

HSN
HSA

REPORT NO. 208-MGA-2001-003

SAFETY COMPLIANCE SLED TESTING FOR FMVSS 208
OCCUPANT CRASH PROTECTION

Daewoo Motor Company, Ltd.
2001 Daewoo Leganza 4 Door
NHTSA NO. C10506

MGA RESEARCH CORPORATION
5000 WARREN ROAD
BURLINGTON, WI 53105



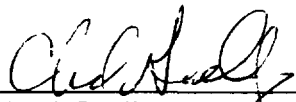
Test Date: March 21, 2001

Report Date April 19, 2001

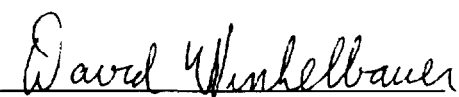
FINAL REPORT

Prepared For.
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NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
SAFETY ASSURANCE
OFFICE OF VEHICLE SAFETY COMPLIANCE
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400 SEVENTH STREET, S W., ROOM 6115
WASHINGTON, D.C. 20590

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PREPARED BY 
Chad Gadberry, Project Engineer
MGA Research Corporation

DATE: 4/19/01

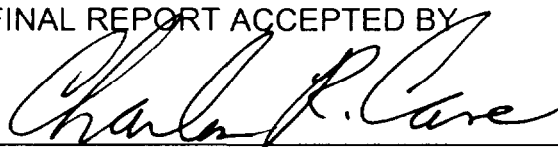
APPROVED BY 
David Winkelbauer, Facility Director
MGA Research Corporation

DATE: 4-19-01

Technicians Alan Artus
 Tammy Brausch
 Ben Marx
 Tim Michnay
 Doug Miller
 Chris Novak
 Kurt Range

Secretary Donna M Janovicz

FINAL REPORT ACCEPTED BY


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

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12 Sponsoring Agency Name and Address U S Department of Transportation National Highway Traffic Safety Administration Office of Vehicle Safety Compliance (Mail Code NSA-30) 400 Seventh St , S W , Room 6115 Washington, D C 20590				13 Type of Report and Period Covered Final Report March 21 - April 19, 2001	
				14 Sponsoring Agency Code NSA-30	
15 Supplementary Notes					
16 Abstract A compliance test (sled test) was conducted on the subject 2001 Daewoo Leganza 4 Door 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 2001 Daewoo Leganza 4 Door, NHTSA No. C10506, 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-eight (38) 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 March 21, 2001.

The test vehicle, a 2001 Daewoo Leganza 4 Door, NHTSA No C10506, 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 #403)	Passenger (Serial #401)
HIC	1000	323	206
Chest g	60 g	41.4 g	38.9 g
Chest displacement	3 in	1.3 in.	1.0 in
Left Femur	2250 lb	1361 lb	987 lb
Right Femur	2250 lb	1668 lb	1389 lb
Neck Extension	57 Nm	60 Nm	99 Nm
Neck Flexion	190 Nm	62.2 Nm	85.6 Nm
Neck Tension	3300 N	784 N	1015 N
Neck Compression	4000 N	2684 N	54 N
Neck Shear	3100 N	1135 N	1228 N

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 17.6 g with an integrated velocity change of 29.8 mph. After filtering the acceleration signal to Channel Class 60, the airbag system was triggered 18.3 milliseconds after 0.5 g acceleration.

INCLUDE DISCUSSION OF LOST CHANNELS OR OTHER TEST ISSUES.

- No valid data was collected on the Top of Engine X Acceleration channel.
- For both the driver and passenger seating positions, the H-point machine and initial dummy placement was performed with the seats in the 9th position rearward as the first position being zero. Prior to conducting the test, the seats were placed in the 10th position.

Sled Test Summary

Vehicle NHTSA No. C10506 Test Mode: FMVSS 208 SLED TEST

Vehicle Yr/Make/Model/Body Style 2001/Daewoo/Leganza/4 Door

Test Date: March 21, 2001 Time 1 30 p m Temp: 71°F

Vehicle Test Weight. 3626 lbs

DUMMY INFO.

DRIVER

PASSENGER

Dummy Type

Part 572E

Part 572E

Serial Number

403

401

Restraint System

Frontal airbag

Frontal airbag

No. Data Channels

15

15

Number of Cameras.

1 Real Time

6 High Speed

Door Opening Data

yes Left Front

yes Right Front

FRONT SEAT(S) DATA

DRIVER

PASSENGER

Seat Track Failure -

0.0 inches shift,

0.0 inches shift

Seat Back Failure -

no

no

VISIBLE DUMMY CONTACT POINTS:

DRIVER

PASSENGER

Head

Airbag/windshield/
sunvisor

Airbag/sunvisor

Chest

Airbag

Airbag

Left Knee

Knee bolster

Glove box

Right Knee

Knee bolster

Glove box

General Test And Vehicle Parameter DataVehicle Yr/Make/Model/Body Style: 2001/Daewoo/Leganza/4 DoorVehicle NHTSA No. C10506 VIN: KLAVB69231B301270 Color: Teal

Engine Data

No Cylinders 4; CID: ; Liters: 2.2; CCs Placement: Longitudinal/Inline: , Transverse/Lateral: X

Transmission Data:

Speeds 4, Manual , Automatic: X, 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 Rear defogger, tinted glassDate Received 2/1/01; Odometer Reading 53 milesSelling Dealer Harms Daewoo, 220 Interchange N., Lake Geneva, WI 53147

REMARKS None

General Test And Vehicle Parameter Data (Cont.)

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By Daewoo

Date of Manufacture 10/00 ; VIN: KLAVB69231B301270

GVWR: 4040 lbs, GAWR Front 2150 lbs

GAWR Rear 1965 lbs

DATA FROM TIRE PLACARD

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT: 29 psi REAR: 29 psi

Recommended Tire Size P205/60R15 ;

Recommended Cold Tire Pressure

FRONT: 29 psi REAR: 29 psi

Size of Tires on Test Vehicle: P205/60R15

Type of Spare Tire: P205/60R15 ; Space Saver ____; Standard: X

Vehicle Capacity Data

Type of Front Seats: X Bucket, ____Bench; ____Split Bench

Number of Occupants: 2 Front; 3 Rear; ____3rd Seat, 5 TOTAL

REMARKS. None

VEHICLE CAPACITY WEIGHT (VCW) = 881 lbs

No Of Occupants x 150 lbs = 750 lbs

Rated Cargo/Luggage Weight (RCWL) = 131 lbs (Difference)

General Test And Vehicle Parameter Data (Cont.)

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

Right Front =	<u>935</u> lbs	Right Rear =	<u>626</u> lbs
Left Front =	<u>962</u> lbs	Left Rear =	<u>628</u> lbs.
TOTAL FRONT =	<u>1897</u> lbs	TOTAL REAR =	<u>1254</u> lbs
% Total Weight =	<u>60.2</u> %	% Total Weight =	<u>39.8</u> %

TOTAL DELIVERED WEIGHT = 3151 lbs

WEIGHT OF FULLY LOADED TEST VEHICLE WITH TWO DUMMIES (344 POUNDS) AND
131 POUNDS OF CARGO WEIGHT

Right Front =	<u>1006</u> lbs	Right Rear =	<u>791</u> lbs
Left Front =	<u>1039</u> lbs	Left Rear =	<u>790</u> lbs
TOTAL FRONT =	<u>2045</u> lbs	TOTAL REAR =	<u>1581</u> lbs
% Total Weight =	<u>56.4</u> %	% Total Weight =	<u>43.6</u> %

TOTAL WEIGHT = 3626 lbs

TEST VEHICLE ATTITUDE (all measurements in degrees)

AS DELIVERED DOOR SILL ANGLE	<u>0.5° nose down</u>
AS TESTED DOOR SILL ANGLE:	<u>0.3° nose down</u>
FULLY LOADED DOOR SILL ANGLE:	<u>0.2° nose up</u>

FUEL SYSTEM DATA

Fuel System Capacity From Owner's Manual = 15.5 gallons
Usable Capacity Figure Furnished by COTR = 15.5 gallons

REMARKS None

Post-Impact Data

Test number.	HT01032101	
NHTSA number	C10506	
Test date.	March 21, 2001	
Test time:	1 30 p.m.	
Test type	FMVSS 208 Compliance Sled Test	
Impact angle	0°	
Ambient Temperature at Impact Area	71°F	
Temperature in Occupant Compartment:	71°F	
Impact Velocity.		
Integrated velocity from the integration of the entire sled acceleration:	29.8 mph	
Specified integrated velocity range	28 to 30 mph	
Sled Carriage Acceleration		
Acceleration:	17.6 g	
Specified Acceleration Range	16.0 - 18.2 g	
Sled Carriage Acceleration Duration		
Time from T-0 (-0.5 g) to 0.0 g:	122.4 msec	
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: 2001/Daewoo/Leganza/4 Door

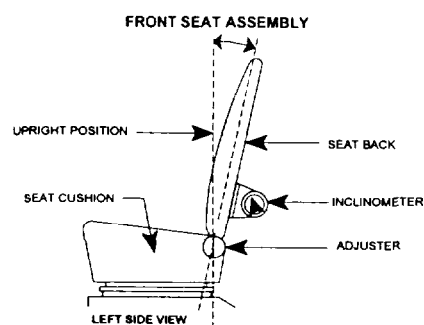
Vehicle NHTSA No · C10506 Test Date March 21, 2001

NOMINAL DESIGN RIDING POSITION

Driver Seat. Seat Back Angle = 10.4° *

Passenger Seat Seat Back Angle = 10.6° *

* - Measured at headrest post



SEAT FORE AND AFT POSITIONS

Driver Seat: The seat track had a total position movement of 20 notches and was positioned 10 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 10 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 (Third position of five)

Dummy Positioning Measurement Table

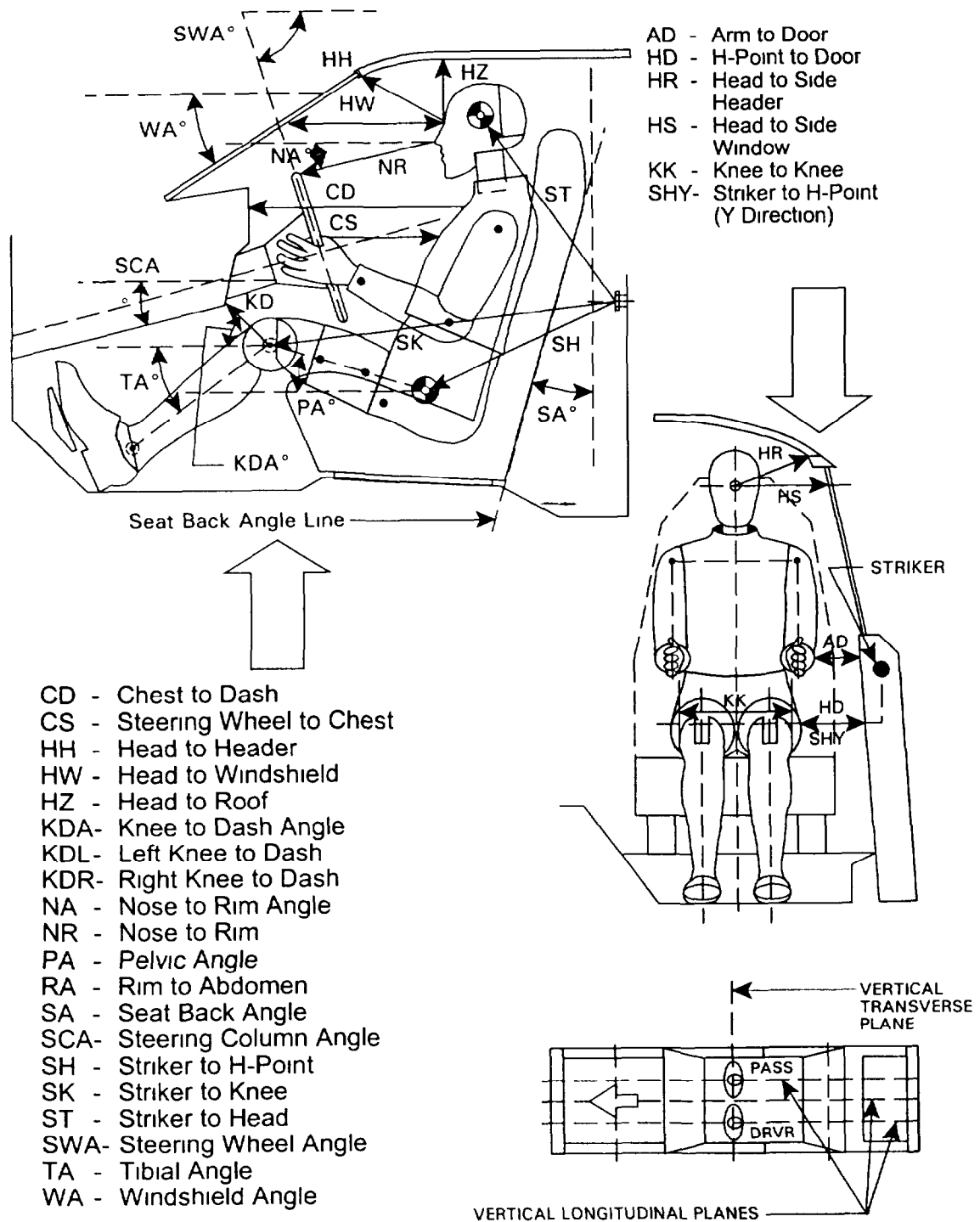
Vehicle Year/Make/Model/Body Style 2001/Daewoo/Leganza/4 Door

Vehicle NHTSA No C10506 Test Date. March 21, 2001

	DRIVER (Serial #403)	PASSENGER (Serial #401)
WA°	27 9°	
SWA°	21.8°	
SCA°	22 2°	
SA°	10.4°	10.6°
HZ	7 1	7.0
HH	12.8	13.6
HW	23 1	22.9
HR	8 9	8.7
NR	16 8 Angle (NA°) 13 9°	
CD	21 7	21.2
CS	13 8	
RA	8 8	
KDL	7.1 Angle (KDA°) 15 7°	7.1
KDR	7.0	7 4 Angle (KDA°) 28.6°
PA°	24 1°	24.1°
TA°	41 1°	38.5°
KK	11 7	10.3
ST	21 5 Angle 4.2°	22.3 Angle 4.5°
SK	23 1 Angle 88 6°	23.0 Angle 92.1°
SH	8 3 Angle 112 0°	8.8 Angle 111.3°
SHY	10.7	10.4
HS	11 9	12.2
HD	5 8	5.6
AD	4 5	4.4

Dummy Positioning Measurement Locations

DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



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 <u>the</u> 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)

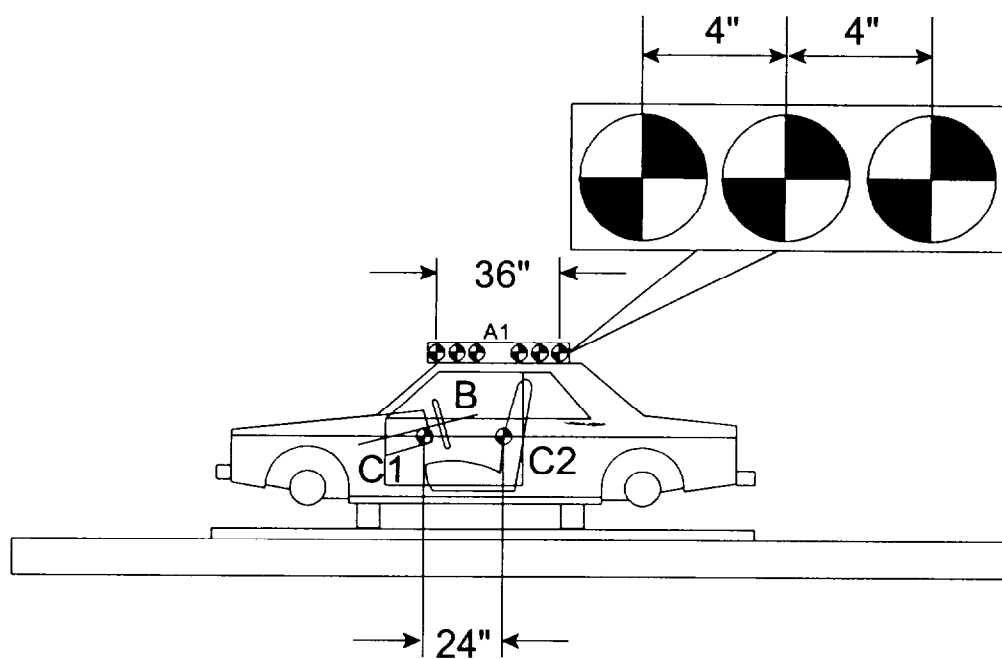
* Measurement used in Data Tape Reference Guide

Description of Dummy Measurements (Cont.)**Angles**

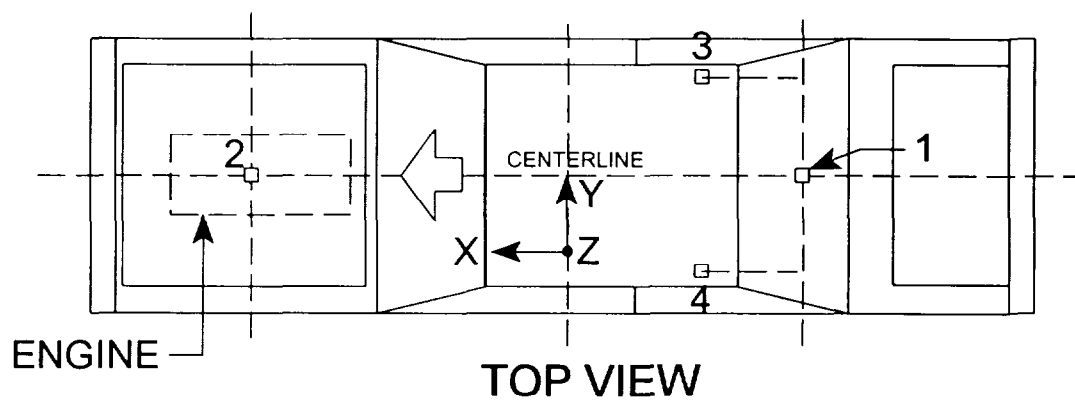
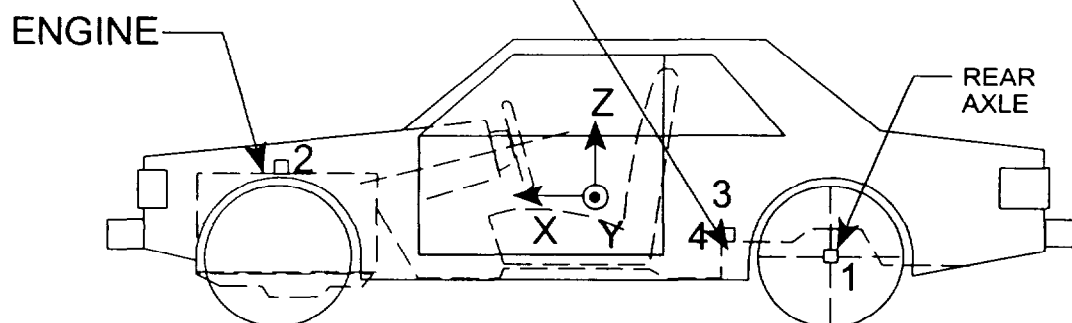
SA	Seat Back Angle, find this angle using the instructions provided by the manufacturer. If the manufacturer doesn't provide clear instructions contact the COTR.
PA	Pelvic or Femur Angle, taken by inserting the pelvic angle gauge into the H-point gauging hole on the SID or the Hybrid III dummies and 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



LEFT SIDE VIEW

Vehicle Accelerometer Placement and Data SummaryVehicle Year/Make/Model/Body Style 2001/Daewoo/Leganza/4 DoorVehicle NHTSA No C10506 Test Date March 21, 2001REAR SEAT CUSHION
ASSY. FRONT ATTACHMENT
BRACKET SUPPORT

Vehicle Accelerometer Location Measurements and Data Summary

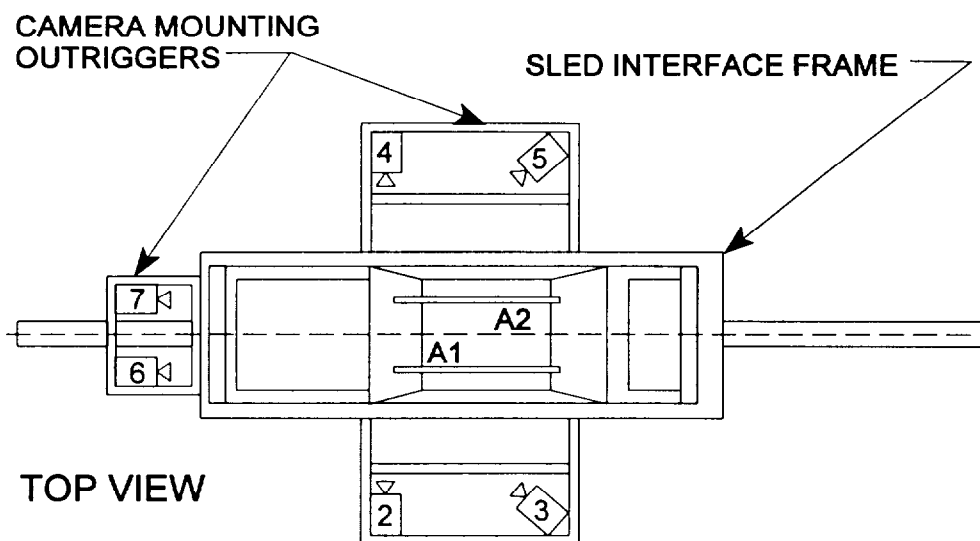
Vehicle Year/Make/Model/Body Style: 2001/Daewoo/Leganza/4 Door

Vehicle NHTSA No.: C10506 Test Date March 21, 2001

No	Location	X (in)	Y (in)	Positive Direction		Negative Direction	
				Value	Time (msec)	Value	Time (msec)
	Sled Primary Longitudinal	67.0	0	17.6 g	67	-1.2 g	125
	Sled Redundant Longitudinal	114.0	0	17.7 g	67	-1.1 g	125
	Sled Velocity Measured Integrated	67.0	0	29.8 mph	123	--	--
1	Rear Axle Longitudinal	41.0	0	17.9 g	56	-1.3 g	126
2	Top Engine Longitudinal	158.0	0	**	**	**	**
3	Right Rear Seat Member Longitudinal	68.0	17.8	19.1 g	48	-2.0 g	127
4	Left Rear Seat Member Longitudinal	68.0	-17.8	20.8 g	48	-1.5 g	127

** - No valid data collected

Camera Positions



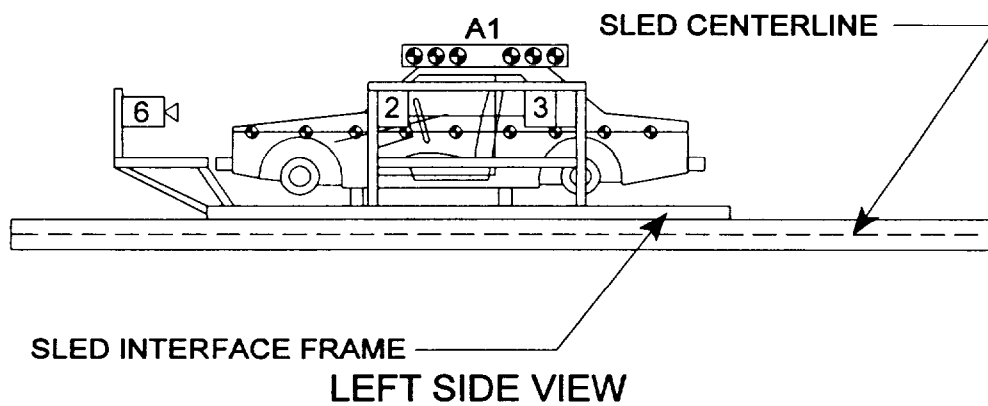
CAMERA FRAME RATES

#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	70 6	88 6	38 4	90	72.4	13	1005
3	Onboard Driver Angle	150 9	91 1	47 8			13	1015
4	Onboard Passenger	71 8	89 6	38.5	90	71 1	13	866
5	Onboard Passenger Angle	146 7	88.5	47 9			13	627
6	Onboard Windshield Driver	18 3	14 1	42 9			13	1031
7	Onboard Windshield Passenger	18 3	13.9	42 9			13	909

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

Occupant Injury Data

Vehicle Year/Make/Model/Body Style: 2001/Daewoo/Leganza/4 Door

Vehicle NHTSA No : C10506 Test Date: March 21, 2001

MAXIMUM ACCELERATION VALUES (g's)	DRIVER DUMMY #403	PASSENGER DUMMY #401
Head Channel X	-45.2	-31.7
Head Channel Y	7.7	-19.7
Head Channel Z	-31.6	20.8
HEAD RESULTANT	50.2	40.5
Chest Channel X	-41.5	-38.6
Chest Channel Y	4.0	-5.6
Chest Channel Z	14.4	-9.7
CHEST RESULTANT	41.8	39.5

HEAD INJURY CRITERIA (HIC) VALUES:

HIC	323	206
t_1 = (msec)	84.7	84.5
t_2 = (msec)	117.3	120.5

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

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

CLIP	41.4	38.9
t_1 = (msec)	91.1	98.2
t_2 = (msec)	94.1	101.2
CHEST DEFLECTION (in)	1.3	1.0

Occupant Injury Data (Cont.)

MAX. COMPRESSIVE FEMUR FORCES	DRIVER DUMMY #403	PASSENGER DUMMY #401
Left Side (lbs)	1361	987
Right Side (lbs)	1668	1389

NECK INJURY CRITERIA.

Peak Flexion Bending Moment about the Occipital Condyle (N-m)	62 2	85.6
Peak Extension Bending Moment about the Occipital Condyle (N-m)	6 0	9.9
Peak Axial Tension (N)	784	1015
Peak Axial Compression (N)	2684	54
Peak Fore Shear (N)	1135	1228
Peak Aft Shear (N)	217	121

Seat Belt Warning System Data

Vehicle Year/Make/Model/Body Style 2001/Daewoo/Leganza/4 Door

NHTSA No.: C10506; Technician: Chad Gadberry; Date: February 26, 2001

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 = 5 seconds
(4 to 8 seconds)

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

A 2 S7 3(a)(2)

Time duration of audible warning signal = _____ seconds
(4 to 8 seconds)(see 49 USCS @ 30124)

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

B. With occupant in driver's position and lap belt in use and 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	<u>X</u>

Readiness IndicatorVehicle Year/Make/Model/Body Style: 2001/Daewoo/Leganza/4 DoorNHTSA No.: C10506 ; Technician: Chad Gadberry, Date: February 26, 2001

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 ☒ No
(If YES this Data Sheet is complete.)
2. Describe the location of the readiness indicator Lower left of instrument panel
3. Is the readiness indicator clearly visible to the driver?

☒ Yes-Pass ☐ No-FAIL
4. Is a list of the elements in the occupant restraint system, being monitored by the readiness indicator, provided?

☒ Yes-Pass ☐ No-FAIL

Air Bag Labels Data

Vehicle Year/Make/Model/Body Style: 2001/Daewoo/Leganza/4 Door

NHTSA No : C10506 , Technician: Chad Gadberry ; Date: February 26, 2001

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 (X) 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: _____)
- 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? (X) 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? (X) 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-Pass ☐ **No-FAIL**
 Passenger Side - ☒ Yes-Pass ☐ **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

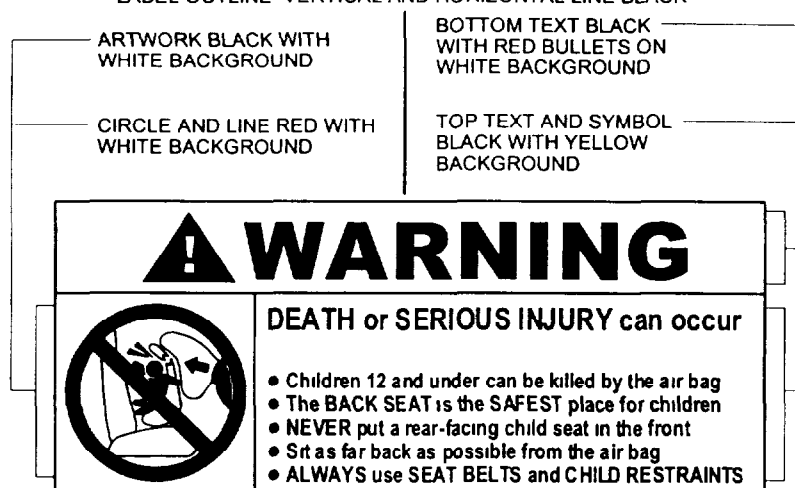


Figure 6a (S4.5.1(b)(2))

SUN VISOR LABEL VISIBLE WHEN VISOR IS IN DOWN POSITION

LABEL OUTLINE, VERTICAL AND HORIZONTAL LINE BLACK

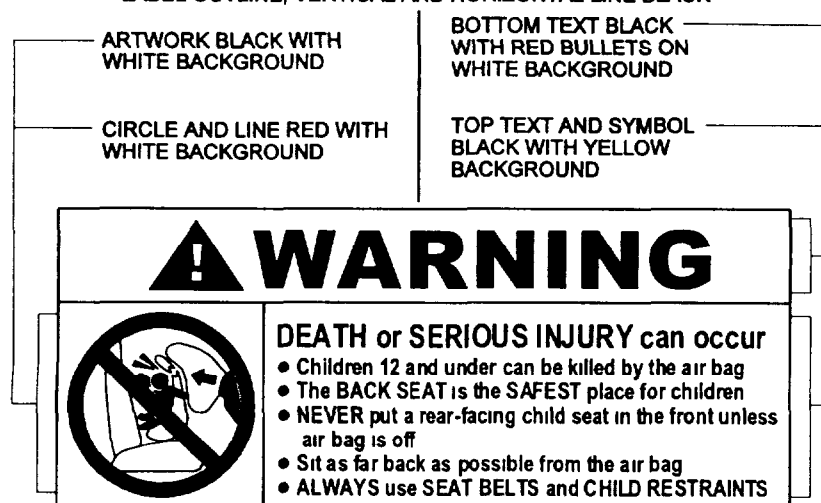


Figure 6b (S4.5.1(b)(2))

- | | | | | |
|-----|---|----------------|-------------|-------------|
| 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: 42 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: 40 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

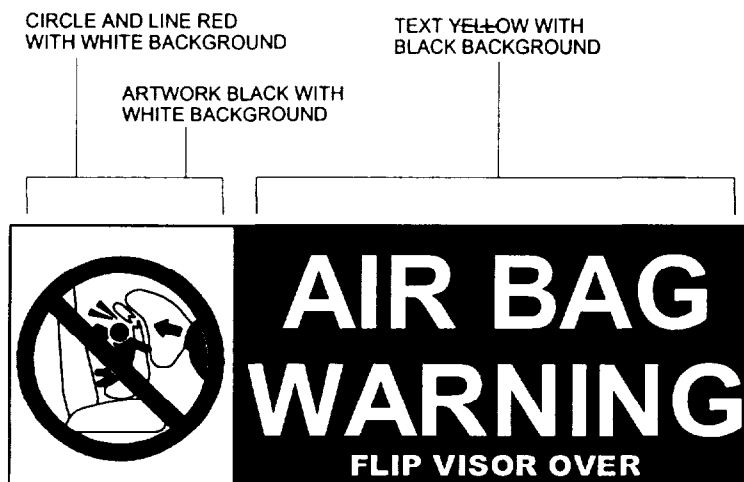


Figure 6c (S4 5 1(c)(2))

- 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. 41 cm²
(X)Yes-Pass () No-FAIL

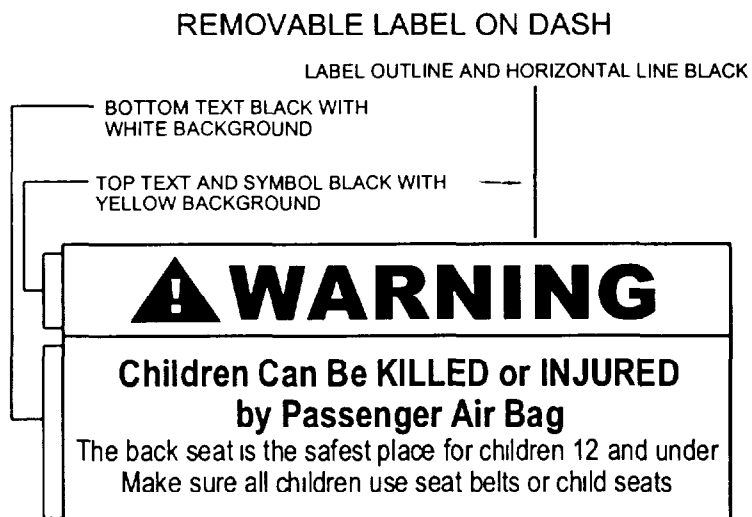


Figure 7 (S4 5 1(e))

Rear Outboard Seating Position Seat Belt DataVehicle Year/Make/Model/Body Style: 2001/Daewoo/Leganza/4 DoorNHTSA No.: C10506; Technician Chad Gadberry, Date: February 26, 2001

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 Data

Vehicle Year/Make/Model/Body Style: 2001/Daewoo/Leganza/4 Door

NHTSA No : C10506, Technician Chad Gadberry; Date: February 26, 2001

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 Fully rearward
(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 65.5 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)

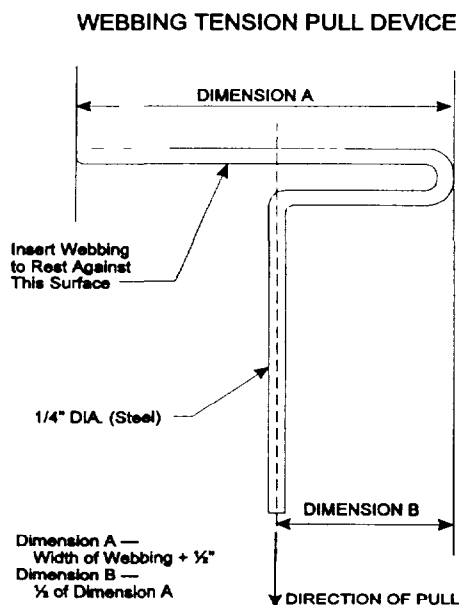


Figure 5 (S7.1.1.5(c)(4))

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 26.8 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

(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 = 38.7 inches

(X)Yes-Pass () **No-FAIL**

REMARKS None

Lap Belt Lockability Data (Cont.)

Vehicle Year/Make/Model/Body Style: 2001/Daewoo/Leganza/4 Door

NHTSA No.: C10506, Technician: Chad Gadberry; Date: February 26, 2001

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 57 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)

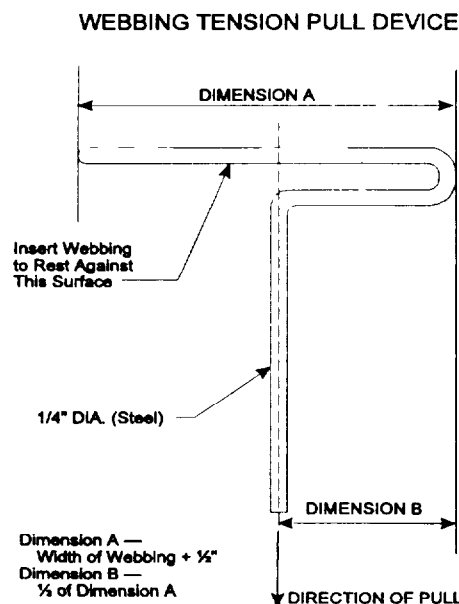


Figure 5 (S7.1 1 5(c)(4))

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 14 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 16 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 = 2 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 = 41 inches

(X)Yes-Pass

() No-FAIL

REMARKS None

Lap Belt Lockability Data (Cont.)

Vehicle Year/Make/Model/Body Style: 2001/Daewoo/Leganza/4 Door

NHTSA No.: C10506, Technician: Chad Gadberry; Date: February 26, 2001

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? () Yes, go to 6.1 (X) 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))

() 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 39 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)

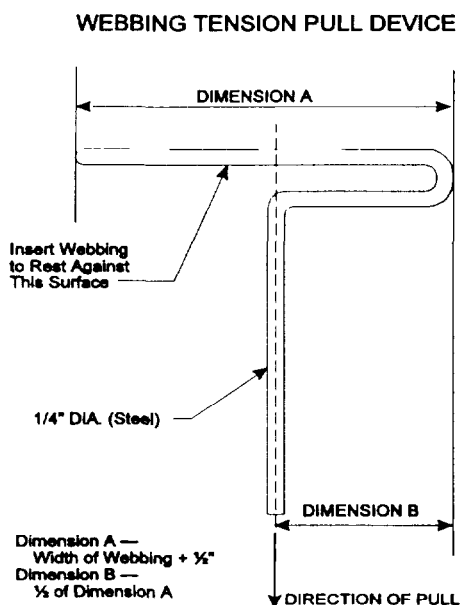


Figure 5 (S7.1.1.5(c)(4))

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 22 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 22 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 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 = 17 inches

(X)Yes-Pass

() No-FAIL

REMARKS: None

Lap Belt Lockability Data (Cont.)

Vehicle Year/Make/Model/Body Style: 2001/Daewoo/Leganza/4 Door

NHTSA No.: C10506 ; Technician: Chad Gadberry ; Date: February 26, 2001

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 57 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)

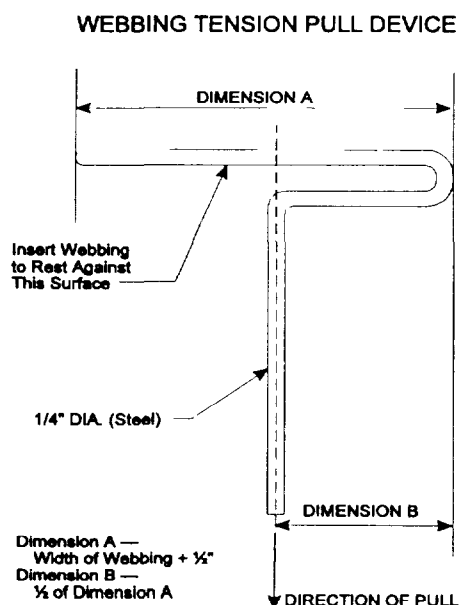


Figure 5 (S7.1.1.5(c)(4))

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 14 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 16 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 = 2 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 = 41 inches

(X)Yes-Pass

() No-FAIL

REMARKS None

Seat Belt Comfort and Convenience Data

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

Test Vehicle NHTSA No C10506

Vehicle Model Year/Make/Model/Body Style 2001/Daewoo/Leganza/4 Door

Designated Seating Position Tested: Left Rear

Date of Comfort/Convenience Check: February 26, 2001

Technician Performing Check Chad Gadberry

GVWR 4040 lb

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
 (X) 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
 (X) N/A
- 1 3 If separately adjustable in a vertical direction, the seats are at the lowest position.
 () Check
 (X) N/A
- 1.4 Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.
 () Check
 (X) 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
 (X) N/A
- 1 6 Place each adjustable head restraint in its highest adjustment position.
 () Check
 (X) 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
(X) N/A
- 1.8 Position the test dummies according to dummy position placement instructions in Appendix B
(X) 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 0.3 lb. (X) 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. C10506

Vehicle Model Year/Make/Model/Body Style: 2001/Daewoo/Leganza/4 Door

Designated Seating Position Tested: Right Rear

Date of Comfort/Convenience Check February 26, 2001

Technician Performing Check: Chad Gadberry

GVWR: 4040 lb

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

- * 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 C10506

Vehicle Model Year/Make/Model/Body Style: 2001/Daewoo/Leganza/4 Door

Designated Seating Position Tested **Not applicable - passenger car**

Date of Comfort/Convenience Check _____

Technician Performing Check _____

GVWR _____

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 C10506

Vehicle Model Year/Make/Model/Body Style 2001/Daewoo/Leganza/4 Door

Designated Seating Position Tested Not applicable - passenger car

Date of Comfort/Convenience Check: _____

Technician Performing Check _____

GVWR _____

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?
(X) 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 C10506

Vehicle Model Year/Make/Model/Body Style 2001/Daewoo/Leganza/4 Door

Designated Seating Position Tested: Left Rear

Date of Comfort/Convenience Check: February 26, 2001

Technician Performing Check: Chad Gadberry

GVWR 4040 lb

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. (X) Check

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

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

(X) 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)?

(X) Yes - Pass

() No - **FAIL**

Seat Belt Comfort and Convenience Data (Cont)

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

Test Vehicle NHTSA No C10506

Vehicle Model Year/Make/Model/Body Style 2001/Daewoo/Leganza/4 Door

Designated Seating Position Tested Center Rear

Date of Comfort/Convenience Check February 26, 2001

Technician Performing Check Chad Gadberry

GVWR: 4040 lb

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?
 (X)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)?
 (X)Yes - Pass
 () No - FAIL
- 4.3 Are the remaining two seat belt parts accessible under normal conditions?
 (X)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 (X) Check

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

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

(X) 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)?

(X) Yes - Pass

() No - **FAIL**

Seat Belt Comfort and Convenience Data (Cont)

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

Test Vehicle NHTSA No : C10506

Vehicle Model Year/Make/Model/Body Style 2001/Daewoo/Leganza/4 Door

Designated Seating Position Tested: Right Rear

Date of Comfort/Convenience Check February 26, 2001

Technician Performing Check Chad Gadberry

GVWR 4040 lb

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 (X) Check

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

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

(X) 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)?

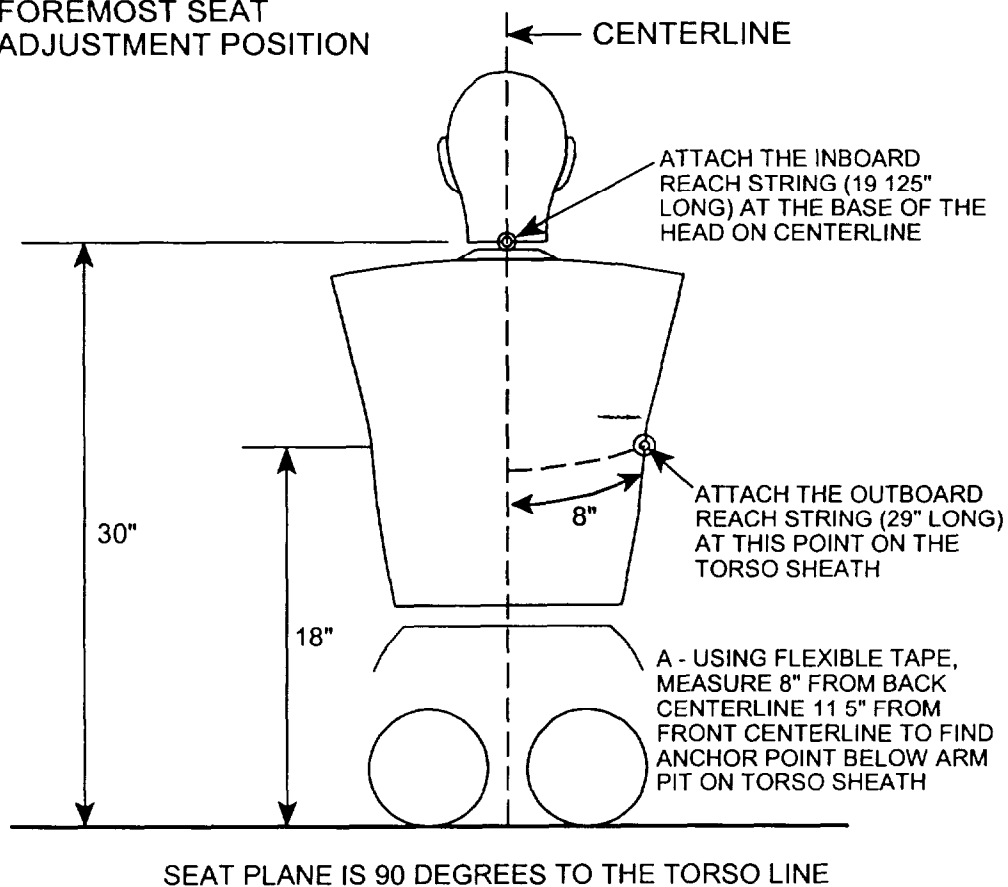
(X) Yes - Pass

() No - **FAIL**

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

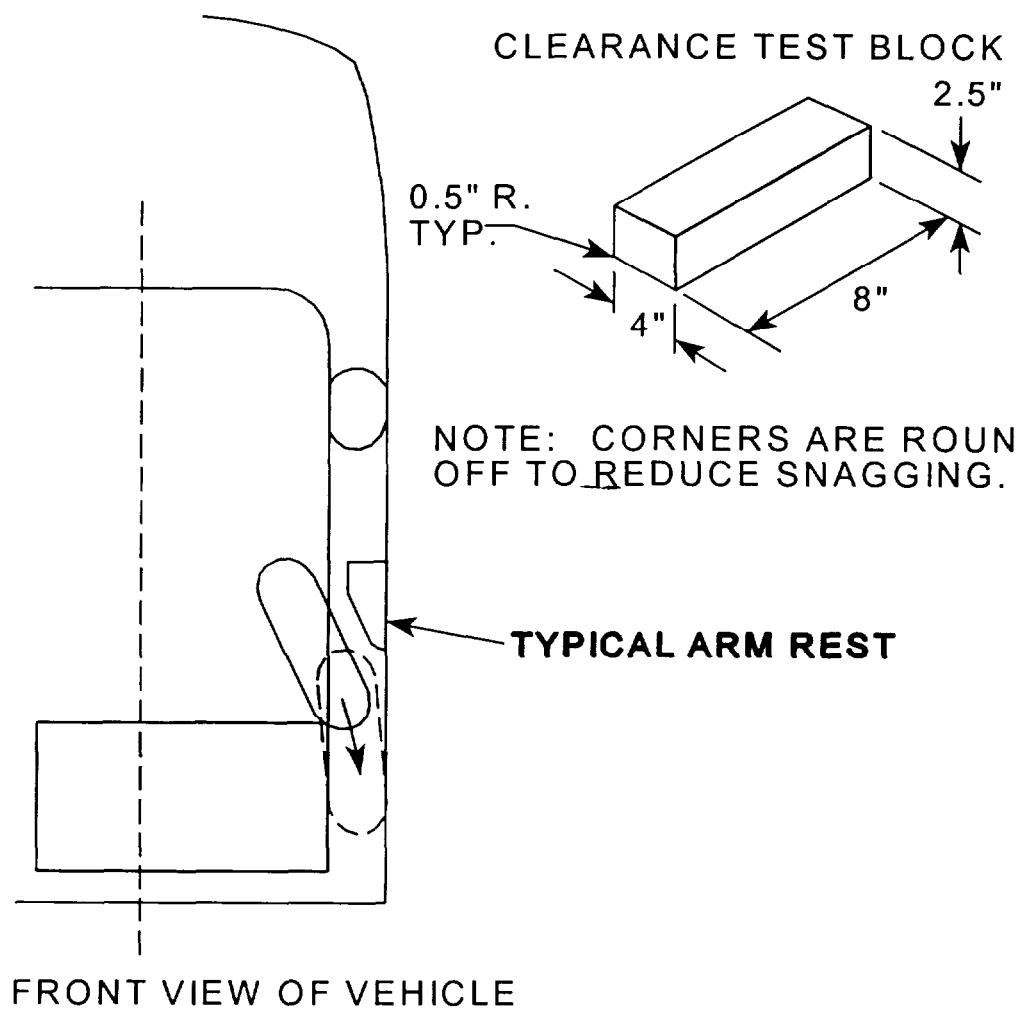
PART 572E DUMMY

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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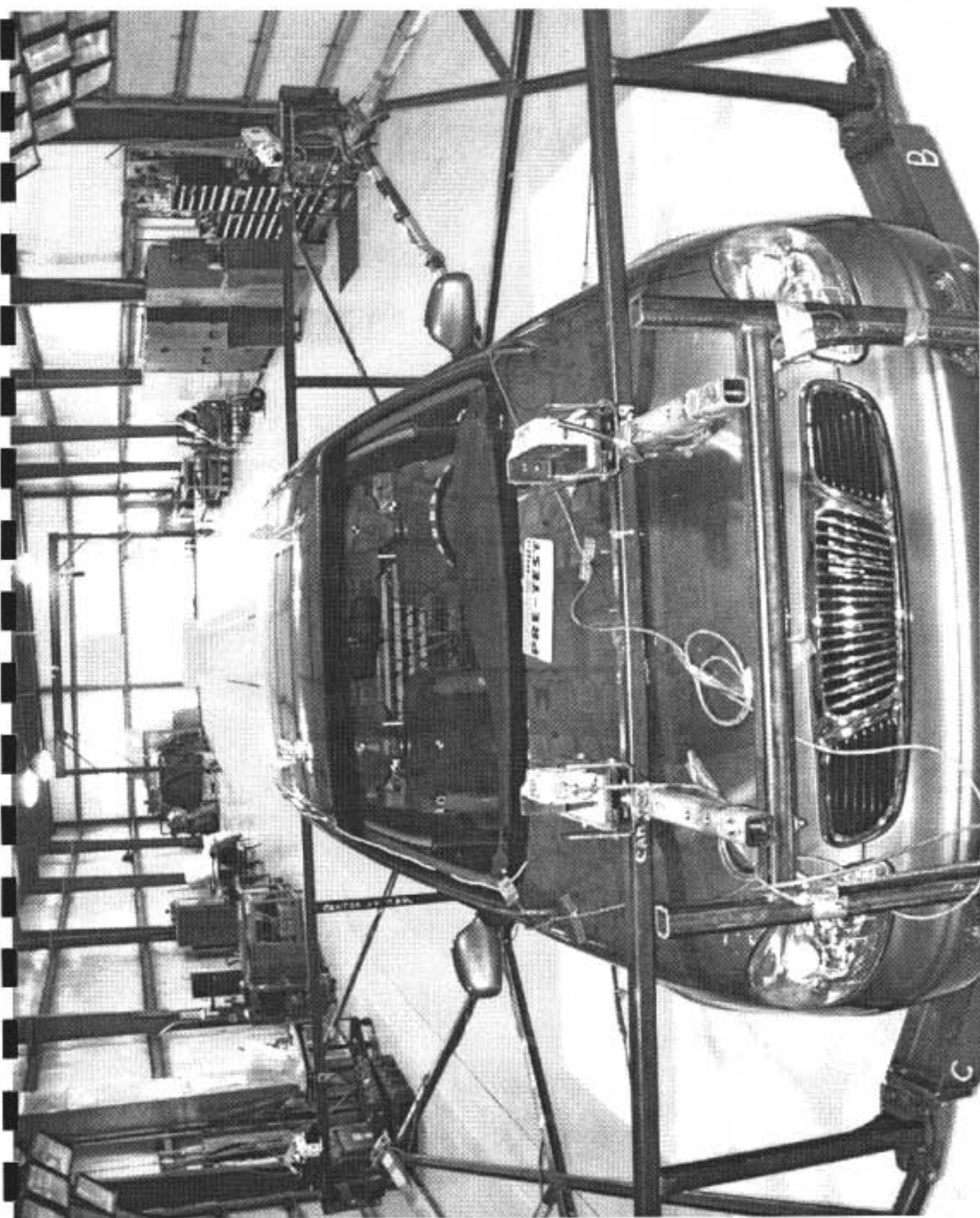


Photo No. A-1 - Pre-Test Frontal View

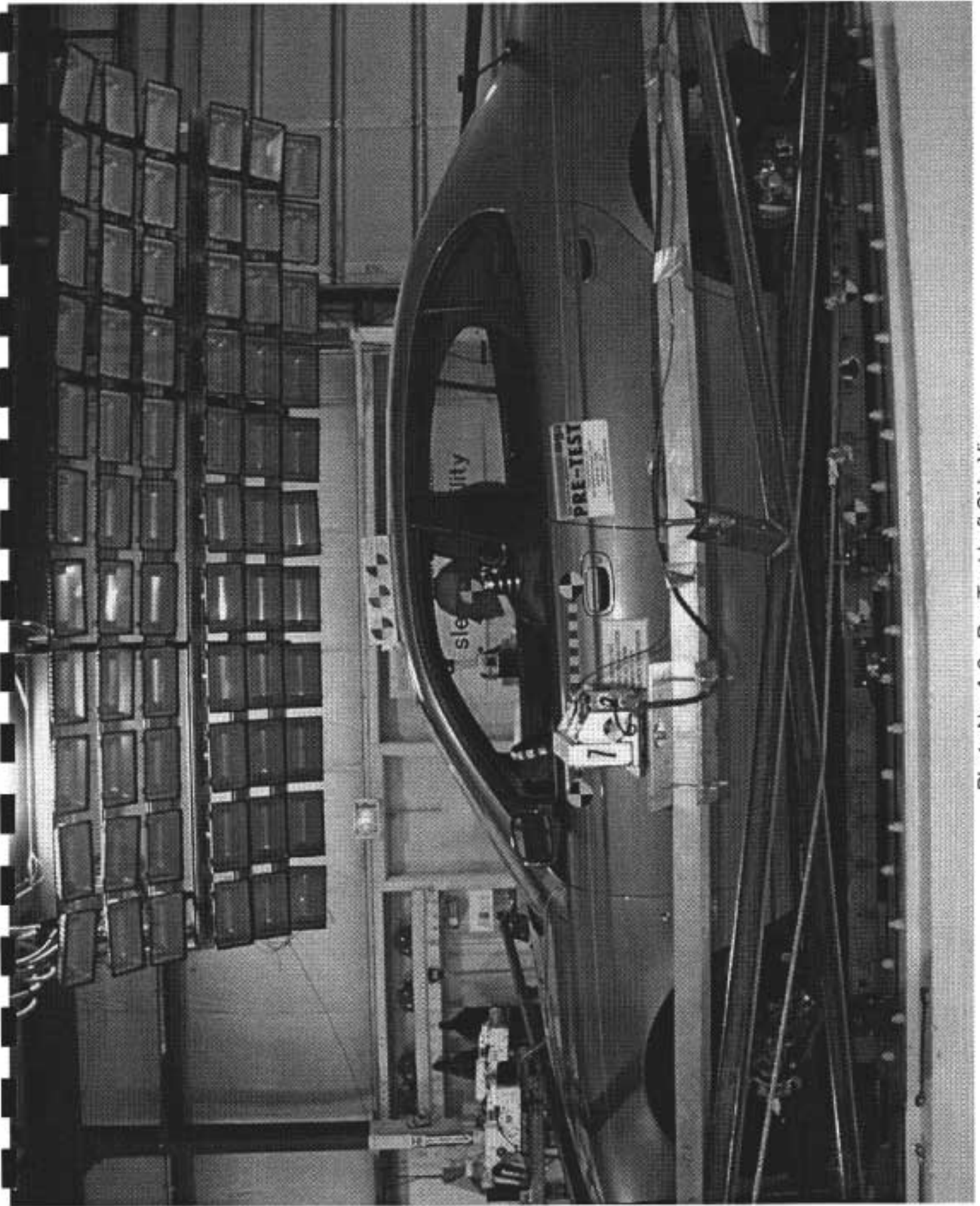


Photo No. A-2 - Pre-Test Left Side View

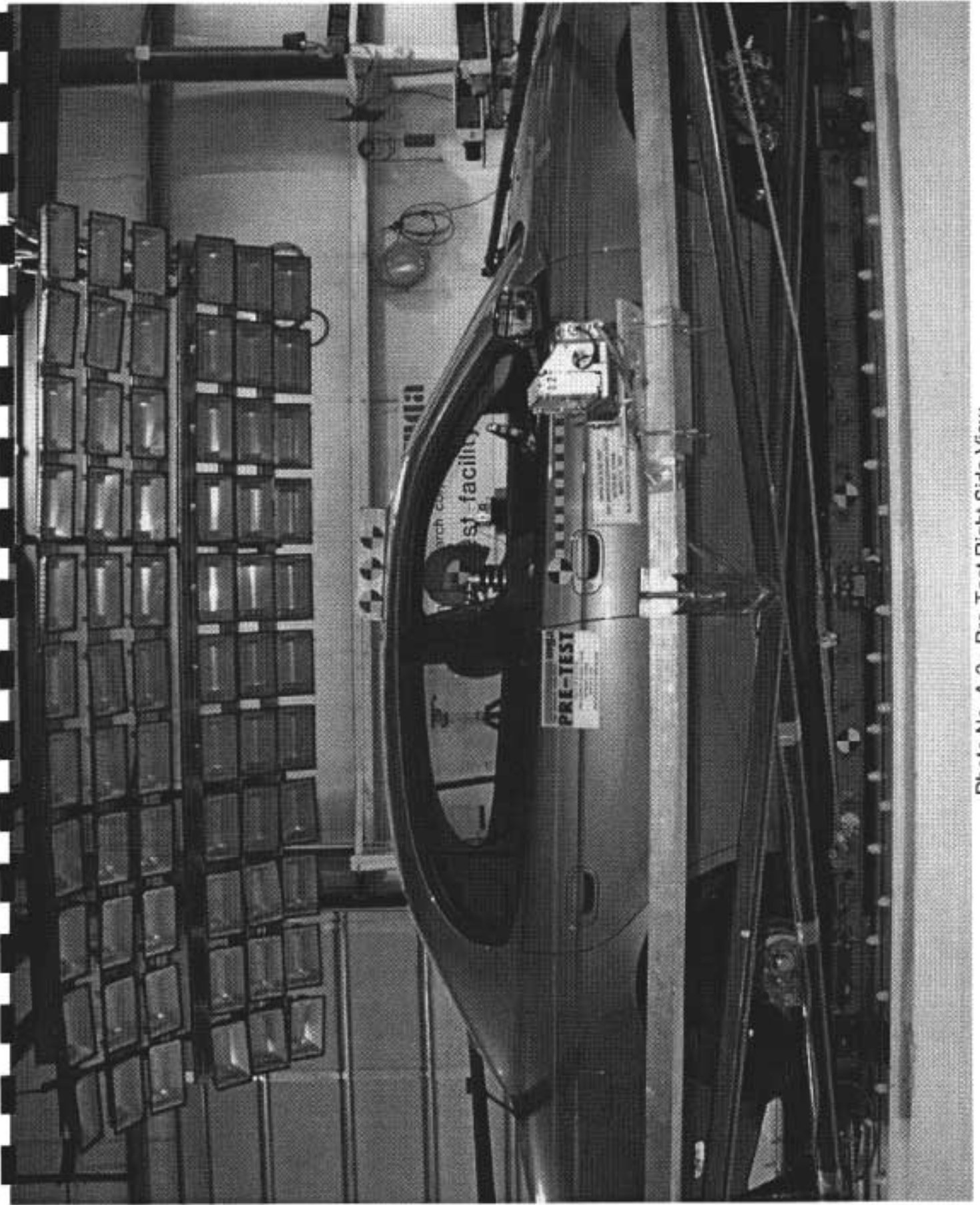


Photo No. A-3 - Pre-Test Right Side View

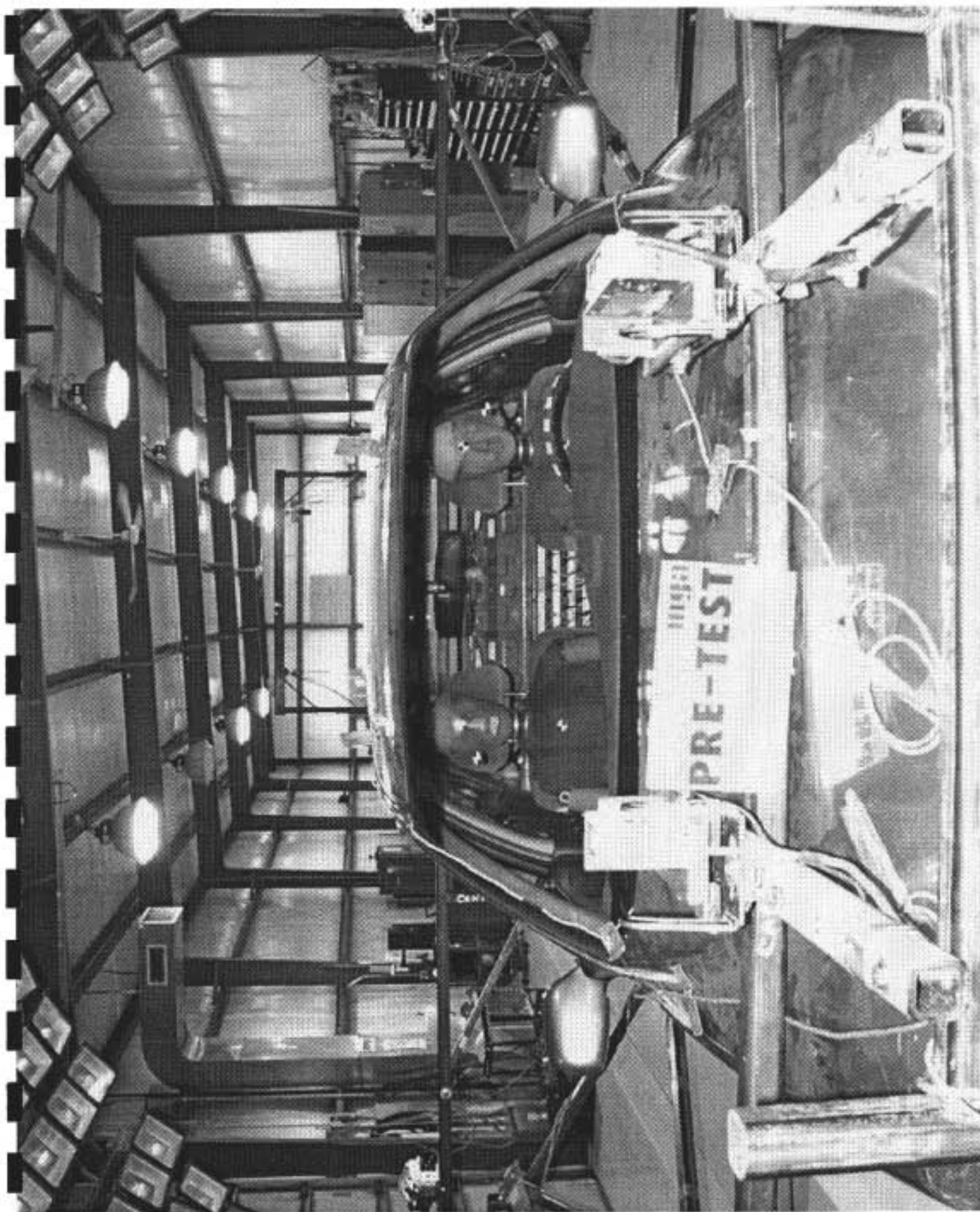


Photo No. A-4 - Pre-Test Windshield View

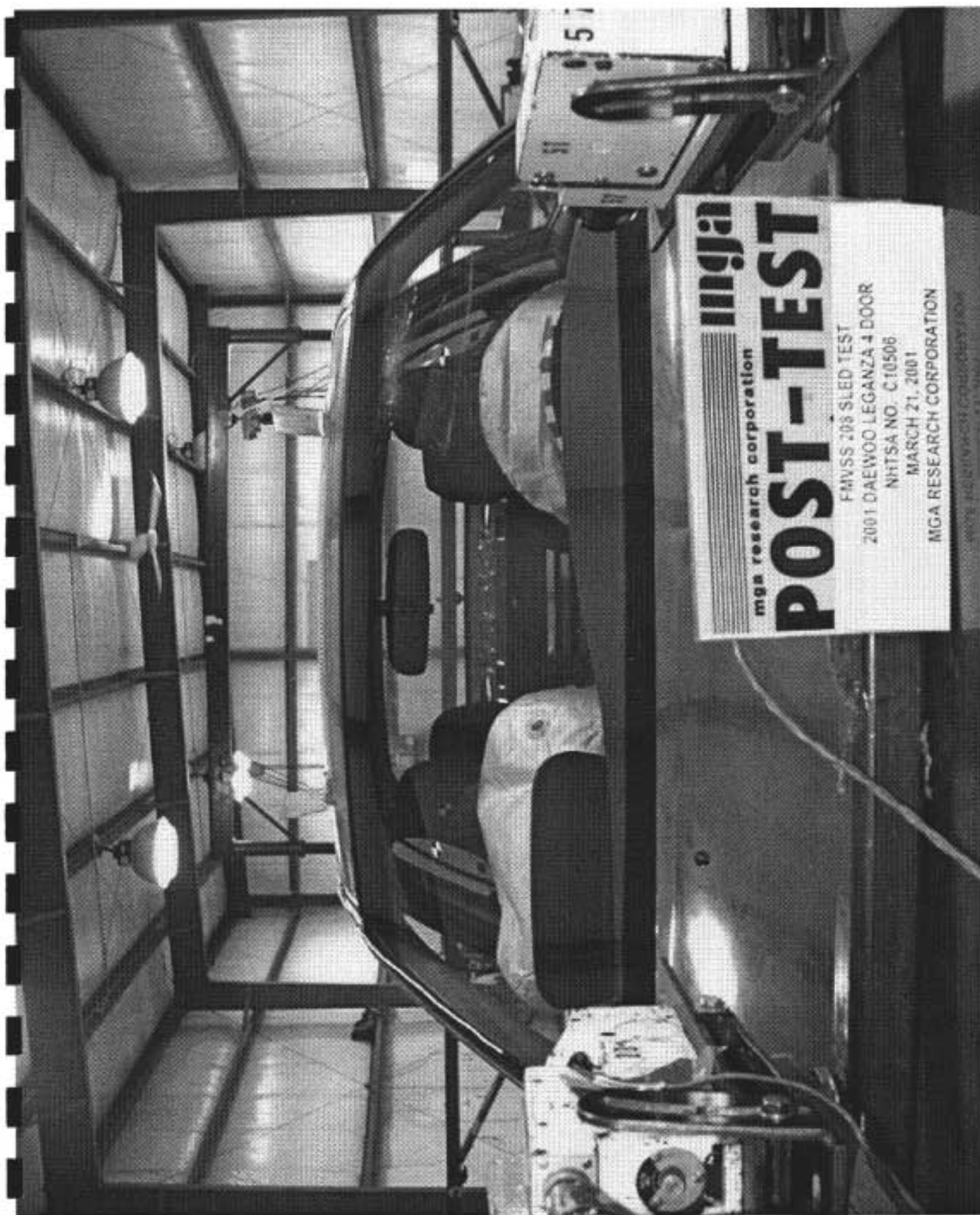


Photo No. A-5 - Post-Test Windshield View

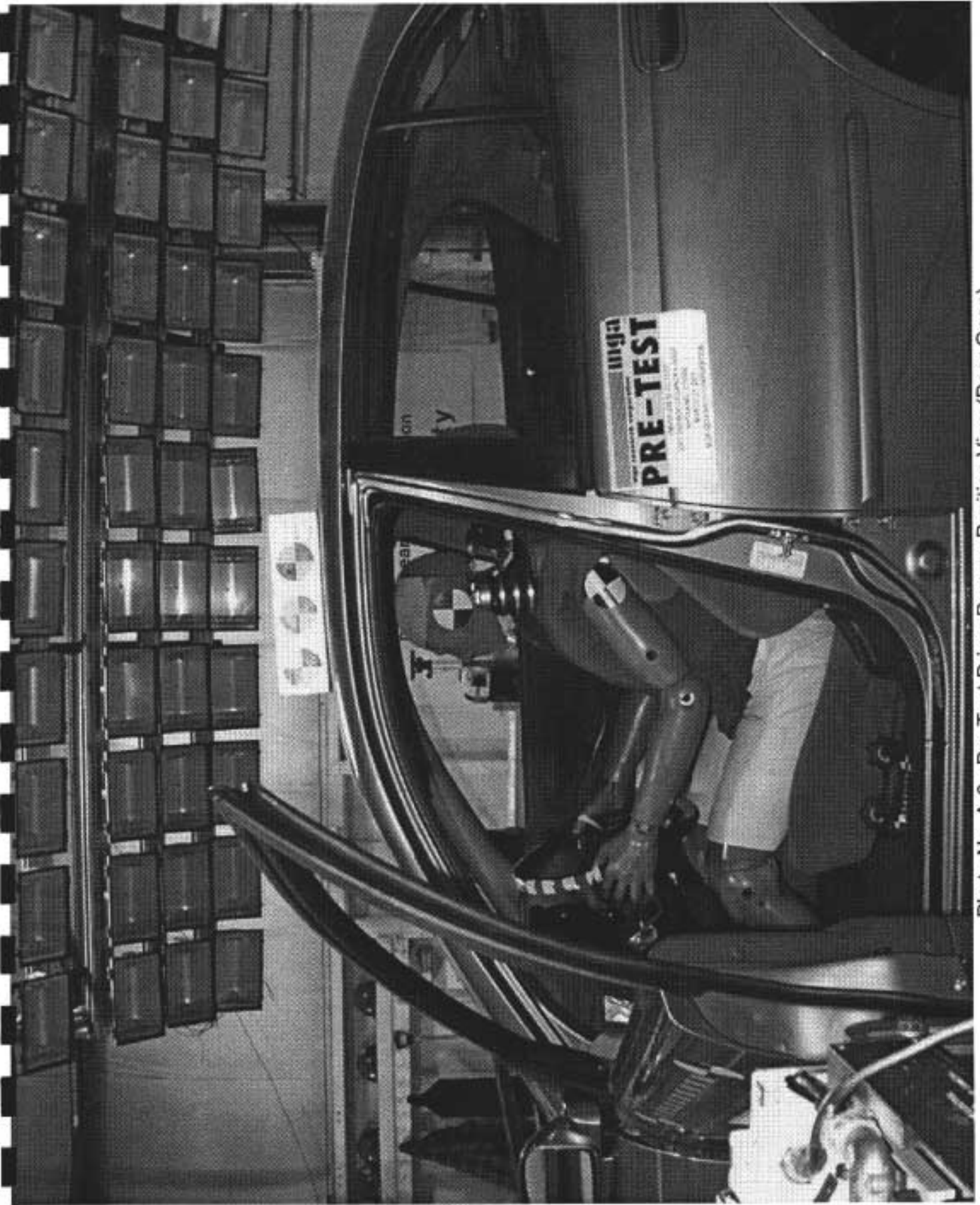


Photo No. A-6 - Pre-Test Driver Dummy Position View (Door Open)



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

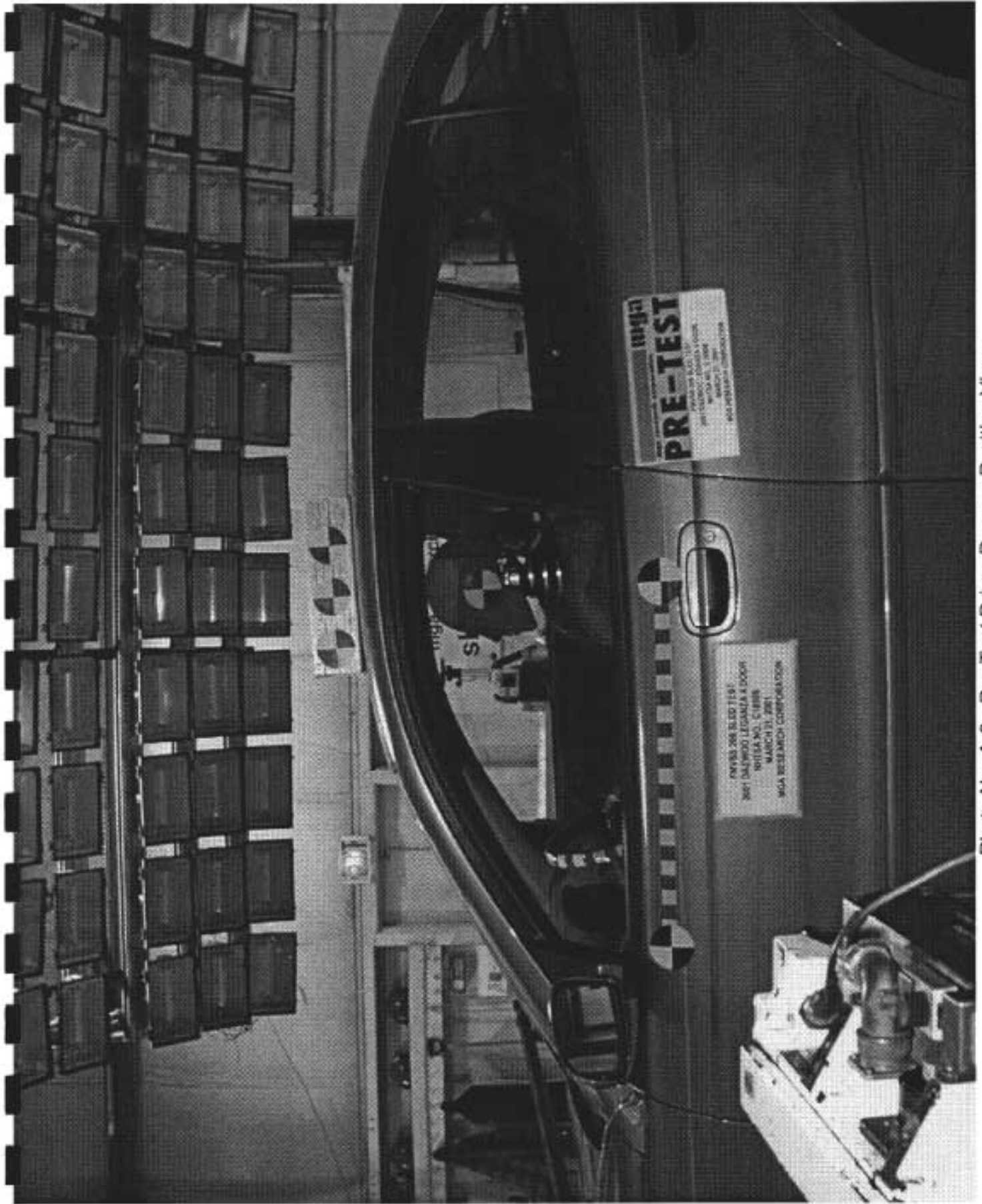


Photo No. A-8 - Pre-Test Driver Dummy Position View

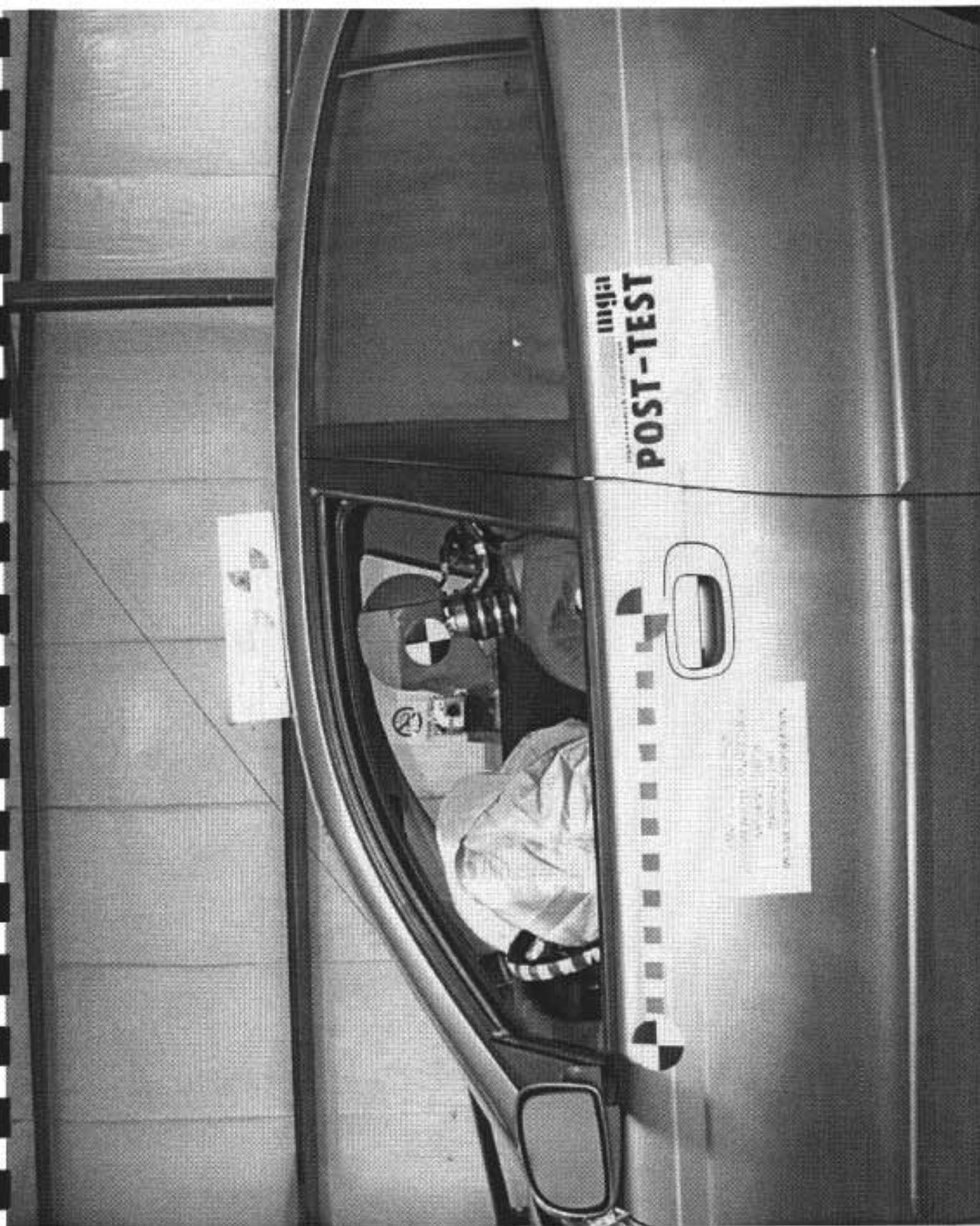


Photo No. A-9 - Post-Test Driver Dummy Position View



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

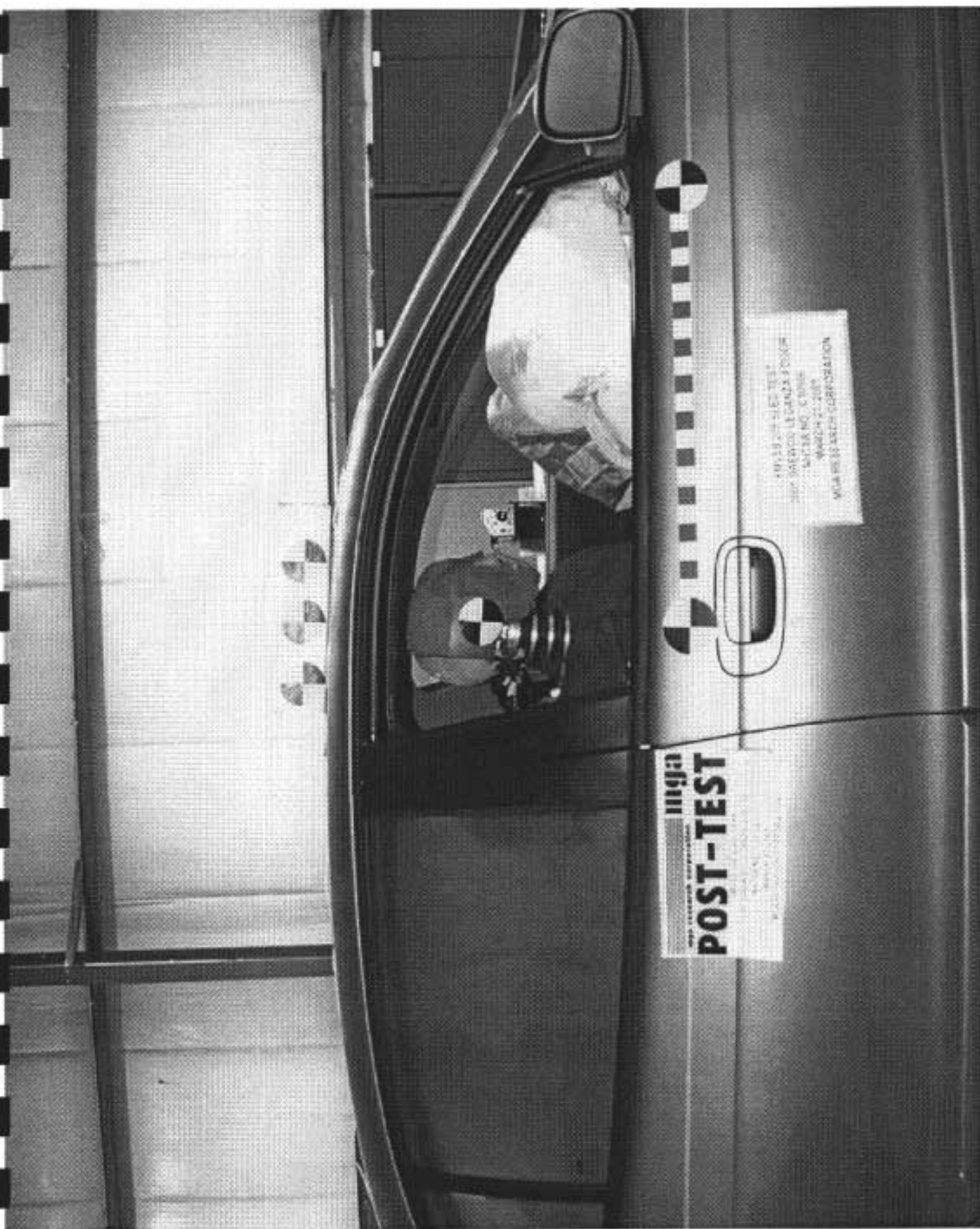
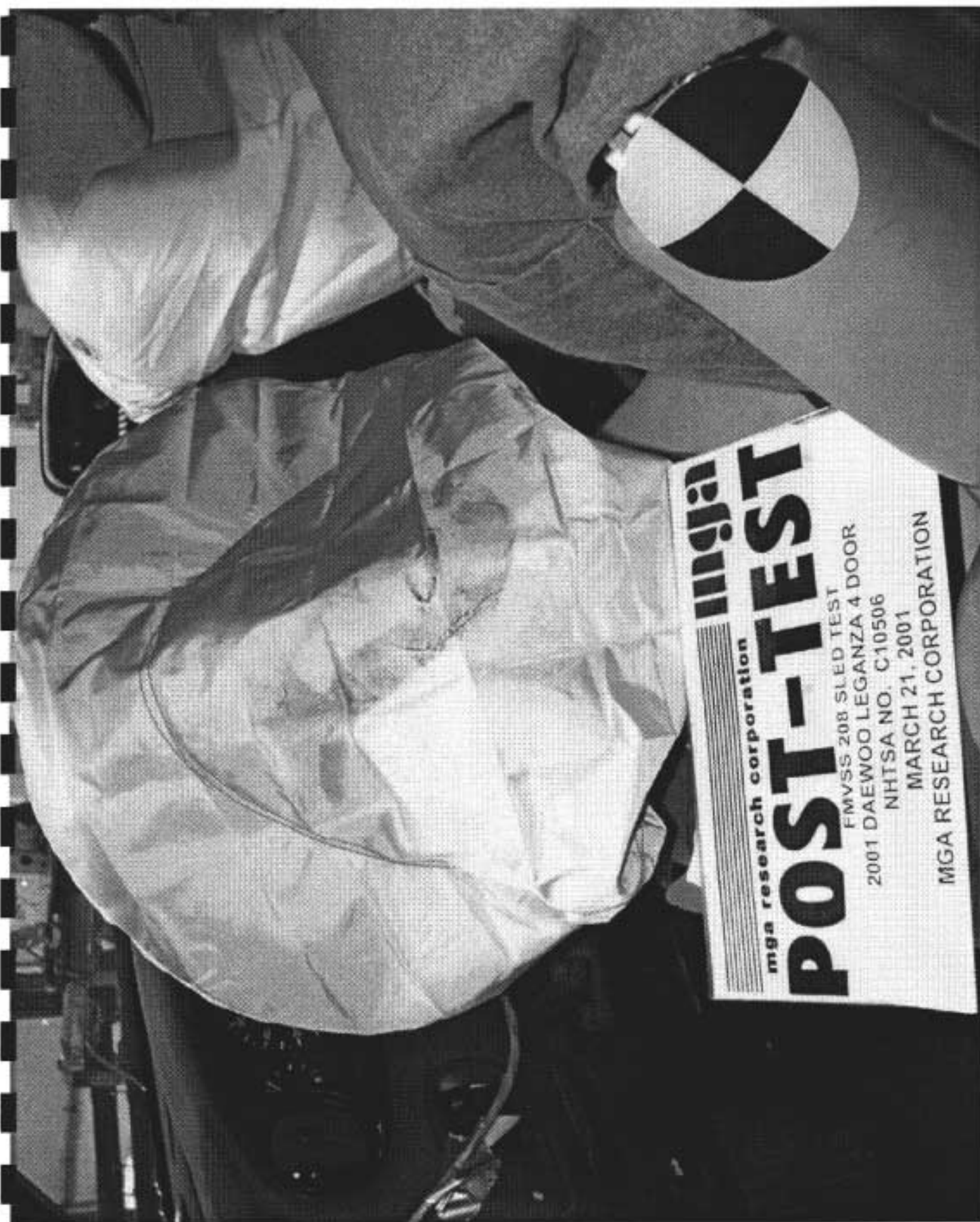


Photo No. A-13 - Post-Test Passenger Dummy Position View



mga
mga research corporation
POST-TEST

FMVSS 208 SLED TEST
2001 DAEWOO LEGANZA 4 DOOR
NHTSA NO. C10506

MARCH 21, 2001
MGA RESEARCH CORPORATION

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

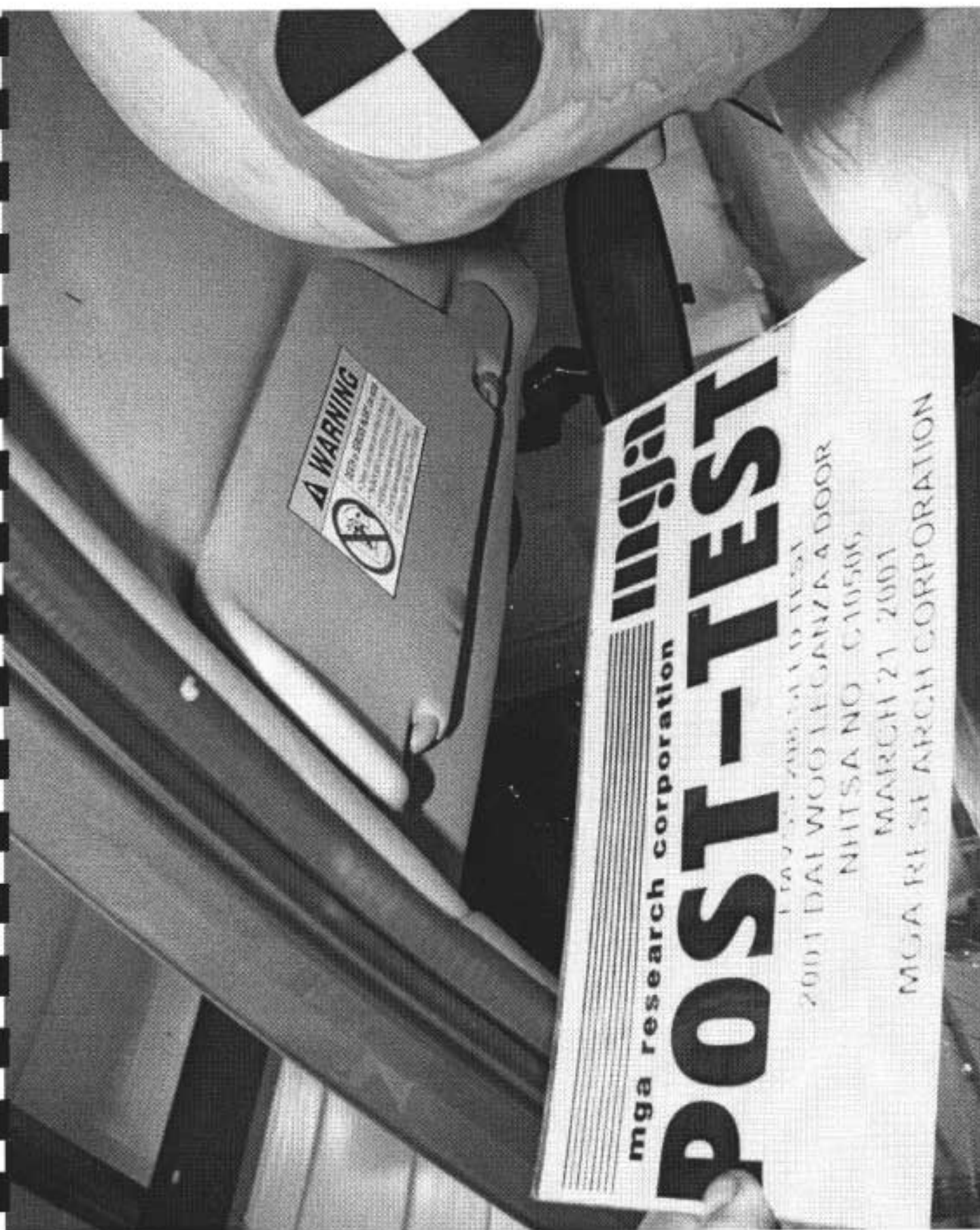


Photo No. A-15 - Post-Test Driver Head Contact View (visor)

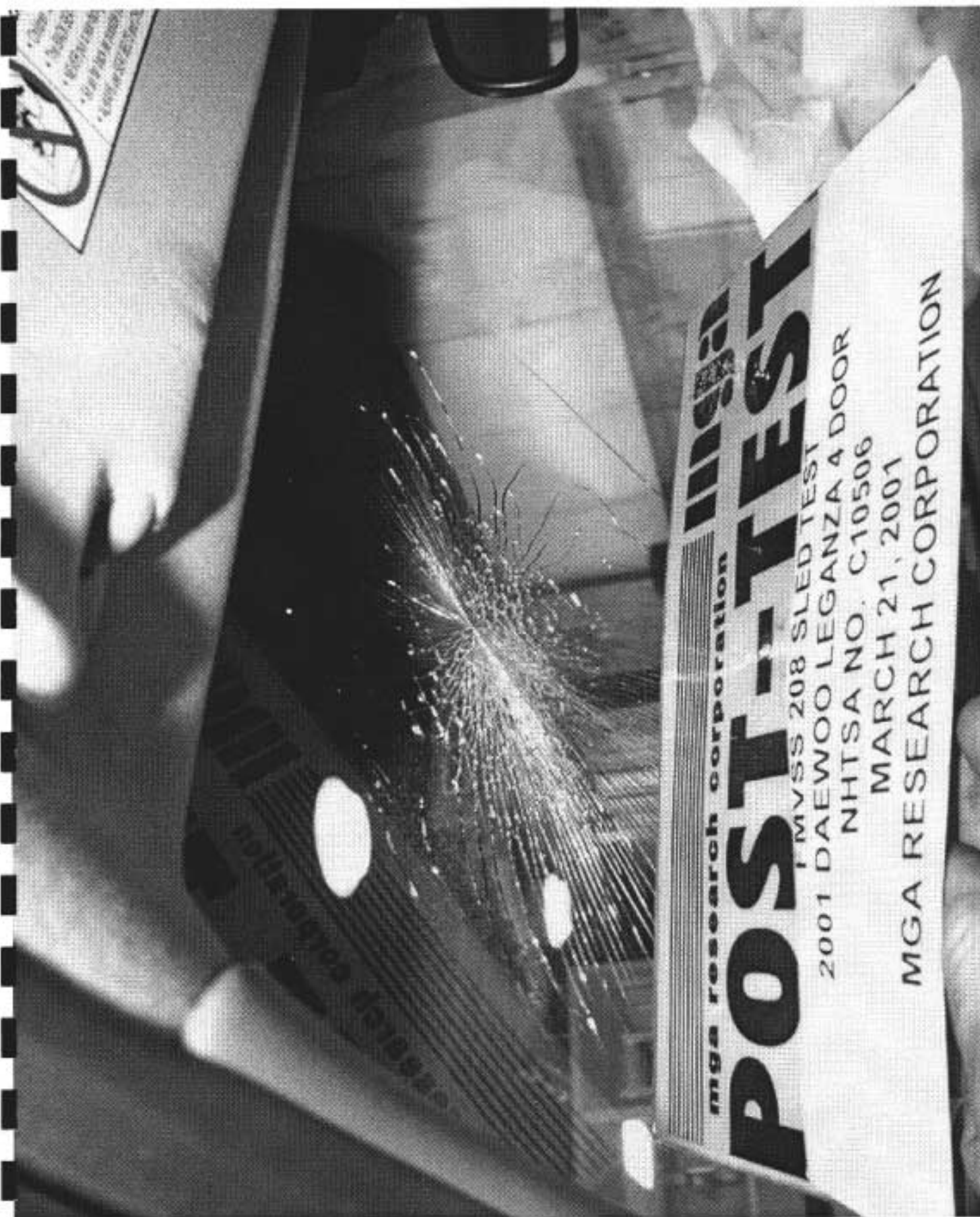


Photo No. A-16 - Post-Test Driver Head Contact View (windshield)



Photo No. A-17 - Post-Test Passenger Dummy Airbag View



POST-TEST

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FMVSS 208 SLED TEST
2001 DAEWOO LEGANZA 4 DOOR

NHTSA NO. C10506

MARCH 21, 2001

MGA RESEARCH CORPORATION



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

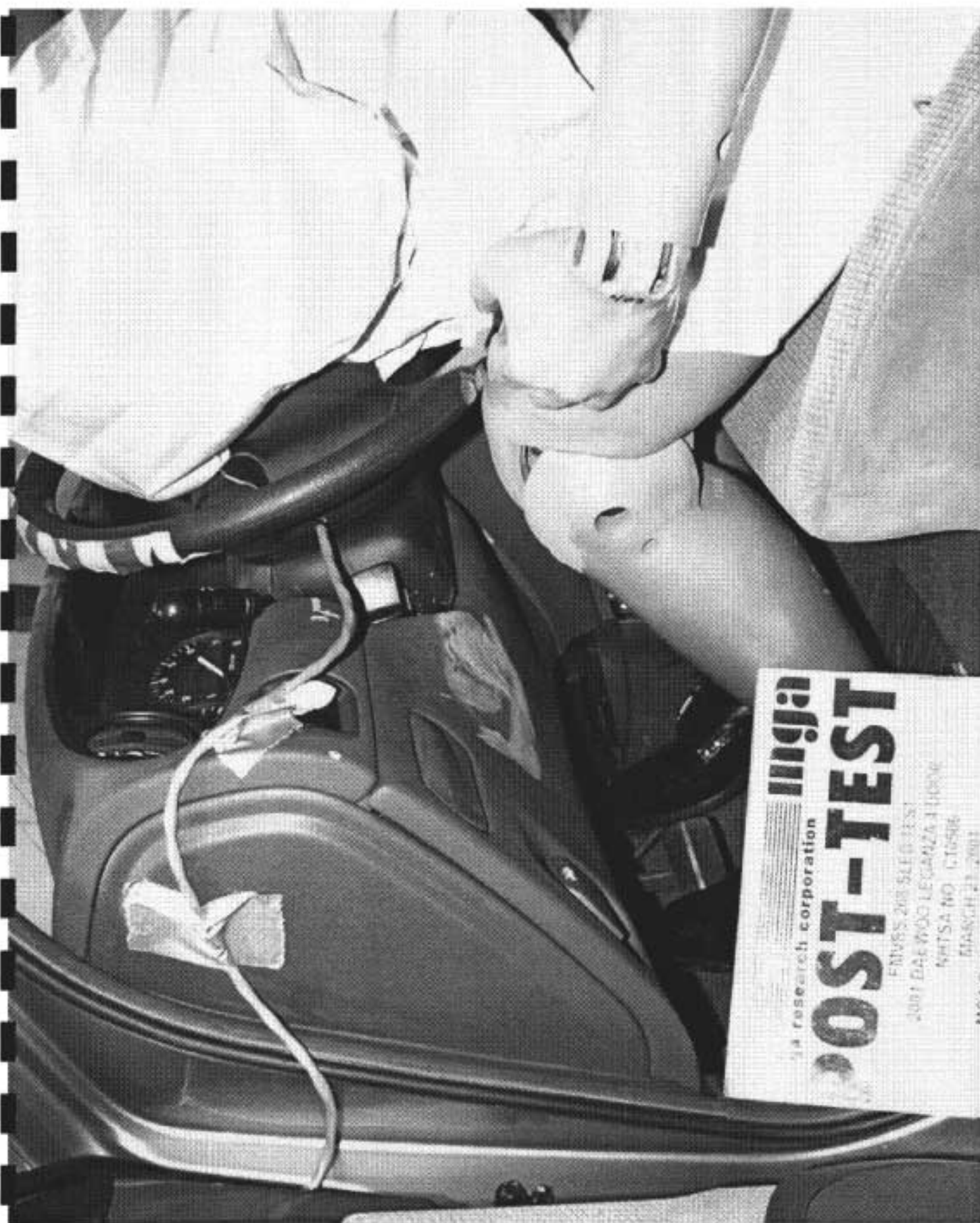


Photo No. A-20 - Post-Test Driver Knee Bolster View



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



Photo No. A-22 - Post-Test Passenger Knee Bolster View

MFD. BY DAEWOO MOTOR CO., LTD., REPUBLIC OF KOREA

DATE GVWR GAWR FRT GAWR RR

10/00 4040LB 2150LB 1965LB

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

KLAVB69231B301270

TIRE LOADING INFORMATION XU

OCCUPANTS : TOTAL 5 (FRONT 2, REAR 3)
 VEHICLE CAPACITY WEIGHT : 881LBS(400KG)
 MAXIMUM LOADING AT GVWR.(LBS/KG)
 SAME AS VEHICLE CAPACITY WEIGHT
 TIRE SIZE : P205/60 R15 90H

RECOMMENDED COLD TIRE INFLATION PRESSURE	
FRONT	REAR
29/200	UP TO 4 OCCUPANTS 29/200
29/200	VEHICLE CAPACITY WEIGHT 29/200

SEE OWNER'S MANUAL
 FOR ADDITIONAL INFORMATION
 96243046

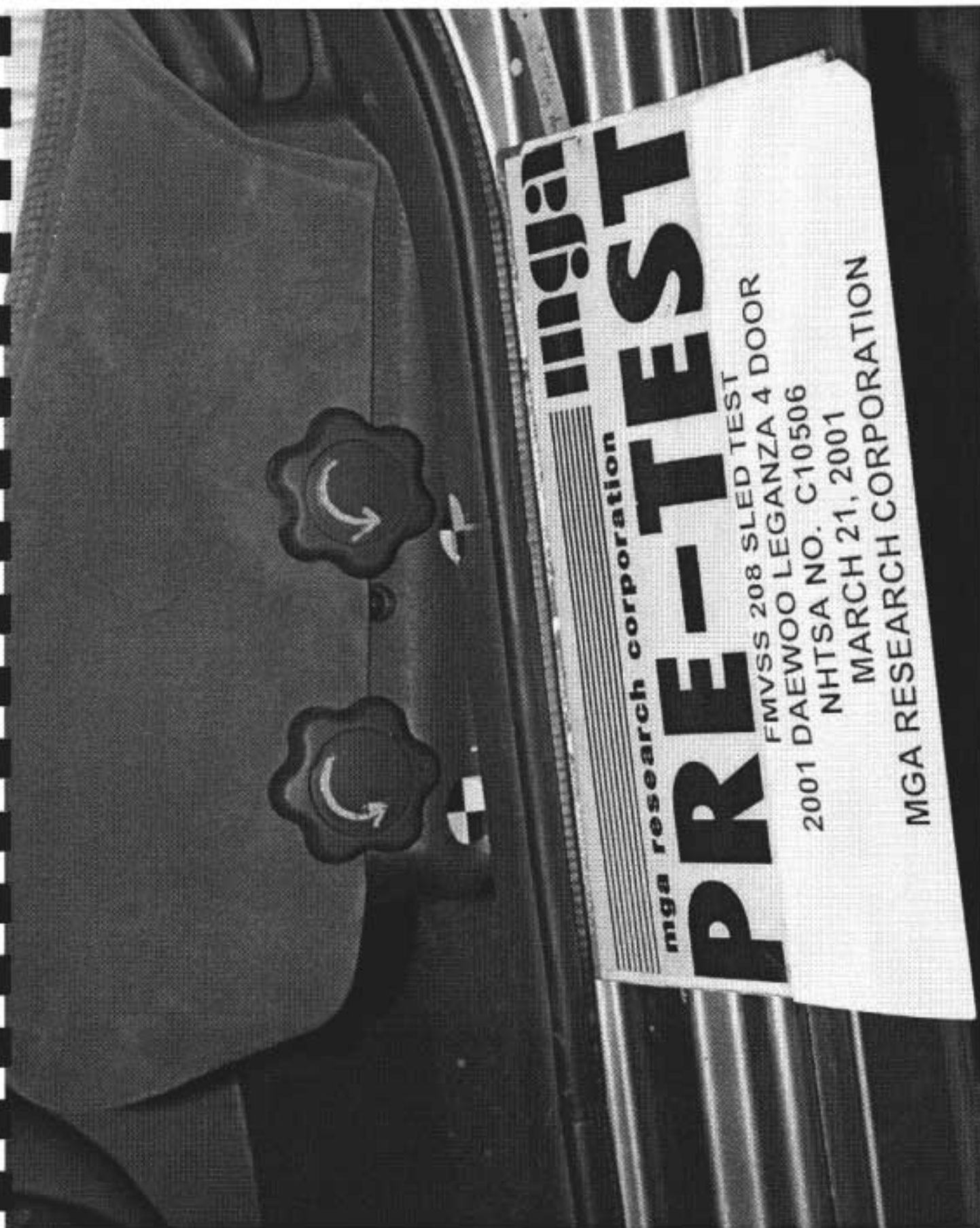


Photo No. A-25 - Pre-Test Driver Seat Track Position

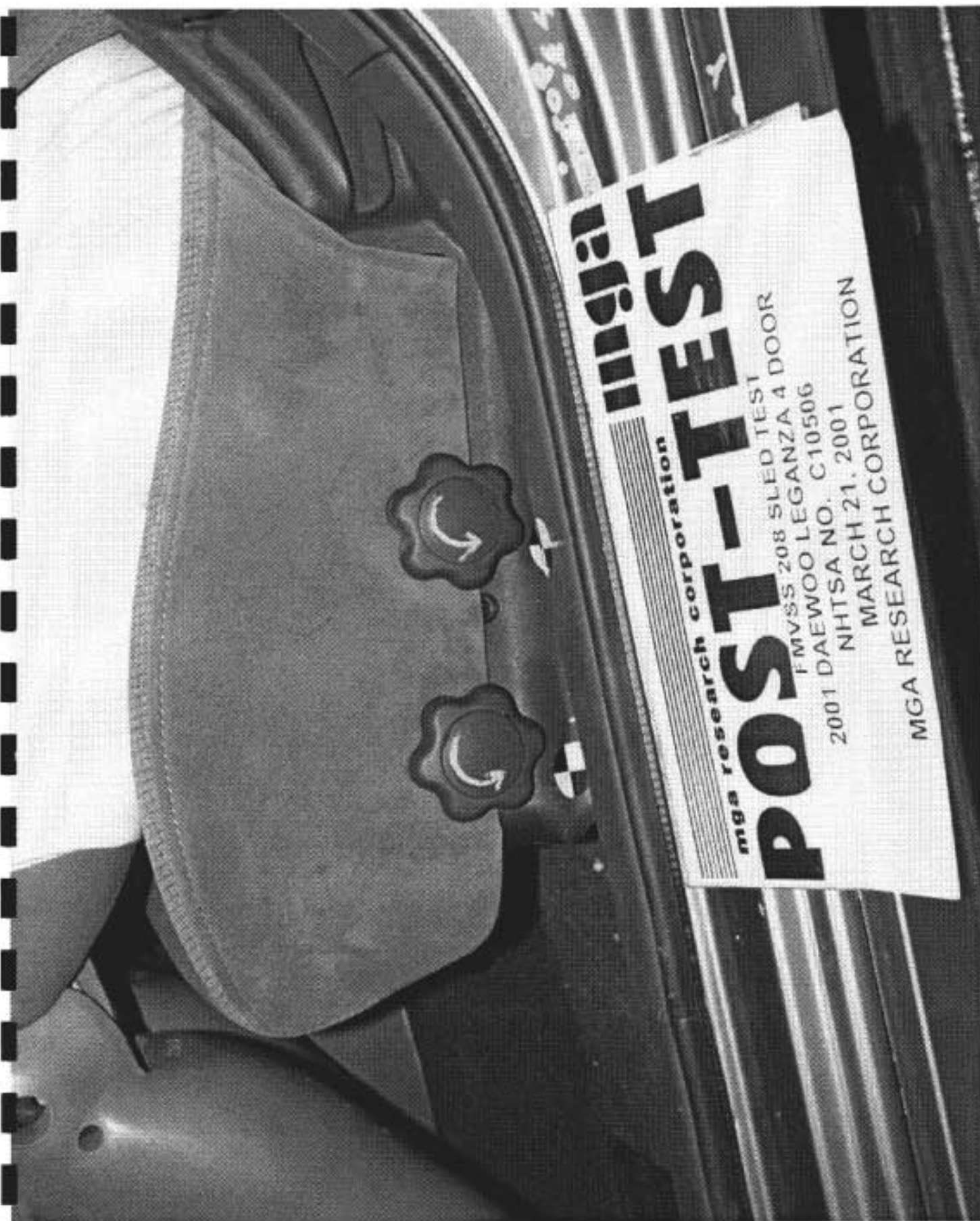


Photo No. A-26 - Post-Test Driver Seat Track Position



Photo No. A-27 - Pre-Test Passenger Seat Track Position



Photo No. A-28 – Post-Test Passenger Seat Track Position

APPENDIX B
DATA PLOTS

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* No Valid Data Collected

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TEST FMVSS 208 SLED (H01035)

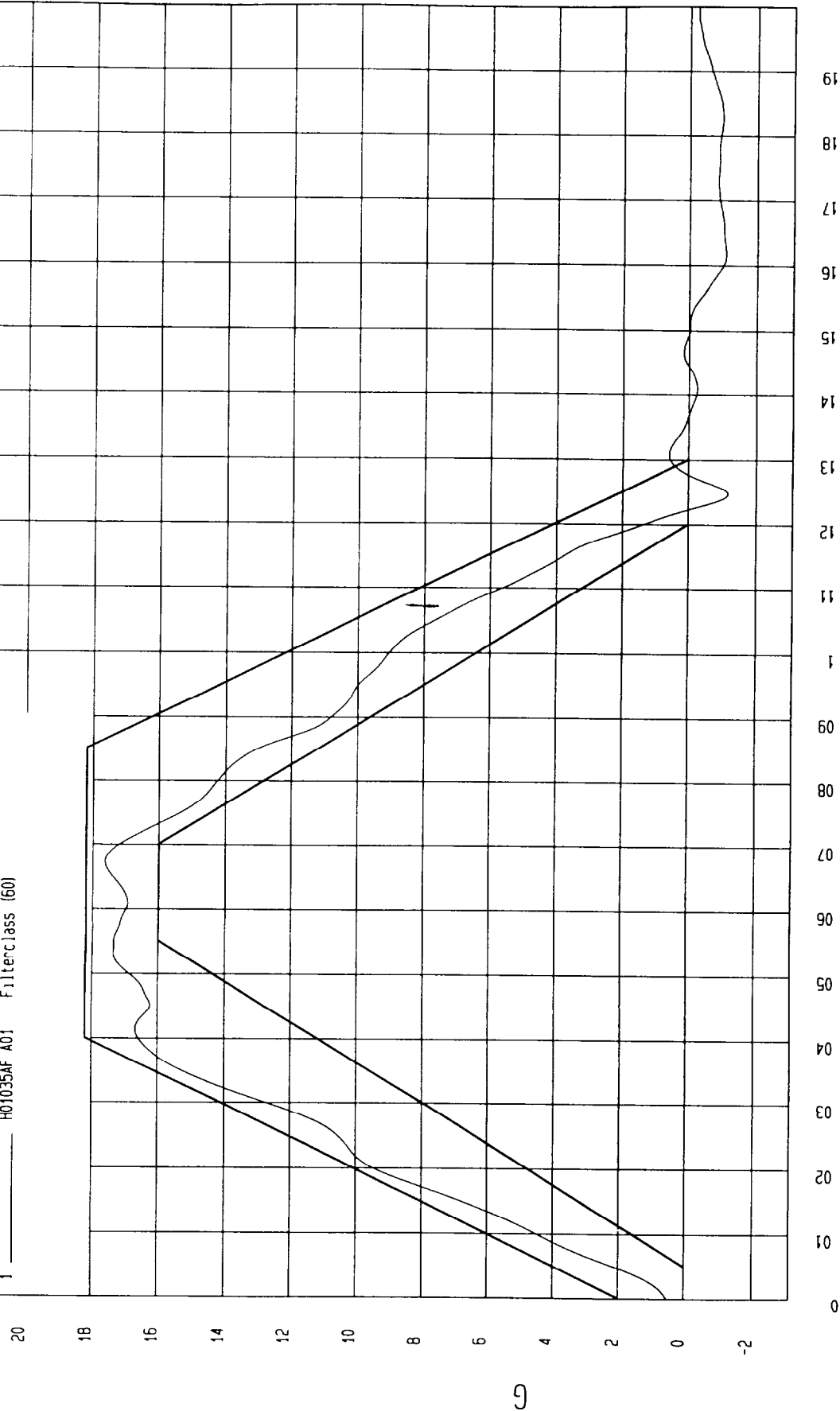
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum = -1.16 G at 124.8 msec

Maximum = 17.62 G at 67.3 msec

SLED X ACCELERATION

1 H01035AF A01 FilterClass (60)



TEST FMVSS 208 SLED (H01035) TEST DATE 03-21-2001

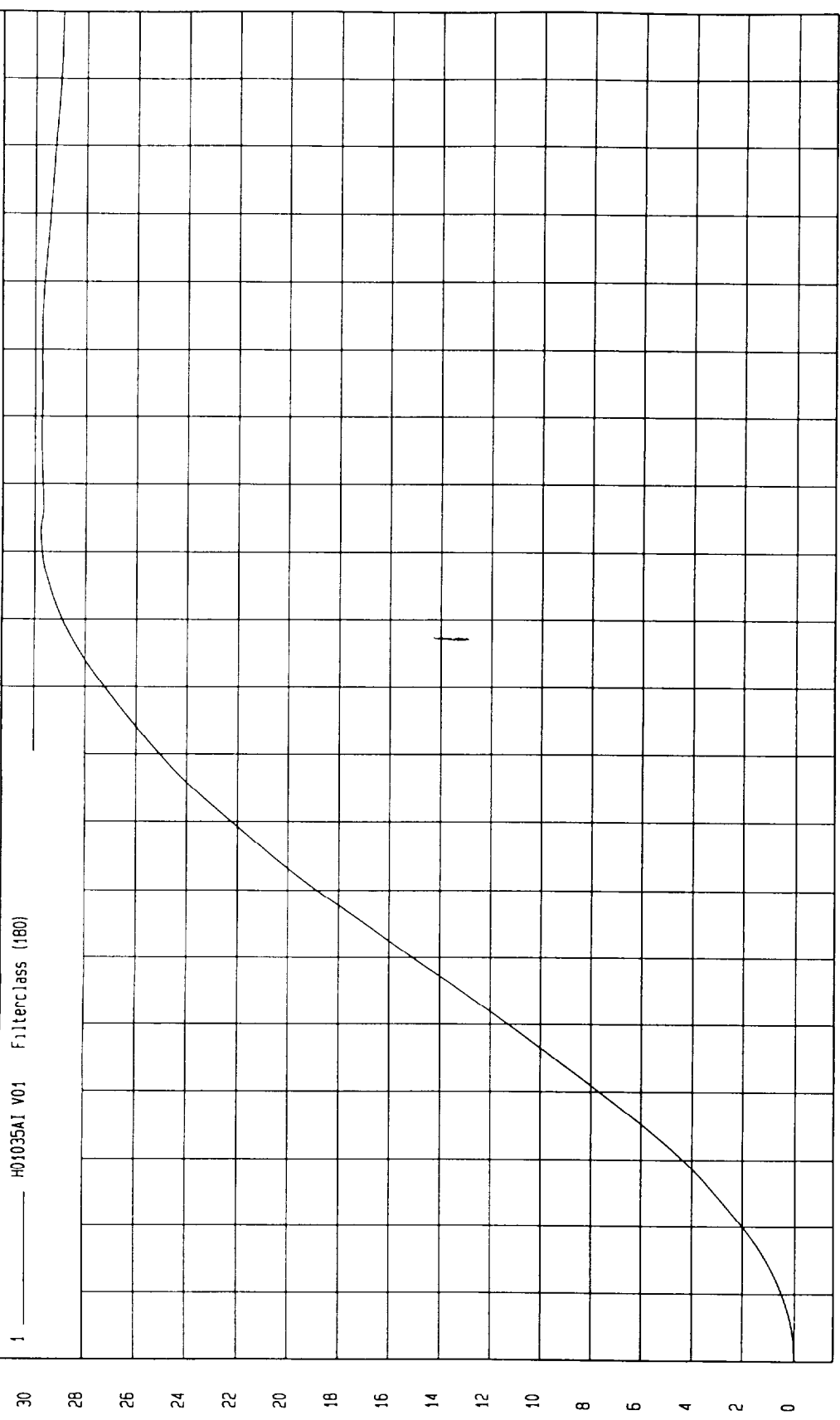
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum 0 MPH at 0 msec

Maximum 29.76 MPH at 123 msec

SLED X VELOCITY

1 H01035AI V01 Filterclass (180)



TIME Seconds

TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

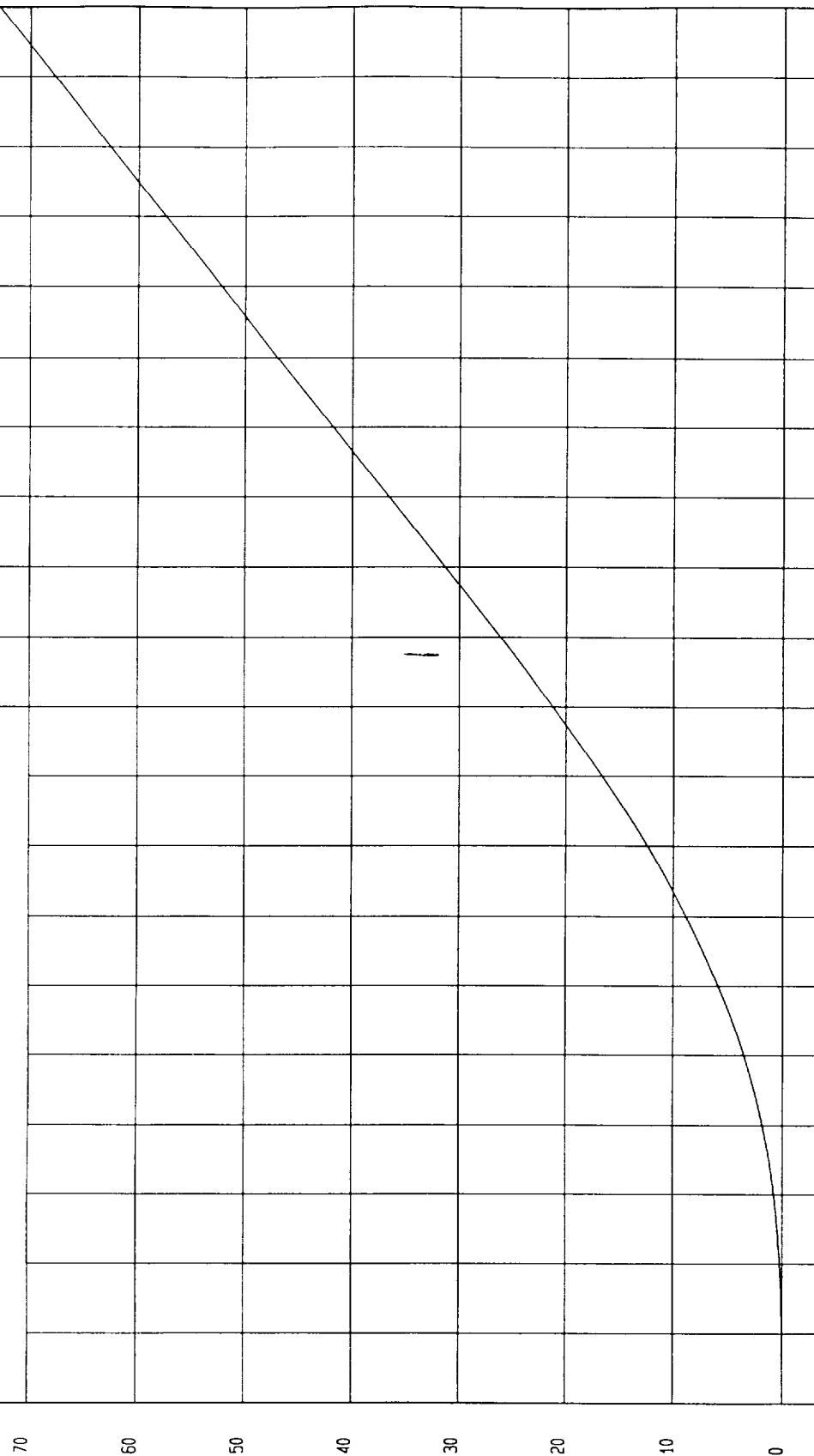
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum - 0 IN at 0 msec

Maximum - 72.77 IN at 200 msec

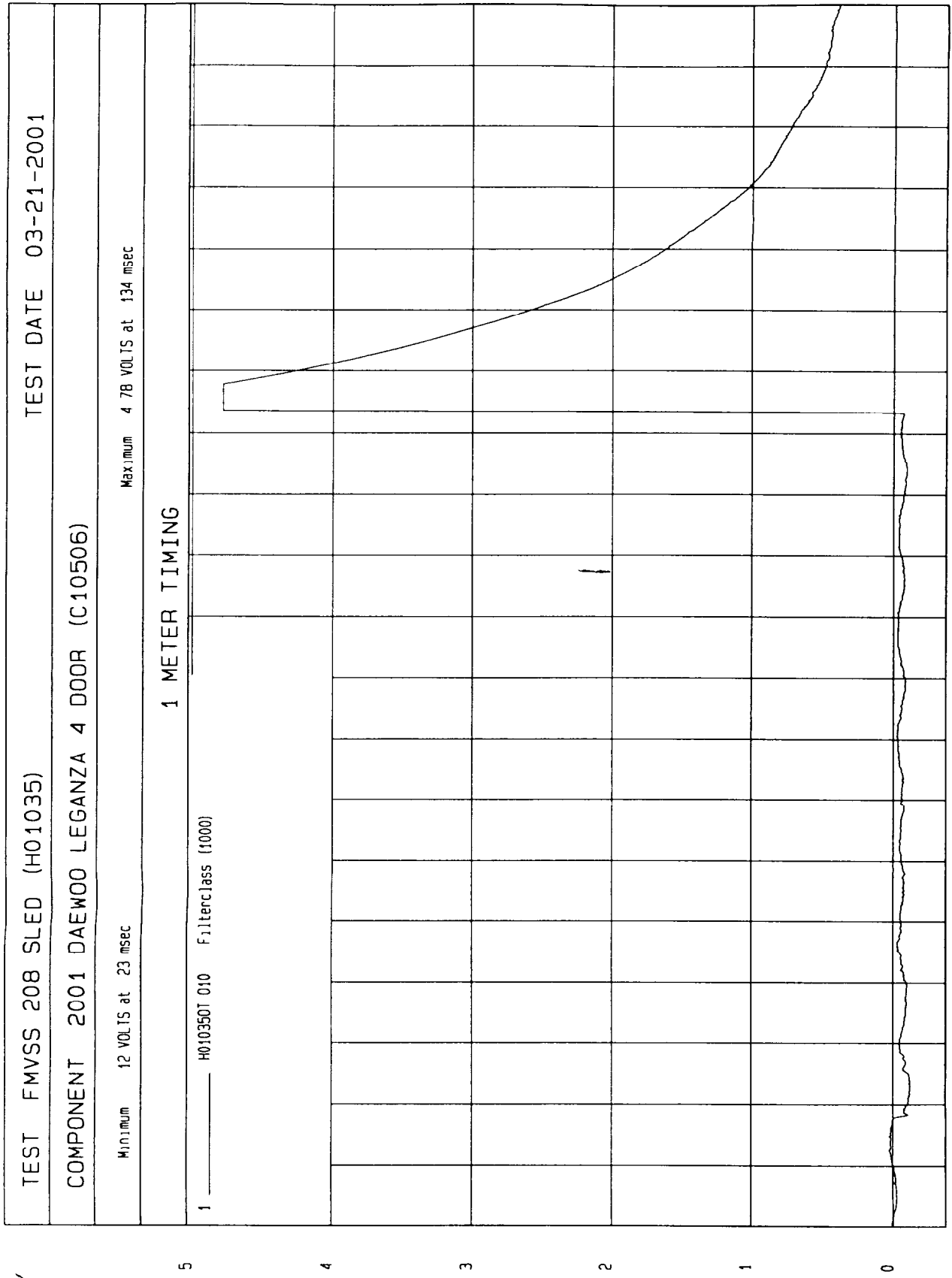
SLED X DISPLACEMENT

1 ——— H01035A1 001 Filterclass (180)



TIME Seconds

NI



VOLTS

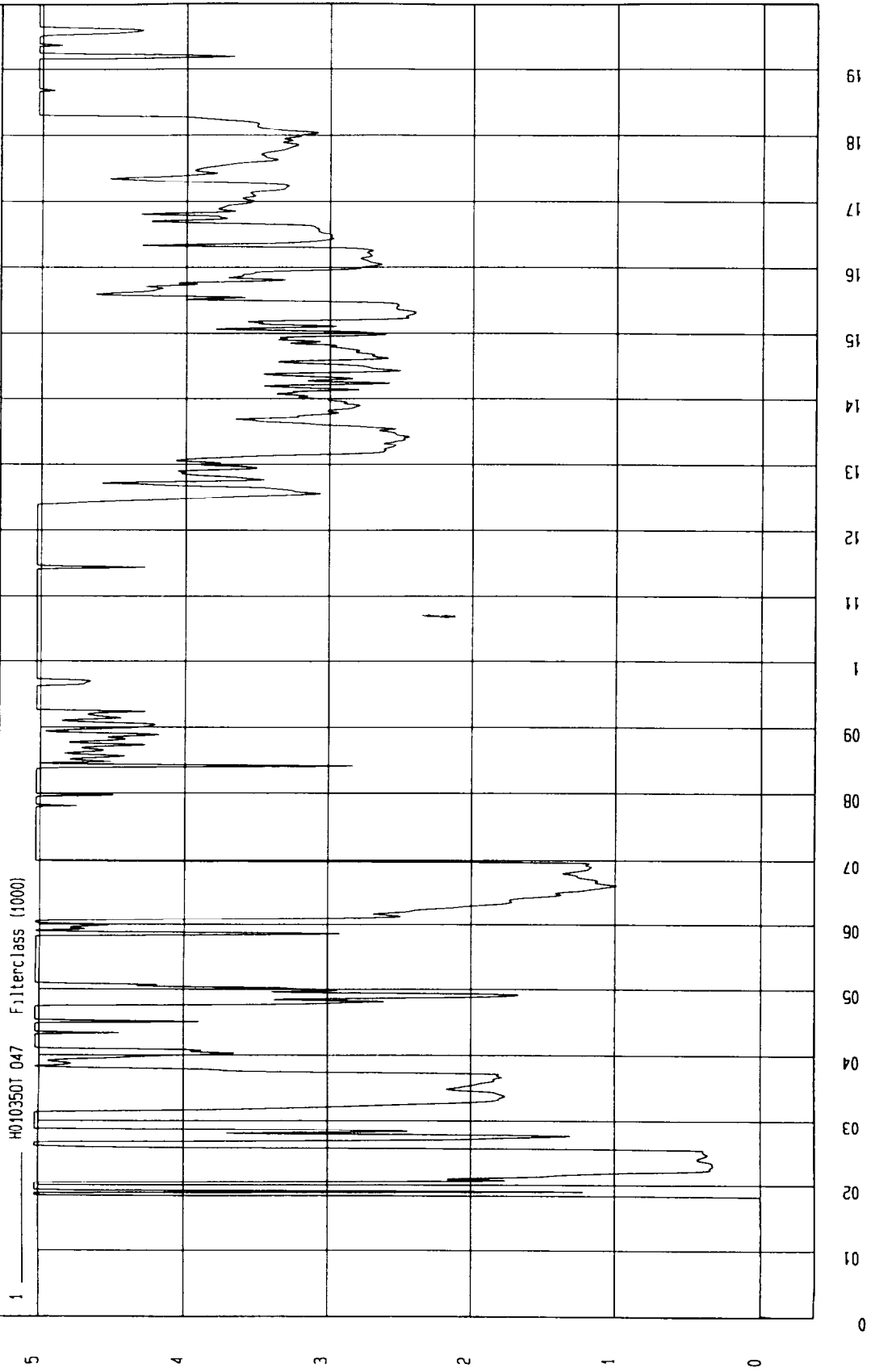
TEST FMVSS 208 SLED (H01035) TEST DATE 03-21-2001

COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum = -1 V at 0 msec

Maximum = 5.03 V at 18 msec

AIRBAG TIMING



TIME (SECONDS)

TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

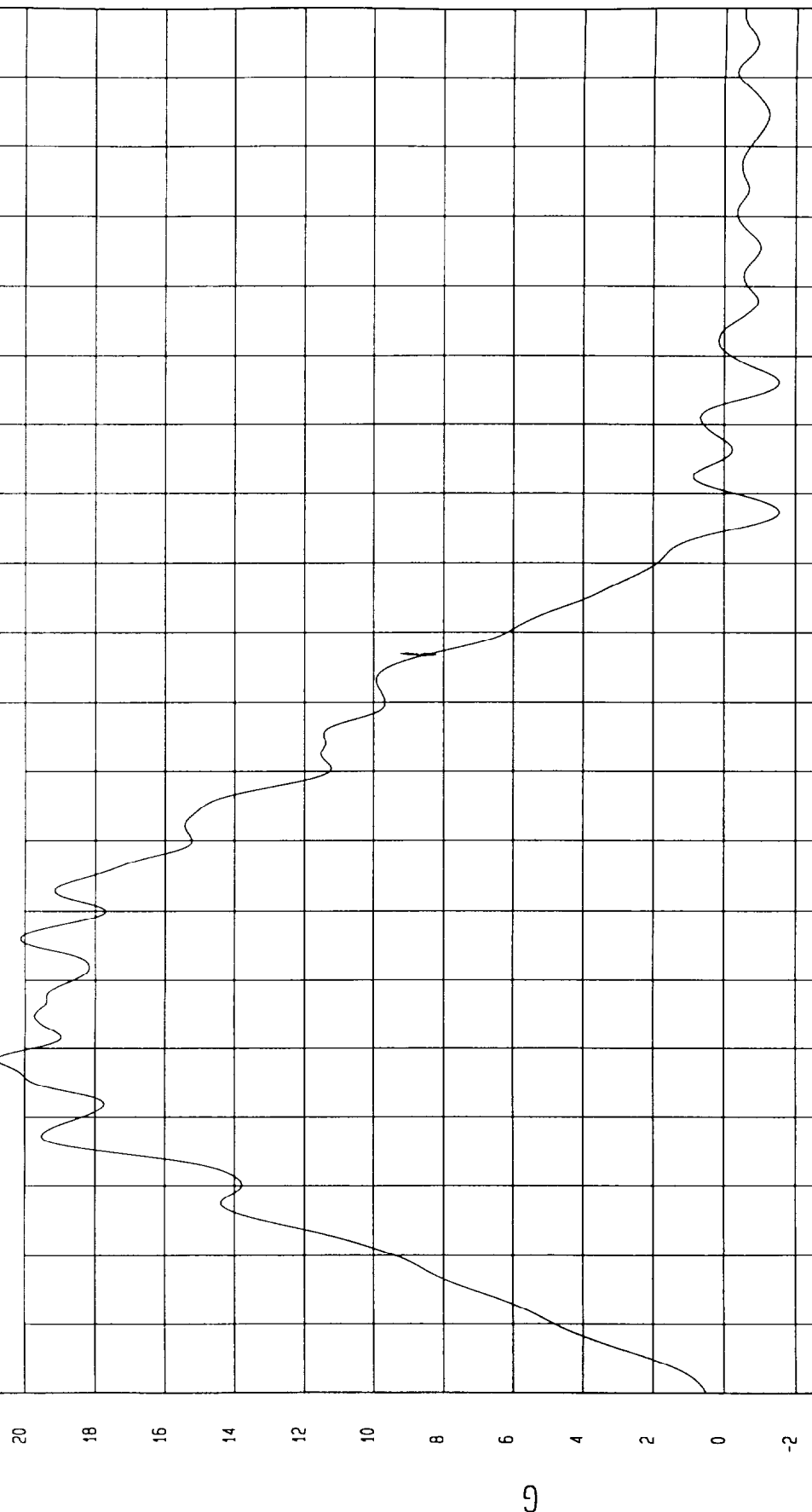
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum 1.54 G at 127 msec

Maximum = 20.82 G at 48 msec

LEFT REAR SEAT CROSSMEMBER X ACCELERATION

1 H01035AF A43 Filterclass (60)



TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

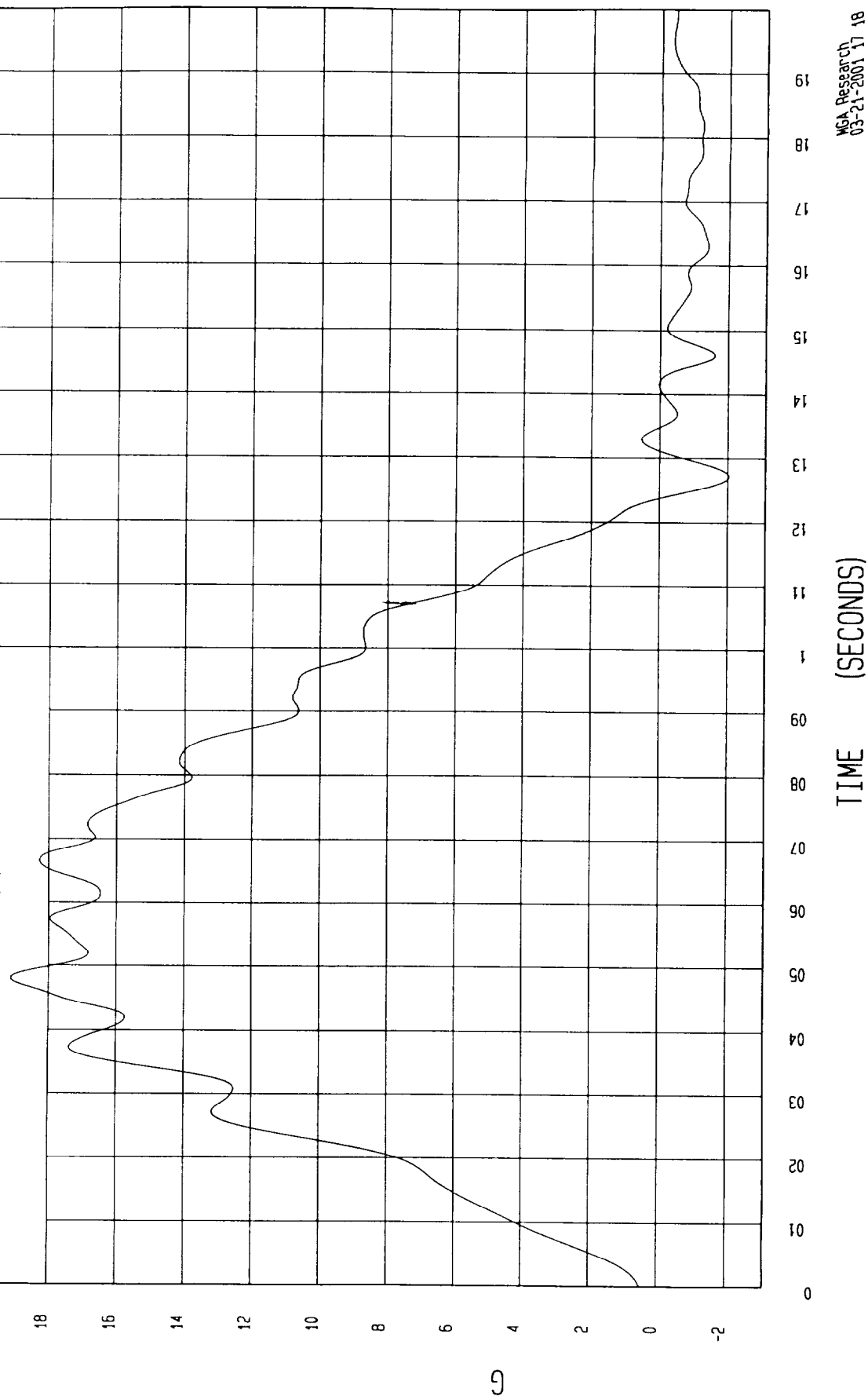
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum = -2.03 G at 127 msec

Maximum = 19.11 G at 48 msec

RIGHT REAR SEAT CROSSMEMBER X ACCELERATION

1 H01035AF A44 FilterClass (60)

MGA Research
03-21-2001 17 18

TOP OF ENGINE X ACCELERATION VS TIME
NO VALID DATA COLLECTED

↑

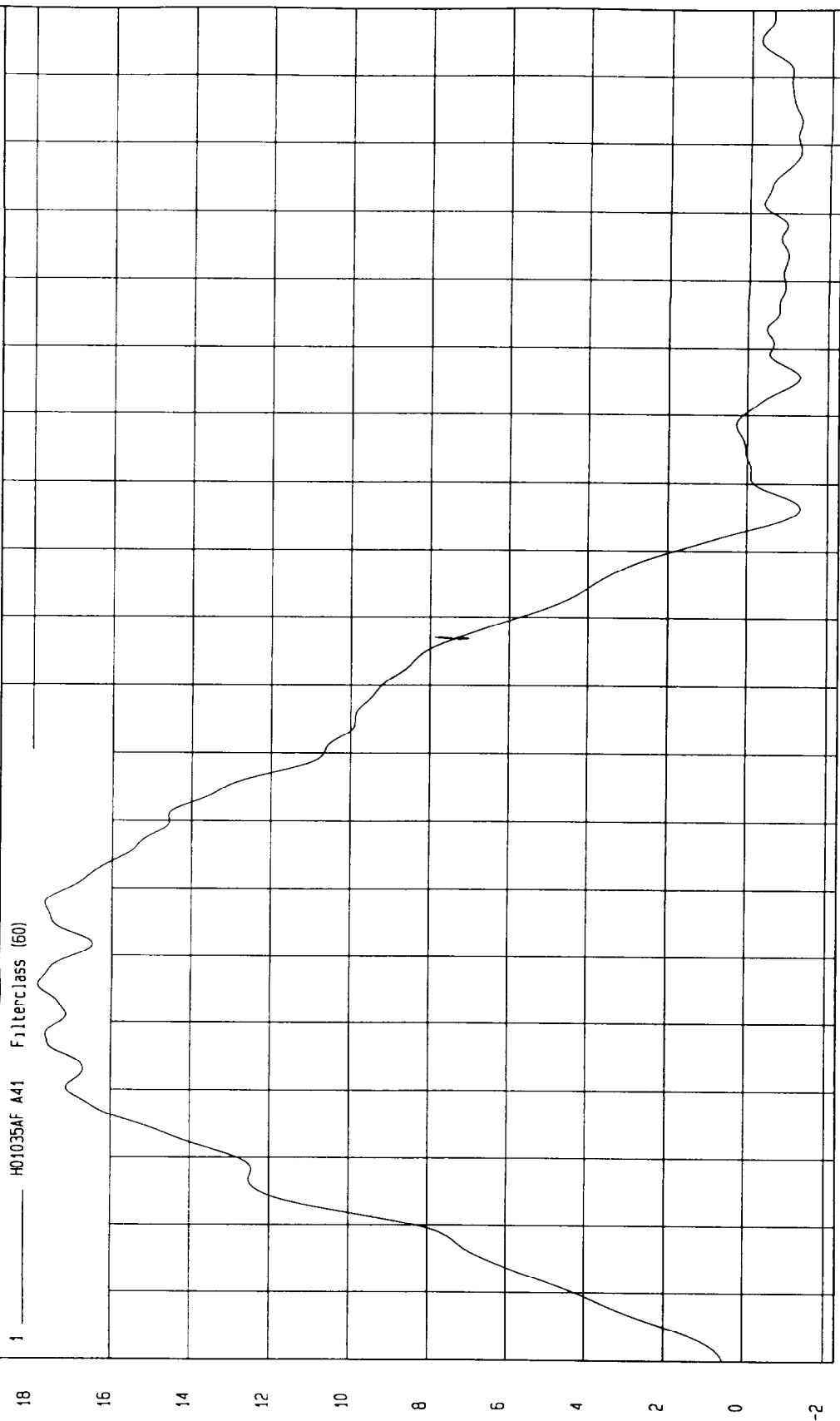
TEST FMVSS 208 SLED (H01035) TEST DATE 03-21-2001

COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum 1.31 G at 126 msec Maximum = 17.86 G at 56 msec

REAR AXLE X ACCELERATION

1 H01035AF 441 Filterclass (60)



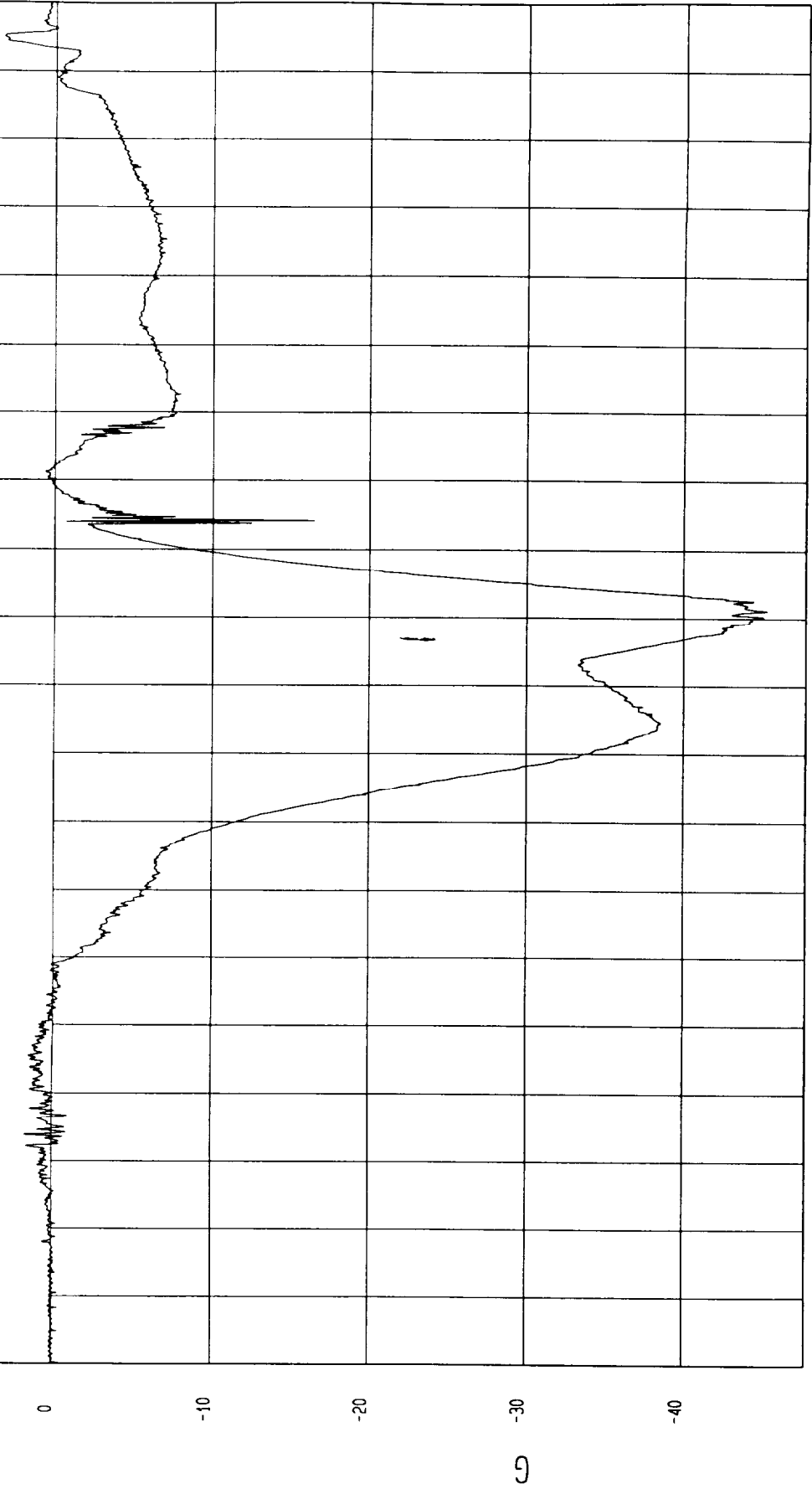
TEST FMVSS 208 SLED (H01035) TEST DATE 03-21-2001

COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum 45.19 G at 111 msec Maximum = 3.29 G at 195 msec

DRIVER HEAD X ACCELERATION

1 H01035AT A03 Filterclass (1000)



TEST FMVSS 208 SLED (H01035) TEST DATE 03-21-2001

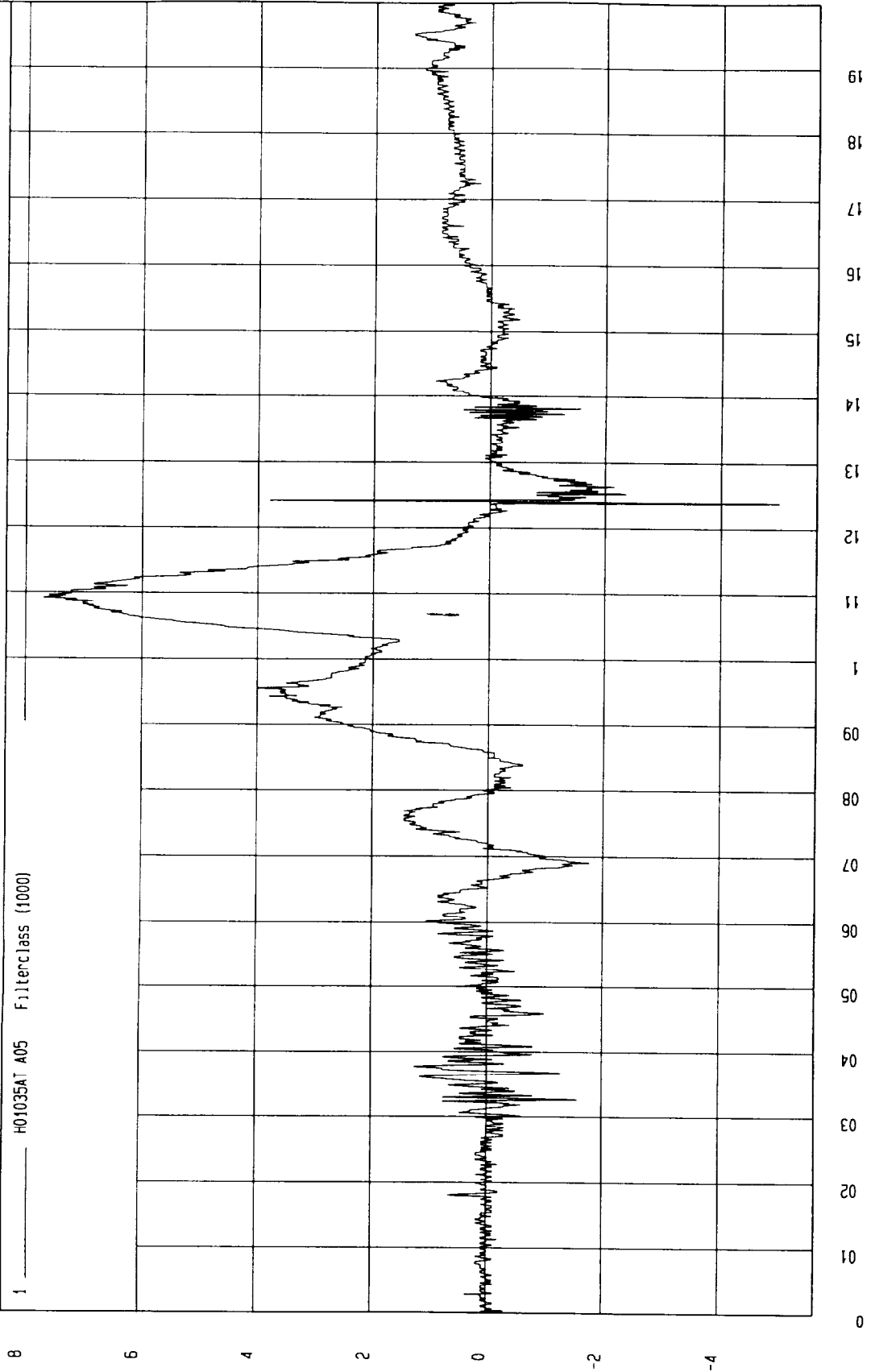
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum - -4.99 G at 124 msec

Maximum - 7.7 G at 109 msec

DRIVER HEAD Y ACCELERATION

1 H01035AT 405 Filterclass (1000)



TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

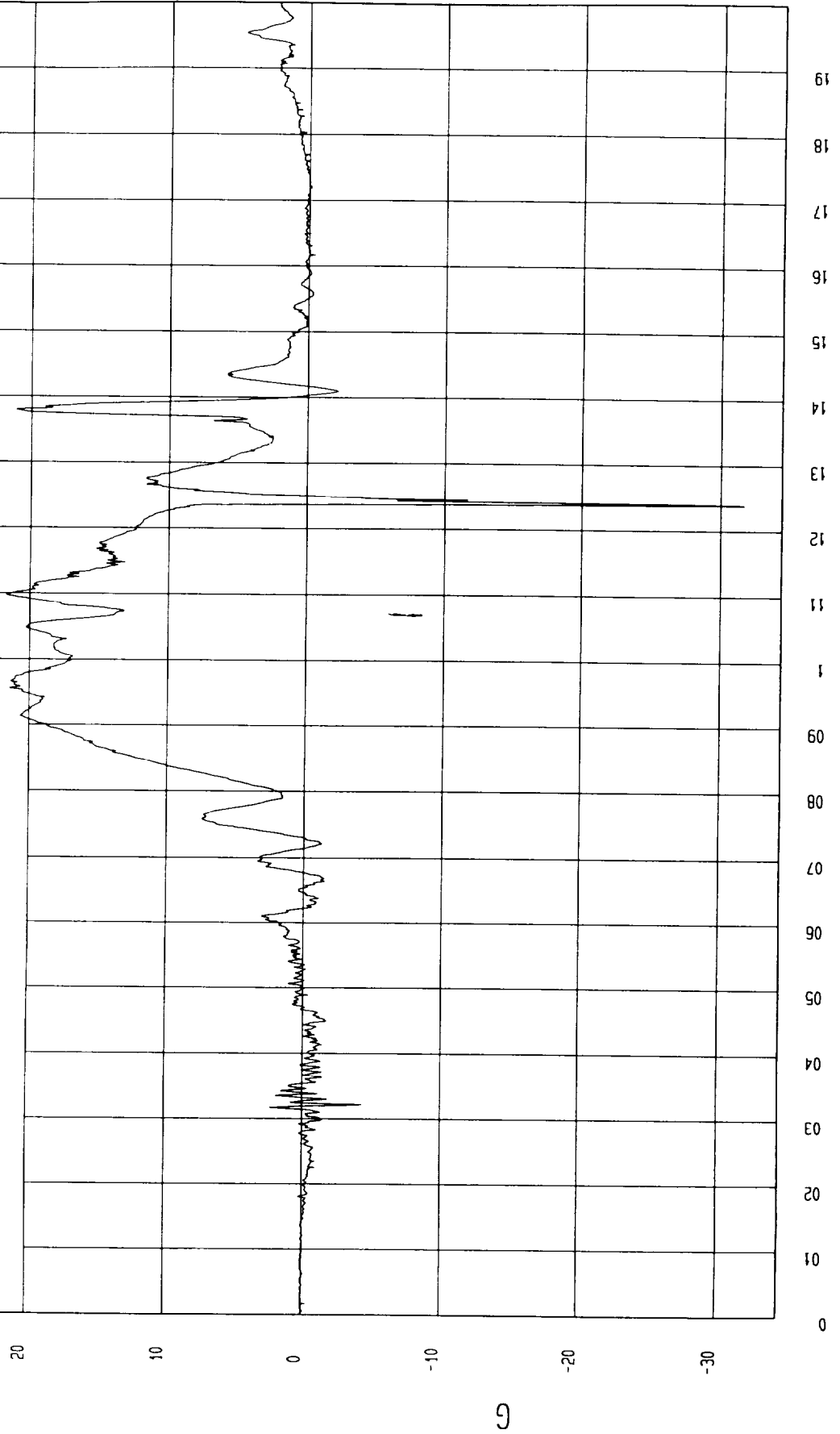
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum - 31.54 G at 124 msec

Maximum = 21.72 G at 110 msec

DRIVER HEAD Z ACCELERATION

1 H01035AT A06 Filterclass (1000)



TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

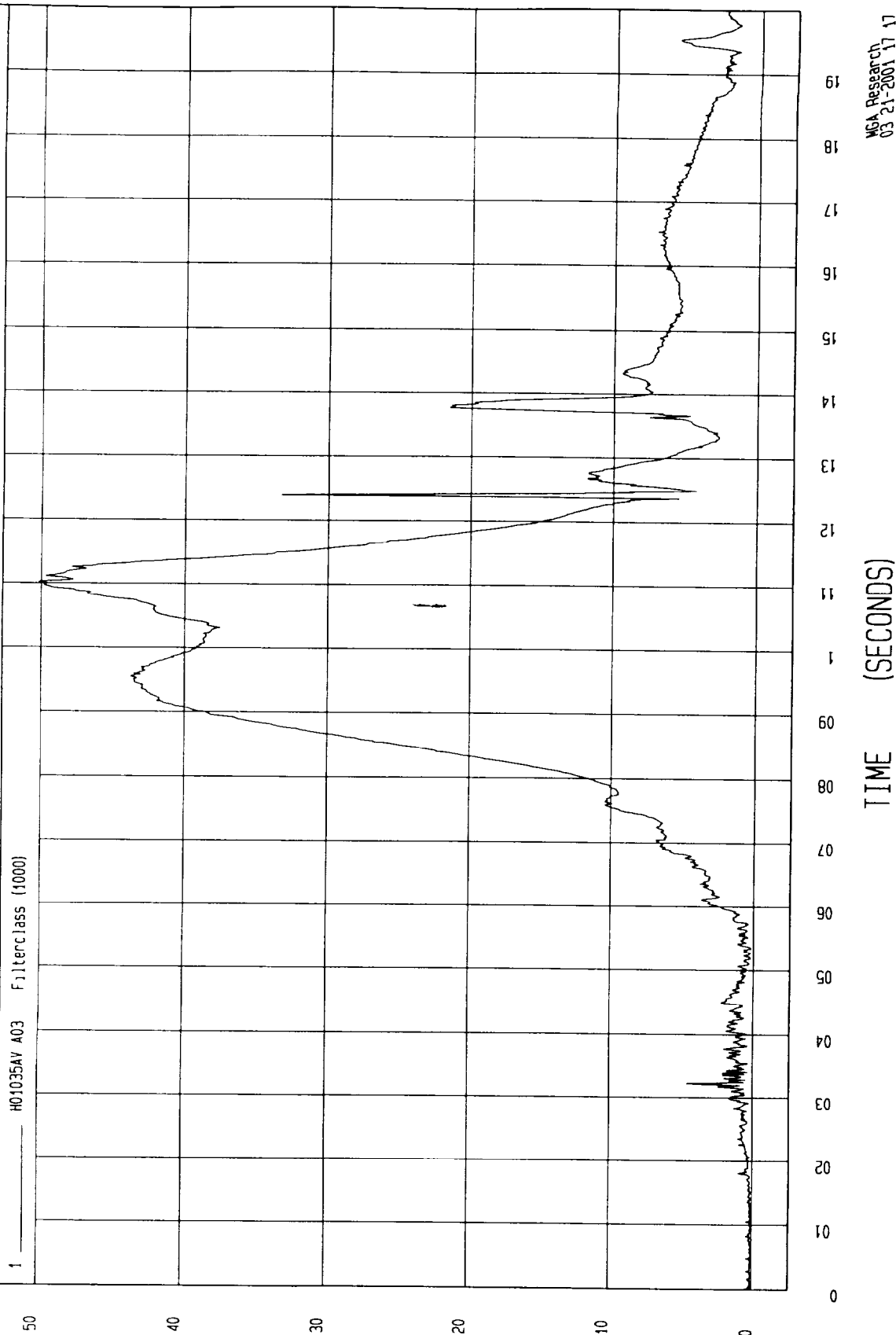
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum 4.55E 02 G at 0 msec

Maximum - 50.18 G at 110 msec

DRIVER HEAD RESULTANT ACCELERATION

1 H01035AV A03 Filterclass (1000)

MGA Research
03-21-2001 17:17

TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

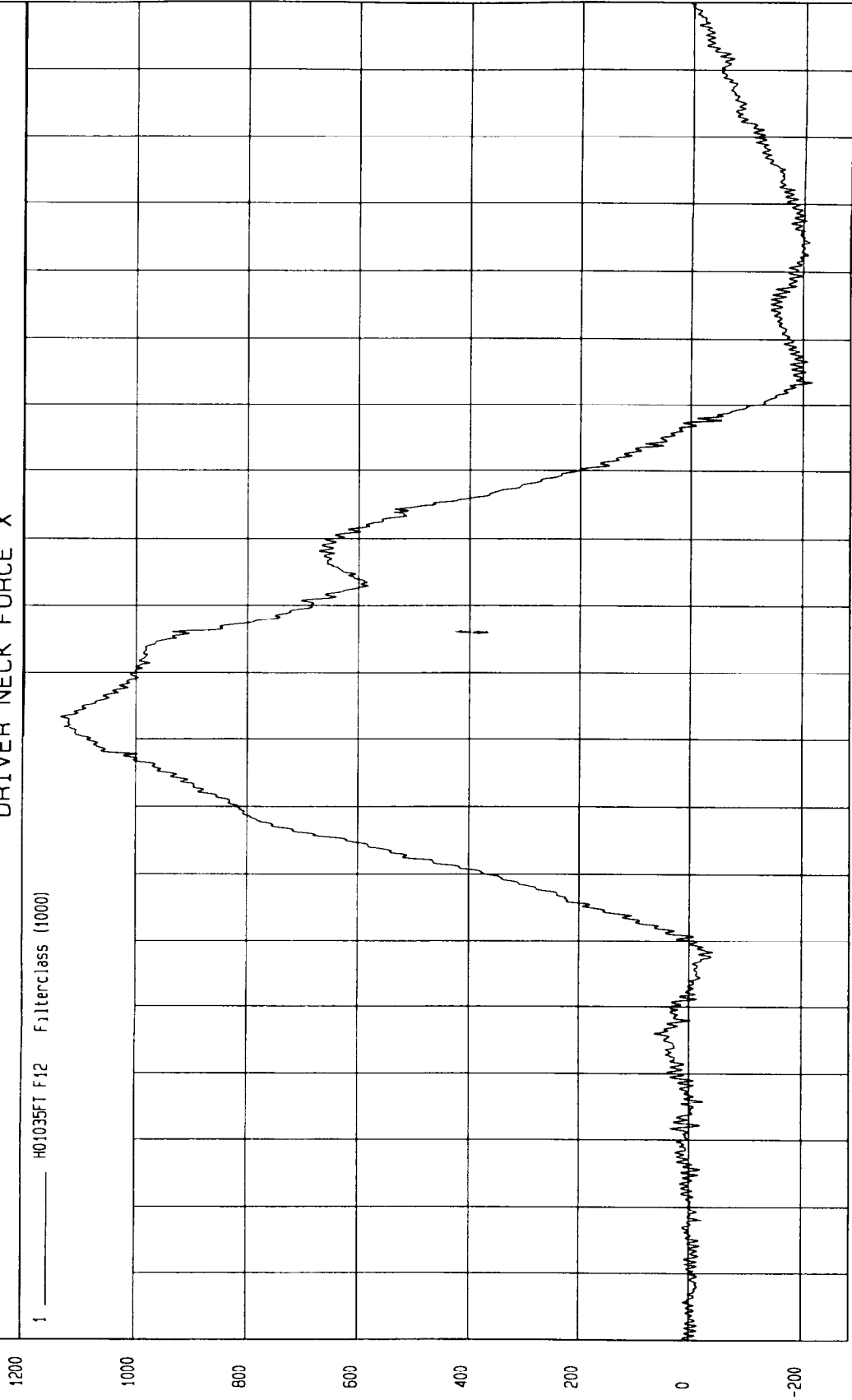
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum 217 28 N at 144 msec

Maximum 1134 76 N at 93 msec

DRIVER NECK FORCE X

1 H01035FT F12 Filterclass (1000)



TEST FMVSS 208 SLED (H01035)

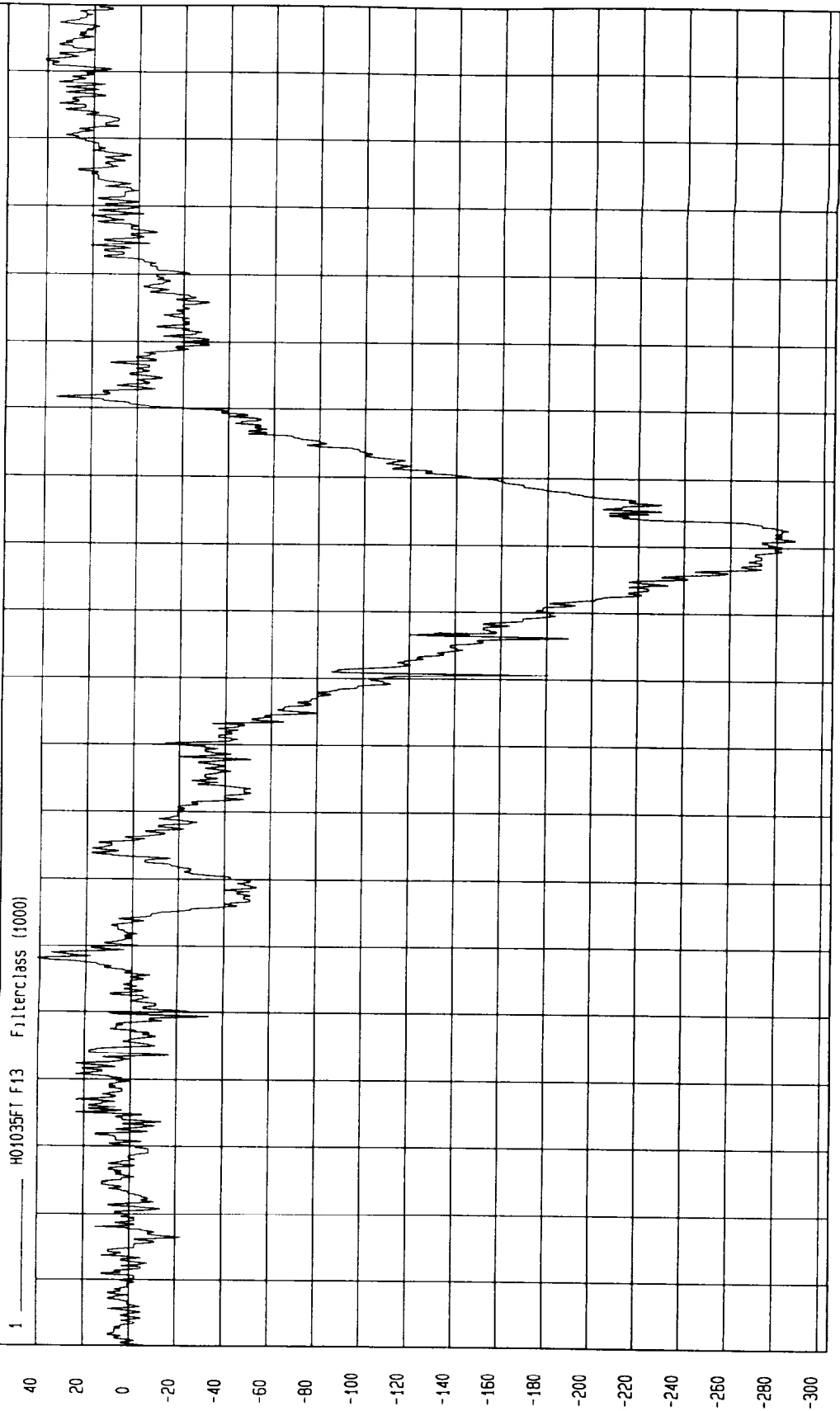
TEST DATE 03-21-2001

COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum = -287 84 N at 121 msec

Maximum = 40 97 N at 58 msec

DRIVER NECK FORCE Y



TEST: FMVSS 208 SLED (H01035)

TEST DATE: 03-21-2001

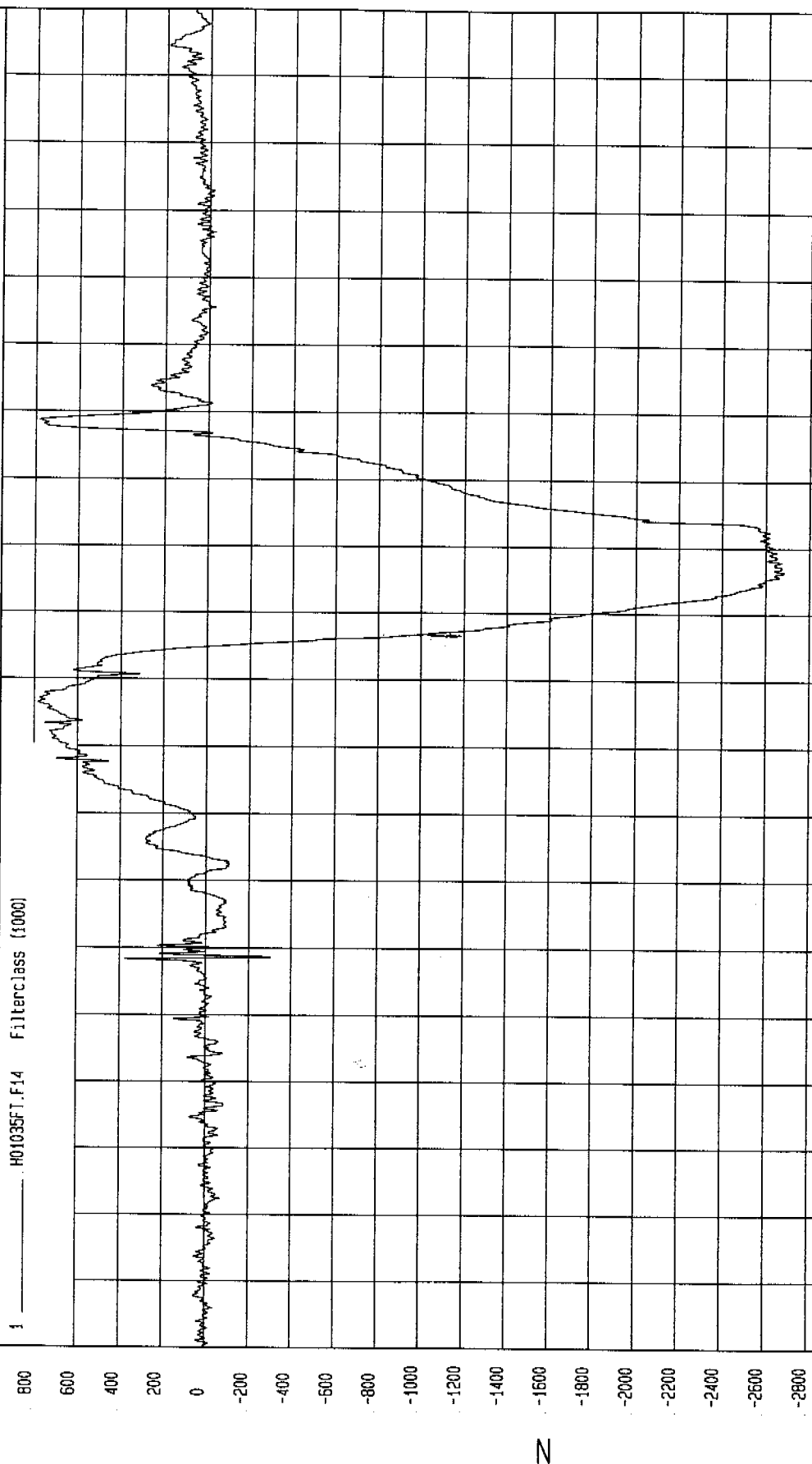
COMPONENT: 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum = -2684.11 N at 116 msec

Maximum = 784.24 N at 96 msec

DRIVER NECK FORCE Z

1 H01035T.F14 Filterclass (1000)

MSA Research
03-21-2001 11:17

TIME (SECONDS)

TEST FMVSS 208 SLED (H01035) TEST DATE 03-21-2001

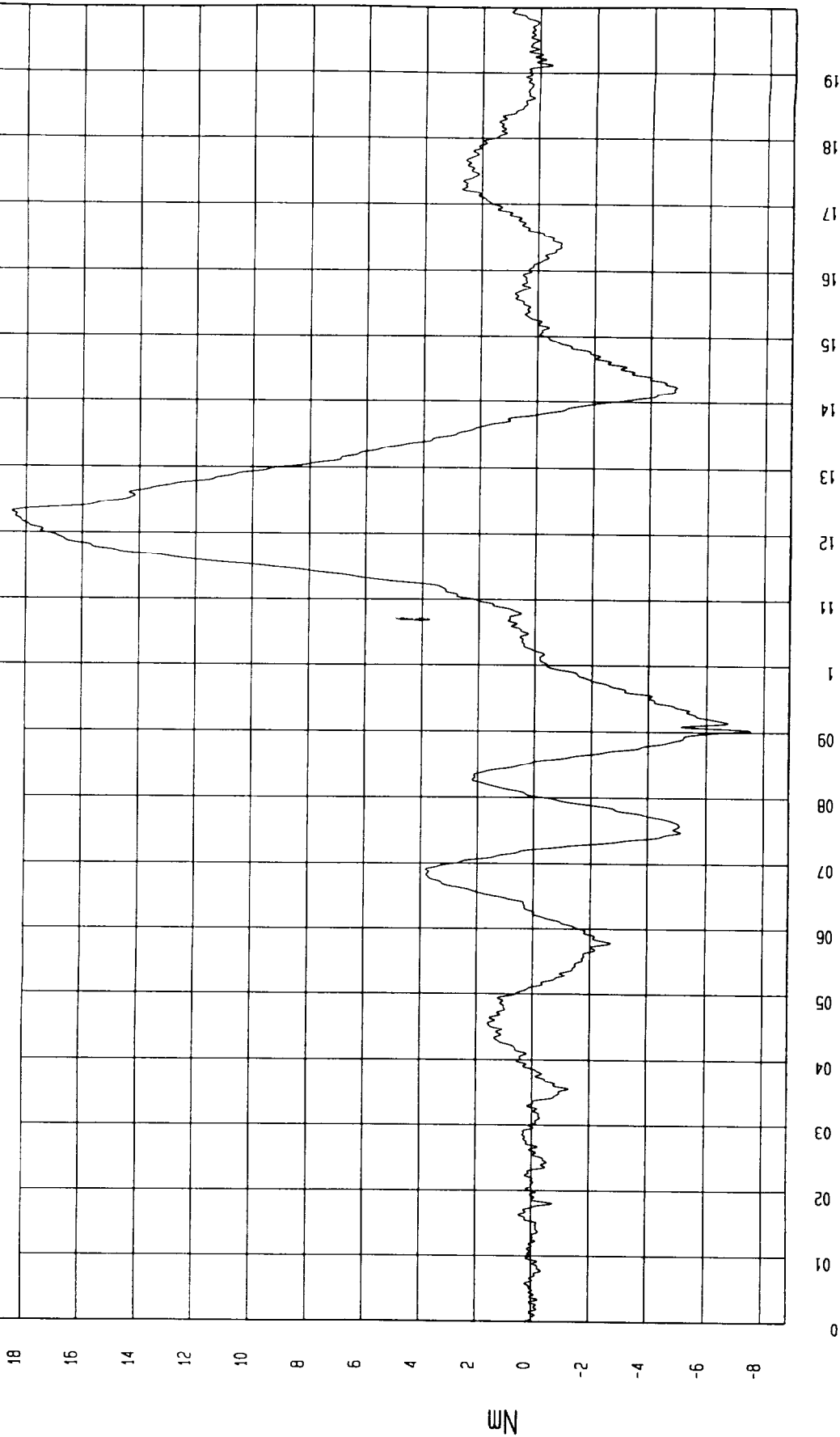
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum = -7.55 Nm at 90 msec

Maximum = 18.51 Nm at 123 msec

DRIVER NECK MOMENT X

1 H01035MF M15 Filterclass (600)



TIME (SECONDS)

MCA Research
03-21-2001 17 17

TEST FMVSS 208 SLED (H01035) TEST DATE 03-21-2001

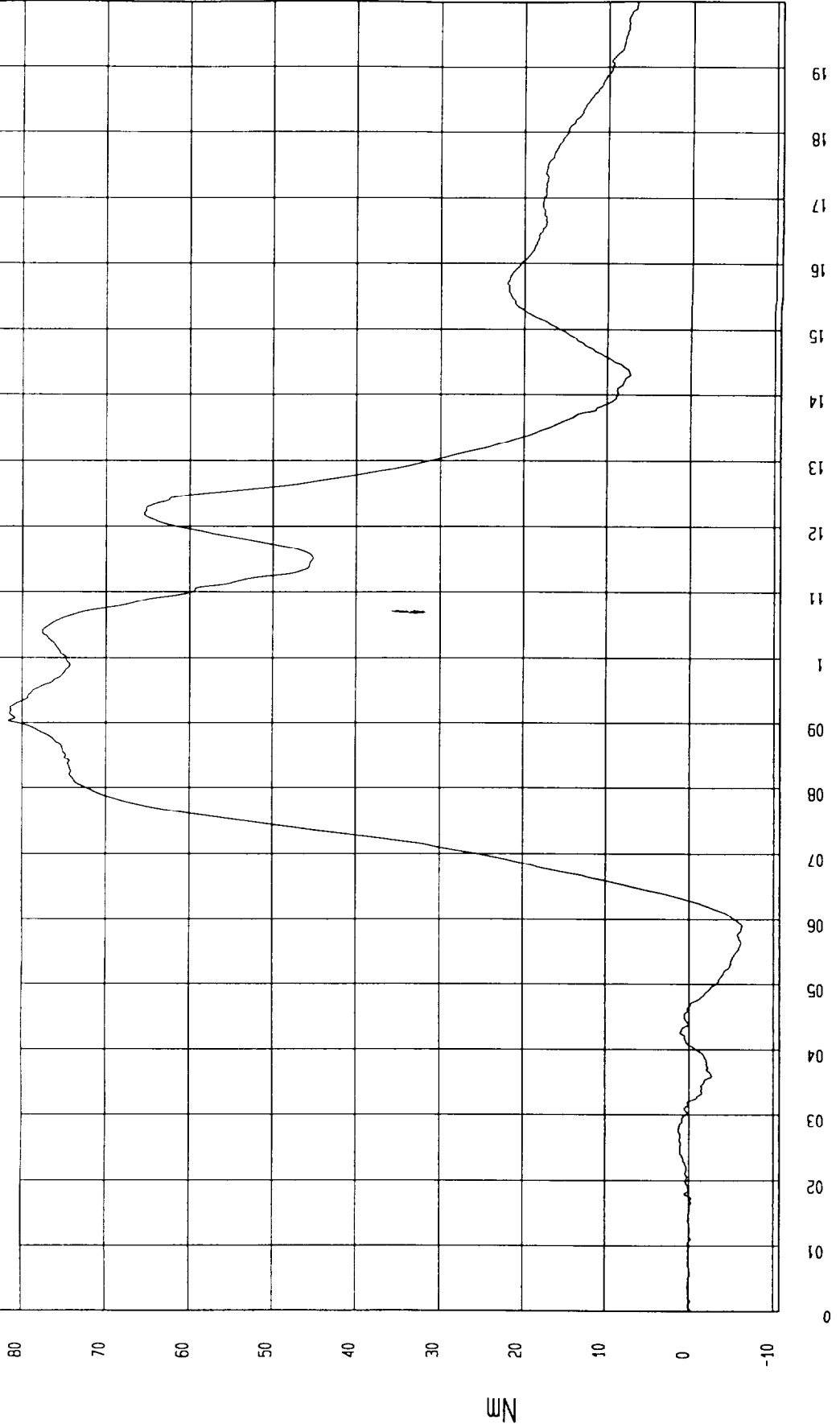
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum = -6.3 Nm at 59 msec

Maximum = 81.6 Nm at 90 msec

DRIVER NECK MOMENT Y

1 H01035MF M16 Filterclass (600)



TIME (SECONDS)

WGA Research
03-21-2001 17 17

TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

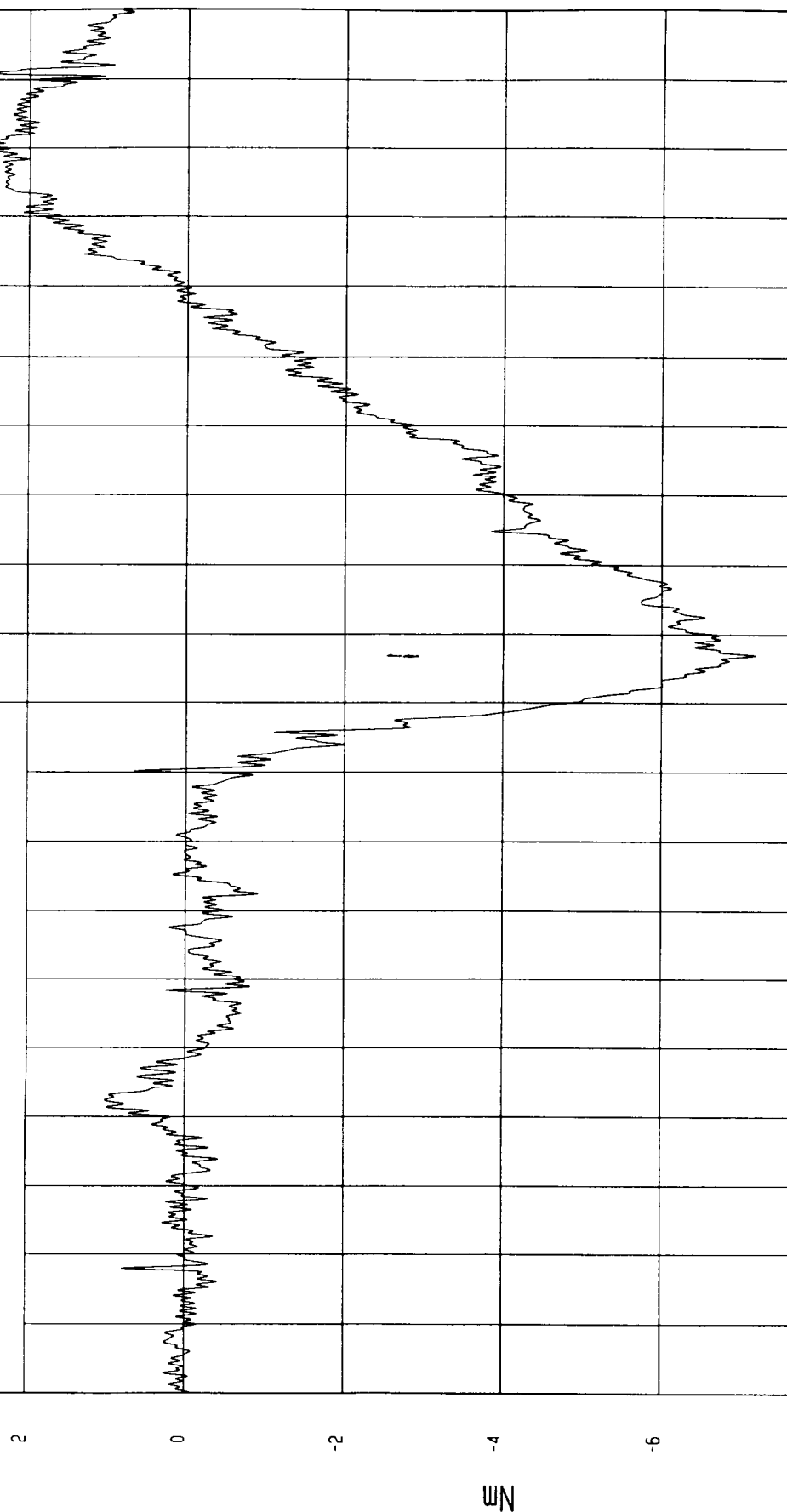
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum - 7.17 Nm at 107 msec

Maximum 2.62 Nm at 191 msec

DRIVER NECK MOMENT Z

1 H01035MF M17 Filterclass (500)

MGA Research
03-21-2001 17 18

TIME (SECONDS)

TEST FMVSS 208 SLED (H01035) TEST DATE 03-21-2001

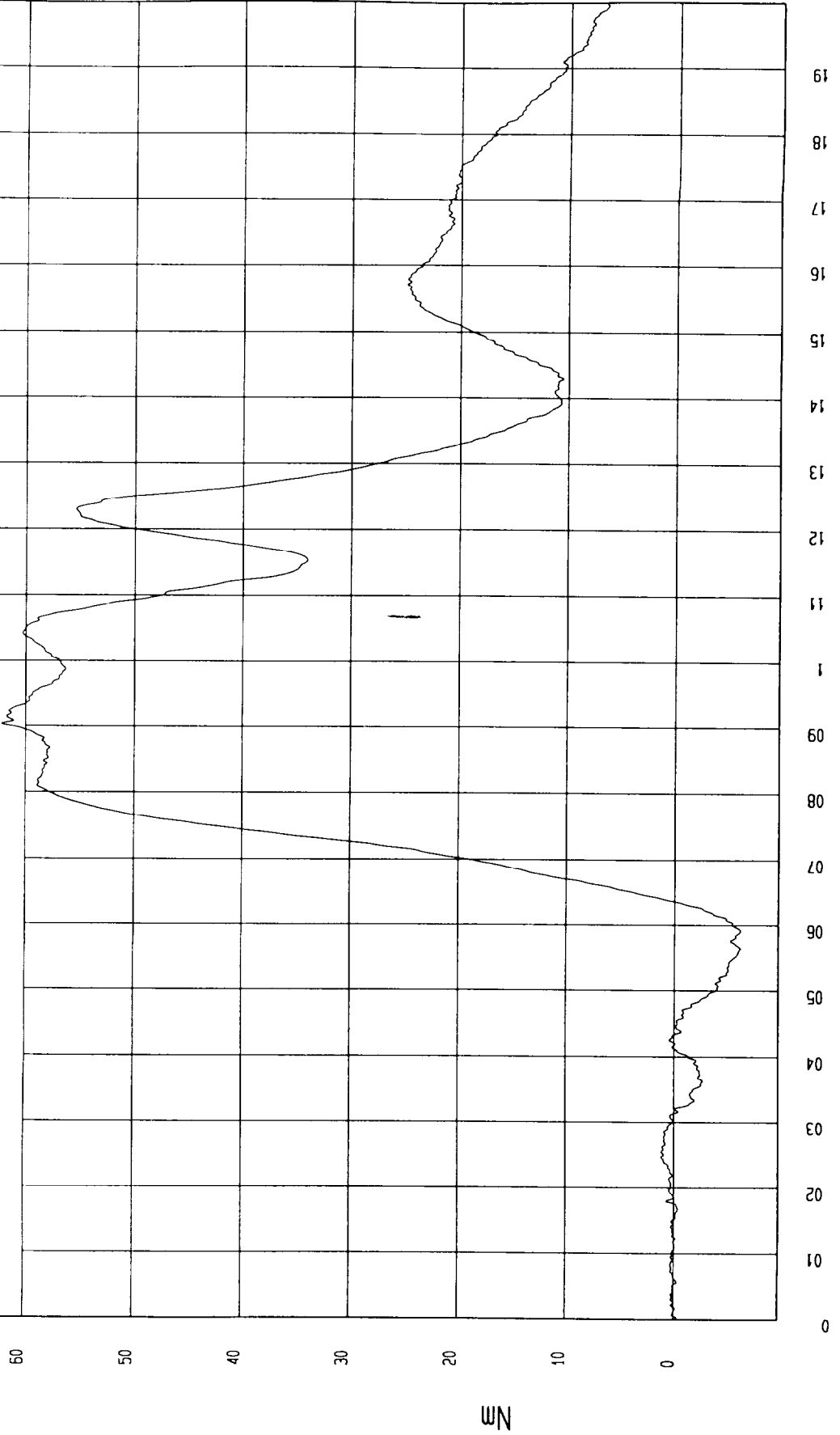
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum = -5.97 Nm at 56 msec

Maximum = 62.22 Nm at 90 msec

DRIVER OCCIPITAL CONDYLE MOMENT Y

1 H01035M0 M16 Filterclass (600)



TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

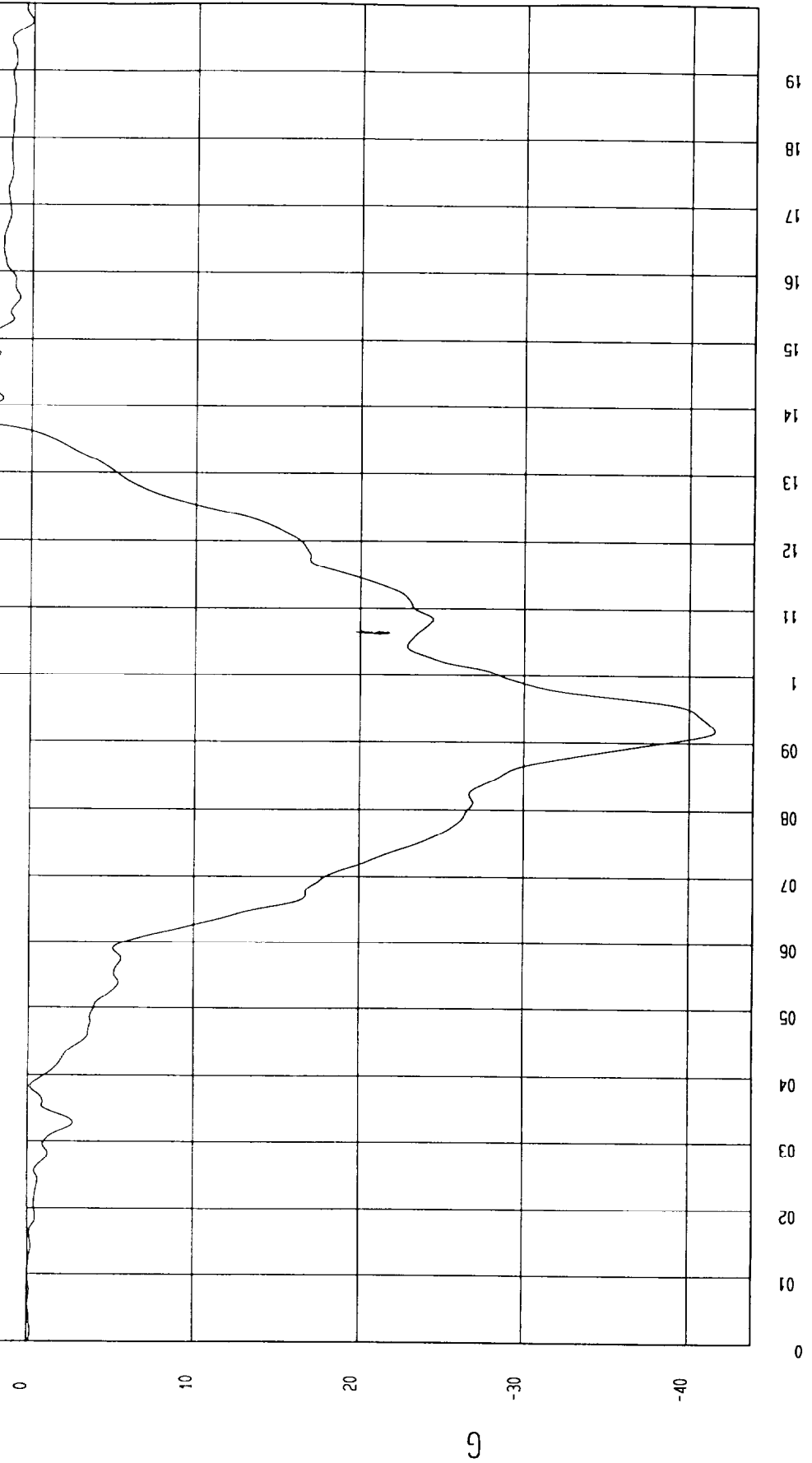
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum 41.53 G at 92 msec

Maximum 3.95 G at 138 msec

DRIVER CHEST X ACCELERATION

1 — H01035AF A21 Filterclass (180)



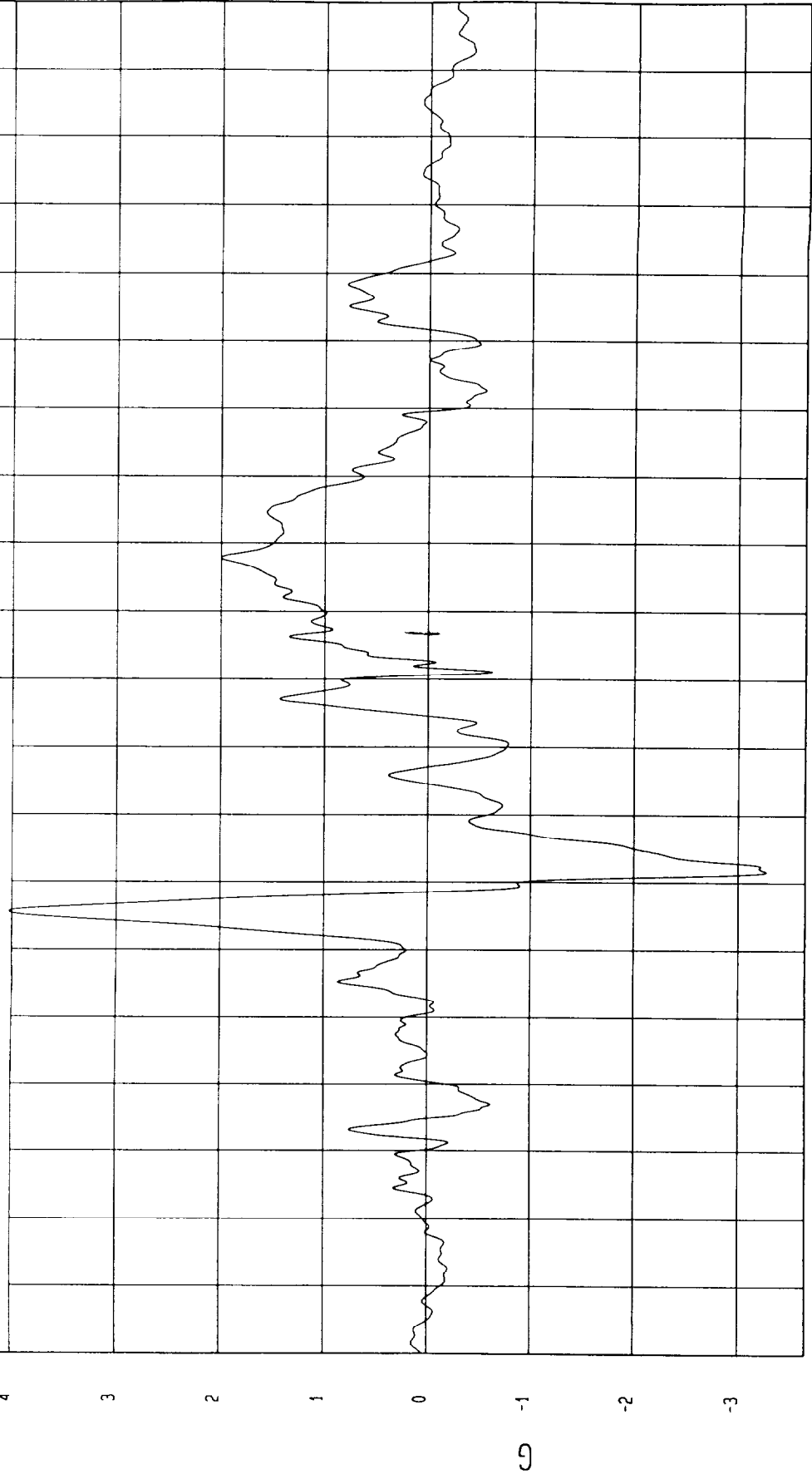
TEST FMVSS 208 SLED (H01035) TEST DATE 03-21-2001

COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum - -3.27 G at 72 msec Maximum 4.03 G at 56 msec

DRIVER CHEST Y ACCELERATION

1 H01035AF A22 FilterClass (180)



TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

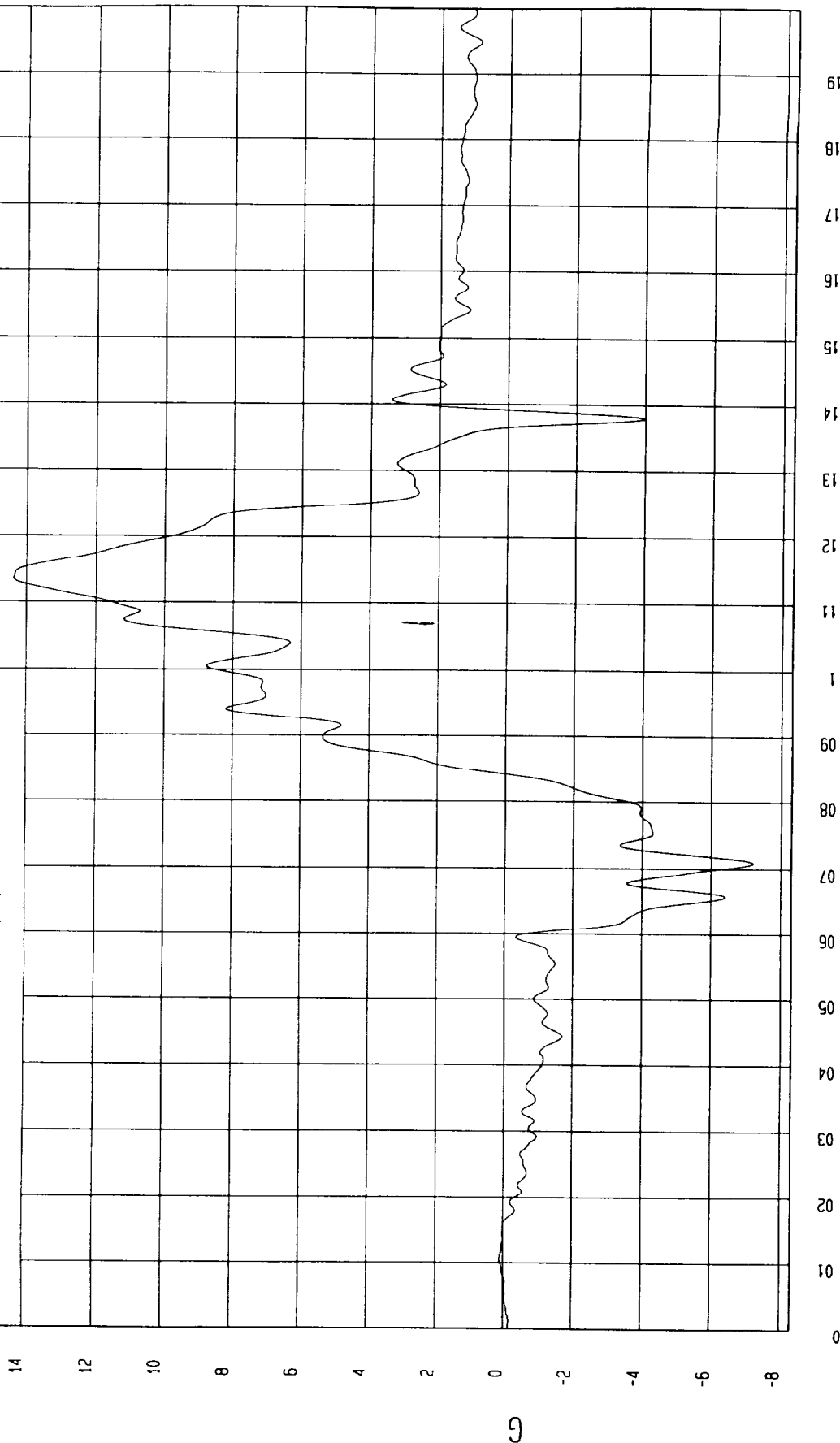
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum - -7.21 G at 71 msec

Maximum 14.37 G at 114 msec

DRIVER CHEST Z ACCELERATION

1 ——— H01035AF A23 Filterclass (180)



TIME (SECONDS)

NSA Research
03-21-2001 11:18

TEST FMVSS 208 SLED (H01035) TEST DATE 03-21-2001

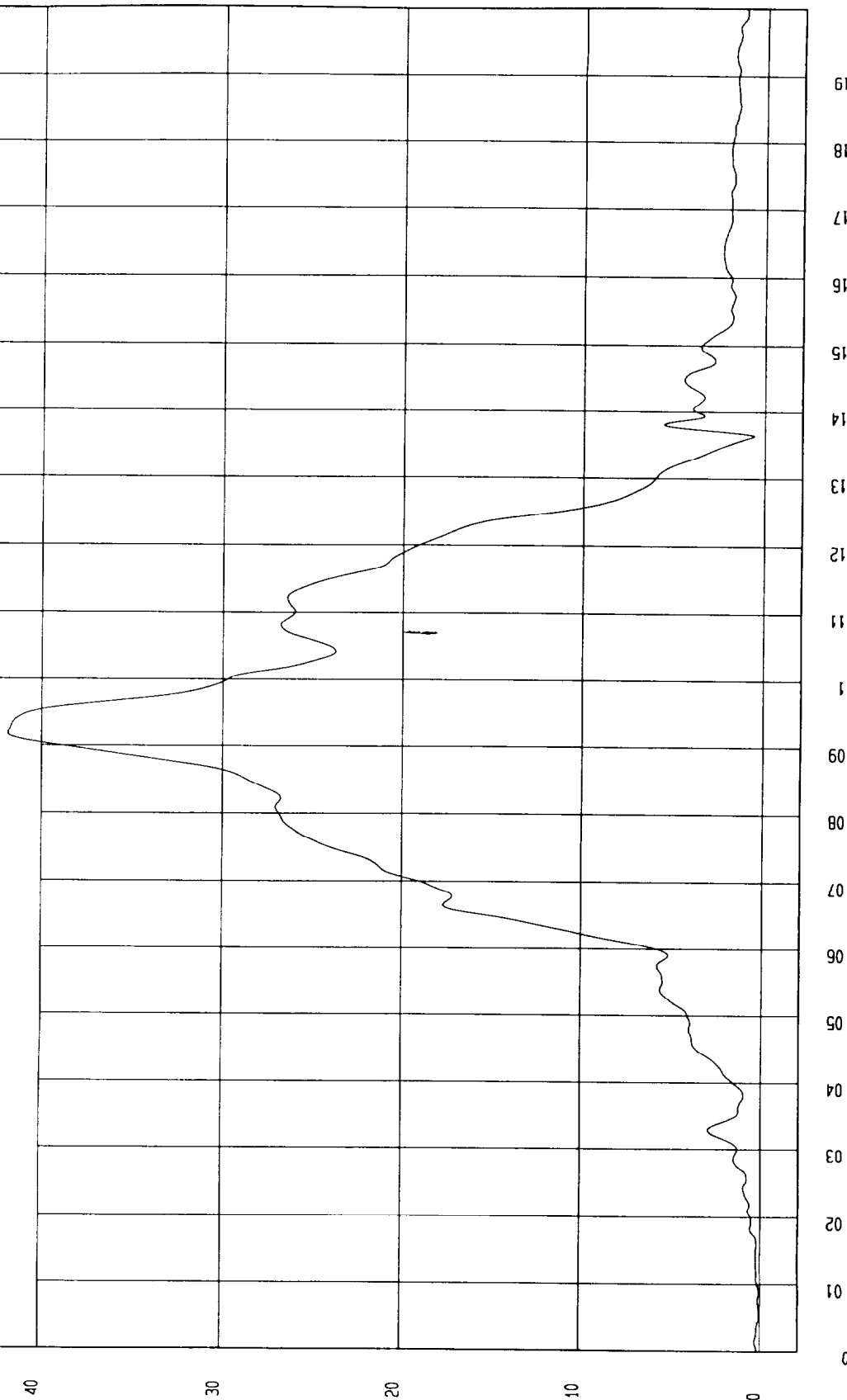
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum 6.45E 02 G at 5 msec

Maximum = 41.82 G at 92 msec

DRIVER CHEST RESULTANT ACCELERATION

1 H01035AV A21 Filterclass (180)



TIME (SECONDS)

MCA Research
03-21-2001 17 18

TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

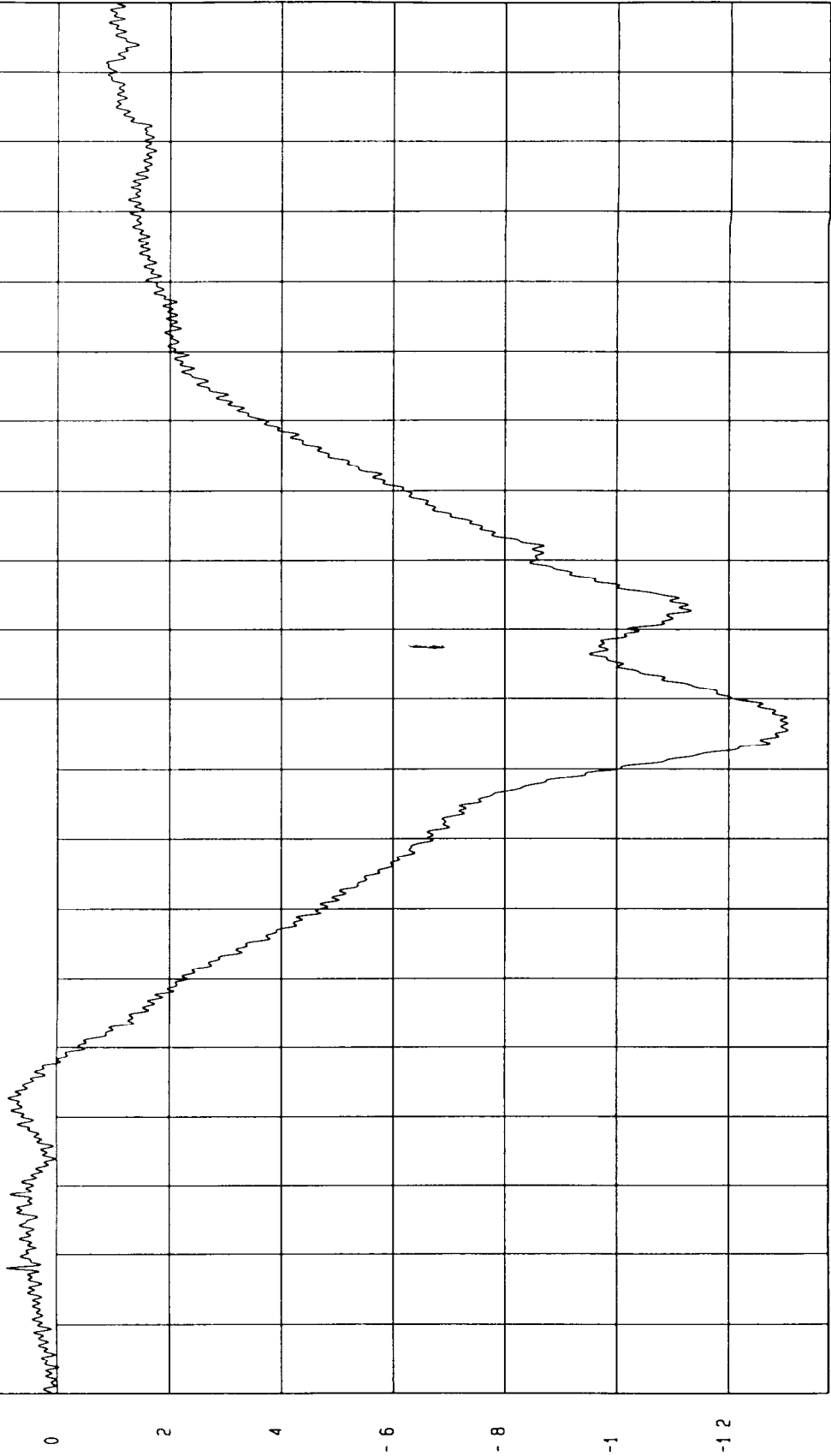
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum = -1.3 INCHES at 97 msec

Maximum = 8.88 INCHES at 18 msec

DRIVER CHEST COMPRESSION

1 H01035DF 03B Filterclass (600)



TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

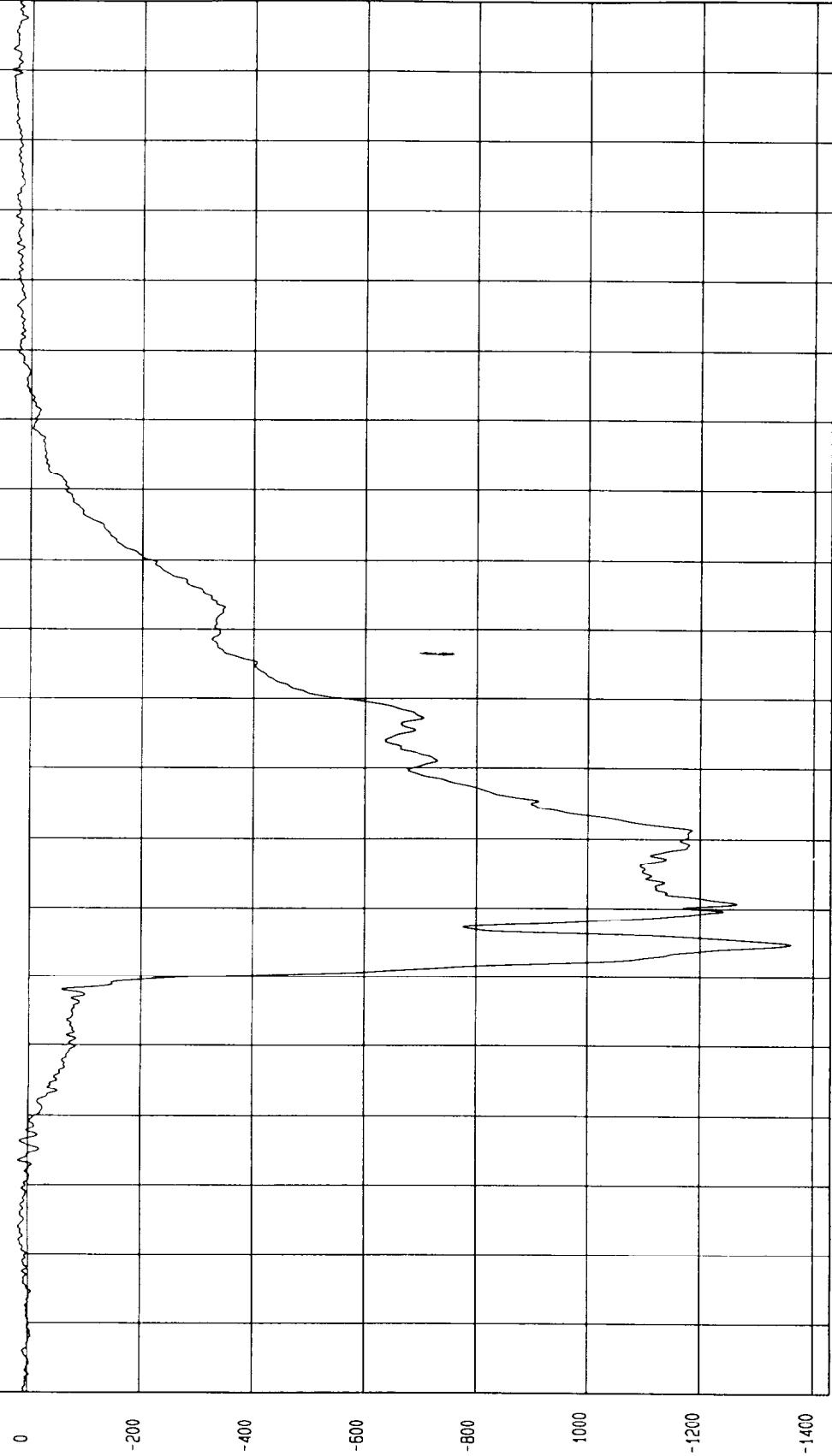
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum 1360 55 LB at 65 msec

Maximum = 35 34 LB at 190 msec

DRIVER LEFT FEMUR FORCE

1 H01035FF F08 Filterclass (500)



TIME (SECONDS)

LB

TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

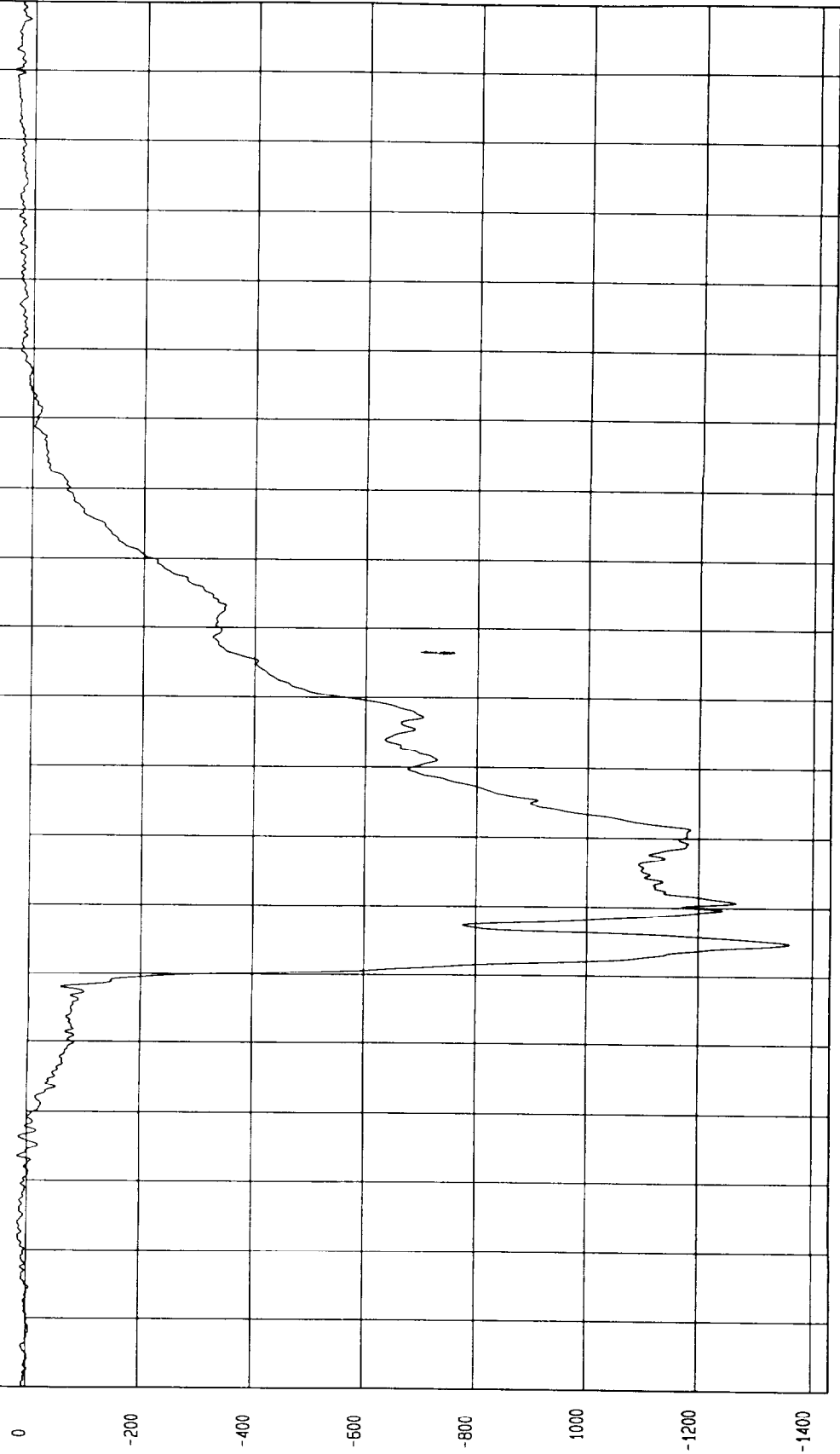
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum - 1360 65 LB at 65 msec

Maximum = 35 34 LB at 190 msec

DRIVER LEFT FEMUR FORCE

1 — H01035ff F08 Filterclass (500)



TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

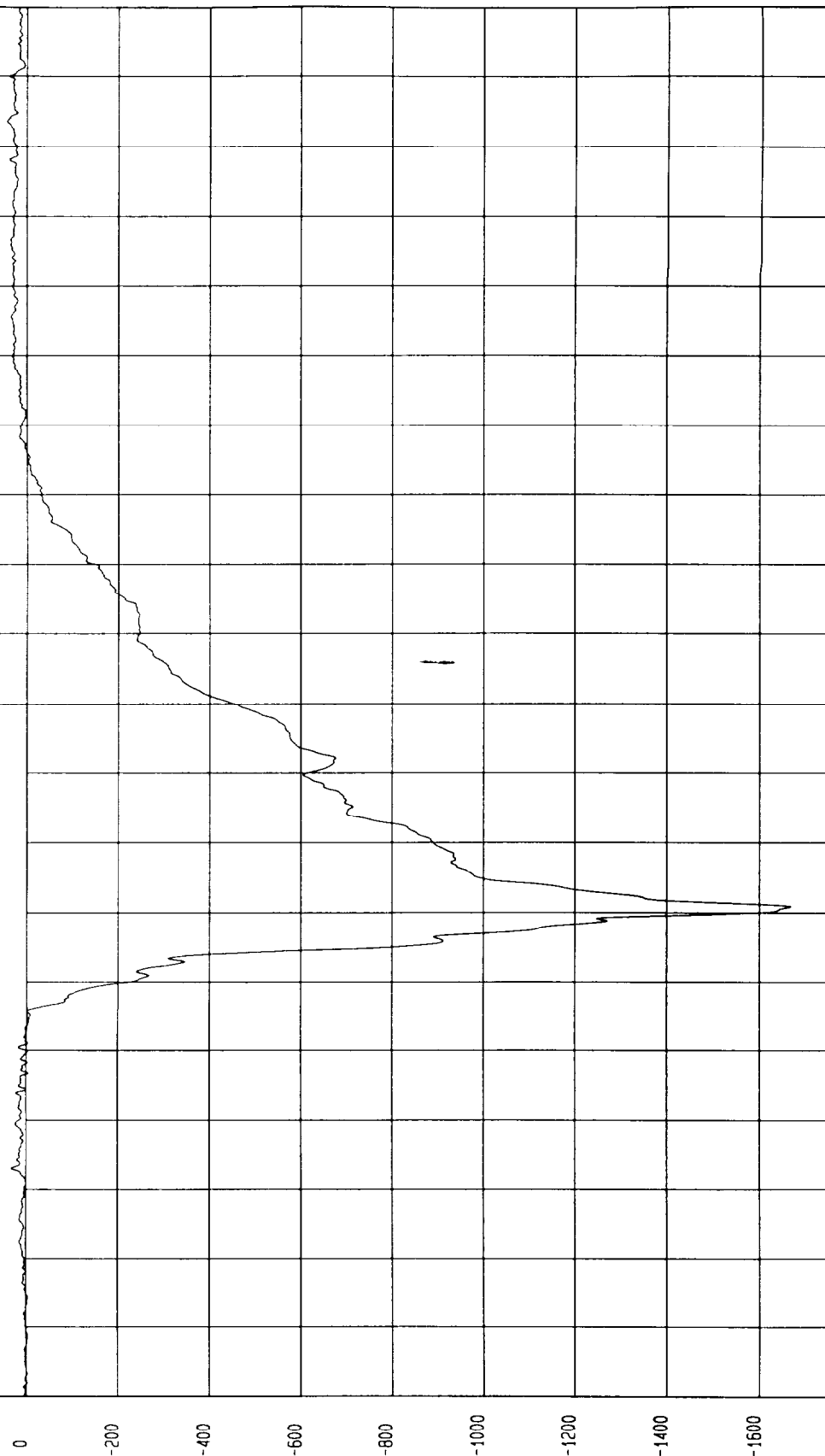
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum = 1668 22 LB at 71 msec

Maximum = 43 2 LB at 184 msec

DRIVER RIGHT FEMUR FORCE

1 H01035FF F09 FilterClass (600)



TIME (SECONDS)

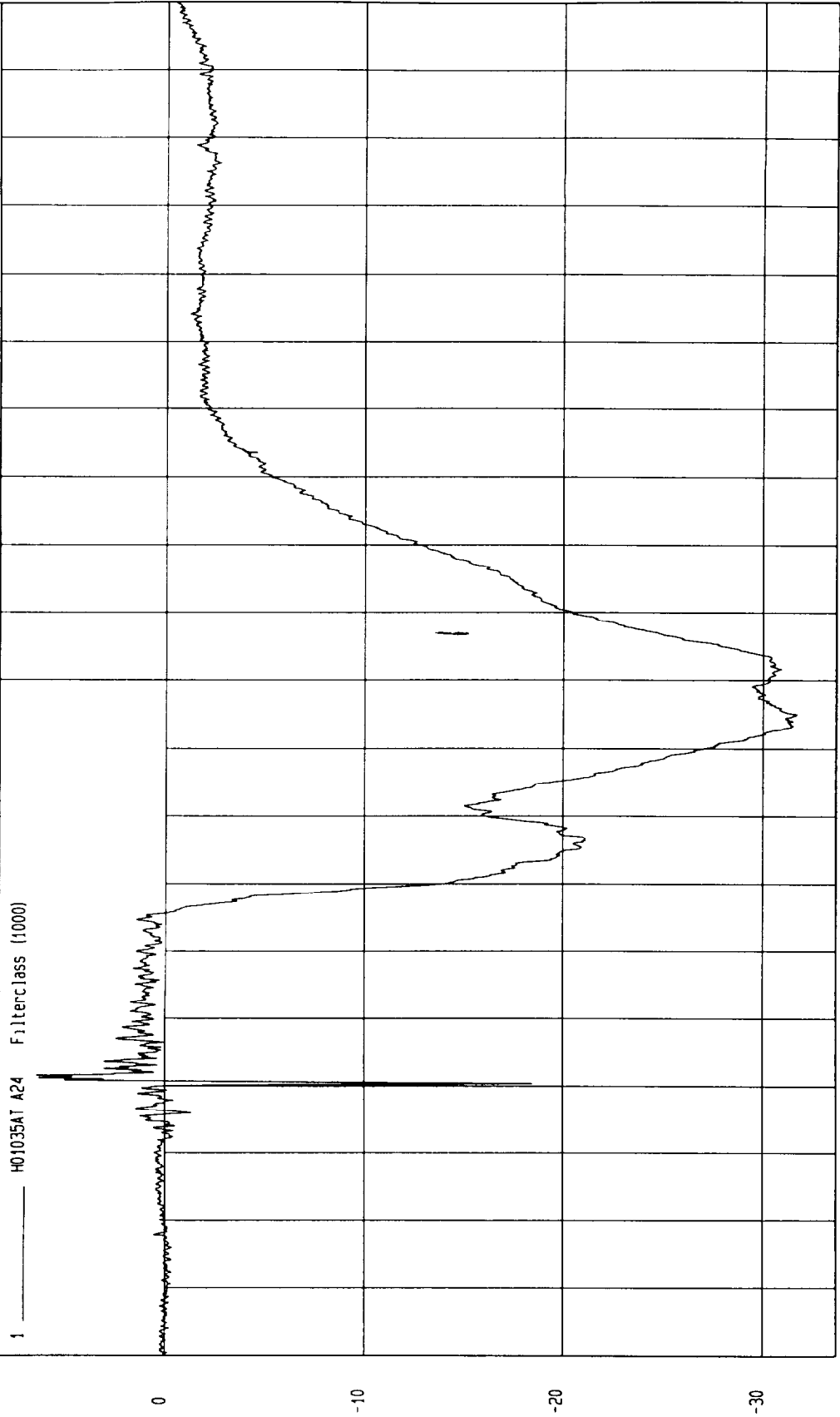
LB

TEST FMVSS 208 SLED (H01035) TEST DATE 03-21-2001

COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum - -31.72 G at 95 msec Maximum - 6.4 G at 42 msec

PASSENGER HEAD X ACCELERATION



TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

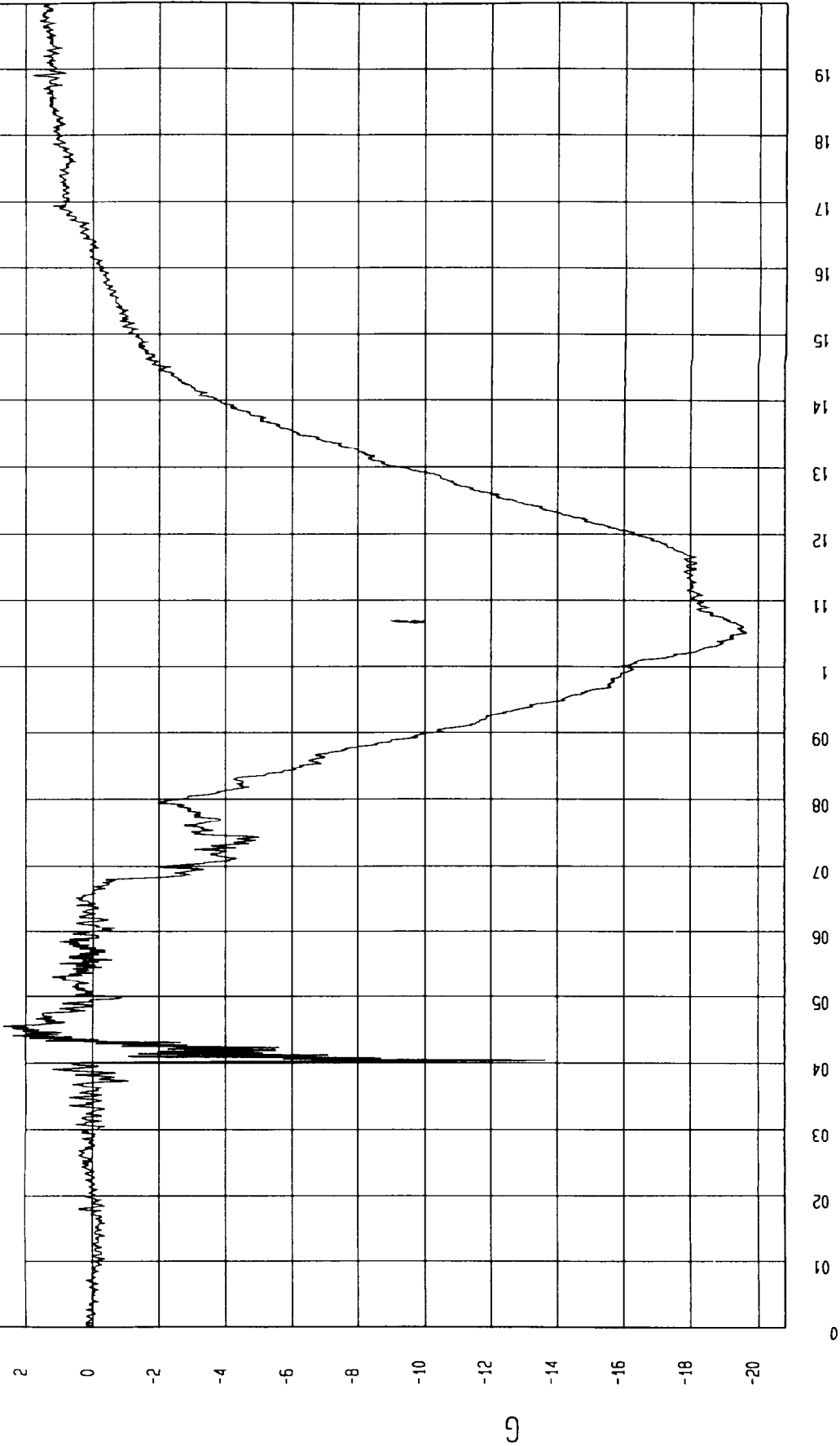
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum = -19.67 G at 105 msec

Maximum = 2.69 G at 46 msec

PASSENGER HEAD Y ACCELERATION

1 ——— H01035AT A25 Filterclass (1000)



TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum - 4.89 G at 68 msec

Maximum = 20.8 G at 95 msec

PASSENGER HEAD Z ACCELERATION

1 H01035AT A26 Filterclass (1000)

22

20

18

16

14

12

10

8

6

4

2

0

-2

-4

-6

G

TIME (SECONDS)

WGA Research
03-21-2001 17 17

19

18

17

16

15

14

13

12

11

10

09

08

07

06

05

04

03

02

01

0

TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

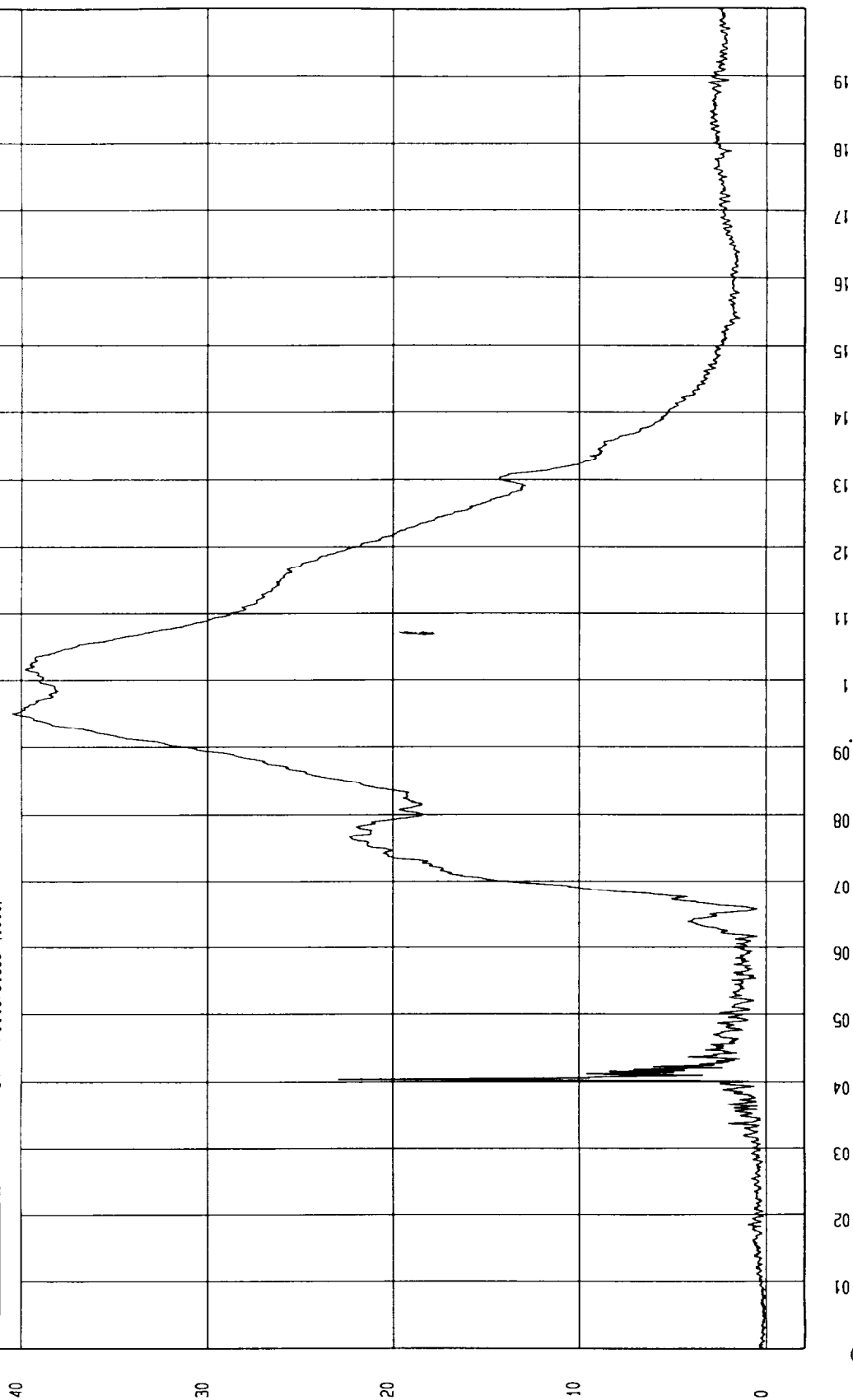
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum = 04 G at 3 msec

Maximum = 40.48 G at 95 msec

PASSENGER HEAD RESULTANT ACCELERATION

1 H01035AV A24 Filterclass (1000)

MGA Research
03-21-2001 17 17

TIME (SECONDS)

TEST FMVSS 208 SLED (H01035)

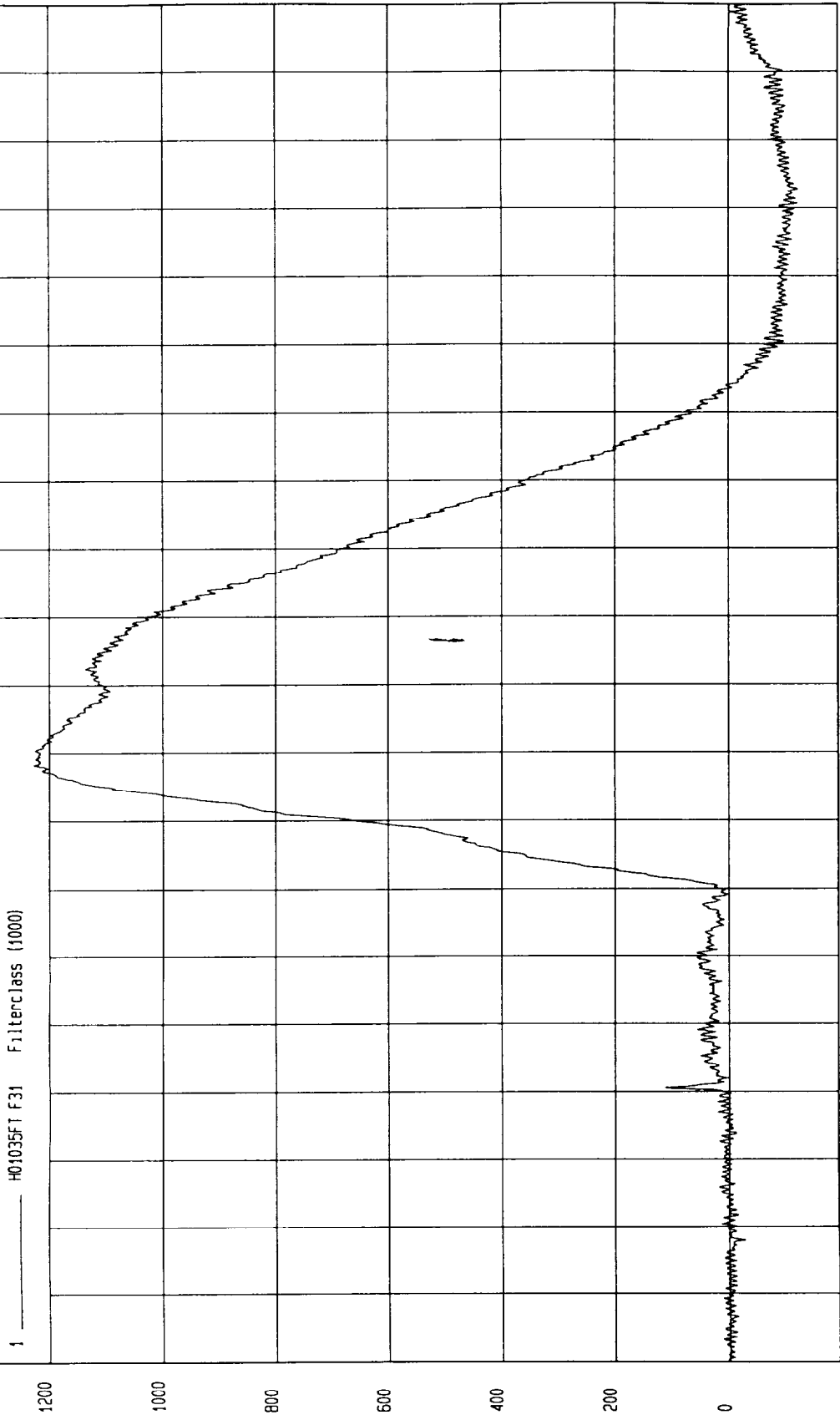
TEST DATE 03-21-2001

COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum 121 24 N at 171 msec

Maximum = 1227 83 N at 88 msec

PASSENGER NECK FORCE X



TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

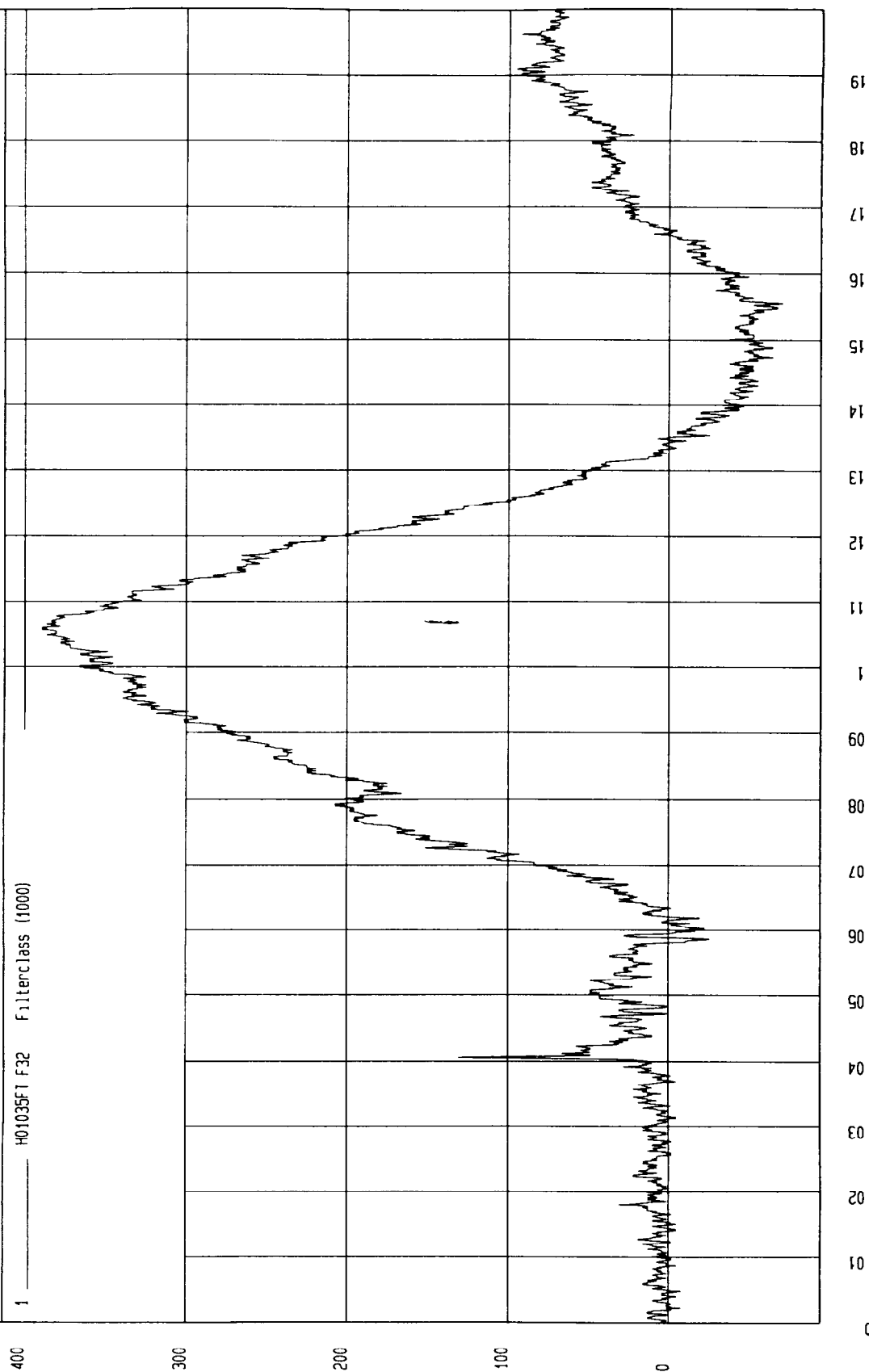
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum 69 39 N at 156 msec

Maximum 389 64 N at 106 msec

PASSENGER NECK FORCE Y

1 ——— H01035F1 F32 Filterclass (1000)



TIME (SECONDS)

MGA Research
03-21-2001 17 18

TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

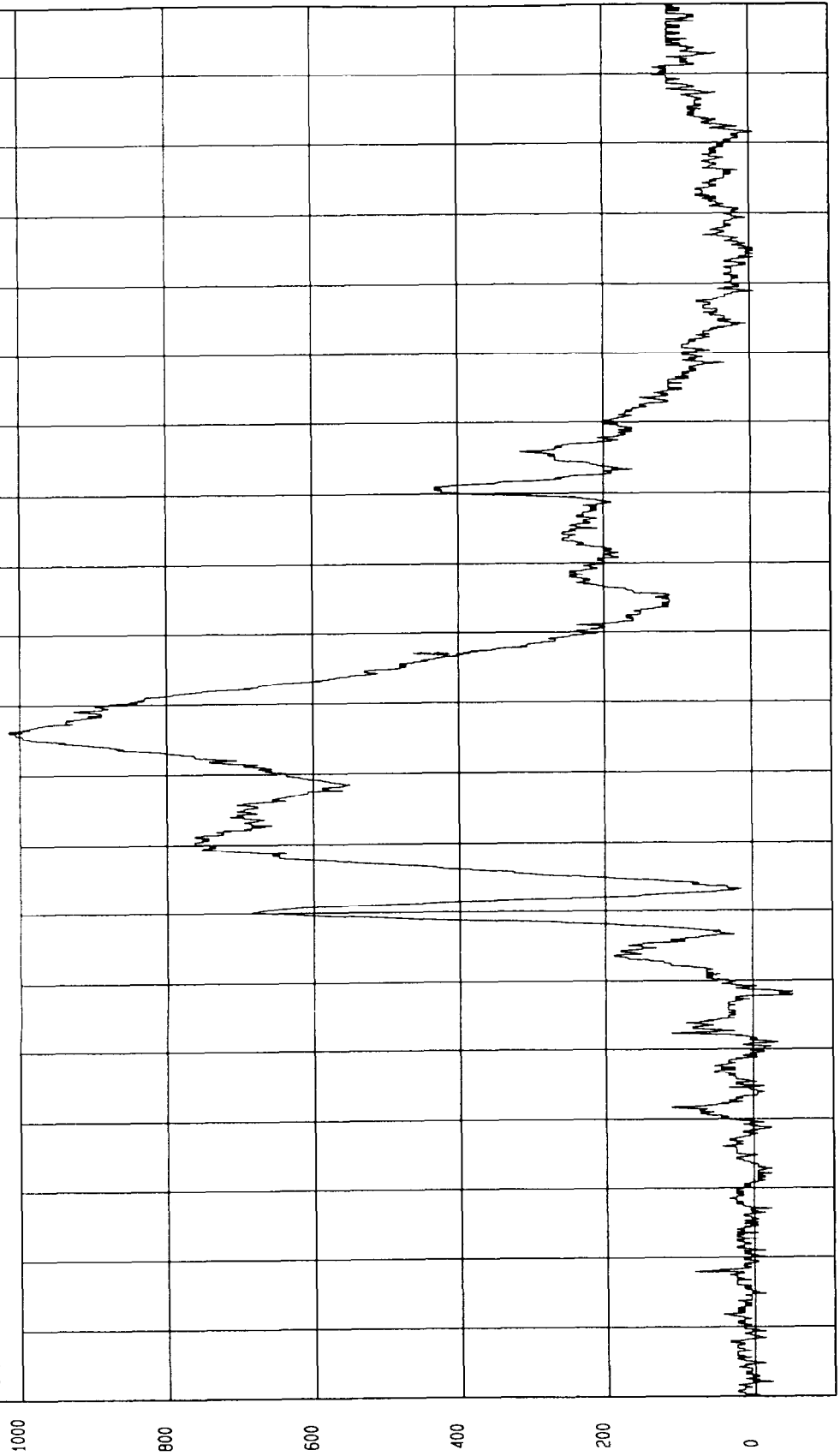
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum -53 86 N at 58 msec

Maximum = 1015 02 N at 96 msec

PASSENGER NECK FORCE Z

1 ——— H01035T F33 Filterclass (1000)



TEST FMVSS 208 SLED (H01035) TEST DATE 03-21-2001

COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum -29 48 Nm at 107 msec

Maximum = 8 48 Nm at 184 msec

PASSENGER NECK MOMENT X

1 H01035MF M45 FilterClass (600)

10

0

-10

-20

-30

Nm

0

01

02

03

04

05

06

07

08

09

10

11

12

13

14

15

16

17

18

19

TIME (SECONDS)

WGA Research
03-21-2001 11:18

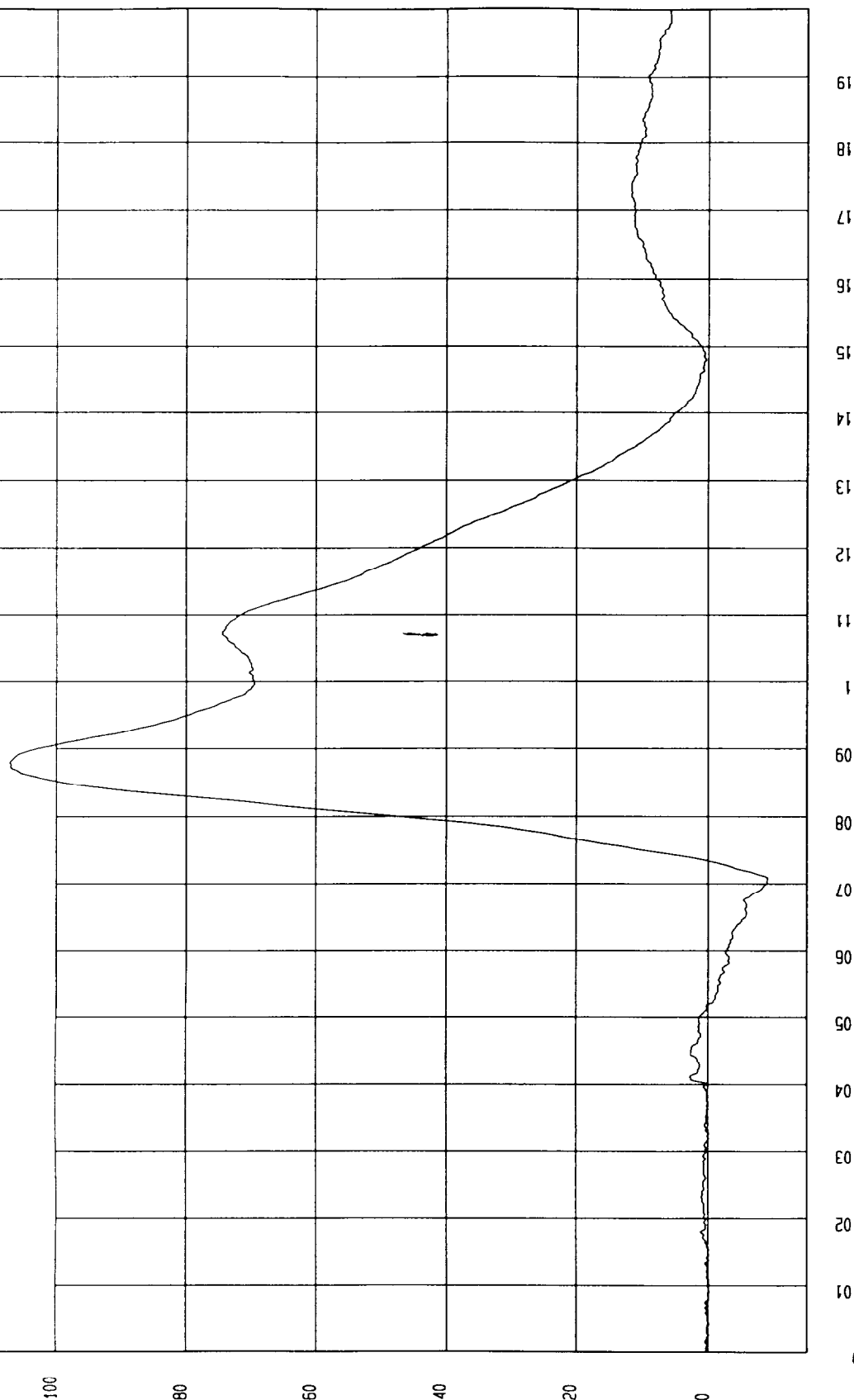
TEST FMVSS 208 SLED (H01035) TEST DATE 03-21-2001

COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum = -8.97 Nm at 71 msec

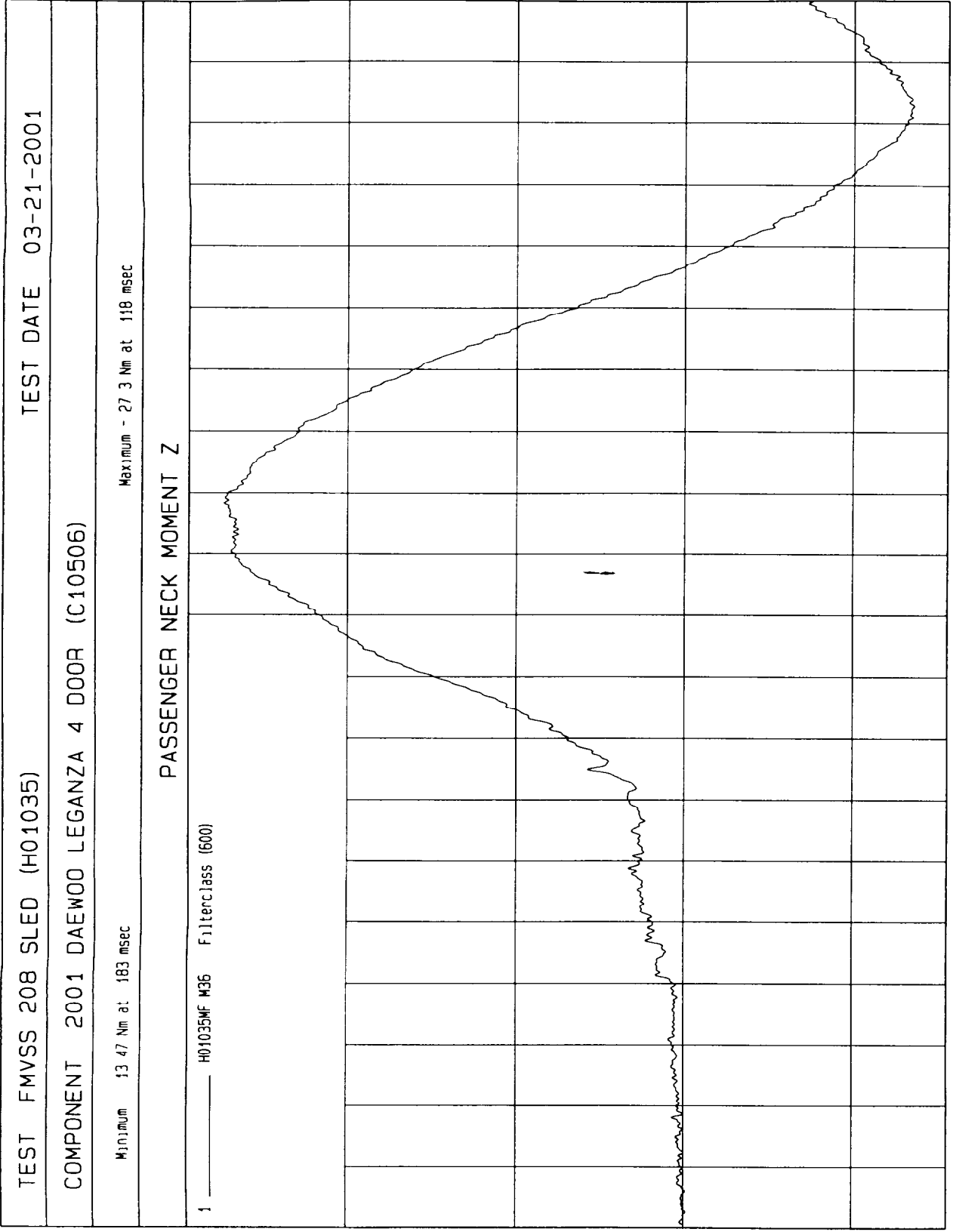
PASSENGER NECK MOMENT Y

1 H01035MF M35 Filterclass (600)



WCA Research
03-21-2001 17:18

TIME (SECONDS)



Nm

TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

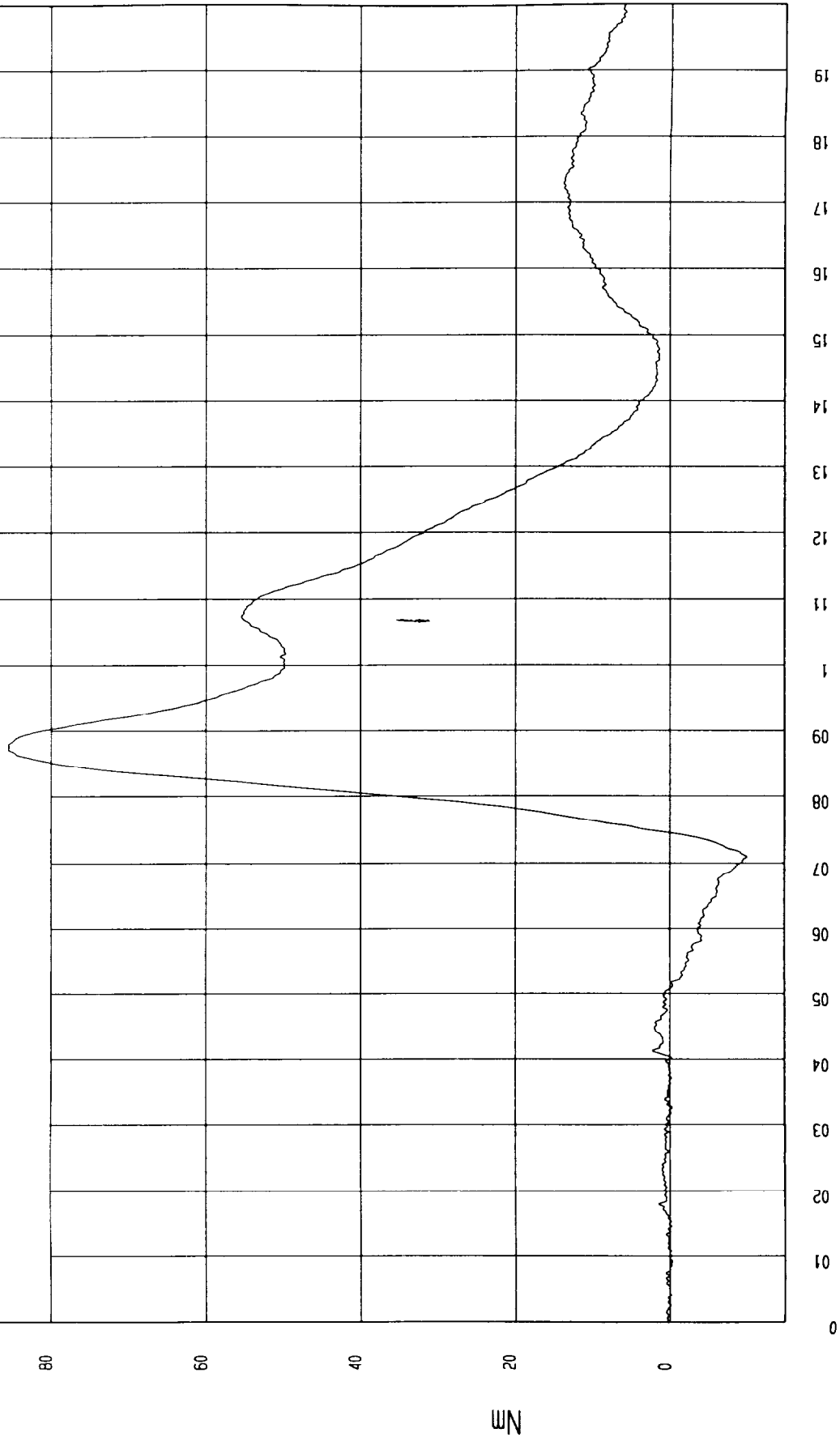
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum = 9.86 Nm at 71 msec

Maximum = 85.6 Nm at 87 msec

PASSENGER OCCIPITAL CONDYLE MOMENT Y

1 _____ H01035M0 M35 Filterclass (600)



TEST FMVSS 208 SLED (H01035) TEST DATE 03-21-2001

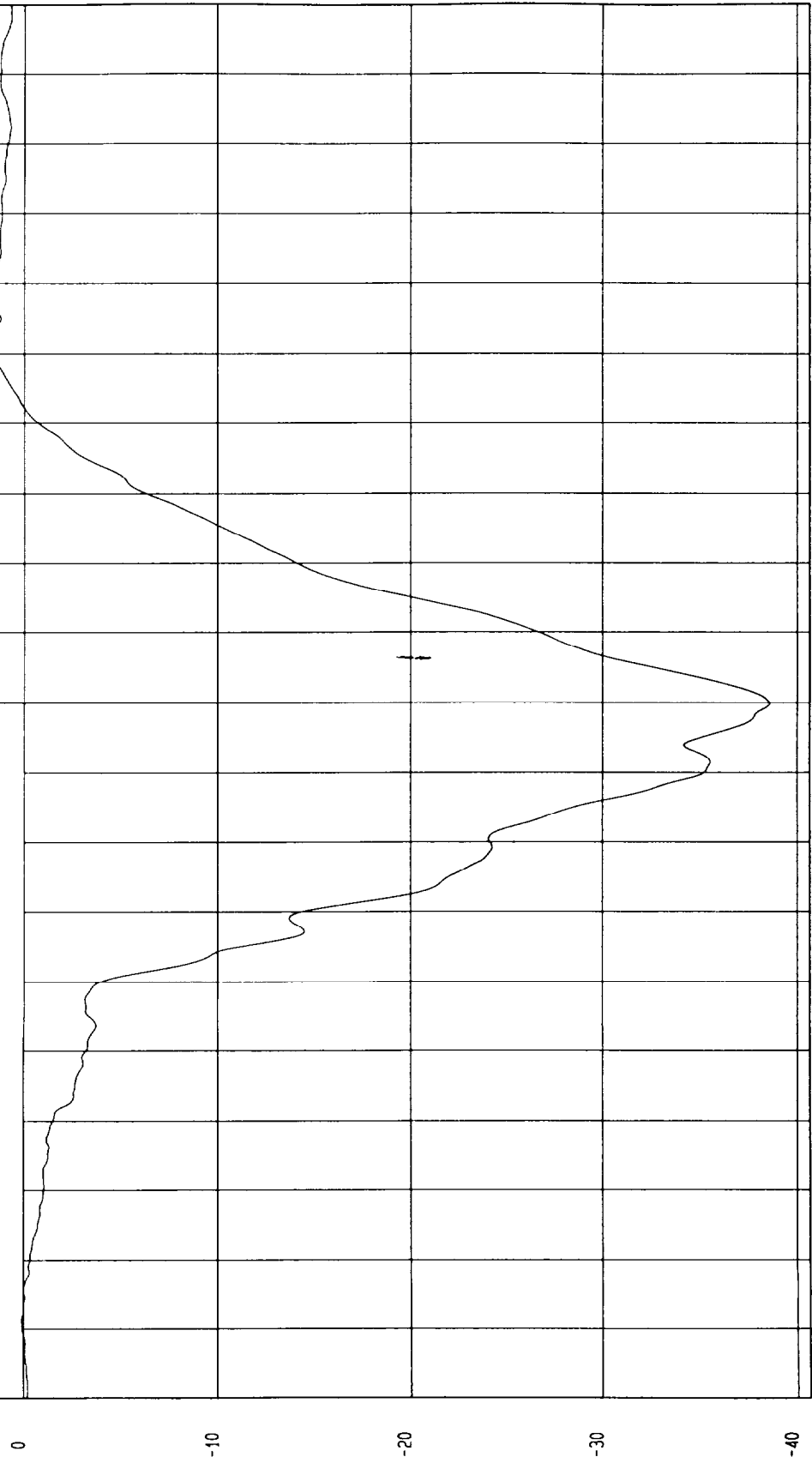
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum - -38.61 G at 100 msec

Maximum - 1.95 G at 153 msec

PASSENGER CHEST X ACCELERATION

1 _____ H01035AF A27 Filterclass (180)



TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

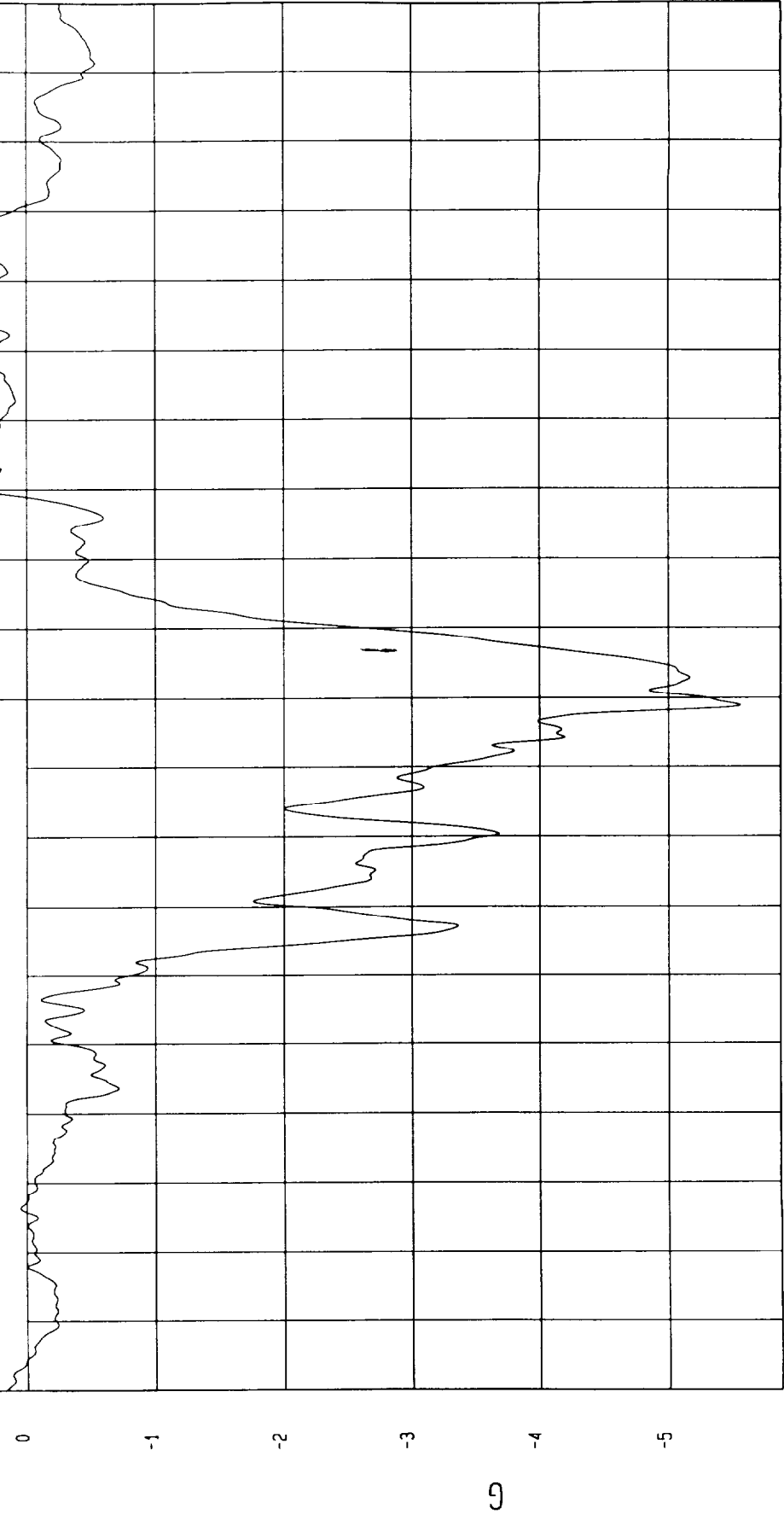
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum = -5.56 G at 99 msec

Maximum = 52 G at 157 msec

PASSENGER CHEST Y ACCELERATION

1 H01035AF A28 Filterclass (180)



TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

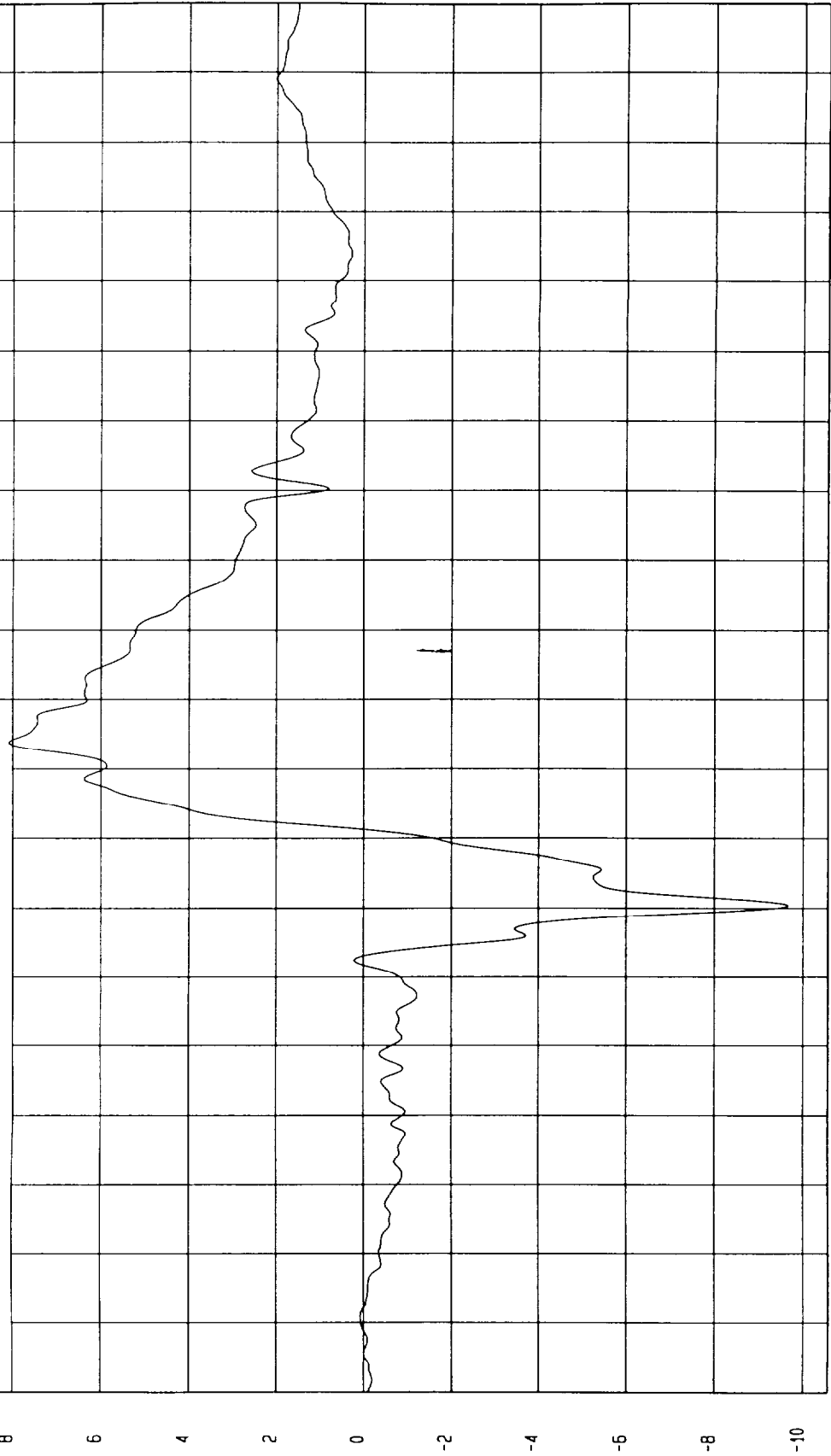
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum = 9.67 G at 70 msec

Maximum 8.09 G at 94 msec

PASSENGER CHEST Z ACCELERATION

1 H01035AF A29 Filterclass (180)



TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

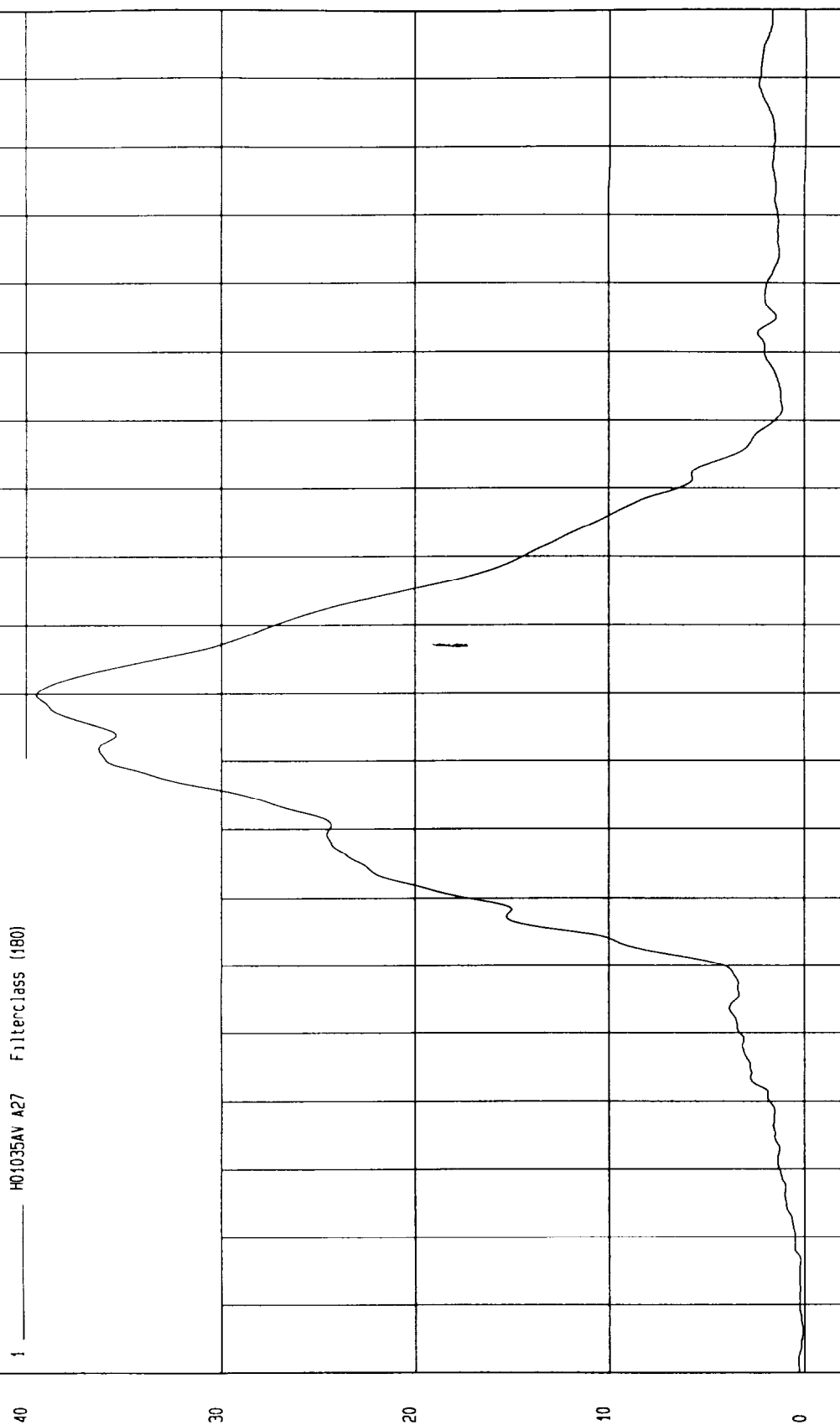
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum = 8.59E 02 G at 6 msec

Maximum = 39.49 G at 100 msec

PASSENGER CHEST RESULTANT ACCELERATION

1 — H01035AV A27 Filterclass (180)

MGA Research
03-21-2001 17 18

TIME (SECONDS)

TIME SECONDS

0

19

18

17

16

15

14

13

12

11

10

09

08

07

06

05

04

03

02

01

INCHES

-1

-8

-6

4

-2

0

1 H010350F D39 Filterclass (600)

PASSENGER CHEST COMPRESSION

Minimum = 1.02 INCHES at 99 msec

Maximum = 2.81E-04 INCHES at 1 msec

COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum -987.3 LB at 80 msec

Maximum = 24.64 LB at 165 msec

PASSENGER LEFT FEMUR FORCE

1 H01035FF F18 Filterclass (500)



TEST FMVSS 208 SLED (H01035)

TEST DATE 03-21-2001

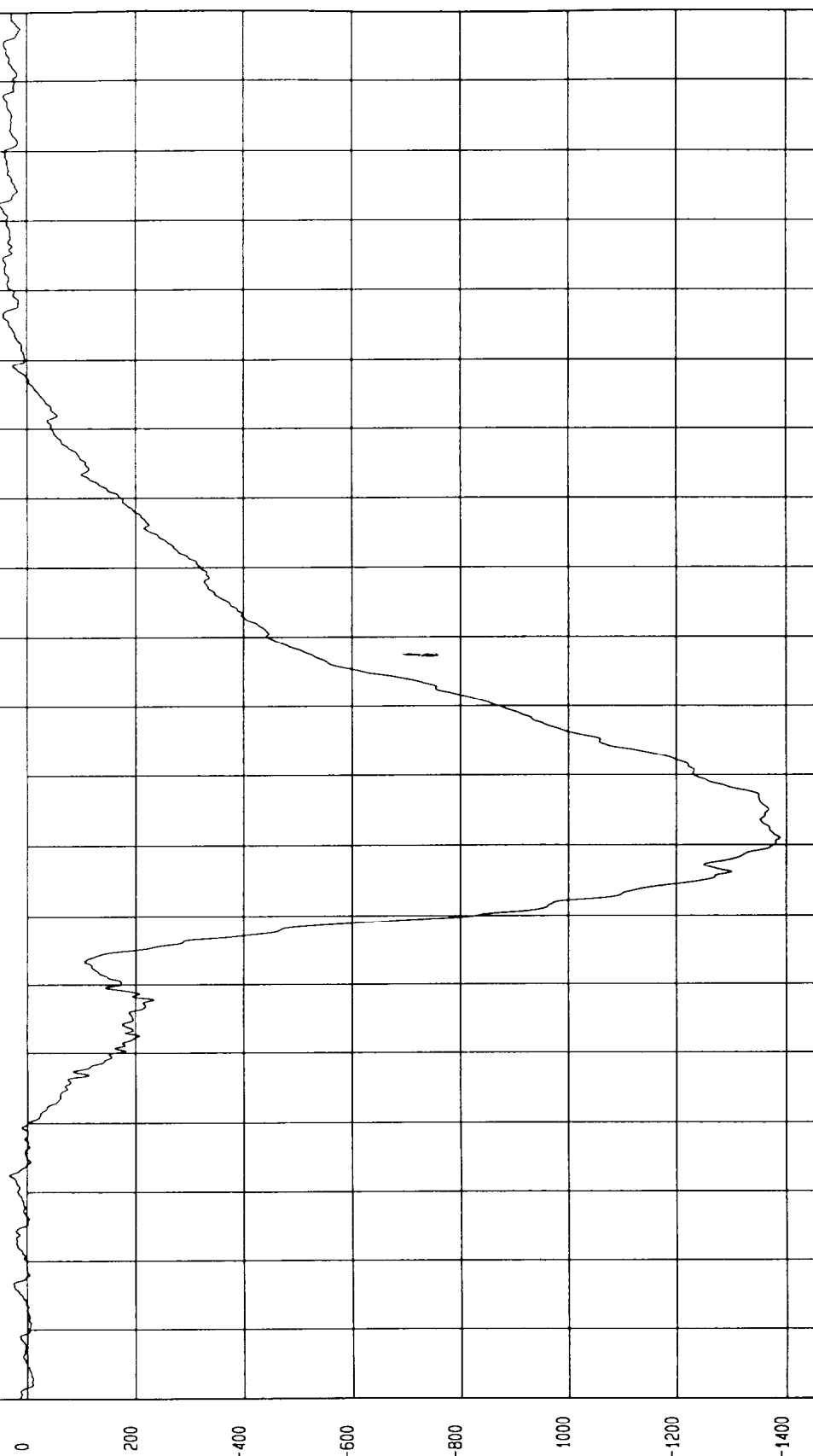
COMPONENT 2001 DAEWOO LEGANZA 4 DOOR (C10506)

Minimum = 1388.81 LB at 81 msec

Maximum = 52.03 LB at 172 msec

PASSENGER RIGHT FEMUR FORCE

1 ——— H01035FF F19 Filterclass (600)



TIME (SECONDS)

MSA Research
03-21-2001 17 18

APPENDIX C
MANUFACTURER'S VEHICLE INFORMATION

Information for Compliance Test

Test Vehicle Leganza Sedan

No	ITEMS	INFORMATION	REMARKS
1	① Please inform OVSC if the air bag restraint system is certified to meet the requirements of S4 1 5(a) or S13 ② If the air bags were installed to meet the requirements of S4.1.5 1(a)(1) please provide a copy of the certification test of the automatic restraint system with the manual safety belts unfastened and fastened ③ If the air bags were installed to meet the requirements of S13 please provide a copy of the certification test reports for the frontal/angular barrier impact tests of the automatic restraint system with the manual safety belts fastened and the certification test reports for the sled test using only the automatic restraint system	The air bag restraint system in MY2001 Leganza is certified to meet the requirements of S4.1.5(a) Refer to the attachment # 1 ~ 3	
2	Provide the following (1) describe the difference between the MY2001 air bag system and MY2000 air bag system (2) explain what other restraint change have been made	Refer to the attachment # 4 There is no the difference between the MY2001 air bag system and MY2000 air bag system None	

No	ITEMS	INFORMATION	REMARKS
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(3) explain what other vehicle changes have been made that might have affected FMVSS 208 performance

(4) describe any features that might affect performance with respect to children and out of position occupants when angle measurement is made(S6 4)

3 ① If the vehicle was certified with unrestrained dummies to meet the requirements of S13, describe how to disconnect the air bag from the vehicle sensors and connect them to the triggering mechanism used in the sled test

② Describe the method used "1 certification to determine when to trigger the air bag and the system used to trigger the air bag

③ For air bags with dual stage or multistage inflators describe when the stages are triggered and provide data to show that this is similar to what would occur in a crash of similar severity

4 ① State for any safety belt system in this vehicle whether or not it is equipped with a tension - relieving device

② Provide a copy of the information furnished in accordance with S7 4 2 if the tension - relieving device is used

Simply, after cutting the airbag extention lines, we connect them to the ones from triggering system by hand

We trigger the air bag at the time when 20ms passes since the initial acceleration level is 0.5G by test requirements. The system we possess to trigger the air bag is 12inch Hyge Sled Test Equip-ment and the air bag firing time is controlled by its system control unit, TMSI

No	ITEMS	INFORMATION	REMARKS
5	FMVSS No 208, S8 1 5 allows the manufacturer the option of having movable vehicle windows and vents placed in the closed position State whether the vehicle's movable windows and vents were opened or closed for the certification tests	Opened	
6	① Submit dummy placement measurements, including diagrams or photographs which show exactly where each measurement was taken Enclosed is a diagram of some of OVSC's dummy measurements Where possible, use each dimension shown in the diagram to provide the individual dummy placement measurements	Refer to the attachment # 4	
7	② State whether the vehicle has a foot rest for the driver ① Provide the seat positioning, steering column positioning, and fuel tank data on the enclosed form ② If more than one front seating, steering column or fuel tank configuration are available on this vehicle, provide separate information for each ③ In addition, provide the seating reference point for each seat for the lockable seat belt requirement in S7 1 1 5	MY2001 Leganza has a foot rest for the driver Refer to the others sheet(2nd ~ 5th) in this M/S Excel File None Refer to the attachment # 5	
8	If the vehicle is equipped with adjustable seat belt anchorage, provide the manufacturer's nominal design position for a 50th percentile adult male occupant	Middle position	

No	ITEMS	INFORMATION	REMARKS
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9	① For barrier tests provide the speed at impact, vehicle test weight, and resulting injury criteria(i e , HIC, chest acceleration, chest compression, and femur loads) recorded for all certification tests conducted to meet the requirements of S4.1 5 1(a)	Refer to the attachment # 1 ~ 3	
	② For sled tests, provide the resulting injury criteria(i.e., HIC, chest compression, and femur loads, and neck moments and forces)recorded for all certification tests conducted to meet the requirements of S13	Refer to the attachment # 4	
10	When vehicle components must be removed to obtain the proper test weight for the barrier test, what components do you recommend for removal and in what priority order do you recommend removal?	Rear seat, Spare tire, Equipments which is not effected on the test performance	
11	If the vehicle uses a pressure vessel to inflate the air bag, provide a copy of the test reports or engineering analysis to demonstrate that it meets all the requirements of S9 1	None	
12	If the vehicle uses an explosive to device to inflate the air bag, provide a copy of the test report or engineering analysis to demonstrate that it meets all the requirements of S9 2	Refer to the attachment # 6	

Attachment # 3

TEST VEHICLE INFORMATION

Vehicle Model Year & Maker : 2001, Daewoo Motor

Vehicle Model & Body Style : Leganza, Sedan

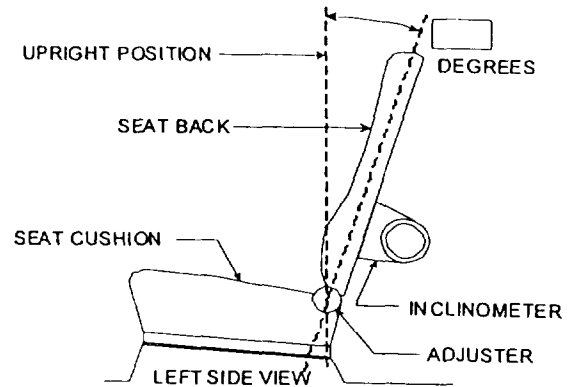
1. NOMINAL DESIGN RIDING POSITION

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"?)

Seat back angle for driver's seat = 25 °

Measurement Instructions

The angle between seat back main frame and horizontal line is 68.5 ° Or the angle between head restraint rod and horizontal line is 80 ° (dummy is not placed in the seat). To get the seat back angle 15 steps are moved rearward at the first detent which is "0"



Seat back angle for passenger's seat = 25 °

Measurement Instructions

Same as the drier's seat

2. SEAT FORE & AFT POSITIONS

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

Positioning of the driver's seat

- Manual type : For positioning of the driver's seat 9 steps are moved forward at the fully rearward position.

- Power type : For positioning of the driver's seat 114mm are moved forward at the fully rearward position.

Positioning of the passenger's seat(if applicable)

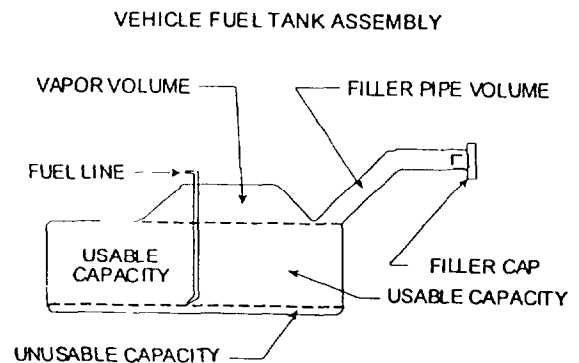
Same as the driver's seat

3. FUEL TANK CAPACITY DATA

3 1 A "Usable Capacity" of standard equipment fuel tank = 15 5(59) gallons(Liters)

B "Usable Capacity" of optional equipment fuel tank = 0(0) gallons(Liters)

C "Usable Capacity" of vehicle(s) used for certification testing to requirements of FMVSS 301 = 15 5(59) gallons(Liters)



Attachment # 3

UNUSABLE CAPACITY

Optional Instructions

None

3 2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 14 9(56 4) gallons(Liters)★ In case of attached test report, fuel tank capacity was **65 liters** So, amount of stoddard solvent added to vehicle(s) used for certification test(s) was **62.1 liters** But, it's capacity had been reduced to 60 liters later

3 3 Is vehicle equipped with electric fuel pump?

Yes ☐ No ☐

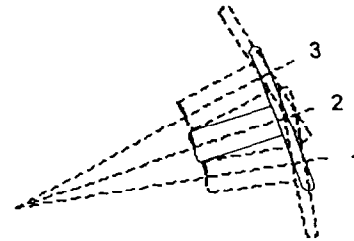
If YES, explain the vehicle operating conditions under which the fuel pump will pump fuel

1 Switch "on" mode, fuel pump operates about 5 seconds2 Switch "start" mode, fuel pump operates continuously3 In case of abnormal engine-off, fuel pump will not operate**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

STEERING COLUMN ASSEMBLY



LEFT SIDE VIEW

Optional Instructions

Wheel Angle $\alpha = 21^\circ$ Tilt There are five steps in steering tilting mechanism (Please set the third step)

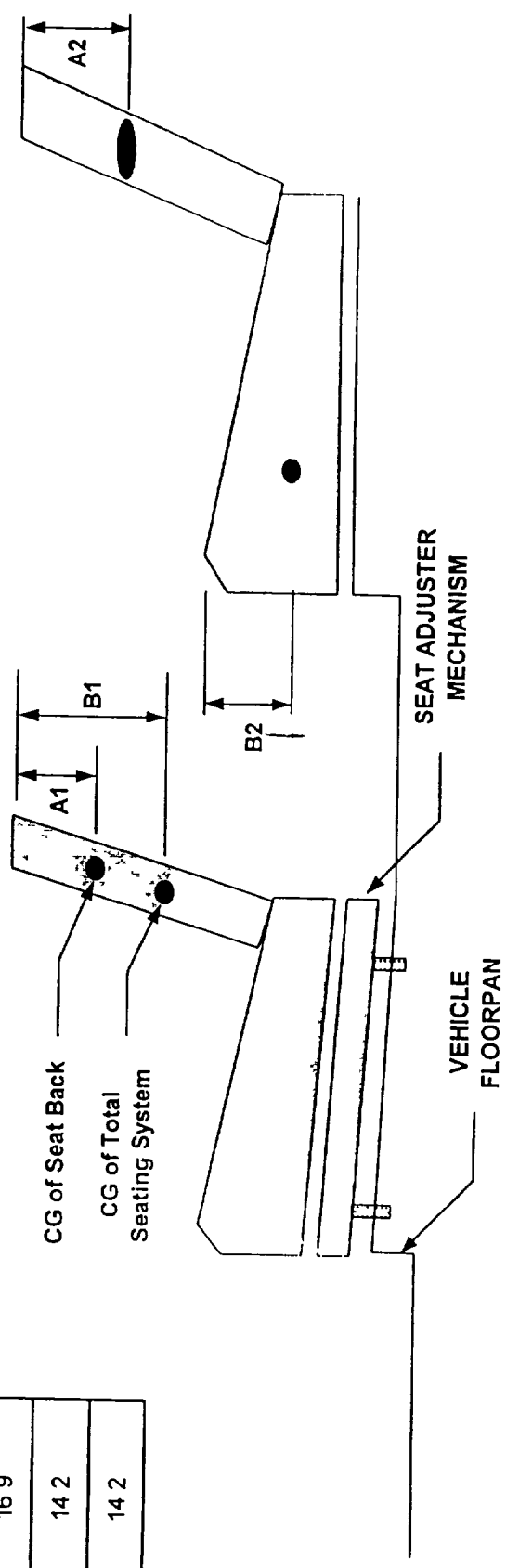
attachment # 3

TEST VEHICLE SEAT INFORMATION
(All Dimension In Inches)

Model Year: MY 2001
Make : Daewoo
Model : Leganza
Body Style : Sedan
Seat Style : FRT : BUCKET

RR : SPLIT BENCH

A1	11 4
B1	16 9
A2	14 2
B2	14 2



FRONT		BACK	
LH 8 6Kg, RH 8 6Kg		LH 6 5Kg RH 10 2Kg	
LH 22 8Kg, RH 21 7Kg		LH 6 5Kg RH 10 2Kg	
TORSO 25 °		TORSO 28 °	

Weight of Hinged or Folding Portion of Seat =
Weight of Total Seat System =
Angle of Seat Back =

TEST VEHICLE SEAT INFORMATION (All Dimension In Inches)

Model Year : MY 2001

Make : Daewoo

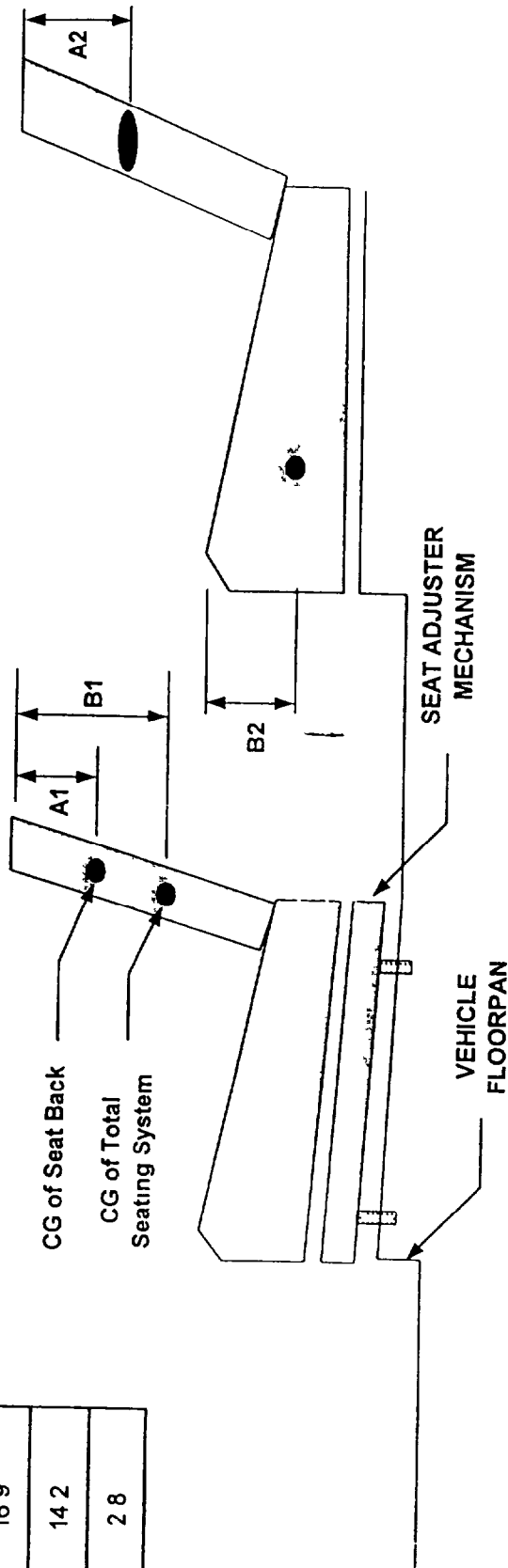
Model : Leganza

Body Style : Sedan

Seat Style : FRT : BUCKET

RR : SPLIT BENCH

A1	11 4
B1	16 9
A2	14 2
B2	2 8



FRONT	BACK
8 6	LH 6 5,RH 10 2
LH 22 8,RH 21 7	↑
25deg	28deg

Weight of Hinged or Folding Portion of Seat =

Weight of Total Seat System =

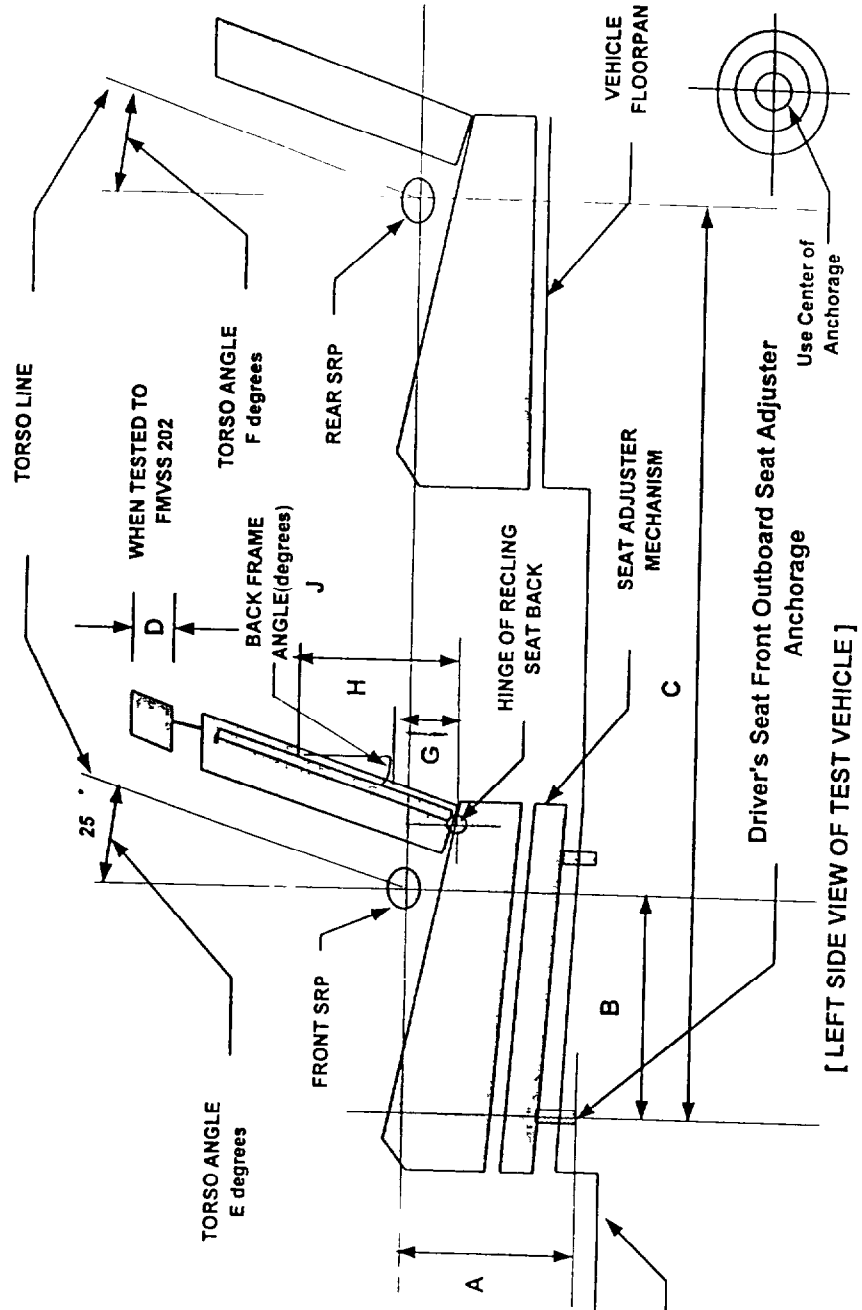
Angle of Seat Back =

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

Model Year : MY 2001
 Make : Daewoo
 Model : Leganza
 Body Style : Sedan
 Seat Style : FRT : BUCKET

RR : SPLIT BENCH

A	8 58
B	12 6
C	45 7
D	8 7
	25 °
F	28 °



MEASURING ZONE OF SEAT
 BACK ANGLE

G	53
H	10 8
J	21 5 °

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

Model Year : MY 2001

Make : Daewoo

Model : Leganza

Body Style : Sedan

Seat Style : FRT : BUCKET

RR : SPLIT BENCH

B	12 6
C	45 7
F	9 4
G	23 6
H	37 8

