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Report Number: 208S-TRC-04-004

Vehicle Safety Compliance Testing for FMVSS 208
for Occupant Crash Protection

Sled Test

Ford Motor Company
2004 Ford Freestar MPV
NHTSA Number: C40209
TRC Inc. Test Number: S040428

Transportation Research Center Inc.
10820 State Route 347
East Liberty, OH 43319



Test Date: April 28, 2004
Report Date: May 12, 2004

Final Report

Prepared For:
U. S. Department of Transportation
National Highway Traffic Safety Administration
Office of Enforcement
Office of Vehicle Safety Compliance (NVS-220)
400 Seventh Street, S.W., Room No. 6115
Washington, DC 20590

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Test Performed By: Ronald Stoner, Engineering Technician

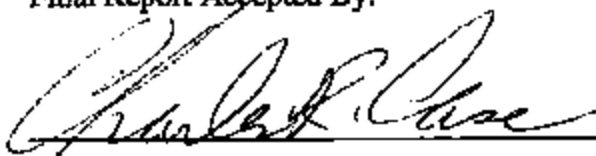
Report Approved By:



Walter Dudek, Project Manager
Transportation Research Center Inc.

Date 5/11/04

Final Report Accepted By:



Contracting Officer's Technical Representative (COTR),
NHTSA, Office of Vehicle Safety Compliance

Date 7/26/04

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16. Abstract An FMVSS 208 Section 13 compliance sled test was conducted on a 2004 Ford Freestar MPV, NHTSA No. C40209, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP208S-01 for the determination of FMVSS 208 compliance. Possible test failures identified were as follows: None.			
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Purpose

This Federal Motor Vehicle safety Standard (FMVSS) 208 compliance sled test is part of the FMVSS compliance test program conducted for the National Highway Traffic Safety Administration (NHTSA) by the Transportation Research Center Inc. (TRC Inc.) under Contract No. DTNH22-03-D-01002. The purpose of this test was to determine if the subject vehicle, a 2004 Ford Freestar MPV, NHTSA No.C40209, meets the performance requirements of FMVSS 208, "Occupant Crash Protection," in the impact simulation sled test mode.

Test Procedure

This test was conducted in accordance with NHTSA's Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedure No. TP-208S-01, dated January 15, 1998. Data was obtained relative to FMVSS 208, "Occupant Crash Protection," performance.

The sled test vehicle was instrumented with four (4) accelerometers to measure longitudinal accelerations. The sled was instrumented with one (1) longitudinal accelerometer, which is prefiltered with an analog filter to 200 Hz as an integral part of the sled firing circuit, and two (2) additional accelerometers: the primary accelerometer for pulse and integrated velocity determination and a backup accelerometer. In addition, the sled was instrumented with one (1) light trap to measure velocity and four (4) airbag firing timing circuits.

The sled test vehicle contained two (2) Part 572 E 50th percentile adult male anthropomorphic test devices (dummies). The dummies were positioned in the front outboard designated seating positions according to the dummy placement procedure specified in Appendix B of the Laboratory Test Procedure. The dummies were not restrained by seat belts.

Both dummies were instrumented with head and chest accelerometers to measure longitudinal, lateral, and vertical accelerations; chest deflection potentiometers; left and right femur load cells to measure axial forces; and upper neck load cells to measure longitudinal, lateral, and vertical forces and moments.

The forty-two (42) data channels were digitally sampled at 12,500 samples per second and processed per Sections 11.7 through 11.9 of the Laboratory Test Procedure.

The sled test event was recorded by one (1) real-time motion picture camera and six (6) high-speed motion picture cameras. The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera.

Test Results Summary

This FMVSS 208 compliance sled test was conducted by TRC Inc. on April 28, 2004.

The test vehicle, a 2004 Ford Freestar MPV, NHTSA No. C40209, does appear to comply with the performance requirements of FMVSS 208 in the impact simulation sled test mode as measured by Hybrid III 50th percentile male dummies.

	FMVSS 208 Max. Allowable Injury Assessment Values	Driver	Passenger
HIC	1000	188	345
Chest g	60 g	32	38
Chest Displacement	3 inches	1.0	0.3
Left Femur	2250 lbs	1066	819
Right Femur	2250 lbs	1391	968
Neck Extension	57 Nm	11	49
Neck Flexion	190 Nm	68	22
Neck Tension	3300 N	1450	1642
Neck Compression	4000 N	570	2873
Neck Shear	3100 N	927	1592

The subject vehicle, a 2004 Ford Freestar, NHTSA No. C40209, appears to meet the other FMVSS 208 requirements for which it was tested. These results are shown in the data sheets that are included in this report.

The sled test vehicle was equipped with air bags at the driver and passenger seating positions. The dummies were not restrained by seat belts. The sled carriage was accelerated to 18.3 g with an integrated velocity change of 29.9 mph. The primary stages of the airbags were triggered at 20.2 milliseconds after 0.5 g acceleration was measured by the firing circuit. The secondary stages of the airbags were triggered at 35.2 milliseconds (driver), and 30.2 milliseconds (passenger) after 0.5 g acceleration was measured by the firing circuit. Following

subsequent digital data processing and filtering the acceleration signal to Channel Class 60, the primary stages airbag event trigger signal was 20.7 ms after the 0.5 g acceleration level was indicated and the secondary stages airbag event trigger signal was 35.7 ms (driver) and 30.7 ms (passenger) after the 0.5 g acceleration level was indicated.

Data Acquisition Explanations

The complete 16-hour pre-test dummy ambient air temperature trace was not recorded for this test. A partial trace was recorded and is included in Appendix D. During the final two hours prior to test, the dummies were within the specified temperature range.

Pre-test photographs of the driver and passenger knee bolsters were not taken for this test.

Sled Test Summary

NHTSA number: C40209
Test type: Alternate 208
Test date: 04/28/04
Test time: 14:13
Ambient temperature at impact area: 69.9° F
Vehicle year/make/ model/body style: 2004/Ford/Freestar/MPV

<u>Dummy Info:</u>	Driver #314	Front passenger #229
Type:	Hybrid III 50th	Hybrid III 50th
Location:	Left front	Right front
Restraint:	Airbag	Airbag
Number of data channels:	15	15

Number of Cameras:

Real-time:	1
High-speed:	6

Door Opening Data:

Left Front:	Easy
Right Front:	Easy

Front Seat Data:

Seat track failure:	None	None
Seat back failure	None	None

Visible Dummy Contact Points:

Head:	Airbag, sun visor, head liner, A-pillar, windshield	Airbag, windshield
Chest:	Airbag, steering wheel	Airbag
Left knee:	Knee bolster	Glove box
Right knee:	Knee bolster	Glove box

General Test and Vehicle Parameter Data for the Sled Test Vehicle

Test Vehicle Information:

Vehicle year/make/
model/body style: 2004/Ford/Freestar/MPV
Color: Vibrant white
VIN: 2FMZA50684BA66026
NHTSA number: C40209
Engine data:
Placement: Transverse
Cylinders: 6
Displacement: 3.9
Transmission data: 4 speed, manual, X automatic, X overdrive
Final drive: X fwd, rwd, 4wd
Date vehicle received: 4/7/2004
Odometer reading: 649
Dealer's name
and address: Graham Ford Inc.
Columbus, OH 43216

Major Options:

Power steering	Yes	Other: No
Power brakes	Yes	
Power windows	Yes	
Air conditioning	Yes	
Power door locks	Yes	

Remarks:

General Test and Vehicle Parameter Data for the Sled Test Vehicle, Cont'd.

Data from Vehicle's Certification Label:

Vehicle manufactured by: Ford Motor Company
Date of manufacture: 01/04
VIN: 2FMZA50684BA66026
GVWR: 5660 lbs
GAWR: Front: 2915 lbs
Rear: 2760 lbs

Data from Vehicle's Tire Placard:

Tire pressure with maximum capacity vehicle load:

Front: 35 psi
Rear: 35 psi
Recommended tire size: P225/60R16
Load range: N/A lbs

Recommended cold tire pressure:

Front: 35 psi
Rear: 35 psi
Size of tires on vehicle: P225/60R16
Spare tire: T145/90R16

Vehicle capacity data:

Type of front seats: Bucket

Number of occupants:

Front 2
Mid 2
Rear 3
Total 7

Remarks:

General Test and Vehicle Parameter Data for the Sled Test Vehicle, Cont'd.

Weight of test vehicle as received (with maximum fluids):

Right front	1252.2 lbs	Right rear	867.5 lbs
Left front	1277.6 lbs	Left rear	847.7 lbs
Total front weight	2529.8 lbs	(59.6% of total vehicle weight)	
Total rear weight	1715.2 lbs	(40.4% of total vehicle weight)	
Total delivered weight	4245.0 lbs		

Calculation of test vehicle's target test weight:

VCW = Vehicle Capacity Weight (1200 lbs)

DSC = Designated Seating Capacity (7)

RCLW = Rated Cargo and Luggage Weight = $VCW - (DSC \times 150 \text{ lbs}) = 150 \text{ lbs}$

UDW = Unloaded Delivered Weight (4245.0 lbs)

Target test weight = $UDW + RCLW + (\text{Number of Hybrid III dummies} \times 167 \text{ lbs per dummy})$

Target test weight = $4245.0 + 150.0 + 334.0 = 4729.0 \text{ lbs}$

Weight of test vehicle with two dummies and 233.7 lbs of cargo weight:¹

Right front	1331.6 lbs	Right rear	1069.2 lbs
Left front	1360.3 lbs	Left rear	1051.6 lbs
Total front weight	2691.9 lbs	(56% of total vehicle weight)	
Total rear weight	2120.8 lbs	(44% of total vehicle weight)	
Total test weight	4812.7 lbs		

Remarks:

Weight of ballast secured in vehicle cargo area: None

Components removed to meet target test weight: None

¹ The RCLW was incorrectly calculated as 233 lbs during vehicle preparations. The correct target test weight was 4729 lbs.

General Test and Vehicle Parameter Data for the Sled Test Vehicle, Cont'd.

Test Vehicle Attitude:

As delivered door sill angle: 1.3° Nose Down

As tested door sill angle: 1.0° Nose Down

Fully loaded door sill angle: 0.8° Nose Down

Vehicle Wheelbase: 120.8 inches

Fuel System Data:

Fuel system capacity from owner's manual: 26.0 gallons

Useable capacity figure furnished by COTR: 26.0 gallons

Remarks: The roll angle measurements were within 1 inch of each other.

The left and right side measurements were 26.7 inches and 26.7 inches respectively.

Post-Impact Data

Test number: S040428
NHTSA number: C40209
Test date: 04/28/04
Test time: 14:13
Test type: Alternate 208
Impact angle: 0°
Ambient temperature
at impact area: 69.9° F
Temperature in
occupant compartment: 69.9° F

Sled carriage velocity:

Integrated velocity from the integration of the entire sled acceleration: 29.9 mph
Measured velocity from the light trap device attached to the sled (backup): 29.5 mph
Specified integrated velocity range: 28 to 30 mph

Sled carriage acceleration:

Acceleration: 18.1 g
Specified acceleration range: 16.0 g - 18.2 g

Sled carriage acceleration duration:

Time from T-0(-0.5 g) to 0.0 g: 123.5 ms
Specified acceleration duration: 120 - 130 ms

The sled acceleration curve was within the specified corridor.

Seat and Steering Column Positioning Data

Vehicle: 2004/Ford/Freestar/MPV

NHTSA No.: C40209

Nominal Design Riding Position:

Driver Seat: Seat Back Angle = 18.4° measured 13 inches above the back pivot
on the rear outboard seat frame.

Passenger Seat: Seat Back Angle = 17.9° measured 13 inches above the back pivot
on the rear outboard seat frame.

Seat Fore and Aft Positions:

Driver Seat: Set to the middle of the available fore/aft travel

Passenger: Set to the middle of the available fore/aft travel

Steering Column Adjustments:

Set to the middle of the geometric range of travel.

Dummy Measurement Data for Front Seat Occupants

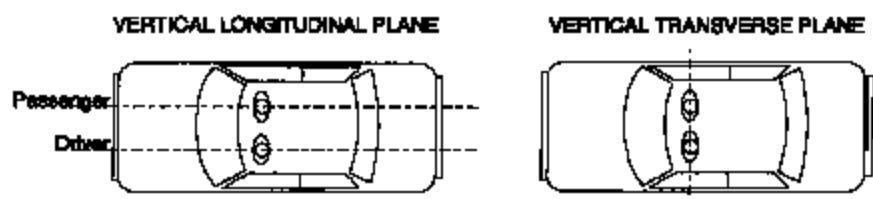
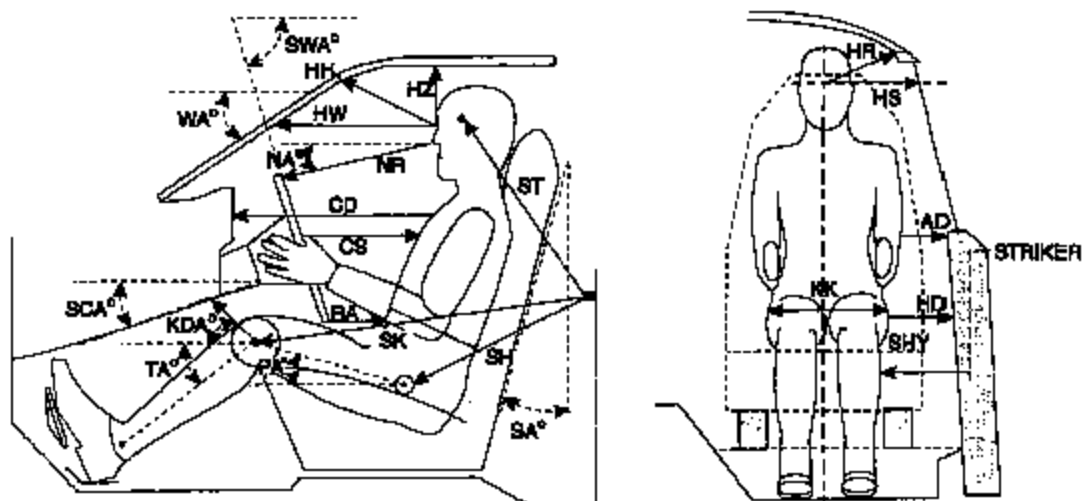
Designation	Type of Measurement	Driver (Serial #314)	Passenger (Serial #229)
WA	Windshield angle	30.4°	N/A
SWA	Steering wheel angle	63.2°	N/A
SCA	Steering column angle	26.8°	N/A
SA	Seat back angle	18.4°	17.9°
HZ	Head to roof	8.7 in	8.1 in
HH	Head to header	18.1 in	16.7 in
HW	Head to windshield	26.9 in	25.2 in
HR	Head to side header	8.7 in	7.7 in
NR	Nose to rim	18.2 in	N/A
NA	Nose to rim angle	12.3°	N/A
CD	Chest to dash	22.1 in	21.7 in
CS	Steering wheel to chest	14.4 in	N/A
RA	Rim to abdomen	9.1 in	N/A
KDL	Left knee to dash	6.3 in	5.7 in
KDR	Right knee to dash	6.3 in	5.6 in
KDA	Outboard knee to dash angle	70.3°	59.5°
PA	Pelvis angle	22.6°	24.4°
TA	Tibia angle	57.7°	55.2°
KK	Knee to knee	12.4 in	10.6 in
ST ¹	Striker to head	23.7 in	24.1 in
	Striker to head angle	-86.8°	-81.5°
SK ¹	Striker to knee	23.5 in	24.5 in
	Striker to knee angle	-9.3°	-4.3°
SH ¹	Striker to H-point	8.7 in	9.4 in
	Striker to H-point angle	19.8°	14.4°
SHY	Striker to H-point (Y dir.)	9.8 in	8.7 in
HS	Head to side window	12.2 in	12.2 in
HD	H-point to door	7.6 in	6.7 in
AD	Arm to door	5.5 in	4.0 in

The seat back angle (SA°) is measured relative to vertical.

All other angles are measured relative to horizontal.

¹ A negative angle indicates the measurement point was located below the striker.

Dummy Measurement Locations for Front Seat Occupants



Descriptions of Dummy Measurements

When a level is to be used, it is to ensure that the line containing the two points described is either parallel or perpendicular to the ground. If a measurement to be made is less than 10 inches ignore the directions to use a level and approximate a level measurement. Also, when a measurement is to be taken to or from the center of a bolt on the dummy, take the measurement from the center of the bolt hole if the bolt is recessed.

The following measurements are to be made within a vertical longitudinal plane.

- * HH Head to Header, taken from the point where the dummy's nose meets his forehead (between his eyes) to the furthest point forward on the header.
- * HW Head to Windshield, taken from the point where the dummy's nose meets his forehead (between his eyes) to a point on the windshield. Use a level.
- HZ Head to Roof, taken from the point where the dummy's nose meets his forehead (between his eyes) to the point on the roof directly above it. Use a level.
- * CS Steering Wheel to Chest, taken from the center of the steering wheel hub to the dummy's chest. Use a level.
- * CD Chest to Dash, place a tape measure on the tip of the dummy's chin and rotate five inches of it downward toward the dummy to the point of contact on the transverse center of the dummy's chest. Then measure from this point to the closest point on the dashboard either between the upper part of the steering wheel between the hub and the rim, or measure to the dashboard placing the tape measure above the rim, whichever is a shorter measurement. See diagram.
- RA Steering Wheel Rim to Abdomen, taken from the bottommost point of the steering wheel rim horizontally rearward to the dummy. Use a level.
- NR Nose to Rim, taken from the tip of the dummy's nose to the closest point on the top of the steering wheel rim. Also indicate the angle this line makes with respect to the horizontal (NA).

* Measurement used in Data Tape Reference Guide

Descriptions of Dummy Measurements, Cont'd.

- *¹ KDL,
KDR Left and Right Knees to Dashboard, taken from the center of the knee pivot bolt's outer surface to the closest point forward acquired by swinging the tape measure in continually larger arcs until it contacts the dashboard. Also reference the angle of this measurement with respect to the horizontal for the outboard knee (KDA). See diagram.
- SH,
SK,
ST Striker to Hip, Knee, and Head, these measurements are to be taken in the X-Z plane measured from the forward most center point on the striker to the center of the H-point, outer knee bolt, and head target. When taking this measurement a firm device that can be rigidly connected to the striker should be used. Use a level. The angles of these measurements with respect to the horizontal should also be recorded. The measurement in the Y (transverse) direction from the striker to the H-point should also be taken (SHY). See diagram.

The following measurements are to be made within a vertical transverse plane.

- HS Head to Side Window, taken from the point where the dummy's nose meets his forehead (between his eyes) to the outside of the side window. In order to make this measurement, roll the window down to the exact height which allows a level measurement. Use a level. See diagram.
- * AD Arm to Door, taken from the outer surface of the elbow pivot bolt on a Hybrid II dummy to the first point it hits on the door. In the case of a Hybrid III dummy, measure from the bolt on the outer biceps. When a SID is used make the measurement from the center of the bottom of the arm segment where it meets the dummy's torso.
- * HD H-point to Door, taken from the H-point on the dummy to the closest point on the door. Use a level.
- * HR Head to Side Header, measure the shortest distance from the point where the dummy's nose meets his forehead (between his eyes) to the side edge of the header just above the window frame, directly adjacent to the dummy.

* Measurement used in Data Tape Reference Guide

¹ Only outboard measurement is referenced in Data Tape Reference Guide

Descriptions of Dummy Measurements, Cont'd.

SHY Striker to H-point, taken from a rod rigidly connected to the forward most center point on the striker to the H-point. Use a level. See diagram.

KK Knee to Knee, for Hybrid II dummies measure the distance between knee pivot bolt head outer surfaces. For Hybrid III dummies measure the distance between the outboard knee clevis flange surfaces. (This measurement may not be exactly transverse.)

Angles

SA Seat Back Angle, find this angle using the instructions provided by the manufacturer. If the manufacturer doesn't provide clear instructions contact the COTR.

PA Pelvis or Femur Angle, taken by inserting the pelvic angle gauge into the H-point gauging hole on the SID or the Hybrid III dummies and taking this angle with respect to the horizontal. Measure the angle of the line connecting the H-point hole and the outer knee pivot bolt hole on a Hybrid II dummy with respect to the horizontal, to find the femur angle.

SWA Steering Wheel Angle, find this by placing a straight edge against the steering wheel rim along the longitudinal plane. Then measure the acute angle of the straight edge with respect to the horizontal.

SCA Steering Column Angle, measured with respect to the horizontal by placing an inclinometer on the center of the underside of the steering column.

NA Measure the angle made when taking the measurement NR with respect to the horizontal.

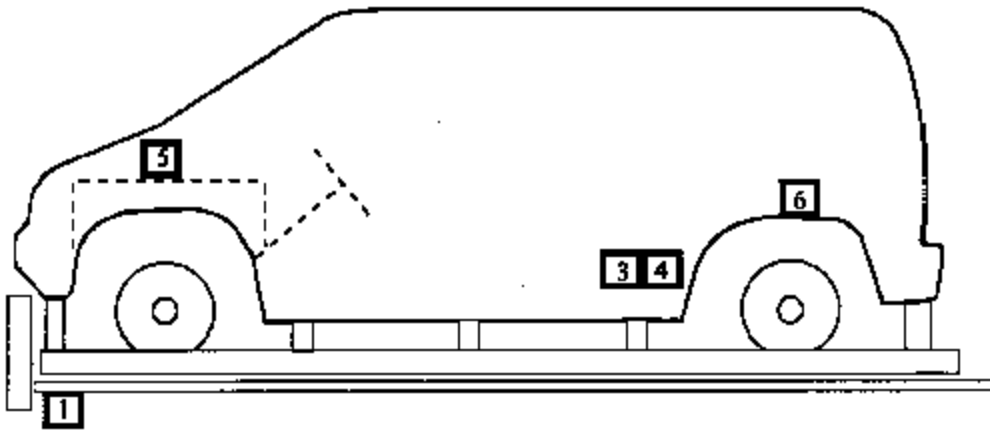
KDA Knee to Dash Angle, the angle that the measurement KD is taken at with respect to the horizontal. Only get this angle for the outboard knee. See diagram.

WA Windshield Angle, place an inclinometer along the transverse center of the windshield exterior (measurement is made with respect to horizontal).

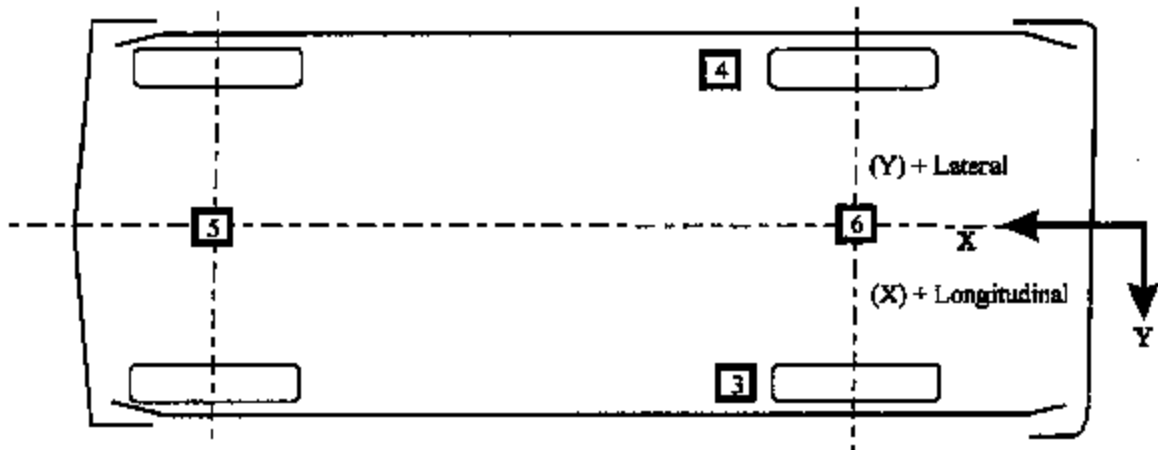
TA Tibia Angle, use a straight edge to connect the dummy's knee and ankle bolts. Then place an inclinometer on the straight edge and measure the angle with respect to the horizontal.

* Measurement used in Data Tape Reference Guide

Vehicle Accelerometer Placement



Side View



Bottom View

Vehicle Data Summary and Accelerometer Locations

TEST NUMBER: S040428 No. LOCATION	X	Y	Z	POSITIVE DIRECTION		NEGATIVE DIRECTION	
1 SLED ACCELERATION PRIMARY	165.6 in	-1.0 in	NA	0.8 g	@ 126.6 ms	18.1 g	@ 57.4 ms
2 SLED ACCELERATION BACKUP REDUNDANT	165.6 in	-1.0 in	NA	0.9 g	@ 126.8 ms	18.3 g	@ 57.4 ms
3 SLED VELOCITY MEASURED INTEGRATED ²	NA	NA	NA	0.1 mph ---	@ 9.3 ms ---	29.4 mph 29.9 mph	@ 124.7 ms @ 124.3 ms
4 LEFT REAR SEAT CROSSMEMBER LONGITUDINAL	148.2 in	-16.3 in	NA	1.4 g	@ 128.7 ms	18.3 g	@ 52.7 ms
5 RIGHT REAR SEAT CROSSMEMBER LONGITUDINAL	145.5 in	14.6 in	NA	1.4 g	@ 128.6 ms	18.2 g	@ 53.0 ms
6 TOP ENGINE LONGITUDINAL	178.3 in	2.5 in	NA	6.0 g	@ 134.9 ms	23.3 g	@ 46.9 ms
7 REAR AXLE LONGITUDINAL	39.2 in	0.0 in	NA	3.0 g	@ 146.6 ms	19.0 g	@ 53.4 ms

Vehicle Data Summary and Accelerometer Locations, Cont'd.

TEST NUMBER: S040428
No. LOCATION

X

Y

Z

POSITIVE
DIRECTION

NEGATIVE
DIRECTION

8 DRIVER PRIMARY AIRBAG
EVENT

NA

NA

NA

1.0 volt @ 20.7 ms

9 DRIVER SECONDARY
AIRBAG
EVENT

NA

NA

NA

1.0 volt @ 35.7 ms

10 PASSENGER PRIMARY
AIRBAG
EVENT

NA

NA

NA

1.0 volt @ 20.7 ms

11 PASSENGER SECONDARY
AIRBAG
EVENT

NA

NA

NA

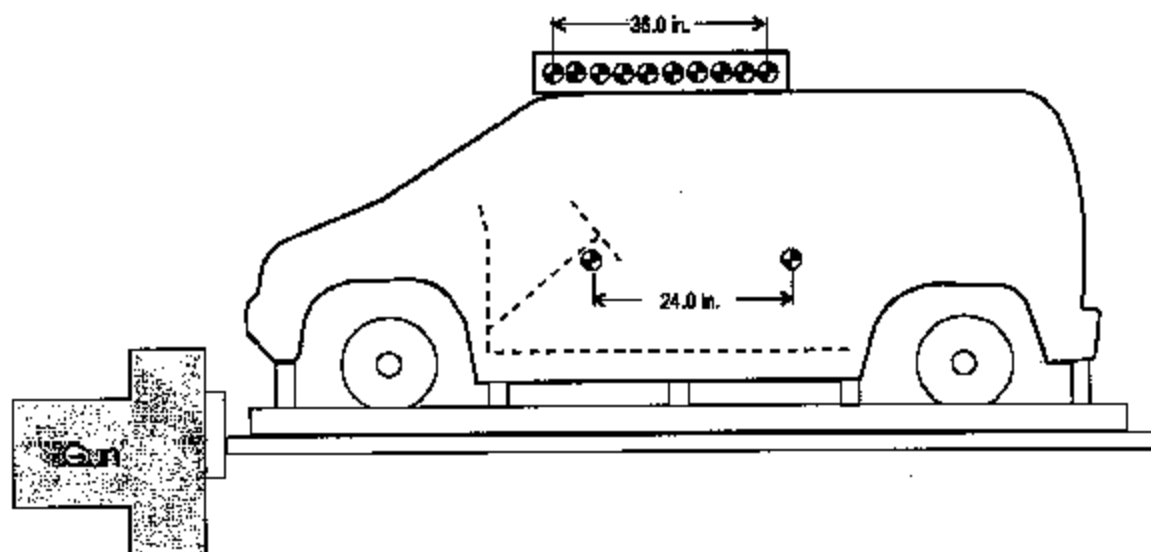
1.0 volt @ 30.7 ms

REFERENCE: X: + FORWARD FROM VEHICLE REAR SURFACE
Y: + RIGHTWARD FROM SLED CARRIAGE CENTERLINE
Z:

- ¹ Sign convention per SAEJ211 March 1995.
- ² See Data Acquisition Explanations on page 4.
- ³ No positive data in time frame of interest.

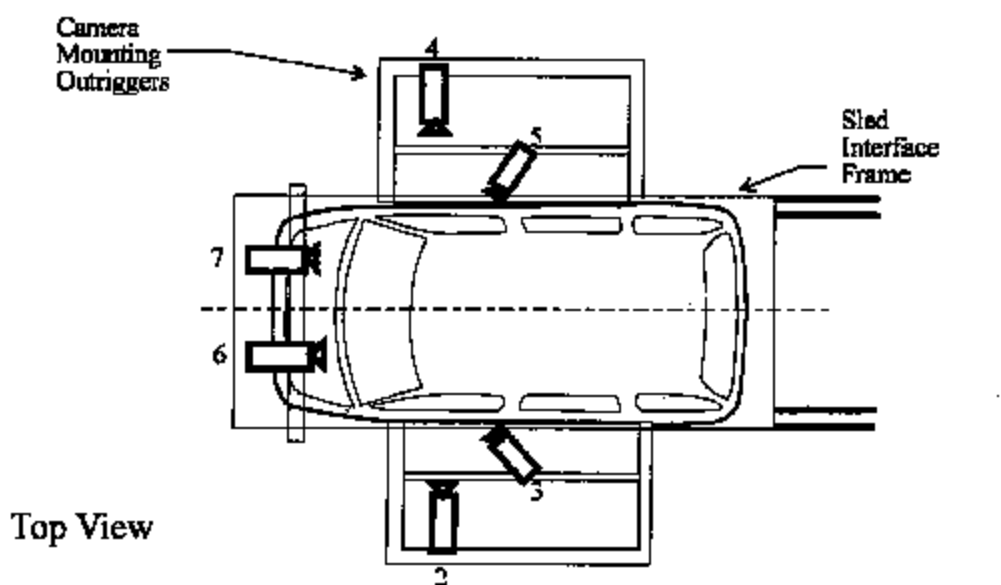
Vehicle Targeting Measurements

REFERENCE PHOTO TARGETS

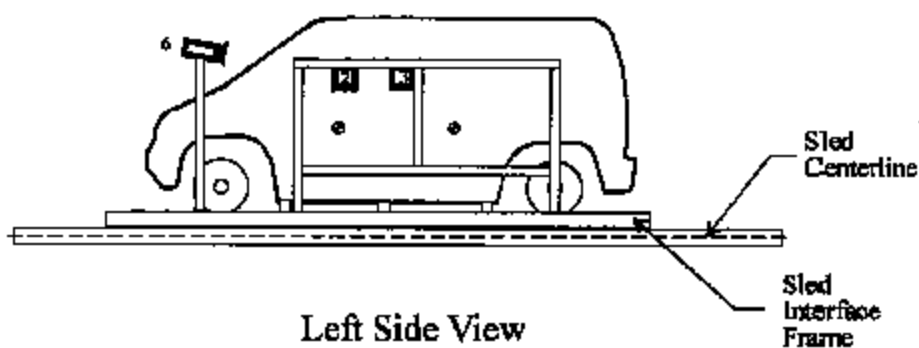


LEFT SIDE VIEW

Camera Positions



Camera Frame Rates:
 #1 = 24 fps
 All Others = 1,000 fps



Motion Picture Camera Locations

Vehicle year/make/model/body style: 2004/Ford/Freestar/MPV

NHTSA No.: C40209

Test Number: S040428

Camera Number	View	Camera Positions ¹			Camera Angle ²	Film Plane to Head Target	Camera Lens	Film Speed
		X	Y	Z				
1	Pre- and Post-Test panning and documentary	92.9 in	304.4 in	42.2 in	0.0°	286.3 in	6.7 mm	30 frames/s
2	Left side view wide	73.4 in	72.2 in	59.8 in	5.2°	52.8 in	13 mm	1000 frames/s
3	Left side view over shoulder	95.6 in	47.7 in	59.9 in	15.3°	33.9 in	7.5 mm	1200 frames/s
4	Right side view wide	71.2 in	74.7 in	59.0 in	2.5°	55.3 in	13 mm	1000 frames/s
5	Right side view over shoulder	97.8 in	48.3 in	58.6 in	12.6°	34.6 in	8 mm	1045 frames/s
6	Front view - driver	30.6 in	15.8 in	59.3 in	0.8°	51.7 in	8 mm	1062 frames/s
7	Front view - passenger	28.1 in	16.7 in	58.4 in	2.4°	50.6 in	8 mm	1002 frames/s

- ¹ X: Film plane to front of sled
Y: Film plane to sled centerline
Z: Film plane to top of sled

- ² Angle: Film plane of camera downward from horizontal plane

FMVSS 208 Occupant Injury Data

Vehicle: 2004/Ford/Freestar/MPV

NHTSA No.: C40209 Date:04/28/04

Maximum Acceleration Values: (g)	Driver Dummy #314	Passenger Dummy #229
Head Channel X	-42.7	-69.2
Head Channel Y	15.3	-15.5
Head Channel Z	20.5	33.1
HEAD RESULTANT	45.4	76.9
Chest Channel X	-29.4	-35.6
Chest Channel Y	4.2	2.5
Chest Channel Z	14.5	30.3
CHEST RESULTANT	32.1	39.8

Head Injury Criteria (HIC) Values:

HIC	188	345
$t_1 =$ (ms)	95.84	95.04
$t_2 =$ (ms)	131.84	120.32

The maximum HIC time interval from t_1 to t_2 is 36 milliseconds.

Chest Injury Criteria (Clip) Values:

CLIP (g)	31.8	38.0
$t_1 =$ (ms)	100.45	107.10
$t_2 =$ (ms)	103.41	110.07
Chest Deflection (in)	1.0	0.3

FMVSS 208 Occupant Injury Data, Cont'd.

Vehicle: 2004/Ford/Freestar/MPV

NHTSA No.: C40209 Date: 04/28/04

Max. Compressive Femur Forces:	Driver Dummy #314	Passenger Dummy #229
Left Side (lbs)	1066	819
Right Side (lbs)	1391	968

Neck Injury Criteria:	Driver Dummy #314	Passenger Dummy #229
Peak Flexion Bending Moment (N-m)	11	49
Peak Extension Bending Moment (N-m)	68	22
Peak Axial Tension (N)	1450	1642
Peak Axial Compression (N)	570	2873
Peak Positive X-axis Shear (N)	927	1592
Peak Negative X-axis Shear (N)	241	920

DATA SHEET 3
Certification Label and Tire Placard Information

NHTSA No. C40209

Test Date: 04/16/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

1. Certification Label
Manufacturer Ford Motor Company
Date of Manufacture 01/04
VIN 2FMZA50684BA66026
Vehicle certified as: Passenger car ☒ MPV ☐ Truck ☐ Bus
Front axle GVWR 2915 lbs
Rear axle GVWR 2760 lbs
Total GVWR 5680 lbs

2. Tire Placard
N/A - Vehicle is not a passenger car and does not have a tire placard.
☒ This is not a passenger car (see the item 1 above), but all or part of this information is still contained on a vehicle label and is reported here.

Vehicle Capacity Weight	<u>1200 lbs</u>
Designated seating capacity front	<u>2</u>
Designated seating capacity second	<u>2</u>
Designated seating capacity rear	<u>3</u>
Total Designated seating capacity	<u>7</u>
Recommended cold tire inflation pressure front	<u>35 psi</u>
Recommended cold tire inflation pressure rear	<u>35 psi</u>
Recommended tire size	<u>P225/60R16</u>

DATA SHEET 4
REAR OUTBOARD SEATING POSITION SEAT BELTS

NHTSA No. C40209

Test Date: 04/15/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

Do all rear outboard seating positions have type 2 seat belts? Yes X; No _____

If NO, describe the seat belt installed, the seat location, and any other information about the seat that would explain why a type 2 seat belt was not installed.

REMARKS:

DATA SHEET 5

AIR BAG LABELS (S4.5.1)

NHTSA No. C40209

Test Date: 04/15/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

1. Air Bag Maintenance Label and Owner's Manual Instructions: (S4.5.1(a))
 - 1.1 Does the manufacturer recommend periodic maintenance or replacement of the air bag?
☐ Yes (Go to 1.2); ☒ No (Go to 2)
 - 1.2 Does the vehicle have a label specifying air bag maintenance or replacement?
☐ Yes-Pass; ☒ No-FAIL
 - 1.3 Does the label contain one of the following?
☐ Yes-Pass; ☒ No-FAIL
 Check applicable schedule
☐ Schedule on label specifies month and year (Record date _____)
☐ Schedule on label specifies vehicle mileage (Record mileage _____)
☐ Schedule on label specifies interval measured from date on certification label
 (Record interval _____)
 - 1.4 Is the label permanently affixed within the passenger compartment such that it cannot be removed without destroying or defacing the label or the survivor?
☐ Yes-Pass; ☒ No-FAIL
 - 1.5 Is the label lettered in English?
☐ Yes-Pass; ☒ No-FAIL
 - 1.6 Is the label in block capitals and numerals?
☐ Yes-Pass; ☒ No-FAIL
 - 1.7 Are the letters and numerals at least 3/32 inches high?
 _____ height of letters and numerals
☐ Yes-Pass; ☒ No-FAIL
 - 1.8 Does the owner's manual set forth the recommended schedule for maintenance or replacement? ☐ Yes-Pass ☒ No-FAIL
2. Does the owner's manual: (S4.5.1(f))
 - 2.1 Include a description of the vehicle's air bag system in an easily understandable format?
☒ Yes-Pass; ☐ No-FAIL
 - 2.2 Include a statement that the vehicle is equipped with an air bag and a lap/shoulder belt at the front outboard seating positions?
☒ Yes-Pass; ☐ No-FAIL
 - 2.3 Include a statement that the air bag is a supplemental restraint at the front outboard seating positions?
☒ Yes-Pass; ☐ No-FAIL
 - 2.4 Emphasize that all occupants, including the driver, should always wear their seat belts whether or not an air bag is also provided at their seating positions to minimize the risk of severe injury or death in the event of a crash?
☒ Yes-Pass; ☐ No-FAIL
 - 2.5 Provide any necessary precautions regarding the proper positioning of occupants, including children, at seating positions equipped with air bags to ensure maximum safety protection for those occupants?
☒ Yes-Pass; ☐ No-FAIL
 - 2.6 Explain that no objects should be placed over or near the air bag on the steering wheel or on the instrument panel, because any such objects could cause harm if the vehicle is in a crash severe enough to cause the air bag to inflate?
☒ Yes-Pass; ☐ No-FAIL

- 2.7 is the vehicle certified to meet the requirements of S14.5, S15, S17, S19, S21, S23, and S25? (Obtain the answer to this question from the COTR.) (S4.5.1(f)(2))
 ___Yes (go to 2.7.1); XNo (go to 3)
- 2.7.1 Explain the proper functioning of the advanced air bag system? (S4.5.1(f)(2))
 ___Yes-Pass; ___No-FAIL
- 2.7.2 Provide a summary of the actions that may affect the proper functioning of the system? (S4.5.1(f)(2))
 ___Yes-Pass; ___No-FAIL
- 2.7.3 Present and explain the main components of the advanced passenger air bag system? (S4.5.1(f)(2)(i))
 ___Yes-Pass; ___No-FAIL
- 2.7.4 Explain how the components function together as part of the advanced passenger air bag system? (S4.5.1(f)(2)(ii))
 ___Yes-Pass; ___No-FAIL
- 2.7.5 Contain the basic requirements for proper operation, including an explanation of the actions that may affect the proper functioning of the system? (S4.5.1(f)(2)(iii))
 ___Yes-Pass; ___No-FAIL
- 2.7.6 Is the vehicle certified to the requirements of S19.2, S21.2 or S23.2 (automatic suppression)?
 ___Yes, continue with 2.7.6
 ___No, go to 2.7.7
- 2.7.6.1 Contain a complete description of the passenger air bag suppression system installed in the vehicle, including a discussion of any suppression zone? (S4.5.1(f)(2)(iv))
 ___Yes-Pass; ___No-FAIL
- 2.7.6.2 Discuss the telltale light, specifying its location in the vehicle and explaining when the light is illuminated?
 ___Yes-Pass; ___No-FAIL
- 2.7.7 Explain the interaction of the advanced passenger air bag system with other vehicle components, such as seat belts, seats or other components? (S4.5.1(f)(2)(v))
 ___Yes-Pass; ___No-FAIL
- 2.7.8 Summarize the expected outcomes when child restraint systems, children and small teenagers or adults are both properly and improperly positioned in the passenger seat, including cautionary advice against improper placement of child restraint systems? (S4.5.1(f)(2)(vi))
 ___Yes-Pass; ___No-FAIL
- 2.7.9 Provide information on how to contact the vehicle manufacturer concerning modifications for persons with disabilities that may affect the advanced air bag system? (S4.5.1(f)(2)(vii))
 ___Yes-Pass; ___No-FAIL
3. Sun Visor Air Bag Warning Label (S4.5.1 (b)) Check only one of the following:
X The vehicle is not certified to meet the requirements of S19, S21, and S23. (Obtain the answer to this question from the COTR.) (S4.5.1(b)(1)) Go to 3.1 and skip 3.2 and 3.3
 ___The vehicle is certified to meet the requirements of S19, S21, and S23 before 9/1/03. (Obtain the answer to this question from the COTR.) (S4.5.1(b)(2)) Go to 3.2 and skip 3.1 and 3.3
 ___The vehicle is certified to meet the requirements of S19, S21, and S23 on 9/1/03 or later. (Obtain the answer to this question from the COTR.) (S4.5.1(b)(3)) Go to 3.3 and skip 3.1 and 3.2
- 3.1 Vehicles not certified to meet the requirements of S19, S21, and S23.

- 3.1.1 Is the label permanently affixed (including permanent marking on the visor material or molding into the visor material) to either side of the sun visor at each front outboard seating position such that it cannot be removed without destroying or defacing it? (S4.5.1(b)(1))
 Driver side ☒ Yes-Pass ☐ No-FAIL
 Passenger side ☒ Yes-Pass ☐ No-FAIL
- 3.1.2 Does the label conform in content to the label shown in either Figure 6a or 6b (Figure 6b is for vehicles with passenger air bag on-off switches), as appropriate, at each front outboard seating position? (S4.5.1 (b)(1)) (Vehicles without back seats may omit the statement: "The BACK SEAT is the SAFEST place for children." (S4.5.1(b)(1)(iv)))
 Driver side ☒ Yes-Pass ☐ No-FAIL
 Passenger side ☒ Yes-Pass ☐ No-FAIL
- 3.1.3 Is the label heading area yellow with the word "WARNING" and the alert symbol in black? (S4.5.1 (b)(1)(i))
 Driver side ☒ Yes-Pass ☐ No-FAIL
 Passenger side ☒ Yes-Pass ☐ No-FAIL
- 3.1.4 Is the message area white with black text? (S4.5.1 (b)(1)(ii))
 Driver side ☒ Yes-Pass ☐ No-FAIL
 Passenger side ☒ Yes-Pass ☐ No-FAIL
- 3.1.5 Is the message area at least 30 cm²? (S4.5.1 (b)(1)(iii))
 Driver side: Length 8.3, Width 3.6
 Passenger side: Length 8.3, Width 3.6
 Actual message area 30 cm²
 Driver side ☒ Yes-Pass ☐ No-FAIL
 Passenger side ☒ Yes-Pass ☐ No-FAIL
- 3.1.6 Is the pictogram black with a red circle and slash on a white background? (S4.5.1(b)(2)(III))
 Driver side ☒ Yes-Pass ☐ No-FAIL
 Passenger side ☒ Yes-Pass ☐ No-FAIL
- 3.1.7 Is the pictogram at least 30 mm in diameter? (S4.5.1 (b)(2)(III))
 Actual diameter 31 mm
 Driver side ☒ Yes-Pass ☐ No-FAIL
 Passenger side ☒ Yes-Pass ☐ No-FAIL
- 3.2 Vehicles certified to meet the requirements of S19, S21, and S23 before 9/1/03.
 (S4.5.1(b)(2))
- 3.2.1 Is the label permanently affixed (including permanent marking on the visor material or molding into the visor material) to either side of the sun visor at each front outboard seating position such that it cannot be removed without destroying or defacing the label or the sun visor? (S4.5.1 (b)(2))
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL
- 3.2.2 Does the label conform in content to the label shown in Figure 6 or Figure 11 at each front outboard seating position? (S4.5.1(b)(2)) (Vehicles without back seats may omit the statement: "The BACK SEAT is the SAFEST place for children." (S4.5.1(b)(2)(iv)) Vehicles without back seats or the back seat is too small to accommodate a rear-facing child restraint may omit the statement "Never put a rear-facing child seat in the front." (S4.5.1(b)(2)(v)))
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL
- 3.2.3 Is the label heading area yellow with the word "WARNING" and the alert symbol in black? (S4.5.1 (b)(2)(i))
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL
- 3.2.4 Is the message area white with black text? (S4.5.1(b)(2)(II))
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL

- 3.2.5 Is the message area at least 30 cm²? (S4.5.1(b)(2)(II))
 Driver side: Length _____ Width _____
 Passenger side: Length _____ Width _____
 Driver actual message area _____ cm²
 Passenger actual message area _____ cm²
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL
- 3.2.6 Is the pictogram black on a white background? (S4.5.1(b)(2)(III))
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL
- 3.2.7 Is the pictogram at least 30 mm (1.2 in) in length? (S4.5.1(b)(2)(iii))
 Driver side: Length _____
 Passenger side: Length _____
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL
- 3.3 Vehicles certified to meet the requirements of S19, S21, and S23 on 9/1/03 and later.
 (S4.5.1(b)(3))
- 3.3.1 Is the label permanently affixed (including permanent marking on the visor material or molding into the visor material) to either side of the sun visor at each front outboard seating position such that it cannot be removed without destroying or defacing the label or the sun visor? (S4.5.1(b)(3))
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL
- 3.3.2 Does the label conform in content to the label shown in Figure 11 at each front outboard seating position? (S4.5.1(b)(2)) (Vehicles without back seats may omit the statement: "The BACK SEAT is the SAFEST place for children." (S4.5.1(b)(3)(iv)) Vehicles without back seats or the back seat is too small to accommodate a rear-facing child restraint may omit the statement "Never put a rear-facing child seat in the front." (S4.5.1(b)(3)(v)))
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL
- 3.3.3 Is the label heading area yellow with the word "WARNING" and the alert symbol in black? (S4.5.1(b)(3)(i))
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL
- 3.3.4 Is the message area white with black text? (S4.5.1(b)(3)(ii))
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL
- 3.3.5 Is the message area at least 30 cm²? (S4.5.1(b)(3)(iii))
 Driver side: Length _____ Width _____
 Passenger side: Length _____ Width _____
 Driver actual message area _____ cm²
 Passenger actual message area _____ cm²
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL
- 3.3.6 Is the pictogram black on a white background? (S4.5.1(b)(3)(iii))
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL
- 3.3.7 Is the pictogram at least 30 mm in length? (S4.5.1(b)(3)(iii))
 Driver side: Length _____
 Passenger side: Length _____
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL

- 3.4 Is the same side of the sun visor that contains the air bag warning label free of other information with the exception of the air bag maintenance label and/or the rollover-warning label? (S4.5.1 (b)(5)(i))
 Driver side ☒ Yes-Pass ☐ No-FAIL
 Passenger side ☒ Yes-Pass ☐ No-FAIL
- 3.5 Is the sun visor free of other information about air bags or the need to wear seat belts with the exception of the air bag alert label and/or the rollover-warning label? (S4.5.1(b)(5)(ii))
 Driver side ☒ Yes-Pass ☐ No-FAIL
 Passenger side ☒ Yes-Pass ☐ No-FAIL
- 3.6 Does the driver side visor contain a rollover-warning label on the same side of the visor as the air bag warning label?
☐ Yes (go to 3.6.1); ☒ No (go to 4., skipping 3.6.1 through 3.6.3)
- 3.6.1 Are both the rollover-warning label and the air bag warning label surrounded by a continuous solid-lined border?
☐ Yes (go to 3.6.2 and skip 3.6.3); ☐ No (go to 3.6.3 and skip 3.6.2.)
- 3.6.2 Is the shortest distance from the border of the rollover label to the border of the air bag warning label at least 1 cm? (575.105 (d)(1)(iv)(B))
 _____ actual distance
☐ Yes-Pass ☐ No-FAIL
- 3.6.3 Is the shortest distance from any of the lettering or graphics on the rollover-warning label to any of the lettering or graphics of the air bag warning label at least 3 cm? (575.105(d)(1)(iv)(A))
 _____ actual distance
☐ Yes-Pass ☐ No-FAIL
4. Air Bag Alert Label (S4.5.1(c)) (A "Rollover Warning Label" or "Rollover Alert Label" may be on the same side of the driver's sun visor as the "Air Bag Alert Label" 575.105(d))
- 4.1 Is the Sun Visor Warning Label visible when the sun visor is in the stowed position?
 Driver side ☒ Yes ☐ No
 Passenger side ☒ Yes ☐ No
If yes, for driver and passenger go to 5.
- 4.2 Is the air bag alert label permanently affixed (including permanent marking on the visor material or molding into the visor material) to the sun visor at each front outboard seating position such that it cannot be removed without destroying or defacing the label or the sun visor? (S4.5.1(c))
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL
- 4.3 Is the air bag alert label visible when the visor is in the stowed position? (S4.5.1(c))
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL
- 4.4 Does the label conform in content to the label shown in Figure 6c? (S4.5.1(c))
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL
- 4.5 Is the message area black with yellow text? (S4.5.1(c)(1))
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL
- 4.6 Is the message area at least 20 cm²? (S4.5.1(c)(1))
 Driver side: Length _____ Width _____
 Passenger side: Length _____ Width _____
 Actual message area _____ cm²
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL
- 4.7 Is the pictogram black with a red circle and slash on a white background? (S4.5.1(c)(2))
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL

- 4.8 Is the pictogram at least 20 mm in diameter? (S4.5.1(c)(2))
 Driver side: diameter _____
 Passenger side: diameter _____
 Driver side ☐ Yes-Pass ☐ No-FAIL
 Passenger side ☐ Yes-Pass ☐ No-FAIL
5. Label On the Dashboard
- 5.1 Is the vehicle certified to meet the requirements of S10, S21, and S23? (Obtain the answer to this question from the COTR.) (S4.5.1(e)(2))
☐ Yes (go to 5.1.1 and skip 5.2)
☒ No (go to 5.2, skipping 5.1.1 through 5.1.6)
- 5.1.1 Does the vehicle have a label on the dash or steering wheel hub? (S4.5.1(e)(2))
☐ Yes-Pass ☐ No-FAIL
- 5.1.2 Is the label clearly visible from all front seating positions? (S4.5.1(e)(2))
☐ Yes-Pass ☐ No-FAIL
- 5.1.3 Does the label conform in content to the label shown in Figure 8? (S4.5.1(e)(2))
 (Vehicles without back seats may omit the statement: "The back seat is the safest place for children." (S4.5.1(e)(2)(III)))
☐ Yes-Pass; ☐ No-Fail
- 5.1.4 Is the heading area yellow with black text? (S4.5.1(e)(2)(i))
☐ Yes-Pass; ☐ No-FAIL
- 5.1.5 Is the message white with black text? (S4.5.1(e)(2)(II))
☐ Yes-Pass; ☐ No-FAIL
- 5.1.6 Is the message area at least 30 cm²? (S4.5.1(e)(2)(III))
 Length _____, Width _____
 Actual message area _____ cm²
☐ Yes-Pass; ☐ No-FAIL
- 5.2 Does the vehicle have a label on the dash or steering wheel hub? (S4.5.1(e)(1))
☒ Yes-Pass ☐ No-FAIL
- 5.2.1 Is the label clearly visible from all front seating positions? (S4.5.1(e)(1))
☒ Yes-Pass ☐ No-FAIL
- 5.2.2 Does the label conform in content to the label shown in Figure 7? (S4.5.1 (e)(1)(III))
 (Vehicles without back seats may omit the statement: "The back seat is the safest place for children 12 and under." (S4.5.1(e)(2)(III)))
☒ Yes-Pass; ☐ No-Fail
- 5.2.3 Is the heading area yellow with the word "WARNING" and the alert symbol in black? (S4.5.1 (e)(1)(i))
☒ Yes-Pass; ☐ No-FAIL
- 5.2.4 Is the message white with black text? (S4.5.1(e)(1)(II))
☒ Yes-Pass; ☐ No-FAIL
- 5.2.5 Is the message area at least 30 cm²? (S4.5.1(e)(1)(III))
 Length 12.5 _____, Width 3.0 _____
 Actual message area 38 _____ cm²
☒ Yes-Pass; ☐ No-FAIL

Label Outline, Vertical and Horizontal Line Black

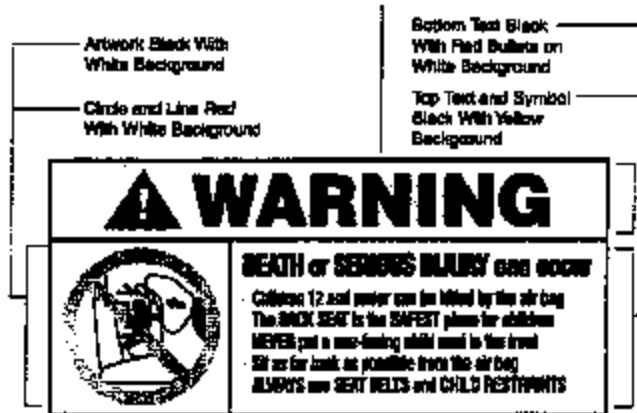


Figure 8a. Sun Visor Label Visible When Visor is in Down Position.

Label Outline, Vertical and Horizontal Line Black

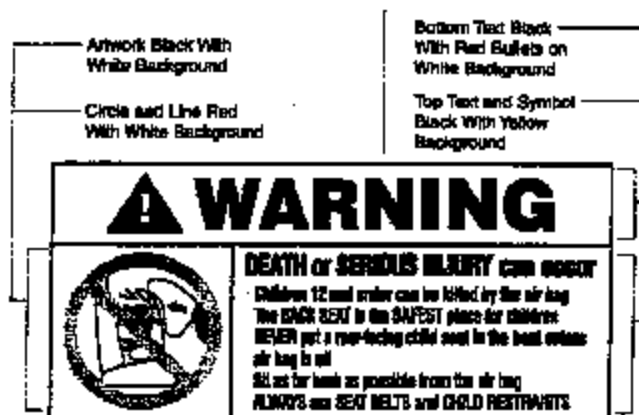


Figure 8b. Sun Visor Label Visible When Visor is in Down Position.

Circle and Line Red
With White Background

Artwork Black With
White Background

Text Yellow With
Black Background



Figure 6c. Sun Visor Label Visible When Visor is In Up Position.

Label Outline and Horizontal Line Black

Bottom Text Black
With White
Background

Top Text and Symbol
Black With Yellow
Background



Figure 7. Removable Label on Dash.

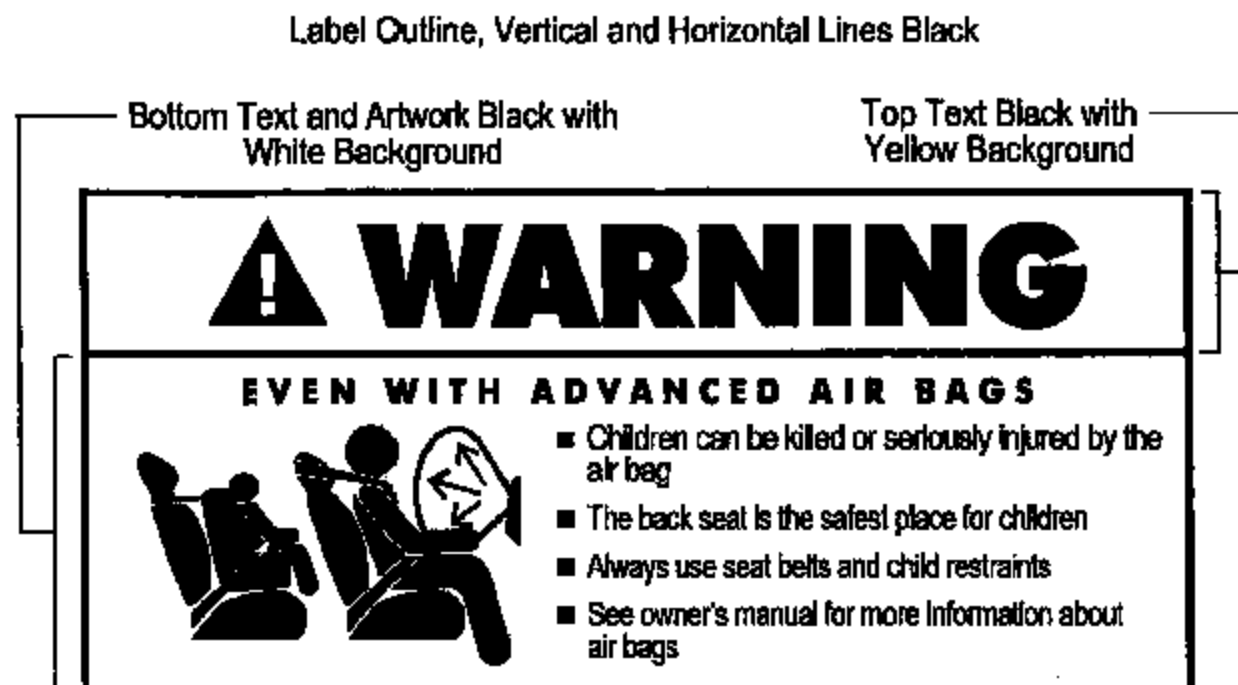


Figure 8. Sun Visor Label Visible when Visor is in Down Position.

Label Outline, Vertical and Horizontal Lines Black

Bottom Text Black with
White Background

Top Text Black with
Yellow Background

**This Vehicle is Equipped with
Advanced Air Bags**

Even with Advanced Air Bags

Children can be killed or seriously injured by the air bag.

The back seat is the safest place for children.

Always use seat belts and child restraints.

See owner's manual for more information about air bags.


Figure 9. Removable Label on Dash.

Bottom Text and Artwork Black with
White Background

Top Text Black with
Yellow Background

! WARNING

EVEN WITH ADVANCED AIR BAGS



- Children can be killed or seriously injured by the air bag
- The back seat is the safest place for children
- Never put a rear-facing child seat in the front
- Always use seat belts and child restraints
- See owner's manual for more information about air bags

Figure 11. Sun Visor Label Visible when Visor is in Down Position.

DATA SHEET 6

FMVSS 208 READINESS INDICATOR (S4.5.2)

NHTSA No. C40209

Test Date: 04/15/04

Laboratory: TBC Inc.

Test Technician(s): Michael S. Postle

An occupant restraint system that deploys in the event of a crash shall have a monitoring system with a readiness indicator. A totally mechanical system is exempt from this requirement. (11/8/94 legal interpretation to Lawrence F. Henneberger on behalf of Breed)

- X 1. Is the system totally mechanical? Yes ; No X
(If YES this Data Sheet is complete.)
- X 2. Describe the location of the readiness indicator: Lower right corner of instrument cluster
-
- X 3. Is the readiness indicator clearly visible to the driver?
X Yes-Pass; No-FAIL
- X 4. Is a list of the elements in the occupant restraint system, being monitored by the readiness indicator, provided on a label or in the owner's manual?
X Yes-Pass; No-FAIL
- X 5. Does the vehicle have an on-off switch for the passenger air bag?
 Yes (go to 6) X No (this form is complete)
6. Is the air bag readiness indicator off when the passenger air bag switch is in the off position?
 Yes-Pass; No-FAIL

REMARKS:

DATA SHEET 7

Passenger Air Bag Manual Cut-Off Device (S4.5.4)

NHTSA No. C40209

Test Date: 04/16/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

- ☒ 1. Is the vehicle equipped with an on-off switch that deactivates the air bag installed at the right front outboard seating position?
☐ Yes, go to 2
☒ No, this sheet is complete
- ☐ 2. Does the vehicle have any forward-facing rear designated seating positions? (S4.5.4(a))
☐ Yes, go to 3
☐ No, go to 4
- ☐ 3. Verification of the lack of room for a child restraint in the rear seat behind the driver's seat. (S4.5.4(b))
- ☐ 3.1 Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
☐ N/A - No lumbar adjustment
- ☐ 3.2 Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
☐ N/A - No additional support adjustment
- ☐ 3.3 If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
☐ N/A - No independent fore-aft seat cushion adjustment
- ☐ 3.4 If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
☐ N/A - No independent seat cushion height adjustment
- ☐ 3.5 Put the seat in its full rearward position. (S16.2.10.3.1)
☐ N/A - the seat does not have a fore-aft adjustment
- ☐ 3.6 If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
☐ N/A - No seat height adjustment
- ☐ 3.7 Draw a horizontal reference line on the side of the seat cushion.
- ☐ 3.8 Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
☐ N/A - The seat does not have a fore-aft adjustment.
- ☐ 3.9 Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position. (S8.1.2)
☐ N/A - The seat does not have fore-aft adjustment.
☐ Mid position
If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: _____
- ☐ 3.10 If seat adjustments, other than fore-aft, are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal.
☐ N/A - No adjustments
Angle of reference line as tested: _____

- ___ 3.11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
 ___ N/A - No seat back angle adjustment
 Manufacturer's design seat back angle _____
 Tested seat back angle _____
- ___ 3.12 Is the driver seat a bucket seat?
 ___ Yes, go to 3.12.1 and skip 3.12.2.
 ___ No, go to 3.12.2 and skip 3.12.1.
- ___ 3.12.1 Bucket seats:
 ___ 3.12.1.1 Locate and mark a vertical Plane B through the longitudinal centerline of the seat driver's seat cushion. (S22.2.1.3) The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle. Measure
 Record the width of the seat. _____
 Record the distance from the edge of the seat to Plane B. _____
- ___ 3.12.1.2 Locate the longitudinal horizontal line in plane B that is tangent to the highest point of the rear seat cushion behind the driver's seat. Measure along this line from the front of the seat back of the rear seat to the rear of the seat back of the driver's seat.
 ___ mm distance
 ___ less than 720 mm - Pass
 ___ more than 720 mm - FAIL
 Go to 4
- ___ 3.12.2 Bench seats (including split bench seats):
 ___ 3.12.2.1 Locate and mark a vertical Plane B through the center of the steering wheel parallel to the vehicle longitudinal centerline.
 ___ 3.12.2.2 Locate the longitudinal horizontal line in plane B that is tangent to the highest point of the rear seat cushion. Measure along this line from the front of the seat back of the rear seat to the rear of the seat back of the front seat.
 ___ mm distance
 ___ less than 720 mm - Pass
 ___ more than 720 mm - FAIL
 Go to 4
- ___ 4. Does the device turn the air bag on and off using the vehicle's Ignition key? (S4.5.4.2)
 ___ Yes - Pass
 ___ No - FAIL
- ___ 5. Is the on-off device separate from the ignition switch? (S4.5.4.2)
 ___ Yes - Pass
 ___ No - FAIL
- ___ 6. Is there a telltale light that comes on when the passenger air bag is turned off? (S4.5.4.2)
 ___ Yes - Pass
 ___ No - FAIL
- ___ 7. Telltale light (S4.5.4.3)
 ___ 7.1 Is the light yellow? S4.5.4.3(a)
 ___ Yes - Pass
 ___ No - FAIL
- ___ 7.2 Are the words "PASSENGER AIR BAG OFF" (S4.5.4.3(b))
 ___ 7.2.1 on the telltale?
 ___ Yes - Pass, go to 7.3
 ___ No - go to 7.2.2
 ___ 7.2.2 within 25 mm of the telltale? _____ mm from the edge of the telltale light
 ___ Yes - Pass
 ___ No - FAIL

- __7.3 Does the telltale remain illuminated while the air bag is turned off? (S4.5.4.3c) (Leave the air bag off for 5 minutes.)
 __Yes - Pass
 __No - **FAIL**
- __7.4 Is the telltale illuminated while the air bag is turned on? (S4.5.4.3(d))
 __Yes - **FAIL**
 __No - Pass
- __7.5 Is the telltale combined with the air bag readiness indicator? (S4.5.3(e))
 __Yes - **FAIL**
 __No - Pass
- __8. Owner's manual
- __8.1 Does the owner's manual contain complete instructions on the operation of the on-off switch? (S4.5.4.4(a))
 __Yes - Pass
 __No - **FAIL**
- __8.2 Does the owner's manual contain a statement that the on-off switch should only be used when a member of one of the following risk groups is occupying the right front passenger seating position? (S4.5.4.4(b))
- | | |
|------------------------|--|
| Infants: | there is no back seat
the rear seat is too small to accommodate a child restraint
there is a medical condition that must be monitored constantly |
| Children aged 1 to 12: | there is no back seat
space is not always available in the rear seat
there is a medical condition that must be monitored constantly |
| Medical condition: | medical risk causes special risk for passenger
greater risk for harm than with the air bag on |
- __Yes - Pass
 __No - **FAIL**
- __8.3 Does the owner's manual contain a warning about the safety consequences of using the on-off switch at other times?
 __Yes - Pass
 __No - **FAIL**

DATA SHEET 8
LAP BELT LOCKABILITY
Passenger cars, trucks, buses, and multipurpose passenger
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for each designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), and that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No. C40209

Test Date: 04/18/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: Right front passenger

 N/A - No retractor is at this position

 N/A - The retractor is an automatic locking retractor ONLY

- X 1. Record test fore-aft seat position. Mid
(S7.1.1.5 (c)(1))
(Any position is acceptable.)
- X 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle.
(S7.1.1.5 (a))
X Yes-Pass; No-FAIL
- X 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))
X Yes-Pass; No-FAIL
- X 4. Buckle the seat belt. (S7.1.1.5(c)(1))
- X 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))
- X 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
- X 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
X Yes; No (If yes, go to 7.1. If no, go to 8.)
- X 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))
X Yes-Pass; No-FAIL
- X 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))
- X 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly.
(S7.1.1.5(c)(2))
Measured distance between A and B 74.6 inches
- X 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing.
(S7.1.1.5(c)(3))

- X 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))
Measured force application angle 10 degrees (spec. 5 - 15 degrees)
- X 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))
Measured distance between A and B 54.0 inches
- X 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))
Record onset rate 25 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))
Measured distance between A and B 54.3 inches (S7.1.1.5(c)(6))
- X 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) $13-12=$ 0.3 inches;
X Yes-Pass; No-FAIL
- X 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) $9-13=$ 20.5 inches;
X Yes-Pass; No-FAIL

REMARKS:

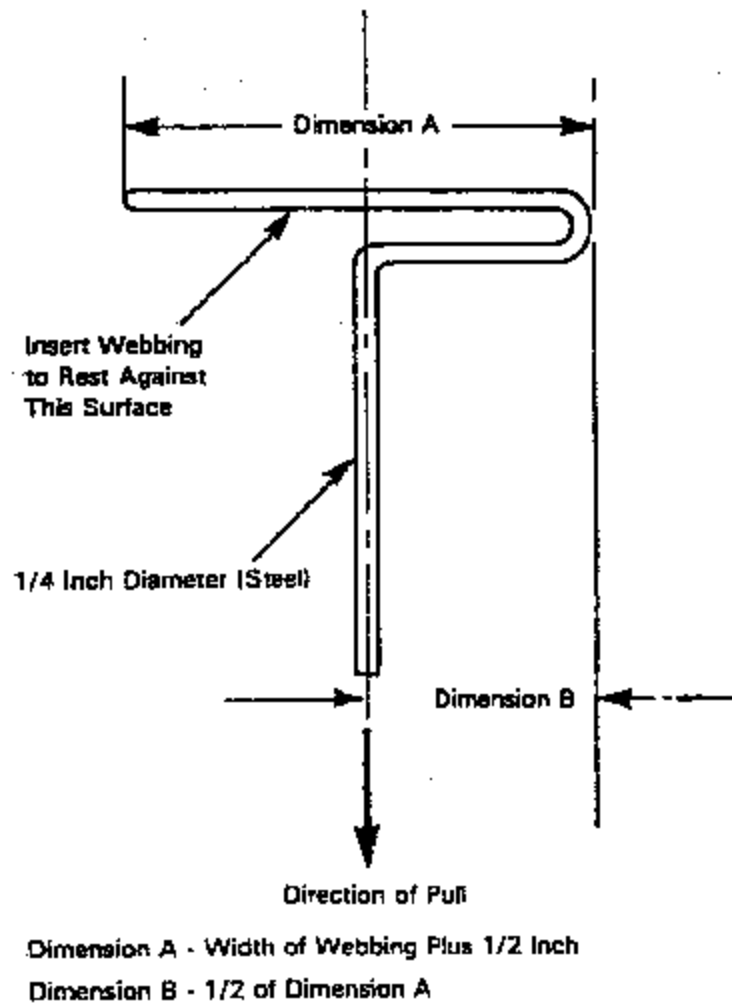


Figure 5. - Webbing Tension Pull Device

DATA SHEET B
LAP BELT LOCKABILITY
Passenger cars, trucks, buses, and multipurpose passenger
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for each designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), and that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No. C40209

Test Date: 04/16/04

Laboratory: TRC Inc. Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: 2nd Row, Right outboard passenger

 N/A – No retractor is at this position

 N/A – The retractor is an automatic locking retractor ONLY

- X 1. Record test fore-aft seat position. Fixed
(S7.1.1.5 (c)(1))
(Any position is acceptable.)
- X 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))
X Yes-Pass; No-FAIL
- X 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))
X Yes-Pass; No-FAIL
- X 4. Buckle the seat belt. (S7.1.1.5(c)(1))
- X 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))
- X 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
- X 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
X Yes; No (If yes, go to 7.1. If no, go to 8.)
- X 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))
X Yes-Pass; No-FAIL
- X 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))
- X 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
Measured distance between A and B 71.2 inches
- X 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- X 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))
Measured force application angle 10 degrees (spec. 5 - 15 degrees)
- X 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))
Measured distance between A and B 58.0 inches
- X 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(6))
Record onset rate 25 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))
Measured distance between A and B 58.8 inches (S7.1.1.5(c)(6))
- X 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) $13-12=$ 0.8 inches;
X Yes-Pass; No-FAIL
- X 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) $9-13=$ 12.4 inches;
X Yes-Pass; No-FAIL

REMARKS:

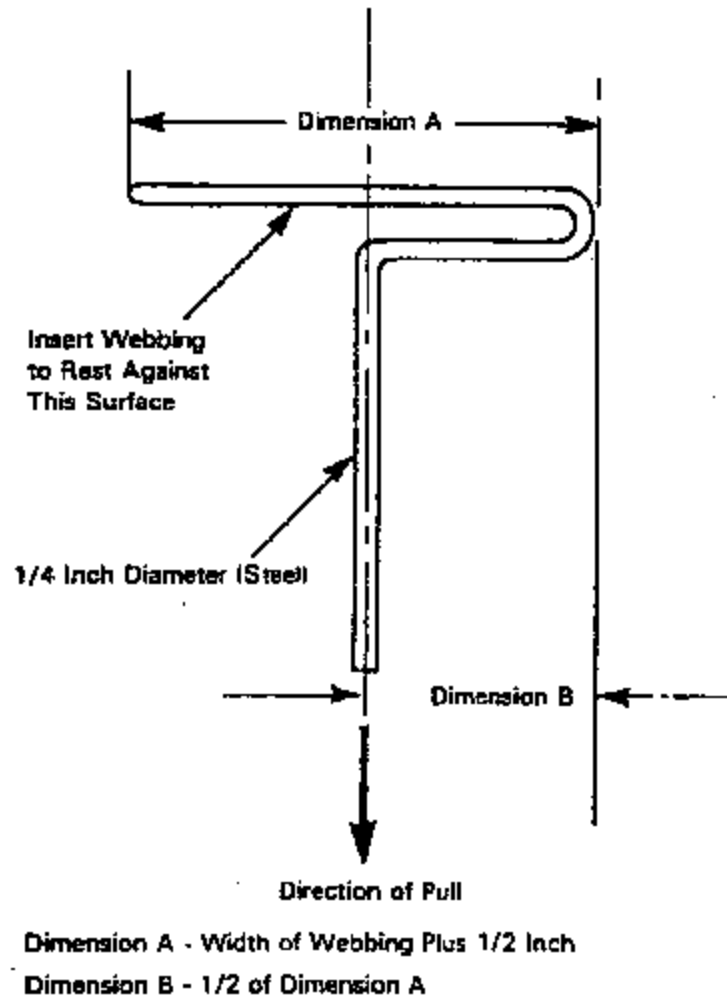


Figure 5. - Webbing Tension Pull Device

DATA SHEET B
LAP BELT LOCKABILITY

Passenger cars, trucks, buses, and multipurpose passenger
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for each designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), and that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No. C40206

Test Date: 04/16/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: 2nd Row, Left outboard passenger

☐ N/A - No retractor is at this position

☐ N/A - The retractor is an automatic locking retractor ONLY

- ☒ 1. Record test fore-aft seat position. Fixed
(S7.1.1.5 (c)(1))
(Any position is acceptable.)
- ☒ 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))
X Yes-Pass; No-FAIL
- ☒ 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))
X Yes-Pass; No-FAIL
- ☒ 4. Buckle the seat belt. (S7.1.1.5(c)(1))
- ☒ 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))
- ☒ 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
- ☒ 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
X Yes; No (If yes, go to 7.1. If no, go to 8.)
- ☒ 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))
X Yes-Pass; No-FAIL
- ☒ 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))
- ☒ 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
Measured distance between A and B 73.5 inches
- ☒ 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- X 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))
Measured force application angle 10 degrees (spec. 5 - 15 degrees)
- X 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))
Measured distance between A and B 63.0 inches
- X 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))
Record onset rate 25 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))
Measured distance between A and B 63.7 inches (S7.1.1.5(c)(6))
- X 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= 0.7 inches;
X Yes-Pass; No-FAIL
- X 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13= 9.8 inches;
X Yes-Pass; No-FAIL

REMARKS:

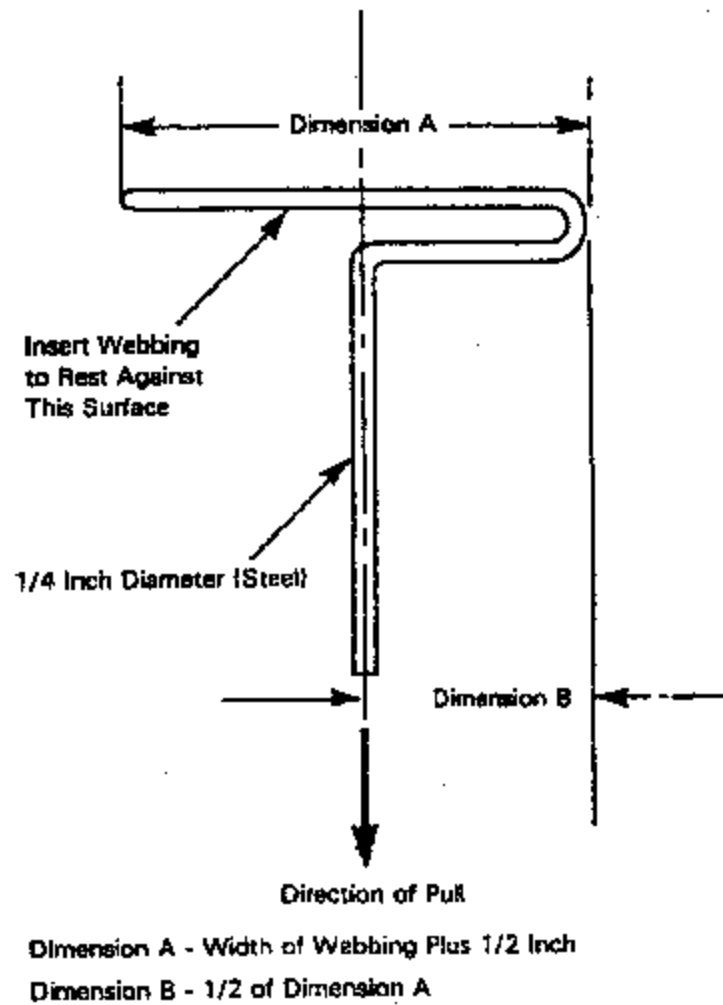


Figure 5. - Webbing Tension Pull Device

DATA SHEET 8
LAP BELT LOCKABILITY

Passenger cars, trucks, buses, and multipurpose passenger
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for each designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), and that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No. C40209

Test Date: 04/16/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: 3rd Row, Left outboard passenger

 N/A – No retractor is at this position

 N/A – The retractor is an automatic locking retractor ONLY

- X 1. Record test fore-aft seat position. Fixed
(S7.1.1.5 (c)(1))
(Any position is acceptable.)
- X 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))
 X Yes-Pass; No-FAIL
- X 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))
 X Yes-Pass; No-FAIL
- X 4. Buckle the seat belt. (S7.1.1.5(c)(1))
- X 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))
- X 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
- X 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
 X Yes; No (If yes, go to 7.1. If no, go to 8.)
- X 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))
 X Yes-Pass; No-FAIL
- X 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))
- X 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
Measured distance between A and B 76.5 inches
- X 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- X 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))
Measured force application angle 10 degrees (spec. 5 - 15 degrees)
- X 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))
Measured distance between A and B 63.2 inches
- X 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))
Record onset rate 25 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))
Measured distance between A and B 64.0 inches (S7.1.1.5(c)(6))
- X 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= 0.8 inches;
X Yes-Pass; No-FAIL
- X 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13= 12.5 inches;
X Yes-Pass; No-FAIL

REMARKS:

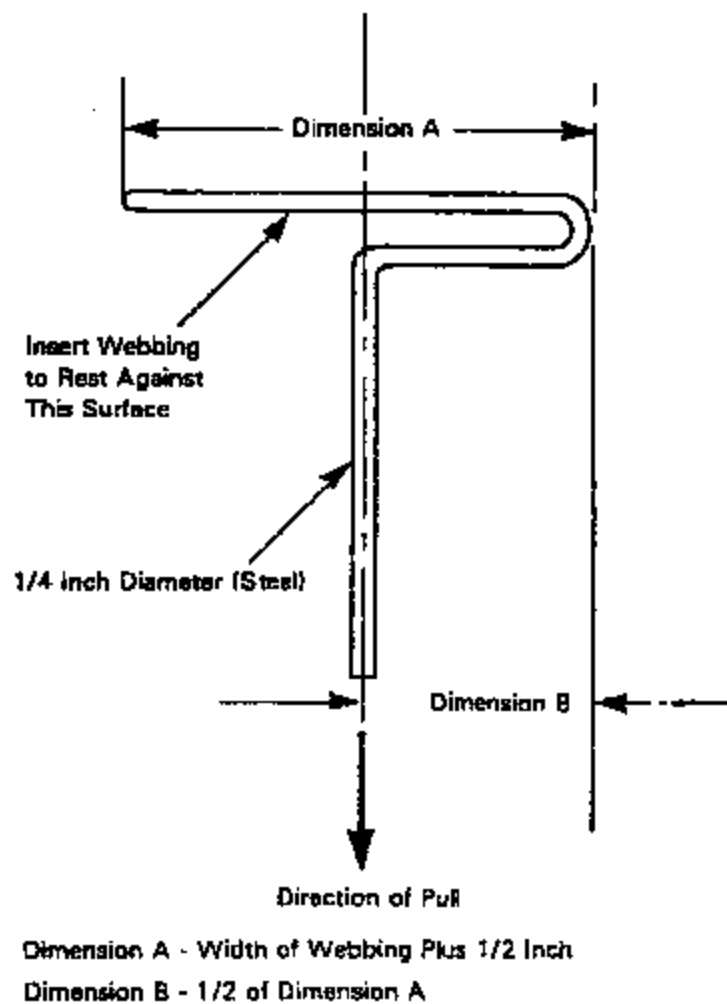


Figure 5. - Webbing Tension Pull Device

DATA SHEET 8
LAP BELT LOCKABILITY

Passenger cars, trucks, buses, and multipurpose passenger
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for each designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), and that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No. C40209

Test Date: 04/16/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Poole

DESIGNATED SEATING POSITION: 3rd Row, Center passenger

 N/A – No retractor is at this position

 N/A – The retractor is an automatic locking retractor ONLY

- X 1. Record test fore-aft seat position. Fixed
(S7.1.1.5 (c)(1))
(Any position is acceptable.)
- X 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))
 X Yes-Pass; No-FAIL
- X 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))
 X Yes-Pass; No-FAIL
- X 4. Buckle the seat belt. (S7.1.1.5(c)(1))
- X 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))
- X 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
- X 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
 X Yes; No (If yes, go to 7.1. If no, go to 8.)
- X 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))
 X Yes-Pass; No-FAIL
- X 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))
- X 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
Measured distance between A and B 63.2 inches
- X 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- X 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))
Measured force application angle 10 degrees (spec. 5 - 15 degrees)
- X 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))
Measured distance between A and B 53.2 inches
- X 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))
Record onset rate 25 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))
Measured distance between A and B 54.7 inches (S7.1.1.5(c)(6))
- X 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= 1.6 inches;
X Yes-Pass; No-FAIL
- X 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13= 8.5 inches;
X Yes-Pass; No-FAIL

REMARKS:

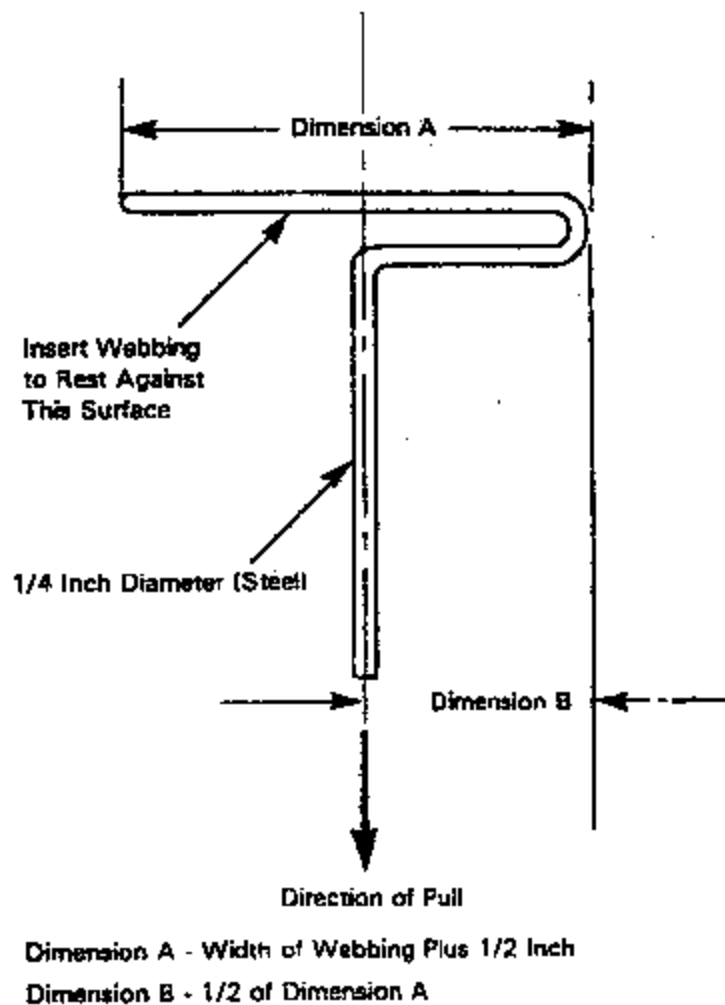


Figure 5. - Webbing Tension Pull Device

DATA SHEET 8
LAP BELT LOCKABILITY
Passenger cars, trucks, buses, and multipurpose passenger
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for each designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), and that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No. C40209

Test Date: 04/16/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: 3rd Row, Right outboard passenger

☐ N/A – No retractor is at this position

☐ N/A – The retractor is an automatic locking retractor ONLY

- ☒ 1. Record test fore-aft seat position. Fixed
(S7.1.1.5 (c)(1))
(Any position is acceptable.)
- ☒ 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))
☒ Yes-Pass; ☐ No-FAIL
- ☒ 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))
☒ Yes-Pass; ☐ No-FAIL
- ☒ 4. Buckle the seat belt. (S7.1.1.5(c)(1))
- ☒ 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))
- ☒ 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
- ☒ 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
☒ Yes; ☐ No (If yes, go to 7.1. If no, go to 8.)
- ☒ 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))
☒ Yes-Pass; ☐ No-FAIL
- ☒ 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))
- ☒ 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
Measured distance between A and B 72.2 inches
- ☒ 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- X 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))
Measured force application angle 10 degrees (spec. 5 - 15 degrees)
- X 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))
Measured distance between A and B 60.0 inches
- X 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))
Record onset rate 25 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))
Measured distance between A and B 60.8 inches (S7.1.1.5(c)(6))
- X 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= 0.8 inches;
X Yes-Pass; No-FAIL
- X 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13= 11.4 inches;
X Yes-Pass; No-FAIL

REMARKS:

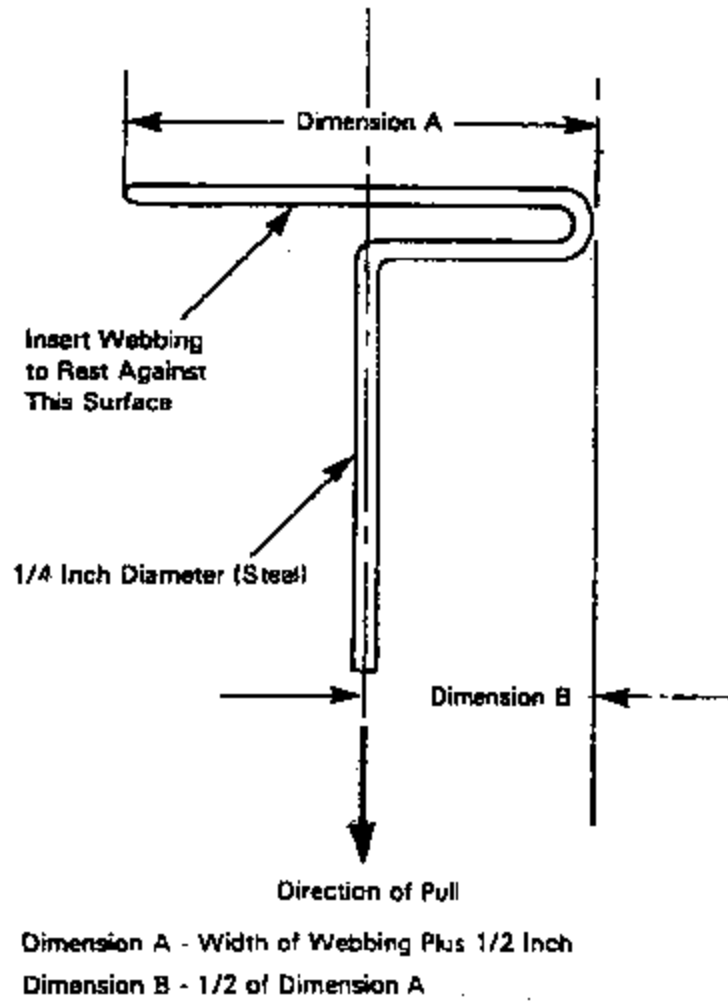


Figure 5. - Webbing Tension Pull Device

DATA SHEET 9

FMVSS 208 SEAT BELT WARNING SYSTEM CHECK (S7.3)

NHTSA No. C40209

Test Date: 04/16/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

- ☒ 1. The occupant is in the driver's seat.
- ☒ 2. The seat belt is in the stowed position.
- ☒ 3. The key is in the "on" or "start" position.
- ☒ 4. The time duration of the audible signal beginning with key "on" or "start" is 6 seconds.
- ☒ 5. The occupant is in the driver's seat.
- ☒ 6. The seat belt is in the stowed position.
- ☒ 7. The key is in the "on" or "start" position.
- ☒ 8. The time duration of the warning light beginning with key "on" or "start" is 62 seconds.
- ☒ 9. The occupant is in the driver's seat.
- ☒ 10. The seat belt is in the latched position and with at least 4 inches of belt webbing extended.
- ☒ 11. The key is in the "on" or "start" position.
- ☒ 12. The time duration of the audible signal beginning with key "on" or "start" is 0 seconds.
- ☒ 13. The occupant is in the driver's seat.
- ☒ 14. The seat belt is in the latched position and with at least 4 inches of belt webbing extended.
- ☒ 15. The key is in the "on" or "start" position.
- ☒ 16. The time duration of the warning light beginning with key "on" or "start" is 0 seconds.
- ☒ 17. Complete the following table with the data from 4, 8, 12 and 16 to determine which option is used

		Warning light	Warning light specification	Audible signal	Audible signal specification*
S7.3 (a)(1)	Belt latched & Key on or start	Item 16 <u>0</u>	0 seconds*	Item 12 <u>0</u>	0 seconds**
	Belt stowed & Key on or start	Item 8 <u>62</u>	60 seconds minimum	Item 4 <u>6</u>	4 to 8 seconds
S7.3 (a)(2)	Belt latched & Key on or start	Item 16 <u>0</u>	4 to 8 seconds	Item 12 <u>0</u>	0 seconds**
	Belt stowed & Key on or start	Item 8 <u>62</u>	4 to 8 seconds	Item 4 <u>6</u>	4 to 8 seconds

* 49 USC § 30124 does NOT allow an audible signal to operate for more than 8 seconds.

** 0 seconds means the light or audible signal are NOT permitted to operate under these conditions. See 7/12/00 interpretation to Patrick Raher of Hogan and Hartson

- ☒ 18. The seat belt warning system meets the requirements of (manufacturers may comply with either section)
☒ S7.3 (a)(1)
☐ S7.3 (a)(2)
☐ FAIL - Does NOT meet the requirements of either option
- ☒ 19. Note wording of visual warning: (S7.3(a)(1) and S7.3(a)(2))
☐ Fasten Seat Belts
☐ Fasten Belts
☒ Symbol 101
☐ FAIL - Does not use any of the above wording or symbol

DATA SHEET 10

BELT CONTACT FORCE (S7.4.3)

NHTSA No. C40209

Test Date: 04/19/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: Driver

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- X 1. Does the vehicle incorporate a webbing tension-relieving device?
 ___ Yes (this form is complete)
X No (continue with this check sheet)
- X 3. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
X N/A - No lumbar adjustment
- X 4. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
X N/A - No additional support adjustment
- X 5. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
X N/A - No independent fore-aft seat cushion adjustment
- X 6. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
X N/A - No independent seat cushion height adjustment
- X 7. Put the seat in its full rearward position. (S16.2.10.3.1)
 ___ N/A - the seat does not have a fore-aft adjustment
- X 8. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
X N/A - No seat height adjustment
- X 9. Draw a horizontal reference line on the side of the seat cushion.
- X 10. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 ___ N/A - The seat does not have a fore-aft adjustment.
- X 11. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
X Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: _____
- X 12. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
X N/A - No adjustments
 Reference line angle as tested _____

- ☒ 13. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
___ N/A - No seat back angle adjustment
Manufacturer's design seat back angle 18.0
Tested seat back angle 18.0
- ☒ 14. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- ☒ 15. Fasten the seat belt latch.
- ☒ 16. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- ☒ 17. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
Contact force 0.11 lb.
☒ 0.0 to 0.7 pounds - Pass
___ greater than 0.7 pounds - FAIL

DATA SHEET 10

BELT CONTACT FORCE (S7.4.3)

NHTSA No. C40209

Test Date: 04/20/04

Laboratory: TRC inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: Right front passenger

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- X 1. Does the vehicle incorporate a webbing tension-relieving device?
 ___ Yes (this form is complete)
X No (continue with this check sheet)
- X 3. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
X N/A - No lumbar adjustment
- X 4. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
X N/A - No additional support adjustment
- X 5. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
X N/A - No independent fore-aft seat cushion adjustment
- X 6. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
X N/A - No independent seat cushion height adjustment
- X 7. Put the seat in its full rearward position. (S16.2.10.3.1)
 ___ N/A - the seat does not have a fore-aft adjustment
- X 8. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
X N/A - No seat height adjustment
- X 9. Draw a horizontal reference line on the side of the seat cushion.
- X 10. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 ___ N/A - The seat does not have a fore-aft adjustment.
- X 11. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
X Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: _____
- X 12. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
X N/A - No adjustments
 Reference line angle as tested: _____

- X 13. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
___ N/A - No seat back angle adjustment
Manufacturer's design seat back angle 18.0
Tested seat back angle 18.0
- X 14. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- X 15. Fasten the seat belt latch.
- X 16. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- X 17. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
Contact force 0.23 lb.
X 0.0 to 0.7 pounds - Pass
___ greater than 0.7 pounds - FAIL

DATA SHEET 10

BELT CONTACT FORCE (S7.4.3)

NHTSA No. C40209

Test Date: 04/20/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: 2nd Row, Right outboard passenger

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Does the vehicle incorporate a webbing tension-relieving device?
☐ Yes (this form is complete)
☒ No (continue with this check sheet)
- ☒ 3. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
☒ N/A - No lumbar adjustment
- ☒ 4. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
☒ N/A - No additional support adjustment
- ☒ 5. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
☒ N/A - No independent fore-aft seat cushion adjustment
- ☒ 6. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
☒ N/A - No independent seat cushion height adjustment
- ☒ 7. Put the seat in its full rearward position. (S16.2.10.3.1)
☒ N/A - the seat does not have a fore-aft adjustment
- ☒ 8. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
☒ N/A - No seat height adjustment
- ☒ 9. Draw a horizontal reference line on the side of the seat cushion.
- ☒ 10. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
☒ N/A - The seat does not have a fore-aft adjustment.
- ☒ 11. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
☐ Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Fixed
- ☒ 12. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
☒ N/A - No adjustments
 Reference line angle as tested _____

- X 13. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and SB.1.3)
___ N/A - No seat back angle adjustment
Manufacturer's design seat back angle 22.5
Tested seat back angle 22.5
- X 14. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- X 15. Fasten the seat belt latch.
- X 16. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- X 17. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
Contact force 0.40 lb.
X 0.0 to 0.7 pounds - Pass
___ greater than 0.7 pounds - FAIL

DATA SHEET 10

BELT CONTACT FORCE (S7.4.3)

NHTSA No. C40209

Test Date: 04/20/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: 2nd Row, Left outboard passenger

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- X 1. Does the vehicle incorporate a webbing tension-relieving device?
 Yes (this form is complete)
X No (continue with this check sheet)
- X 3. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
X N/A - No lumbar adjustment
- X 4. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
X N/A - No additional support adjustment
- X 5. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
X N/A - No independent fore-aft seat cushion adjustment
- X 6. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
X N/A - No independent seat cushion height adjustment
- X 7. Put the seat in its full rearward position. (S16.2.10.3.1)
X N/A - the seat does not have a fore-aft adjustment
- X 8. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
X N/A - No seat height adjustment
- X 9. Draw a horizontal reference line on the side of the seat cushion.
- X 10. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
X N/A - The seat does not have a fore-aft adjustment.
- X 11. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
 Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Fixed
- X 12. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
X N/A - No adjustments
 Reference line angle as tested

- X 13. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
___ N/A - No seat back angle adjustment
Manufacturer's design seat back angle 22.5
Tested seat back angle 22.5
- X 14. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- X 15. Fasten the seat belt latch.
- X 16. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- X 17. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
Contact force 0.24 lb.
X 0.0 to 0.7 pounds - Pass
___ greater than 0.7 pounds - FAIL

DATA SHEET 10

BELT CONTACT FORCE (S7.4.3)

NHTSA No. C40209

Test Date: 04/20/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: 3rd Row, Left outboard passenger

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Does the vehicle incorporate a webbing tension-relieving device?
☐ Yes (this form is complete)
☒ No (continue with this check sheet)
- ☒ 3. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
☒ N/A - No lumbar adjustment
- ☒ 4. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
☒ N/A - No additional support adjustment
- ☒ 5. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
☒ N/A - No independent fore-aft seat cushion adjustment
- ☒ 6. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
☒ N/A - No independent seat cushion height adjustment.
- ☒ 7. Put the seat in its full rearward position. (S16.2.10.3.1)
☒ N/A - the seat does not have a fore-aft adjustment
- ☒ 8. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
☒ N/A - No seat height adjustment
- ☒ 9. Draw a horizontal reference line on the side of the seat cushion.
- ☒ 10. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
☒ N/A - The seat does not have a fore-aft adjustment.
- ☒ 11. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
☐ Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Fixed
- ☒ 12. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
☒ N/A - No adjustments
 Reference line angle as tested _____

- ☒ 13. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
___ N/A - No seat back angle adjustment
Manufacturer's design seat back angle 18.4
Tested seat back angle 18.4
- ☒ 14. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- ☒ 15. Fasten the seat belt latch.
- ☒ 16. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- ☒ 17. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
Contact force 0.36 lb.
☒ 0.0 to 0.7 pounds - Pass
___ greater than 0.7 pounds - FAIL

DATA SHEET 10

BELT CONTACT FORCE (S7.4.3)

NHTSA No. C40209

Test Date: 04/20/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: 3rd Row, Center passenger

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- X 1. Does the vehicle incorporate a webbing tension-relieving device?
 Yes (this form is complete)
X No (continue with this check sheet)
- X 3. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
X N/A - No lumbar adjustment
- X 4. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
X N/A - No additional support adjustment
- X 5. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
X N/A - No independent fore-aft seat cushion adjustment
- X 6. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
X N/A - No independent seat cushion height adjustment
- X 7. Put the seat in its full rearward position. (S16.2.10.3.1)
X N/A - the seat does not have a fore-aft adjustment
- X 8. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
X N/A - No seat height adjustment
- X 9. Draw a horizontal reference line on the side of the seat cushion.
- X 10. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 N/A - The seat does not have a fore-aft adjustment.
- X 11. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
 Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Fixed
- X 12. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
X N/A - No adjustments
 Reference line angle as tested

- X 13. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
___ N/A - No seat back angle adjustment
Manufacturer's design seat back angle 18.4
Tested seat back angle 18.4
- X 14. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- X 15. Fasten the seat belt latch.
- X 16. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- X 17. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
Contact force 0.12 lb.
X 0.0 to 0.7 pounds - Pass
___ greater than 0.7 pounds - FAIL

DATA SHEET 10

BELT CONTACT FORCE (S7.4.3)

NHTSA No. C40209

Test Date: 04/20/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: 3rd Row, Right outboard passenger

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- X 1. Does the vehicle incorporate a webbing tension-relieving device?
☐ Yes (this form is complete)
☒ No (continue with this check sheet)
- X 3. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
☒ N/A - No lumbar adjustment
- X 4. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
☒ N/A - No additional support adjustment
- X 5. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
☒ N/A - No independent fore-aft seat cushion adjustment
- X 6. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
☒ N/A - No independent seat cushion height adjustment.
- X 7. Put the seat in its full rearward position. (S16.2.10.3.1)
☒ N/A - the seat does not have a fore-aft adjustment
- X 8. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
☒ N/A - No seat height adjustment
- X 9. Draw a horizontal reference line on the side of the seat cushion.
- X 10. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
☒ N/A - The seat does not have a fore-aft adjustment.
- X 11. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
☒ Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Fixed
- X 12. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
☒ N/A - No adjustments
 Reference line angle as tested: _____

- ☒ 13. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and SB.1.3)
___ N/A - No seat back angle adjustment
Manufacturer's design seat back angle 18.4
Tested seat back angle 18.4
- ☒ 14. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- ☒ 15. Fasten the seat belt latch.
- ☒ 16. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- ☒ 17. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
Contact force 0.34 lb.
☒ 0.0 to 0.7 pounds - Pass
___ greater than 0.7 pounds - FAIL

DATA SHEET 11

LATCHPLATE ACCESS (S7.4.4)

NHTSA No. C40209

Test Date: 04/16/04

Laboratory: JRC Inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: Driver

Test all front outboard seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- X 1. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (8.1.3)
X N/A - No lumbar adjustment
- X 2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
X N/A - No additional support adjustment
- X 3. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
X N/A - No independent fore-aft seat cushion adjustment
- X 4. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
X N/A - No independent seat cushion height adjustment.
- X 5. Put the seat in its full rearward position. (S16.2.10.3.1)
 N/A - the seat does not have a fore-aft adjustment
- X 6. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
X N/A - No seat height adjustment
- X 7. Draw a horizontal reference line on the side of the seat cushion
- X 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 N/A - The seat does not have a fore-aft adjustment.
- X 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the forwardmost fore-aft position for this test. (S10.7)
- X 10. If seat adjustments, other than fore-aft, are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal.
X N/A - No adjustments
Reference line angle as tested

- X 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S6.1.3)
 ___ N/A - No seat back angle adjustment
 Manufacturer's design seat back angle 18.0
 Tested seat back angle 18.0
- X 12. Position the test dummy using the procedures in Appendix A. (Some modifications to the positioning procedure may need to be made because the seat is in its forward most position. Note on the Appendix A positioning check sheet any deviations necessary to position the Part 572, Subpart E dummy.) Include the positioning check sheet with this form.
- X 13. Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant.
- X 14. Attach the inboard reach string to the base of the head following the instructions on Figure 3.
- X 14. Attach the outboard reach string to the torso sheath following the instructions on Figure 3.
- X 16. Place the latch plate in the stowed position.
- X 17. Extend inboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?
X Yes - Pass ___ NO
- X 18. Extend outboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?
X Yes - Pass ___ NO
- X 19. Is the latch plate within the inboard (Item 17) or outboard (Item 18) reach envelope?
X Yes - Pass ___ NO - FAIL
- X 20. Using the clearance test block, specified in Figure 4, is there sufficient clearance between the vehicle seat and the side of vehicle interior to allow the test block to move unhindered to the latch plate or buckle?
X Yes - Pass ___ NO - FAIL

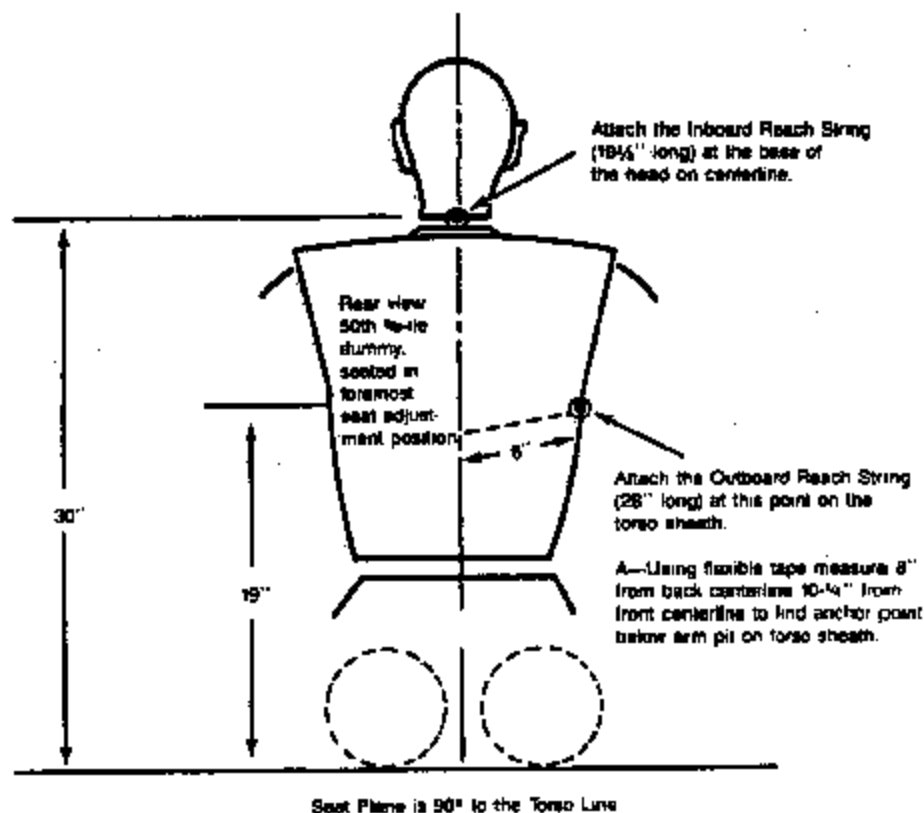


Figure 3. Location of Anchoring Points for Latchplate Reach Limiting Chains or Strings to Test for Latchplate Accessibility Using Subpart E Test Device

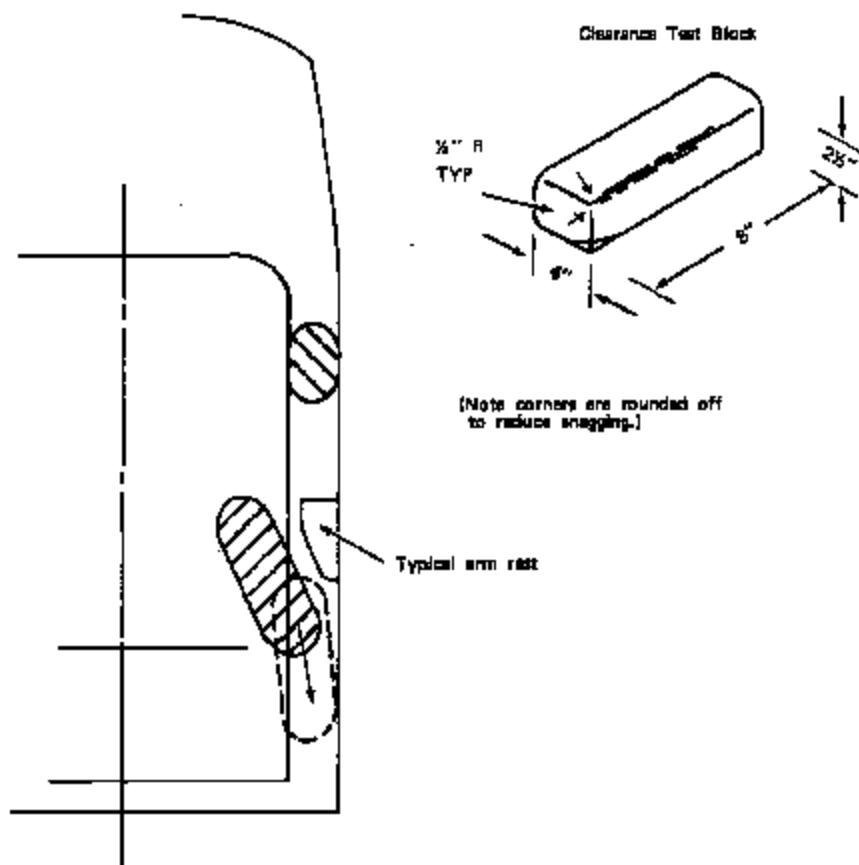


Figure 4—USE OF CLEARANCE TEST BLOCK TO DETERMINE HAND/ARM ACCESS

DATA SHEET 11

LATCHPLATE ACCESS (S7.4.4)

NHTSA No. C40209

Test Date: 04/16/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: Right front passenger

Test all front outboard seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S16.2.10.3)
☒ N/A - No lumbar adjustment
- ☒ 2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
☒ N/A - No additional support adjustment
- ☒ 3. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
☒ N/A - No independent fore-aft seat cushion adjustment
- ☒ 4. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
☒ N/A - No independent seat cushion height adjustment
- ☒ 5. Put the seat in its full rearward position. (S16.2.10.3.1)
☐ N/A - the seat does not have a fore-aft adjustment
- ☒ 6. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
☒ N/A - No seat height adjustment
- ☒ 7. Draw a horizontal reference line on the side of the seat cushion
- ☒ 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
☐ N/A - The seat does not have a fore-aft adjustment.
- ☒ 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the forwardmost fore-aft position for this test. (S10.7)
- ☒ 10. If seat adjustments, other than fore-aft, are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal.
☒ N/A - No adjustments
Reference line angle as tested _____

- X 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer.
(S4.5.4.1 (b) and S8.1.3)
___ N/A - No seat back angle adjustment
Manufacturer's design seat back angle 18.0
Tested seat back angle 18.0
- X 12. Position the test dummy using the procedures in Appendix A. (Some modifications to the positioning procedure may need to be made because the seat is in its forward most position. Note on the Appendix A positioning check sheet any deviations necessary to position the Part 572, Subpart E dummy.) Include the positioning check sheet with this form.
- X 13. Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant.
- X 14. Attach the inboard reach string to the base of the head following the instructions on Figure 3.
- X 14. Attach the outboard reach string to the torso sheath following the instructions on Figure 3.
- X 16. Place the latch plate in the stowed position.
- X 17. Extend inboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?
X Yes - Pass ___ NO
- X 18. Extend outboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?
X Yes - Pass ___ NO
- X 19. Is the latch plate within the inboard (Item 17) or outboard (Item 18) reach envelope?
X Yes - Pass ___ **NO - FAIL**
- X 20. Using the clearance test block, specified in Figure 4, is there sufficient clearance between the vehicle seat and the side of vehicle interior to allow the test block to move unhindered to the latch plate or buckle?
X Yes - Pass ___ **NO - FAIL**

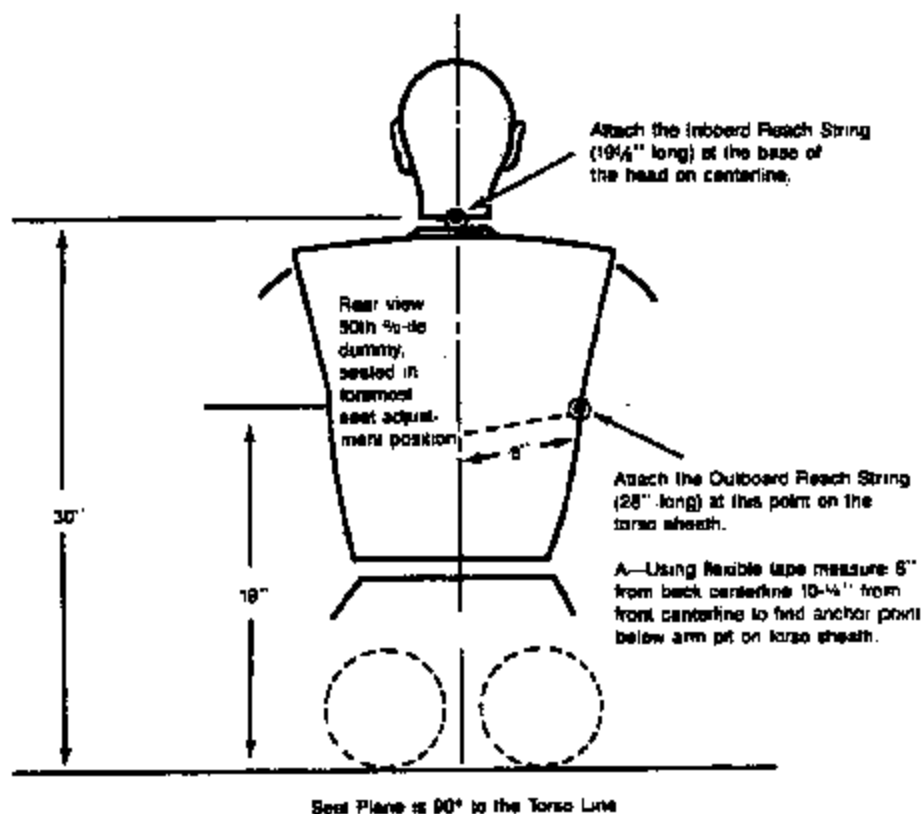


Figure 3. Location of Anchoring Points for Latchplate Reach Limiting Chains or Strings to Test for Latchplate Accessibility Using Subpart E Test Device

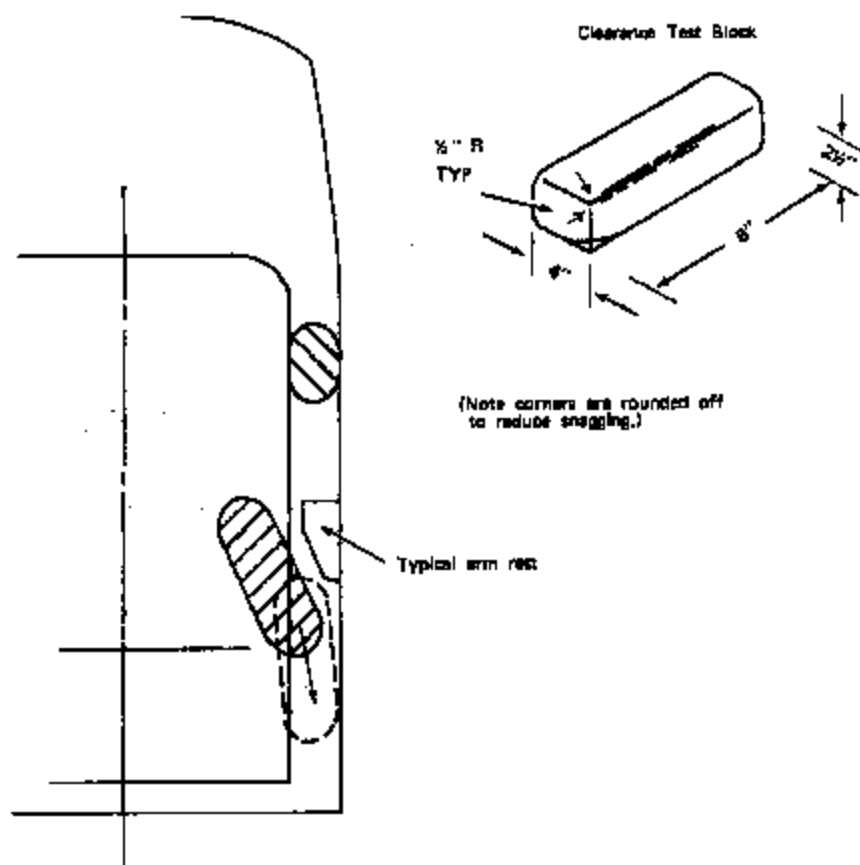


Figure 4—USE OF CLEARANCE TEST BLOCK TO DETERMINE HAND/ARM ACCESS

DATA SHEET 12
SEAT BELT RETRACTION (S7.4.5)

NHTSA No. C40209

Test Date: 04/19/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: Driver

GVWR: 5660 lbs

Test all front outboard seat belts, except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- X 1. Is the vehicle a passenger car or walk-in van-type vehicle?
___ Yes, this form is complete
X No
- X 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
X N/A - No lumbar adjustment
- X 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
X N/A - No additional support adjustment
- X 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
X N/A - No independent fore-aft seat cushion adjustment
- X 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
X N/A - No independent seat cushion height adjustment.
- X 6. Put the seat in its full rearward position.
___ N/A - the seat does not have a fore-aft adjustment
- X 7. If the seat height is adjustable, put it in the full down position. (S8.1.2)
X N/A - No seat height adjustment
- X 7. Draw a horizontal line on the side of the seat cushion.
- X 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
___ N/A - The seat does not have a fore-aft adjustment.
- X 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the middle fore-aft position. (S8.1.2)
If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: _____
- X 10. If seat adjustments, other than fore-aft, are present and the reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2)
X N/A - No seat adjustments
Reference angle as tested _____

- X 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S8.1.3)
 ___ N/A - No seat back angle adjustment
 Manufacturer's design seat back angle 18.0
 Tested seat back angle 18.0
- X 12. If adjustable, set the head restraint at the full up and full forward position. (S8.1.3) Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible.
X N/A - No head restraint adjustment
- X 13. Place any adjustable seat belt anchorages at the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant (S8.1.3)
 ___ N/A - No adjustable upper seat belt anchorage
 Manufacturer's specified anchorage position. 1 up from full down
 Tested anchorage position 1 up from full down
- X 14. Is the driver seat a bucket seat?
X Yes, go to 14.1 and skip 14.2
 ___ No, go to 14.2 and skip 14.1.
- X 14.1 Bucket seats:
 Locate and mark a vertical Plane B through the longitudinal centerline of the seat. The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.
 Record the width of the seat. 20.9 inches
 Record the distance from the edge of the seat to Plane B. 10.4 inches
- ___ 14.2 Bench seats (including split bench seats):
 ___ Driver seat: Locate and mark a vertical Plane B through the center of the steering wheel parallel to the vehicle longitudinal centerline.
 ___ Passenger seat: Locate and mark a vertical longitudinal Plane B on the seat that is the same distance from the longitudinal centerline of the vehicle as the center of the steering wheel.
 Distance from the vehicle centerline to the center of the steering wheel _____
 Distance from the vehicle centerline to Plane B _____
- X 15. Stow outboard armrests that are capable of being stowed. (S7.4.5)
- X 16. Remove the arms of a Subpart E dummy and place it in the seat such that the midsagittal plane is coincident with Plane B and the upper torso rests against the seat back. (S10.4.1.1 & S10.4.1.2)
- X 17. Rest the thighs on the seat cushion.
- X 18. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined by using the equipment and procedures specified in SAE J826 (APR 1980). (S10.4.2.1) Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage. Adjust the dummy position until these three measurements are within the specifications. (S10.4.2.1 and S10.4.2.2)
0.2 horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
0.2 vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
21.9 pelvic angle (20° to 25°) (S10.4.2.2)
- X 19. Set the distance between the outboard knee clevis flange surfaces at 10.6 inches.
X measured distance (10.6 inches) (S10.5)
- X 20. To the extent practicable keep the thighs and the legs in a vertical plane (S10.5) and rest the thighs on the seat cushion while resting the feet on the floorpan or toe board.
- X 21. Fasten the seat belt around the dummy.

- ☒ 22. Remove all slack from the lap belt portion. (S10.9)
- ☒ 23. Pull the upper torso webbing out of the retractor and allow it to retract; repeat this four times. (S10.9)
- ☒ 24. Apply a 2 to 4 pound tension load to the lap belt. (S10.9)
 4 pound load applied
- ☒ 25. Is the belt system equipped with a tension relieving device?
 ___ Yes, continue
 ☒ No, go to 26
- ___ 25.1 Introduce the maximum amount of slack into the upper torso belt that is recommended by the vehicle manufacturer in the vehicle owner's manual. (S10.9). Go to 25.
- ☒ 26. Check the statement that applies to this test vehicle:
- ___ 26.1 The torso and lap belt webbing of the seat belt system automatically retracts to a stowed position when the adjacent vehicle door is in an open position and the seat belt latch plate is released. ___ Pass
- ☒ 26.2 The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latch plate is released. ☒ Pass
- ___ 26.3 Neither A or B apply. ___ FAIL
- ☒ 27. With the webbing and hardware in the stowed position are the webbing and hardware prevented from being pinched when the door is closed?
 ☒ Yes - Pass ___ NO - FAIL
- ☒ 28. If this test vehicle has an open body (without doors) and has a belt system with a tension-relieving device, does the belt system fully retract when the tension-relieving device is deactivated?
 ☒ N/A
 ___ Yes - Pass ___ NO - FAIL

DATA SHEET 12
SEAT BELT RETRACTION (S7.4.5)

NHTSA No. C40208

Test Date: 04/19/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: Right front passenger

GVWR: 5660 lbs

Test all front outboard seat belts, except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- X 1. Is the vehicle a passenger car or walk-in van-type vehicle?
___ Yes, this form is complete
X No
- X 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
X N/A - No lumbar adjustment
- X 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
X N/A - No additional support adjustment
- X 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
X N/A - No independent fore-aft seat cushion adjustment
- X 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
X N/A - No independent seat cushion height adjustment
- X 6. Put the seat in its full rearward position.
___ N/A - the seat does not have a fore-aft adjustment
- X 7. If the seat height is adjustable, put it in the full down position. (S8.1.2)
X N/A - No seat height adjustment
- X 7. Draw a horizontal line on the side of the seat cushion.
- X 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
___ N/A - The seat does not have a fore-aft adjustment.
- X 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the middle fore-aft position. (S8.1.2)
If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: _____
- X 10. If seat adjustments, other than fore-aft, are present and the reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2)
X N/A - No seat adjustments
Reference angle as tested _____

- X 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S6.1.3)
 ___ N/A - No seat back angle adjustment
 Manufacturer's design seat back angle 18.0
 Tested seat back angle 18.0
- X 12. If adjustable, set the head restraint at the full up and full forward position. (S8.1.3) Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible.
 ___ N/A - No head restraint adjustment
- X 13. Place any adjustable seat belt anchorages at the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant (S8.1.3)
 ___ N/A - No adjustable upper seat belt anchorage
 Manufacturer's specified anchorage position. 1 up from full down
 Tested anchorage position 1 up from full down
- X 14. Is the driver seat a bucket seat?
X Yes, go to 14.1 and skip 14.2.
 ___ No, go to 14.2 and skip 14.1.
- X 14.1 Bucket seats:
 Locate and mark a vertical Plane B through the longitudinal centerline of the seat. The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.
 Record the width of the seat. 20.9 inches
 Record the distance from the edge of the seat to Plane B. 2.6 inches
- ___ 14.2 Bench seats (including split bench seats):
 ___ Driver seat: Locate and mark a vertical Plane B through the center of the steering wheel parallel to the vehicle longitudinal centerline.
 ___ Passenger seat: Locate and mark a vertical longitudinal Plane B on the seat that is the same distance from the longitudinal centerline of the vehicle as the center of the steering wheel.
 Distance from the vehicle centerline to the center of the steering wheel _____
 Distance from the vehicle centerline to Plane B _____
- X 15. Stow outboard armrests that are capable of being stowed. (S7.4.5)
- X 16. Remove the arms of a Subpart E dummy and place it in the seat such that the midsagittal plane is coincident with Plane B and the upper torso rests against the seat back. (S10.4.1.1 & S10.4.1.2)
- X 17. Rest the thighs on the seat cushion.
- X 18. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined by using the equipment and procedures specified in SAE J826 (APR 1990). (S10.4.2.1) Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage. Adjust the dummy position until these three measurements are within the specifications. (S10.4.2.1 and S10.4.2.2)
0.2 horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
0.2 vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
22.3 pelvic angle (20° to 25°) (S10.4.2.2)
- X 19. Set the distance between the outboard knee clevis flange surfaces at 10.6 inches.
X measured distance (10.6 inches) (S10.5)
- X 20. To the extent practicable keep the thighs and the legs in a vertical plane (S10.5) and rest the thighs on the seat cushion while resting the feet on the floorpan or toe board.
- X 21. Fasten the seat belt around the dummy.

- ☒ 22. Remove all slack from the lap belt portion. (S10.9)
- ☒ 23. Pull the upper torso webbing out of the retractor and allow it to retract; repeat this four times. (S10.9)
- ☒ 24. Apply a 2 to 4 pound tension load to the lap belt. (S10.9)
 4 pound load applied
- ☒ 25. Is the belt system equipped with a tension relieving device?
 ___ Yes, continue
 ☒ No, go to 26
- ___ 25.1 Introduce the maximum amount of slack into the upper torso belt that is recommended by the vehicle manufacturer in the vehicle owner's manual. (S10.9). Go to 25.
- ☒ 26. Check the statement that applies to this test vehicle:
- ___ 26.1 The torso and lap belt webbing of the seat belt system automatically retracts to a stowed position when the adjacent vehicle door is in an open position and the seat belt latch plate is released. ___ Pass
- ☒ 26.2 The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latch plate is released. ☒ Pass
- ___ 26.3 Neither A or B apply. ___ FAIL
- ☒ 27. With the webbing and hardware in the stowed position are the webbing and hardware prevented from being pinched when the door is closed?
 ☒ Yes - Pass ___ NO - FAIL
- ☒ 28. If this test vehicle has an open body (without doors) and has a belt system with a tension-relieving device, does the belt system fully retract when the tension-relieving device is deactivated?
 ☒ N/A
 ___ Yes -- Pass ___ NO - FAIL

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No. C40209

Test Date: 04/19/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: Driver

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
___ Yes; this form is complete
☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))
___ Yes; this form is complete
☒ No; got to 3
- ☒ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
___ Yes; this form is complete
☒ No; got to 4
- ☒ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
___ Yes; go to 5.
☒ No: this form is complete.
- ___ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
___ Yes - Pass
___ NO - FAIL
Identify the part(s) on top or above the seat.
___ seat belt latch plate; ___ buckle; ___ seat belt webbing
- ___ 6. Are the remaining two seat belt parts accessible under normal conditions?
___ Yes - Pass
___ NO - FAIL
- ___ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL
- ___ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL
- ___ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL
- ___ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No. C40209

Test Date: 04/19/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: Right front passenger

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- X 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
___ Yes; this form is complete
X No; got to 2
- X 2. Is the seat removable? (S7.4.6.1(b))
___ Yes; this form is complete
X No; got to 3
- X 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
___ Yes; this form is complete
X No; got to 4
- X 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
___ Yes; go to 5.
X No; this form is complete.
- ___ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
___ Yes - Pass
___ NO - FAIL
Identify the part(s) on top or above the seat.
___ seat belt latch plate; ___ buckle; ___ seat belt webbing
- ___ 6. Are the remaining two seat belt parts accessible under normal conditions?
___ Yes - Pass
___ NO - FAIL
- ___ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL
- ___ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL
- ___ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL
- ___ 10. Is the Inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No. C40209

Test Date: 04/19/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: 2nd Row, Right outboard passenger

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
___ Yes; this form is complete
☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1 (b))
☒ Yes; this form is complete
___ No; got to 3
- ___ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1 (b))
___ Yes; this form is complete
___ No; got to 4
- ___ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1 (a))
___ Yes; go to 5.
___ No; this form is complete.
- ___ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1 (a))
___ Yes - Pass
___ NO - FAIL
Identify the part(s) on top or above the seat.
___ seat belt latch plate; ___ buckle; ___ seat belt webbing
- ___ 6. Are the remaining two seat belt parts accessible under normal conditions?
___ Yes - Pass
___ NO - FAIL
- ___ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL
- ___ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL
- ___ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL
- ___ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No. C40209

Test Date: 04/19/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: 2nd Row, Left outboard passenger

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
___ Yes; this form is complete
☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))
☒ Yes; this form is complete
___ No; got to 3
- ☐ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
___ Yes; this form is complete
___ No; got to 4
- ☐ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
___ Yes; go to 5.
___ No; this form is complete.
- ☐ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
___ Yes - Pass
___ NO - FAIL
Identify the part(s) on top or above the seat.
___ seat belt latch plate; ___ buckle; ___ seat belt webbing
- ☐ 6. Are the remaining two seat belt parts accessible under normal conditions?
___ Yes - Pass
___ NO - FAIL
- ☐ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL
- ☐ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL
- ☐ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL
- ☐ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No. C40208

Test Date: 04/19/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: 3rd Row, Left outboard passenger

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
☐ Yes; this form is complete
☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))
☐ Yes; this form is complete
☒ No; got to 3
- ☒ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
☒ Yes; this form is complete
☐ No; got to 4
- ☐ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
☐ Yes; go to 5.
☐ No; this form is complete.
- ☐ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
☐ Yes - Pass
☐ NO - FAIL
Identify the part(s) on top or above the seat.
☐ seat belt latch plate; ☐ buckle; ☐ seat belt webbing
- ☐ 6. Are the remaining two seat belt parts accessible under normal conditions?
☐ Yes - Pass
☐ NO - FAIL
- ☐ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
☐ Yes - Pass ☐ NO - FAIL
- ☐ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
☐ Yes - Pass ☐ NO - FAIL
- ☐ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
☐ Yes - Pass ☐ NO - FAIL
- ☐ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
☐ Yes - Pass ☐ NO - FAIL

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No. C40209

Test Date: 04/19/04

Laboratory: TBC Inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: 3rd Row, Center passenger

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
___ Yes; this form is complete
☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))
___ Yes; this form is complete
☒ No; got to 3
- ☒ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
☒ Yes; this form is complete
___ No; got to 4
- ___ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
___ Yes; go to 5.
___ No; this form is complete.
- ___ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
___ Yes - Pass
___ NO - FAIL
Identify the part(s) on top or above the seat.
___ seat belt latch plate; ___ buckle; ___ seat belt webbing
- ___ 6. Are the remaining two seat belt parts accessible under normal conditions?
___ Yes - Pass
___ NO - FAIL
- ___ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL
- ___ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL
- ___ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL
- ___ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No. C40209

Test Date: 04/19/04

Laboratory: TRC Inc.

Test Technician(s): Michael S. Postle

DESIGNATED SEATING POSITION: 3rd Row, Right outboard passenger

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
___ Yes; this form is complete
☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))
___ Yes; this form is complete
☒ No; got to 3
- ☒ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
☒ Yes; this form is complete
___ No; got to 4
- ___ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
___ Yes; go to 5.
___ No; this form is complete.
- ___ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
___ Yes - Pass
___ NO - FAIL
Identify the part(s) on top or above the seat.
___ seat belt latch plate; ___ buckle; ___ seat belt webbing
- ___ 6. Are the remaining two seat belt parts accessible under normal conditions?
___ Yes - Pass
___ NO - FAIL
- ___ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL
- ___ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL
- ___ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL
- ___ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
___ Yes - Pass ___ NO - FAIL

Appendix A

Photographs

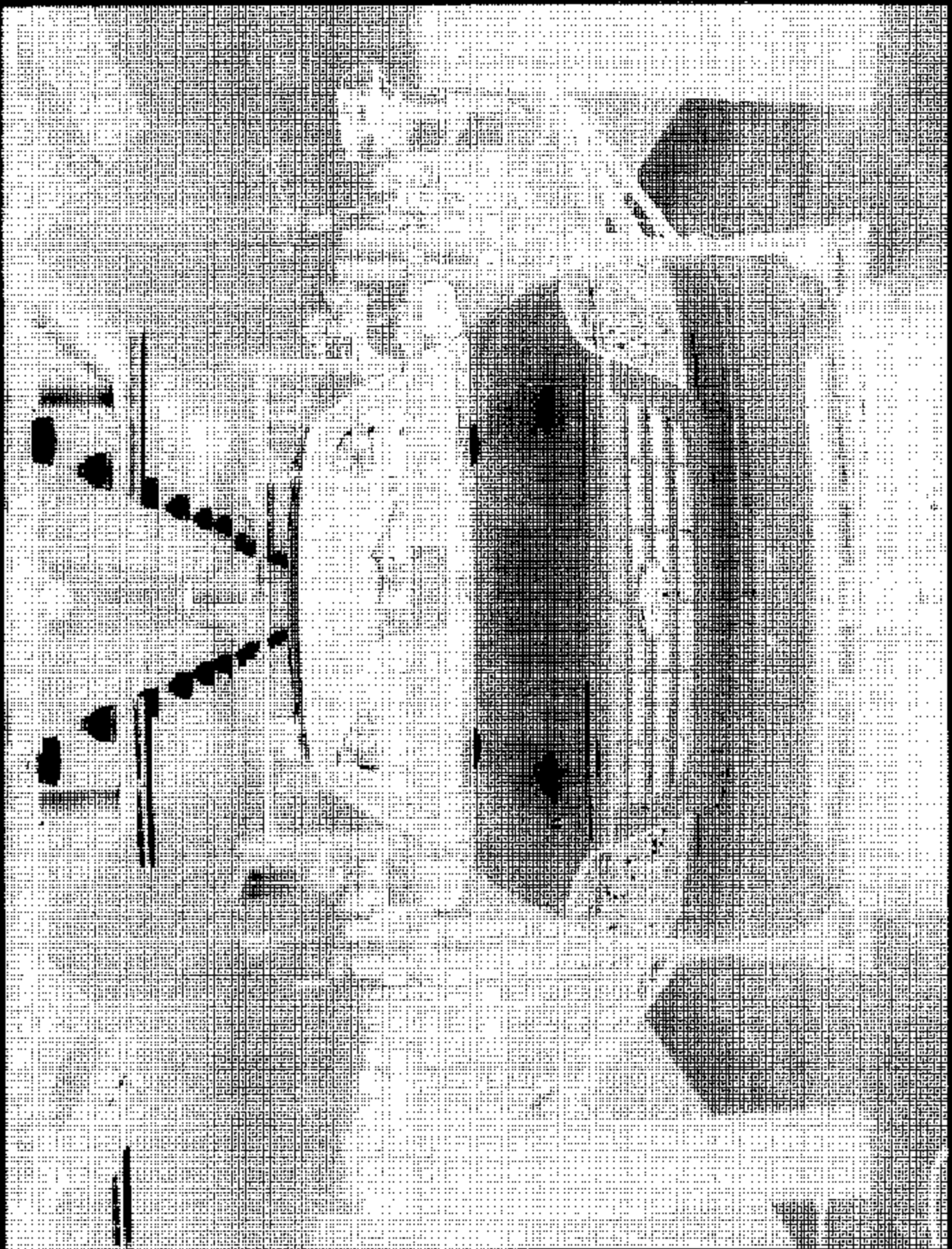


Figure A-1 Pre-Test Front View of Test Vehicle Mounted to Sled

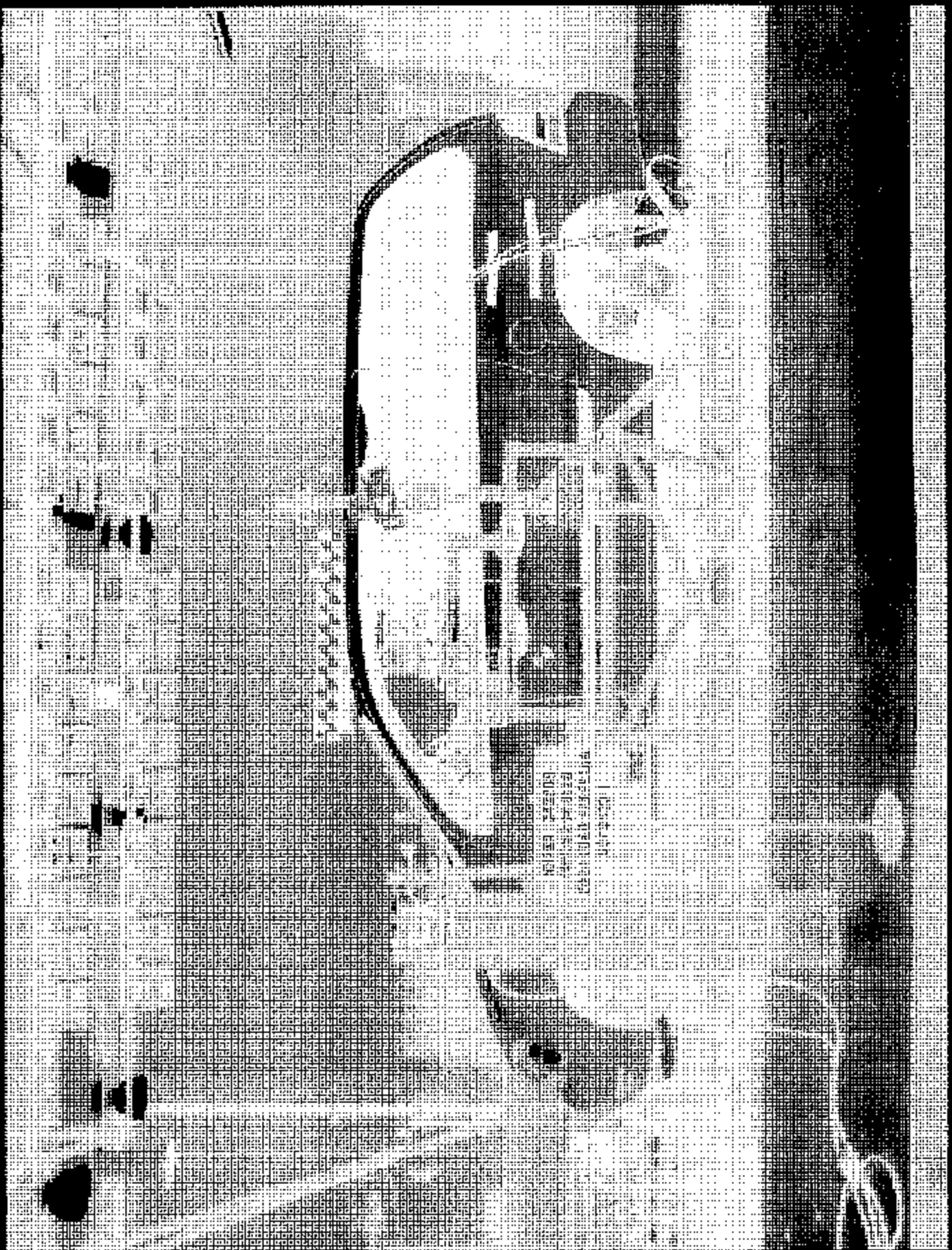


Figure A-2 Pre-Test Left Side View of Test Vehicle Mounted to Sled

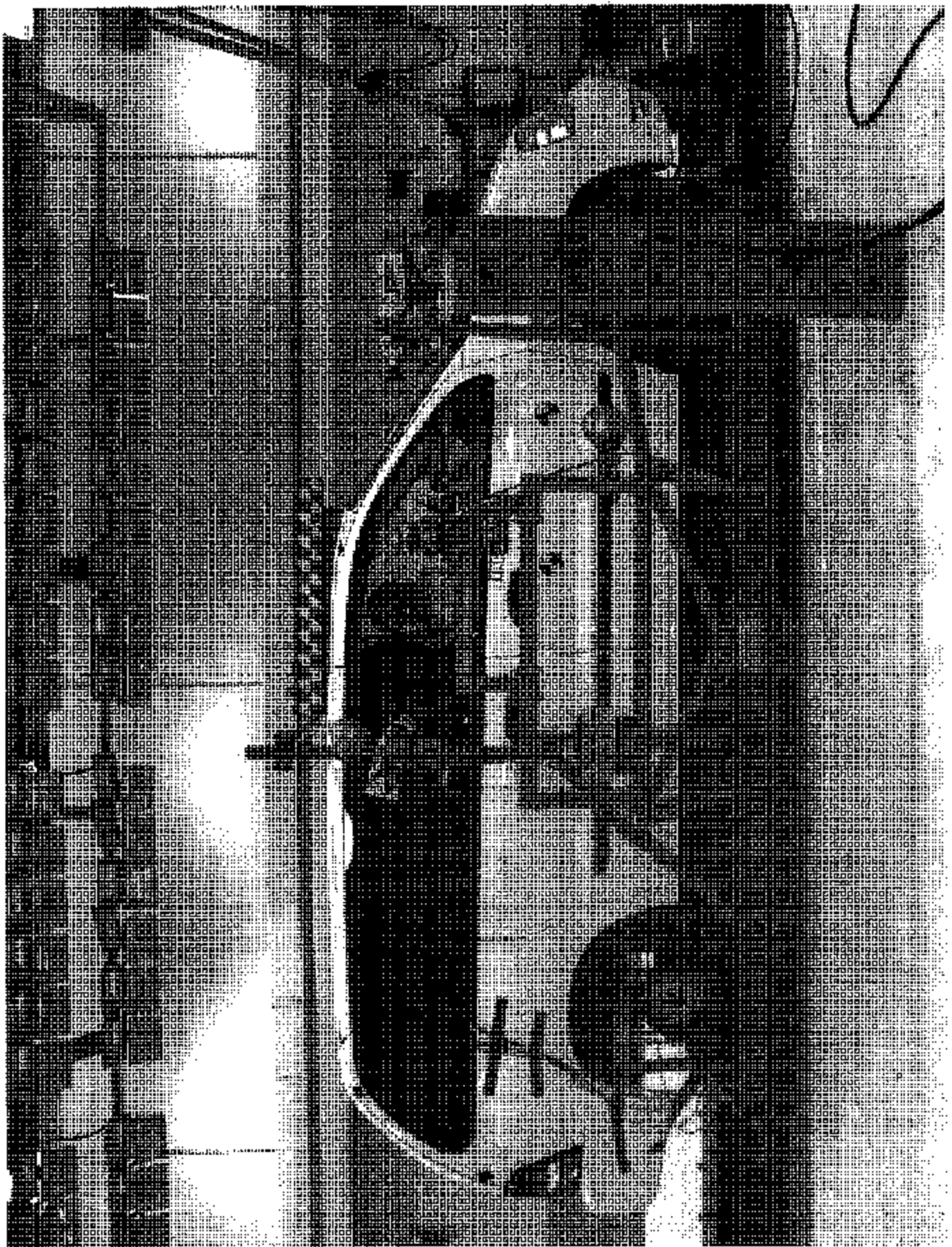


Figure A-3 Pre-Test Right Side View of Test Vehicle Mounted to Sled

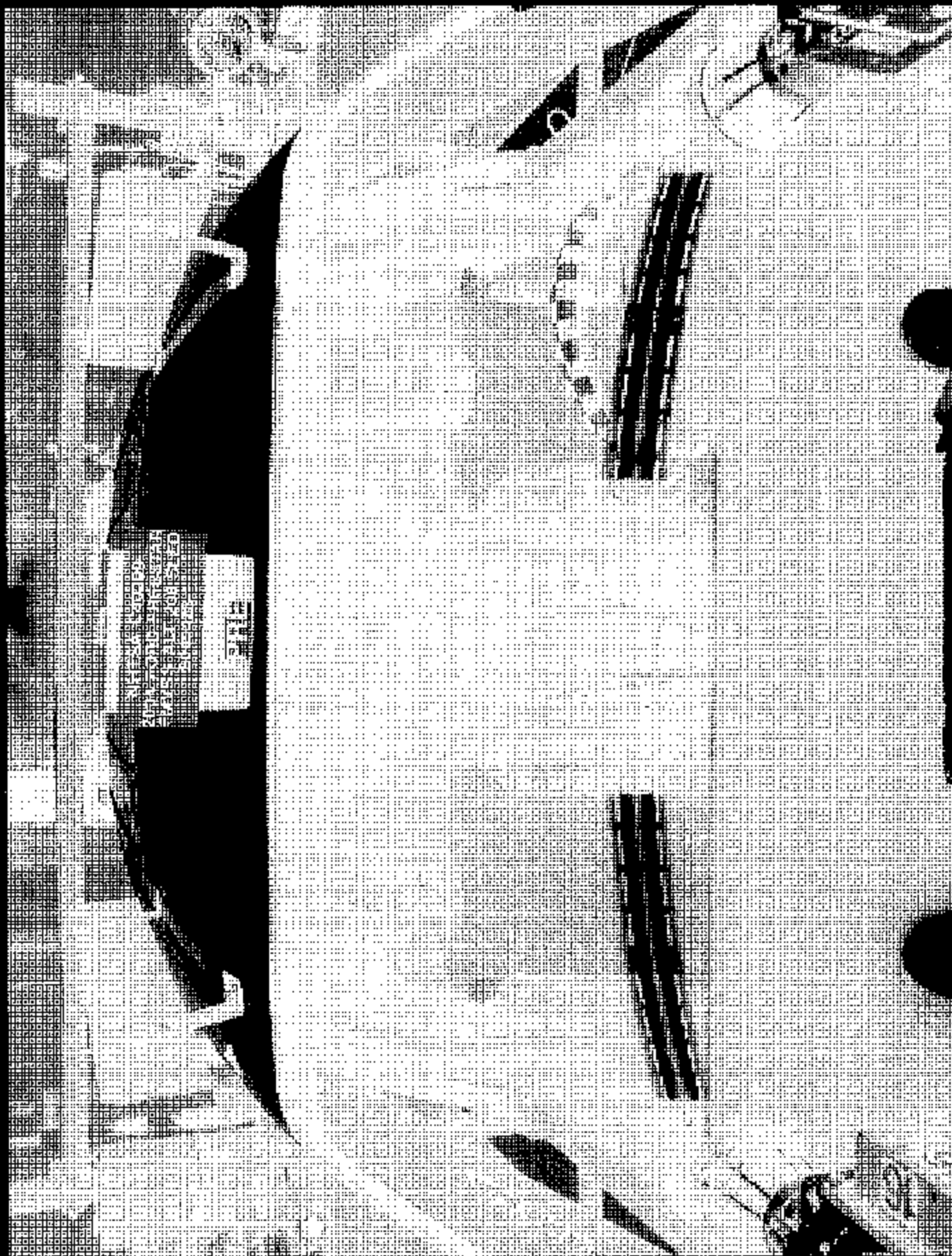


Figure A-4 Pre-Test Windshield View



Figure A-5 Post-Test Windshield View

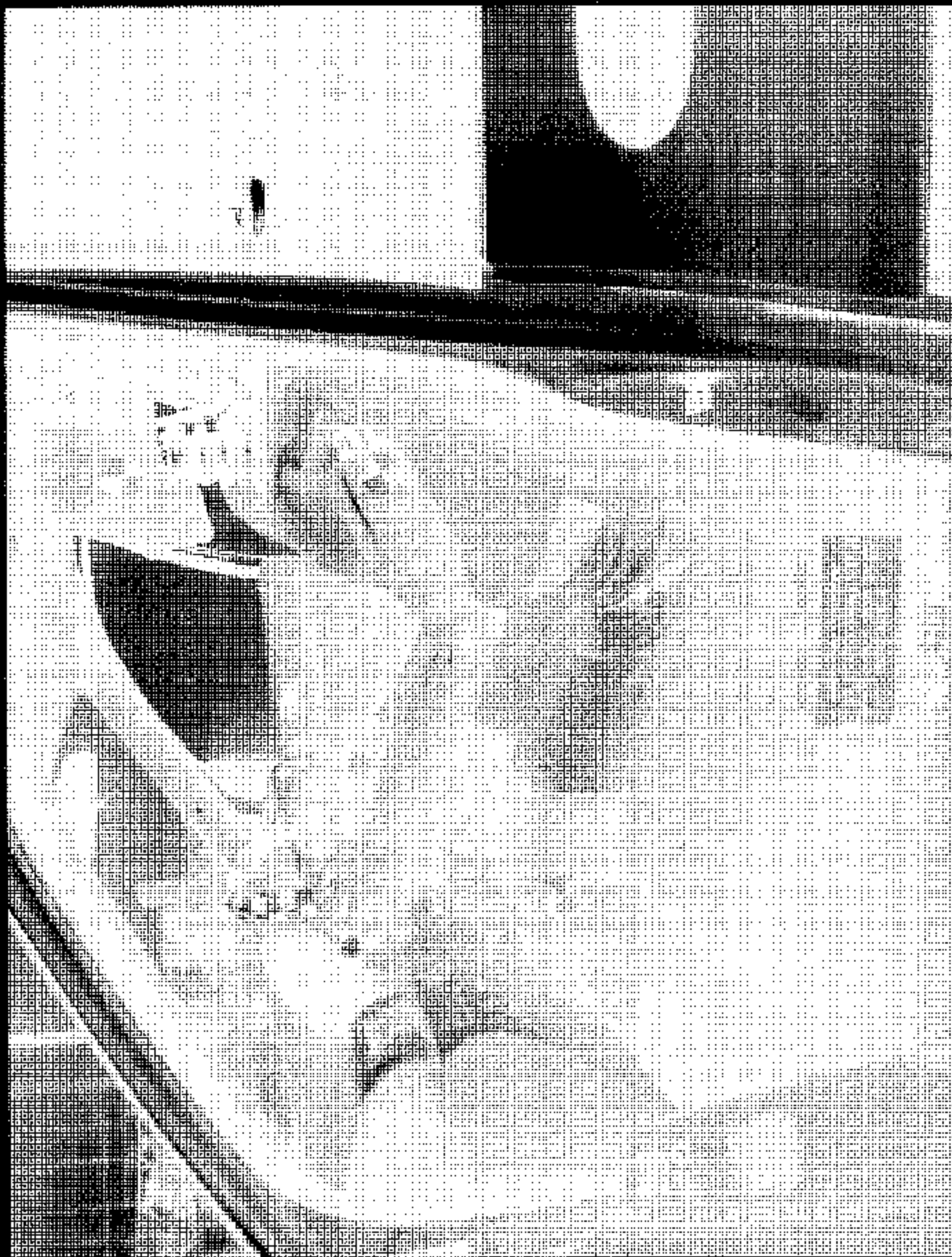


Figure A-6 Pre-Test Driver Dummy Position View with Door Open



Figure A-7 Post-Test Driver Dummy Position View with Door Open

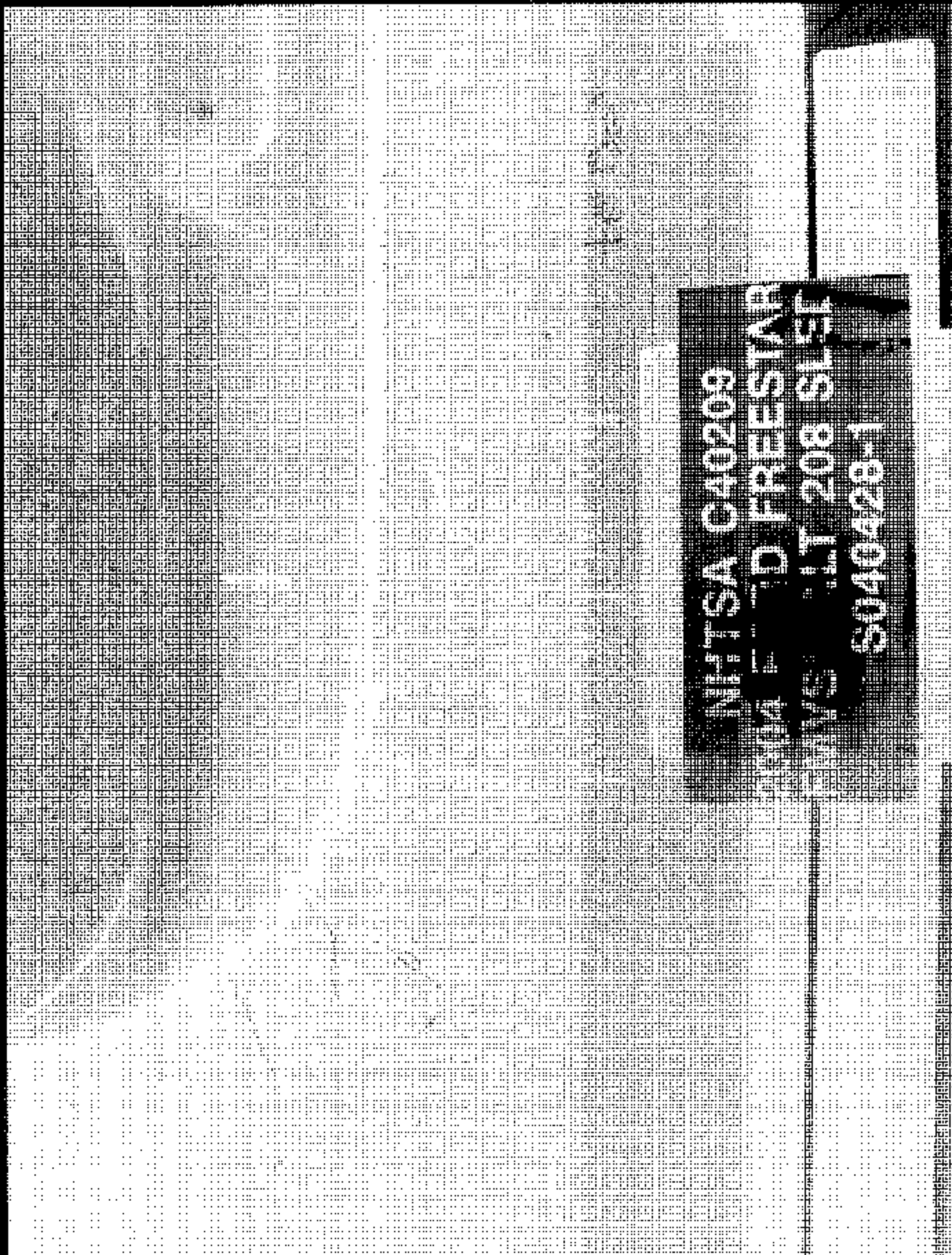


Figure A-8 Pre-Test Driver Seat Track Position View

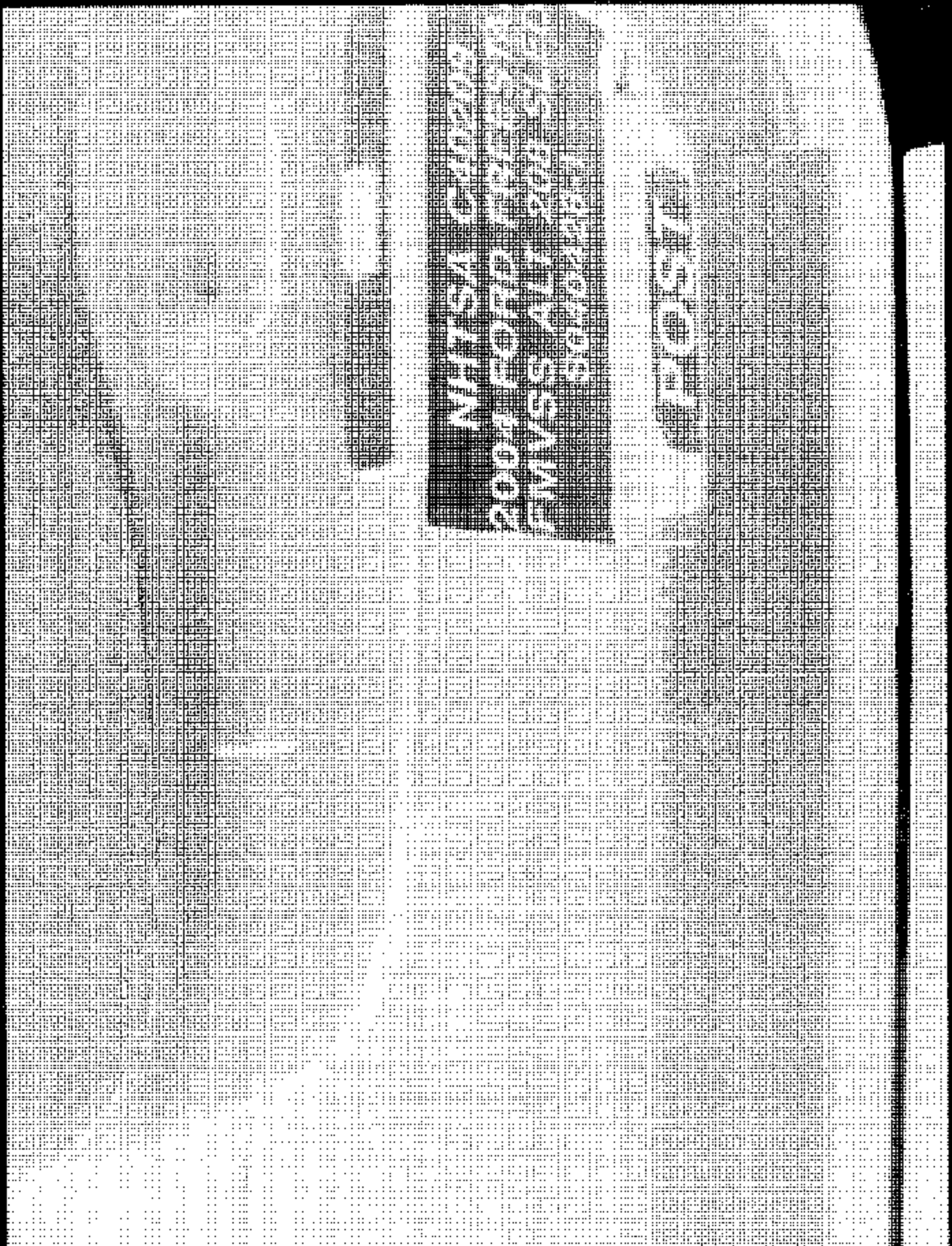


Figure A-9 Post-Test Driver Seat Track Position View

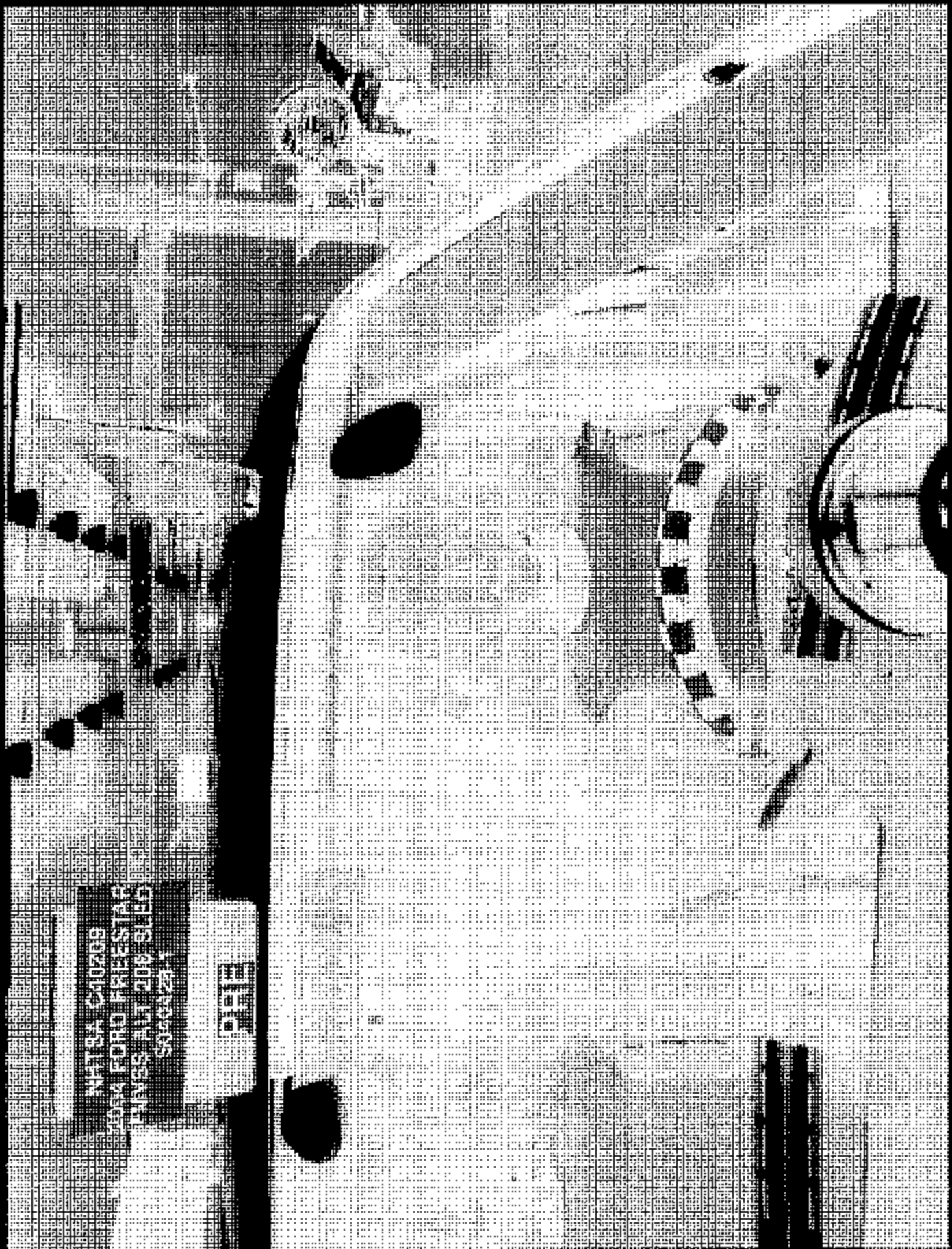


Figure A-10 Pre-Test Driver Dummy Position Front View

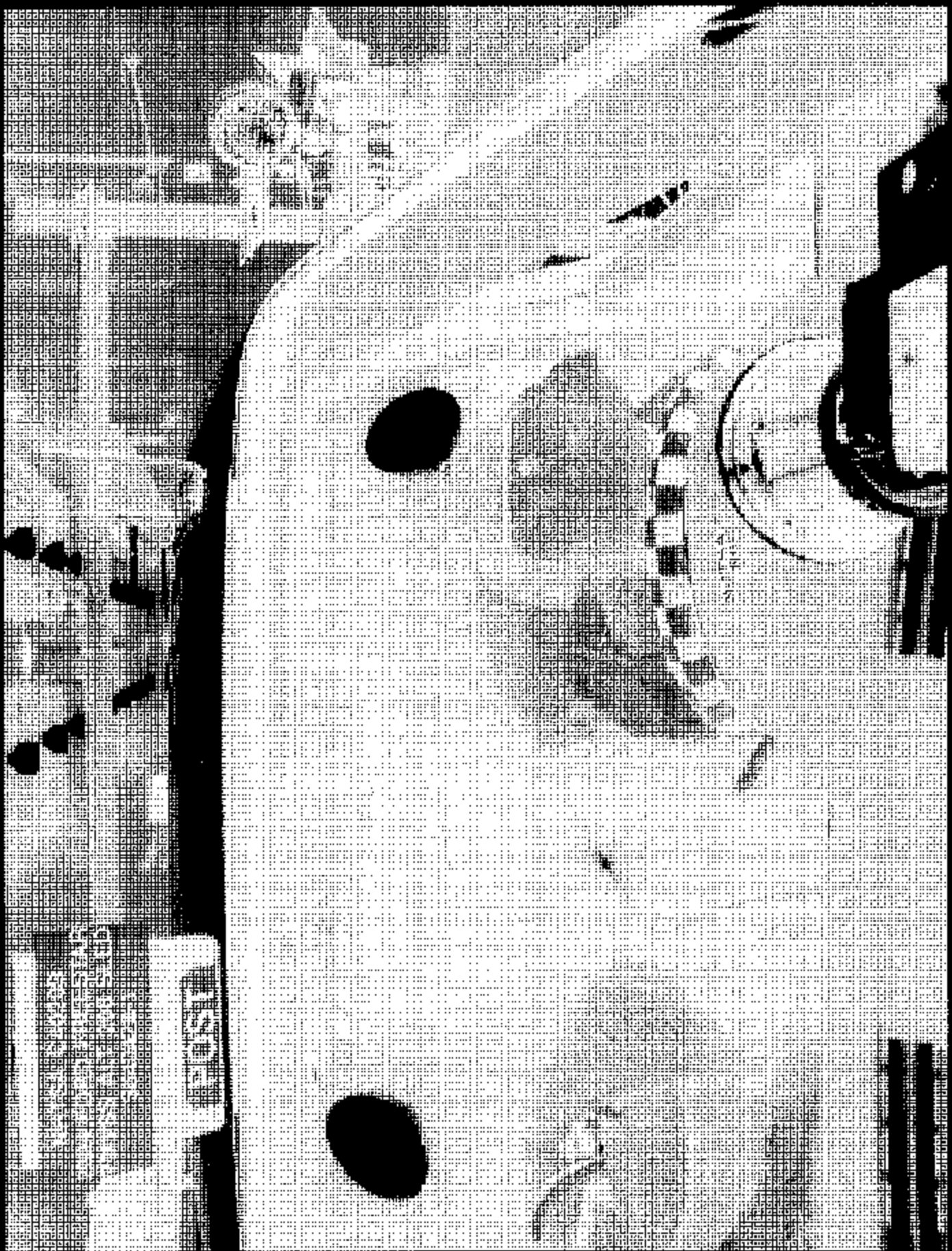


Figure A-11 Post-Test Driver Dummy Position Front View



Figure A-12 Pre-Test Passenger Dummy Position View with Door Open

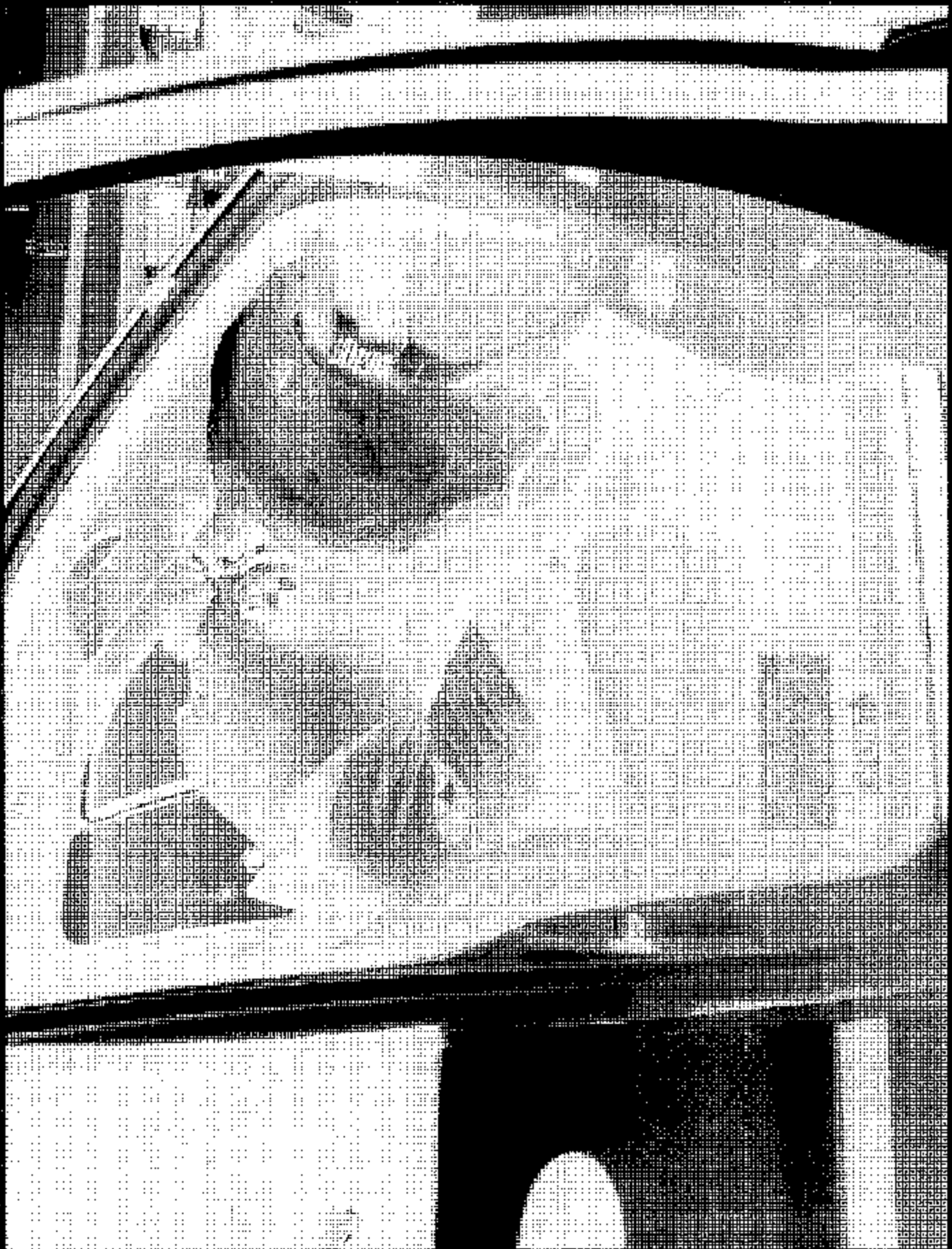


Figure A-13 Post-Test Passenger Dummy Position View with Door Open



Figure A-14 Pre-Test Passenger Seat Track Position View

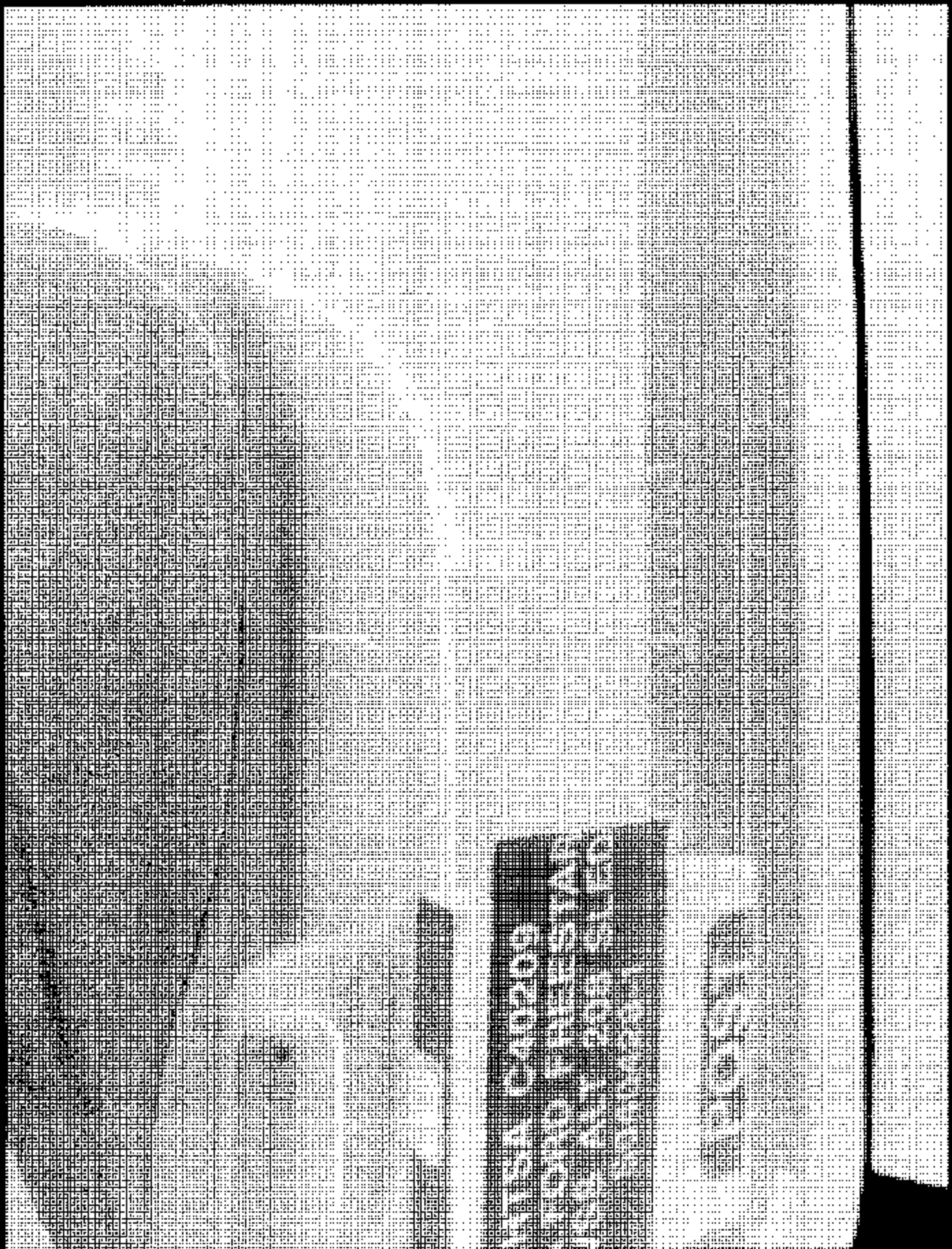


Figure A-15 Post-Test Passenger Seat Track Position View

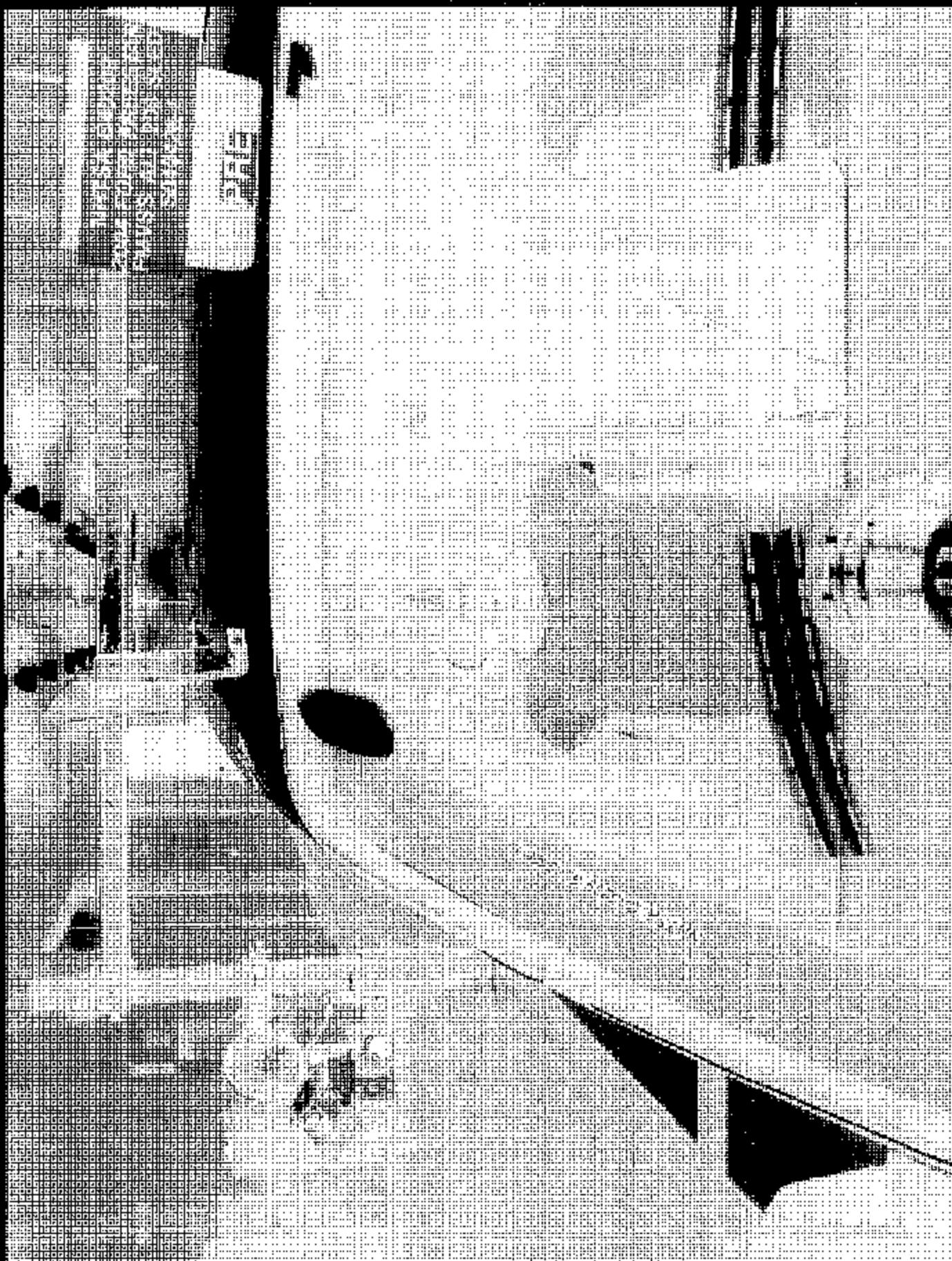


Figure A-16 Pre-Test Passenger Dummy Position Front View

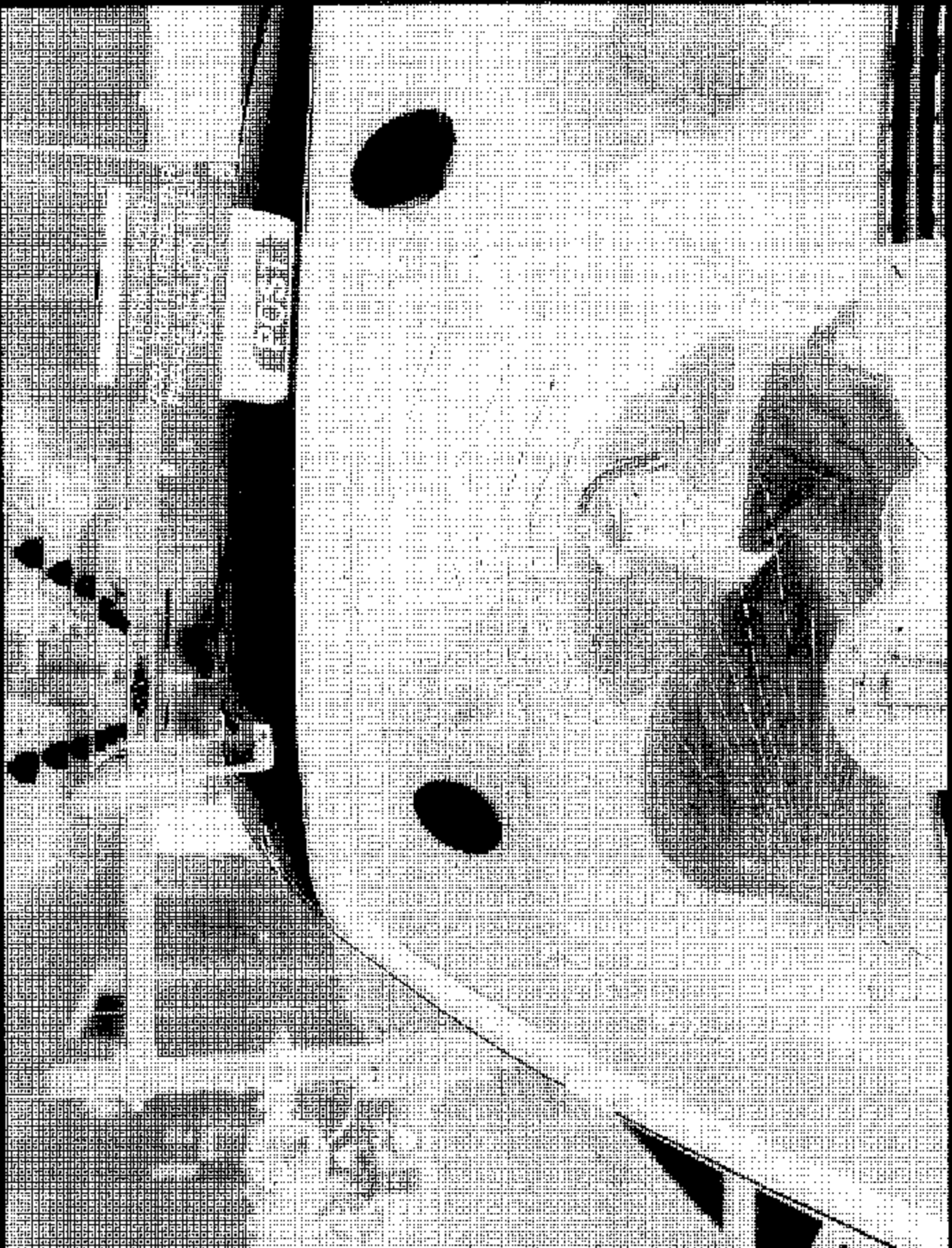


Figure A-17 Post-Test Passenger Dummy Position Front View



Figure A-18 Post-Test Driver Airbag View

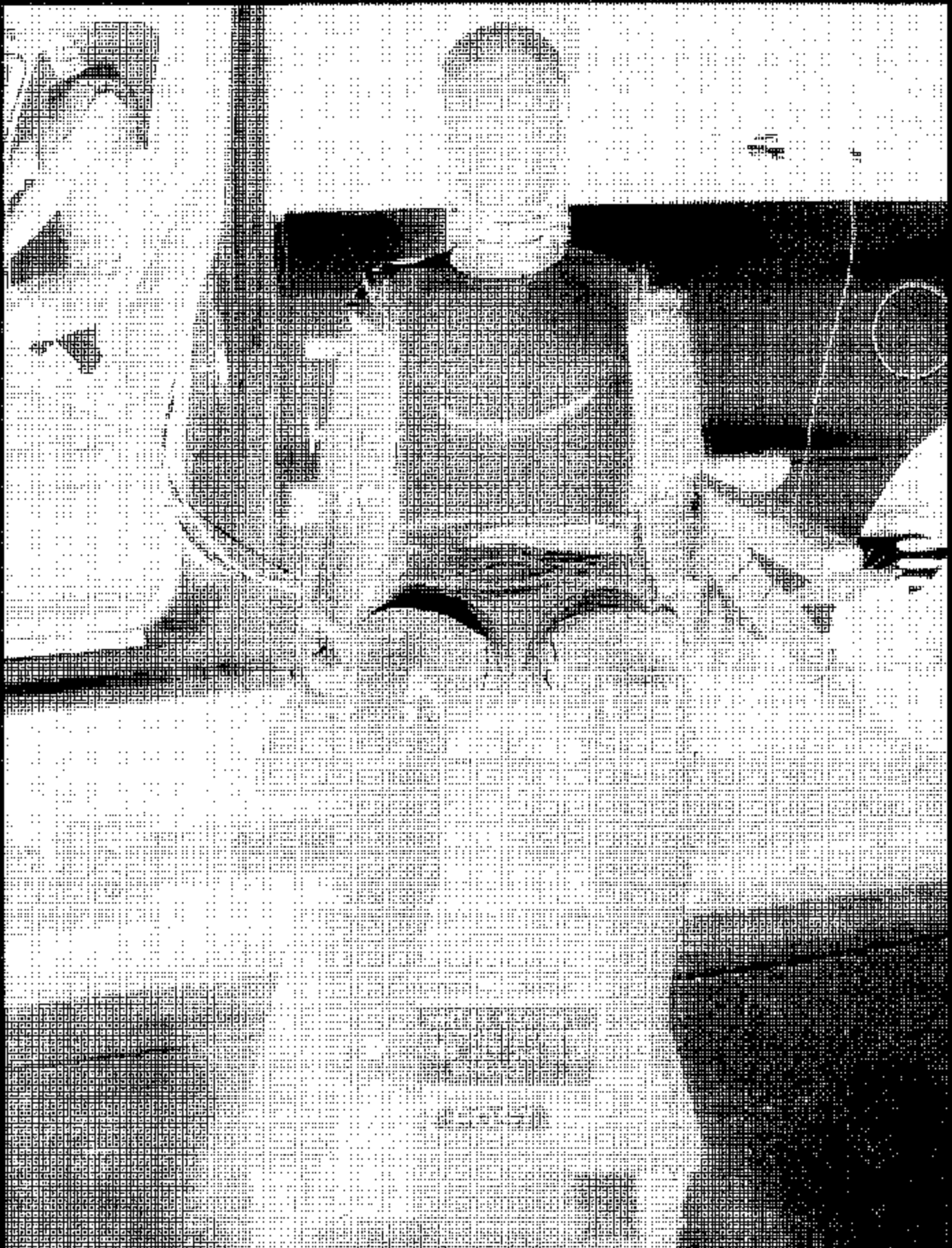


Figure A-19 Post-Test Driver Dummy Removed from Vehicle Overall View

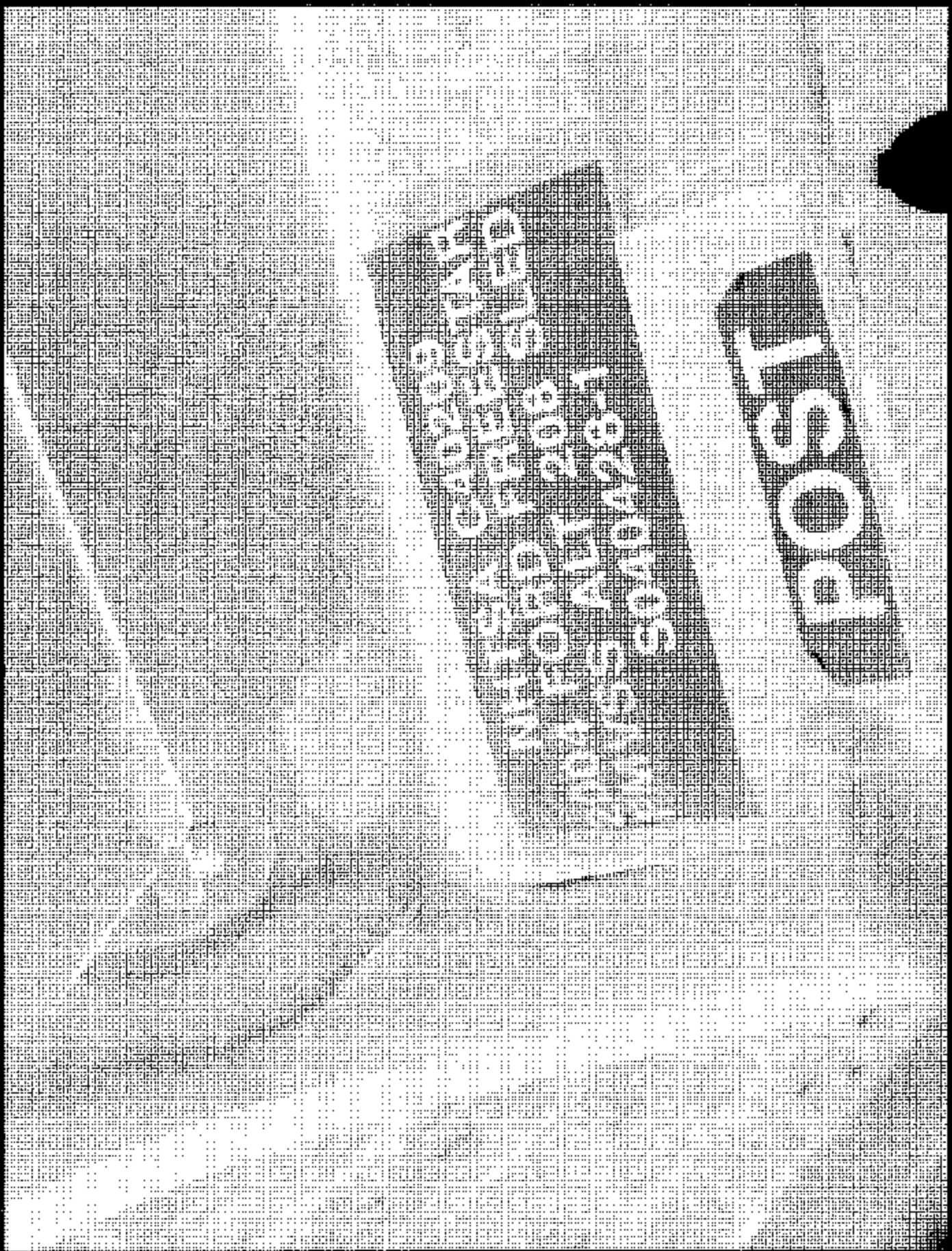


Figure A-20 Post-Test Driver Head Contact - View 1



Figure A-21 Post-Test Driver Head Contact - View 2



Figure A-22 Post-Test Passenger Airbag View

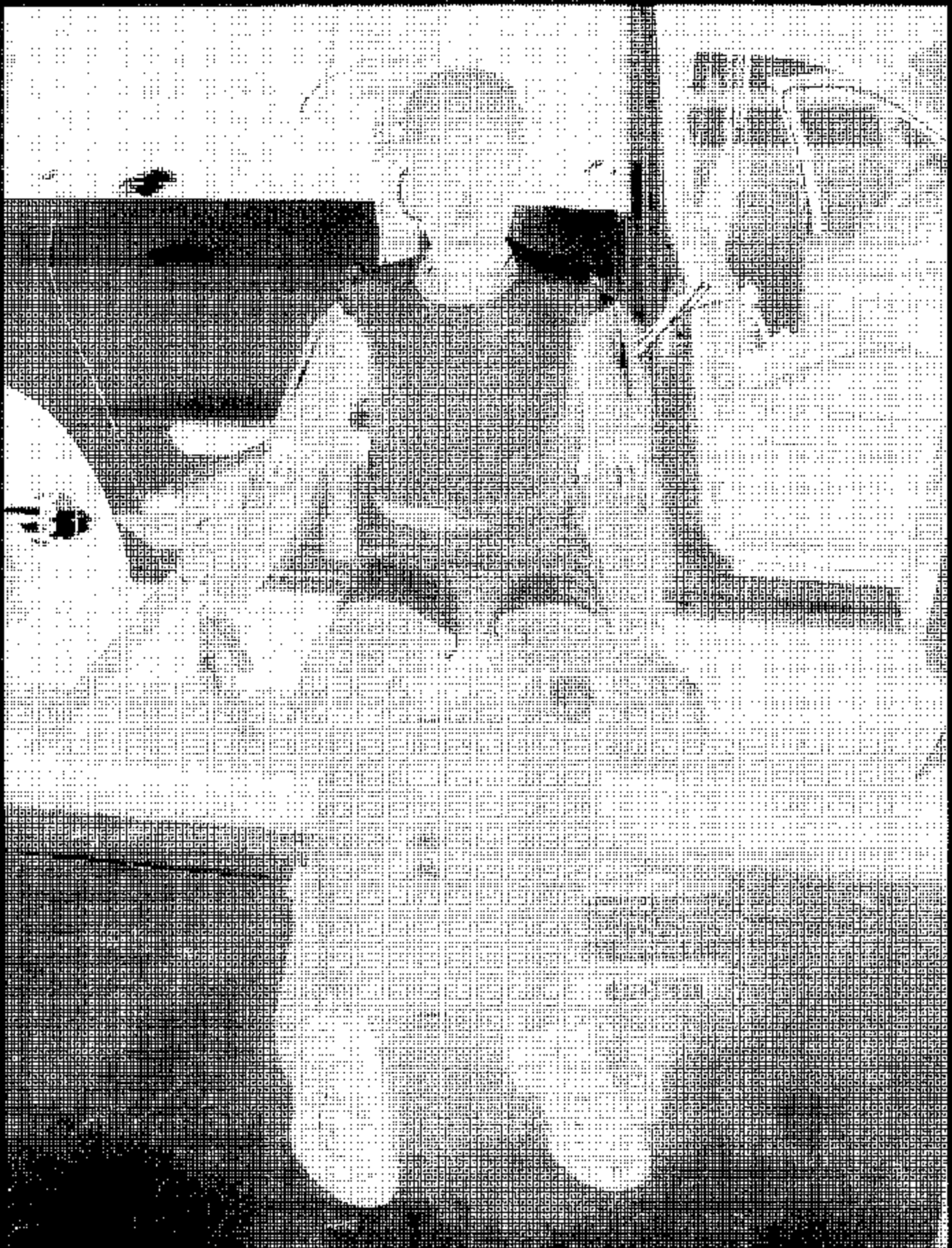


Figure A-23 Post-Test Passenger Dummy Removed from Vehicle Overall View

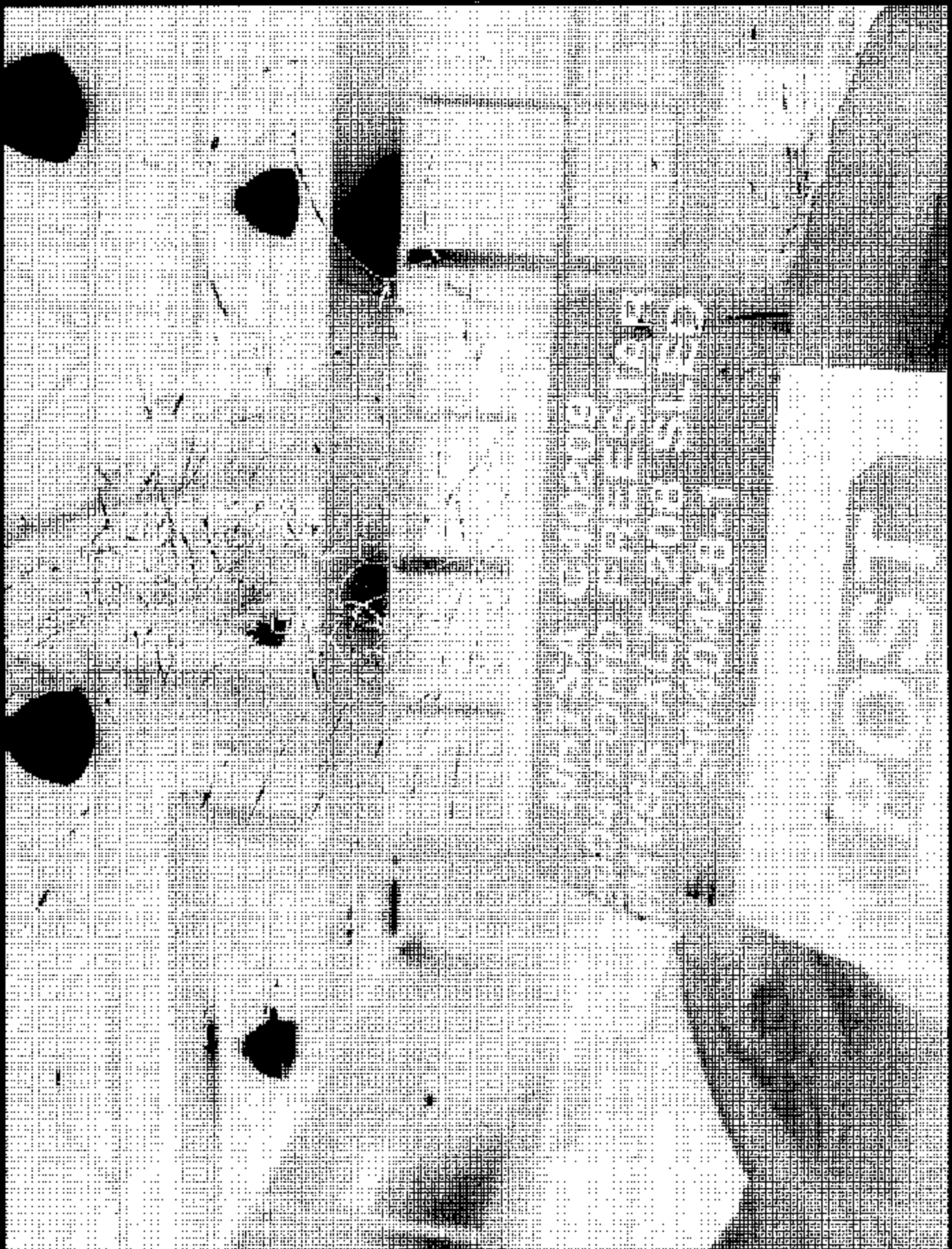


Figure A-24 Post-Test Passenger Head Contact View



Figure A-25 Post-Test Driver Knee Balster View

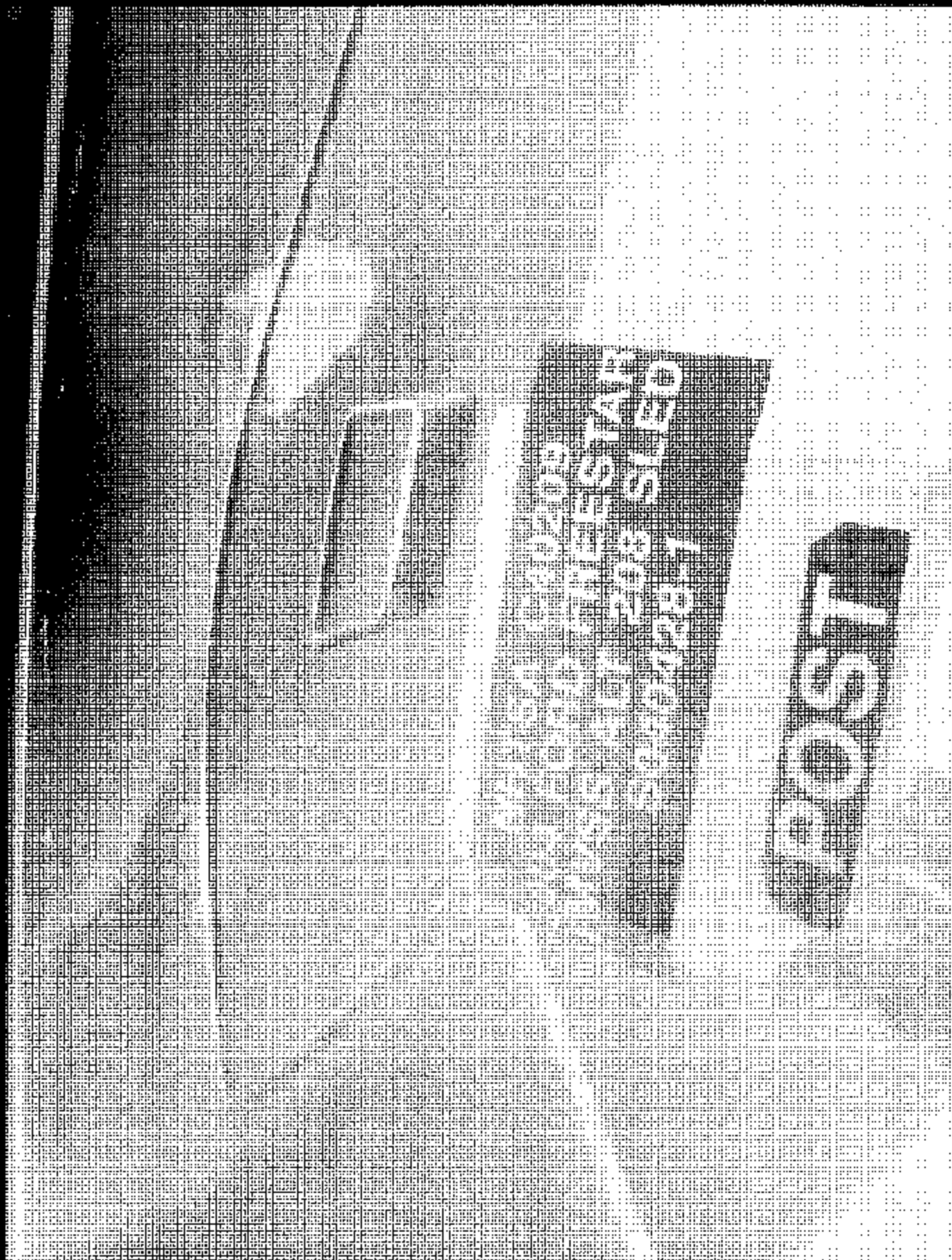


Figure A-26 Post-Test Passenger Glove Box View

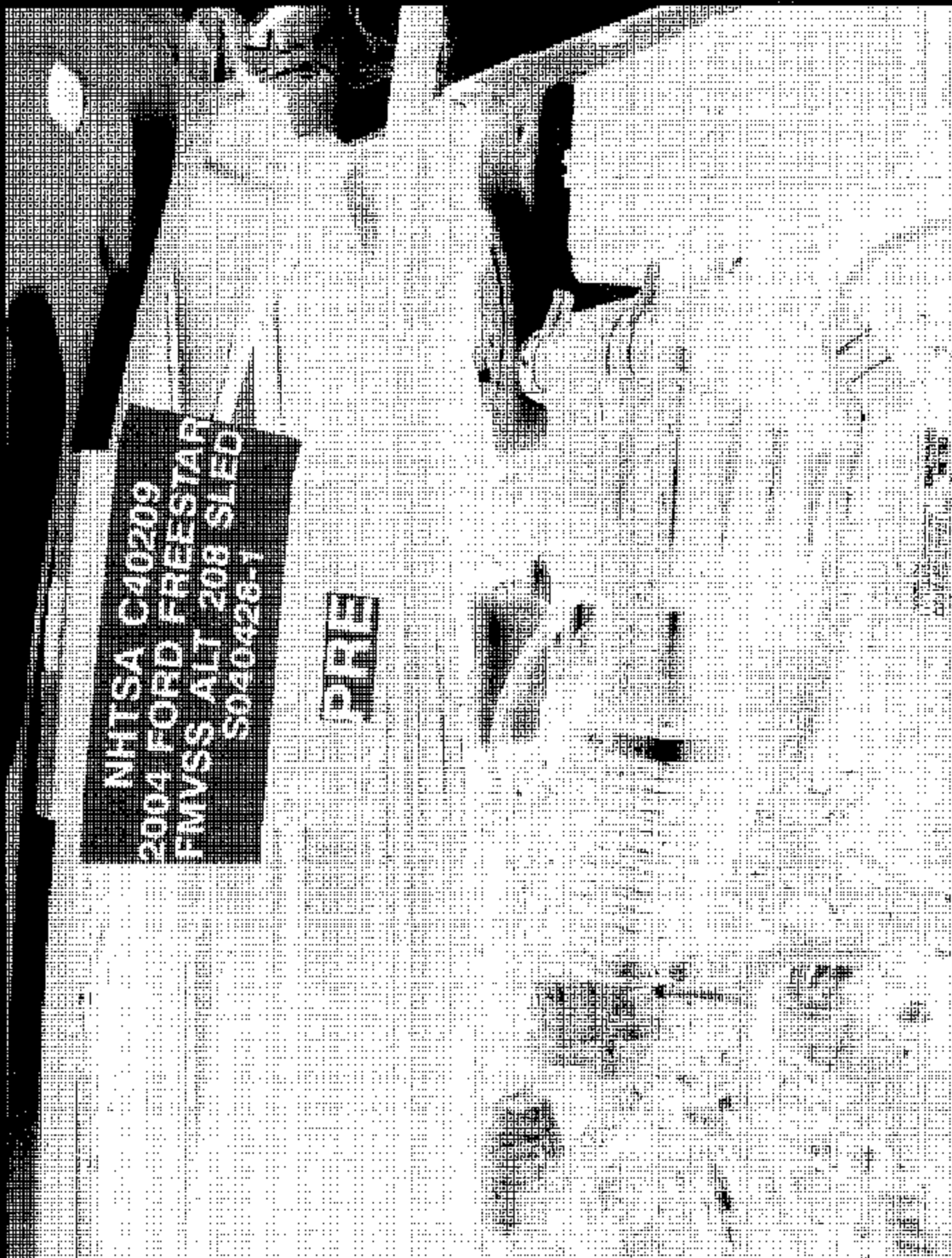


Figure A-27 Pre-Test Steering Column Linkage in Engine Compartment View

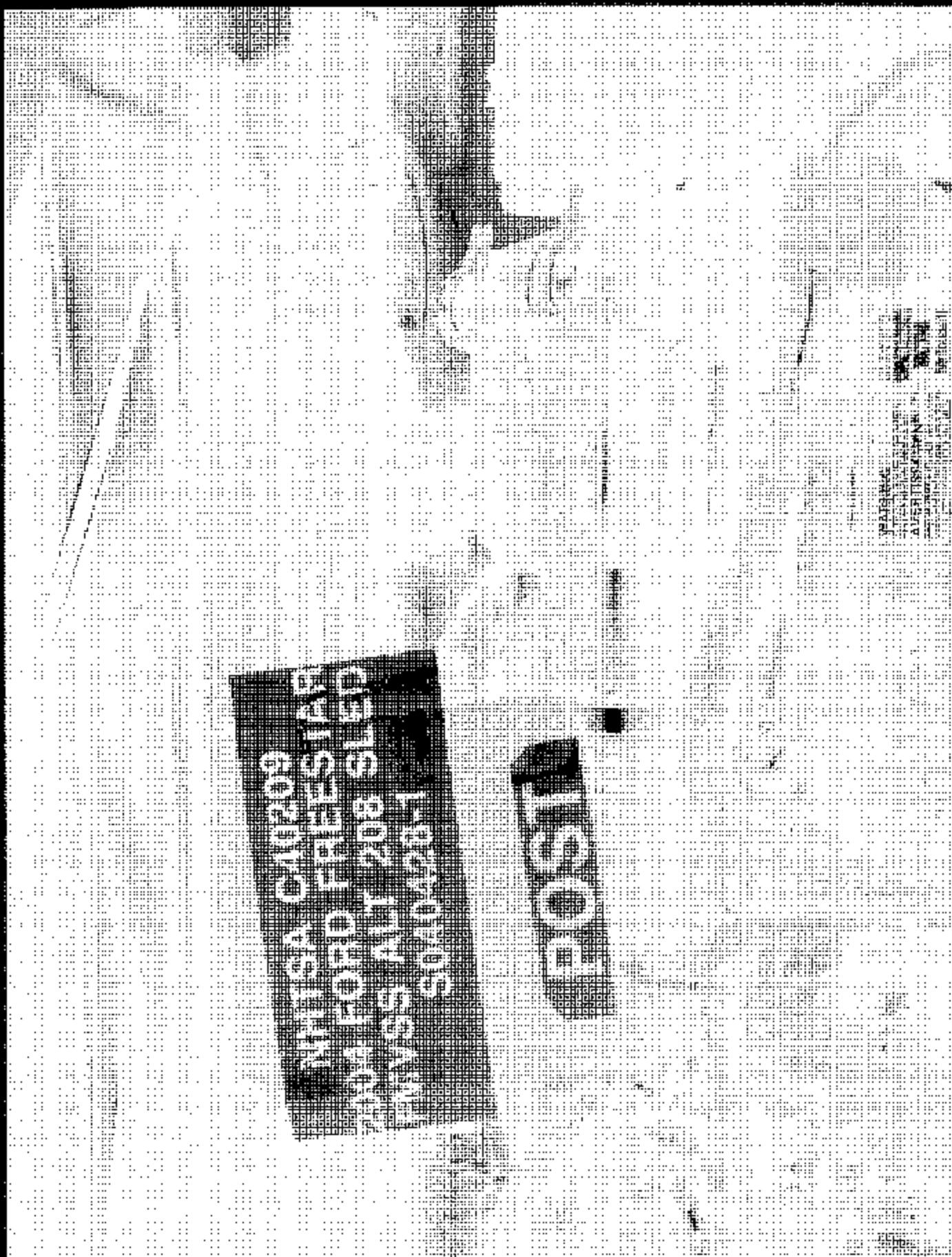


Figure A-28 Post-Test Steering Column Linkage in Engine Compartment View

Figure A-29 Pre-Test Vehicle Certification Label View

A-30

S040428

MADE BY FORD MOTOR CO.
GWR: 2567KG/5660LB
REAR GWR: 1254KG/2760LB
DATE: 01/84
FRONT GWR: 1329KG/2915LB
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR
VEHICLE SAFETY AND THEFT PREVENTION STANDARDS
IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE
VIN: 2FMAZA30684BA66026
MAXIMUM LOAD - OCCUPANTS + LUGGAGE = 544KG/1200LB
OCCUPANTS = 7 TOTAL
2 FRONT, 2 MID, 3 REAR
TIRE: P225/60R16
PRESSURE: 240 kPa/35 PSI COLD
PRESSURE: 240 kPa/35 PSI COLD



SEAT BELT - SEE OWNER GUIDE
LRC: 47
DSO: 1
F0076
10162
2FMAZA30684BA66026
MADE IN CANADA

Appendix B

Data Plots

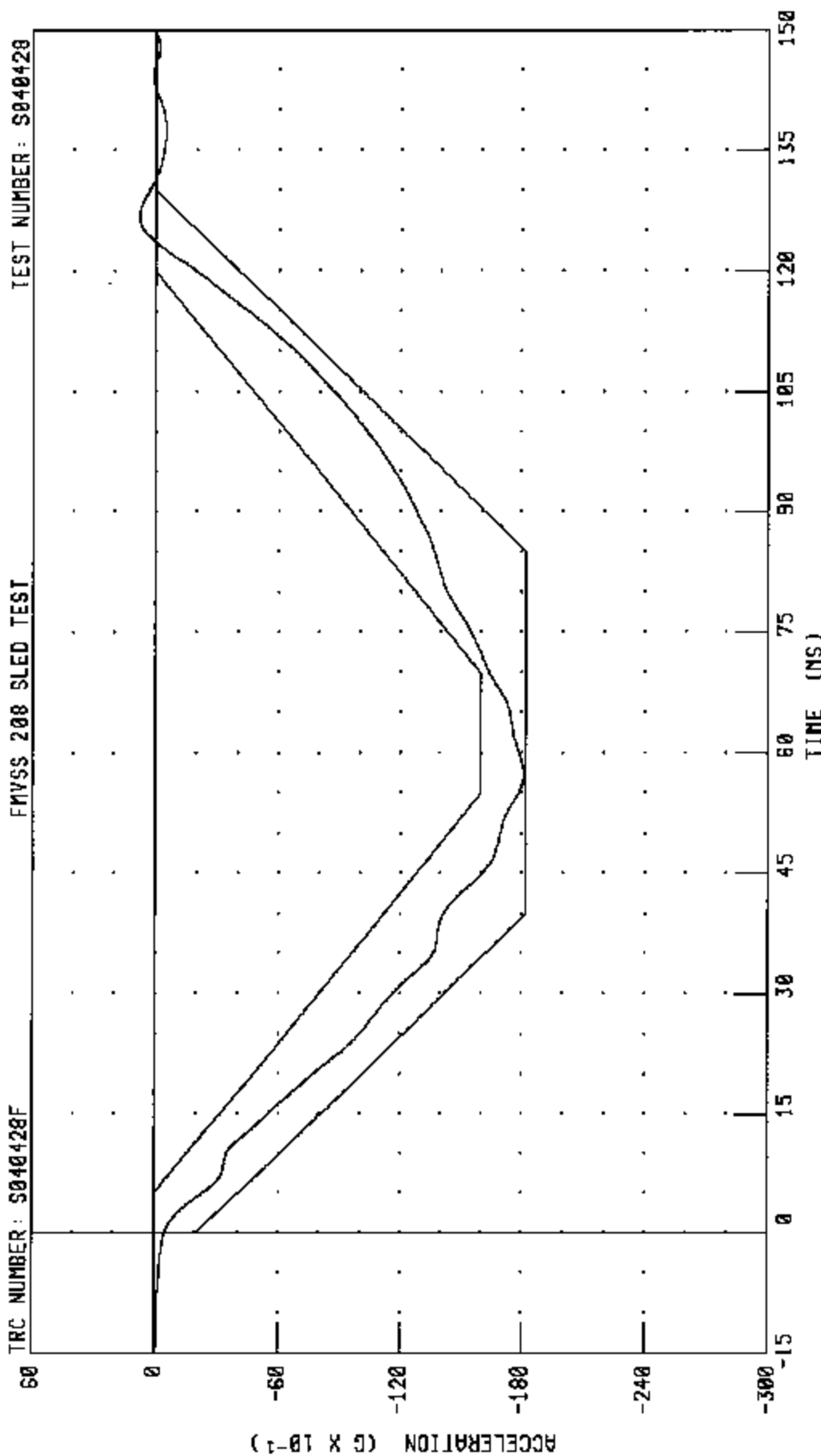
C40203 / 2004 FORD FREESTAR

SLED ACCELERATION

FMVSS 208 SLED TEST

TRC NUMBER: S040428F

TEST NUMBER: S040428

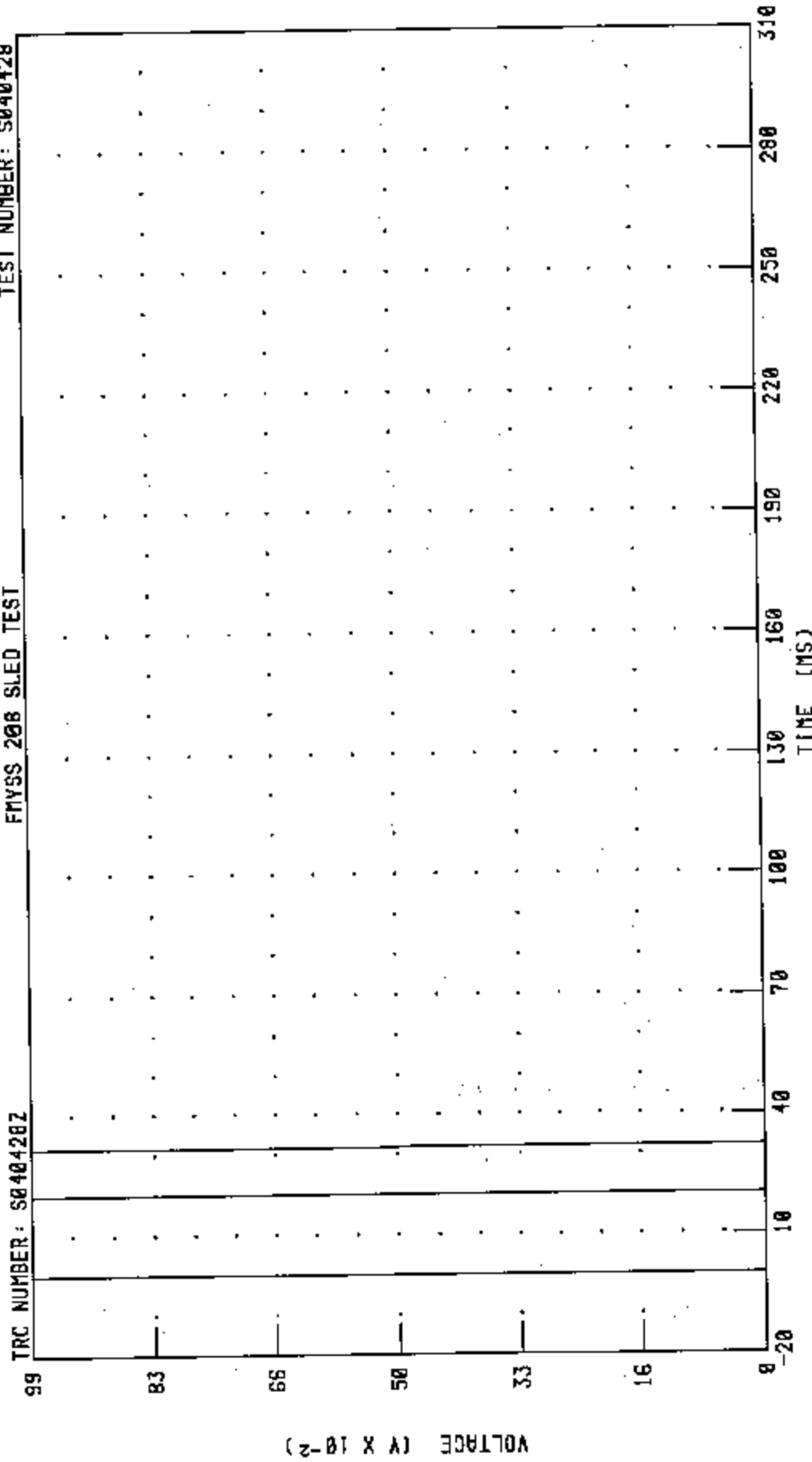


CHANNEL: SLDXG FILTER: CH. CLASS 60

C40209 / 2004 FORD FREESTAR
DRIVER PRIMARY AIRBAG EVENT
FMVSS 208 SLED TEST

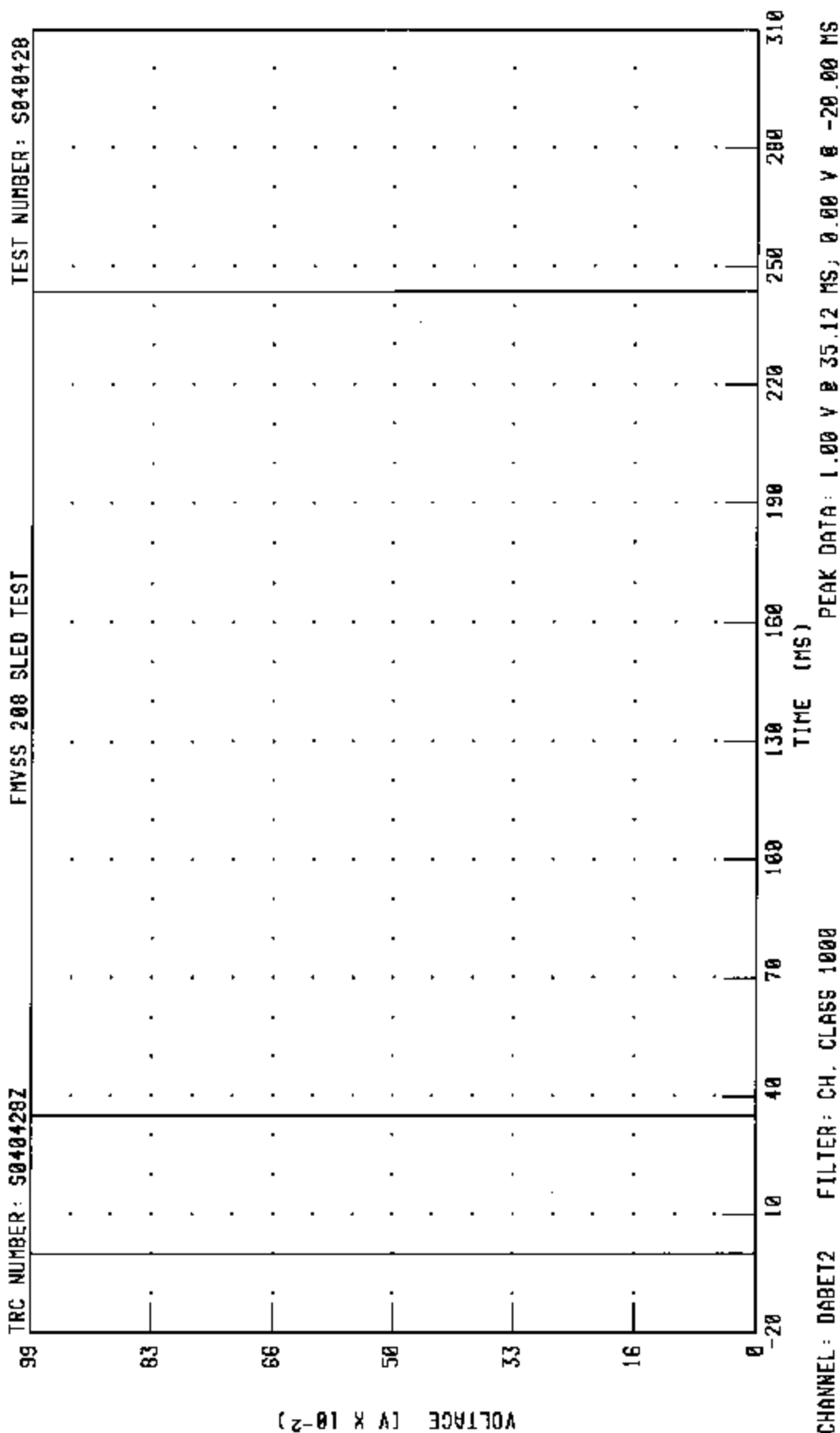
TEST NUMBER: S040428

TRC NUMBER: S040420Z



PEAK DATA: 1.00 V @ 20.16 MS; 0.00 V @ -20.00 MS

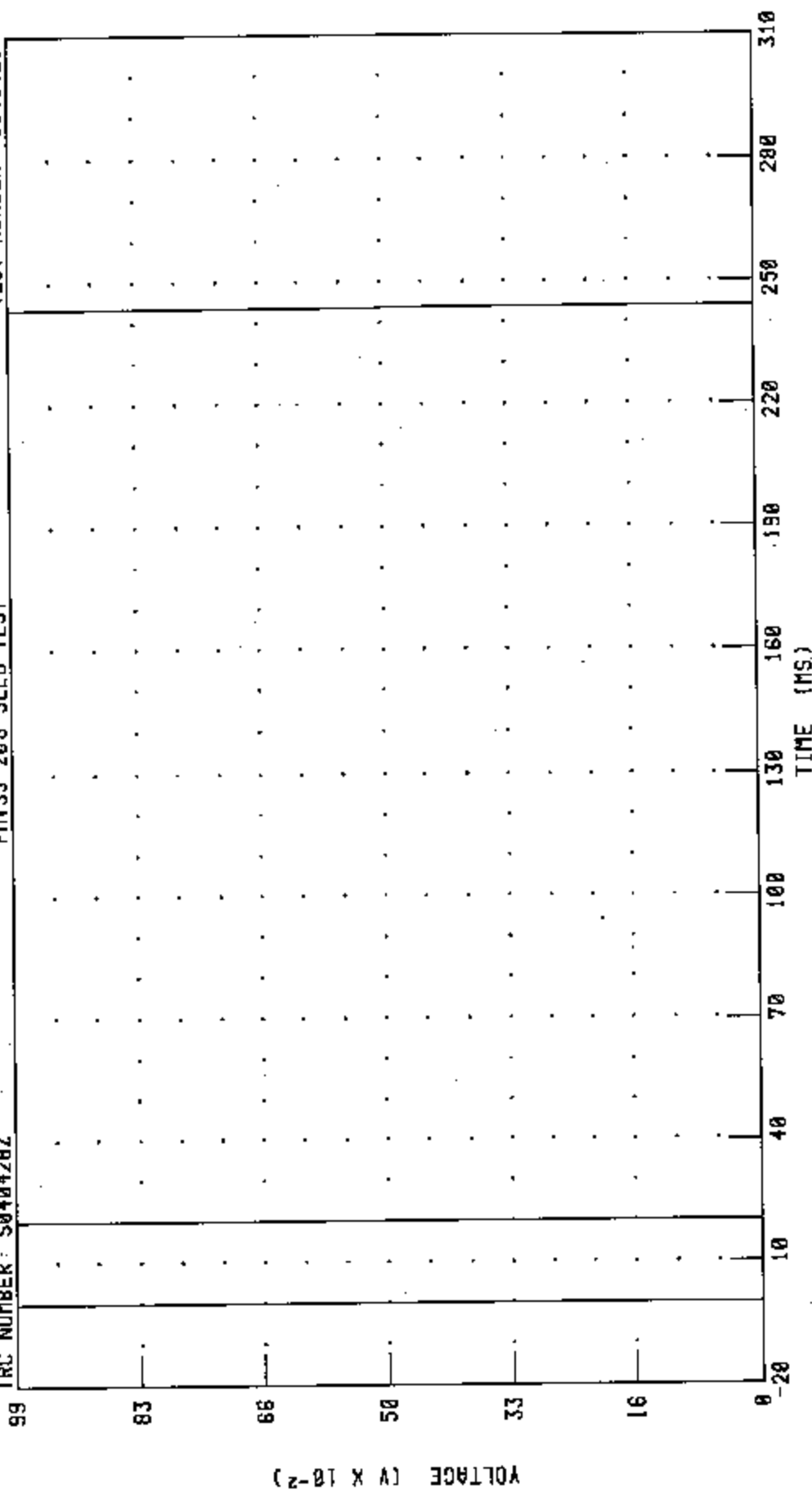
C40209 / 2004 FORD FREESTAR
 DRIVER SECONDARY AIRBAG EVENT
 FMVSS 208 SLED TEST



C40209 / 2004 FORD FREESTAR
PASSENGER PRIMARY AIRBAG EVENT
FMVSS 208 SLED TEST

TEST NUMBER: S040428

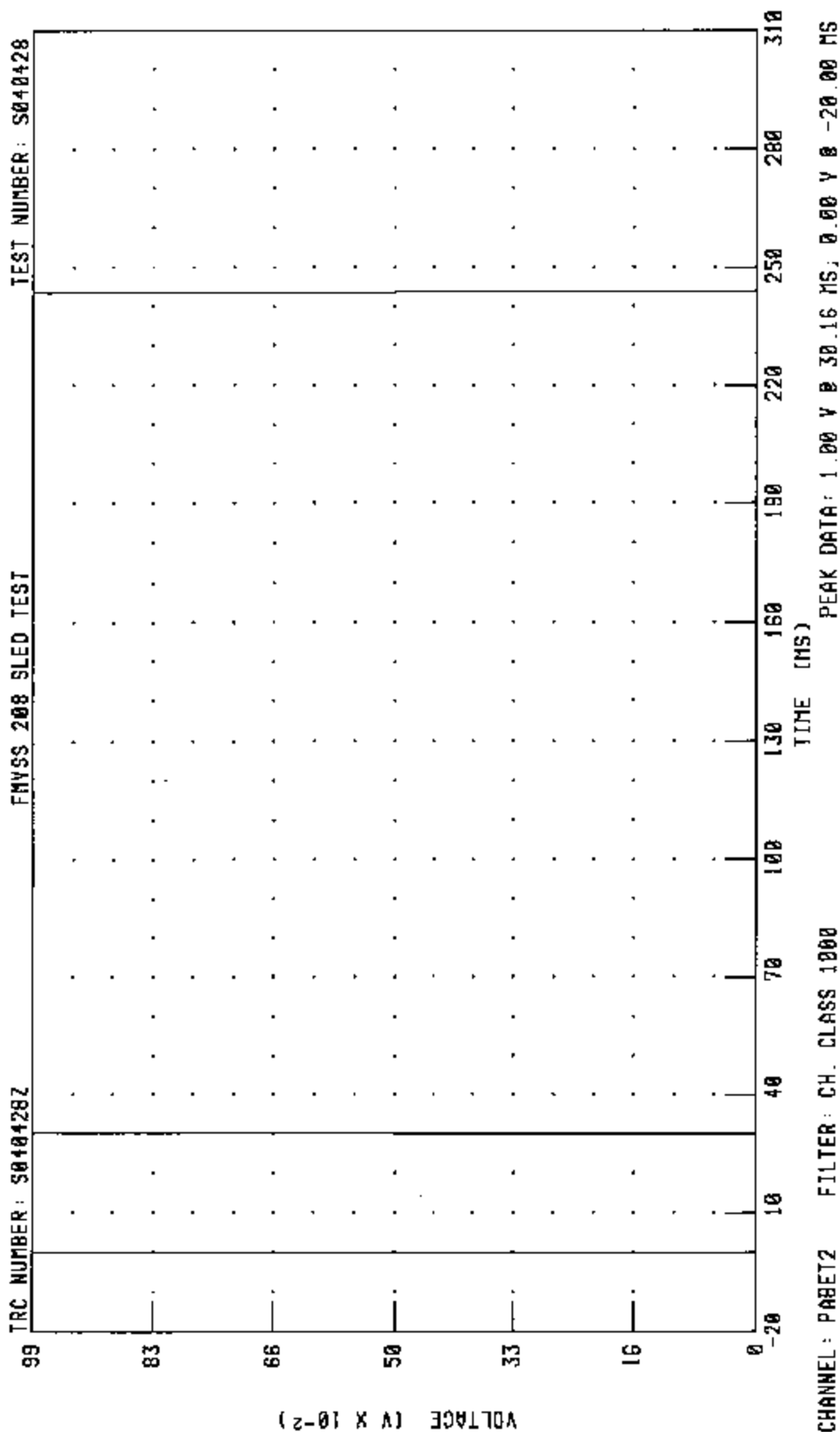
TRC NUMBER: S040428Z



CHANNEL: PABET1 FILTER: CH. CLASS 1000

PEAK DATA: 1.00 V @ 20.16 MS; 0.00 V @ -20.00 MS

C40209 / 2004 FORD FREESTAR
PASSENGER SECONDARY AIRBAG EVENT
FMVSS 208 SLED TEST



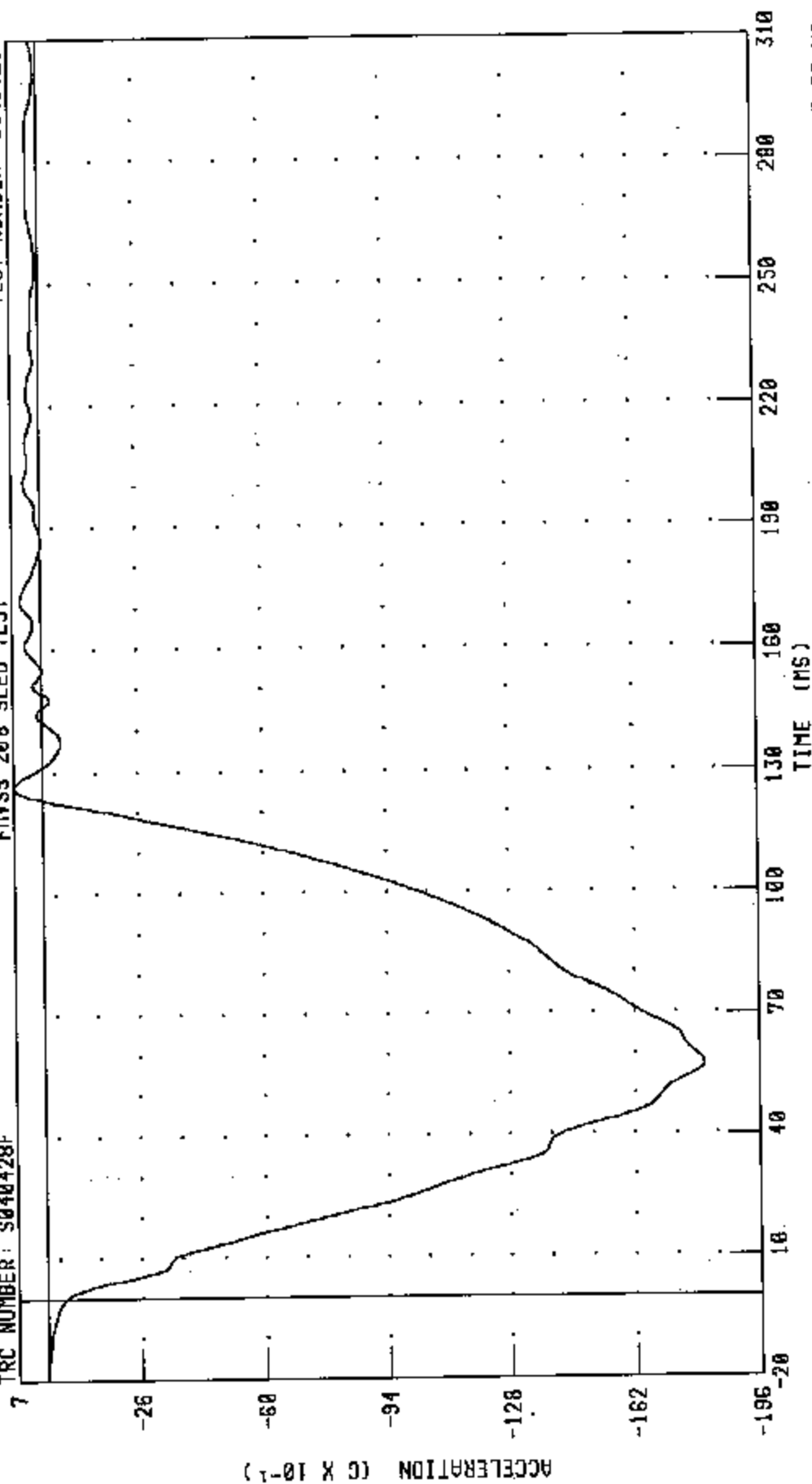
C40209 / 2004 FORD FREESTAR

SLED ACCELERATION

FNVS 200 SLED TEST

TEST NUMBER: S040428

7 TRC NUMBER: S040428F



CHANNEL: SLDXC FILTER: CH. CLASS 60

PEAK DATA: 0.80 G @ 126.56 MS, -18.11 G @ 57.36 MS

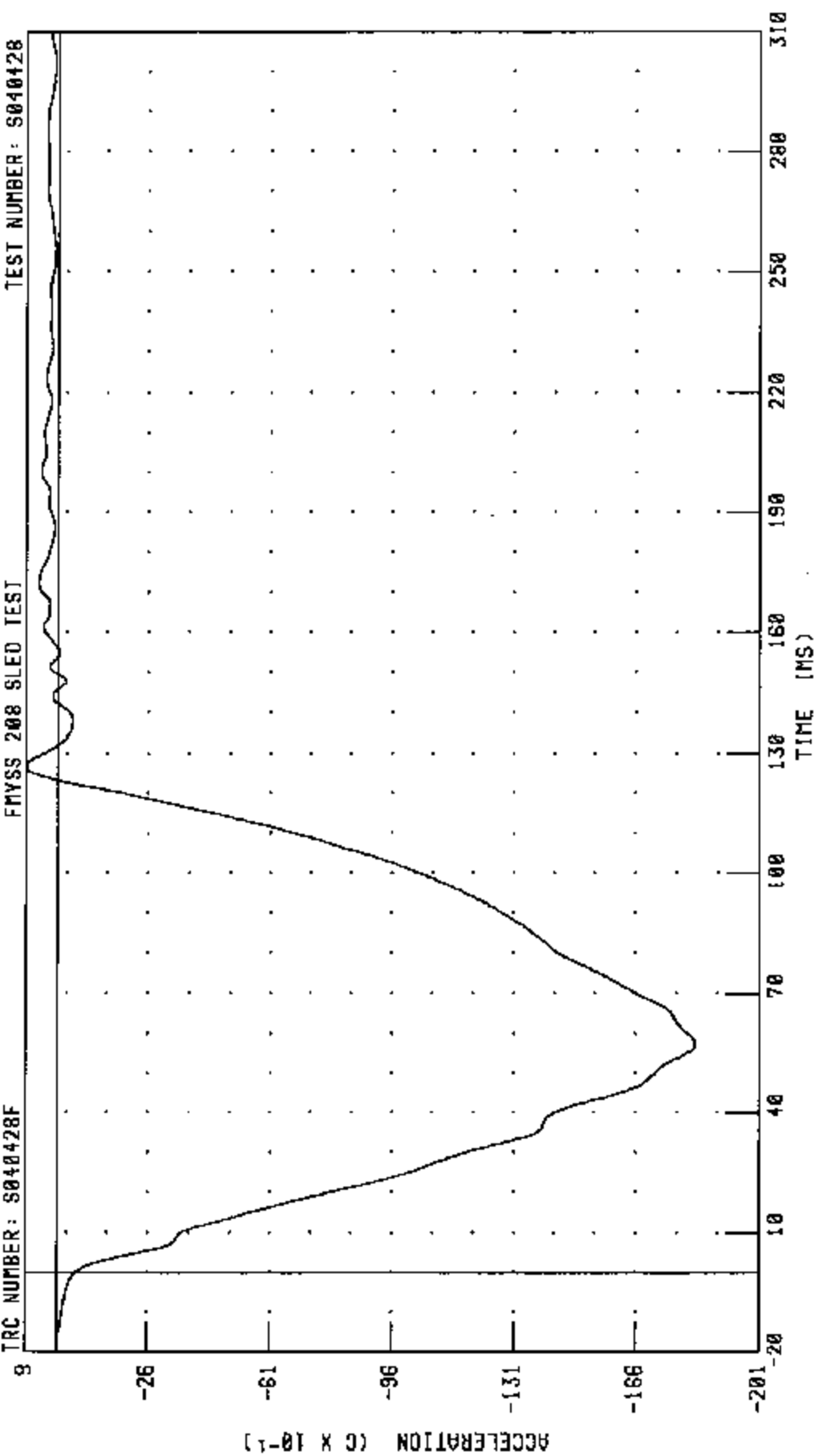
C40205 / 2004 FORD FREESTAR

SLED ACCELERATION - BACKUP

TRC NUMBER: S040428F

FMYSS 208 SLED TEST

TEST NUMBER: S040428



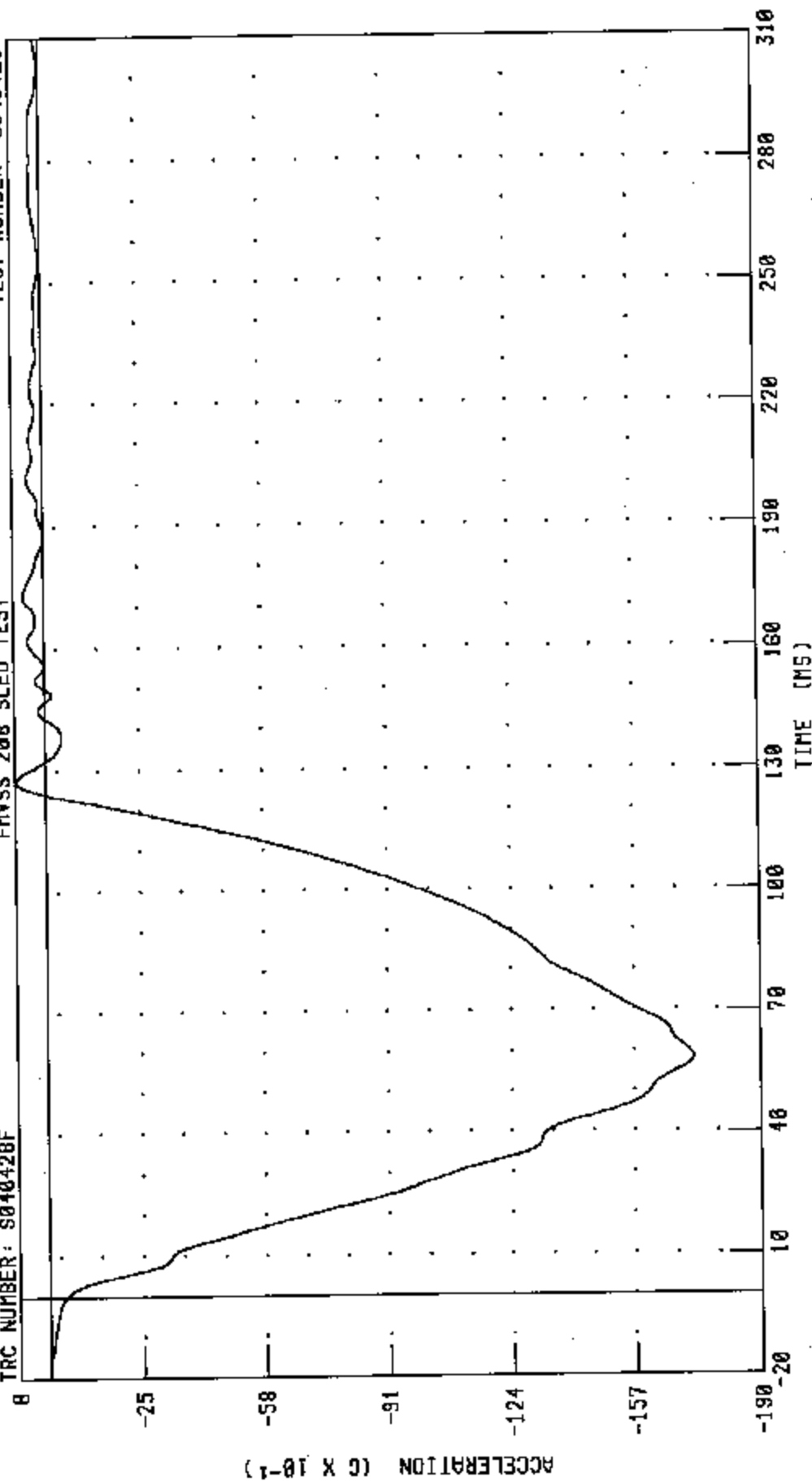
CHANNEL: SLDXGR FILTER: CH. CLASS 60

PEAK DATA: 0.88 G @ 126.80 MS; -18.31 G @ 57.44 MS

C40209 / 2004 FORD FREESTAR
SLED ACCELERATION FOR TIMING CIRCUIT
FMVSS 208 SLED TEST

TEST NUMBER: S040428

TRC NUMBER: S040428F



CHANNEL: SLOXGT FILTER: CH. CLASS 60

PEAK DATA: 0.77 G @ 127.52 MS, -17.25 G @ 58.24 MS

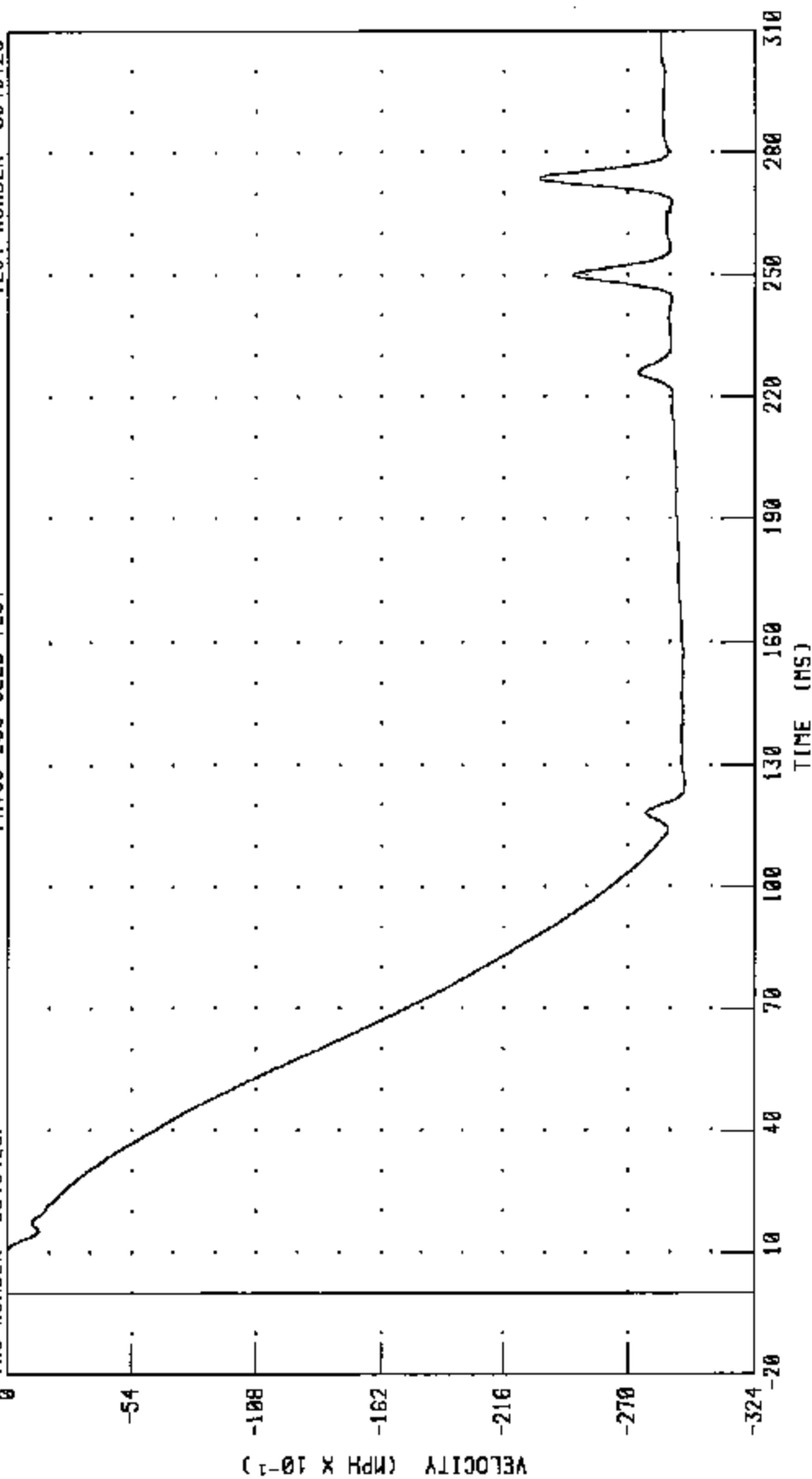
C40209 / 2004 FORD FREESTAR

MEASURED VELOCITY TRAP

TRC NUMBER: S040428F

FMVSS 208 SLED TEST

TEST NUMBER: S040428



CHANNEL: SLOXV FILTER: CH. CLASS 60

PEAK DATA: 0.06 MPH @ 9.28 MS; -29.45 MPH @ 124.72 MS

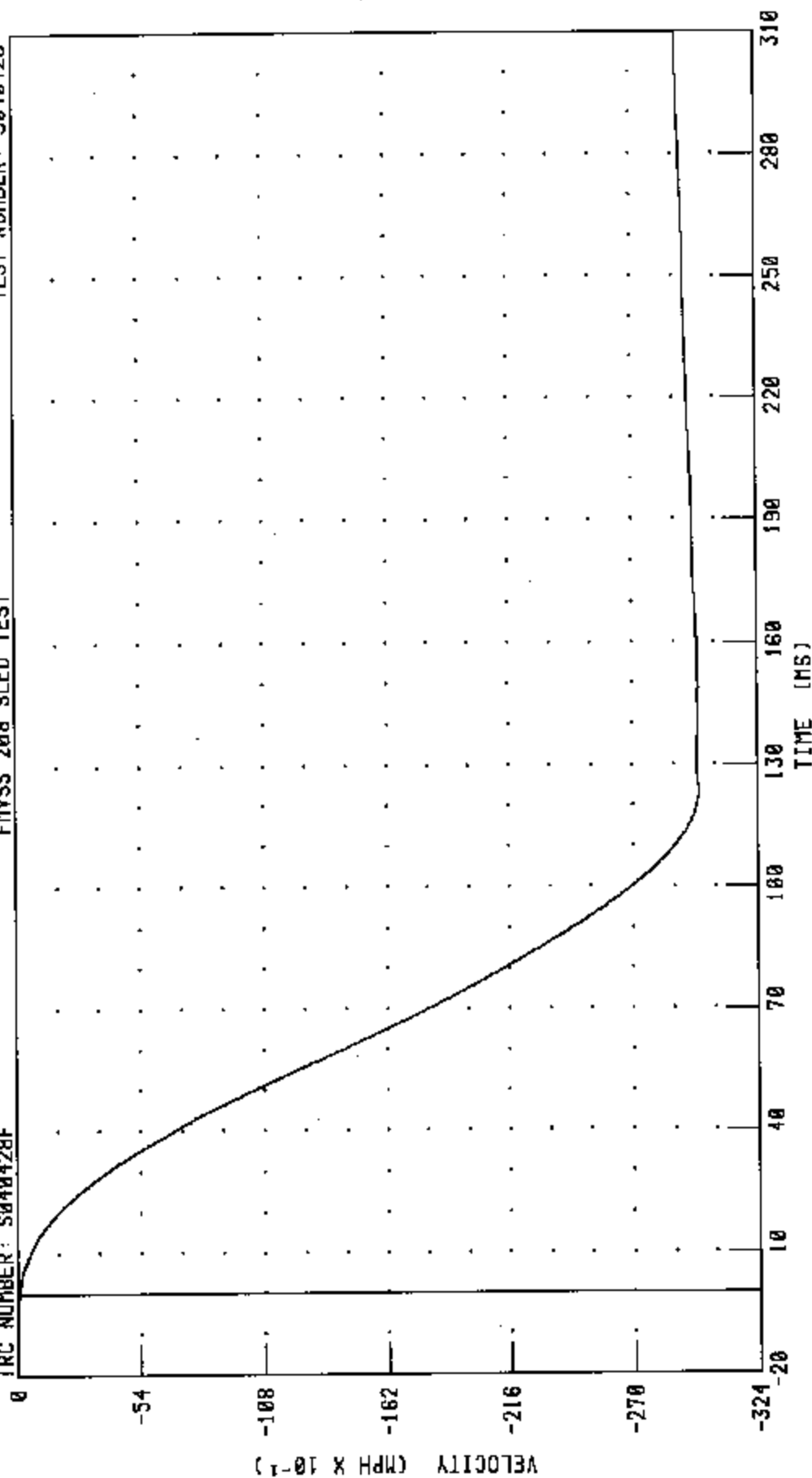
C40209 / 2004 FORD FREESTAR

SLED VELOCITY (INTEGRATED)

FMVSS 208 SLED TEST

TEST NUMBER: S040428

TRC NUMBER: S040428F

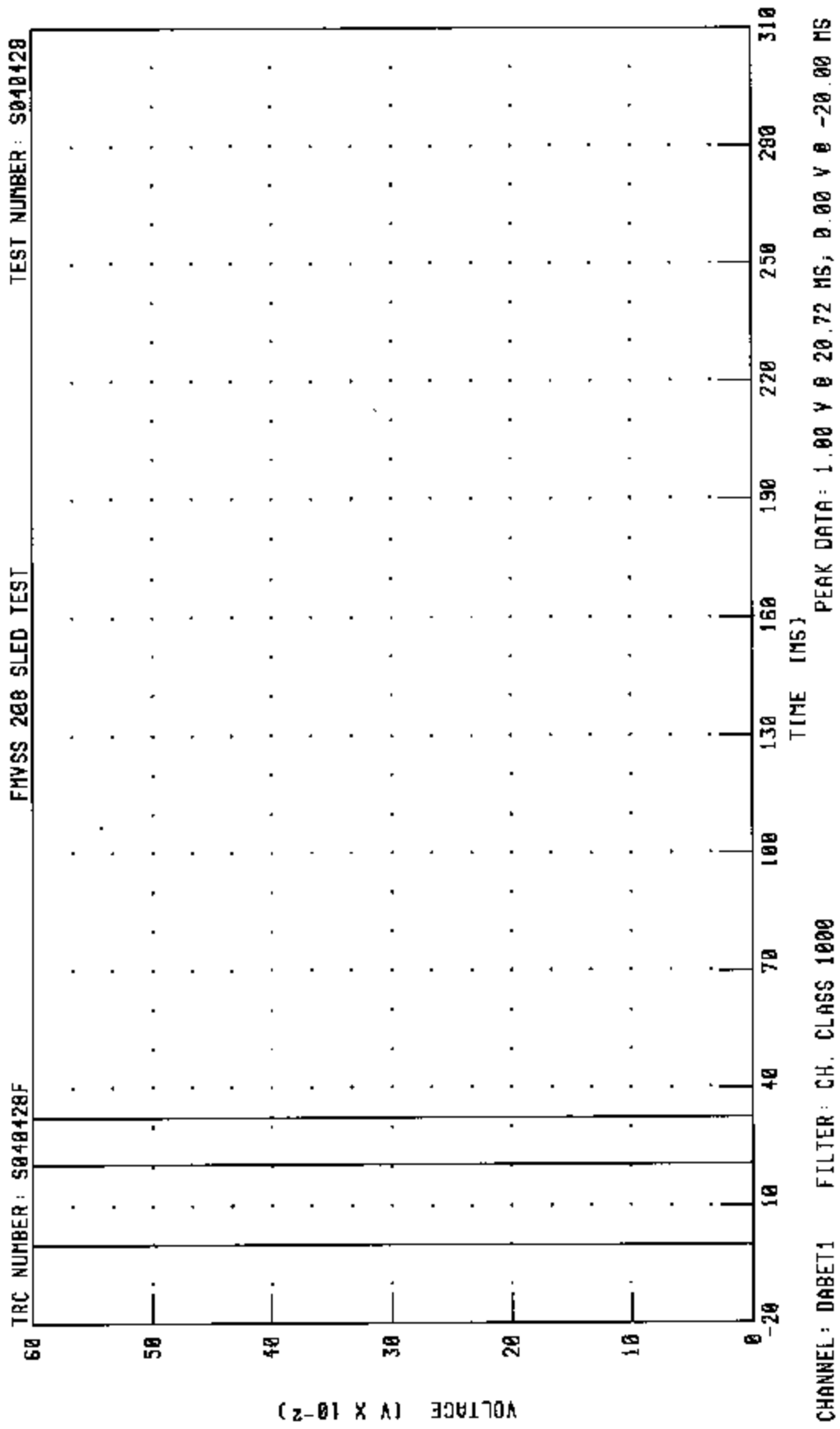


TIME (MS)

PEAK DATA: 0.00 MPH @ -19.12 MS; -29.88 MPH @ 124.32 MS

CHANNEL: SLDXVI FILTER: CH. CLASS 180

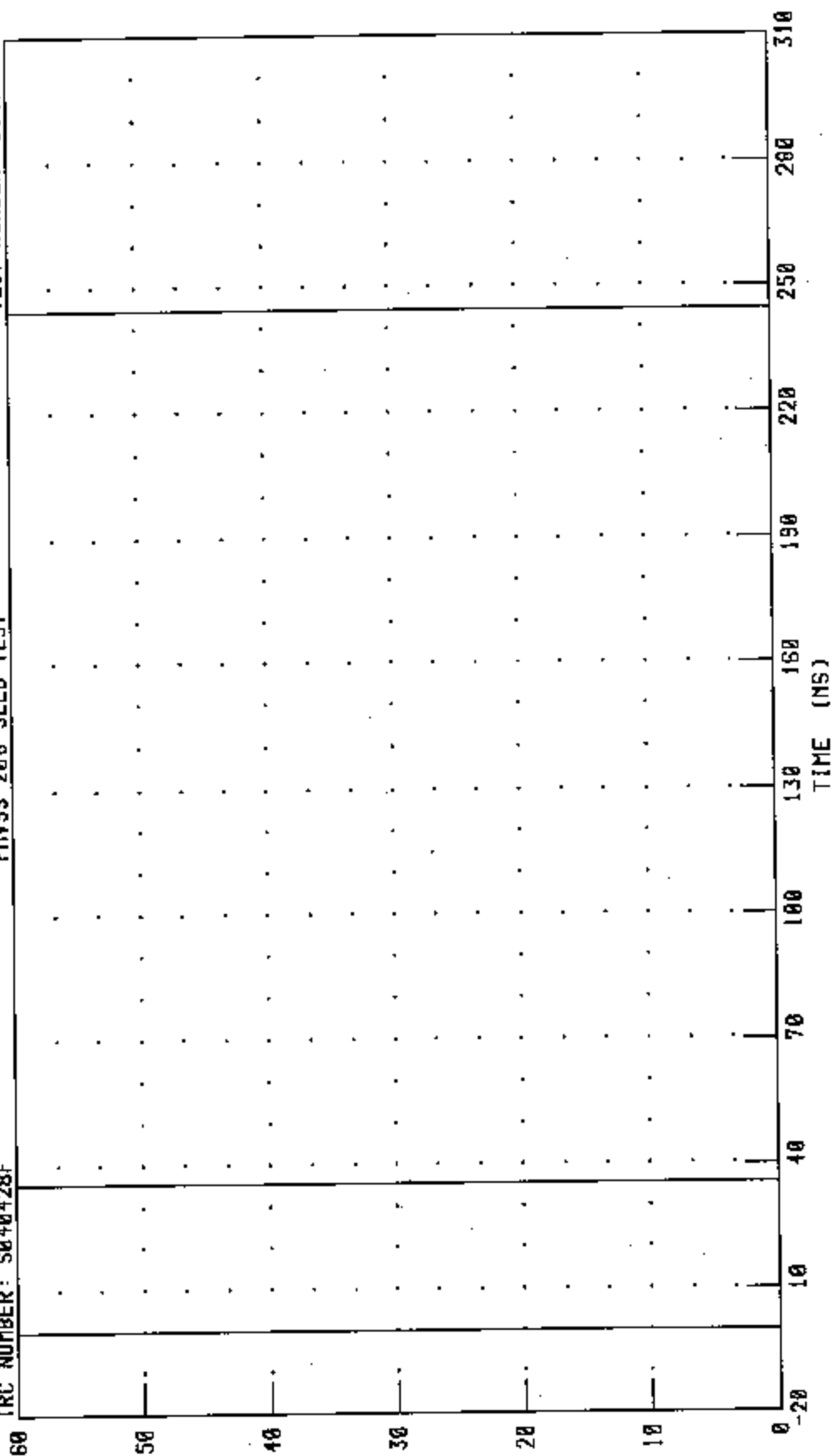
C40209 / 2004 FORD FREESTAR
 DRIVER PRIMARY AIRBAG EVENT



C40209 / 2004 FORD FREESTAR
 DRIVER SECONDARY AIRBAG EVENT
 FMVSS 208 SLED TEST

TEST NUMBER: S040428

TRC NUMBER: S040428F



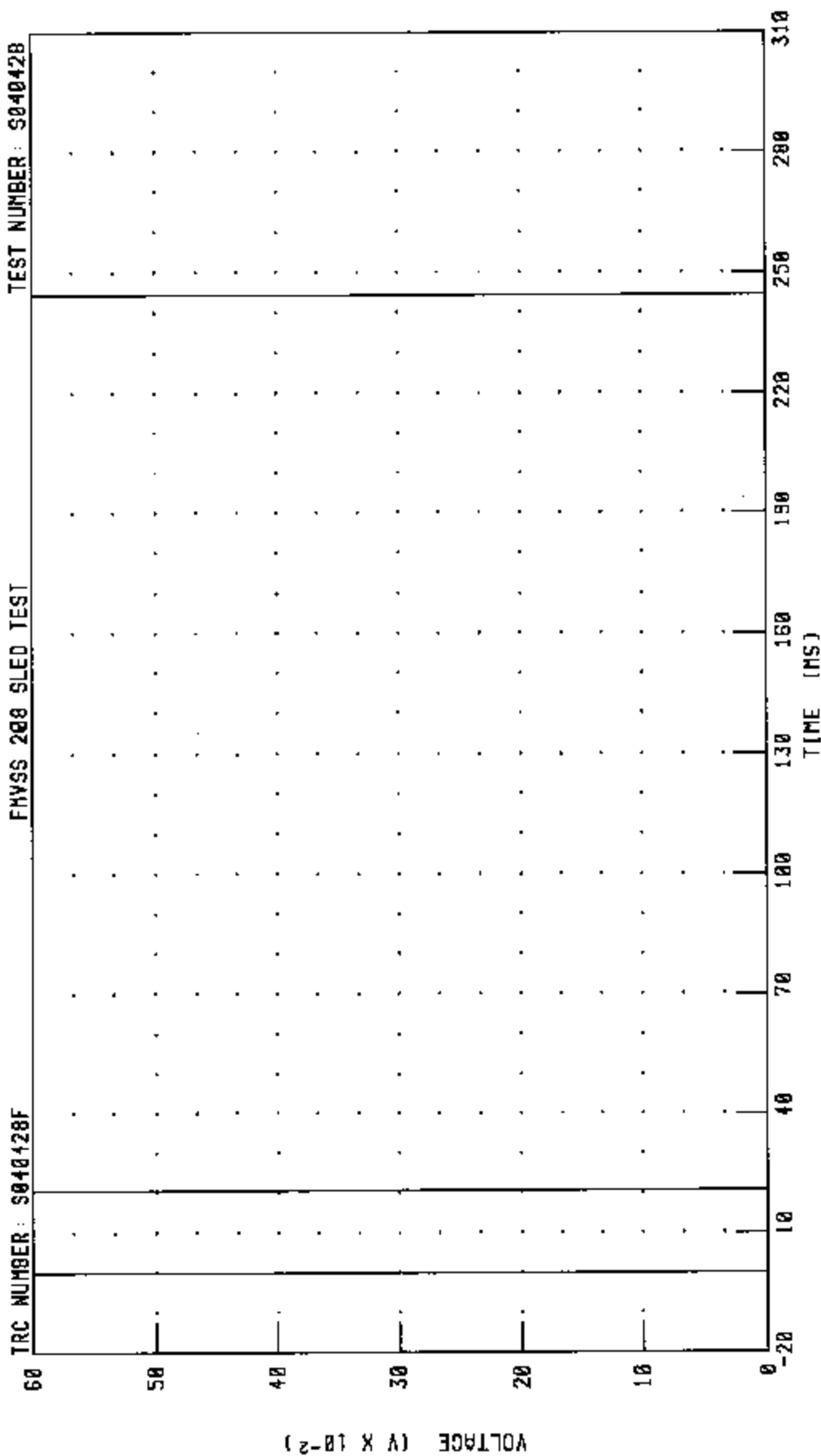
VOLTAGE (V X 10⁻²)

TIME (MS)

CHANNEL: DABET2 FILTER: CH. CLASS 1000

PEAK DATA: 1.00 V @ 35.68 MS; 0.00 V @ -20.00 MS

C40203 / 2004 FORD FREESTAR
PASSENGER PRIMARY AIRBAG EVENT
FHVS 200 SLED TEST



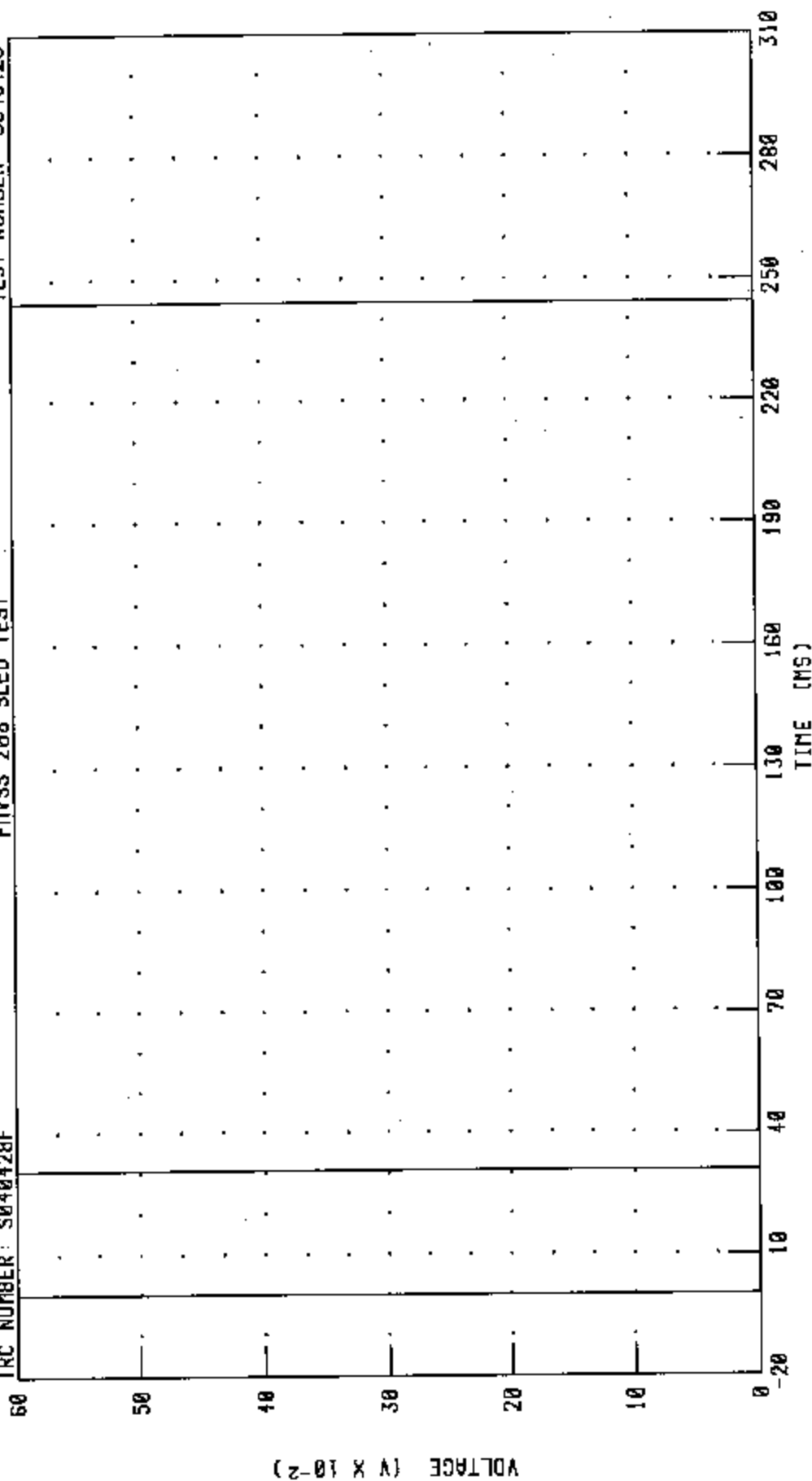
CHANNEL: PABET1 FILTER: CH. CLASS 1000

PEAK DATA: 1.00 V @ 20.72 MS; 0.00 V @ -20.00 MS

C40209 / 2004 FORD FREESTAR
PASSENGER SECONDARY AIRBAG EVENT
FNVS 200 SLED TEST

TEST NUMBER: S040428

TRC NUMBER: S040428F



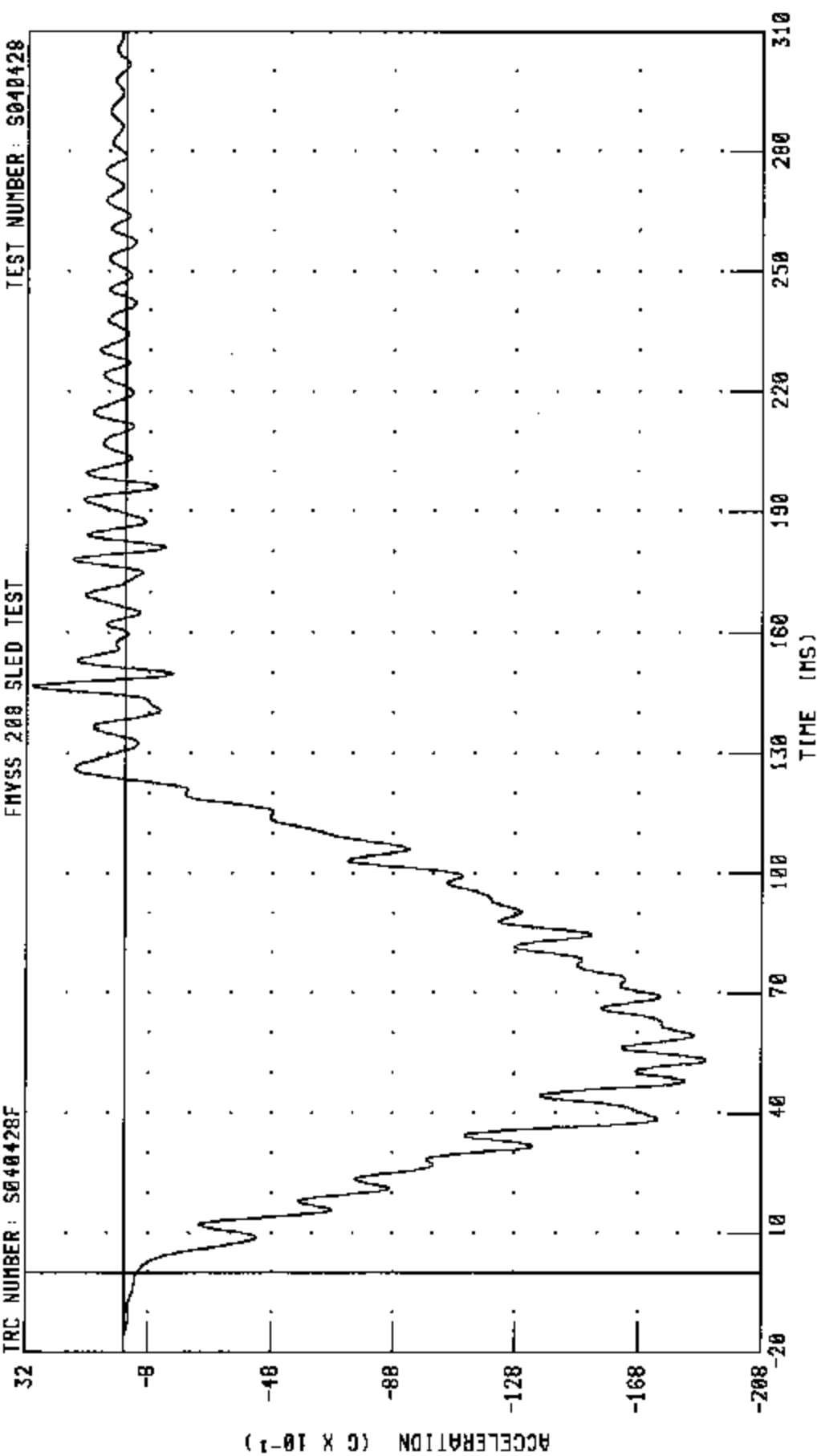
CHANNEL: PABET2 FILTER: CH. CLASS 1000

PEAK DATA: 1.00 V @ 30.72 MS; 0.00 V @ -20.00 MS

C40209 / 2004 FORD FREESTAR
REAR AXLE X-AXIS ACCELERATION
FHYSS 200 SLED TEST

TRC NUMBER: S040428F

TEST NUMBER: S040428



CHANNEL: RAXG FILTER: CH. CLASS 60

PEAK DATA: 2.99 G @ 146.56 MS; -19.03 G @ 53.36 MS

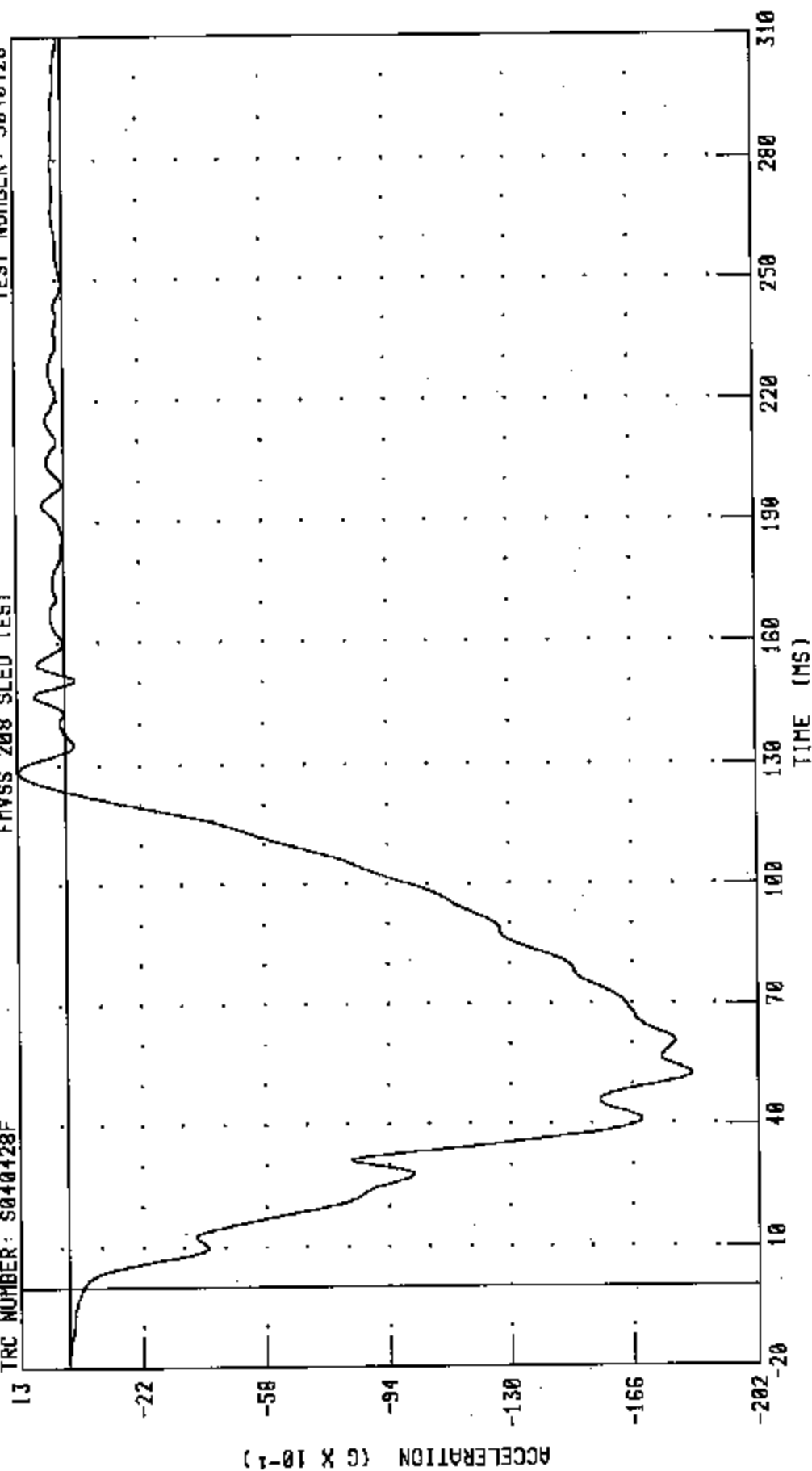
C40209 / 2004 FORD FREESTAR

LEFT REAR SEAT CROSSMEMBER X-AXIS ACCELERATION

TEST NUMBER: S040428

FMVSS 208 SLED TEST

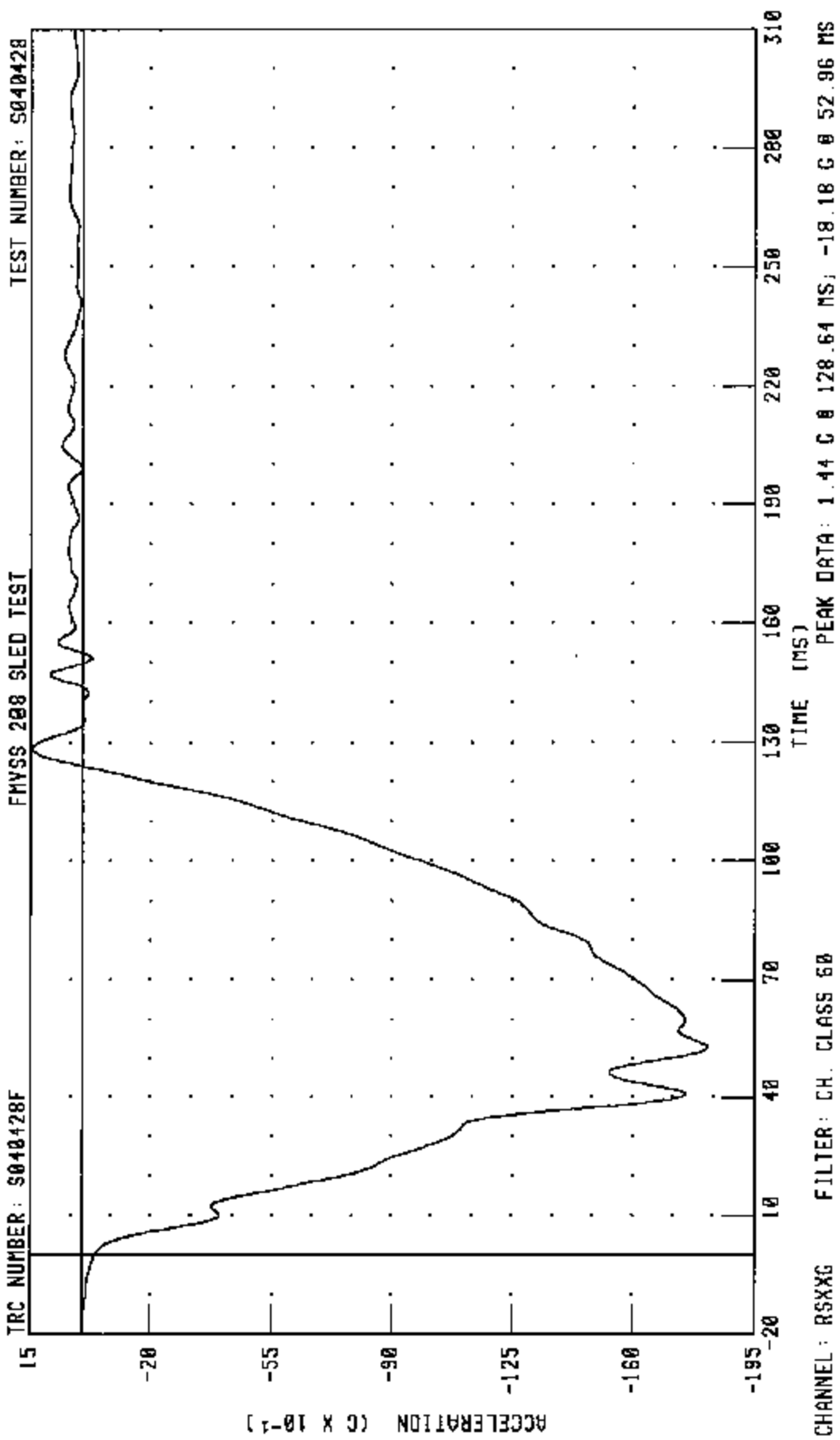
TRC NUMBER: S040428F



CHANNEL: LSXXG FILTER: CH. CLASS 60

PEAK DATA: 1.36 G @ 128.72 MS; -18.33 G @ 52.72 MS

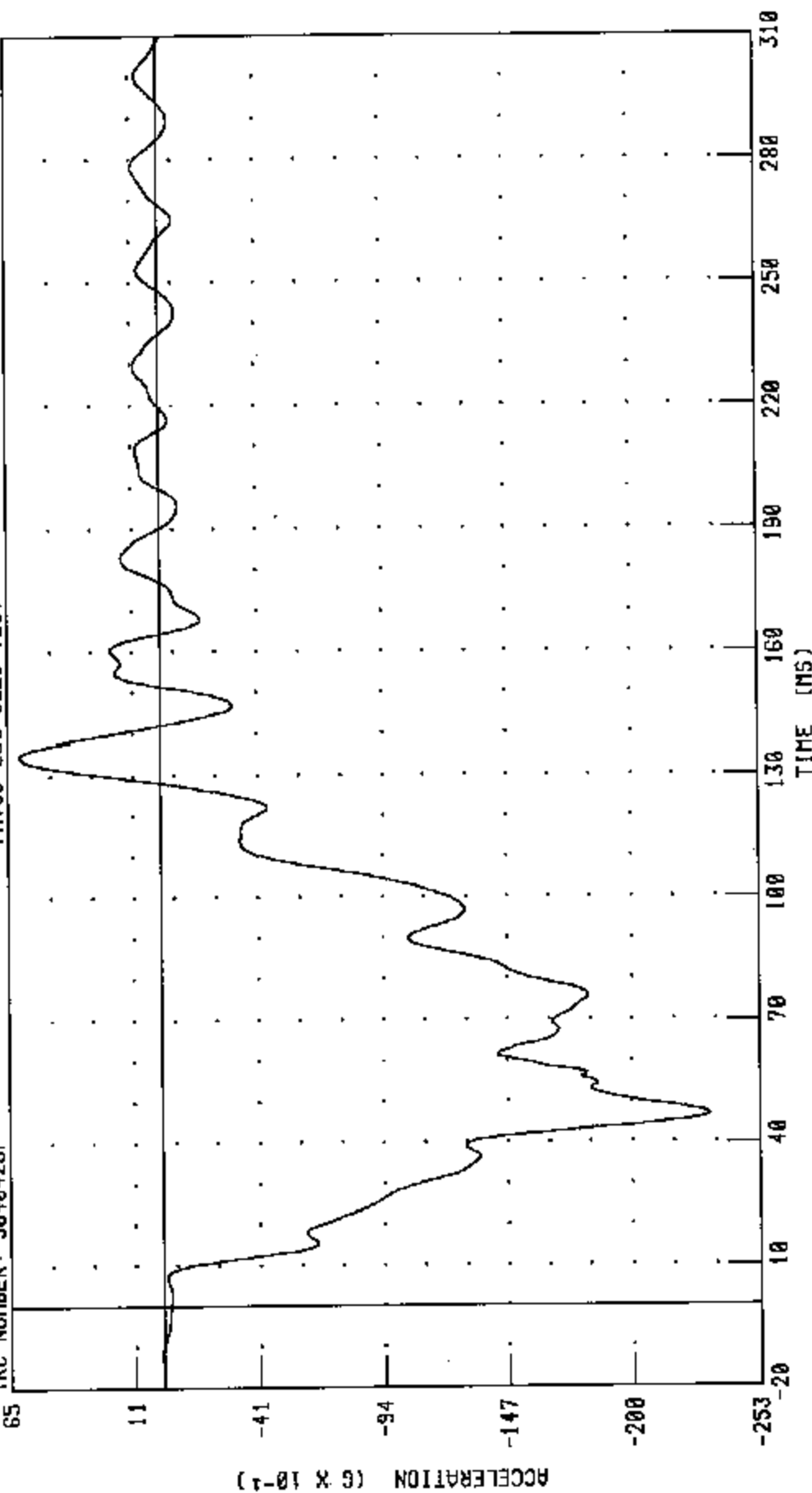
C40209 / 2004 FORD FREESTAR
RIGHT REAR SEAT CROSSMEMBER X-AXIS ACCELERATION



C40209 / 2004 FORD FREESTAR
 TOP ENGINE X-AXIS ACCELERATION
 FMVSS 208 SLED TEST

TEST NUMBER: S040428

TRC NUMBER: S040428F



CHANNEL: TEXTG FILTER: CH. CLASS 60

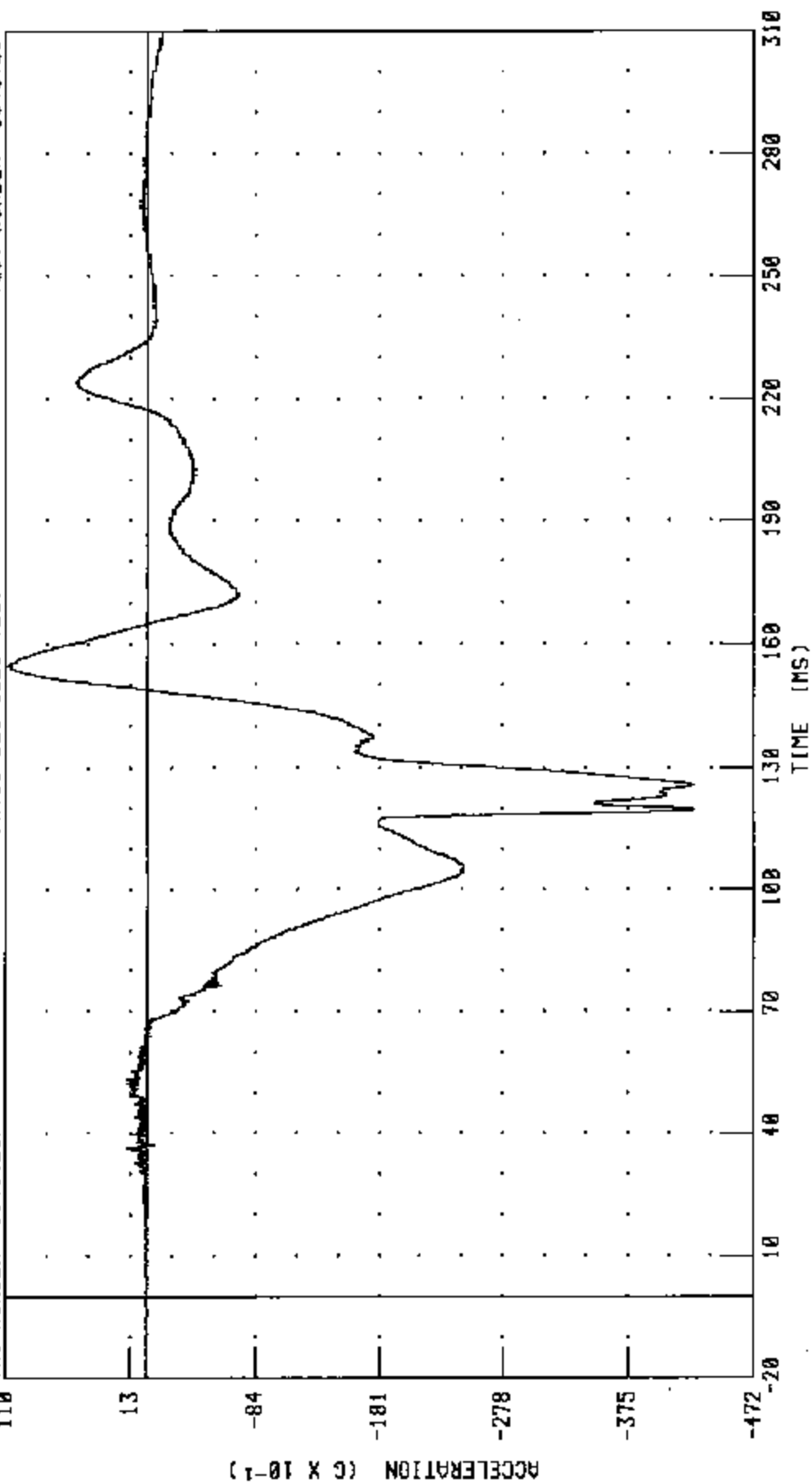
PEAK DATA: 5.99 G @ 134.88 MS; -23.28 G @ 45.88 MS

C40203 / 2004 FORD FREESTAR
DRIVER HEAD X-AXIS ACCELERATION

TRC NUMBER: S040428F

TEST NUMBER: S040428

FMVSS 208 SLED TEST



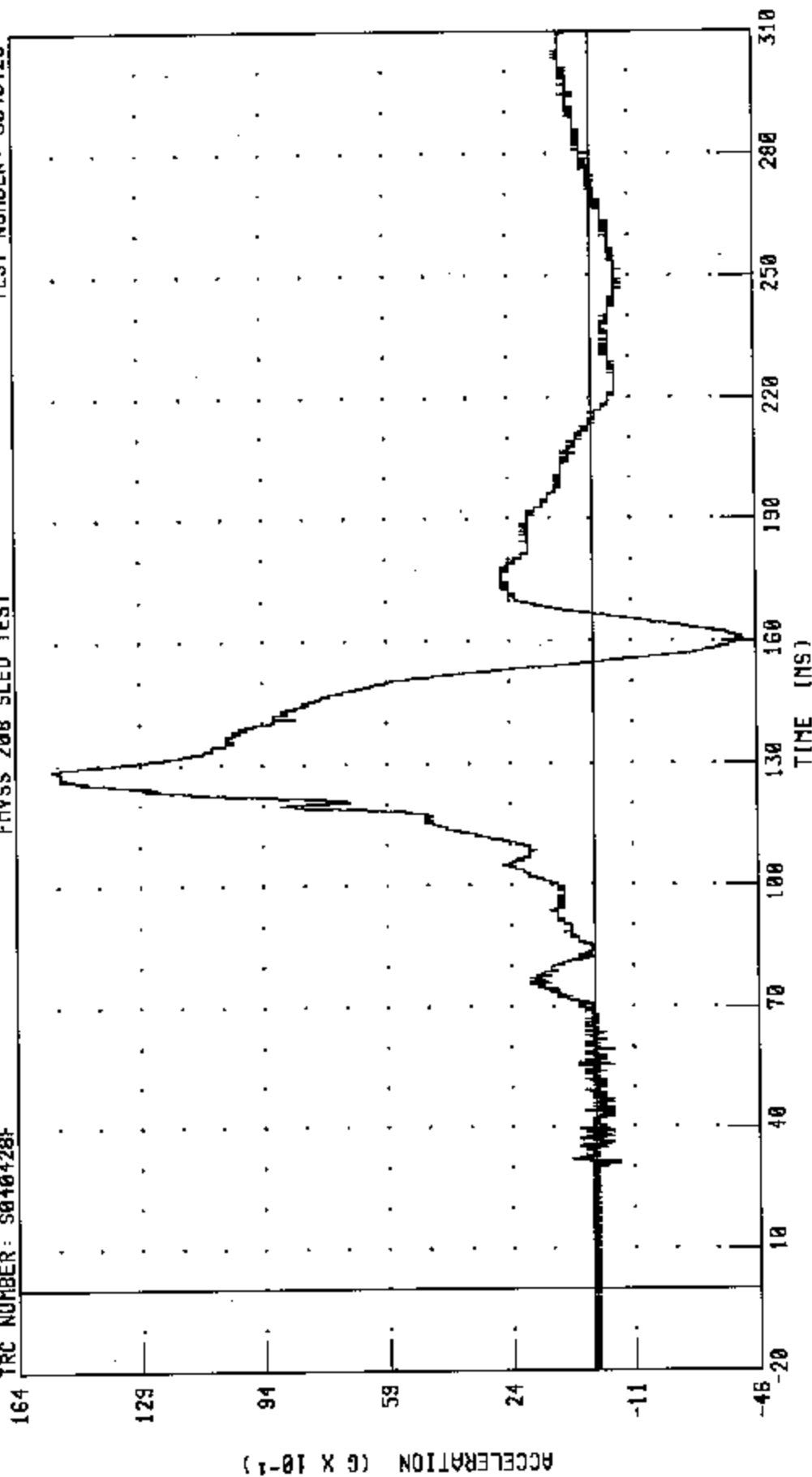
CHANNEL: HEDXC1 FILTER: CH. CLASS 1000

PEAK DATA: 10.74 G @ 154.80 MS; -42.68 G @ 119.84 MS

C40209 / 2004 FORD FREESTAR
 DRIVER HEAD Y-AXIS ACCELERATION
 FMVSS 208 SLED TEST

TEST NUMBER: S040428

TRC NUMBER: S040428F



CHANNEL: HEDYC1 FILTER: CH. CLASS 1000

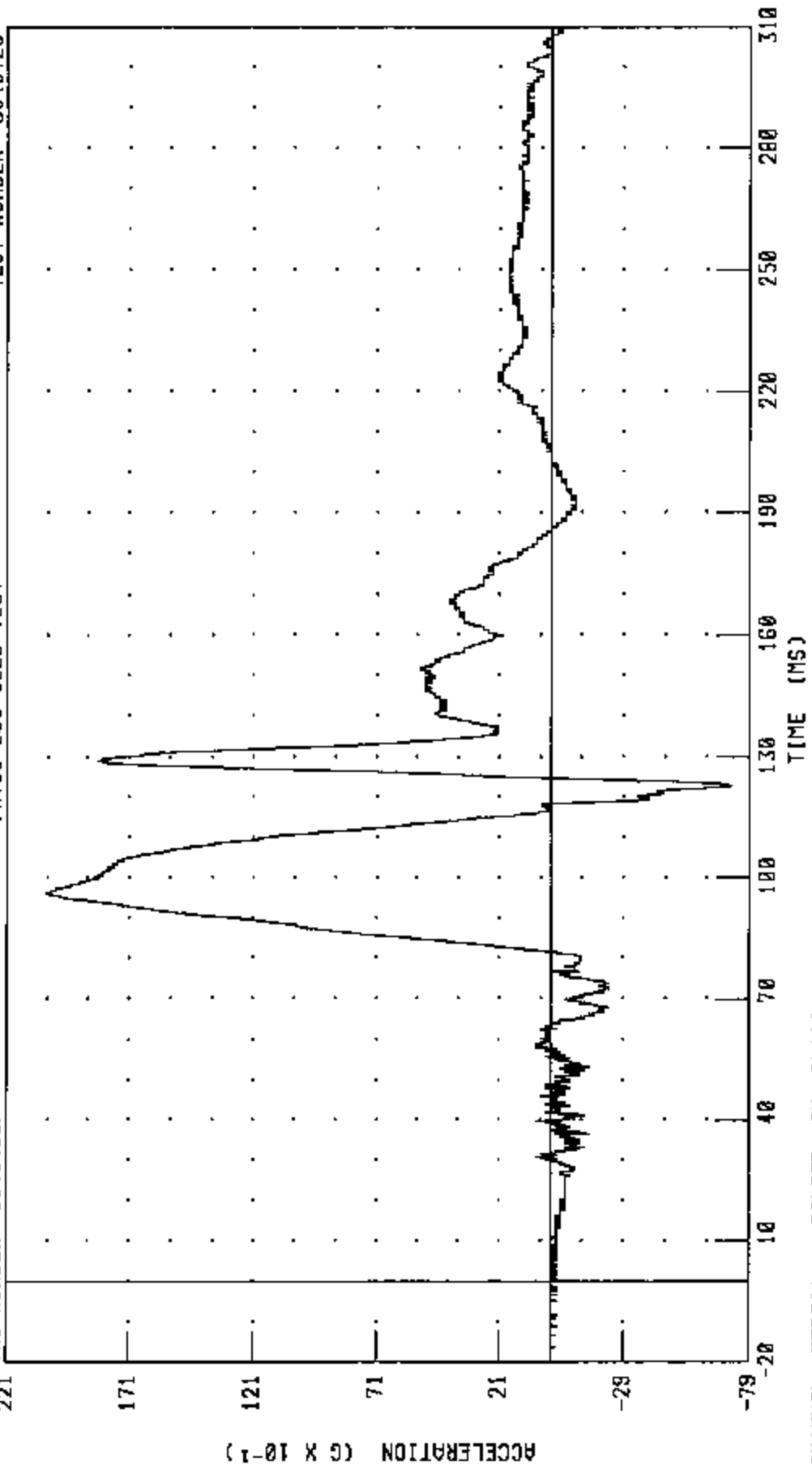
PEAK DATA: 15.34 G @ 128.48 MS; -4.22 G @ 159.92 MS

C40209 / 2004 FORD FREESTAR
DRIVER HEAD Z-AXIS ACCELERATION
FMVSS 208 SLED TEST

TEST NUMBER: S040428

TRC NUMBER: S040428F

221



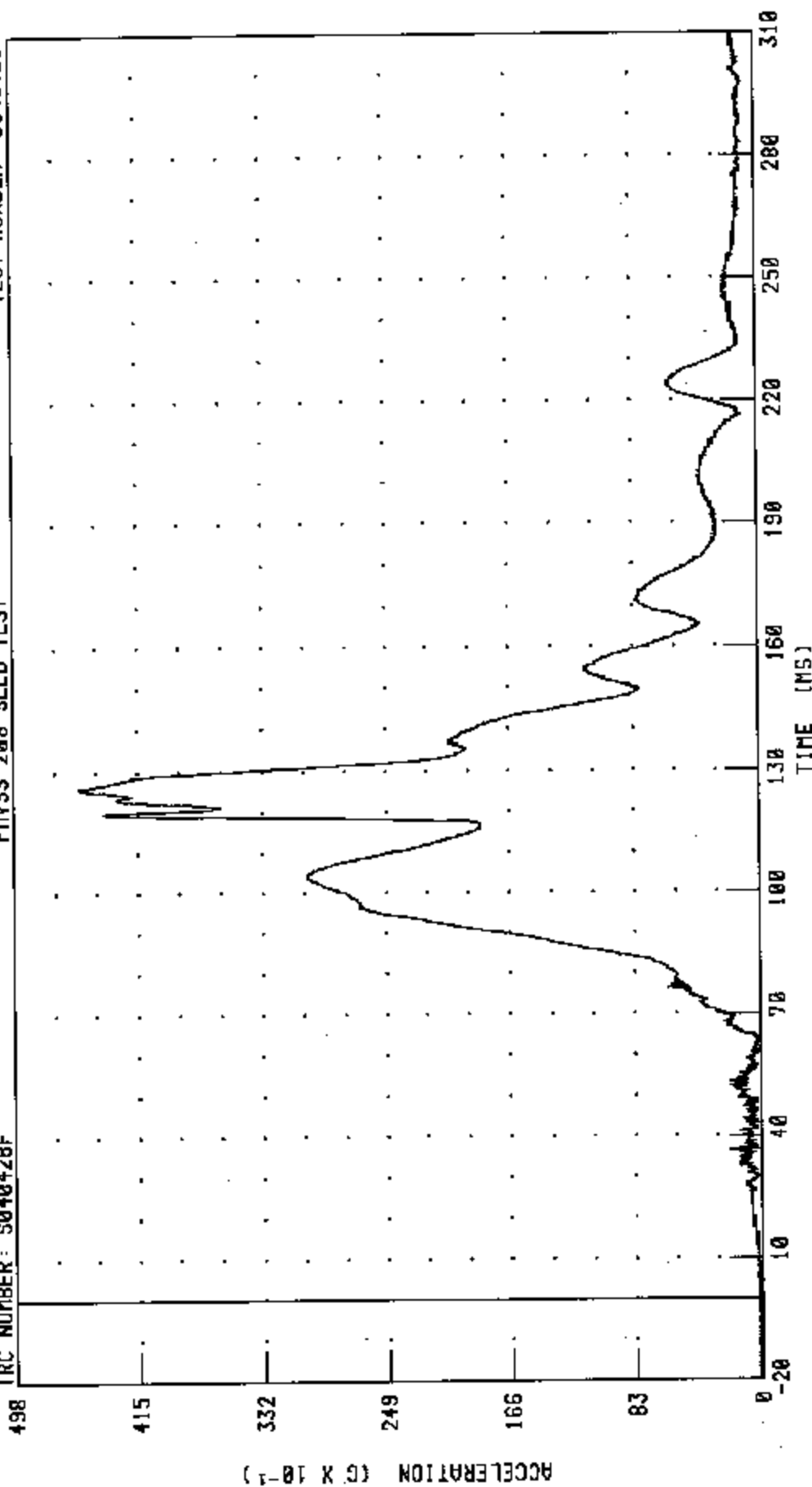
CHANNEL: HEDZG1 FILTER: CH. CLASS 1000

PEAK DATA: 20.50 G @ 95.92 MS; -7.21 G @ 122.88 MS

C40209 / 2004 FORD FREESTAR
 DRIVER HEAD RESULTANT ACCELERATION
 FMVSS 208 SLED TEST

TEST NUMBER: S040428

TRC NUMBER: S040428F



CHANNEL: HEDR01 FILTER: CH. CLASS 1000

PEAK DATA: 45.40 G @ 125.92 MS; 0.09 G @ -19.92 MS

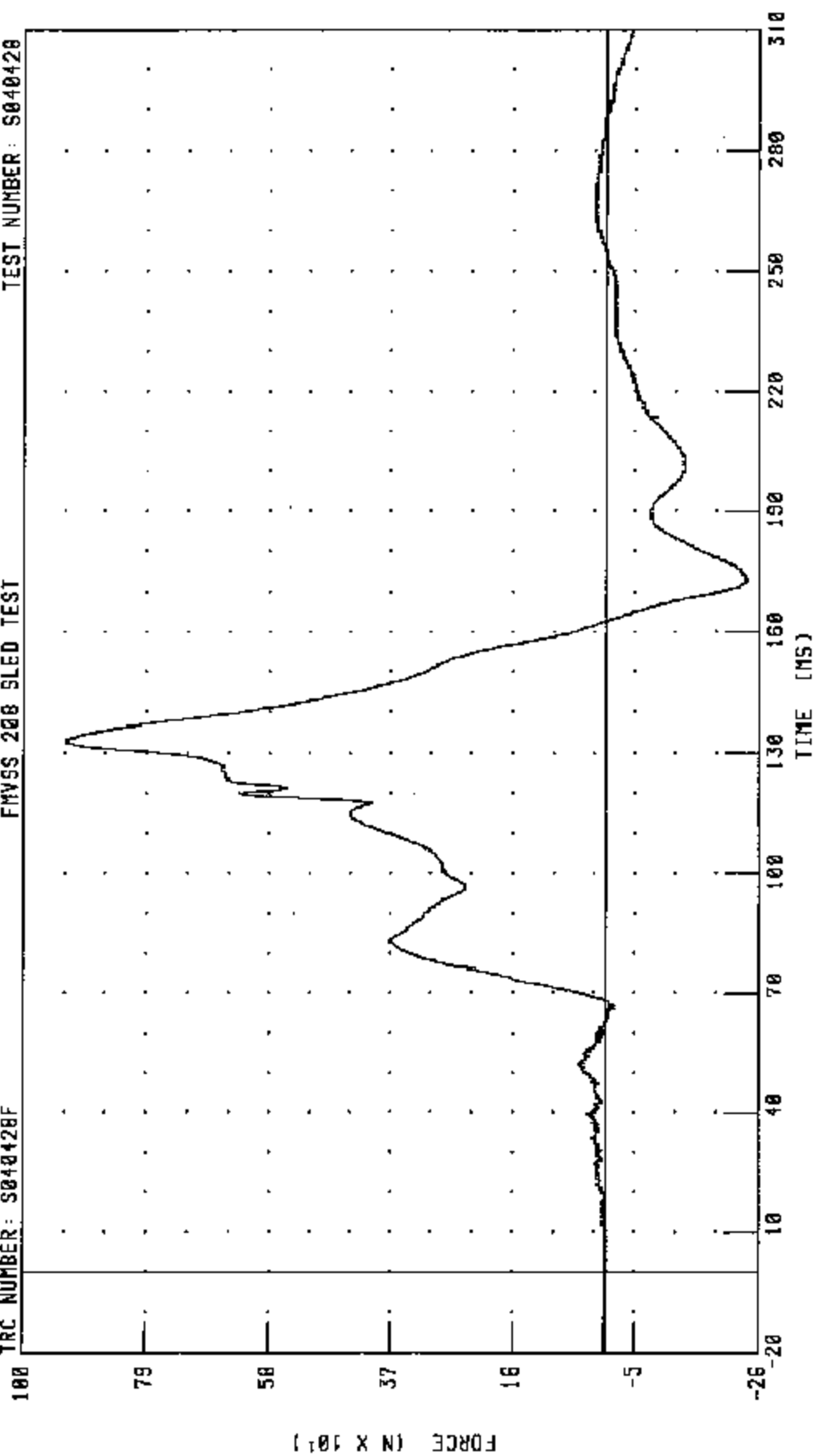
C40209 / 2004 FORD FREESTAR

DRIVER NECK X-AXIS SHEAR FORCE

FMVSS 208 SLED TEST

TRC NUMBER: S040428F

TEST NUMBER: S040428



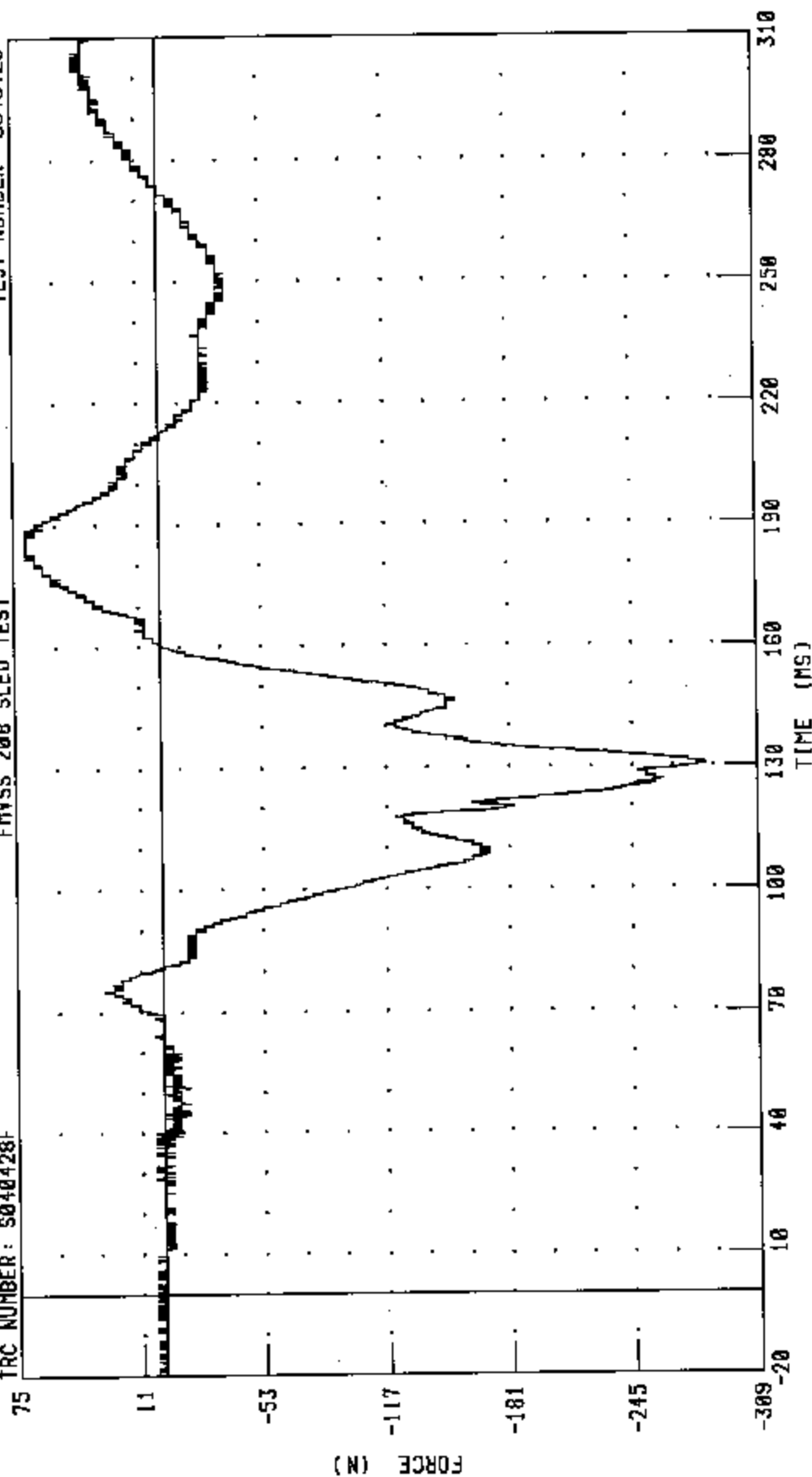
CHANNEL: NEKXF1 FILTER: CH. CLASS 1000

PEAK DATA: 926.83 N @ 132.64 MS, -240.85 N @ 172.56 MS

C40209 / 2004 FORD FREESTAR
DRIVER NECK Y-AXIS SHEAR FORCE
FMVSS 208 SLED TEST

TEST NUMBER: S040428

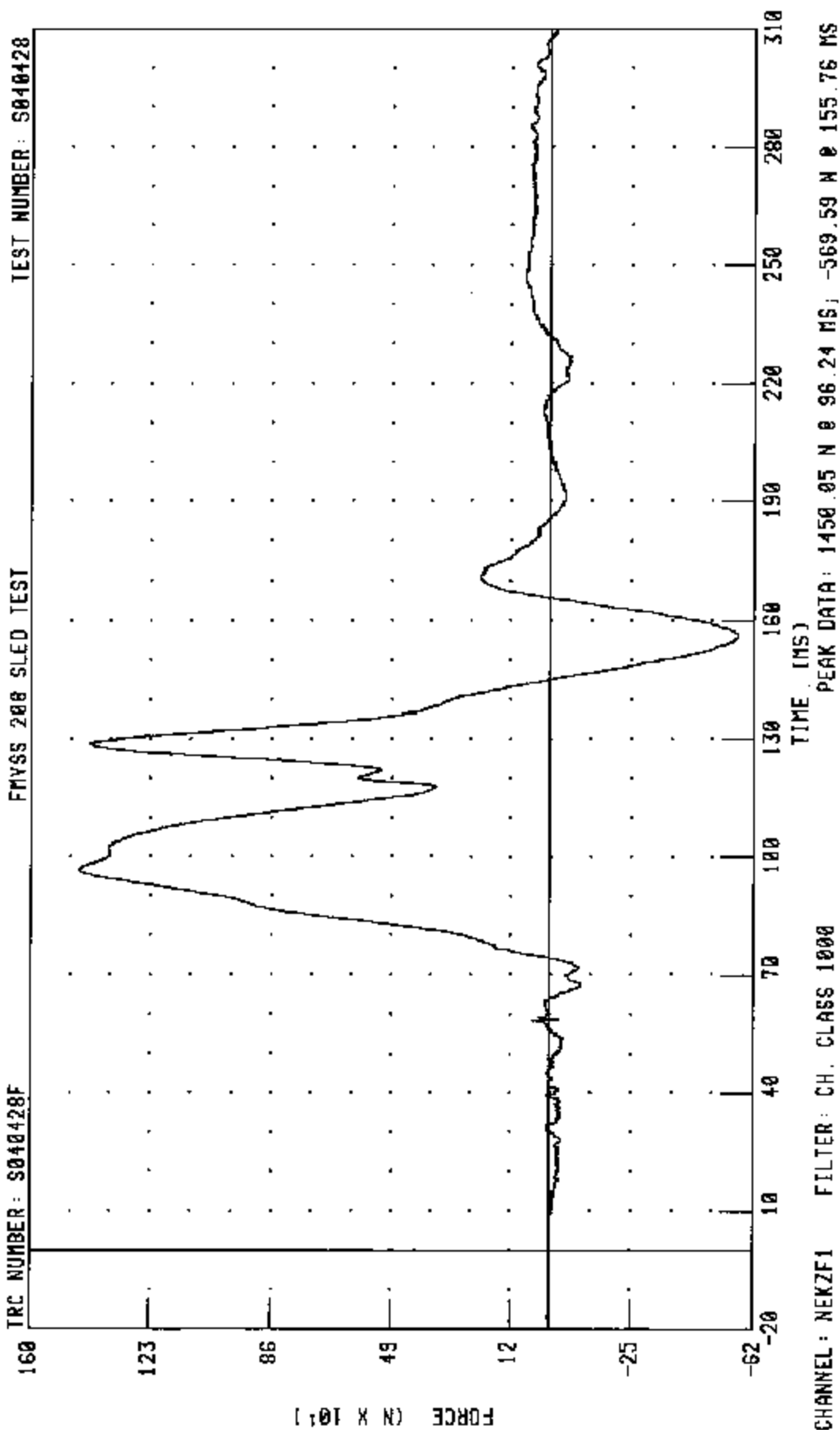
TRC NUMBER: S040428F



CHANNEL: NEKYF1 FILTER: CH. CLASS 1000

PEAK DATA: 68.04 N @ 182.24 MS, -283.09 N @ 130.40 MS

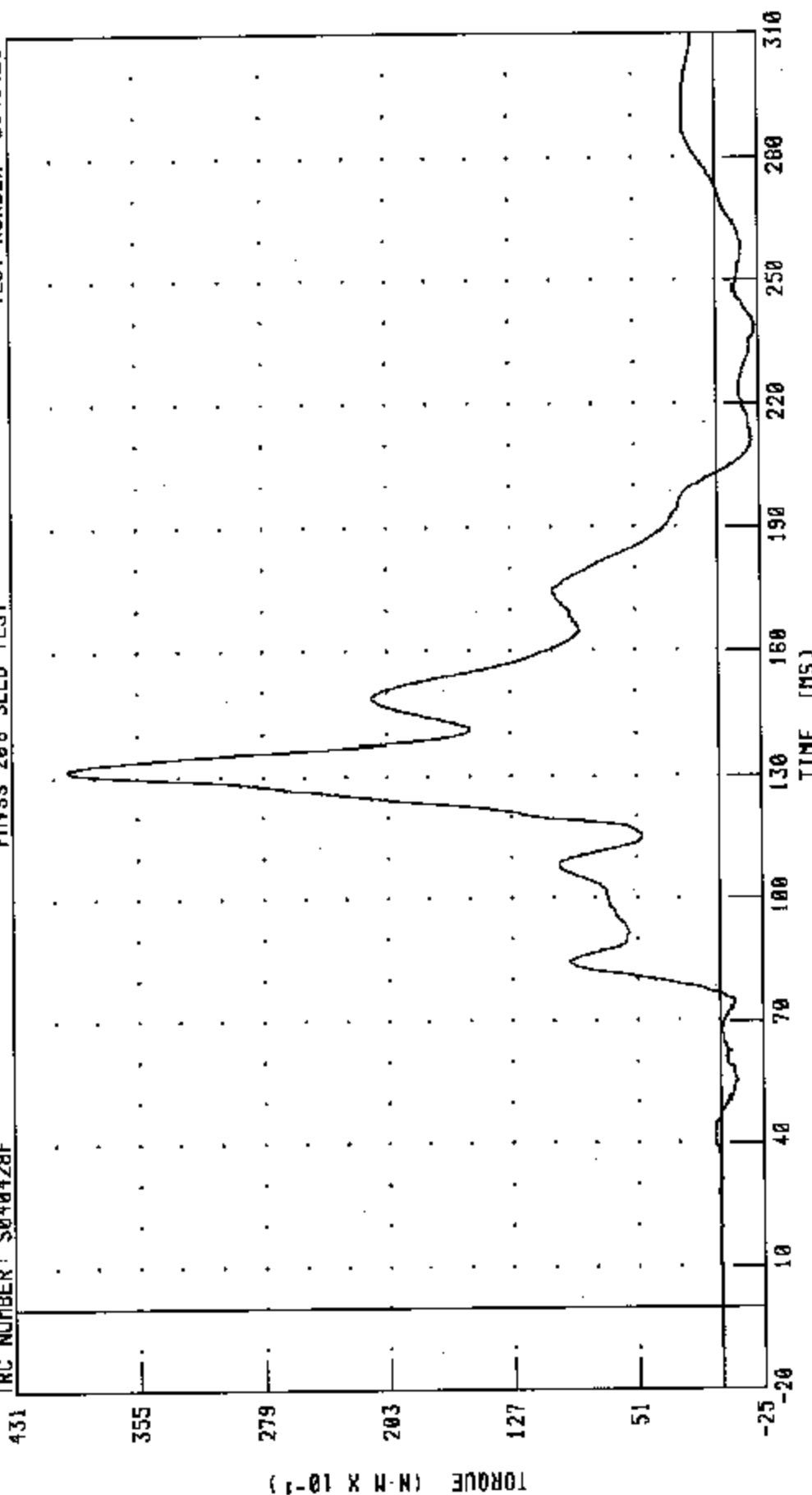
C40209 / 2004 FORD FREESTAR
DRIVER NECK Z-AXIS AXIAL FORCE



C40209 / 2004 FORD FREESTAR
 DRIVER NECK MOMENT ABOUT X AXIS
 FMVSS 208 SLED TEST

TEST NUMBER: S040428

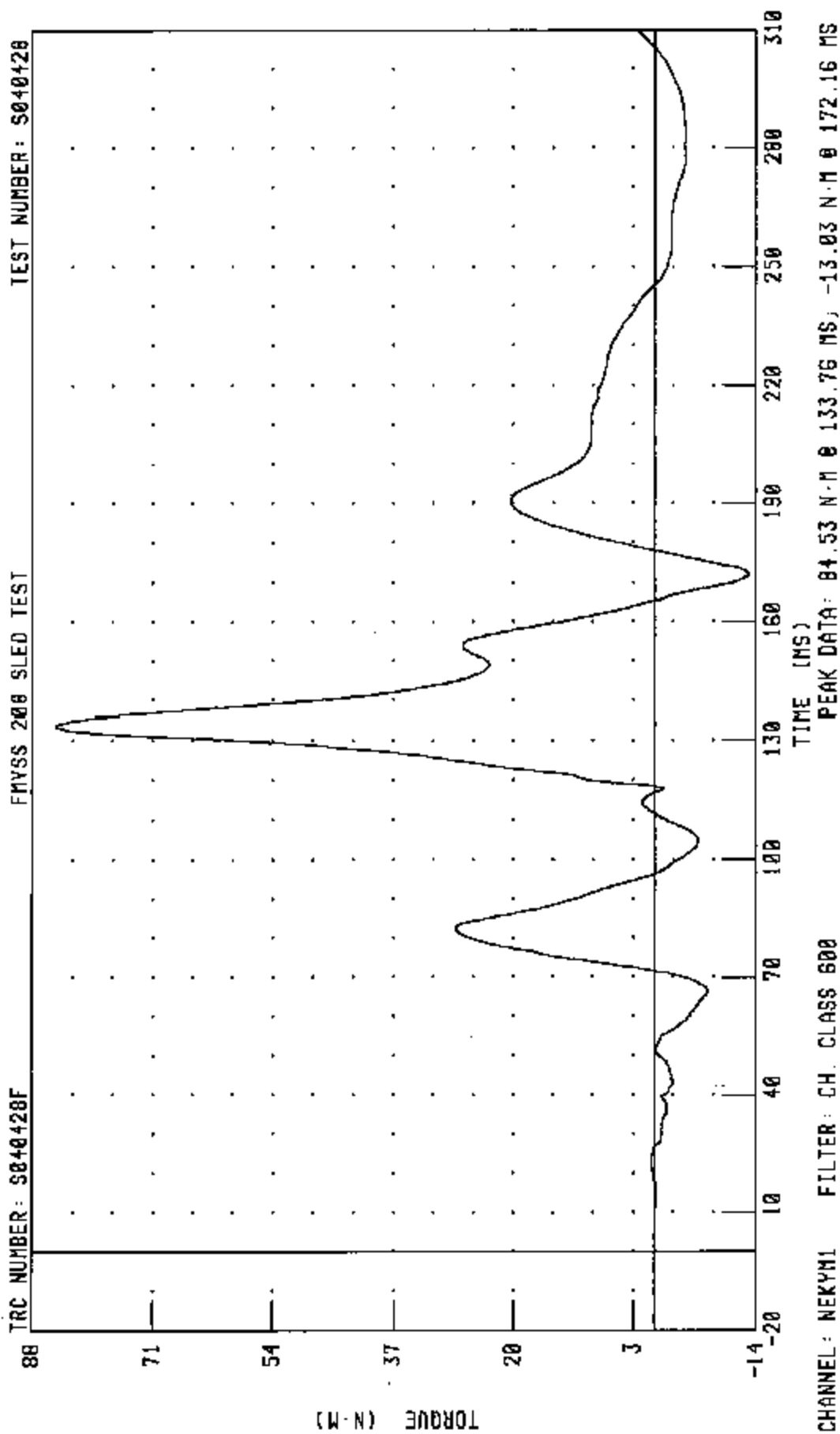
TRC NUMBER: S040428F



CHANNEL: NEKX11 FILTER: CH. CLASS 600

PEAK DATA: 39.69 N-m @ 131.84 ms; -2.28 N-m @ 239.04 ms

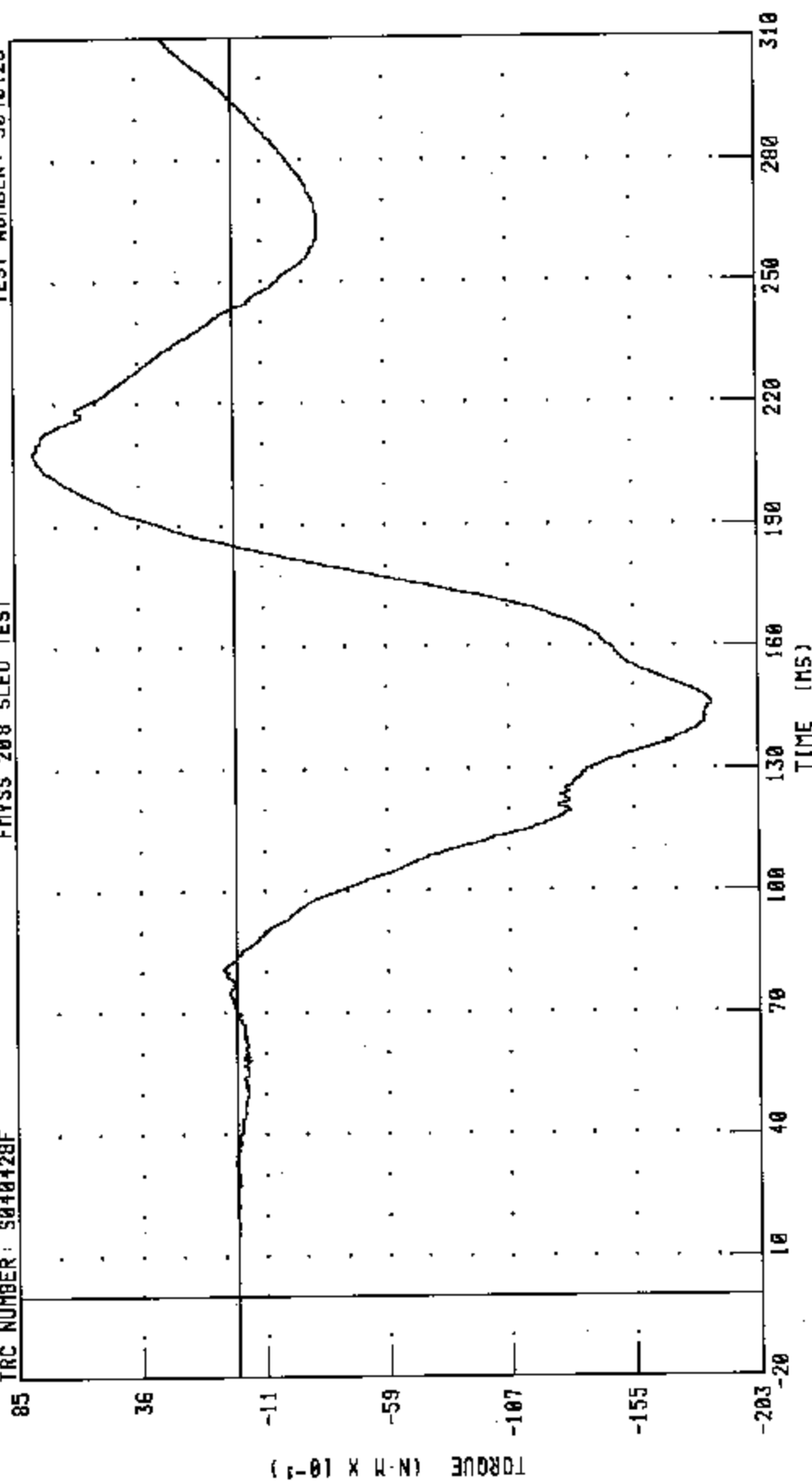
C40209 / 2004 FORD FREESTAR
 DRIVER NECK MOMENT ABOUT Y AXIS
 FMVSS 208 SLED TEST



C40209 / 2004 FORD FREESTAR
DRIVER NECK MOMENT ABOUT Z AXIS
FMVSS 208 SLED TEST

TEST NUMBER: S040428

TRC NUMBER: S040428F



TIME (MS)

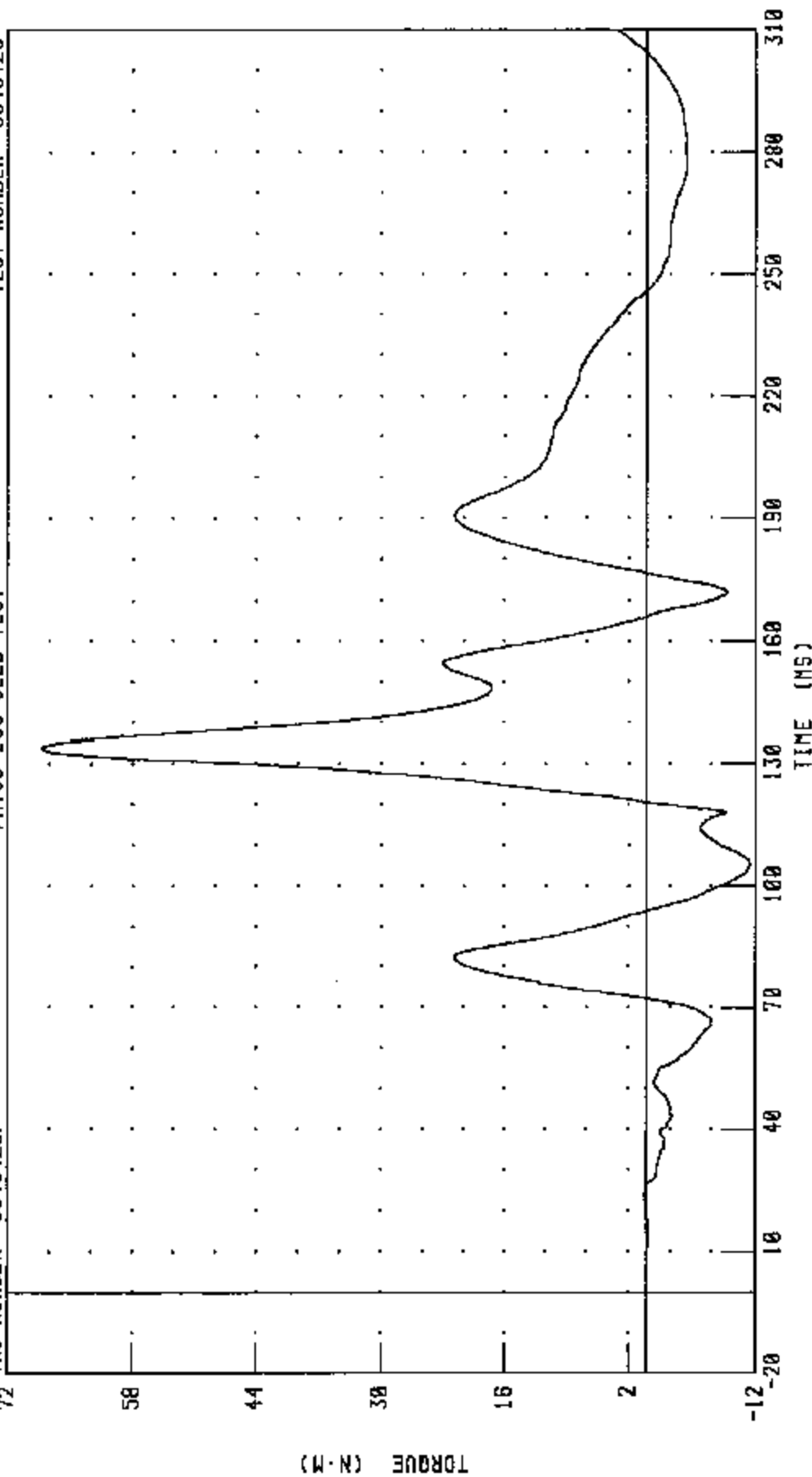
PEAK DATA: 7.74 N-M @ 207.84 MS; -18.56 N-M @ 145.68 MS

CHANNEL: NEKZM1 FILTER: CH. CLASS 600

C40209 / 2004 FORD FREESTAR
 DRIVER NECK MOMENT ABOUT Y AXIS OCCIPITAL CONDYLE
 FMVSS 208 SLED TEST

TRC NUMBER: S040428F

TEST NUMBER: S040428



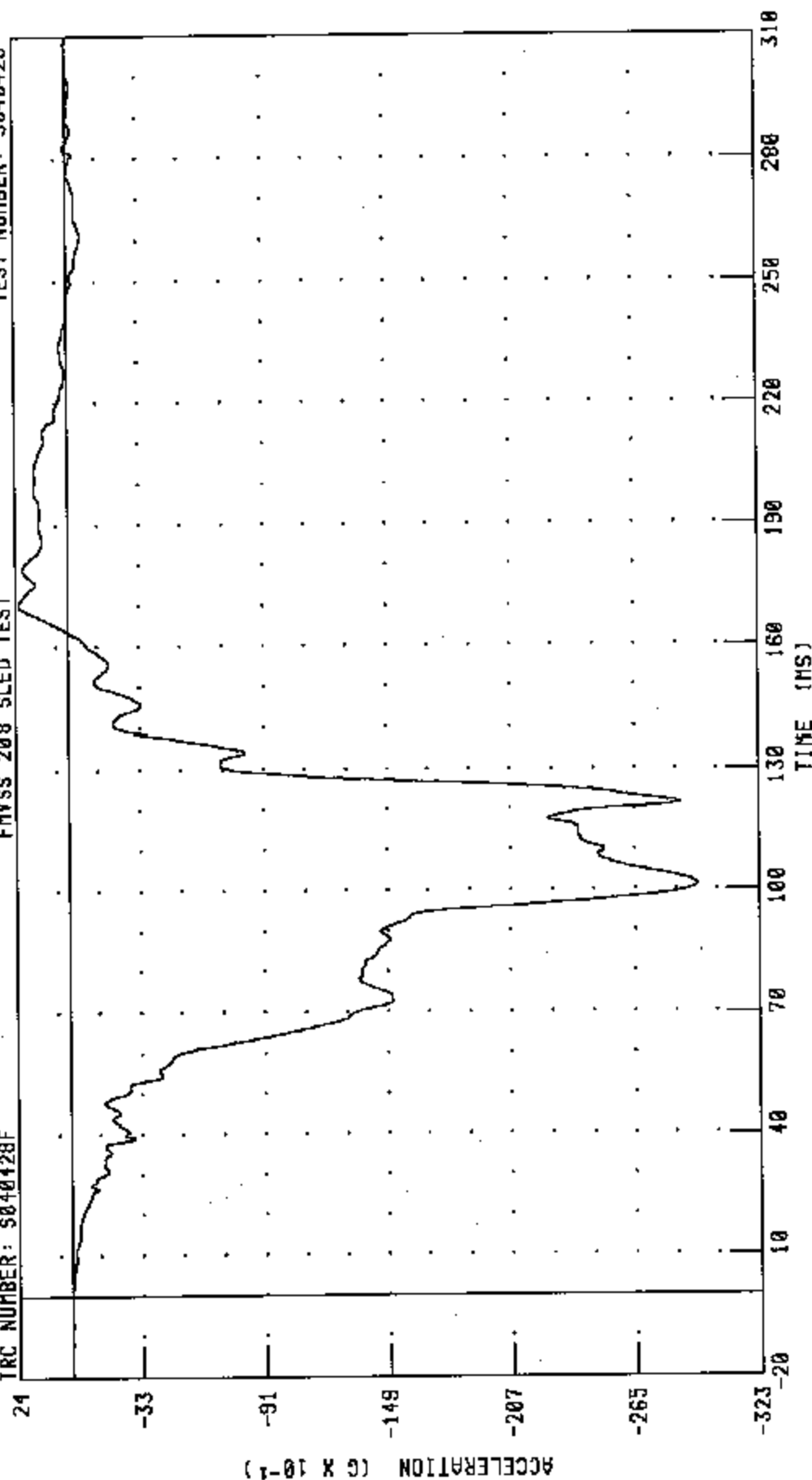
CHANNEL: NEKOM1 FILTER: CH. CLASS 600

PEAK DATA: 68.23 N-M @ 133.92 MS, -11.38 N-M @ 105.36 MS

C40209 / 2004 FORD FREESTAR
DRIVER CHEST X-AXIS ACCELERATION
FMVSS 208 SLED TEST

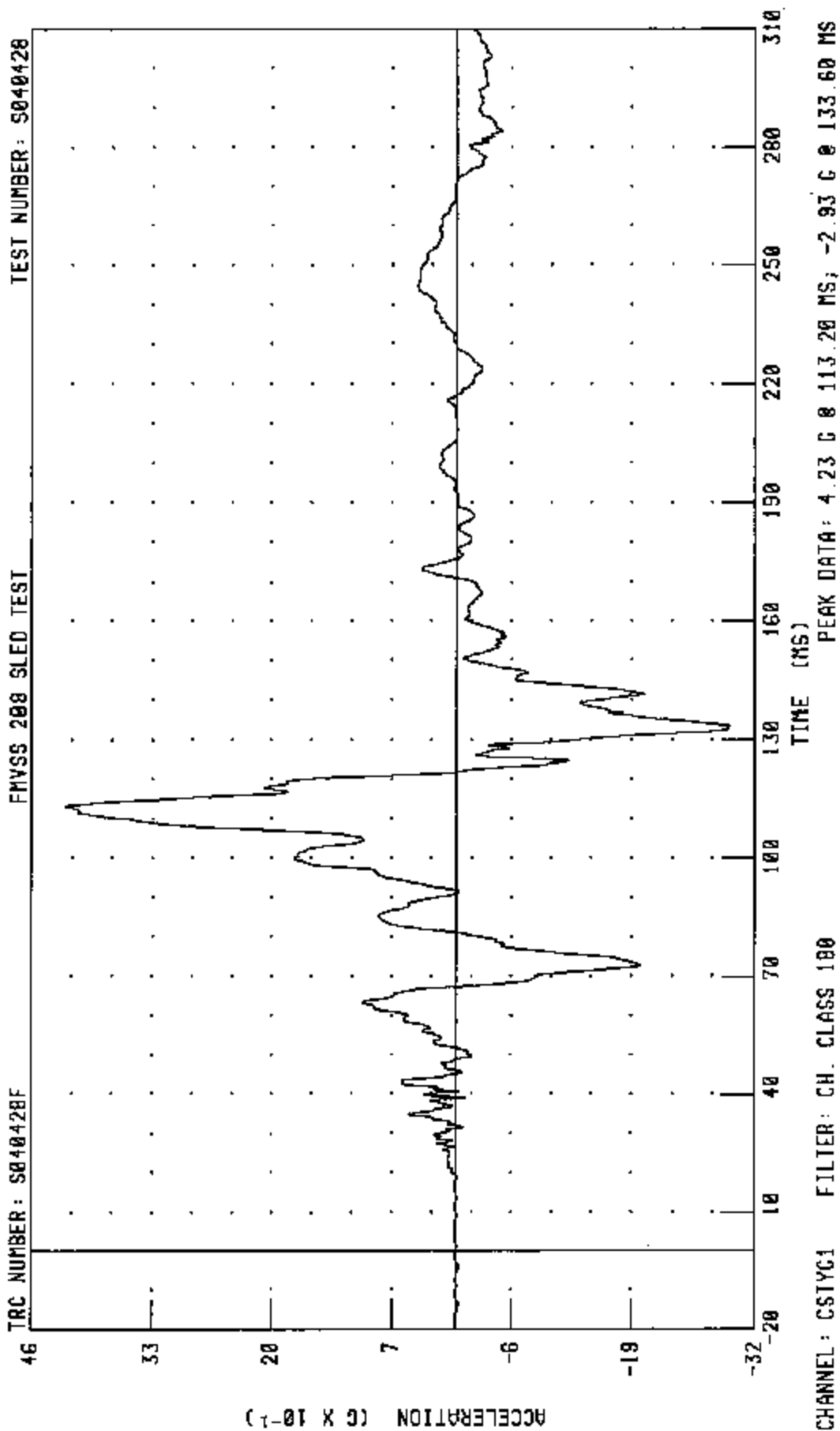
TEST NUMBER: S040428

TRC NUMBER: S040428F



CHANNEL: ESTXG1 FILTER: CH. CLASS 180

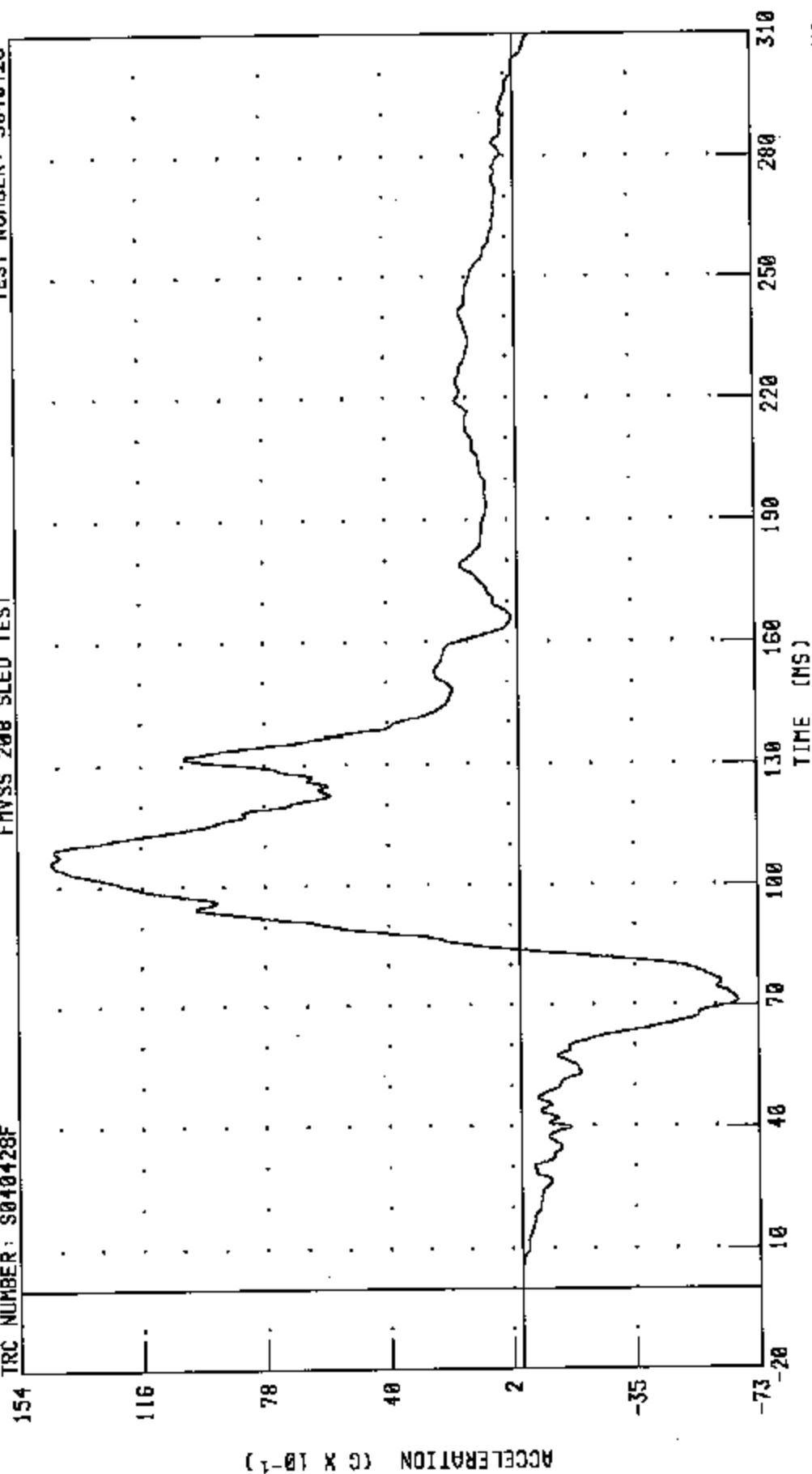
C40209 / 2004 FORD FREESTAR
 DRIVER CHEST Y-AXIS ACCELERATION



C40209 / 2004 FORD FREESTAR
 DRIVER CHEST Z-AXIS ACCELERATION
 FMVSS 208 SLED TEST

TEST NUMBER: S040428

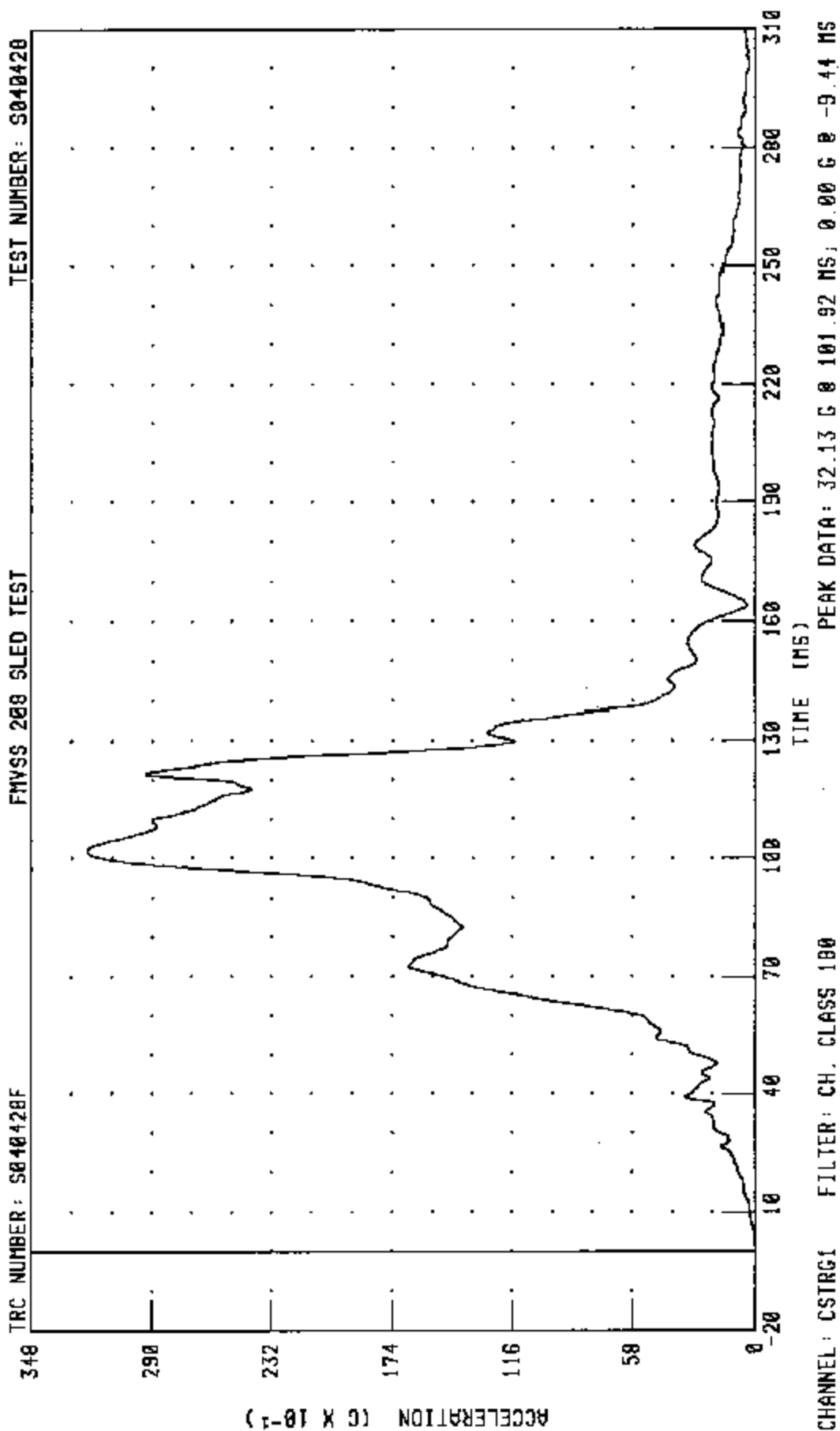
TRC NUMBER: S040428F



CHANNEL: CSTZC1 FILTER: CH. CLASS 180

PEAK DATA: 14.46 G @ 106.00 MS; -6.66 G @ 71.12 MS

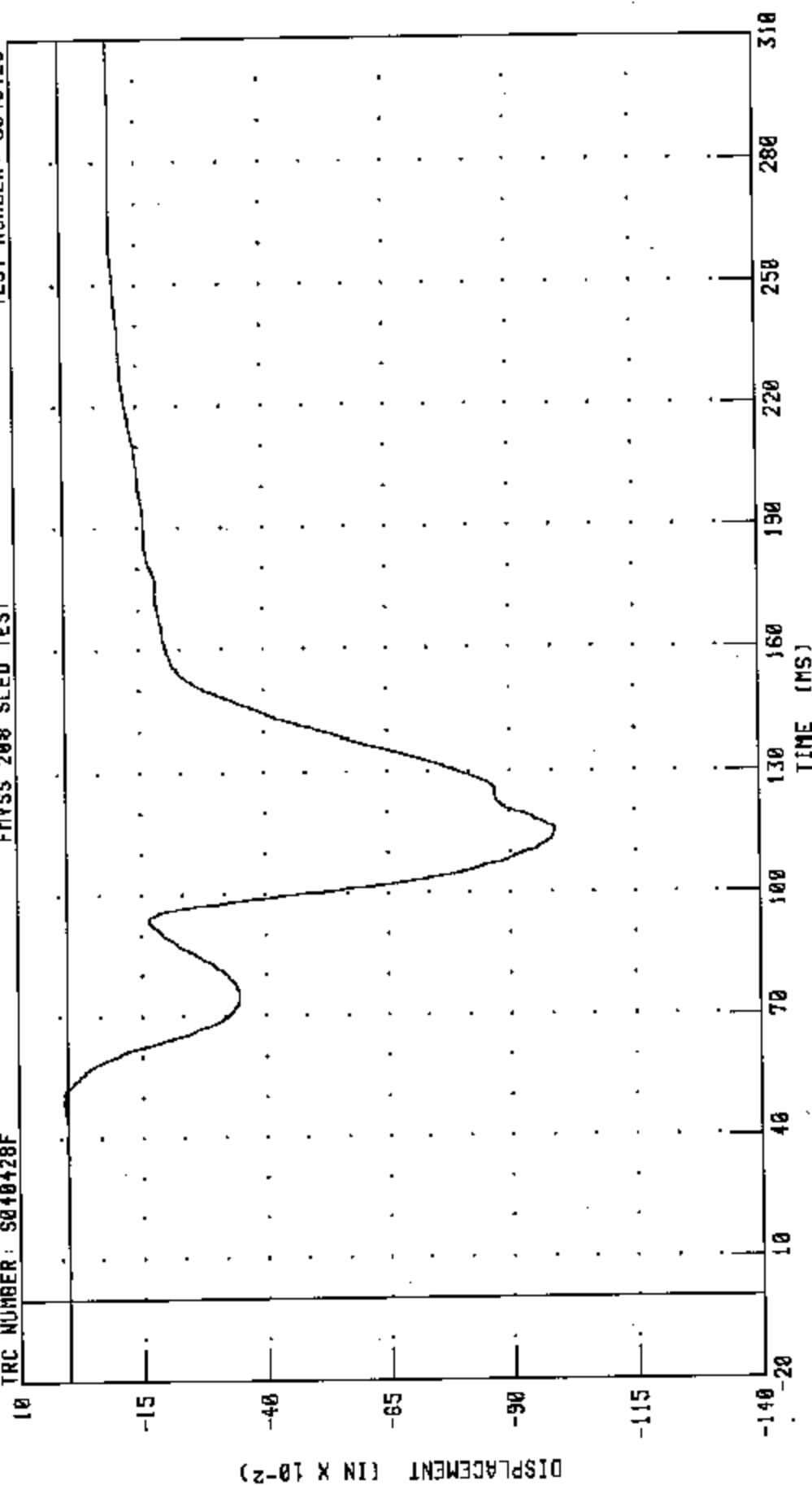
C40209 / 2004 FORD FREESTAR
DRIVER CHEST RESULTANT ACCELERATION



C40209 / 2004 FORD FREESTAR
DRIVER CHEST DEFLECTION
FMVSS 208 SLED TEST

TEST NUMBER: S040428

TRC NUMBER: S040428F



CHANNEL: CSTXD1 FILTER: CH. CLASS 600

PEAK DATA: 0.01 IN @ 48.88 MS; -0.99 IN @ 115.84 MS

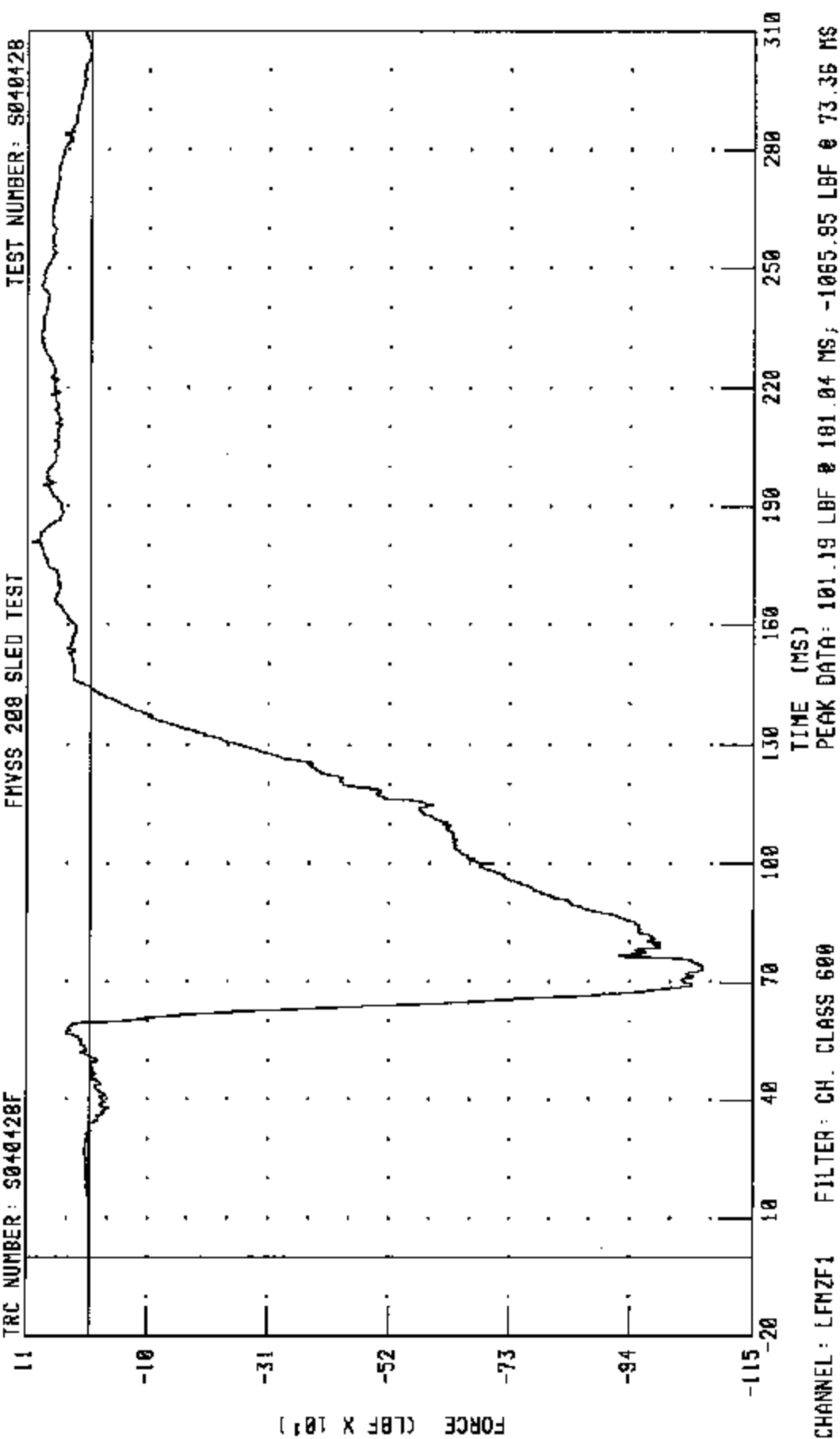
C40209 / 2004 FORD FREESTAR

DRIVER LEFT FEMUR FORCE

FMVSS 208 SLED TEST

TRC NUMBER: S040428F

TEST NUMBER: S040428



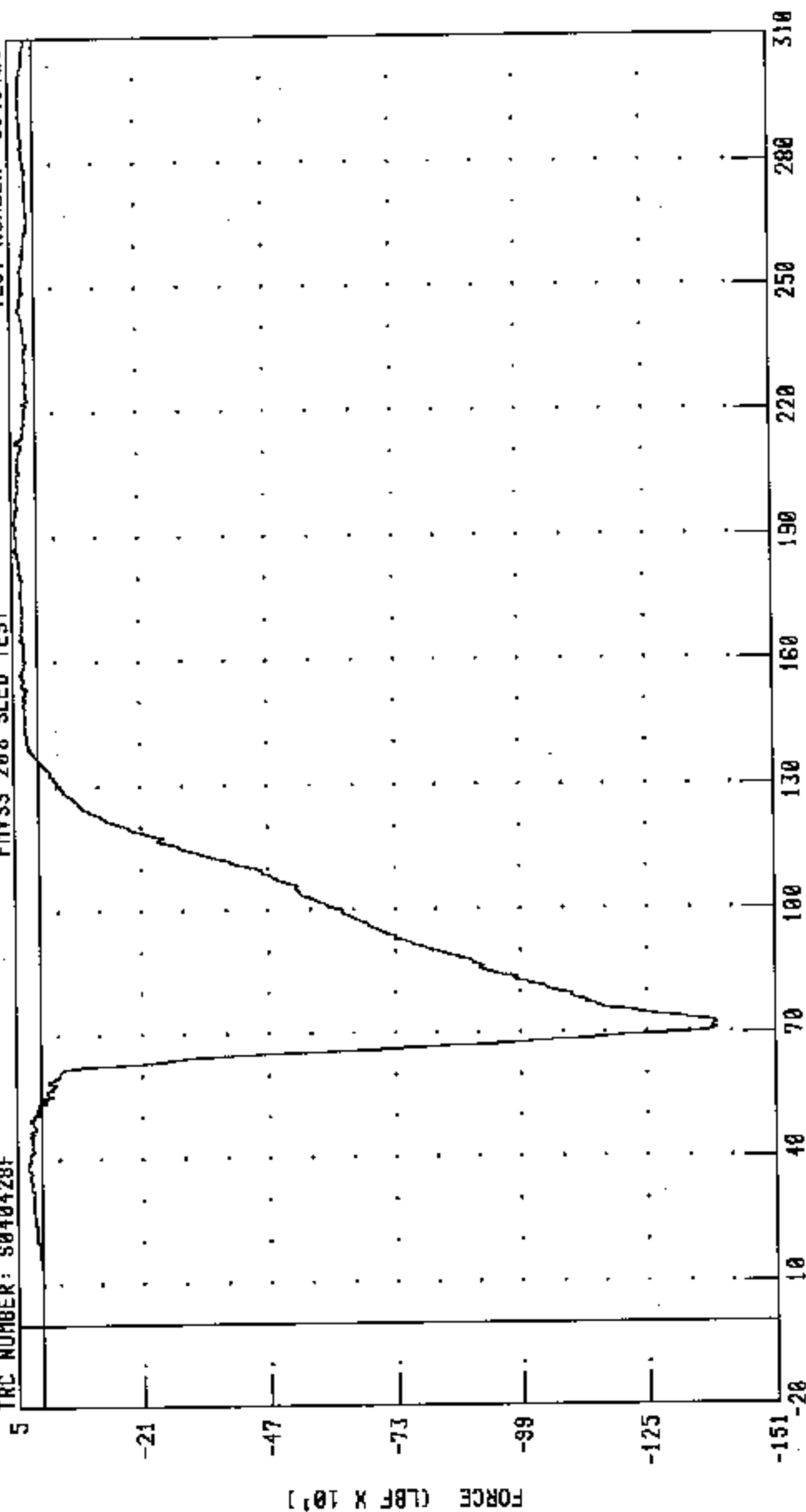
C40209 / 2004 FORD FREESTAR

DRIVER RIGHT FEMUR FORCE

FMVSS 208 SLED TEST

TEST NUMBER: S040428

TRC NUMBER: S040428F



TIME (MS)

PEAK DATA: 45.64 LBF @ 193.84 MS; -1391.11 LBF @ 72.16 MS

CHANNEL: RFMZF1 FILTER: CH. CLASS 600

FORCE (LBF X 10³)

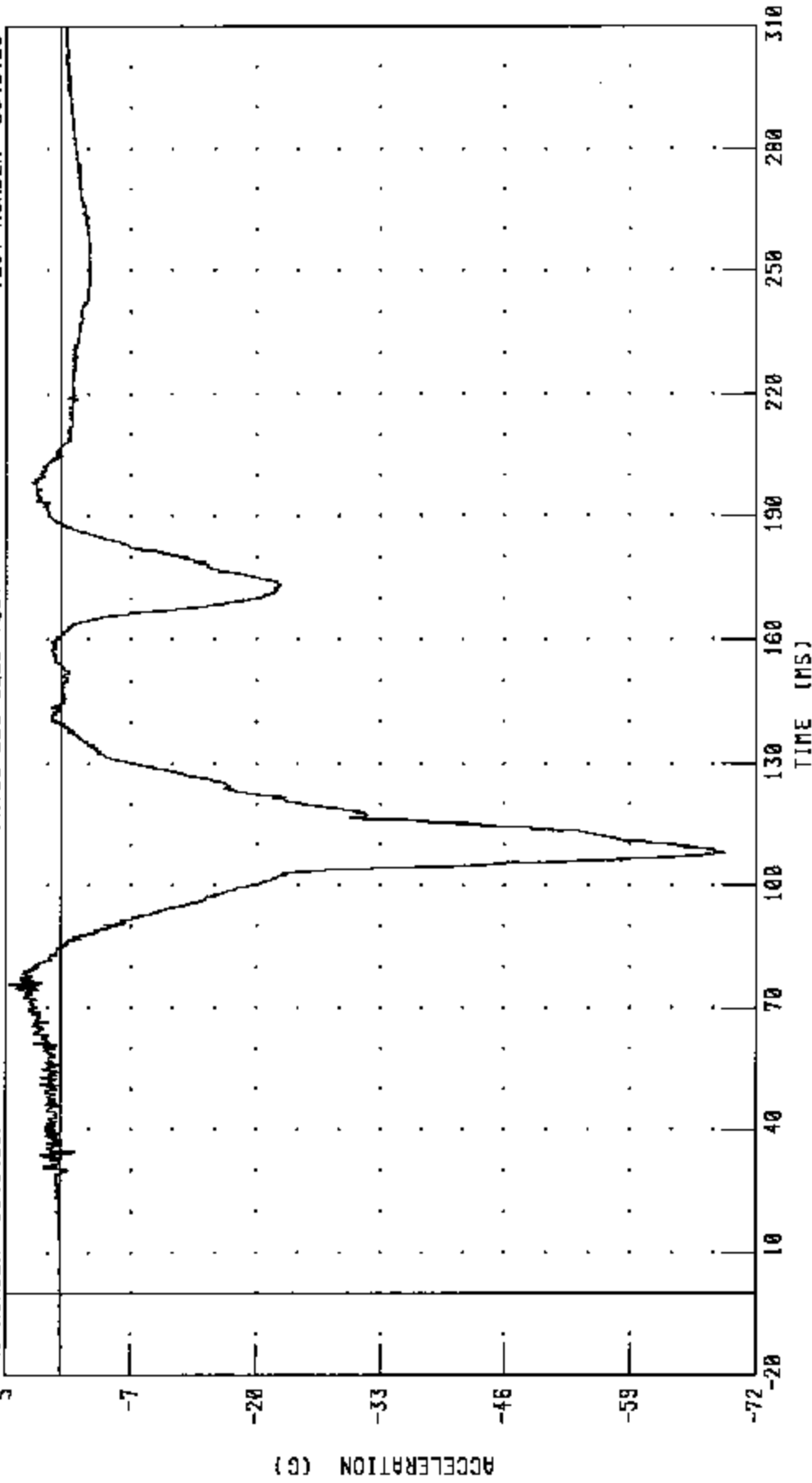
C40209 / 2004 FORD FREESTAR

RIGHT FRONT PASSENGER HEAD X-AXIS ACCELERATION

TRC NUMBER: S040428F

FMVSS 208 SLED TEST

TEST NUMBER: S040428



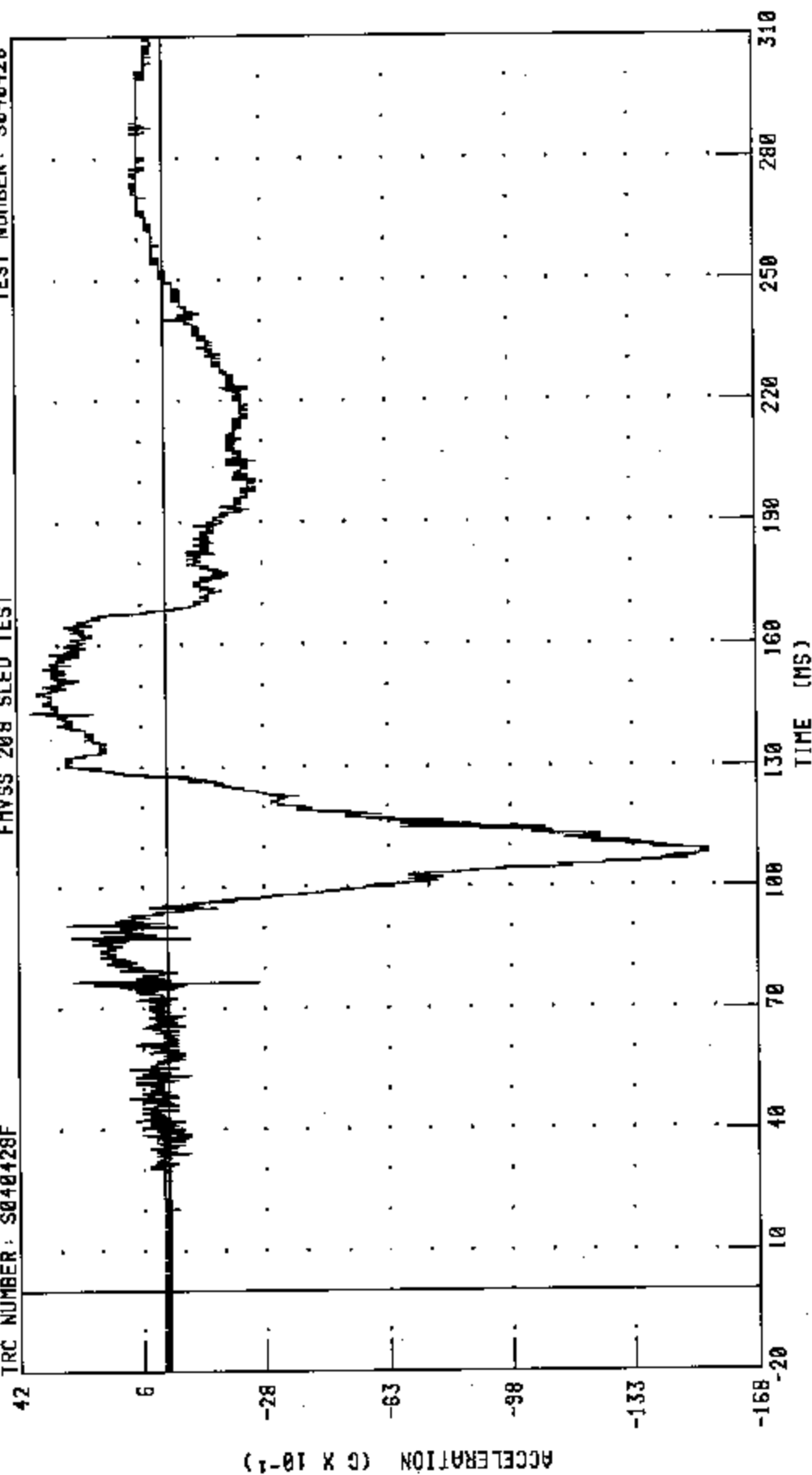
CHANNEL: HEDXC2 FILTER: CH. CLASS 1000

PEAK DATA: 5.27 G @ 75.84 MS; -69.16 G @ 108.08 MS

C40209 / 2004 FORD FREESTAR
 RIGHT FRONT PASSENGER HEAD Y-AXIS ACCELERATION
 FMVSS 208 SLED TEST

TEST NUMBER: S040428

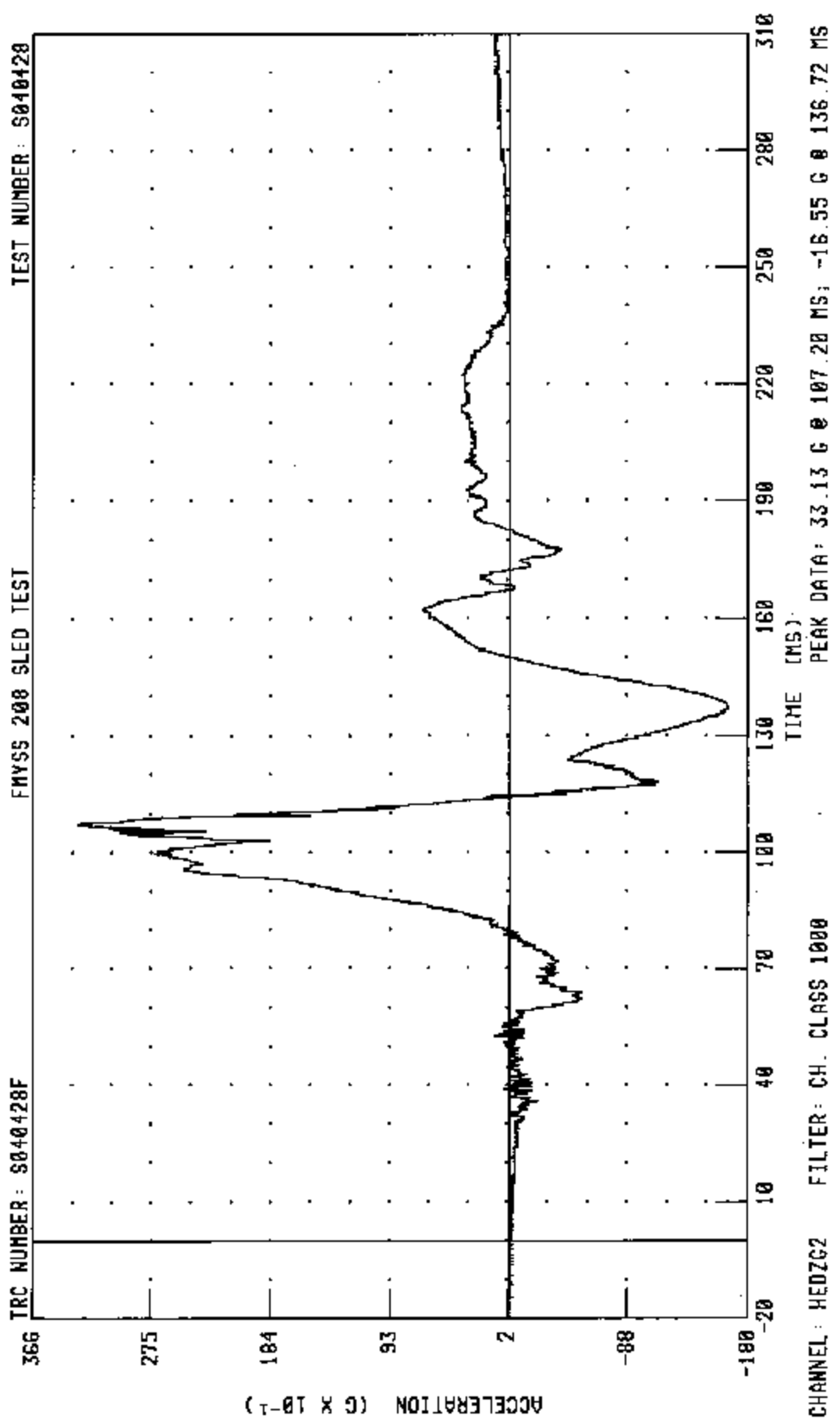
TRC NUMBER: S040428F



CHANNEL: HEDYC2 FILTER: CH. CLASS 1000

PEAK DATA: 3.03 G @ 143.52 MS; -15.46 G @ 108.16 MS

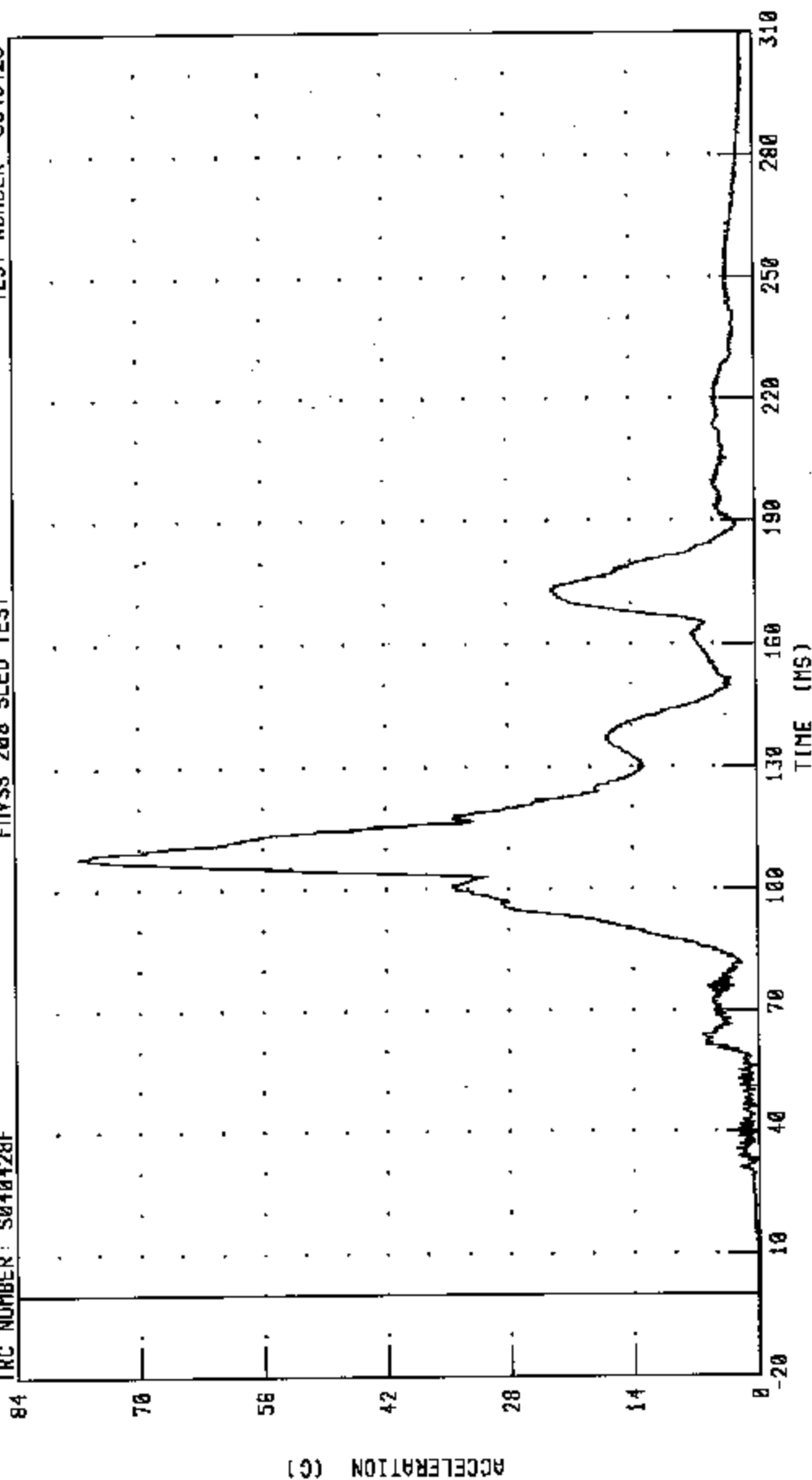
C40209 / 2004 FORD FREESTAR
 RIGHT FRONT PASSENGER HEAD Z-AXIS ACCELERATION



C40209 / 2004 FORD FREESTAR
 RIGHT FRONT PASSENGER HEAD RESULTANT ACCELERATION
 FMVSS 208 SLED TEST

TEST NUMBER: S040428

TRC NUMBER: S040428F



CHANNEL: HEDRC2 FILTER: CH. CLASS 1000

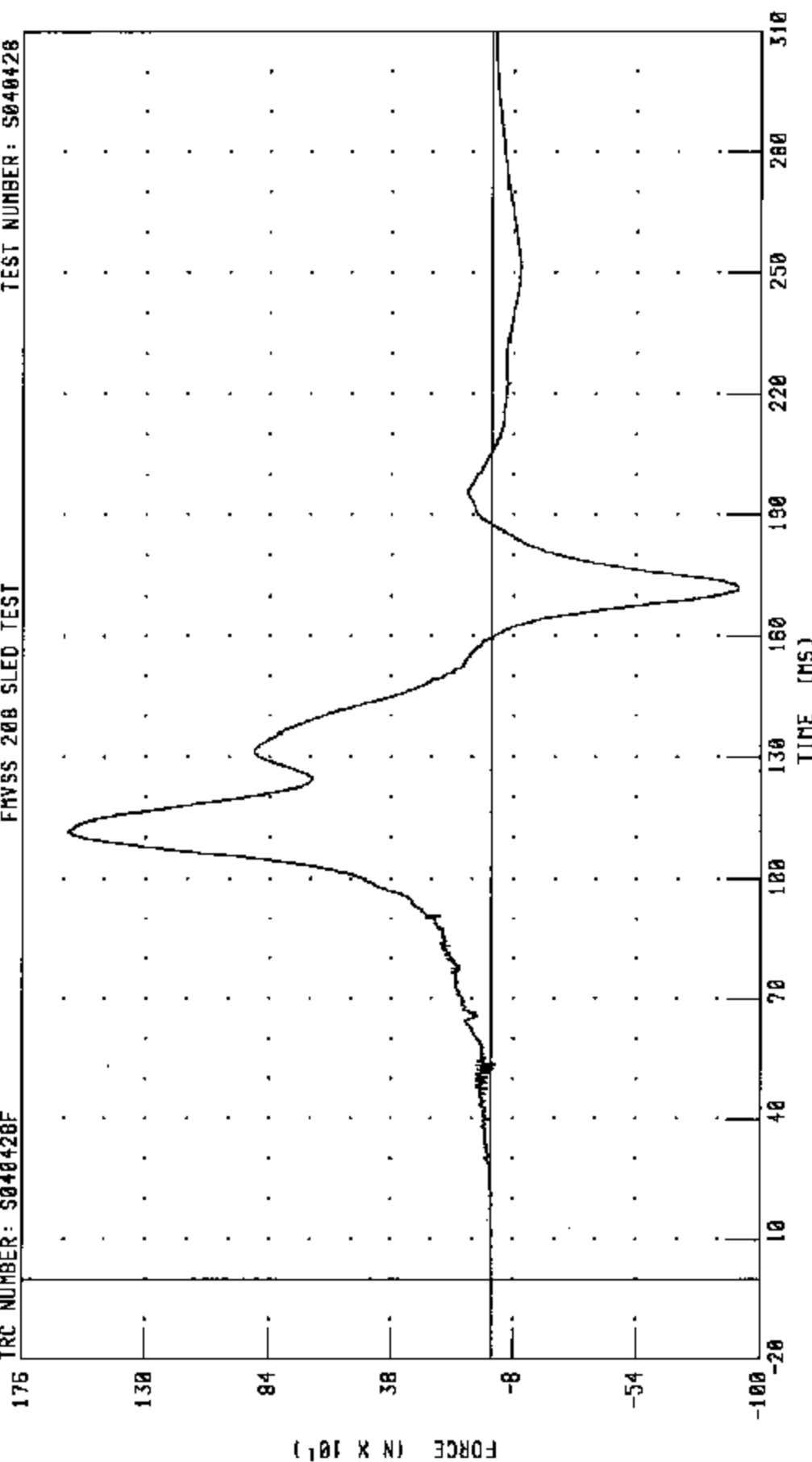
C40209 / 2004 FORD FREESTAR

RIGHT FRONT PASSENGER NECK X-AXIS SHEAR FORCE

TRC NUMBER: S040428F

FMVSS 208 SLED TEST

TEST NUMBER: S040428



CHANNEL: NEKXF2 FILTER: CH. CLASS 1000

PEAK DATA: 1592.27 N @ 111.52 MS, -920.00 N @ 171.76 MS

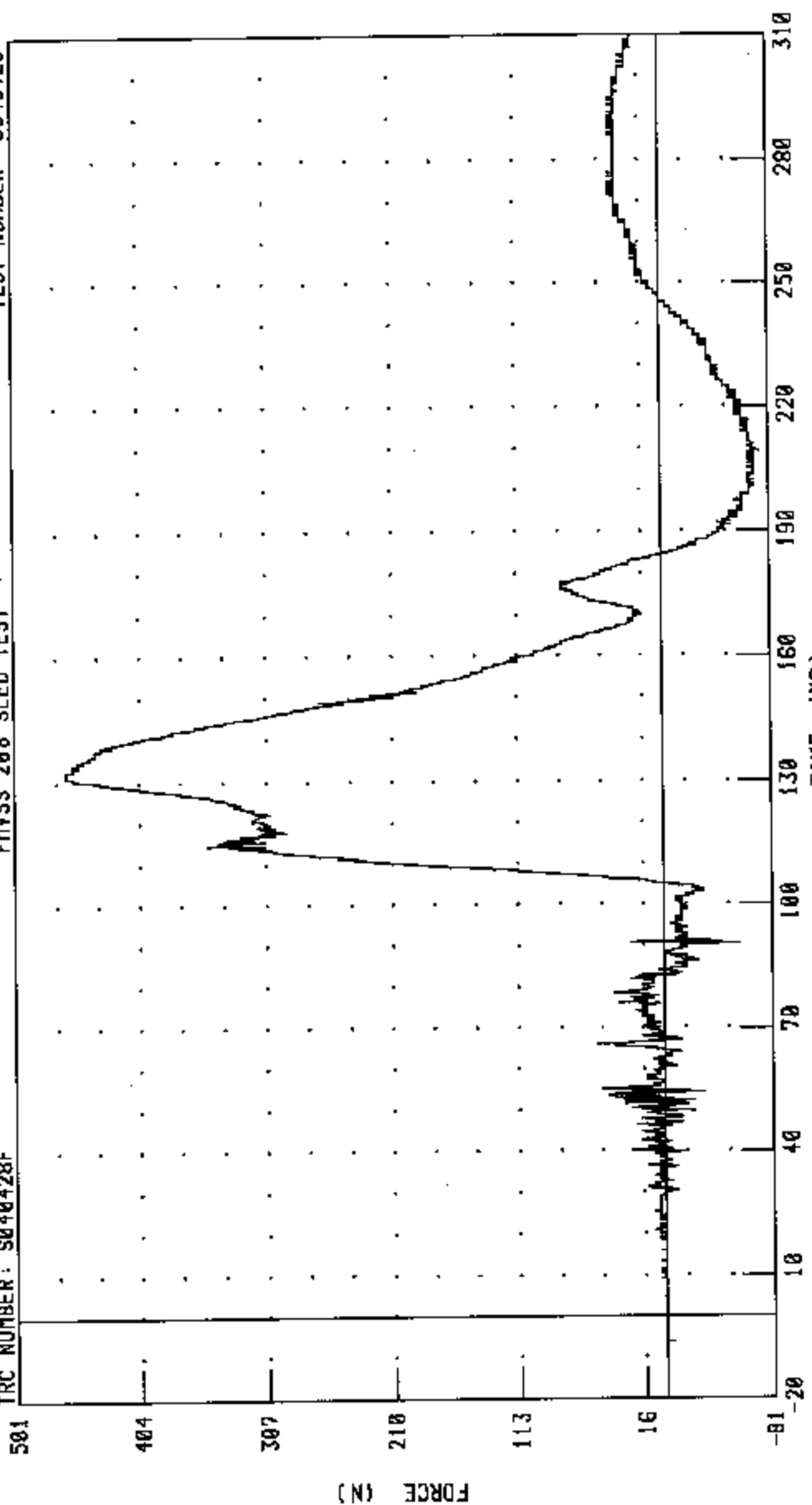
C40209 / 2004 FORD FREESTAR

RIGHT FRONT PASSENGER NECK Y-AXIS SHEAR FORCE

TEST NUMBER: S040428

TRC NUMBER: S040428F

FMVSS 208 SLED TEST



TIME (MS)

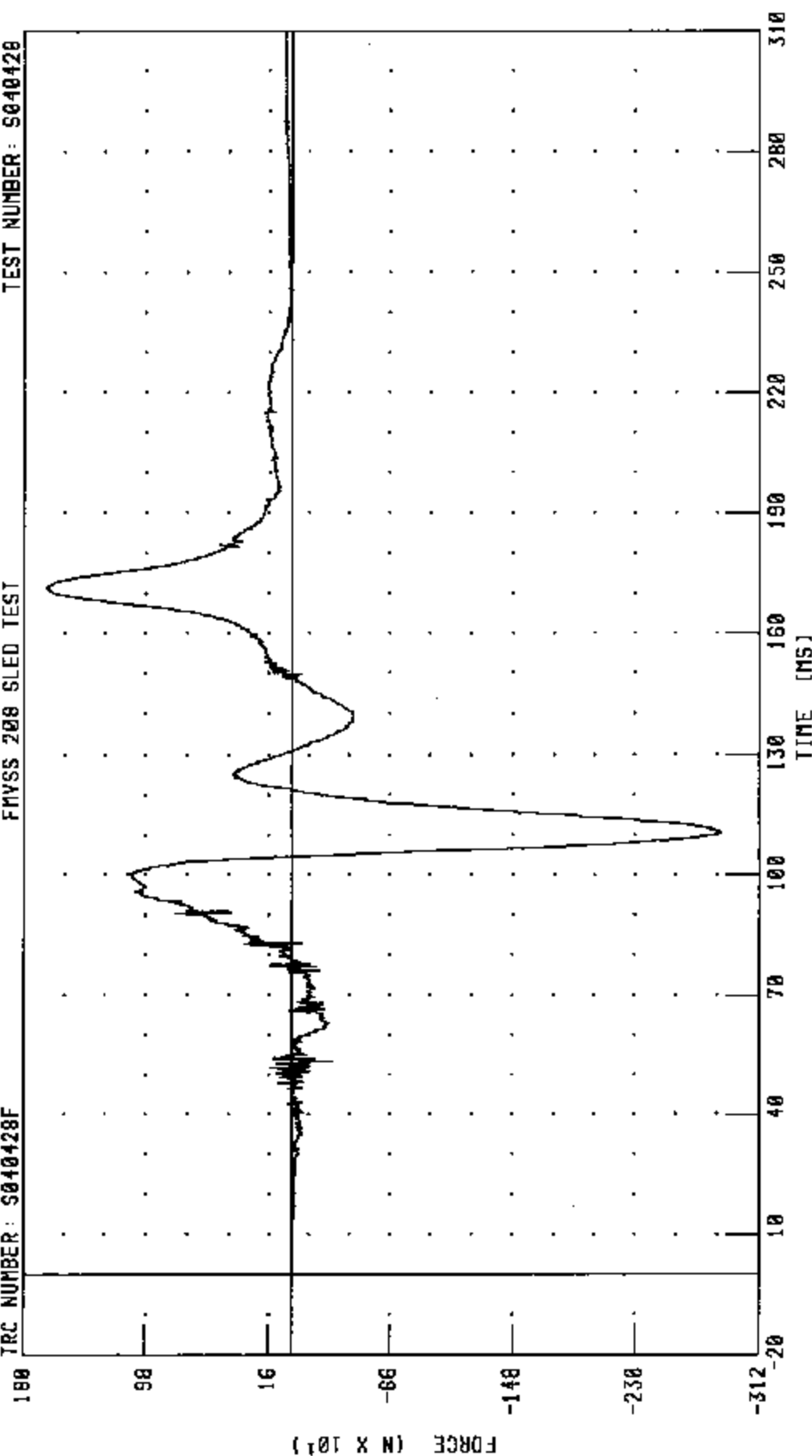
CHANNEL: NEKYF2 FILTER: CH. CLASS 1000

PEAK DATA: 460.65 N @ 131.36 MS, -73.88 N @ 208.44 MS

C40209 / 2004 FORD FREESTAR
RIGHT FRONT PASSENGER NECK Z-AXIS AXIAL FORCE
FMVSS 208 SLED TEST

TRC NUMBER: S040428F

TEST NUMBER: S040428



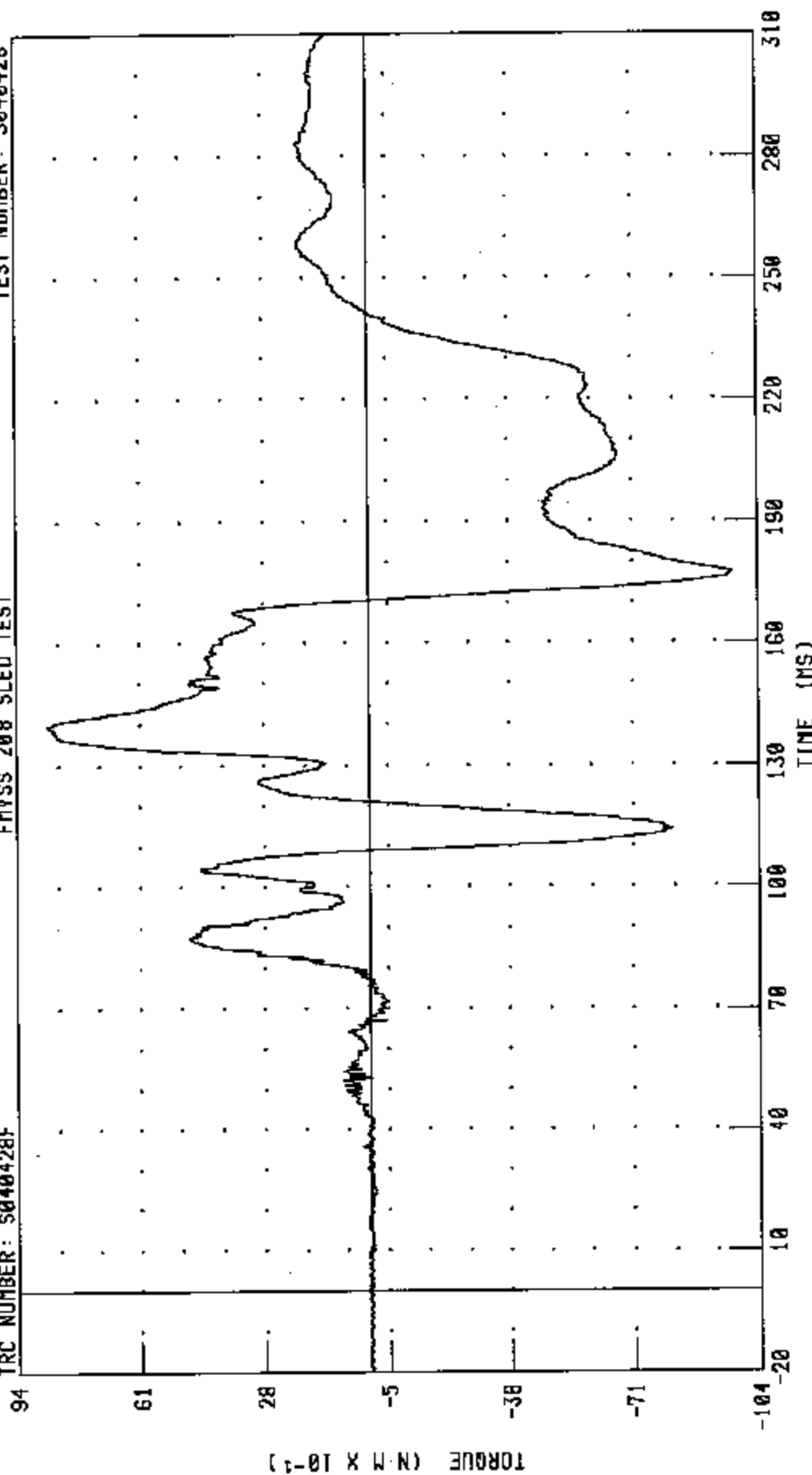
CHANNEL: NEKZF2 FILTER: CH. CLASS 1000

PEAK DATA: 1642.19 N @ 171.28 MS; -2872.69 N @ 110.48 MS

C40209 / 2004 FORD FREESTAR
 RIGHT FRONT PASSENGER NECK MOMENT ABOUT X AXIS
 FMVSS 208 SLED TEST

TEST NUMBER: S040428

TRC NUMBER: S040428F



TIME (MS)

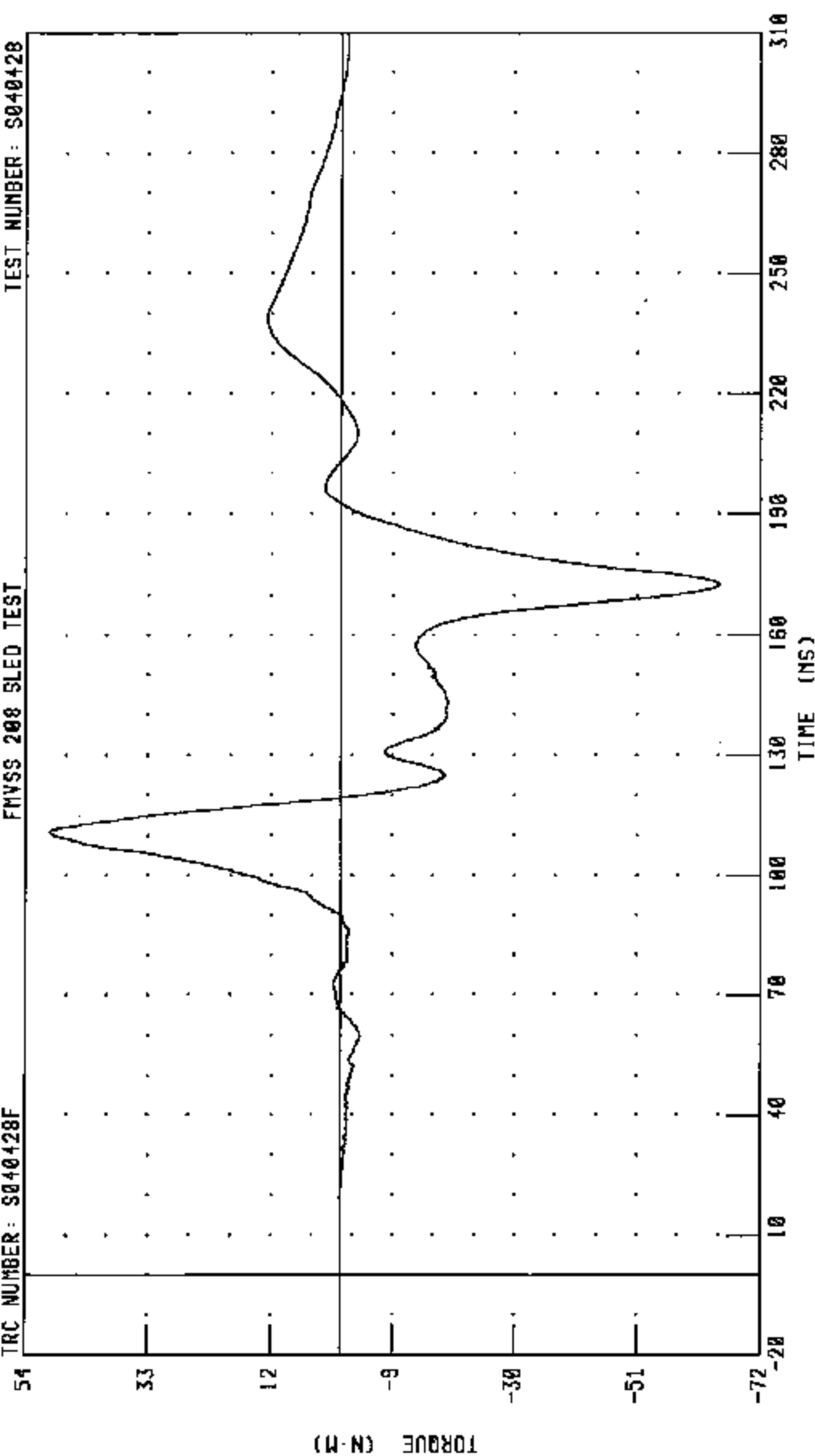
PEAK DATA: 0.61 N·m @ 139.52 MS; -9.70 N·m @ 177.60 MS

CHANNEL: NEKX12 FILTER: CH. CLASS 600

C40209 / 2004 FORD FREESTAR
RIGHT FRONT PASSENGER NECK MOMENT ABOUT Y AXIS
FMVSS 208 BLEED TEST

TRC NUMBER: S040428F

TEST NUMBER: S040428



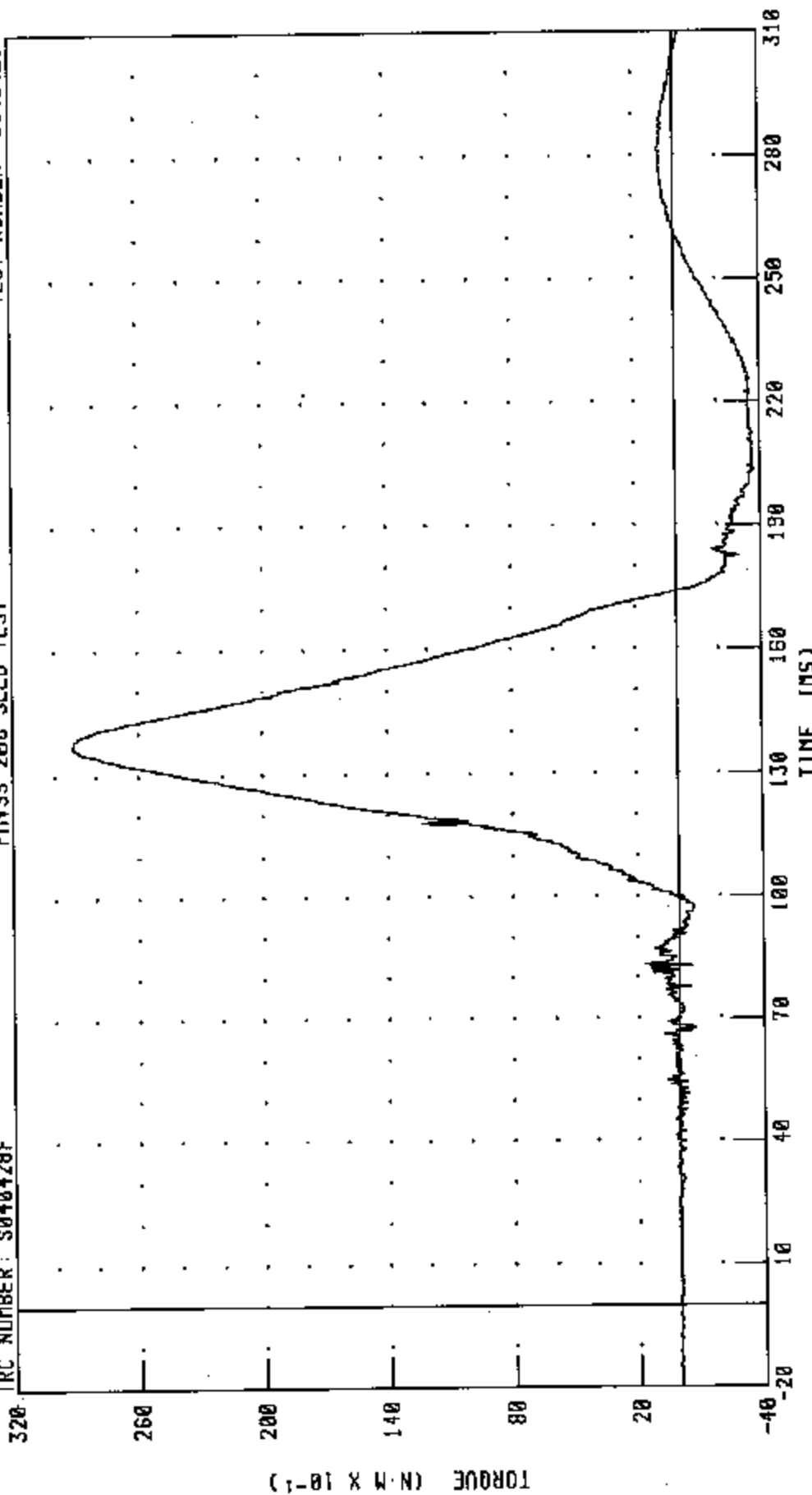
CHANNEL: NEKYM2 FILTER: CH. CLASS 600

PEAK DATA: 49.82 N-M @ 130.96 MS, -65.07 N-M @ 172.72 MS

C40209 / 2004 FORD FREESTAR
RIGHT FRONT PASSENGER NECK MOMENT ABOUT Z AXIS
FMVSS 208 SLED TEST

TEST NUMBER: S040428

TRC NUMBER: S040428F



CHANNEL: NEKZM2 FILTER: CH. CLASS 600

PEAK DATA: 29.11 N·m @ 137.12 ms, -3.70 N·m @ 203.28 ms

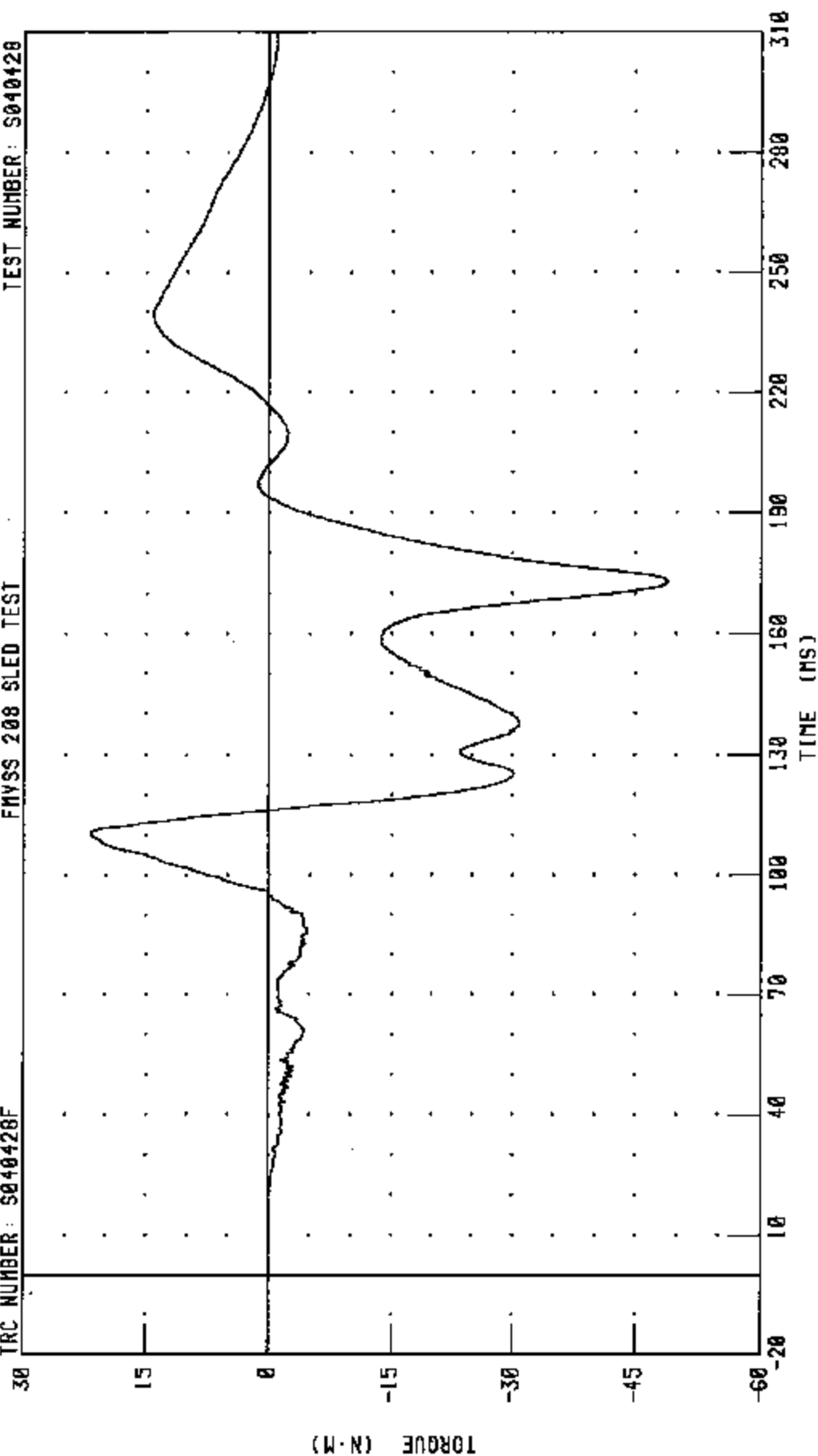
C40209 / 2004 FORD FREESTAR

RIGHT FRONT PASSENGER NECK MOMENT ABOUT Y AXIS OCCIPITAL CONDYLE

TRC NUMBER: S040428F

FNVS 208 SLED TEST

TEST NUMBER: S040428



TIME (MS)

CHANNEL: NEK0N2 FILTER: CH. CLASS 600

PEAK DATA: 21.87 N·M @ 110.40 MS, -48.97 N·M @ 173.04 MS

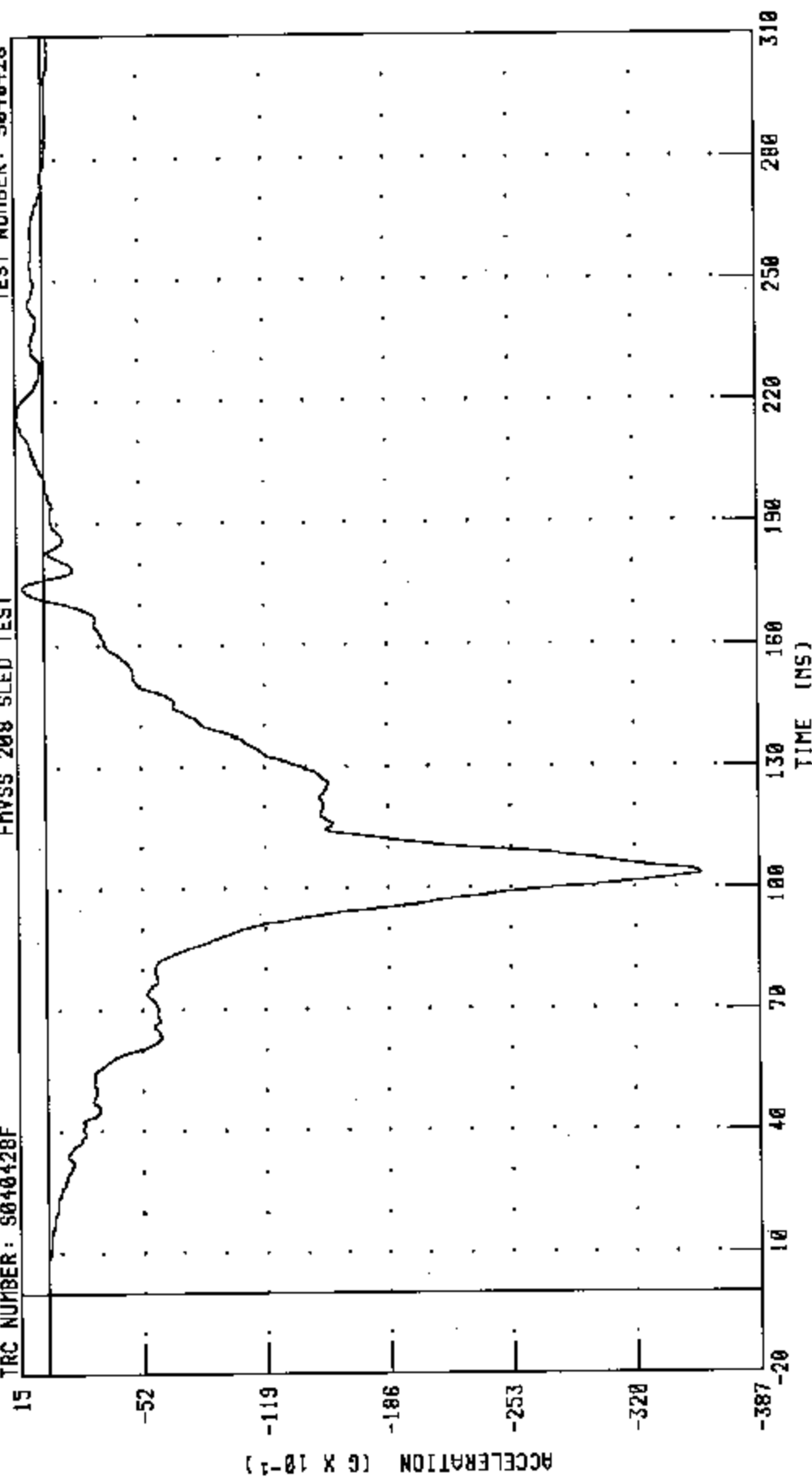
C40209 / 2004 FORD FREESTAR

RIGHT FRONT PASSENGER CHEST X-AXIS ACCELERATION

TEST NUMBER: S040428

TRC NUMBER: S040428F

FMVSS 208 SLED TEST



CHANNEL: CSTXG2 FILTER: CH. CLASS 180

PEAK DATA: 1.44 G @ 216.16 MS, -35.59 G @ 103.68 MS

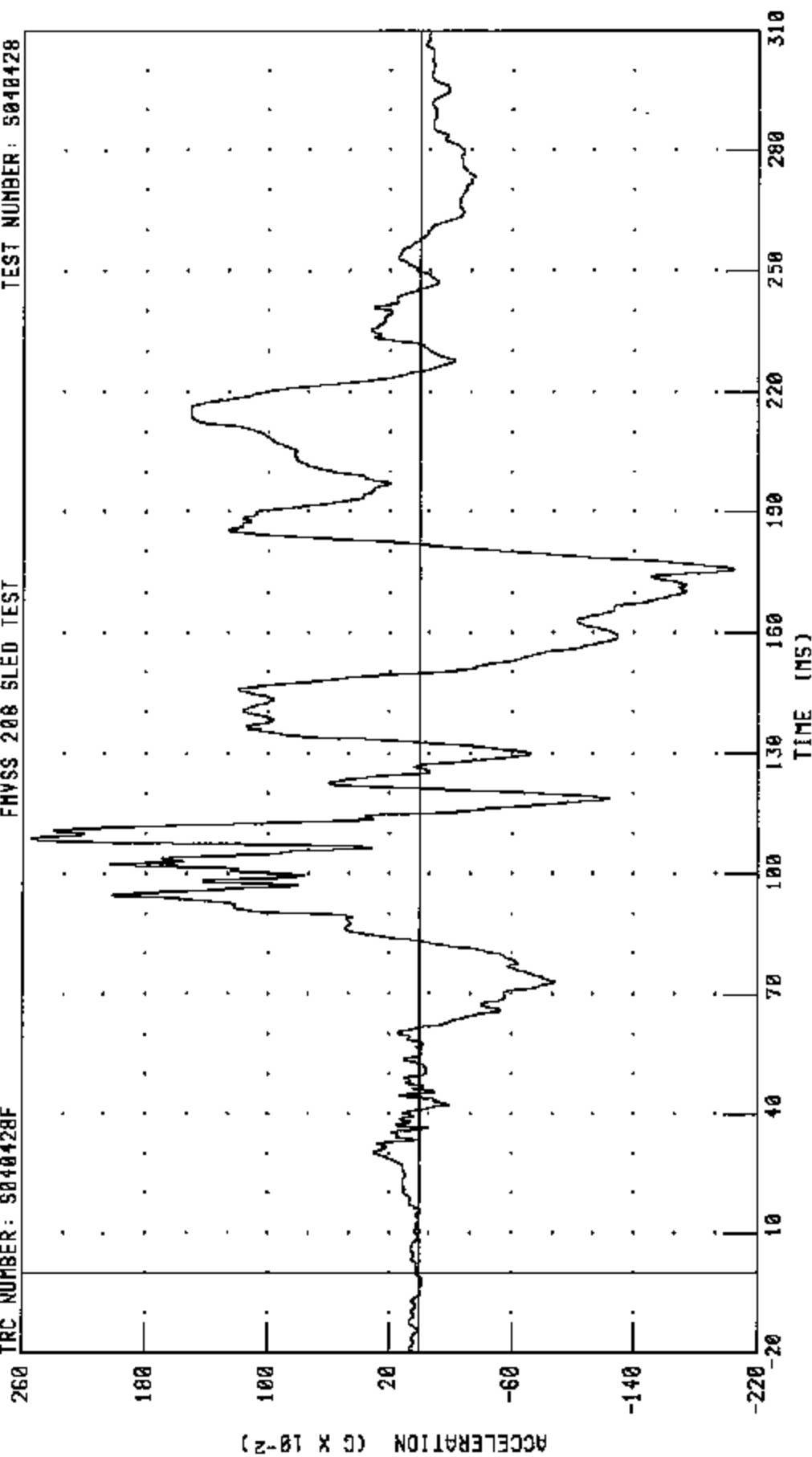
C40209 / 2004 FORD FREESTAR

RIGHT FRONT PASSENGER CHEST Y-AXIS ACCELERATION

TRC NUMBER: S040428F

FHVSS 208 SLED TEST

TEST NUMBER: S040428



CHANNEL: CSTYG2 FILTER: CH. CLASS 180

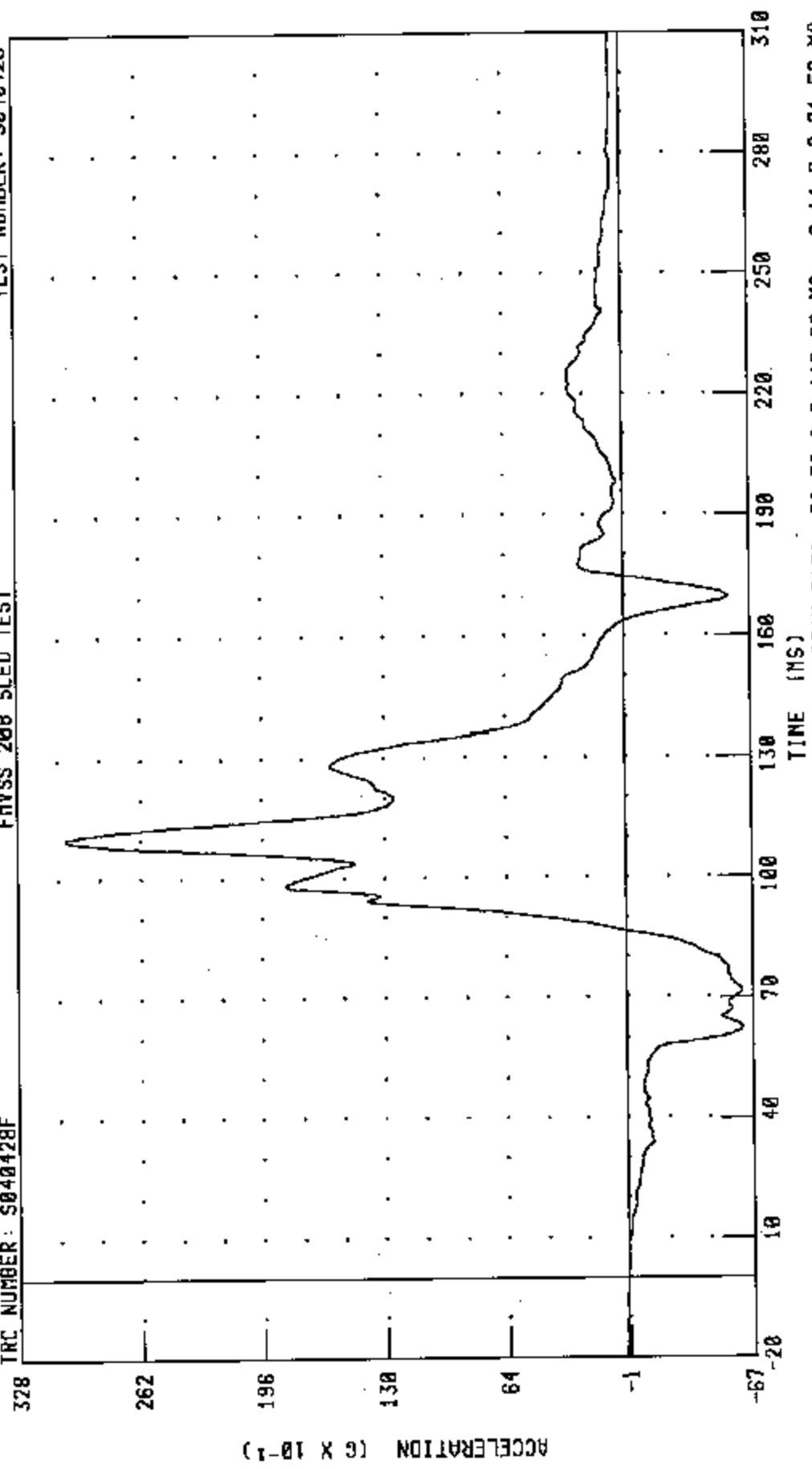
PEAK DATA: 2.54 G @ 108.72 MS, -2.05 G @ 175.84 MS

C40209 / 2004 FORD FREESTAR
RIGHT FRONT PASSENGER CHEST Z-AXIS ACCELERATION

TEST NUMBER: S040428

FHVSS 200 SLED TEST

TRC NUMBER: S040428F



PEAK DATA: 30.32 G @ 110.00 MS; -6.14 G @ 71.52 MS

CHANNEL: CSTG2 FILTER: CH. CLASS 180

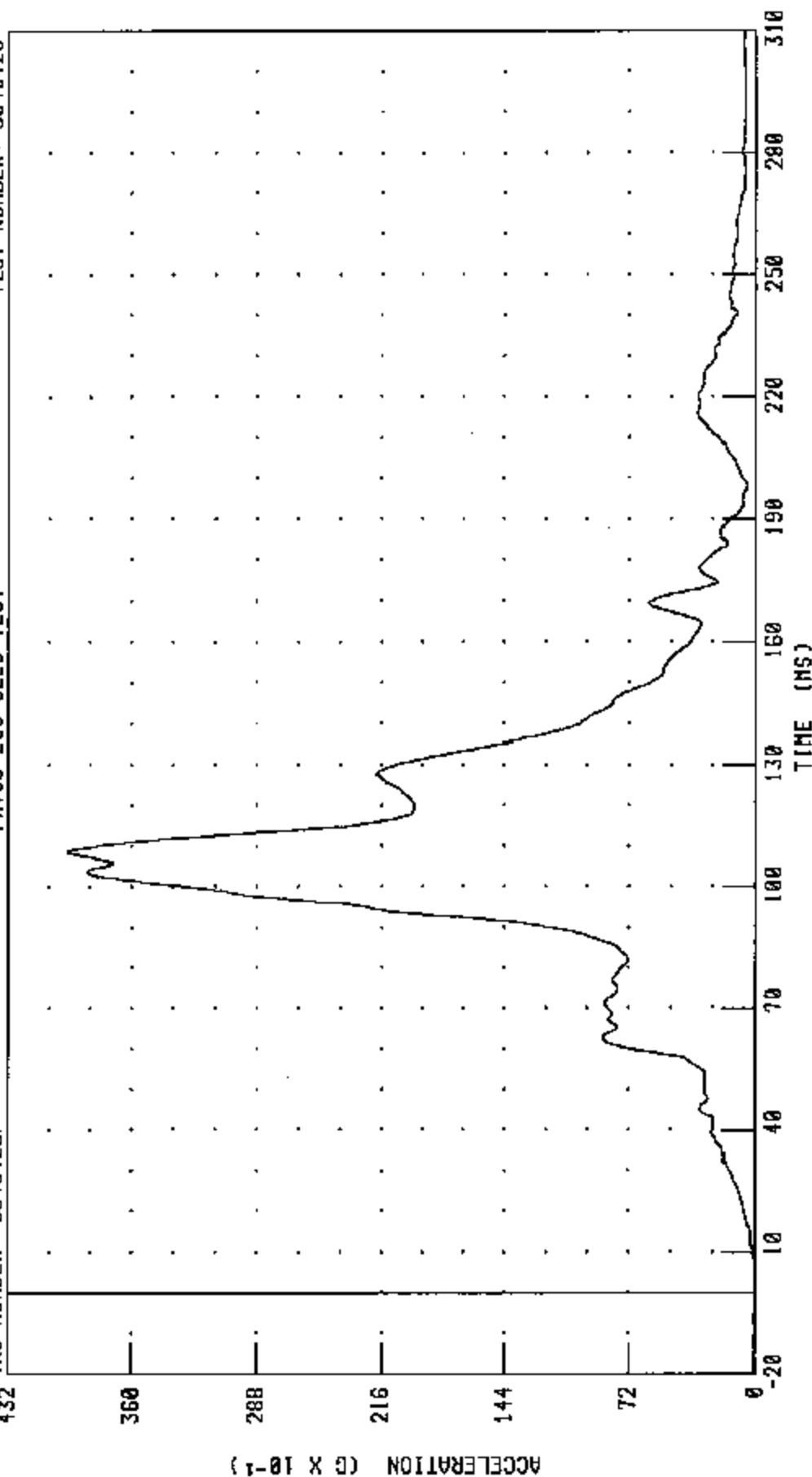
C40209 / 2004 FORD FREESTAR

RIGHT FRONT PASSENGER CHEST RESULTANT ACCELERATION

TRC NUMBER: S040428F

FMVSS 208 SLED TEST

TEST NUMBER: S040428



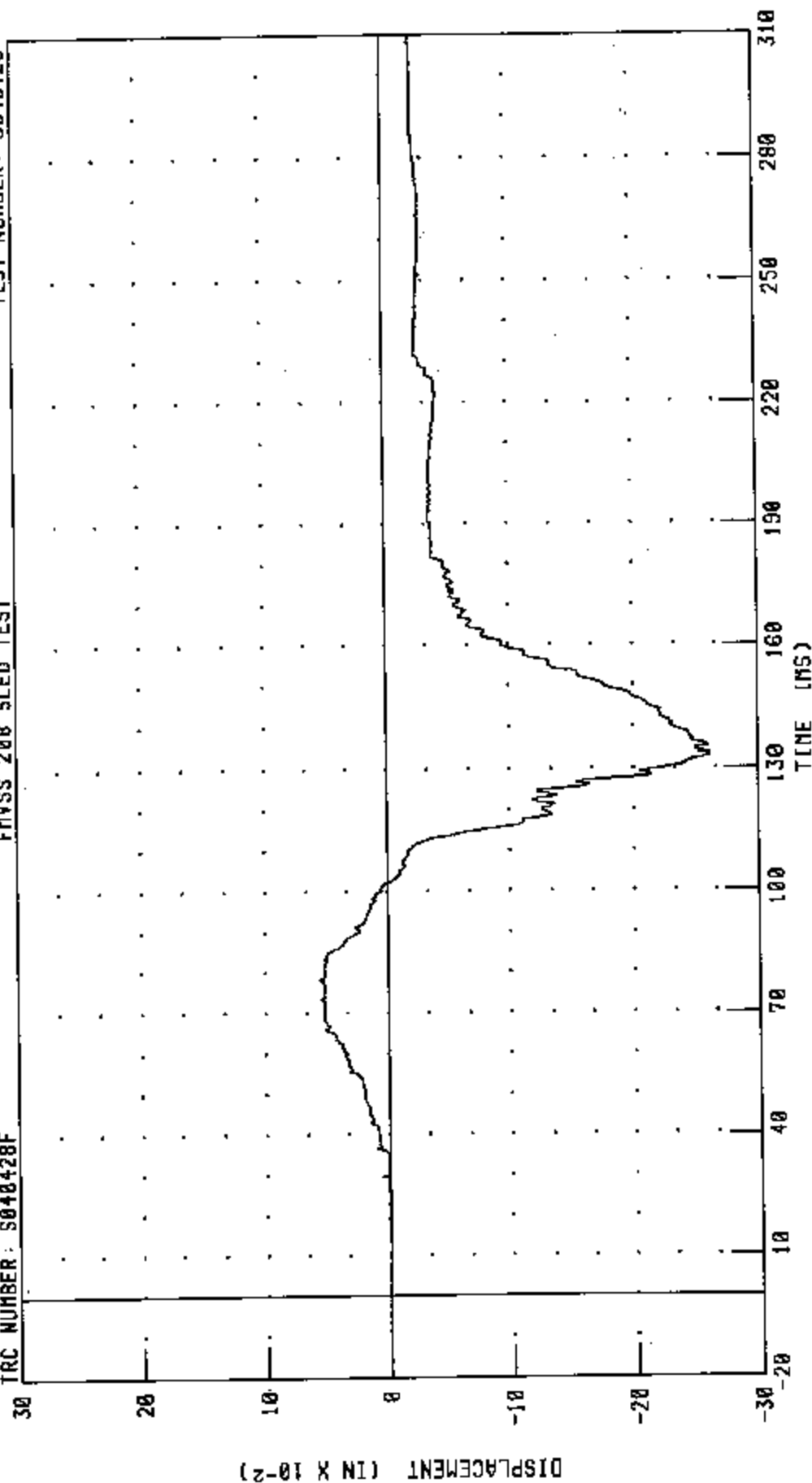
CHANNEL: CSTRG2 FILTER: CH. CLASS 180

PEAK DATA: 39.76 G @ 108.72 MS, 0.01 G @ -3.68 MS

C40209 / 2004 FORD FREESTAR
RIGHT FRONT PASSENGER CHEST DEFLECTION
FMVSS 208 SLED TEST

TEST NUMBER: S040428

TRC NUMBER: S040428F



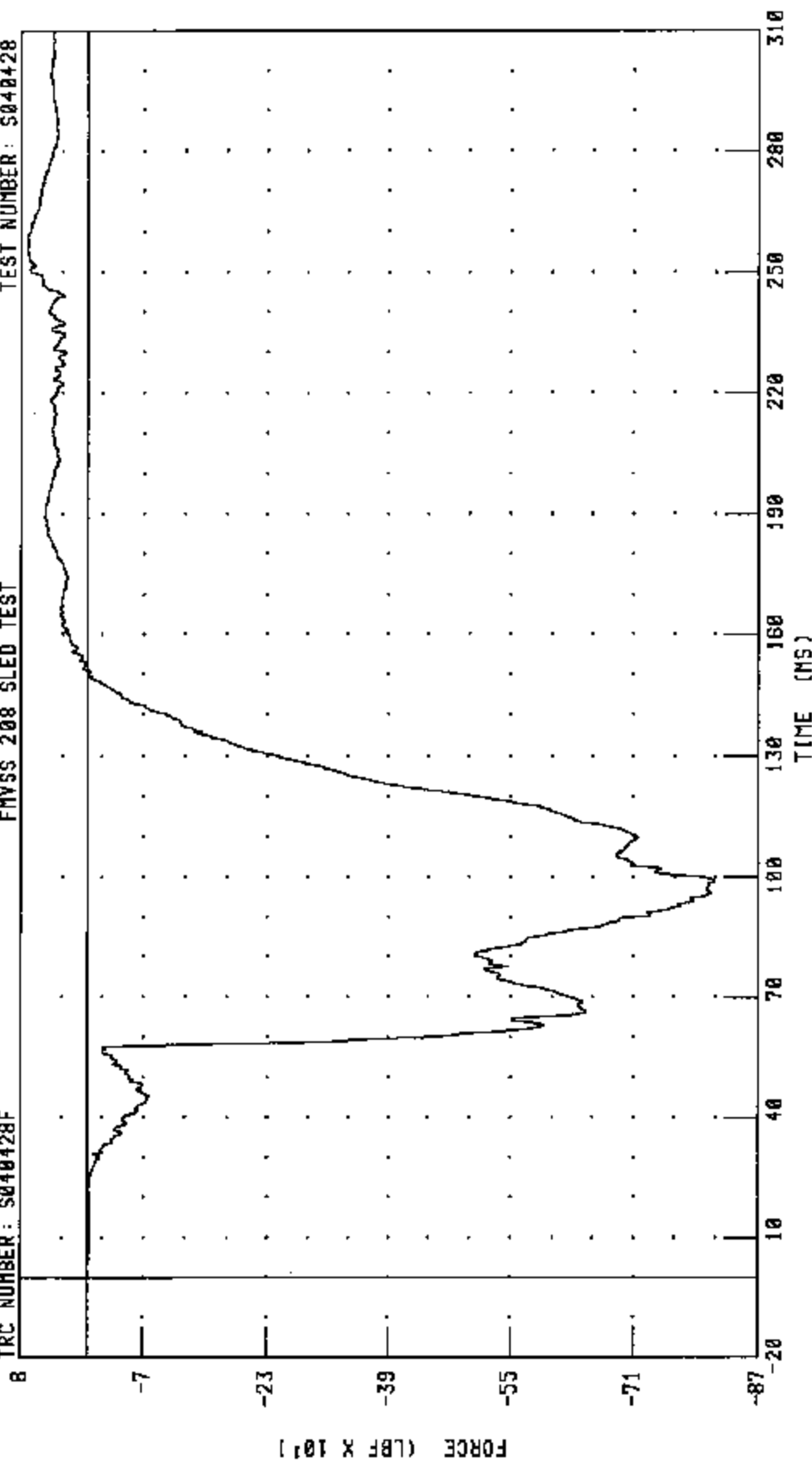
CHANNEL: CSTXD2 FILTER: CH. CLASS 600

PEAK DATA: 0.06 IN @ 78.24 MS; -0.25 IN @ 133.30 MS

C40209 / 2004 FORD FREESTAR
RIGHT FRONT PASSENGER LEFT FEMUR FORCE
FMVSS 208 SLED TEST

TRC NUMBER: S040428F

TEST NUMBER: S040428



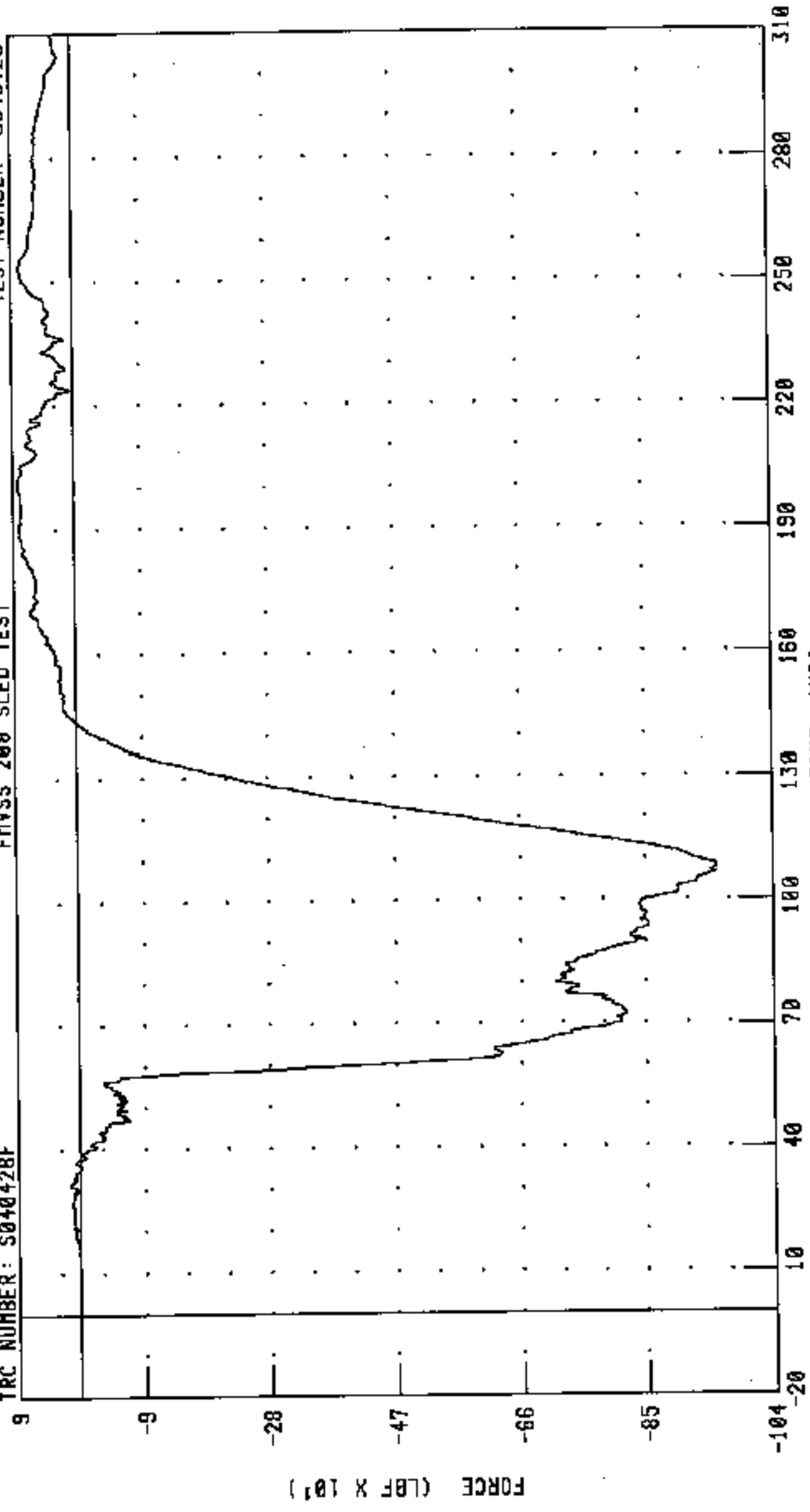
CHANNEL: LFH2F2 FILTER: CH. CLASS 600

PEAK DATA: 79.86 LBF @ 255.68 MS; -819.34 LBF @ 99.04 MS

C40209 / 2004 FORD FREESTAR
RIGHT FRONT PASSENGER RIGHT FEMUR FORCE
FMVSS 200 SLED TEST

TEST NUMBER: S040428

TRC NUMBER: S040428F



TIME (MS)

PEAK DATA: 83.51 LBF @ 200.96 MS, -968.24 LBF @ 108.08 MS

CHANNEL: RFMZF2 FILTER: CH. CLASS 600

Appendix C

Manufacturer's Vehicle Information

Ford Motor Company

James P. Vendele, Director
Automotive Safety Office
Environmental & Safety Engineering

January 9, 2004

Mr. Harry Thompson, Chief
Vehicle Division
Office of Vehicle Safety Compliance
National Highway Traffic Safety Administration
400 Seventh Street, S. W.
Washington, DC 20590

Dear Mr. Thompson:

Subject: FMVSS 208 "Occupant Crash Protection" 2004 Model Year Freestar

Reference: NVS-221CCA/OA-208-831018-H

This is the Ford Motor Company (Ford) response to your October 22, 2003 letter requesting information for possible agency compliance surveillance testing of a 2004 Ford Freestar vehicle (subject vehicle) to the requirements of Federal Motor Vehicle Safety Standard (FMVSS) No. 208, "Occupant Crash Protection." For the agency's convenience, all pertinent photographs for the test reports contained in this response are being provided on a computer CD.

We listed each request for information followed by our response to it below:

Request 1: Restraint System Information

- 1.1 Describe the difference between the MY 2004 air bag restraint system and the 2003 system.
- 1.2 Describe what other restraint system changes have been made.
- 1.3 Describe other vehicle changes that may affect FMVSS 208 performance
- 1.4 Describe any features that may affect occupant protection performance with respect to children and out of position occupants.
- 1.5 State whether the vehicle is equipped with a FMVSS 208 air bag on-off switch for the passenger frontal air bag.

Answer:

- 1.1: The new 2004 Ford Freestar, is a major model change from the 2003 Ford Windstar that features an all-new vehicle interior as well as an all-new flexible seating system. For 2004, there is a new driver air bag assembly with a new thermoplastic cover and floating horn



assembly, with revised dual stage inflators with a variable time delay. Autoliv continues as the supplier for the driver air bag system. The passenger side frontal air bag is also new for 2004 and incorporates a new dual stage inflator with variable time delay along with a hybrid stored gas inflator system. The air bag cover has been changed from a thermoplastic cover to a seamless integrated side foam cover. The passenger air bag in the subject vehicle utilizes a mounting that produces an initial upward, then rearward inflation pattern, as opposed to the 2003 passenger air bag that had an initial rearward inflation pattern. The supplier also changes from TRV in 2003 to Autoliv in 2004.

1.2: For 2004, the supplier for all Ford Freestar seat belts is Autoliv; TRV supplied all the seat belts for the 2003 Ford Windstar. Freestar belt assemblies have free-falling, single-slotted tongues and automatic locking retractors (ALR) as opposed to the double-slotted locking cinch tongues used on the 2003 Windstar. In the first row, the Freestar is equipped with pyrotechnic buckle pretensioners while the Windstar was equipped with retractor pretensioners. The front passenger seat belt assembly in the Freestar includes a belt tension sensor (BTS). In second row on the bench seat equipped Freestar vehicles, both left side and right side belts anchor to the side of the seat. 2003 Windstar vehicles with bench seats had floor-anchored belts on the driver's side and seat-anchored belts on the passenger side. The Freestar does not utilize the load limiting retractors in the second row bench seat that were in the 2003 Windstar. The 2004 Freestar first and second row height adjusters now have four positions rather than the five positions on the Windstar. In the third row of seats, the center seating position on the 2004 Freestar is now equipped with a three-point, foot-mounted seat belt whereas the 2003 Windstar has only a lap belt for the center position.

1.3: Vehicle changes to the new 2004 Ford Freestar vehicle that may affect FMVSS 208 performance are:

- Modified front frame rails
- New upper radiator support to mount the new roll restrictor
- New engine
- New dash panel
- New #1 front cross member and extensions
- New hood and front fenders
- New front sub-frame and lower control arms
- New instrument panel with new knee bolster system
- New steering wheel

1.4: For the 2004 model year, the new Ford Freestar vehicle has a Right Front Passenger Seat Occupant Classification System (OCS) sensor that, in conjunction with the logic system in the Restraints Control Module, can suppress the activation of the right front passenger air bag depending upon the weight/position of the occupant. This feature is intended to deactivate the air bag for 12 month old, three year old and six year old children but reactivate the air bag for a 5th percentile female individual. This OCS system is designed to meet all the new S14 requirements of FMVSS 208 but the subject 2004 model year Ford Freestar vehicle itself is certified to the S13 requirements of FMVSS 208 as was the 2003 model year Ford Windstar.

1.5: The 2004 Ford Freestar vehicle is not equipped with an FMVSS 208 air bag on-off switch for the right front passenger frontal air bag.

Request 2: Advanced Air Bag VehiclesRequest 2.1: Crash tests

- 2.1.1 A copy of the certification test reports for belted and unbelted crash tests (frontal, angular, and offset) using the 5th percentile female dummy and the 50th percentile male dummy.
- 2.1.2 The width of the vehicle as defined in S18.2.4, the location at which the maximum dimension was measured, and any other information and measurements used to position the vehicle for the offset crash test at 40 percent overlap.

Answer:

- 2.1: The subject vehicles are not certified to meet the new advanced air bag requirements of section S14 of FMVSS 208. This vehicle meets the existing S13 requirements of FMVSS 208.

Request 2.2: 5th Female Low Risk Deployment

- 2.2.1 A copy of the 5th female low risk deployment certification tests.
- 2.2.2 For air bags with dual stage or multi-stage inflators, describe the inflator stage or combination of inflator stages or time delay between successive inflator stages used for low risk deployment.
- 2.2.3 A copy of the tests and analyses that were used to determine the inflator stage or combination of inflator stages or time delay between successive inflator stages used for the low risk deployment test. (S26.4)
- 2.2.4 The location of the "geometric center of the opening through which the air bag deploys into the occupant compartment."
- 2.2.5 Describe how to disconnect the air bags and trigger the appropriate inflator stages.

Answer:

- 2.2: The subject vehicles are not certified to meet the 5th Female Low Risk Deployment requirements of section S14 of FMVSS 208.

Request 2.3: Children Low Risk Deployment (if applicable):

- 2.3.1 When certified to low risk deployment for children, a copy of the certification test report for each child restraint (12-month-old) and/or child position (3-year-old, 6-year-old).
- 2.3.2 For air bags with dual stage or multi-stage inflators, describe the inflator stage or combination of inflator stages or time delay between successive inflator stages used for low risk deployment.
- 2.3.2 A copy of the tests and analyses that were used to determine the inflator stage or combination of inflator stages or time delay between successive inflator stages used for the low risk deployment tests. (S20.4.9 & S22.4.4 & S24.4.4)
- 2.3.3 The location of the "geometric center of the opening through which the air bag deploys into the occupant compartment."

- 2.3.4 Describe how to disconnect the air bags and trigger the appropriate inflator stages.

Answer:

- 2.3: The subject vehicles are not certified to the "Children Low Risk Deployment" option of the advanced air bag requirements of section S14 of FMVSS 208.

Request 2.4: Suppression (if applicable):

- 2.4.1 A representative test report for each type of suppression test (12-month-old, 3-year-old, 6-year-old) and a reactivation test report using a 5th percentile female dummy.
- 2.4.2 State whether dummies or humans were used. If humans were used provide the method to deactivate the air bag during suppression tests, identify any parts or equipment necessary for deactivation, and provide the method to assure that the same test results would be obtained if the air bag were not deactivated.
- 2.4.3 Describe how the suppression system works and its components.
- 2.4.4 State whether the air bag is suppressed when the seat is empty and whether the telltale on the dash is lit when the seat is empty. If the telltale is not lit when the seat is empty, describe the mechanism used to determine whether the air bag is suppressed or activated and describe the equipment and procedure necessary to verify the air bag is suppressed.
- 2.4.5 Describe the telltale and its location.

Answer:

- 2.4: The subject vehicles are not certified to the "Suppression" option of the advanced air bag requirements of section S14 of FMVSS 208.

Request 3: Non-Advanced Air Bag Vehicles: Barrier Crash Tests:

Non-advanced air bag vehicles certified unbelted in a 40 km/h barrier crash test
A copy of the certification test reports for belted and unbelted crash tests (frontal and angular).

Answer:

The subject vehicles are not certified to the "Non-Advanced Air Bag Unbelted 40 km/h Barrier Crash Test" requirements of FMVSS 208.

Request 4: Non-Advanced Air Bag Vehicles: Certified Unbelted in a Sled Test:

- 4.1 A copy of the certification sled test.
- 4.2 A copy of the certification test reports for belted crash tests (frontal and angular).
- 4.3 Describe how to disconnect the air bags from the vehicle sensors and connect them to the triggering mechanism used in the sled test.

- 4.4 For air bags with dual stage or multi-stage inflators, describe the inflator stage or combination of inflator stages or time delay between successive inflator stages used in the sled test.
- 4.5 For air bags with dual stage or multi-stage inflators, provide a copy of the tests and analyses that were used to determine the inflator stage or combination of inflator stages or time delay between successive inflator stages that would occur in a crash of similar severity.

Answer:

4: The subject vehicles were certified to the S13 non-advanced air bag requirements (certified unbelted in a sled test) of FMVSS 208.

4.1: Appendix A contains copies of the following representative test reports used for demonstrating compliance to the S13 unbelted sled test requirements:

- Sled test for driver position: Test H23794
- Sled test for front passenger: Test H23805

4.2: Appendix B contains copies of the following representative test reports used for demonstrating compliance to belted crash test requirements of FMVSS 208:

- Full frontal barrier test: Test C13447 (35 mph 90 degree frontal) – Driver only
- Full frontal barrier test sled simulation: Test H24036 (35 mph 90 degree frontal simulation) – front passenger only
- 30 degree angular barrier test: Test C13448 (30 mph 30 degree front angular left)

4.3: For Driver Air Bag:

To disconnect the 2004 Ford Freestar driver air bag, first disconnect the vehicle battery and wait several minutes to allow the crash sensor power supply to decay, then open the access door at the lower part of driver steering wheel air bag to view and access the connector. The white connector is for the radio and cruise function. The gray connector contains the air bag circuits. Disconnect the gray connector. For detailed wiring and connector information, see Appendix C that contains the Interface Connector Diagram (ICD) for the driver air bag circuits for stage 1 and stage 2.

In the Ford sled tests, the wiring from the extension cable that supplies the firing current from the KT-Ford Programmable Time Fire Unit was connected to the driver air bag connector. The Programmable unit has an arming circuit and variable time delay (adjustable to 0.1 msec) which starts counting once time zero (T=0) has been triggered. At 20 msec after T=0, the Programmable Time Fire Unit sends current through the extension cable and into the air bag wiring.

For Front Passenger Air Bag:

To disconnect the 2004 Ford Freestar passenger side air bag, disconnect the vehicle battery and again wait several minutes to allow the crash sensor power supply to decay, then open the glove box and release the door bumper stops to allow access to the passenger air bag connector. The gray connector contains the air bag circuits. Disconnect the gray connector. For detailed wiring and connector information, see Appendix D that contains the Interface Connector Diagram (ICD) for the front passenger air bag circuits for stage 1 and stage 2.

In the Ford sled tests, the wiring from the extension cable that supplies the firing current from the KT-Ford Programmable Time Fire Unit was connected to the passenger air bag connection. The Programmable unit has an arming circuit and variable time delay (adjustable to 0.1 msec) which starts counting once time zero ($T=0$) has been triggered. At 20 msec after $T=0$, the Programmable Time Fire Unit sends current through the extension cable and into the air bag wiring.

KT-Ford Programmable Time Fire Unit

The Programmable Time Fire Unit has the capability of supplying between 30 and 35 volts with a current draw limited to 3 amps. In testing conducted by Ford, the typical current draw is 3 amps. The system has an arming circuit and variable time delay (adjustable to 0.1 msec) which starts counting once time zero ($T=0$) has been triggered. An accelerometer is used on the sled to trigger $T=0$ when an acceleration of 0.75g is attained on the sled. [Ford Motor Company adjusted the $T=0$ trigger for their US HYGE sled system to a level of 0.75g's prior to 1988 in order to have more consistent triggers for any given pulse.] Evaluation of recorded test instrumentation data shows that for these compliance tests, our $T=0$ timing occurs less than 0.4 msec later than a 0.5g trigger. This data paired with the air bag delay-triggering system tolerance of 2.0 msec results in a difference from the regulated trigger (0.5g $T=0$ and $T=20$ msec deployment time) of less than 0.8 msec. This is safely within the tolerance allowed in the regulation (± 2.0 msec).

4.4: The time delays used in the Ford S13 Unbelted Sled Tests were the following times after $T=0$ time was triggered:

- Driver: 1st stage = 20 msec.; 2nd stage = 35 msec. (15 msec. after stage 1)
- Front Passenger: 1st stage = 20 msec.; 2nd stage = 30 msec. (10 msec. after stage 1)

4.5: Appendix E contains the Ford analysis and rationale utilized to determine the time delay between successive inflator stages that would occur in a crash of similar severity.

Request 5: Other Information

- 5.1 Describe the seat adjustment controls (manual and power) available for this model, including any adjustment controls on seats rearward of the front outboard designated seating positions, and the seat movements associated with each individual control.
- 5.2 Describe the headrest adjustments available for this model.
- 5.3 State for each safety belt system in the subject vehicles whether or not it is equipped with a tension-relieving device. Provide a copy of the information furnished in accordance with S7.4.2 if the tension-relieving device is used.
- 5.4 State for each crash test (frontal, angular, and offset) whether the moveable windows and vents were opened or closed.
- 5.5 Submit dummy placement measurements, including diagrams or photographs that show exactly where each measurement was taken. For the subject vehicles certified to the advanced air bag requirements, provide measurements for both the 50th percentile male and the 5th percentile female. Enclosed is a diagram of some of OVSC's dummy measurements. Where possible, use each dimension shown in the diagram to provide the individual dummy placement measurements.
- 5.6 State whether the subject vehicles have a footrest for the driver.

- 5.7 Provide the seat positioning, steering column positioning, and fuel tank data on the enclosed form. If more than one front seating configuration, steering column or fuel tank configuration are available on this vehicle, provide separate information for each. For certification tests using the 5th percentile female, provide the seat fore-aft position, seat height, and seat back angle used in the certification test.
- 5.8 Provide the seating reference point (SgRP) for the driver designated seating position and every other designated seating position required to comply with the lockable seat belt requirement in S7.1.1.5.
- 5.9 If there are adjustable seat belt anchorages at front and/or rear designated seating positions, provide the manufacturer's nominal design position for a 50th percentile adult male occupant and, if certified to the advanced air bag requirements, the position for the 5th percentile female.
- 5.10 For all tests that are performed to certify the subject vehicles to injury assessment performance requirements of FMVSS 208, provide a summary of the injury results. In addition, for crash tests provide the measured test speed.
- 5.11 When vehicle components must be removed to obtain the proper test weight for crash tests, list the components you recommend for removal, and in the priority order you recommend for removal.
- 5.12 If the subject vehicles use a pressure vessel to inflate the air bag, provide a copy of the test reports or engineering analysis to demonstrate that it meets all the requirements of S9.1.
- 5.13 If the subject vehicles use an explosive device to inflate the air bag, provide a copy of the test report or engineering analysis to demonstrate that it meets all the requirements of S9.2.

Answer:

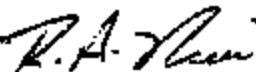
- 5.1: As noted previously, the new 2004 Ford Freestar is a major model change that features an all-new vehicle interior as well as an all-new flexible seating system. Appendix F contains a detailed description of this new seating system in the 2004 Freestar (Vehicle code: V229).
- 5.2: Appendix F also contains a description of the seat headrest adjustments available on the 2004 Ford Freestar.
- 5.3: The 2004 Ford Freestar vehicles do not use tension-relieving devices for the driver or front passenger safety belt systems.
- 5.4: The 2004 Ford Freestar vehicles were tested with all moveable windows full down for 80 degree frontal impact testing. For the front angular left test mode, the driver side window was up and the passenger side window was down. There are no vents on this vehicle. Ford requests that the agency conduct their testing with all windows in the full up position.
- 5.5: The requested dummy placement measurements for the 2004 Ford Freestar vehicle are provided in Appendix G.
- 5.6: The 2004 Ford Freestar vehicle is equipped with a driver side outboard (left) footrest.
- 5.7: Appendix H contains the completed NHTSA Form 1 with the requested information.

January 9, 2004

- 5.8: Appendix I contains the completed NHTSA Form 4, which shows the SgRP for all seating positions relative to measurements from the driver's seat front outboard anchorage bolt hole.
- 5.9: The driver and front passenger adjustable four position D-ring anchorages in the 2004 Ford Freestar should be set one position up from the bottom position for a 50th percentile male occupant. For the second seating row, the D-ring height adjusters should be set full up for a 50th percentile male occupant. No height adjustment is available for the third row seating occupants.
- 5.10: Ford is providing the requested summary information for all tests used as a basis to certify the subject vehicles to the Injury assessment performance requirements of FMVSS 208 in Appendix J.
- 5.11: The following components are removed in the order listed to compensate for the added weight of test equipment:
- 3rd Row Seat
 - 2nd Row Seats
 - Rear Quarter Windows
 - Sliding Door Trim Panels, C and D Pillar Trim, Rear Quarter Trim
- 5.12: The subject vehicle utilizes a hybrid (pressure vessel/explosive device) inflator device to inflate the passenger side frontal air bag. Appendix K contains the pertinent documentation from the supplier, Autoliv ASP, Inc., that attests to the compliance of the hybrid inflator to the requirements of S9.1.
- 5.13: The subject vehicle uses an explosive device to inflate the driver side frontal air bag and also uses an explosive device in conjunction with a pressurized vessel to form a hybrid inflator to inflate the passenger side frontal air bag. Copies of the pertinent documentation from the supplier, Autoliv ASP, Inc., that attests to the compliance of these inflators to the requirements of S9.2 are contained in Appendix K for the passenger air bag inflator and Appendix L for the driver air bag.

If you have any further questions, please contact me.

Sincerely,



James P. Vondale

Attachments

Restraint Electrical/Electronic Subsystem Interface Control Document (ICD)

Component Name:	Driver Air Bag Module
Part Number:	3F23-4704001-000
Subsystem:	Restraints
Model Year:	2004
Vehicle Line:	Vz04

DNR Engineer (Ford):	Rick Elwood
Department:	Restraints
Phone:	913-382-4000
PROFS ID:	

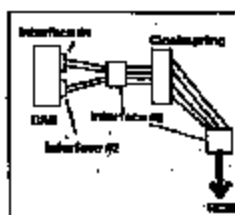
Supplier Contact:	Mike Kuchey
Company:	Autoliv
Phone:	348-875-8000
PROFS ID / E-Mail:	miked.kuchey@autoliv.com

Physical Hardware Requirements Matrix

Signal Name	Pin Number	Terminal Part Number	Circuit Number	Wire Color
Driver air bag lead 1	1		814	RED
Driver air bag return 1	2		815	GRY

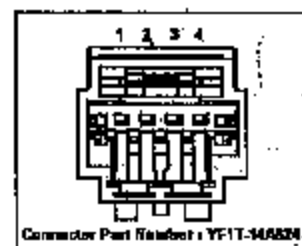
Signal Name	Pin Number	Terminal Part Number	Circuit Number	Wire Color
Driver air bag lead 2	3		1516	YEL
Driver air bag return 2	4		1517	GRY

Signal Name	Pin Number	Terminal Part Number	Circuit Number	Wire Color
Driver air bag lead 1	1		814	RED
Driver air bag return 1	2		815	GRY
Driver air bag lead 2	3		1516	YEL
Driver air bag return 2	4		1517	GRY



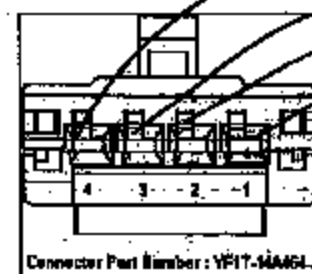
Interface #2 is required between the DAS and the clockspring terminal.

Connector Pin-Out - View Looking Into Pins of the Connector



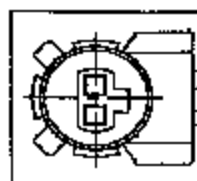
Connector Part Number: YF1T-14A624-L

*DAS side

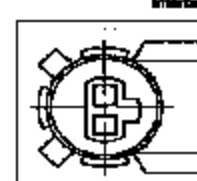


Connector Part Number: YF1T-14A624-L

Clockspring side



Non-reversible Behavior Connector Interface #1



Non-reversible Universal Connector Interface #2

Note: Connector Part Number is the Part Number for the Connector on Your Component Unless Otherwise Noted.

Restraint Electrical/Electronic Subsystem Interface Control Document (ICD)

Component Name:	Driver Air Bag Module
P/N Number:	9F33-17043B 03-177
Sub/Version:	Restraints
Model Year:	2004 Vehicle Line: V220

DAK Engineer (Fwd):	20th Floor
Department:	Restraints
Phone:	313-823-4000
PROFS ID:	

Supplier Contact:	Mike Krzycki
Company:	Autoliv
Phone:	248-576-6600
PROFS ID / E-Mail:	mkrzycki@autoliv.com

Electrical Hardware Requirements Matrix

Circuit Number	Signal Name	Function Class	Operating Voltage (V)			Operating Current (A) at Voltage (V)						Design Resistance (Ohms)			Design Capacitance (uF)			Design Inductance (mH)			Operating Duration or Activation Time			Frequency (Hz)			Thermal Protection			Description
			Min	Nominal	Max	Min	Nominal	Max	Min	Nominal	Max	Min	Nominal	Max	Min	Nominal	Max	Min	Nominal	Max	Min	Nominal	Max	Min	Nominal	Max	Min	Nominal	Max	
			A	V	V	A	V	V	A	V	V	A	V	V	A	V	V	A	V	V	A	V	V	A	V	V	A	V	V	
854	Driver air bag inflator 1	C	8	12	18	55mA	8	0.2	12	1.2	18																			
855	Driver air bag inflator 1	C	8	12	18	60mA	8	0.2	12	1.2	18																			
856	Driver air bag inflator 2	C	8	12	18	60mA	8	0.2	12	1.2	18																			
857	Driver air bag inflator 2	C	8	12	18	65mA	8	0.2	12	1.2	18																			

Operating Temperature (Degrees C)	Min	Max	Min
	-40	+125	0

EMC Compliance: E33007-UC2004 Yes No

Note: Key Off Load Requirements = 0.0 mA

Note: All reported voltages and currents are for NORMAL operation and must include both active and non-active states. Add additional lines within each category or use additional sheets as needed.

Attach ICD Submittal for all interface sheets including:
 * Values or test part numbers for all components
 * Values (tolerance) for all components
 * Logic levels required for functional operations

C-11

S040428

DAB Electrical

1 of 1

10/20/04 12:12 PM

Restraint Electrical/Electronic Subsystem Interface Control Document (ICD)

Component Name:	Front Passenger Air Bag Module
Part Number:	3F2A-1784AA74
SubSystem:	Restraints
Model Year:	2004 Vehicle Line: V229

PAB Engineer (Feds):	Rich Butkowski
Department:	Restraints
Phone:	343.621.3578
Cell:	343.621.3578

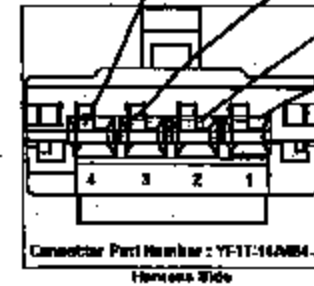
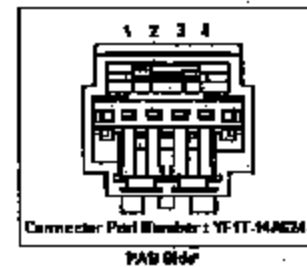
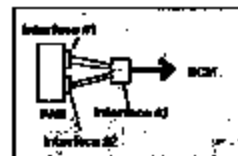
Supplier Contact:	Michael Leckie
Company:	Adelco
Phone:	616.275.9785
PRCP# ID / E-Mail:	mickie.leckie@adelco.com

Physical Hardware Requirements Matrix

Signal Name	Pin Number	Terminal Part Number	Circuit Number	Wiring Color
Front passenger air bag head 1	3		207	LG-B
Front passenger air bag return 1	4		618	PG-BK

Signal Name	Pin Number	Terminal Part Number	Circuit Number	Wiring Color
Front passenger air bag head 2	1		1818	LG-B
Front passenger air bag return 2	2		1819	BK-T

Signal Name	Pin Number	Terminal Part Number	Circuit Number	Wiring Color
Front passenger air bag head 1	3		207	LG-B
Front passenger air bag head 2	4		618	PG-BK
Front passenger air bag head 3	1		1818	LG-B
Front passenger air bag return 2	2		1819	BK-T



Pink/Blk
Blue/ORG
Green/Red
Black/White

Note: Connector Part Number is the Part Number for the Connector on Your Component Unless Otherwise Noted.

C-12

SD40428

PAB Physical

1 of 1

1/5/2004 5:13 PM

Restraint Electrical/Electronic Subsystems Interface Control Document (ICD)

Component Name:	Front Passenger Air Bag Module
Part Number:	9F2A-1704-004
Qualification:	Restraints
Model Year:	2004 Vehicle Line: V228

DER Engineer (Pwr):	Rich R. Robinson
Department:	Restraints
Phone:	313 821 8875
PRC/FB ID:	mahalingdev

Supplier Contact:	Michie/Lach
Company:	Autoliv
Phone:	248 279 3728
PRC/FB ID / E-Mail:	mahalingdev@autoliv.com

Electrical Hardware Requirements Matrix

Class Number	Signal Name	Functional Class	Operating Voltage (V)			Operating Current (A) at Voltage (V)												Design Inductance (mH)			Design Capacitance (nF)			Design Inductance (mH)			Operating Duration or Activation Time			Frequency (Hz)			Wage up	Signal Type (Active, Inactive)	Isolated Protection		Signal Type	Description																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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Min	Max	Min
Operating Temperature (Degree C)	-40	85

ESCC Compliance	ESCC/NT-147/EA	Yes	No
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Note: Key Off Load Requirements = 0.0 mA

Note: All reported voltages and currents are for NORMAL operation and must include both active and non-active states. Add additional lines within each category to use additional channels as needed.

- Attach I/O Submittal for all interface circuits including:
- * Values or bridge part numbers for all components
- * Values tolerances for all components
- * Logic levels required for directional operation

C-13

S040428

PAS Electrical

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V229 Seat Function Information

1st Row

Cushion Adjustment:

Standard for Driver and Passenger – 2-Way Manual (fore/aft) tracks with 180mm travel (150mm forward of design position and 30mm rearward of design position)

Optional for Driver and passenger – 6-Way Power (fore/aft, front tilt up/down, and rear tilt up/down) with 180mm of fore/aft travel (150mm forward of design position and 30mm rearward of design position) and 47mm of up/down (17mm down from design position and 30mm up from design position)

Seat Back Recline:

Standard for all – Manual recline with 80.5° of adjustment (46.75° forward of design position and 33.75° rearward of design position)

Seat Back Lumbar:

Packaged with Power Tracks for Driver Seat on Freestar and Monterey and Optional on Power Passenger Monterey (Design position is full off)

Head Restraint:

Fixed Head Restraints are standard on the low-level Freestar and Adjustable head restraints are standard on the high level Freestar and all Monterey levels – Adjustment is 2-Way, up and down, with 50mm of adjustment.

2nd Row Bench

Cushion Adjustment:

Optional – 2-Way Manual (fore/aft) tracks with 220mm travel (180mm forward of design position and 40mm rearward of design position)

Seat Back Recline:

Standard for all – Manual recline with 118.5° of adjustment (95.5° forward of design position and 22.5° rearward of design position)

Head Restraint:

Adjustable head restraints are standard – Adjustment is 2-Way, up and down, with 67mm of adjustment

2nd Row Buckets

Cushion Adjustment:

Optional for Freestar and standard for Monterey— 2-Way Manual (fore/aft) tracks with 180mm travel (150mm forward of design position and 30mm rearward of design position)

Seat Back Recline:

Standard for all – Manual recline with 123° of adjustment (95 ° forward of design position and 28° rearward of design position)

Head Restraint

Adjustable head restraints are standard – Adjustment is 2-Way, up and down, with 87mm of adjustment

3rd Row Bench

Seat Back Recline:

Standard for all – Manual recline with 9.375° of adjustment (3.750° forward of design position and 5.625° rearward of design position)

Head Restraint:

Adjustable head restraints are standard – Adjustment is 2-Way, up and down, with 96.7mm of adjustment

POSITIONING NUMBERS

Make sure dummy is sitting centered in seat.

	DRIVER		PASSENGER	
SEATBACK ANGLE (deg)	18.0 +/- 0.5		18.0 +/- 0.5	
PELVIC ANGLE (deg)	22.5 +/- 2.5		22.5 +/- 2.5	
NECK BRACKET ANGLE (deg)	0		0	
	in	mm	in	mm
NOSE TO WHEEL	18.0 +/- 0.3	457.2 +/- 7.62	N/A	N/A
NOSE TO IP	N/A	N/A	24.3 +/- 0.2	617.22 +/- 5.08
TORSO TO WHEEL	9.4 +/- 0.4	238.76 +/- 10.16	N/A	N/A
TORSO TO IP	N/A	N/A	20.6 +/- 0.6	523.24 +/- 15.24
TOP OF LEGS TO WHEEL	1.7 +/- 0.4	43.18 +/- 10.16	N/A	N/A
KNEE SPREAD	10.5 +/- 0	266.7 +/- 0	7.8 +/- 0	198.12 +/- 0
LEFT LEG TO IP	4.7 +/- 0.6	119.38 +/- 15.24	4.0 +/- 0.4	101.6 +/- 10.16
RIGHT LEG TO IP	4.8 +/- 0.6	121.92 +/- 15.24	3.9 +/- 0.3	99.06 +/- 7.62

TEST VEHICLE INFORMATION

Vehicle Model Year and Make: 2004 Ford/Mercury
 Vehicle Model and Body Style: Freestar Wagon/Monterey Wagon
 VIN (If Known): _____

1. NOMINAL DESIGN RIDING POSITION –

For adjustable driver and passenger seat backs, describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent if applicable.

Seat back angle for driver's seat = 18°.

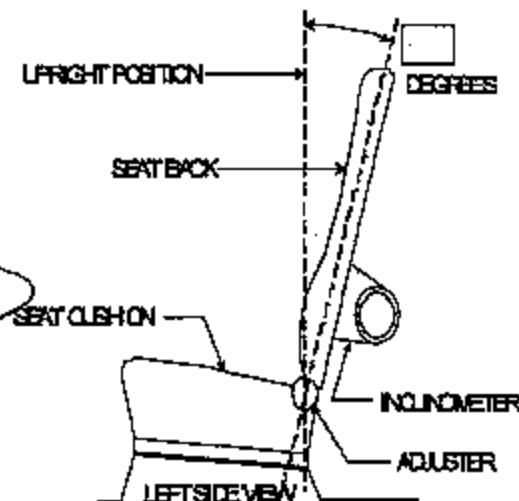
Measurement Instructions:

The seat back angle is measured relative to the rocker sill. Remove the seat back panel and position inclinometer as shown in the drawing 13 inches above the back pivot point on the rear outboard seat frame. Avoid taking measurement on reinforcement plates.

Seat back angle for passenger's seat = 18°.

Measurement Instructions:

Same instructions as the driver's seat.



2. SEAT FORE AND AFT POSITIONS –

Provide instructions for positioning the driver and front outboard passenger seat(s) in the center of fore and aft travel. For example, provide information to locate the detent in which the seat track is to be locked.

Position of the driver's seat:

For all seats (driver & passenger, power & manual seat tracks): Position the seat in the mechanical mid-position. Reference points are scribed on the seat and the seat track. The total seat travel is measured and the seat is then positioned in the center of seat travel. On manual seats, position at the mid-point track location (if available) or the next closest position to the rear of the mid-point travel location.

Position of the passenger's seat (if applicable):

Same instructions as the driver's seat.

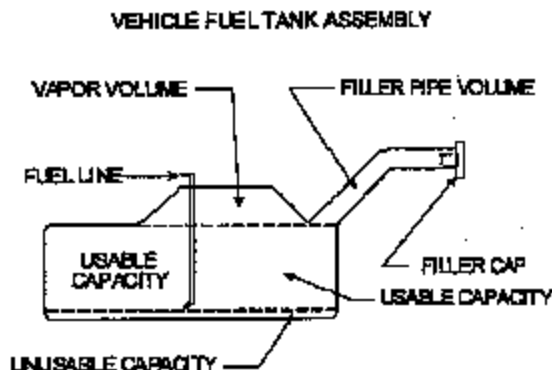
3. FUEL TANK CAPACITY DATA –

3.1 A. "Usable Capacity" of standard equipment fuel tank = 26 gallons.

B. "Usable Capacity" of optional equipment fuel tank = N/A gallons.

C. Capacity used when certification testing to requirements of FMVSS 301 = 26 gallons.
 (= 90 to 95% of A. plus B.)

D. Operational Instructions: None.



3.2 Amount of Stoddard solvent added to vehicle for certification test = 24.7 gallons.
 (= C. minus Unusable Capacity)

3.3 Is vehicle equipped with electric fuel pump? X YES _____ NO

If YES, does pump normally operate when vehicle's electrical system is activated?

X YES _____ NO

If YES, explain the vehicle operating conditions under which the fuel pump will pump fuel.

The electric fuel pump operates for 2 seconds to pressurize the fuel system following the actuation of the ignition. If no attempt has been made to start the engine within 2 seconds following ignition actuation the fuel pump will shut off. The fuel pump operates continuously while the engine is running. If the engine stalls the fuel pump is deactivated. Also, a fuel pump shut-off switch is provided, designed to stop fuel flow to the engine if the vehicle sustains an impact above a certain magnitude.

4. STEERING COLUMN ADJUSTMENTS –

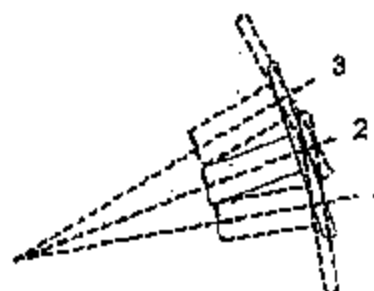
Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when it is moved through its full range of driving positions.

If the tested vehicle has any of these adjustments, does your company use any specific procedures to determine the geometric center.

Operational Instructions:

Adjustable steering controls are adjusted so that the steering wheel hub is located at the geometric center of the locus it describes when it is moved through its full range of driving positions. Vehicle is equipped with a 5 position tilt column. Test position is mid-position.

STEERING COLUMN ASSEMBLY



LEFT SIDE VIEW

5. SEATING REFERENCE POINT (SRP) – (Polar Coordinate Measures from Actual Tests (Inches))

Provide drawing (or description) which shows the occupant SRP locations.

	Door Striker to H-point	Door Striker to OB Knee	Nose to RIM	Knee Spread
Driver (Manual Seat)	N/A	N/A	18.0	10.0
Driver (Power Seat)	SAME AS MANUAL			
Passenger (Manual Seat)	N/A	N/A	N/A	7.8
Passenger (Power Seat)	SAME AS MANUAL			

6. FUEL TANK LOCATION –

Provide drawing (or description) which shows the undercarriage view and/or location.

7. ADJUSTABLE D-RING POSITIONS –

Adjust the front outboard seat D-ring locations to the 2nd from the bottom position (the track has 4 vertical adjustments) when testing 50% dummies.

8. VEHICLE EQUIPMENT –

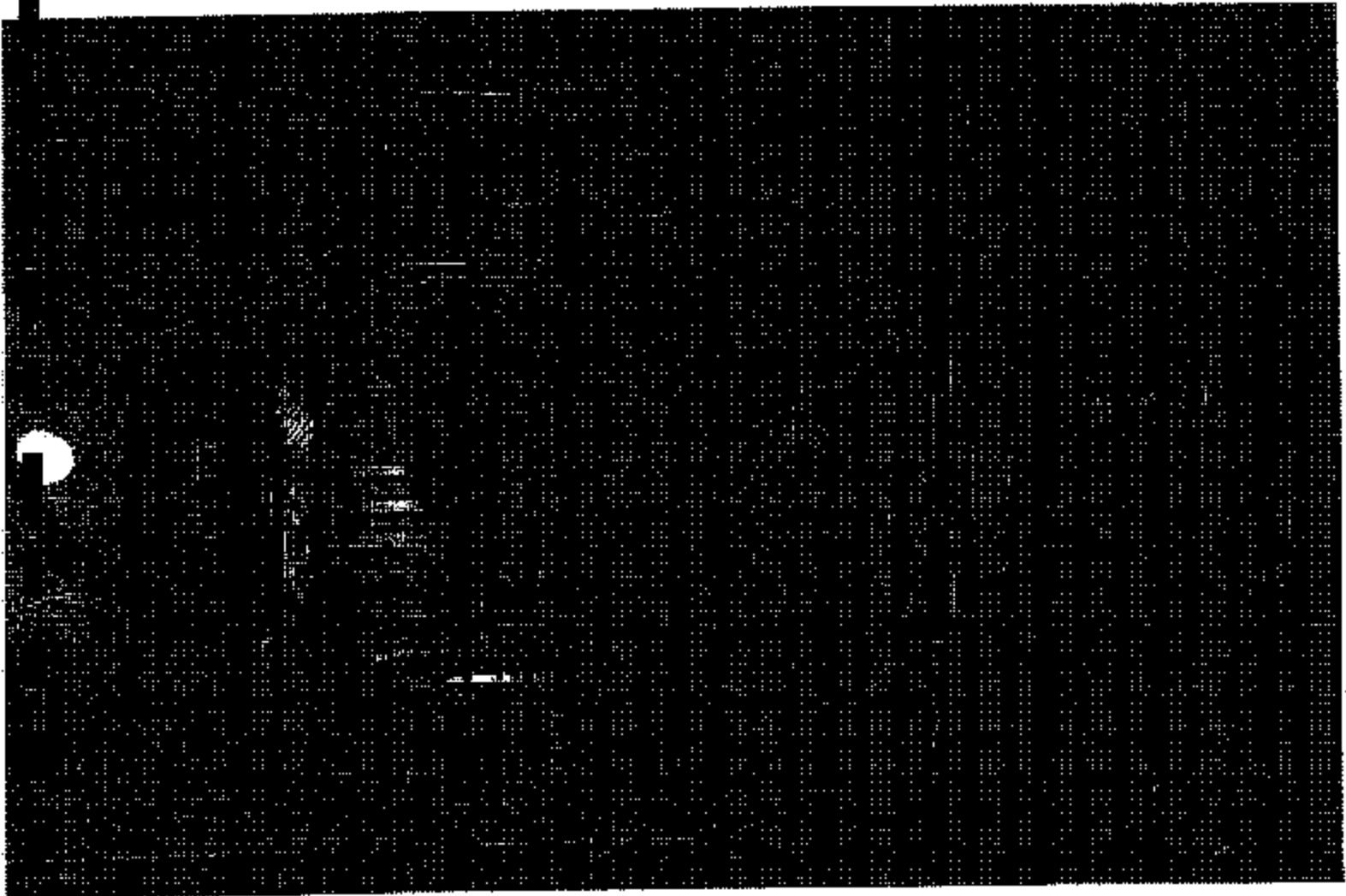
Adjustable pedals
Drivers side outboard foot rest
Telescoping steering column
Side air bags

Availability (Y or N)

Y
Y
N
Y

If yes (Std. or Opt.)

OPT
STD
N/A
OPT

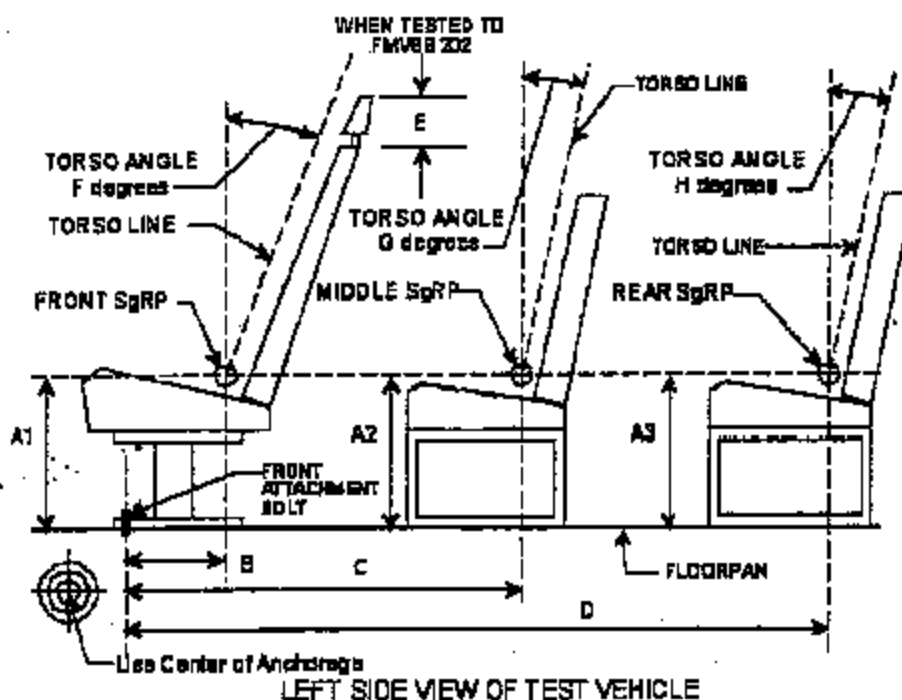


SEATING REFERENCE POINT (SRP) AND TORSO ANGLE DATA FOR FMVSS 201, 202, 203, 207 & 210

(All dimensions in inches)

Model Year: 2004; Make: Ford; Model: Windstar

Body Style: Minivan; Seat Style: 1st Row High Back and Low Back, 2nd Row Quads and Bench, 3rd Row Bench



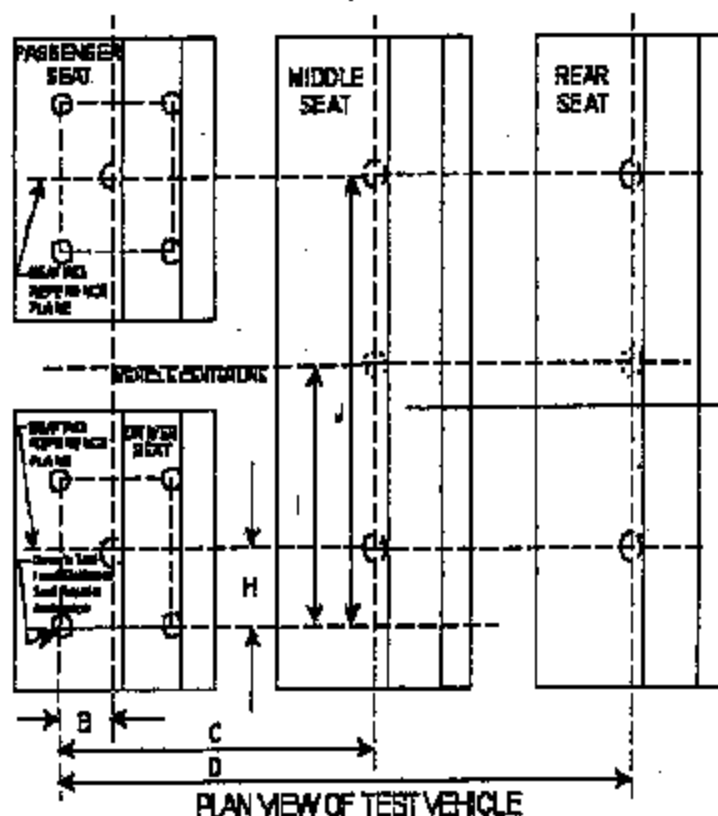
DIMENSION	FRONT, A1	MIDDLE, A2	REAR, A3
A	14.68	13.67	15.3
B		10.18	
C		43.98	
D		75.92	
E	Low Back: Up=10.85, Down=9.08, High Back: N/A		
F		21"	
G		22"	
H		22"	

SEATING REFERENCE POINT (SRP) AND TORSO ANGLE FOR FMVSS 201, 202, 203, 207 & 210

(All dimensions in Inches)

Model Year: 2004; Make: Ford; Model: Windstar

Body Style: Minivan; Seat Style: 1st Row High Back and Low Back, 2nd Row Quad and Bench, 3rd Row Bench



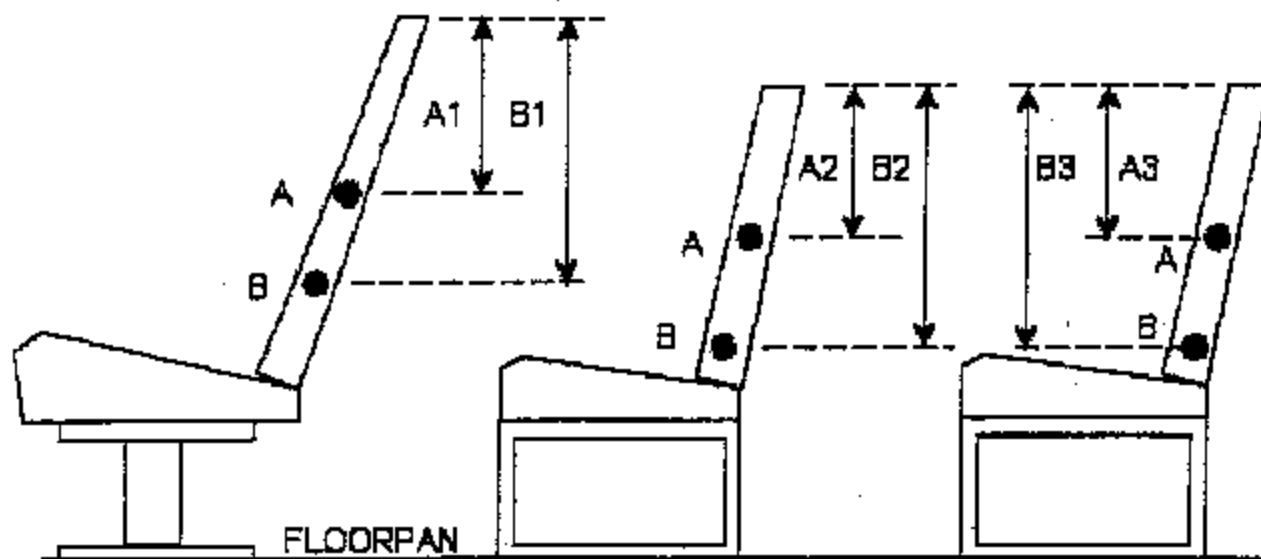
B	10.18
C	43.96
D	75.92
H*	1st row=7.07, 2nd row quad=10.96, 2nd row bench=12.26, 3rd row=7.07
I*	23.29
J*	1st row=40.0, 2nd row quad=40.10, 2nd row bench=34.30, 3rd row=39.51

* Provide all dimensions needed to locate SRP.

TEST VEHICLE SEAT INFORMATION

(All dimensions in inches)

Model Year: 2004; Make: Ford; Model: Windstar
Body Style: Van; Seat Style: Free standing



LEFT SIDE VIEW OF VEHICLE

Note: A: CG of Seat Back

B: CG of total seating system

A1	21.467		FRONT	BACK
B1	33.15	Weight of Hinged or Folding portion of seat	High back - 24.05 lbs	
A2	Bench - 344 Quad - 443	Weight of Total Seat System		
B2	Bench - 475 Quad - 619	Angle of Seat Back	See FMVSS drawing	See FMVSS drawing
A3	11.142	REMARKS: weights depend on configuration. Seat Matrix with weights will be provided.		
B3	16.299			

Compliance Demonstration Report

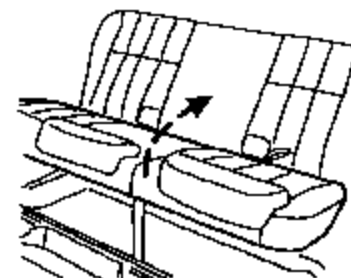
2004 V229

50% Hybrid III Unbelted Generic FMVSS 208 HYGE Sled Testing

	<u>DRIVER</u>	<u>FRONT PASSENGER</u>
Test Mode	Unbelted Generic 208	Unbelted Generic 208
Test Number	H23794	H23805
Airbag Deployment	<u>High Output</u> 15ms delay between 1st and 2nd stage	<u>High Output</u> 10ms delay between 1st and 2nd stage
HIC (15ms)	51	132
HIC (36ms)	90	227
Upper Neck:		
Fore/Aft Shear (N)	625.4	1152
Axial Tension (N)	1354.9	799
Axial Compression (N)	100.5	2267
Flexion (N*m)	29.54	26.09
Extension (N*m)	10.37	28.17
Chest G's (3ms clip)	28.2	33.6
Chest Deflection (mm)	22.1	6.35
V*G (m/s)	0.07	0.008
Left Femur Load (N)	4600	3428
Right Femur Load (N)	6730	4100
Comments	See E7#1 for Low Output	See E7#1 for Low Output

Seating and Safety Restraints

3. To return the seat, ensure seat latching area is free of objects. Then, raise the seat off the liftgate scuff plate and push at the top of the seat back to rotate the seat back onto the latches. Pull up on the head restraints to raise them.



SAFETY RESTRAINTS

Personal Safety System

The Personal Safety System provides an improved overall level of frontal crash protection to front seat occupants and is designed to help further reduce the risk of air bag-related injuries. The system is able to analyze different occupant conditions and crash severity before activating the appropriate safety devices to help better protect a range of occupants in a variety of frontal crash situations.

Your vehicle's Personal Safety System consists of:

- Driver and passenger dual-stage air bag supplemental restraints.
- Front safety belts with pretensioners, energy management retractors (first row only), and safety belt usage sensors.
- Driver's seat position sensor.
- Passenger occupant classification sensor
- Front crash severity sensor.
- Restraints Control Module (RCM) with impact and safing sensors.
- Restraint system warning light and back-up tone.
- The electrical wiring for the air bags, crash sensor(s), safety belt pretensioners, front safety belt usage sensors, driver seat position sensor, passenger occupant classification sensor, and indicator lights.

Seating and Safety Restraints

How does the Personal Safety System work?

The Personal Safety System can adapt the deployment strategy of your vehicle's safety devices according to crash severity and occupant conditions. A collection of crash and occupant sensors provides information to the Restraints control module (RCM). During a crash, the RCM activates the safety belt pretensioners and/or either one or both stages of the dual-stage air bag supplemental restraints based on crash severity and occupant conditions.

The fact that the pretensioners or air bags did not activate for both front seat occupants in a collision does not mean that something is wrong with the system. Rather, it means the Personal Safety System determined the accident conditions (crash severity, belt usage, etc.) were not appropriate to activate these safety devices. Front air bags and pretensioners are designed to activate only in frontal and near-frontal collisions, not rollovers, side-impacts, or rear-impacts unless the collision causes sufficient longitudinal deceleration.

Driver and passenger dual-stage air bag supplemental restraints

The dual-stage air bags offer the capability to tailor the level of air bag inflation energy. A lower, less forceful energy level is provided for more common, moderate-severity impacts. A higher energy level is used for the most severe impacts. Refer to *Air bag supplemental restraints* section in this chapter.

Front crash severity sensor

The front crash severity sensor enhances the ability to detect the severity of an impact. Positioned up front, it provides valuable information early in the crash event on the severity of the impact. This allows your Personal Safety System to distinguish between different levels of crash severity and modify the deployment strategy of the dual-stage air bags and safety belt pretensioners.

Driver's seat position sensor

The driver's seat position sensor allows your Personal Safety System to tailor the deployment level of the driver dual-stage air bag based on seat position. The system is designed to help protect smaller drivers sitting close to the driver air bag by providing a lower air bag output level.

Seating and Safety Restraints

Passenger occupant classification sensor (OCS)

A label is located under the front passenger seat which is marked "OCS". Take your vehicle to any Ford or Lincoln Mercury dealer for assistance.

For air bags to do their job they must inflate with great force, and this force can pose a potentially deadly risk to occupants that are very close to the air bag when it begins to inflate. For some occupants, like infants in rear-facing child seats, this occurs because they are initially sitting very close to the air bag. For other occupants, this occurs when the occupant is not properly restrained by seat belts or child safety seats and they move forward during pre-crash braking. The most effective way to reduce the risk of unnecessary injuries is to make sure all occupants are properly restrained. Accident statistics suggest that children are much safer when properly restrained in the rear seating positions than in the front.



The passenger occupant classification sensor can automatically turn off the passenger front air bag and side air bag (if equipped). The system is designed to help protect small (child size) occupants from air bag deployments when they are improperly seated or restrained in the front passenger seat contrary to proper child-seating or restraint usage recommendations. Even with this technology, parents are **STRONGLY** encouraged to always properly restrain children in the rear seat. The sensor also turns off the air bag(s) when the passenger seat is empty to prevent unnecessary replacement of the air bag(s) after a collision.

Front safety belt usage sensors

The front safety belt usage sensors detect whether or not the driver and front outboard passenger safety belts are fastened. This information allows your Personal Safety System to tailor the air bag deployment and safety belt pretensioner activation depending upon safety belt usage. Refer to *Safety belt* section in this chapter.

Seating and Safety Restraints

Front safety belt pretensioners

The safety belt pretensioners at the front outboard seating positions are designed to tighten the safety belts firmly against the occupant's body during a frontal or near-frontal collision. This maximizes the effectiveness of the safety belts and helps properly position the occupant relative to the air bag to improve protection. The safety belt pretensioners can be either activated alone or, if the collision is of sufficient severity, together with the air bags.

Front safety belt energy management retractors

The front outboard safety belt energy management retractors allow webbing to be pulled out of the retractor in a gradual and controlled manner in response to the occupant's forward momentum. This helps reduce the risk of force-related injuries to the occupant's chest by limiting the load on the occupant. Refer to *Energy management feature* section in this chapter.

Determining if the Personal Safety System is operational

The Personal Safety System uses a warning light in the instrument cluster or a back-up tone to indicate the condition of the system. Refer to the *Warning light* section in the *Instrument cluster* chapter. Routine maintenance of the Personal Safety System is not required.

The Restraints control module (RCM) monitors its own internal circuits and the circuits for the air bag supplemental restraints, crash sensor(s), safety belt pretensioners, front safety belt buckle sensors, driver seat position sensor, and passenger occupant classification sensor. In addition, the RCM also monitors the restraints warning light in the instrument cluster. A difficulty with the system is indicated by one or more of the following.

- The warning light will either flash or stay lit.
- The warning light will not illuminate immediately after ignition is turned on.
- A series of five beeps will be heard. The tone pattern will repeat periodically until the problem and warning light are repaired.

If any of these things happen, even intermittently, have the Personal Safety System serviced at your dealership or by a qualified technician immediately. Unless serviced, the system may not function properly in the event of a collision.

Seating and Safety Restraints

Safety belt precautions

 Always drive and ride with your seatback upright and the lap belt snug and low across the hips.

 To reduce the risk of injury, make sure children are where they can be properly restrained.

 Never let a passenger hold a child on his or her lap while the vehicle is moving. The passenger cannot protect the child from injury in a collision.

 All occupants of the vehicle, including the driver, should always properly wear their safety belts, even when an air bag supplemental restraint system (SRS) is provided.

 It is extremely dangerous to ride in a large area inside or outside of a vehicle. In a collision, people riding in these areas are more likely to be seriously injured or killed. Do not allow people to ride in any area of your vehicle that is not equipped with seats and safety belts. Be sure everyone in your vehicle is in a seat and using a safety belt properly.

 In a rollover crash, an unbelted person is significantly more likely to die than a person wearing a seat belt.

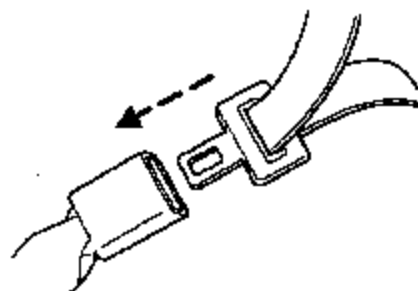
 Each seating position in your vehicle has a specific safety belt assembly which is made up of one buckle and one tongue that are designed to be used as a pair. 1) Use the shoulder belt on the outside shoulder only. Never wear the shoulder belt under the arm. 2) Never swing the safety belt around your neck over the inside shoulder. 3) Never use a single belt for more than one person.

 Always transport children 12 years old and under in the back seat and always properly use appropriate child restraints.

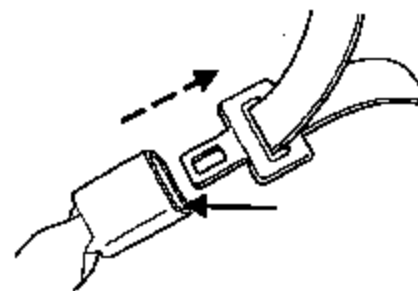
Seating and Safety Restraints

Combination lap and shoulder belts

1. Insert the belt tongue into the proper buckle (the buckle closest to the direction the tongue is coming from) until you hear a snap and feel it latch. Make sure the tongue is securely fastened in the buckle.



2. To unfasten, push the release button and remove the tongue from the buckle.



All restraints in the vehicle are combination lap and shoulder belts. While you are fastened in the seat belt, the combination lap/shoulder belt adjusts to your movement. However, if you brake hard, turn hard, or if your vehicle receives an impact of 8 km/h (5 mph) or more, the safety belt will become locked and help reduce your forward movement.

Energy Management Feature — Outboard

- This vehicle has a safety belt system with an energy management feature at the front seats to help further reduce the risk of injury in the event of a head-on collision.
- This safety belt system has a retractor assembly that is designed to extend the seat belt webbing in a controlled manner. This helps reduce the belt force acting on the user's chest.



Seating and Safety Restraints

Vehicle sensitive mode

This is the normal retractor mode, which allows free shoulder belt length adjustment to your movements and locking in response to vehicle movement. For example, if the driver brakes suddenly or turns a corner sharply, or the vehicle receives an impact of approximately 8 km/h (5 mph) or more, the combination safety belts will lock to help reduce forward movement of the driver and passengers.

Automatic locking mode

The automatic locking mode is not available on the driver safety belt.

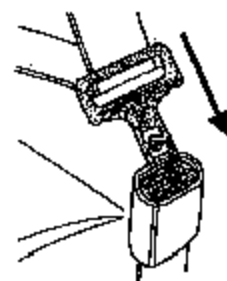
When to use the automatic locking mode

In this mode, the shoulder belt is automatically pre-locked. The belt will still retract to remove any slack in the shoulder belt. The automatic locking mode is not available on the driver safety belt.

This mode should be used **any time** a child safety seat is installed in a passenger front or outboard rear seating position (if equipped). Children 12 years old and under should be properly restrained in the rear seat whenever possible. Refer to *Safety restraints for children* or *Safety seats for children* later in this chapter.

How to use the automatic locking mode

- Buckle the combination lap and shoulder belt.



Seating and Safety Restraints

- Grasp the shoulder portion and pull downward until the entire belt is pulled out.



- Allow the belt to retract. As the belt retracts, you will hear a clicking sound. This indicates the safety belt is now in the automatic locking mode.

How to disengage the automatic locking mode

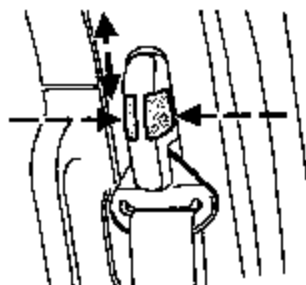
⚠ Ford Motor Company recommends that all passenger safety belt assemblies and anchoring hardware should be inspected by a qualified technician after a collision to verify that the automatic locking retractor is not in child use, is still working properly. Safety belt assemblies should be inspected according to the procedures in the Vehicle Manual. If either damage or improper operation is detected, the belt and retractor assembly could increase the risk of injury in a collision.

Unbuckle the combination lap/shoulder belt and allow it to retract completely to disengage the automatic locking mode and activate the vehicle sensitive (emergency) locking mode.

Safety belt height adjustment

Your vehicle has safety belt height adjustments at the front and second row seating positions. Adjust the height of the shoulder belt so the belt rests across the middle of your shoulder.

To adjust the shoulder belt height, squeeze and hold the buttons on the side and slide the height adjuster up or down. Release the buttons and pull down on the height adjuster to make sure it is locked in place.



Seating and Safety Restraints

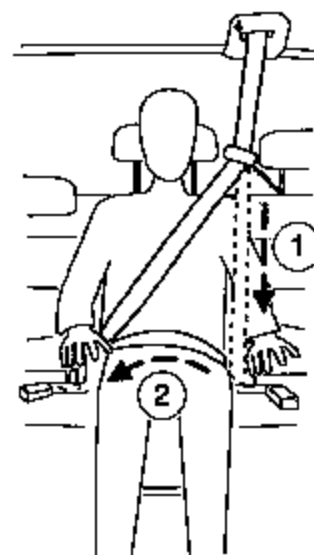
⚠ Position the safety belt height adjusters so that the belt rests across the middle of your shoulder. Failure to adjust the belt properly could reduce the effectiveness of the belt and increase the risk of injury in a collision.

Third row comfort guide

The safety belt for the 3rd row center occupant may be stowed in the ceiling if it has been detached from the seat to carry large cargo. Remove the safety belt from the stowage area on the ceiling and buckle the small tongue on the end of the safety belt to the mini-buckle on the left side of the center seat position.

The third row center lap/shoulder belt is equipped with a Belt Comfort Guide located in a pocket on the back of the seat. The guide is attached to the driver's side head restraint, and is used to adjust the comfort of the shoulder belt for smaller occupants in the center position of the 3rd row seat. To adjust the comfort guide:

- Slip the shoulder belt into the belt guide.
- Slide the guide up or down along the head restraint post so that the belt is centered on the occupant's shoulder.



Safety belt warning light and Indicator chime

The safety belt warning light illuminates in the instrument cluster and a chime sounds to remind the occupants to fasten their safety belts.

Seating and Safety Restraints

Conditions of operation

If...	Then...
The driver's safety belt is not buckled before the ignition switch is turned to the ON position...	The safety belt warning light illuminates 1-2 minutes and the warning chime sounds 4-8 seconds.
The driver's safety belt is buckled while the indicator light is illuminated and the warning chime is sounding...	The safety belt warning light and warning chime turn off.
The driver's safety belt is buckled before the ignition switch is turned to the ON position...	The safety belt warning light and indicator chime remain off.

BeltMinder

The BeltMinder feature is a supplemental warning to the safety belt warning function. This feature provides additional reminders by intermittently sounding a chime and illuminating the safety belt warning lamp in the instrument cluster when the driver's and front passenger's safety belt is unbuckled.

The BeltMinder feature uses information from the passenger occupant classification sensor to determine if a front seat passenger is present and therefore potentially in need of a warning. To avoid activating the BeltMinder feature for objects placed in the front passenger seat, warnings will only be given to large front seat occupants as determined by the passenger occupant classification sensor.

Both the driver's and passenger's safety belt usages are monitored and either may activate the BeltMinder feature. The warnings are the same for the driver and the front passenger. If the BeltMinder warnings have expired (warnings for approximately 5 minutes) for one occupant (driver or front passenger), the other occupant can still activate the BeltMinder feature.

Seating and Safety Restraints

If...	Then...
The driver's and front passenger's safety belts are buckled before the ignition switch is turned to the ON position or less than 1-2 minutes have elapsed since the ignition switch has been turned ON...	The BeltMinder feature will not activate.
The driver's or front passenger's safety belt is not buckled when the vehicle has reached at least 5 km/h (3 mph) and 1-2 minutes have elapsed since the ignition switch has been turned to ON...	The BeltMinder feature is activated - the safety belt warning light illuminates and the warning chime sounds for 6 seconds every 30 seconds, repeating for approximately 5 minutes or until the safety belts are buckled.
The driver's or front passenger's safety belt becomes unbuckled for approximately 1 minute while the vehicle is traveling at least 5 km/h (3 mph) and more than 1-2 minutes have elapsed since the ignition switch has been turned to ON...	The BeltMinder feature is activated - the safety belt warning light illuminates and the warning chime sounds for 6 seconds every 30 seconds, repeating for approximately 5 minutes or until the safety belts are buckled.

The following are reasons most often given for not wearing safety belts:
(All statistics based on U.S. data)

Reason given	Comment
"Crashes are rare events"	86700 crashes occur every day. The more we drive, the more we are exposed to "rare" events, even for good drivers. <i>1 in 4 of us will be seriously injured in a crash during our lifetime.</i>
"I'm not going far"	3 of 4 fatal crashes occur within 25 miles of home.

Seating and Safety Restraints

Reasons Given	Consider
"Belts are uncomfortable"	We design our safety belts to enhance comfort. If you are uncomfortable - try different positions for the safety belt upper anchorage and seatback which should be as upright as possible; this can improve comfort.
"I was in a hurry"	Prime time for an accident. BeltMinder reminds us to take a few seconds to buckle up.
"Safety belts don't work"	Safety belts, when used properly, reduce risk of death to front seat occupants by 45% in cars, and by 60% in light trucks.
"Traffic is light"	Nearly 1 of 2 deaths occur in single-vehicle crashes, many when no other vehicles are around.
"Belts wrinkle my clothes"	Possibly, but a serious crash can do much more than wrinkle your clothes, particularly if you are unbelted.
"The people I'm with don't wear belts"	Set the example, teen deaths occur 4 times more often in vehicles with TWO or MORE people. Children and younger brothers/sisters imitate behavior they see.
"I have an air bag"	Air bags offer greater protection when used with safety belts. Frontal airbags are not designed to inflate in rear and side crashes or rollovers.
"I'd rather be thrown clear"	Not a good idea. People who are ejected are 40 times more likely to DIE. Safety belts help prevent ejection, WE CAN'T "PICK OUR CRASH".

Seating and Safety Restraints

 Do not sit on top of a buckled safety belt to avoid the BeltMinder chime. Sitting on the safety belt will increase the risk of injury in an accident. To disable (one time) or deactivate the BeltMinder feature please follow the directions stated below.

One time disable

If at any time the driver/front passenger quickly buckles then unbuckles the BeltMinder feature for that seating position, the BeltMinder is disabled for the current ignition cycle. The BeltMinder feature will re-enable during the same ignition cycle if the occupant buckles and remains buckled for approximately 30 seconds. Confirmation is not given for the one time disable.

Deactivating/activating the BeltMinder feature

The driver and front passenger BeltMinder are deactivated/activated independently. When deactivating/activating one seating position, do not buckle the other position as this will terminate the process.

Read steps 1 - 4 thoroughly before proceeding with the deactivation/activation programming procedure.

The driver and front passenger BeltMinder features can be deactivated/activated by performing the following procedure:

Before following the procedure, make sure that:

- The parking brake is set
- The gearshift is in P (Park) (automatic transmission)
- The ignition switch is in the OFF position
- The driver and front passenger safety belts are unbuckled

 To reduce the risk of injury, do not deactivate/activate the BeltMinder feature while driving the vehicle.

1. Turn the ignition switch to the RUN (or ON) position. (DO NOT START THE ENGINE)
2. Wait until the safety belt warning light turns off. (Approximately 1 minute)
- Step 3 must be completed within 50 seconds after the safety belt warning light turns off.

Seating and Safety Restraints

3. For the seating position being disabled, buckle then unbuckle the safety belt 9 times, ending in the unbuckled state. (Step 3 must be completed within 50 seconds after the safety belt warning light turns off.)

- After step 3, the restraint system warning light (airbag light) will be turned on for three seconds.
- 4. Within 10 seconds of the light turning on, buckle then unbuckle the safety belt.
- This will disable the BeltMinder feature for that seating position if it is currently enabled. As confirmation, the restraint system warning light will flash 4 times per second for 3 seconds.
- This will enable the BeltMinder feature for that seating position if it is currently disabled. As confirmation, the restraint system warning light will flash 4 times per second for 3 seconds, followed by 3 seconds with the light off, then followed by the restraint system warning light flashing 4 times per second for 3 seconds again.

Safety belt extension assembly

If the safety belt is too short when fully extended, a 23 cm (9 inch) or 31 cm (12 inch) safety belt extension assembly can be added (part numbers 611C22-A and 611C22-B respectively). These assemblies can be obtained from your dealer at no cost.

Use only extensions manufactured by the same supplier as the safety belt. Manufacturer identification is located at the end of the webbing on the label. Also, use the safety belt extension only if the safety belt is too short for you when fully extended.

Safety belt maintenance

Inspect the safety belt systems periodically to make sure they work properly and are not damaged. Inspect the safety belts to make sure there are no nicks, tears or cuts, replacing if necessary. All safety belt assemblies, including retractors, buckles, front seat belt buckle assemblies, buckle support assemblies (slide bar-if equipped), shoulder belt height adjusters (if equipped), child safety seat tether bracket assemblies (if equipped), LATCH child seat tether anchors and lower anchors (if equipped), and attaching hardware, should be inspected after a collision. Ford recommends that all safety belt assemblies in use in

Seating and Safety Restraints

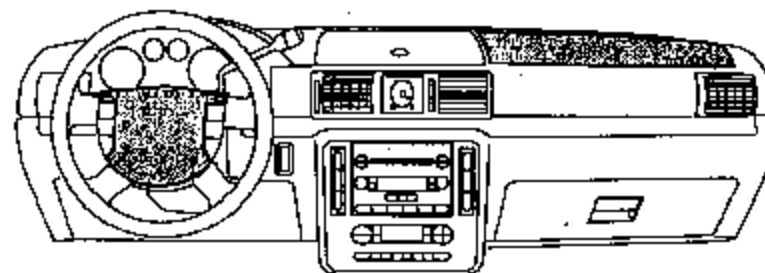
vehicles involved in a collision be replaced. However, if the collision was minor and a qualified technician finds that the belts do not show damage and continue to operate properly, they do not need to be replaced, except as described in the *Replacing the front seat belt assemblies after a collision* section of this chapter. Safety belt assemblies not in use during a collision should also be inspected and replaced if either damage or improper operation is noted.

Refer to *Interior* in the *Cleaning* chapter.

Replacing the front seat belt assemblies after a collision

The front outboard safety belt assemblies have a special energy management retractors designed to further reduce the risk of injury in the event of a head-on collision. These retractors should be replaced if they were used in any accident in which the front airbags deploy. If the safety belt assemblies are not replaced, there may be increased risk of injury in the event of a subsequent collision.

AIR BAG SUPPLEMENTAL RESTRAINT SYSTEM (SRS)



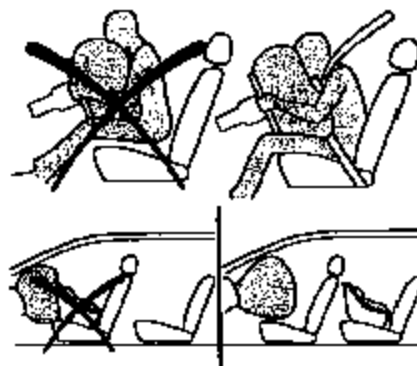
The air bag supplemental restraint system (SRS) is designed to work in conjunction with the safety belts to help protect the driver and front outboard passenger from certain upper body injuries. The term

Seating and Safety Restraints

"supplemental restraint" means the air bags are intended as a supplement to the safety belts. Air bags alone cannot protect as well as air bags plus safety belts in impacts for which the air bags are designed to deploy, and air bags do not offer any protection in crashes for which they do not deploy.

Important SRS precautions

The SRS is designed to work with the safety belt to help protect the driver and right front passenger from certain upper body injuries. Air bags DO NOT inflate slowly; there is a risk of injury from a deploying air bag.



⚠ All occupants of the vehicle, including the driver, should always wear their seat belts, even when an air bag supplemental restraint system (SRS) is provided.

⚠ Always transport children 12 years old and under in the back seat, and always properly use appropriate child restraints.

⚠ The National Highway Traffic Safety Administration (NHTSA) recommends a minimum distance of at least 26 in (10 inches) between an occupant's chest and the driver air bag module.

⚠ Never place your arm over the air bag module as a deploying air bag can result in serious arm fractures or other injuries.

To properly position yourself away from the air bag:

- Move your seat to the rear as far as you can while still reaching the pedals comfortably.
- Recline the seat slightly one or two degrees from the upright position.

Seating and Safety Restraints

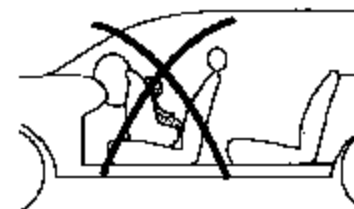
⚠ Do not put anything on or over the air bag module. Placing objects on or over the air bag inflation area may cause those objects to be propelled by the air bag into your face and torso causing serious injury.

⚠ Do not attempt to service, repair, or modify the air bag supplemental restraint systems or its fuses. See your Ford or Lincoln/Mercury dealer.

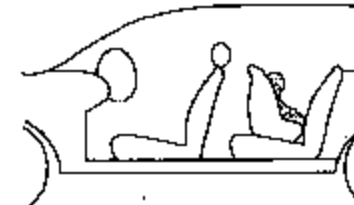
⚠ Modifying or adding equipment to the front end of the vehicle, including frame, bumper, front end body structure and hood, may affect the performance of the air bag system, increasing the risk of injury. Do not modify the front end of the vehicle.

Children and air bags

Children must always be properly restrained. Accident statistics suggest that children are safer when properly restrained in the rear seating positions than in the front seating position. Failure to follow these instructions may increase the risk of injury in a collision.



⚠ Air bags can kill or injure a child in a child seat. NEVER place a rear-facing child seat in front of an active air bag. If you must use a forward-facing child seat in the front seat, move the seat all the way back.



Determining if the system is operational

The supplemental restraint system uses a warning indicator in the instrument cluster or a back-up tone to indicate the condition of the system. Refer to the *Warning light* section in the *Instrument cluster* chapter. Routine maintenance of the air bag is not required.

Seating and Safety Restraints

A difficulty with the system is indicated by one or more of the following:

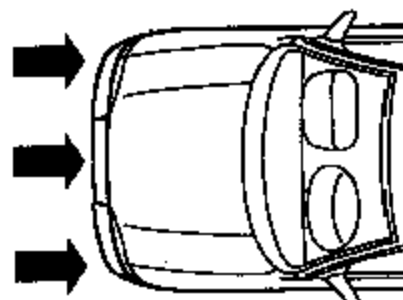
- The readiness light (same light for front and side air bag system) will either flash or stay lit.
- The readiness light will not illuminate immediately after ignition is turned on.
- A series of five beeps will be heard. The tone pattern will repeat periodically until the problem and/or light are repaired.



If any of these things happen, even intermittently, have the supplemental restraint system serviced at your dealership or by a qualified technician immediately. Unless serviced, the system may not function properly in the event of a collision.

How does the air bag supplemental restraint system work?

The air bag SRS is designed to activate when the vehicle sustains longitudinal deceleration sufficient to cause the sensors to close an electrical circuit that initiates air bag inflation. The fact that the air bags did not inflate in a collision does not mean that something is wrong with the system. Rather, it means the forces were not of the type sufficient to cause activation. Front air bags are designed to inflate in frontal and near-frontal collisions, not rollover, side-impact, or rear-impacts unless the collision causes sufficient longitudinal deceleration.



Seating and Safety Restraints

The air bags inflate and deflate rapidly upon activation. After air bag deployment, it is normal to notice a smoke-like, powdery residue or smell the burnt propellant. This may consist of cornstarch, talcum powder (to lubricate the bag) or sodium compounds (e.g., baking soda) that result from the combustion process that inflates the air bag. Small amounts of sodium hydroxide may be present which may irritate the skin and eyes, but none of the residue is toxic.



While the system is designed to help reduce serious injuries, contact with a deploying air bag may also cause abrasions, swelling or temporary hearing loss. Because air bags must inflate rapidly and with considerable force, there is the risk of death or serious injuries such as fractures, facial and eye injuries or internal injuries, particularly to occupants who are not properly restrained or are otherwise out of position at the time of air bag deployment. Thus, it is extremely important that occupants be properly restrained as far away from the air bag module as possible while maintaining vehicle control.

⚠️ Several air bag system components can fail after inflation. Do not touch them after inflation.

⚠️ If the air bag has deployed, the air bag will not function again and must be replaced immediately. If the air bag is not replaced, the air bags will increase the risk of injury in a collision.

The SRS consists of:

- driver and passenger air bag modules (which include the inflators and air bags).
- side air bags (if equipped). Refer to *Side air bag system* later in this chapter.
- one or more impact and sensing sensors.
- a readiness light and tone.

Seating and Safety Restraints

- diagnostic module.
- and the electrical wiring which connects the components.

The diagnostic module monitors its own internal circuits and the supplemental air bag electrical system wiring (including the impact sensors), the system wiring, the air bag system readiness light, the air bag back up power and the air bag ignitors.

Front passenger sensing system

The front passenger sensing system will turn off the front passenger's frontal air bag under certain conditions. The driver's air bag and side air bag are not part of the front passenger sensing system. The front passenger sensing system works with sensors that are part of the front passenger's seat and safety belt. The sensors are designed to detect the presence of a properly-seated occupant and determine if the front passenger's frontal air bag should be enabled (may inflate) or not.

The front passenger sensing system is designed to meet the regulatory requirements of Federal Motor Vehicle Safety Standard (FMVSS) 208 and is designed to turn off the front passenger's frontal air bag if:

- the front passenger seat is unoccupied,
- an infant or small child weighing less than 50 pounds (23 kg) is in the front seat, either in a child restraint, in a booster seat, or sitting directly on the vehicle seat,
- a front passenger takes his/her weight off the seat for a period of time

For larger children and very small adults, the passenger sensing system may leave the air bag system enabled, or turn it OFF. The occupant's seating position may determine whether or not the air bag is enabled.

Even with the front passenger sensing system, children 12 and under should be properly restrained in the back seat.

Seating and Safety Restraints

When the front passenger seat is occupied and the sensing system has turned off the passenger's frontal air bag, the "passenger airbag off" or "pass airbag off" indicator will light and stay lit to remind you that the front passenger frontal air bag is off. When the front passenger seat is not occupied (empty seat) or in the event that the front passenger frontal air bag is enabled (may inflate), the indicator light will be unlit.



The indicator light is located in the center stack of the instrument panel to the right of the radio.

The front passenger sensing system is designed to turn off the front passenger's frontal air bag when a rear facing infant seat, a forward-facing child restraint, or a booster seat is detected. If the child restraint has been installed and the indicator is not lit, then turn the vehicle off, remove the child restraint from the vehicle and reinstall the restraint following the child restraint manufacturer's directions.

The front passenger sensing system is designed to enable (may inflate) the right front passenger's frontal air bag anytime the system senses that a person of adult size is sitting properly in the front passenger seat. When the passenger sensing system has allowed the air bag to be enabled, the indicator will be unlit and stay unlit to remind you that the air bag is enabled (may inflate).

If a person of adult-size is sitting in the front passenger's seat, but the "passenger air bag off" or "pass air bag off" indicator is lit, it could be that the person isn't sitting properly in the seat. If this happens, turn the vehicle off and ask the person to place the seatback in the full upright position, then sit upright in the seat, centered on the seat cushion, with the person's legs comfortably extended. Restart the vehicle and have the person remain in this position for about two minutes. This will allow the system to detect that person and then enable the passenger's air bag. If the indicator lamp remains lit even after this, then the occupant should be advised to ride in the back seat.

After all occupants have adjusted their seats and put on safety belts, it's very important that they continue to sit upright, with their back against the seatback, with their feet comfortably extended on the floor while the vehicle is still in motion. Sitting improperly can increase the chance of injury in a crash event. For example, if an occupant slouches, lies down,

Seating and Safety Restraints

turns sideways, sits forward, leans forward or sideways, or puts one or both feet up, the chance of injury during a crash is greatly increased.



In case there is a problem with the passenger sensing system, the airbag readiness light in the instrument cluster will stay lit. Do NOT attempt to repair or service the system; take your vehicle immediately to the dealer.

If it is necessary to modify an advanced front air bag system to accommodate a person with disabilities, contact the Ford Customer Relationship Center at the phone number shown in the Customer Assistance section of this Owner's Guide.

Side air bag system (if equipped)

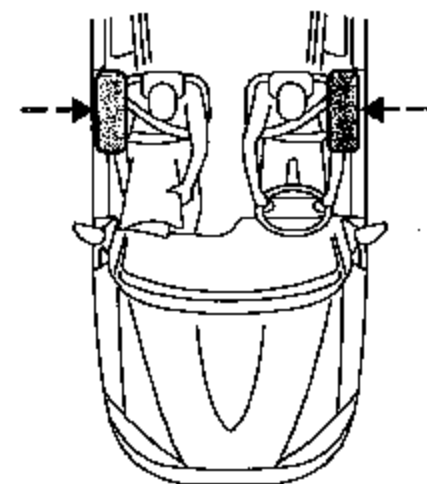


Seating and Safety Restraints

How does the side air bag system work?

The side air bag system consists of the following:

- An inflatable nylon bag (air bag) with a gas generator concealed behind the outboard bolster of the driver and front passenger seatbacks.
- A special seat cover designed to allow airbag deployment.
- The same readiness airbag light, electronic control and diagnostic unit as used for the front air bags.
- Two crash sensors located under the outboard side of the front seats, attached to the floor.



Side air bags, in combination with seat belts, can help reduce the risk of severe injuries in the event of a significant side impact collision.

The side air bags are fitted on the outboard side of the seatbacks of the front seats. In certain lateral collisions, the air bag on the side affected by the collision will be inflated, even if the respective seat is not occupied. The air bag was designed to inflate between the door panel and occupant to further enhance the protection provided occupants in side impact collisions.

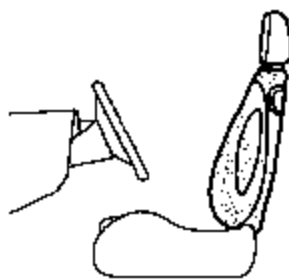
The air bag SRS is designed to activate when the vehicle sustains lateral deceleration sufficient to cause the sensors to close an electrical circuit that initiates air bag inflation.

The fact that the air bags did not inflate in a collision does not mean that something is wrong with the system. Rather, it means the forces were not of the type sufficient to cause activation. Side air bags are designed to inflate in side-impact collisions, not roll-over, rear-impact, frontal or near-frontal collisions, unless the collision causes sufficient lateral deceleration.



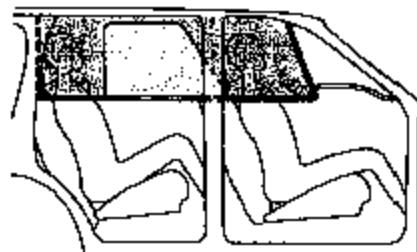
Seating and Safety Restraints

⚠ If the side air bag has deployed, the air bag will not function again. The side air bag system (including the seat) must be inspected and serviced by a qualified technician in accordance with the vehicle service manual. If the air bag is not replaced, the risk of injury in a collision will increase.



Safety Canopy[®] system (if equipped)

⚠ Do not place objects on the front safety seat or rear outboard seat. The Safety Canopy[®] system is designed to protect the rear outboard seat area. Placing objects on the seat or rear outboard seat may increase the risk of personal injury in the event of a collision.



⚠ Do not lean your head on the door. The Safety Canopy[®] could interfere with its deployment from the headliner.

⚠ Do not attempt to make repair or modify the Safety Canopy[®] system. The Safety Canopy[®] system is designed to deploy from the headliner on the rear outboard seat area. See your Ford or Lincoln dealer for more information.

⚠ All occupants of the vehicle including the driver should always wear their seat belts even when an air bag and Safety Canopy[®] system is provided.

Seating and Safety Restraints

⚠ To reduce risk of injury, do not obstruct or place objects in the deployment path of the inflatable Safety Canopy[®].

How does the Safety Canopy[®] system work?

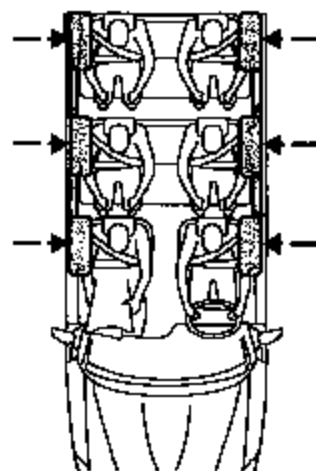
The design and development of the Safety Canopy[®] system included recommended testing procedures that were developed by a group of automotive safety experts known as the Side Air Bag Technical Working Group. These recommended testing procedures help reduce the risk of injuries related to the deployment of side airbags (including the Safety Canopy[®]).

The Safety Canopy[®] system consists of the following:

- An inflatable nylon curtain with a gas generator concealed behind the headliner and above the doors (one on each side of vehicle).
- A headliner designed to flex open above the side doors to allow Safety Canopy[®] deployment.
- The same readiness airbag light, electronic control and diagnostic unit as used for the front airbags.
- Two crash sensors mounted under the front seats (one on each side).
- Two crash sensors located at the c-pillar behind the rear doors (one on each side).
- Rollover sensor in the restraints control module (RCM).

The Safety Canopy[®] system, in combination with seat belts, can help reduce the risk of severe injuries in the event of a significant side impact collision or rollover event.

Children 12 years old and under should always be properly restrained in the second or third row seats. The Safety Canopy[®] will not interfere with children restrained using a properly installed child or booster seat because it is designed to inflate downward from the headliner above the doors along the side window opening.

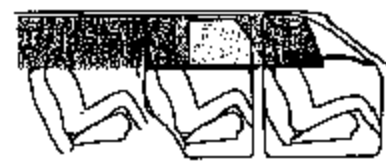
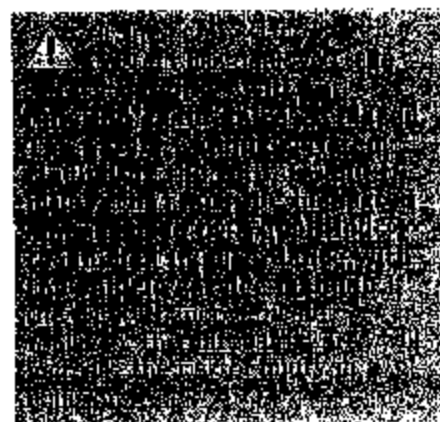


Seating and Safety Restraints

The Safety Canopy[®] system is designed to activate when the vehicle sustains lateral deceleration sufficient to cause the side crash sensor to close an electrical circuit that initiates Safety Canopy[®] inflation or when a certain likelihood of a rollover event is detected by the rollover sensor.

The Safety Canopy[®] is mounted to roof side-rail sheet metal, behind the headliner, along the entire side of the vehicle. In certain lateral collisions or rollover events, the Safety Canopy[®] system will be activated, regardless of which seats are occupied. In certain rollover events, the Safety Canopy[®] on both sides of the vehicle will be inflated, regardless of which seats are occupied. The Safety Canopy[®] is designed to inflate between the side window area and occupants to further enhance protection provided in side impact collisions and rollover events.

The fact that the Safety Canopy[®] did not activate in a collision does not mean that something is wrong with the system. Rather, it means the forces were not of the type sufficient to cause activation. The Safety Canopy[®] is designed to inflate in certain side impact collisions or rollover events, not in rear impact, frontal or near-frontal collisions, unless the collision causes sufficient lateral deceleration or rollover.



Seating and Safety Restraints

Determining if the system is operational

The SRS uses a readiness light in the instrument cluster or a tone to indicate the condition of the system. Refer to the *Air bag readiness* section in the *Instrument Cluster* chapter. Routine maintenance of the air bag is not required.

Any difficulty with the system is indicated by one or more of the following:

- The readiness airbag light (same light as for front air bag system) will either flash or stay lit.
- The readiness light will not illuminate immediately after ignition is turned on.
- A series of five beeps will be heard. The tone pattern will repeat periodically until the problem and light are repaired.

If any of these things happen, even intermittently, have the SRS serviced at your dealership or by a qualified technician immediately. Unless serviced, the system may not function properly in the event of a collision or rollover event.

Disposal of air bags and air bag equipped vehicles (including pretensioners)

See your local dealership or qualified technician. Air bags **MUST BE** disposed of by qualified personnel.

SAFETY RESTRAINTS FOR CHILDREN

See the following sections for directions on how to properly use safety restraints for children. Also see *Air bag supplemental restraint system (SRS)* in this chapter for special instructions about using air bags.

Important child restraint precautions

You are required by law to use safety restraints for children in the U.S. and Canada. If small children (generally children who are four years old or younger and who weigh 18 kg [40 lbs] or less) ride in your vehicle, you must put them in safety seats made especially for children. Many states require that children use approved booster seats until they are eight years old. Check your local and state or provincial laws for specific requirements regarding the safety of children in your vehicle. When possible, always place children under age 12 in the rear seat of your vehicle. Accident statistics suggest that children are safer when properly restrained in the rear seating positions than in the front seating position.

Seating and Safety Restraints



Always follow the instructions and warnings that come with any infant or child restraint you might use.

Children and safety belts

If the child is the proper size, restrain the child in a safety seat. Children who are too large for child safety seats (as specified by your child safety seat manufacturer) should always wear safety belts.

Follow all the important safety restraint and air bag precautions that apply to adult passengers in your vehicle.

If the shoulder belt portion of a combination lap and shoulder belt can be positioned so it does not cross or rest in front of the child's face or neck, the child should wear the lap and shoulder belt. Moving the child closer to the center of the vehicle may help provide a good shoulder belt fit.



Child booster seats

Children outgrow a typical convertible or toddler seat when they weigh 40 pounds and are around 4 years of age. Although the lap/shoulder belt will provide some protection, these children are still too small for lap/shoulder belts to fit properly, which could increase the risk of serious injury.

To improve the fit of both the lap and shoulder belt on children who have outgrown child safety seats, Ford Motor Company recommends use of a belt-positioning booster.

Booster seats position a child so that safety belts fit better. They lift the child up so that the lap belt rests low across the hips and the knees bend comfortably. Booster seats also make the shoulder belt fit better and more comfortably for growing children.

When children should use booster seats

Children need to use booster seats from the time they outgrow the toddler seat until they are big enough for the vehicle seat and lap/shoulder belt to fit properly. Generally this is when they weigh about 80 lbs (about 8 to 12 years old).

Seating and Safety Restraints

Booster seats should be used until you can answer YES to ALL of these questions:

- Can the child sit all the way back against the vehicle seat back with knees bent comfortably at the edge of the seat without slouching?



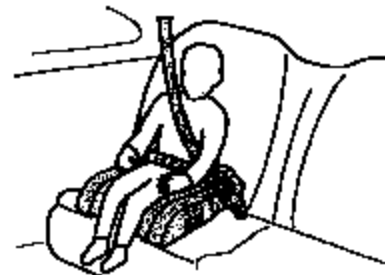
- Does the lap belt rest low across the hips?
- Is the shoulder belt centered on the shoulder and chest?
- Can the child stay seated like this for the whole trip?

Types of booster seats

There are two types of belt-positioning booster seats:

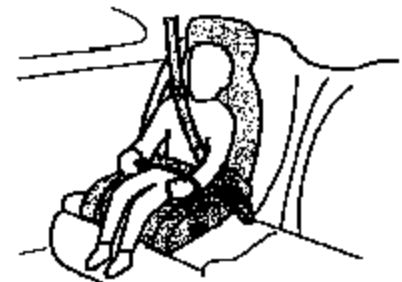
- Those that are backless.

If your backless booster seat has a removable shield, remove the shield and use the lap/shoulder belt. If a seating position has a low seat back and no head restraint, a backless booster seat may place your child's head (top of ear level) above the top of the seat. In this case, move the backless booster to another seating position with a higher seat back and lap/shoulder belts.



- Those with a high back.

If, with a backless booster seat, you cannot find a seating position that adequately supports your child's head, a high back booster seat would be a better choice.



Seating and Safety Restraints

Both can be used in any vehicle in a seating position equipped with lap/shoulder belts if your child is over 40 lbs.

The shoulder belt should cross the chest, resting snugly on the center of the shoulder. The lap belt should rest low and snug across the hips, never up high across the stomach.

If the booster seat slides on the vehicle seat, placing a rubberized mesh sold as shelf or carpet liner under the booster seat may improve this condition.

The importance of shoulder belts

Using a booster without a shoulder belt increases the risk of a child's head hitting a hard surface in a collision. For this reason, you should never use a booster seat with a lap belt only. It is best to use a booster seat with lap/shoulder belts in the back seat- the safest place for children to ride.



SAFETY SEATS FOR CHILDREN

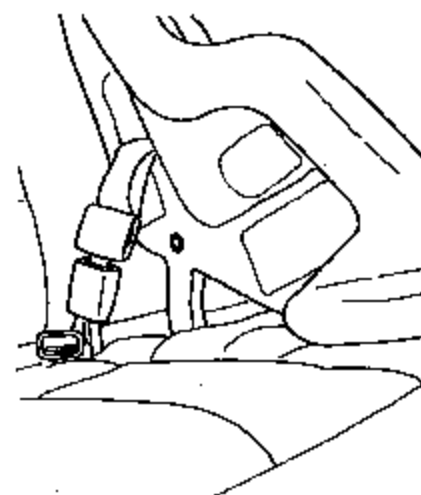
Child and infant or child safety seats

Use a safety seat that is recommended for the size and weight of the child. Carefully follow all of the manufacturer's instructions with the safety seat you put in your vehicle. If you do not install and use the safety seat properly, the child may be injured in a sudden stop or collision.

Seating and Safety Restraints

When installing a child safety seat:

- Review and follow the information presented in the *Air Bag Supplemental Restraint System* section in this chapter.
- Use the correct safety belt buckle for that seating position.
- Insert the belt tongue into the proper buckle until you hear a snap and feel it latch. Make sure the tongue is securely fastened in the buckle.
- Keep the buckle release button pointing up and away from the safety seat, with the tongue between the child seat and the release button, to prevent accidental unbuckling.
- Place seat back in upright position.
- LATCH lower anchors are recommended for use by children up to 22 kg (48 pounds) in a child restraint. Top tether anchors can be used for children up to 27 kg (60 pounds) in a child restraint, and to provide upper torso restraint for children up to 36 kg (80 pounds) using an upper torso harness and a belt-positioning booster.



Ford recommends the use of a child safety seat having a top tether strap. Install the child safety seat in a seating position with LATCH and tether anchors. For more information on top tether straps and anchors, refer to *Attaching safety seats with tether straps* in this chapter. For more information of LATCH anchors refer to *Attaching safety seats with LATCH (Lower Anchors and Tethers for Children) attachments* in this chapter.



Seating and Safety Restraints

Installing child safety seats with combination lap and shoulder belts

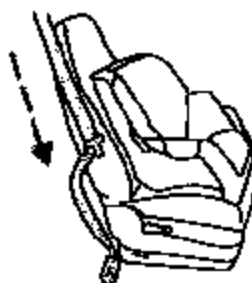
⚠ Air bags can kill or injure a child in a child seat. **NEVER** place a child in a child seat in front of an active air bag. If you must use a forward-facing child seat in the front seat, move the seat all the way back.

⚠ Children 12 and under should be properly restrained in the rear seat whenever possible.

1. Position the child safety seat in a seat with a combination lap and shoulder belt.

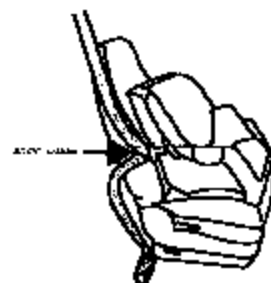
If you use the 3rd row center seat and the safety belt has been detached from the seat to carry large cargo, remove the safety belt from the stowage area on the ceiling and buckle the small tongue on the end of the belt to the mini-buckle on the left side of the center seat position.

2. Pull down on the shoulder belt and then grasp the shoulder belt and lap belt together.

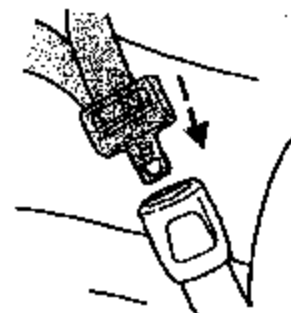


Seating and Safety Restraints

3. While holding the shoulder and lap belt portions together, route the tongue through the child seat according to the child seat manufacturer's instructions. Be sure the belt webbing is not twisted.



4. Insert the belt tongue into the proper buckle (the buckle closest to the direction the tongue is coming from) for that seating position until you hear a snap and feel the latch engage. Make sure the tongue is latched securely by pulling on it.



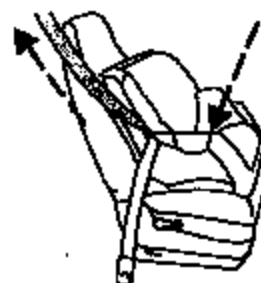
5. To put the retractor in the automatic locking mode, grasp the shoulder portion of the belt and pull downward until all of the belt is pulled out and a click is heard.



6. Allow the belt to retract. The belt will click as it retracts to indicate it is in the automatic locking mode.

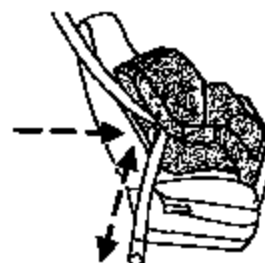
Seating and Safety Restraints

7. Pull the lap belt portion across the child seat toward the buckle and pull up on the shoulder belt while pushing down with your knee on the child seat.



8. Allow the safety belt to retract to remove any slack in the belt.

9. Before placing the child in the seat, forcibly move the seat forward and back to make sure the seat is securely held in place. To check this, grab the seat at the belt path and attempt to move it side to side and forward. There should be no more than one inch of movement for proper installation.



10. Try to pull the belt out of the retractor to make sure the retractor is in the automatic locking mode (you should not be able to pull more belt out). If the retractor is not locked, unbuckle the belt and repeat steps two through nine.

Check to make sure the child seat is properly secured before each use.

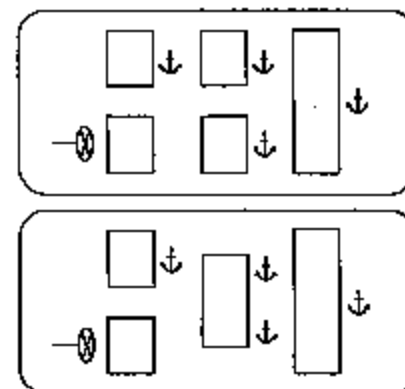
Attaching child safety seats with tether straps

Most new forward-facing child safety seats include a tether strap which goes over the back of the seat and hooks to an anchoring point. Tether straps are available as an accessory for many older safety seats. Contact the manufacturer of your child seat for information about ordering a tether strap.

Child seats should be placed in the rear in an appropriate child safety seat that is properly secured to the vehicle.

Seating and Safety Restraints

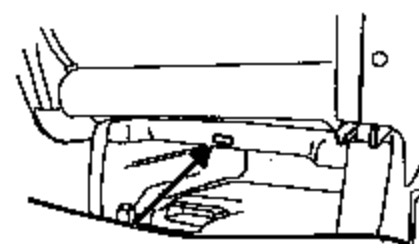
The tether anchors in your vehicle are in the positions shown:



The front passenger seat with power adjustment does not have a tether anchor. The two tether anchors on the back of the second row bench seat can be used either for child safety seats at the two seating positions, or either anchor can be used for a single LATCH child seat installed at the center of the bench seat.

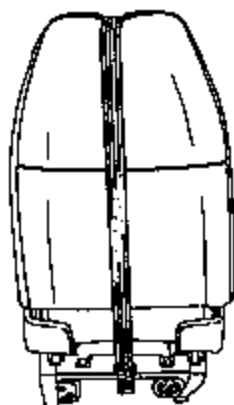
Front passenger seating position (manual adjusting seats only)

1. Position the child safety seat on the passenger seat cushion.

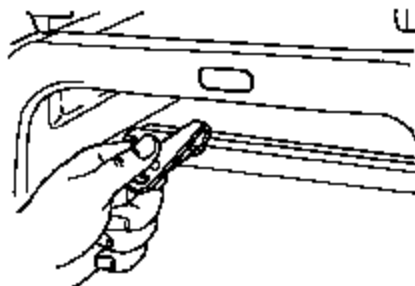


Seating and Safety Restraints

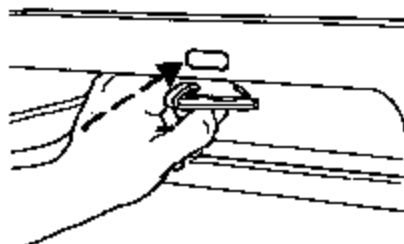
2. Route the child safety seat tether strap over the back of the seat. If the head restraint is adjustable, route the tether strap under the head restraint and between the head restraint posts. If the top of the safety seat hits the head restraint, raise the head restraint to let the child seat fit further rearward.



3. Grasp the tether strap and position it to the seat frame.

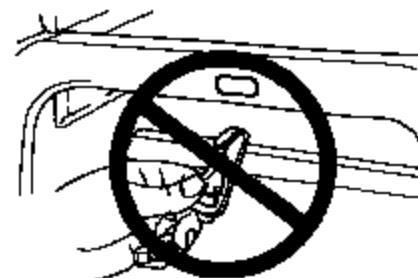


4. Rotate the tether hook, and clip the tether strap to the seat frame.



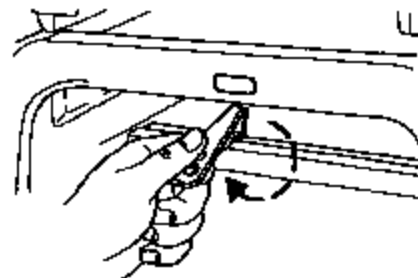
Seating and Safety Restraints

 If the tether strap is clipped incorrectly (as shown), the child safety seat may not be retained properly in the event of a collision.

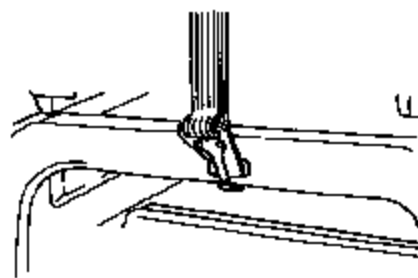


5. Rotate the tether strap clip.

6. Install the child safety seat tightly using the LATCH anchors or safety belts. Follow the instructions in this chapter.



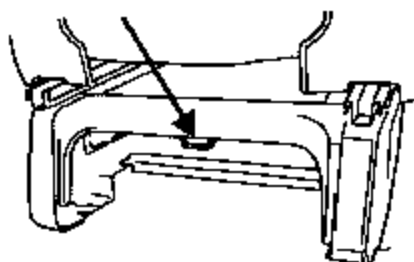
7. Tighten the child safety seat tether strap according to the manufacturer's instructions.



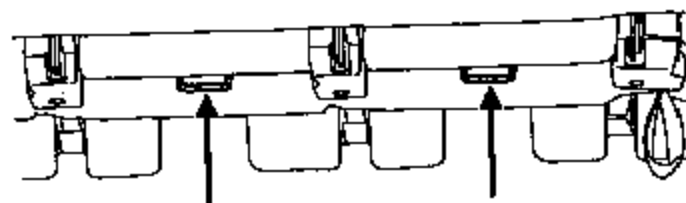
Rear seating positions

Follow steps 1-7 as described above for the following available seats:

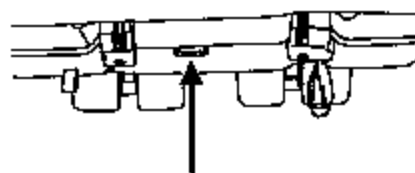
- 2nd row bucket



- 2nd row bench



- 3rd row bench



For additional important safety information on the proper use of safety belts, child seats and infant seats, please read the entire *Seating and safety restraints* chapter in this owner's guide.

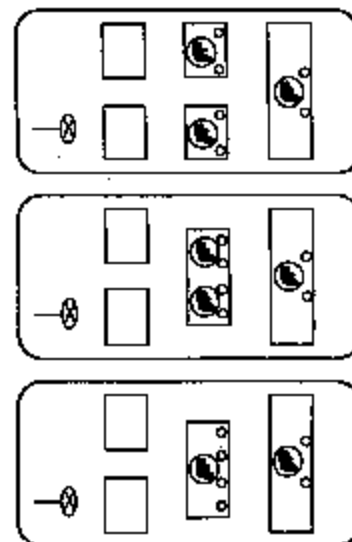
Attaching safety seats with LATCH (Lower Anchors and Tethers for Children) attachments for child seat anchors

New child safety seats have two rigid or webbing mounted attachments that connect to two anchors at certain seating positions in your vehicle. This type of child seat eliminates the need to use safety belts to attach the child seat. For forward-facing child seats, the tether strap must also be attached to the proper tether anchor. See *Attaching safety seats with tether straps* in this chapter.

Your vehicle has LATCH anchors for child seat installation at the seating positions marked with the child seat symbol.

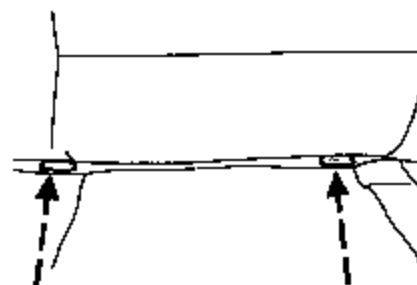
If your vehicle has a second row bench seat, one child seat can be placed in each outboard seating position, or one LATCH child seat can be placed in the center of the seat only. Please note that the center-only position does not have a separate tether anchor. Either of the outboard tether anchors may be used for the center position.

Do not use the two designated seating positions of the 2nd row bench when a LATCH child seat is installed at the center. A child seat will block access to the safety belt buckles.



Seating and Safety Restraints

The lower anchors for child seat installation are located at the rear section of the rear seat between the cushion and seat back.



Follow the child seat manufacturer's instructions to properly install a child seat with LATCH attachments.

⚠ Attach LATCH lower attachments of the child seat only to the anchors shown.

If you install a child seat with rigid LATCH attachments, do not tighten the tether strap enough to lift the child seat off the vehicle seat cushion when the child is seated in it. Keep the tether strap just snug without lifting the front of the child seat. Keeping the child seat just touching the vehicle seat gives the best protection in a severe crash. Adjusting the seat back angle may allow the tether strap to be tight without lifting the child seat.

Each time you use the safety seat, check that the seat is properly attached to the lower anchors and tether anchor. Try to tilt the child seat from side to side. Also try to tug the seat forward. Check to see if the anchors hold the seat in place.

⚠ If the safety seat is not anchored properly, the risk of a child being injured in a crash greatly increases.

Ford

FREESTAR

2004 FREESTAR S
7-PASSENGER
3.0L OHV EFI ENGINE
4 SPD AUTO O/D TRANSMISSION

VIN 2FMZA50684B **A66026**

EXTERIOR
VIBRANT WHITE CLEARCOAT
INTERIOR
FLINT CLOTH

STANDARD EQUIPMENT INCLUDED AT NO EXTRA CHARGE

- EXTERIOR**
- 17" STEEL WHEELS
 - POWER WINDOWS INCL. FLIP-OUTS
 - POWER LOCKS & MIRRORS
 - REAR WIPER WASHER/DEFROST
 - INTERVAL WIPERS
 - SPARE TIRE, MINI
 - BODY COLOR PAINTED BUMPERS
- INTERIOR**
- 3RD ROW STOW IN FLOOR
 - TRIAL DATE BENCH
 - DOAT FRONT CLOTH BUCKET
 - 2ND ROW 2-PASS BENCH
 - AIR VENT TO REAR W/ CLOTH
 - STORAGE BINS, CUP HOLDERS
 - TILT STEERING WHEEL
 - VANITY MIRRORS
 - FRONT & REAR FLOOR MATS

- FUNCTIONAL**
- FRONT WHEEL DRIVE
 - POWER RATIO MINION STEERING
 - FRONT INDEPENDENT MACPHERS
 - STEERING
 - BEAM, OPTIONAL BEAM W/ COIL
 - SPRINGS
 - POWER FRONT & REAR
 - LOCK ANTI-LOCK INTERVAL
 - LOCK ANTI-LOCK TANK
- SAFETY SECURITY**
- PERSONAL SAFETY SYSTEM
 - 4-WHEEL DISC BRAKES W/ ABS
 - LAUNCH CHILD SAFETY SYSTEM
 - SECURE LOCK SAFETY ANTI-LOCK
 - LOW FUEL WARNING SYSTEM
 - 5 MPH FRONT/REAR BUMPERS
 - WARRANTY
 - 24 HR. ROADSIDE ASSISTANCE

PRICE INFORMATION

STANDARD VEHICLE PRICE

\$23,915.00

INCLUDED ON THIS VEHICLE

- ORDER CODE 1108-FREESTAR S
- 3.0L RATIO REGULAR AXLE
- DOOR RIGHT HAND/LEFT HAND DOOR
- DUAL BUCKET SEATS
- 6.0 X 16" STEEL WHEELS

OPTIONAL EQUIPMENT

ORDERERS PACKAGE 50.00
2ND/3RD ROW PRIVACY GLASS 415.00
TOTAL VEHICLE & OPTIONS 24,360.00
DESTINATION & DELIVERY 685.00

CITY MPG

17

Actual mileage will vary with options, driving conditions, driving habits and vehicle condition. Results reported to EPA indicate that the capacity of vehicles with these estimates will achieve between 14 and 20 mpg in the city and between 17 and 27 mpg in the highway.



HIGHWAY MPG

23

For Comparison Shopping all vehicles classified in SPECIAL PURPOSE have been tested at same ratings ranging from 10 to 24 mpg city and 16 to 28 mpg highway.

2004 FREESTAR WAGON FWD, 3.0L ENGINE (FEEDBACK FUEL SYSTEM), 6 CYLINDERS, FUEL INJECTION, CATALYST, 4-SPEED AUTOMATIC. Estimated Annual Fuel Cost: \$1105

TROPHY CASE

**Ford's All-New Star
- The 2004 Freestar**

TOTAL MSRP

\$25,045.00

2FMZA50684BA66026



Ford Extended Service Plan is the ONLY service contract backed by Ford Motor Company and licensed by over 5,000 Ford and Lincoln Mercury dealers. Ask your dealer for price and additional details or see our website at www.ford-esp.com.

SEND TO
Graham Ford Inc
Columbus OH 43215

SHIP TO (IF OTHER THAN ABOVE)

SHIP THROUGH ITEM#: 47-1572 O/T 2

RECEIVED FROM DEALER VIN: 2FMZA50684BA66026

PHONE NO: 471 312

PLACE ADDRESS HERE: OAKVILLE

RAIL RF98

4A141 N RB 2X 435 000092 01 14 04

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S040428

Appendix D

Miscellaneous Test Information

Channel Report

04/28/2004 11:16:33 AM

Name of Test 040428-1

System K3600

Name of DAU DAU3

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range		Pol.	Cal.	Group	Mfg.	Model	
3000	EVENT	EVENT	EVENT		10.24	V	+	04/19/2004	OK	SLED	TRC	Event
3001	C15351	SLDXG	SLED G LONG.	Rear	199.58523	g	-	03/15/2004	OK	SLED	Endevco	7231C
3002	C15519	SLDXGR	SLED G LONG	Rear	200.05001	g	-	03/15/2004	OK	SLED	Endevco	7231C
3003	SLDXV	SLDXV	SLED VELOCITY		164.82632	km/h	-	07/31/2003	OK	SLED	TRC	SLDXV
3004	SLDXGT	SLDXGT	SLED TRIGGER/SLDXGT	Rear	189.76668	g	-	07/15/2003	OK	-1	Endevco	7231C
3005	P34003	LSXXG	RR SEAT X-MEMBER AT LT	FWD	200.25187	g	+	03/31/2004	OK	-1	Endevco	7264C-2K-2-180
3006	P33562	RSXXG	RR SEAT X-MEMBER AT RT	FWD	200.12977	g	+	03/31/2004	OK	-1	Endevco	7264C-2K-2-180
3007	P33833	TEXG	TOP OF ENGINE BLOCK	FWD	199.75966	g	+	03/31/2004	OK	-1	Endevco	7264C-2K-2-180
3008	P33526	RAXG	REAR AXLE	RR	199.56462	g	-	03/31/2004	OK	-1	Endevco	7264C-2K-2-180
3009	APDJ3	HBDXG1	Head Accel X	Rwd	400.74513	g	-	03/15/2004	OK	314n	Endevco	7231C
3012	1716A-1221-FX	NEKXF1	Neck Force X	Hd	8889.9769	N	-	03/15/2004	OK	314n	Denton	1716A
3013	1716A-1221-FY	NEKYF1	Neck Force Y	Hd	8898.2041	N	+	03/15/2004	OK	314n	Denton	1716A
3014	1716A-1221-FZ	NEKZF1	Neck Force Z	Hd	13342.680	N	+	03/15/2004	OK	314n	Denton	1716A
3015	1716A-1221-MX	NEKXM1	Neck Moment X	Rt Ear	283.08084	N-m	-	03/15/2004	OK	314n	Denton	1716A
3016	1716A-1221-MY	NEKYM1	Neck Moment Y	Chn	282.99444	N-m	+	03/15/2004	OK	314n	Denton	1716A
3017	1716A-1221-MZ	NEKZM1	Neck Moment Z	Chn	283.12378	N-m	+	03/15/2004	OK	314n	Denton	1716A
3018	C13010	CSTXG1	Chest Accel X	Fwd	400.88947	g	+	03/15/2004	OK	314n	Endevco	7231C
3019	C14563	CSTYG1	Chest Accel Y	Left	402.12687	g	-	03/15/2004	OK	314n	Endevco	7231C
3020	AD343	CSTZG1	Chest Accel Z	Down	400.49436	g	+	03/15/2004	OK	314n	Endevco	7231C
3021	14CB1-2847-041	CSTXD1	Chest Deflection X	Strnm	101.14479	mm	+	03/16/2004	OK	314n	Servo	14CB1-2847
3022	2430-962	LFMZP1	Left Femur Force Z 91	Knee	13340.907	N	+	03/15/2004	OK	314n	GSE	2430
3023	2430-982	RFMZP1	Right Femur Force Z 98	Knee	13342.089	N	+	03/15/2004	OK	314n	GSE	2430
3024	GB86	HBDXG2	Head Accel X	Rwd	399.01959	g	-	03/15/2004	OK	229n	Endevco	7231C
3025	GB77	HBDYG2	Head Accel Y	Lft	399.04914	g	-	03/15/2004	OK	229n	Endevco	7231C
3026	A54F	HBDZG2	Head Accel Z	Up	399.03359	g	-	03/15/2004	OK	229n	Endevco	7231C
3027	1716A-1222-FX	NEKXF2	Neck Force X	Hd	8901.8939	N	-	03/15/2004	OK	229n	Denton	1716A
3028	1716A-1222-FY	NEKYF2	Neck Force Y	Hd	8900.2923	N	+	03/15/2004	OK	229n	Denton	1716A
3029	1716A-1222-FZ	NEKZF2	Neck Force Z	Hd	13342.680	N	+	03/15/2004	OK	229n	Denton	1716A
3030	1716A-1222-MX	NEKXM2	Neck Moment X	Rt Ear	282.86519	N-m	-	03/15/2004	OK	229n	Denton	1716A
3031	1716A-1222-MY	NEKYM2	Neck Moment Y	Chn	283.04588	N-m	+	03/15/2004	OK	229n	Denton	1716A
3032	1716A-1222-MZ	NEKZM2	Neck Moment Z	Chn	282.70168	N-m	+	03/15/2004	OK	229n	Denton	1716A
3033	C14135	CSTXG2	Chest Accel X	Fwd	401.55917	g	+	03/15/2004	OK	229n	Endevco	7231C

Channel Report

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3034	A35D	CSTYG2	Chest Accel Y	Lft	399.67526	g	-	03/15/2004	OK	229n	Endevco	7231C
3035	AH5G8	CSTZG2	Chest Accel Z	Down	399.66902	g	+	03/15/2004	OK	229n	Endevco	7231C
3036	14CB1-2847-229	CSTXD2	Chest Deflection X	Strnm	99.901464	mm	+	03/16/2004	OK	229n	Servo	14CH1-2847
3037	2430-901	LFMZP2	Left Femur Force Z 603	Knee	13342.506	N	+	03/15/2004	OK	229n	GSE	2430
3038	2430-902	RFMZP2	Right Femur Force Z 744	Knee	13355.941	N	+	03/15/2004	OK	229n	GSE	2430
3039	AGHP8	HEDYG1	Head Accel Y	Left	400.51315	g	-	03/15/2004	OK	314n	Endevco	7231C
3040	APD60	HEDZG1	Head Accel Z	Up	399.51932	g	-	03/15/2004	OK	314n	Endevco	7231C

Digital and System Channel Report

2004-04-28 11:15:40

Name of Test 040428-1

System K3600

Name of DAU DAU3 descriptio

enable Channel
d
Yes 3500

Short Name

Type
dig0

Data File
DAT33500
Module Type
KM3650 Sequencer

bit position	bit	short	long	descriptio
MSB = bit 15	0			
bit 14	0			
bit 13	1	Switch	Backup Switch	
bit 12	1	ABEVT1	DRIV. PRI	
bit 11	1	ABEVT2	DRIV. SEC	
bit 10	1	ABEVT3	PASS. PRI	
bit 09	1	ABEVT4	PASS. SEC	
bit 08	0			
bit 07	0			
bit 06	0			
bit 05	0			
bit 04	0			
bit 03	0			
bit 02	0			
bit 01	0			
LSB = bit 00	0			

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Dummy	229n	Type	HYBRID III 50TH	Description	NHTSA - 229n HYBRID III 50TH CAL DUE 9-15-04 (DKS 3-15-04)J211						
Channel	Location	Model	Name	Manufacturer	Sens./mV/V/	Fullscal	Calcdat	Pos Output	Flip		
HEDXG	Head Accel X	7231C	GB86	Endevco	0.01959	g	750	3/15/2004	Rwd	1	
HEDYG	Head Accel Y	7231C	GB77	Endevco	0.01915	g	750	3/15/2004	Lft	1	
HEDZG	Head Accel Z	7231C	A54P	Endevco	0.01974	g	750	3/15/2004	Up	1	
NEKXF	Neck Force X	1716A	1716A-1222-PX	Denton	0.0001953	N	8896.4	3/15/2004	Hd Fd,Cat Rr	1	
NEKYF	Neck Force Y	1716A	1716A-1222-PY	Denton	0.0001908	N	8896.4	3/15/2004	Hd Lt,Cat Rt	0	
NBKZF	Neck Force Z	1716A	1716A-1222-PZ	Denton	0.0000998	N	13344.6	3/15/2004	Hd Up,Cat Dn	0	
NEKXM	Neck Moment X	1716A	1716A-1222-MX	Denton	0.0060842	N	282.5	3/15/2004	Rt Ear to Rt Shld	1	
NEKYM	Neck Moment Y	1716A	1716A-1222-MY	Denton	0.0039308	N	282.5	3/15/2004	Chr to Strmn	0	
NEKZM	Neck Moment Z	1716A	1716A-1222-MZ	Denton	0.0085028	N	282.5	3/15/2004	Chr to Lt Shld	0	
CSTXG	Chest Accel X	7231C	C14135	Endevco	0.02742	g	750	3/15/2004	Fwd	0	
CSTYG	Chest Accel Y	7231C	A35D	Endevco	0.01912	g	750	3/15/2004	Lft	1	
CSTZG	Chest Accel Z	7231C	AH5G8	Endevco	0.01941	g	750	3/15/2004	Down	0	
CSTXD	Chest Deflection X	14CB1-2847	14CB1-2847-229	Servo	1.1389	m	100	3/16/2004	Strmn Away Frm Spn	0	
LFMZF	Left Femur Force Z 603	2430	2430-901	GSE	0.0000708	N	13344.7	3/15/2004	Knee Fd,Pel Rr	0	
RFMZP	Right Femur Force Z 744	2430	2430-902	GSE	0.0000697	N	13344.7	3/16/2004	Knee Fd,Pel Rr	0	

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Dummy 314n Type HYBRID III 50TH Descriptio NHTSA - 314n HYBRID III 50TH. CAL DUE 9-15-04 (DKS 3-15-04)J211

Chsnum	Location	Model	Name	Manufacturer	Sens/m V/V/	Fullscal	Calidat	Pos Output	Flip
HEDXG	Head Accel X	7231C	APDJ3	Endevco	0.02012 g	750	3/15/2004	Rwd	1
HEDYG	Head Accel Y	7231C	AGHP8	Endevco	0.01908 g	750	3/15/2004	Left	1
HEDZG	Head Accel Z	7231C	APD60	Endevco	0.02067 g	750	3/15/2004	Up	1
NEKXF	Neck Force X	1716A	1716A-1221-FX	Denton	0.0001949 N	8896.4	3/15/2004	Hd Rd,Cst Rr	1
NEKYF	Neck Force Y	1716A	1716A-1221-FY	Denton	0.0001899 N	8896.4	3/15/2004	Hd Lt,Cst Rt	0
NEKZF	Neck Force Z	1716A	1716A-1221-FZ	Denton	0.0000998 N	13344.6	3/15/2004	Hd Up,Cst Dn	0
NEKXM	Neck Moment X	1716A	1716A-1221-MX	Denton	0.0060898 N-	282.5	3/15/2004	Rt Ear to Rt Shld	1
NEKYM	Neck Moment Y	1716A	1716A-1221-MY	Denton	0.0058741 N-	282.5	3/15/2004	Chr to Strum	0
NEKZM	Neck Moment Z	1716A	1716A-1221-MZ	Denton	0.0085101 N-	282.5	3/15/2004	Chr to Lt Shld	0
CSTXG	Chest Accel X	7231C	C13010	Endevco	0.02936 g	750	3/15/2004	Fwd	0
CSTYG	Chest Accel Y	7231C	C14563	Endevco	0.02961 g	750	3/15/2004	Left	1
CSTZG	Chest Accel Z	7231C	AD343	Endevco	0.01937 g	750	3/15/2004	Down	0
CSTXD	Chest Deflection X	14CB1-2847	14CB1-2847-041	Servo	1.1249 m	100	3/18/2004	Strum Away Frm Spn	0
LFMZP	Left Femur Force Z 91	2430	2430-962	GSE	0.0000694 N	13344.7	3/15/2004	Knee Fd,Pel Rr	0
RFMZP	Right Femur Force Z 98	2430	2430-982	GSE	0.0000678 N	13344.7	3/15/2004	Knee Fd,Pel Rr	0

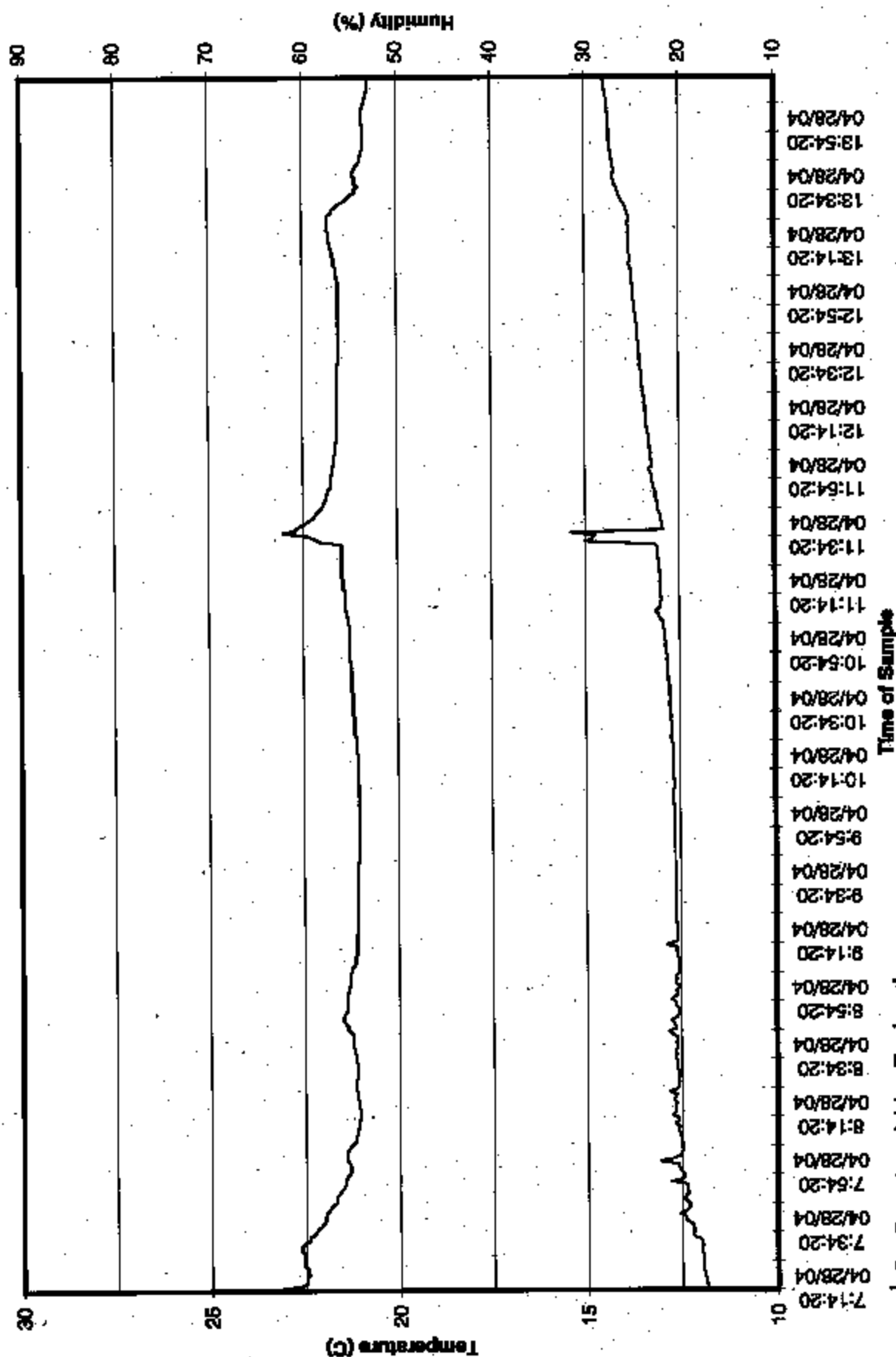
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Wednesday, April 28, 2004 314n

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C40209 2004 Ford Freestar S040428¹



¹ See Data Acquisition Explanations