636717
146717

Report Number: 208S-TRC-005

Vehicle Safety Compliance Testing for FMVSS 208
for Occupant Crash Protection
Sled Test

DaimlerChrysler Corporation

2003 Dodge Caravan

NHTSA Number: C30300

TRC Inc. Test Number: S030514

Transportation Research Center Inc.

10820 State Route 347

East Liberty, OH 43319

Test Date: May 14, 2003

Report Date: June 4, 2003

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

This Final Test Report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, under Contract No. DTNH22-98-D-01055.

This publication is distributed by the U. S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings, and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Test Performed By: Ron Stoner, Engineering Technician

Report Approved By:

Virginia L. Watters Date 6/3/03

Virginia L. Watters, Project Manager
Transportation Research Center Inc.

Final Report Accepted By:

Charles R Case Date 8/12/03

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

Technical Report Documentation Page

1. Report No. 208S-TRC-005	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle Final Report of FMVSS No. 208 Compliance Sled Testing of a 2003 Dodge Caravan NHTSA No. C30300		5. Report Date May 14, 2003 6. Performing Organization Code TRC
7. Author(s) Virginia L. Watters, Project Manager Transportation Research Center Inc.		8. Performing Organization Report No. 208S-TRC-005
9. Performing Organization Name and Address Transportation Research Center Inc. 10820 State Route 347 East Liberty, OH 43319		10. Work Unit No. 11. Contract or Grant No. DTNH22-98-D-01055
12. Sponsoring Agency Name and Address 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 6115 Washington, DC 20590		13. Type of Report and Period Covered Final Report May – June 2003 14. Sponsoring Agency Code NVS-220
15. Supplemental Notes None		

16. Abstract

An FMVSS 208 Section 13 compliance sled test was conducted on a 2003 Dodge Caravan MPV, NHTSA No.C30300, 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

17. Key Words Safety Engineering Compliance Sled Testing; FMVSS 208, "Occupant Crash Protection"	18. Distribution Statement Copies of this report are available from: NHTSA Technical Reference Division Room 5108 400 Seventh Street, S.W., NPO-230 Washington, DC 20590

19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. Number of Pages 198	22. Price

Form DOT F 1700.7 (8-72) Reproduction of completed page authorized

Table of Contents

List of Photographs

List of Photographs, Cont'd.

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. DTNH22-98-D-01055. The purpose of this test was to determine if the subject vehicle, a 2003 Dodge Caravan MPV, NHTSA No.C30300, 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 May 14, 2003.

The test vehicle, a 2003 Dodge Caravan MPV, NHTSA No. C30300, 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	163	336
Chest g	60 g	34.8	44.3
Chest Displacement	3 inches	2.0	0.5
Left Femur	2250 lbs	1184	1398
Right Femur	2250 lbs	966	1268[1]
Neck Extension	57 Nm	7.1	11.0
Neck Flexion	190 Nm	42.7	87.2
Neck Tension	3300 N	1245	398
Neck Compression	4000 N	201	3579
Neck Shear	3100 N	470	1230

The subject vehicle, a 2003 Dodge Caravan, NHTSA No. C30300, 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 17.5 g with an integrated velocity change of 29.5 mph. Both the primary and secondary stages of the air bags were triggered at 20.2 milliseconds 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 19.4 ms after the 0.5 g acceleration level was indicated.

[1] See Data Acquisition Explanations

Data Acquisition Explanations

The passenger dummy's right femur force channel, RFMZF2, went open at approximately 282 ms. The data recorded after 292 mss is not considered valid.

Sled Test Summary

NHTSA number:	C30300
Test type:	FMVSS 208 Sled Test
Test date:	05/14/03
Test time:	12:01
Ambient temperature at impact area:	70.6° F
Vehicle year/make/ model/body style:	2003/Dodge/Caravan/MPV

Dummy Info:	Driver #230	Front #314
Type:	Hybrid III 50th Male	Hybrid III 50th Male
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, sunvisor, head liner	Airbag, sunvisor, windshield, headrest
Chest:	Airbag	Airbag
Left knee:	Bolster	Glove Box
Right knee:	Bolster	Glove Box

General Test and Vehicle Parameter Data for the Sled Test Vehicle

Test Vehicle Information:

Vehicle year/make/ model/body style:	2003/Dodge/Caravan/MPV			
Color:	Silver			
VIN:	1D8GP25B13B137409			
NHTSA number:	C30300			
Engine data:				
Placement:	Transverse			
Cylinders:	4			
Displacement:	2.4			
Transmission data:	_3_speed,	__manual,	_X_automatic,	__overdrive
Final drive:	_X_fwd,	___rwd,	___4wd	
Date vehicle received:	04/11/2003			
Odometer reading:	148			
Dealer's name and address:	Jeff Wyler Chrysler-Plymouth-Jeep-Dodge 100 Alexandria Pike Ft. Thomas, KY 41075			

Major Options:

Power steering	Yes	Other: Latch-child seat anchor system, Easy-Out ® Rollerseats
Power brakes	Yes	
Power windows	No	
Air conditioning	Yes	
Power door locks	No	

Remarks:

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

Data from Vehicle's Certification Label:

Vehicle manufactured by:		DaimlerChrysler Corporation
Date of manufacture:		08/02
VIN:		1D8GP25B13B137409
GVWR:		5400 lbs
GAWR:	Front:	2850 lbs
	Rear:	2750 lbs

Data from Vehicle's Tire Placard:

Tire pressure with maximum capacity vehicle load:

Front:	44 psi
Rear:	44 psi
Recommended tire size:	215/70R15
Load index/speed rating:	98S

Recommended cold tire pressure:

Front:	36 psi
Rear:	36 psi
Size of tires on vehicle:	215/70R15
Spare tire:	T145/90D16

Vehicle capacity data:

Type of front seats: Bucket

Number of occupants: (from count of seatbelts)

Front	2
Mid	2
Rear	3
Total	7

Remarks: None

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

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

Right front	1061.5 lbs	Right rear	802.5 lbs
Left front	1164.0 lbs	Left rear	806.9 lbs
Total front weight	2225.5 lbs	(58.0% of total vehicle weight)	
Total rear weight	1609.4 lbs	(42.0% of total vehicle weight)	
Total delivered weight	3834.9 lbs		

Calculation of test vehicle's target test weight:

RCLW = Rated Cargo and Luggage Weight

UDW = Unloaded Delivered Weight (3834.9 lbs)

DSC = Designated Seating Capacity (7)

RCLW[1] = 300 lbs

Target test weight = UDW + RCLW[1] + (Number of Hybrid III dummies x 167 lbs per dummy)

Target test weight = 3834.9 + 300[1] + 334 = 4468.9 lbs

Weight of test vehicle with two dummies and 301.0 lb of cargo weight:

Right front	1139.8 lbs	Right rear	1048.3 lbs
Left front	1229.1 lbs	Left rear	1052.7 lbs
Total front weight	2368.9 lbs	(53.0% of total vehicle weight)	
Total rear weight	2101.0 lbs	(47.0% of total vehicle weight)	
Total test weight	4469.9 lbs		

Remarks:

Weight of ballast secured in vehicle cargo area: None

Components removed to meet target test weight: None

[1] RCLW is set at a maximum of 300 lbs. for target test weight determination.

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

Test Vehicle Attitude:

As delivered door sill angle: 1.7° Nose Down

As tested door sill angle: 0.9° Nose Down

Fully loaded door sill angle: 0.9° Nose Down

Vehicle Wheelbase: 113.3 inches

Fuel System Data:

Fuel system capacity from owner's manual: 20 gallons

Useable capacity figure furnished by COTR: 20 gallons

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

The left and right side measurements were 27.0 inches and 27.0 inches respectively.

Post-Impact Data

Test number:	S030514-1
NHTSA number:	C30300
Test date:	05/14/03
Test time:	12:01
Test type:	FMVSS 208 Sled Test
Impact angle:	0°
Ambient temperature at impact area:	70.6° F
Temperature in occupant compartment:	70.6° F

Sled carriage velocity:

Integrated velocity from the integration of the entire sled acceleration:	29.5 mph
Measured velocity from the light trap device attached to the sled (backup):	29.1 mph
Specified integrated velocity range:	28 to 30 mph

Sled carriage acceleration:

Acceleration:	17.5 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:	128.5 ms
Specified acceleration duration:	120 - 130 ms

The sled acceleration curve was within the specified corridor.

Seat and Steering Column Positioning Data

Vehicle: 2003/Dodge/Caravan/MPV NHTSA No.: C30300

Nominal Design Riding Position:

Driver Seat: Manual; seat back was set at 4° back from full upright. This measured 9.5° at the headrest.

Passenger Seat: Manual; seat back was set at 4° back from full upright. This measured 10.8° at the headrest.

Seat Fore and Aft Positions:

Driver Seat: Mid-position - manual adjustment; the seat was set in the 12th of 23 latch positions.

Passenger: Mid-position - manual adjustment; the seat was set in the 12th of 23 latch positions.

Steering Column Adjustments:

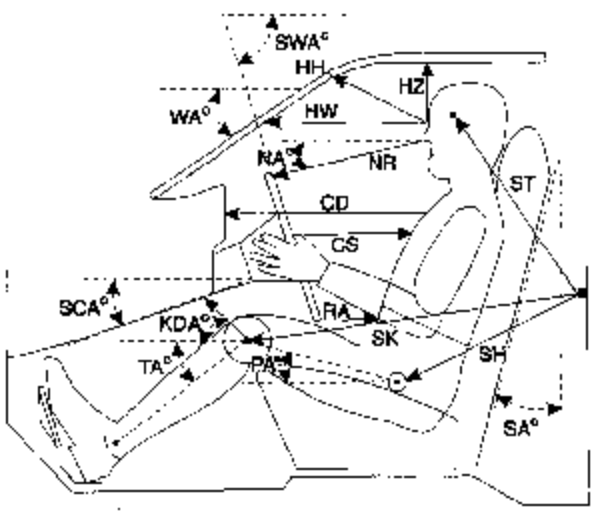
The steering column was not adjustable.

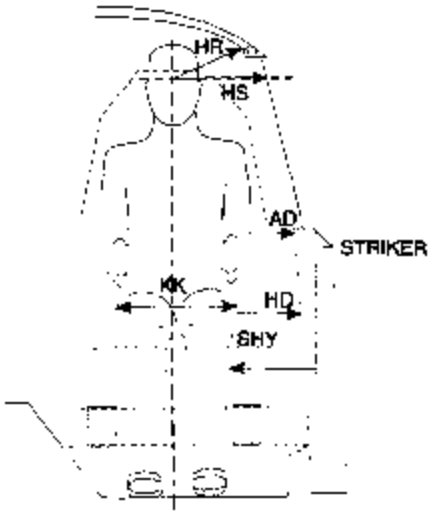
Dummy Measurement Data for Front Seat Occupants

Designation	Type of Measurement	Driver (Serial #230)	Passenger (Serial #314)
WA	Windshield angle	27.0°	N/A
SWA	Steering wheel angle	27.0°	N/A
SCA	Steering column angle	63.0°	N/A
SA	Seat back angle[1]	9.5°	10.8°
HZ	Head to roof	7.9 in	7.7 in
HH	Head to header	13.8 in	13.3 in
HW	Head to windshield	23.2 in	21.3 in
HR	Head to side header	9.8 in	9.1 in
NR	Nose to rim	15.9 in	N/A
NA	Nose to rim angle	13.6°	N/A
CD	Chest to dash	21.9 in	22.3 in
CS	Steering wheel to chest	10.6 in	N/A
RA	Rim to abdomen	7.0 in	N/A
KDL	Left knee to dash	6.2 in	7.6 in
KDR	Right knee to dash	7.9 in	7.4 in
KDA	Outboard knee to dash angle	62.6°	34.9°
PA	Pelvis angle	22.6°	22.3°
TA	Tibia angle	56.6°	55.8°
KK	Knee to knee	11.6 in	10.6 in
ST[2]	Striker to head	26.5 in	26.4 in
	Striker to head angle	81.1°	82.6°
SK[2]	Striker to knee	24.1 in	23.6 in
	Striker to knee angle	11.6°	10.7°
SH[2]	Striker to H-point	8.4 in	8.3 in
	Striker to H-point angle	-0.2°	-2.5°
SHY	Striker to H-point (Y dir.)	9.9 in	9.7 in
HS	Head to side window	14.4 in	13.2 in
HD	H-point to door	5.6 in	5.6 in
AD	Arm to door	6.0 in	5.5 in

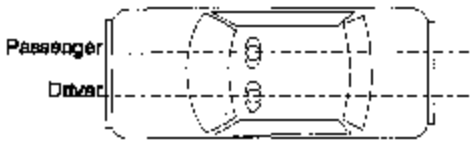
The seat back angle (SA°) is measured relative to vertical.
All other angles are measured relative to horizontal.
[1] Seat back angle measured on the headrest post.
[2] A negative angle indicates the measurement point was located below the striker.

Dummy Measurement Locations for Front Seat Occupants

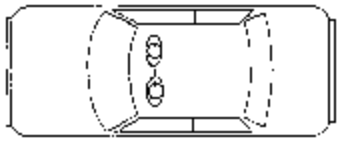




VERTICAL LONGITUDINAL PLANE



VERTICAL TRANSVERSE PLANE



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

*[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

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.

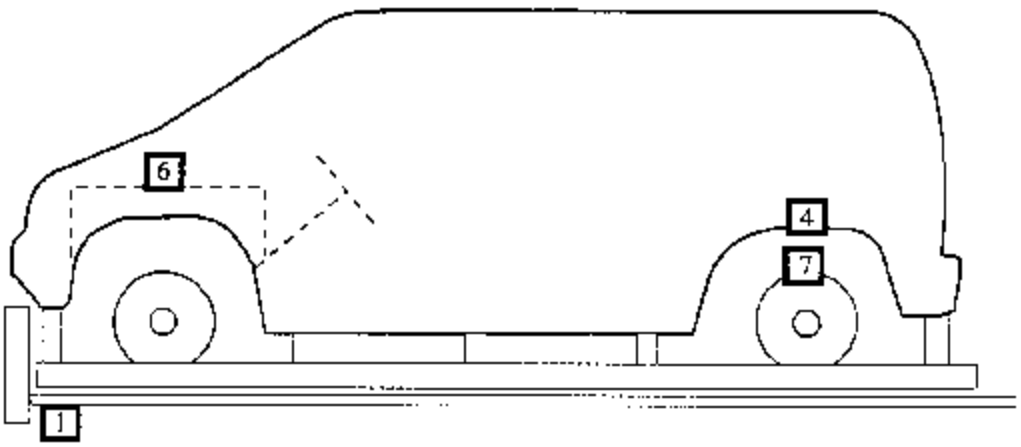
KDA Knee to Dash Angle, the angle that the measurement KD is taken at with respect to the horizontal. Only get this angle for the outboard knee. See diagram.

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

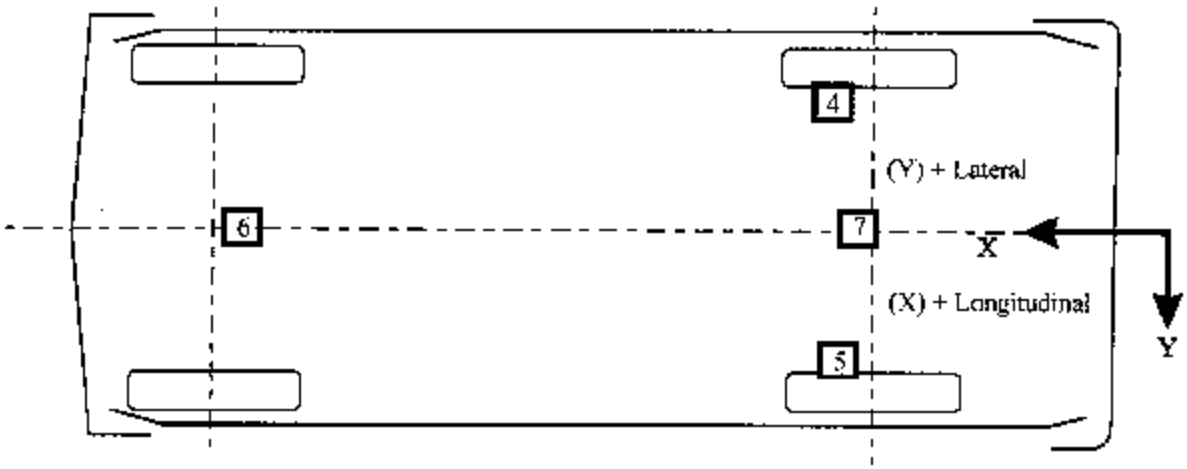
TA Tibia Angle, use a straight edge to connect the dummy's knee and ankle bolts. Then place an inclinometer on the straight edge and measure the angle with respect to the horizontal.

* Measurement used in Data Tape Reference Guide

Vehicle Accelerometer Placement



Side View



Bottom View

Vehicle Data Summary and Accelerometer Locations

TEST NUMBER: S030514 No. LOCATION	X	Y	Z	POSITIVE DIRECTION [1]		NEGATIVE DIRECTION [1]	
1 SLED ACCELERATION PRIMARY	165.6 in	-1.0 in	NA	0.4 g	@ 161.7 ms	17.5 g	@ 57.5 ms
2 SLED ACCELERATION BACKUP REDUNDANT	165.6 in	-1.0 in	NA	0.4 g	@ 159.9 ms	17.6 g	@ 57.5 ms
3 SLED VELOCITY	NA	NA	NA				
MEASURED				0.1 mph	@ 8.9 ms	29.1 mph	@ 135.0 ms
INTEGRATED [2]				---	---	29.5 mph	@ 136.7 ms
4 LEFT REAR SEAT CROSSMEMBER LONGITUDINAL	26.9 in	-16.1 in	NA	1.2 g	@ 128.4 ms	17.5 g	@ 59.8 ms
5 RIGHT REAR SEAT CROSSMEMBER LONGITUDINAL	26.8 in	16.1 in	NA	1.3 g	@ 128.5 ms	17.8 g	@ 54.7 ms
6 TOP ENGINE LONGITUDINAL	159.1 in	0.8 in	NA	2.3 g	@ 153.3 ms	19.2 g	@ 45.8 ms
7 REAR AXLE LONGITUDINAL	36.0 in	0.0 in	NA	0.8 g	@ 128.1 ms	17.5 g	@ 54.6 ms

Vehicle Data Summary and Accelerometer Locations, Cont'd.

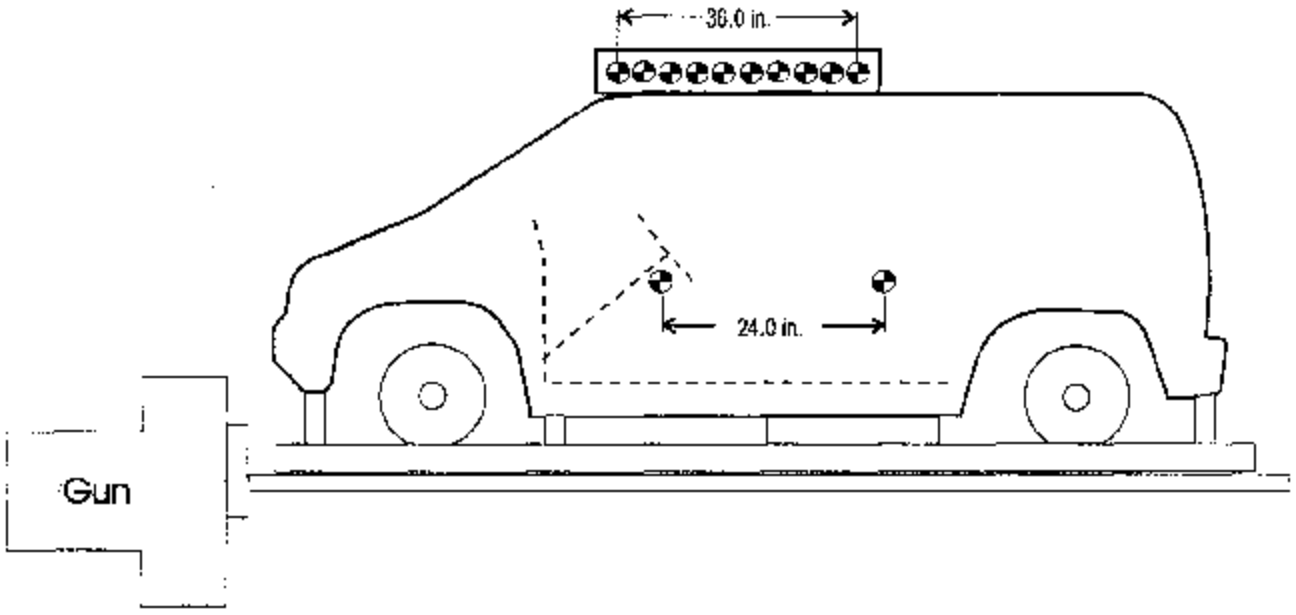
TEST NUMBER: S030514

No.	LOCATION	X	Y	Z	POSITIVE DIRECTION	NEGATIVE DIRECTION
8	DRIVER PRIMARY AIRBAG	NA	NA	NA		
	EVENT				1.0 volt @ 19.4 ms	
9	DRIVER SECONDARY AIRBAG	NA	NA	NA		
	EVENT				1.0 volt @ 19.4 ms	--- ---
10	PASSENGER PRIMARY AIRBAG	NA	NA	NA		
	EVENT				1.0 volt @ 19.4 ms	--- ---
11	PASSENGER SECONDARY AIRBAG	NA	NA	NA		
	EVENT				1.0 volt @ 19.4 ms	--- ---

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

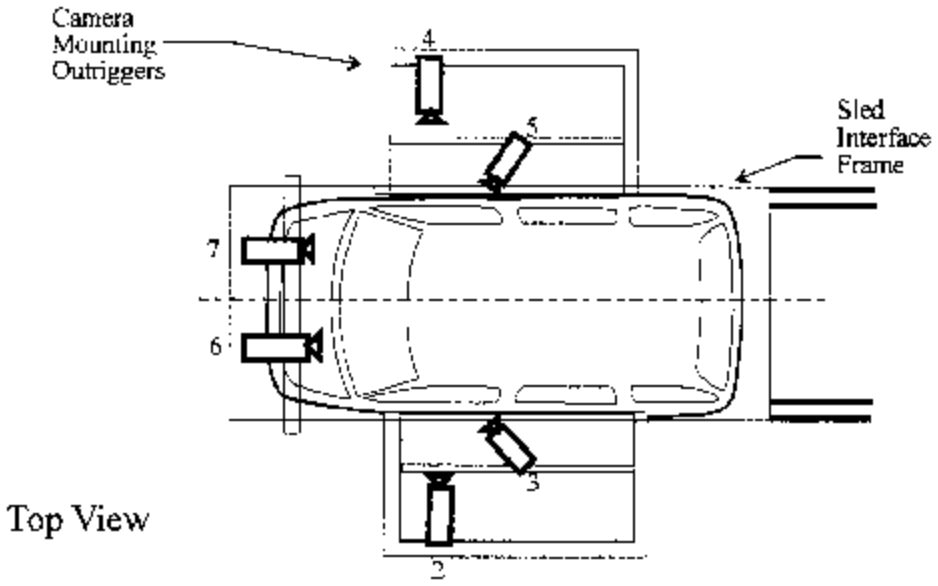
[1] Sign convention per SAEJ211 March 1995.
[2] No positive data in time frame of interest.

REFERENCE PHOTO TARGETS



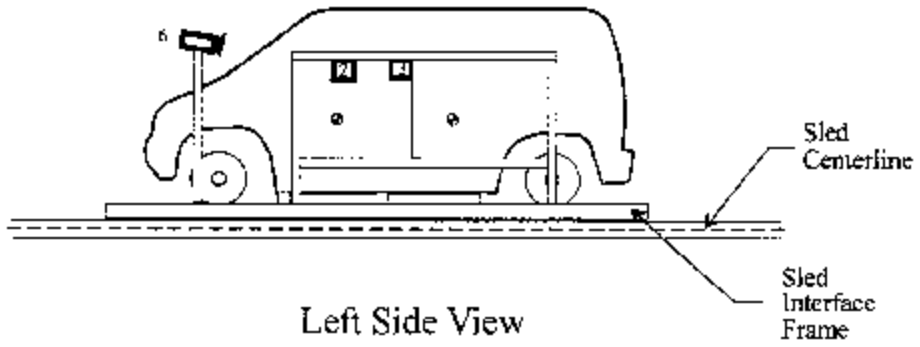
LEFT SIDE VIEW

Camera Positions



Top View

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



Left Side View

Motion Picture Camera Locations

Vehicle year/make/model/body style: 2003/Dodge/Caravan/MPV NHTSA No.: C30300 Test Number: S030514

Camera Number	View	Camera Positions[1] X	Y	Z	Camera Angle[2]	Film Plane to Head Target	Camera Lens	Film Speed
1	Real-time Pre-Doc./Panning	93.0 in	309.2 in	44.8 in	1.3°	292.3 in	Bolex	24 frames/s
2	Left side view wide	75.2 in	72.6 in	52.4 in	-8.8°	54.1 in	8 mm	1010 frames/s
3	Left side view over shoulder	97.4 in	50.6 in	58.9 in	15.8°	33.9 in	8 mm	1002 frames/s
4	Right side view wide	71.2 in	74.3 in	51.8 in	-3.8°	57.0 in	8 mm	990 frames/s
5	Right side view over shoulder	99.7 in	49.3 in	58.1 in	-12.6°	34.1 in	8 mm	992 frames/s
6	Left front view - driver	26.4 in	17.3 in	55.9 in	-1°	58.3 in	8 mm	997 frames/s
7	Right front view - passenger	26.5 in	16.9 in	56.4 in	-1°	58.3 in	Bolex	frames/s
8	Real-time Post-Doc.							

[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: 2003/Dodge/Caravan/MPV NHTSA No.: C30300 Date:05/14/03

Maximum Acceleration Values: (g)[1]	Driver Dummy #230	Passenger Dummy #314
Head Channel X	-28.1	-71.2
Head Channel Y	4.5	-72.8
Head Channel Z	23.8	-72.3
HEAD RESULTANT	36.4	120.2
Chest Channel X	-34.6	-38.8
Chest Channel Y	1.9	-4.5
Chest Channel Z	7.5	25.1
CHEST RESULTANT	35.2	46.2

Head Injury Criteria (HIC) Values:

HIC	163	336
t_1 = (ms)	90.00	98.08
t_2 = (ms)	126.00	116.08

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

Chest Injury Criteria (Clip) Values:

CLIP (g)	34.8	44.3
t_1 = (ms)	96.88	105.74
t_2 = (ms)	100.93	108.70
Chest Deflection (in)	2.0	0.5

[1] Sign convention per SAE J211, March 1995.

FMVSS 208 Occupant Injury Data. Cont'd.

Vehicle: 2003/Dodge/Caravan/MPV NHTSA No.: C30300 Date:05/14/03

Max. Compressive Femur Forces:	Driver Dummy #230	Passenger Dummy #314
Left Side (lbs)	1184	1398
Right Side (lbs)	966	1268[1]

Neck Injury Criteria:	Driver Dummy #230	Passenger Dummy #314
Peak Flexion Bending Moment (N-m)	42.7	87.2
Peak Extension Bending Moment (N-m)	7.1	11.0
Peak Axial Tension (N)	1245	398
Peak Axial Compression (N)	201	3579
Peak Positive X-axis Shear (N)	470	1230
Peak Negative X-axis Shear (N)	209	173

[1] See Data Acquisition Explanations

FMVSS 208 Seat Belt Warning System Check

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 04/23/2003

Complete the following to determine which seat belt warning system option (S7.3(a)(1) or S7.3(a)(2)) is used. (Manufacturers may use either option.)

A. With occupant in driver's position and lap belt in stowed position and ignition switch placed in "Start/On" position:

A.1 S7.3(a)(1)
Time duration of audible warning signal = 6 seconds
(4 to 8 seconds)

Time duration of reminder light operation = remains on
(no less than 60 seconds)

A.2 S7.3(a)(2)
Time duration of audible warning signal = seconds
(4 to 8 seconds) (see 49 USCS @ 30124)

Time duration of reminder light operation = seconds
(4 to 8 seconds)

B. With occupant in driver's position and lap belt in use and the ignition switch placed in "Start/On" position:

B.1 S7.3(a)(1)
Time duration of audible warning signal = seconds
(audible warning should not operate)

Time duration of reminder light operation = seconds
(reminder light does not operate)

B.2 S7.3(a)(2)
Time duration of audible warning signal = 0 seconds
(audible warning should not operate)

Time duration of reminder light operation = 6 seconds
(4 to 8 seconds)

C. Note wording of visual warning:
Fasten Seat Belt
Fasten Belt
Symbol 101 ☒

FMVSS 208 Readiness Indicator

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 04/23/2003

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).

Is the system totally mechanical? ☐ Yes; ☒ No

Describe the location of the readiness indicator: Upper right on instrument panel

Is the readiness indicator clearly visible to the driver? ☒ Yes; ☐ No

Is a list of the elements in the occupant restraint system, being monitored by the readiness indicator, provided? ☒ Yes; ☐ No

FMVSS 208 Air Bag Labels

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 04/23/2003

1. Air Bag Maintenance Label and Owner's Manual Instructions:

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 maintenance or replacement label?

☐ Yes-Pass ☐ **No-Fail**

1.3 Does the label contain one of the following? ☐ Yes-Pass ☐ **No-Fail**

☐ Schedule on label specifies month and year

☐ Schedule on label specifies vehicle mileage

☐ Schedule on label specifies interval measured from date on certification label

1.4 Is the label permanently affixed within the passenger compartment?

☐ 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 inch high?

☐ 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 ☐ **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 ☐ **No-Fail**

FMVSS 208 Air Bag Labels, Cont'd.

2.3 Include a statement that the air bag is a supplemental restraint at the front outboard seating positions? ☒ Yes ☐ **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 ☐ **No-Fail**

2.5 Provide any necessary precautions regarding the proper positioning of occupants, including children, at seating positions equipped with air bags to insure maximum safety protection for those occupants? ☒ Yes ☐ **No-Fail**

2.6 Explain that no objects should be place 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 ☐ **No-Fail**

3. Does the Vehicle:

3.1 Provide an automatic means to ensure that the air bag does not deploy when a child seat or child with a total mass of 30 kg or less is present on the front outboard seat? ☐ Yes ☒ No

3.2 Incorporate sensors, other than or in addition to weight sensors, which automatically prevent the passenger air bag from deploying in situations in which it might have an adverse effect on infants in rear-facing child seat, and unbelted or improperly belted children? ☐ Yes ☒ No

3.3 Have a passenger air bag designed to deploy in a manner that does not create a risk of serious injury to infants in rear-facing child seats, and unbelted or improperly belted children? ☐ Yes ☒ No

If yes to 3.1, or 3.2, or 3.3, the vehicle is not required to have a Sun Visor Warning Label (S4.5.1(b)), an air bag alert label (S4.5.1(c)) or a label on the dash (S4.5.1(e)) and **this check sheet is complete. (S4.5.1) If no to 3.1, 3.2, and 3.3, go to 4.**

4. Sun Visor Warning Label

4.1 Is the label permanently affixed (may be permanent marking or molding) to either side of the sun visor at each front outboard seating position with an air bag?

Driver side ☒ Yes-Pass ☐ **No-Fail**

Passenger side ☒ Yes-Pass ☐ **No-Fail**

4.2 Does the label conform in content **(vehicles without back seats may omit the statement: "The BACK SEAT is the SAFEST place for children.")** (S4.5.1(b)(2)(v)) to the label shown in either Figure 6a or 6b as appropriate at each front outboard seating position with an air bag? (S4.5.1(b)(2))

4.2.1 Dual air bags

Driver side ☒ Yes-Pass ☐ **No-Fail**

Passenger side ☒ Yes-Pass ☐ **No-Fail**

4.2.2 Vehicles with driver air bag ONLY - either 4.2.1 or 4.2.2 is applicable, not both. (S4.5.1(b)(2)(iv))

4.2.2.1 Does the label conform on content to the label shown in either Figure 6a or 6b as appropriate?

☒ N/A

Driver side ☐ Yes-Pass ☐ **No-Fail**

4.2.2.2 Does the label conform in content to the label shown in Figure 6a where the label can be modified to omit the pictogram and the message may read:

DEATH or SERIOUS INJURY can occur.

. Sit as far back as possible from the air bag.

. ALWAYS use SEAT BELTS and CHILD RESTRAINTS.

. The BACK SEAT is the SAFEST place for children.

☒ N/A

Driver side ☐ Yes-Pass ☐ **No-Fail**

SUN VISOR LABEL VISIBLE WHEN VISOR IS IN DOWN POSITION

LABEL OUTLINE, VERTICAL AND HORIZONTAL LINE BLACK

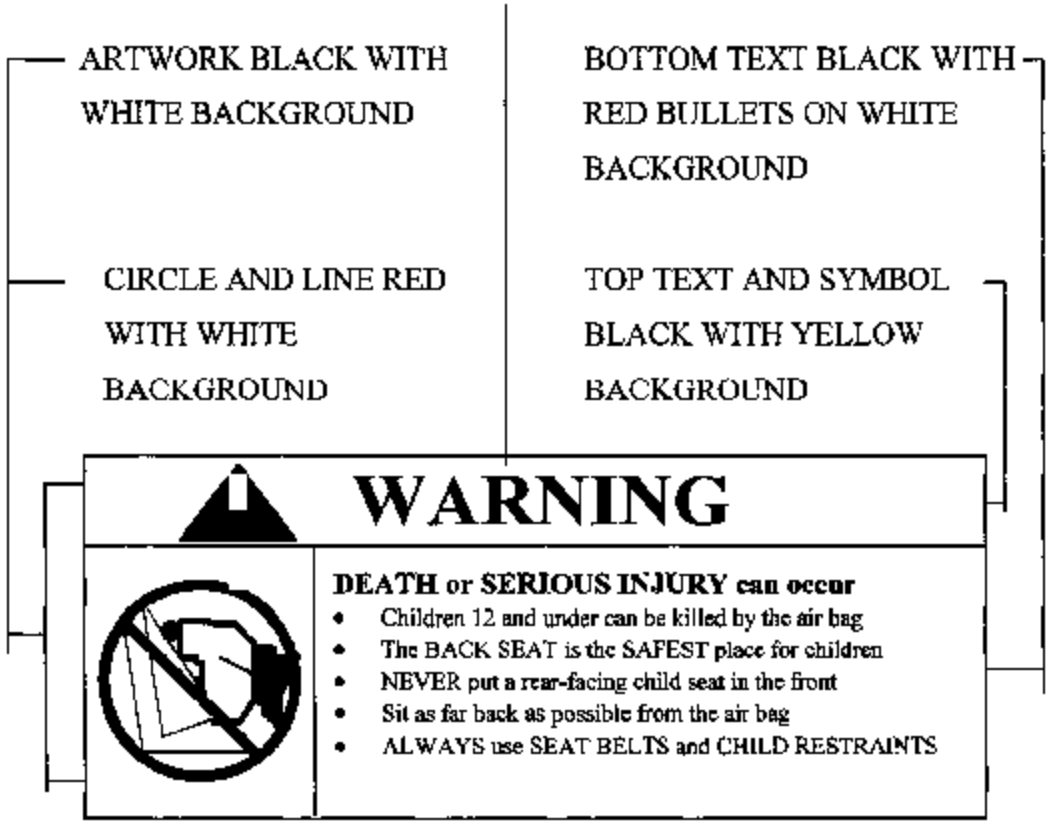


Figure 6a
(S4.5.1(b)(2))

SUN VISOR LABEL VISIBLE WHEN VISOR IS IN DOWN POSITION

LABEL OUTLINE, VERTICAL AND HORIZONTAL LINE BLACK

ARTWORK BLACK WITH WHITE BACKGROUND

BOTTOM TEXT BLACK WITH RED BULLETS ON WHITE BACKGROUND

CIRCLE AND LINE RED WITH WHITE BACKGROUND

TOP TEXT AND SYMBOL BLACK WITH YELLOW BACKGROUND

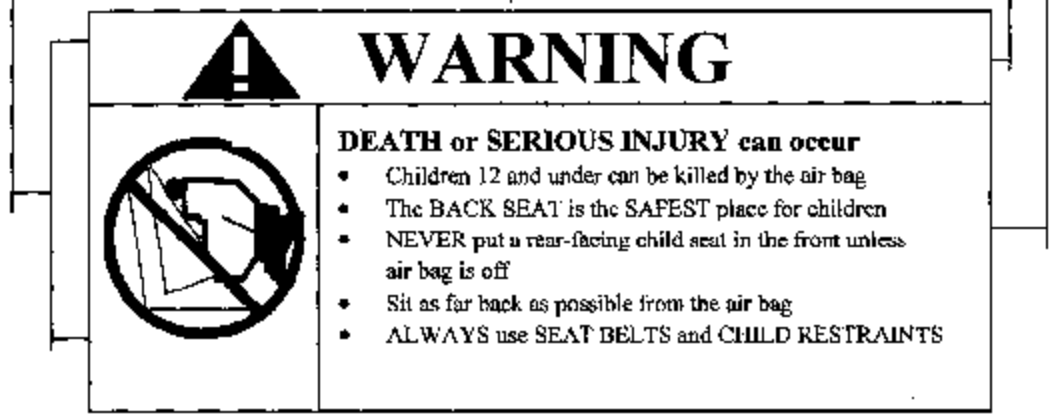


Figure 6b
(S4.5.1(b)(2))

4.3 Is the driver side 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**

4.4 Is the message white with black text? (S4.5.1 (b)(2)(ii))

Driver side		☒ Yes-Pass	☐ **No-Fail**
Passenger side	☐ No air bag	☒ Yes-Pass	☐ **No-Fail**

4.5 Is the message area at least 30 cm^2? (S4.5.1(b)(2)(ii))

Actual message area, driver side **32** cm^2

Actual message area, passenger side **32** cm^2

Driver side		☒ Yes-Pass	☐ **No-Fail**
Passenger side	☐ No air bag	☒ Yes-Pass	☐ **No-Fail**

FMVSS 208 Air Bag Labels, Cont'd.

4.6 Is the pictogram black with a red circle and slash on a white background? (S4.5.1(b)(2)(iii)) & (S4.5.1(b)(2)(iv))

For vehicles with driver side air bag ONLY			☐ N/A
Driver side		☒ Yes-Pass	☐ **No-Fail**
Passenger side	☐ No air bag	☒ Yes-Pass	☐ **No-Fail**

4.7 Is the pictogram at least 30 mm in diameter? (S4.5.1(b)(2)(iii))
Actual diameter, driver side **30** mm
Actual diameter, passenger side **30** mm

For vehicles with driver side air bag ONLY			☐ N/A
Driver side		☒ Yes-Pass	☐ **No-Fail**
Passenger side	☐ No air bag	☒ Yes-Pass	☐ **No-Fail**

4.8 Is the same side of the sun visor to which the sun visor label is affixed free of other information with the exception of an air bag maintenance label? (S4.5.1(b)(3)) and/or a rollover warning label specified in 49CFR Part 575 (S575.105)?

Driver side		☒ Yes-Pass	☐ **No-Fail**
Passenger side	☐ No air bag	☒ Yes-Pass	☐ **No-Fail**

4.9 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 or the utility vehicle label?

Driver side		☒ Yes-Pass	☐ **No-Fail**
Passenger side	☐ No air bag	☒ Yes-Pass	☐ **No-Fail**

5. Air Bag Alert Label

5.1 Is the Sun Visor Warning Label visible when the sun visor is in the stowed position?

Driver	☒ Yes	☐ No
Passenger	☒ Yes	☐ No

If yes, go to 6

5.2 Does the label conform in content to the label shown in Figure 6c? (S4.5.1(c)(2)) ☐ Yes-Pass ☐ **No-Fail**

SUN VISOR LABEL VISIBLE WHEN VISOR IS IN UP POSITION

Circle and Line Red with White Background

Artwork Black with White Background

Text Yellow with Black Background

Figure 6c
(S4.5.1(c)(2))

FMVSS 208 Air Bag Labels, Cont'd.

5.3 Is the message area black with yellow text? (S4.5.1(c)(2)(i))

☐ Yes-Pass ☐ **No-Fail**

5.4 Is the message area at least 20 cm^2? (S4.5.1(c)(2)(i))

Actual message area **N/A** cm^2 ☐ Yes-Pass ☐ **No-Fail**

5.5 Is the pictogram black with a red circle and slash on a white background? (S4.5.1(c)(2)(ii))

For vehicles with driver side air bag ONLY ☐ N/A

☐ Yes-Pass ☐ **No-Fail**

5.6 Is the pictogram at least 20 mm in diameter? (S4.5.1(c)(2)(ii))

Actual diameter is **N/A** mm

For vehicles with driver side air bag ONLY ☐ N/A

☐ Yes-Pass ☐ **No-Fail**

6. Label On the Dash

6.1 Does the vehicle have a passenger air bag?

☒ Yes ☐ No

If no, this checklist is complete.

6.2 Does the vehicle have a label on the dash or steering wheel hub? (S4.5.1(c))

☒ Yes-Pass ☐ **No-Fail**

6.3 Does the label conform in content (**vehicles without back seats may omit the statement: "The back seat is the safest place for children 12 and under."**) (S4.5.1(e)(iii)) to the label shown in Figure 7? (S4.5.1(e))

☒ Yes-Pass ☐ **No-Fail**

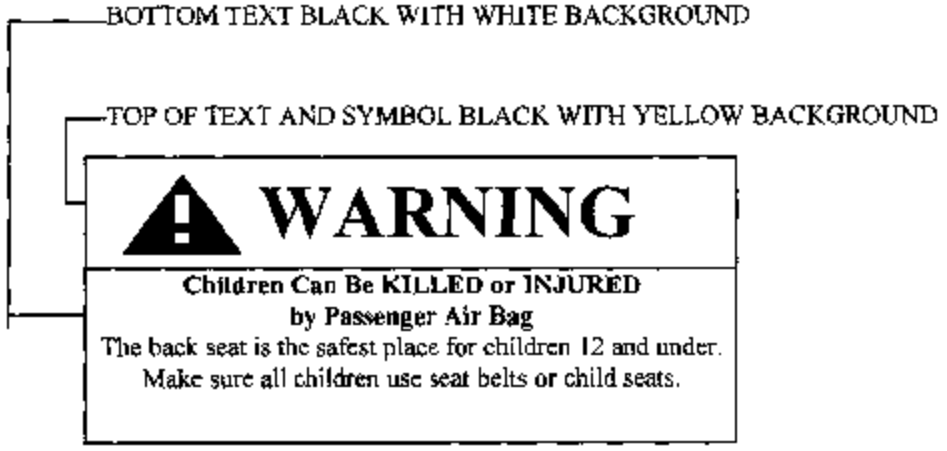


Figure 7
(S4.5.1(e))

FMVSS 208 Air Bag Labels, Cont'd.

6.4 Is the heading area yellow with the word "warning" and the alert symbol in black? (S4.5.1(e)(i)) ☒ Yes-Pass ☐ **No-Fail**

6.5 Is the message white with black text? (S4.5.1(e)(ii))

☒ Yes-Pass ☐ **No-Fail**

6.6 Is the message area at least 30 cm^2? (S4.5.1(e)(ii))

Actual message area **32.9** cm^2 ☒ Yes-Pass ☐ **No-Fail**

FMVSS 208 Rear Outboard Seating Position Seat Belts

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 05/14/03

Do all rear outboard seating positions have type 2 seat belts?

☒ Yes; ☐ No; ☐ N/A (No Back Seat)

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

N/A

FMVSS 208 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 with forward-facing seats, other than the driver's seat, or seats that can be adjusted to forward-facing **and** that has seat belt retractors that are not automatic retractors. (S7.1.1.5(c))

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 05/13/2003

Designated Seating Position: Front Passenger

☒1. Record test seat position: Mid
(S7.1.1.5(c)(1)) (Any position is acceptable.)

☒2. Buckle the seat belt. (S7.1.1.5(c)(1))

☒3. Complete any procedures recommended in the vehicle owner's manual to activate any locking feature. (S7.1.1.5(c)(1))

☒4. 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 to the vehicle? (S7.1.1.5(a)) ☒ Yes-Pass ☐ **No-Fail**

☒5. 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**

☒6. 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?

If yes, go to 6.1. If no, go to 7. ☒ Yes ☐ No

6.1 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**

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 05/13/2003

Designated Seating Position: Front Passenger

☒7. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

☒8. 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))

☒9. 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))

☒10. 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 **72.0** inches.

☒11. 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))

☒12. 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)

☒13. 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 **46.3** inches.

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 05/13/2003

Designated Seating Position: Front Passenger

☒14. 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** lbs/sec (spec. 10 ~50 lb/sec)

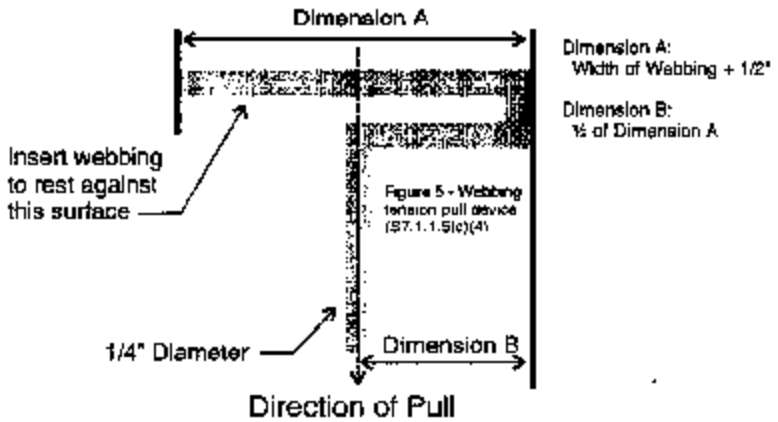
The measured distance between A and B is **46.7** inches (S7.1.1.5(c)(6))

☒15. Subtract the measurement in 13 from the measurement in 14. Is the difference 2 inches or less? (S7.1.1.5 (c)(7))

14-13= **0.4** inches ☒ Yes-Pass ☐ **No-Fail**

☒16. Subtract the measurement in 14 from the measurement in 10. Is the difference 3 inches or more? (S7.1.1.5(c)(8))

10-14= **25.3** inches. ☒ Yes-Pass ☐ **No-Fail**



FMVSS 208 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 with forward-facing seats, other than the driver's seat, or seats that can be adjusted to forward-facing **and** that has seat belt retractors that are not automatic retractors. (S7.1.1.5(c))

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 05/13/2003

Designated Seating Position: 2nd Row Left

☒1. Record test seat position: Fixed (S7.1.1.5(c)(1)) (Any position is acceptable.)

☒2. Buckle the seat belt. (S7.1.1.5(c)(1))

☒3. Complete any procedures recommended in the vehicle owner's manual to activate any locking feature. (S7.1.1.5(c)(1))

☒4. 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 to the vehicle? (S7.1.1.5(a)) ☒ Yes-Pass ☐ **No-Fail**

☒5. 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**

☒6. 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?

If yes, go to 6.1. If no, go to 7. ☒ Yes ☐ No

6.1 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**

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 05/13/2003

Designated Seating Position: 2nd Row Left

☒7. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

☒8. 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))

☒9. 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))

☒10. 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 **89.4** inches.

☒11. 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))

☒12. 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)

☒13. 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 **39.8** inches.

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 05/13/2003

Designated Seating Position: 2nd Row Left

☒14. 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** lbs/sec (spec. 10 ~50 lb/sec)

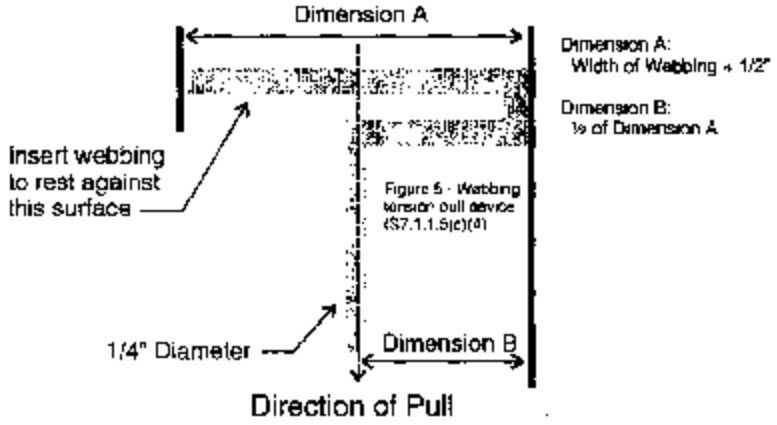
The measured distance between A and B is **40.2** inches (S7.1.1.5(c)(6))

☒15. Subtract the measurement in 13 from the measurement in 14. Is the difference 2 inches or less? (S7.1.1.5 (c)(7))

14-13= **0.4** inches ☒ Yes-Pass ☐ **No-Fail**

☒16. Subtract the measurement in 14 from the measurement in 10. Is the difference 3 inches or more? (S7.1.1.5(c)(8))

10-14= **49.2** inches. ☒ Yes-Pass ☐ **No-Fail**



FMVSS 208 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 with forward-facing seats, other than the driver's seat, or seats that can be adjusted to forward-facing **and** that has seat belt retractors that are not automatic retractors. (S7.1.1.5(c))

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 05/13/2003

Designated Seating Position: 2nd Row Right

☒1. Record test seat position: Fixed (S7.1.1.5(c)(1)) (Any position is acceptable.)

☒2. Buckle the seat belt. (S7.1.1.5(c)(1))

☒3. Complete any procedures recommended in the vehicle owner's manual to activate any locking feature. (S7.1.1.5(c)(1))

☒4. 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 to the vehicle? (S7.1.1.5(a)) ☒ Yes-Pass ☐ **No-Fail**

☒5. 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**

☒6. 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?

If yes, go to 6.1. If no, go to 7. ☒ Yes ☐ No

6.1 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**

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 05/13/2003

Designated Seating Position: 2nd Row Right

☒7. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

☒8. 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))

☒9. 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))

☒10. 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 **77.2** inches.

☒11. 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))

☒12. 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)

☒13. 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 **47.8** inches.

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 05/13/2003

Designated Seating Position: 2nd Row Right

☒14. 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** lbs/sec (spec. 10 ~50 lb/sec)

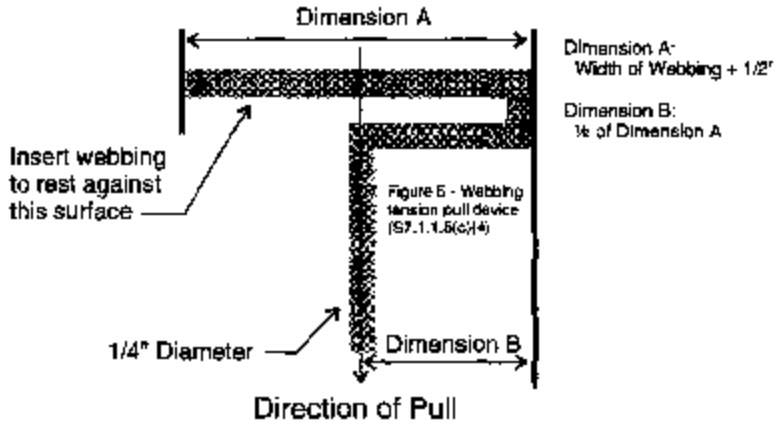
The measured distance between A and B is **48.0** inches (S7.1.1.5(c)(6))

☒15. Subtract the measurement in 13 from the measurement in 14. Is the difference 2 inches or less? (S7.1.1.5 (c)(7))

14-13= **0.2** inches ☒ Yes-Pass ☐ **No-Fail**

☒16. Subtract the measurement in 14 from the measurement in 10. Is the difference 3 inches or more? (S7.1.1.5(c)(8))

10-14= **29.2** inches. ☒ Yes-Pass ☐ **No-Fail**



FMVSS 208 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 with forward-facing seats, other than the driver's seat, or seats that can be adjusted to forward-facing **and** that has seat belt retractors that are not automatic retractors. (S7.1.1.5(c))

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 05/13/2003

Designated Seating Position: 3rd Row Left

☒1. Record test seat position: Fixed (S7.1.1.5(c)(1)) (Any position is acceptable.)

☒2. Buckle the seat belt. (S7.1.1.5(c)(1))

☒3. Complete any procedures recommended in the vehicle owner's manual to activate any locking feature. (S7.1.1.5(c)(1))

☒4. 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 to the vehicle? (S7.1.1.5(a)) ☒ Yes-Pass ☐ **No-Fail**

☒5. 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**

☒6. 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?

If yes, go to 6.1. If no, go to 7. ☒ Yes ☐ No

6.1 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**

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 05/13/2003

Designated Seating Position: 3rd Row Left

☒7. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

☒8. 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))

☒9. 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))

☒10. 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 **78.9** inches.

☒11. 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))

☒12. 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)

☒13. 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 **40.2** inches.

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 05/13/2003

Designated Seating Position: 3rd Row Left

☒14. 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** lbs/sec (spec. 10 ~50 lb/sec)

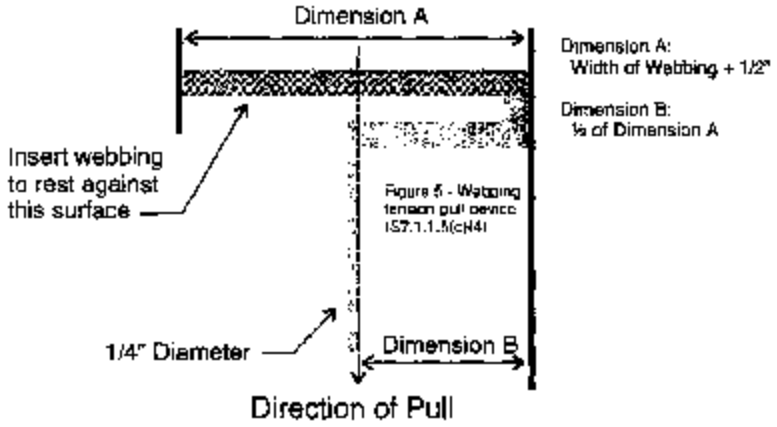
The measured distance between A and B is **40.5** inches (S7.1.1.5(c)(6))

☒15. Subtract the measurement in 13 from the measurement in 14. Is the difference 2 inches or less? (S7.1.1.5 (c)(7))

14-13= **0.3** inches ☒Yes-Pass ☐**No-Fail**

☒16. Subtract the measurement in 14 from the measurement in 10. Is the difference 3 inches or more? (S7.1.1.5(c)(8))

10-14= **38.4** inches. ☒Yes-Pass ☐**No-Fail**



FMVSS 208 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 with forward-facing seats, other than the driver's seat, or seats that can be adjusted to forward-facing **and** that has seat belt retractors that are not automatic retractors. (S7.1.1.5(c))

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 05/13/2003

Designated Seating Position: 3rd Row Right

☒1. Record test seat position: Fixed (S7.1.1.5(c)(1)) (Any position is acceptable.)

☒2. Buckle the seat belt. (S7.1.1.5(c)(1))

☒3. Complete any procedures recommended in the vehicle owner's manual to activate any locking feature. (S7.1.1.5(c)(1))

☒4. 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 to the vehicle? (S7.1.1.5(a)) ☒ Yes-Pass ☐ **No-Fail**

☒5. 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**

☒6. 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?

If yes, go to 6.1. If no, go to 7. ☒ Yes ☐ No

6.1 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**

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 05/13/2003

Designated Seating Position: 3rd Row Right

☒7. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

☒8. 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))

☒9. 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))

☒10. 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 **80.7** inches.

☒11. 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))

☒12. 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)

☒13. 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 **40.9** inches.

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 05/13/2003

Designated Seating Position: 3rd Row Right

☒ 14. 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** lbs/sec (spec. 10 ~50 lb/sec)

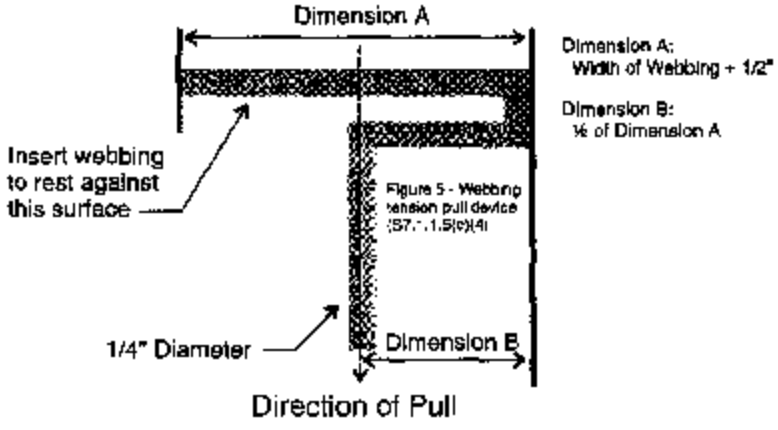
The measured distance between A and B is **41.2** inches (S7.1.1.5(c)(6))

☒ 15. Subtract the measurement in 13 from the measurement in 14. Is the difference 2 inches or less? (S7.1.1.5 (c)(7))

14-13= **0.3** inches ☒ Yes-Pass ☐ **No-Fail**

☒ 16. Subtract the measurement in 14 from the measurement in 10. Is the difference 3 inches or more? (S7.1.1.5(c)(8))

10-14= **39.5** inches. ☒ Yes-Pass ☐ **No-Fail**



FMVSS 208 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 with forward-facing seats, other than the driver's seat, or seats that can be adjusted to forward-facing **and** that has seat belt retractors that are not automatic retractors. (S7.1.1.5(c))

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 05/13/2003

Designated Seating Position: 3rd Row Center – not type 2 belt

☐1. Record test seat position: Fixed (S7.1.1.5(c)(1)) (Any position is acceptable.)

☐2. Buckle the seat belt. (S7.1.1.5(c)(1))

☐3. Complete any procedures recommended in the vehicle owner's manual to activate any locking feature. (S7.1.1.5(c)(1))

☐4. 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 to the vehicle? (S7.1.1.5(a)) ☐ Yes-Pass ☐ **No-Fail**

☐5. 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**

☐6. 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?

If yes, go to 6.1. If no, go to 7. ☐ Yes ☐ No

6.1 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**

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 05/13/2003

Designated Seating Position: 3rd Row Center – not type 2 belt

☐7. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

☐8. 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))

☐9. 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))

☐10. 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 ___ inches.

☐11. 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))

☐12. 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 __ degrees. (Spec. 5~15 degrees)

☐13. 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 ___ inches.

FMVSS 208 Lap Belt Lockability, Cont'd.

Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV

NHTSA No.: C30300 Technician: Ron Stoner Date: 05/13/2003

Designated Seating Position: 3rd Row Center – not type 2 belt

☐14. 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 __ lbs/sec (spec. 10 –50 lb/sec)

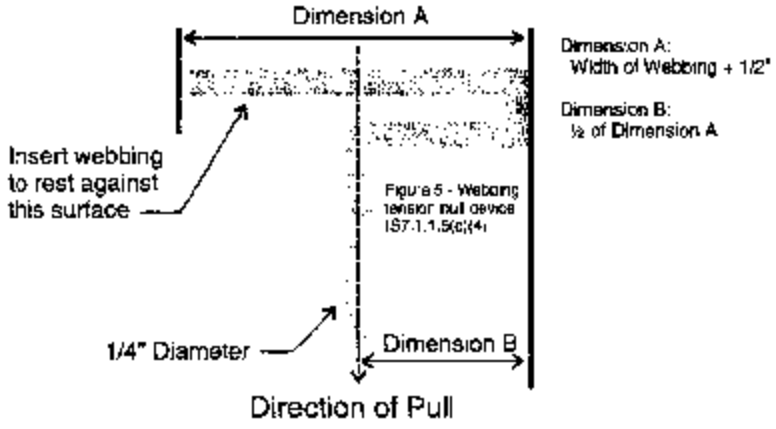
The measured distance between A and B is ___ inches (S7.1.1.5(c)(6))

☐15. Subtract the measurement in 13 from the measurement in 14. Is the difference 2 inches or less? (S7.1.1.5 (c)(7))

14-13= __ inches ☐ Yes-Pass ☐ **No-Fail**

☐16. Subtract the measurement in 14 from the measurement in 10. Is the difference 3 inches or more? (S7.1.1.5(c)(8))

10-14= ___ inches. ☐ Yes-Pass ☐ **No-Fail**



FMVSS 208 Seat Belt Comfort And Convenience Test

Belt Contact Force (S7.4.3)

Test Vehicle NHTSA No.: C30300
Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV
Designated Seating Position Tested: Driver
Date of Comfort and Convenience Check: 04/23/2003
Technician Performing Check: Steve Bell
GVWR: 5400 pounds

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-go to latchplate access
   ☒ No-continue with this check sheet

2. Adjustable seats are in the adjustment position midway between the forward most and rearmost positions. If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2)

   ☒ Check
   ☐ N/A

3. If separately adjustable in a vertical direction, the seats are at the lowest position.

   ☐ Check
   ☒ N/A

4. Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.

   ☒ Check
   ☐ N/A

5. Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant. This information will be furnished by the COTR.

   ☒ Check
   ☐ N/A

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.

Belt Contact Force (S7.4.3)

6. Place each adjustable head restraint in its highest adjustment position.

☒ Check
☐ N/A

7. Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)

☐ Check
☒ N/A

8. Position the test dummy according to the dummy position placement instructions in Appendix B of the Laboratory Test Procedure.

☒ Check

9. Fasten the seat belt latch. 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. 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) Measure the contact force exerted by the belt webbing on the dummy's chest. Contact the COTR if the contact force exceeds 0.7 pounds. Contact force is **0.7** pounds.

☒ 0.0 to 0.7 pounds - Pass
☐ **greater than 0.7 pounds - FAIL***

* If the seat belts are voluntarily installed by the manufacturer they do not have to comply.

FMVSS 208 Seat Belt Comfort And Convenience Test

Belt Contact Force (S7.4.3)

Test Vehicle NHTSA No.: C30300
Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV
Designated Seating Position Tested: Front Passenger
Date of Comfort and Convenience Check: 04/23/2003
Technician Performing Check: Steve Bell
GVWR: 5400 pounds

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-go to latchplate access
   ☒ No-continue with this check sheet

2. Adjustable seats are in the adjustment position midway between the forward most and rearmost positions. If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2)

   ☒ Check
   ☐ N/A

3. If separately adjustable in a vertical direction, the seats are at the lowest position.

   ☐ Check
   ☒ N/A

4. Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.

   ☒ Check
   ☐ N/A

5. Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant. This information will be furnished by the COTR.

   ☒ Check
   ☐ N/A

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.

Belt Contact Force (S7.4.3)

6. Place each adjustable head restraint in its highest adjustment position.

☒ Check
☐ N/A

7. Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)

☐ Check
☒ N/A

8. Position the test dummy according to the dummy position placement instructions in Appendix B of the Laboratory Test Procedure.

☒ Check

9. Fasten the seat belt latch. 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. 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) Measure the contact force exerted by the belt webbing on the dummy's chest. Contact the COTR if the contact force exceeds 0.7 pounds. Contact force is **0.6** pounds.

☒ 0.0 to 0.7 pounds - Pass
☐ **greater than 0.7 pounds - FAIL***

* If the seat belts are voluntarily installed by the manufacturer they do not have to comply.

FMVSS 208 Seat Belt Comfort And Convenience Test

Belt Contact Force (S7.4.3)

Test Vehicle NHTSA No.: C30300
Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV
Designated Seating Position Tested: 2nd Row Left
Date of Comfort and Convenience Check: 04/23/2003
Technician Performing Check: Steve Bell
GVWR: 5400 pounds

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-go to latchplate access
   ☒ No-continue with this check sheet

2. Adjustable seats are in the adjustment position midway between the forward most and rearmost positions. If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2)

   ☐ Check
   ☒ N/A

3. If separately adjustable in a vertical direction, the seats are at the lowest position.

   ☐ Check
   ☒ N/A

4. Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.

   ☐ Check
   ☒ N/A

5. Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant. This information will be furnished by the COTR.

   ☒ Check
   ☐ N/A

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.

Belt Contact Force (S7.4.3)

6. Place each adjustable head restraint in its highest adjustment position.

☒ Check
☐ N/A

7. Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)

☐ Check
☒ N/A

8. Position the test dummy according to the dummy position placement instructions in Appendix B of the Laboratory Test Procedure.

☒ Check

9. Fasten the seat belt latch. 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. 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) Measure the contact force exerted by the belt webbing on the dummy's chest. Contact the COTR if the contact force exceeds 0.7 pounds. Contact force is **0.6** pounds.

☒ 0.0 to 0.7 pounds - Pass
☐ **greater than 0.7 pounds - FAIL***

* If the seat belts are voluntarily installed by the manufacturer they do not have to comply.

FMVSS 208 Seat Belt Comfort And Convenience Test

Belt Contact Force (S7.4.3)

Test Vehicle NHTSA No.: C30300
Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV
Designated Seating Position Tested: 2nd Row Right
Date of Comfort and Convenience Check: 04/23/2003
Technician Performing Check: Steve Bell
GVWR: 5400 pounds

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-go to latchplate access
   ☒ No-continue with this check sheet

2. Adjustable seats are in the adjustment position midway between the forward most and rearmost positions. If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2)

   ☐ Check
   ☒ N/A

3. If separately adjustable in a vertical direction, the seats are at the lowest position.

   ☐ Check
   ☒ N/A

4. Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.

   ☐ Check
   ☒ N/A

5. Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant. This information will be furnished by the COTR.

   ☒ Check
   ☐ N/A

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.

Belt Contact Force (S7.4.3)

6. Place each adjustable head restraint in its highest adjustment position.

☒ Check
☐ N/A

7. Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)

☐ Check
☒ N/A

8. Position the test dummy according to the dummy position placement instructions in Appendix B of the Laboratory Test Procedure.

☒ Check

9. Fasten the seat belt latch. 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. 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) Measure the contact force exerted by the belt webbing on the dummy's chest. Contact the COTR if the contact force exceeds 0.7 pounds. Contact force is **0.6** pounds.

☒ 0.0 to 0.7 pounds - Pass
☐ **greater than 0.7 pounds - FAIL***

* If the seat belts are voluntarily installed by the manufacturer they do not have to comply.

FMVSS 208 Seat Belt Comfort And Convenience Test

Belt Contact Force (S7.4.3)

Test Vehicle NHTSA No.: C30300
Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV
Designated Seating Position Tested: 3rd Row Left
Date of Comfort and Convenience Check: 04/23/2003
Technician Performing Check: Steve Bell
GVWR: 5400 pounds

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-go to latchplate access
   ☒ No-continue with this check sheet

2. Adjustable seats are in the adjustment position midway between the forward most and rearmost positions. If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2)

   ☐ Check
   ☒ N/A

3. If separately adjustable in a vertical direction, the seats are at the lowest position.

   ☐ Check
   ☒ N/A

4. Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.

   ☐ Check
   ☒ N/A

5. Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant. This information will be furnished by the COTR.

   ☐ Check
   ☒ N/A

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.

Belt Contact Force (S7.4.3)

6. Place each adjustable head restraint in its highest adjustment position.

☒ Check
☐ N/A

7. Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)

☐ Check
☒ N/A

8. Position the test dummy according to the dummy position placement instructions in Appendix B of the Laboratory Test Procedure.

☒ Check

9. Fasten the seat belt latch. 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. 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) Measure the contact force exerted by the belt webbing on the dummy's chest. Contact the COTR if the contact force exceeds 0.7 pounds. Contact force is **0.6** pounds.

☒ 0.0 to 0.7 pounds - Pass
☐ **greater than 0.7 pounds - FAIL***

* If the seat belts are voluntarily installed by the manufacturer they do not have to comply.

FMVSS 208 Seat Belt Comfort And Convenience Test

Belt Contact Force (S7.4.3)

Test Vehicle NHTSA No.: C30300
Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV
Designated Seating Position Tested: 3rd Row Right
Date of Comfort and Convenience Check: 04/23/2003
Technician Performing Check: Steve Bell
GVWR: 5400 pounds

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-go to latchplate access
   ☒ No-continue with this check sheet

2. Adjustable seats are in the adjustment position midway between the forward most and rearmost positions. If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2)

   ☐ Check
   ☒ N/A

3. If separately adjustable in a vertical direction, the seats are at the lowest position.

   ☐ Check
   ☒ N/A

4. Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.

   ☐ Check
   ☒ N/A

5. Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant. This information will be furnished by the COTR.

   ☐ Check
   ☒ N/A

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.

Belt Contact Force (S7.4.3)

6. Place each adjustable head restraint in its highest adjustment position.

☒ Check
☐ N/A

7. Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)

☐ Check
☒ N/A

8. Position the test dummy according to the dummy position placement instructions in Appendix B of the Laboratory Test Procedure.

☒ Check

9. Fasten the seat belt latch. 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. 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) Measure the contact force exerted by the belt webbing on the dummy's chest. Contact the COTR if the contact force exceeds 0.7 pounds. Contact force is **0.6** pounds.

☒ 0.0 to 0.7 pounds - Pass
☐ **greater than 0.7 pounds - FAIL***

* If the seat belts are voluntarily installed by the manufacturer they do not have to comply.

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.

Latchplate Access (S7.4.4)

Test Vehicle NHTSA No.: C30300
Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV
Designated Seating Position Tested: Driver
Date of Comfort and Convenience Check: 05/13/2003
Technician Performing Check: Ron Stoner
GVWR: 5400 pounds

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 in its forward most adjustment position. ☒ Check

2. Position the test dummy using the procedures in Appendix B of the Laboratory Test Procedure. (Some modifications to the positioning procedure may need to be made because the seat is in its forward most position.) ☒ Check

3. Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant. ☒ Check

4. Attach the inboard and outboard reach string following the instructions on Figure 1C of the Laboratory Test Procedure. ☒ Check

5. Place the latch plate in the stowed position. ☒ Check

6. Extend each line backward and outboard to generate arcs of the reach envelope of the test dummy's arms. Is the latchplate within the reach envelope?

   ☒ Yes-Pass; ☐ **No-Fail**

7. Using the clearance test block, specified in Figure 2C of the Laboratory Test Procedure, determine if there is sufficient clearance between the vehicle seat and the side of vehicle to allow the test block to move unhindered to the latchplate or buckle.

   ☒ Yes-Pass; ☐ **No-Fail**

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.

Latchplate Access (S7.4.4)

Test Vehicle NHTSA No.: C30300
Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV
Designated Seating Position Tested: Front Passenger
Date of Comfort and Convenience Check: 05/13/2003
Technician Performing Check: Ron Stoner
GVWR: 5400 pounds

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 in its forward most adjustment position. ☒ Check

2. Position the test dummy using the procedures in Appendix B of the Laboratory Test Procedure. (Some modifications to the positioning procedure may need to be made because the seat is in its forward most position.) ☒ Check

3. Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant. ☒ Check

4. Attach the inboard and outboard reach string following the instructions on Figure 1C of the Laboratory Test Procedure. ☒ Check

5. Place the latch plate in the stowed position. ☒ Check

6. Extend each line backward and outboard to generate arcs of the reach envelope of the test dummy's arms. Is the latchplate within the reach envelope?

   ☒ Yes-Pass; ☐ **No-Fail**

7. Using the clearance test block, specified in Figure 2C of the Laboratory Test Procedure, determine if there is sufficient clearance between the vehicle seat and the side of vehicle to allow the test block to move unhindered to the latchplate or buckle.

   ☒ Yes-Pass; ☐ **No-Fail**

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.

Retraction (S7.4.5)

Test Vehicle NHTSA No.: C30300
Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV
Designated Seating Position Tested: Driver
Date of Comfort and Convenience Check: 05/13/2003
Technician Performing Check: Ron Stoner
GVWR: 5400 pounds

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. Is the vehicle a passenger car or walk-in van-type vehicle? ☐ Yes ☒ No

   If yes, go to seat belt guides and hardware.

2. Adjustable seats are in the adjustment position midway between the forward most and rearmost positions. If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2) ☒ Check

3. If separately adjustable in a vertical direction, the seats are at the lowest position. ☒ Check

4. Place any adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer. ☒ Check

5. Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant. This information will be furnished by the COTR. ☒ Check

6. Place each adjustable head restraint in its highest adjustment position. ☒ Check

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.

Retraction (S7.4.5)

7. Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3) ☒ Check

8. Use anthropomorphic test dummies whose arms have been removed and position the dummies in the front outboard designated seating positions according to instructions in Appendix B of the Laboratory Test Procedure. ☒ Check

9. Restrain the dummies using the belt systems for the position being tested. ☒ Check

10. Stow outboard armrests that are capable of being stowed. ☒ Check

11. Check the statement that applies to this test vehicle:

    (A) 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 latchplate is released. ☒ Pass

    (B) The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latchplate is released. ☒ Pass

    (C) Neither A or B apply. ☐ **Fail**

12. 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**

13. 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**

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.

Retraction (S7.4.5)

Test Vehicle NHTSA No.: C30300
Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV
Designated Seating Position Tested: Front Passenger
Date of Comfort and Convenience Check: 05/13/2003
Technician Performing Check: Ron Stoner
GVWR: 5400 pounds

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. Is the vehicle a passenger car or walk-in van-type vehicle? ☐ Yes ☒ No

   If yes, go to seat belt guides and hardware.

2. Adjustable seats are in the adjustment position midway between the forward most and rearmost positions. If an adjustment position does not exist midway between the forward most and rearmost positions, the next closest adjustment position to the rear of the midpoint is used. (S8.1.2) ☒ Check

3. If separately adjustable in a vertical direction, the seats are at the lowest position. ☒ Check

4. Place any adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer. ☒ Check

5. Place any adjustable anchorages at the manufacturer's nominal design position for a 50th percentile adult male (50M) occupant. This information will be furnished by the COTR. ☒ Check

6. Place each adjustable head restraint in its highest adjustment position. ☒ Check

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.

Retraction (S7.4.5)

7. Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3) ☒ Check

8. Use anthropomorphic test dummies whose arms have been removed and position the dummies in the front outboard designated seating positions according to instructions in Appendix B. ☒ Check

9. Restrain the dummies using the belt systems for the position being tested. ☒ Check

10. Stow outboard armrests that are capable of being stowed. ☒ Check

11. Check the statement that applies to this test vehicle:

    (A) 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 latchplate is released. ☒ Pass

    (B) The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latchplate is released. ☒ Pass

    (C) Neither A or B apply. ☐ **Fail**

12. 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**

13. 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**

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.

Seat Belt Guides And Hardware (S7.4.6)

Test Vehicle NHTSA No.: C30300
Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV
Designated Seating Position Tested: Driver
Date of Comfort and Convenience Check: 05/13/2003
Technician Performing Check: Ron Stoner
GVWR: 5400 pounds

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.

The requirements for accessibility **DO NOT APPLY** to:

A. Seats whose seat cushions are movable so that the seat back serves a function other than seating (S7.4.6.1(b)).

B. Seats which are removable.

C. Seats that are movable so that the space formerly occupied by the seat can be used for a secondary function.

If the seats in this vehicle are different than the criteria above, determine the following:

1. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back?
   ☐ Yes: go to 2.
   ☒ No: this form is complete.

2. Does one of the following three parts, the seat belt latchplate, 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)?
   ☐ Yes-Pass; ☐ **No-Fail**

3. Are the remaining two seat belt parts accessible under normal conditions?
   ☐ Yes-Pass; ☐ **No-Fail**

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.

Seat Belt Guides And Hardware (S7.4.6)

4. The buckle and latchplate do not pass through the guides or conduits provided and fall behind the seat when the following events occur in order:

   (A) The belt is completely retracted or, if the belt is nonretractable, the belt is unlatched.

   ☐ Check

   (B) The seat is moved to any position to which it is designed to be adjusted.

   ☐ Check

   (C) The seat back, if foldable, is folded forward as far as possible and then moved backward into position. ☐ Check

   ☐ Yes-Pass; ☐ **No-Fail**

5. Is the inboard receptacle end of the seat belt assembly, installed in the outboard designated seating position, accessible with the center arm rest in any position to which it can be adjusted (without moving the armrest)? ☐ Yes-Pass; ☐ **No-Fail**

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.

Seat Belt Guides And Hardware (S7.4.6)

Test Vehicle NHTSA No.: C30300
Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV
Designated Seating Position Tested: Front Passenger
Date of Comfort and Convenience Check: 05/13/2003
Technician Performing Check: Ron Stoner
GVWR: 5400 pounds

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.

The requirements for accessibility **DO NOT APPLY** to:

A. Seats whose seat cushions are movable so that the seat back serves a function other than seating (S7.4.6.1(b)).

B. Seats which are removable.

C. Seats that are movable so that the space formerly occupied by the seat can be used for a secondary function.

If the seats in this vehicle are different than the criteria above, determine the following:

1. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back?
   ☐ Yes: go to 2.
   ☒ No: this form is complete.

2. Does one of the following three parts, the seat belt latchplate, 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)?
   ☐ Yes-Pass; ☐ **No-Fail**

3. Are the remaining two seat belt parts accessible under normal conditions?
   ☐ Yes-Pass; ☐ **No-Fail**

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.

Seat Belt Guides And Hardware (S7.4.6)

4. The buckle and latchplate do not pass through the guides or conduits provided and fall behind the seat when the following events occur in order:

   (A) The belt is completely retracted or, if the belt is nonretractable, the belt is unlatched.

   ☐ Check

   (B) The seat is moved to any position to which it is designed to be adjusted.

   ☐ Check

   (C) The seat back, if foldable, is folded forward as far as possible and then moved backward into position. ☐ Check

   ☐ Yes-Pass; ☐ **No-Fail**

5. Is the inboard receptacle end of the seat belt assembly, installed in the outboard designated seating position, accessible with the center arm rest in any position to which it can be adjusted (without moving the armrest)? ☐ Yes-Pass; ☐ **No-Fail**

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.

Seat Belt Guides And Hardware (S7.4.6)

Test Vehicle NHTSA No.: C30300
Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV
Designated Seating Position Tested: 2nd Row Left and Right – does not apply due to reason B below.
Date of Comfort and Convenience Check: 05/13/2003
Technician Performing Check: Ron Stoner
GVWR: 5400 pounds

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.

The requirements for accessibility **DO NOT APPLY** to:

A. Seats whose seat cushions are movable so that the seat back serves a function other than seating (S7.4.6.1(b)).

B. Seats which are removable.

C. Seats that are movable so that the space formerly occupied by the seat can be used for a secondary function.

If the seats in this vehicle are different than the criteria above, determine the following:

1. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back?
   ☐ Yes: go to 2.
   ☐ No: this form is complete.

2. Does one of the following three parts, the seat belt latchplate, 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)?
   ☐ Yes-Pass; ☐ **No-Fail**

3. Are the remaining two seat belt parts accessible under normal conditions?
   ☐ Yes-Pass; ☐ **No-Fail**

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.

Seat Belt Guides And Hardware (S7.4.6)

4. The buckle and latchplate do not pass through the guides or conduits provided and fall behind the seat when the following events occur in order:

   (A) The belt is completely retracted or, if the belt is nonretractable, the belt is unlatched.

   ☐ Check

   (B) The seat is moved to any position to which it is designed to be adjusted.

   ☐ Check

   (C) The seat back, if foldable, is folded forward as far as possible and then moved backward into position. ☐ Check

   ☐ Yes-Pass; ☐ **No-Fail**

5. Is the inboard receptacle end of the seat belt assembly, installed in the outboard designated seating position, accessible with the center arm rest in any position to which it can be adjusted (without moving the armrest)? ☐ Yes-Pass; ☐ **No-Fail**

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.

Seat Belt Guides And Hardware (S7.4.6)

Test Vehicle NHTSA No.: C30300
Vehicle Model Year/Make/Model/Body Style: 2003/Dodge/Caravan/MPV
Designated Seating Position Tested: 3rd Row Left, Center and Right – does not apply due to reason B and C below.
Date of Comfort and Convenience Check: 05/13/2003
Technician Performing Check: Ron Stoner
GVWR: 5400 pounds

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.

The requirements for accessibility **DO NOT APPLY** to:

A. Seats whose seat cushions are movable so that the seat back serves a function other than seating (S7.4.6.1(b)).

B. Seats which are removable.

C. Seats that are movable so that the space formerly occupied by the seat can be used for a secondary function.

If the seats in this vehicle are different than the criteria above, determine the following:

1. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back?
   ☐ Yes: go to 2.
   ☐ No: this form is complete.

2. Does one of the following three parts, the seat belt latchplate, 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)?
   ☐ Yes-Pass; ☐ **No-Fail**

3. Are the remaining two seat belt parts accessible under normal conditions?
   ☐ Yes-Pass; ☐ **No-Fail**

FMVSS 208 Seat Belt Comfort And Convenience Test Summary, Cont'd.

Seat Belt Guides And Hardware (S7.4.6)

4. The buckle and latchplate do not pass through the guides or conduits provided and fall behind the seat when the following events occur in order:

   (A) The belt is completely retracted or, if the belt is nonretractable, the belt is unlatched.

   ☐ Check

   (B) The seat is moved to any position to which it is designed to be adjusted.

   ☐ Check

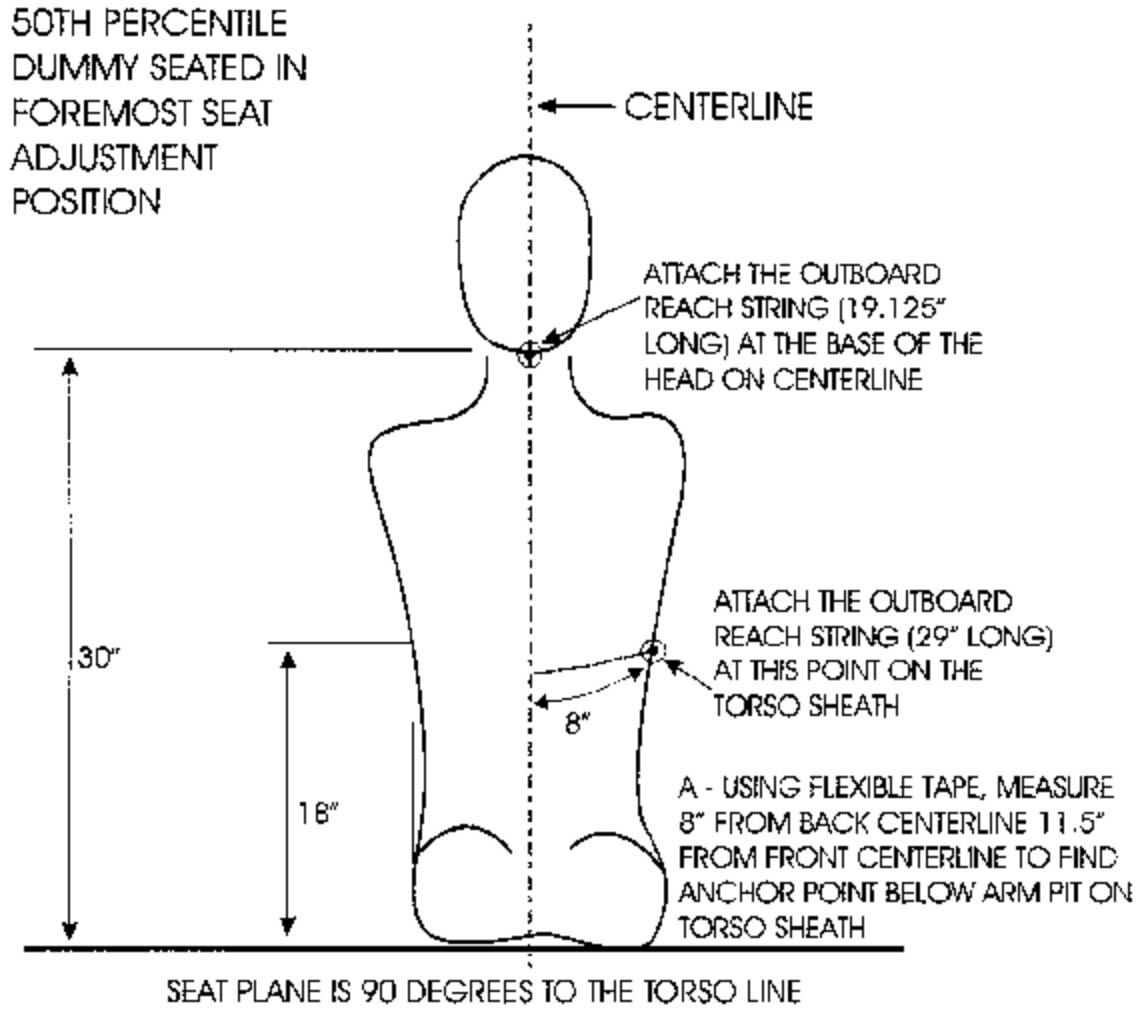
   (C) The seat back, if foldable, is folded forward as far as possible and then moved backward into position. ☐ Check

   ☐ Yes-Pass; ☐ **No-Fail**

5. Is the inboard receptacle end of the seat belt assembly, installed in the outboard designated seating position, accessible with the center arm rest in any position to which it can be adjusted (without moving the armrest)? ☐ Yes-Pass; ☐ **No-Fail**

LOCATION OF ANCHORING POINTS FOR LATCHPLATE REACH LIMITING CHAINS OR STRINGS TO TEST FOR LATCHPLATE ACCESSIBILITY

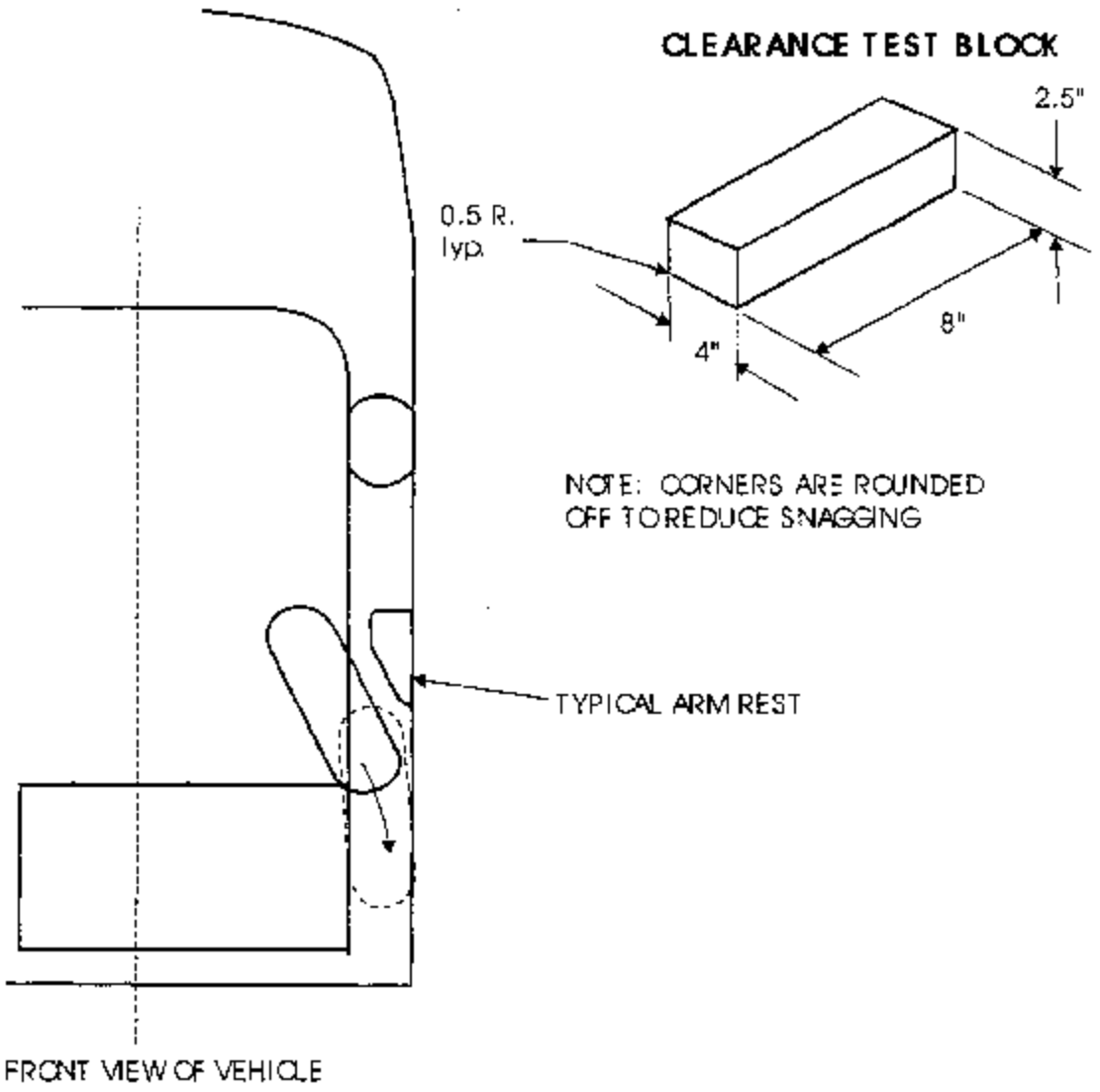
PART 572E DUMMY



REAR VIEW

Laboratory Test Procedure Figure 1C

USE OF CLEARANCE TEST BLOCK TO DETERMINE HAND/ARM ACCESS



Laboratory Test Procedure Figure 2C

Appendix A

Photographs

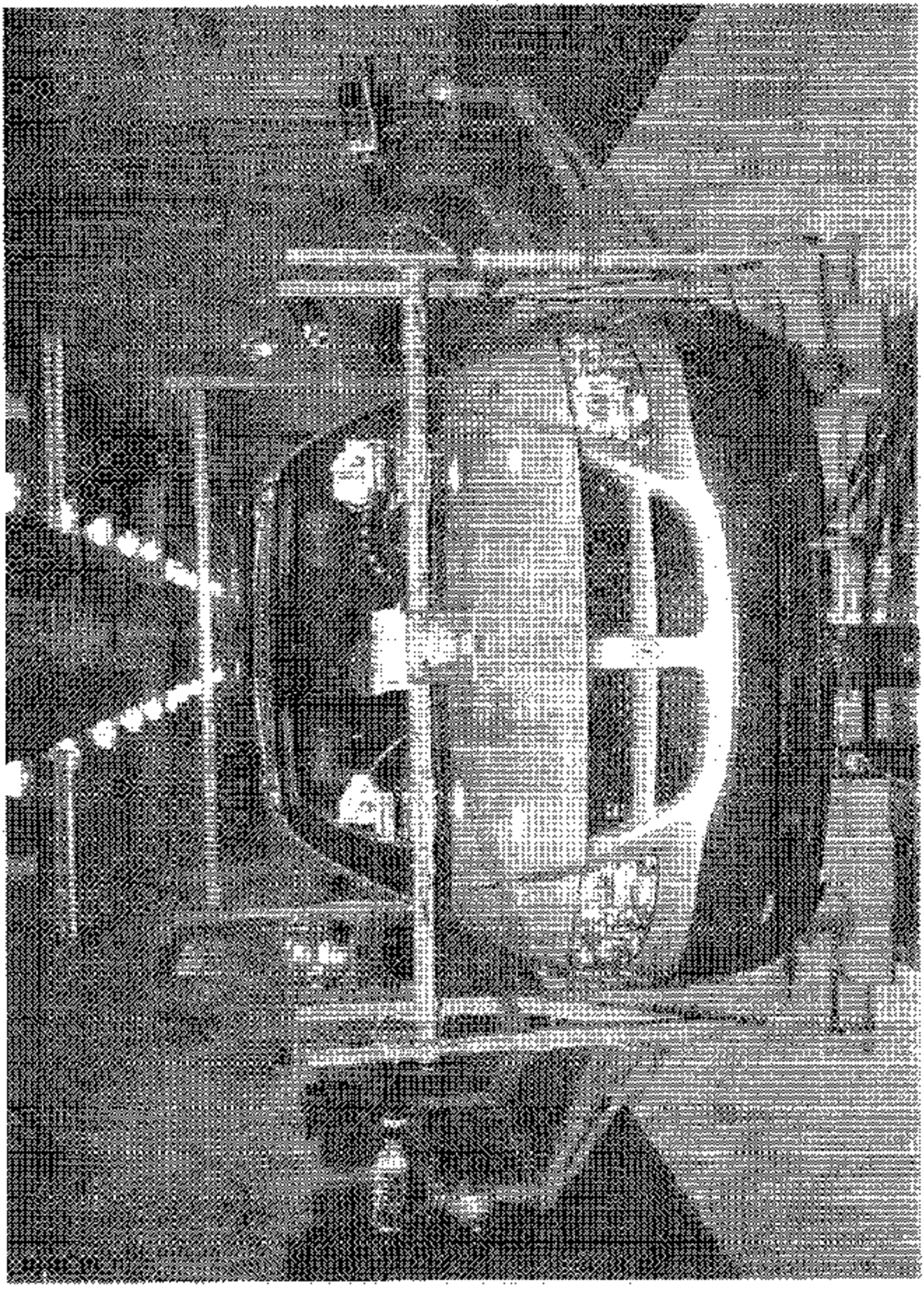


Figure A-1. Pre-Test Front View of Test Vehicle Mounted to Sled

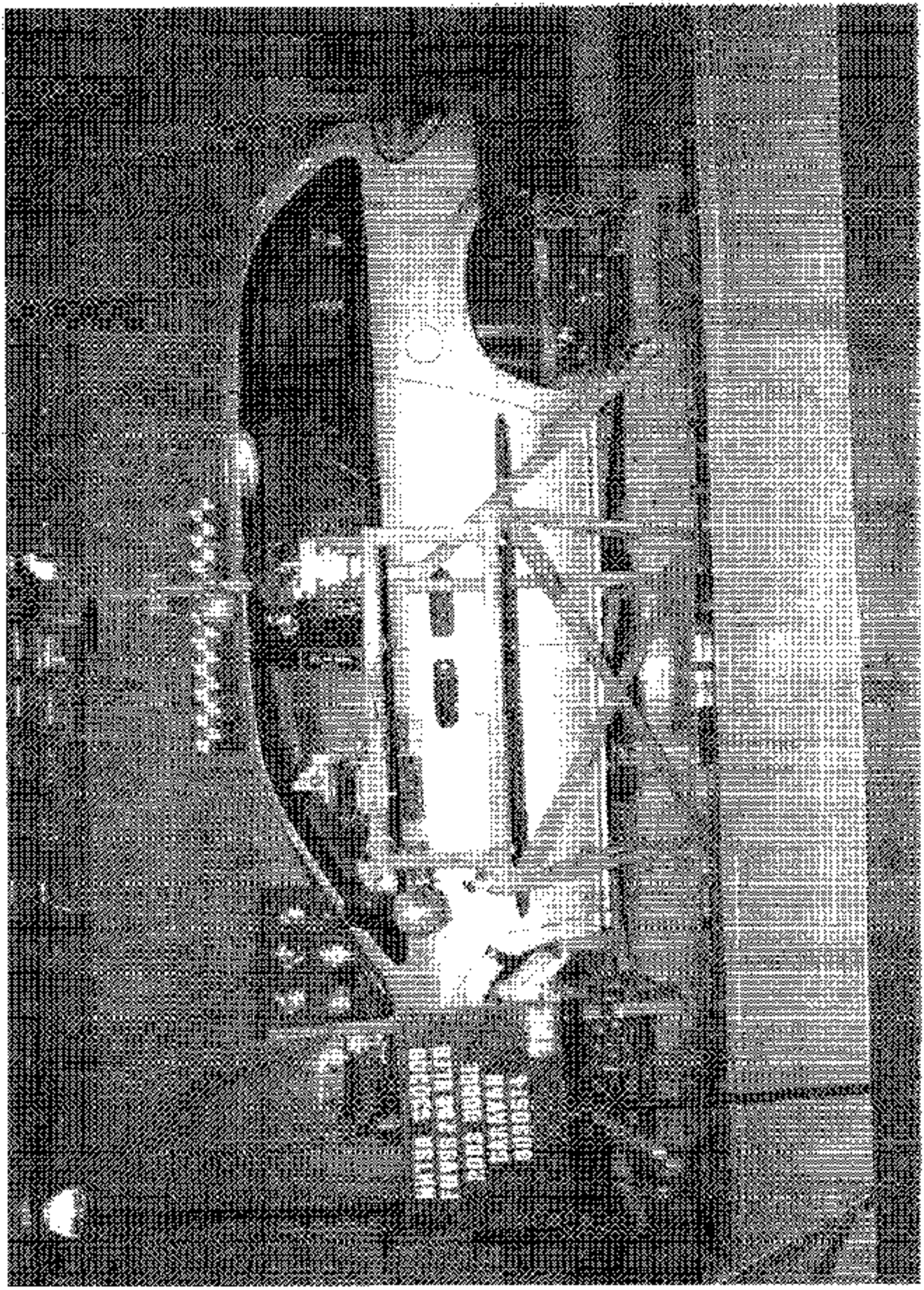


Figure A-2. Pre-Test Left Side View of Test Vehicle Mounted to Sled

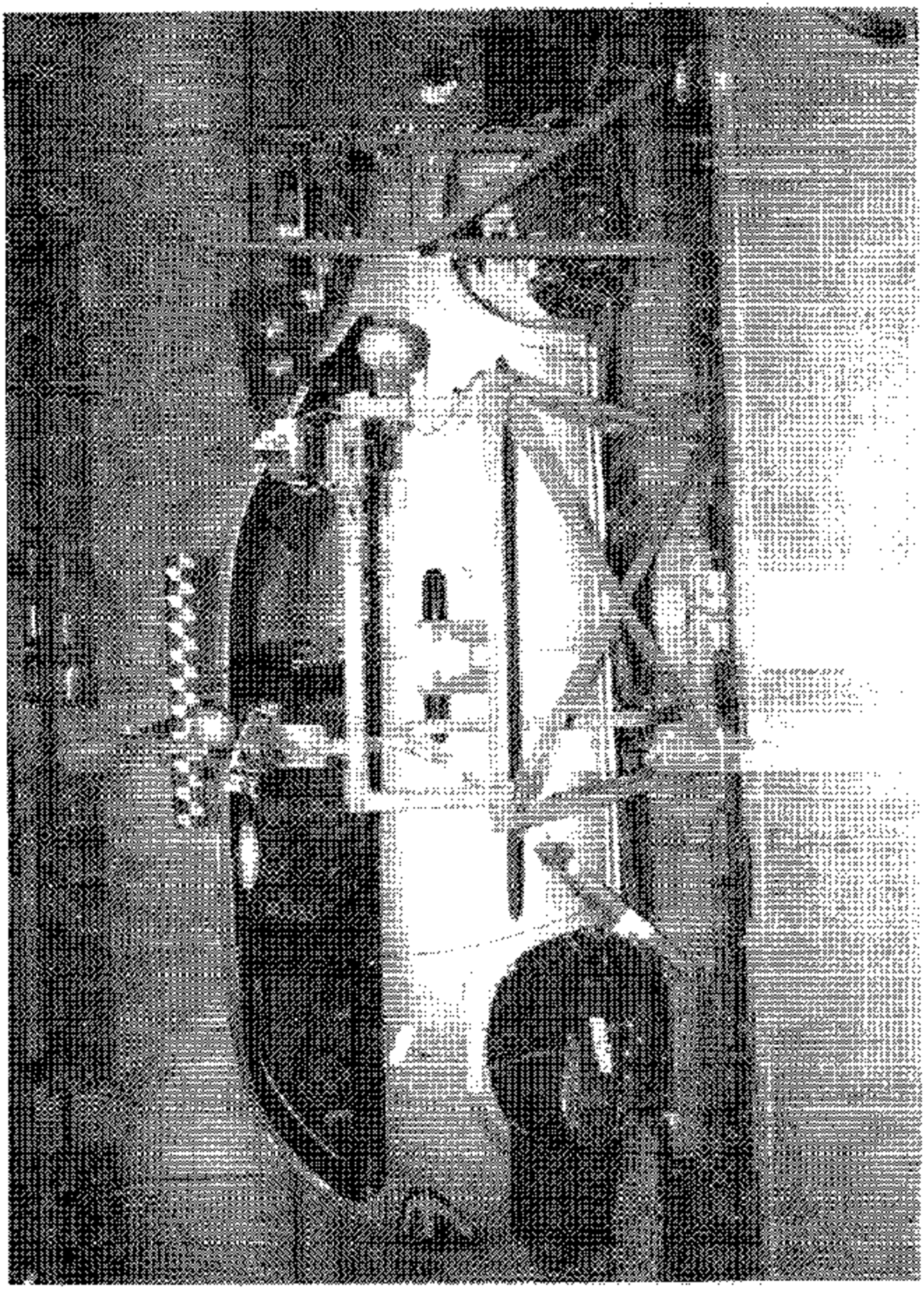


Figure A-3. Pre-Test Right Side View of Test Vehicle Mounted to Sled

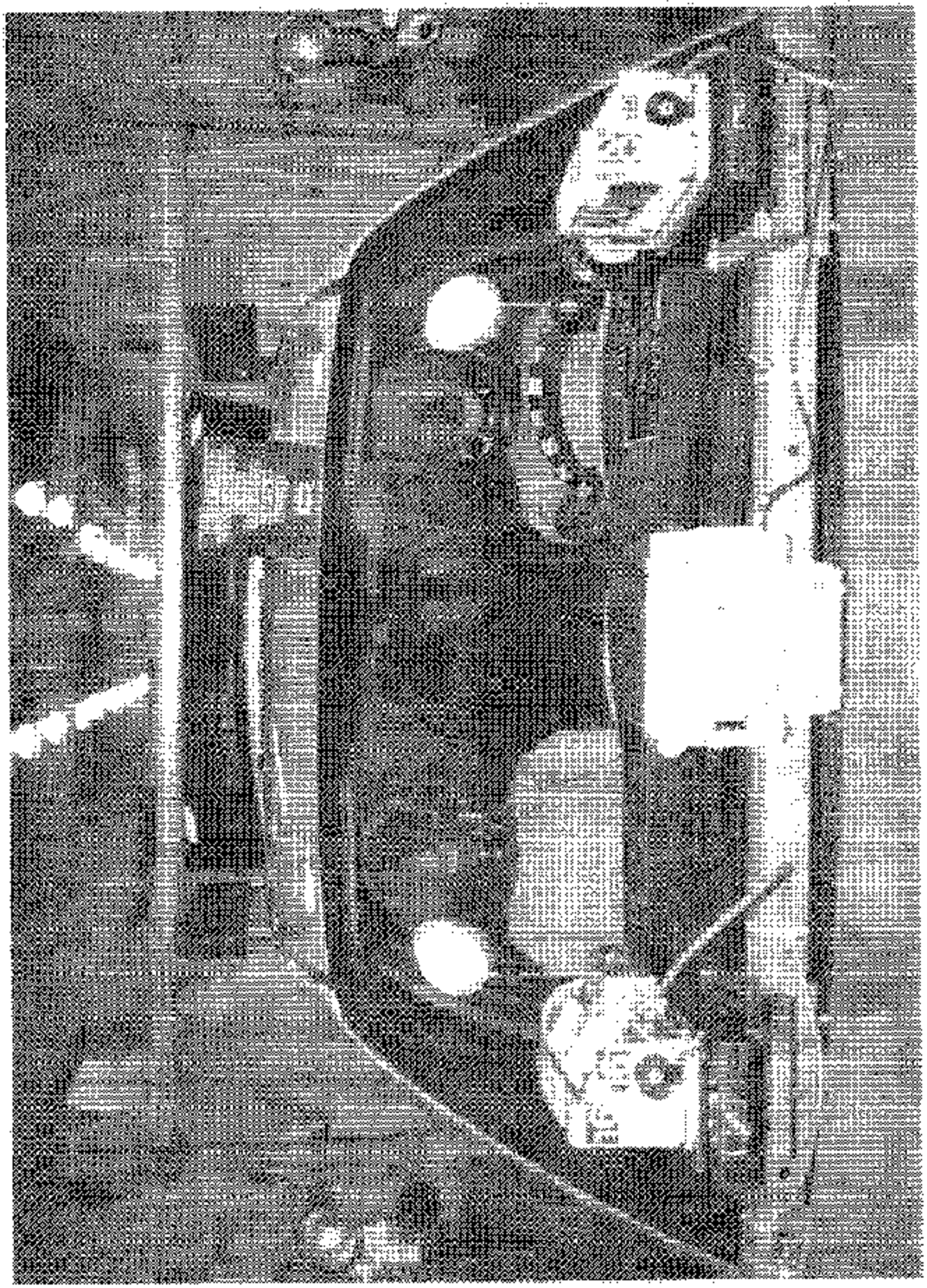


Figure A-4. Pre-Test Windshield View

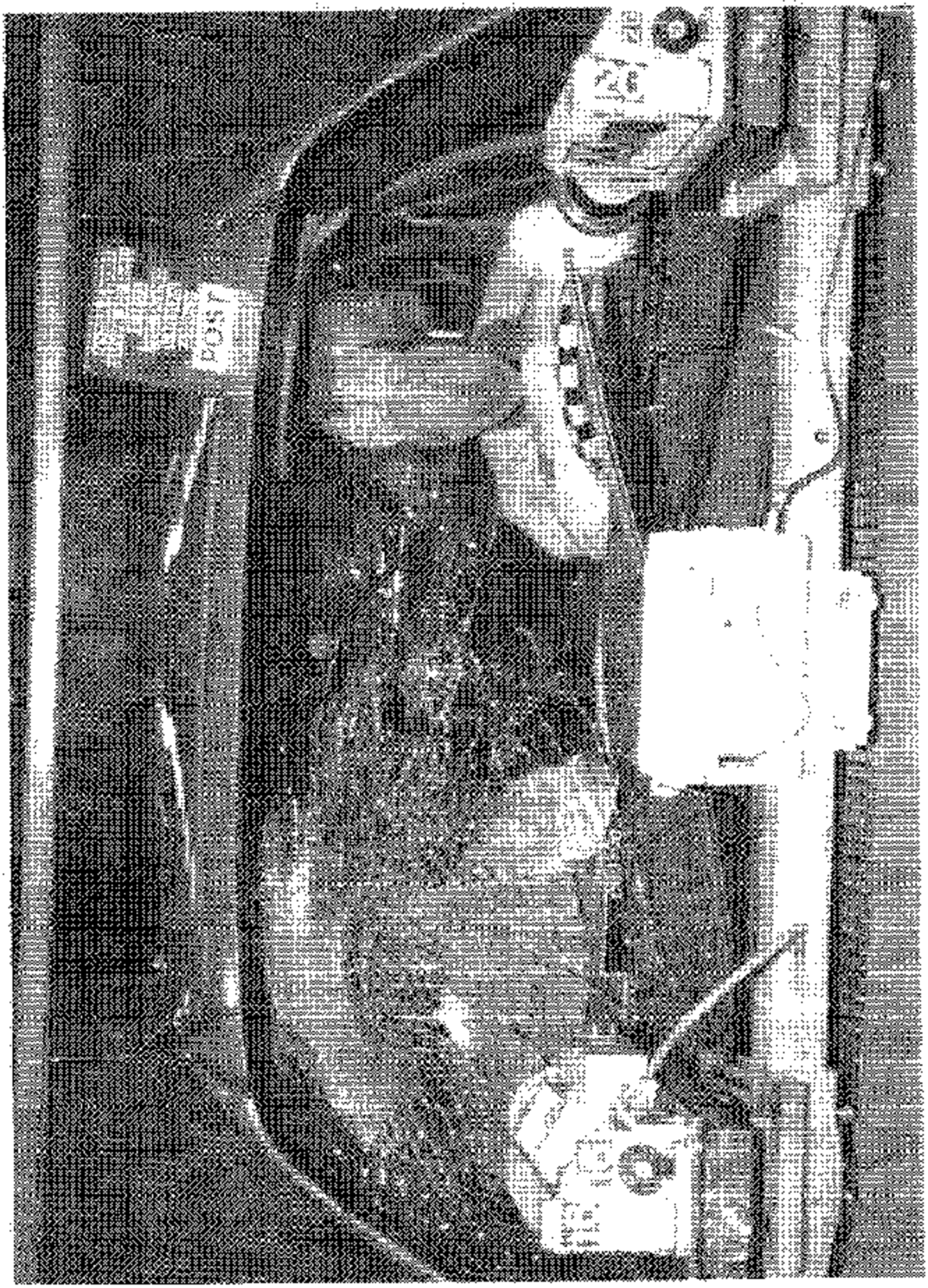


Figure A-5. Post-Test Windshield View

Figure A-6. Pre-Test Driver Dummy Position View with Door Open - View 1

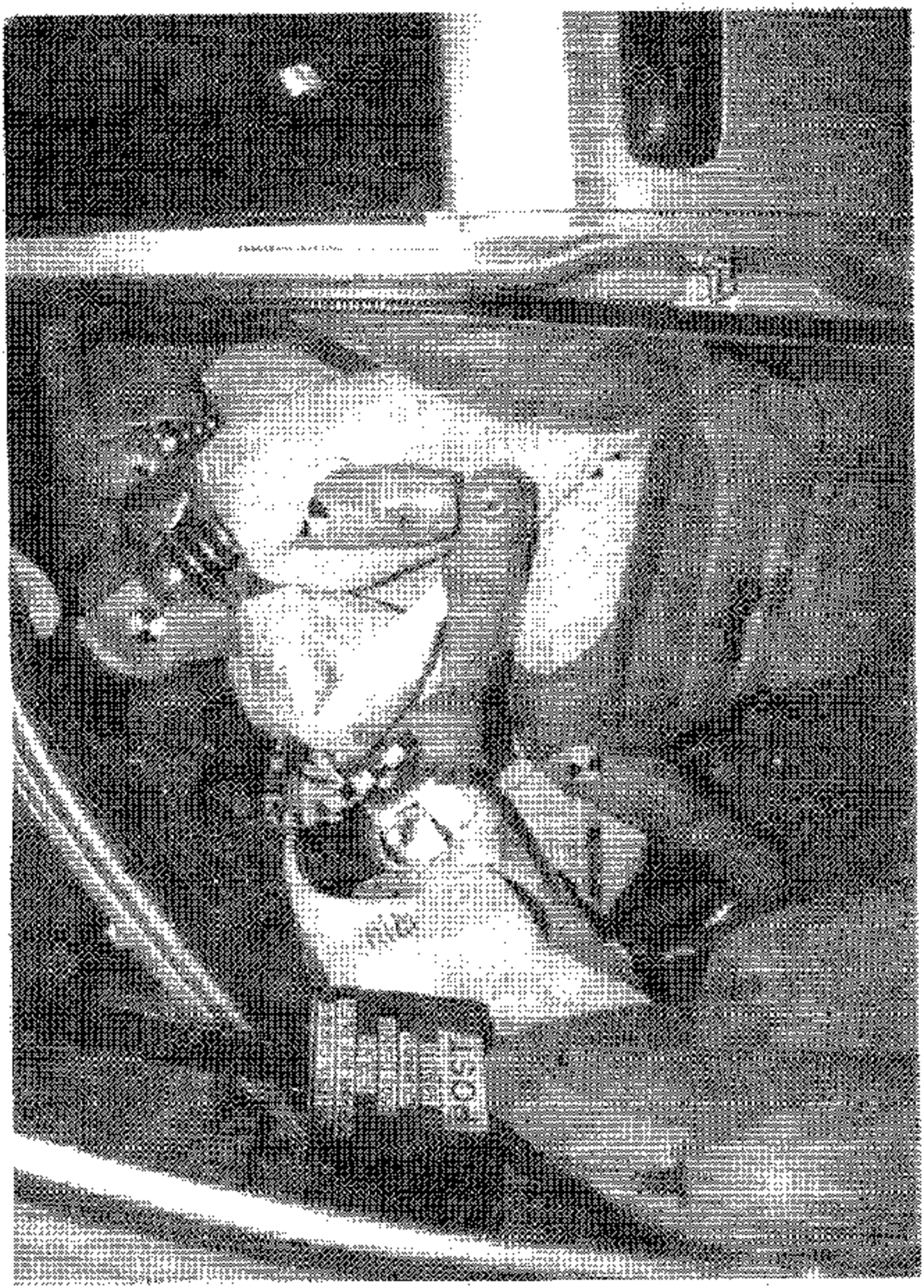


Figure A-7. Post-Test Driver Dummy Position View with Door Open - View 1

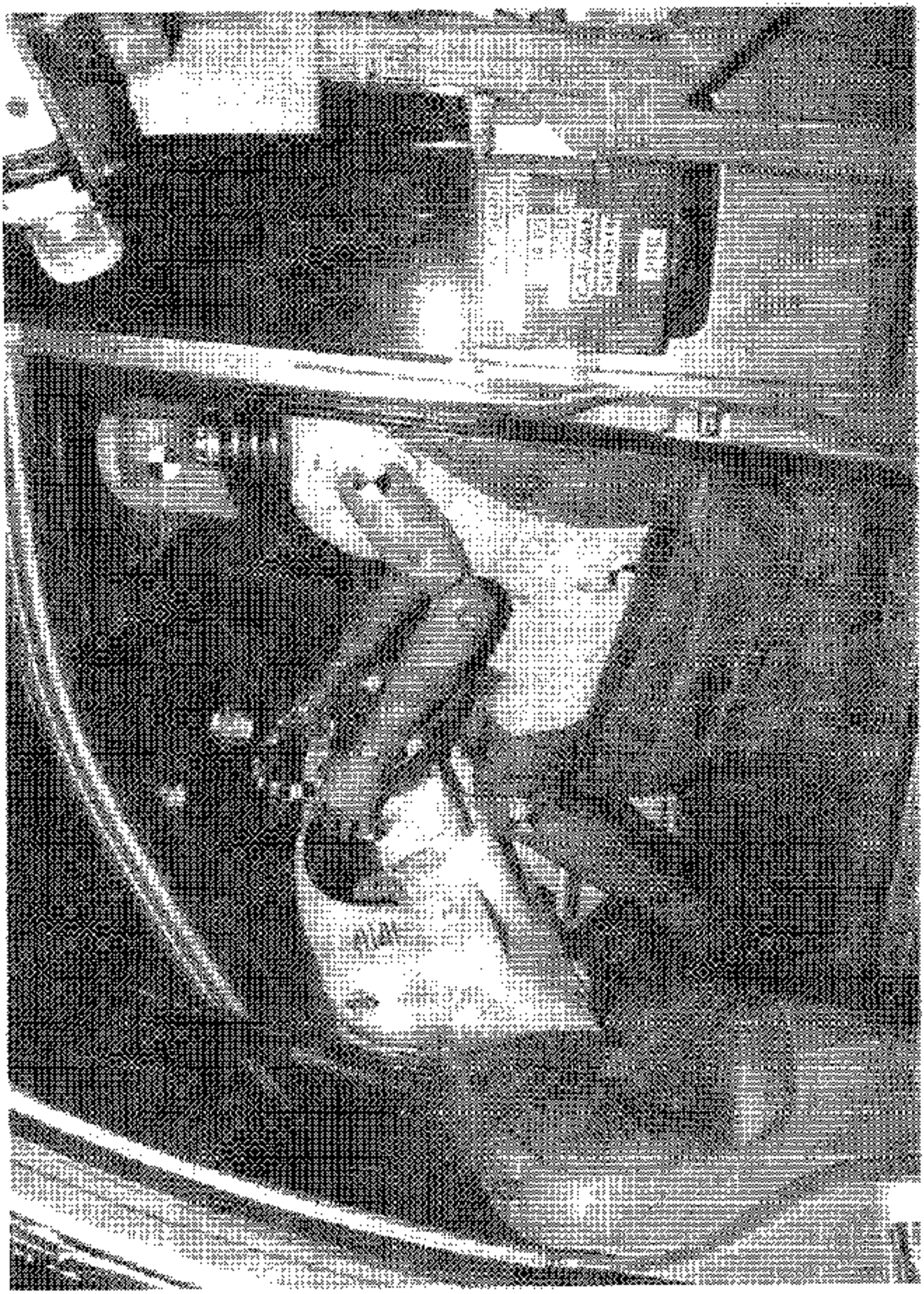


Figure A-8. Pre-Test Driver Dummy Position View with Door Open - View 2

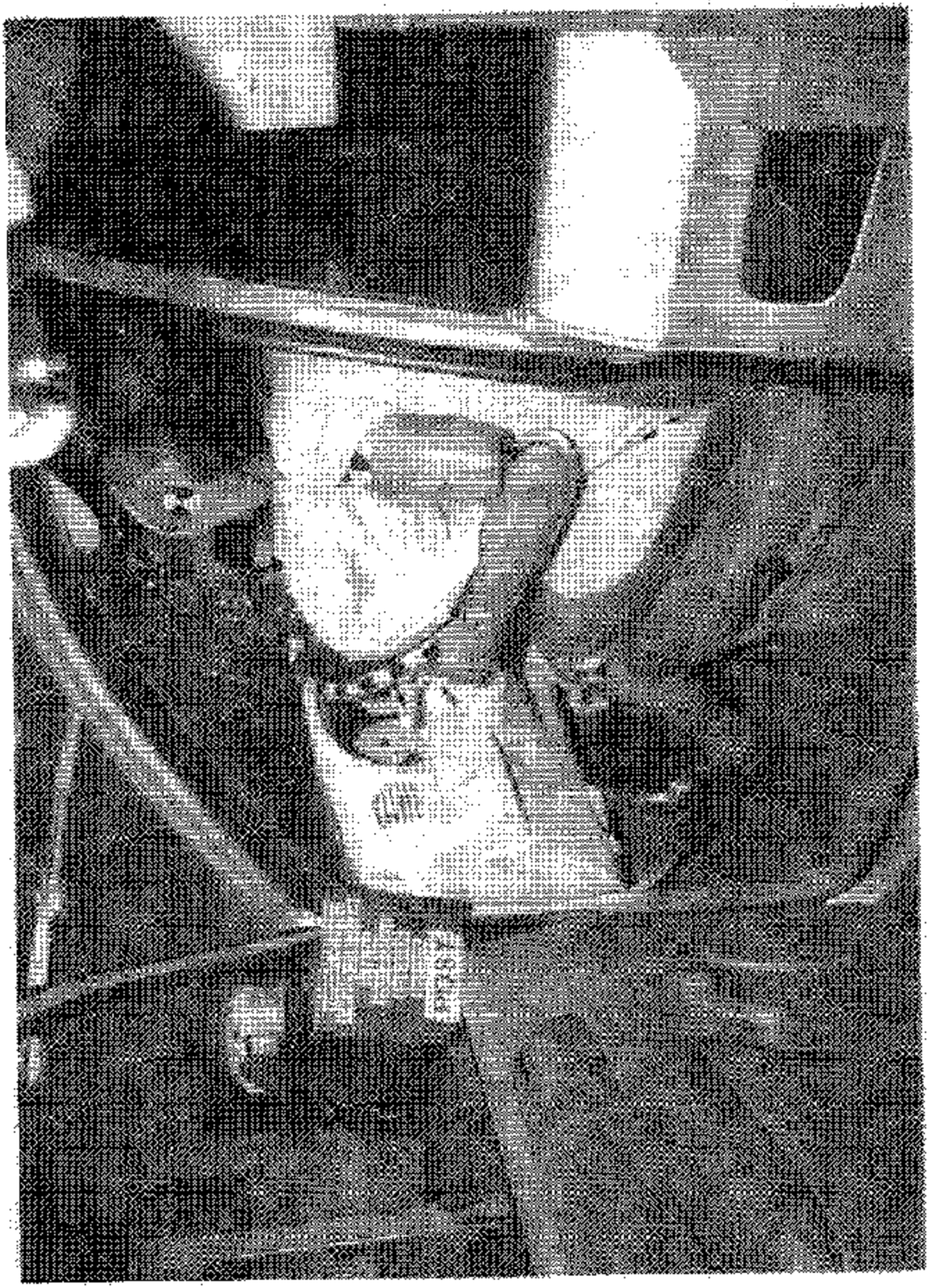


Figure A-9. Post-Test Driver Dummy Position View with Door Open - View 2

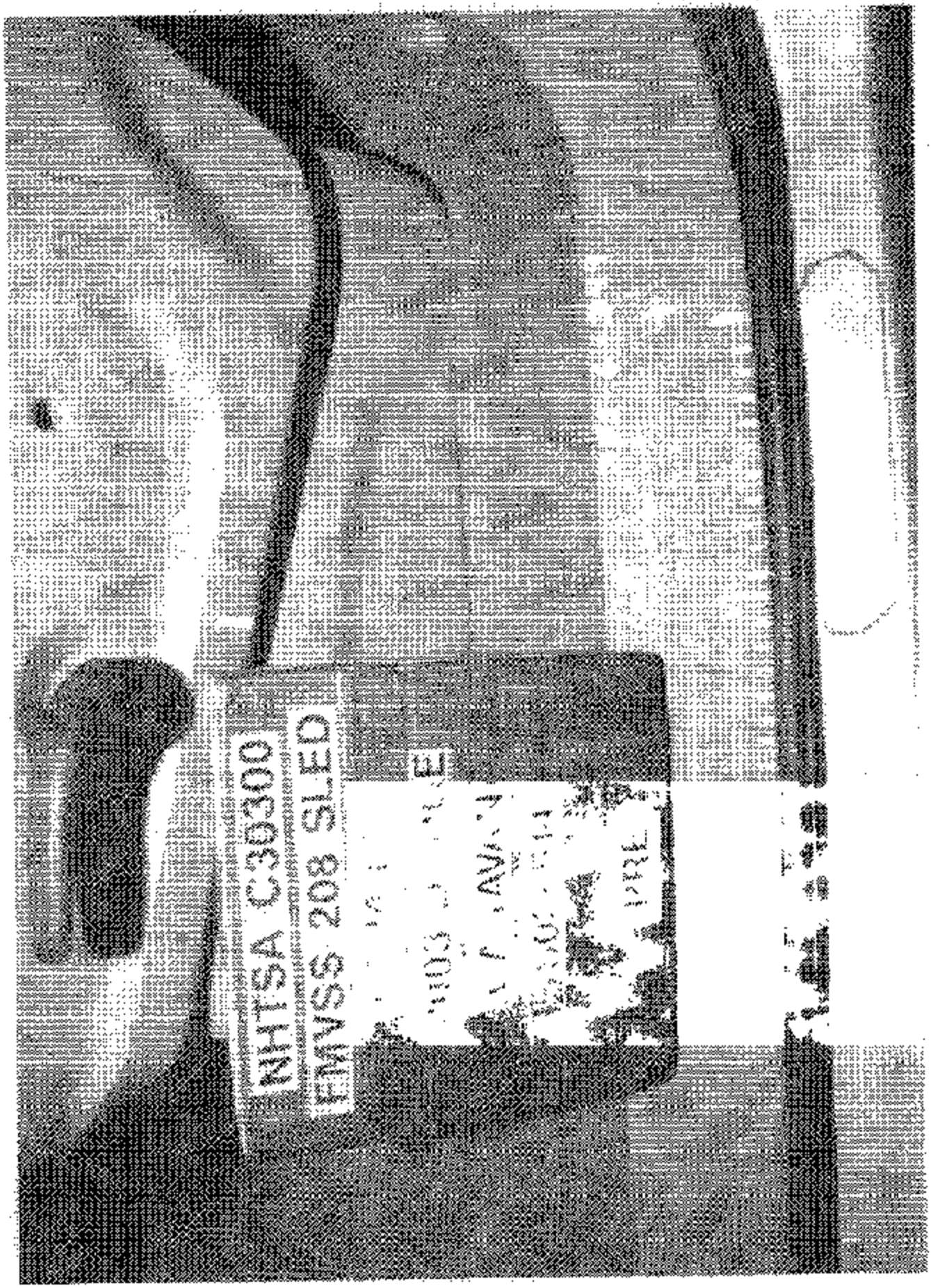


Figure A-10. Pre-Test Driver Seat Track Position View

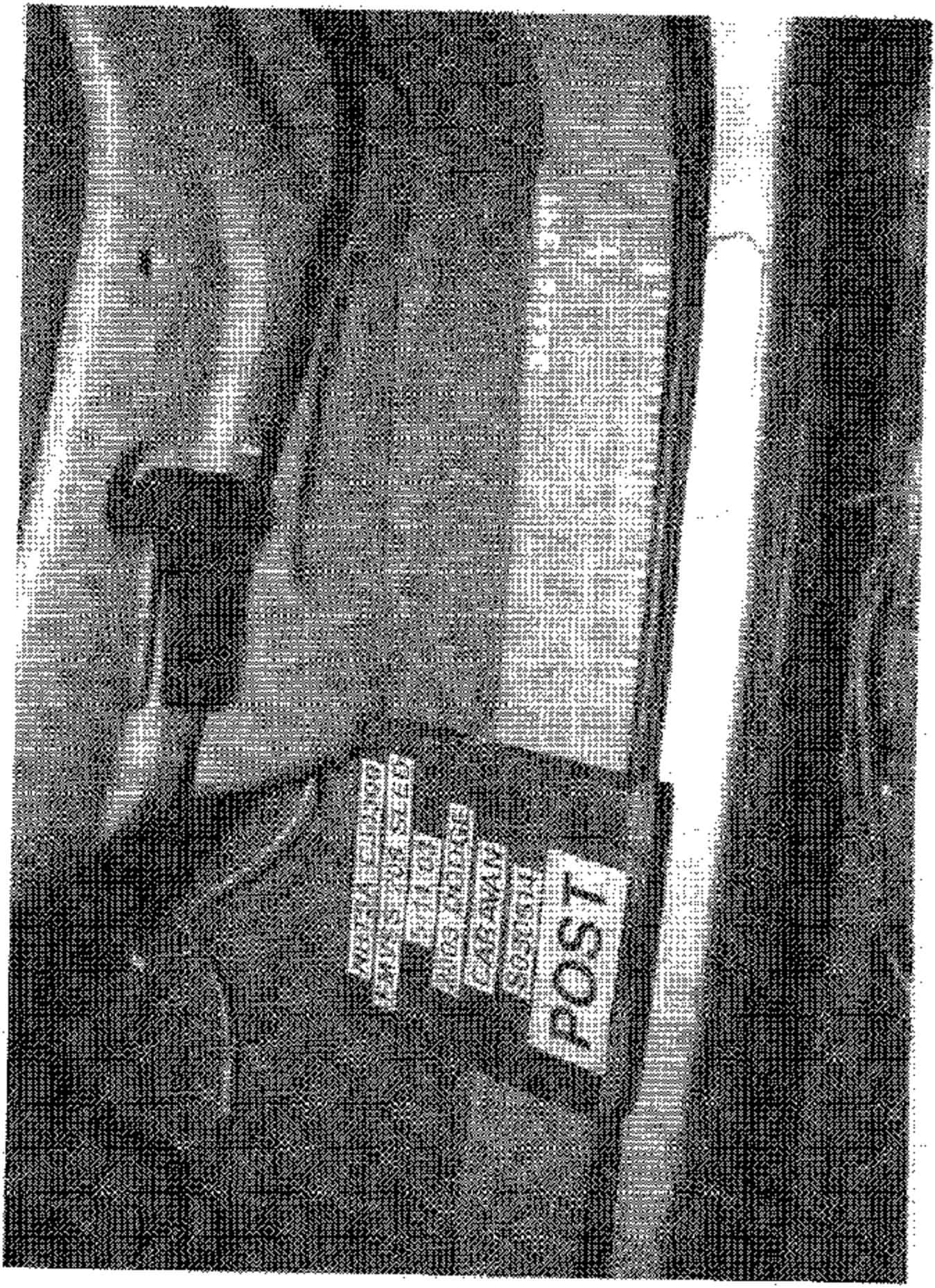


Figure A-11. Post-Test Driver Seat Track Position View

Figure A-12. Pre-Test Driver Dummy Position Front View

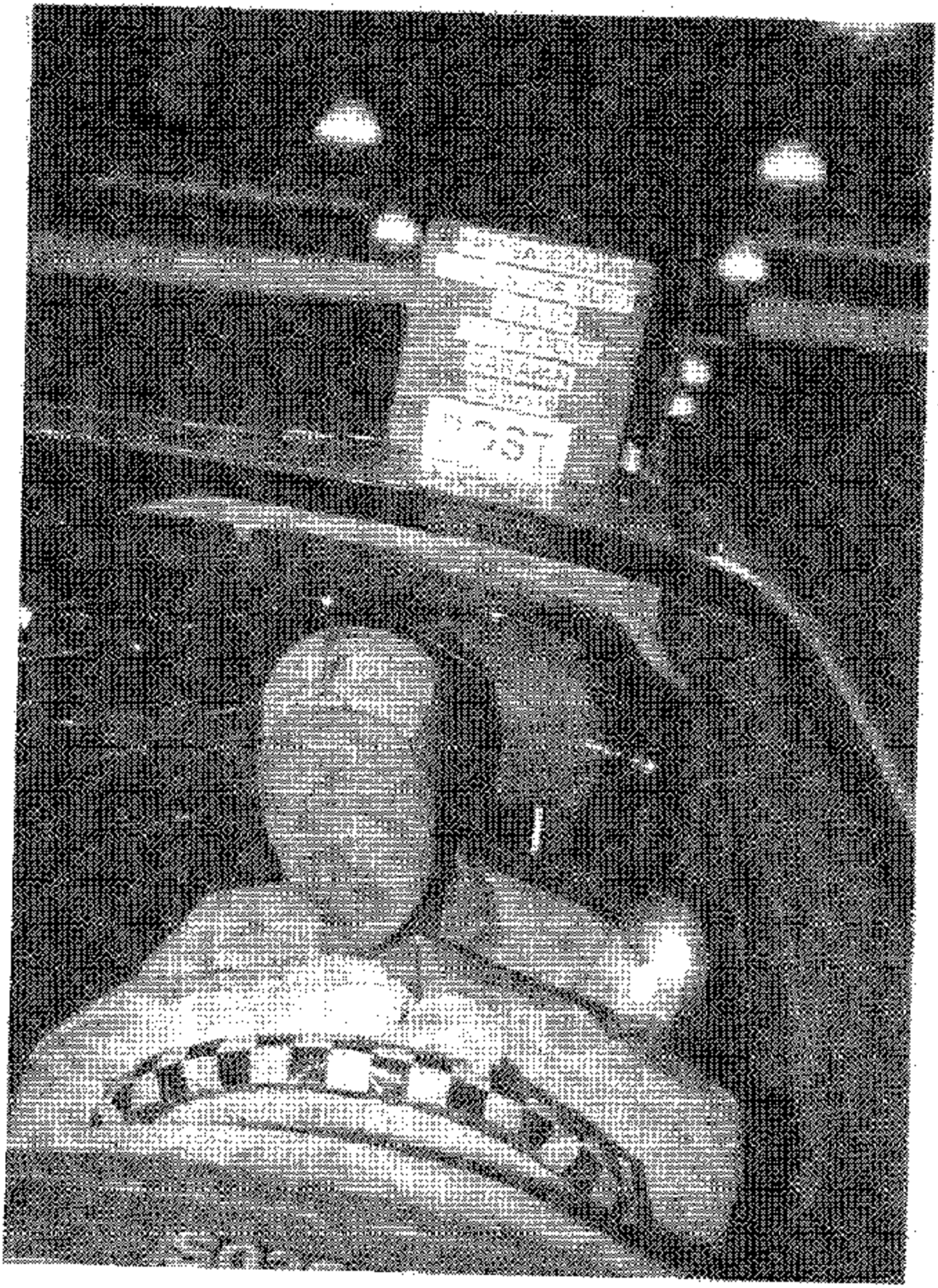


Figure A-13. Post-Test Driver Dummy Position Front View

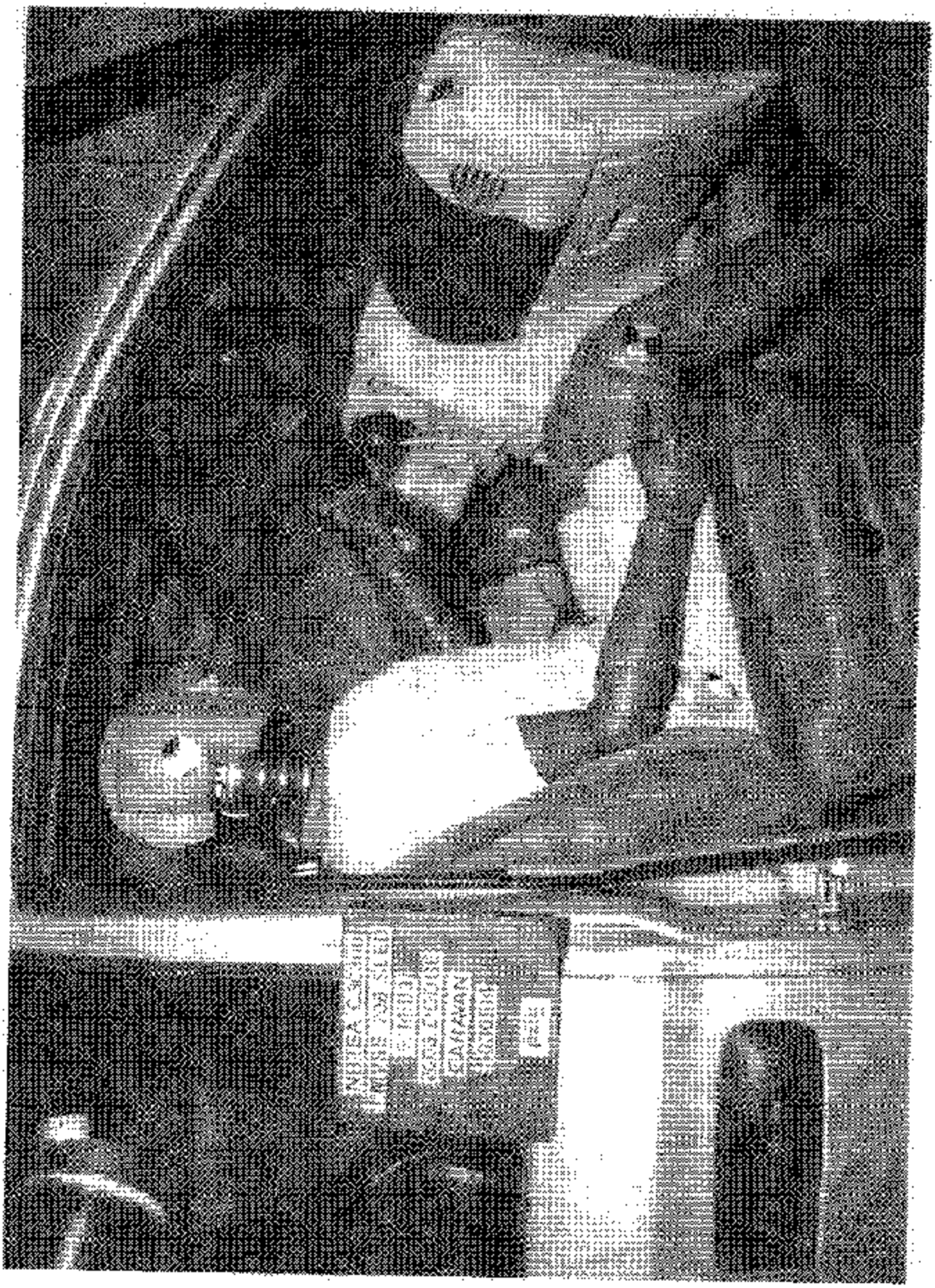


Figure A-14. Pre-Test Passenger Dummy Position View with Door Open - View 1

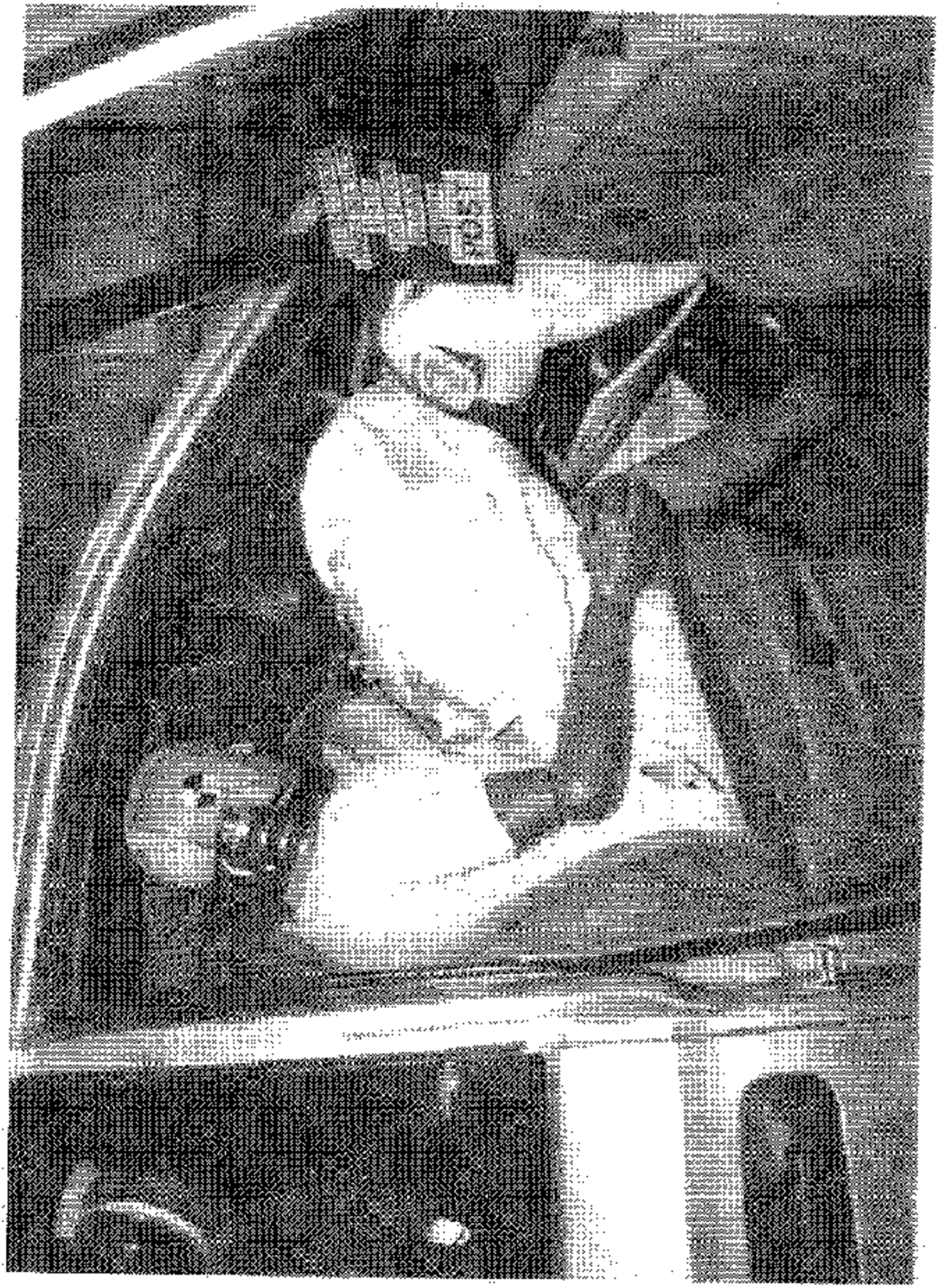


Figure A-15. Post-Test Passenger Dummy Position View with Door Open - View 1

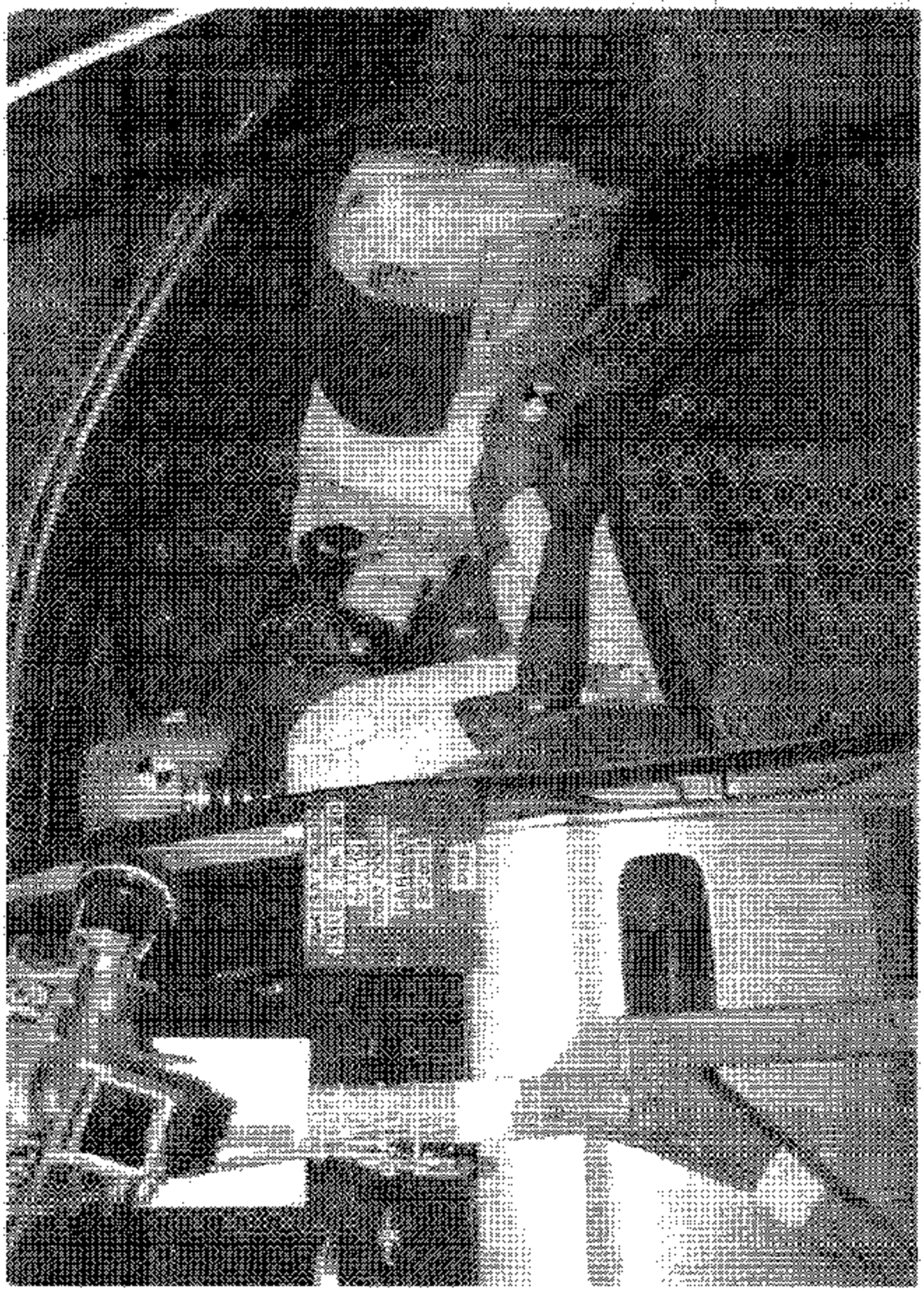


Figure A-16. Pre-Test Passenger Dummy Position View with Door Open - View 2

Figure A-17. Post-Test Passenger Dummy Position View with Door Open - View 2

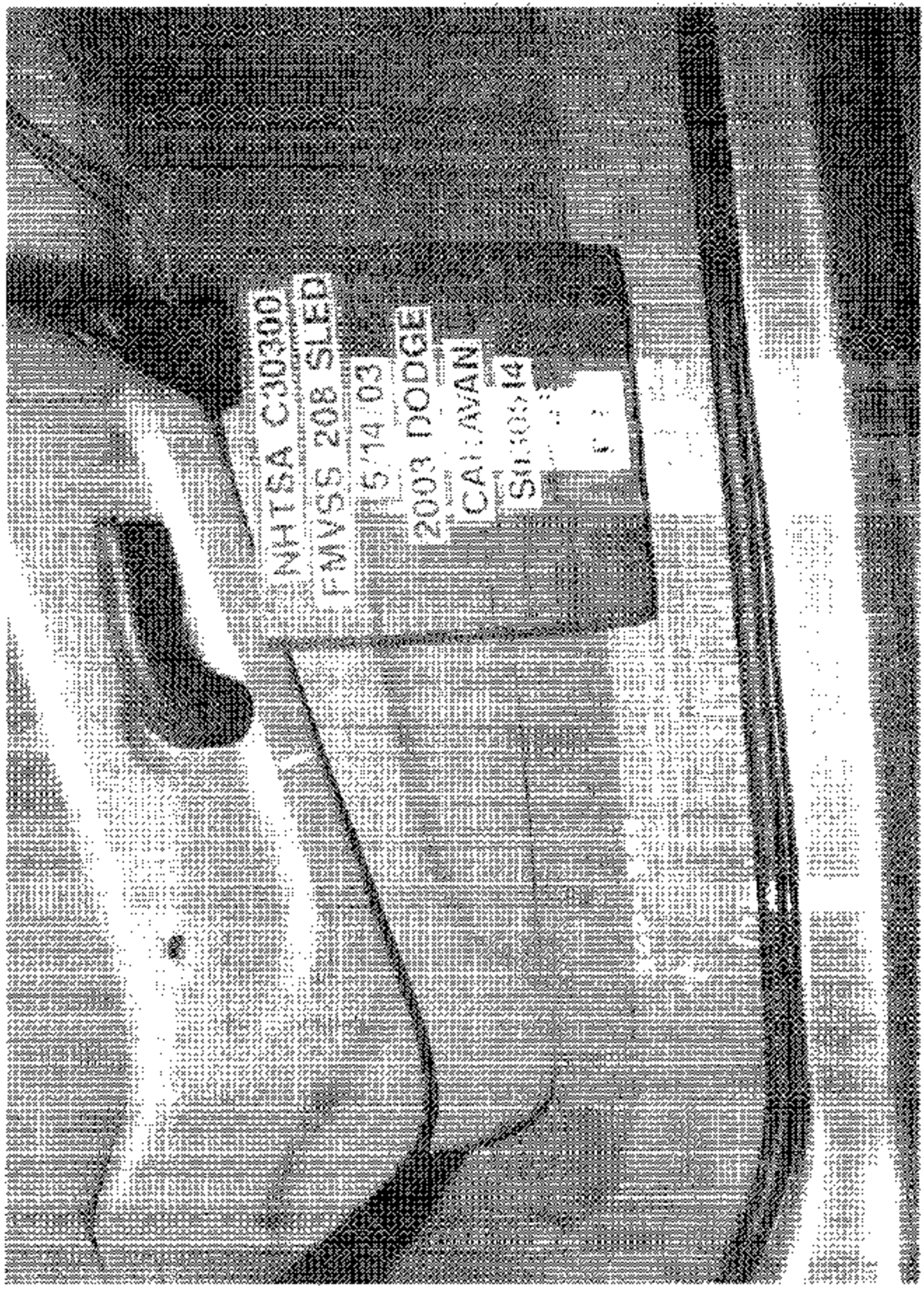


Figure A-18. Pre-Test Passenger Seat Track Position View

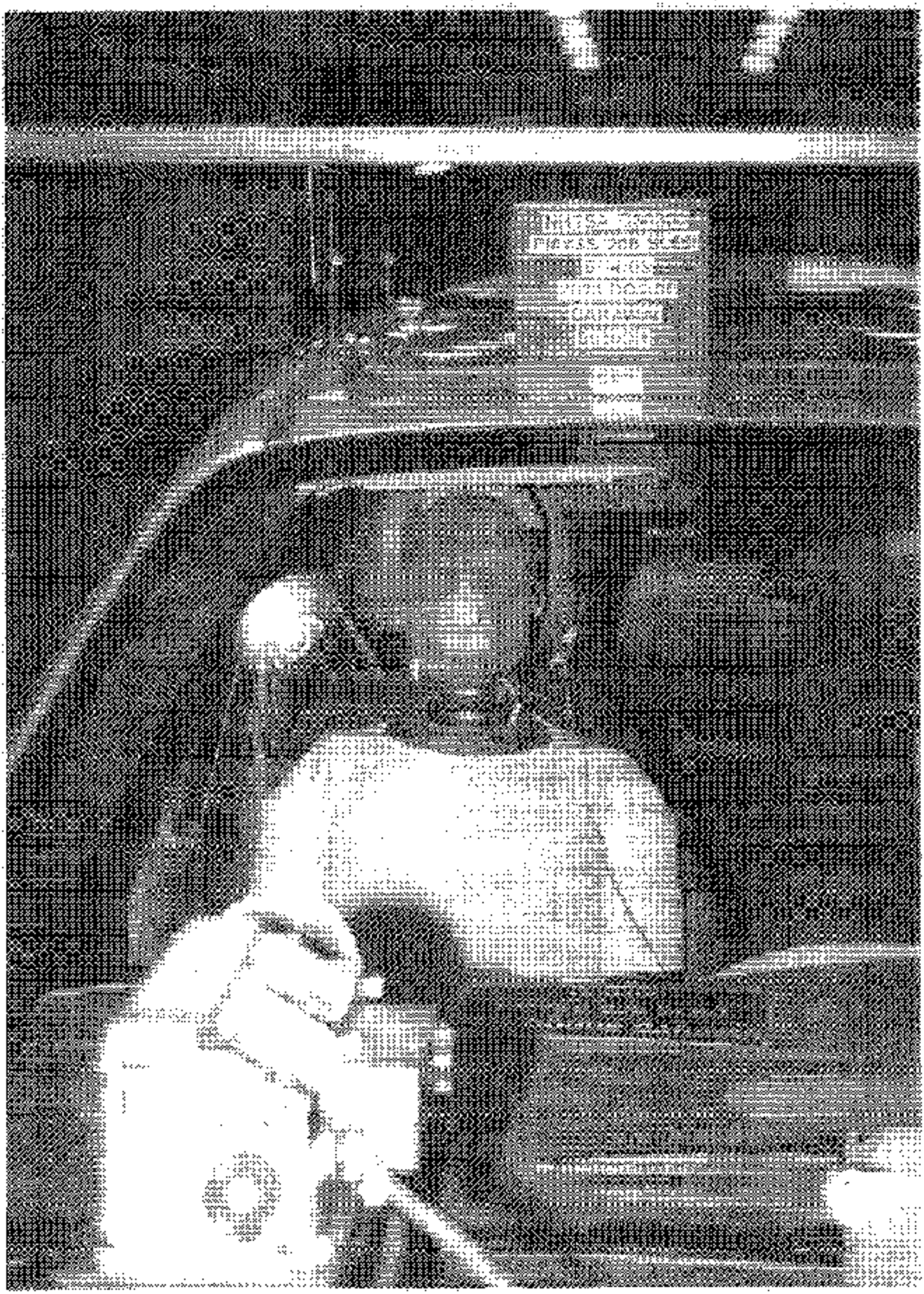


Figure A-19. Pre-Test Passenger Dummy Position Front View

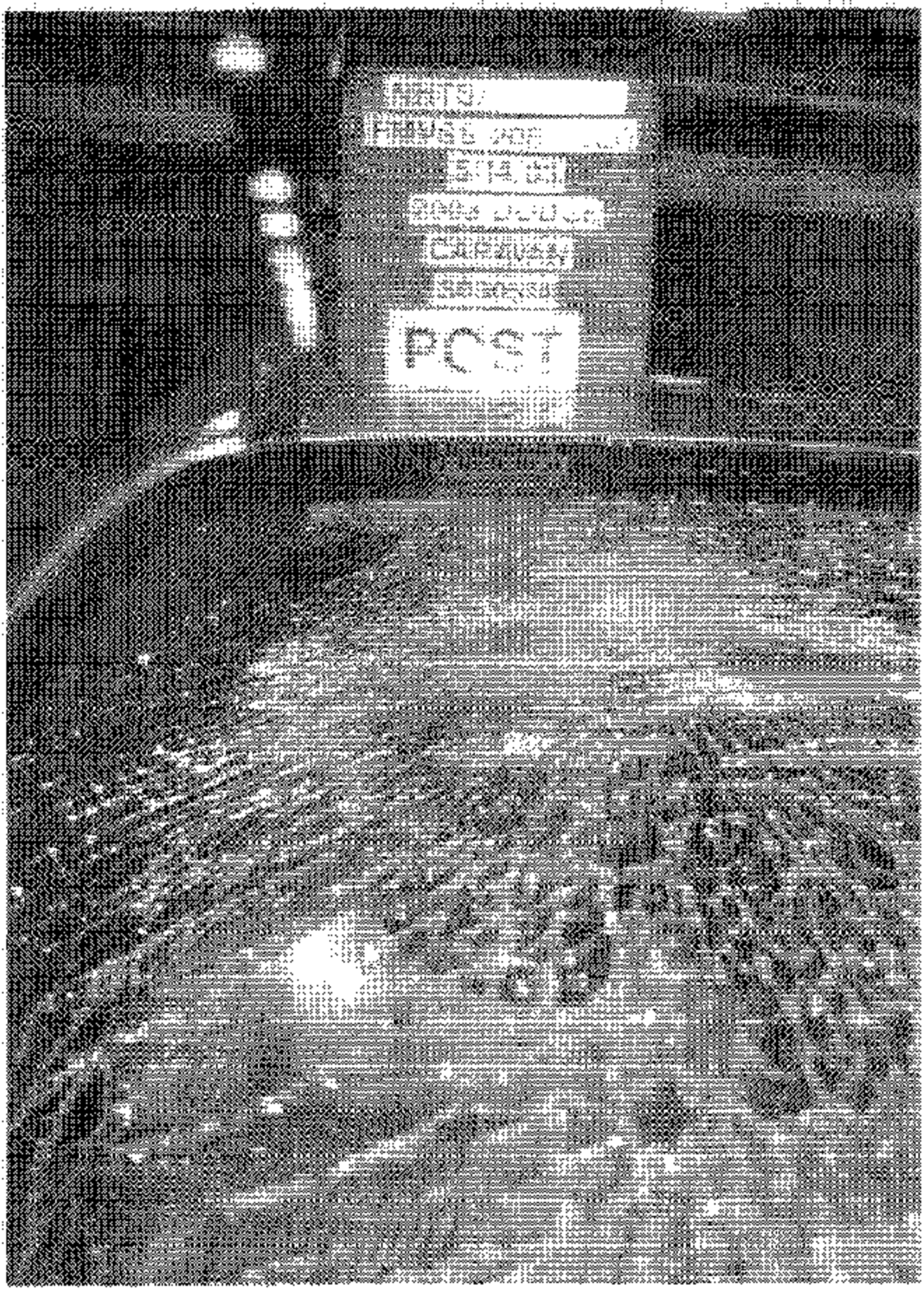


Figure A-20. Post-Test Passenger Dummy Position Front View

Figure A-21. Post-Test Driver Airbag View

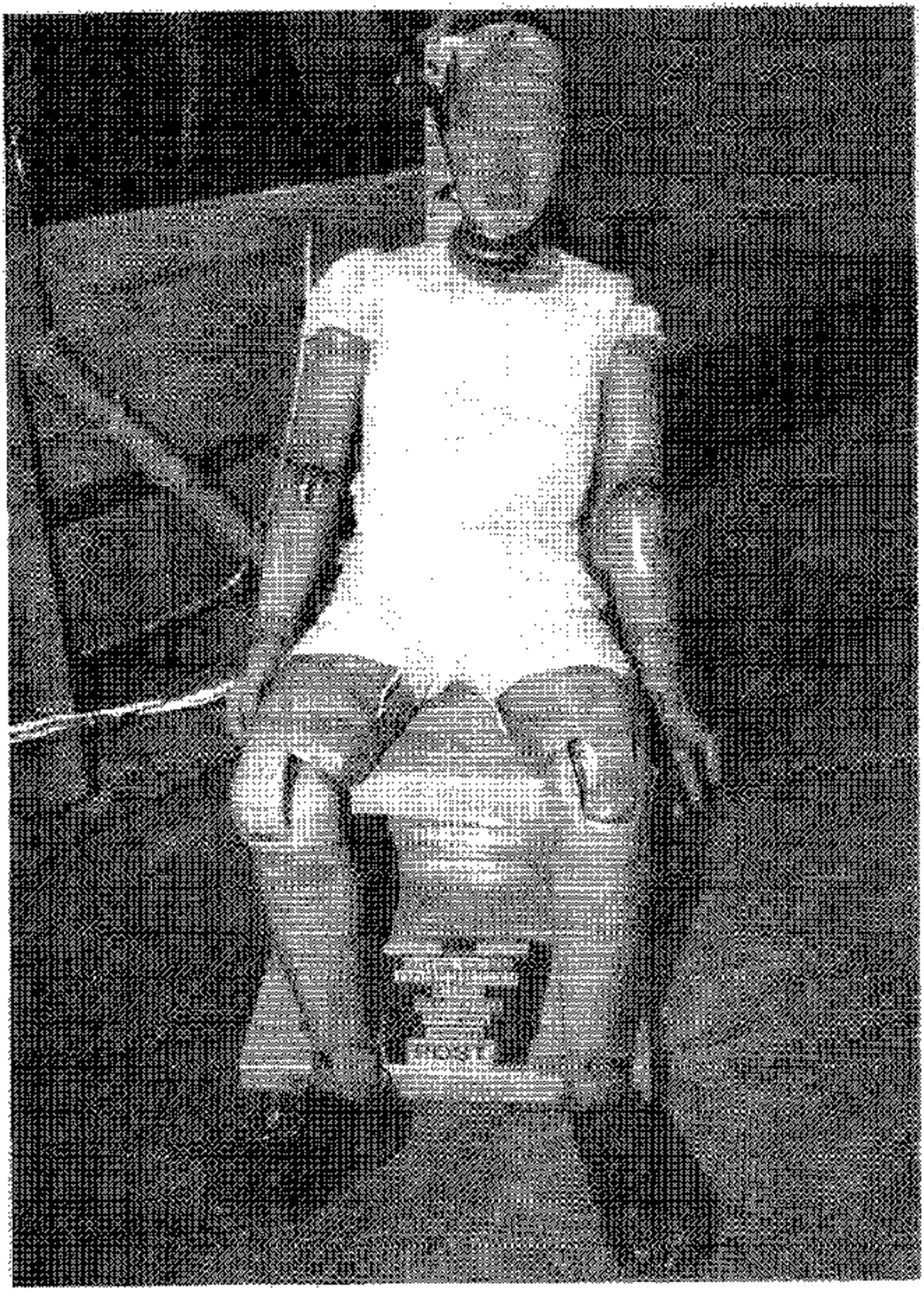


Figure A-22. Post-Test Driver Dummy Removed from Vehicle Overall View

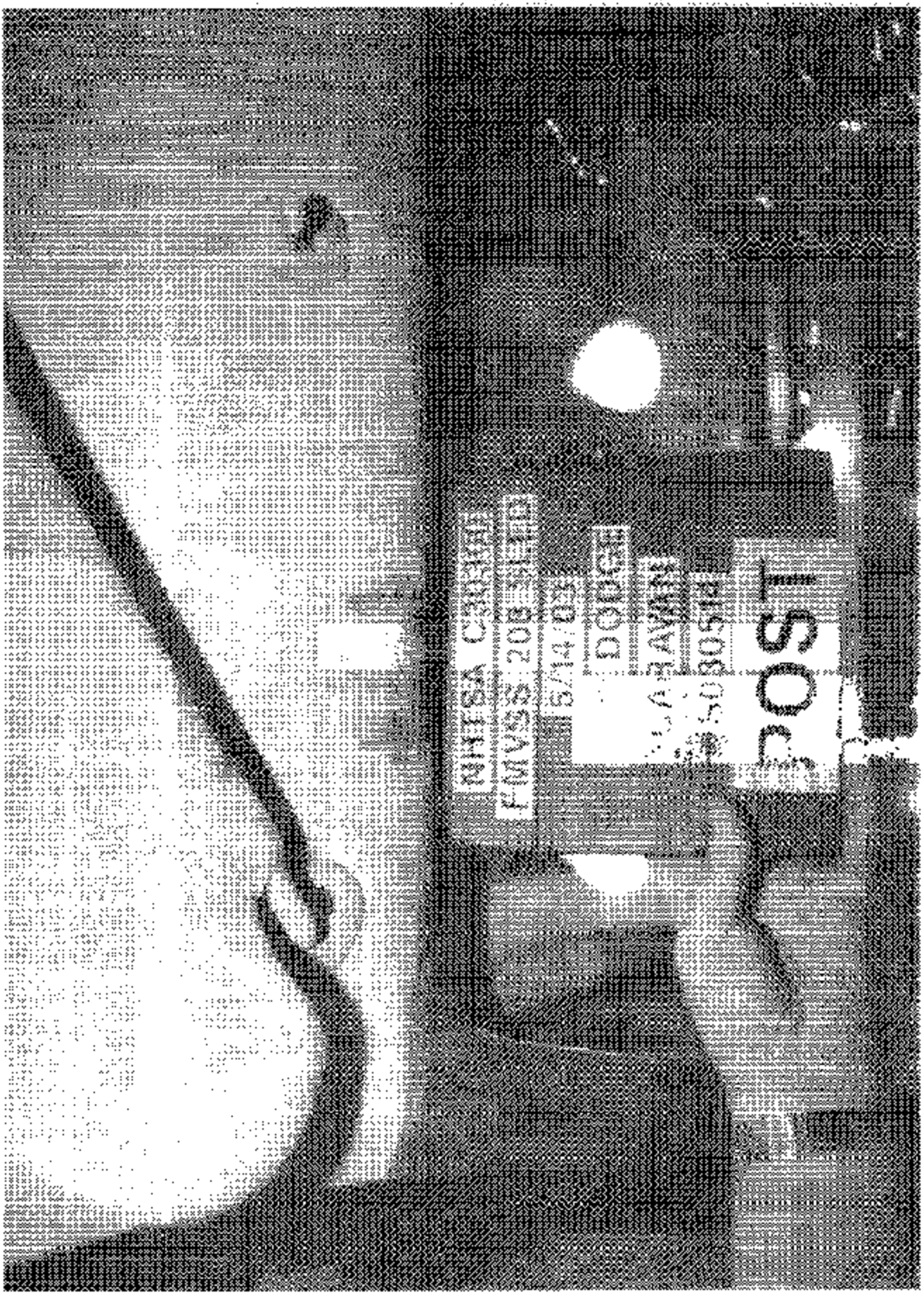


Figure A-23. Post-Test Driver Head Contact – View 1

Figure A-24. Post-Test Passenger Airbag View

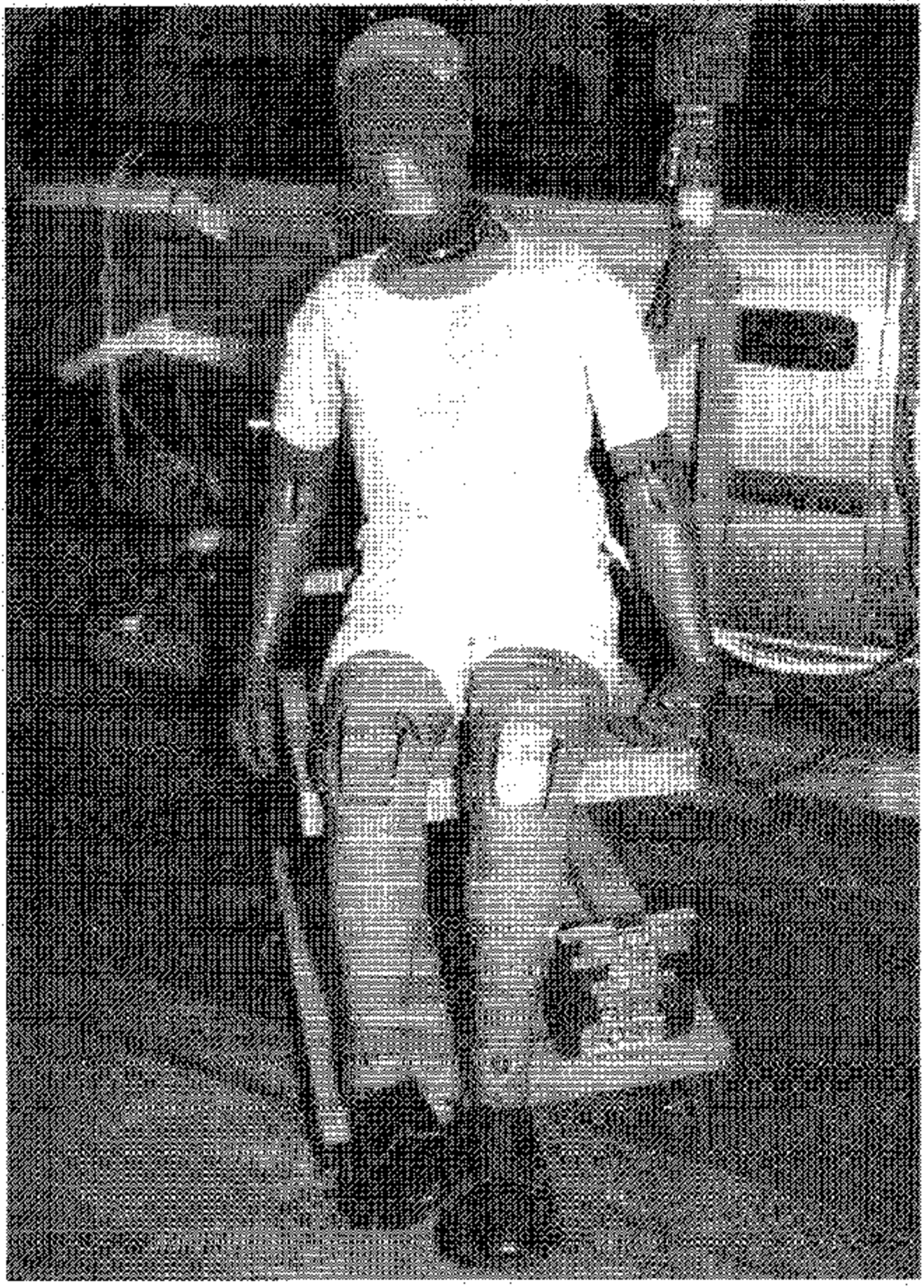


Figure A-25. Post-Test Passenger Dummy Removed from Vehicle Overall View

Figure A-26. Post-Test Passenger Head Contact – View 1

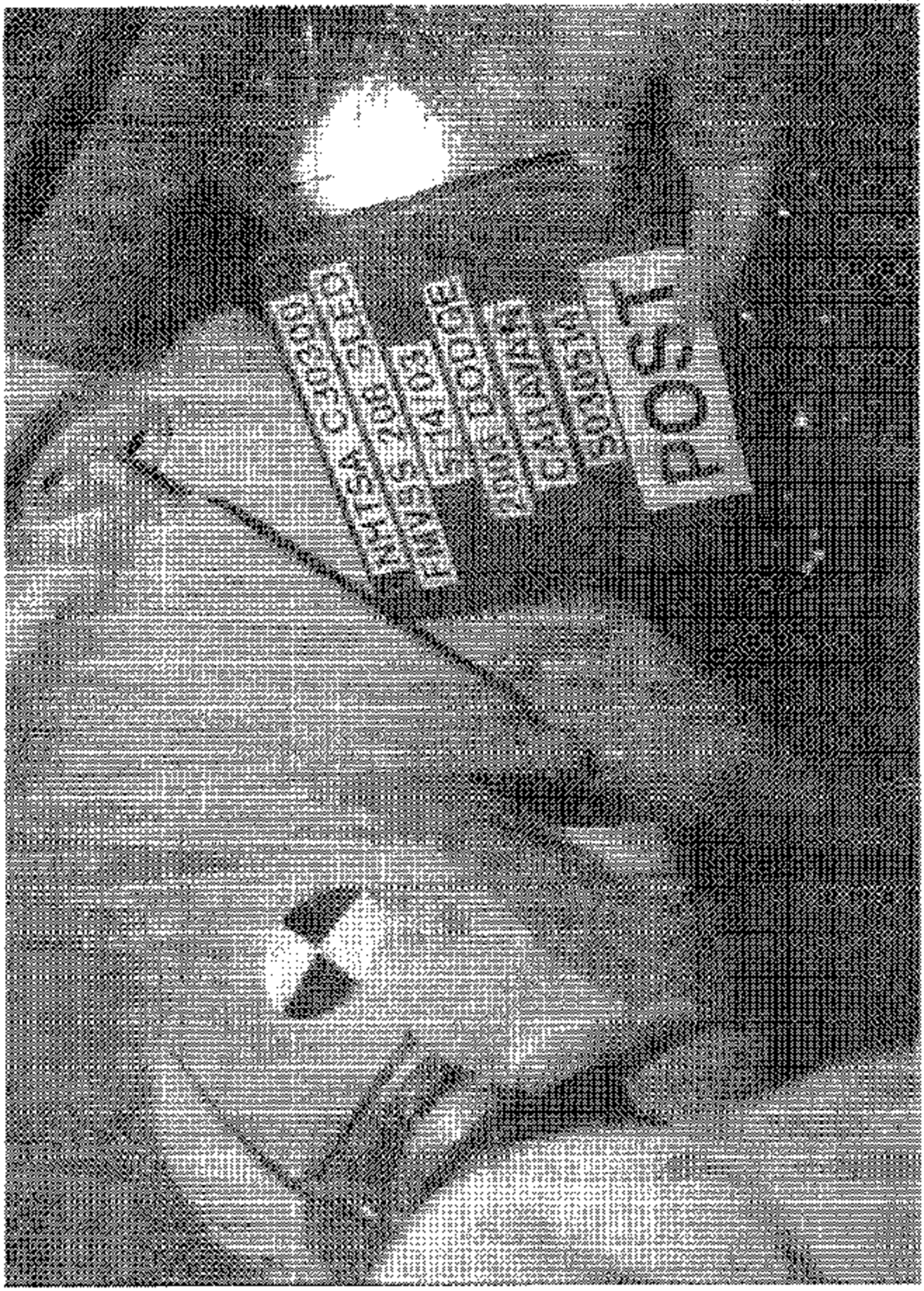


Figure A-27. Post-Test Passenger Head Contact – View 2

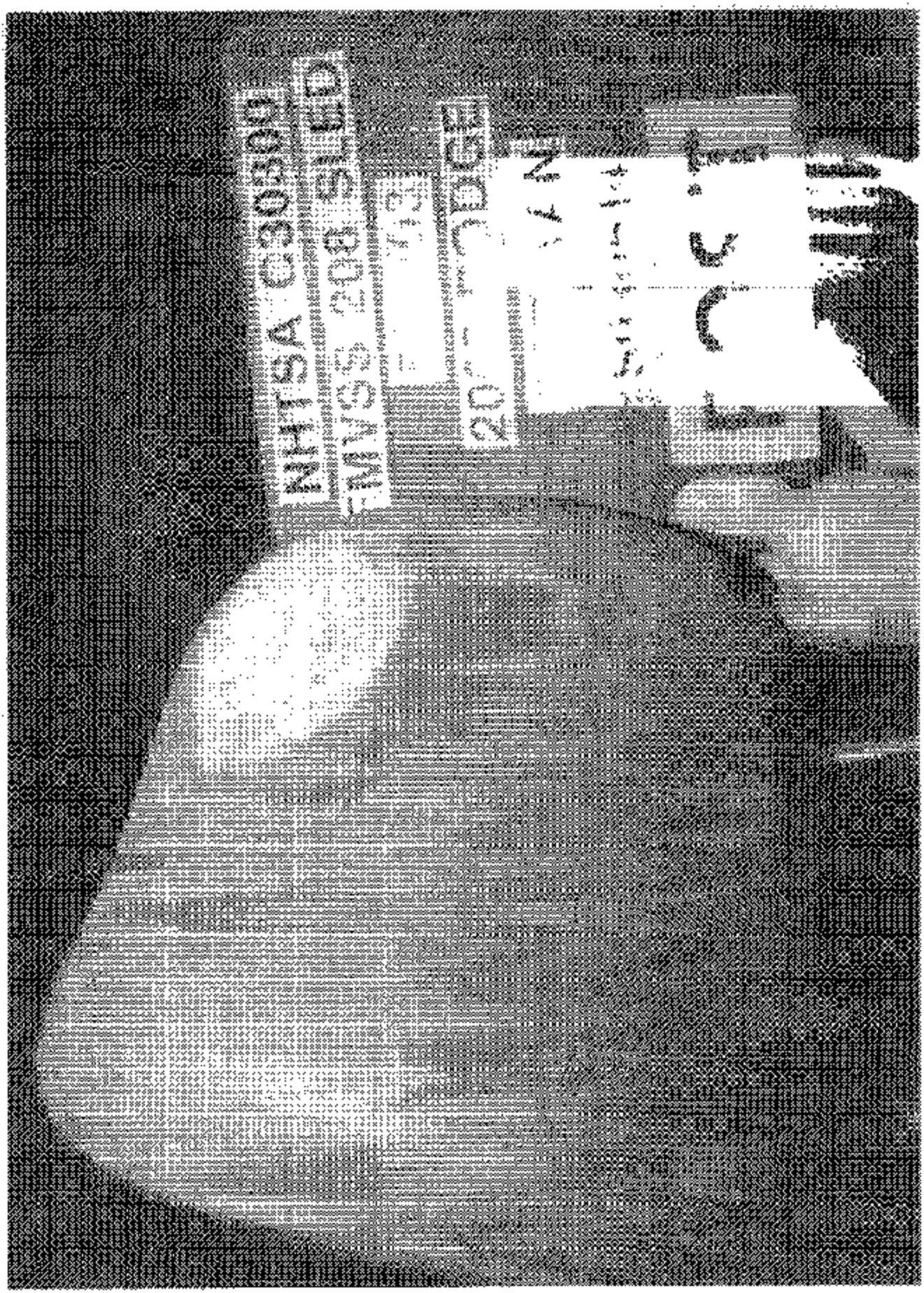


Figure A-28. Post-Test Passenger Head Contact – View 3

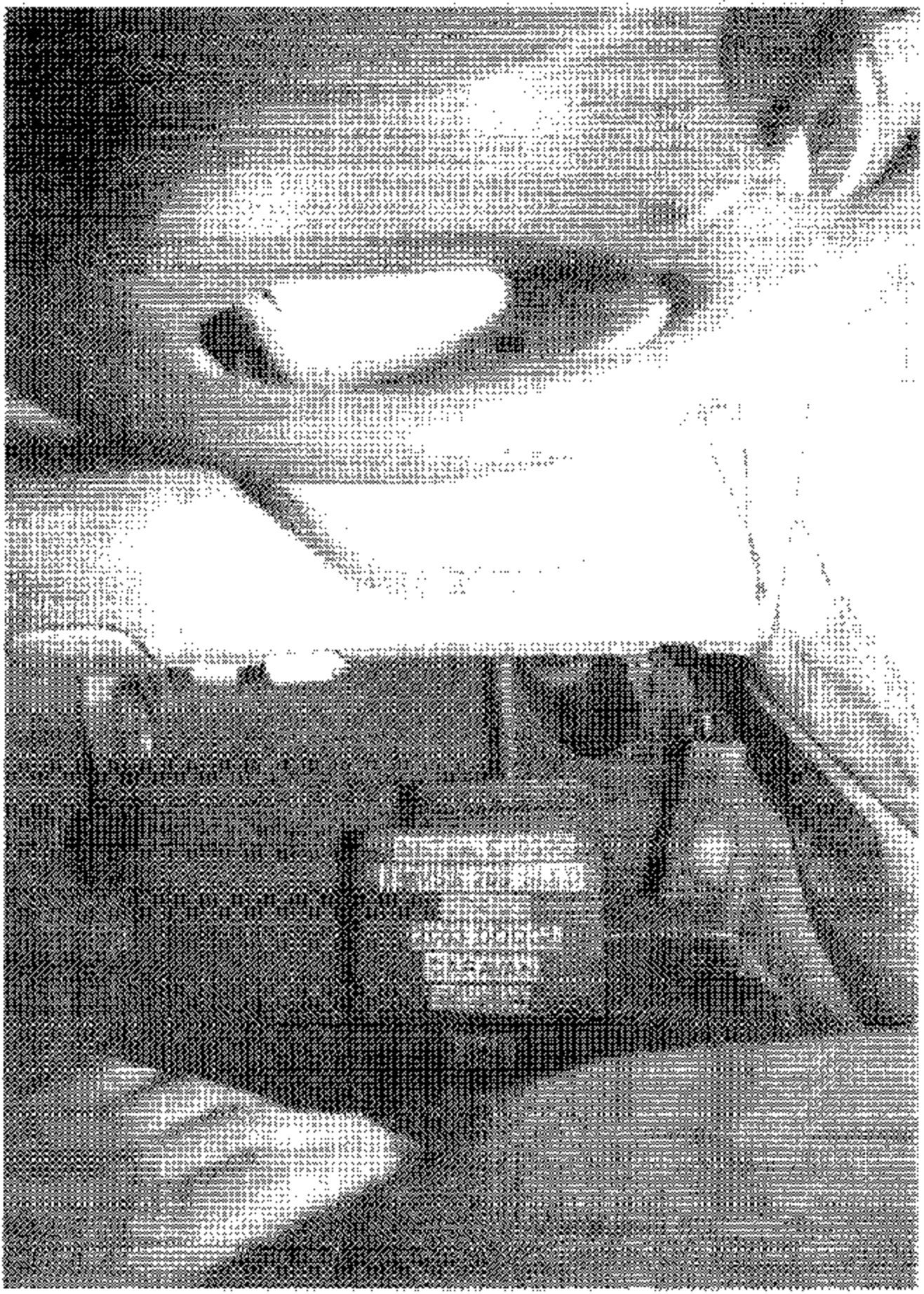


Figure A-29. Pre-Test Driver Knee Bolster View

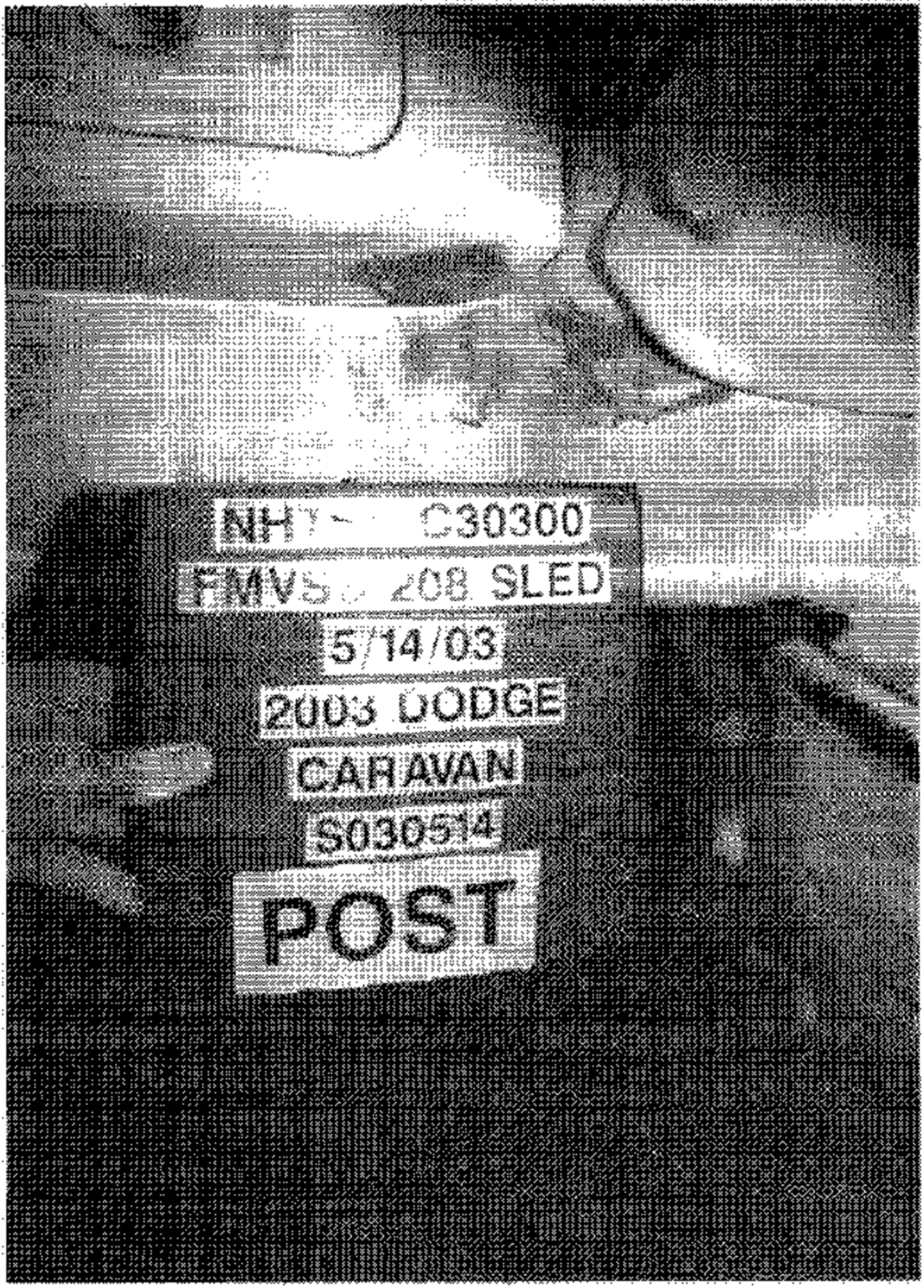


Figure A-30. Post-Test Driver Knee Bolster – View 1

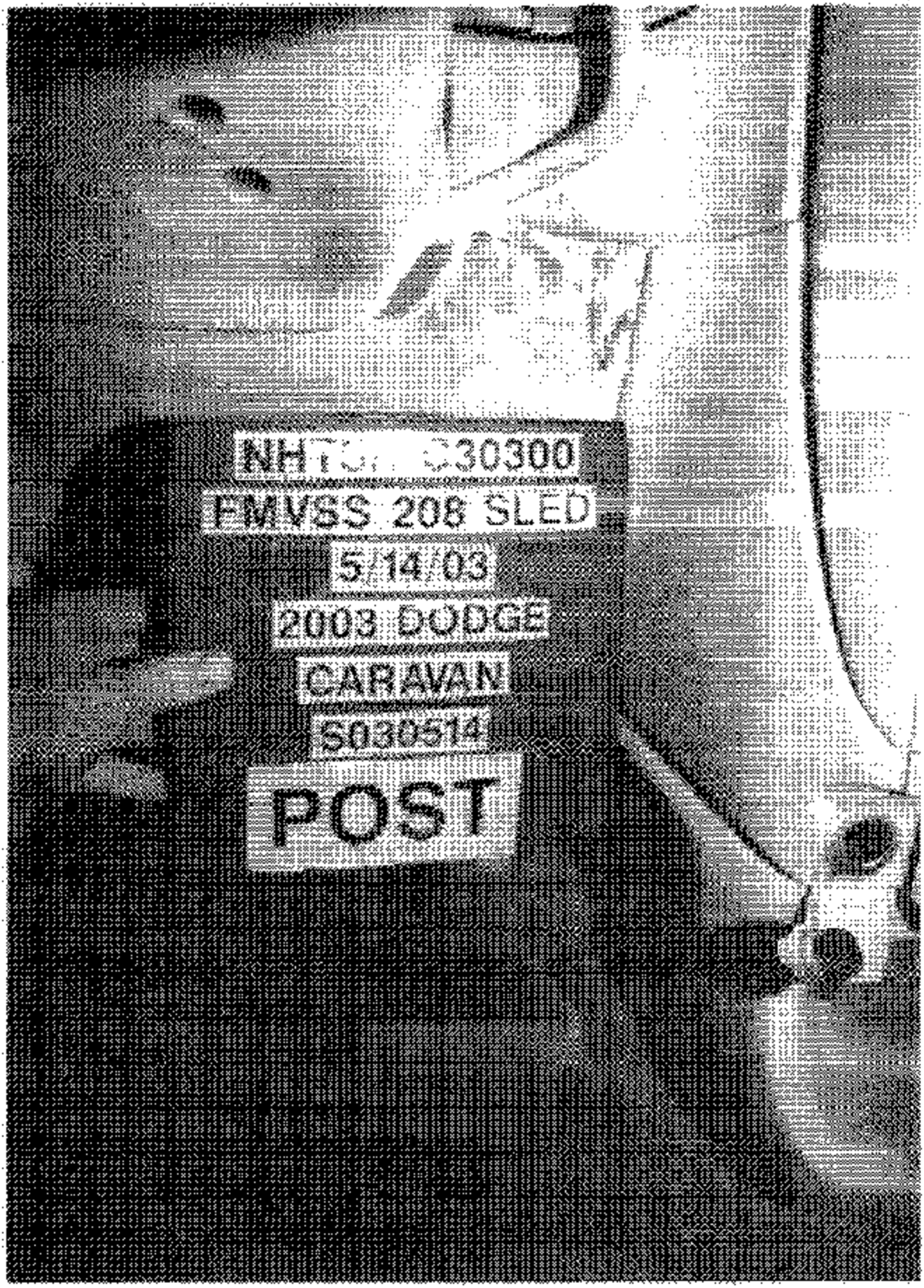


Figure A-31. Post-Test Driver Knee Bolster - View 2

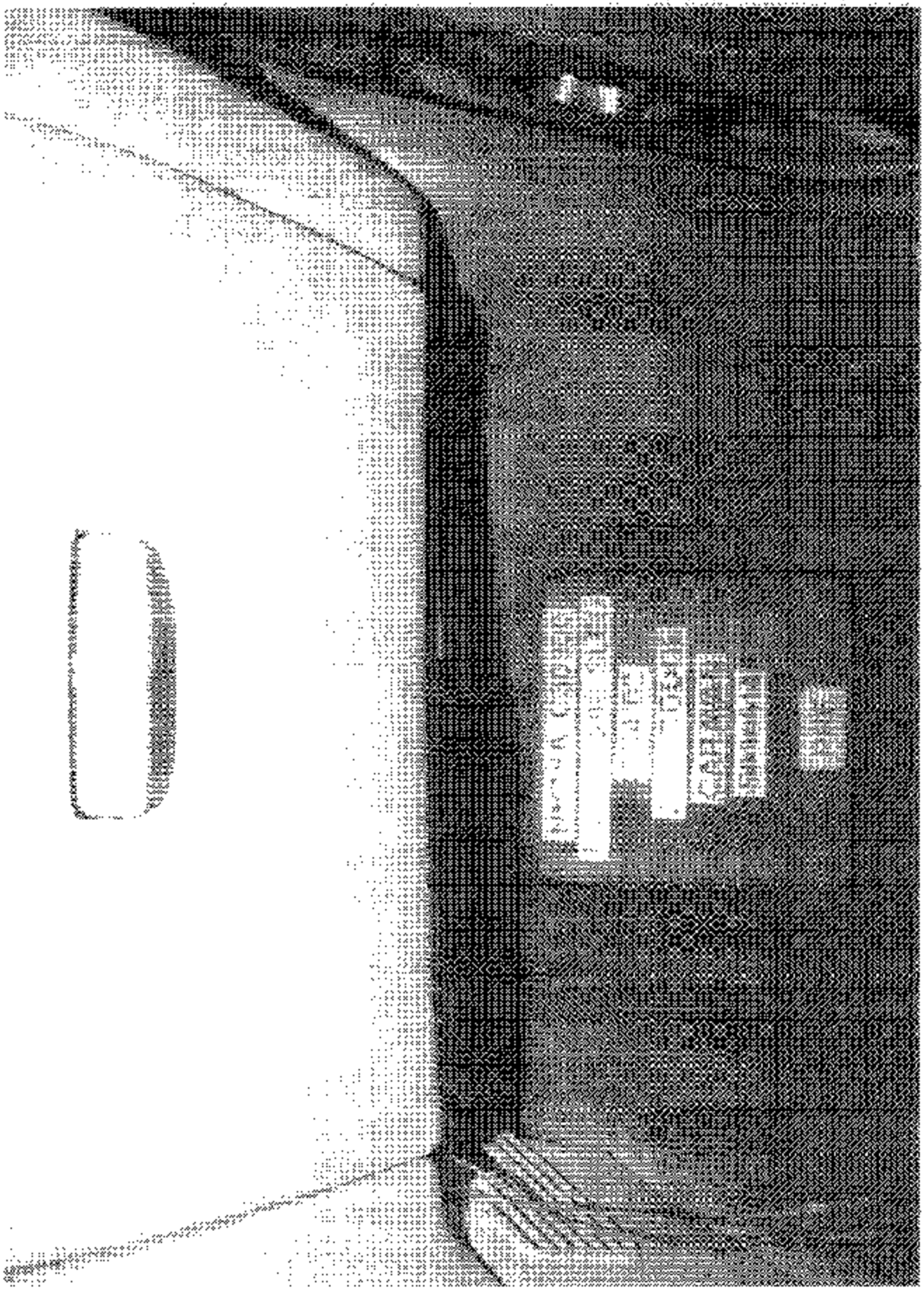


Figure A-32. Pre-Test Passenger Glove Box View

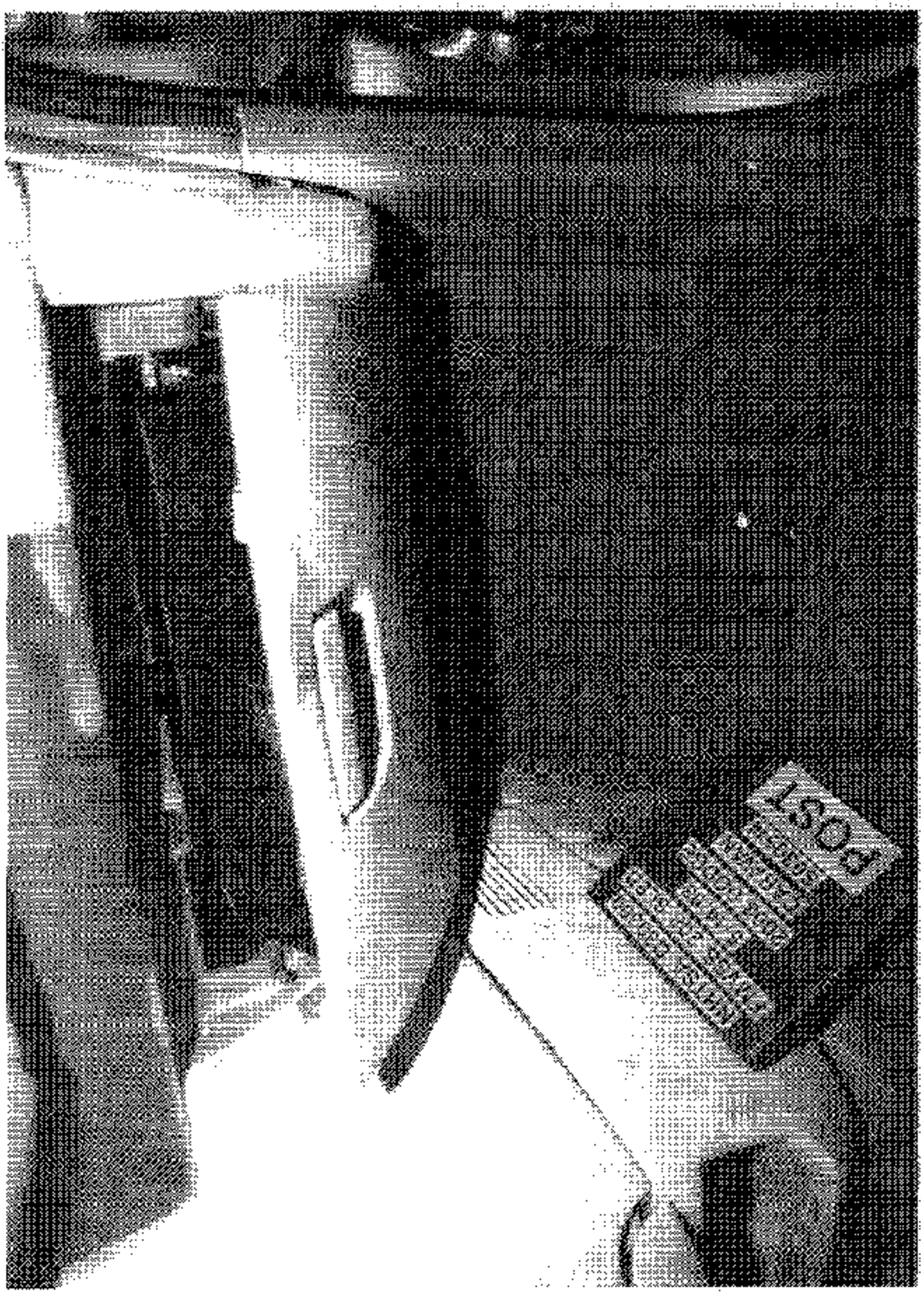


Figure A-33. Post-Test Passenger Glove Box – View 1

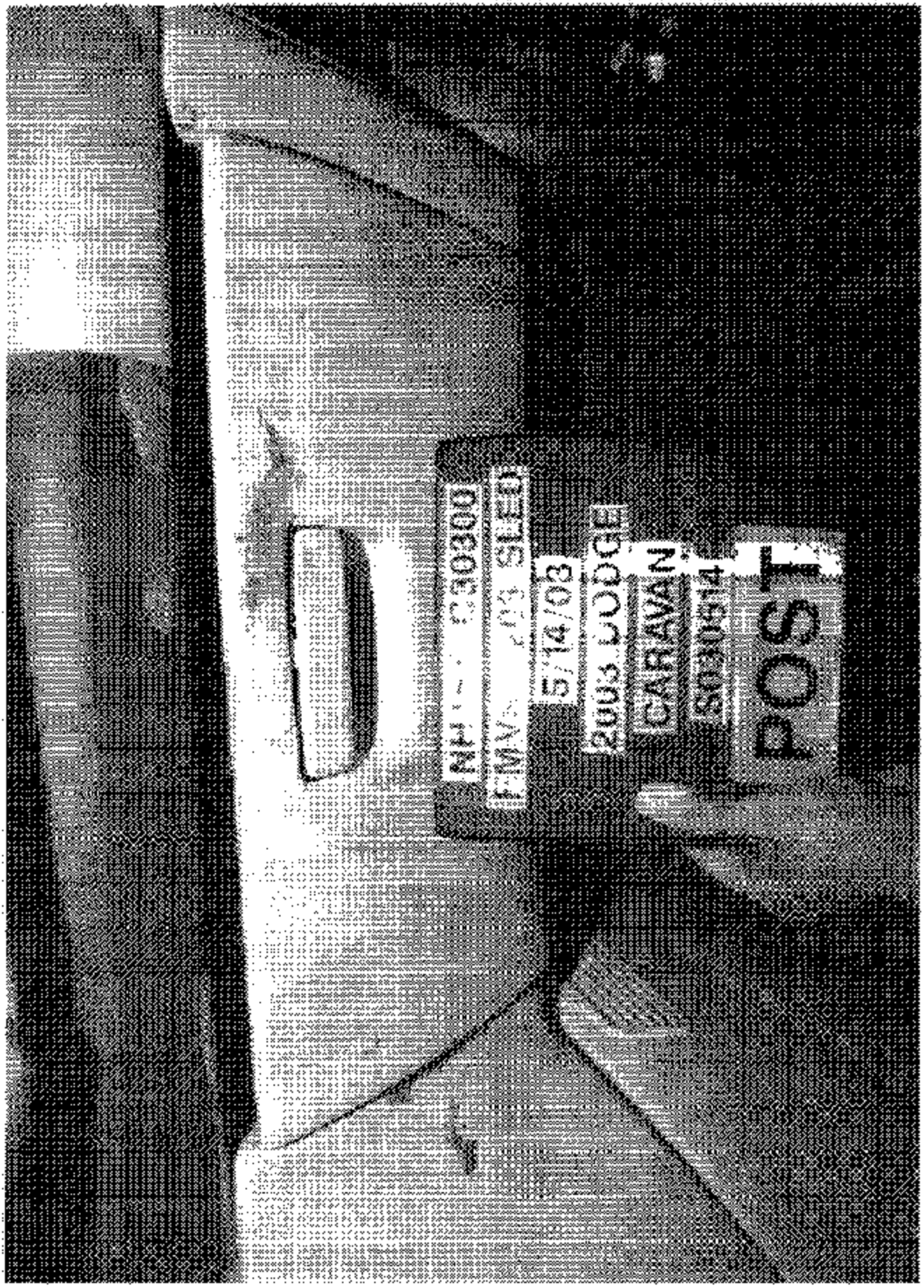


Figure A-34. Post-Test Passenger Glove Box – View 2

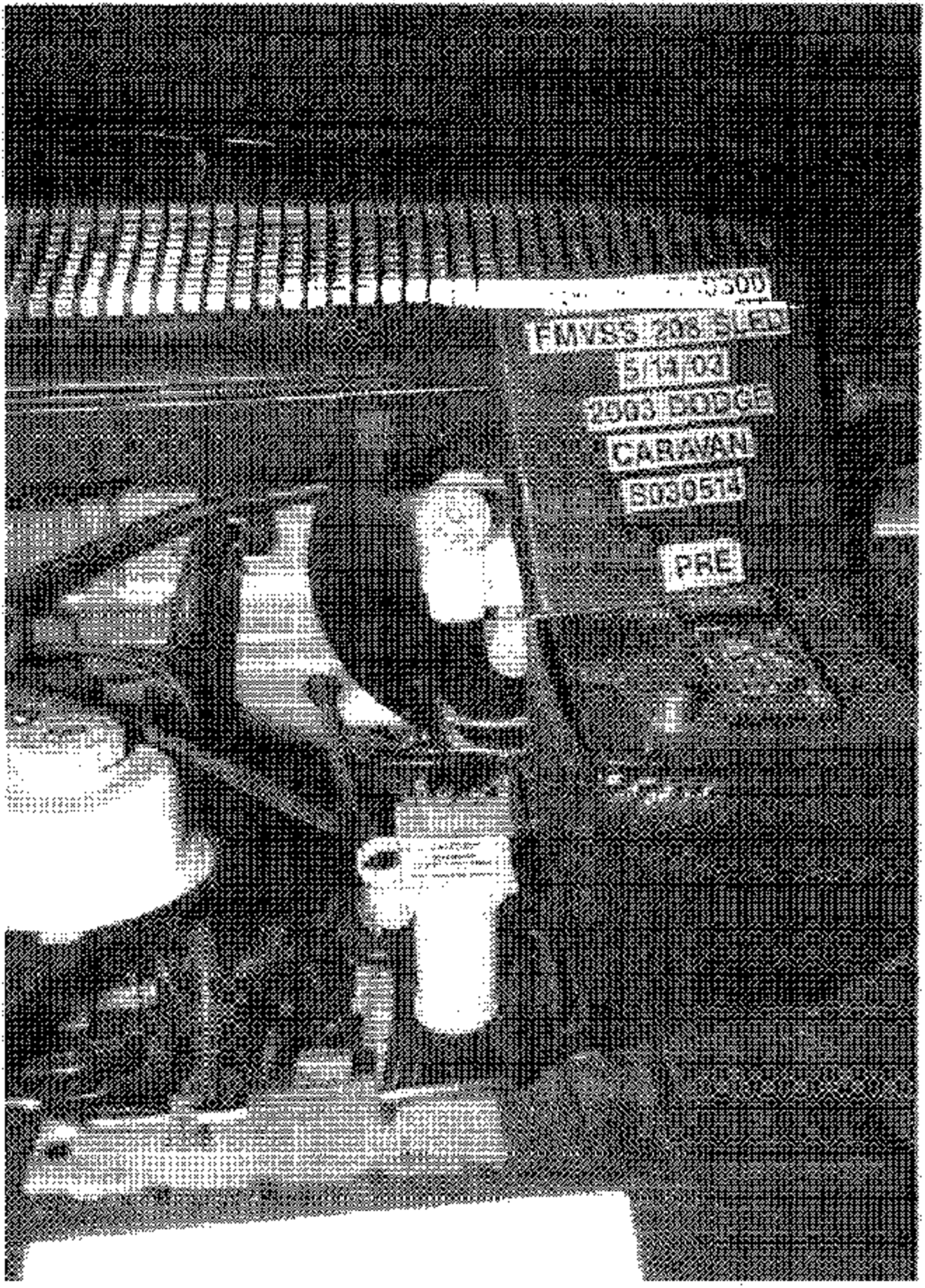


Figure A-35. Pre-Test Steering Column Linkage in Engine Compartment View

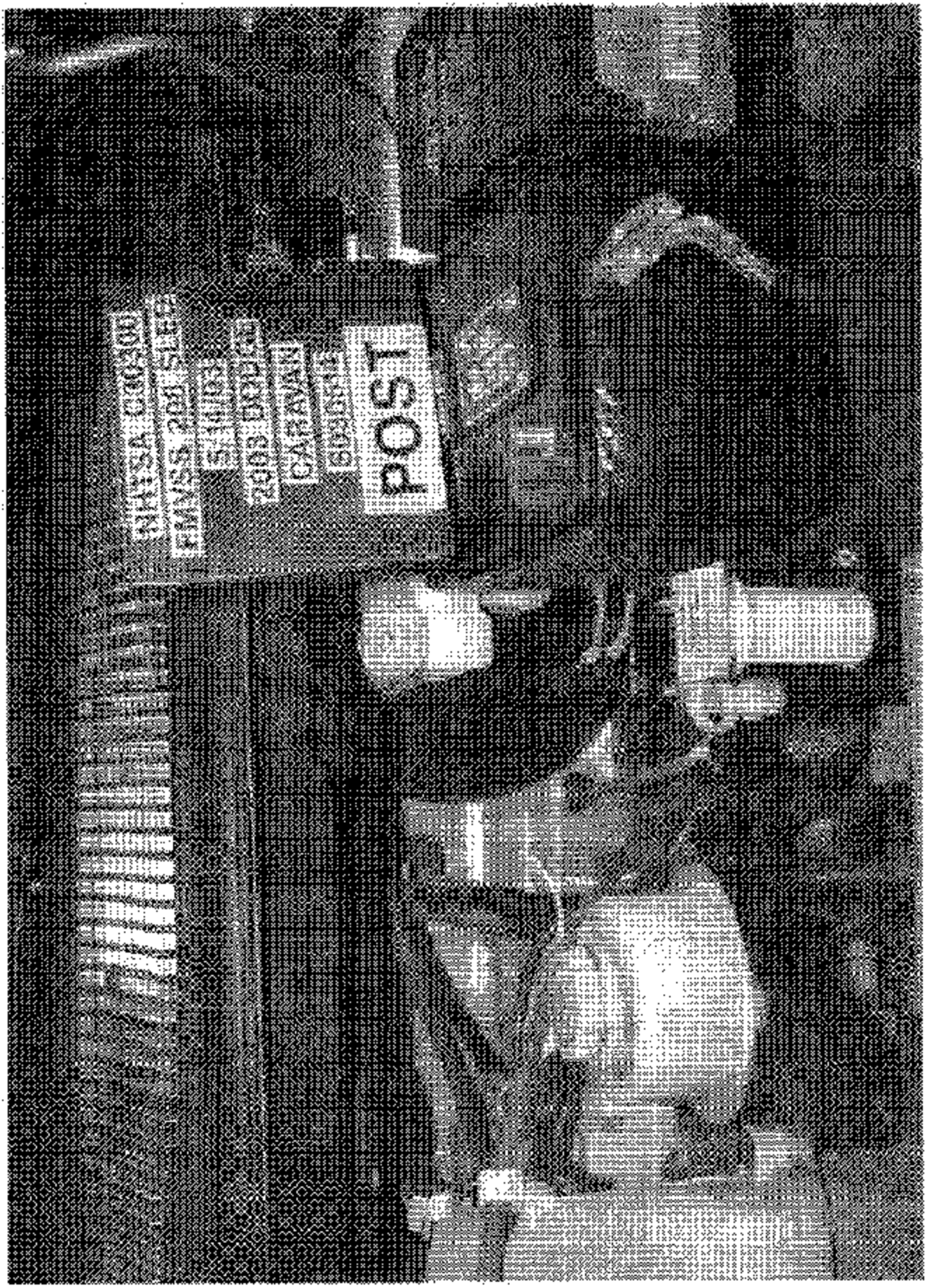


Figure A-36. Post-Test Steering Column Linkage in Engine Compartment View

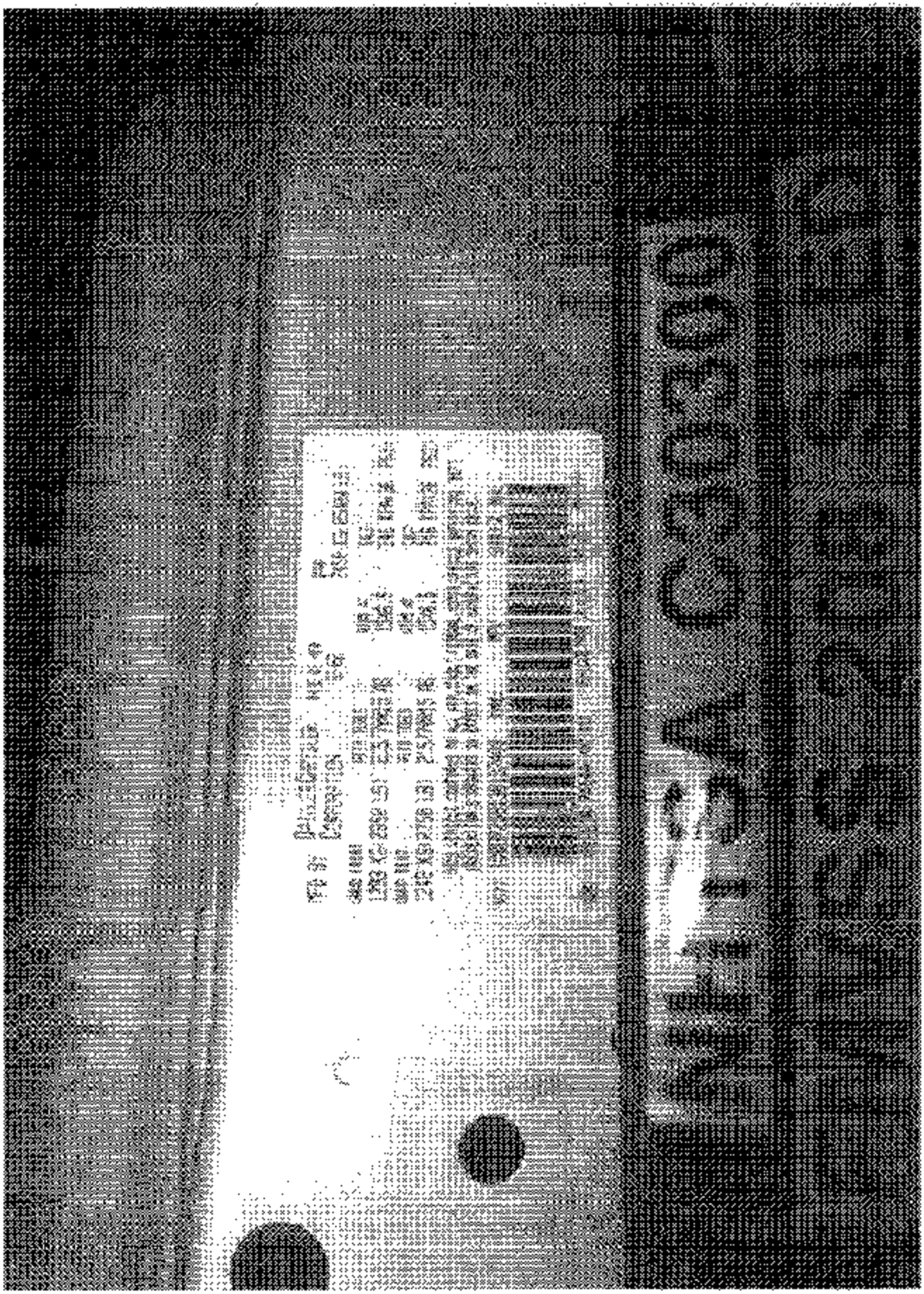
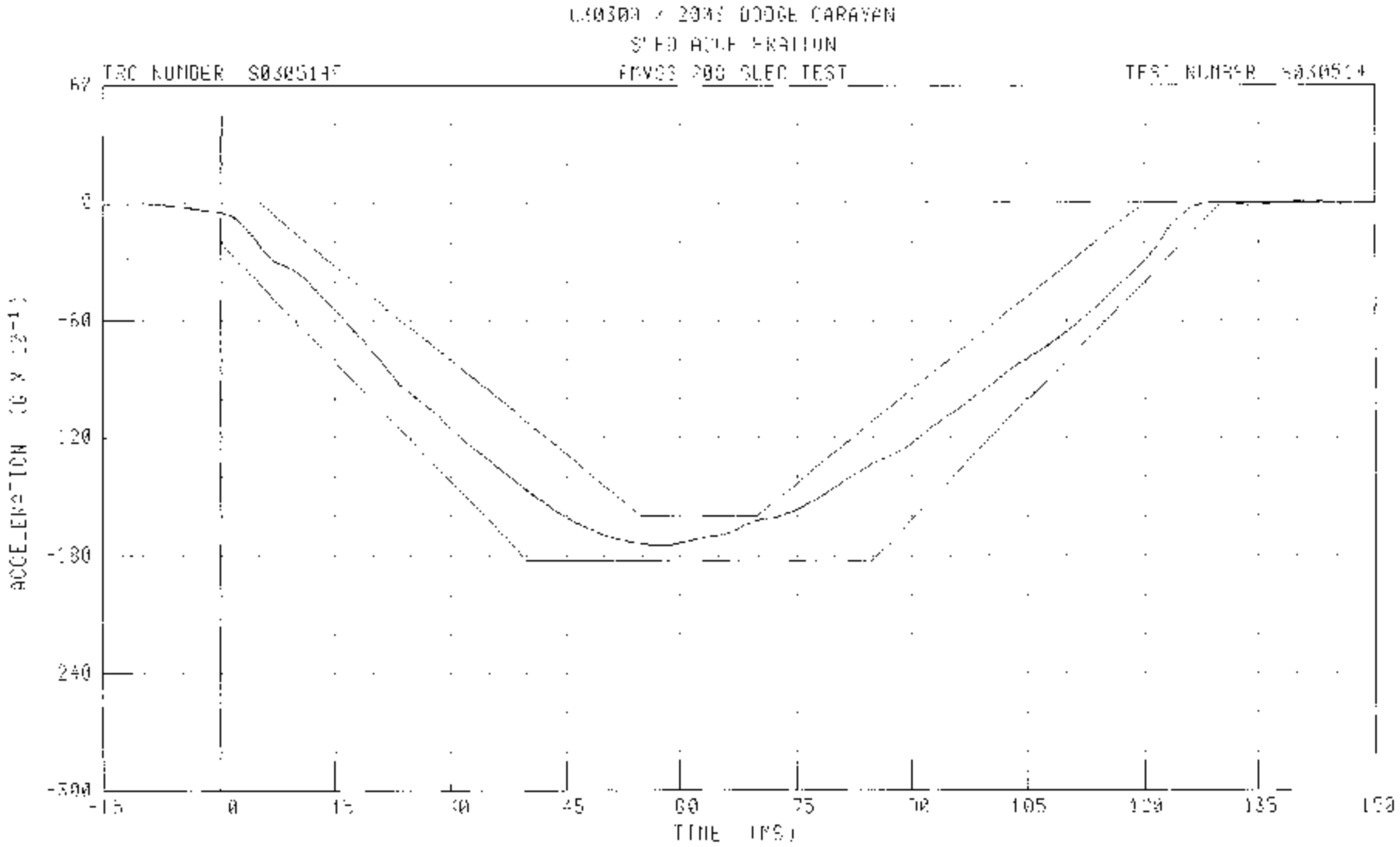


Figure A-37. Pre-Test Vehicle Certification Label View

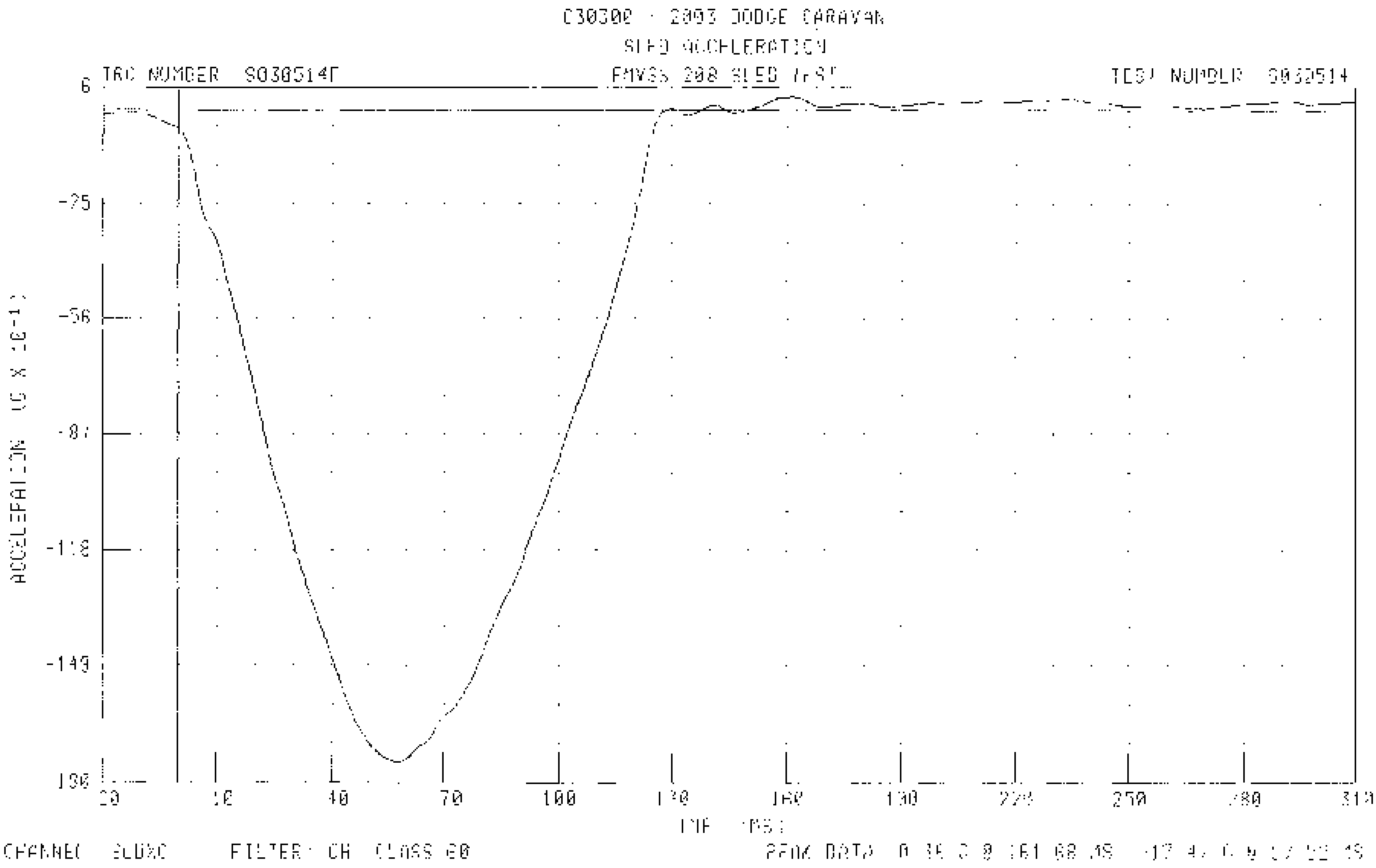
Appendix B

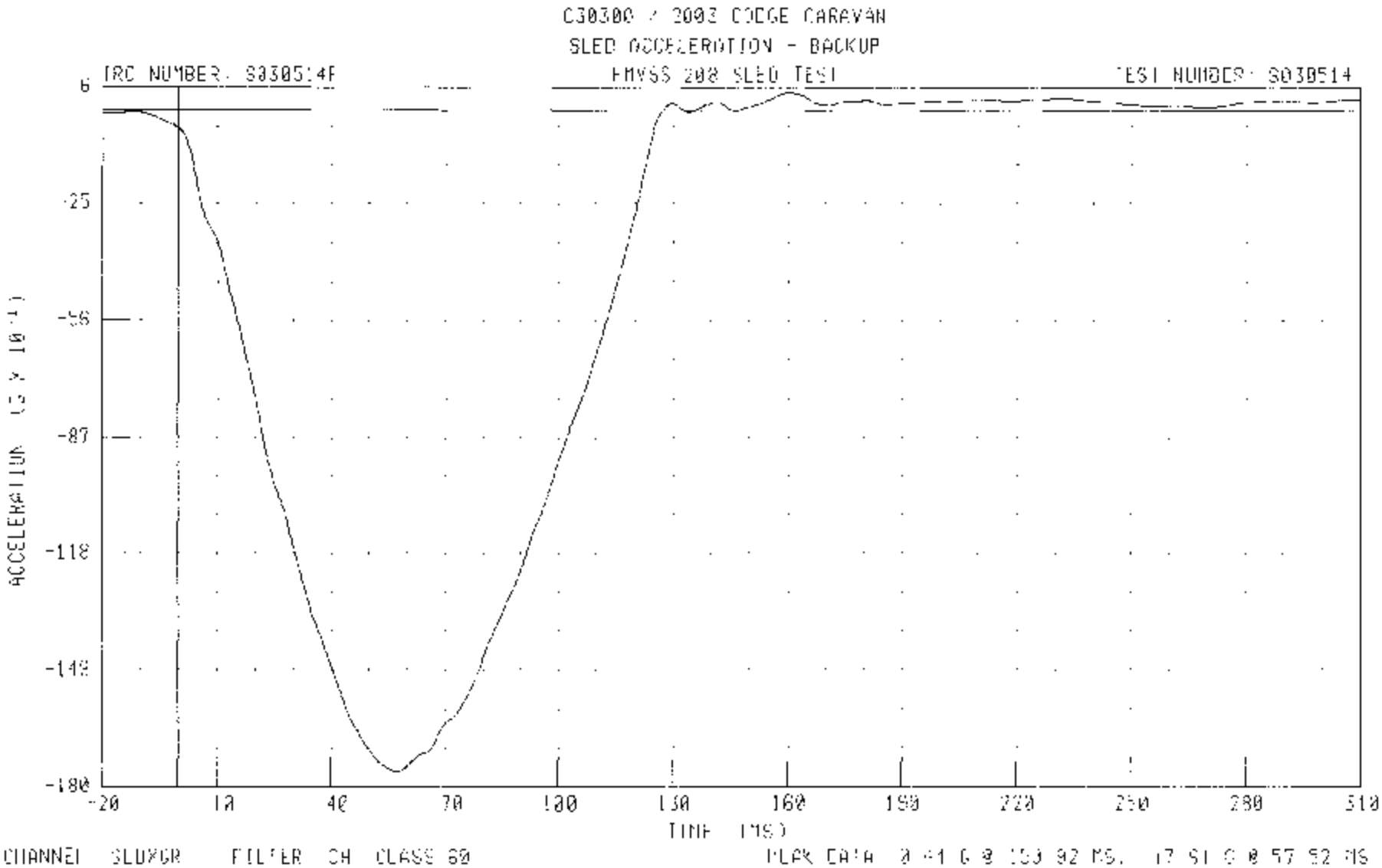
Data Plots

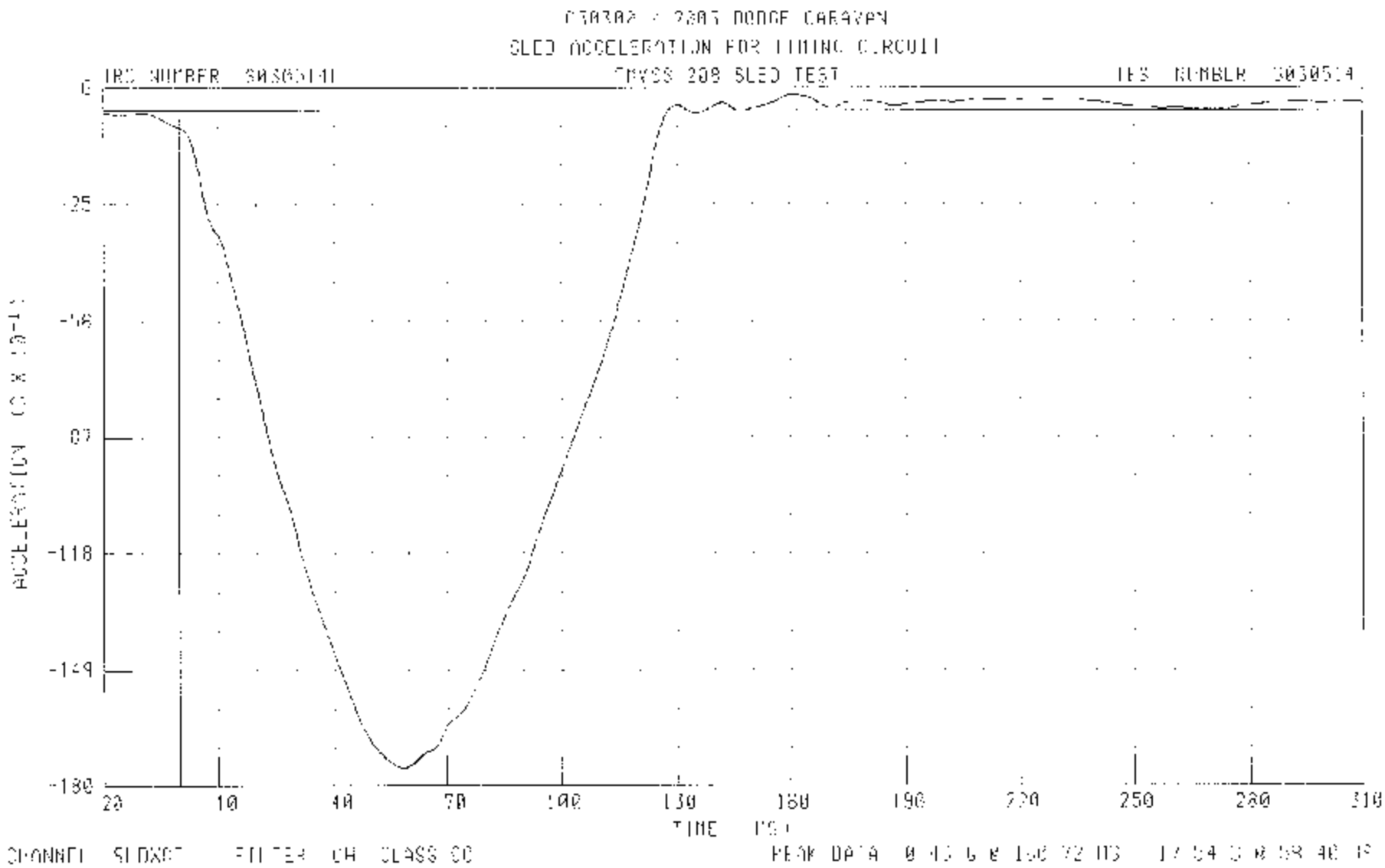

C40300 / 2001 DODGE CARAVAN
SLED ACCELERATION
TEST NUMBER S030514
60
0
-60
-120
-180
-240
-300
-15
0
15
30
45
60
75
90
105
120
135
150
TIME (MS)

B-2

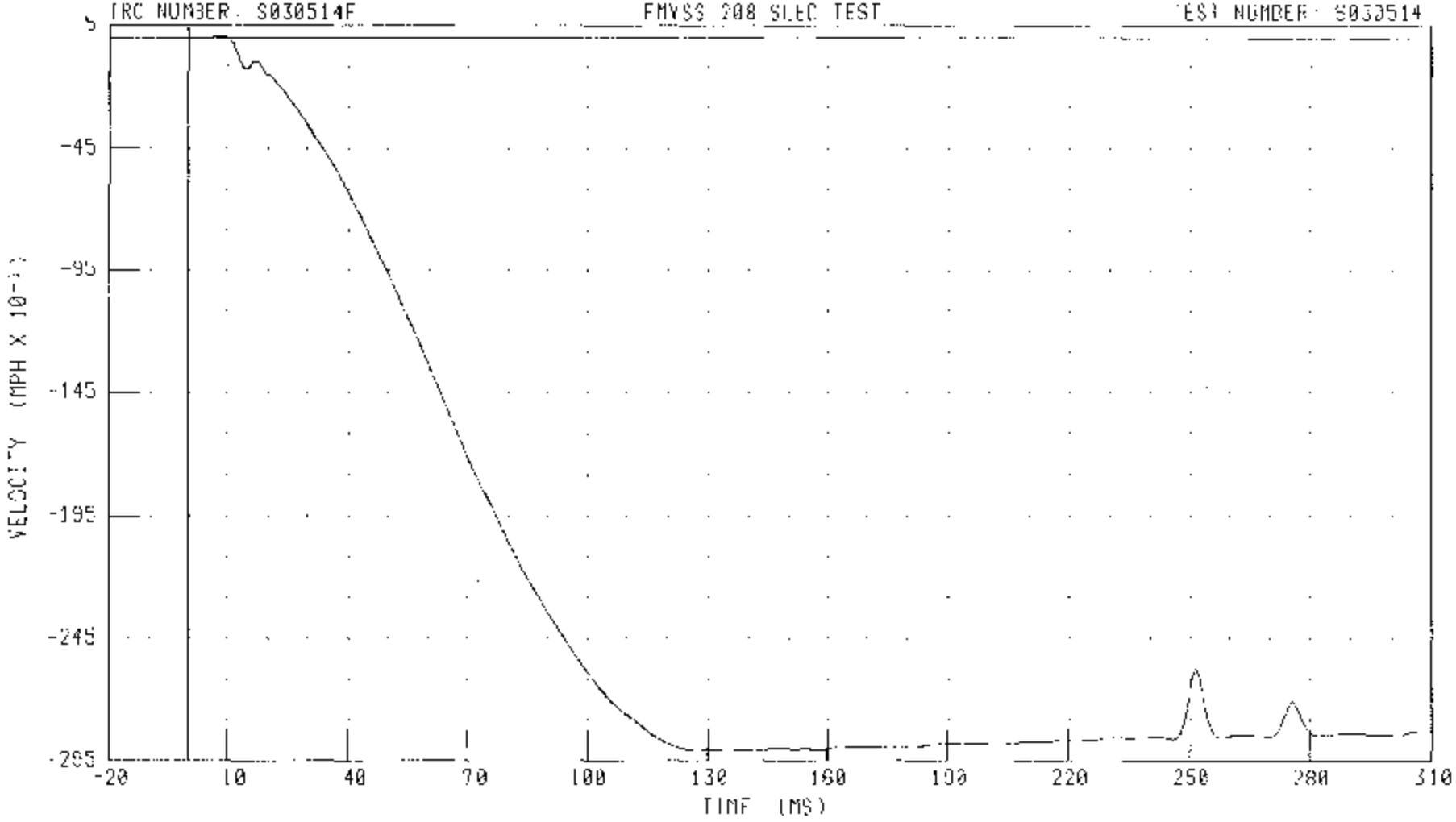
S030514


C30300 · 2003 DODGE CARAVAN
SLED ACCELERATION
TRC NUMBER S030514F
FMVSS 208 SLED TEST
TEST NUMBER S030514
ACCELERATION (G X 10-1)
6
-25
-56
-87
-118
-149
-180
-20
10
40
70
100
130
160
190
250
280
310
TIME (MS)
CHANNEL 8LDXC
FILTER: CH CLASS 60
PEAK DATA


C30300 / 2003 DODGE CARAVAN
SLED ACCELERATION - BACKUP
IRC NUMBER: S030514F
FMVSS 208 SLED TEST
TEST NUMBER: S030514
6
-25
-56
-87
-118
-149
-180
ACCELERATION (G'S)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL SLDXGR FILTER CH CLASS 60
PEAK DATA 0 -41 G @ 103.92 MS. 17 SI G @ 57.92 MS

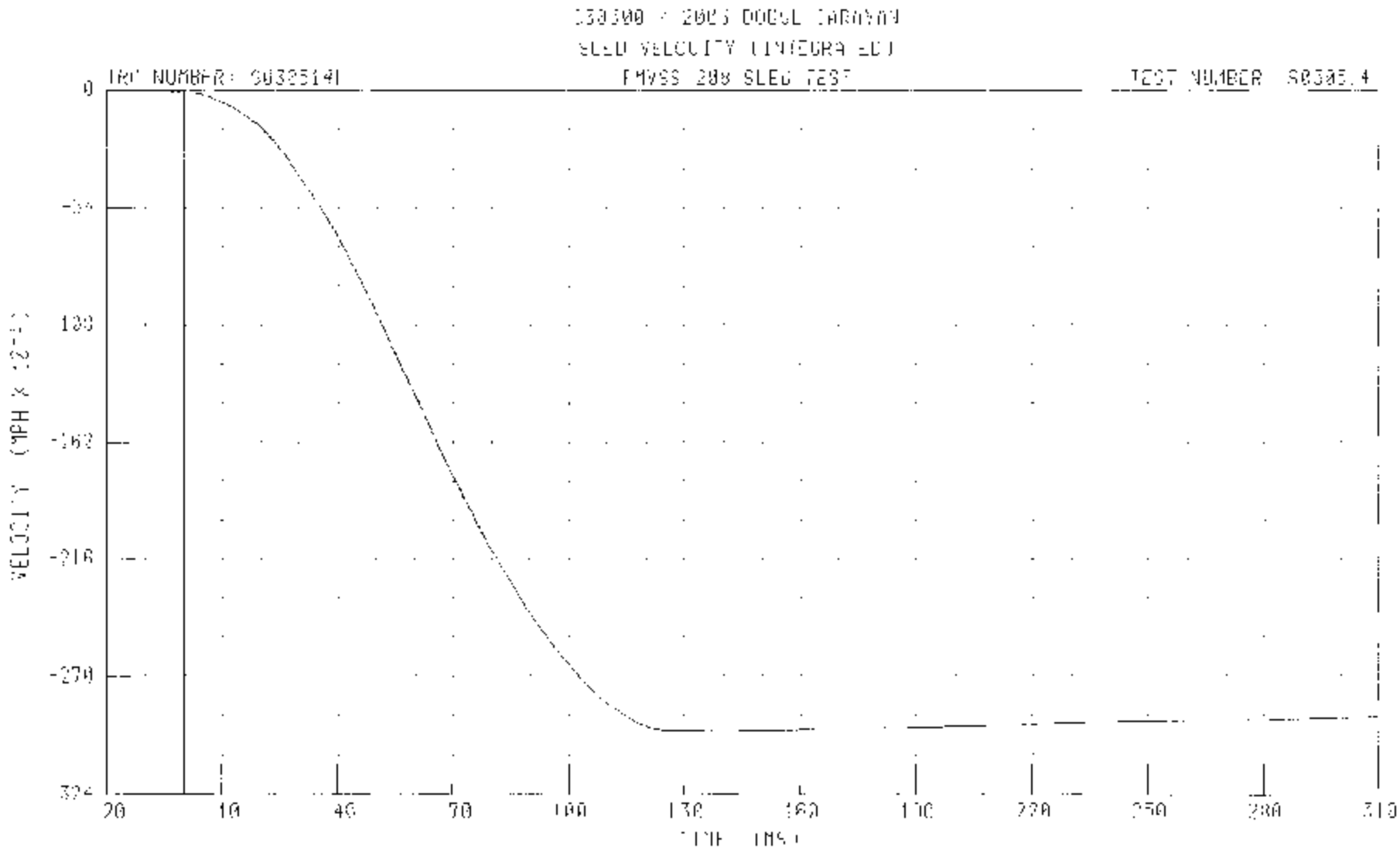

SLED ACCELERATION FOR TIMING CIRCUIT
IRC NUMBER
TEST NUMBER
0
-25
-74
-87
-118
-149
-180
ACCELERATION (G's)
20
40
70
100
130
160
190
220
250
280
310
TIME (MS)

C30300 / 2003 DODGE CARAVAN
MEASURED VELOCITY TRAP
FMVSS 208 SLED TEST

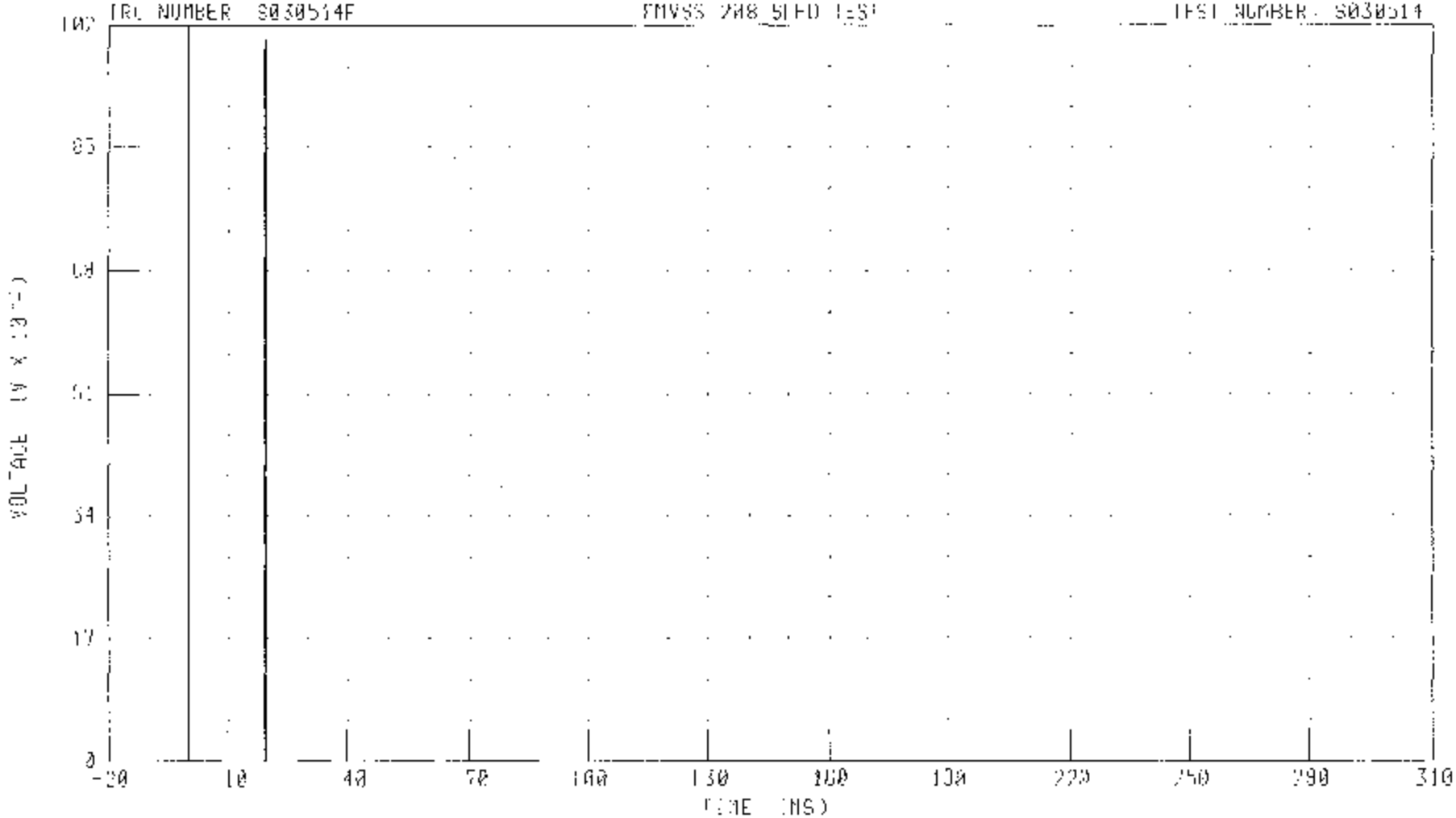


CHANNEL SLDXV FILTER CH CLASS 60 PEAK DATA 0.05 MPH @ 3.38 MS; -29.28 MPH @ 134.96 MS

S030514


030300 - 2003 DODGE CARAVAN
SLED VELOCITY (INTEGRATED)
TEST NUMBER: S0305141
FMVSS 208 SLED TEST
TEST NUMBER S0305.4
0
-54
-108
-162
-216
-270
-324
VELOCITY (MPH X 12-1)
20
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL SLDXVI FILTER CH CLASS 180
PEAK DATA -0.01 MPH @ -20.00 MS -29.50 MPH @ 136.52 MS

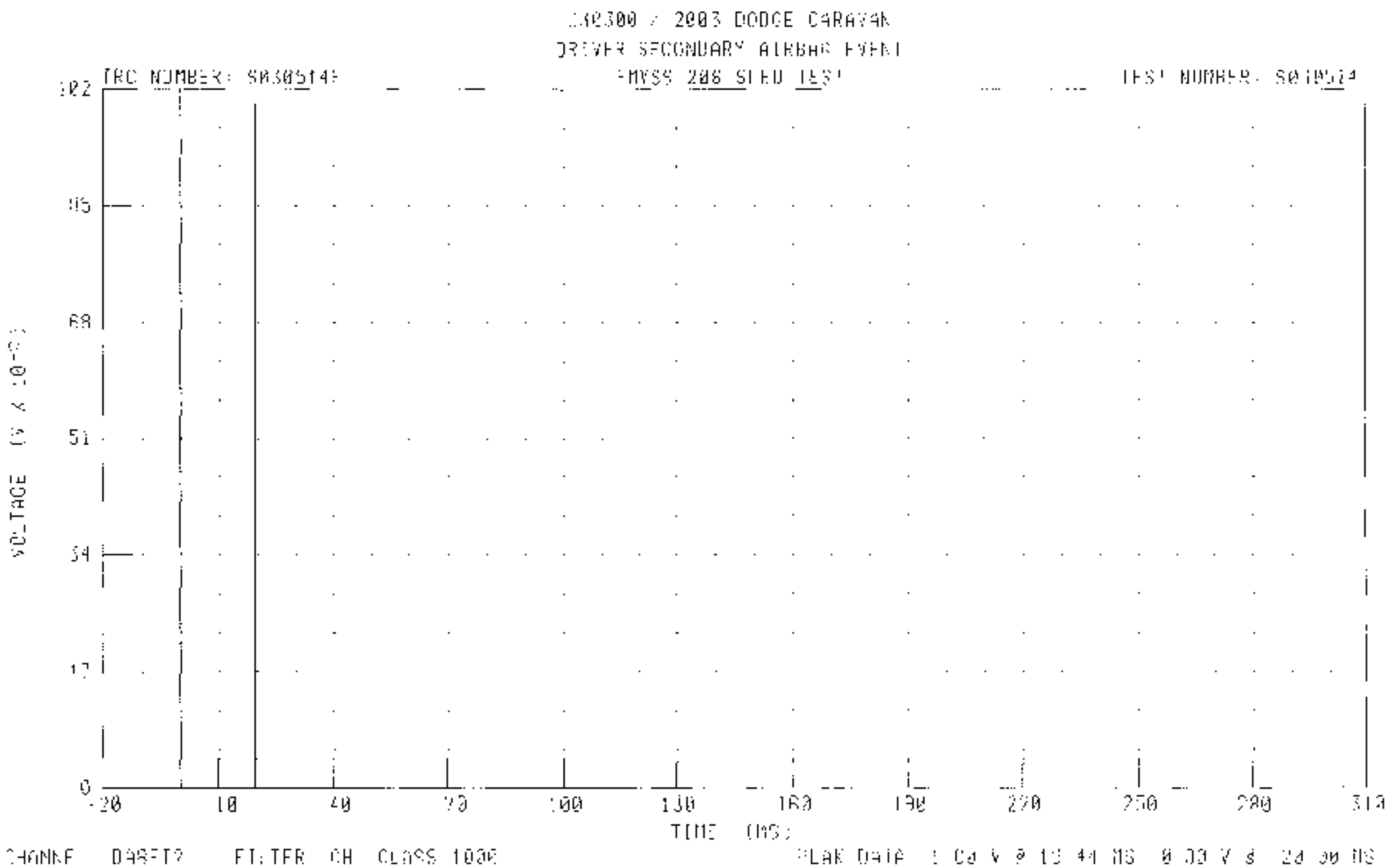
C30300 / 2003 DODGE CARAVAN
DRIVER PRIMARY AIRBAG EVEN
FMVSS 208 50TH TEST



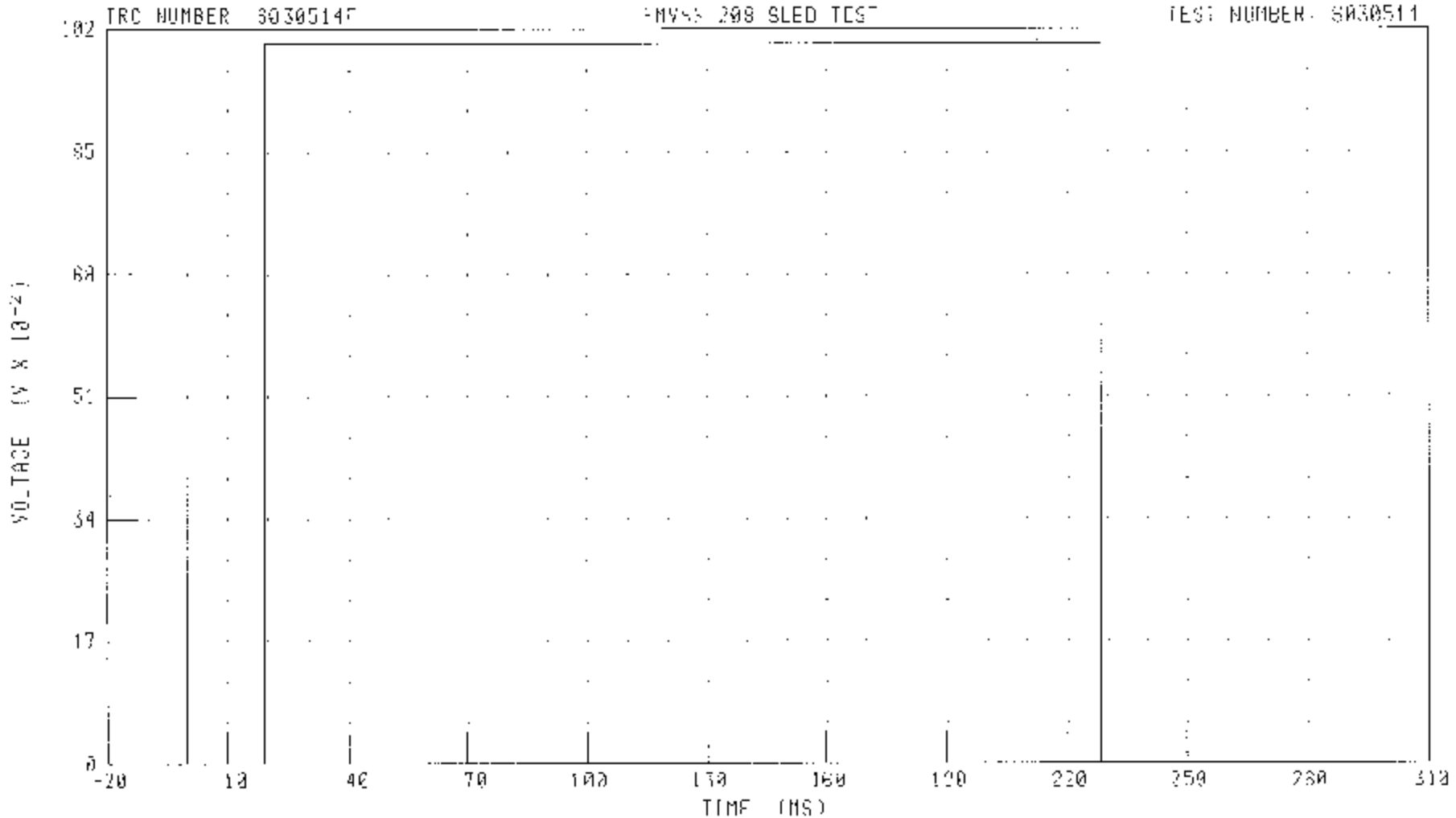
CHANNEL LABEL: DRIVER CH CLASS 1000 PEAK DATA: 1.00 V @ 10.44 MS 0.00 V @ -20.00 MS

B-8

S030514


C40300 / 2003 DODGE CARAVAN
DRIVER SECONDARY AIRBAG EVENT
FMVSS 208 SLED TEST
TRC NUMBER: S030514
TEST NUMBER: S030514
102
85
68
51
34
17
0
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL DASH2 FILTER CH CLASS 1000
PEAK DATA 1 Ca V @ 13.44 MS 0.00 V @ 24.00 MS

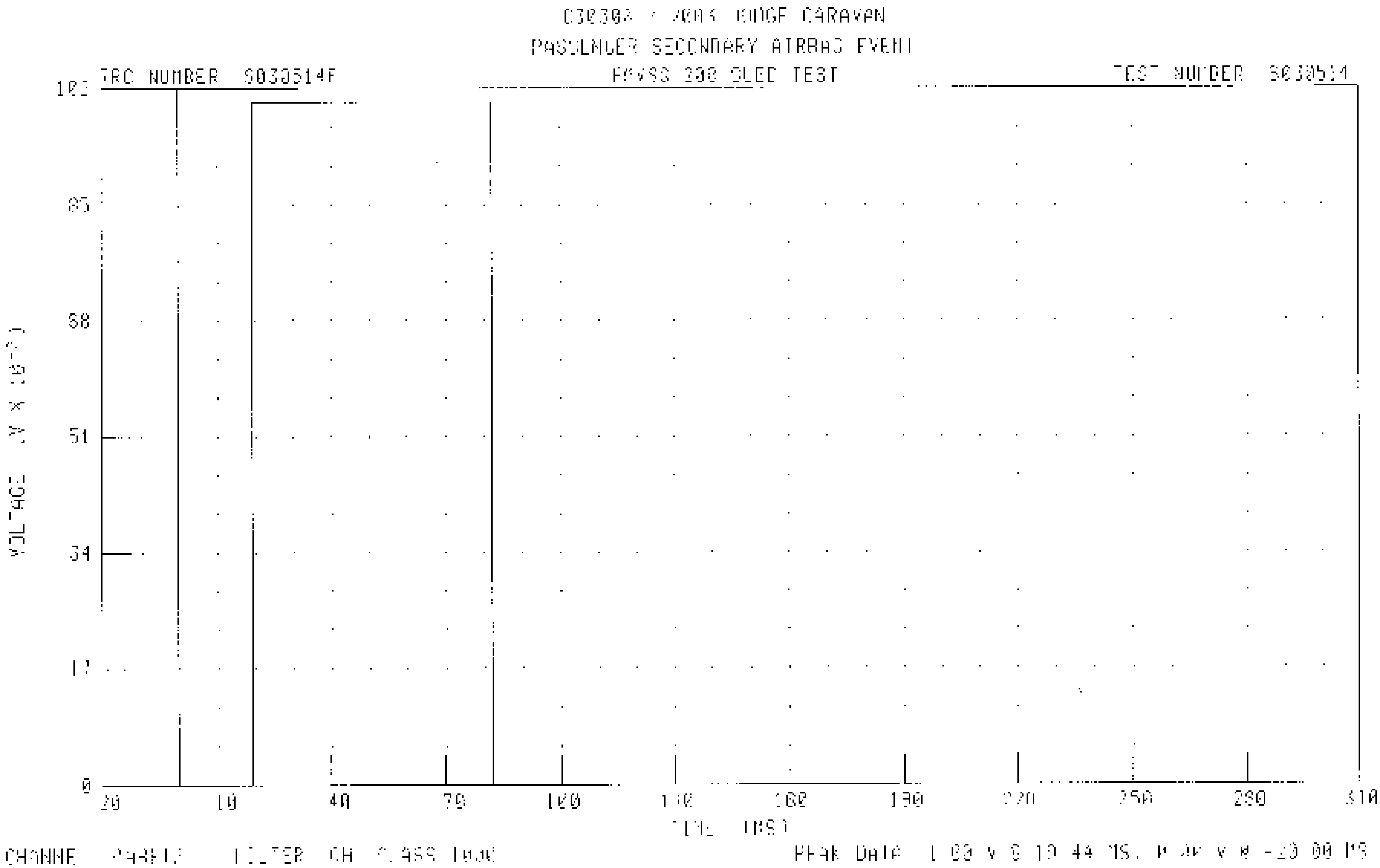
C30300 / 2003 DODGE CARAVAN
PASSENGER PRIMARY AIRBAG EVENT
FMVSS 208 SLED TEST



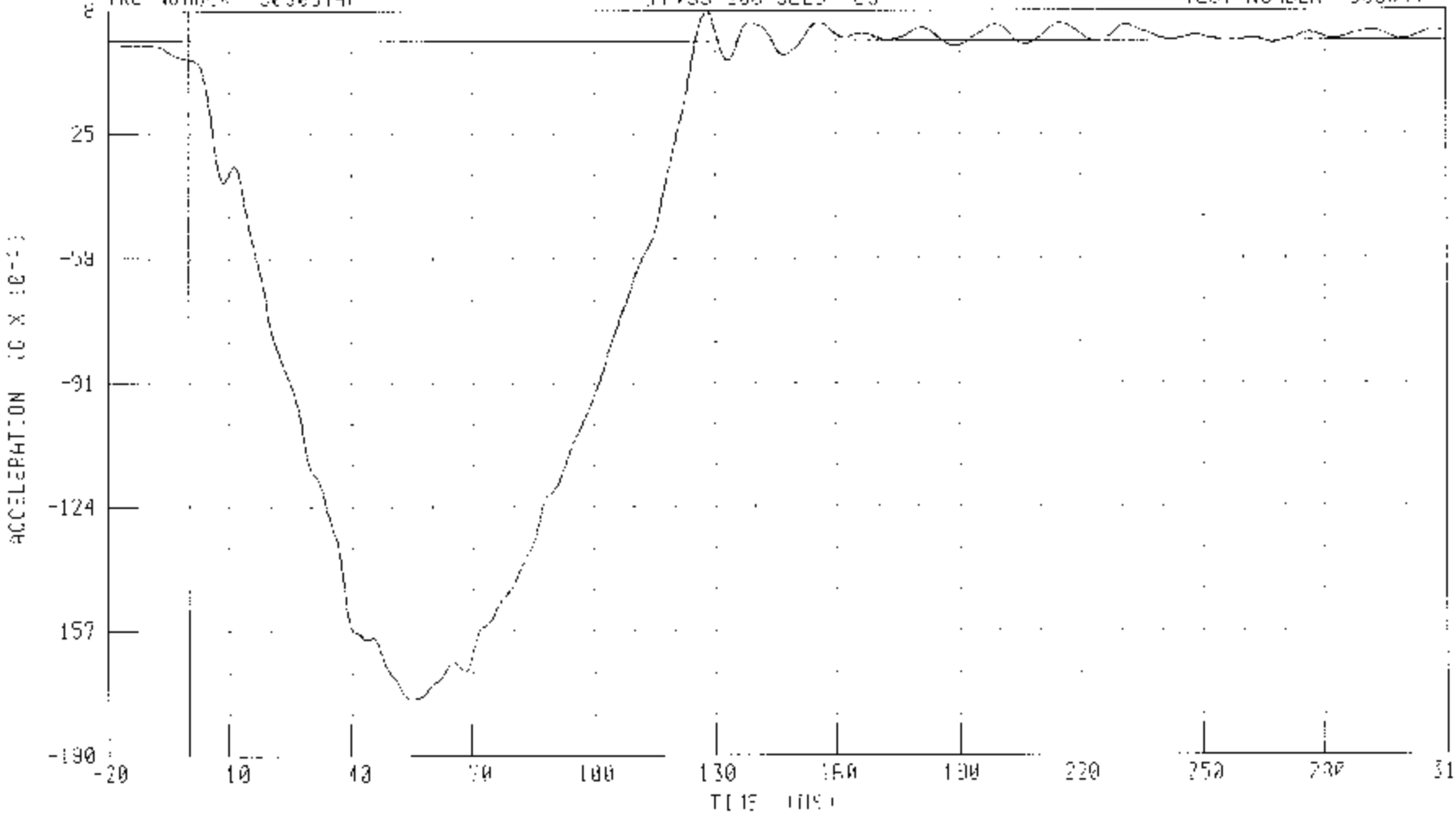
CHANNEL PABE"1 FILTER CH CLASS 1000 PEAK DATA 1 00 V @ 10 44 MS. 0 00 V @ -20 00 MS

B-10

S030514

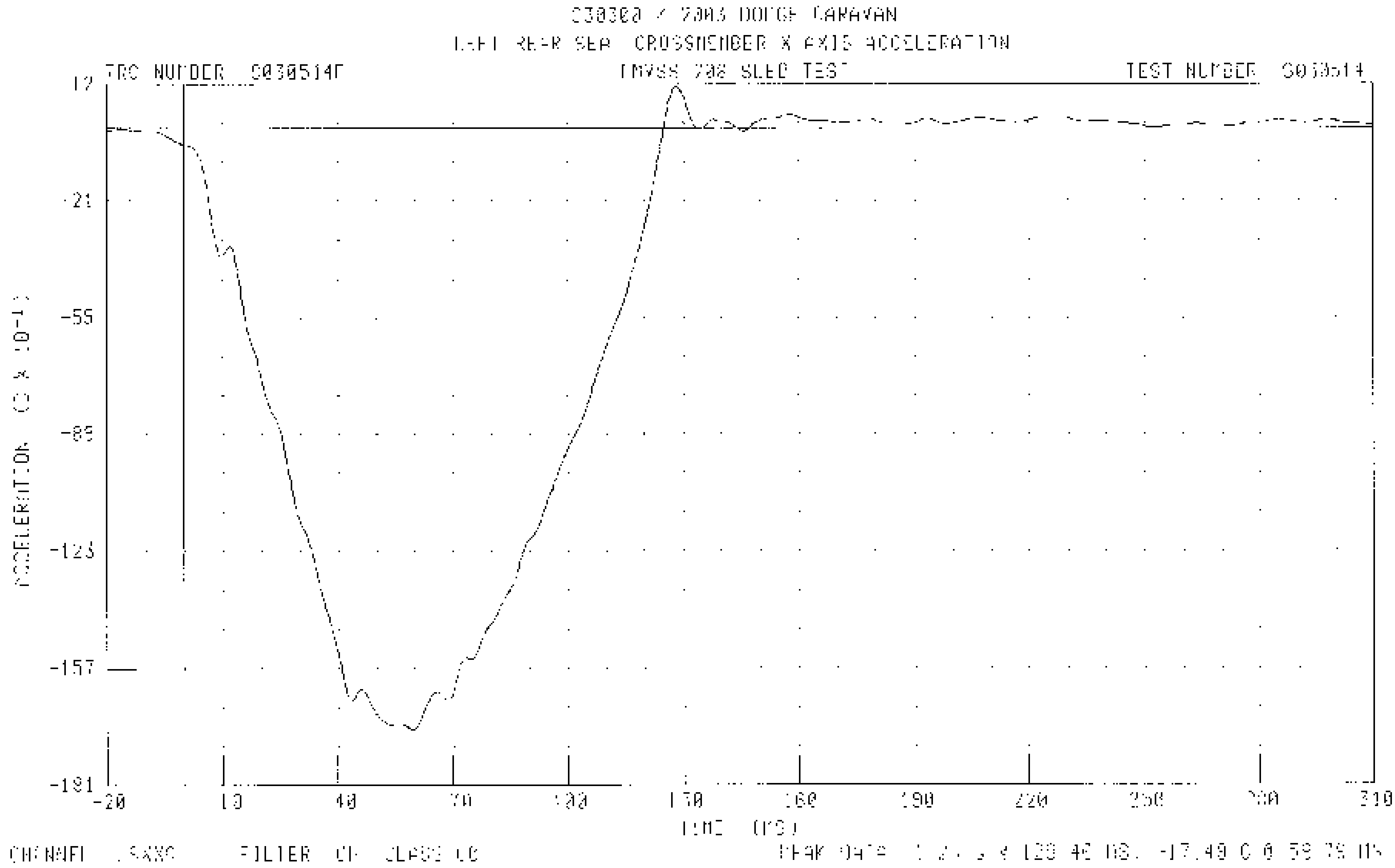

PASSENGER SECONDARY AIRBAG EVENT
TEST NUMBER S030514
0
20
10
40
70
100
130
190
250
280
310
51
34
68
85
CHANNE

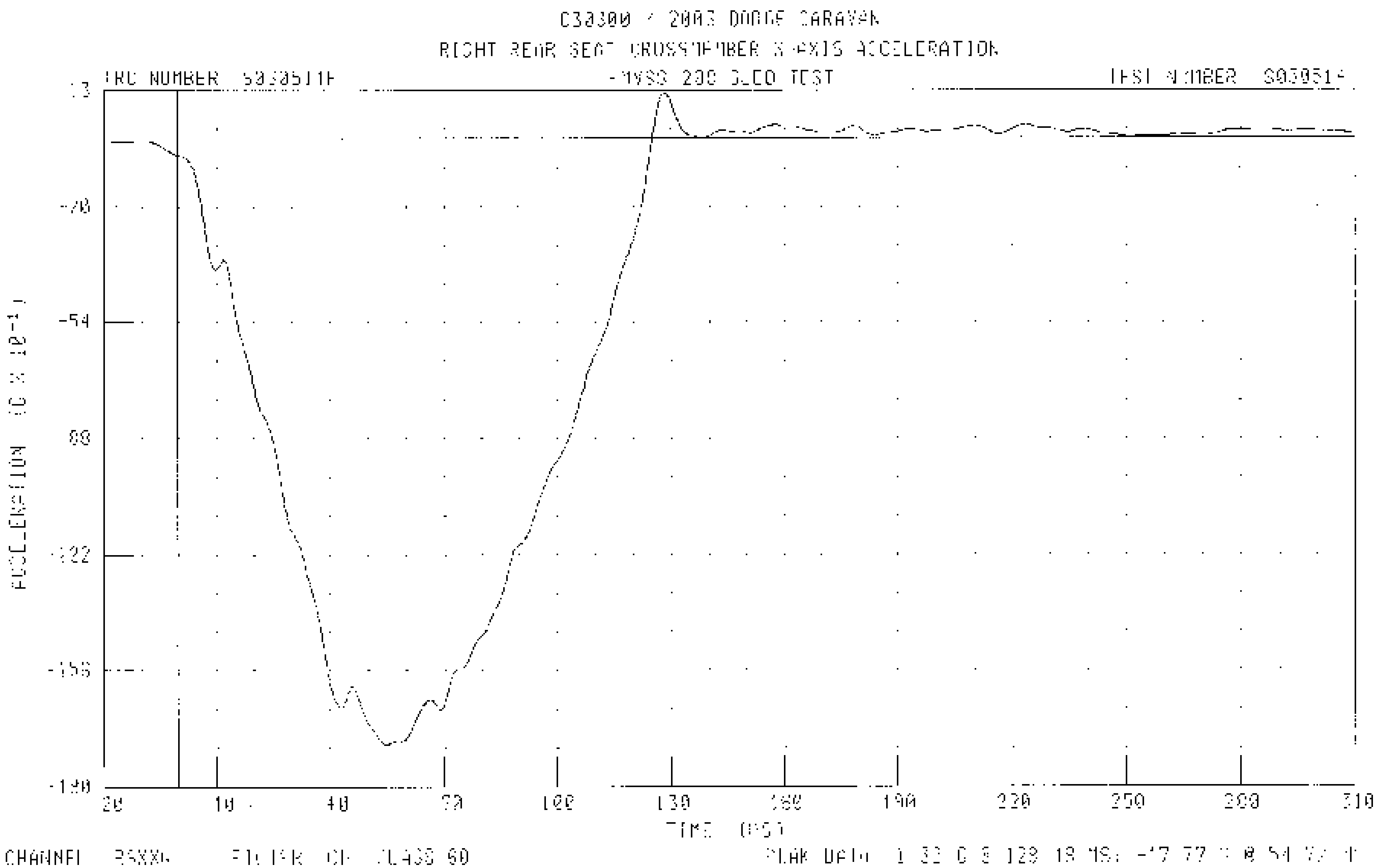
C30300 / 2003 DODGE CARAVAN
REAR AXLE X-AXIS ACCELERATION
FMVSS 208 SLED TEST

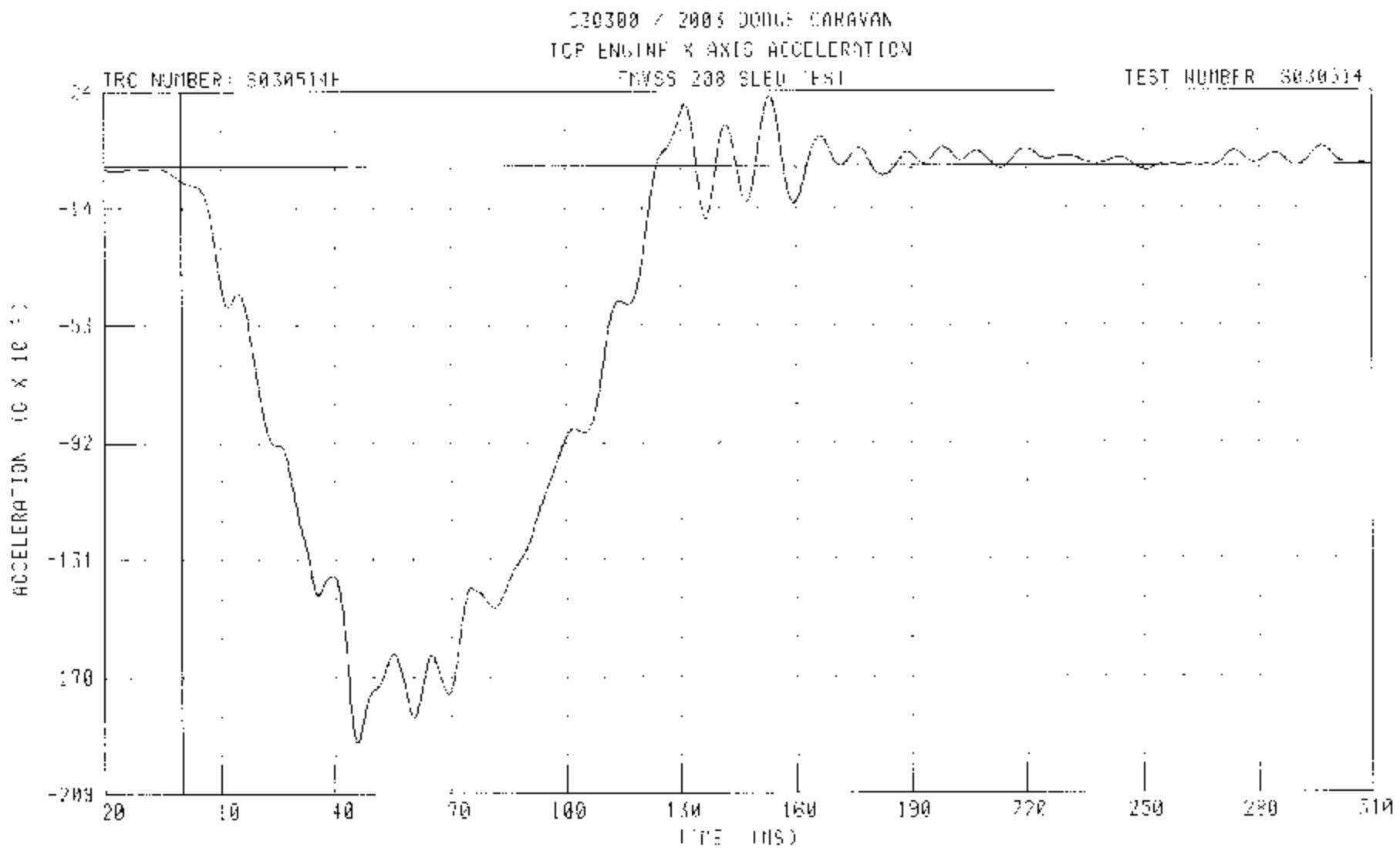


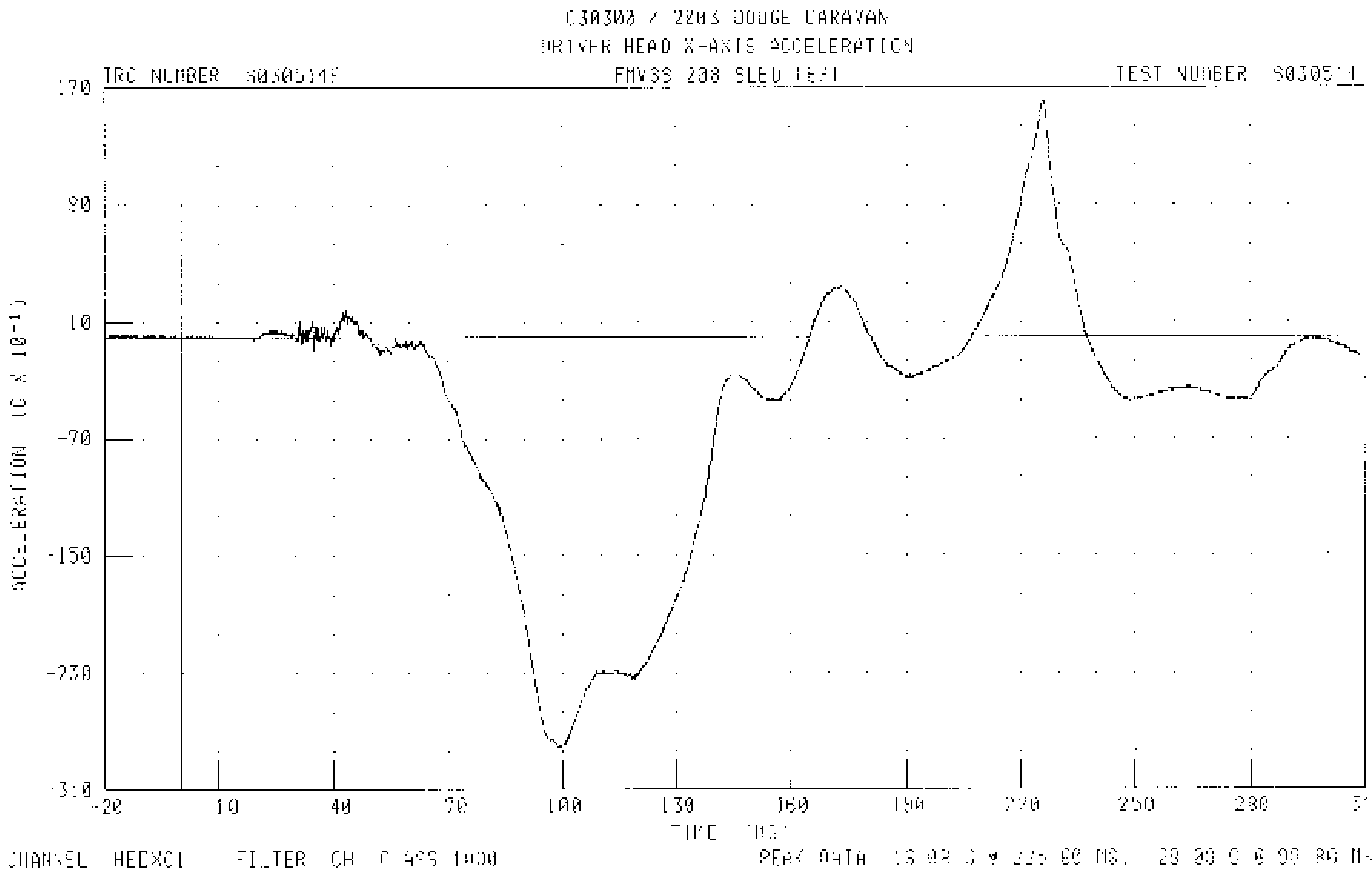
B-12

S030514

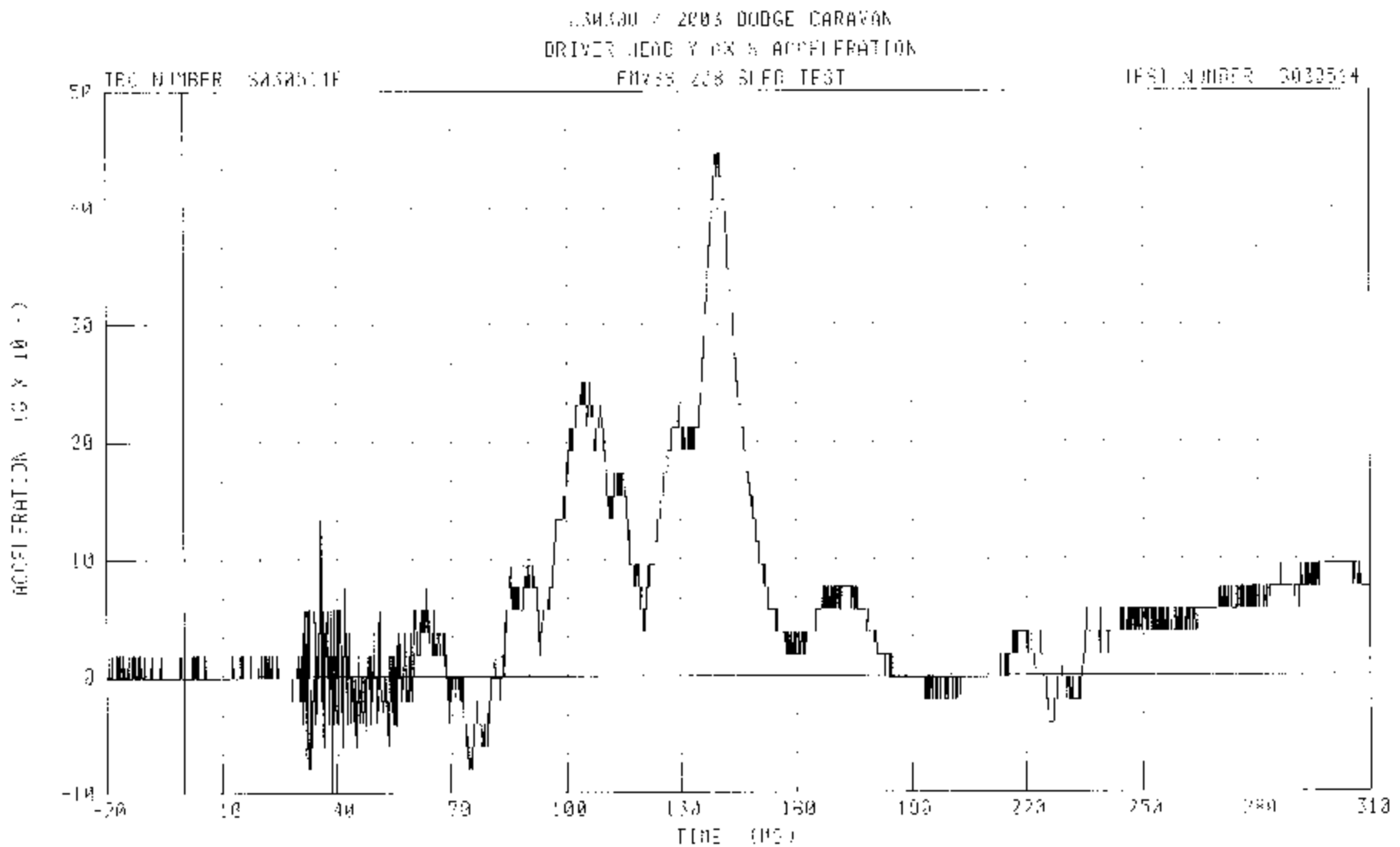

030300 / 2003 DODGE CARAVAN
LEFT REAR SEAT CROSSMEMBER X AXIS ACCELERATION
FMVSS 208 SLED TEST
TRC NUMBER S030514F
TEST NUMBER S030514
12
-21
-55
-89
-123
-157
-191
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
ACCELERATION (G X 10-1)
CHANNEL
FILTER
PEAK DATA

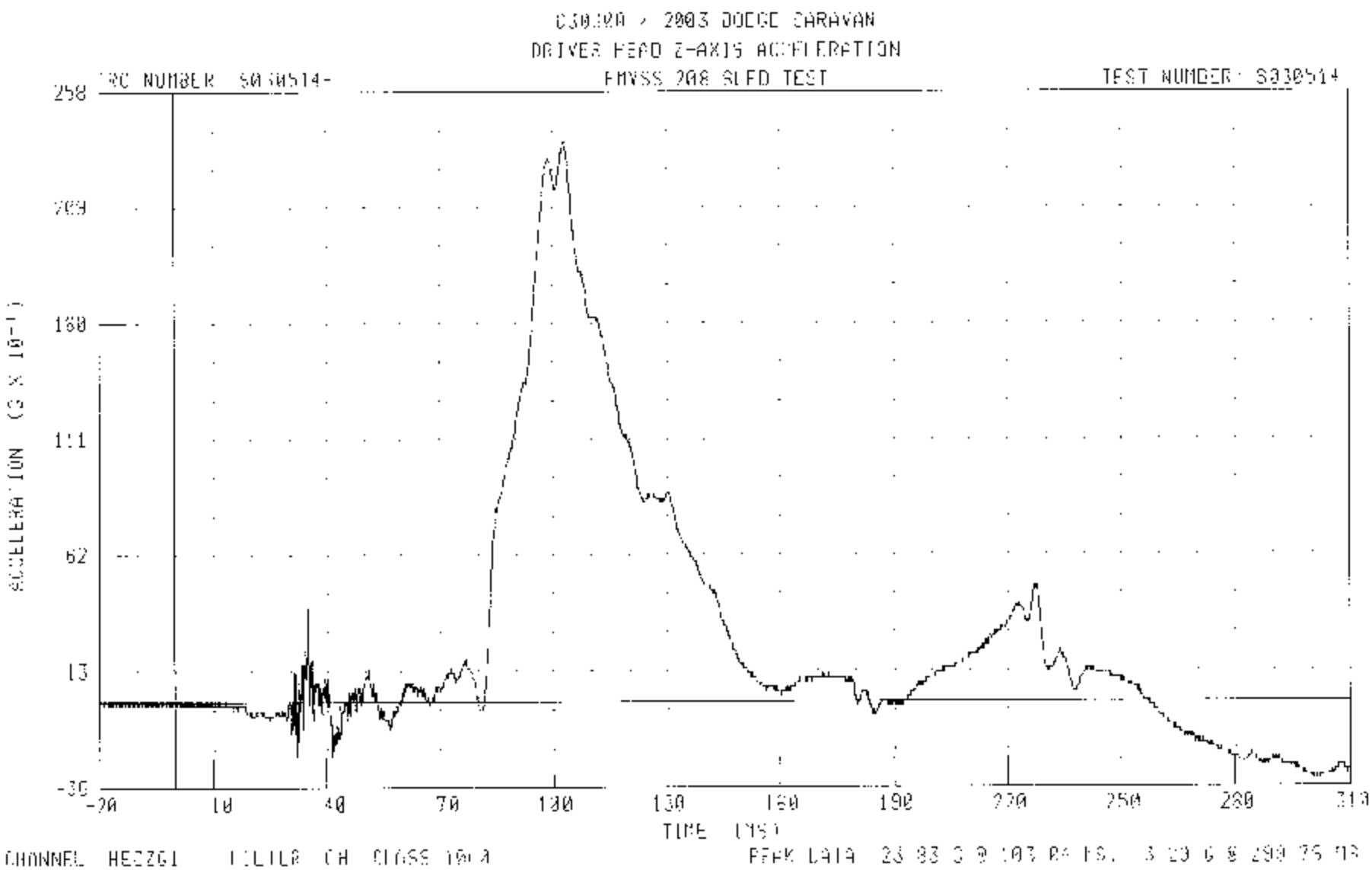

C30300 / 2003 DODGE CARAVAN
RIGHT REAR SEAT CROSSMEMBER X-AXIS ACCELERATION
FMVSS 208 SLED TEST
TRC NUMBER S030514F
TEST NUMBER S030514
ACCELERATION (G X 10-1)
TIME (MS)
CHANNEL
FILTER CFC CLASS 60
PEAK DATA


030300 / 2005 DODGE CARAVAN
TOP ENGINE X AXIS ACCELERATION
FMVSS 208 SLED TEST
TRC NUMBER: S030514F
TEST NUMBER S030514
ACCELERATION (G X 10 **)
-14
-53
-92
-131
-170
-209
20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL TEXT
FILTER CH. CLASS 60
PEAK DATA


C30308 / 2003 DODGE CARAVAN
DRIVER HEAD X-AXIS ACCELERATION
FMVSS 208 SLED TEST
TRC NUMBER
TEST NUMBER
170
90
10
-70
-150
-230
-310
ACCELERATION (G X 10-1)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL HEDXC1
FILTER CH
PEAK DATA

S030514


2003 DODGE CARAVAN
DRIVER HEAD X AXIS ACCELERATION
TEST NUMBER
TEST NUMBER
50
40
30
20
10
0
-10
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)


C30.000 / 2003 DODGE CARAVAN
DRIVER HEAD Z-AXIS ACCELERATION
FMVSS 208 SLED TEST
TEST NUMBER: S030514
258
209
160
111
62
13
-36
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL HEZZGI
PEAK DATA

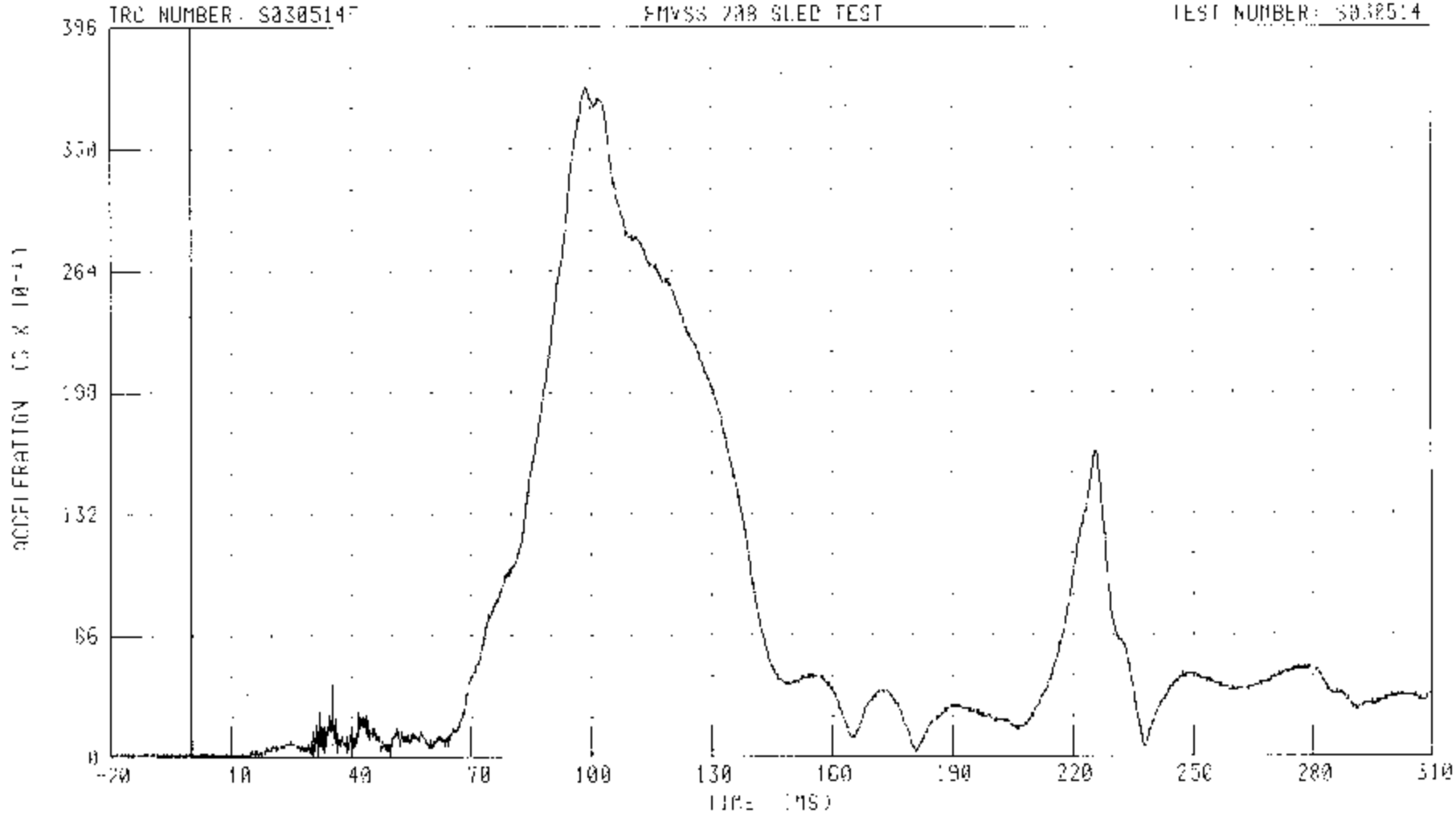
C30302 / 2003 DODGE CARAVAN

DRIVER HEAD RESULTANT ACCELERATION

FMVSS 208 SLED TEST

TRC NUMBER: S0305147

TEST NUMBER: S030514



CHANNEL HEAD01 FILTER CH CLASS 1000

PEAK DATA 30.36 G @ 98.98 MS, 0.00 G @ 19.00 MS

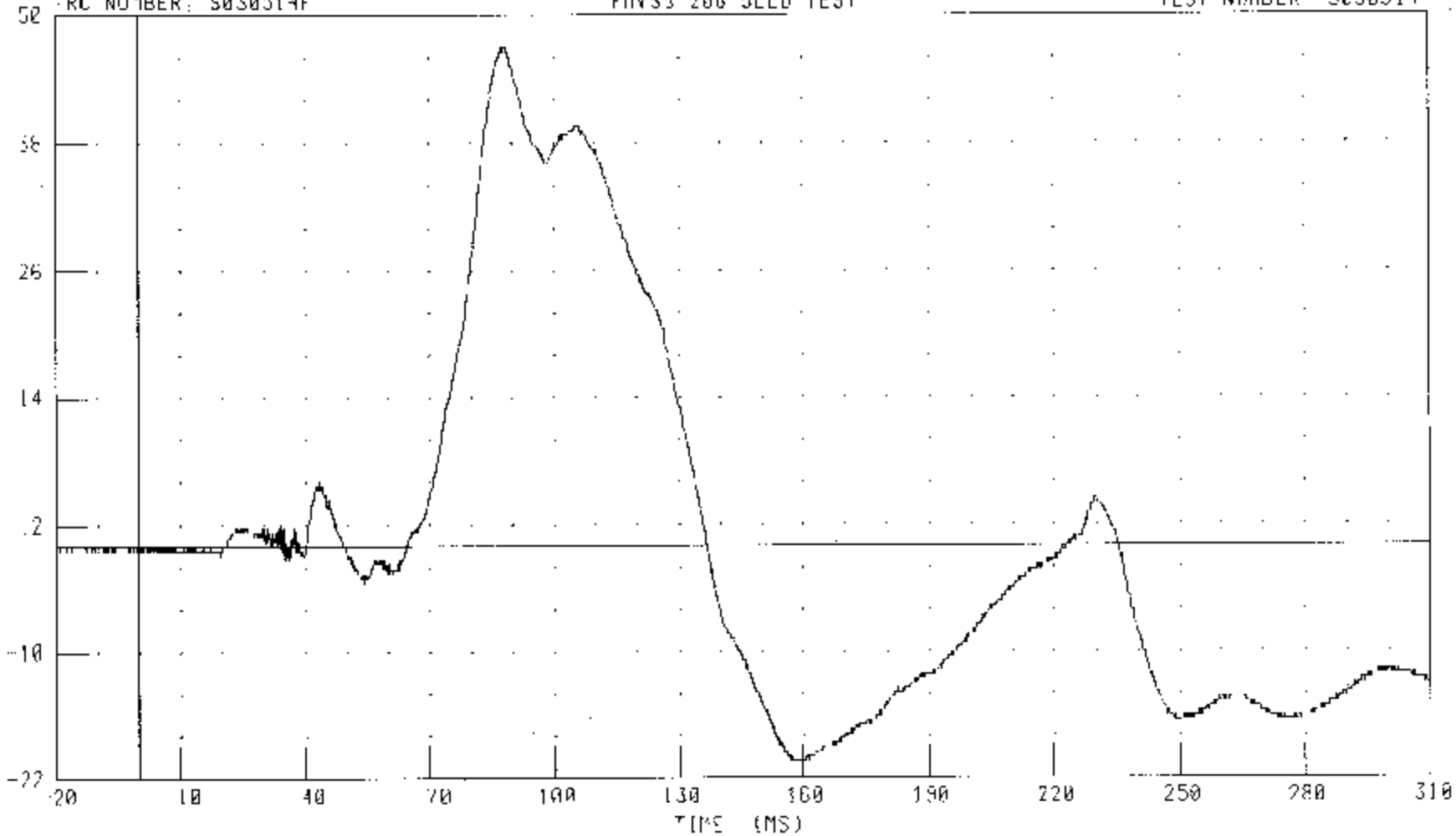
B-19

S030514

C30300 / 2003 DODGE CARAVAN
DRIVER NECK X-AXIS SHEAR FORCE
FMVSS 208 SLED TEST

TRC NUMBER: S030514F

TEST NUMBER S030514

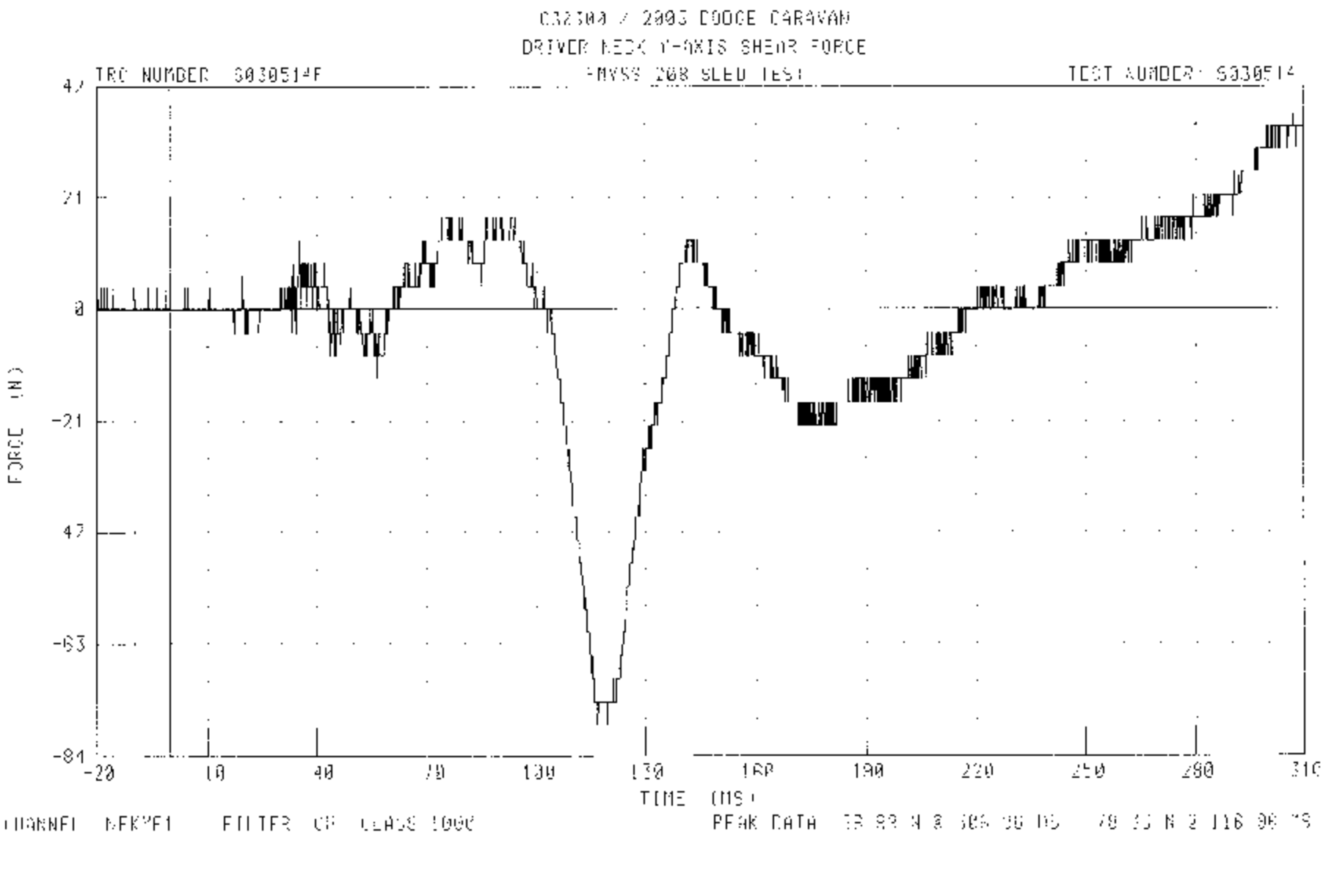


CHANNEL NEKXF1 FILTER CH CLASS 1000

PEAK DATA: 464.68 N @ 87.08 MS; -208.51 N @ 153.92 MS

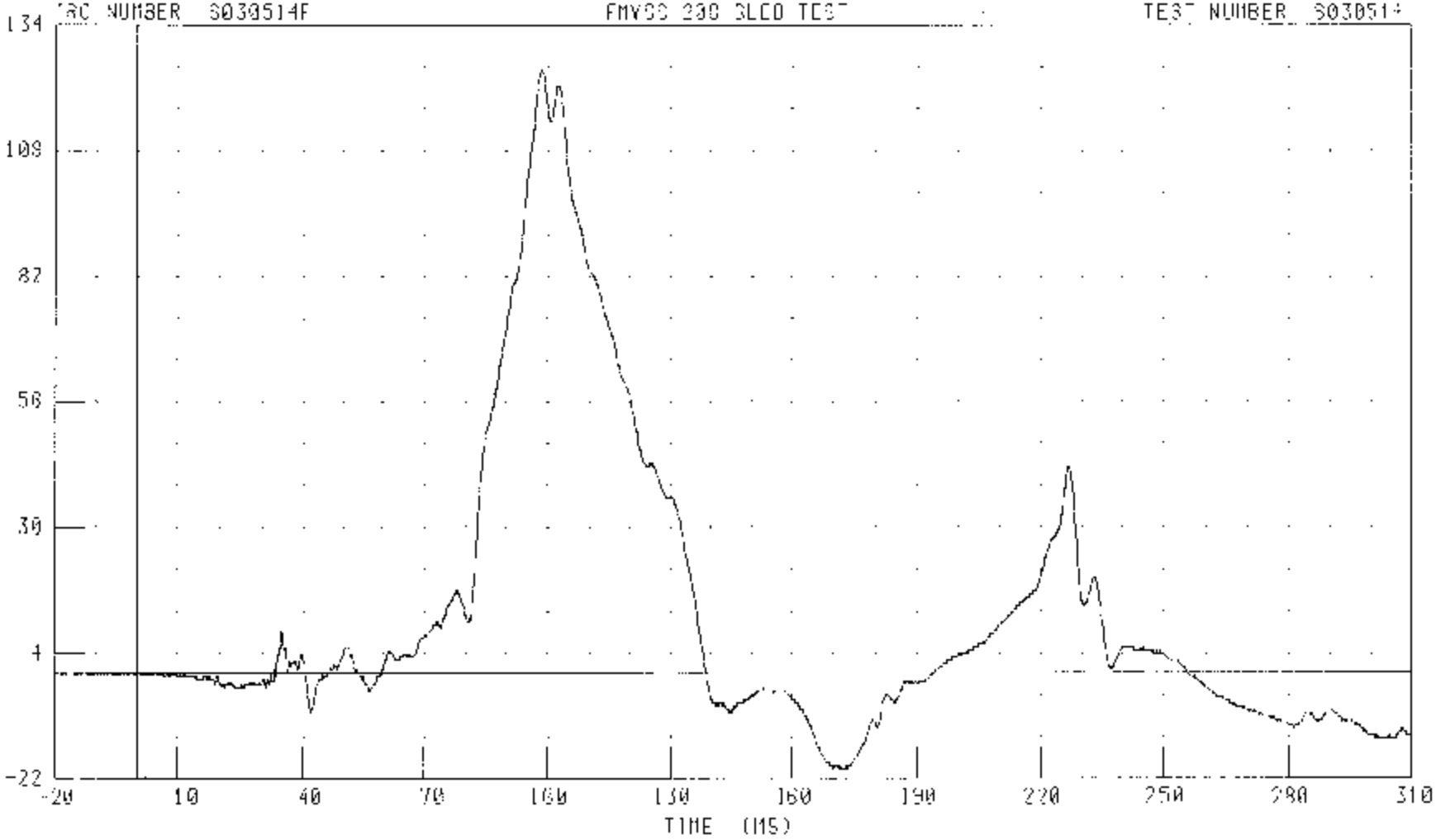
B-20

S030514


C32304 / 2003 DODGE CARAVAN
DRIVER NECK Y-AXIS SHEAR FORCE
FMVSS 208 SLED TEST
TRC NUMBER: S030514F
TEST NUMBER: S030514
47
21
0
-21
-63
-84
FORCE (N)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL NFKYF1 FILTER CF CLASS 1000
PEAK DATA 33.82 N @ 305.00 MS 70.33 N @ 116.00 MS

S030514

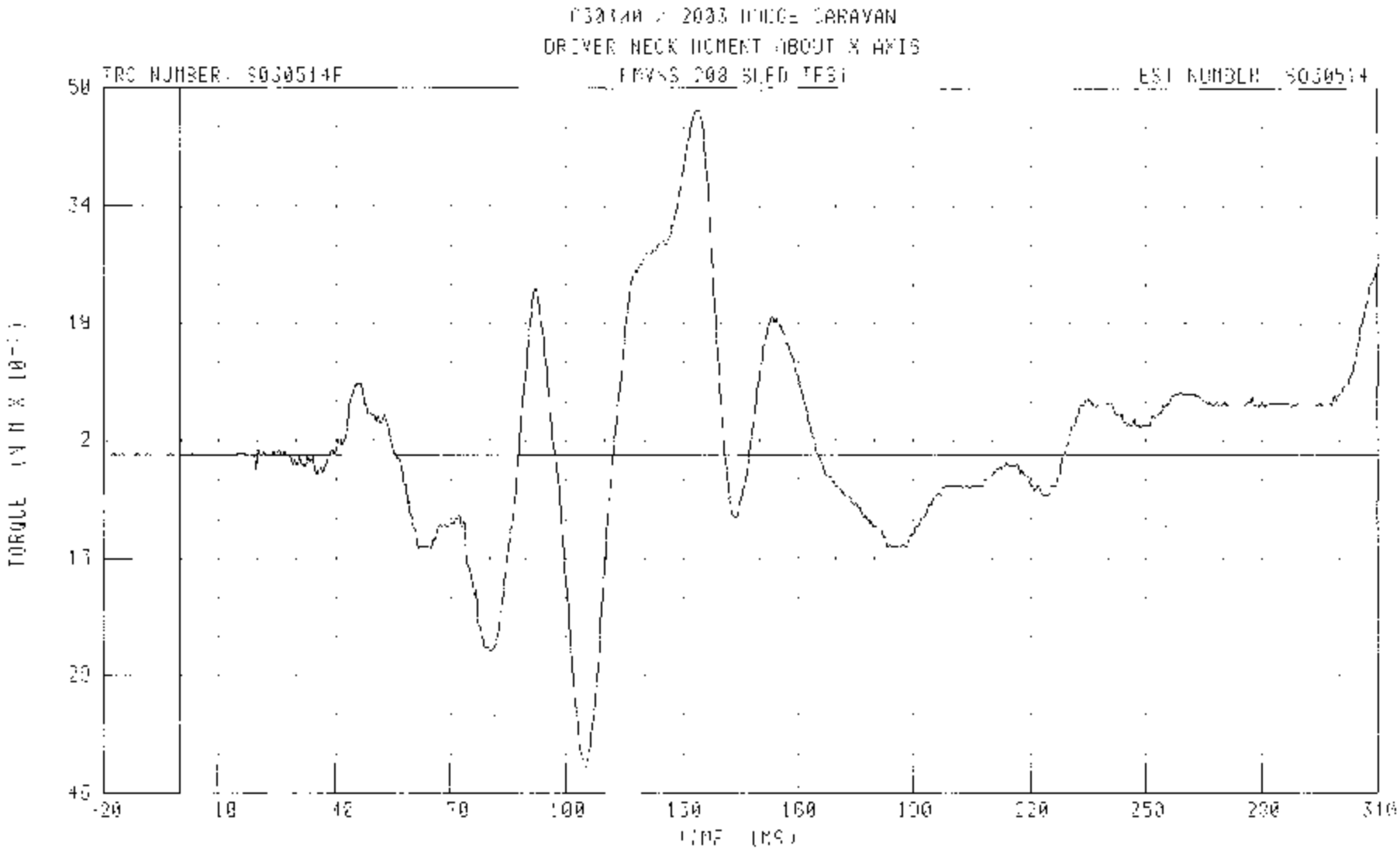
C30100 / 2003 DODGE CARAVAN
DRIVER NECK Z-AXIS AXIAL FORCE
SRC NUMBER S030514F FMVSS 208 SLED TEST TEST NUMBER S03051

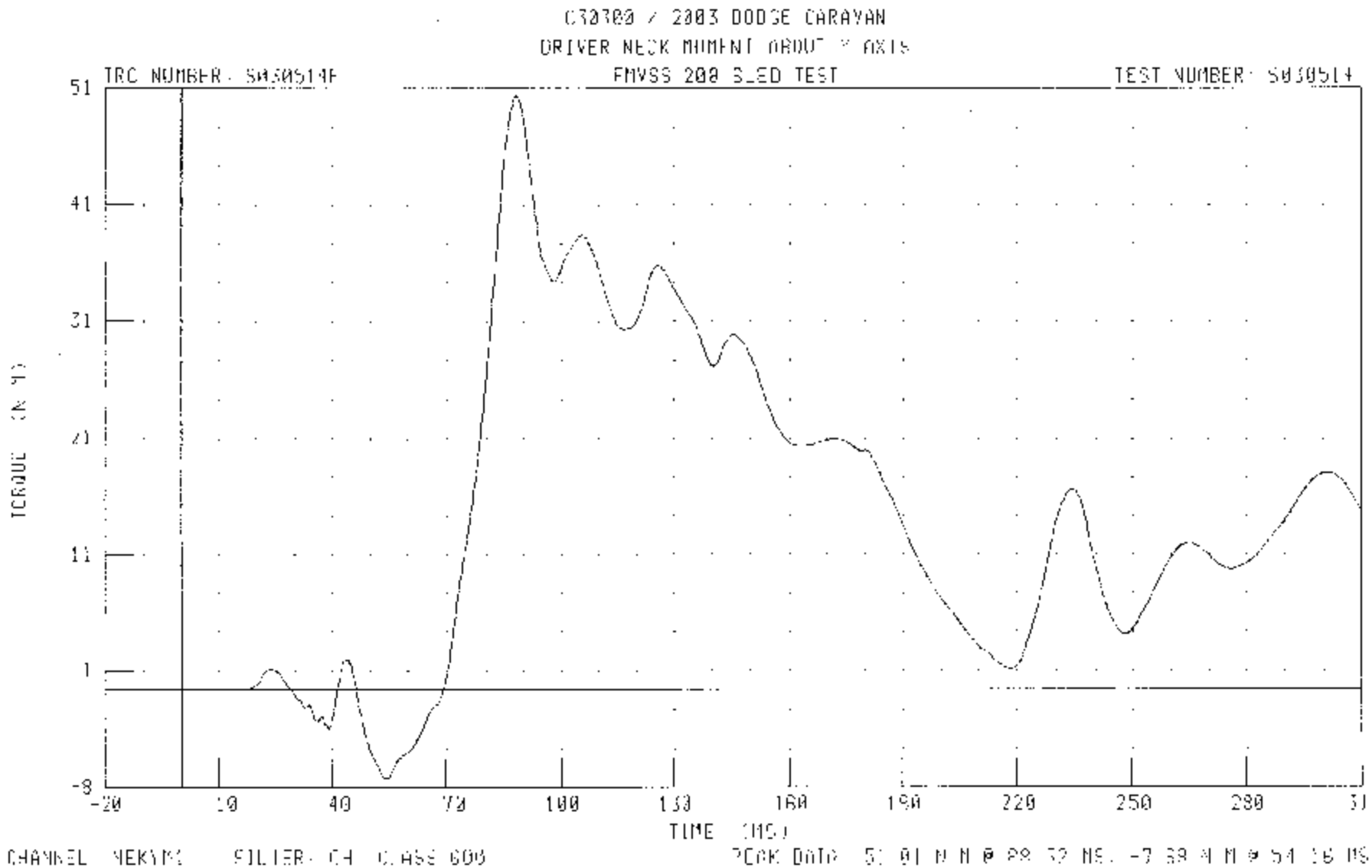


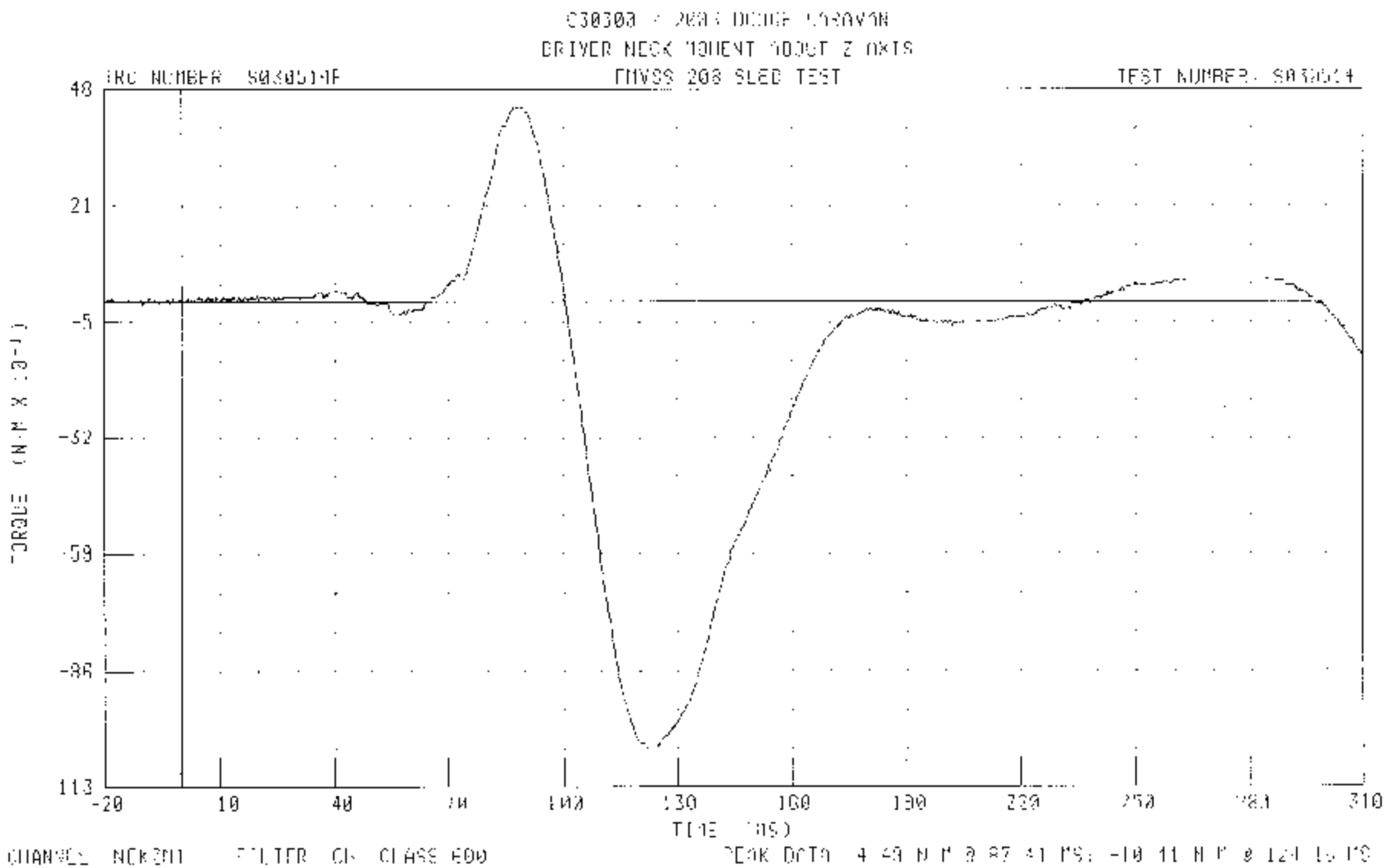
CHANNEL NCK2T1 FILTER CH CLASS 1000 PEAK DATA 1245.43 N @ 99.49 MS, -20[illegible]16 N @ 170.08 MS

B-22

S030514


030340 / 2003 DODGE CARAVAN
DRIVER NECK MOMENT ABOUT X AXIS
TRC NUMBER: S030514F
FMVSS 208 SLED TEST
TEST NUMBER: S030514
50
34
19
2
-13
-29
-45
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: NEKXM1
FILTER: C- CLASS 600
PEAK DATA:

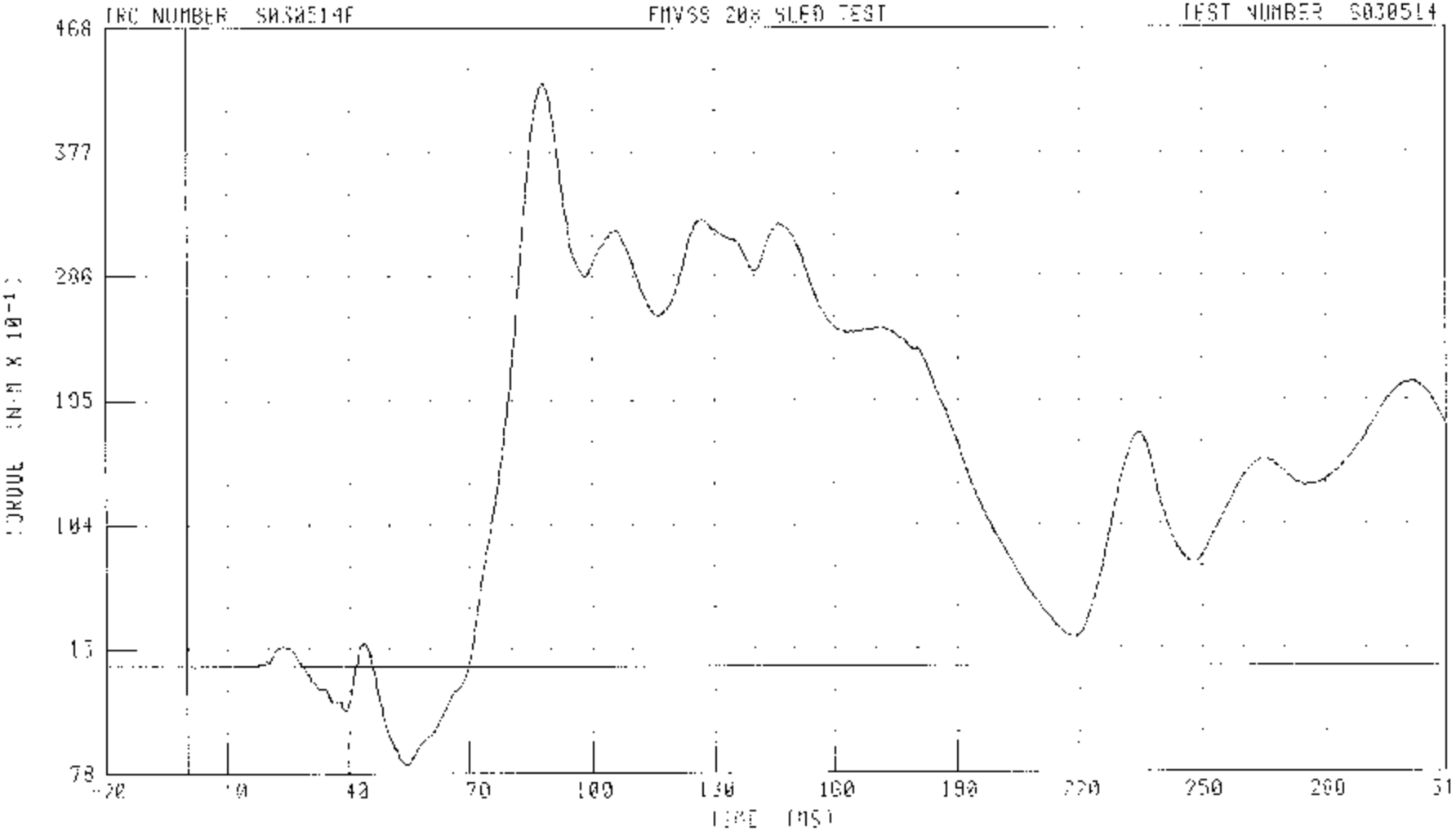

C30300 / 2003 DODGE CARAVAN
DRIVER NECK MOMENT ABOUT Y AXIS
TRC NUMBER: S030514F
FMVSS 208 SLED TEST
TEST NUMBER: S030514
51
41
31
21
11
1
-9
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL NEKYM
FILTER: CH CLASS 600
PEAK DATA: 51.01 N.M @ 88.32 MS, -7.39 N.M @ 54.16 MS


C30303 - 2003 DODGE CARAVAN
DRIVER NECK MOMENT ABOUT Z AXIS
FMVSS 208 SLED TEST
SRC NUMBER: S030514F
TEST NUMBER: S030514
48
21
-5
-32
-59
-86
113
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL NUMBER: FILTER CFC CLASS 600
PEAK DATA: 4.49 N-M @ 87.41 MS; -10.11 N-M @ 124.15 MS

C30300.7 2003 DODGE CARAVAN

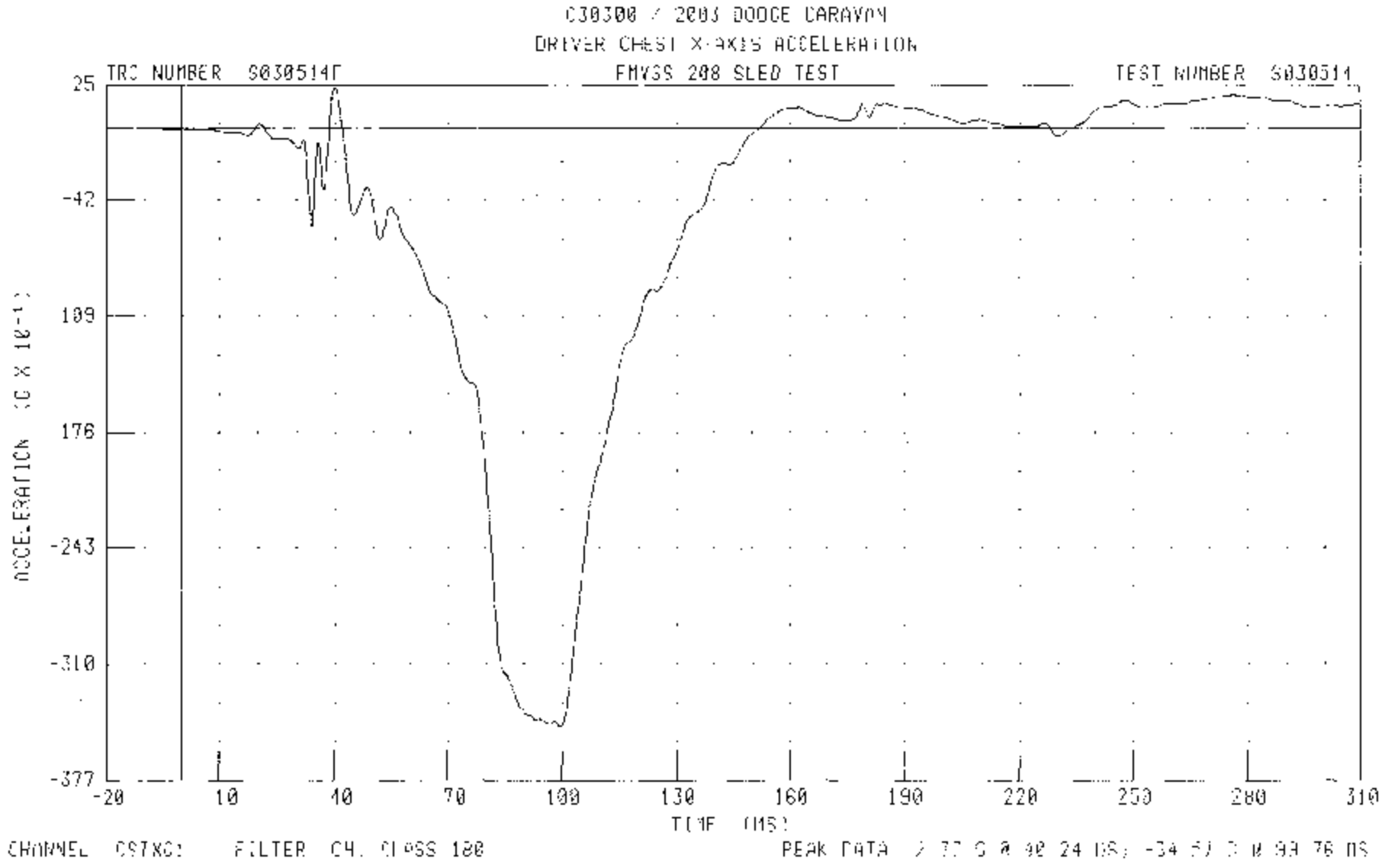
DRIVER NECK MOMENT ABOUT Y AXIS OCCIPITAL CONDYLE

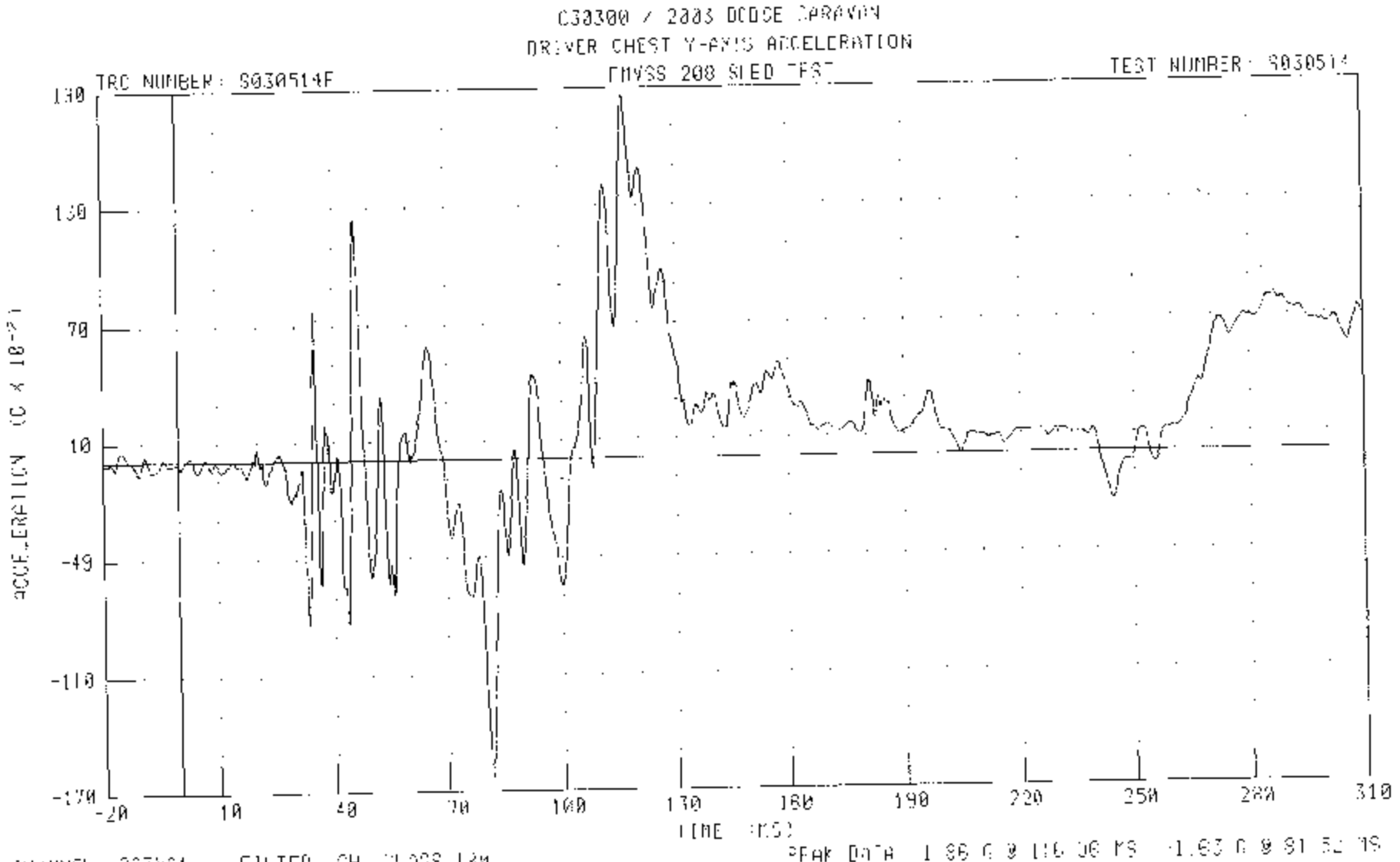
INC NUMBER S030514F FMVSS 208 SLED TEST TEST NUMBER S030514

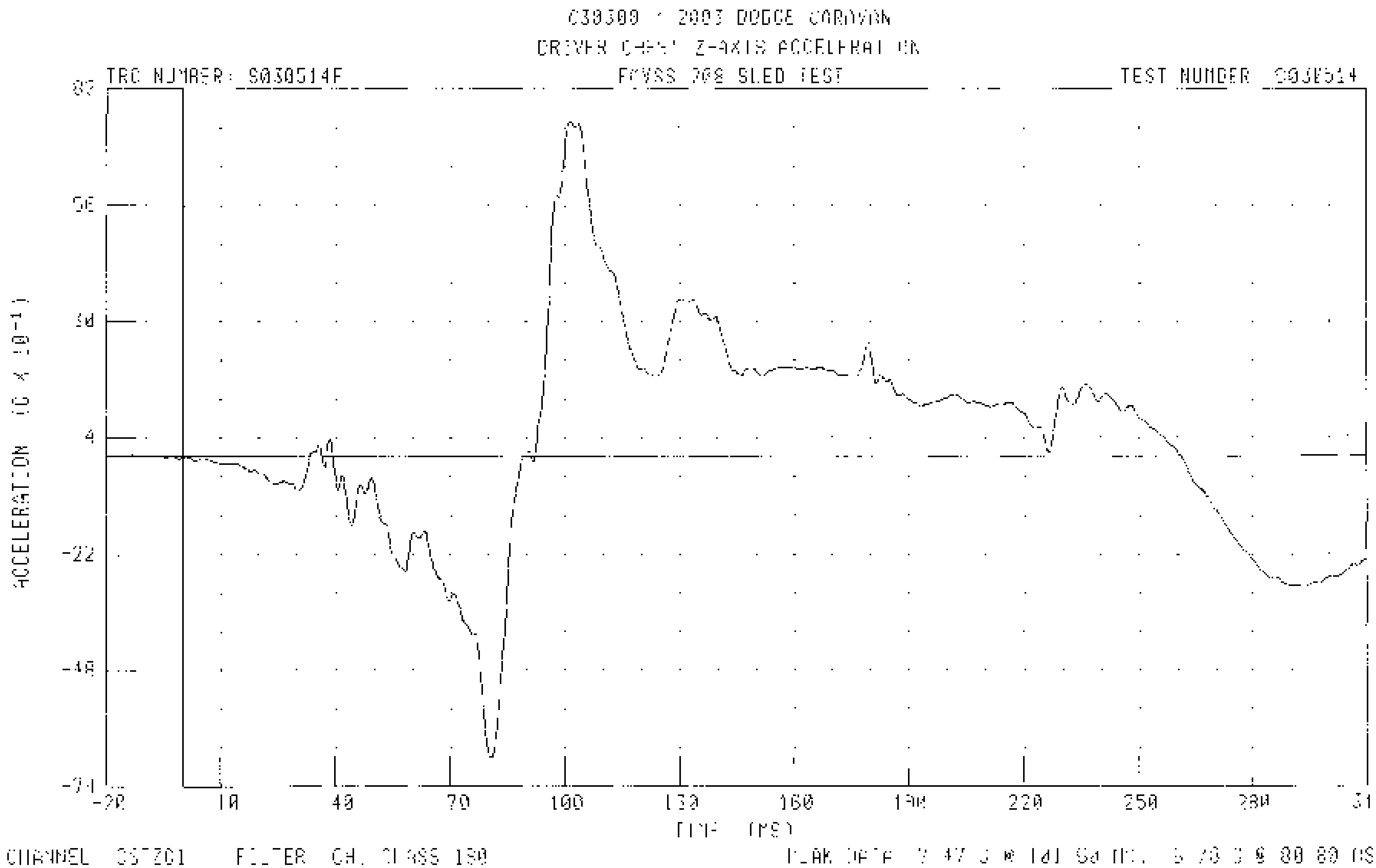


CHANNEL NECKOY FILTER CFC CLASS 600 PEAK DATA 42.66 N @ 8.68 MS, 7.13 N-M @ 51.24 MS

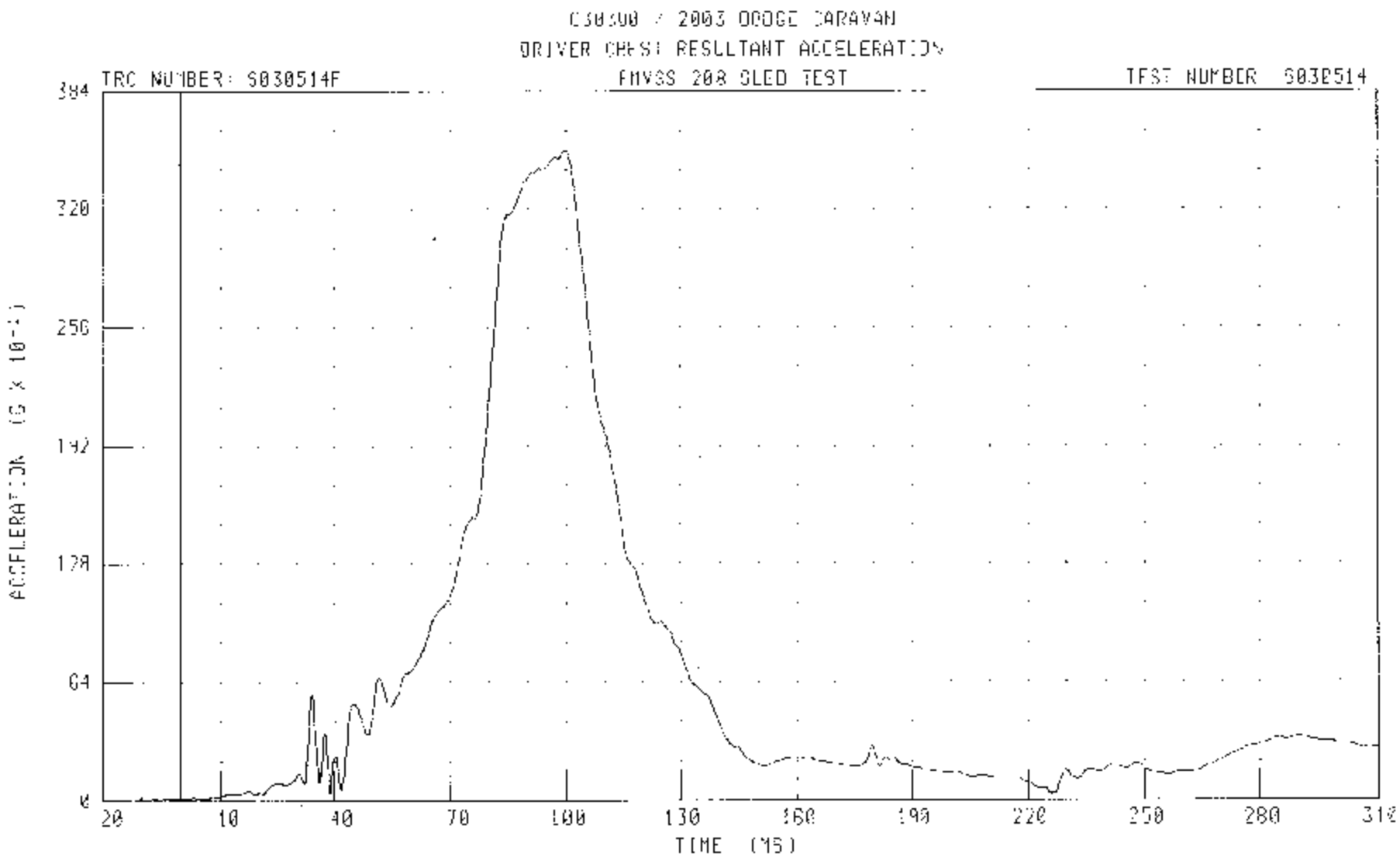
S030514

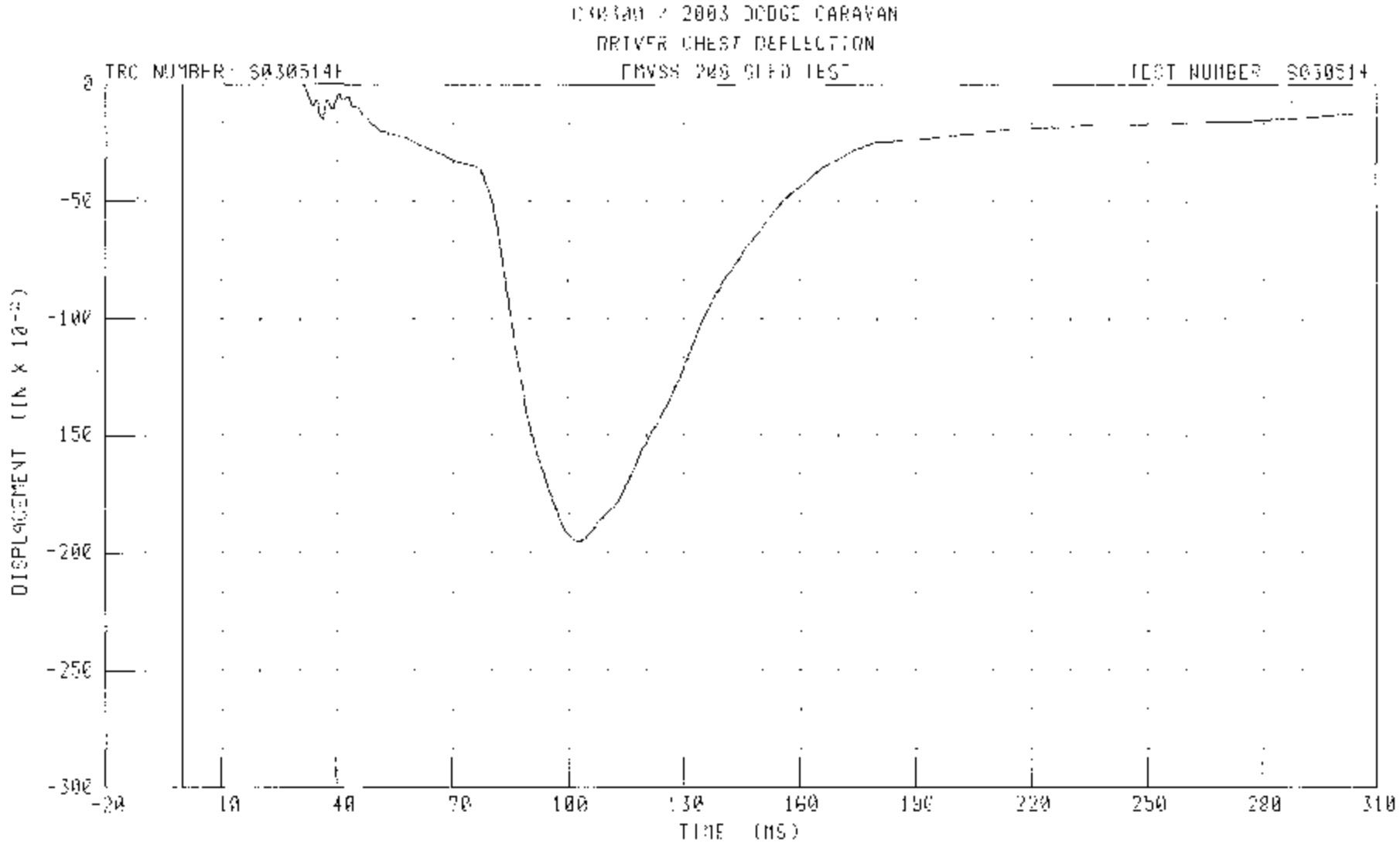

C30300 / 2003 DODGE CARAVAN
DRIVER CHEST X-AXIS ACCELERATION
TRC NUMBER S030514F
FMVSS 208 SLED TEST
TEST NUMBER S030514
25
-42
109
176
-243
-310
-377
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL C9TXCG
FILTER CH. CLASS 180
PEAK DATA


C30300 / 2003 DODGE CARAVAN
DRIVER CHEST Y-AXIS ACCELERATION
FMVSS 208 SLED TEST
TRC NUMBER: S030514F
TEST NUMBER: S030514
ACCELERATION (G X 10-1)
TIME (MS)
CHANNEL: C3YD1
FILTER CH. CLASS 180
PEAK DATA

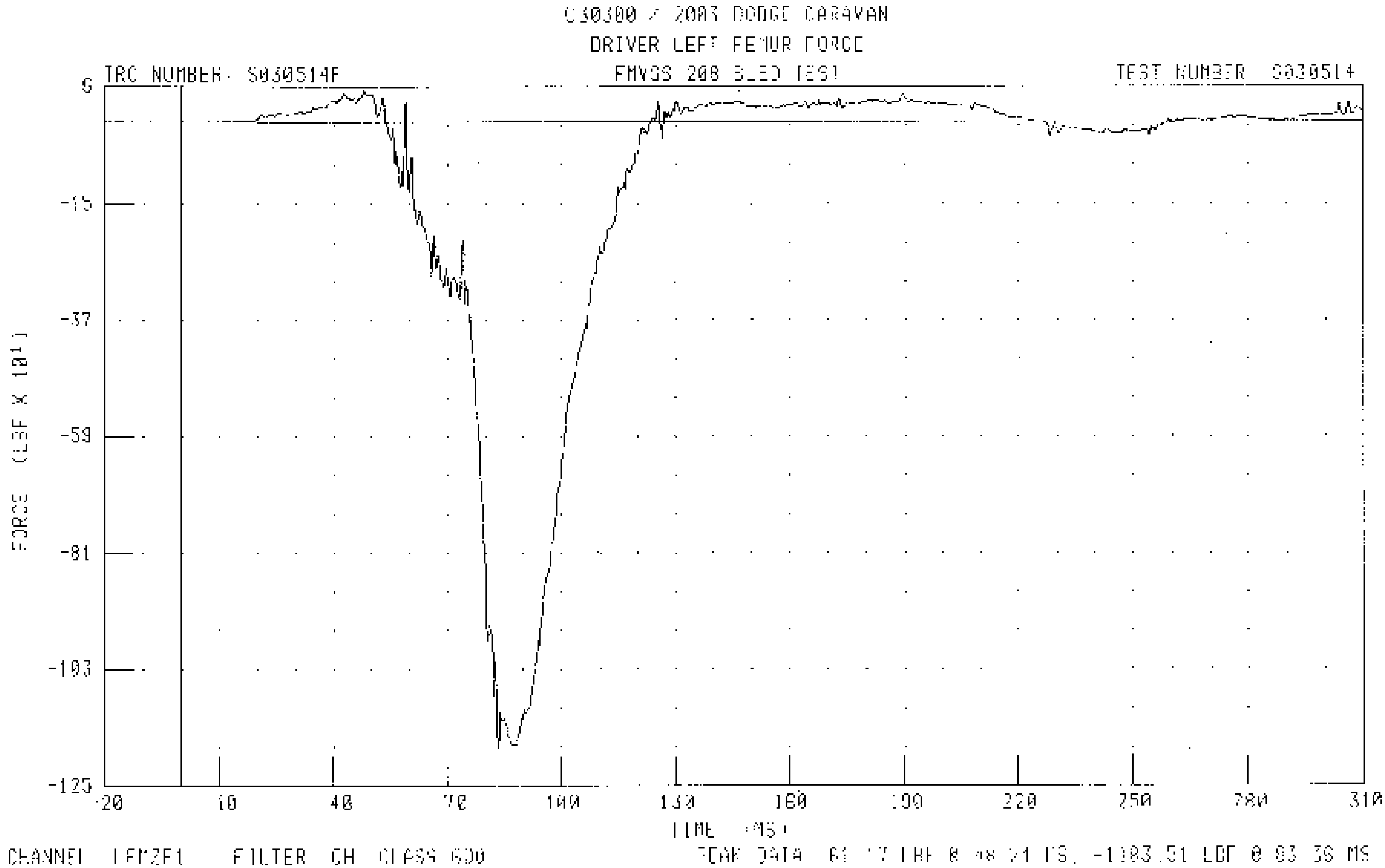


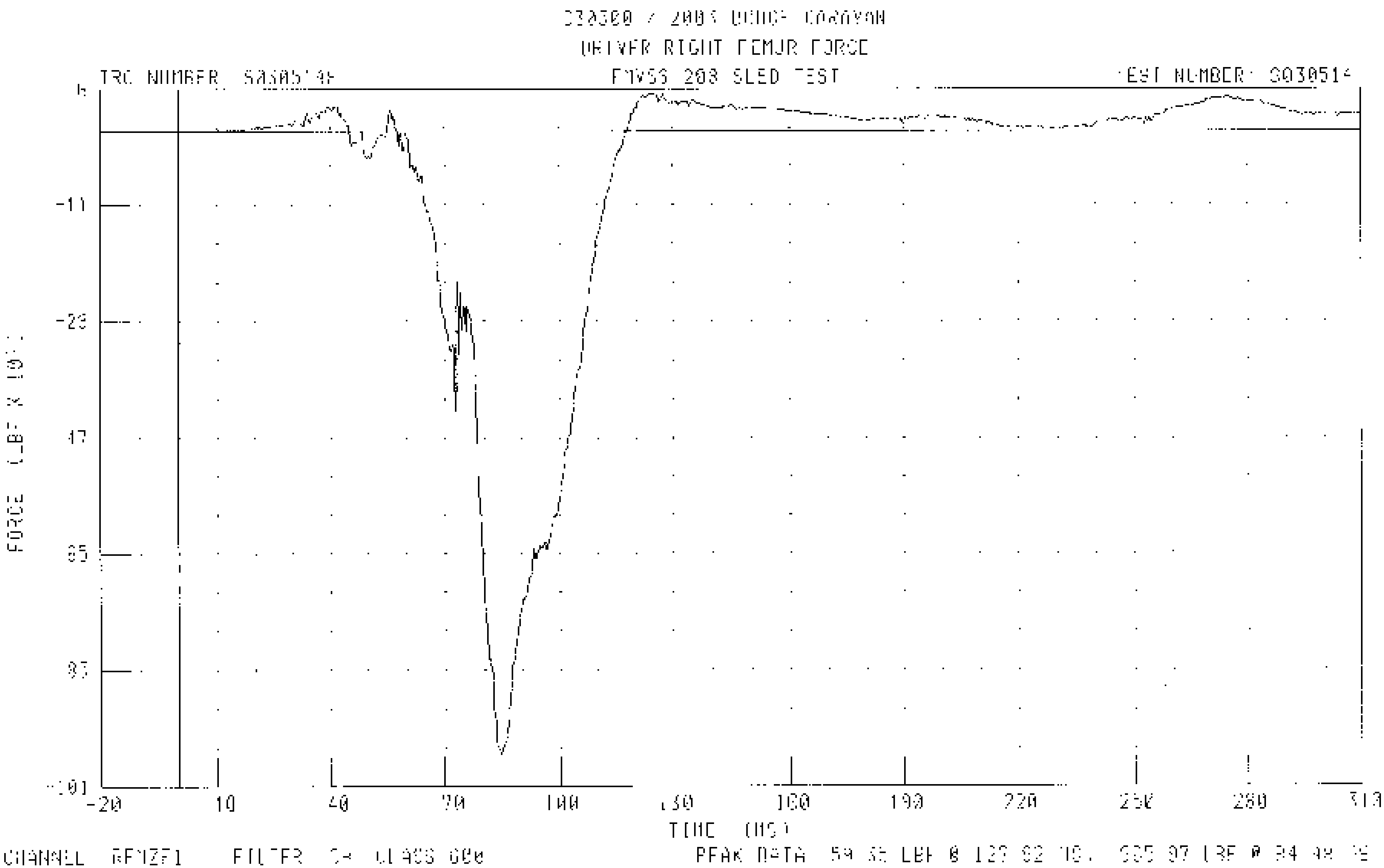
C30300 · 2003 DODGE CARAVAN
FMVSS 208 SLED TEST
TEST NUMBER S030514
ACCELERATION (G X 10-1)
CHANNEL
FILTER
TIME (MS)


C30300 / 2003 DODGE CARAVAN
DRIVER CHEST RESULTANT ACCELERATION
FMVSS 208 SLED TEST
TRC NUMBER: S030514F
TEST NUMBER S030514
384
320
256
192
128
64
0
20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: CSTRC1 FILTER CH CLASS 180

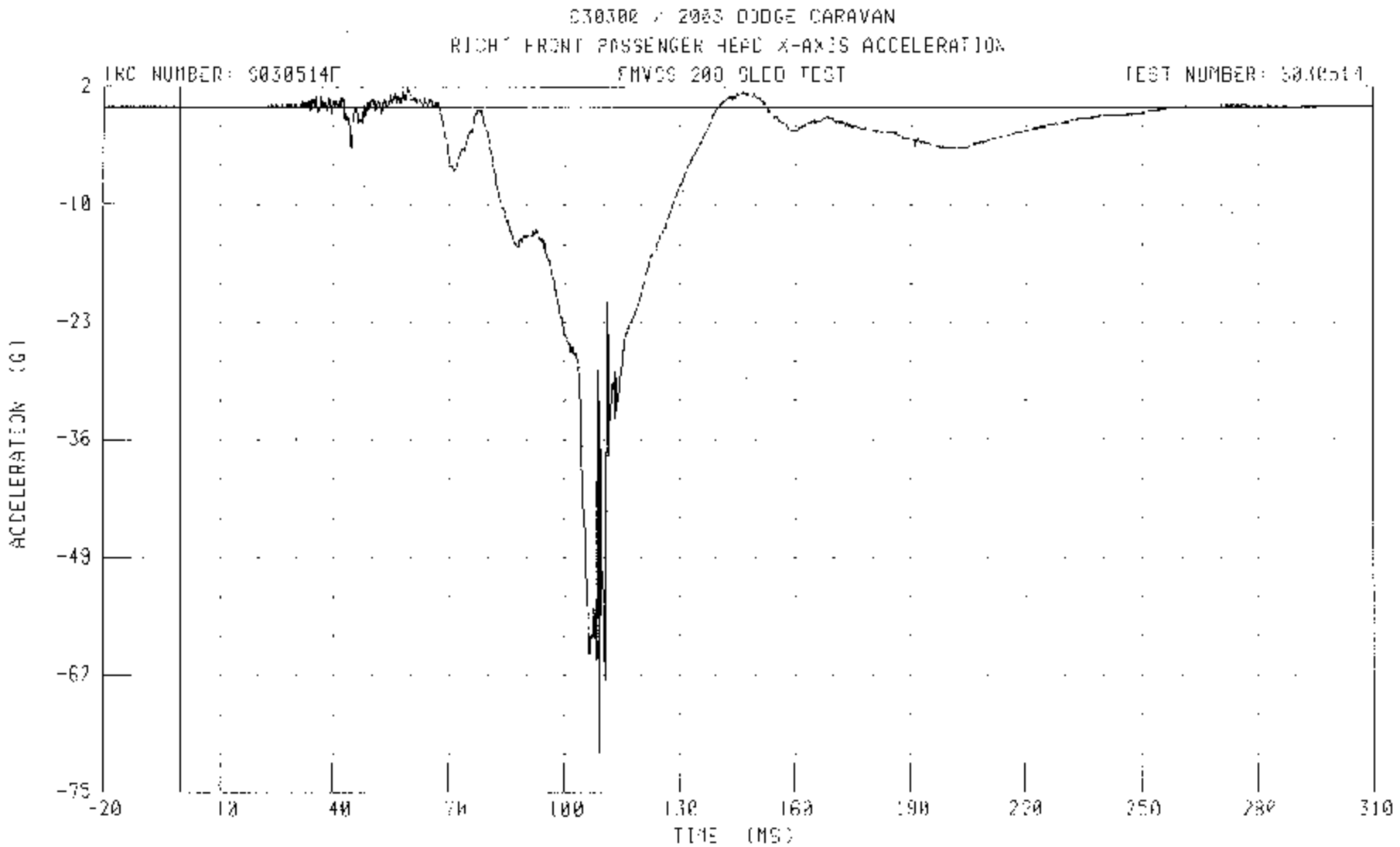

TRC NUMBER: S030514F
FMVSS 208 SLED TEST
TEST NUMBER S030514
0
-50
-100
150
-200
-250
-300
DISPLACEMENT (IN X 10**-2)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL C31XD1 FILTER CH CLASS 600
PEAK DATA 0.00 IN @ 0.30 32 MS; -1.95 IN @ 103.04 MS

S030514

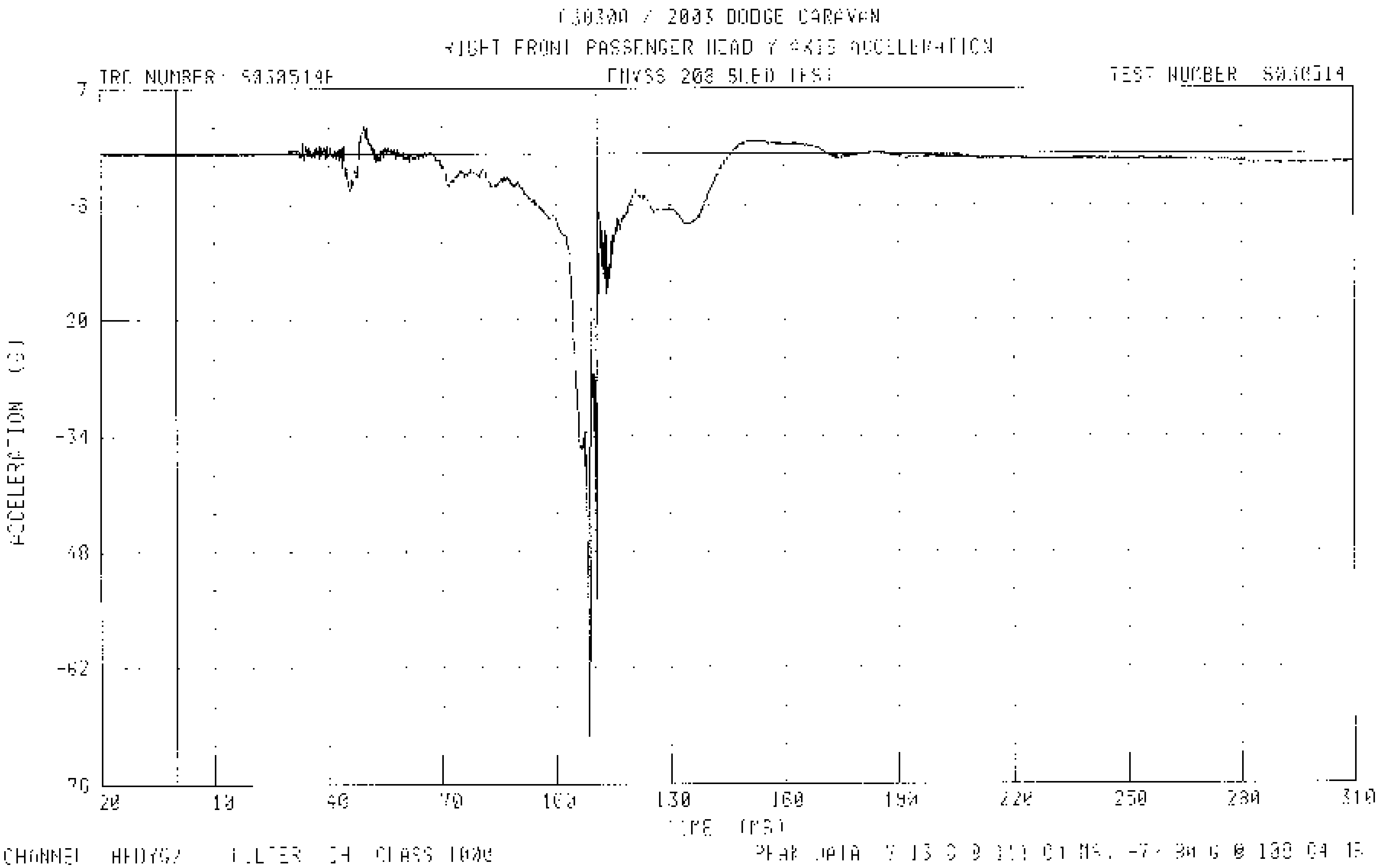

C30300 / 2003 DODGE CARAVAN
DRIVER LEFT FEMUR FORCE
FMVSS 208 SLED TEST
TRC NUMBER: S030514F
TEST NUMBER: S030514
FORCE (LBF X 10^1)
5
-15
-37
-59
-81
-103
-125
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL LFMZF1
FILTER CH CLASS 600



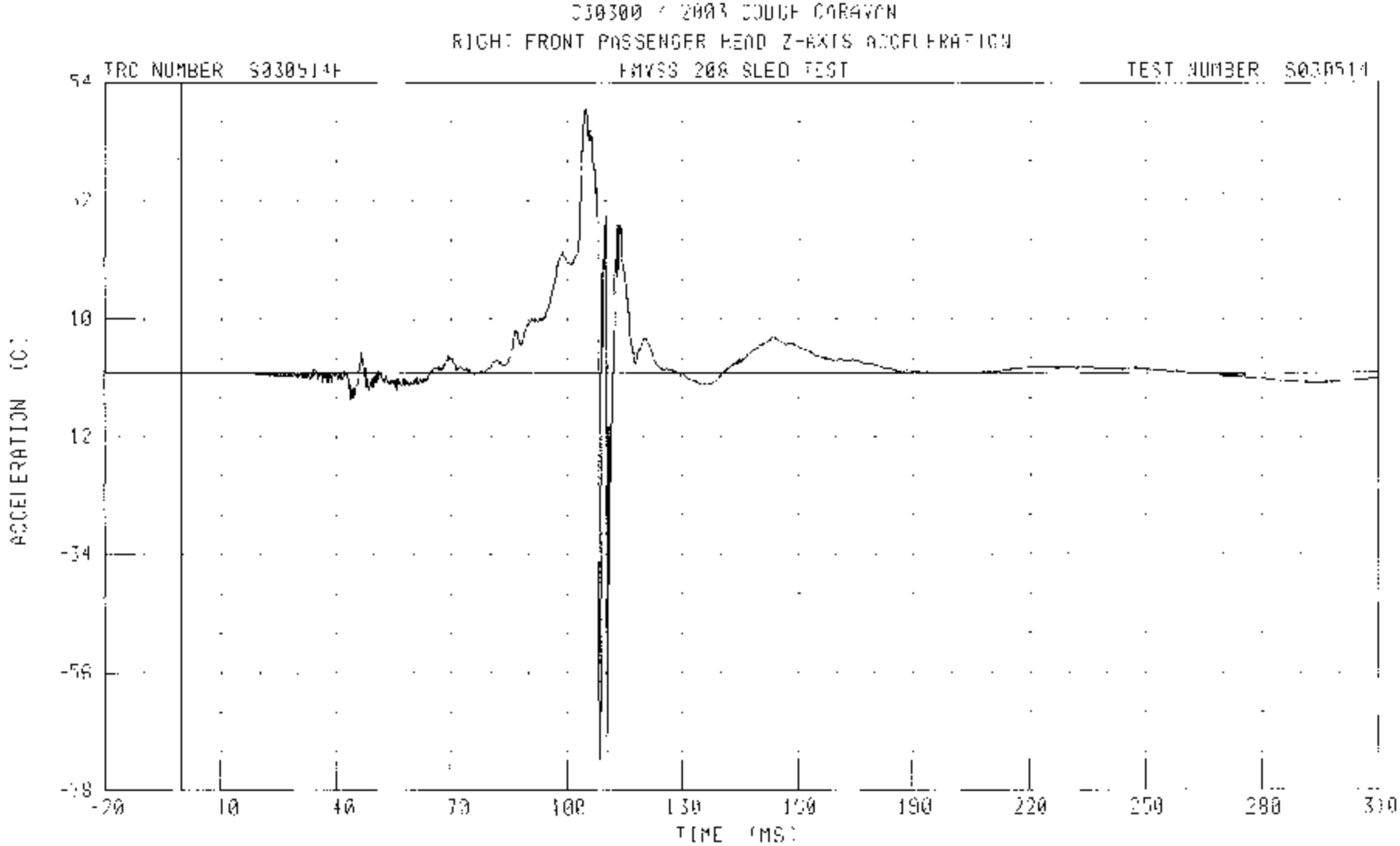
D30300 / 2003 DODGE CARAVAN
DRIVER RIGHT FEMUR FORCE
FMVSS 208 SLED TEST
TRC NUMBER: S030514F
TEST NUMBER: S030514
FORCE (LBF X 10^1)
TIME (MS)
CHANNEL RFMZF1
FILTER CH CLASS 600
PEAK DATA 59.35 LBF @ 129.02 MS, -995.97 LBF @ 84.48 MS


030300 / 2003 DODGE CARAVAN
RIGHT FRONT PASSENGER HEAD X-AXIS ACCELERATION
IRC NUMBER: 9030514C
FMVSS 208 SLED TEST
TEST NUMBER: 9030514
2
-10
-23
-36
-49
-62
-75
ACCELERATION (G)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: PEJXG2
FILTER: CF
CLASS: 1000
PEAK DATA: 2 12 G @ 59.20 MS
1 10 G @ 103.72 MS

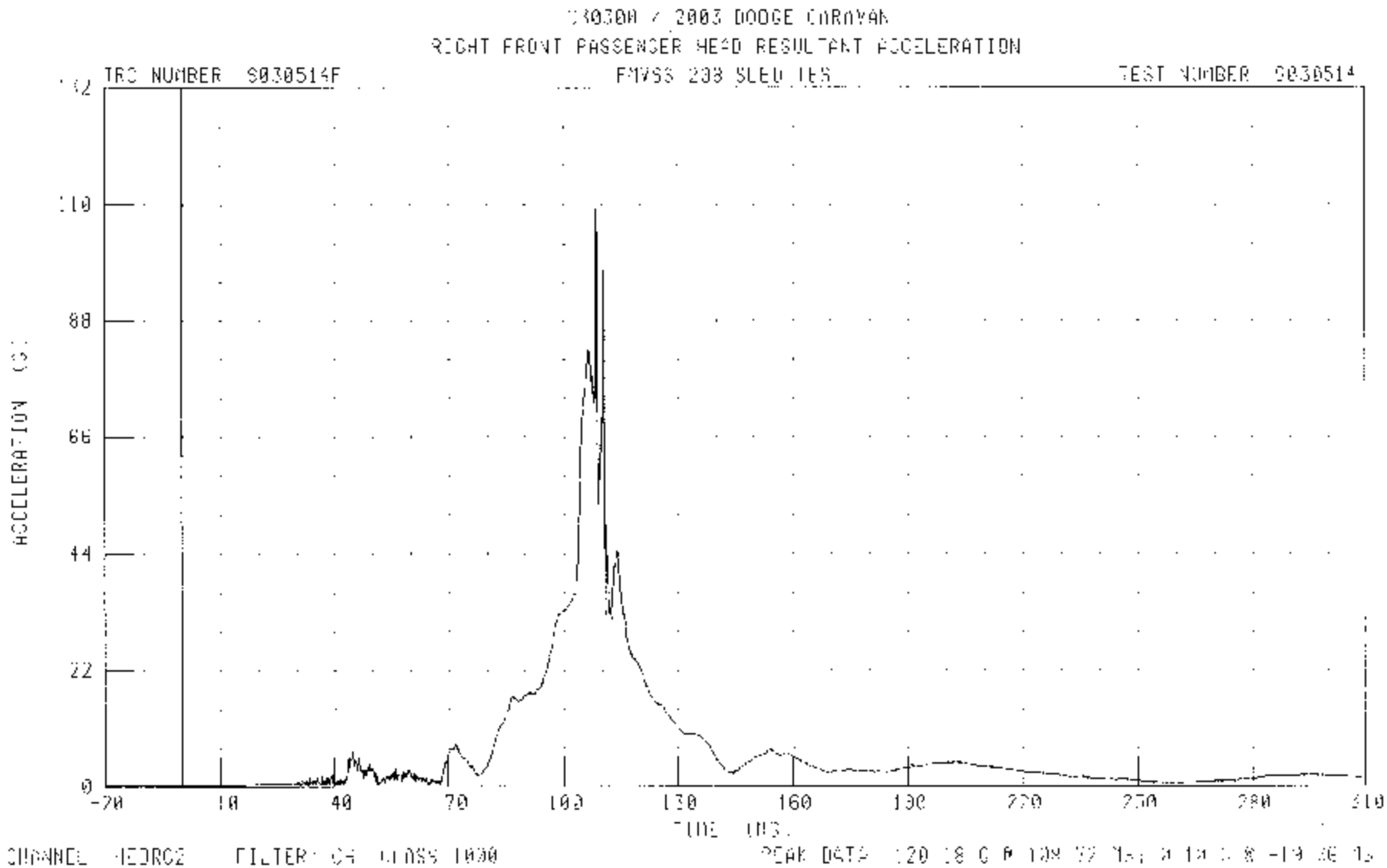
S030514


C30300 / 2003 DODGE CARAVAN
RIGHT FRONT PASSENGER HEAD Y AXIS ACCELERATION
TRC NUMBER: S030514F
FMVSS 208 SLED TEST
TEST NUMBER S030514
ACCELERATION (G)
7
-6
-20
-34
-48
-62
-76
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL HEDYG2
FILTER CH CLASS 1000

S030514


030300 / 2003 DODGE CARAVAN
RIGHT FRONT PASSENGER HEAD Z-AXIS ACCELERATION
TRC NUMBER S030514F
FMVSS 208 SLED TEST
TEST NUMBER S030514
54
32
10
-12
-34
-56
-78
ACCELERATION (G)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL HEAD02 FILTER CH CLASS 1000
PEAK DATA 49.13 G @ 104.96 MS; -72.33 G @ 108.80 MS

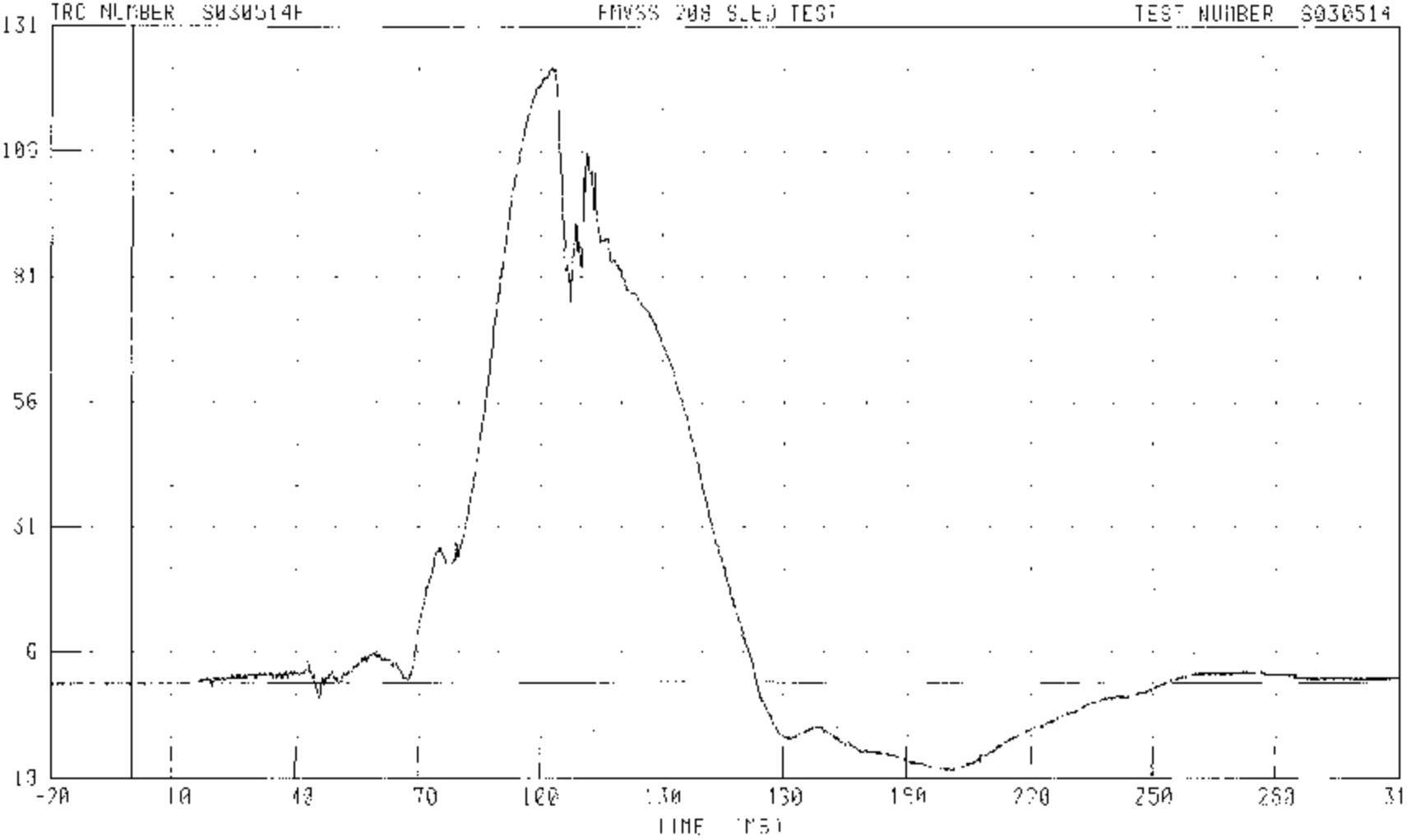
S030514


S030514 / 2003 DODGE CARAVAN
RIGHT FRONT PASSENGER HEAD RESULTANT ACCELERATION
TRC NUMBER S030514F
FMVSS 208 SLED TES
TEST NUMBER S030514
ACCELERATION (G)
132
110
88
66
44
22
0
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL HEDRC2 FILTER: CFC CLASS 1000
PEAK DATA

C30300 / 2003 DODGE CARAVAN

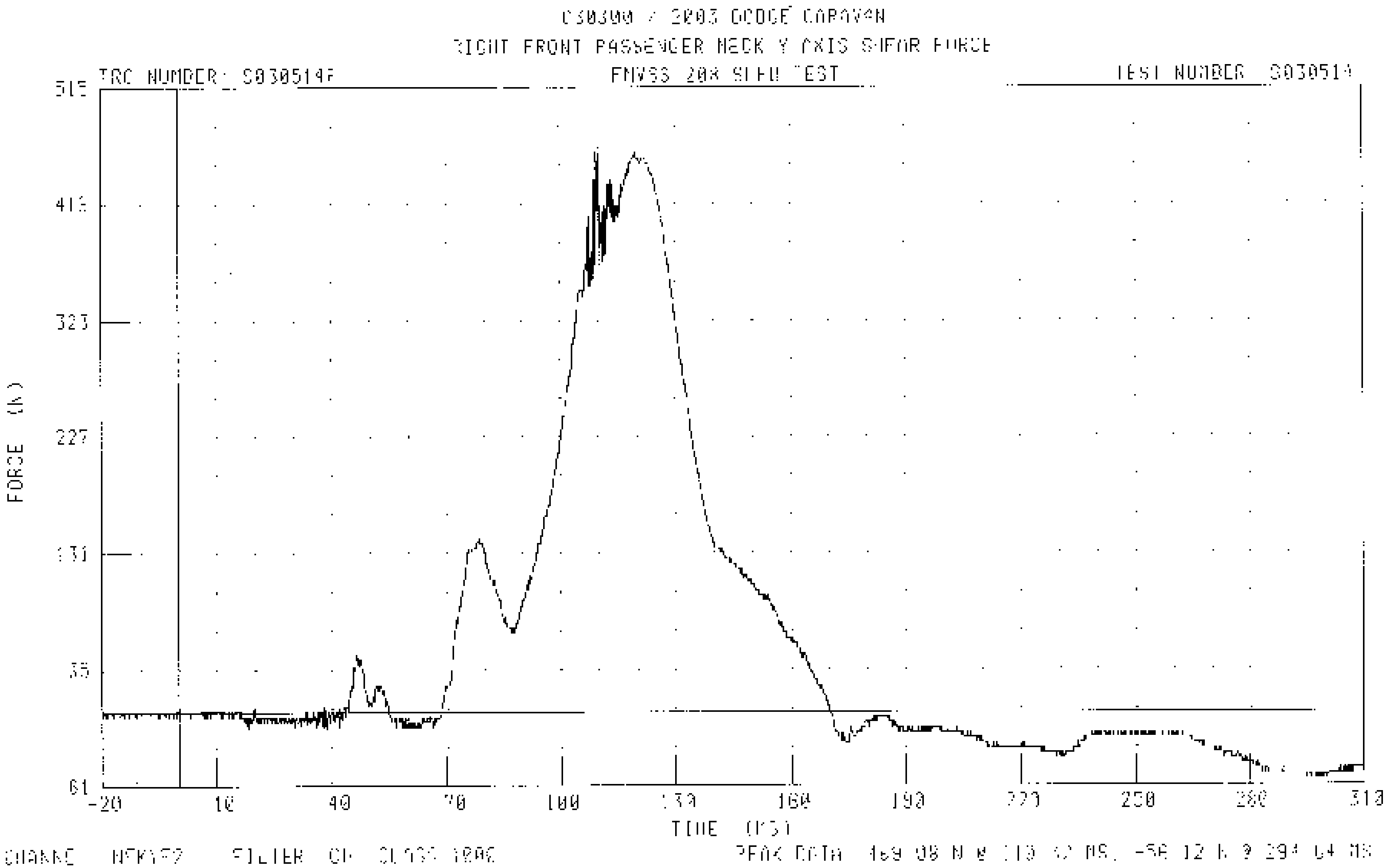
RIGHT FRONT PASSENGER NECK X-AXIS SHEAR FORCE

TRC NUMBER S030514F — FMVSS 208 SLED TEST — TEST NUMBER S030514

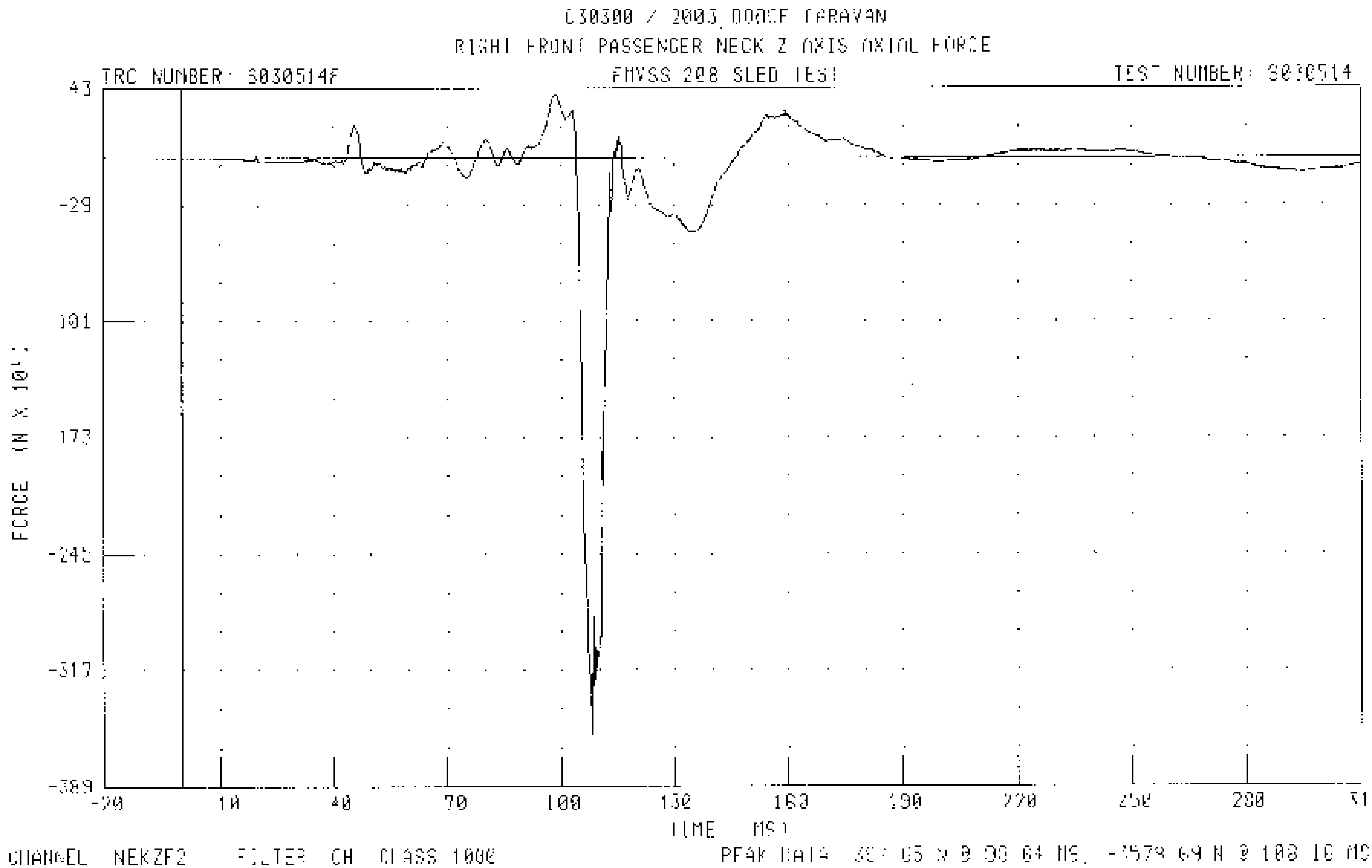


CHANNEL NEKXF2 FILTER CH CLASS 1000 PEAK DATA 1230.19 N @ 102.80 MS, -122.73 N @ 198.00 MS

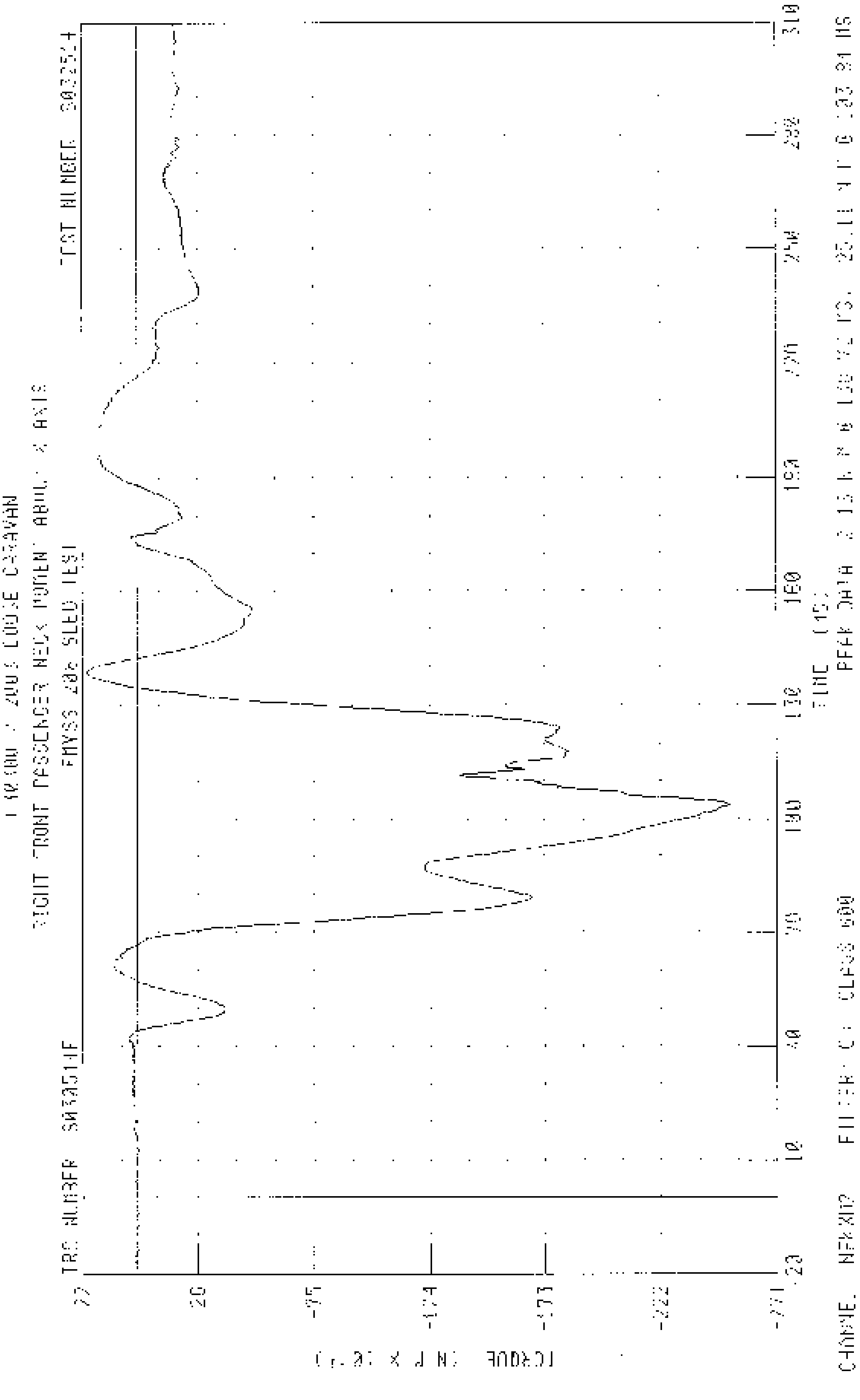
S030514

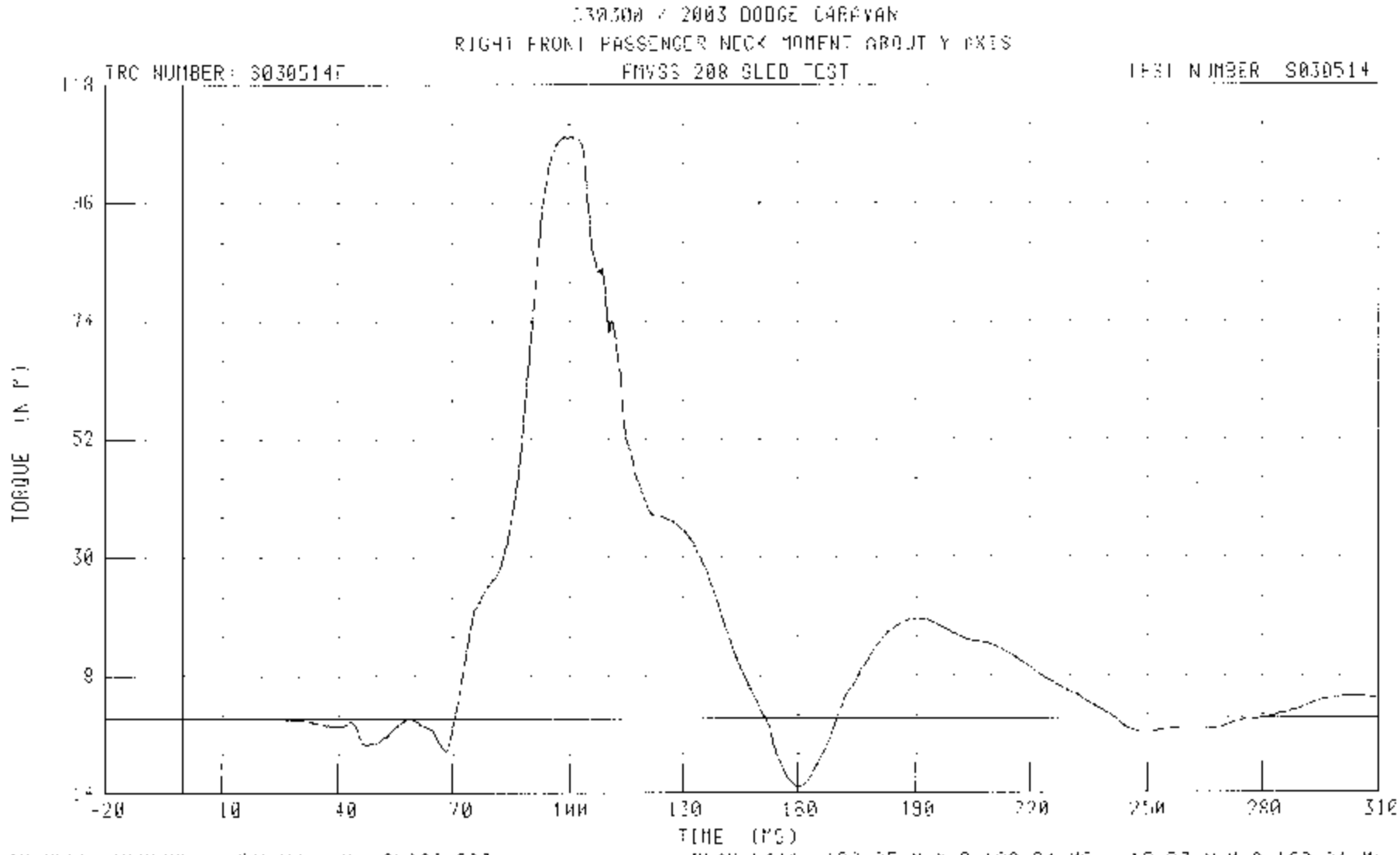


C30300 / 2003 DODGE CARAVAN
RIGHT FRONT PASSENGER NECK Y AXIS SHEAR FORCE
TRC NUMBER: S030514F
FMVSS 208 SLED TEST
TEST NUMBER S030514
FORCE (N)
TIME (MS)
-20
10
40
70
100
160
190
250
310
515
323
227
35
61
PEAK DATA 469.08 N @ 113.02 MS, -56.12 N @ 294.04 MS



C30300 / 2003 DODGE CARAVAN
RIGHT FRONT PASSENGER NECK Z AXIS AXIAL FORCE
FMVSS 208 SLED TEST
TRC NUMBER: S030514F
TEST NUMBER: S030514
43
-29
101
173
-245
-317
-389
FORCE (N X 10¹)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL NEKZF2
FILTER CH CLASS 1000


TEST NUMBER S030514
TRC NUMBER S030514F
FMVSS 208 SLED TEST
RIGHT FRONT PASSENGER NECK MOMENT ABOUT X AXIS
2003 DODGE CARAVAN
FILTER CH CLASS 600
TIME (MS)
77
20
-124
-173
-222
-271
-20
10
40
70
100
130
160
190
220
250
280
310

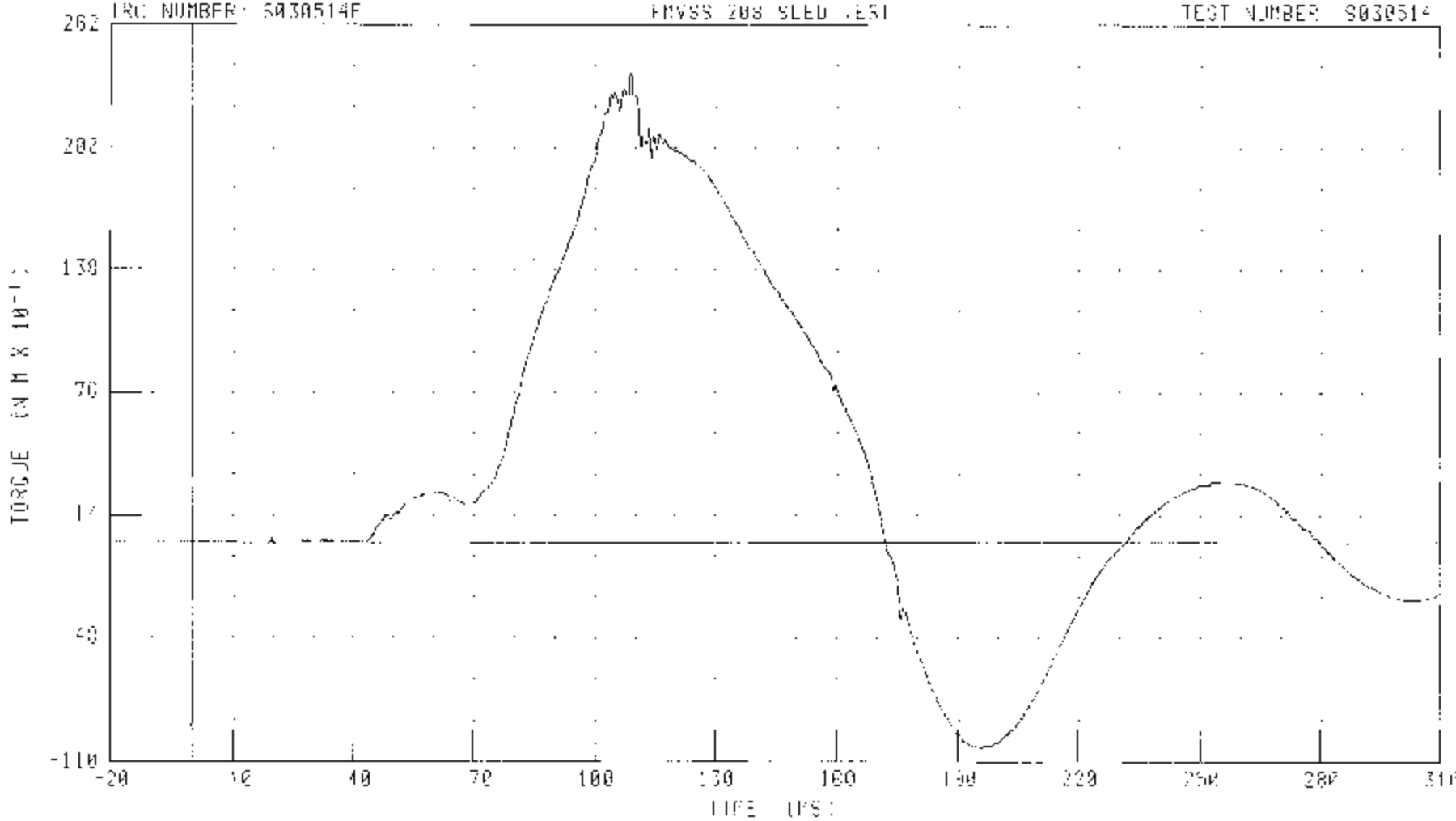

030308 / 2003 DODGE CARAVAN
RIGHT FRONT PASSENGER NECK MOMENT ABOUT Y AXIS
TRC NUMBER: S0305147
FMVSS 208 SLED TEST
TEST NUMBER S030514
TORQUE (N-M)
96
74
52
30
9
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL NEKYM2 FILTER CF CLASS 600
PEAK DATA 100.25 N-M @ 100.04 MS, -12.83 N-M @ 160.24 MS

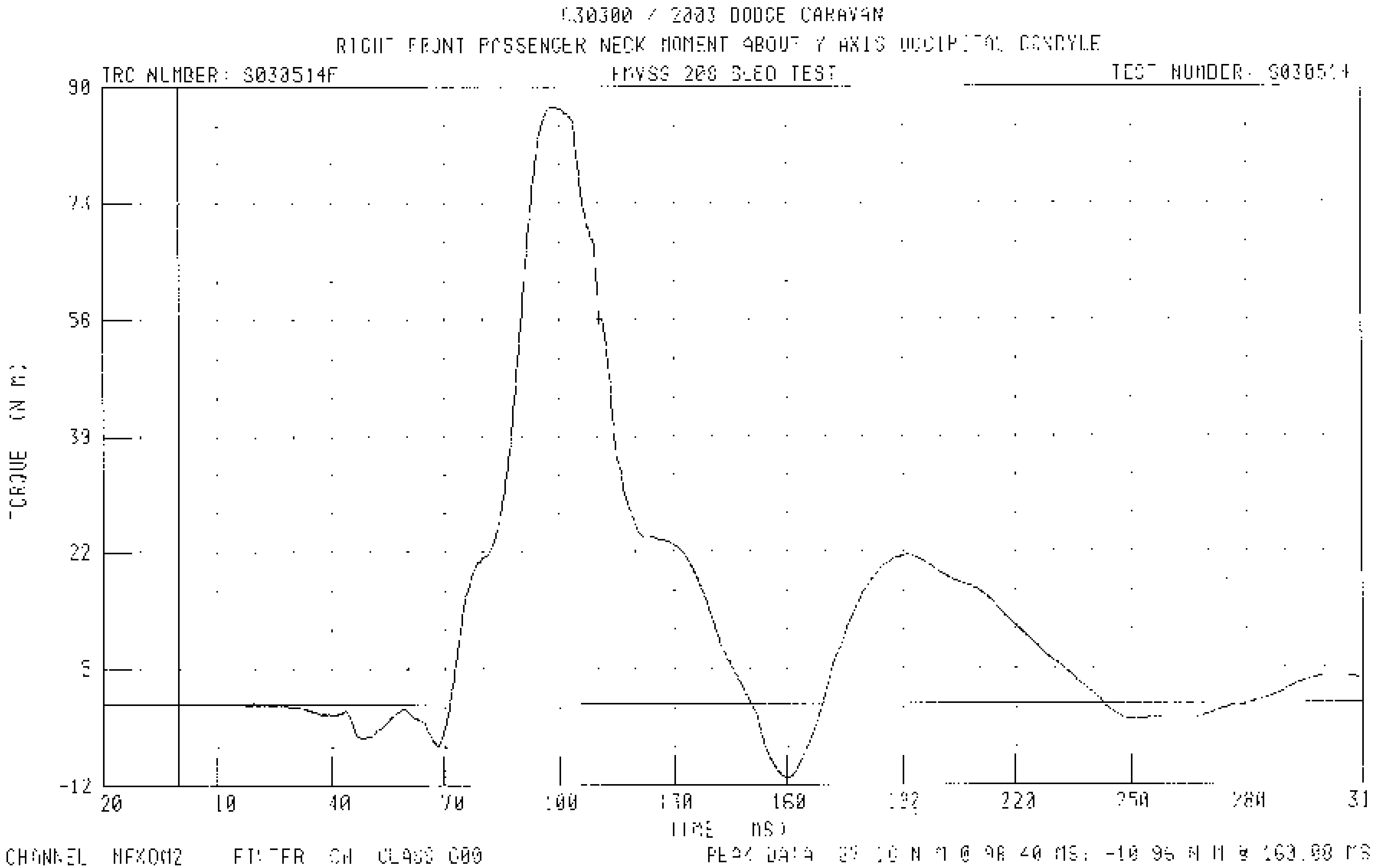
S030514

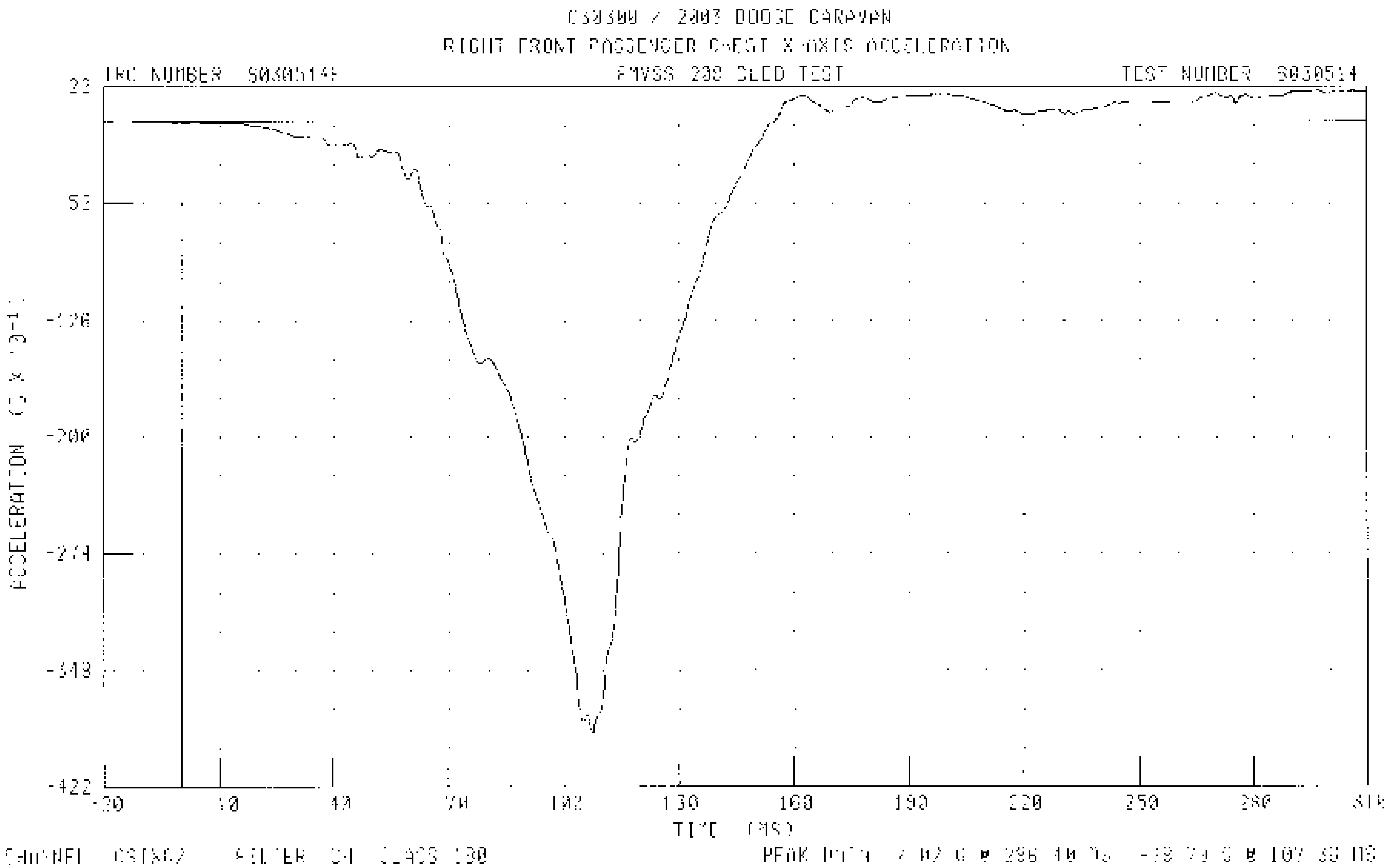
C30302 / 2003 DODGE CARAVAN

RIGHT FRONT PASSENGER NECK MOMENT ABOUT Z AXIS

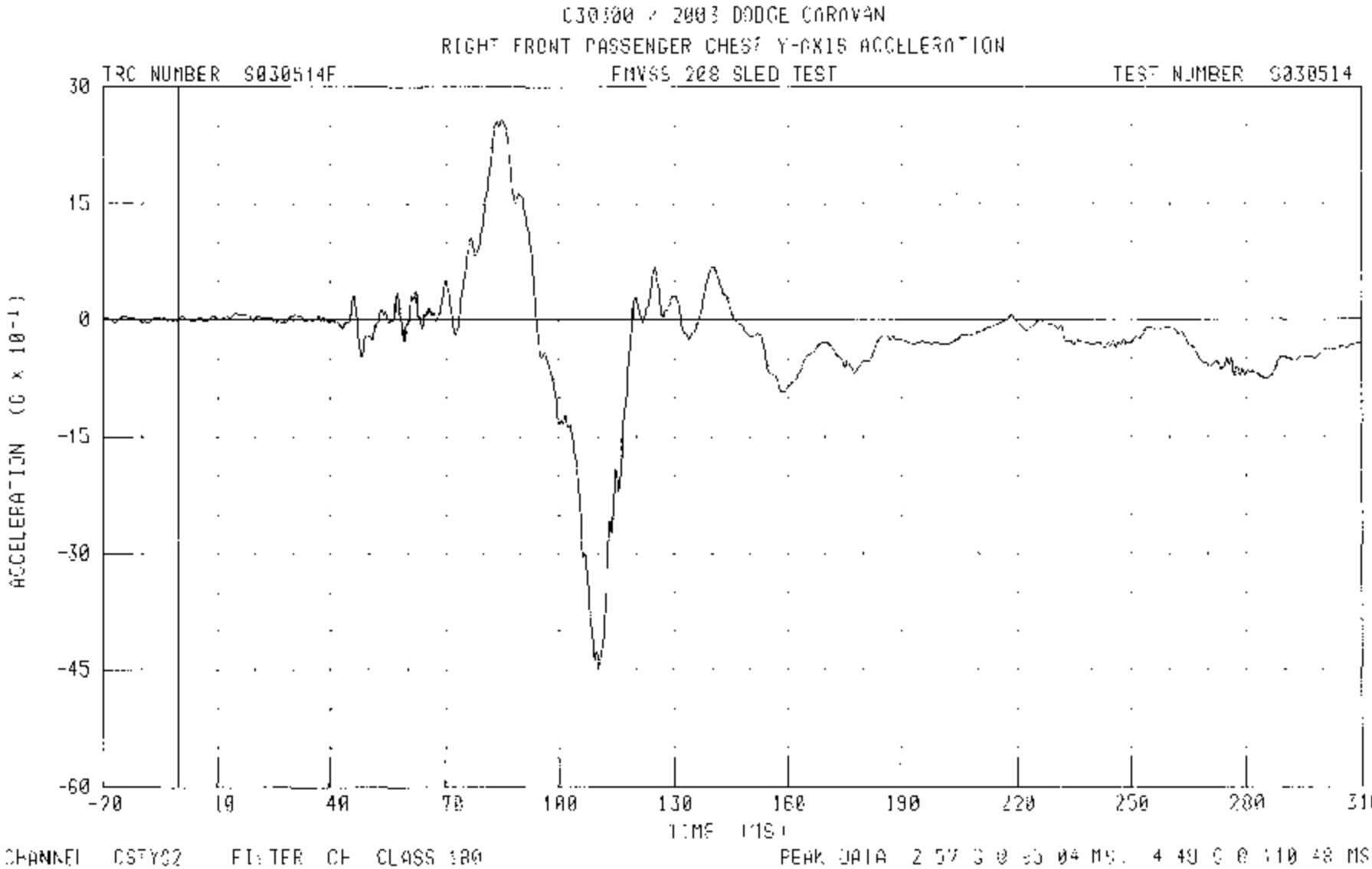
FMVSS 208 SLED TEST

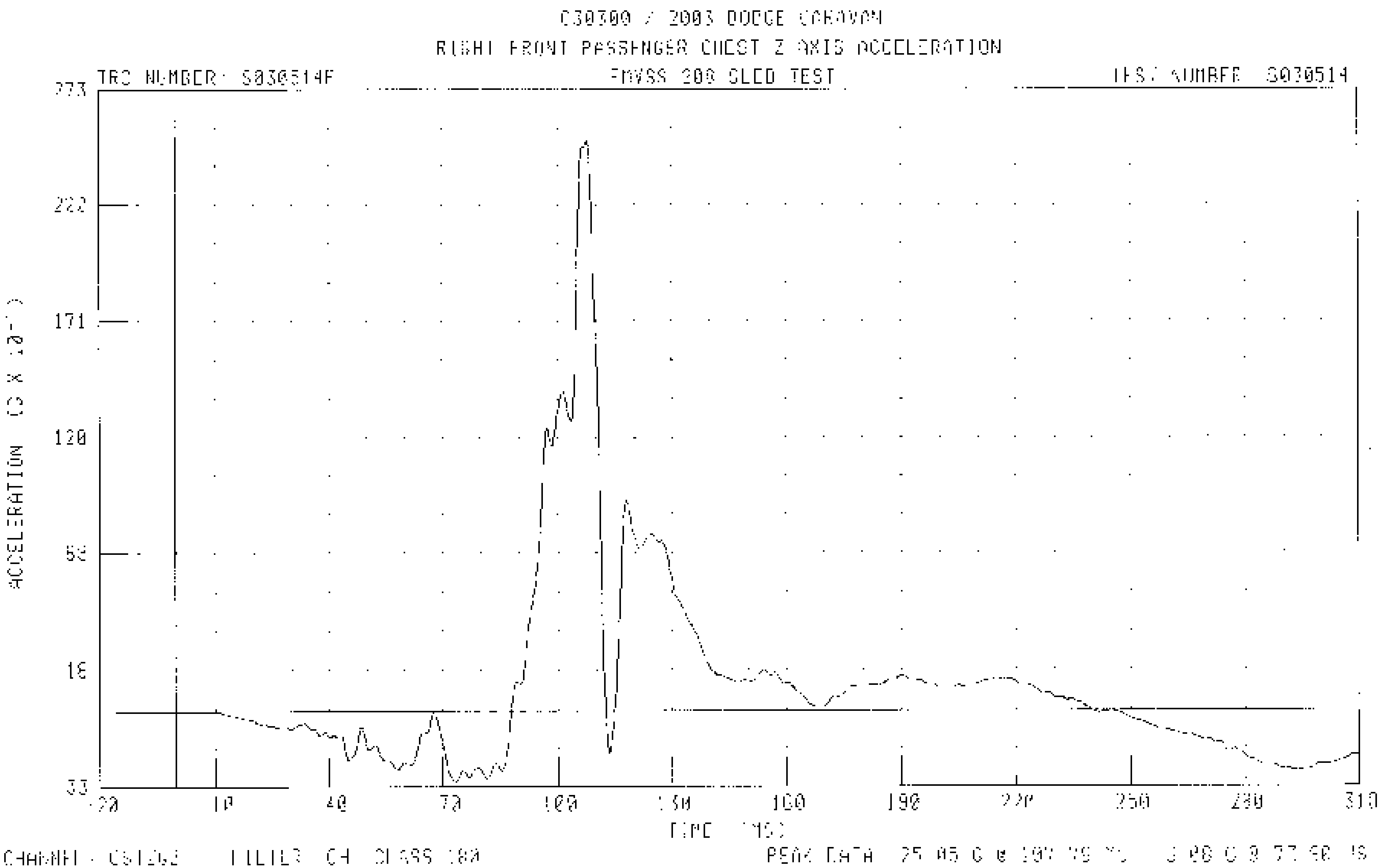



S30300 / 2003 DODGE CARAVAN
RIGHT FRONT PASSENGER NECK MOMENT ABOUT Y AXIS OCCIPITAL CONDYLE
TRC NUMBER: S030514F
FMVSS 208 SLED TEST
TEST NUMBER: S030514
TORQUE (N M)
90
56
39
22
5
-12
TIME (MS)
CHANNEL NFXOM2
FILTER CH CLASS 600
-10.95 N M @ 160.00 MS



C30300 / 2003 DODGE CARAVAN
RIGHT FRONT PASSENGER CHEST X-AXIS ACCELERATION
FMVSS 208 SLED TEST
TEST NUMBER S030514
ACCELERATION (G X 10-1)
TIME (MS)

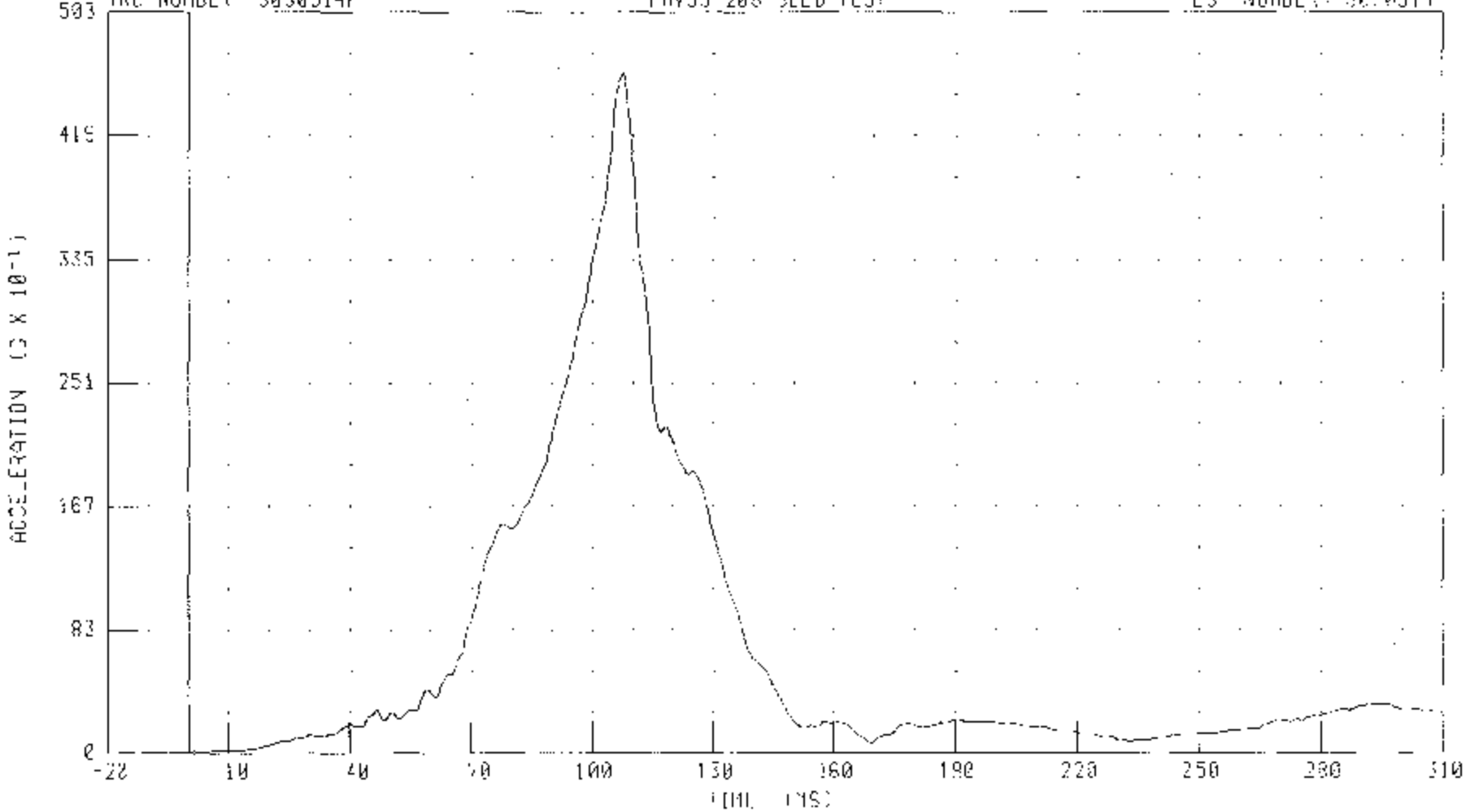

C30500 / 2003 DODGE CARAVAN
RIGHT FRONT PASSENGER CHEST Y-AXIS ACCELERATION
TRC NUMBER S030514F
FMVSS 208 SLED TEST
TEST NUMBER S030514
30
15
0
-15
-30
-45
-60
ACCELERATION (G x 10-1)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL CSTYG2 FILTER CH CLASS 180
PEAK DATA 2.57 G @ 65.04 MS, 4.49 G @ 110.48 MS


C30300 / 2003 DODGE CARAVAN
RIGHT FRONT PASSENGER CHEST Z AXIS ACCELERATION
FMVSS 208 SLED TEST
TRC NUMBER: S030514F
TEST NUMBER S030514
ACCELERATION
273
222
171
120
69
18
-33
-20
10
40
70
100
130
160
190
220
250
280
310
TIME
CHANNEL
FILTER
PEAK DATA

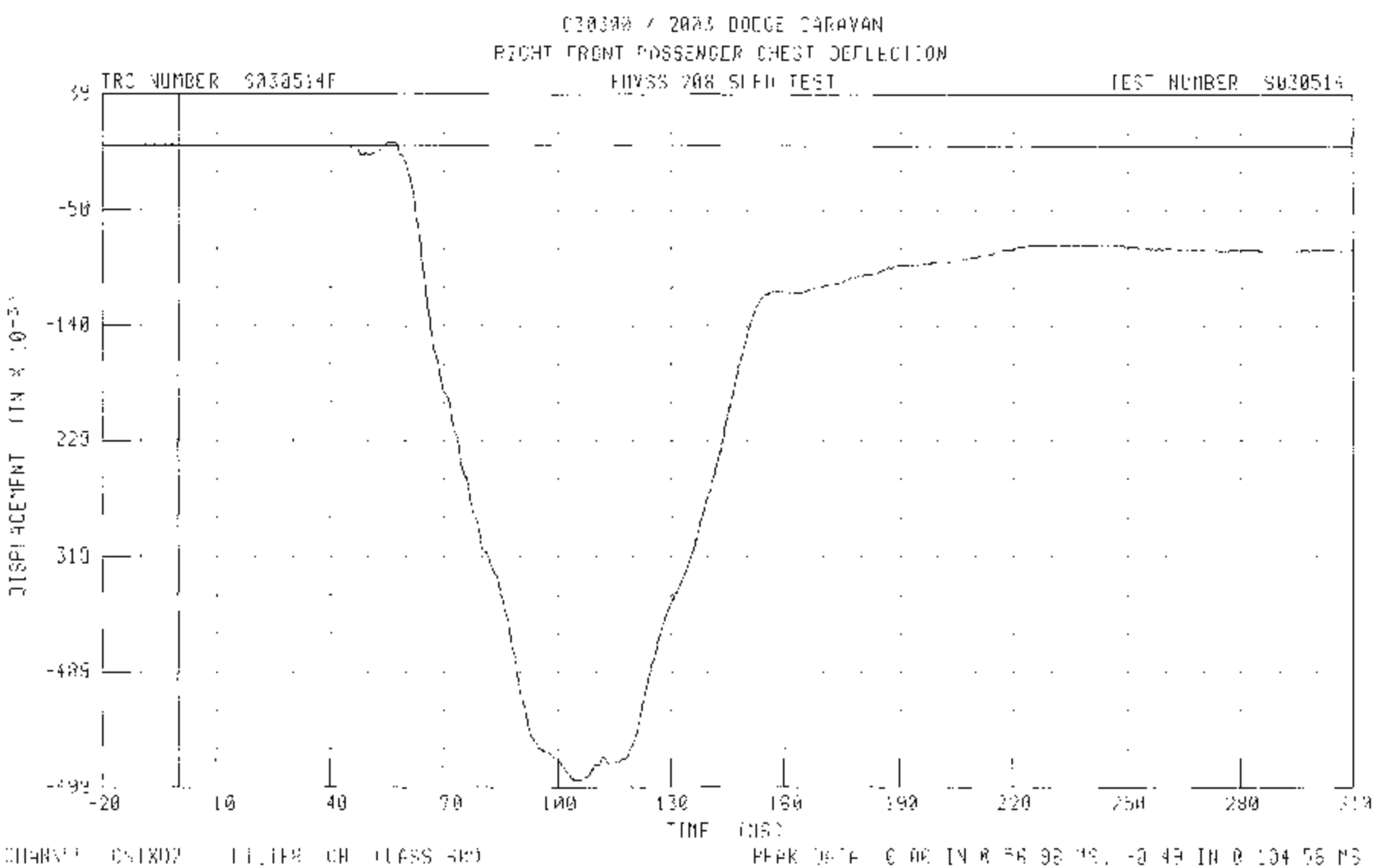
C30300 / 2005 DODGE CARAVAN

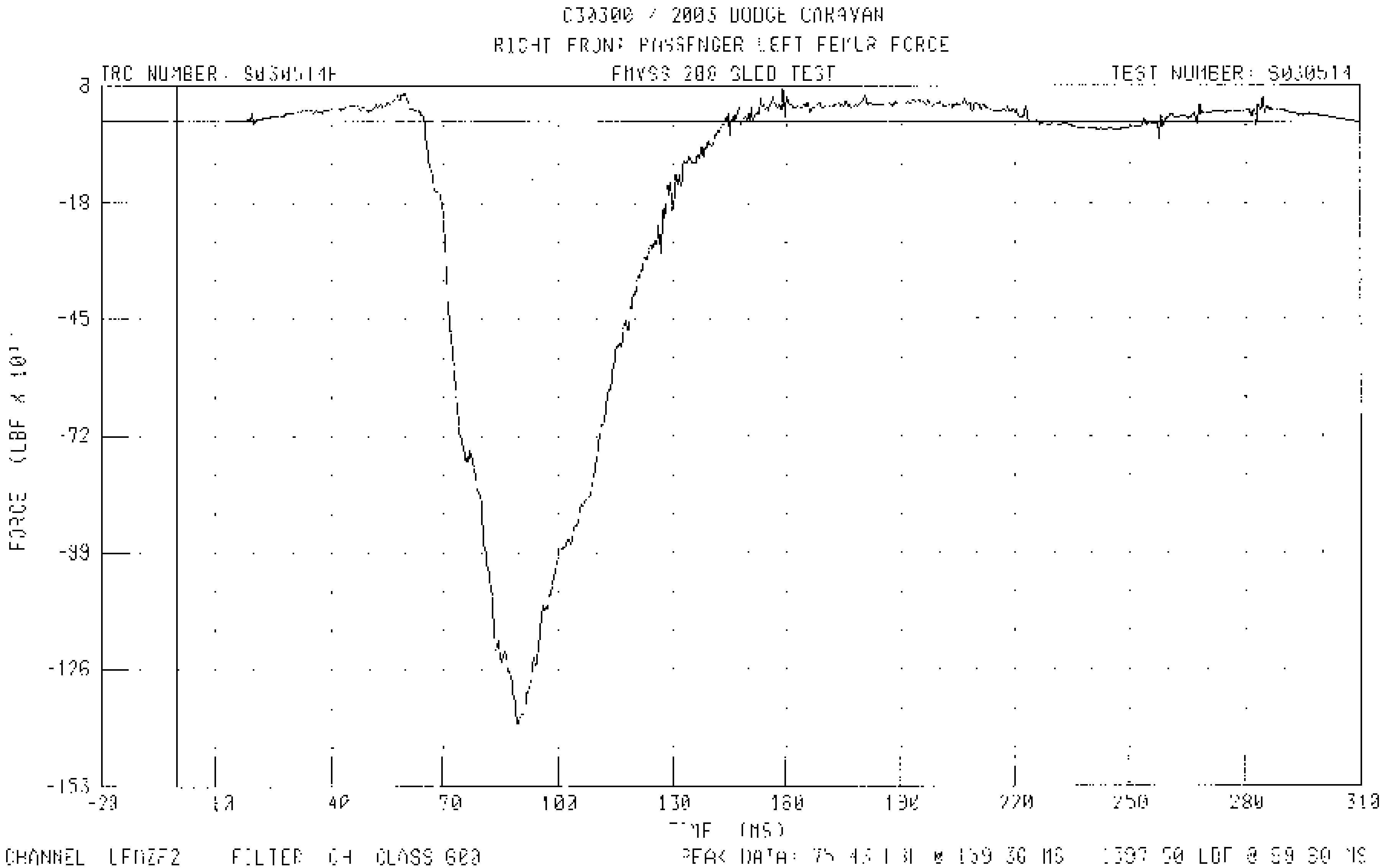
RIGHT FRONT PASSENGER CHEST RESULTANT ACCELERATION

TRC NUMBER: S030514F — FMVSS 208 SLED TEST — TEST NUMBER: S030514

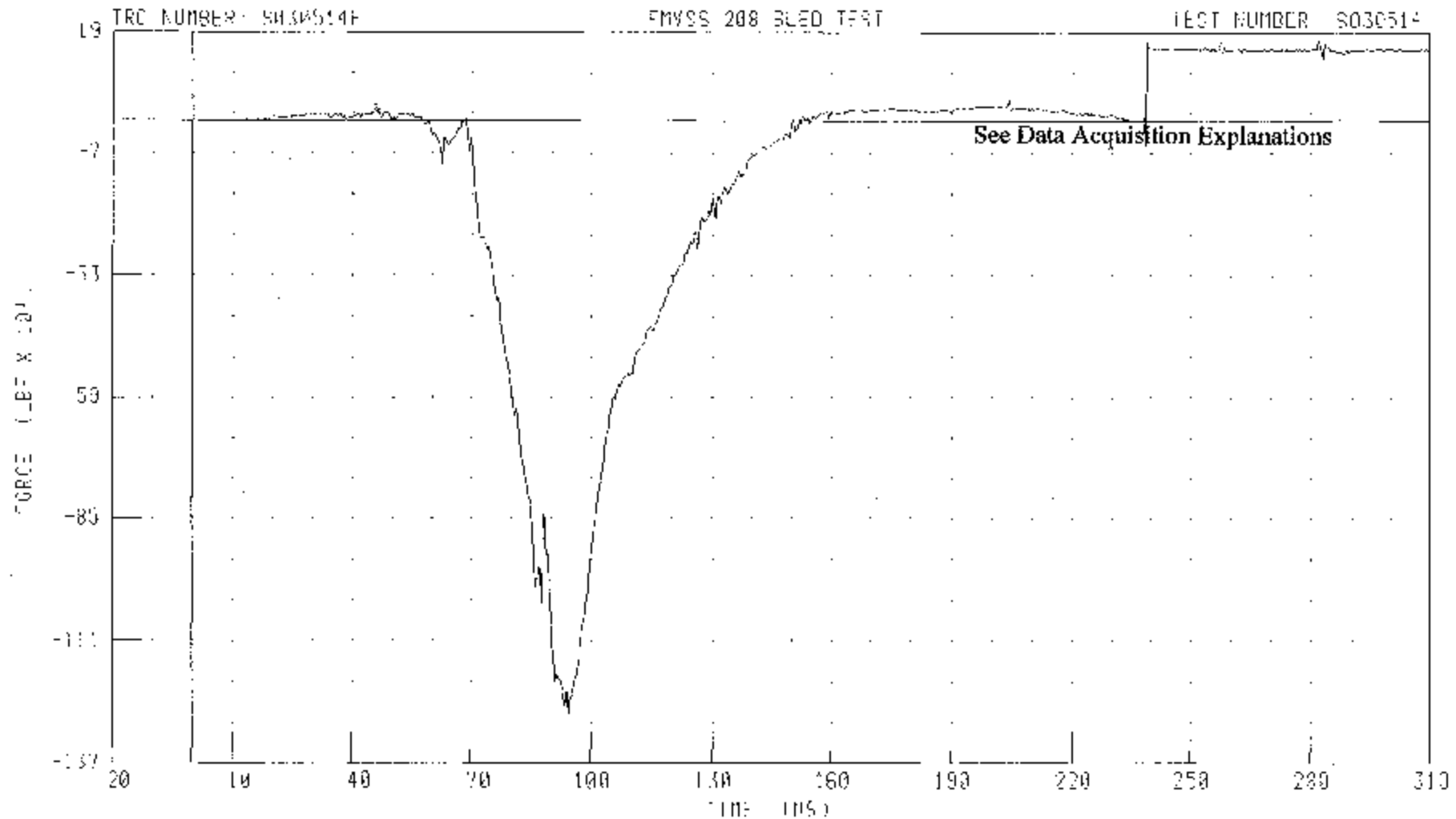


CHANNEL: CSTR32 FILTER CH CLASS 180 PEAK DATA 10.24 G @ 107.32 MS 0.00 G @ 20.00 MS


C30300 / 2003 DODGE CARAVAN
RIGHT FRONT PASSENGER CHEST DEFLECTION
FMVSS 208 SLED TEST
TRC NUMBER S030514F
TEST NUMBER S030514
50
-50
-140
220
310
-405
-20
10
40
70
100
130
160
190
220
250
280
TIME (MS)
DISPLACEMENT (IN X 10-3)


C30300 / 2005 DODGE CARAVAN
RIGHT FRONT PASSENGER LEFT FEMUR FORCE
FMVSS 208 SLED TEST
TRC NUMBER: S030514F
TEST NUMBER: S030514
FORCE (LBF X 10)
0
-18
-45
-72
-99
-126
-153
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL LFMZF2
FILTER CH CLASS 600
PEAK DATA: 75.43 LBF @ 159.30 MS -1397.50 LBF @ 89.90 MS

C30203 / 2003 DODGE CARAVAN
RIGHT FRONT PASSENGER RIGHT FEMUR FORCE
FMVSS 208 SLED TEST



S030514

Appendix C

Manufacturer's Vehicle Information

OCCUPANT RESTRAINTS

Some of the most important safety features in your vehicle are the restraint systems. These include the front and rear seat belts for the driver and all passengers, front airbags for both the driver and front passenger and if equipped, side airbags for both the driver and front passenger. If you will be carrying children too small for adult-size seat belts, your seat belts or the LATCH feature (Lower Anchors and Tether for CHildren) also, can be used to hold infant and child restraint systems.

Please pay close attention to the information in this section. It tells you how to use your restraint system properly to keep you and your passengers as safe as possible.

In a collision, you and your passengers can suffer much greater injuries if you are not properly buckled up. You can strike the interior of your vehicle or other passengers, or you can be thrown out of the vehicle. Always be sure you and others in your vehicle are buckled up properly.

Buckle up even though you are an excellent driver, even on short trips. Someone on the road may be a poor driver and cause a collision that includes you. This can happen far away from home or on your own street.

Research has shown that seat belts save lives, and they can reduce the seriousness of injuries in a collision. Some of the worst injuries happen when people are thrown from the vehicle. Seat belts reduce the possibility of

ejection and the risk of injury caused by striking the inside of the vehicle. Everyone in a motor vehicle should be belted at all times.

Lap/Shoulder Belts

All the outboard seats in your vehicle are equipped with Lap/Shoulder Belts.

The belt webbing retractor is designed to lock during very sudden stops or collisions. This feature allows the shoulder part of the belt to move freely with you under normal conditions. But in a collision, the belt will lock and reduce the risk of your striking the inside of the vehicle or being thrown out.

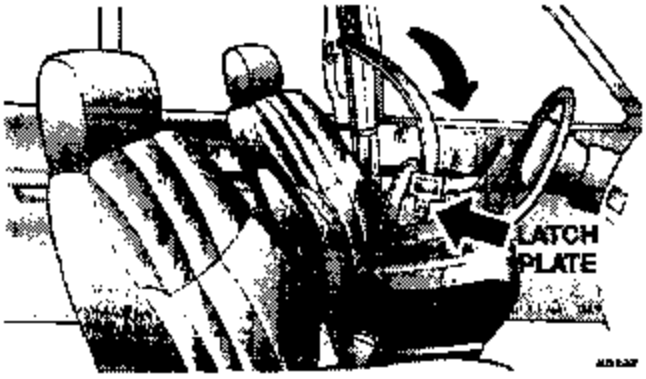
- **It is extremely dangerous to ride in a cargo area, inside or outside of a vehicle. In a collision, people riding in these areas are more likely to be seriously injured or killed.**
- **Do not allow people to ride in any area of your vehicle that is not equipped with seats and seat belts.**
- **Be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

- **Wearing a seat belt incorrectly is dangerous. Seat belts are designed to go around the large bones of your body. These are the strongest parts of your body and can take the forces of a collision the best.**
- **Wearing your belt in the wrong place could make your injuries in a collision much worse. You might suffer internal injuries, or you could even slide out of part of the belt. Follow these instructions to wear your seat belt safely and to keep your passengers safe, too.**
- **Two people should never be belted into a single seat belt. People belted together can crash into one another in a collision, hurting one another badly. Never use a lap/shoulder belt or lap belt for more than one person, no matter what their size.**

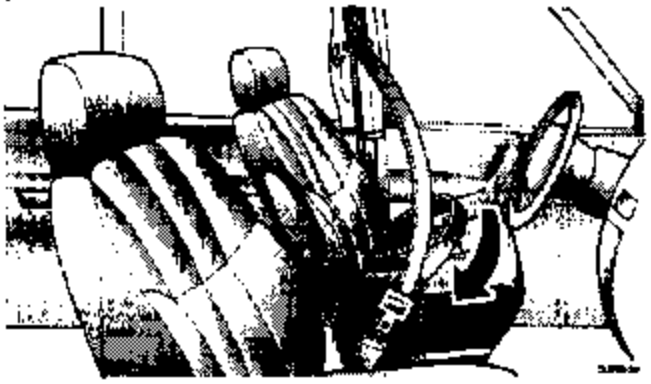
Lap/Shoulder Belt Operating Instructions

1. Enter the vehicle and close the door. Sit back and adjust the seat.

2. The seat belt latch plate is near the seatback of the front seats and next to your arm in the rear seats. Grasp the latch plate and pull out the belt. Slide the latch plate up the webbing as far as necessary to allow the belt to go around your lap.



3. When the belt is long enough to fit, insert the latch plate into the buckle until you hear a "click".



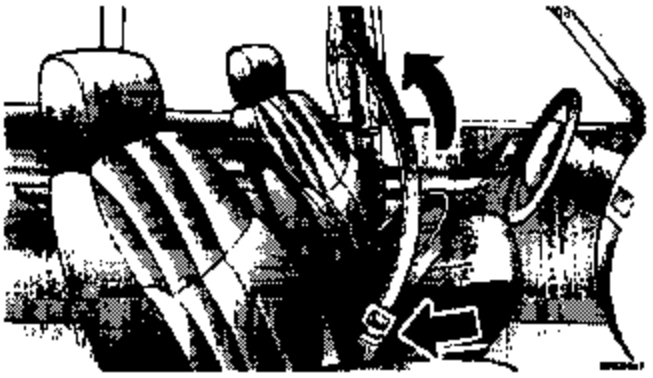
A belt that is buckled into the wrong buckle will not protect you properly. The lap portion could ride too high on your body, possibly causing internal injuries. Always buckle your belt into the buckle nearest you.

A belt that is too loose will not protect you as well. In a sudden stop you could move too far forward, increasing the possibility of injury. Wear your seat belt snugly.

A belt that is worn under your arm is very dangerous. Your body could strike the inside surfaces of the vehicle in a collision, increasing head and neck injury. A belt worn under the arm can cause internal injuries. Ribs aren't as strong as shoulder bones. Wear the belt over your shoulder so that your strongest bones will take the force in a collision.

A shoulder belt placed behind you will not protect you from injury during a collision. You are more likely to hit your head in a collision if you do not wear your shoulder belt. The lap and shoulder belt are meant to be used together.

4. Position the lap belt across your thighs, below your abdomen. To remove slack in the lap belt portion, pull up on the shoulder belt. To loosen the lap belt if it is too tight, tilt the latch plate and pull on the lap belt. A snug belt reduces the risk of sliding under the belt in a collision.



A lap belt worn too high can increase the risk of internal injury in a collision. The belt forces won't be at the strong hip and pelvic bones, but across your abdomen. Always wear the lap belt as low as possible and keep it snug.

A twisted belt can't do its job as well. In a collision it could even cut into you. Be sure the belt is straight. If you can't straighten a belt in your vehicle, take it to your dealer and have it fixed.

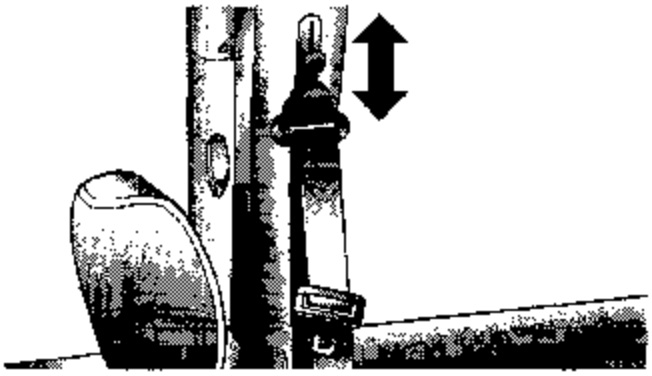
5. Position the shoulder belt on your chest so that it is comfortable and not resting on your neck. The retractor will withdraw any slack in the belt.

6. To release the belt, push the red button on the buckle. The belt will automatically retract to its stowed position. If necessary, slide the latch plate down the webbing to allow the belt to retract fully.

A frayed or torn belt could rip apart in a collision and leave you with no protection. Inspect the belt system periodically, checking for cuts, frays, or loose parts. Damaged parts must be replaced immediately. Do not disassemble or modify the system. Seat belt assemblies must be replaced after a collision if they have been damaged (bent retractor, torn webbing, etc.).

Adjustable Upper Shoulder Belt Anchorage

In the front seats and the second row outboard seats, the shoulder belt anchorage can be adjusted upward or downward to help position the belt away from your neck. Push up or down on the release lever to release the anchorage, and then move it up or down to the position that serves you best.

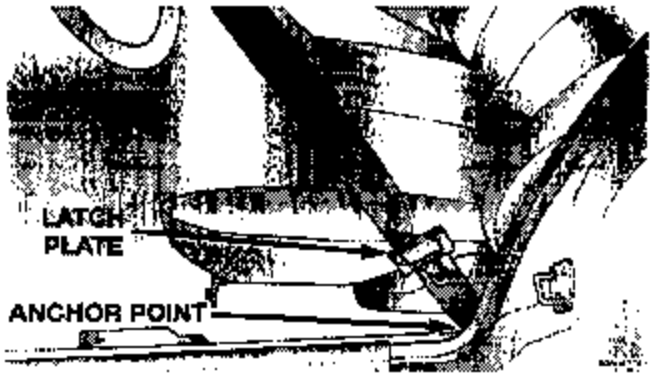


As a guide, if you are shorter than average, you will prefer a lower position, and if you are taller than average, you'll prefer a higher position. When you release the anchorage, try to move it up or down to make sure that it is locked in position.

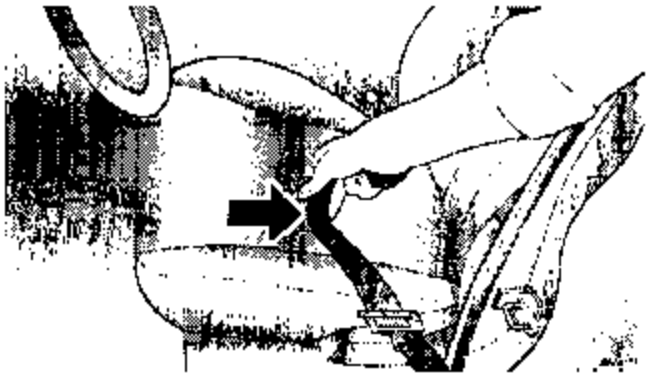
Lap/Shoulder Belt Untwisting Procedure

Use the following procedure to untwist a twisted lap/shoulder belt.

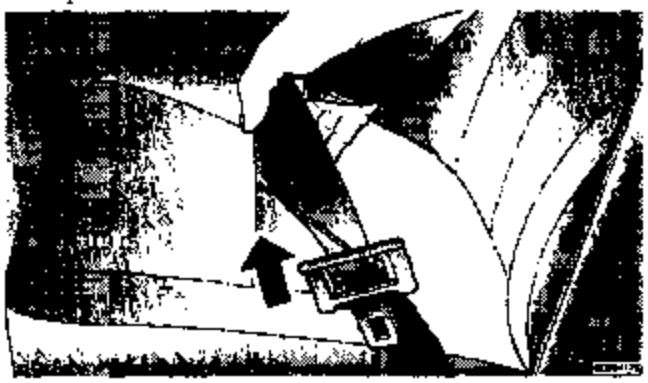
1. Position the latch plate as close as possible to the anchor point.



2. At about 15 to 30 cm (6 to 12 inches) above the latch plate, grasp and twist the belt webbing 180° to create a fold that begins immediately above the latch plate.



3. Slide the latch plate upward over the folded webbing. The folded webbing must enter the slot at the top of the latch plate.



4. Continue to slide the latch plate up until it clears the folded webbing.

Center Lap Belts

The center seating positions have a lap belt only. To fasten the lap belt, slide the latch plate into the buckle until you hear a "click". To lengthen the lap belt, tilt the latch plate and pull. To remove slack, pull the loose end of the webbing.

Wear the lap belt snug against the hips. Sit back and erect in the seat, then adjust the belt as tightly as is comfortable.

- **A lap belt worn too loose or too high is dangerous.**
- **A belt worn too loose can allow you to slip down and under the belt in a collision.**
- **A belt that is too high will apply crash forces to the abdomen, not to the stronger hip bones. In either case, the risk of internal injuries is greater. Wear a lap belt low and snug.**

Seat Belt Pretensioners

The seat belts for both front seating positions are equipped with pretensioning devices that are designed to remove slack from the seat belt in the event of a collision. These devices improve the performance of the seat belt by assuring that the belt is tight about the occupant early in a collision. Pretensioners work for all size occupants, including those in child restraints and will only deploy if the seat belt is buckled.

NOTE: These devices are not a substitute for proper seat belt placement by the occupant. The seat belt still must be worn snugly and positioned properly.

The pretensioners are triggered by the front airbag control module (see Airbag Section). Like the front airbags, the pretensioners are single use items. After a collision that is severe enough to deploy the airbags and pretensioners, both must be replaced.

Seat Belts and Pregnant Women

We recommend that pregnant women use the seat belts throughout their pregnancies. Keeping the mother safe is the best way to keep the baby safe.

Pregnant women should wear the lap part of the belt across the thighs and as snug across the hips as possible. Keep the belt low so that it does not come across the abdomen. That way the strong bones of the hips will take the force if there is a collision.

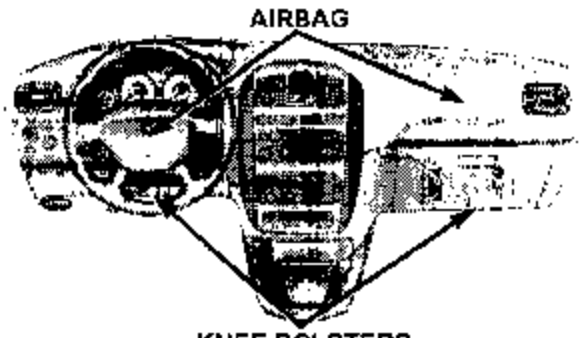
Seat Belt Extender

If a seat belt is too short, even when fully extended and when the adjustable upper shoulder belt anchorage (if equipped) is in its lowest position, your dealer can provide you with a seat belt extender. This extender should be used only if the existing belt is not long enough. When it is not required, remove the extender and stow it.

Using a seat belt extender when not needed can increase the risk of injury in a collision. Only use when the lap belt is not long enough when it is worn low and snug, and in the recommended seating positions. Remove and store the extender when not needed.

Driver and Front Passenger Supplemental Restraint System - Airbag

This vehicle has airbags for both the driver and front passenger as a supplement to the seat belt restraint systems. The driver's front airbag is mounted in the center of the steering wheel. The passenger's front airbag is mounted in the instrument panel, above the glove compartment. The words SRS AIRBAG are embossed on the airbag covers.



NOTE: The front airbags are certified to the Federal regulations that allow less forceful deployment in low speed collisions.

The front airbags have a multi stage inflator design. This allows the airbag to have different rates of inflation that are based on collision severity.

If the vehicle is equipped with side airbags, they are located inside the driver and front passenger seatbacks, and their covers are labeled SRS AIRBAG.

- **Do not put anything on or around the airbag covers or attempt to manually open them. You may damage the airbags and you could be injured because the airbags are not there to protect you. These protective covers for the airbag cushions are designed to open only when the airbags are inflating.**
- **If your vehicle is equipped with side airbags, do not use accessory seat covers or place objects between you and the side airbags; the performance could be adversely affected and/or objects could be pushed into you, causing serious injury.**
- **If your vehicle is equipped with side airbags, do not attach cup holders or any other objects on or around the door. The inflating side airbag could drive the object into occupants, causing serious injury.**

Airbags inflate in moderate to high speed impacts. Along with seat belts and pretensioners, front airbags work with the instrument panel knee bolsters to provide improved protection for the driver and front passenger. Side airbags also work with seat belts to improve occupant protection.

The seat belts are designed to protect you in many types of collisions. The front airbags deploy in moderate to severe frontal collisions. If your vehicle is equipped, the side airbag on the crash side of the vehicle is triggered in moderate to severe side collisions. In certain types of collisions, both the front and side airbags may be triggered. But even in collisions where the airbags deploy, you need the seat belts to keep you in the right position for the airbags to protect you properly.

Here are some simple steps you can take to minimize the risk of harm from a deploying airbag.

1. **Children 12 years old and under should always ride buckled up in a rear seat.**

Infants in rear facing child restraints should NEVER ride in the front seat of a vehicle with a passenger front airbag. An airbag deployment can cause severe injury or death to infants in that position.

Children up to 27 kg (60 lbs) should be secured in the rear seat in child restraints or belt-positioning booster seats. Older children who do not use child restraints or belt-positioning booster seats should ride properly buckled up in the rear seat, and in the outboard seat if possible. Never allow children to slide the shoulder belt behind them or under their arm.

If a child from 1 to 12 years old must ride in the front passenger seat because the vehicle is crowded, move the seat as far back as possible, and use the proper child restraint. See the section on Child Restraint.

You should read the instructions provided with your child restraint belt-positioning booster seat to make sure that you are using it properly.

2. **All occupants should wear their lap and shoulder belts properly.**

3. **The driver and front passenger seats should be moved back as far as practical to allow the front airbags room to inflate.**

4. **If your vehicle has side airbags, do not lean against the door; airbags will inflate forcefully into the space between you and the door.**

- **Relying on the airbags alone could lead to more severe injuries in a collision. The airbags work with your seat belt to restrain you properly. In some collisions the airbags won't deploy at all. Always wear your seat belts even though you have airbags.**
- **Being too close to the steering wheel or instrument panel during front airbag deployment could cause serious injury. Airbags need room to inflate. Sit back, comfortably extending your arms to reach the steering wheel or instrument panel.**
- **If the vehicle has side airbags, they also need room to inflate. Do not lean against the door. Sit upright in the center of the seat.**

The Front Airbag System consists of the following:

- Front Airbag Control Module (with integrated impact sensor)
- AIRBAG Readiness Light
- Driver Airbag
- Passenger Airbag
- Steering Wheel and Column
- Instrument Panel
- Seat Belt Readiness Light
- Interconnecting Wiring
- Knee Impact Bolster

How The Front Airbag System Works

- The front airbag control module determines if a frontal impact is severe enough to require the airbags to inflate. Based on the level of collision severity, the front control module determines the proper rate of inflation. The front airbag inflators are designed to provide different rates of airbag inflation. The front airbag control module will not detect side, roll over, or rear collisions.

The front airbag control module also monitors the readiness of the electronic parts of the system whenever the ignition switch is in the START or ON positions. These include all of the items listed above except the knee bolster, instrument panel and the steering wheel and column. If the key is in the OFF position, in the ACC position, or not in the ignition switch, the front airbags are not on and will not inflate.

The front airbag control module sends a message to the instrument cluster to turn on the AIRBAG light in the instrument panel for 6 to 8 seconds when the ignition switch is first turned ON, then turns the light off. If the front or

side airbag control modules detect a malfunction in any part of the system, the airbag light will turn on either momentarily or continuously.

Ignoring the AIRBAG light in your instrument panel could mean you won't have the airbags to protect you in a collision. If the light does not come on, stays on after you start the vehicle, or if it comes on as you drive, have the airbag system checked right away.

- When the front airbag control module detects a collision requiring the front airbags, it signals the inflator units. A large quantity of nontoxic gas is generated to inflate the front airbags. Different front airbag inflation rates are possible based on collision severity. These rates are determined by the front airbag control module based on collision severity. The front airbag covers separate and fold out of the way as the airbags inflate to their full size. The front airbags fully inflate in about 50 milliseconds. This is only about half of the time it takes you to blink your eyes. The front airbags then quickly deflate while helping to restrain the driver and front passenger. The driver's and passenger's front airbag gas is vented through the airbag material towards the instrument panel. In this way the front airbags do not interfere with your control of the vehicle.
- **The Knee Impact Bolsters** help protect the knees and position you for the best interaction with the front airbags.

Side Airbags Supplemental Restraint System (SRS) — If Equipped

The Side Airbag System, on vehicles equipped, consists of the following:

- AIRBAG Readiness Light (shared with the front airbag system)

- Side Airbag in the driver's seat
- Side Airbag in the passenger's seat
- Side Airbag Control Module (with integrated impact sensor)
- Interconnecting Wiring

How The Side Airbag System Works

The side airbag control modules determine if a side collision is severe enough to require the side airbags to inflate. The side airbag control modules will not detect roll over, front or rear collisions.

The side airbag control modules monitor the readiness of the electronic parts of the system whenever the ignition switch is in the START or ON positions. These include all of the items listed under "The Side Airbag System", on vehicles so equipped.

In moderate to severe side collisions, the side airbag inflator on the crash side of the vehicle is triggered, releasing a quantity of nontoxic gas. The inflating side airbag exits through the seat seam into the space between the occupant and the door. The side airbag moves at a very high speed and with such a high force that it could injure you if you are not seated properly, or if items are positioned in the area where the side airbag inflates. This especially applies to children.

If An Airbag Deployment Occurs

The airbag systems are designed to deploy when the airbag control modules detect a moderate-to-severe collision, to help restrain the driver and front passenger, and then immediately deflate.

NOTE: A collision that is not severe enough to need airbag protection will not activate the system. This does not mean something is wrong with the airbag system.

If you do have a collision which deploys the airbag, any or all of the following may occur:

- The airbag material may sometimes cause abrasions and/or skin reddening to the driver and front passenger as the airbags deploy and unfold. The abrasions are similar to friction rope burns or those you might get sliding along a carpet or gymnasium floor. They are not caused by contact with chemicals. They are not permanent and normally heal quickly. However, if you haven't healed significantly within a few days, or if you have any blistering, see your doctor immediately.
- As the airbags deflate you may see some smoke-like particles. The particles are a normal by-product of the process that generates the nontoxic gas used for airbag inflation. These airborne particles may irritate the skin, eyes, nose, or throat. If you have skin or eye irritation, rinse the area with cool water. For nose or throat irritation, move to fresh air. If the irritation continues see your doctor. If these particles settle on your clothing, follow the garment manufacturer's instructions for cleaning.
- It is not advisable to drive your vehicle after the airbags have deployed. If you are involved in another collision, the airbags and seat belt pretensioners will not be in place to protect you.

WARNING!

Deployed airbags and seat belt pretensioners cannot protect you in another collision. Have the airbags and seat belt pretensioners replaced by an authorized dealer as soon as possible.

Enhanced Accident Response

If the airbags and seat belt pretensioners deploy after an impact and the electrical system remains functional, vehicles equipped with power door locks will unlock automatically. In addition, approximately 10 seconds after the vehicle has stopped moving, the interior lights will illuminate until the ignition switch is turned off.

Maintaining Your Airbag System

WARNING!

- **Modifications to any part of the airbag system could cause it to fail when you need it. You could be injured because the airbags are not there to protect you. Do not modify the components or wiring, including adding any kind of badges or stickers to the steering wheel hub trim cover or the upper right side of the instrument panel. Do not modify the front bumper, vehicle body structure, or frame.**
- **You need proper knee impact protection in a collision. Do not mount or locate any aftermarket equipment on or behind the knee bolsters.**
- **It is dangerous to try to repair any part of the airbag system yourself. Be sure to tell anyone who works on your vehicle that it has airbags.**

Airbag Light

You will want to have the airbags ready to inflate for your protection in a collision. While the airbag system is designed to be maintenance free, if any of the following occurs, have an authorized dealer service the system immediately.

- The AIRBAG light does not come on or flickers during the 6 to 8 seconds when the ignition switch is first turned on.
- The light remains on or flickers after the 6 to 8 second interval.
- The light flickers or comes on and remains on while driving.

DaimlerChrysler Corporation Integrated Child Seat — If Equipped

Operating instructions for this seat are included with the seat. If the instructions are not with the seat or in the Owner's Manual Package, replacement instructions can be obtained.

To obtain Integrated Child Seat replacement instructions:

Use the order form at the back of this manual and specify publication number 81-016-1950.

Child Restraint

Everyone in your vehicle needs to be buckled up at all times — babies and children, too. Every state in the United States and all Canadian provinces require that small children ride in proper restraint systems. This is the law, and you can be prosecuted for ignoring it.

Children 12 years and under should ride properly buckled up in a rear seat. According to crash statistics, children are safer when properly restrained in the rear seats, rather than in the front.

In a collision, an unrestrained child, even a tiny baby, can become a missile inside the vehicle. The force required to hold even an infant on your lap could become so great that you could not hold the child, no matter how strong you are. The child and others could be badly injured. Any child riding in your vehicle should be in a proper restraint for the child's size.

Infants and Small Children

There are different sizes and types of restraints for children from newborn size to the child almost large enough for an adult safety belt. Always check the child seat owner's manual to ensure you have the right seat for your child. Use the restraint that is correct for your child:

- Safety experts recommend that children ride rearward-facing in the vehicle until they are at least one year old and weigh at least 9 kg (20 lbs). Two types of child restraints can be used rearward-facing: infant carriers and "convertible" child seats. Both types of child restraints are held in the vehicle by the lap/shoulder belt or the LATCH child restraint anchorage system. Refer to "Lower Anchors and Tether for CHildren (LATCH)" later in this section.
- The infant carrier is only used rearward-facing in the vehicle. It is recommended for children who weigh up to about 9 kg (20 lbs). "Convertible" child seats can be used either rearward-facing or forward-facing in the vehicle. Convertible child seats often have a higher weight limit in the rearward-facing direction than infant carriers do, so they can be used rearward-facing by children who weigh more than 9 kg (20 lbs) but are less than one year old.

- Rearward-facing child seats must **NEVER** be used in the front seat of a vehicle with a front passenger airbag. An airbag deployment could cause severe injury or death to infants in this position.
- Children who weigh more than 9 kg (20 lbs) and who are older than one year can ride forward-facing in the vehicle. Forward-facing child seats and convertible child seats used in the forward-facing direction are for children who weigh 9 to 18 kg (20 to 40 lbs) and who are older than one year. These child seats are also held in the vehicle by the lap/shoulder belt or the LATCH child restraint anchorage system. Refer to "Lower Anchors and Tether for CHildren (LATCH)" later in this section.
- The belt-positioning booster seat is for children weighing more than 18 kg (40 lbs), but who are still too small to fit the vehicle's seat belts properly. The child and booster seat are held in the vehicle by the lap/shoulder belt. (Some booster seats are equipped with a front shield and are held in the vehicle by the lap portion.)

- **Improper installation can lead to failure of an infant or child restraint. It could come loose in a collision. The child could be badly injured or killed. Follow the manufacturer's directions exactly when installing an infant or child restraint.**
- **A rearward facing child restraint should only be used in a rear seat. A rearward facing child restraint in the front seat may be struck by a deploying passenger airbag which may cause severe or fatal injury to the infant.**

Here are some tips on getting the most out of your child restraint:

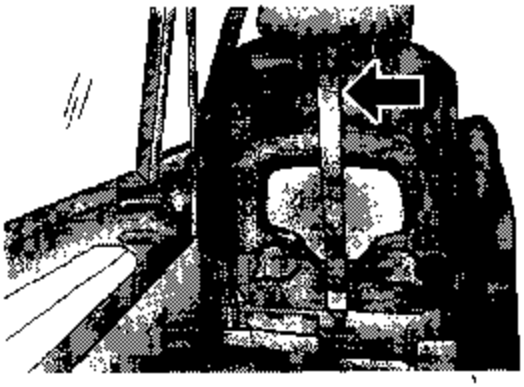
- Before buying any restraint system, make sure that it has a label certifying that it meets all applicable Safety Standards. We also recommend that you make sure that you can install the child restraint in the vehicle where you will use it, before you buy it.
- The restraint must be appropriate for your child's weight and height. Check the label on the restraint for weight and height limits.
- Carefully follow the instructions that come with the restraint. If you install the restraint improperly, it may not work when you need it.

  The passenger seat belts are equipped with cinching latch plates, which are designed to keep the lap portion tight around the child restraint so that it is not necessary to use a locking clip. Pulling up on the shoulder portion of the lap/shoulder belt will tighten the belt. The cinching latch plate will keep the belt tight, however, any seat belt system will loosen with time, so check the belt occasionally and pull it tight if necessary.
- In the rear seat, you may have trouble tightening the lap/shoulder belt on the child restraint because the buckle or latch plate is too close to the belt path opening on the restraint. Disconnect the latch plate from the buckle and twist the short buckle end of the belt several times to shorten it. Insert the latch plate into the buckle with the release button facing out.
- If the belt still can't be tightened, or if pulling and pushing on the restraint loosens the belt, disconnect the latch plate from the buckle, turn the buckle around, and insert the latch plate into the buckle again. If you still can't make the child restraint secure, try a different seating position.

- Buckle the child into the seat according to the child restraint manufacturer's directions.
- When your child restraint is not in use, secure it in the vehicle with the seat belt or remove it from the vehicle. Don't leave it loose in the vehicle. In a sudden stop or collision, it could strike the occupants or seatbacks and cause serious personal injury.

Lower Anchors and Tether for CHildren (LATCH)
Each vehicle, except commercial cargo vehicles, is equipped with the child restraint anchorage system called LATCH, which stands for Lower Anchors and Tether for CHildren. Two LATCH child restraint anchorage systems are installed on all second-row seats. Second-row seats also feature tether strap anchorages, located in the rear surface of the seatback. In addition, all 3-passenger bench seats are equipped with a child restraint tether anchor at the center seating position.

When using the tether anchorages in the outboard seating positions, ensure that the strap is routed over the top of the seatback and under the head restraint between the head restraint posts. When the tether anchorage is used in the center seating position, the strap should be positioned straight over the top of the seatback.



80e1ce71

Child restraint systems having attachments designed to connect to the lower anchorages are now available. Child restraints having tether straps and hooks for connection to the seatback tether anchorage have been available for some time. In fact, many child restraint manufacturers will provide add-on tether strap kits for some of their older products.

Fleet vehicles equipped with the LATCH system on the 3-passenger bench seat must have the seat adjusted to the full rear position on the tracks when the LATCH system is used. Also, when using the LATCH system, be sure the seatback is two clicks rear of its full upright position.

Because the lower anchorages are to be introduced to passenger carrying vehicles over a period of years, child restraint systems having attachments for those anchorages will continue to have features for installation in vehicles using the lap or lap/shoulder belt. They will also have tether straps, and you are urged to take advantage of all of the available attachments provided with your child restraint in any vehicle.

Installing the Child Restraint System

If your fleet vehicle is equipped with LATCH anchorages on the 3-passenger bench seat, do not install three child restraints at the same time in this seat. The anchorages in this seat are not designed to restrain three child restraints at one time. Instead, you may install one child restraint at the center position, or one child restraint at each of the right and left positions.

Fleet Vehicles Only:

Do not install child restraint systems equipped with LATCH attachments at all three seating positions in the seat at one time. The LATCH anchorages in this seat are designed to restrain no more than two child restraints at a time in the event of a collision. Failure to follow this may result in serious or fatal injury.

We urge that you carefully follow the directions of the manufacturer when installing your child restraint. Many, but not all, restraint systems will be equipped with separate straps on each side, with each having a hook or connector and a means for adjusting the tension in the strap. Forward-facing toddler restraints and some rearward-facing infant restraints will also be equipped with a tether strap, a hook and means for adjusting the tension in the strap.

In general, you will first loosen the adjusters on the lower straps and tether straps so that you can more easily attach the hook or connector to the lower anchorages and tether anchorages. Then tighten all three straps as you push the child restraint rearward and downward into the seat.

Not all child restraint systems will be installed as we have described here. Again, carefully follow the instructions that come with the child restraint system.

WARNING!

Improper installation of a child restraint to the LATCH anchorages can lead to failure of an infant or child restraint. The child could be badly injured or killed. Follow the manufacturer's directions exactly when installing an infant or child restraint.

Children Too Large For Booster Seats

Children who are large enough to wear the shoulder belt comfortably, and whose legs are long enough to bend over the front of the seat when their back is against the seatback, should use the lap/shoulder belt in a rear seat.

- Make sure that the child is upright in the seat.
- The lap portion should be low on the hips and as snug as possible.
- Check belt fit periodically. A child's squirming or slouching can move the belt out of position.
- If the shoulder belt contacts the face or neck, move the child closer to the center of the vehicle. If this doesn't help, move the child to the center rear seating position and use the lap belt. Never allow a child to put the shoulder belt under an arm or behind their back.

Appendix D

Miscellaneous Test Information

Channel Report

05/13/2003 11:15:16 AM

Name of Test 030514-1 **System** K3600 **Name of DAU** DAU3

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range		Pol.	Cal.		Group	Mfg.	Model
3000	EVENT	EVENT	T - 0		10.24	V	+	10/15/2002	OK	SLED	TRC	Event
3001	C15351	SLDXG	Sled X - axis Acceleration	Rear	199.88288	g	-	01/09/2003	OK	SLED	Endevco	7231C
3002	C15519	SLDXGR	Sled X - axis Acceleration	Rear	200.27772	g	-	01/09/2003	OK	SLED	Endevco	7231C
3003	SLDXV	SLDXV	Measured Velocity		164.59317	km/h	-	04/08/2003	OK	SLED	TRC	SLDXV
3004	SLDXGT	SLDXGT	Sled X - axis Acceleration for	Rear	195.51312	g	-	01/09/2003	OK	SLED	Endevco	7231C
3005	AD4H9	HEDXG1	Head X - axis acceleration	Rear	398.49319	g	-	11/14/2002	OK	230n	Endevco	7231C
3006	AD4J7	HEDYG1	Head Y - axis acceleration	Left	399.03359	g	-	11/14/2002	OK	230n	Endevco	7231C
3007	AD4J8	HEDZG1	Head Z - axis acceleration	Up	399.46322	g	-	11/14/2002	OK	230n	Endevco	7231C
3008	1716-0235-FX	NEKXF1	Neck X - axis Shear Force	Hd	8903.7408	N	-	05/12/2003	OK	230n	Denton	1716
3009	1716-0235-FY	NEKYF1	Neck Y - axis Shear Force	Hd	8898.8551	N	+	05/12/2003	OK	230n	Denton	1716
3010	1716-0235-FZ	NEKZF1	Neck Z - axis Shear Force	Hd	13345.322	N	+	05/12/2003	OK	230n	Denton	1716
3011	1716-0235-MX	NEKXM1	Neck Moment about X - axis	Rt Ear	282.72010	N·m	-	05/12/2003	OK	230n	Denton	1716
3012	1716-0235-MY	NEKYM1	Neck Moment about Y - axis	Chn	282.29433	N·m	+	05/12/2003	OK	230n	Denton	1716
3013	1716-0235-MZ	NEKZM1	Neck Moment about Z - axis	Chn	282.38719	N·m	+	05/12/2003	OK	230n	Denton	1716
3014	ACTR4	CSTXG1	Chest X - axis acceleration	Fwd	398.62971	g	+	11/14/2002	OK	230n	Endevco	7231C
3015	ACTT4	CSTYG1	Chest Y - axis acceleration	Left	400.58522	g	-	11/14/2002	OK	230n	Endevco	7231C
3016	ACTW0	CSTZG1	Chest Z - axis acceleration	Down	399.43828	g	+	11/14/2002	OK	230n	Endevco	7231C
3017	85427-1	CSTXD1	Chest Deflection	Strnm	100.27124	mm	+	05/12/2003	OK	230n	Servo	14CB1-2847
3018	2430-984	LFMZF1	Left Femur Force Z 60	Knee	13355.850	N	+	05/12/2003	OK	230n	GSE	2430
3019	2430-985	RFMZF1	Right Femur Force Z S1511	Knee	13340.457	N	+	05/12/2003	OK	230n	GSE	2430
3020	APDJ3	HEDXG2	Head X - axis acceleration	Rwd	400.34717	g	-	12/26/2002	OK	314n	Endevco	7231C
3021	AGHP8	HEDYG2	Head Y - axis acceleration	Left	399.25763	g	-	12/26/2002	OK	314n	Endevco	7231C
3022	APD60	HEDZG2	Head Z - axis acceleration	Up	401.21461	g	-	12/26/2002	OK	314n	Endevco	7231C
3023	1716A-1221-FX	NEKXF2	Neck X - axis Shear Force	Hd	8895.0621	N	-	12/26/2002	OK	314n	Denton	1716A
3024	1716A-1221-FY	NEKYF2	Neck Y - axis Shear Force	Hd	8889.3007	N	+	12/26/2002	OK	314n	Denton	1716A
3025	1716A-1221-FZ	NEKZF2	Neck Z - axis Shear Force	Hd	13350.072	N	+	12/26/2002	OK	314n	Denton	1716A
3026	1716A-1221-MX	NEKXM2	Neck Moment about X - axis	Rt Ear	282.42982	N·m	-	12/26/2002	OK	314n	Denton	1716A
3027	1716A-1221-MY	NEKYM2	Neck Moment about Y - axis	Chn	282.62541	N·m	+	12/26/2002	OK	314n	Denton	1716A
3028	1716A-1221-MZ	NEKZM2	Neck Moment about Z - axis	Chn	282.79480	N·m	+	12/26/2002	OK	314n	Denton	1716A
3029	C13010	CSTXG2	Chest X - axis acceleration	Fwd	398.44668	g	+	12/26/2002	OK	314n	Endevco	7231C
3030	C14563	CSTYG2	Chest Y - axis acceleration	Left	399.42894	g	-	12/26/2002	OK	314n	Endevco	7231C
3031	AD343	CSTZG2	Chest Z - axis acceleration	Down	398.84708	g	+	12/26/2002	OK	314n	Endevco	7231C

3032	14CB1-2847-041	CSTXD2	Chest Deflection	Strnm	100.51928	mm	+	01/06/2003	OK	314n	Servo	14CB1-2847
3033	2430-962	LFMZF2	Left Femur Force Z 91	Knee	13347.405	N	+	12/26/2002	OK	314n	GSE	2430
3034	2430-982	RFMZF2	Right Femur Force Z 98	Knee	13345.590	N	+	12/26/2002	OK	314n	GSE	2430
3035	P25516	LSXXG	Rear Seat X - Member @ Left	Fwd	199.64516	g	+	03/04/2003	OK	-1	Endevco	7264C-2K-2-180
3036	P25323	RSXXG	Rear Seat X - Member @ Right	Fwd	200.07893	g	+	01/22/2003	OK	-1	Endevco	7264C-2K-2-180
3037	P24451	TEXG	Top of Engine Block	Fwd	200.27028	g	I	11/21/2002	OK	-1	Endevco	7264C-2K-2-180
3038	J12272	RAXG	Rear Axle	Rr	199.81384	g	-	03/04/2003	OK	-1	Endevco	7264-2000T

Digital and System Channel Report

Name of Test 030514-1 **System** K3600 **Name of DAU** DAU3 **descriptio**

enabled	Channel	Short Name	Type	Data File	Module Type
Yes	3500		dig0	DAT33500	KM3650 Sequencer

bit position	bit	short	long	descriptio	
MSB = bit 15	1	Switch	Backup Switch		
bit 14	1	ABEVT1	AIRBAG EVENT DP	20 mS	1
bit 13	1	ABEVT2	AIRBAG EVENT DS	20 mS	2
bit 12	1	ABEVT3	AIRBAG EVENT PP	20 mS	3
bit 11	1	ABEVT4	AIRBAG EVENT PS	20 mS	4
bit 10	0				
bit 09	0				
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				

Dummy 230m **Type** HYBRID III 50TH **Descriptio** NHTSA - 230m HYBRID III 50TH. CAL DUE 5-14-03 (DKS 1-23-03)J211

Chsnam	Location	Model	Name	Manufacturer	Sens./mV/V/		Fullscal	Caldat	Pos Output	Flip
HEDXG	Head Accel X	7231C	AD4H9	Endevco	0.01992	g	750	11/14/2002	Rear	1
HEDYG	Head Accel Y	7231C	AD4J7	Endevco	0.01974	g	750	11/14/2002	Left	1
HEDZG	Head Accel Z	7231C	AD4J8	Endevco	0.01942	g	750	11/14/2002	Up	1
NEKXF	Neck Force X	1716	1716-0235-FX	Denton	0.00019427	N	8896.4	5/12/2003	Hd Fd,Cst Rr	1
NEKYF	Neck Force Y	1716	1716-0235-FY	Denton	0.000186199	N	8896.4	5/12/2003	Hd Lt,Cst Rt	0
NEKZF	Neck Force Z	1716	1716-0235-FZ	Denton	0.000093918	N	13344.6	5/12/2003	Hd Up,Cst Dn	0
NEKXM	Neck Moment X	1716	1716-0235-MX	Denton	0.00591823	N-	282.5	5/12/2003	Rt Ear to Rt Shld	1
NEKYM	Neck Moment Y	1716	1716-0235-MY	Denton	0.005985841	N-	282.5	5/12/2003	Chn to Sternm	0
NEKZM	Neck Moment Z	1716	1716-0235-MZ	Denton	0.008452743	N-	282.5	5/12/2003	Chn to Lt Shld	0
CSTXG	Chest Accel X	7231C	ACTR4	Endevco	0.01976	g	750	11/14/2002	Fwd	0
CSTYG	Chest Accel Y	7231C	ACTT4	Endevco	0.01922	g	750	11/14/2002	Left	1
CSTZG	Chest Accel Z	7231C	ACTW0	Endevco	0.01972	g	750	11/14/2002	Down	0
CSTXD	Chest Deflection X	14CB1-2847	85427-1	Servo	1.1347	in	100	5/12/2003	Sternm Away Frm Spn	0
LFMZF	Left Femur Force Z 60	2430	2430-984	GSE	0.00007086	N	13344.7	5/12/2003	Knee Fd,Pel Rr	0
RFMZF	Right Femur Force Z S151	2430	2430-985	GSE	0.000069908	N	13344.7	5/12/2003	Knee Fd,Pel Rr	0

D-5

Wednesday, May 14, 2003 230m

S030514

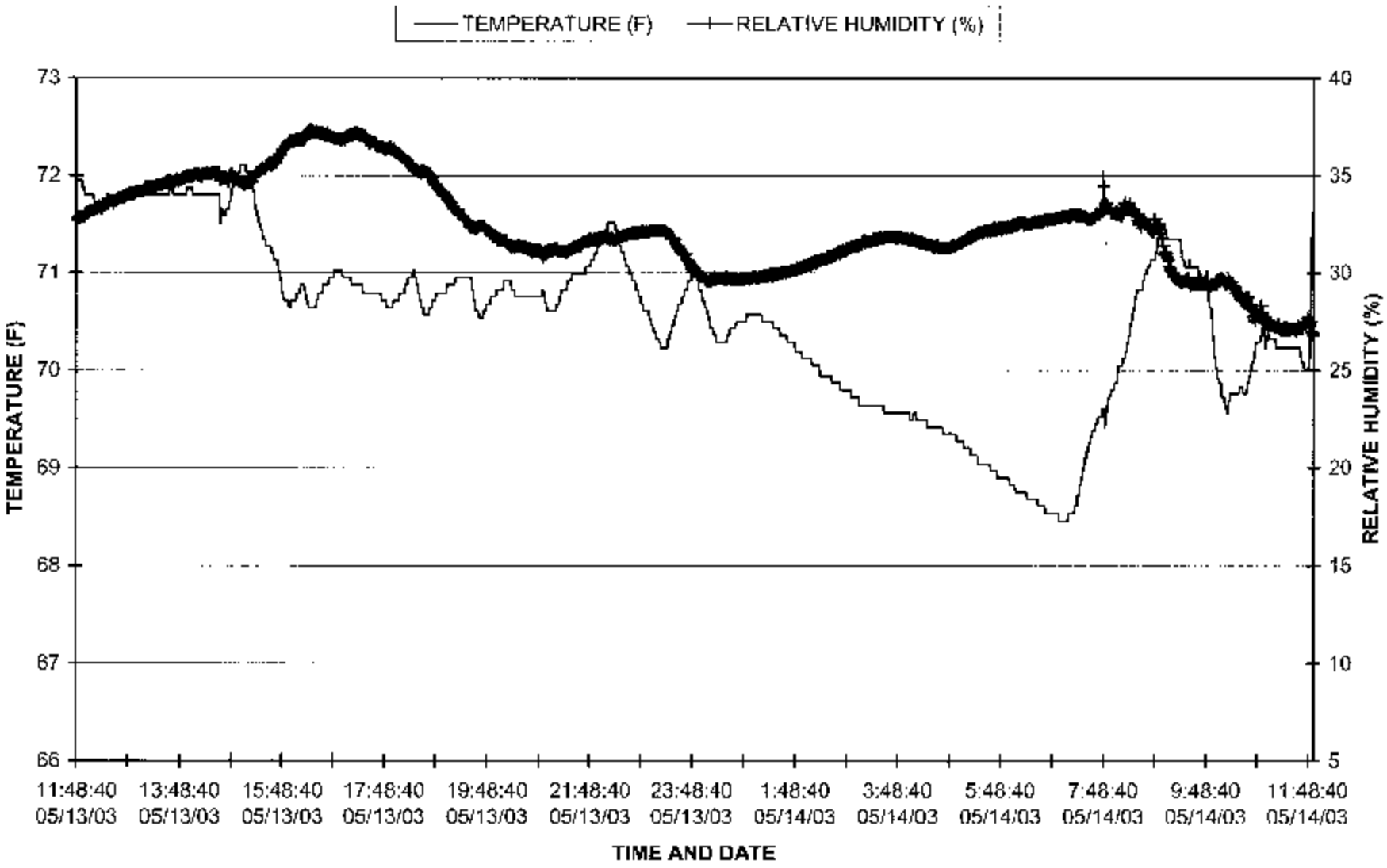
Dummy 314n **Type** HYBRID III 50TH **Descriptio** NHTSA - 314n HYBRID III 50TH. CAL DUE 6-26-03(DKS 12-31-02)J211

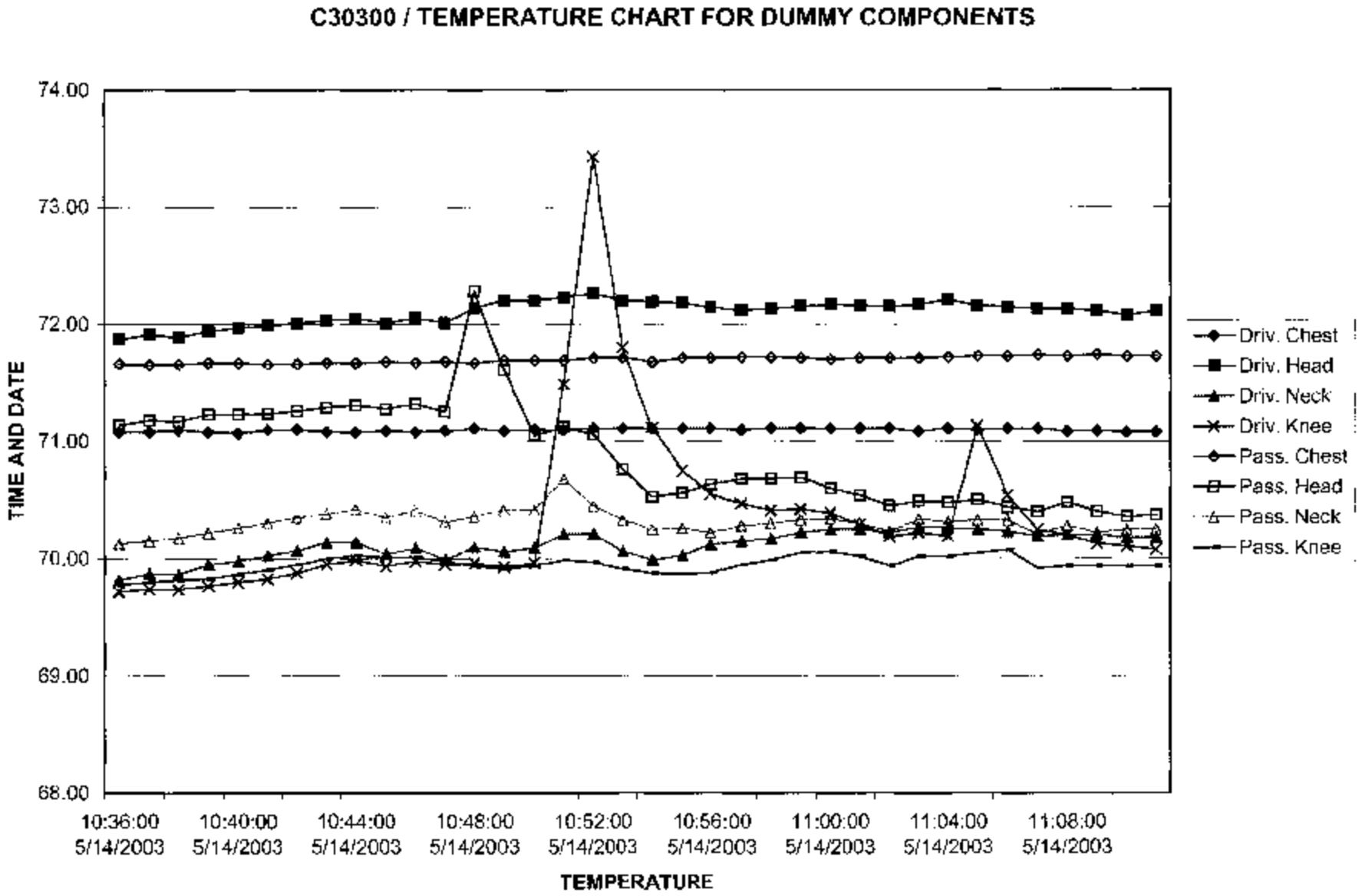
Chsnam	Location	Model	Name	Manufacturer	Sens./mV/V/		Fullscal	Caldat	Pos Output	Flip
HEDXG	Head Accel X	7231C	APDJ3	Endevco	0.02014	g	750	12/26/2002	Rwd	1
HEDYG	Head Accel Y	7231C	AGHP8	Endevco	0.01914	g	750	12/26/2002	Left	1
HEDZG	Head Accel Y	7231C	APD60	Endevco	0.02075	g	750	12/26/2002	Up	1
NEKXF	Neck Force X	1716A	1716A-1221-FX	Denton	0.00019545	N	8896.4	12/26/2002	Hd Fd,Cst Rr	1
NEKYF	Neck Force Y	1716A	1716A-1221-FY	Denton	0.000186098	N	8896.4	12/26/2002	Hd Lt,Cst Rt	0
NEKZF	Neck Force Z	1716A	1716A-1221-FZ	Denton	0.000099486	N	13344.6	12/26/2002	Hd Up,Cst Dn	0
NEKXM	Neck Moment X	1716A	1716A-1221-MX	Denton	0.006063009	N-	282.5	12/26/2002	Rt Ear to Rt Shld	1
NEKYM	Neck Moment Y	1716A	1716A-1221-MY	Denton	0.00588177	N-	282.5	12/26/2002	Chn to Strnm	0
NEKZM	Neck Moment Z	1716A	1716A-1221-MZ	Denton	0.00852	N-	282.5	12/26/2002	Chn to Lt Shld	0
CSTXG	Chest Accel X	7231C	C13010	Endevco	0.02954	g	750	12/26/2002	Fwd	0
CSTYG	Chest Accel Y	7231C	C14563	Endevco	0.02981	g	750	12/26/2002	Left	1
CSTZG	Chest Accel Z	7231C	AD343	Endevco	0.01945	g	750	12/26/2002	Down	0
CSTXD	Chest Deflection X	14CB1-2847	14CB1-2847-041	Servo	1.1319	m	100	1/6/2003	Strnm Away Frm Spn	0
LFMZF	Left Femur Force Z 91	2430	2430-962	GSE	0.000069241	N	13344.7	12/26/2002	Knee Fd,Pel Rr	0
RFMZF	Right Femur Force Z 98	2430	2430-982	GSE	0.000068754	N	13344.7	12/26/2002	Knee Fd,Pel Rr	0

D-6

S030514

C30300 / TEMPERATURE AND HUMIDITY CHART




C30300 / TEMPERATURE CHART FOR DUMMY COMPONENTS
74.00
73.00
72.00
71.00
70.00
69.00
68.00
TIME AND DATE
10:36:00 5/14/2003
10:40:00 5/14/2003
10:44:00 5/14/2003
10:48:00 5/14/2003
10:52:00 5/14/2003
10:56:00 5/14/2003
11:00:00 5/14/2003
11:04:00 5/14/2003
11:08:00 5/14/2003
TEMPERATURE
Driv. Chest
Driv. Head
Driv. Neck
Driv. Knee
Pass. Chest
Pass. Head
Pass. Neck
Pass. Knee