

3272

REPORT NUMBER: 214-CAL-00-2

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

FUJI HEAVY INDUSTRIES, LTD.
2000 SUBARU LEGACY
4-DOOR WAGON

NHTSA NUMBER: CY5501

VERIDIAN ENGINEERING
TRANSPORTATION SCIENCES CENTER
P.O. BOX 400
BUFFALO, NEW YORK 14225



January 25, 2000

FINAL REPORT

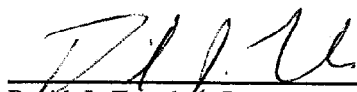
U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Safety Assurance
Office of Vehicle Compliance
400 Seventh Street, SW
Room 6115 (NSA-30)
Washington, DC 20590

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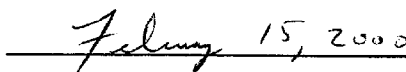
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16. Abstract A 55/28 kph 90° Side Impact (Moving Deformable Barrier) Inducant Test was conducted on the subject 2000 Subaru Legacy 4-Door Wagon. This test was performed at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which 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 January 25, 2000. The impact velocity of the Moving Deformable Barrier (MDB) was 62.28 kph, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21 °C. The target vehicle post-test maximum crush was 267 mm at level 4. 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">60</td> <td align="center">g's</td> <td align="center">45</td> <td align="center">g's</td> </tr> <tr> <td>Left Lower Rib Acceleration:</td> <td align="center">54</td> <td align="center">g's</td> <td align="center">46</td> <td align="center">g's</td> </tr> <tr> <td>Lower Spine Acceleration:</td> <td align="center">69</td> <td align="center">g's</td> <td align="center">68</td> <td align="center">g's</td> </tr> <tr> <td>Thoracic Trauma Index (TTI):</td> <td align="center">65</td> <td align="center">g's</td> <td align="center">57</td> <td align="center">g's</td> </tr> <tr> <td>Pelvis Acceleration (PEV):</td> <td align="center">55</td> <td align="center">g's</td> <td align="center">51</td> <td align="center">g's</td> </tr> </tbody> </table> The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.					<u>Front SID</u>		<u>Rear SID</u>		Left Upper Rib Acceleration:	60	g's	45	g's	Left Lower Rib Acceleration:	54	g's	46	g's	Lower Spine Acceleration:	69	g's	68	g's	Thoracic Trauma Index (TTI):	65	g's	57	g's	Pelvis Acceleration (PEV):	55	g's	51	g's
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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 Subaru Legacy 4-Door Wagon 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 Subaru Legacy 4-Door Wagon 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 62.28 kph (38.7 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 January 25, 2000. 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 10 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 48 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)	65	57
PEV (g)	55	51

SECTION 3

SUMMARY OF TEST RESULTS

DATA SHEET 1

GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 2000 Subaru Legacy 4-Door Wagon
 Vehicle Body Color: Red VIN: 4S3BH6354Y6304887
 Vehicle NHTSA No.: CY5501 Month & Year of Manufacture: 10-99
 Engine Data: 4 Cylinders; - CID; 2.5 Liters; - cc
 Engine Placement: X Longitudinal; or - Lateral
 Transmission: 5 Speed; X Manual; - Automatic; X Overdrive
 Final Drive: - Rear Wheel Drive; - Front Wheel Drive; X Four Wheel
 Odometer Reading 97 km
 Options: X A/C; X Power Steering; X Pwr.Brakes; X Pwr. Windows

DATA FROM TIRE PLACARD

Tire Pressure* (at capacity); 220 kPa FRONT
210 kPa REAR

Recommended Tire Size: P205/60R15
 Tires on Test Vehicle: P205/60R15 ; Manufacturer: Bridgestone
 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 = 408.0 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>413.0</u> kg	Left Rear	=	<u>353.0</u> kg
Right Front	=	<u>407.0</u> kg	Right Rear	=	<u>339.0</u> kg
TOTAL FRONT	=	<u>820.0</u> kg	TOTAL REAR	=	<u>692.0</u> kg
% of Total Weight	=	<u>54.2</u> %	% of Total Weight	=	<u>45.8</u> %
TOTAL WEIGHT	=	<u>1512.0</u> kg			

* Tire pressure used in test.

DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Max. Fluids	=	<u>1512.0</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>1742.2</u>	kg (A+B+C)

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

Left Front	=	<u>456.0</u>	kg	Left Rear	=	<u>453.0</u>	kg
Right Front	=	<u>412.0</u>	kg	Right Rear	=	<u>409.0</u>	kg
TOTAL FRONT	=	<u>868.0</u>	kg	TOTAL REAR	=	<u>862.0</u>	kg
% of Total Weight	=	<u>50.2</u>	%	% of Total Weight	=	<u>49.8</u>	%
TOTAL TEST WEIGHT	=	<u>1730.0</u>	kg				

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

Left Front	=	<u>449.0</u>	kg	Left Rear	=	<u>411.5</u>	kg
Right Front	=	<u>459.5</u>	kg	Right Rear	=	<u>414.5</u>	kg
TOTAL FRONT	=	<u>908.5</u>	kg	TOTAL REAR	=	<u>826.0</u>	kg
% of Total Weight	=	<u>52.4</u>	%	% of Total Weight	=	<u>47.6</u>	%
TOTAL TEST WEIGHT	=	<u>1734.5</u>	kg				

TEST VEHICLE ATTITUDE (all dimensions in millimeters):

AS DELIVERED:

Left Front <u>683</u>	Right Front <u>685</u>	Left Rear <u>682</u>	Right Rear <u>684</u>
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FULLY LOADED:

Left Front <u>670</u>	Right Front <u>678</u>	Left Rear <u>649</u>	Right Rear <u>663</u>
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READY FOR TEST:

Left Front <u>672</u>	Right Front <u>680</u>	Left Rear <u>650</u>	Right Rear <u>664</u>
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Test Vehicle Wheelbase: 2650 millimeters

C.G. = 1262.0 millimeters rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side	=	<u>4655</u>	millimeters
Left Side	=	<u>4655</u>	millimeters
Centerline	=	<u>4750</u>	millimeters

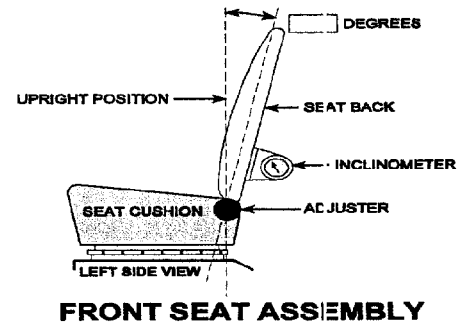
DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501

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: Place at 120 mm rearward of full forward position (detent 9 from 0)

Total Length of Adjustment Travel: 230 millimeters

Total Number of Adjustment Positions or Detents: 18

FRONT SEAT BACK ADJUSTMENT POSITION: Place 3 detents rearward of full up position

Seat Back Torso Angle: 8.5 degrees

SECOND POSITION SEAT:

Total Length of Fore/Aft Adjustment Travel: 0 millimeters

Seat Back Adjustment Position: N/A

ADJUSTABLE STEERING COLUMN POSITION: Mid-Position

WINDOW POSITIONS: Left Front: Closed Left Rear: Closed

Right Front: Removed Right Rear: Removed

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

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

64 liters (Fuel Tank Usable Capacity)

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

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

Wheelbase = 2650 millimeters

Impact Point is 385 millimeters rearward of front axle centerline

(which is 940 millimeters forward of the wheelbase midpoint)

Actual Impact Point is 385 millimeters rearward of front axle centerline

DATA SHEET 2

TEST VEHICLE SUMMARY OF RESULTS

VEHICLE IDENTIFICATION:

Vehicle Year/Make/Model: 2000 Subaru Legacy

Body Style: 4-Door Wagon

VIN: 4S3BH6354Y6304887

NHTSA No.: CY5501

Test Date: January 25, 2000

Overall Length = 4750 millimeters; Overall Width = 1742 millimeters

VEHICLE TEST WEIGHT (Pre-Test):

Left Front = 449.0 kg Left Rear = 411.5 kg

Right Front = 459.5 kg Right Rear = 414.5 kg

TOTAL FRONT = 908.5 kg TOTAL REAR = 826.0 kg

TOTAL VEHICLE WEIGHT 1734.5 kg

Wheelbase = 2650 millimeters

Longitudinal C.G. from Center of Front Axle = 1262.0 millimeters

Impact Angle with Respect to Impactor = 90 degrees

ACTUAL IMPACT POINT

Actual Impact Point is 0 mm on the of nominal impact ref. line (Lateral)

Actual Impact Point is 5 mm above the nominal impact point (Vertical)

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 (270 mm above ground) = 110 millimeters

2. LEVEL 2 (490 mm above ground) = 247 millimeters

3. LEVEL 3 (575 mm above ground) = 248 millimeters

4. LEVEL 4 (810 mm above ground) = 267 millimeters

5. LEVEL 5 (1380 mm above ground) = 12 millimeters

Maximum Post-Test Intrusion = 267 millimeters

OCCUPANTS:

Front Passenger:

Rear Passenger:

Dummy Identification 015 016

Restraints Used Seatbelt Seatbelt

INSTRUMENTATION:

Number of Vehicle Data Channels: = 43

Number of Cameras: Onboard = 3

Offboard = 8

TOTAL = 11

DATA SHEET 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501

MDB FACE MANUFACTURER AND SERIAL NUMBER:

Plascore, Inc. 032B1199-1 013C1099 2814

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>62.28</u>	kph				

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

1. Row A at Center of Bumper Level	=	<u>226</u>	millimeters
2. Row B at Top of Bumper Level	=	<u>179</u>	millimeters
3. Row C at Mid Level	=	<u>179</u>	millimeters
4. Row D at Top of Stack Level	=	<u>177</u>	millimeters

INSTRUMENTATION:

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

POST-TEST OBSERVATIONS

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501

VISIBLE DUMMY CONTACT POINTS:

	<u>LEFT FRONT SID</u>	<u>LEFT REAR SID</u>
Head:	<u>Side of face to left shoulder</u>	<u>Side and top of the face to C-pillar trim</u>
Upper Torso:	<u>Door Trim Panel</u>	<u>Door Trim Panel</u>
Lower Torso:	<u>Door Trim Panel</u>	<u>Door Trim Panel</u>
Left Knee:	<u>Door Trim Panel</u>	<u>Door Trim Panel</u>
Right Knee:	<u>Left Knee</u>	<u>Left Knee</u>

DOOR OPENING:

	<u>LEFT DOOR</u>	<u>RIGHT DOOR</u>	<u>LIFT GATE</u>
Front:	<u>Closed/Inoperable</u>	<u>Closed/Operable</u>	<u>N/A</u>
Rear:	<u>Closed/Inoperable</u>	<u>Closed/Operable</u>	<u>Closed/Operable</u>

MDB DISTANCE FROM TARGET IMPACT POINT:

Vertical: 5 mm above

Horizontal: 0 mm

ARM REST LOCATIONS:

Front:	<u>The front armrest was pushed inboard during the event.</u>
Rear:	<u>The rear armrest was pushed inboard during the event.</u>

SEAT MOVEMENT:

Front:	<u>The driver's seatback was rotated counter clockwise during the event.</u>
Rear:	<u>The rear seat cushion was pushed inboard during the event.</u>

GLAZING DAMAGE:

Windshield:	<u>The windshield was cracked along the A-Pillar radiating to the windshield center.</u>
Window:	<u>Left side front and rear door side windows shattered on impact.</u>

PILLAR PERFORMANCE:

There were no visible tears or breaks due to the impact. The vehicle A- and B-pillar sheet metal was pushed inboard during the event.

SILL SEPARATION:

There were no visible tears or separation.

AIR BAG DEPLOYMENT STATUS:

	<u>DRIVER</u>	<u>FRONT PASSENGER</u>	<u>REAR PASSENGER</u>
<u>FRONT</u>	<u>No</u>	<u>No</u>	<u>N/A</u>
<u>SIDE</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

OTHER NOTABLE IMPACT EFFECTS:

SECTION 4

OCCUPANT AND VEHICLE INFORMATION

DATA SHEET 5

SID INSTRUMENTATION DATA

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501

	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	3.5	323.6	-16.1	74.0	8.2	66.0	-48.0	56.2
Lateral Y	26.7	54.5	-7.8	145.9	119.1	55.2	-8.5	104.6
Vertical Z	30.0	58.6	-0.4	196.4	24.3	54.6	-43.5	62.2
Resultant R	37.1	56.7	-	-	129.7	55.2	-	-
HIC	141.1				698.1			
RIB ACCELERATIONS:								
Upper Rib Lateral . . Y	60.1	30.0	-10.1	92.5	44.9	43.2	-9.4	105.6
Upper Rib Lateral . . Y(R)	62.7	30.0	-10.4	92.5	44.3	43.2	-9.5	105.6
Lower Rib Lateral . . Y	54.1	30.7	-11.1	75.6	46.3	53.8	-13.8	106.3
Lower Rib Lateral . . Y(R)	55.9	30.6	-11.3	75.6	47.4	53.8	-14.2	106.3
SPINE ACCELERATIONS:								
Lower Lateral Y	69.3	35.0	-18.7	68.1	67.9	55.6	-11.8	76.3
Lower Lateral Y(R)	69.3	35.0	-18.2	68.1	67.6	55.6	-11.8	76.3
PELVIC ACCELERATIONS:								
Lateral Y	55.3	33.8	-3.5	114.3	50.7	49.4	-4.0	168.8
Lateral Y(R)	54.7	33.8	-3.4	114.3	50.6	49.4	-4.1	168.8

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

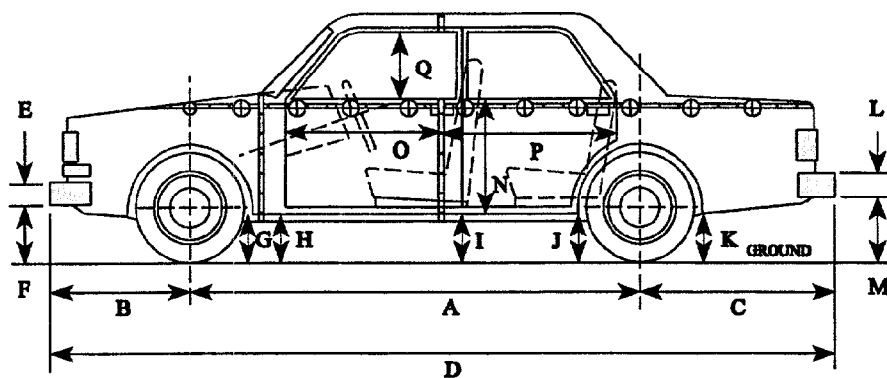
Note: Above data has been FIR filtered, Y(R) denotes redundant Y direction accelerometer.
 Head Accelerations are filtered at SAE Class 1000.

DATA SHEET 6

VEHICLE SIDE MEASUREMENTS

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501



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	2650	-	2643	-7
B	965	-	977	12
C	1135	-	1130	-5
D	4750	-	4750	0
E	175	-	175	0
F	302	297	336	39
G	212	192	215	23
H	212	189	210	21
I	208	183	212	29
J1	183	154	163	9
J2	212	183	210	27
K	287	253	264	11
L	150	-	150	0
M	368	334	335	1
N	665	-	601	-64
O	730	-	719	-11
P	1234	-	1149	-85
Q	450	-	459	9
R	4655	-	4655	0
S	4655	-	4646	-9
T	1742	-	1627	-115

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

E&L = Bumper Thickness
J1 = To Pinch Weld

R = Right Side Length
J2 = To Sill

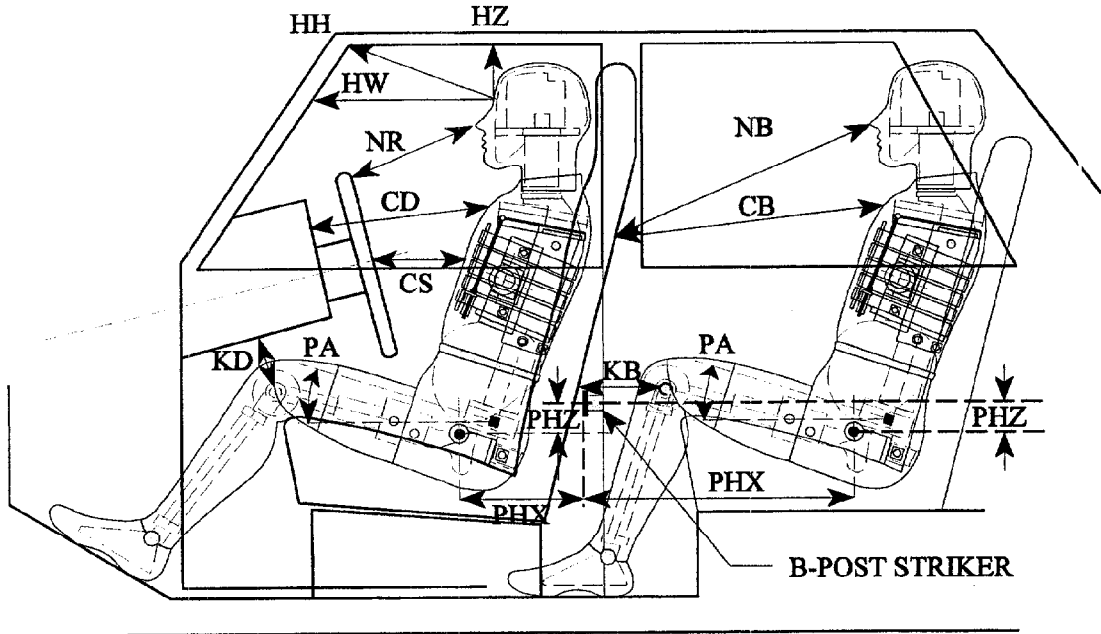
S = Left Side Length

DATA SHEET 7

SID LONGITUDINAL CLEARANCE DIMENSIONS

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501



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	355	N/A
HW	590	N/A
HZ	175	188
NR/NB	460	630
CD/CB	525	540
CS	285	N/A
KDL(KDA°)/KBL(KDA°)	167 / (28°)	222 / (25°)
KDR(KBA°)/KBR(KBA°)	172 / (28°)	229 / (24°)
PA°	23.9 °	24.0 °
PHX	184	251
PHZ	108	259

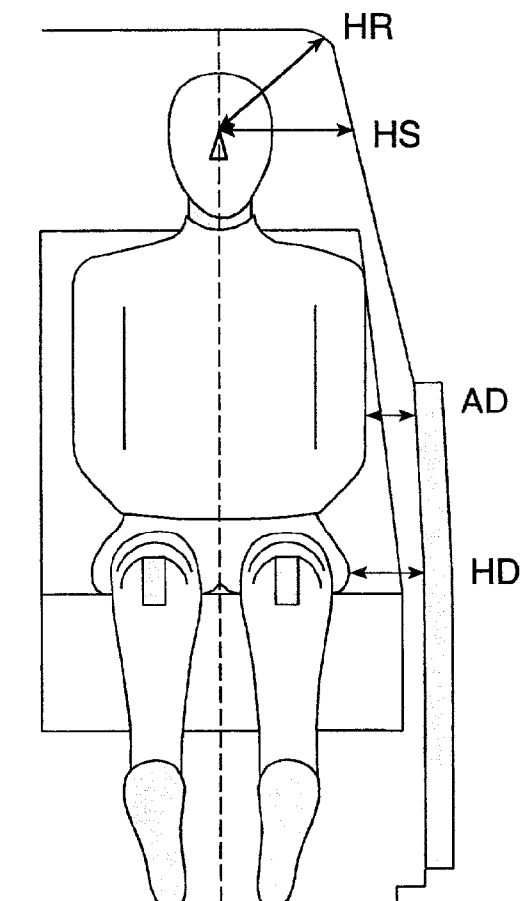
Note: 2-door vehicle shown. Rear dummy PHX & PHZ measurements for 4-door vehicle would use the C-post striker as a reference point.

DATA SHEET 8

SID LATERAL CLEARANCE DIMENSIONS

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501



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

	DRIVER ID # <u>015</u>		LEFT REAR PASS. ID # <u>016</u>	
HR	192		206	
HS	315		250	
AD*	LOWER: 122	UPPER: 106	LOWER: 155	UPPER: 126
HD	135		175	

* 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.

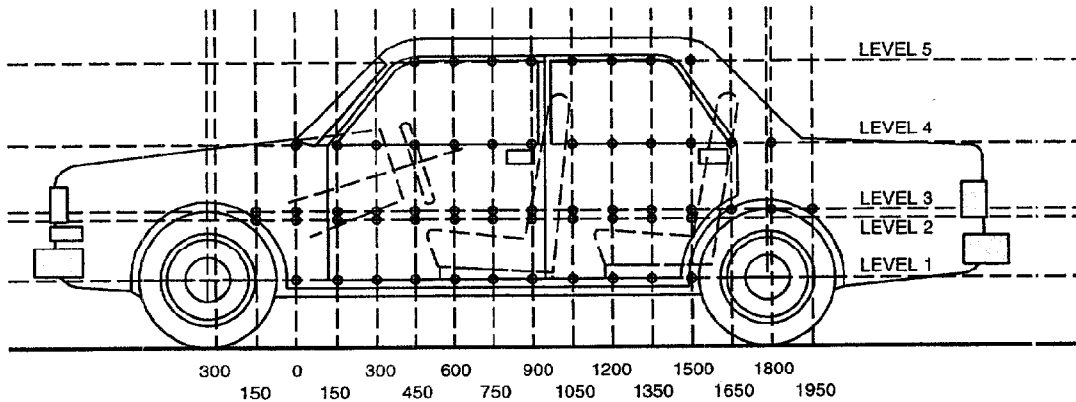
Upper measurement is taken laterally at the center of the upper rib accelerometer height from the SID arm segment to the closest part of the vehicle side.

DATA SHEET 9

VEHICLE SIDE MEASUREMENTS

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501



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>1380</u>	millimeters
Level 4 @ Window Sill	=	<u>810</u>	millimeters
Level 3 @ Mid Door	=	<u>575</u>	millimeters
Level 2 @ Occupant H-Point	=	<u>490</u>	millimeters
Level 1 @ Sill Top Height	=	<u>270</u>	millimeters

DATA SHEET 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501

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

		DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT																											
LEVEL	HEIGHT (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	270																												
SIDE		189	--	--	--	--	--	174	175	182	184	189	191	189	193	191	197	192	191	183	--	--	--	--	--	164	174	195	
SILL		204	--	--	--	--	--	--	188	227	251	260	266	275	282	303	283	268	263	254	228	--	--	--	--	--	190	201	231
LEVEL 2	490																												
H		15	N/A	N/A	N/A	N/A	N/A	14	52	69	76	77	84	93	110	92	71	71	63	45	N/A	N/A	N/A	N/A	N/A	N/A	26	27	36
POINT		195	165	--	--	--	--	--	152	141	136	142	145	141	140	144	142	137	138	140	146	145	--	--	--	--	151	181	194
LEVEL 3	575																												
MTD		178	148	--	--	--	--	--	168	260	303	325	353	377	387	379	382	384	378	373	327	245	--	--	--	--	189	221	215
DOOR		-17	-17	N/A	N/A	N/A	N/A	N/A	16	119	167	183	208	236	247	235	240	247	240	233	181	100	N/A	N/A	N/A	N/A	N/A	38	40
LEVEL 4	810																												
WINDOW		191	177	--	--	--	--	141	139	139	136	137	135	134	133	133	134	141	140	140	148	145	--	--	--	154	170	186	202
SILL		213	181	--	--	--	--	164	159	229	277	302	323	344	359	349	373	376	386	388	359	262	--	--	--	178	199	225	243
LEVEL 5	1380																												
WINDOW		22	4	N/A	N/A	N/A	N/A	23	20	90	141	165	188	210	226	216	239	235	246	248	211	117	N/A	N/A	N/A	24	29	39	41
TOP		355	314	272	234	216	201	192	187	181	174	169	160	160	159	159	160	160	160	161	164	169	174	174	180	194	201	211	225
LEVEL 6	1380																												
WINDOW		364	307	272	235	221	203	198	217	275	312	328	338	340	346	384	413	427	399	347	286	185	198	220	230	231	234	255	
TOP		9	-7	0	1	5	2	6	30	94	138	159	178	180	187	225	253	267	238	183	117	11	24	40	36	30	23	30	
LEVEL 7	1380																												
WINDOW		--	--	--	--	--	--	--	--	--	--	--	--	--	--	510	496	489	486	488	487	489	497	506	505	523	--	--	
TOP		--	--	--	--	--	--	--	--	--	--	--	--	--	--	499	500	490	492	498	497	488	492	494	507	510	528	--	--
LEVEL 8	1380																												
WINDOW		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-11	4	1	6	12	9	1	3	3	1	5	5	N/A	N/A
TOP		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

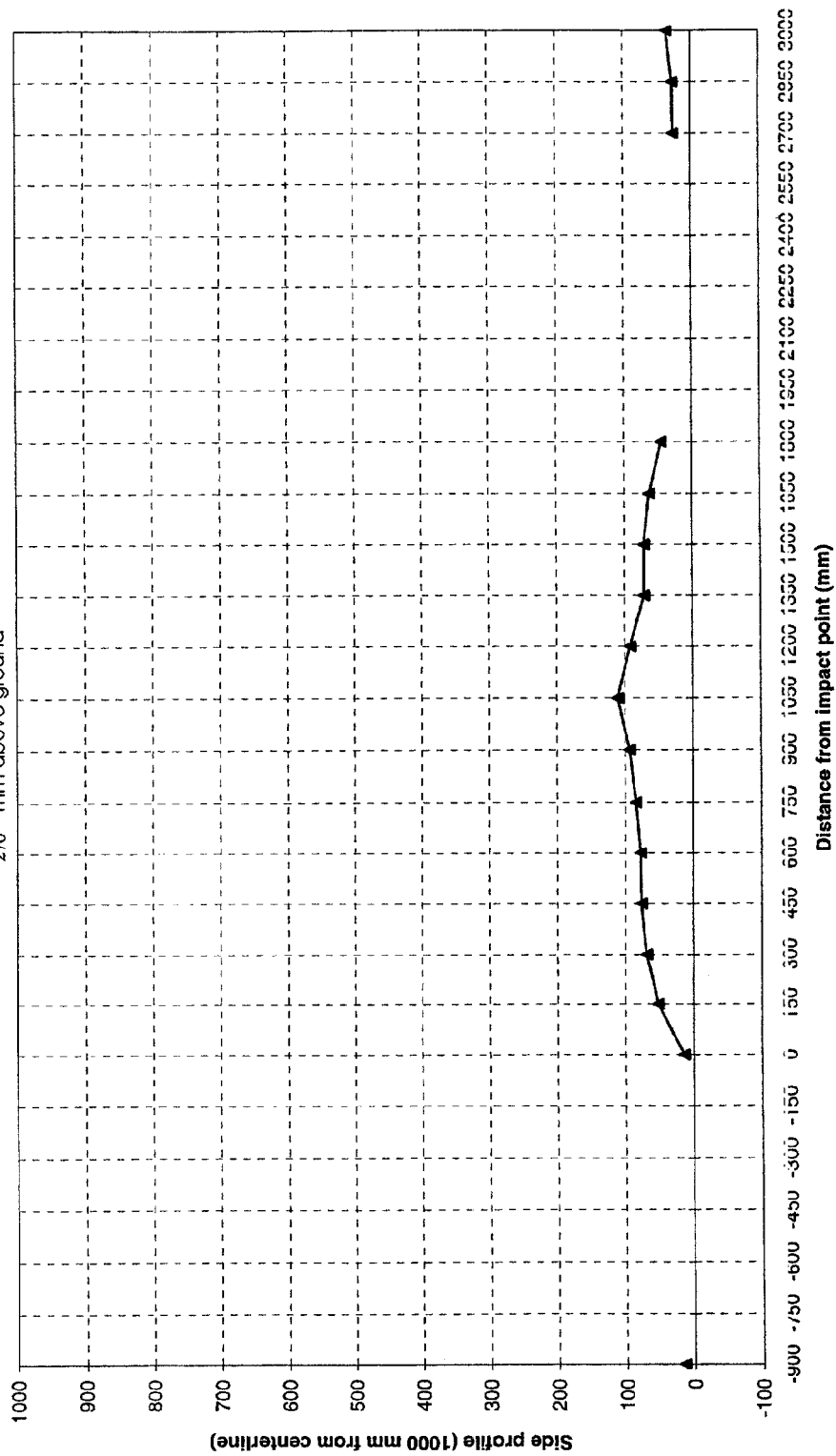
Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501

→ CRUSH

SIDE PROFILE LEVEL 1

270 mm above ground

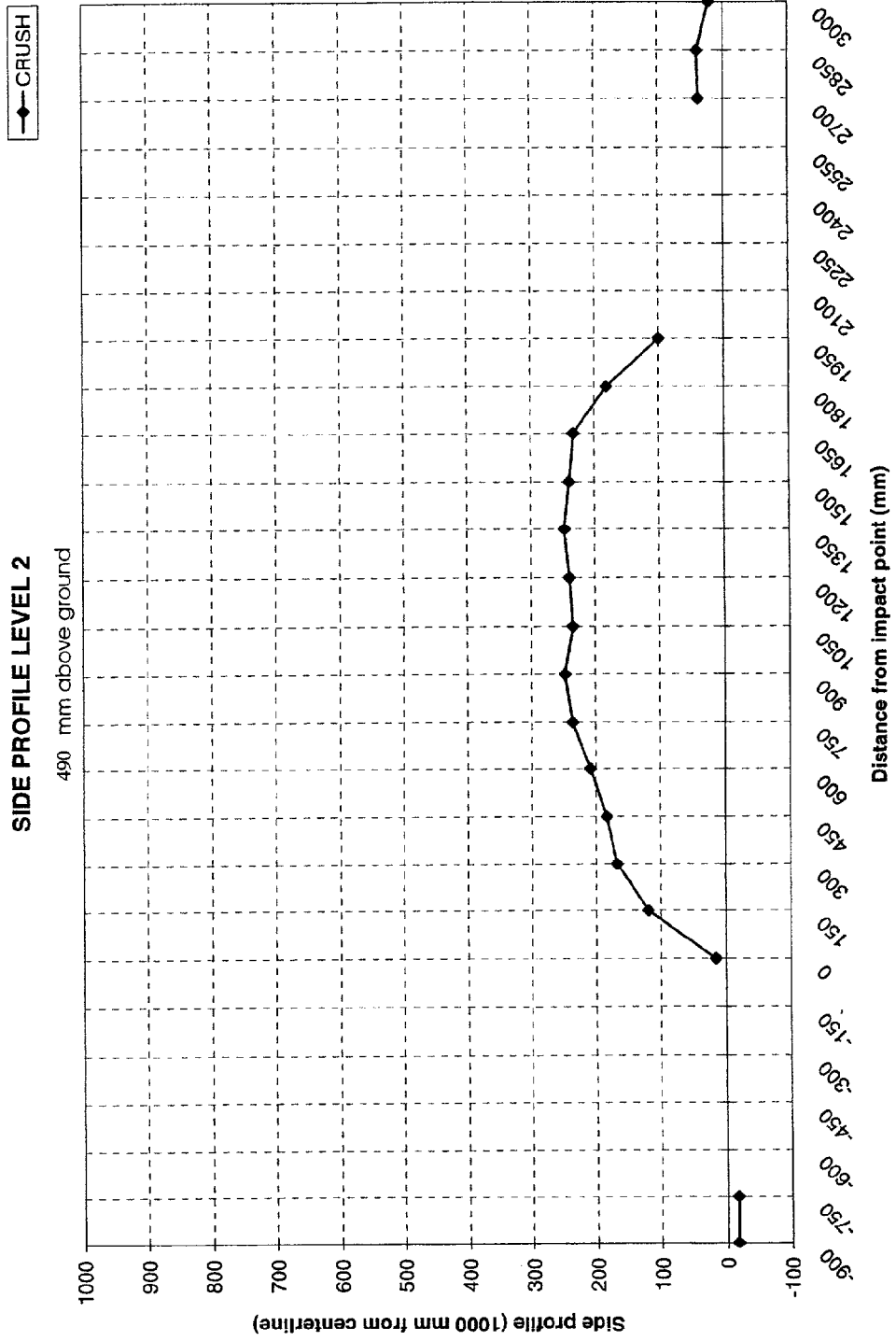


DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501

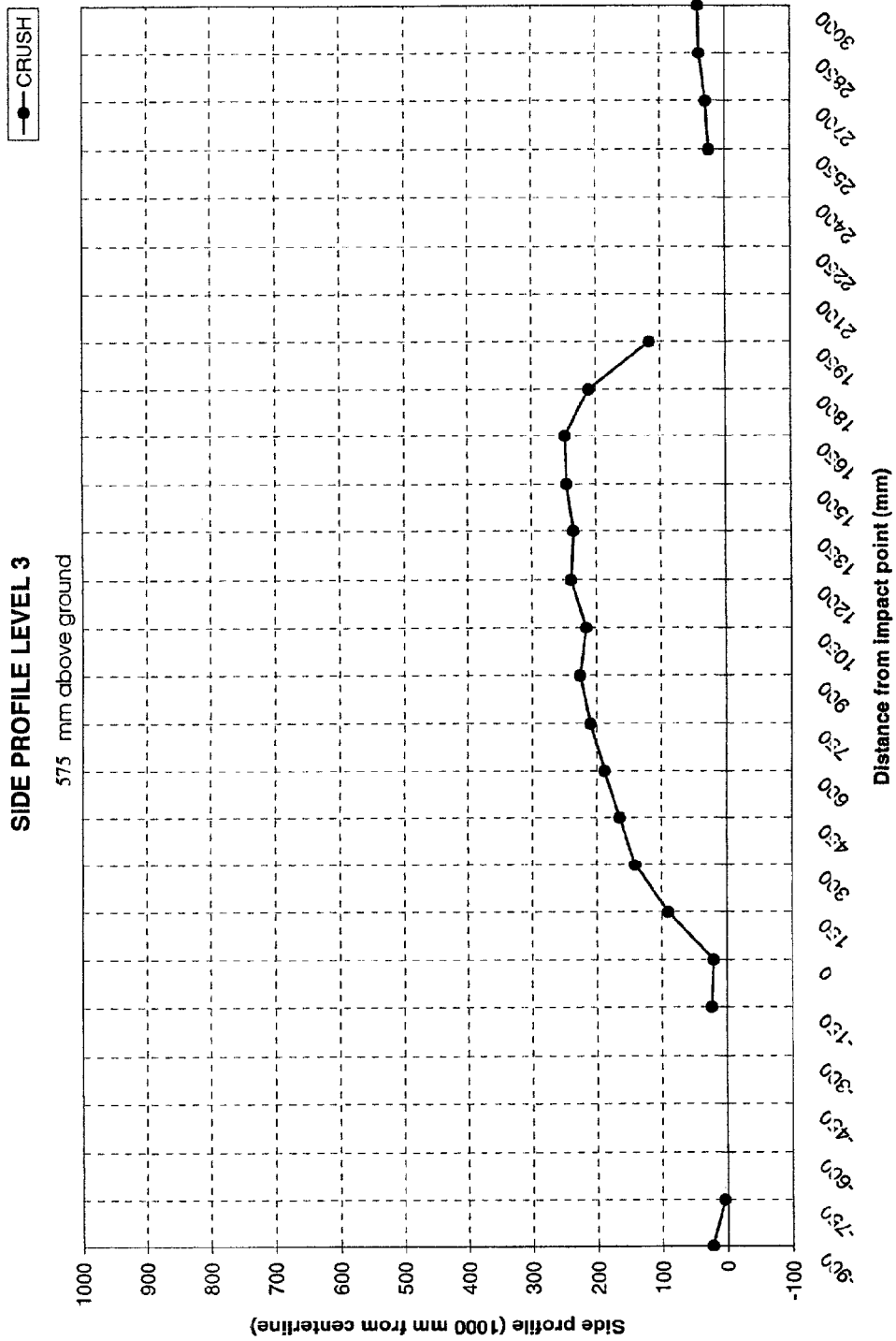


DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501

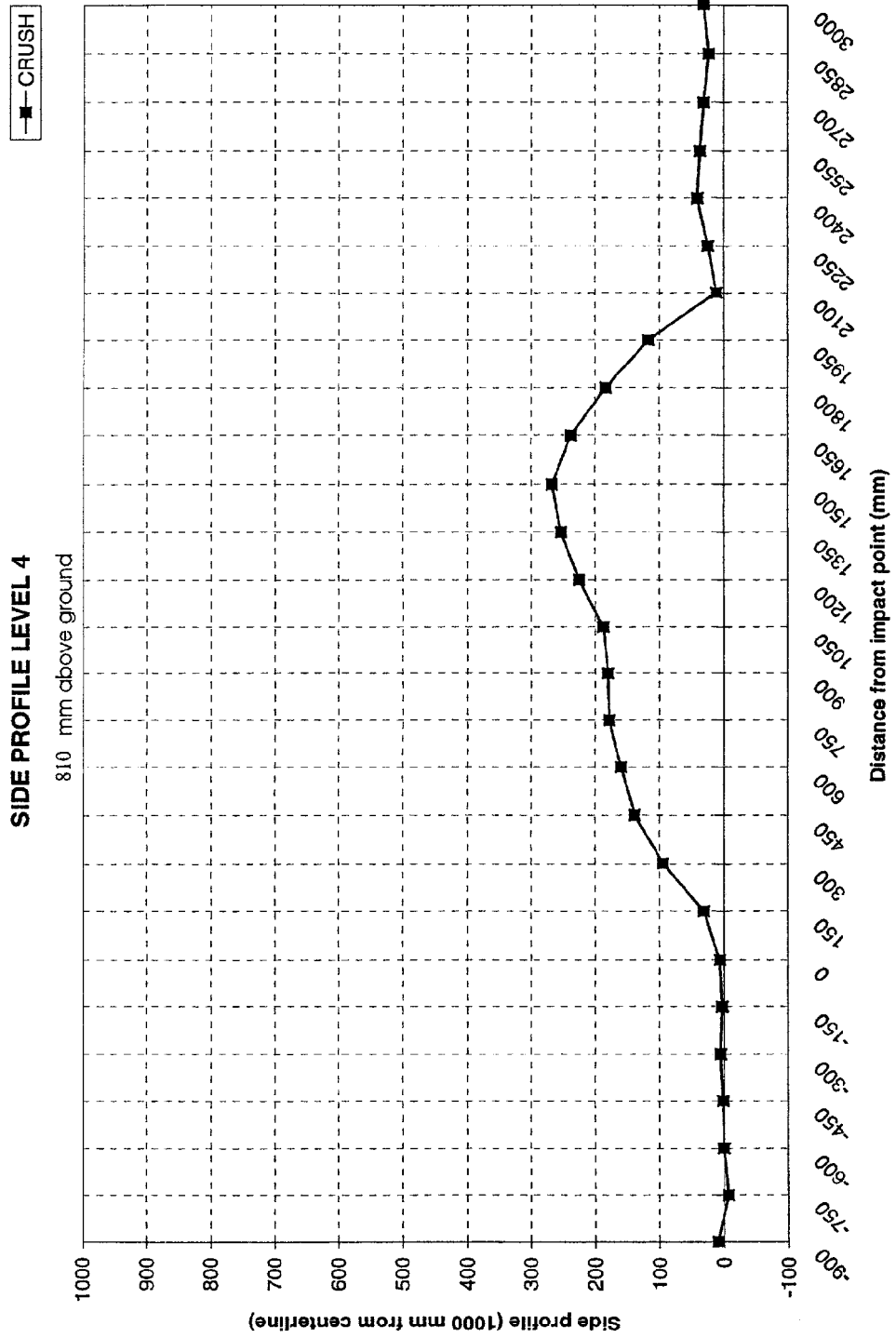


DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501

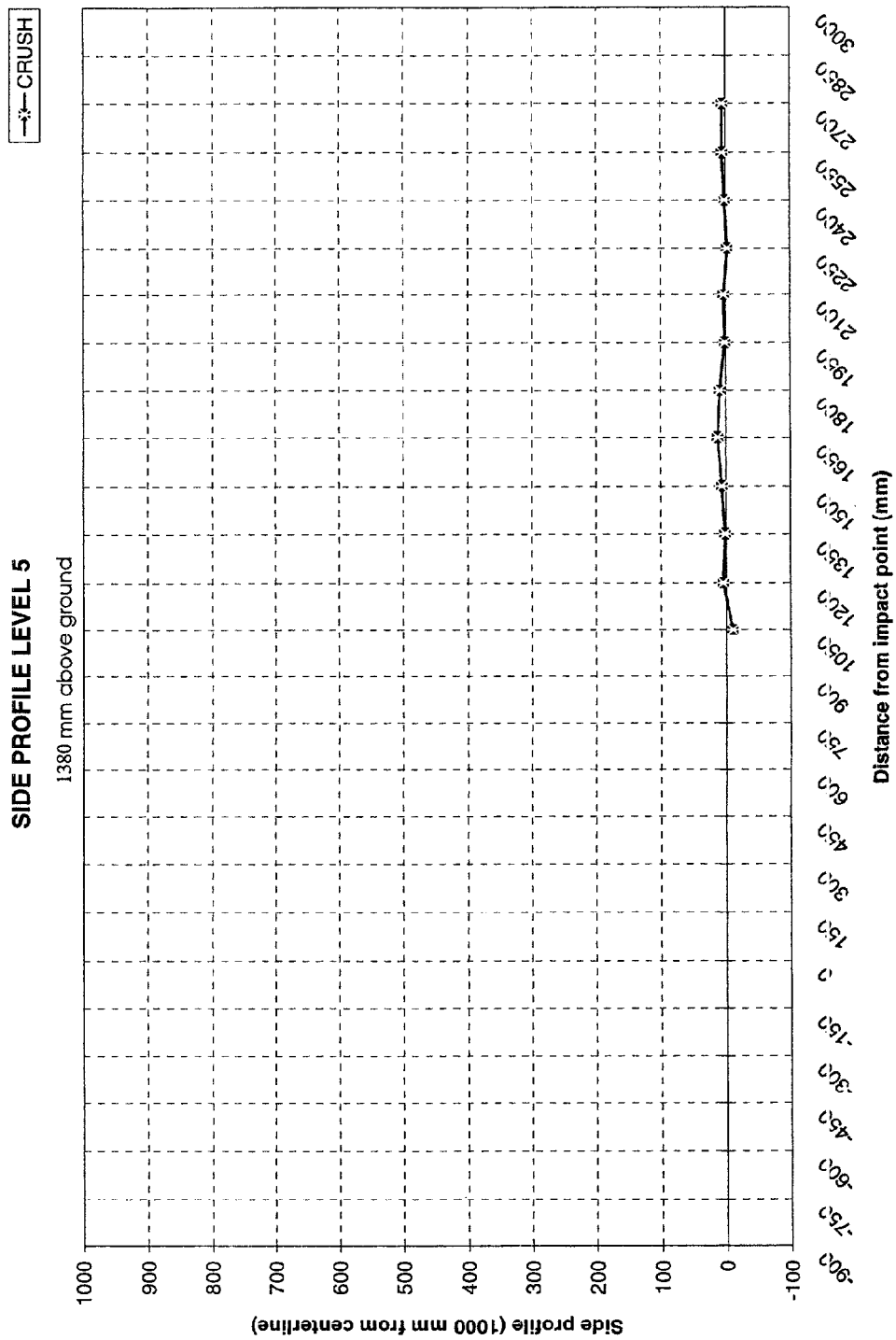


DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501

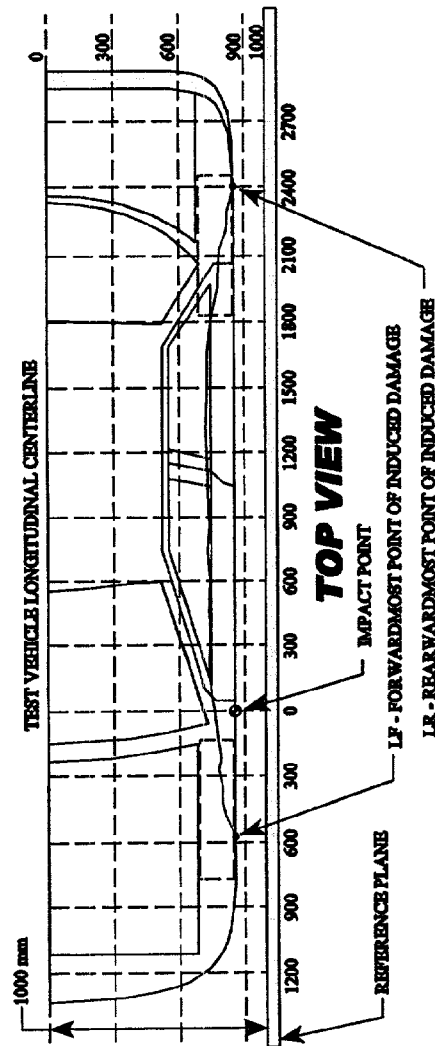


DATA SHEET 11

VEHICLE DAMAGE PROFILE DISTANCES

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501



MEASUREMENT CONVENTIONS:
 Forward of the impact point (towards front of vehicle) is considered negative (-).
 Rearward of the impact point (toward 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 = 2100 mm)	185	174	11
2	1680	389	162	227
3	1260	383	140	243
4	840	383	140	243
5	420	321	141	180
6	(LF = 0 mm)	159	139	20

DATA SHEET 12

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

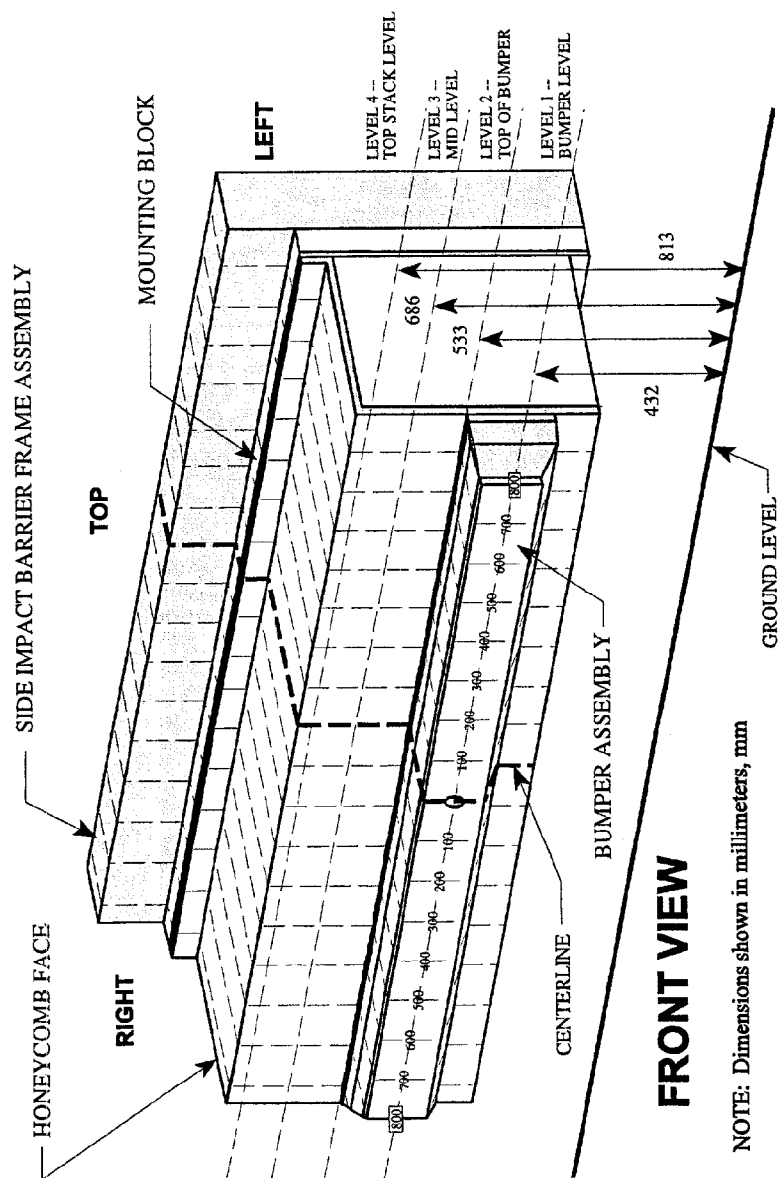
Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501

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

		DISTANCE RIGHT OF CENTER (mm)																DISTANCE LEFT OF CENTER (mm)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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LEVEL	HEIGHT AT CL (mm)*																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
LEVEL 4 TOP STACK	813	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	

EXTERIOR STATIC CRUSH FOR IMPACTOR FACE



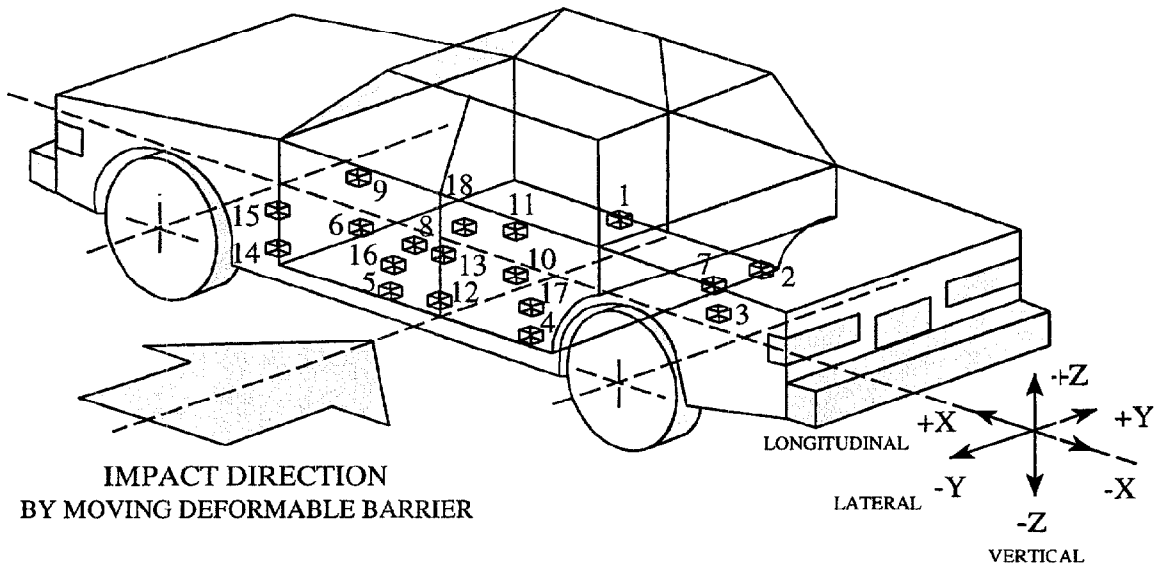
NOTE: Dimensions shown in millimeters, mm

DATA SHEET 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501



- 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 Subaru Legacy

NHTSA No. CY5501

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	3010	613	265	pos. 3.1 neg. -5.7	62.2 10.7	36.9 -1.7	6.8 135.1	4.4 -10.4	31.2 8.3	38.0 0.0	6.9 -32.7
2	Right Side Sill at Rear Seat	2165	611	265	pos. 3.2 neg. -4.6	61.7 10.5	29.1 -1.6	6.9 108.7	3.5 -7.3	29.1 8.4	29.8 0.0	6.9 -30.7
3	Rear Floorpan Above Axle	1122	0	540	pos. 2.8 neg. -5.6	62.4 25.5	23.6 -1.5	6.8 108.0	15.0 -4.9	9.0 18.1	24.0 0.0	6.9 -40.3
4	Left Side Sill at Rear Seat	2165	-650	240	pos. - neg. -	- -	41.9 -9.8	3.3 35.2	- -	- -	- -	- -
5	Left Side Sill at Front Seat	3173	-692	278	pos. - neg. -	- -	44.0 -7.4	4.5 31.6	- -	- -	- -	- -
6	Left Front Door on Centerline	-	-	-	pos. - neg. -	- -	- -	- -	- -	- -	- -	- -
7	Right Rear Occupant Compartment	2174	418	200	pos. - neg. -	- -	29.2 -1.5	6.9 108.4	- -	- -	- -	- -
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) Y - Vehicle Centerline (+ To Right) Z - Ground Level (+ Up)

** Accelerometer was not requested by COTR.

DATA SHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501

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)	Max (g)	Time (msec)
12	Left Lower B-Pillar	2271	-665	330	pos.	-	145.9	5.7	-	-	-	-
					neg.	-	-130.7	31.4	-	-	-	-
13	Left Middle B-Pillar	2250	-665	665	pos.	-	135.0	3.6	-	-	-	-
					neg.	-	-67.5	27.7	-	-	-	-
14	Left Lower A-Pillar	3313	-700	560	pos.	-	54.5	3.8	-	-	-	-
					neg.	-	-10.9	8.3	-	-	-	-
15	Left Middle A-Pillar	3785	-245	810	pos.	-	14.8	30.8	-	-	-	-
					neg.	-	-3.0	85.5	-	-	-	-
16	Front Seat Track	2468	-580	270	pos.	-	39.1	17.0	-	-	-	-
					neg.	-	-16.2	31.8	-	-	-	-
17	Rear Seat Track	1285	-545	620	pos.	-	*	*	-	-	-	-
					neg.	-	*	*	-	-	-	-
18	Vehicle CG	2744	-38	460	pos.	9.4	39.6	22.9	42.5	26.9	51.5	27.2
					neg.	-12.1	-32.2	34.2	-36.7	19.9	0.0	-15.8

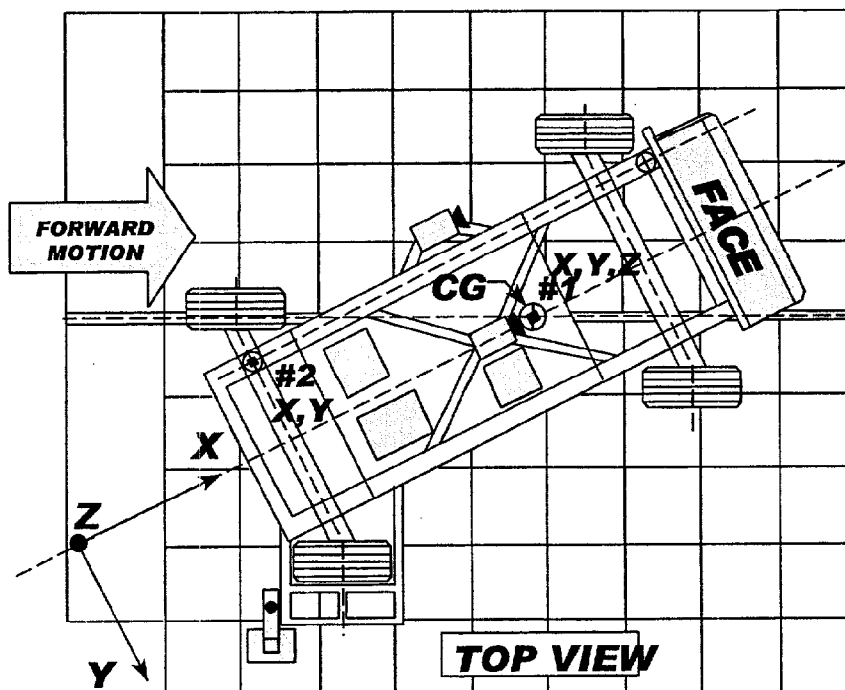
*Reference: X - Rear Bumper (+ Forward) Y - Vehicle Centerline (+ To Right) Z - Ground Level (+ Up) *Did not record

DATA SHEET 14

MDB ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501



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	1.1	100.1	-21.6	43.1
	Lateral..... Y				3.8	69.2	-8.6	32.7
	Vertical..... Z				9.4	61.7	-13.4	20.2
	Resultant..... R				23.6	33.1	-	-
2	Rear Frame Member							
	Longitudinal... X	386	-660	660	1.8	91.7	-21.5	50.8
	Lateral..... Y				4.3	28.1	-2.3	68.2

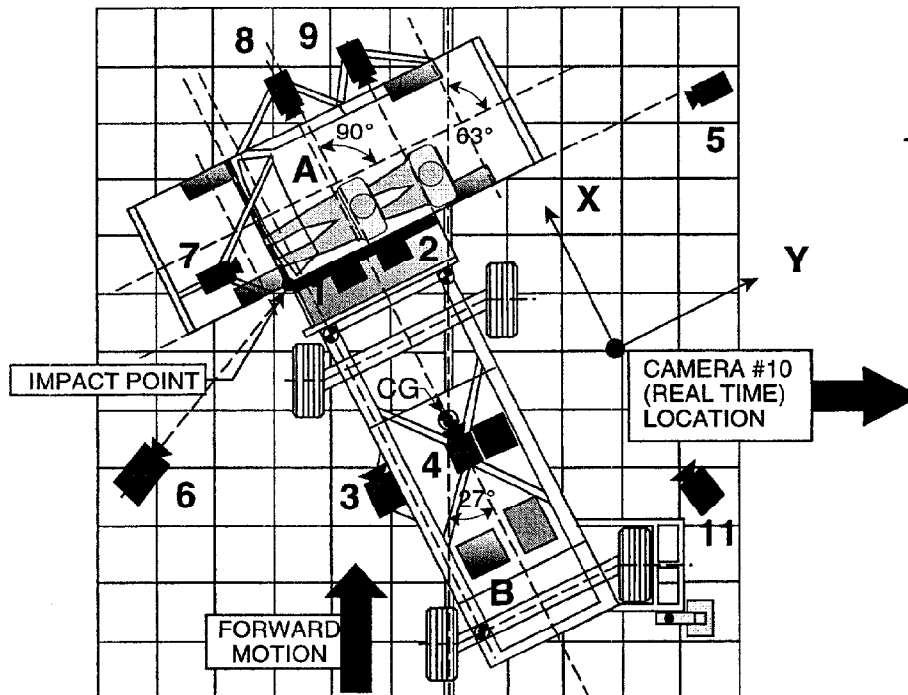
*Reference: X = Rear Bumper (+ Forward)
Y = Vehicle Centerline (+ To Right)
Z = Ground Level (+ Up)
All measurements accurate to within ± 3 mm.

DATA SHEET 15

HIGH SPEED CAMERA LOCATIONS AND DATA SUMMARY

Vehicle: 2000 Subaru Legacy

NHTSA. No. CY5501



Camera No.	View	Coordinates (millimeters)			Angle (deg.)	Lens (mm)	Film Speed (fps)
		X*	Y*	Z*			
1	Overhead view of test vehicle	95	825	4880	-90	8	1005
2	Overhead closeup view of impact plane	225	884	4880	-90	12.5	1010
3	MDB onboard closeup view of impact point	-1470	0	847	0	13	1035
4	MDB onboard view of driver dummy	-1140	838	1586	-17	7.5	1045
5	Right side ground level overall view	293	8923	1094	-4	25	1025
6	Left side ground level overall view	-1046	-1596	1035	-6	13	1020
7	Test vehicle onboard driver front view	520	-256	1212	-14	13	990
8	Test vehicle onboard driver side view	1661	831	1018	-12	8	1010
9	Test vehicle onboard passenger side view	1662	1616	1025	-9	8	1015
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

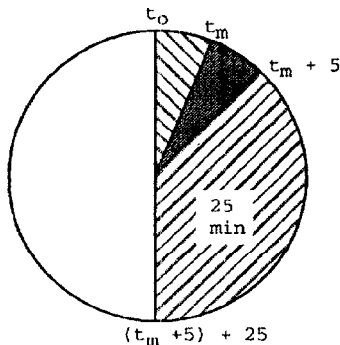
NHTSA No.: CY5501 TEST DATE: January 23, 2000

Vehicle Mfr./Make/Model : 2000 Subaru Legacy 4-Door Wagon

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 (62.28 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

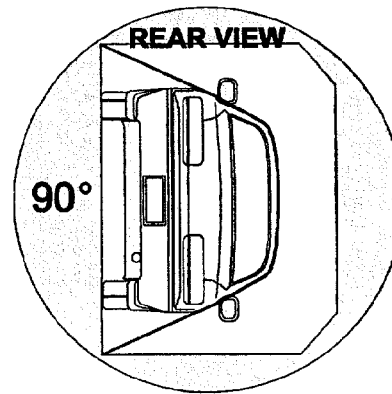
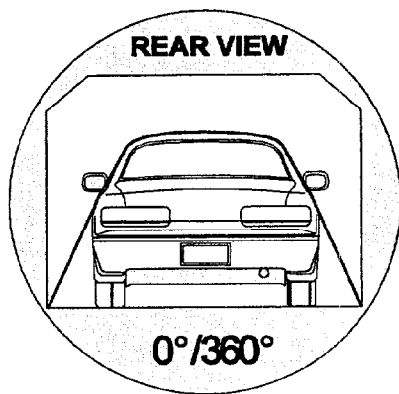
DATA SHEET 17

ROLLOVER DATA

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501

0 - 90 Degrees



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time	<u>1</u>	minutes	<u>30</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>30</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

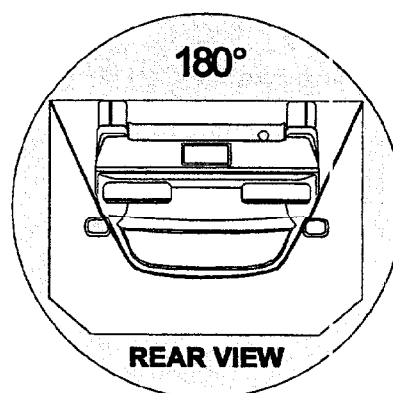
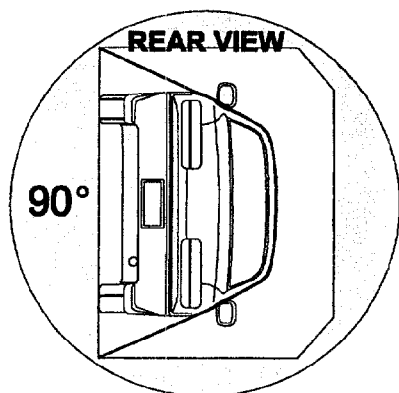
DATA SHEET 17 (continued)

ROLLOVER DATA

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501

90 - 180 Degrees



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time	<u>1</u>	minutes	<u>10</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>10</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

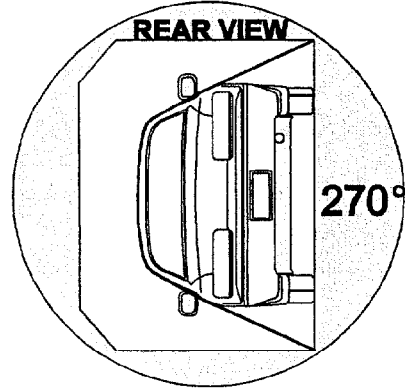
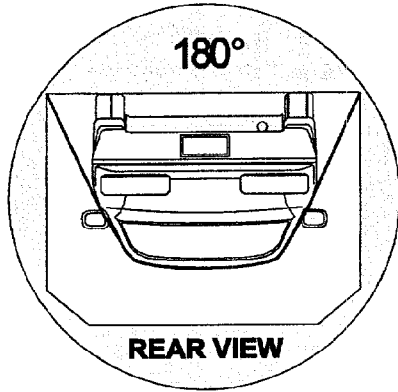
DATA SHEET 17 (continued)

ROLLOVER DATA

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501

180 - 270 Degrees



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time	<u>1</u> minutes <u>03</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>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

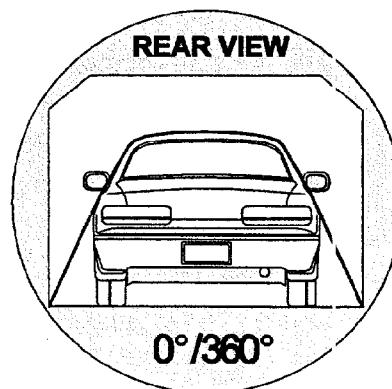
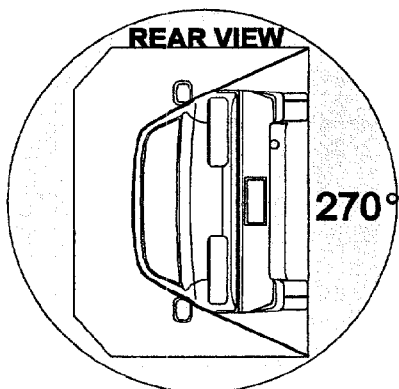
DATA SHEET 17 (continued)

ROLLOVER DATA

Vehicle: 2000 Subaru Legacy

NHTSA No. CY5501

270 - 360 Degrees



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time	<u>1</u> minutes <u>10</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>10</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

APPENDIX A

PHOTOGRAPHS

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



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



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



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

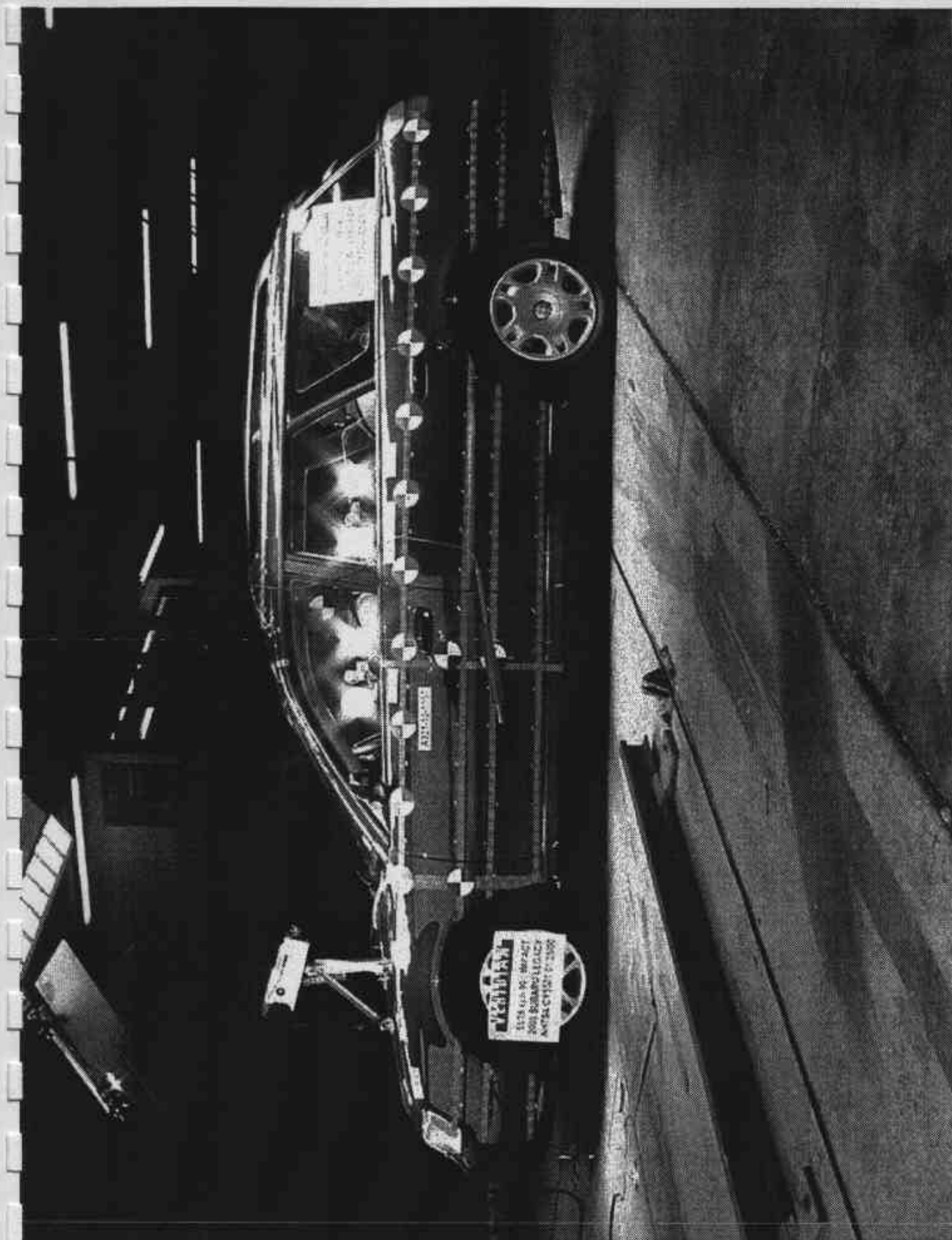


Figure A-5 PRE-TEST IMPACTED SIDE VIEW OF TEST VEHICLE

VERTICAL

VERTECH
1800 KENTON IMPACT
2800 SHELBY LEGACY
MILWAUKEE 57001012500

AL33-33-1117

11.11.11

11.11.11

11.11.11

AL33-33-1117

VERTECH
1800 KENTON IMPACT
2800 SHELBY LEGACY
MILWAUKEE 57001012500

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

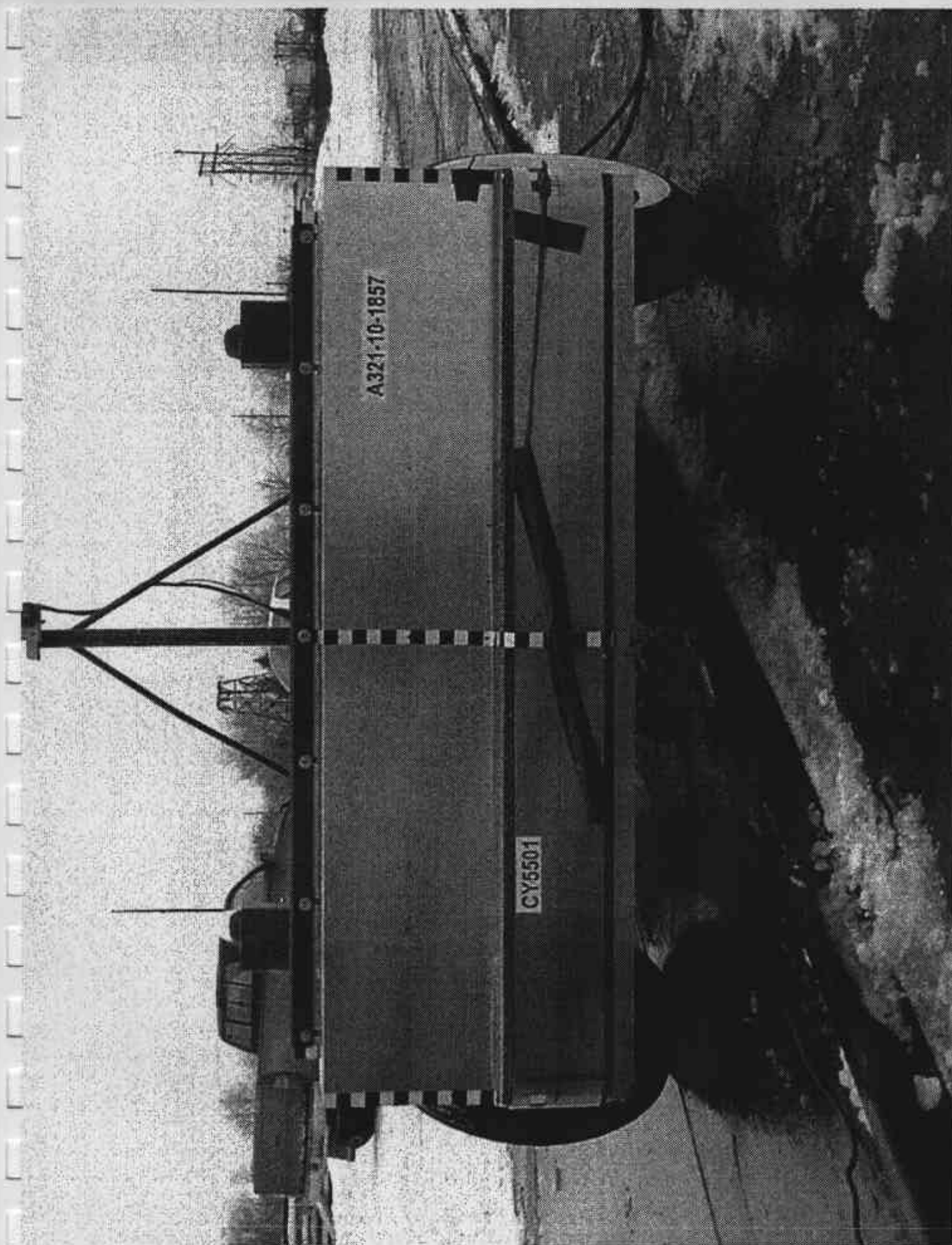


Figure A-7 PRE-TEST FRONTAL VIEW OF IMPACTOR FACE

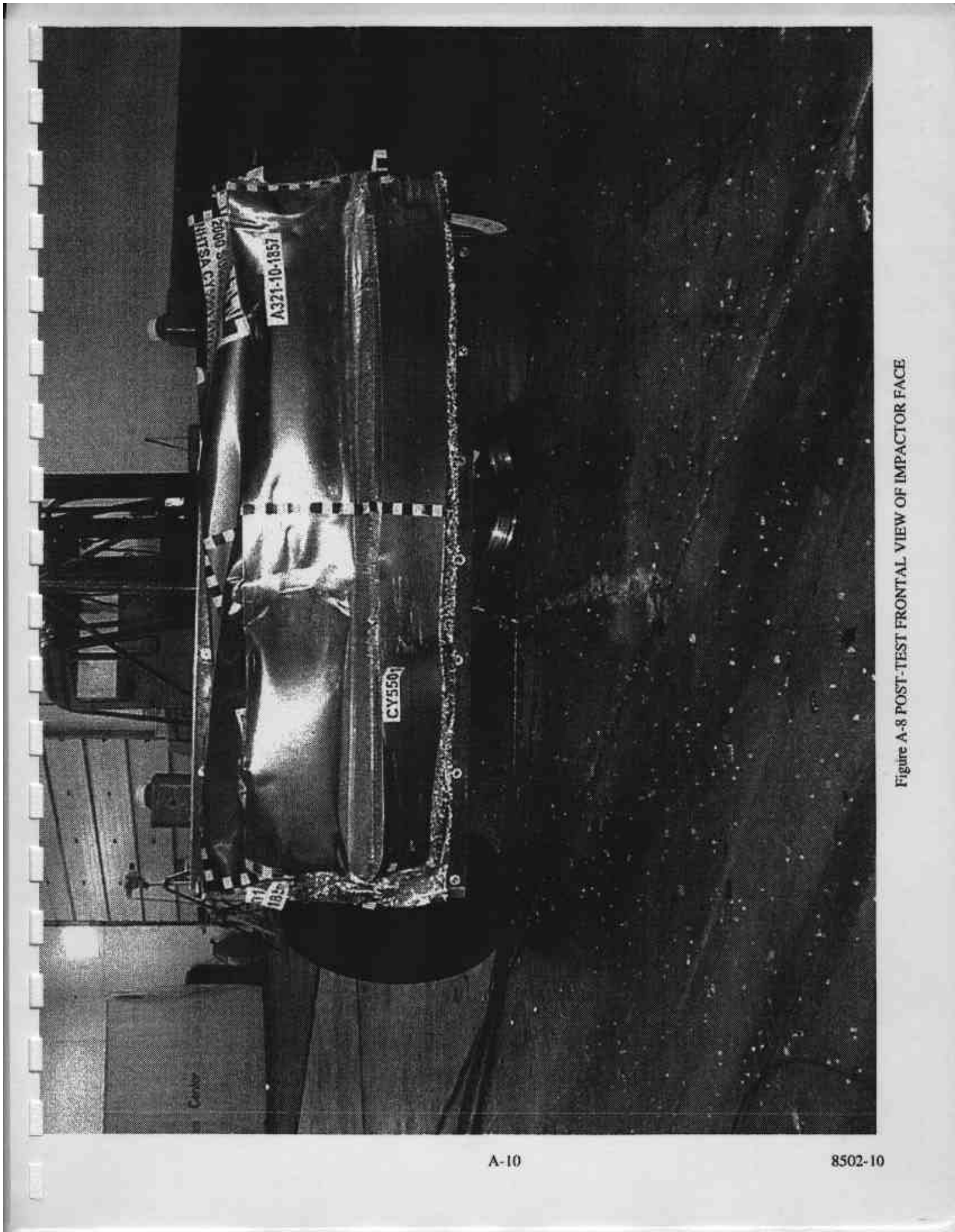


Figure A-8 POST-TEST FRONTAL VIEW OF IMPACTOR FACE

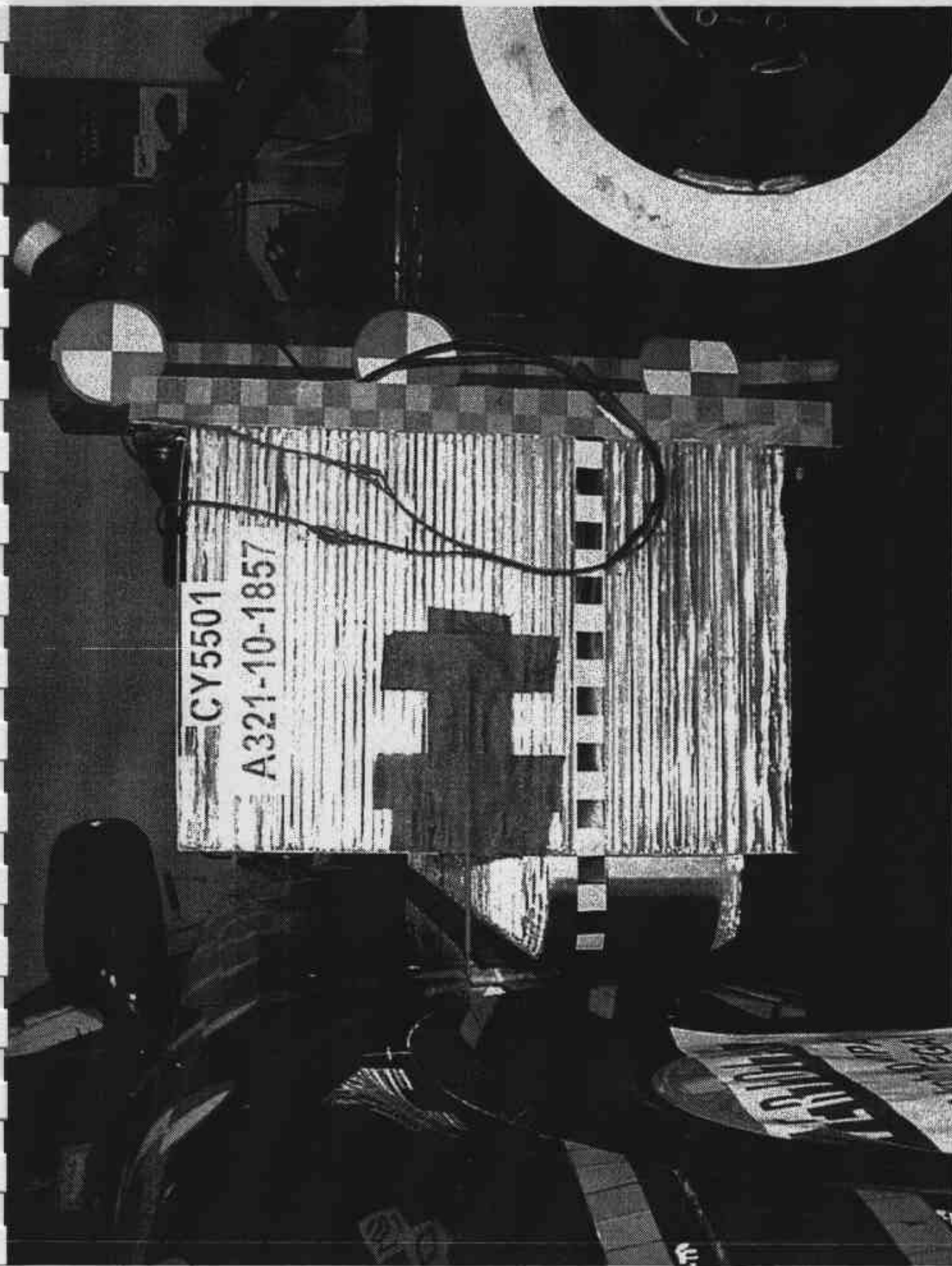


Figure A-9 PRE-TEST LEFT SIDE VIEW OF IMPACTOR FACE

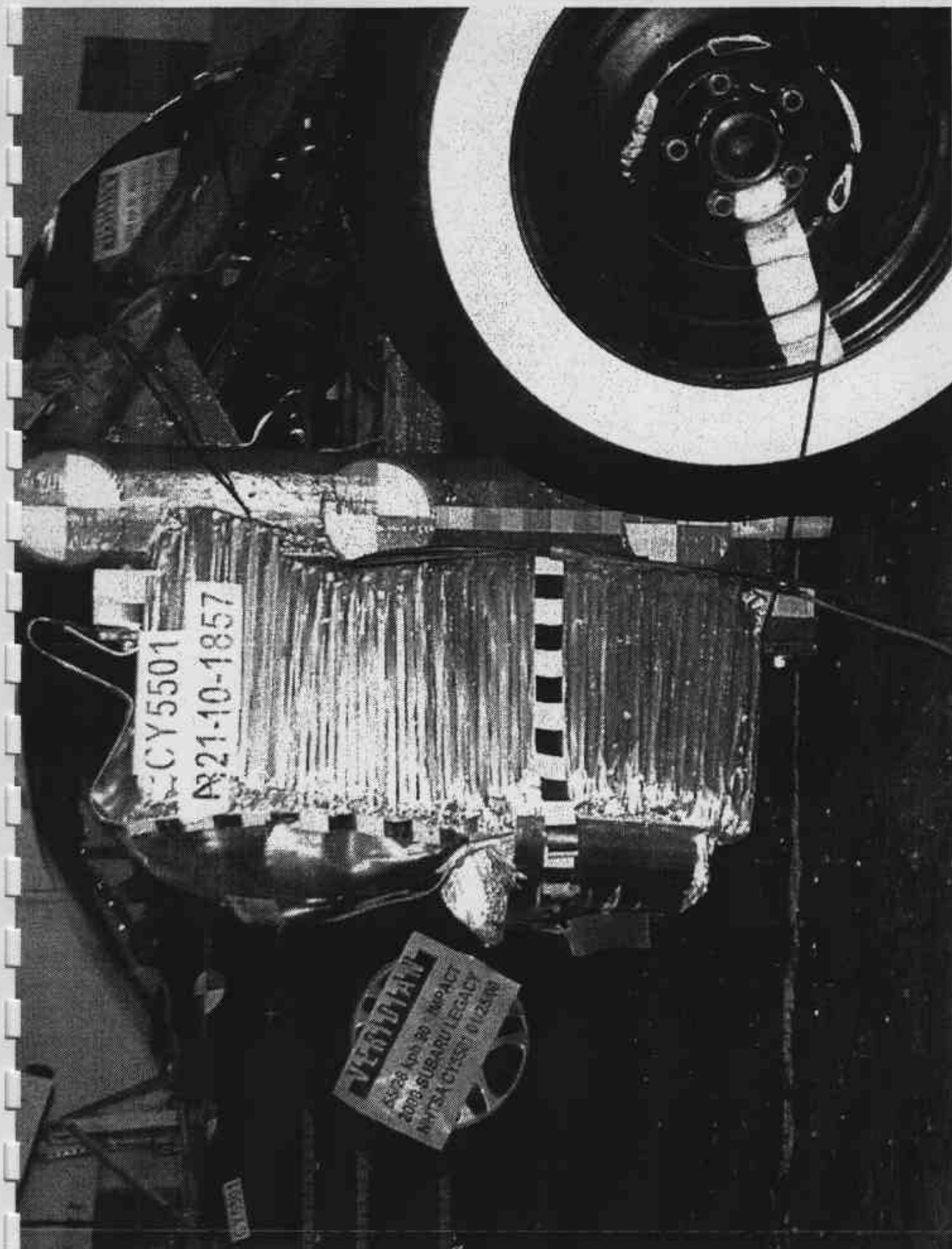


Figure A-10 POST-TEST LEFT SIDE VIEW OF IMPACTOR FACE



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



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

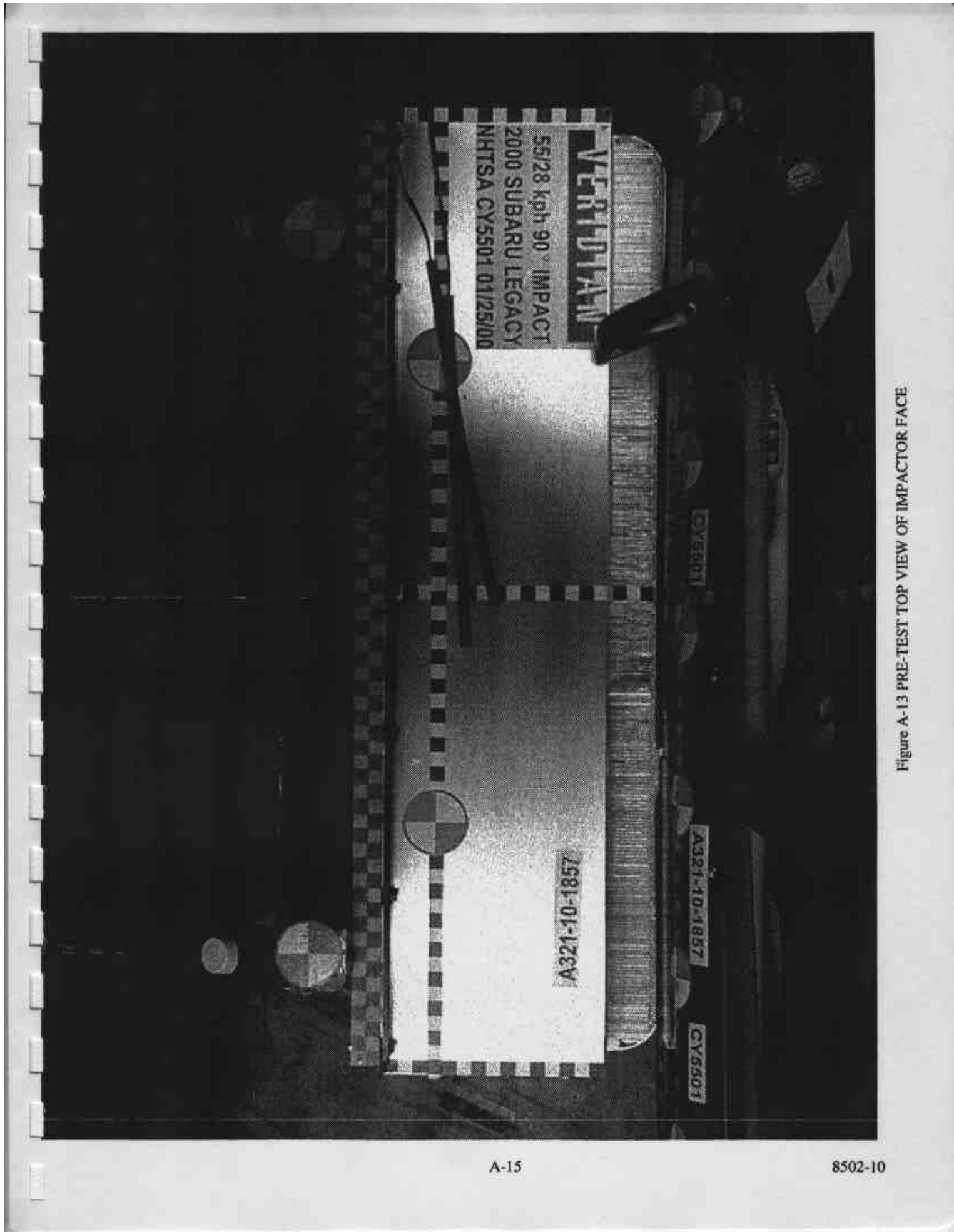


Figure A-13 PRE-TEST TOP VIEW OF IMPACTOR FACE



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

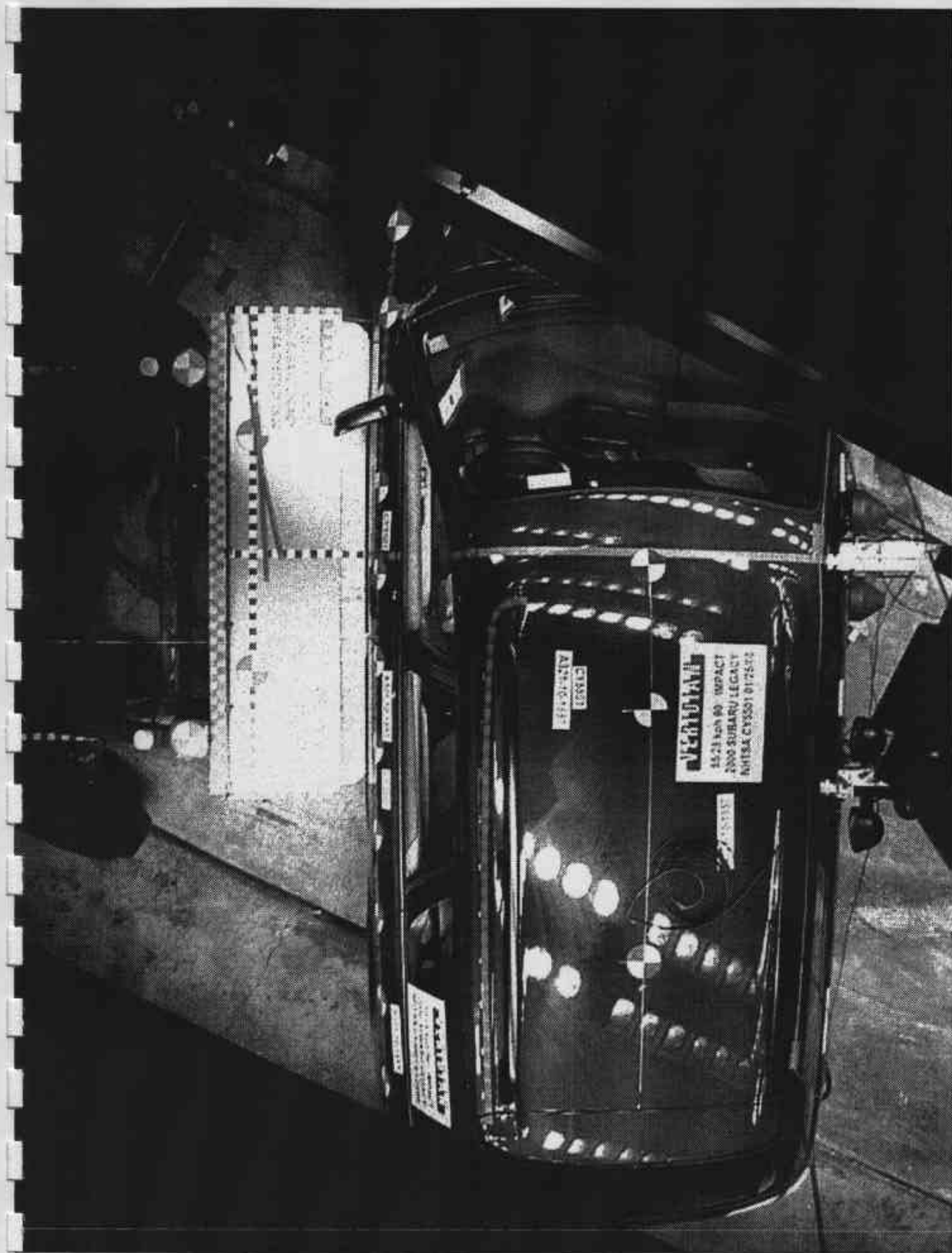


Figure A-15 PRE-TEST OVERHEAD VIEW OF ALIGNED MDB AND VEHICLE



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

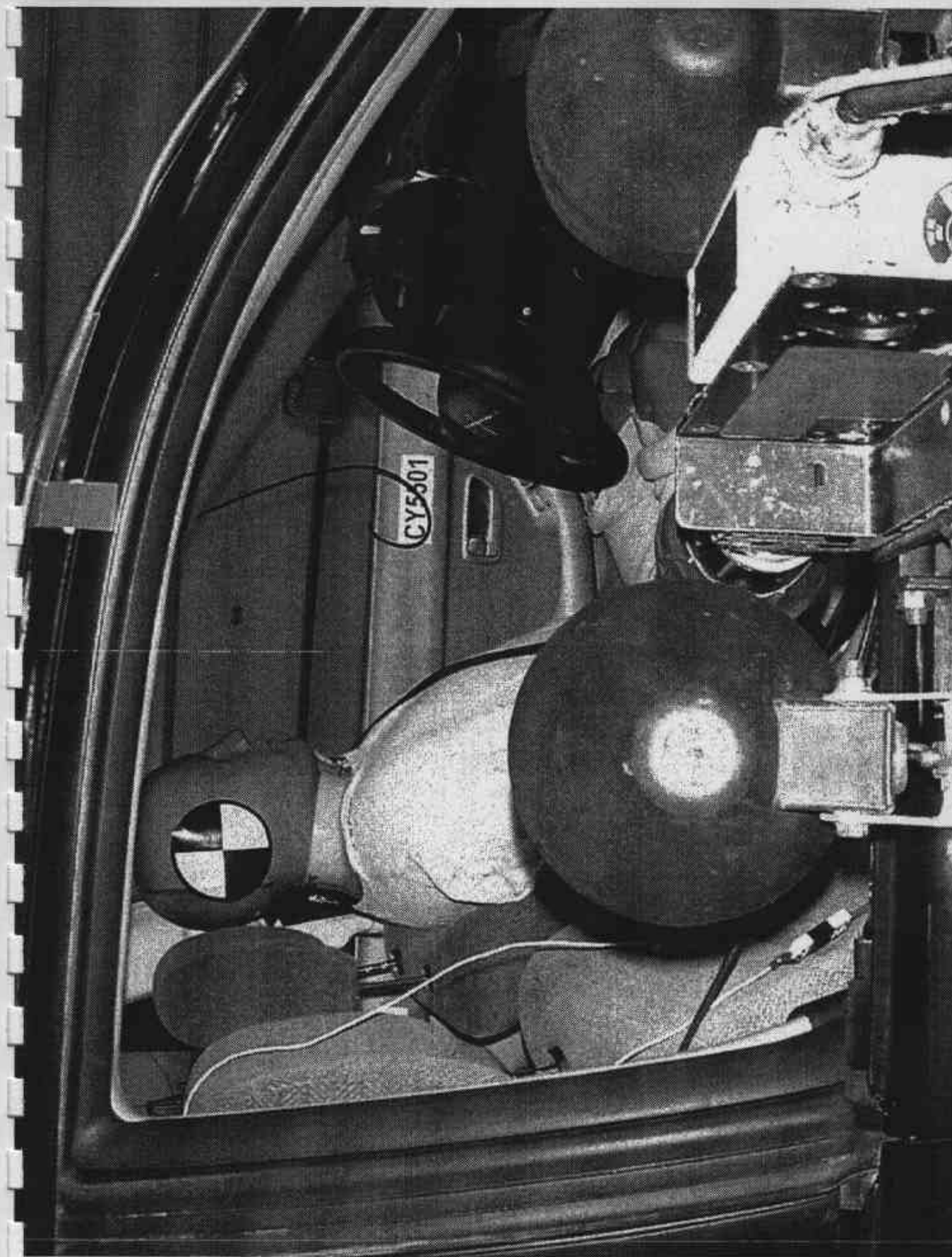


Figure A-17 PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID

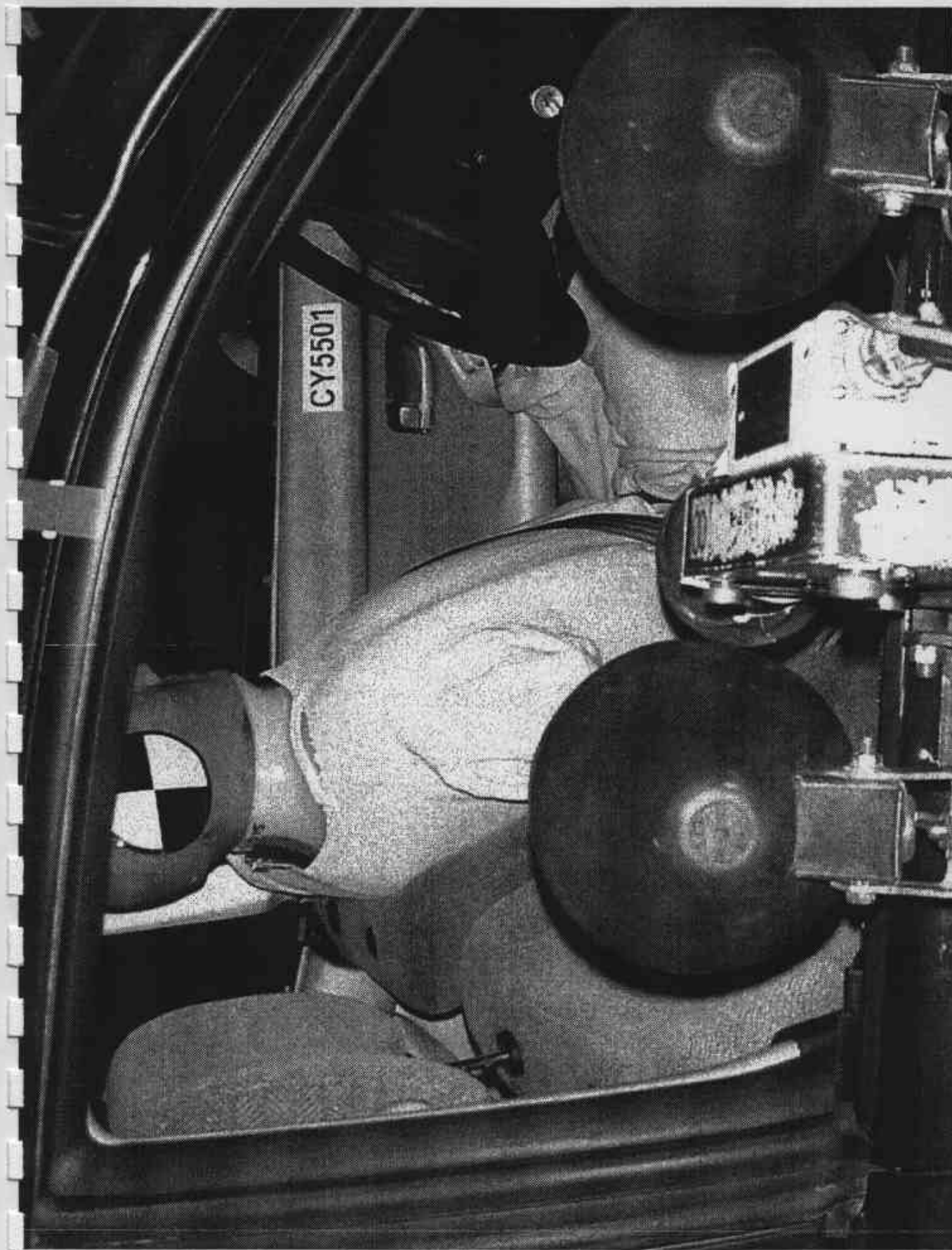


Figure A-18 POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID



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

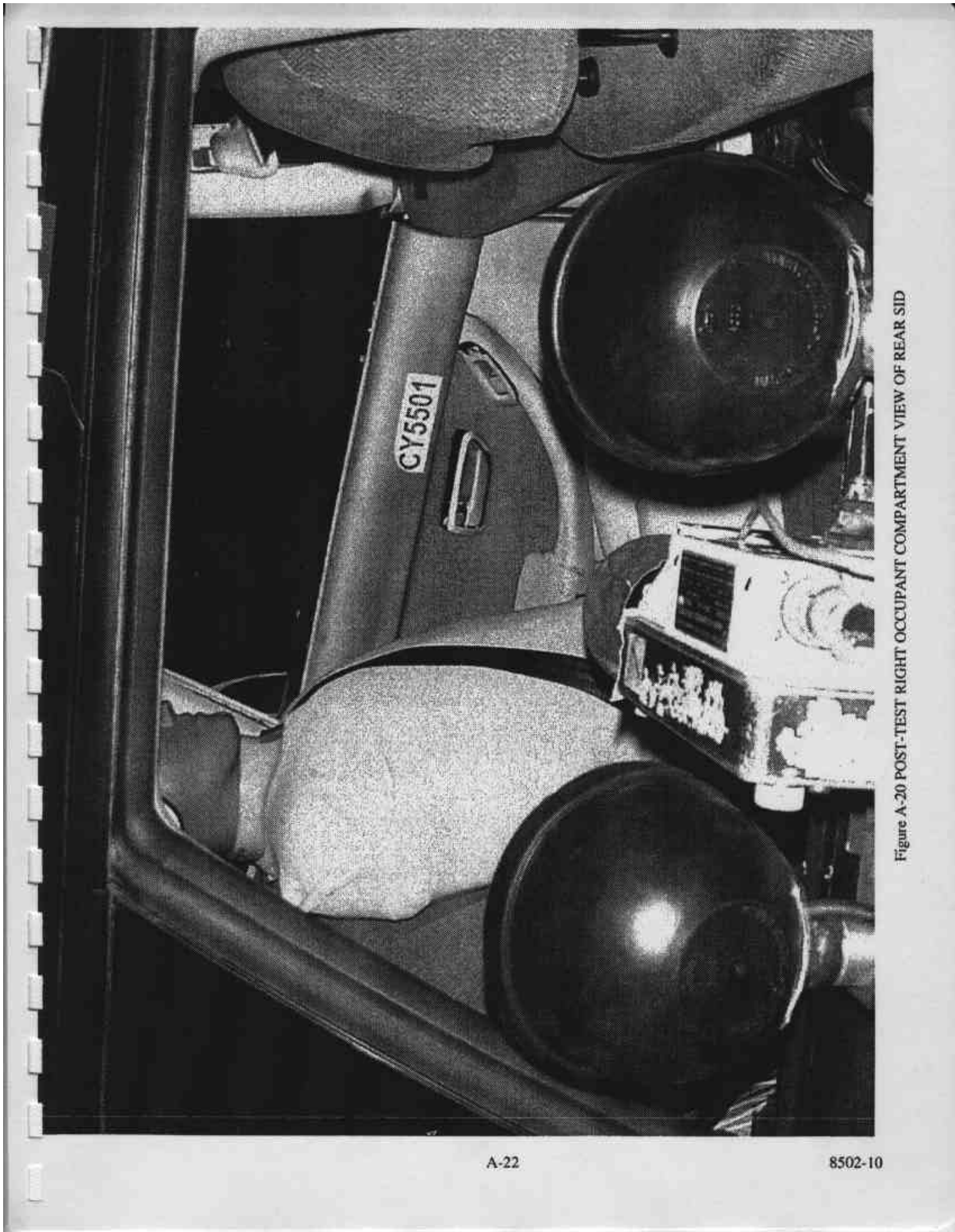


Figure A-20 POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF REAR SID



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

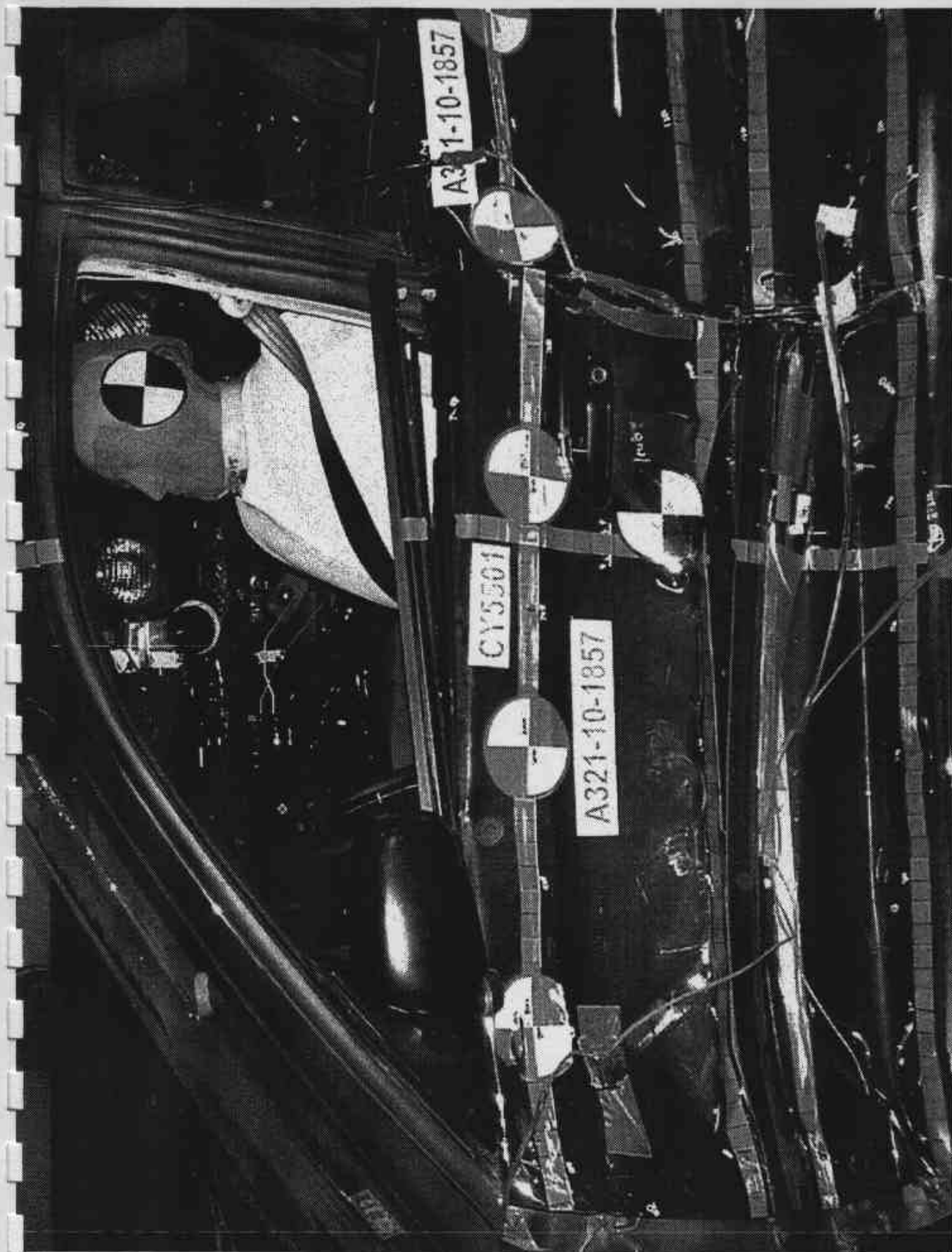


Figure A-22 POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID

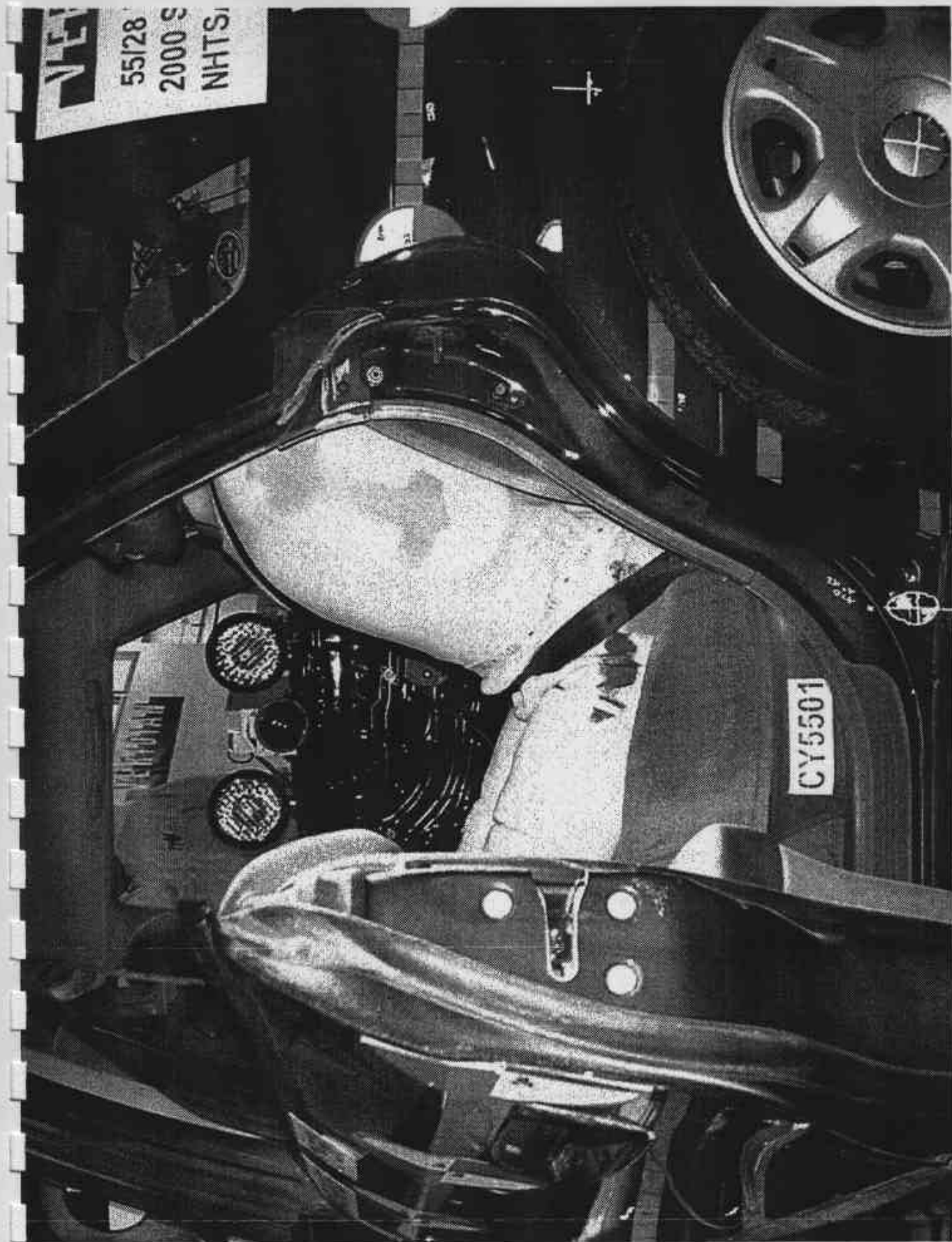


Figure A-23 PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SID

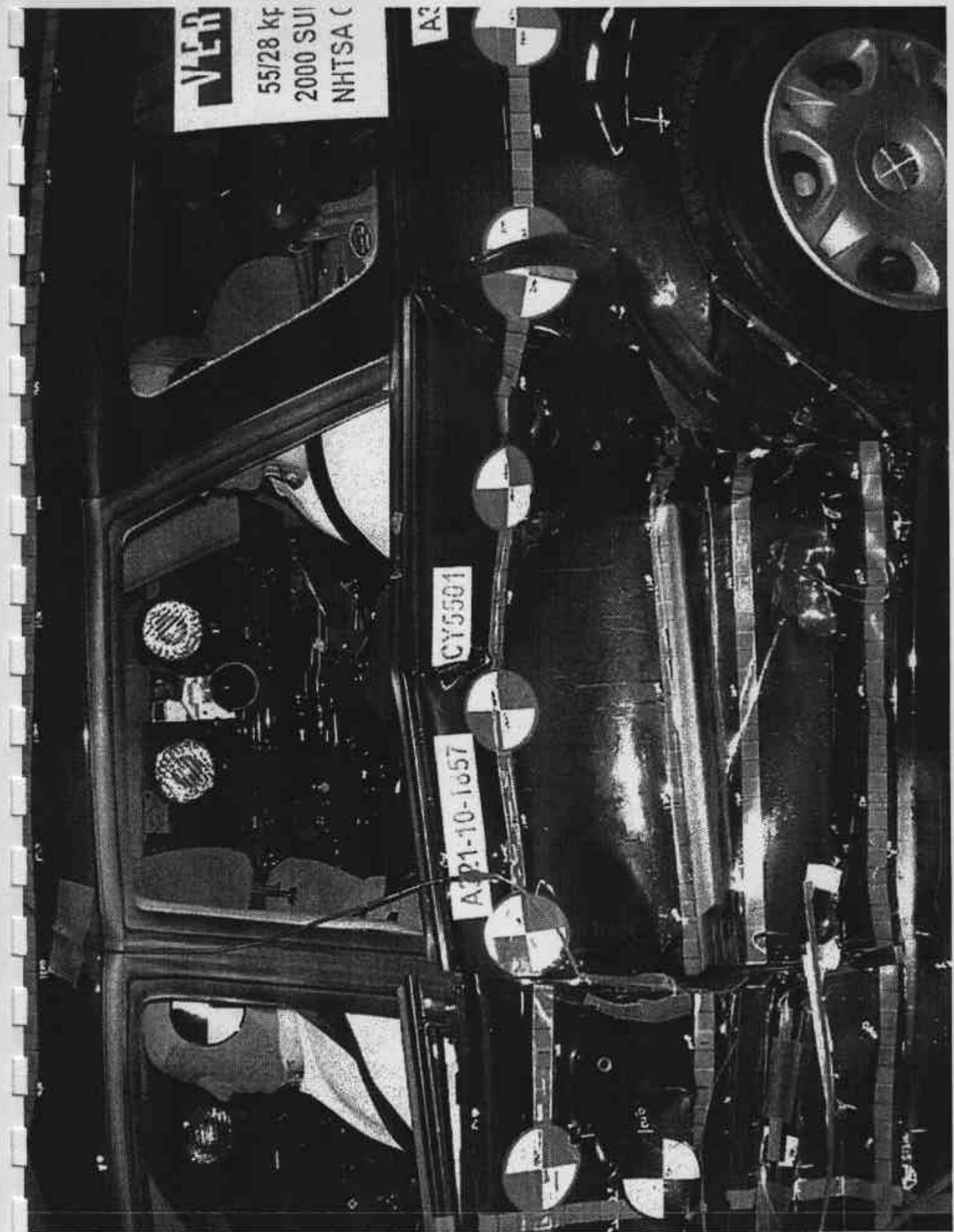


Figure A-24 POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SID



Figure A-25 PRE-TEST 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

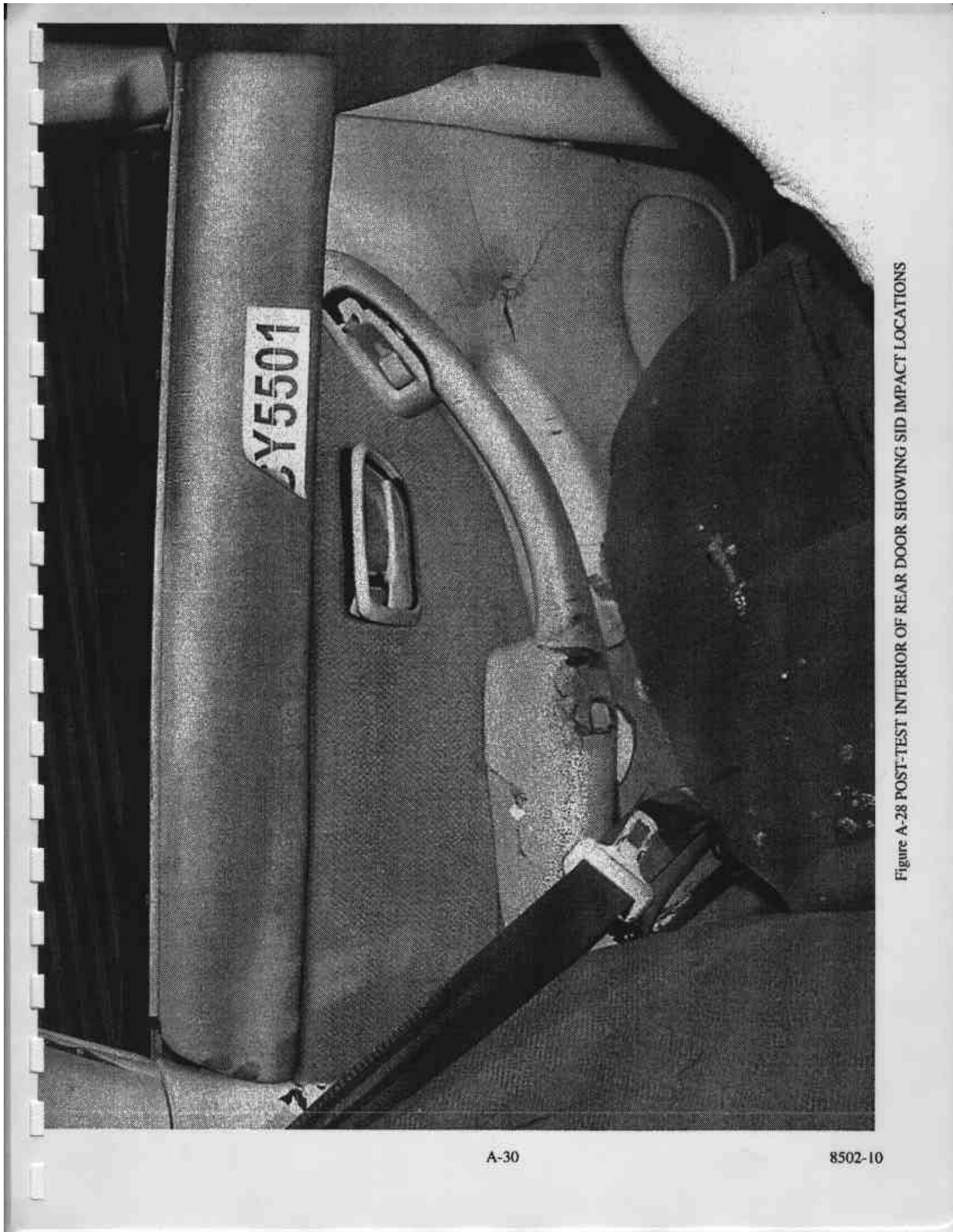


Figure A-28 POST-TEST INTERIOR OF REAR DOOR SHOWING SID IMPACT LOCATIONS

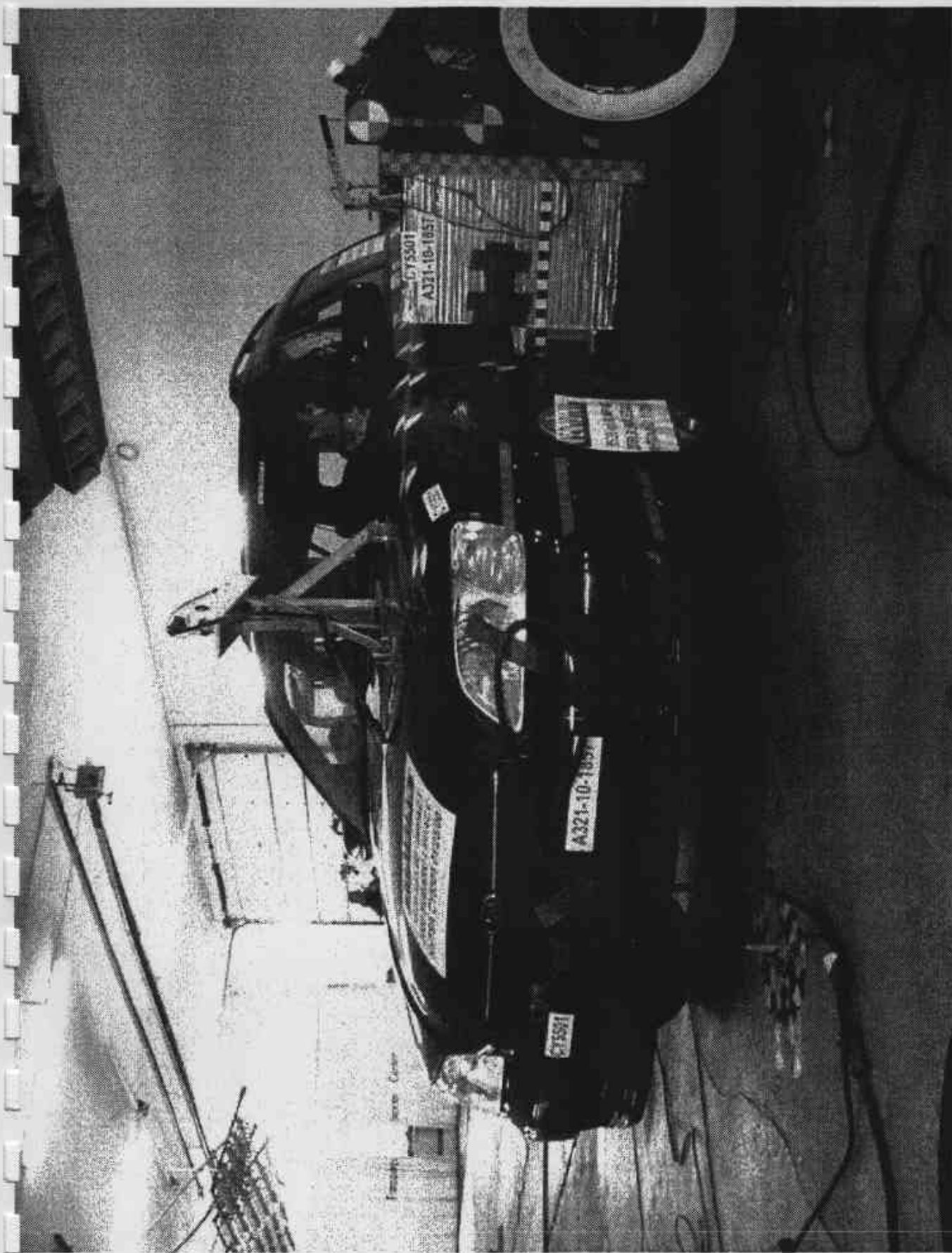


Figure A-29 PRE-TEST LEFT SIDE VIEW OF MDB WITH IMPACTOR FACE IN POSITION

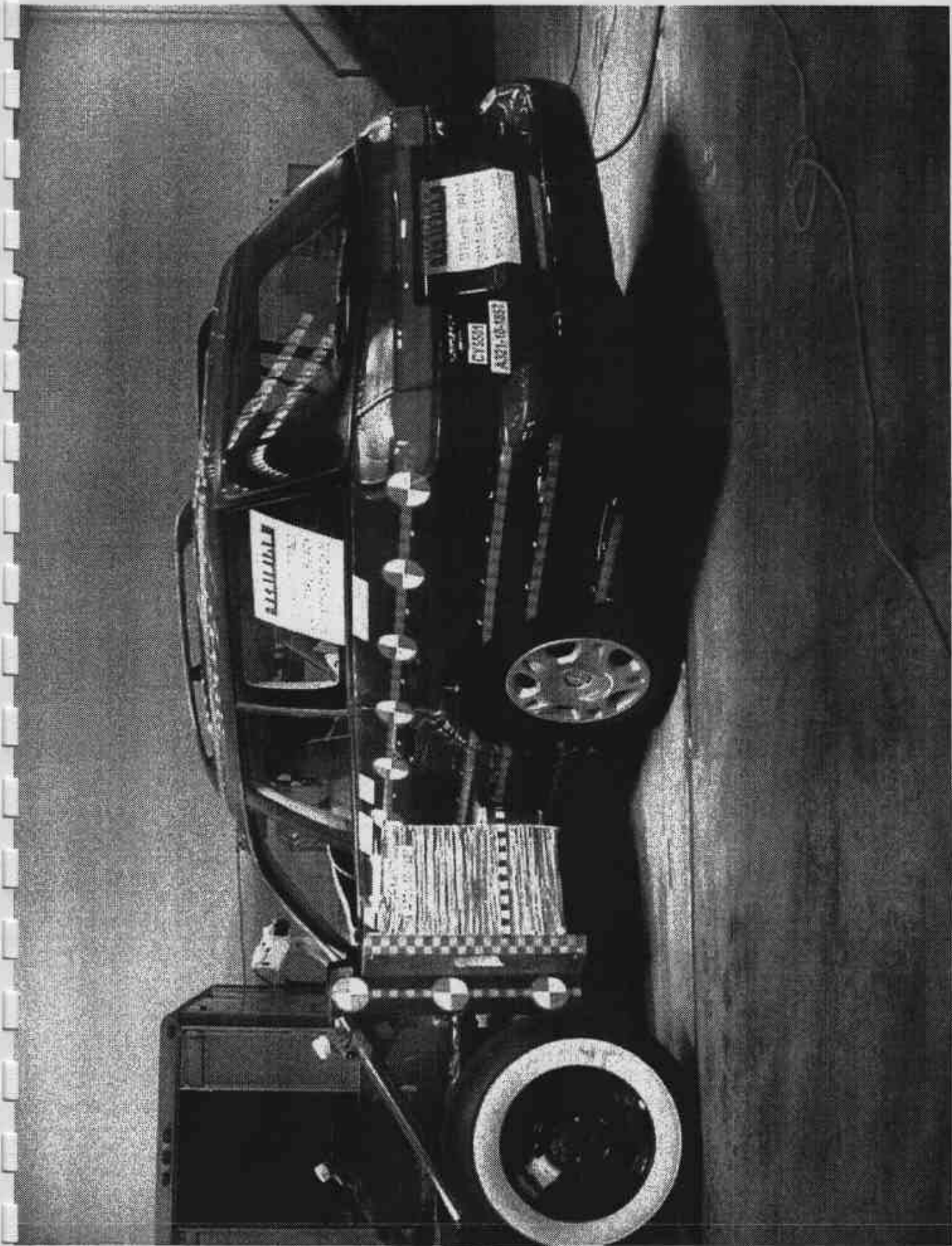


Figure A-30 PRE-TEST RIGHT SIDE VIEW OF MDB WITH IMPACTOR FACE IN POSITION

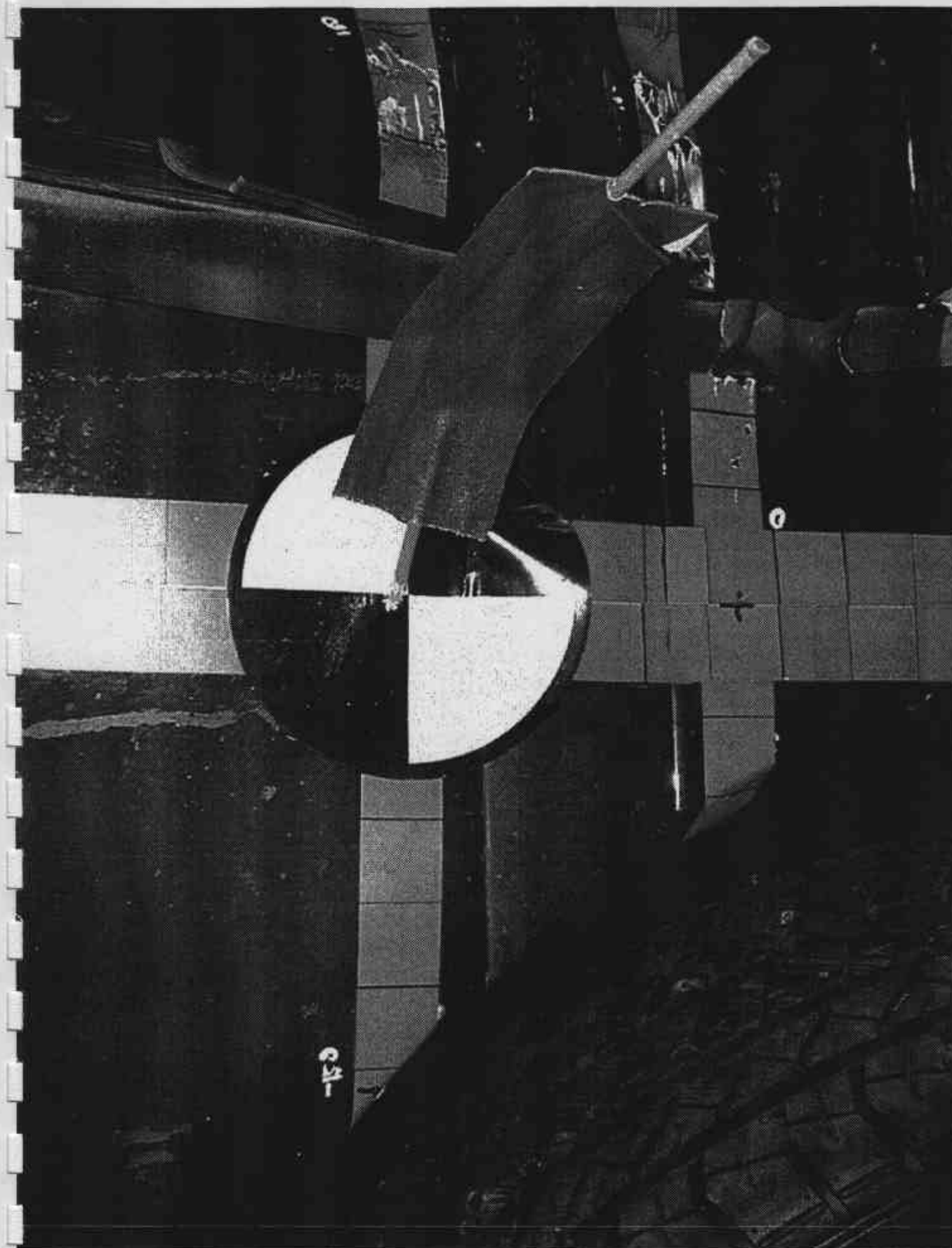


Figure A-31 POST-TEST CLOSE-UP VIEW OF IMPACT POINT TARGET

MFD BY FUJII HEAVY INDUSTRIES LTD. DATE: 10/99
GVWR: 4555LB(2066KG) GAWR: F 2210LB(1002KG) R 2345LB(1064KG)
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE
SAFETY, BUMPER, AND THEFT PREVENTION STANDARDS IN EFFECT ON
THE DATE OF MANUFACTURE SHOWN ABOVE.

VIN: 4S3BH6354Y6304887

TYPE: PASSENGER CAR



ASSEMBLED BY SUBARU - ISUZU AUTOMOTIVE INC. MADE IN U.S.A.

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

SUBARU

VEHICLE CAPACITY WEIGHT:
 SEDAN 850LB(388KG)
 WAGON 900LB(408KG)

NUMBER OF OCCUPANTS:
 TOTAL 5 (FRONT 2/REAR 3)

RECOMMENDED TIRE INFLATION PRESSURE psi(kg/cm²)

TIRE SIZE	FRONT	REAR
P205/60R15 93H	32(2.2)	30(2.1)
TEMPORARY/ SPARE TIRE		
T135/70D16 100M		50(4.2)

FN

⚠ CAUTION

THIS VEHICLE IS EQUIPPED WITH A VENTILATION AIR FILTER WHICH COLLECTS DUST, POLLEN, etc.

TO ENSURE VENTILATION, A/C, HEATING AND DEFROSTING PERFORMANCE, THE FILTER SHOULD BE REPLACED REGULARLY.

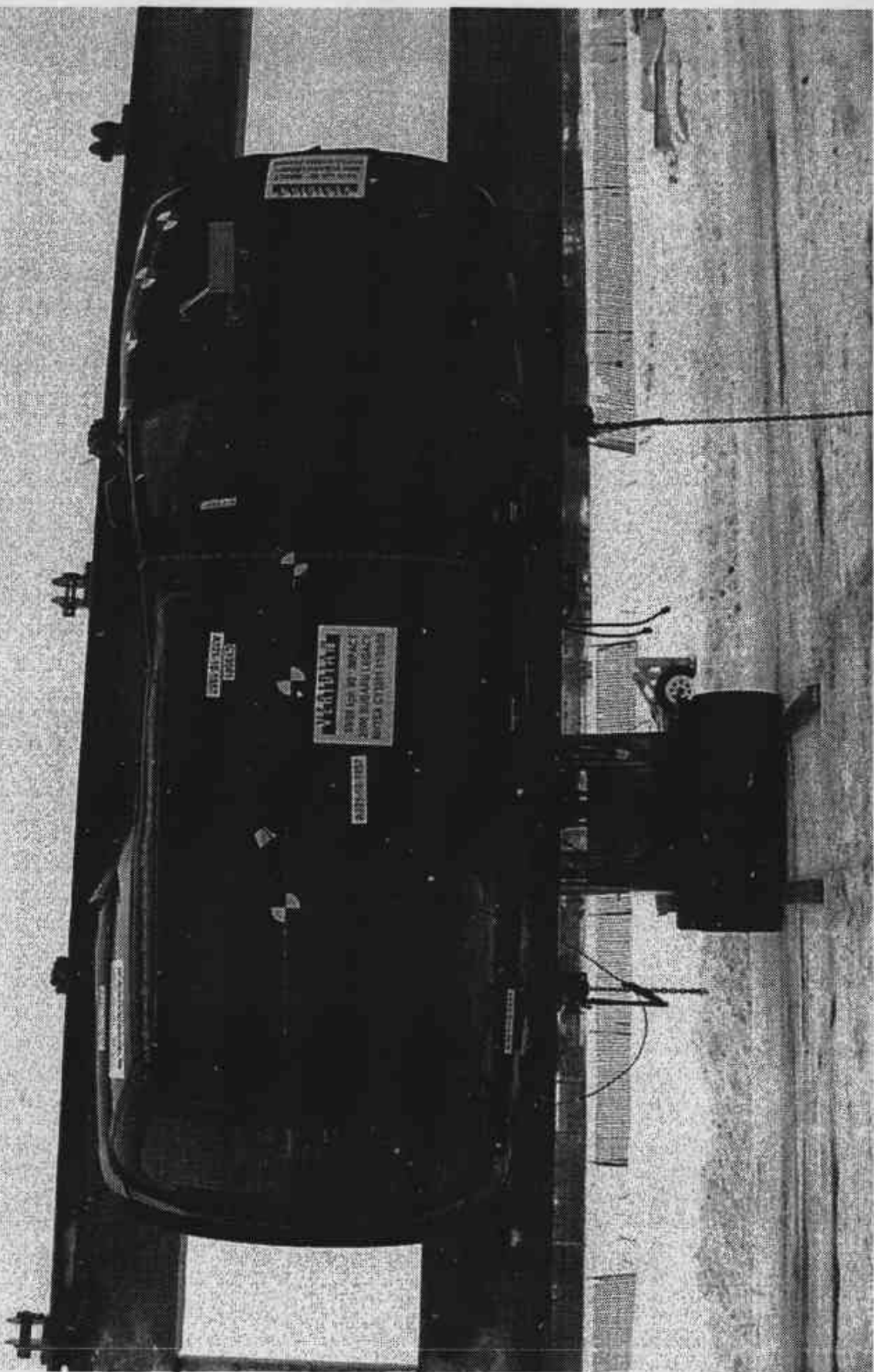
CONTACT YOUR DEALER FOR PART REPLACEMENT.

REPLACE THE PART EVERY

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



Figure A-34 IMPACT PHOTO



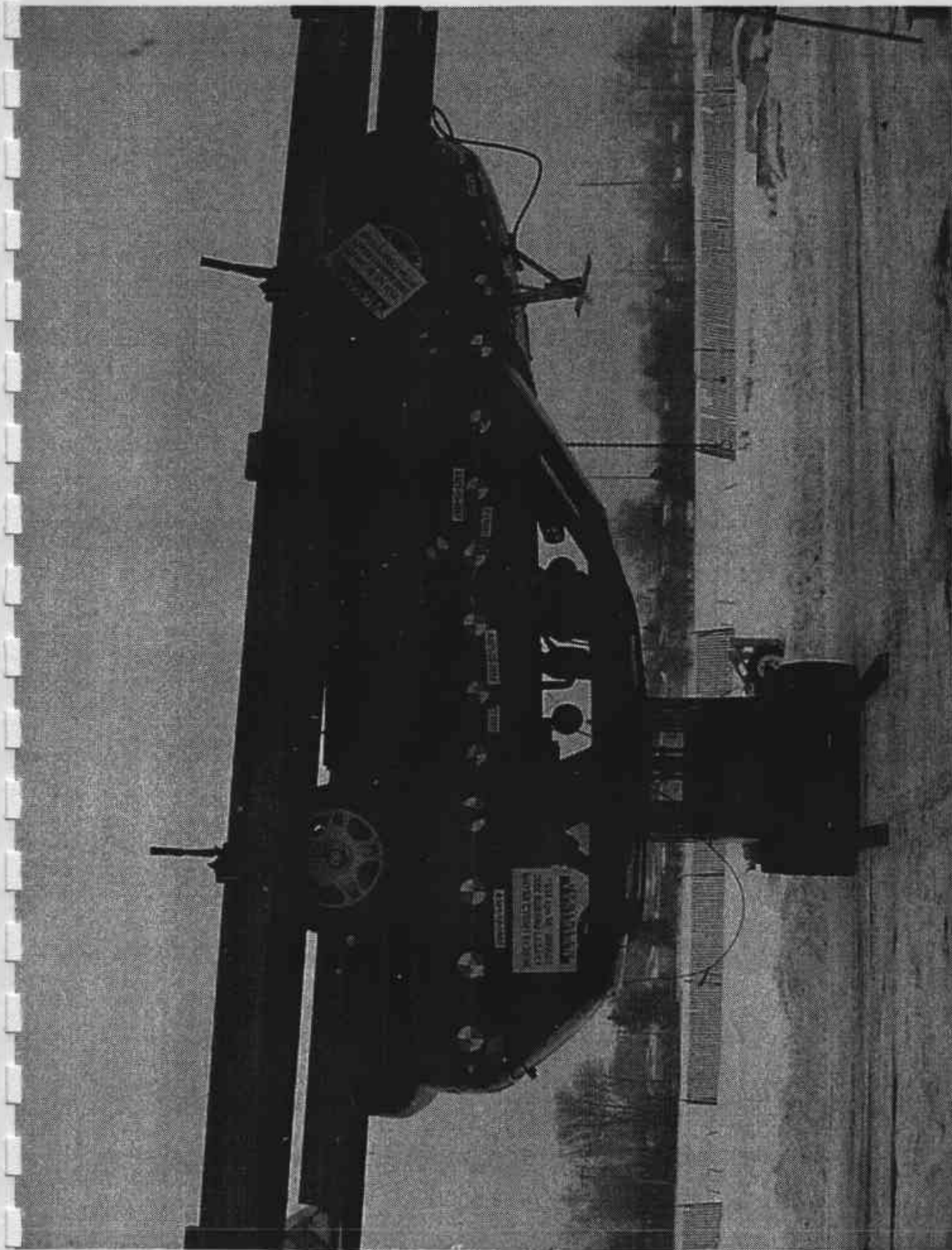


Figure A-36 ROLLOVER 180 DEGREES

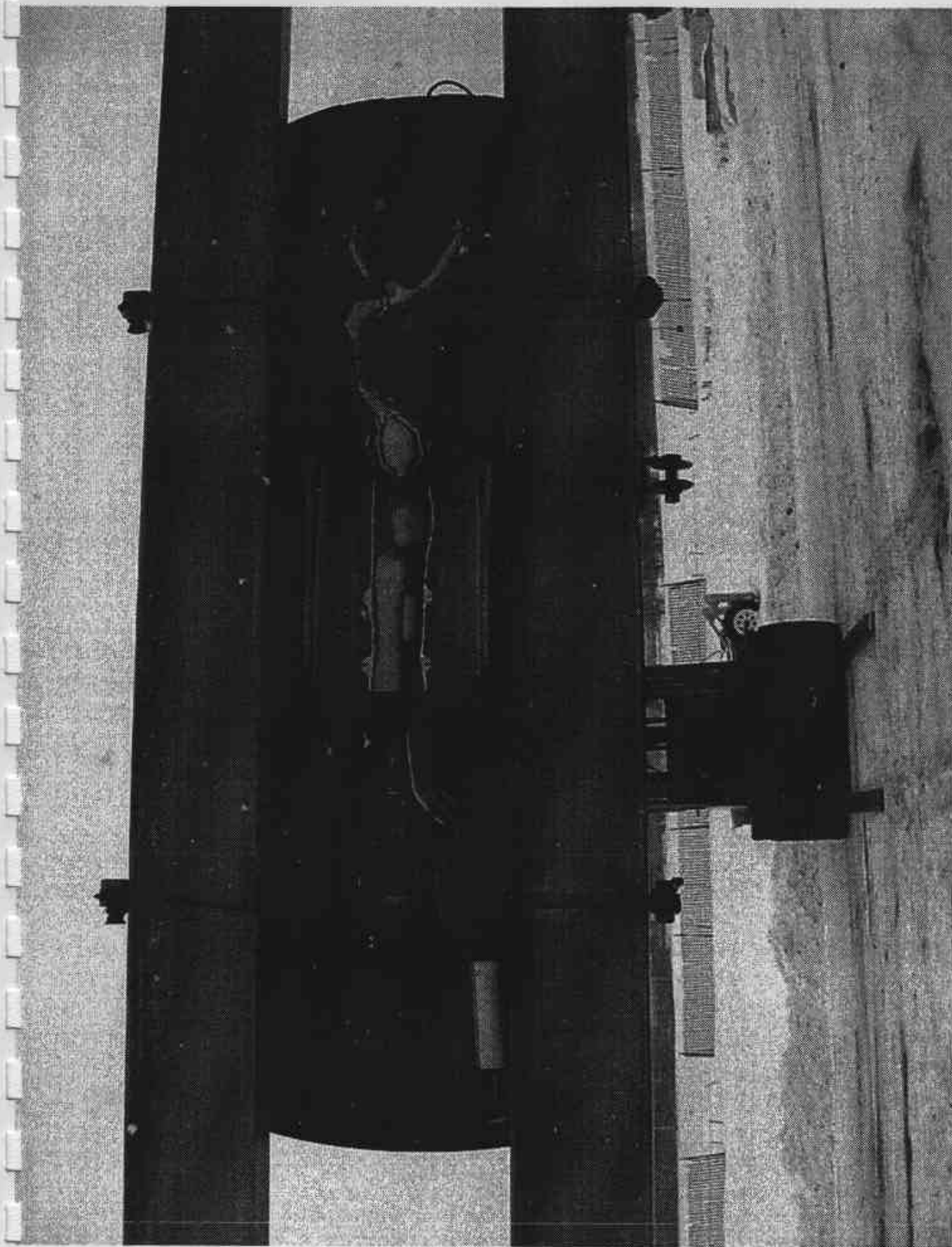


Figure A-37 ROLLOVER 270 DEGREES



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, LOWER SPINE - FILTER CLASS 180 INTEGRATION DATA - FILTER CLASS 180

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

DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS ACCELERATION DATA - FIR FILTERED

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

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

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

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>
71	LOWER A-POST (Y) VELOCITY VS TIME	B- 76
72	UPPER A-POST (Y) ACCELERATION VS TIME	B- 77
73	UPPER A-POST (Y) VELOCITY VS TIME	B- 78
74	FRONT SEAT TRACK (Y) ACCELERATION VS TIME	B- 79
75	FRONT SEAT TRACK (Y) VELOCITY VS TIME	B- 80
76	REAR SEAT TRACK (Y) ACCELERATION VS TIME	B- 81
77	REAR SEAT TRACK (Y) VELOCITY VS TIME	B- 82
78	VEHICLE CENTER OF GRAVITY (X) ACCELERATION VS TIME	B- 83
79	VEHICLE CENTER OF GRAVITY (X) VELOCITY VS TIME	B- 84
80	VEHICLE CENTER OF GRAVITY (Y) ACCELERATION VS TIME	B- 85
81	VEHICLE CENTER OF GRAVITY (Y) VELOCITY ACCELERATION VS TIME	B- 86
82	VEHICLE CENTER OF GRAVITY (Z) ACCELERATION VS TIME	B- 87
83	VEHICLE CENTER OF GRAVITY (Z) VELOCITY VS TIME	B- 88
84	VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME	B- 89

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>
85	MDB CENTER OF GRAVITY (X) ACCELERATION VS TIME	B- 90
86	MDB CENTER OF GRAVITY (X) VELOCITY VS TIME	B- 91
87	MDB CENTER OF GRAVITY (Y) ACCELERATION VS TIME	B- 92
88	MDB CENTER OF GRAVITY (Y) VELOCITY VS TIME	B- 93
89	MDB CENTER OF GRAVITY (Z) ACCELERATION VS TIME	B- 94
90	MDB CENTER OF GRAVITY (Z) VELOCITY VS TIME	B- 95
91	MDB CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME	B- 96
92	MDB REAR (X) ACCELERATION VS TIME	B- 97
93	MDB REAR (X) VELOCITY VS TIME	B- 98
94	MDB REAR (Y) ACCELERATION VS TIME	B- 99
95	MDB REAR (Y) VELOCITY VS TIME	B- 100

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

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
96	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 101
97	DRIVER UPPER RIB (Y) VELOCITY VS TIME	B- 102
98	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 103
99	DRIVER LOWER RIB (Y) VELOCITY VS TIME	B- 104
100	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 105
101	DRIVER LOWER SPINE (Y) VELOCITY VS TIME	B- 106
102	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 107
103	DRIVER PELVIC (Y) VELOCITY VS TIME	B- 108
104	PASSENGER UPPER RIB (Y) ACCELERATION VS TIME	B- 109
105	PASSENGER UPPER RIB (Y) VELOCITY VS TIME	B- 110
106	PASSENGER LOWER RIB (Y) ACCELERATION VS TIME	B- 111
107	PASSENGER LOWER RIB (Y) VELOCITY VS TIME	B- 112
108	PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME	B- 113
109	PASSENGER LOWER SPINE (Y) VELOCITY VS TIME	B- 114
110	PASSENGER PELVIC (Y) ACCELERATION VS TIME	B- 115
111	PASSENGER PELVIC (Y) VELOCITY VS TIME	B- 116

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

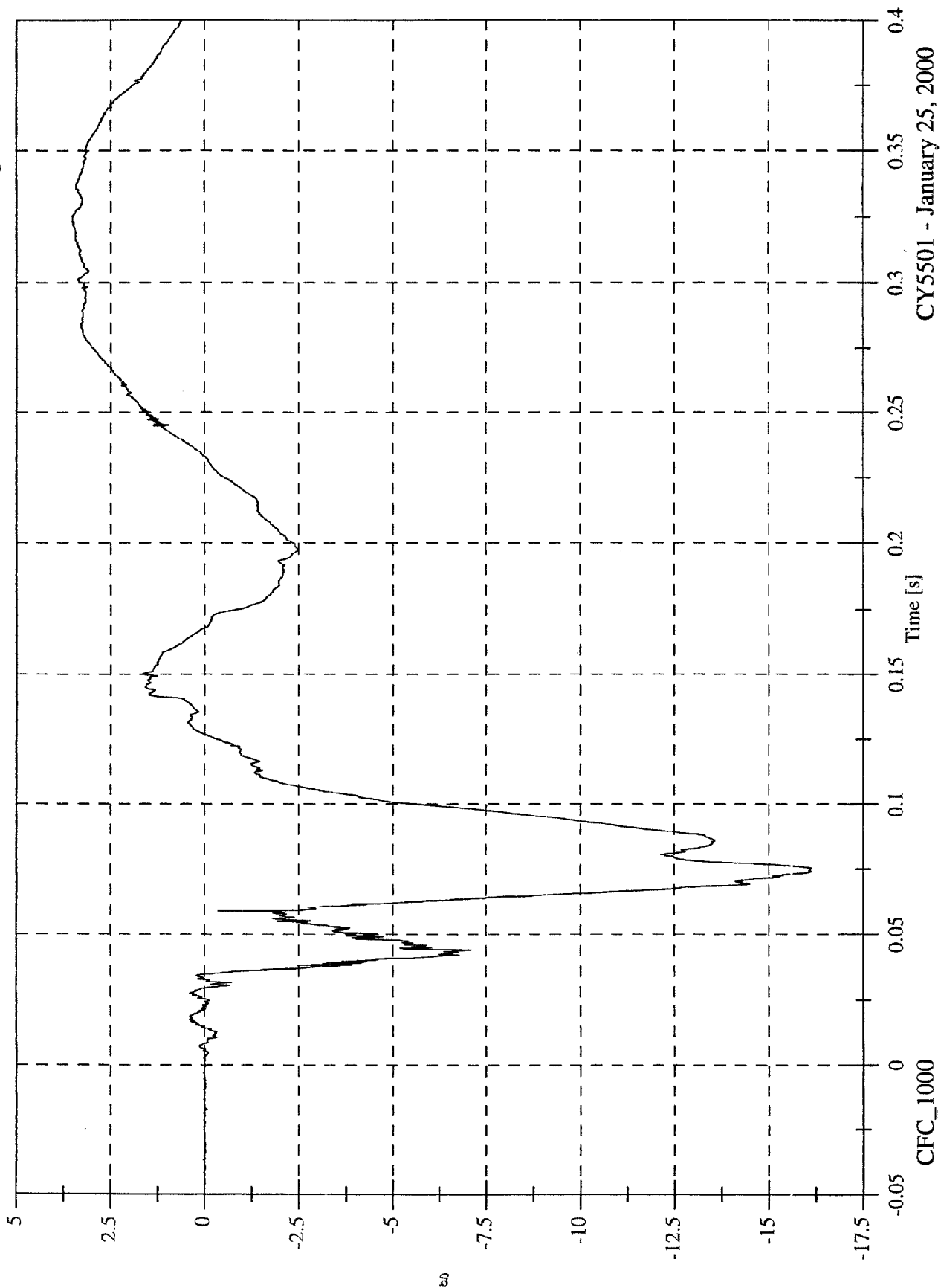
<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
112	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 117
113	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 118
114	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 119
115	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 120
116	PASSENGER UPPER RIB (Y) ACCELERATION VS TIME	B- 121
117	PASSENGER LOWER RIB (Y) ACCELERATION VS TIME	B- 122
118	PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME	B- 123
119	PASSENGER PELVIC (Y) ACCELERATION VS TIME	B- 124

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Max: 3.5 [g] at 0.324 [s]

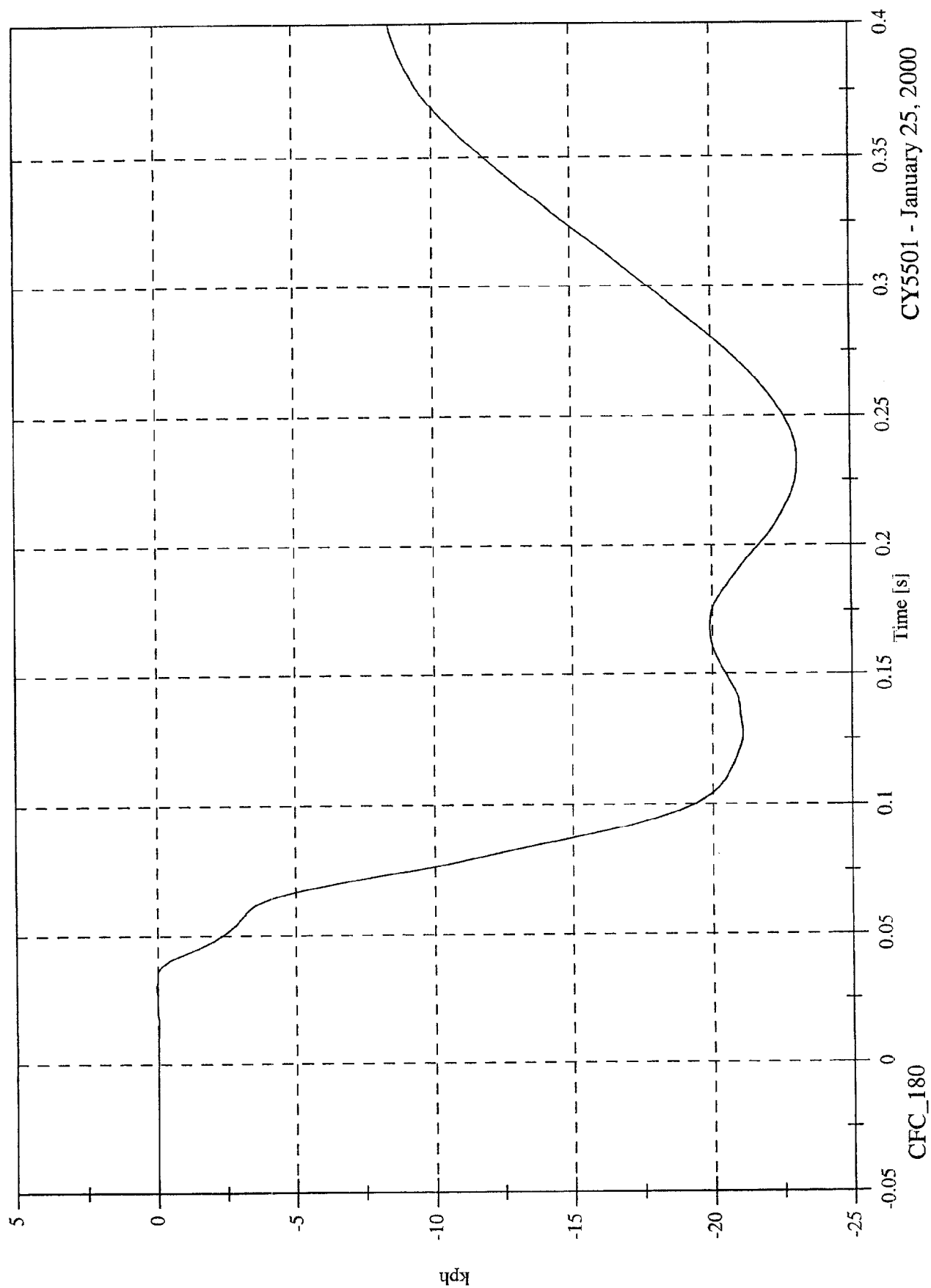
Min: -16.1 [g] at 0.074 [s]

P1 Head x



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FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon
P1 Head x Velocity
Max: 0.0 [kph] at 0.030 [s]
Min: -23.1 [kph] at 0.233 [s]



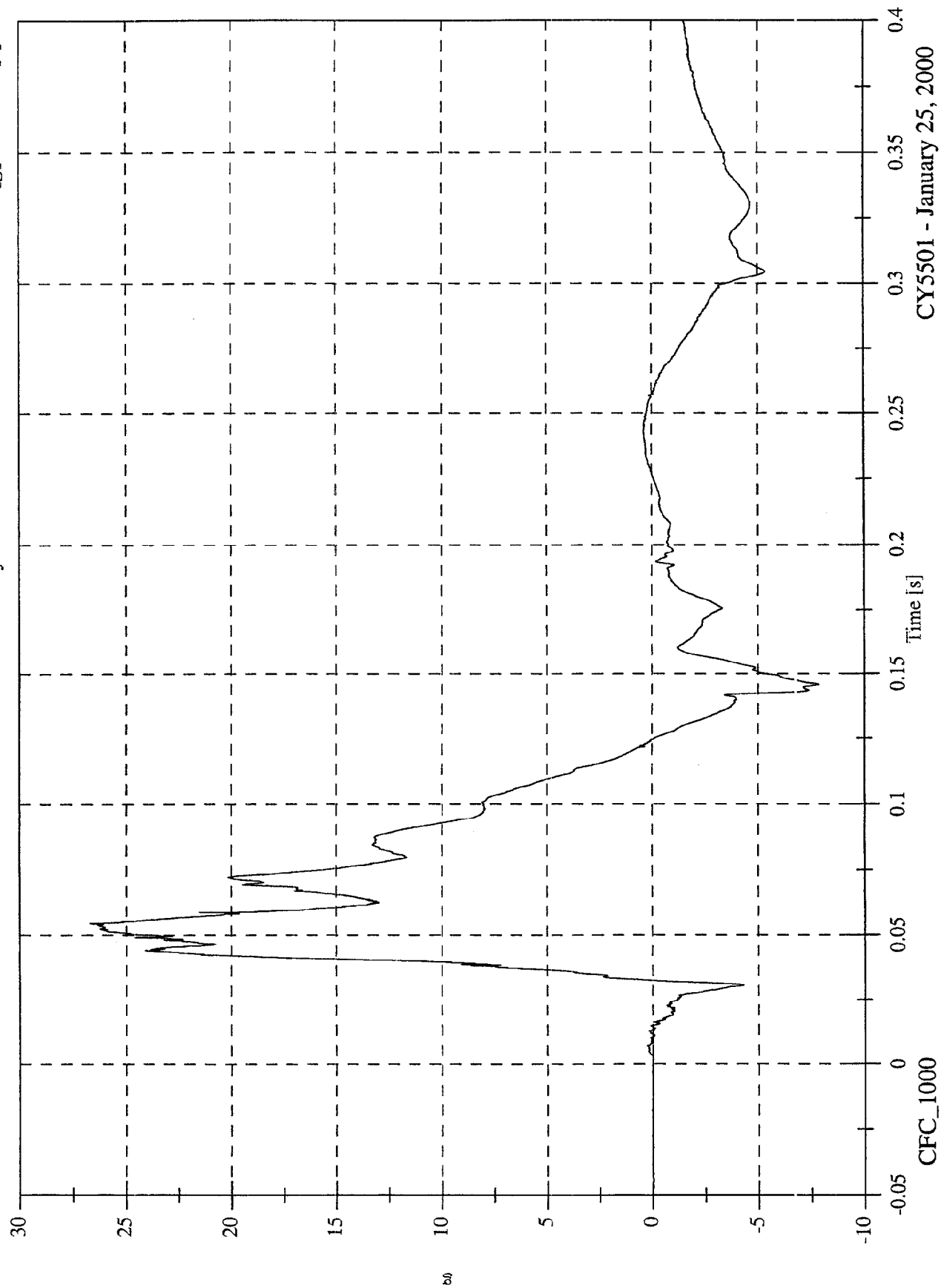
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FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

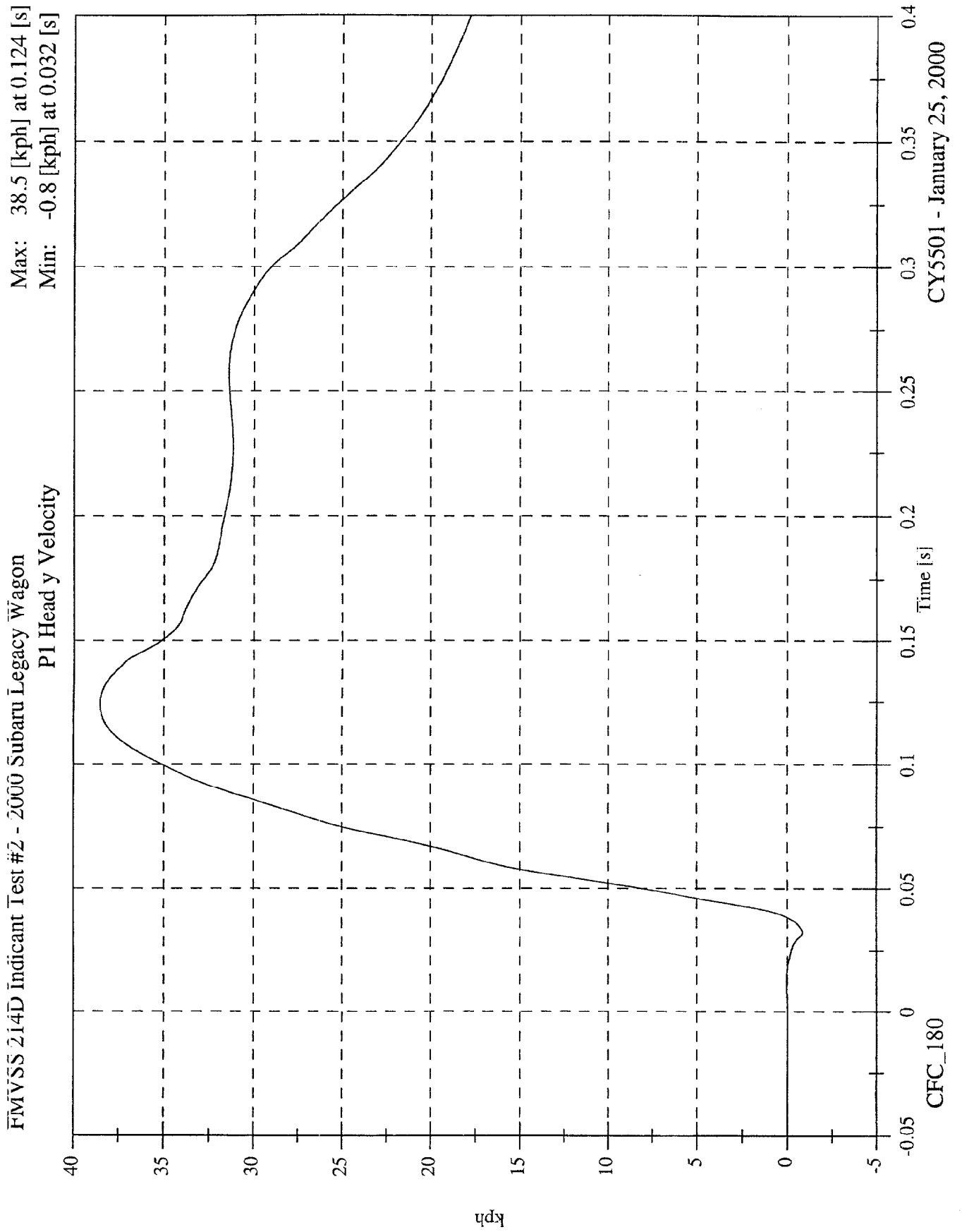
Max: 26.7 [g] at 0.054 [s]

Min: -7.8 [g] at 0.146 [s]

P1 Head y



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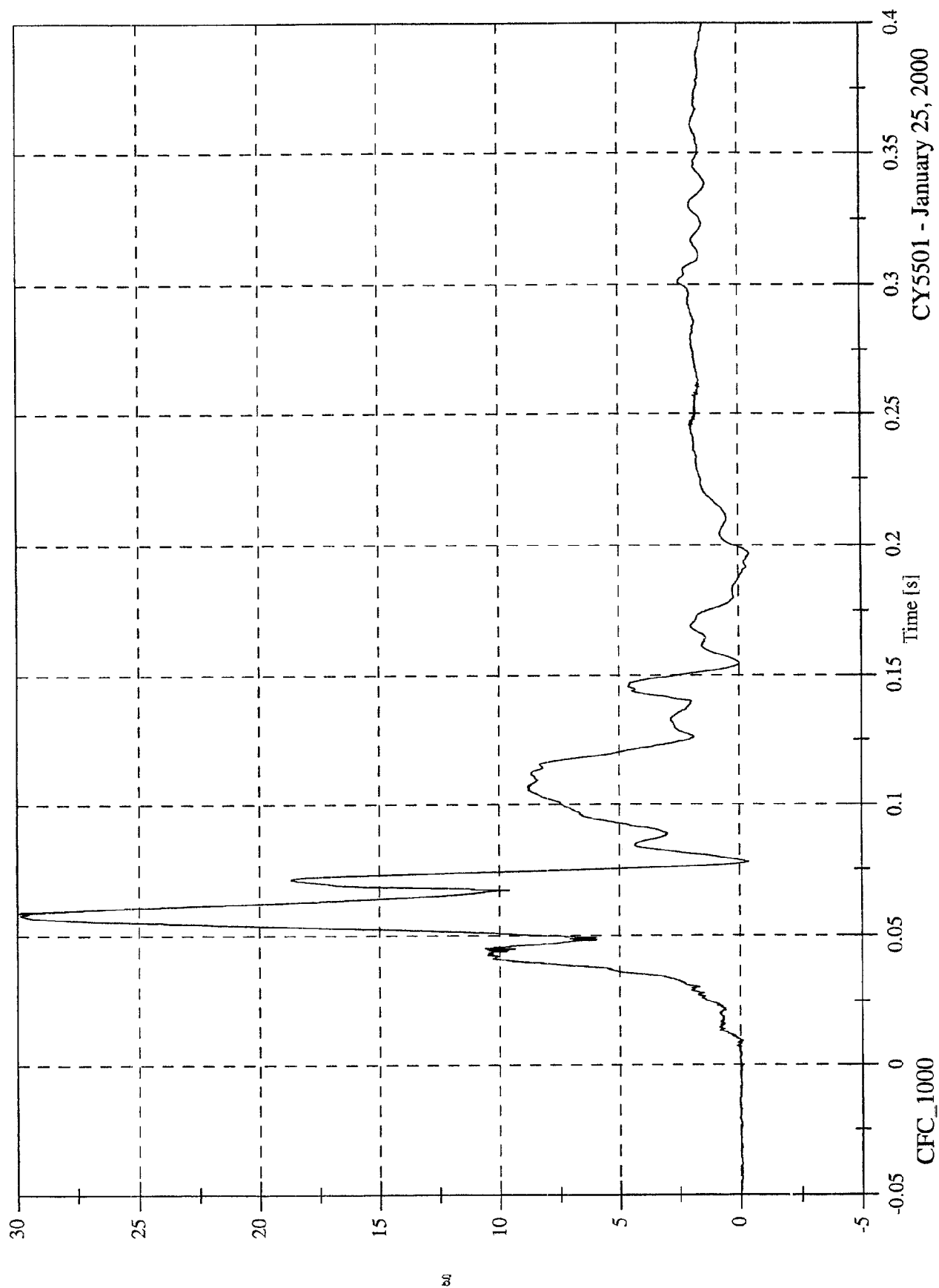


FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Max: 30.0 [g] at 0.059 [s]

Min: -0.4 [g] at 0.196 [s]

P1 Head z

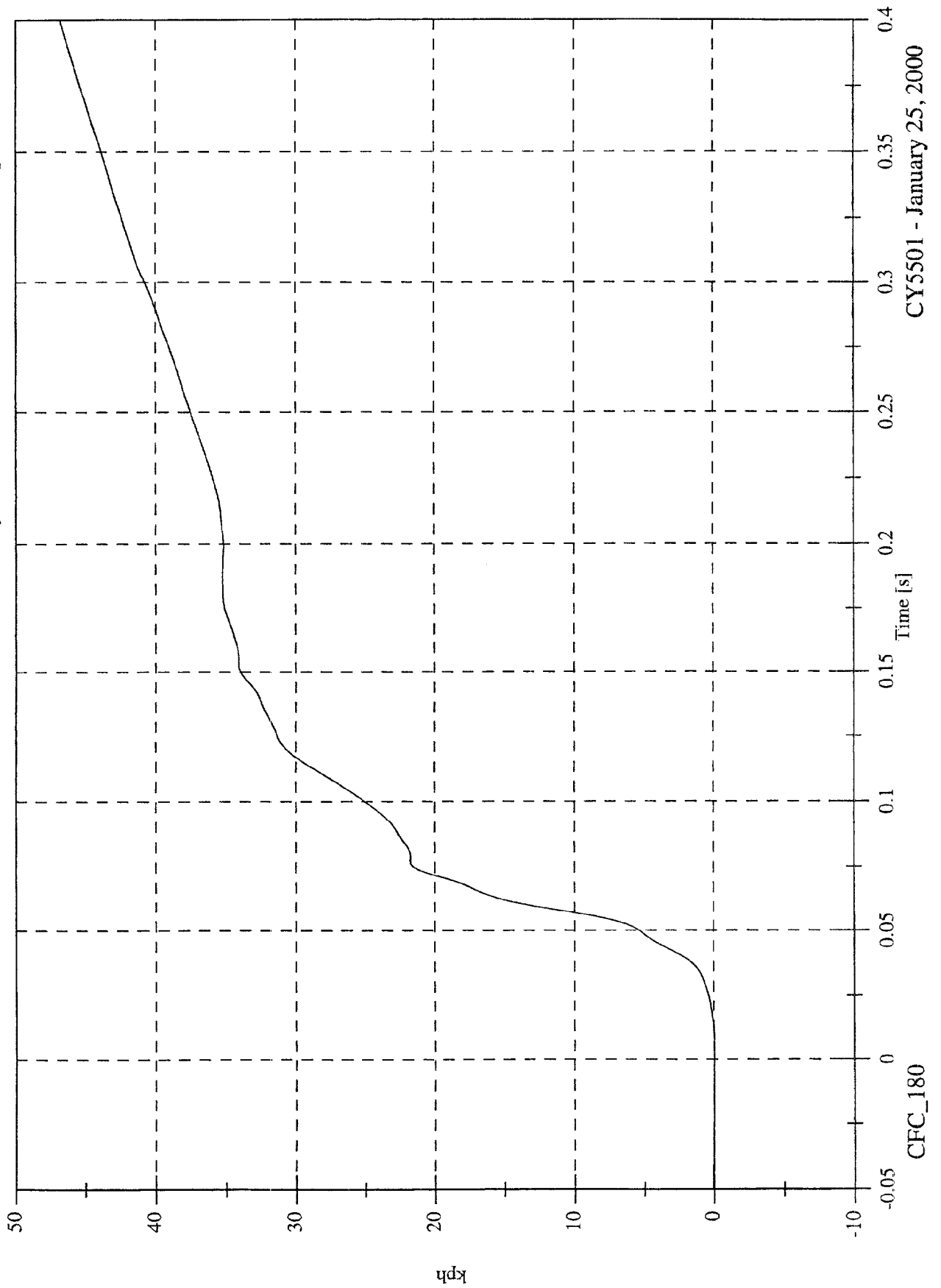


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FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon

P1 Head z Velocity

Max: 46.8 [kph] at 0.400 [s]
Min: -0.0 [kph] at 0.005 [s]

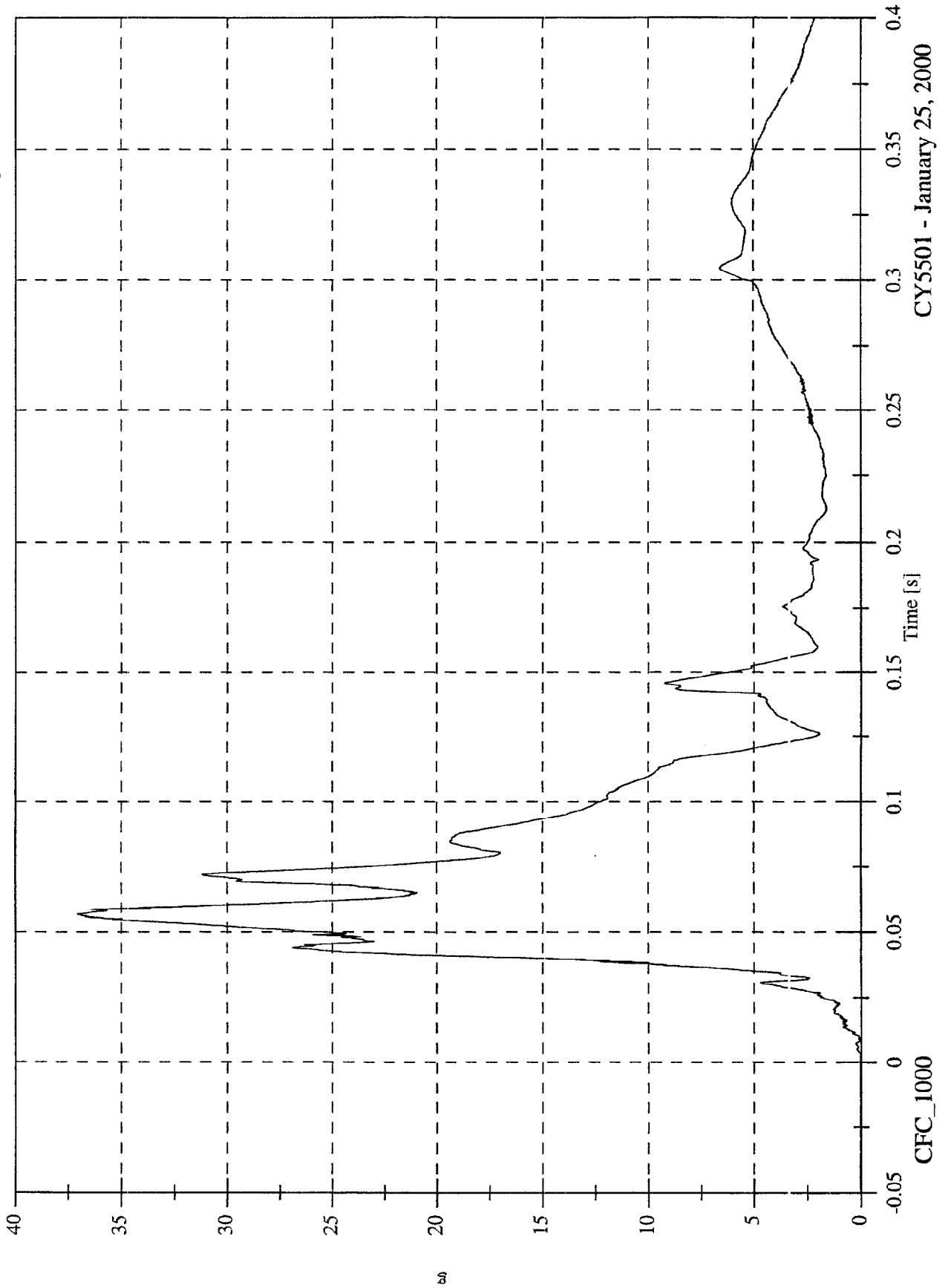


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FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon

Max: 37.1 [g] at 0.057 [s]
Min: 0.0 [g] at -0.049 [s]

P1 Head Resultant

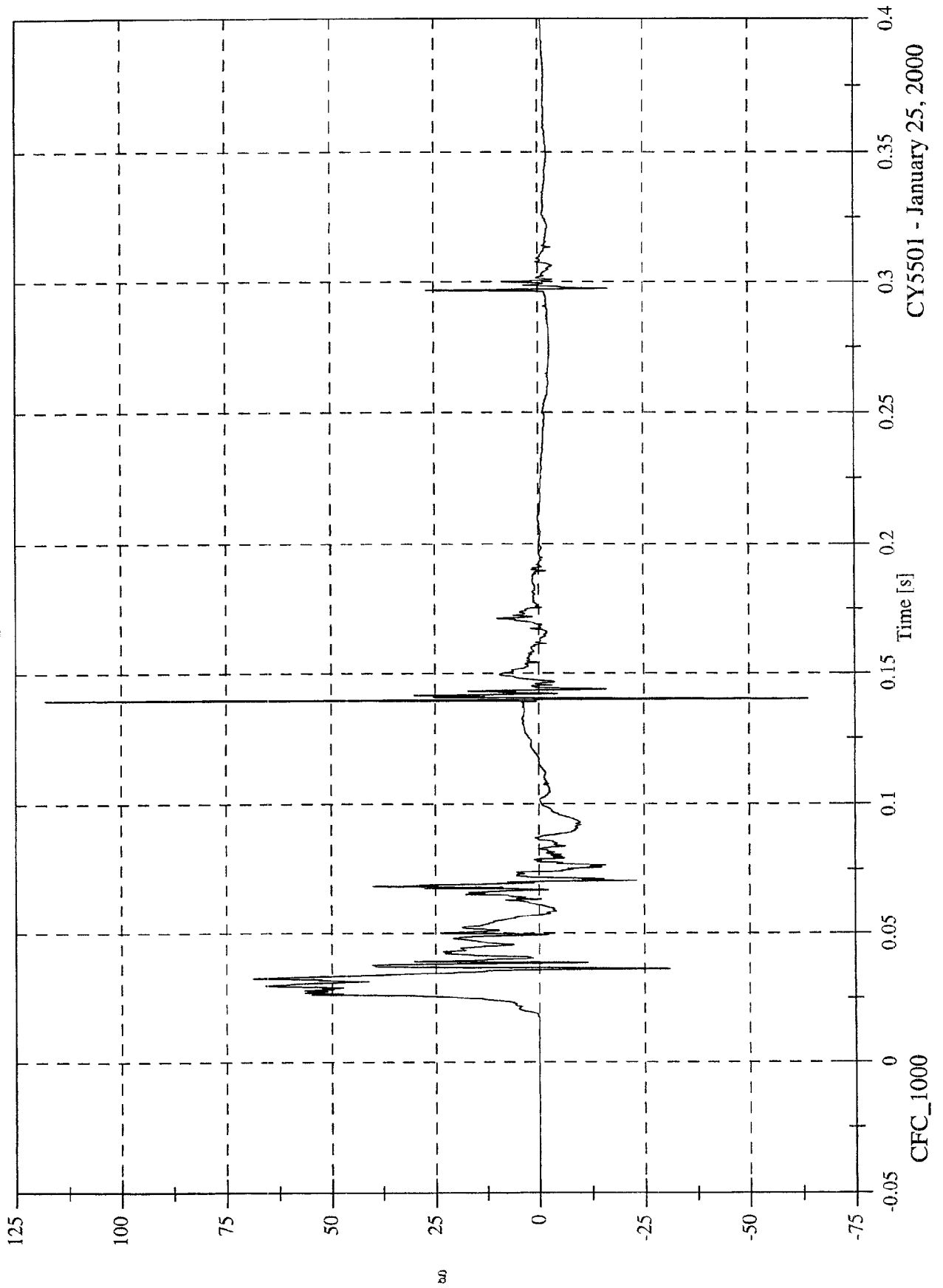


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FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P1 Upper Rib y

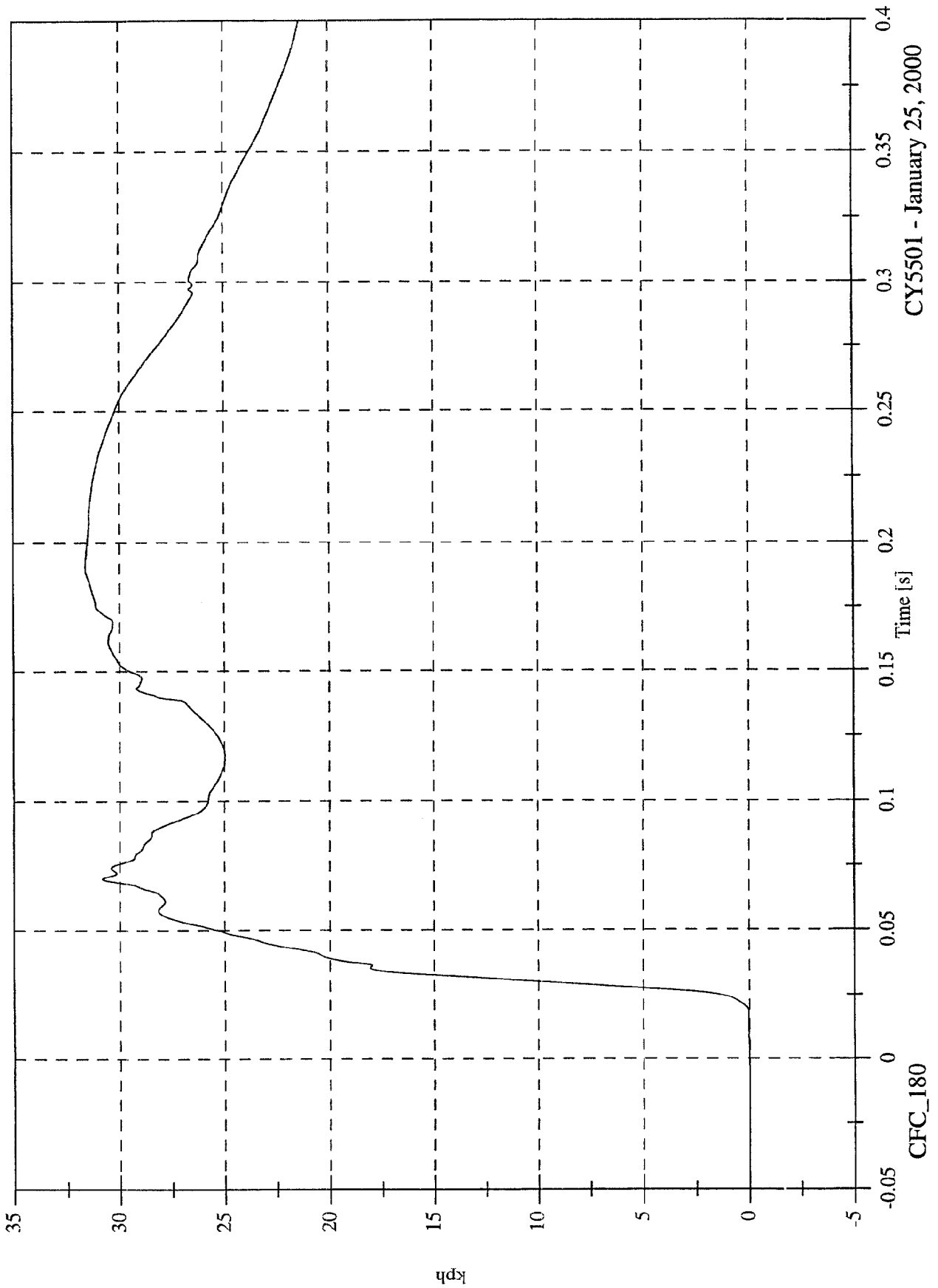
Max: 118.0 [g] at 0.139 [s]
Min: -64.0 [g] at 0.140 [s]



FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Max: 31.6 [kph] at 0.191 [s]
 Min: -0.0 [kph] at -0.039 [s]

P1 Upper Rib y Velocity

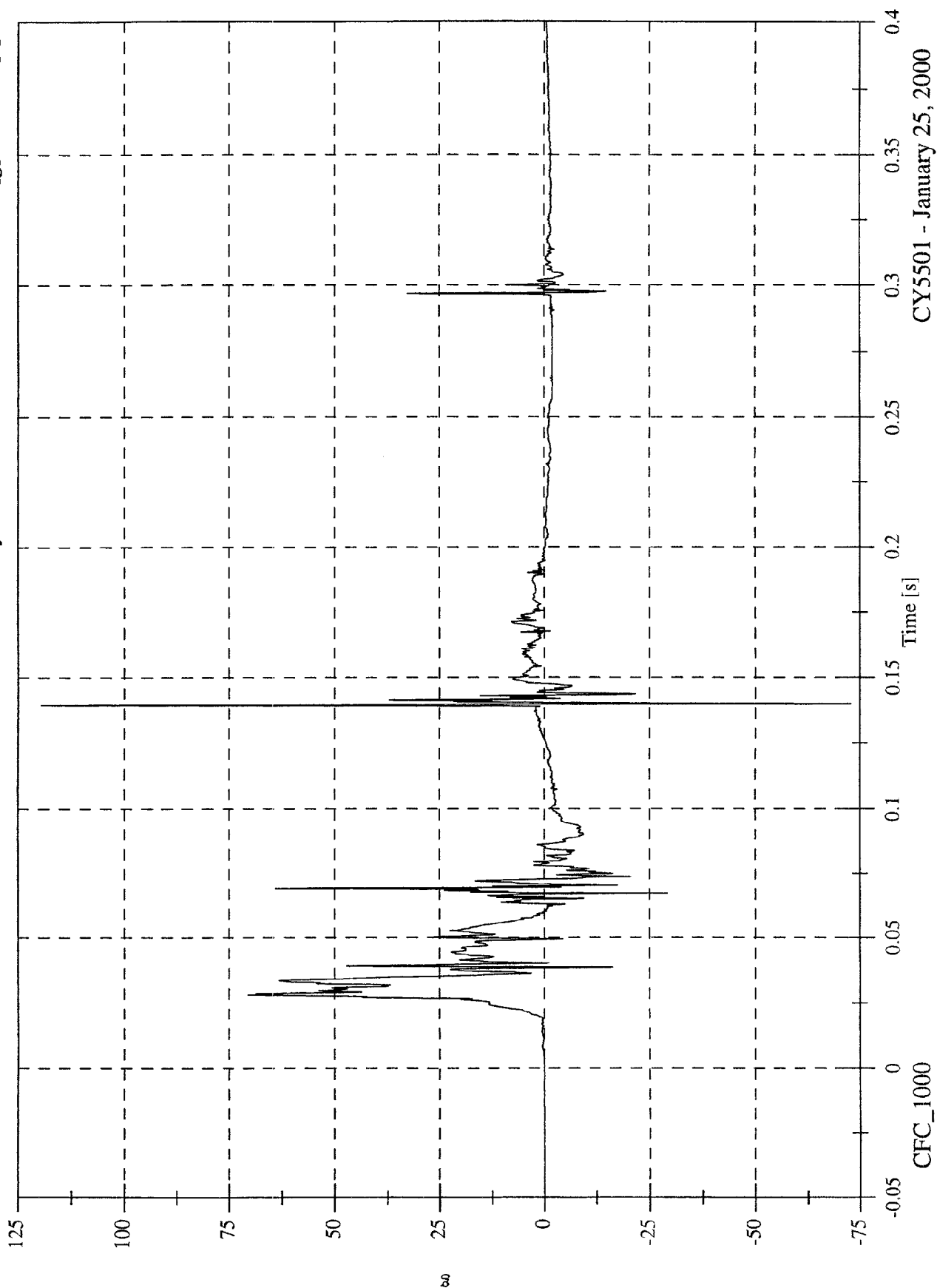


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FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P1 Lower Rib y

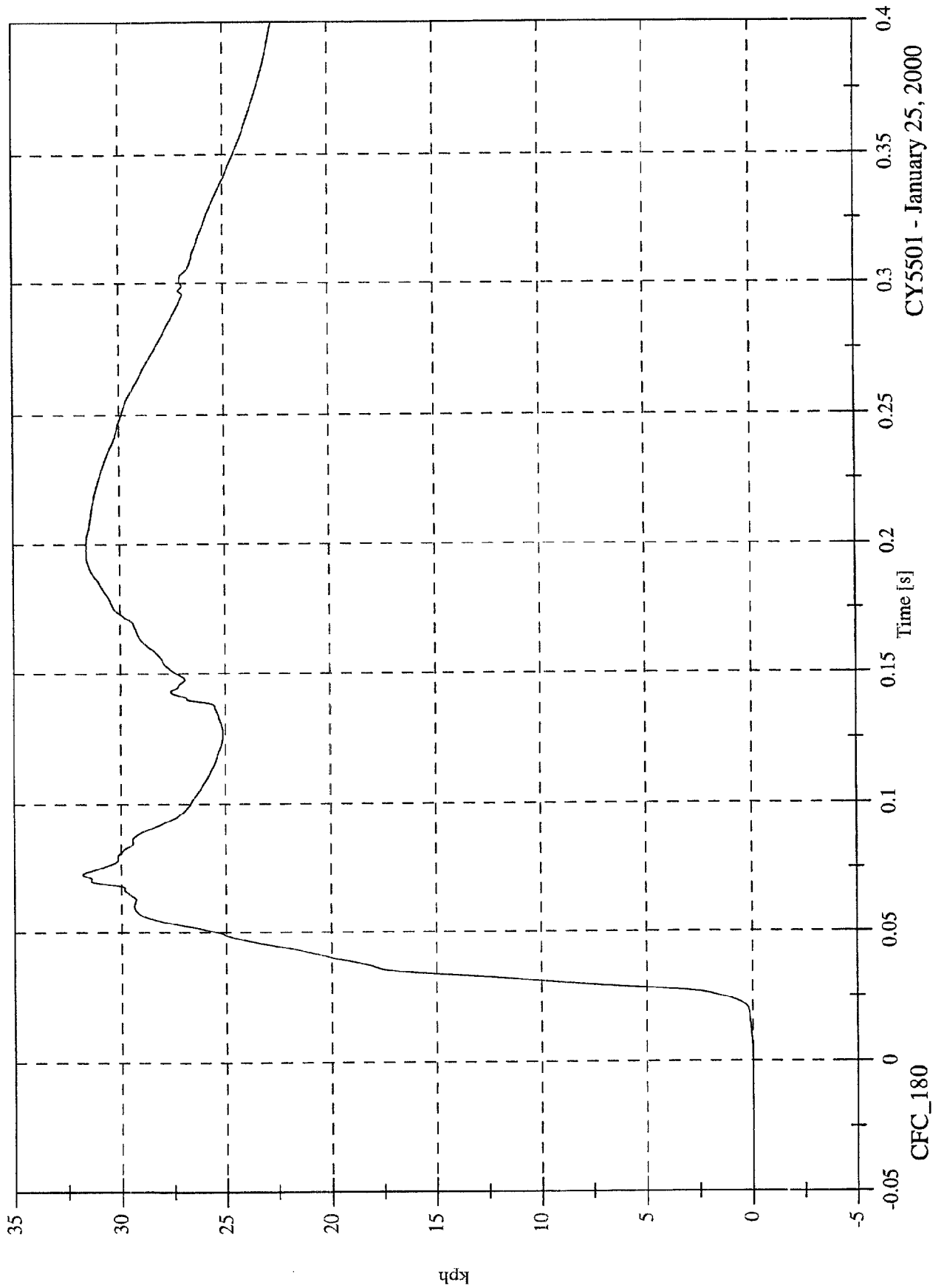
Max: 119.6 [g] at 0.139 [s]
Min: -72.8 [g] at 0.140 [s]



FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon

P1 Lower Rib y Velocity

Max: 31.8 [kph] at 0.073 [s]
Min: -0.0 [kph] at -0.050 [s]

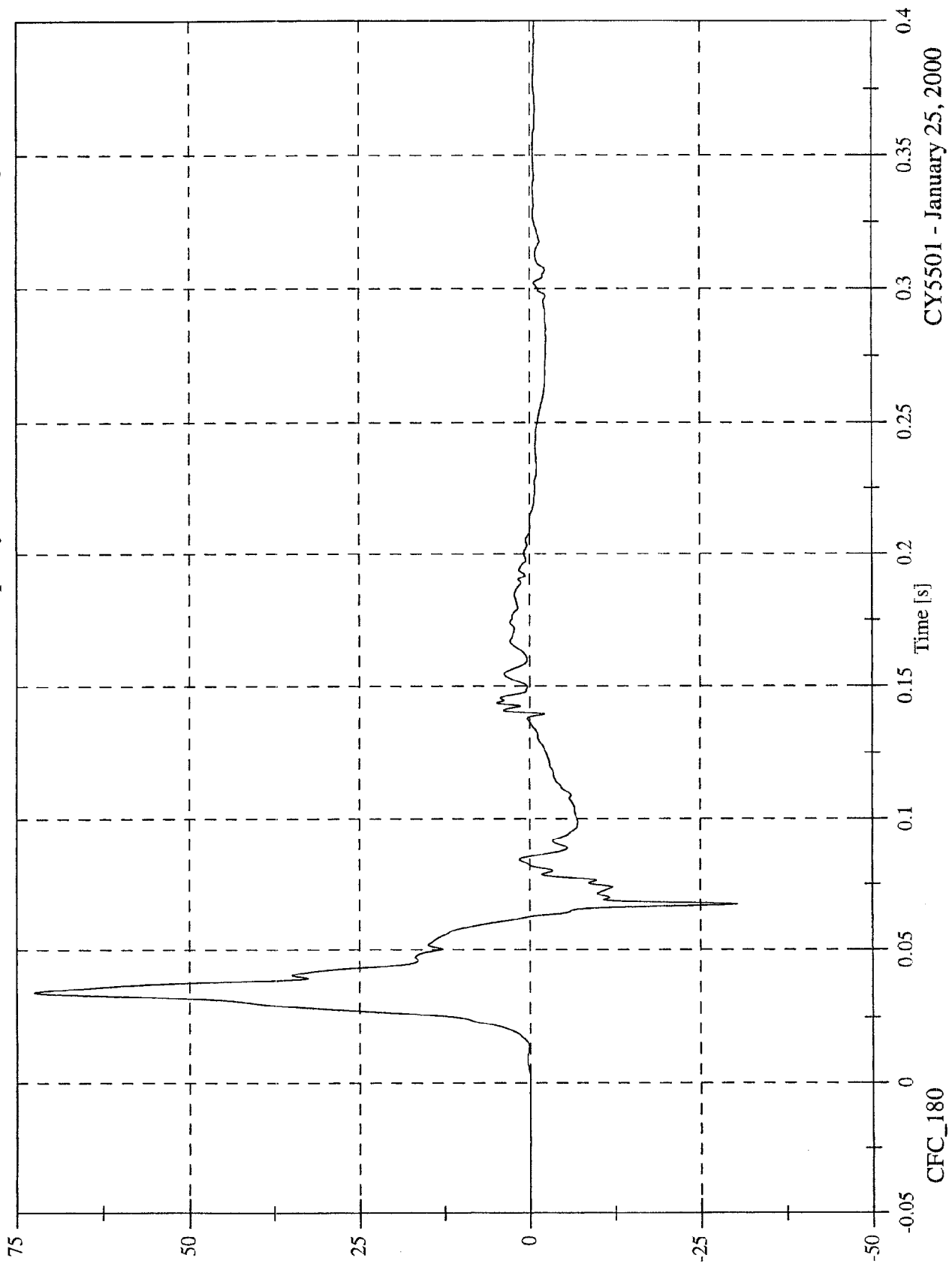


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FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P1 Lower Spine y

Max: 72.4 [g] at 0.034 [s]
Min: -30.3 [g] at 0.067 [s]

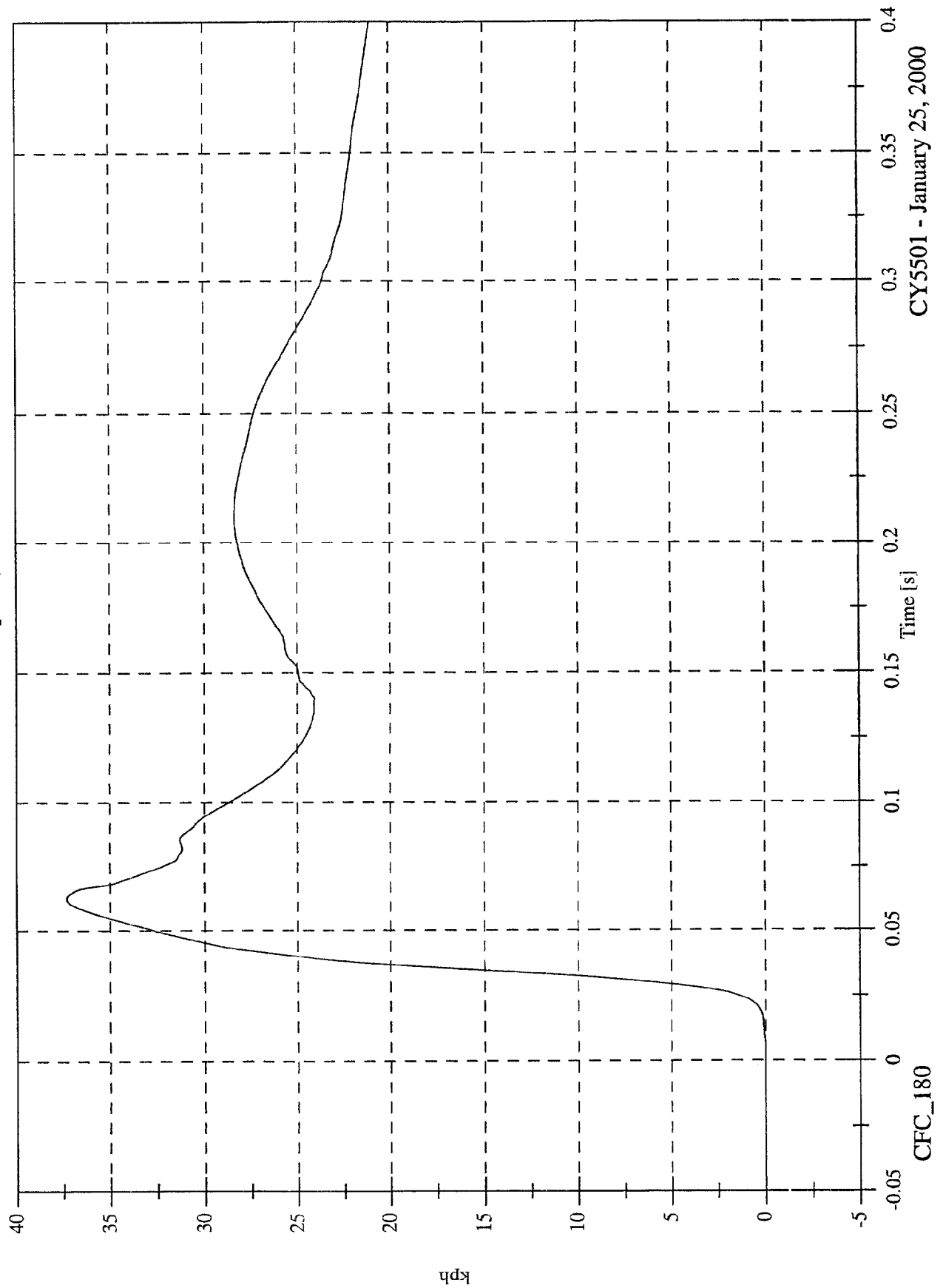


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FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon

P1 Lower Spine y Velocity

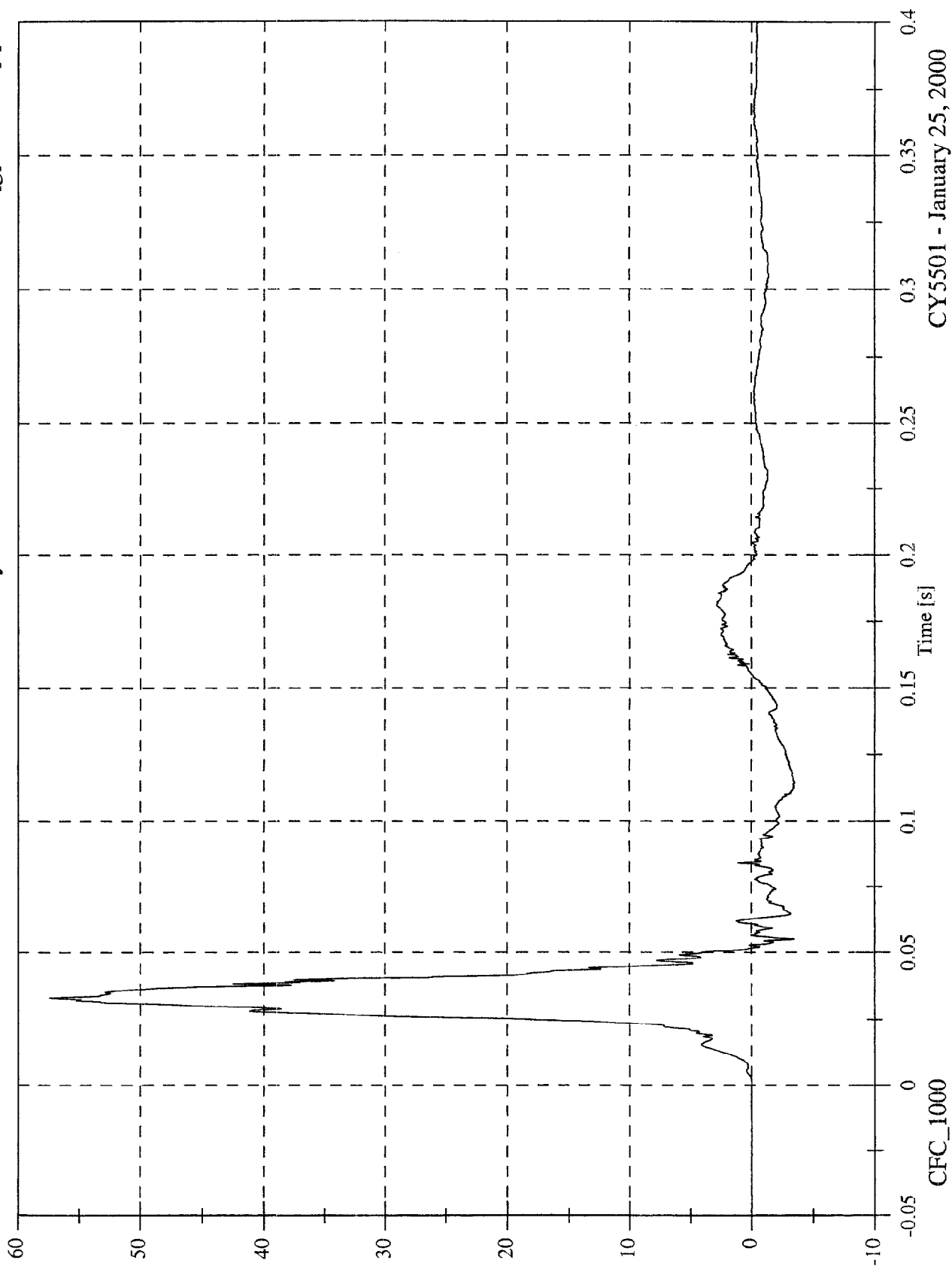
Max: 37.3 [kph] at 0.063 [s]
Min: -0.0 [kph] at -0.019 [s]



FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

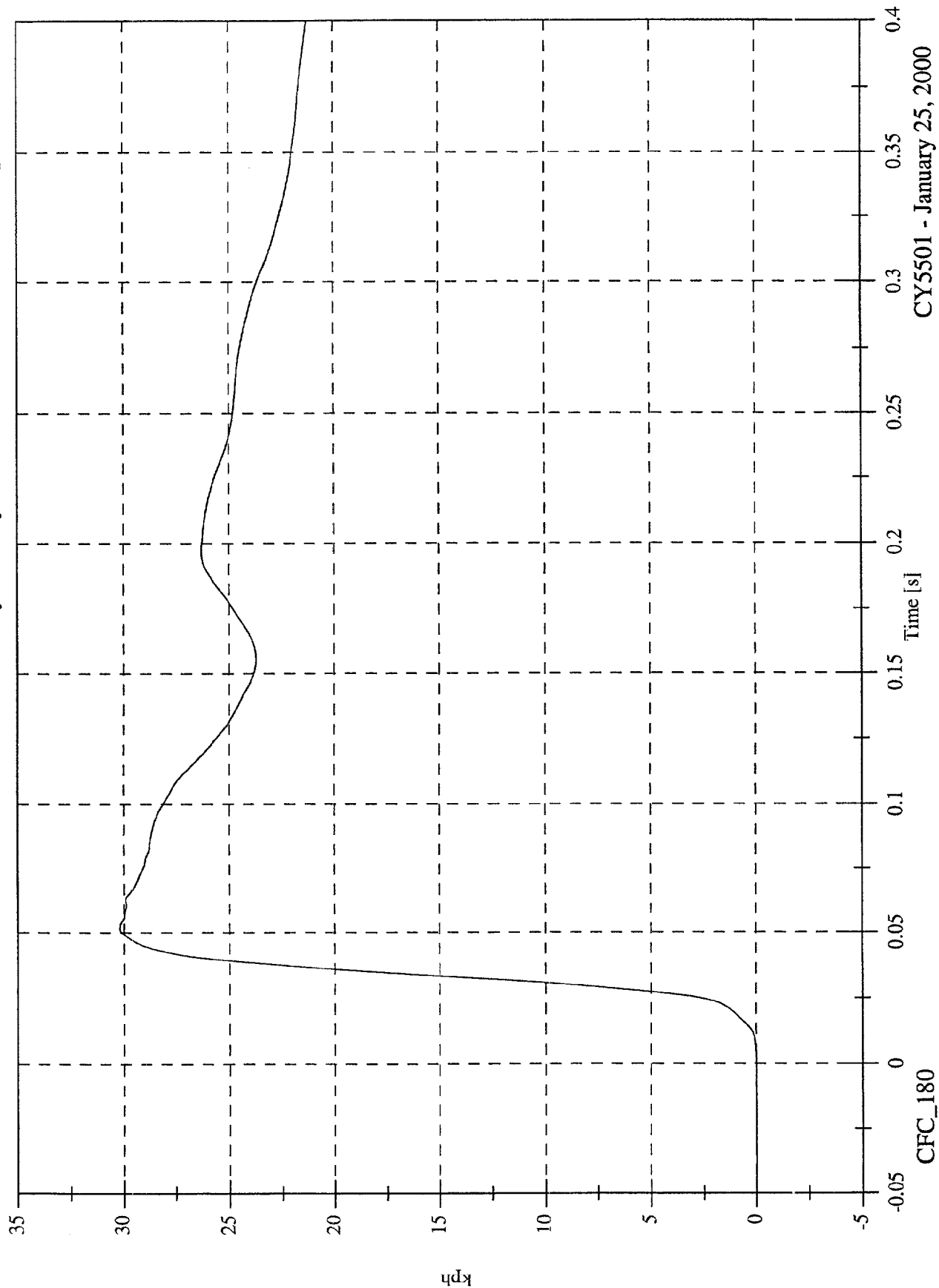
P1 Pelvic y

Max: 57.4 [g] at 0.033 [s]
Min: -3.5 [g] at 0.114 [s]



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FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon
P1 Pelvic y Velocity
Max: 30.2 [kph] at 0.052 [s]
Min: -0.0 [kph] at -0.037 [s]

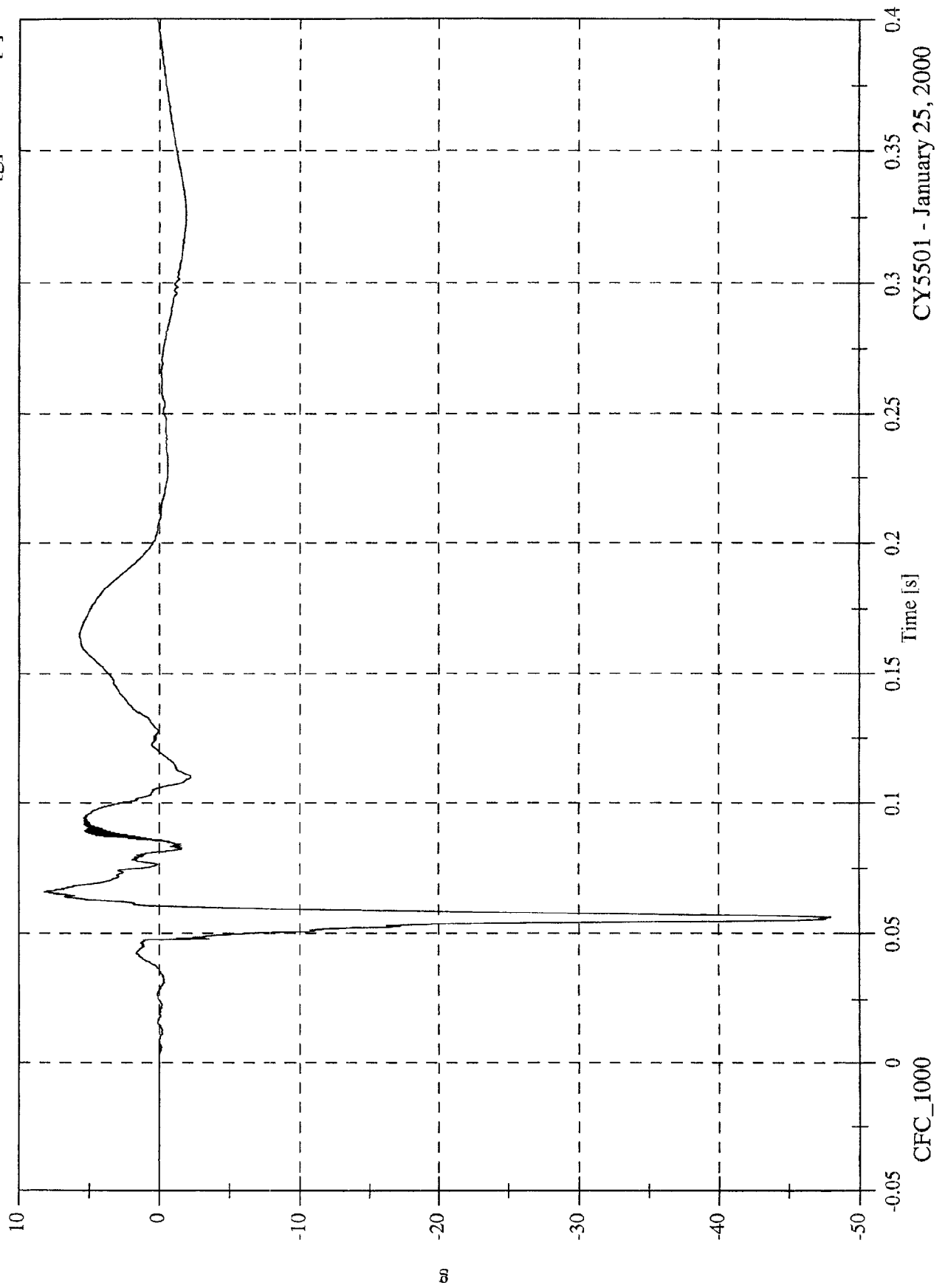


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FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Max: 8.2 [g] at 0.066 [s]
 Min: -48.0 [g] at 0.056 [s]

P4 Head x



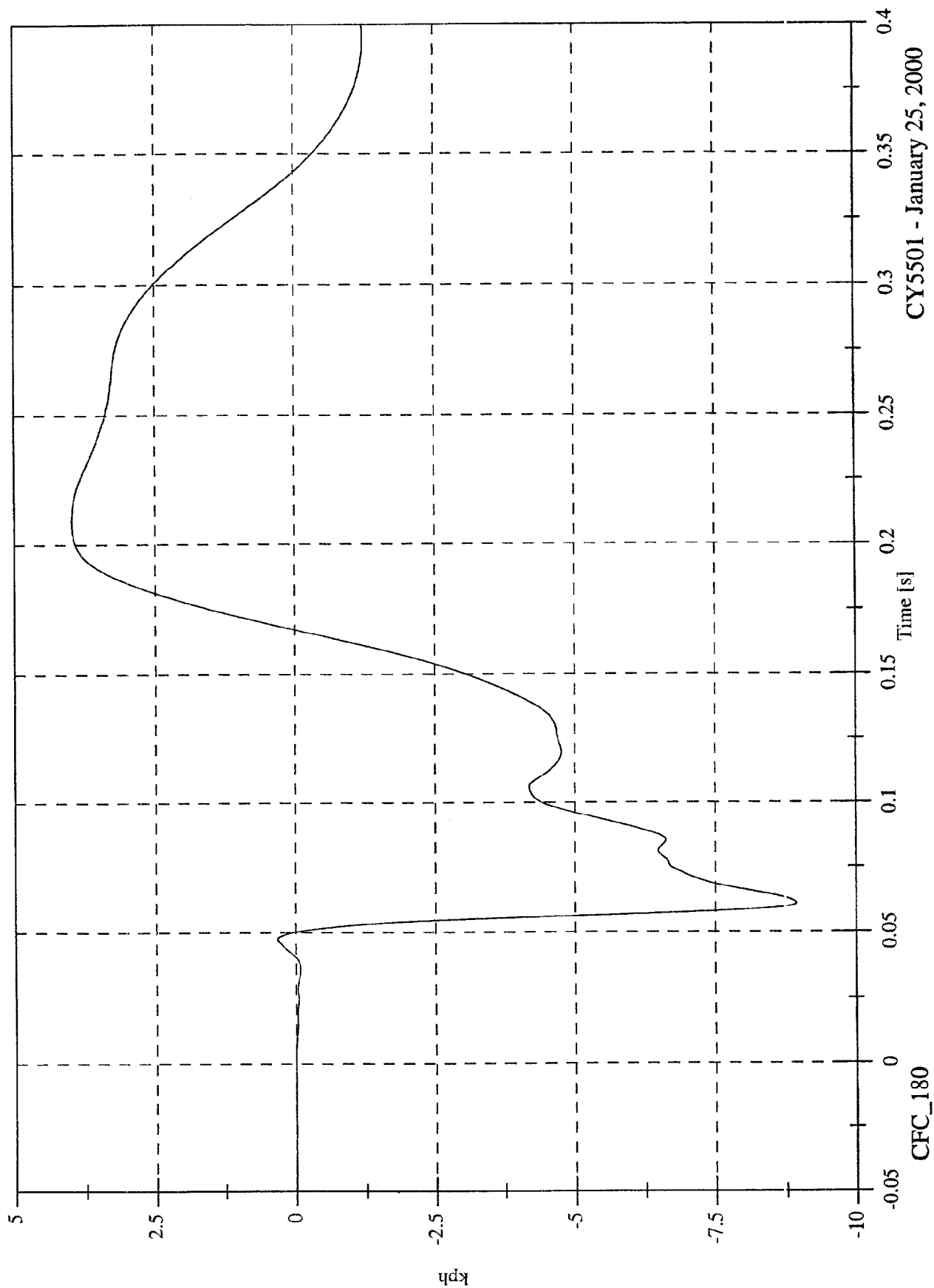
CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Max: 4.0 [kph] at 0.209 [s]

Min: -8.9 [kph] at 0.061 [s]

P4 Head x Velocity



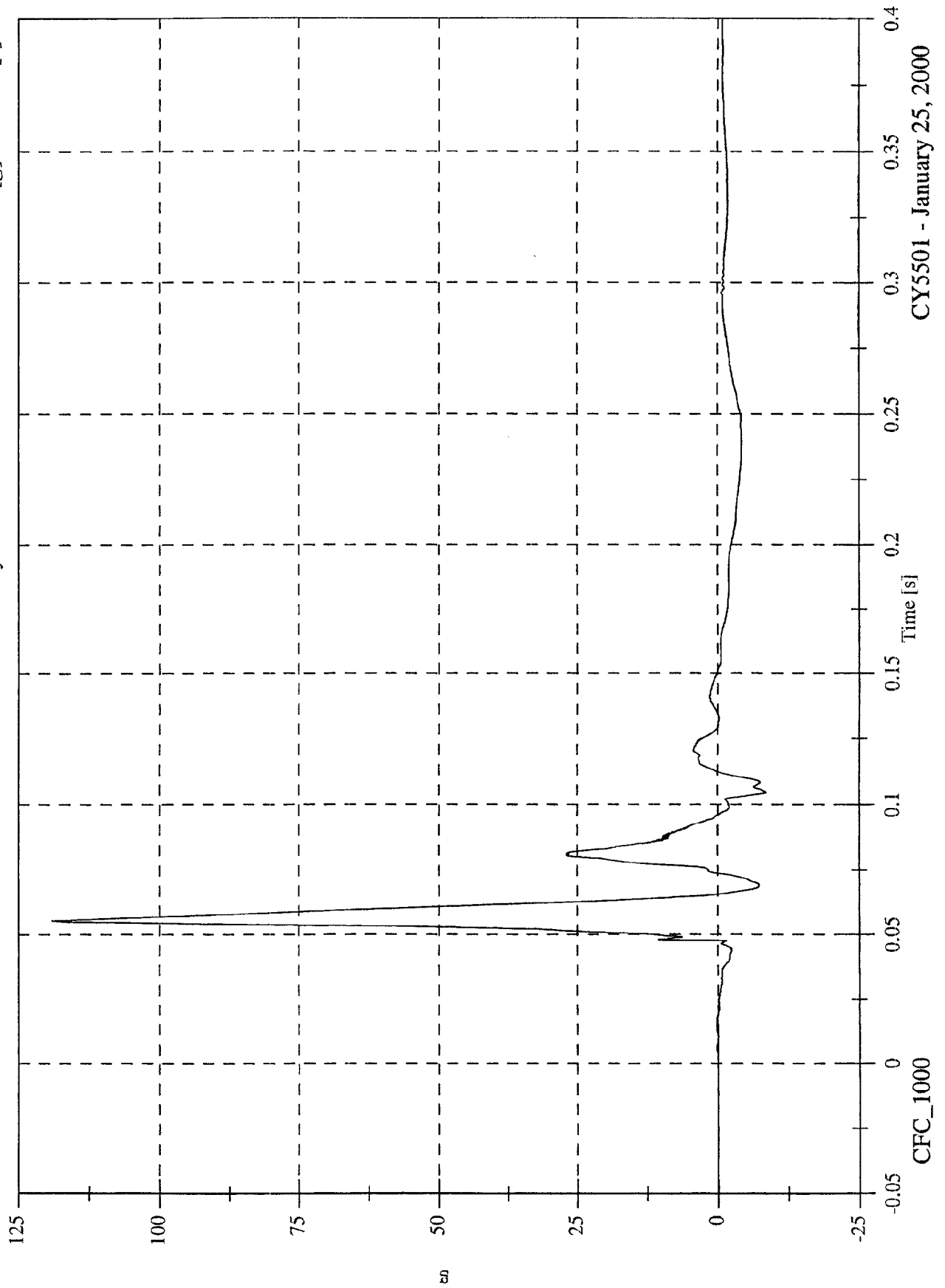
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FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P4 Head y

Max: 119.1 [g] at 0.055 [s]

Min: -8.6 [g] at 0.105 [s]

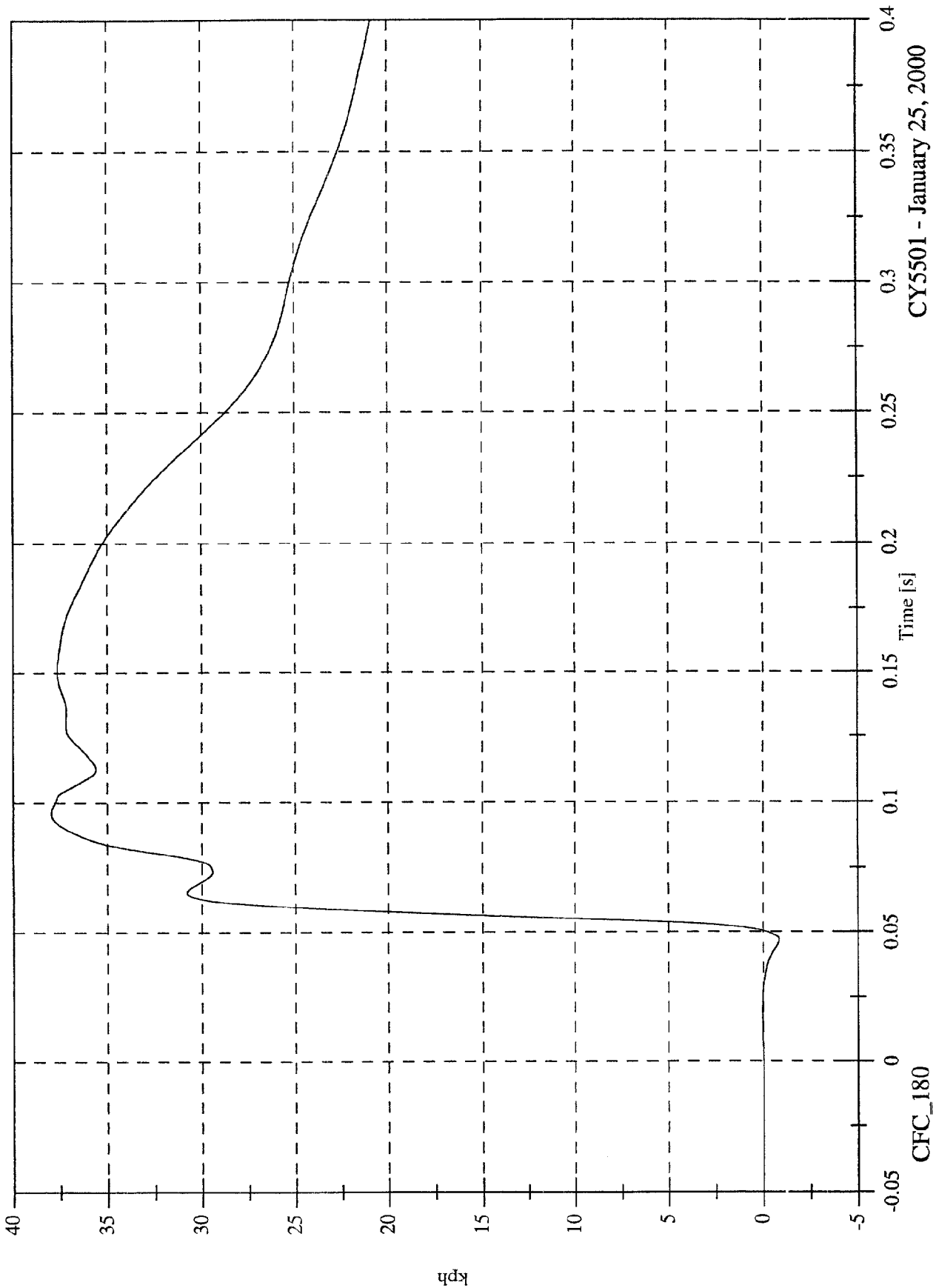


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FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon
P4 Head y Velocity

Max: 38.0 [kph] at 0.096 [s]

Min: -0.8 [kph] at 0.047 [s]



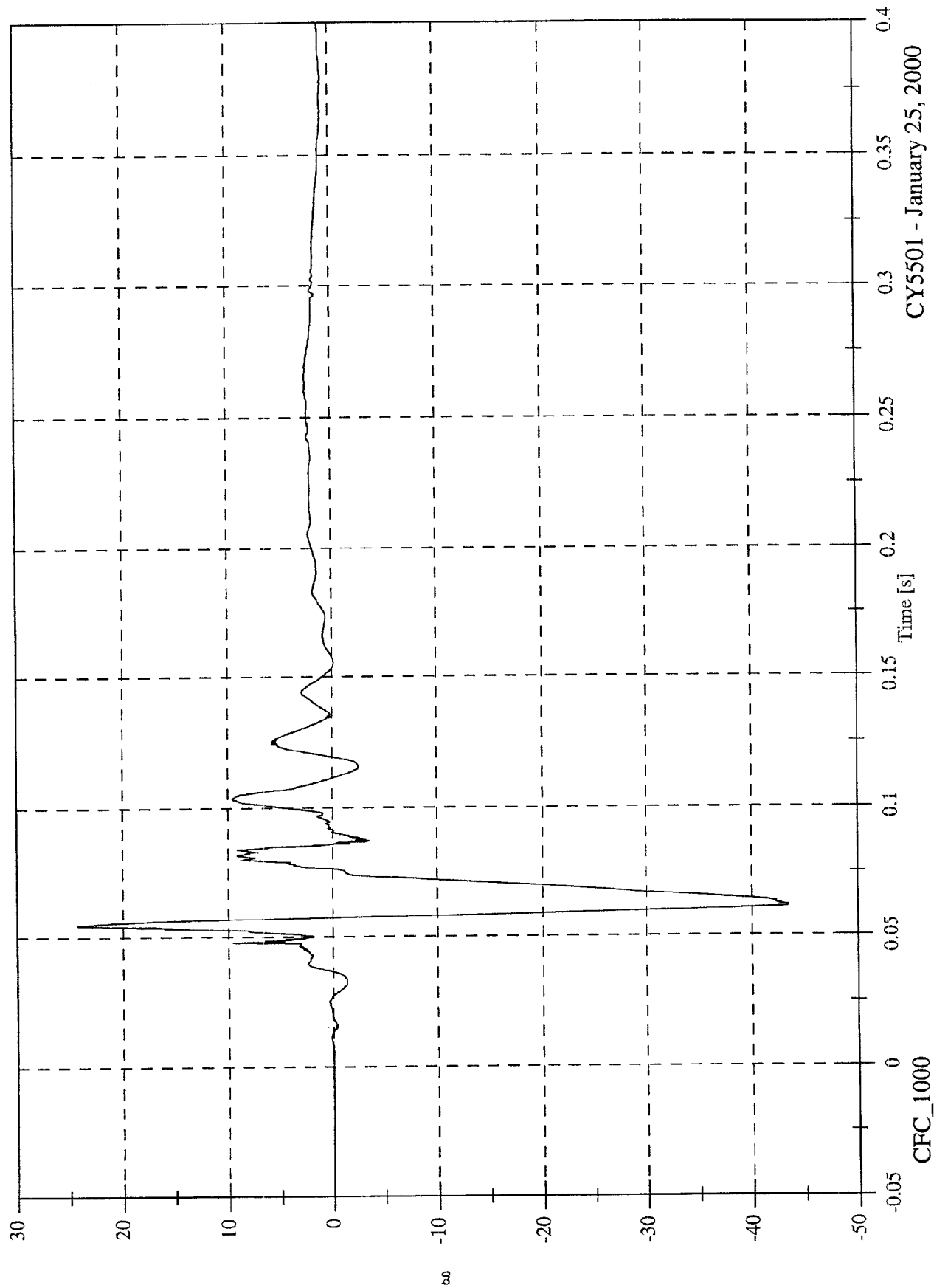
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FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Max: 24.3 [g] at 0.055 [s]

Min: -43.5 [g] at 0.062 [s]

P4 Head z

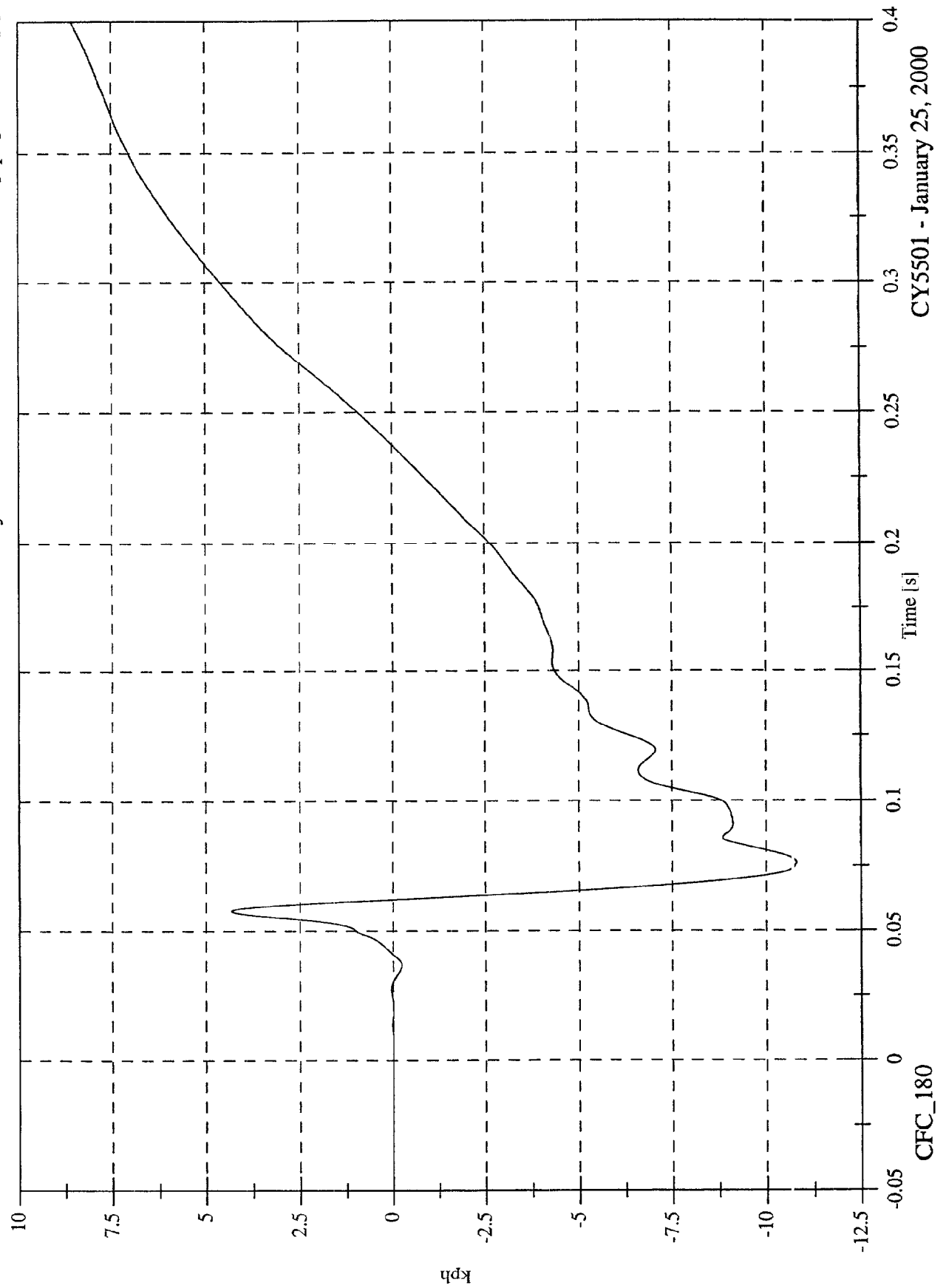


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FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P4 Head z Velocity

Max: 8.6 [kph] at 0.400 [s]
Min: -10.8 [kph] at 0.076 [s]

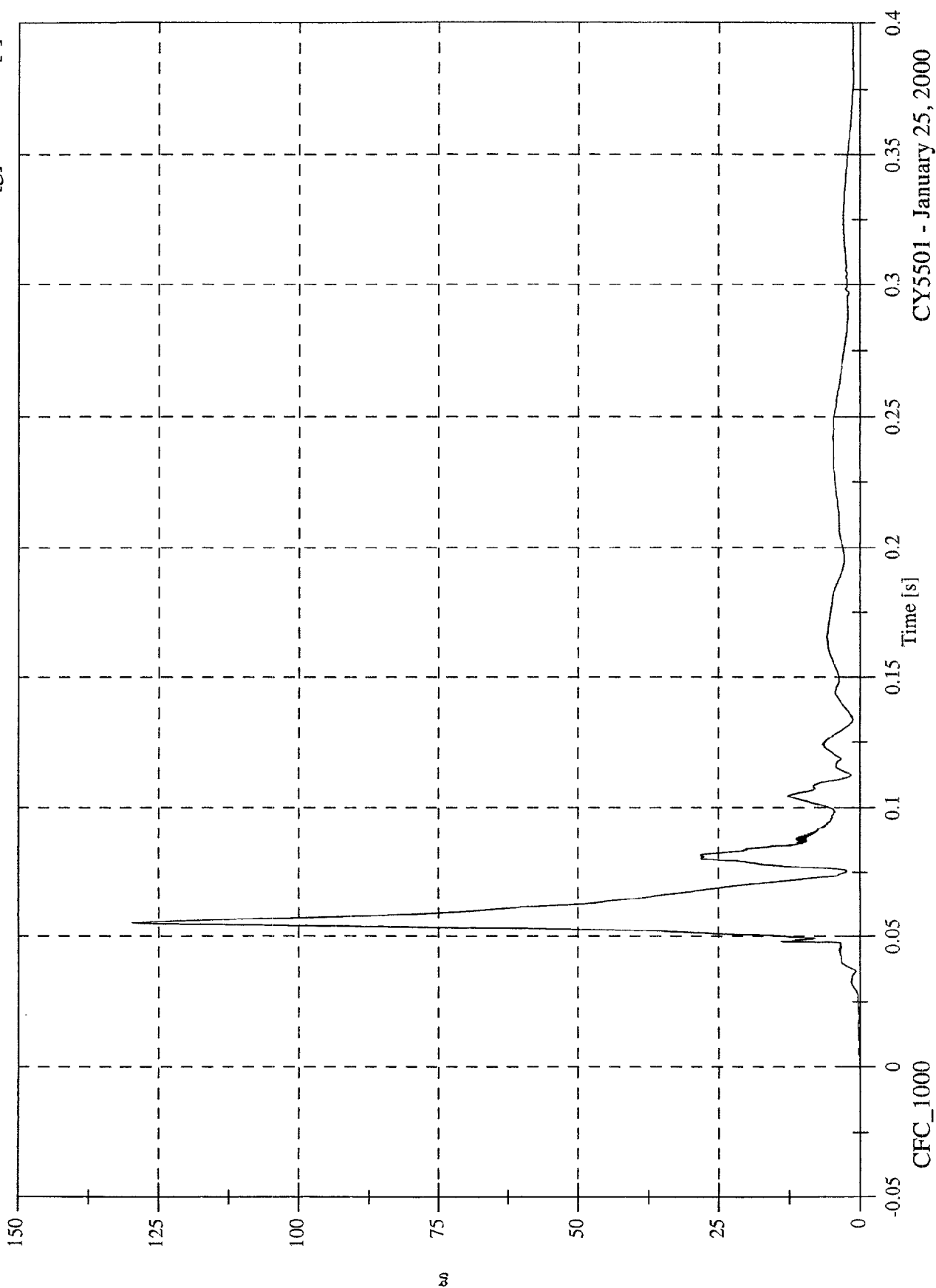


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FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon

P4 Head Resultant

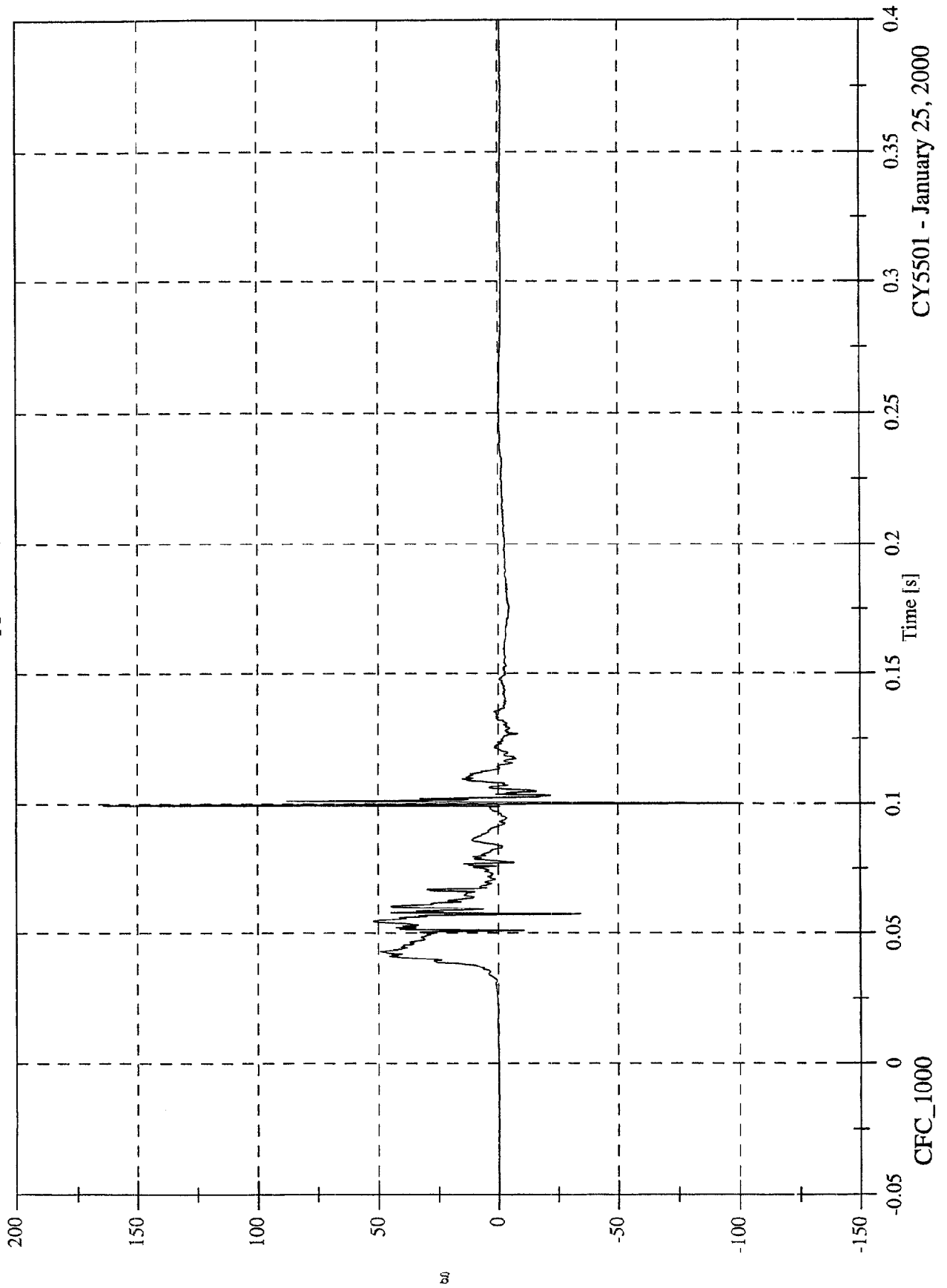
Max: 129.7 [g] at 0.055 [s]
Min: 0.0 [g] at -0.031 [s]



FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P4 Upper Rib y

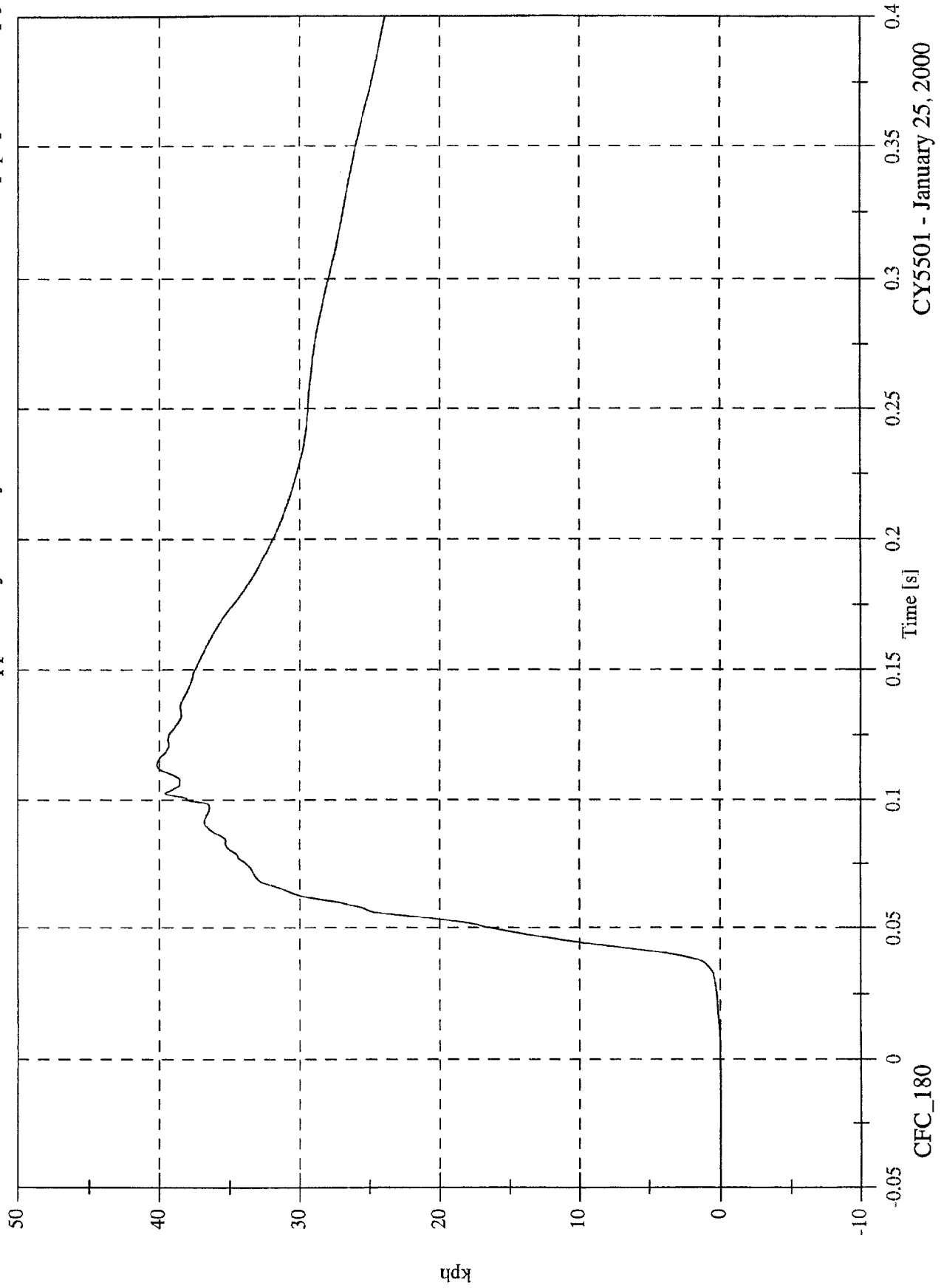
Max: 164.2 [g] at 0.100 [s]
Min: -101.2 [g] at 0.100 [s]



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FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon
P4 Upper Rib y Velocity

Max: 40.2 [kph] at 0.114 [s]
Min: -0.0 [kph] at -0.021 [s]

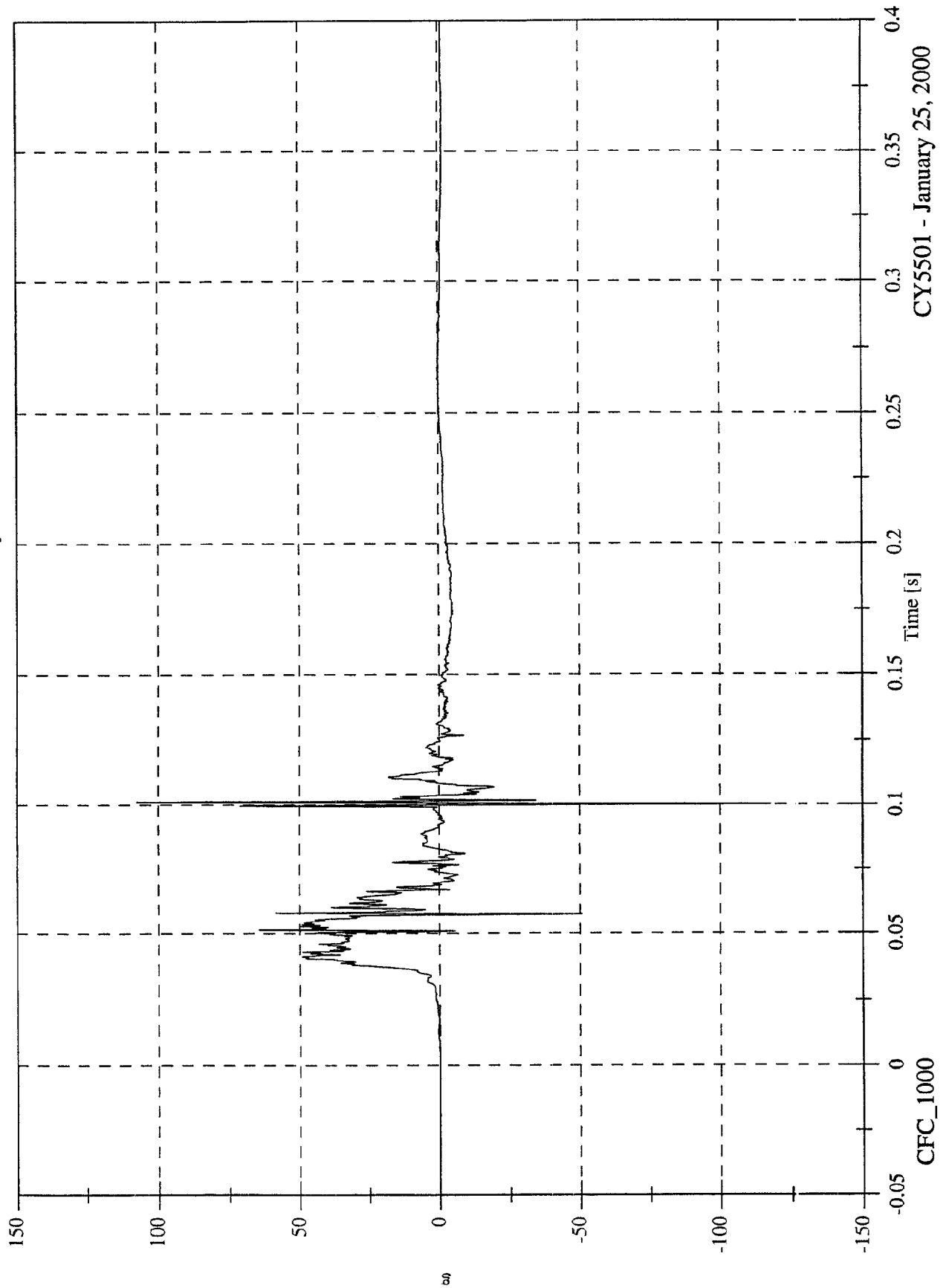


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FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P4 Lower Rib y

Max: 107.3 [g] at 0.101 [s]
Min: -117.6 [g] at 0.100 [s]

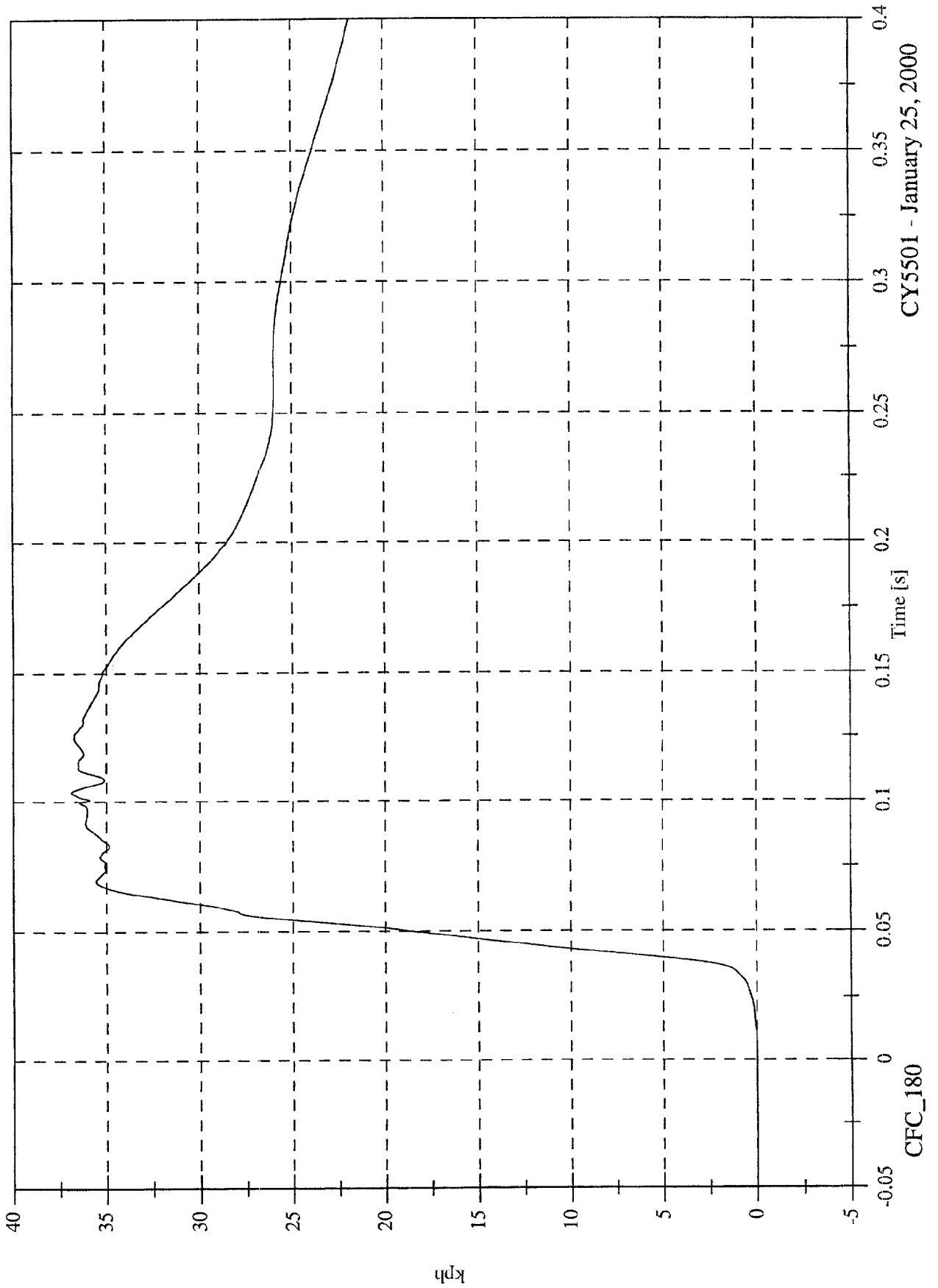


CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P4 Lower Rib y Velocity

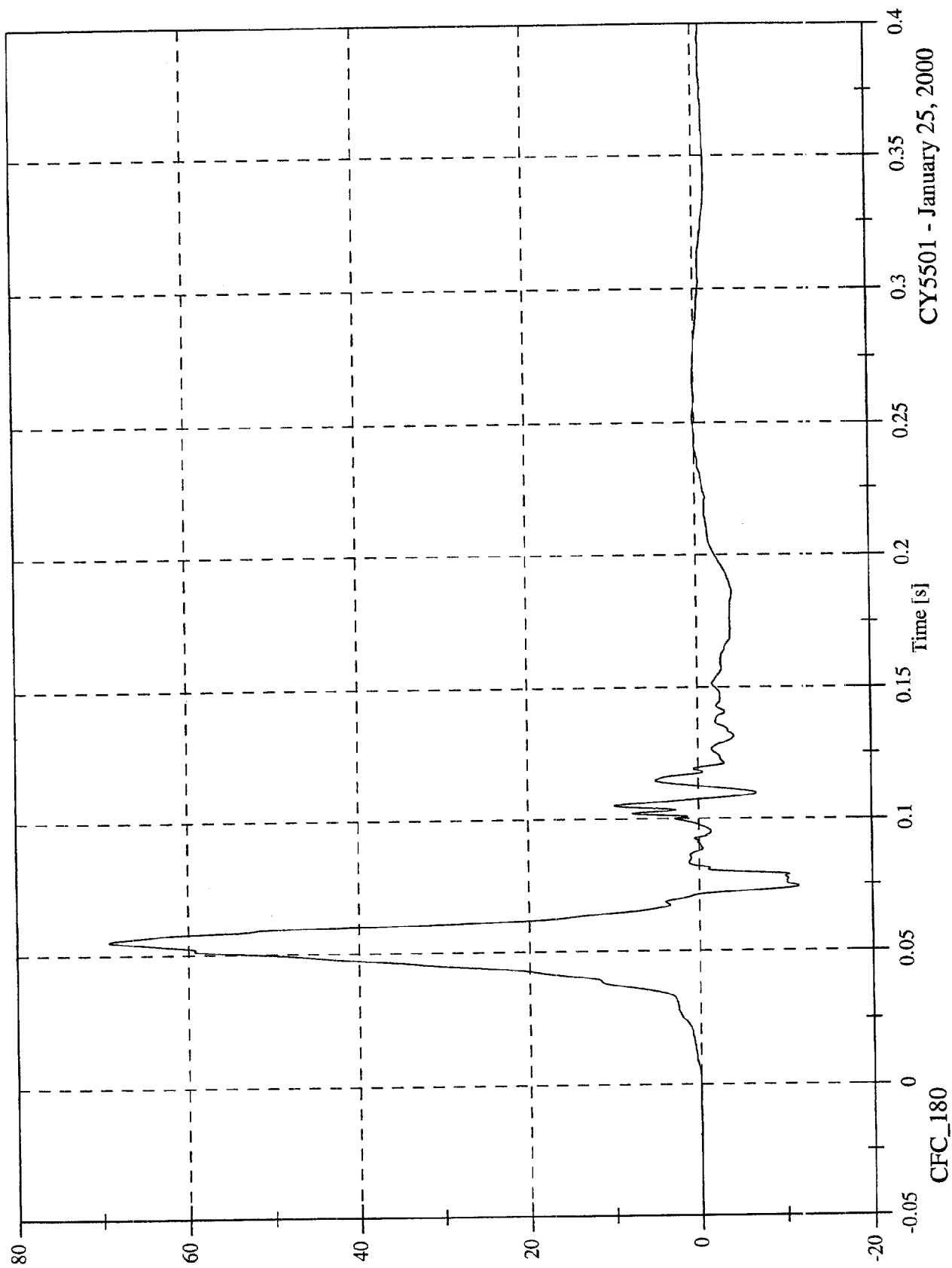
Max: 36.9 [kph] at 0.104 [s]
Min: -0.0 [kph] at -0.046 [s]



CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon
P4 Lower Spine y

Max: 69.2 [g] at 0.055 [s]
Min: -11.6 [g] at 0.074 [s]



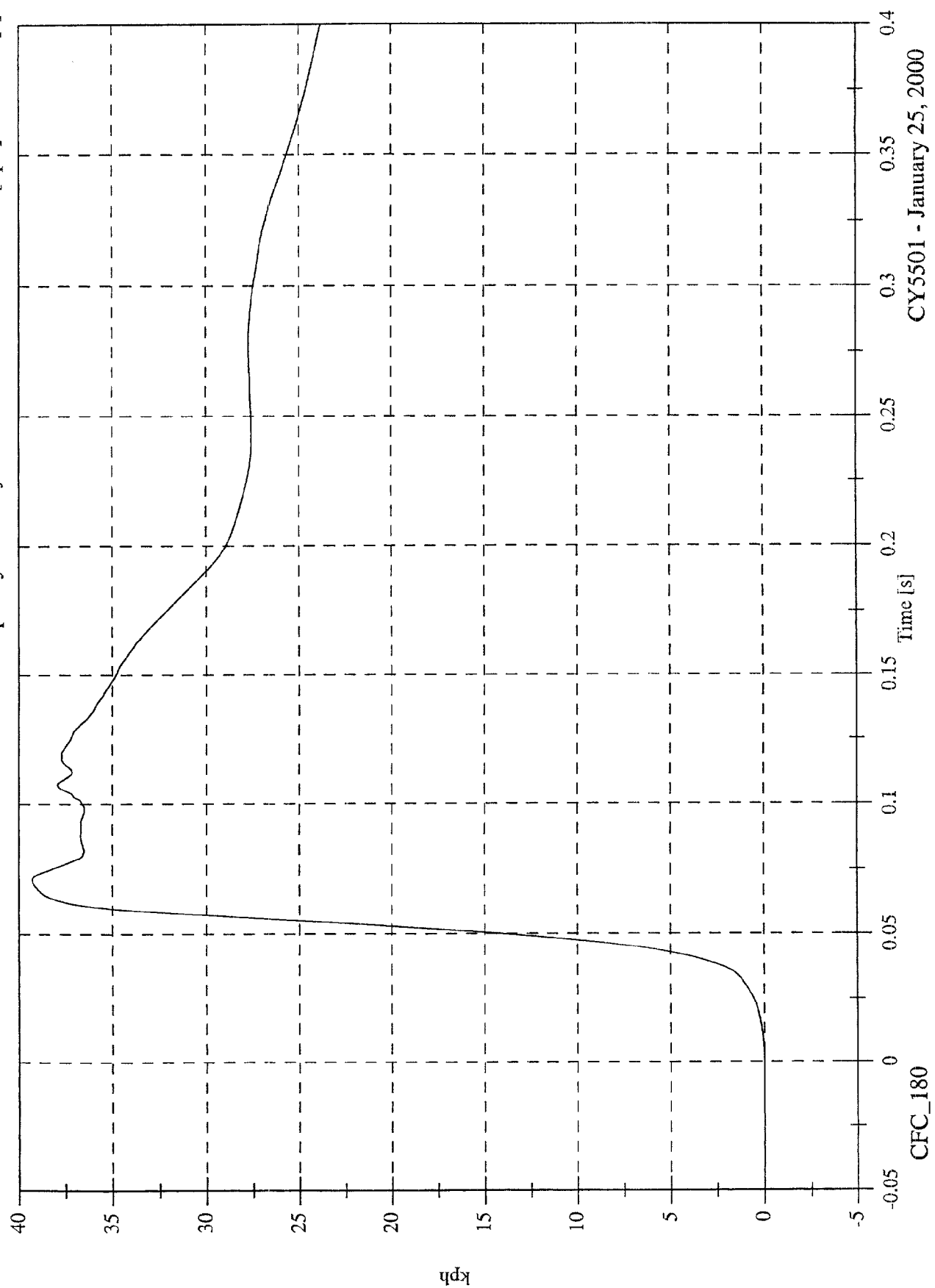
CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Max: 39.3 [kph] at 0.071 [s]

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

P4 Lower Spine y Velocity



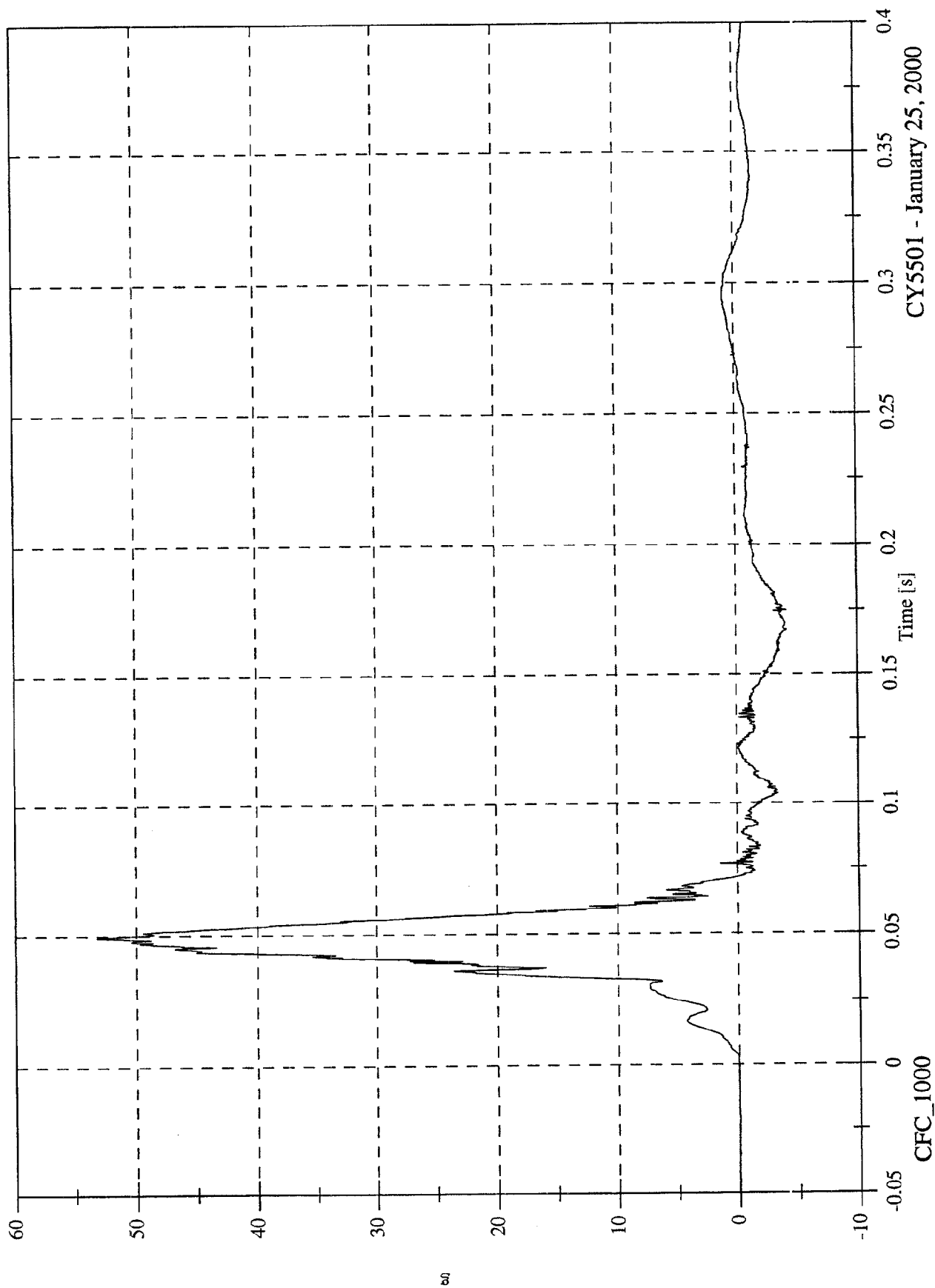
CY5501 - January 25, 2000

CFC_180

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P4 Pelvic y

Max: 53.2 [g] at 0.049 [s]
Min: -4.2 [g] at 0.167 [s]

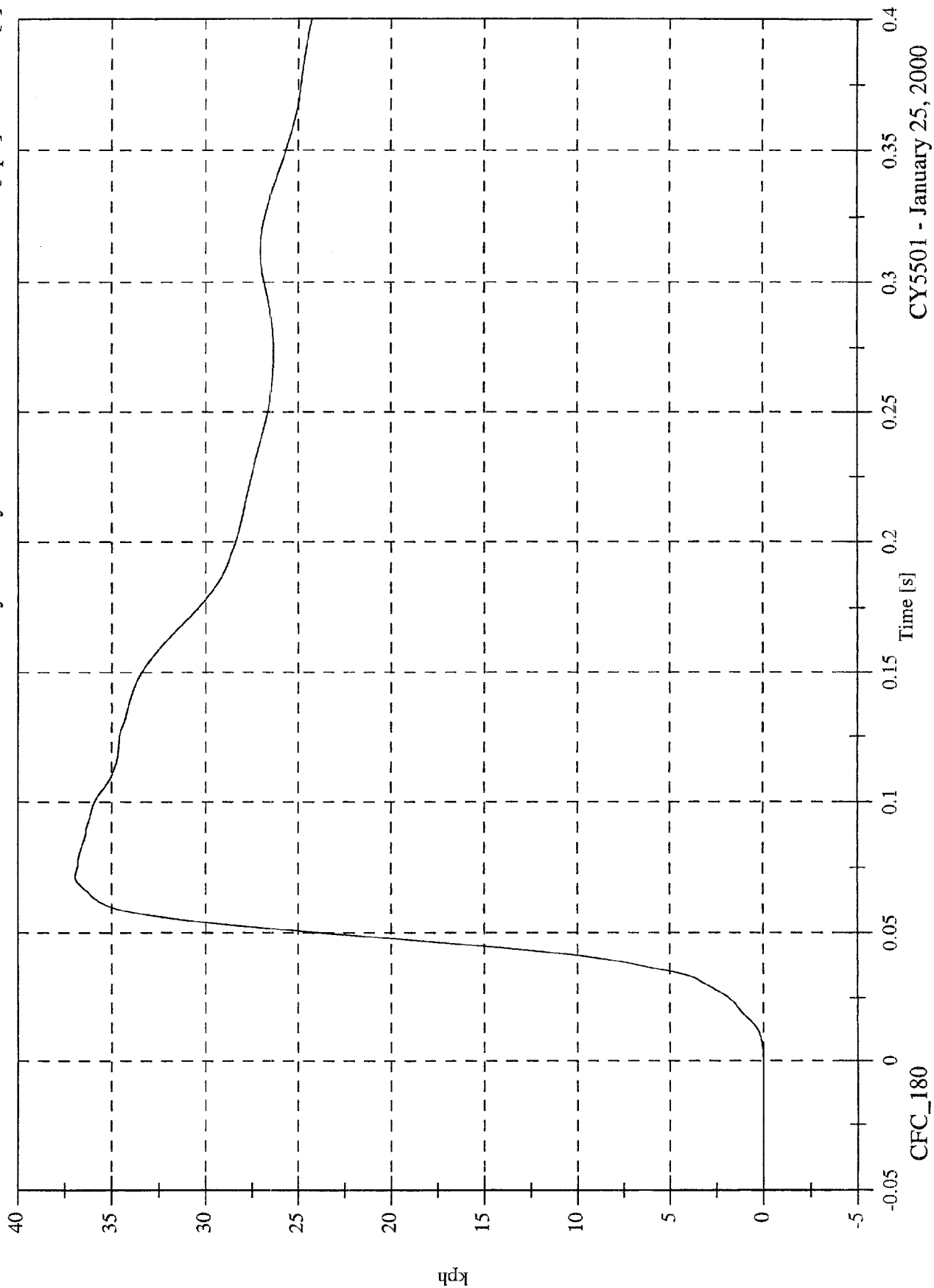


CY5501 - January 25, 2000

FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon

Max: 36.9 [kph] at 0.072 [s]
Min: -0.0 [kph] at -0.018 [s]

P4 Pelvic y Velocity



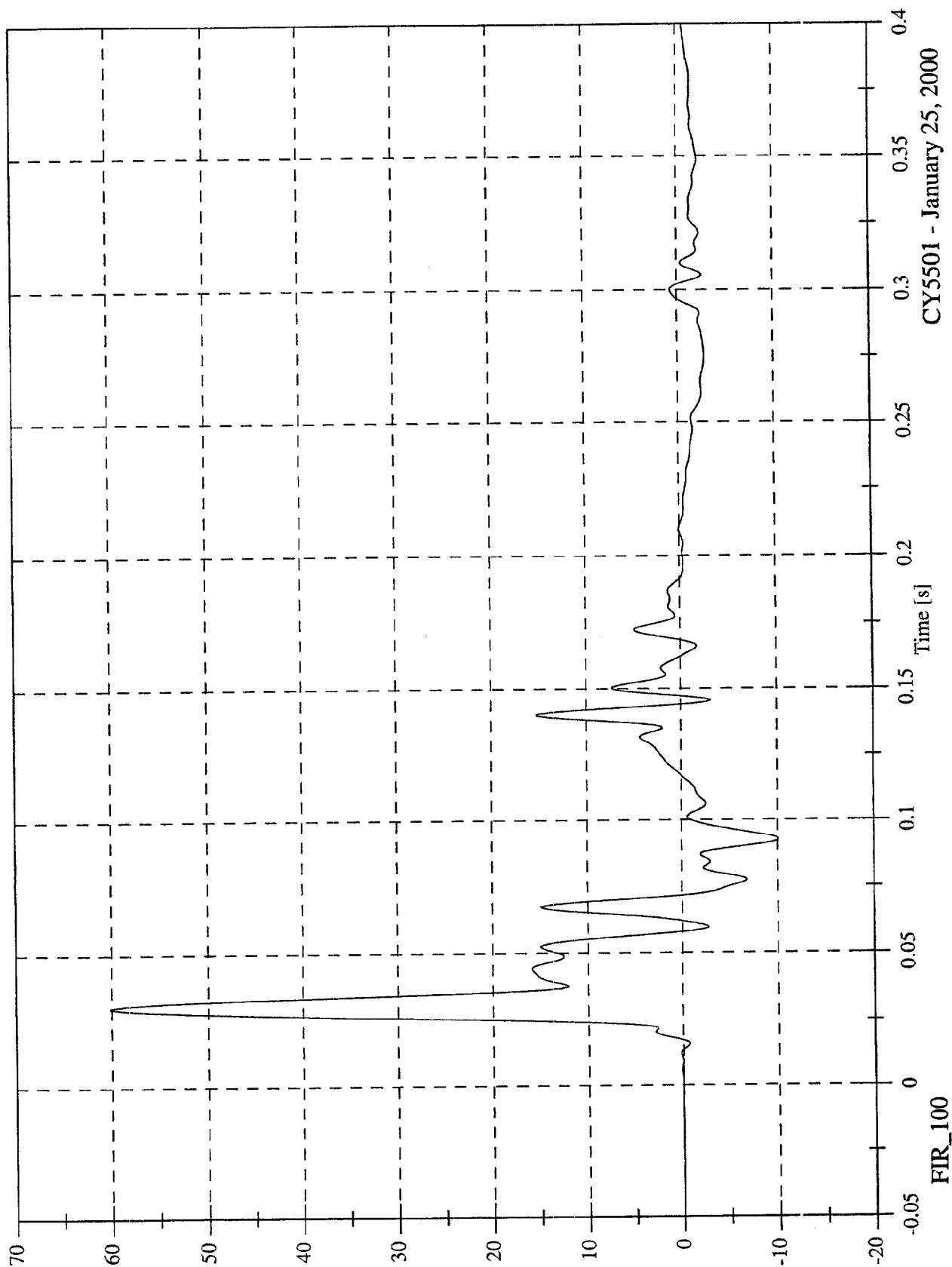
CFC_180

CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P1 Upper Rib y

Max: 60.1 [g] at 0.030 [s]
Min: -10.1 [g] at 0.093 [s]



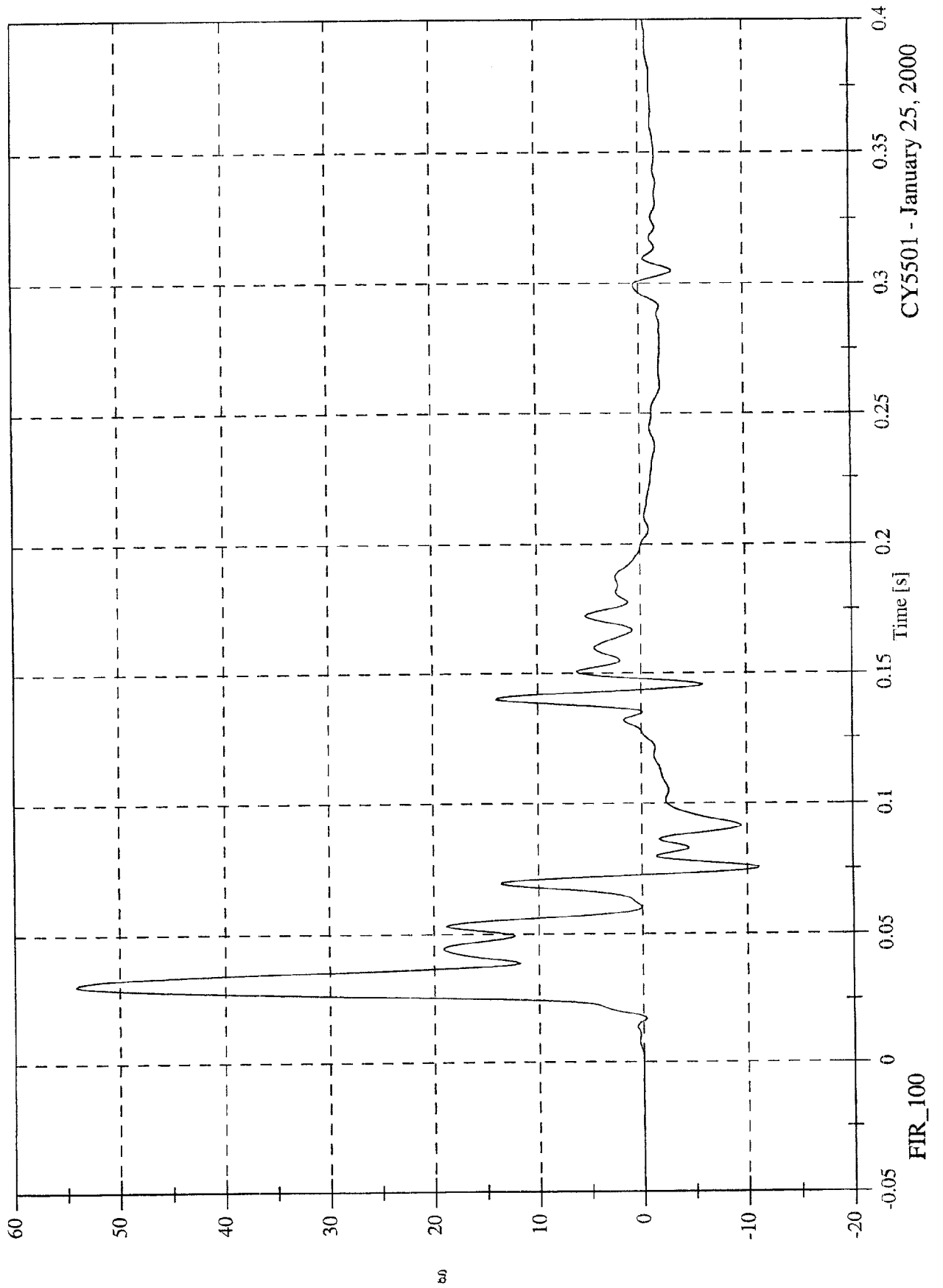
CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Max: 54.1 [g] at 0.031 [s]

Min: -11.1 [g] at 0.076 [s]

P1 Lower Rib y

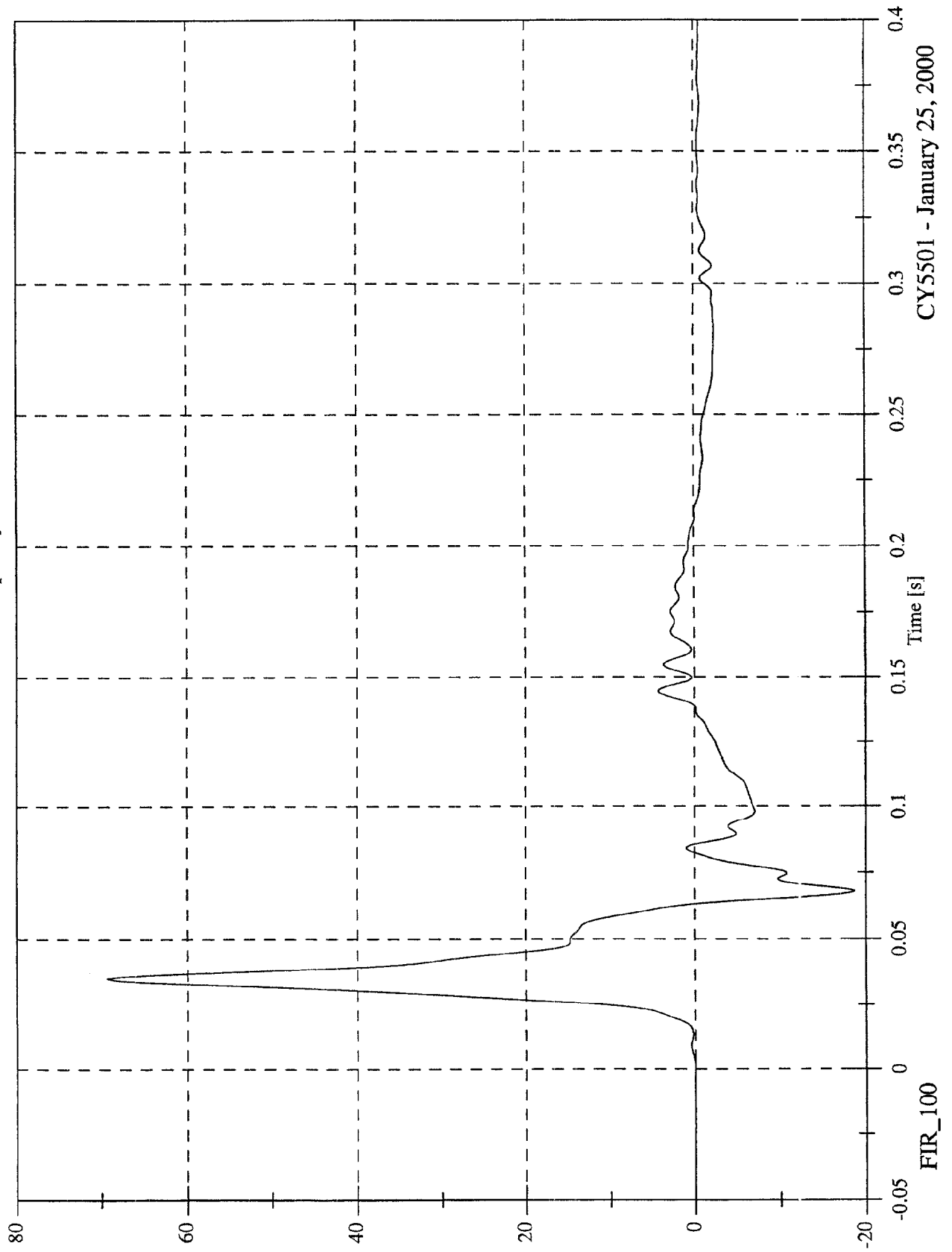


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P1 Lower Spine y

Max: 69.3 [g] at 0.035 [s]
Min: -18.7 [g] at 0.068 [s]

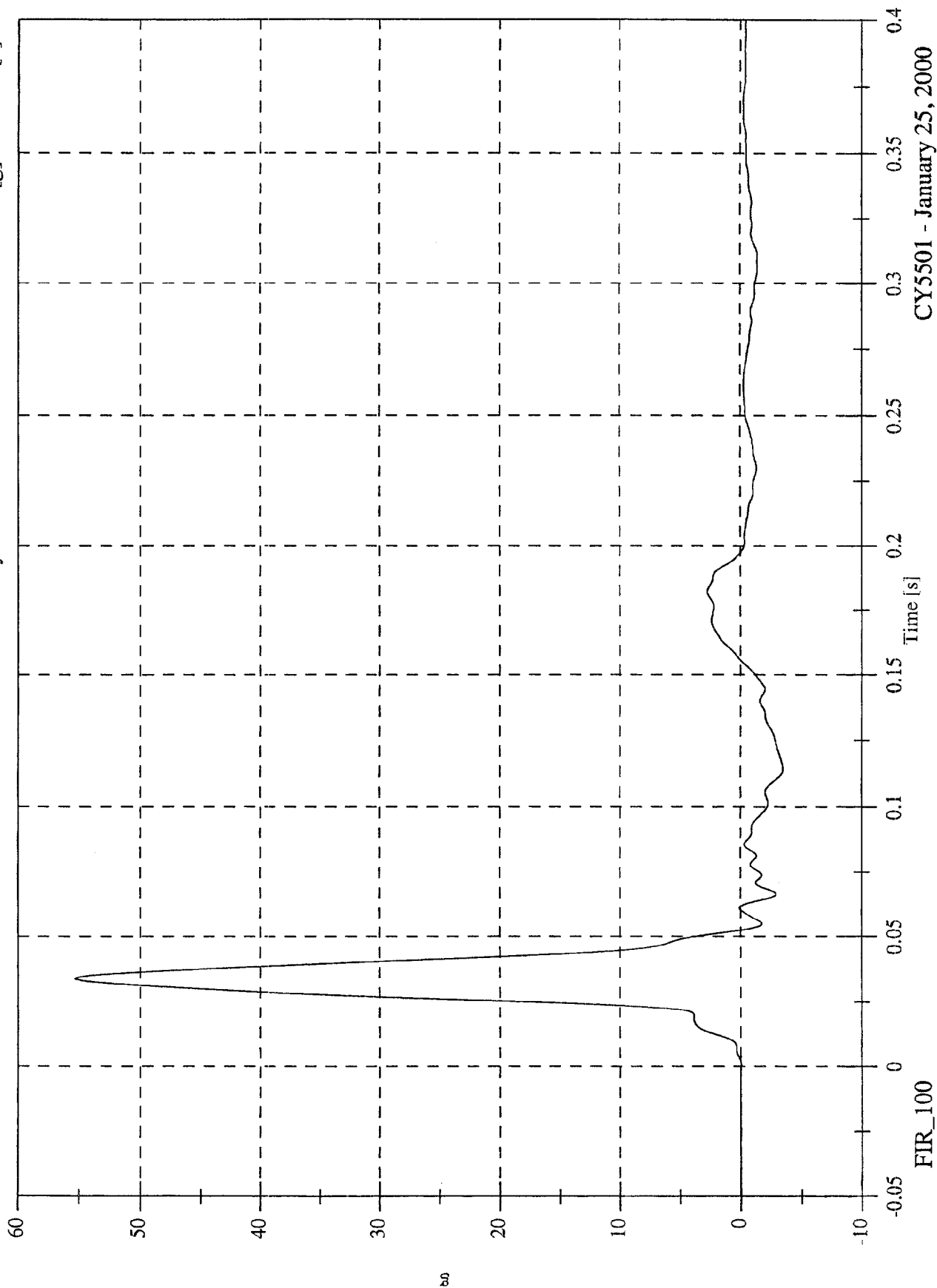


FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Max: 55.3 [g] at 0.034 [s]

Min: -3.5 [g] at 0.114 [s]

P1 Pelvic y

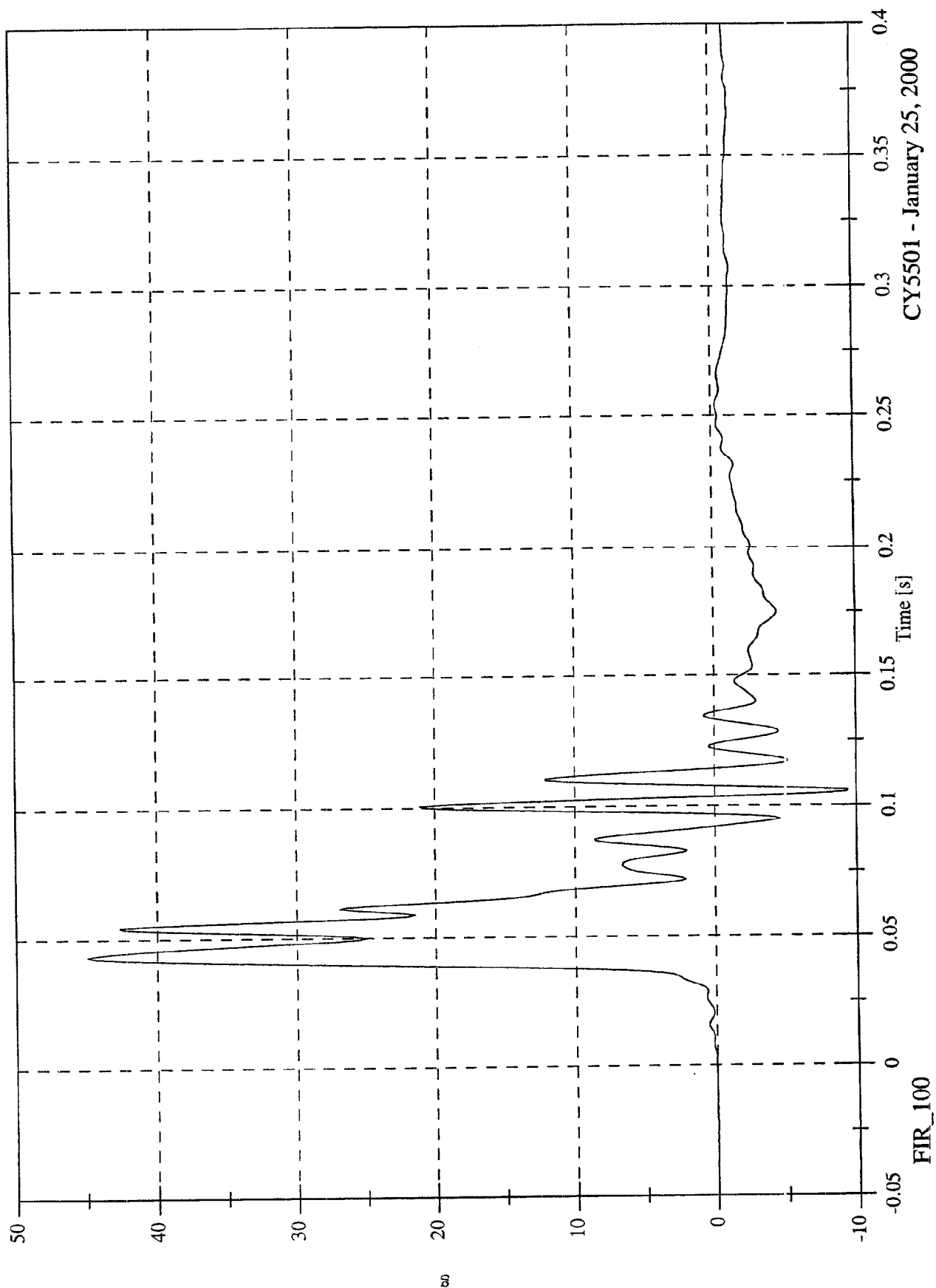


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Max: 44.9 [g] at 0.043 [s]
Min: -9.4 [g] at 0.106 [s]

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P4 Upper Rib y



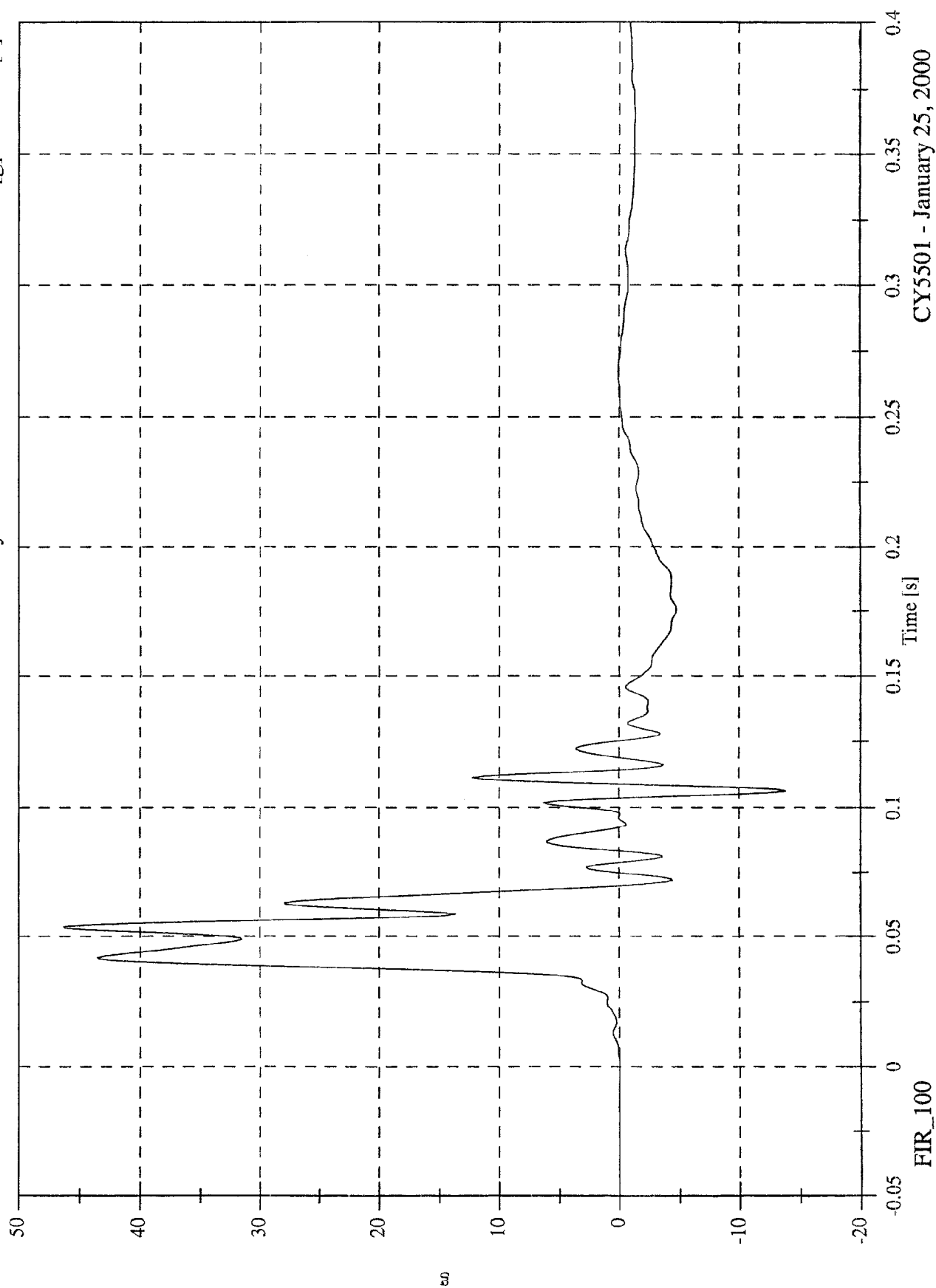
CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P4 Lower Rib y

Max: 46.3 [g] at 0.054 [s]

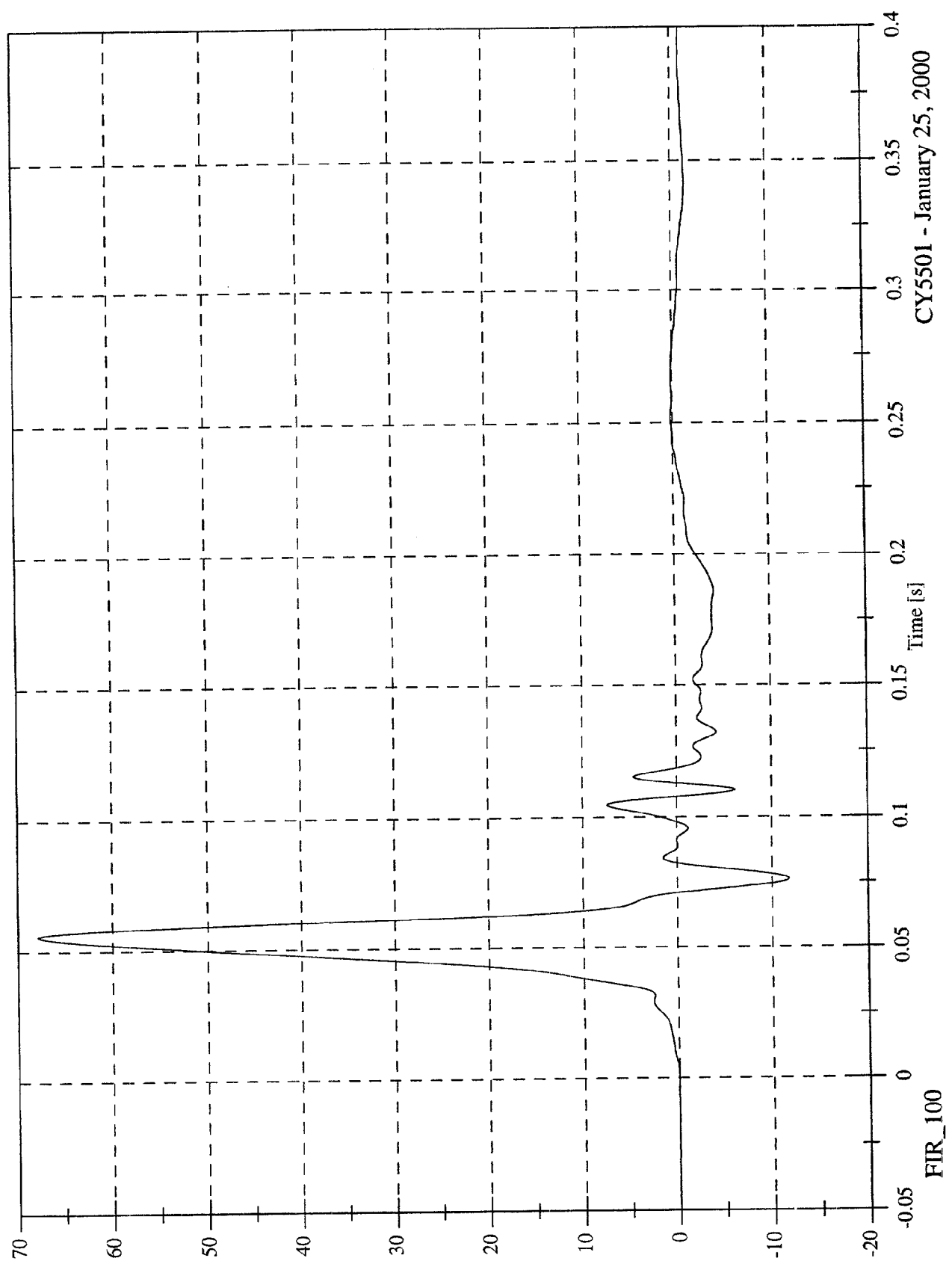
Min: -13.8 [g] at 0.106 [s]



CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon
P4 Lower Spine y

Max: 67.9 [g] at 0.056 [s]
Min: -11.8 [g] at 0.076 [s]



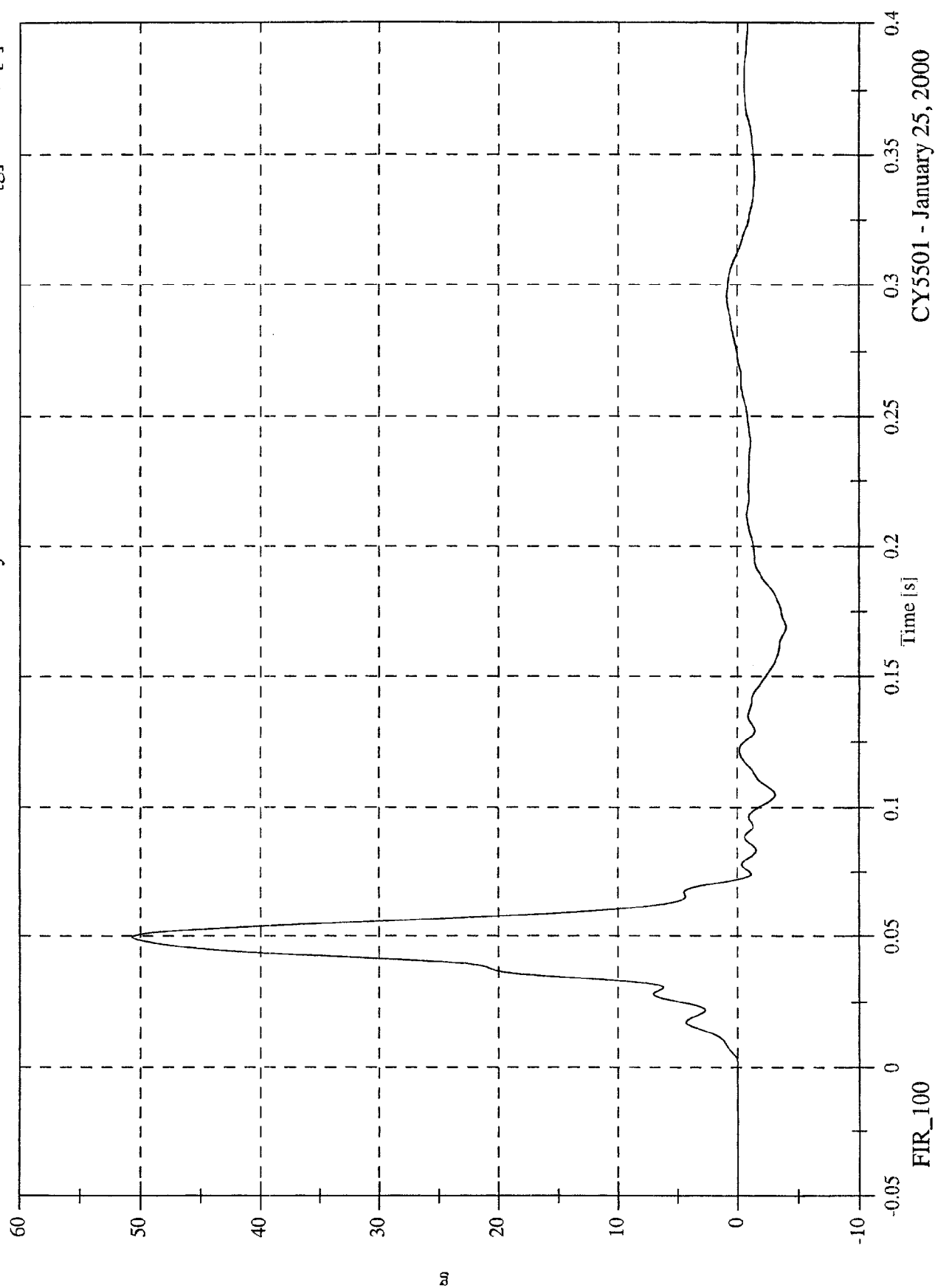
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FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Max: 50.7 [g] at 0.049 [s]

Min: -4.0 [g] at 0.169 [s]

P4 Pelvic y



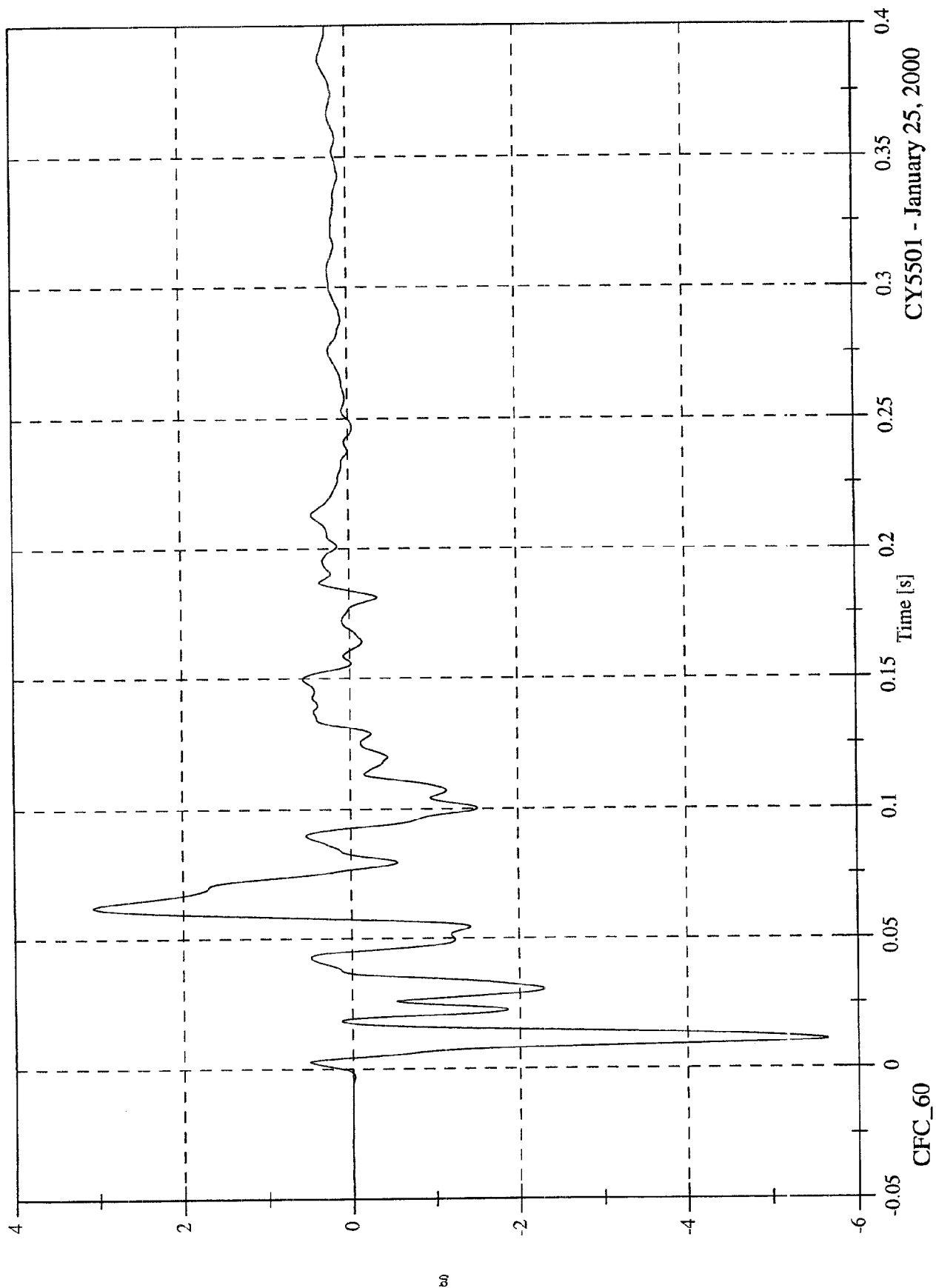
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FIR_100

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 1 Right Front Sill Ax

Max: 3.1 [g] at 0.062 [s]
Min: -5.7 [g] at 0.011 [s]

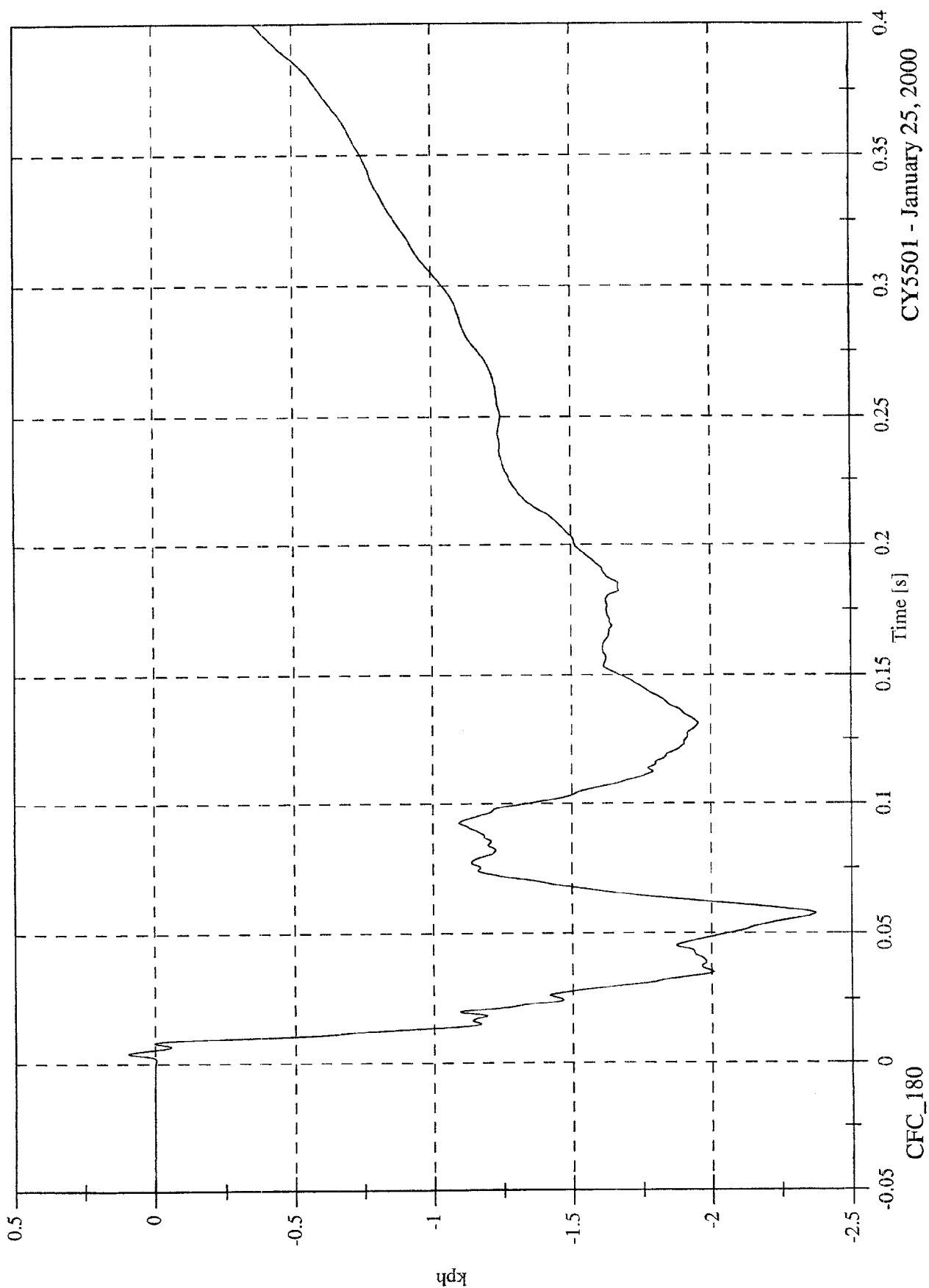


FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Max: 0.1 [kph] at 0.004 [s]

Acc 1 Right Front Sill Ax Velocity

Min: -2.4 [kph] at 0.058 [s]

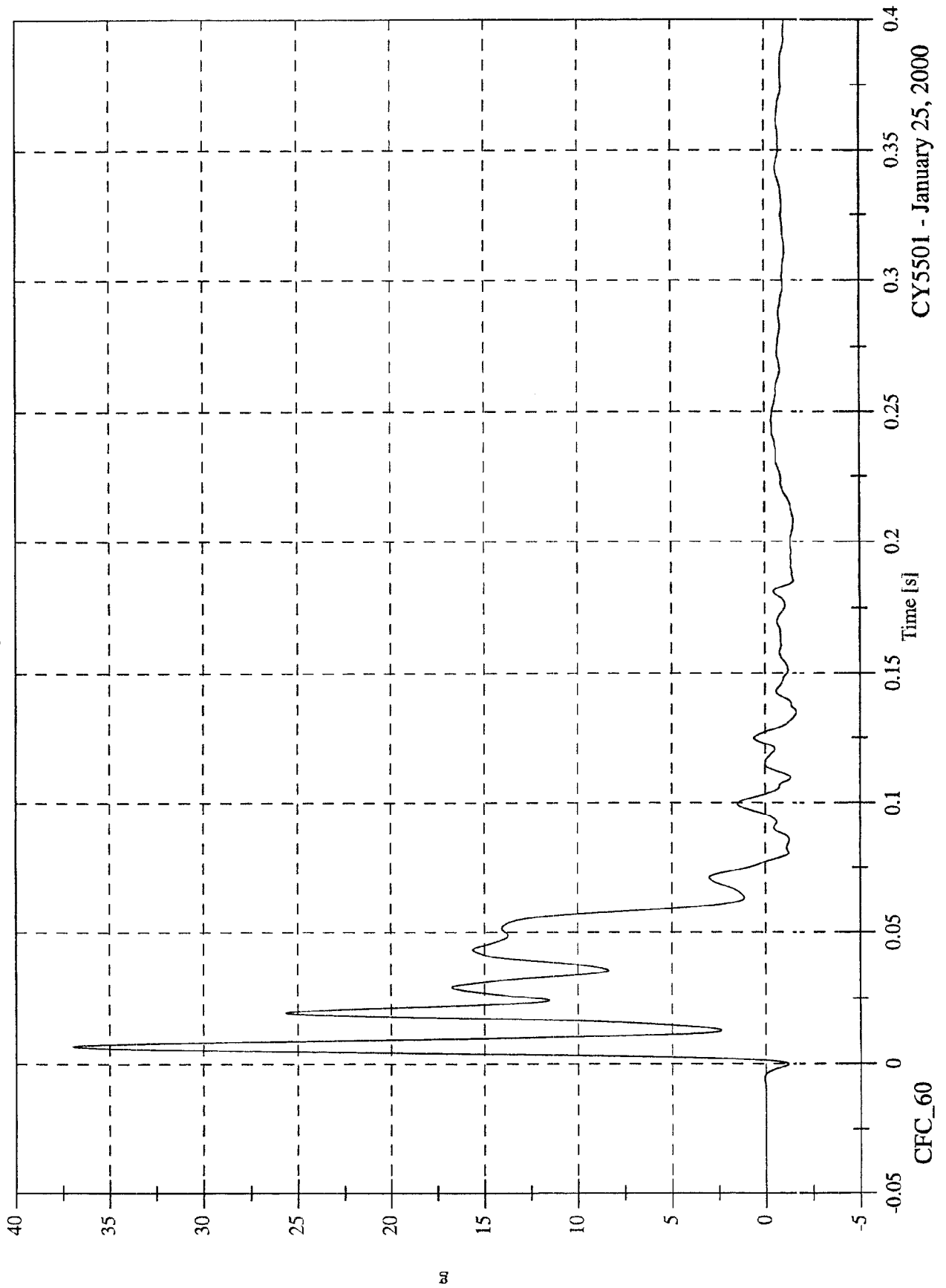


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FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon

Acc 1 Right Front Sill Ay

Max: 36.9 [g] at 0.007 [s]
Min: -1.7 [g] at 0.135 [s]



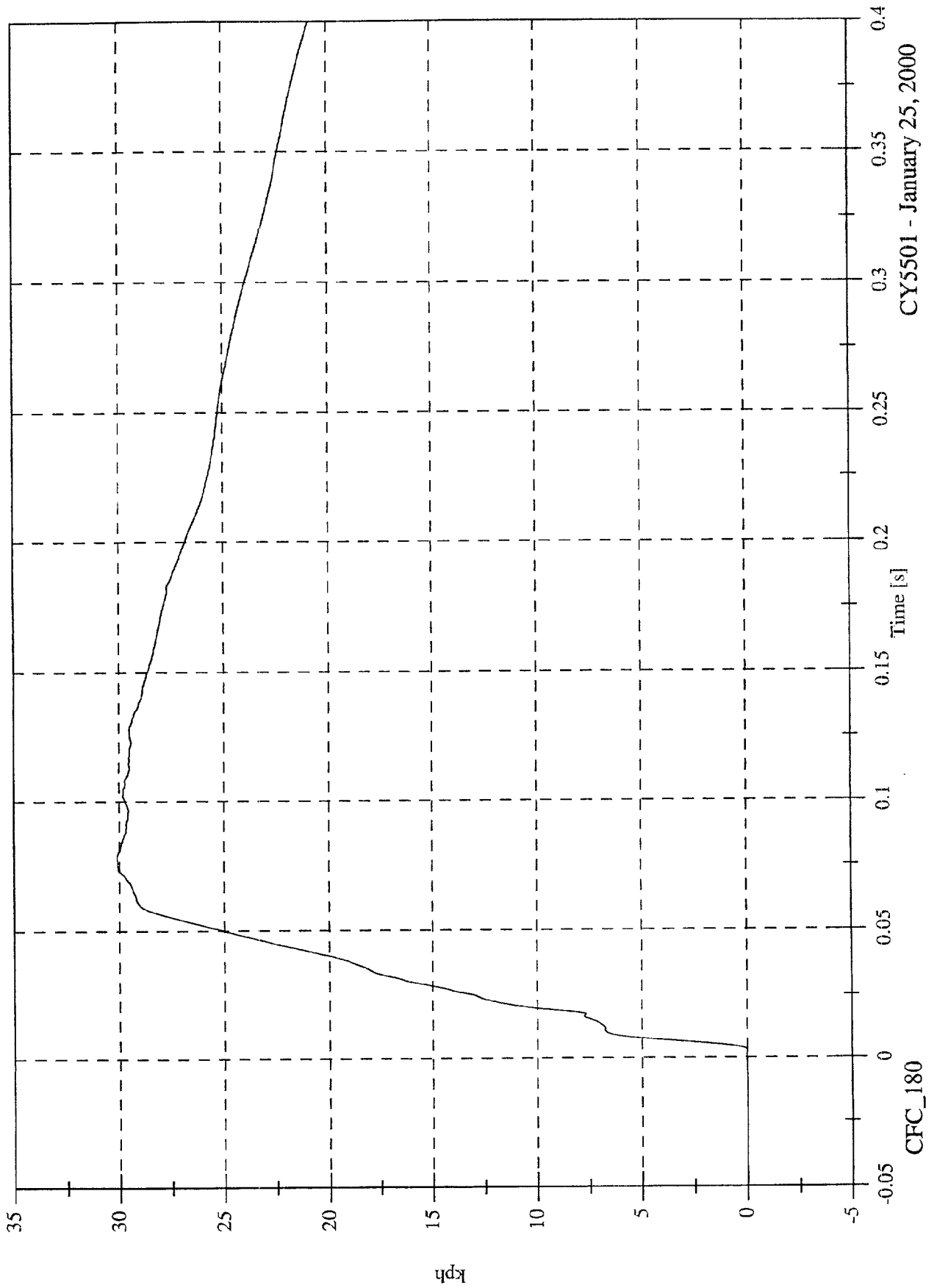
CY5501 - January 25, 2000

FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon

Acc 1 Right Front Sill Ay Velocity

Max: 30.1 [kph] at 0.078 [s]

Min: -0.0 [kph] at -0.049 [s]

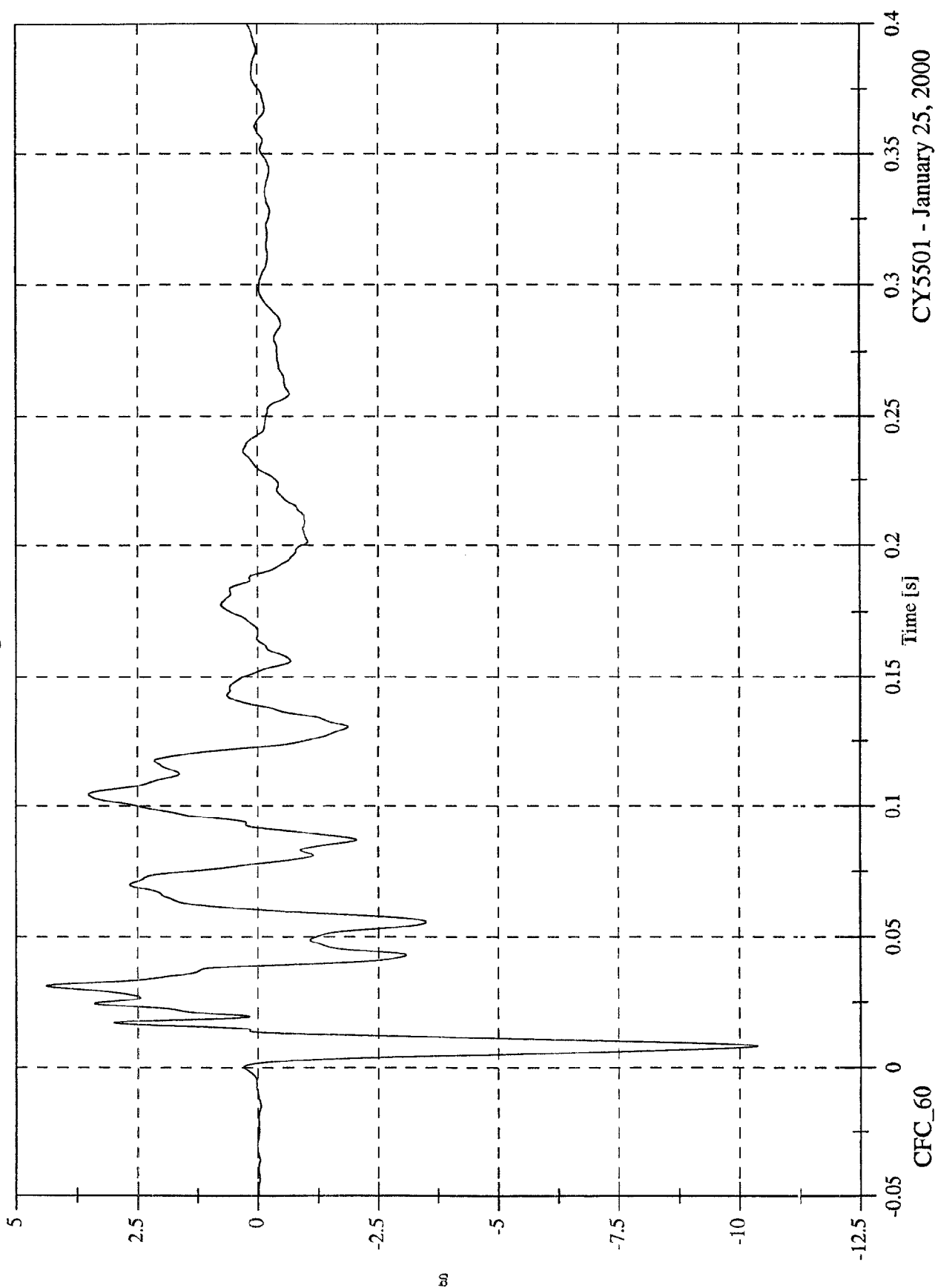


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FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon

Acc 1 Right Front Sill Az

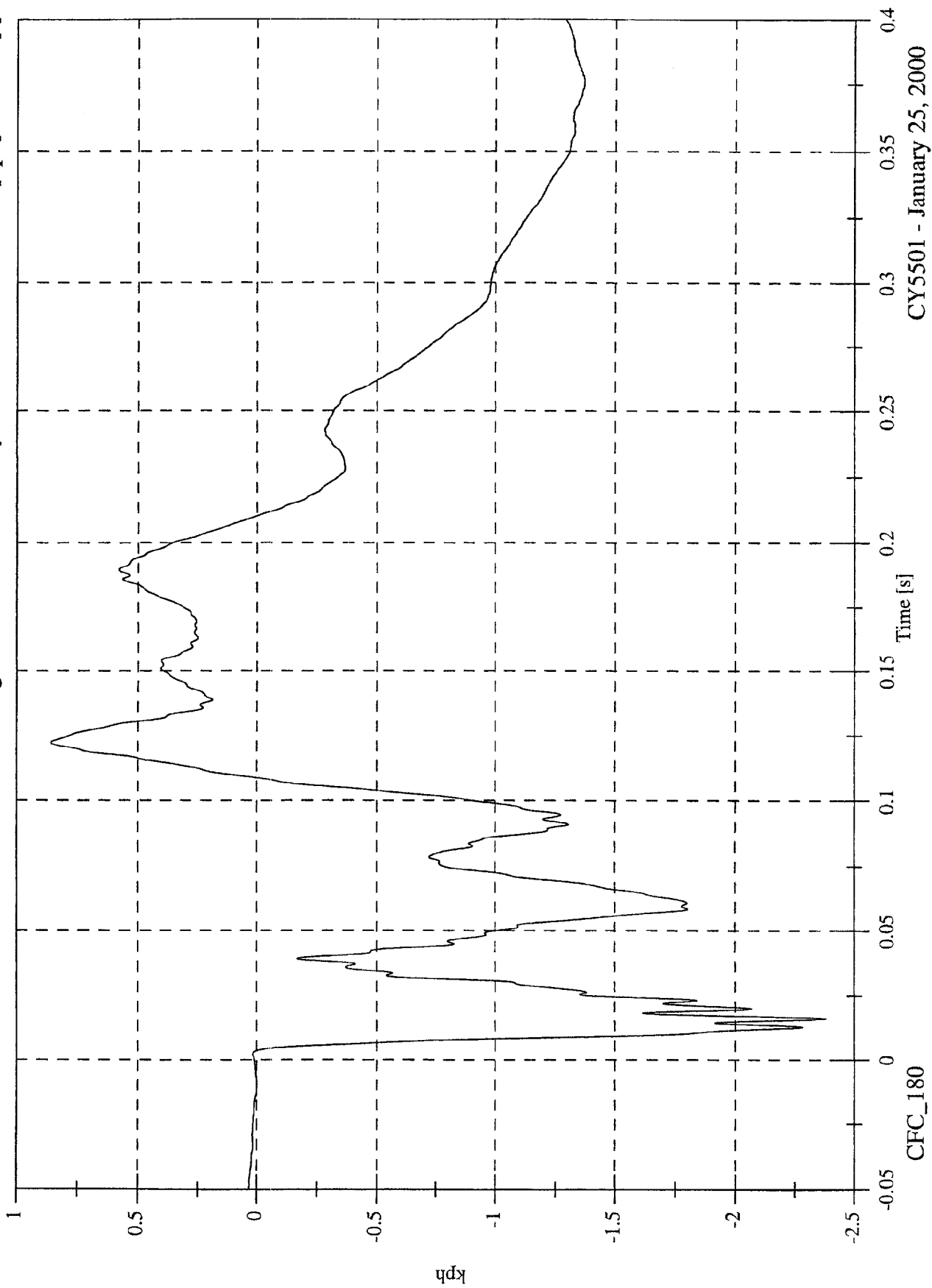
Max: 4.4 [g] at 0.031 [s]
Min: -10.4 [g] at 0.008 [s]



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FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon
 Acc 1 Right Front Sill Az Velocity

Max: 0.9 [kph] at 0.122 [s]
 Min: -2.4 [kph] at 0.016 [s]

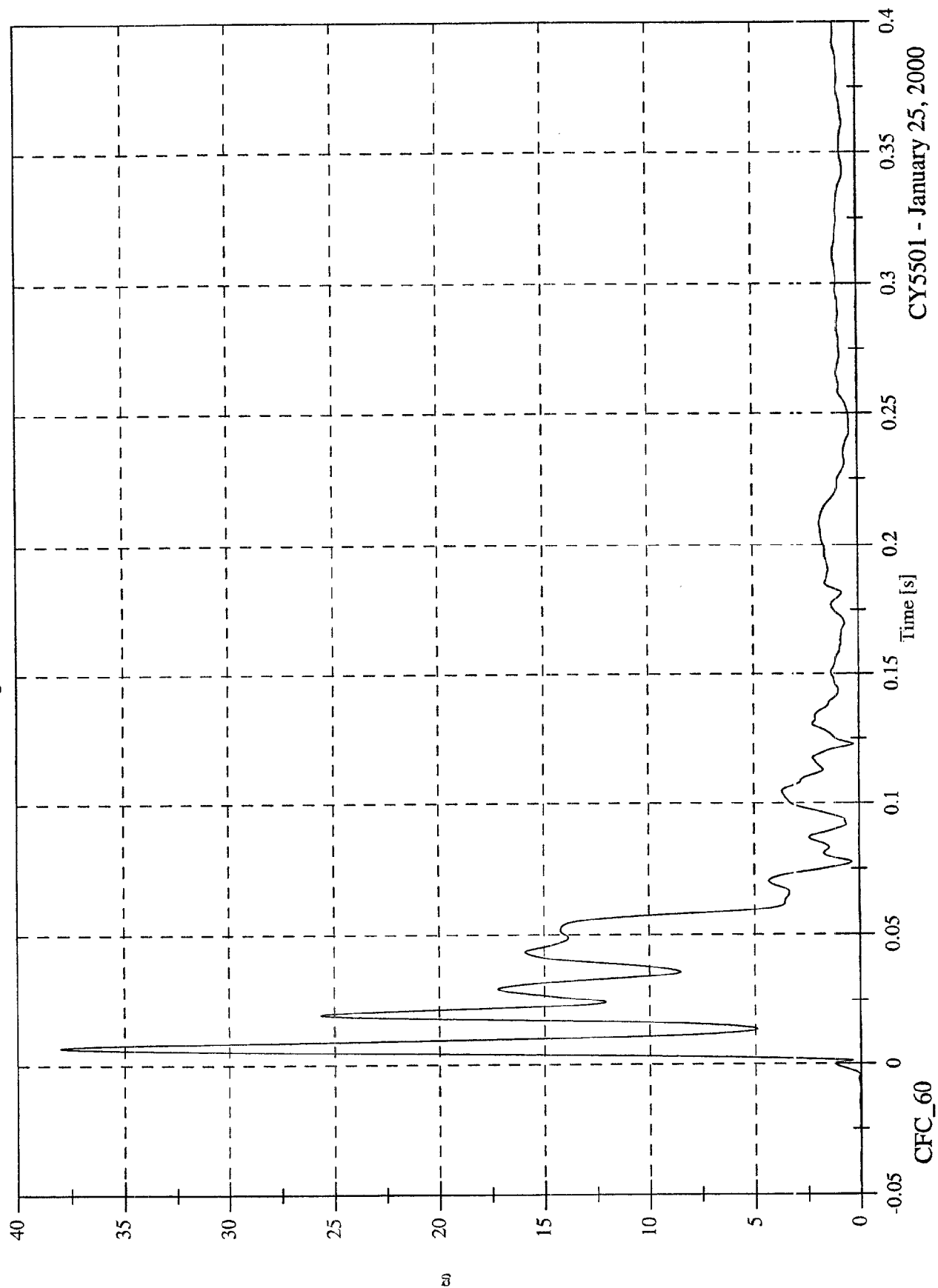


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FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 1 Right Front Sill A Resultant

Max: 38.0 [g] at 0.007 [s]
Min: 0.0 [g] at -0.033 [s]



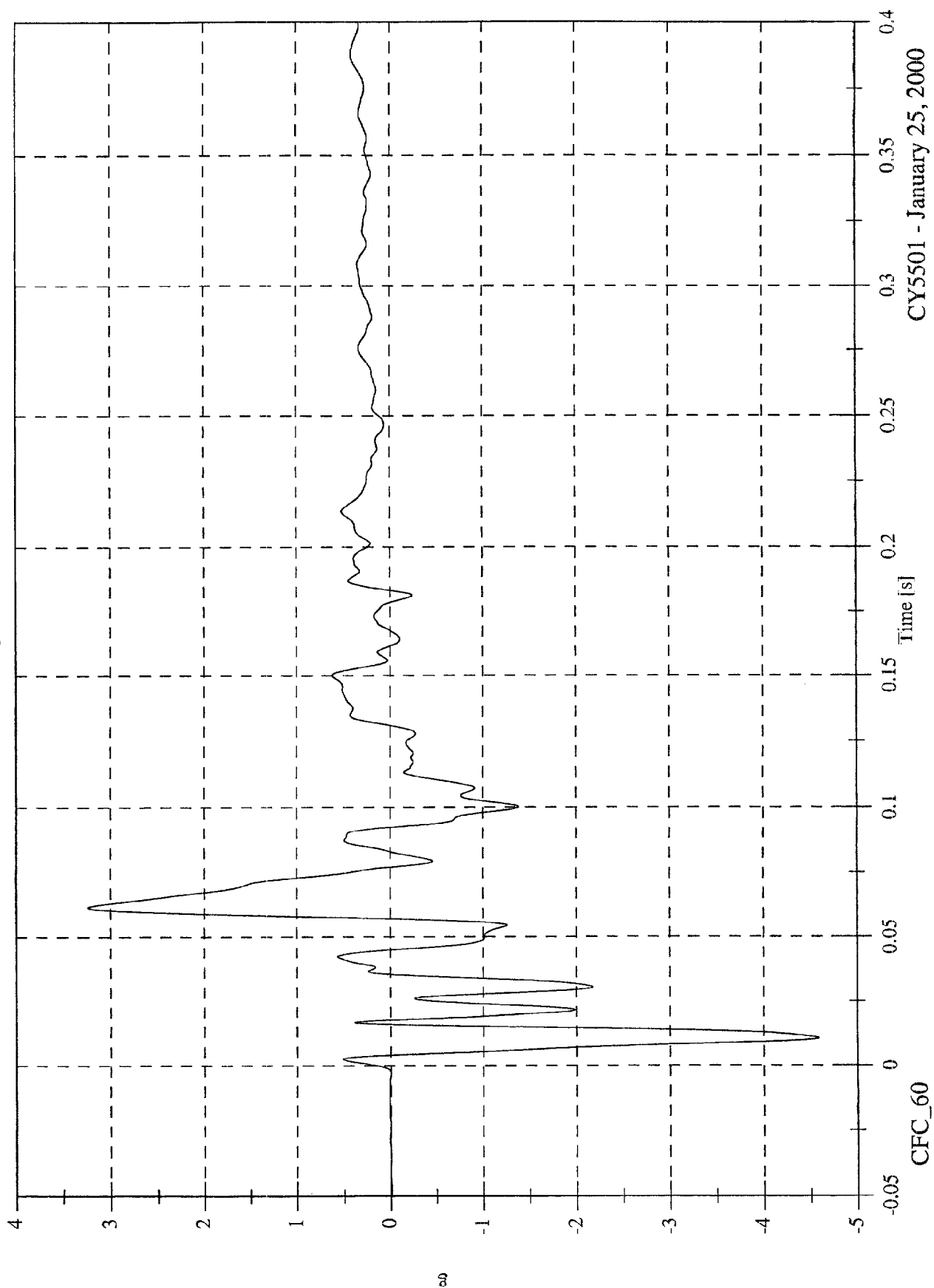
CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Max: 3.2 [g] at 0.062 [s]

Min: -4.6 [g] at 0.010 [s]

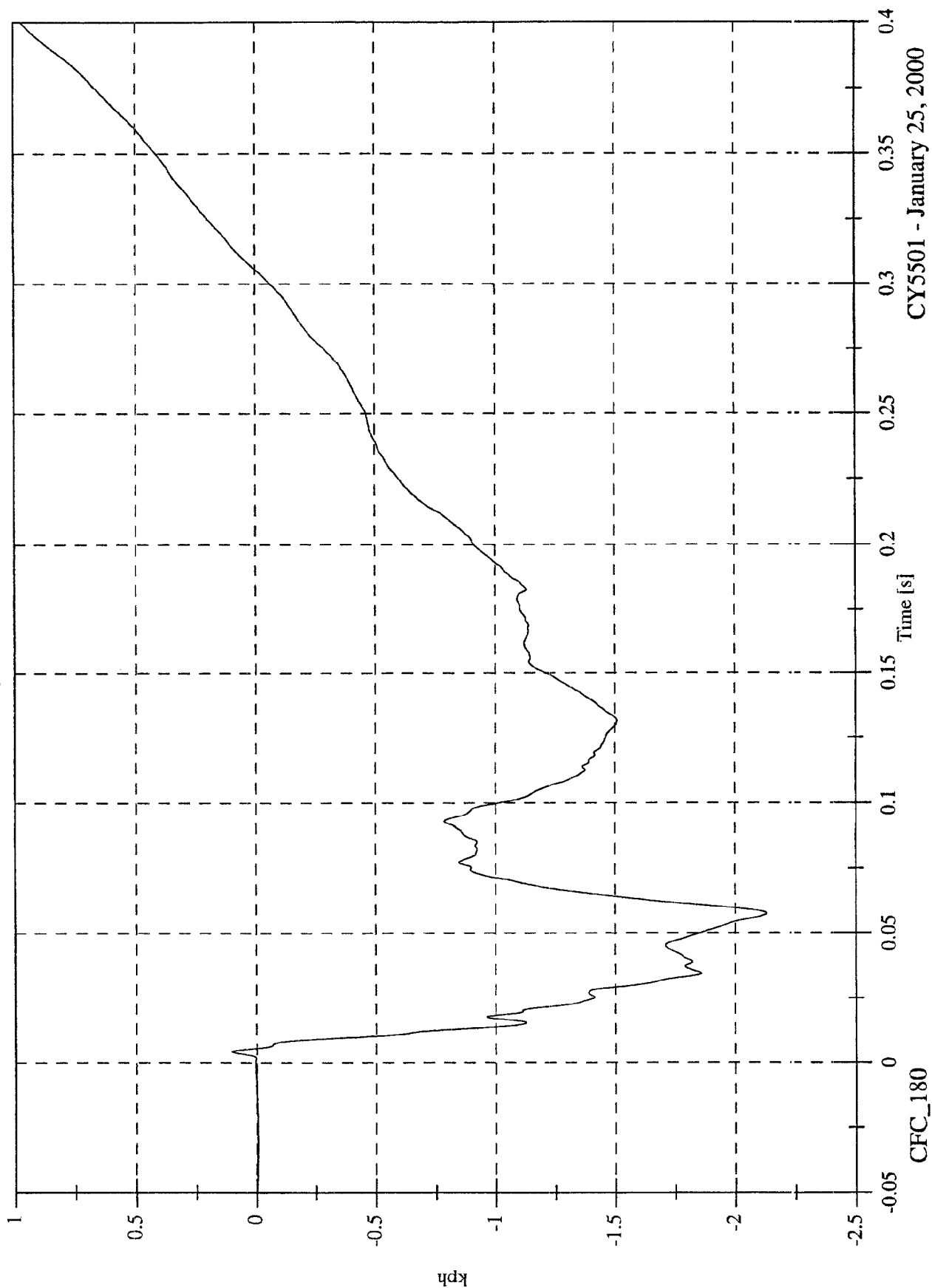
Acc 2 Right Rear Sill Ax



FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 2 Right Rear Sill Ax Velocity

Max: 1.0 [kph] at 0.400 [s]
Min: -2.1 [kph] at 0.058 [s]



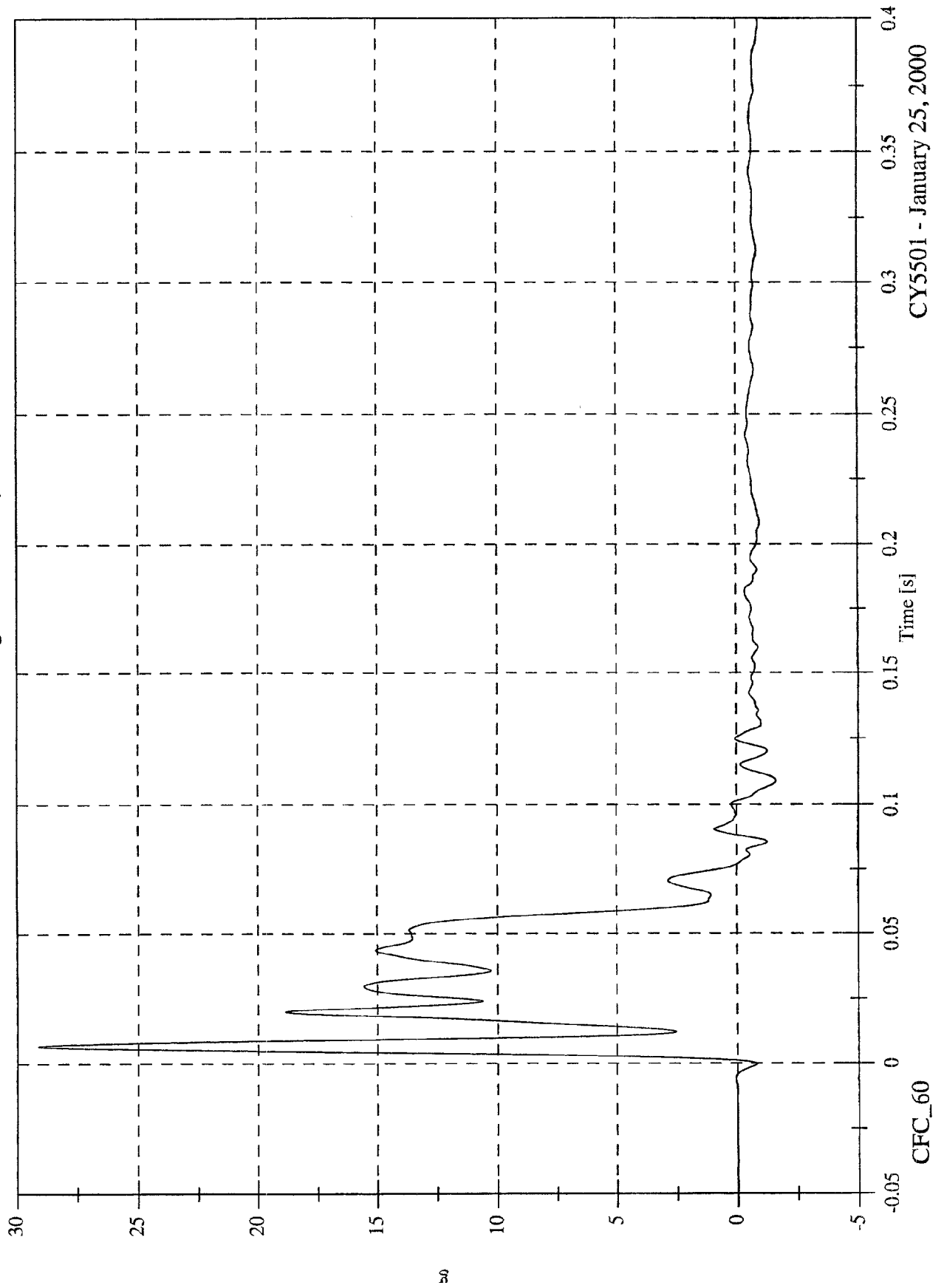
CY5501 - January 25, 2000

FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon

Max: 29.1 [g] at 0.007 [s]

Min: -1.6 [g] at 0.109 [s]

Acc 2 Right Rear Sill Ay

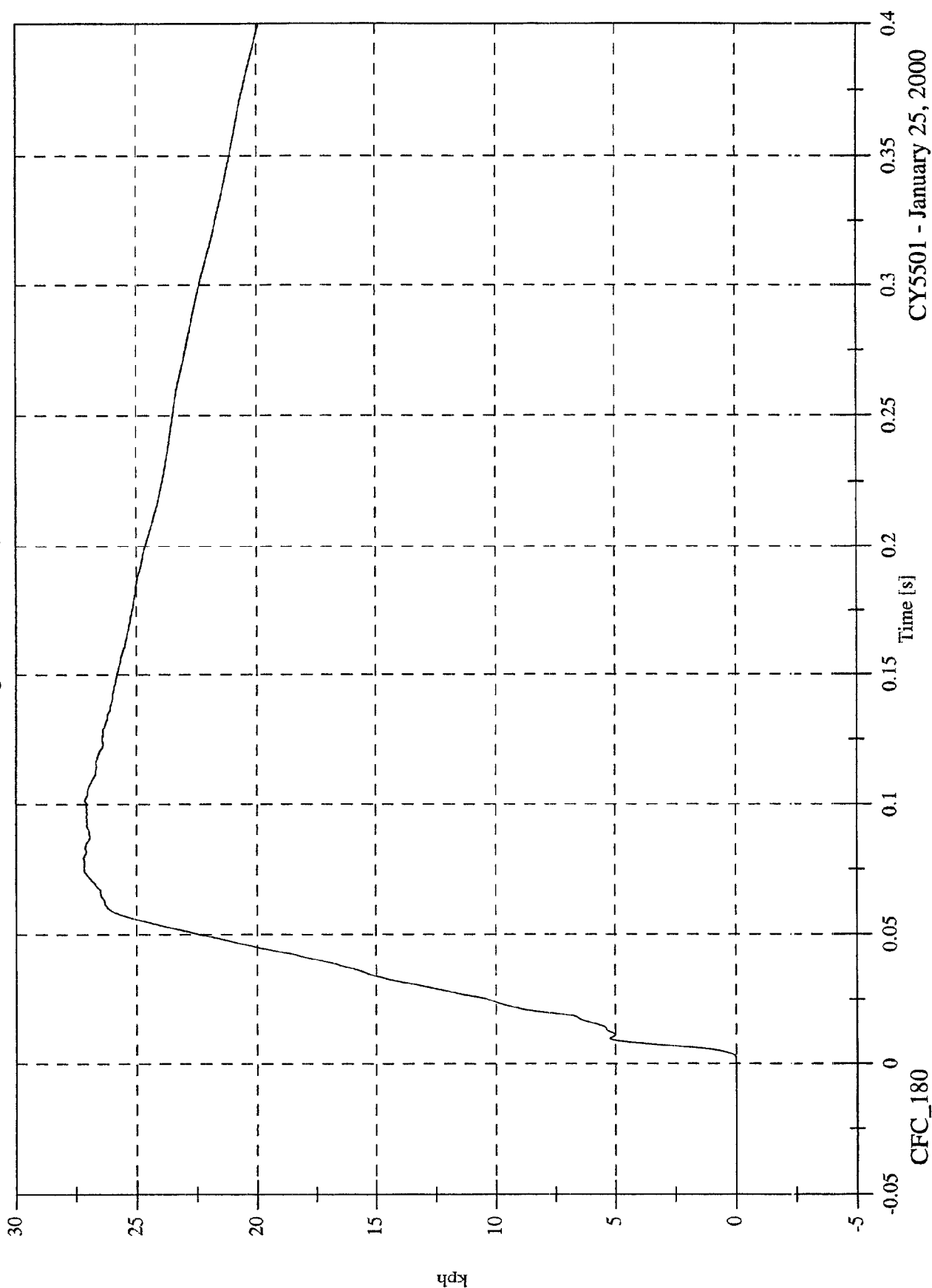


CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 2 Right Rear Sill Ay Velocity

Max: 27.2 [kph] at 0.079 [s]
Min: -0.0 [kph] at -0.023 [s]



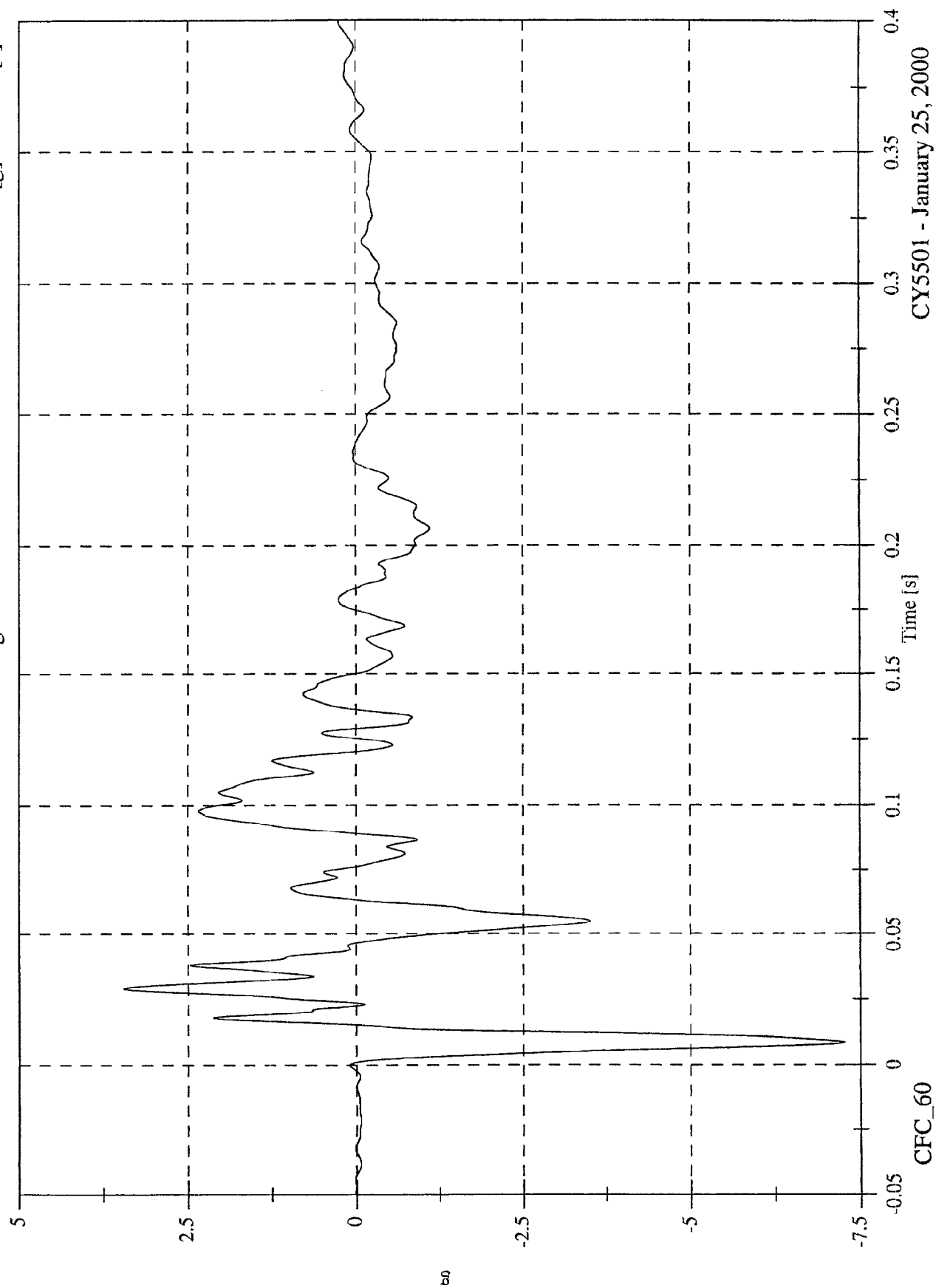
CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 2 Right Rear Sill Az

Max: 3.5 [g] at 0.029 [s]

Min: -7.3 [g] at 0.008 [s]

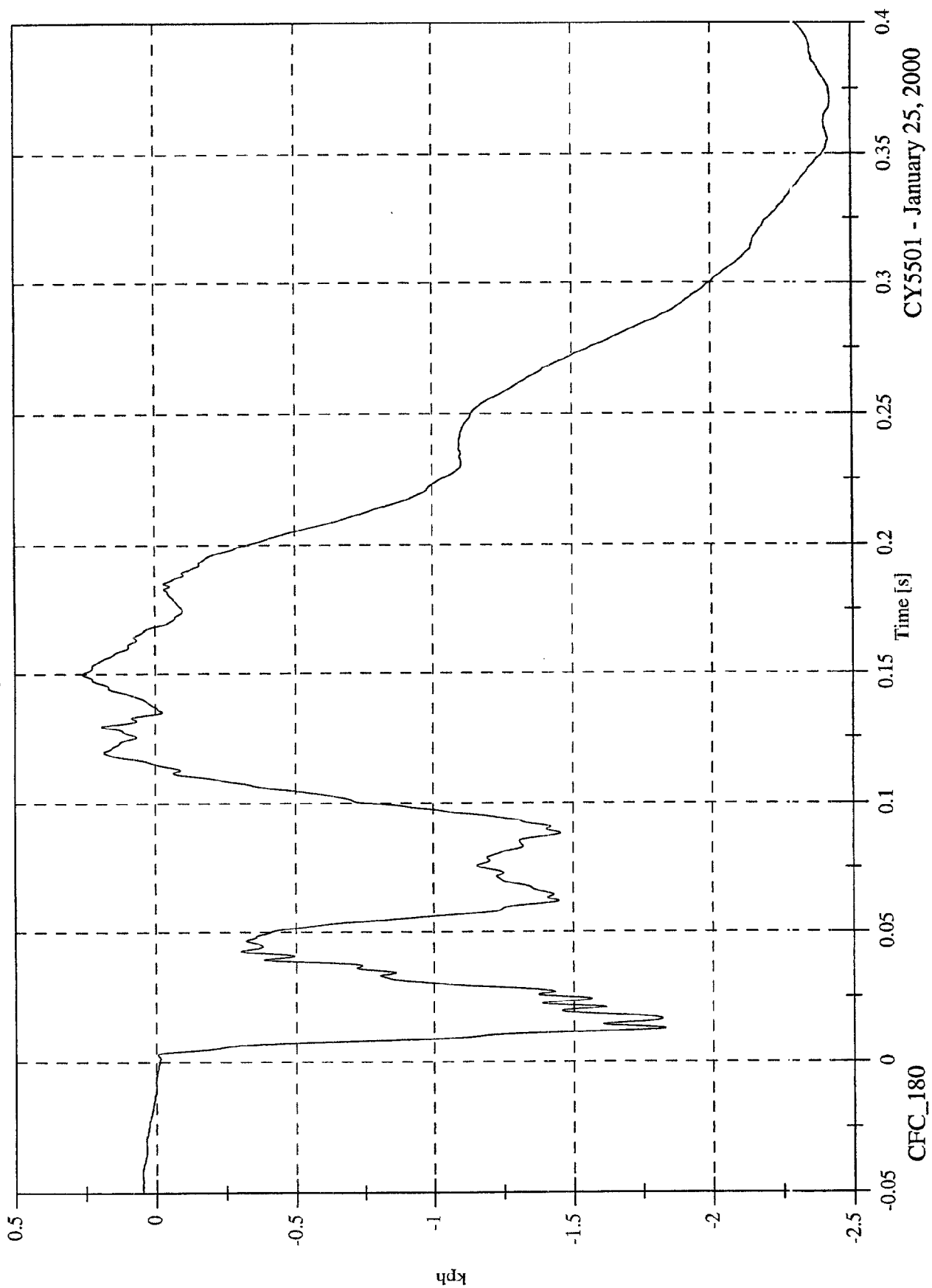


CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 2 Right Rear Sill Az Velocity

Max: 0.3 [kph] at 0.150 [s]
Min: -2.4 [kph] at 0.370 [s]



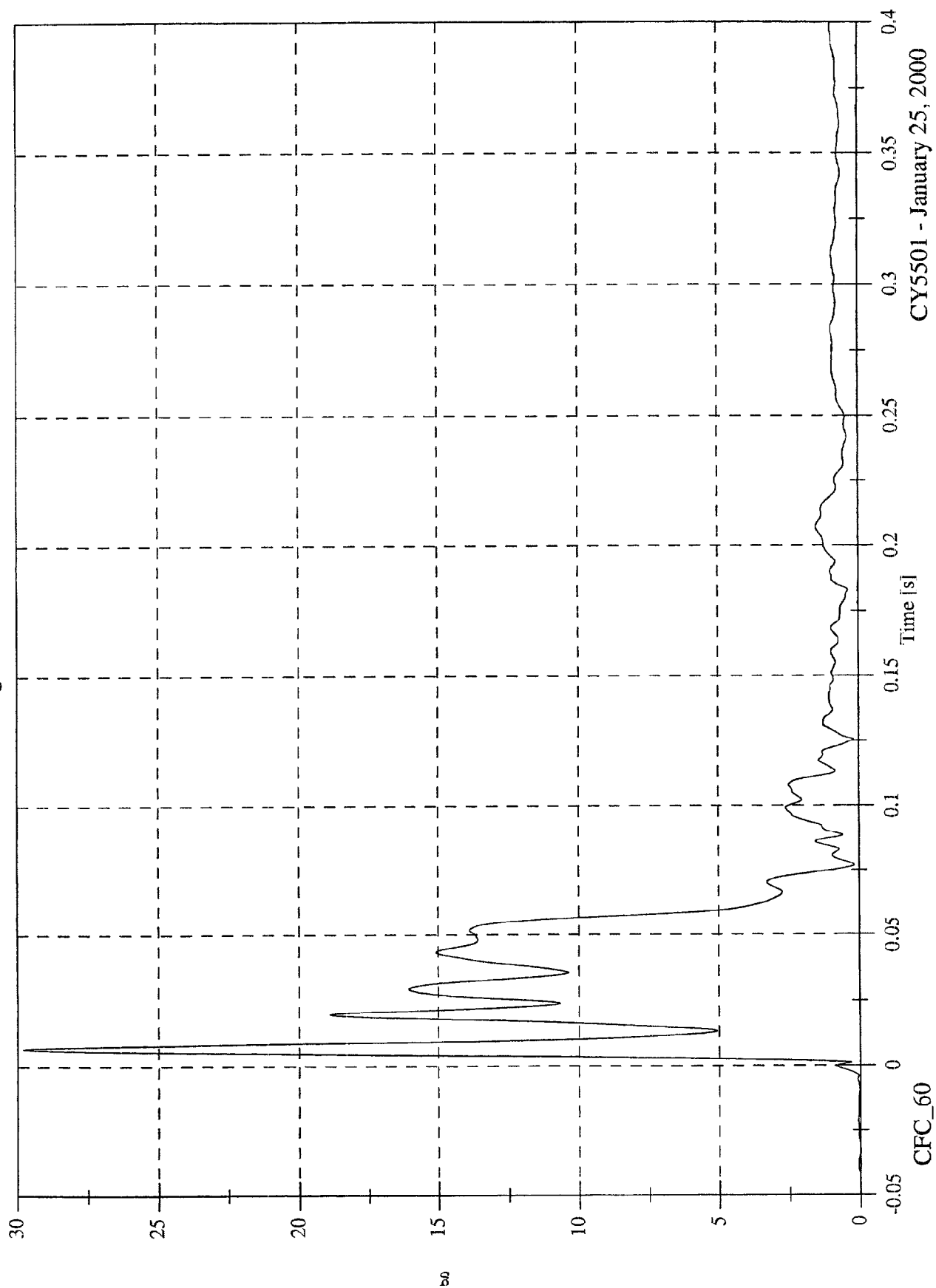
CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 2 Right Rear Sill A Resultant

Max: 29.8 [g] at 0.007 [s]

Min: 0.0 [g] at -0.031 [s]



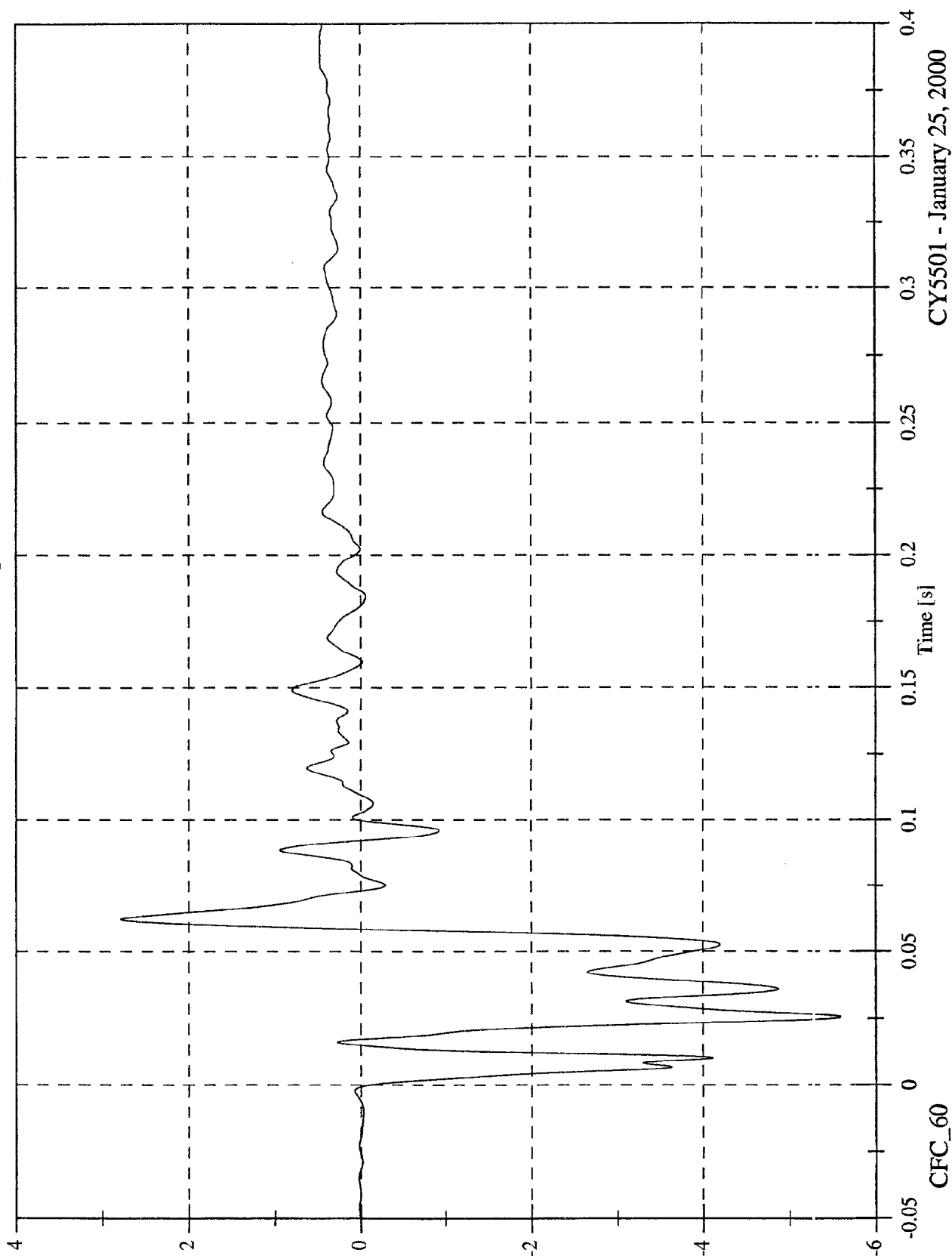
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FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 3 Rear Floorpan Ax

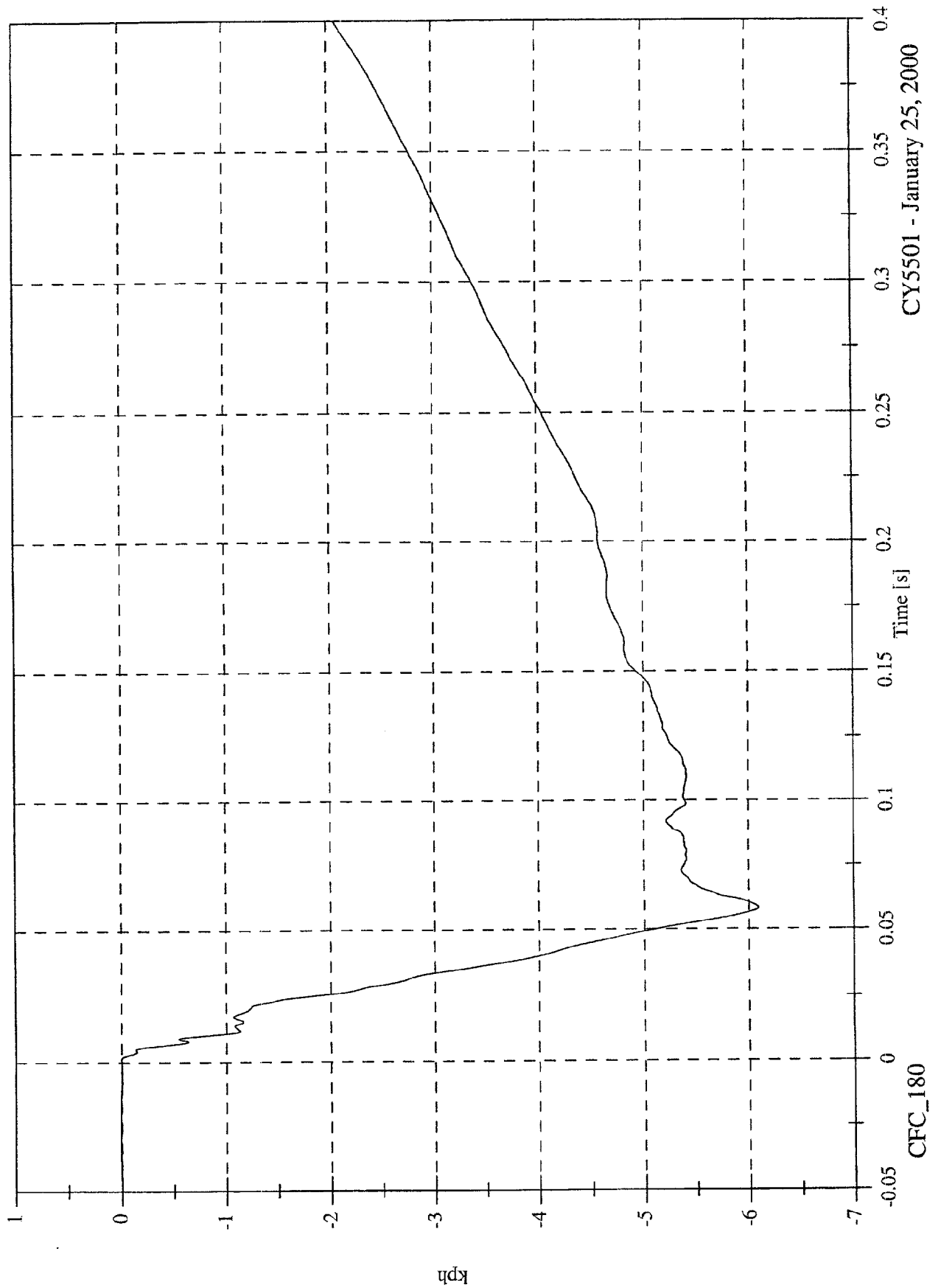
Max: 2.8 [g] at 0.062 [s]

Min: -5.6 [g] at 0.026 [s]



CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon
Acc 3 Rear Floorpan Ax Velocity
Max: 0.0 [kph] at -0.031 [s]
Min: -6.1 [kph] at 0.058 [s]

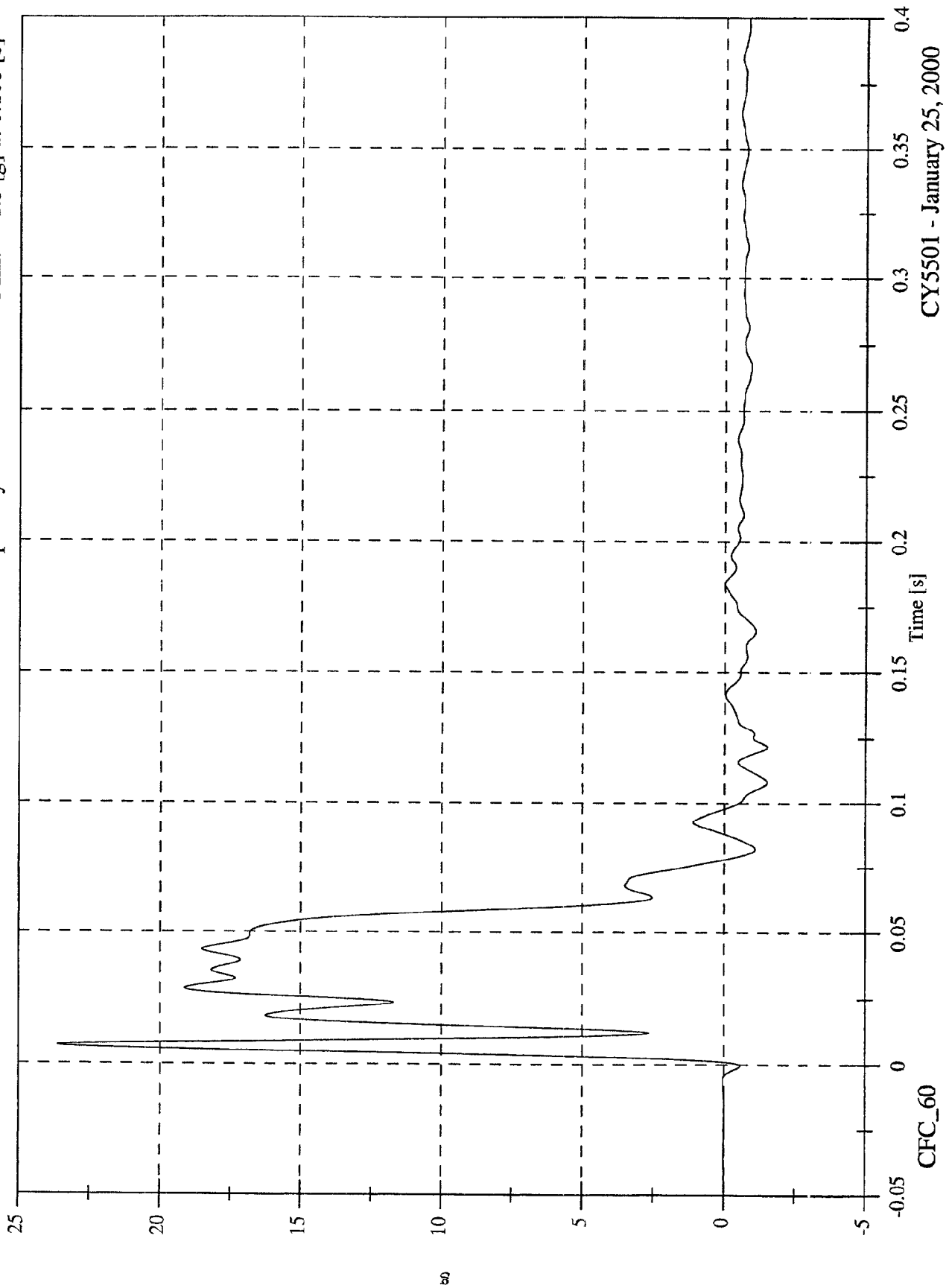


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FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 3 Rear Floorpan Ay

Max: 23.6 [g] at 0.007 [s]
Min: -1.5 [g] at 0.108 [s]

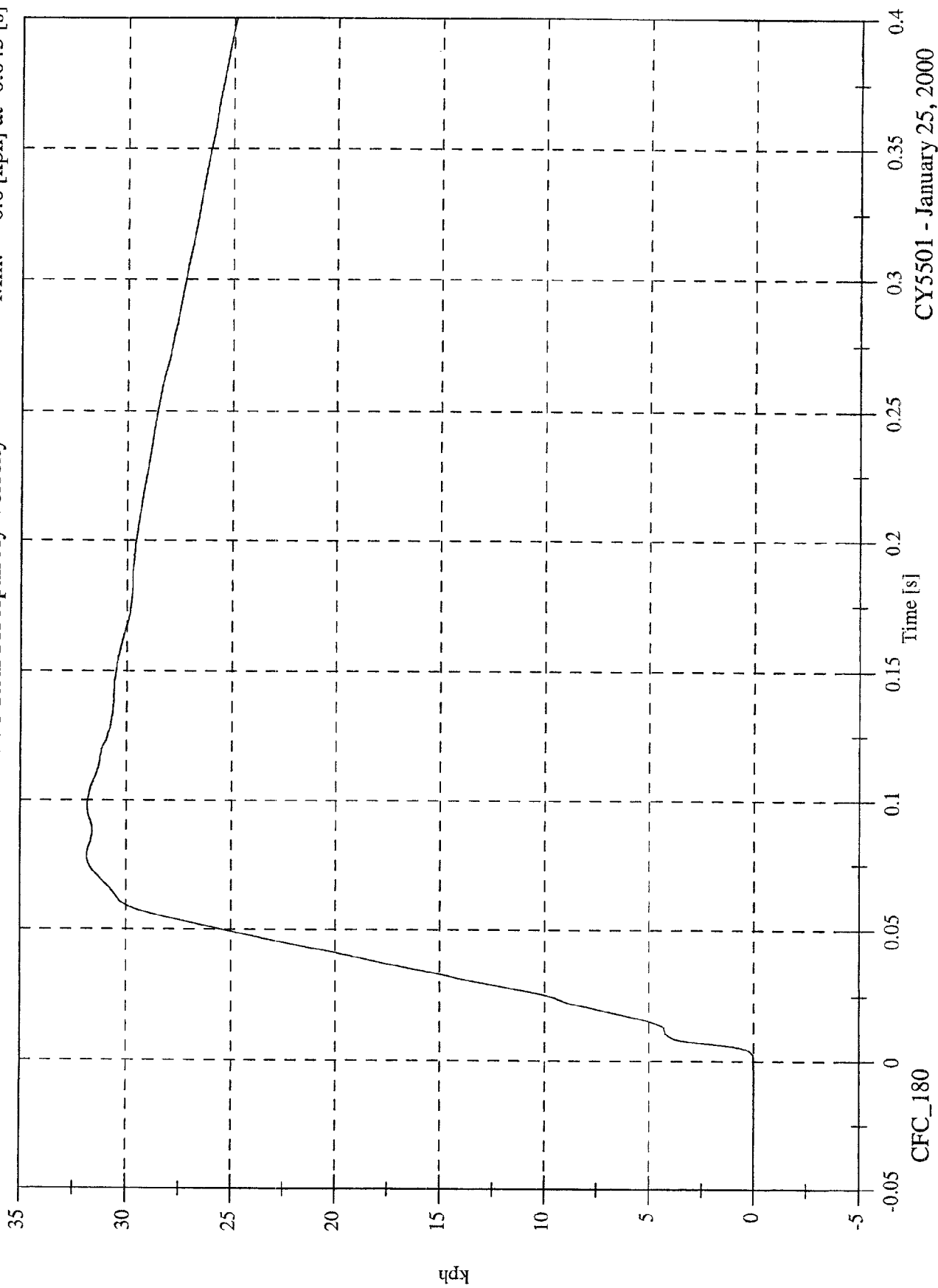


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FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 3 Rear Floorpan Ay Velocity

Max: 31.9 [kph] at 0.078 [s]
Min: -0.0 [kph] at -0.043 [s]



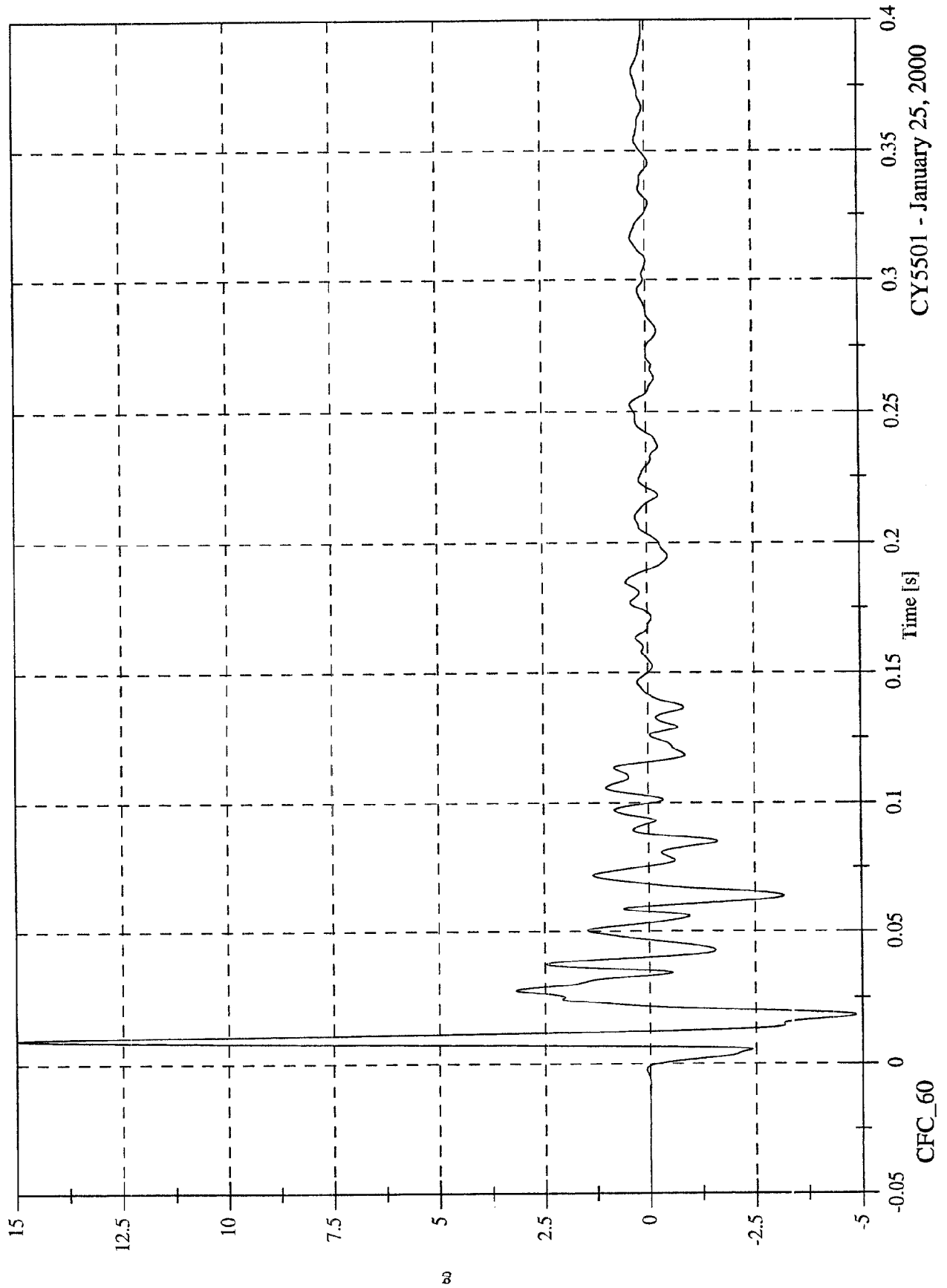
CFC_180

CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 3 Rear Floorpan Az

Max: 15.0 [g] at 0.009 [s]
Min: -4.9 [g] at 0.018 [s]

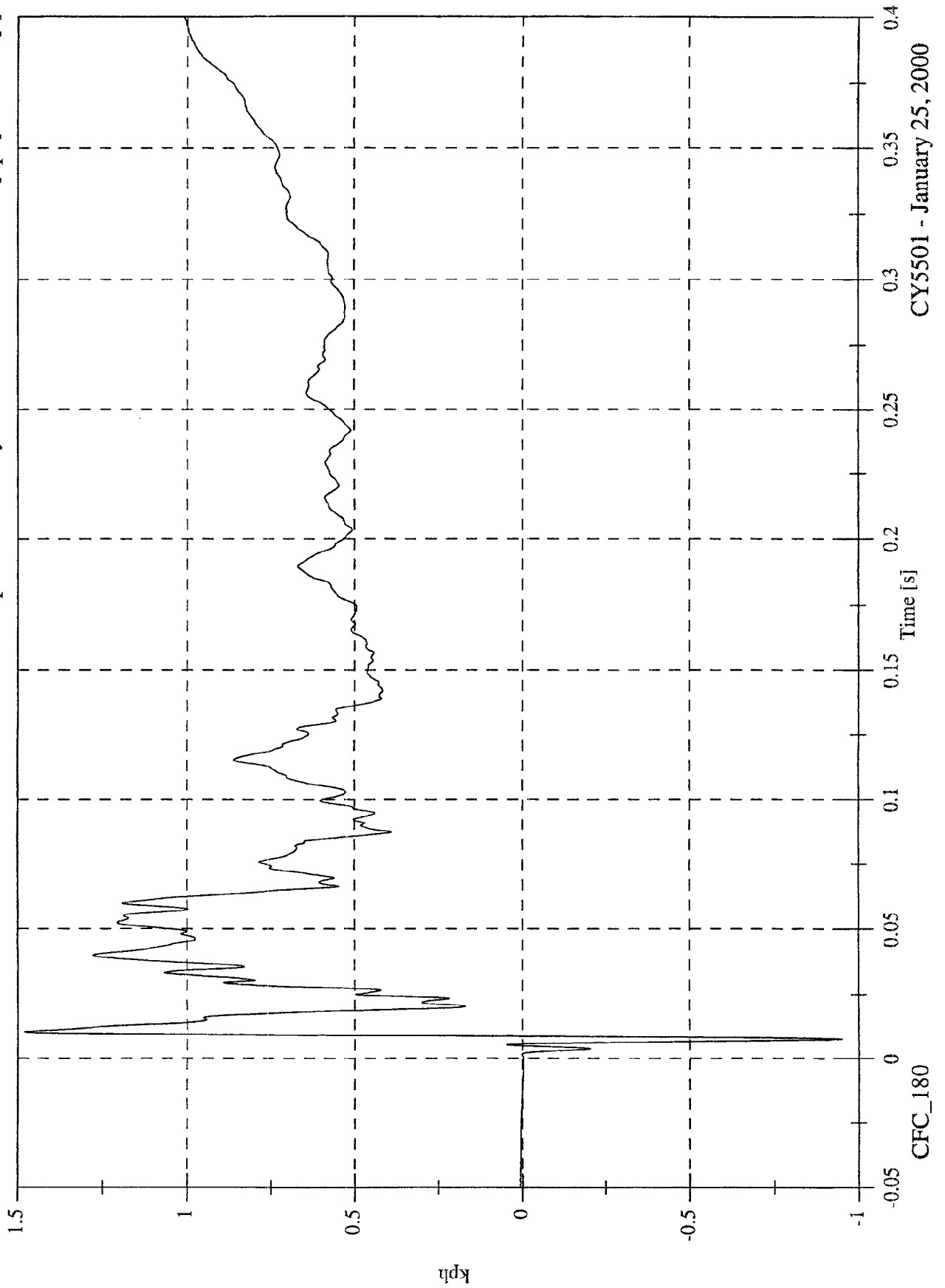


CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 3 Rear Floorpan Az Velocity

Max: 1.5 [kph] at 0.010 [s]
Min: -1.0 [kph] at 0.008 [s]

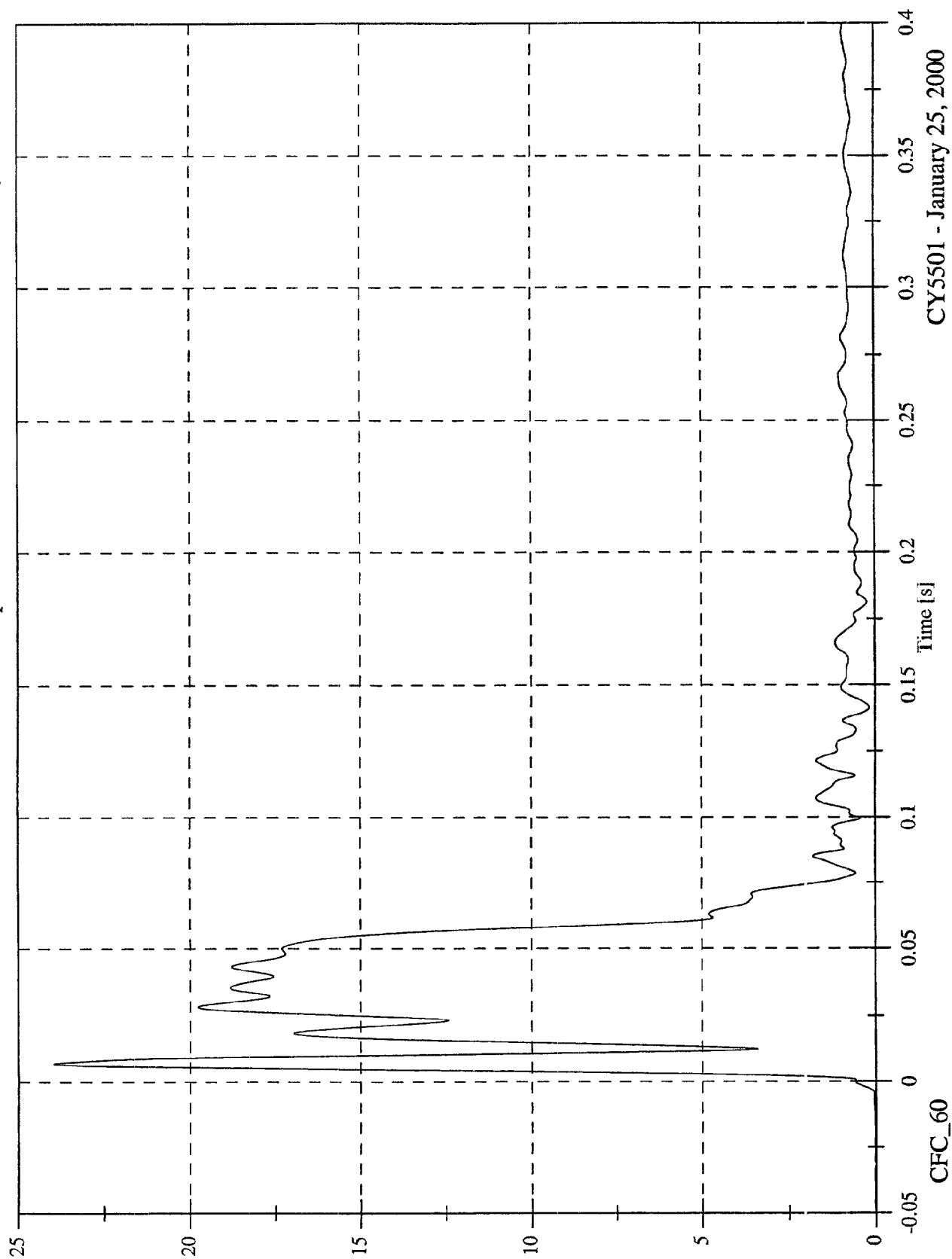


FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Max: 24.0 [g] at 0.007 [s]

Acc 3 Rear Floorpan A Resultant

Min: 0.0 [g] at -0.040 [s]



CY5501 - January 25, 2000

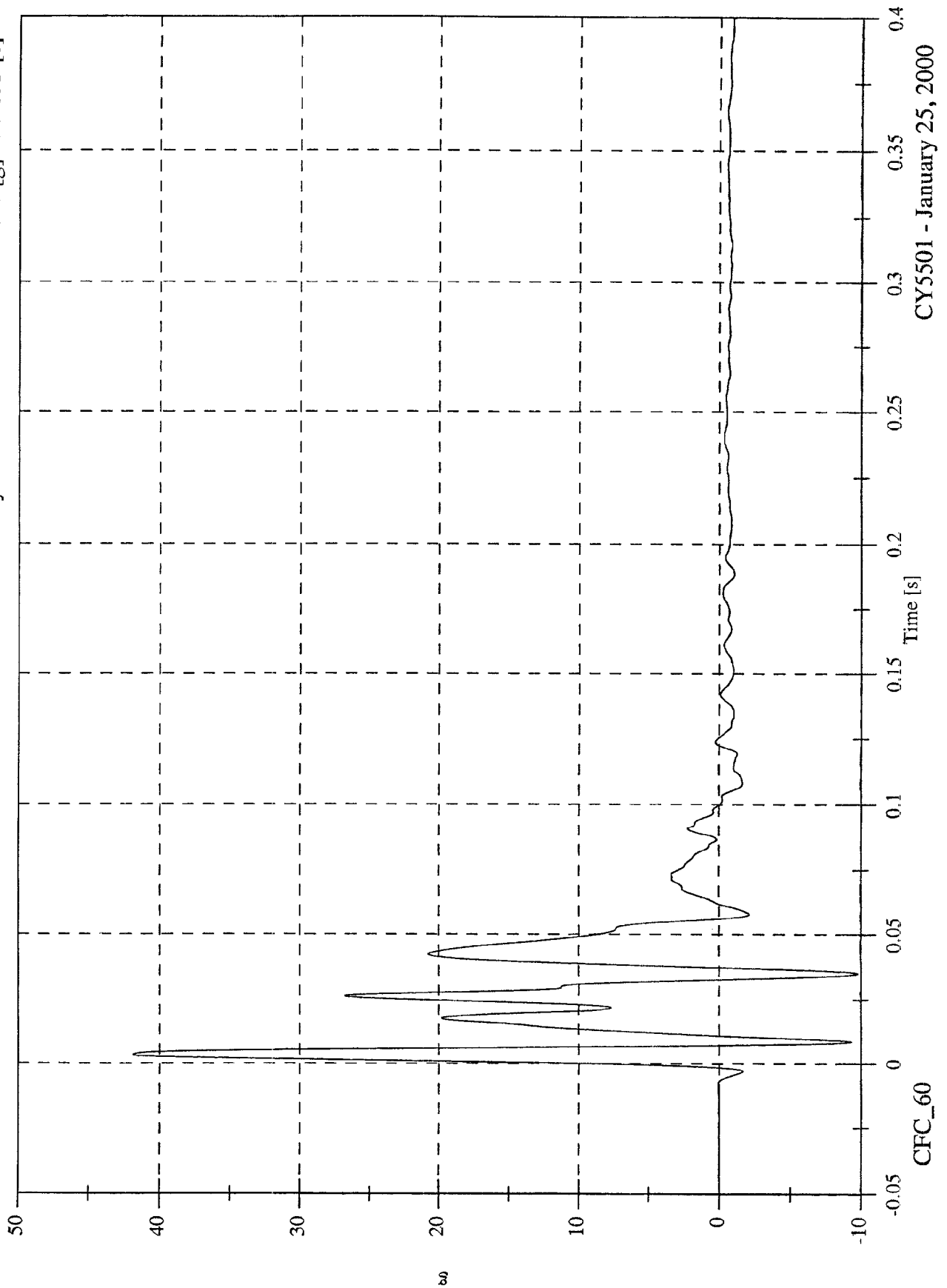
CFC_60

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 4 Left Rear Sill Ay

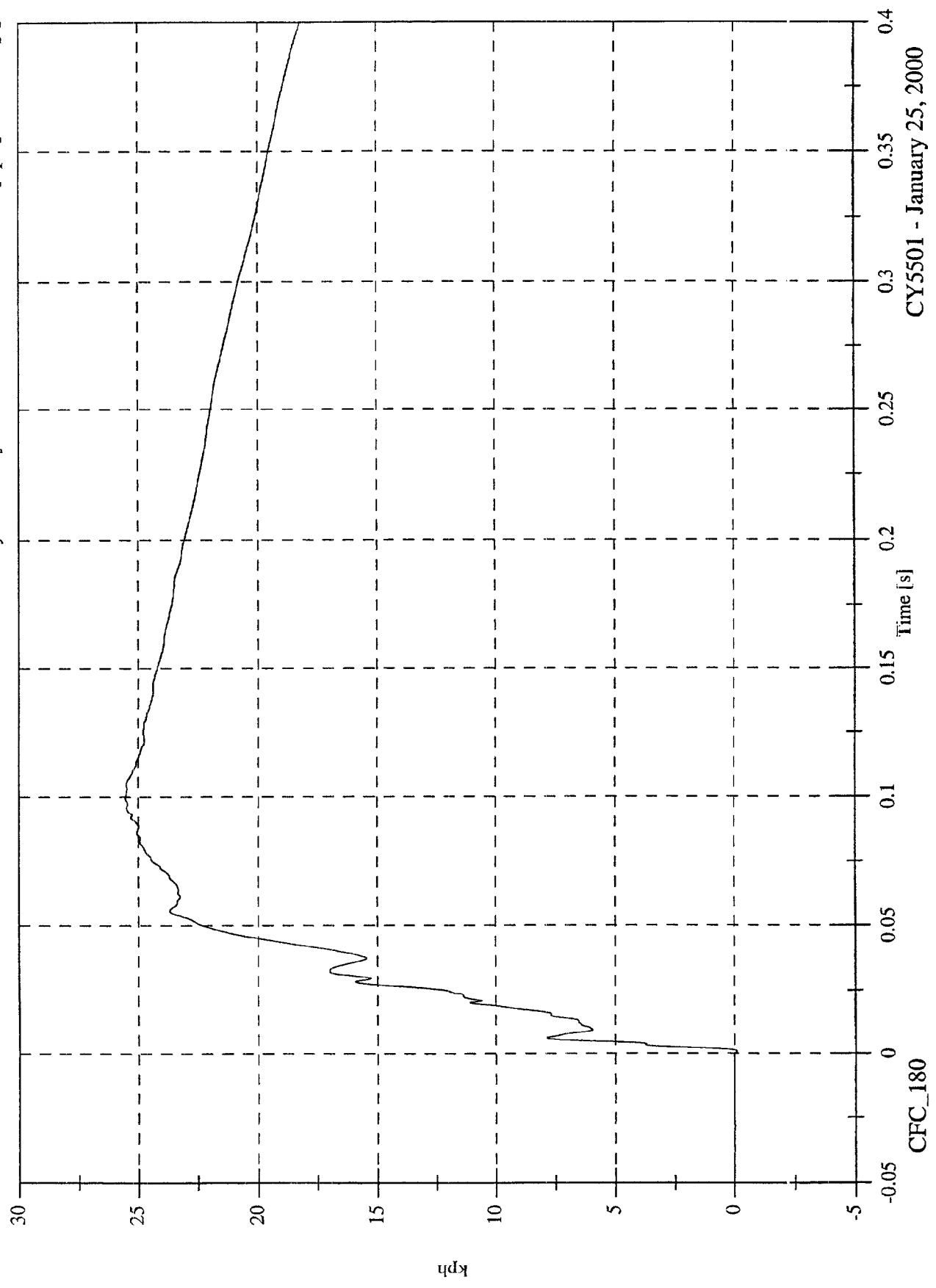
Max: 41.9 [g] at 0.003 [s]

Min: -9.8 [g] at 0.035 [s]



FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon
Acc 4 Left Rear Sill Ay Velocity

Max: 25.6 [kph] at 0.099 [s]
Min: -0.1 [kph] at 0.001 [s]



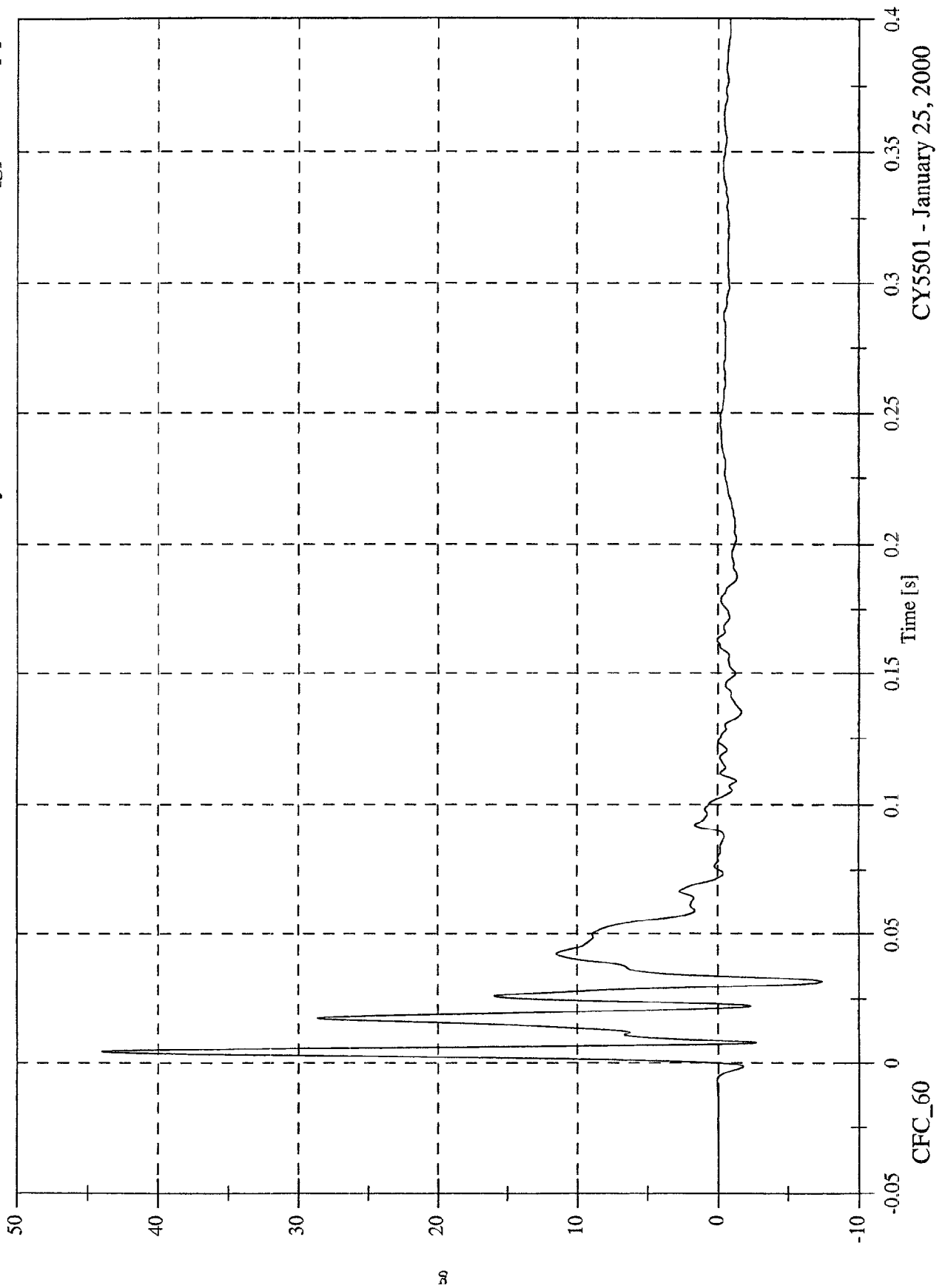
CY5501 - January 25, 2000

FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon

Acc 5 Left Front Sill Ay

Max: 44.0 [g] at 0.004 [s]

Min: -7.4 [g] at 0.032 [s]

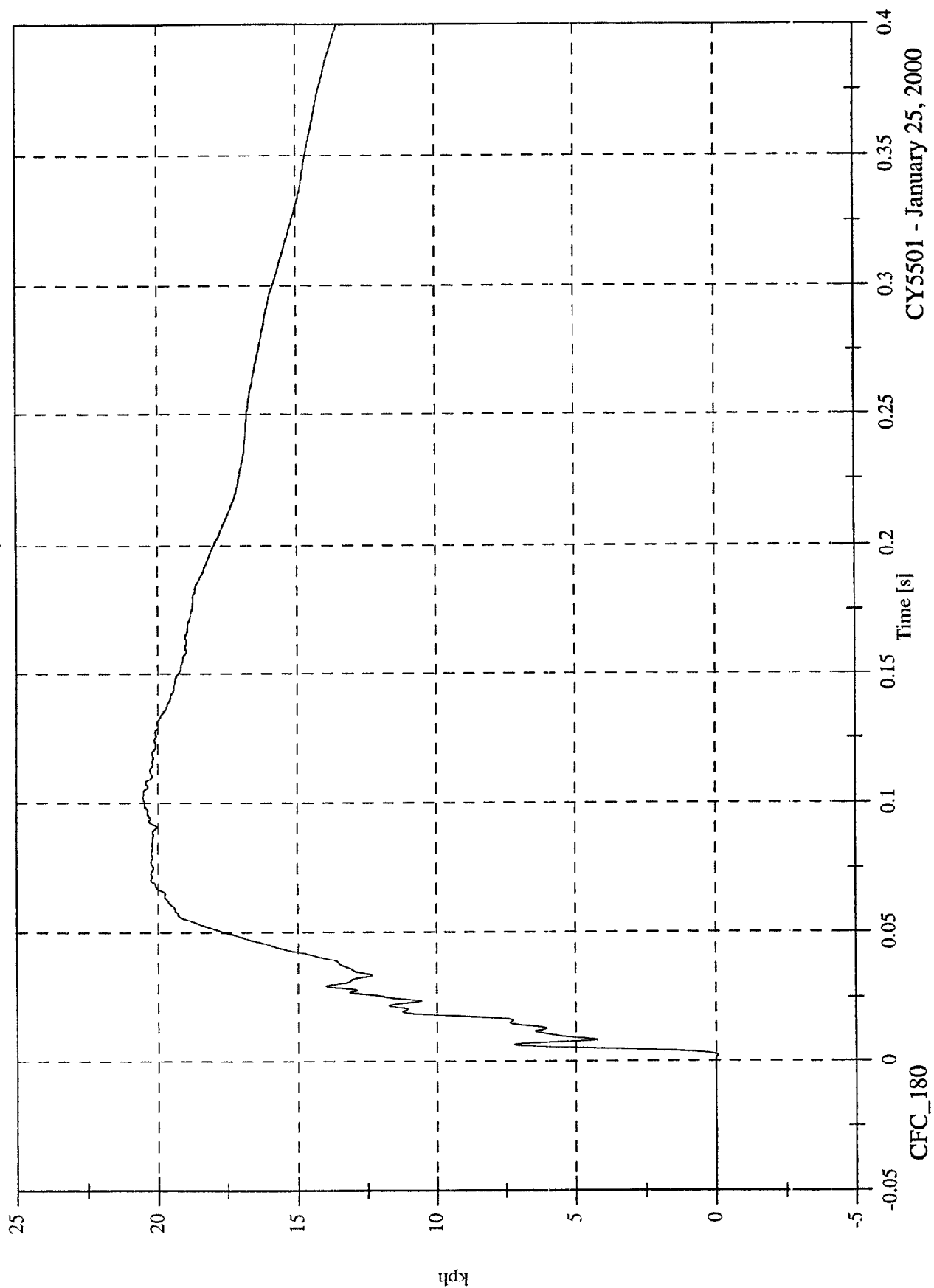


CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 5 Left Front Sill Ay Velocity

Max: 20.5 [kph] at 0.102 [s]
Min: -0.1 [kph] at 0.002 [s]



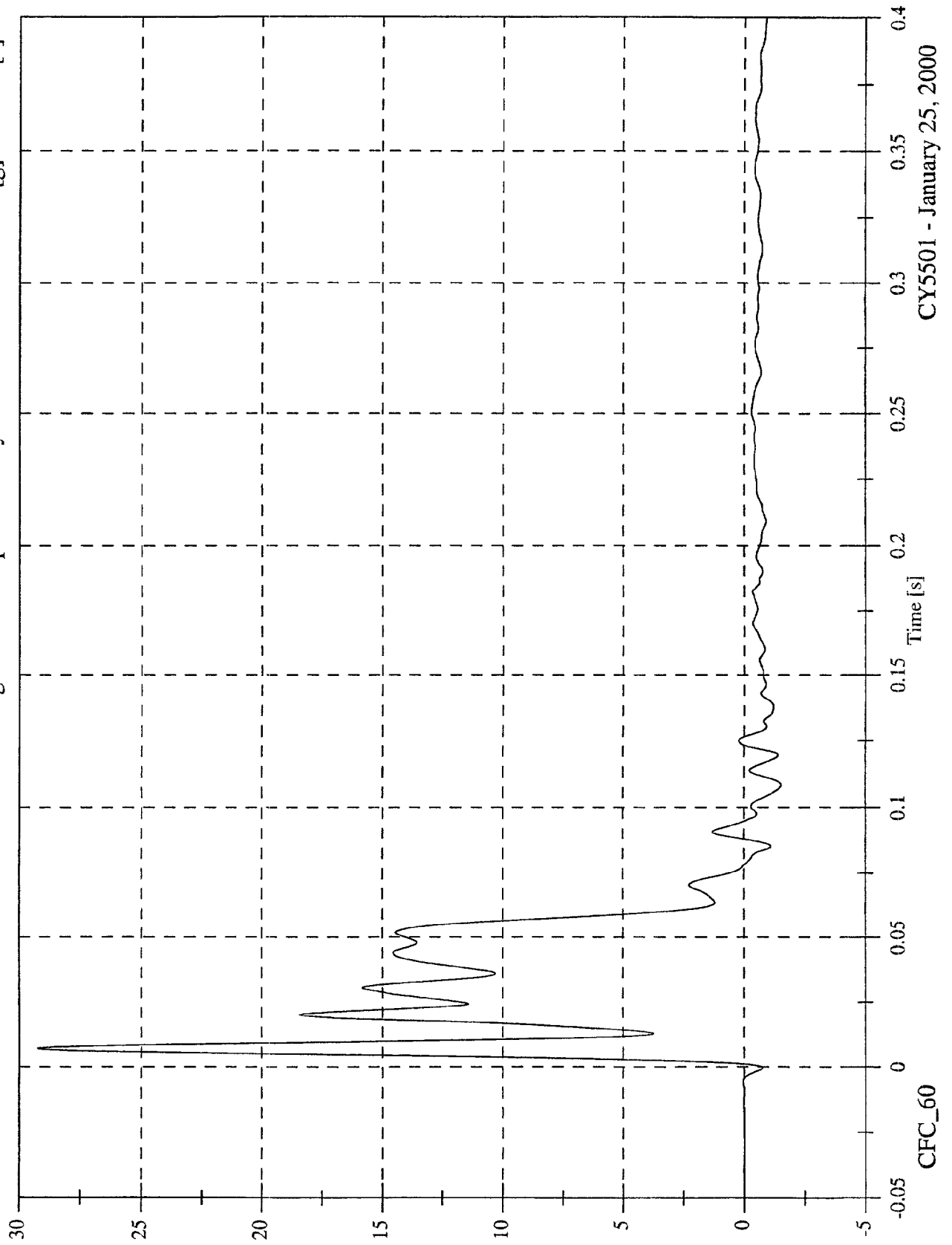
CY5501 - January 25, 2000

FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon

Acc 7 Right Rear Compartment Ay

Max: 29.2 [g] at 0.007 [s]

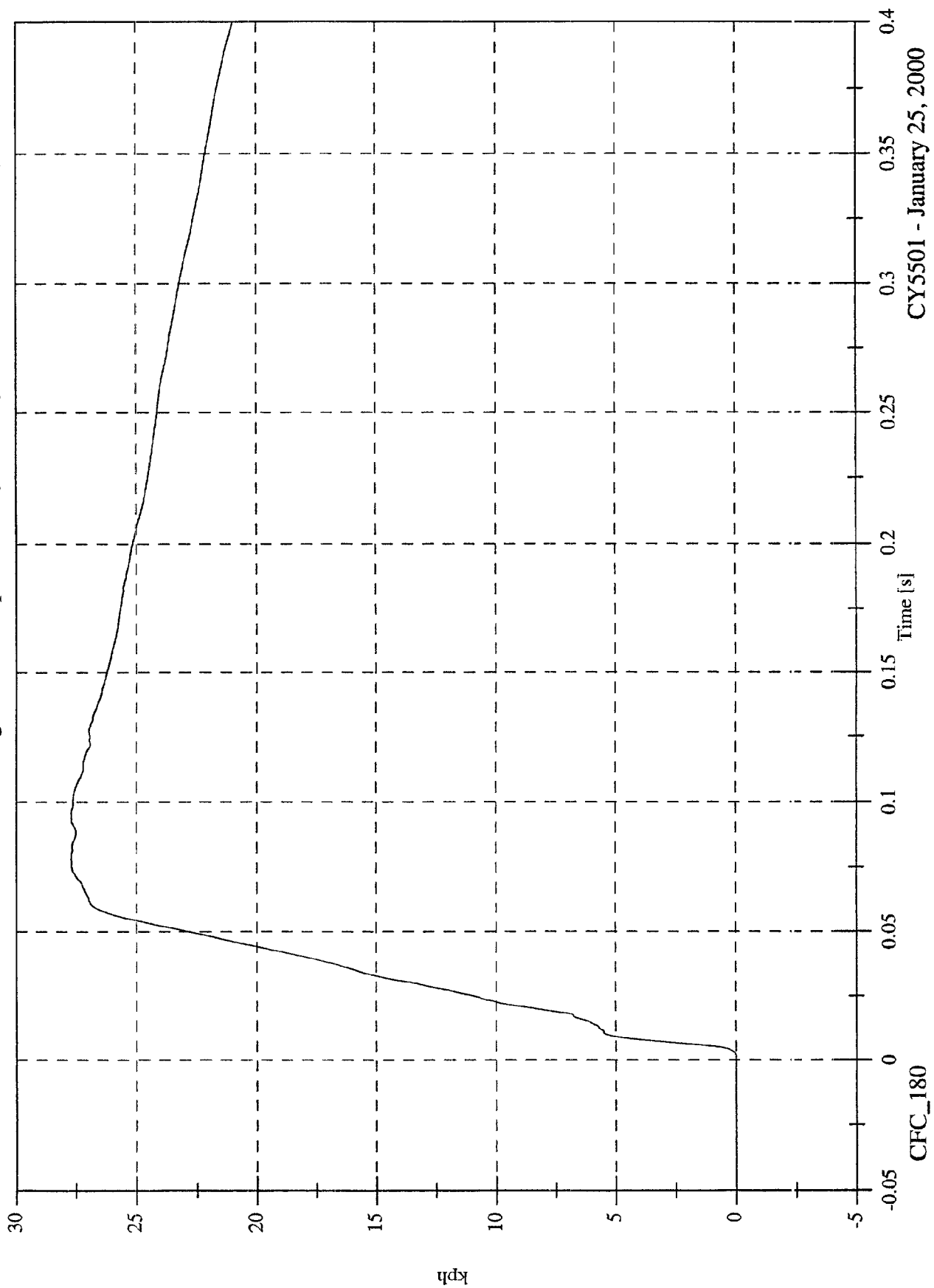
Min: -1.5 [g] at 0.108 [s]



CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon
Acc 7 Right Rear Compartment Ay Velocity

Max: 27.7 [kph] at 0.078 [s]
Min: -0.0 [kph] at -0.024 [s]

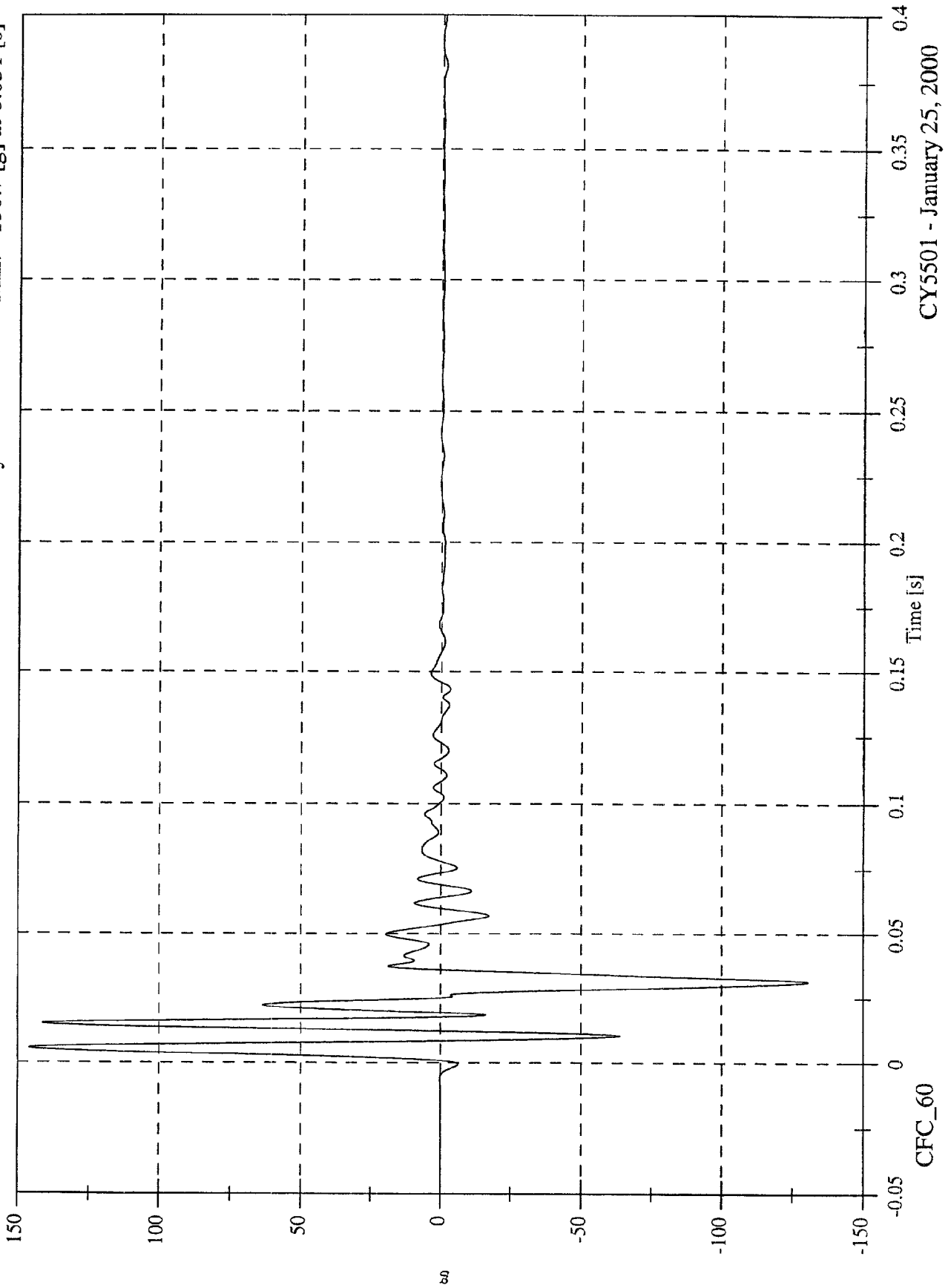


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FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 12 Left Lower B Post Ay

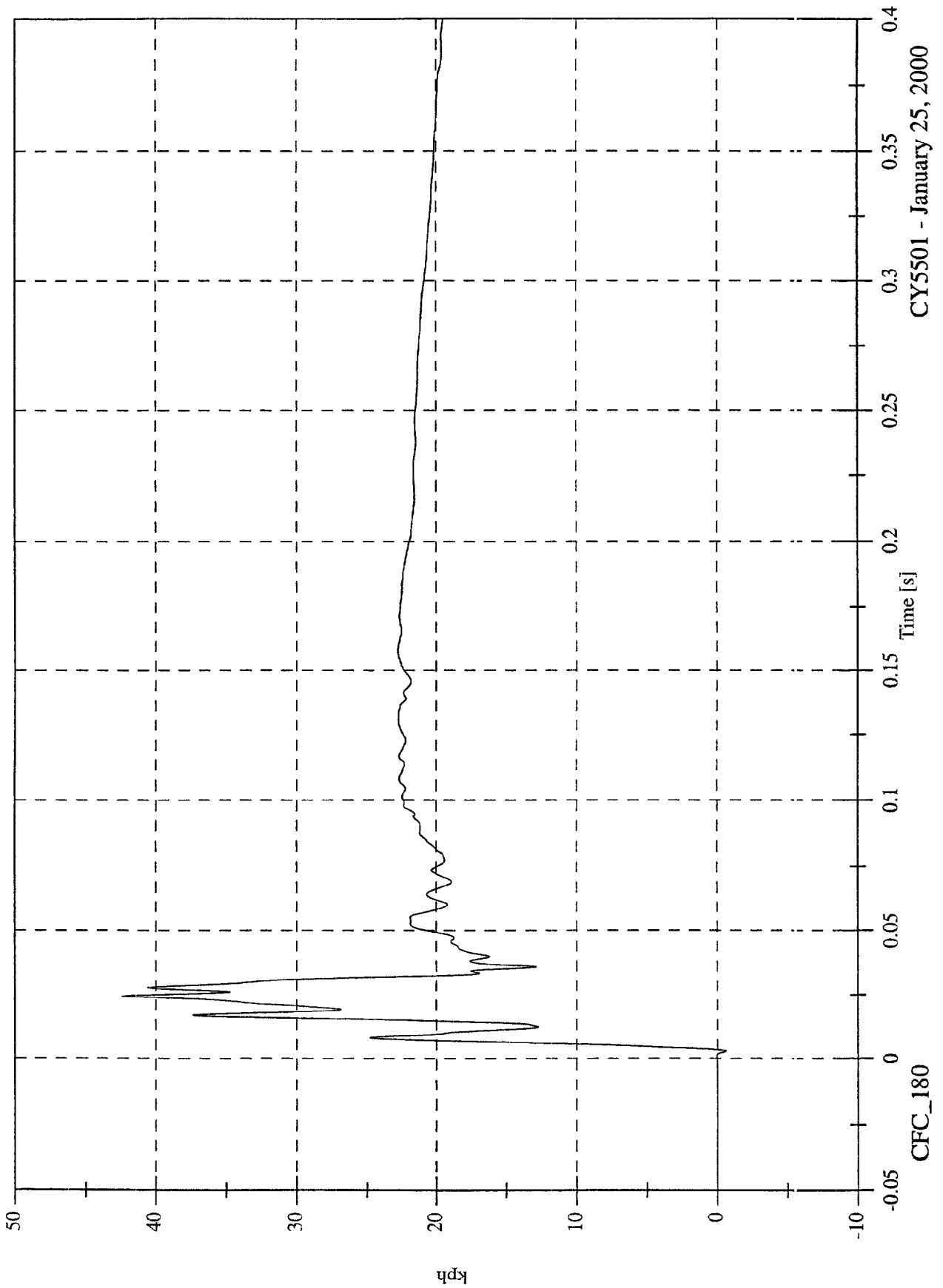
Max: 145.9 [g] at 0.006 [s]
Min: -130.7 [g] at 0.031 [s]



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FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon
 Acc 12 Left Lower B Post Ay Velocity

Max: 42.4 [kph] at 0.024 [s]
 Min: -0.6 [kph] at 0.003 [s]



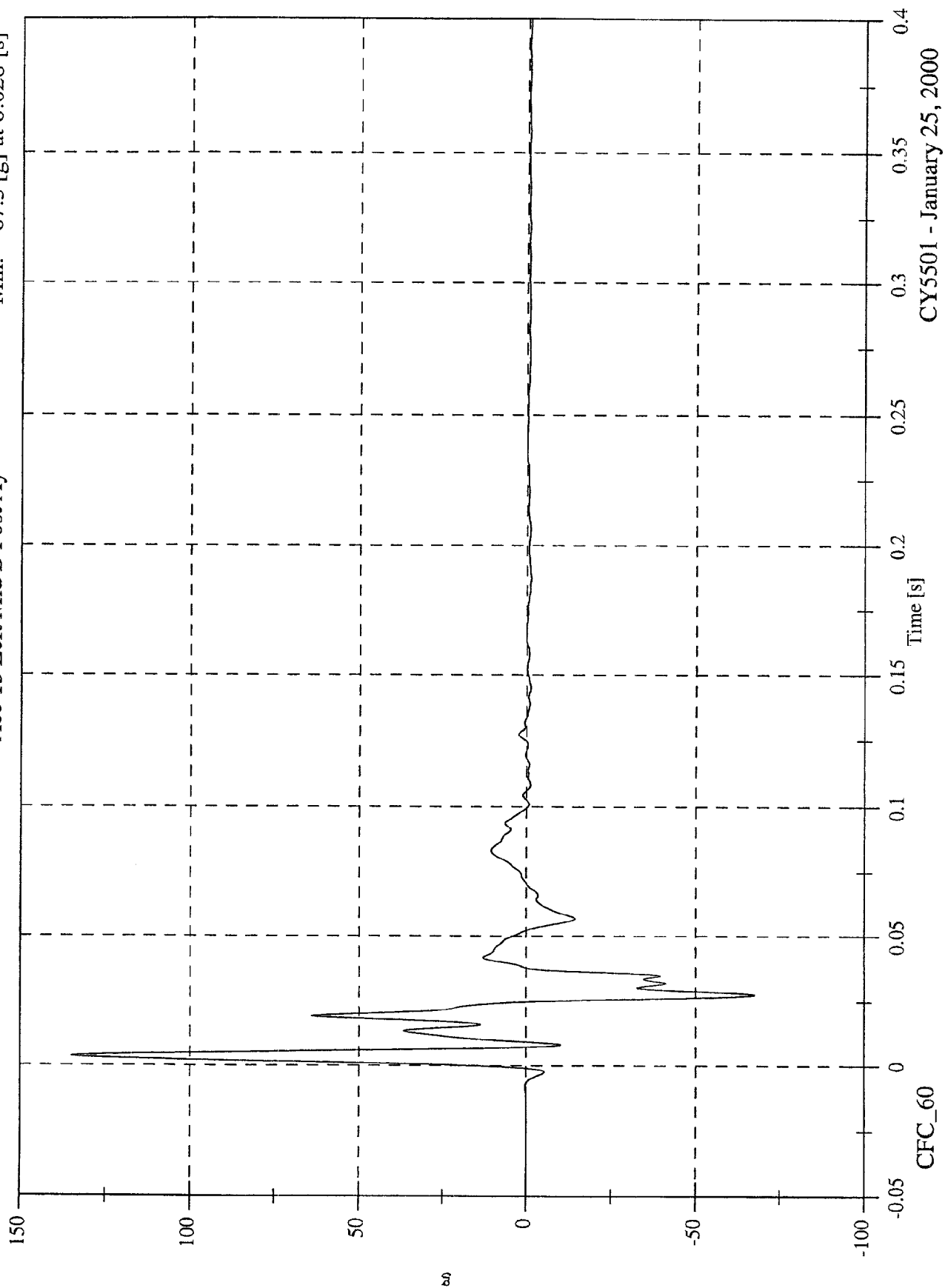
CY5501 - January 25, 2000

FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon

Acc 13 Left Mid B Post Ay

Max: 135.0 [g] at 0.004 [s]

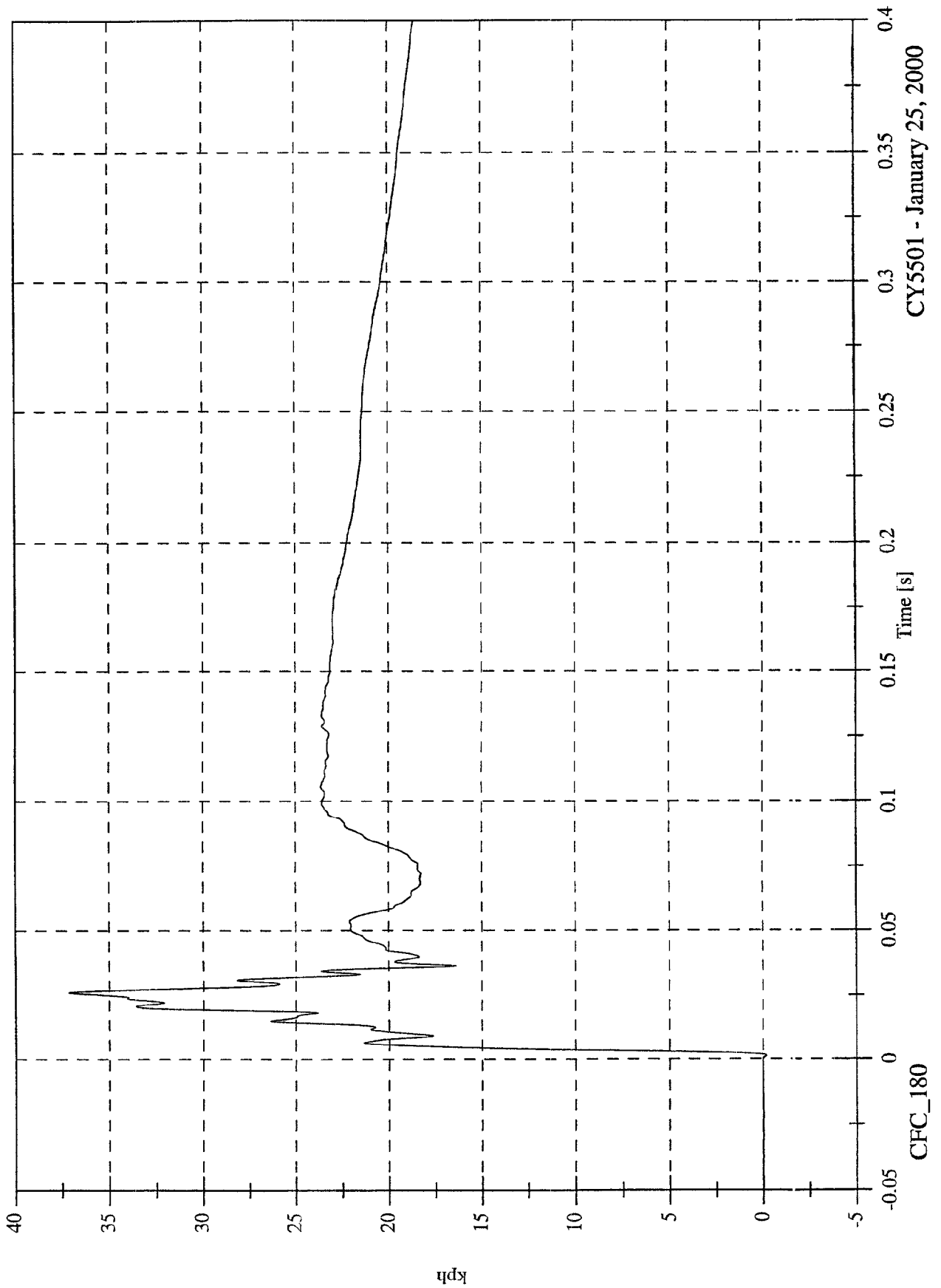
Min: -67.5 [g] at 0.028 [s]



CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon
Acc 13 Left Mid B Post Ay Velocity

Max: 37.2 [kph] at 0.026 [s]
Min: -0.2 [kph] at 0.001 [s]



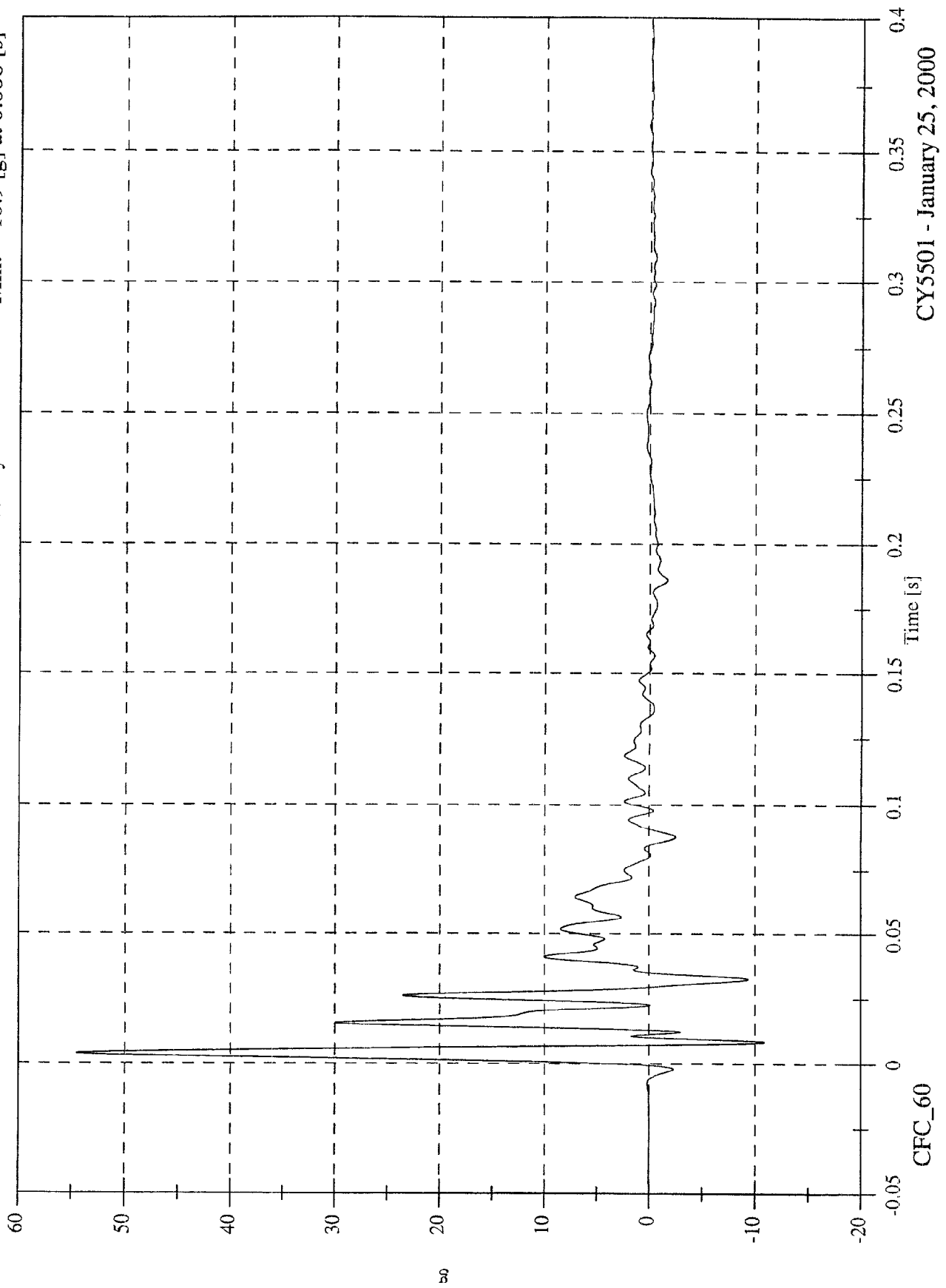
CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 14 Left Lower A Post Ay

Max: 54.5 [g] at 0.004 [s]

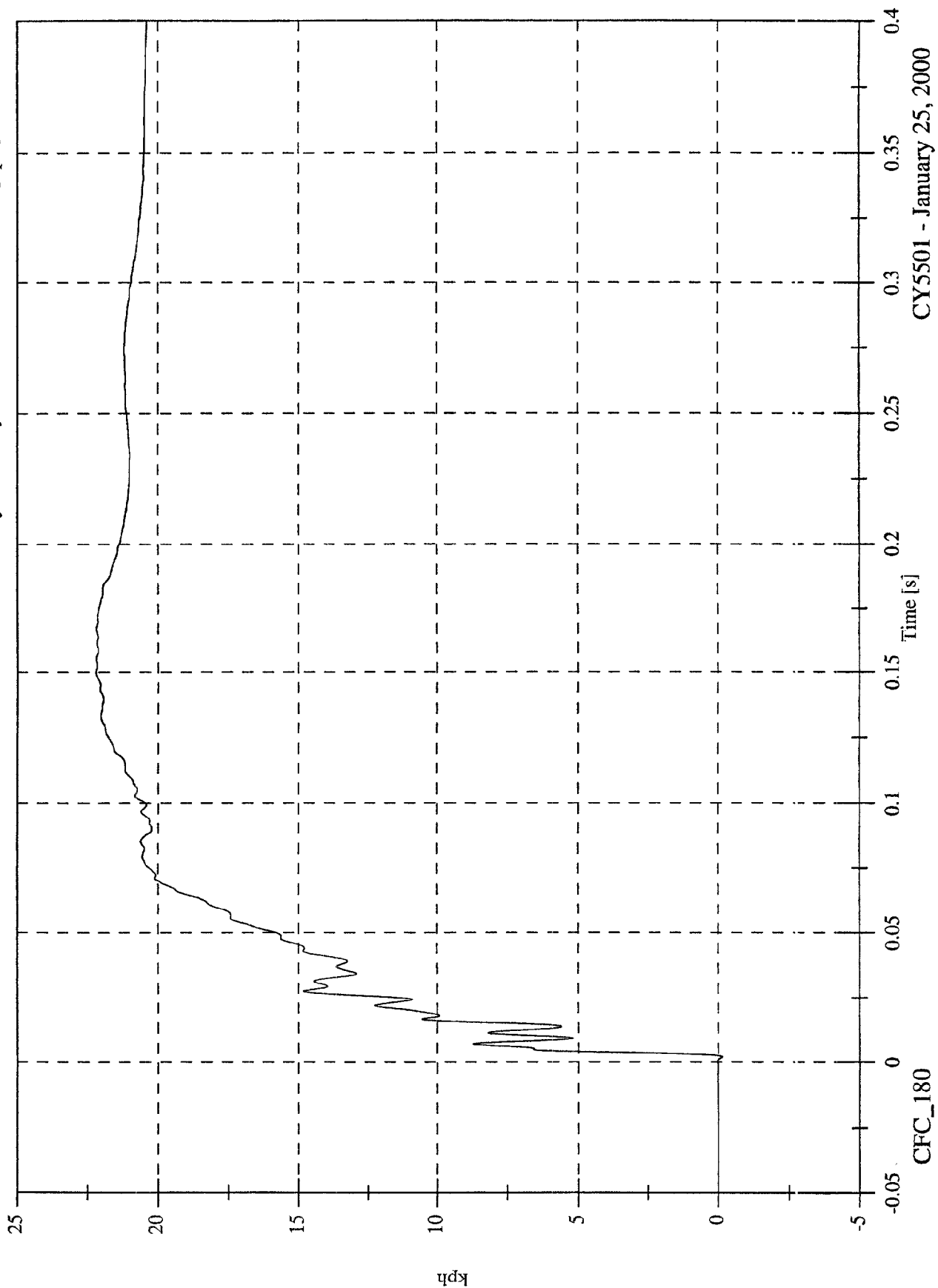
Min: -10.9 [g] at 0.008 [s]



CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon
Acc 14 Left Lower A Post Ay Velocity

Max: 22.2 [kph] at 0.150 [s]
Min: -0.1 [kph] at 0.002 [s]



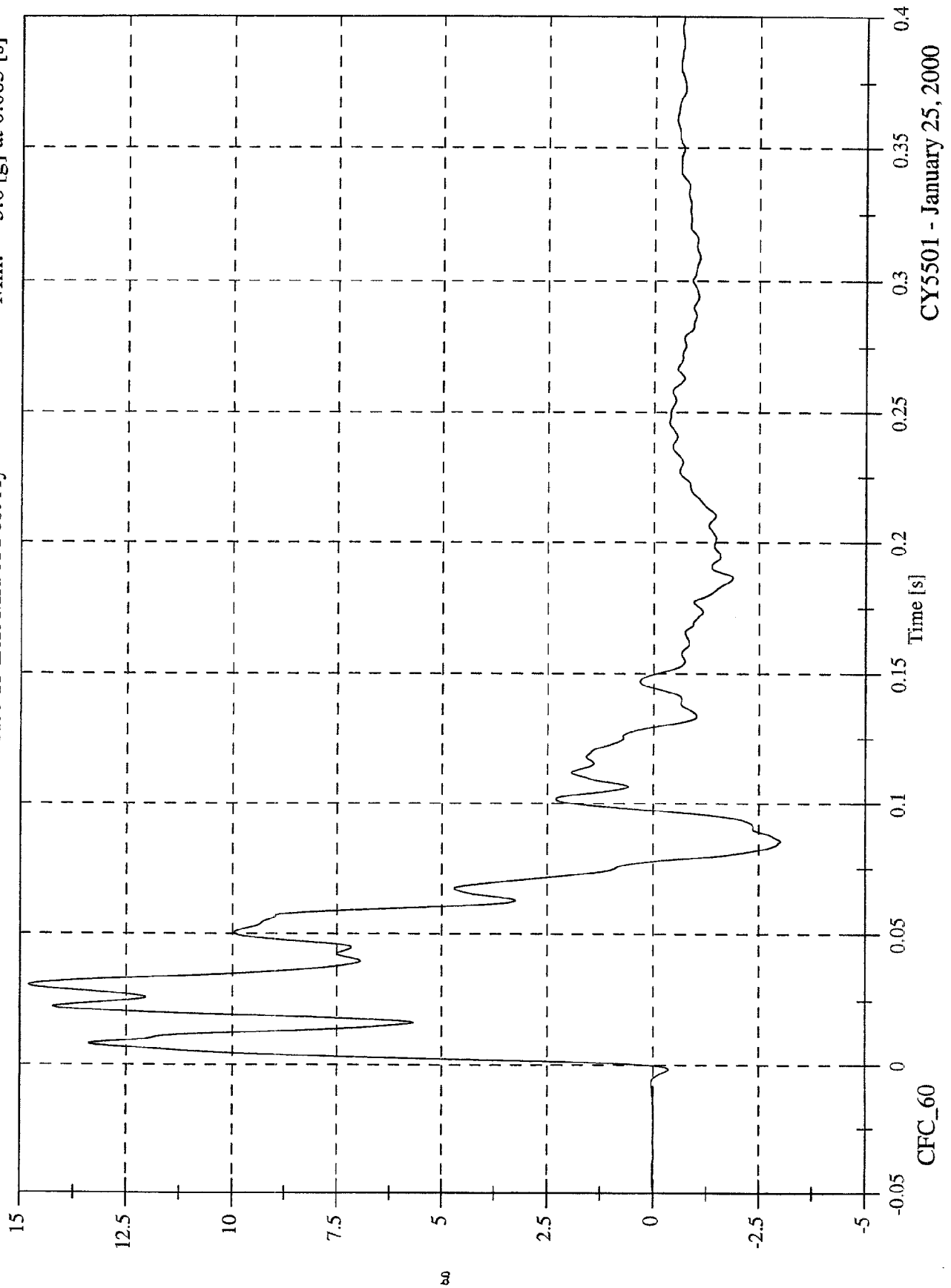
CY5501 - January 25, 2000

HMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 15 Left Mid A Post Ay

Max: 14.8 [g] at 0.031 [s]

Min: -3.0 [g] at 0.085 [s]

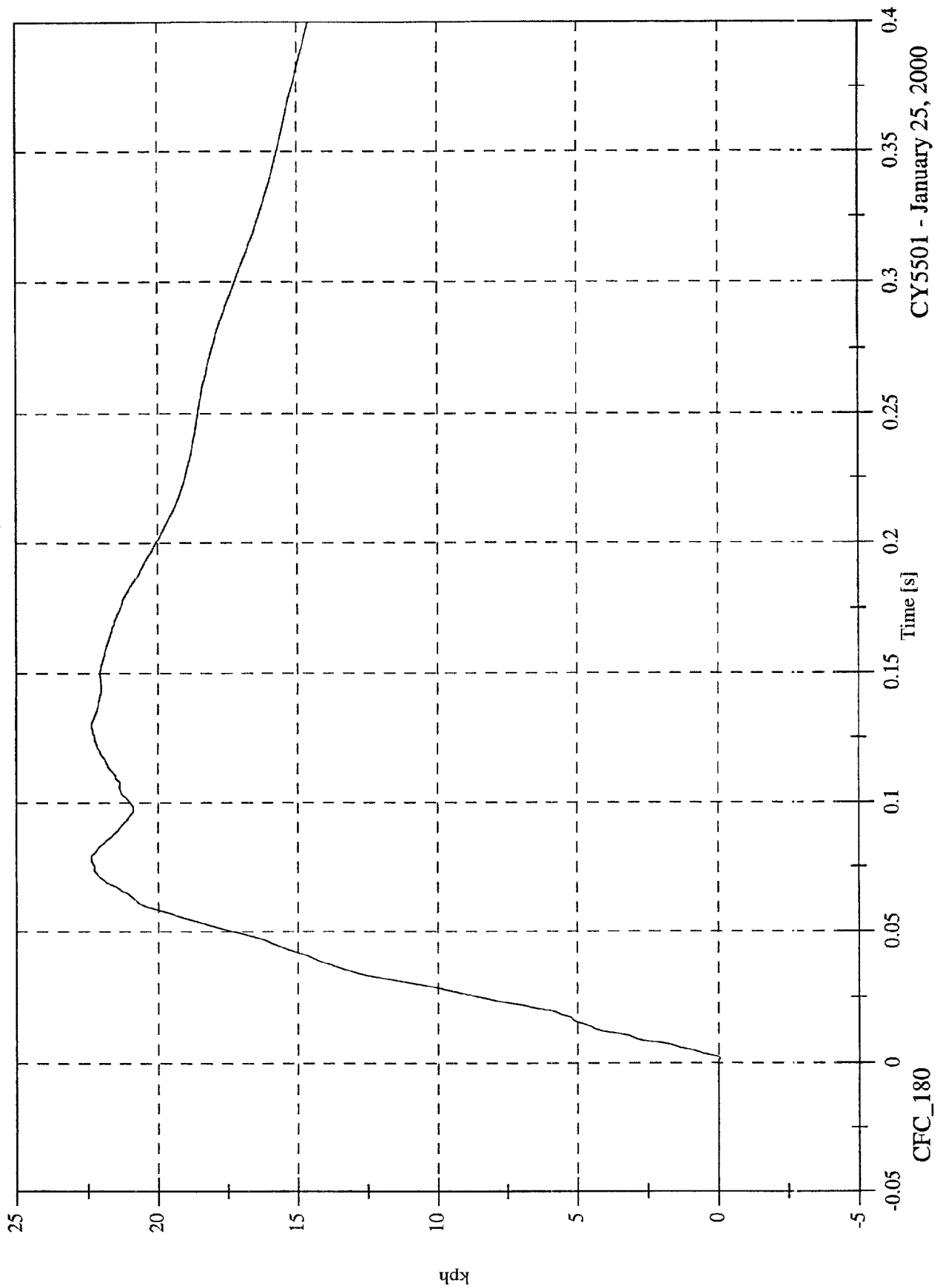


CY5501 - January 25, 2000

FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon

Acc 15 Left Mid A Post Ay Velocity

Max: 22.4 [kph] at 0.079 [s]
Min: -0.0 [kph] at 0.002 [s]



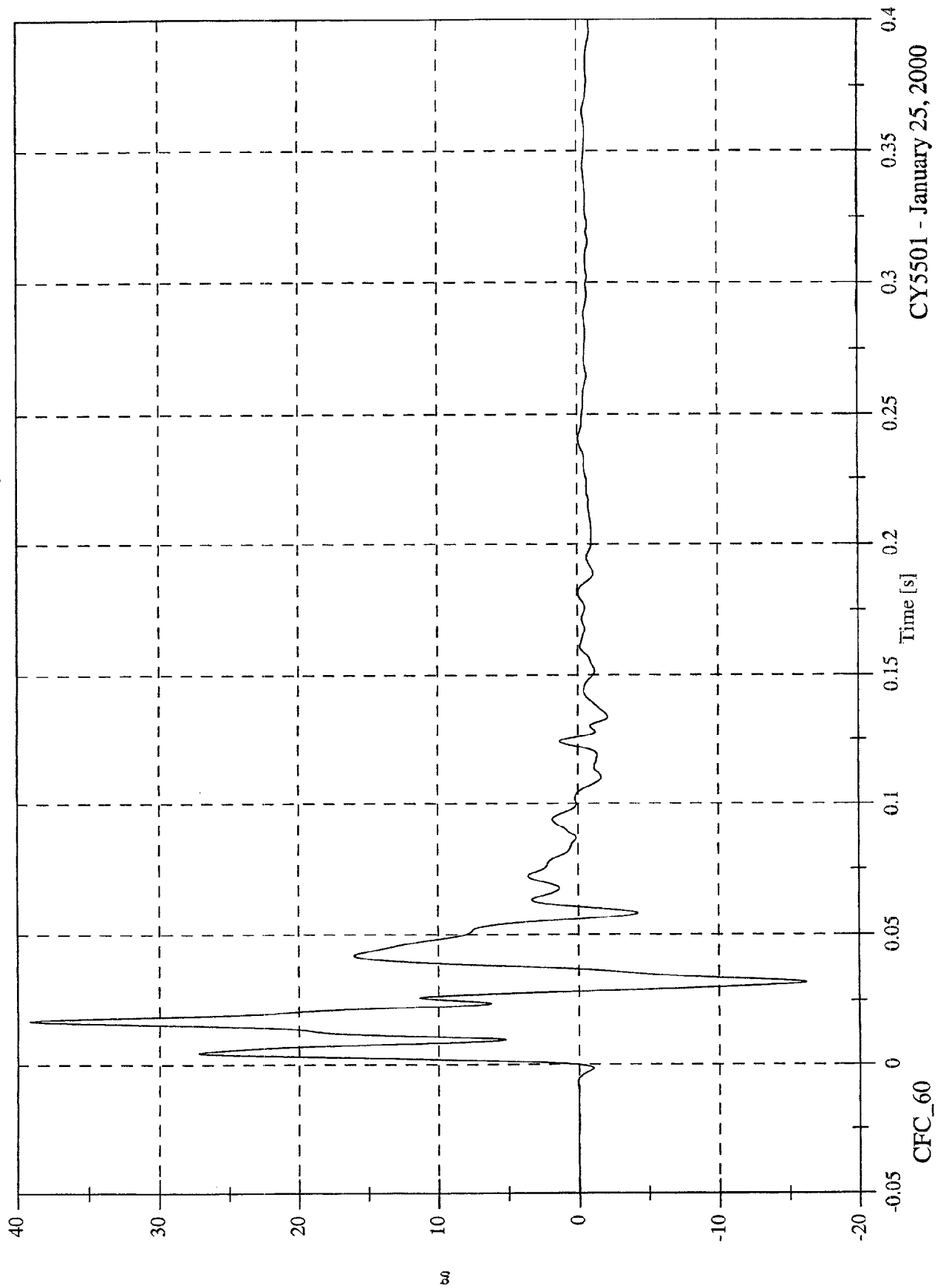
CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 16 Front Seat Track Ay

Max: 39.1 [g] at 0.017 [s]

Min: -16.2 [g] at 0.032 [s]

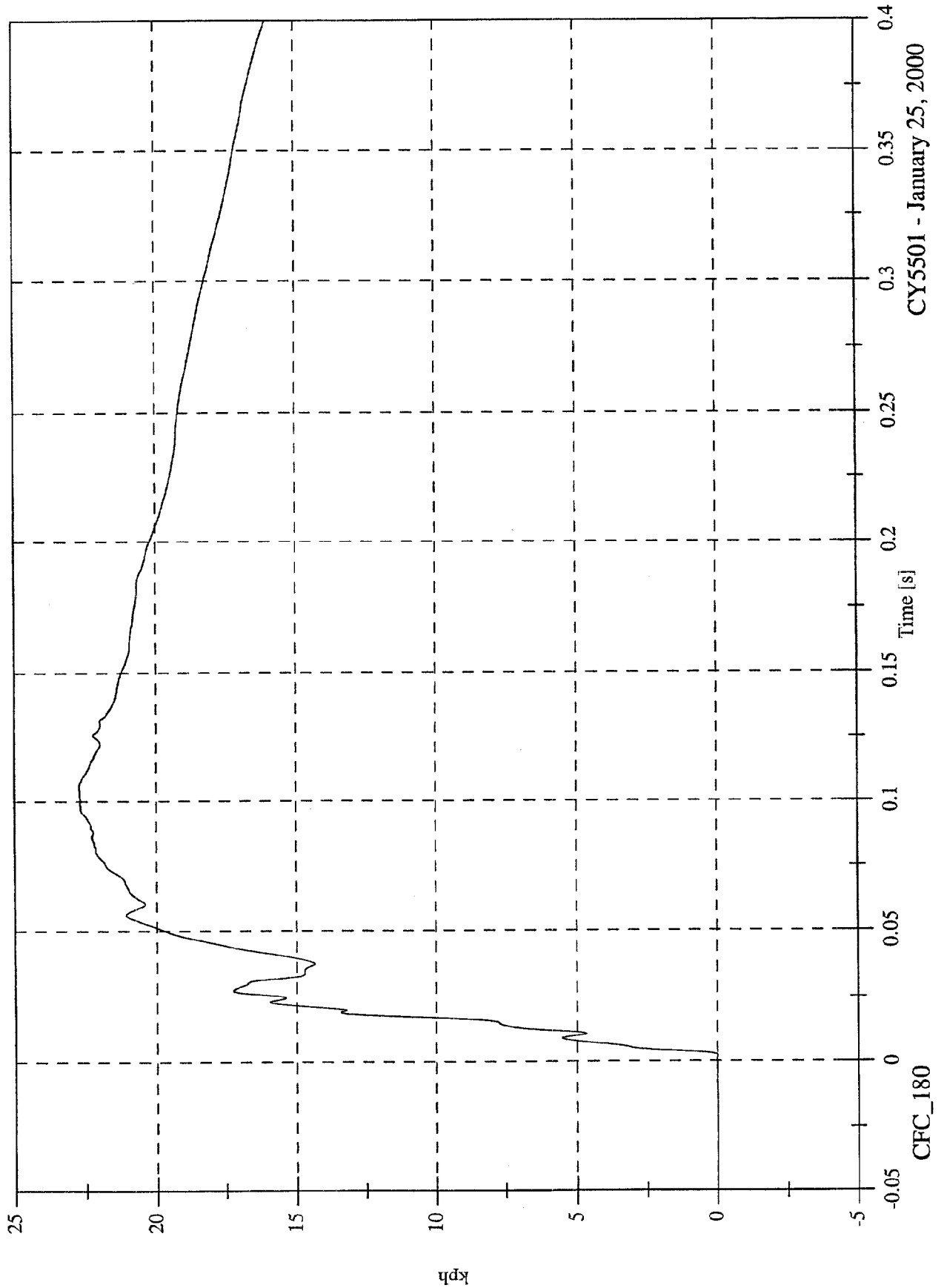


CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 16 Front Seat Track Ay Velocity

Max: 22.7 [kph] at 0.106 [s]
Min: -0.0 [kph] at -0.047 [s]

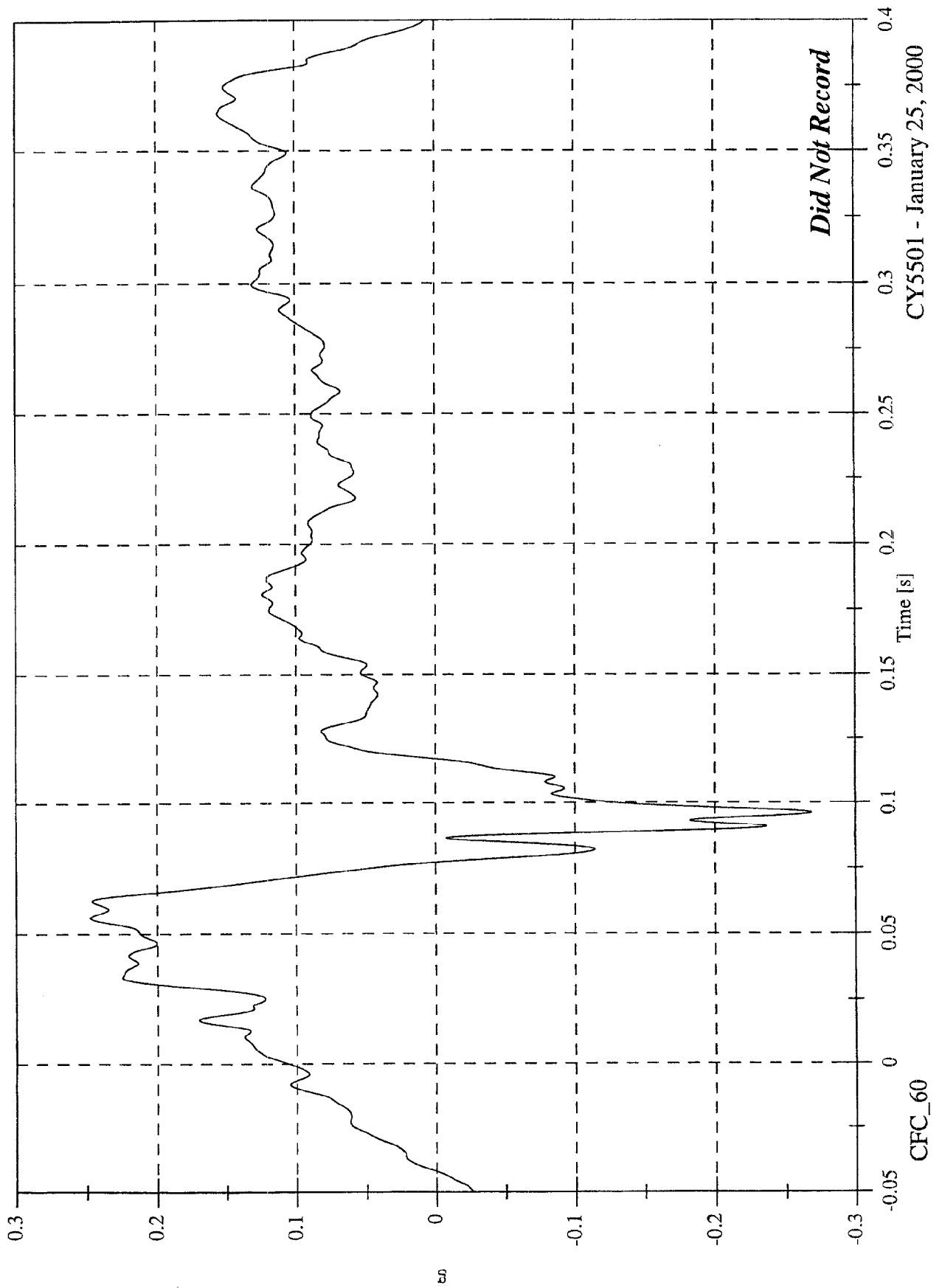


FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 17 Rear Seat Track Ay

Max: 0.2 [g] at 0.056 [s]

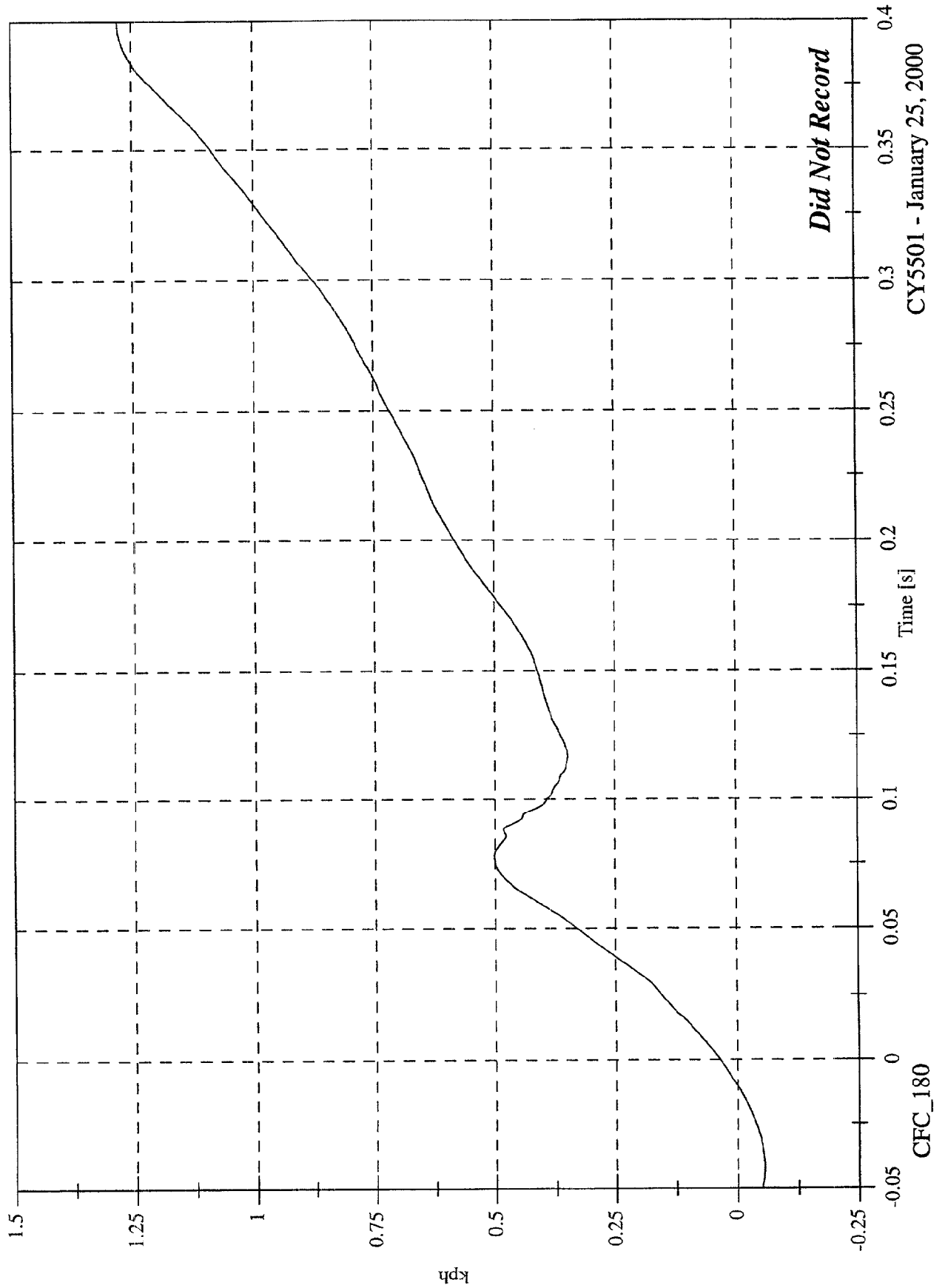
Min: -0.3 [g] at 0.096 [s]



FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon

Max: 1.3 [kph] at 0.400 [s]
 Min: -0.1 [kph] at -0.042 [s]

Acc 17 Rear Seat Track Ay Velocity

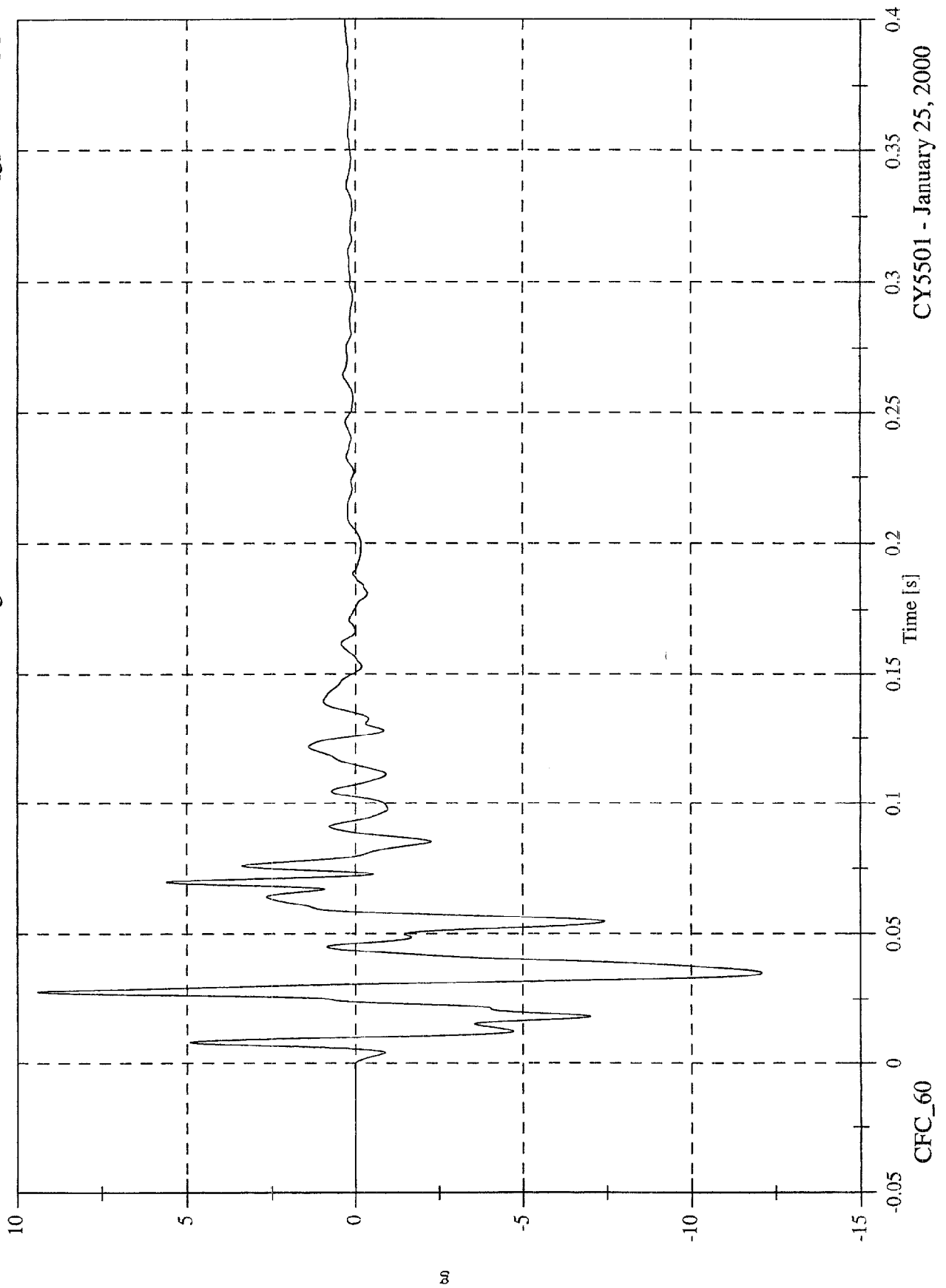


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FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Max: 9.4 [g] at 0.028 [s]
 Min: -12.1 [g] at 0.035 [s]

Acc 18 Target CG Ax

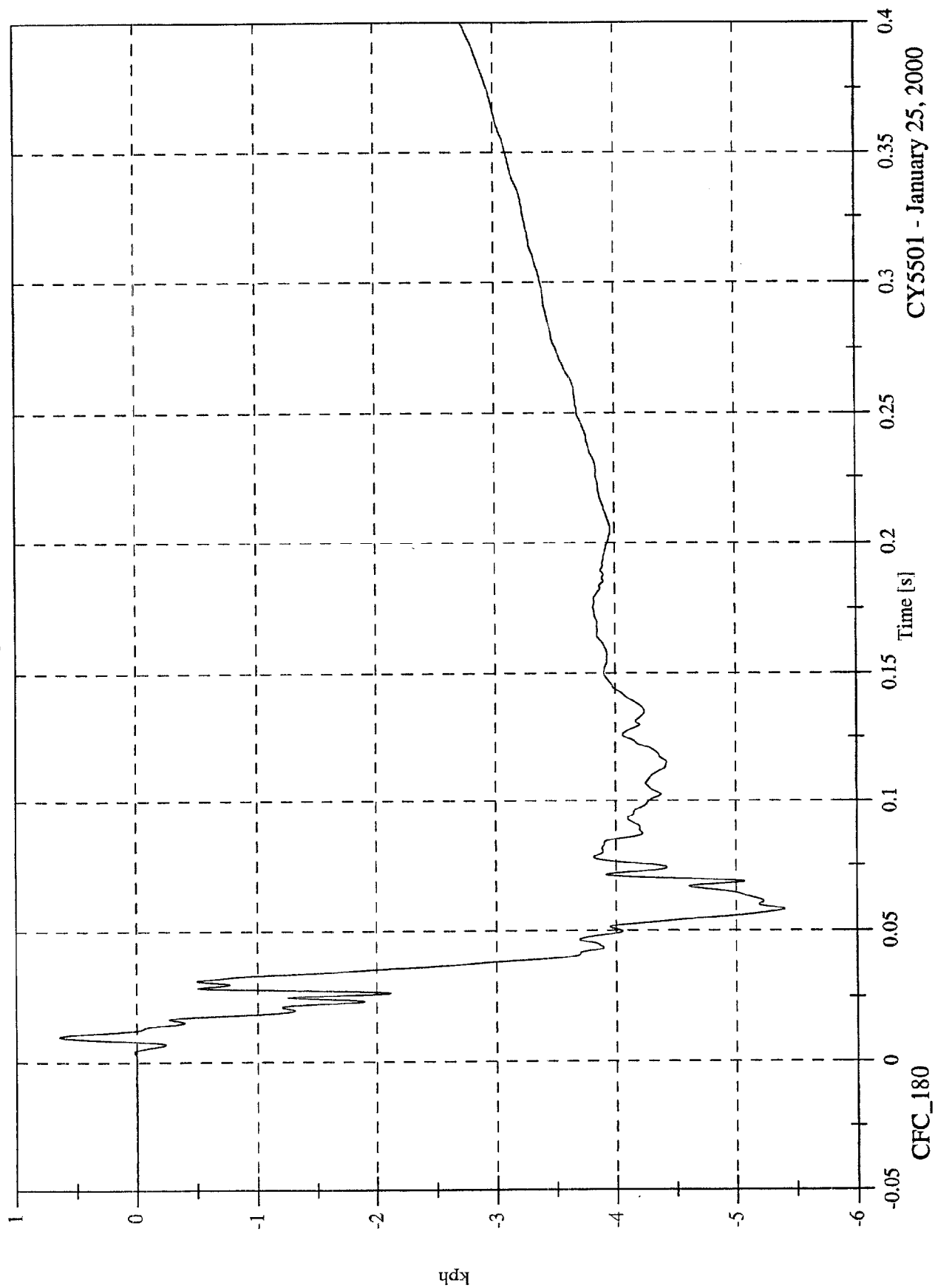


CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 18 Target CG Ax Velocity

Max: 0.6 [kph] at 0.010 [s]
Min: -5.4 [kph] at 0.058 [s]



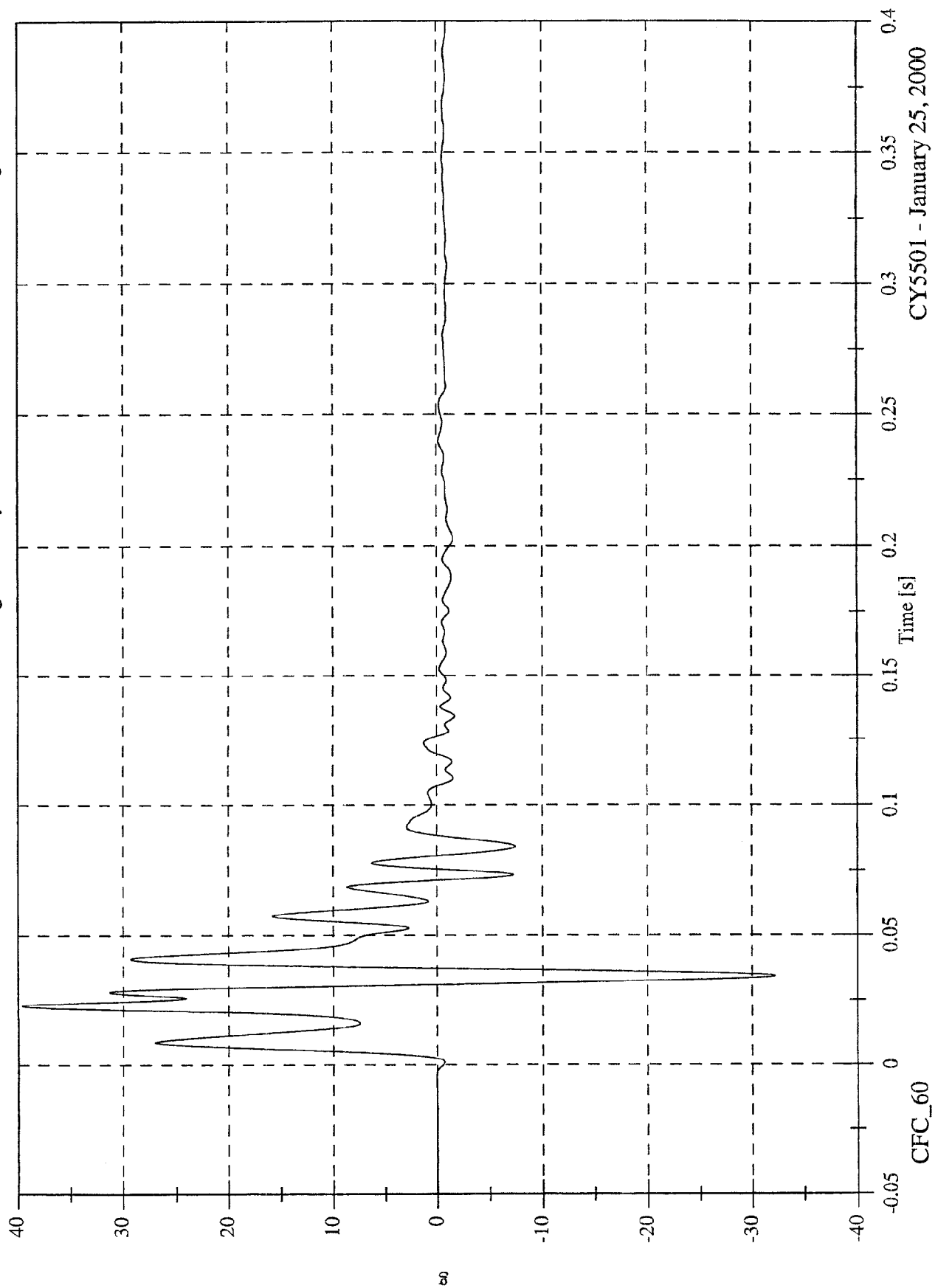
CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 18 Target CG Ay

Max: 39.6 [g] at 0.023 [s]

Min: -32.2 [g] at 0.034 [s]

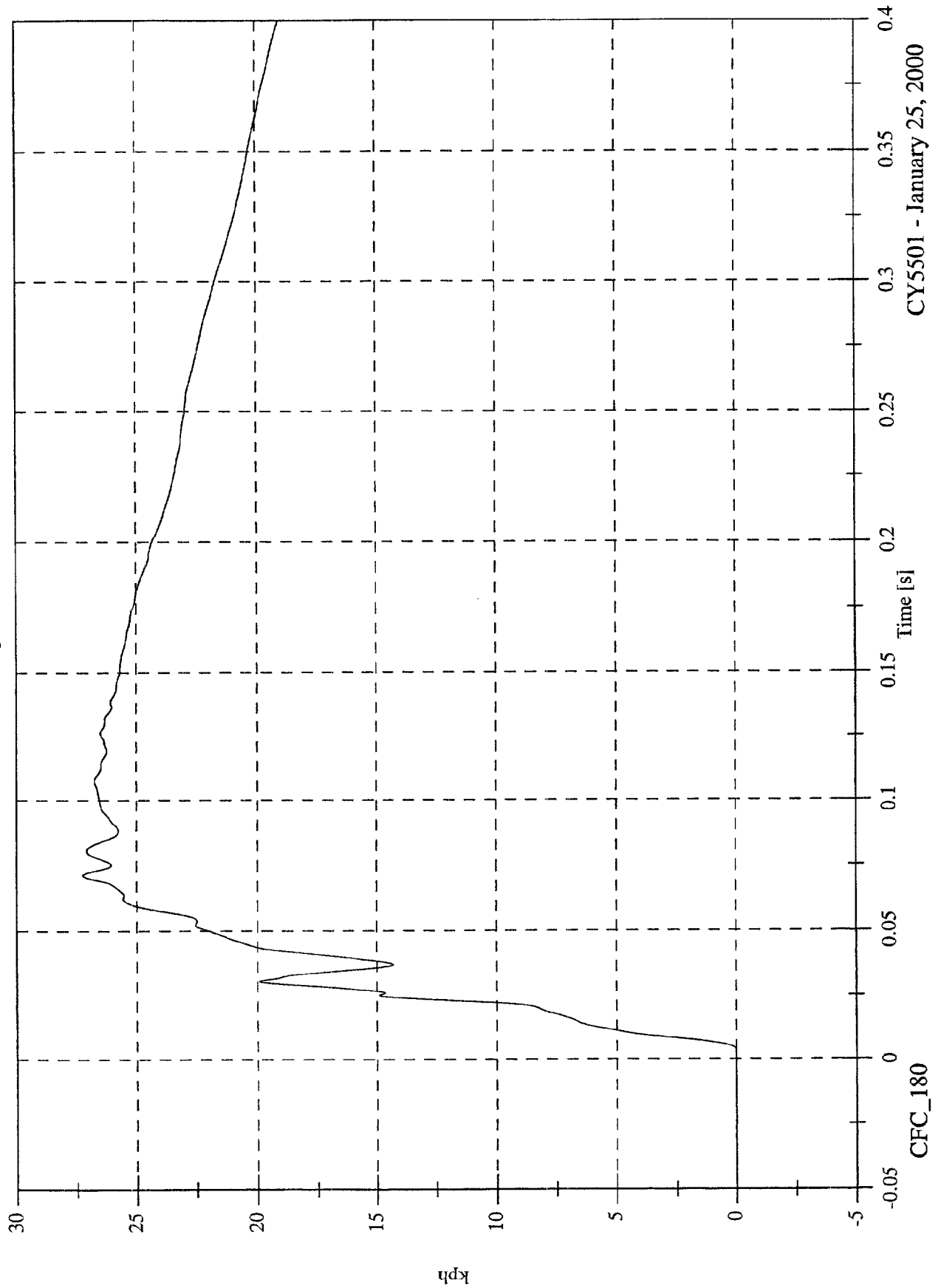


CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Max: 27.2 [kph] at 0.071 [s]
Min: -0.0 [kph] at -0.047 [s]

Acc 18 Target CG Ay Velocity



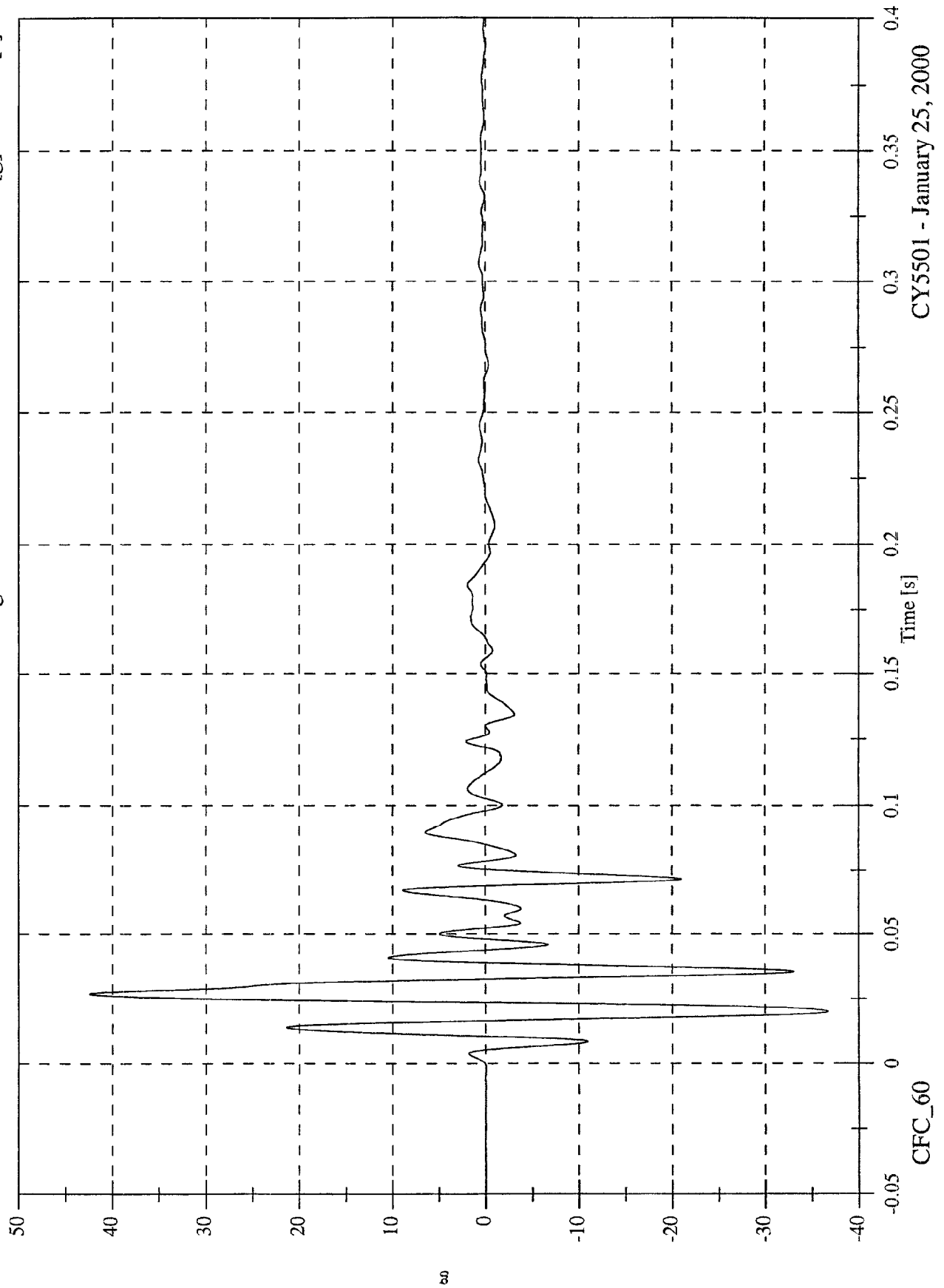
CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 18 Target CG Az

Max: 42.5 [g] at 0.027 [s]

Min: -36.7 [g] at 0.020 [s]

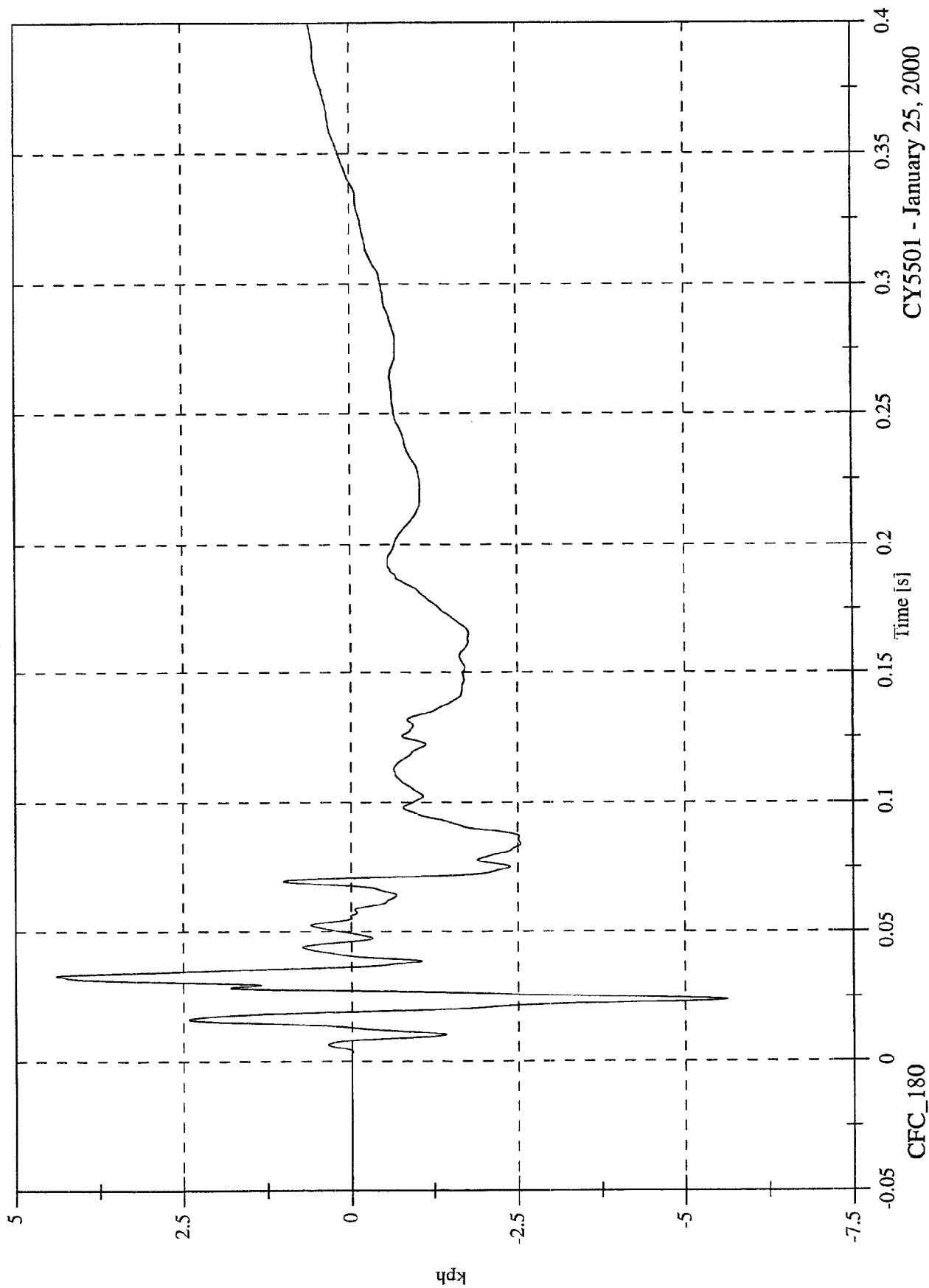


FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon

Acc 18 Target CG Az Velocity

Max: 4.4 [kph] at 0.033 [s]

Min: -5.6 [kph] at 0.024 [s]



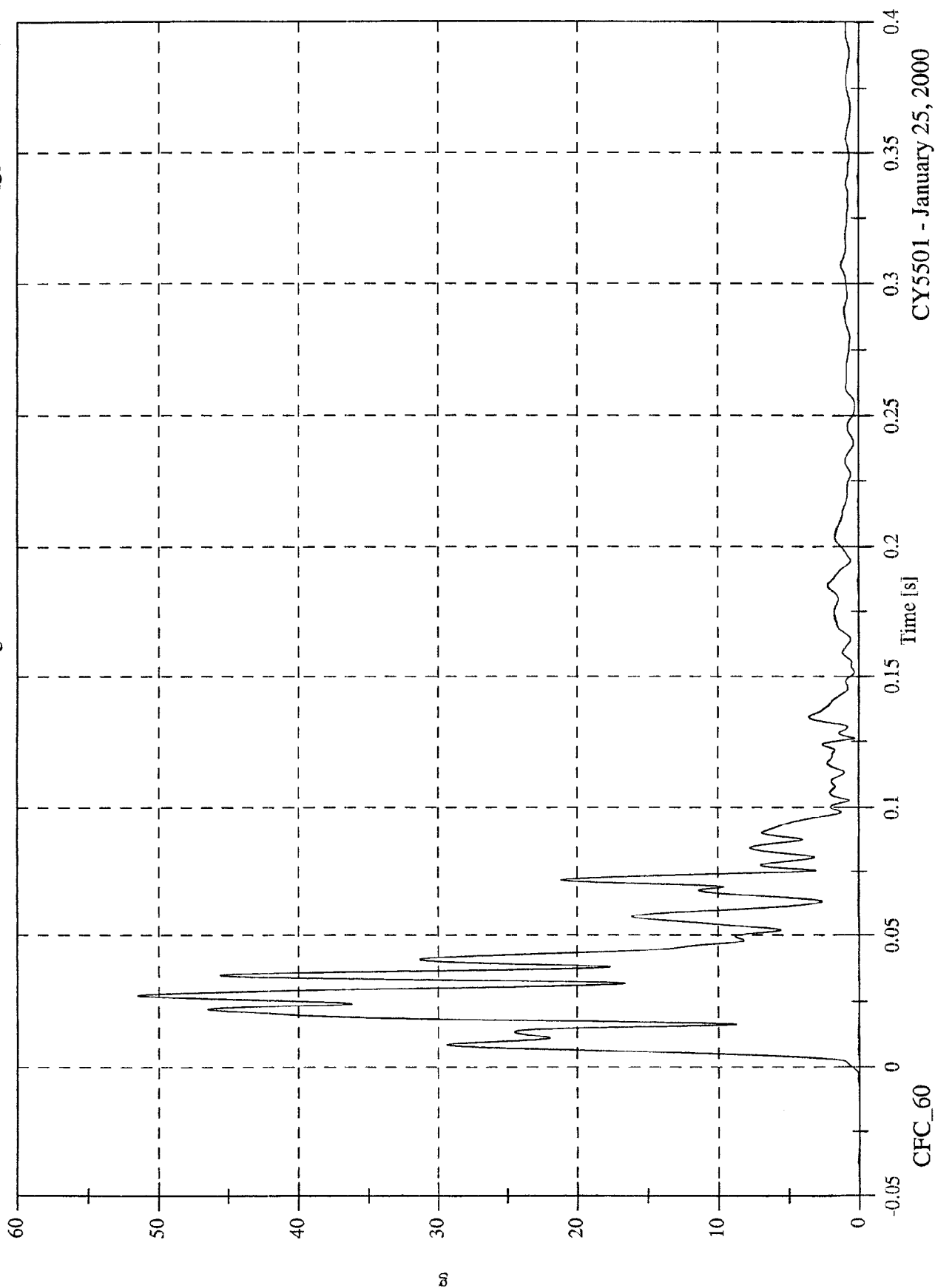
CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Acc 18 Target CG A Resultant

Max: 51.5 [g] at 0.027 [s]

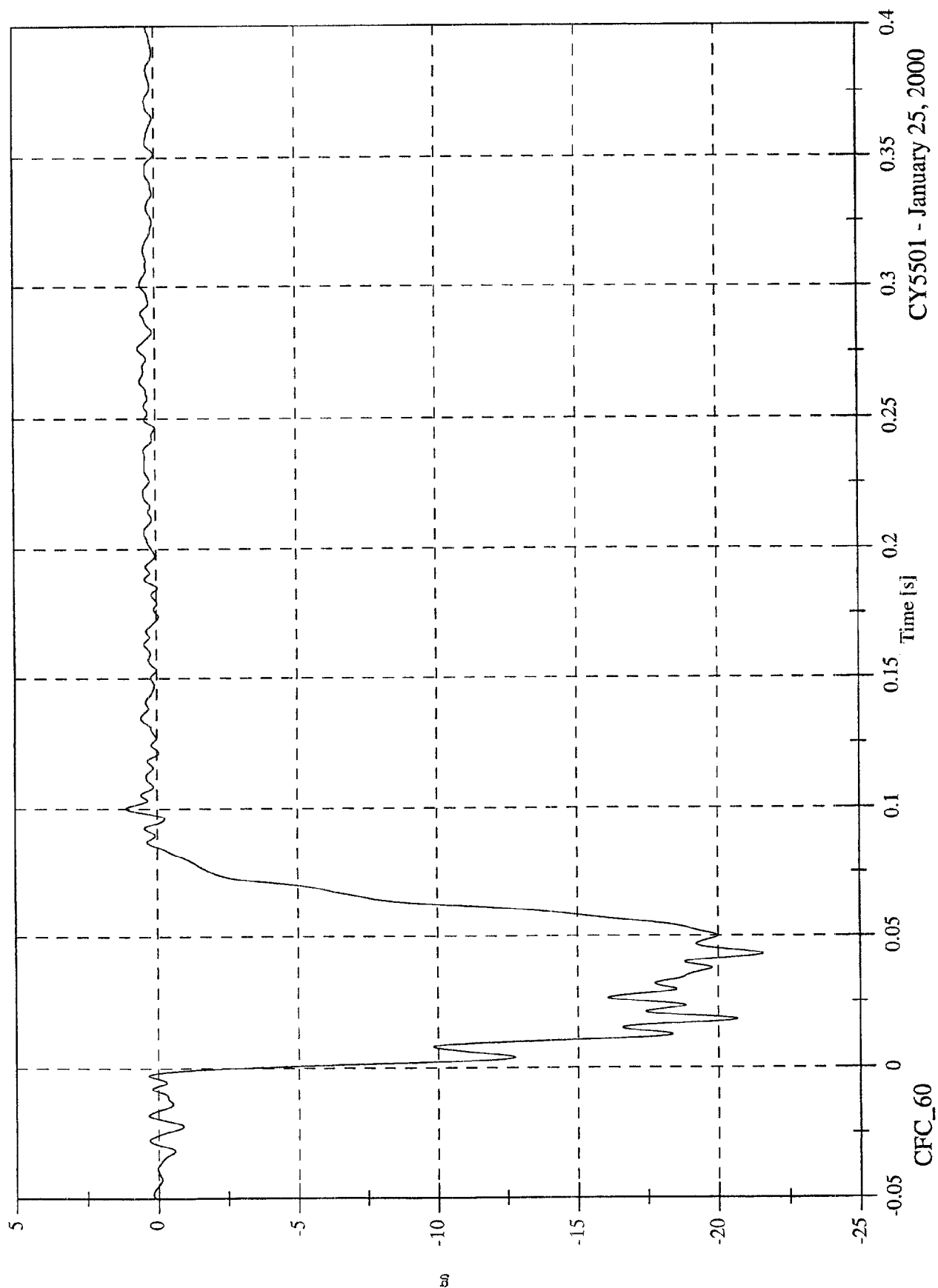
Min: 0.0 [g] at -0.016 [s]



FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

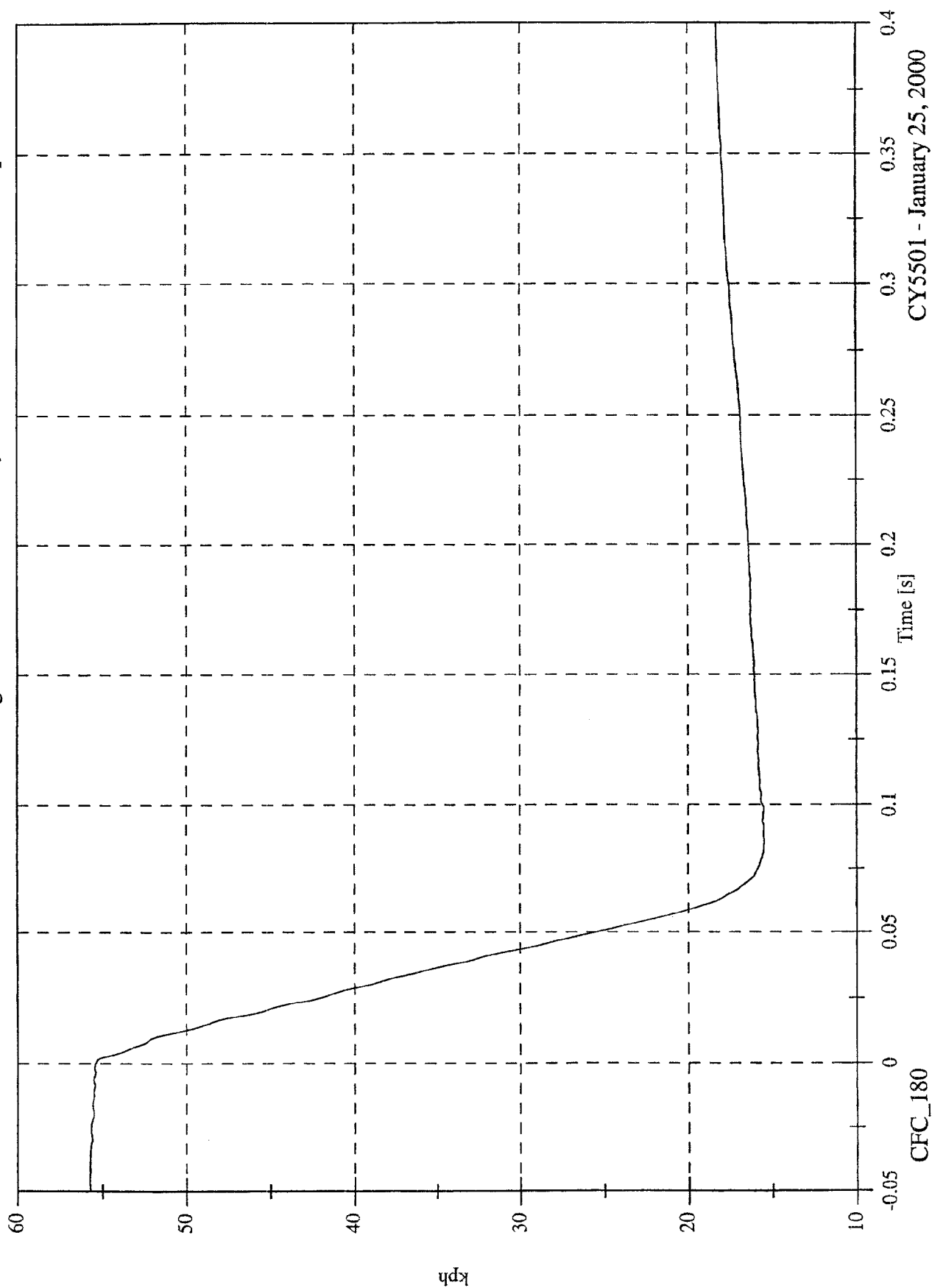
Moving Barrier CG Ax

Max: 1.1 [g] at 0.100 [s]
Min: -21.6 [g] at 0.043 [s]



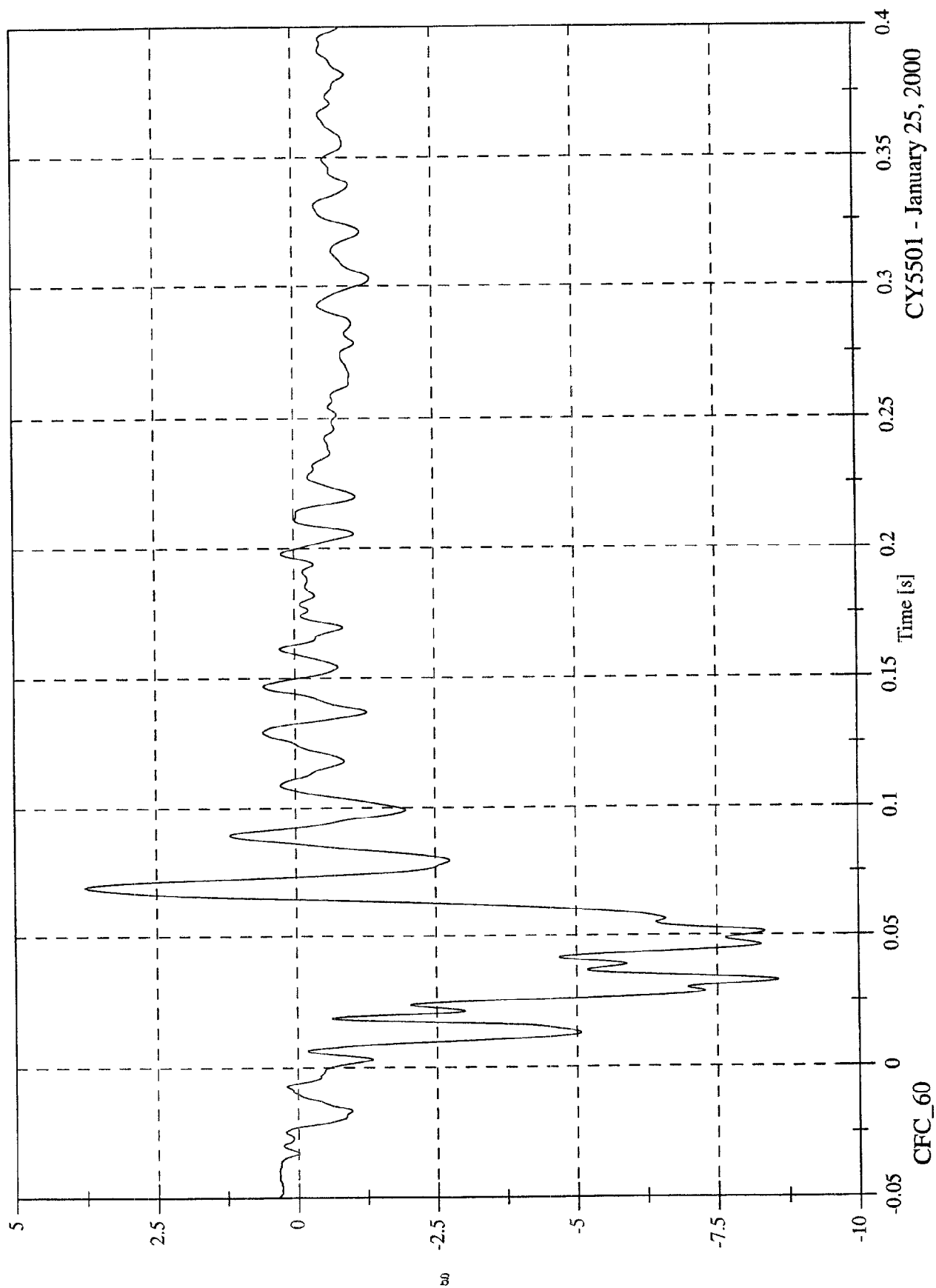
FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon
Moving Barrier CG Ax Velocity

Max: 55.7 [kph] at -0.045 [s]
Min: 15.5 [kph] at 0.085 [s]



FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon
Moving Barrier CG Ay

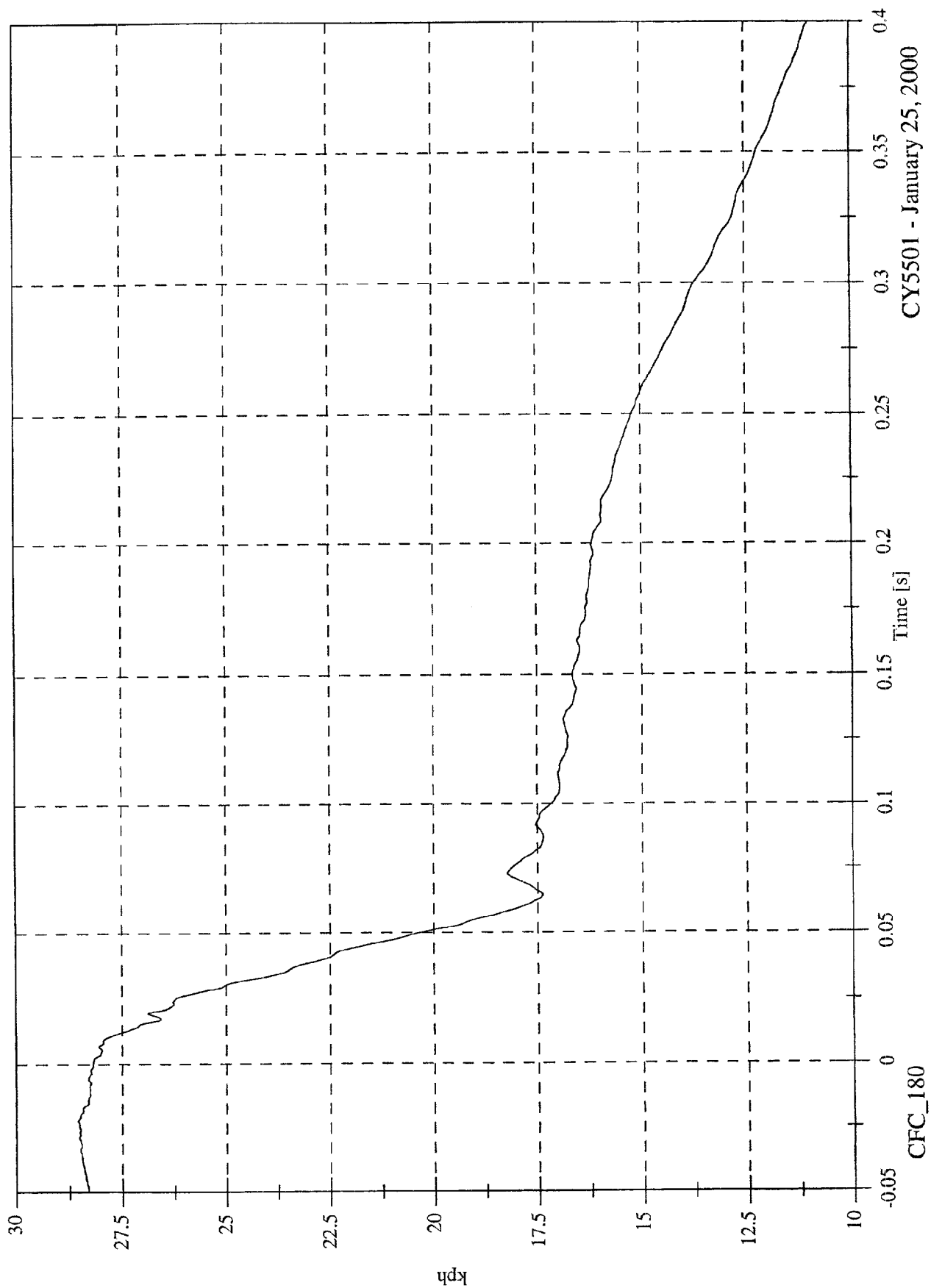
Max: 3.8 [g] at 0.069 [s]
Min: -8.6 [g] at 0.033 [s]



CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon
Moving Barrier CG Ay Velocity

Max: 28.5 [kph] at -0.022 [s]
Min: 11.0 [kph] at 0.400 [s]



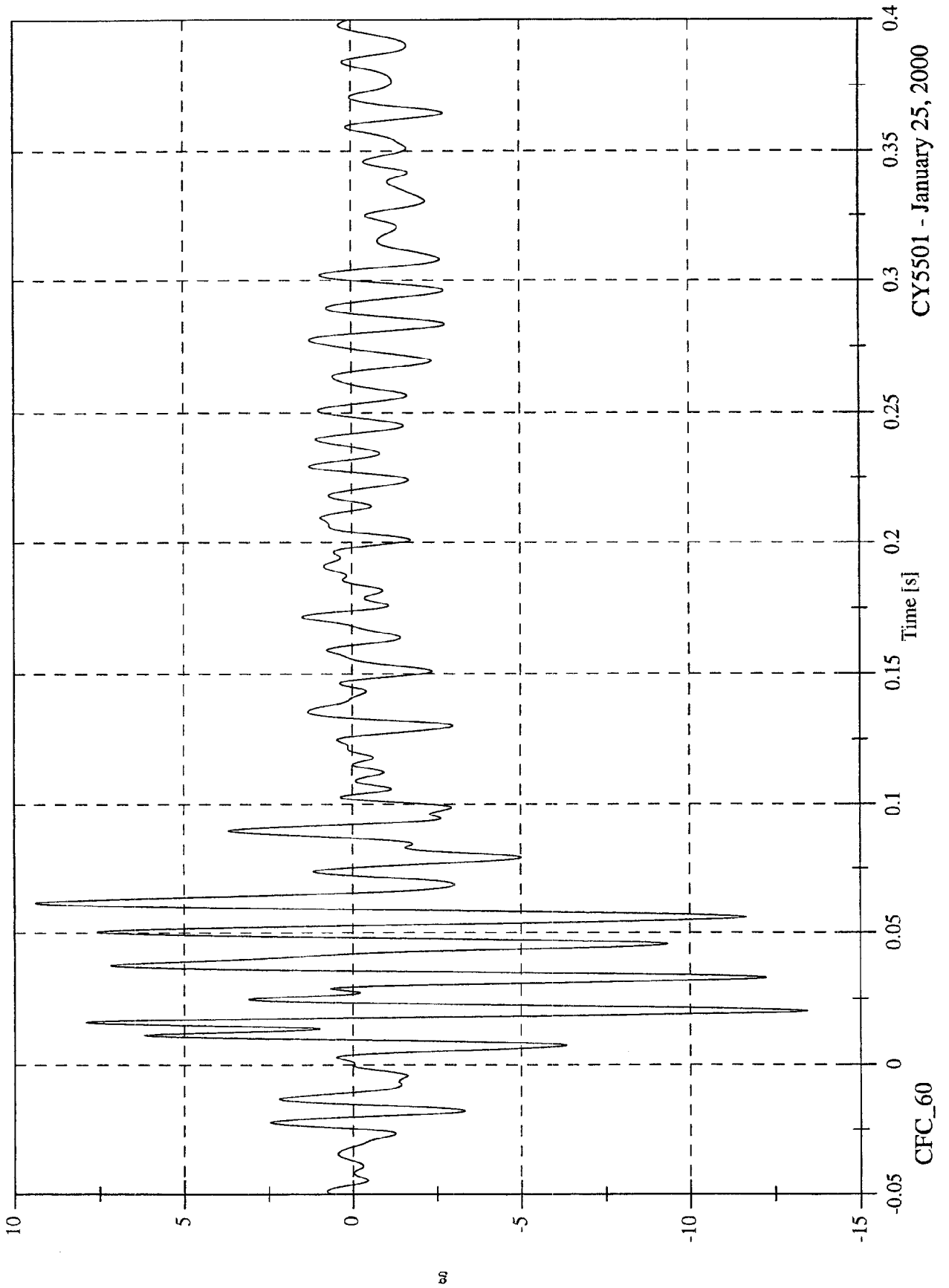
CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Moving Barrier CG Az

Max: 9.4 [g] at 0.062 [s]

Min: -13.4 [g] at 0.020 [s]

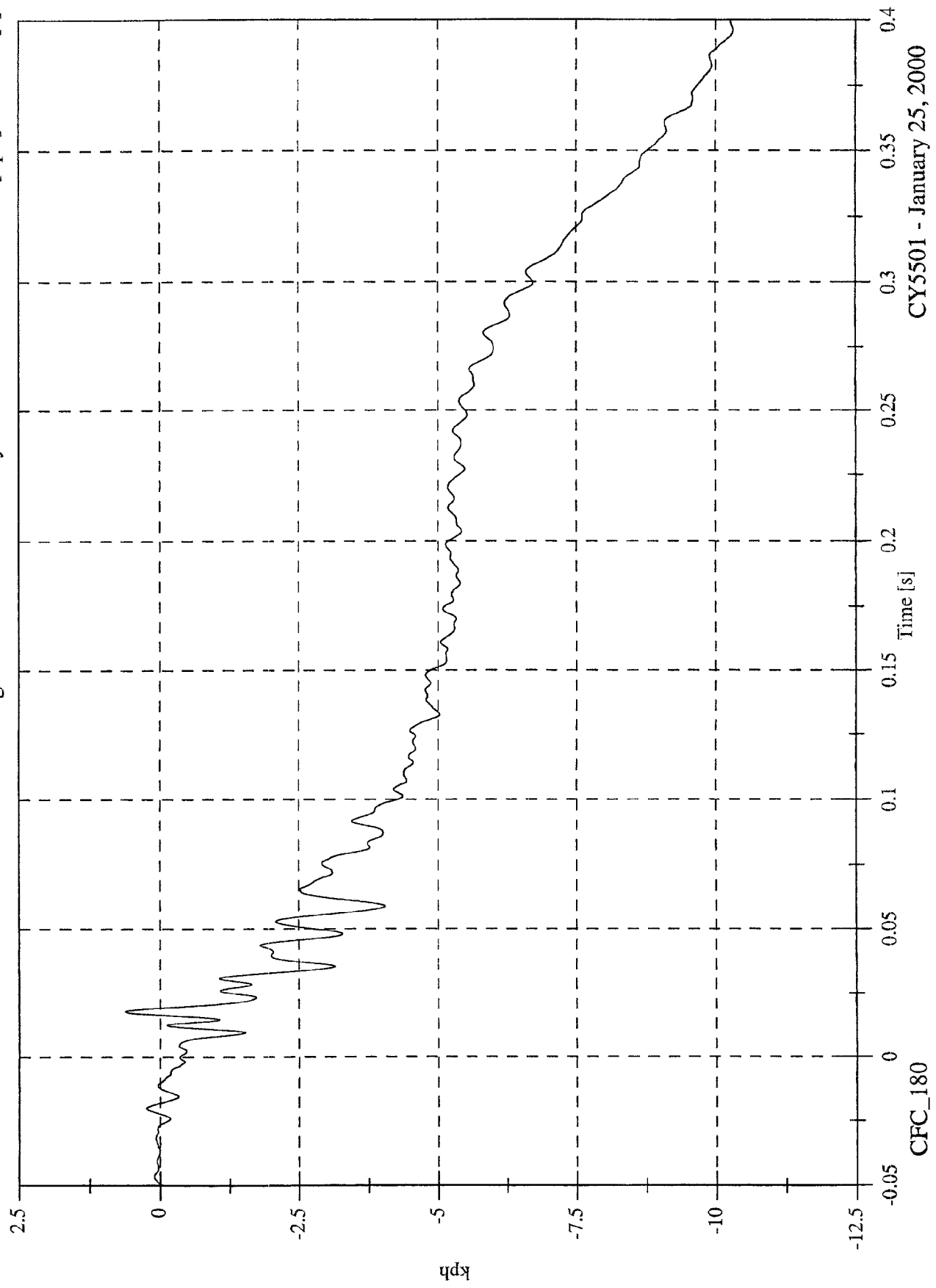


CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Max: 0.6 [kph] at 0.018 [s]
Min: -10.3 [kph] at 0.396 [s]

Moving Barrier CG Az Velocity

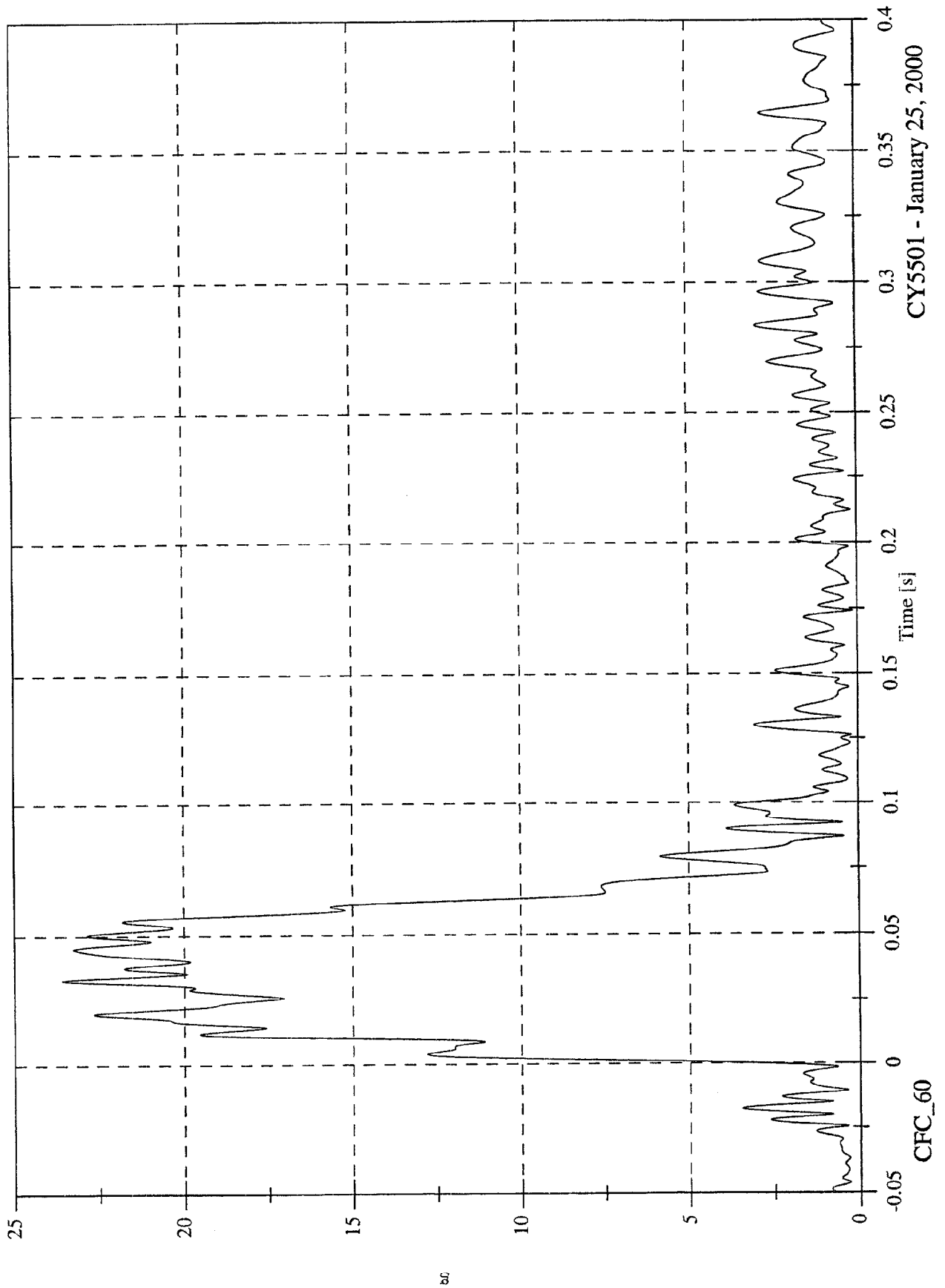


CFC_180

CY5501 - January 25, 2000

FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon
Moving Barrier CG A Resultant

Max: 23.6 [g] at 0.033 [s]
Min: 0.1 [g] at 0.174 [s]



CY5501 - January 25, 2000

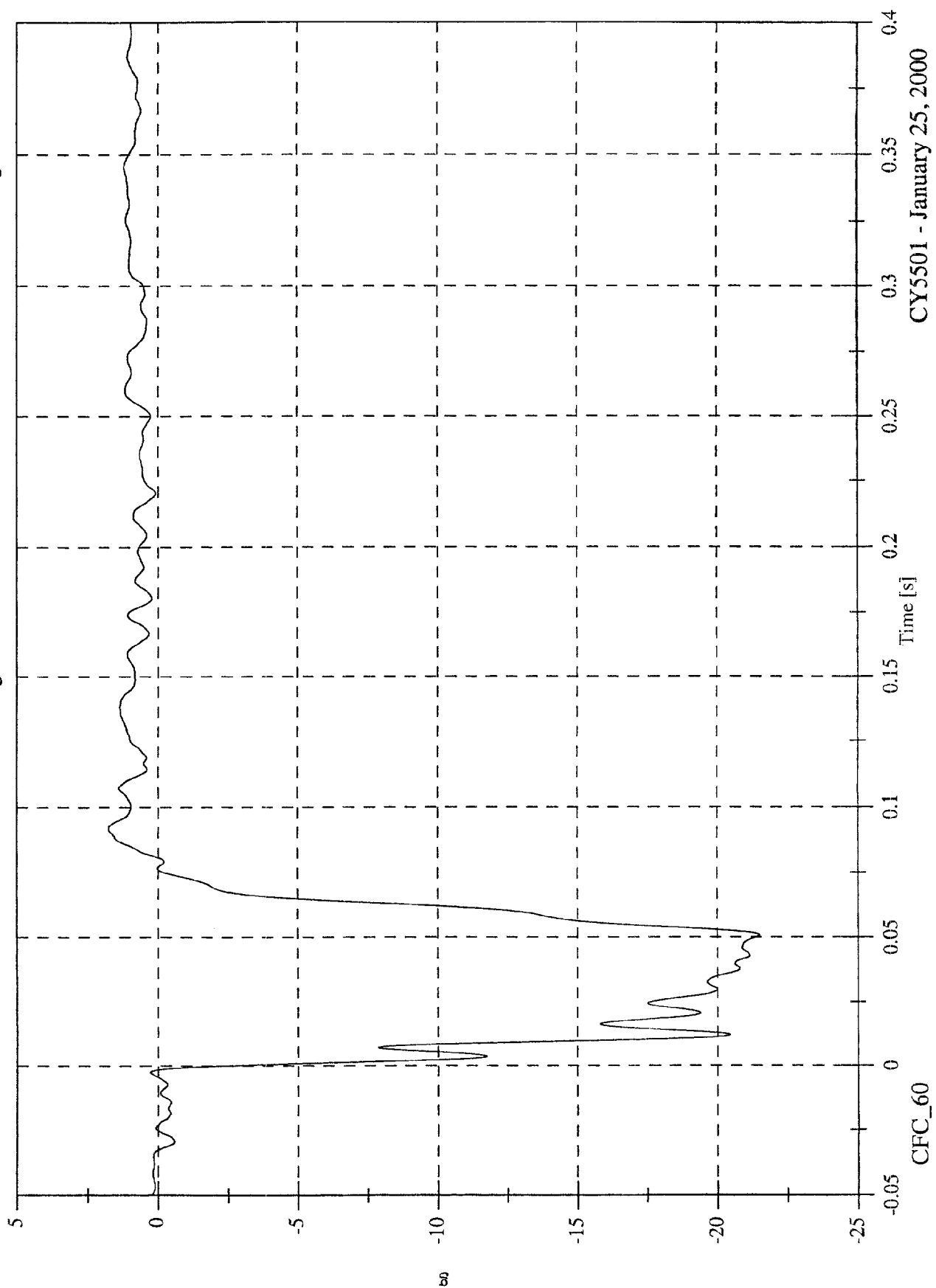
CFC_60

FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon

Moving Barrier Left Rail Ax

Max: 1.8 [g] at 0.092 [s]

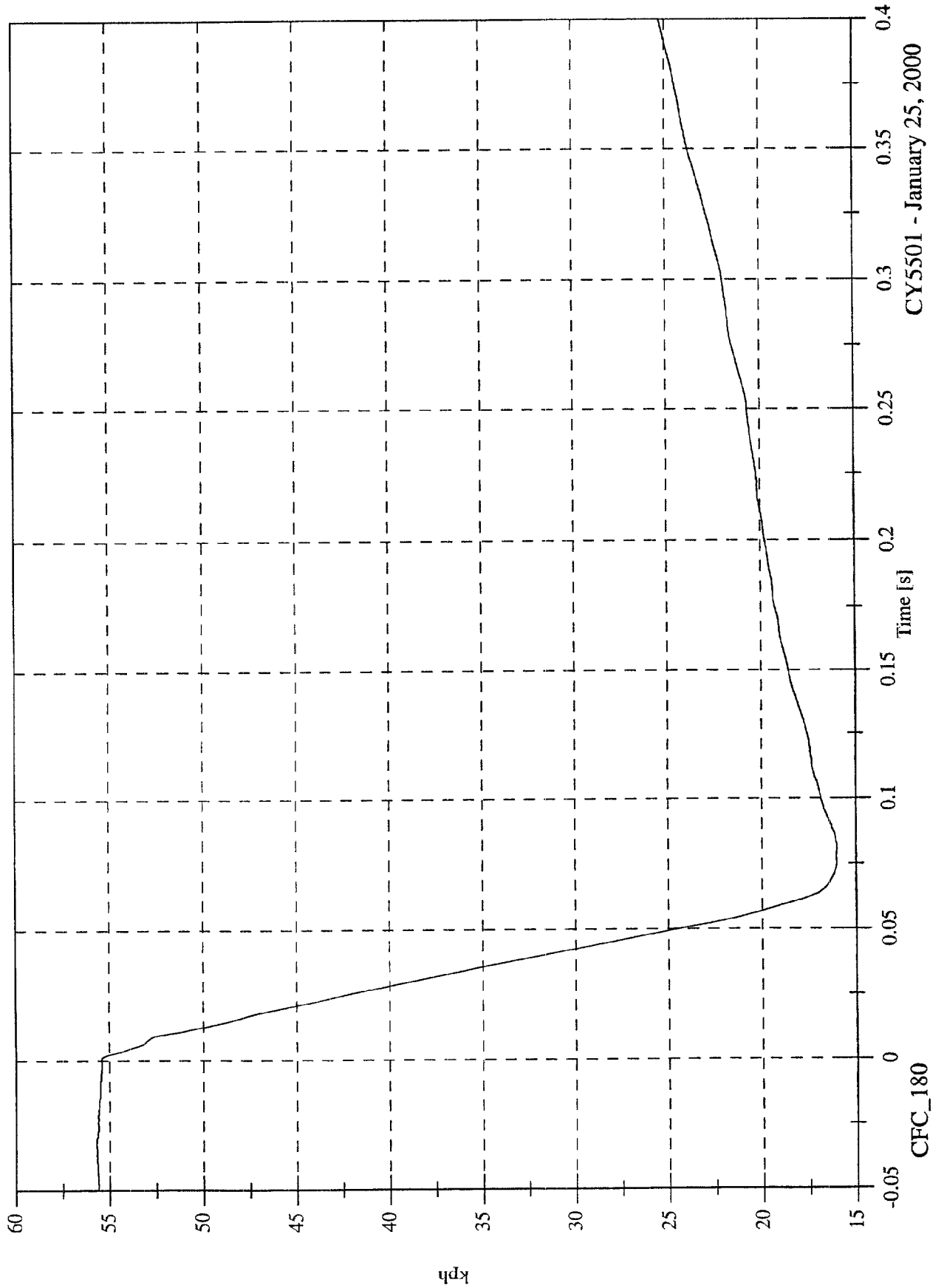
Min: -21.5 [g] at 0.051 [s]



CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon
Moving Barrier Left Rail Ax Velocity

Max: 55.7 [kph] at -0.032 [s]
Min: 16.0 [kph] at 0.080 [s]

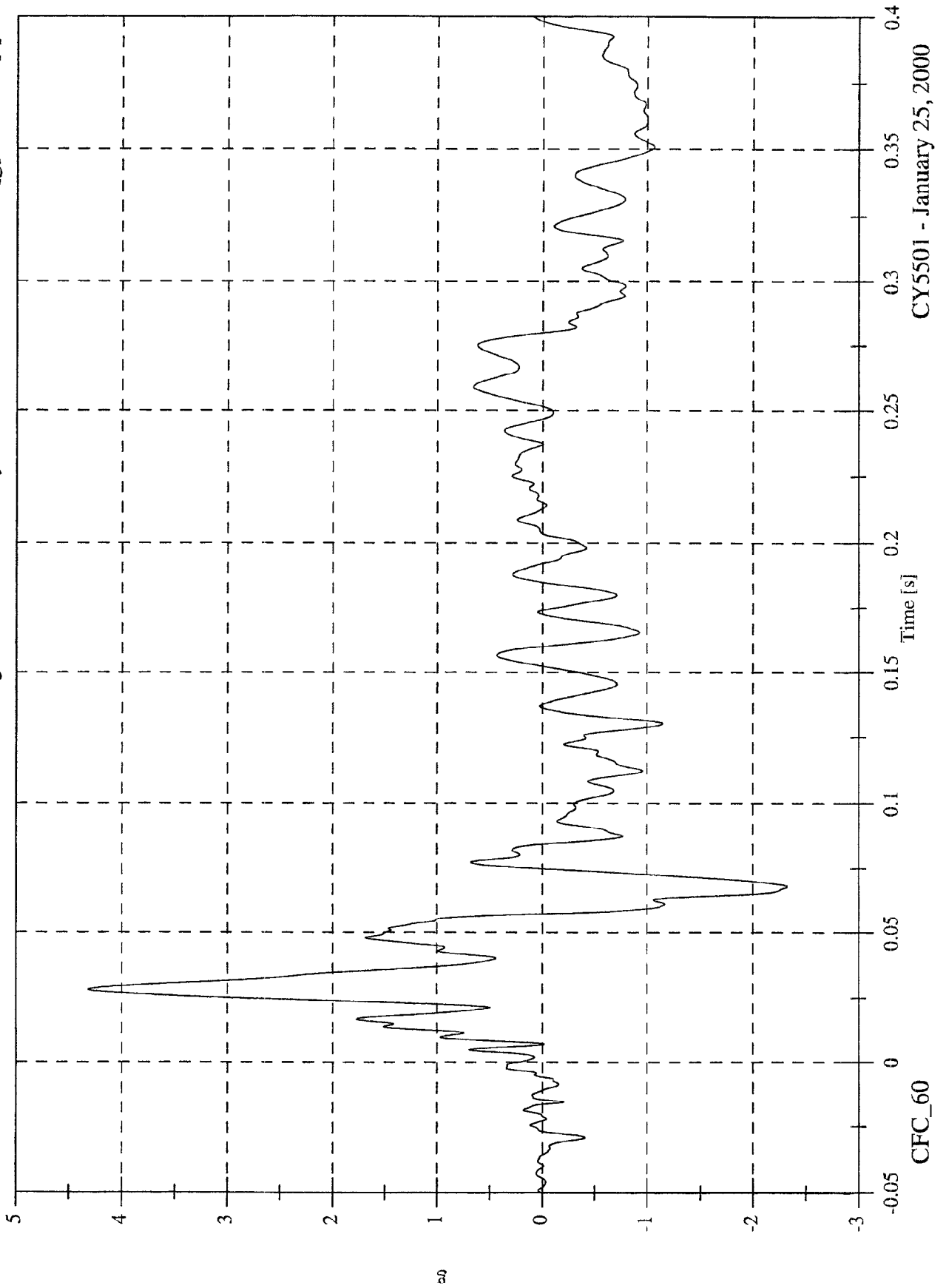


CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Moving Barrier Left Rail Ay

Max: 4.3 [g] at 0.028 [s]
Min: -2.3 [g] at 0.068 [s]

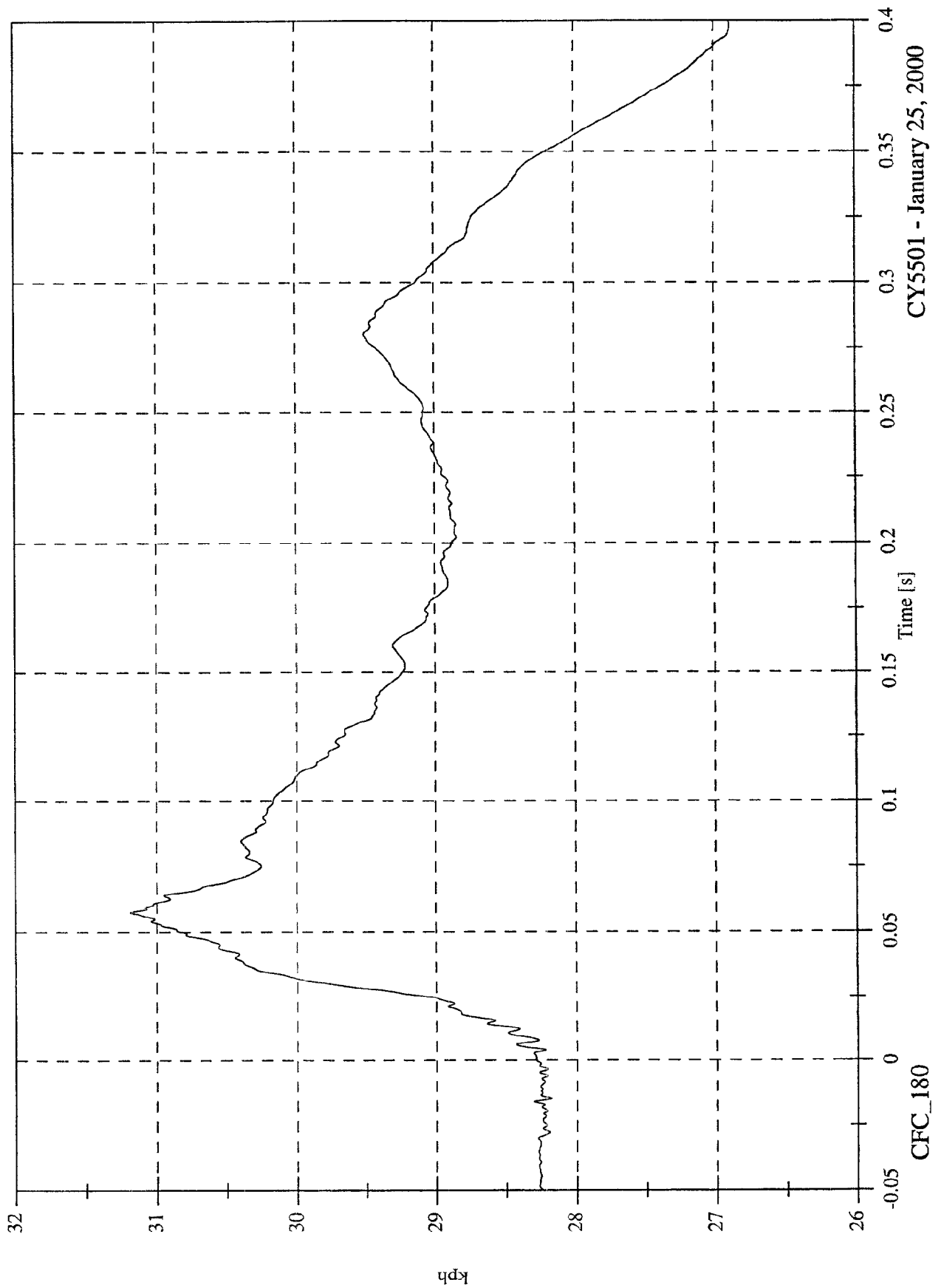


CY5501 - January 25, 2000

FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon

Moving Barrier Left Rail Ay Velocity

Max: 31.2 [kph] at 0.058 [s]
Min: 26.9 [kph] at 0.398 [s]



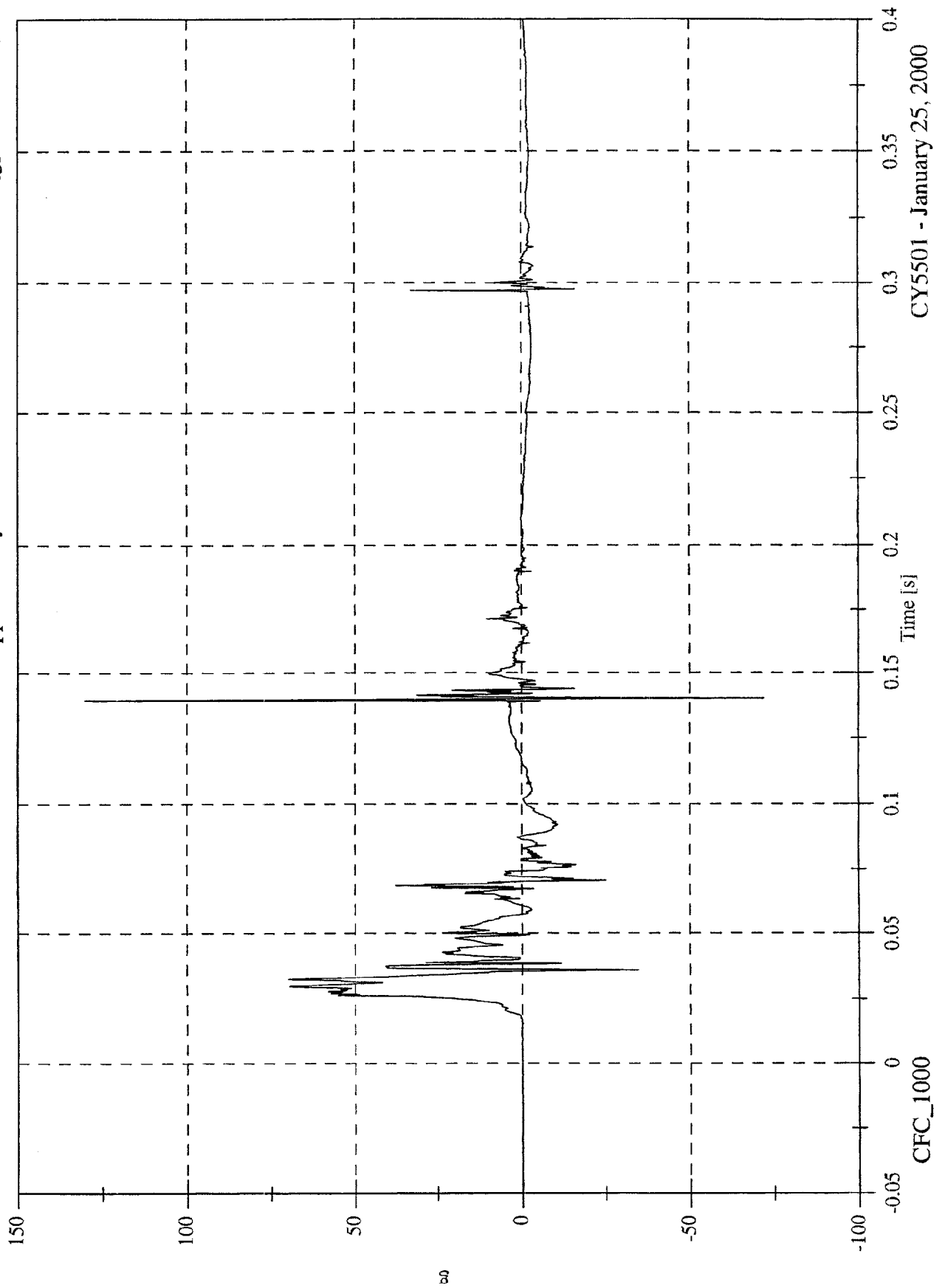
CY5501 - January 25, 2000

CFC_180

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P1 Upper Rib Ry

Max: 130.2 [g] at 0.139 [s]
Min: -72.0 [g] at 0.140 [s]

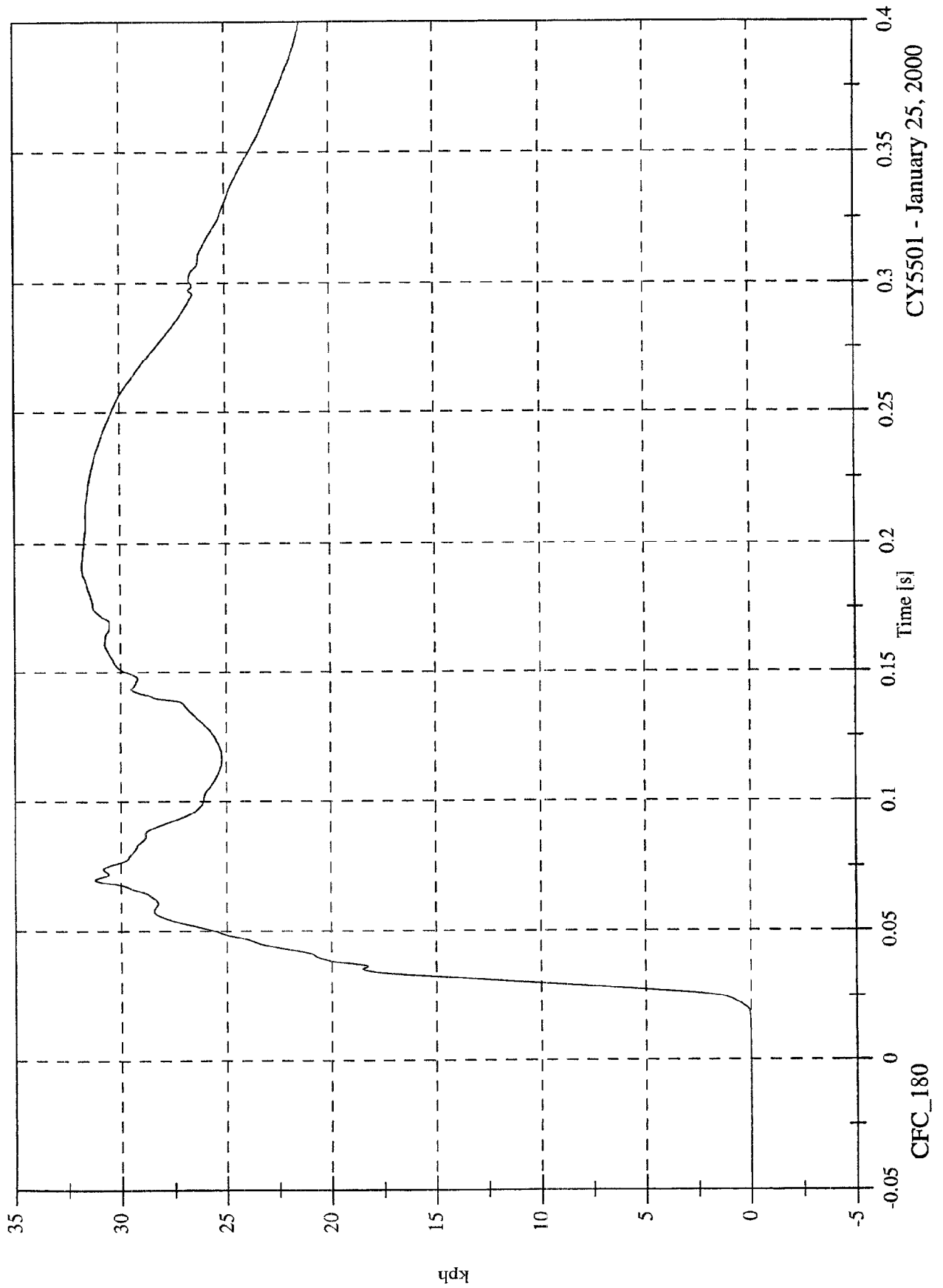


CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P1 Upper Rib Ry Velocity

Max: 31.8 [kph] at 0.191 [s]
Min: -0.0 [kph] at -0.001 [s]

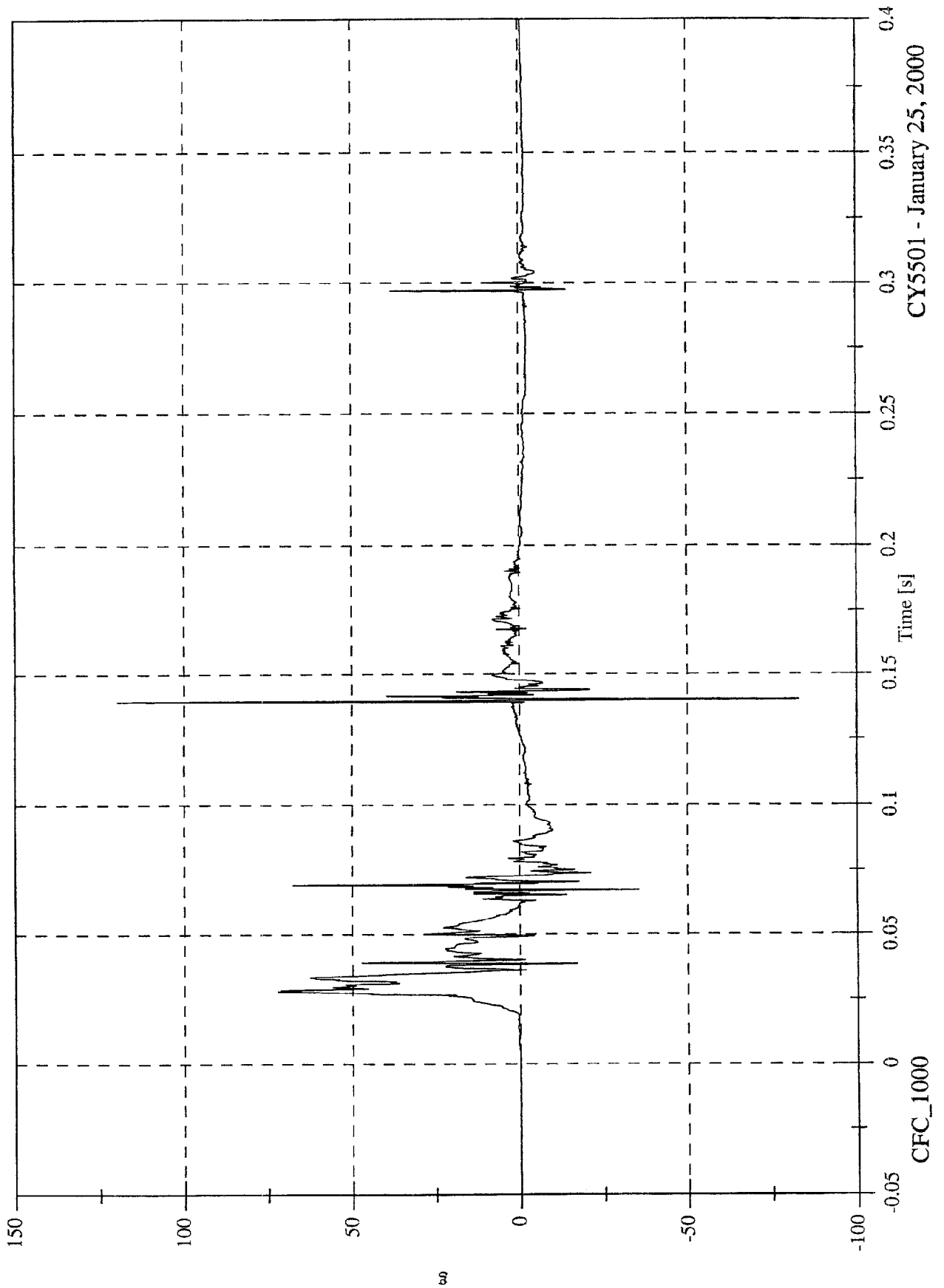


CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P1 Lower Rib Ry

Max: 119.9 [g] at 0.140 [s]
Min: -82.9 [g] at 0.140 [s]

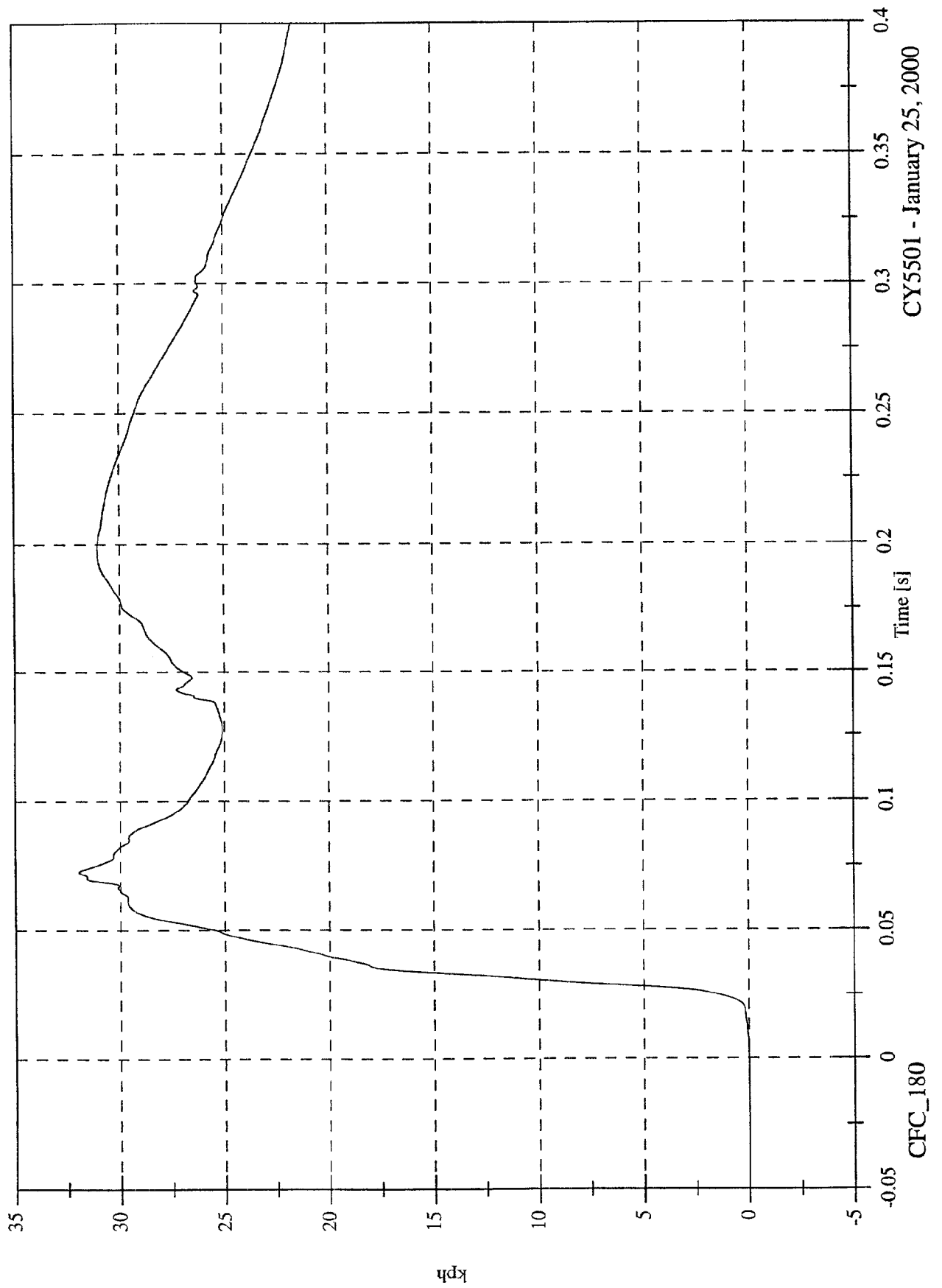


CY5501 - January 25, 2000

FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon
P1 Lower Rib Ry Velocity

Max: 32.0 [kph] at 0.073 [s]

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



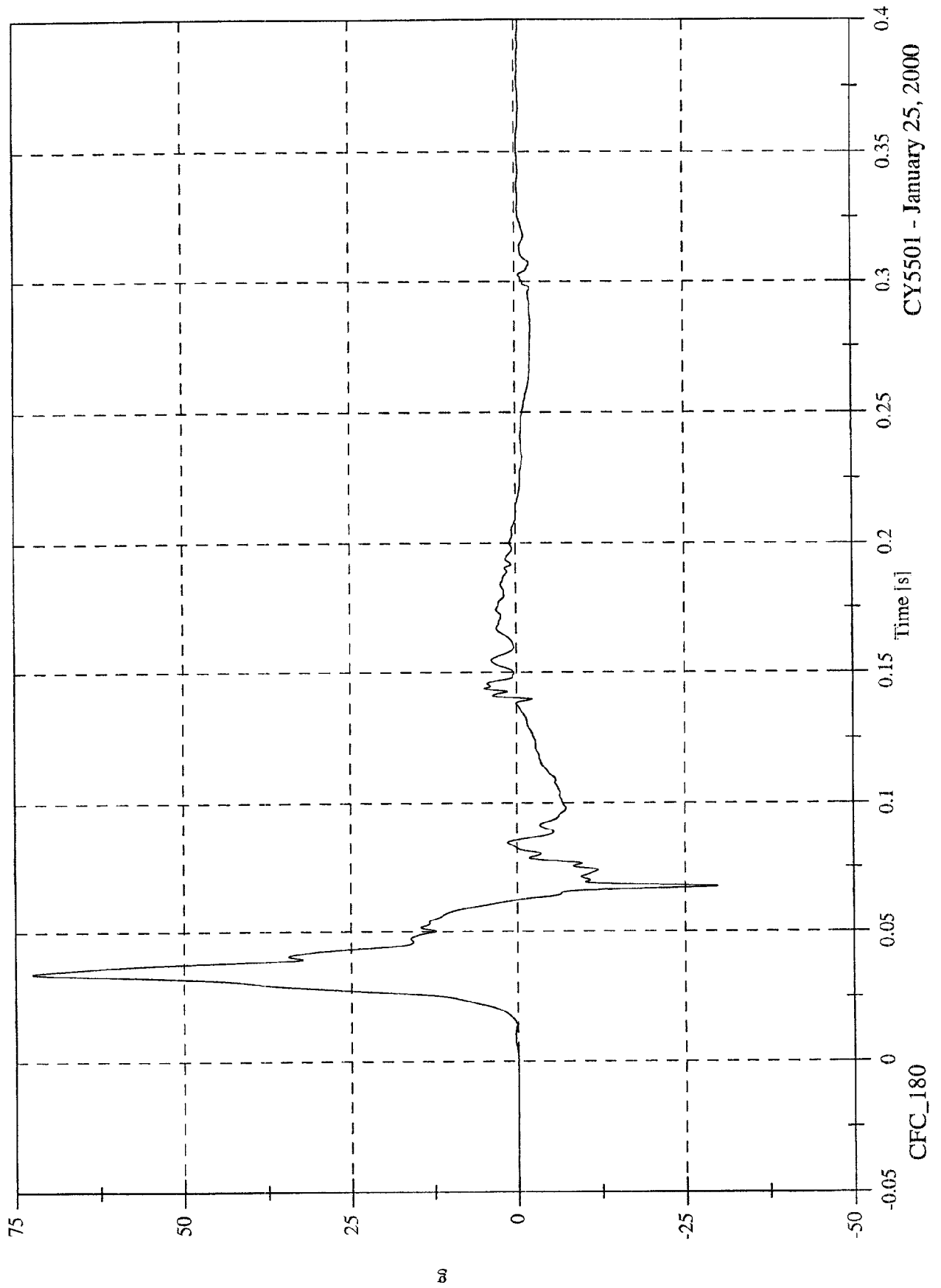
CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P1 Lower Spine Ry

Max: 72.5 [g] at 0.034 [s]

Min: -29.8 [g] at 0.067 [s]

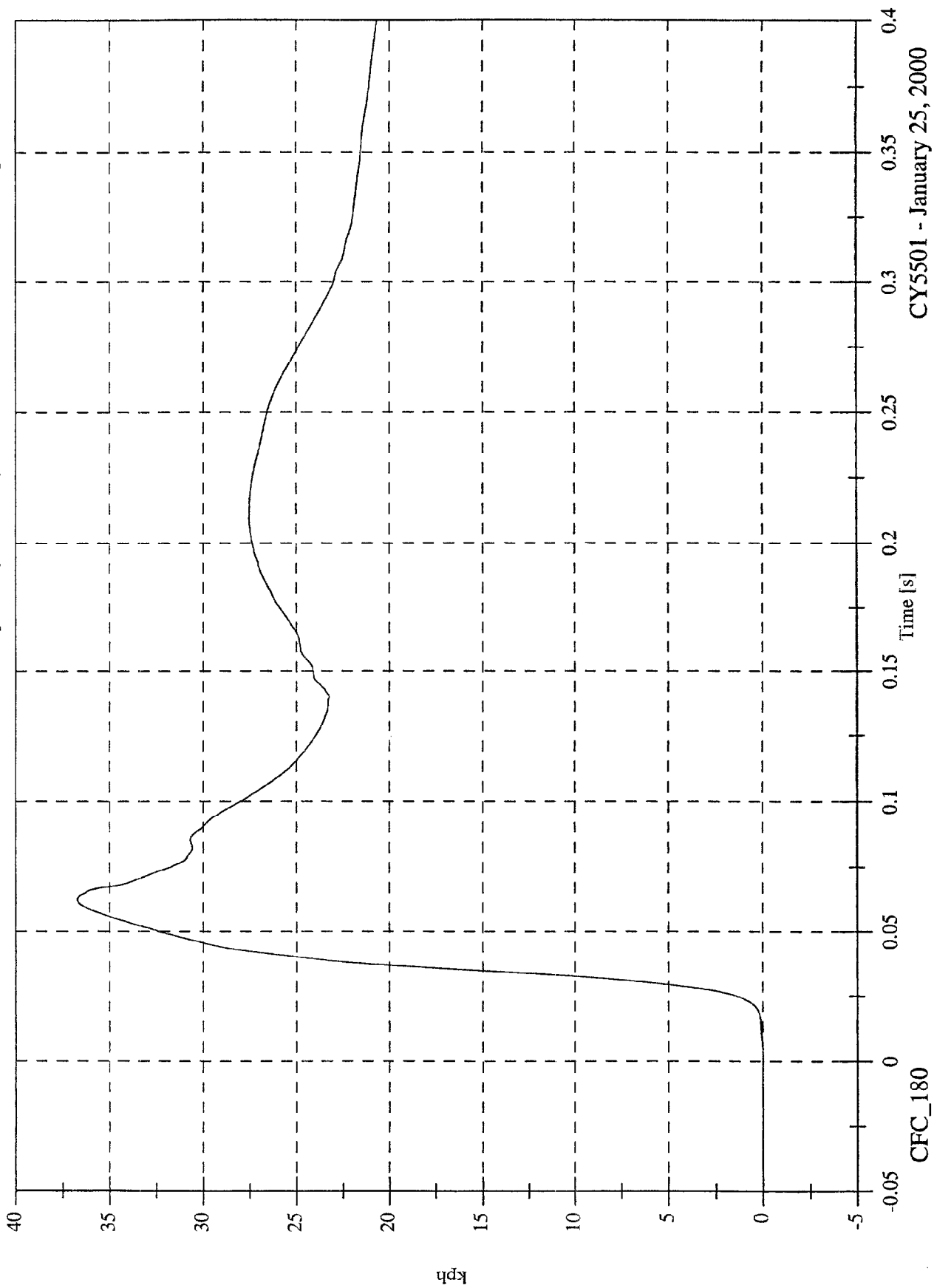


CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Max: 36.7 [kph] at 0.062 [s]
Min: -0.0 [kph] at -0.050 [s]

P1 Lower Spine Ry Velocity

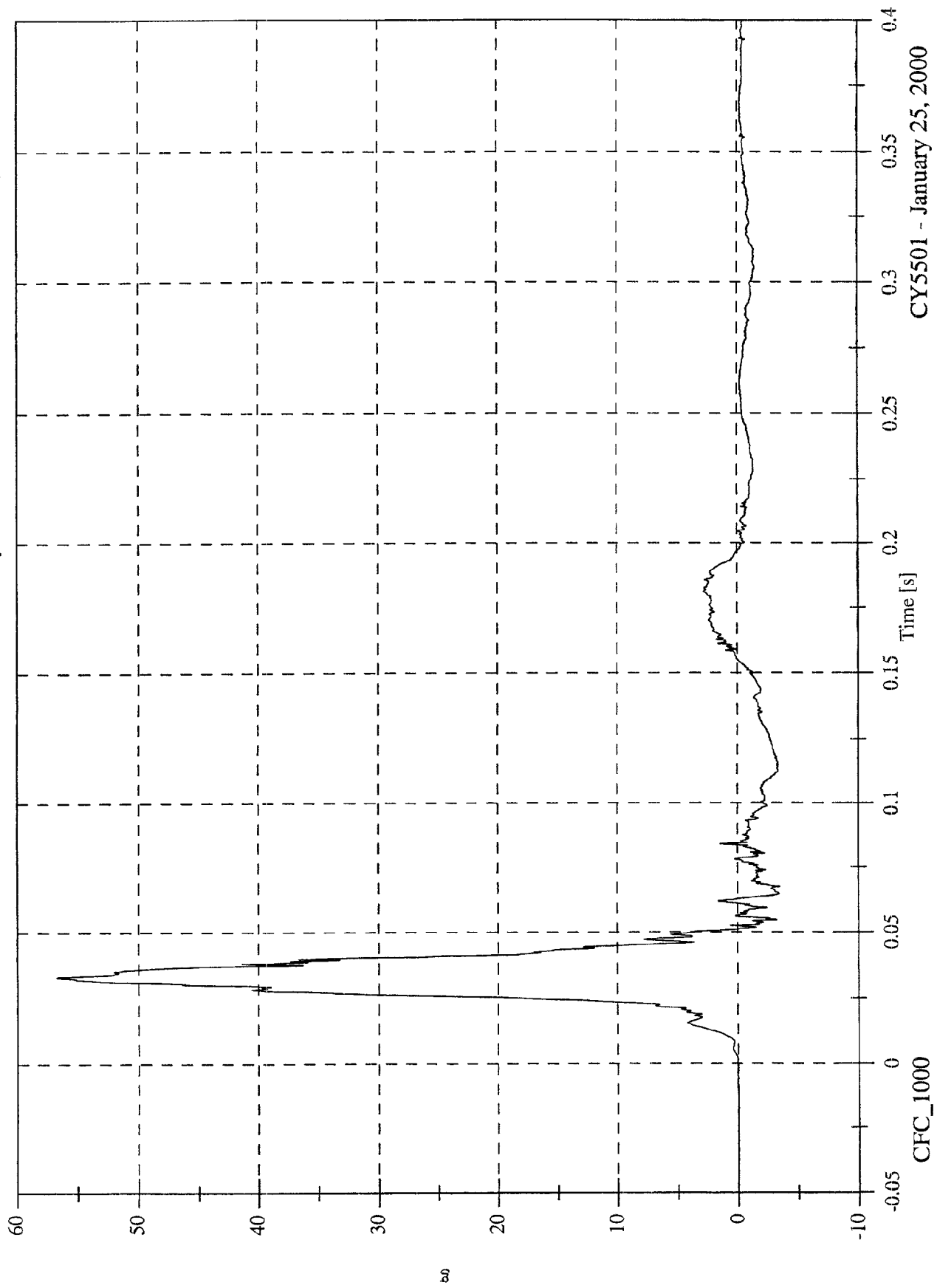


CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Max: 56.7 [g] at 0.033 [s]
 Min: -3.5 [g] at 0.067 [s]

P1 Pelvic Ry

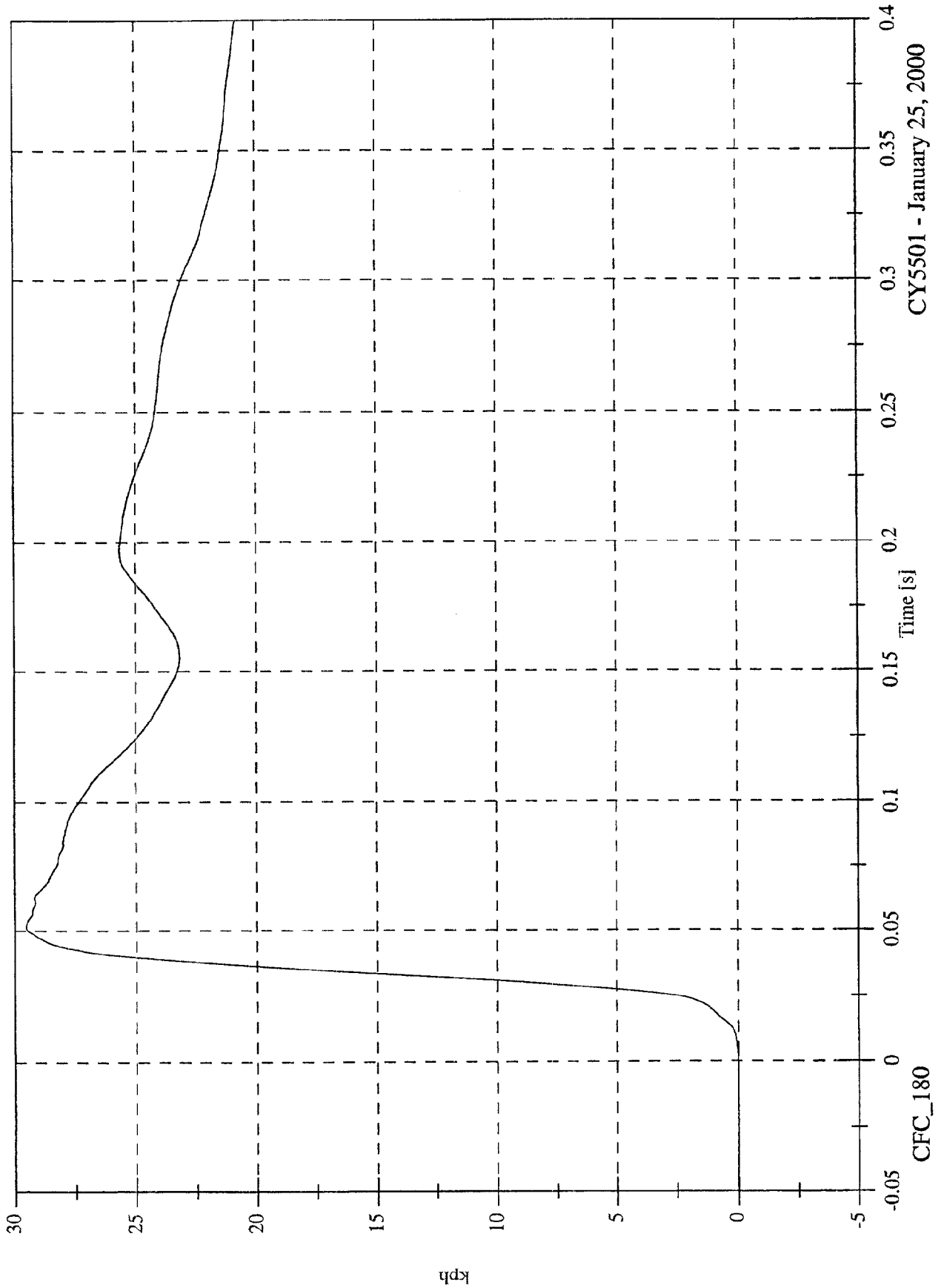


CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P1 Pelvic Ry Velocity

Max: 29.5 [kph] at 0.051 [s]
Min: -0.0 [kph] at -0.011 [s]



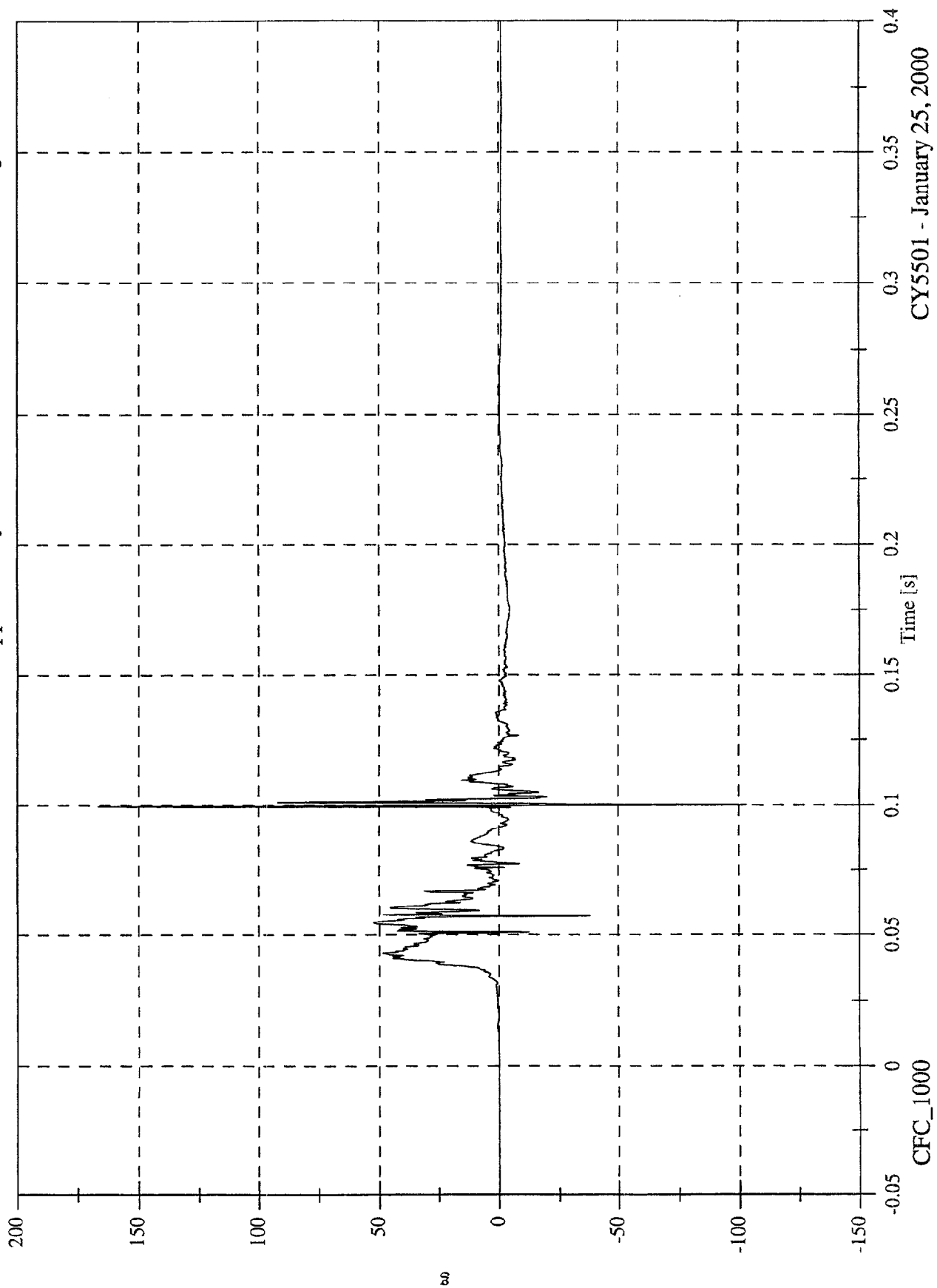
CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P4 Upper Rib Ry

Max: 166.7 [g] at 0.100 [s]

Min: -103.0 [g] at 0.100 [s]

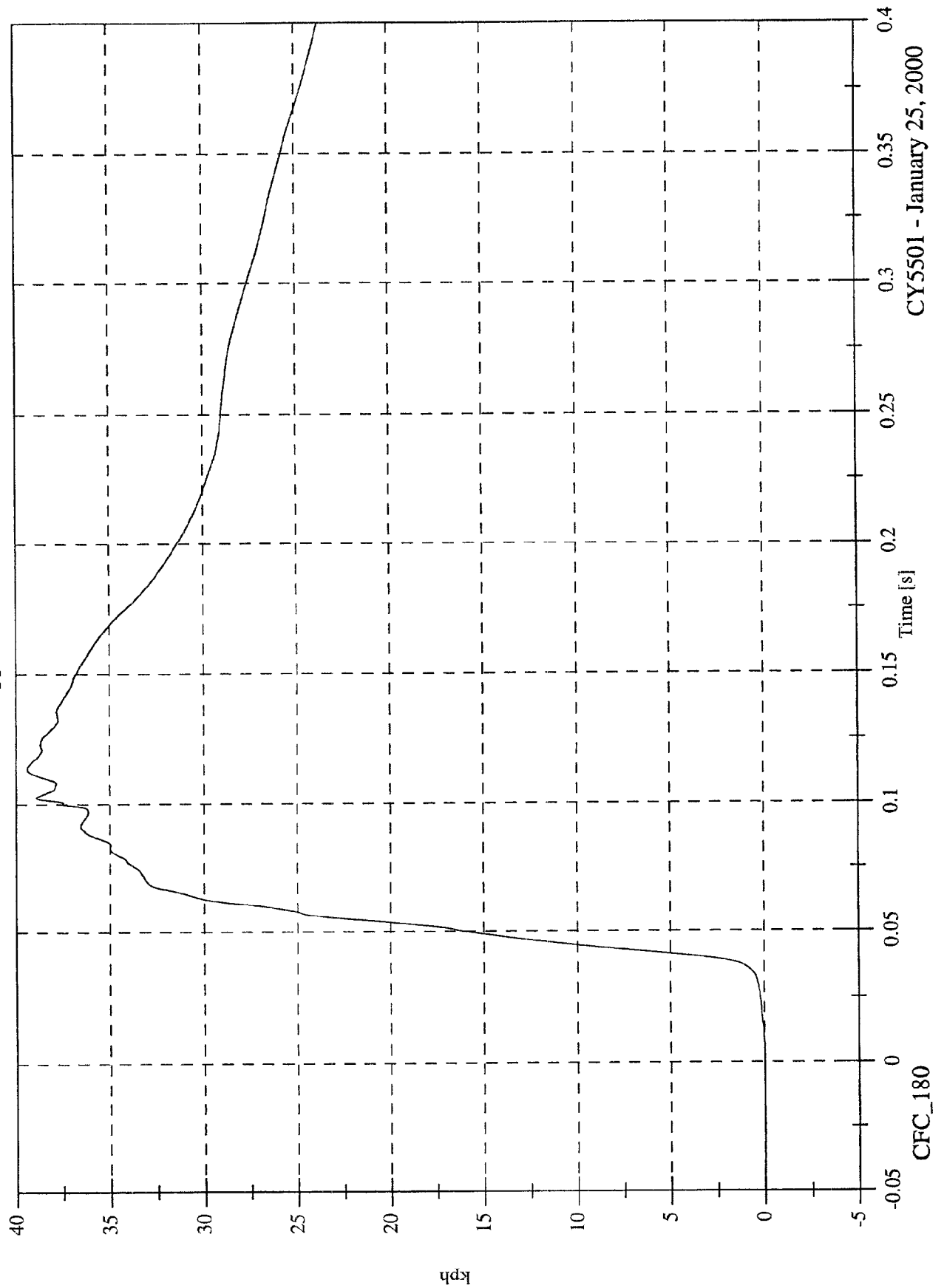


CY5501 - January 25, 2000

FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon

P4 Upper Rib Ry Velocity

Max: 39.4 [kph] at 0.113 [s]
Min: -0.0 [kph] at -0.028 [s]



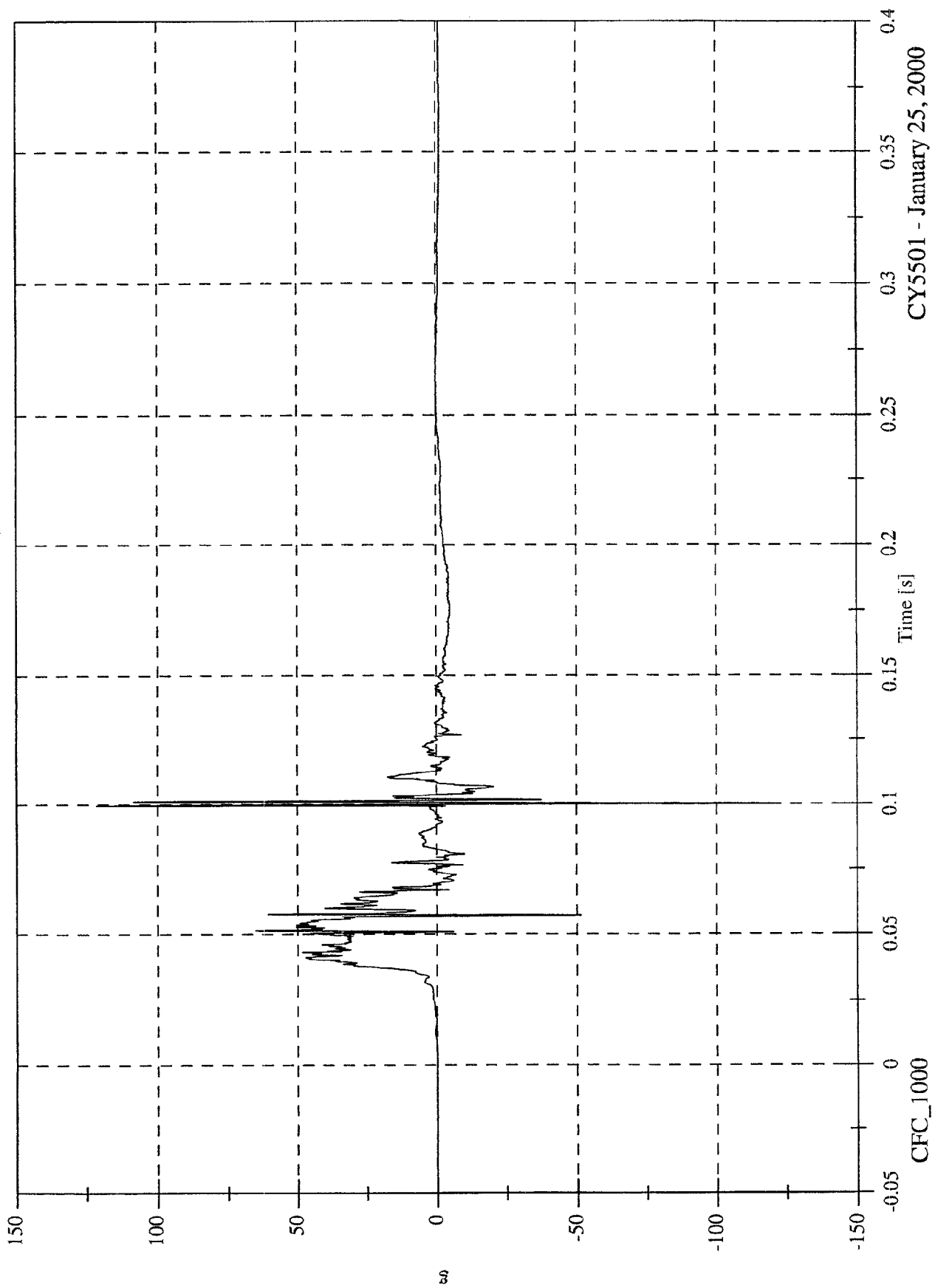
CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P4 Lower Rib Ry

Max: 121.5 [g] at 0.100 [s]

Min: -122.1 [g] at 0.100 [s]

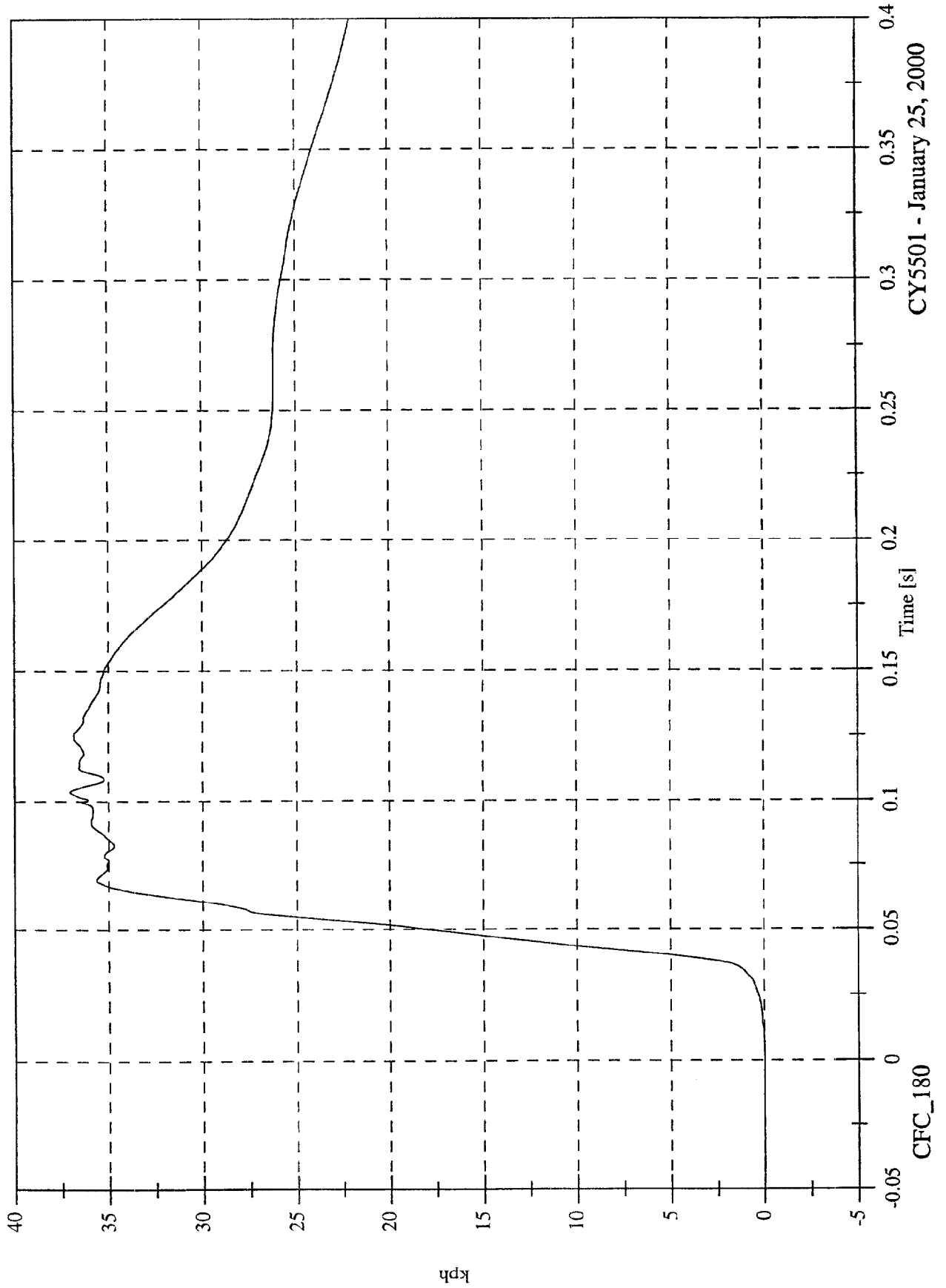


CY5501 - January 25, 2000

FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon

P4 Lower Rib Ry Velocity

Max: 37.1 [kph] at 0.104 [s]
 Min: -0.0 [kph] at -0.041 [s]



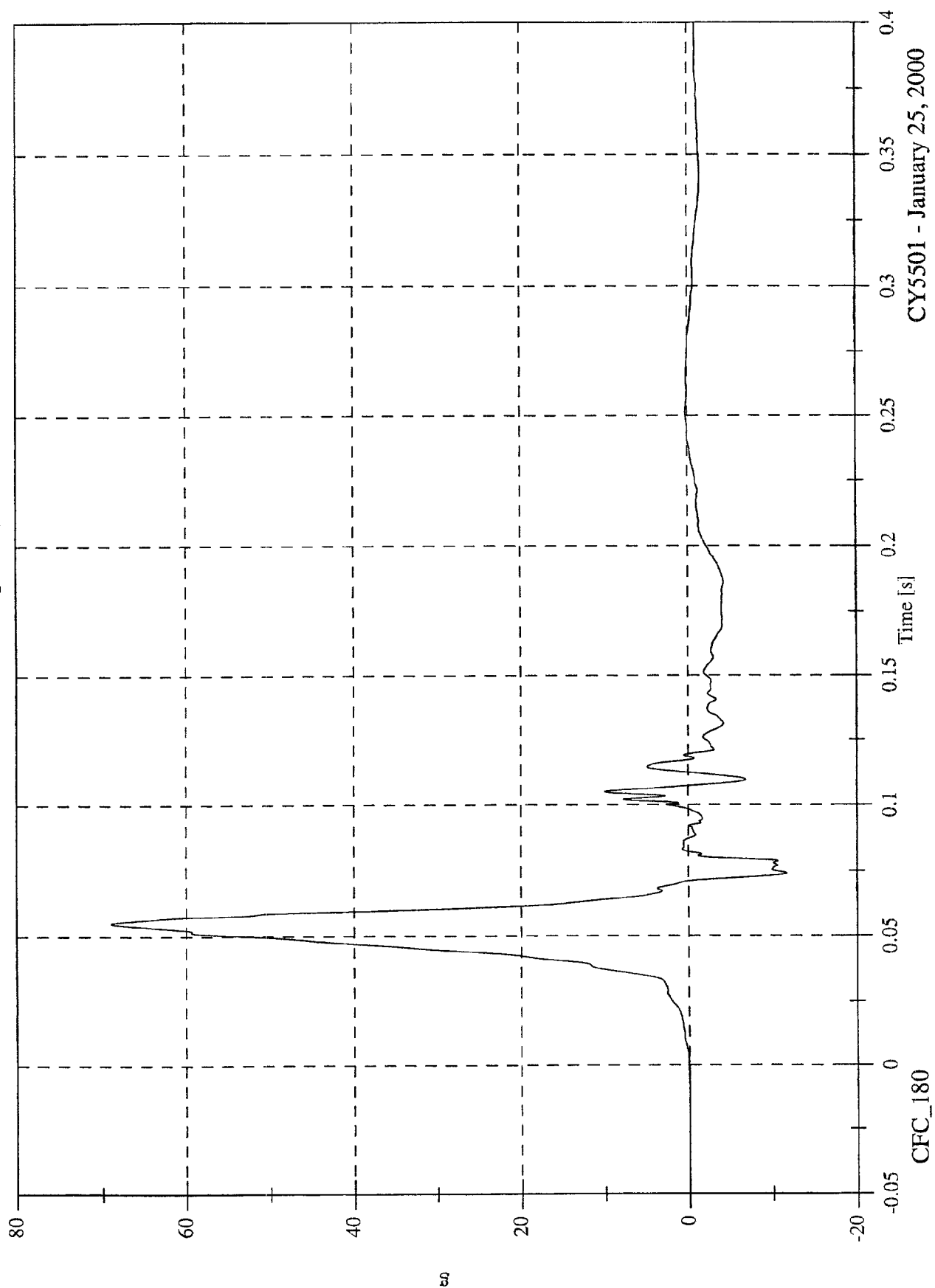
CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P4 Lower Spine Ry

Max: 68.9 [g] at 0.055 [s]

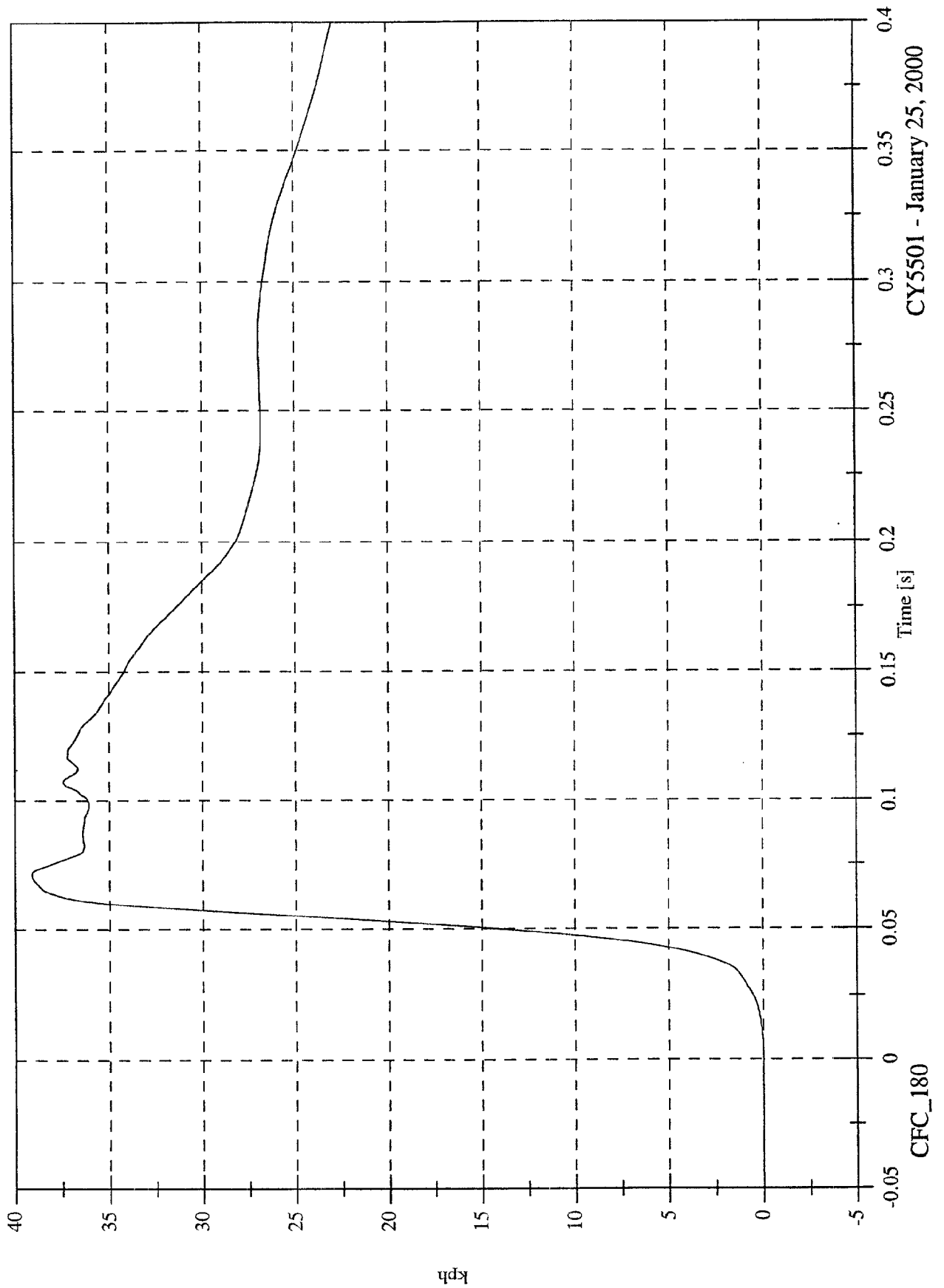
Min: -11.7 [g] at 0.074 [s]



FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

Max: 39.1 [kph] at 0.071 [s]
 Min: -0.0 [kph] at -0.027 [s]

P4 Lower Spine Ry Velocity



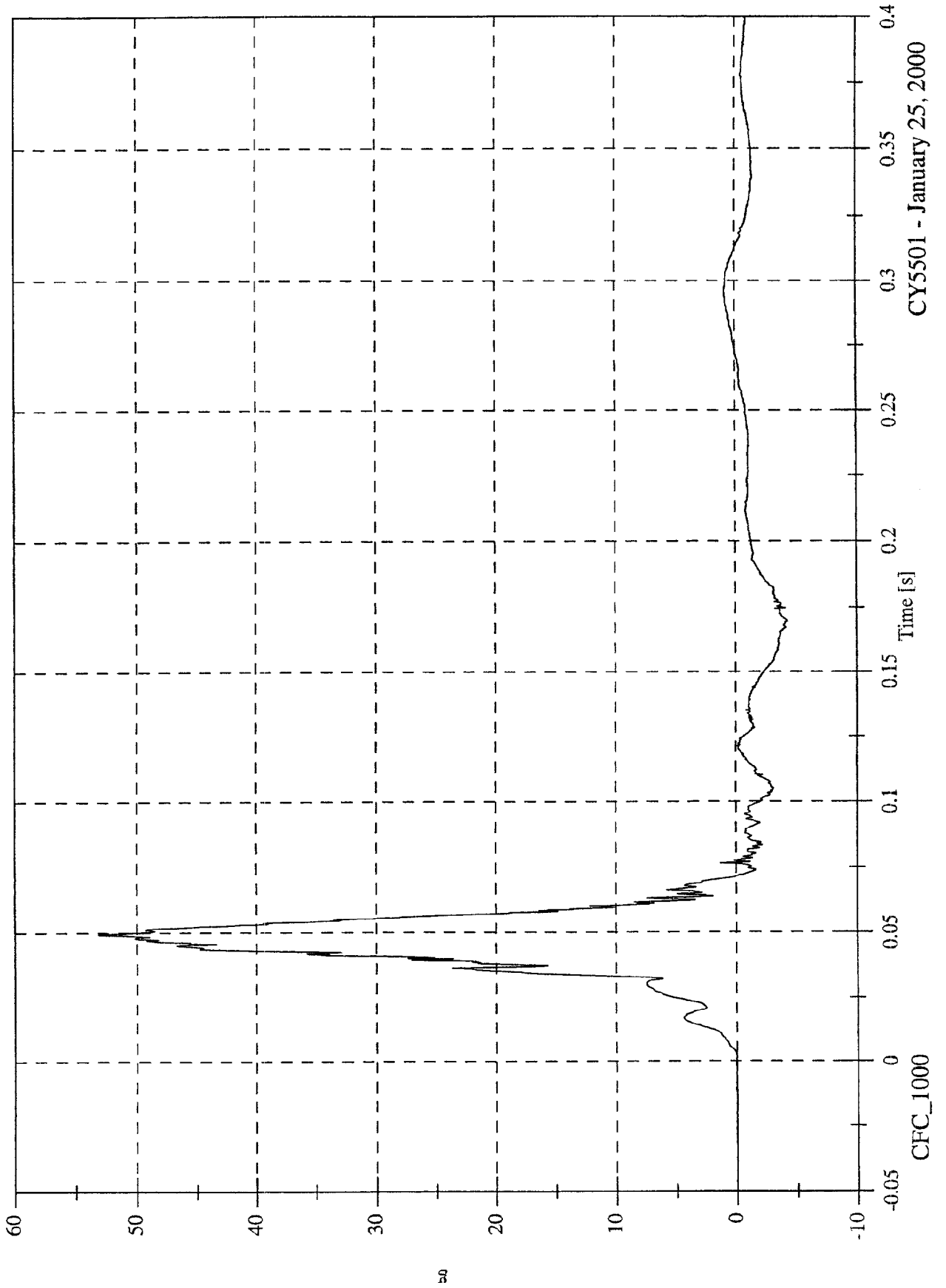
CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P4 Pelvic Ry

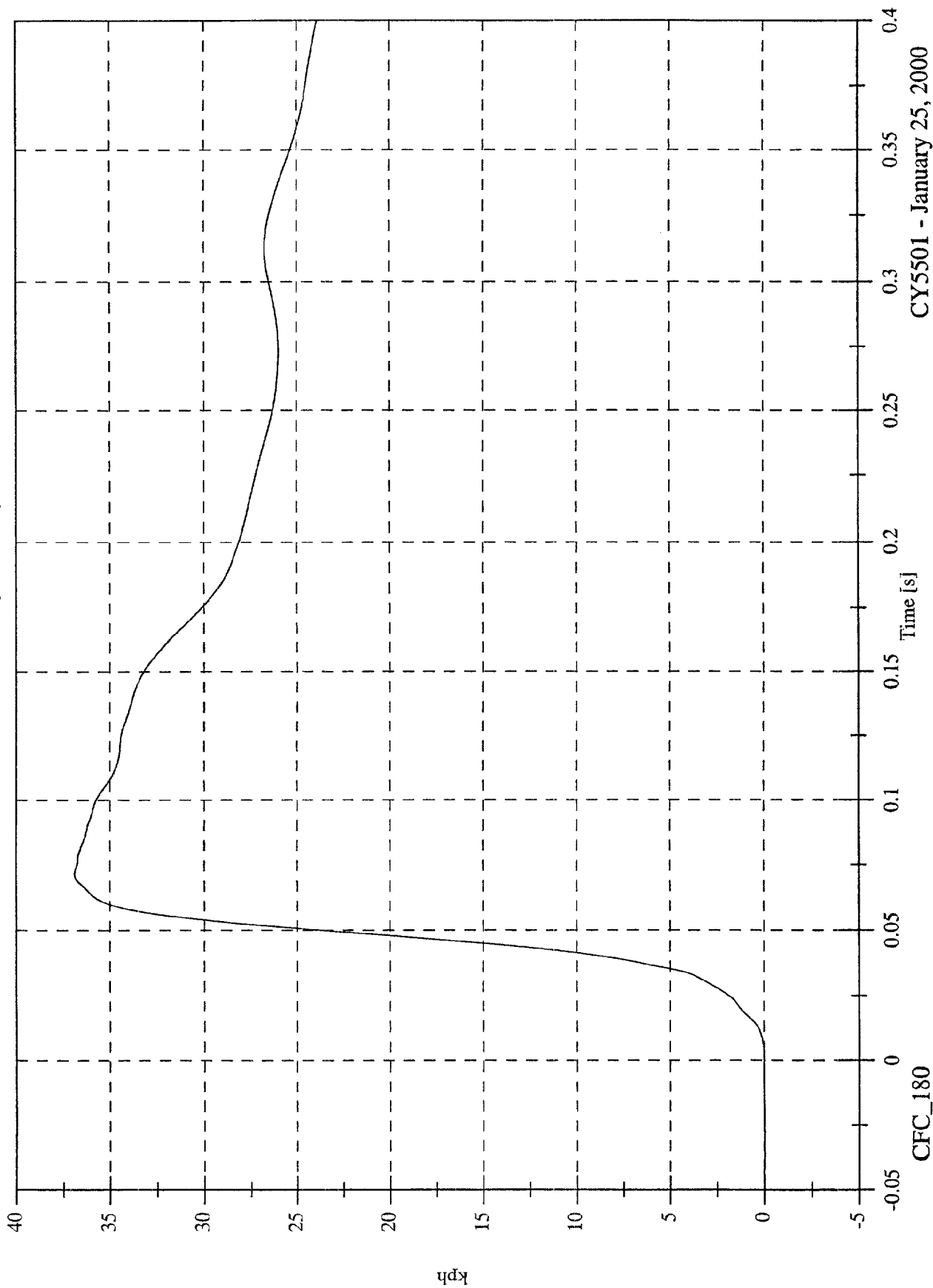
Max: 53.2 [g] at 0.049 [s]

Min: -4.3 [g] at 0.170 [s]



CY5501 - January 25, 2000

FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon
P4 Pelvic Ry Velocity
Max: 36.9 [kph] at 0.072 [s]
Min: -0.0 [kph] at -0.032 [s]



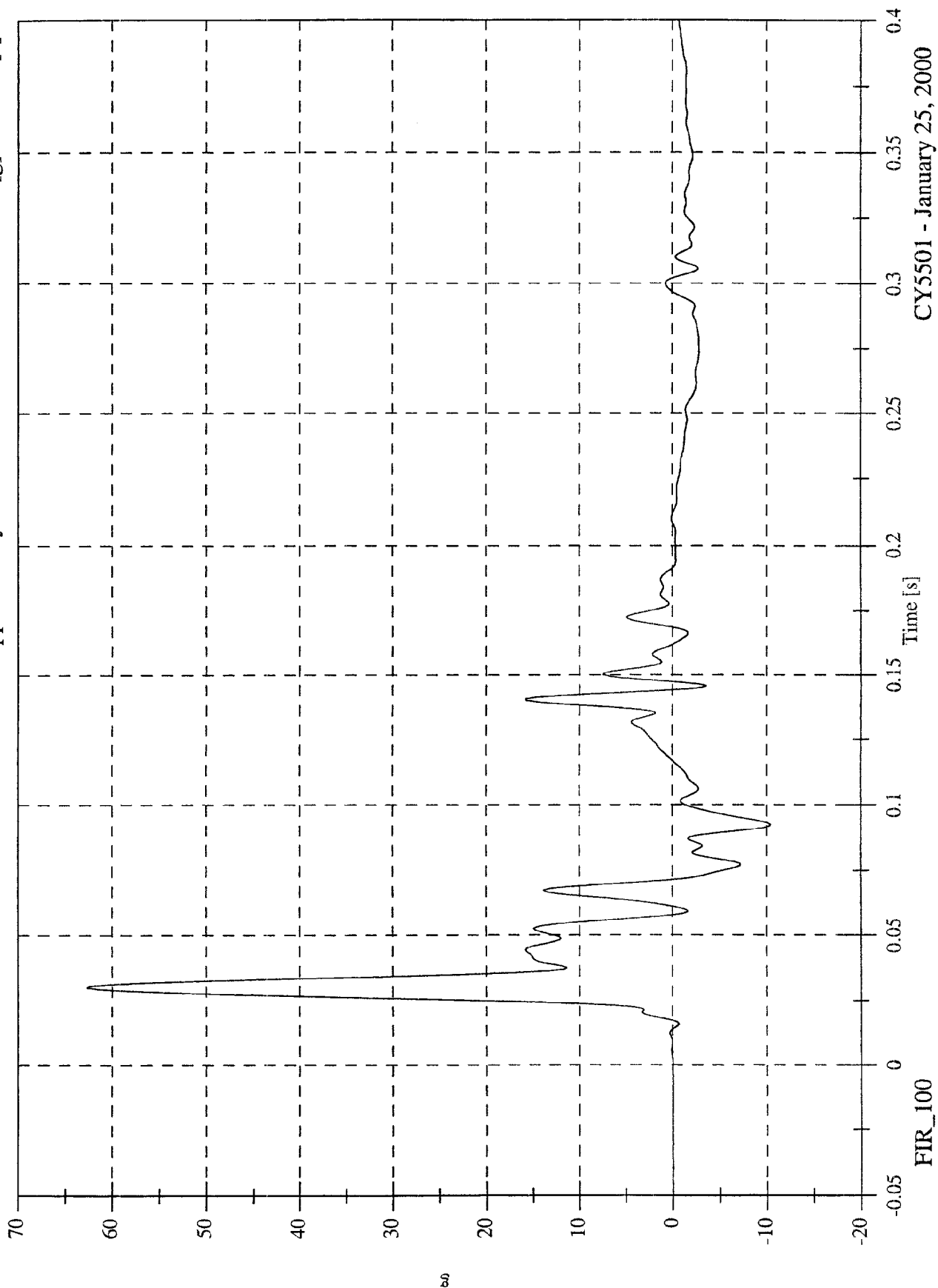
CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P1 Upper Rib Ry

Max: 62.7 [g] at 0.030 [s]

Min: -10.4 [g] at 0.093 [s]

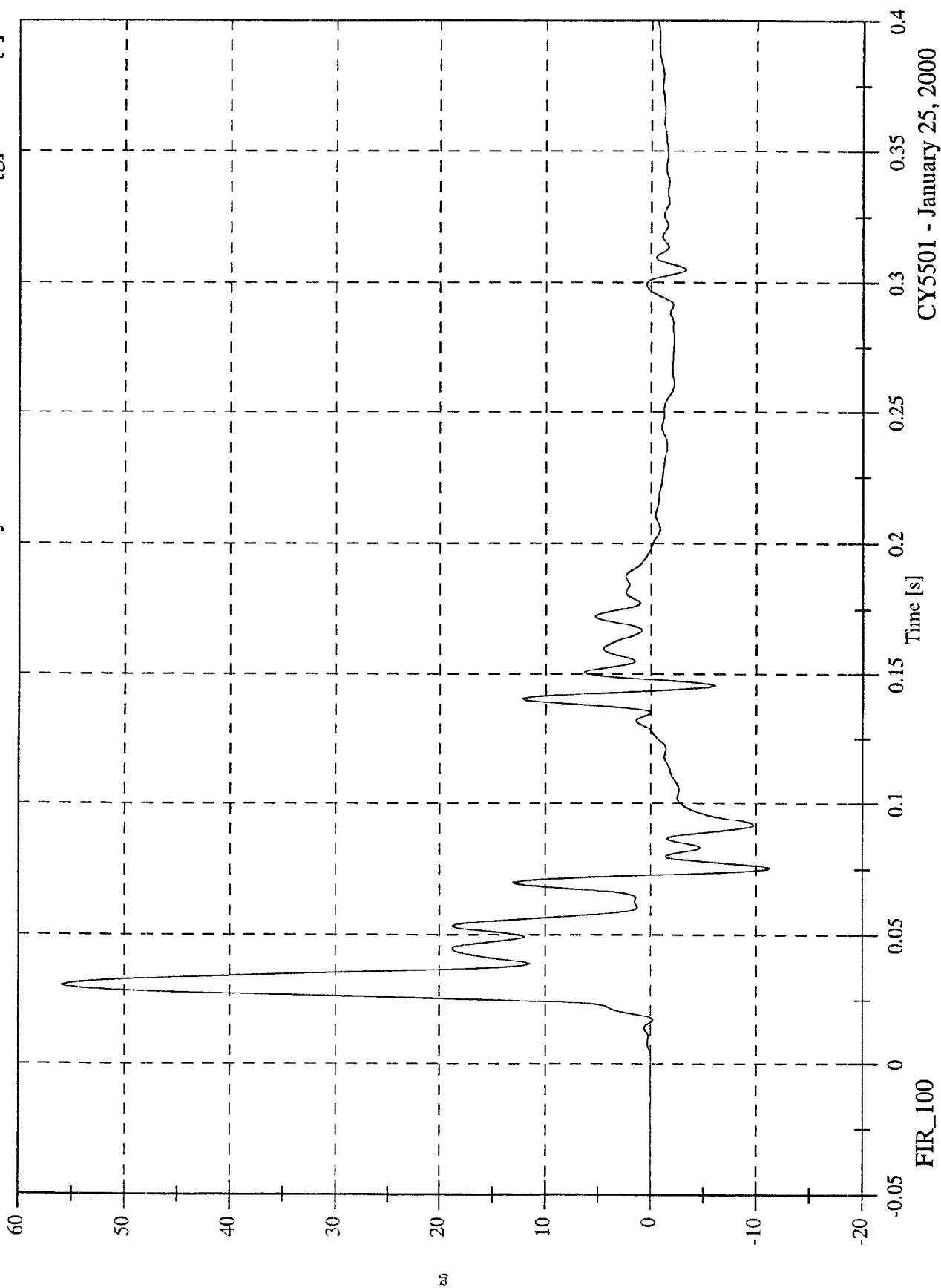


CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P1 Lower Rib Ry

Max: 55.9 [g] at 0.031 [s]
Min: -11.3 [g] at 0.076 [s]

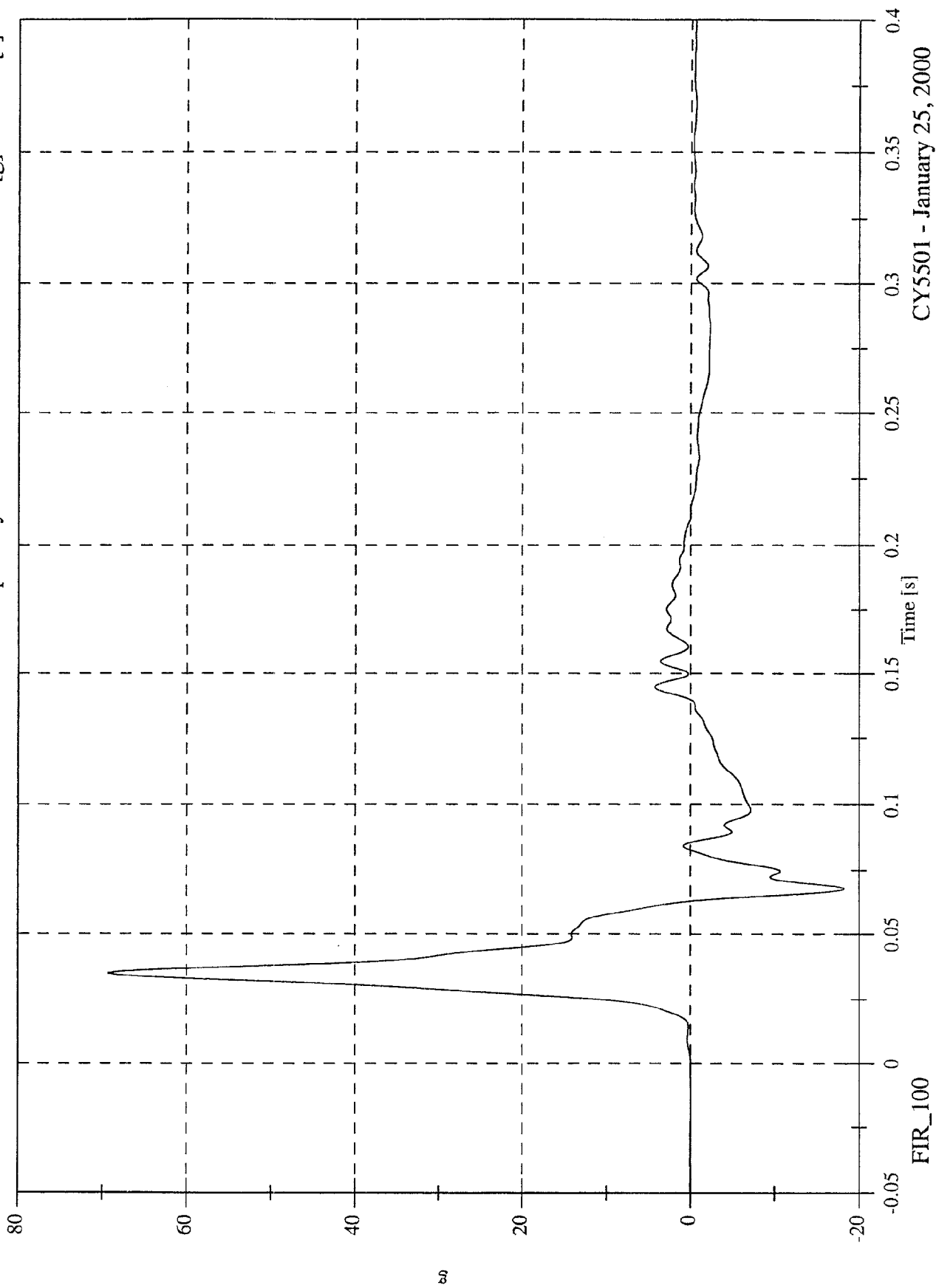


FMVSS 214D Inducant Test #2 - 2000 Subaru Legacy Wagon

P1 Lower Spine Ry

Max: 69.3 [g] at 0.035 [s]

Min: -18.2 [g] at 0.068 [s]



FIR_100

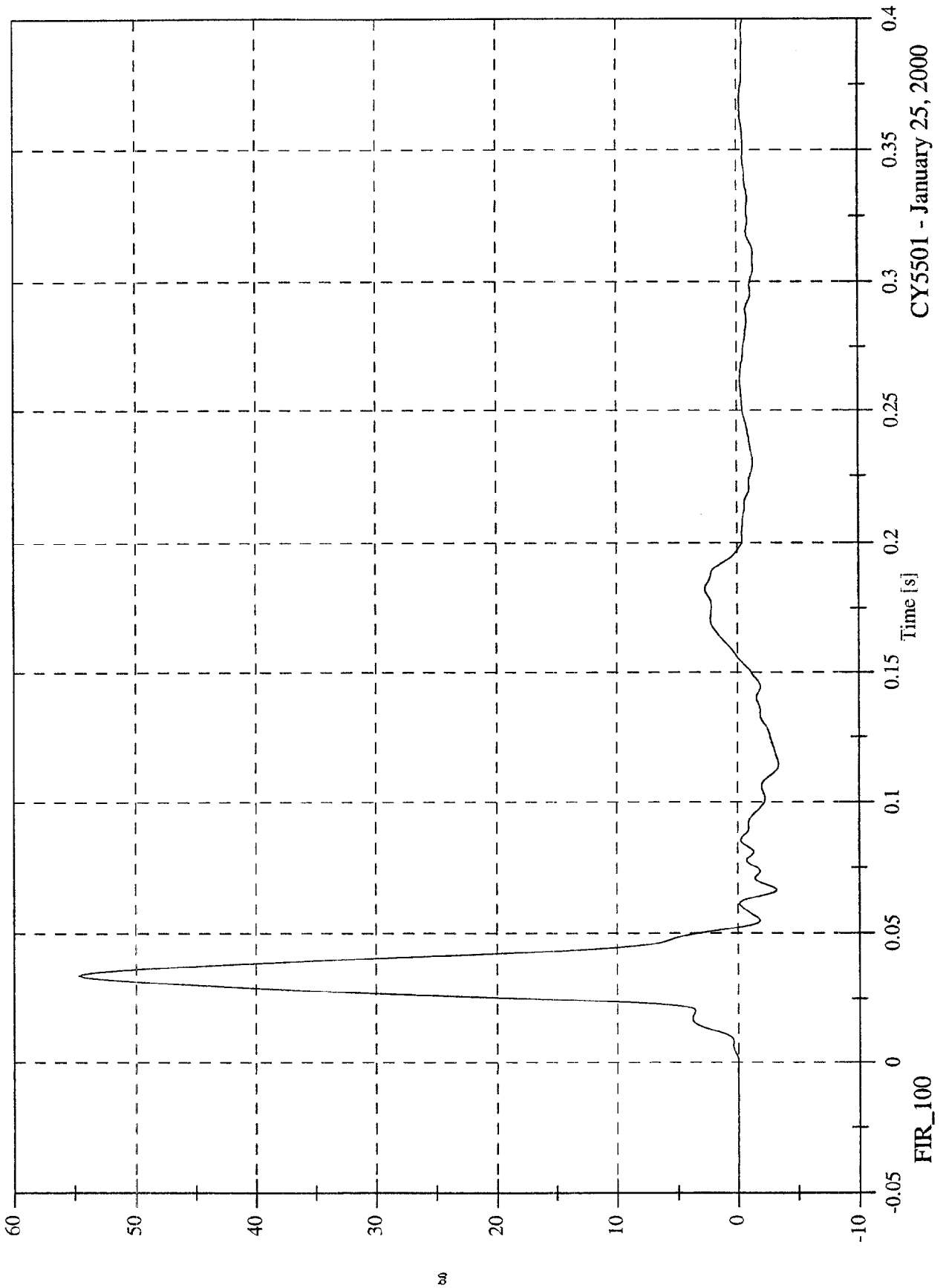
CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P1 Pelvic Ry

Max: 54.7 [g] at 0.034 [s]

Min: -3.4 [g] at 0.114 [s]

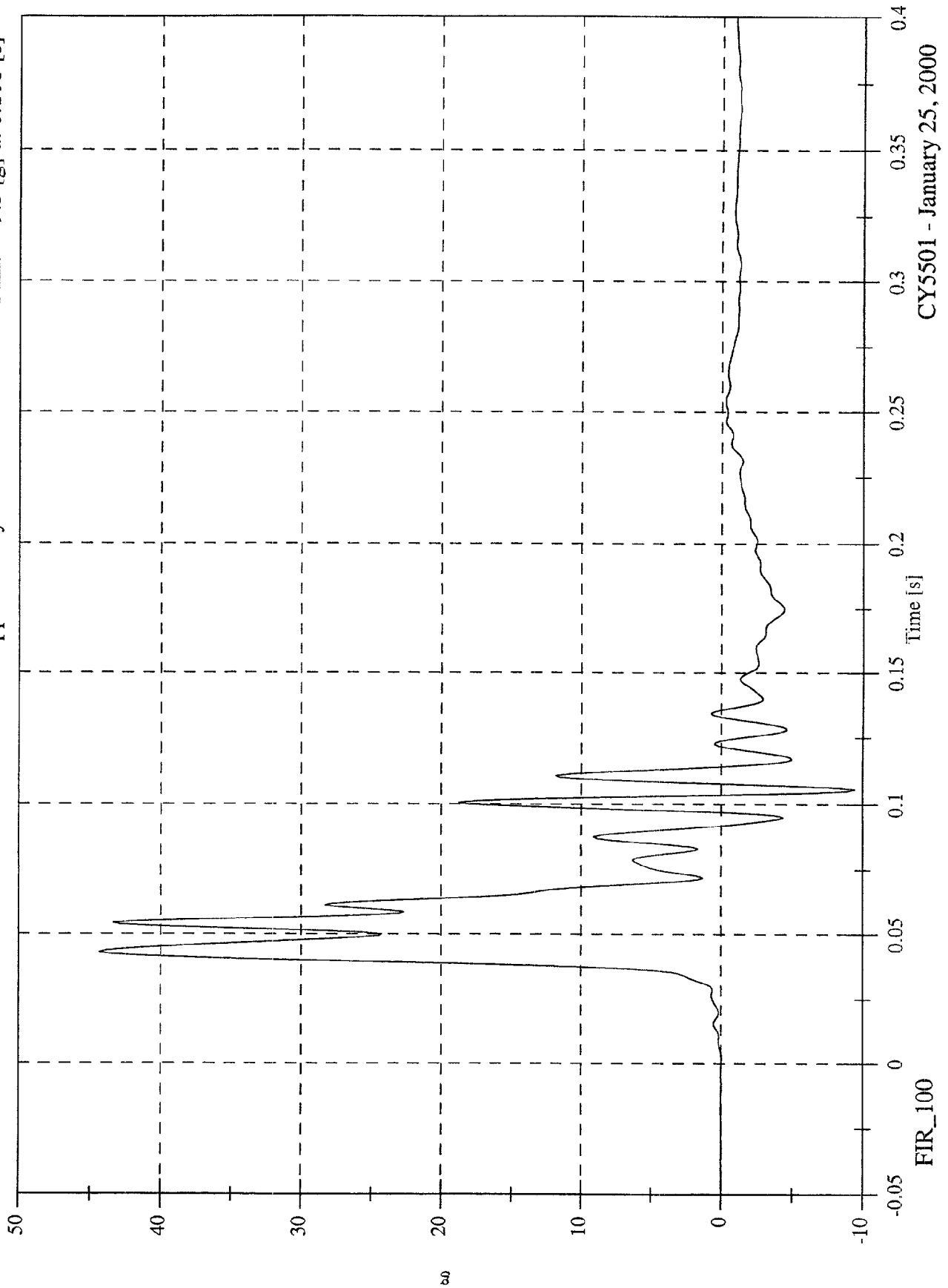


CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P4 Upper Rib Ry

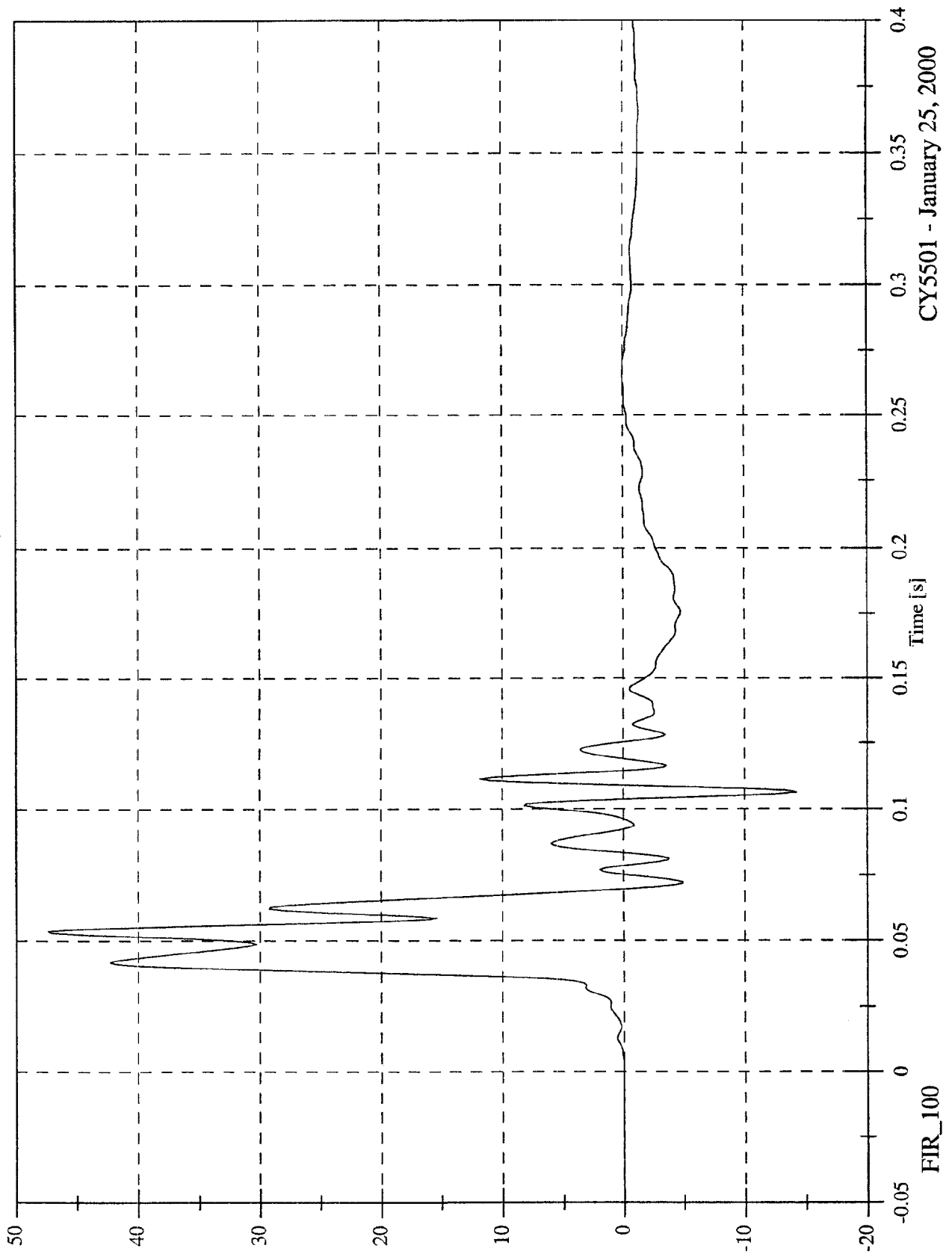
Max: 44.3 [g] at 0.043 [s]
Min: -9.5 [g] at 0.106 [s]



CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon
P4 Lower Rib Ry

Max: 47.4 [g] at 0.054 [s]
Min: -14.2 [g] at 0.106 [s]

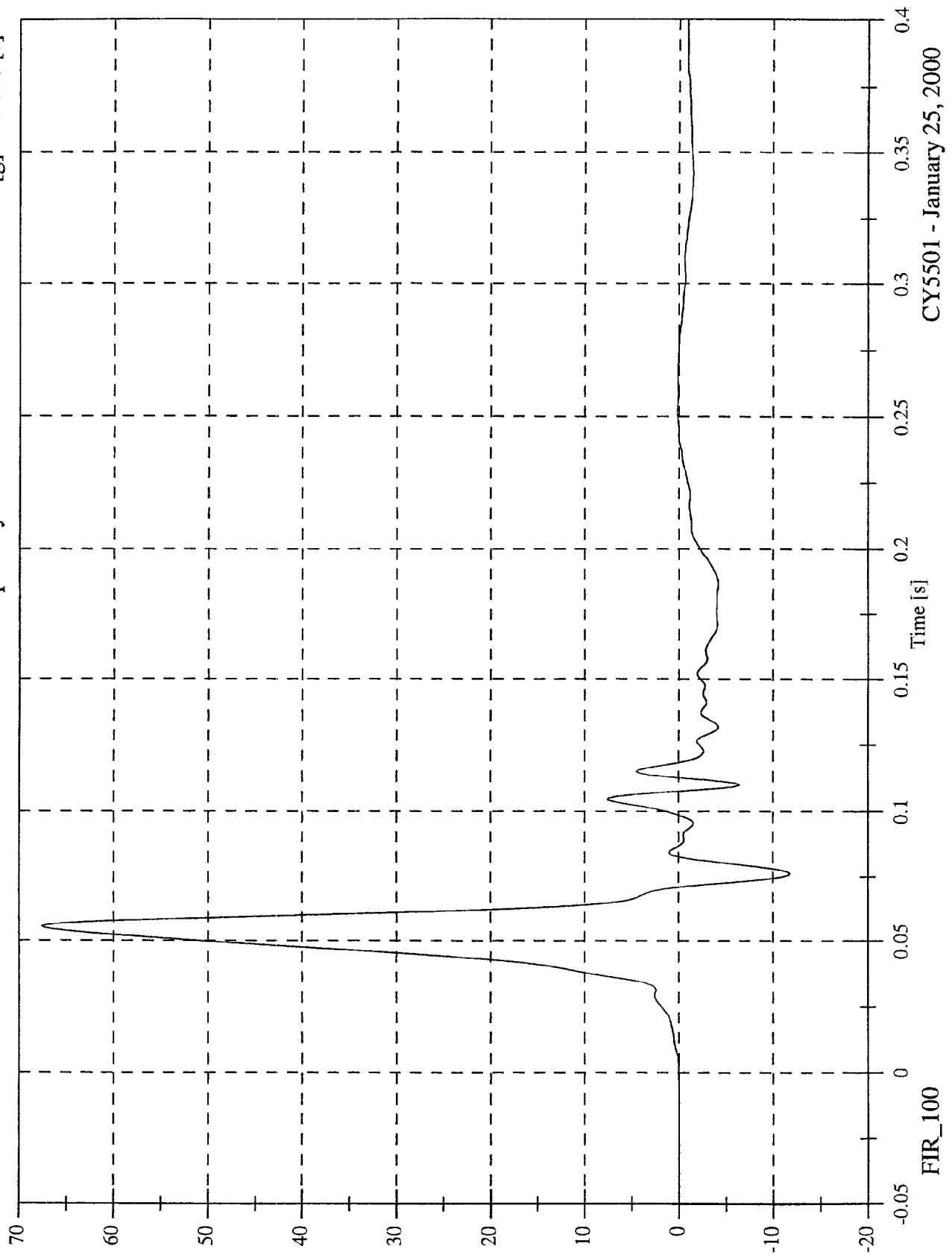


CY5501 - January 25, 2000

FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P4 Lower Spine Ry

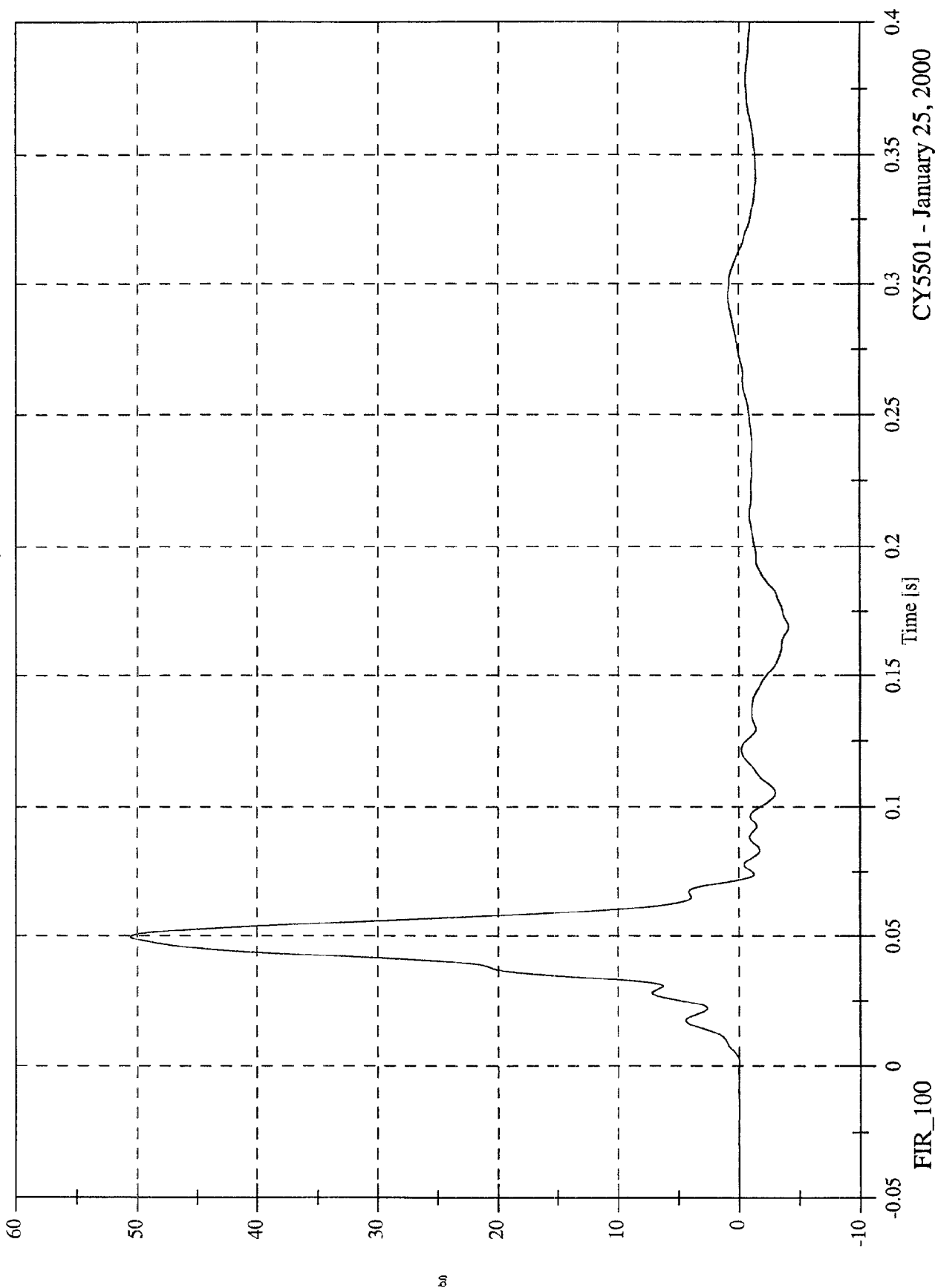
Max: 67.6 [g] at 0.056 [s]
Min: -11.8 [g] at 0.076 [s]



FMVSS 214D Indicant Test #2 - 2000 Subaru Legacy Wagon

P4 Pelvic Ry

Max: 50.6 [g] at 0.049 [s]
Min: -4.1 [g] at 0.169 [s]



CY5501 - January 25, 2000

APPENDIX C

SID CONFIGURATION AND PERFORMANCE VERIFICATION DATA

SUMMARY
SID PRE & POST TEST CALIBRATION

CONFIGURED FOR LEFT SIDE IMPACT

Date: January 21, 2000; February 1, 2000

Sequential Test Number:

4,1; 2;1

Laboratory Technician:

B. Swiecicki

TEST PARAMETER	SPECIFICATION	SID NO.: 015		SID NO.: 016	
		PRE TEST	POST TEST	PRE TEST	POST TEST
SH- Seated Height (mm)	889 - 909	904	904	902	902
RH- Rib Height (mm)	501 - 521	513	513	513	514
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	368	368	361	361
THORAX IMPACTS					
TEMPERATURE (°C)	18.9 - 25.5	21.0	21.7	21.0	21.7
RELATIVE HUMIDITY (%)	10 - 70	32	31	32	31
PROBE SPEED (m/s)	4.27 - 4.33	4.29	4.32	4.28	4.30
UPPER RIB (g's)	37 - 46	40.3	41.2	40.8	42.6
LOWER RIB (g's)	37 - 46	41.1	40.5	39.2	42.2
LOWER SPINE (g's)	15 - 22	21.7	21.7	19.2	21.7
PELVIS IMPACT					
TEMPERATURE (°C)	18.9 - 25.5	21.0	21.7	21.0	21.7
RELATIVE HUMIDITY (%)	10 - 70	32	31	32	31
PROBE SPEED (m/s)	4.27 - 4.33	4.30	4.29	4.29	4.31
PELVIS (g's)	40 - 60	46.3	53.3	45.5	54.5

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 Sequential Test Number: 4
Date: January 21, 2000 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: 4
Date: January 21, 2000 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

THORACIC SHOCK ABSORBER TESTS
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1.4
Date: August 27, 1999 Laboratory Technician: B. Swiecicki

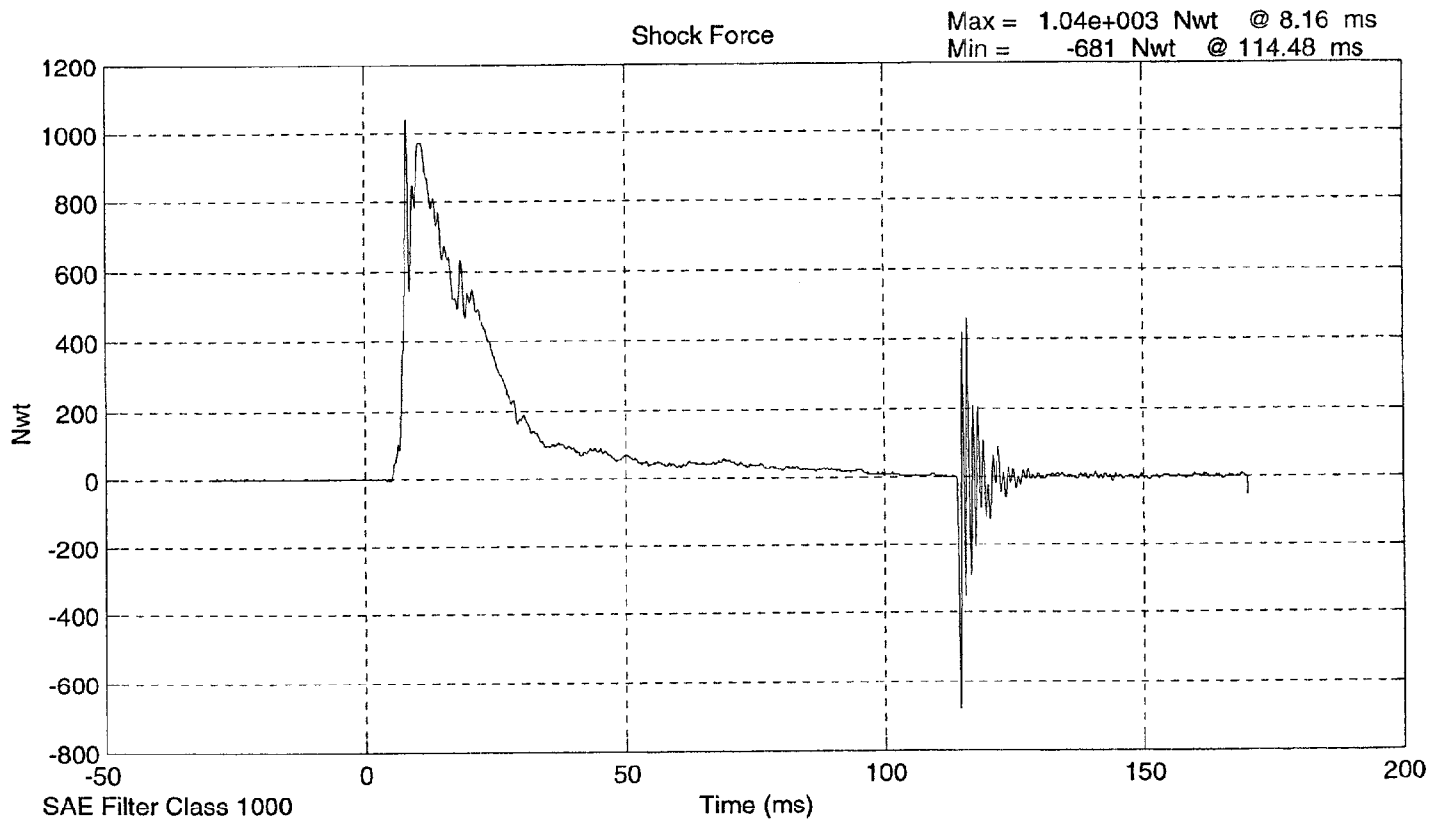
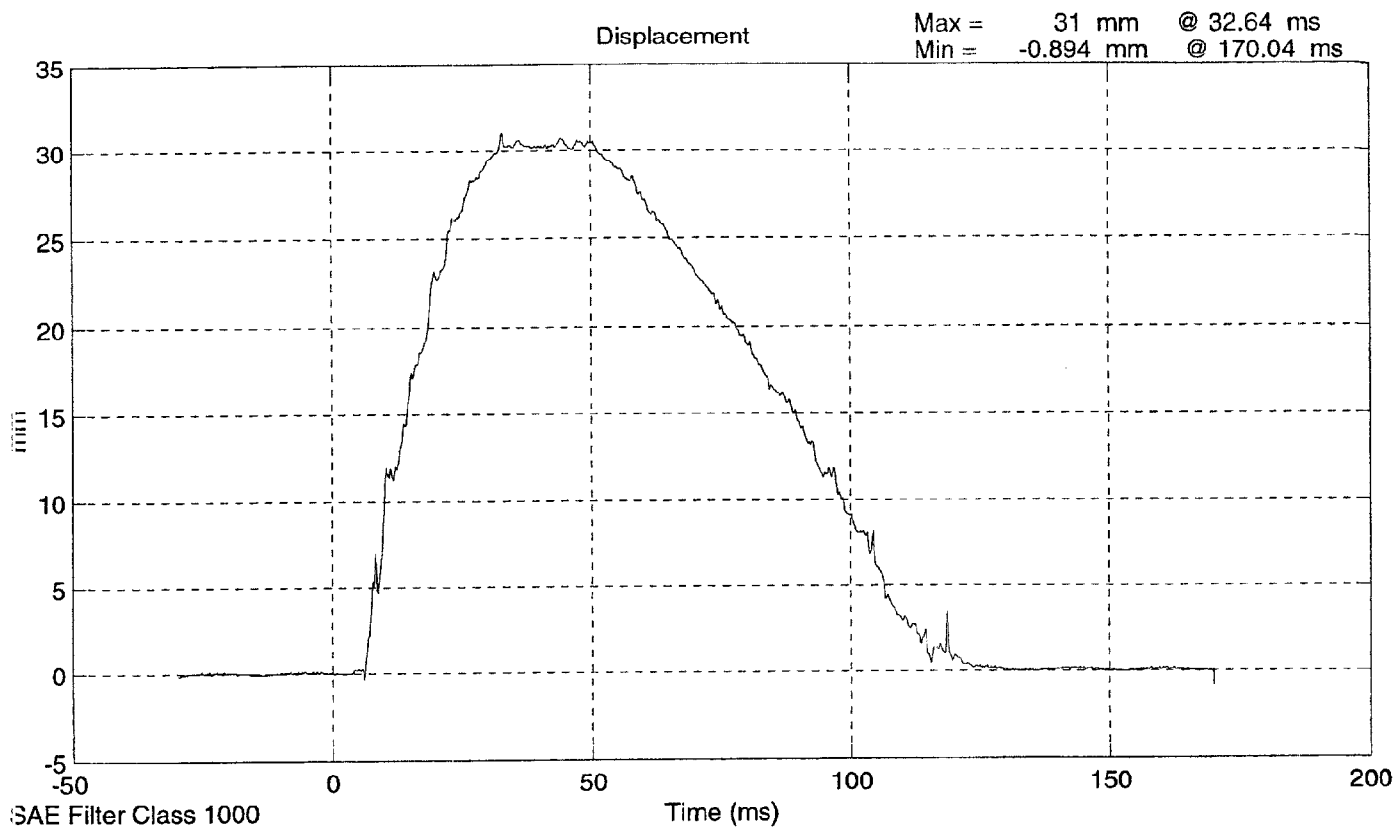
DAMPER IDENTIFICATION: 015

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

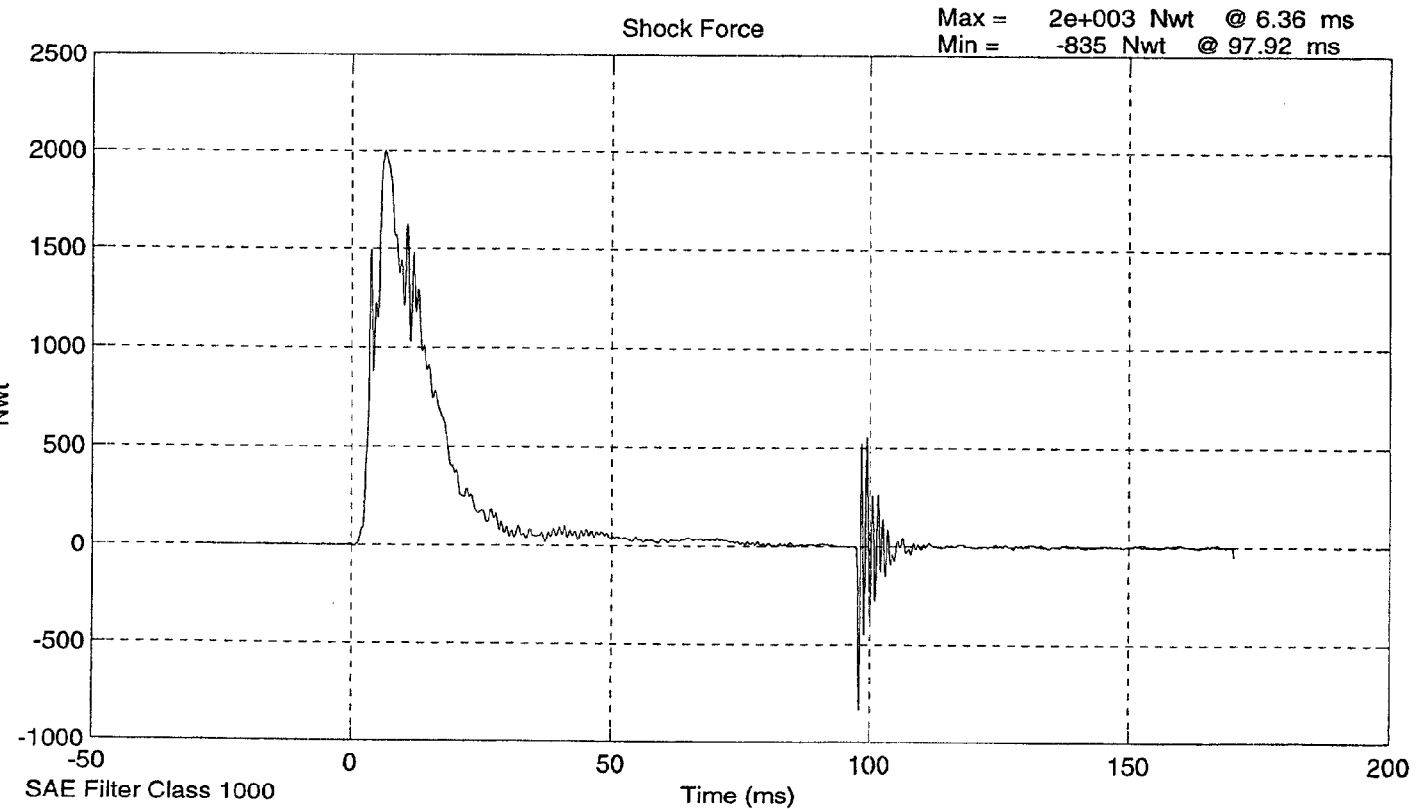
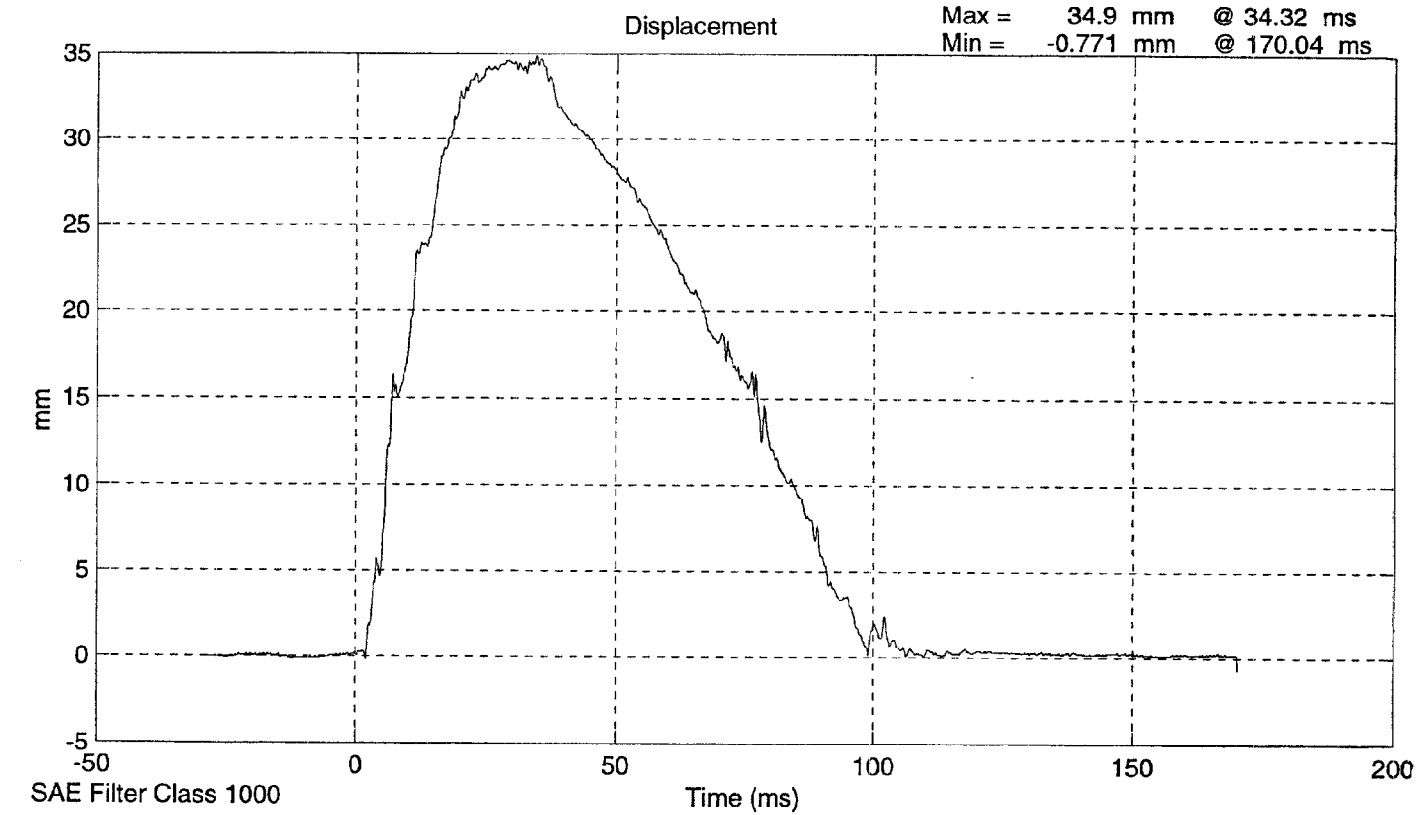
DAMPER SETTING: 5

REMARKS: None

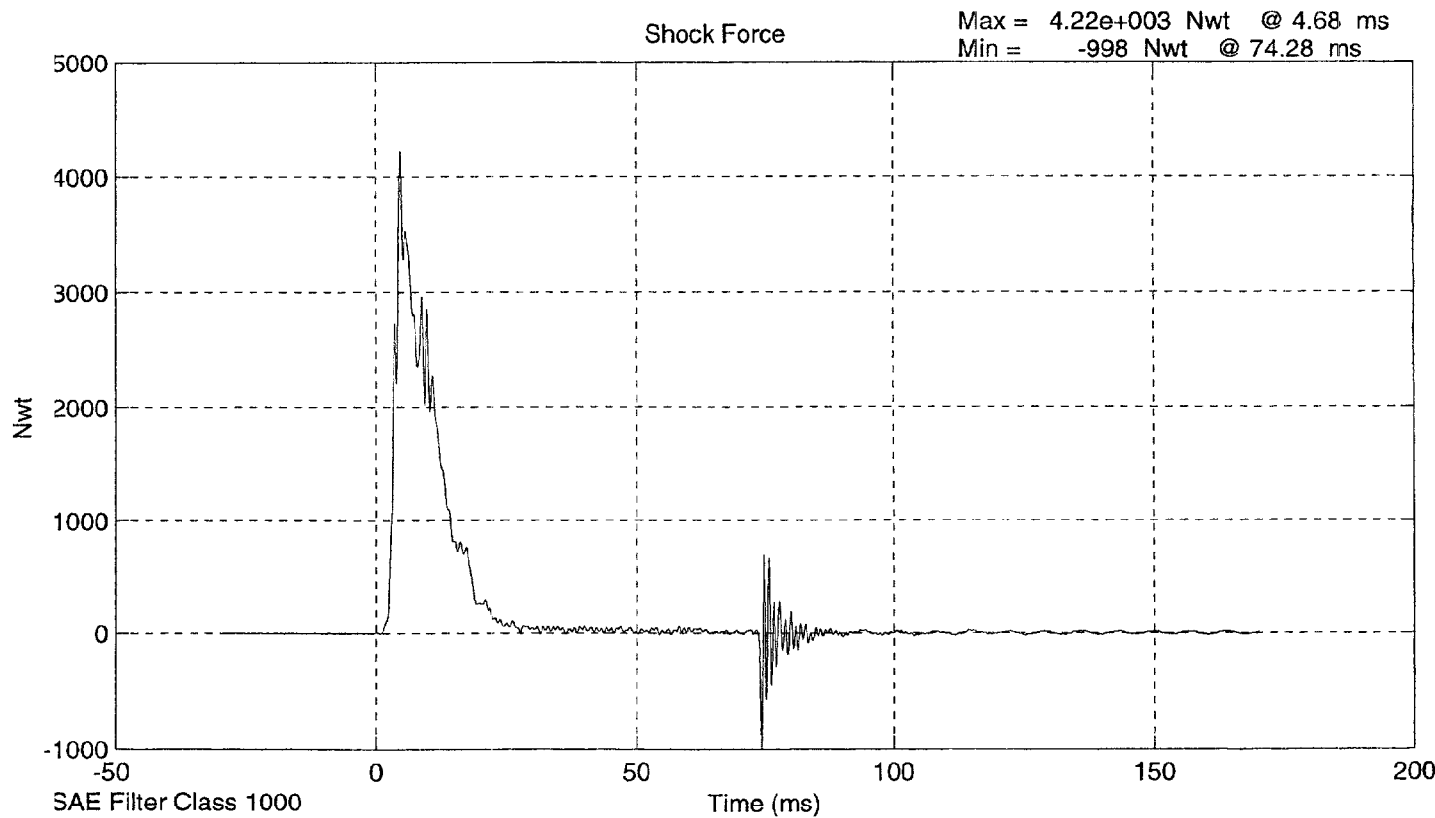
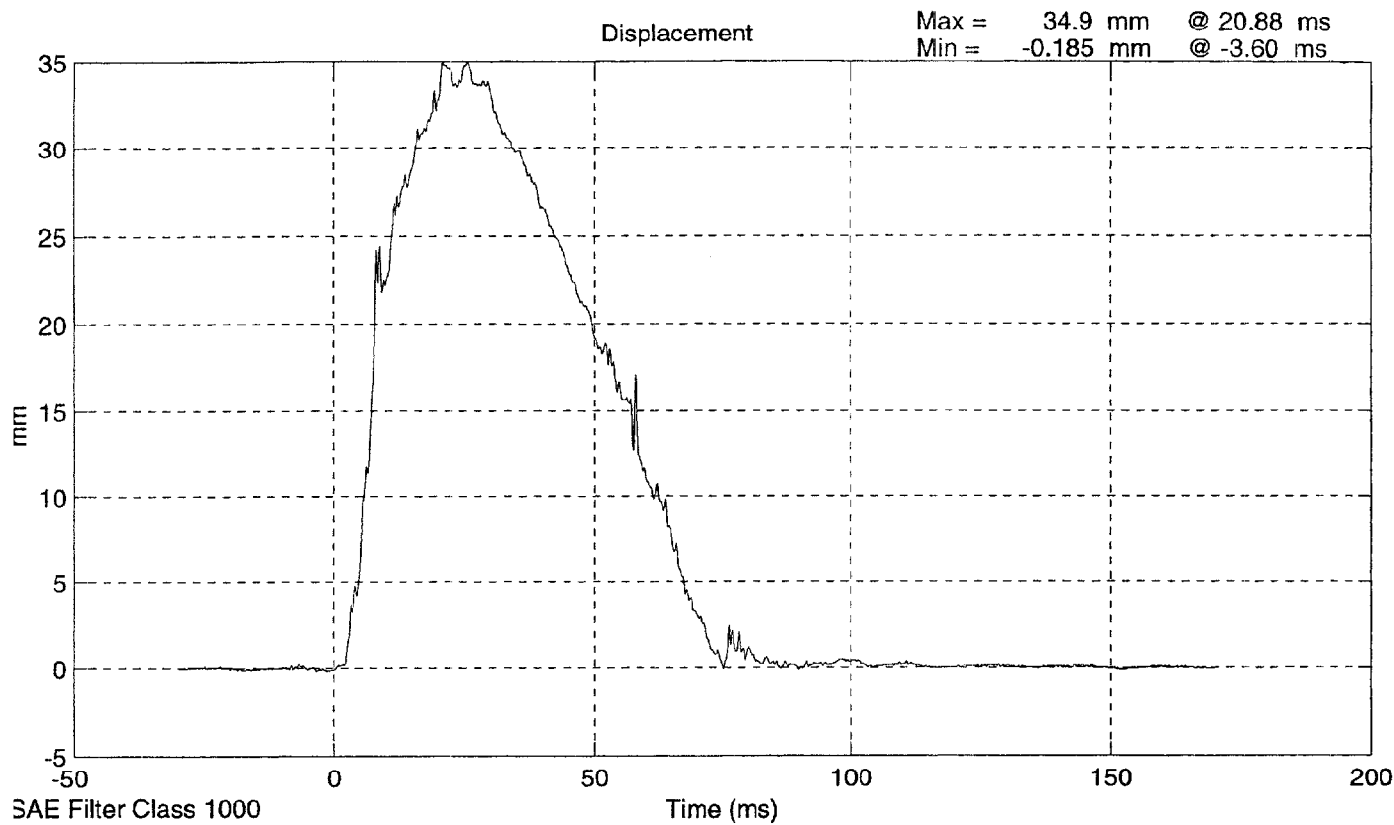
SID Shock Absorber Impact Test 015 @ 3.048 m/s



SID Shock Absorber Impact Test 015 @ 4.2672 m/s



SID Shock Absorber Impact Test 015 @ 6.096 m/s



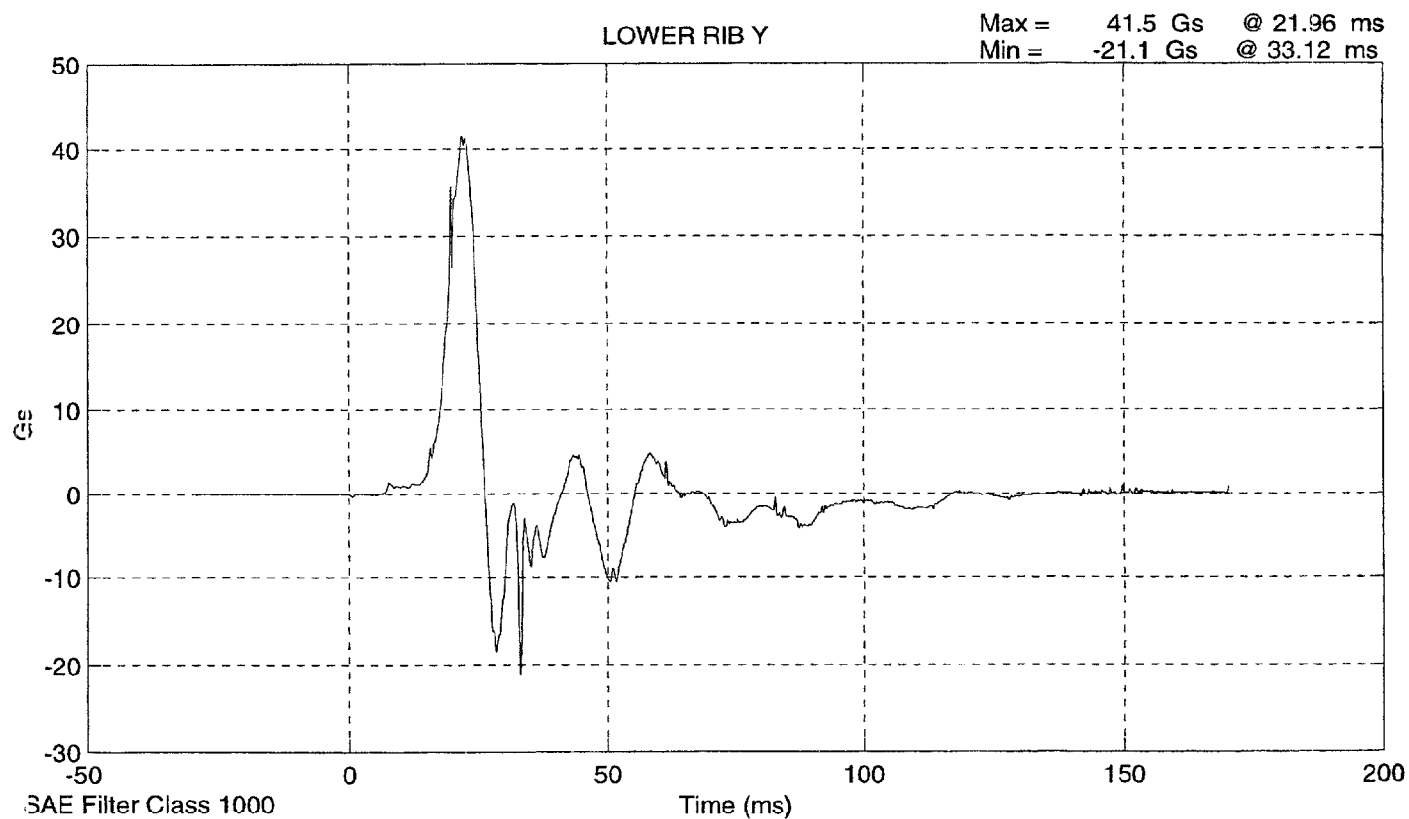
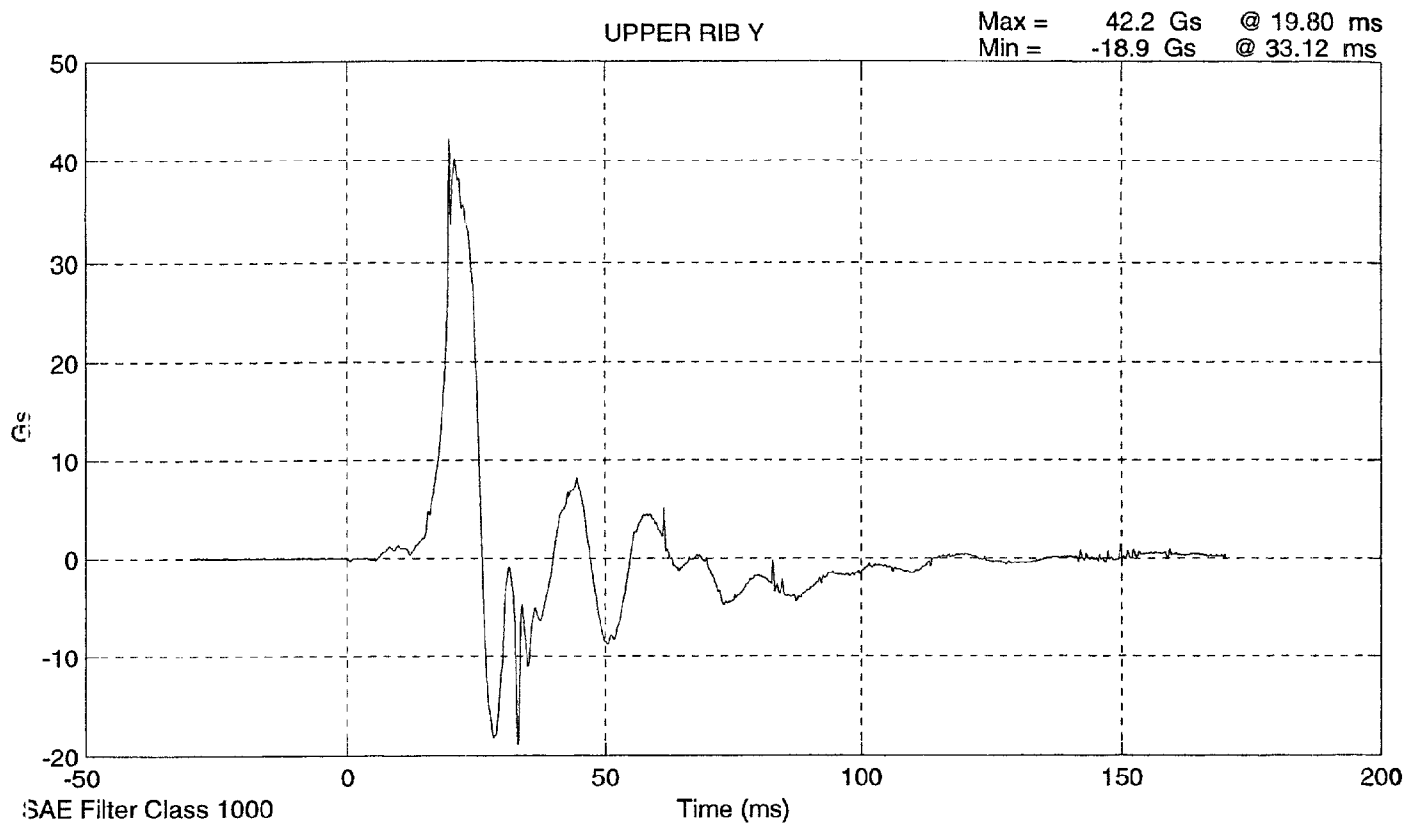
**LATERAL THORAX IMPACT TEST
PRE-TEST**

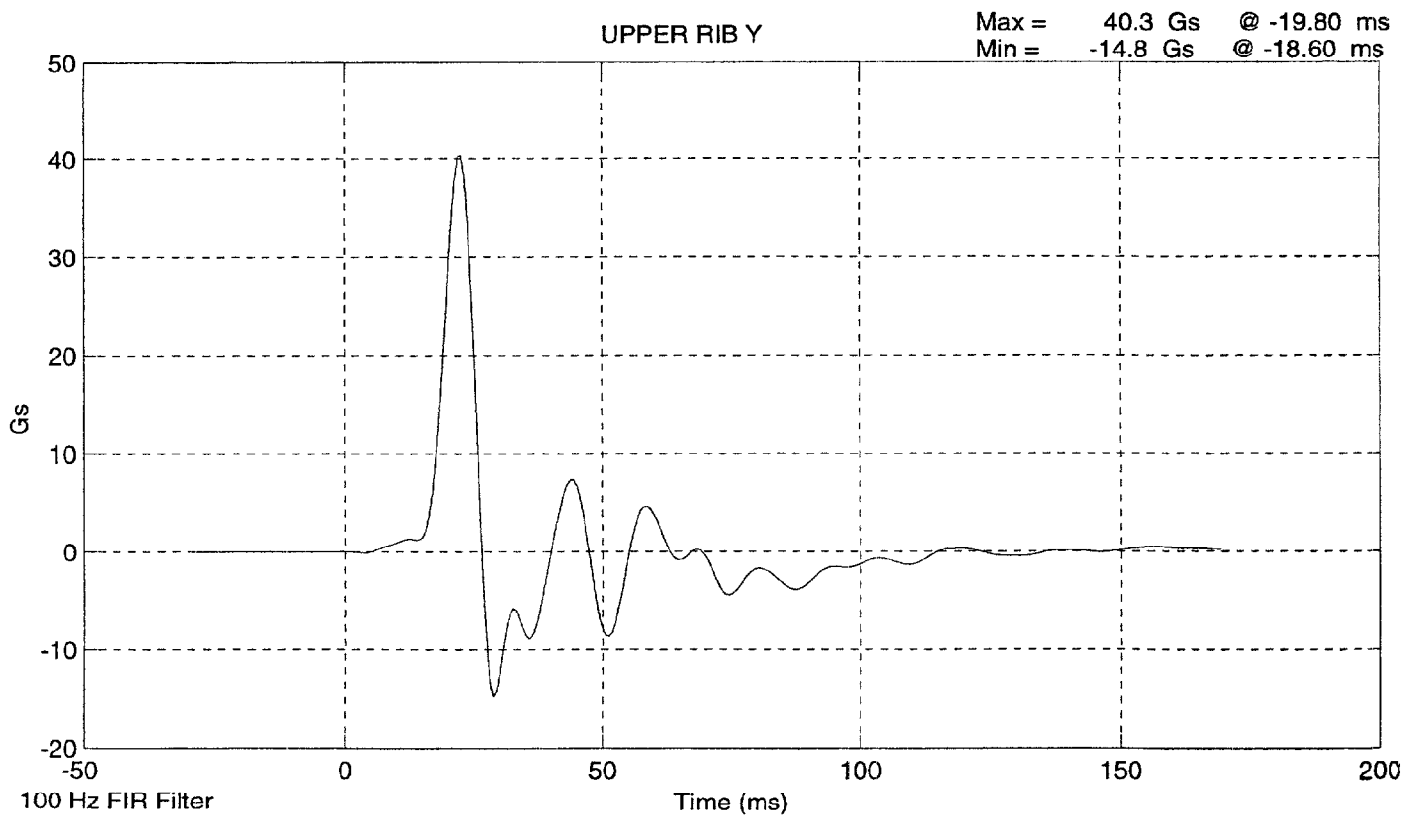
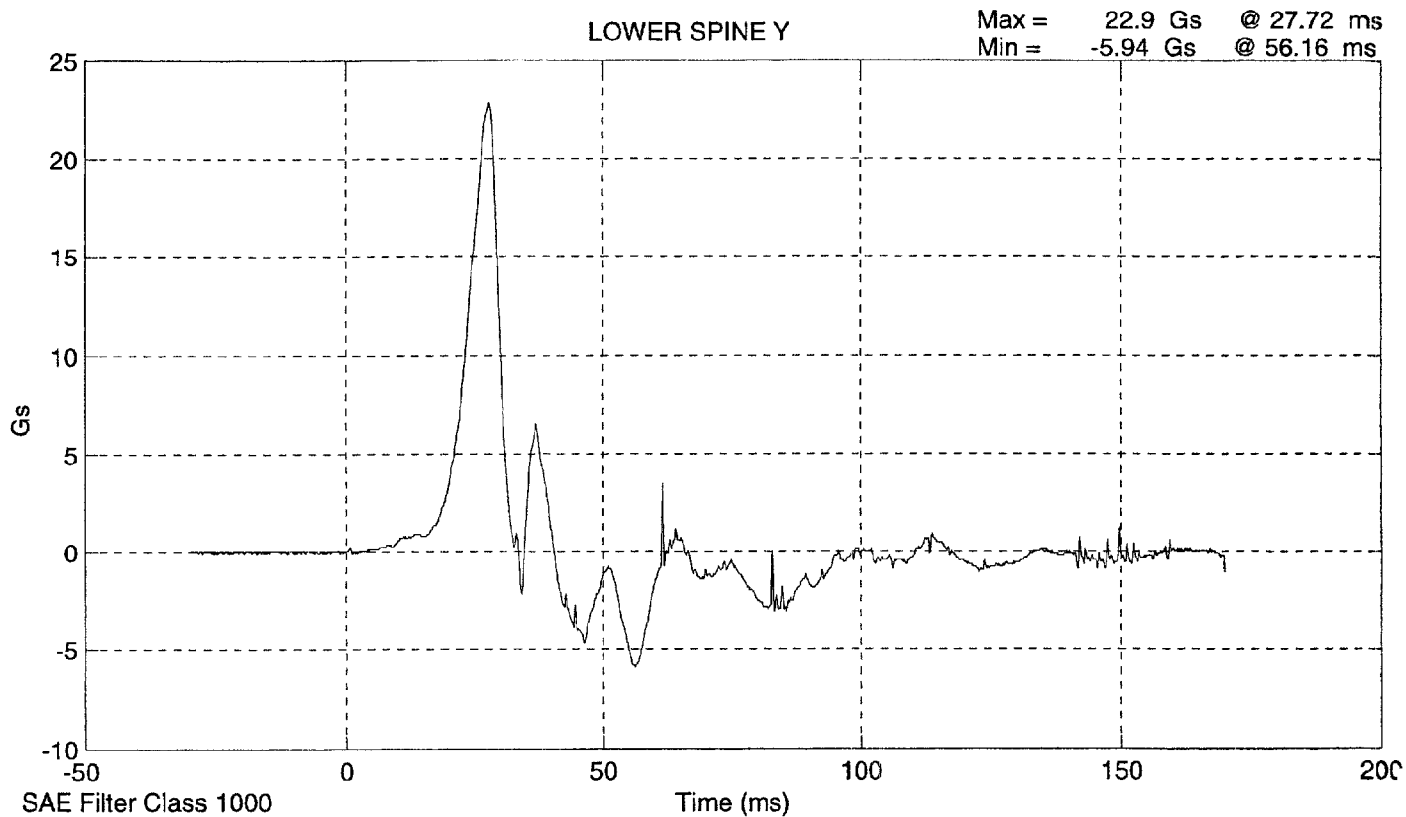
CONFIGURED FOR LEFT SIDE IMPACT

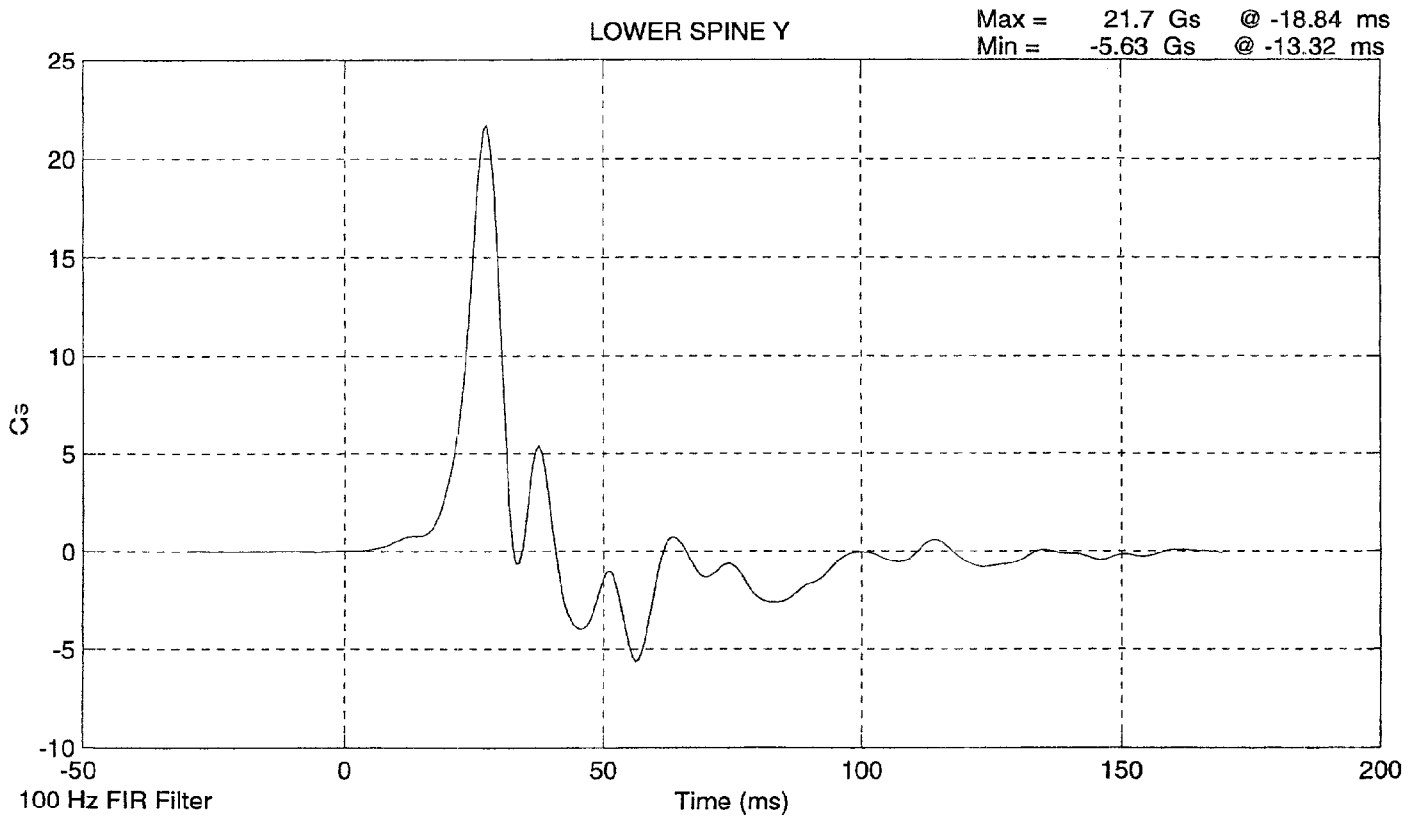
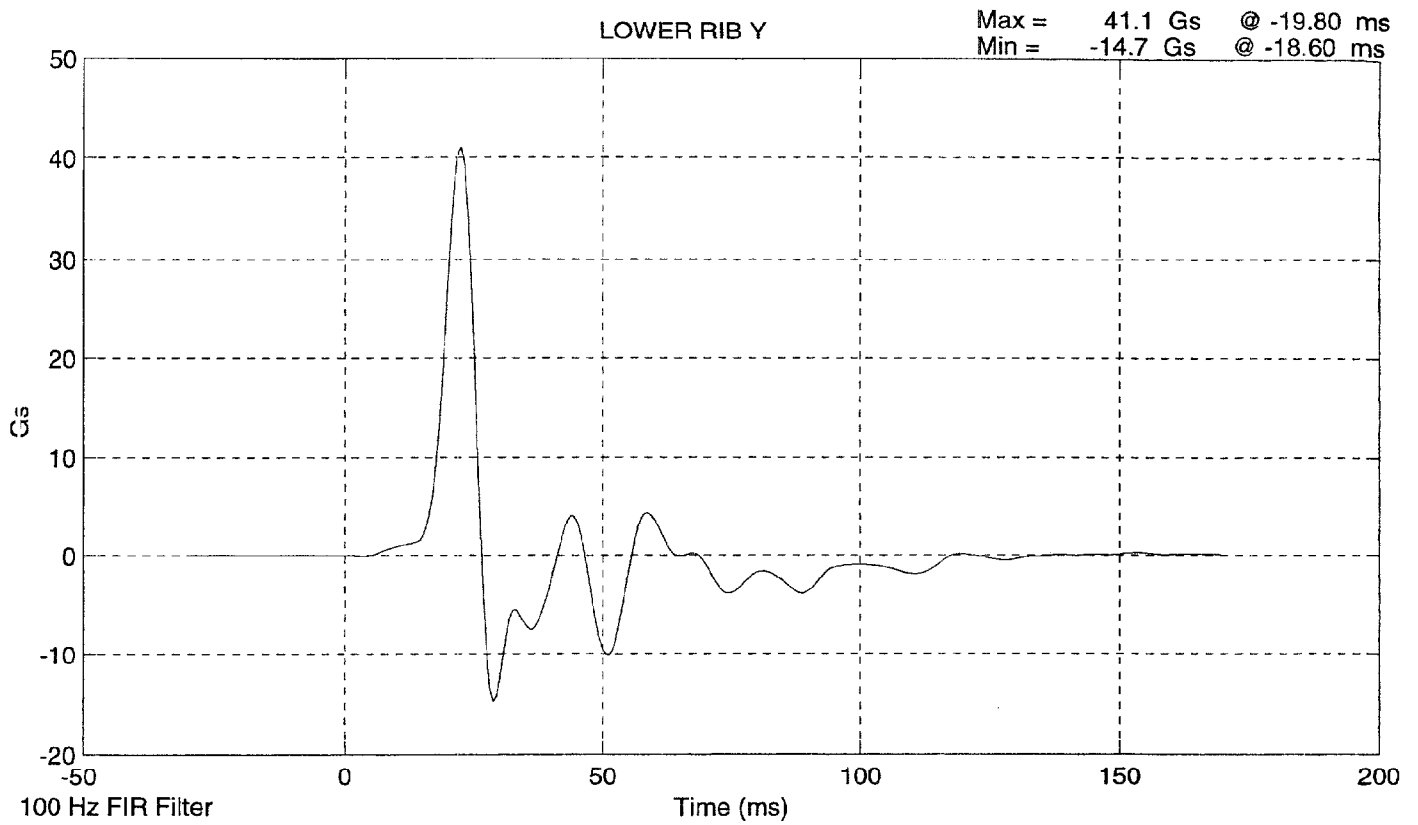
SID Serial No.: 015 Sequential Test Number: 4
Date: January 21, 2000 Laboratory Technician: B. Swiecicki

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
PRE-TEST**

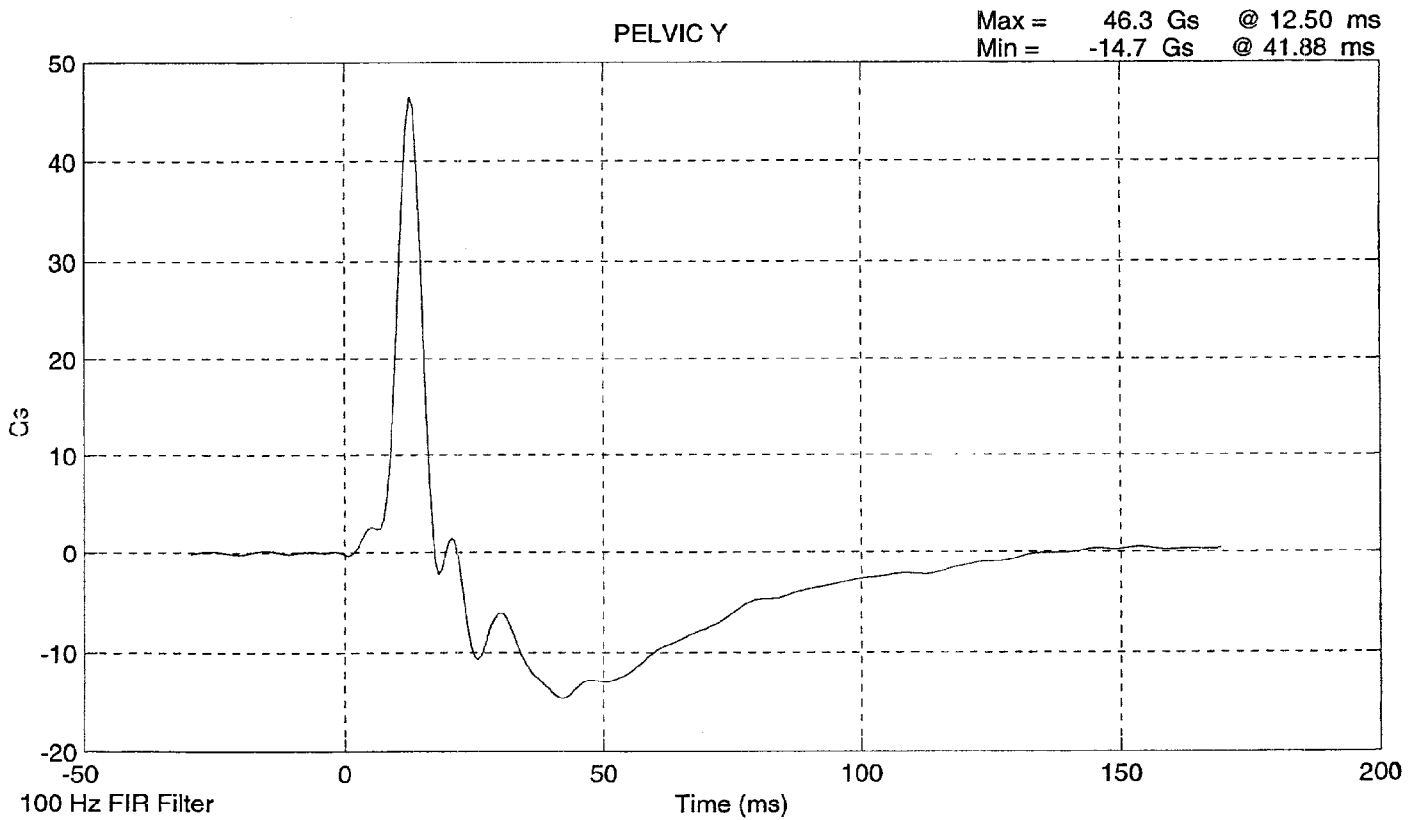
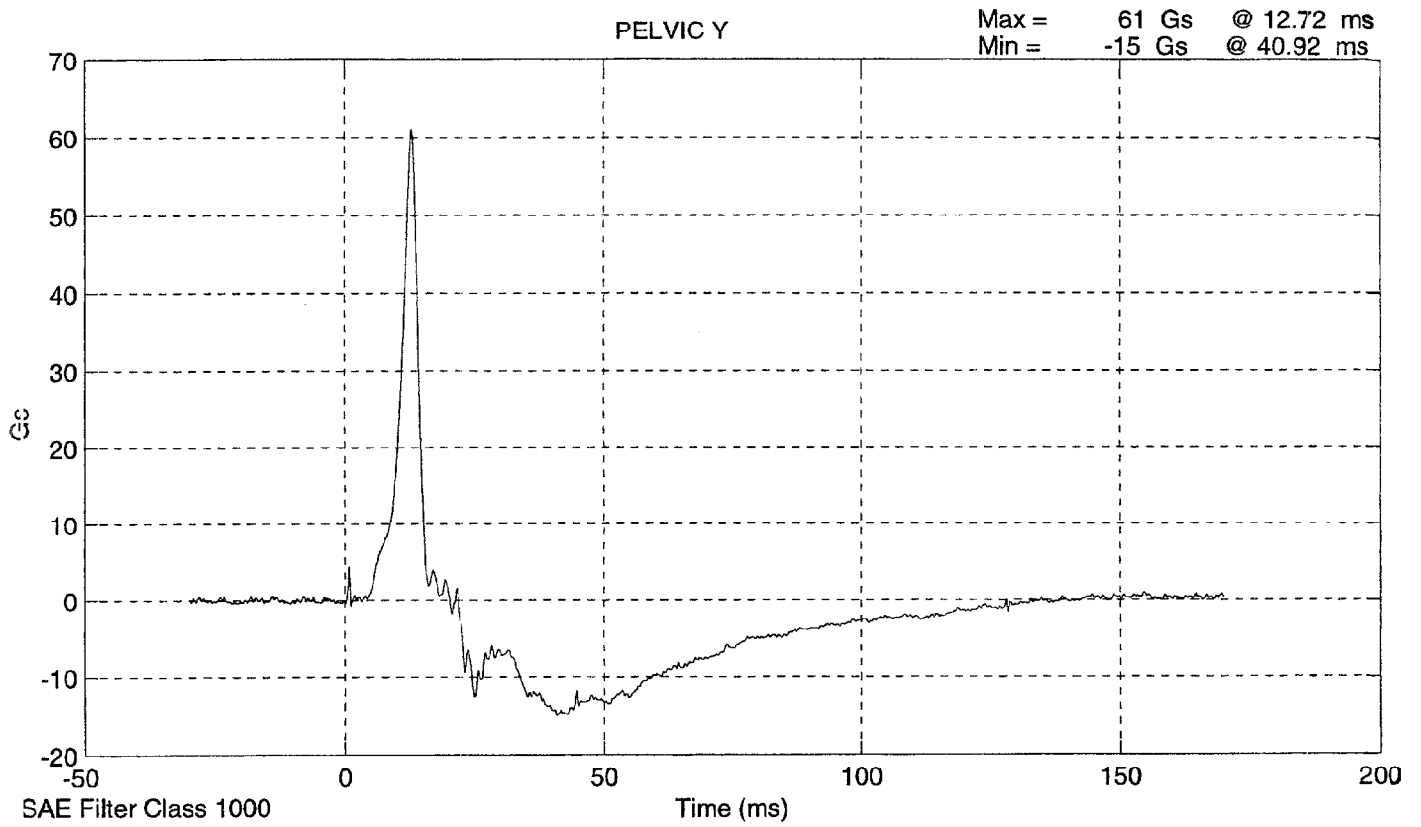
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 4
Date: January 21, 2000 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

SID 015 Pelvic Impact Test @ 4.2977 m/s



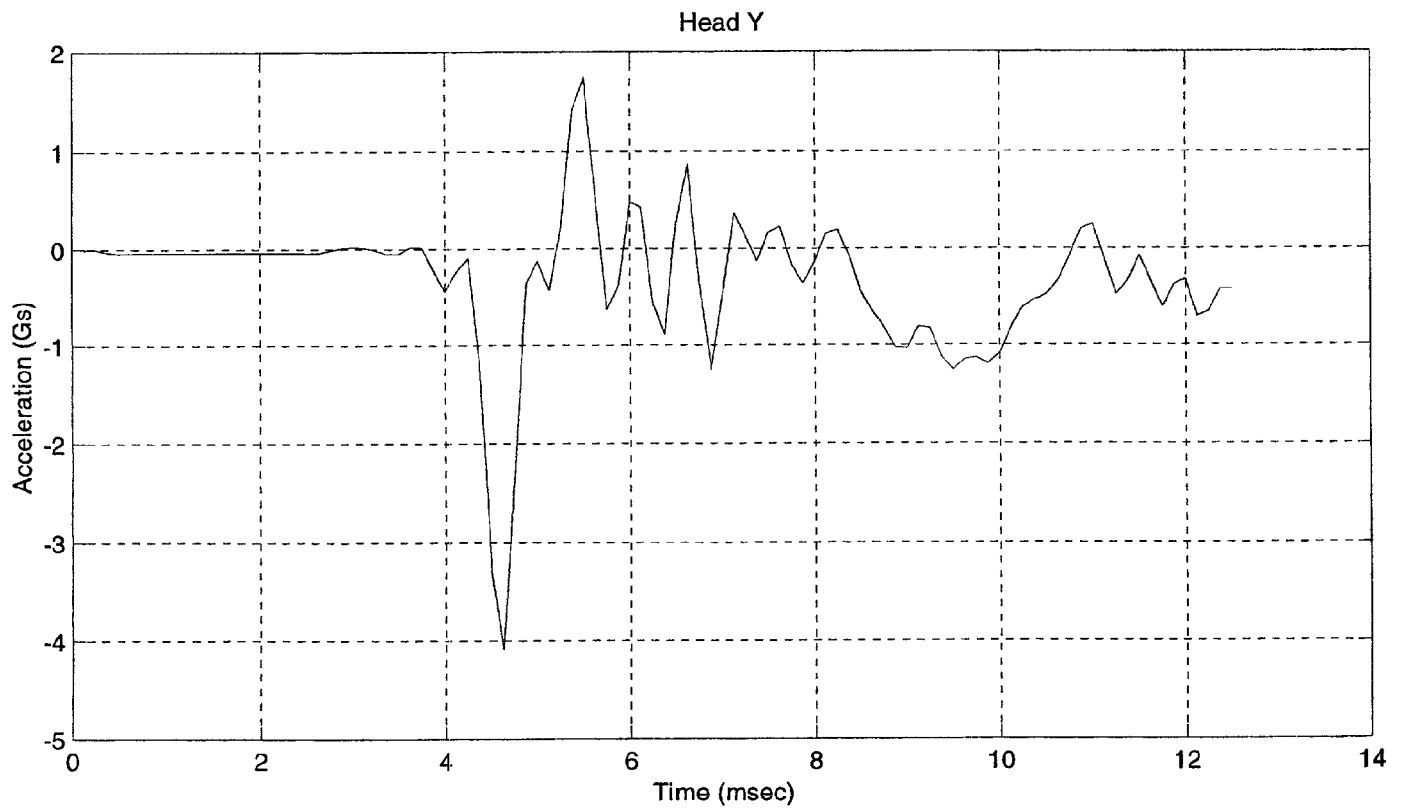
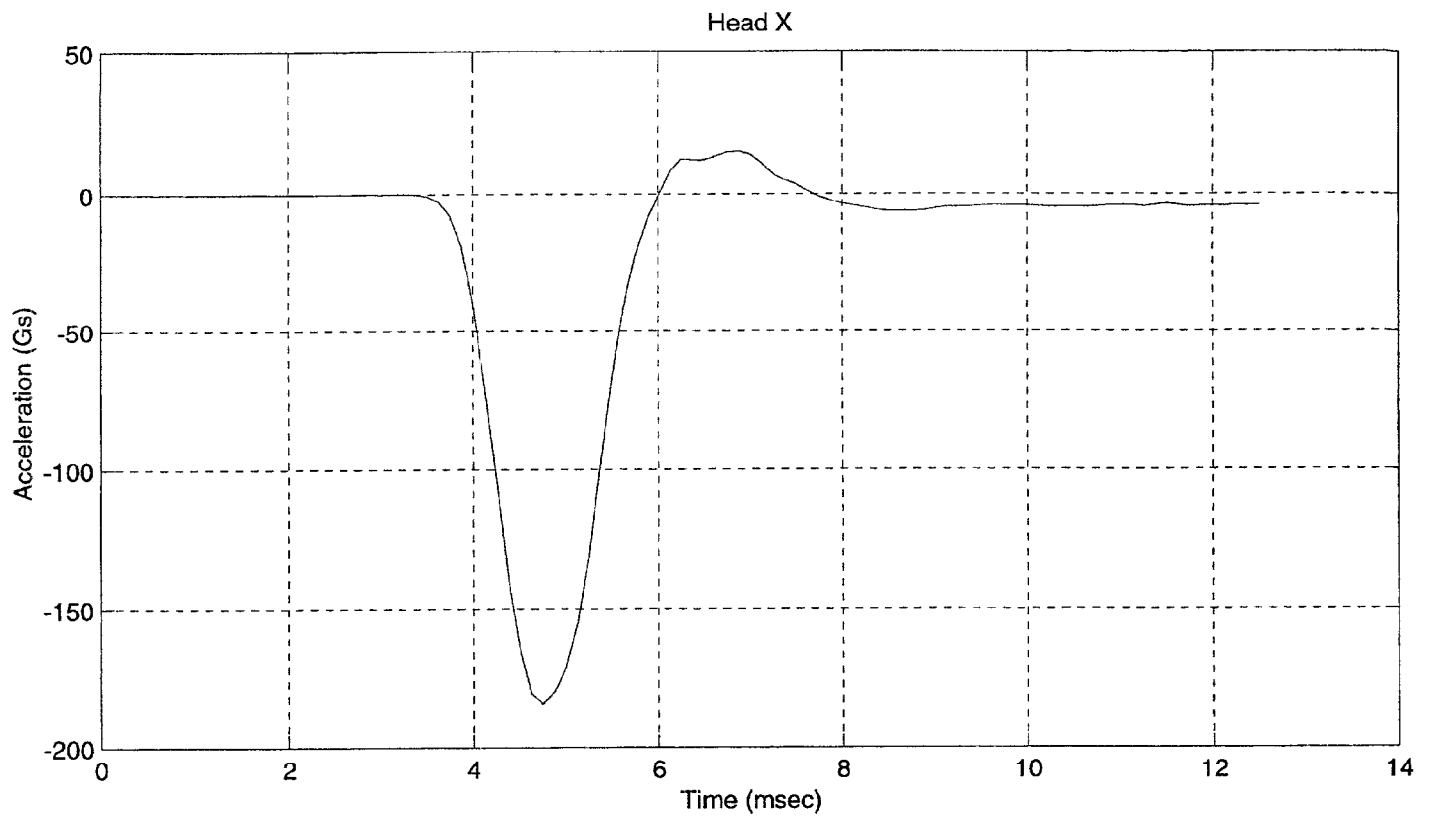
HEAD DROP TEST
PRE-TEST
(Test not required for SID certification)

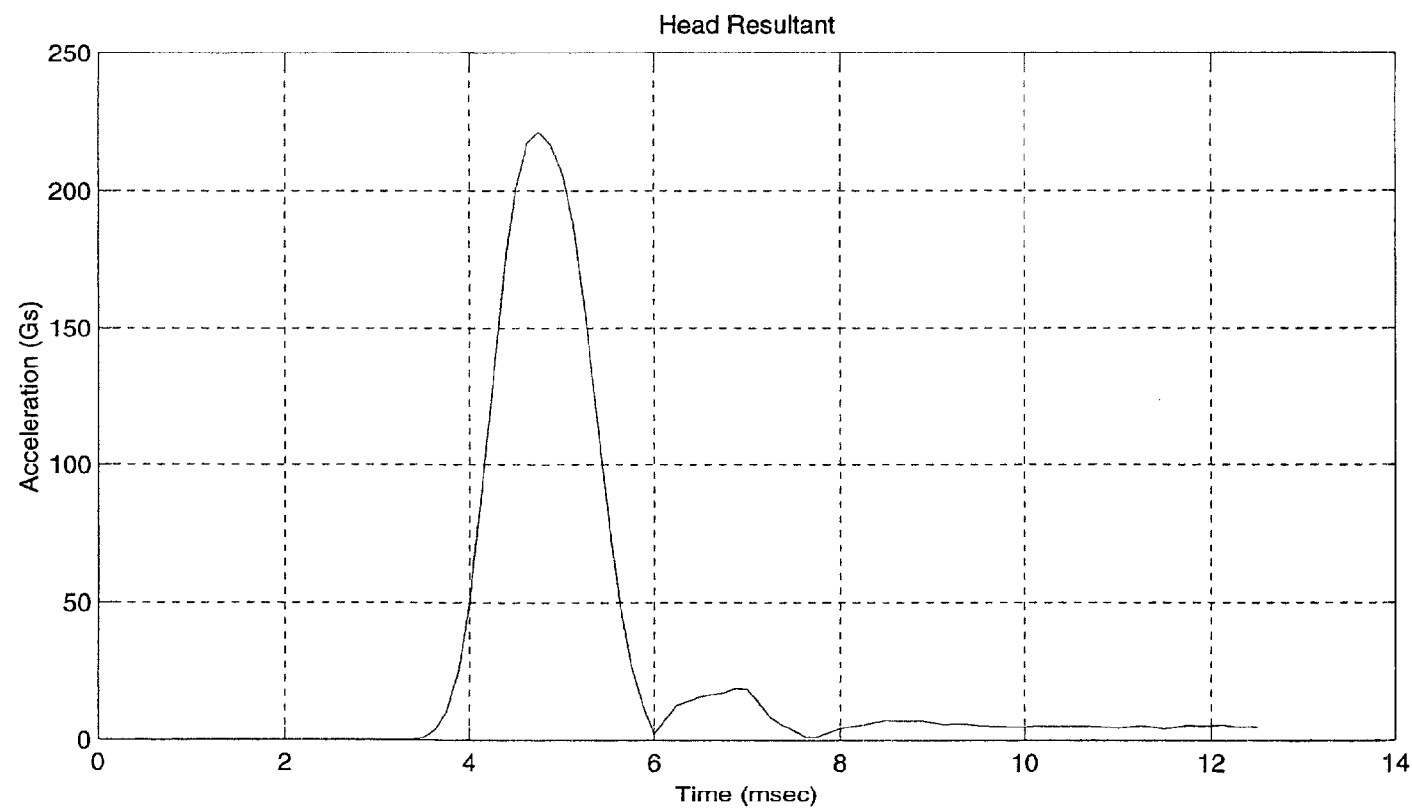
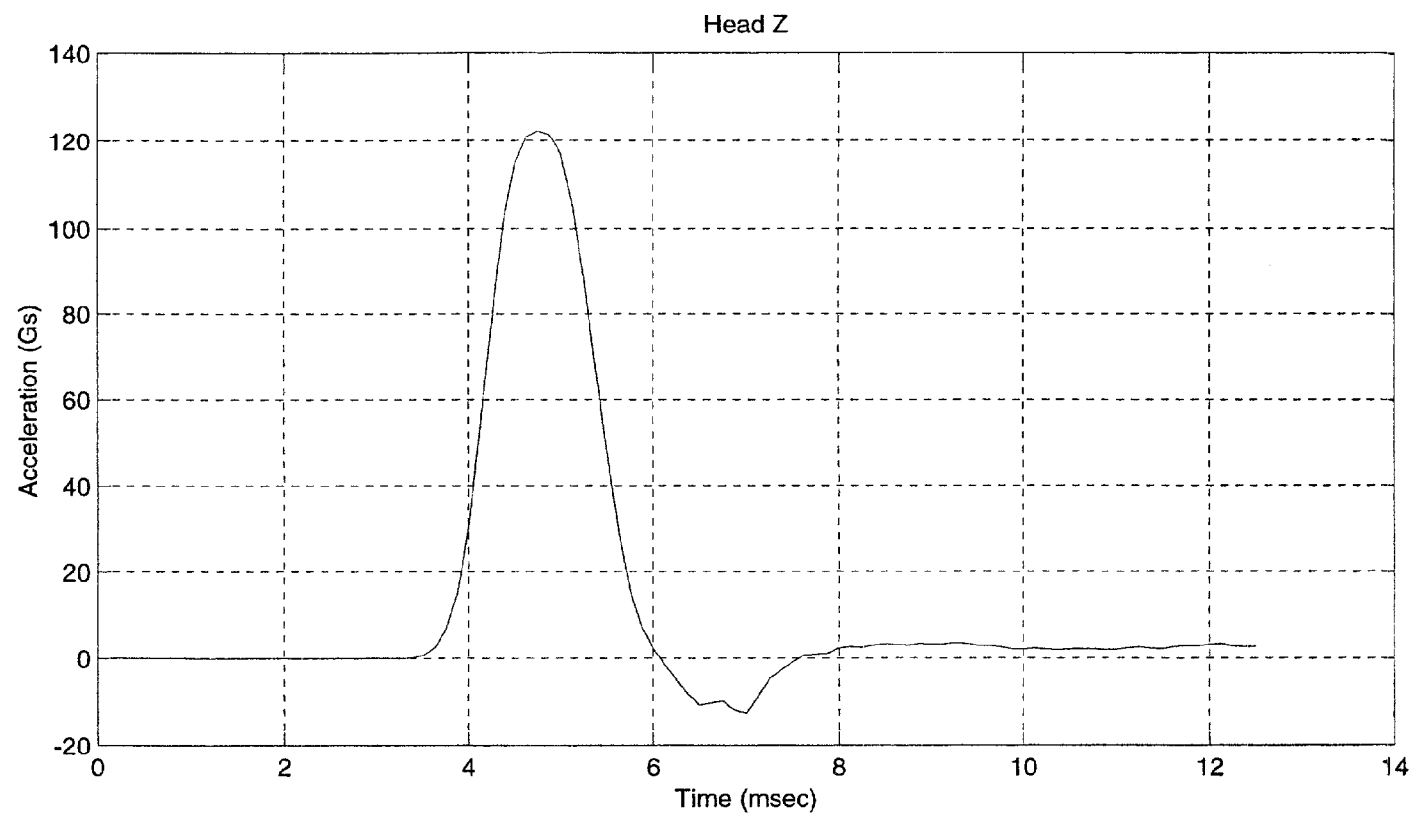
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 4
Date: January 14, 2000 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
PRE-TEST**

(Test not required for SID certification)

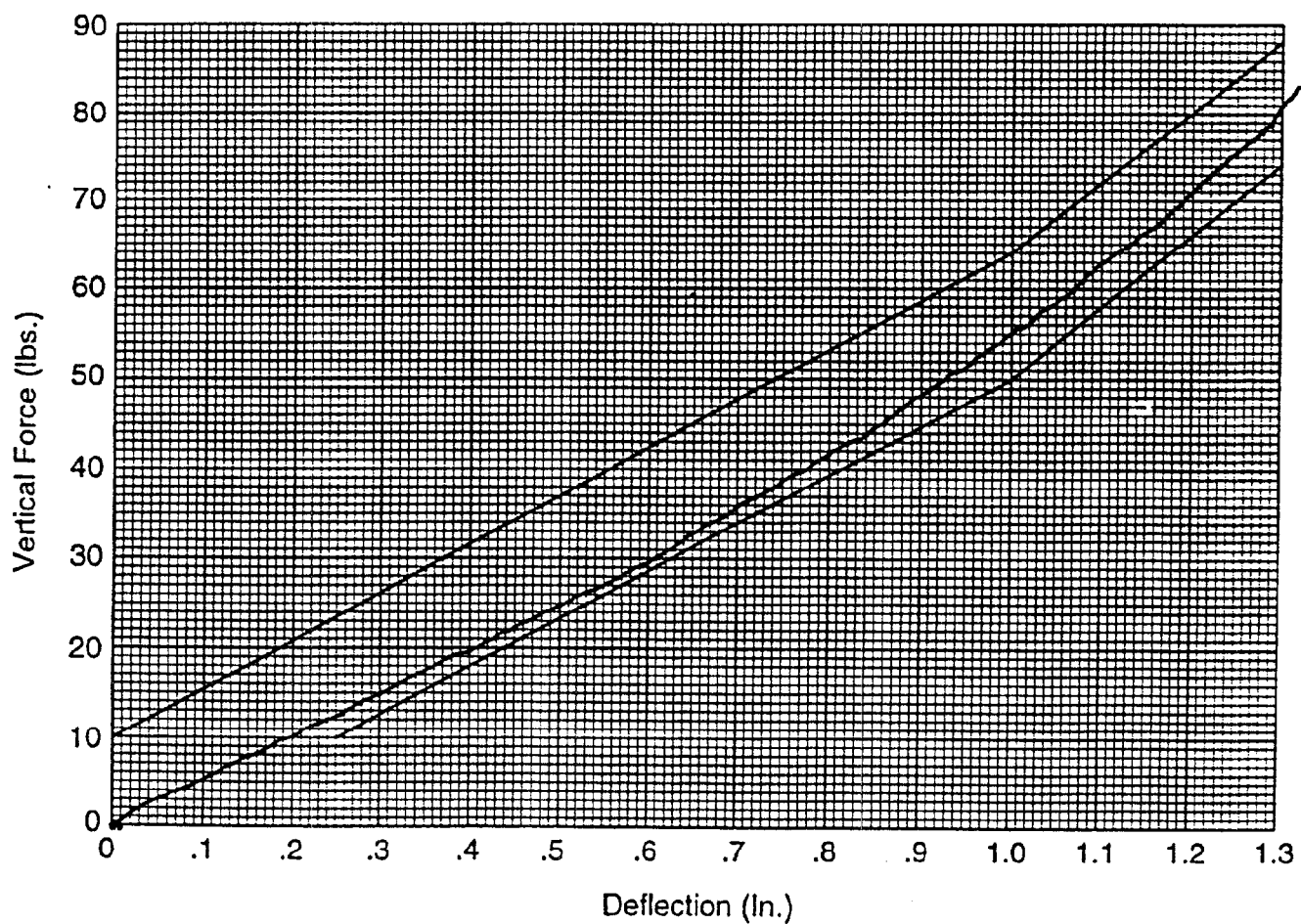
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 4
Date: January 21, 2000 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 B2
Temp. 70°
Humidity 32%



Hybrid II
Abdomen Static Press

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

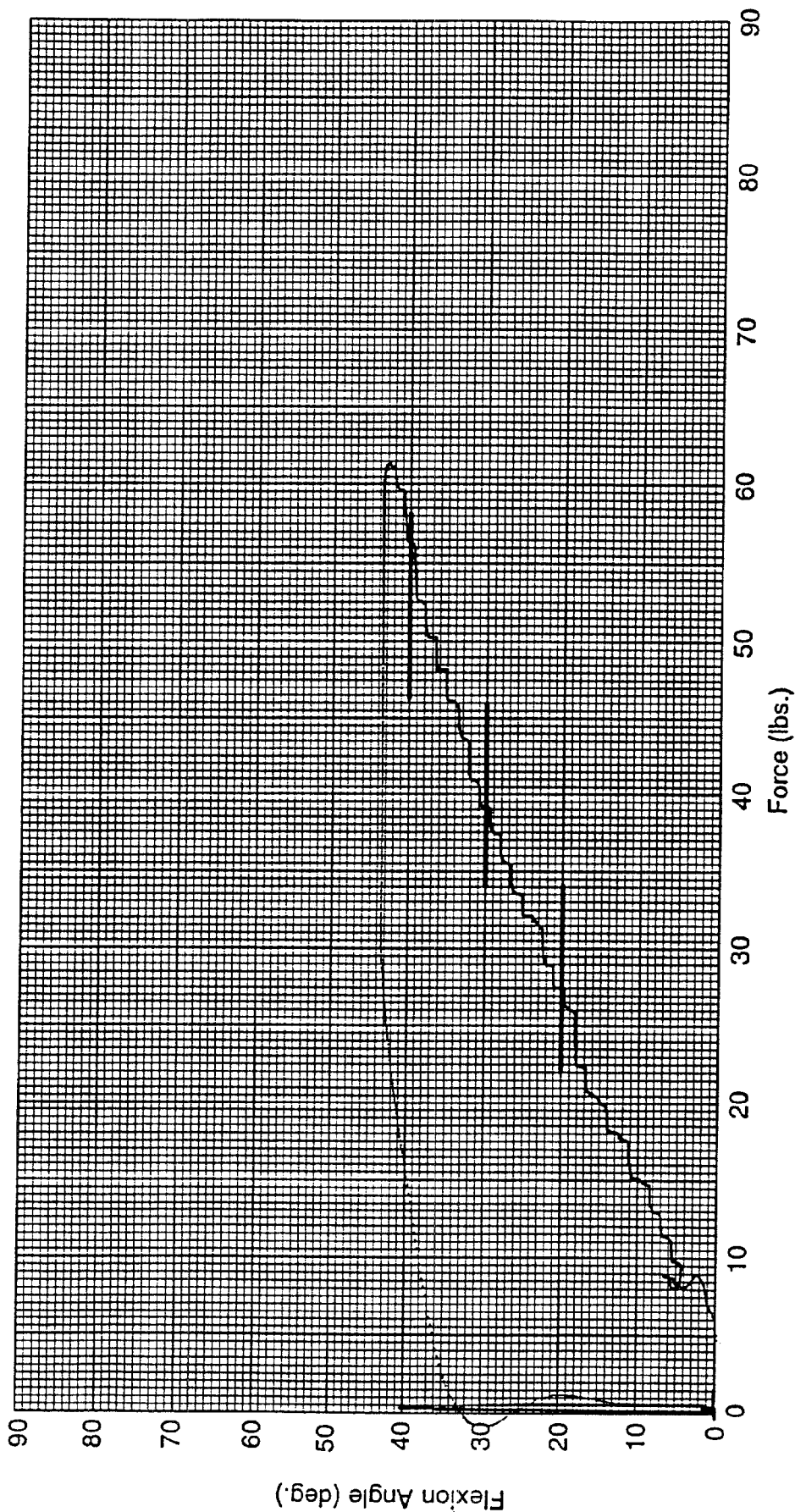
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 4
Date: January 21, 2000 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

PRE-TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 4
 Date: January 21, 2000 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: 2
Date: January 21, 2000 Laboratory Technician: B. Swiecicki

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

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 2
Date: January 21, 2000 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

**THORACIC SHOCK ABSORBER TESTS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1.2
Date: September 30, 1999 Laboratory Technician: B. Swiecicki

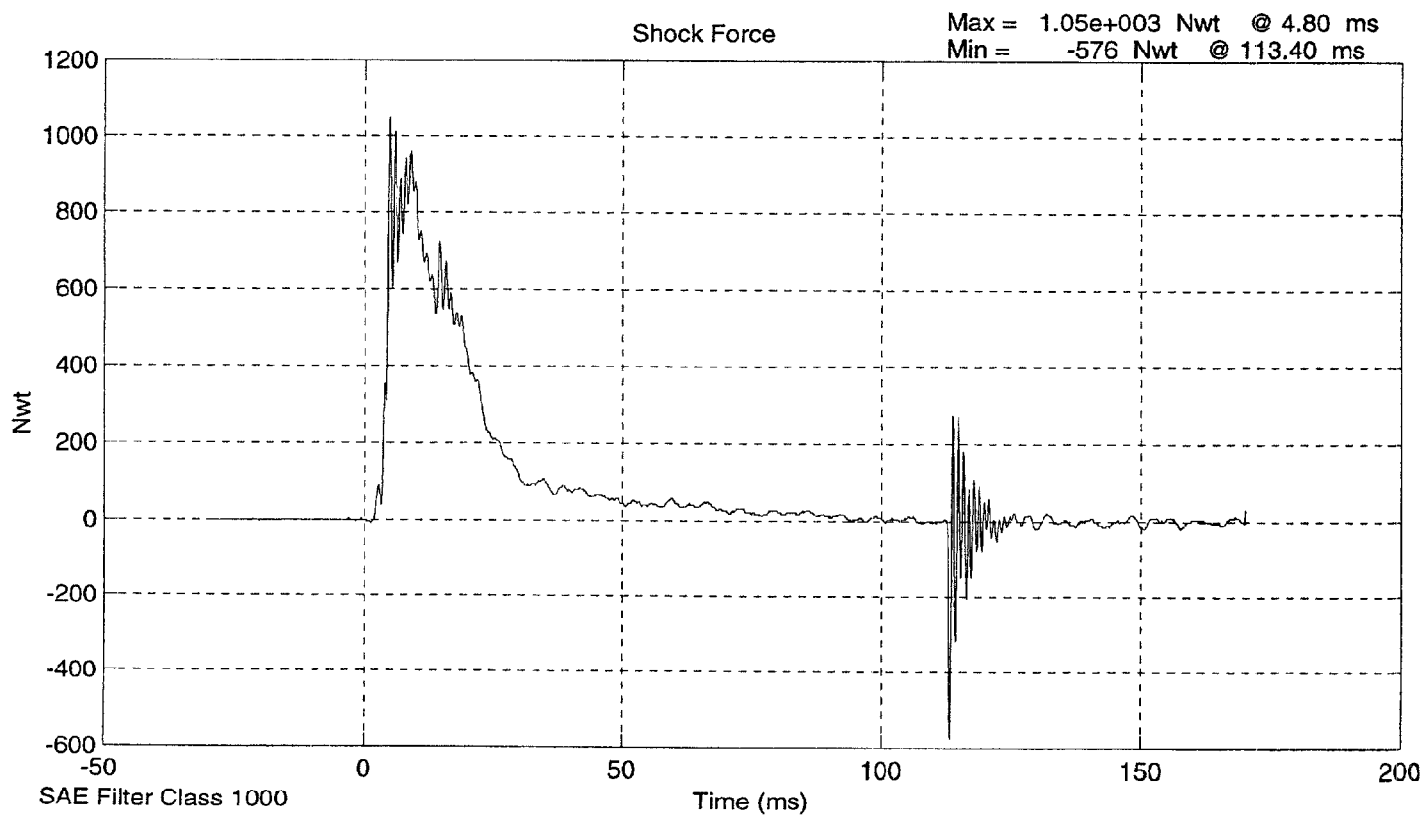
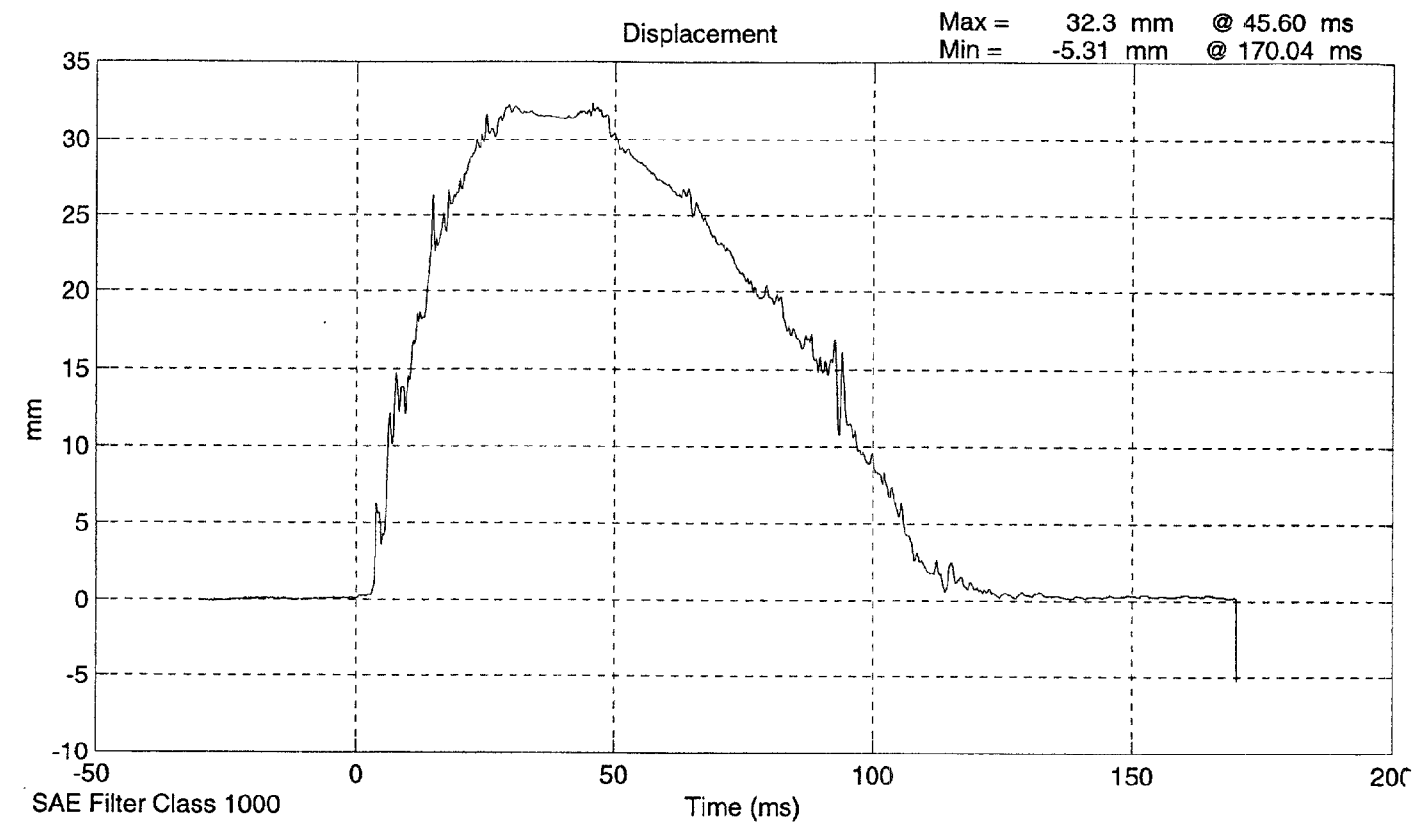
DAMPER IDENTIFICATION: 016

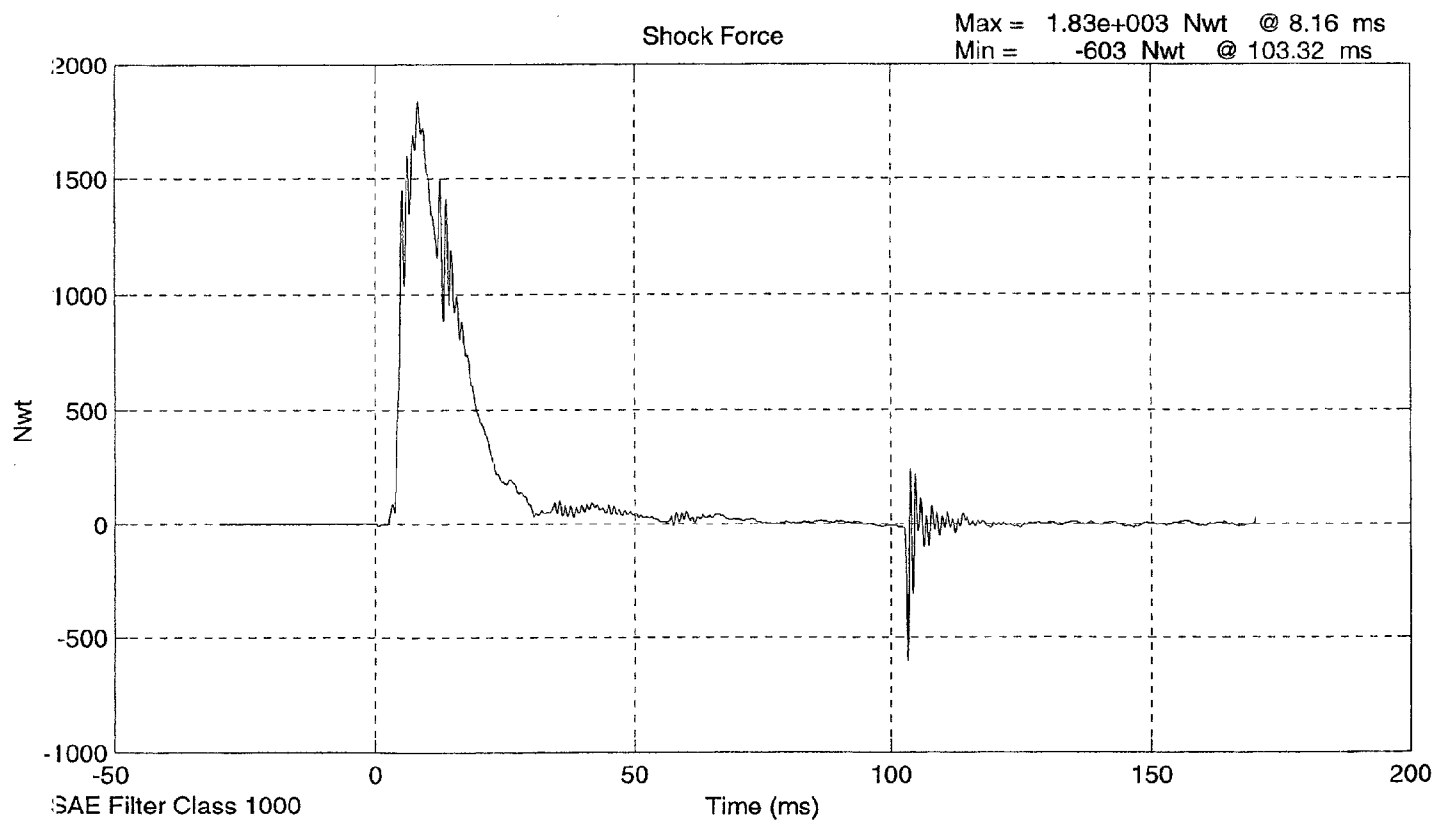
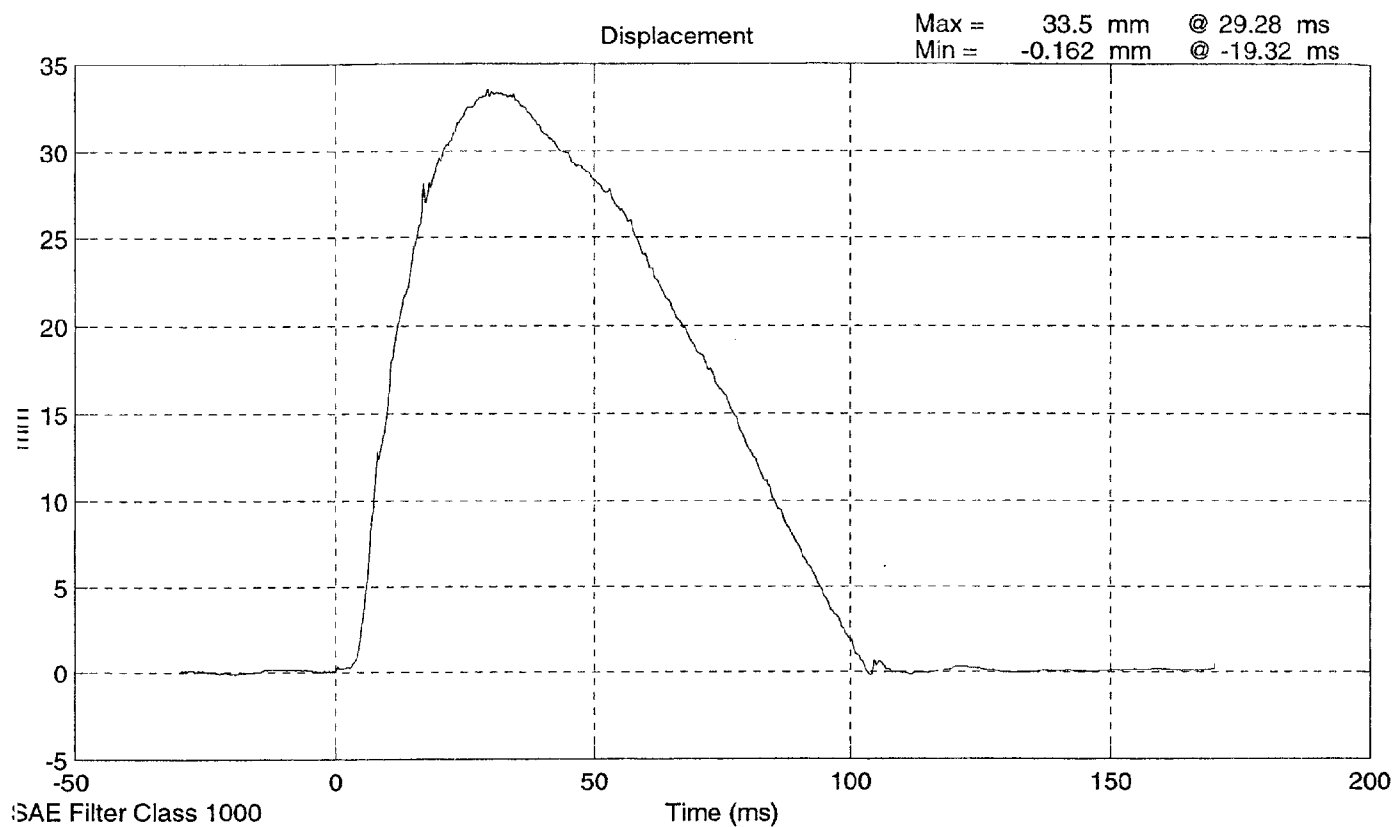
TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)		18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)		10 - 70	31
VELOCITY 3.05 m/s	FORCE (N)	836 - 1125	1048.7
	DISPLACEMENT (mm)	30 - 35	32.3
VELOCITY 4.27 m/s	FORCE (N)	1730 - 2099	1830.4
	DISPLACEMENT (mm)	32 - 37	33.5
VELOCITY 6.10 m/s	FORCE (N)	3741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

DAMPER SETTING: 5

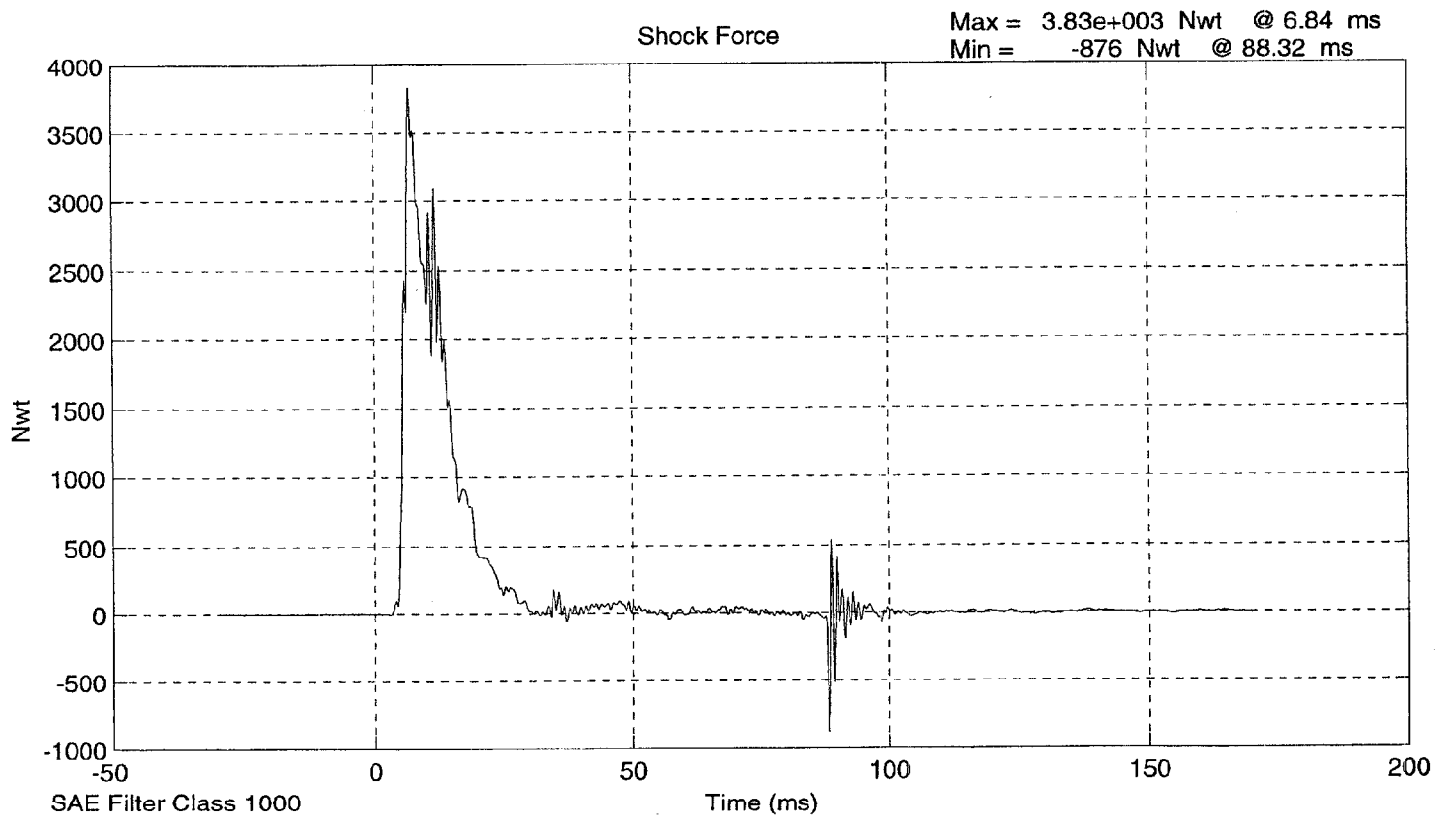
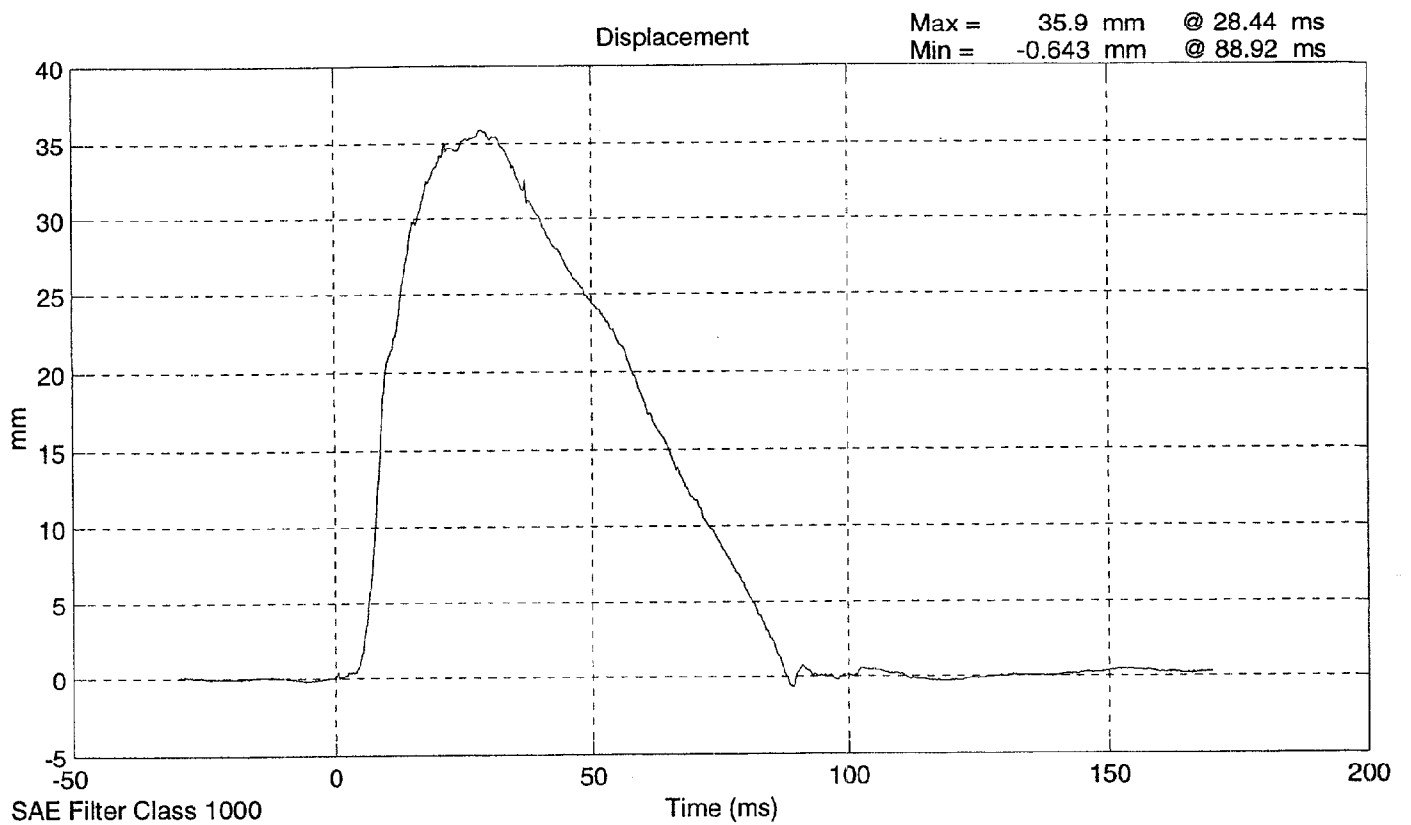
REMARKS: None

SID Shock Absorber Impact Test 016 @ 3.048 m/s





SID Shock Absorber Impact Test 016 @ 6.096 m/s



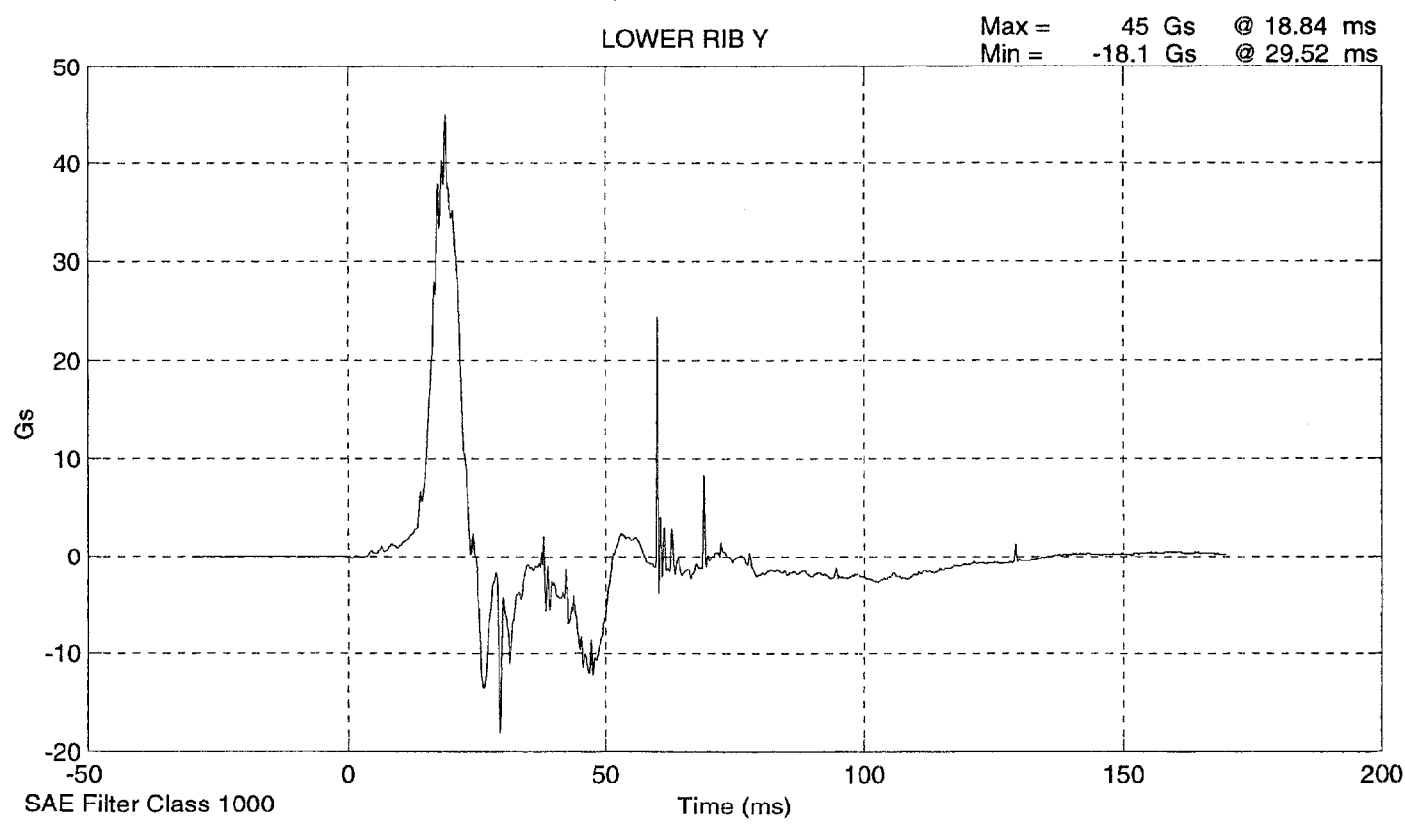
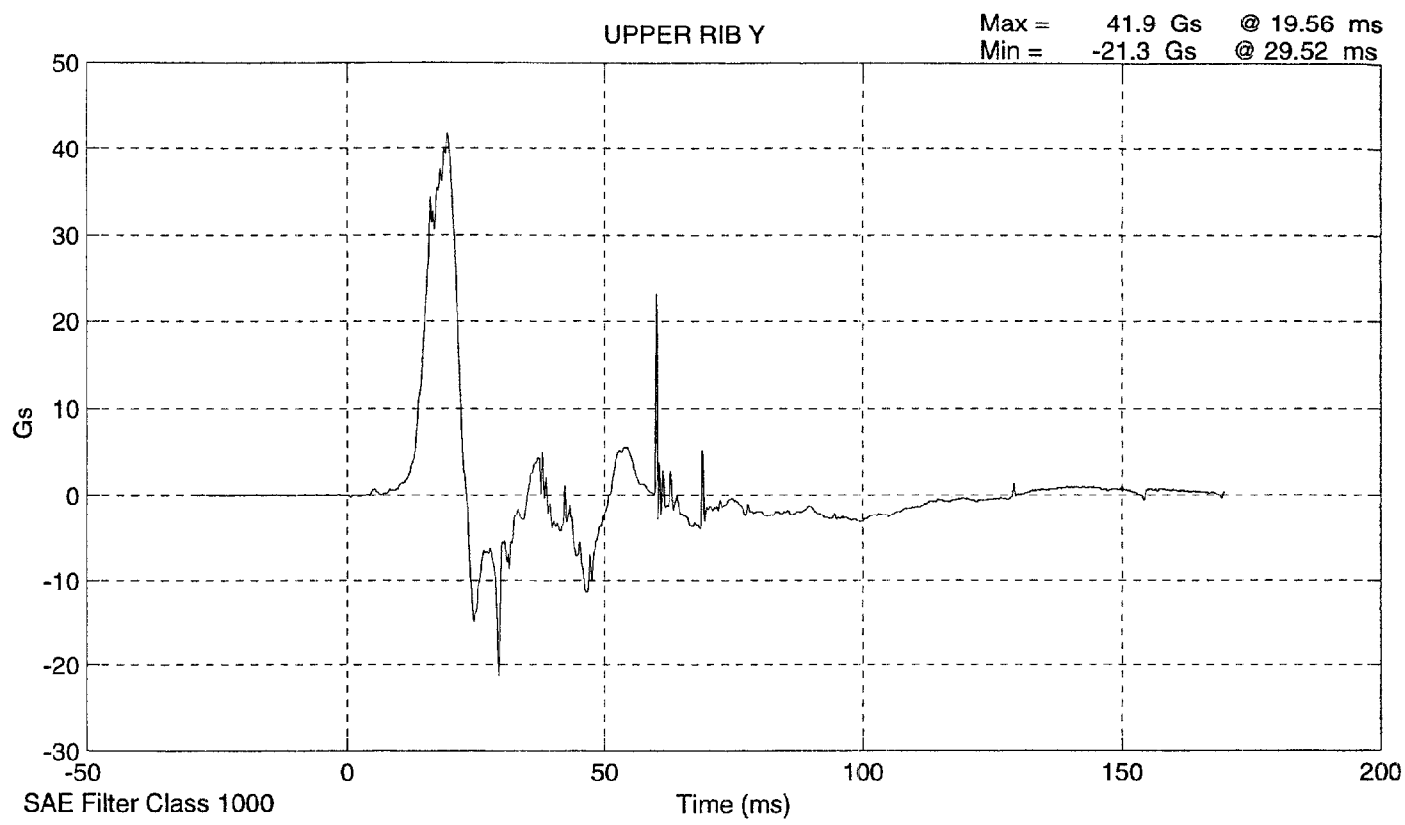
**LATERAL THORAX IMPACT TEST
PRE-TEST**

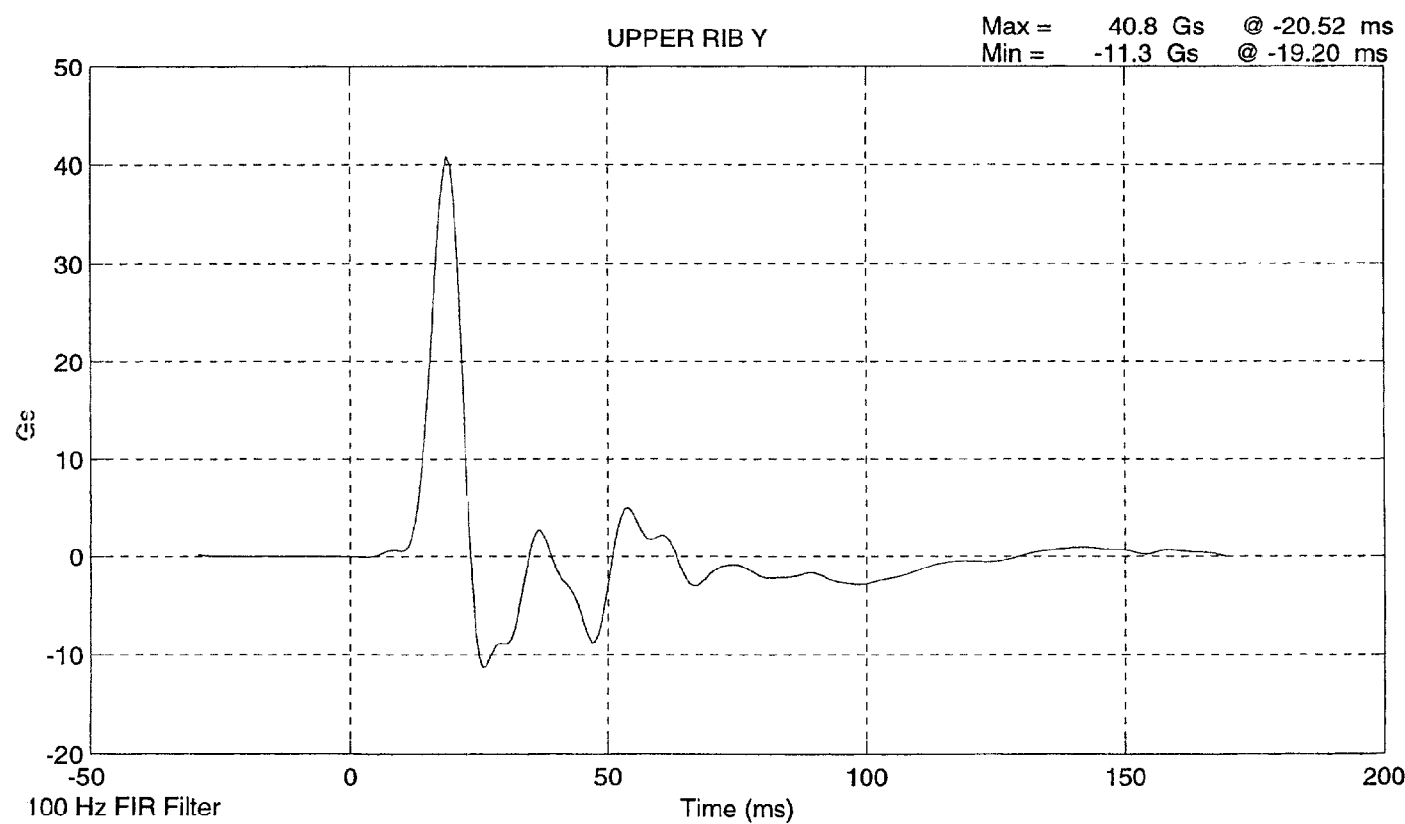
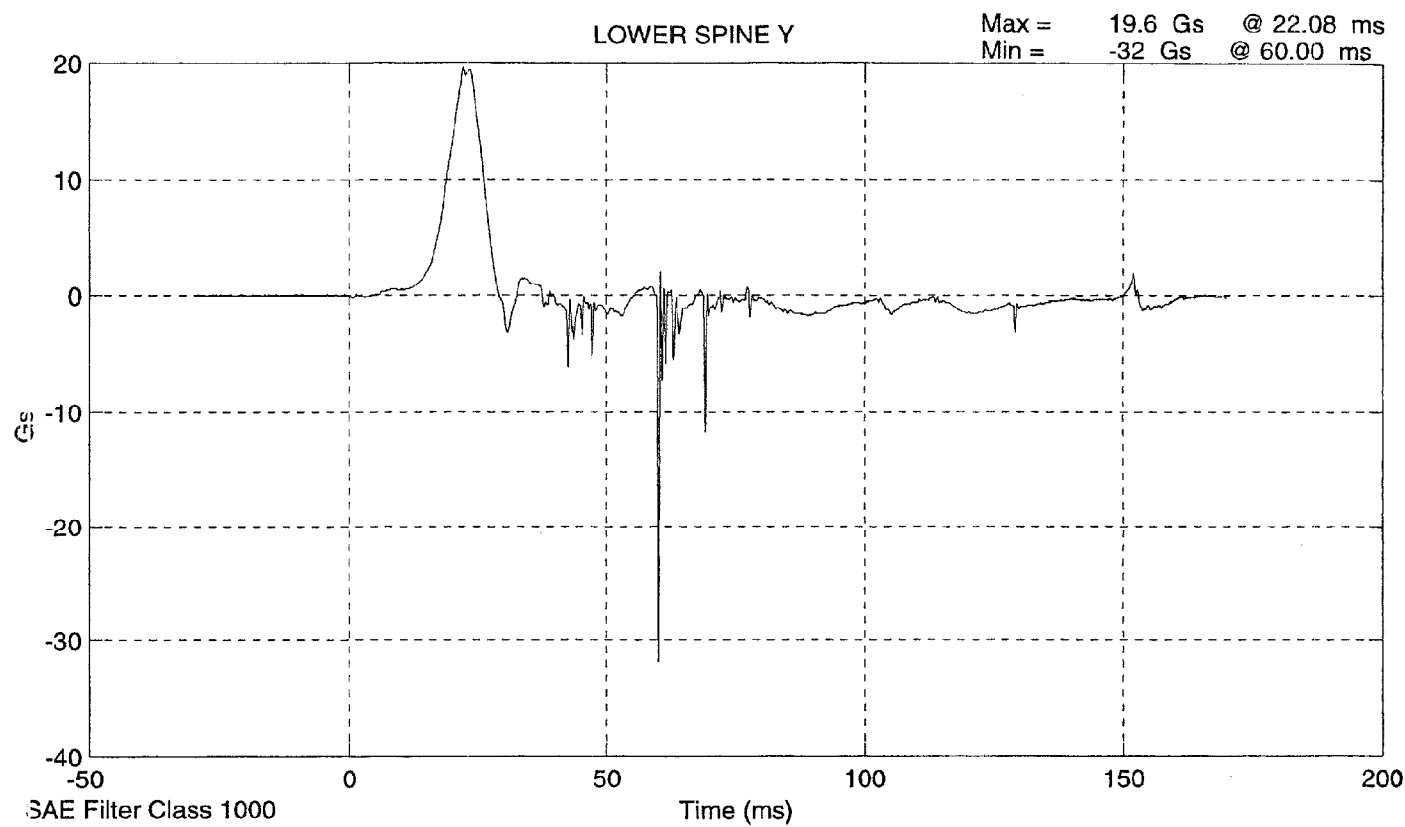
CONFIGURED FOR LEFT SIDE IMPACT

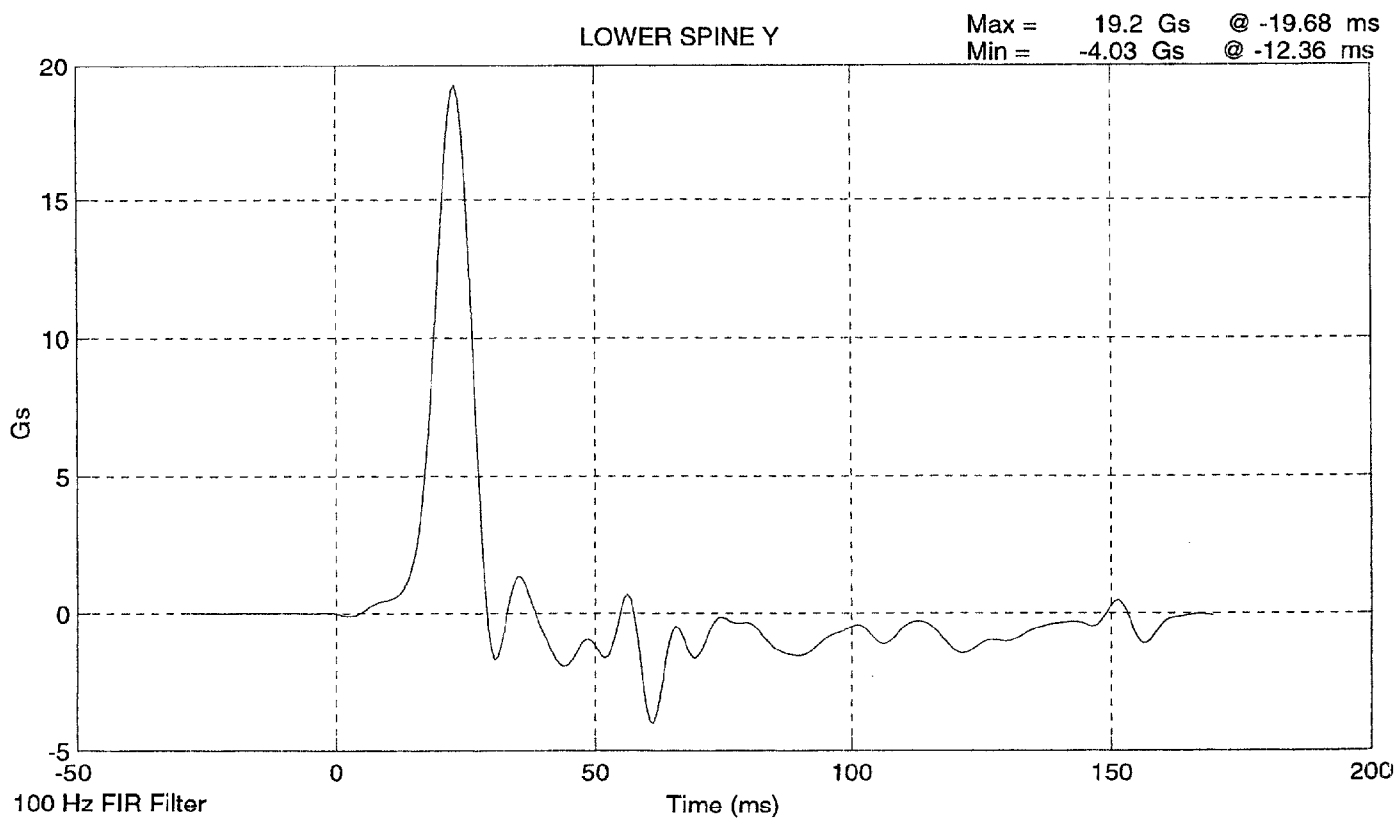
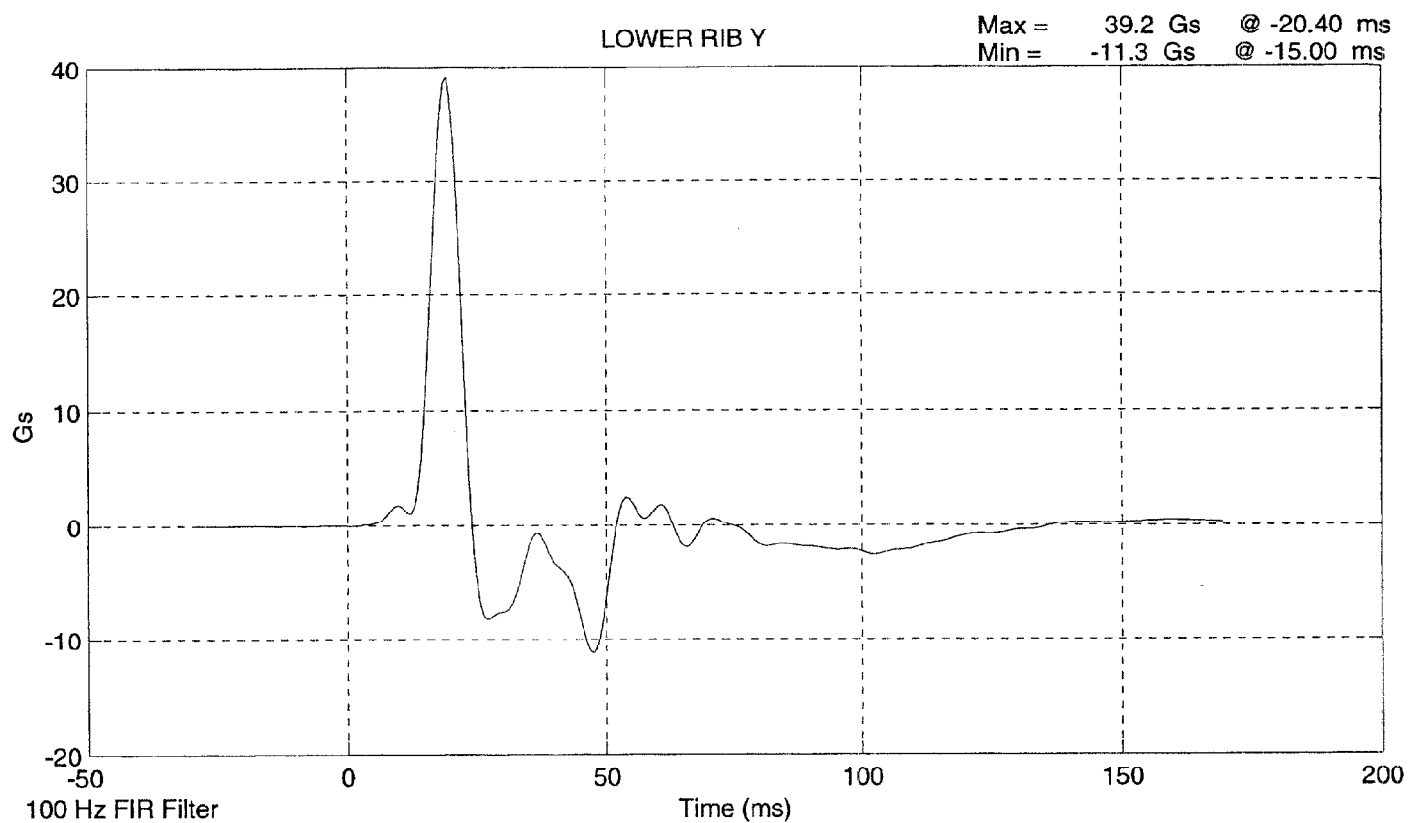
SID Serial No.: 016 Sequential Test Number: 2
Date: January 21, 2000 Laboratory Technician: B. Swiecicki

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
PRE-TEST**

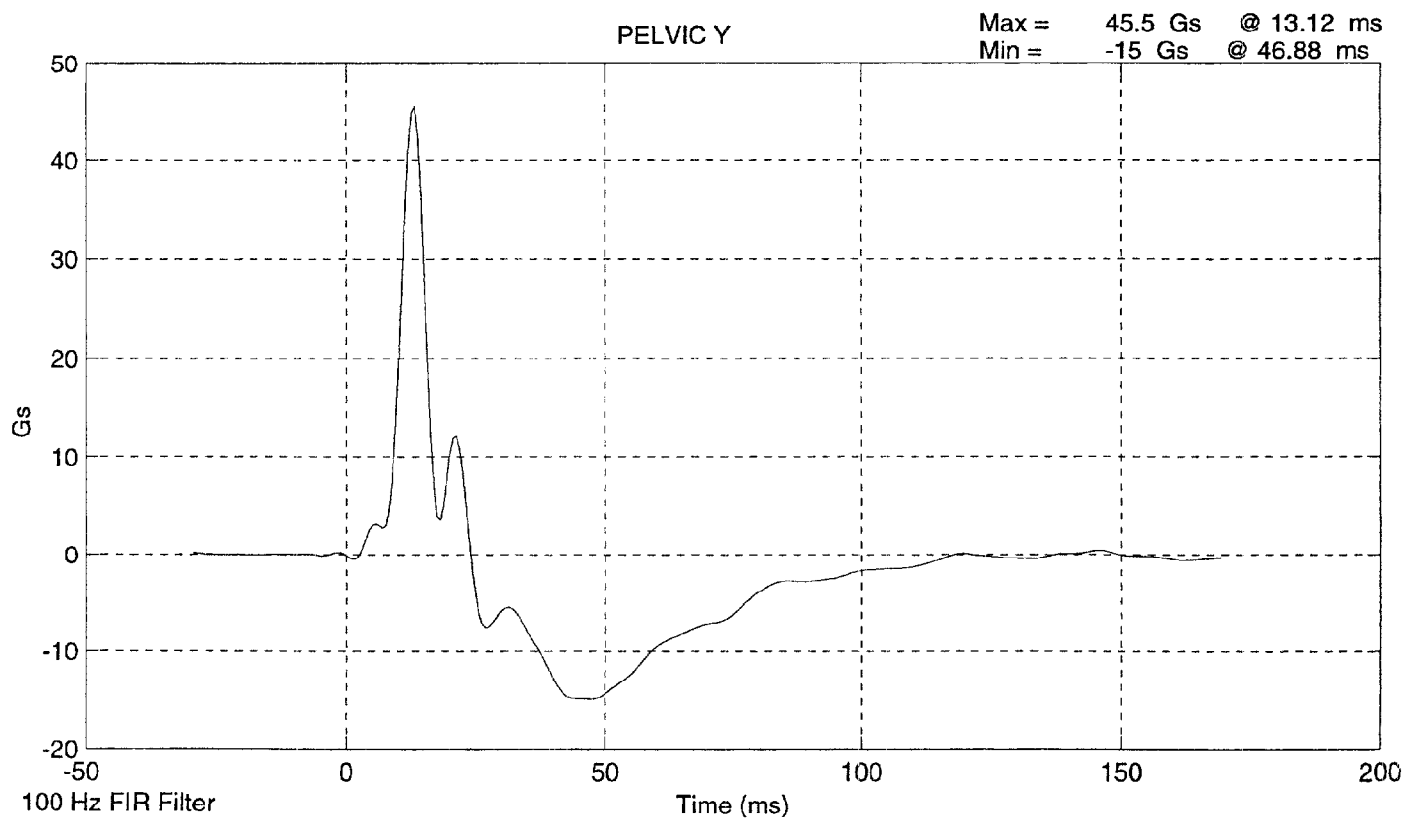
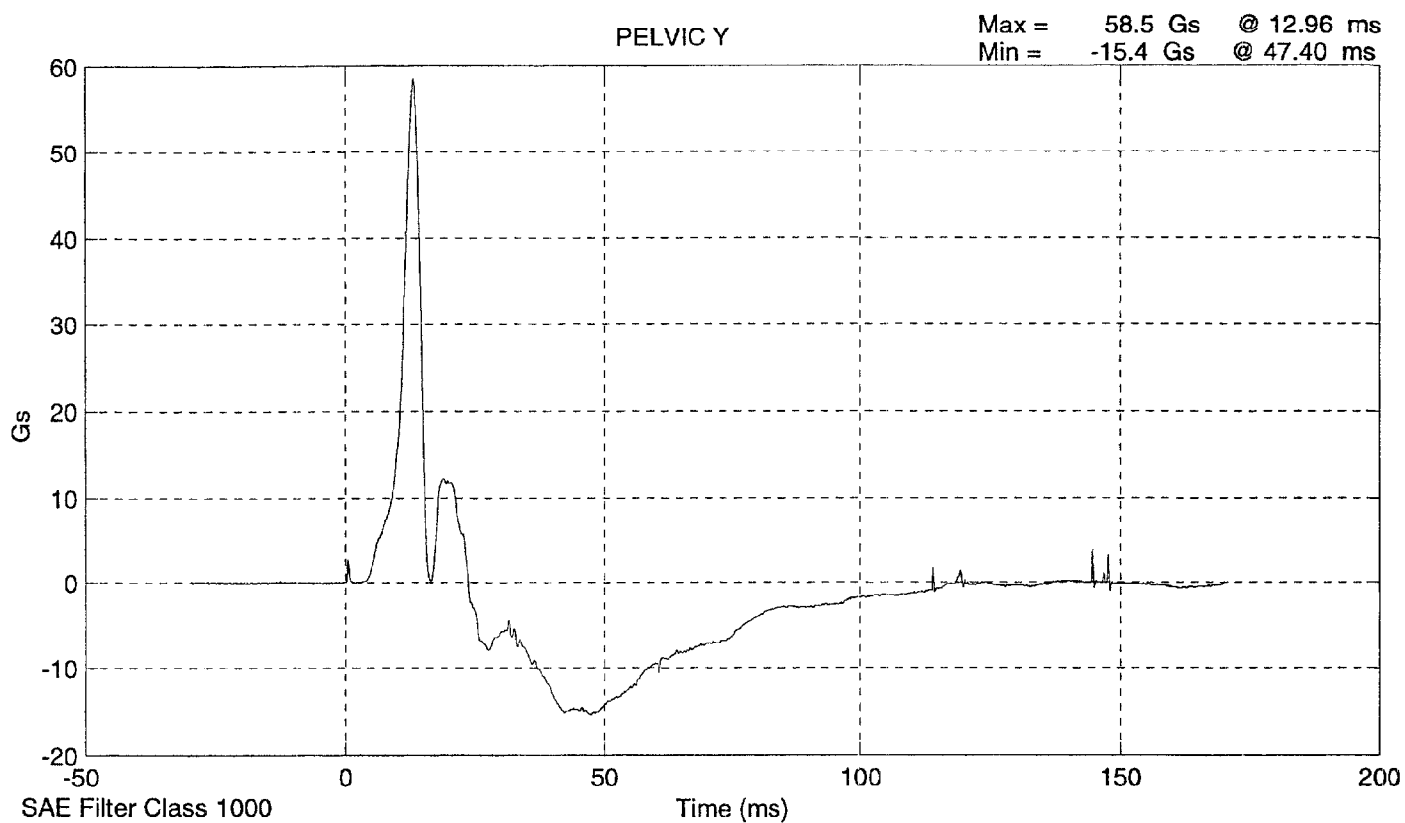
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 2
Date: January 21, 2000 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

SID 016 Pelvic Impact Test @ 4.2855 m/s



HEAD DROP TEST**PRE-TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACTSID Serial No.: 016

Sequential Test Number:

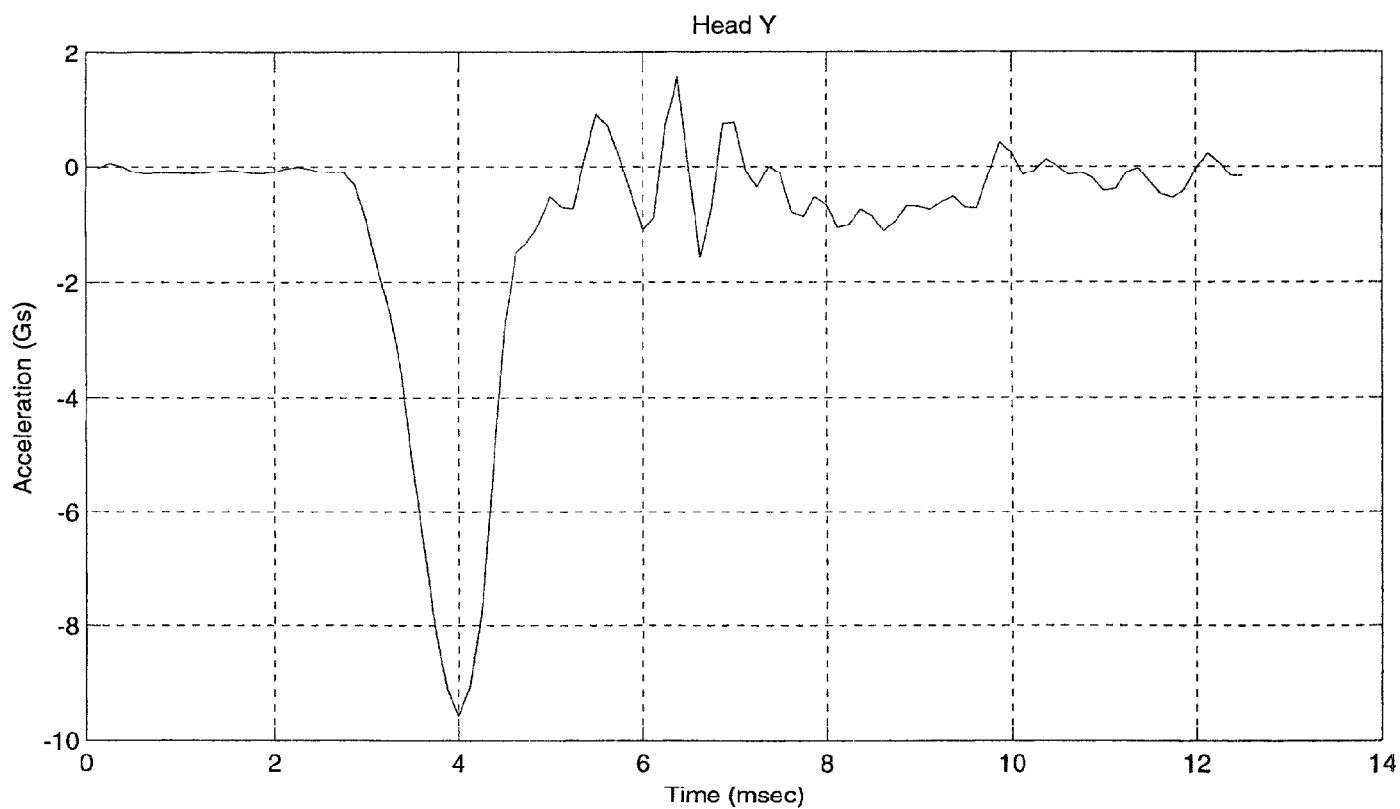
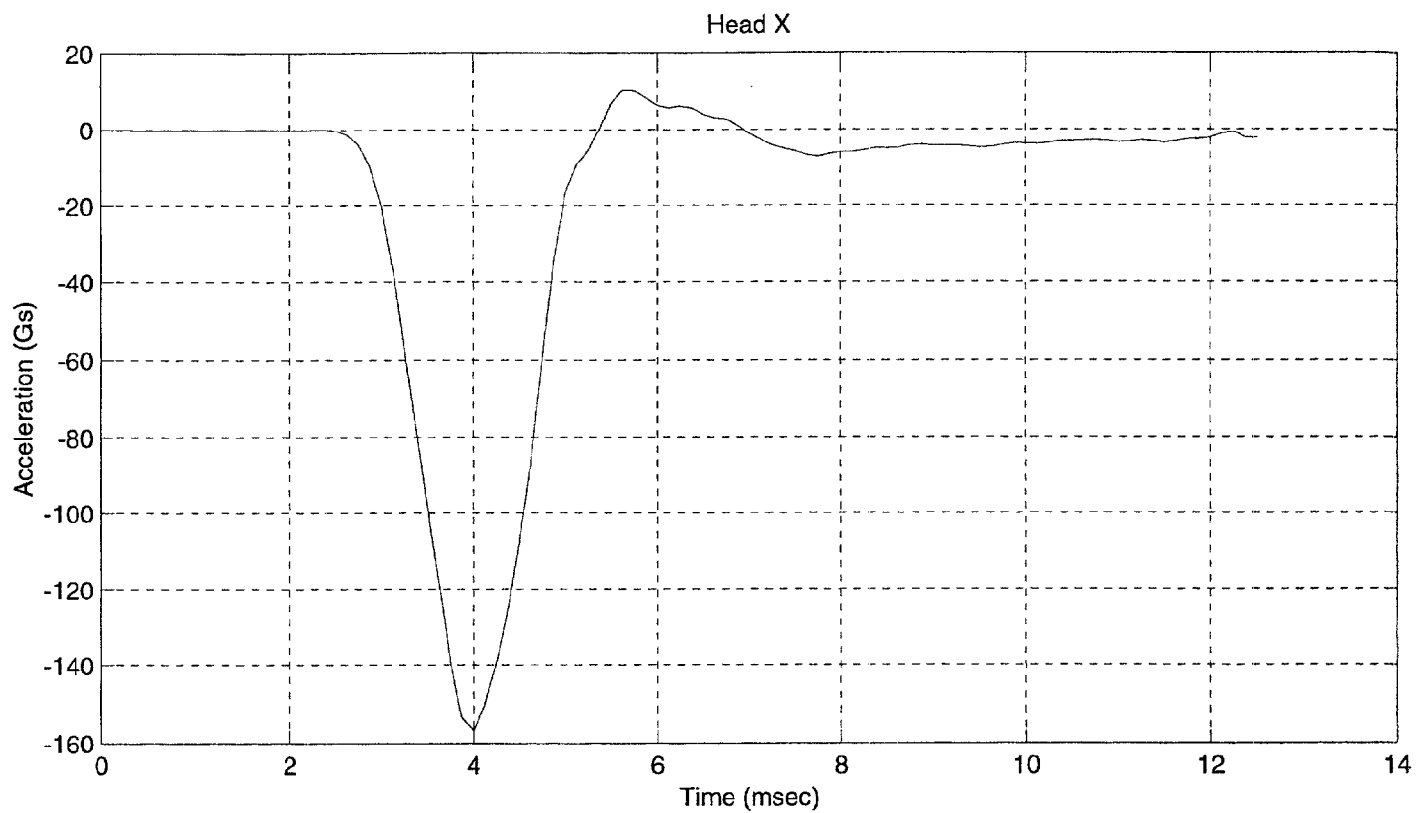
2Date: January 14, 2000

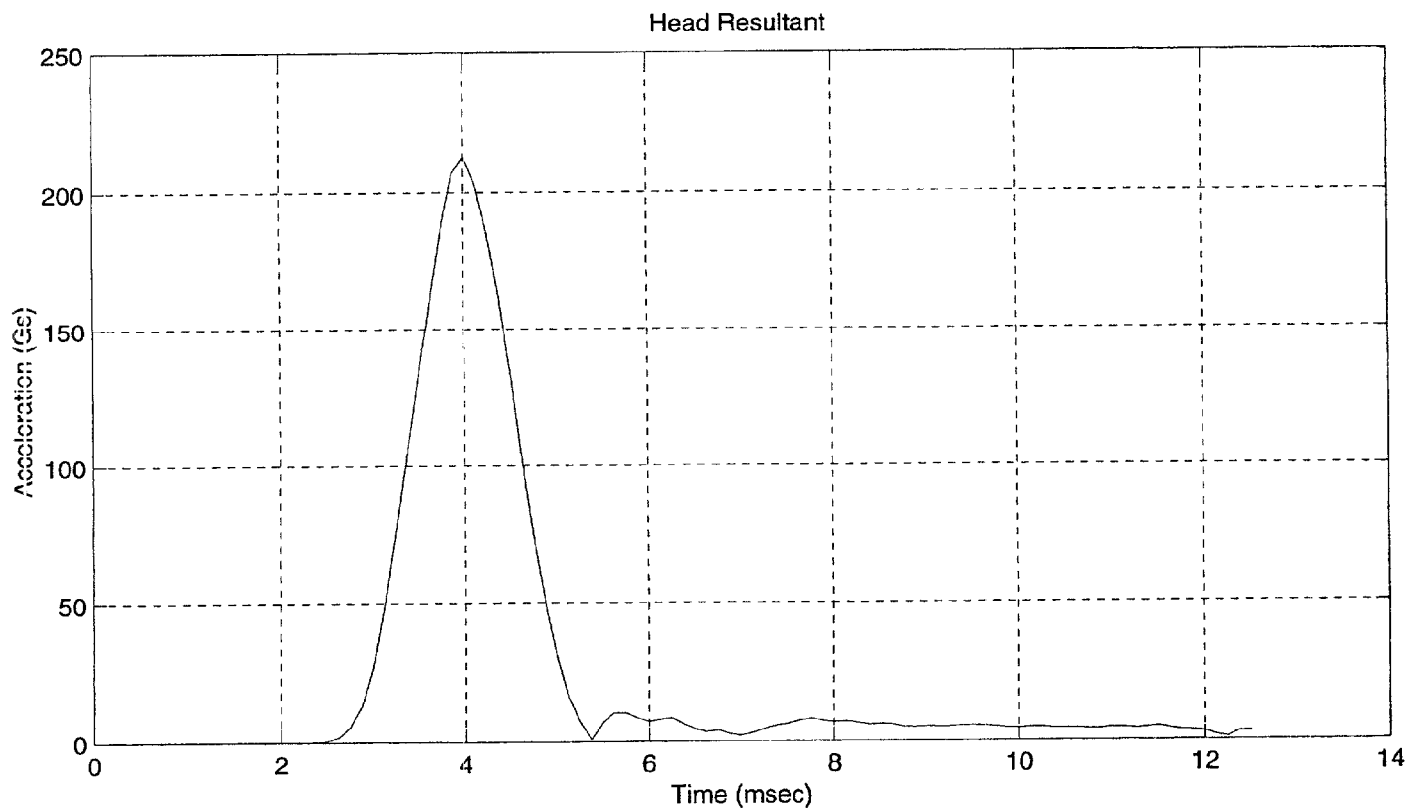
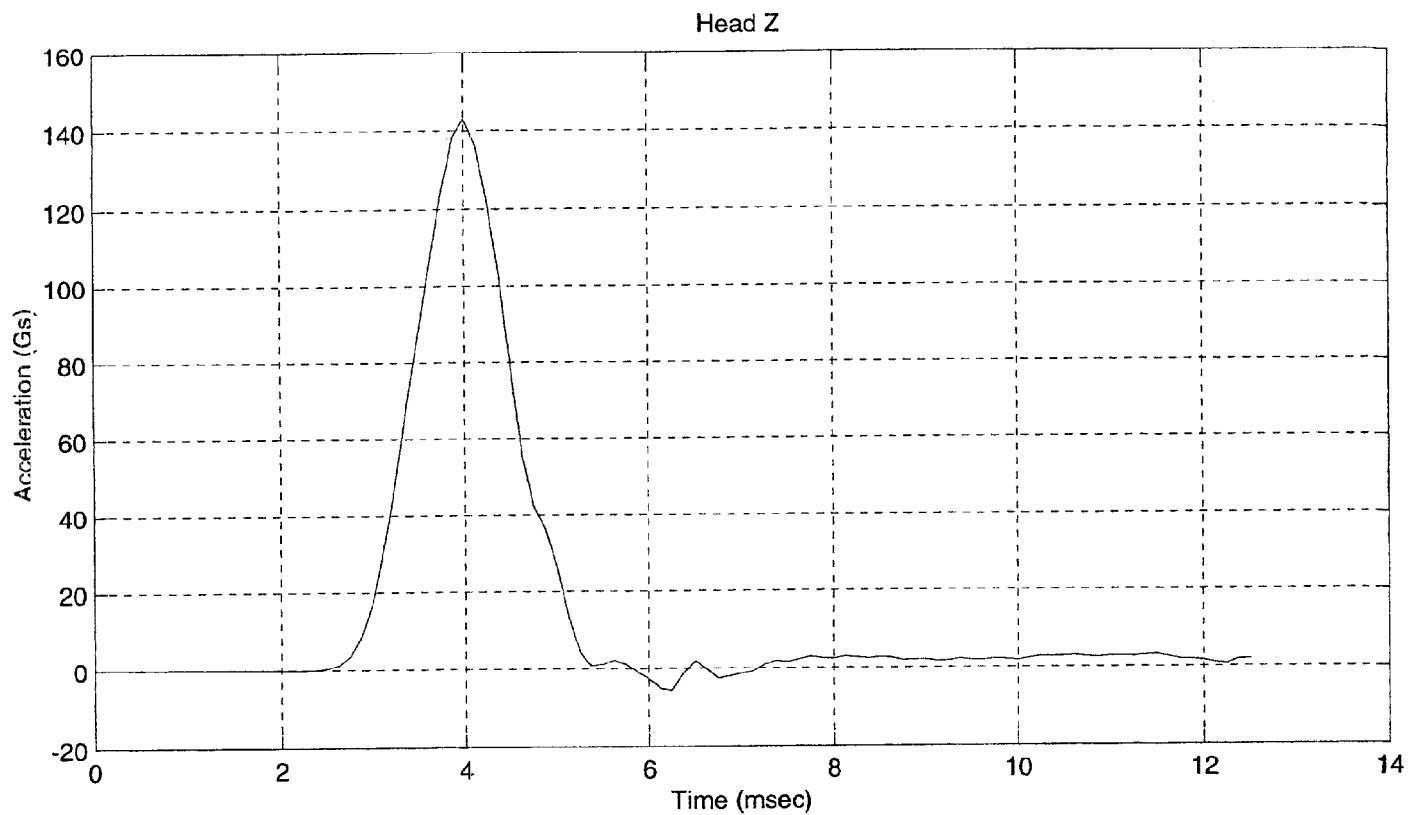
Laboratory Technician:

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	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





ABDOMINAL COMPRESSION TEST**PRE-TEST**

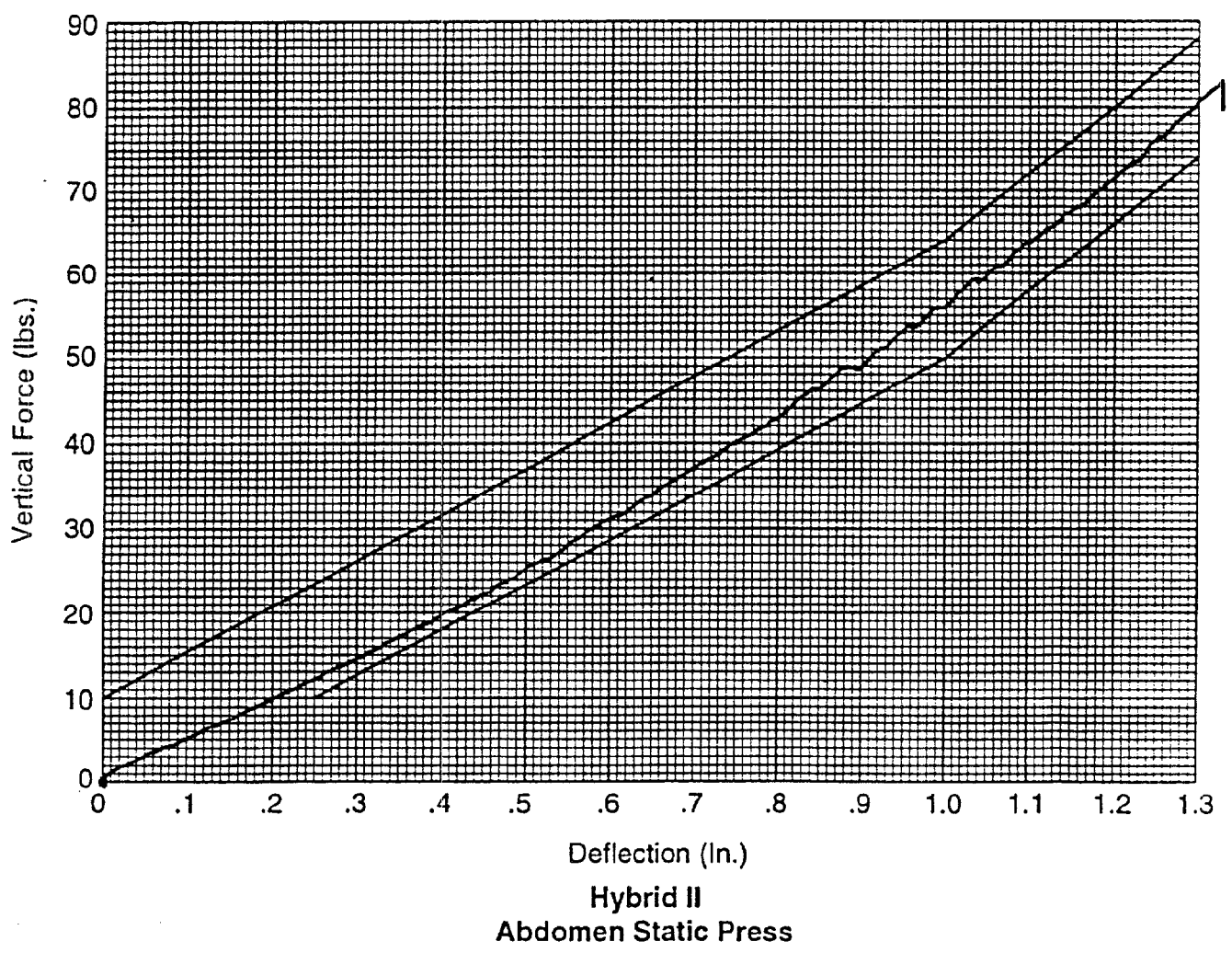
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACTSID Serial No.: 016Sequential Test Number: 2Date: January 21, 2000Laboratory 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
PRE-TEST
(Test not required for SID certification)

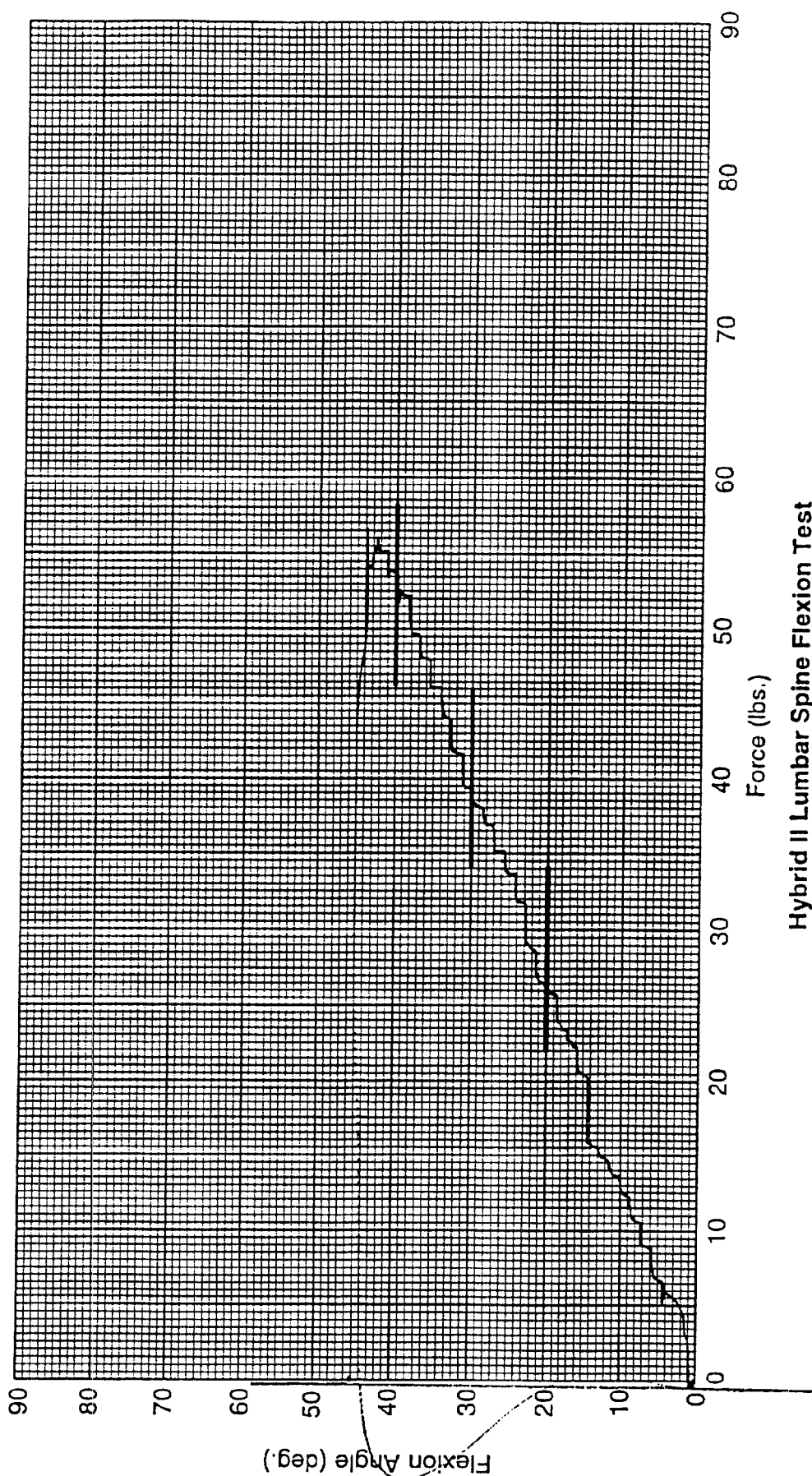
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 2
Date: January 21, 2000 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 BSB
 Temp. 70°
 Humidity 32%



Hybrid II Lumbar Spine Flexion Test

PRE-TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 2
Date: January 21, 2000 Laboratory Technician: B. Swiecicki

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

REMARKS: None

**CALIBRATION TEST RESULTS
POST TEST**

SID NO.: 015

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: February 1, 2000 Laboratory Technician: B. Swiecicki

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

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: February 1, 2000 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

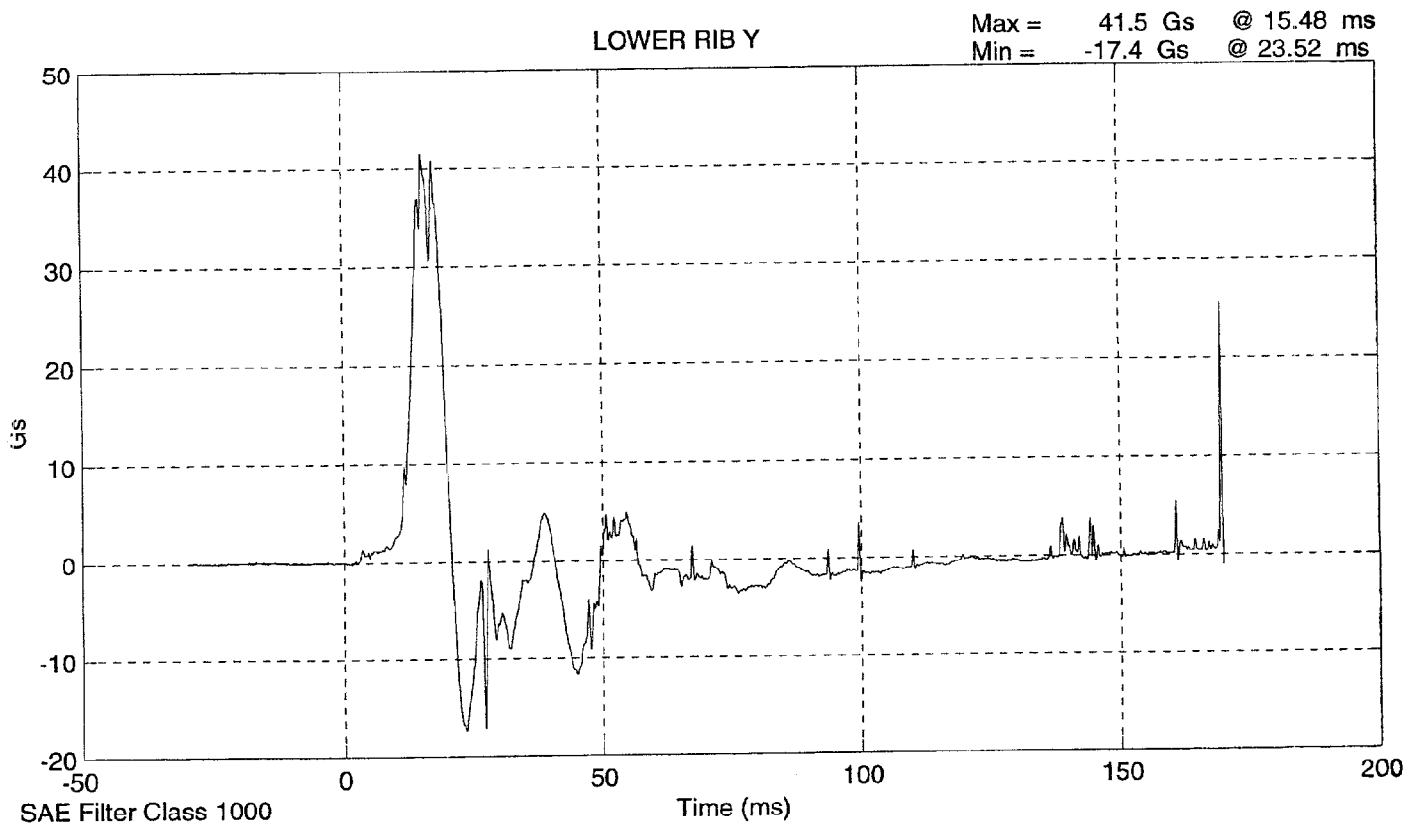
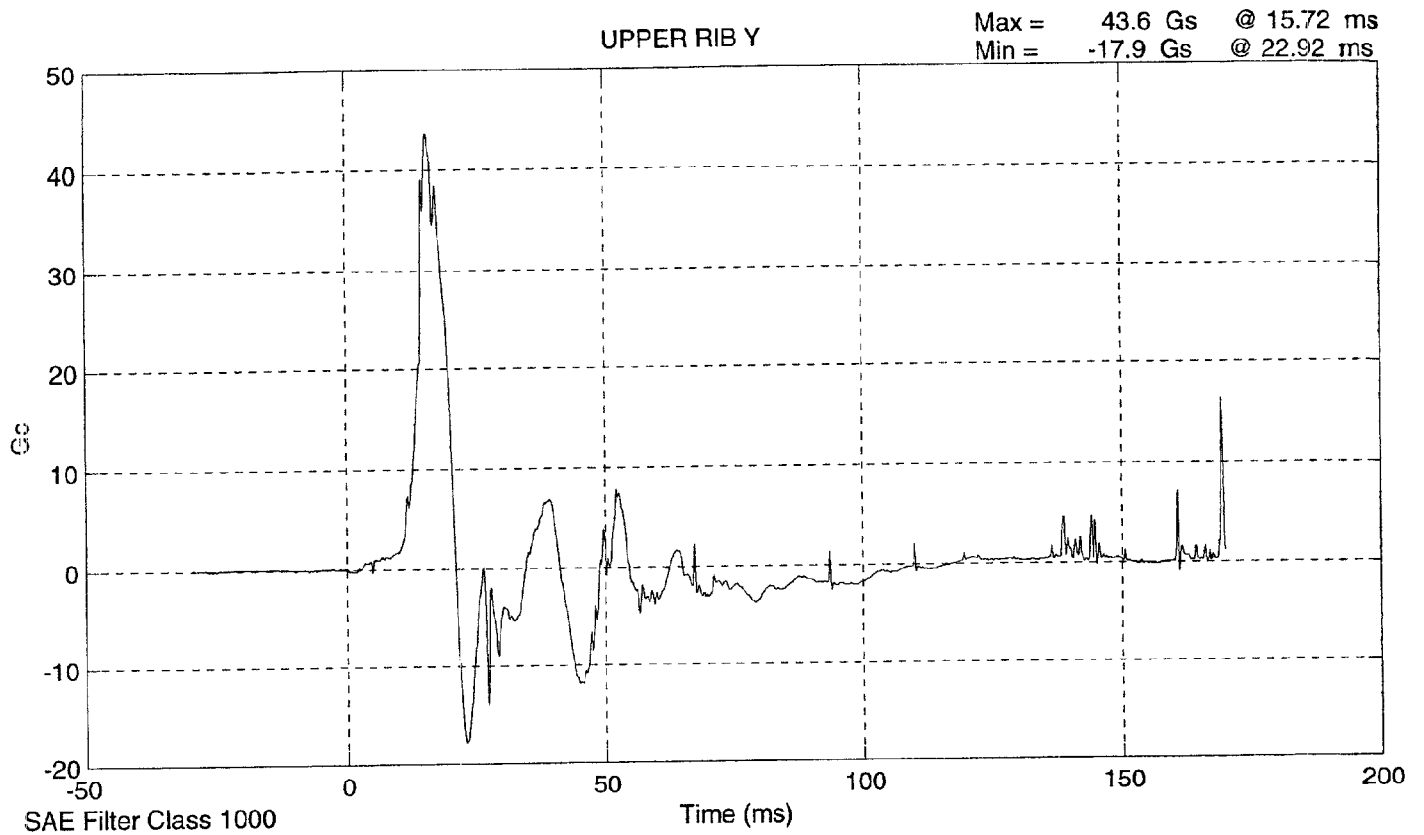
**LATERAL THORAX IMPACT TEST
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

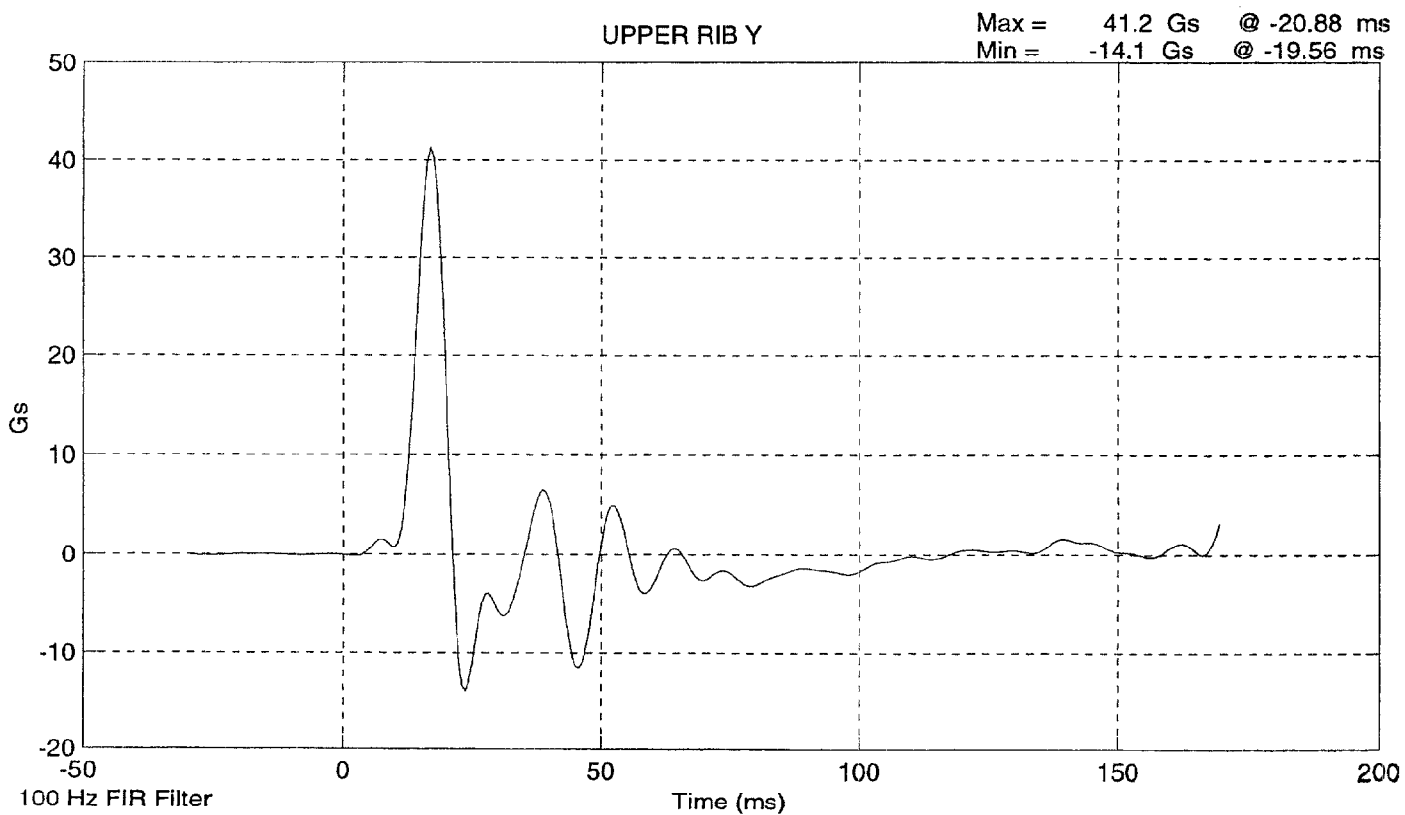
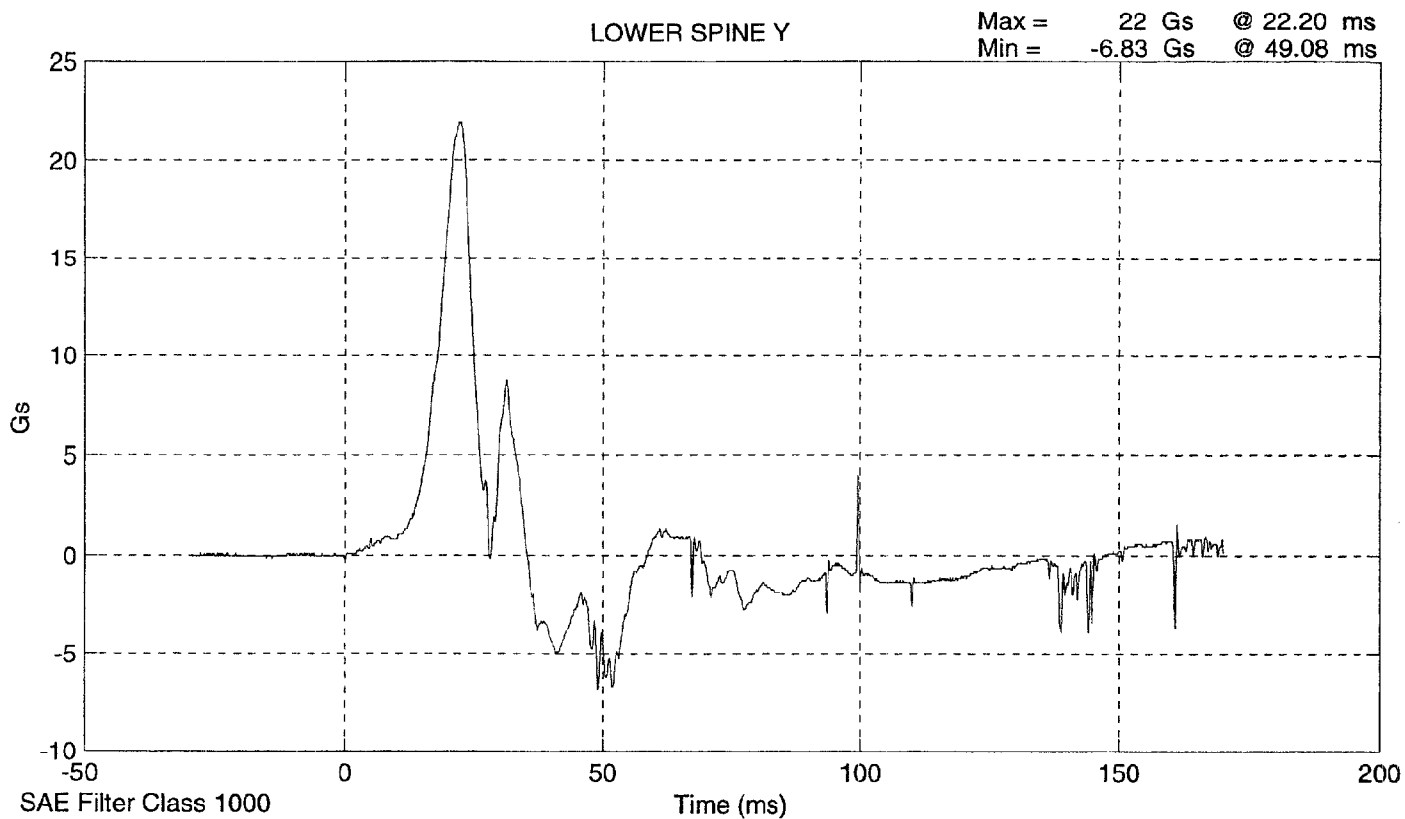
SID Serial No.: 015 Sequential Test Number: 1
Date: February 1, 2000 Laboratory Technician: B. Swiecicki

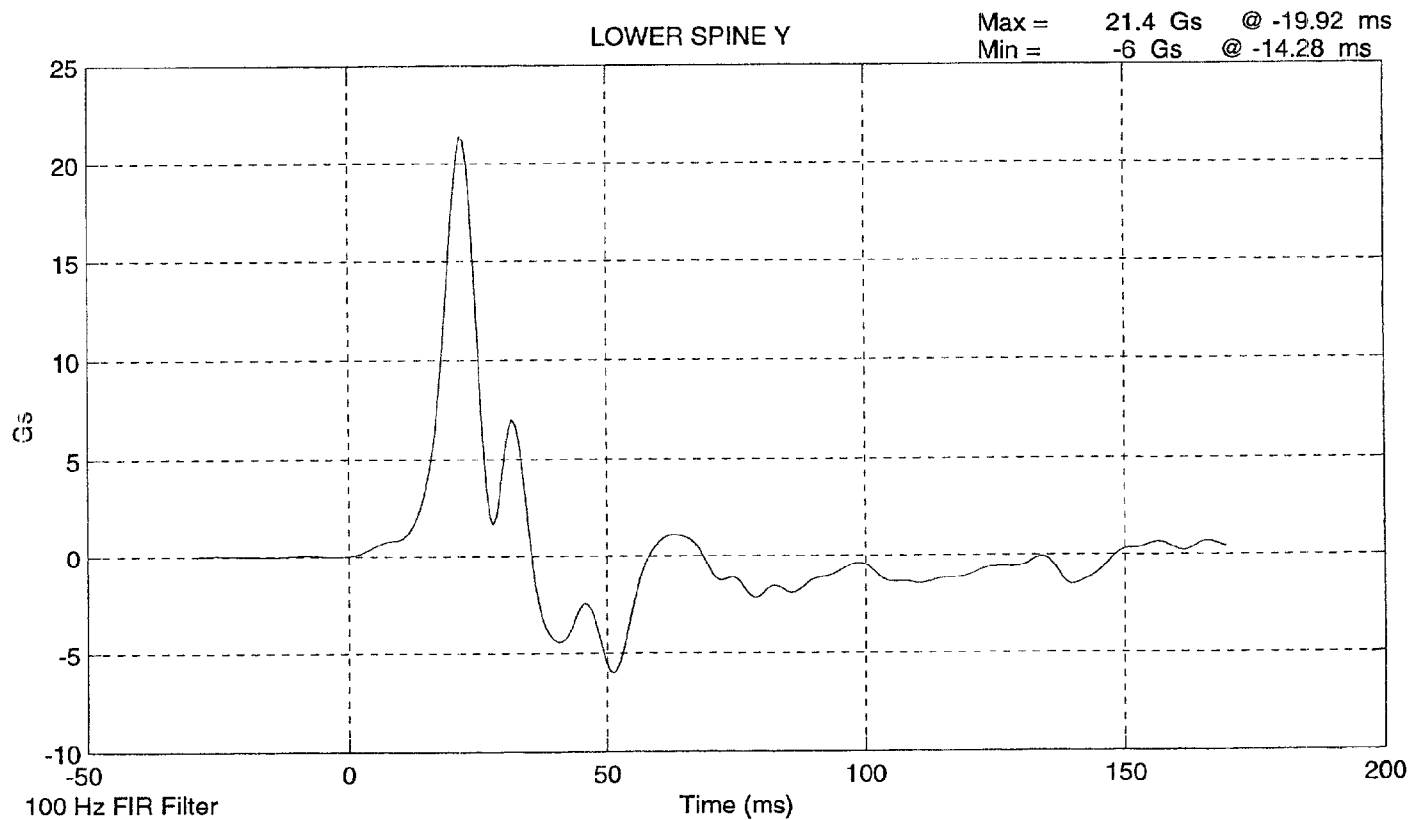
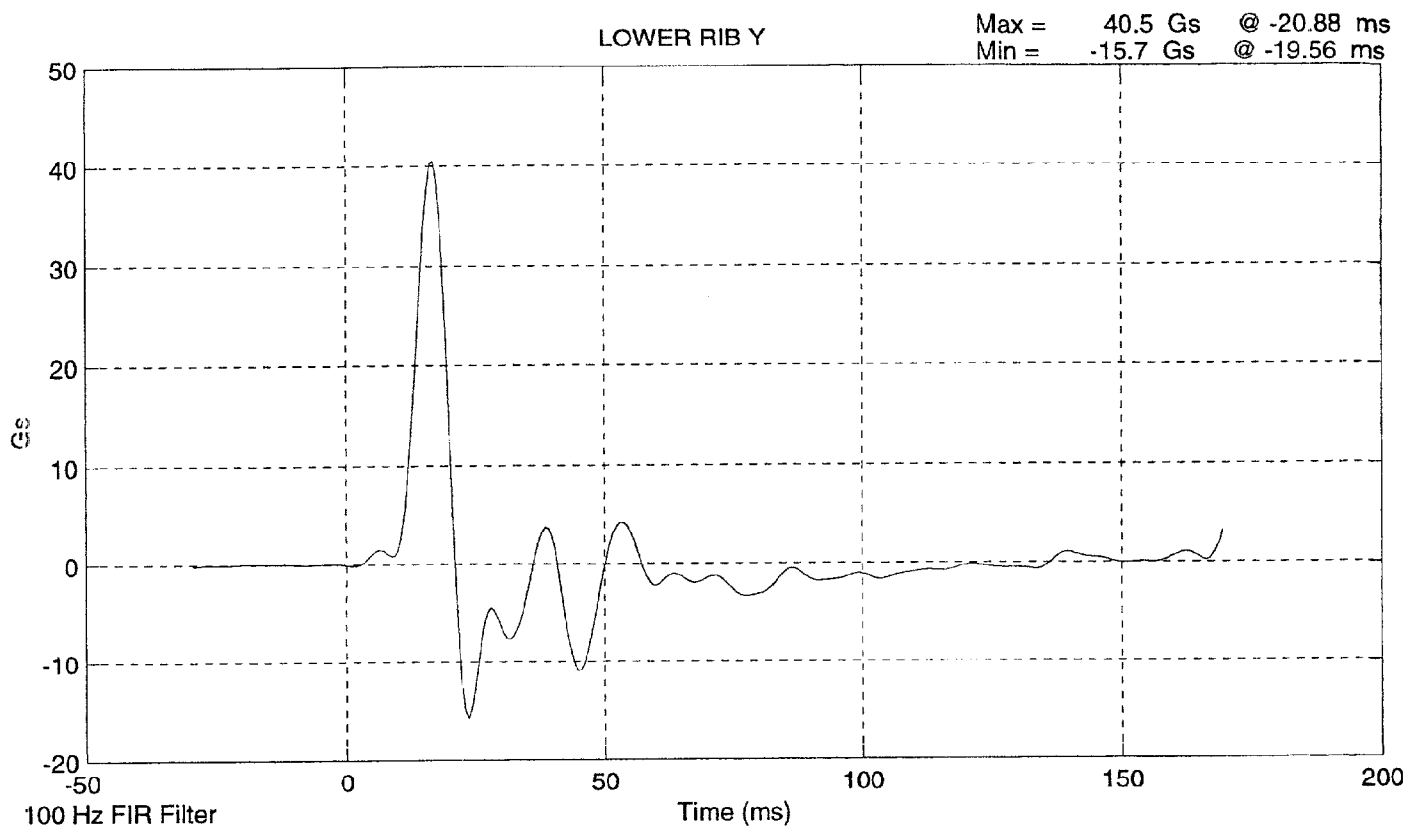
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
PROBE SPEED (m/s)	4.27 - 4.33	4.32
UPPER RIB (g's)	37 - 46	41.2
LOWER RIB (g's)	37 - 46	40.5
LOWER SPINE (g's)	15 - 22	21.4

REMARKS: None



SID 015 Thorax Impact Test @ 4.316 m/s





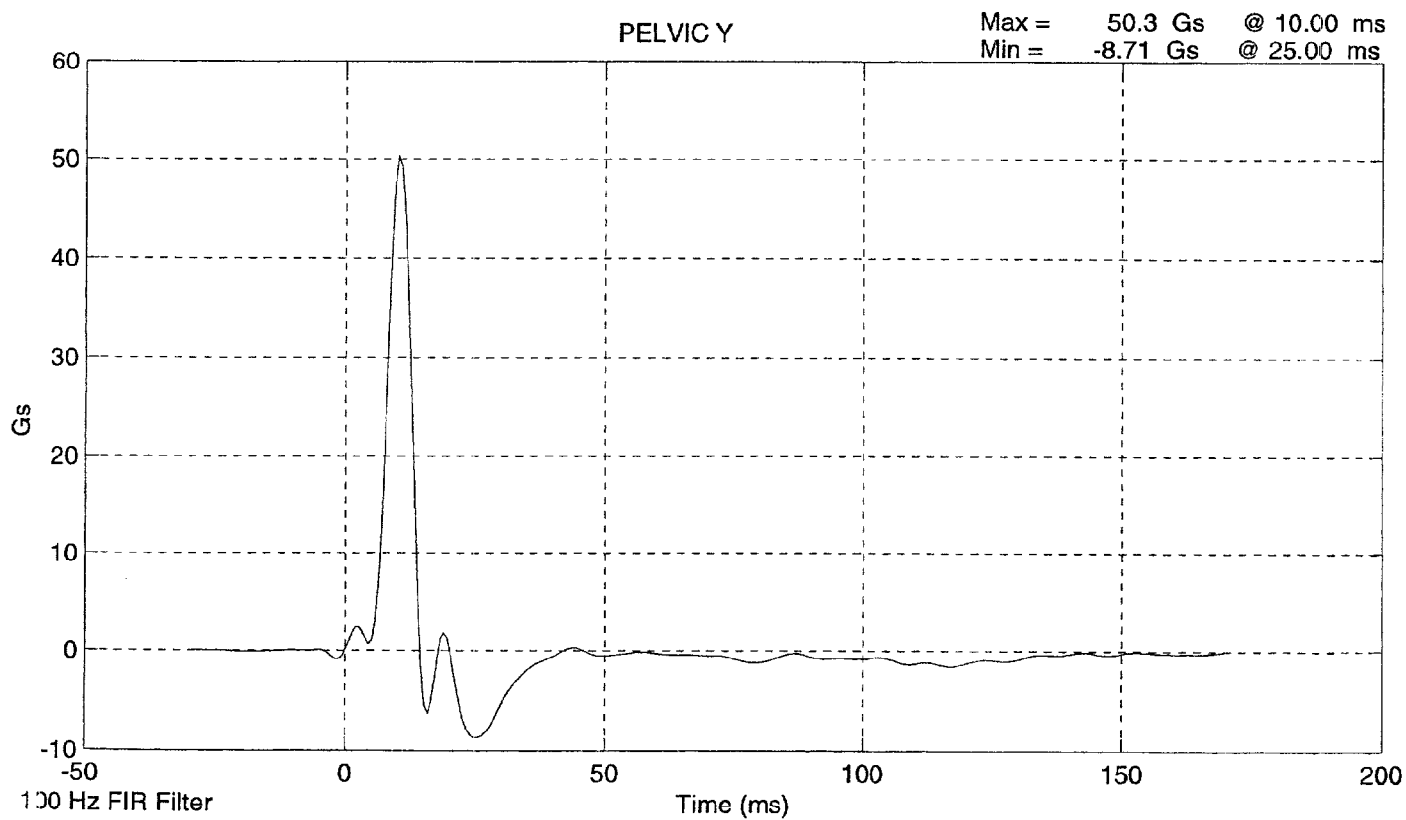
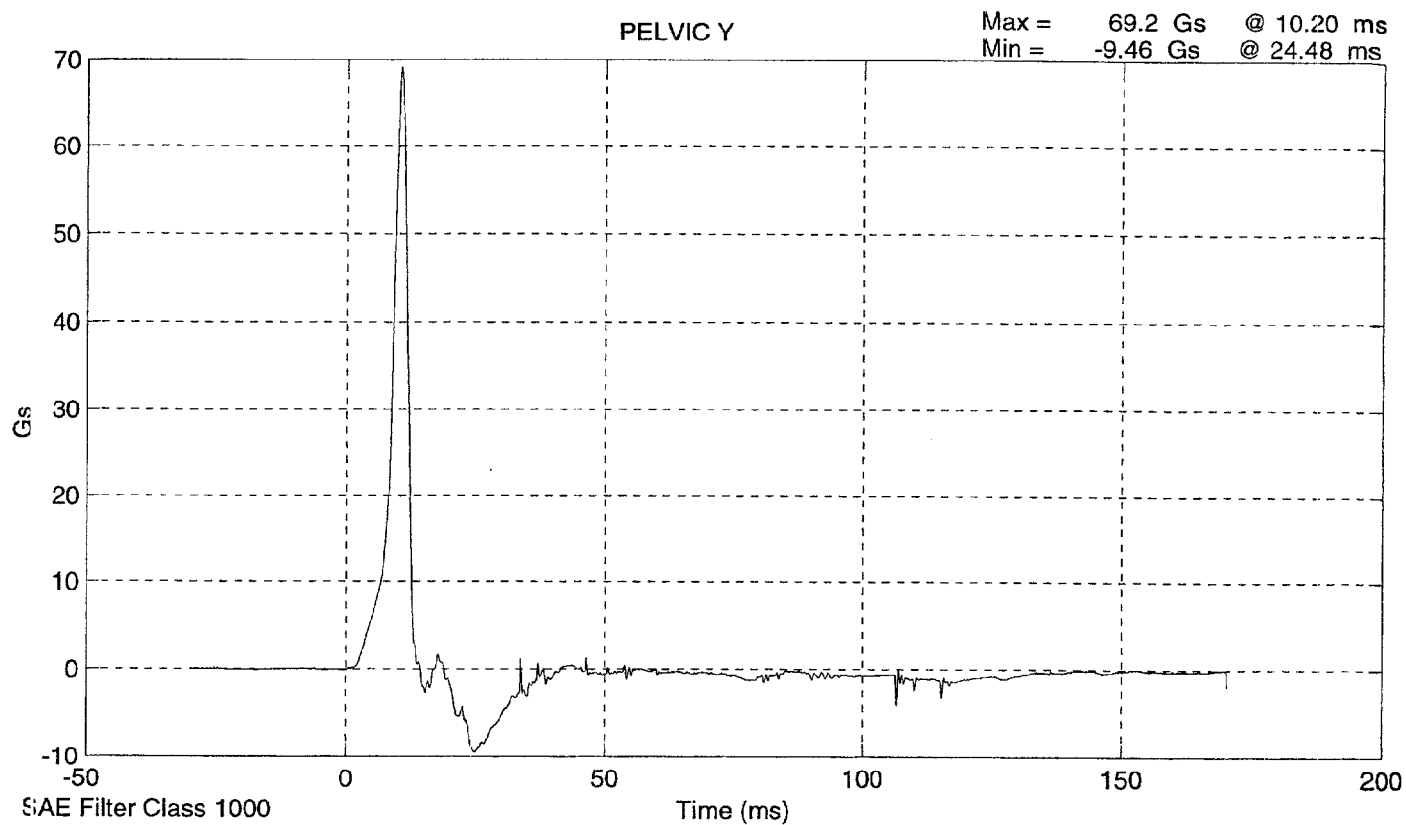
**LATERAL PELVIS IMPACT TEST
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: February 1, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
PROBE SPEED (m/s)	4.27 - 4.33	4.29
PELVIS ACCELERATION (g's)	40 - 60	53.3

REMARKS: None



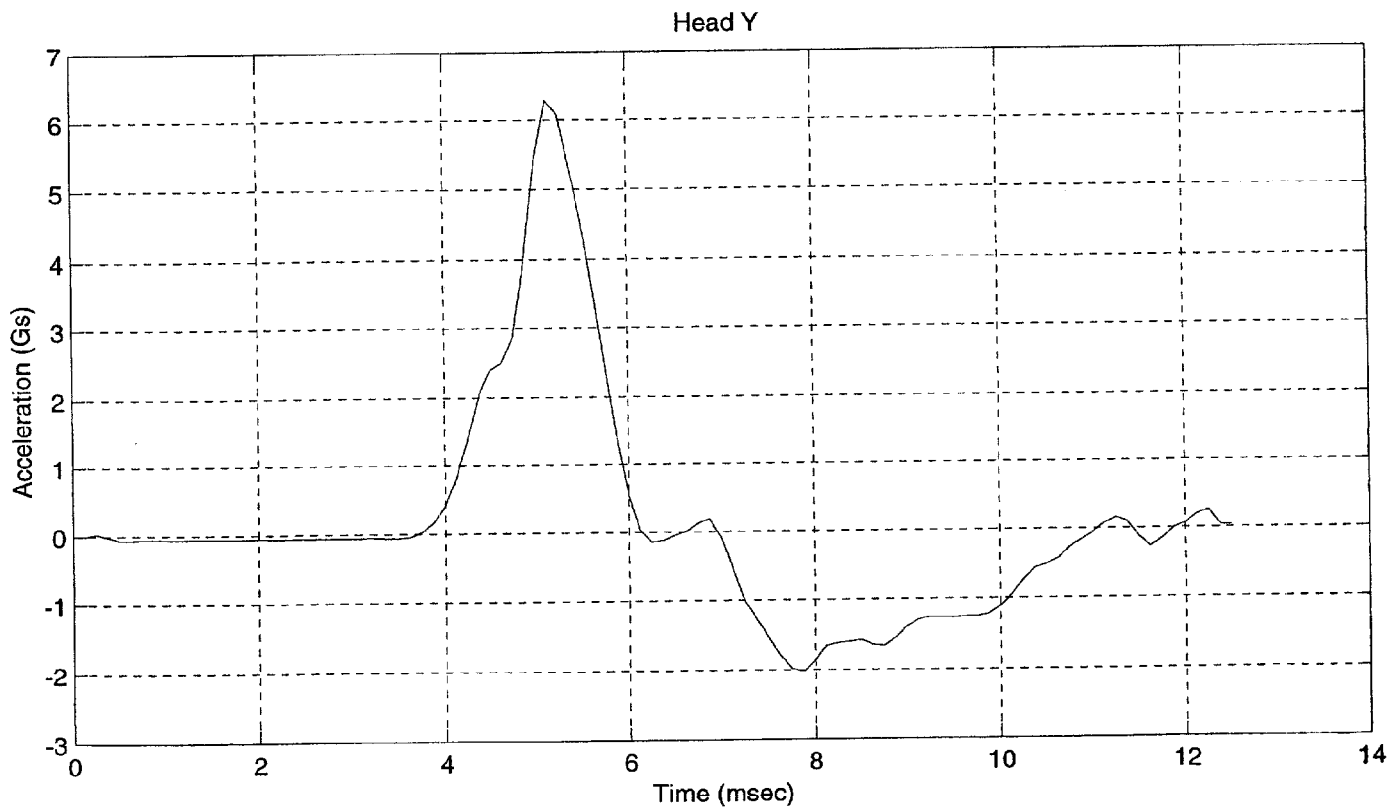
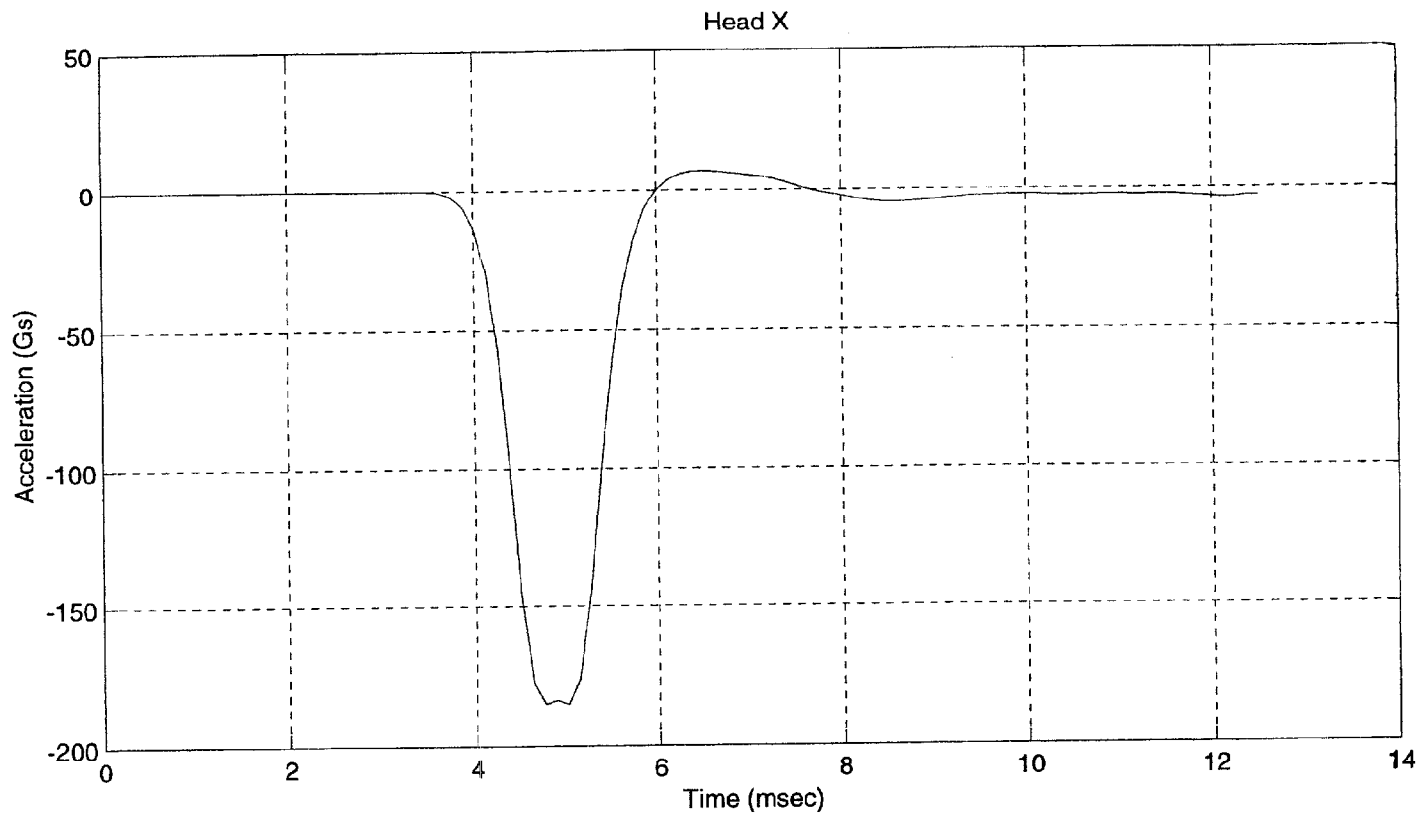
HEAD DROP TEST
POST-TEST
(Test not required for SID certification)

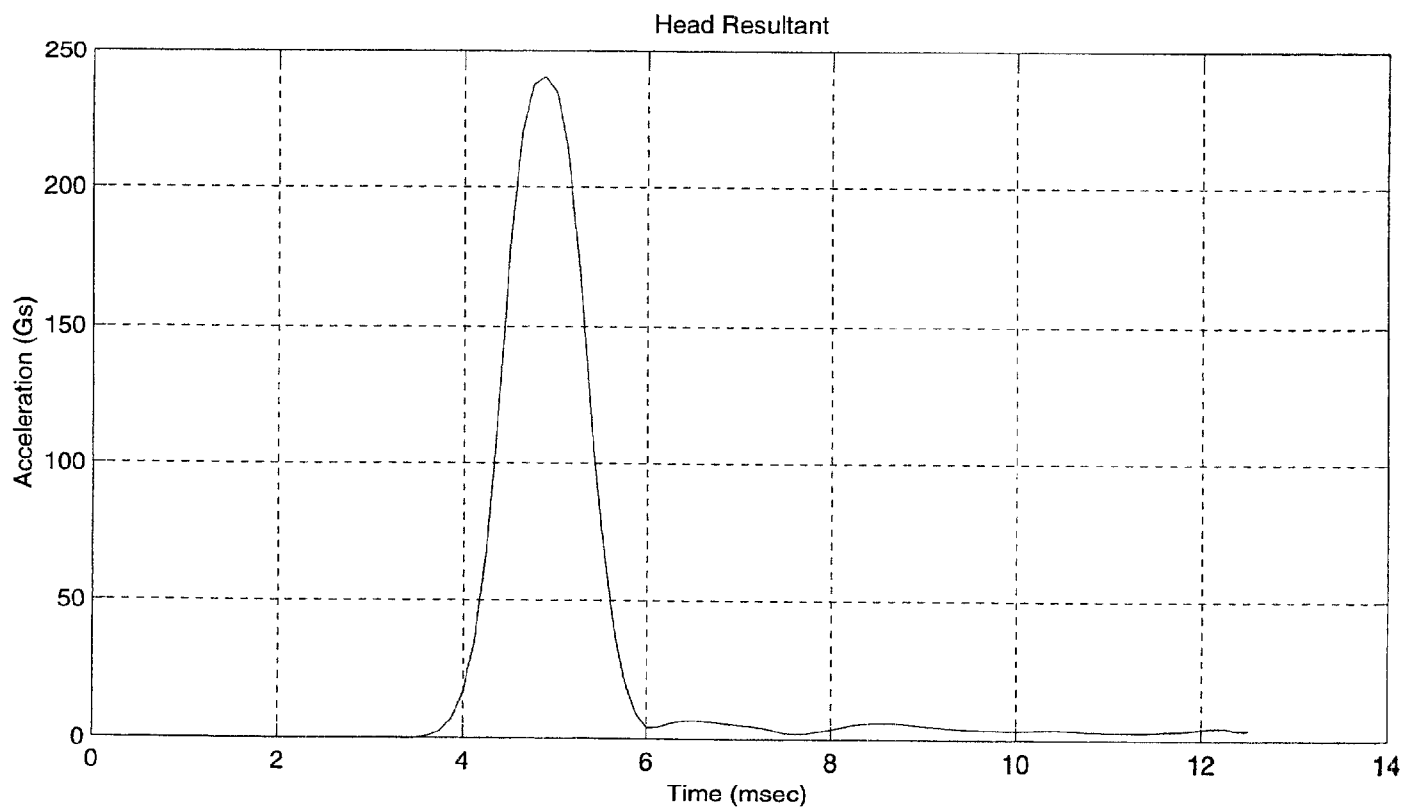
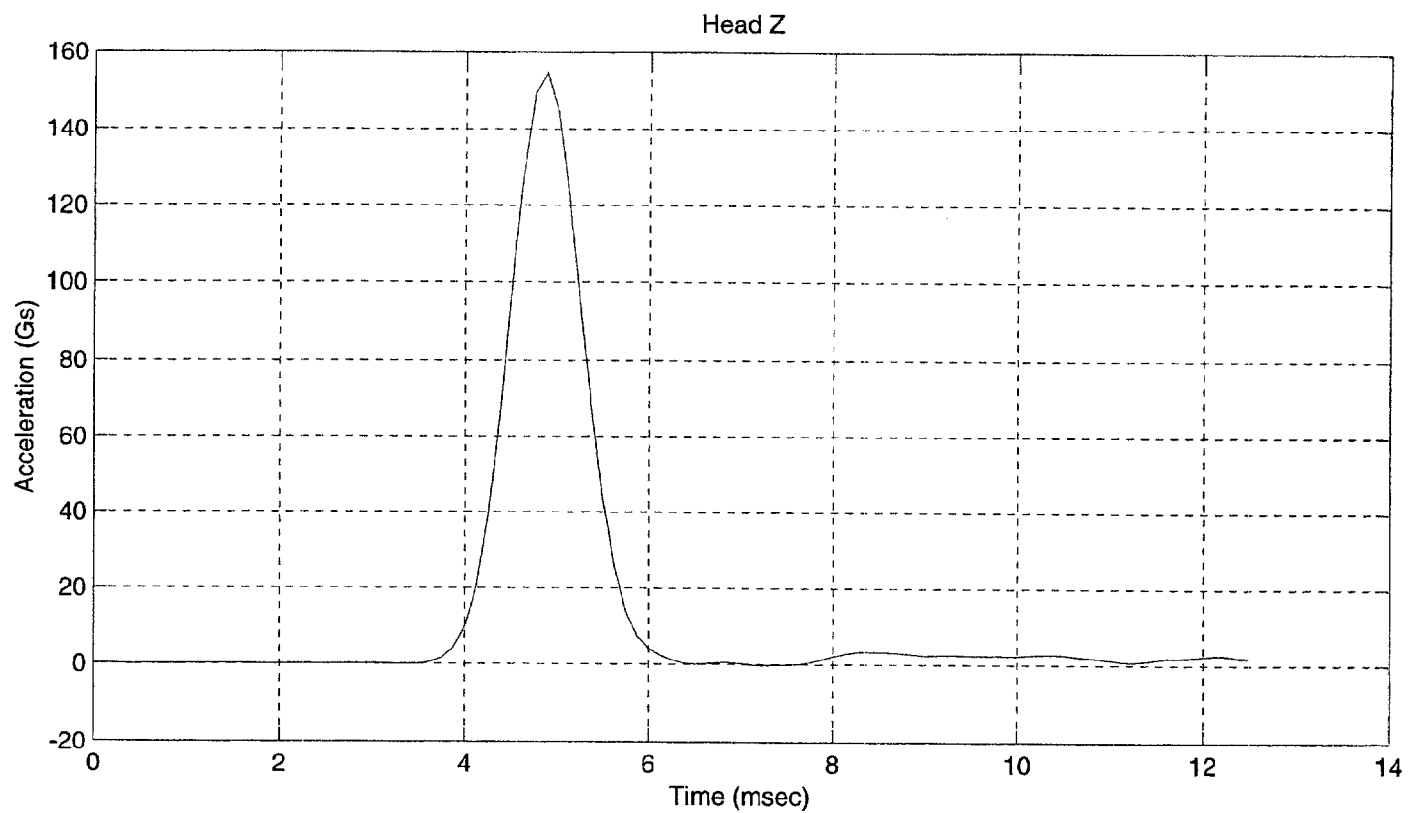
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 2
Date: February 1, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	240.27
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	6.28
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.00

REMARKS: None





**ABDOMINAL COMPRESSION TEST
POST TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: February 1, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	30
FORCE @ 13 mm (N)	104 - 162	120.1
FORCE @ 19 mm (N)	163 - 221	182.3
FORCE @ 25 mm (N)	222 - 280	253.6
FORCE @ 33 mm (N)	325 - 391	355.9

REMARKS: None

Dummy S/N 015

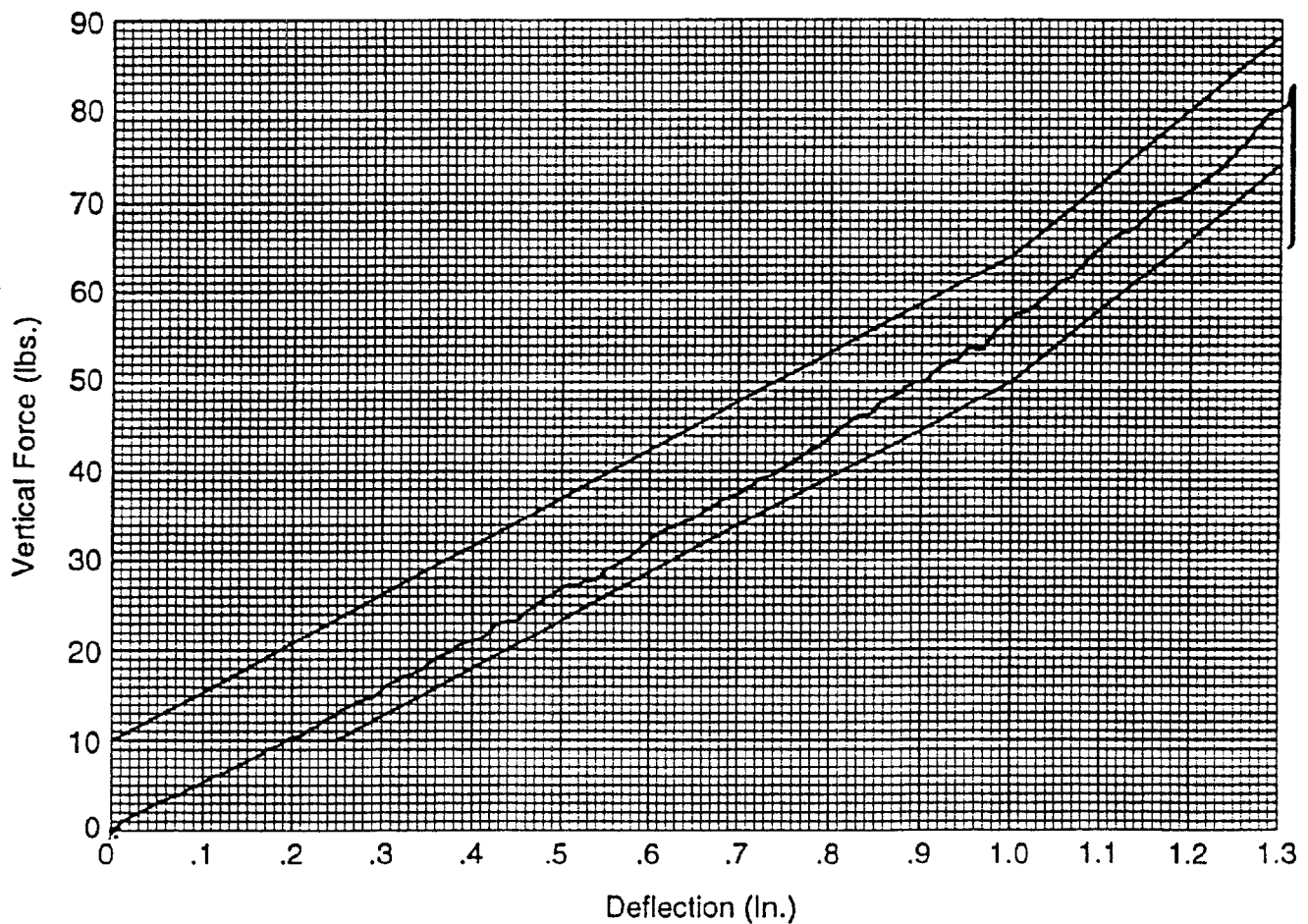
W/A _____

Date 2-1-2000

Performed By BS

Temp. 71

Humidity 30



Hybrid II
Abdomen Static Press

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

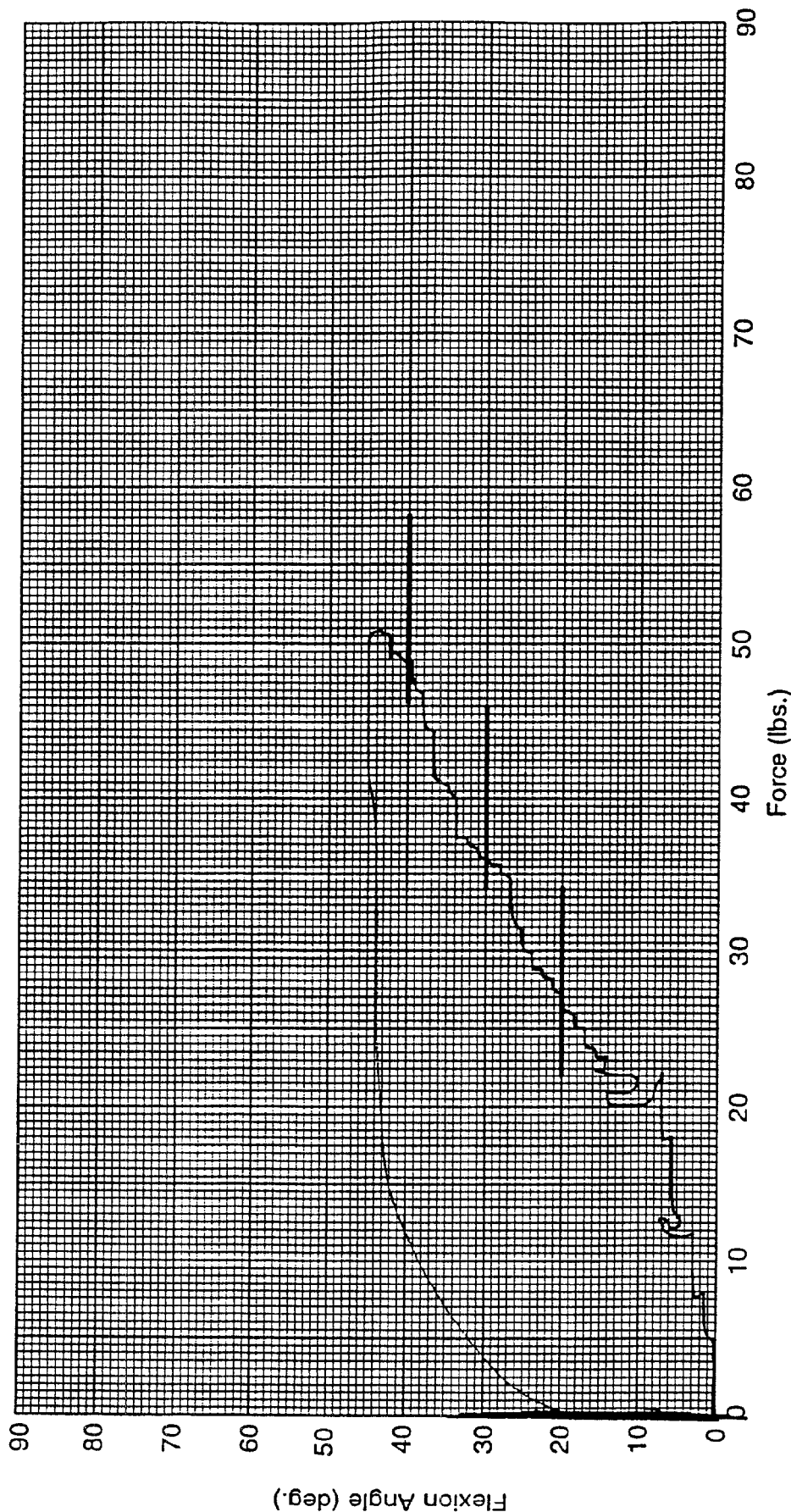
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: February 1, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	30
FORCE @ 0° (N)	0 - 26.7	0
FORCE @ 20° (N)	97.8 - 151.2	117.9
FORCE @ 30° (N)	151.2 - 204.6	160.1
FORCE @ 40° (N)	204.6 - 258	218.0
RETURN ANGLE	12° max.	7°

REMARKS: None

Dummy S/N 015
 W/A _____
 Date 2-1-2000
 Performed By BS
 Temp. 70
 Humidity 30



Hybrid II Lumbar Spine Flexion Test

POST TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: February 1, 2000 Laboratory Technician: B. Swiecicki

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

REMARKS: None

**CALIBRATION TEST RESULTS
POST TEST**

SID NO.: 016

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
Date: February 1, 2000 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 Sequential Test Number: 1
Date: February 1, 2000 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

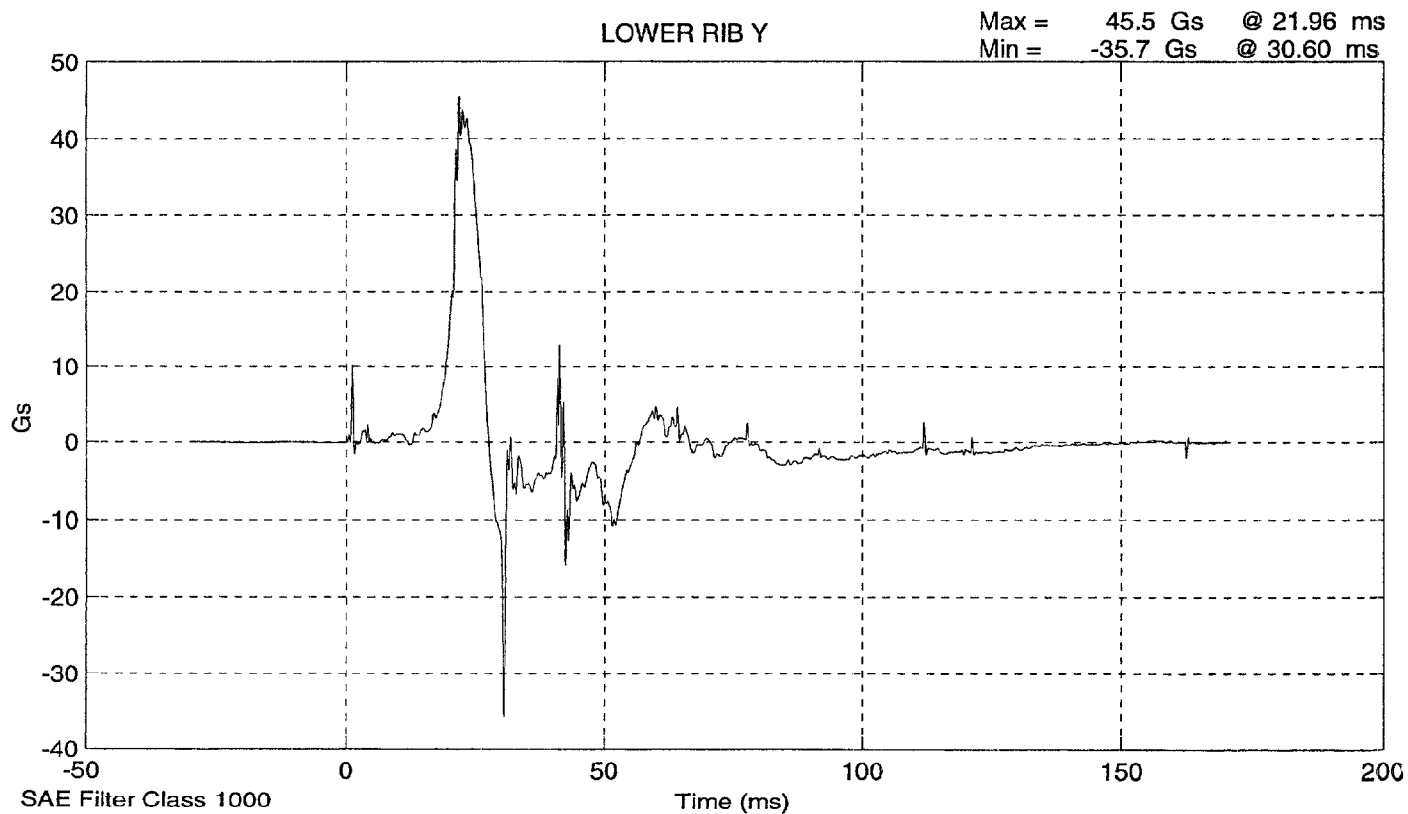
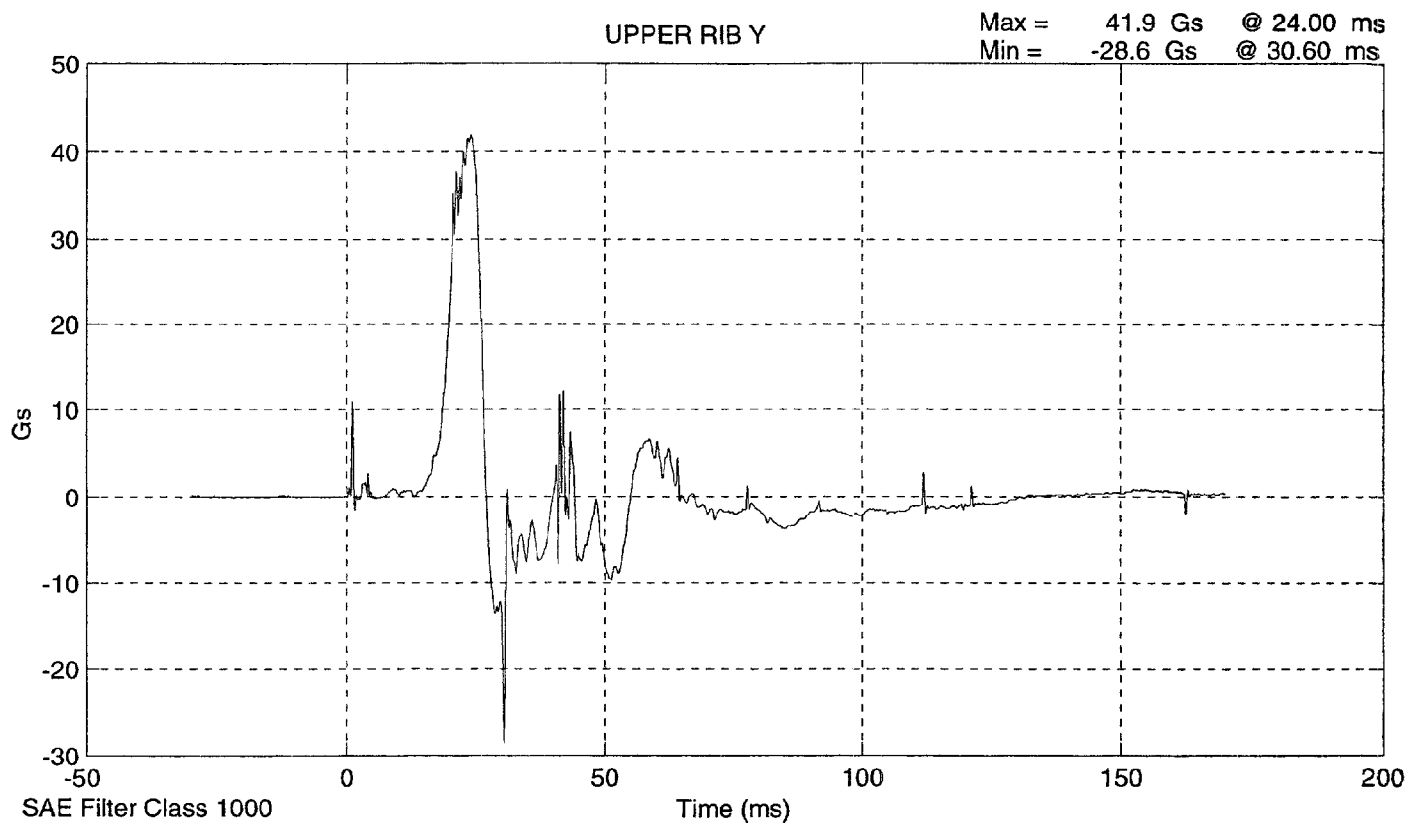
**LATERAL THORAX IMPACT TEST
POST TEST**

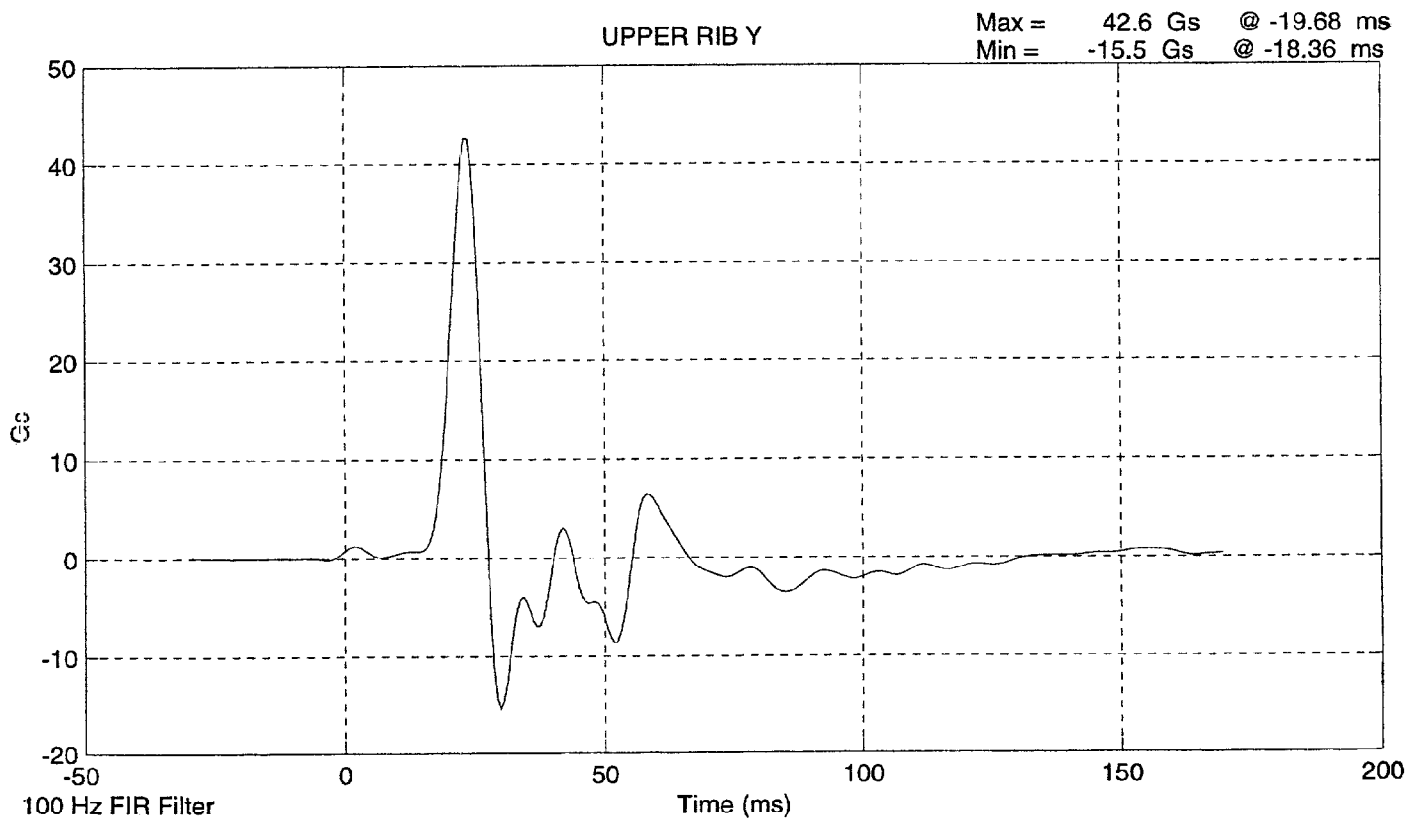
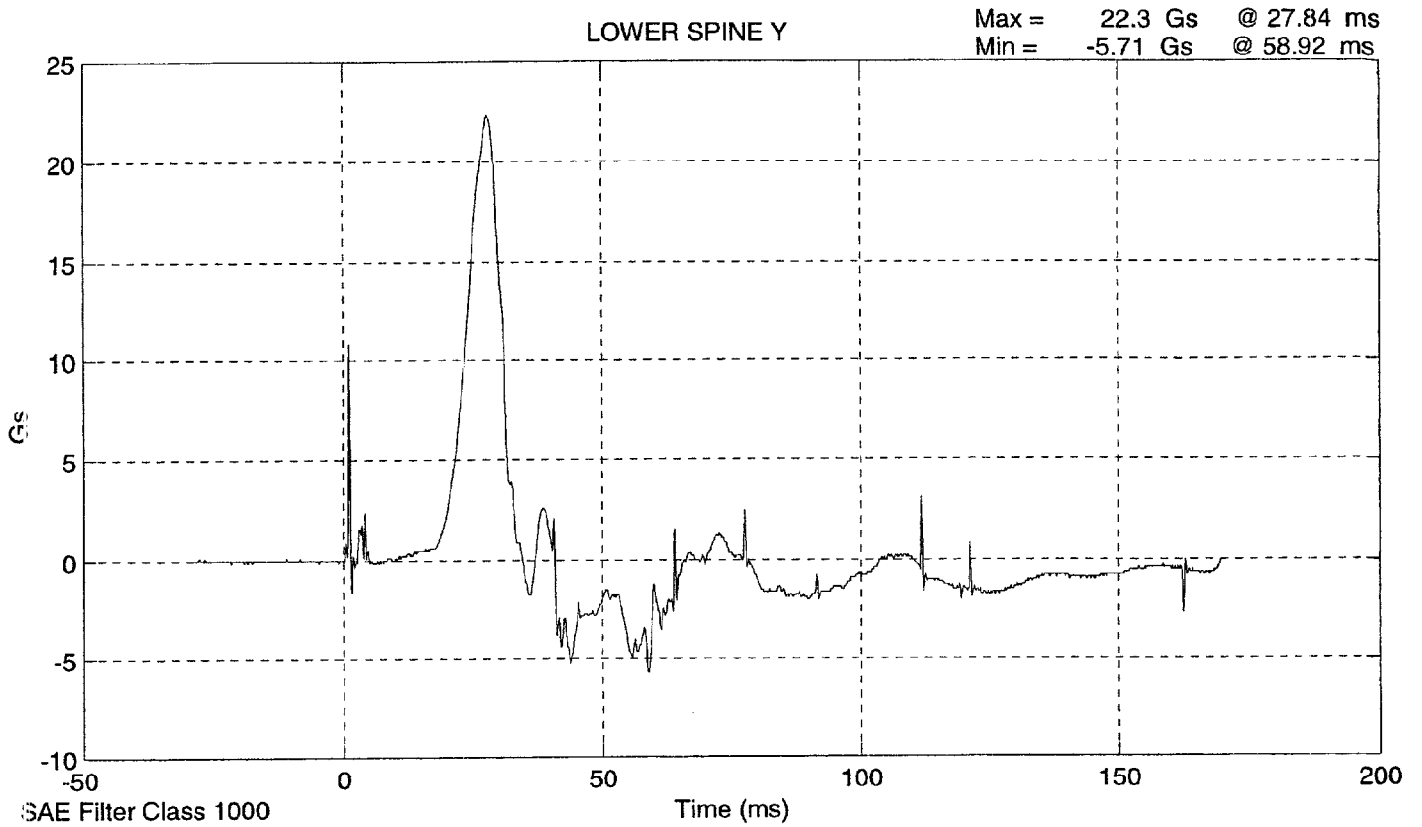
CONFIGURED FOR LEFT SIDE IMPACT

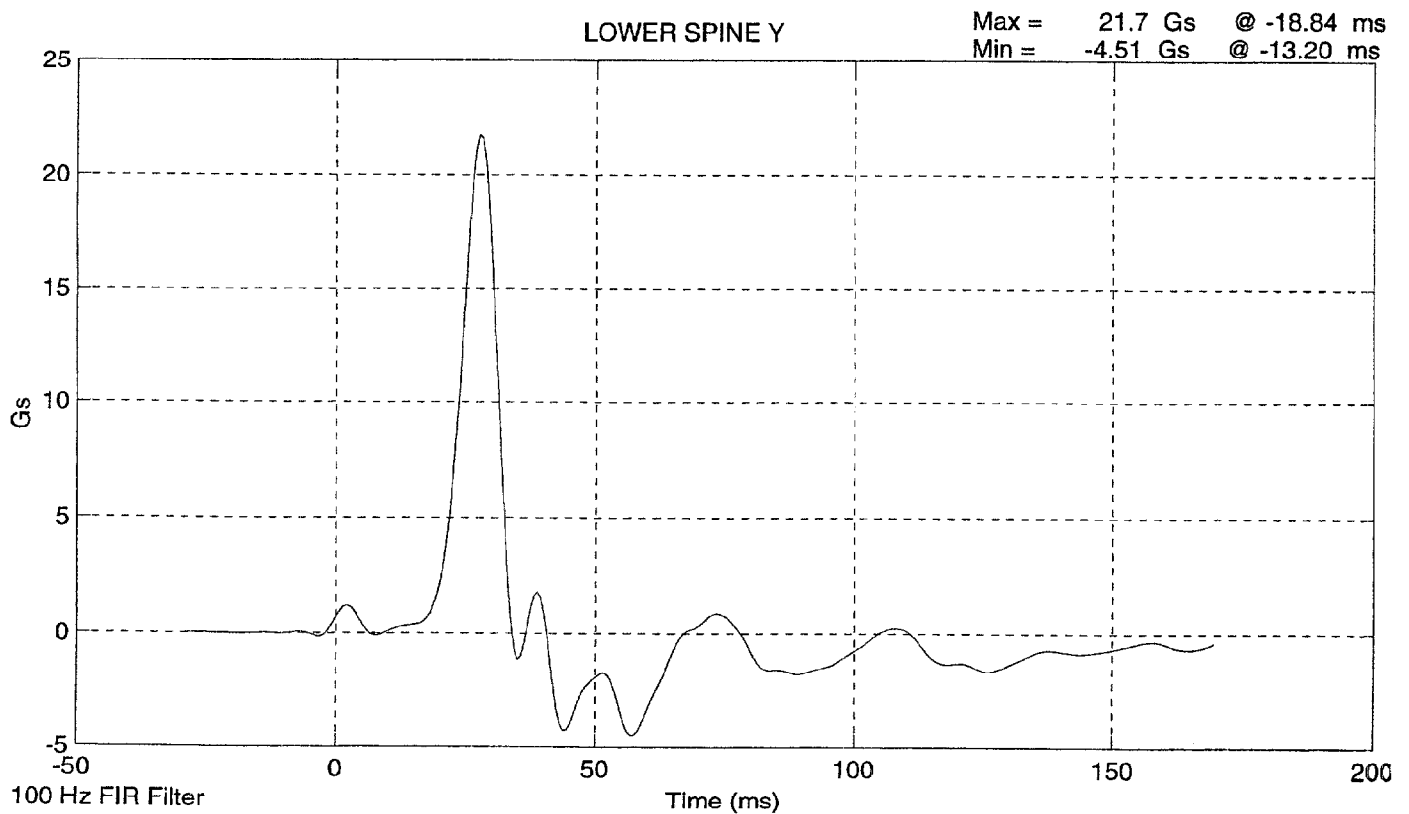
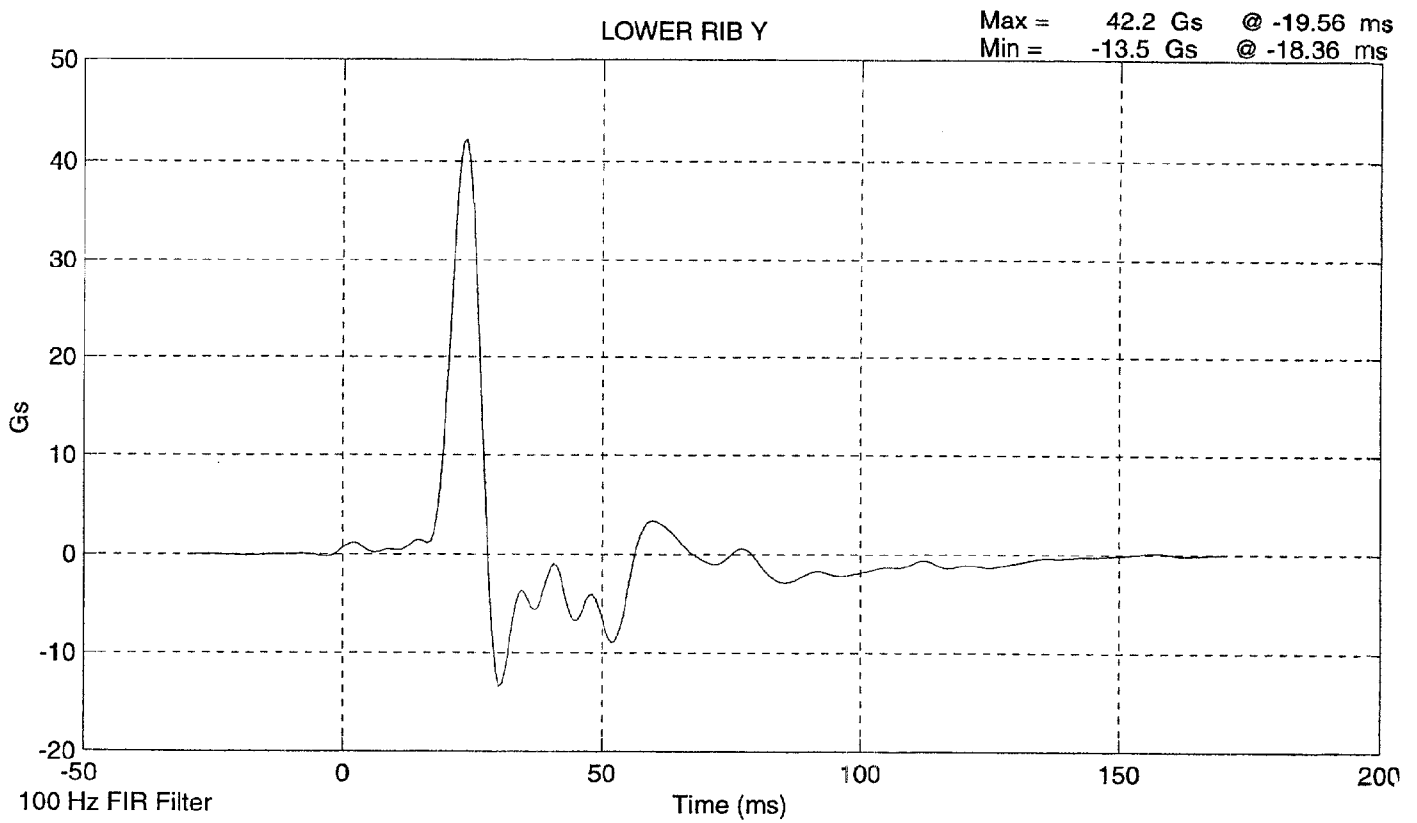
SID Serial No.: 016 Sequential Test Number: 1
Date: February 1, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
PROBE SPEED (m/s)	4.27 - 4.33	4.30
UPPER RIB (g's)	37 - 46	42.6
LOWER RIB (g's)	37 - 46	42.2
LOWER SPINE (g's)	15 - 22	21.7

REMARKS: None







**LATERAL PELVIS IMPACT TEST
POST TEST**

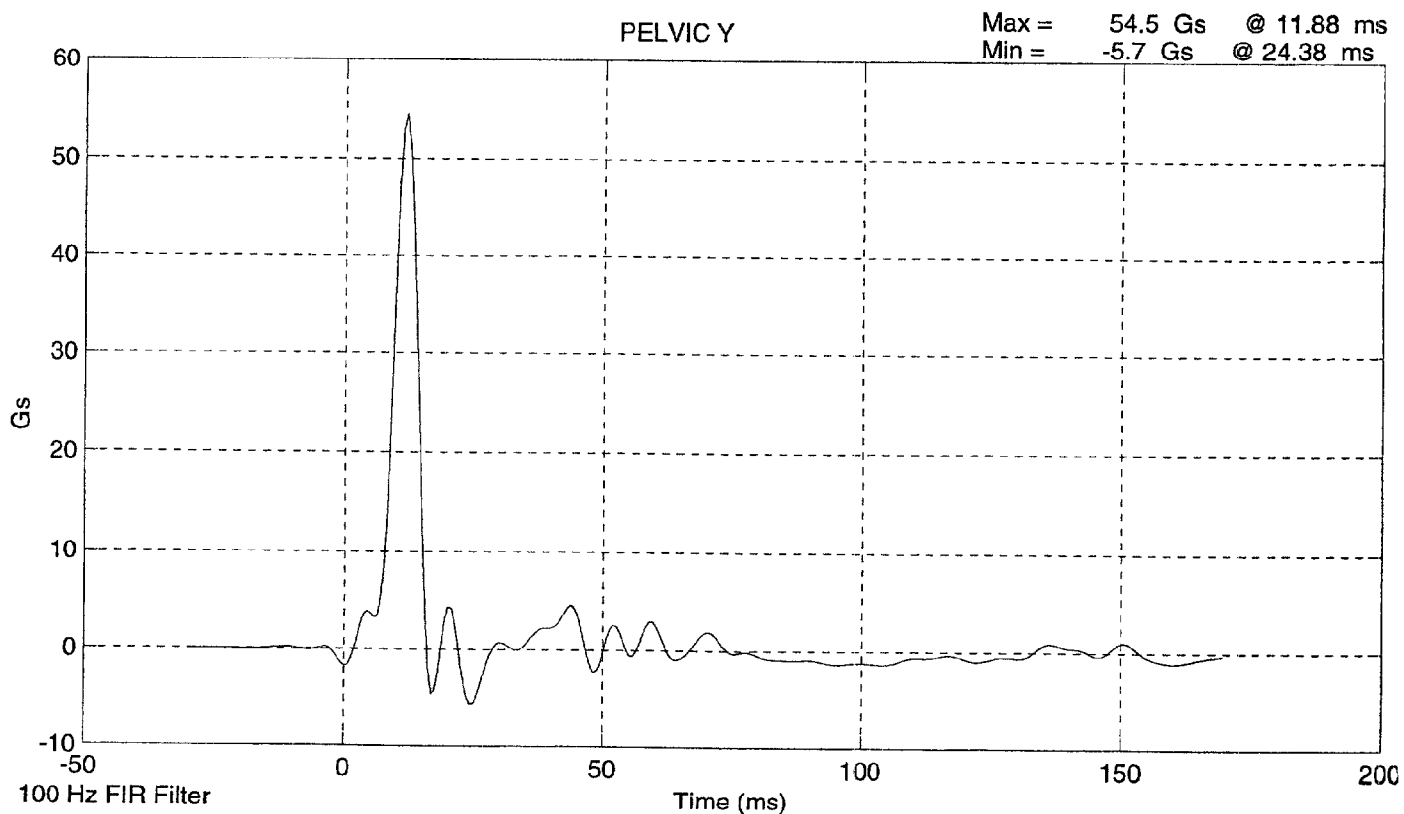
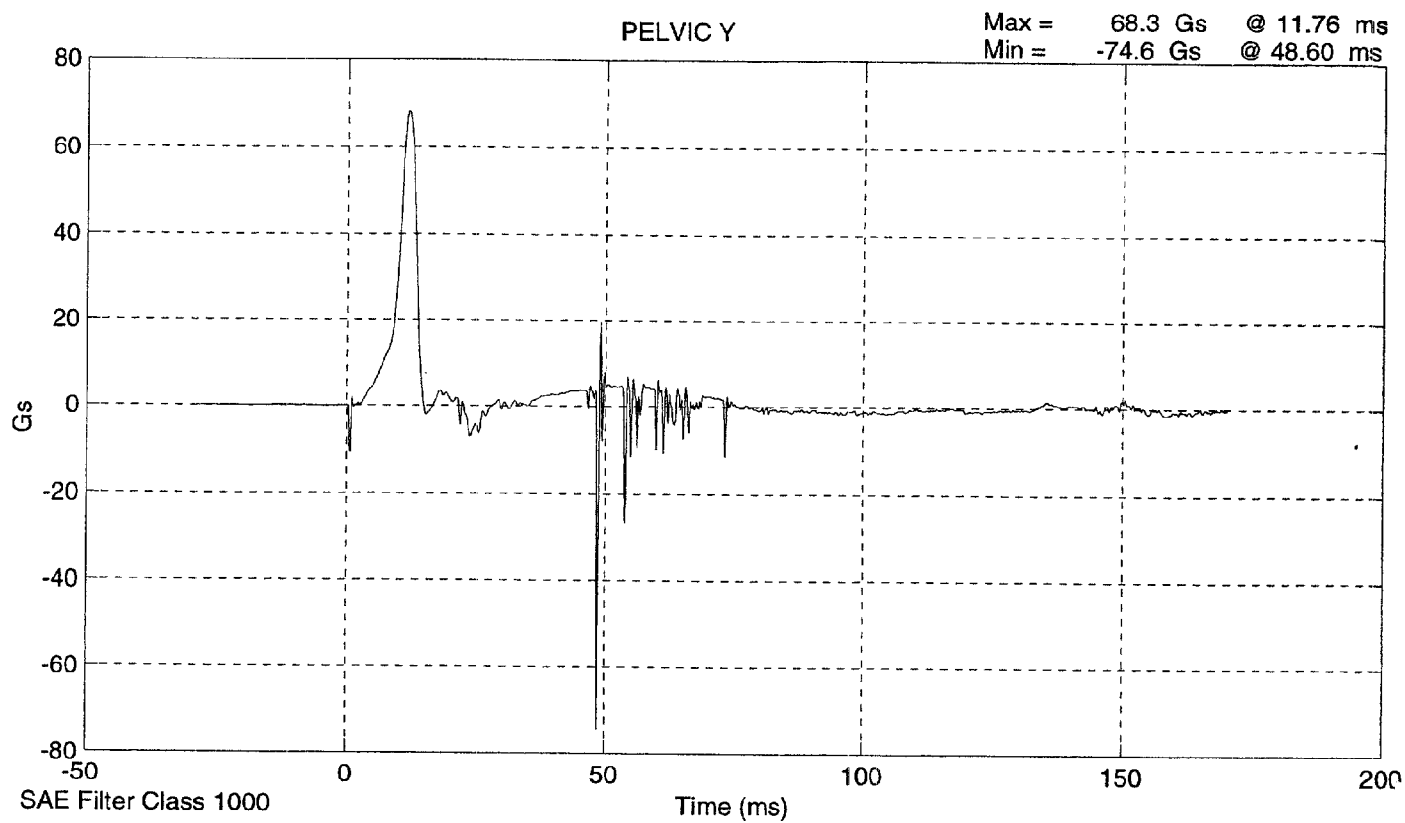
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
Date: February 1, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
PROBE SPEED (m/s)	4.27 - 4.33	4.31
PELVIS ACCELERATION (g's)	40 - 60	54.5

REMARKS: None

SID 016 Pelvic Impact Test @ 4.3068 m/s



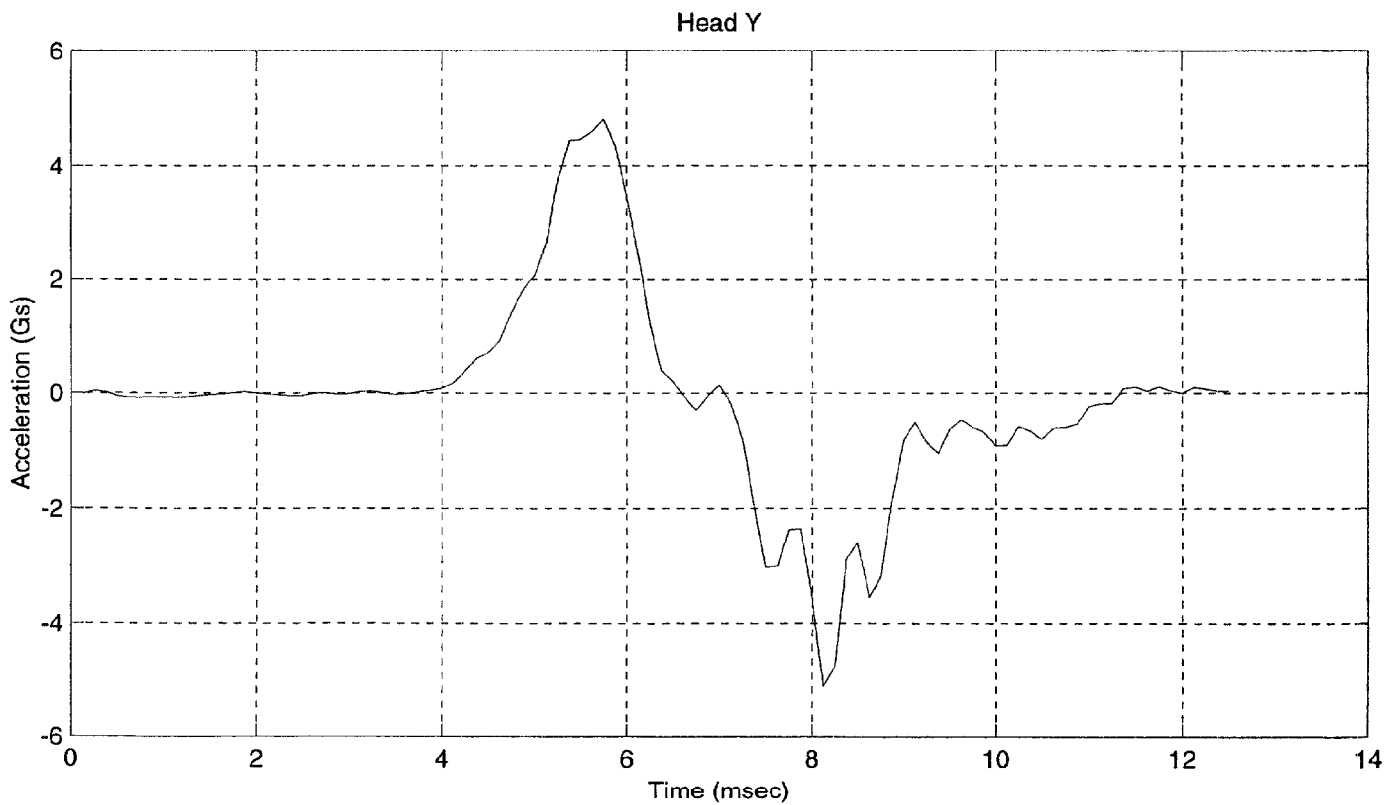
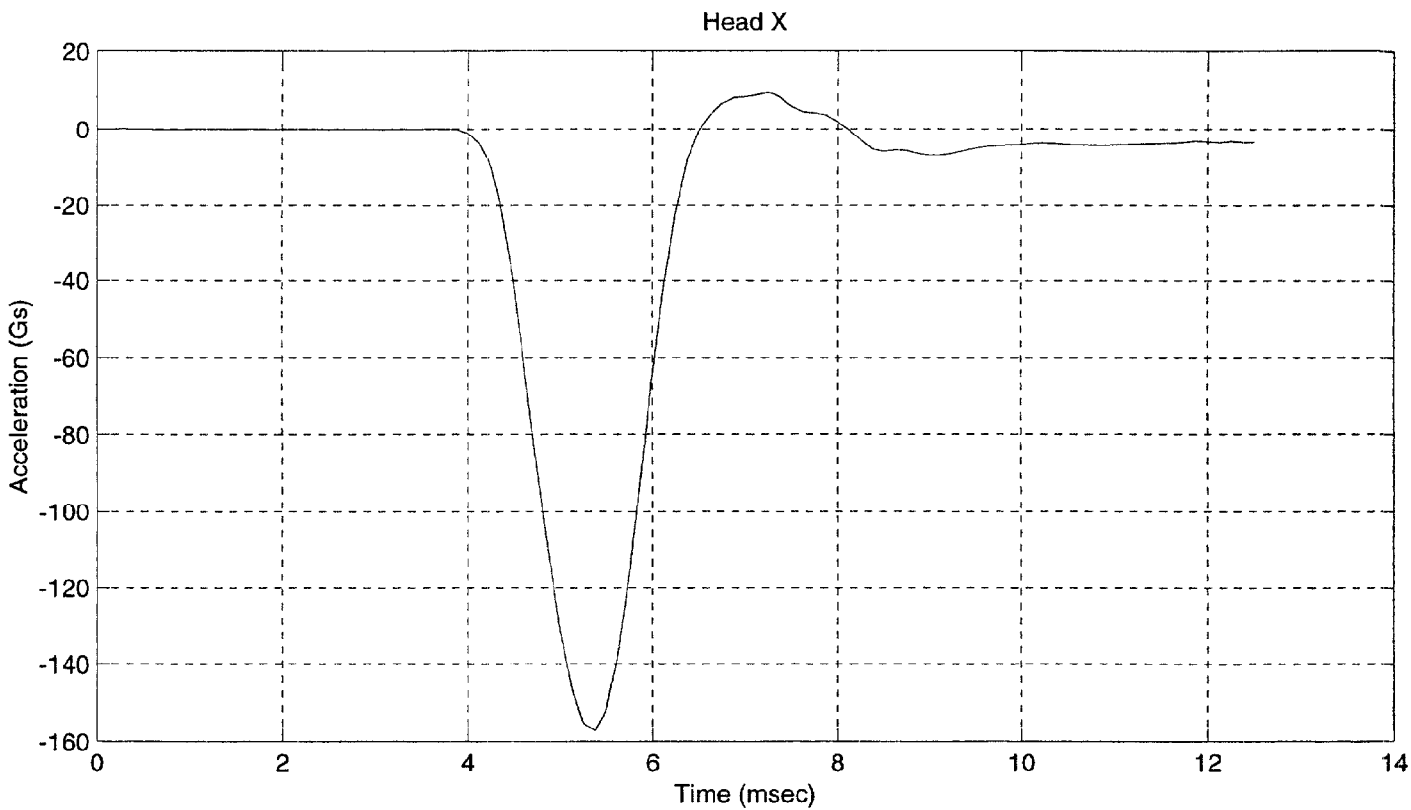
HEAD DROP TEST
POST-TEST
(Test not required for SID certification)

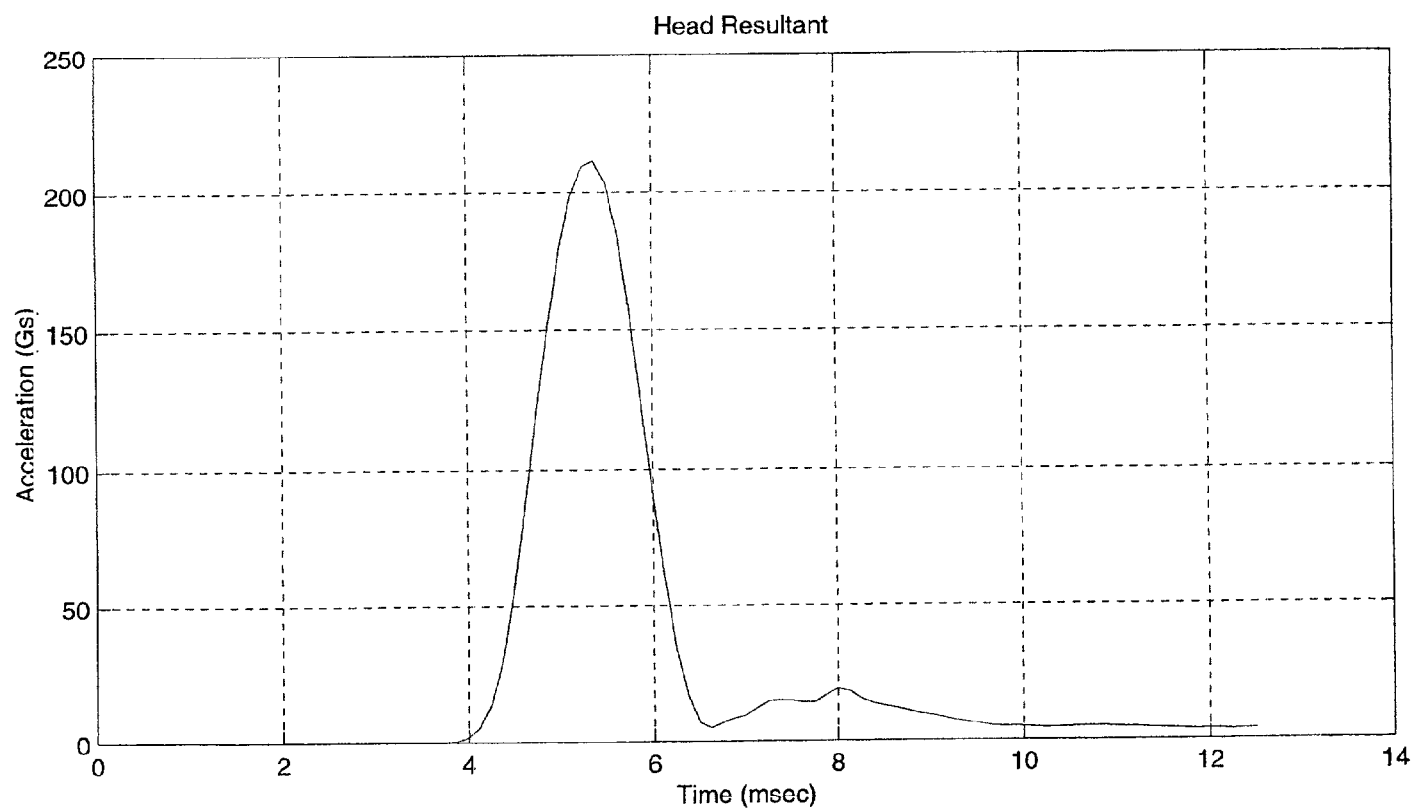
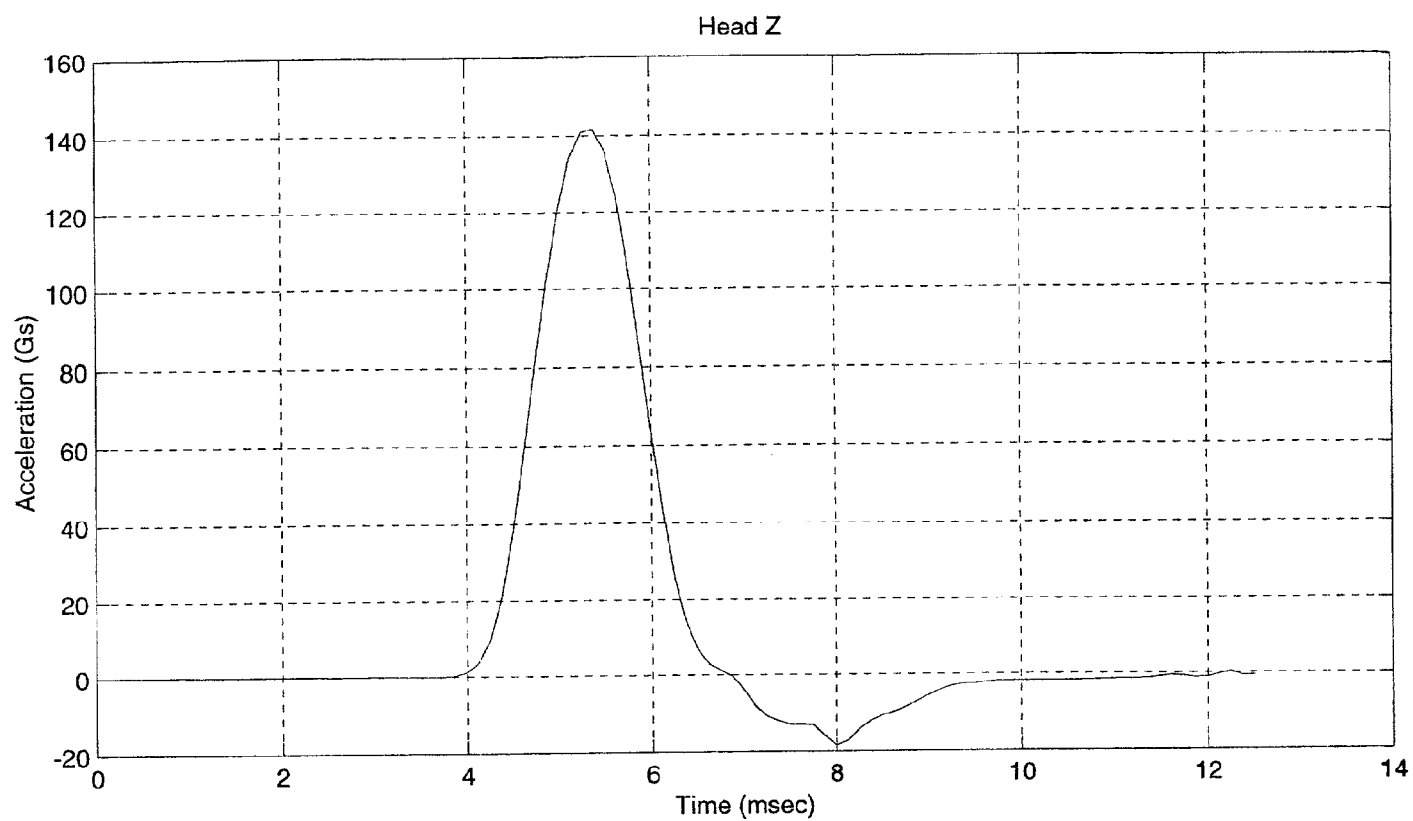
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 2
Date: February 1, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	211.53
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	5.11
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.: 016 Sequential Test Number: 1
Date: February 1, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	30
FORCE @ 13 mm (N)	104 - 162	120.1
FORCE @ 19 mm (N)	163 - 221	177.9
FORCE @ 25 mm (N)	222 - 280	246.9
FORCE @ 33 mm (N)	325 - 391	347.0

REMARKS: None

Dummy S/N 016

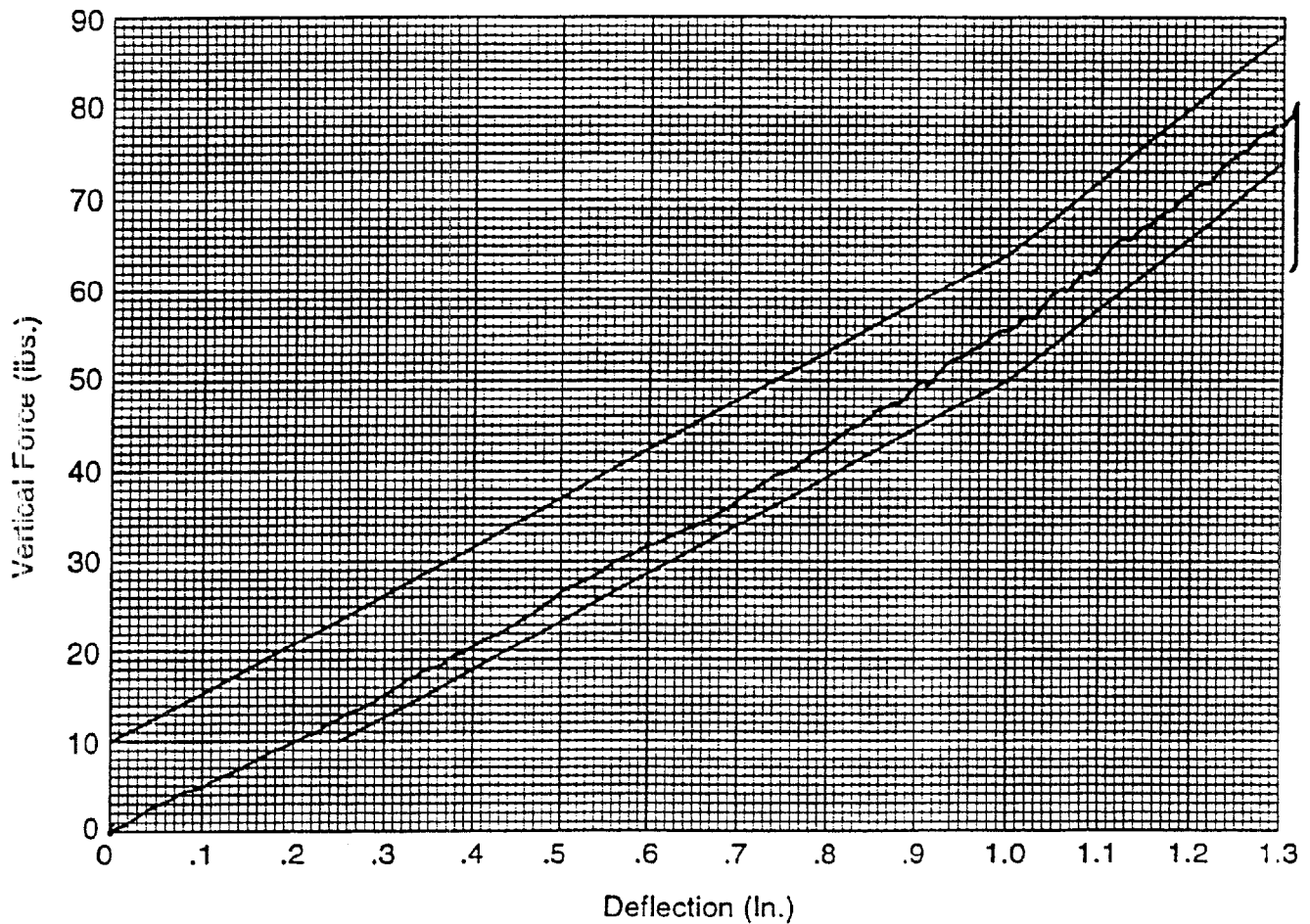
W/A _____

Date 2-1-2000

Performed By [Signature]

Temp. 71

Humidity 30



Hybrid II
Abdomen Static Press

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

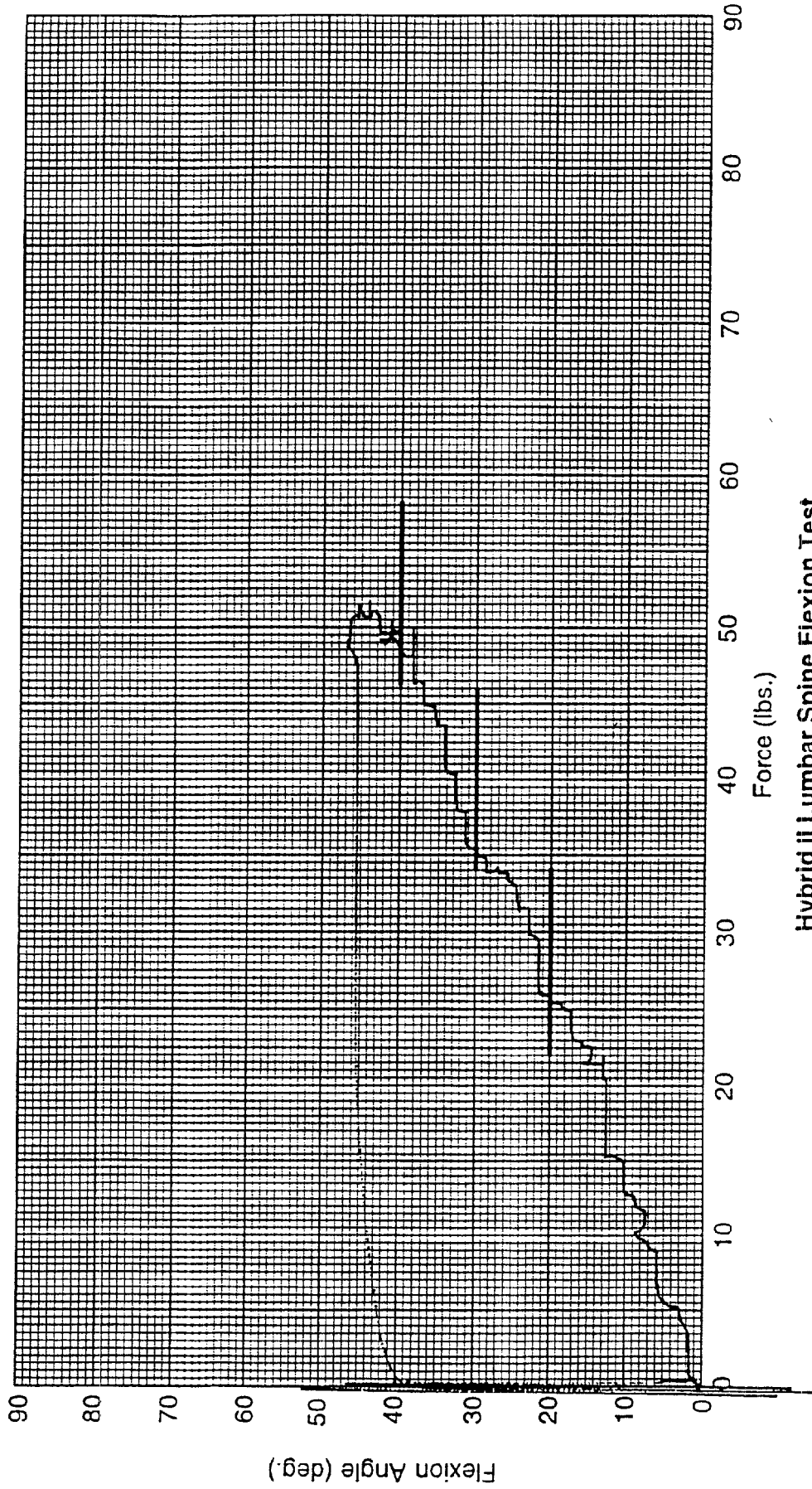
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
Date: February 1, 2000 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	30
FORCE @ 0° (N)	0 - 26.7	0
FORCE @ 20° (N)	97.8 - 151.2	113.4
FORCE @ 30° (N)	151.2 - 204.6	157.9
FORCE @ 40° (N)	204.6 - 258	214.4
RETURN ANGLE	12° max.	9°

REMARKS: None

Dummy S/N 16
W/A _____
Date 2-9-2000
Performed By ESD
Temp. 70
Humidity 30



Hybrid II Lumbar Spine Flexion Test

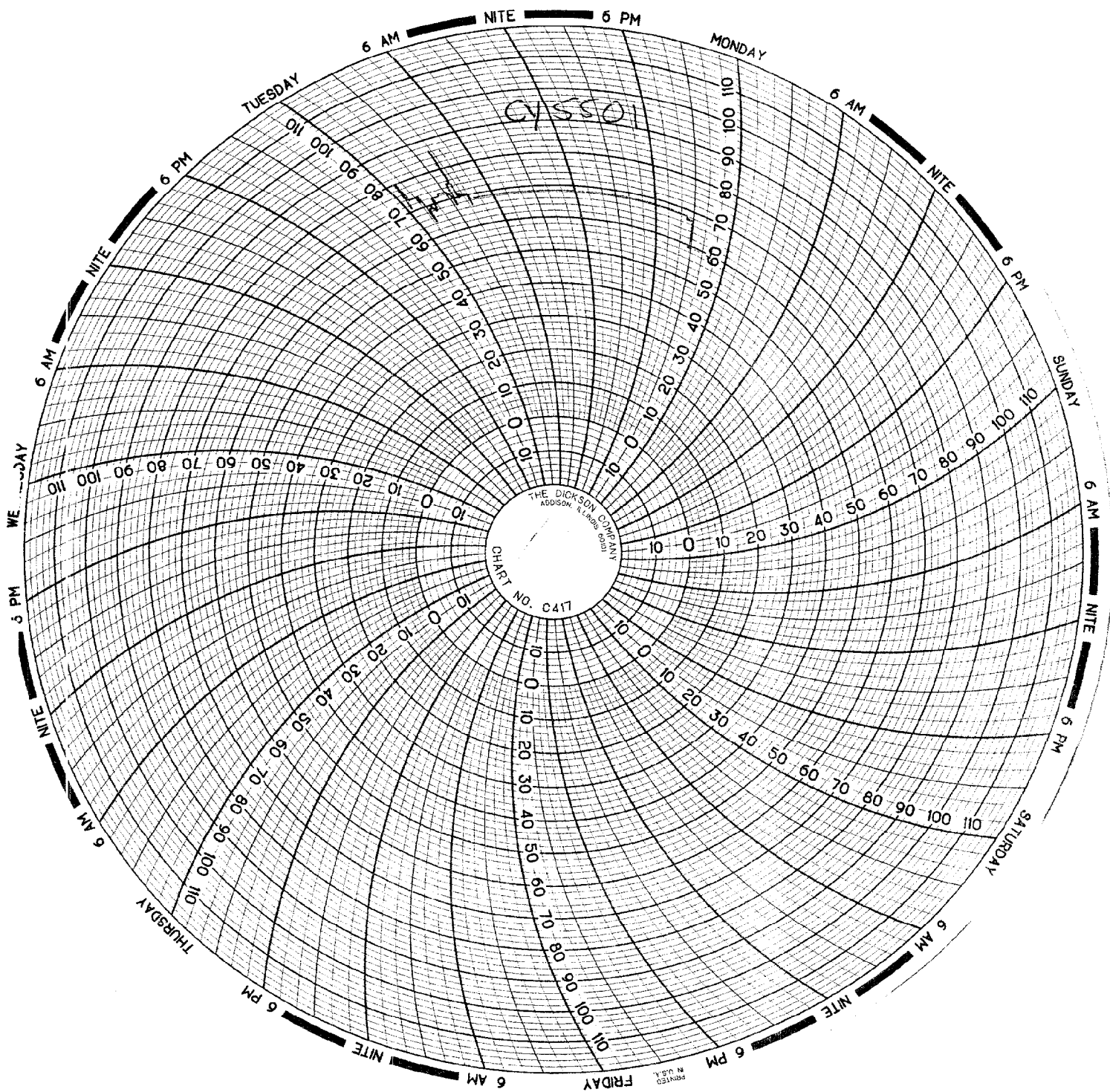
POST TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
 Date: February 1, 2000 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



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-A51A	ENDEVCO	17-Nov-99
HEAD (Y)	AC-AC2R5	ENDEVCO	12-Nov-99
HEAD (Z)	AC-AF5F7	ENDEVCO	12-Nov-99
UPPER RIB (Y)	AC-J32791	ENDEVCO	18-Jan-00
LOWER RIB (Y)	AC-J33156	ENDEVCO	18-Jan-00
LOWER SPINE (Y)	AC-J33127	ENDEVCO	18-Jan-00
PELVIS (Y)	AC-J32832	ENDEVCO	18-Jan-00
UPPER RIB REDUNDANT (Y)	AC-J32838	ENDEVCO	18-Jan-00
LOWER RIB REDUNDANT (Y)	AC-J32787	ENDEVCO	18-Jan-00
LOWER SPINE REDUNDANT (Y)	AC-J33351	ENDEVCO	19-Jan-00
PELVIS REDUNDANT (Y)	AC-J33379	ENDEVCO	18-Jan-00

REAR SID NO.: 016			
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD (X)	AC-AE8T7	ENDEVCO	1-Jul-99
HEAD (Y)	AC-AD4A9	ENDEVCO	17-Dec-99
HEAD (Z)	AC-A27A	ENDEVCO	17-Nov-99
UPPER RIB (Y)	AC-J33019	ENDEVCO	19-Jan-00
LOWER RIB (Y)	AC-J33018	ENDEVCO	19-Jan-00
LOWER SPINE (Y)	AC-J33032	ENDEVCO	19-Jan-00
PELVIS (Y)	AC-J33030	ENDEVCO	19-Jan-00
UPPER RIB REDUNDANT (Y)	AC-J34019	ENDEVCO	19-Jan-00
LOWER RIB REDUNDANT (Y)	AC-J32783	ENDEVCO	19-Jan-00
LOWER SPINE REDUNDANT (Y)	AC-J33021	ENDEVCO	19-Jan-00
PELVIS REDUNDANT (Y)	AC-J32782	ENDEVCO	19-Jan-00

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-B11073	ENDEVCO	24-Sep-99
RIGHT FRONT SILL (Y)	AC-B10954	ENDEVCO	24-Sep-99
RIGHT FRONT SILL (Z)	AC-APIA2	ENDEVCO	24-Sep-99
RIGHT REAR SILL (X)	AC-J18622	ENDEVCO	24-Sep-99
RIGHT REAR SILL (Y)	AC-APBB6	ENDEVCO	24-Sep-99
RIGHT REAR SILL (Z)	AC-J18649	ENDEVCO	24-Sep-99
REAR FLOORPAN ABOVE AXLE (X)	AC-BB14	ENDEVCO	27-Sep-99
REAR FLOORPAN ABOVE AXLE (Y)	AC-AP064	ENDEVCO	27-Sep-99
REAR FLOORPAN ABOVE AXLE (Z)	AC-B10955	ENDEVCO	27-Sep-99
LEFT REAR SILL (Y)	AC-Y141	ICS	15-Sep-99
LEFT FRONT SILL (Y)	AC-D75	ICS	14-Sep-99
RIGHT REAR SEAT OCCUPANT COMP. (Y)	AC-D80	ICS	7-Dec-99
LOWER LEFT B- PILLAR (Y)	AC-J18400	ENDEVCO	24-Sep-99
MIDDLE LEFT B-PILLAR (Y)	AC-AC7W8	ENDEVCO	6-Dec-99
LOWER LEFT A-PILLAR (Y)	AC-Z02	ENTRAN	6-Dec-99
UPPER LEFT A-PILLAR (Y)	AC-D55	ICS	23-Nov-99
FRONT SEAT TRACK (Y)	AC-J18436	ENDEVCO	7-Oct-99
REAR SEAT TRACK (Y)	AC-AY60	ENDEVCO	14-Sep-99
VEHICLE CG (X)	AC-ACC06	ENDEVCO	27-Sep-99
VEHICLE CG (Y)	AC-B11351	ENDEVCO	27-Sep-99
VEHICLE CG (Z)	AC-B10481	ENDEVCO	27-Sep-99
MDB CG (X)	AC-CL60	ENDEVCO	4-Jan-00
MDB CG (Y)	AC-CJ54	ENDEVCO	4-Jan-00
MDB CG (Z)	AC-GK12	ENDEVCO	4-Jan-00
MDB REAR FRAME MEMBER (X)	AC-CX05	ENDEVCO	4-Jan-00
MDB REAR FRAME MEMBER (Y)	AC-A27F	ENDEVCO	4-Jan-00

REMARKS: None