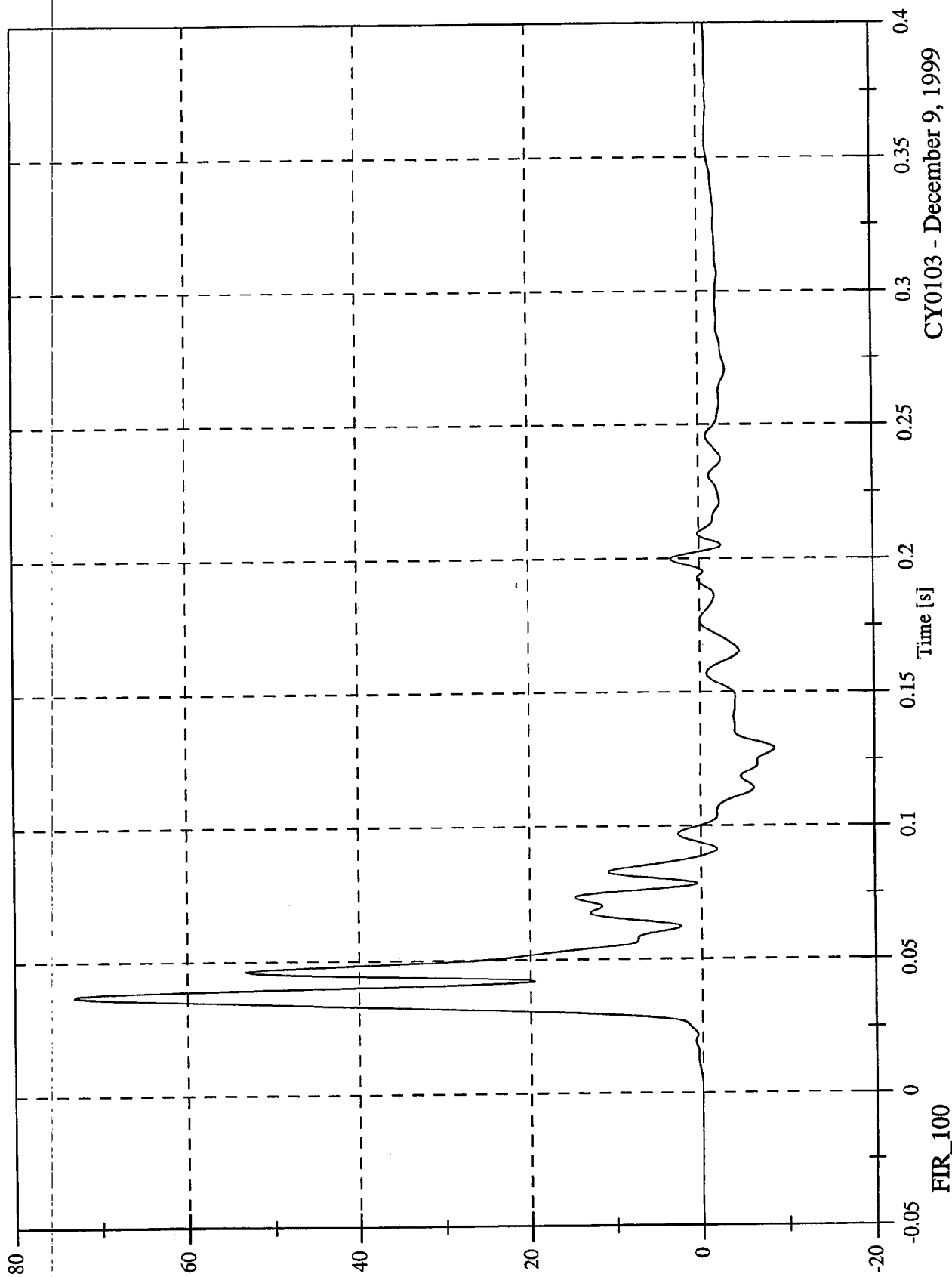


CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P4 Upper Rib y

Max: 73.1 [g] at 0.037 [s]
Min: -8.6 [g] at 0.129 [s]

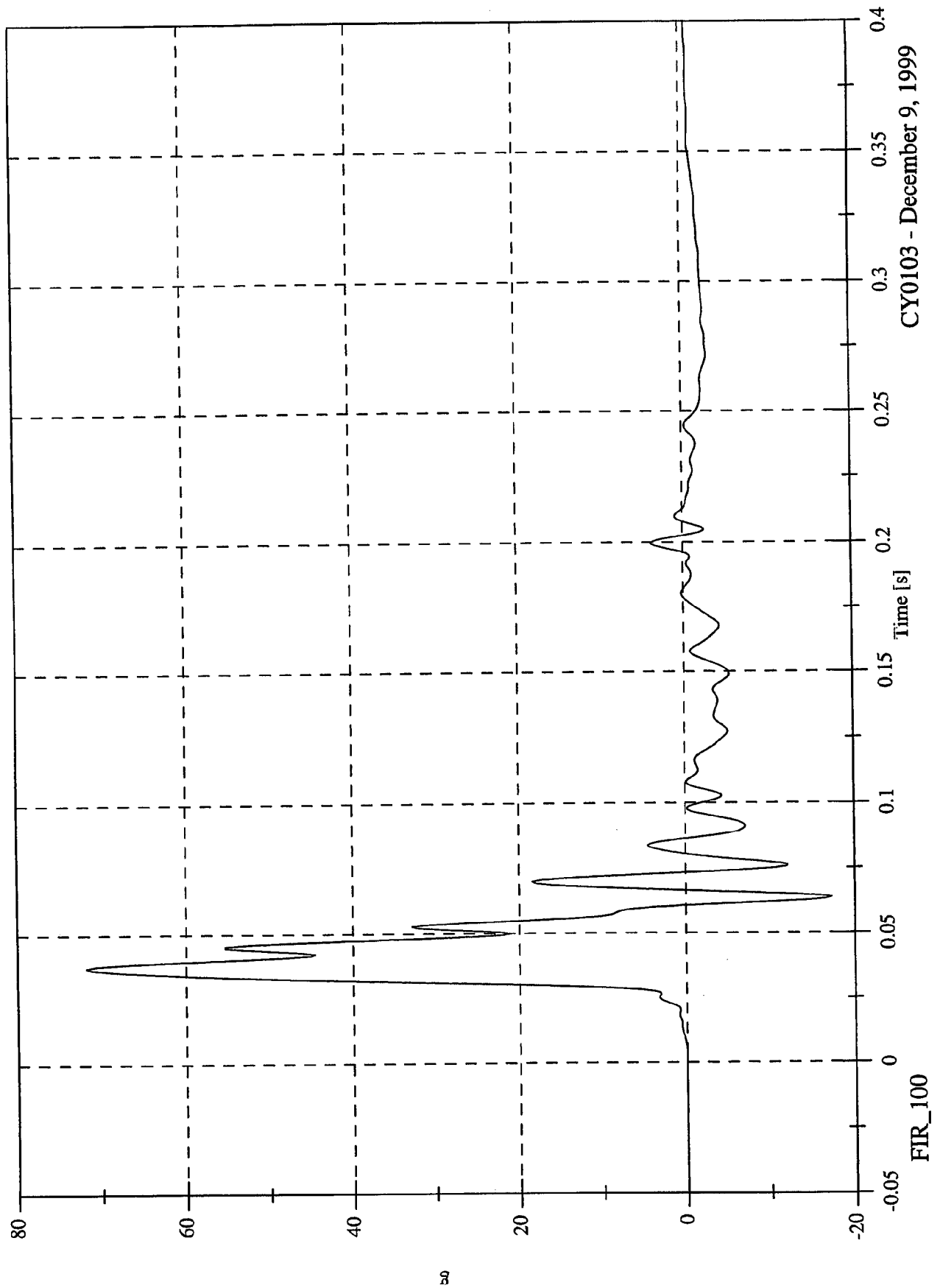


FIR_100

CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am
P4 Lower Rib y

Max: 71.8 [g] at 0.038 [s]
Min: -17.3 [g] at 0.064 [s]

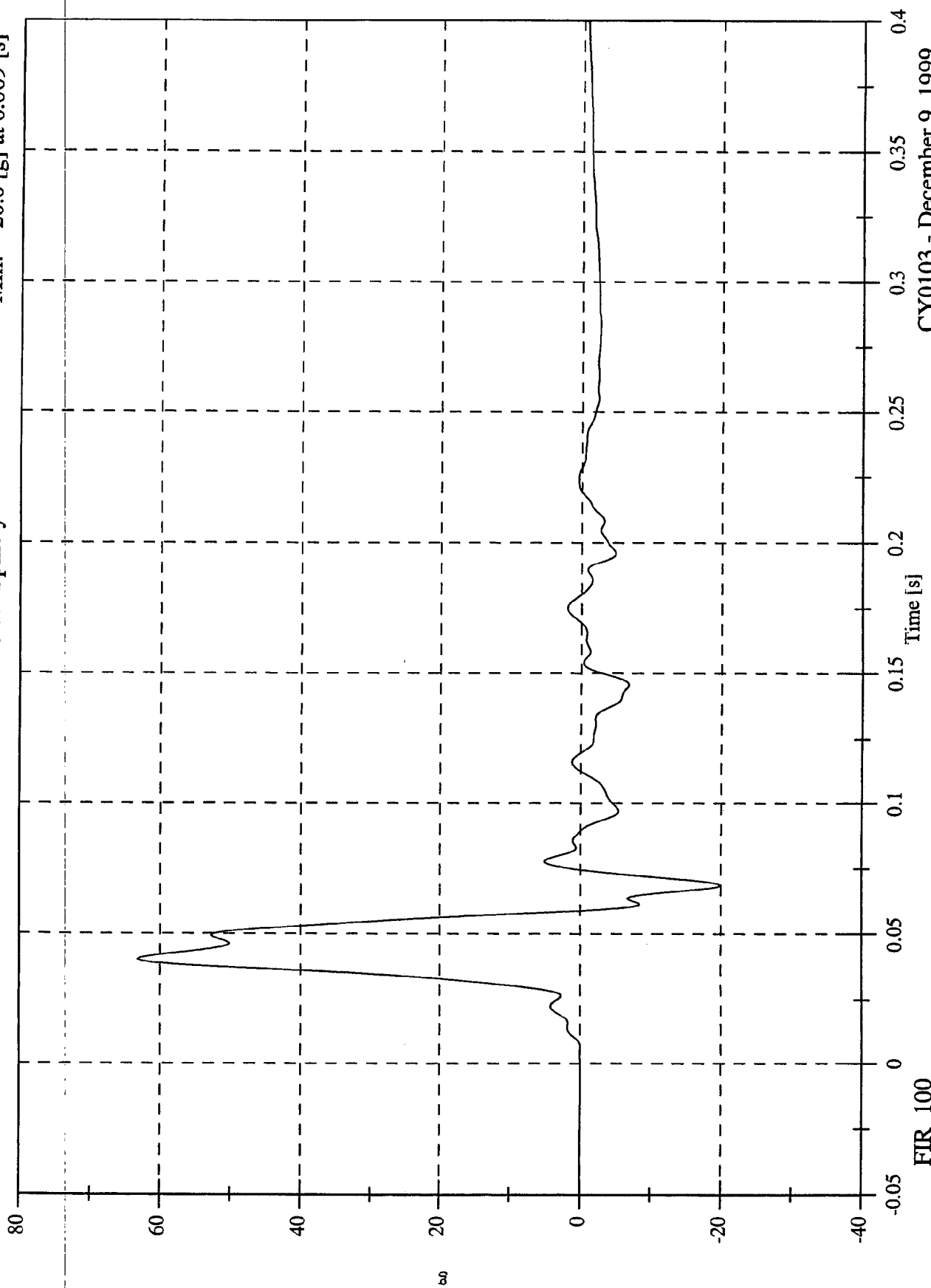


CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P4 Lower Spine y

Max: 63.2 [g] at 0.040 [s]
Min: -20.0 [g] at 0.069 [s]



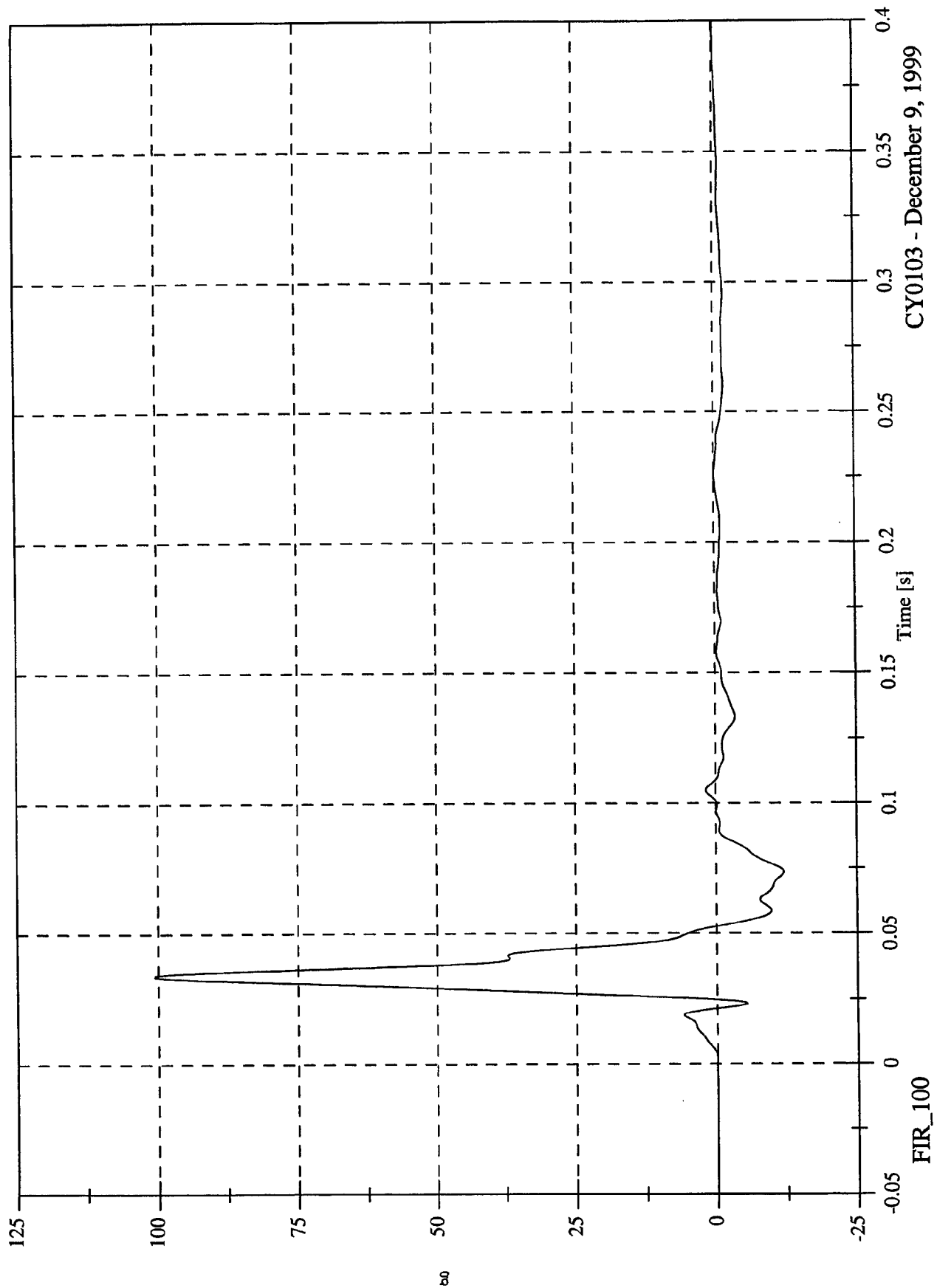
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P4 Pelvic y

Max: 100.6 [g] at 0.034 [s]

Min: -12.1 [g] at 0.074 [s]



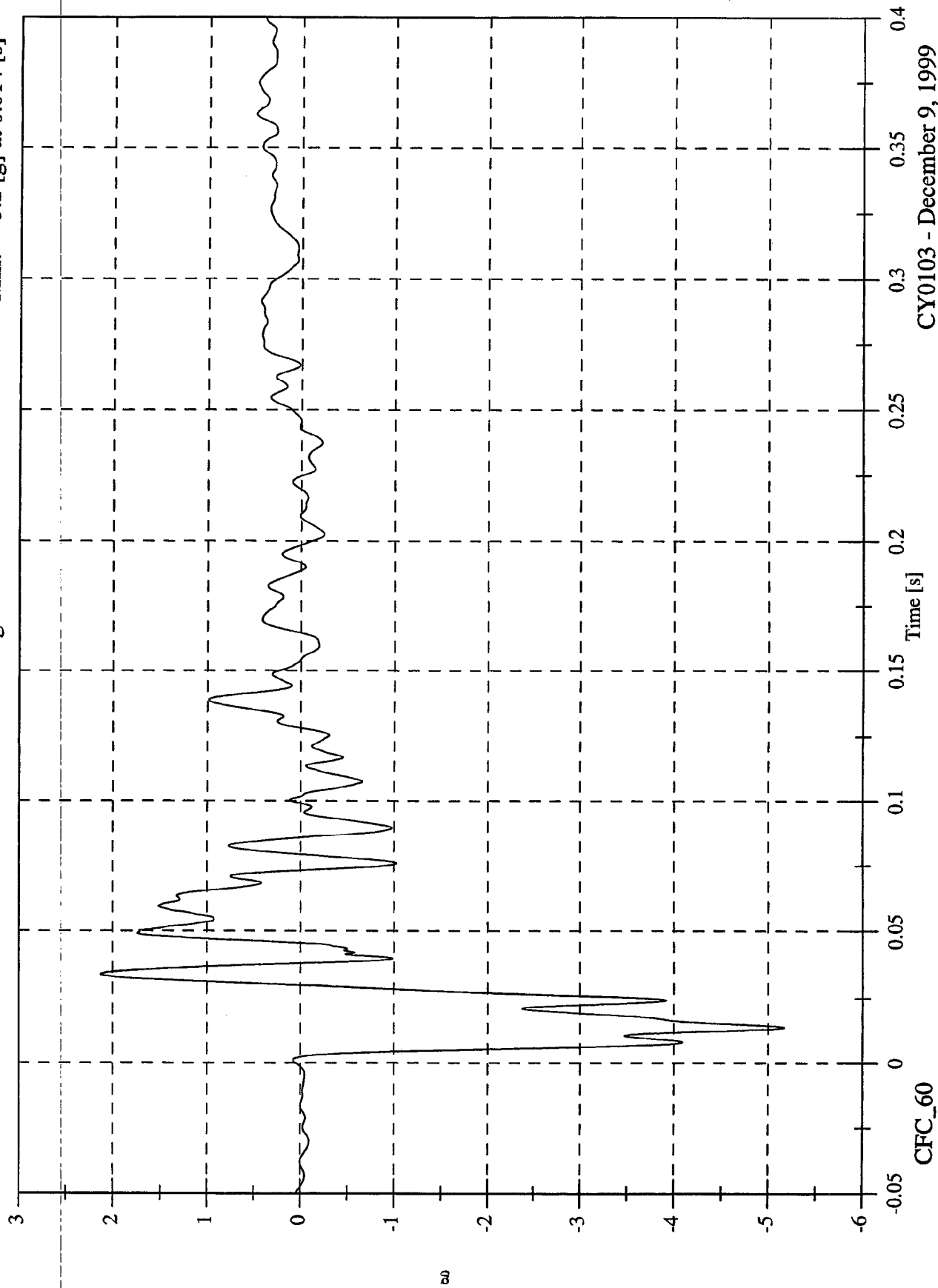
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 1 Right Front Sill X

Max: 2.1 [g] at 0.034 [s]

Min: -5.2 [g] at 0.014 [s]



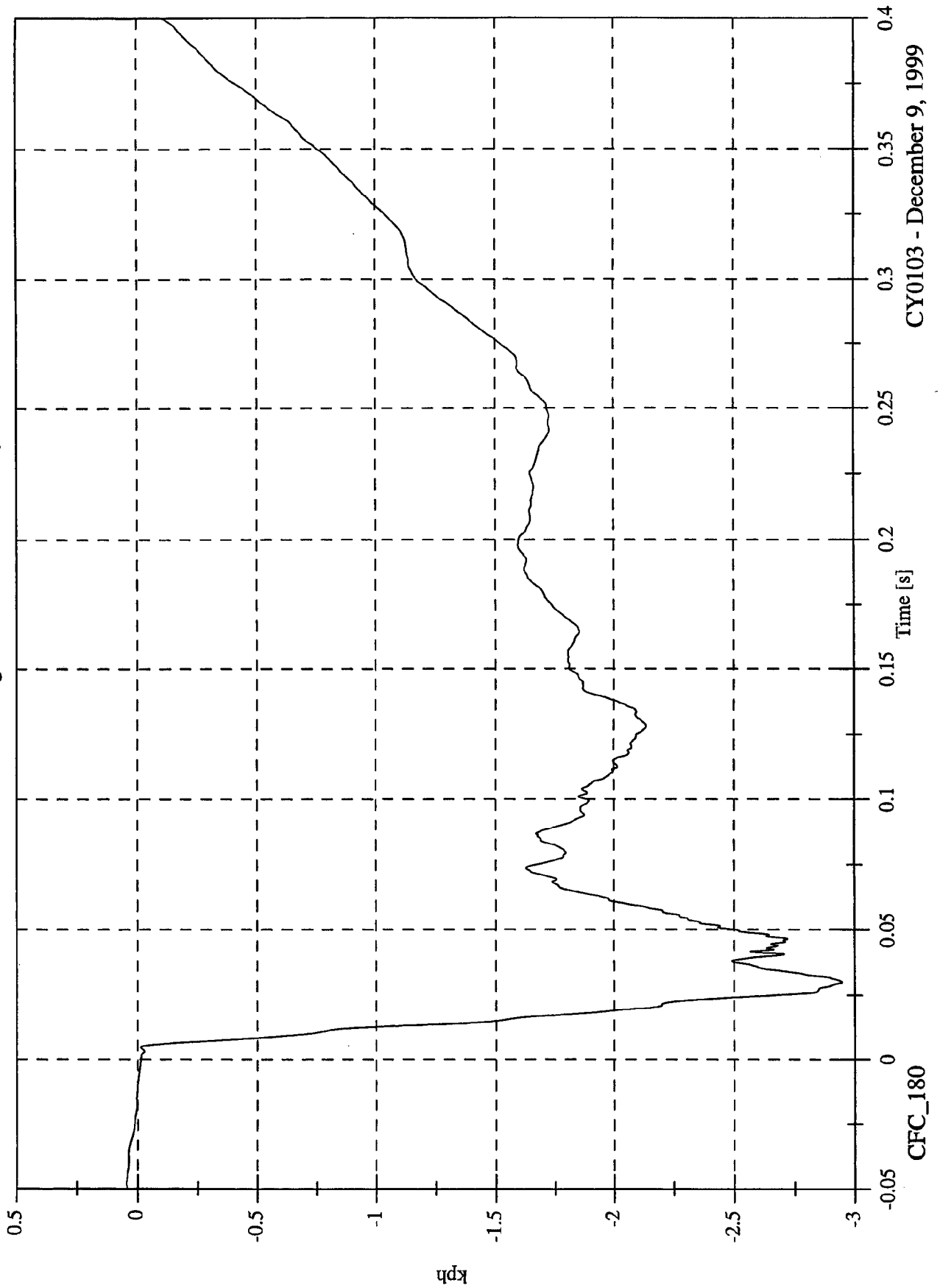
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 1 Right Front Sill X Velocity

Max: 0.0 [kph] at -0.048 [s]

Min: -2.9 [kph] at 0.030 [s]

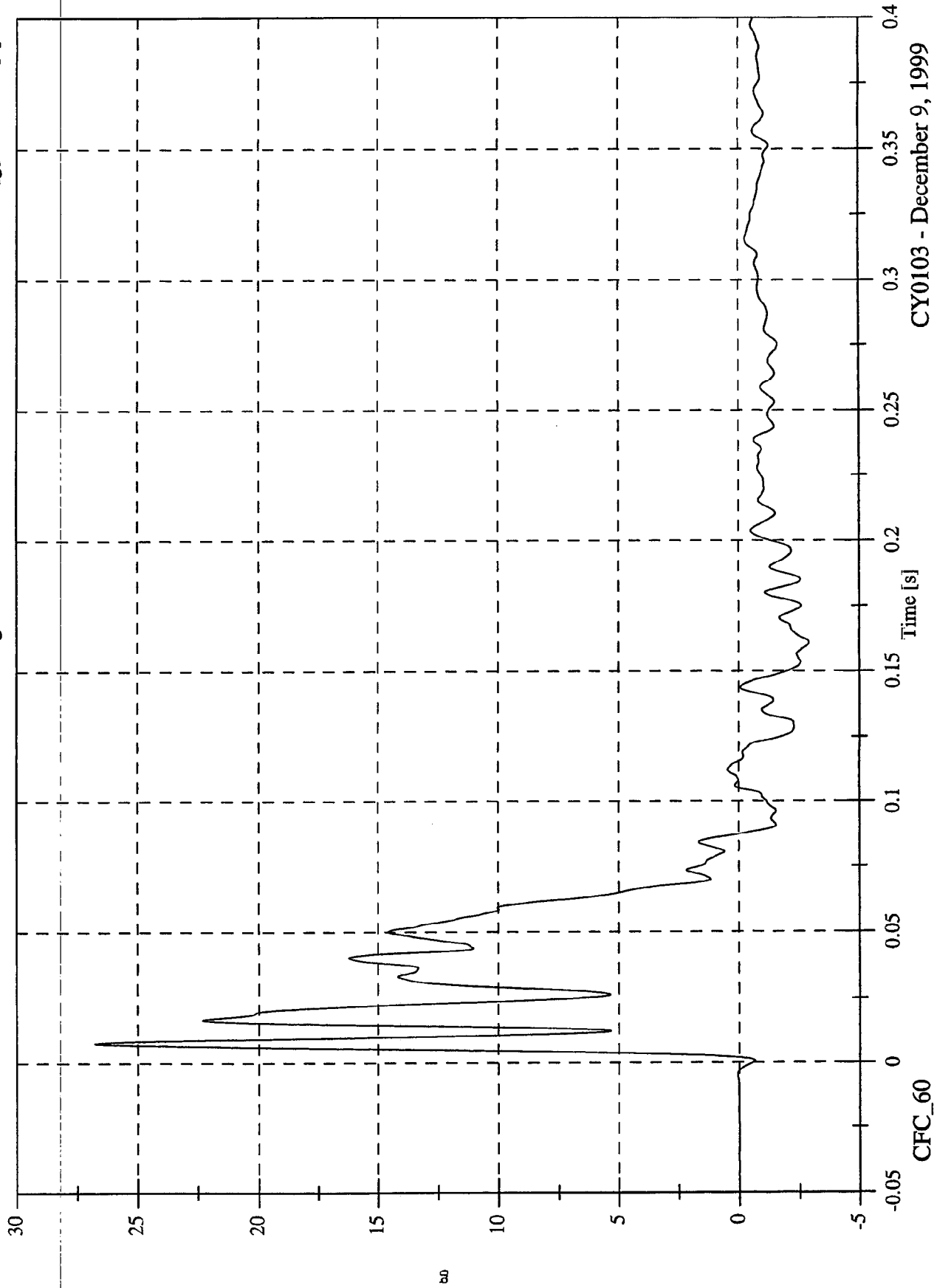


CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 1 Right Front Sill Y

Max: 26.8 [g] at 0.008 [s]
Min: -2.9 [g] at 0.161 [s]

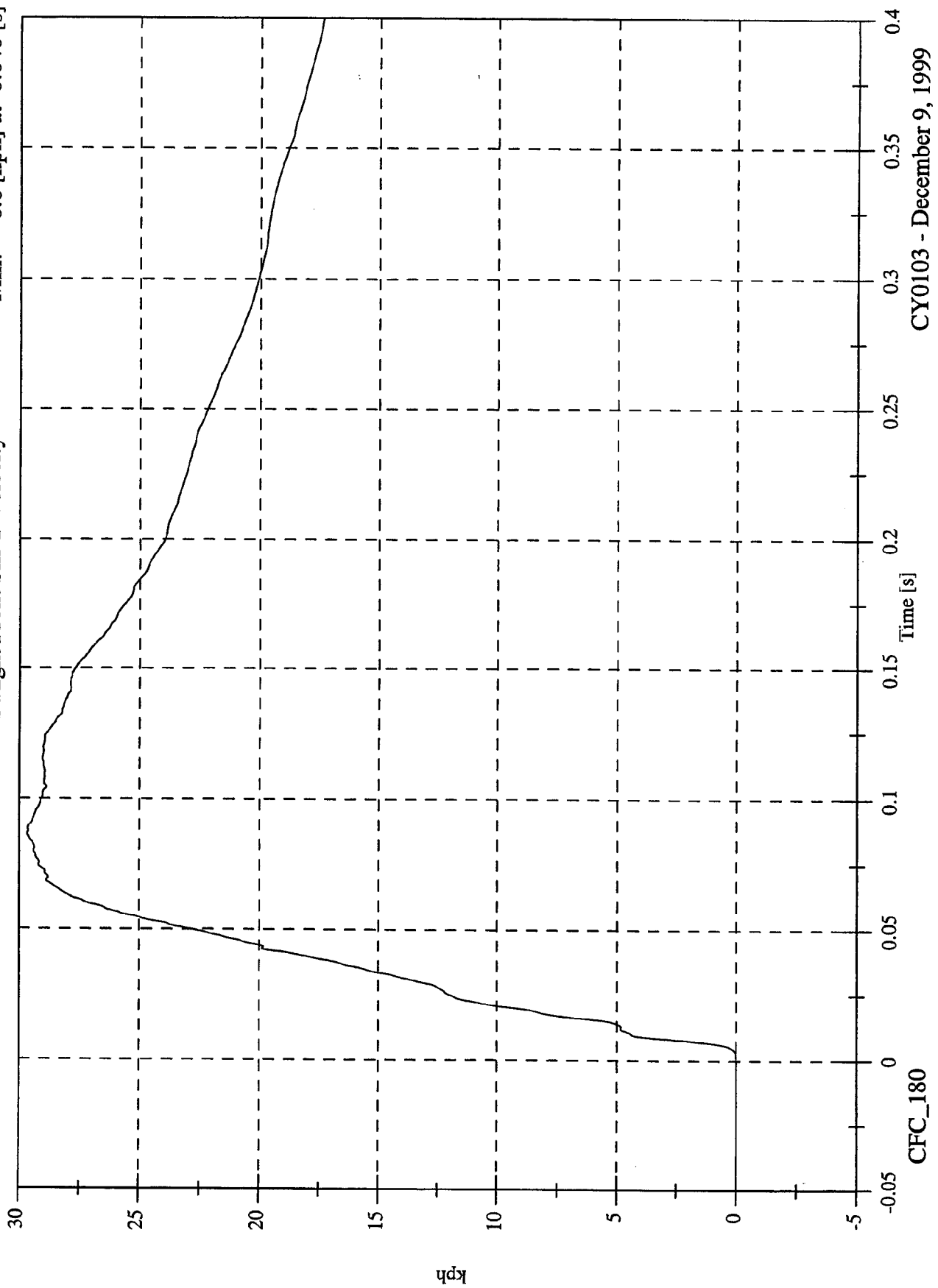


CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 29.7 [kph] at 0.086 [s]
Min: -0.0 [kph] at -0.048 [s]

Acc 1 Right Front Sill Y Velocity



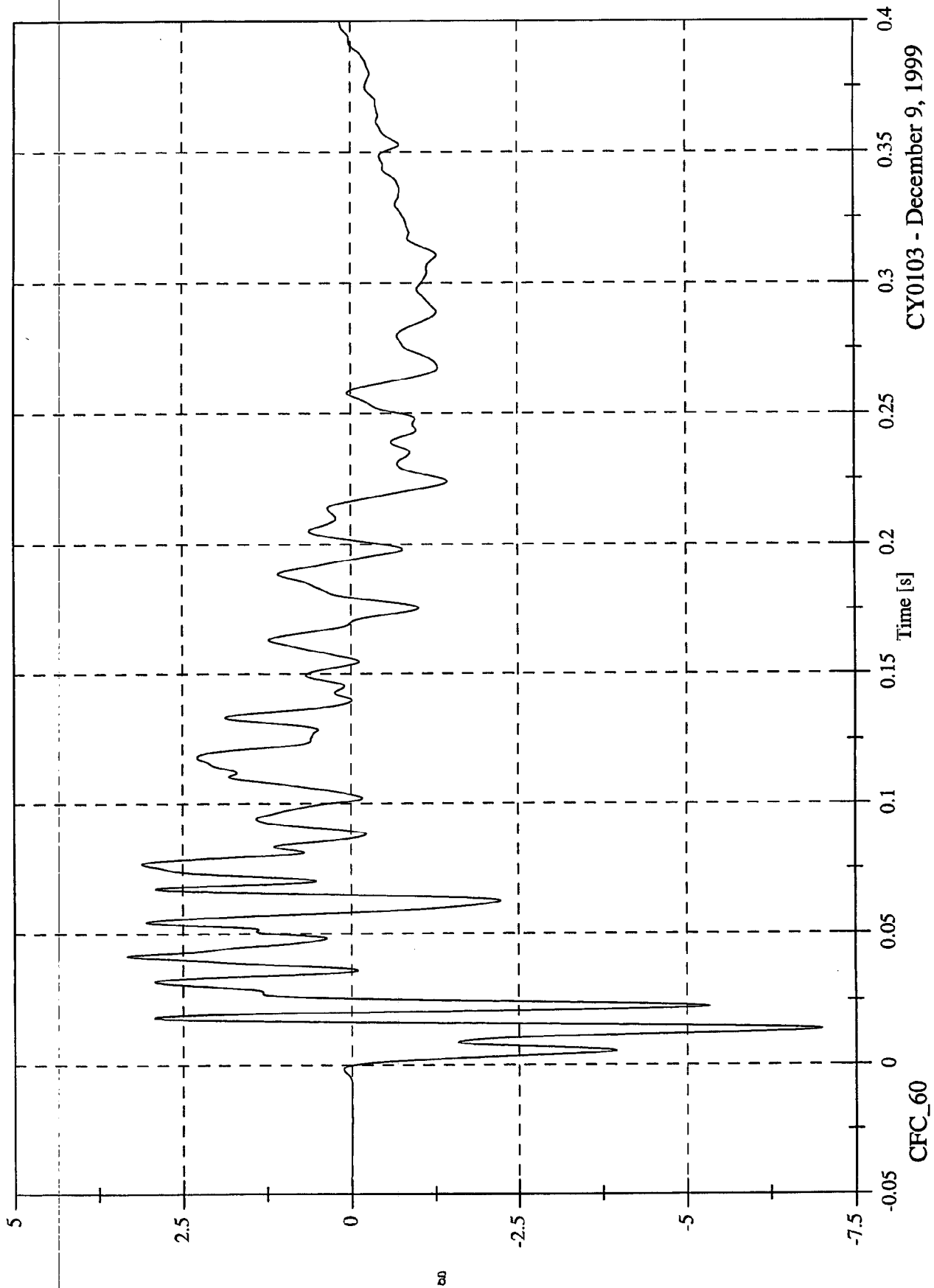
CFC_180

CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 1 Right Front Sill Z

Max: 3.3 [g] at 0.042 [s]
Min: -7.0 [g] at 0.014 [s]



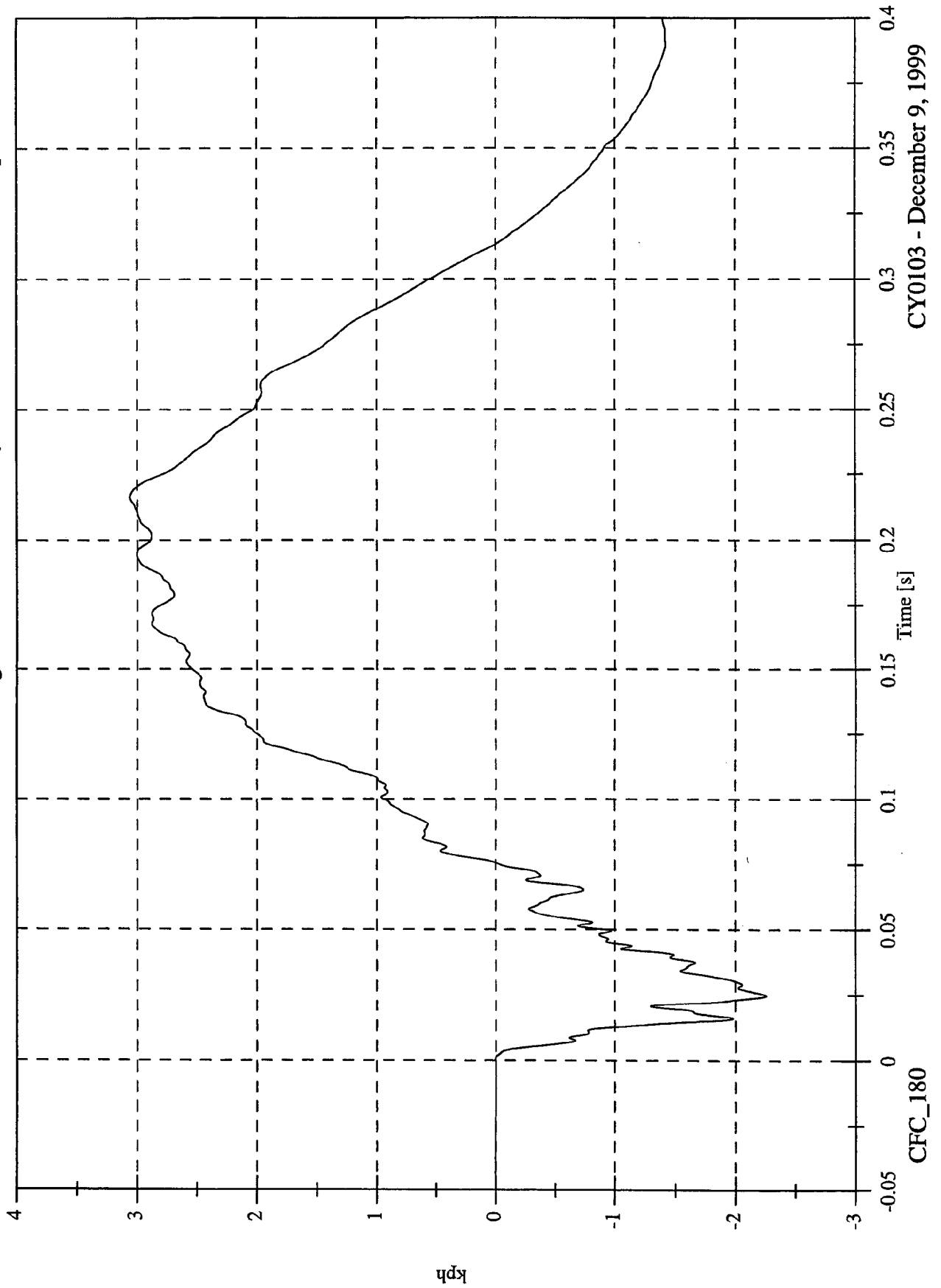
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 3.1 [kph] at 0.216 [s]

Min: -2.3 [kph] at 0.025 [s]

Acc 1 Right Front Sill Z Velocity



CFC_180

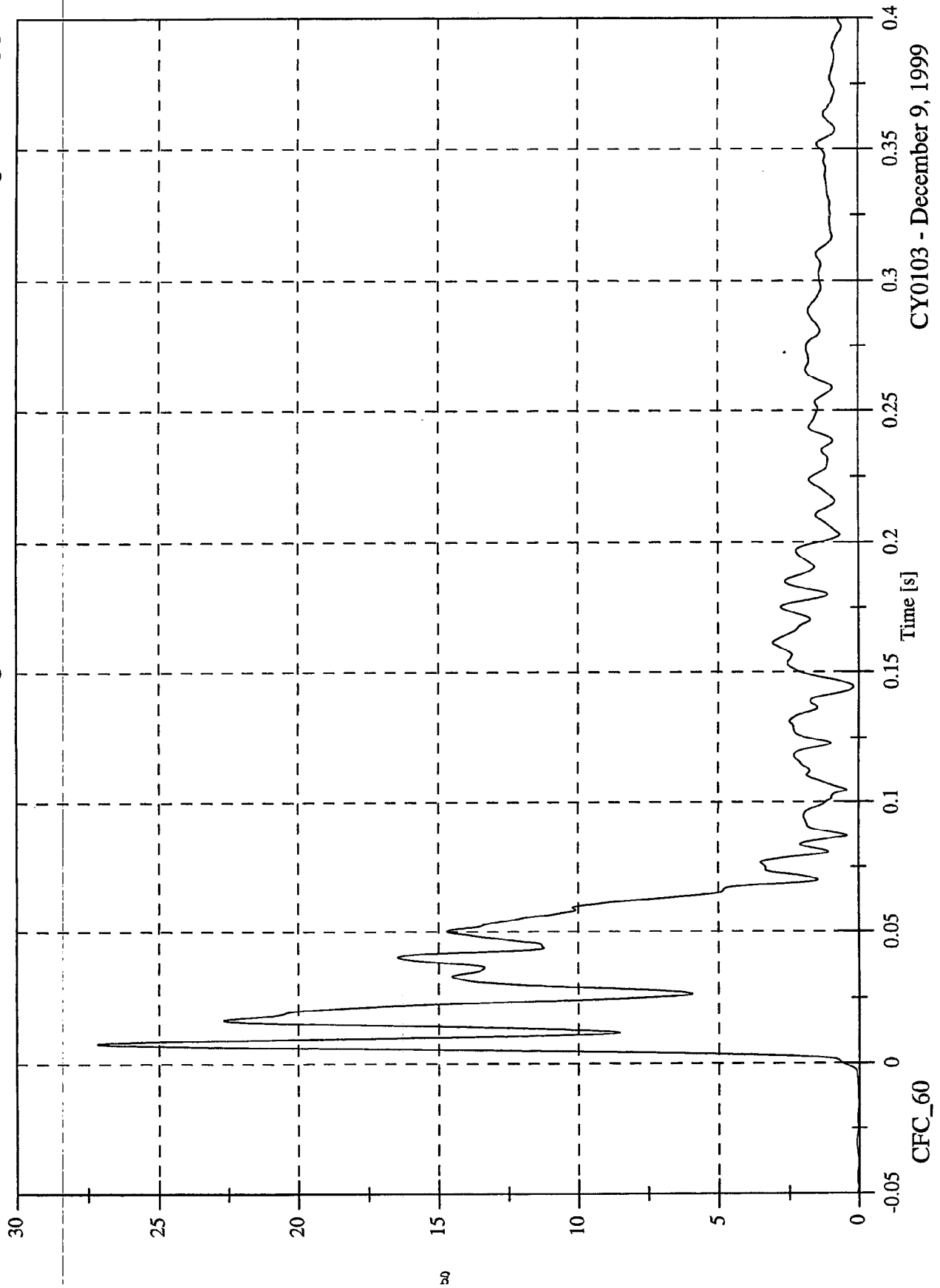
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 1 Right Front Sill Resultant

Max: 27.2 [g] at 0.008 [s]

Min: 0.0 [g] at -0.039 [s]



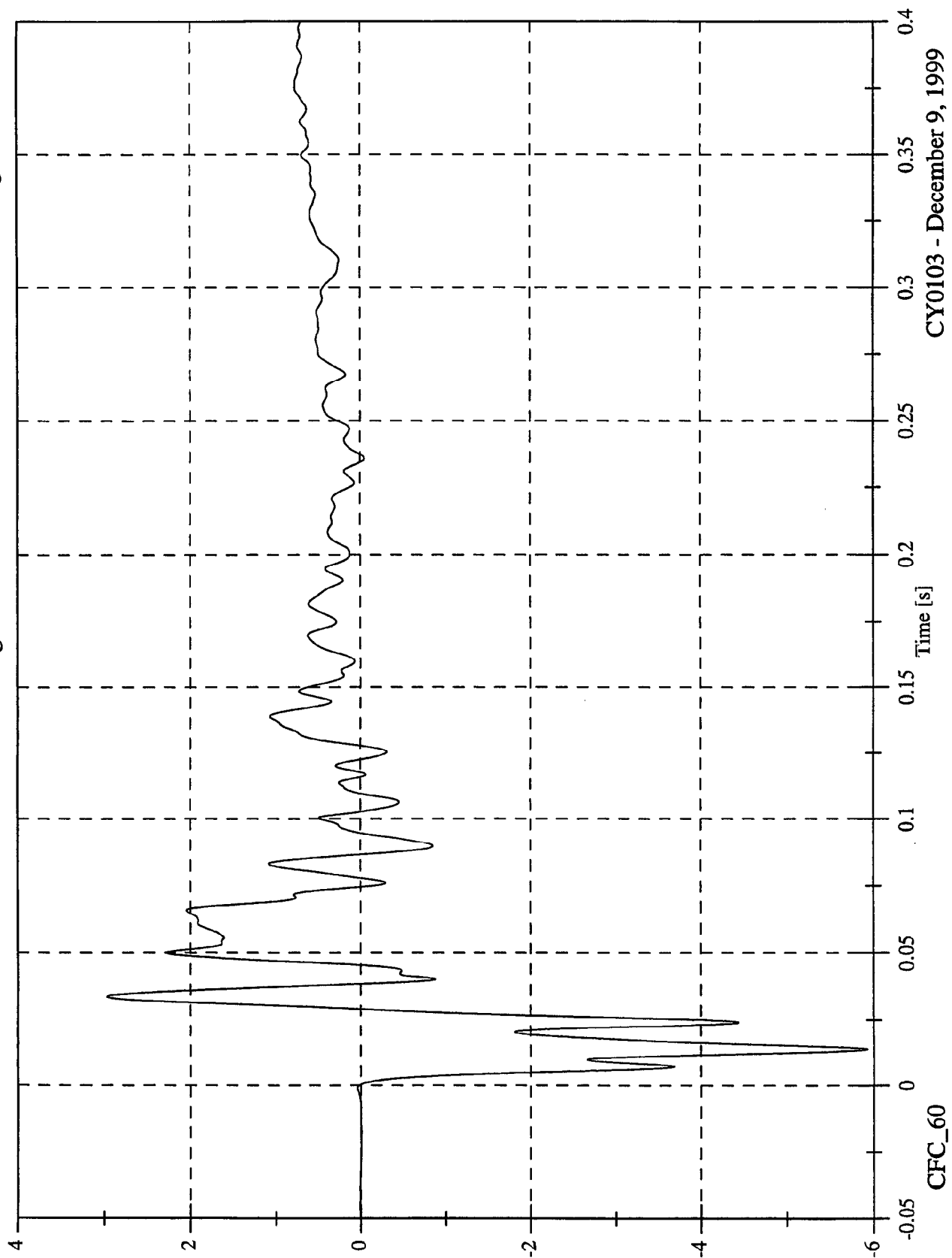
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 2 Right Rear Sill X

Max: 3.0 [g] at 0.034 [s]

Min: -5.9 [g] at 0.014 [s]



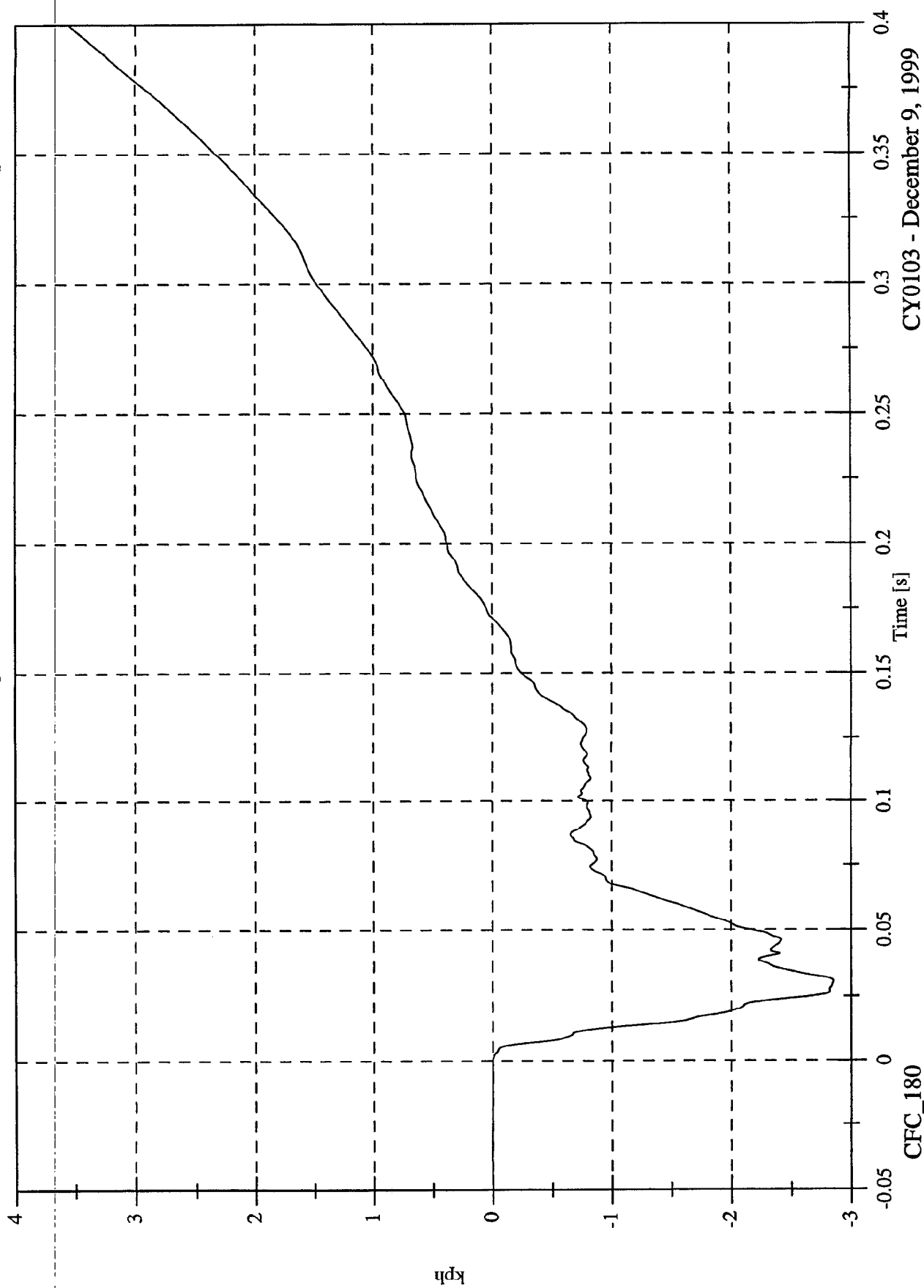
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 2 Right Rear Sill X Velocity

Max: 3.6 [kph] at 0.400 [s]

Min: -2.9 [kph] at 0.030 [s]

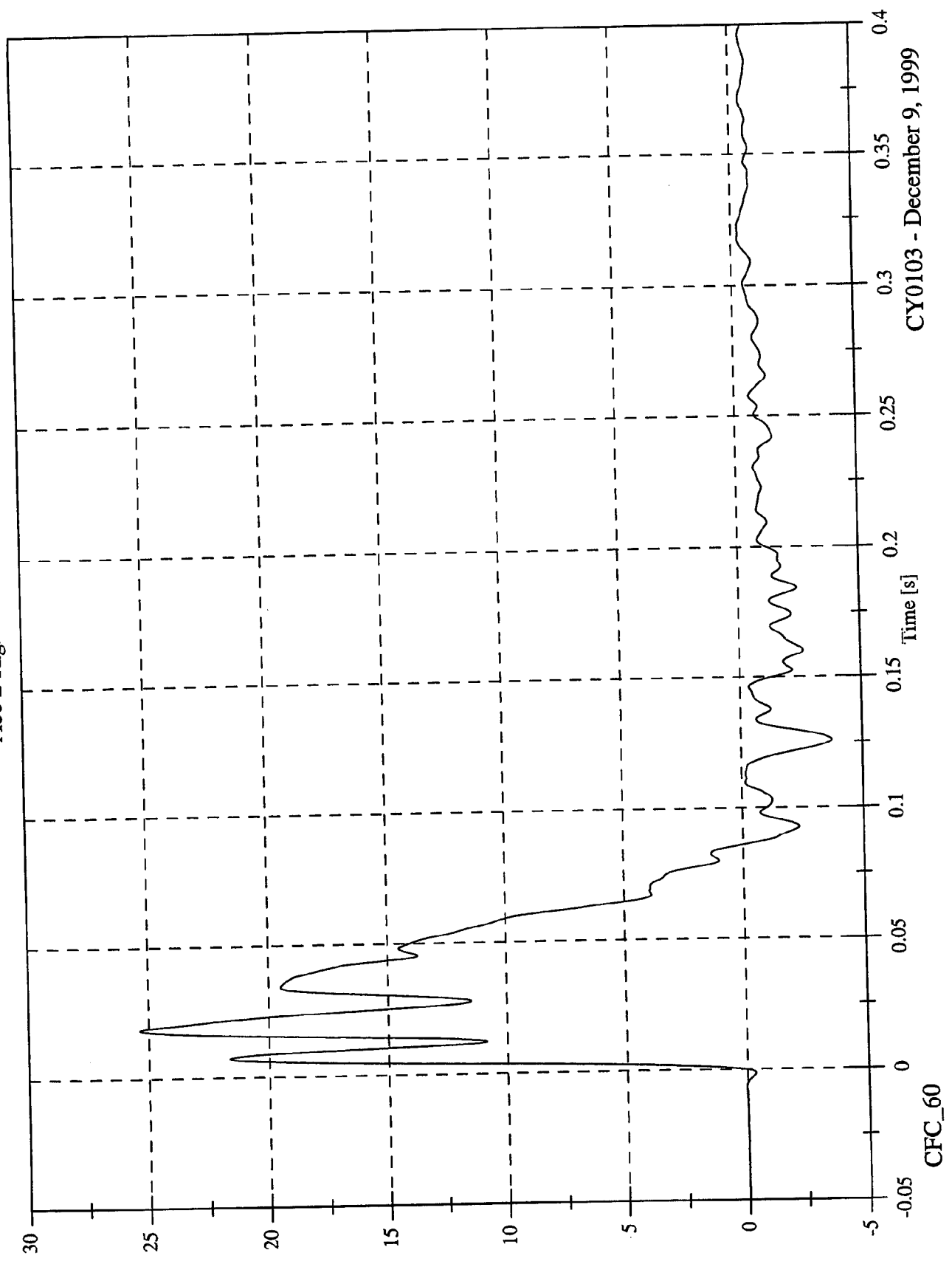


CFC_180

CY0103 - December 9, 1999

Max: 25.4 [g] at 0.018 [s]
Min: -3.7 [g] at 0.126 [s]

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am
Acc 2 Right Rear Sill Y



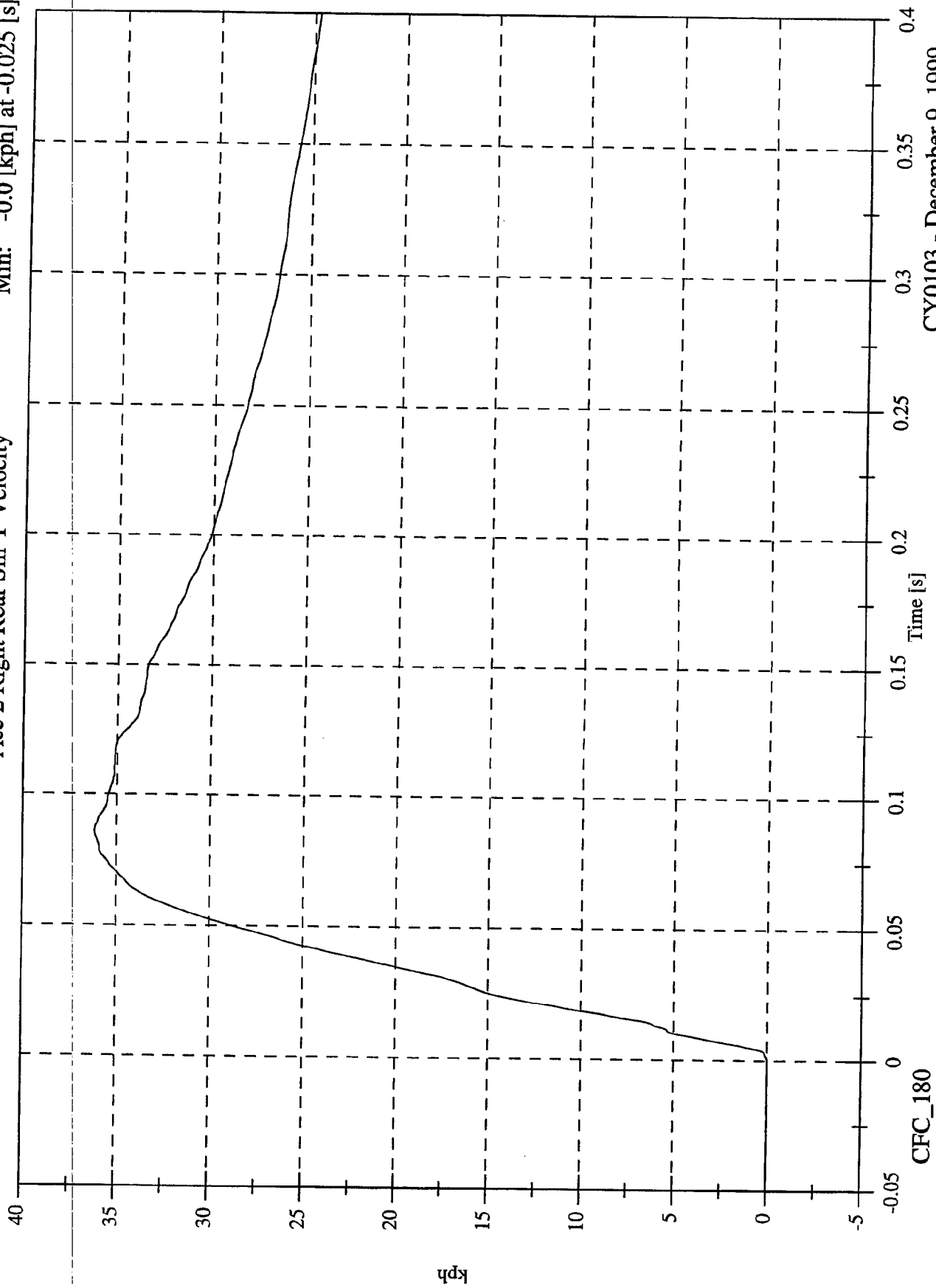
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 2 Right Rear Sill Y Velocity

Max: 36.2 [kph] at 0.086 [s]

Min: -0.0 [kph] at -0.025 [s]



CY0103 - December 9, 1999

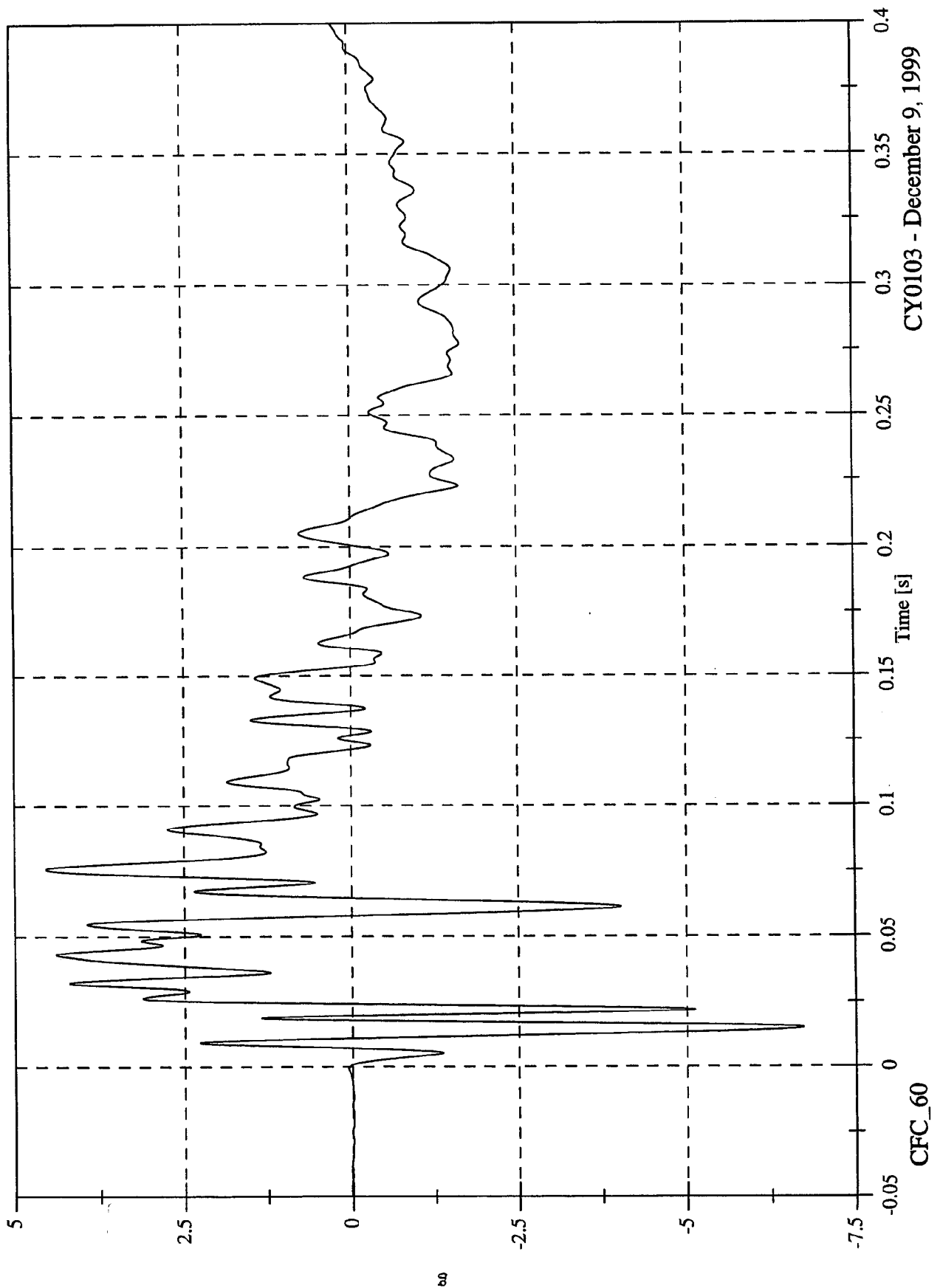
CFC_180

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 2 Right Rear Sill Z

Max: 4.5 [g] at 0.076 [s]

Min: -6.7 [g] at 0.015 [s]

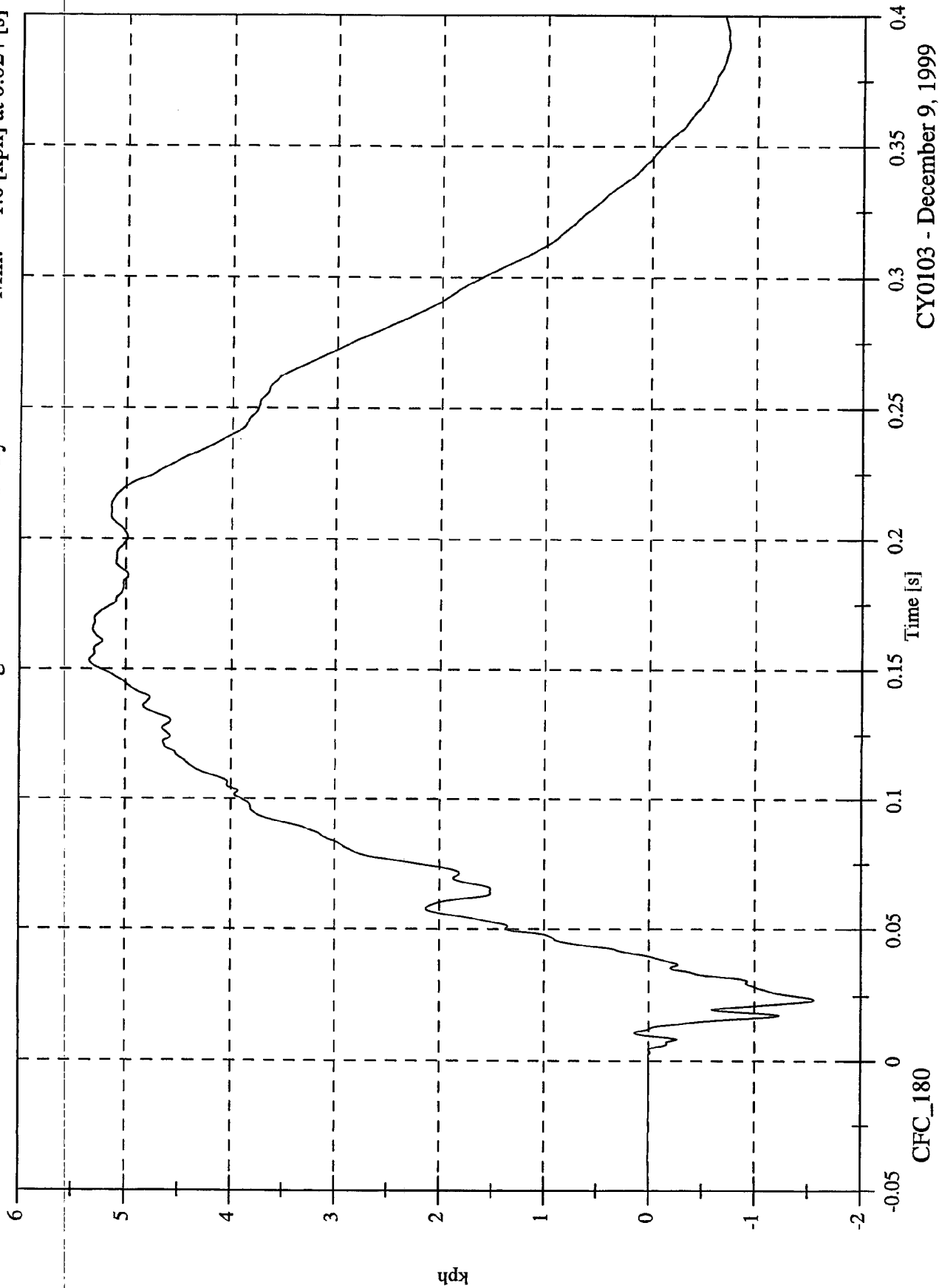


CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 2 Right Rear Sill Z Velocity

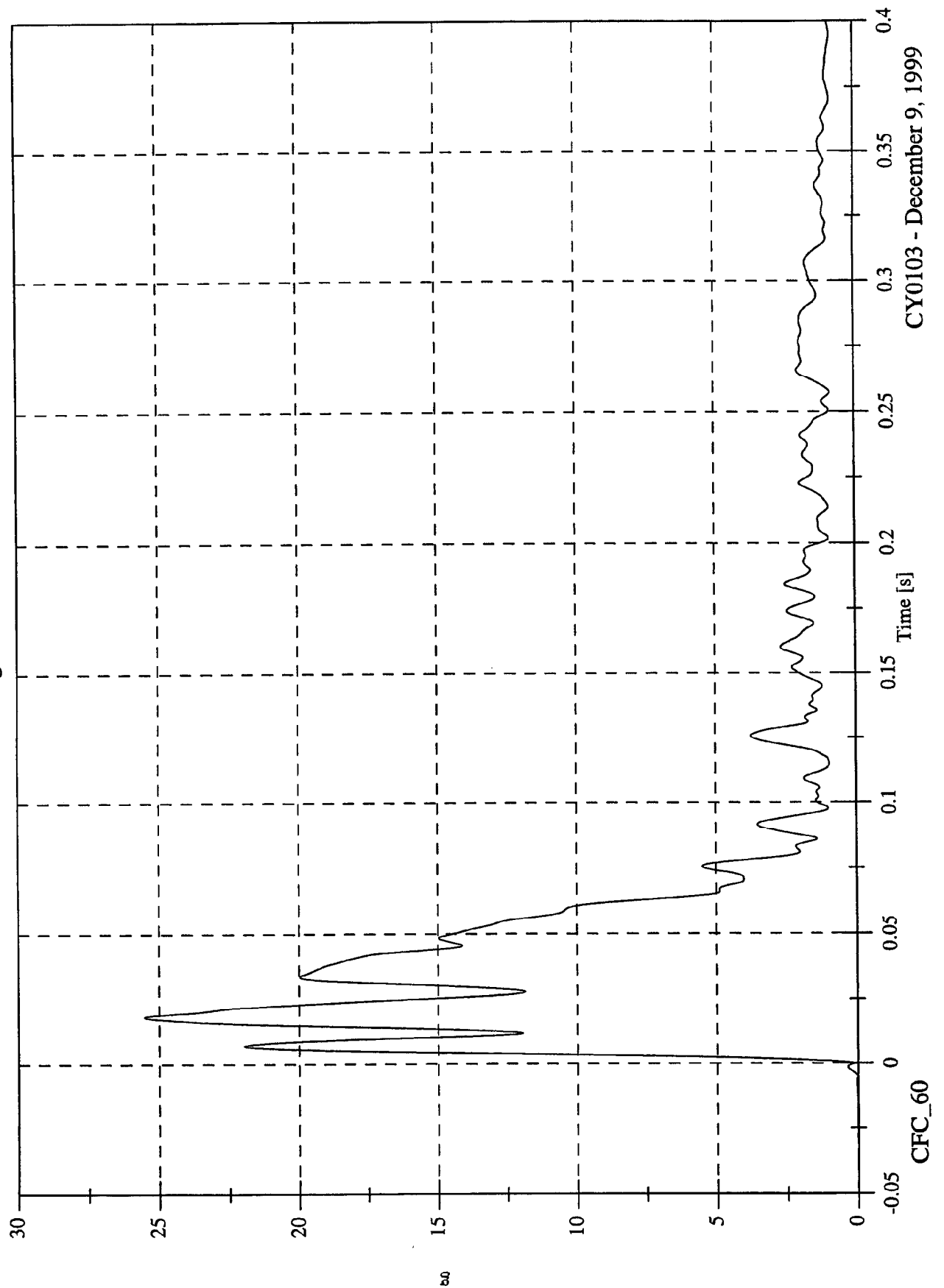
Max: 5.3 [kph] at 0.153 [s]
Min: -1.6 [kph] at 0.024 [s]



CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am
Acc 2 Right Rear Sill Resultant

Max: 25.5 [g] at 0.018 [s]
Min: 0.0 [g] at -0.032 [s]



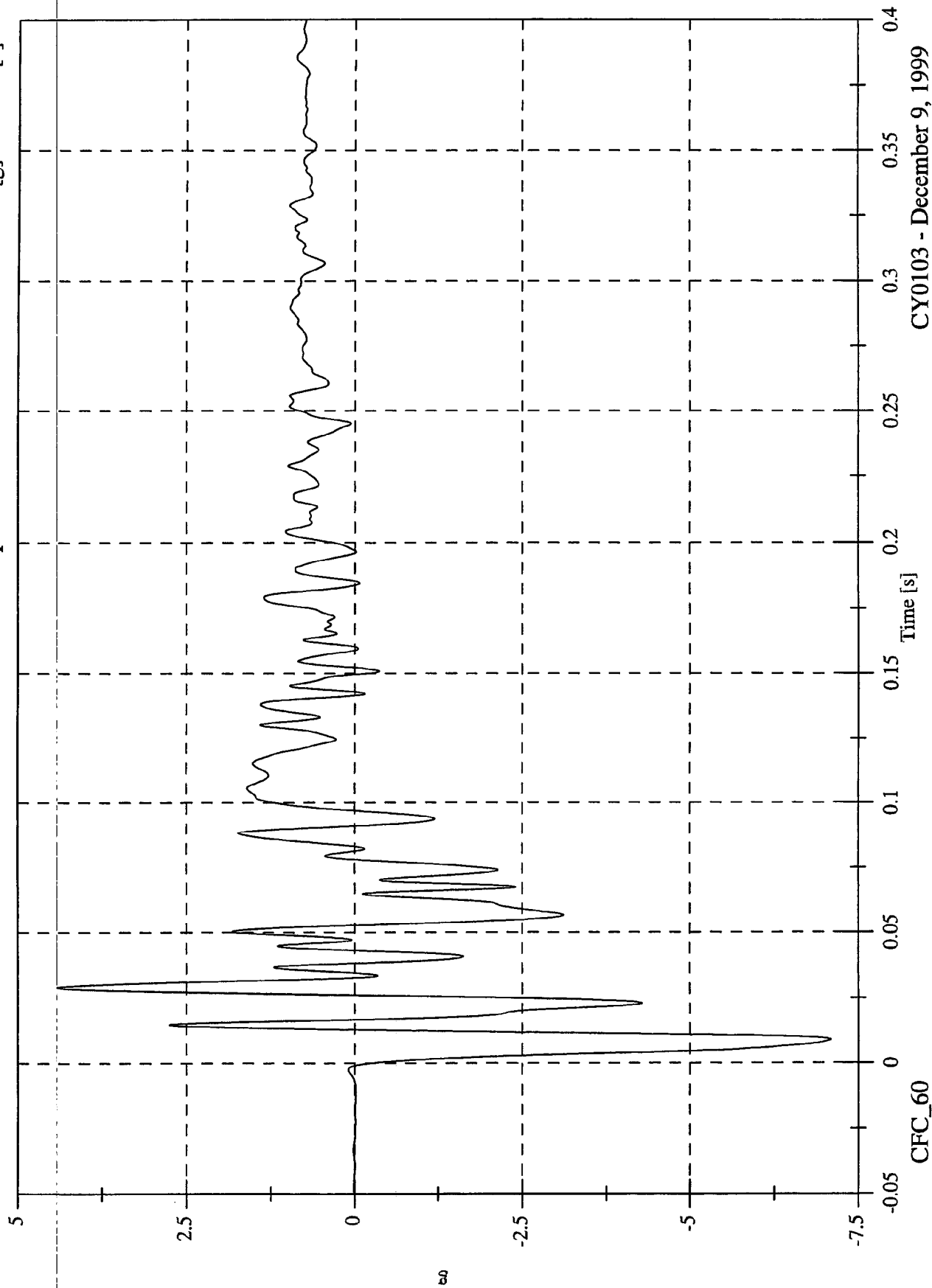
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 4.4 [g] at 0.029 [s]

Min: -7.1 [g] at 0.009 [s]

Acc 3 Rear Floorpan X



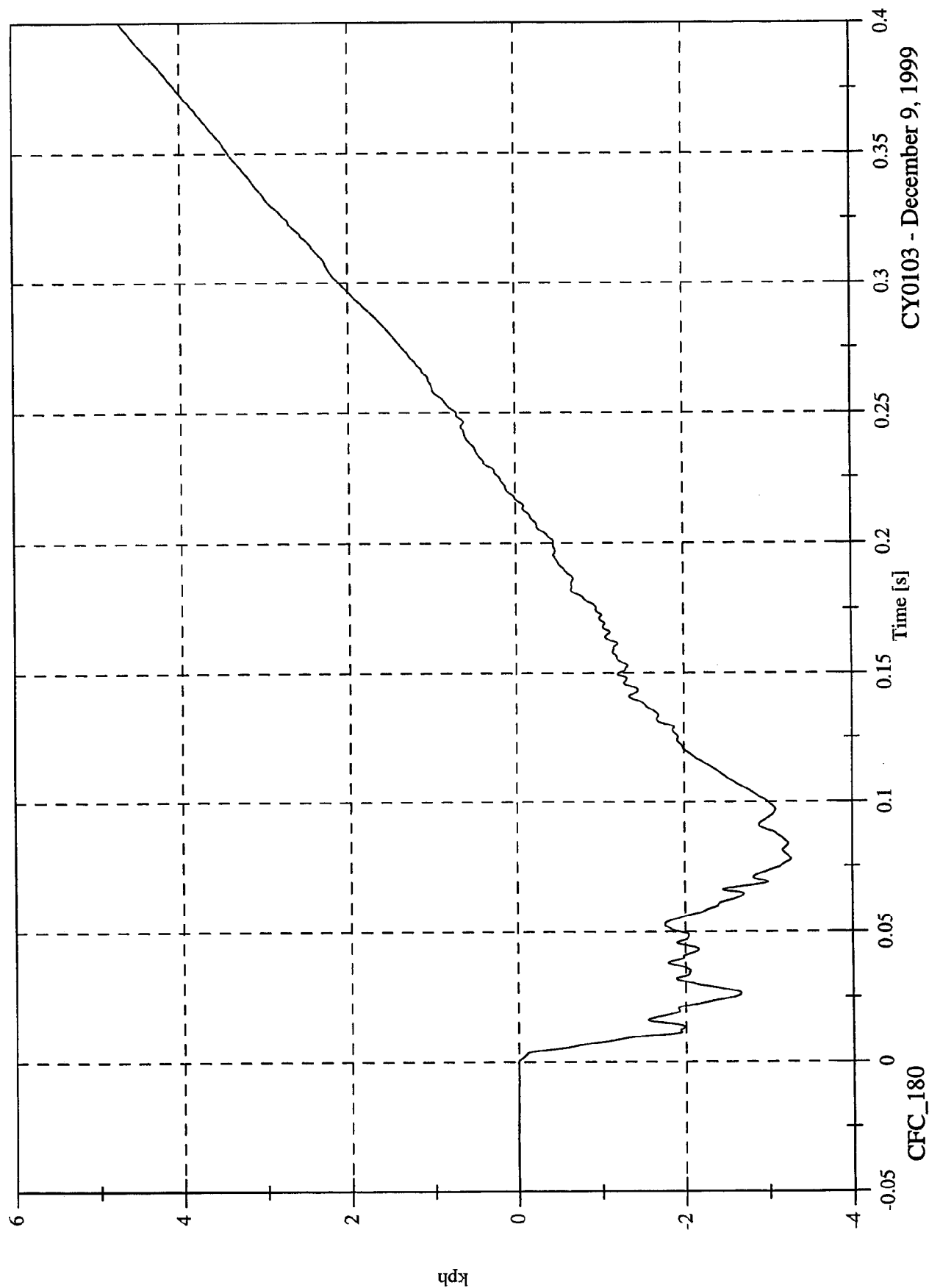
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 4.7 [kph] at 0.400 [s]

Acc 3 Rear Floorpan X Velocity

Min: -3.3 [kph] at 0.078 [s]



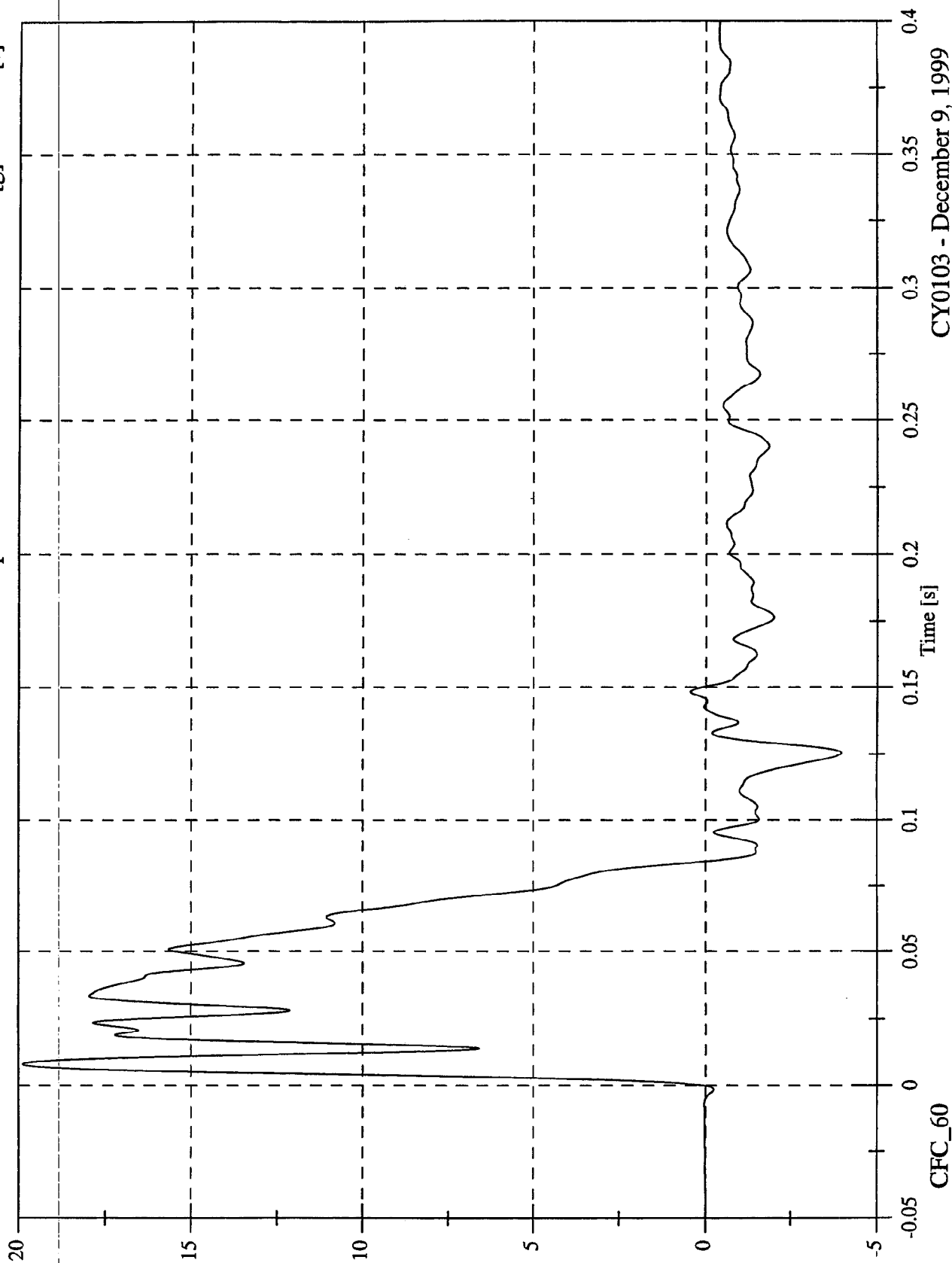
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 3 Rear Floorpan Y

Max: 19.9 [g] at 0.008 [s]

Min: -4.0 [g] at 0.125 [s]



CFC_60

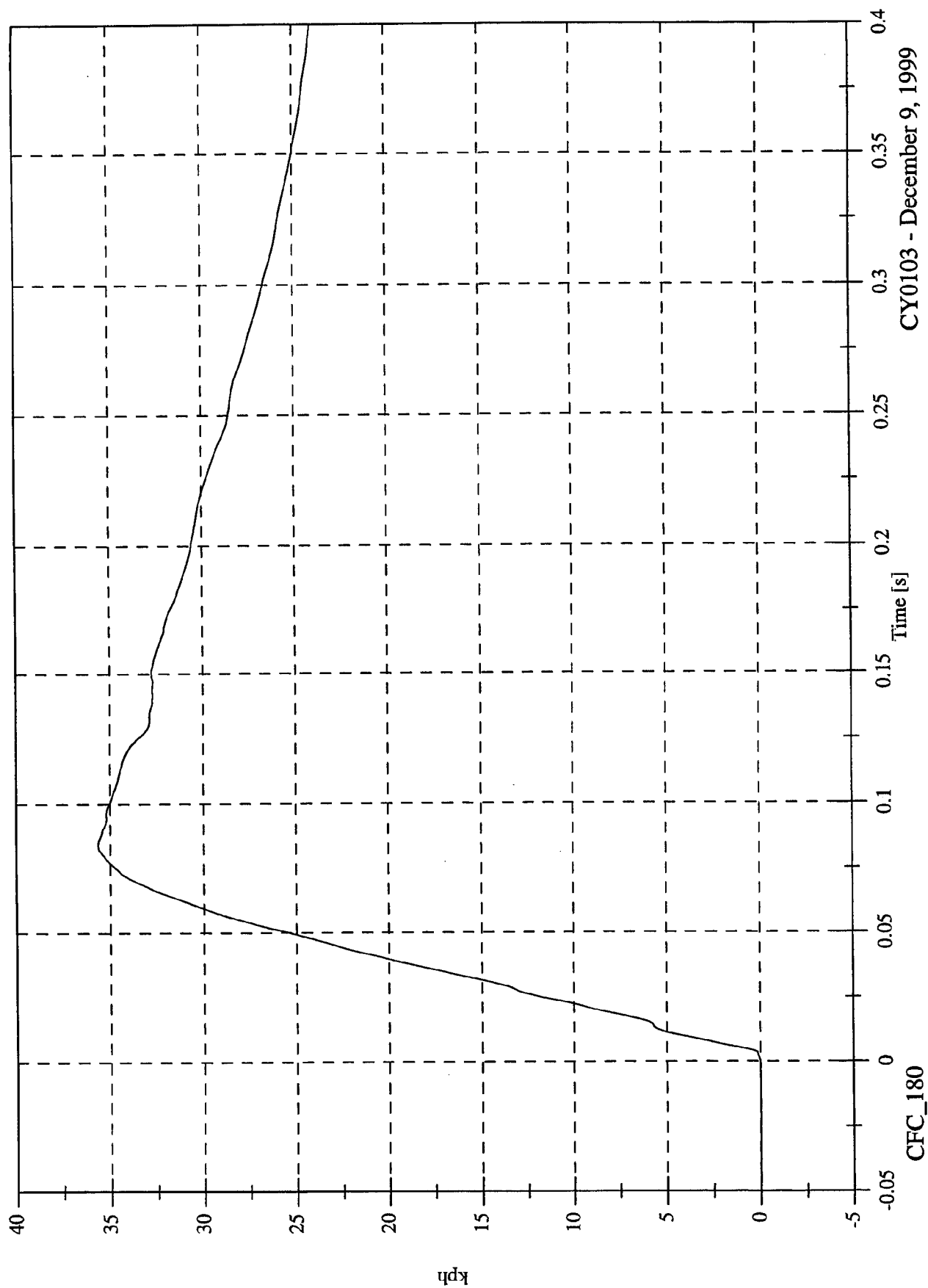
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 35.6 [kph] at 0.084 [s]

Min: -0.0 [kph] at -0.036 [s]

Acc 3 Rear Floorpan Y Velocity



CFC_180

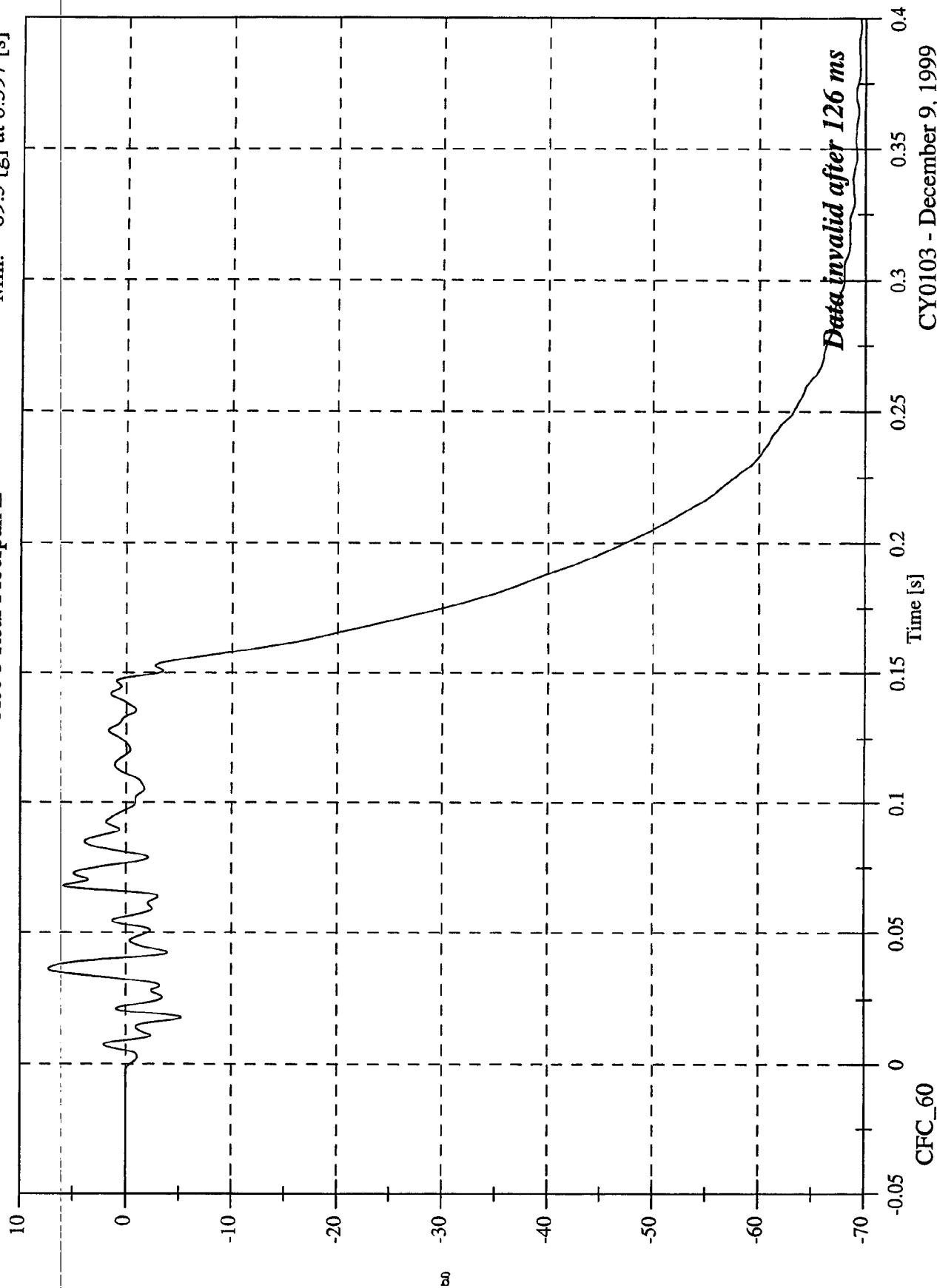
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 3 Rear Floorpan Z

Max: 7.3 [g] at 0.036 [s]

Min: -69.5 [g] at 0.397 [s]



CFC_60

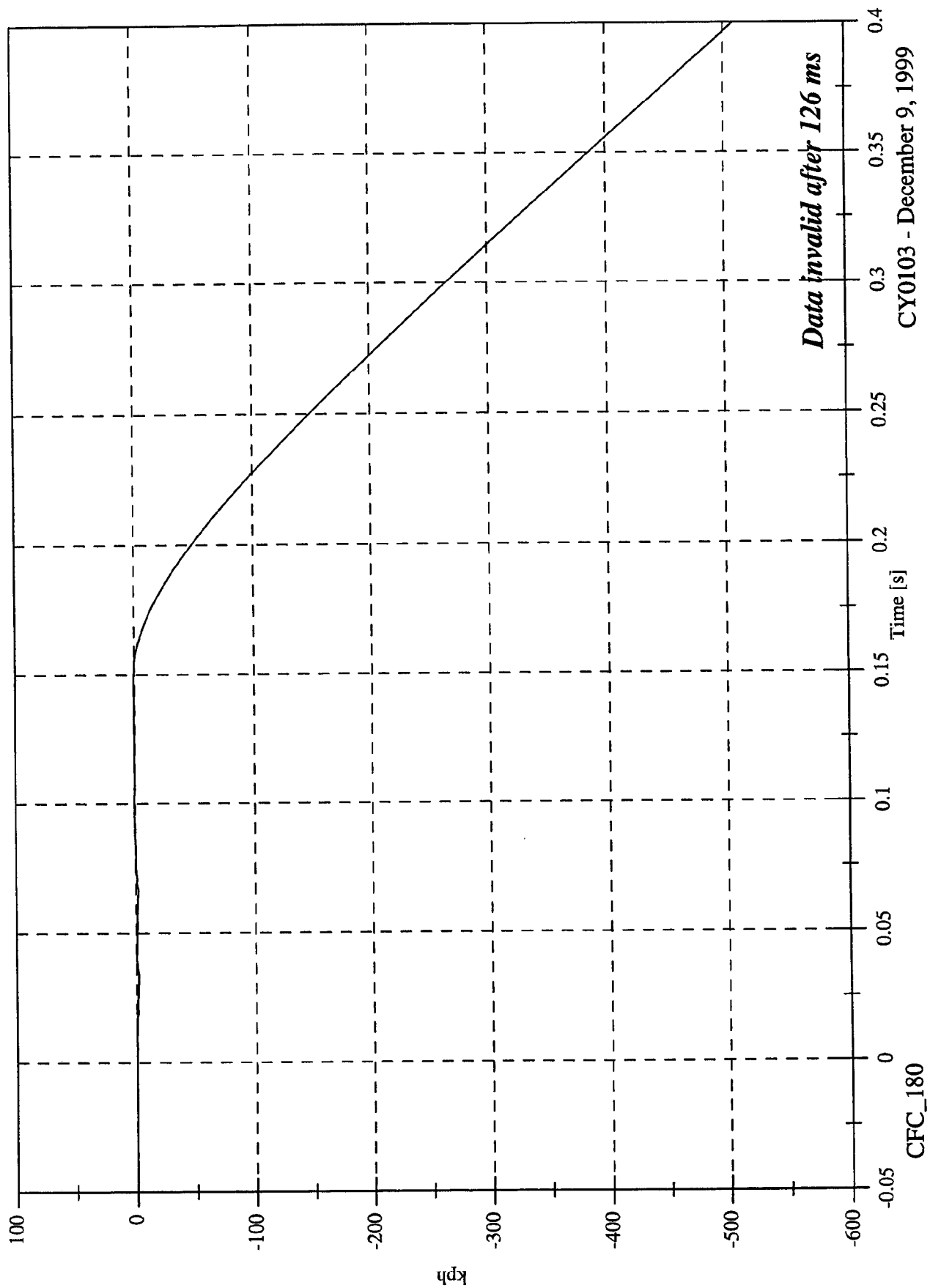
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 3 Rear Floorpan Z Velocity

Max: 0.7 [kph] at 0.149 [s]

Min: -508.5 [kph] at 0.400 [s]



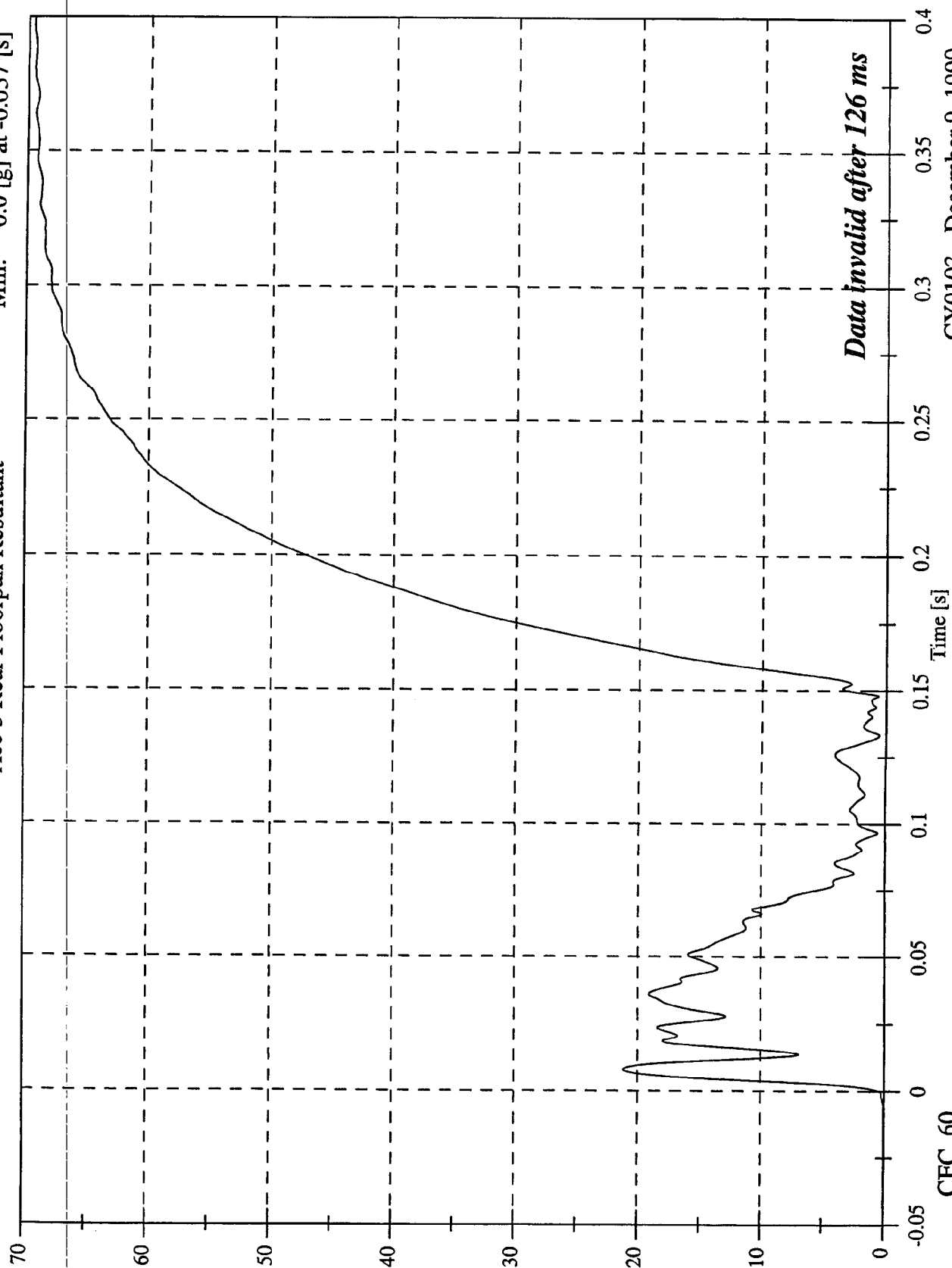
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 3 Rear Floorpan Resultant

Max: 69.5 [g] at 0.397 [s]

Min: 0.0 [g] at -0.037 [s]



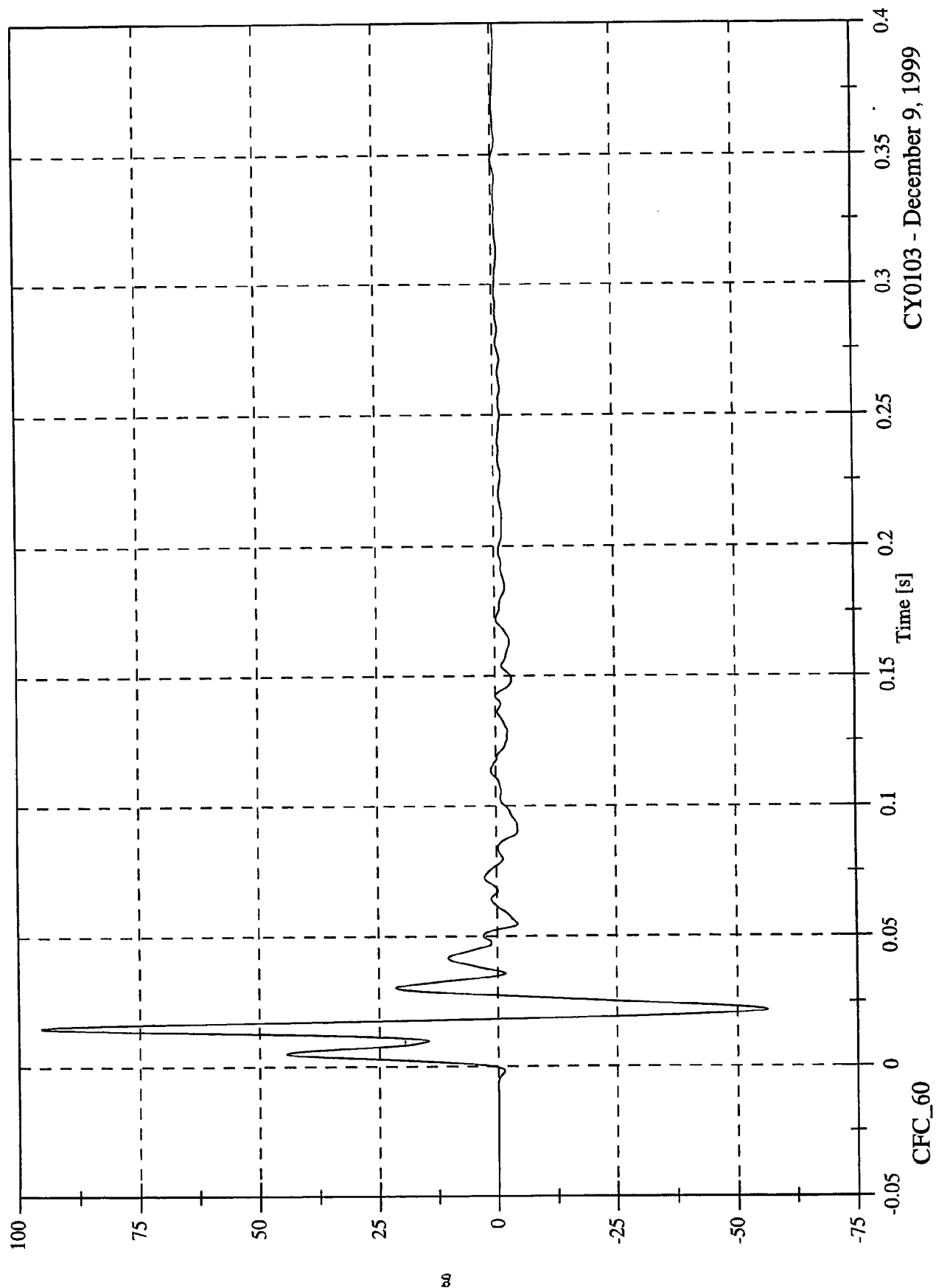
CFC_60

Data invalid after 126 ms

CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am
Acc 4 Left Rear Sill Y

Max: 95.4 [g] at 0.015 [s]
Min: -56.3 [g] at 0.022 [s]



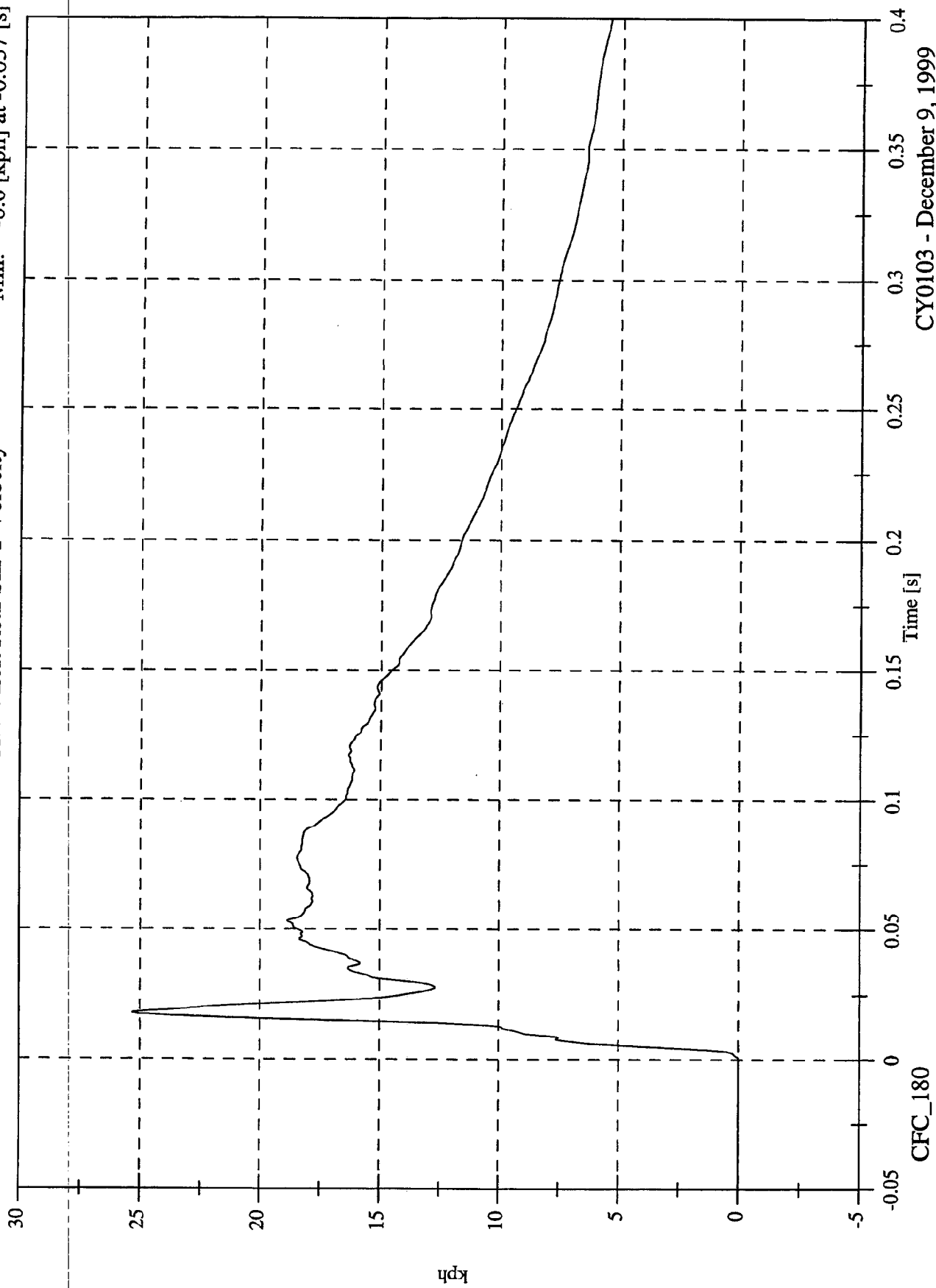
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 4 Left Rear Sill Y Velocity

Max: 25.3 [kph] at 0.018 [s]

Min: -0.0 [kph] at -0.037 [s]



CFC_180

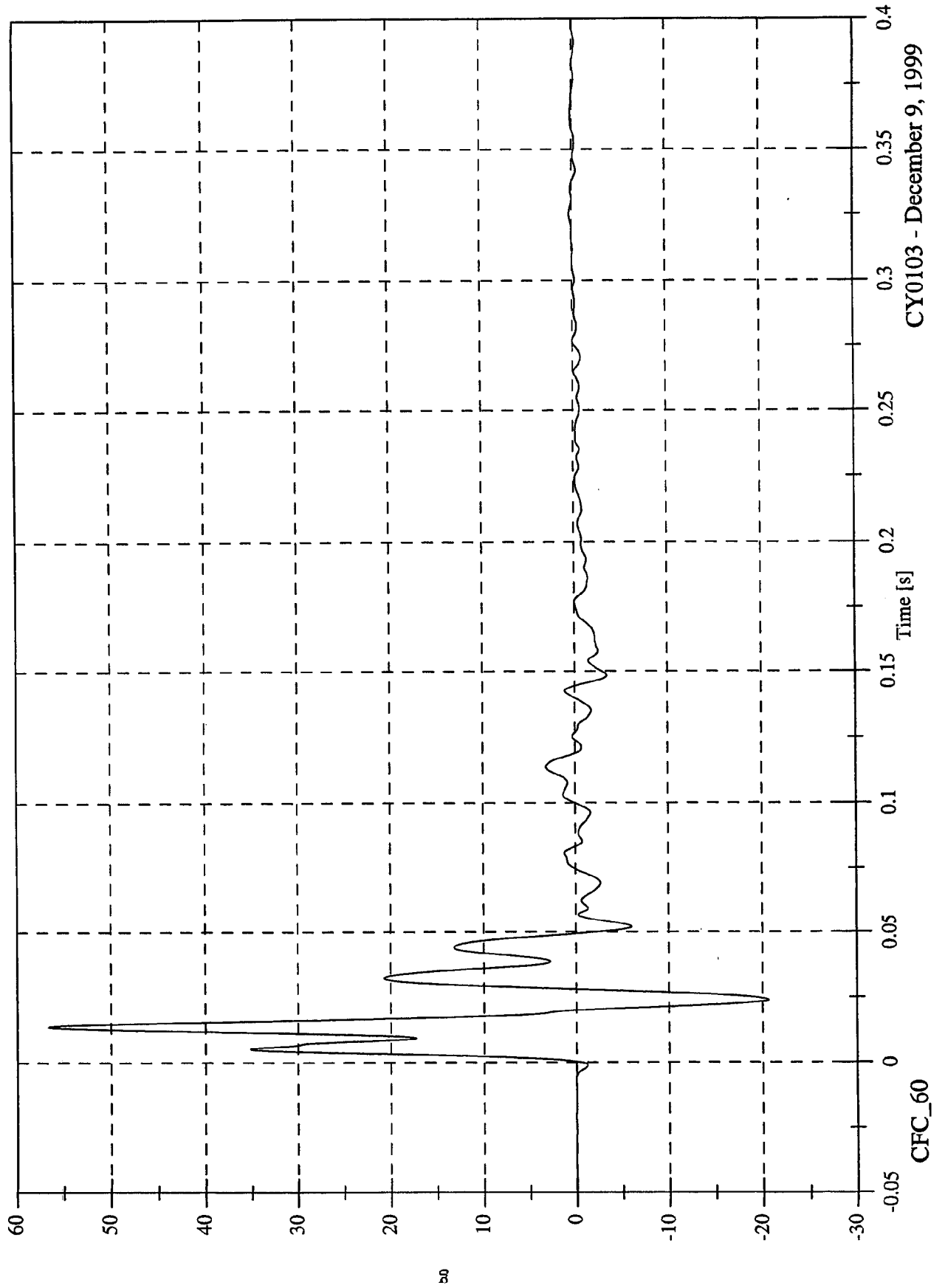
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 5 Left Front Sill Y

Max: 56.6 [g] at 0.014 [s]

Min: -20.6 [g] at 0.024 [s]



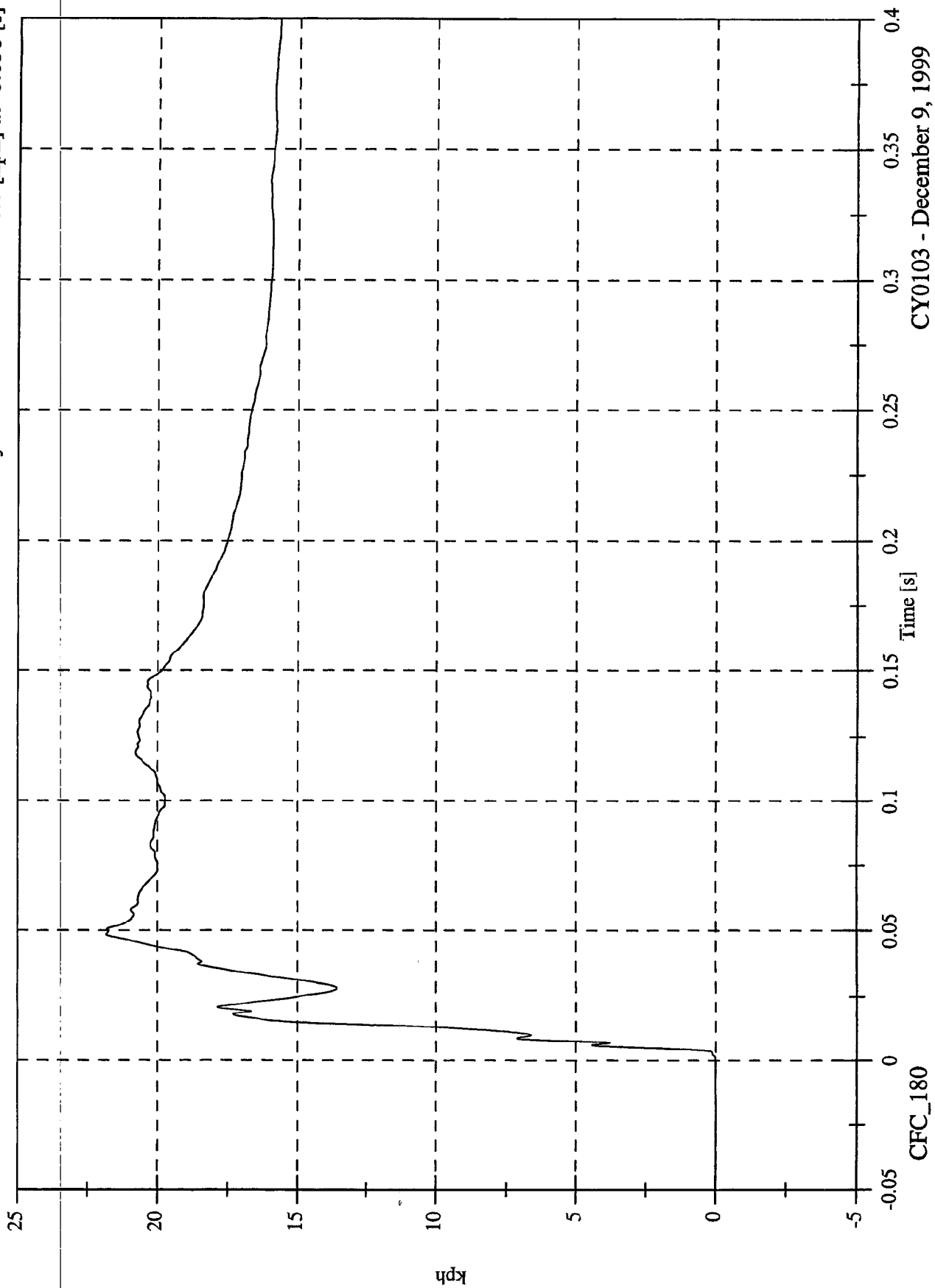
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 5 Left Front Sill Y Velocity

Max: 21.8 [kph] at 0.048 [s]

Min: -0.0 [kph] at -0.050 [s]



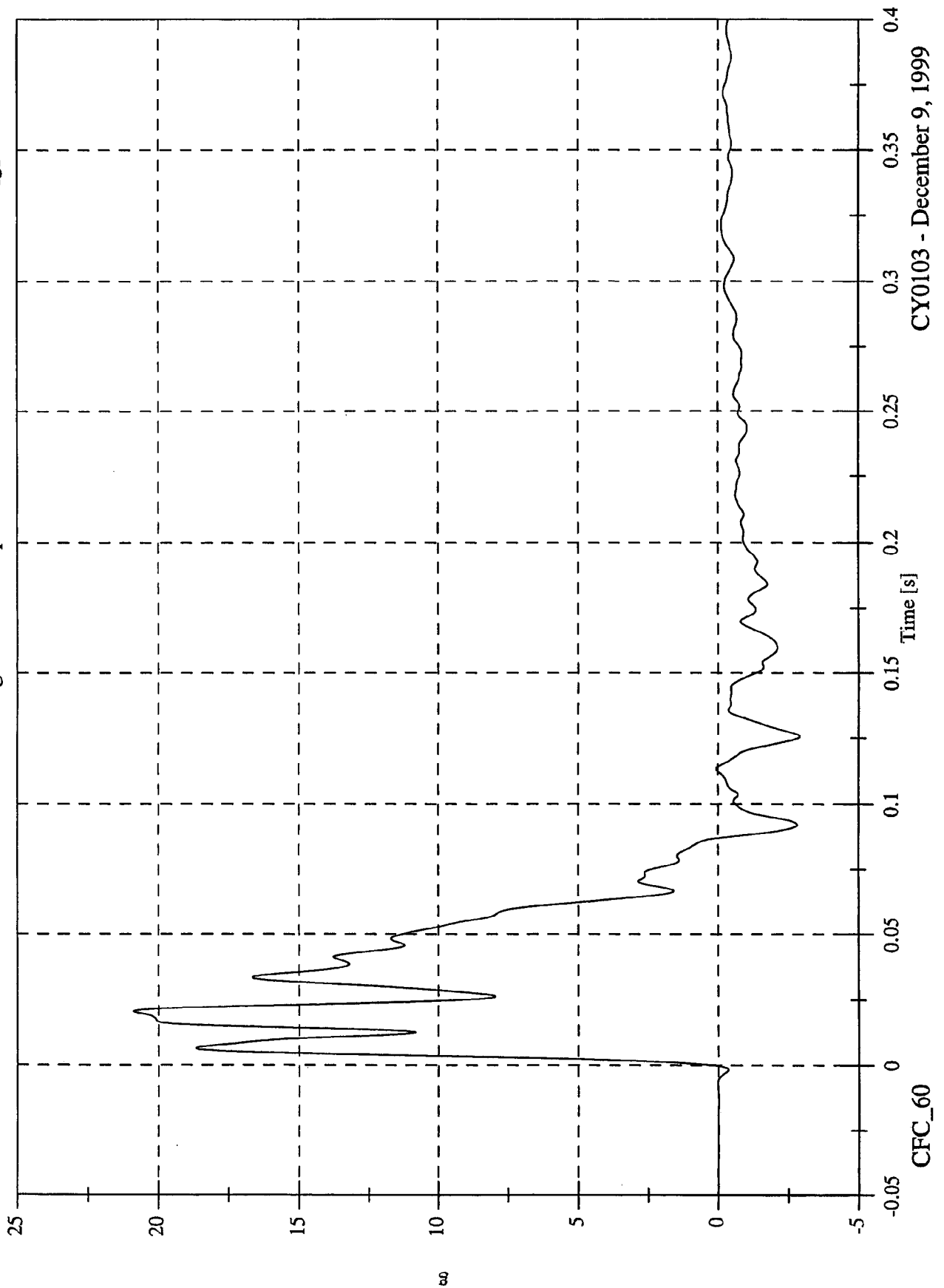
CFC_180

CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 7 Right Rear Compartment Y

Max: 20.9 [g] at 0.020 [s]
Min: -2.9 [g] at 0.126 [s]



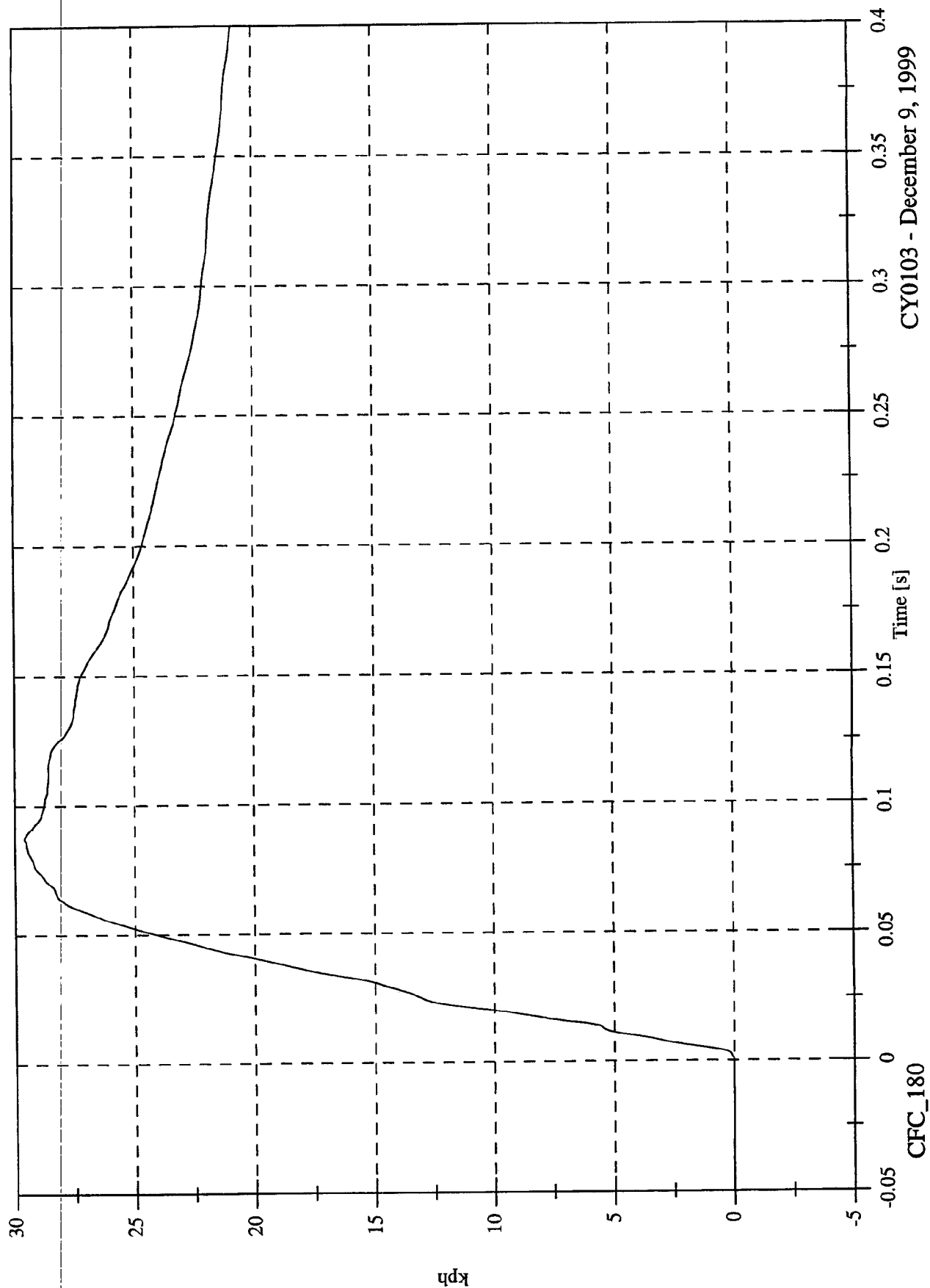
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 29.6 [kph] at 0.087 [s]

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

Acc 7 Right Rear Compartment Y Velocity



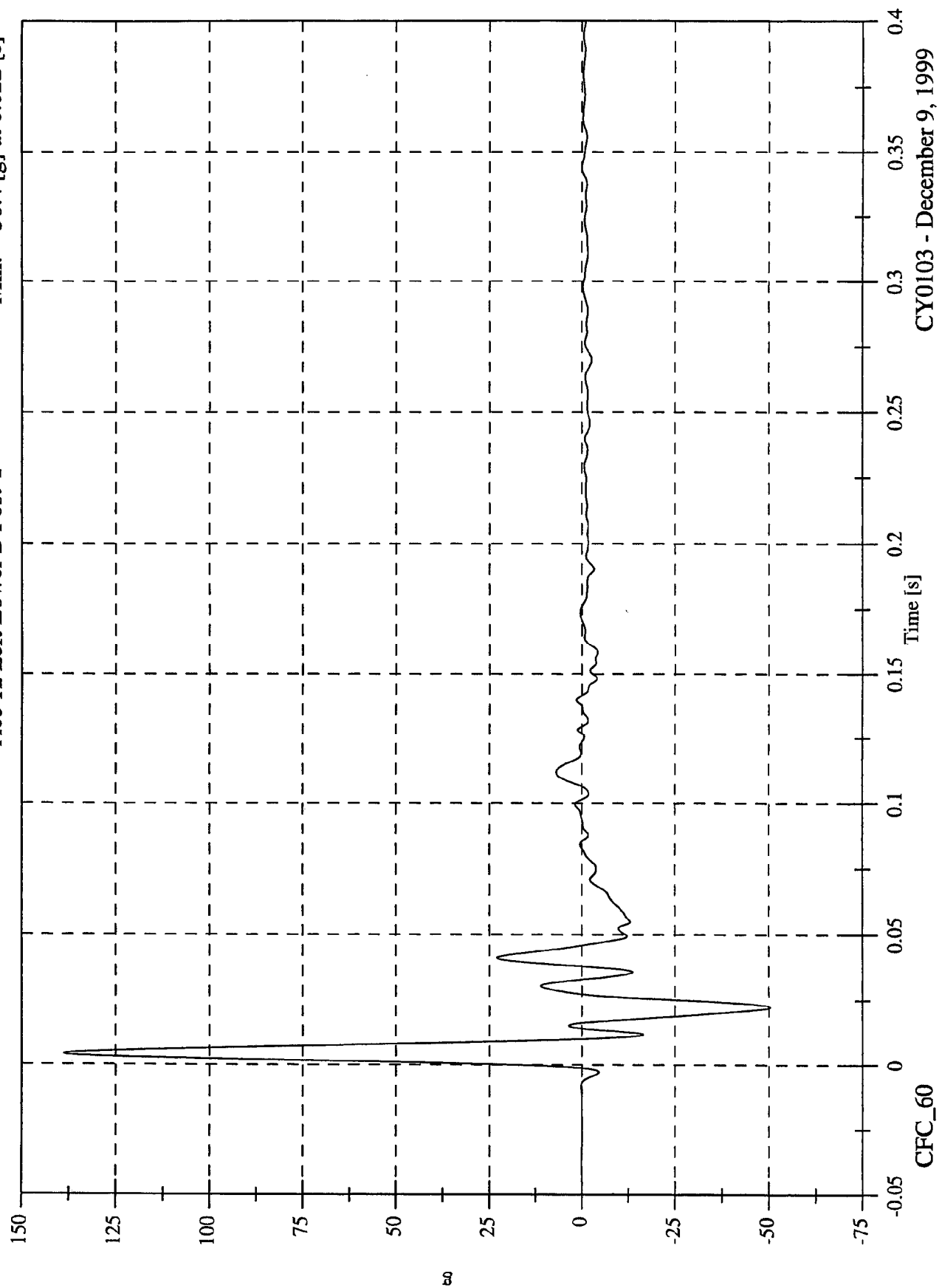
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 12 Left Lower B Post Y

Max: 138.9 [g] at 0.004 [s]

Min: -50.4 [g] at 0.022 [s]



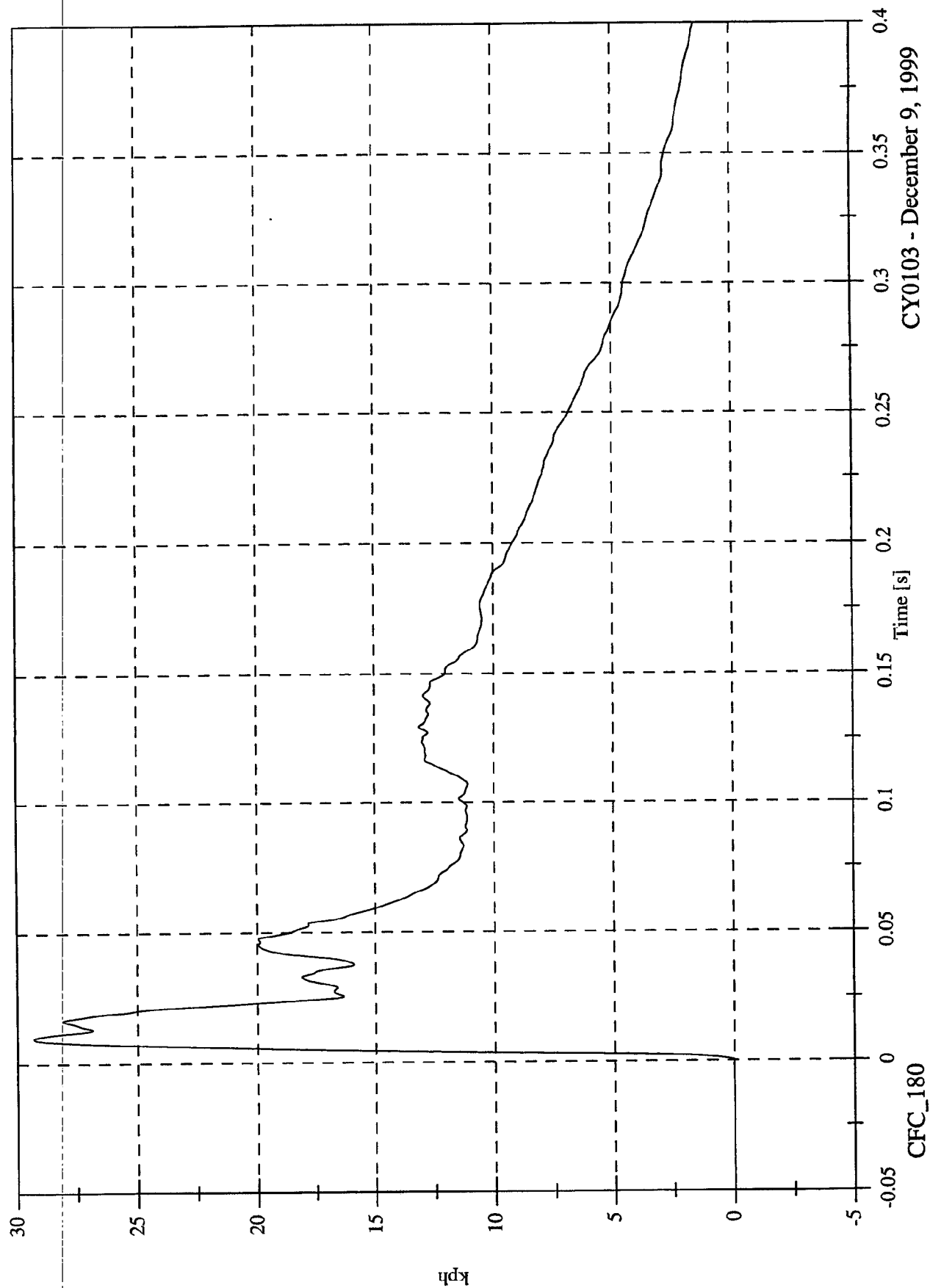
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 29.3 [kph] at 0.010 [s]

Min: -0.0 [kph] at -0.000 [s]

Acc 12 Left Lower B Post Y Velocity



CFC_180

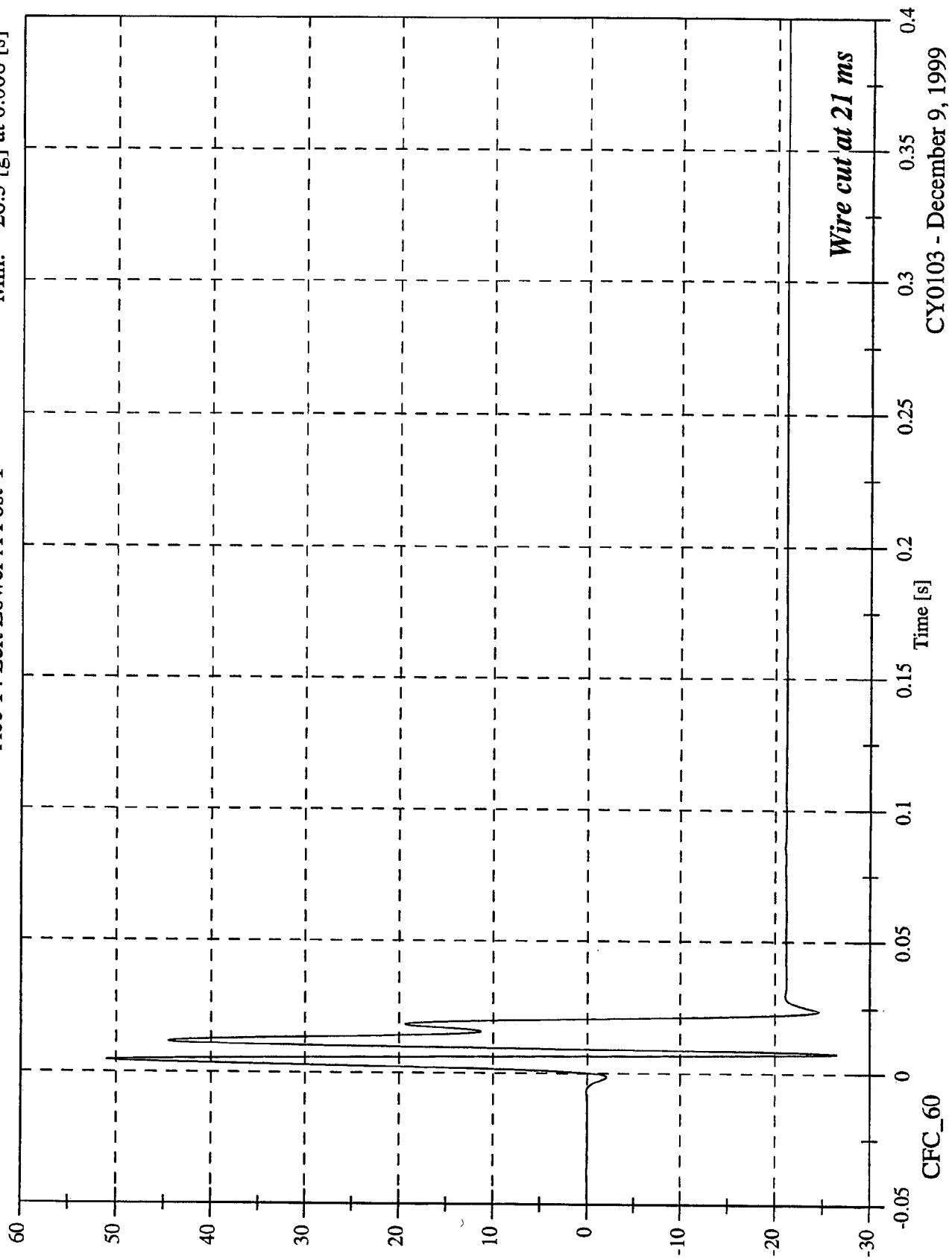
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 14 Left Lower A Post Y

Max: 51.0 [g] at 0.005 [s]

Min: -26.5 [g] at 0.008 [s]



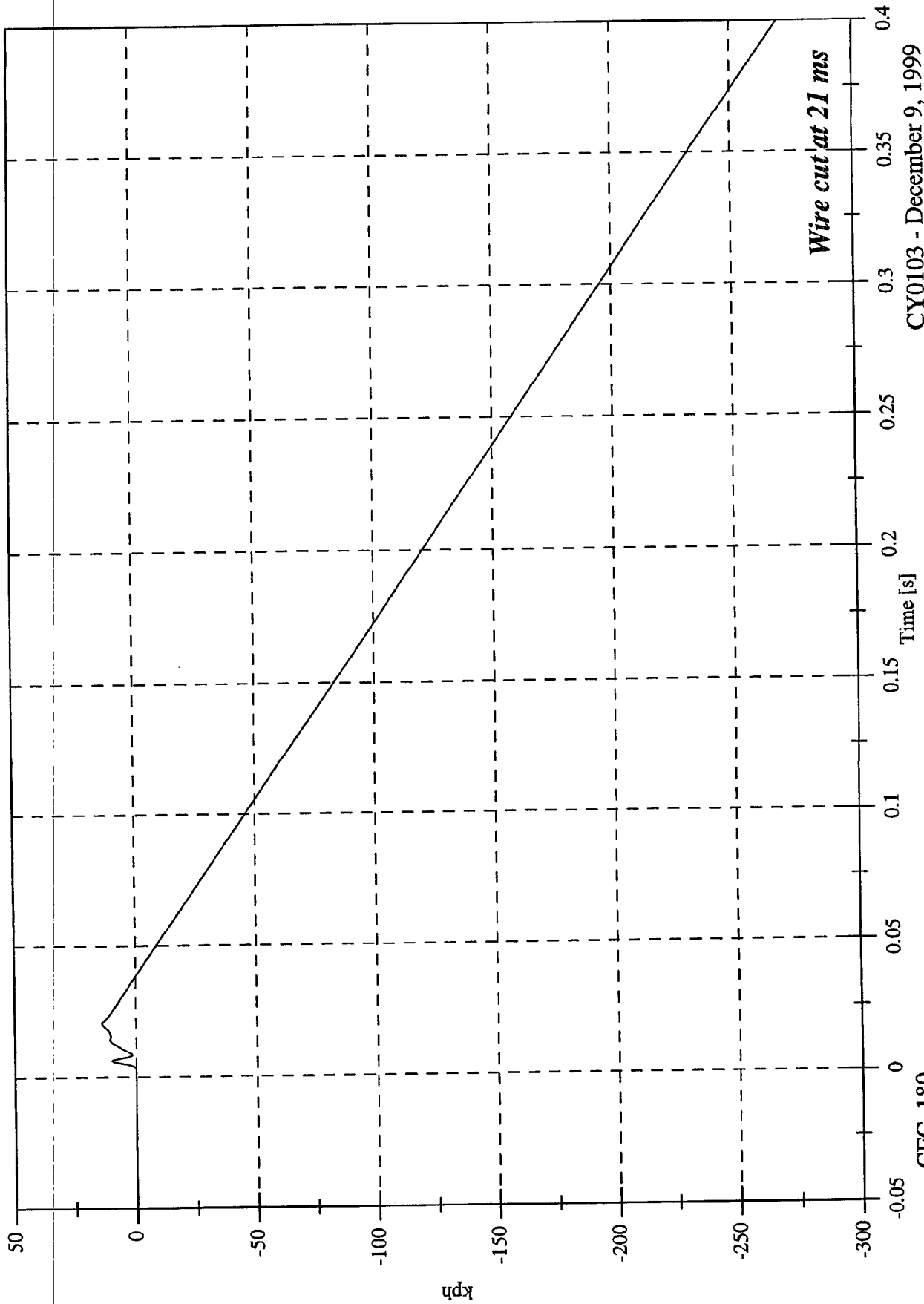
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 13.9 [kph] at 0.021 [s]

Min: -269.6 [kph] at 0.400 [s]

Acc 14 Left Lower A Post Y Velocity



CFC_180

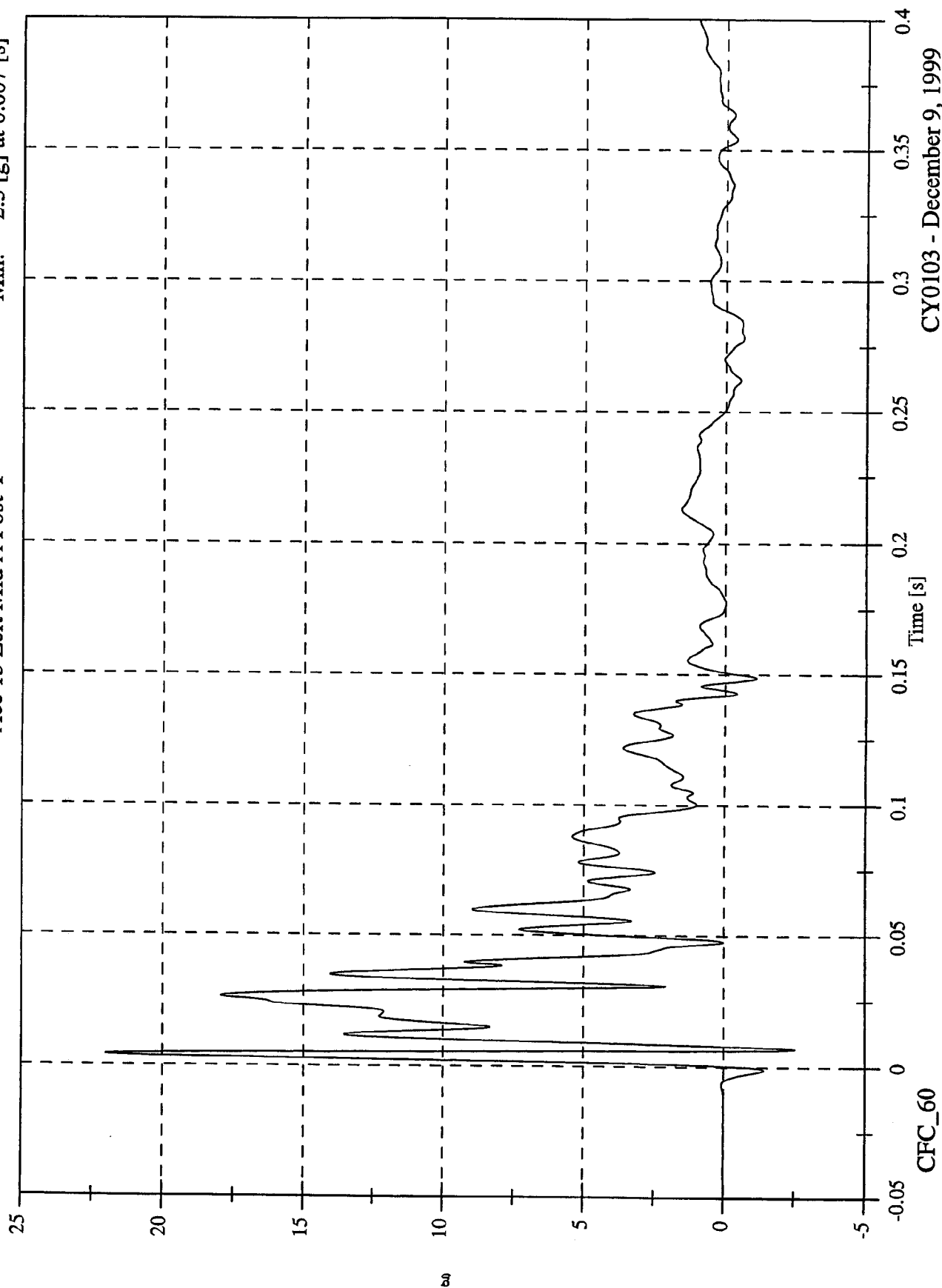
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 15 Left Mid A Post Y

Max: 22.0 [g] at 0.004 [s]

Min: -2.5 [g] at 0.007 [s]



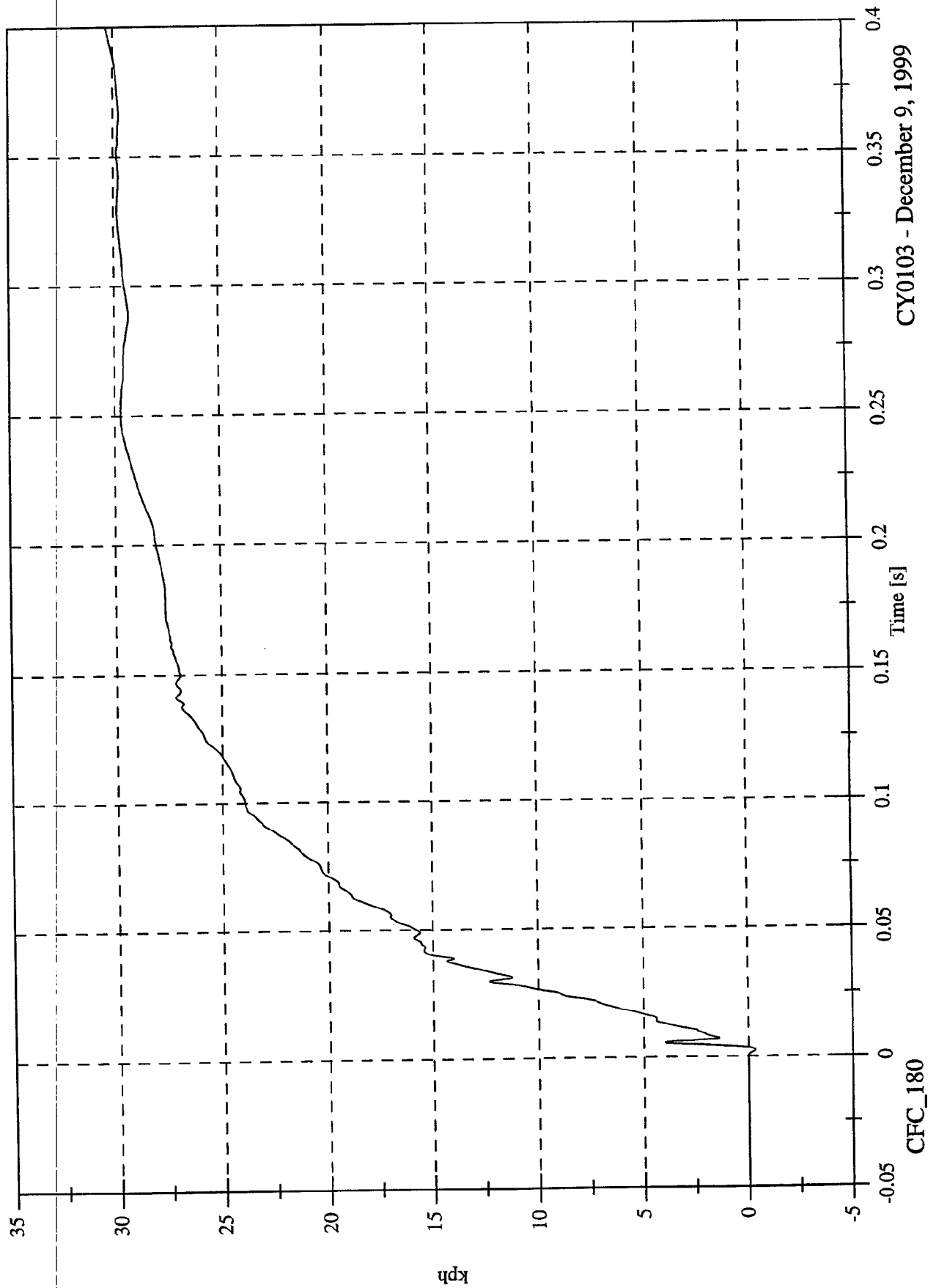
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 15 Left Mid A Post Y Velocity

Max: 30.3 [kph] at 0.400 [s]

Min: -0.3 [kph] at 0.002 [s]



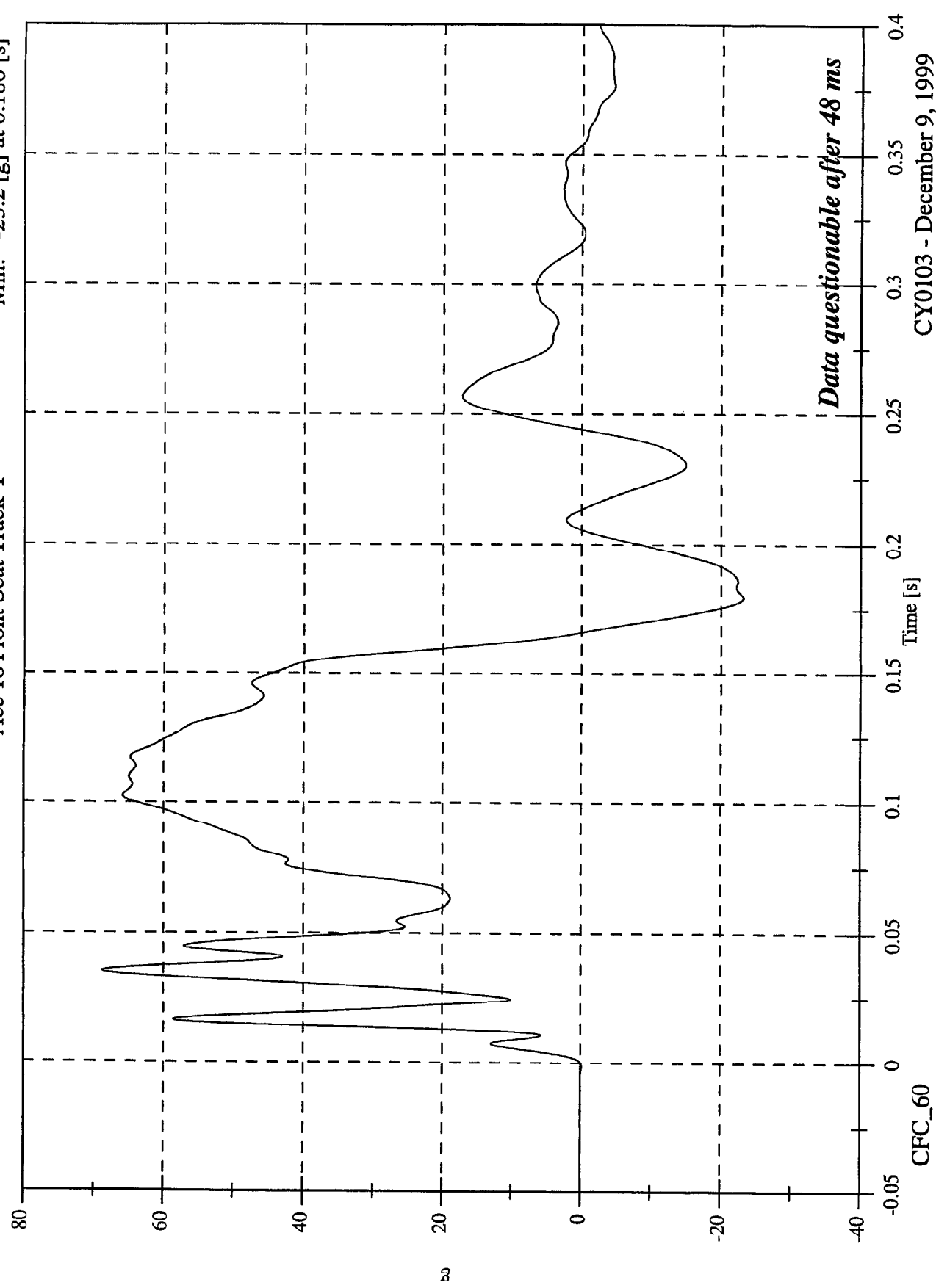
CY0103 - December 9, 1999

CFC_180

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 16 Front Seat Track Y

Max: 68.9 [g] at 0.035 [s]
Min: -23.2 [g] at 0.180 [s]

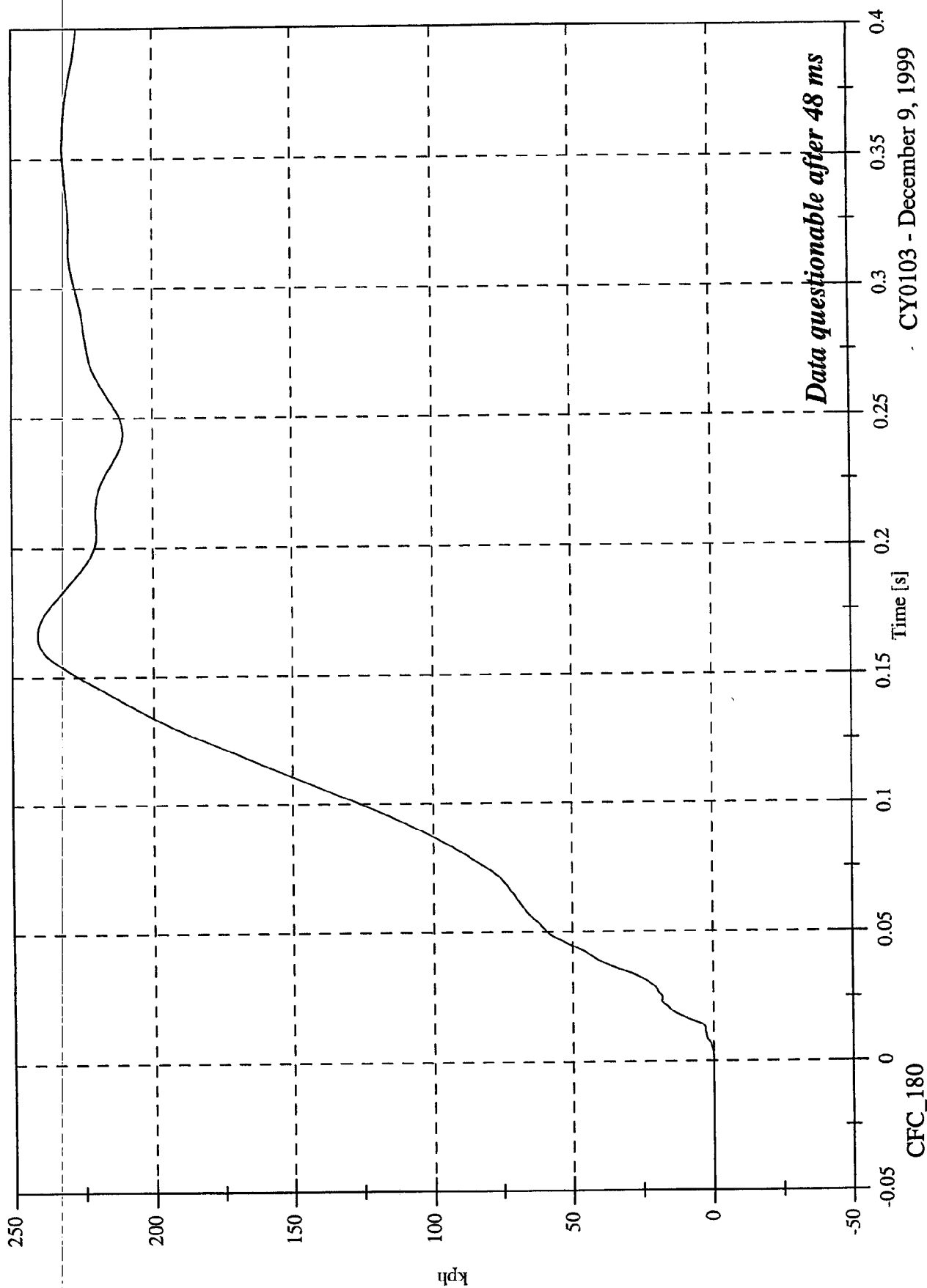


FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 240.9 [kph] at 0.167 [s]

Min: -0.0 [kph] at -0.050 [s]

Acc 16 Front Seat Track Y Velocity



Data questionable after 48 ms

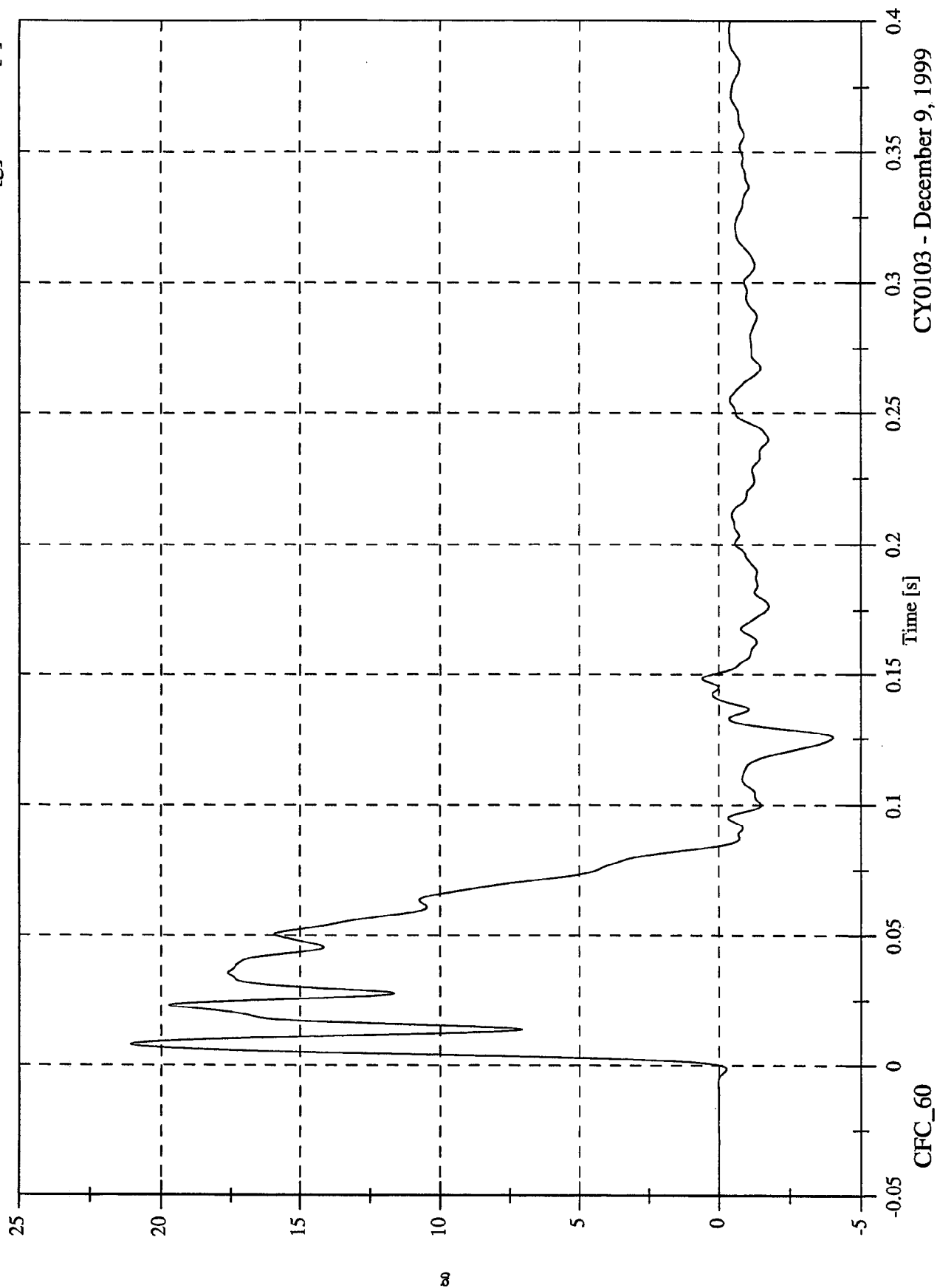
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 17 Rear Seat Track Y

Max: 21.1 [g] at 0.008 [s]

Min: -4.0 [g] at 0.126 [s]



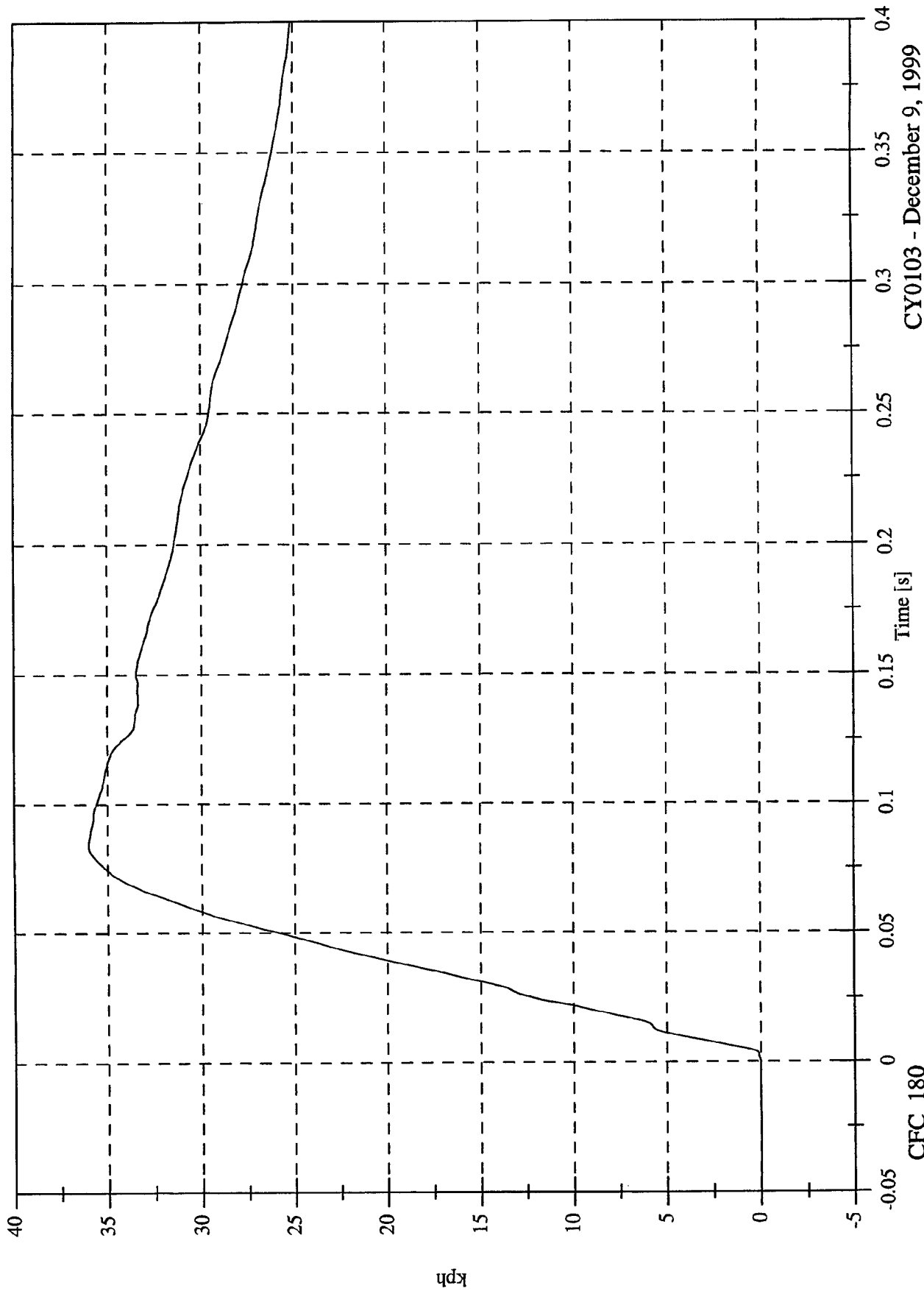
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 36.0 [kph] at 0.084 [s]

Min: -0.0 [kph] at -0.026 [s]

Acc 17 Rear Seat Track Y Velocity



CFC_180

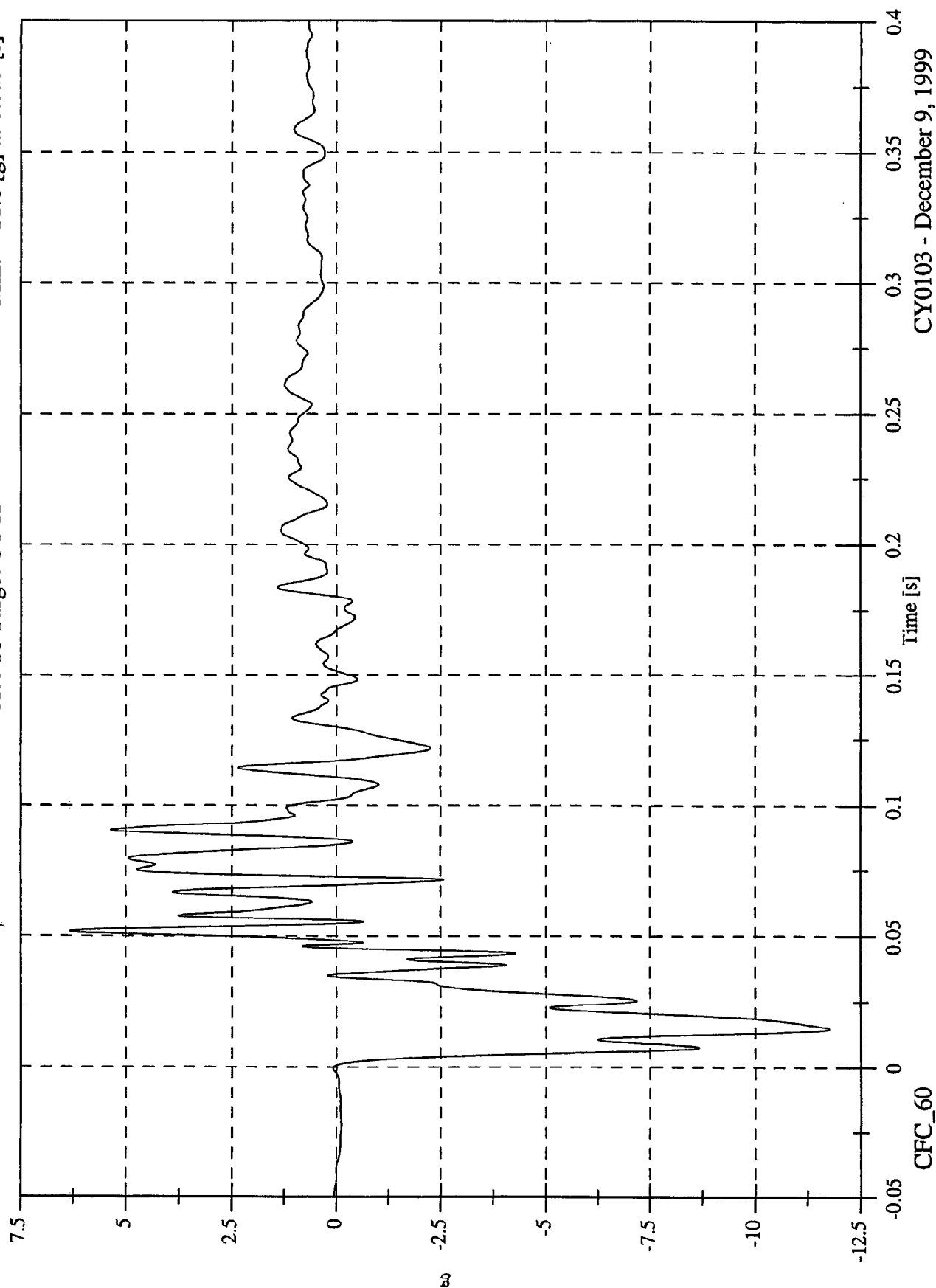
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 6.3 [g] at 0.052 [s]

Min: -11.8 [g] at 0.015 [s]

Acc 18 Target CG X



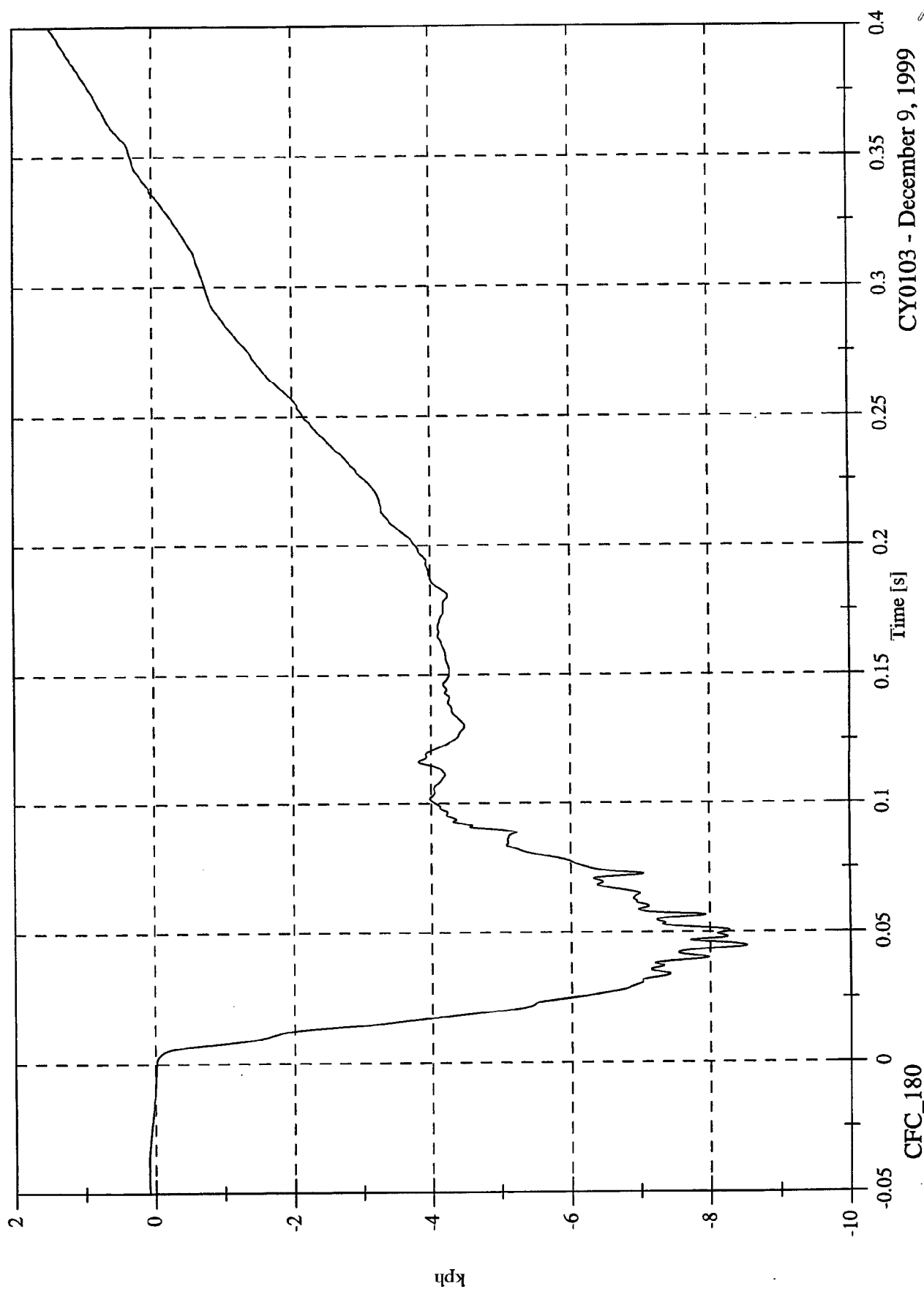
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 18 Target CG X Velocity

Max: 1.5 [kph] at 0.400 [s]

Min: -8.5 [kph] at 0.045 [s]



CY0103 - December 9, 1999

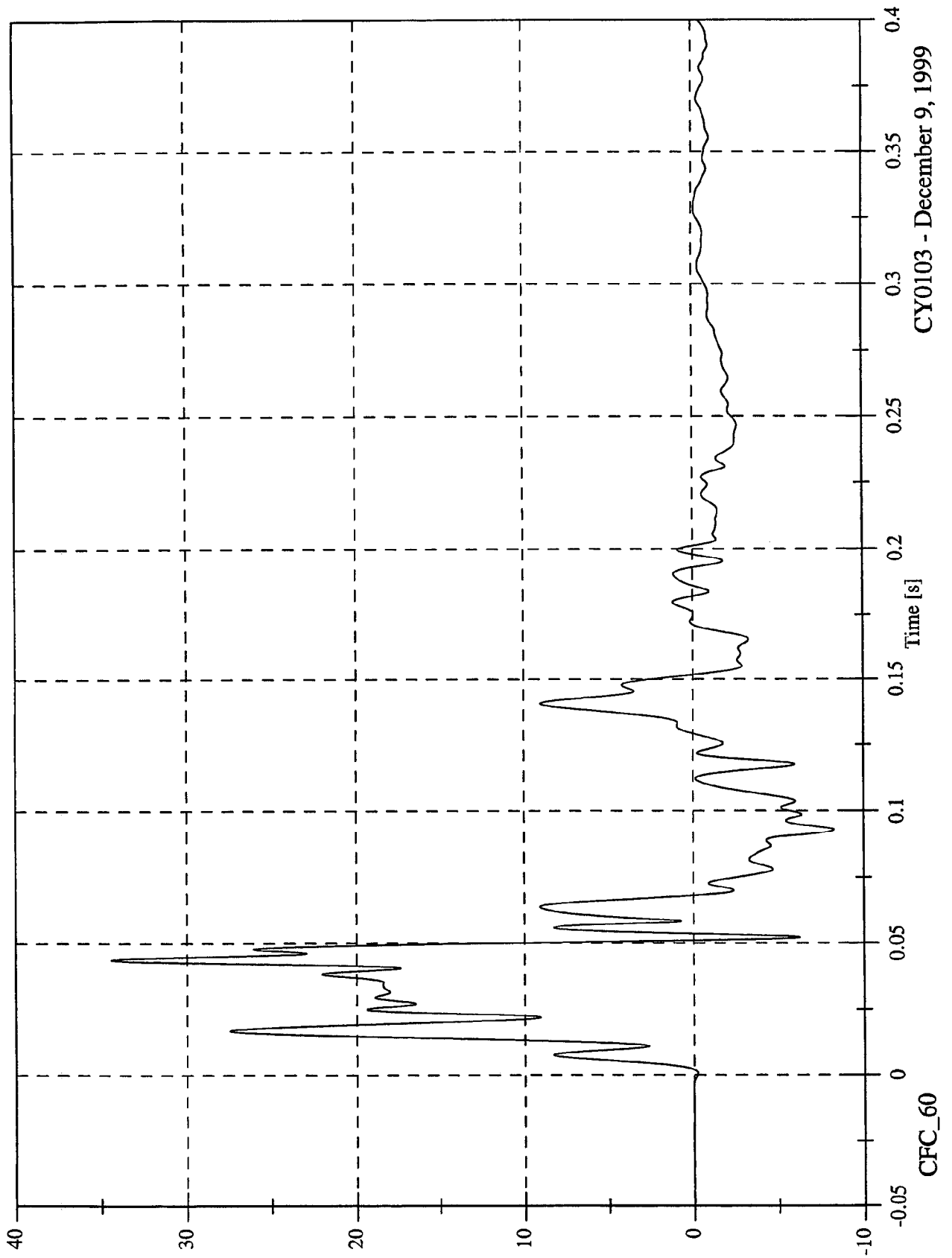
CFC_180

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 18 Target CG Y

Max: 34.4 [g] at 0.044 [s]

Min: -8.3 [g] at 0.093 [s]



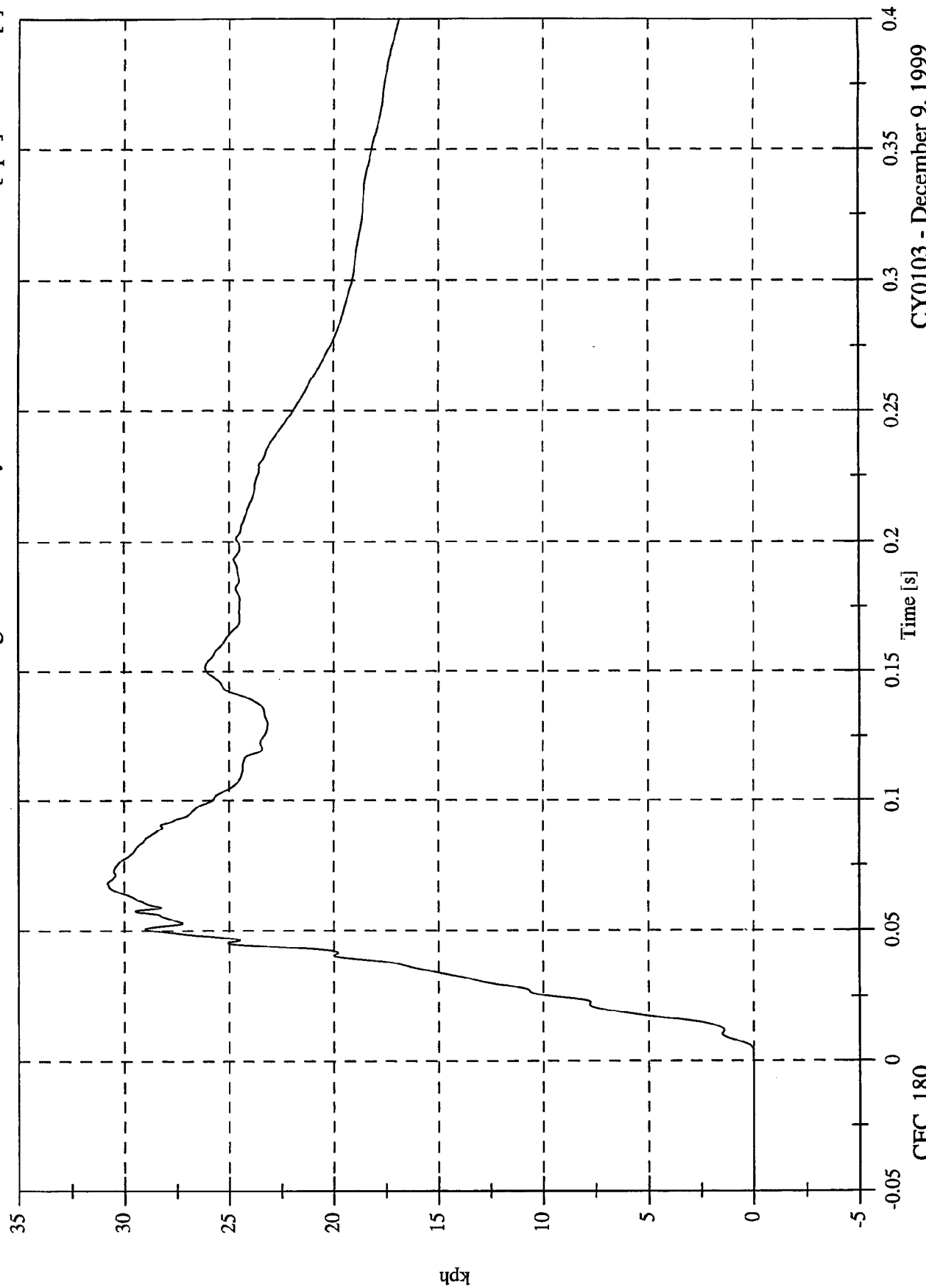
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 30.8 [kph] at 0.068 [s]

Min: -0.0 [kph] at -0.030 [s]

Acc 18 Target CG Y Velocity



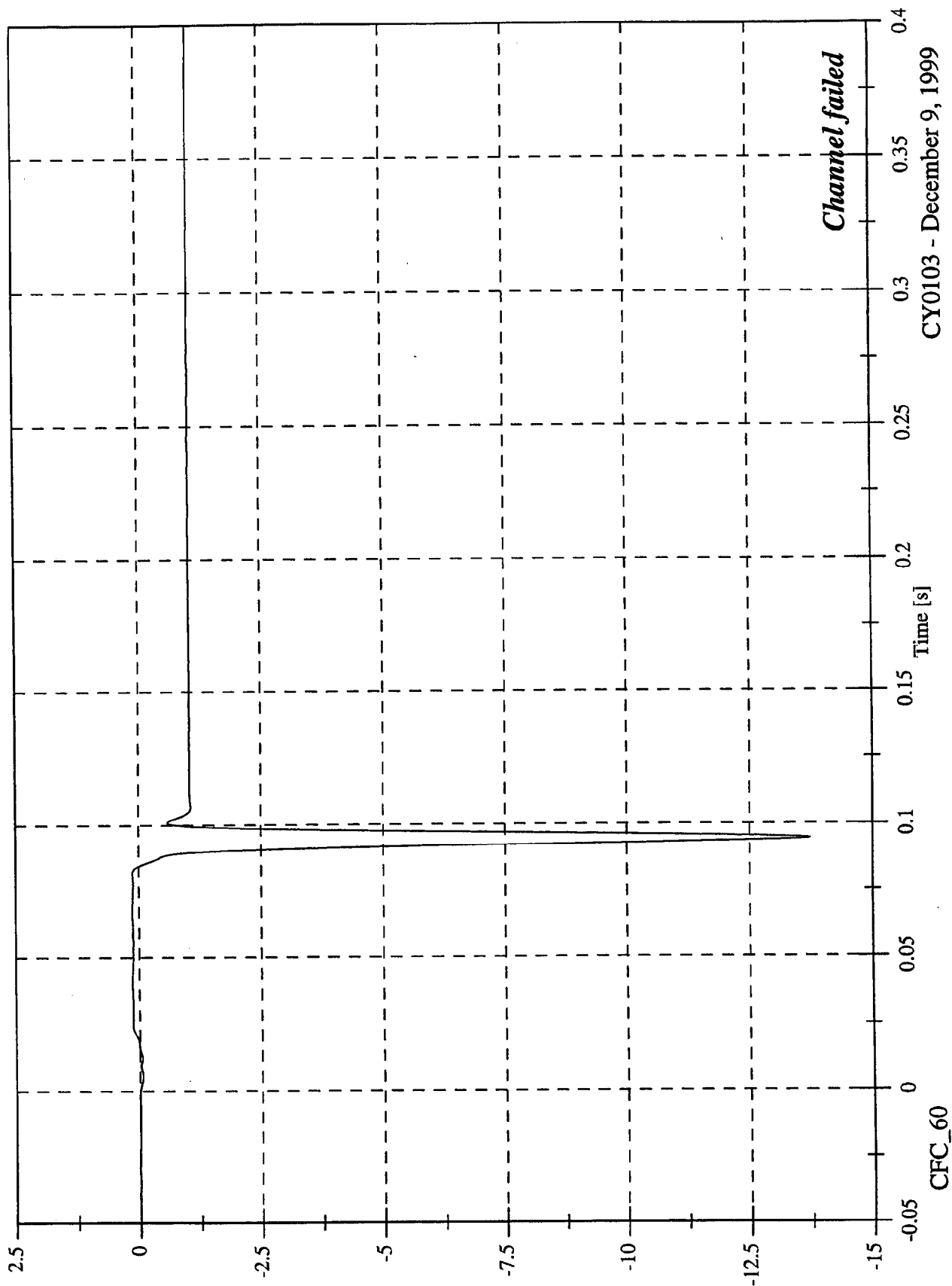
CFC_180

CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 18 Target CG Z

Max: 0.1 [g] at 0.040 [s]
Min: -13.7 [g] at 0.094 [s]

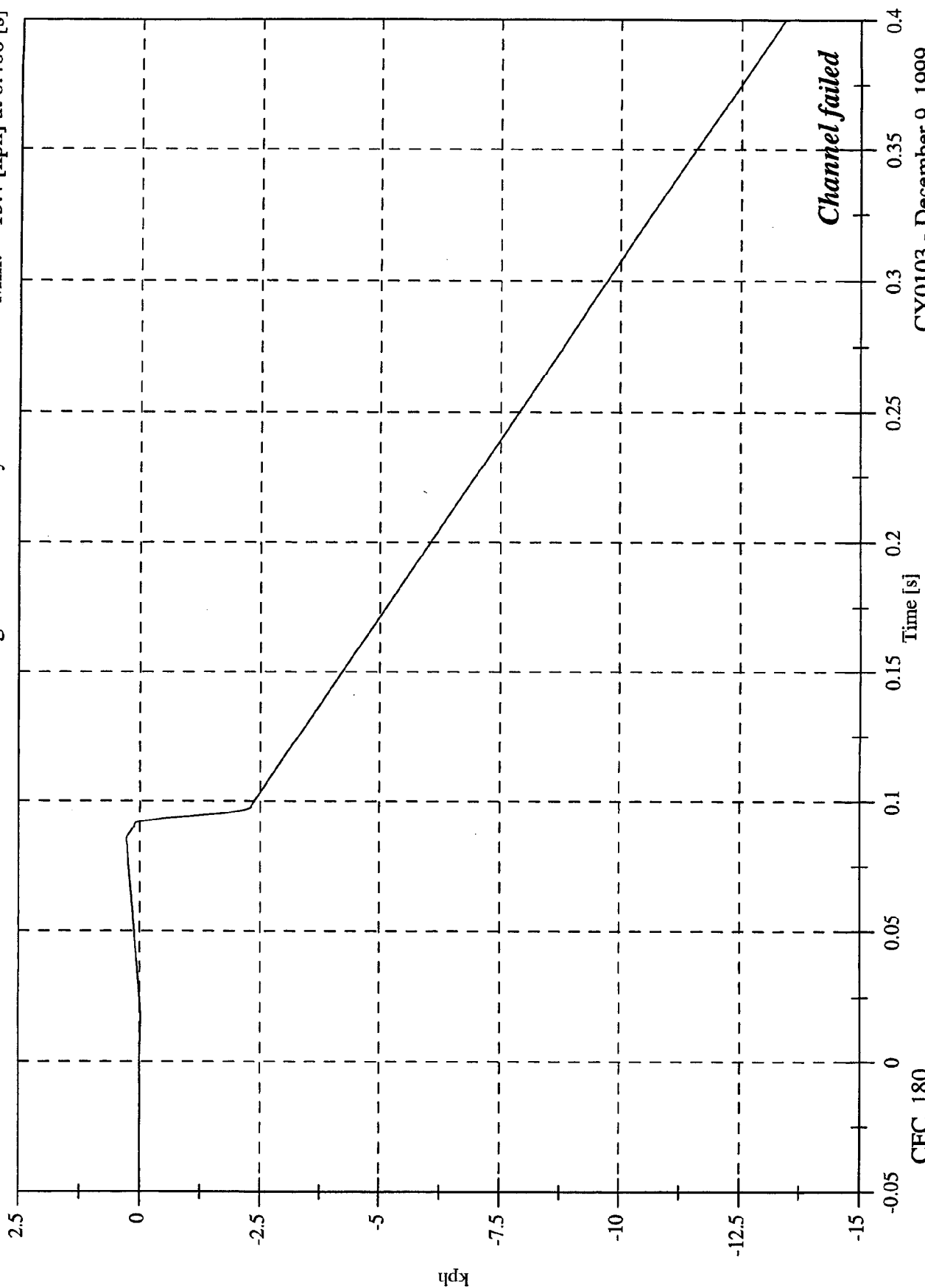


CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 0.3 [kph] at 0.085 [s]
 Min: -13.4 [kph] at 0.400 [s]

Acc 18 Target CG Z Velocity



CFC_180

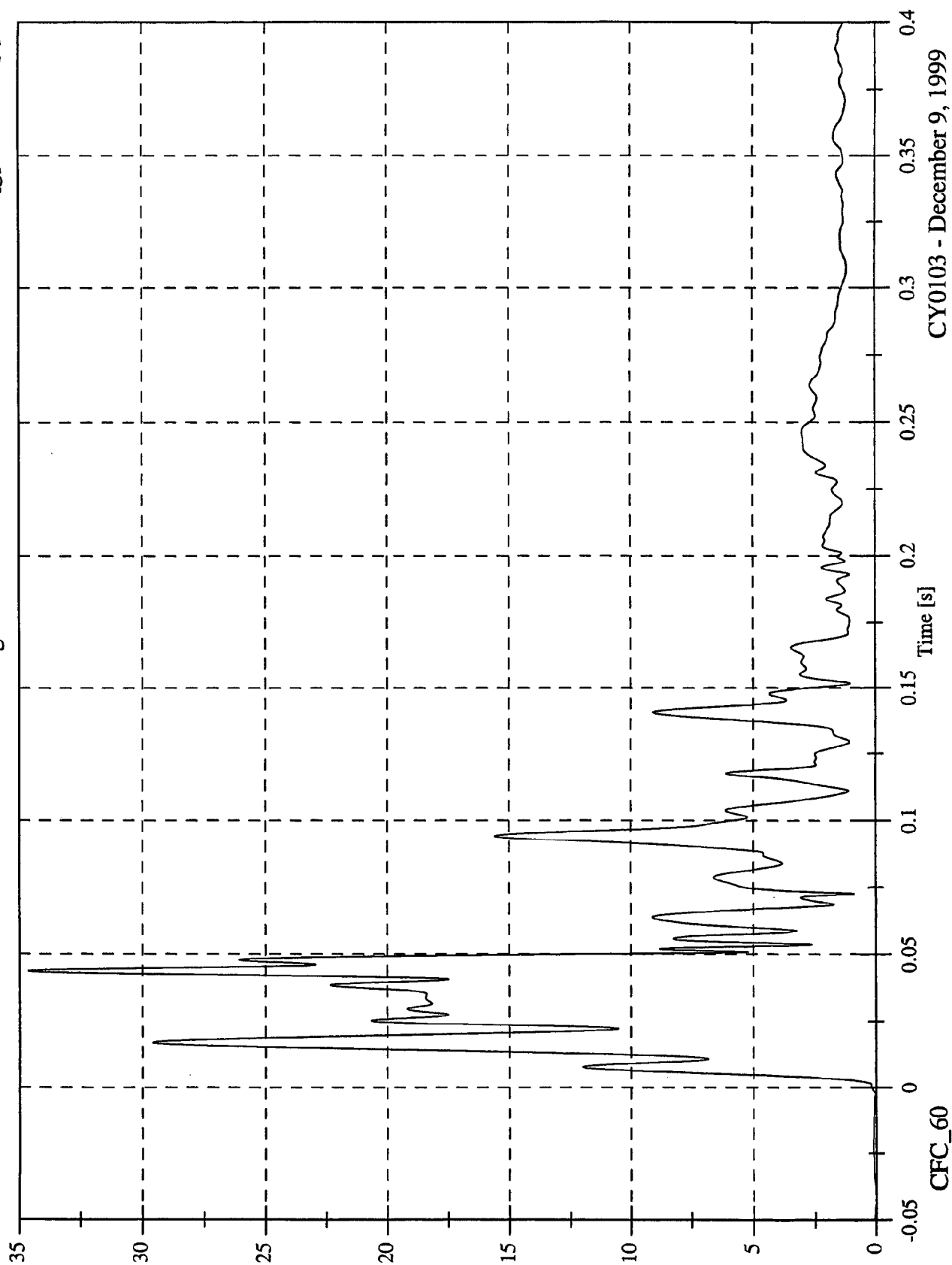
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Acc 18 Target CG Resultant

Max: 34.6 [g] at 0.044 [s]

Min: 0.0 [g] at -0.038 [s]



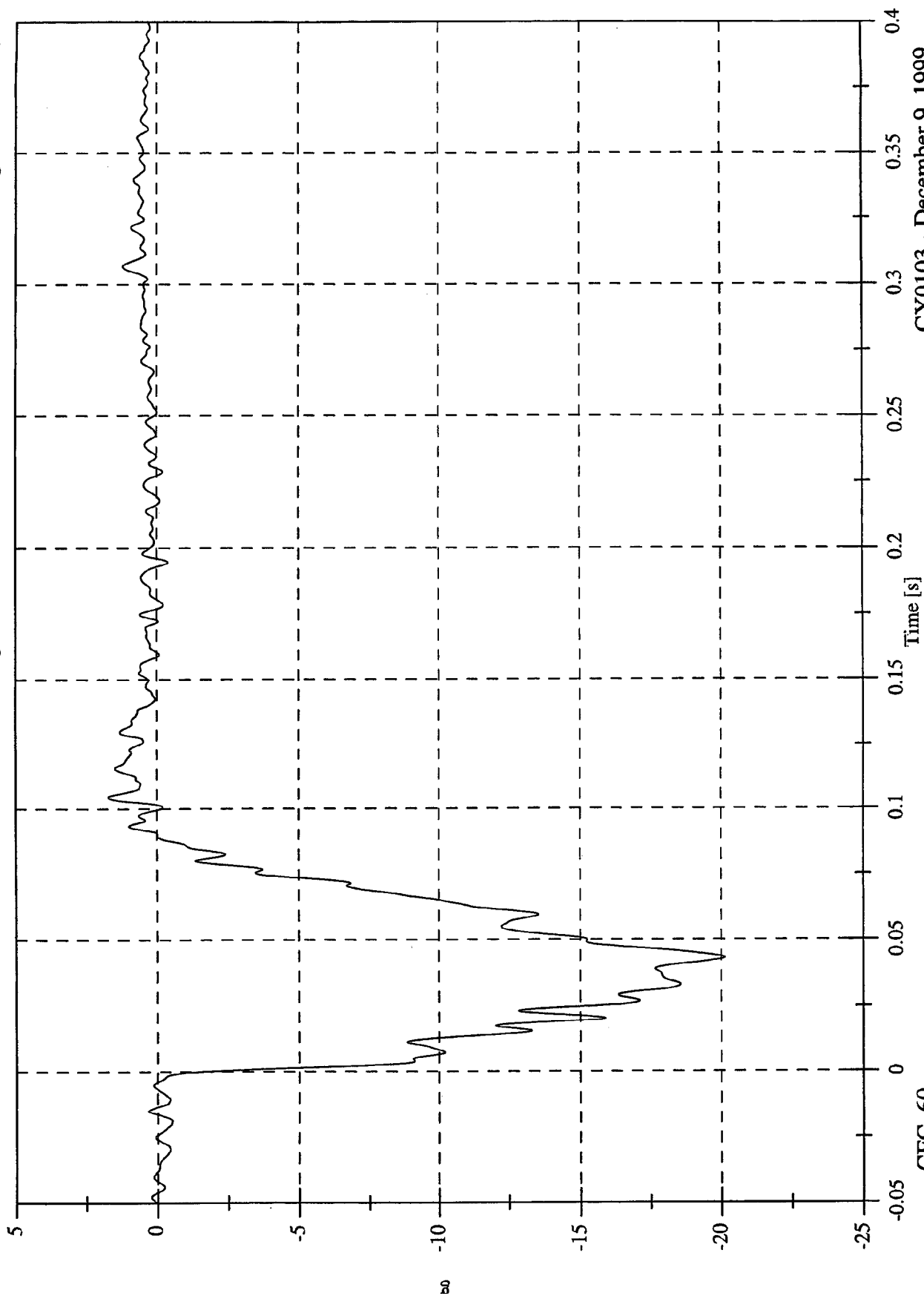
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 1.7 [g] at 0.104 [s]

Min: -20.1 [g] at 0.043 [s]

Moving Barrier CG X



CFC_60

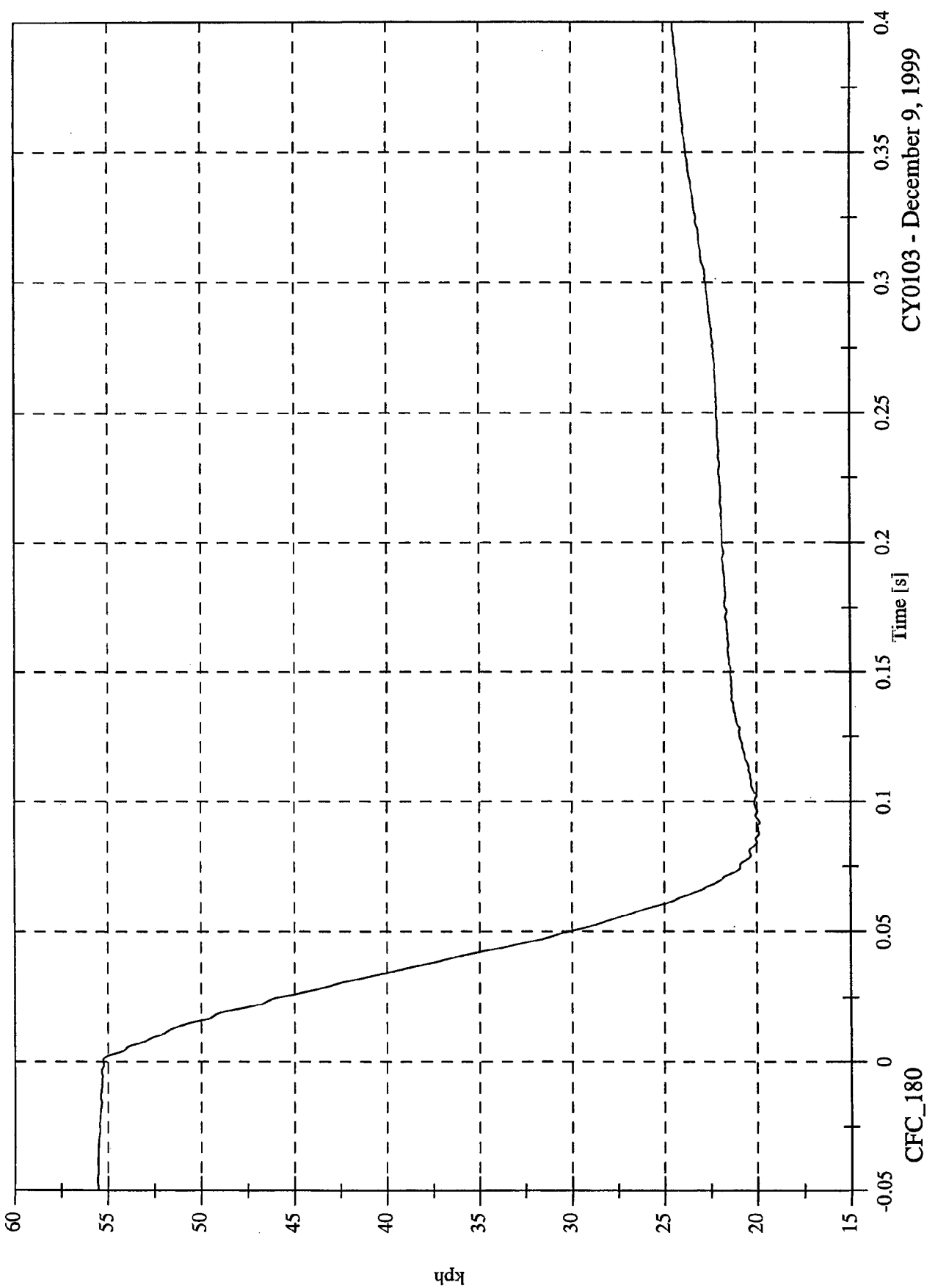
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 55.6 [kph] at -0.046 [s]

Min: 19.8 [kph] at 0.092 [s]

Moving Barrier CG X Velocity



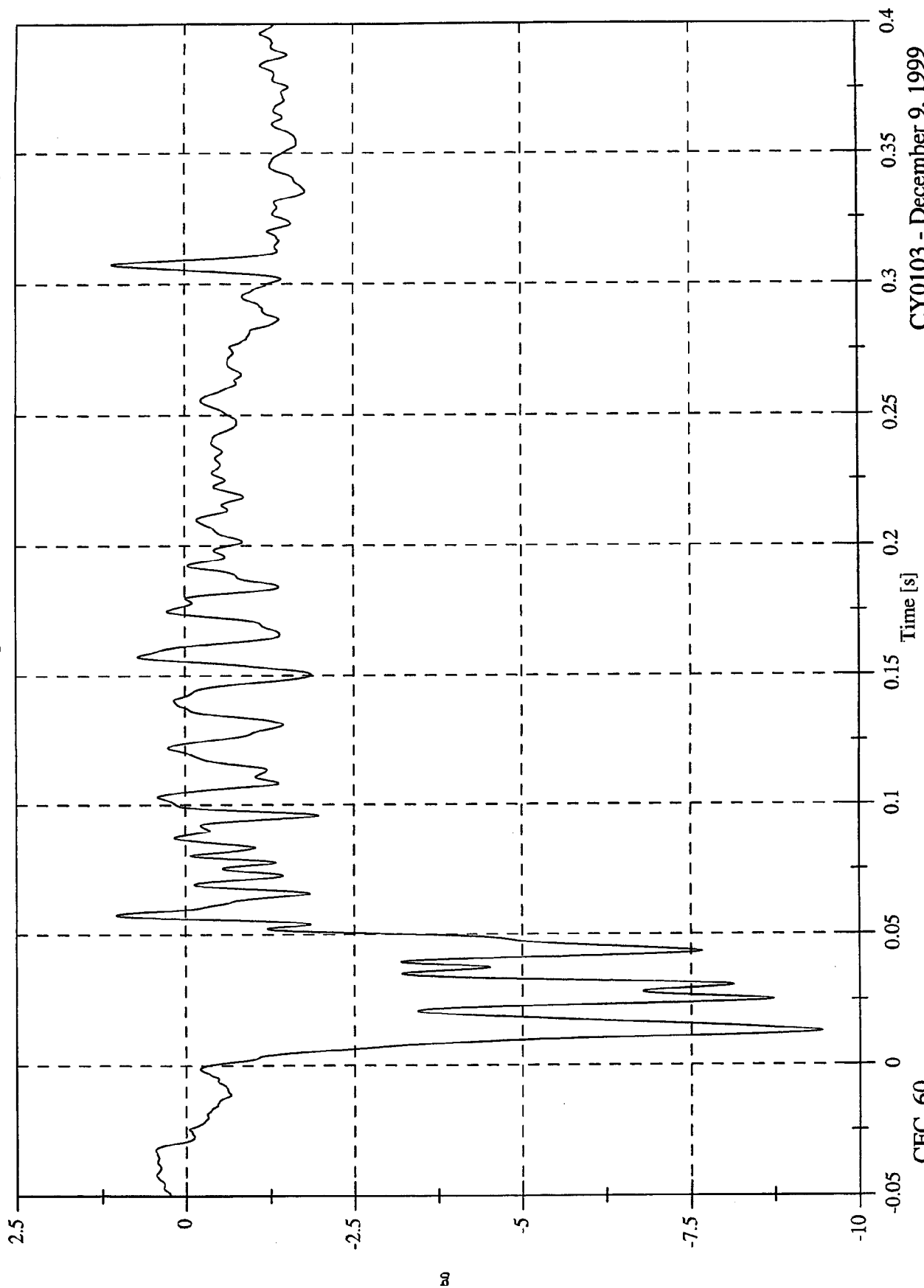
CFC_180

CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Moving Barrier CG Y

Max: 1.1 [g] at 0.307 [s]
Min: -9.4 [g] at 0.013 [s]



CFC_60

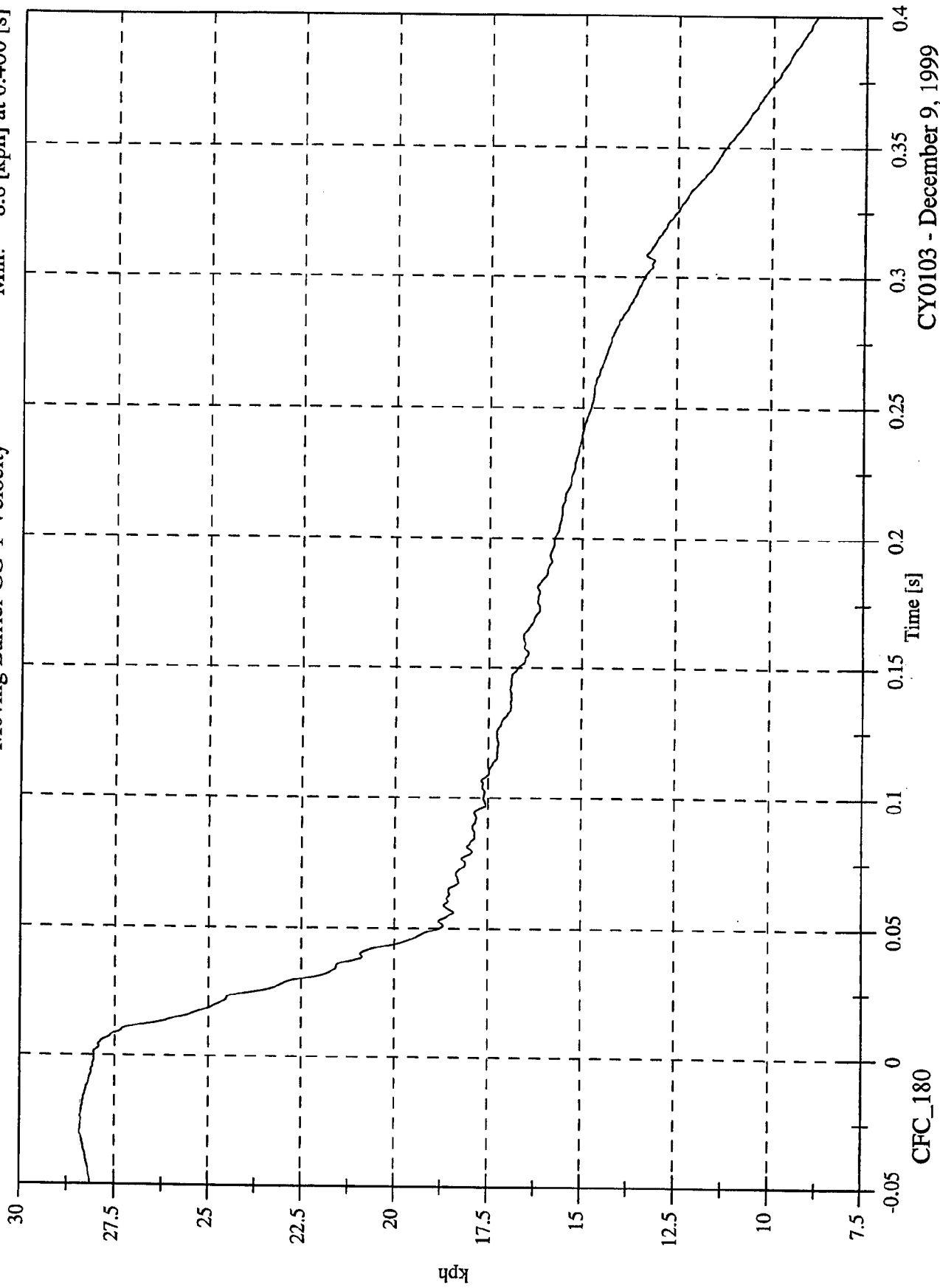
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Moving Barrier CG Y Velocity

Max: 28.4 [kph] at -0.030 [s]

Min: 8.8 [kph] at 0.400 [s]

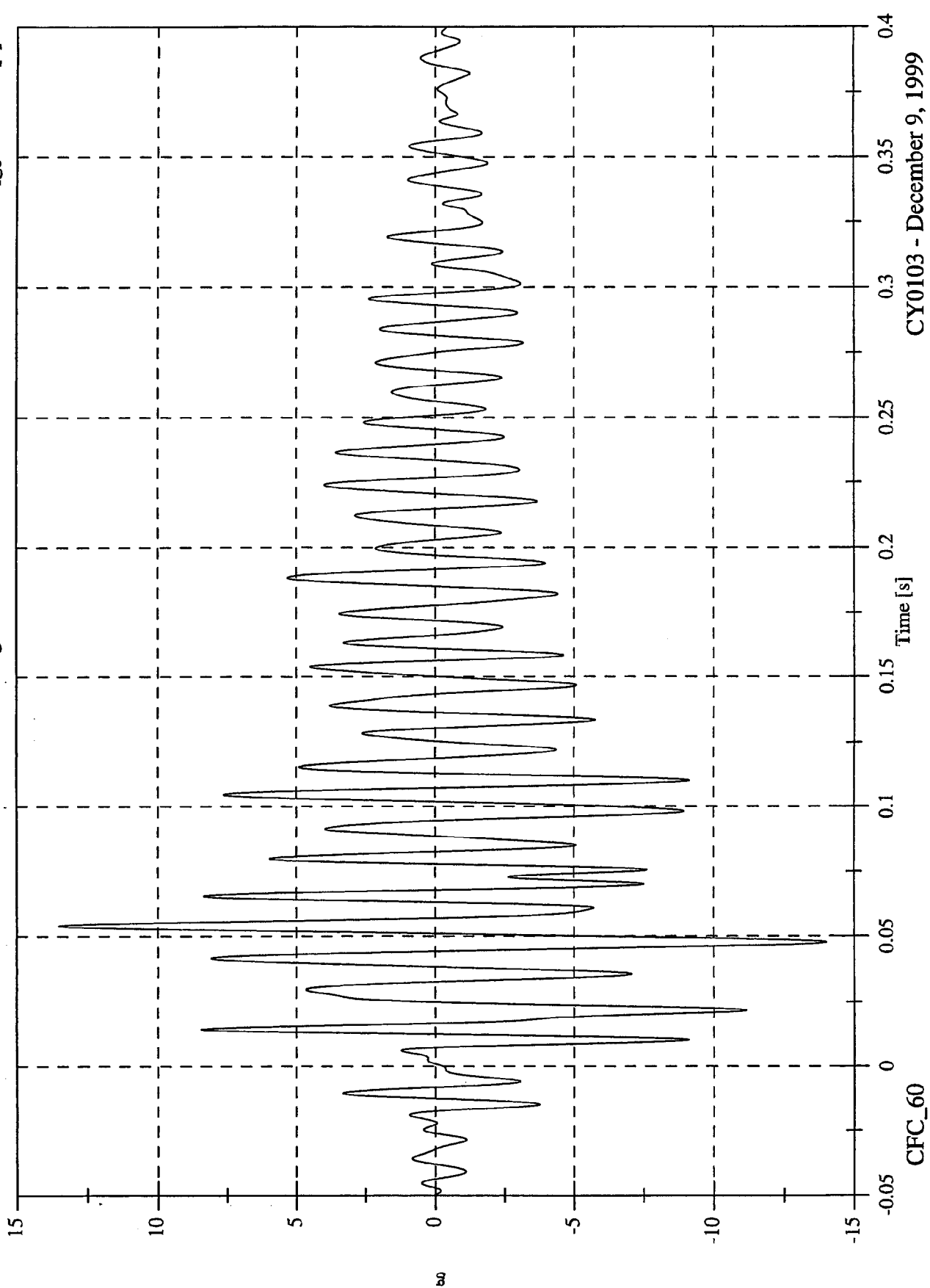


CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Moving Barrier CG Z

Max: 13.5 [g] at 0.054 [s]
Min: -14.0 [g] at 0.048 [s]

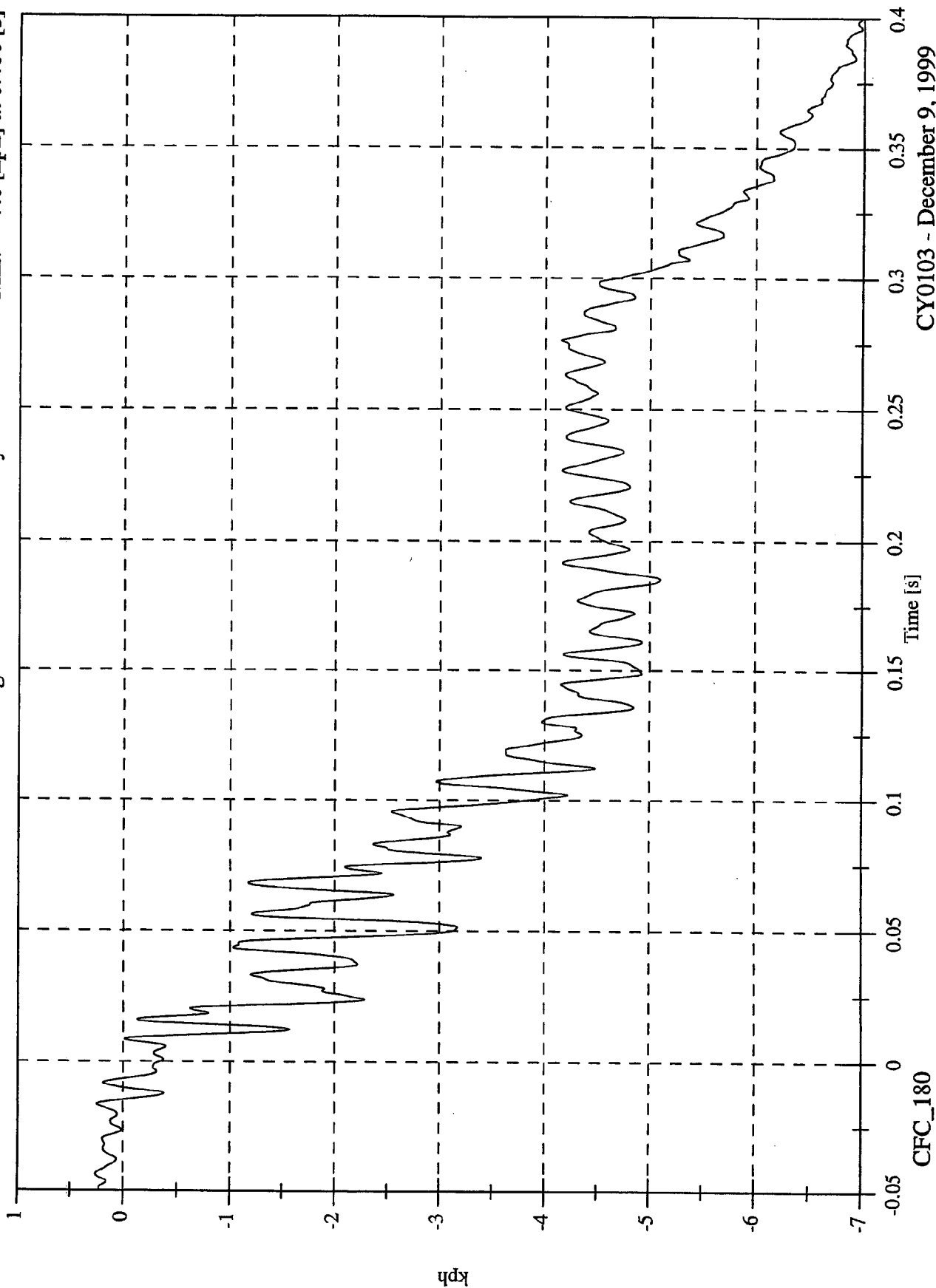


CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Moving Barrier CG Z Velocity

Max: 0.3 [kph] at -0.043 [s]
Min: -7.0 [kph] at 0.400 [s]



CFC_180

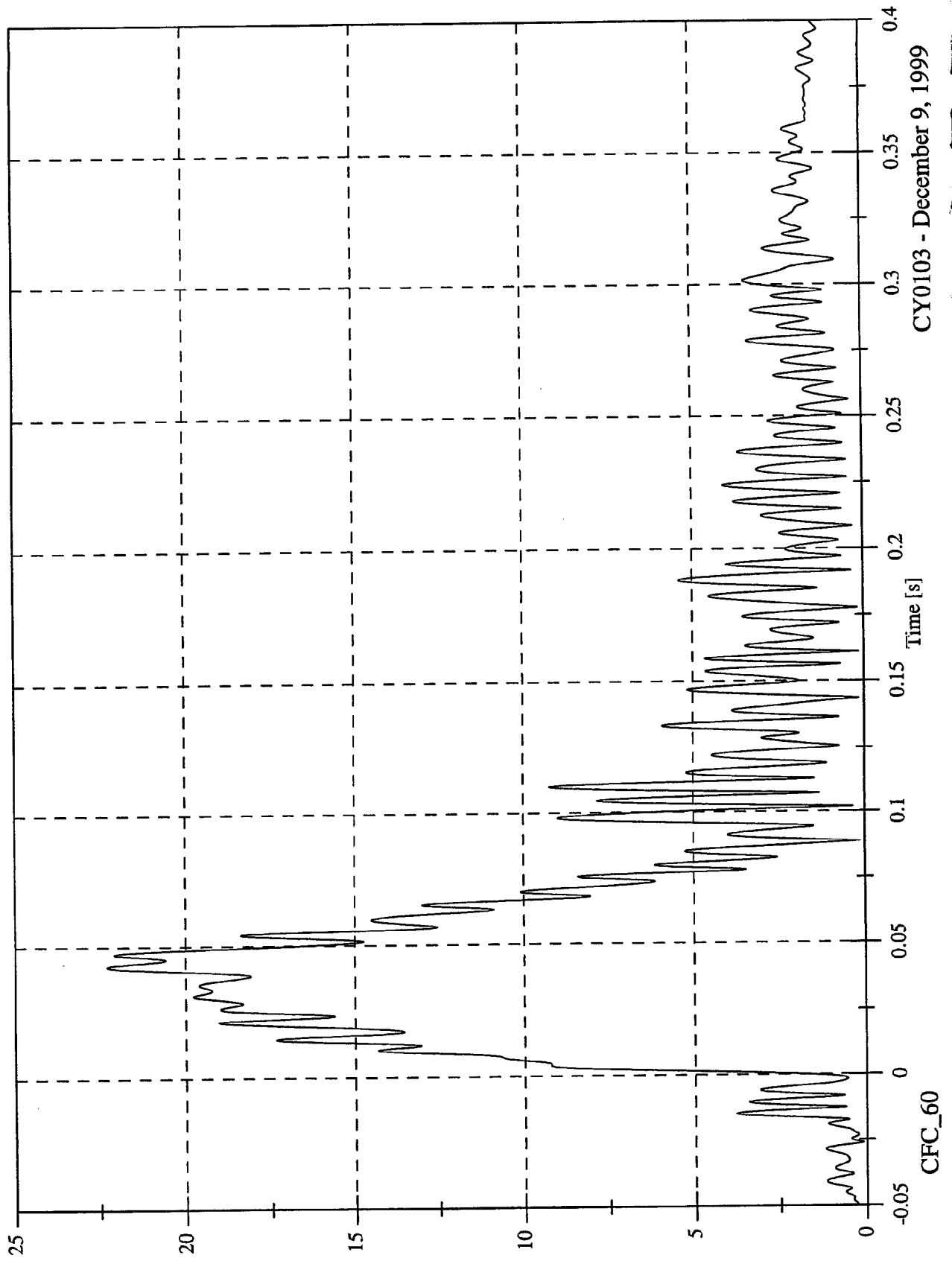
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Moving Barrier CG Resultant

Max: 22.3 [g] at 0.043 [s]

Min: 0.1 [g] at -0.026 [s]



CFC_60

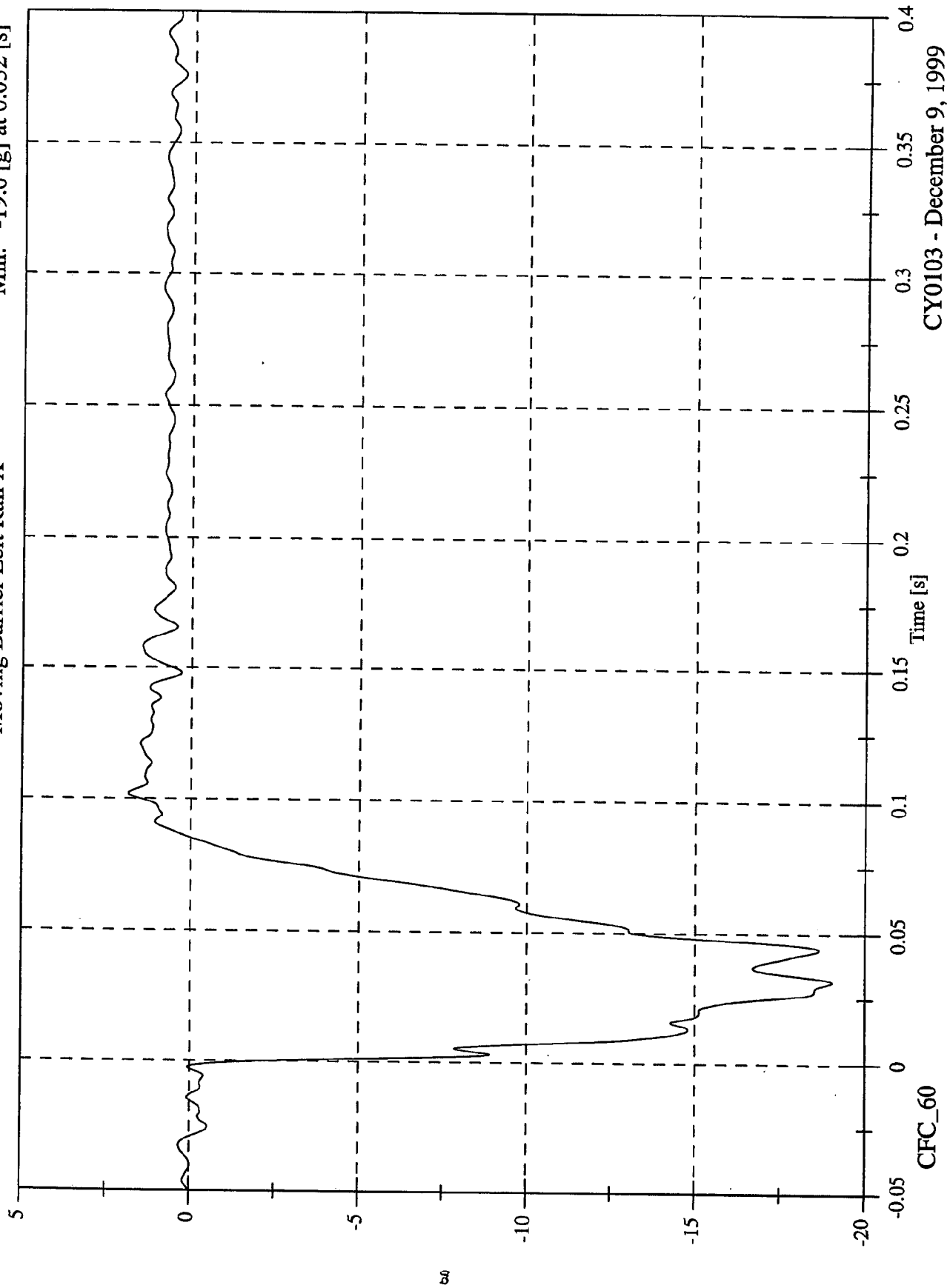
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Moving Barrier Left Rail X

Max: 1.9 [g] at 0.102 [s]

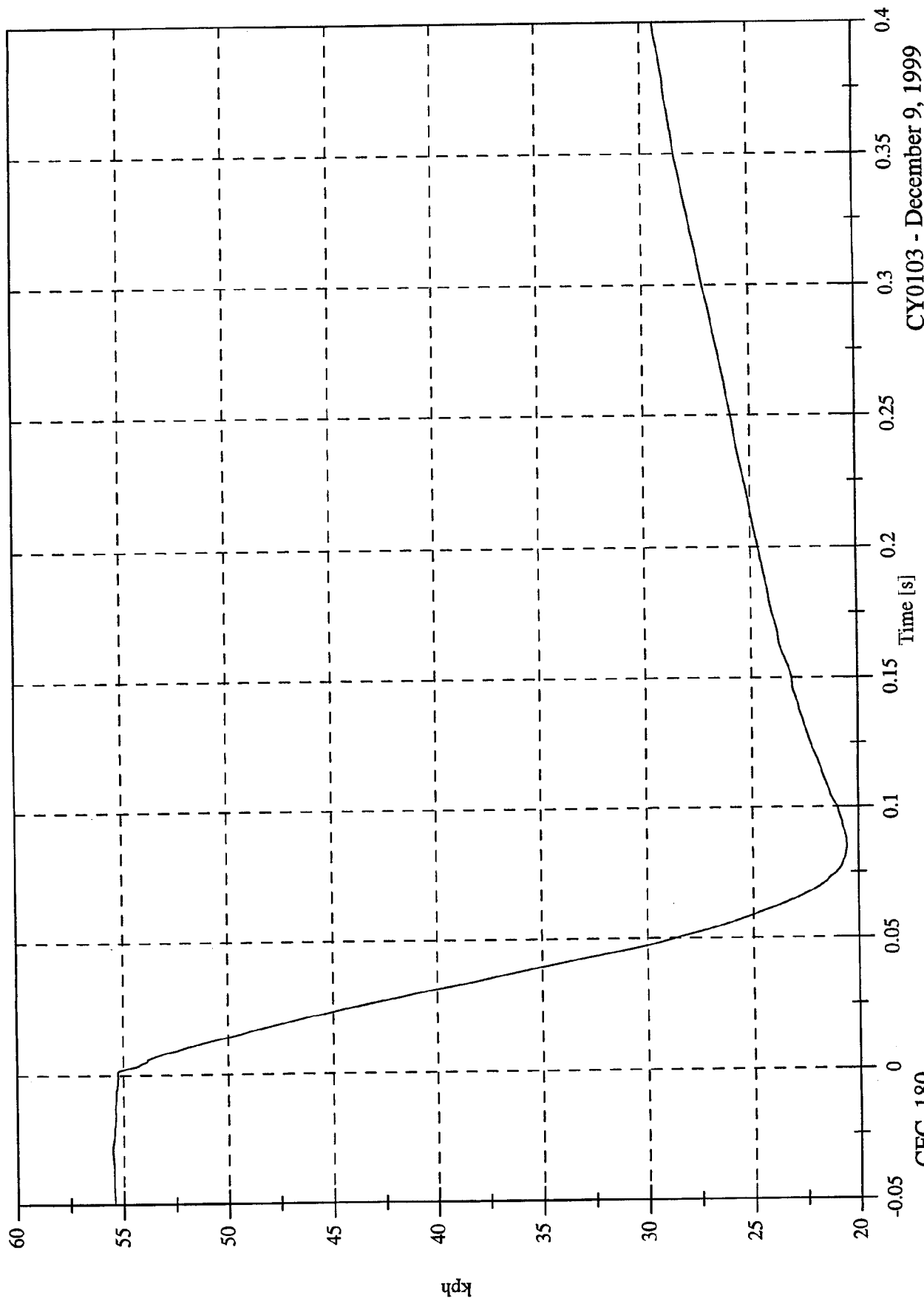
Min: -19.0 [g] at 0.032 [s]



CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am
Moving Barrier Left Rail X Velocity

Max: 55.5 [kph] at -0.029 [s]
Min: 20.5 [kph] at 0.085 [s]



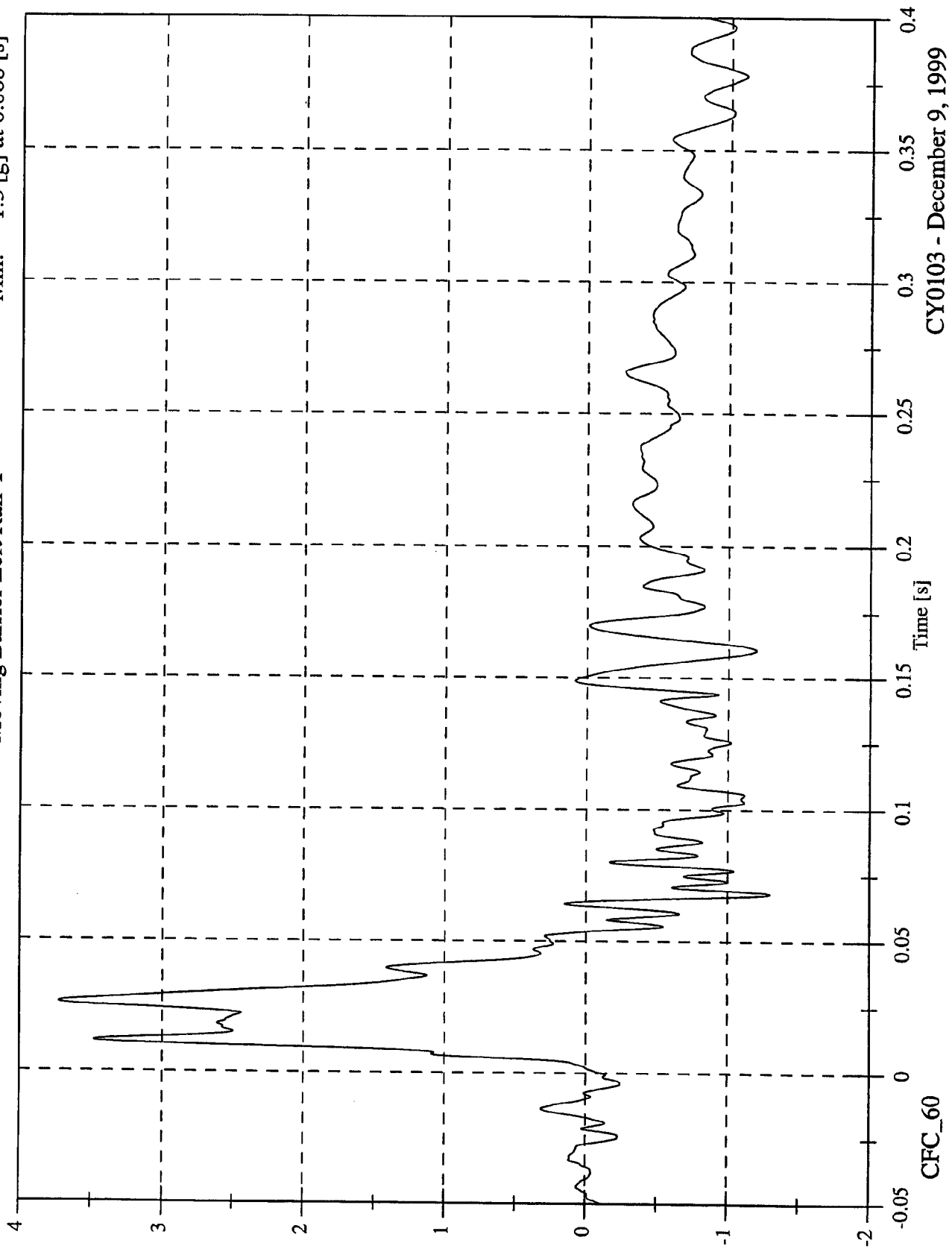
CFC_180

CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Moving Barrier Left Rail Y

Max: 3.7 [g] at 0.027 [s]
Min: -1.3 [g] at 0.068 [s]

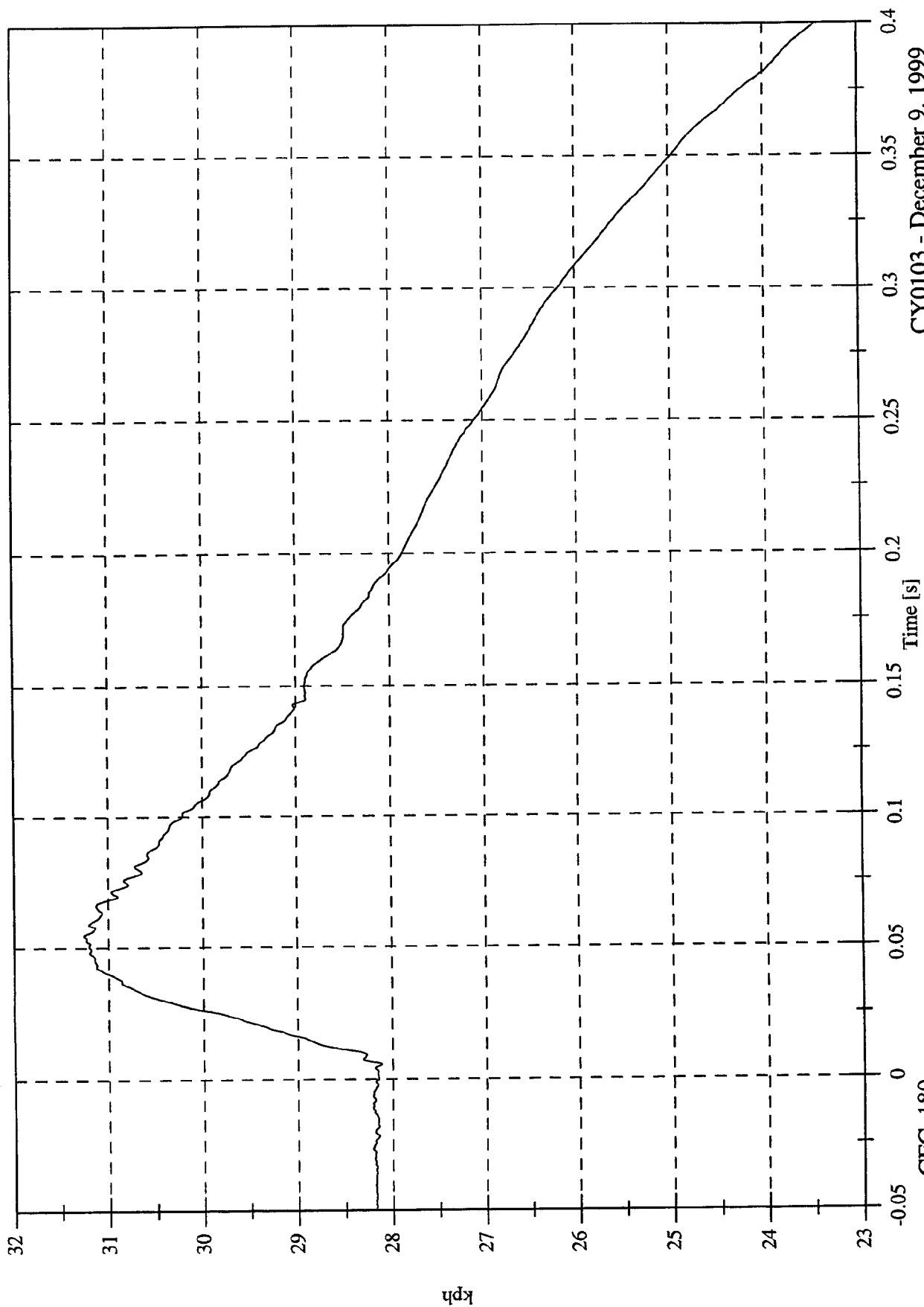


CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Moving Barrier Left Rail Y Velocity

Max: 31.3 [kph] at 0.055 [s]
Min: 23.4 [kph] at 0.400 [s]



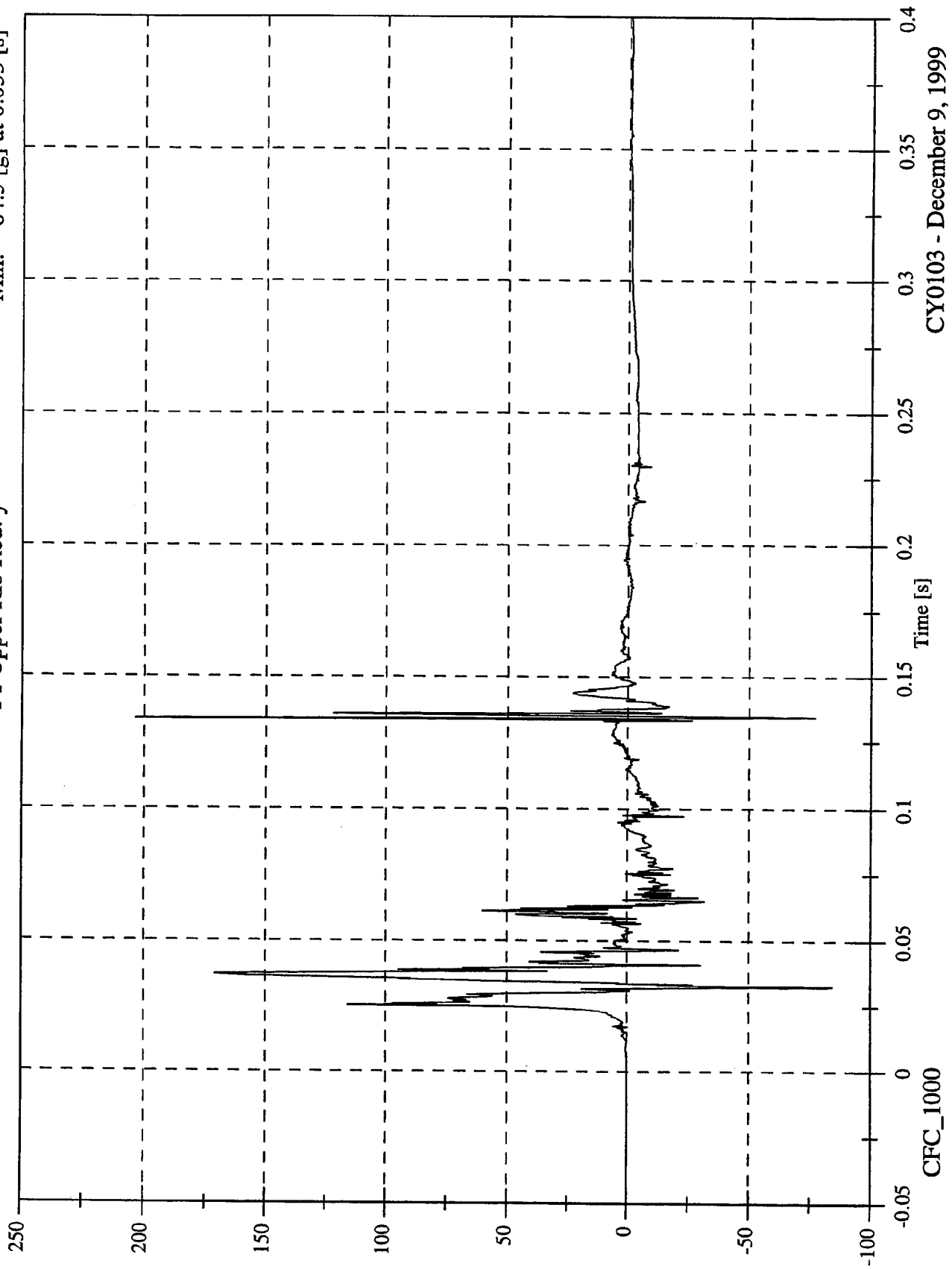
CFC_180

CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Upper Rib Red. y

Max: 203.5 [g] at 0.134 [s]
Min: -84.3 [g] at 0.033 [s]

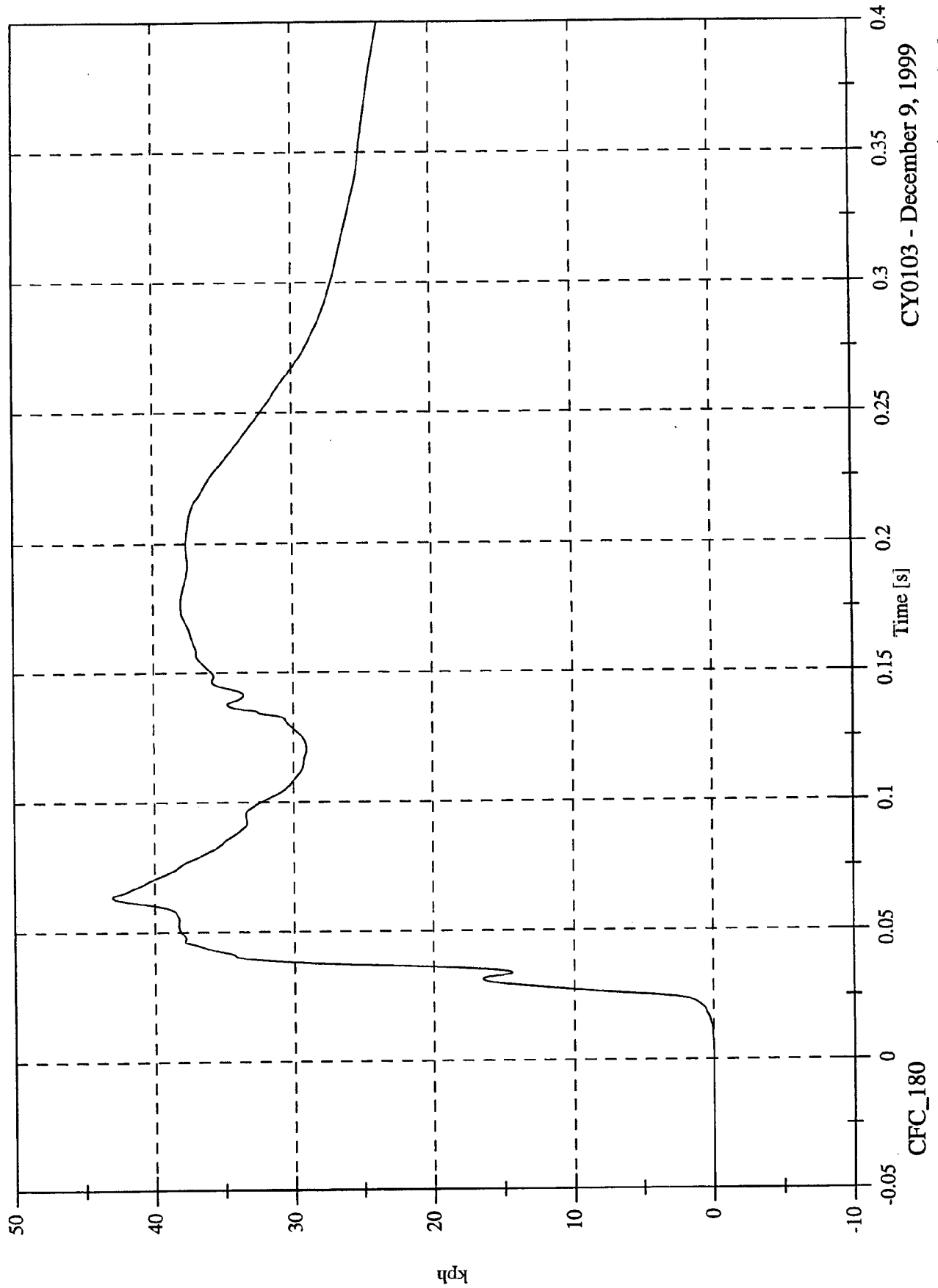


FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Upper Rib Red. y Velocity

Max: 43.0 [kph] at 0.064 [s]

Min: -0.0 [kph] at -0.029 [s]



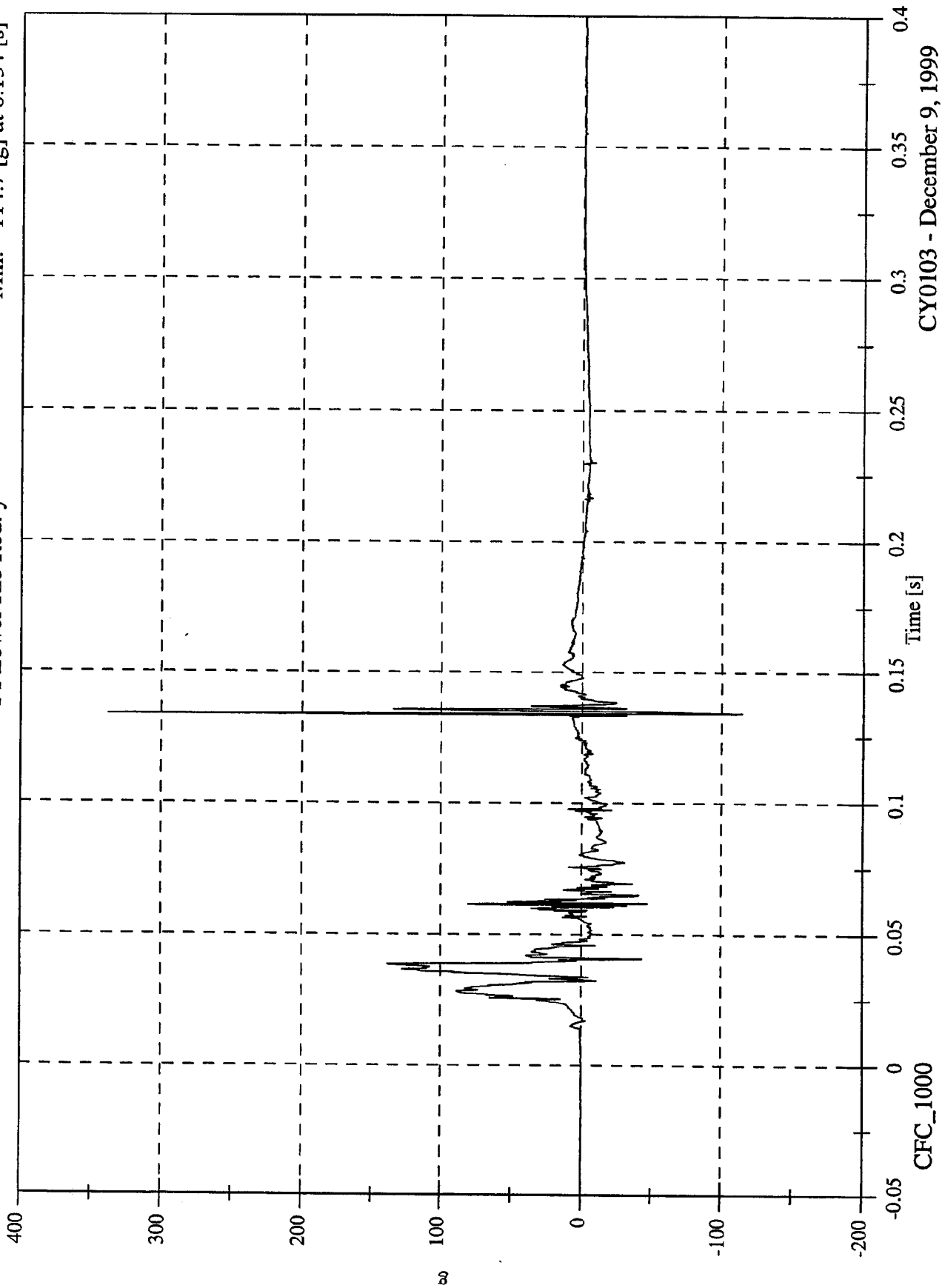
CFC_180

CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Lower Rib Red. y

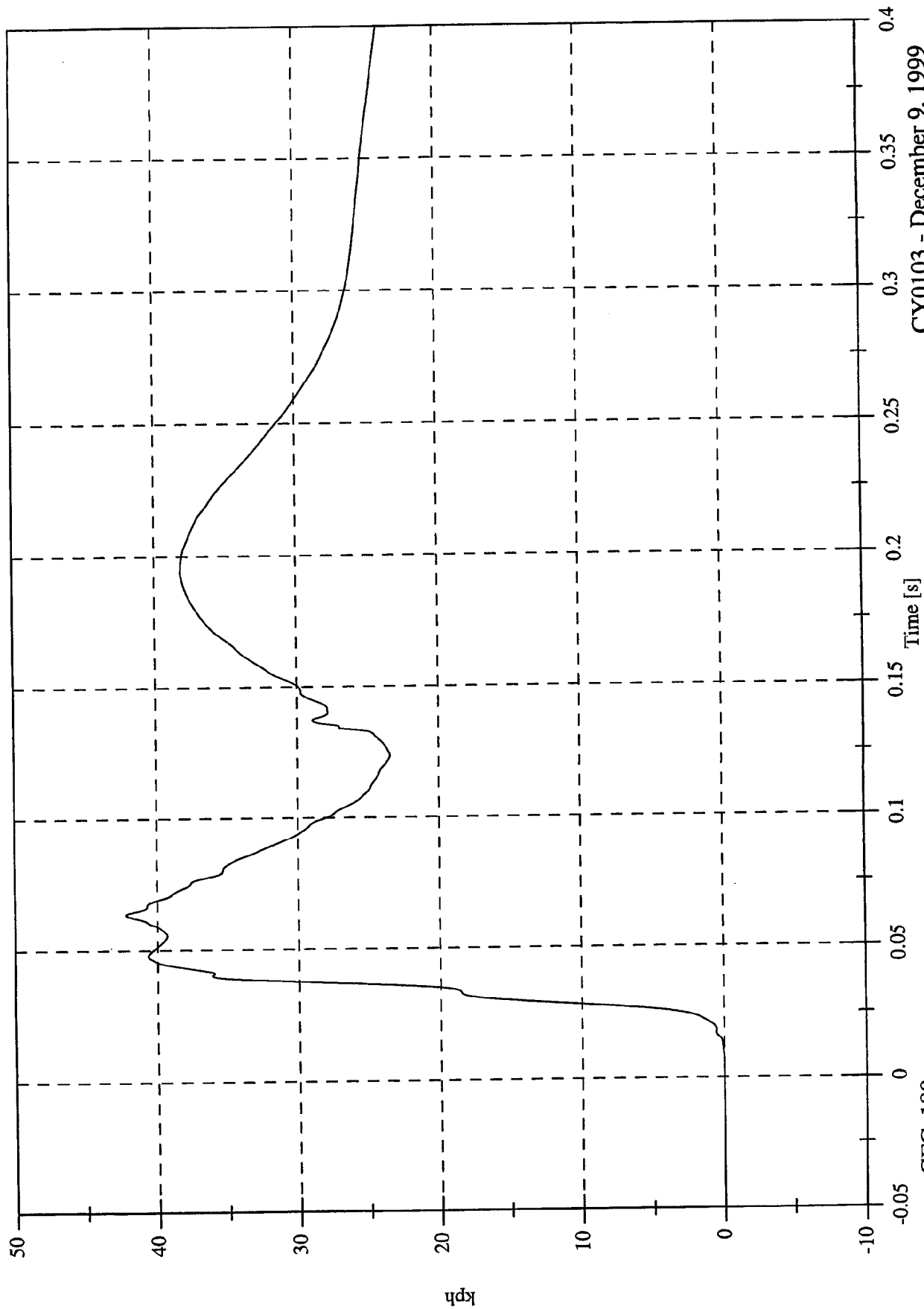
Max: 337.7 [g] at 0.134 [s]
Min: -114.7 [g] at 0.134 [s]



CY0103 - December 9, 1999

Max: 42.2 [kph] at 0.064 [s]
Min: -0.0 [kph] at -0.036 [s]

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am
P1 Lower Rib Red. y Velocity



CY0103 - December 9, 1999

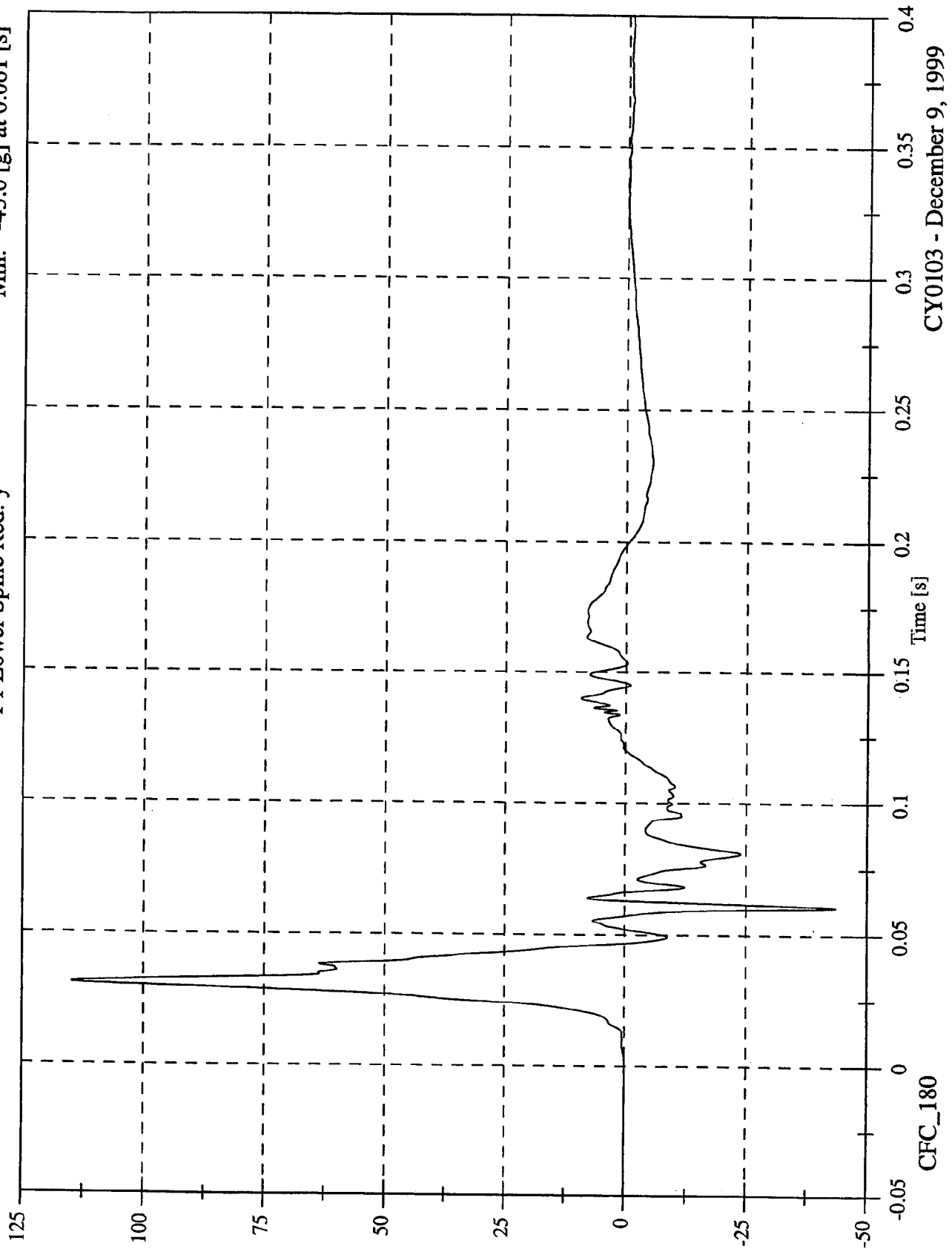
CFC_180

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Lower Spine Red. y

Max: 114.7 [g] at 0.031 [s]

Min: -43.6 [g] at 0.061 [s]



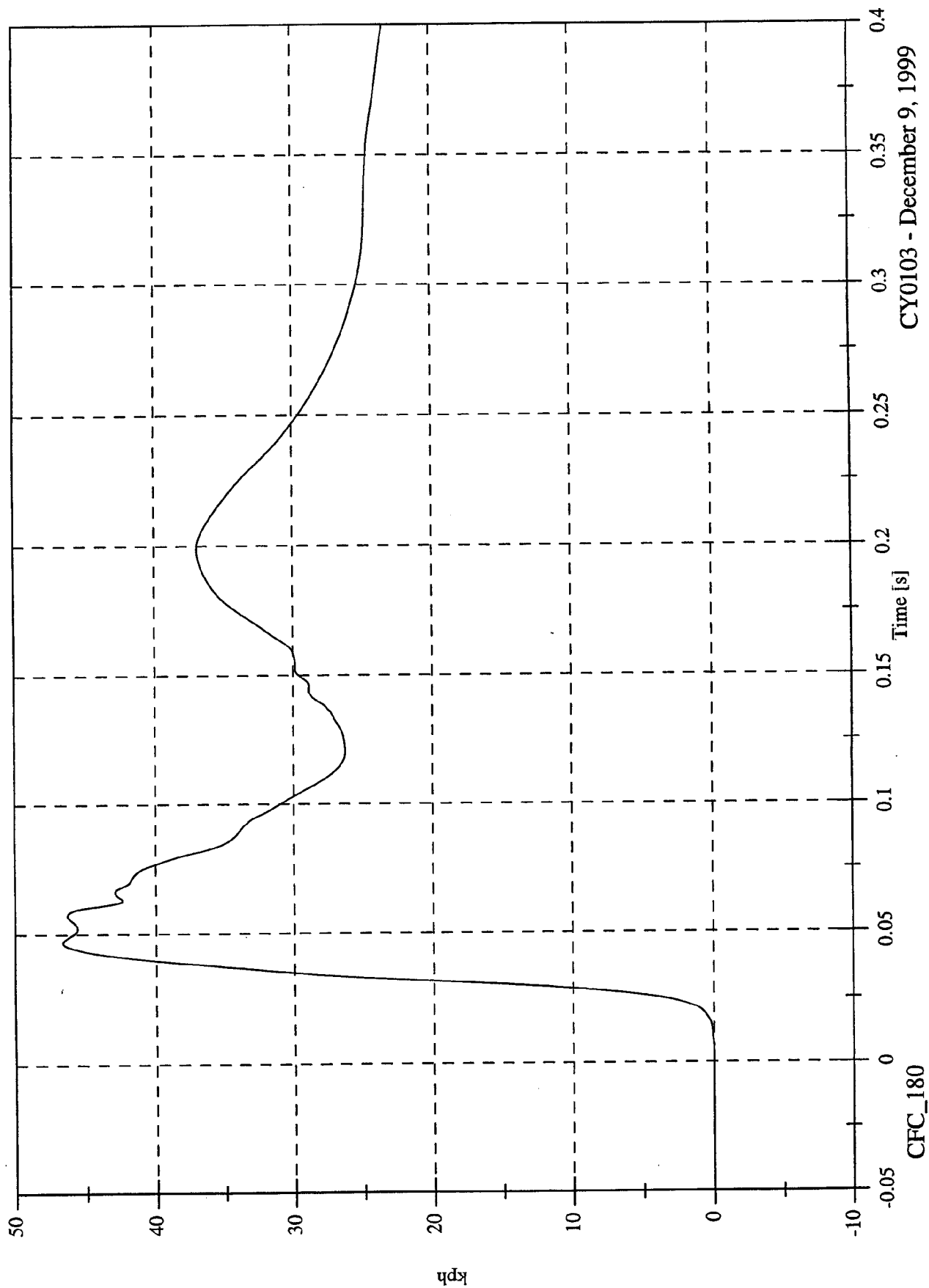
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Lower Spine Red. y Velocity

Max: 46.6 [kph] at 0.047 [s]

Min: -0.0 [kph] at -0.050 [s]



CY0103 - December 9, 1999

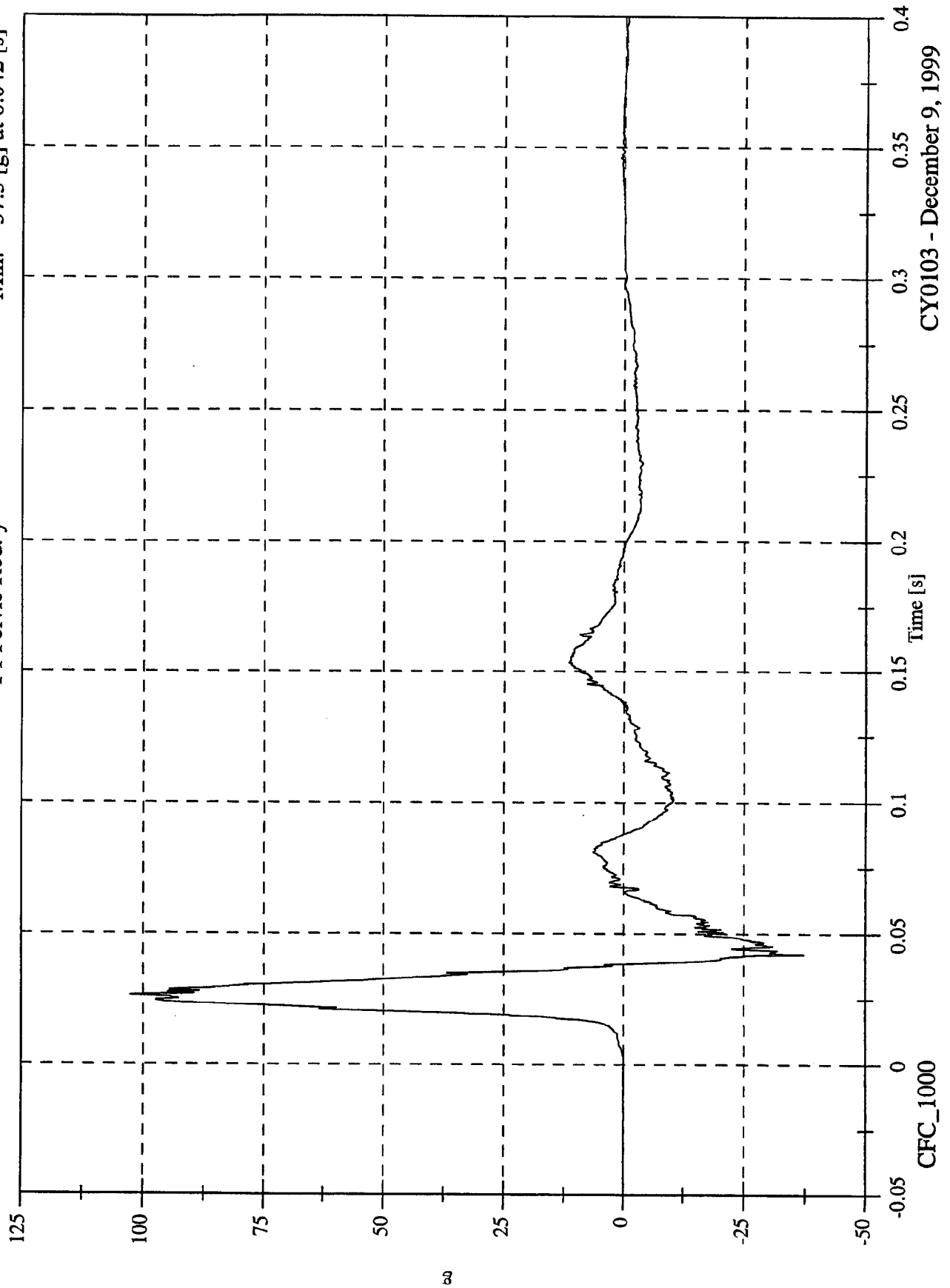
CFC_180

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Pelvic Red. y

Max: 102.7 [g] at 0.026 [s]

Min: -37.3 [g] at 0.042 [s]

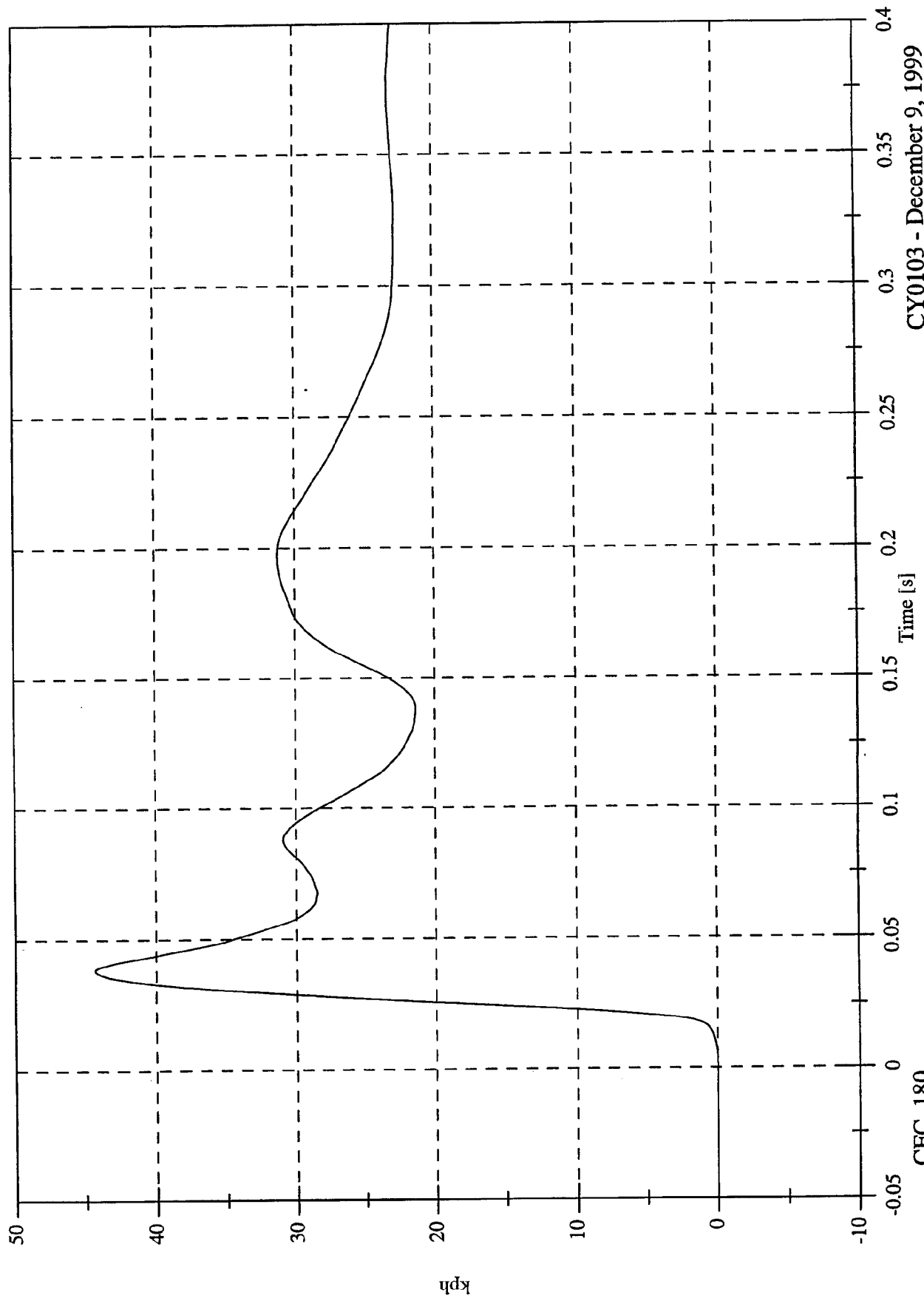


CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Pelvic Red. y Velocity

Max: 44.3 [kph] at 0.038 [s]
Min: -0.0 [kph] at -0.038 [s]



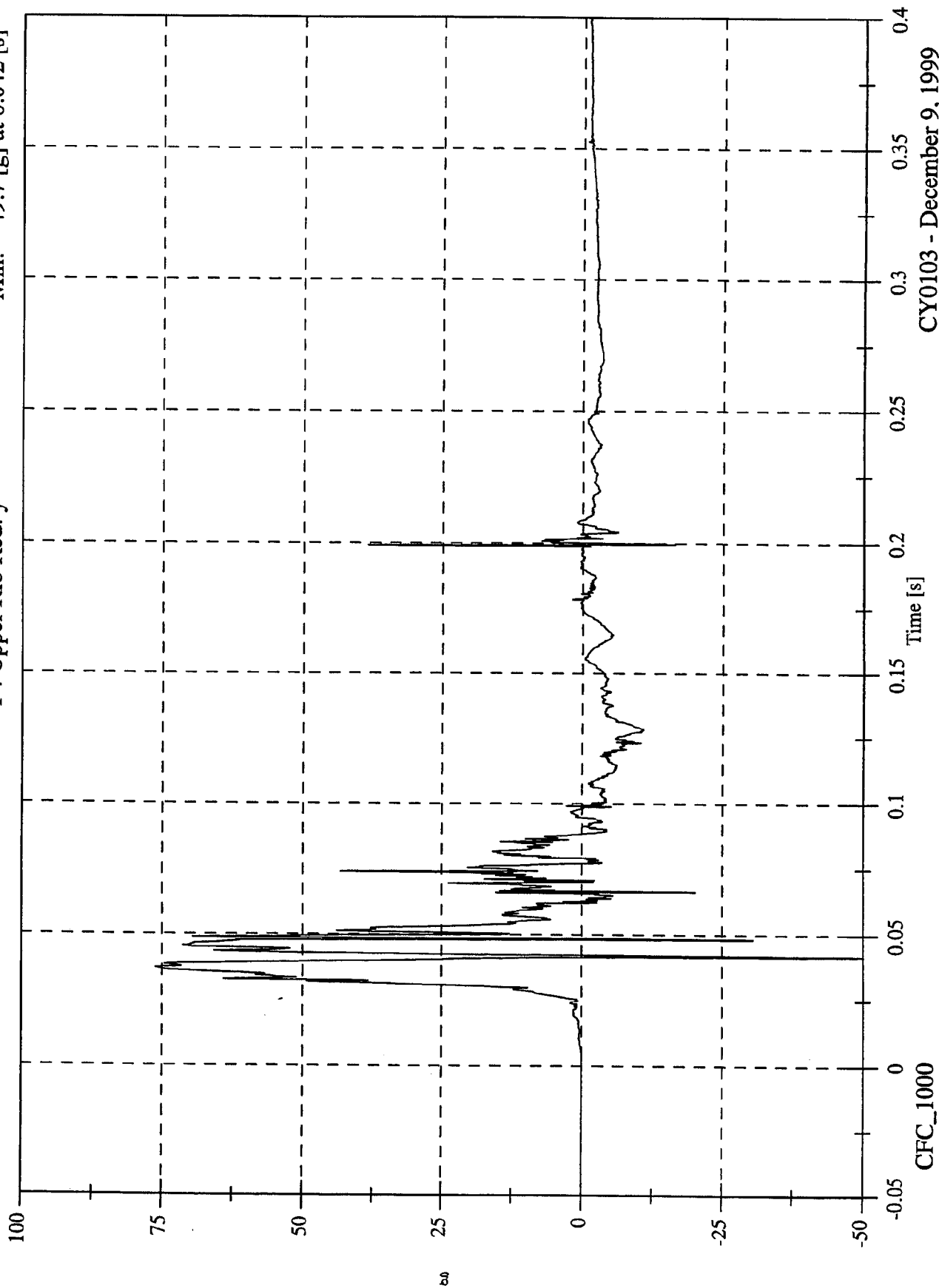
CFC_180

CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P4 Upper Rib Red. y

Max: 76.1 [g] at 0.037 [s]
Min: -49.7 [g] at 0.042 [s]

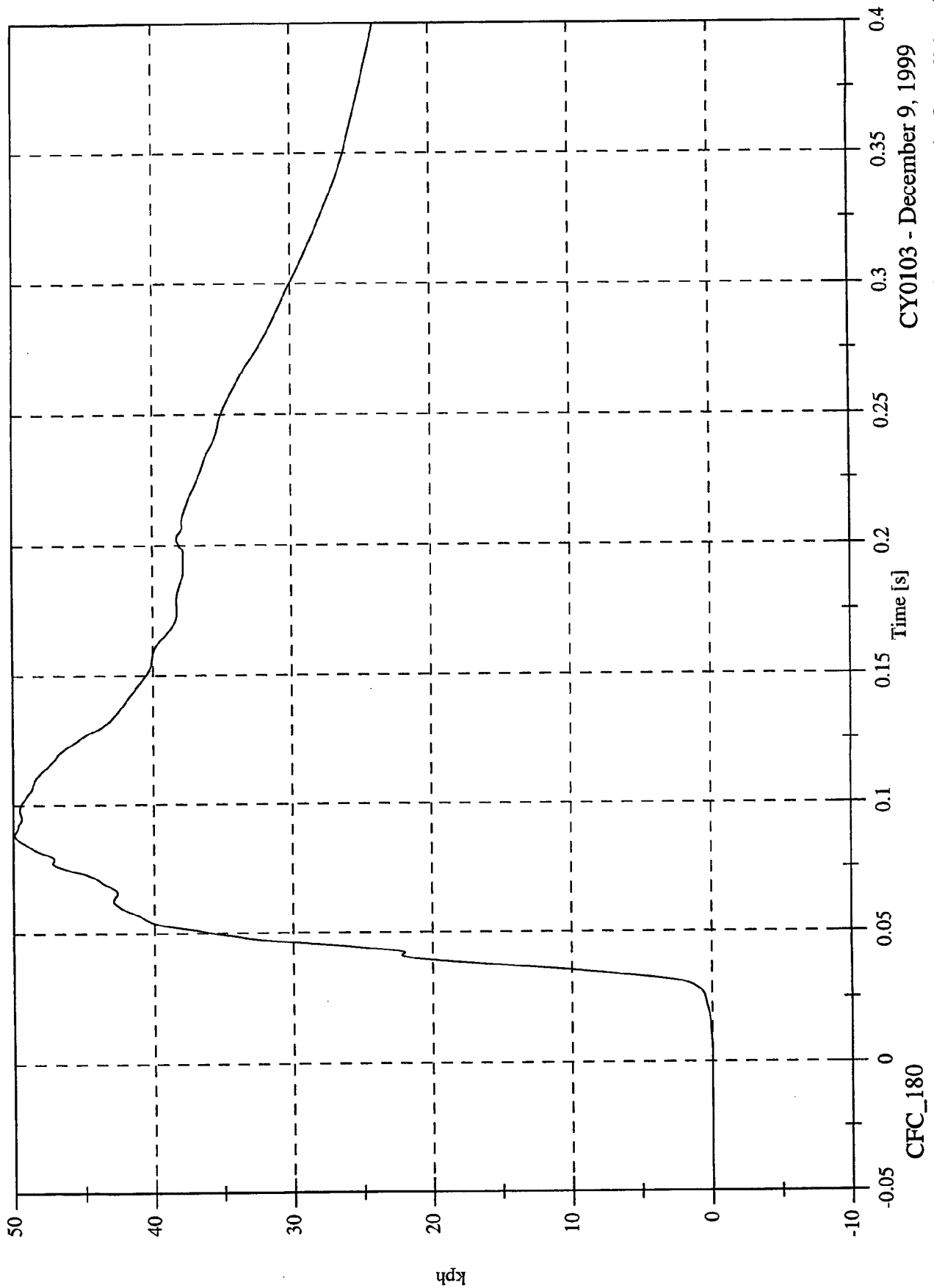


CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P4 Upper Rib Red. y Velocity

Max: 49.9 [kph] at 0.088 [s]
Min: -0.0 [kph] at -0.042 [s]



CFC_180

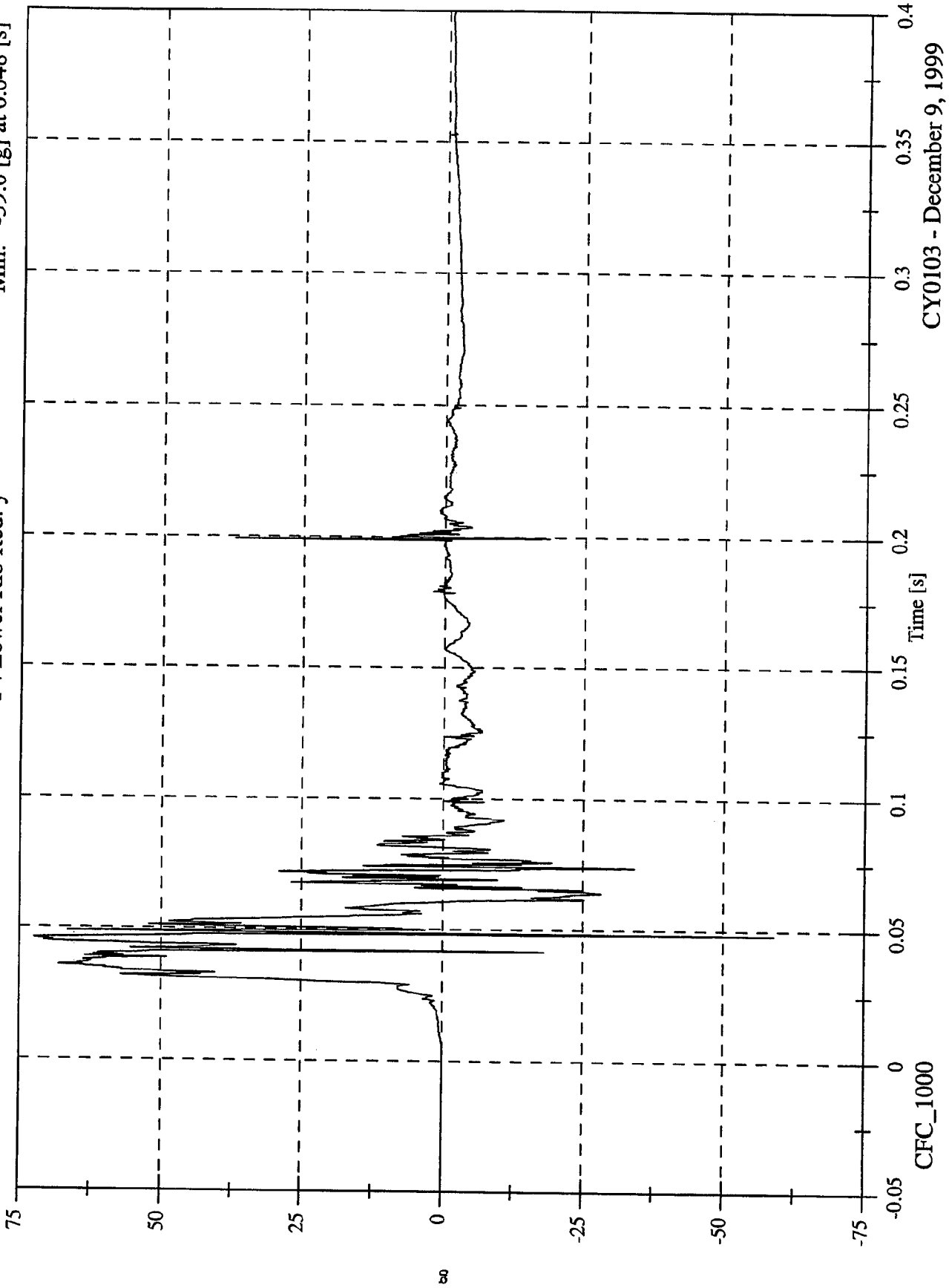
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 72.4 [g] at 0.046 [s]

Min: -59.0 [g] at 0.048 [s]

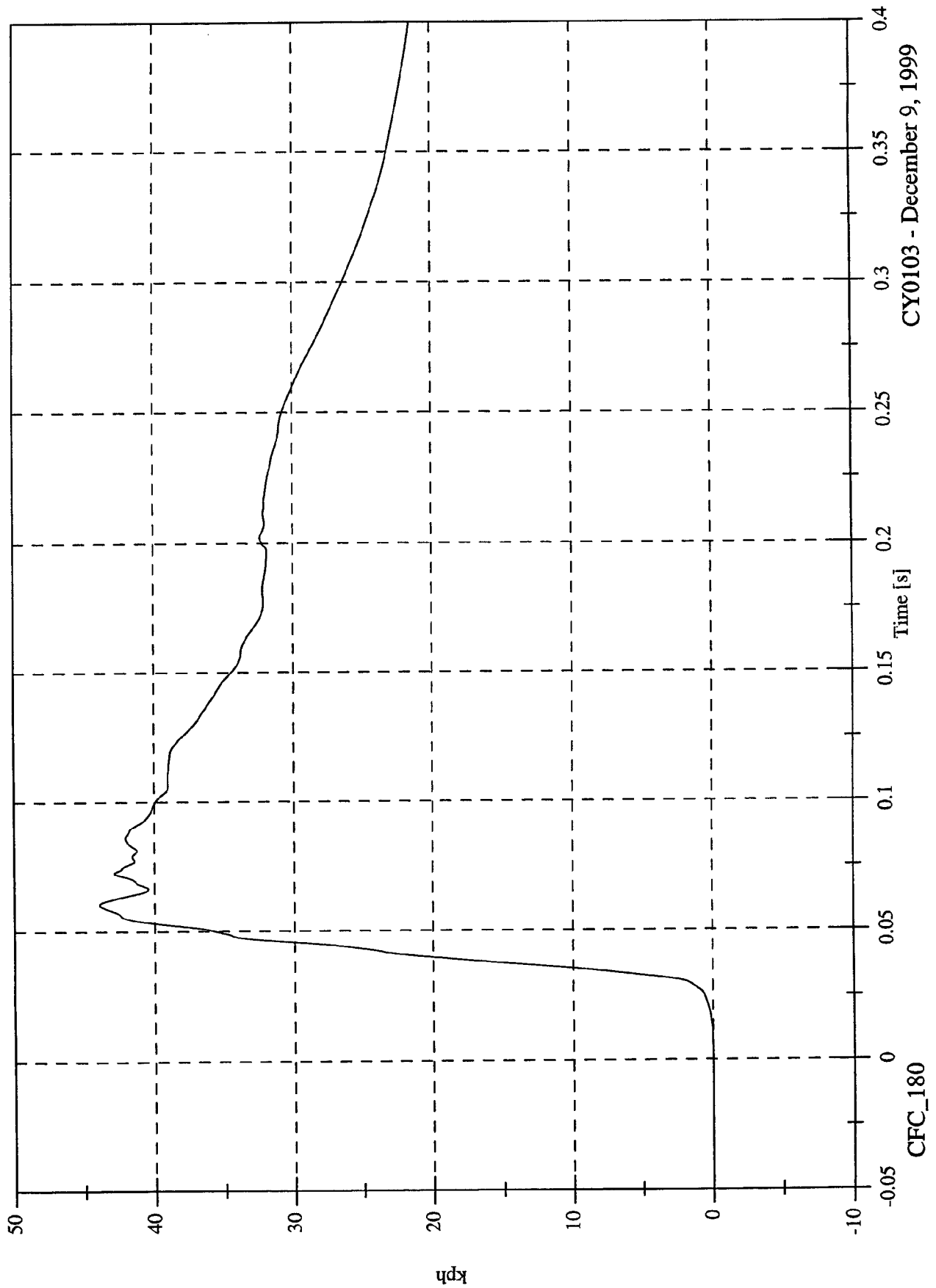
P4 Lower Rib Red. y



CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am
P4 Lower Rib Red. y Velocity

Max: 43.9 [kph] at 0.061 [s]
Min: -0.0 [kph] at -0.024 [s]



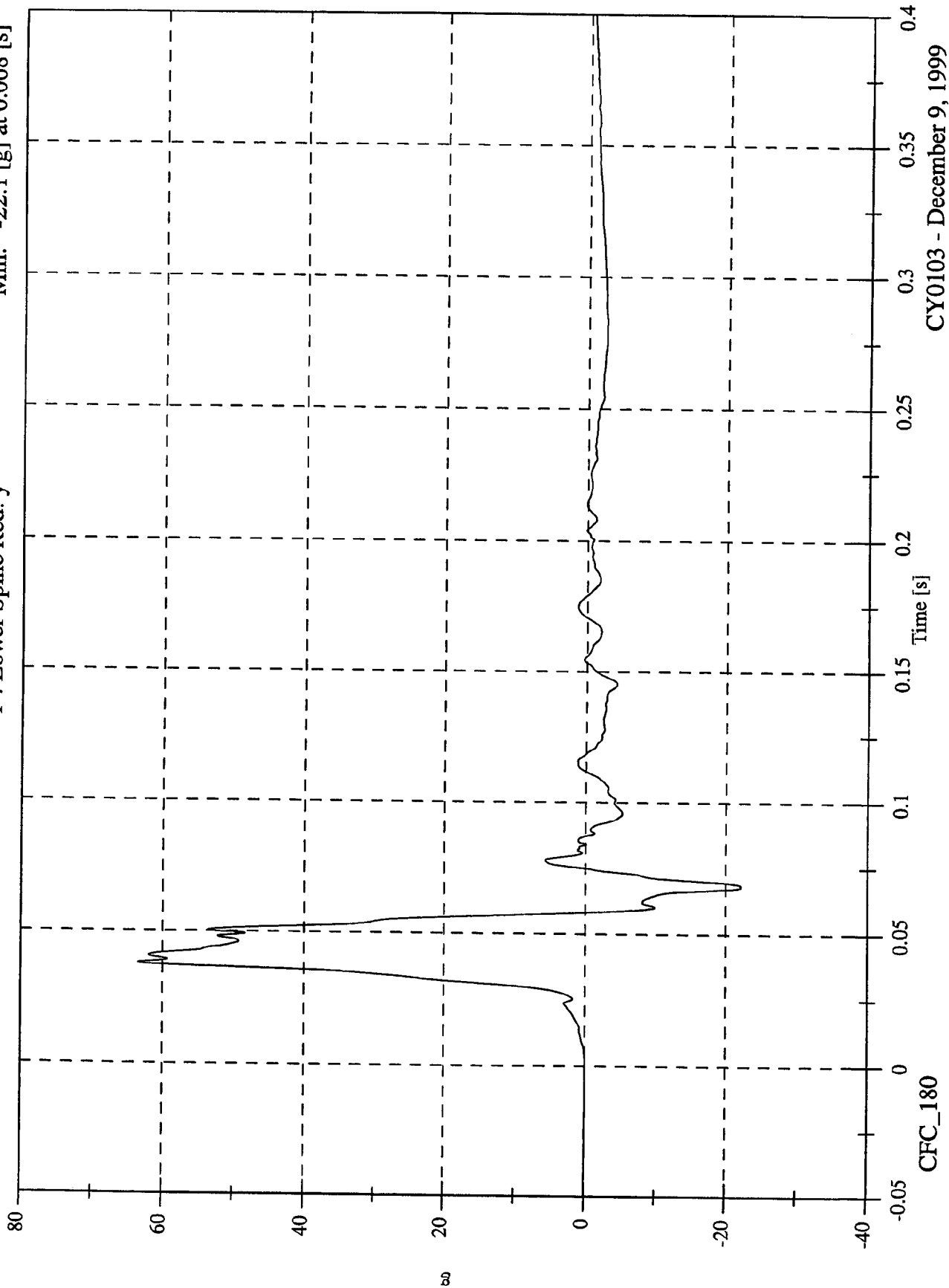
CFC_180

CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P4 Lower Spine Red. y

Max: 63.4 [g] at 0.038 [s]
Min: -22.1 [g] at 0.068 [s]



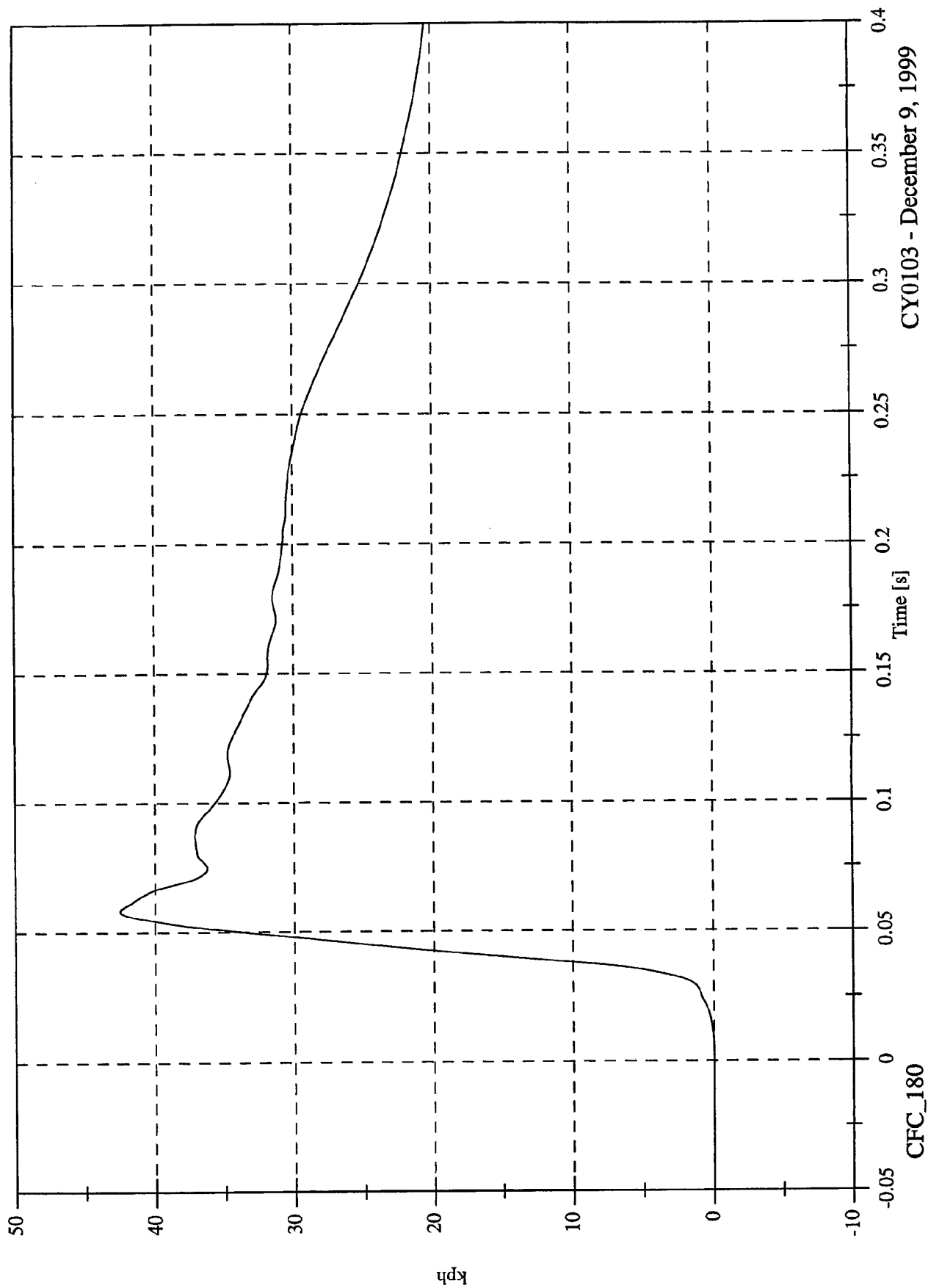
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P4 Lower Spine Red. y Velocity

Max: 42.5 [kph] at 0.058 [s]

Min: -0.0 [kph] at -0.050 [s]



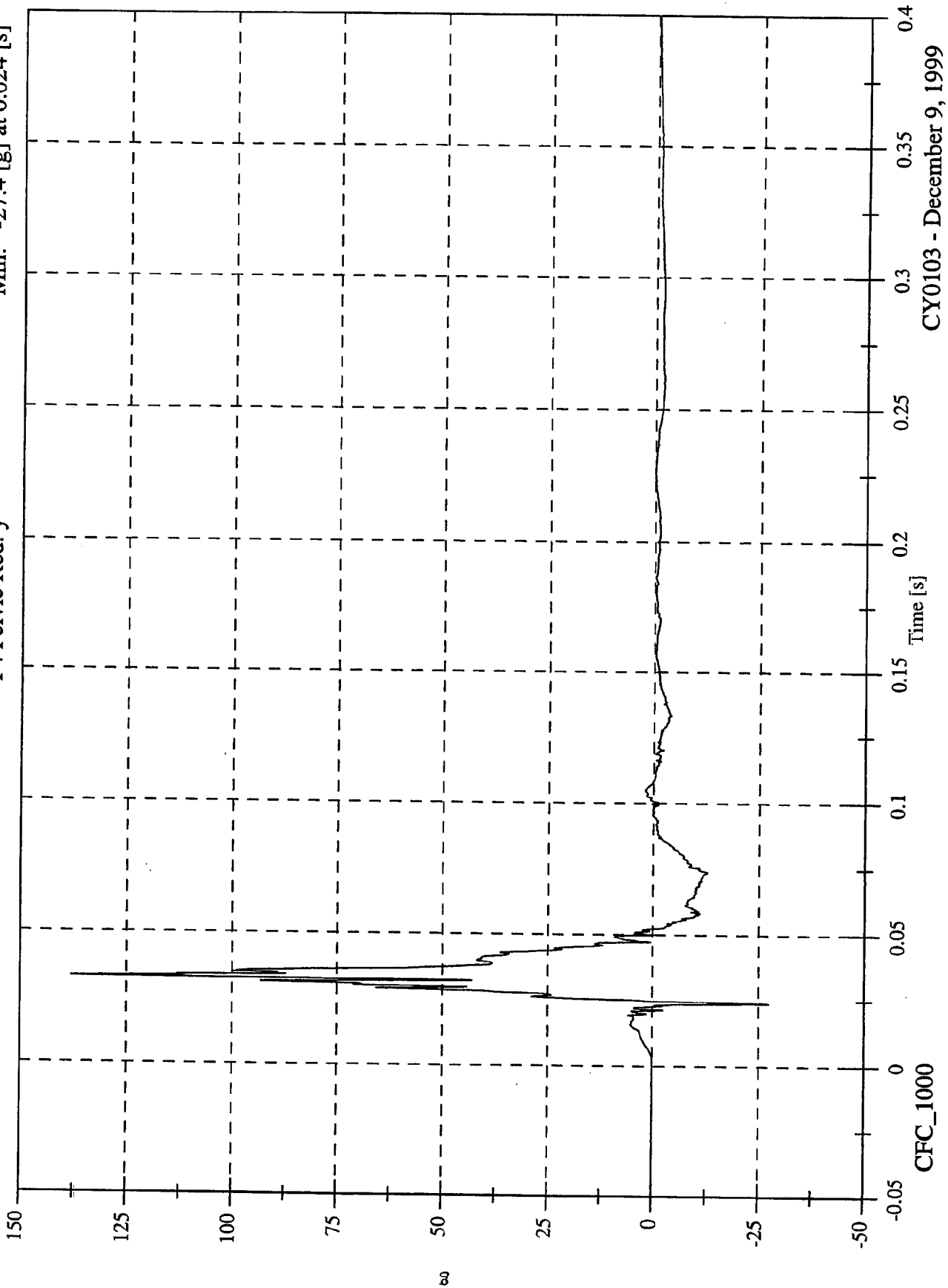
CY0103 - December 9, 1999

CFC_180

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 138.0 [g] at 0.033 [s]
Min: -27.4 [g] at 0.024 [s]

P4 Pelvic Red. y



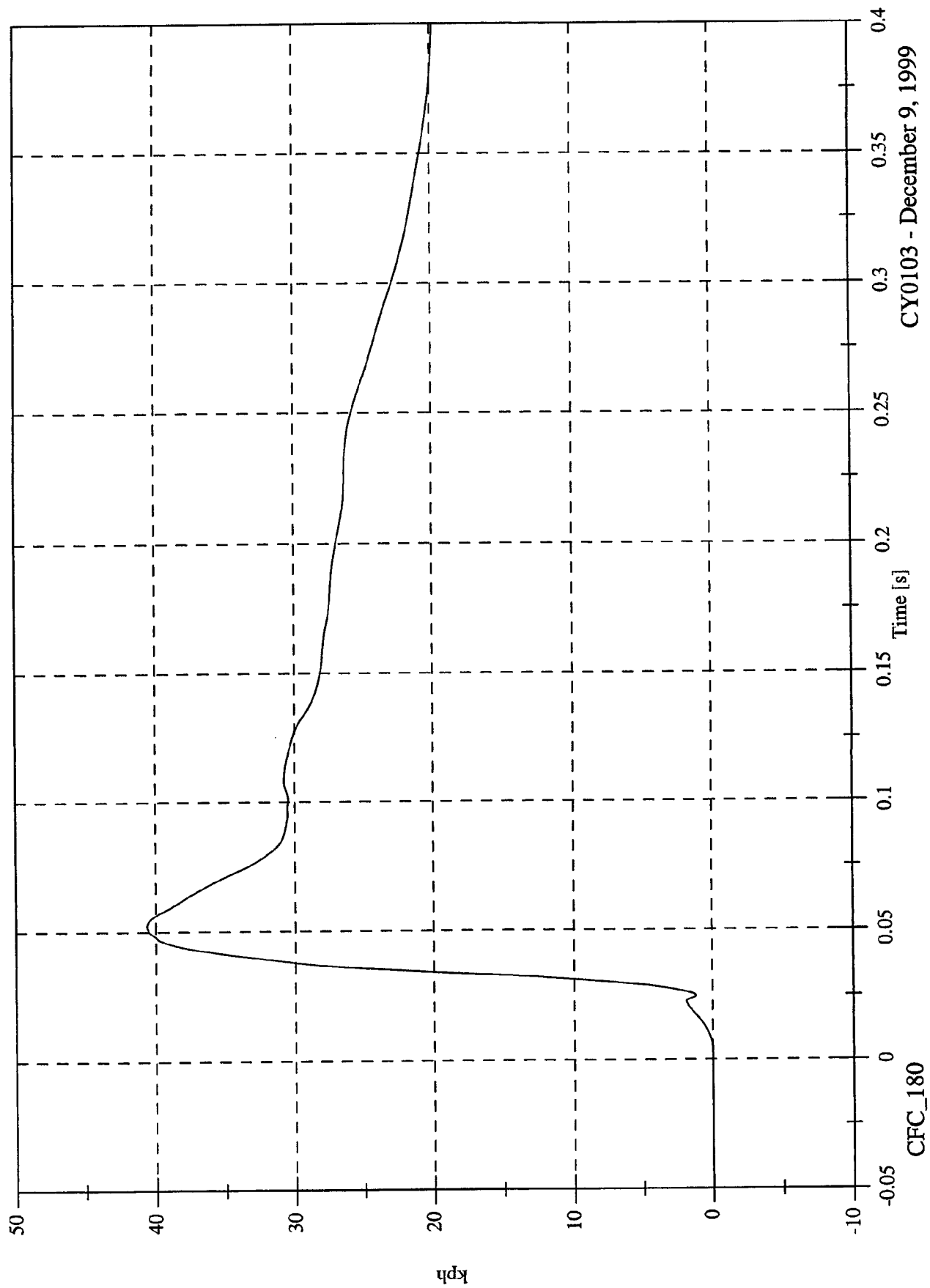
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P4 Pelvic Red. y Velocity

Max: 40.6 [kph] at 0.052 [s]

Min: -0.0 [kph] at -0.034 [s]



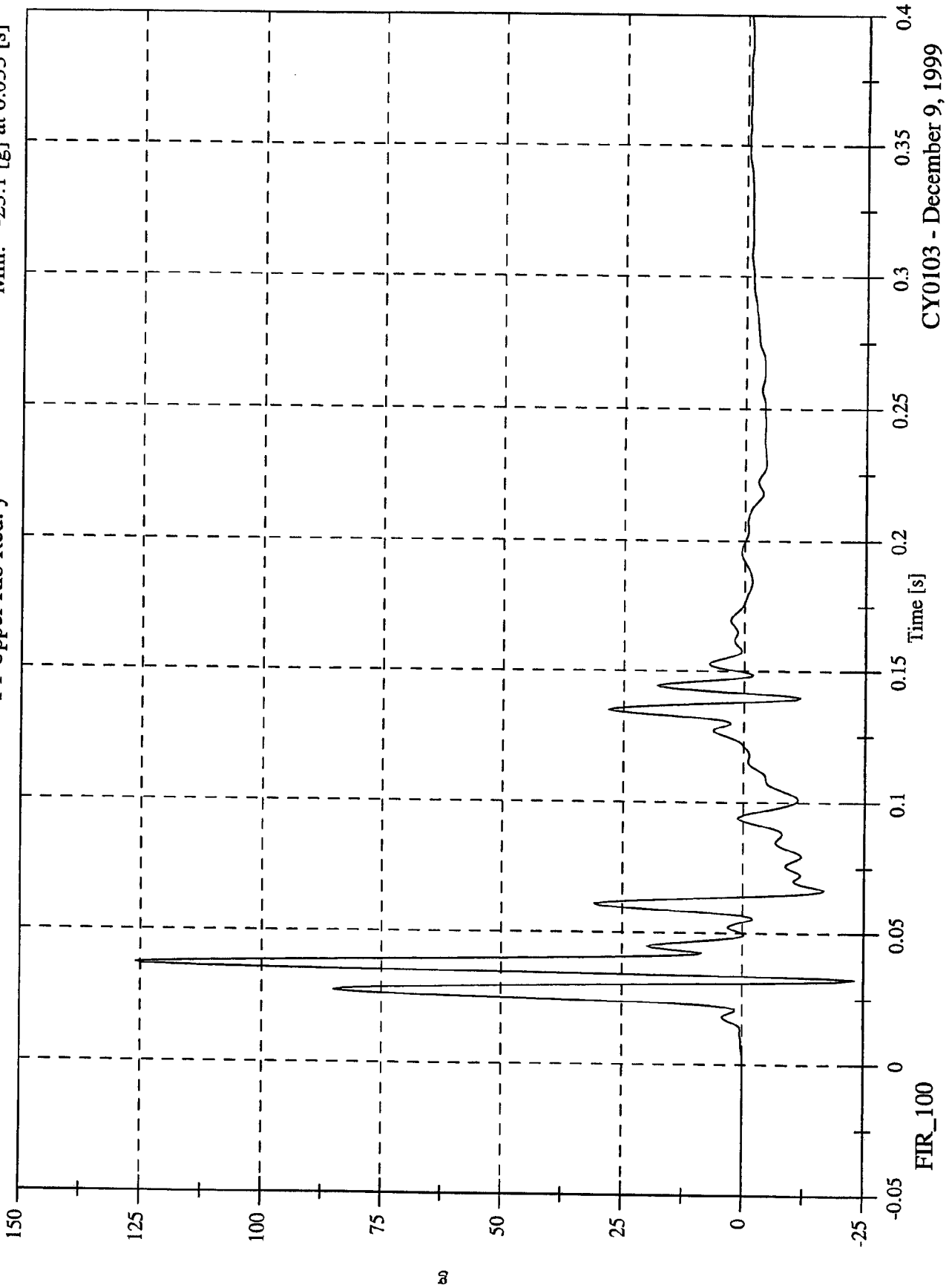
CY0103 - December 9, 1999

CFC_180

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Upper Rib Red. y

Max: 126.0 [g] at 0.038 [s]
Min: -23.1 [g] at 0.033 [s]

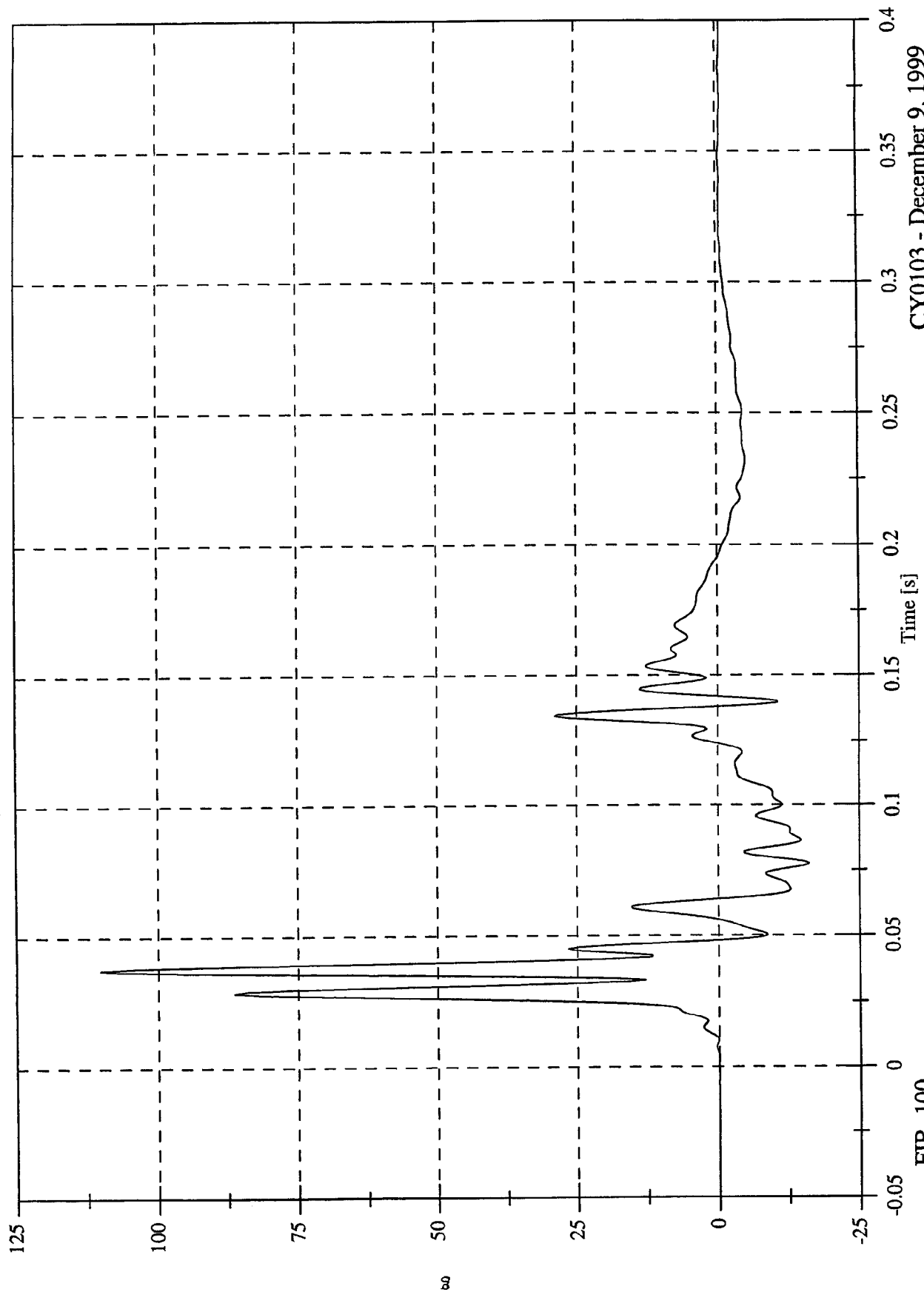


CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 110.2 [g] at 0.038 [s]
 Min: -16.1 [g] at 0.078 [s]

P1 Lower Rib Red. y



FIR_100

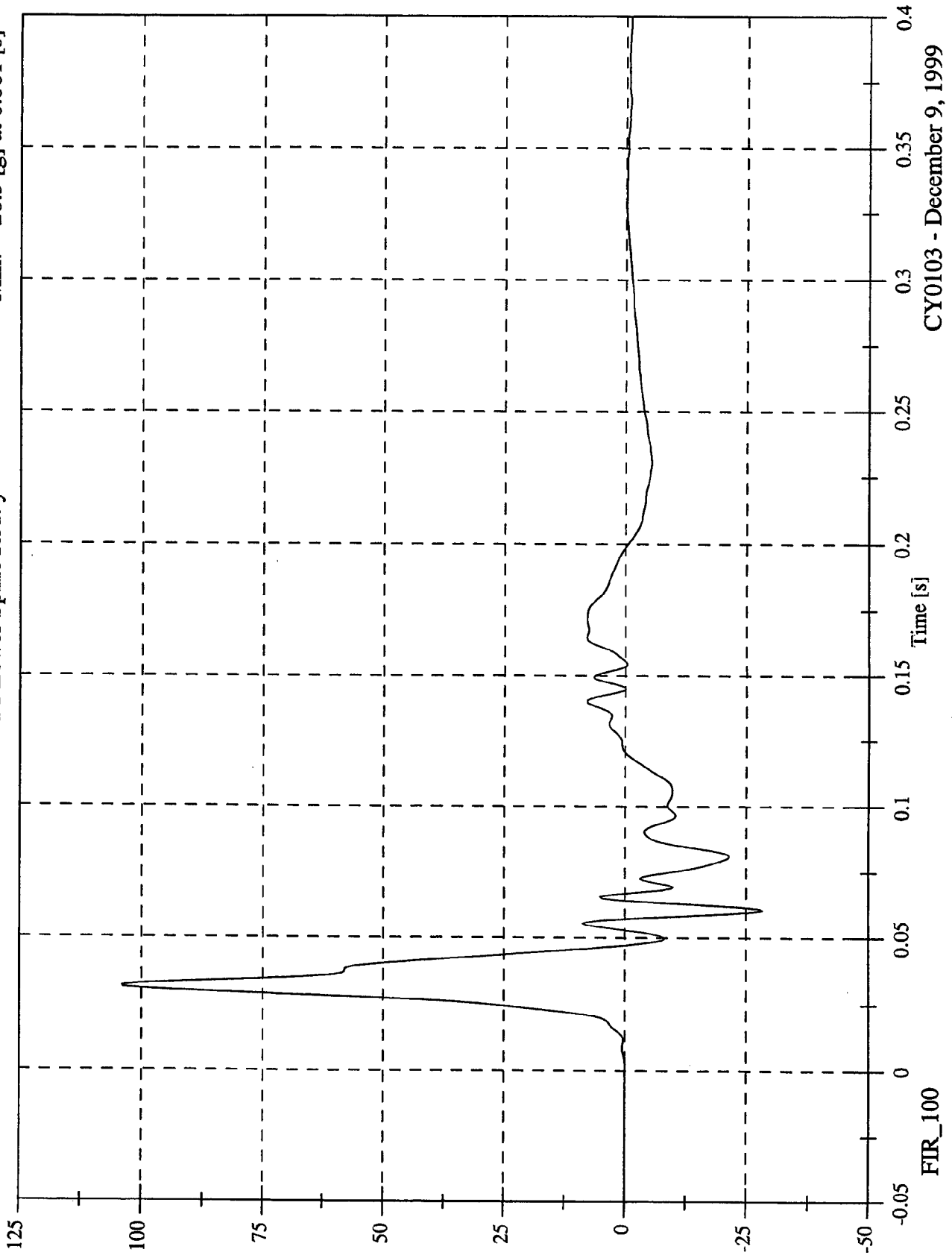
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

Max: 103.9 [g] at 0.032 [s]

Min: -28.3 [g] at 0.061 [s]

P1 Lower Spine Red. y



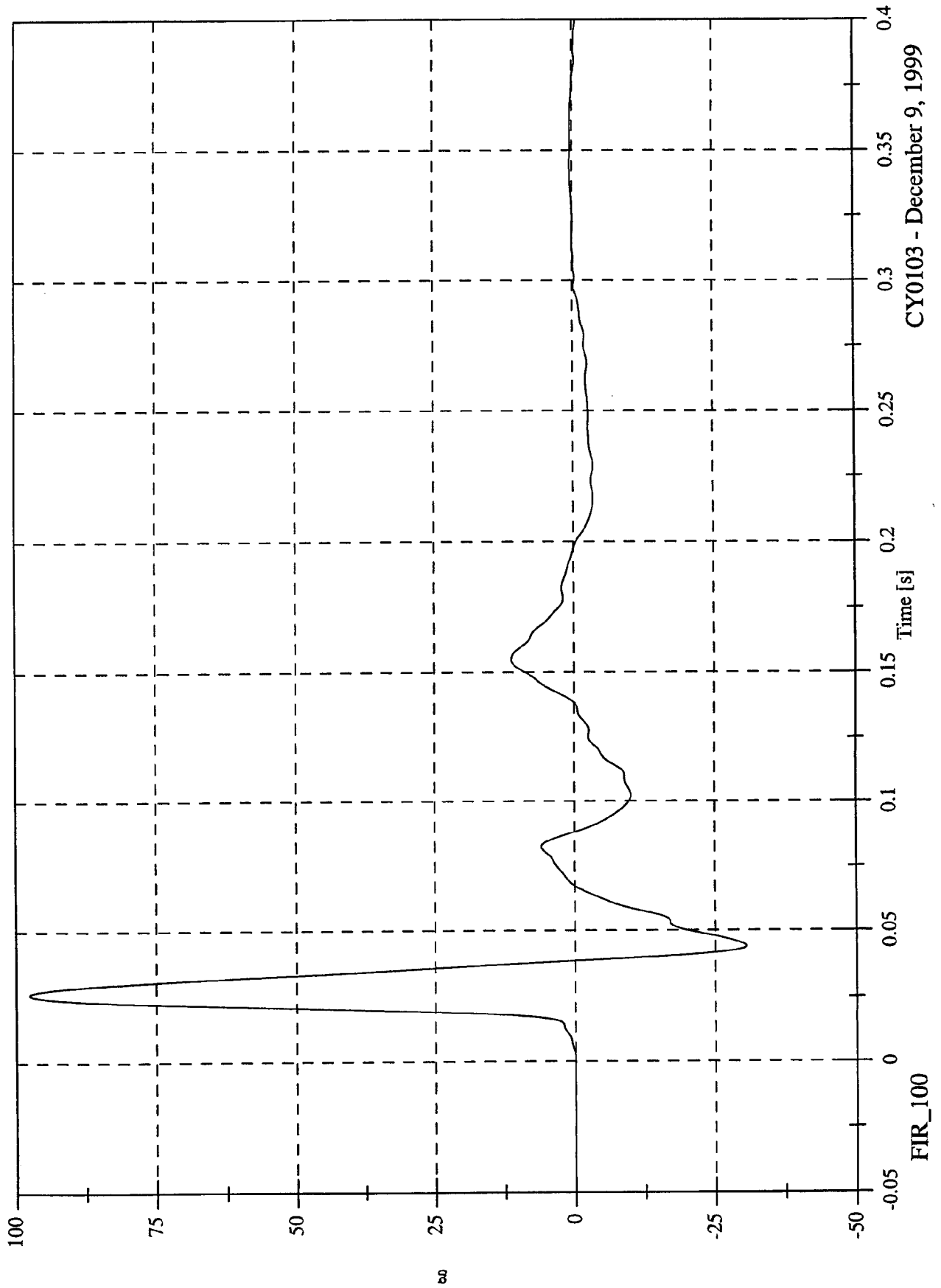
FIR_100

CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P1 Pelvic Red. y

Max: 97.6 [g] at 0.026 [s]
Min: -30.5 [g] at 0.044 [s]



FIR_100

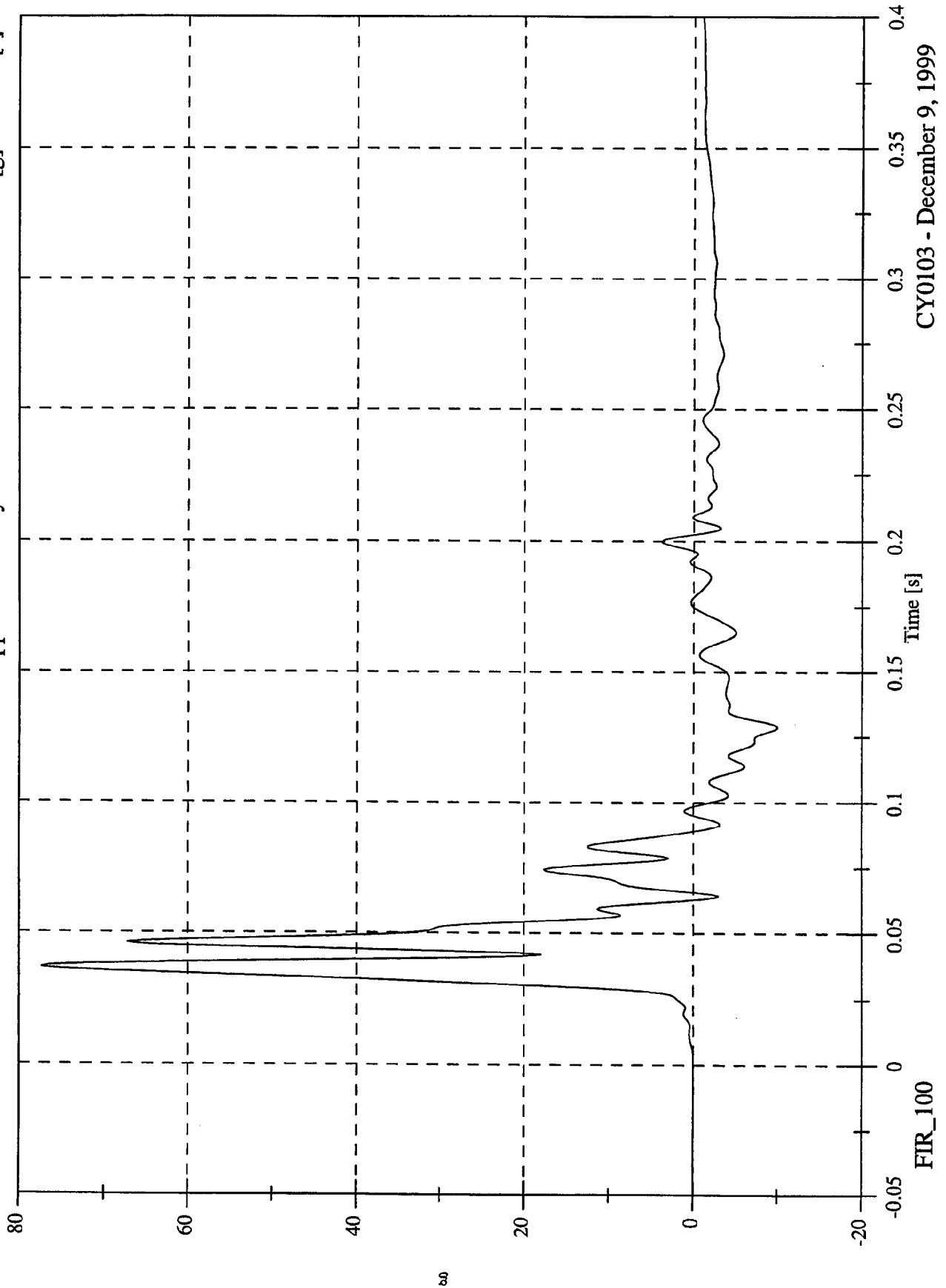
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P4 Upper Rib Red. y

Max: 77.3 [g] at 0.037 [s]

Min: -10.0 [g] at 0.129 [s]



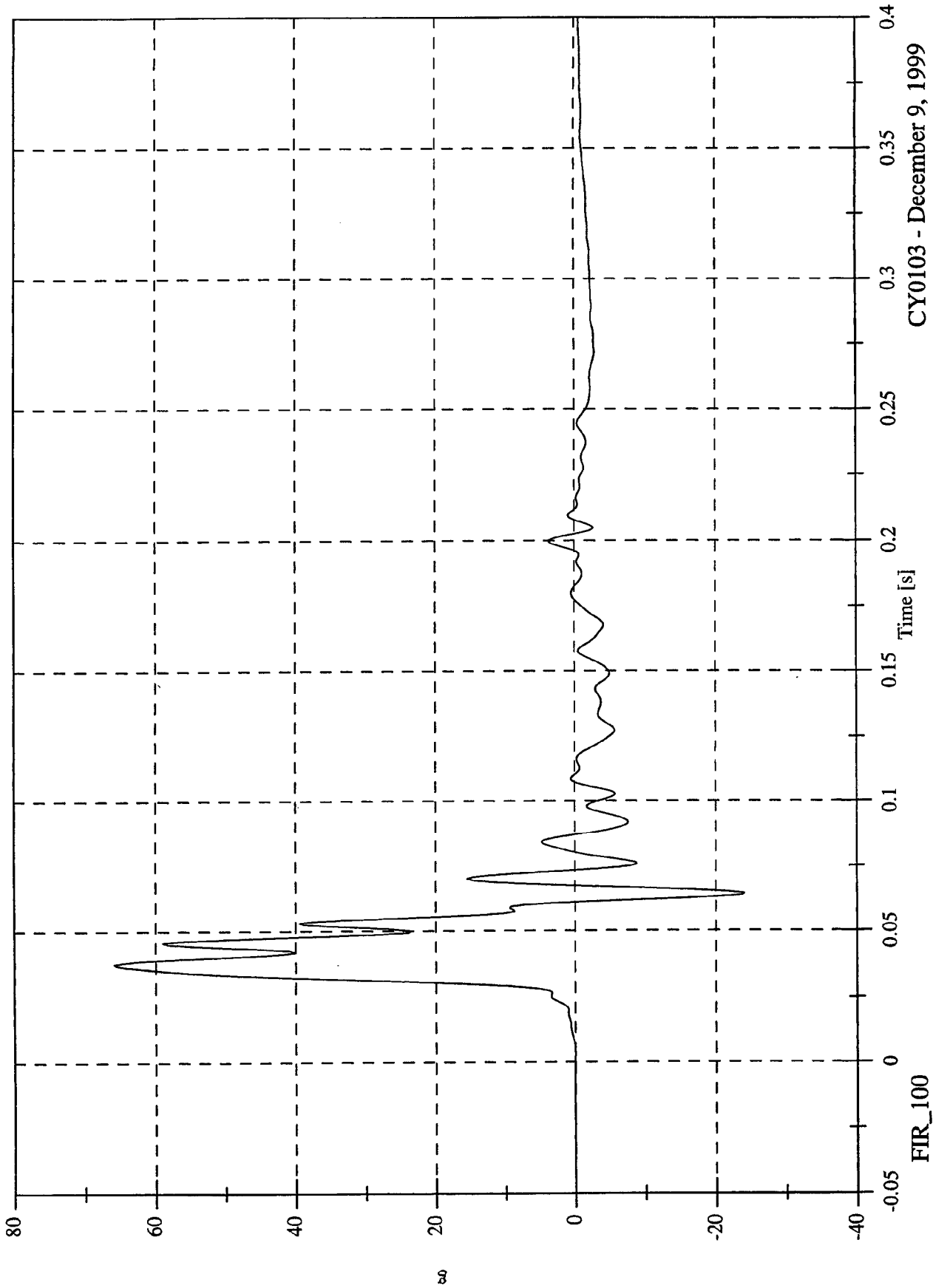
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P4 Lower Rib Red. y

Max: 65.9 [g] at 0.038 [s]

Min: -24.0 [g] at 0.064 [s]



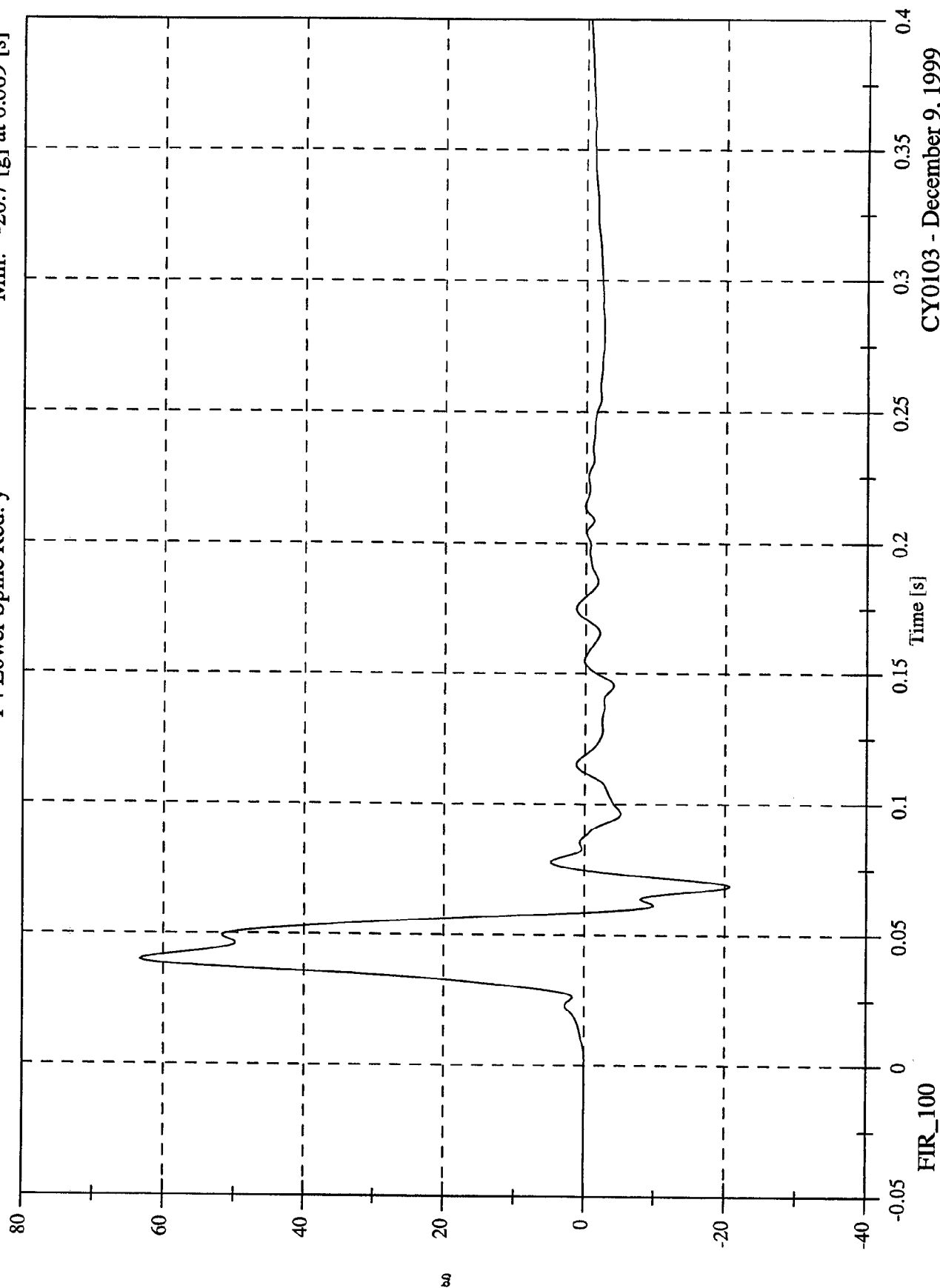
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P4 Lower Spine Red. y

Max: 63.3 [g] at 0.040 [s]

Min: -20.7 [g] at 0.069 [s]



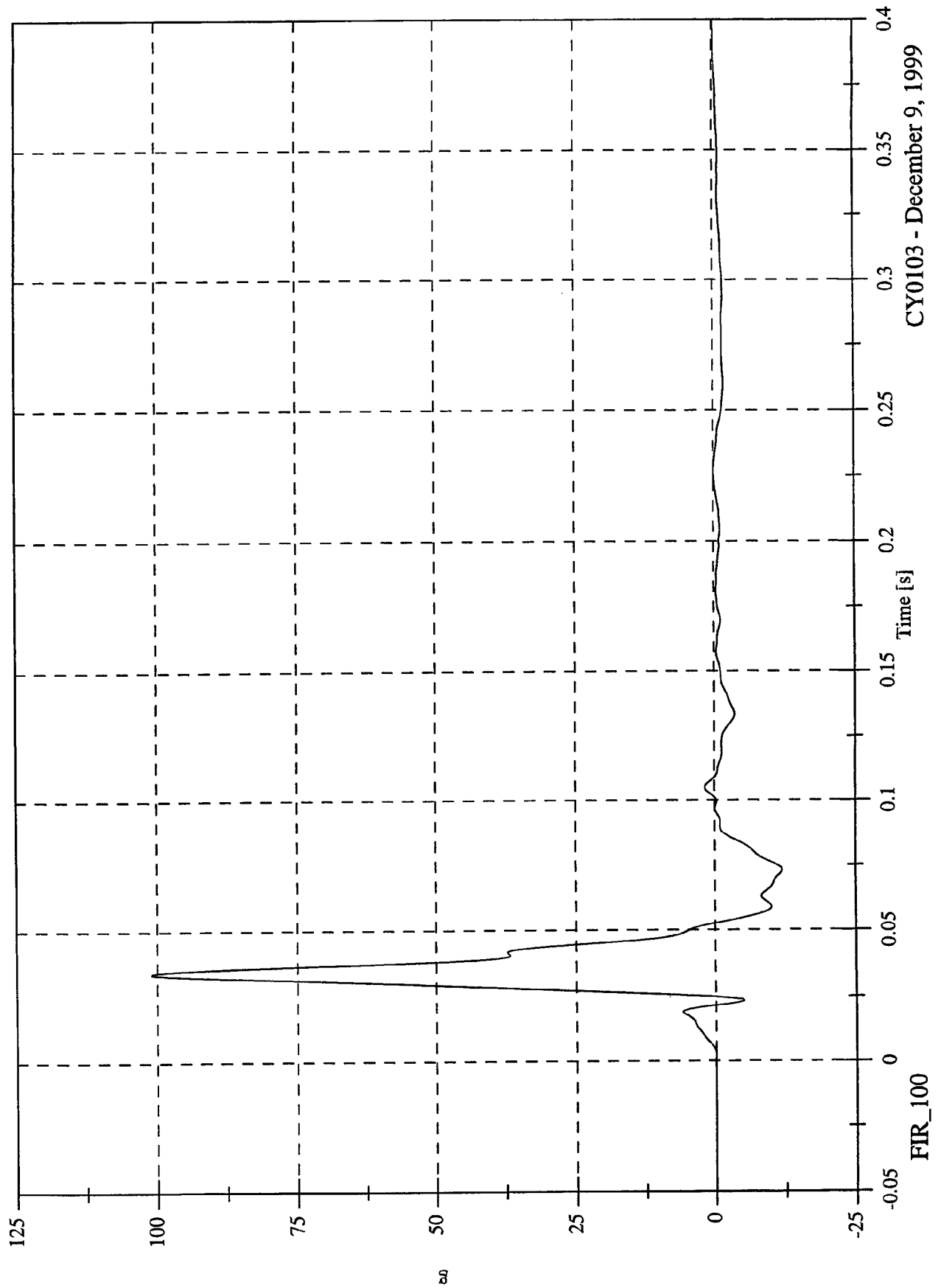
CY0103 - December 9, 1999

FMVSS 214D INDICANT TEST - 2000 Pontiac Grand Am

P4 Pelvic Red. y

Max: 100.9 [g] at 0.034 [s]

Min: -12.0 [g] at 0.073 [s]



FIR_100

CY0103 - December 9, 1999

APPENDIX C

SID CONFIGURATION AND PERFORMANCE VERIFICATION DATA

SUMMARY
SID PRE & POST TEST CALIBRATION

CONFIGURED FOR LEFT SIDE IMPACT

Date: 12/6/99-1/21/00; 12/6/99-1/21/00

Sequential Test Number:

1-2; 1-2

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	904	904	902	902
RH- Rib Height (mm)	501 - 521	513	513	514	513
HP- Hip Pivot Height (mm)	99 ref.	99	99	99	99
RD- Rib from Back Line (mm)	229 - 241	236	236	239	239
KV- Knee Pivot from Back Line (mm)	511 - 526	521	521	526	526
SW- Knee Pivot to Floor (mm)	490 - 505	493	493	494	494
HW- Hip Width (mm)	356 - 391	370	368	361	361
THORAX IMPACTS					
TEMPERATURE (°C)	18.9 - 25.5	21.1	21.0	21.1	21.0
RELATIVE HUMIDITY (%)	10 - 70	31	32	30	32
PROBE SPEED (m/s)	4.27 - 4.33	4.30	4.29	4.29	4.28
UPPER RIB (g's)	37 - 46	40.5	40.3	39.0	40.8
LOWER RIB (g's)	37 - 46	39.4	41.1	39.5	39.2
LOWER SPINE (g's)	15 - 22	21.5	21.0	19.6	19.2
PELVIS IMPACT					
TEMPERATURE (°C)	18.9 - 25.5	21.1	21.0	21.1	21.0
RELATIVE HUMIDITY (%)	10 - 70	31	32	31	32
PROBE SPEED (m/s)	4.27 - 4.33	4.31	4.30	4.30	4.29
PELVIS (g's)	40 - 60	55.8	46.3	50.1	45.5

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
Date: 12/6/99

Sequential Test Number: 1
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:

1Date: 12/6/99

Laboratory Technician:

B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	904
RH- Rib Height (mm)	502 - 520	513
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	236
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	370

REMARKS: None

**THORACIC SHOCK ABSORBER TESTS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1.3
Date: 8/27/99 Laboratory Technician: B. Swiecicki

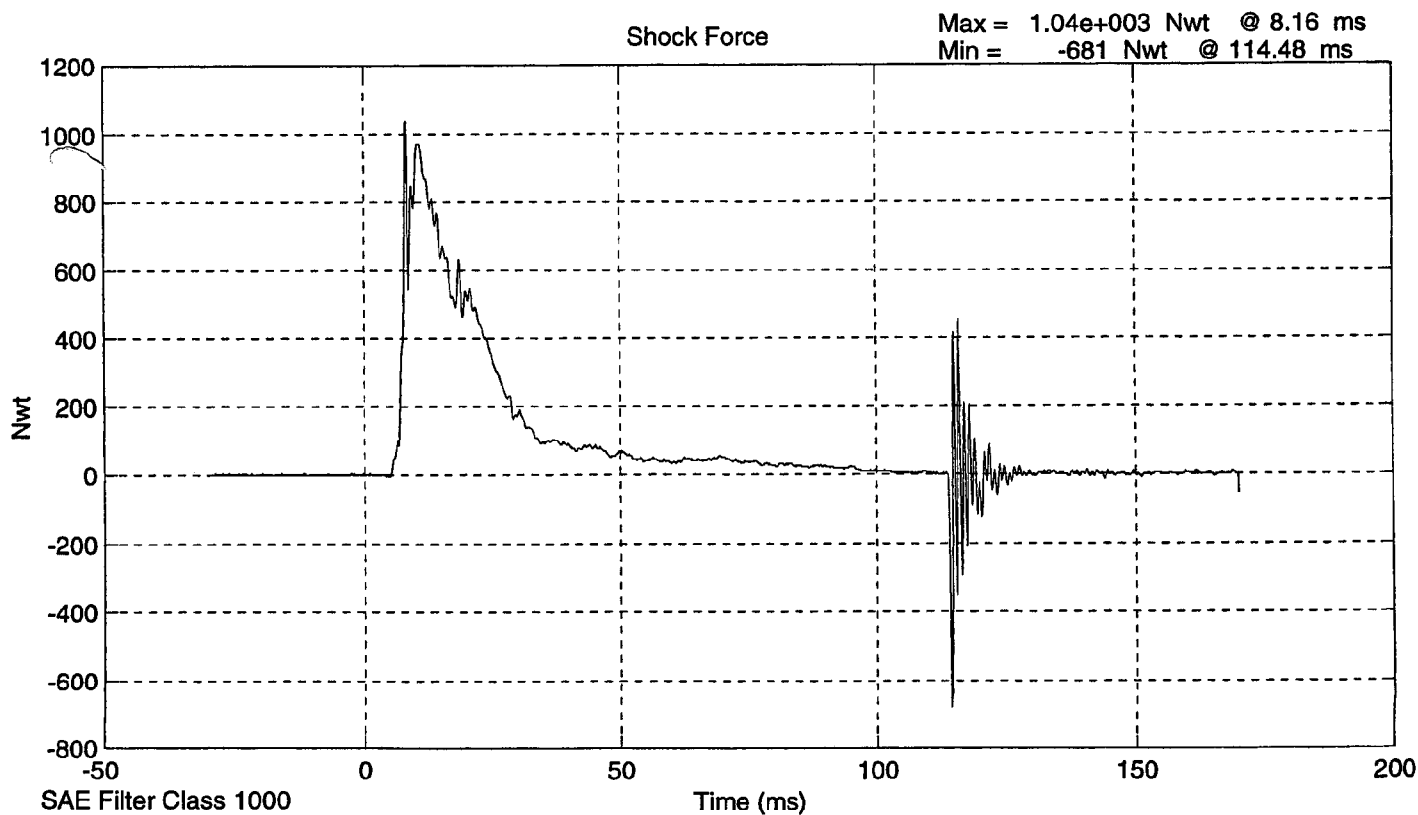
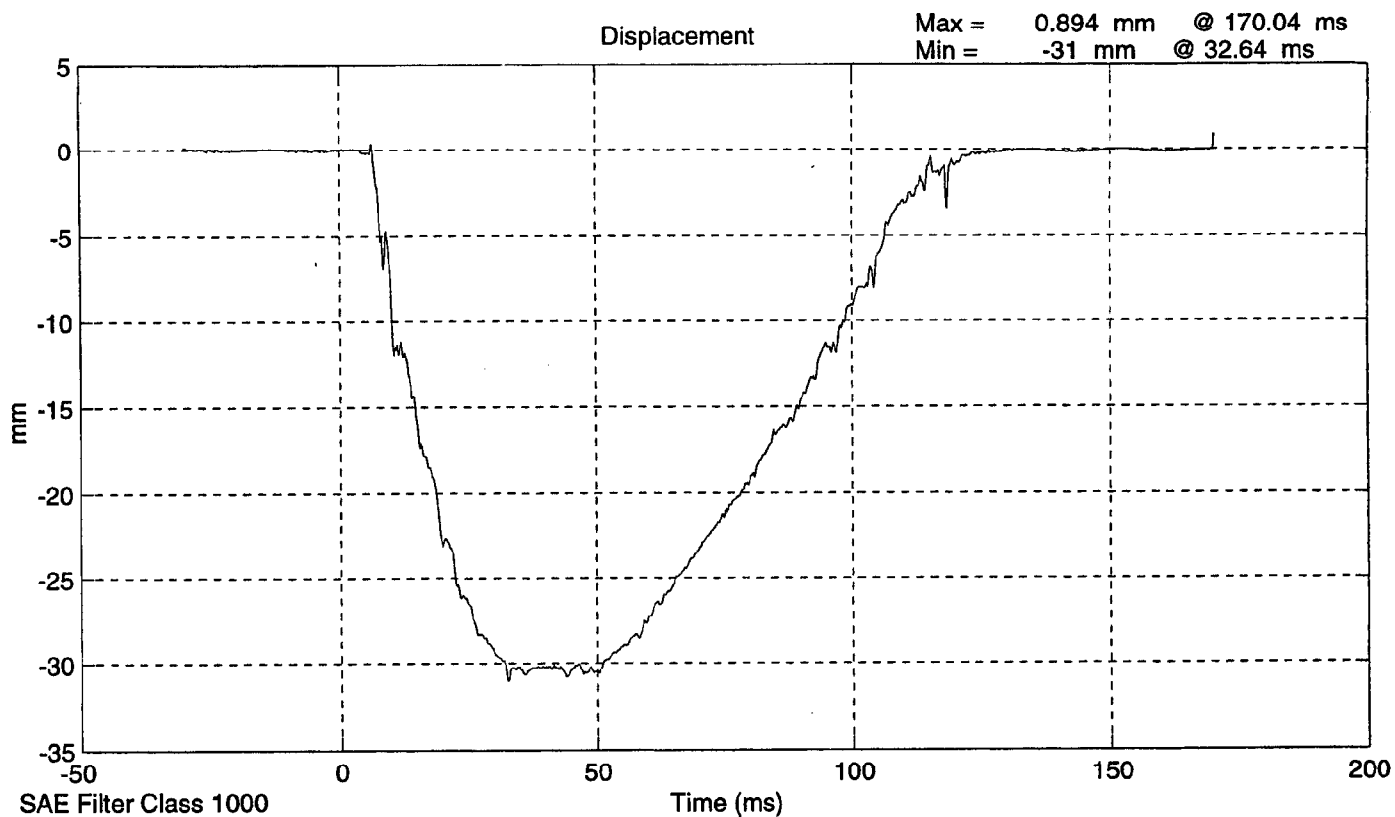
DAMPER IDENTIFICATION: 015

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)		18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)		10 - 70	31
VELOCITY 3.05 m/s	FORCE (N)	836 - 1125	1038.7
	DISPLACEMENT (mm)	30 - 35	31.0
VELOCITY 4.27 m/s	FORCE (N)	1730 - 2099	2000.6
	DISPLACEMENT (mm)	32 - 37	34.9
VELOCITY 6.10 m/s	FORCE (N)	3741 - 4448	4218.5
	DISPLACEMENT (mm)	33 - 40	34.9

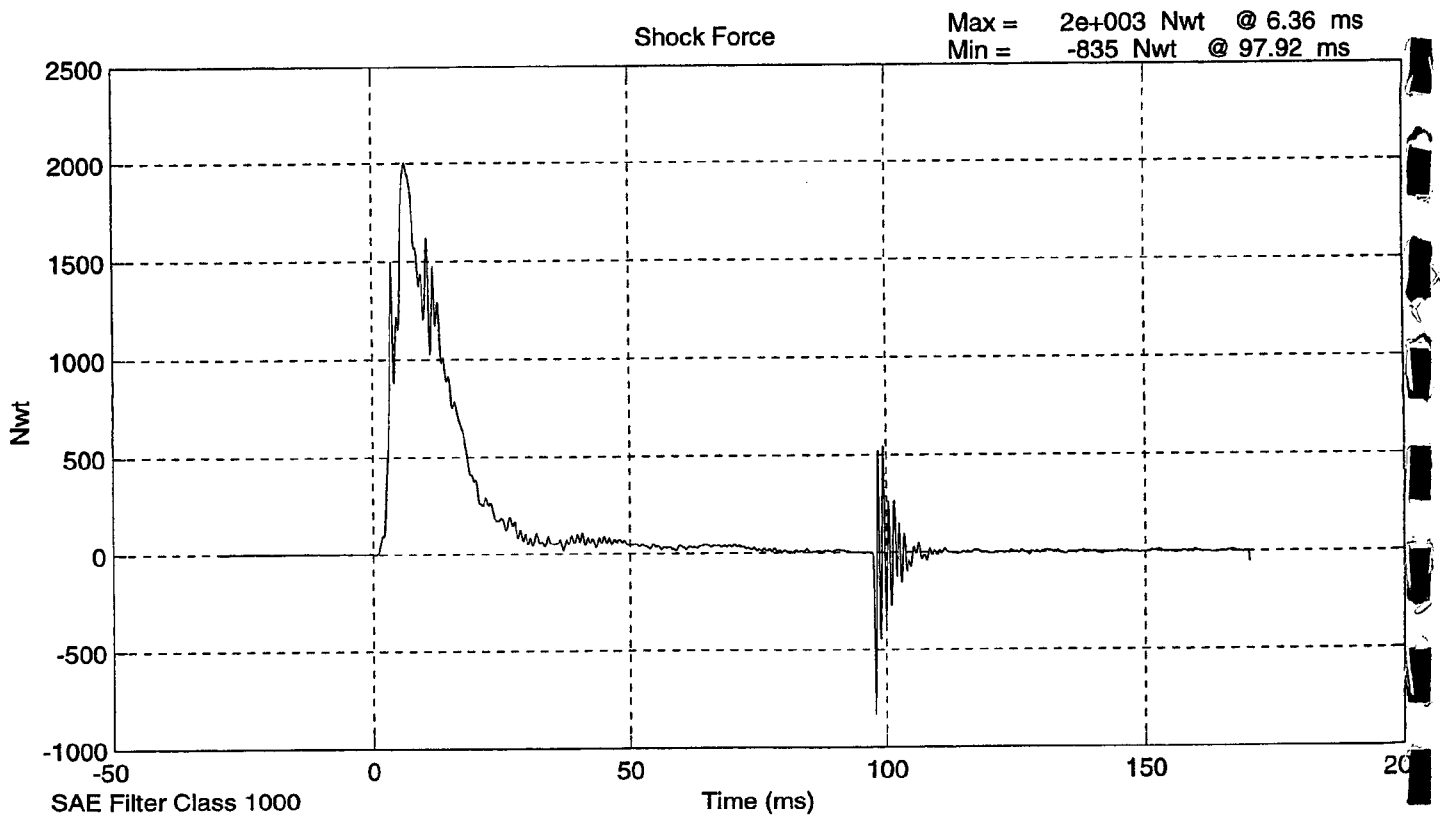
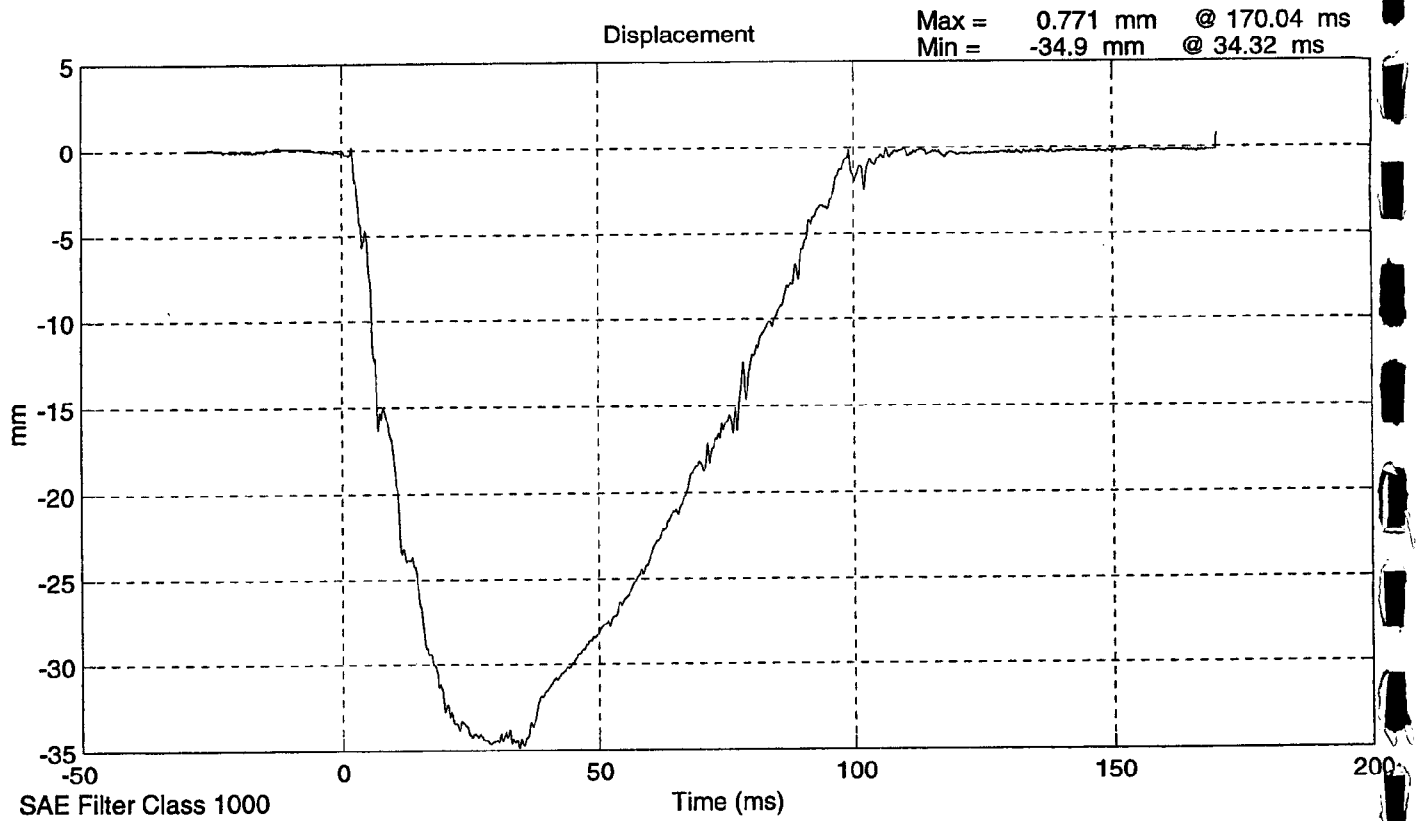
DAMPER SETTING: 5

REMARKS: None

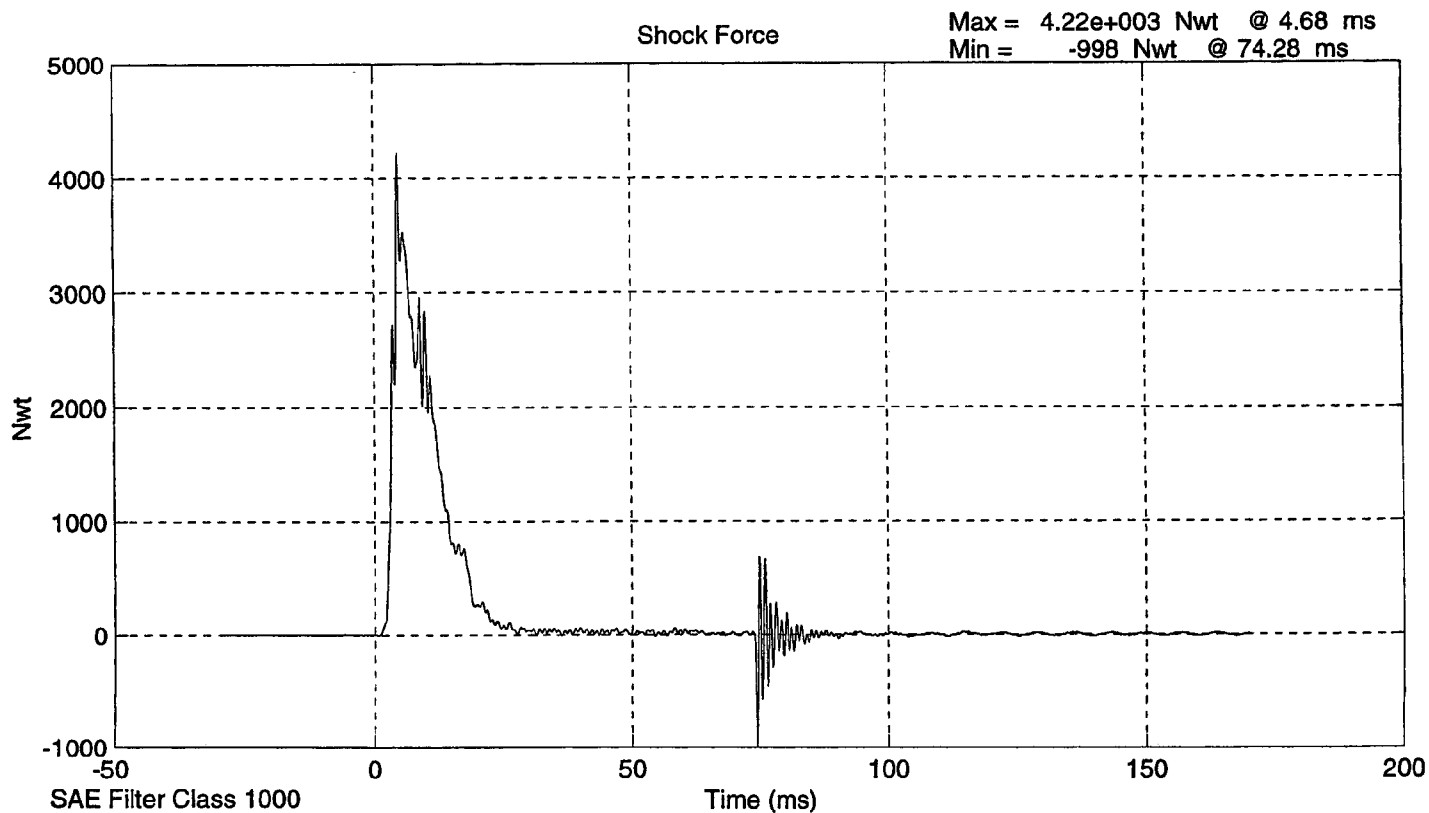
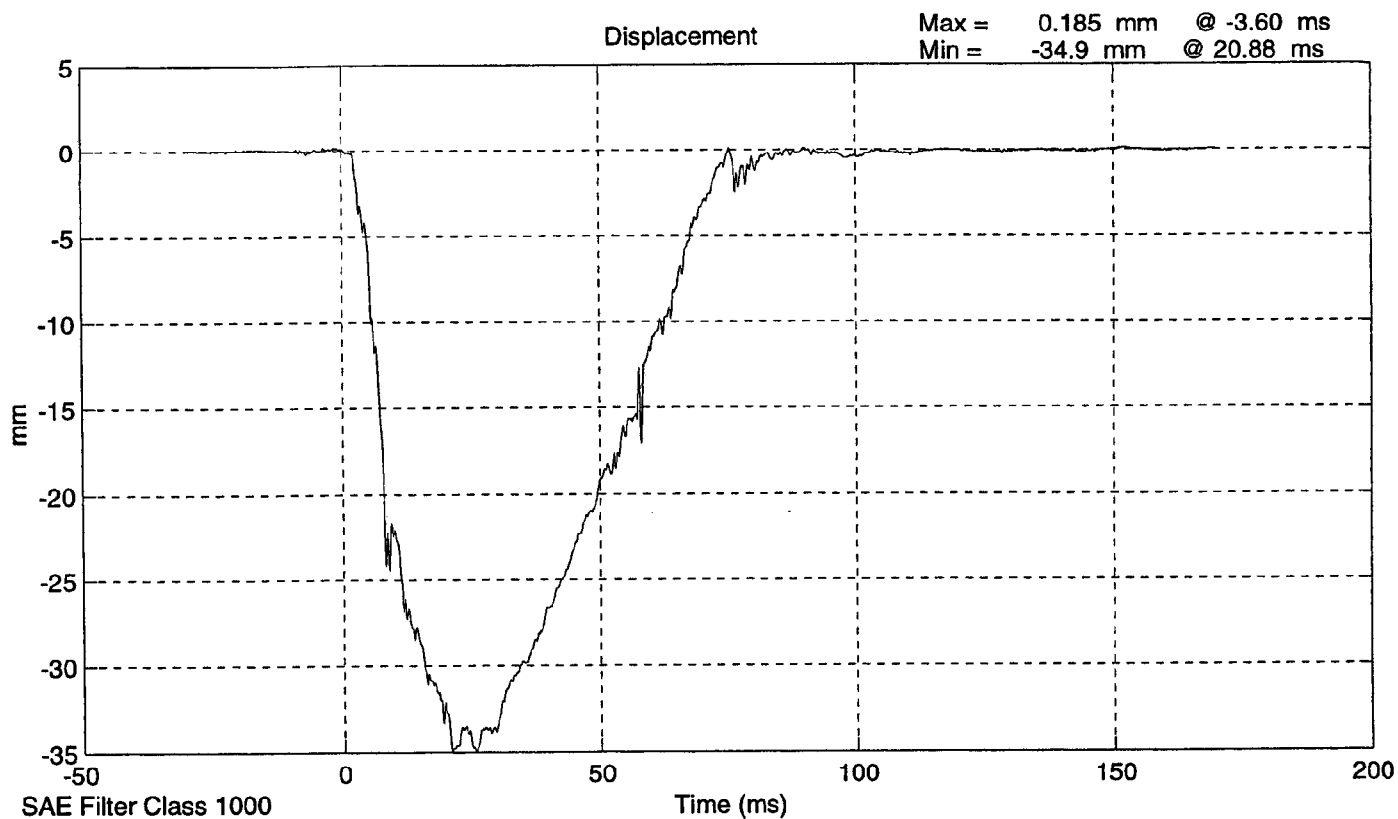
SID Shock Absorber Impact Test 015 @ 3.048 m/s



SID Shock Absorber Impact Test 015 @ 4.2672 m/s



SID Shock Absorber Impact Test 015 @ 6.096 m/s



**LATERAL THORAX IMPACT TEST
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015
Date: 12/6/99

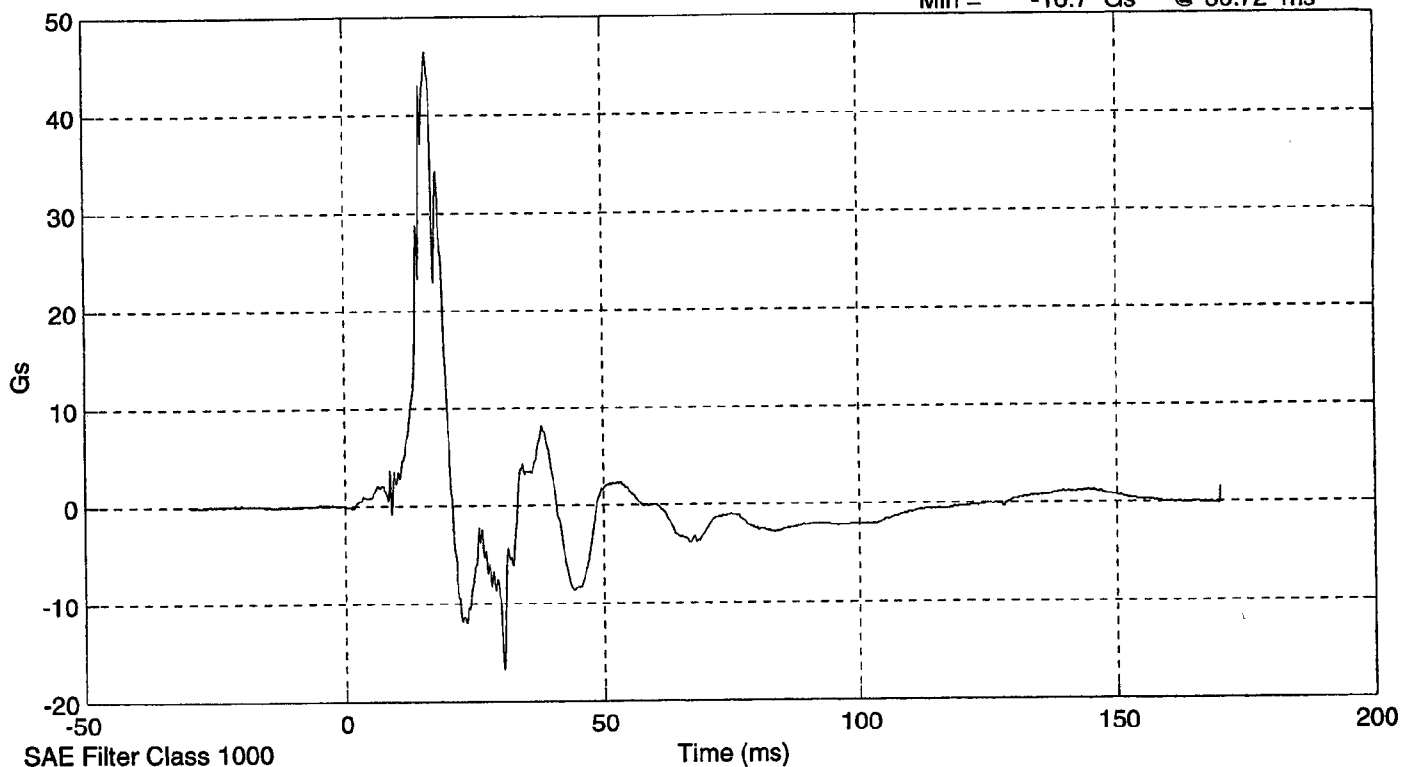
Sequential Test Number: 1
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	31
PROBE SPEED (m/s)	4.27 - 4.33	4.30
UPPER RIB (g's)	37 - 46	40.5
LOWER RIB (g's)	37 - 46	39.4
LOWER SPINE (g's)	15 - 22	21.5

REMARKS: None

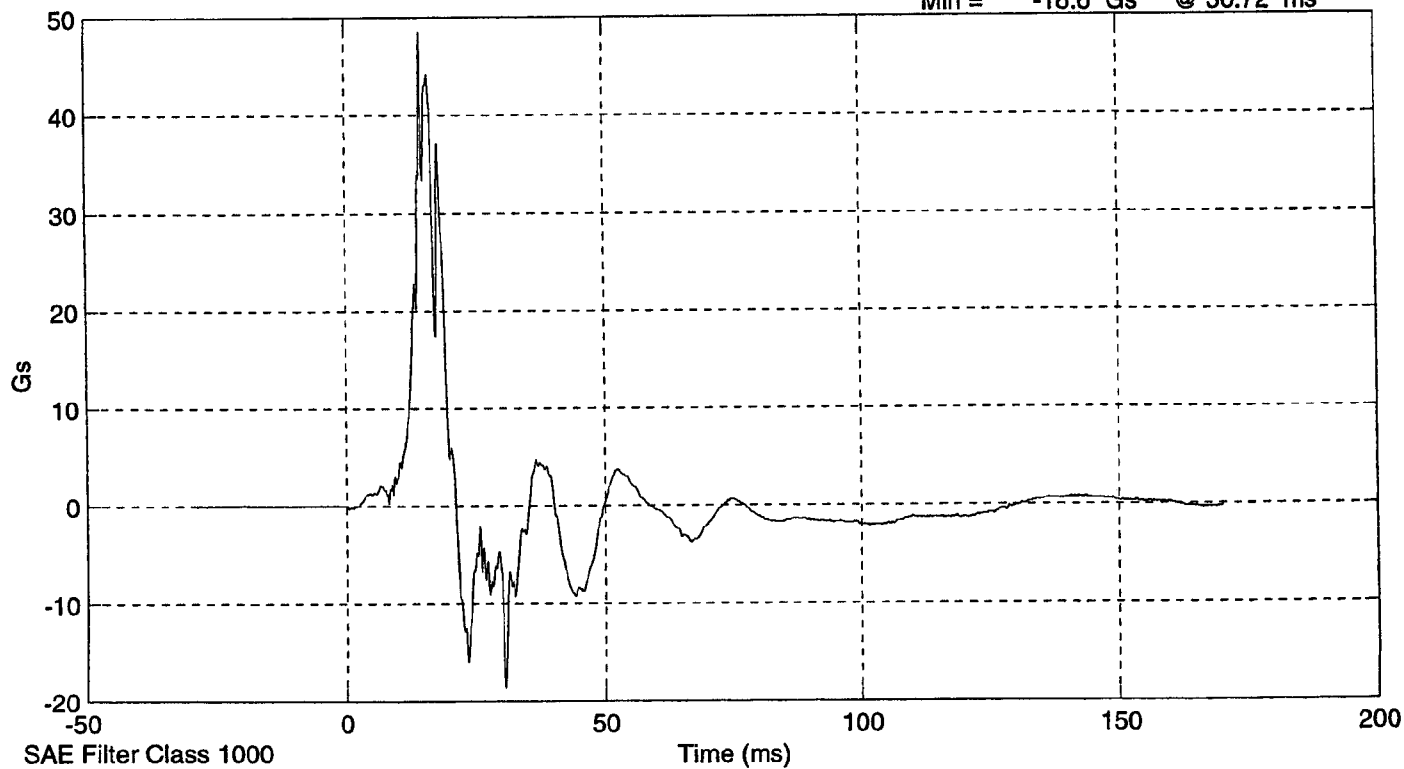
UPPER RIB Y

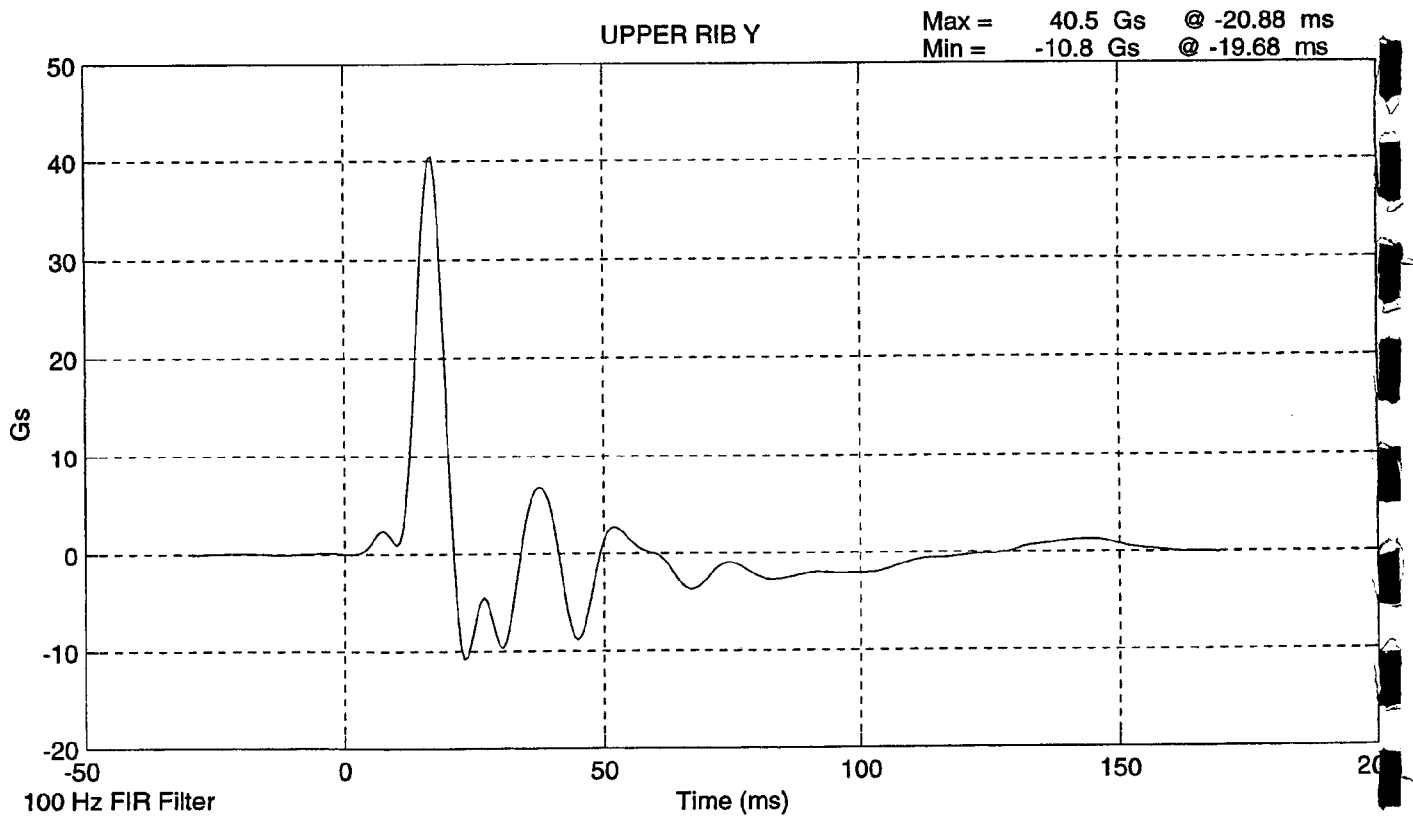
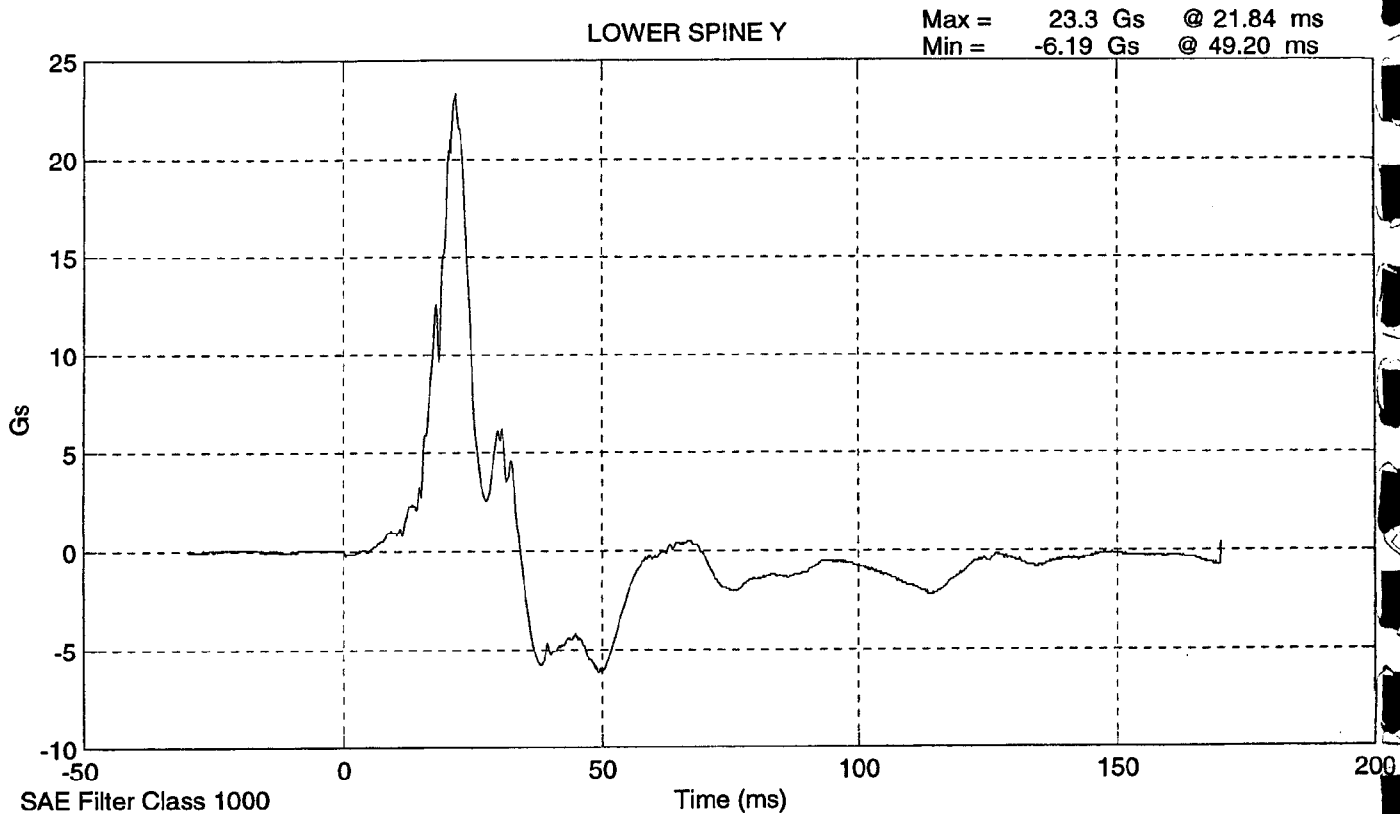
Max = 46.5 Gs @ 16.20 ms
Min = -16.7 Gs @ 30.72 ms

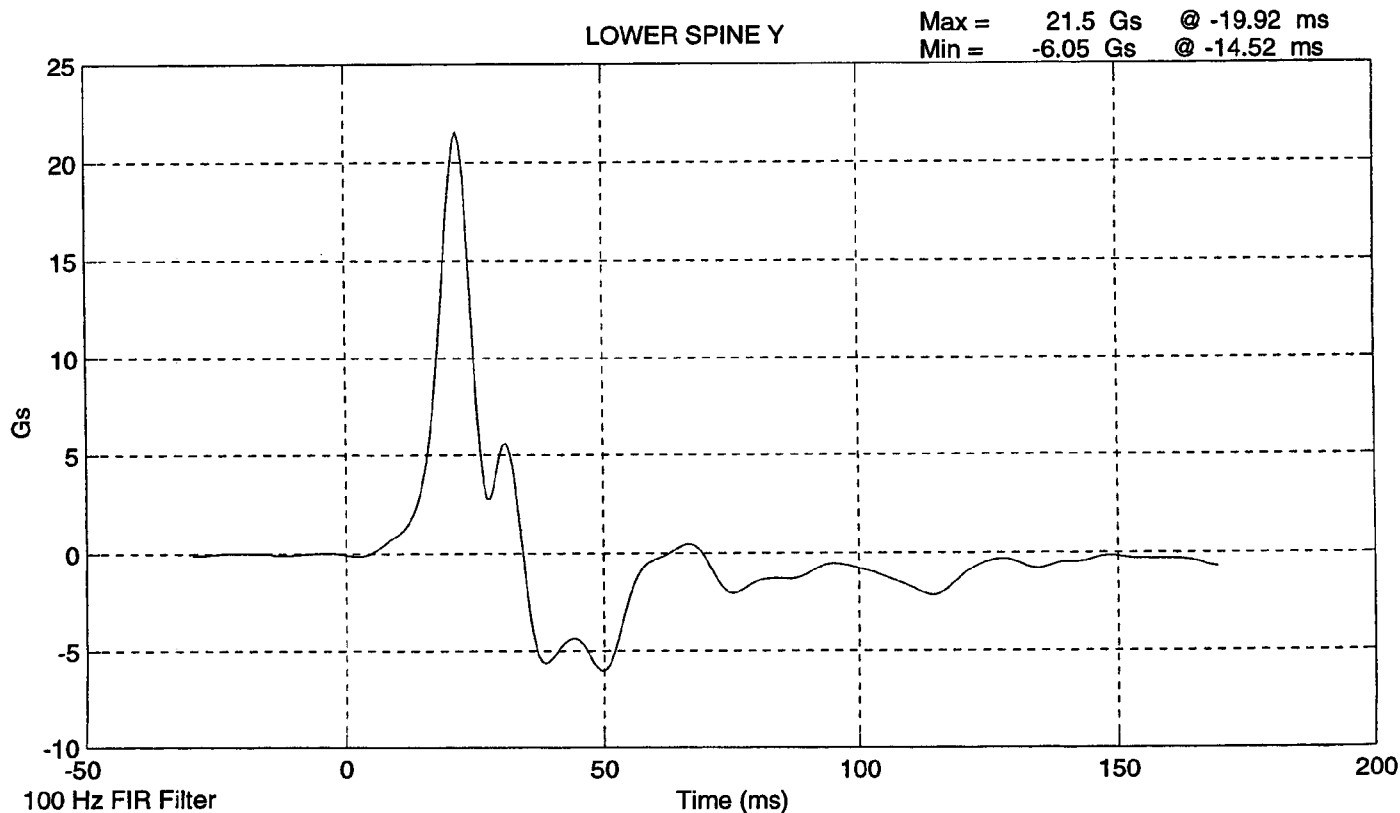
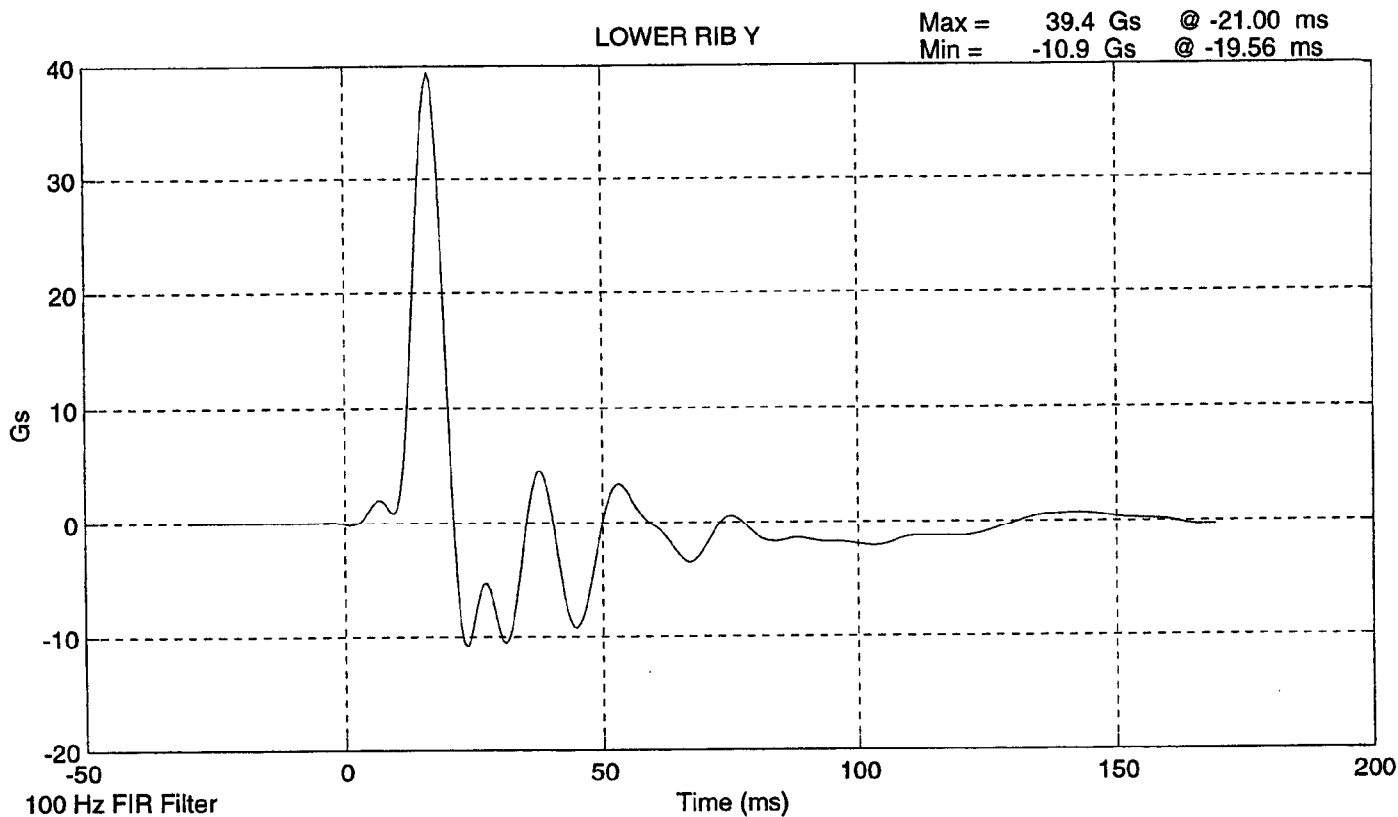


LOWER RIB Y

Max = 48.5 Gs @ 14.64 ms
Min = -18.6 Gs @ 30.72 ms







**LATERAL PELVIS IMPACT TEST
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

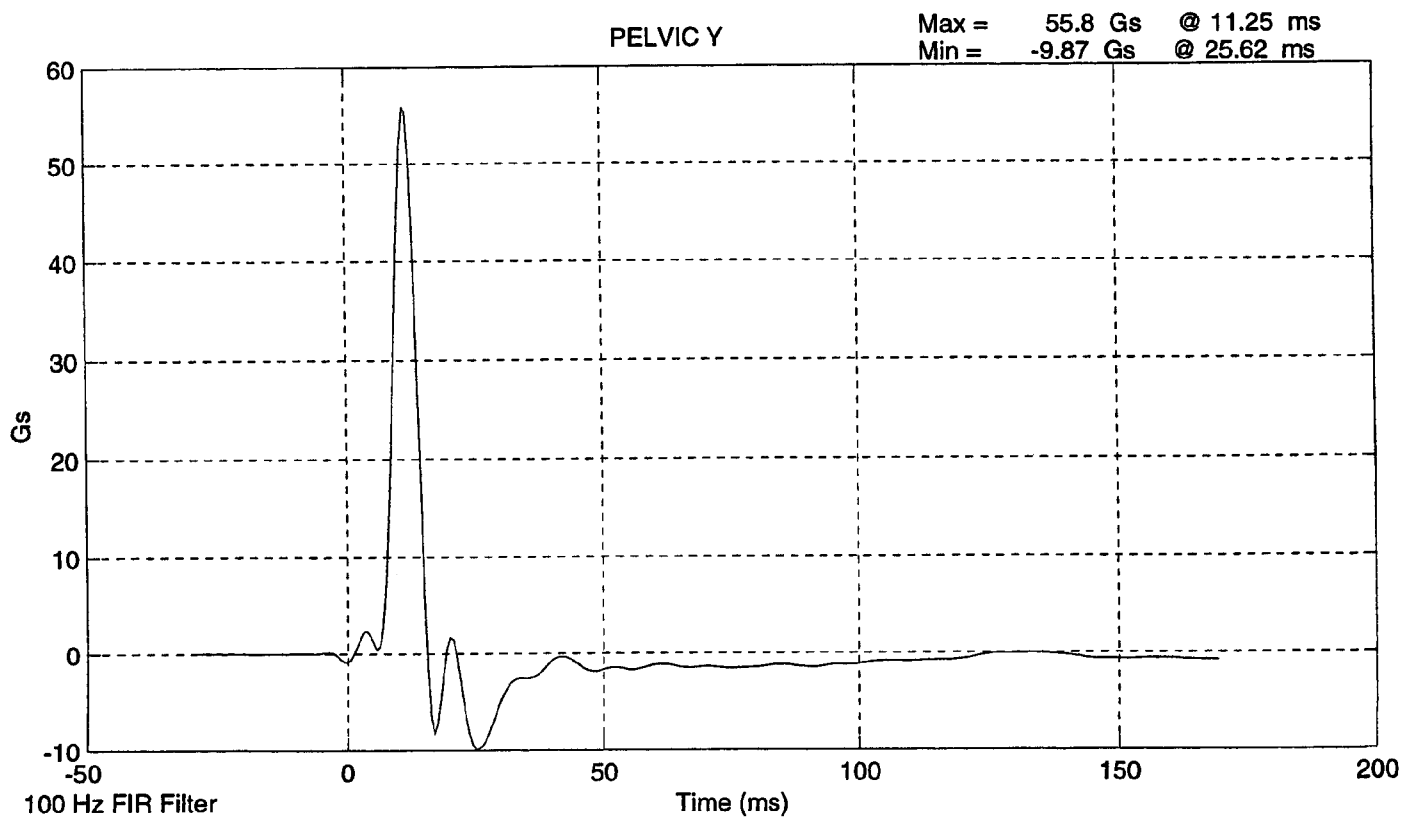
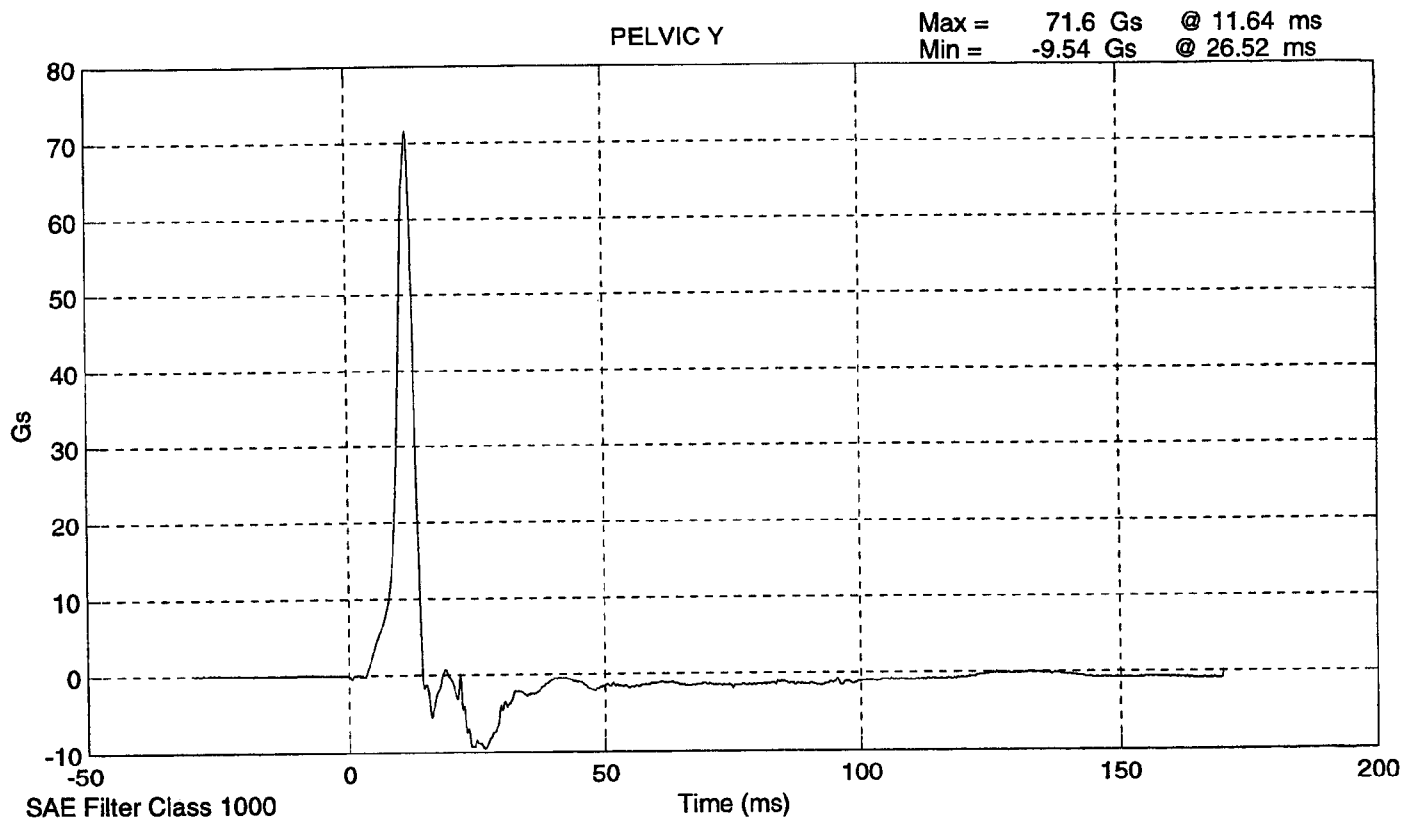
SID Serial No.: 015
Date: 12/6/99

Sequential Test Number: 1
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	31
PROBE SPEED (m/s)	4.27 - 4.33	4.31
PELVIS ACCELERATION (g's)	40 - 60	55.8

REMARKS: None

SID 015 Pelvic Impact Test @ 4.3038 m/s



HEAD DROP TEST
PRE-TEST
(Test not required for SID certification)

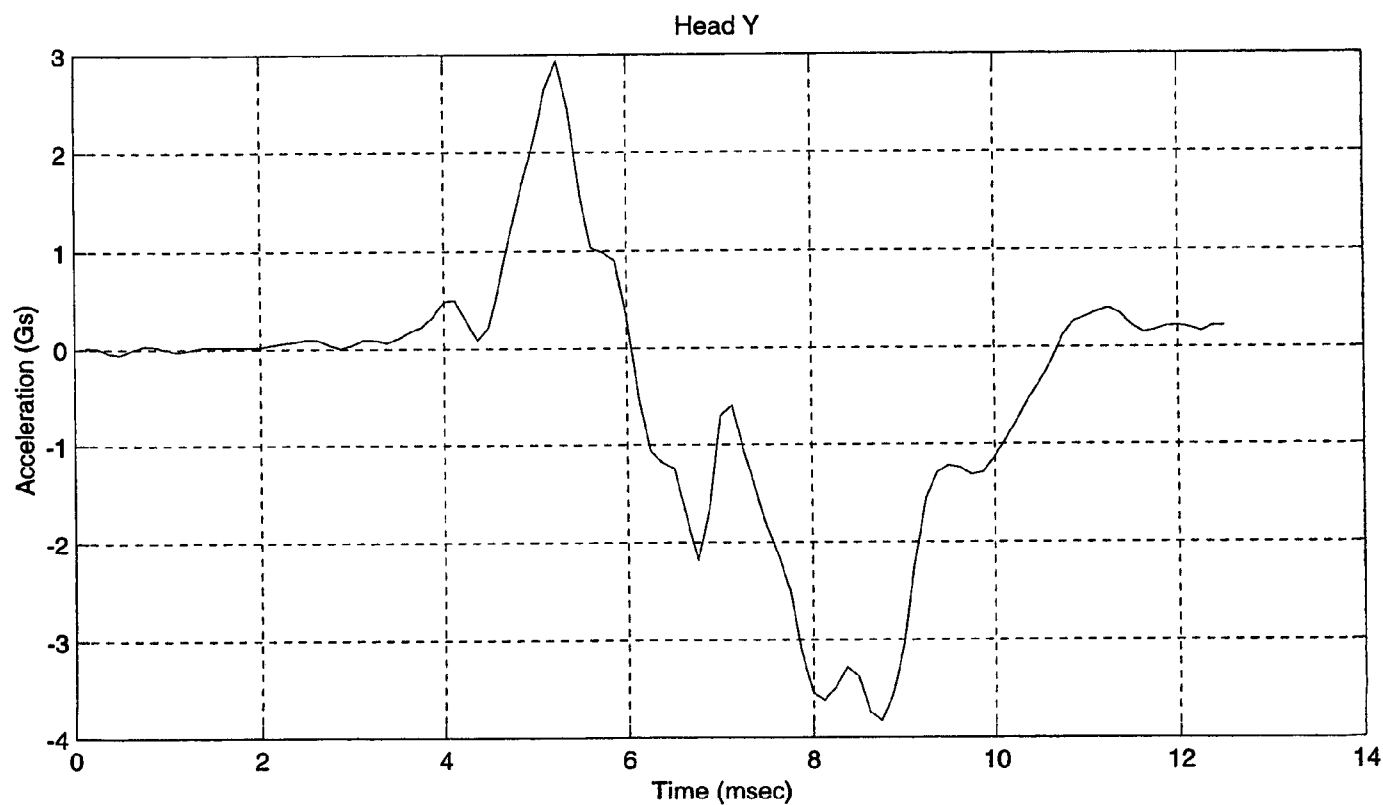
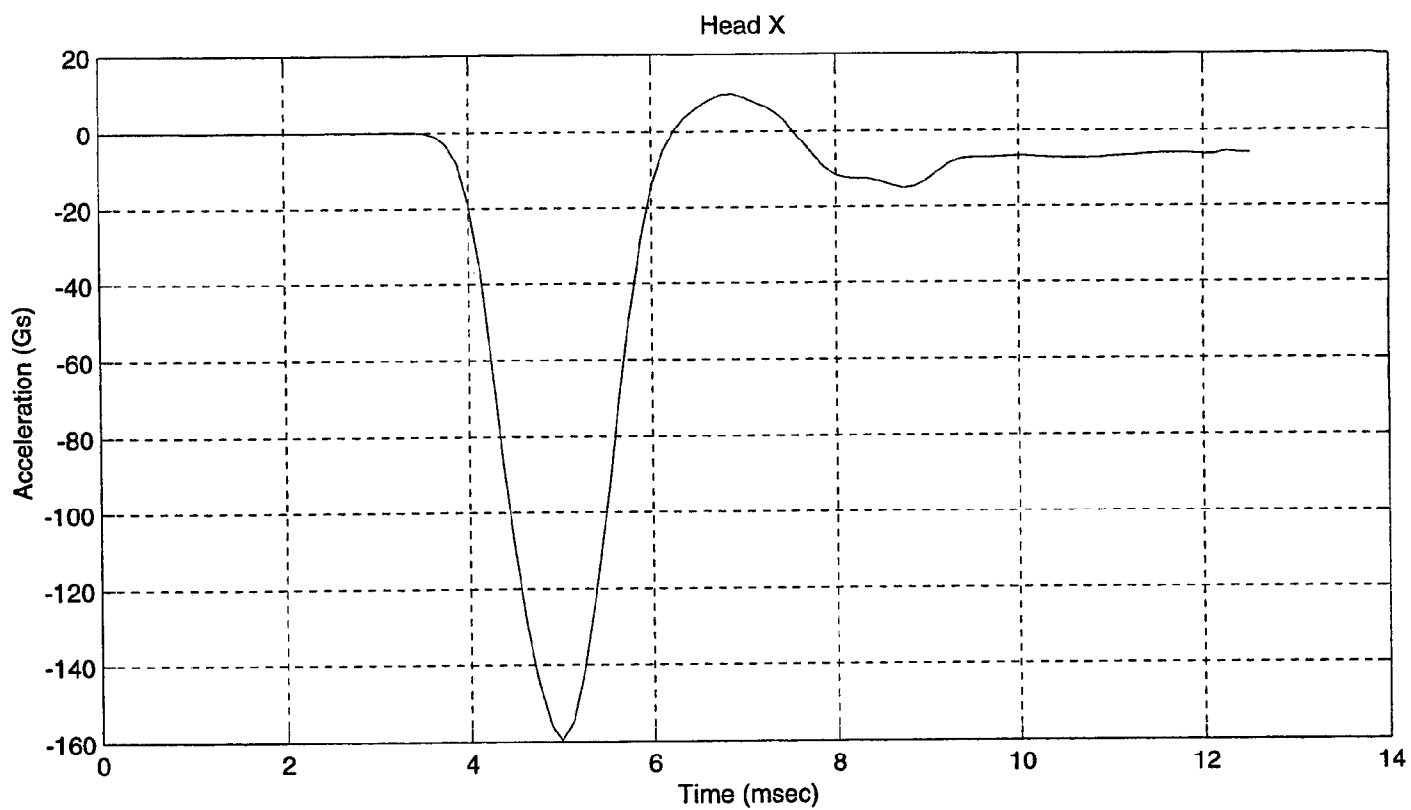
CONFIGURED FOR LEFT SIDE IMPACT

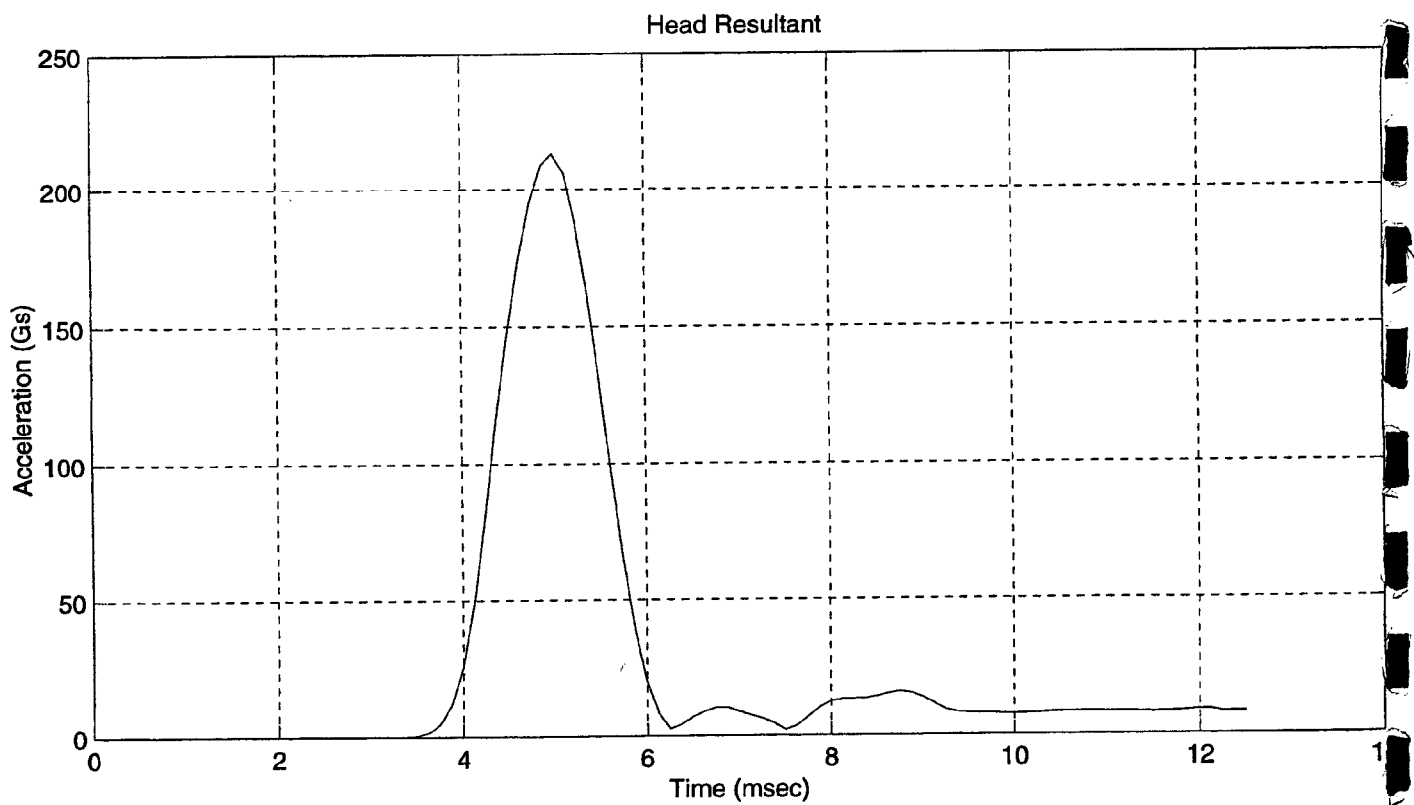
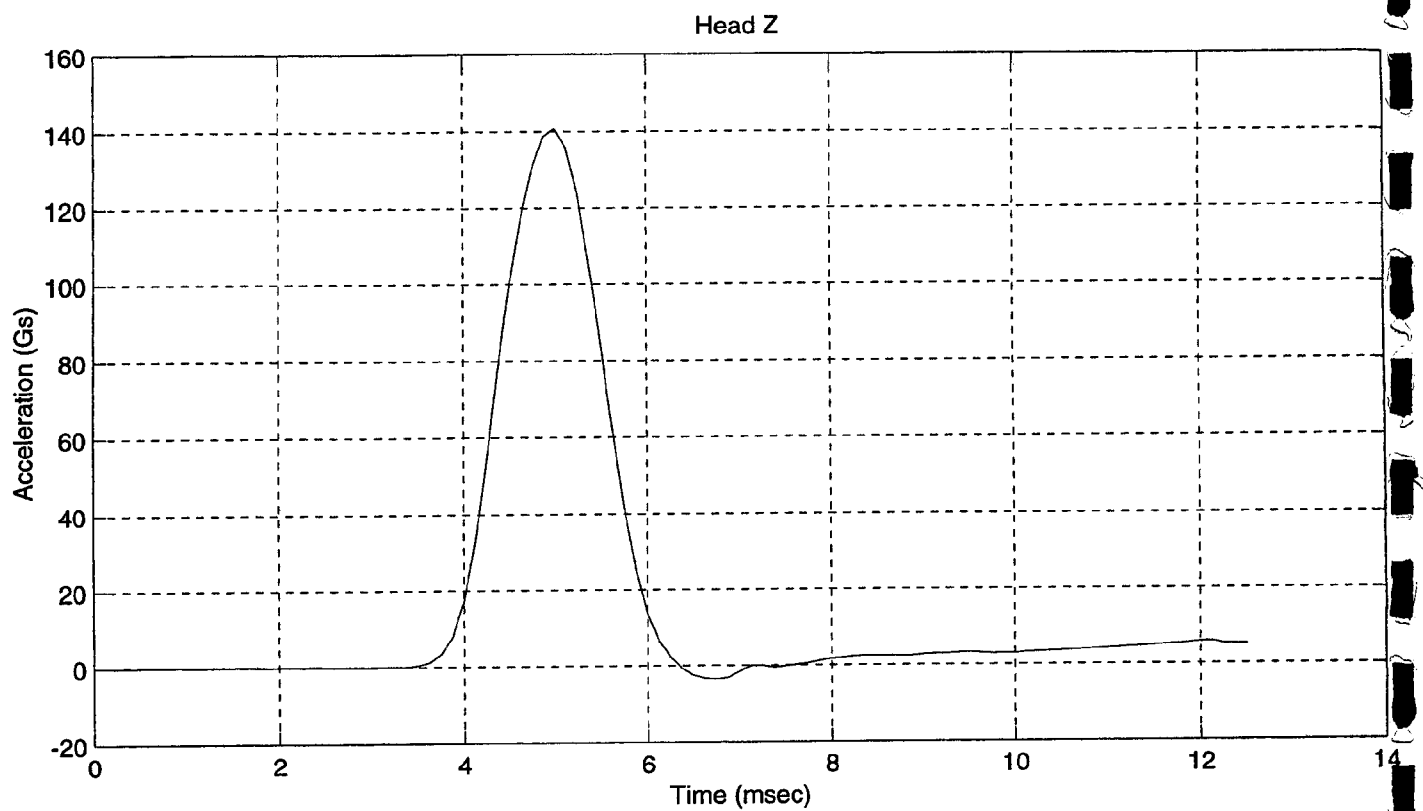
SID Serial No.: 015
Date: 12/6/99

Sequential Test Number: 1
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	31
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	212.9
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	3.8
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.25

REMARKS: None





**ABDOMINAL COMPRESSION TEST
PRE-TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015
Date: 12/6/99

Sequential Test Number: 1
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	31
FORCE @ 13 mm (N)	104 - 162	105.9
FORCE @ 19 mm (N)	163 - 221	176.1
FORCE @ 25 mm (N)	222 - 280	250.0
FORCE @ 33 mm (N)	325 - 391	353.6

REMARKS: None

Dummy S/N 15

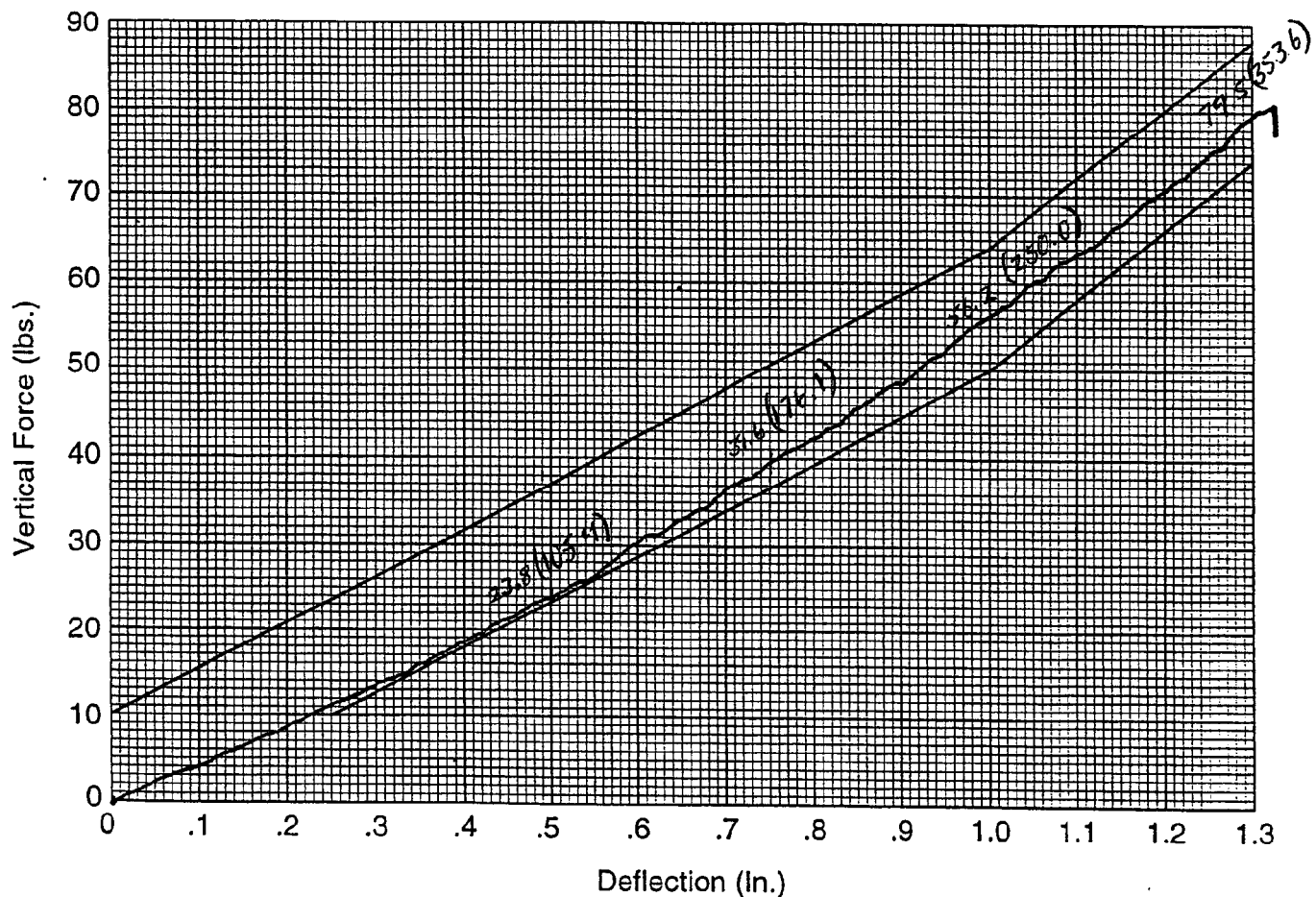
W/A _____

Date 12-6-99

Performed By BB

Temp. 70°

Humidity 31%



Hybrid II
Abdomen Static Press

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

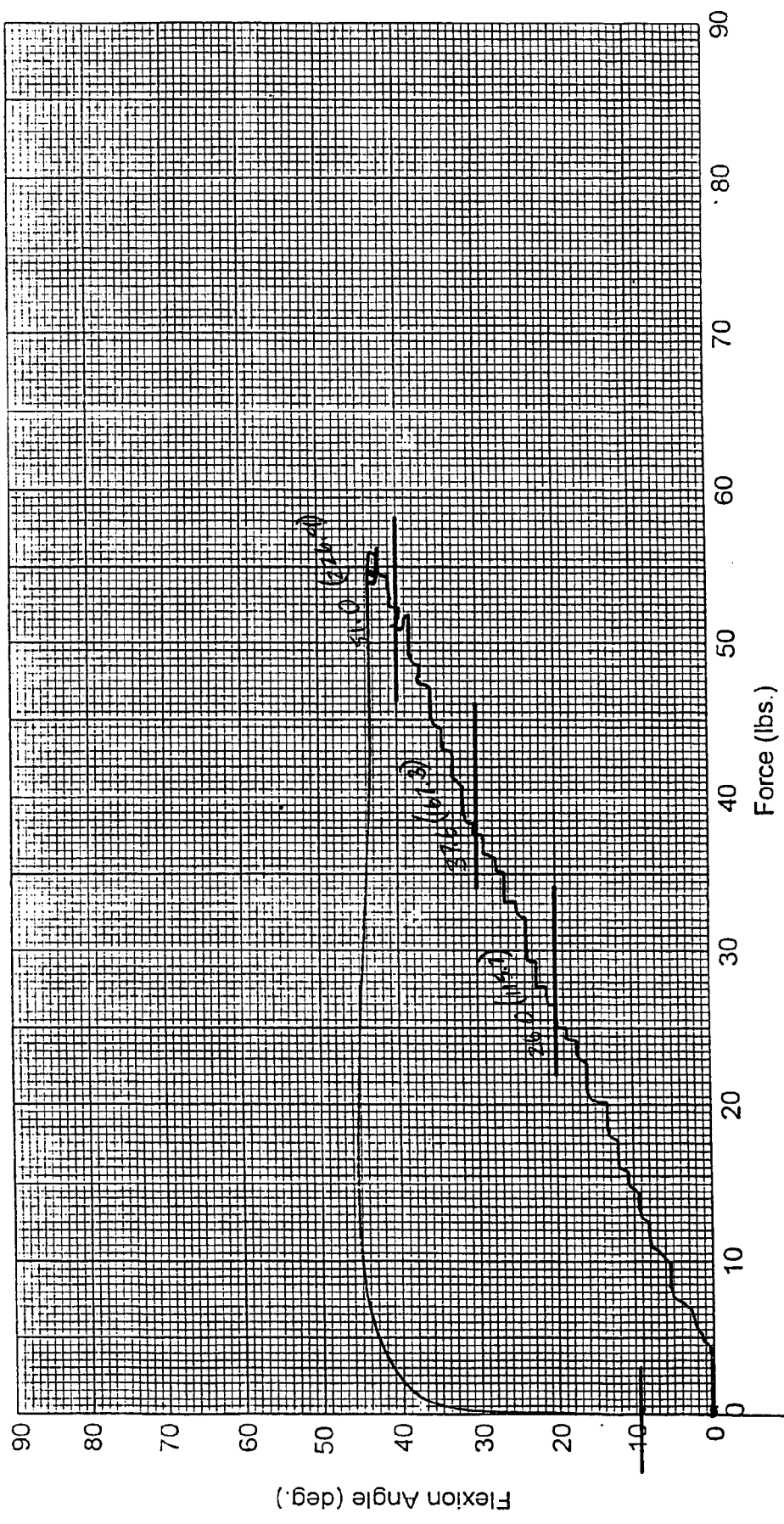
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: 12/6/99 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	31
FORCE @ 0° (N)	0 - 26.7	0.0
FORCE @ 20° (N)	97.8 - 151.2	115.7
FORCE @ 30° (N)	151.2 - 204.6	167.3
FORCE @ 40° (N)	204.6 - 258	226.9
RETURN ANGLE	12° max.	9.2°

REMARKS: None

Dummy S/N 15
W/A
Date 12-6-99
Performed By BB
Temp. 70°
Humidity 31%



Hybrid II Lumbar Spine Flexion Test

PRE-TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015
Date: 12/6/99

Sequential Test Number: 1
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: 12/6/99 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
Date: 12/6/99

Sequential Test Number: 1
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	514
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	494
HW- Hip Width (mm)	356 - 391	361

REMARKS: None

THORACIC SHOCK ABSORBER TESTS
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1.1
Date: 9/30/99 Laboratory Technician: B. Swiecicki

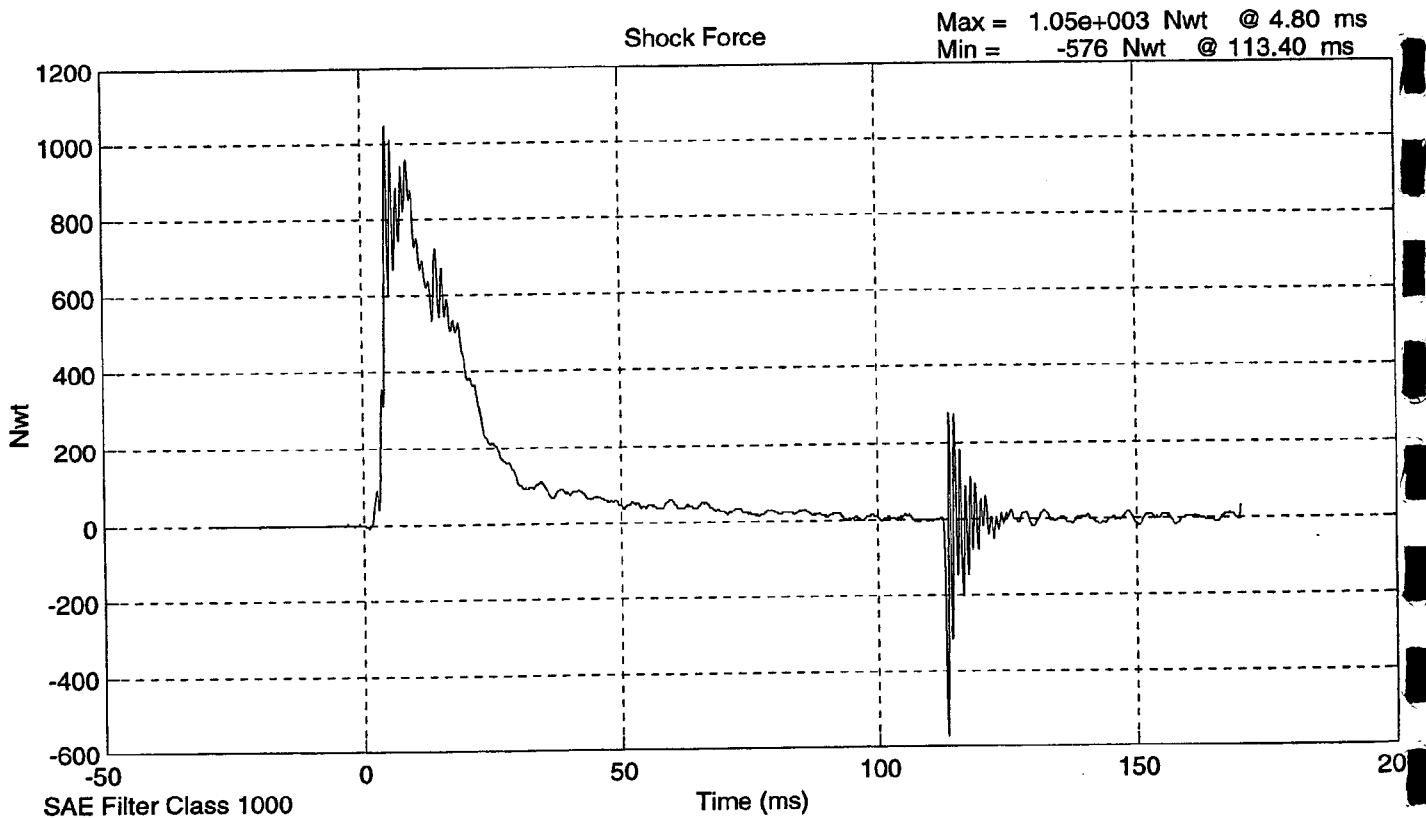
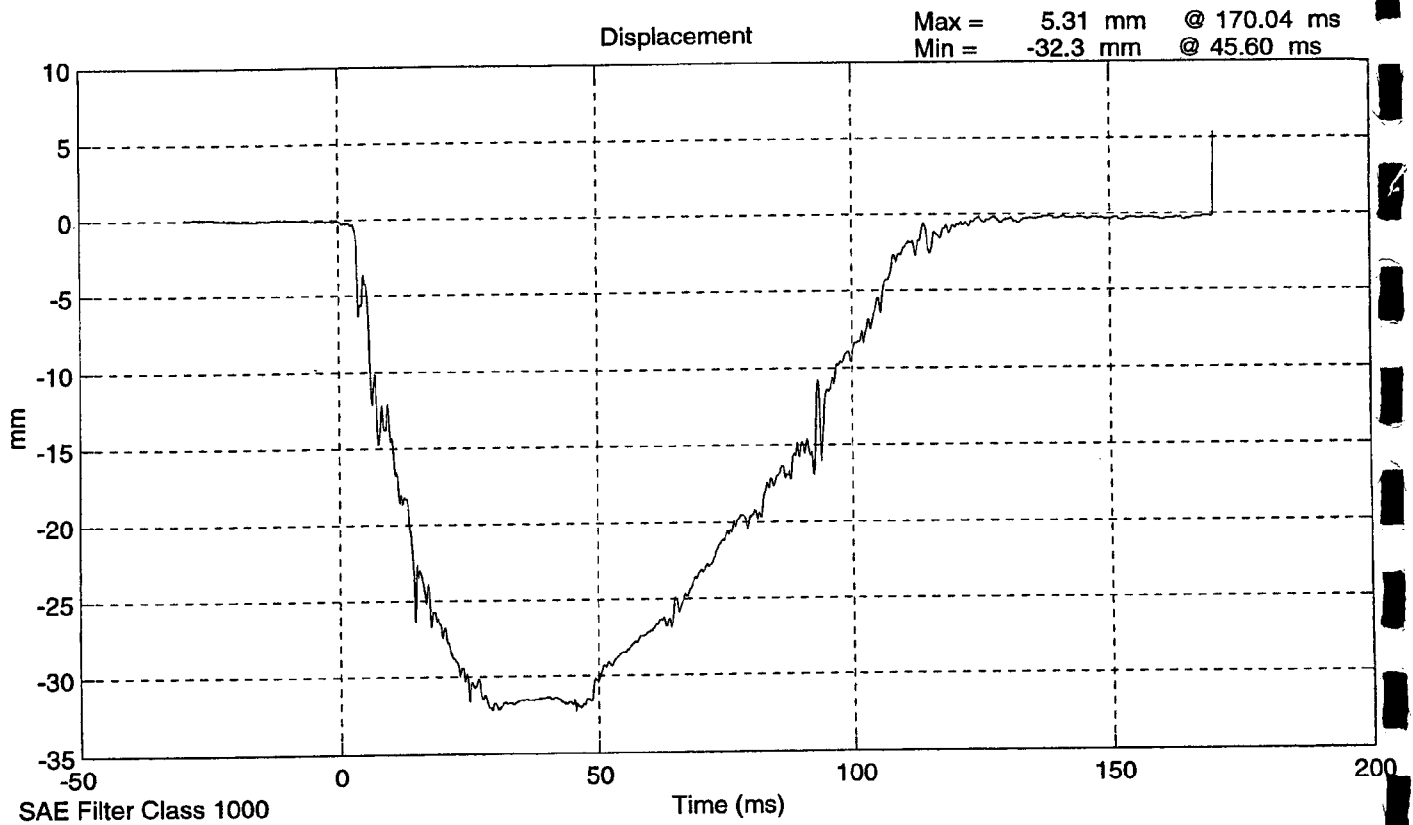
DAMPER IDENTIFICATION: 016

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)		18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)		10 - 70	31
VELOCITY 3.05 m/s	FORCE (N)	836 - 1125	1048.7
	DISPLACEMENT (mm)	30 - 35	32.3
VELOCITY 4.27 m/s	FORCE (N)	1730 - 2099	1830.4
	DISPLACEMENT (mm)	32 - 37	33.5
VELOCITY 6.10 m/s	FORCE (N)	3741 - 4448	3830.9
	DISPLACEMENT (mm)	33 - 40	35.9

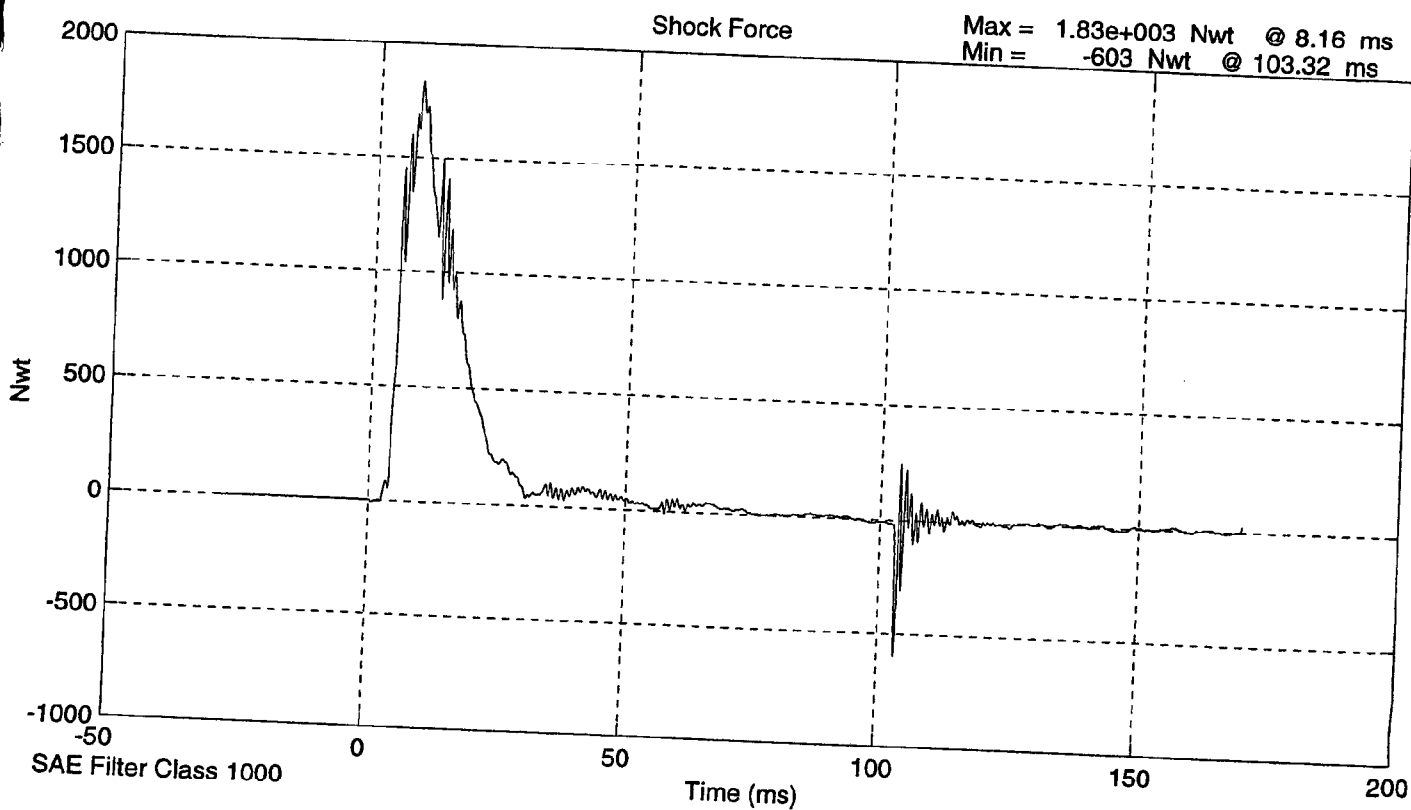
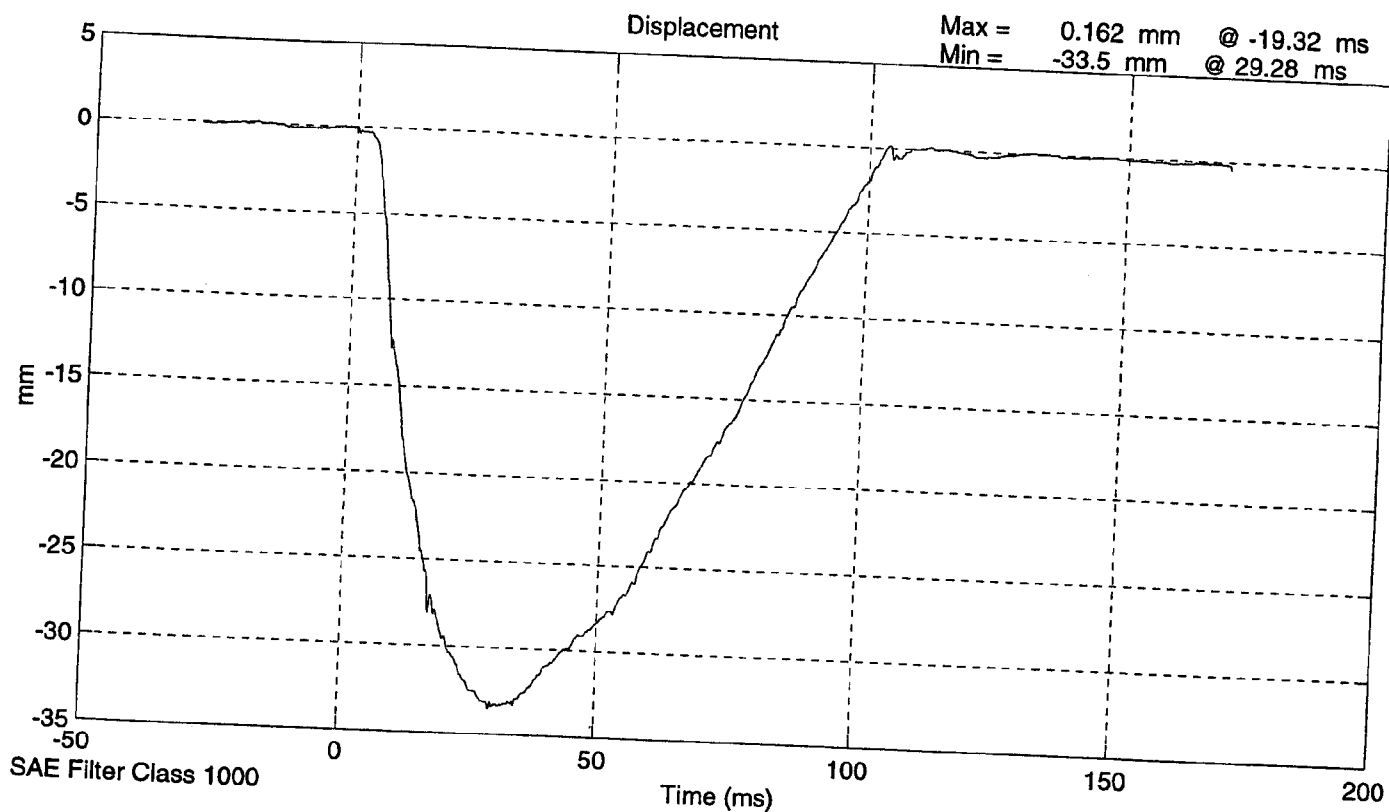
DAMPER SETTING: 5

REMARKS: None

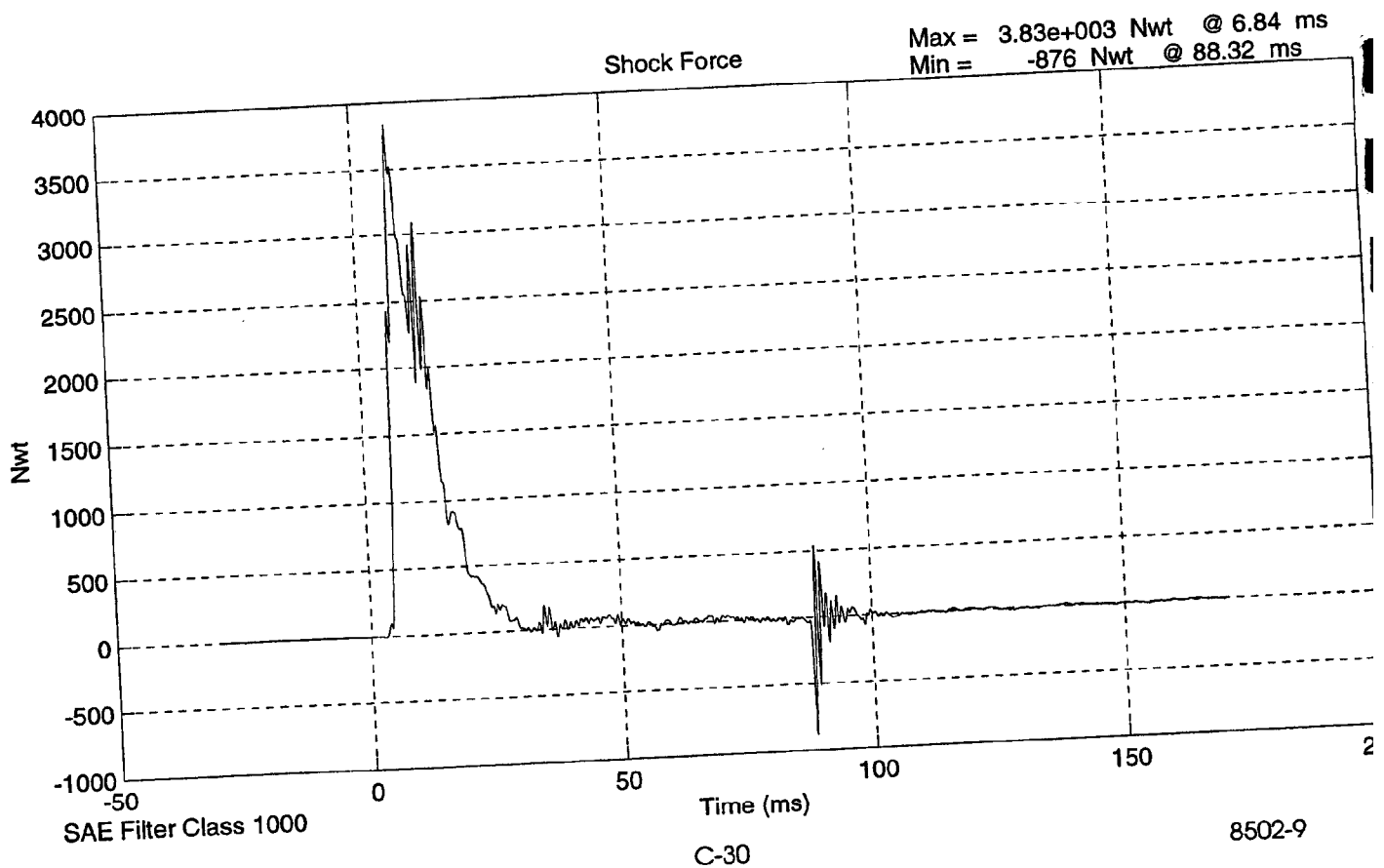
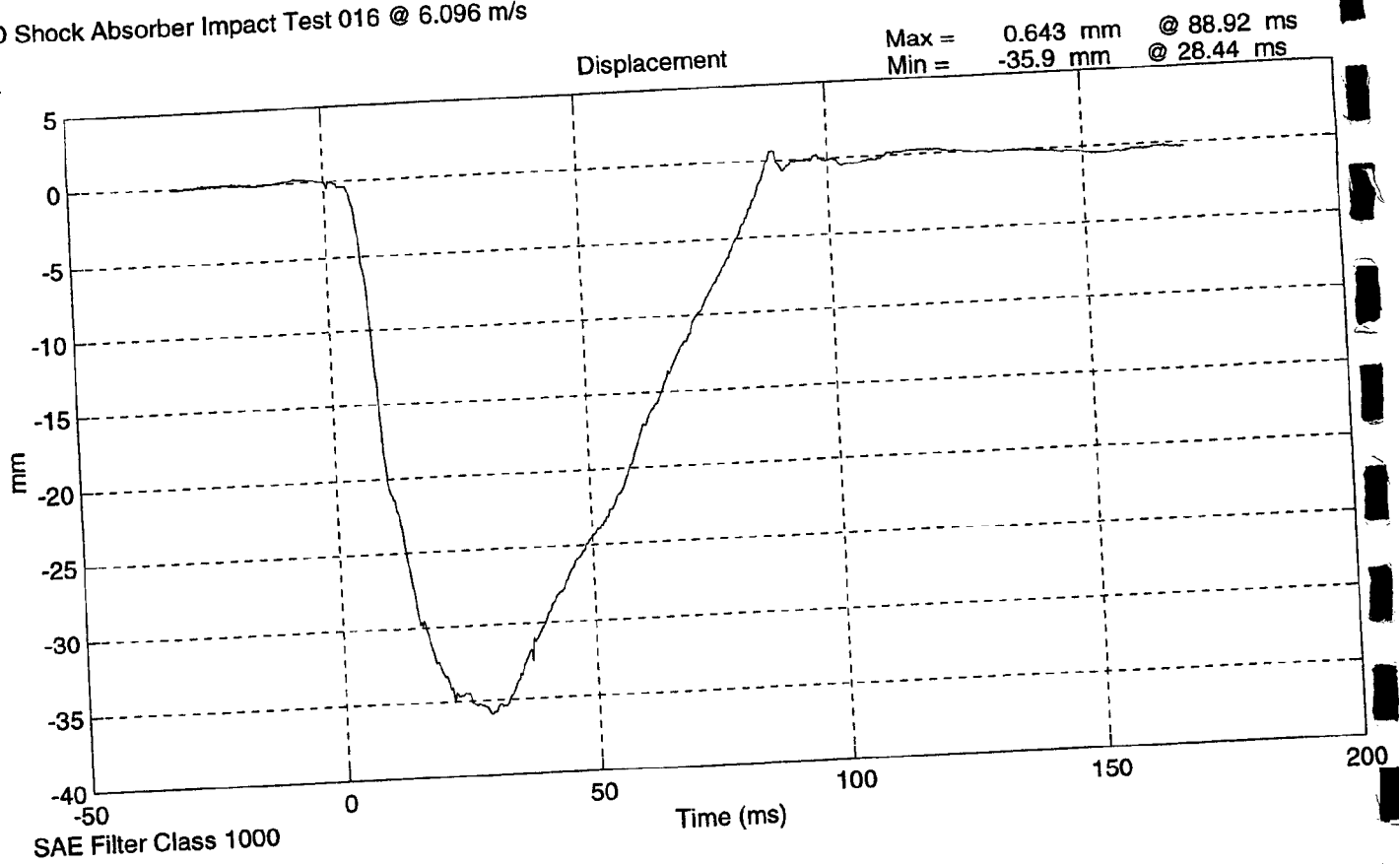
SID Shock Absorber Impact Test 016 @ 3.048 m/s



SID Shock Absorber Impact Test 016 @ 4.2672 m/s



SID Shock Absorber Impact Test 016 @ 6.096 m/s



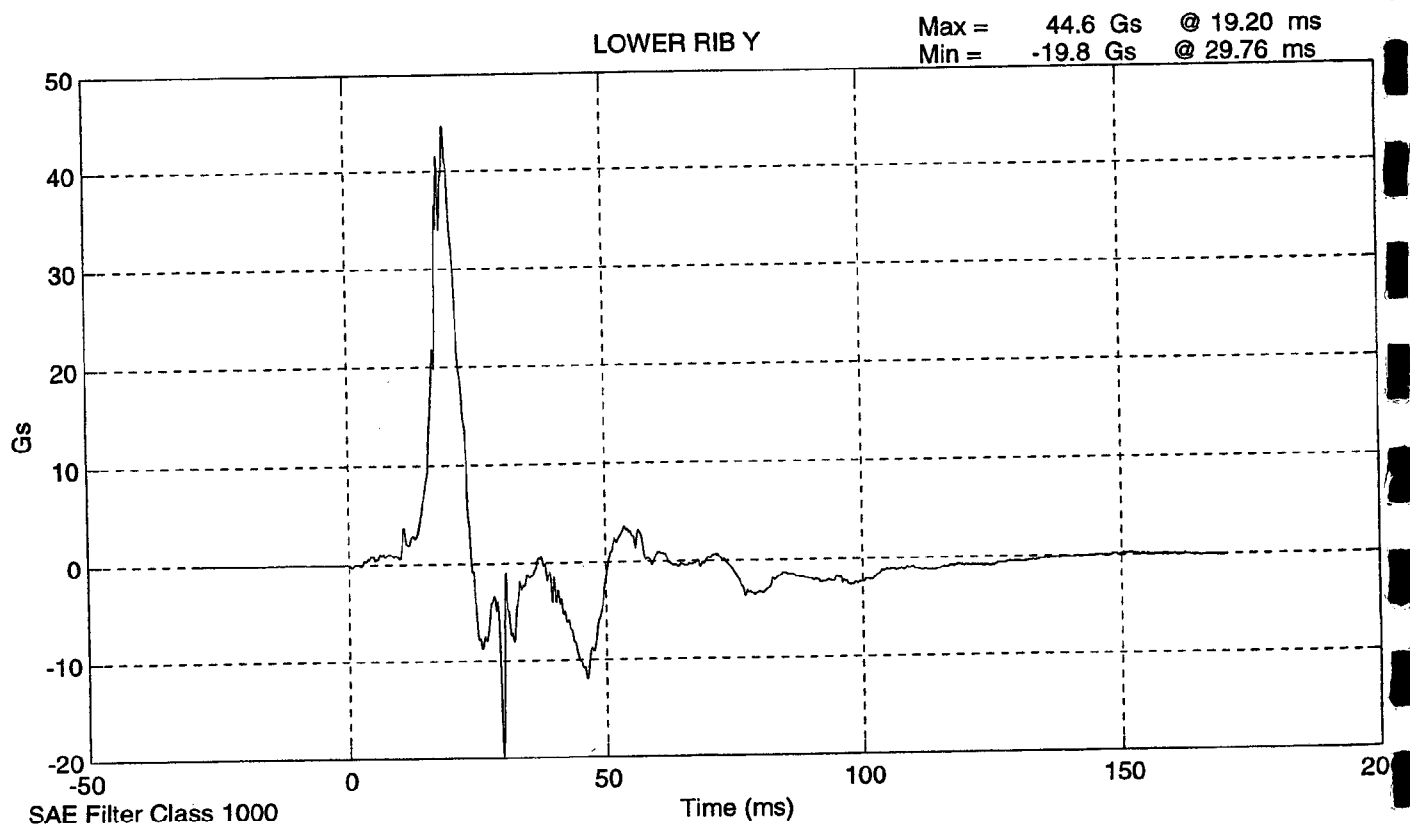
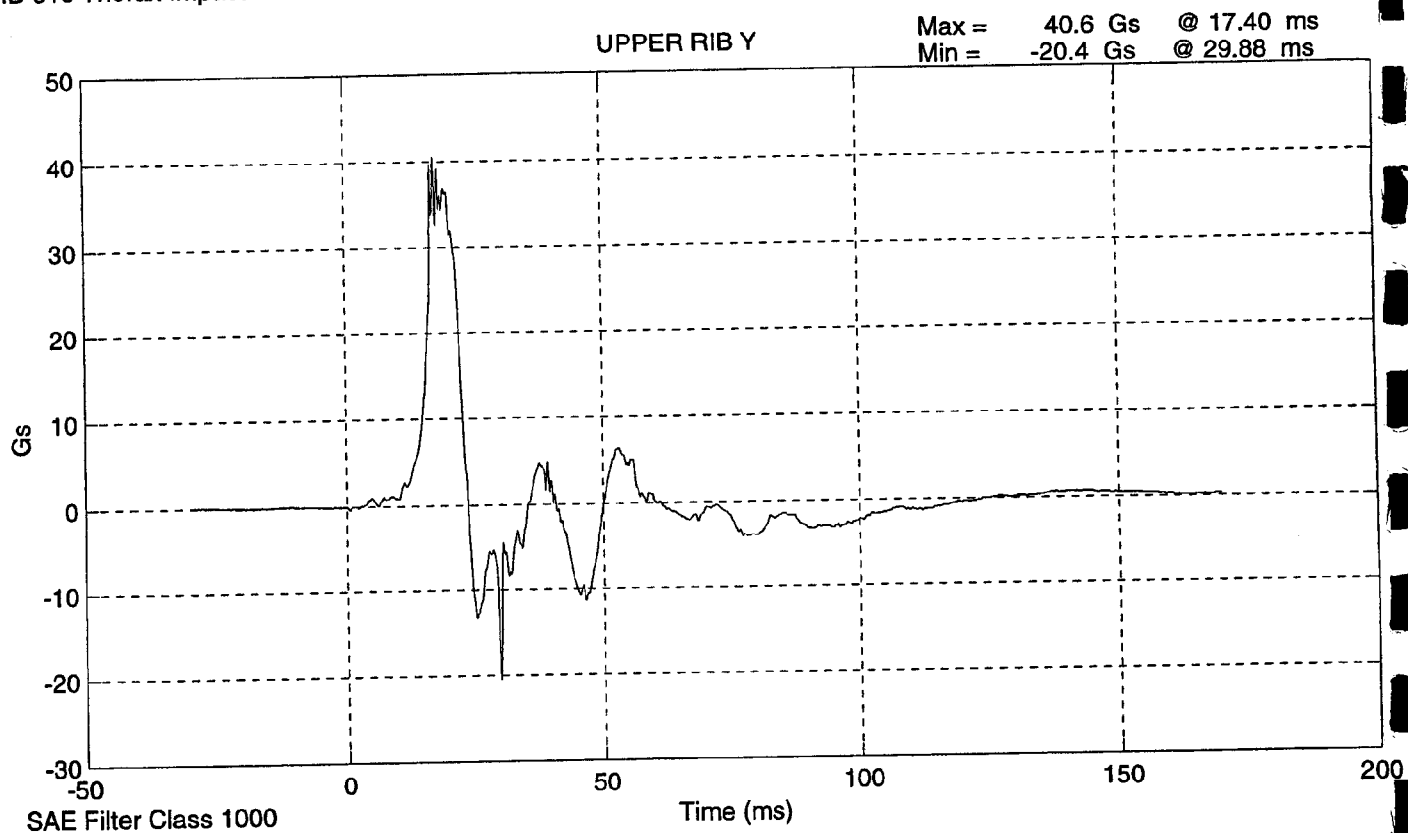
**LATERAL THORAX IMPACT TEST
PRE-TEST**

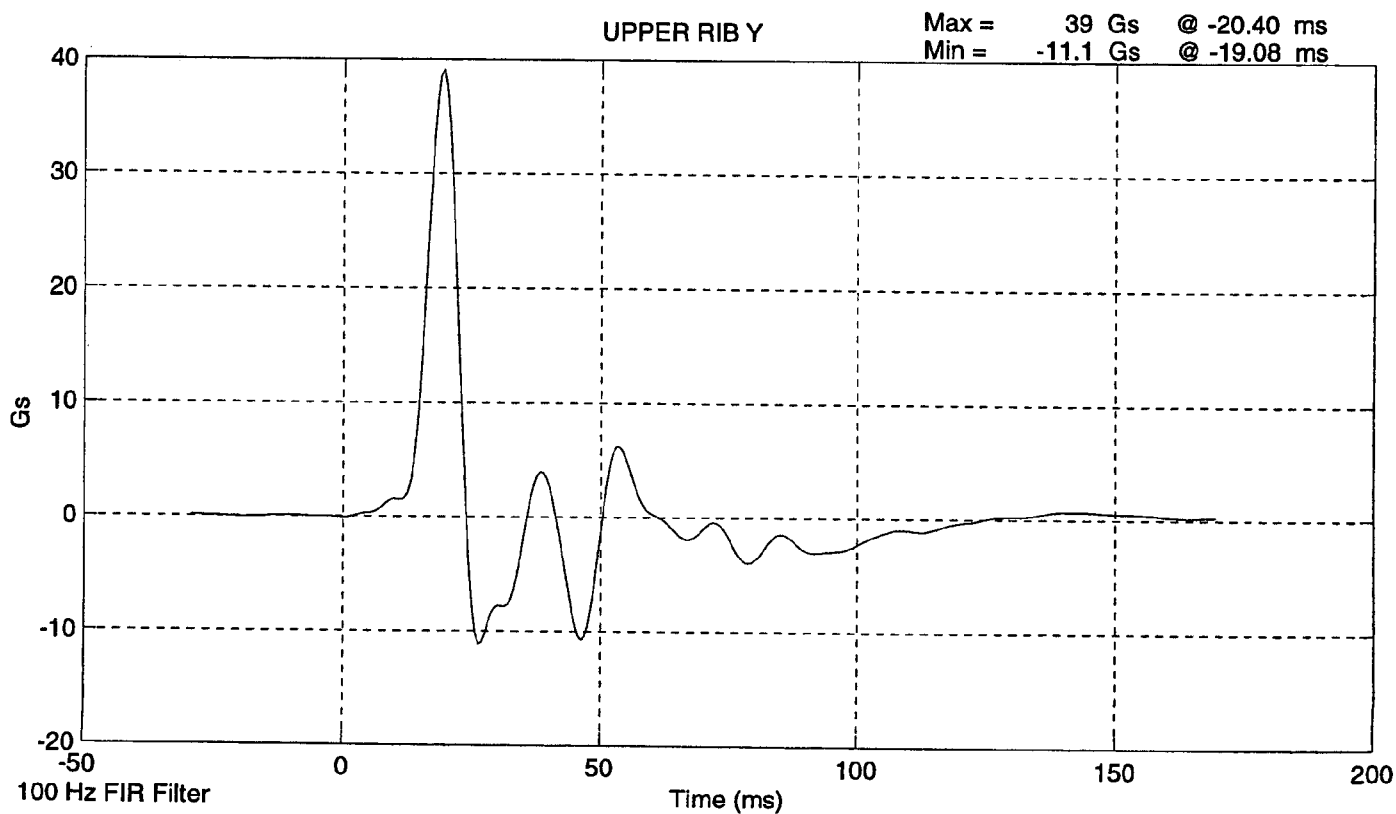
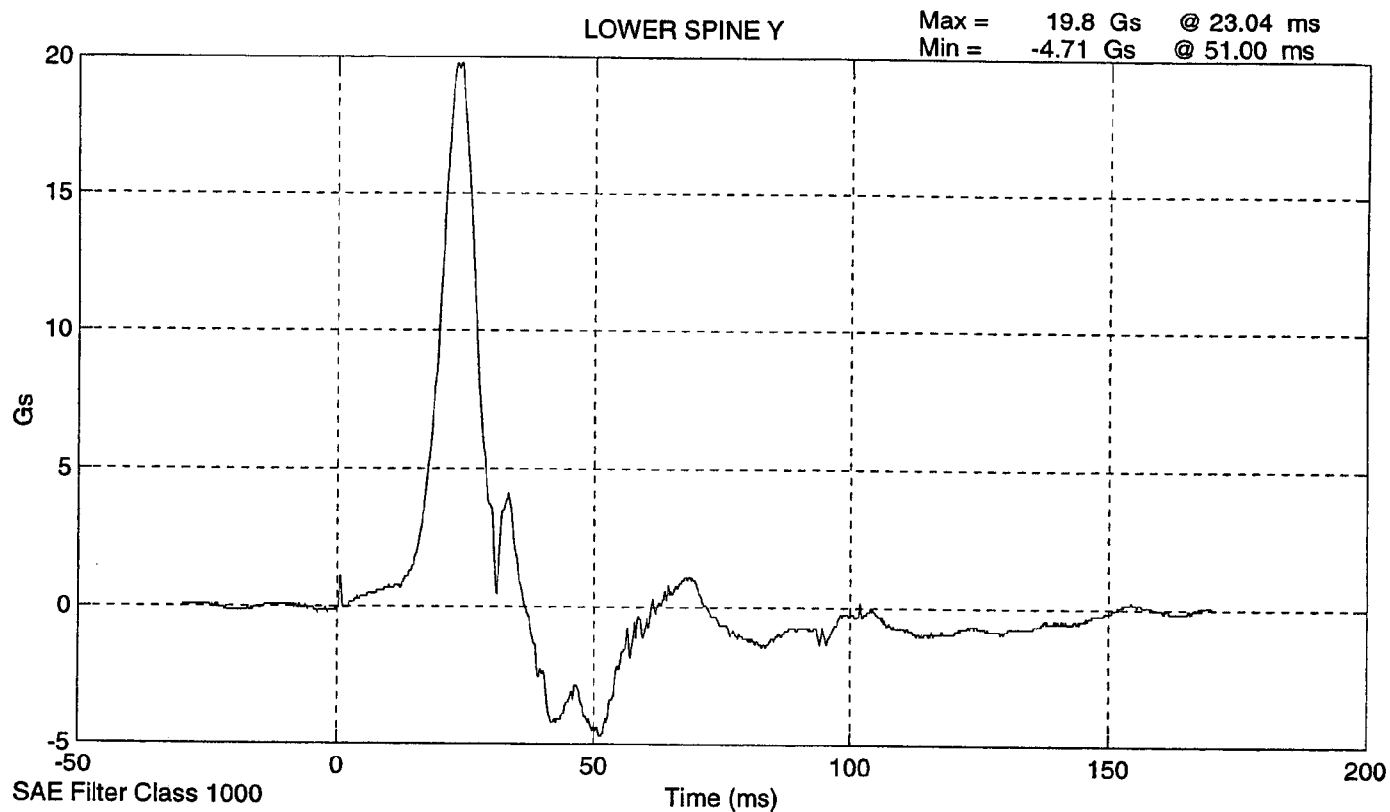
CONFIGURED FOR LEFT SIDE IMPACT

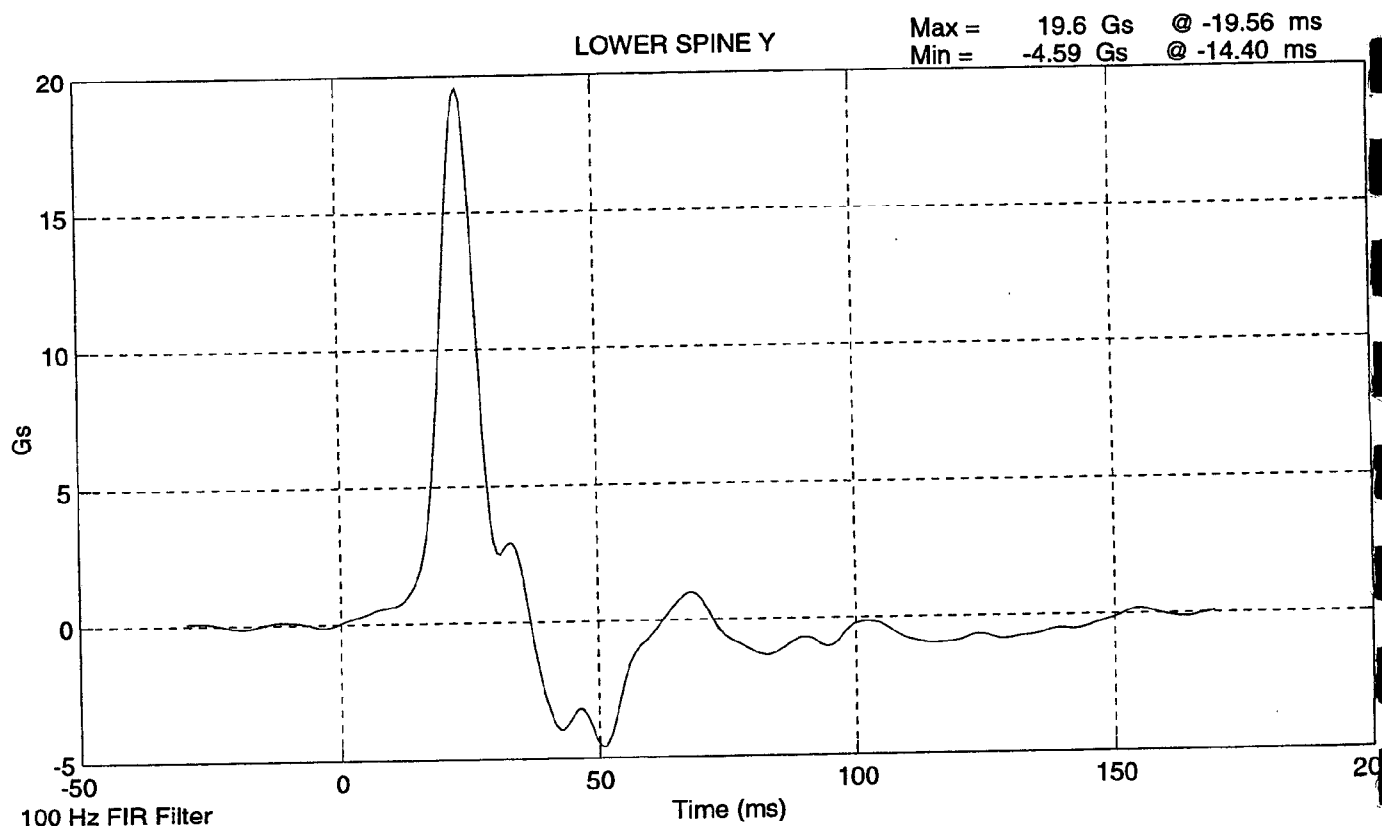
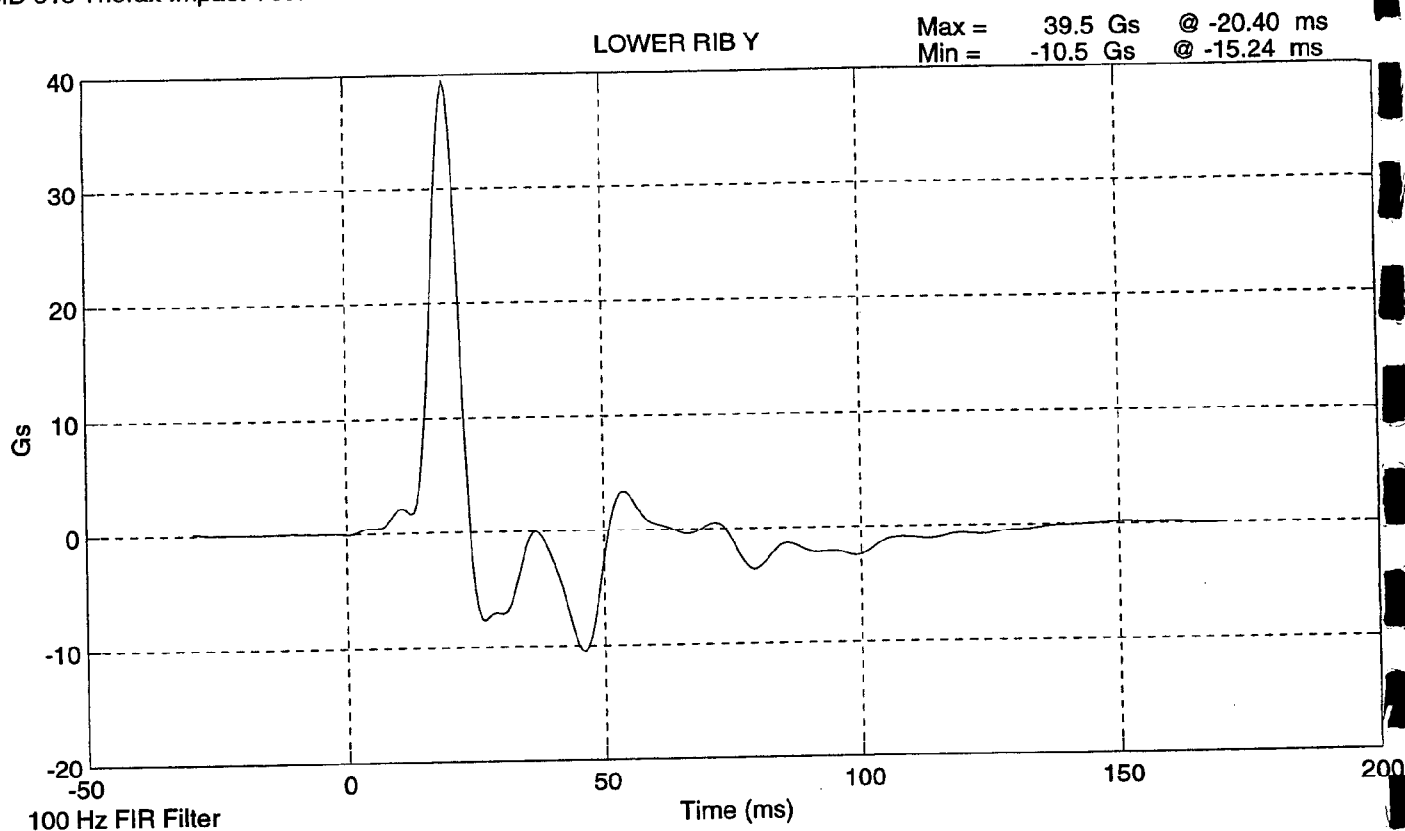
SID Serial No.: 016 Sequential Test Number: 1
Date: 12/6/99 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	30
PROBE SPEED (m/s)	4.27 - 4.33	4.29
UPPER RIB (g's)	37 - 46	39.0
LOWER RIB (g's)	37 - 46	39.5
LOWER SPINE (g's)	15 - 22	19.6

REMARKS: None







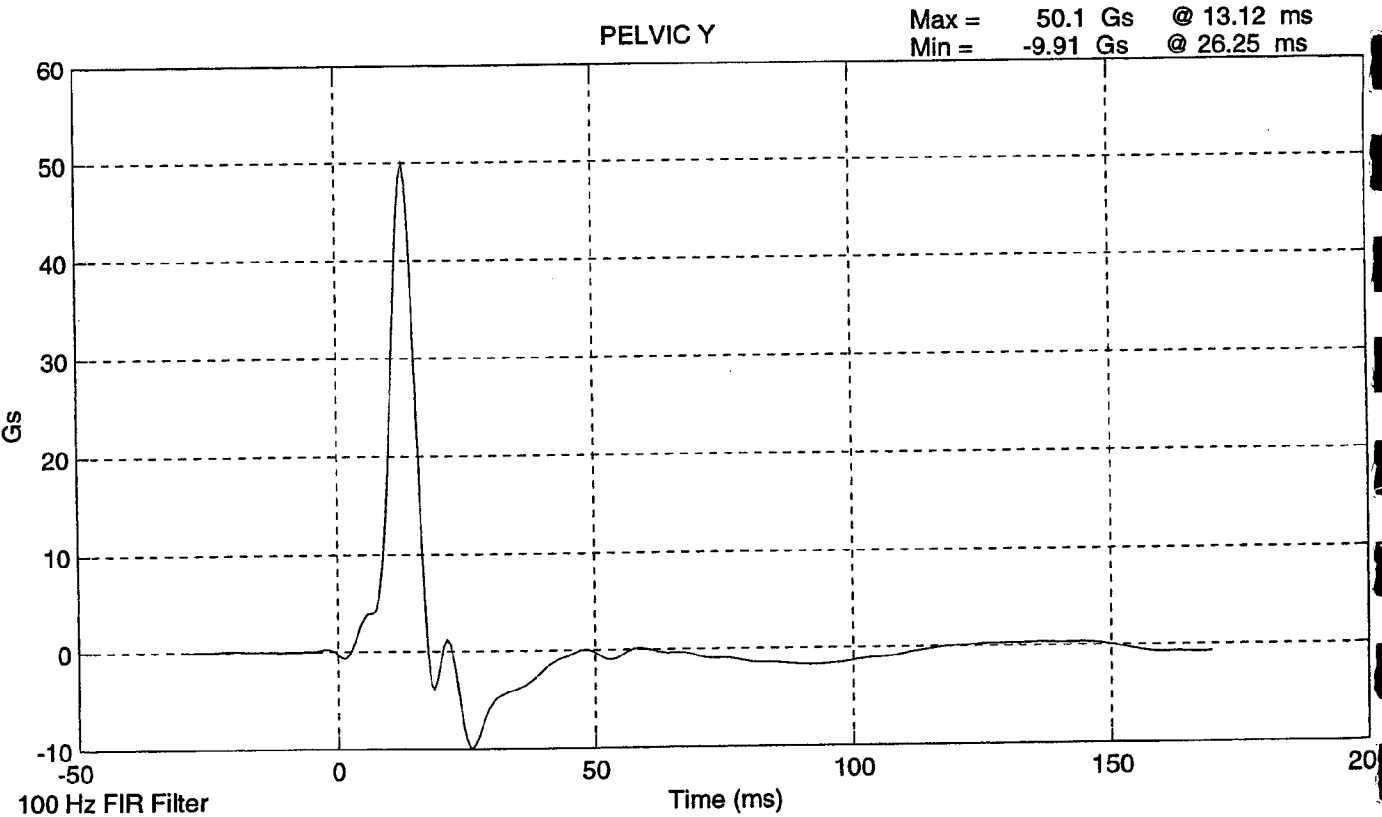
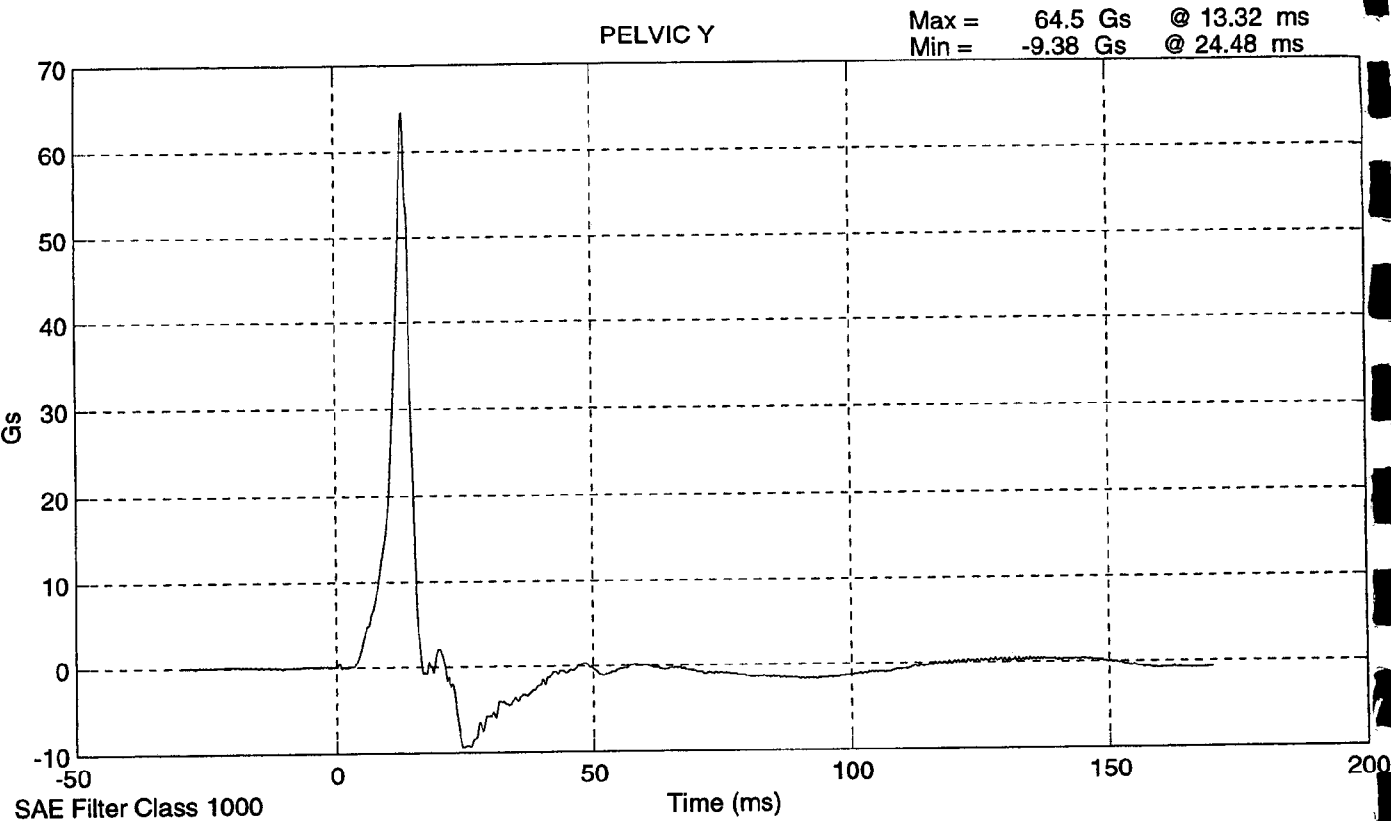
**LATERAL PELVIS IMPACT TEST
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
Date: 12/6/99 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	31
PROBE SPEED (m/s)	4.27 - 4.33	4.30
PELVIS ACCELERATION (g's)	40 - 60	50.1

REMARKS: None



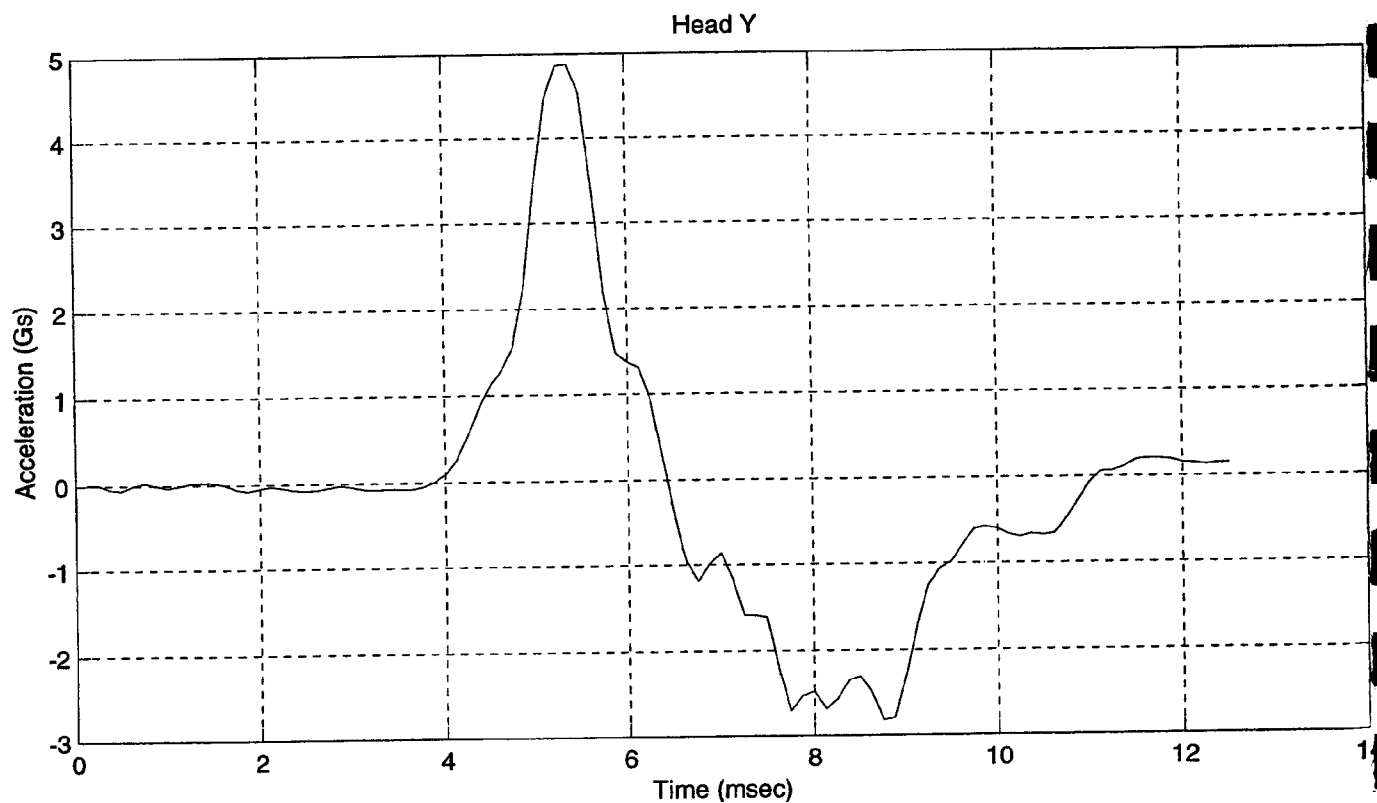
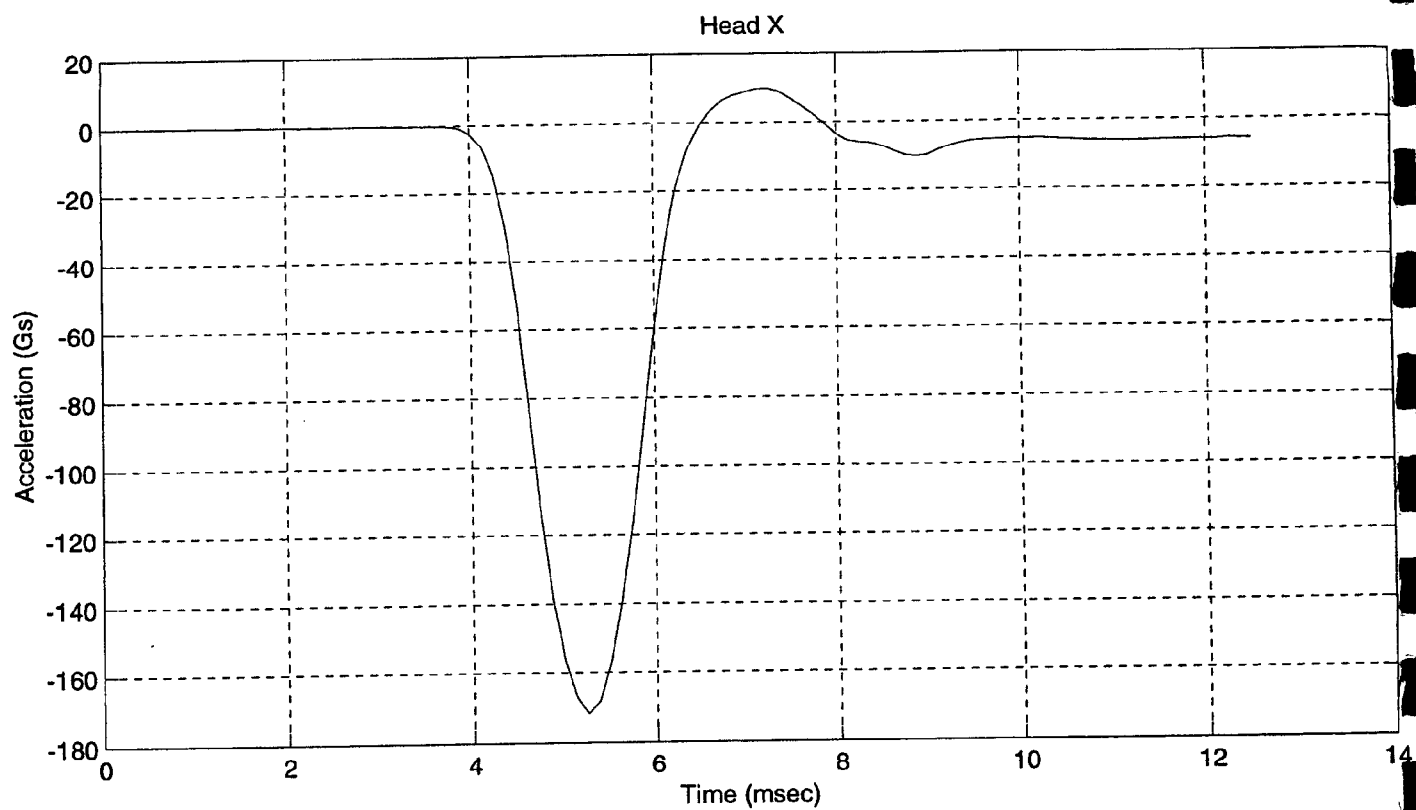
HEAD DROP TEST
PRE-TEST
(Test not required for SID certification)

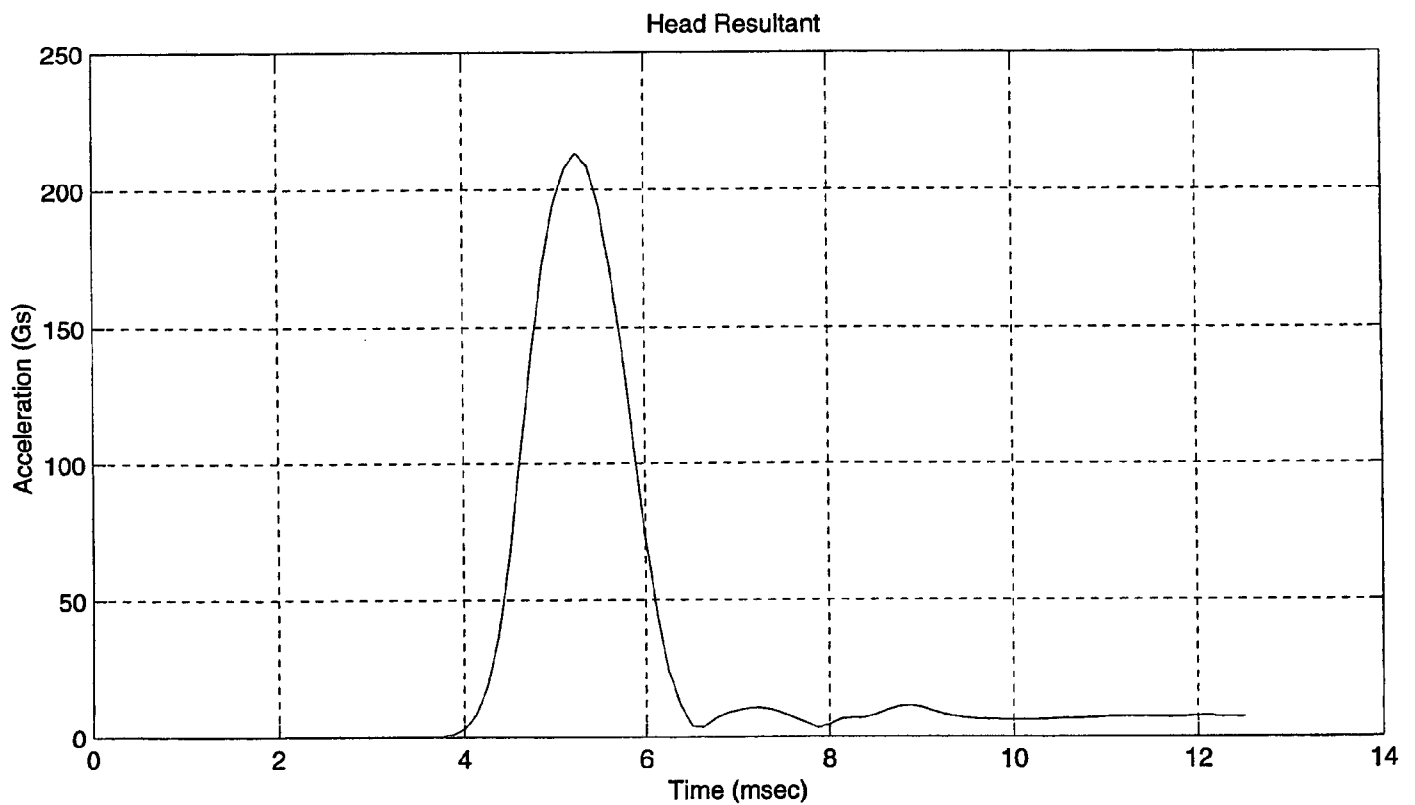
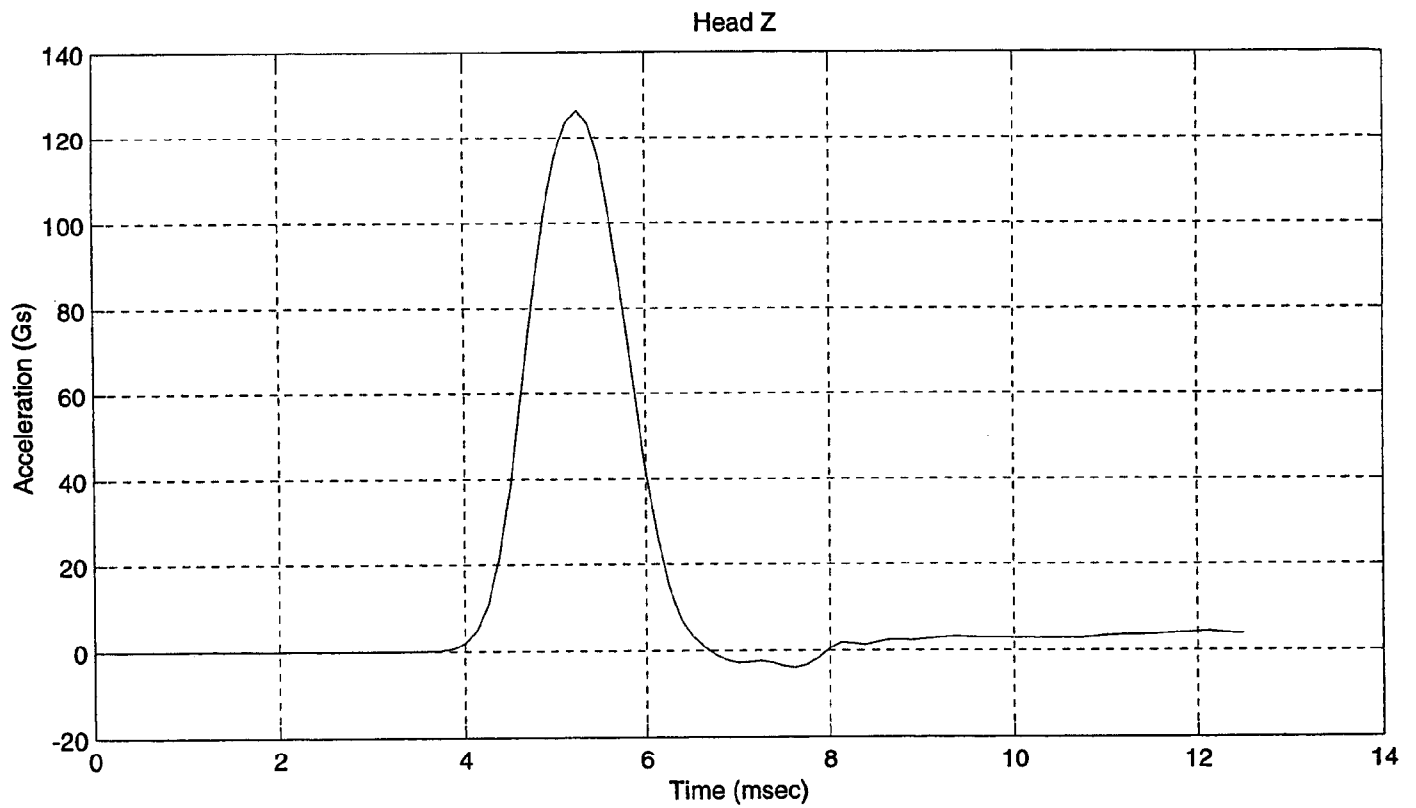
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
Date: 12/6/99 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	31
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	213.3
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	4.9
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.25

REMARKS: None





**ABDOMINAL COMPRESSION TEST
PRE-TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016
Date: 12/6/99

Sequential Test Number: 1
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	31
FORCE @ 13 mm (N)	104 - 162	106.8
FORCE @ 19 mm (N)	163 - 221	174.8
FORCE @ 25 mm (N)	222 - 280	248.2
FORCE @ 33 mm (N)	325 - 391	357.6

REMARKS: None

Dummy S/N 16

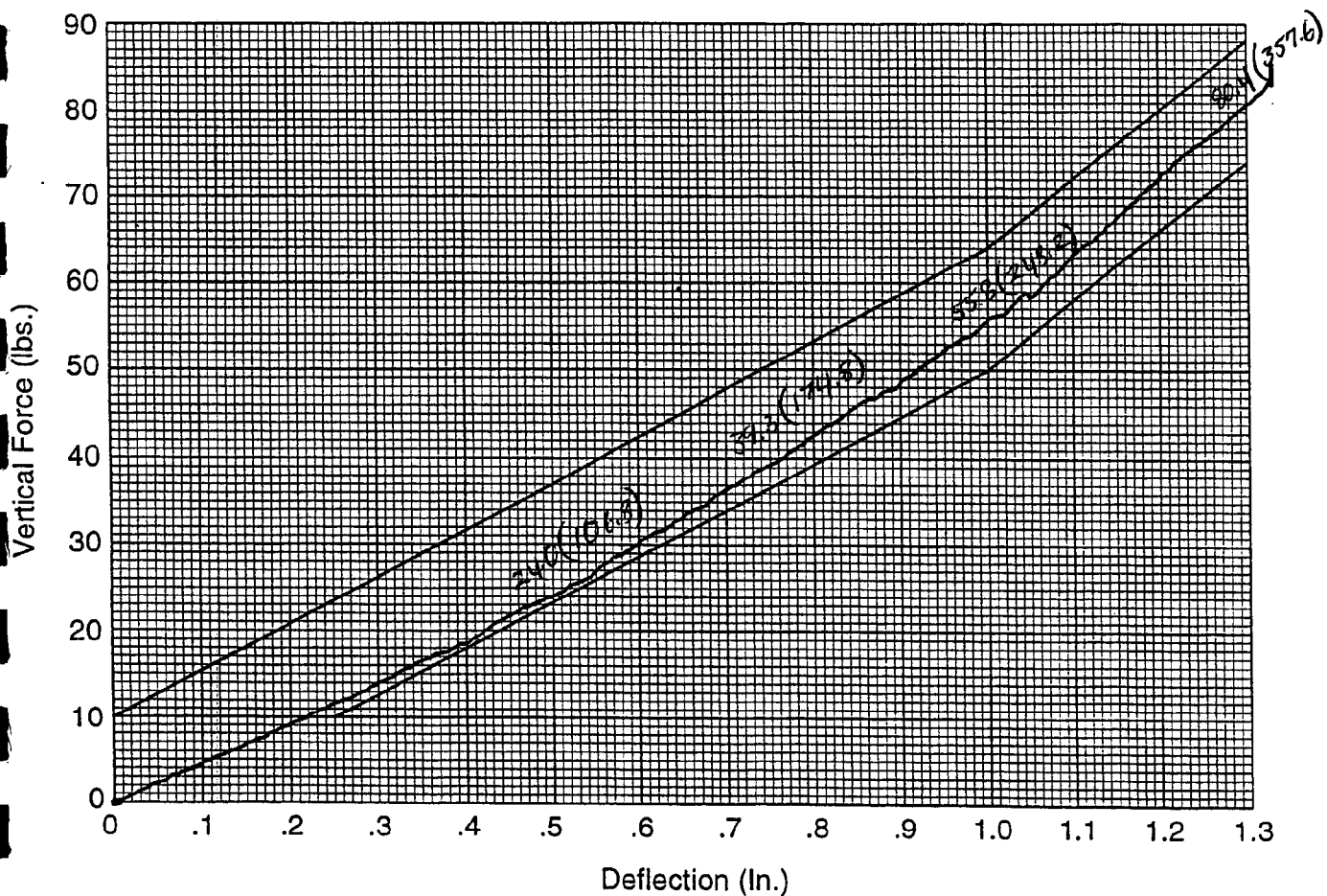
W/A _____

Date 12-6-99

Performed By BS

Temp. 70°

Humidity 31%



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: 12/6/99 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	31
FORCE @ 0° (N)	0 - 26.7	0.0
FORCE @ 20° (N)	97.8 - 151.2	129.9
FORCE @ 30° (N)	151.2 - 204.6	162.4
FORCE @ 40° (N)	204.6 - 258	221.1
RETURN ANGLE	12° max.	8°

REMARKS: None

ummy S/N

N/A

Date

12-6-99

Performed By

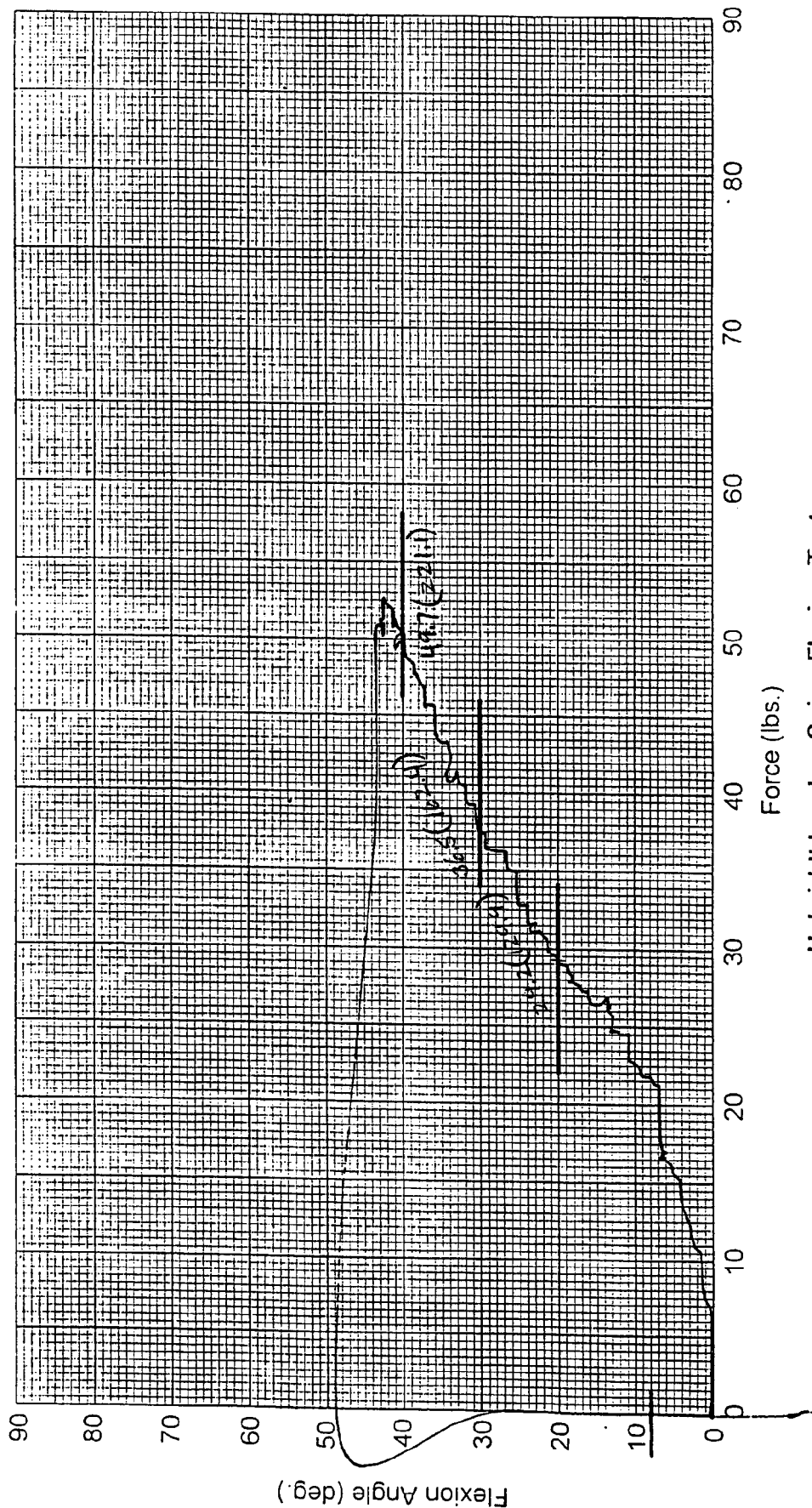
BJ

Temp

70°

Humidity

31%



Hybrid II Lumbar Spine Flexion Test

PRE-TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016
 Date: 12/6/99

Sequential Test Number: 1
 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: 2

Date: 1/21/00

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
Date: 1/21/00

Sequential Test Number: 2
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	904
RH- Rib Height (mm)	502 - 520	513
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	236
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	368

REMARKS: None

**LATERAL THORAX IMPACT TEST
POST TEST**

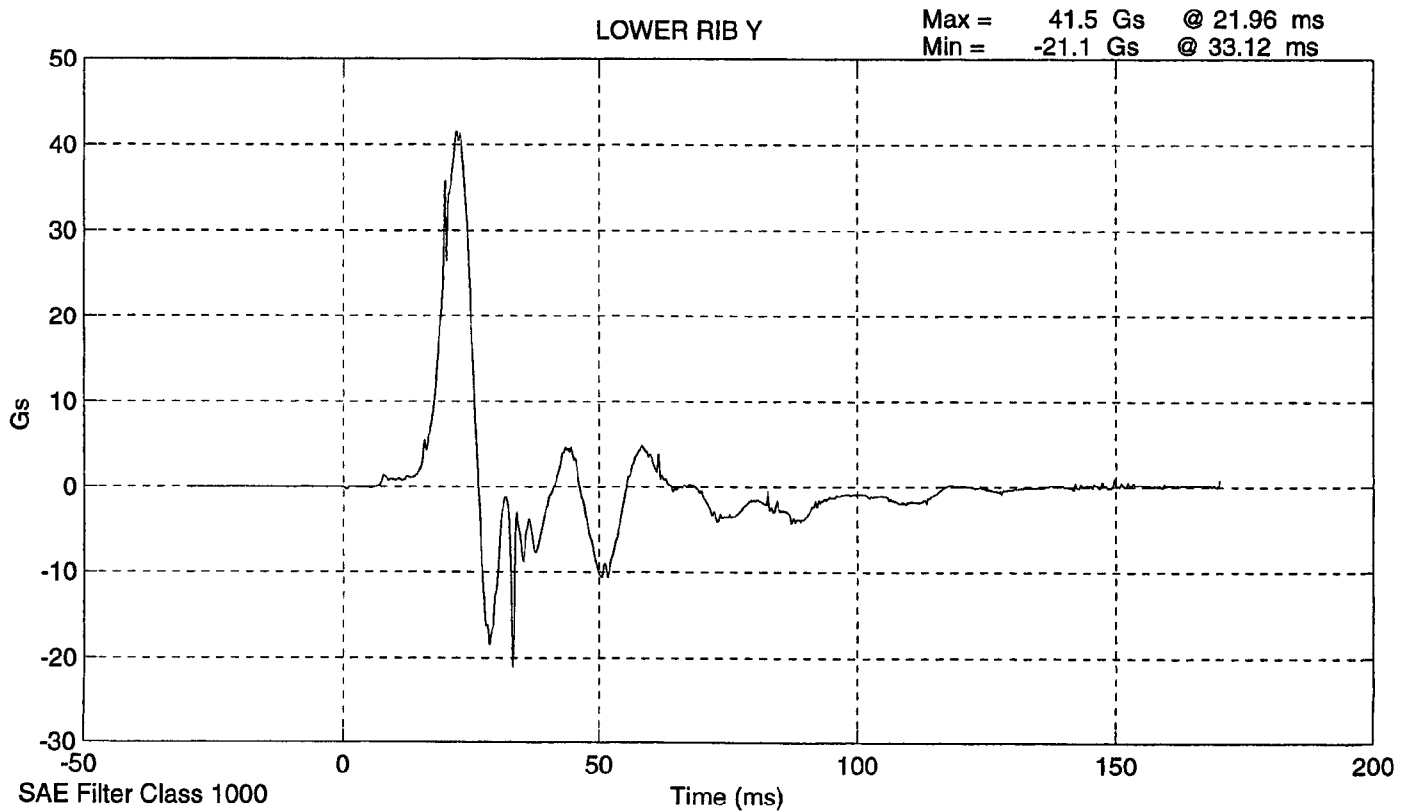
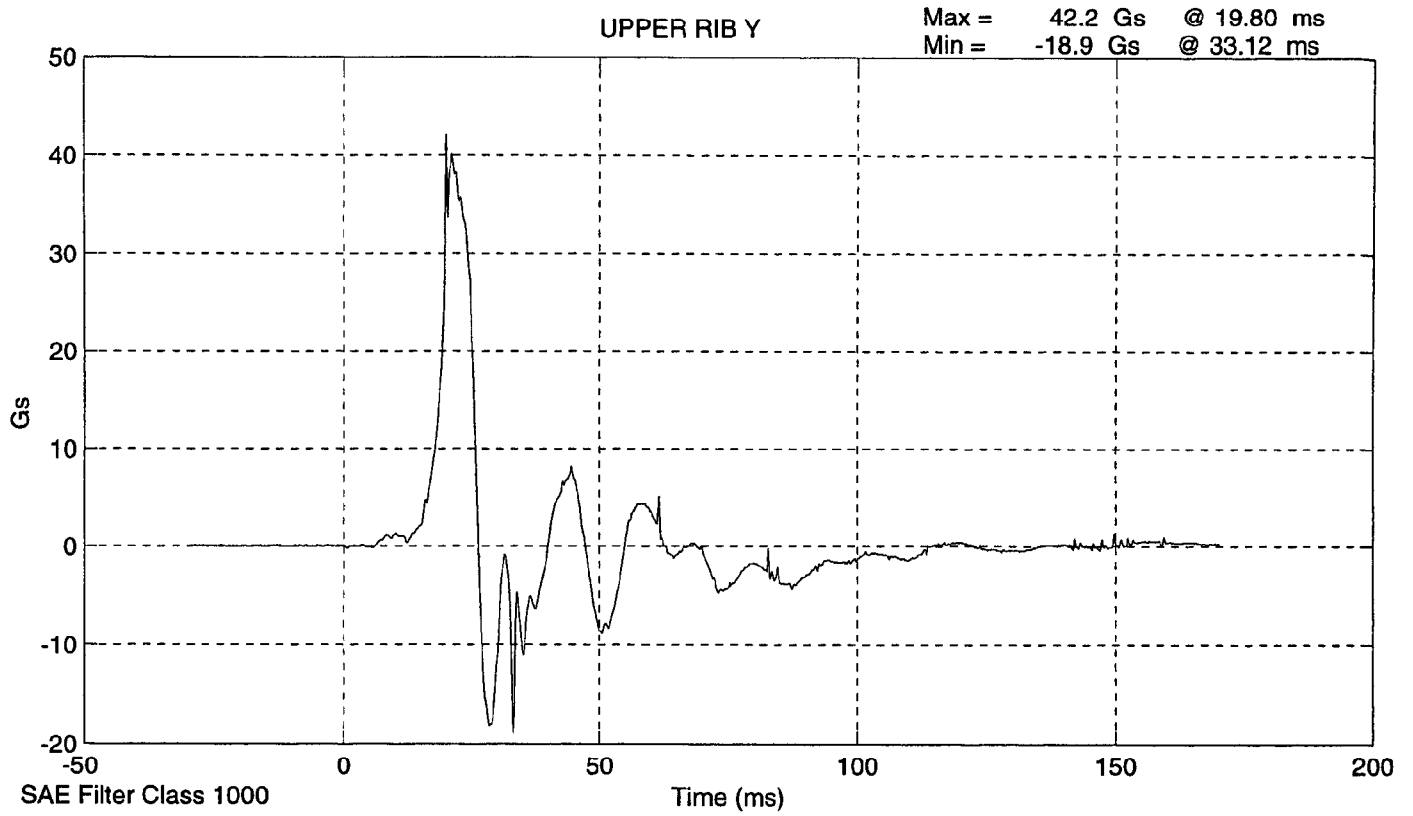
CONFIGURED FOR LEFT SIDE IMPACT

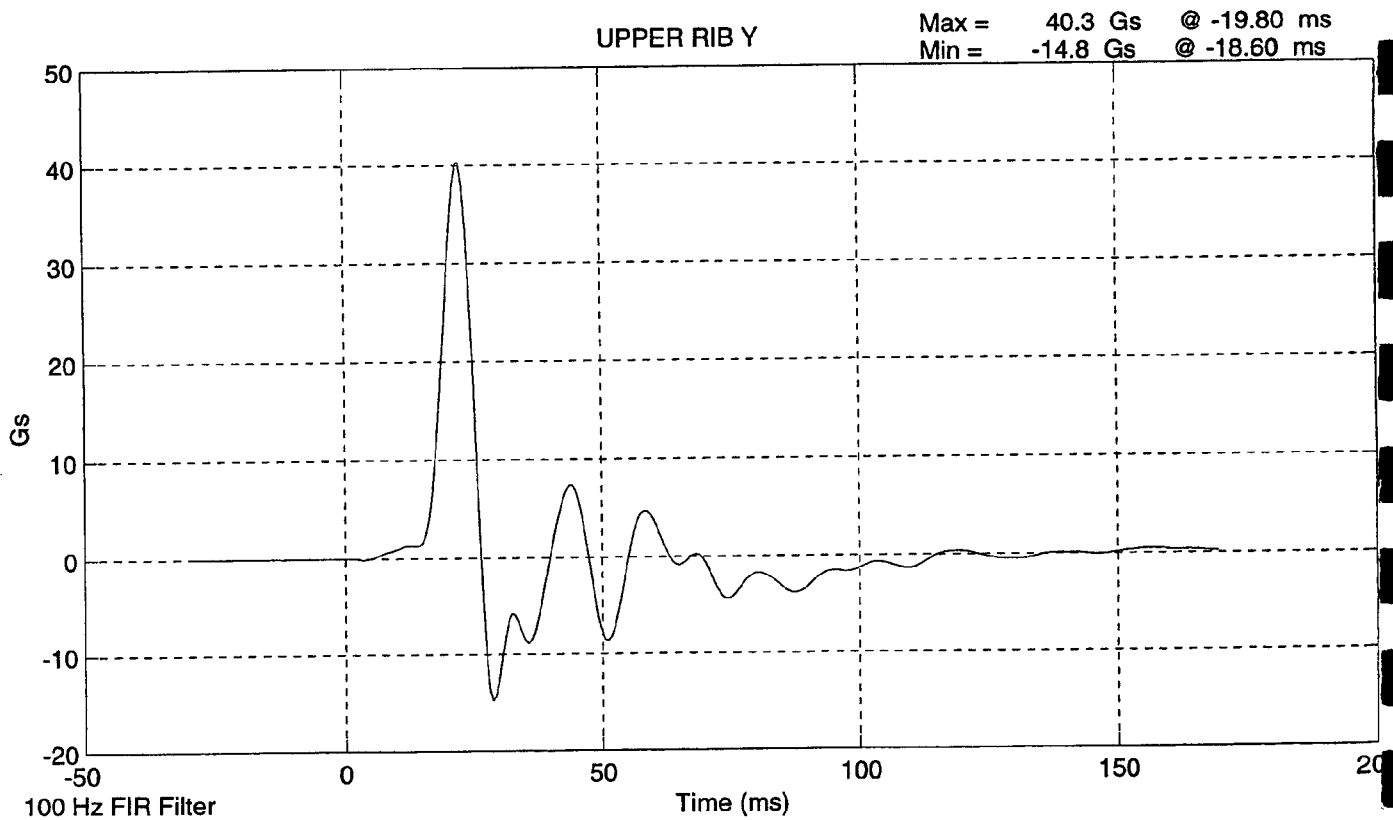
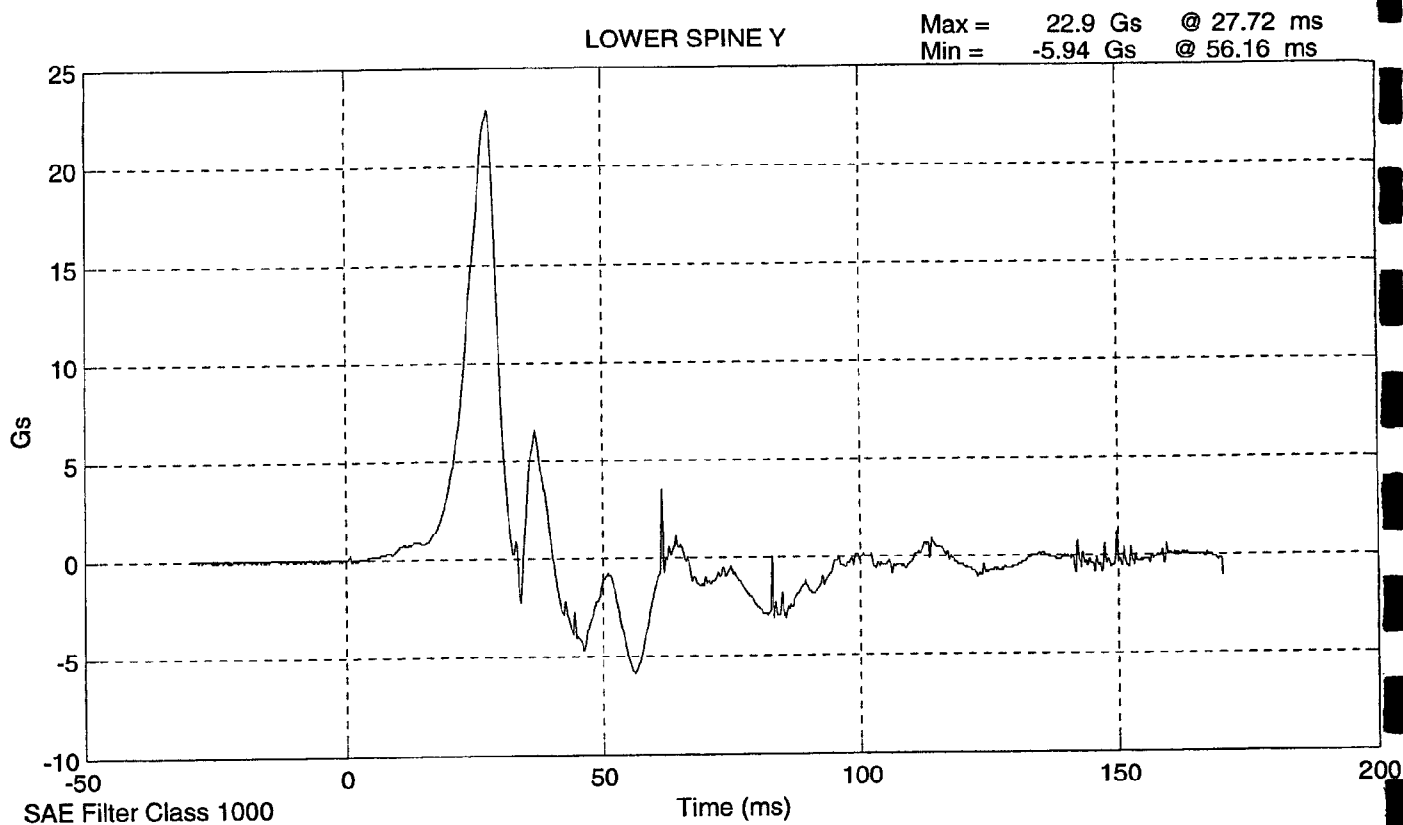
SID Serial No.: 015
Date: 1/21/00

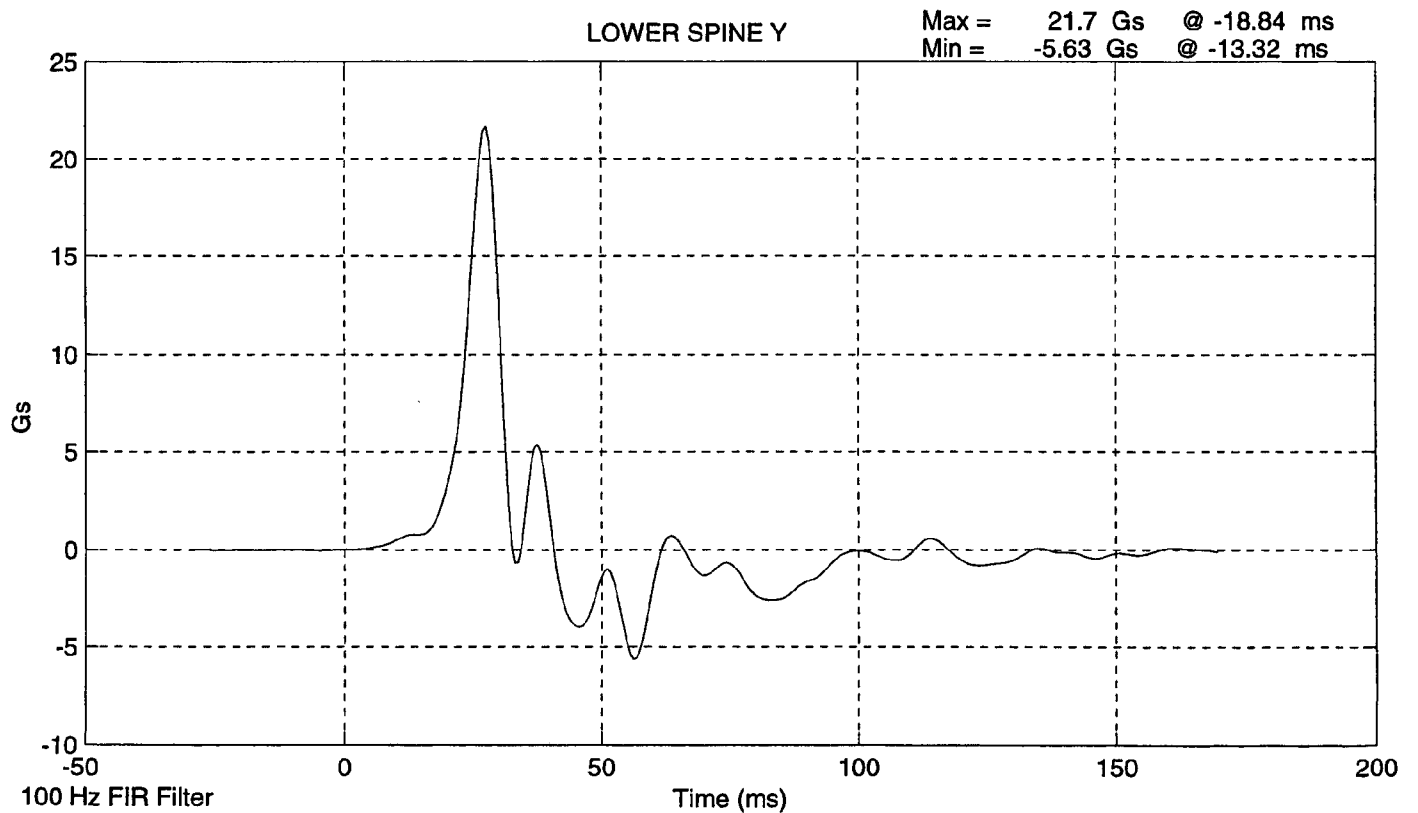
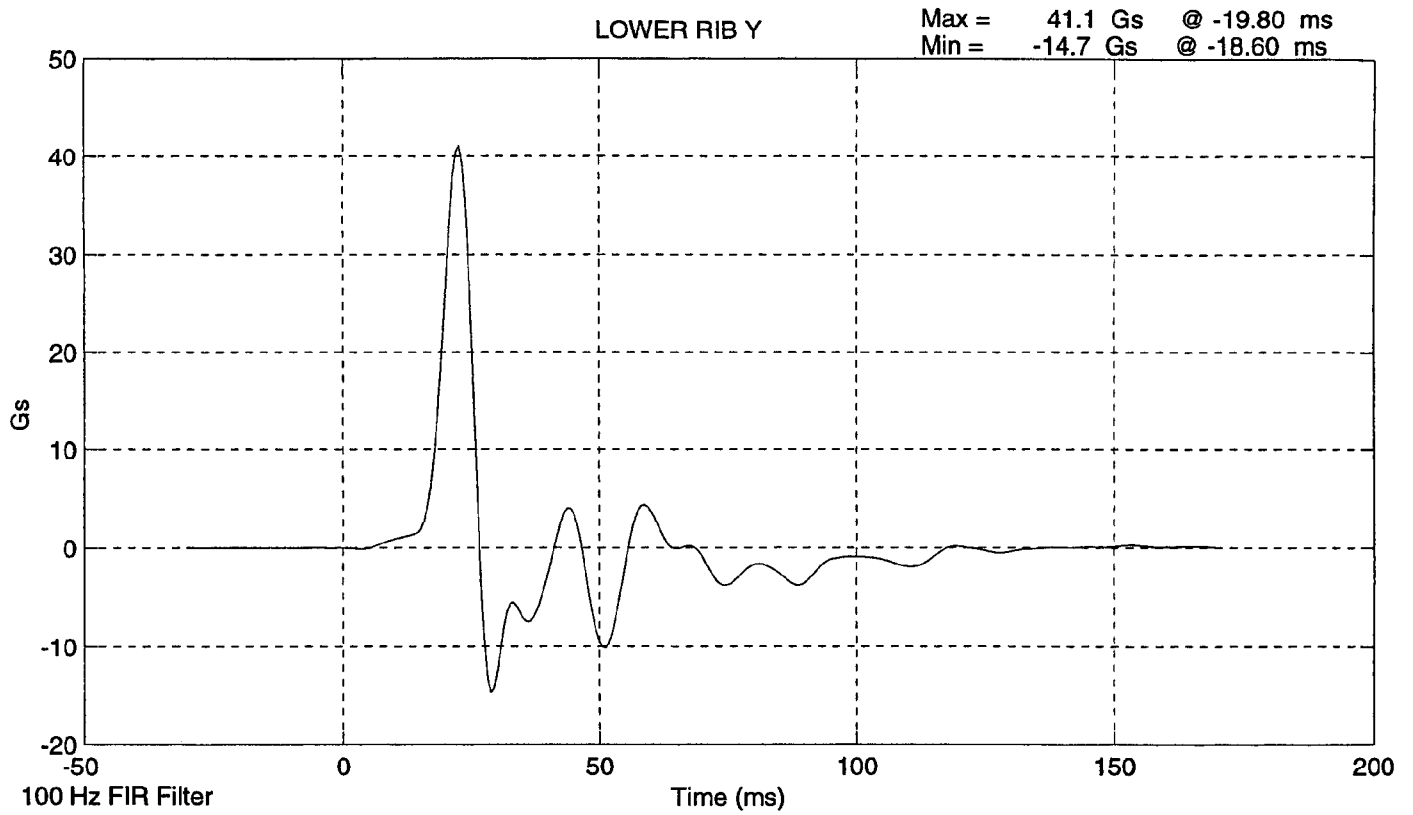
Sequential Test Number: 2
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21
RELATIVE HUMIDITY (%)	10 - 70	32
PROBE SPEED (m/s)	4.27 - 4.33	4.29
UPPER RIB (g's)	37 - 46	40.3
LOWER RIB (g's)	37 - 46	41.1
LOWER SPINE (g's)	15 - 22	21.7

REMARKS: None







**LATERAL PELVIS IMPACT TEST
POST TEST**

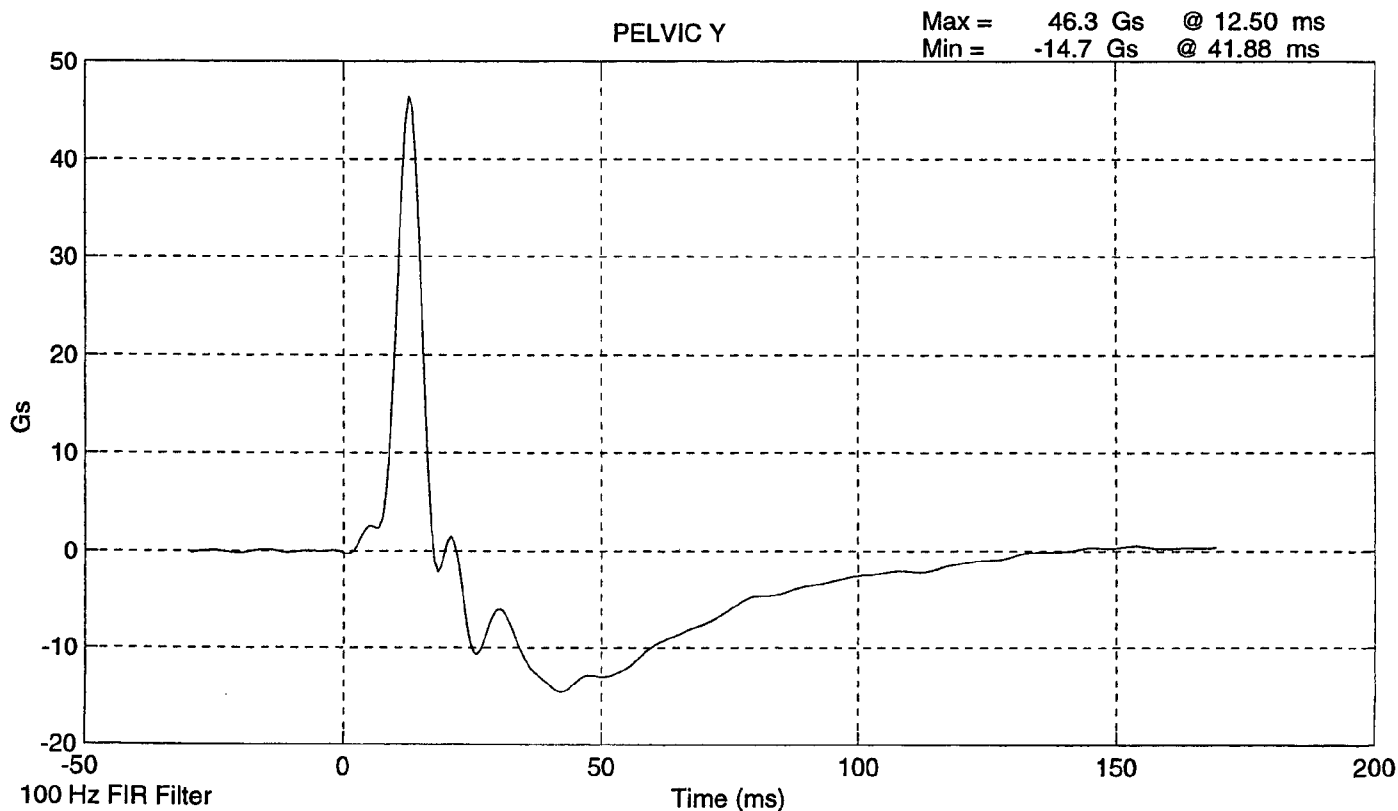
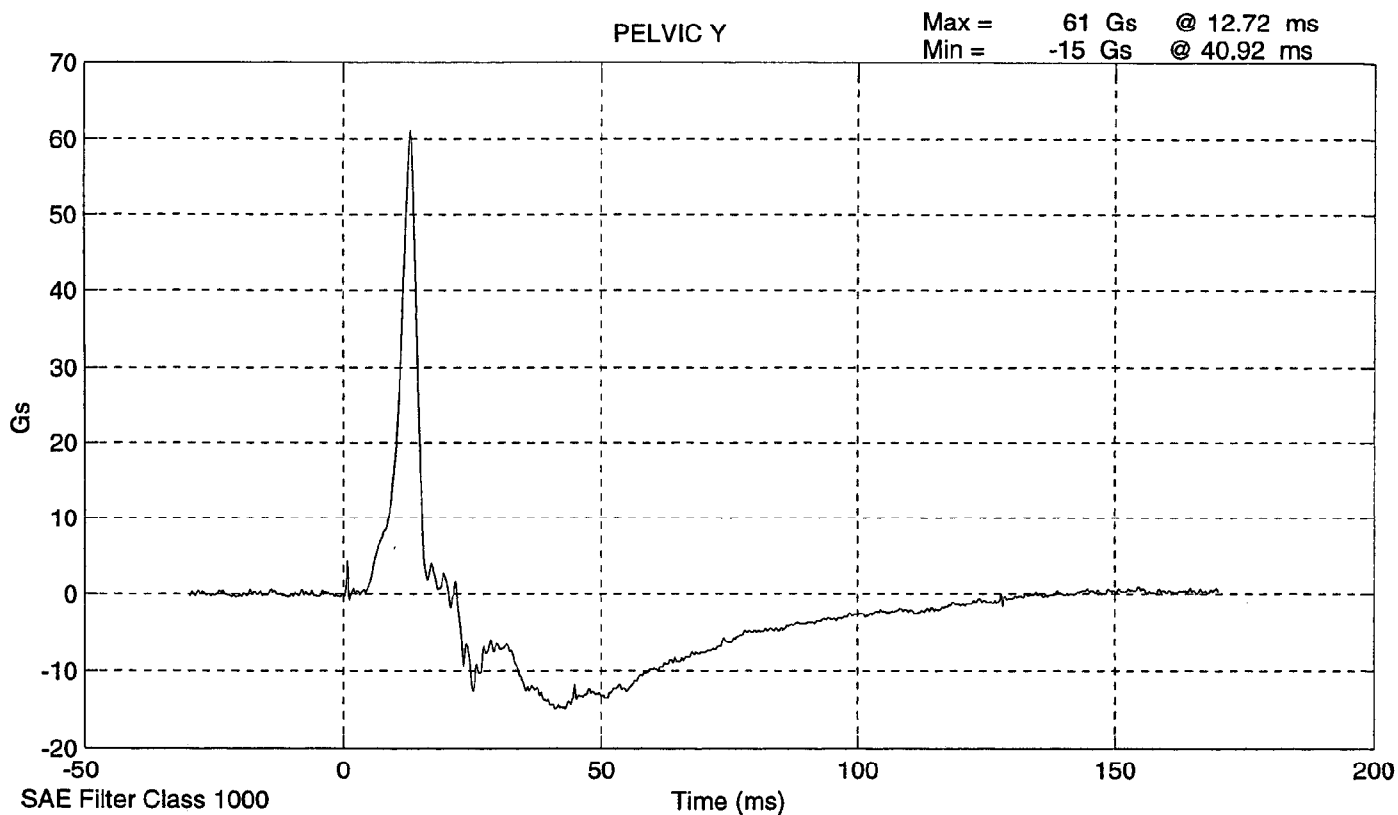
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015
Date: 1/21/00

Sequential Test Number: 2
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21
RELATIVE HUMIDITY (%)	10 - 70	32
PROBE SPEED (m/s)	4.27 - 4.33	4.30
PELVIS ACCELERATION (g's)	40 - 60	46.3

REMARKS: None



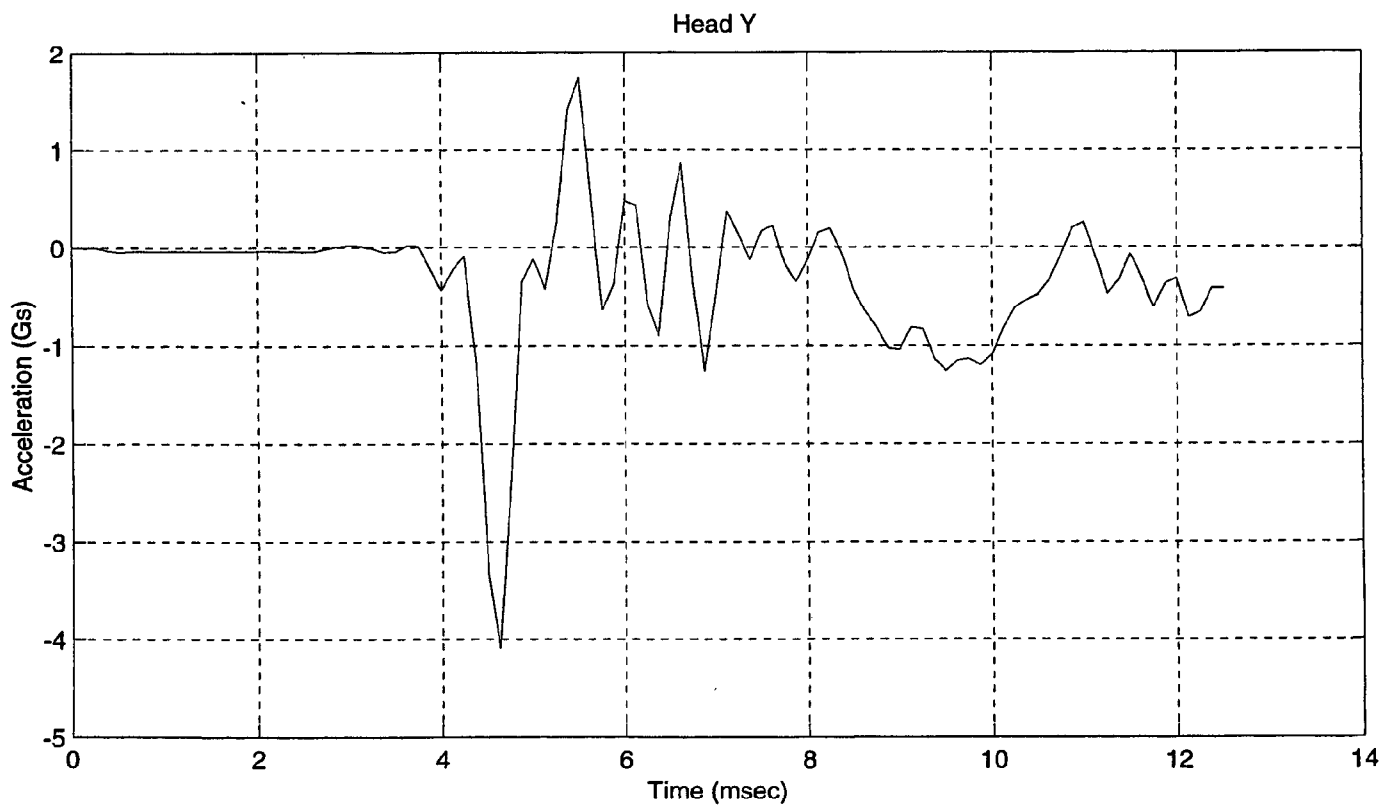
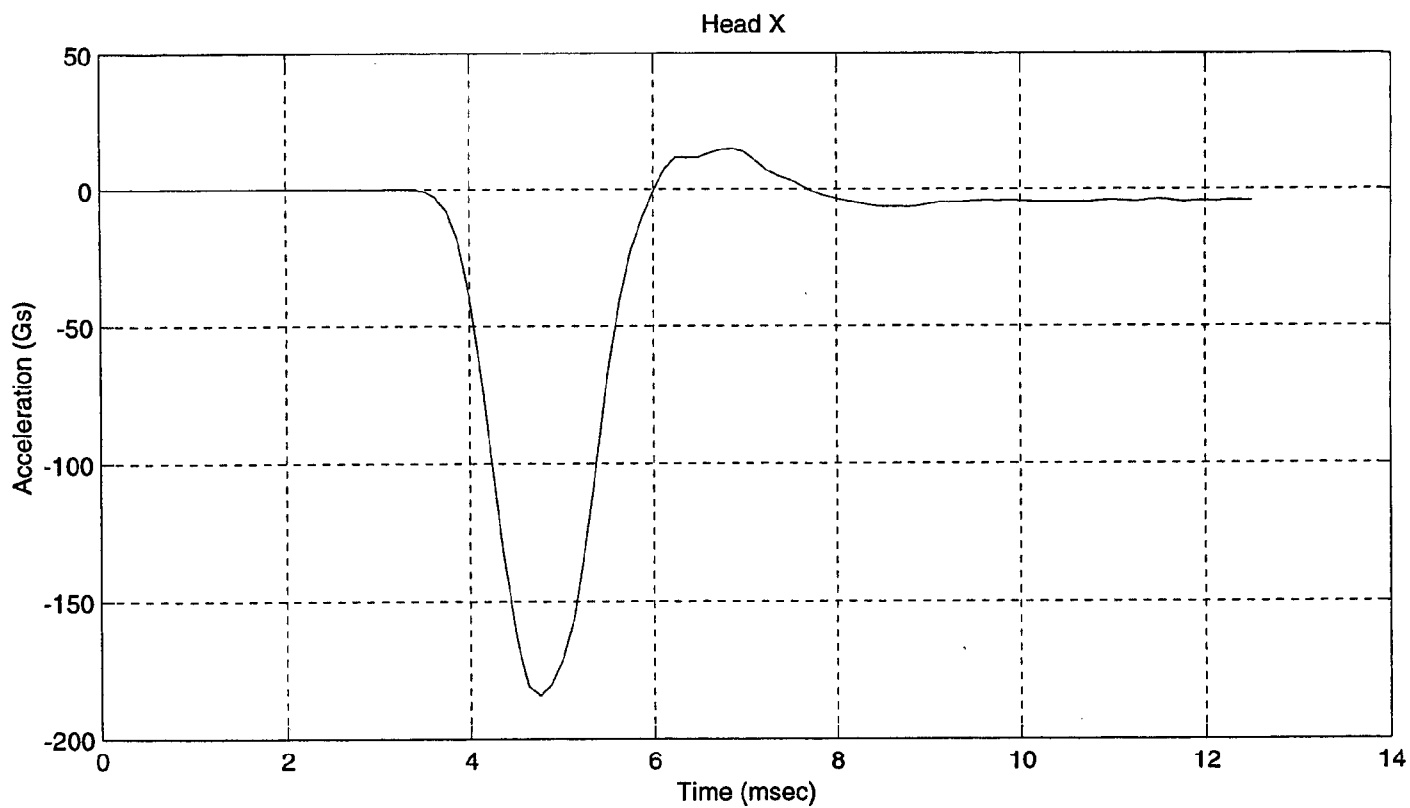
HEAD DROP TEST**POST-TEST**

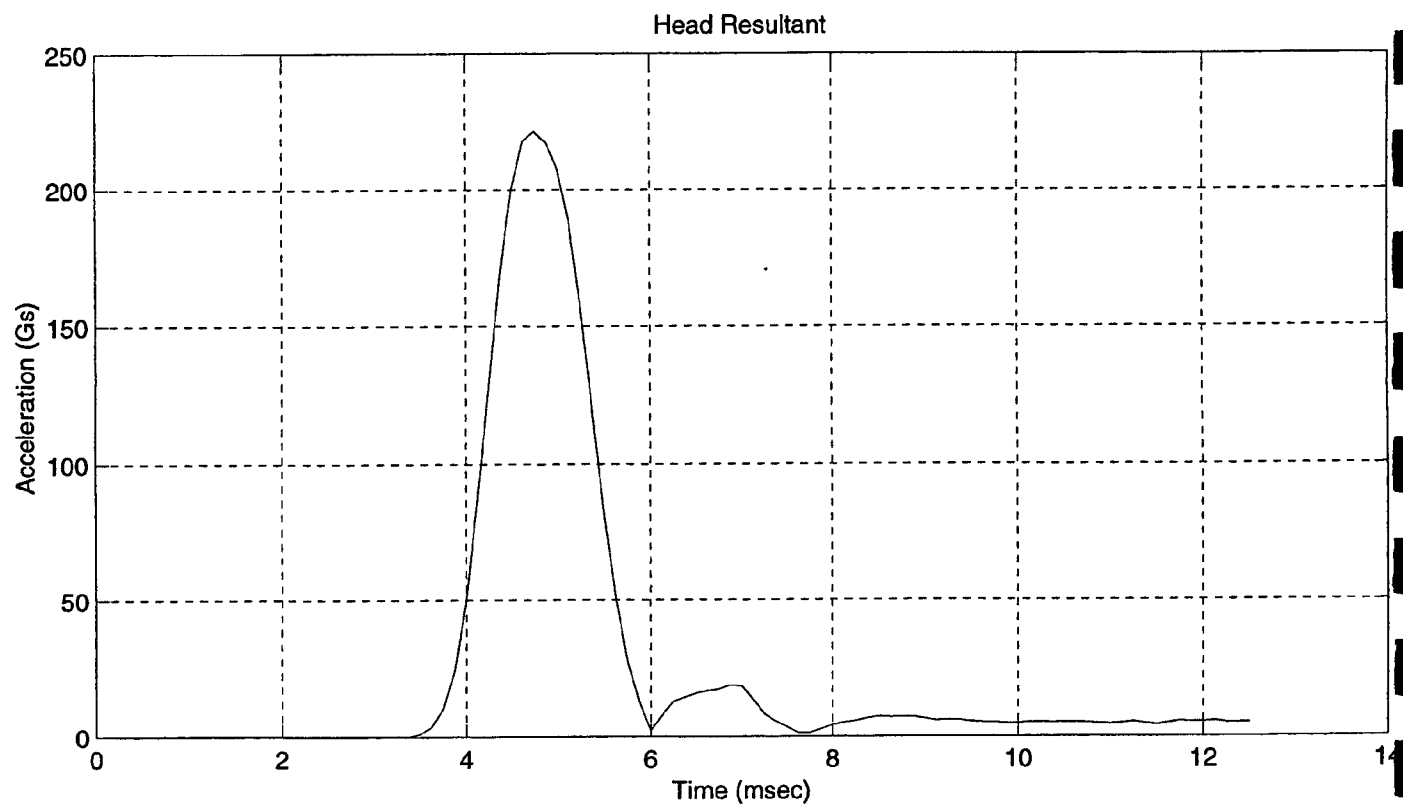
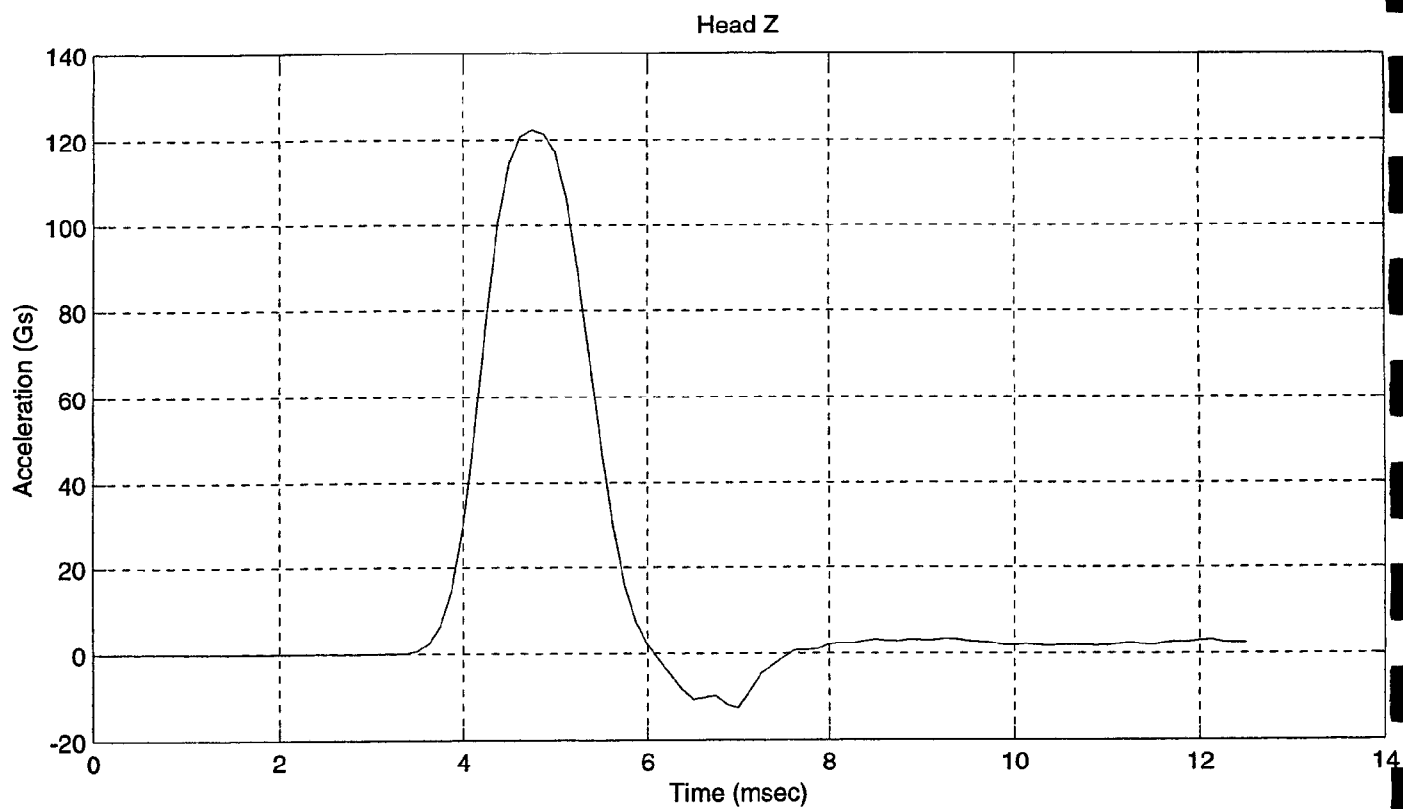
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACTSID Serial No.: 015
Date: 1/14/00Sequential Test Number: 2
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	221.25
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	4.08
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.38

REMARKS: None





**ABDOMINAL COMPRESSION TEST
POST TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015
Date: 1/21/00

Sequential Test Number: 2
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21
RELATIVE HUMIDITY (%)	10 - 70	32
FORCE @ 13 mm (N)	104 - 162	111.2
FORCE @ 19 mm (N)	163 - 221	173.5
FORCE @ 25 mm (N)	222 - 280	244.6
FORCE @ 33 mm (N)	325 - 391	360.3

REMARKS: None

Dummy S/N 15

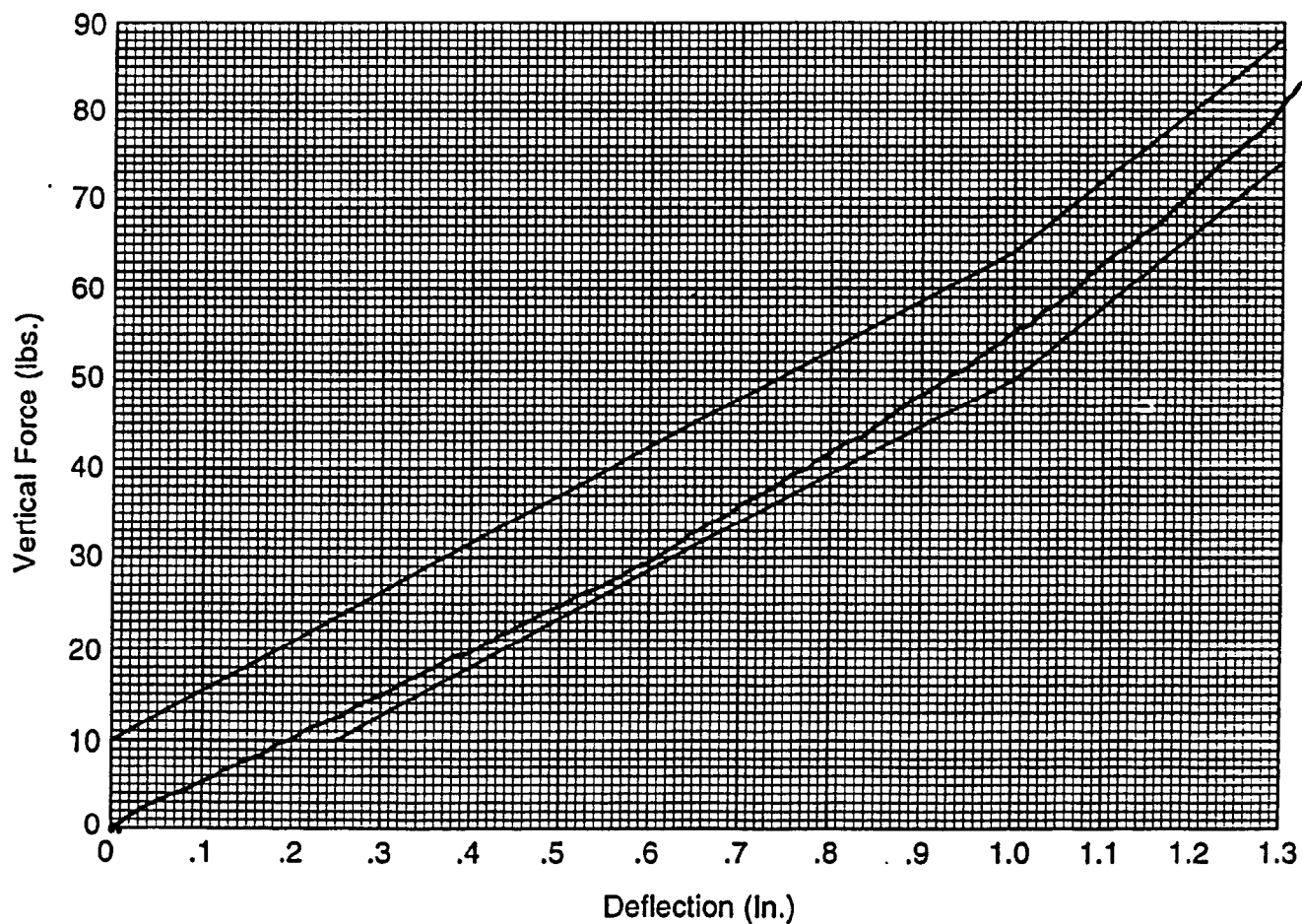
W/A _____

Date 1-21-2000

Performed By BQ

Temp. 70°

Humidity 32%



Hybrid II
Abdomen Static Press

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

CONFIGURED FOR LEFT SIDE IMPACT

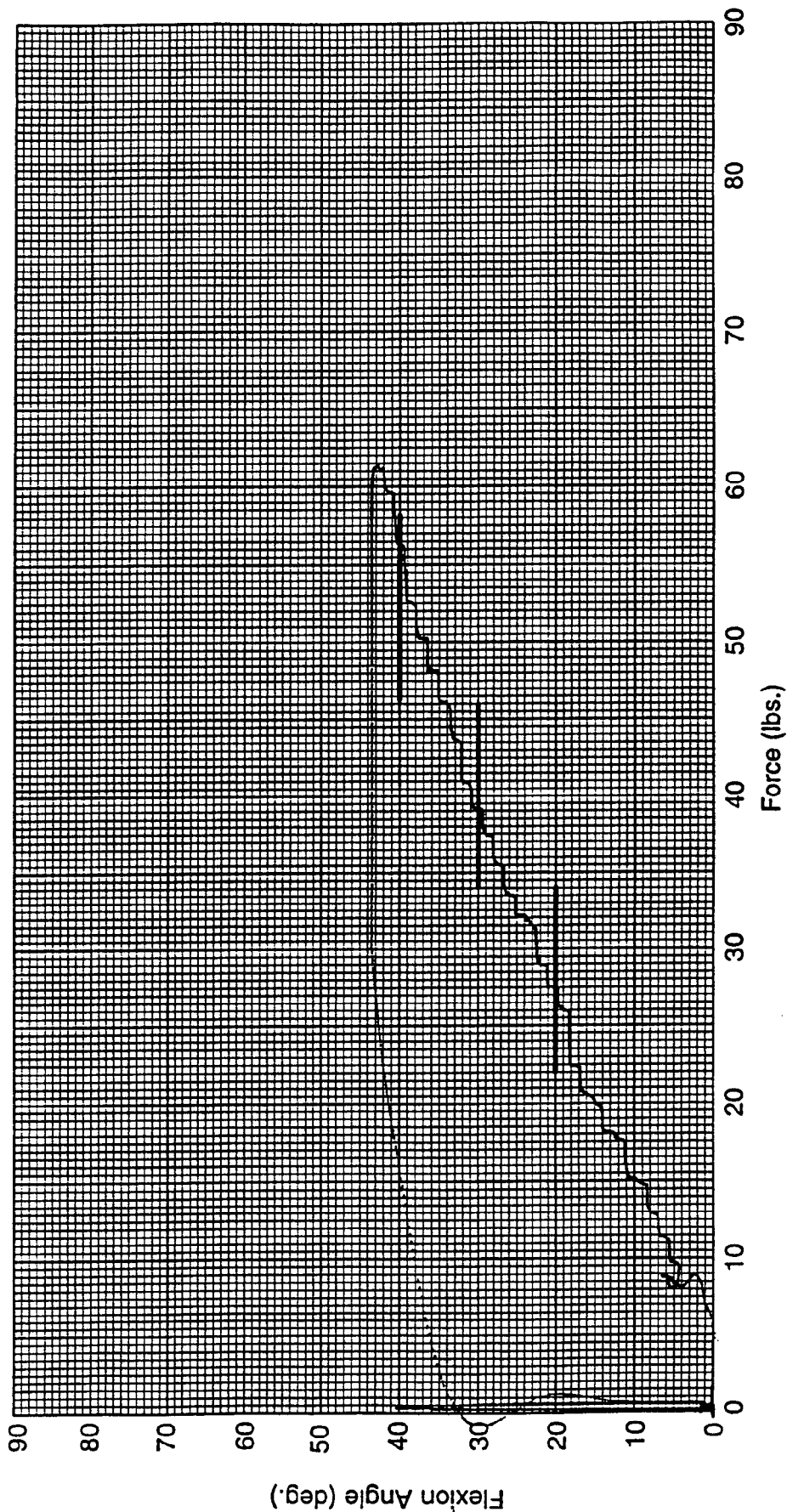
SID Serial No.: 015
Date: 1/21/00

Sequential Test Number: 2
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21
RELATIVE HUMIDITY (%)	10 - 70	32
FORCE @ 0° (N)	0 - 26.7	0
FORCE @ 20° (N)	97.8 - 151.2	122.3
FORCE @ 30° (N)	151.2 - 204.6	173.5
FORCE @ 40° (N)	204.6 - 258	228.0
RETURN ANGLE	12° max.	1.5

REMARKS: None

Dummy S/N 15
W/A _____
Date 1-21-2000
Performed By [Signature]
Temp. 70°
Humidity 32%



Hybrid II Lumbar Spine Flexion Test

POST TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 2
 Date: 1/21/00 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: 2
Date: 1/21/00 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.: 016
Date: 1/21/00

Sequential Test Number: 2
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	494
HW- Hip Width (mm)	356 - 391	361

REMARKS: None

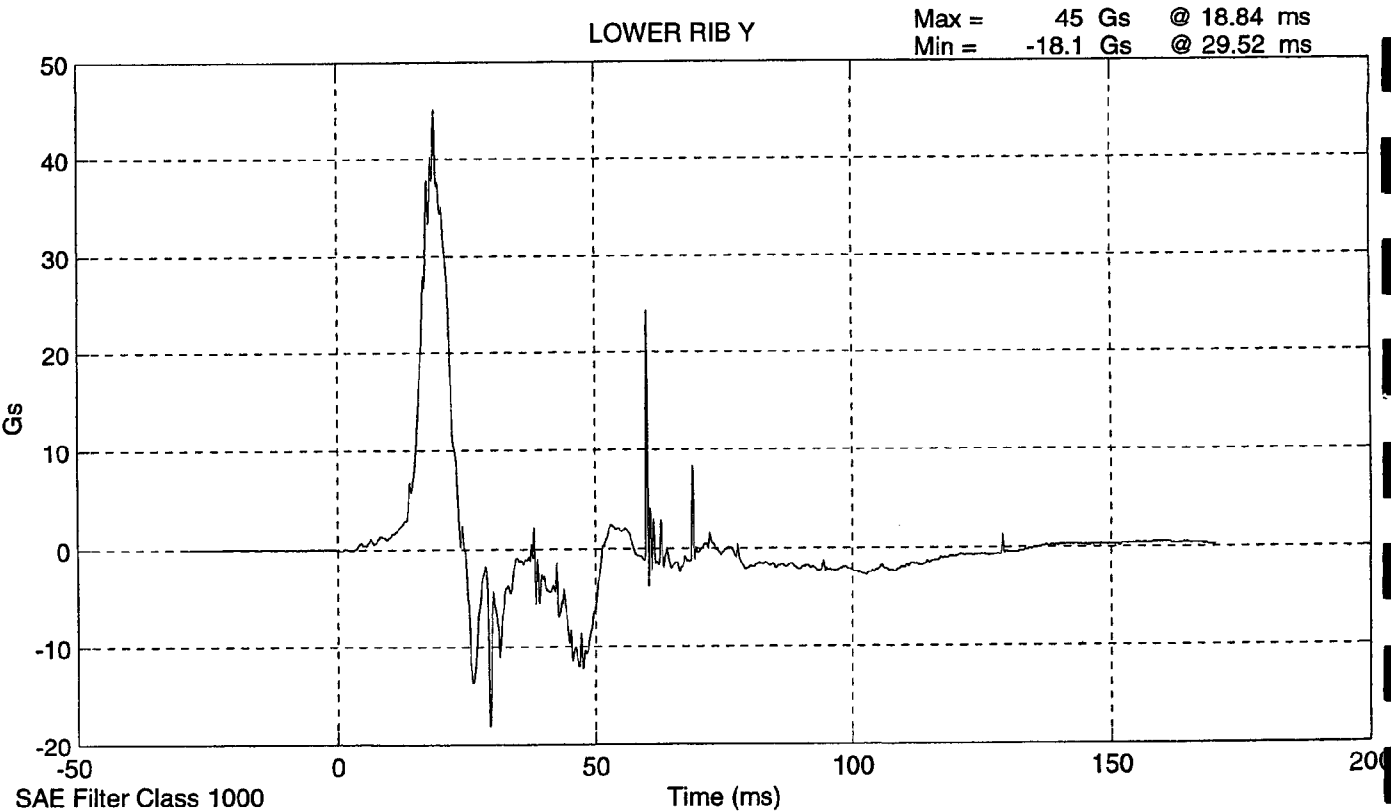
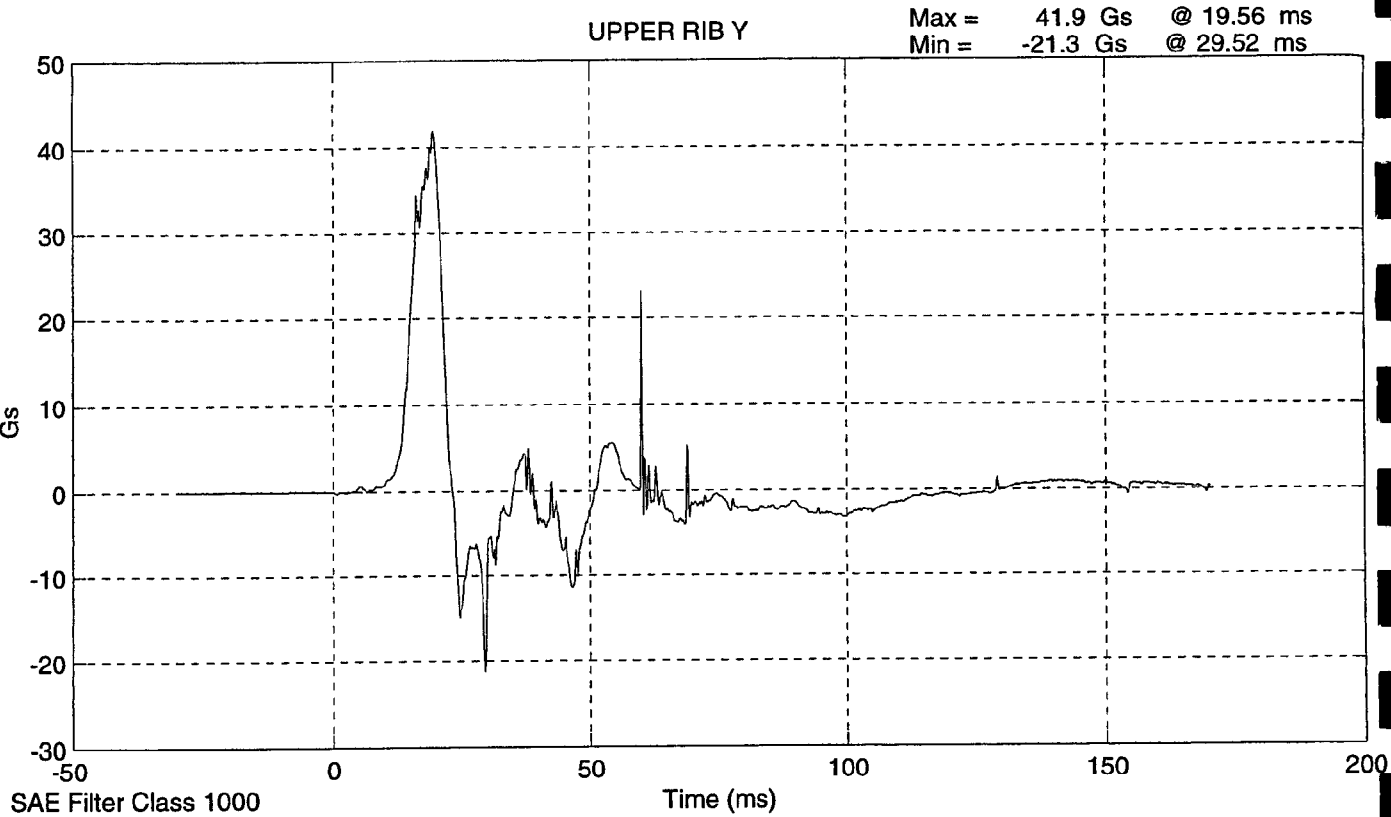
**LATERAL THORAX IMPACT TEST
POST TEST**

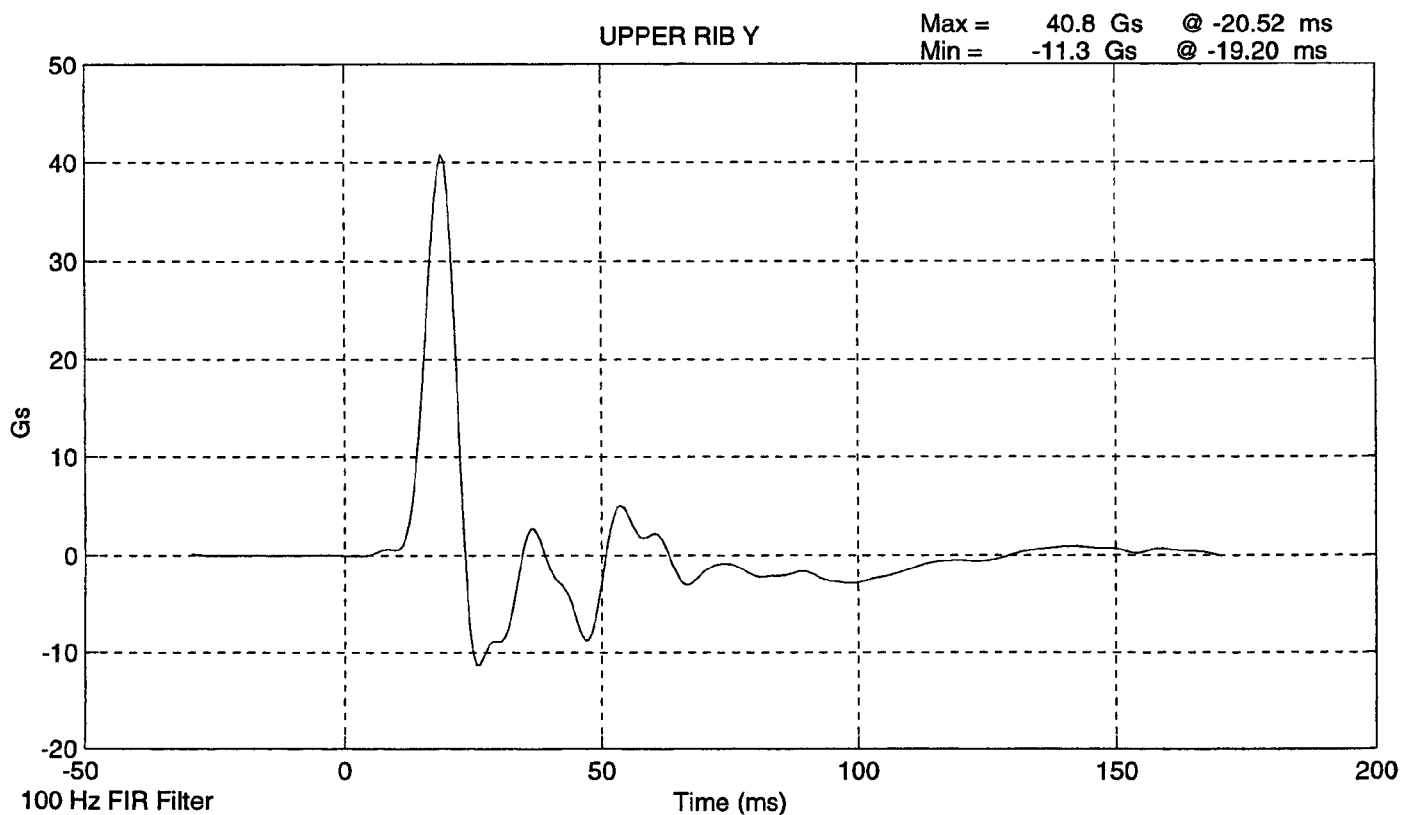
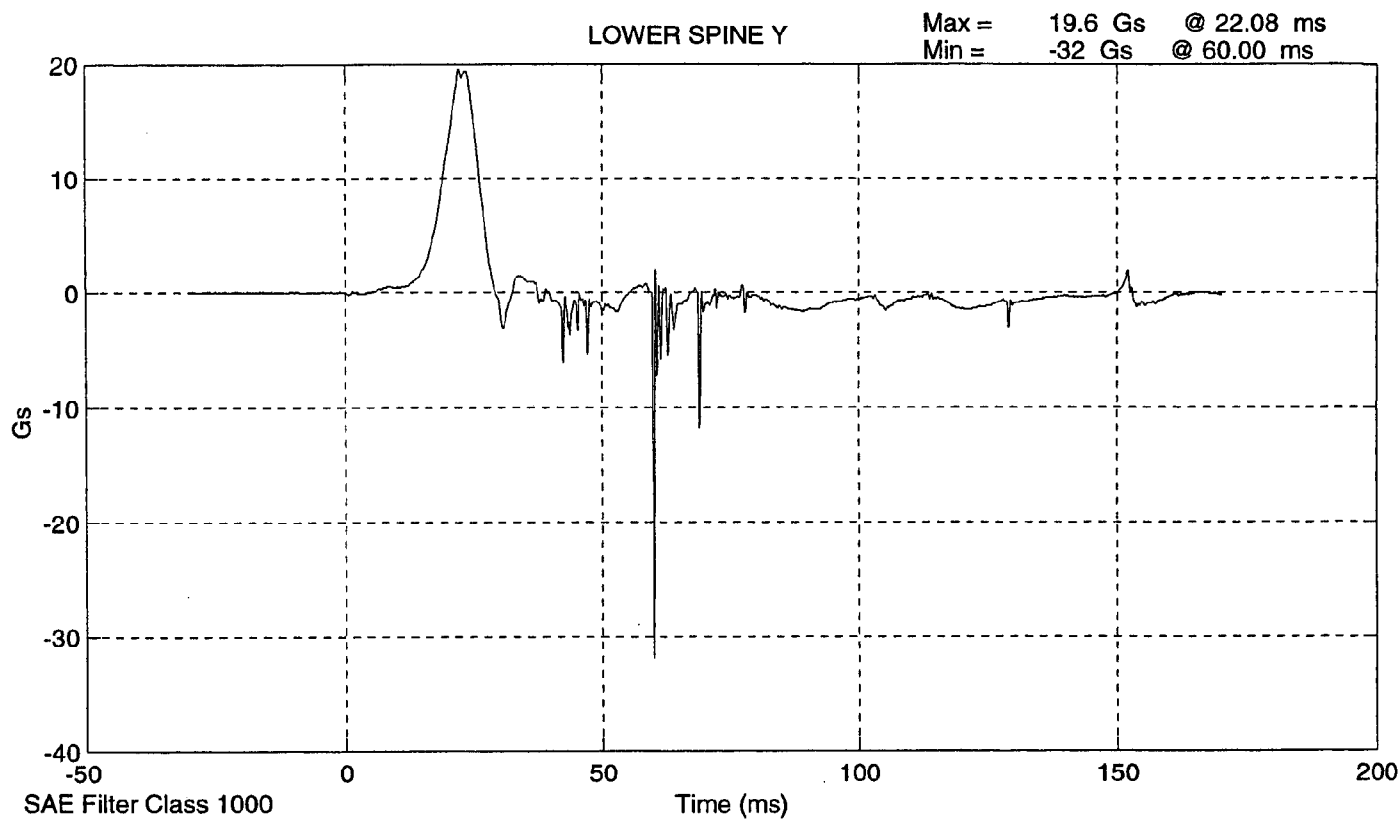
CONFIGURED FOR LEFT SIDE IMPACT

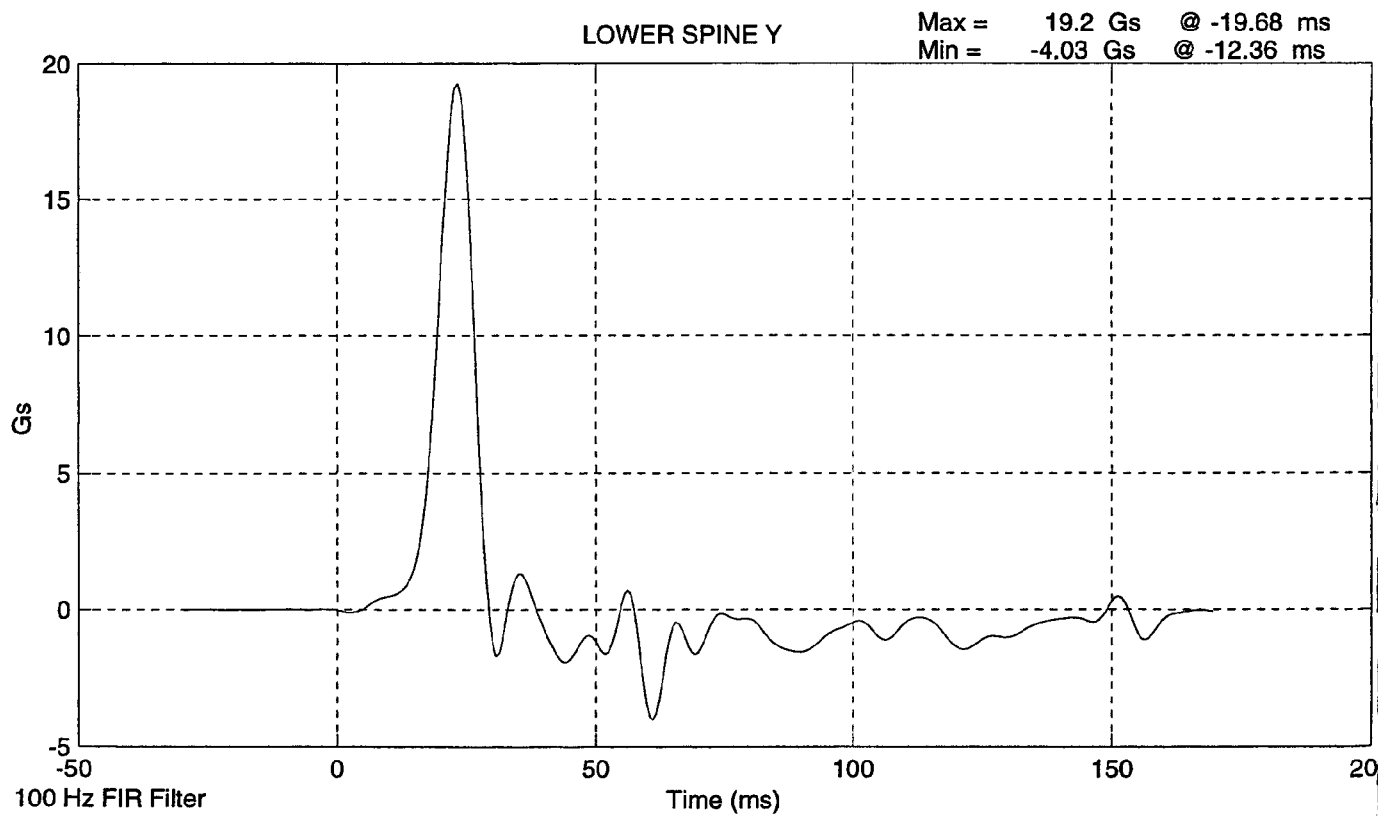
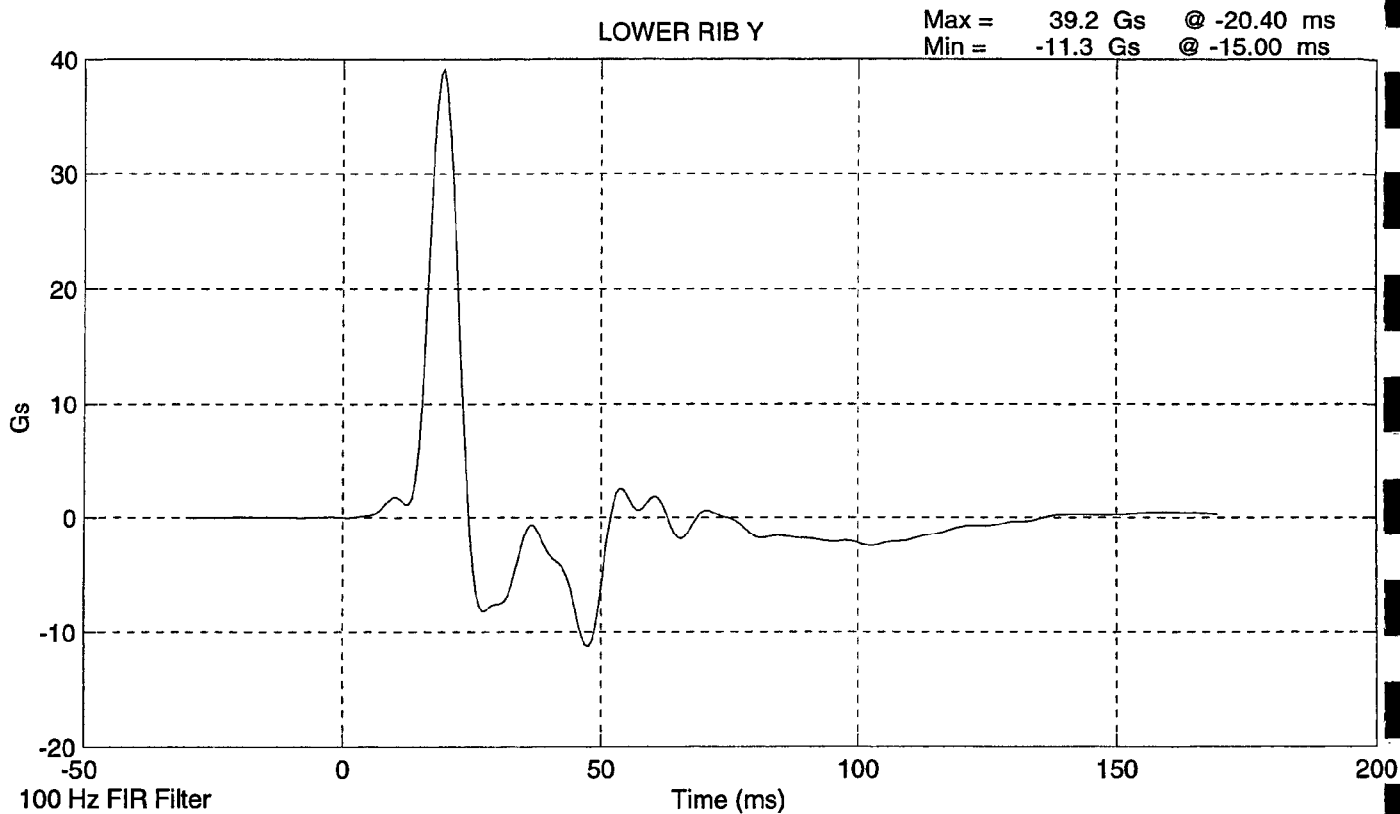
SID Serial No.: 016 Sequential Test Number: 2
Date: 1/21/00 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21
RELATIVE HUMIDITY (%)	10 - 70	32
PROBE SPEED (m/s)	4.27 - 4.33	4.28
UPPER RIB (g's)	37 - 46	40.8
LOWER RIB (g's)	37 - 46	39.2
LOWER SPINE (g's)	15 - 22	19.2

REMARKS: None







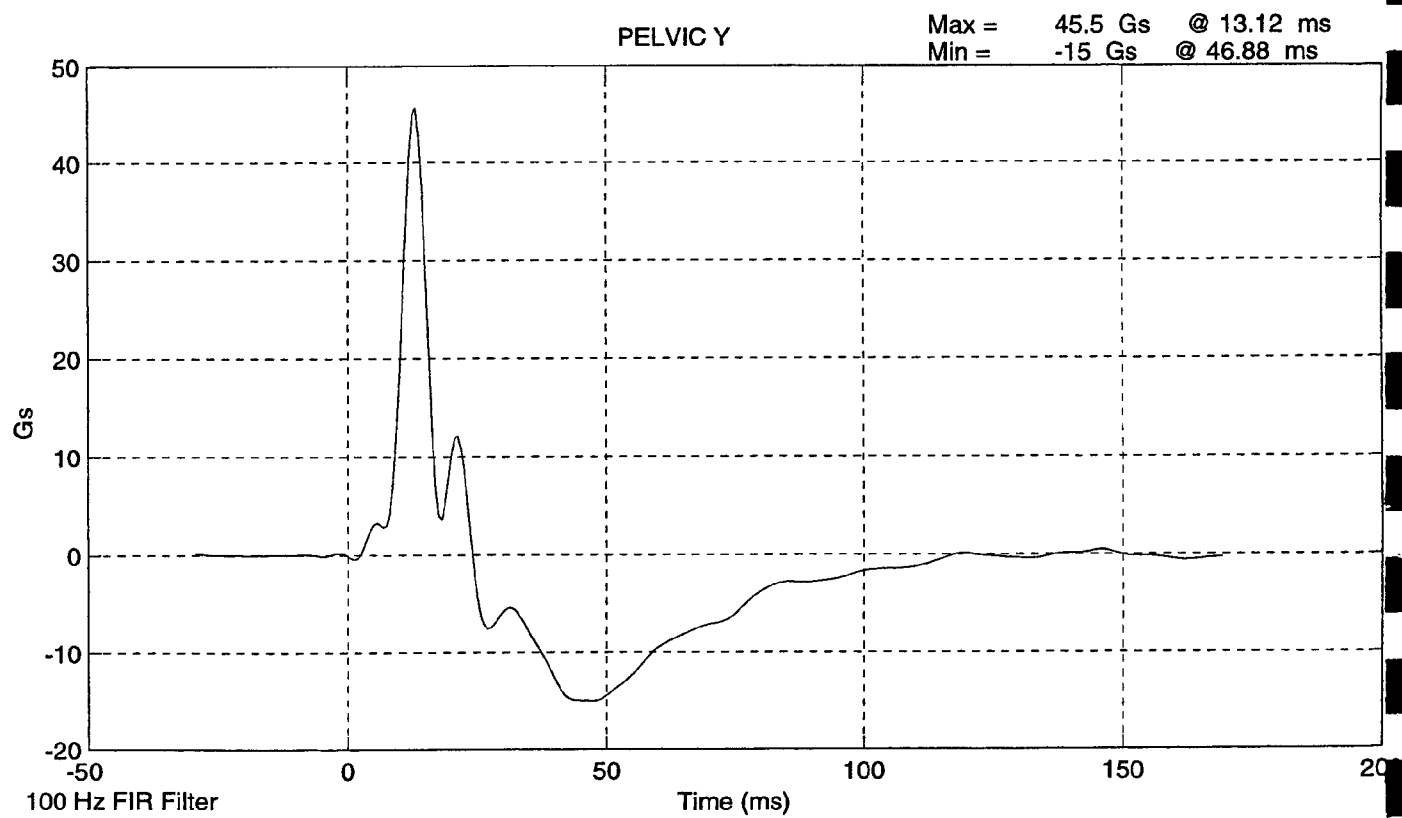
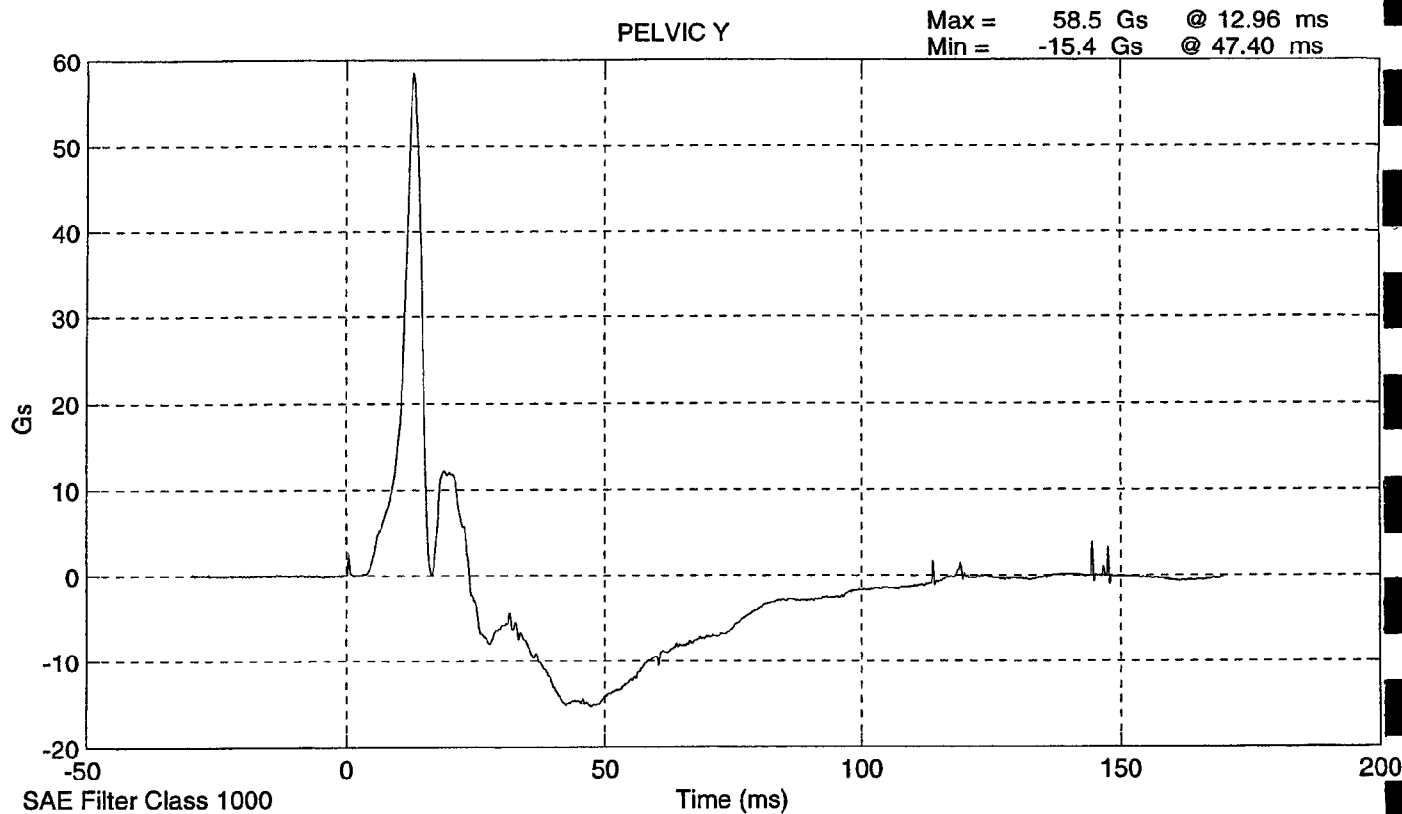
**LATERAL PELVIS IMPACT TEST
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 2
Date: 1/21/00 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21
RELATIVE HUMIDITY (%)	10 - 70	32
PROBE SPEED (m/s)	4.27 - 4.33	4.29
PELVIS ACCELERATION (g's)	40 - 60	45.5

REMARKS: None



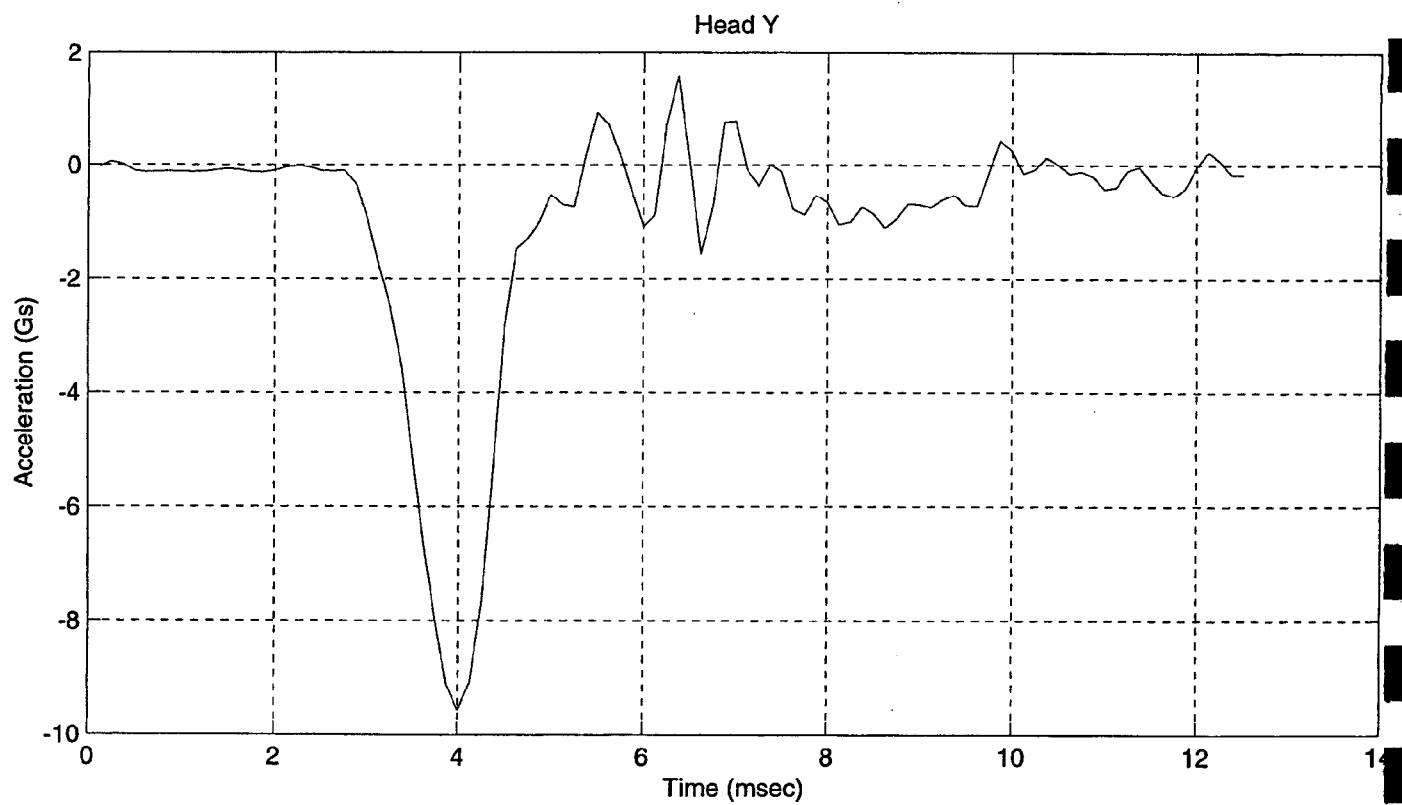
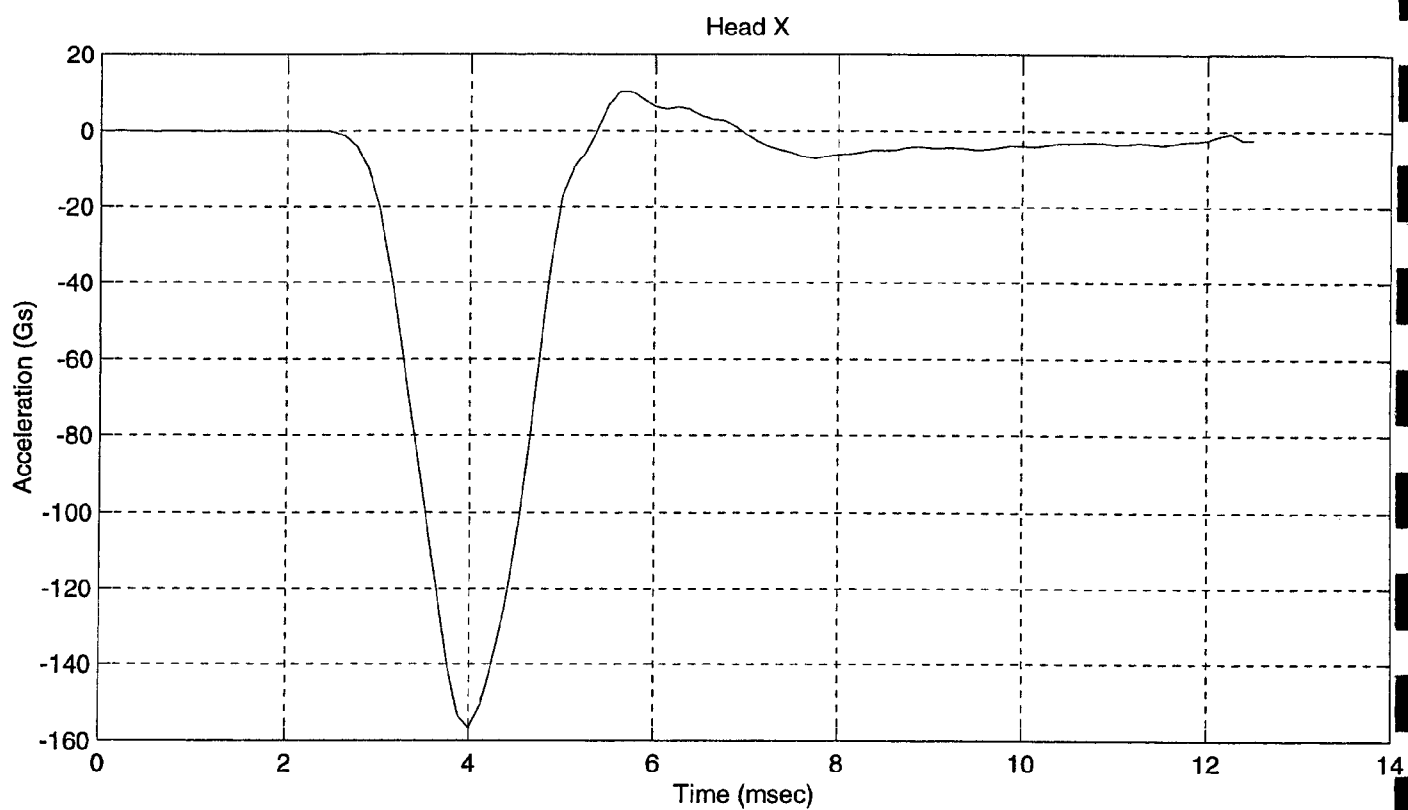
HEAD DROP TEST**POST-TEST**

(Test not required for SID certification)

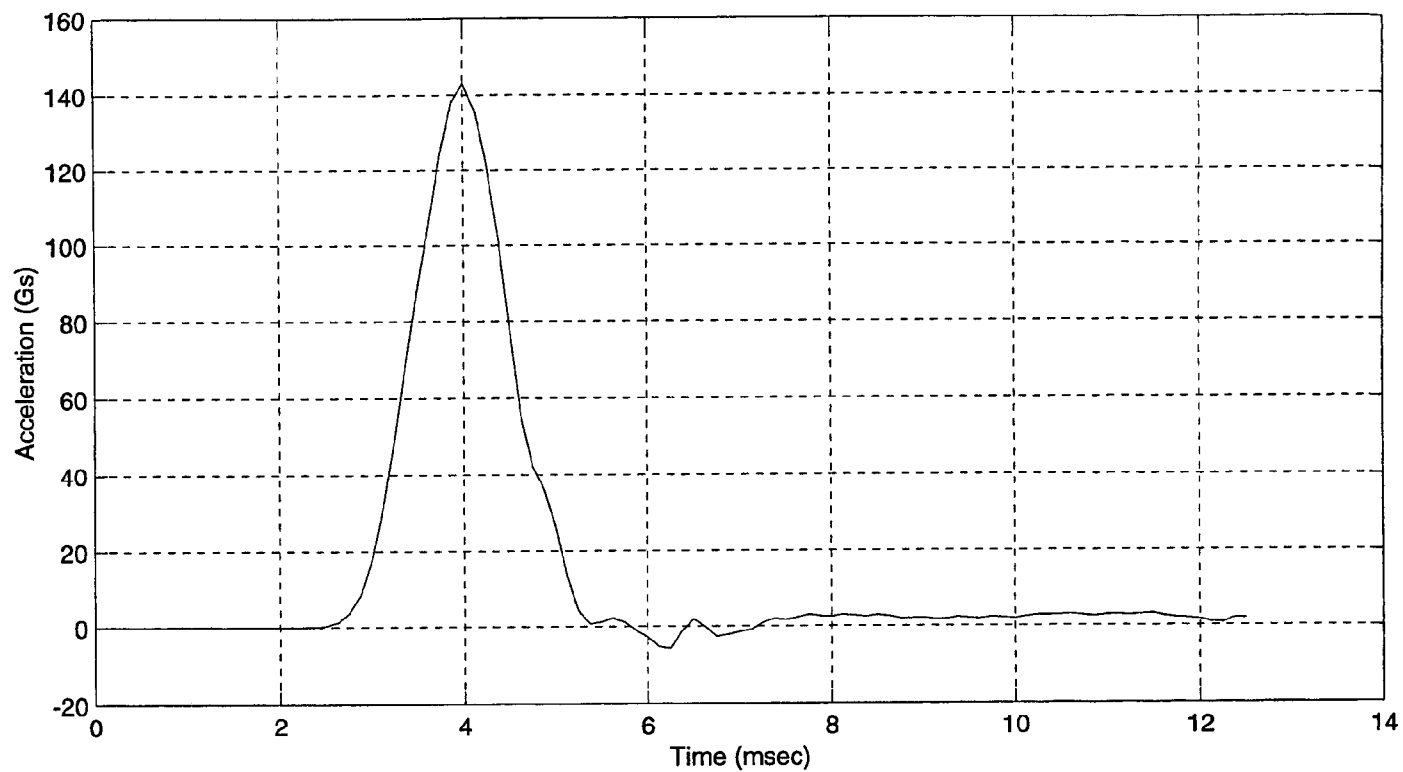
CONFIGURED FOR LEFT SIDE IMPACTSID Serial No.: 016Sequential Test Number: 2Date: 1/14/00Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	32
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	212.25
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	9.57
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.25

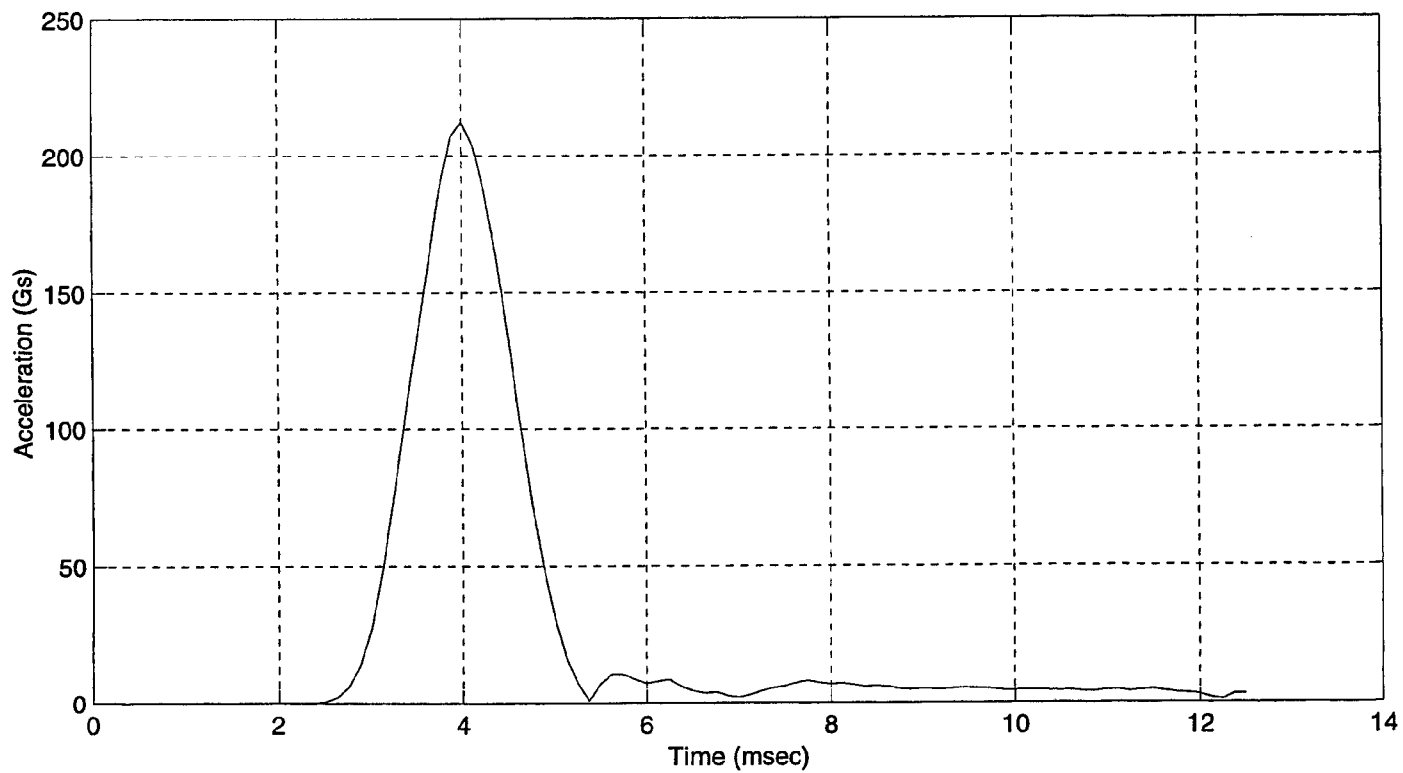
REMARKS: None



Head Z



Head Resultant



ABDOMINAL COMPRESSION TEST**POST TEST**

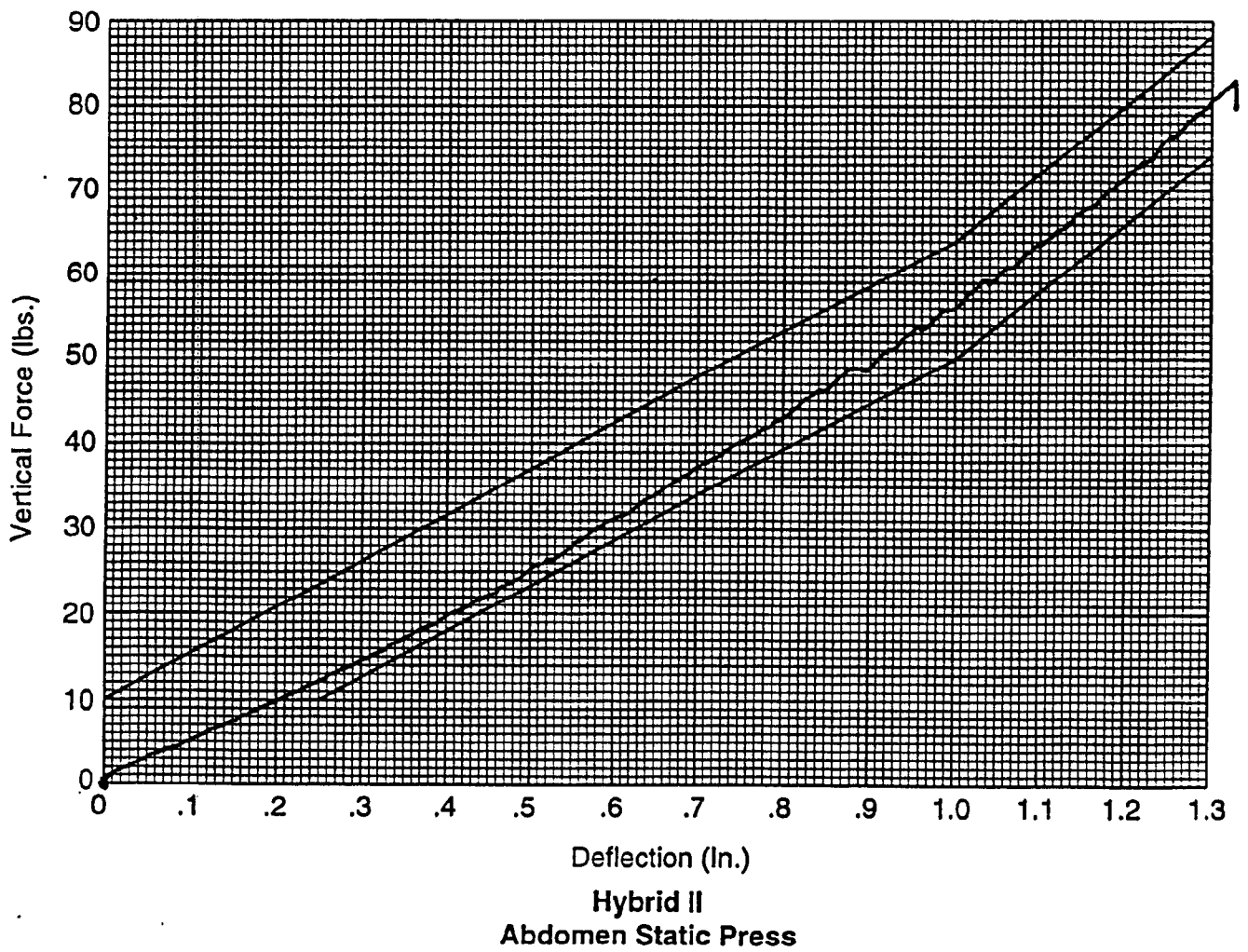
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACTSID Serial No.: 016Sequential Test Number: 2Date: 1/21/00Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21
RELATIVE HUMIDITY (%)	10 - 70	32
FORCE @ 13 mm (N)	104 - 162	115.7
FORCE @ 19 mm (N)	163 - 221	177.9
FORCE @ 25 mm (N)	222 - 280	249.1
FORCE @ 33 mm (N)	325 - 391	360.3

REMARKS: None

Dummy S/N 16
W/A _____
Date 1-21-2000
Performed By BSR
Temp. 70°
Humidity 32%



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

CONFIGURED FOR LEFT SIDE IMPACT

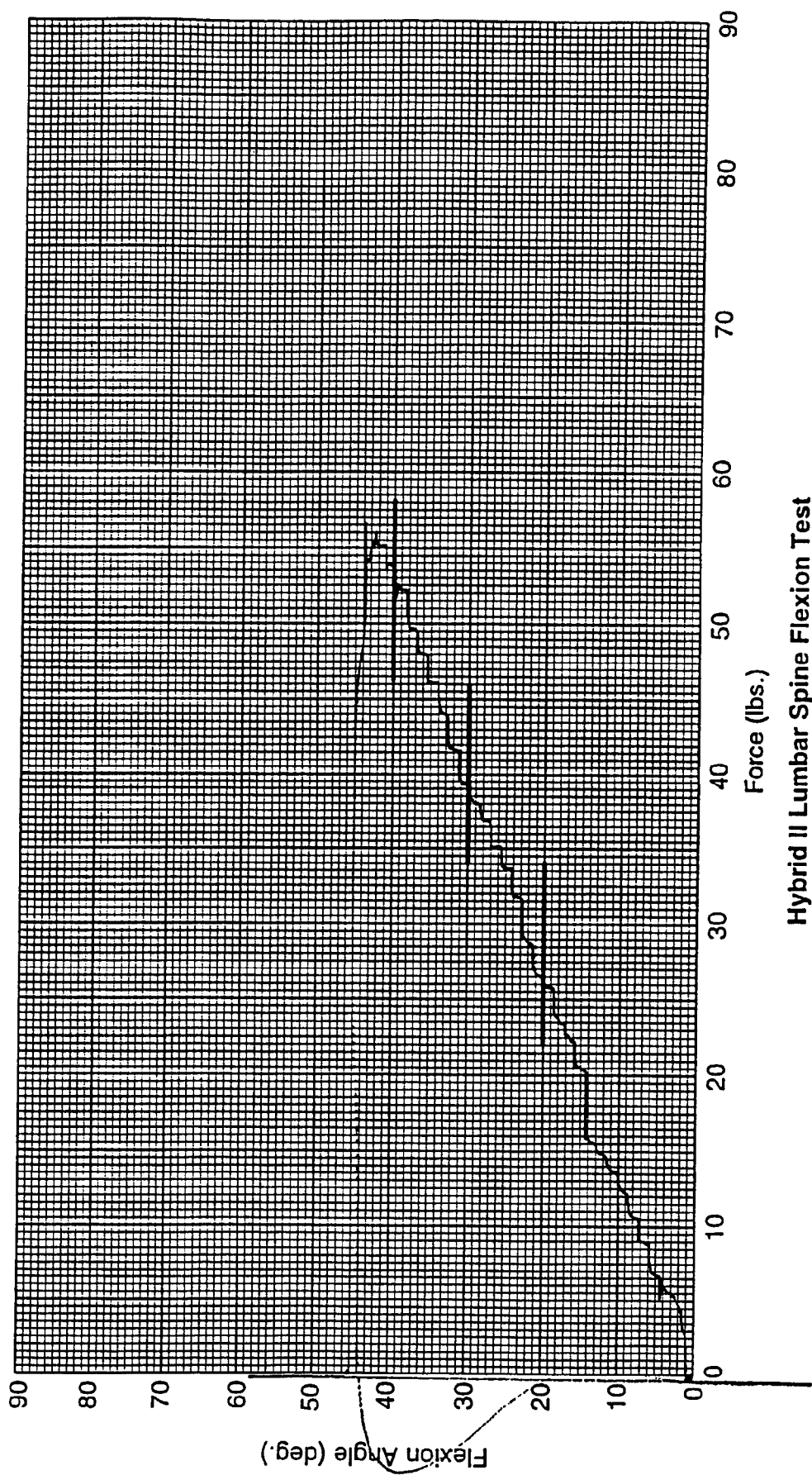
SID Serial No.: 016
Date: 1/21/00

Sequential Test Number: 2
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21
RELATIVE HUMIDITY (%)	10 - 70	32
FORCE @ 0° (N)	0 - 26.7	0
FORCE @ 20° (N)	97.8 - 151.2	115.7
FORCE @ 30° (N)	151.2 - 204.6	171.3
FORCE @ 40° (N)	204.6 - 258	233.5
RETURN ANGLE	12° max.	1

REMARKS: None

Dummy S/N 16
W/A _____
Date 1-21-2000
Performed By BS
Temp. 70°
Humidity 32%



Hybrid II Lumbar Spine Flexion Test



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 (X)	AC-GE16	ENDEVCO	11/17/99
HEAD (Y)	AC-C14950	ENDEVCO	9/10/99
HEAD (Z)	AC-A33A	ENDEVCO	9/10/99
UPPER RIB (Y)	AC-A13568	ENDEVCO	6/18/99
LOWER RIB (Y)	AC-A14433	ENDEVCO	6/29/99
LOWER SPINE (Y)	AC-A14239	ENDEVCO	6/29/99
PELVIS (Y)	AC-A14485	ENDEVCO	7/9/99
UPPER RIB REDUNDANT (Y)	AC-A14481	ENDEVCO	6/29/99
LOWER RIB REDUNDANT (Y)	AC-A14488	ENDEVCO	6/29/99
LOWER SPINE REDUNDANT (Y)	AC-A14306	ENDEVCO	6/29/99
PELVIS REDUNDANT (Y)	AC-A14321	ENDEVCO	6/30/99

REAR SID NO.: 016			
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD (X)	AC-AE8K1	ENDEVCO	5/3/99
HEAD (Y)	AC-AH5M8	ENDEVCO	5/3/99
HEAD (Z)	AC-AF5C4	ENDEVCO	5/3/99
UPPER RIB (Y)	AC-A14312	ENDEVCO	6/16/99
LOWER RIB (Y)	AC-A11544	ENDEVCO	6/16/99
LOWER SPINE (Y)	AC-J31095	ENDEVCO	10/11/99
PELVIS (Y)	AC-A13492	ENDEVCO	6/16/99
UPPER RIB REDUNDANT (Y)	AC-A13506	ENDEVCO	6/16/99
LOWER RIB REDUNDANT (Y)	AC-A13513	ENDEVCO	6/16/99
LOWER SPINE REDUNDANT (Y)	AC-J30491	ENDEVCO	10/7/99
PELVIS REDUNDANT (Y)	AC-A13498	ENDEVCO	6/16/99

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-AP1A2	ENDEVCO	9/24/99
RIGHT FRONT SILL (Y)	AC-B10954	ENDEVCO	9/24/99
RIGHT FRONT SILL (Z)	AC-B11073	ENDEVCO	9/24/99
RIGHT REAR SILL (X)	AC-B11351	ENDEVCO	9/27/99
RIGHT REAR SILL (Y)	AC-B10481	ENDEVCO	9/27/99
RIGHT REAR SILL (Z)	AC-ACC06	ENDEVCO	9/27/99
REAR FLOORPAN ABOVE AXLE (X)	AC-D40	ICS	9/16/99
REAR FLOORPAN ABOVE AXLE (Y)	AC-D41	ICS	9/16/99
REAR FLOORPAN ABOVE AXLE (Z)	AC-D52	ICS	9/16/99
LEFT REAR SILL (Y)	AC-J18515	ENDEVCO	9/3/99
LEFT FRONT SILL (Y)	AC-AP1A0	ENDEVCO	9/3/99
RIGHT REAR SEAT OCCUPANT COMP. (Y)	AC-D31	ICS	9/14/99
LOWER LEFT B- PILLAR (Y)	AC-Z02	ENTRAN	12/6/99
MIDDLE LEFT B-PILLAR (Y)	-	-	-
LOWER LEFT A-PILLAR (Y)	AC-A12268	ENDEVCO	10/5/99
UPPER LEFT A-PILLAR (Y)	AC-J18406	ENDEVCO	9/3/99
FRONT SEAT TRACK (Y)	AC-AY60	ENDEVCO	9/14/99
REAR SEAT TRACK (Y)	AC-X93	ICS	12/7/99
VEHICLE CG (X)	AC-J18649	ENDEVCO	9/24/99
VEHICLE CG (Y)	AC-J18622	ENDEVCO	9/24/99
VEHICLE CG (Z)	AC-APBB6	ENDEVCO	9/24/99
MDB CG (X)	AC-CL60	ENDEVCO	6/21/99
MDB CG (Y)	AC-CJ54	ENDEVCO	6/21/99
MDB CG (Z)	AC-GK12	ENDEVCO	6/21/99
MDB REAR FRAME MEMBER (X)	AC-CX05	ENDEVCO	7/27/99
MDB REAR FRAME MEMBER (Y)	AC-A27F	ENDEVCO	7/27/99

REMARKS: None