

V3008

REPORT NO. 208-MGA-99-01

SAFETY COMPLIANCE SLED TESTING FOR FMVSS 208
OCCUPANT CRASH PROTECTION

Nissan Motor Corporation
1999 Nissan Altima GXE
NHTSA NO. CX5200

MGA RESEARCH CORPORATION
5000 WARREN ROAD
BURLINGTON, WI 53105



Test Date: January 12, 1999

Report Date: January 22, 1999

FINAL REPORT

Prepared For:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
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16. Abstract A compliance test (sled test) was conducted on the subject 1999 Nissan Altima GXE in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP208S-01 for the determination of FMVSS 208 compliance. Test failures identified were as follows: NONE					
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Purpose

This FMVSS 208 compliance sled test is part of the Federal Motor Vehicle Safety Standard (FMVSS) 208 compliance test program conducted for the National Highway Traffic Safety Administration (NHTSA) by MGA Research Corporation (MGA) under Contract No. DTNH22-98-D-11055. The purpose of this test was to determine if the subject vehicle, a 1999 Nissan Altima GXE, NHTSA No. CX5200, 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 test vehicle was instrumented with four (4) accelerometers to measure longitudinal axis accelerations.

The test vehicle contained two (2) Part 572 E 50th percentile adult male anthropomorphic test devices (dummies). The dummies were positioned in the front outboard seating positions according to the dummy placement procedures 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 thirty-seven (37) data channels were digitally sampled at 10,000 samples per second and processed per Sections 11.7 through 11.9 of the Laboratory Test Procedure.

The crash 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 at MGA Research Corporation on January 12, 1999.

The test vehicle, a 1999 Nissan Altima GXE, NHTSA No. CX5200, appeared 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 (Serial #401)	Passenger (Serial #403)
HIC	1000	388	251
Chest g	60 g	45	45
Chest displacement	3 inches	1.3	0.4
Left Femur	2250 lb	811	1054
Right Femur	2250 lb	819	1286
Neck Extension	57 Nm	6	17
Neck Flexion	190 Nm	71	93
Neck Tension	3300 N	469	778
Neck Compression	4000 N	3425	1976
Neck Shear	3100 N	1186	1554

The vehicle also 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 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 17.7 g with an integrated velocity change of 29.9 mph. After filtering the acceleration signal to Channel Class 60, the airbag system was triggered 20 milliseconds after 0.5 g acceleration.

INCLUDE DISCUSSION OF LOST CHANNELS OR OTHER TEST ISSUES.

NONE NOTED

Sled Test SummaryVehicle NHTSA No.: CX5200 Test Mode: FMVSS 208 SLED TESTVehicle Yr/Make/Model/Body Style: 1999/Nissan/Altima/GXETest Date: January 12, 1999 Time: 1:15 p.m. Temp: 72°FVehicle Test Weight: 3398 lbs.**DUMMY INFO.****DRIVER****PASSENGER**

Dummy Type

Part 572EPart 572E

Serial Number

401403

Restraint System

AirbagAirbag

No. Data Channels

1515

Number of Cameras:

1 Real Time6 High Speed

Door Opening Data:

yes Left Frontyes Right Front**FRONT SEAT(S) DATA****DRIVER****PASSENGER**

Seat Track Failure -

0 inches shift;0 inches shift

Seat Back Failure -

nonenone**VISIBLE DUMMY
CONTACT POINTS:****DRIVER****PASSENGER**

Head

airbag, headrestairbag, visor, windshield,
and headrest

Chest

airbagairbag

Left Knee

instrument panel, steering columninstrument panel, airbag

Right Knee

instrument panel, steering columninstrument panel, airbag

General Test And Vehicle Parameter DataVehicle Yr/Make/Model/Body Style: 1999/Nissan/Altima/GXEVehicle NHTSA No.: CX5200 VIN: 1N4DL01D2XC142469 Color: Black

Engine Data:

No. Cylinders: 4; CID: ; Liters: 2.4; CCs: Placement: Longitudinal/Inline: ; Transverse/Lateral: X

Transmission Data:

Speeds: 5; Manual: X; Automatic: ; Overdrive:

Final Drive:

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

Major Options:

A/C: X; Pwr. Strg.: X; Pwr. Brakes: X; Pwr. Windows: XPwr. Dr. Locks: X; Other: Tilt wheel, cruise control, tachometer, and rear window defrosterDate Received: 10/23/98; Odometer Reading: 76 milesSelling Dealer: Wilde Nissan Inc., 1903 E. Moreland Blvd., Waukesha, WI 53186

REMARKS:

General Test And Vehicle Parameter Data (Cont.)

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: Nissan Motor CorporationDate of Manufacture: 10/98 ; VIN: 1N4DL01D2XC142469GVWR: 3990 lbs; GAWR Front: 2152 lbs.GAWR Rear: 1863 lbs.

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT: 30 psi REAR: 29 psiRecommended Tire Size: P195/65R15

Recommended Cold Tire Pressure:

FRONT: 30 psi REAR: 29 psiSize of Tires on Test Vehicle: P195/65R15Type of Spare Tire: T125/70D15 ; Space Saver: X ; Standard:

Vehicle Capacity Data:

Type of Front Seats: X Bucket; Bench; Split BenchNumber of Occupants: 2 Front; 3 Rear; 3rd Seat; 5 TOTAL

REMARKS:

VEHICLE CAPACITY WEIGHT (VCW) = 860 lbs.No. Of Occupants x 150 lbs = 750 lbs.Rated Cargo/Luggage Weight (RCWL) = 110 lbs. (Difference)

General Test And Vehicle Parameter Data (Cont.)

WEIGHT OF TEST VEHICLE AS RECEIVED AT LABORATORY: (with maximum fluids)

Right Front =	<u>893</u> lbs.	Right Rear =	<u>584</u> lbs.
Left Front =	<u>908</u> lbs.	Left Rear =	<u>550</u> lbs.
TOTAL FRONT =	<u>1801</u> lbs.	TOTAL REAR =	<u>1134</u> lbs.
% Total Weight =	<u>61</u> %	% Total Weight =	<u>39</u> %
TOTAL DELIVERED WEIGHT = <u>2935</u> lbs.			

WEIGHT OF FULLY LOADED TEST VEHICLE WITH TWO DUMMIES AND 110 POUNDS OF CARGO WEIGHT:

Right Front =	<u>982</u> lbs.	Right Rear =	<u>724</u> lbs.
Left Front =	<u>996</u> lbs.	Left Rear =	<u>696</u> lbs.
TOTAL FRONT =	<u>1978</u> lbs.	TOTAL REAR =	<u>1420</u> lbs.
% Total Weight =	<u>58</u> %	% Total Weight =	<u>42</u> %
TOTAL WEIGHT = <u>3398</u> lbs.			

TEST VEHICLE ATTITUDE: (all measurements in degrees)

AS DELIVERED DOOR SILL ANGLE:	<u>-0.3</u>
AS TESTED DOOR SILL ANGLE:	<u>0.0</u>
FULLY LOADED DOOR SILL ANGLE:	<u>0.1</u>
Vehicle's Wheelbase =	<u>103.1</u> inches

FUEL SYSTEM DATA:

Fuel System Capacity From Owner's Manual =	<u>15.8</u> gallons
Usable Capacity Figure Furnished by COTR =	<u>15.8</u> gallons

REMARKS:

Post-Impact Data

Test number: HT99011201
 NHTSA number: CX5200
 Test date: January 12, 1999
 Test time: 1:15 p.m.
 Test type: FMVSS 208 Compliance Sled Test
 Impact angle: 0°
 Ambient Temperature
 at Impact Area: 72° F
 Temperature in
 Occupant Compartment: 72° F
 Impact Velocity:
 Integrated velocity from the integration of the entire sled acceleration: 29.9 mph
 Specified integrated velocity range: 28 to 30 mph
 Sled Carriage Acceleration:
 Acceleration: 17.7 g
 Specified Acceleration Range: 16.0 - 18.2 g
 Sled Carriage Acceleration Duration:
 Time from T-0 (-0.5 g) to 0.0 g: 122.7
 Specified Acceleration Duration: 120.0 to 130.0 msec

The sled acceleration corridor was achieved.

Seat and Steering Column Positioning Data

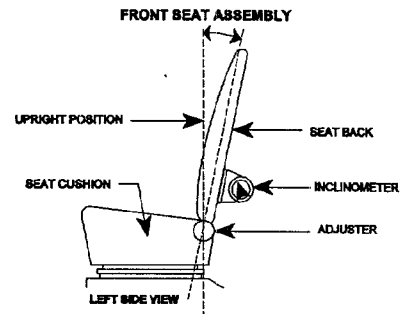
Vehicle Yr/Make/Model/Body Style: 1999/Nissan/Altima/GXE

Vehicle NHTSA No.: CX5200 Test Date: January 12, 1999

NOMINAL DESIGN RIDING POSITION:

Driver Seat: Seat Back Angle = 17.7°

Passenger Seat: Seat Back Angle = 17.6°



SEAT FORE AND AFT POSITIONS:

Driver Seat: The seat track had a total position movement of 20 notches and was positioned 11 notches rearward from the foremost position with the forward most locking position as zero.

Passenger Seat: The seat track had a total position movement of 20 notches and was positioned 11 notches rearward from the foremost position with the forward most locking position as zero.

STEERING COLUMN ADJUSTMENTS:

The steering column was placed in the mid position.

Dummy Positioning Measurement Table

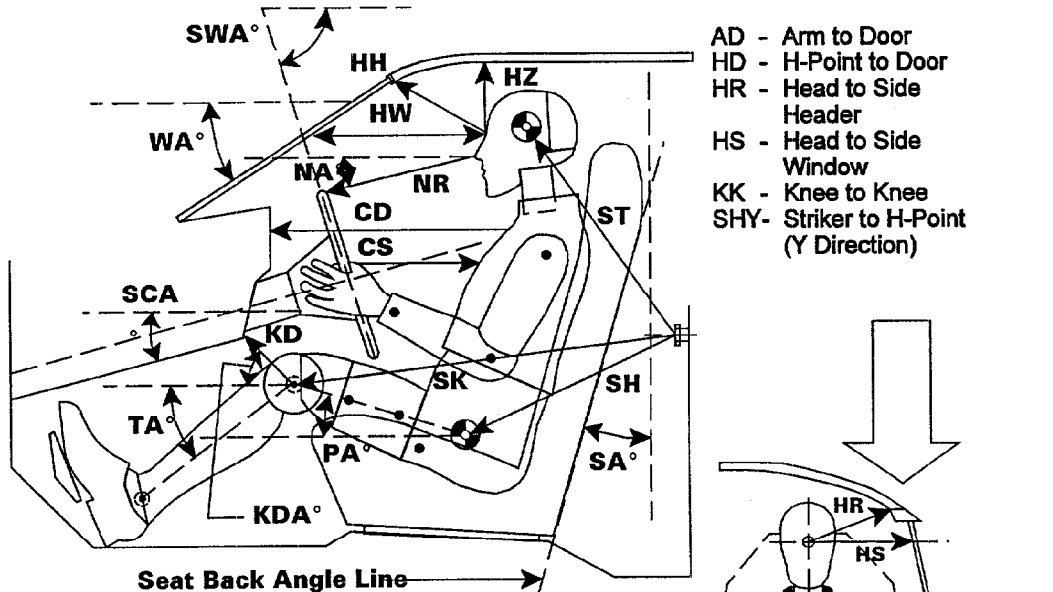
Vehicle Year/Make/Model/Body Style: 1999/Nissan/Altima/GXE

Vehicle NHTSA No.: CX5200 Test Date: January 12, 1999

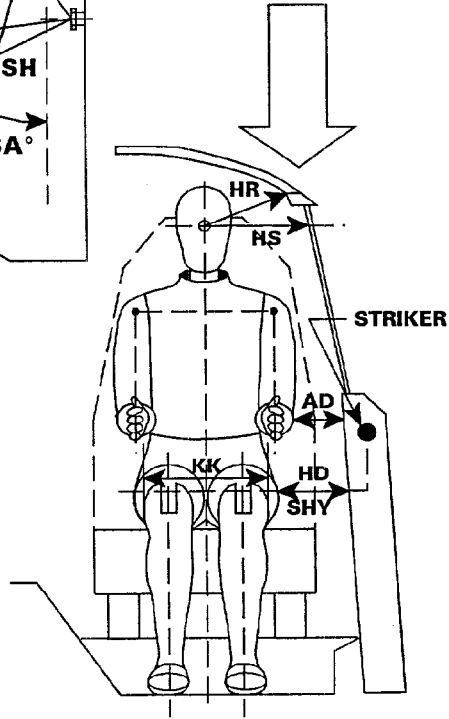
	DRIVER (Serial #401)	PASSENGER (Serial #403)
WA°	28.0°	
SWA°	65.5°	N/A
SCA°	25.5°	N/A
SA°	17.7	17.6
HZ	6.9	6.1
HH	13.4	13.4
HW	22.9	21.8
HR	9.8	9.3
NR	17.9 Angle (NA°) 9.4°	N/A
CD	21.8	25.5
CS	13.9	N/A
RA	8.5	N/A
KDL	9.6 Angle (KDA°) 0.0°	8.9
KDR	8.7	9.9 Angle (KDA°) 0.0°
PA°	24.5°	24.4°
TA°	42.3°	37.8°
KK	11.7	11.8
ST	19.8 Angle 4.9°	20.5 Angle 7.4°
SK	23.0 Angle 91.8°	23.5 Angle 96.2°
SH	9.6 Angle 118.9°	9.6 Angle 123.9°
SHY	9.4	9.7
HS	12.7	12.6
HD	5.6	5.2
AD	3.9	3.6

Dummy Positioning Measurement Locations

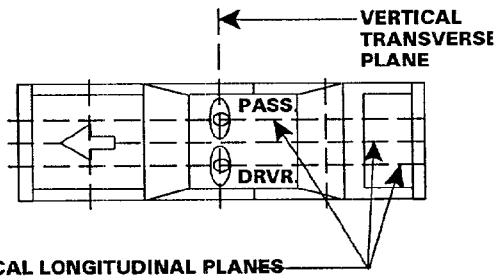
DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



- AD - Arm to Door
- HD - H-Point to Door
- HR - Head to Side Header
- HS - Head to Side Window
- KK - Knee to Knee
- SHY- Striker to H-Point (Y Direction)



- CD - Chest to Dash
- CS - Steering Wheel to Chest
- HH - Head to Header
- HW - Head to Windshield
- HZ - Head to Roof
- KDA- Knee to Dash Angle
- KDL- Left Knee to Dash
- KDR- Right Knee to Dash
- NA - Nose to Rim Angle
- NR - Nose to Rim
- PA - Pelvic Angle
- RA - Rim to Abdomen
- SA - Seat Back Angle
- SCA- Steering Column Angle
- SH - Striker to H-Point
- SK - Striker to Knee
- ST - Striker to Head
- SWA- Steering Wheel Angle
- TA - Tibial Angle
- WA - Windshield Angle



VERTICAL LONGITUDINAL PLANES

Description 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 photograph.
- 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).
- *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 photograph.

* Measurement used in Data Tape Reference Guide

¹ Only outboard measurement is referenced in Data Tape Reference Guide

Description of Dummy Measurements (Cont.)

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 photograph.

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 photograph. |
| * 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. |
| 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 photograph. |
| 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) |

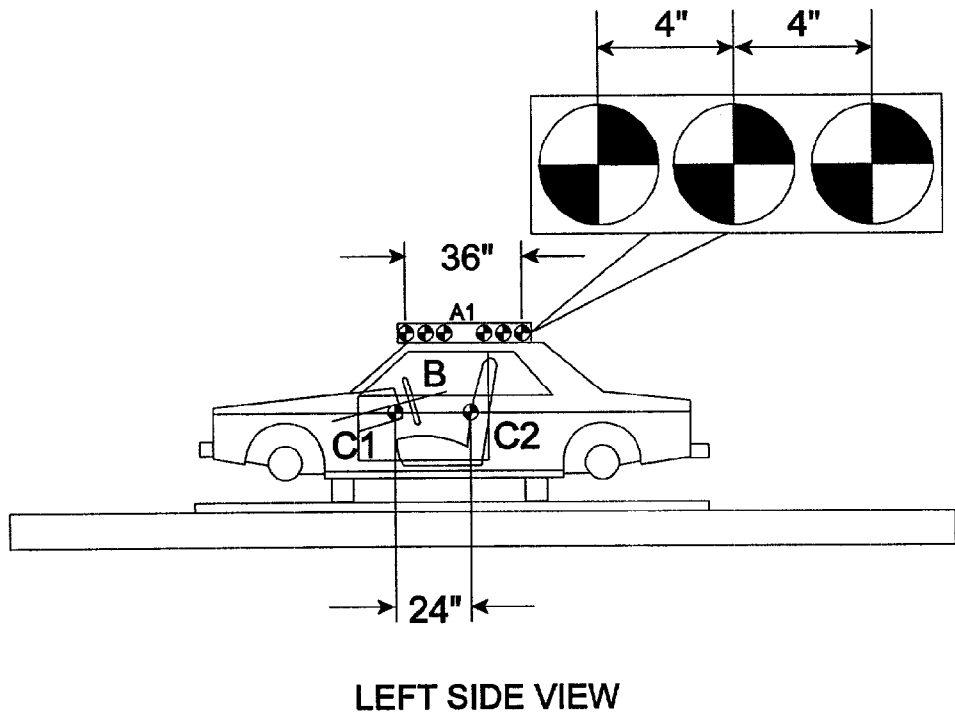
* Measurement used in Data Tape Reference Guide

Description of Dummy Measurements (Cont.)**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	Pelvic 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 photograph.
WA	Windshield Angle, place an inclinometer along the transverse center of the windshield exterior (measurement is made with respect to horizontal).
TA	Tibial 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.

Vehicle Targeting Measurements

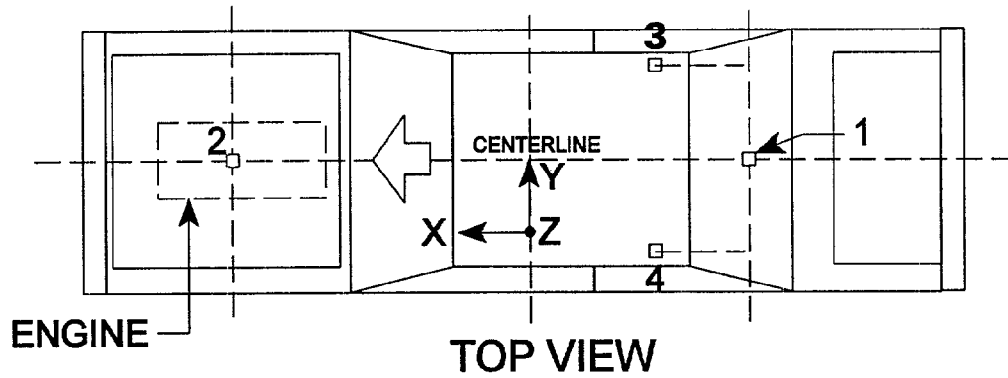
REFERENCE PHOTO TARGETS



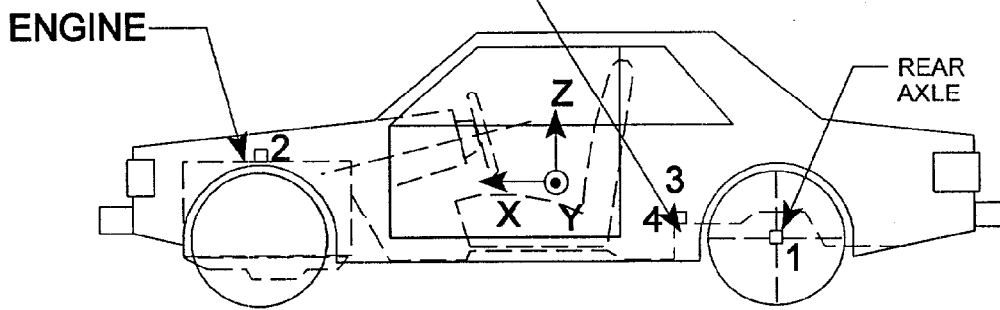
Vehicle Accelerometer Placement and Data Summary

Vehicle Year/Make/Model/Body Style: 1999/Nissan/Altima/GXE

Vehicle NHTSA No.: CX5200 Test Date: January 12, 1999



REAR SEAT CUSHION
ASSY. FRONT ATTACHMENT
BRACKET SUPPORT



LEFT SIDE VIEW

Vehicle Accelerometer Location Measurements and Data Summary

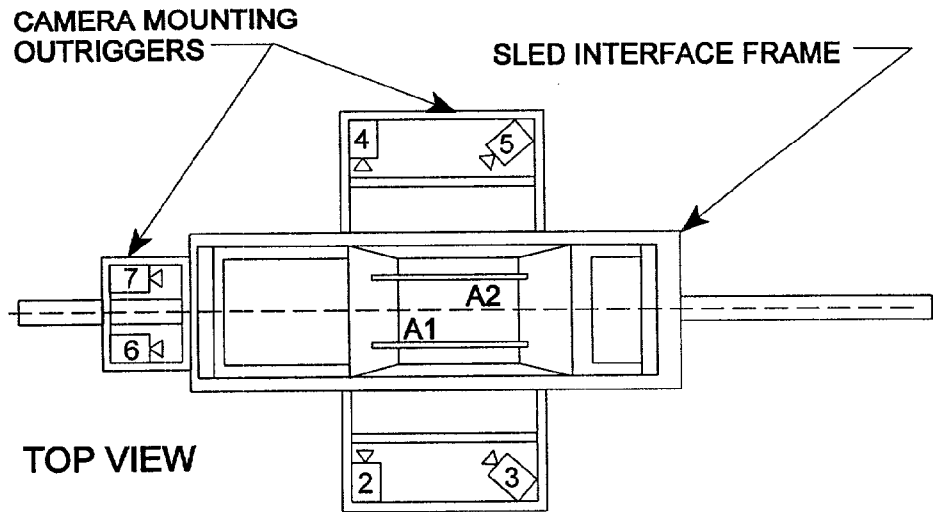
Vehicle Year/Make/Model/Body Style: 1999/Nissan/Altima/GXE

Vehicle NHTSA No.: CX5200 Test Date: January 12, 1999

No.	Location	X (in)	Y (in)	Positive Direction		Negative Direction	
				g's	msec	g's	msec
	Sled Primary Longitudinal	61	0	17.7 g's	60 msec	0.7 g's	180 msec
	Sled Redundant Longitudinal	108	0	17.5 g's	60 msec	0.8 g's	162 msec
	Sled Velocity Measured Integrated	64	0	29.9 mph	123 msec	-	-
1	Rear Axle Longitudinal	34.5	0	18.1 g's	57 msec	1.4 g's	125 msec
2	Top Engine Longitudinal	151.3	0	20.0 g's	52 msec	3.7 g's	153 msec
3	Right Rear Seat Member Longitudinal	68.3	24.5	17.7 g's	57 msec	1.0 g's	147 msec
4	Left Rear Seat Member Longitudinal	68.3	24.5	17.7 g's	57 msec	1.4 g's	125 msec

X = Rear of Vehicle
Y = Vehicle Centerline

Camera Positions



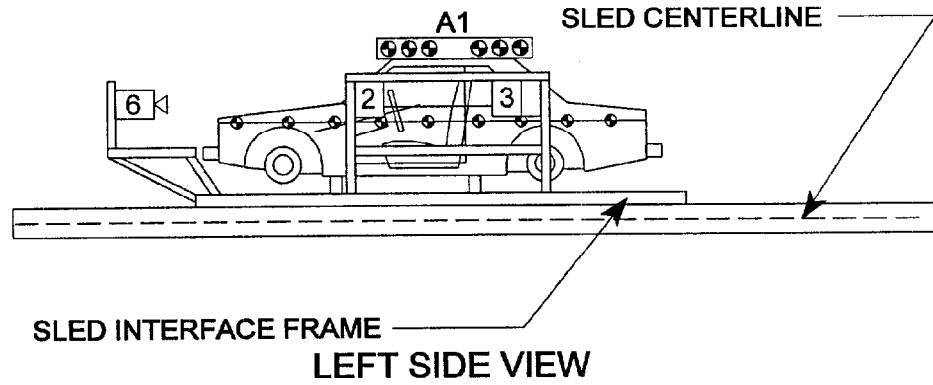
CAMERA FRAME RATES:

#1 = 24 fps

All Others = 1,000 fps



REAL TIME CAMERA



Camera Location Measurements

Camera No.	VIEW	Camera Positions (inches)*			Angle (deg)	Film Plane To Head Target	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Real-Time (Pre and Post)						10	24
2	Onboard Driver	74.0	86.0	37.0	90	66.0	13	1010
3	Onboard Driver Angle	143.5	86.5	47.5	–	–	13	1005
4	Onboard Passenger	75.8	87.5	38.0	90	68.5	13	1000
5	Onboard Passenger Angle	145.0	87.5	48.0	–	–	13	735
6	Onboard Windshield Driver	22.0	13.0	43.5	–	–	13	1000
7	Onboard Windshield Passenger	21.5	14.0	43.0	–	–	13	1005

Reference* X = Front of sled carriage
 Y = Center of sled carriage
 Z = Top of sled carriage

*

Occupant Injury DataVehicle Year/Make/Model/Body Style: 1999/Nissan/Altima/GXEVehicle NHTSA No.: CX5200 Test Date: January 12, 1999

MAXIMUM ACCELERATION VALUES: (g's)	DRIVER DUMMY #401	PASSENGER DUMMY #403
Head Channel X	-71.2	-72.8
Head Channel Y	14.6	-8.5
Head Channel Z	51.9	52.6
HEAD RESULTANT	87.1	83.5
Chest Channel X	-41.9	-42.4
Chest Channel Y	-2.4	-4.9
Chest Channel Z	26.1	31.8
CHEST RESULTANT	45.7	47.1

HEAD INJURY CRITERIA (HIC) VALUES:

HIC	388	251
t_1 = (msec)	89.0	83.1
t_2 = (msec)	111.9	119.1

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

CHEST INJURY CRITERIA (CLIP) VALUES: (g's)

CLIP	45	45
t_1 = (msec)	101.9	96.2
t_2 = (msec)	105.0	99.2
CHEST DEFLECTION (in)	1.3	0.4

Occupant Injury Data (Cont.)

MAX. COMPRESSIVE FEMUR FORCES:	DRIVER DUMMY #401	PASSENGER DUMMY #403
Left Side (lbs)	811	1054
Right Side (lbs)	819	1286

NECK INJURY CRITERIA:

Peak Flexion Bending Moment about the Occipital Condyle (N-m)	71.0	93.1
Peak Extension Bending Moment about the Occipital Condyle (N-m)	6.5	16.6
Peak Axial Tension (N)	468.9	778.0
Peak Axial Compression (N)	3425.4	1976.3
Peak Fore Shear (N)	1186.1	1553.7
Peak Aft Shear (N)	164.4	252.0

Seat Belt Warning System Data

Vehicle Year/Make/Model/Body Style: 1999/Nissan/Altima/GXE

NHTSA No.: CX5200 ; Technician: David Winkelbauer ;

Date: November 5, 1998

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 = >60* seconds
(no less than 60 seconds)

* light stays on until belt is latched

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 ignition switch placed in "Start/On" position:

B.1 S7.3(a)(1)

Time duration of audible warning signal = 0 seconds
(audible warning not required)

Time duration of reminder light operation = 0 seconds
(reminder light not required)

B.2 S7.3(a)(2)

Time duration of audible warning signal = seconds
(audible warning not required)

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

C. Note wording of visual warning:

Fasten seat belt

Fasten Belt

Symbol 101 X

Readiness IndicatorVehicle Year/Make/Model/Body Style: 1999/Nissan/Altima/GXENHTSA No.: CX5200 ; Technician: David Winkelbauer ; Date: November 5, 1998

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)

1. Is the system totally mechanical? ()Yes (X)No
(If YES this Data Sheet is complete.)
 2. Describe the location of the readiness indicator: Lower center of tachometer

 3. Is the readiness indicator clearly visible to the driver?
(X)Yes-Pass ()No-FAIL
 4. Is a list of the elements in the occupant restraint system, being monitored by the readiness indicator, provided?
(X)Yes-Pass ()No-FAIL
-

Air Bag Labels DataVehicle Year/Make/Model/Body Style: 1999/Nissan/Altima/GXENHTSA No.: CX5200 ; Technician: David Winkelbauer ; Date: November 5, 1998

1. Air bag maintenance label and owner's manual instructions (S4.5.1(a)):
 - 1.1. Does the manufacturer recommend periodic maintenance or replacement of the airbag? 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 (Date: _____)
 - Schedule on label specifies vehicle mileage (Mileage: _____)
 - Schedule on label specifies interval measured from date on certification label (Date: 10/2008)
 - 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 inches 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 airbag system in an easily understandable format? Yes-Pass **No-FAIL**
 - 2.2. Include a statement that the vehicle is equipped with an airbag and a lap/shoulder belt at the front outboard seating positions? Yes-Pass **No-FAIL**

Air Bag Labels Data (Cont.)

- 2.3 Include a statement that the air bag is a supplemental restraint at the front outboard seating positions?
(X)Yes-Pass () **No-FAIL**
- 2.4 Emphasize that all occupants, including the driver, should always wear their seat belts whether or not an airbag is also provided at their seating positions to minimize the risk of severe injury or death in the event of a crash?
(X)Yes-Pass () **No-FAIL**
- 2.5 Provide any necessary precautions regarding the proper positioning of occupants, including children, at seating positions equipped with air bags to insure maximum safety protection for those occupants?
(X)Yes-Pass () **No-FAIL**
- 2.6 Explain that no objects should be placed over or near the air bag on the steering wheel or on the instrument panel, because any such objects could cause harm if the vehicle is in a crash severe enough to cause the air bag to inflate?
(X)Yes-Pass () **No-FAIL**
3. Does the vehicle:
- 3.1. Provide an automatic means to ensure that the airbag does not deploy when a child seat or child with a total mass of 30 kg or less is present on the front outboard passenger?
()Yes (X) 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 seats, and unbelted or improperly belted children?
()Yes (X) 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 (X) No

If yes to 3.1, or 3.2, or 3.3, the vehicle is not required to have a sunvisor warning label (S4.5.1(6)), an airbag alert label (S4.5.1(c)) or a label on the dash (S4.5.2(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 sunvisor at each front outboard seating position with an airbag?
(S4.5.1(b)(2))
- Driver Side - (X)Yes-Pass () **No-FAIL**
Passenger Side - () N/A (X)Yes-Pass () **No-FAIL**

Air Bag Labels Data (Cont.)

- 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 either label shown on the next page as appropriate at each front outboard seating position with an air bag? (S4.5.1(b)(2))

4.2.1 **Dual air bags:** Not Applicable
 Driver Side - Yes No-FAIL
 Passenger Side - Yes No-FAIL

4.2.2 **Vehicle with driver air bag ONLY - either 4.2.2.1 or 4.2.2.2 is applicable, not both.** (S4.5.1(b)(2)(iv))

4.2.2.1 Does the label conform in content to either label shown on the following page as appropriate?
 Not Applicable
 Driver Side - Yes-Pass No-FAIL

4.2.2.2 Does the label conform in content to the first label shown on the following page where the label can be modified to omit the pictogram and the message text 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.

Not Applicable
 Driver Side - Yes-Pass No-FAIL

Air Bag Labels Data (Cont.)

SUN VISOR LABEL VISIBLE WHEN VISOR IS IN DOWN POSITION
 LABEL OUTLINE, VERTICAL AND HORIZONTAL LINE BLACK

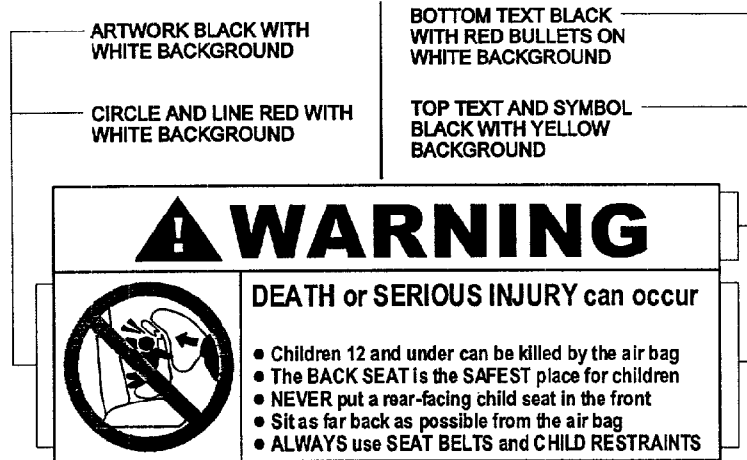


Figure 6a (S4.5.1(b)(2))

SUN VISOR LABEL VISIBLE WHEN VISOR IS IN DOWN POSITION
 LABEL OUTLINE, VERTICAL AND HORIZONTAL LINE BLACK

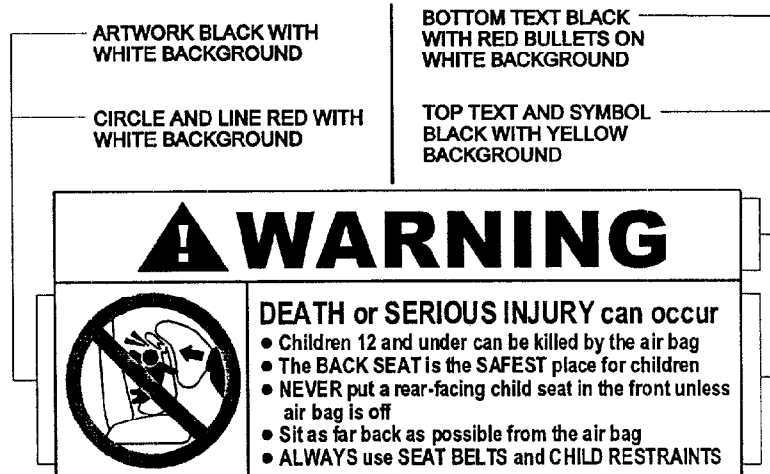


Figure 6b (S4.5.1(b)(2))

- 4.3 Is the label heading area yellow with the word "warning" and the alert symbol in black? (S4.5.1(b)(2)(i))
- | | | |
|------------------|----------------|-------------------------|
| Driver Side - | (X)Yes-Pass | () No-FAIL |
| Passenger Side - | () No air bag | (X)Yes-Pass () No-FAIL |
- 4.4 Is the message white with black text? (S4.5.1(b)(2)(ii))
- | | | |
|------------------|----------------|-------------------------|
| Driver Side - | (X)Yes-Pass | () No-FAIL |
| Passenger Side - | () No air bag | (X)Yes-Pass () No-FAIL |

Air Bag Labels Data (Cont.)

- 4.5 Is the message area at least 30 cm²? (S4.5.1(b)(2)(ii))
Actual message area: 40 cm²
- | | | |
|------------------|----------------|-------------------------|
| Driver Side - | (X)Yes-Pass | () No-FAIL |
| Passenger Side - | () No air bag | (X)Yes-Pass () No-FAIL |
- 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 () Not Applicable
- | | | |
|------------------|----------------|-------------------------|
| Driver Side - | (X)Yes-Pass | () No-FAIL |
| Passenger Side - | () No air bag | (X)Yes-Pass () No-FAIL |
- 4.7 Is the pictogram at least 30 mm in diameter? (S4.5.1(b)(2)(iii))
Actual diameter: 35 mm
For vehicles with driver side air bag ONLY () Not Applicable
- | | | |
|------------------|----------------|-------------------------|
| Driver Side - | (X)Yes-Pass | () No-FAIL |
| Passenger Side - | () No air bag | (X)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))
- | | | |
|------------------|----------------|-------------------------|
| Driver Side - | (X)Yes-Pass | () No-FAIL |
| Passenger Side - | () No air bag | (X)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?
(S4.5.1(b)(3))
- | | | |
|------------------|----------------|-------------------------|
| Driver Side - | (X)Yes-Pass | () No-FAIL |
| Passenger Side - | () No air bag | (X)Yes-Pass () No-FAIL |
5. Air Bag Alert Label
- 5.1 Is the Sun Visor Warning Label visible when the sunvisor is in the stowed position?
- | | | |
|------------------|-----------------|---------------|
| Driver Side - | (X)Yes, go to 6 | () No |
| Passenger Side - | () No air bag | (X)Yes () No |
- 5.2 Does the label conform in content to the label shown below? (S4.5.1(c)(2))
- | | | |
|------------------|----------------|--------------------------|
| Driver Side - | () Yes | () No-FAIL |
| Passenger Side - | () No air bag | () Yes-Pass () No-FAIL |
- 5.3 Is the message area black with yellow text? (S4.5.1(c)(2)(i))
- | | | |
|------------------|----------------|--------------------------|
| Driver Side - | () Yes-Pass | () No-FAIL |
| Passenger Side - | () No air bag | () Yes-Pass () No-FAIL |

Air Bag Labels Data (Cont.)

- 5.4 Is the message area at least 20 cm²? (S4.5.1(c)(2)(i))
 Actual message area: _____ cm²
 Driver Side - () Yes-Pass () No-FAIL
 Passenger Side - () No air bag () 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 () Not Applicable
 () Yes-Pass () No-FAIL
- 5.6 Is the pictogram at least 20 mm in diameter? (S4.5.1(c)(2)(ii))
 Actual diameter _____ mm
 For vehicles with driver side air bag ONLY () Not Applicable
 () Yes-Pass () No-FAIL

SUN VISOR LABEL VISIBLE WHEN VISOR IS IN UP POSITION

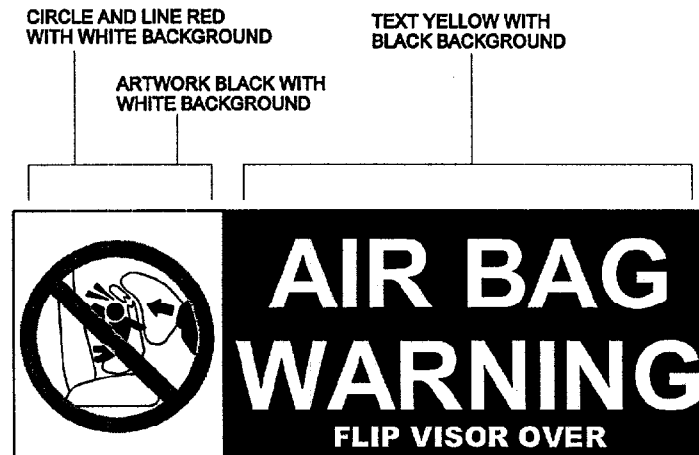


Figure 6c (S4.5.1(c)(2))

6. Label On the Dash
- 6.1 Does the vehicle have a passenger side air bag?
 (X) Yes () No, check sheet is complete.
- 6.2 Does the vehicle have a label on the dash or steering wheel hub? (S4.5.1(e))
 (X) 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 below. (S4.5.1(e))
 (X) Yes-Pass () No-FAIL

Air Bag Labels Data (Cont.)

- 6.4 Is the heading area yellow with the word "warning" and the alert symbol in black?
(S4.5.1(e)(i)) (X)Yes-Pass () No-FAIL
- 6.5 Is the message white with black text? (S4.5.1(e)(ii))
(X)Yes-Pass () No-FAIL
- 6.6 Is the message area at least 30 cm²? (S4.5.1(e)(ii))
Actual message area: 40 cm² (X)Yes-Pass ()No-FAIL

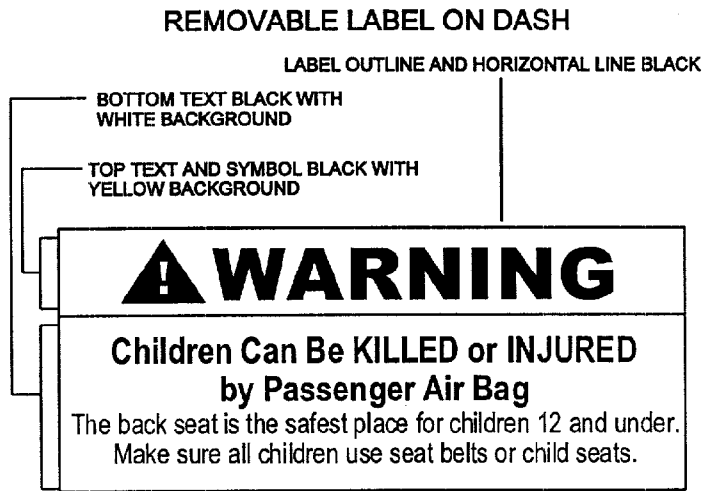


Figure 7 (S4.5.1(e))

Rear Outboard Seating Position Seat Belt Data

Vehicle Year/Make/Model/Body Style: 1999/Nissan/Altima/GXE

NHTSA No.: CX5200 ; Technician: David Winkelbauer ; Date: November 5, 1998

Do all rear outboard seating positions have type 2 seat belts?
(X)Yes ()No

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

Lap Belt Lockability DataVehicle Year/Make/Model/Body Style: 1999/Nissan/Altima/GXENHTSA No.: CX5200; Technician: David Winkelbauer; Date: November 5, 1998

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 locking retractors. (S7.1.1.5(c))

Designated Seating Position (DSP): Right Front

1. Record the seating position. Mid Position
(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 of the vehicle. (S7.1.1.5(a))

(X)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))

(X)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? (X)Yes, go to 6.1 () No, go to 7.
 - 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))

(X)Yes-Pass () No-FAIL
7. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

Lap Belt Lockability Data (Cont.)

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 is 43.5 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. 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))

The measured force application angle = 10 (spec. 5-15 degrees)

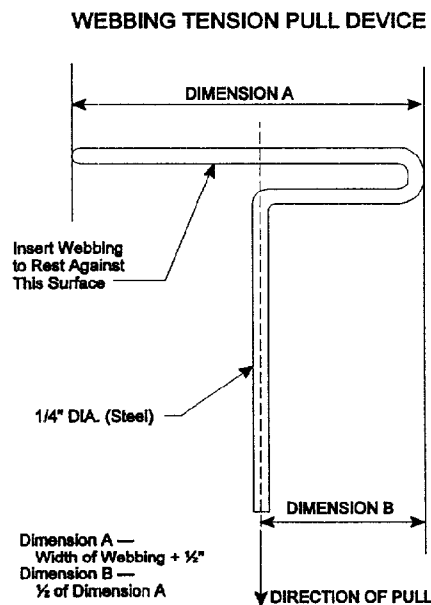


Figure 5 (S7.1.1.5(c)(4))

Lap Belt Lockability Data (Cont.)

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 is 30 inches.

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: 10 lb/sec (Spec. 10 to 50 lb/sec)

Measure distance between points A and B 30.5 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 = 0.5 inches

(X)Yes-Pass

() No-FAIL

16. Subtract the measurement in 14 from the measurement in 10. Is the difference 3 inches or more?

10-14 = 13 inches

(X)Yes-Pass

() No-FAIL

REMARKS:

Lap Belt Lockability Data (Cont.)Vehicle Year/Make/Model/Body Style: 1999/Nissan/Altima/GXENHTSA No.: CX5200 ; Technician: David Winkelbauer ; Date: November 5, 1998

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 locking retractors. (S7.1.1.5(c))

Designated Seating Position (DSP): Left Rear

1. Record the seating position. Non-adjustable
(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 of the vehicle. (S7.1.1.5(a))

(X)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))

(X)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? (X)Yes, go to 6.1 () No, go to 7.
 - 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))

(X)Yes-Pass () No-FAIL
7. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

Lap Belt Lockability Data (Cont.)

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 is 42 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. 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))

The measured force application angle = 10 (spec. 5-15 degrees)

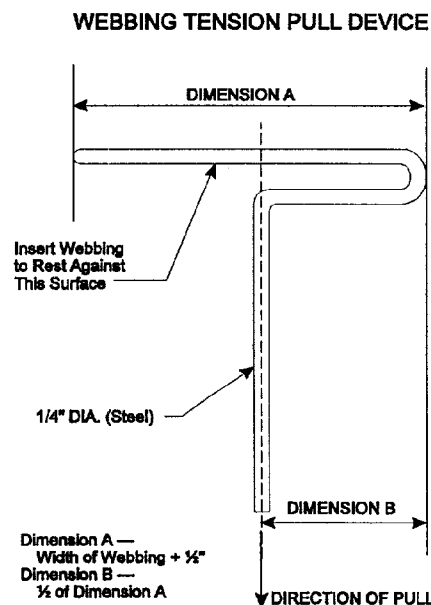


Figure 5 (S7.1.1.5(c)(4))

Lap Belt Lockability Data (Cont.)

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 is 25 inches.

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: 10 lb/sec (Spec. 10 to 50 lb/sec)

Measure distance between points A and B 25.8 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 = 0.8 inches

Yes-Pass

No-FAIL

16. Subtract the measurement in 14 from the measurement in 10. Is the difference 3 inches or more?

10-14 = 16.2 inches

Yes-Pass

No-FAIL

REMARKS:

Lap Belt Lockability Data (Cont.)Vehicle Year/Make/Model/Body Style: 1999/Nissan/Altima/GXENHTSA No.: CX5200 ; Technician: David Winkelbauer ;Date: November 5, 1998

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 locking retractors. (S7.1.1.5(c))

Designated Seating Position (DSP): Center Rear

1. Record the seating position. Non-adjustable
(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 of the vehicle. (S7.1.1.5(a))

(X)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))

(X)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? (X)Yes, go to 6.1 () No, go to 7.
 - 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))

(X)Yes-Pass () No-FAIL
7. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

Lap Belt Lockability Data (Cont.)

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 is 30 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. 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))

The measured force application angle = 10 (spec. 5-15 degrees)

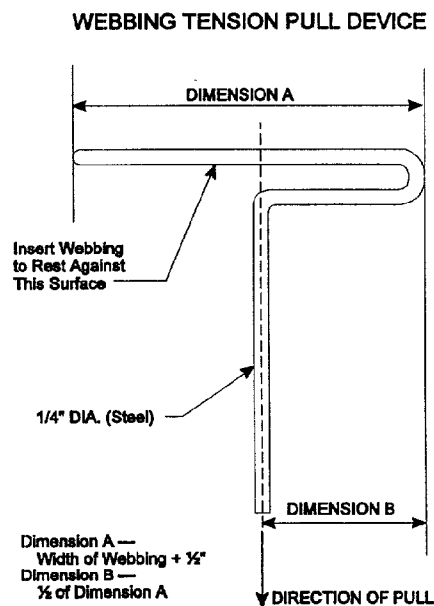


Figure 5 (S7.1.1.5(c)(4))

Lap Belt Lockability Data (Cont.)

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 is 23 inches.

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: 10 lb/sec (Spec. 10 to 50 lb/sec)

Measure distance between points A and B 23.3 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?

10-14 = 6.7 inches

Yes-Pass

No-FAIL

REMARKS:

Lap Belt Lockability Data (Cont.)Vehicle Year/Make/Model/Body Style: 1999/Nissan/Altima/GXENHTSA No.: CX5200 ; Technician: David Winkelbauer ;Date: November 5, 1998

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 locking retractors. (S7.1.1.5(c))

Designated Seating Position (DSP): Right Rear

1. Record the seating position. Non-adjustable
(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 of the vehicle. (S7.1.1.5(a))

(X)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))

(X)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? (X)Yes, go to 6.1 () No, go to 7.
 - 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))

(X)Yes-Pass () No-FAIL
7. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

Lap Belt Lockability Data (Cont.)

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 is 42.5 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. 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))

The measured force application angle = 10 (spec. 5-15 degrees)

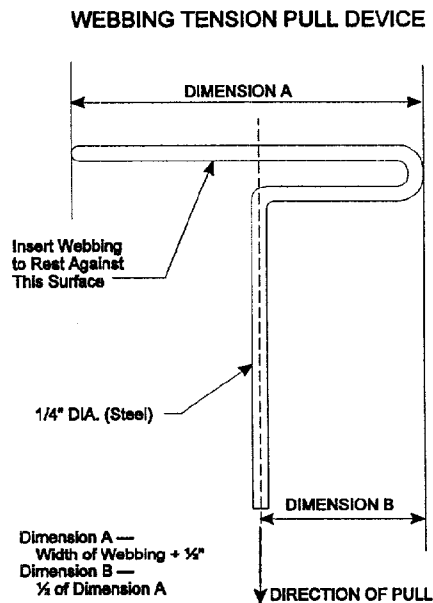


Figure 5 (S7.1.1.5(c)(4))

Lap Belt Lockability Data (Cont.)

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 is 26 inches.

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: 10 lb/sec (Spec. 10 to 50 lb/sec)

Measure distance between points A and B 26.5 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 = 0.5 inches

Yes-Pass

No-FAIL

16. Subtract the measurement in 14 from the measurement in 10. Is the difference 3 inches or more?

10-14 = 16 inches

Yes-Pass

No-FAIL

REMARKS:

Seat Belt Comfort and Convenience Data

1. **BELT CONTACT FORCE (S7.4.3)**

Test Vehicle NHTSA No.: CX5200

Vehicle Model Year/Make/Model/Body Style: 1999/Nissan/Altima/GXE

Designated Seating Position Tested: Left Rear

Date of Comfort/Convenience Check: November 5, 1998

Technician Performing Check: David Winkelbauer

GVWR: 3990 lbs

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.

- 1.1 Does the vehicle incorporate a webbing tension-relieving device?
 Yes - go to latchplate access
 No - continue with this check sheet
- 1.2 Adjustable seats are in 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
- 1.3 If separately adjustable in a vertical direction, the seats are at the lowest position.
 Check
 N/A
- 1.4 Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.
 Check
 N/A
- 1.5 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
- 1.6 Place each adjustable head restraint in its highest adjustment position.
 Check
 N/A

Seat Belt Comfort and Convenience Data (Cont.)

- 1.7 Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)
 Check
 N/A
- 1.8 Position the test dummies according to dummy position placement instructions in Appendix B.
 Check
- 1.9 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 0.2 lb. 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.

Seat Belt Comfort and Convenience Data (Cont.)**1. BELT CONTACT FORCE (S7.4.3)**Test Vehicle NHTSA No.: CX5200Vehicle Model Year/Make/Model/Body Style: 1999/Nissan/Altima/GXEDesignated Seating Position Tested: Right RearDate of Comfort/Convenience Check: November 5, 1998Technician Performing Check: David WinkelbauerGVWR: 3990 lbs

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.

- 1.1 Does the vehicle incorporate a webbing tension-relieving device?
 Yes - go to latchplate access
 No - continue with this check sheet
- 1.2 Adjustable seats are in 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
- 1.3 If separately adjustable in a vertical direction, the seats are at the lowest position.
 Check
 N/A
- 1.4 Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.
 Check
 N/A
- 1.5 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
- 1.6 Place each adjustable head restraint in its highest adjustment position.
 Check
 N/A

Seat Belt Comfort and Convenience Data (Cont.)

- 1.7 Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)
 Check
 N/A
- 1.8 Position the test dummies according to dummy position placement instructions in Appendix B.
 Check
- 1.9 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 0.2 lb. 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.

Seat Belt Comfort and Convenience Data (Cont.)

2. **LATCHPLATE ACCESS (S7.4.4)**

Test Vehicle NHTSA No.: CX5200

Vehicle Model Year/Make/Model/Body Style: 1999/Nissan/Altima/GXE

Designated Seating Position Tested: **Not Applicable/Passenger Car**

Date of Comfort/Convenience Check: November 5, 1998

Technician Performing Check: David Winkelbauer

GVWR: 3990 lbs

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.

- 2.1 Position the seat in its forward most adjustment position.
() Check
- 2.2 Position the test dummy using the procedures in Appendix B. (Some modifications to the positioning procedure may need to be made because the seat is in its forward most position.)
() Check
- 2.3 Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant.
() Check
- 2.4 Attach the inboard and outboard reach string following the instructions on Figure 1C.
() Check
- 2.5 Place the latch plate in the stowed position.
() Check
- 2.6 Extend each line backward and outboard to generate arcs of the reach envelop of the test dummy's arms. Is the latch plate within the reach envelope?
() Yes-Pass () No-FAIL
- 2.7 Using the clearance test block, specified in Figure 2C, is there sufficient clearance between the vehicle seat and the side of vehicle interior to allow the test block to move unhindered to the latch plate or buckle?
() Yes-Pass () No-FAIL

Seat Belt Comfort and Convenience Data (Cont.)

3. **RETRACTION (S7.4.5)**

Test Vehicle NHTSA No.: CX5200

Vehicle Model Year/Make/Model/Body Style: 1999/Nissan/Altima/GXE

Designated Seating Position Tested: **Not Applicable/Passenger Car**

Date of Comfort/Convenience Check: November 5, 1998

Technician Performing Check: David Winkelbauer

GVWR: 3990 lbs.

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.

- 3.1 Is the vehicle a passenger car or walk-in van-type vehicle?
 () Yes If yes, go to seat belt guides and hardware.
 () No
- 3.2 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
- 3.3 If separately adjustable in a vertical direction, the seats are at the lowest position.
 () Check
- 3.4 Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.
 () Check
- 3.5 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
- 3.6 Place each adjustable head restraint in its highest adjustment position.
 () Check
- 3.7 Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position (S8.1.3)
 () Check

Seat Belt Comfort and Convenience Data (Cont.)

- 3.8 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
- 3.9 Restrain the dummies using the belt systems for the position being tested.
() Check
- 3.10 Stow outboard armrests which are capable of being stowed.
() Check
- 3.11 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 latch plate is released.
() Pass
- (B) The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latch plate is released.
() Pass
- (C) Neither A or B apply.
() **FAIL**
- 3.12 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**
- 3.13 If this test vehicle has an open body (without doors) and has a seat 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**

Seat Belt Comfort and Convenience Data (Cont.)**4. SEAT BELT GUIDES AND HARDWARE (S7.4.6)**Test Vehicle NHTSA No.: CX5200Vehicle Model Year/Make/Model/Body Style: 1999/Nissan/Altima/GXEDesignated Seating Position Tested: Left RearDate of Comfort/Convenience Check: November 5, 1998Technician Performing Check: David WinkelbauerGVWR: 3990 lbs

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 which 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:

- 4.1 Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back?
 Yes - Go to 4.2.
 No - this form is complete
- 4.2 Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)?
 Yes - Pass
 No - **FAIL**
- 4.3 Are the remaining two seat belt parts accessible under normal conditions?
 Yes - Pass
 No - **FAIL**

Seat Belt Comfort and Convenience Data (Cont.)

- 4.4 The buckle and latch plate 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
- 4.5 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
-

Seat Belt Comfort and Convenience Data (Cont.)4. **SEAT BELT GUIDES AND HARDWARE (S7.4.6)**Test Vehicle NHTSA No.: CX5200Vehicle Model Year/Make/Model/Body Style: 1999/Nissan/Altima/GXEDesignated Seating Position Tested: Center RearDate of Comfort/Convenience Check: November 5, 1998Technician Performing Check: David WinkelbauerGVWR: 3990 lbs

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 which 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:

- 4.1 Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back?
 Yes - Go to 4.2.
 No - this form is complete
- 4.2 Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)?
 Yes - Pass
 No - FAIL
- 4.3 Are the remaining two seat belt parts accessible under normal conditions?
 Yes - Pass
 No - FAIL

Seat Belt Comfort and Convenience Data (Cont.)

- 4.4 The buckle and latch plate 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
- 4.5 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

Seat Belt Comfort and Convenience Data (Cont.)

4. **SEAT BELT GUIDES AND HARDWARE (S7.4.6)**

Test Vehicle NHTSA No.: CX5200

Vehicle Model Year/Make/Model/Body Style: 1999/Nissan/Altima/GXE

Designated Seating Position Tested: Right Rear

Date of Comfort/Convenience Check: November 5, 1998

Technician Performing Check: David Winkelbauer

GVWR: 3990 lbs

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 which 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:

- 4.1 Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back?
 Yes - Go to 4.2.
 No - this form is complete
- 4.2 Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)?
 Yes - Pass
 No - **FAIL**
- 4.3 Are the remaining two seat belt parts accessible under normal conditions?
 Yes - Pass
 No - **FAIL**

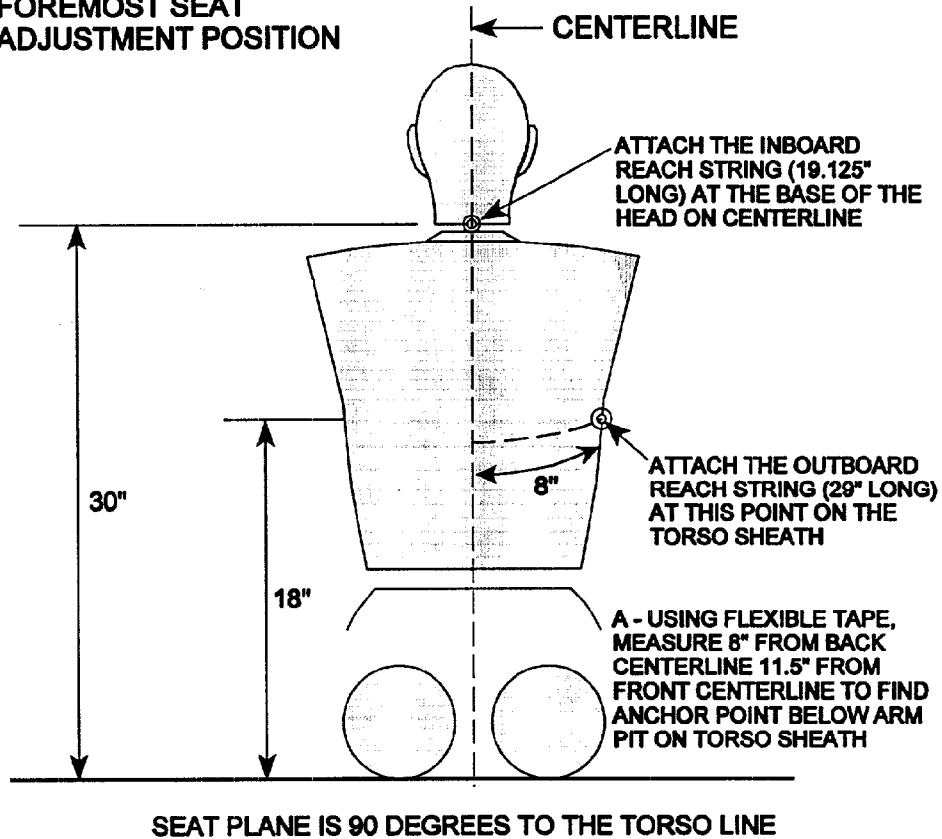
Seat Belt Comfort and Convenience Data (Cont.)

- 4.4 The buckle and latch plate 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
- 4.5 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**

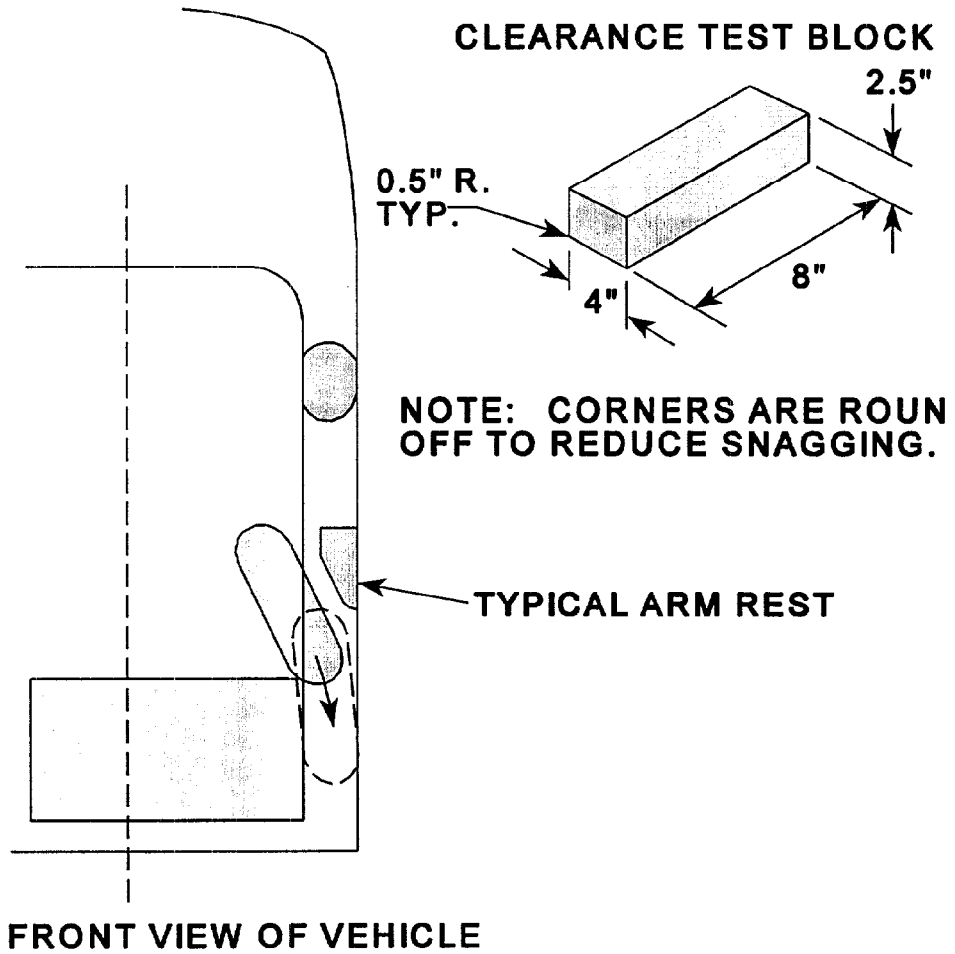
PART 572E DUMMY

50TH PERCENTILE
DUMMY SEATED IN
FOREMOST SEAT
ADJUSTMENT POSITION



REAR VIEW

USE OF CLEARANCE TEST BLOCK TO DETERMINE HAND/ARM ACCESS



APPENDIX A
PHOTOGRAPHS

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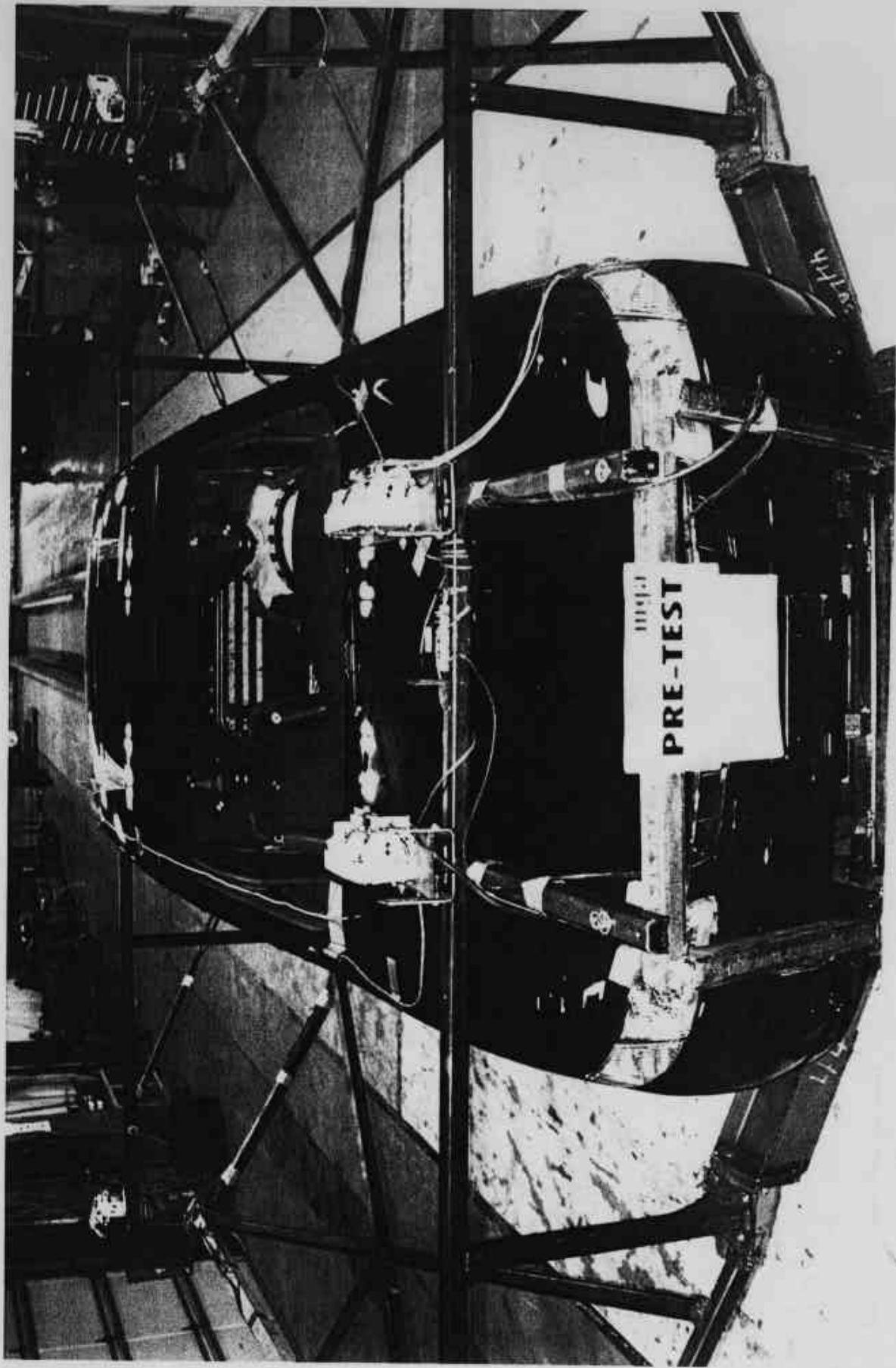
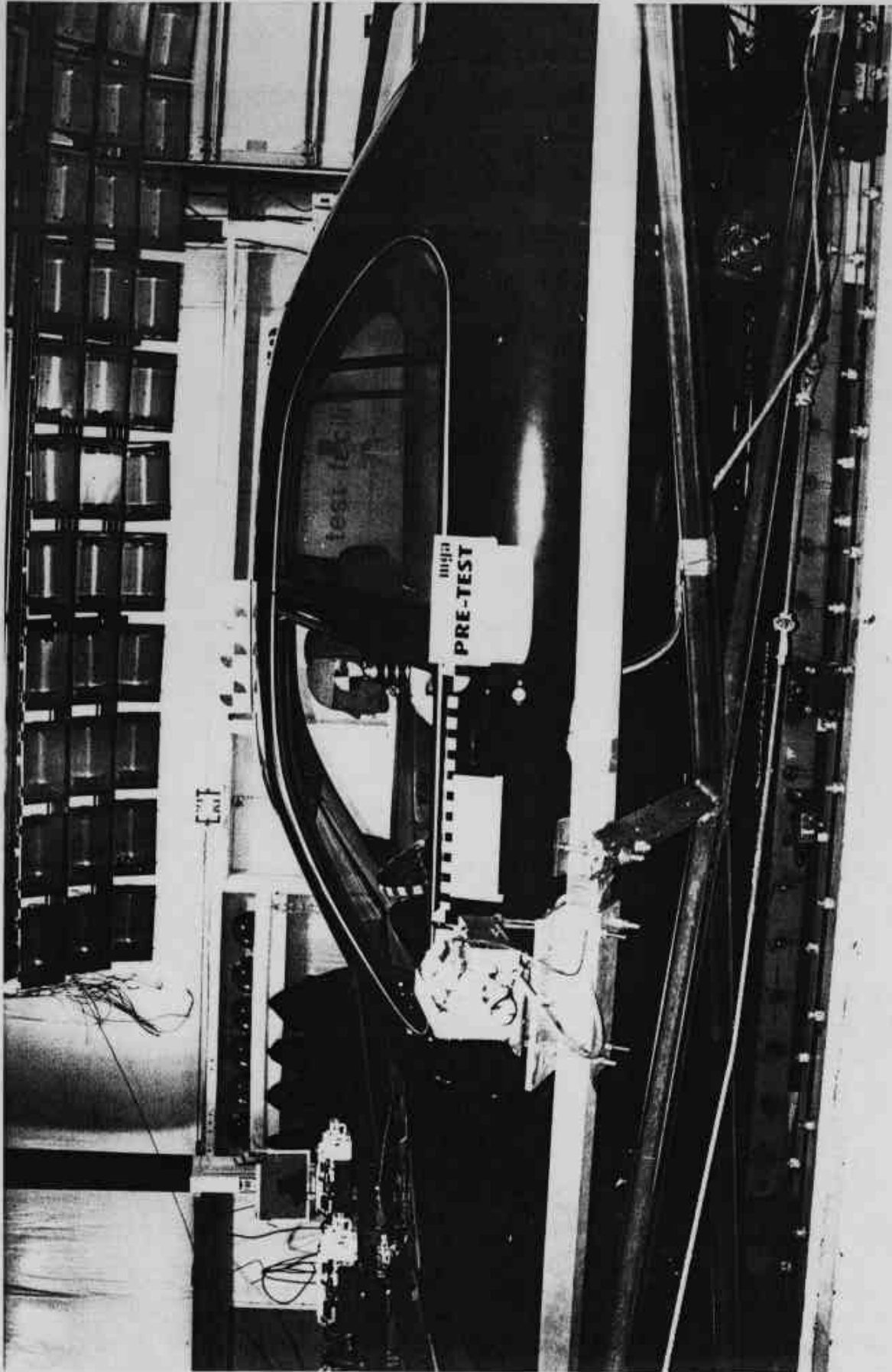


Photo No. A-1 - Pre-Test Frontal View



A-2

Photo No. A-2 - Pre-Test Left Side View

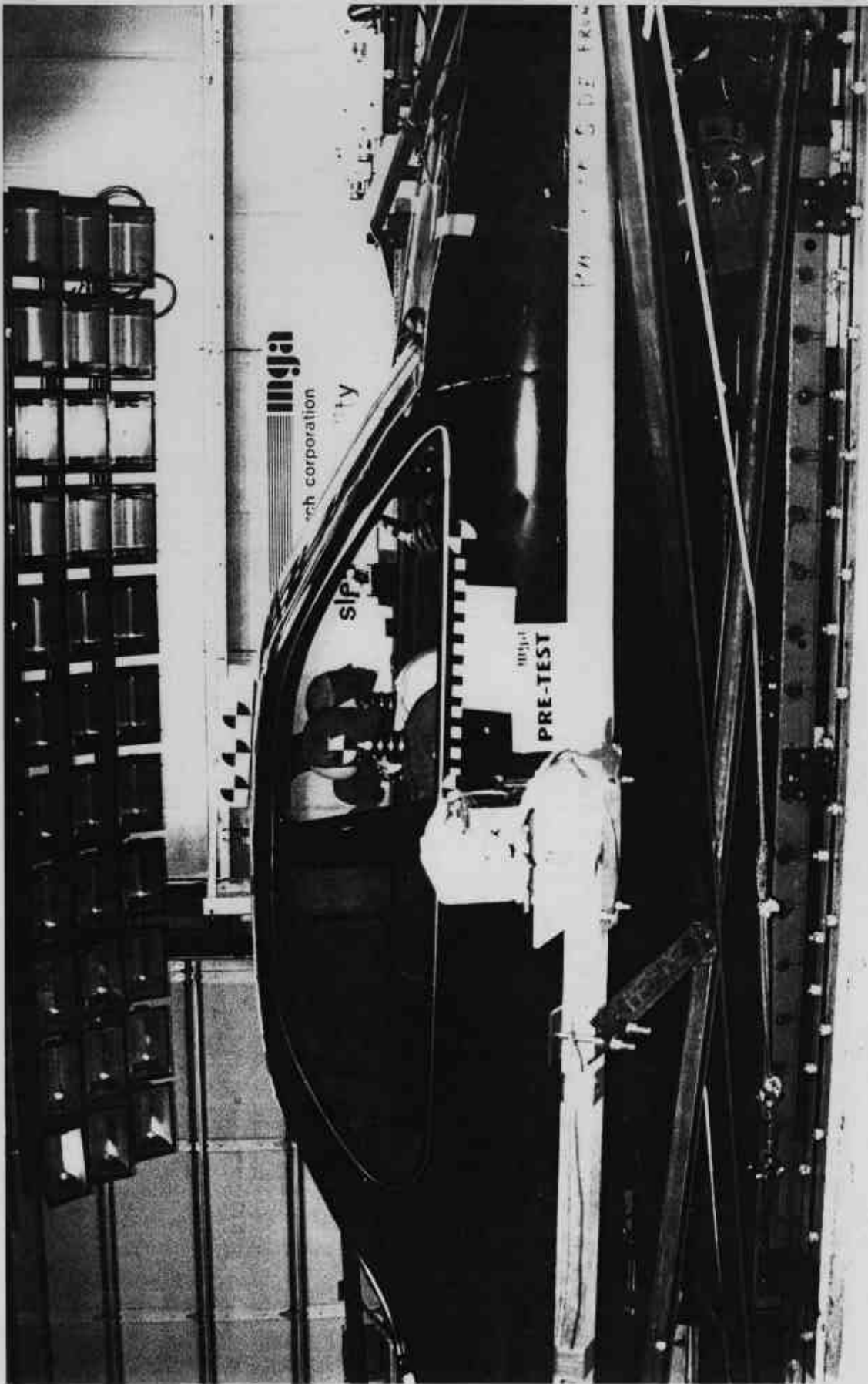


Photo No. A-3 - Pre-Test Right Side View

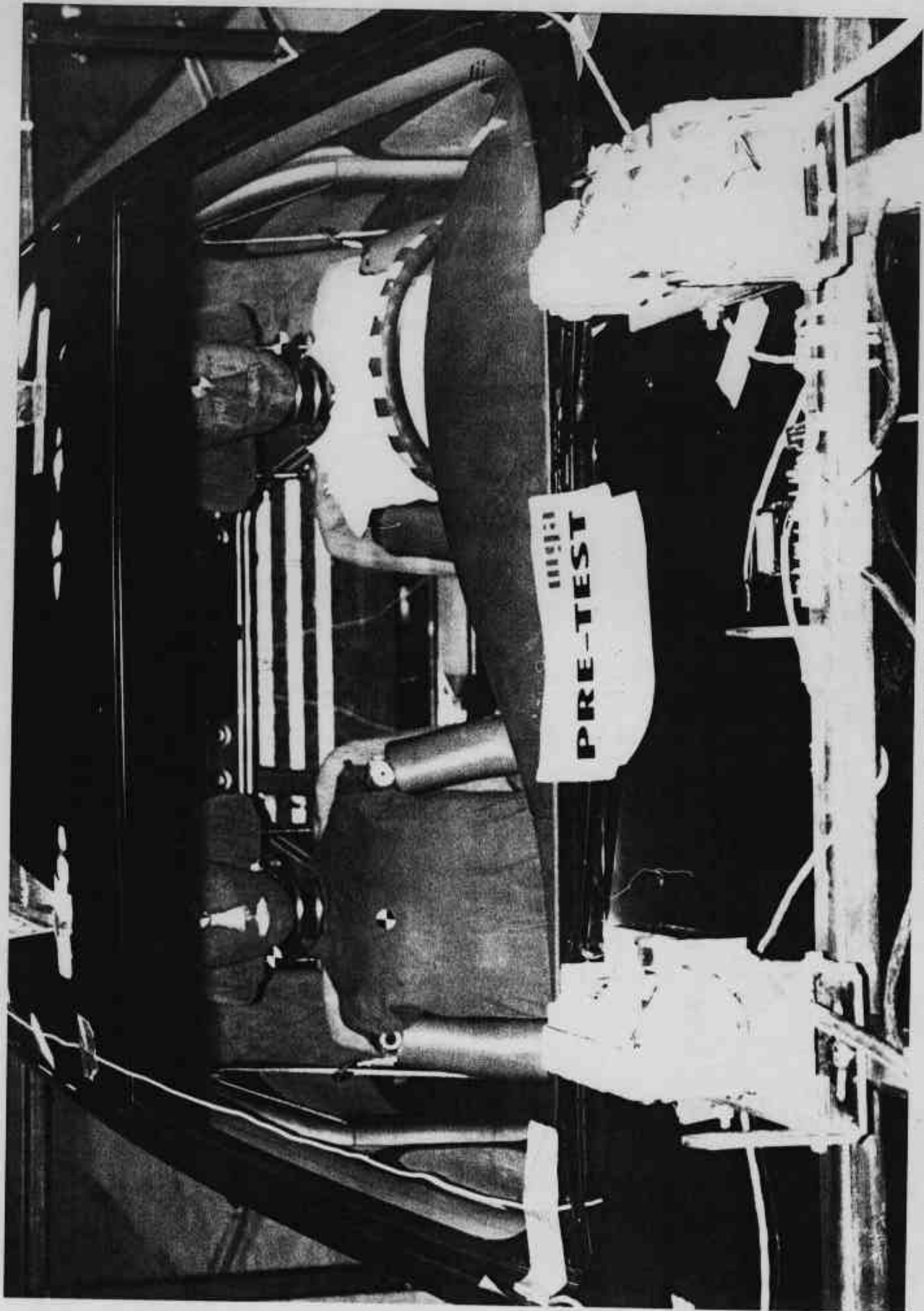


Photo No. A-4 - Pre-Test Windshield View

A-4

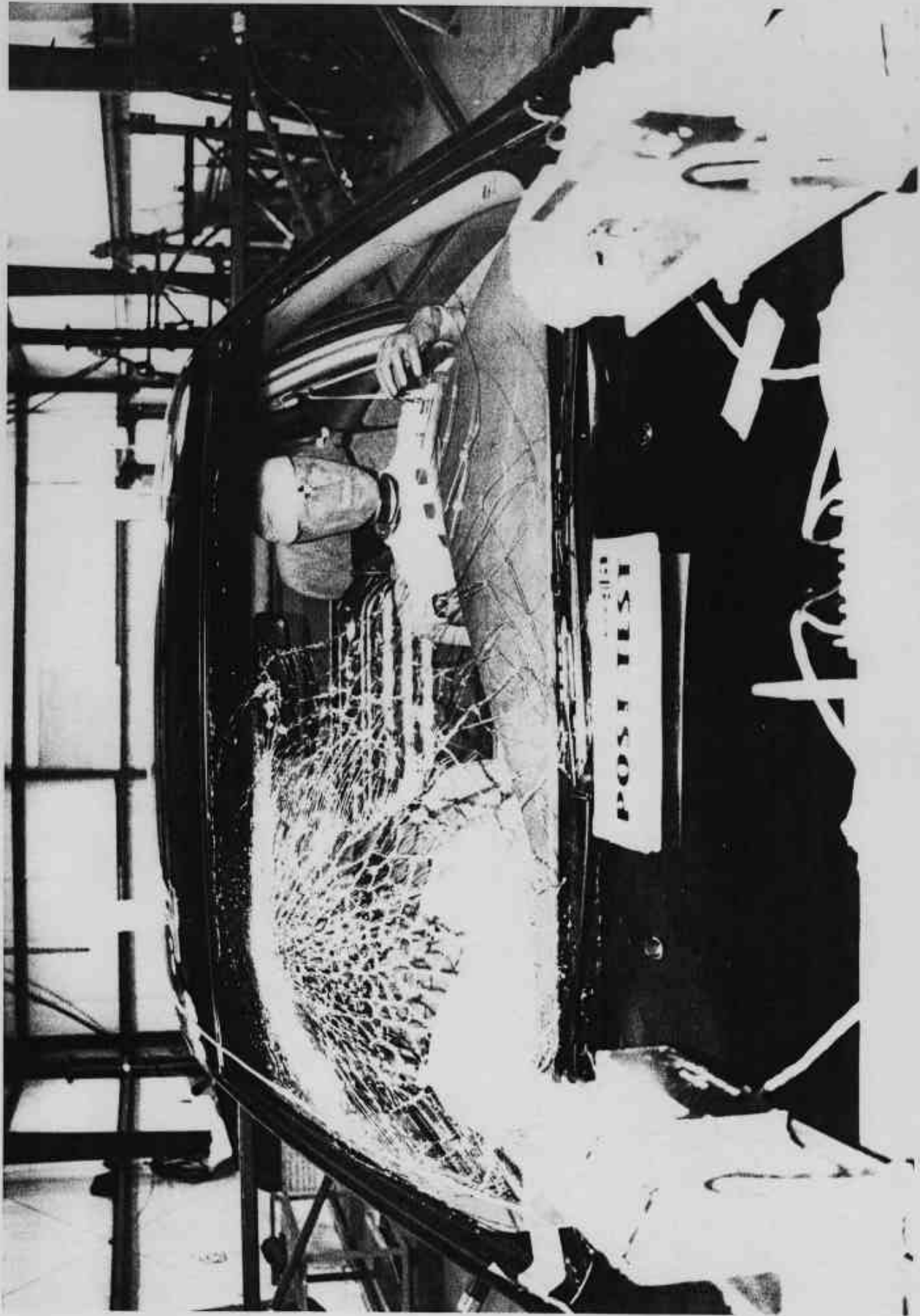


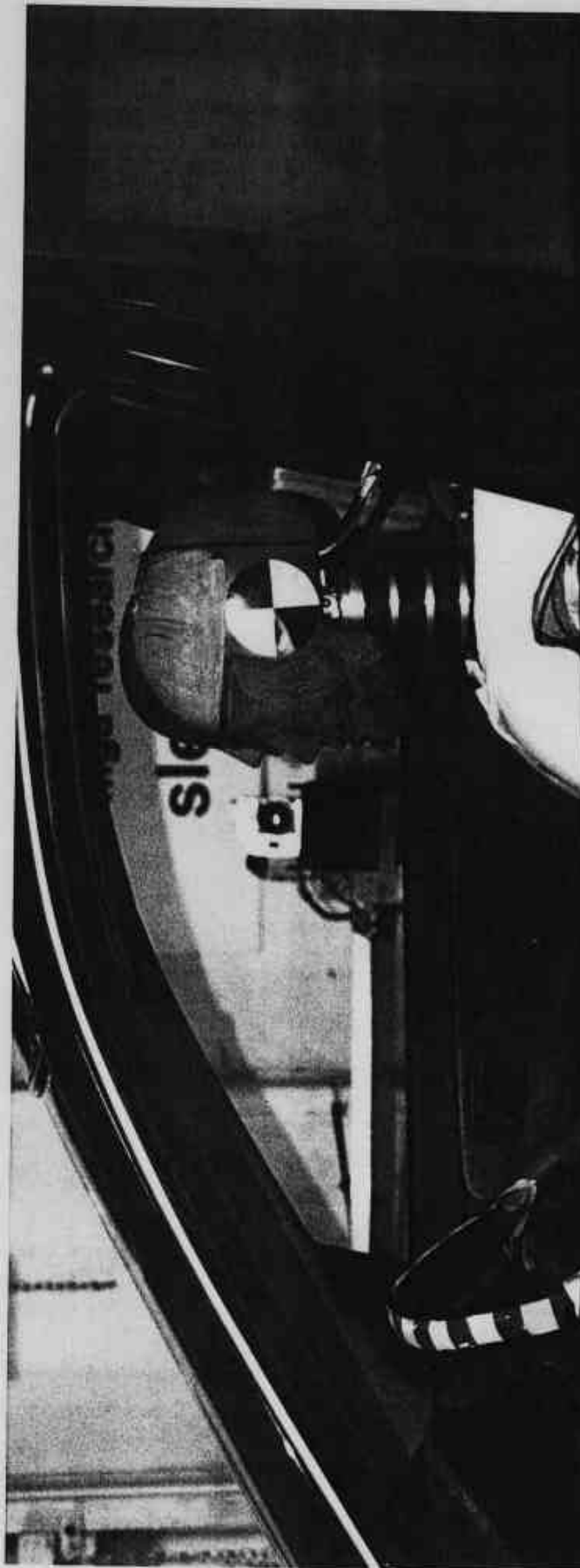
Photo No. A-5 - Post-Test Windshield View



Photo No. A-6 - Pre-Test Driver Dummy Position View (Door Open)



Photo No. A-7 - Post-Test Driver Dummy Position View (Door Open)



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PRE-TEST

FMVSS 208 SLED TEST
1999 NISSAN ALTIMA
CX5200

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JANUARY 12 1999

FMVSS 208 SLED TEST
1999 NISSAN ALTIMA
CX5200
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Photo No. A-8 - Pre-Test Driver Dummy Position View

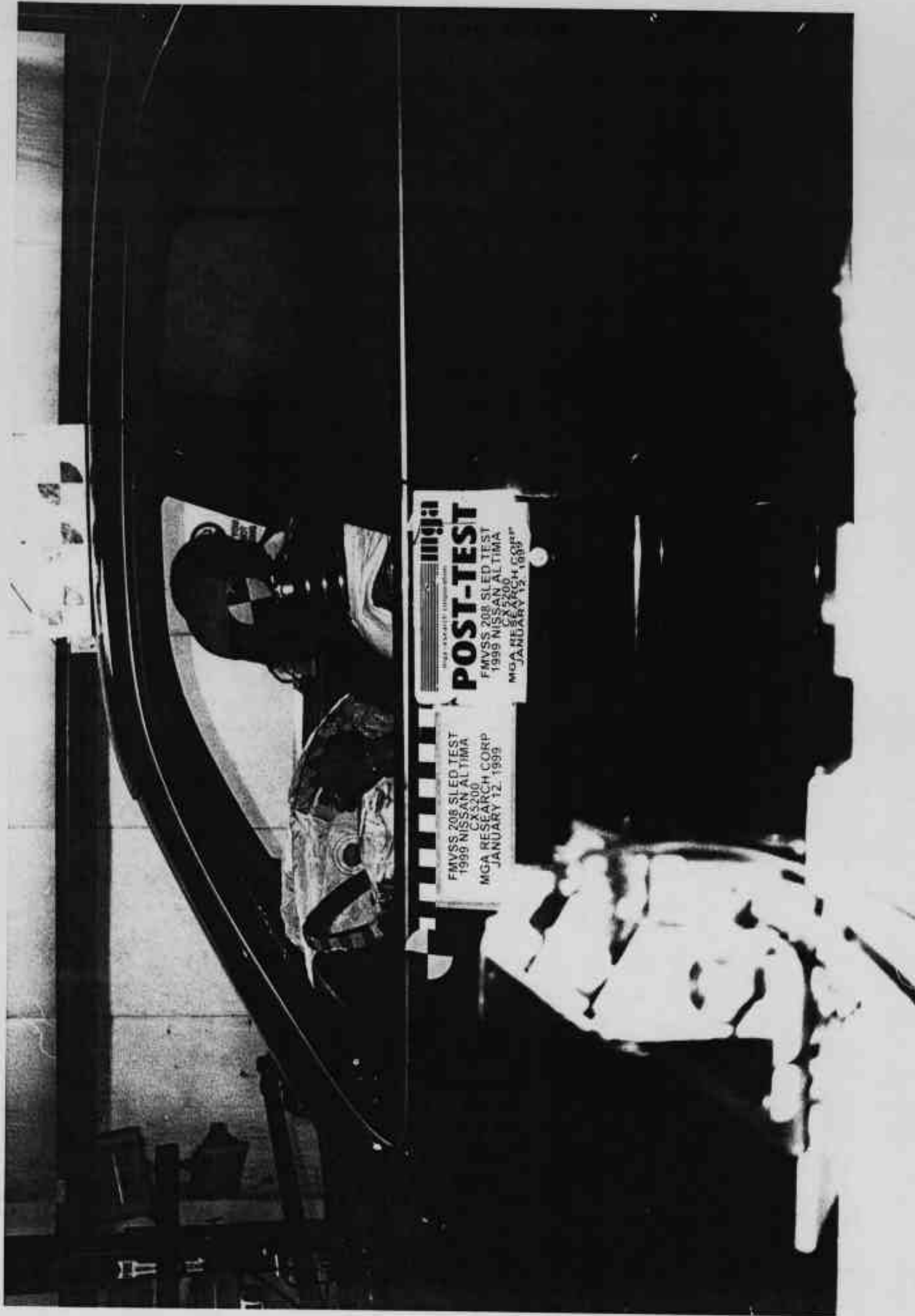


Photo No. A-9 - Post-Test Driver Dummy Position View



Photo No. A-10 - Pre-Test Passenger Dummy Position View (Door Open)



Photo No. A-11 - Post-Test Passenger Dummy Position View (Door Open)



Photo No. A-12 - Pre-Test Passenger Dummy Position View



FMVSS 208 SLED TEST
POST-TEST
1999 NISSAN ALTIMA
CX5200
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POST-TEST
1999 NISSAN ALTIMA
CX5200
MGA RESEARCH CORP
JANUARY 12, 1999

Photo No. A-13 - Post-Test Passenger Dummy Position View

- TEST
SLED TEST
AN ALTIMA
5200
RESEARCH CORP.
JARY 12, 1999



Photo No. A-14 - Post-Test Driver Airbag View



Photo No. A-15 - Post-Test Passenger Dummy Airbag View



Photo No. A-16 - Post-Test Passenger Dummy Head Contact View (windshield)

Photo No. A-17 - Post-Test Passenger Dummy Head Contact View (visor)





mga research corporation

PRE-TEST

FMVSS 208 SLED TEST
1999 NISSAN ALTIMA
CX5200

MCA RESEARCH CORP.
JANUARY 12 1999

Photo No. A-18 - Pre-Test Driver Knee Bolster View



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mga research corporation

POST-TEST

FMVSS 208 SLED TEST
1999 NISSAN ALTIMA
CX5200

MGA RESEARCH CORP
JANESVILLE, WI

Photo No. A-19 - Post-Test Driver Knee Bolster View






mga research corporation

PRE-TEST

FMVSS 208 SLED TEST
1999 NISSAN ALTIMA
CX5200

MGA RESEARCH CORP.
JANUARY 12 1999

Photo No. A-20 - Pre-Test Passenger Knee Bolster View

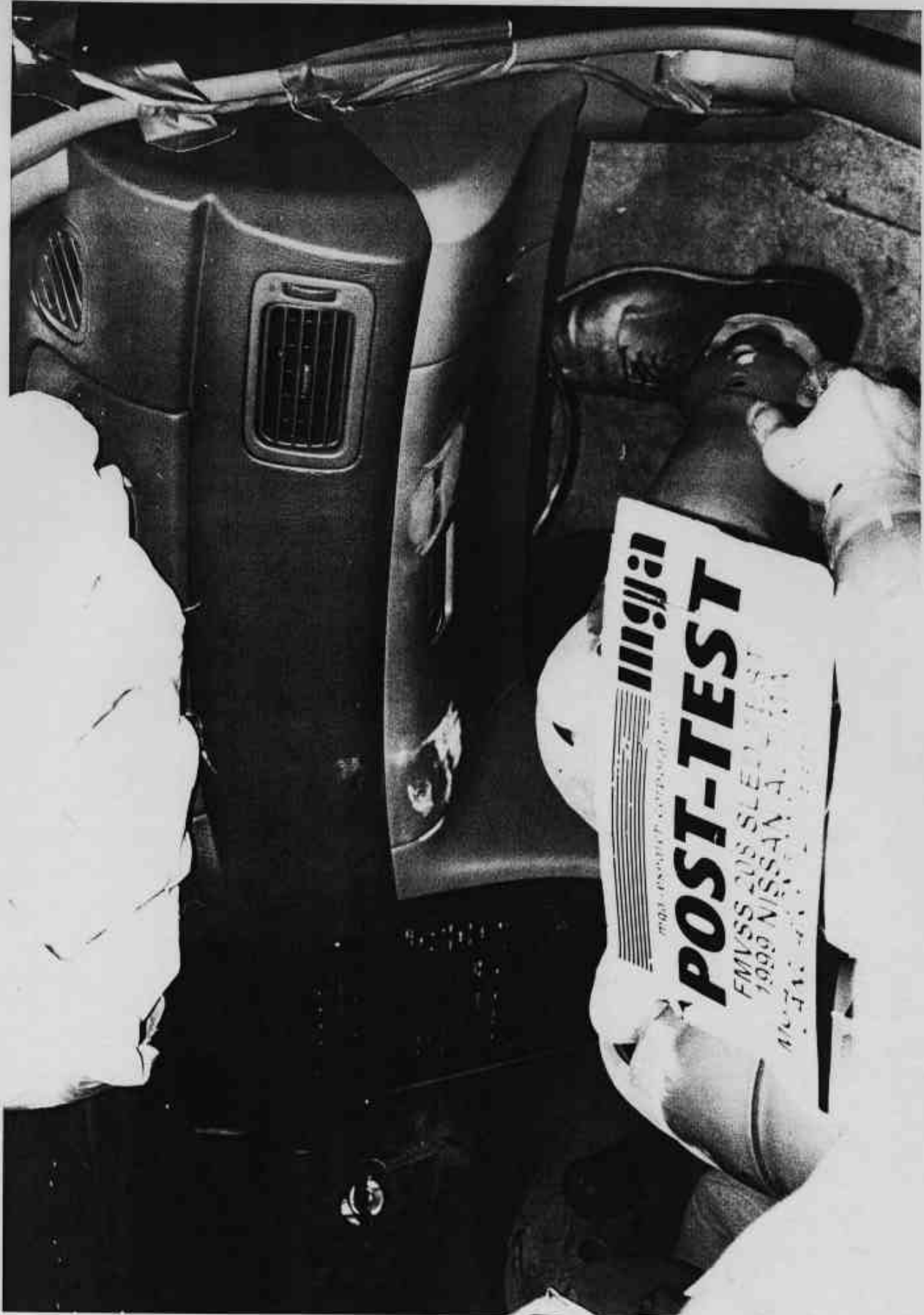


Photo No. A-21 - Post-Test Passenger Knee Bolster View

MANUFACTURED BY NISSAN MOTOR CO., LTD.
DATE 10/98 GVWR 3990 LB
GVWR FR. 2152 LB GVWR RR. 1863 LB

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR
VEHICLE SAFETY, BUMPER AND THEFT PREVENTION STANDARDS
IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.
SEE OWNERS MANUAL FOR ADDITIONAL INFORMATION.

VIN: 1N4DL01D2XC142469 PASSENGER CAR
COLOR TRIM TRANS AXLE ENGINE
KH3 K R55F50R FG36 K24DE 2395CC
MODEL: BB6RLBF-EUR 151 82000



1N4DL01D2XC142469

VEHICLE CAPACITY WEIGHT POIDS UTILE DU VEHICULE	390kg 860 lbs.	SEATING CAPACITY NOMBRE DE PLACES	FRONT 2 AVANT	REAR 3 ARRIERE	TOTAL TOTAL	5	SPARE TIRE ROUE DE SECOURS	T125/70D15	kPa	420	PSI	40											
RECOMMENDED COLD TIRE INFLATION PRESSURE PRESSION DE GONFLAGE RECOMMANDEE DES PNEUS FROIDS.																							
TIRE SIZE DIMENSIONS						FRONT AVANT																	
P195/65R15						210 kPa						30 psi											
						REAR ARRIERE						200 kPa						29 psi					
DO NOT USE IN EXCESS OF 50 MPH, 80 km/h. SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION. UTILISATION A UNE VITESSE MAX 50 MPH, 80 km/h. POUR LES DETAILS SE REFERER AU MANUEL DU CONDUCTEUR.																							
9E003																							

Photo No. A-23 - FMVSS 110 Label

APPENDIX B
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TEST: FMVSS 208 SLED TEST TEST DATE: 01-12-1999

COMPONENT: 1999 NISSAN ALTIMA CX5200

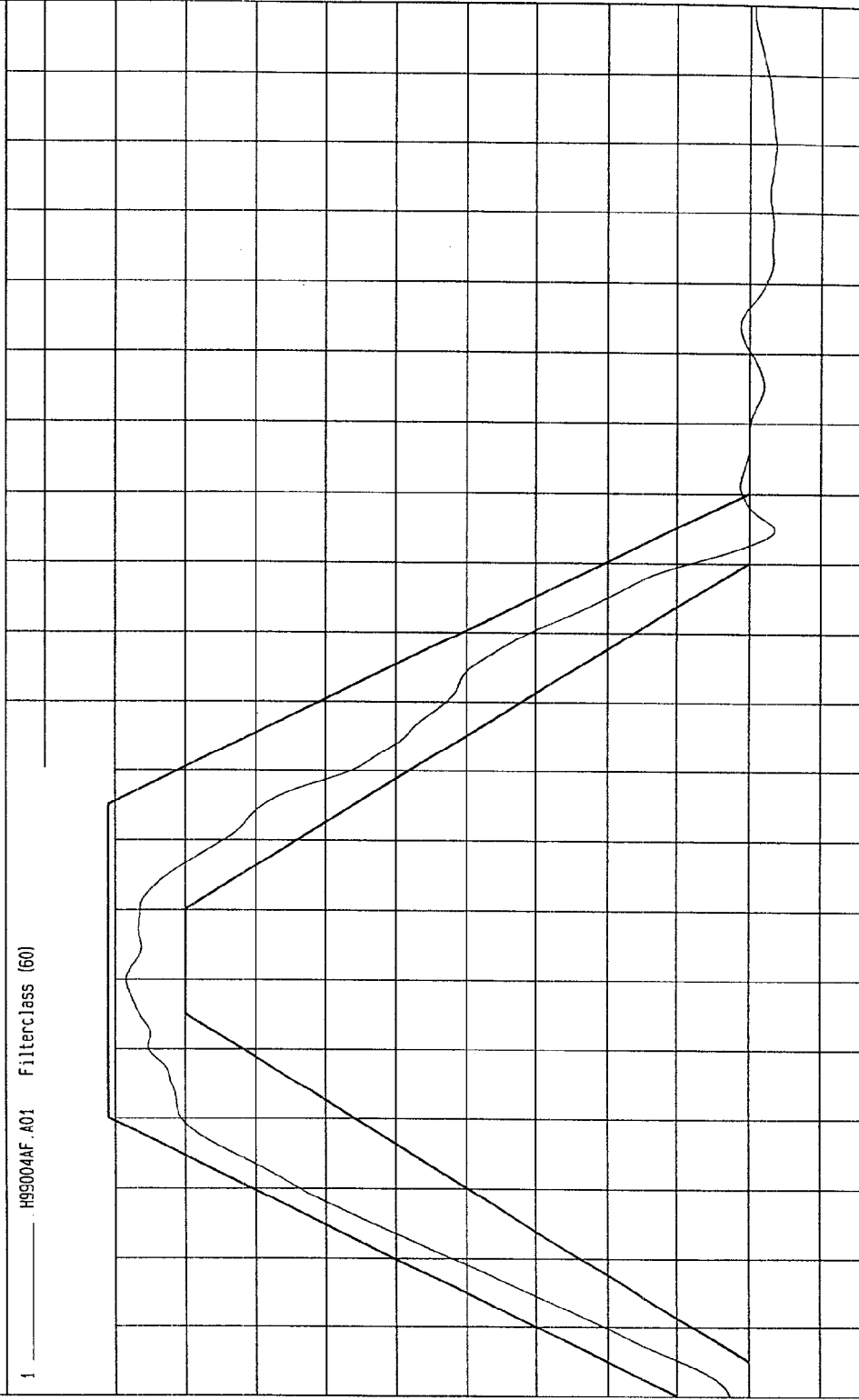
Minimum = -.74 G'S at 179.7 msec

Maximum = 17.69 G'S at 59.9 msec

SLED ACCELERATION

1 ——— H99004AF.A01 Filterclass (60)

G.S



TIME (SECONDS)

NSA Research
01-12-1999 13:53

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

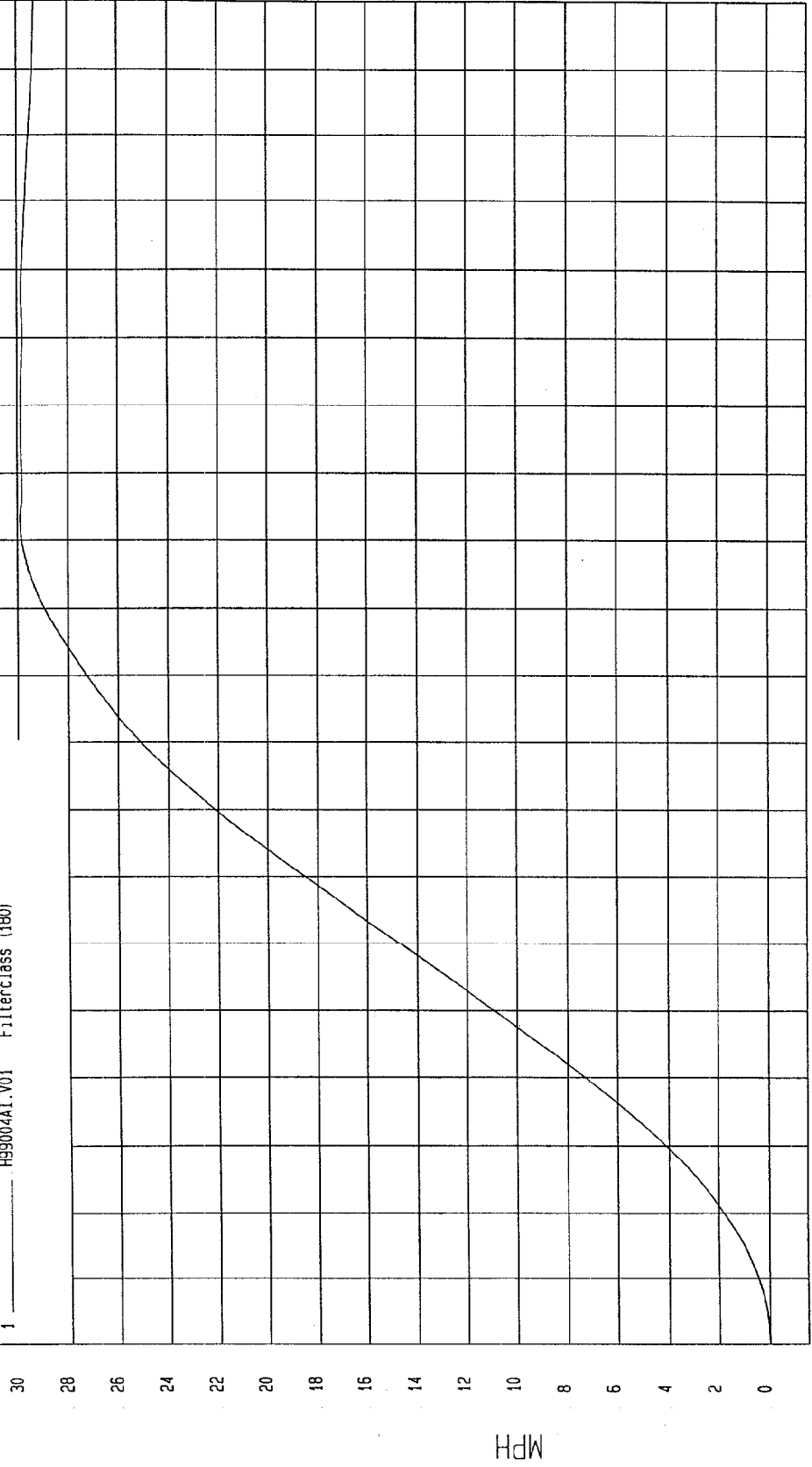
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN= 0 MPH at 9.9 msec

YMAX= 29.89274 MPH at 123 msec

SLED X VELOCITY

1 H99004AI.V01 Filterclass (180)



M&A Research
01-12-1999 13:52

TIME Seconds

MPH

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

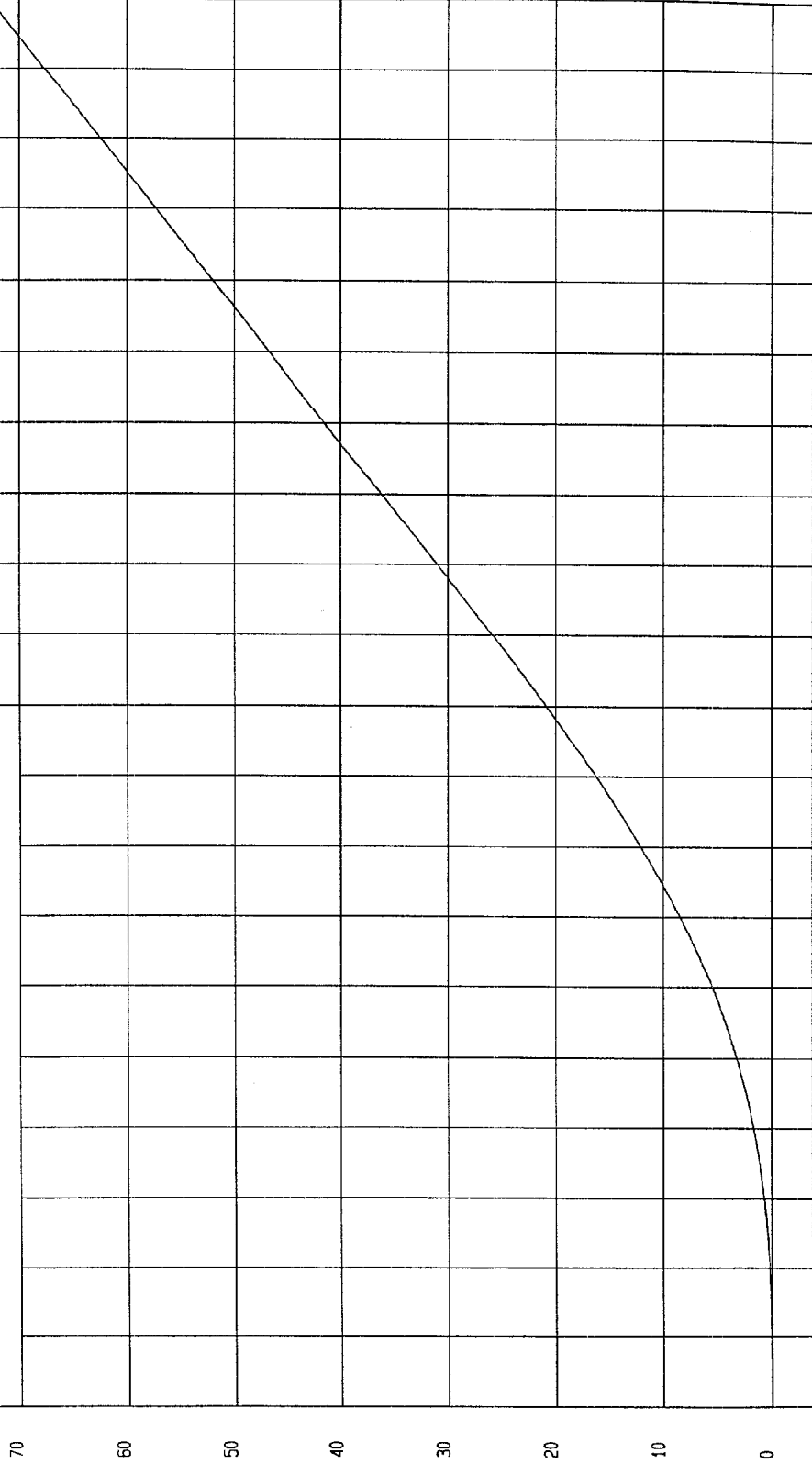
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN= 0 IN at 9.9 msec

YMAX= 72.80431 IN at 200 msec

SLED X DISPLACEMENT

1 _____ H99004A1.001 Filterclass (f80)



WCA Research
01-12-1999 13:52

NI

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

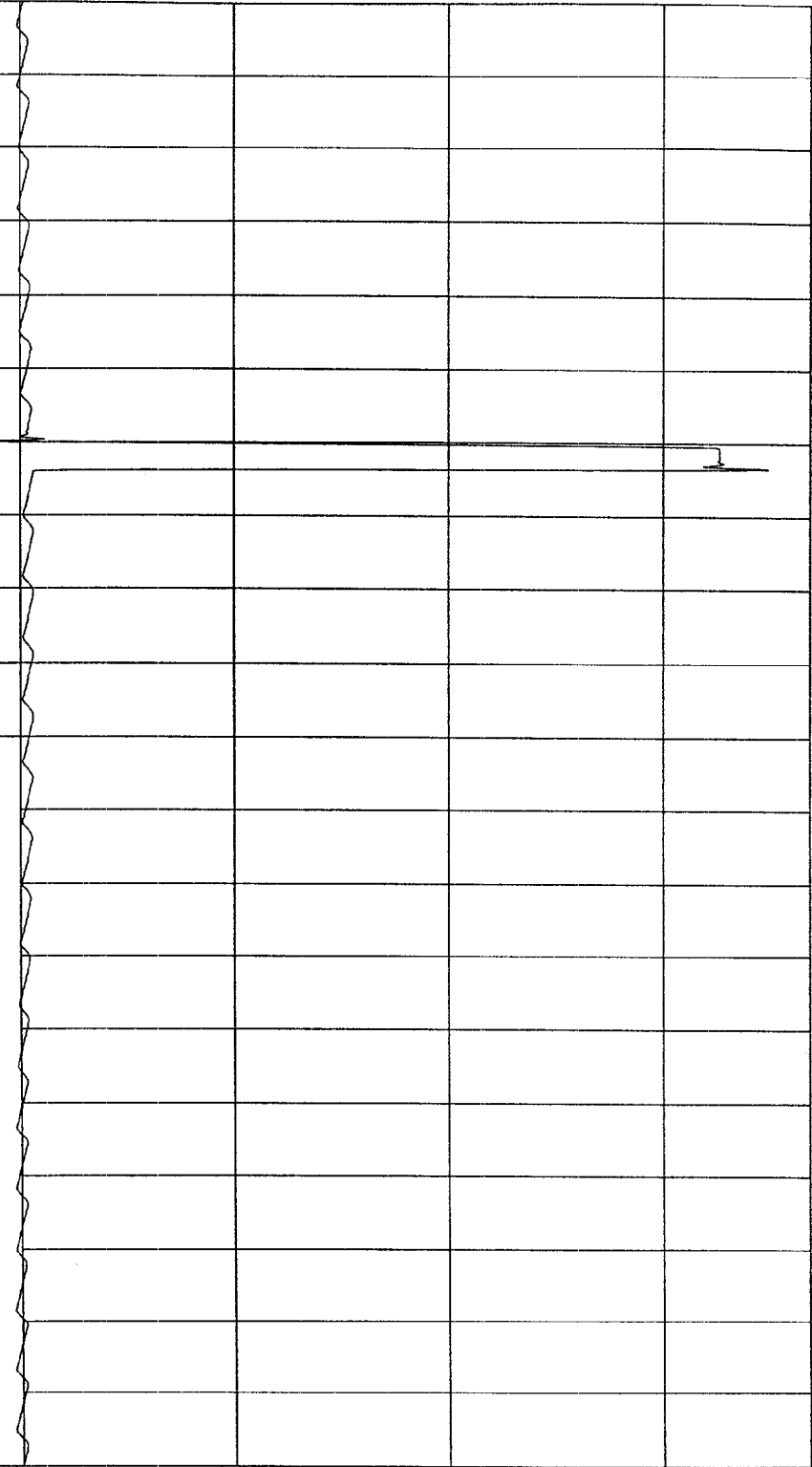
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-3.481544 VOLTS at 136 msec

YMAX= .319726 VOLTS at 140 msec

1 METER

1 _____ H990040T.010 Filterclass (1000)



TIME (SECONDS)

0.19
0.18
0.17
0.16
0.15
0.14
0.13
0.12
0.11
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01

WCA Research
01-12-1999 14:01

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

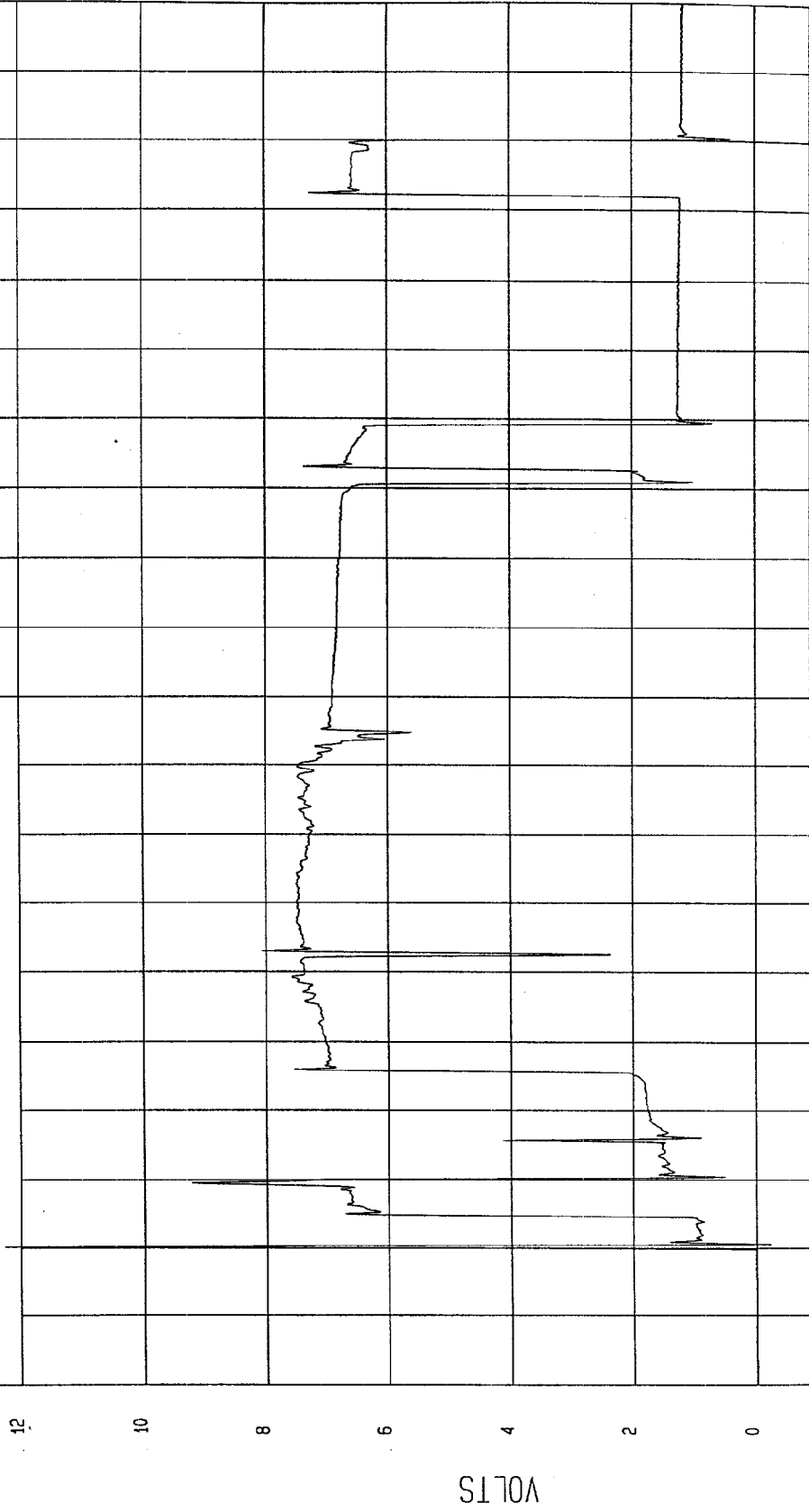
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMAX= 12.26592 VOLTS at 20. msec

YMIN=-.2311518 VOLTS at 20. msec

AIRBAG TIMING

1 H99004VT.V79 Filterclass (f000)



MGA Research
01-12-1999 13:55

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

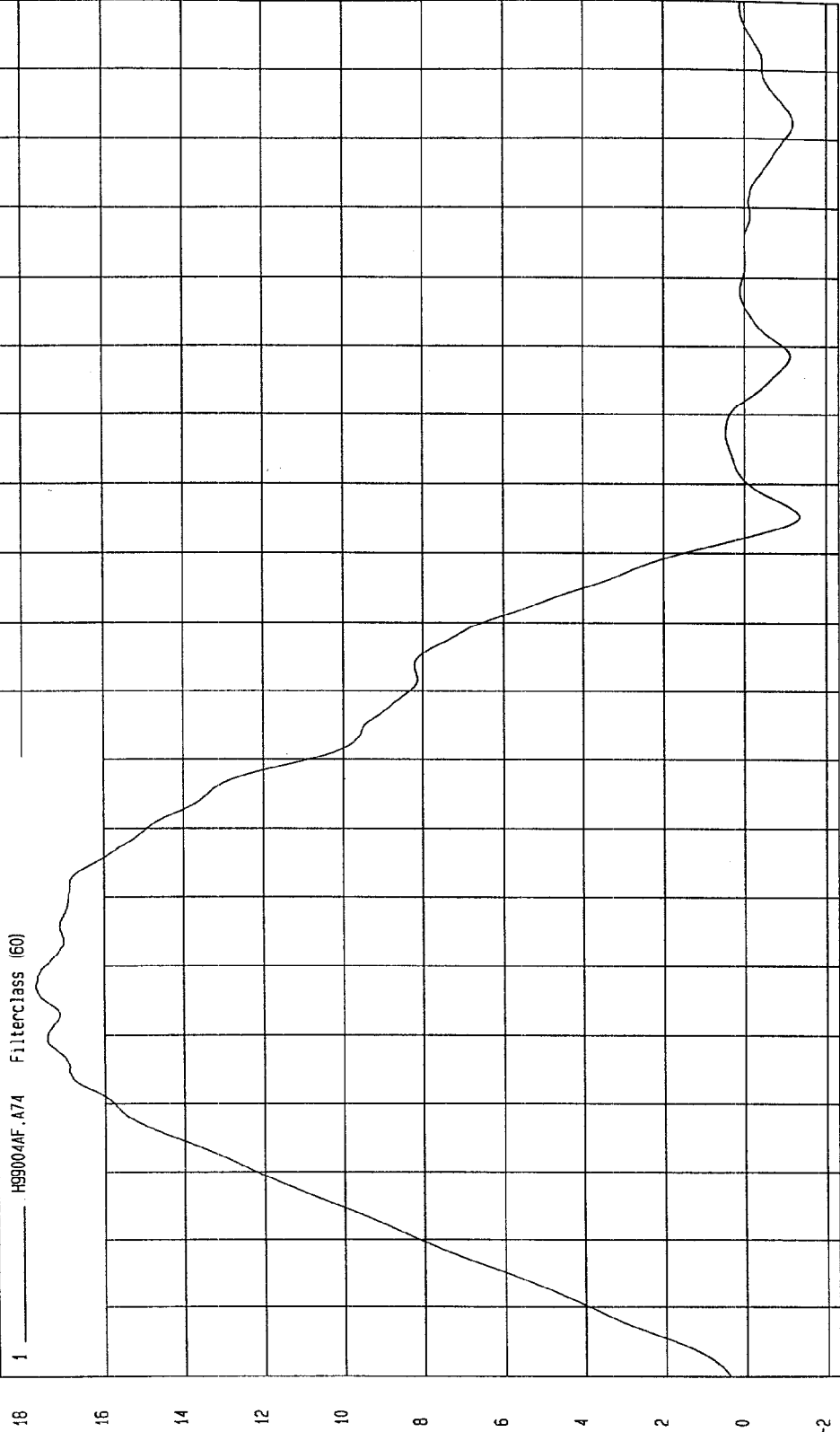
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-1.35568 G'S at 125 msec

YMAX= 17.66408 G'S at 57 msec

REAR SEAT CROSSMEMBER @ LEFT SIDE X ACCELERATION

1 H99004F.A74 Filterclass (60)



MGA Research
01-13-1999 09:22

TIME (SECONDS)

G.S

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

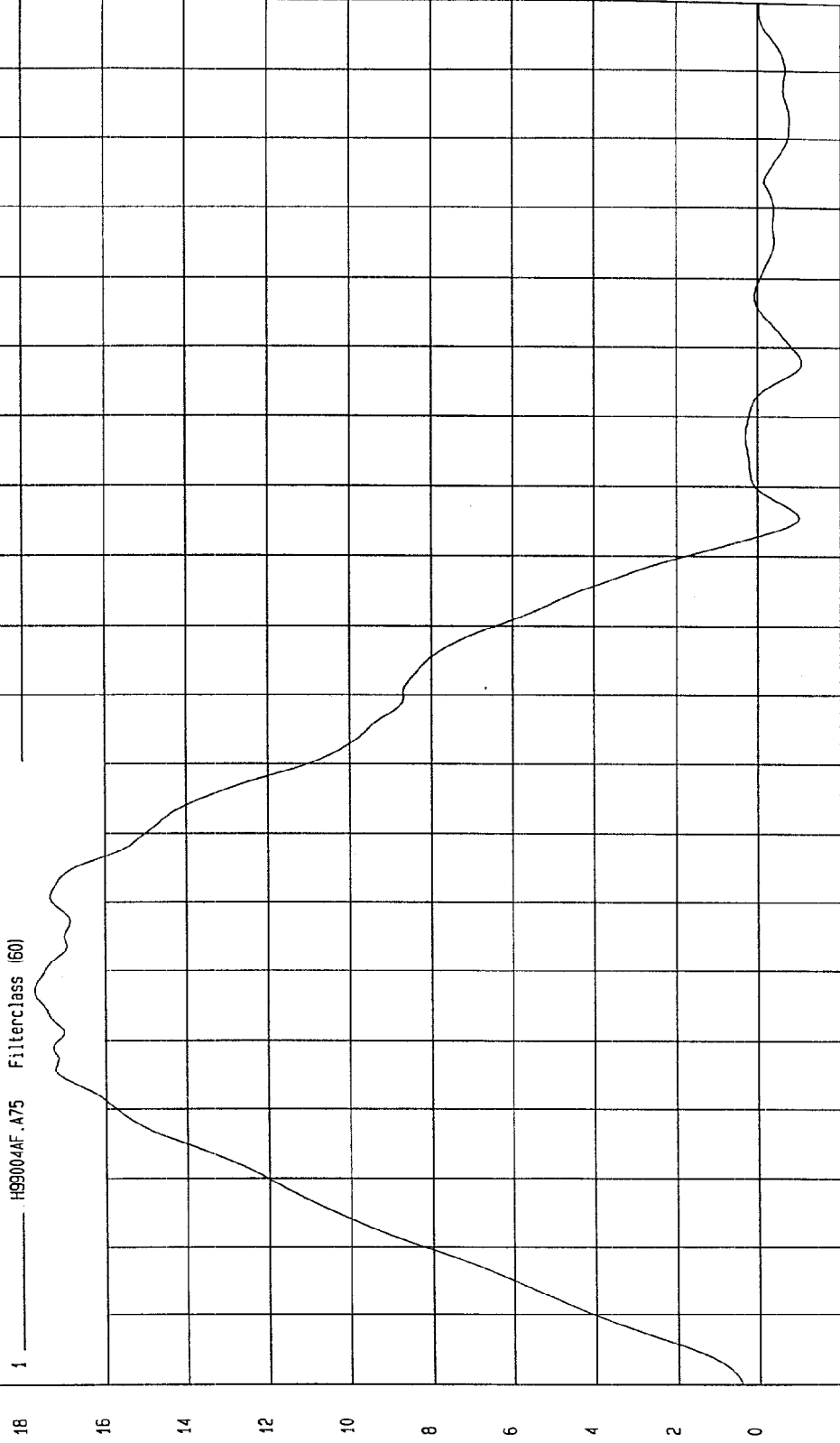
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-1.054761 G'S at 147 msec

YMAX= 17.72189 G'S at 57. msec

REAR SEAT CROSSMEMBER @ RIGHT SIDE X ACCELERATION

1 H99004F.A75 Filterclass (60)



MGA Research
01-13-1999 09:22

TIME (SECONDS)

G'S

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

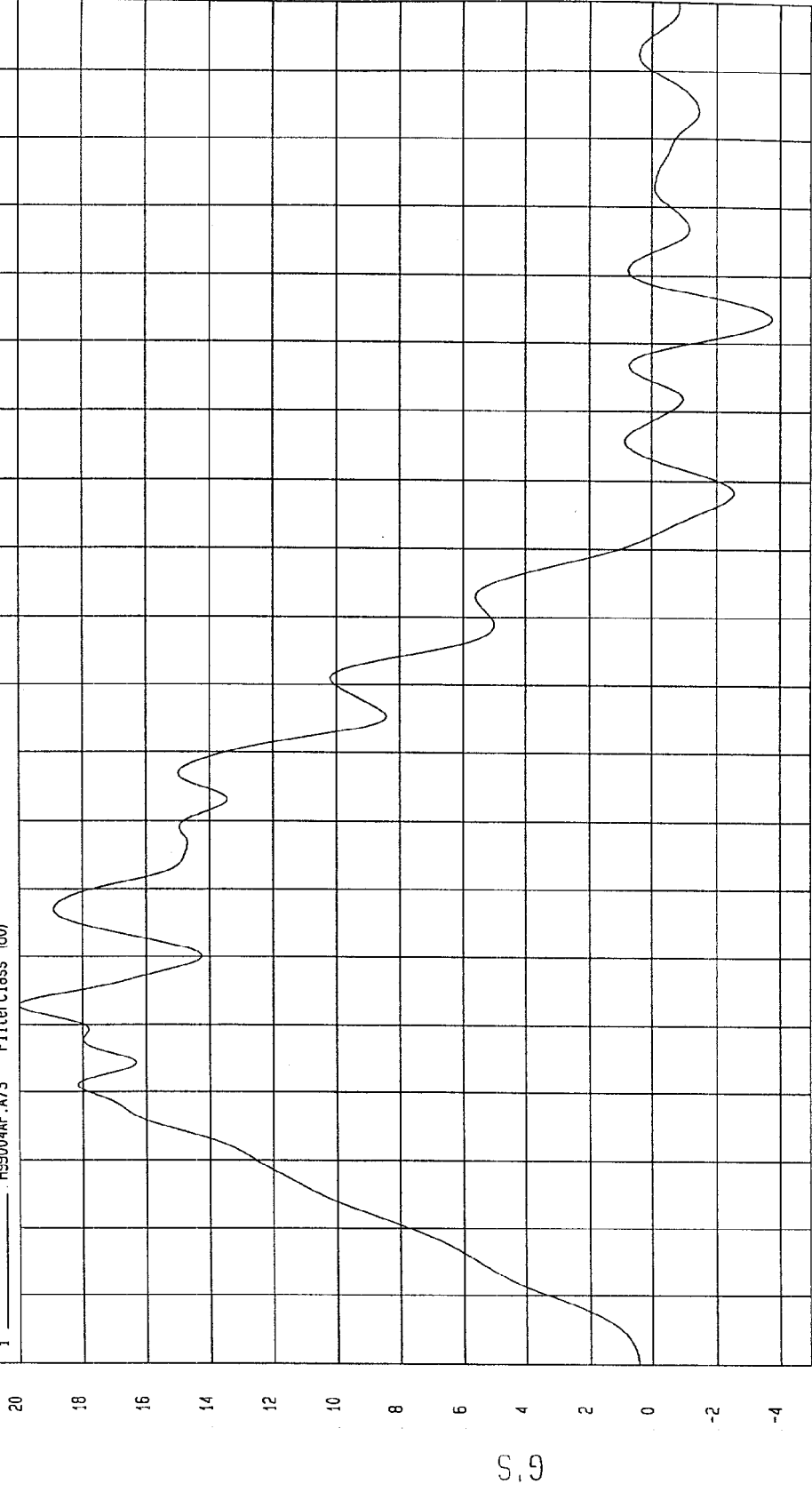
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-3.745453 G'S at 153 msec

YMAX= 20.01516 G'S at 52. msec

TOP OF ENGINE X ACCELERATION

1 H99004F.A73 Filterclass (60)



MCA Research
01-13-1999 09:22

TIME (SECONDS)

G'S

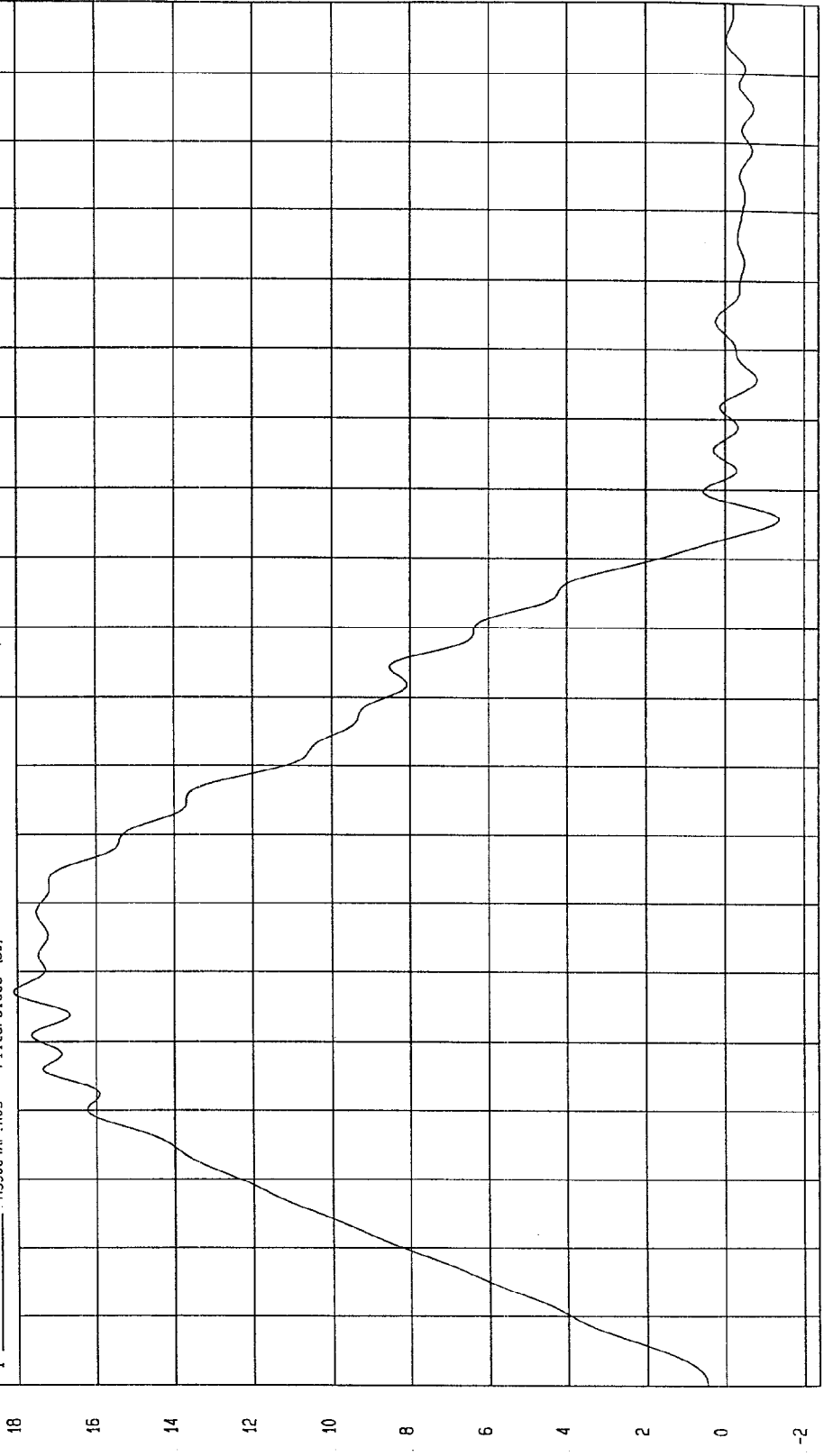
TEST: FMVSS 208 SLED TEST TEST DATE: 01-12-1999

COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-1.378013 G'S at 125 msec YMAX= 18.08864 G'S at 57. msec

VEHICLE REAR AXLE X ACCELERATION

1 H99004AF.A09 Filterclass (60)



NSA Research Co.
01-13-1999 09:22

G.S

TIME (SECONDS)

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-71.22381 G'S at 104 msec

YMAX= 1.351942 G'S at 54. msec

DRIVER HEAD X ACCELERATION



MCA Research
01-12-1999 13:39

TIME (SECONDS)

G'S

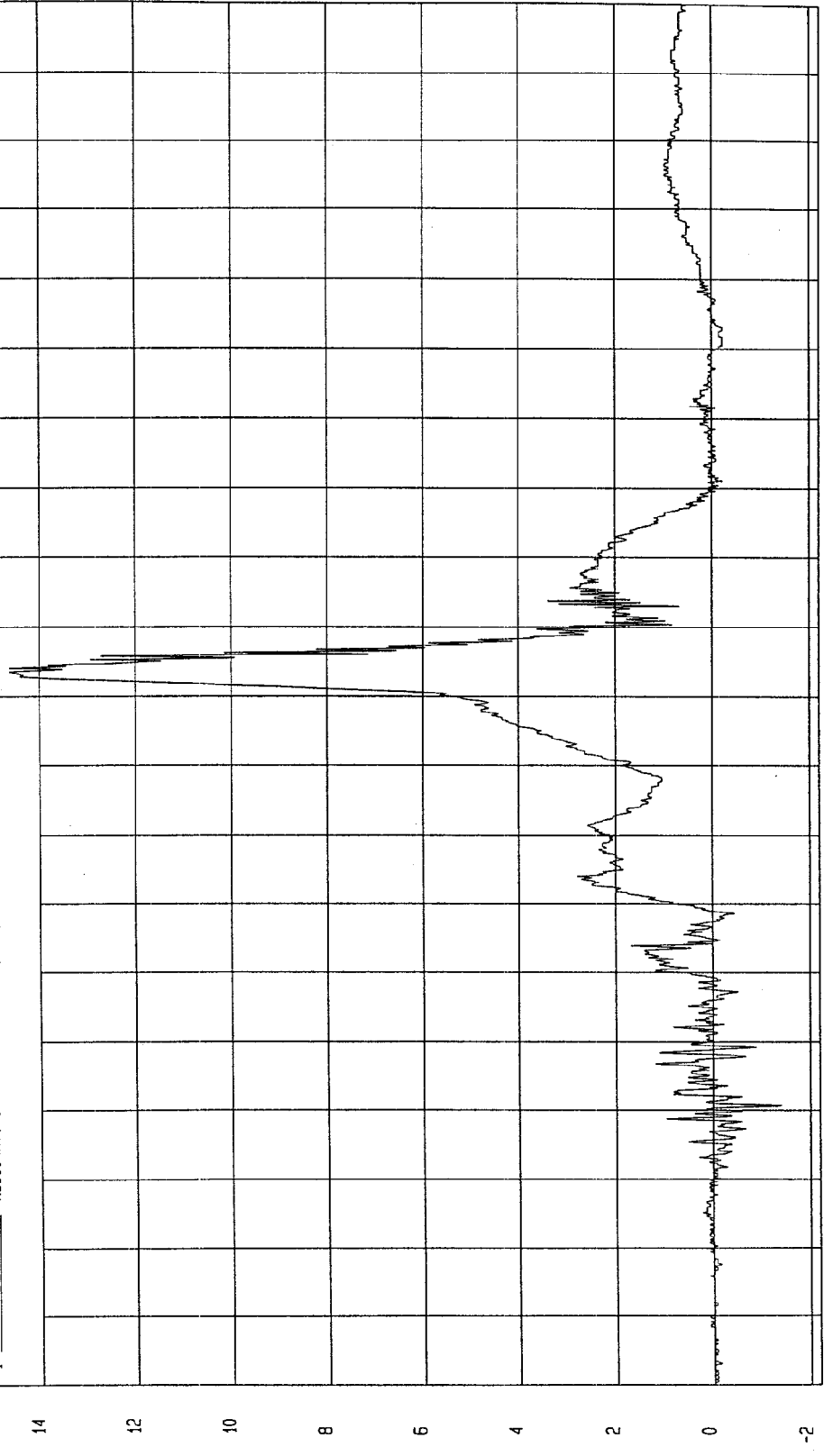
TEST: FMVSS 208 SLED TEST TEST DATE: 01-12-1999

COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-1.393584 G'S at 40. msec YMAX= 14.63004 G'S at 103 msec

DRIVER HEAD Y ACCELERATION

1 H99004AT.A04 Filterclass (1000)



MGA Research
01-12-1999 13:40

TIME (SECONDS)

G.S

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

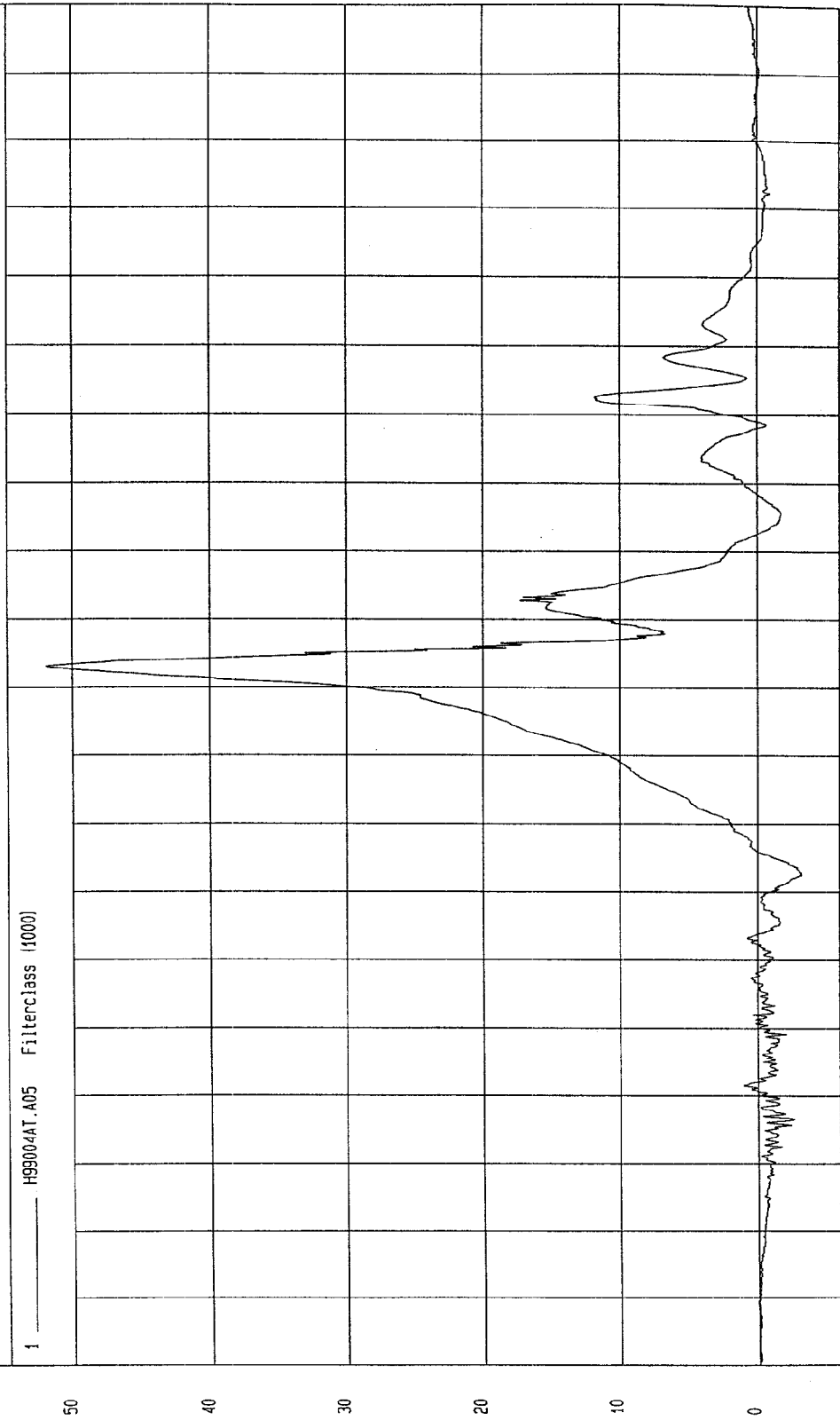
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-3.183472 G'S at 72. msec

YMAX= 51.85449 G'S at 103 msec

DRIVER HEAD Z ACCELERATION

1 _____ H93004AT.A05 Filterclass (1000)



NGA Research
01-12-1999 13.40

TIME (SECONDS)

G.S

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

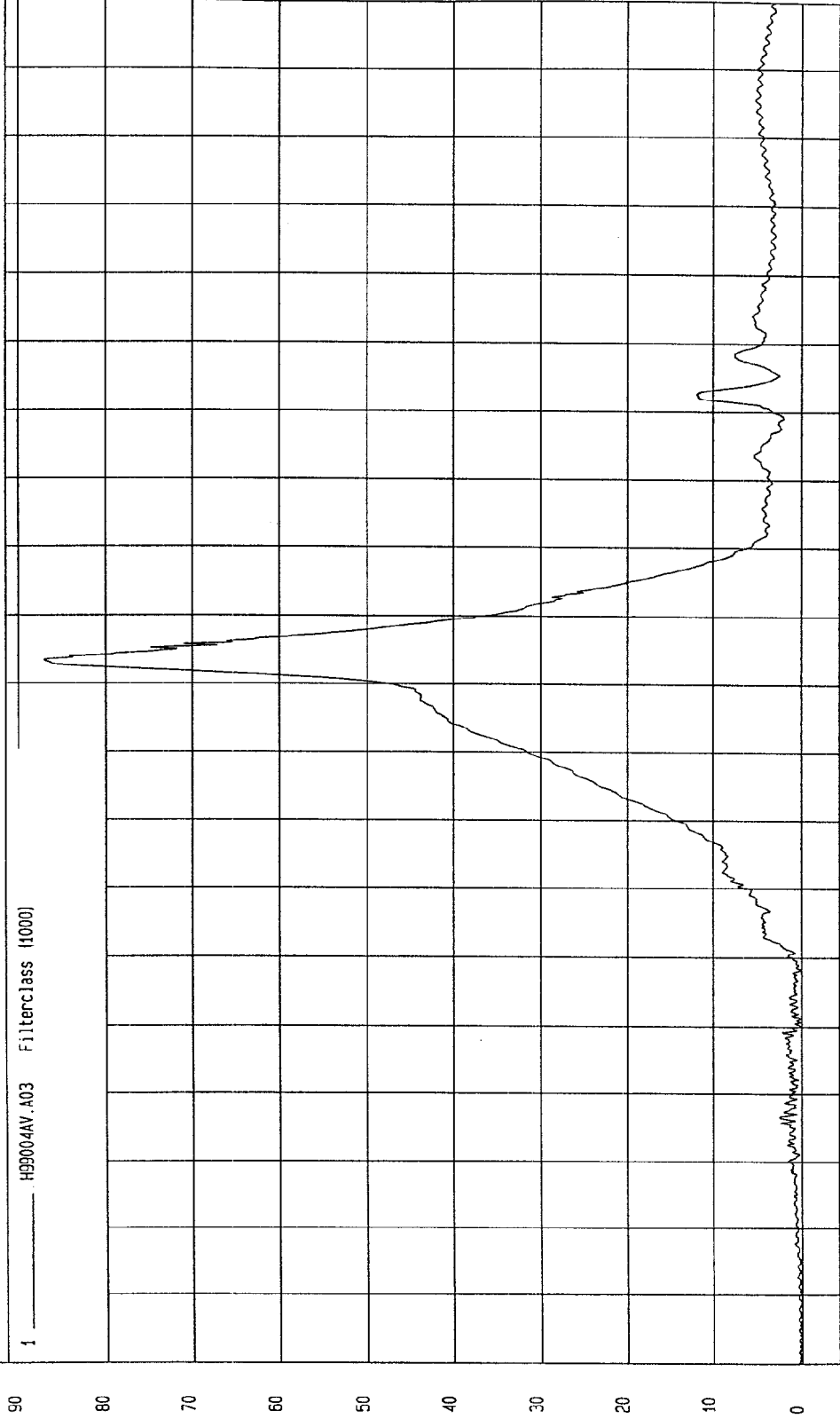
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN= .041263 G'S at 2.2 msec

YMAX= 87.08031 G'S at 103 msec

DRIVER HEAD RESULTANT ACCELERATION

1 ——— H99004AV.A03 Filterclass (1000)



MGA Research
01-12-1999 13.40

TIME (SECONDS)

G'S

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

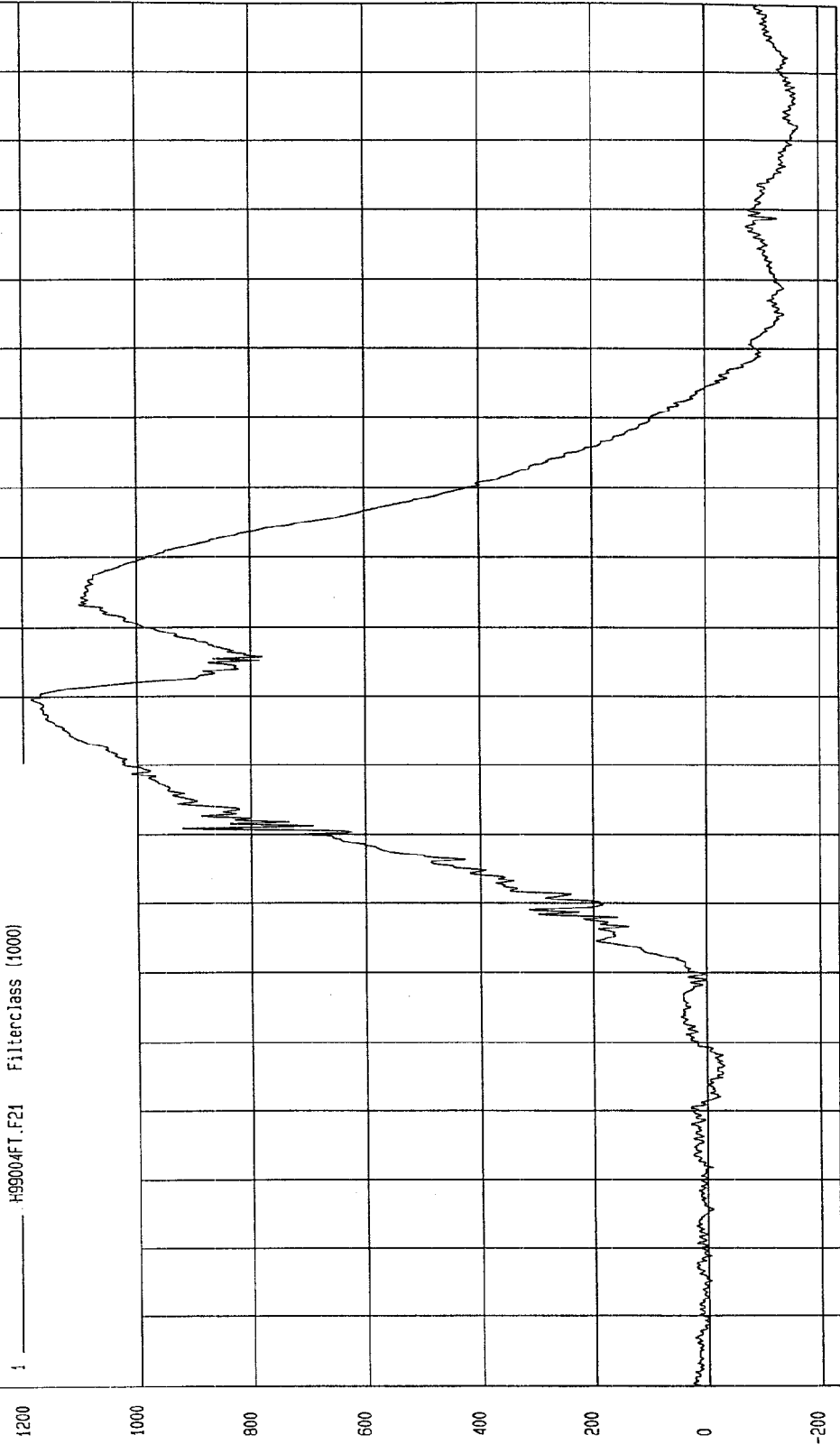
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-164.4172 N at 181 msec

YMAX= 1186.083 N at 99. msec

DRIVER NECK FORCE X

1 ——— H99004FT.F21 Filterclass (1000)



MCA Research
01-12-1999 13:40

TIME (SECONDS)

N

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

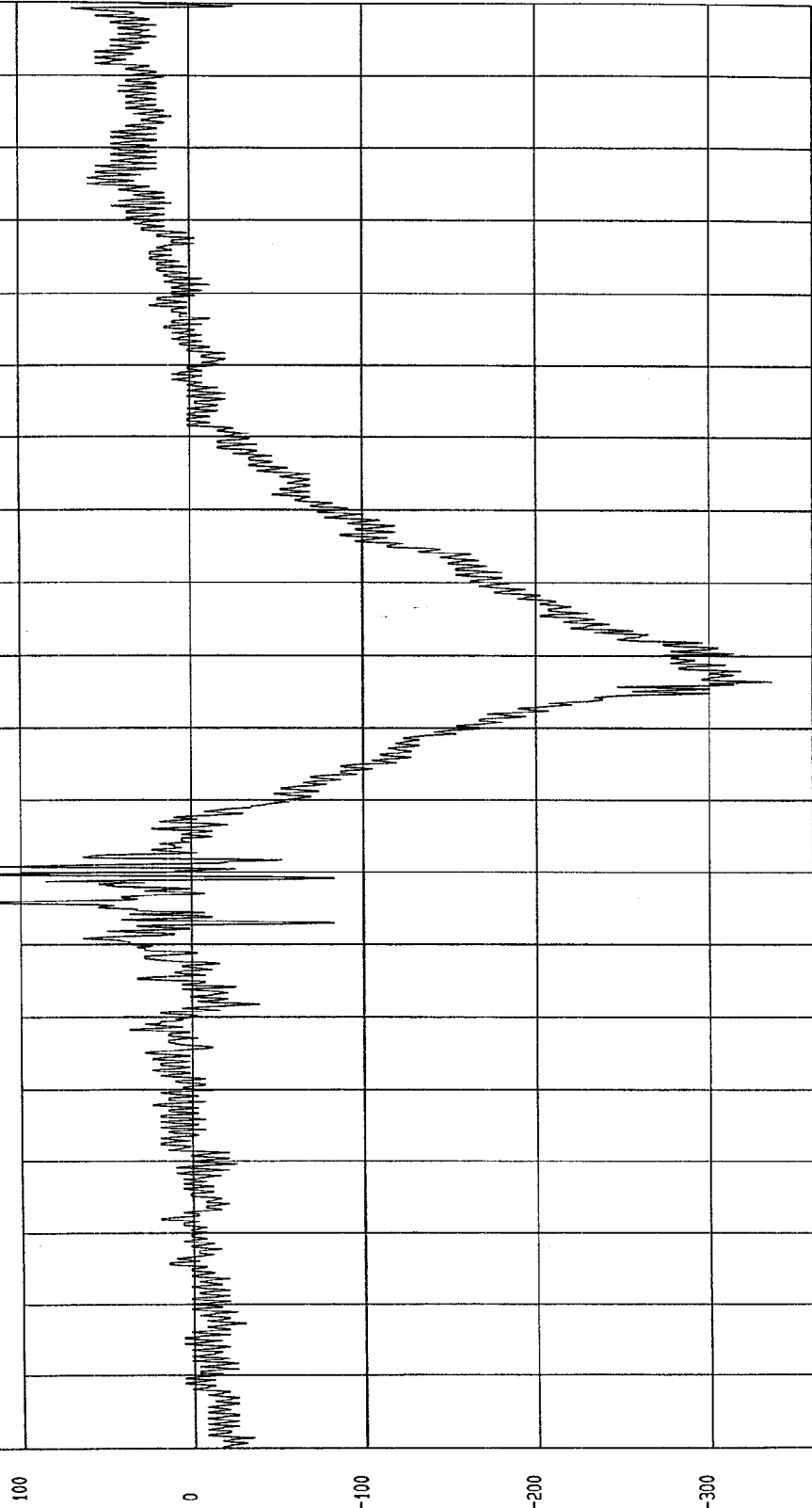
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-335.8936 N at 106 msec

YMAX=130.0898 N at 79. msec

DRIVER NECK FORCE Y

1 H99004FT.F22 Filterclass (1000)



MOA Research
01-12-1999 13:40

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

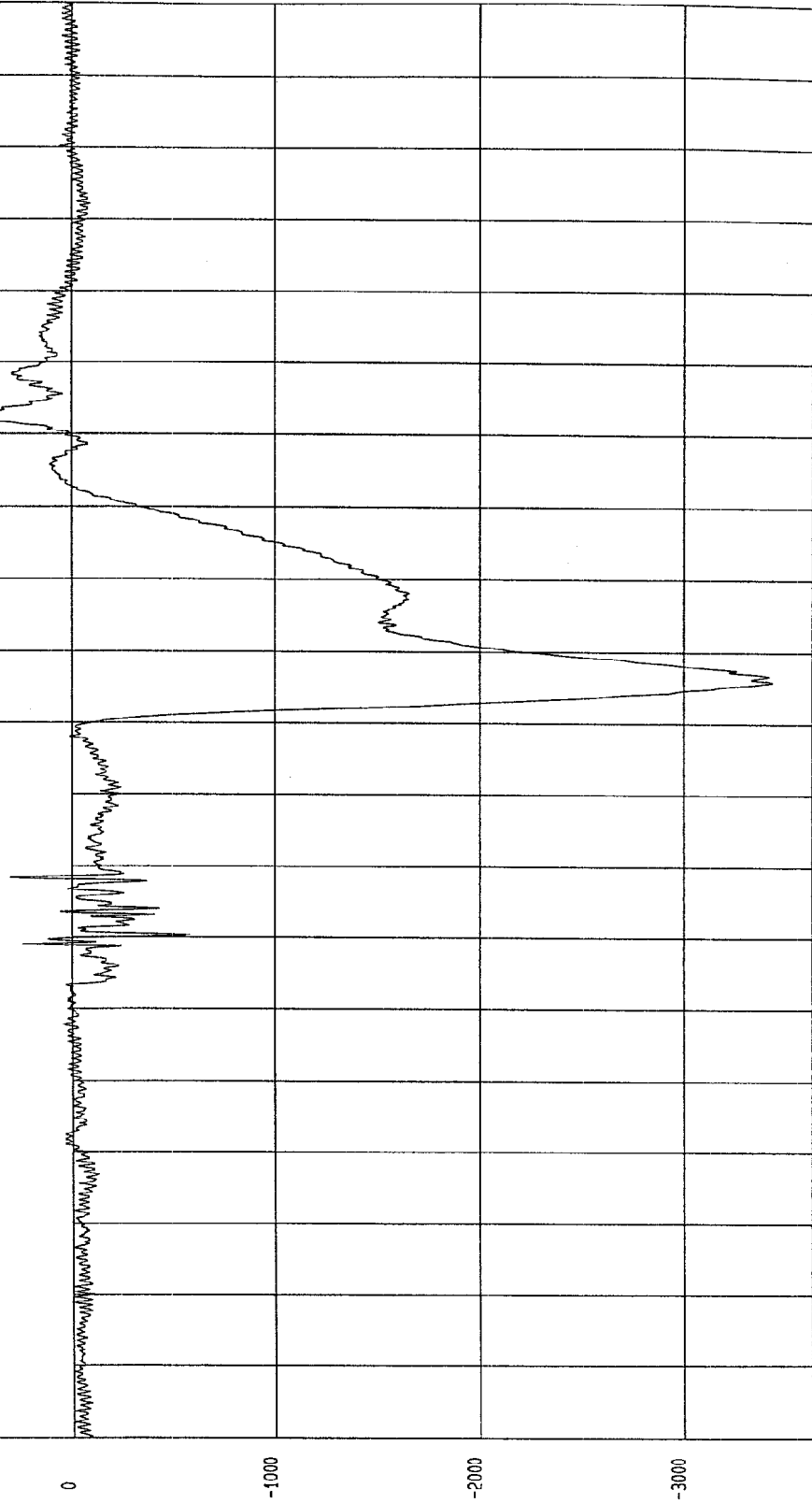
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-3425.423 N at 105 msec

YMAX= 468.8969 N at 142 msec

DRIVER NECK FORCE Z

1 _____ H99004FT.F23 Filterclass (1000)



NGA Research
01-12-1999 13:40

TIME (SECONDS)

N

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

COMPONENT: 1999 NISSAN ALTIMA CX5200

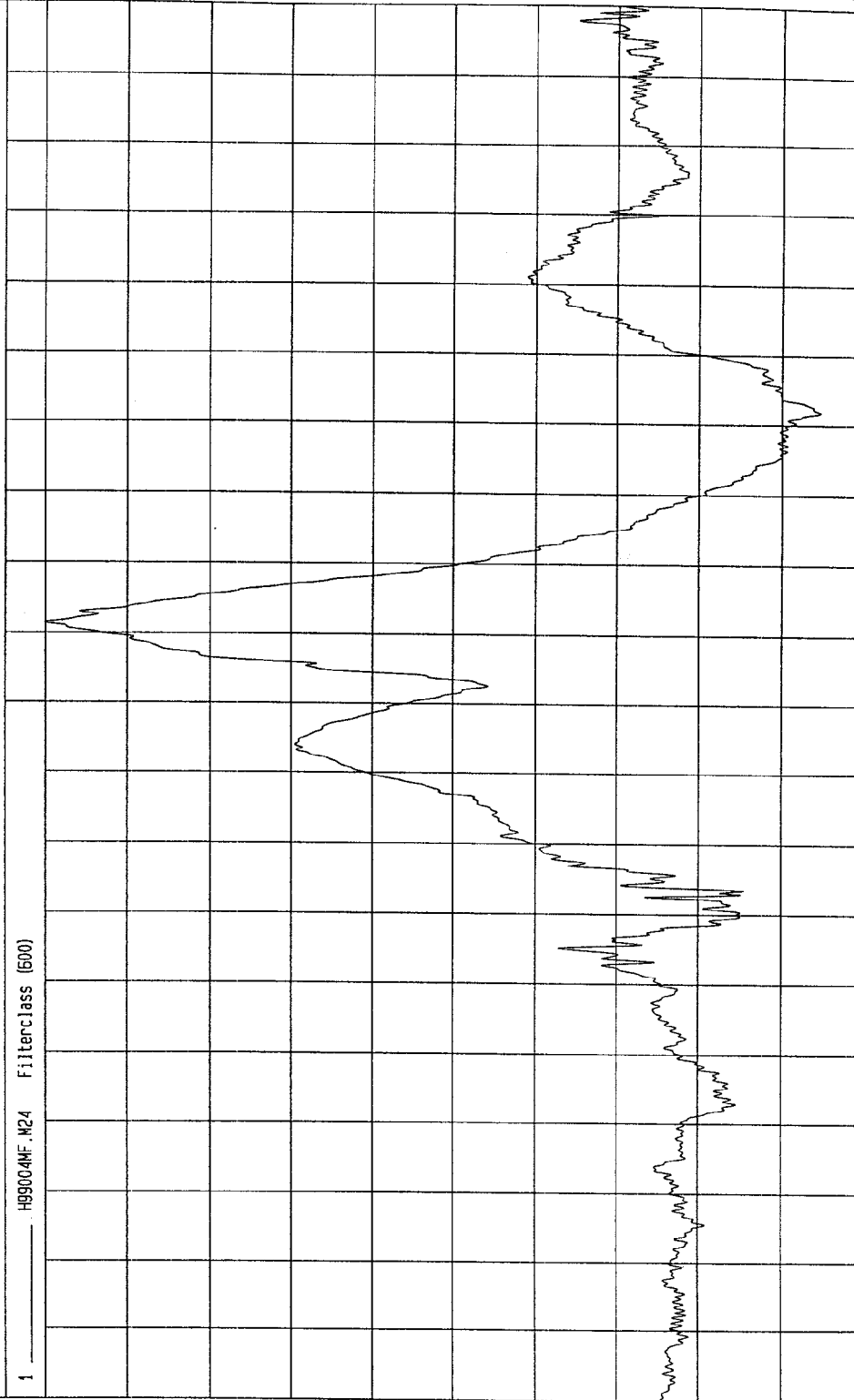
YMIN=-2.935886 NM at 141 msec

YMAX= 16.01853 NM at 111 msec

DRIVER NECK MOMENT X

1 H99004NF.M24 Filter:Jass (500)

16
14
12
10
8
6
4
2
0
-2
NM



MGA Research
01-12-1999 13:40

TIME (SECONDS)

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

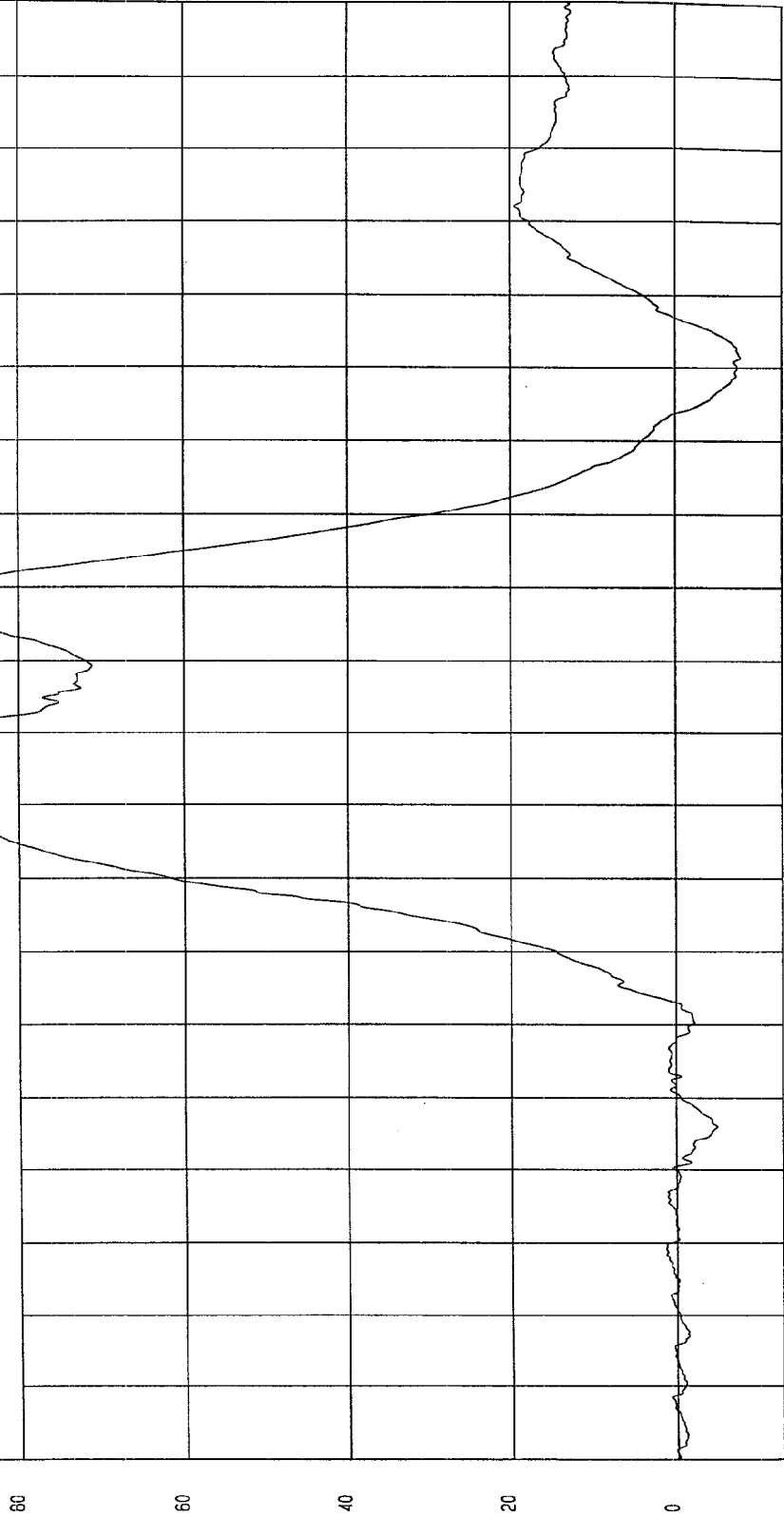
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-7.961925 NM at 151 msec

YMAX= 90.57156 NM at 98. msec

DRIVER NECK MOMENT Y

1 H99004MF.N25 Filterclass (600)



MGA Research
01-12-1999 13:40

TIME (SECONDS)

NM

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

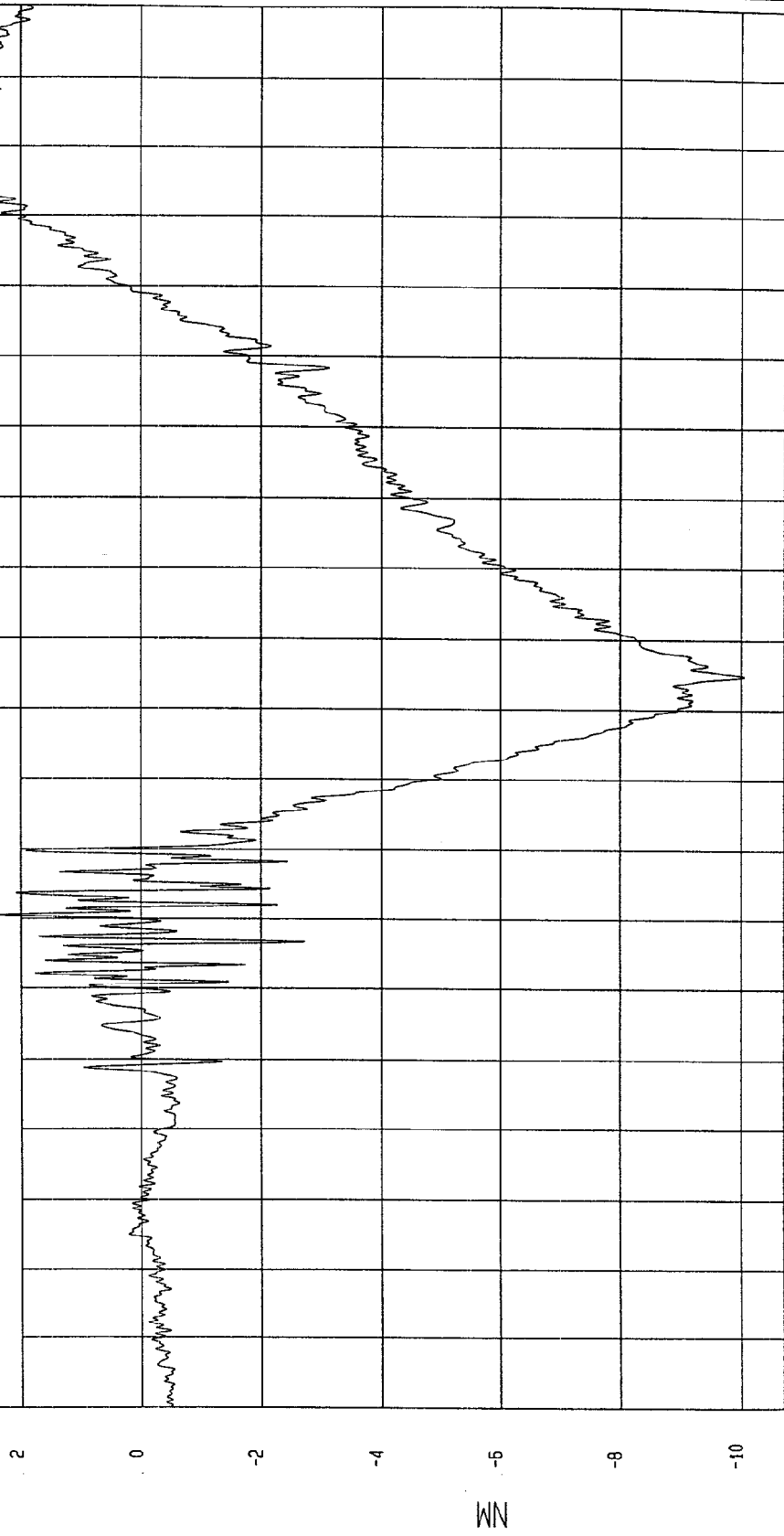
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMAX= 2.920615 NM at 179 msec

YMIN= -10.054 NM at 104 msec

DRIVER NECK MOMENT Z

1 ——— H99004HF.N26 FilterClass (600)



MOA Research
01-12-1999 13:41

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

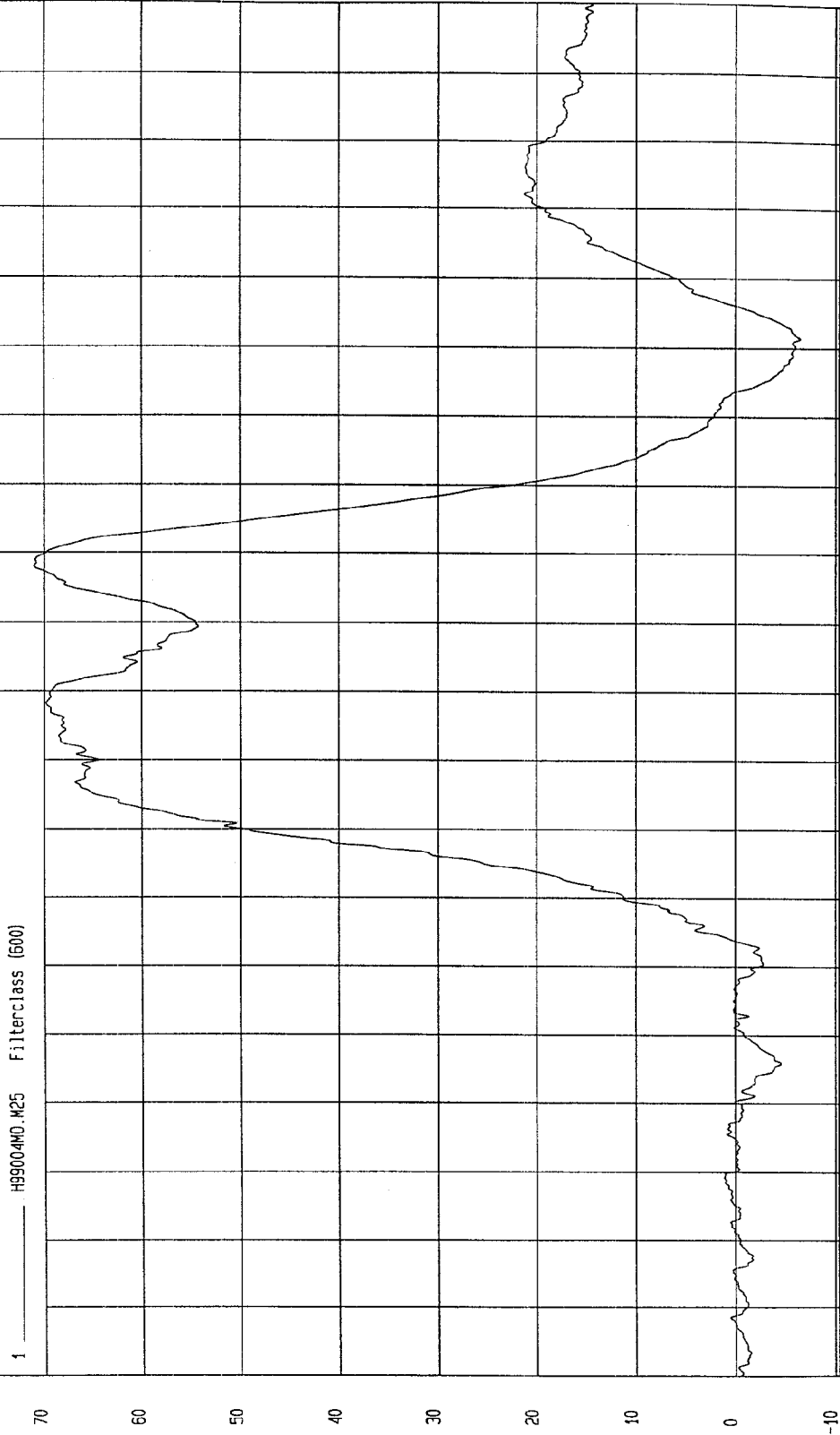
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMAX= 70.97711 NM at 118 msec

YMIN= -6.456506 NM at 151 msec

DRIVER OCCIPITAL CONDYLE MOMENT Y

H99004M0.M25 Filtercl.ass (600)



MOA Research
01-12-1999 14:03

TIME (SECONDS)

NM

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

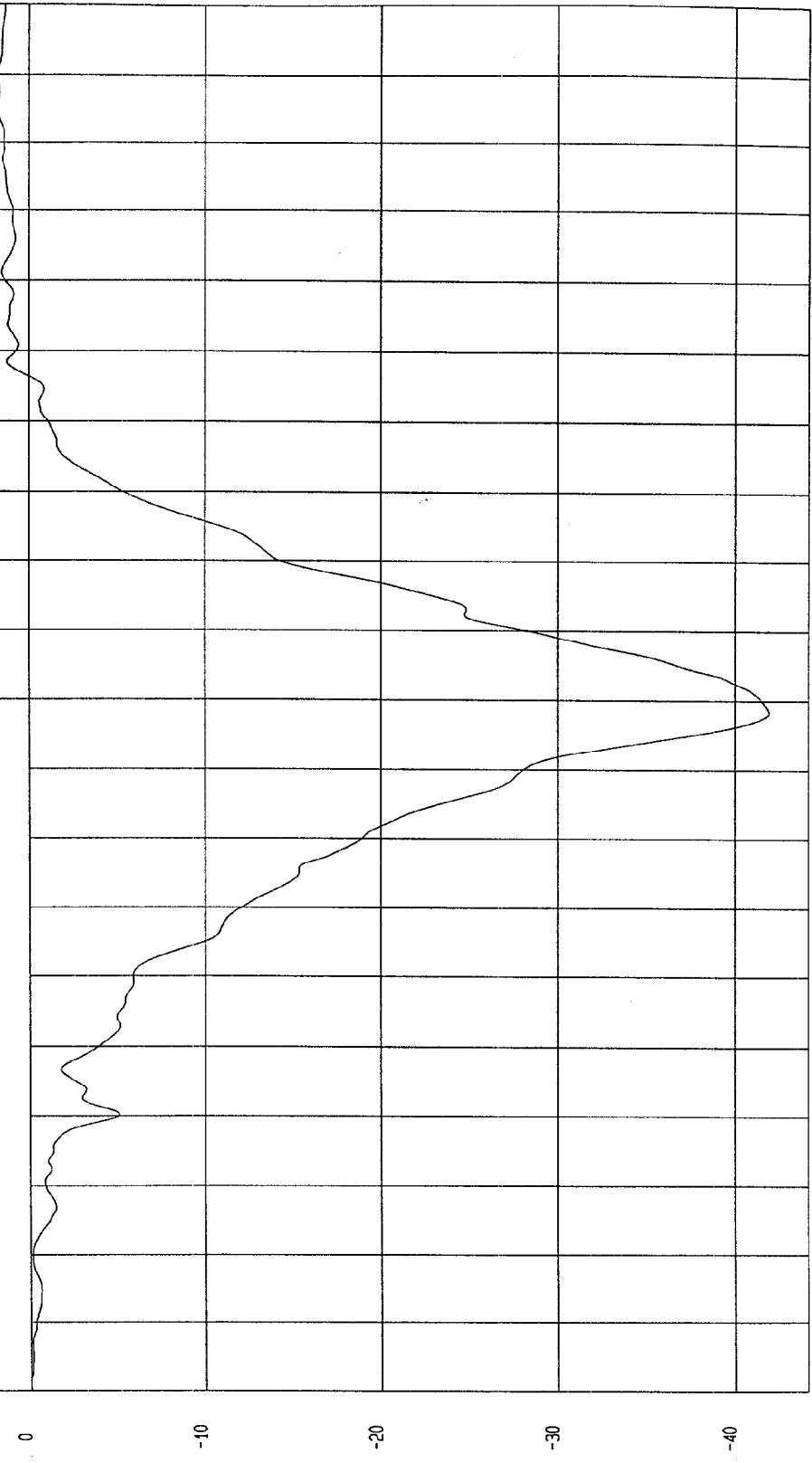
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-41.89543 G'S at 98. msec

YMAX= 1.748659 G'S at 190 msec

DRIVER CHEST X ACCELERATION

1 H99004AF.A12 Filterclass (180)



WCA Research
01-12-1999 13:41

TIME (SECONDS)

G.S

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

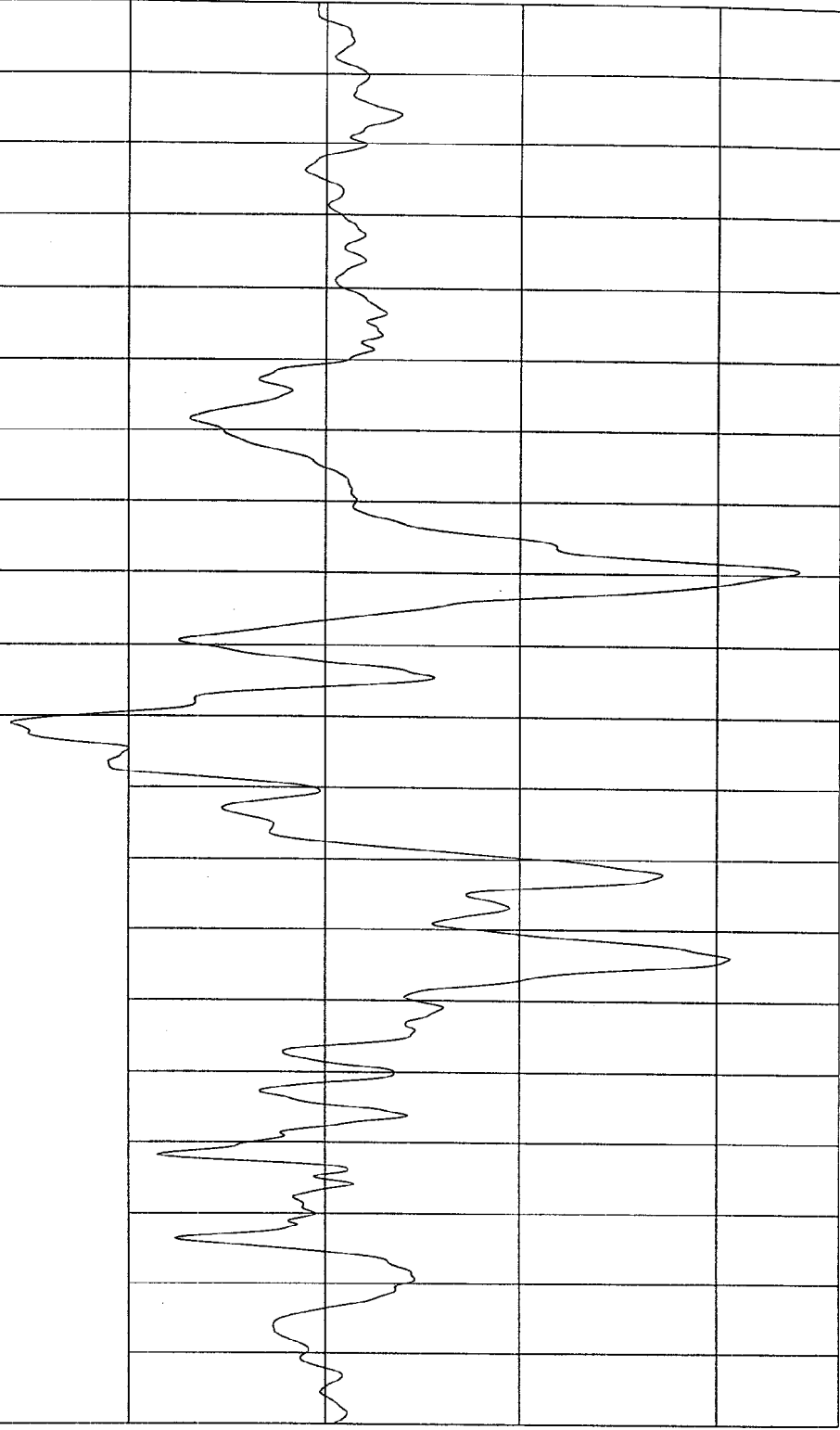
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMAX= 1.59726 G'S at 99 msec

YMIN=-2.47307 G'S at 120 msec

DRIVER CHEST Y ACCELERATION

1 ——— H99004AF.A13 Filterclass (180)



MCA Research
01-12-1999 13:41

TIME (SECONDS)

G.S

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

COMPONENT: 1999 NISSAN ALTIMA CX5200

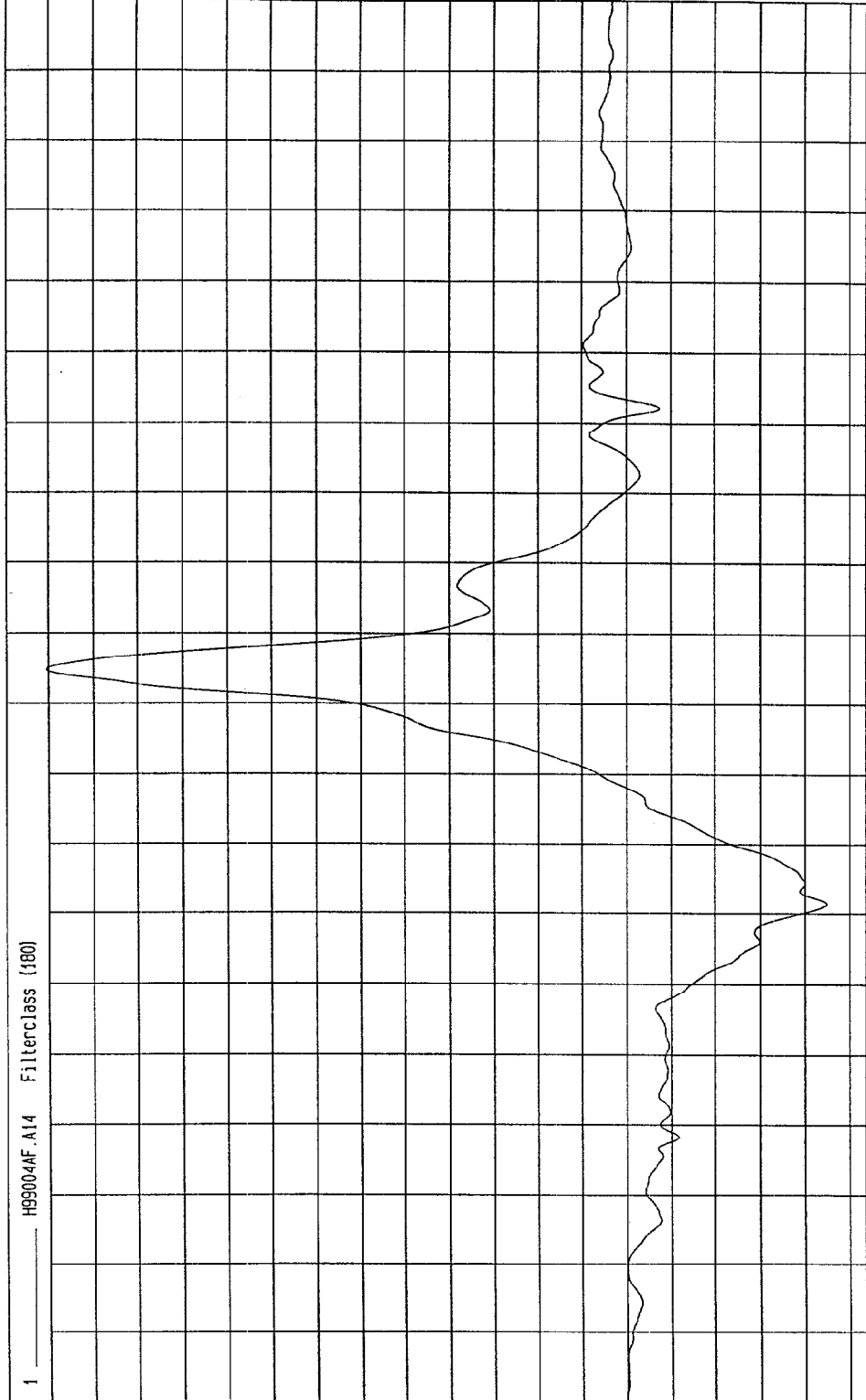
YMIN=-8.95922 G'S at 71. msec

YMAX= 26.10131 G'S at 104 msec

DRIVER CHEST Z ACCELERATION

1 H99004NF.A14 Filterclass (180)

G.S
26
24
22
20
18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10



0.1 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.1 0.11 0.12 0.13 0.14 0.15 0.16 0.17 0.18 0.19
TIME (SECONDS)

MCA Research
01-12-1999 13:41

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN= 9.865034E-02 6'S at 9.9 msec

YMAX= 45.74531 6'S at 103 msec

DRIVER CHEST RESULTANT ACCELERATION

1. _____ H99004V.A12 Filterclass (160)



MCA Research
01-12-1999 13.49

TIME (SECONDS)

G.S

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

COMPONENT: 1999 NISSAN ALTIMA CX5200

YMAX=-6.852942E-03 INCHES at 48 msec

YMIN=-1.284743 INCHES at 102 msec

DRIVER CHEST COMPRESSION



MCA Research
01-12-1999 13.49

TIME SECONDS

INCHES

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

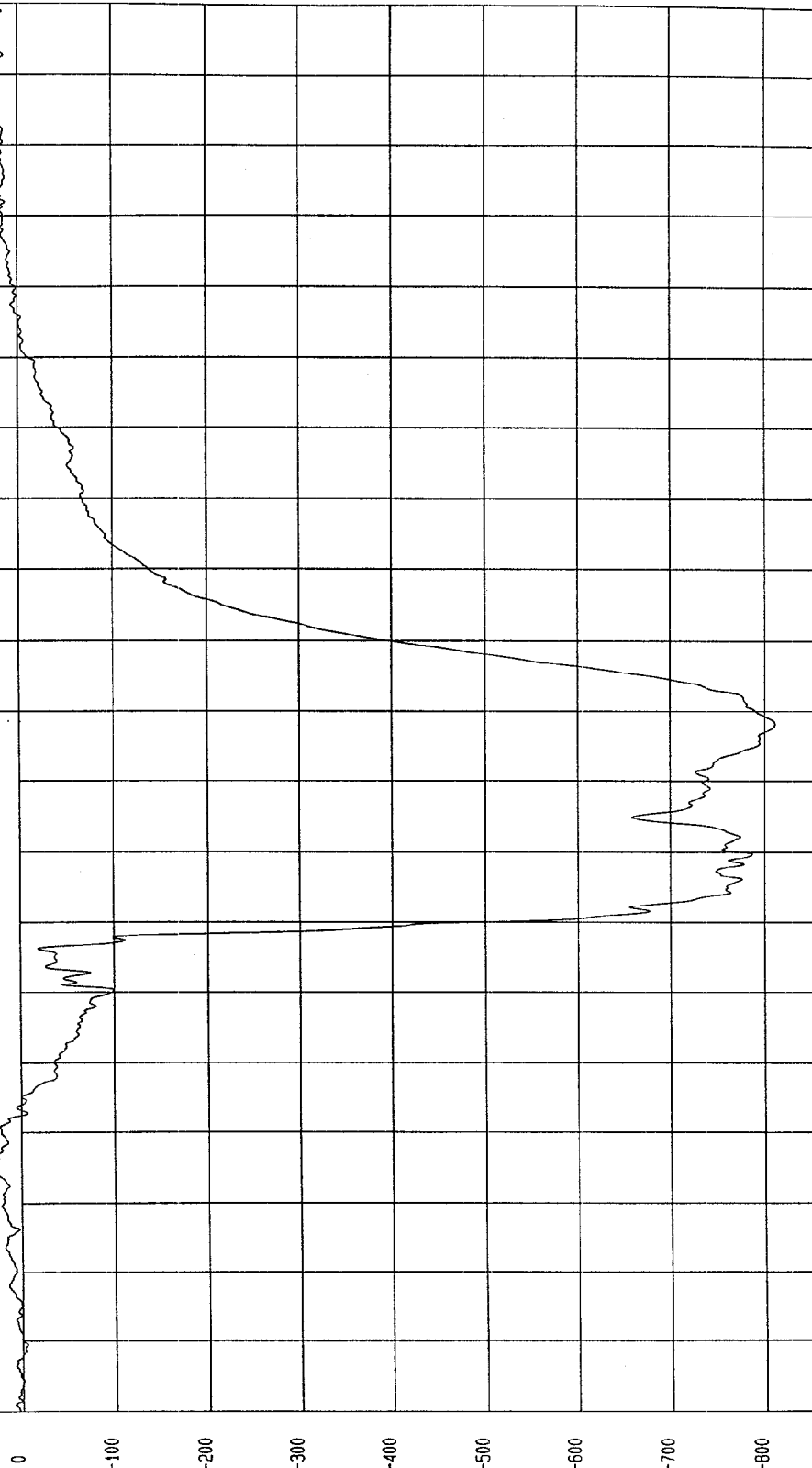
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-811.4396 LBS at 98. msec

YMAX= 27.44125 LBS at 34. msec

DRIVER LEFT FEMUR FORCE

1 H99004FF.F06 Filterclass (600)



MCA Research
01-12-1999 13:41

TIME (SECONDS)

LBS

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

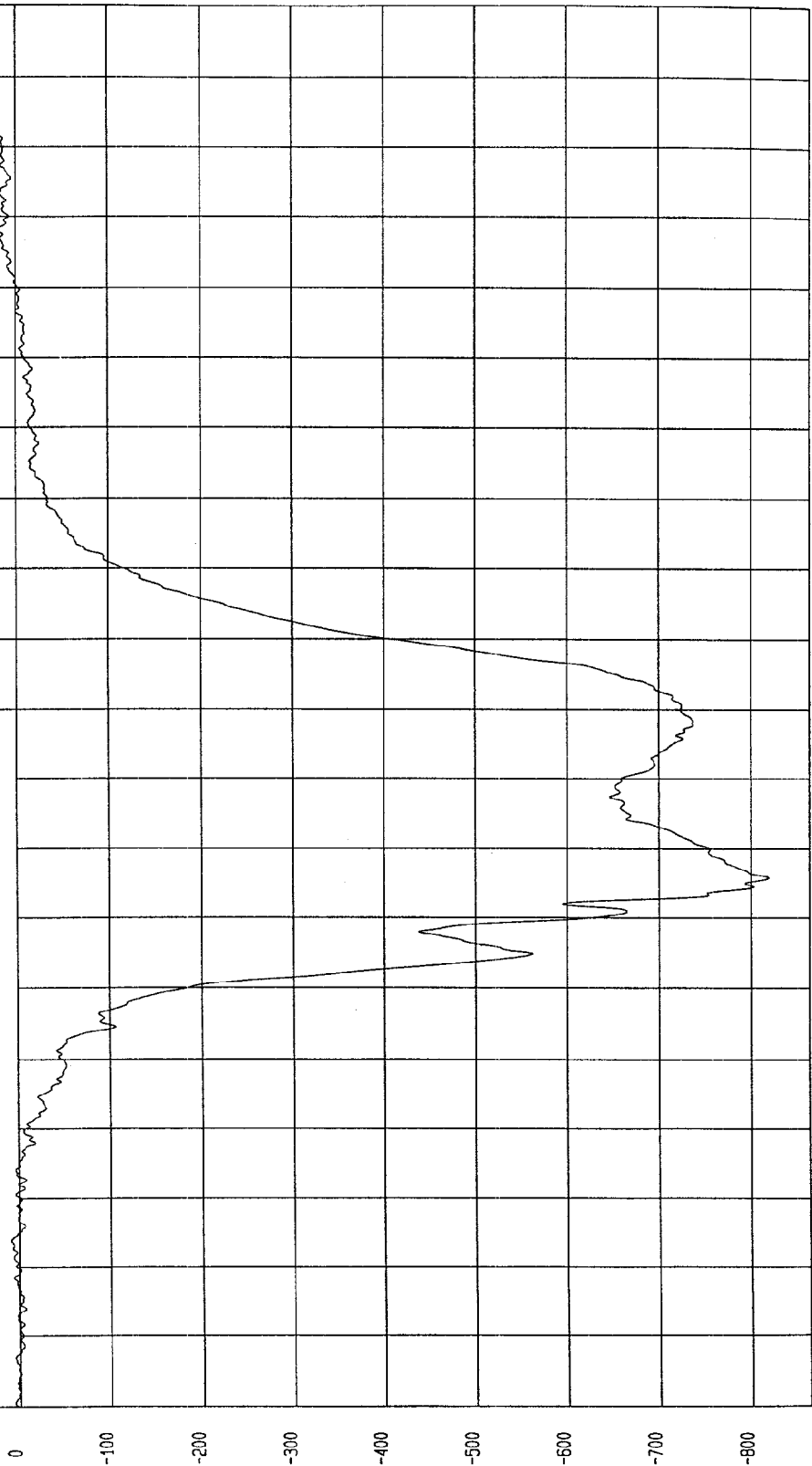
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-818.915 LBS at 75. msec

YMAX= 30.37868 LBS at 190 msec

DRIVER RIGHT FEMUR FORCE

1 H99004FF.F08 Filterclass (600)



TIME (SECONDS)

NCA Research
01-12-1999 13:41

LBS

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

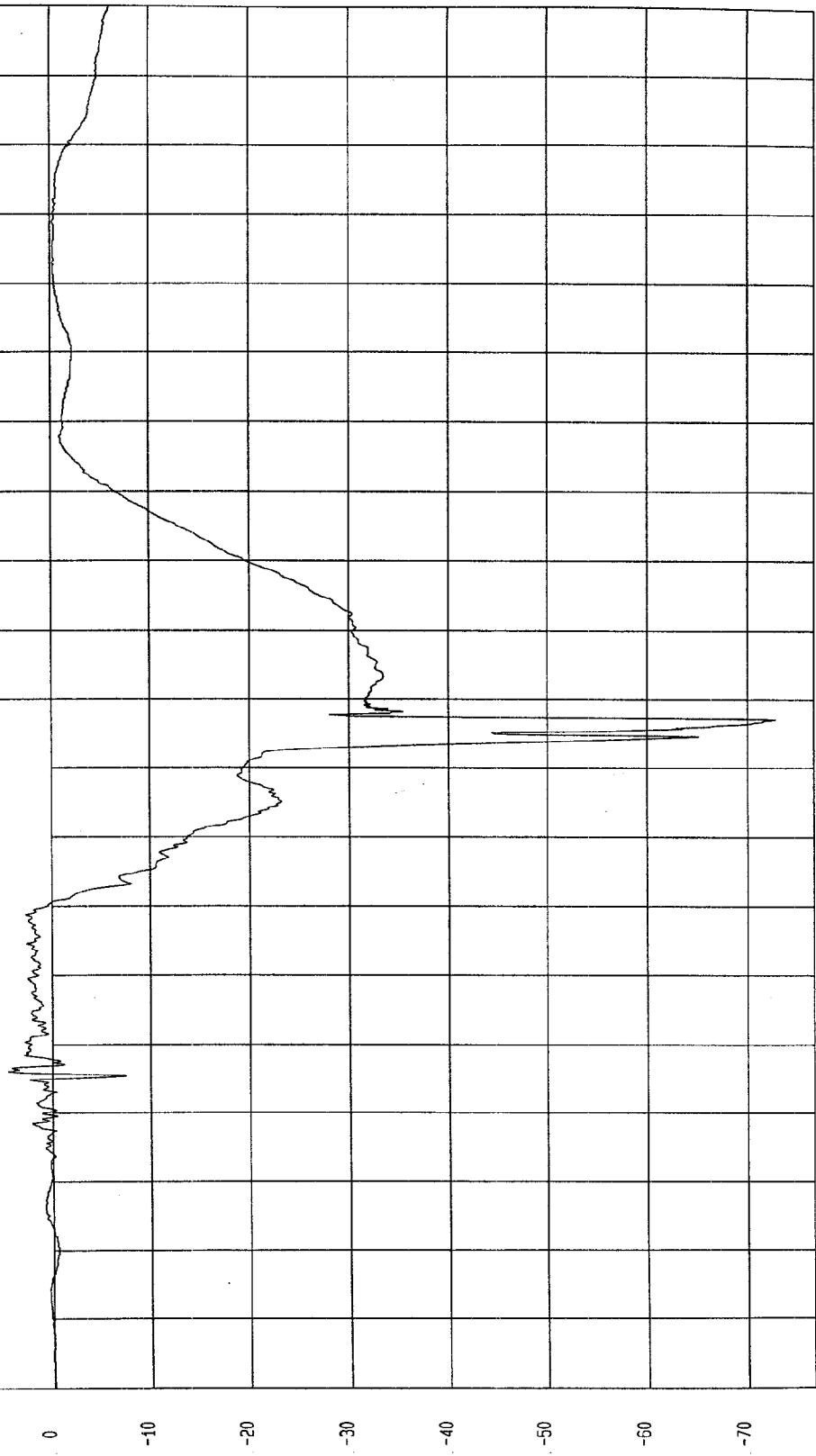
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-72.75642 G'S at 97. msec

YMAX= 4.40963 G'S at 46. msec

PASSENGER HEAD X ACCELERATION

1 H99004AT.A15 Filterclass (1000)



MCA Research
01-12-1999 13:41

TIME (SECONDS)

G'S

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

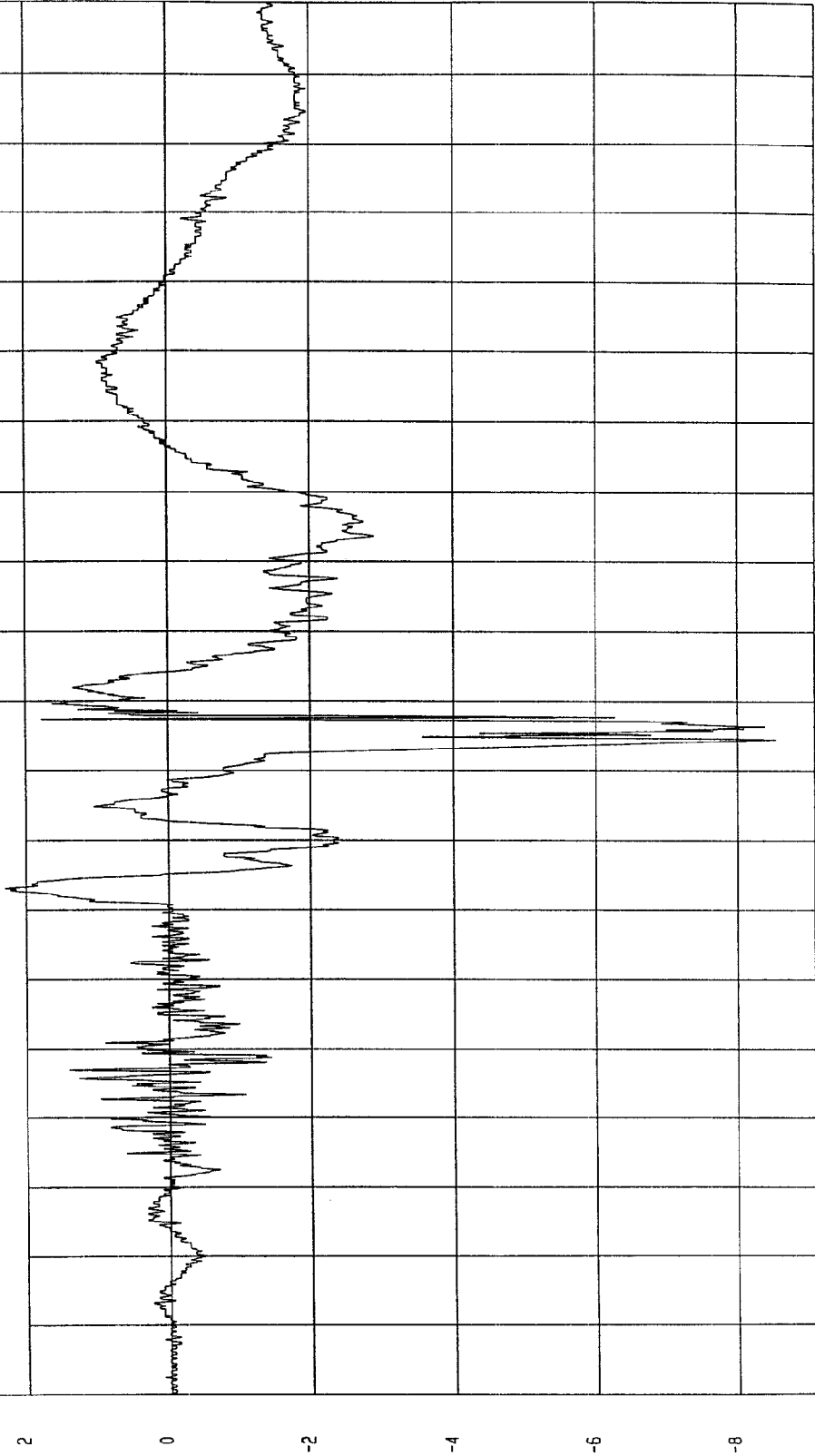
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-8.536077 G'S at 94. msec

YMAX= 2.284115 G'S at 73. msec

PASSENGER HEAD Y ACCELERATION

1 ——— H99004AT.A16 Filterclass (1000)



MGA Research
01-12-1999 13: 41

TIME (SECONDS)

G.S

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

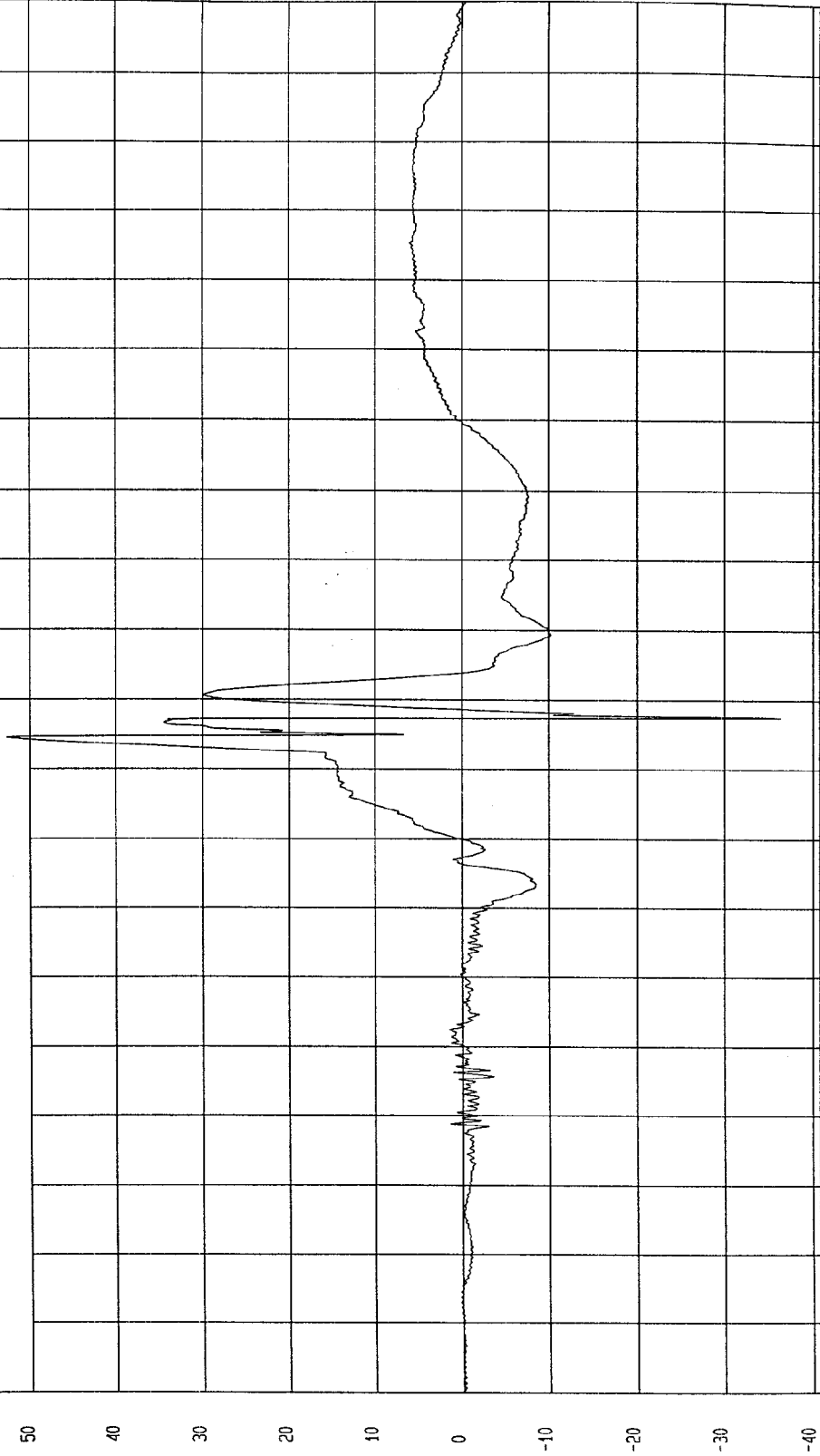
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-36.33995 G'S at 97. msec

YMAX= 52.64592 G'S at 94. msec

PASSENGER HEAD Z ACCELERATION

1 _____ H99004AT.A17 Filterclass (1000)



MOA Research
01-12-1999 13:42

TIME (SECONDS)

G.S

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN= 2.934487E-02 G'S at 1.7 msec

YMAX= 83.46643 G'S at 94. msec

PASSENGER HEAD RESULTANT ACCELERATION

1 _____ H99004AV.A15 Filterclass (1000)



MCA Research
01-12-1999 13:42

TIME (SECONDS)

G.S

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-252.0191 N at 196 msec

YMAX= 1553.668 N at 97. msec

PASSENGER NECK FORCE X

1 H99004FT.F31 Filterclass (1000)

1600
1400
1200
1000
800
600
400
200
0
-200

TIME (SECONDS)
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
1.1
1.2
1.3
1.4
1.5
1.6
1.7
1.8
1.9

NSA Research
01-12-1999 13:42

N

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

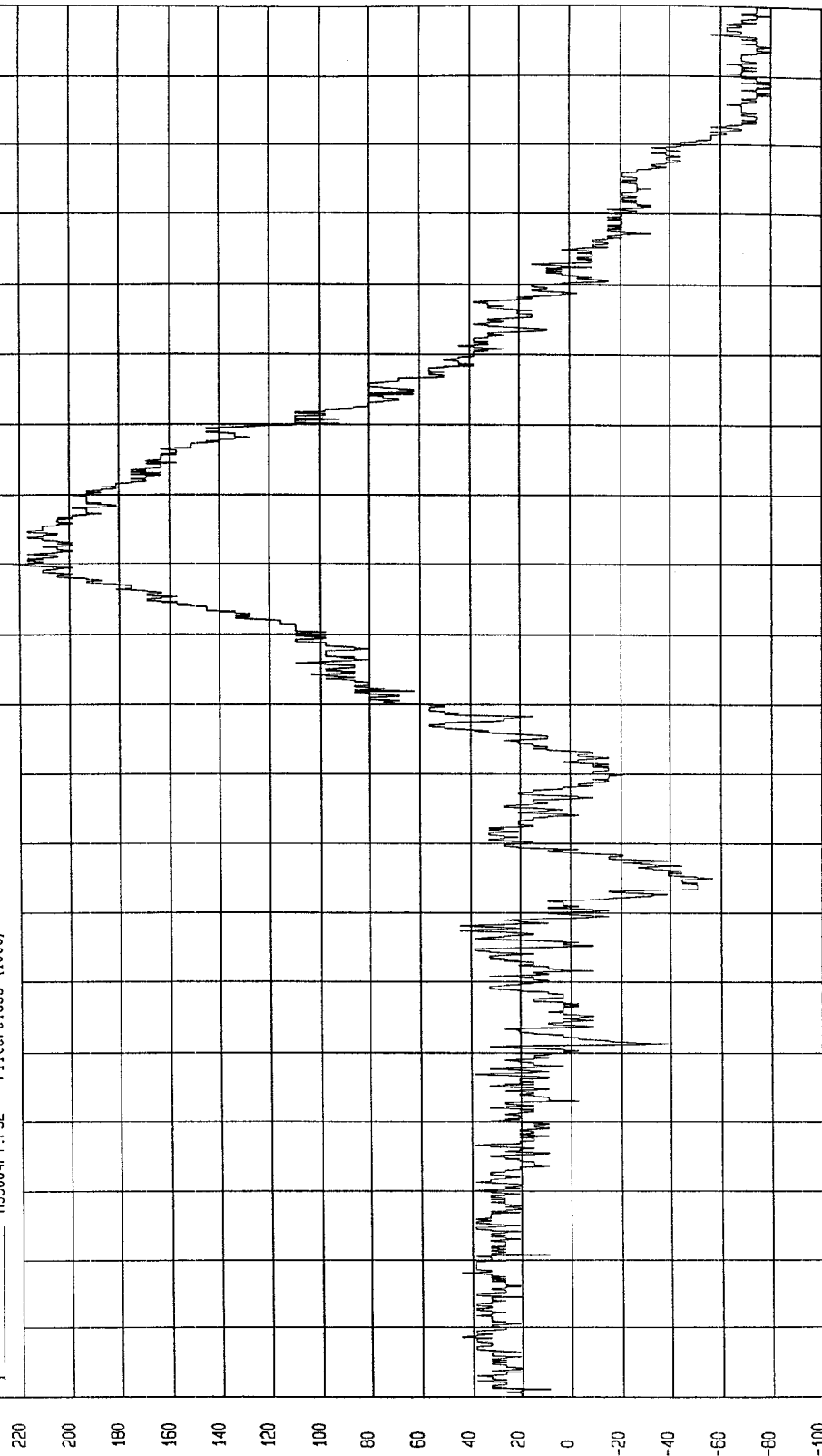
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-86.14542 N at 200 msec

YMAX= 222.6823 N at 119 msec

PASSENGER NECK FORCE Y

1 H99004T.F32 Filterclass (1000)



MECA Research
01-12-1999 13:42

TIME (SECONDS)

N

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

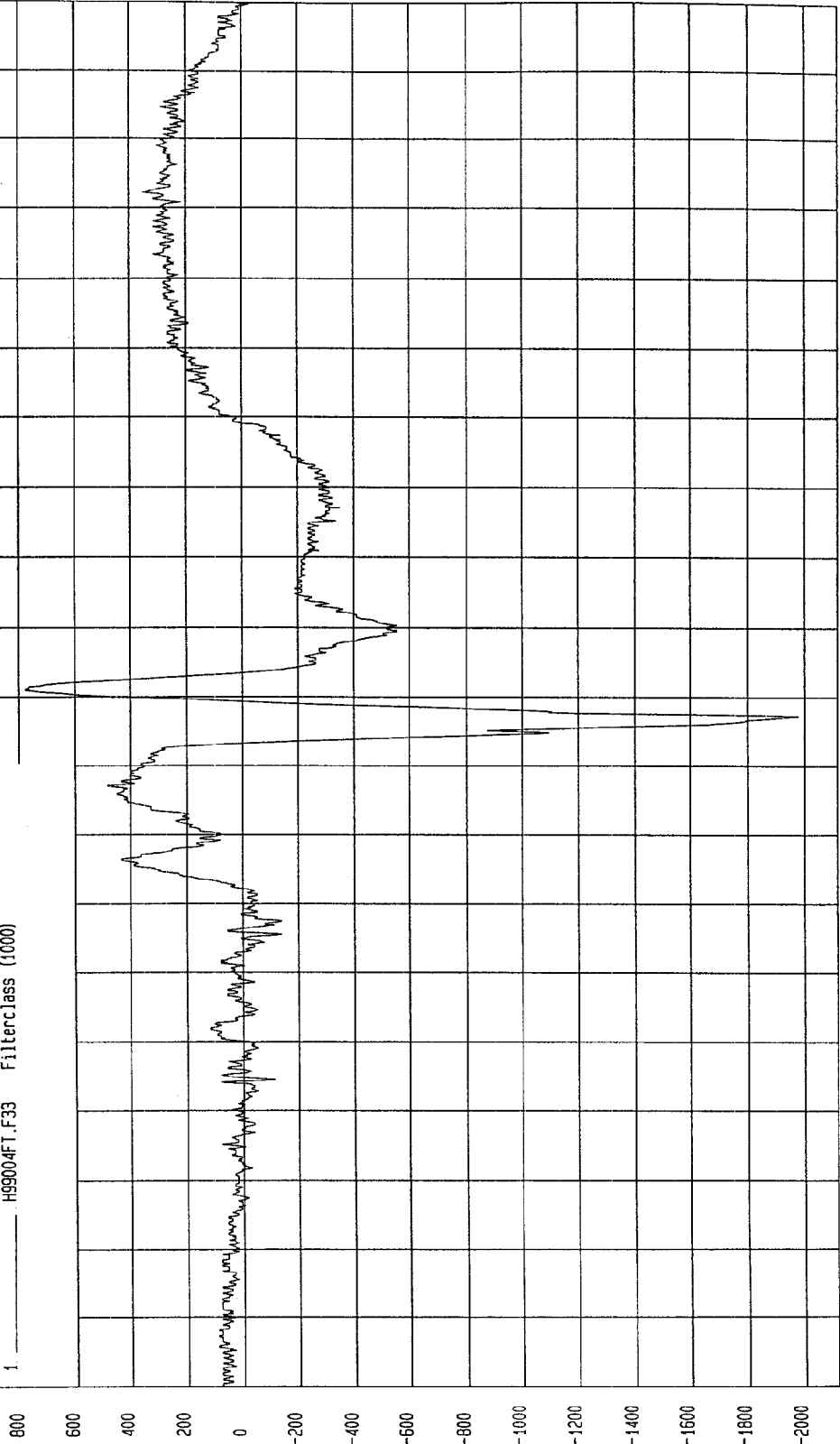
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-1976.322 N at 97. msec

YMAX= 778.015 N at 101 msec

PASSENGER NECK FORCE Z

1. H99004FT.F33 Filterclass (1000)



MCA Research
01-12-1999 13:42

TIME (SECONDS)

Z

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

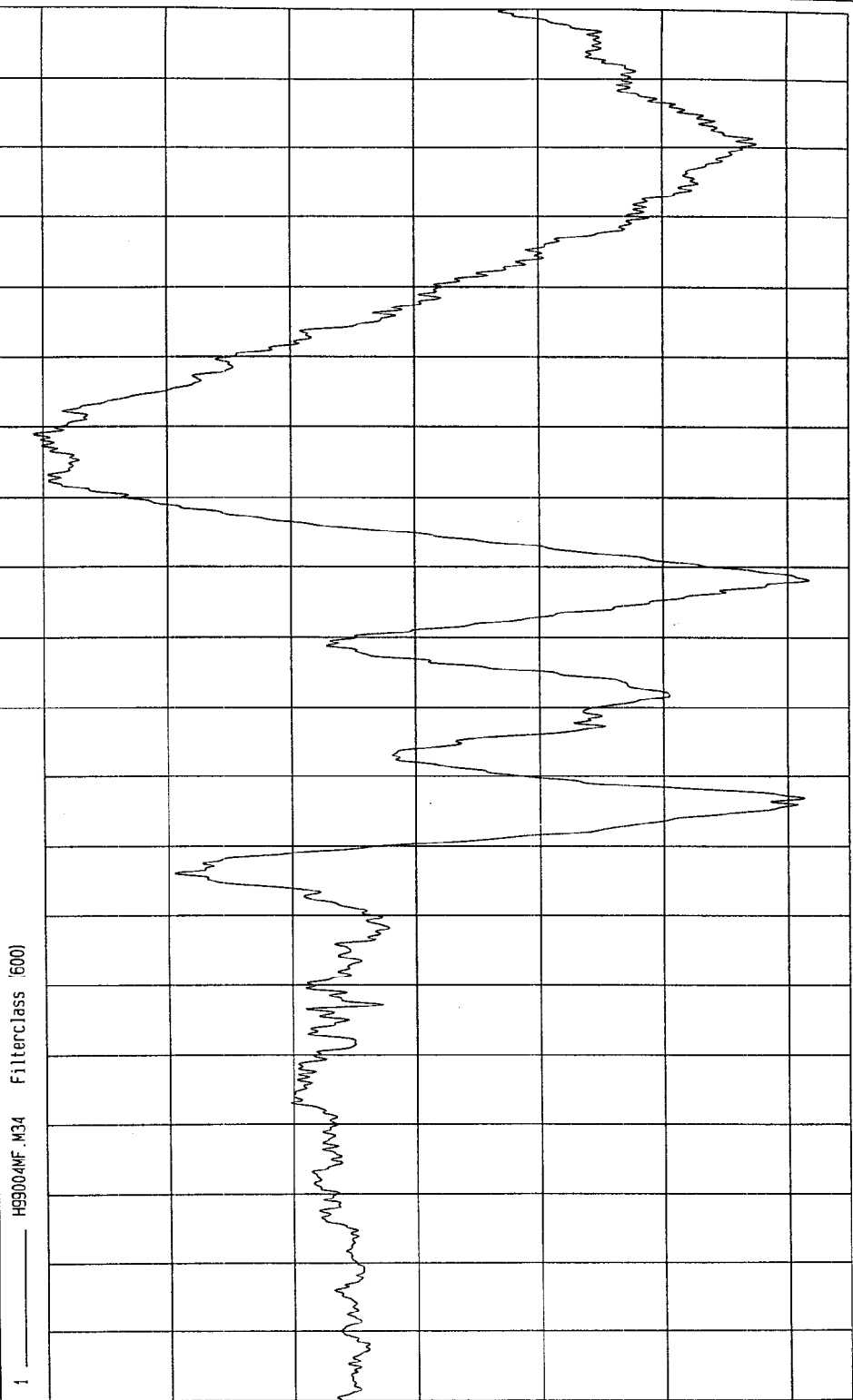
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMAX= 4.151837 NM at 139 msec

YMIN=-8.342432 NM at 118 msec

PASSENGER NECK MOMENT X

1 H99004MF.M34 FilterClass (600)



MCA Research
01-12-1999 13:42

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

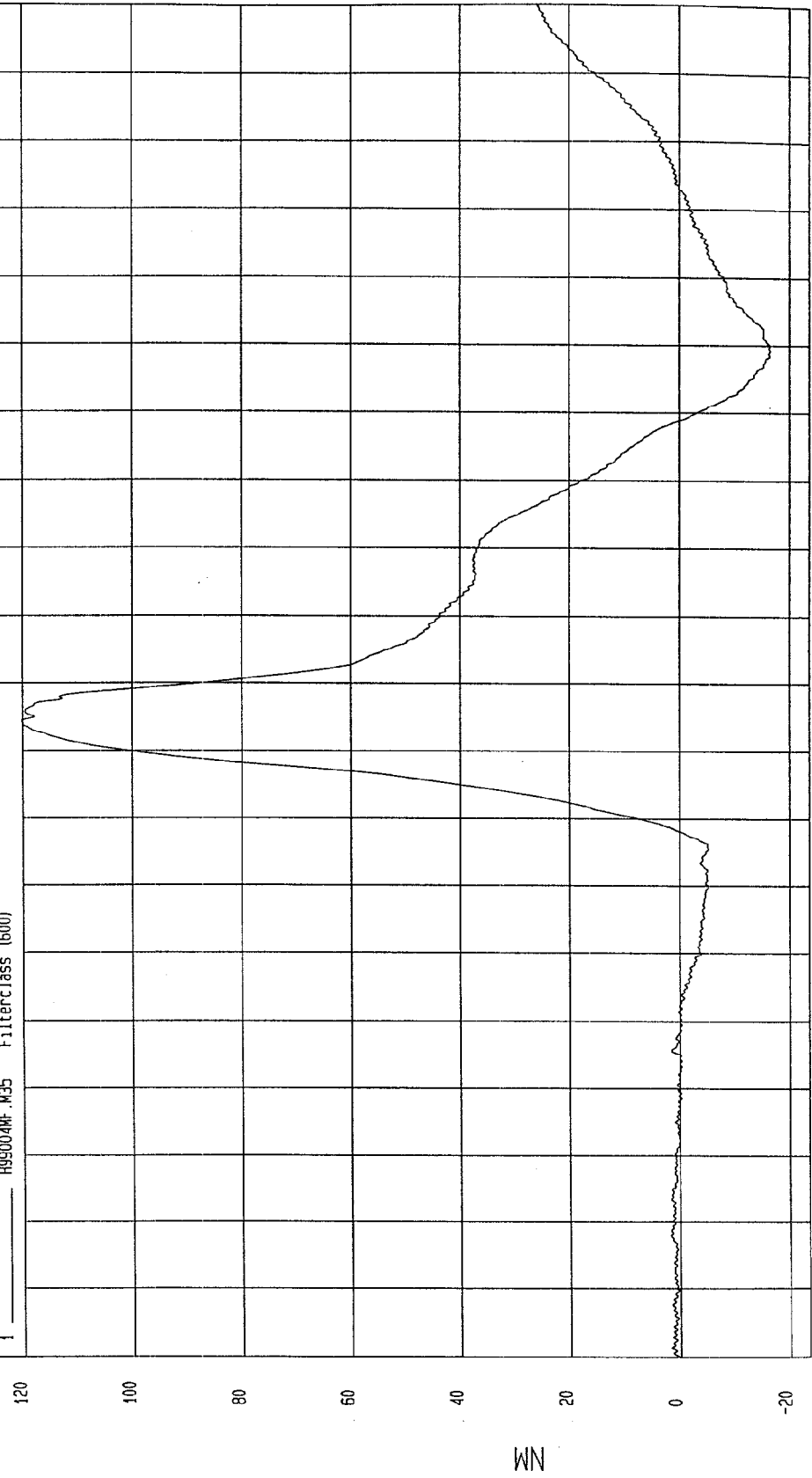
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-16.5988 NM at 149 msec

YMAX=120.2019 NM at 94. msec

PASSENGER NECK MOMENT Y

1 H99004MF.M35 Filterclass (600)



MCA Research
01-12-1999 13:42

TIME (SECONDS)

NM

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

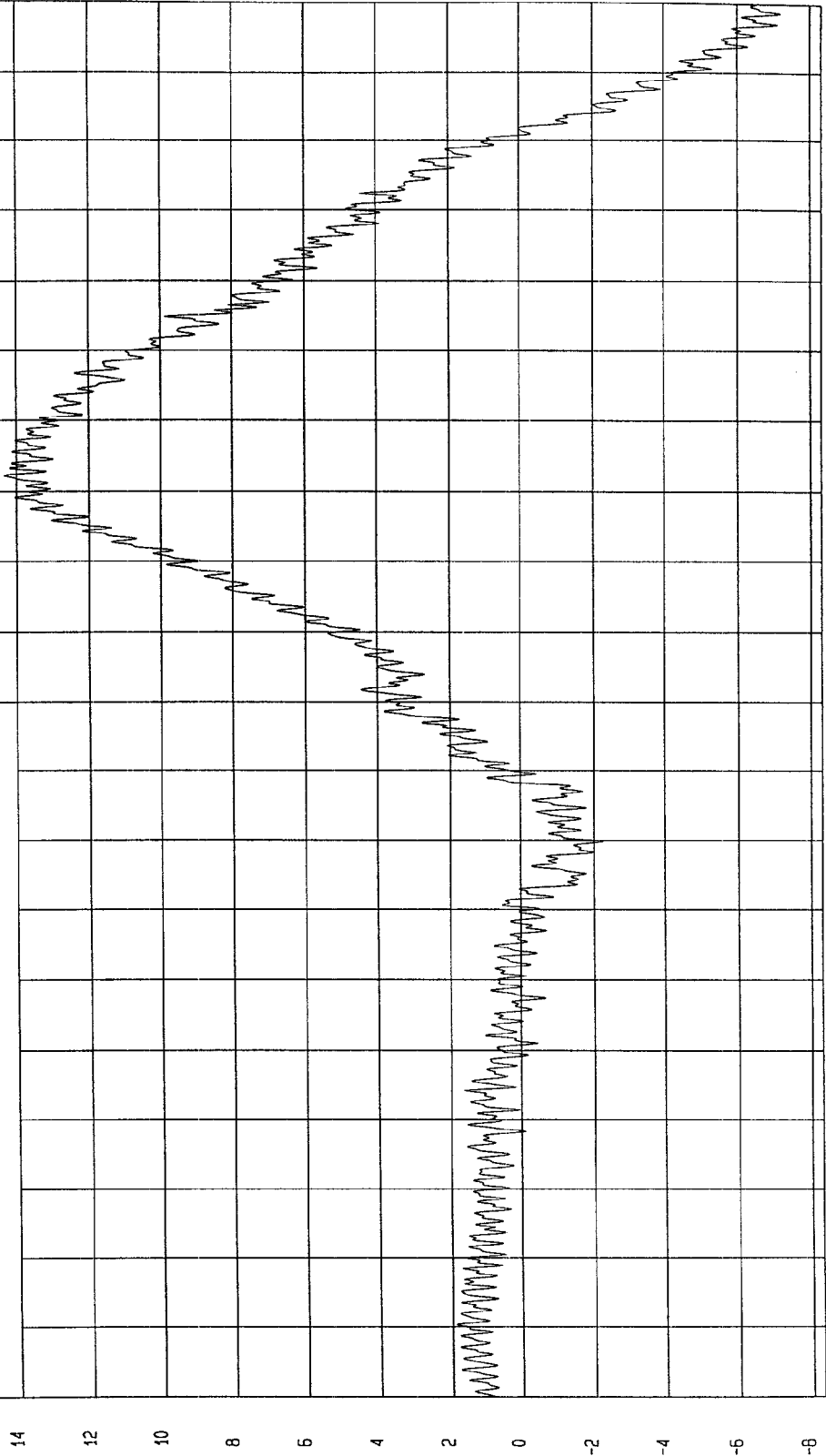
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-7.205351 NM at 198 msec

YMAX= 14.32811 NM at 132 msec

PASSENGER NECK MOMENT Z

1 _____ H99004MF.N36 Filterclass (600)



MCA Research
01-12-1999 13:42

TIME (SECONDS)

NM

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

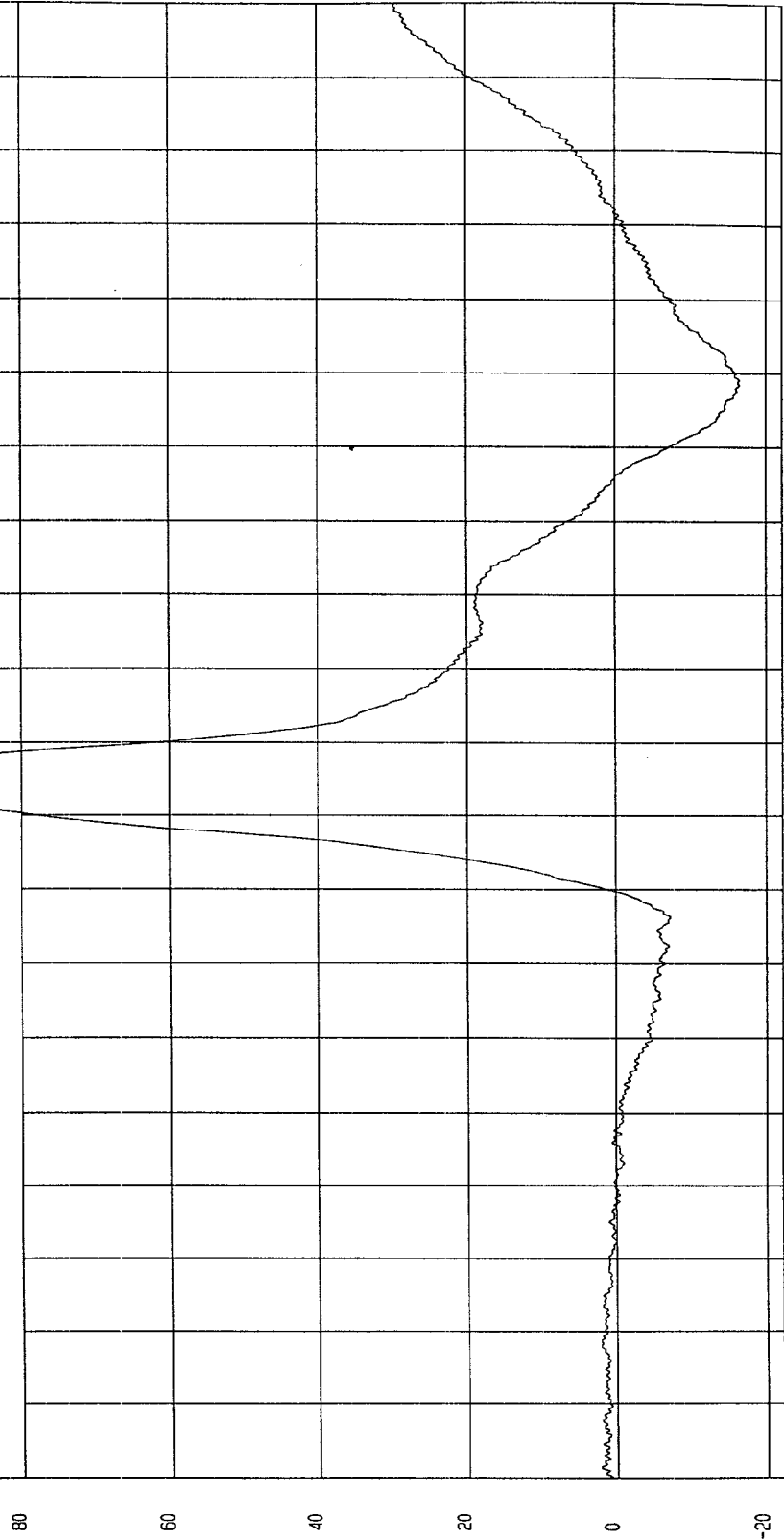
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMAX= 93.13568 NM at 93. msec

YMIN=-16.55929 NM at 149 msec

PASSENGER OCCIPITAL CONDYLE MOMENT Y

1 — H99004M0.M35 Filterclass (600)



MCA Research
01-12-1999 1A: 03

TIME (SECONDS)

NM

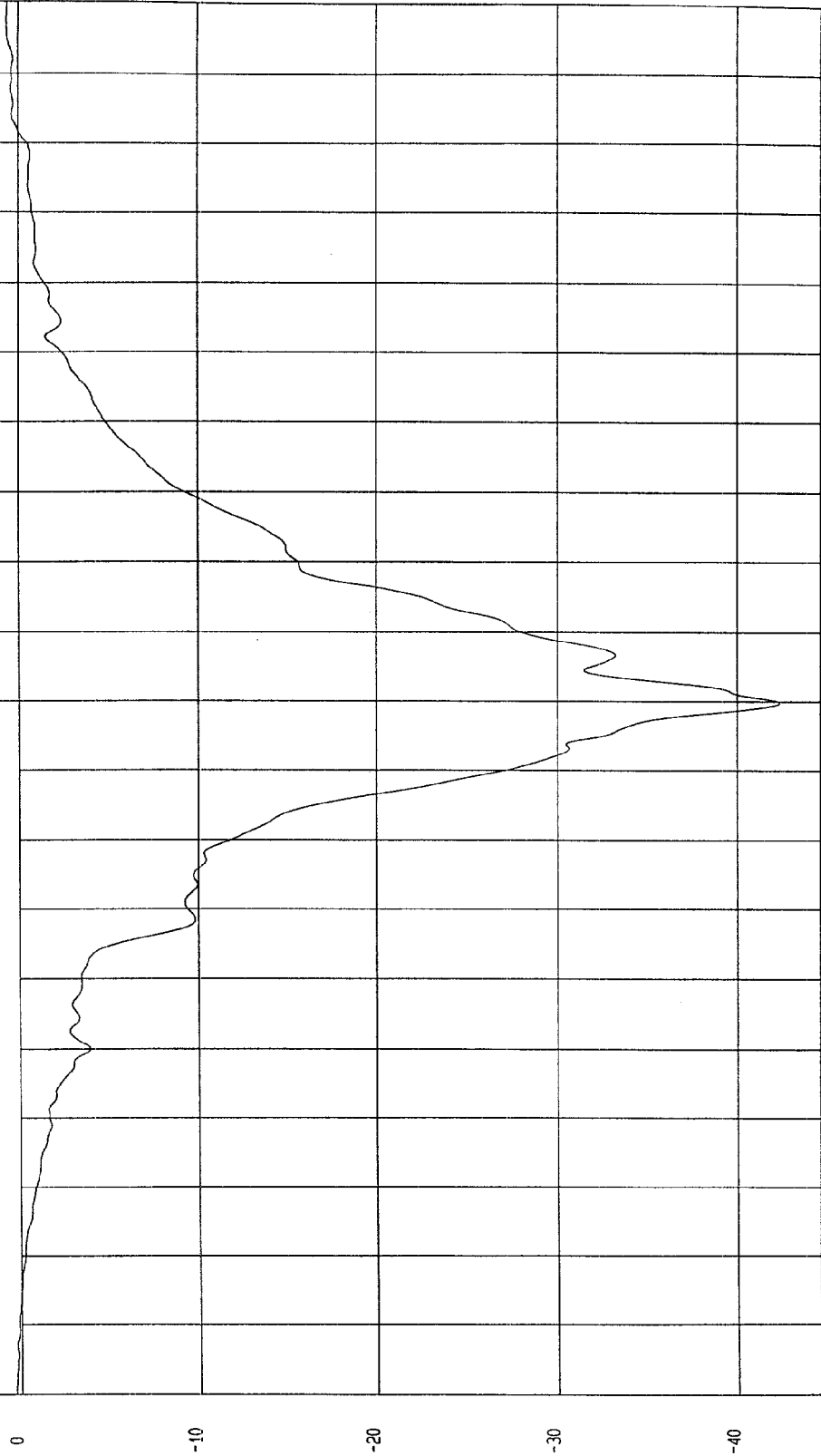
TEST: FMVSS 208 SLED TEST TEST DATE: 01-12-1999

COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-42.39328 G'S at 99. msec YMAX= .6527492 G'S at 197 msec

PASSENGER CHEST X ACCELERATION

1 H99004AF.A27 Filterclass (180)



NCA Research
01-12-1999 13:42

TIME (SECONDS)

G.S

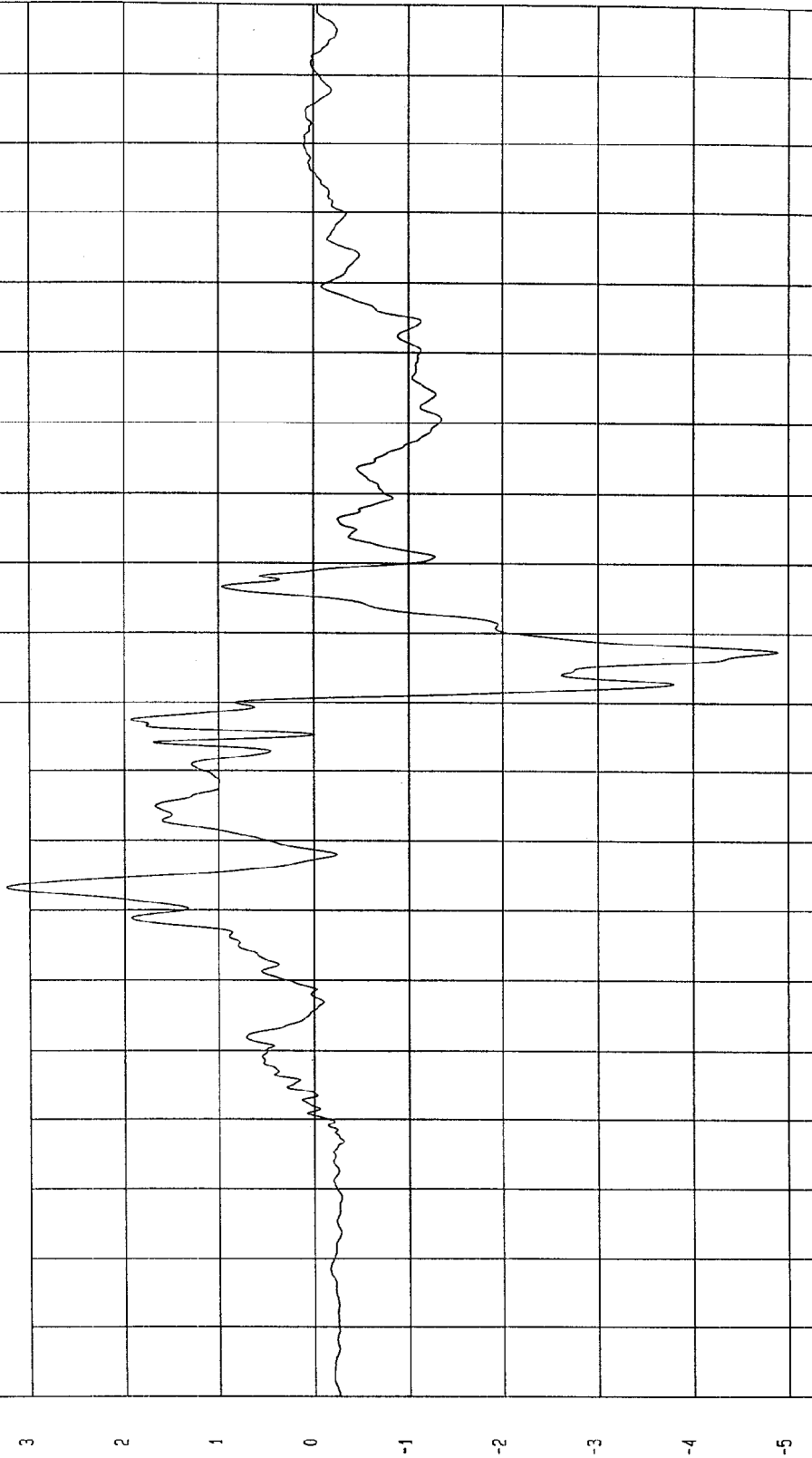
TEST: FMVSS 208 SLED TEST TEST DATE: 01-12-1999

COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-4.891802 G'S at 107 msec YMAX= 3.248324 G'S at 73. msec

PASSENGER CHEST Y ACCELERATION

1 _____ H99004AF.A28 Filterclass (480)



WCA Research
01-12-1999 13:43

G.S

TEST: FMVSS 208 SLED TEST TEST DATE: 01-12-1999

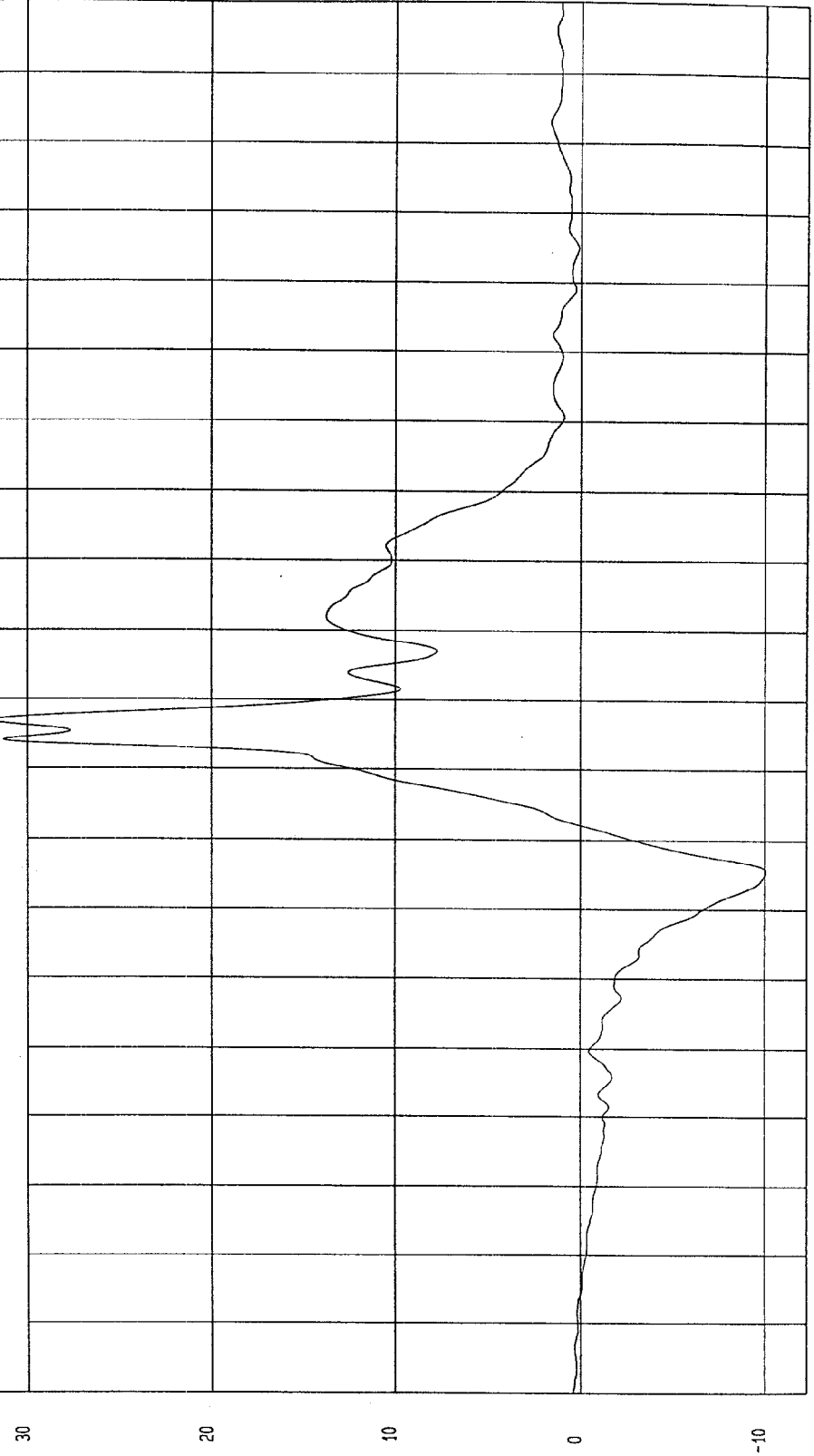
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-10.0733 G'S at .75. msec

YMAX= 31.84315 G'S at 96. msec

PASSENGER CHEST Z ACCELERATION

1 _____ H99004AF.A29 Filterclass (480)



MCA Research
01-12-1999 13:43

S.G

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

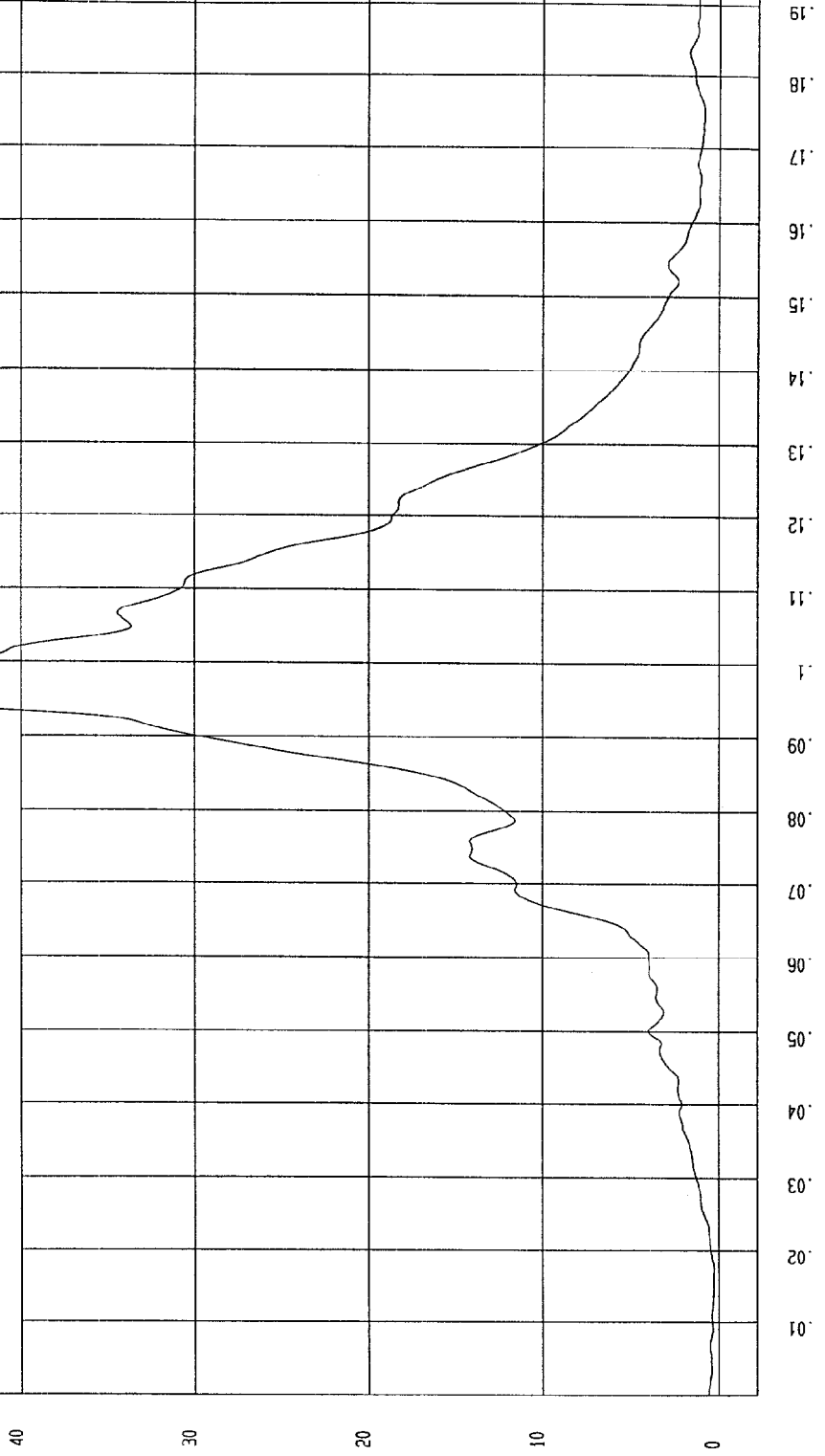
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN= .2327439 G'S at 17. msec

YMAX= 47.12466 G'S at 97. msec

PASSENGER CHEST RESULTANT ACCELERATION

1 _____ I959004AV.A27 FilterClass (180)



MCA Research
01-12-1999 13.43

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-.3979695 INCHES at 96. msec

YMAX= 6.002778E-02 INCHES at 12. msec

PASSENGER CHEST COMPRESSION

1 _____ H99004DF.039 Filterclass (600)



MGA Research
01-12-1999 13:49

TIME SECONDS

INCHES

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-1054.491 LBS at 92 msec

YMAX= 31.79931 LBS at 167 msec

PASSENGER LEFT FEMUR FORCE

1 H99004FF.F18 Filterclass (500)



WCA Research
01-12-1999 13.43

LBS

TIME (SECONDS)

TEST DATE: 01-12-1999

TEST: FMVSS 208 SLED TEST

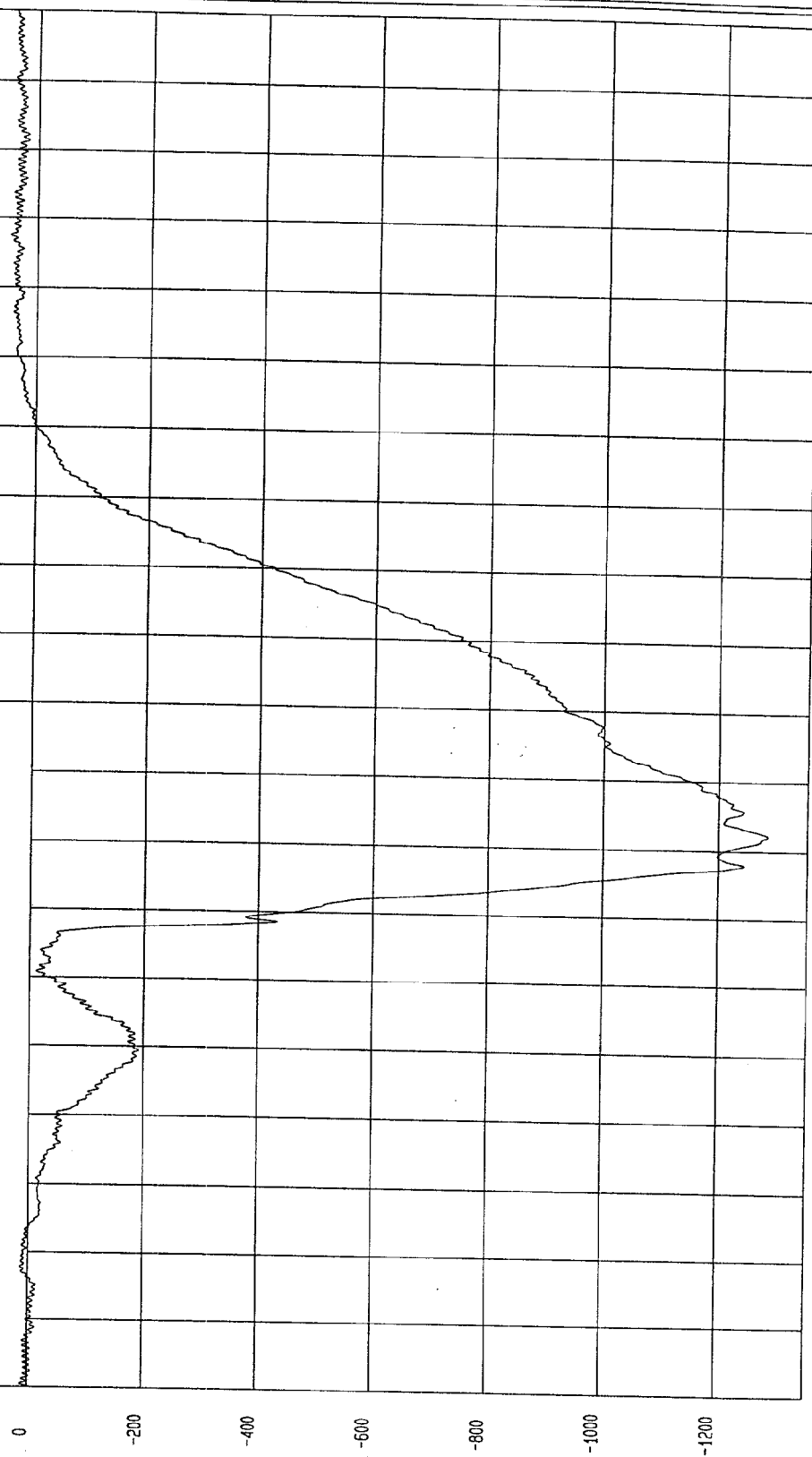
COMPONENT: 1999 NISSAN ALTIMA CX5200

YMIN=-1286.178 LBS at 82. msec

YMAX= 47.15662 LBS at 167 msec

PASSENGER RIGHT FEMUR FORCE

1 — H99004FF.F19 Filterclass (600)



MCA Research
01-12-1999 13:43

TIME (SECONDS)

LBS

APPENDIX C
MANUFACTURER'S VEHICLE INFORMATION

- 1) The air bag restraint system provided at each front outboard designated seating position in the 1999 Model Year Nissan Altima is installed to meet the requirements of FMVSS No. 208, S13.
- Attachment 1 is a copy of the certification test report for FMVSS No. 208, S13 Alternative Unbelted Test. (Driver Side – 1998 MY Carryover Report)
 - Attachment 2 is a copy of the certification test report for FMVSS No. 208, S13 Alternative Unbelted Test (Passenger Side – New for 1999 MY)
 - Attachment 3 is a copy of the certification test report for FMVSS No. 208, Frontal 0° Belted Barrier. (Driver - 1998 MY Carryover Report)
 - Attachment 4 is a copy of the certification test report for FMVSS No. 208, Frontal 0° Belted Barrier. (Passenger - New for 1999 MY)

Nissan made an engineering judgment for angle barrier test condition.

- 1) The 1999 Model Year Nissan Altima was designed from its inception to comply with the requirements of FMVSS No. 208, S13 as opposed to an existing model that has been redesigned to meet these requirements

Attachment 5, The VIN tag is labeled with "SRS II" as a depowered air bag vehicle on the 1999 Model Year Nissan Altima.

- 3) The 99 MY Altima is not equipped with a crash event recorder.
- 4) Attachment 6, "Method of Disconnecting Air Bags for Sled Test" describes the method Nissan used for certification of S13 of FMVSS No. 208.

A secondary sled accelerometer is used to determine when the sled acceleration reaches 0.5g. The 0.5 g acceleration is based on an analog filtered data at channel class 300.

- 5) The safety belt system in the 1999 Nissan Altima is not equipped with tension relieving device.
- 6) The windows were closed during Nissan's certification testing of the 1999 Nissan Altima. The vehicle is not equipped with vents.
- 7) The dummy placement measurements, diagrams and photographs are show in Appendix C.

The 1999 Nissan Altima is equipped with a driver foot rest.

- 8) The seat positioning, steering column positioning, and fuel tank data sheet is shown in Attachment 7 and Appendices A and B.
- 9) The 1999 Nissan Altima is equipped with adjustable upper seat belt anchorages for a 50th percentile adult male occupant. The adjustable upper seat belt anchorage is position at the topmost position for a 50th percentile adult male occupant.
- 10) Attachment 1 & 2, pages 2 and 3 shows the resulting injury criteria recorded for certification tests conducted to meet the requirements of S13.
- 11) The following components are the order of priority for removal to obtain the proper test weight.
- Spare Tire
 - Jack and Tools
 - Rear Seat
 - Tail Lamps
 - Rear Fascia
 - Bumper
 - Trunk Lid

- 12) Not Applicable.

- 13) Explosive devices is used to inflate the air bags in the 1999 Nissan Altima.
Attachment 8 is a copy of the certification report to demonstrate that it meets all the requirements of S9.2.

Attachment 6

Method of Disconnecting Air Bags for Sled Test

C-2

CAUTION:

- Before disconnecting driver and passenger air bags, turn the ignition switch off, disconnect both battery cables and wait for at least 10 minutes.
- Always work from the side of the air bag module.

Driver Air Bag

- 1) Remove lower lid from underneath the steering wheel (6 o'clock position) and disconnect air bag module connector.

Note: The female connector is shunted when the connector is disconnected.

- 2) Cut the male connector (vehicle harness) wire harness with enough lead to solder the trigger mechanism harness.
- 3) Solder the triggering mechanism wire harness to the male connector wire harness.
- 4) Cover the solder joint with electrical heat shrink tubing.
- 5) **Connect the air bag module wire harness as the last step prior to running the sled test.**

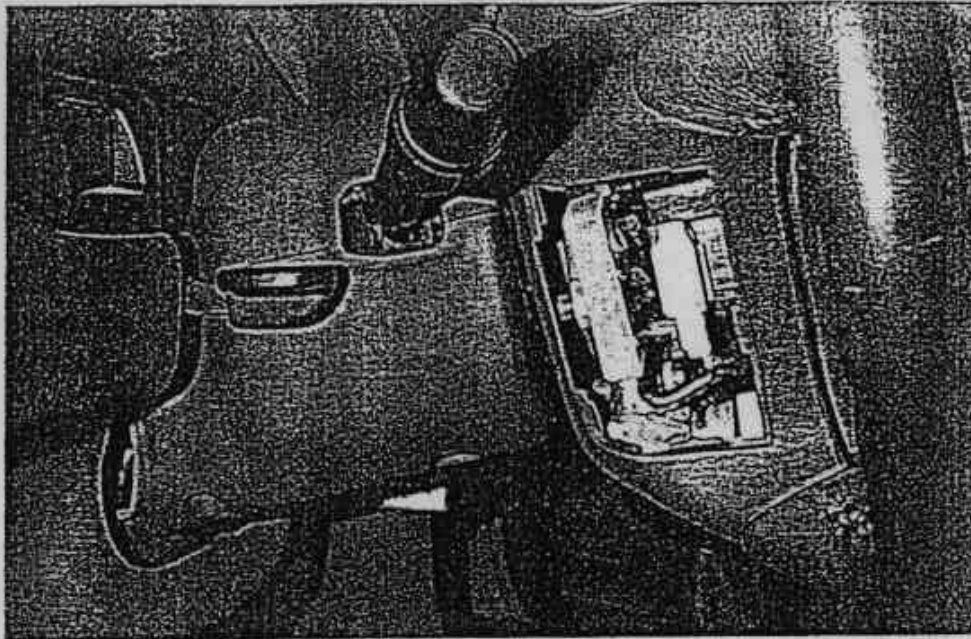
Passenger Air Bag

- 1) Remove lid from inside the glove box and disconnect the air bag module connector.

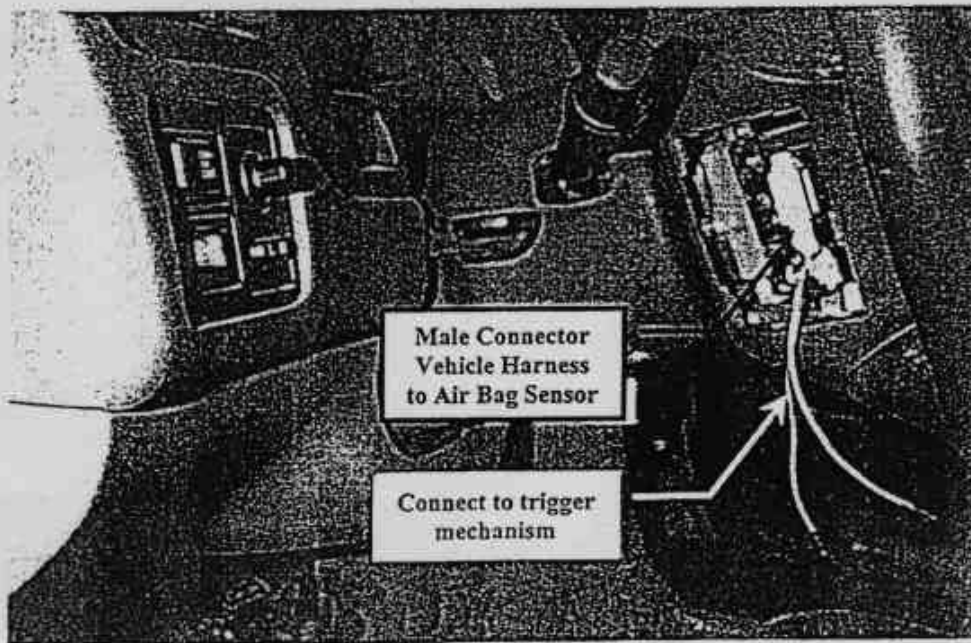
Note: The female connector is shunted when the connector is disconnected.

- 2) Remove the glove box.
- 2) Cut the male connector (vehicle harness) wire harness with enough lead to solder the trigger mechanism harness.
- 3) Solder the triggering mechanism wire harness to the male connector wire harness.
- 4) Cover the solder joint with electrical heat shrink tubing.
- 5) Connect the air bag module wire harness, **DO NOT** connect the triggering mechanism wire harness to the trigger mechanism.
- 6) Route the air bag module and triggering mechanism wire harness away from any sharp edges and re-install the glove box.
- 7) **Connect the triggering mechanism wire harness to the triggering mechanism as the last step prior to running the sled test.**

Attachment 6
Driver Air Bag

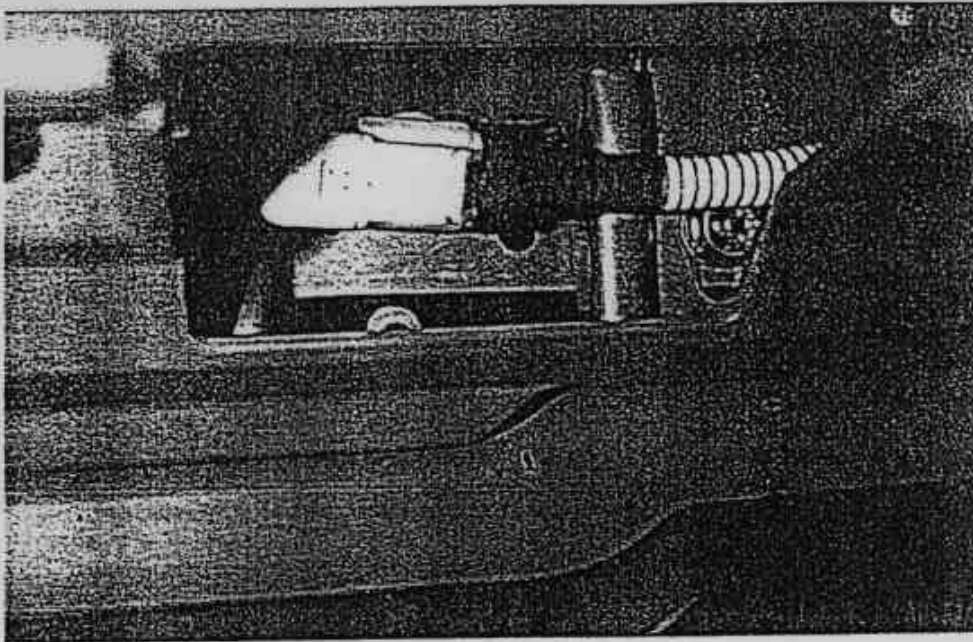


Location of connector inside steering wheel.

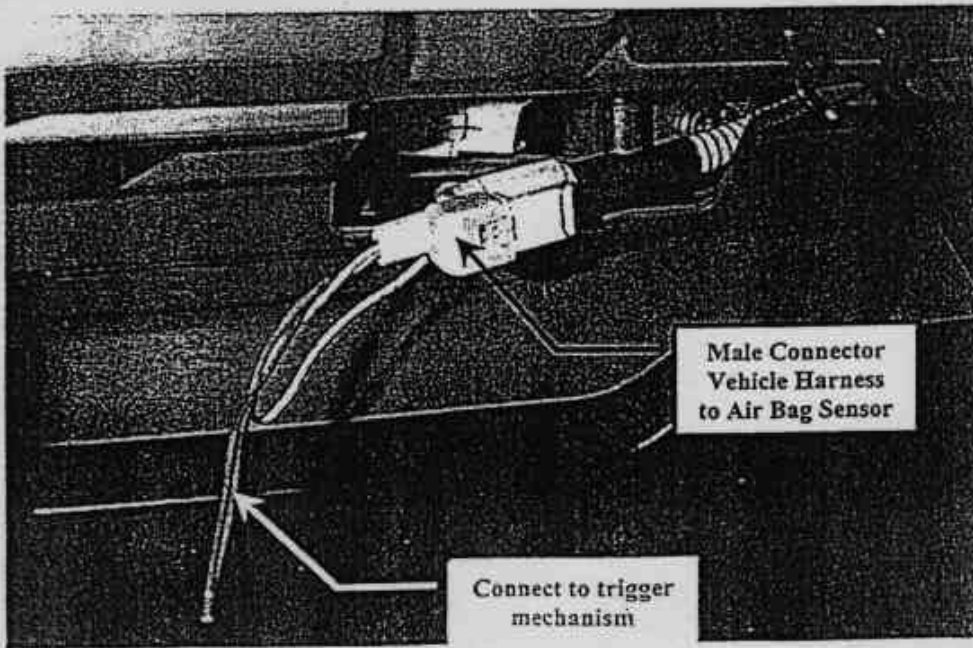


Simulated Air Bag
connector unhooked from
vehicle system.

Attachment 6
Passenger Air Bag



Location of Air Bag connector inside the glove box.



Simulated Air Bag connector unhooked from vehicle system

Attachment 7

TEST VEHICLE INFORMATION

Vehicle Model Year & Make: 1998 & 99 NISSAN
 Vehicle Model & Body Style: ALTIMA 4 DOOR SEDAN

C-5

I. NOMINAL DESIGN RIDING POSITION **

For adjustable driver and passenger seat backs.
 Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent if applicable. Indicate, if applicable, how the detents are numbered (Is the first detent "0" or "1"?). Indicate if the seat back angle is measured with the dummy in the seat.

Seat back angle for driver's seat = $25^\circ *1$ $18.6^\circ *2$ *1 = Nominal Design Angle *2 = Measured Angle on seat back frame

Measurement Instructions:
 A) MANUAL SEAT

- 1) Adjust the seat back until it is locked in the full upright position (first detent = "0")
- 2) Release the lock by actuating the reclining lever and push the seat back to the 7th rearward notch.

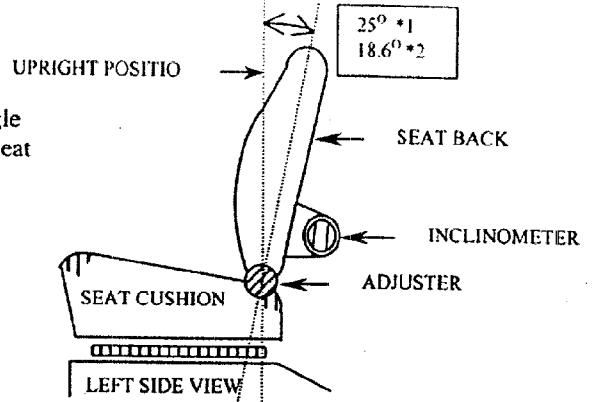
B) POWER SEAT

- 1) Adjust the seat back by the recliner switch to the upright initial position.
- 2) Recline the seat back rearward until the inclinometer read 18.6° as shown on the figure to the right or shown in Appendix A. (neutral position).

Seat back angle for passenger's seat = $25^\circ *1$ $18.6^\circ *2$ *1 = Nominal Design Angle *2 = Measured Angle on seat back frame

Measurement Instructions:

Same procedure as Driver side.



FRONT SEAT ASSEMBLY

2. SEAT FOR & AFT POSTIONS **

Provide instructions for positioning the driver and front outboard passenger seat(s) in the center of fore and aft travel. For example, indicate how the detents are numbered (Is the first detent "0" or "1"?). Provide information to locate the detent in which the seat track is to be locked.

Positioning of driver's seat:

A: MANUAL SEAT

- 1) Actuate seat track slide mechanism by lifting the lock lever and pull the seat until it is locked in the full forward most position.
- 2) With the initial position designated as "0", release the lock mechanism and adjust the seat to the 10th notch (neutral position).

B: POWER SEAT

- 1) Adjust the seat track by the switch to slide the seat to the full forward most position.
- 2) Adjust the seat 4.72inches (120 mm) rearward (neutral position).

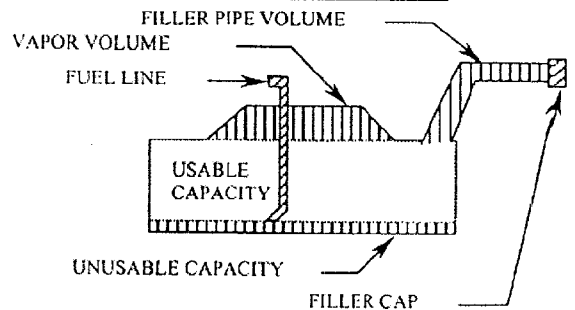
Positioning of the passenger's seat (if applicable):

Same procedure as drive side.

3. FUEL TANK DATA **

- 3.1 A. "Usable Capacity" of standard equipment fuel tank = 15.8 gallons.
- B. "Usable Capacity" of optional equipment fuel tank = N/A gallons.
- C. Capacity used when certification testing to requirements of FMVSS 301 = 15.8 gallons.

Operational



VEHICLE FUEL TANK ASSEMBLY

Attachment 7

3.2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 14.74 gallons.

C-6

3.3 Is vehicle equipped with electric fuel pump? YES NO

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

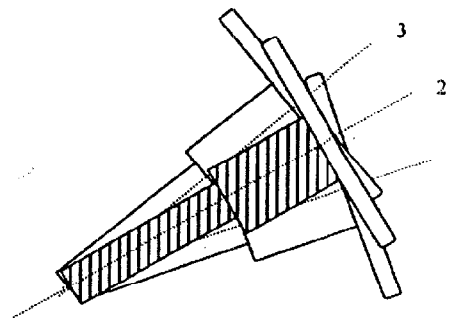
The fuel pump will pump fuel: 1) for 5 seconds after the ignition is switched to "ON".
 2) while the engine is running.
 3) for 1.5 seconds after the engine stops running.

4. STEERING COLUMN ADJUSTMENTS **

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when it is moved through its full range of driving positions. If the tested vehicle has any of these adjustments, does your company use any specific procedures to determine the geometric center.

Operational Instructions: $\alpha = 24^\circ$

- 1) Adjust the steering column and lock it in the full up position. Measure the dimension from the header down to the steering wheel rim.
- 2) Adjust the steering column and lock it in the full down position. Measure the dimension from the header down to the steering wheel rim.
- 3) Adjust the steering column to the middle position of the highest and lowest positions as measured from the header down to the steering wheel rim.
- 4) Place both a straight edge and an inclinometer on the steering wheel and record the steering column angle. The steering column angle should be 24° .



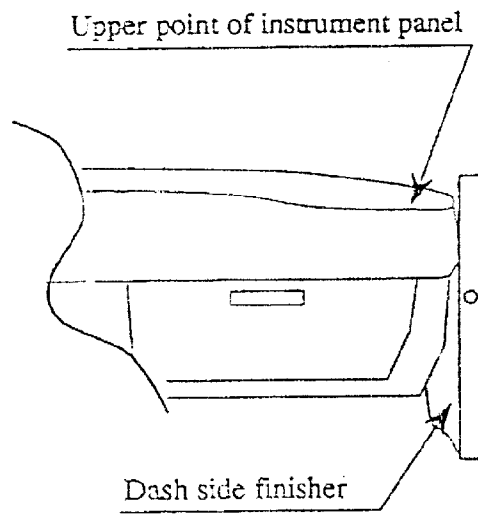
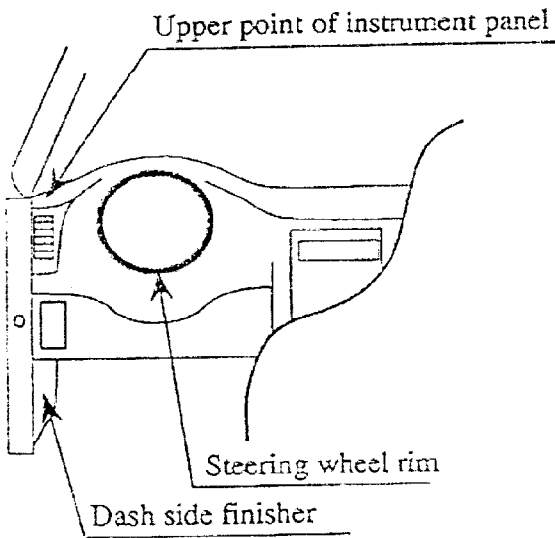
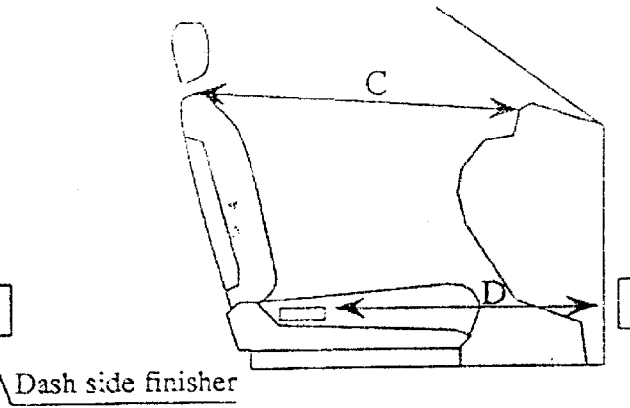
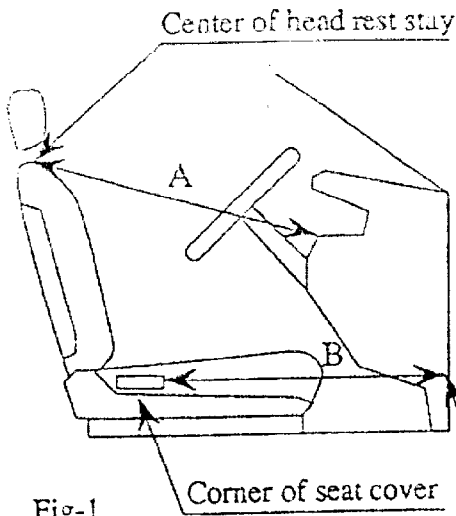
APPENDIX A

VEHICLE MODEL YEAR: 1998 VEHICLE MAKE: NISSAN
VEHICLE MODEL & BODY STYLE: ALTIMA 4DOOR SEDAN

DIMENSIONS FOR SEAT BACK ANGLE AND SEAT SLIDE SETTING

Reset is required when each dimension you measured has more than 0.6 in. difference from the dimension below.
(Refer to Figs. 1 -4 and photographs)

	Measurements Points	Photographs	Dimensions	
Driver Side (Power seat)	A Center of headrest stay - Upper point of instrument Panel	1 to 3	38.3 in.	Seat back setting data
	B Corner of seat cover- Dash side finisher	4 to 6	30.4 in.	Seat slide setting data
Passenger Side	C Center of headrest stay - Upper point of instrument Panel	7 to 9	39.2 in.	Seat back setting data
	D Corner of seat cover- Dash side finisher	10 to 12	30.5 in.	Seat slide setting data



Driver Seat (Dimension A)

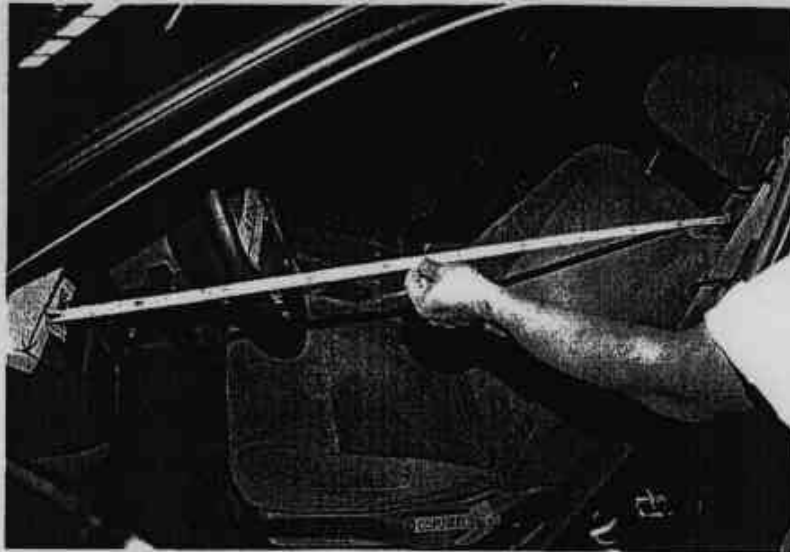


Photo.1

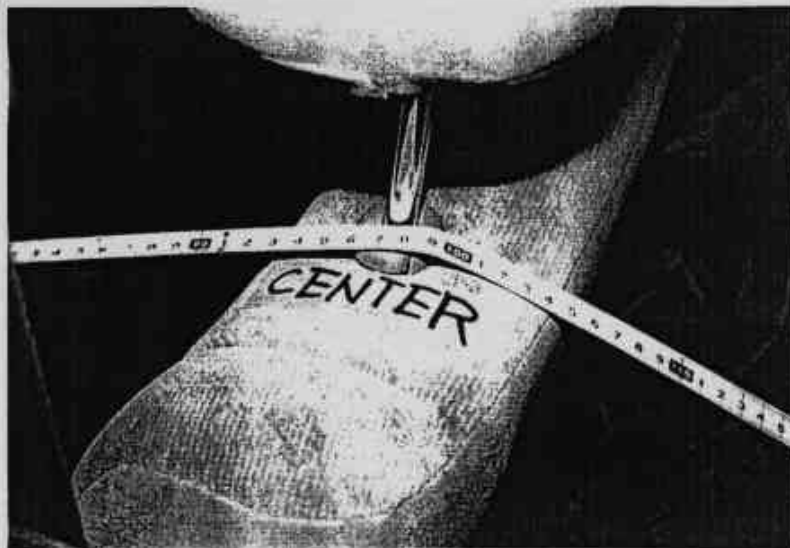


Photo.2

Center of head
rest stay

Driver Seat (Dimension A)



Photo.3

Upper point of

instrument Panel

Driver Seat (Dimension B)



Photo. 4

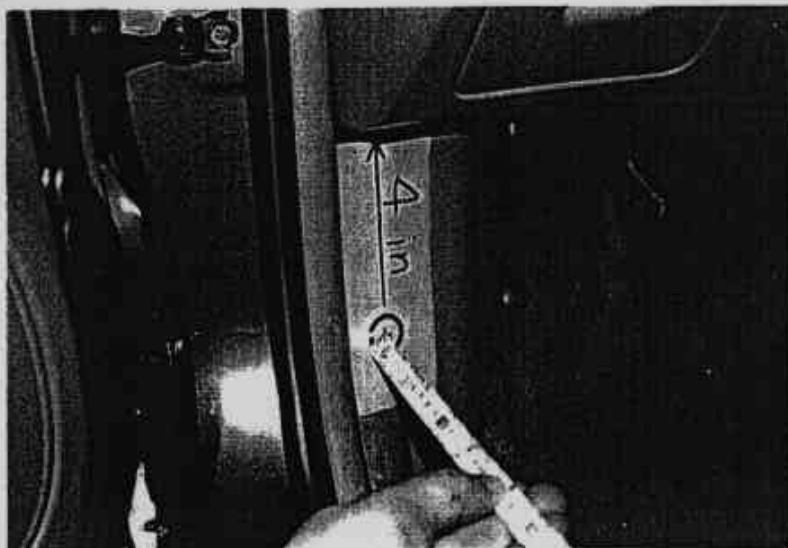


Photo.5

Dash side finisher

Driver Seat (Dimension B)



Photo. 6
Corner of seat
cover

Passenger Seat (Dimension C)

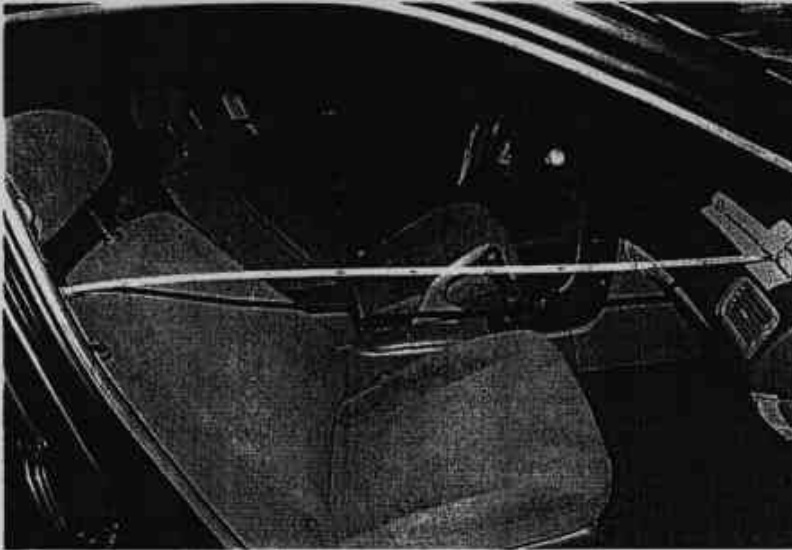


Photo.7



Photo.8
Center of
headrest stay

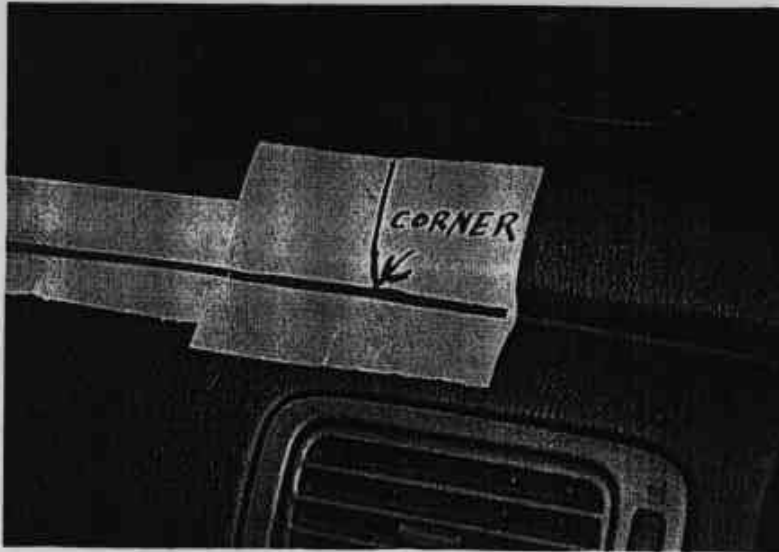


Photo.9

Upper point of
instrument panel

Passenger Seat (Dimension D)

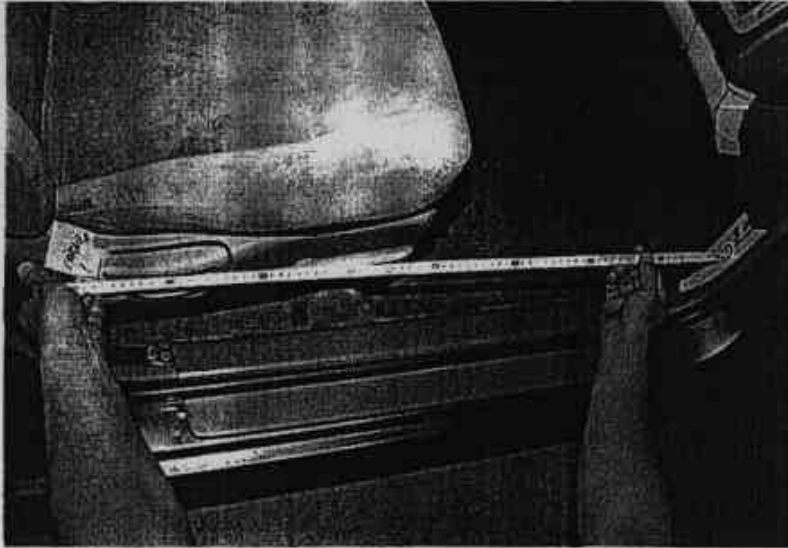


Photo. 10

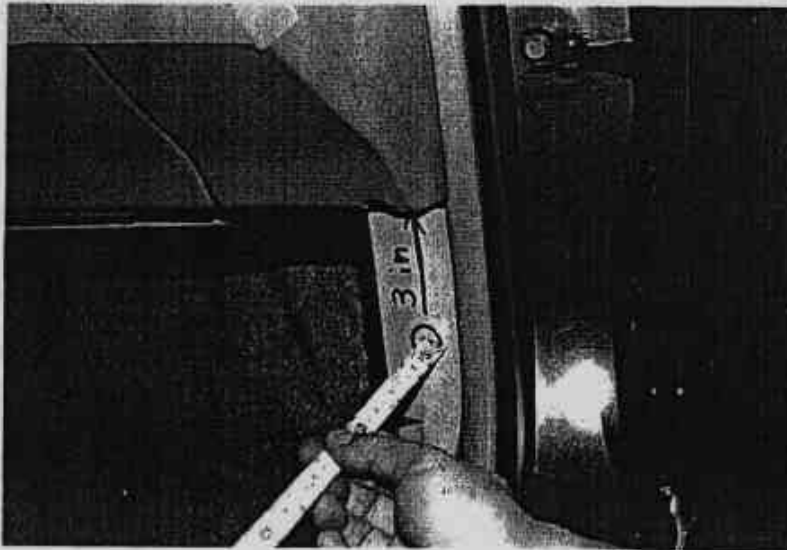


Photo. 11

Dash side finisher



Photo. 12

Corner of seat
cover

1999 NISSAN ALTIMA FOUR DOOR SEDAN

APPENDIX B

VEHICLE MODEL YEAR: 1998 VEHICLE MAKE: NISSAN
 VEHICLE MODEL & BODY STYLE: ALTIMA 4DOOR SEDAN
 DIMENSIONS FOR TILT STEERING COLUMN POSITIONING

Reset is required when each dimension you measured has more than 0.6 in. difference from the dimension below.
 (Refer to Figs. 1 -2 and photographs.)

	Measurements Points	Photographs	Dimensions
Driver Side	A Center of steering horn pad - Edge of header rail	1,2,3	17.1 in.
	B Lower point of steering wheel rim - Edge of header rail	4,5	23.5 in.

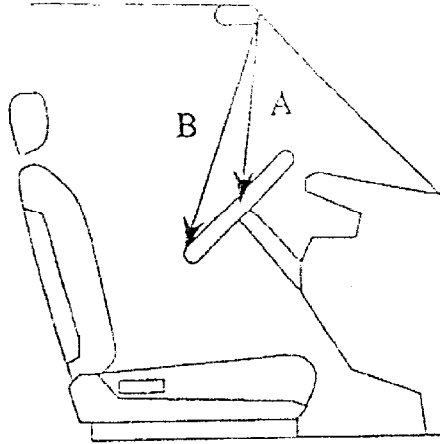
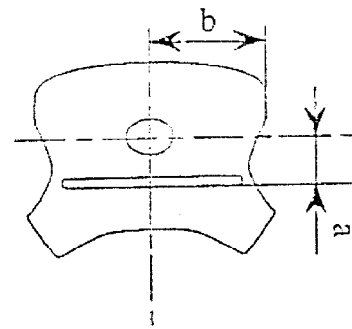
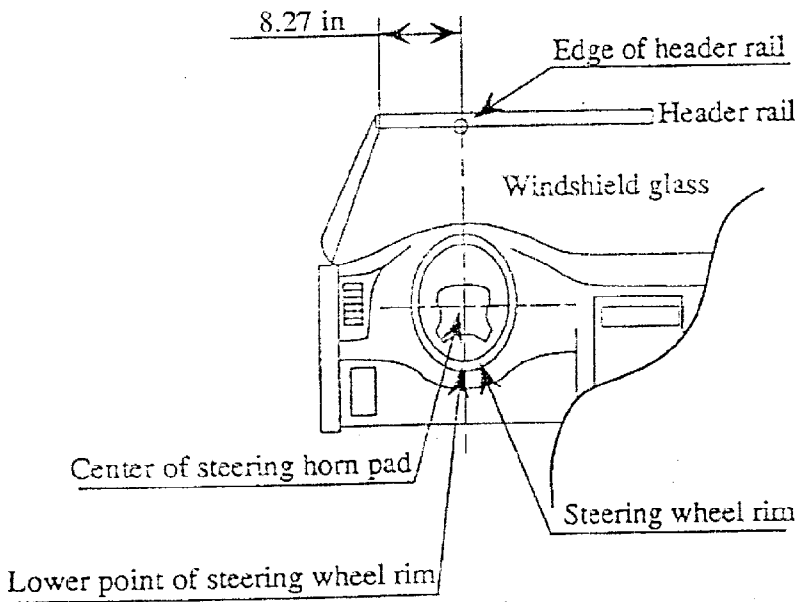


Fig-1



$a = 1.38 \text{ in}$
 $b = 4.72 \text{ in}$

Center of steering horn pad

Fig-2

Driver Seat (Dimension A)



Photo. 1

Driver Seat (Dimension A)

Photo.2

Center of steering

horn pad

Refer to Photo 4

Driver Seat (Dimension A&B)

C-20

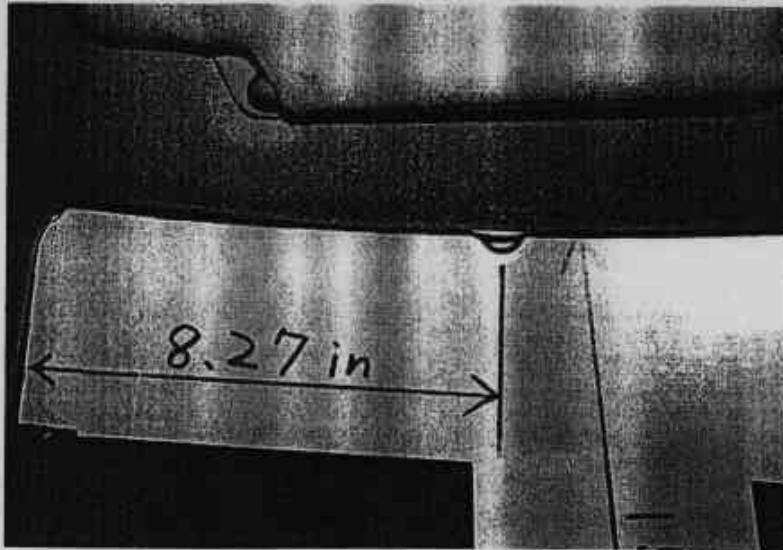


Photo. 3

Edge of header rail



Driver Seat (Dimension B)



Photo. 4
Steering wheel

Driver Seat (Dimension B)

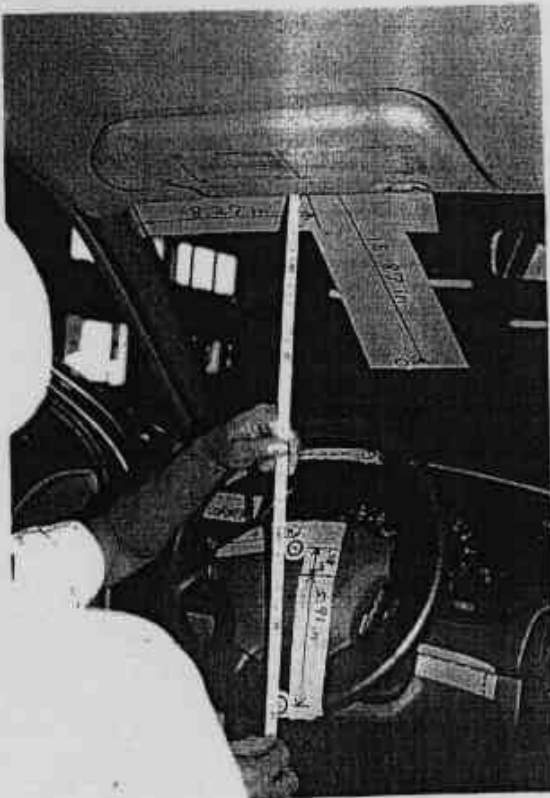


Photo.5
Lower point of
steering wheel rim

Appendix C

SUPPLEMENTAL INFORMATION FOR ENCLOSURE 4.5
 VEHICLE MODEL YEAR: 1998 VEHICLE MAKE: NISSAN
 VEHICLE MODEL & BODY STYLE: ALTIMA 4DOOR SEDAN

C-22

	Dimension	Photographs of Driver	Photographs of Passenger
ENCLOSURE 4	WA	—	
	SWA	1	—
	SCA	—	
	SA	2	3
	HZ	—	
	HH	4,8,10	5,9,11
	HW	6,8,10	7,9,11
	HR	12,14	13,15
	NR	10,16,17	
	CD	18,20,24	19,21,25
	CS	22,23,24	—
	RA	—	
	KDL	26,28	30,33
	KDR	27,29	31,33
	PA	—	
	TA	—	
	KK	32	34
	ST	—	
	SK	—	
	SH	—	
SHY	—		
HS *1	35,37	36,38	
HD *2	39,41	40,42	
AD	43,45	44,46	
HC *3	47,49	48,50	
ENCLOSURE 5	PBU	51	52
	PBL	51	52

*1;HS—Head target to side door molding.

*2;HD—H-point to Body sill. Center of dummy hip point hole to Body sill.

*3;HC—H-point to Check link. Center of dummy hip point hole to Check link pin of front door.

DUMMY POSITIONING IN VEHICLE FRONT SEAT MEASUREMENT TABLE

C-23

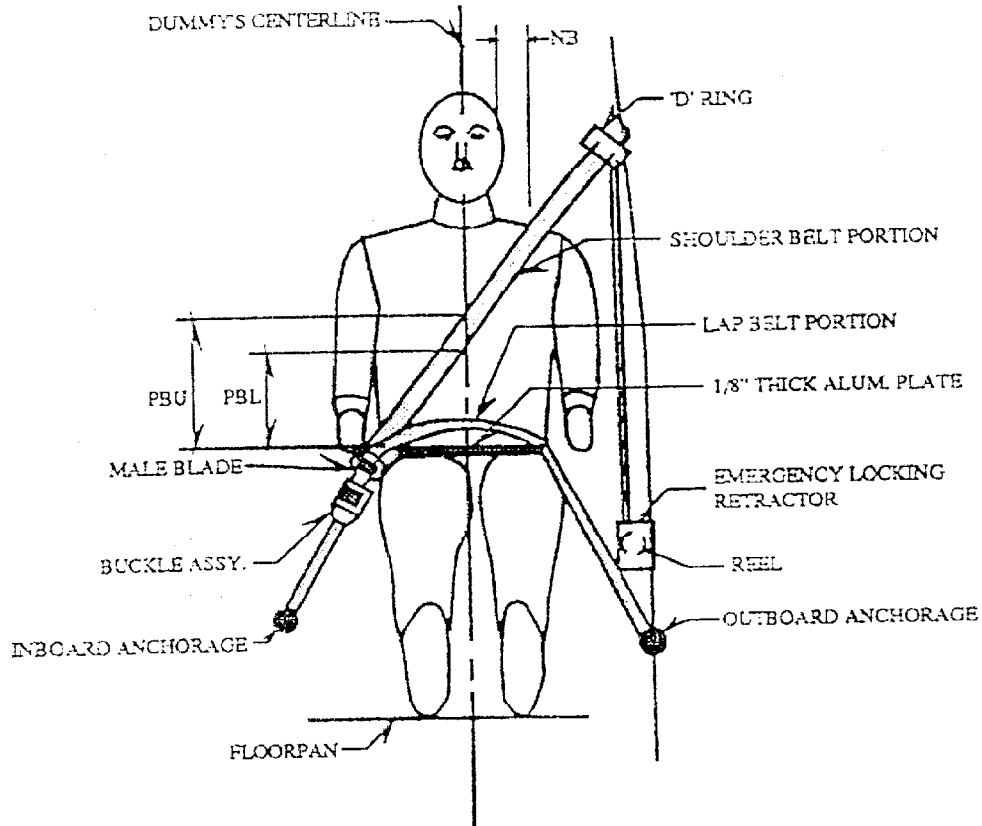
	DRIVER (Serial #)			PASS. (Serial #)		
WA°	_____					
SWA°	24.0 deg					
SCA°	_____					
SA°	18.5 deg			18.7 deg		
HZ	_____			_____		
HH	12.8 in			13.0 in		
HW	25.3 in			25.8 in		
HR	7.9 in			7.9 in		
NR	16.5 in			Angle (NA) N/A		
CD	20.6 in			24.0 in		
CS	12.3 in			_____		
RA	_____			_____		
KDL	4.5 in Angle (KDA) N/A			4.5 in		
KDR	4.5 in			4.9 in Angle (KDA) N/A		
PA°	N/A			N/A		
TA°	N/A			N/A		
KK	11.0 in			8.8 in		
ST	N/A Angle N/A			N/A Angle N/A		
SK	N/A Angle N/A			N/A Angle N/A		
SH	N/A Angle N/A			N/A Angle N/A		
SHY	N/A			N/A		
HS *1	15.9 in			15.9 in		
HD *2	9.1 in			9.2 in		
AD	4.3 in			4.5 in		
HC *3	3.1 in			30.9 in		

*1; HS-Head target to side door molding.

*2; HD-H-point to Body sill. Center of dummy hip point hole to Body sill.

*3; HC-H-point to Check link. Center of dummy hip point hole to Check link pin of front door.

Pre-Test
SEAT BELT POSITIONING DATA



FRONT VIEW OF DRIVER DUMMY

(sample belt configuration)

	DRIVER DUMMY (inches)	PASSENGER DUMMY (inches)
<u>PBU</u> -- Top surface of alum. plate to upper edge (inches)	12.3 in	13.0 in
<u>PBL</u> -- Top surface of alum. plate to belt lower edge (inches)	9.4 in	9.8 in
<u>LAP BELT TENSION</u> (lbs.)	NO DATA	NO DATA
<u>SHOULDER BELT TENSION</u> (lbs.)	NO DATA	NO DATA
<u>NB</u> - Edge of neck to edge of belt	NO DATA	NO DATA

Steering wheel angle SWA



Photo.1

Driver (Seat back angle SA)



Photo.2

Passenger (Seat back angle SA)



Photo.3

Driver (Dimension HH)



Photo.4
Middle of the
forehead to edge
of header rail

Passenger (Dimension HH)



Photo.5
Middle of the
forehead to edge
of header rail

Driver (Dimension HW)

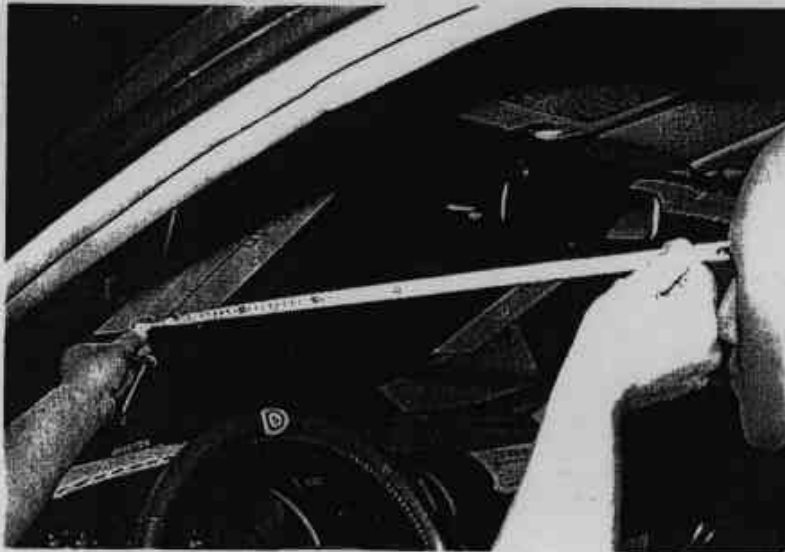


Photo. 6
Middle of the
forehead to
windshield glass

Passenger (Dimension HW)



Photo.7
Middle of the
forehead to
windshield glass

Driver (Dimension HH,HW)

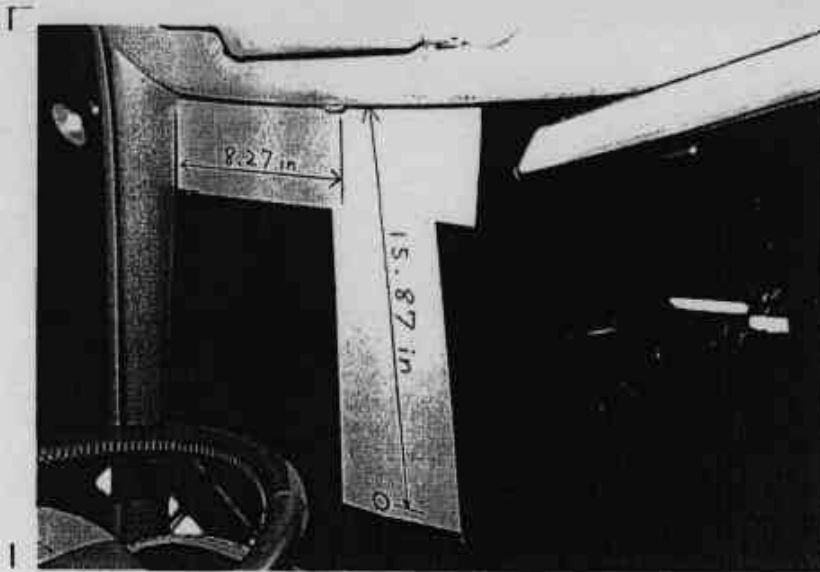


Photo. 8
Base point for HH
Edge of
header rail

Base point for HW
Windshield glass

Passenger (Dimension HH,HW)

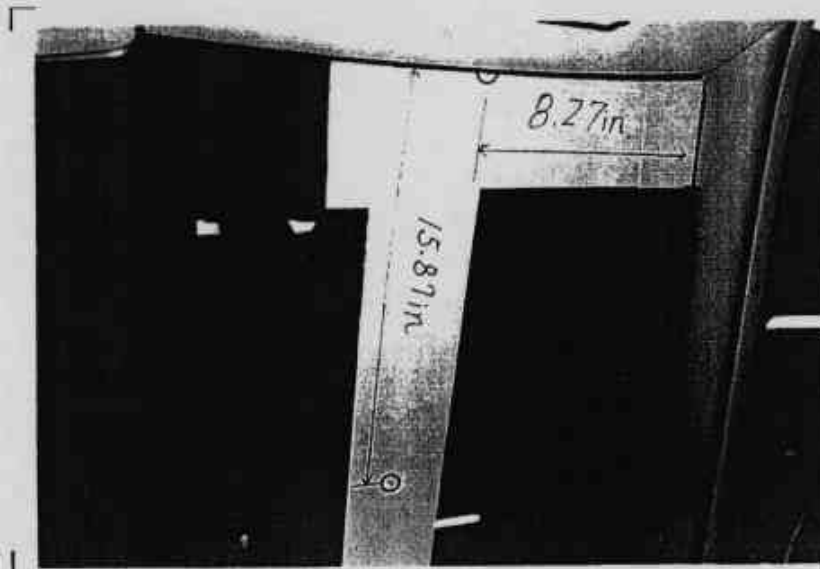


Photo.9
Base point for HH
Edge of
header rail

Base point for HW
Windshield glass

Driver (Dimension HH,HW,NR)

┌

Photo.10

Refer to Photos 4,6,16

┌

Passenger (Dimension HH,HW)

┌

Photo.11

Refer to Photos 5,7

┌

Driver (Dimension HR)

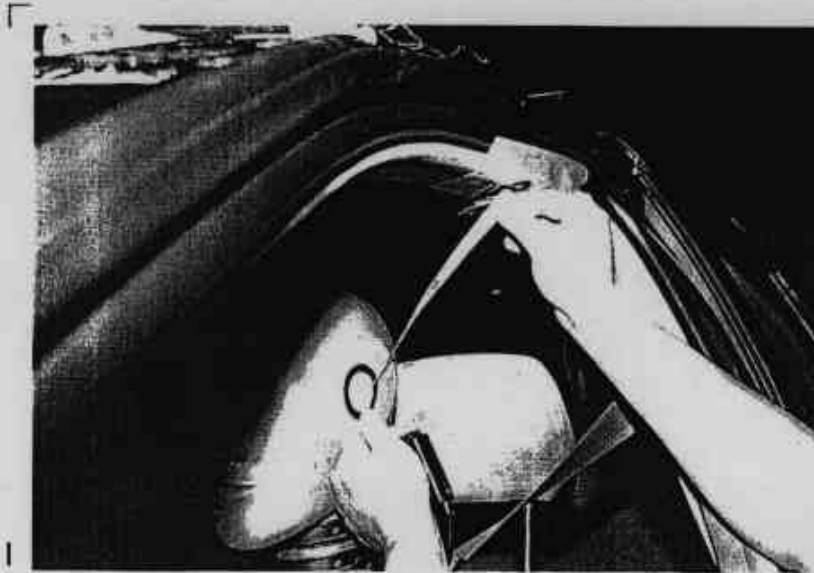


Photo.12
Head target to
roof side

Passenger (Dimension HR)



Photo.13
Head target to
roof side

Driver (Dimension HR)

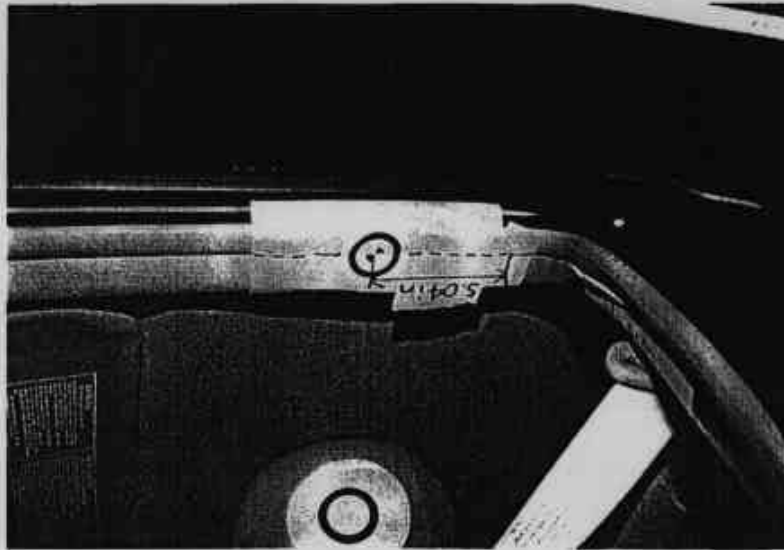


Photo.14

Passenger (Dimension HR)

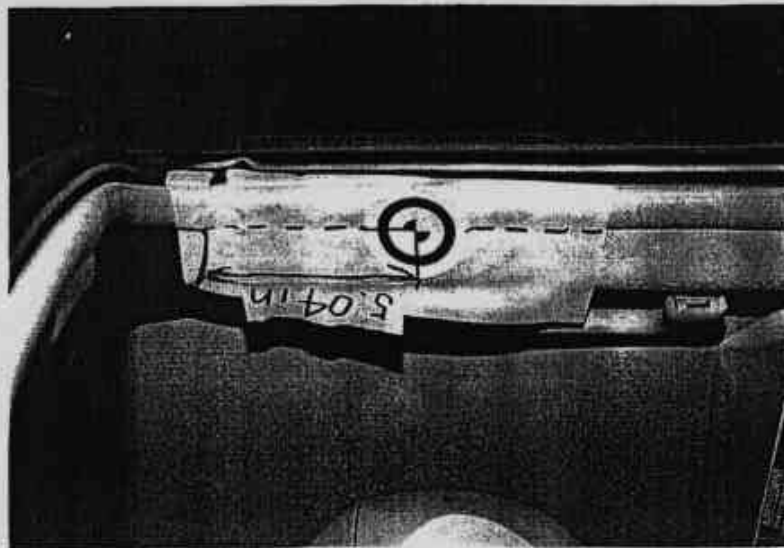


Photo.15

Driver (Dimension NR)



Photo.16
Middle of the forehead

Driver (Dimension NR)

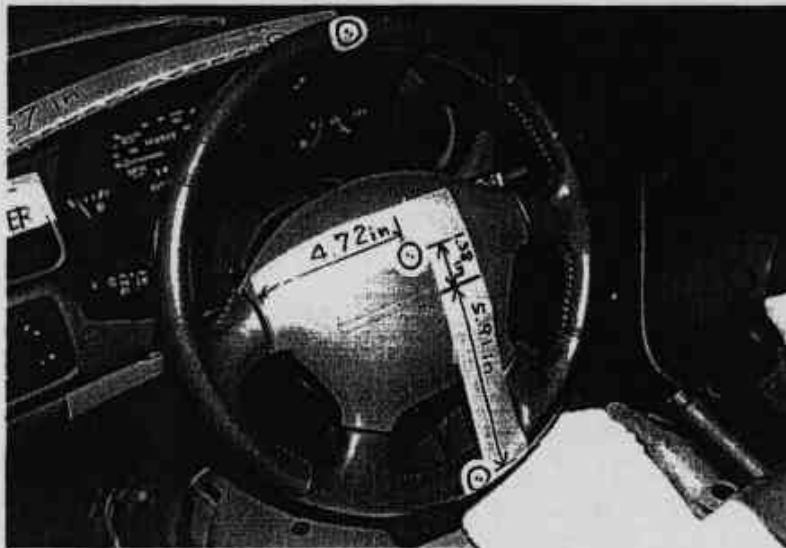


Photo.17
Top rear surface
of steering
wheel rim

Driver (Dimension CD)



Photo.18
Center of chest
to top rear surface
of instrument
panel cluster

Passenger (Dimension CD)

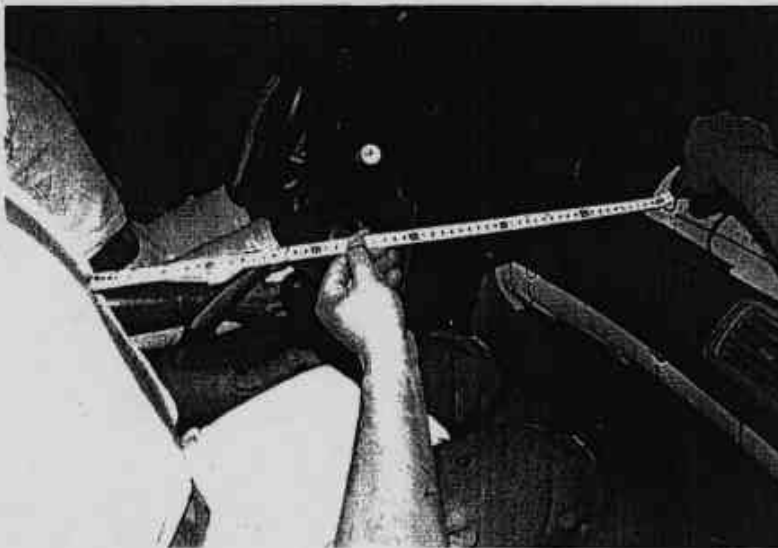


Photo.19
Center of chest
to middle point
of instrument
panel

Driver (Dimension CD)

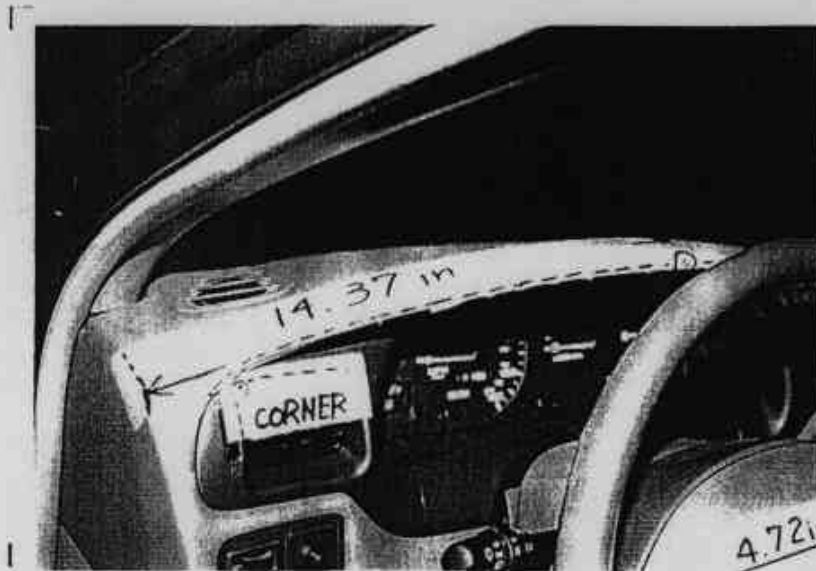


Photo.20
Top rear surface
of instrument
panel cluster

Passenger (Dimension CD)

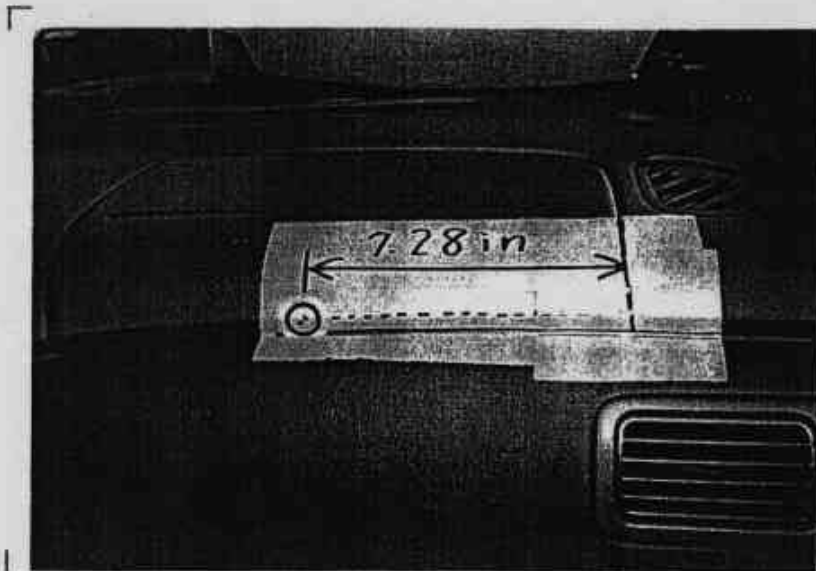


Photo.21
Middle point of
instrument panel

Driver (Dimension CS)

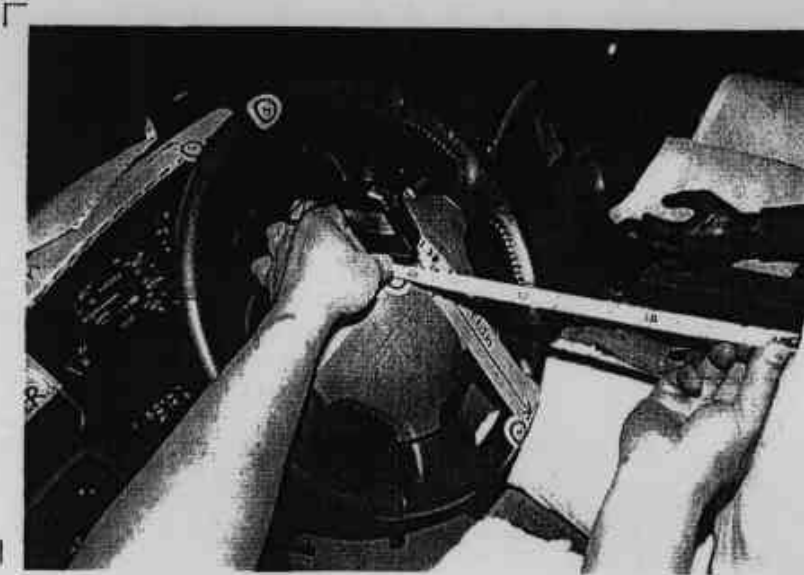


Photo. 22

Chest to steering
horn pad

Driver (Dimension CS)

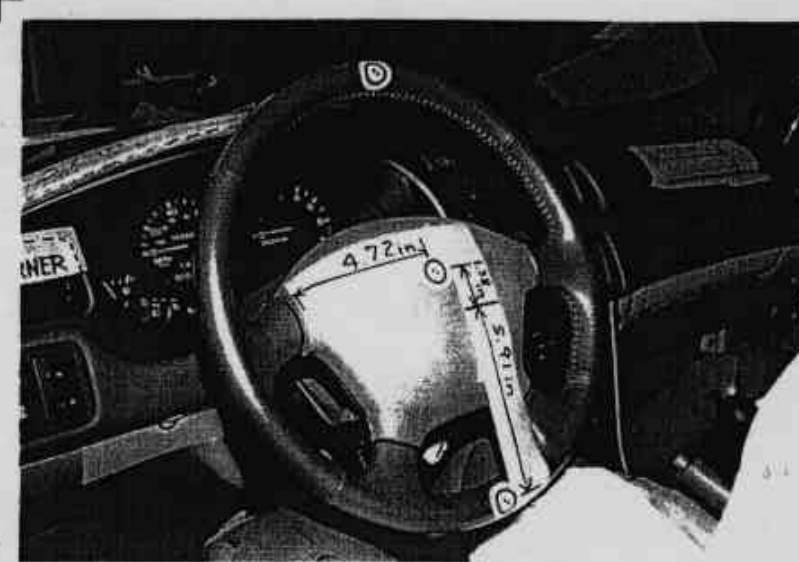


Photo.23

Center of steering
horn pad

Driver (Dimension CD,CS)



Photo.24
Center of chest

Passenger (Dimension CD)



Photo.25
Center of chest

Driver (Dimension KDL)



Photo.26
Left knee
to instrument
lower panel

Driver (Dimension KDR)

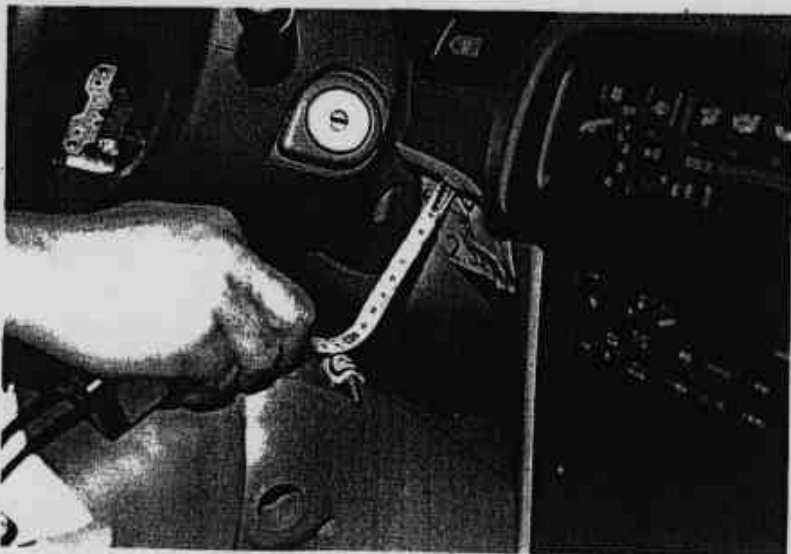


Photo.27
Right knee
to instrument
lower panel

Driver (Dimension KDL)

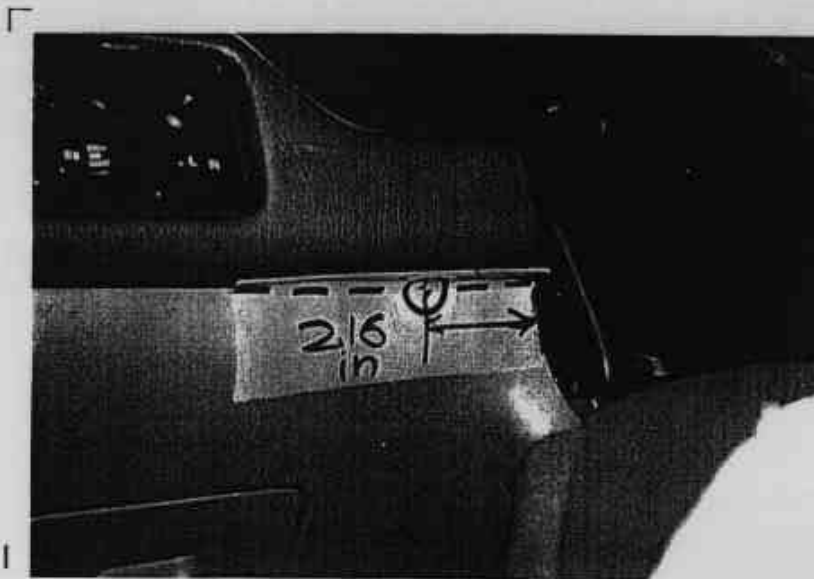


Photo.28
Instrument
lower panel

Driver (Dimension KDR)



Photo.29
Instrument
lower panel

Passenger (Dimension KDL)



Photo.30
Left knee to
glove box lid

Passenger (Dimension KDR)



Photo.31
Right knee to
glove box lid

Driver (Dimension KK)

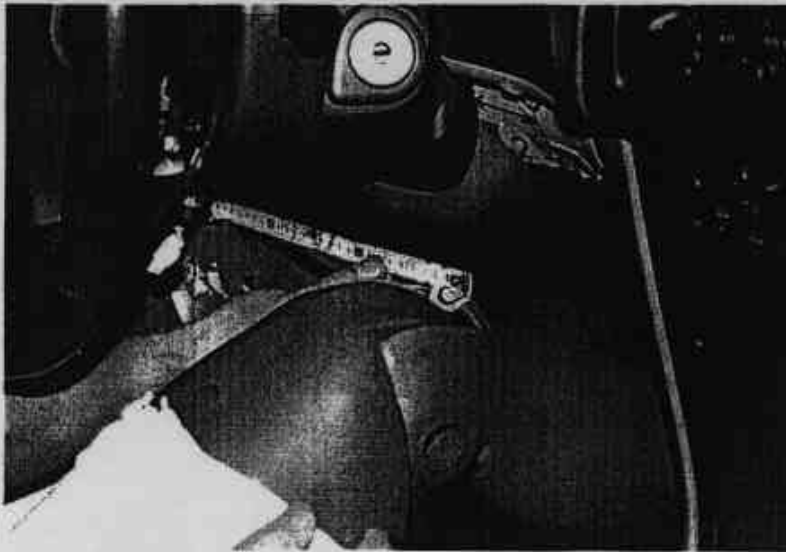


Photo.32

Center of right
knee to center
to left knee

Passenger (Dimension KDR,KDL)

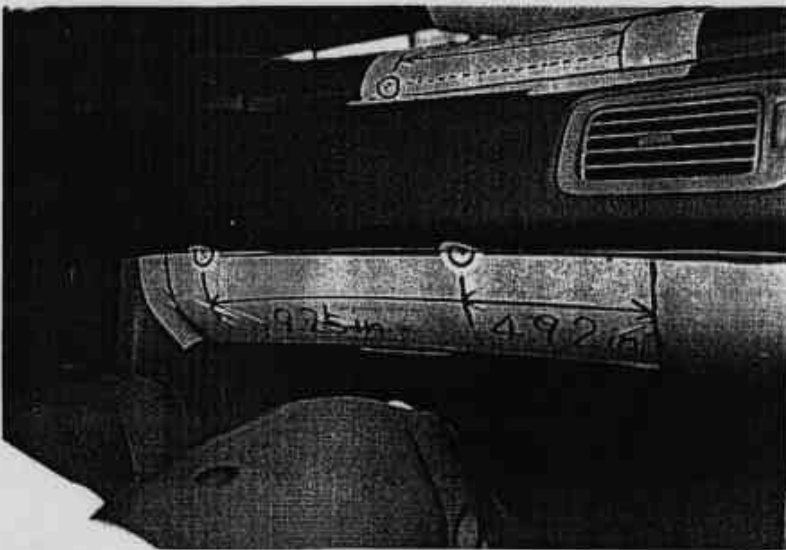


Photo.33

Upper point of
glove box lid

Passenger (Dimension KK)

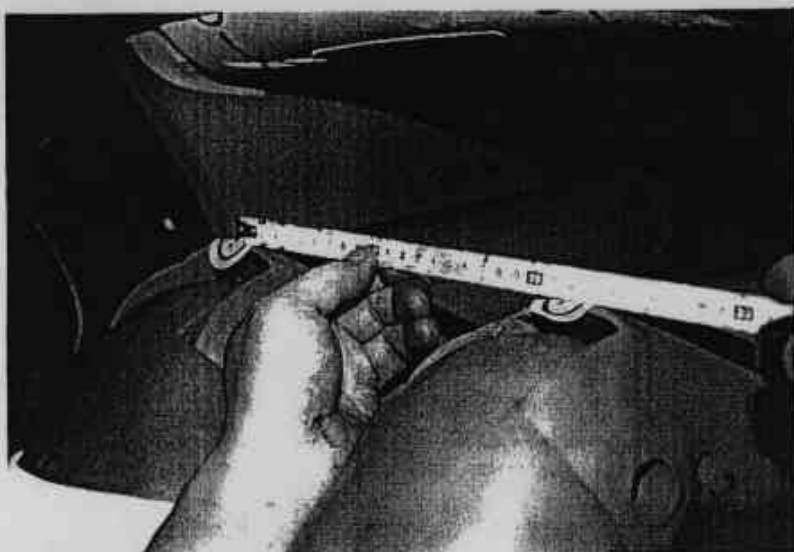


Photo.34
Center of right
knee to center
of left knee

Driver (Dimension HS)

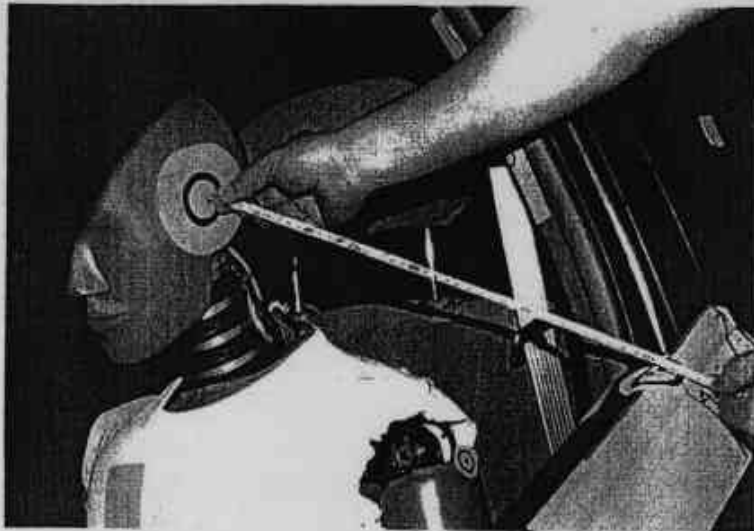


Photo.35
Head target to
Side door molding

Passenger (Dimension HS)



Photo.36
Head target to
Side door molding

Driver (Dimension HS)

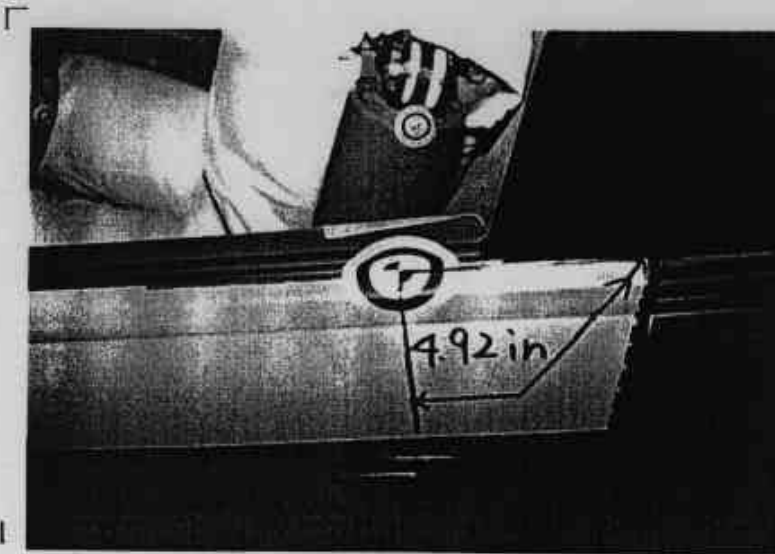


Photo. 37
Side door molding

Passenger (Dimension HS)

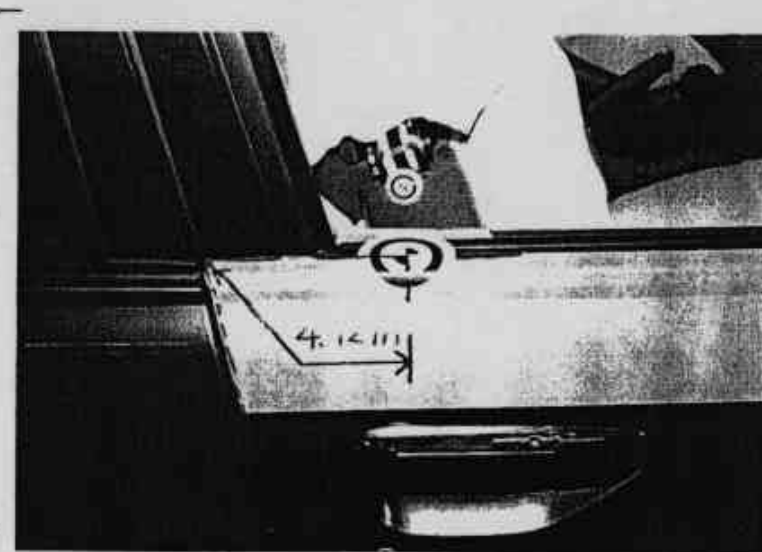


Photo.38
Side door molding

Driver (Dimension HD)



Photo.39
Center of
dummy hip point
hole to Body sill

Passenger (Dimension HD)

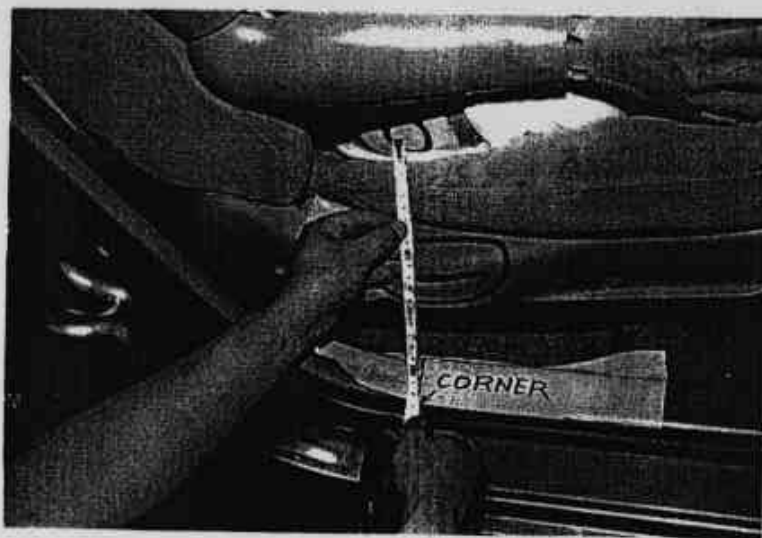


Photo.40
Center of
dummy hip point
hole to Body sill

Driver (Dimension HD)



Photo. 41
Body sill

Passenger (Dimension HD)



Photo. 42
Body sill

Driver (Dimension AD)

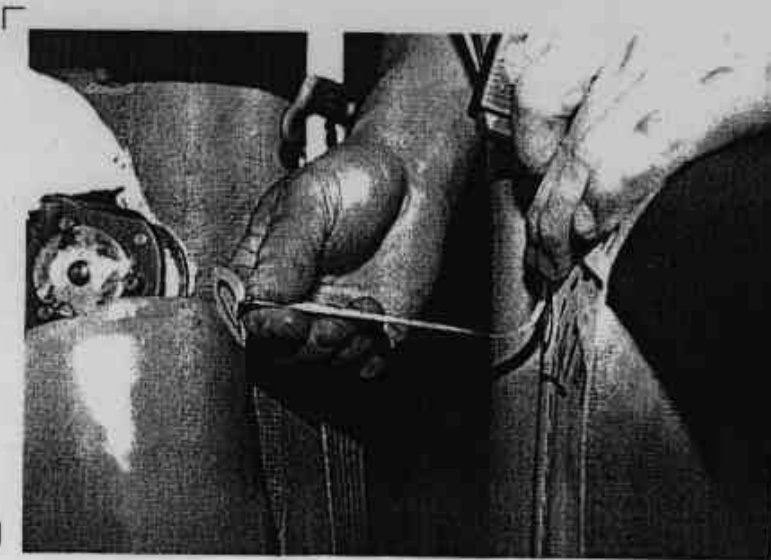


Photo.43
Arm to side door
molding

Passenger (Dimension AD)



Photo.44
Arm to side door
molding

Driver (Dimension PBU,PBL)

Appendix C

30/30

C-48

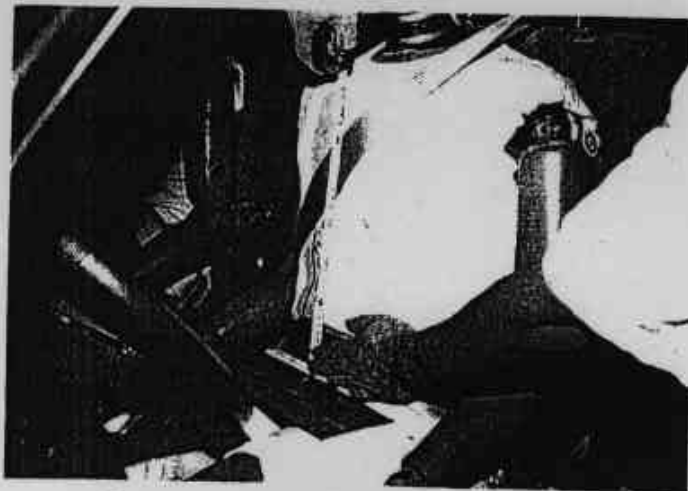


Photo. 51

Driver
(Dimension PBU,PBL)

Passenger (Dimension PBU,PBL)

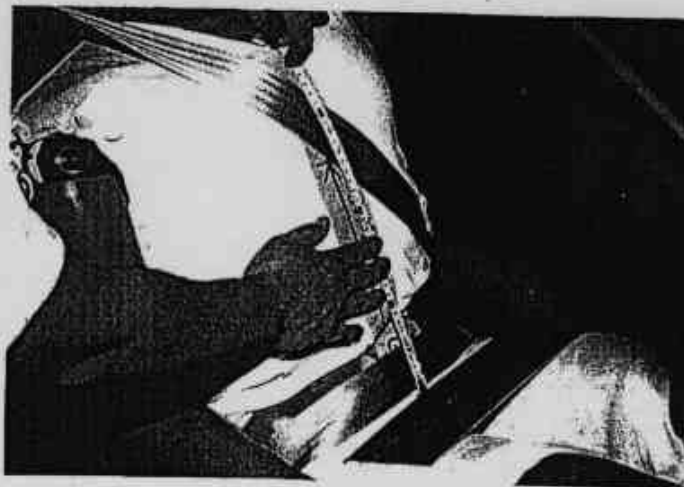


Photo.52

Passenger
(Dimension PBU,PBL)

Driver (Dimension HC)

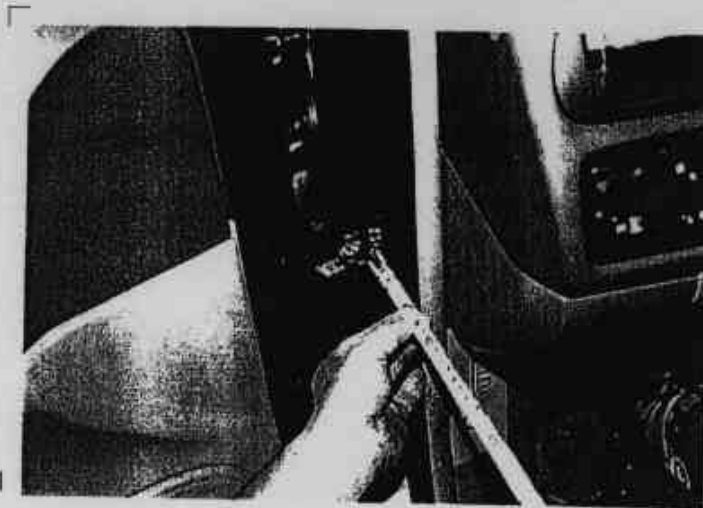


Photo.49
Check link pin of
front door

Passenger (Dimension HC)

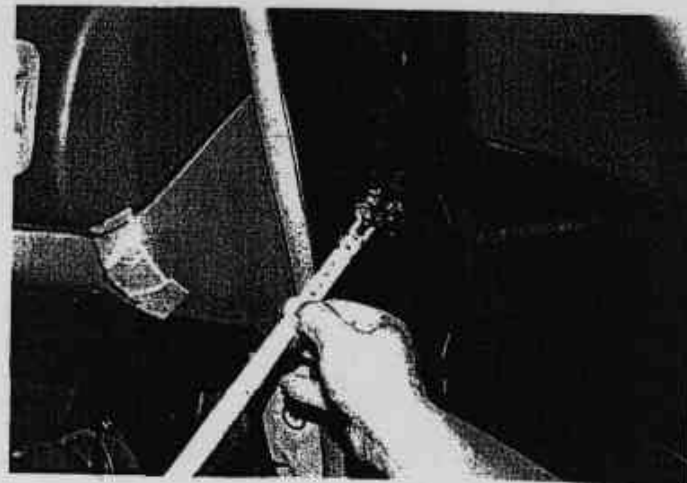


Photo.50
Check link pin of
front door

Driver (Dimension HC)

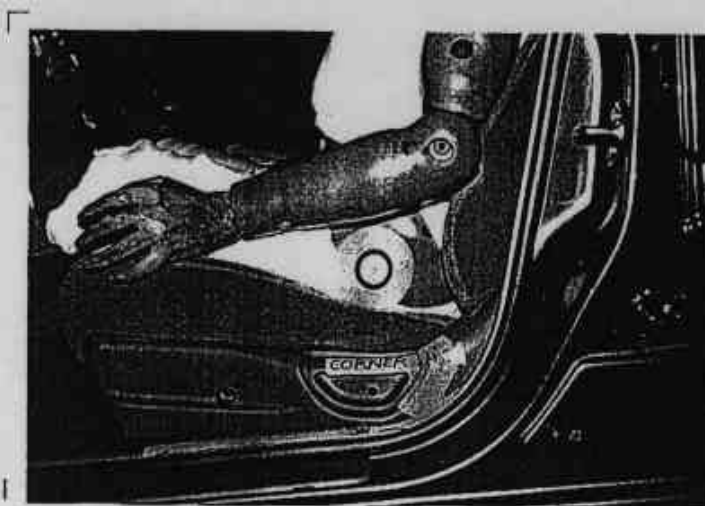


Photo.47
Center of angle
gage hole to
check link pin of
front door.

Passenger (Dimension HC)

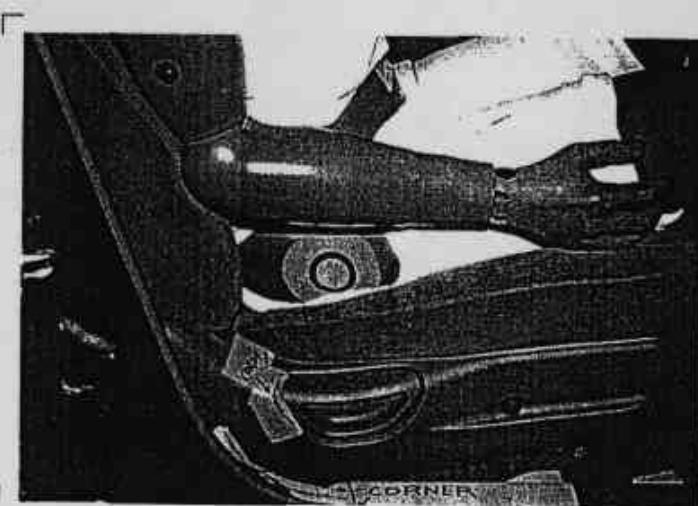


Photo.48
Center of angle
gage hole to
check link pin of
front door.

Driver (Dimension AD)

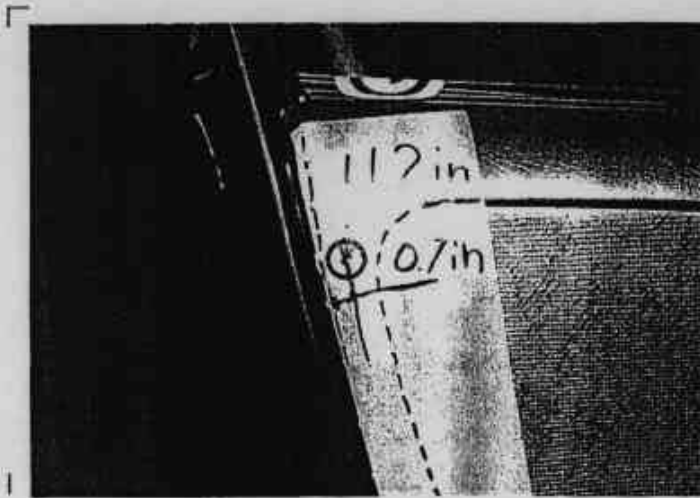


Photo.45
Side door molding

Passenger (Dimension AD)

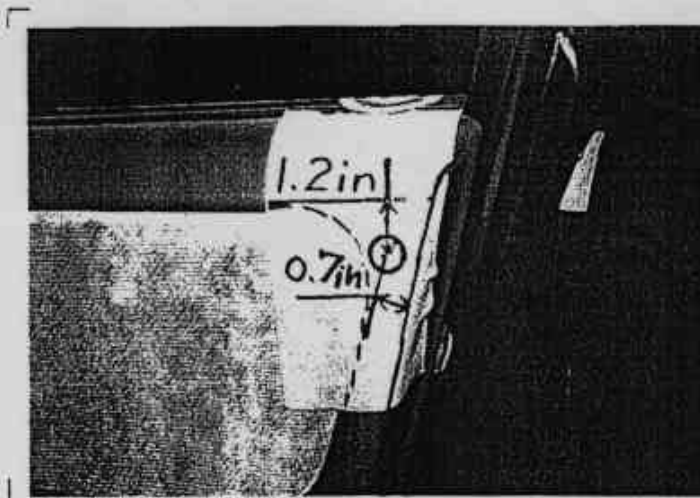


Photo.46
Side door molding