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REPORT NO. 208-MGA-2002-003

SAFETY COMPLIANCE SLED TESTING FOR FMVSS 208
OCCUPANT CRASH PROTECTION

Toyota Motor Corporation
2002 Toyota Sienna MPV
NHTSA NO. C25102

MGA RESEARCH CORPORATION
5000 WARREN ROAD
BURLINGTON, WI 53105



Test Date. February 19, 2002

Report Date February 26, 2002

FINAL REPORT

Prepared For:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
SAFETY ASSURANCE
OFFICE OF VEHICLE SAFETY COMPLIANCE
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16 Abstract A compliance test (sled test) was conducted on the subject 2002 Toyota Sienna MPV 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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TABLE OF CONTENTS

<u>DESCRIPTION</u>	<u>PAGE NO.</u>
Purpose	1
Test Procedure	2
Test Results Summary	3
Sled Test Summary	5
General Test and Vehicle Parameter Data	6
Post Test Data	9
Seat and Steering Column Positioning Data	10
Dummy Positioning Measurement Table	11
Vehicle Targeting Measurements	16
Vehicle Accelerometer Placement and Data Summary	17
Vehicle Accelerometer Location Measurements and Data Summary	18
Camera Positions	19
Camera Location Measurements	20
Occupant Injury Data	21
Seat Belt Warning System Data	23
Readiness Indicator	24
Airbag Labels Data	25
Rear Outboard Seating Position Seat Belt Data	32
Lap Belt Lockability Data	33
Seat Belt Comfort and Convenience Data	48
Appendix A - Photographs	
Appendix B - Data Plots	
Appendix C - Manufacturer Provided Test Information	

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 2002 Toyota Sienna MPV, NHTSA No. C25102, meets the performance requirements of FMVSS 208, "Occupant Crash Protection," in the impact simulation sled test mode.

Test Procedure

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

The test vehicle was instrumented with four (4) accelerometers to measure longitudinal axis accelerations

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

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

The thirty-seven (37) data channels were digitally sampled at 10,000 samples per second and processed per Sections 11.7 through 11.9 of the Laboratory Test Procedure.

The crash event was recorded by 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 February 19, 2002

The test vehicle, a 2002 Toyota Sienna MPV, NHTSA No. C25102, appeared to comply with the performance requirements of FMVSS 208 in the impact simulation sled test mode as measured by Hybrid III 50th percentile male dummies.

	FMVSS 208 Max. Allowable Injury Assessment Values	Driver (Serial #401)	Passenger (Serial #403)
HIC	1000	396	387
Chest g	60 g	38.1 g	44.1 g
Chest displacement	3 in.	1.3 in	0.6 in.
Left Femur	2250 lb	55 lb	997 lb
Right Femur	2250 lb	901 lb	839 lb
Neck Extension	57 Nm	9.3 Nm	15.6 Nm
Neck Flexion	190 Nm	46.7 Nm	55.3 Nm
Neck Tension	3300 N	1811 N	593 N
Neck Compression	4000 N	468 N	2788 N
Neck Shear	3100 N	837 N	1588 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 17.7 g with an integrated velocity change of 29.3 mph. After filtering the acceleration signal to Channel Class 60, the airbag system was triggered 18.3 milliseconds after 0.5 g acceleration.

Test Anomalies:

The airbag warning label on the dash was removed prior to receiving the vehicle. It is not known whether the label was removed by the dealer, by a potential customer, or not installed at all.

Sled Test Summary

Vehicle NHTSA No : C25102 Test Mode: FMVSS 208 SLED TEST

Vehicle Yr/Make/Model/Body Style: 2002/Toyota/Sienna/MPV

Test Date. February 19, 2002 Time: 12:10 p.m. Temp: 71°F

Vehicle Test Weight: 4474 lbs.

DUMMY INFO.

	DRIVER	PASSENGER
Dummy Type	<u>Part 572E</u>	<u>Part 572E</u>
Serial Number	<u>401</u>	<u>403</u>
Restraint System	<u>Frontal airbag</u>	<u>Frontal airbag</u>
No Data Channels	<u>15</u>	<u>15</u>

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 -	<u>0.0</u> inches shift;	<u>0 0</u> inches shift
Seat Back Failure -	<u>no</u>	<u>no</u>

VISIBLE DUMMY CONTACT POINTS:

	DRIVER	PASSENGER
Head	<u>Airbag/sunvisor/ windshield/header</u>	<u>Airbag/windshield</u>
Chest	<u>Airbag</u>	<u>Airbag</u>
Left Knee	<u>Knee bolster</u>	<u>Glove box/dashpanel</u>
Right Knee	<u>Knee bolster</u>	<u>Glove box/dashpanel</u>

General Test And Vehicle Parameter DataVehicle Yr/Make/Model/Body Style: 2002/Toyota/Sienna/MPVVehicle NHTSA No.: C25102 VIN: 4T3ZF19C92U438443 Color: Blue

Engine Data.

No Cylinders: 6, CID , Liters: 3.0; CCs: Placement: Longitudinal/Inline , Transverse/Lateral: X

Transmission Data:

Speeds: 4; Manual: ; Automatic X, Overdrive: X

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: Cruise control, tilt wheel, roof rack, rear defoggerDate Received: 11/14/01; Odometer Reading: 50 milesSelling Dealer: Wilde Toyota, Inc., 3225 South 108th Street, West Allis, WI 53227

REMARKS: None

General Test And Vehicle Parameter Data (Cont.)

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: Toyota Motor Corporation

Date of Manufacture: 10/01; VIN: 4T3ZF19C92U438443

GVWR: 5250 lbs; GAWR Front: 2725 lbs

GAWR Rear: 2725 lbs.

DATA FROM TIRE PLACARD

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT: 35 psi REAR: 35 psi

Recommended Tire Size: P205/70R15 or P215/65R15

Recommended Cold Tire Pressure:

FRONT: 35 psi REAR: 35 psi

Size of Tires on Test Vehicle P205/70R15

Type of Spare Tire T145/80D16, Space Saver: X; Standard:

Vehicle Capacity Data:

Type of Front Seats: X Bucket; Bench; Split Bench

Number of Occupants: 2 Front; 2 Rear; 3 3rd Seat, 7 TOTAL

REMARKS: None

VEHICLE CAPACITY WEIGHT (VCW) = 1160 lbs.

No. Of Occupants x 150 lbs = 1050 lbs.

Rated Cargo/Luggage Weight (RCWL) = 110 lbs (Difference)

General Test And Vehicle Parameter Data (Cont.)

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

Right Front =	<u>1154</u> lbs	Right Rear =	<u>835</u> lbs
Left Front =	<u>1170</u> lbs.	Left Rear =	<u>861</u> lbs.
TOTAL FRONT =	<u>2324</u> lbs.	TOTAL REAR =	<u>1696</u> lbs.
% Total Weight =	<u>57.8</u> %	% Total Weight =	<u>42.2</u> %

TOTAL DELIVERED WEIGHT = 4020 lbs.

WEIGHT OF FULLY LOADED TEST VEHICLE WITH TWO DUMMIES (344 LB) AND 110 POUNDS OF CARGO WEIGHT

Right Front =	<u>1241</u> lbs	Right Rear =	<u>975</u> lbs.
Left Front =	<u>1260</u> lbs.	Left Rear =	<u>998</u> lbs.
TOTAL FRONT =	<u>2501</u> lbs.	TOTAL REAR =	<u>1973</u> lbs.
% Total Weight =	<u>55.9</u> %	% Total Weight =	<u>44.1</u> %

TOTAL WEIGHT = 4474 lbs.

TEST VEHICLE ATTITUDE: (all measurements in degrees)

AS DELIVERED DOOR SILL ANGLE	<u>1.1° nose down</u>
AS TESTED DOOR SILL ANGLE	<u>1.0° nose down</u>
FULLY LOADED DOOR SILL ANGLE	<u>0.8° nose down</u>

FUEL SYSTEM DATA:

Fuel System Capacity From Owner's Manual = 21.0 gallons

Usable Capacity Figure Furnished by COTR = 21.2 gallons

REMARKS. None

Post-Impact Data

Test number.	HT02021901	
NHTSA number	C25102	
Test date	February 19, 2002	
Test time	12:10 pm	
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:		29.3 mph
Specified integrated velocity range.		28 to 30 mph
Sled Carriage Acceleration		
Acceleration		17.7 g
Specified Acceleration Range		16.0 - 18.2 g
Sled Carriage Acceleration Duration		
Time from T-0 (-0.5 g) to 0.0 g		120.4 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: 2002/Toyota/Sienna/MPV

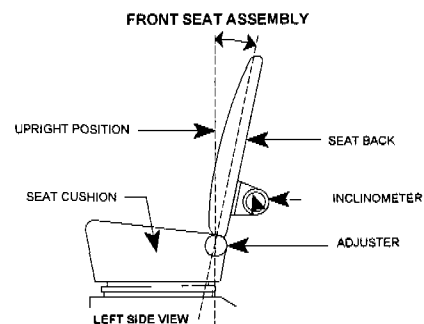
Vehicle NHTSA No.: C25102 Test Date: February 19, 2002

NOMINAL DESIGN RIDING POSITION.

Driver Seat Seat Back Angle = 11.8° *

Passenger Seat Seat Back Angle = 13.5° *

* - Measured from fully upright position



SEAT FORE AND AFT POSITIONS.

Driver Seat: The seat track had a total position movement of 16 notches and was positioned 8 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 16 notches and was positioned 8 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 (3rd position of 5)

Dummy Positioning Measurement Table

Vehicle Year/Make/Model/Body Style: 2002/Toyota/Sienna/MPV

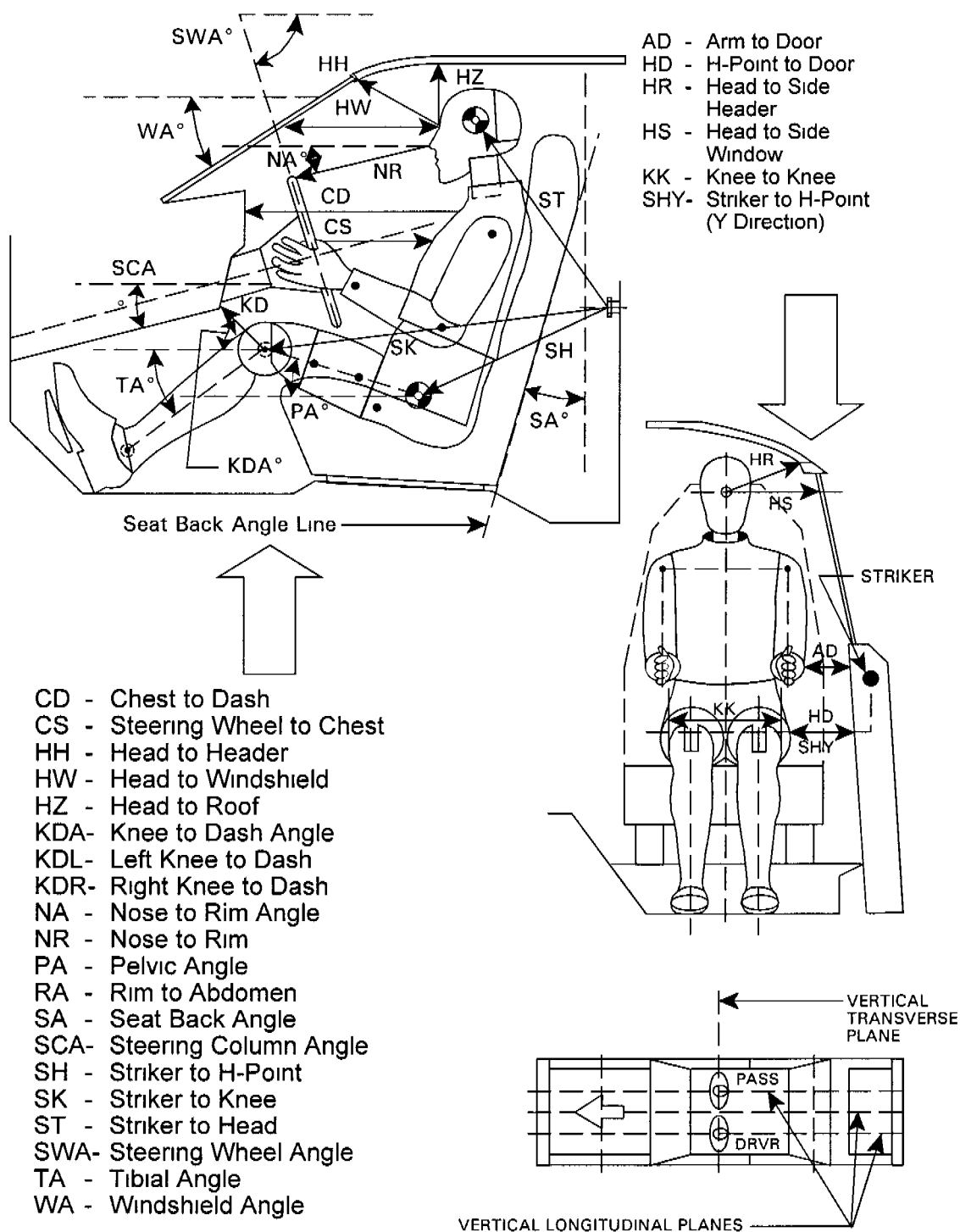
Vehicle NHTSA No.. C25102 Test Date. February 19, 2002

	DRIVER (Serial #401)	PASSENGER (Serial #403)
WA°	28.0°	
SWA°	27.0°	
SCA°	27.0°	
SA°*	17.0°	16.6°
HZ	8.1	6.7
HH	14.1	13.2
HW	26.6	24.1
HR	9.4	8.4
NR	15.8 Angle (NA°) 16.8°	
CD	20.6	20.7
CS	12.6	
RA	7.0	
KDL	5.6 Angle (KDA°) 0.0°	5.4
KDR	5.9	5.6 Angle (KDA°) 0.0°
PA°	24.6°	24.4°
TA°	57.6°	54.8°
KK	12.8	10.3
ST	21.5 Angle 23.1°	22.2 Angle 26.5°
SK	28.1 Angle 92.9°	28.3 Angle 95.5°
SH	14.0 Angle 112.5°	13.9 Angle 112.5°
SHY	7.4	11.7
HS	12.9	11.7
HD	6.1	5.9
AD	4.8	4.9

* - Measured at headrest post

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 plan .

HS	Head to Side Window, taken from the point where the dummy's nose meets his forehead (between his eyes) to the outside of the side window. In order to make this measurement, roll the window down to the exact height which allows a level measurement. Use a level. See photograph
* AD	Arm to Door, taken from the outer surface of the elbow pivot bolt on a Hybrid II dummy to the first point it hits on the door. In the case of a Hybrid III dummy, measure from the bolt on the outer biceps. When a SID is used make the measurement from the center of the bottom of the arm segment where it meets the dummy's torso
* HD	H-point to Door, taken from the H-point on the dummy to the closest point on the door. Use a level
* HR	Head to Side Header, measure the shortest distance from the point where the dummy's nose meets his forehead (between his eyes) to the side edge of the header just above the window frame, directly adjacent to the dummy
SHY	Striker to H-point, taken from a rod rigidly connected to the forward most center point on the striker to the H-point. Use a level. See photograph
KK	Knee to Knee, for Hybrid II dummies measure the distance between knee pivot bolt head outer surfaces. For Hybrid III dummies measure the distance between the outboard knee clevis flange surfaces. (This measurement may not be exactly transverse)

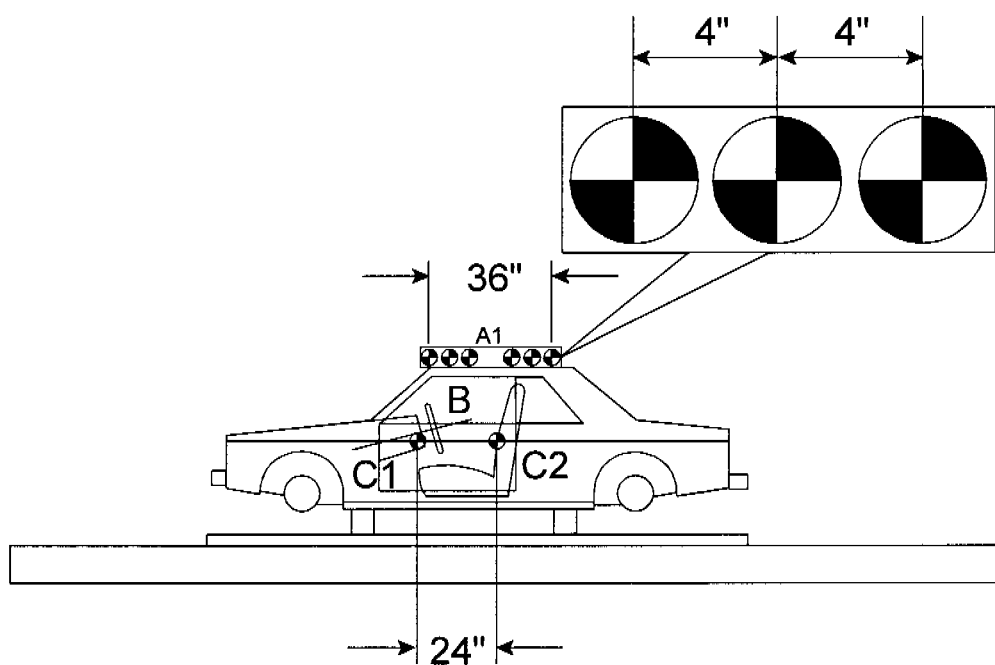
* Measurement used in Data Tape Reference Guide

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

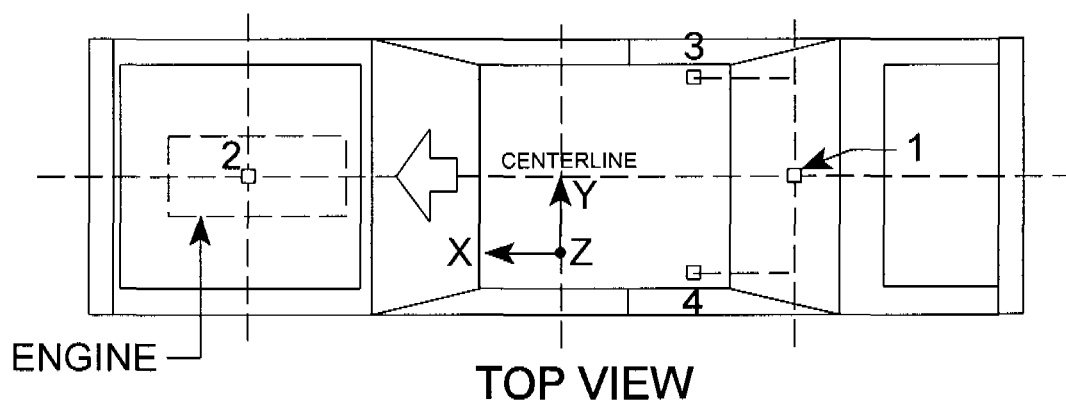
SA	Seat Back Angle, find this angle using the instructions provided by the manufacturer. If the manufacturer doesn't provide clear instructions contact the COTR.
PA	Pelvic or Femur Angle, taken by inserting the pelvic angle gauge into the H-point gauging hole on the SID or the Hybrid III dummies and taking this angle with respect to the horizontal. Measure the angle of the line connecting the H-point hole and the outer knee pivot bolt hole on a Hybrid II dummy with respect to the horizontal, to find the femur angle.
SWA	Steering Wheel Angle, find this by placing a straight edge against the steering wheel rim along the longitudinal plane. Then measure the acute angle of the straight edge with respect to the horizontal.
SCA	Steering Column Angle, measured with respect to the horizontal by placing an inclinometer on the center of the underside of the steering column.
NA	Measure the angle made when taking the measurement NR with respect to the horizontal.
KDA	Knee to Dash Angle, the angle that the measurement KD is taken at with respect to the horizontal. Only get this angle for the outboard knee. See photograph.
WA	Windshield Angle, place an inclinometer along the transverse center of the windshield exterior (measurement is made with respect to horizontal)
TA	Tibial Angle, use a straight edge to connect the dummy's knee and ankle bolts. Then place an inclinometer on the straight edge and measure the angle with respect to the horizontal.

Vehicle Targeting Measurements

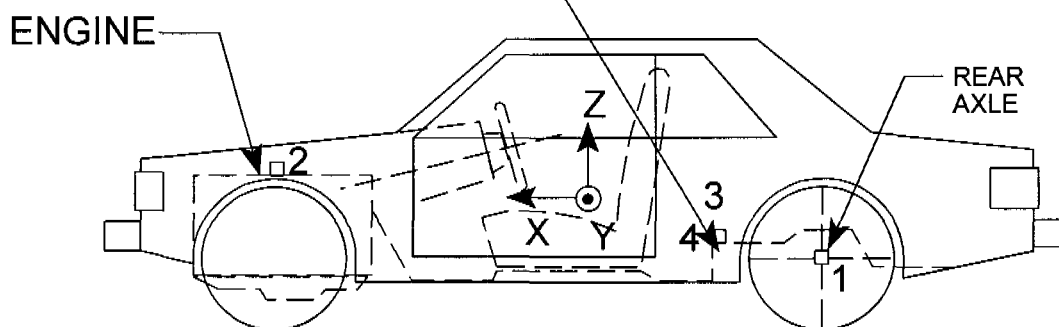
REFERENCE PHOTO TARGETS



LEFT SIDE VIEW

Vehicle Accelerometer Placement and Data SummaryVehicle Year/Make/Model/Body Style 2002/Toyota/Sienna/MPVVehicle NHTSA No.: C25102 Test Date. February 19, 2002

REAR SEAT CUSHION
ASSY. FRONT ATTACHMENT
BRACKET SUPPORT



LEFT SIDE VIEW

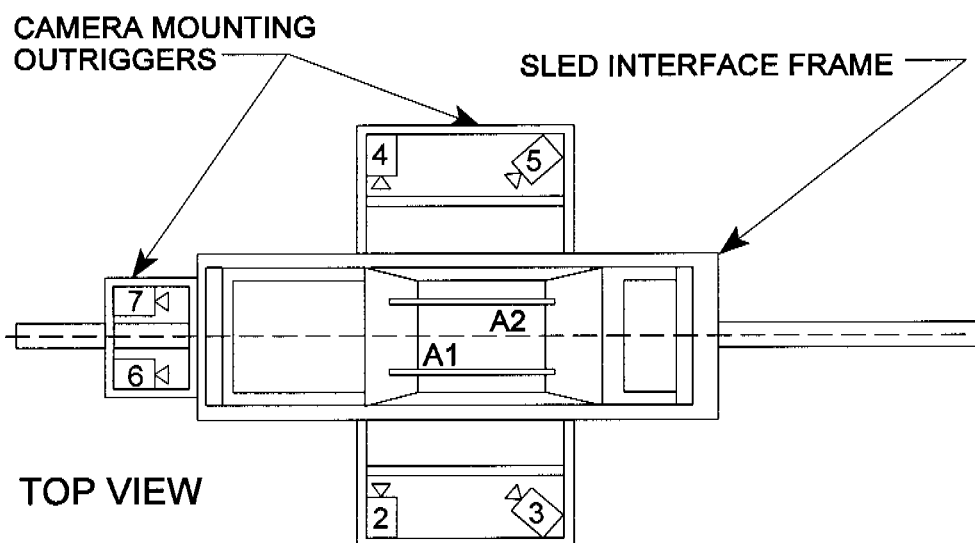
Vehicle Accelerometer Location Measurements and Data Summary

Vehicle Year/Make/Model/Body Style: 2002/Toyota/Sienna/MPV

Vehicle NHTSA No. C25102 Test Date. February 19, 2002

No.	Location	X (in)	Y (in)	Positive Direction		Negative Direction	
				Value	Time (msec)	Value	Time (msec)
	Sled Primary Longitudinal	67.0	0	17.7 g	53	-1.9 g	125
	Sled Redundant Longitudinal	67 0	4.0	17.7 g	53	-1.9 g	125
	Sled Velocity Measured Integrated	67 0	0	29.3 mph	120	--	--
1	Rear Axle Longitudinal	53 0	0	17.6 g	53	-1 5 g	124
2	Top Engine Longitudinal	163 0	0	22.3 g	33	-2.9 g	153
3	Right Rear Seat Member Longitudinal	79 0	24.0	17 3 g	53	-1 6 g	124
4	Left Rear Seat Member Longitudinal	79.0	24 0	17.4 g	46	-1 6 g	124

Camera Positions



TOP VIEW

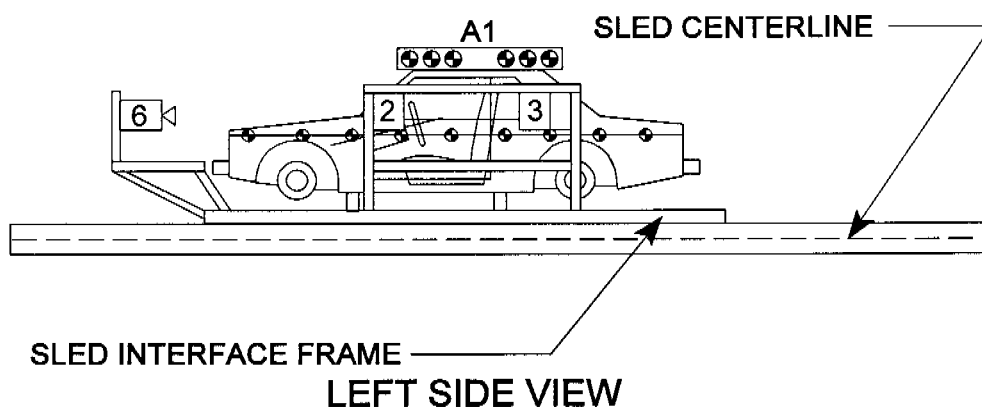
CAMERA FRAME RATES:

#1 = 24 fps

All Others = 1,000 fps



REAL TIME CAMERA



LEFT SIDE VIEW

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	909
3	Onboard Driver Angle	150 9	91 1	47.8			13	1005
4	Onboard Passenger	71 8	89 6	38.5	90	71 1	13	1036
5	Onboard Passenger Angle	146 7	88.5	47.9			13	1000
6	Onboard Windshield Driver	18 3	14 1	42.9			13	625
7	Onboard Windshield Passenger	18 3	13.9	42.9			13	800

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. 2002/Toyota/Sienna/MPV

Vehicle NHTSA No C25102 Test Date: February 19, 2002

MAXIMUM ACCELERATION VALUES. (g's)	DRIVER DUMMY #401	PASSENGER DUMMY #403
Head Channel X	-60.0	-66.9
Head Channel Y	4.4	-17.9
Head Channel Z	21.8	45.0
HEAD RESULTANT	61.2	79.0
Chest Channel X	-40.7	-38.4
Chest Channel Y	8.3	-6.5
Chest Channel Z	11.0	25.8
CHEST RESULTANT	42.5	45.3

HEAD INJURY CRITERIA (HIC) VALUES.

HIC	396	387
$t_1 =$ (msec)	104.4	98.0
$t_2 =$ (msec)	123.9	112.6

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

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

CLIP	38.1	44.1
$t_1 =$ (msec)	107.3	99.3
$t_2 =$ (msec)	110.3	102.3
CHEST DEFLECTION (in)	1.3	0.6

Occupant Injury Data (Cont.)

MAX. COMPRESSIVE FEMUR FORCES	DRIVER DUMMY #401	PASSENGER DUMMY #403
Left Side (lbs)	55	997
Right Side (lbs)	901	839

NECK INJURY CRITERIA

Peak Flexion Bending Moment about the Occipital Condyle (N-m)	46.7	55.3
Peak Extension Bending Moment about the Occipital Condyle (N-m)	9.3	15.6
Peak Axial Tension (N)	1811	593
Peak Axial Compression (N)	468	2788
Peak Fore Shear (N)	837	1588
Peak Aft Shear (N)	97	191

Seat Belt Warning System Data

Vehicle Year/Make/Model/Body Style: 2002/Toyota/Sienna/MPV

NHTSA No.. C25102 ; Technician: Chad Gadberry; Date: February 1, 2002

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

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

A 1 S7.3(a)(1)

Time duration of audible warning signal = 6 seconds
(4 to 8 seconds)

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

A.2 S7.3(a)(2)

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

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

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

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

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

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

B 2 S7 3(a)(2)

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

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

C Note wording of visual warning.

Fasten seat belt

Fasten Belt

Symbol 101

X

Air Bag Labels DataVehicle Year/Make/Model/Body Style: 2002/Toyota/Sienna/MPVNHTSA No.: C25102; Technician Chad Gadberry, Date: February 1, 2002

1. Air bag maintenance label and owner's manual instructions (S4.5.1(a)):
 - 1.1. Does the manufacturer recommend periodic maintenance or replacement of the airbag? ☐ Yes, go to 1.2 ☒ No, go to 2
 - 1.2. Does the vehicle have a maintenance or replacement label? ☐ Yes-Pass ☐ No-FAIL
 - 1.3. Does the label contain one of the following? ☐ Yes-Pass ☐ No-FAIL
 - ☐ Schedule on label specifies month and year (Date: _____)
 - ☐ Schedule on label specifies vehicle mileage (Mileage _____)
 - ☐ Schedule on label specifies interval measured from date on certification label (Date: _____)
 - 1.4. Is the label permanently affixed within the passenger compartment? ☐ Yes-Pass ☐ No-FAIL
 - 1.5. Is the label lettered in English? ☐ Yes-Pass ☐ No-FAIL
 - 1.6. Is the label in block capitals and numerals? ☐ Yes-Pass ☐ No-FAIL
 - 1.7. Are the letters and numerals at least 3/32 inches high? ☐ Yes-Pass ☐ No-FAIL
 - 1.8. Does the owner's manual set forth the recommended schedule for maintenance or replacement? ☐ Yes-Pass ☐ No-FAIL
2. Does the owner's manual (S4.5.1(f)):
 - 2.1. Include a description of the vehicle's airbag system in an easily understandable format? ☒ Yes-Pass ☐ No-FAIL
 - 2.2. Include a statement that the vehicle is equipped with an airbag and a lap/shoulder belt at the front outboard seating positions? ☒ Yes-Pass ☐ No-FAIL

Air Bag Labels Data (Cont.)

- 2.3 Include a statement that the air bag is a supplemental restraint at the front outboard seating positions?
(X)Yes-Pass () No-FAIL
- 2.4 Emphasize that all occupants, including the driver, should always wear their seat belts whether or not an airbag is also provided at their seating positions to minimize the risk of severe injury or death in the event of a crash?
(X)Yes-Pass () No-FAIL
- 2.5 Provide any necessary precautions regarding the proper positioning of occupants, including children, at seating positions equipped with air bags to insure maximum safety protection for those occupants?
(X)Yes-Pass () No-FAIL
- 2.6 Explain that no objects should be placed over or near the air bag on the steering wheel or on the instrument panel, because any such objects could cause harm if the vehicle is in a crash severe enough to cause the air bag to inflate?
(X)Yes-Pass () No-FAIL

3 Does the vehicle:

- 3.1. Provide an automatic means to ensure that the airbag does not deploy when a child seat or child with a total mass of 30 kg or less is present on the front outboard passenger?
()Yes (X) No
- 3.2. Incorporate sensors, other than or in addition to weight sensors, which automatically prevent the passenger air bag from deploying in situations in which it might have an adverse effect on infants in rear-facing child seats, and unbelted or improperly belted children?
()Yes (X) No
- 3.3. Have a passenger air bag designed to deploy in a manner that does not create a risk of serious injury to infants in rear-facing child seats, and unbelted or improperly belted children?
()Yes (X) No

If yes to 3.1, or 3.2, or 3.3, the vehicle is not required to have a sunvisor warning label (S4.5.1(6)), an airbag alert label (S4 5 1(c)) or a label on the dash (S4 5 2(e)) and this check sheet is complete (S4 5 1) If no to 3.1, 3.2, and 3.3, go to 4

4 Sun Visor Warning Label

- 4.1 Is the label permanently affixed (may be permanent marking or molding) to either side of the sunvisor at each front outboard seating position with an airbag?
(S4.5.1(b)(2))
- | | | |
|------------------|-------------|-------------------------|
| Driver Side - | (X)Yes-Pass | () No-FAIL |
| Passenger Side - | () N/A | (X)Yes-Pass () No-FAIL |

Air Bag Labels Data (Cont.)

- 4.2. Does the label conform in content (vehicles without back seats may omit the statement. "The back seat is the safest place for children ") (S4 5.1(b)(2)(v))) to either label shown on the next page as appropriate at each front outboard seating position with an air bag? (S4 5 1(b)(2))

4.2.1 **Dual air bags:** ☐ Not Applicable
 Driver Side - ☒ Yes-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

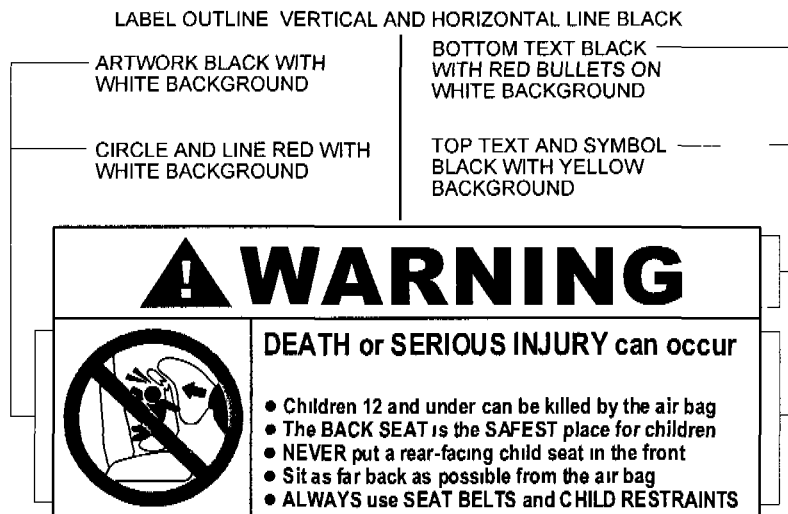


Figure 6a (S4.5.1(b)(2))

SUN VISOR LABEL VISIBLE WHEN VISOR IS IN DOWN POSITION

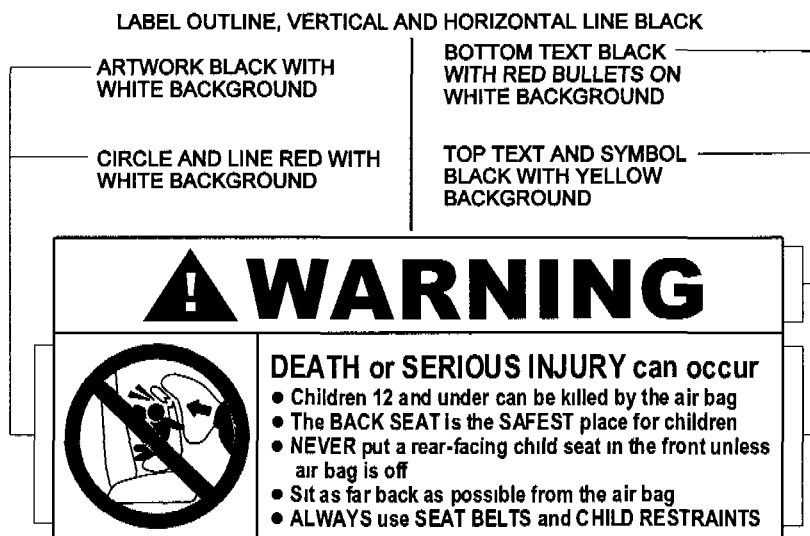


Figure 6b (S4.5.1(b)(2))

- | | | | | |
|-----|---|----------------|-------------|-------------|
| 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)

- 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

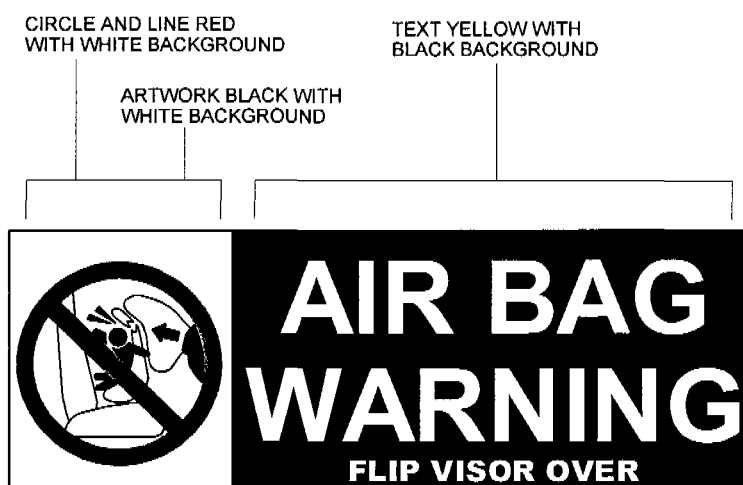


Figure 6c (S4.5.1(c)(2))

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))
 () Yes (X) **No**

Note: The airbag warning label on the dash was removed prior to receiving the vehicle. It is not known whether the label was removed by the dealer, by a potential customer, or not installed at all.

Rear Outboard Seating Position Seat Belt DataVehicle Year/Make/Model/Body Style 2002/Toyota/Sienna/MPVNHTSA No : C25102 ; Technician Chad Gadberry, Date February 1, 2002

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

☒ 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 2002/Toyota/Sienna/MPV

NHTSA No.: C25102; Technician Chad Gadberry; Date February 1, 2002

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 69.8 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)

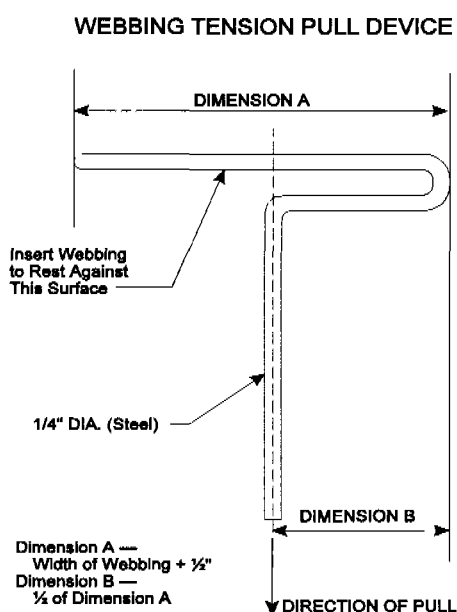


Figure 5 (S7.1.1.5(c)(4))

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 32.0 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 32.4 inches (S7.1.1.5(c)(6))

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

14-13 = 0.4 inches

(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 = 37.4 inches

(X)Yes-Pass

() No-FAIL

REMARKS. None

Lap Belt Lockability Data (Cont.)

Vehicle Year/Make/Model/Body Style. 2002/Toyota/Sienna/MPV

NHTSA No. C25102, Technician. Chad Gadberry; Date February 1, 2002

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 70.1 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)

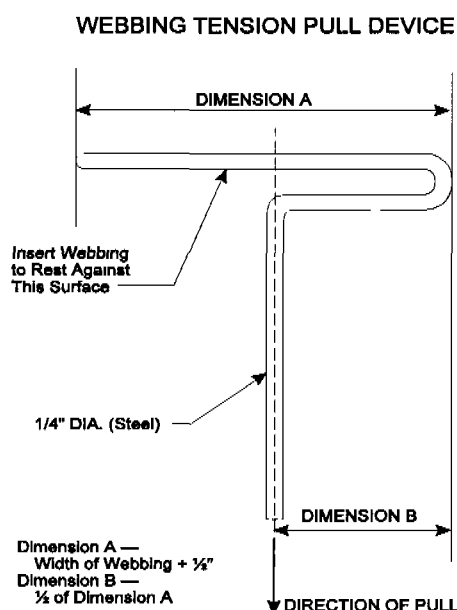


Figure 5 (S7.1.1.5(c)(4))

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 33.0 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 33.0 inches (S7.1.1 5(c)(6))

15. Subtract the measurement in 13 from the measurement in 14 Is the difference 2 inches or less? (S7 1 1 5(c)(7))

14-13 = 0.0 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 = 37.1 inches

(X)Yes-Pass

() No-FAIL

REMARKS: None

Lap Belt Lockability Data (Cont.)Vehicle Year/Make/Model/Body Style: 2002/Toyota/Sienna/MPVNHTSA No. C25102; Technician. Chad Gadberry, Date: February 1, 2002

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 61.5 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)

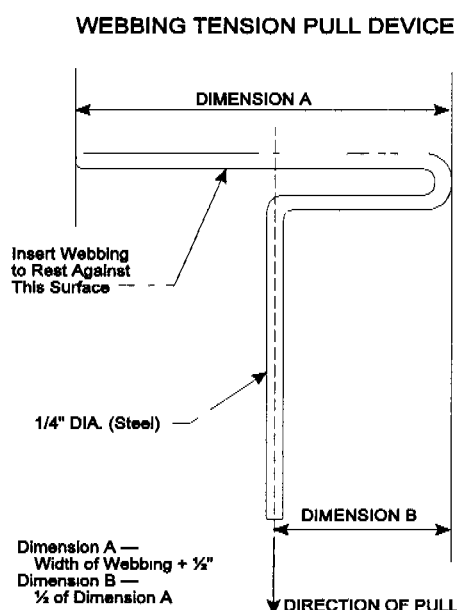


Figure 5 (S7.1.1.5(c)(4))

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 26.6 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 26.6 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 = 0.0 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 = 34.9 inches

(X)Yes-Pass

() No-FAIL

REMARKS. None

Lap Belt Lockability Data (Cont.)Vehicle Year/Make/Model/Body Style: 2002/Toyota/Sienna/MPVNHTSA No.: C25102; Technician: Chad Gadberry; Date February 1, 2002

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 3rd row

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 72.8 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)

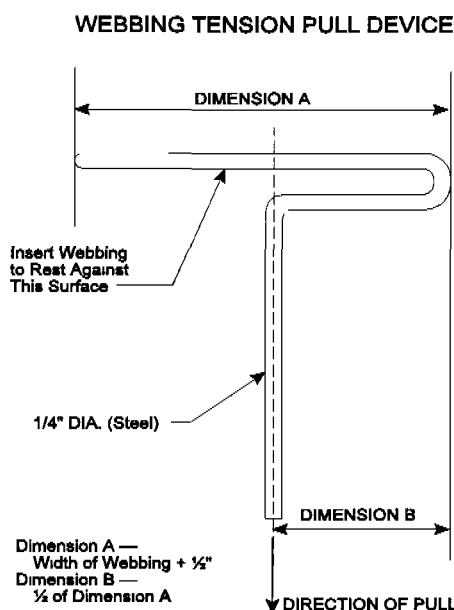


Figure 5 (S7 1 1 5(c)(4))

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 31.1 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 31.1 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 = 0.0 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 = 41.7 inches

(X)Yes-Pass

() No-FAIL

REMARKS: None

Lap Belt Lockability Data (Cont.)Vehicle Year/Make/Model/Body Style: 2002/Toyota/Sienna/MPVNHTSA No.. C25102 ; Technician: Chad Gadberry, Date: February 1, 2002

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 3rd row

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 78.4 inches.

11. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing (S7.1.1.5(c)(3))
12. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device. 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)

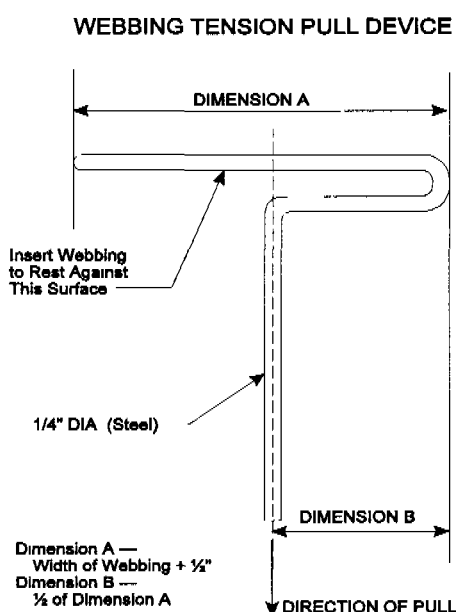


Figure 5 (S7 1 1 5(c)(4))

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 27.0 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 27.4 inches (S7.1.1.5(c)(6))

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

14-13 = 0.4 inches

(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 = 51.0 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.: C25102

Vehicle Model Year/Make/Model/Body Style: 2002/Toyota/Sienna/MPV

Designated Seating Position Tested: Left Front

Date of Comfort/Convenience Check February 1, 2002

Technician Performing Check: Chad Gadberry

GVWR: 5250 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

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 0.7 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.: C25102Vehicle Model Year/Make/Model/Body Style: 2002/Toyota/Sienna/MPVDesignated Seating Position Tested: Right FrontDate of Comfort/Convenience Check February 1, 2002Technician Performing Check: Chad GadberryGVWR: 5250 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)
(X) Check
() 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.
(X) 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.
(X) Check
() N/A
- 1.6 Place each adjustable head restraint in its highest adjustment position
(X) Check
() N/A

Seat Belt Comfort and Convenience Data (Cont.)

- 1.7 Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)
☐ Check
☒ N/A
- 1.8 Position the test dummies according to dummy position placement instructions in Appendix B.
☒ Check
- 1.9 Fasten the seat belt latch. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point, pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Measure the contact force exerted by the belt webbing on the dummy's chest. Contact the COTR if the contact force exceeds 0.7 pounds.
Contact Force 0.7 lb. ☒ 0.0 to 0.7 pounds - Pass
☐ greater than 0.7 pounds - FAIL*

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

Seat Belt Comfort and Convenience Data (Cont.)

1. BELT CONTACT FORCE (S7.4.3)

Test Vehicle NHTSA No.: C25102

Vehicle Model Year/Make/Model/Body Style: 2002/Toyota/Sienna/MPV

Designated Seating Position Tested: Left Rear

Date of Comfort/Convenience Check: February 1, 2002

Technician Performing Check: Chad Gadberry

GVWR 5250 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.
 (X) 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
 (X) N/A
- 1.6 Place each adjustable head restraint in its highest adjustment position
 (X) Check
 () N/A

Seat Belt Comfort and Convenience Data (Cont.)

- 1 7 Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8 1 3)
() Check
(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 0.5 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.: C25102

Vehicle Model Year/Make/Model/Body Style: 2002/Toyota/Sienna/MPV

Designated Seating Position Tested: Right Rear

Date of Comfort/Convenience Check: February 1, 2002

Technician Performing Check: Chad Gadberry

GVWR. 5250 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.
 (X) 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
 (X) N/A
- 1.6 Place each adjustable head restraint in its highest adjustment position.
 (X) Check
 () N/A

Seat Belt Comfort and Convenience Data (Cont.)

- 1.7 Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)
☐ Check
☒ N/A
- 1.8 Position the test dummies according to dummy position placement instructions in Appendix B
☒ Check
- 1.9 Fasten the seat belt latch. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point, pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Measure the contact force exerted by the belt webbing on the dummy's chest. Contact the COTR if the contact force exceeds 0.7 pounds.
Contact Force 0.5 lb. ☒ 0.0 to 0.7 pounds - Pass
☐ greater than 0.7 pounds - FAIL*
- * If the seat belts are voluntarily installed by the manufacturer they do not have to comply.

Seat Belt Comfort and Convenience Data (Cont.)

1 BELT CONTACT FORCE (S7.4.3)

Test Vehicle NHTSA No.: C25102

Vehicle Model Year/Make/Model/Body Style: 2002/Toyota/Sienna/MPV

Designated Seating Position Tested: Left 3rd row

Date of Comfort/Convenience Check: February 1, 2002

Technician Performing Check Chad Gadberry

GVWR: 5250 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)
 (X) Check
 () 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.
 (X) 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
 (X) N/A
- 1.6 Place each adjustable head restraint in its highest adjustment position.
 (X) Check
 () N/A

Seat Belt Comfort and Convenience Data (Cont.)

- 1.7 Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position (S8 1 3)
() Check
(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 0.5 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 C25102

Vehicle Model Year/Make/Model/Body Style: 2002/Toyota/Sienna/MPV

Designated Seating Position Tested: Left Rear

Date of Comfort/Convenience Check February 1, 2002

Technician Performing Check: Chad Gadberry

GVWR: 5250 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.
 (X) 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
 (X) N/A
- 1.6 Place each adjustable head restraint in its highest adjustment position
 (X) Check
 () N/A

Seat Belt Comfort and Convenience Data (Cont.)

- 1 7 Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position. (S8.1.3)
☐ Check
☒ N/A
- 1 8 Position the test dummies according to dummy position placement instructions in Appendix B.
☒ Check
- 1 9 Fasten the seat belt latch. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point, pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Measure the contact force exerted by the belt webbing on the dummy's chest. Contact the COTR if the contact force exceeds 0.7 pounds.
Contact Force 0.5 lb. ☒ 0.0 to 0.7 pounds - Pass
☐ greater than 0.7 pounds - FAIL*

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

Seat Belt Comfort and Convenience Data (Cont.)

2 LATCHPLATE ACCESS (S7.4.4)

Test Vehicle NHTSA No. C25102

Vehicle Model Year/Make/Model/Body Style 2002/Toyota/Sienna/MPV

Designated Seating Position Tested Left Front

Date of Comfort/Convenience Check February 1, 2002

Technician Performing Check Chad Gadberry

GVWR: 5250 lb

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
(X) 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)
(X) Check
- 2.3 Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant
(X) Check
- 2.4 Attach the inboard and outboard reach string following the instructions on Figure 1C
(X) Check
- 2.5 Place the latch plate in the stowed position.
(X) 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?
(X) 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?
(X) Yes-Pass () No-FAIL

Seat Belt Comfort and Convenience Data (Cont.)

2 LATCHPLATE ACCESS (S7.4.4)

Test Vehicle NHTSA No. C25102

Vehicle Model Year/Make/Model/Body Style. 2002/Toyota/Sienna/MPV

Designated Seating Position Tested. Right Front

Date of Comfort/Convenience Check: February 1, 2002

Technician Performing Check. Chad Gadberry

GVWR. 5250 lb

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
(X) 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.)
(X) Check
- 2.3 Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant.
(X) Check
- 2.4 Attach the inboard and outboard reach string following the instructions on Figure 1C
(X) Check
- 2.5 Place the latch plate in the stowed position.
(X) 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?
(X) 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?
(X) Yes-Pass () No-FAIL

Seat Belt Comfort and Convenience Data (Cont.)

3. RETRACTION (S7.4.5)

Test Vehicle NHTSA No.: C25102

Vehicle Model Year/Make/Model/Body Style: 2002/Toyota/Sienna/MPV

Designated Seating Position Tested: Left Front

Date of Comfort/Convenience Check: February 1, 2002

Technician Performing Check Chad Gadberry

GVWR: 5250 lb

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

- 3.1 Is the vehicle a passenger car or walk-in van-type vehicle?
 () Yes If yes, go to seat belt guides and hardware.
 (X) 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)
 (X) Check
- 3.3 If separately adjustable in a vertical direction, the seats are at the lowest position
 (X) Check
- 3.4 Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.
 (X) 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.
 (X) Check
- 3.6 Place each adjustable head restraint in its highest adjustment position
 (X) Check
- 3.7 Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position (S8.1.3)
 (X) 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.
(X) Check
- 3.9 Restrain the dummies using the belt systems for the position being tested.
(X) Check
- 3.10 Stow outboard armrests which are capable of being stowed.
(X) 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
(X) Pass
- (B) The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latch plate is released.
(X) 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?
(X) 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?
(X) N/A
() Yes - Pass
() **No - FAIL**

Seat Belt Comfort and Convenience Data (Cont.)

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

Test Vehicle NHTSA No. C25102

Vehicle Model Year/Make/Model/Body Style 2002/Toyota/Sienna/MPV

Designated Seating Position Tested. Right Front

Date of Comfort/Convenience Check: February 1, 2002

Technician Performing Check: Chad Gadberry

GVWR 5250 lb

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

- 3.1 Is the vehicle a passenger car or walk-in van-type vehicle?
 () Yes If yes, go to seat belt guides and hardware
 (X) 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)
 (X) Check
- 3.3 If separately adjustable in a vertical direction, the seats are at the lowest position
 (X) Check
- 3.4 Place adjustable seat backs in the manufacturer's nominal design riding position in the manner specified by the manufacturer.
 (X) 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.
 (X) Check
- 3.6 Place each adjustable head restraint in its highest adjustment position
 (X) Check
- 3.7 Adjustable lumbar supports are positioned so that the lumbar support is in its lowest adjustment position (S8 1 3)
 (X) 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
(X) Check
- 3.9 Restrain the dummies using the belt systems for the position being tested
(X) Check
- 3.10 Stow outboard armrests which are capable of being stowed.
(X) 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.
(X) Pass
- (B) The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latch plate is released
(X) 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?
(X) 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?
(X) 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.: C25102Vehicle Model Year/Make/Model/Body Style: 2002/Toyota/Sienna/MPVDesignated Seating Position Tested: Left FrontDate of Comfort/Convenience Check: February 1, 2002Technician Performing Check: Chad GadberryGVWR: 5250 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.
 - (X) No - this form is complete
- 4.2 Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)?
 - () Yes - Pass
 - () **No - FAIL**
- 4.3 Are the remaining two seat belt parts accessible under normal conditions?
 - () Yes - Pass
 - () **No - FAIL**

Seat Belt Comfort and Convenience Data (Cont.)

- 4 4 The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the following events occur in order
- (A) The belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. ☐ Check
 - (B) The seat is moved to any position to which it is designed to be adjusted. ☐ Check
 - (C) The seat back, if foldable, is folded forward as far as possible and then moved backward into position. ☐ Check
- ☐ Yes - Pass
☐ **No - FAIL**
- 4 5 Is the inboard receptacle end of the seat belt assembly, installed in the outboard designated seating position, accessible with the center arm rest in any position to which it can be adjusted (without moving the armrest)?
- ☐ Yes - Pass
☐ **No - FAIL**

Seat Belt Comfort and Convenience Data (Cont.)

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

Test Vehicle NHTSA No C25102

Vehicle Model Year/Make/Model/Body Style: 2002/Toyota/Sienna/MPV

Designated Seating Position Tested: Right Front

Date of Comfort/Convenience Check: February 1, 2002

Technician Performing Check: Chad Gadberry

GVWR. 5250 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.
 (X) No - this form is complete
- 4 2 Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)?
 () Yes - Pass
 () **No - FAIL**
- 4 3 Are the remaining two seat belt parts accessible under normal conditions?
 () Yes - Pass
 () **No - FAIL**

Seat Belt Comfort and Convenience Data (Cont.)

- 4.4 The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the following events occur in order
- (A) The belt is completely retracted or, if the belt is nonretractable, the belt is unlatched () Check
 - (B) The seat is moved to any position to which it is designed to be adjusted () Check
 - (C) The seat back, if foldable, is folded forward as far as possible and then moved backward into position.
() Check
() Yes - Pass
() **No - FAIL**
- 4.5 Is the inboard receptacle end of the seat belt assembly, installed in the outboard designated seating position, accessible with the center arm rest in any position to which it can be adjusted (without moving the armrest)?
() Yes - Pass
() **No - FAIL**

Seat Belt Comfort and Convenience Data (Cont.)

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

Test Vehicle NHTSA No. C25102

Vehicle Model Year/Make/Model/Body Style. 2002/Toyota/Sienna/MPV

Designated Seating Position Tested: Left Rear - Does not apply (see requirement B)

Date of Comfort/Convenience Check: February 1, 2002

Technician Performing Check. Chad Gadberry

GVWR. 5250 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. ☐ Check
 - (B) The seat is moved to any position to which it is designed to be adjusted. ☐ Check
 - (C) The seat back, if foldable, is folded forward as far as possible and then moved backward into position ☐ Check
- ☐ Yes - Pass
☐ No - **FAIL**
- 4 5 Is the inboard receptacle end of the seat belt assembly, installed in the outboard designated seating position, accessible with the center arm rest in any position to which it can be adjusted (without moving the armrest)?
- ☐ Yes - Pass
☐ No - **FAIL**

Seat Belt Comfort and Convenience Data (Cont.)

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

Test Vehicle NHTSA No.: C25102

Vehicle Model Year/Make/Model/Body Style 2002/Toyota/Sienna/MPV

Designated Seating Position Tested. Right Rear - Does not apply

(see requirement B)

Date of Comfort/Convenience Check. February 1, 2002

Technician Performing Check. Chad Gadberry

GVWR: 5250 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. ☐ Check
 - (B) The seat is moved to any position to which it is designed to be adjusted. ☐ Check
 - (C) The seat back, if foldable, is folded forward as far as possible and then moved backward into position ☐ Check
- ☐ Yes - Pass
☐ **No - FAIL**
- 4 5 Is the inboard receptacle end of the seat belt assembly, installed in the outboard designated seating position, accessible with the center arm rest in any position to which it can be adjusted (without moving the armrest)?
- ☐ Yes - Pass
☐ **No - FAIL**

Seat Belt Comfort and Convenience Data (Cont.)

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

Test Vehicle NHTSA No.: C25102

Vehicle Model Year/Make/Model/Body Style: 2002/Toyota/Sienna/MPV

Designated Seating Position Tested: Left 3rd row - Does not apply

(see requirement B)

Date of Comfort/Convenience Check: February 1, 2002

Technician Performing Check: Chad Gadberry

GVWR: 5250 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. ☐ Check
 - (B) The seat is moved to any position to which it is designed to be adjusted ☐ Check
 - (C) The seat back, if foldable, is folded forward as far as possible and then moved backward into position ☐ Check
- ☐ Yes - Pass
☐ No - **FAIL**
- 4.5 Is the inboard receptacle end of the seat belt assembly, installed in the outboard designated seating position, accessible with the center arm rest in any position to which it can be adjusted (without moving the armrest)?
- ☐ Yes - Pass
☐ No - **FAIL**

Seat Belt Comfort and Convenience Data (Cont.)

4 SEAT BELT GUIDES AND HARDWARE (S7.4.6)

Test Vehicle NHTSA No C25102

Vehicle Model Year/Make/Model/Body Style 2002/Toyota/Sienna/MPV

Designated Seating Position Tested: Center 3rd row - Does not apply

(see requirement B)

Date of Comfort/Convenience Check: February 1, 2002

Technician Performing Check: Chad Gadberry

GVWR: 5250 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 () Check
 - (B) The seat is moved to any position to which it is designed to be adjusted. () Check
 - (C) The seat back, if foldable, is folded forward as far as possible and then moved backward into position. () Check
- () Yes - Pass
() **No - FAIL**
- 4 5 Is the inboard receptacle end of the seat belt assembly, installed in the outboard designated seating position, accessible with the center arm rest in any position to which it can be adjusted (without moving the armrest)?
- () Yes - Pass
() **No - FAIL**

Seat Belt Comfort and Convenience Data (Cont.)

4 SEAT BELT GUIDES AND HARDWARE (S7.4.6)

Test Vehicle NHTSA No. C25102

Vehicle Model Year/Make/Model/Body Style. 2002/Toyota/Sienna/MPV

Designated Seating Position Tested. Right 3rd row - Does not apply

(see requirement B)

Date of Comfort/Convenience Check: February 1, 2002

Technician Performing Check: Chad Gadberry

GVWR: 5250 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

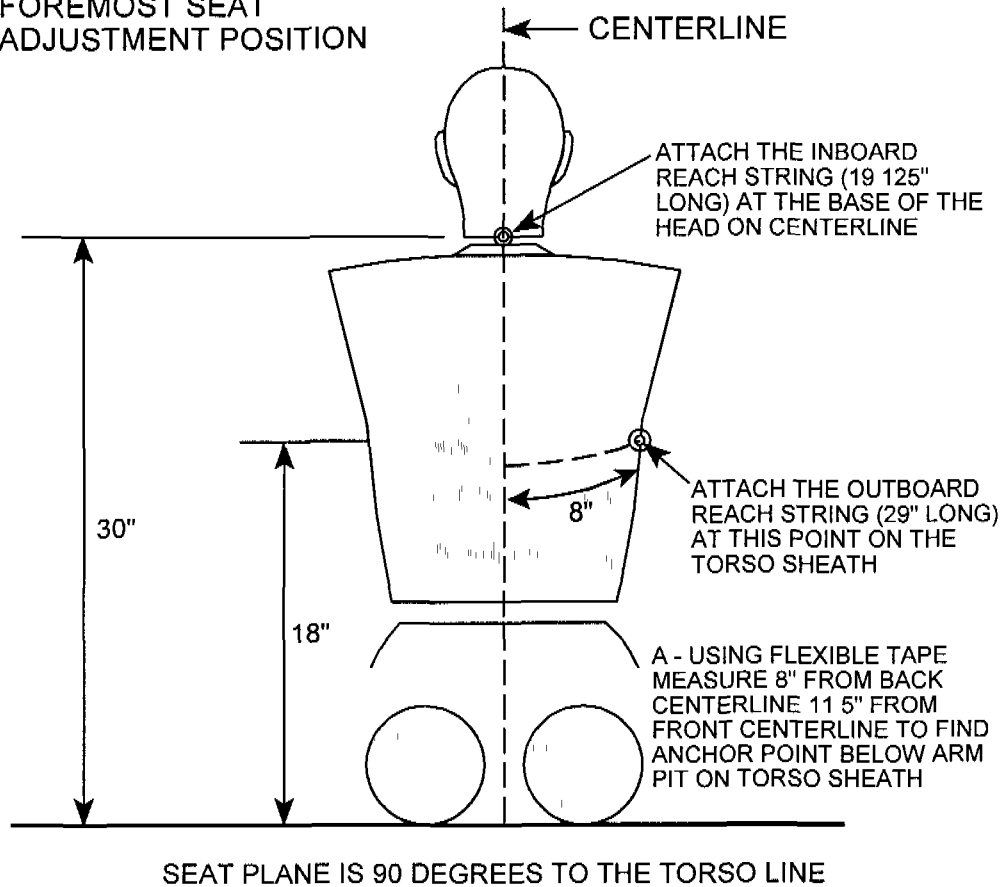
Seat Belt Comfort and Convenience Data (Cont.)

- 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. ☐ Check
 - (B) The seat is moved to any position to which it is designed to be adjusted. ☐ Check
 - (C) The seat back, if foldable, is folded forward as far as possible and then moved backward into position ☐ Check
- ☐ Yes - Pass
☐ **No - FAIL**
- 4 5 Is the inboard receptacle end of the seat belt assembly, installed in the outboard designated seating position, accessible with the center arm rest in any position to which it can be adjusted (without moving the armrest)?
- ☐ Yes - Pass
☐ **No - FAIL**

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

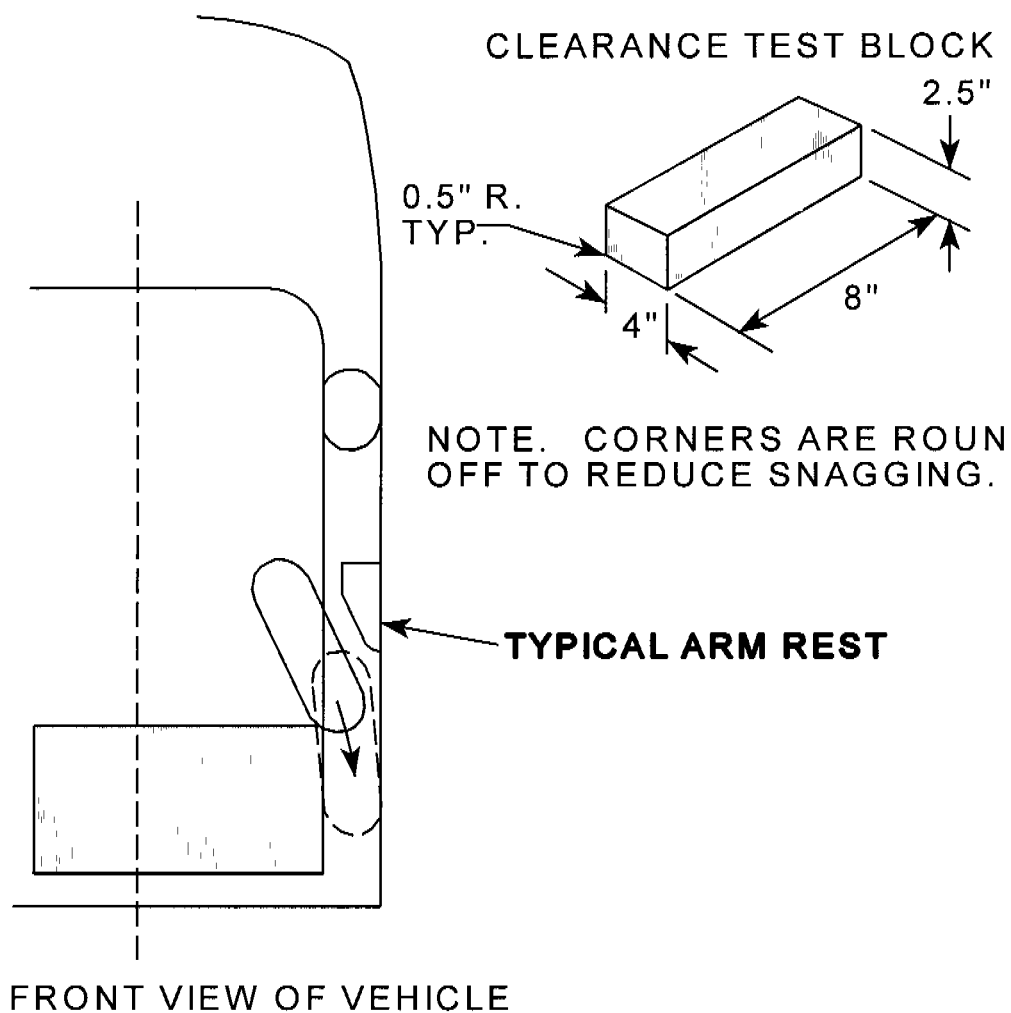
PART 572E DUMMY

50TH PERCENTILE
DUMMY SEATED IN
FOREMOST SEAT
ADJUSTMENT POSITION



REAR VIEW

USE OF CLEARANCE TEST BLOCK TO DETERMINE HAND/ARM ACCESS



APPENDIX A
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

<u>Description</u>	<u>Page No</u>
Photo No A-1 - Pre-Test Frontal View	A-1
Photo No A-2 - Pre-Test Left Side View	A-2
Photo No A-3 - Pre-Test Right Side View	A-3
Photo No A-4 - Pre-Test Windshield View	A-4
Photo No A-5 - Post-Test Windshield View	A-5
Photo No. A-6 - Pre-Test Driver Dummy Position View (Door Open)	A-6
Photo No. A-7 - Post-Test Driver Dummy Position View (Door Open)	A-7
Photo No A-8 - Pre-Test Driver Dummy Position View	A-8
Photo No A-9 - Post-Test Driver Dummy Position View	A-9
Photo No A-10 - Pre-Test Passenger Dummy Position View (Door Open)	A-10
Photo No. A-11 - Post-Test Passenger Dummy Position View (Door Open)	A-11
Photo No A-12 - Pre-Test Passenger Dummy Position View	A-12
Photo No. A-13 - Post-Test Passenger Dummy Position View	A-13
Photo No. A-14 - Post-Test Driver Airbag View	A-14
Photo No. A-15 - Post-Test Driver Dummy Head Contact View (windshield)	A-15
Photo No. A-16 - Post-Test Driver Head Contact View (visor)	A-16
Photo No. A-17 - Post-Test Passenger Dummy Airbag View	A-17
Photo No. A-18 - Post-Test Passenger Dummy Head Contact View (windshield)	A-18
Photo No. A-19 - Pre-Test Driver Knee Bolster View	A-19
Photo No A-20 - Post-Test Driver Knee Bolster View	A-20
Photo No A-21 - Pre-Test Passenger Knee Bolster View	A-21
Photo No A-22 - Post-Test Passenger Knee Bolster View	A-22
Photo No. A-23 - Pre-Test Driver Seat Position View	A-23
Photo No A-24 - Post-Test Driver Seat Position View	A-24
Photo No A-25 - Pre-Test Passenger Seat Position View	A-25
Photo No. A-26 - Post-Test Passenger Seat Position View	A-26
Photo No A-27 - Vehicle Certification Label	A-27
Photo No A-28 - FMVSS 110 Label	A-28

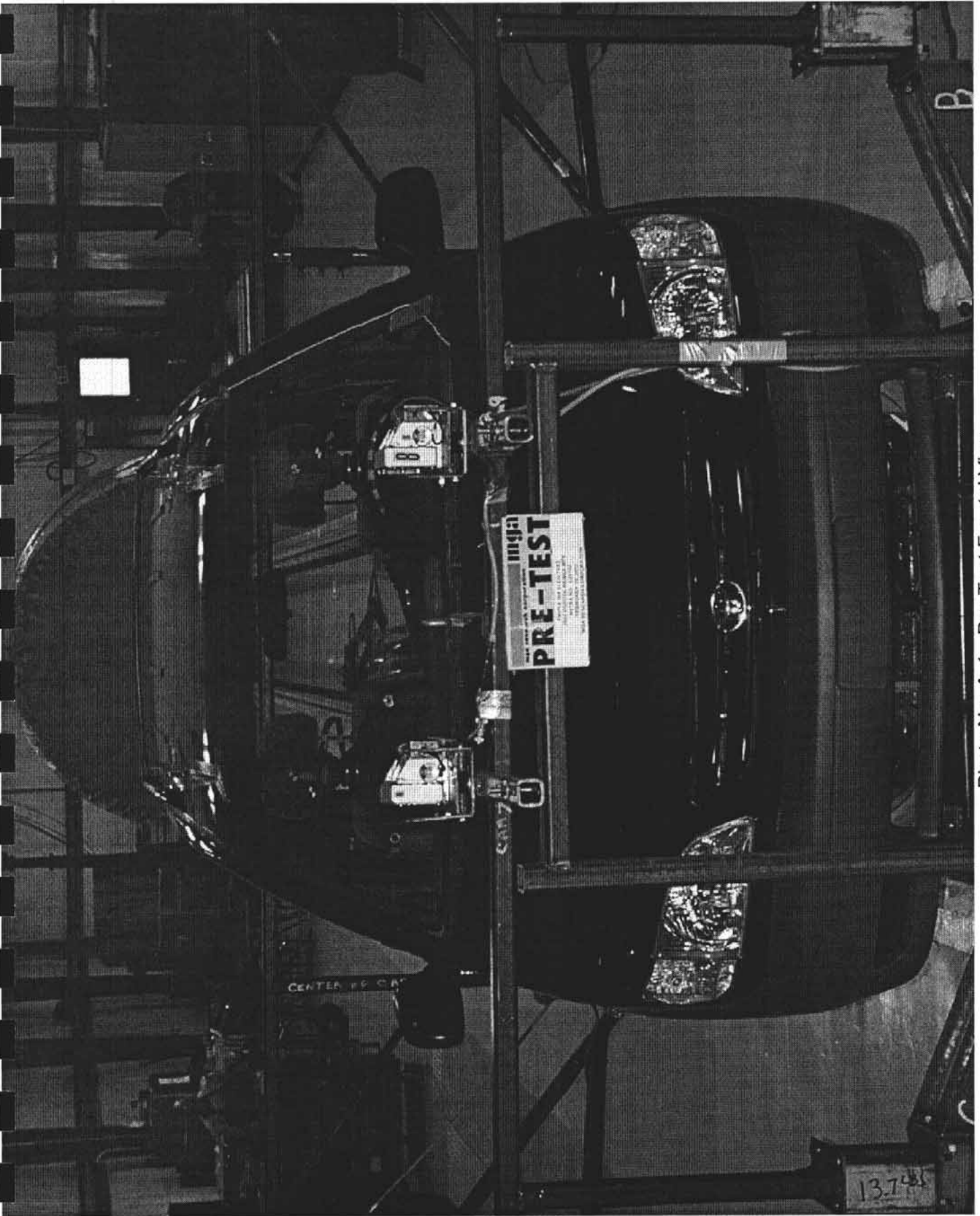


Photo No. A-1 - Pre-Test Frontal View



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

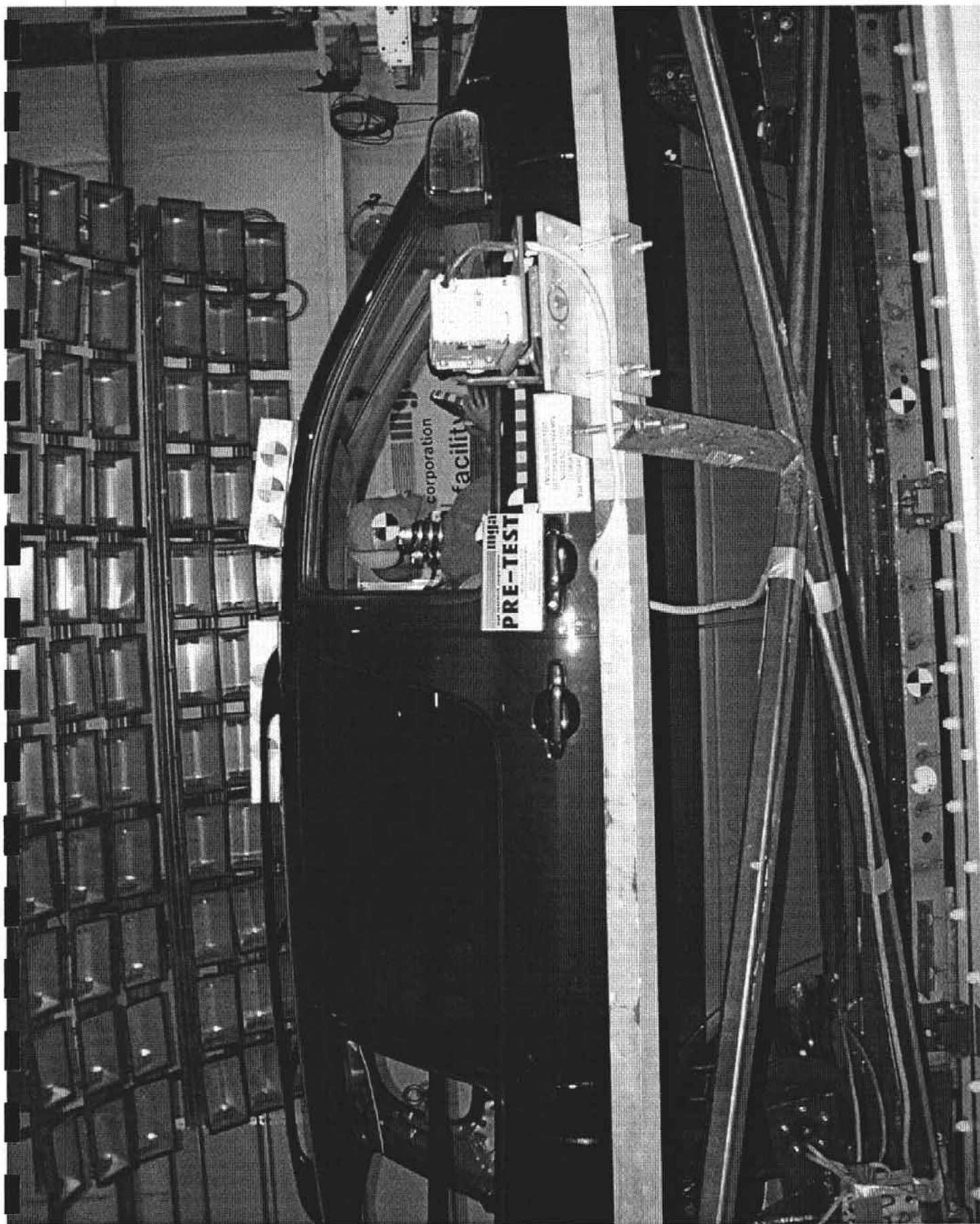


Photo No. A-3 - Pre-Test Right Side View

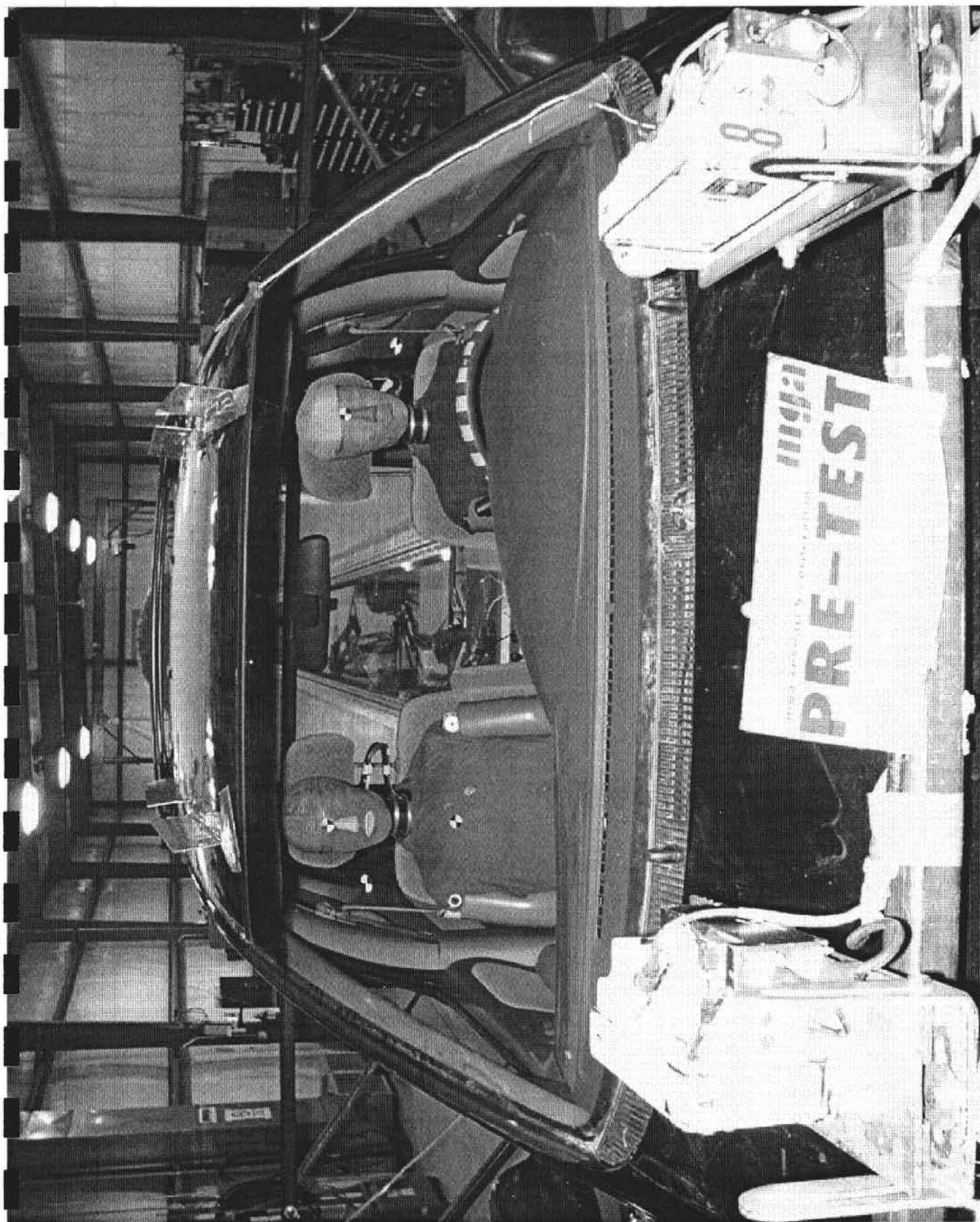


Photo No. A-4 - Pre-Test Windshield View



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

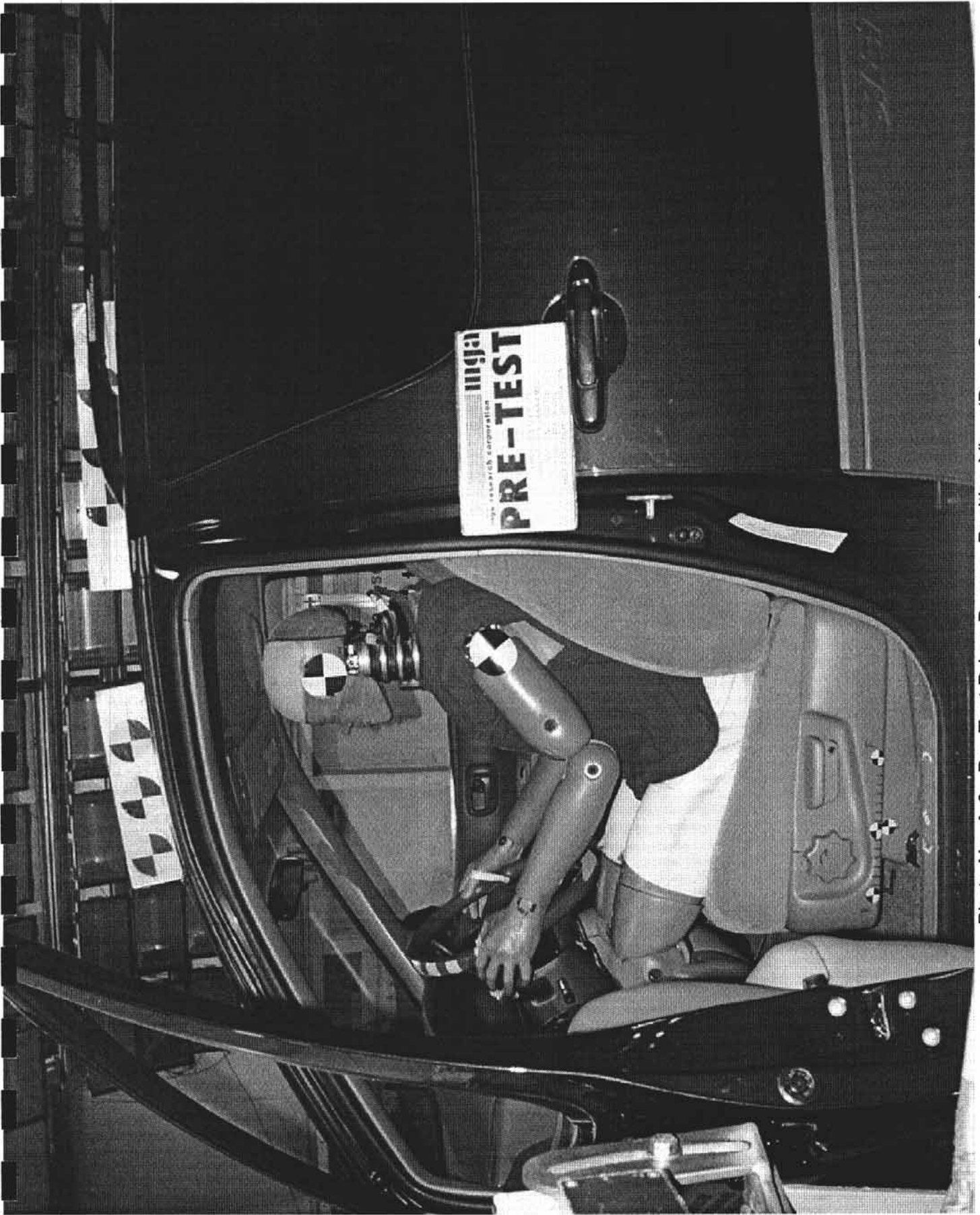


Photo No. A-6 - Pre-Test Driver Dummy Position View (Door Open)



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

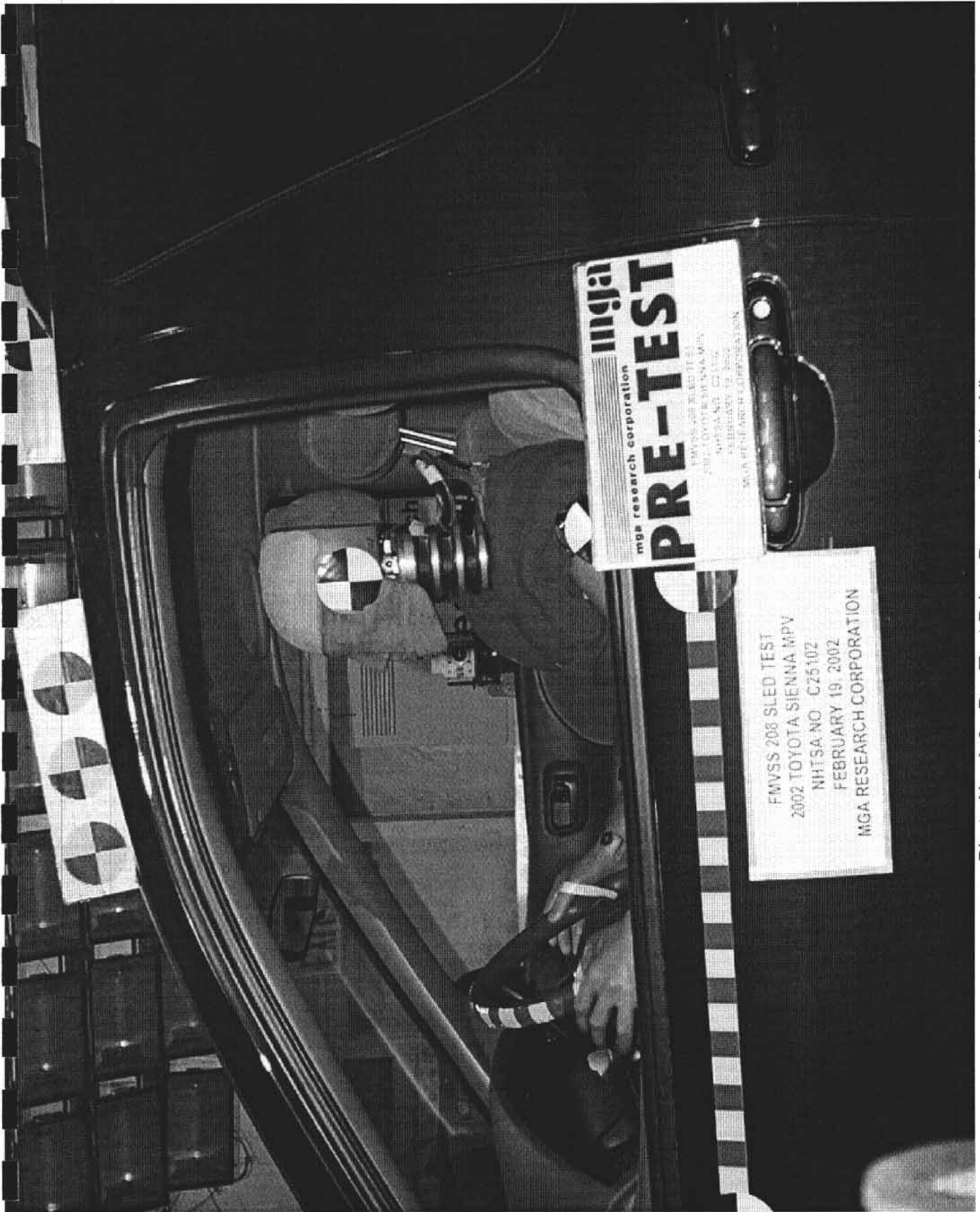


Photo No. A-8 - Pre-Test Driver Dummy Position View

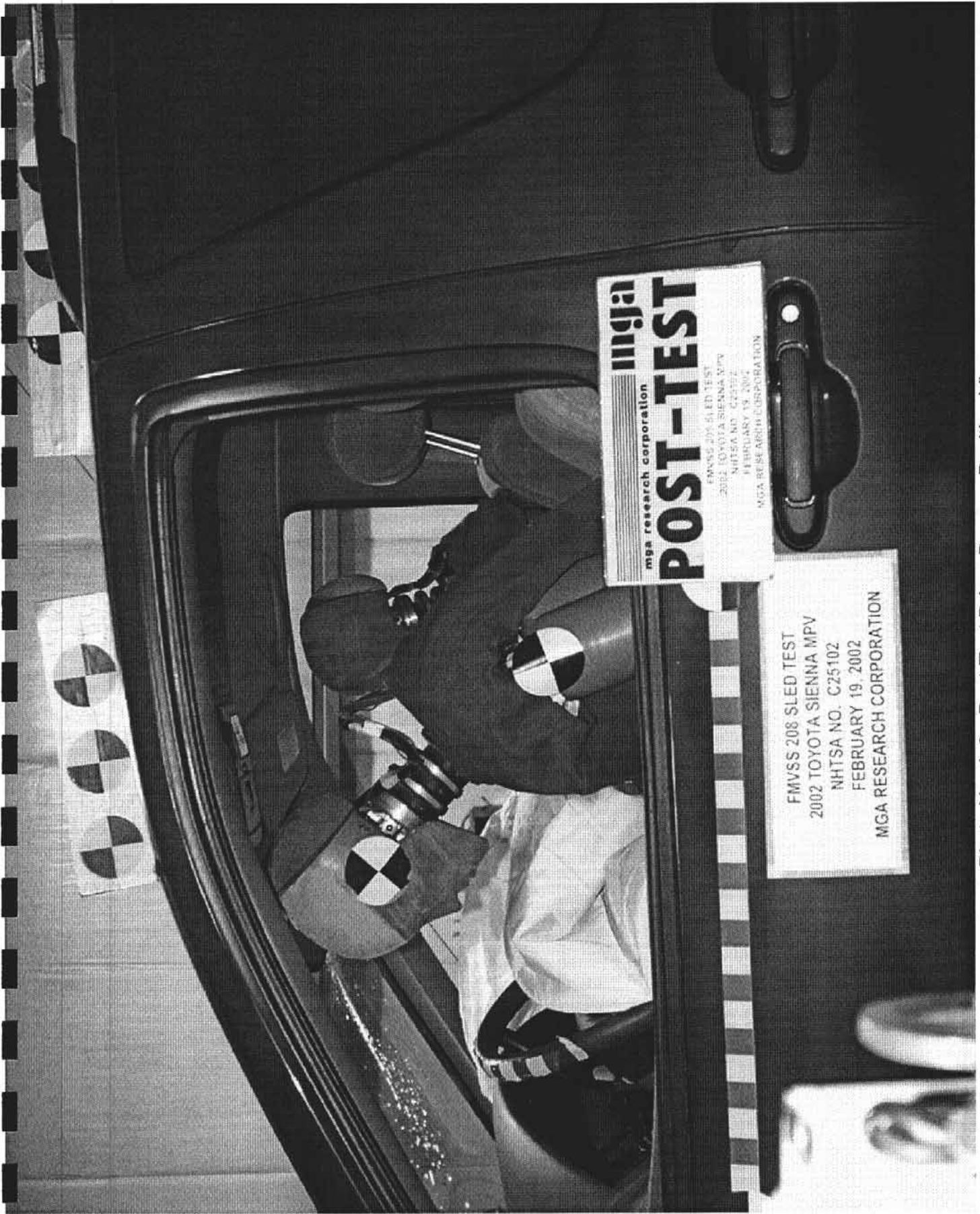


Photo No. A-9 - Post-Test Driver Dummy Position View



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

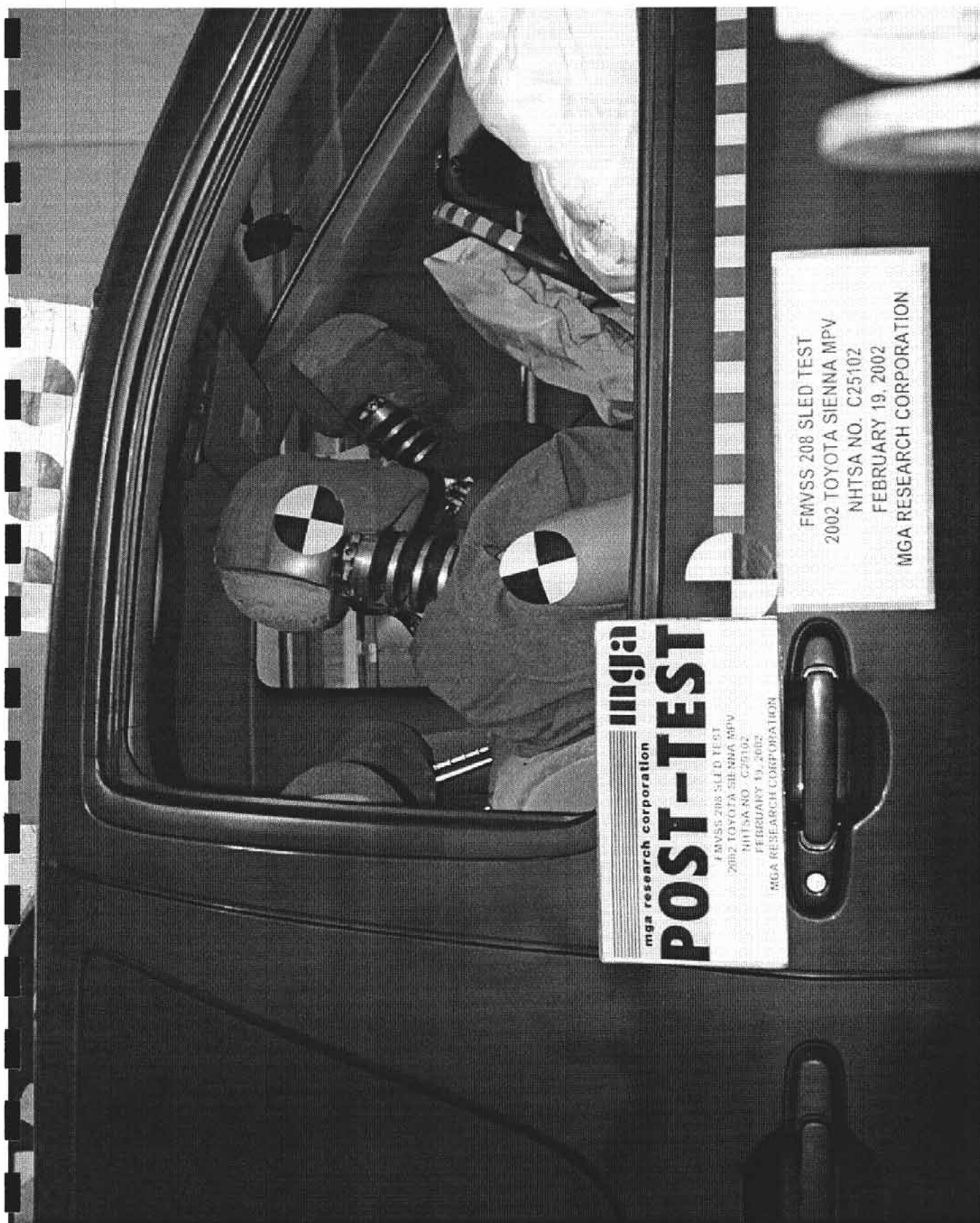


Photo No. A-13 - Post-Test Passenger Dummy Position View



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



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

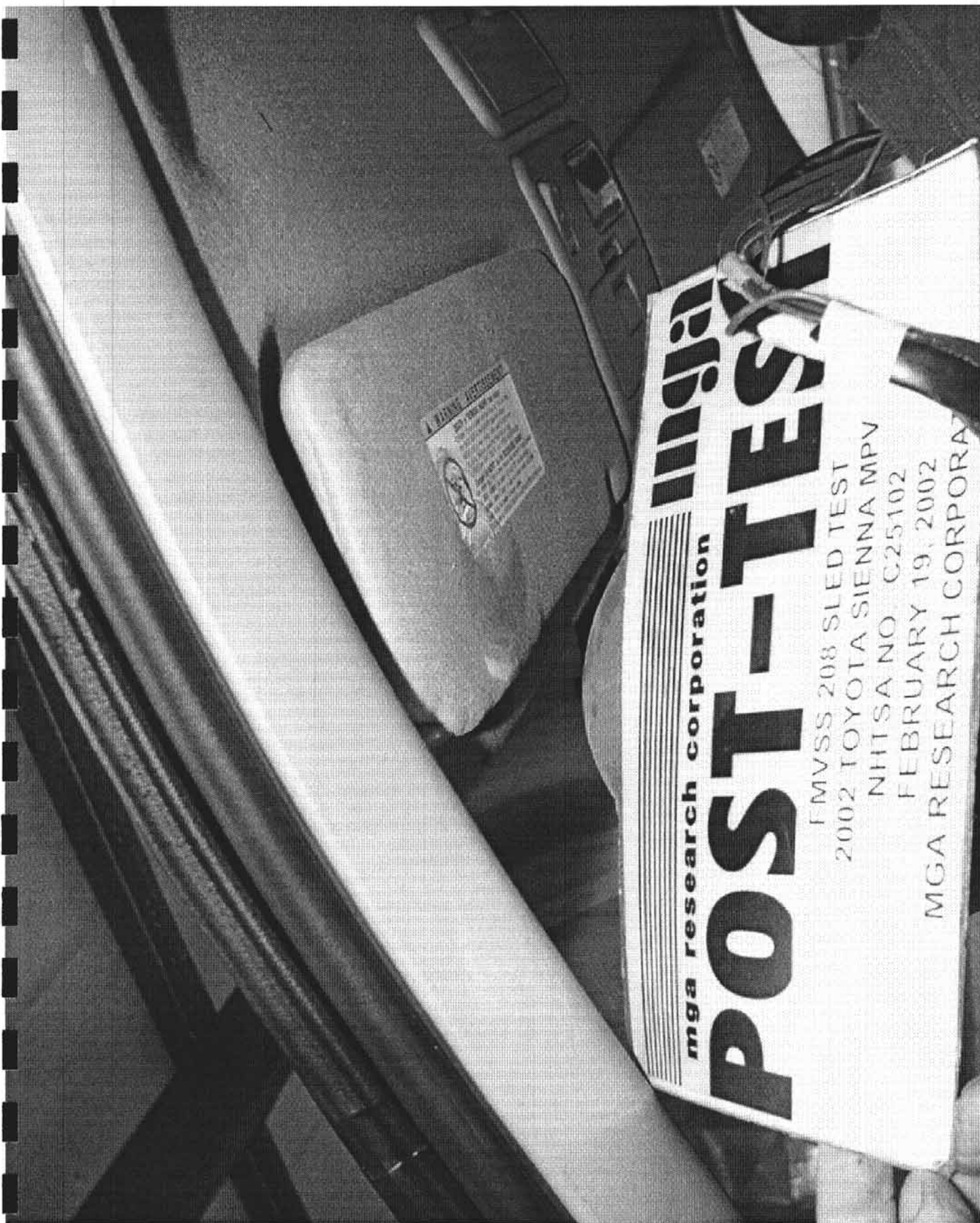


Photo No. A-16 - Post-Test Driver Head Contact View (visor)

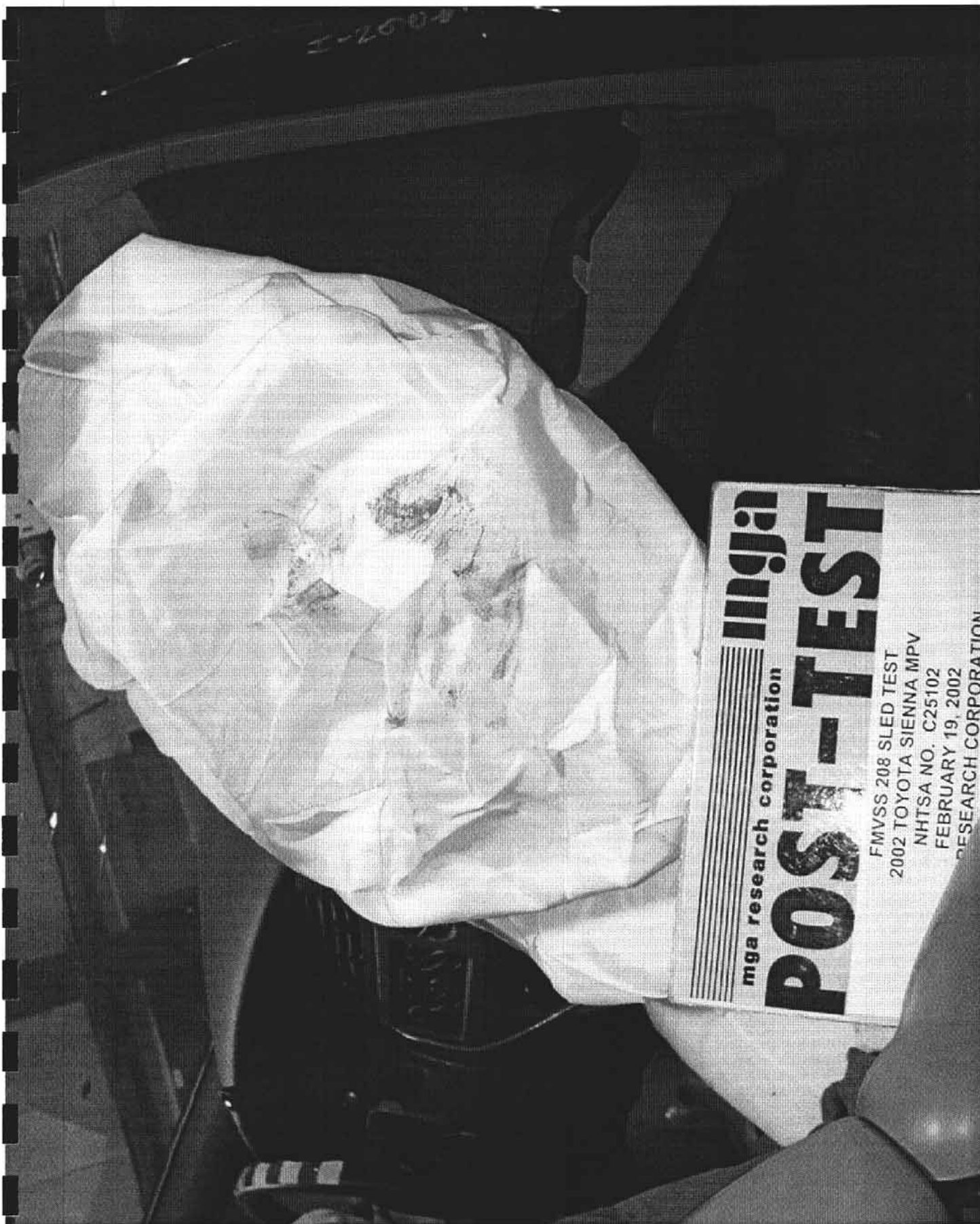


Photo No. A-17 - Post-Test Passenger Dummy Airbag View



Photo No. A-18 - Post-Test Passenger Dummy Head Contact View (windshield)



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



Photo No. A-23 - Pre-Test Driver Seat Position View



Photo No. A-24 - Post-Test Driver Seat Position View

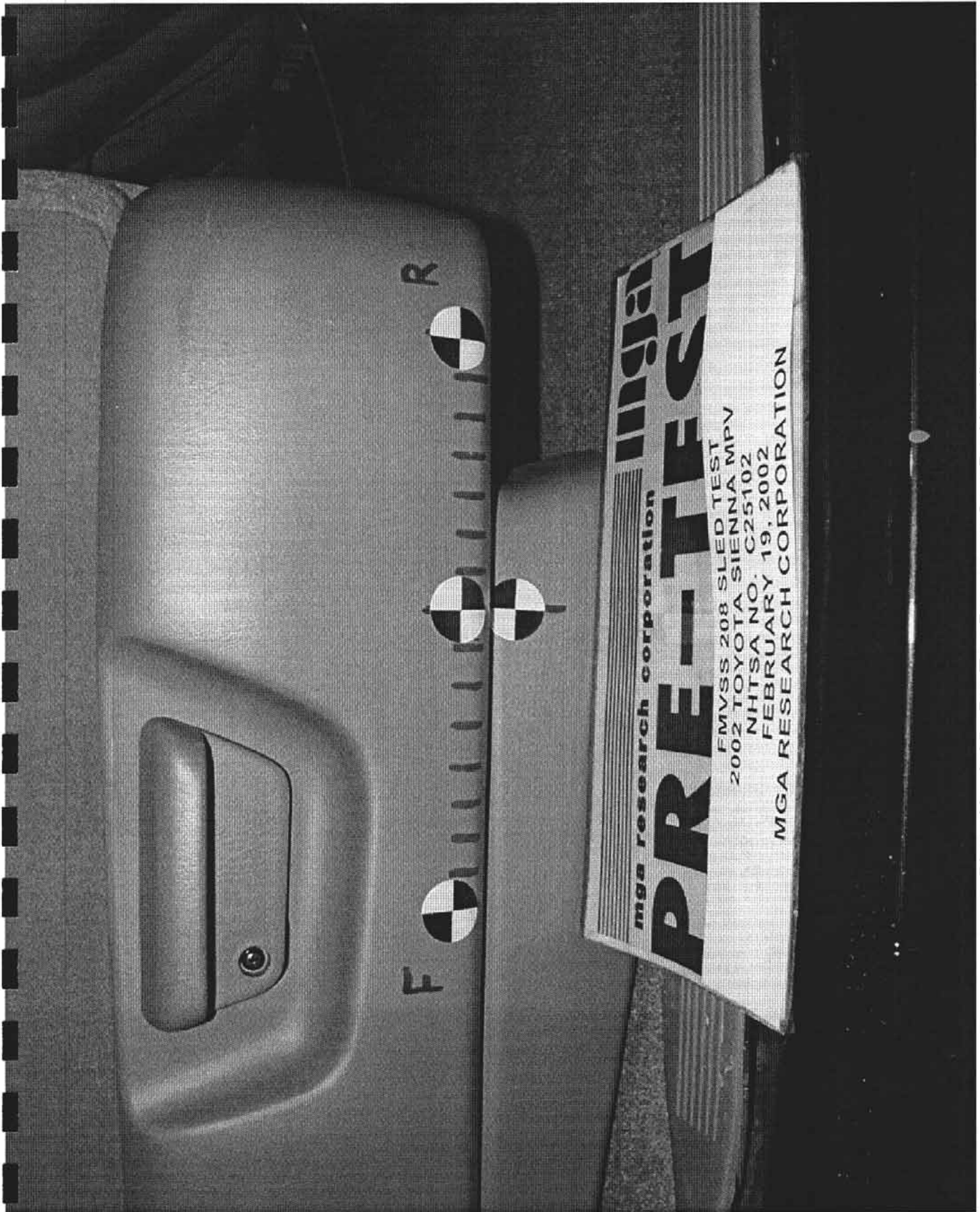


Photo No. A-25 - Pre-Test Passenger Seat Position View

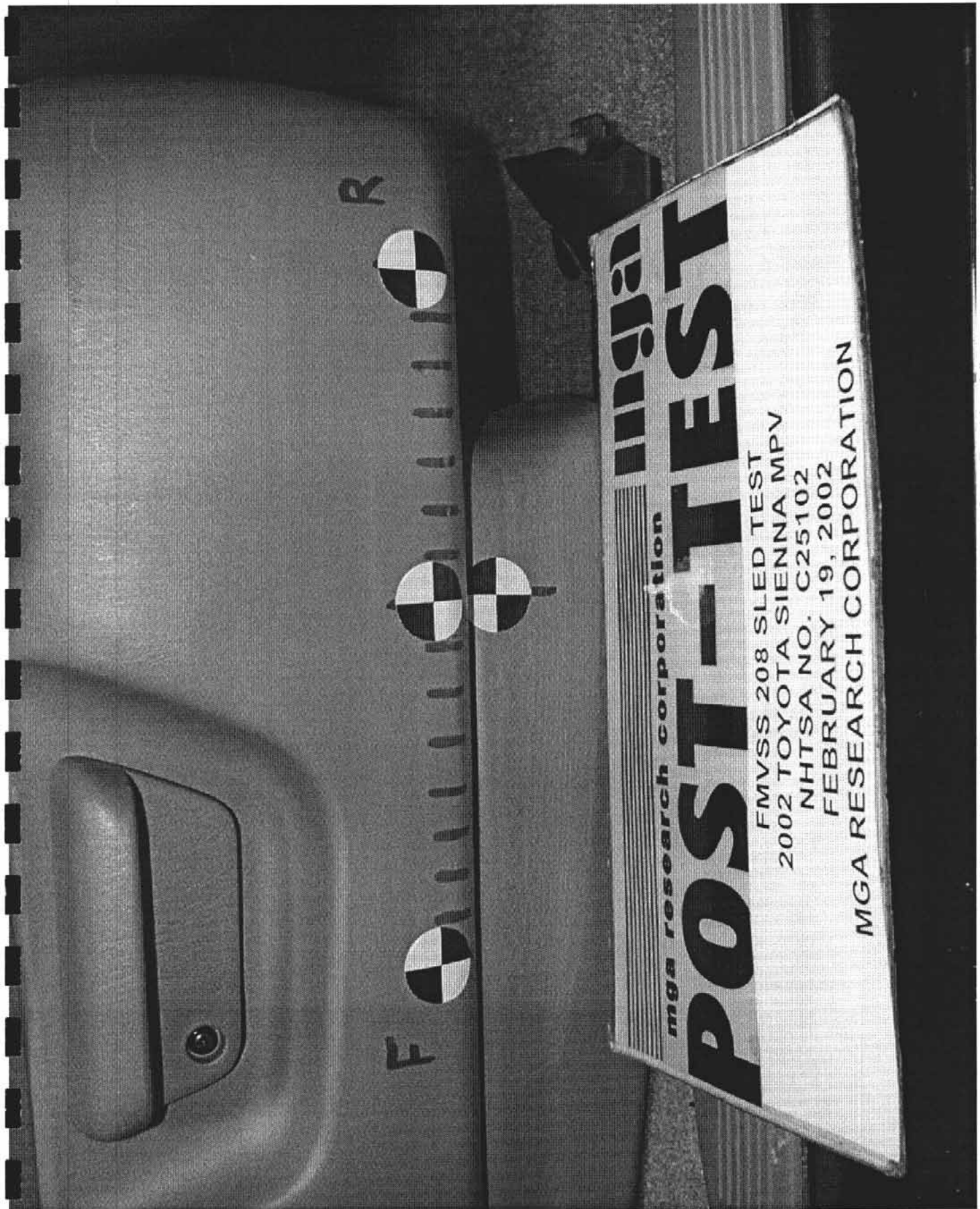


Photo No. A-26 - Post-Test Passenger Seat Position View

MED BY: TOYOTA MOTOR MANUFACTURING-KENTUCKY, INC.
 DATE: 10/01 GVWR: 2380KG (5250LB) WITH P205/70R15 TIRES:
 CWR: FRT 1236KG (2725LB) AT 240KPA (35PSI) COLD
 RR 1236KG (2725LB) AT 240KPA (35PSI) COLD MOTOR
 5 X 6 5JJ RIMS AT APPLICABLE FEDERAL STANDARDS IN EFFECT
 5 X 6 5JJ RIMS AT APPLICABLE STANDARDS IN EFFECT
 THIS VEHICLE CONFORMS TO ALL PREVENTION ABOVE MCL 01-PFSDKA
 VEHICLE SAFETY AND THEFT PREVENTION ABOVE C/IR 800/FAT 1
 ON THE DATE OF MANUFACTURE SHOWN MPV A/TM -01A/ A541E
 413ZF19C92U438443

 NO 98615

VEHICLE CAPACITY WEIGHT [CHARGE MAXIMALE DU VEHICULE]: 526kg (1160 lbs)
OCCUPANT (PERSONNES): TOTAL 7 (FRONT [AVANT] 2, CENTER [CENTRE] 2, REAR [ARRIERE] 3)
RECOMMENDED TIRE SIZE & COLD INFLATION PRESSURE, F1 & R1 [DIMENSION ET PRESSION DE GONFLAGE A FROID DES PNEUS RECOMMANDEES, Av1 & Ar1]: kPa (psi)
• P205/70R15 95S: 240 (35) <VEHICLE CAPACITY WEIGHT [CHARGE MAXIMALE DU VEHICULE] [AVEC 6 PERSONNES A BOARD] • P215/65R15 95S: 220 (32) <UP TO 6 OCCUPANTS 240 (35) <VEHICLE CAPACITY WEIGHT [CHARGE MAXIMALE DU VEHICULE]
COMPACT SPARE TIRE [PNEU DE RECHANGE] COLD TIRE INFLATION PRESSURE [PRESSION DE GONFLAGE A FROID DES PNEUS]: 420kPa (60psi)
TIRE SIZE [DIMENSION DES PNEUS]: T145/80D16
SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION [POUR DE PLUS AMPLES DETAILS, VOIR LE MANUEL DU PROPRIETAIRE]
08011
NG

APPENDIX B
DATA PLOTS

TABLE OF DATA PLOTS

<u>Description</u>	<u>Page No.</u>
Figure B-1 - Sled X Acceleration vs. Time	B-1
Figure B-2 - Sled X Velocity vs Time	B-2
Figure B-3 - Sled X Displacement vs Time	B-3
Figure B-4- Airbag Timing vs. Time	B-4
Figure B-5 - Left Rear Seat Crossmember X Acceleration vs. Time	B-5
Figure B-6 - Right Rear Seat Crossmember X Acceleration vs. Time	B-6
Figure B-7 - Top of Engine X Acceleration vs. Time	B-7
Figure B-8 - Rear Axle X Acceleration vs Time	B-8
Figure B-9 - Driver Head X Acceleration vs. Time	B-9
Figure B-10 - Driver Head Y Acceleration vs. Time	B-10
Figure B-11 - Driver Head Z Acceleration vs. Time	B-11
Figure B-12 - Driver Head Resultant Acceleration vs. Time	B-12
Figure B-13 - Driver Neck Force X vs Time	B-13
Figure B-14 - Driver Neck Force Y vs. Time	B-14
Figure B-15 - Driver Neck Force Z vs. Time	B-15
Figure B-16 - Driver Neck Moment X vs. Time	B-16
Figure B-17 - Driver Neck Moment Y vs. Time	B-17
Figure B-18 - Driver Neck Moment Z vs. Time	B-18
Figure B-19 - Driver Occipital Condyle Moment Y vs Time	B-19
Figure B-20 - Driver Chest X Acceleration vs. Time	B-20
Figure B-21 - Driver Chest Y Acceleration vs. Time	B-21
Figure B-22 - Driver Chest Z Acceleration vs. Time	B-22
Figure B-23 - Driver Chest Resultant Acceleration vs. Time	B-23
Figure B-24 - Driver Chest Compression vs Time	B-24
Figure B-25 - Driver Left Femur Force vs. Time	B-25
Figure B-26 - Driver Right Femur Force vs. Time	B-26
Figure B-27 - Passenger Head X Acceleration vs. Time	B-27
Figure B-28 - Passenger Head Y Acceleration vs. Time	B-28
Figure B-29 - Passenger Head Z Acceleration vs. Time	B-29

TABLE OF DATA PLOTS (Cont.)

<u>Description</u>	<u>Page No.</u>
Figure B-30 - Passenger Head Resultant Acceleration vs. Time	B-30
Figure B-31 - Passenger Neck Force X vs. Time	B-31
Figure B-32 - Passenger Neck Force Y vs. Time	B-32
Figure B-33 - Passenger Neck Force Z vs. Time	B-33
Figure B-34 - Passenger Neck Moment X vs. Time	B-34
Figure B-35 - Passenger Neck Moment Y vs. Time	B-35
Figure B-36 - Passenger Neck Moment Z vs. Time	B-36
Figure B-37 - Passenger Occipital Condyle Moment Y vs. Time	B-37
Figure B-38 - Passenger Chest X Acceleration vs. Time	B-38
Figure B-39 - Passenger Chest Y Acceleration vs. Time	B-39
Figure B-40 - Passenger Chest Z Acceleration vs. Time	B-40
Figure B-41 - Passenger Chest Resultant Acceleration vs. Time	B-41
Figure B-42 - Passenger Chest Compression vs. Time	B-42
Figure B-43 - Passenger Left Femur Force vs. Time	B-43
Figure B-44 - Passenger Right Femur Force vs. Time	B-44

TEST. FMVSS 208 SLED (H02034)

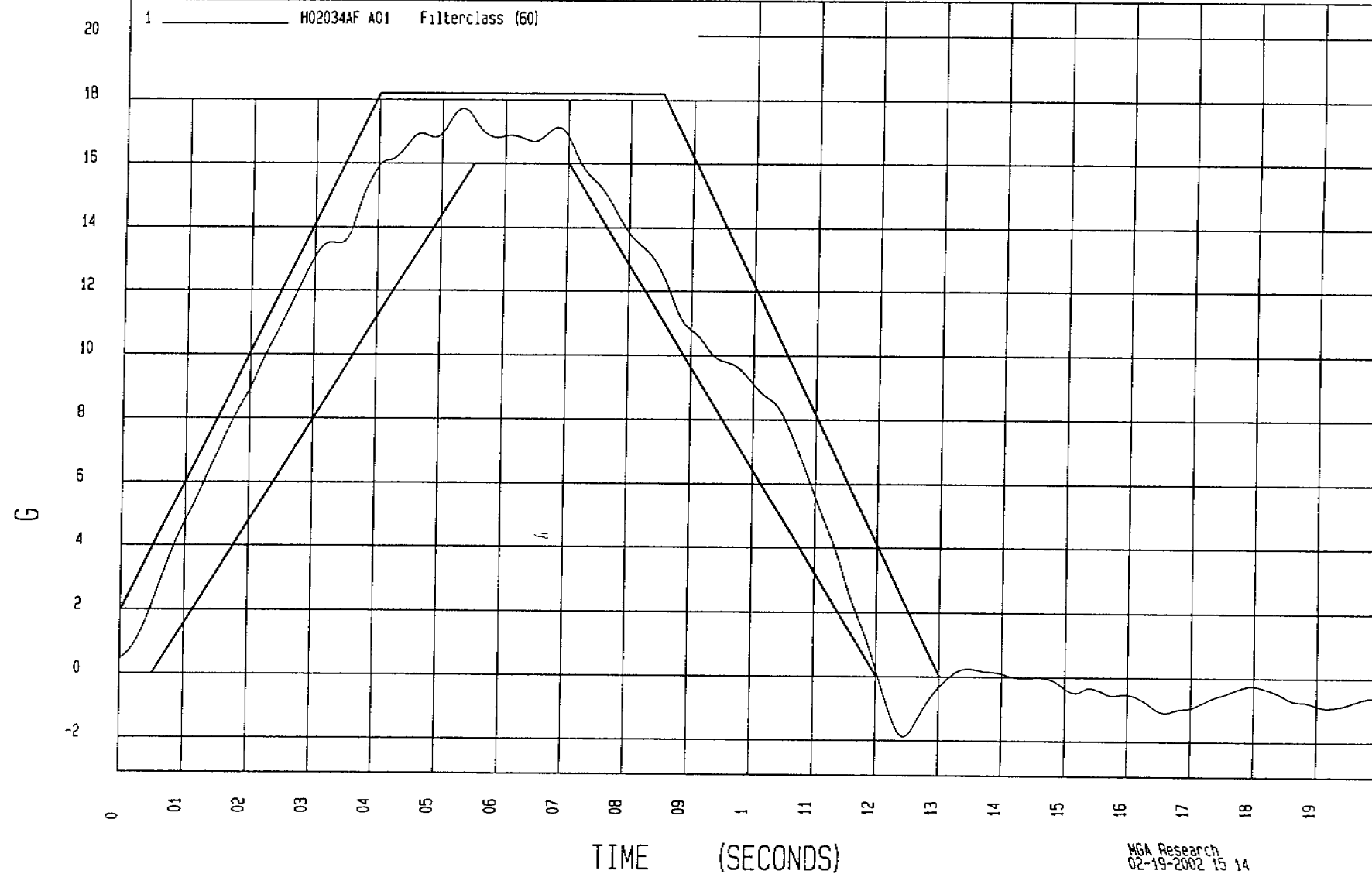
TEST DATE: 02-19-2002

COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -1.88 G at 124.5 msec

Maximum = 17.72 G at 53.2 msec

SLED X ACCELERATION



TEST: FMVSS 208 SLED (H02034)

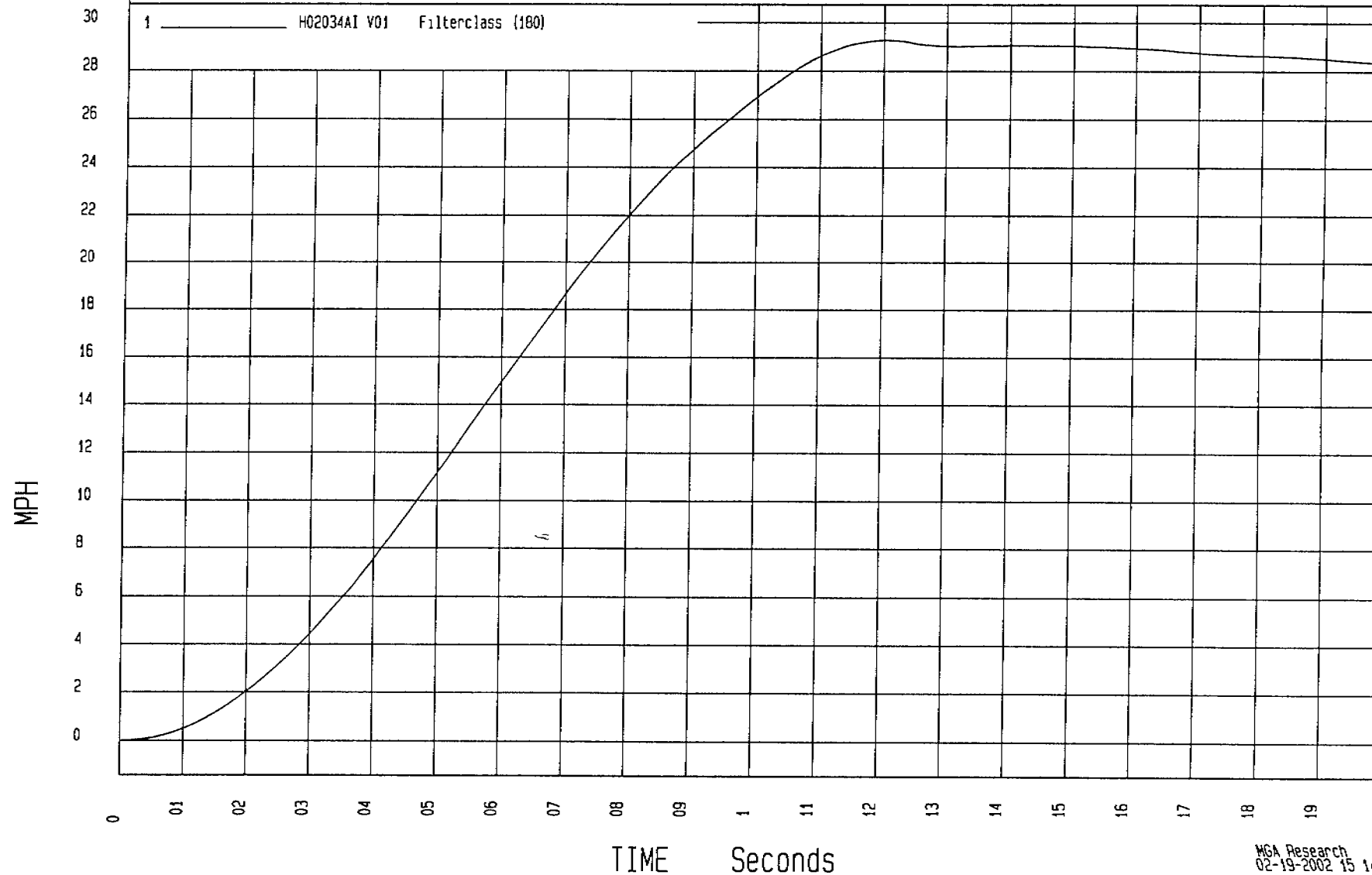
TEST DATE: 02-19-2002

COMPONENT: 2002 TOYOTA SIENNA MPV (C25102)

Minimum = 0 MPH at 0 msec

Maximum = 29.28 MPH at 120 msec

SLED X VELOCITY



TEST FMVSS 208 SLED (H02034)

TEST DATE: 02-19-2002

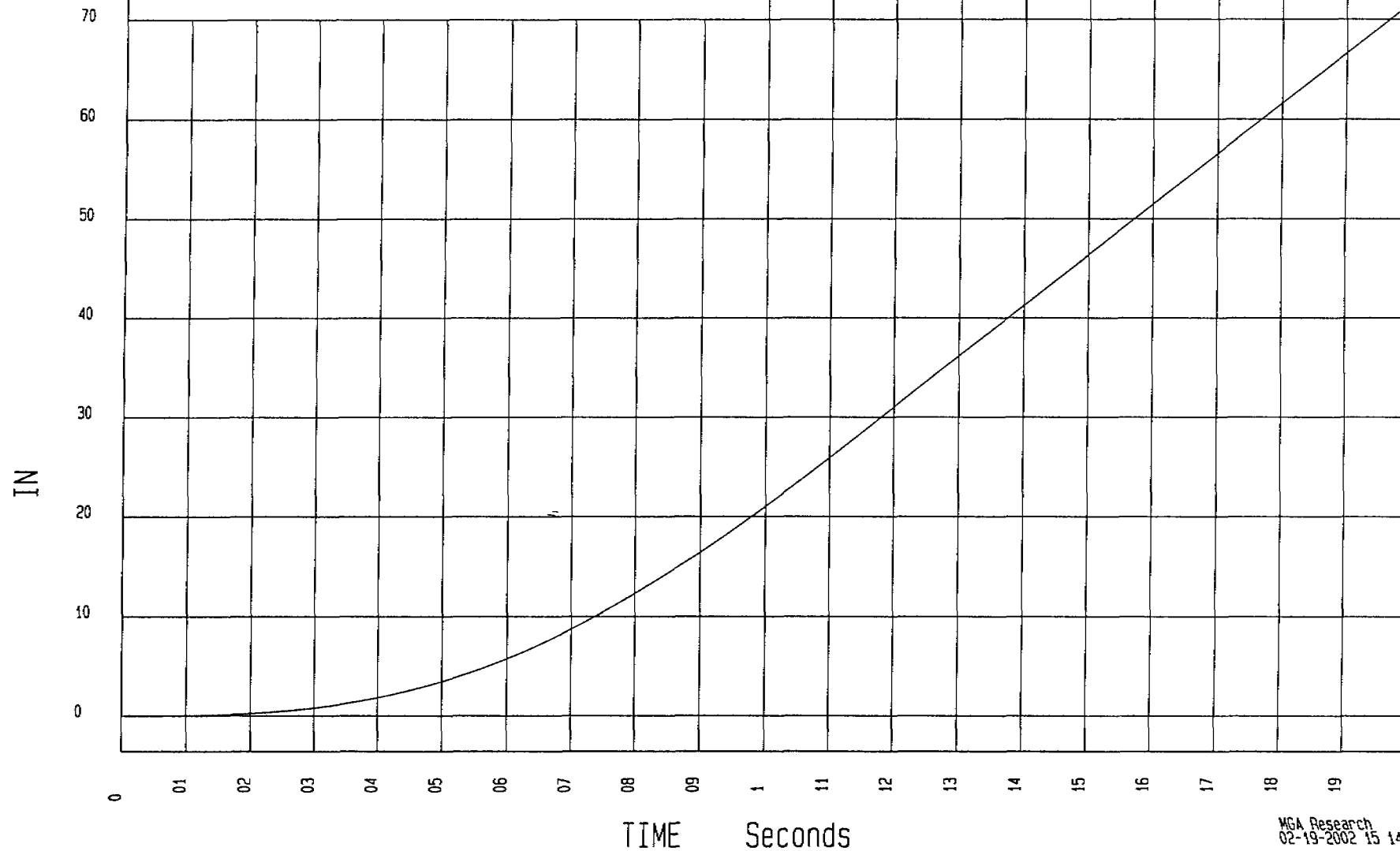
COMPONENT: 2002 TOYOTA SIENNA MPV (C25102)

Minimum = 0 IN at 0 msec

Maximum = 71.59 IN at 200 msec

SLED X DISPLACEMENT

1 _____ H02034AI 001 Filterclass (180)



MGA Research
02-19-2002 15 14

TEST FMVSS 208 SLED (H02034)

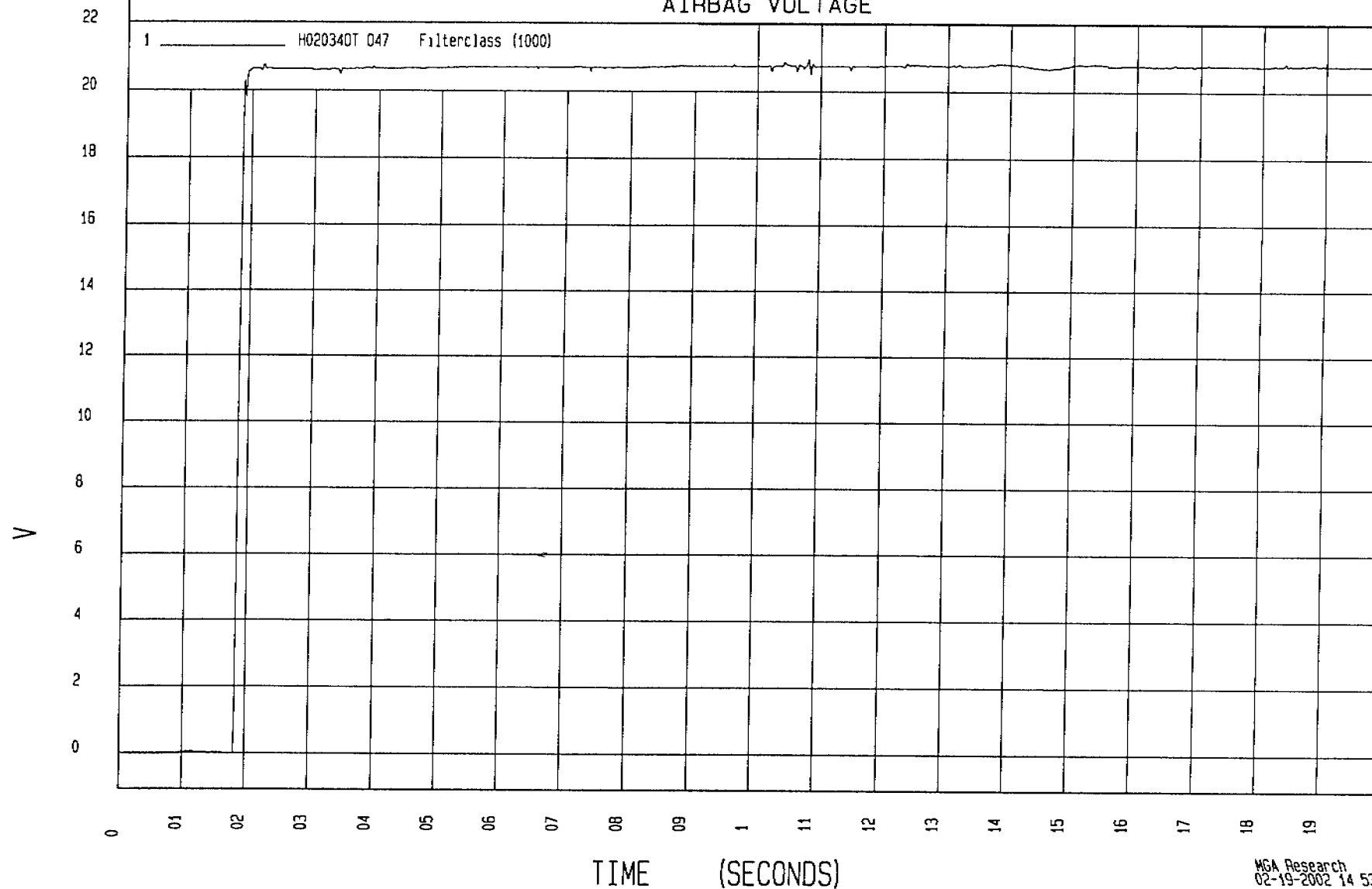
TEST DATE: 02-19-2002

COMPONENT: 2002 TOYOTA SIENNA MPV (C25102)

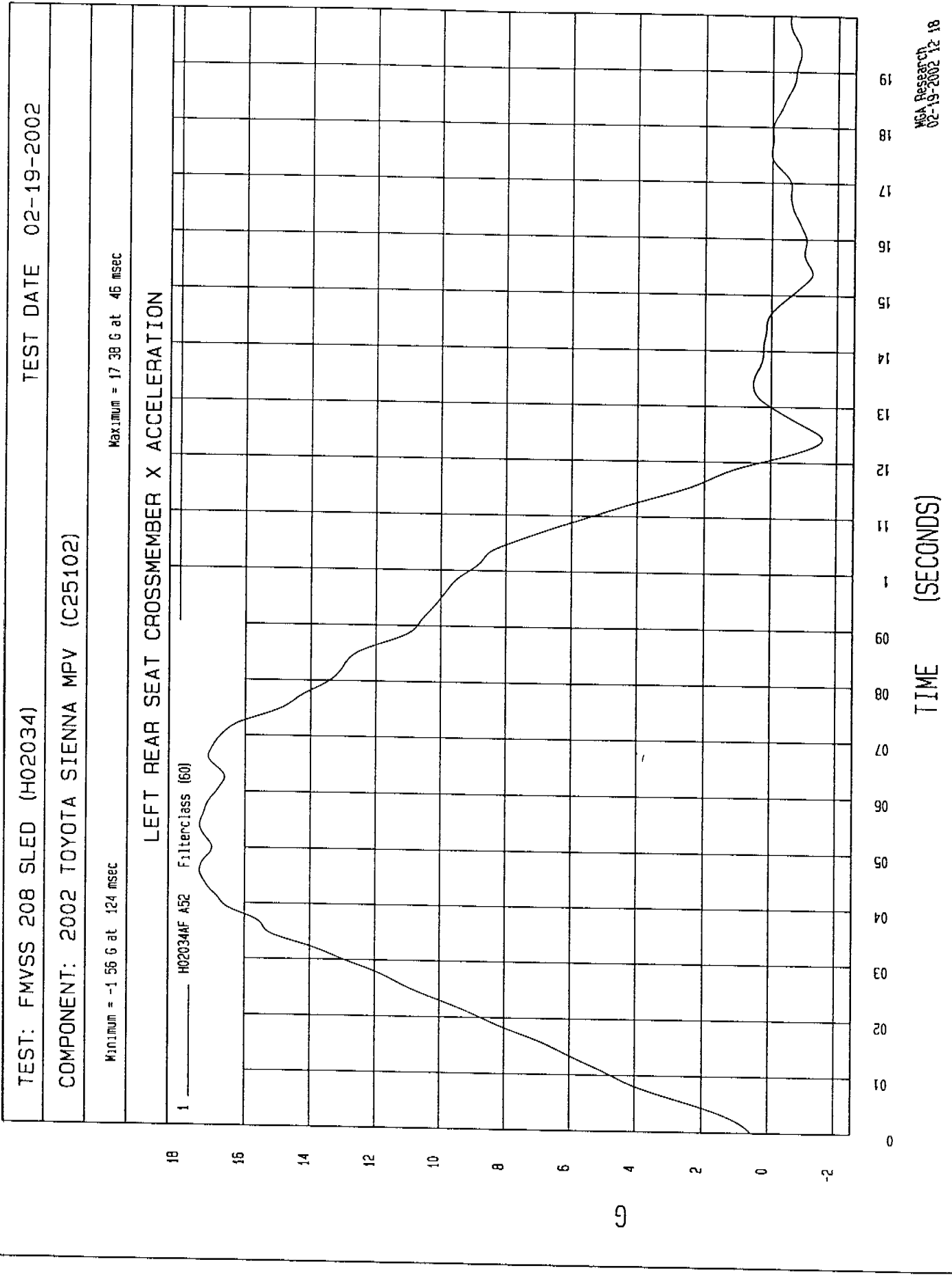
Minimum = -1.95E-02 V at 1 msec

Maximum = 20.98 V at 108 msec

AIRBAG VOLTAGE



MGA Research
02-19-2002 14 53



TEST. FMVSS 208 SLED (H02034)

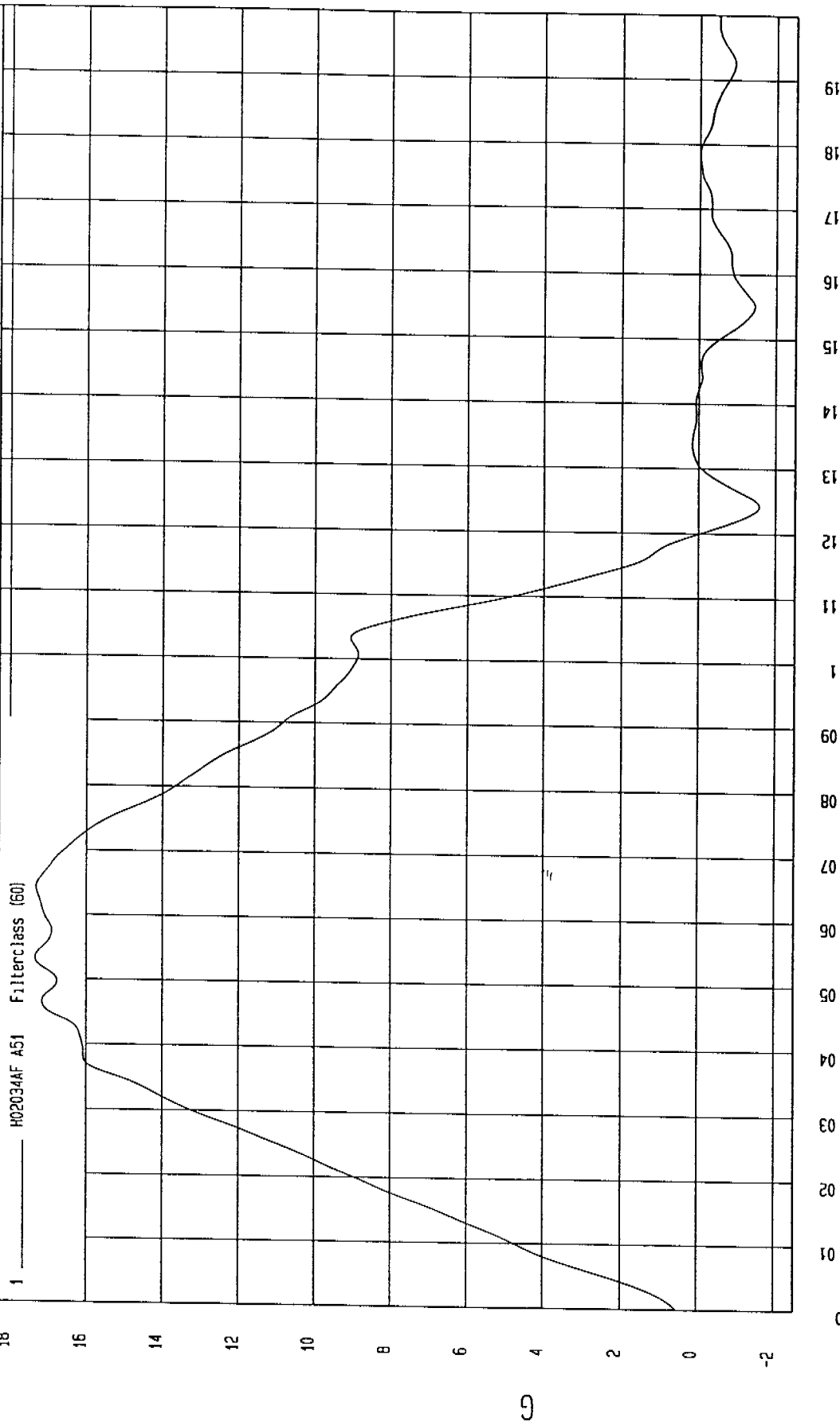
TEST DATE 02-19-2002

COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -1.57 G at 124 msec

Maximum = 17.34 G at 53 msec

RIGHT REAR SEAT CROSSMEMBER X ACCELERATION



WCA Research
02-19-2002 12:18

TIME (SECONDS)

TEST: FMVSS 208 SLED (H02034)

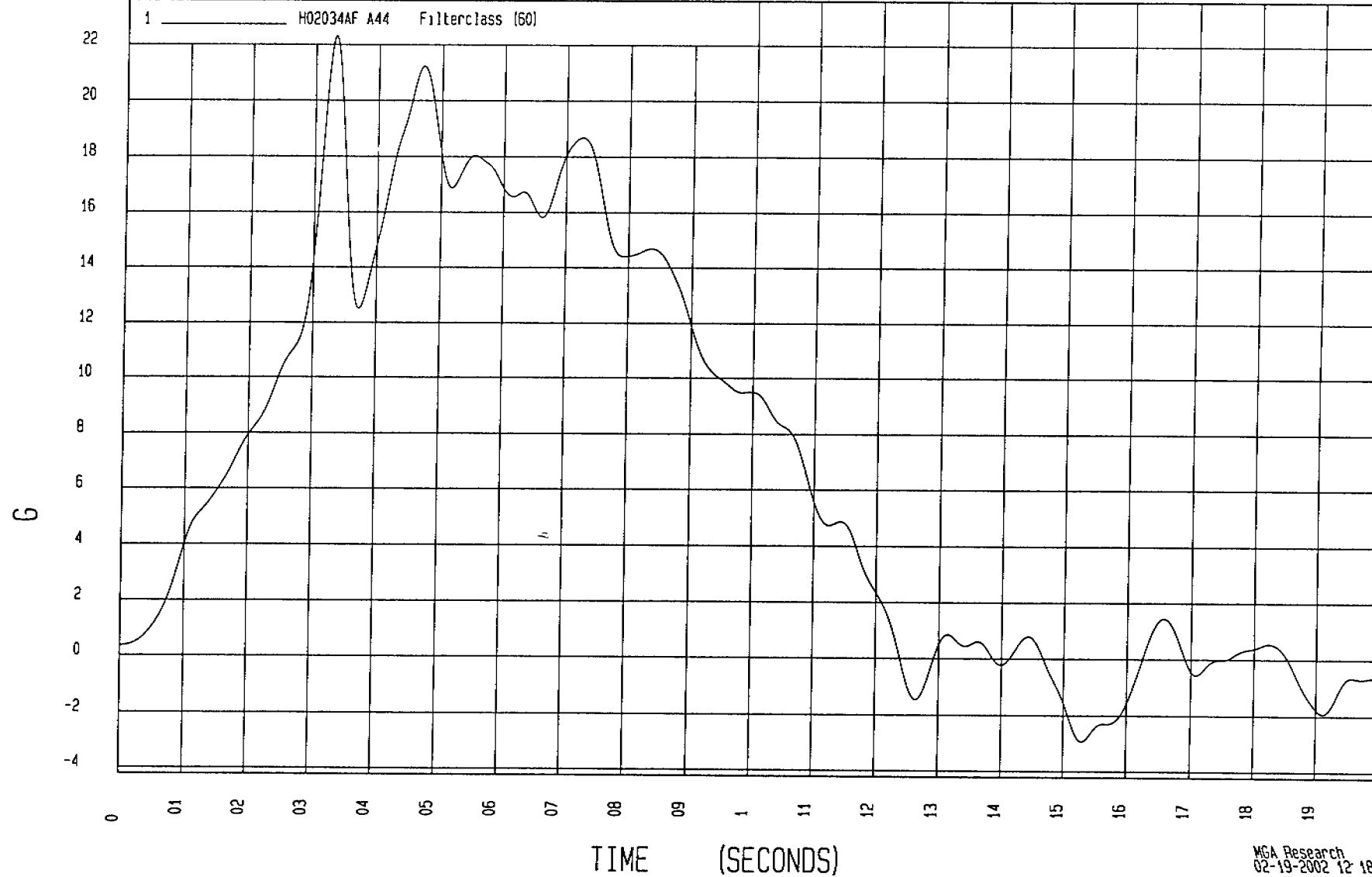
TEST DATE: 02-19-2002

COMPONENT: 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -2.94 G at 153 msec

Maximum = 22.31 G at 33 msec

TOP OF ENGINE X ACCELERATION



TEST FMVSS 208 SLED (H02034)

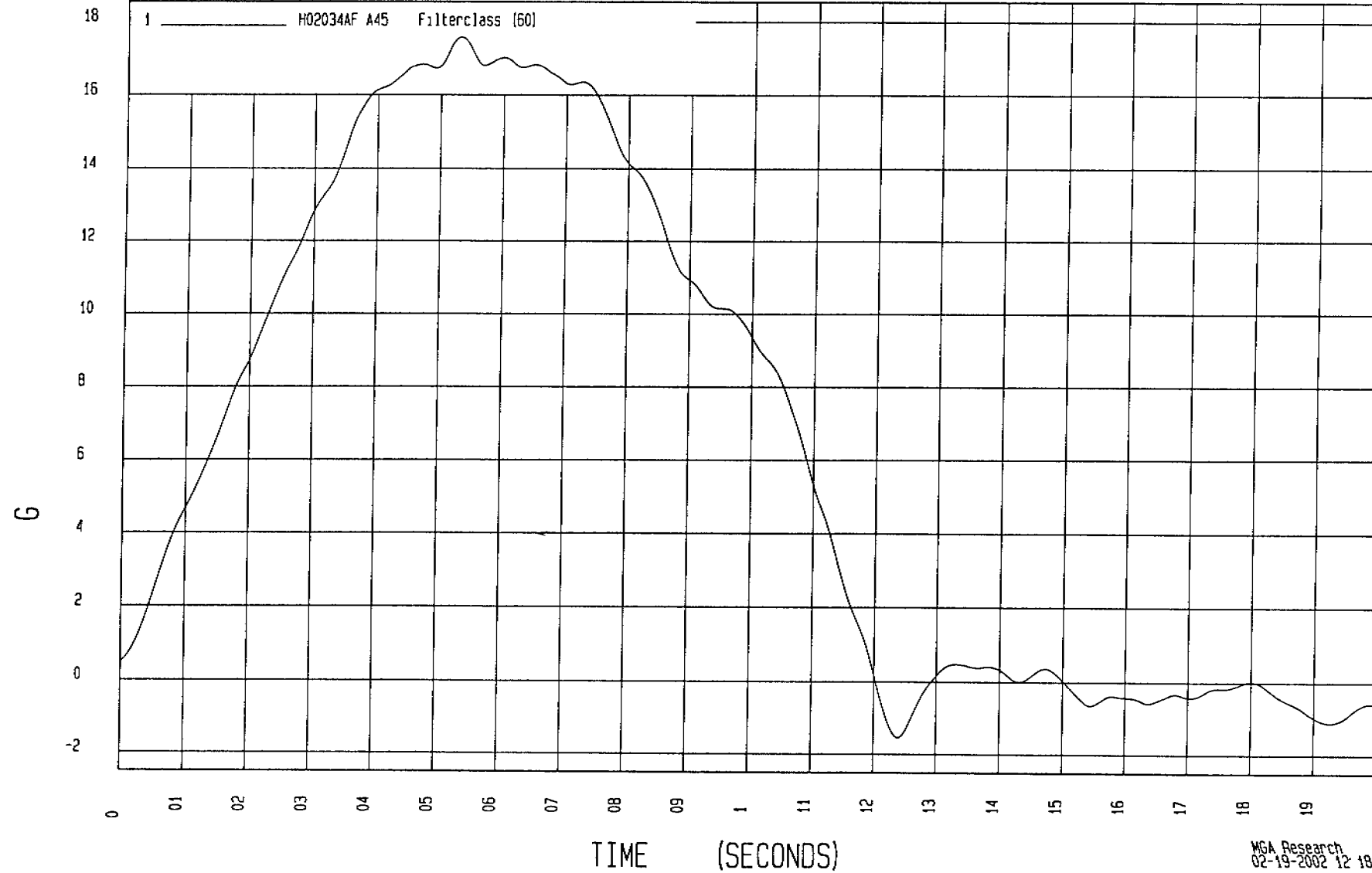
TEST DATE: 02-19-2002

COMPONENT: 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -1.54 G at 124 msec

Maximum = 17.58 G at 53 msec

REAR AXLE X ACCELERATION



TEST FMVSS 208 SLED (H02034)

TEST DATE: 02-19-2002

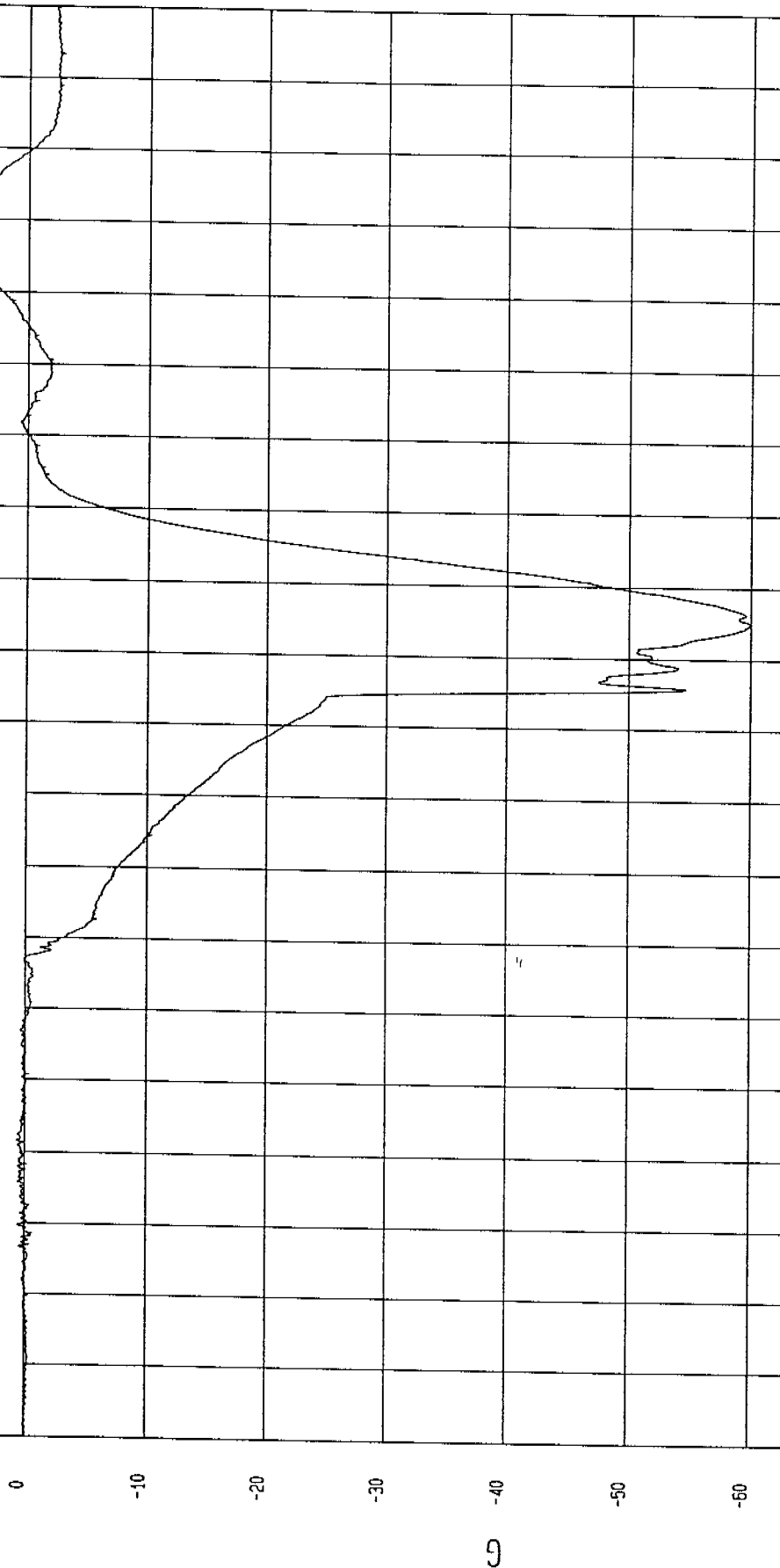
COMPONENT: 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -59.99 G at 115 msec

Maximum = 5.93 G at 171 msec

DRIVER HEAD X ACCELERATION

1 ——— H02034AT A03 Filterclass (1000)



MGA Research
02-19-2002 12:16

TEST DATE: 02-19-2002

TEST: FMVSS 208 SLED (H02034)

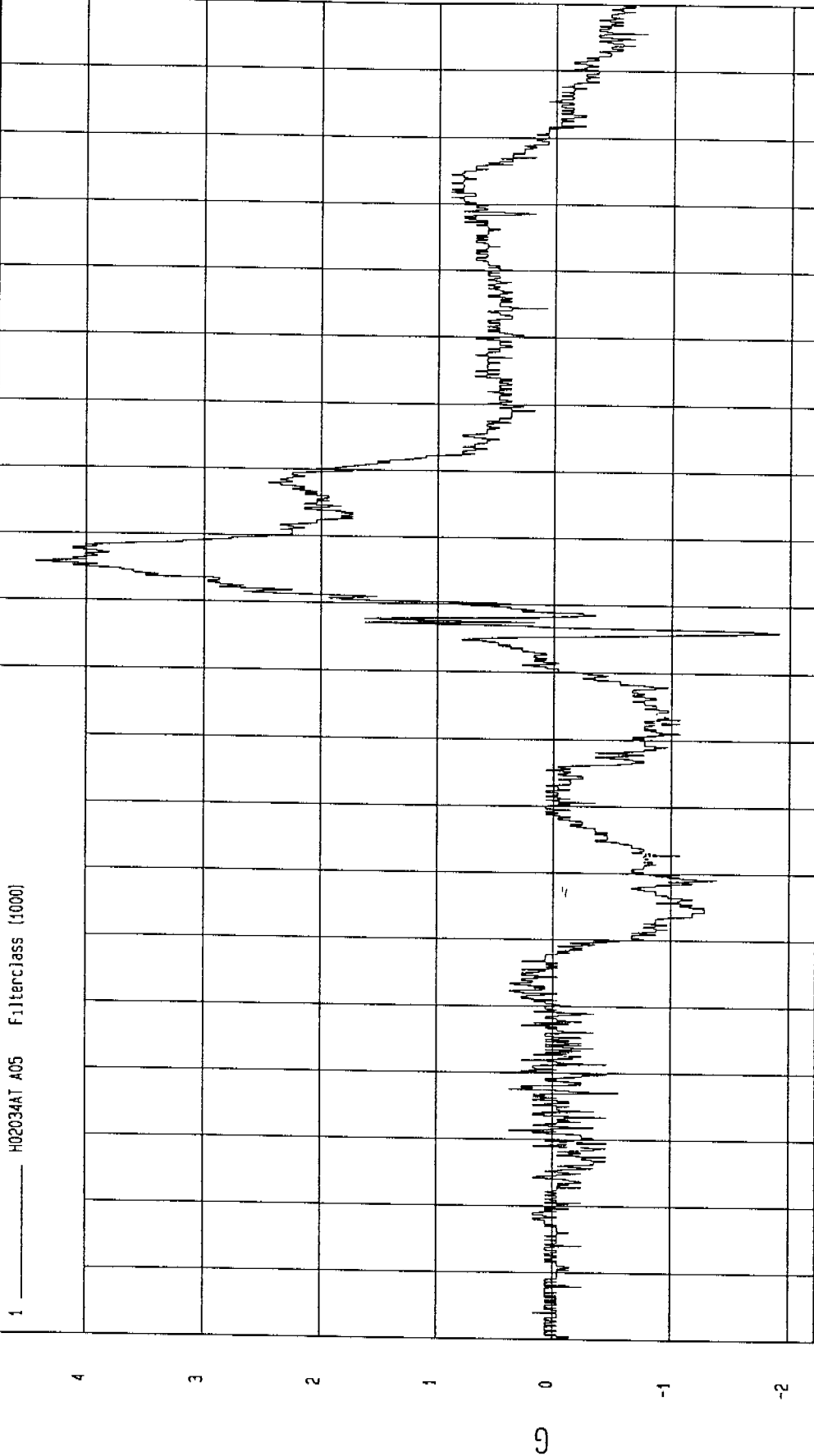
COMPONENT: 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -1.91 G at 105 msec

Maximum = 4.43 G at 116 msec

DRIVER HEAD Y ACCELERATION

1 H02034AT 405 Filterclass (1000)



TEST FMVSS 208 SLED (H02034)

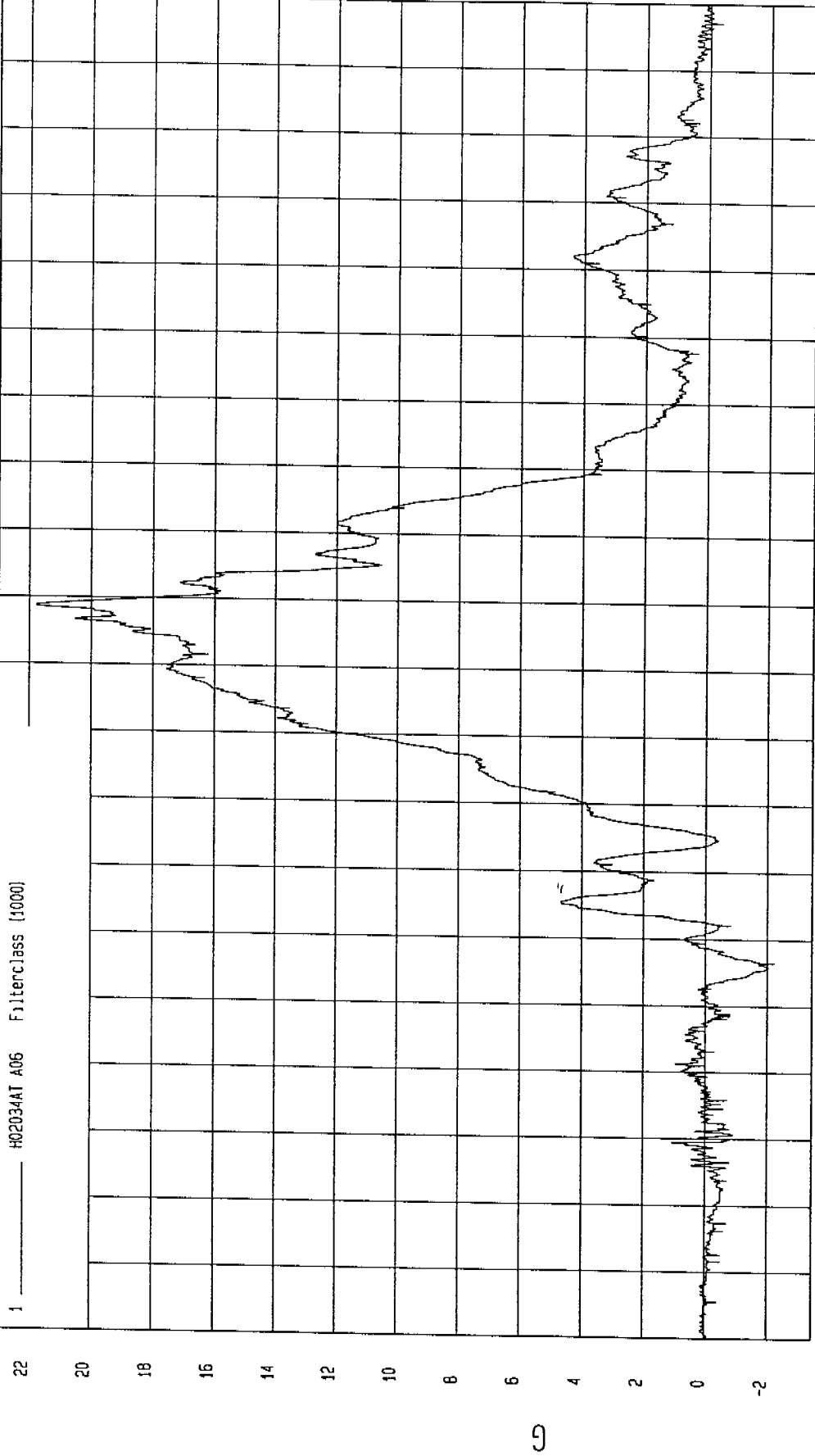
TEST DATE: 02-19-2002

COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -2.24 G at 56 msec

Maximum = 21.78 G at 109 msec

DRIVER HEAD Z ACCELERATION



TEST FMVSS 208 SLED (H02034)

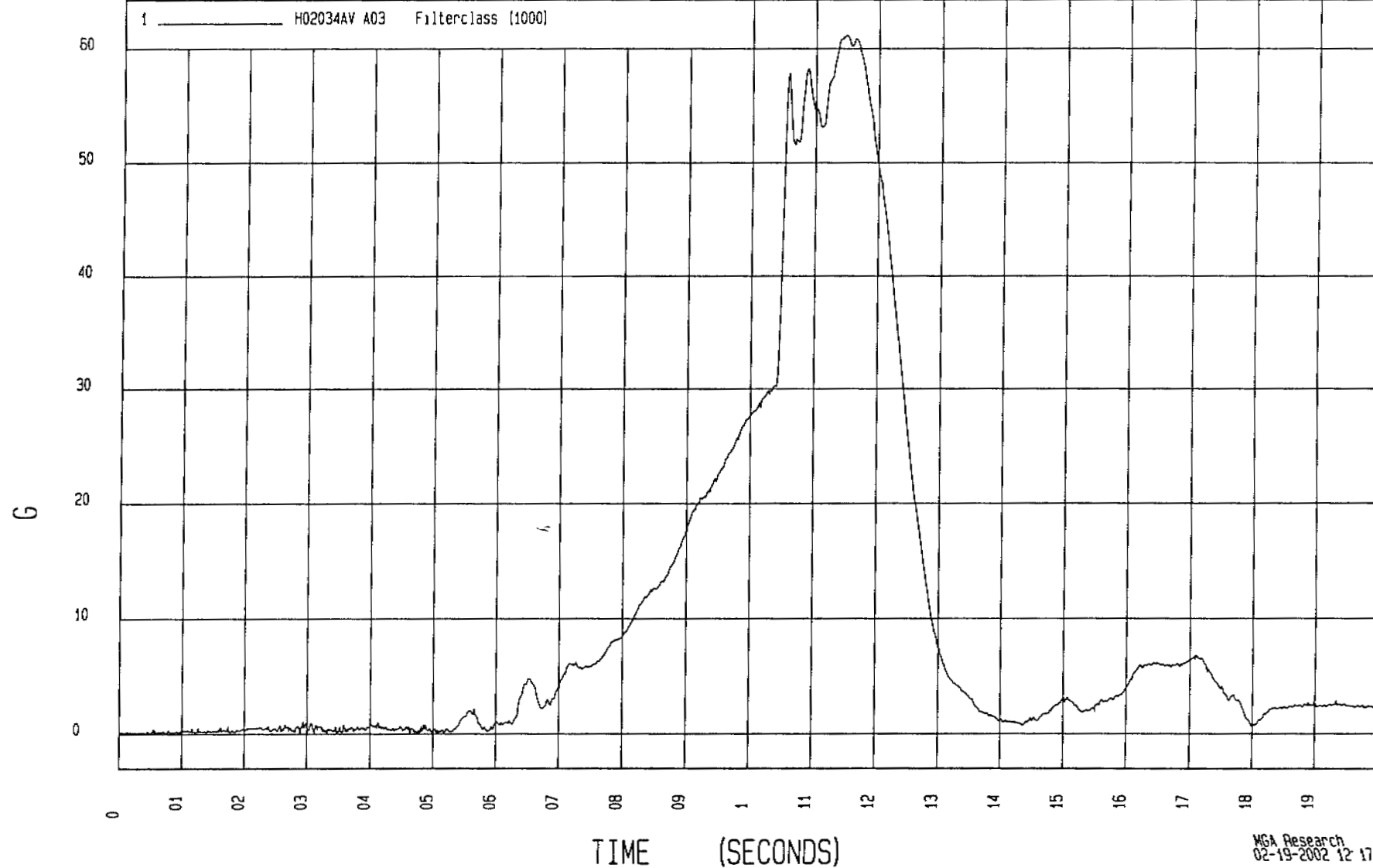
TEST DATE 02-19-2002

COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = 4.74E-02 G at 1 msec

Maximum = 61.2 G at 115 msec

DRIVER HEAD RESULTANT ACCELERATION



TEST. FMVSS 208 SLED (H02034)

TEST DATE 02-19-2002

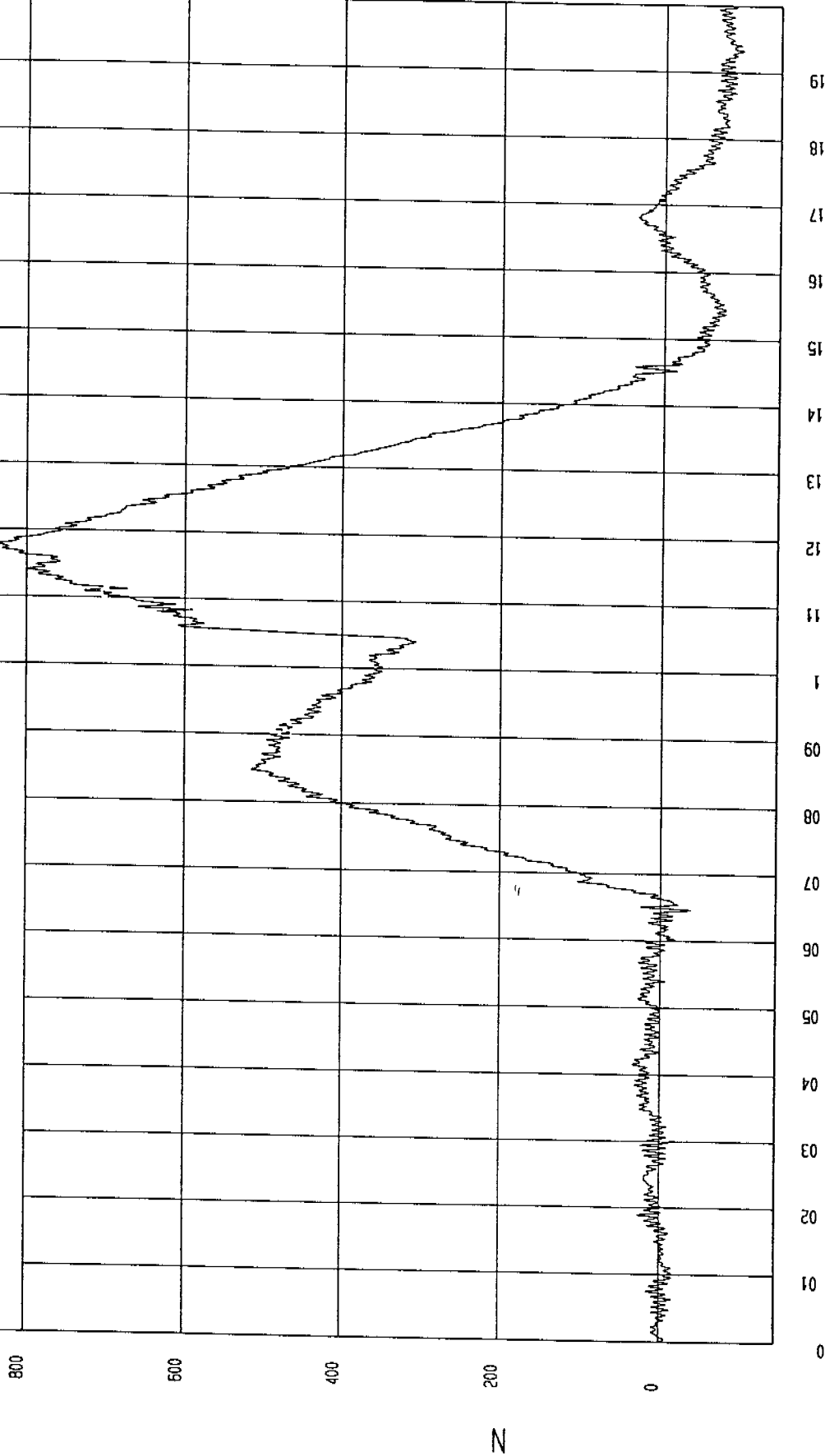
COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -97 45 N at 193 msec

Maximum = 837 35 N at 118 msec

DRIVER NECK FORCE X

1 H02034FT F12 Filterclass (1000)



WCA Research
02-19-2002 12 17

TEST: FMVSS 208 SLED (H02034)

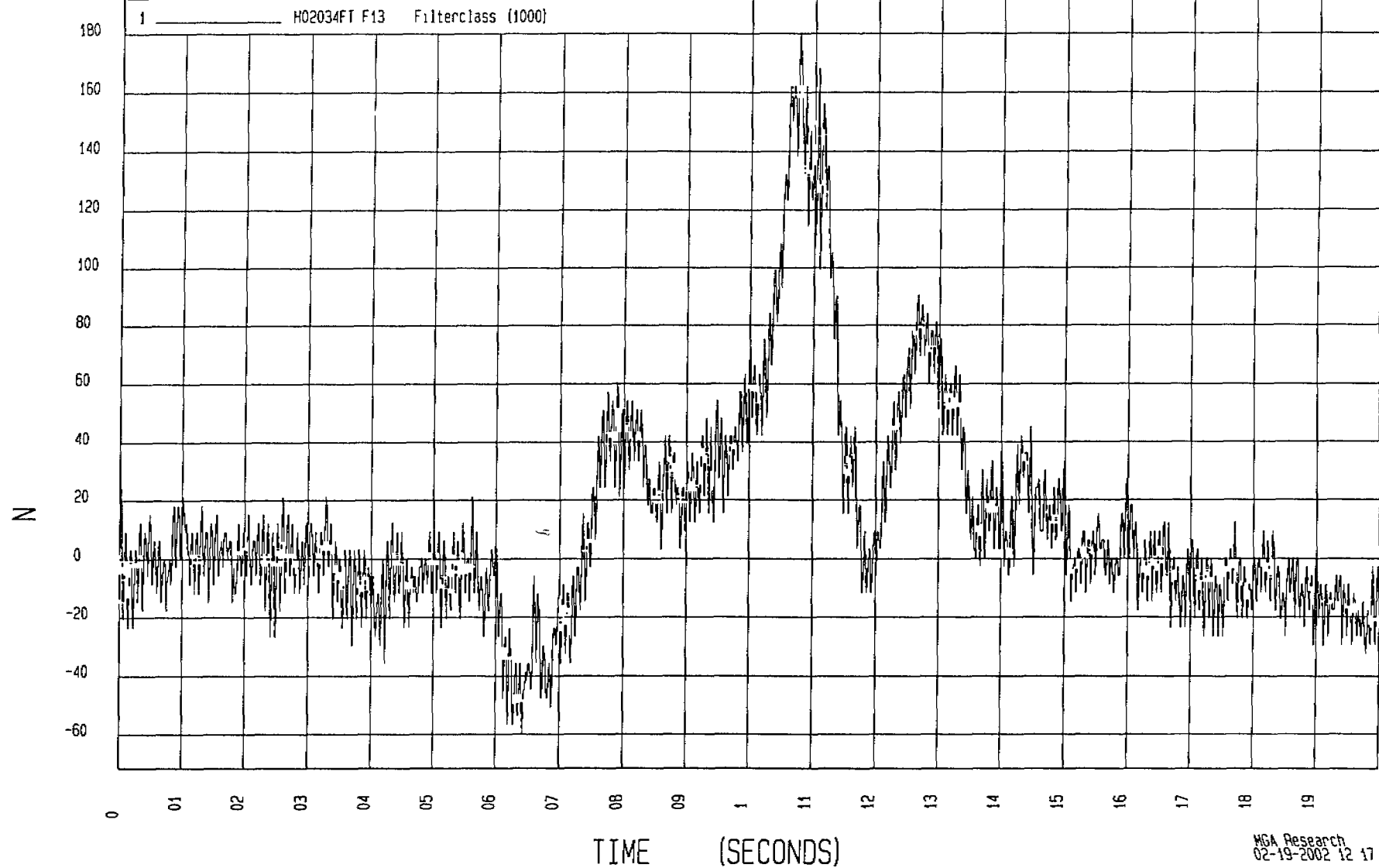
TEST DATE: 02-19-2002

COMPONENT: 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -59.64 N at 64 msec

Maximum = 180.19 N at 108 msec

DRIVER NECK FORCE Y



TEST. FMVSS 208 SLED (H02034)

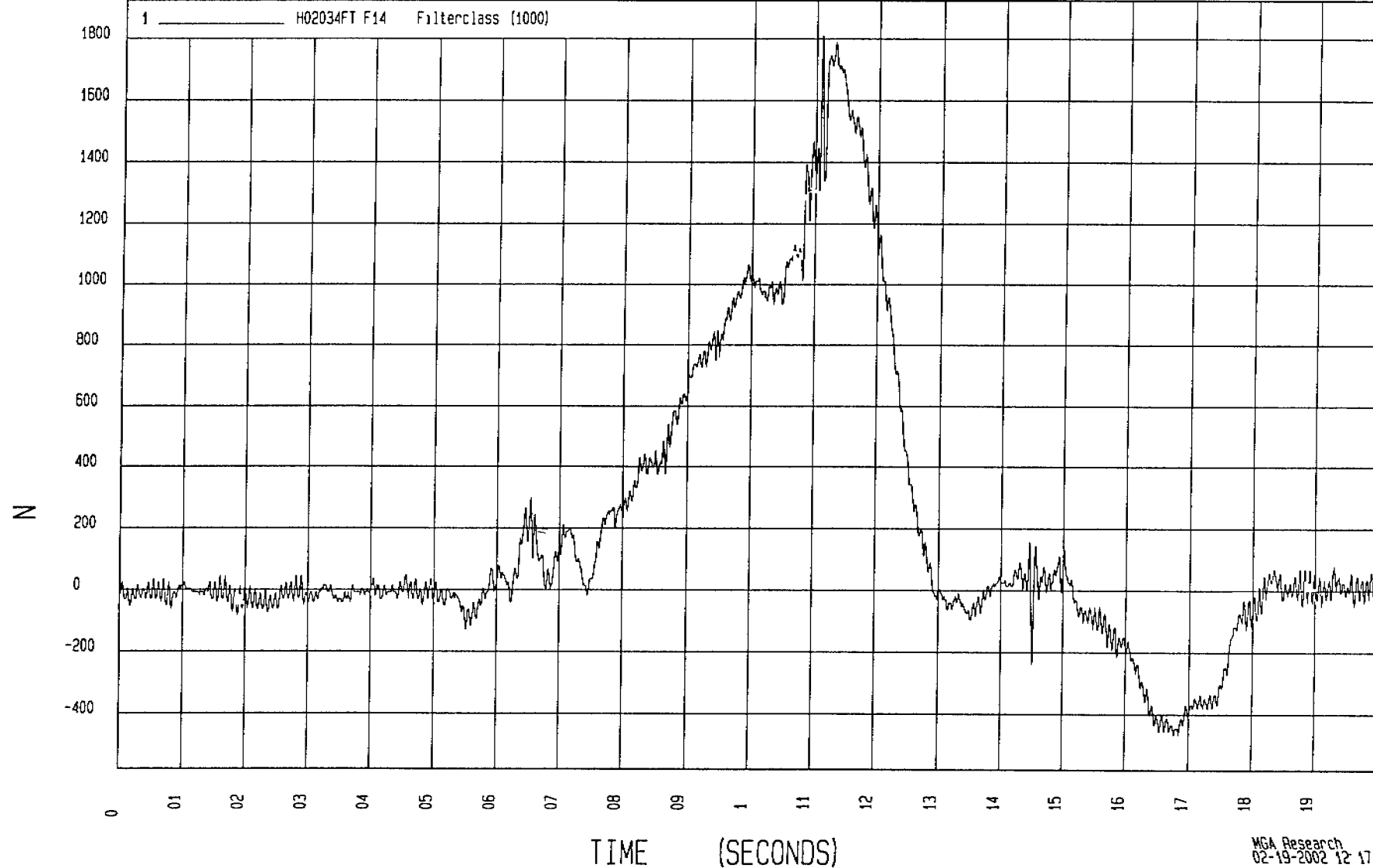
TEST DATE 02-19-2002

COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -467.59 N at 168 msec

Maximum = 1810.8 N at 111 msec

DRIVER NECK FORCE Z



TEST FMVSS 208 SLED (H02034)

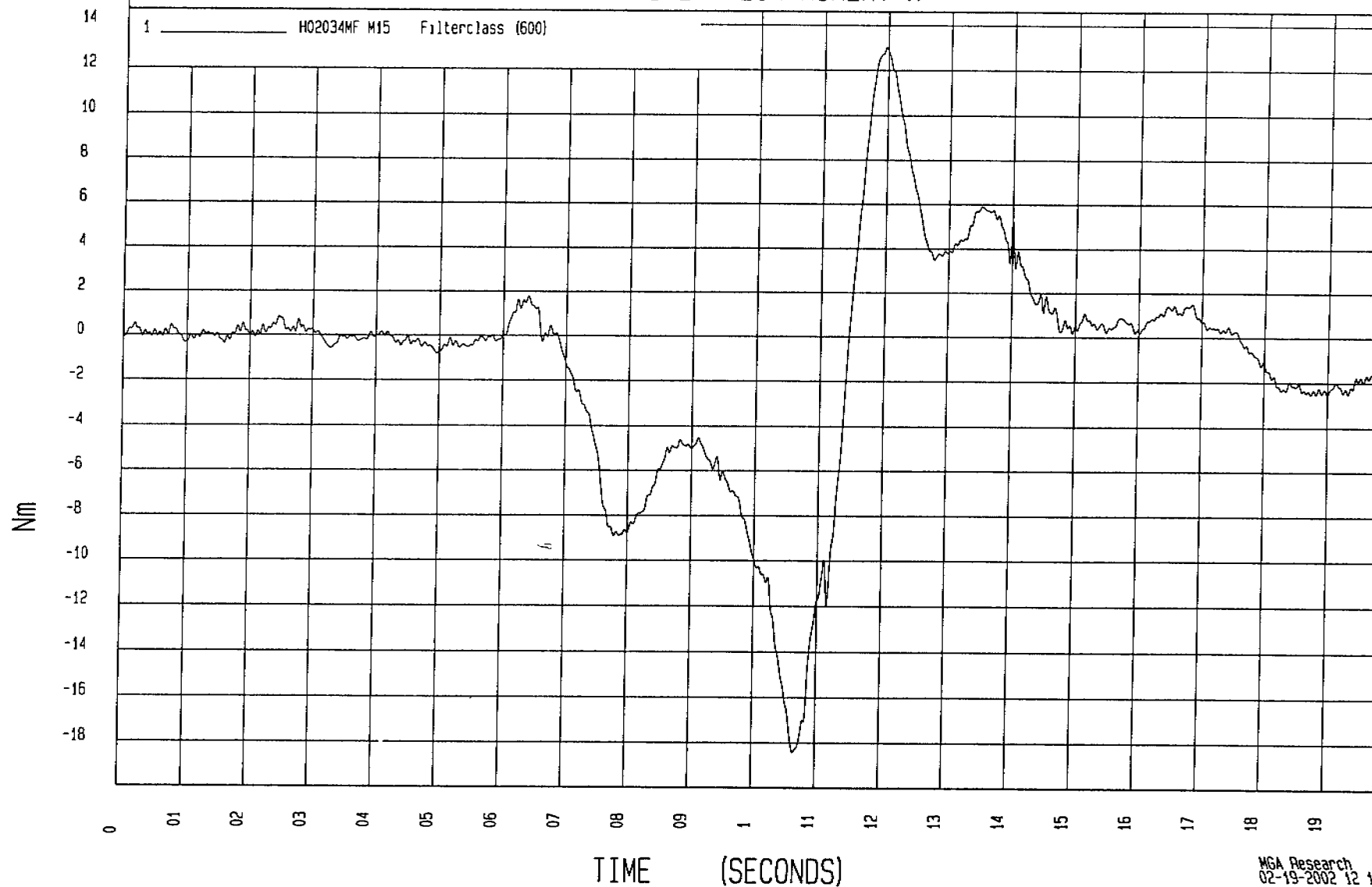
TEST DATE 02-19-2002

COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -18.42 Nm at 106 msec

Maximum = 13.04 Nm at 120 msec

DRIVER NECK MOMENT X



TEST. FMVSS 208 SLED (H02034)

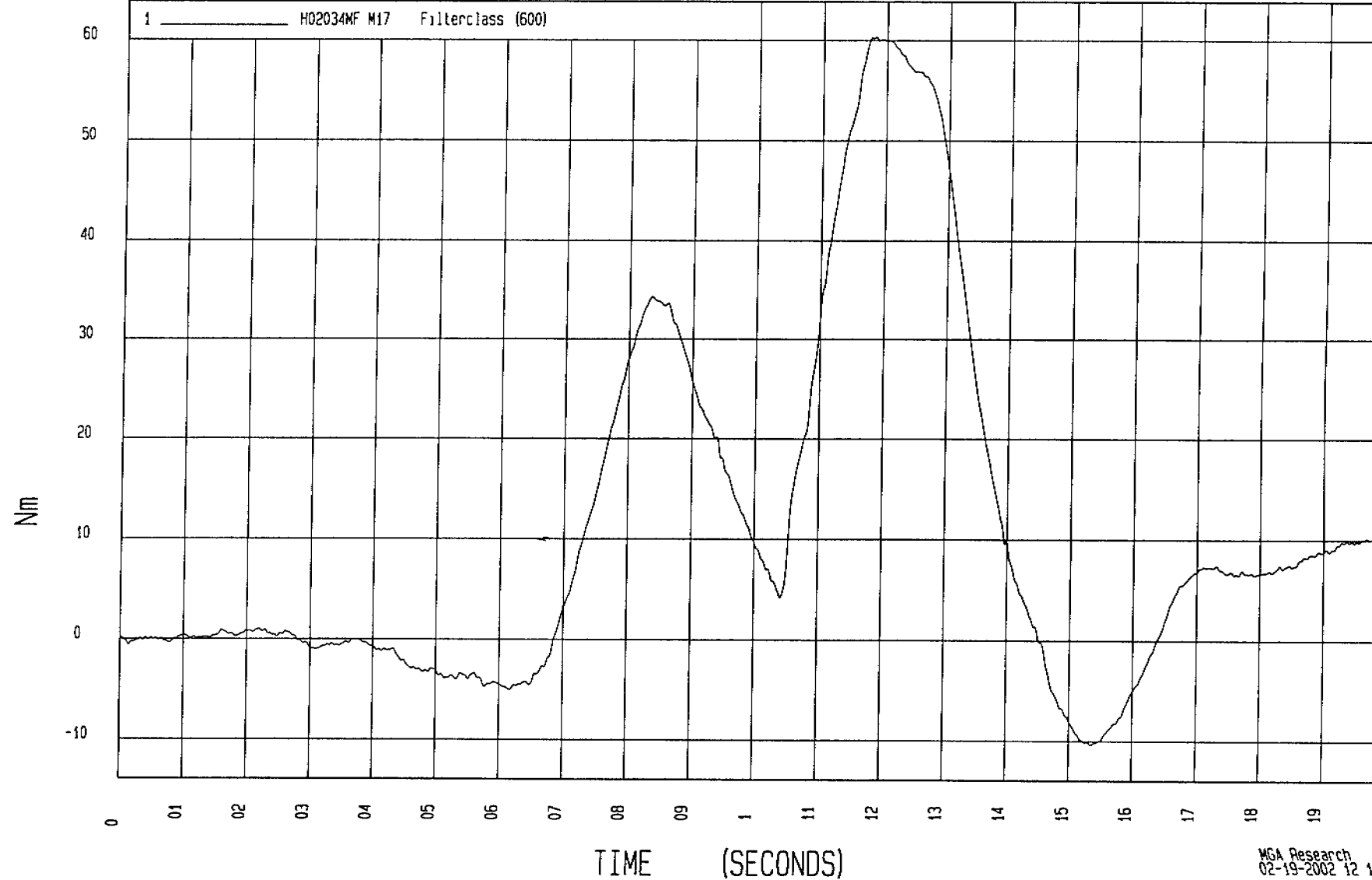
TEST DATE 02-19-2002

COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -10.38 Nm at 154 msec

Maximum = 60.33 Nm at 118 msec

DRIVER NECK MOMENT Y



TEST: FMVSS 208 SLED (H02034)

TEST DATE: 02-19-2002

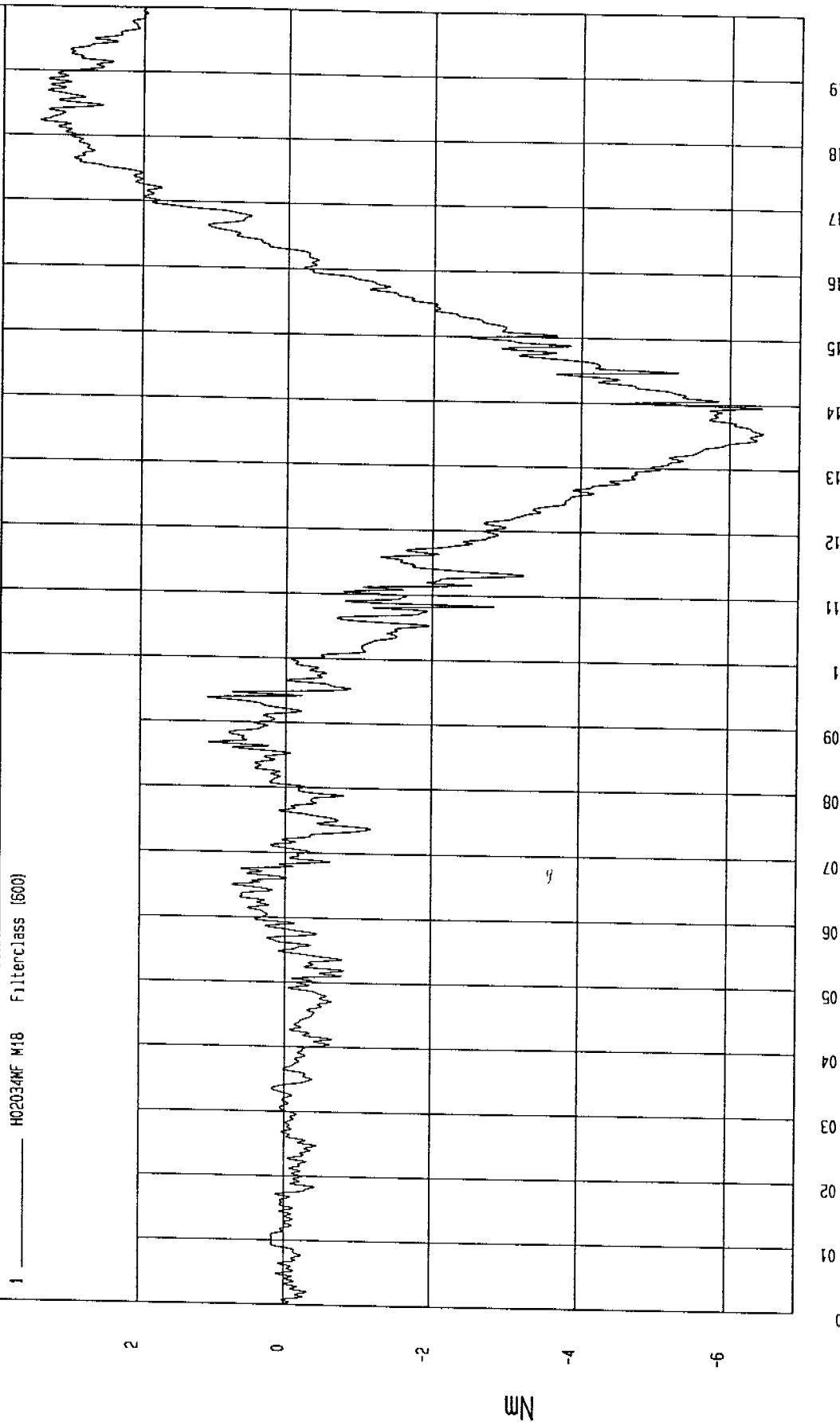
COMPONENT: 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -6.45 Nm at 136 msec

Maximum = 3.39 Nm at 182 msec

DRIVER NECK MOMENT Z

1 ——— H02034MF M18 Filterclass (600)

MGA Research
02-19-2002 12:17

TEST: FMVSS 208 SLED (H02034)

TEST DATE: 02-19-2002

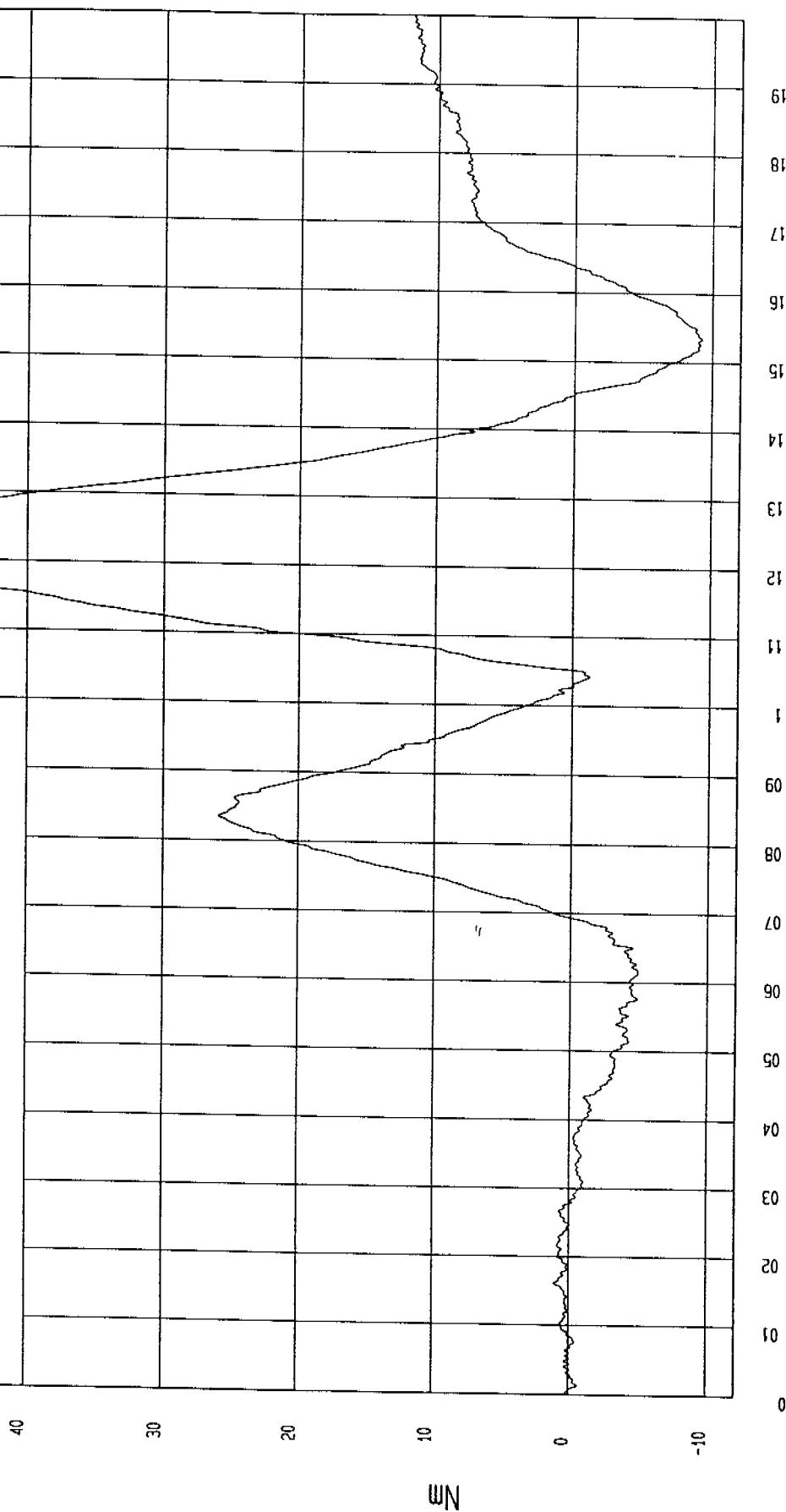
COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -9.25 Nm at 153 msec

Maximum = 46.74 Nm at 121 msec

DRIVER OCCIPITAL CONDYLE MOMENT Y

1 H02034M0 M17 Filterclass (600)

MGA Research
02-19-2002 12 21

TIME (SECONDS)

TEST FMVSS 208 SLED (H02034)

TEST DATE: 02-19-2002

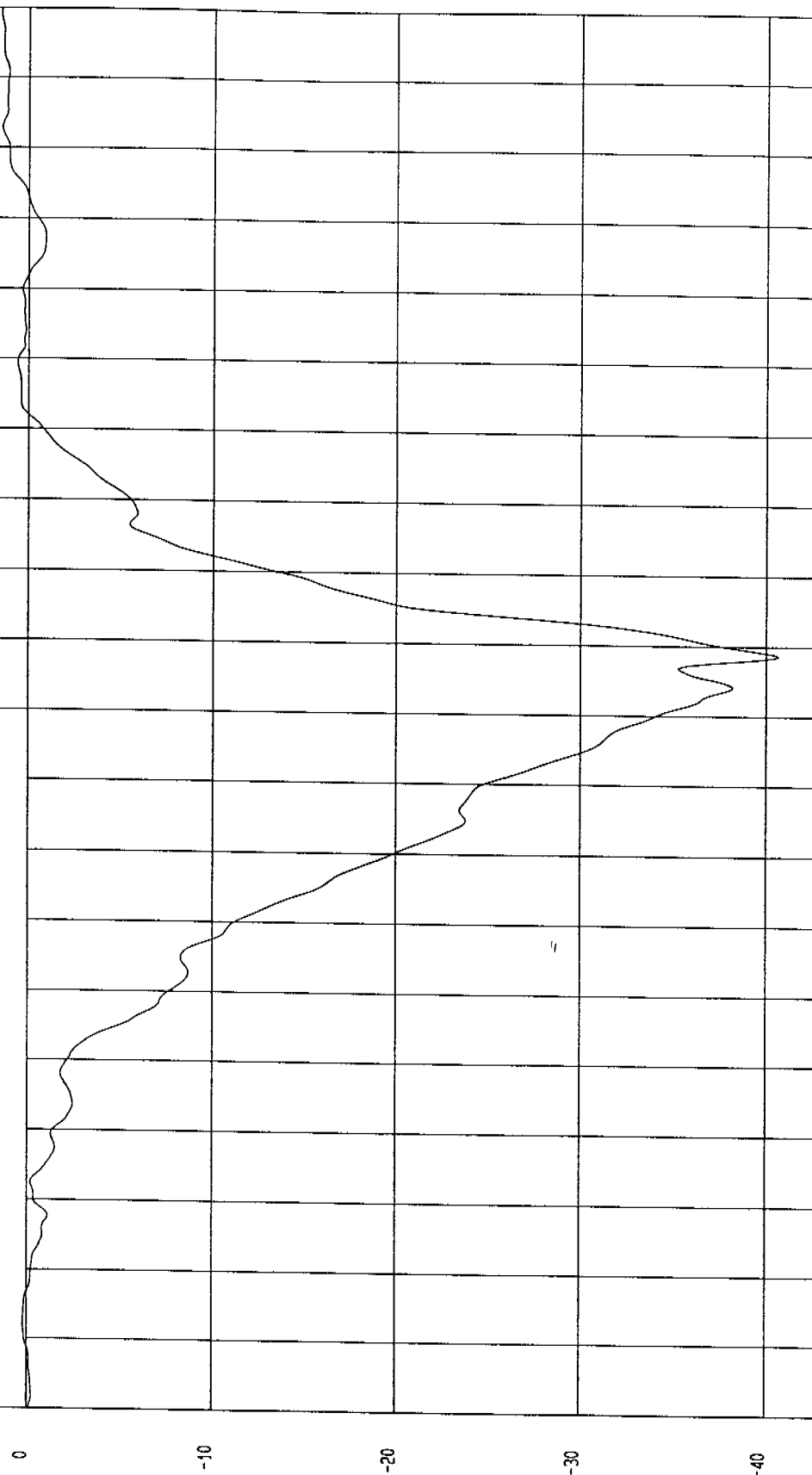
COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -40.65 G at 109 msec

Maximum = 1.48 G at 199 msec

DRIVER CHEST X ACCELERATION

1 H02034AF A21 Filterclass (180)



MCA Research
02-19-2002 12:17

TIME (SECONDS)

TEST FMVSS 208 SLED (H02034)

TEST DATE: 02-19-2002

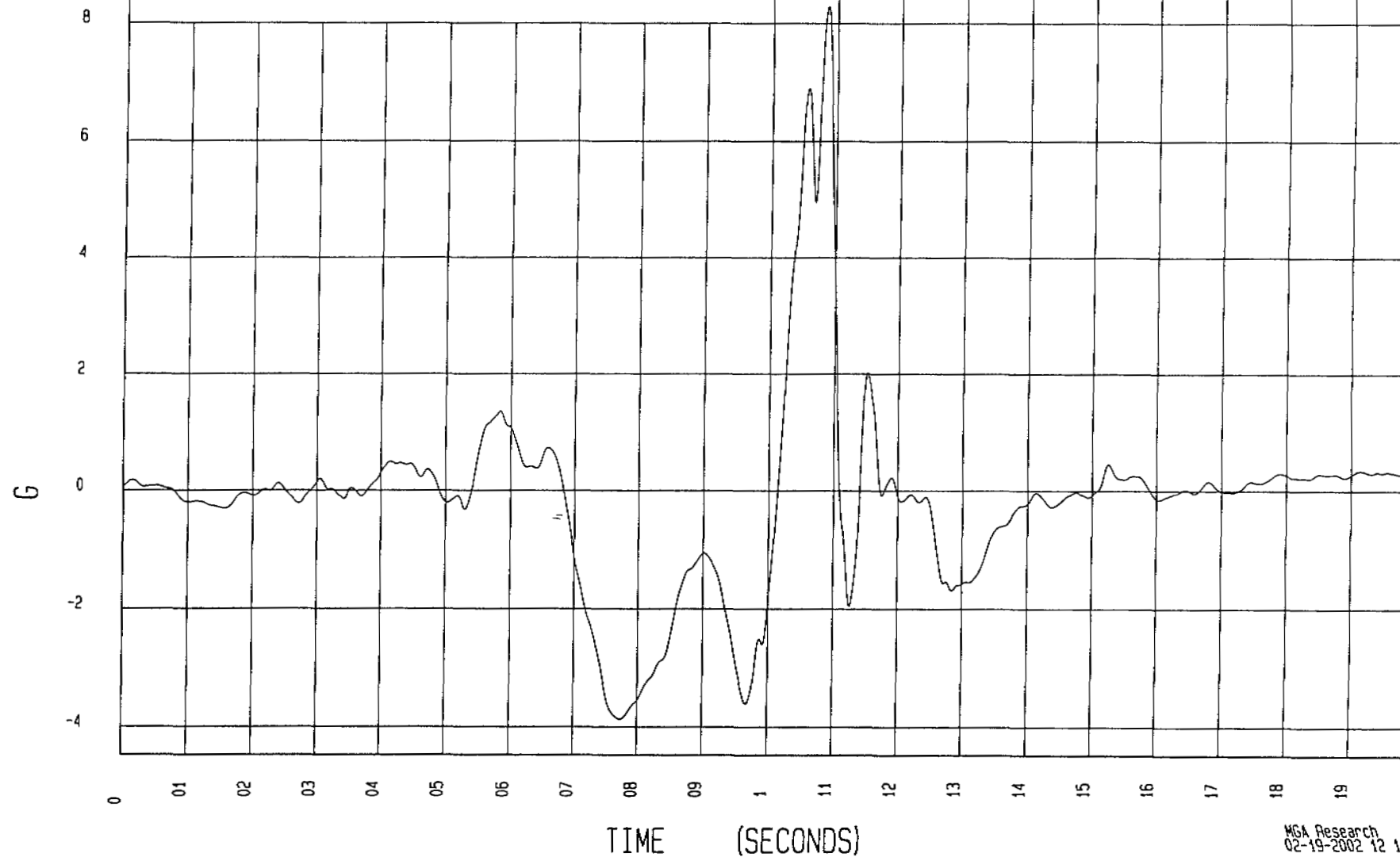
COMPONENT. 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -3.87 G at 77 msec

Maximum = 8.29 G at 109 msec

DRIVER CHEST Y ACCELERATION

1 H02034AF A22 Filterclass [180]



MGA Research
02-19-2002 12 18

TEST: FMVSS 208 SLED (H02034)

TEST DATE 02-19-2002

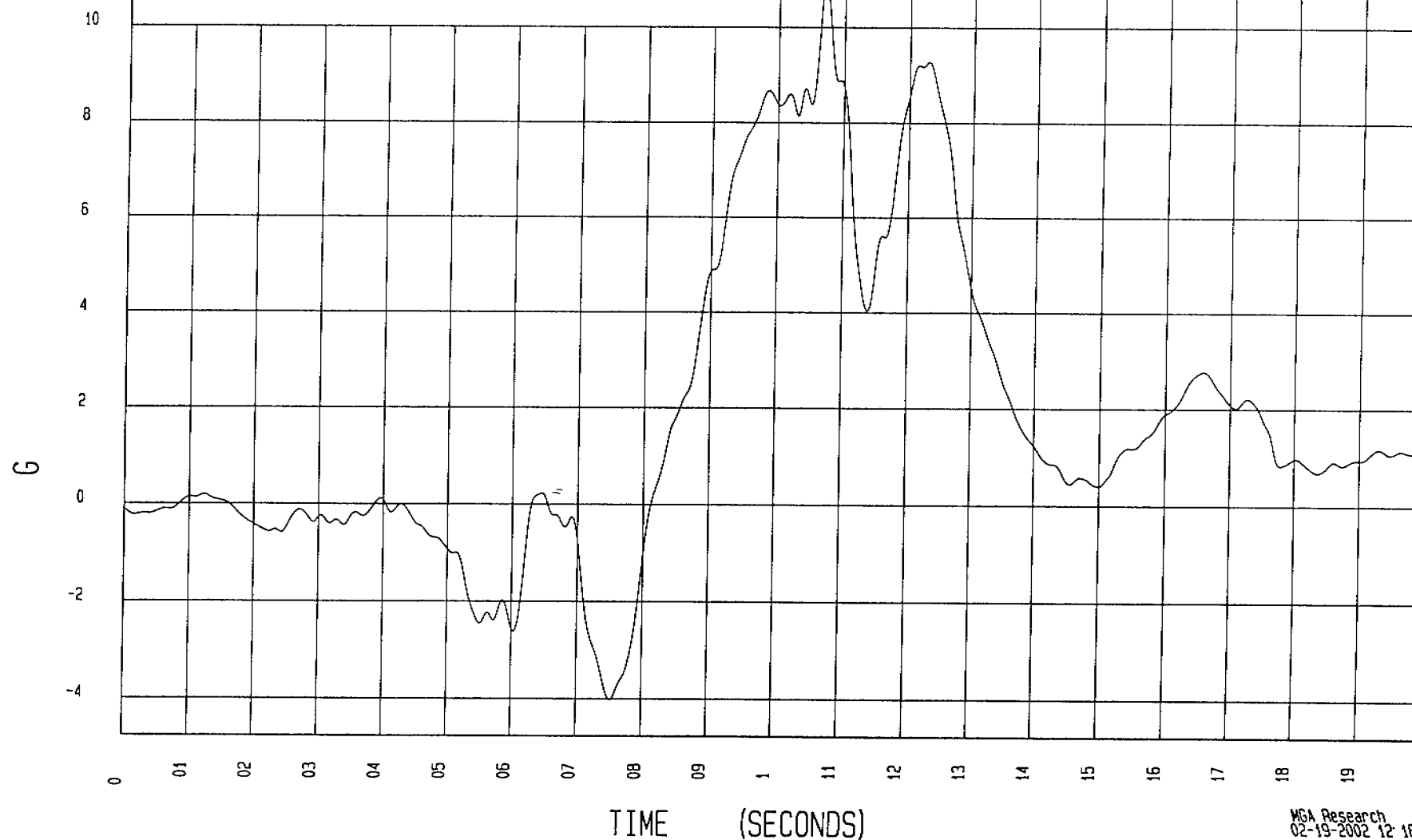
COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -4.02 G at 75 msec

Maximum = 10.99 G at 107 msec

DRIVER CHEST Z ACCELERATION

1 H02034AF A23 Filterclass (180)



MGA Research
02-19-2002 12:18

TEST. FMVSS 208 SLED (H02034)

TEST DATE 02-19-2002

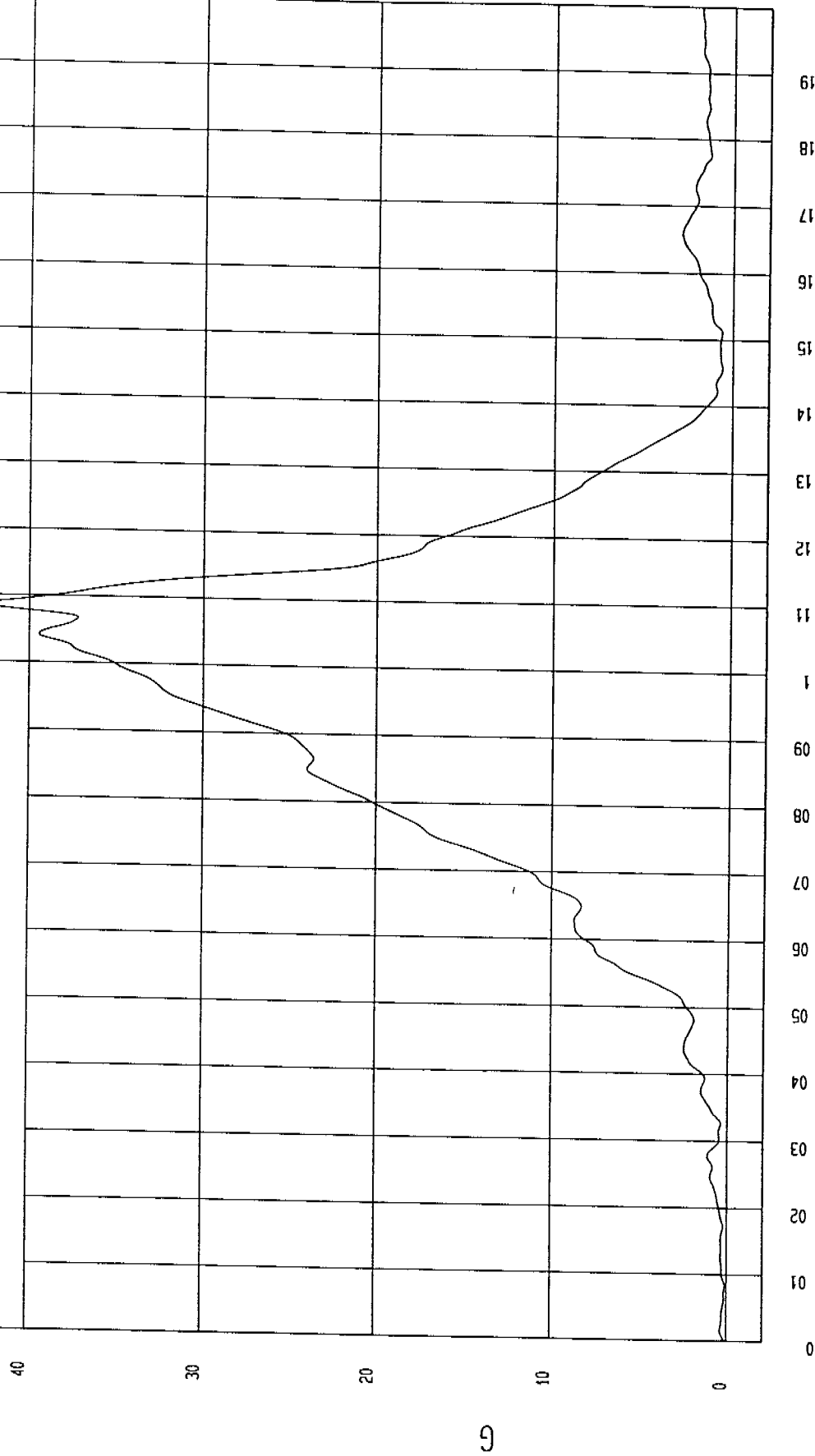
COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = 9.37E-02 G at 8 msec

Maximum = 42.45 G at 109 msec

DRIVER CHEST RESULTANT ACCELERATION

1 ——— H02034AV A21 Filterclass (H80)



MCA Research
02-19-2002 12:18

TEST. FMVSS 208 SLED (H02034)

TEST DATE. 02-19-2002

COMPONENT. 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -1.34 INCHES at 111 msec

Maximum = 6.81E-03 INCHES at 26 msec

DRIVER CHEST COMPRESSION

MGA Research
02-19-2002 12:18

TIME SECONDS

TEST FMVSS 208 SLED (H02034)

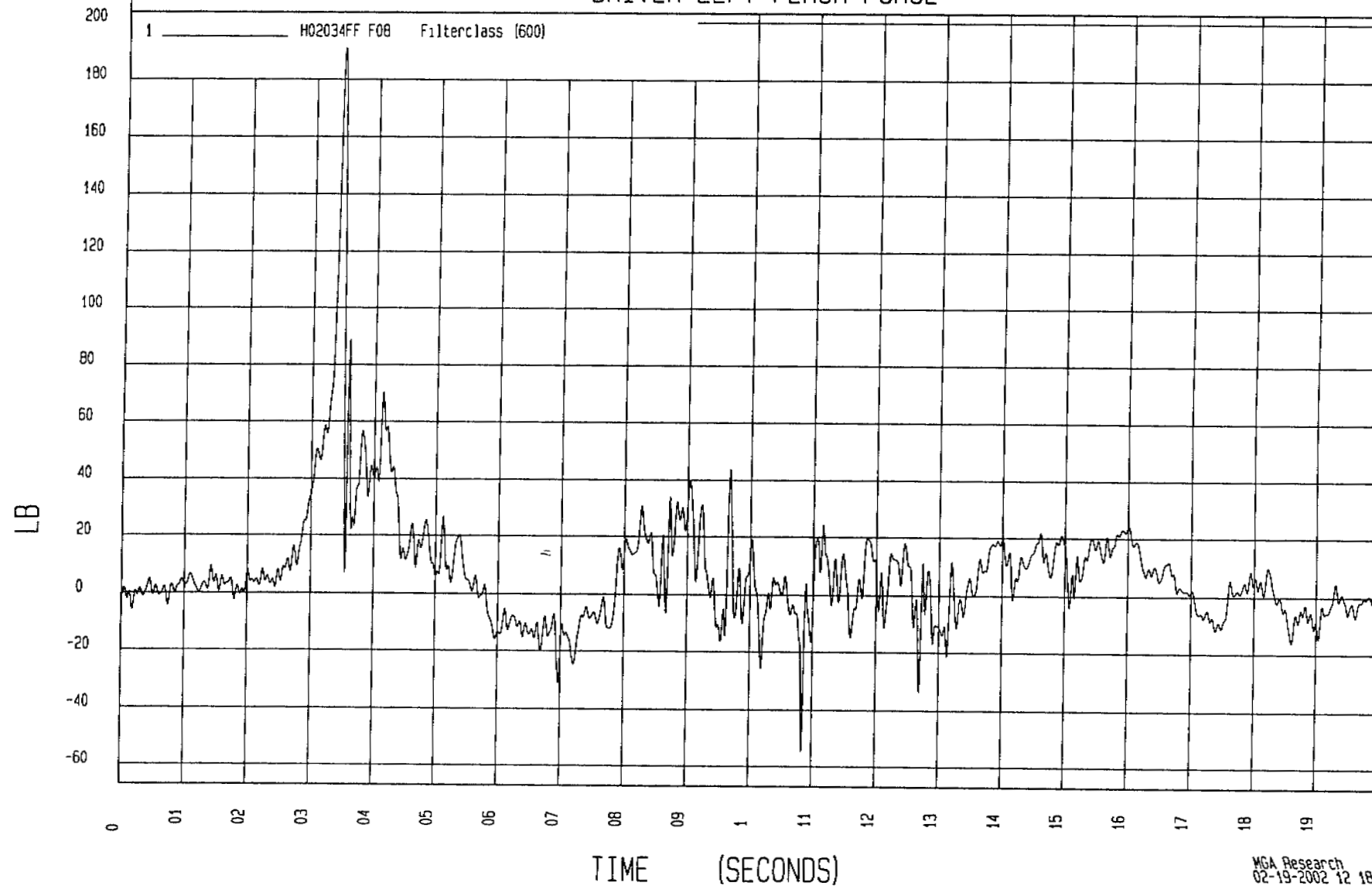
TEST DATE 02-19-2002

COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -54.73 LB at 108 msec

Maximum = 190.91 LB at 34 msec

DRIVER LEFT FEMUR FORCE



TEST DATE: 02-19-2002

TEST: FMVSS 208 SLED (H02034)

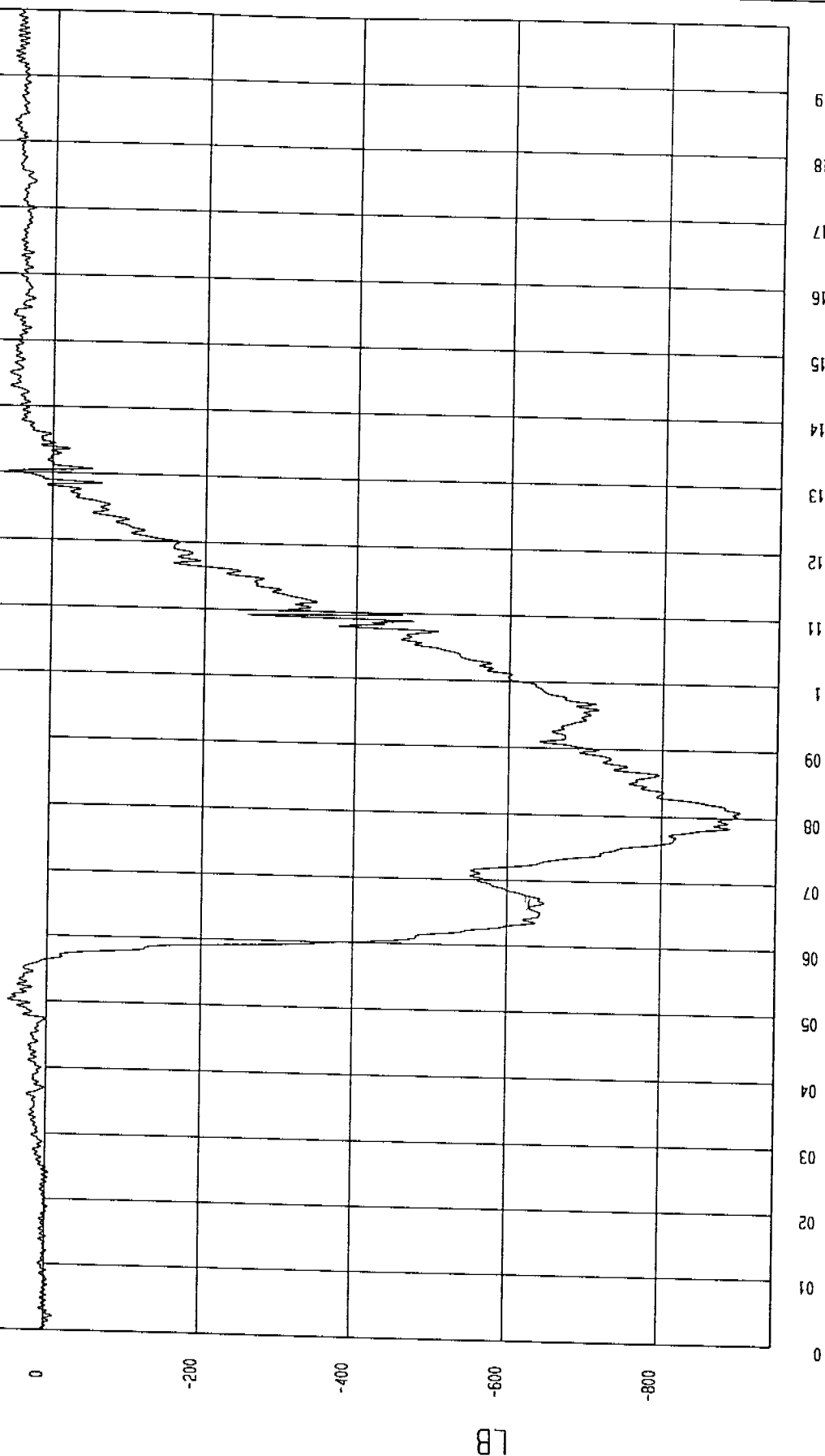
COMPONENT: 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -900 93 LB at 81 msec

Maximum = 57 67 LB at 130 msec

DRIVER RIGHT FEMUR FORCE

1 ——— H02034FF F09 Filterclass (600)

MSA Research
02-19-2002 12:18

TEST: FMVSS 208 SLED (H02034)

TEST DATE 02-19-2002

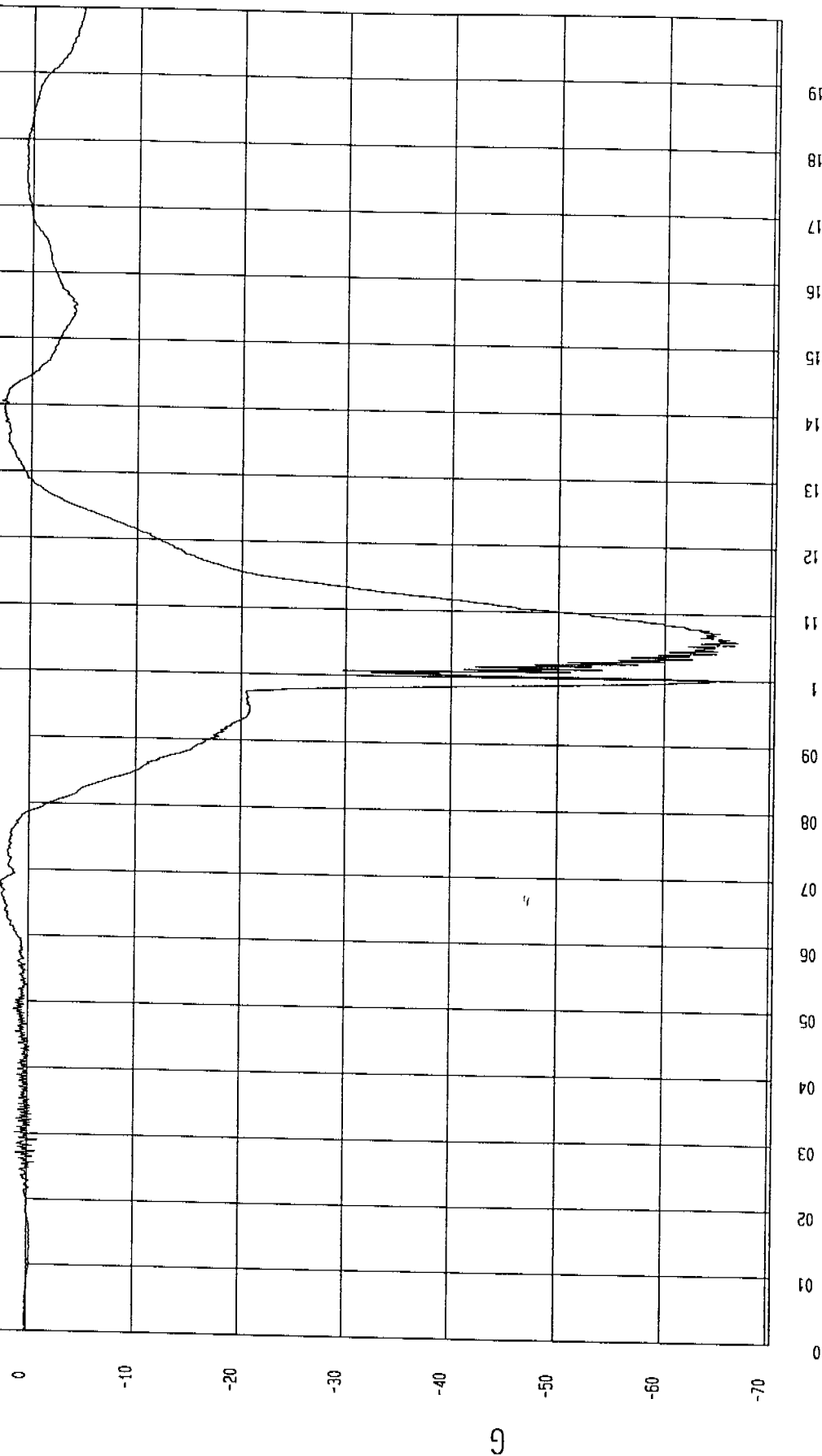
COMPONENT: 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -66.91 G at 106 msec

Maximum = 2.8 G at 68 msec

PASSENGER HEAD X ACCELERATION

1 H02034AT A24 Filterclass (1000)

MCA Research
02-19-2002 12 17

TEST FMVSS 208 SLED (H02034)

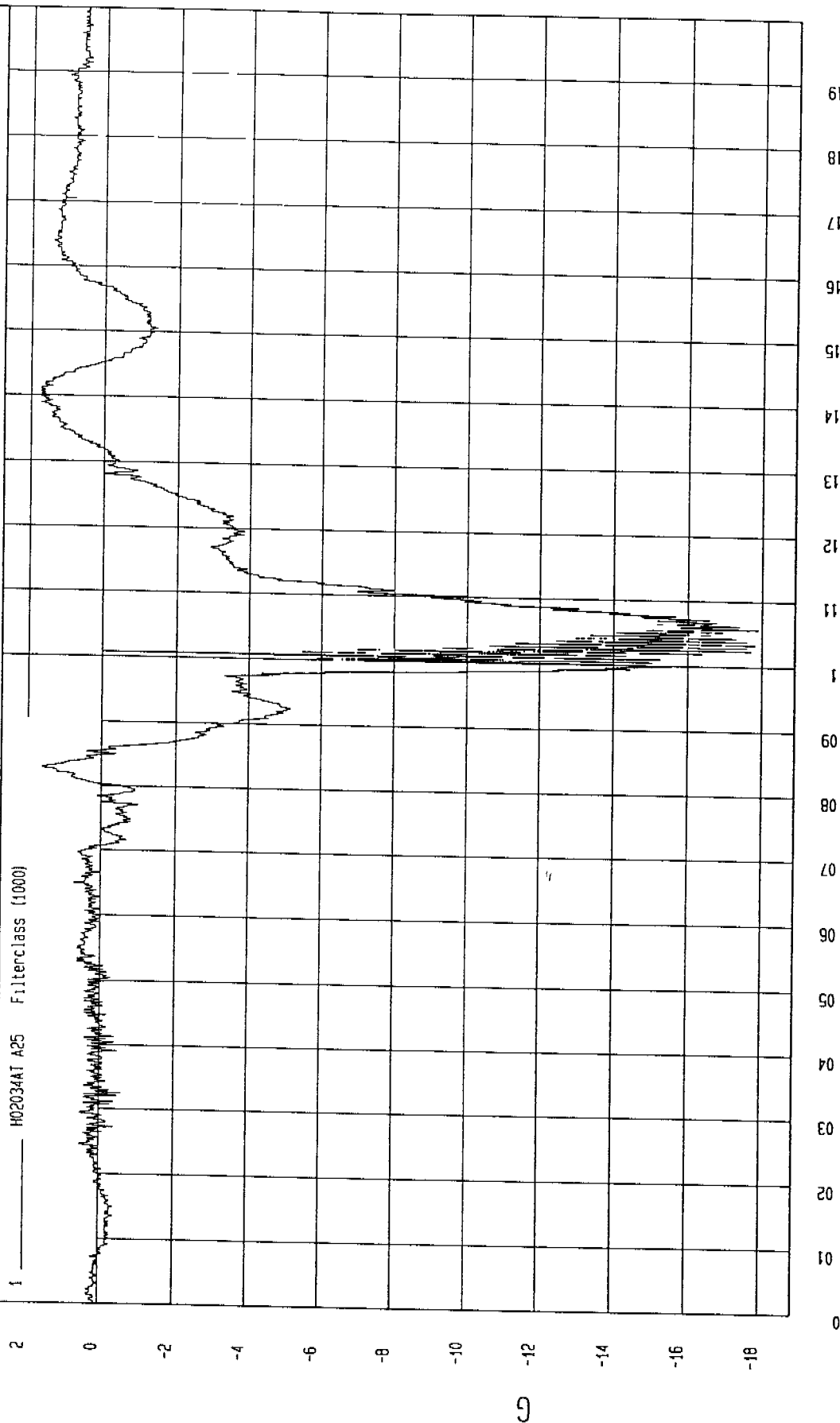
TEST DATE 02-19-2002

COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -17 g at 106 msec

Maximum = 1.73 g at 139 msec

PASSENGER HEAD Y ACCELERATION

MSA Research
02-19-2002 12:17

TEST FMVSS 208 SLED (H02034)

TEST DATE 02-19-2002

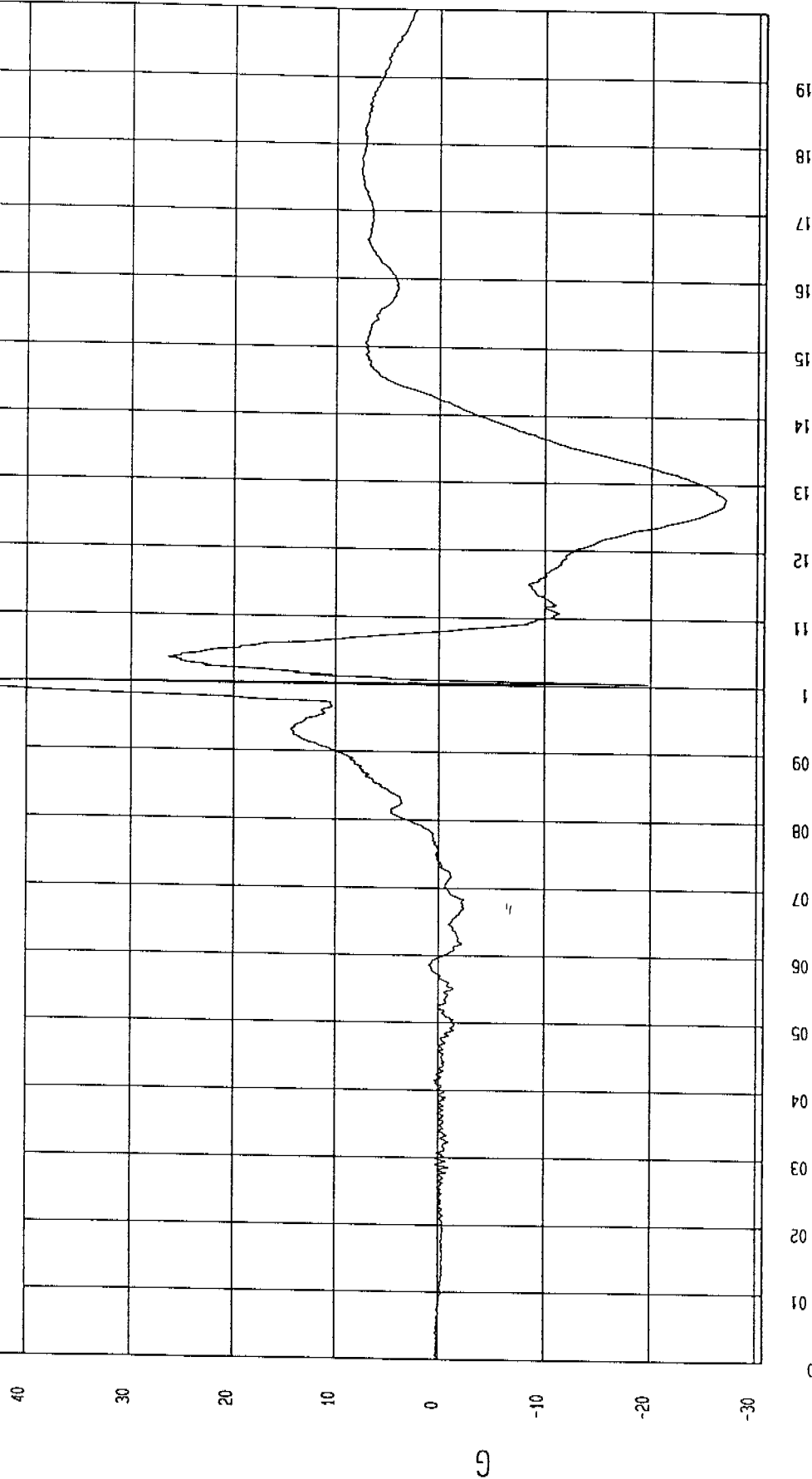
COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -27.08 G at 128 msec

Maximum = 45.04 G at 99 msec

PASSENGER HEAD Z ACCELERATION

1 H02034AT A26 Filterclass [1000]



TIME (SECONDS)

MGA Research
02-19-2002 12 17

TEST FMVSS 208 SLED (H02034)

TEST DATE 02-19-2002

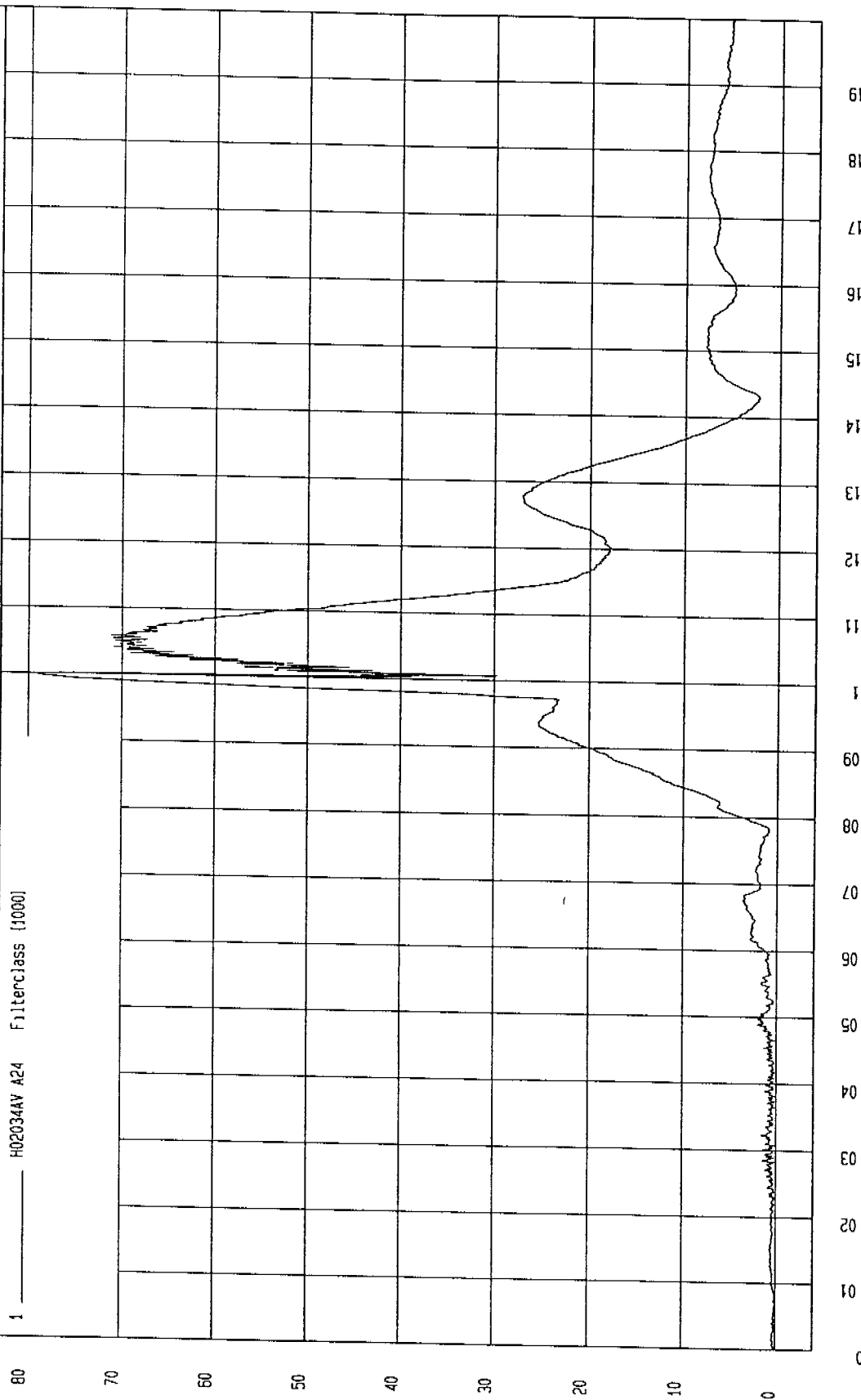
COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = 2.81E-02 G at 7 msec

Maximum = 79.02 G at 100 msec

PASSENGER HEAD RESULTANT ACCELERATION

1 _____ H02034AV A24 Filterclass [1000]

MCA Research
02-19-2002 12 17

TEST: FMVSS 208 SLED (H02034)

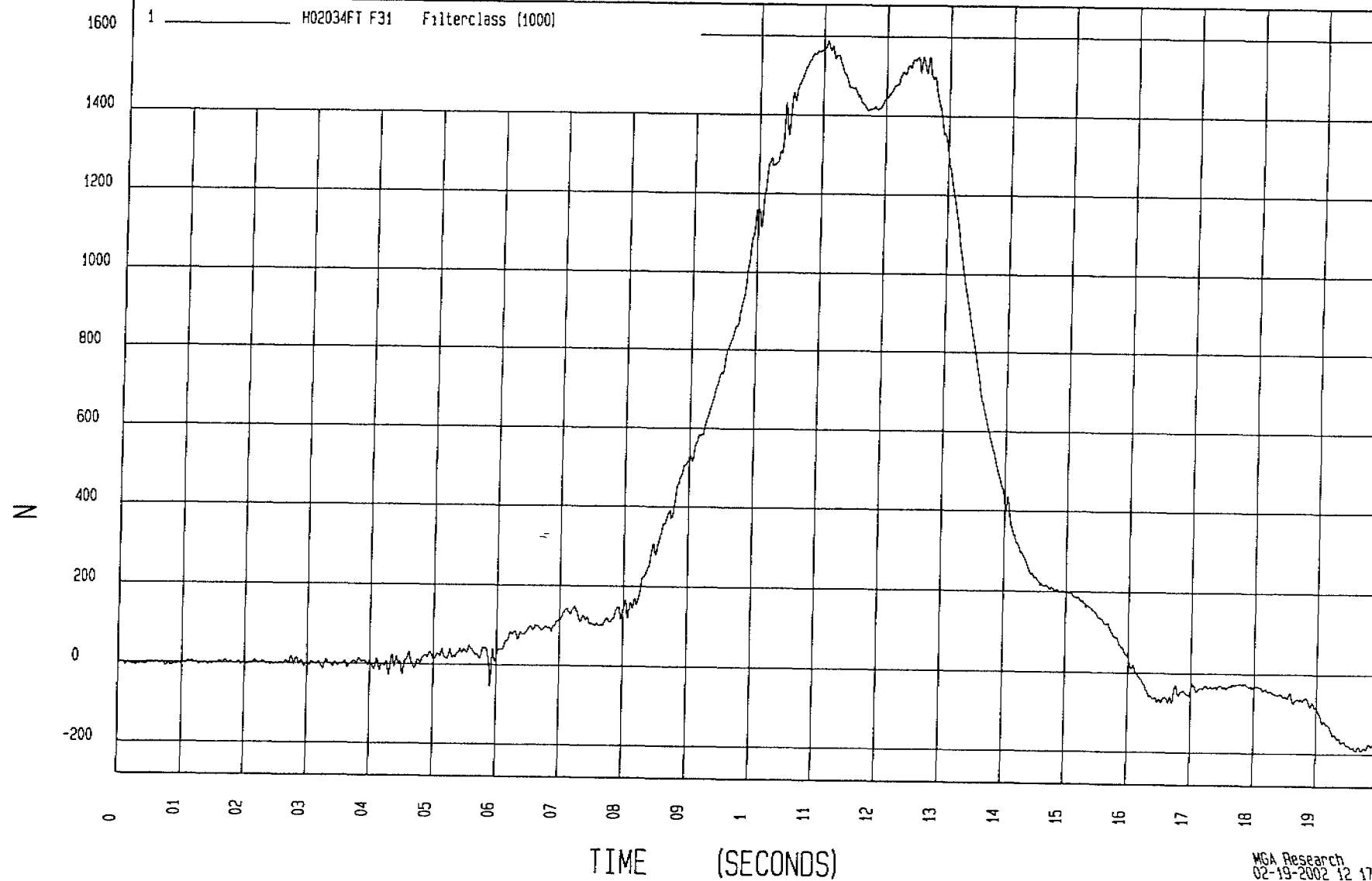
TEST DATE 02-19-2002

COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -190 55 N at 196 msec

Maximum = 1588 46 N at 111 msec

PASSENGER NECK FORCE X



MGA Research
02-19-2002 12 17

TEST FMVSS 208 SLED (H02034)

TEST DATE. 02-19-2002

COMPONENT. 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -38 55 N at 68 msec

Maximum = 354 14 N at 126 msec

PASSENGER NECK FORCE Y

1 H02034FT F32 Filterclass (4000)

300

200

100

N

0

0

01

02

03

04

05

06

07

08

09

1

11

12

13

14

15

16

17

18

19

TIME (SECONDS)

MSA Research
02-19-2002 12 17

TEST FMVSS 208 SLED (H02034)

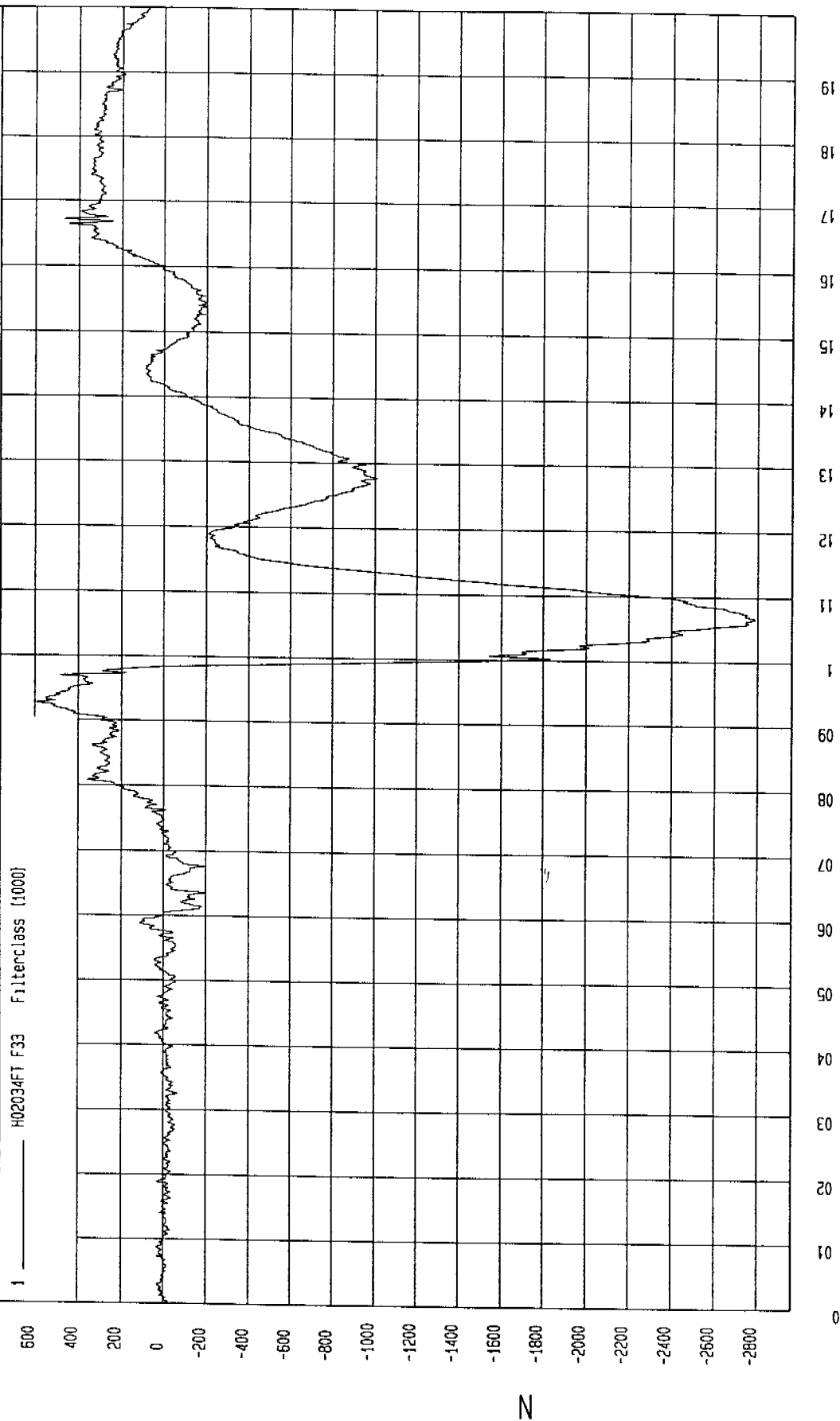
TEST DATE 02-19-2002

COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -2788 l3 N at 107 msec

Maximum = 593 09 N at 93 msec

PASSENGER NECK FORCE Z

MCA Research
02-19-2002 12 17

TIME (SECONDS)

TEST FMVSS 208 SLED (H02034)

TEST DATE 02-19-2002

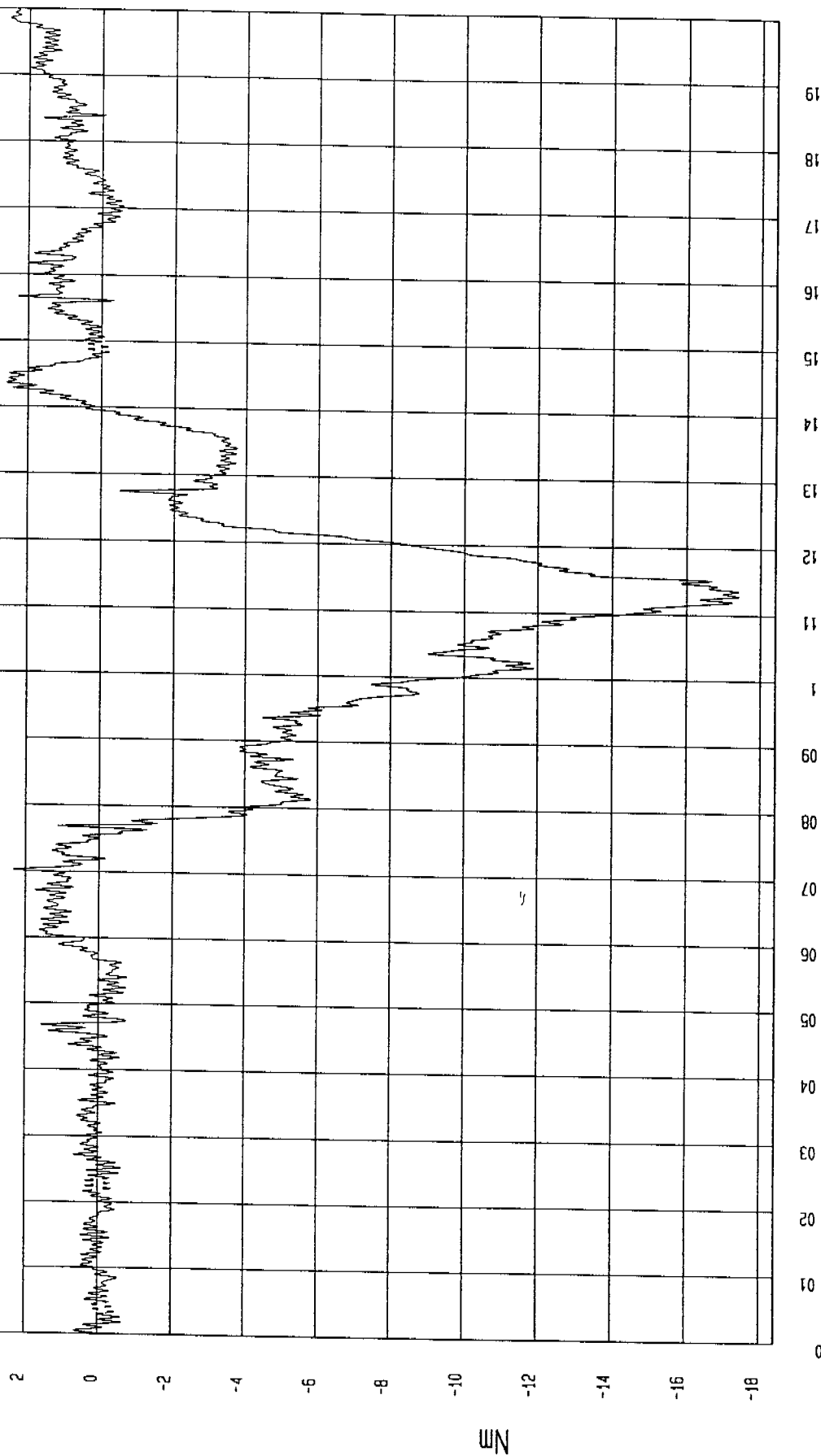
COMPONENT. 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -17.4 Nm at 113 msec

Maximum = 2.58 Nm at 144 msec

PASSENGER NECK MOMENT X

1 H02034MF M35 Filterclass (500)

MGA Research
02-19-2002 12:17

TEST. FMVSS 208 SLED (H02034)

TEST DATE 02-19-2002

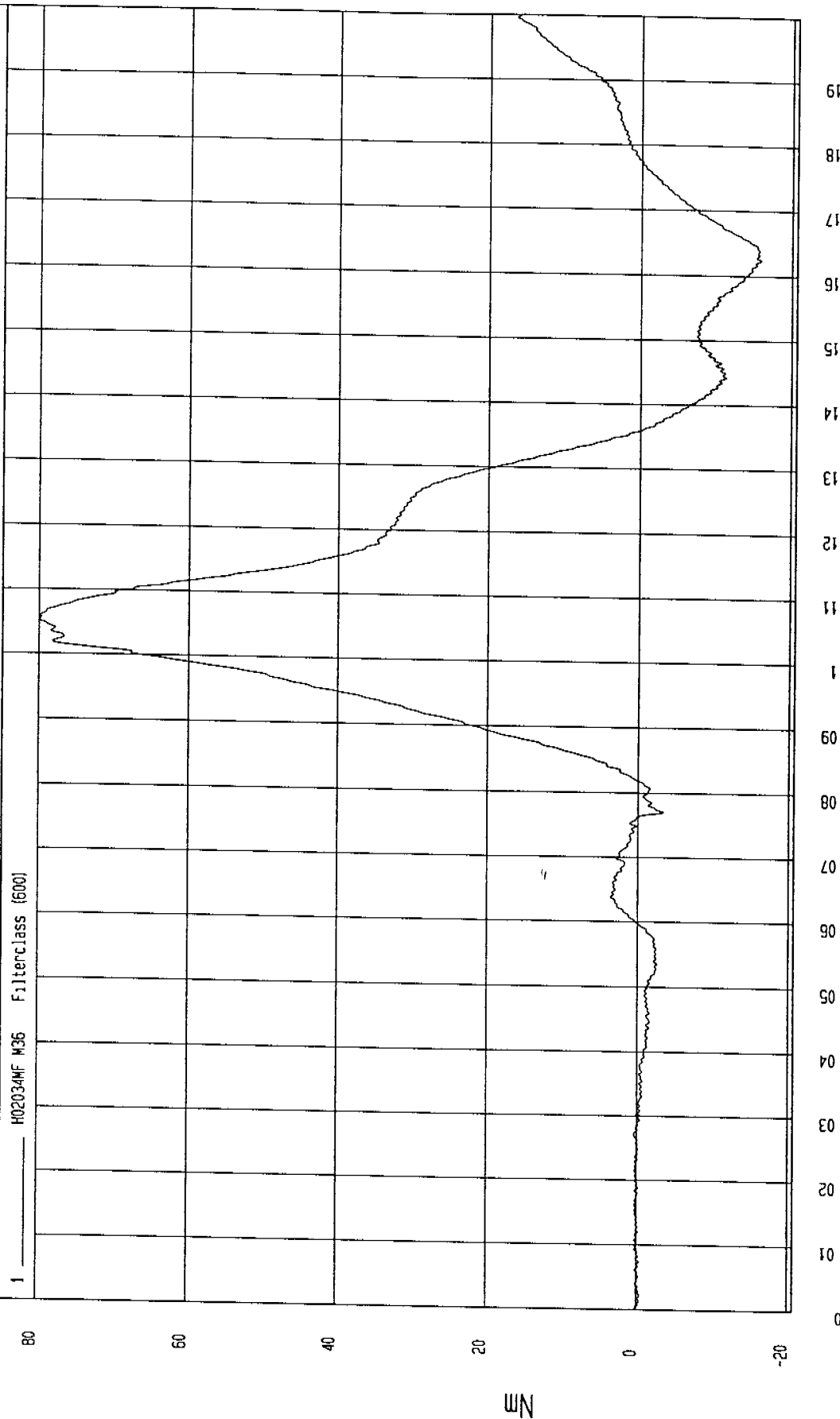
COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -15.85 Nm at 162 msec

Maximum = 80.04 Nm at 105 msec

PASSENGER NECK MOMENT Y

1 — H02034MF M36 Filterclass (600)

MCA Research
02-19-2002 12:17

TIME (SECONDS)

TEST: FMVSS 208 SLED (H02034)

TEST DATE 02-19-2002

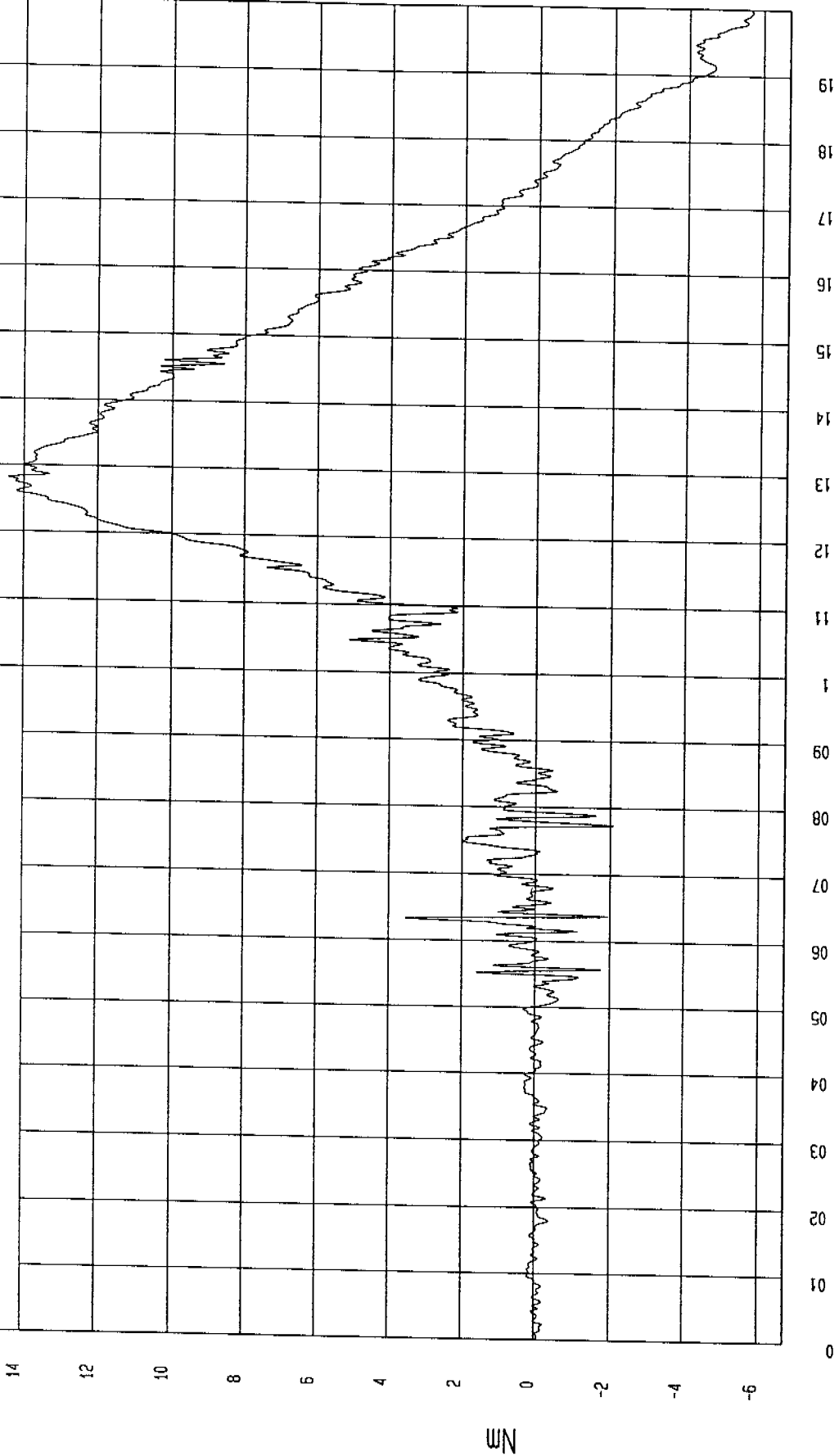
COMPONENT: 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -5.7 Nm at 200 msec

Maximum = 14.43 Nm at 128 msec

PASSENGER NECK MOMENT Z

1 H02034MF M37 Filterclass (600)



MCA Research
02-19-2002 12 17

TIME (SECONDS)

TEST DATE: 02-19-2002

TEST: FMVSS 208 SLED (H02034)

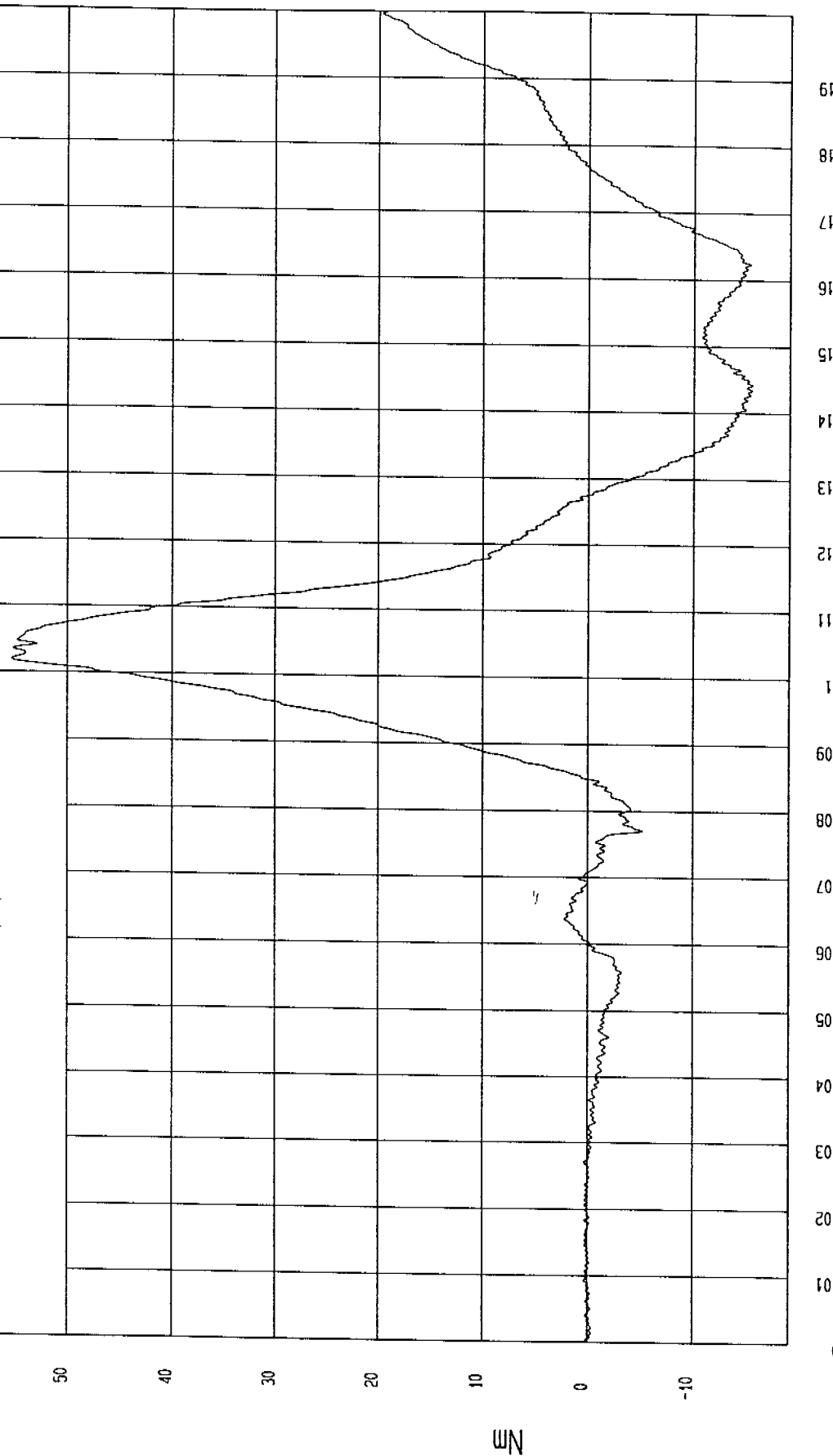
COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -15.63 Nm at 144 msec

Maximum = 55.31 Nm at 102 msec

PASSENGER OCCIPITAL CONDYLE MOMENT Y

1 H02034M0 M36 Filterclass (500)

MCA Research
02-19-2002 12:21

TIME (SECONDS)

TEST: FMVSS 208 SLED (H02034)

TEST DATE 02-19-2002

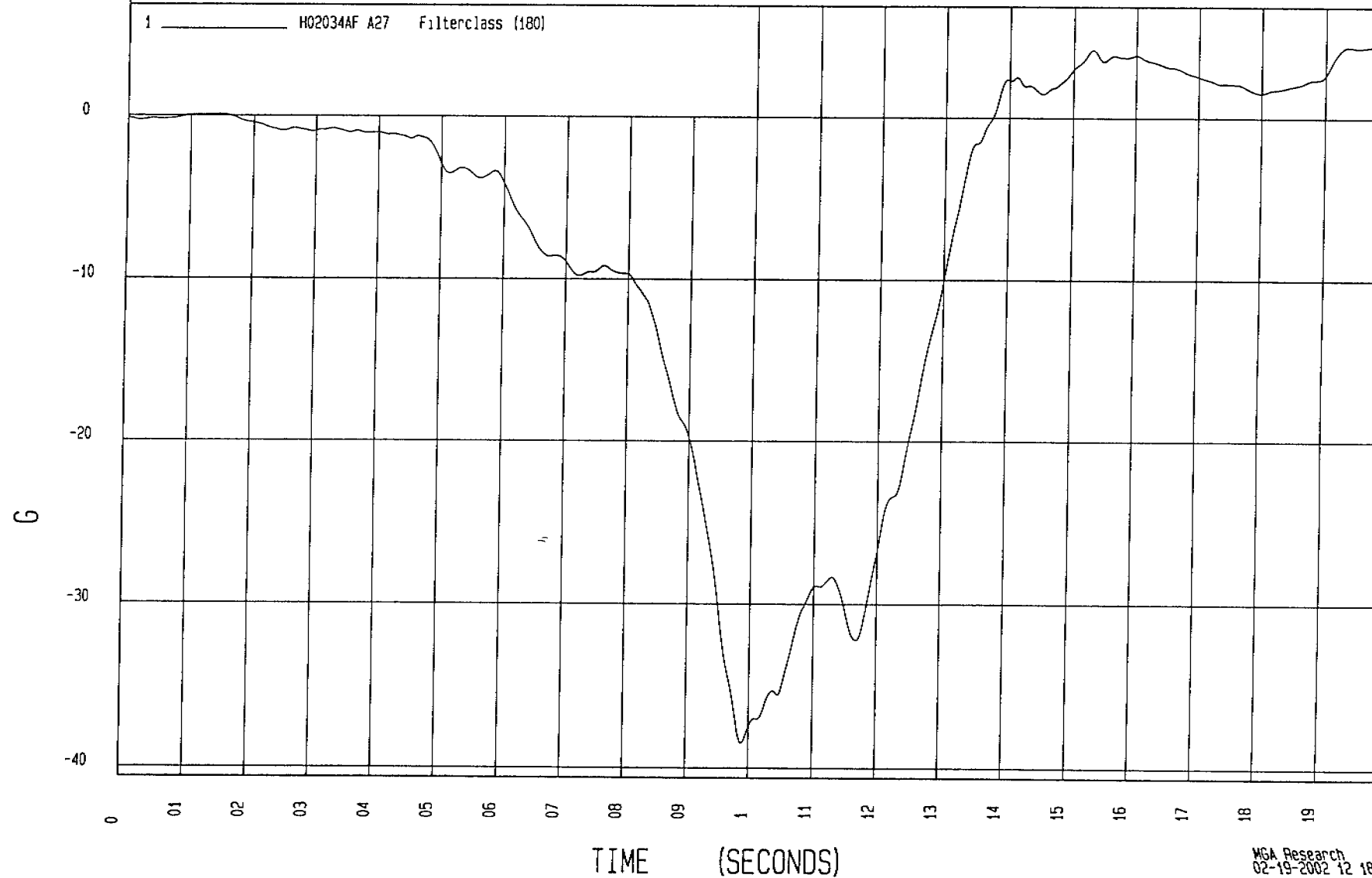
COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -38.44 G at 99 msec

Maximum = 4.62 G at 199 msec

PASSENGER CHEST X ACCELERATION

1 — H02034AF A27 Filterclass (180)



MGA Research
02-19-2002 12 18

TEST FMVSS 208 SLED (H02034)

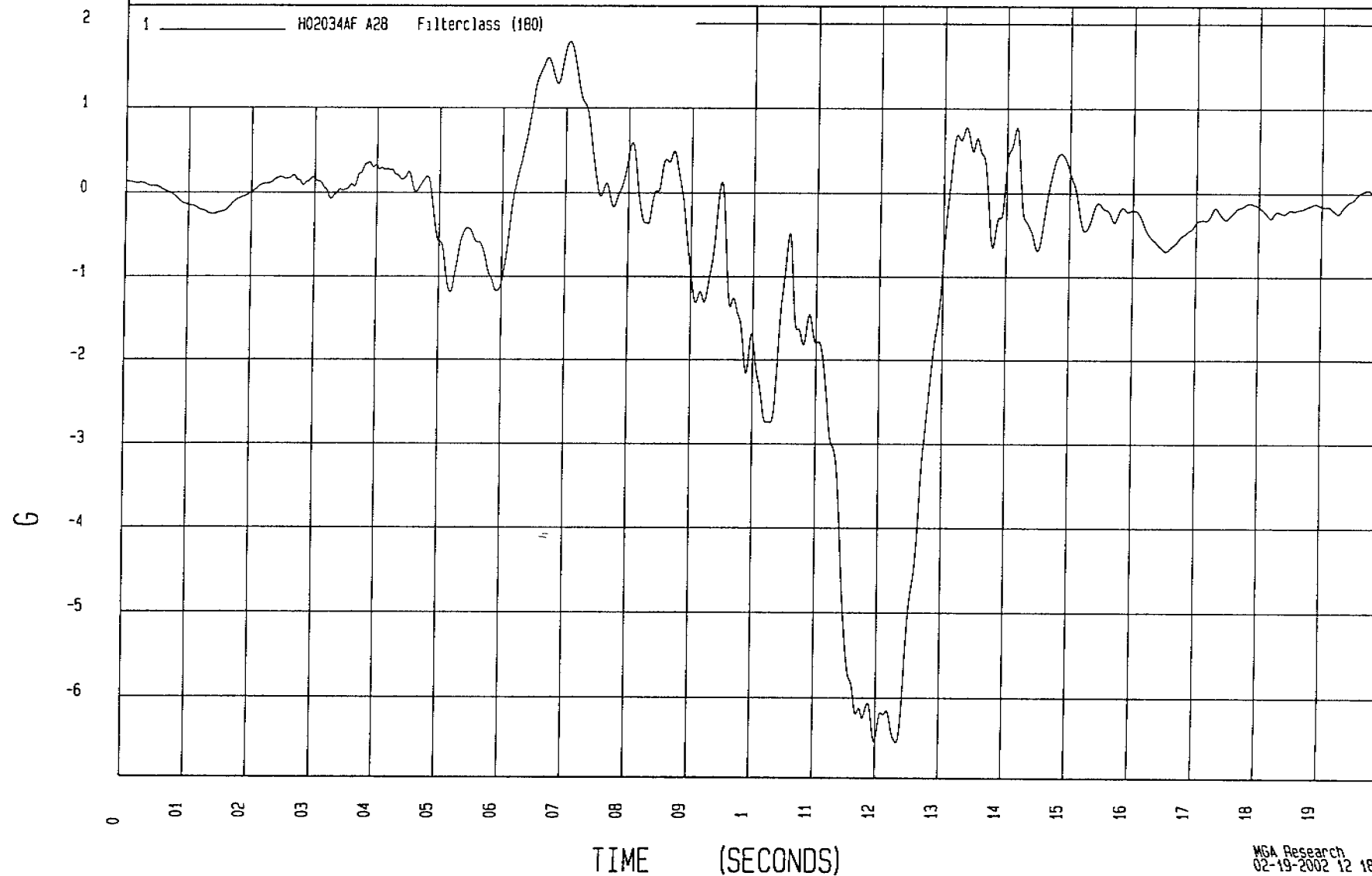
TEST DATE: 02-19-2002

COMPONENT: 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -6.53 G at 123 msec

Maximum = 1.79 G at 70 msec

PASSENGER CHEST Y ACCELERATION



MGA Research
02-19-2002 12:18

TEST. FMVSS 208 SLED (H02034)

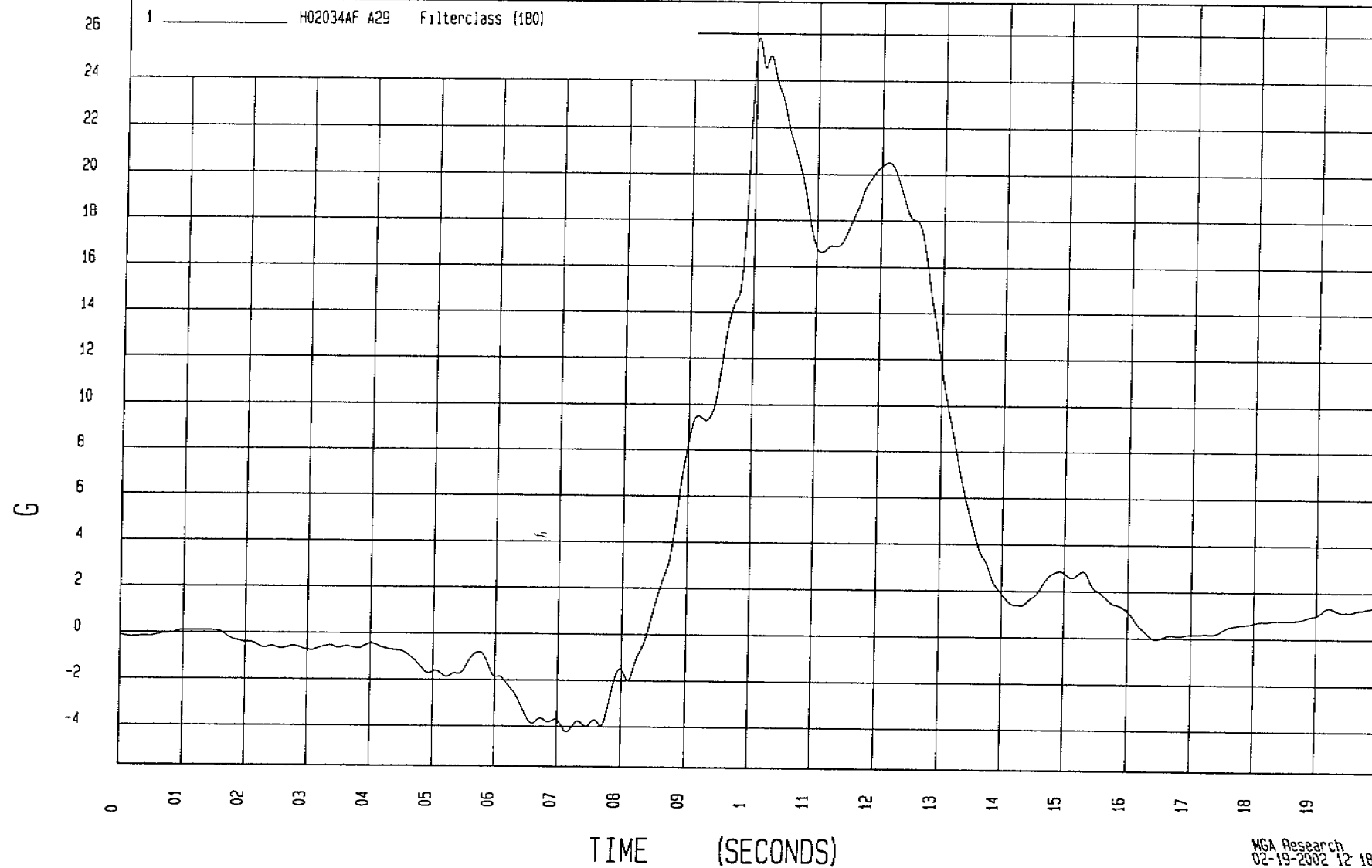
TEST DATE. 02-19-2002

COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -4.23 G at 72 msec

Maximum = 25.84 G at 100 msec

PASSENGER CHEST Z ACCELERATION



MCA Research
02-19-2002 12:18

TEST FMVSS 208 SLED (H02034)

TEST DATE 02-19-2002

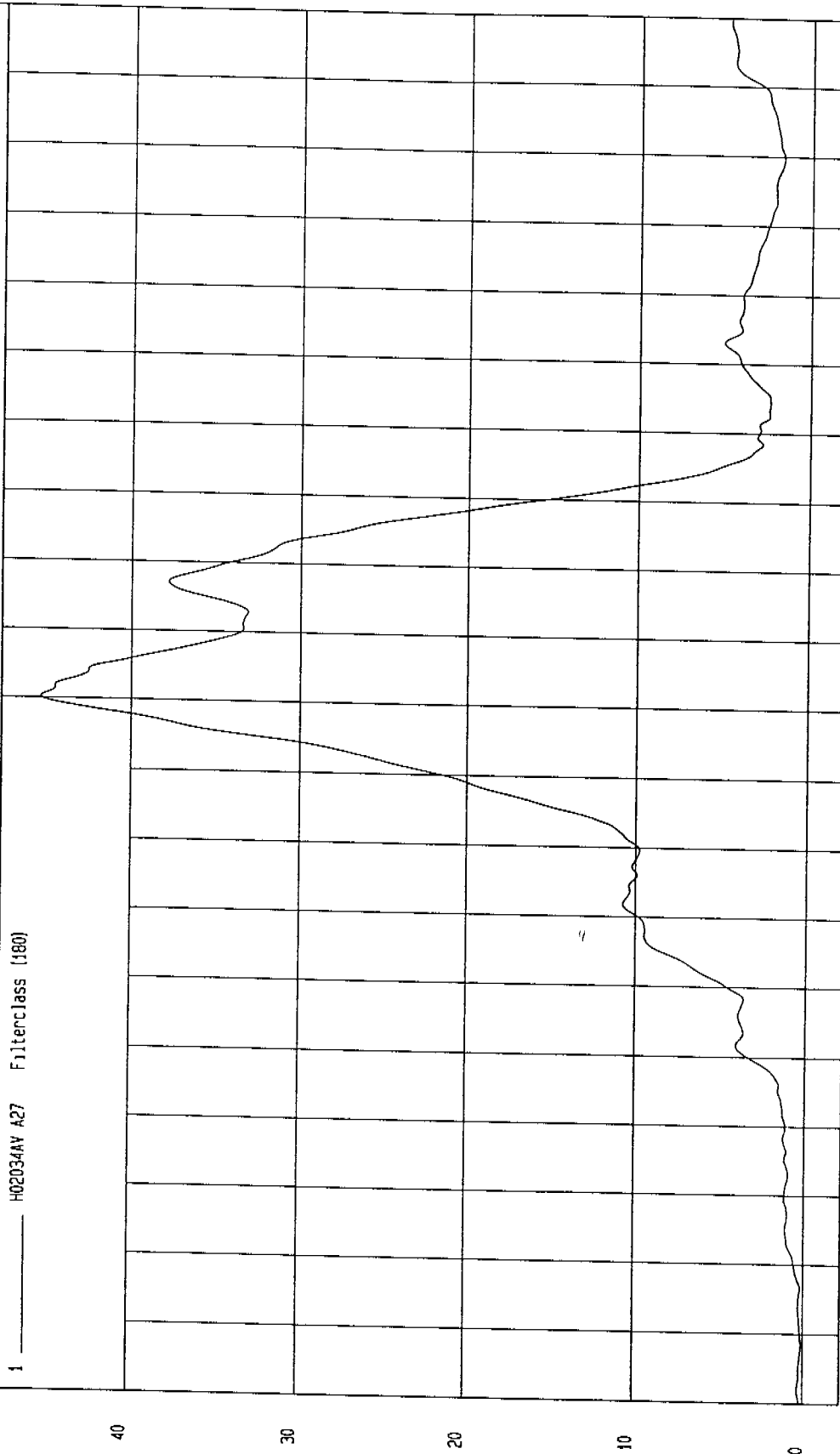
COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = 11 G at 8 msec

Maximum = 45.28 G at 100 msec

PASSENGER CHEST RESULTANT ACCELERATION

1 — H02034V A27 Filterclass (180)



MGA Research
02-19-2002 12 18

TIME (SECONDS)

TEST FMVSS 208 SLED (H02034)

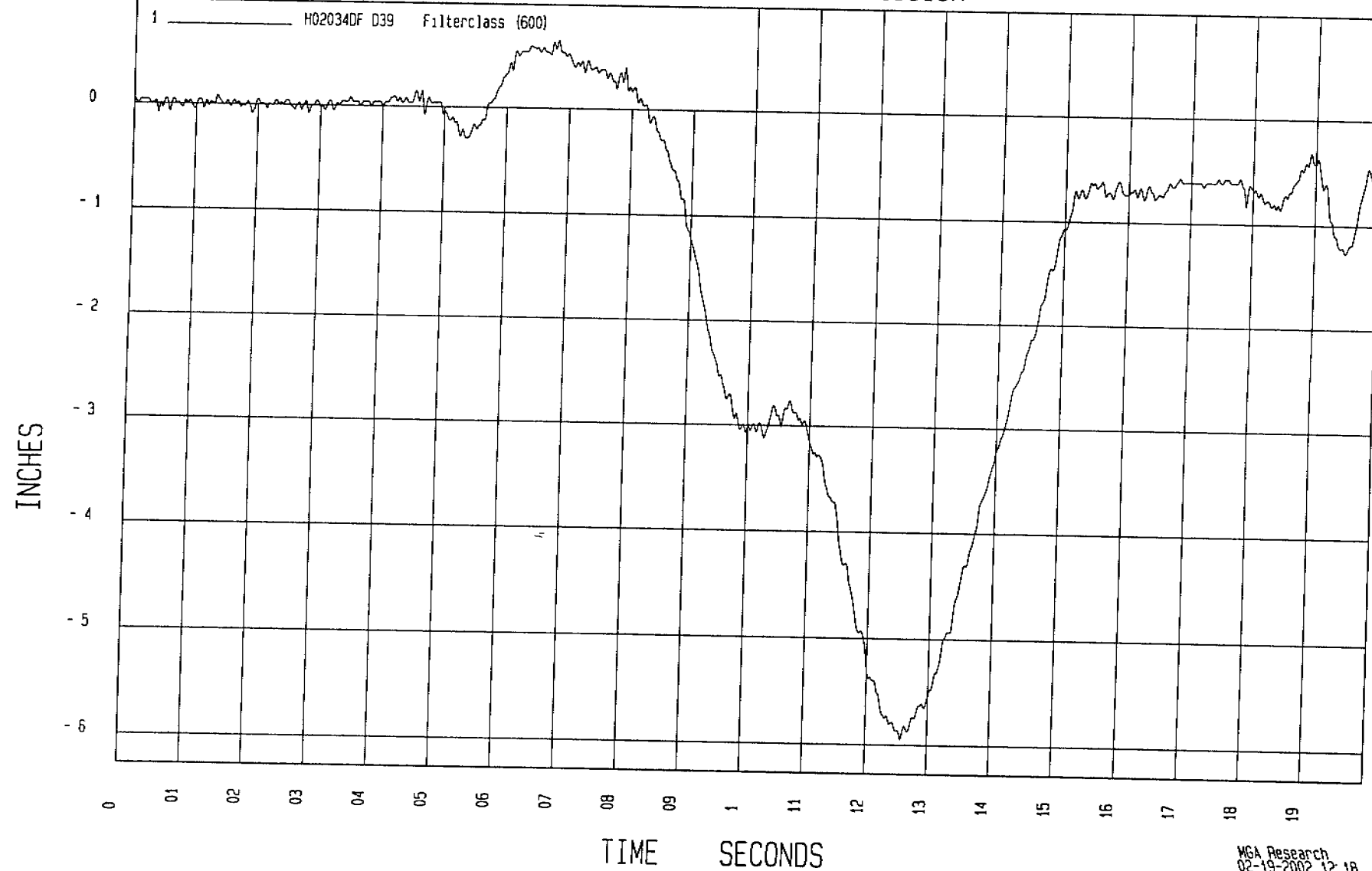
TEST DATE 02-19-2002

COMPONENT: 2002 TOYOTA SIENNA MPV (C25102)

Minimum = - 59 INCHES at 126 msec

Maximum = 06 INCHES at 68 msec

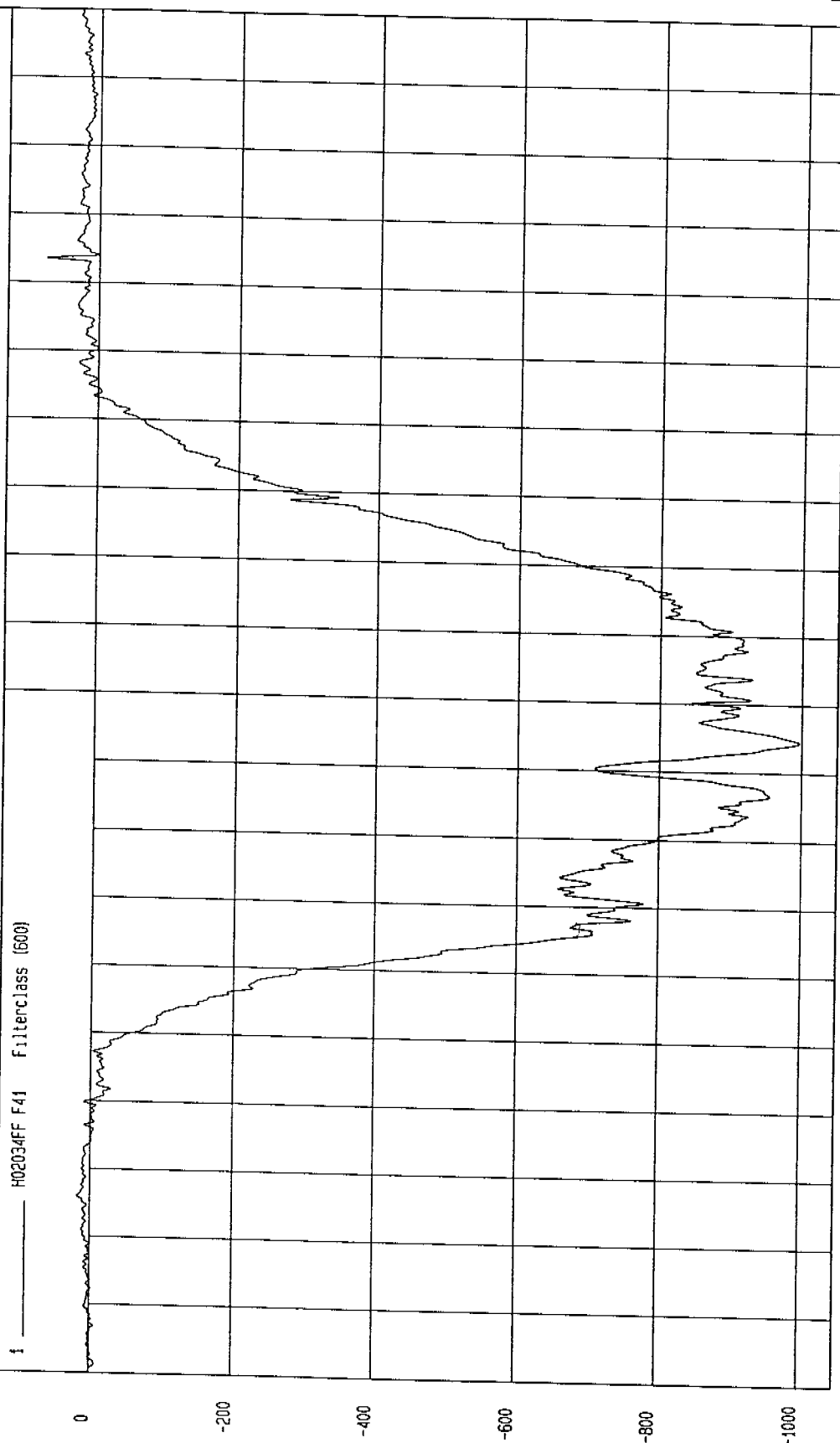
PASSENGER CHEST COMPRESSION



MCA Research
02-19-2002 12:18

TIME (SECONDS)

19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0



PASSENGER LEFT FEMUR FORCE

Maximum = 73 92 LB at 164 msec

Minimum = -996 63 LB at 94 msec

COMPONENT: 2002 TOYOTA SIENNA MPV (C25102)

TEST FMVSS 208 SLED (H02034)

TEST DATE 02-19-2002

LB

TEST FMVSS 208 SLED (H02034)

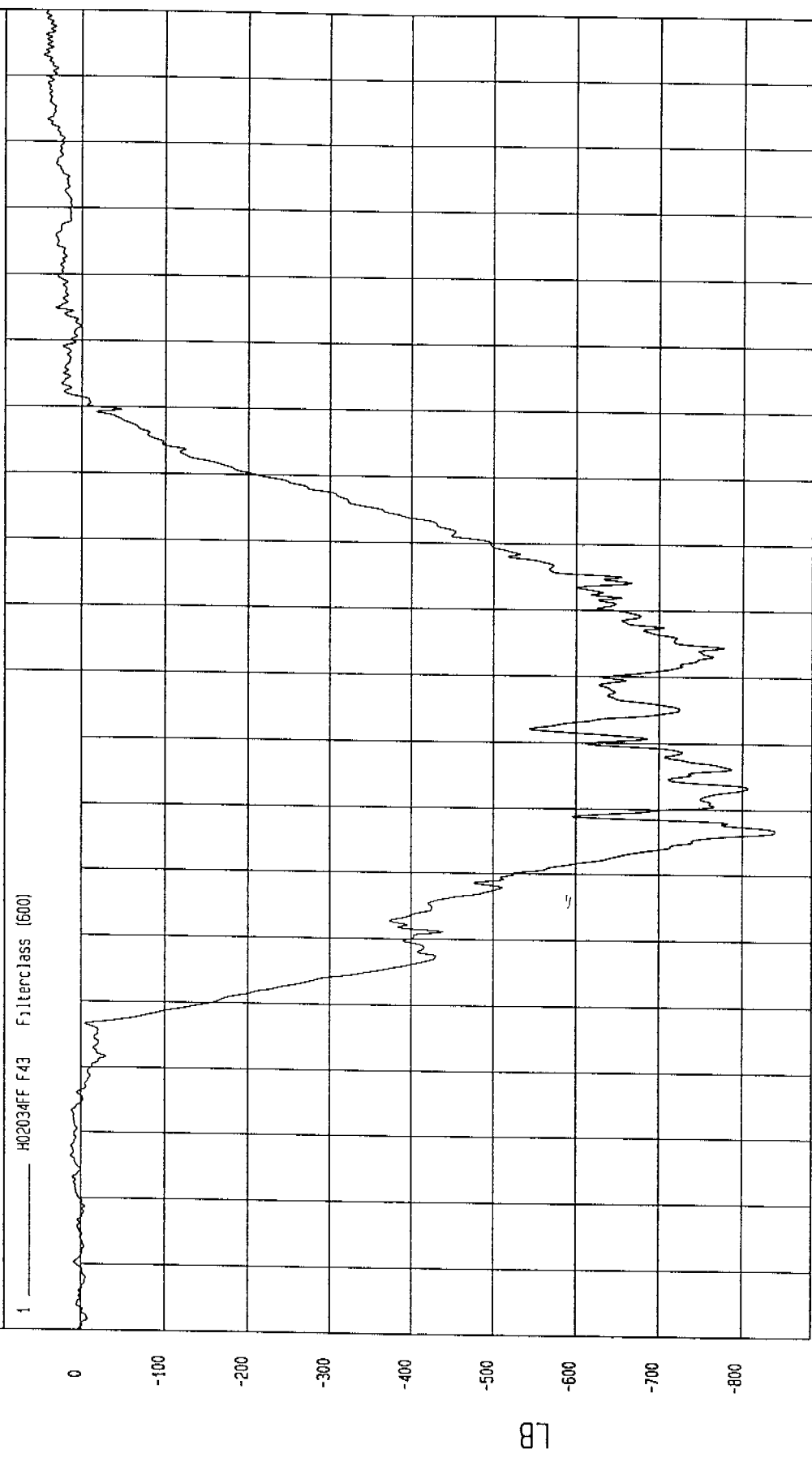
TEST DATE: 02-19-2002

COMPONENT 2002 TOYOTA SIENNA MPV (C25102)

Minimum = -839 24 LB at 77 msec

Maximum = 46 63 LB at 193 msec

PASSENGER RIGHT FEMUR FORCE



MGA Research
02-19-2002 12 18

APPENDIX C
MANUFACTURER'S VEHICLE INFORMATION

TOYOTA'S RESPONSE TO
NHTSA'S REQUEST ON FMVSS No. 208 FOR
THE 2002 TOYOTA SIENNA
(NSA-31CCa, OA-208-010924-V)

- Q.1. Please inform OVSC to which sections of FMVSS No 208 the subject vehicle is certified with respect to dynamic tests in which seat belts are fastened and seat belts are unfastened. Provide a copy of the certification test reports for all the applicable impact tests with regard to the these sections

Response 1

The air bag restraint system of the 2002 Toyota Sienna meets the requirements of S13 of FMVSS No. 208.

We provide the summary reports for frontal/angular barrier impact test with the safety manual belts fastened at 30mph as Attachment I-1 through I-4.

And the summary reports of our certification tests for the sled test with only the automatic restraint system are provided as Attachment I-5 and I-6.

- Q.2. Provide the following: (1)describe the difference between the MY 2002 air bag system and the MY 2001 air bag system, (2) explain what other restraint changes have been made, (3) explain what other vehicle changes have been made that might have affected of FMVSS No.208 performance, and (4) describe any features that might affect performance with respect to children and out of position

Response 2

Since Toyota Sienna is not a new design vehicle/model, the following information are provided,

- (1) There is no difference between the MY 2002 air bag system and the MY 2001 air bag system.
- (2) No other restraint changes.
- (3) No other vehicle changes, that might have affected FMVSS208 performance
- (4) No features, that might affect performance with respect to children and out of position.

- Q.3 If the vehicle was certified with unrestrained dummies to meet the requirements of S13, describe how to disconnect the air bags from the vehicle sensors and connect them to the triggering mechanism used in the sled test. Describe the method used in certification to determine when to trigger the air bag and the system used to trigger the air bag.

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.

Response 3

We provide the illustration which shows the location of the air bag connector to disconnect the air bag as Attachment II-1.

And we describe the air bag triggering system used in certification test in Attachment II-2.

Air bag with dual stage or multistage inflators is not used in the 2002 Toyota Sienna.

- Q.4. State for any safety belt system in this vehicle whether or not it is equipped with a tension-relieving device. Provide a copy of the information furnished in accordance with S7.4.2 if the tension-relieving device is used

Response 4

Tension-relieving device is not used in the 2002 Toyota Sienna

- Q.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

Response 5

Both sides of the front windows were closed and both sides of the rear vents were closed during the tests.

- Q.6. Submit dummy placement measurements, including diagrams or photographs which show exactly where measurements were taken. Enclosed is a diagram of some of OVSC's dummy measurements. Where possible, use the dimension shown in the diagram to provide the individual dummy placement measurements.

Response 6

The dummy placement measurement data in the OVSC form is provided in Attachment III-1, and in addition, we provide our diagrams and measurement data in Attachment III-2 and Attachment III-3

- Q.7. State whether the vehicle has a foot rest for the driver

Response 7

A foot rest is provided for the driver

- Q.8 Provide the seat positioning, steering column positioning, and fuel tank data on the enclosed form. If more than one front seating, steering column or fuel tank configuration are available on this vehicle, provide separate information for each. In addition, provide the seating reference point for each seat for the lockable seat belt requirement in S7.1.1 5

Response 8

We provide the seat positioning, steering column positioning, and fuel tank data as Attachment IV, and the seating reference point for each seat as Attachment V.

- Q.9. If the vehicle is equipped with adjustable seat belt anchorages, provide the manufacturer's nominal design position for a 50th percentile adult male occupant.

Response 9

See section 8 of the Attachment IV-1.

- Q.10 For all certification barrier tests, provide the speed at impact, vehicle test weight, and resulting injury criteria (i.e., HIC, chest acceleration, chest compression, and femur loads, and where applicable neck moments and forces). For all certification sled tests, provide the resulting injury criteria (i.e., HIC, chest acceleration, chest compression, femur loads, and neck moments and forces).

Response 10

We provide the speed at impact, vehicle test weight, and resulting injury criteria recorded for each certification test in Attachment I-1 through I-6 in response to your request No.1.

- Q.11 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?

Response 11

The recommended parts for vehicle weight adjustment are listed in section 10 of the Attachment IV.

- Q.12. 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 S9.1

Response 12

We provide the approval letters of Research and Special Program Administration as Attachment VI-1 for the passenger's air bag

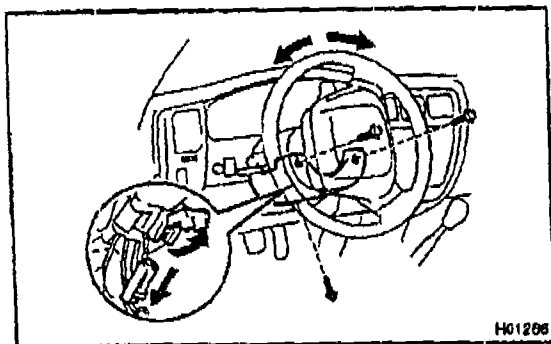
- Q.13. If the vehicle uses an explosive device to inflate the air bag, provide a copy of the test report or engineering analysis to demonstrate that it meets all the requirements of S9.2

Response 13

We provide the approval letters of Research and Special Program Administration as Attachment VI-2 for the driver's air bag

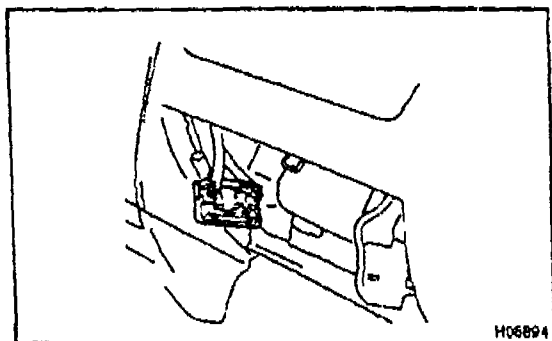
Attachment II-1

LOCATION AND DISCONNECTION OF THE AIR BAG CONNECTOR



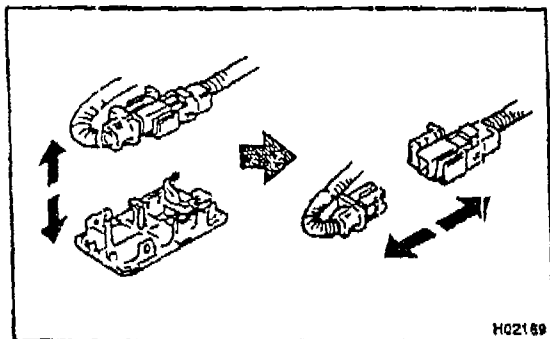
DRIVER SIDE AIR BAG

- (1) Remove the 3 screws and steering column lower cover as shown in the illustration
- (2) Disconnect the airbag connector of the spiral cable.

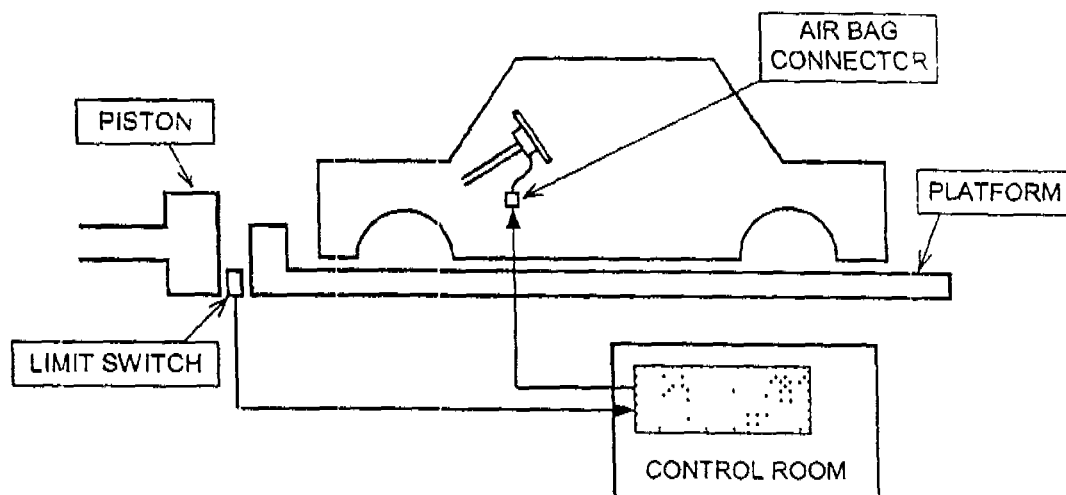


PASSENGER SIDE AIR BAG

- (1) Remove the glove compartment door
- (2) Disconnect the airbag connector



Attachment II-2

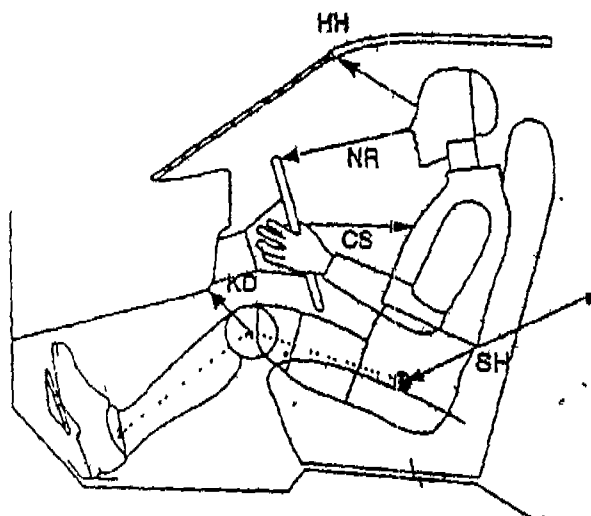
AIR BAG TRIGGERING SYSTEM FOR SLED TEST

- 1 The timing of the initiation of the platform acceleration is measured by the limit switch that is installed between the piston and the platform
- 2 Connect the limit switch, air bag and Master computer which controls the trigger time for the air bag.
- 3 When the platform acceleration is initiated, the limit switch send out a signal to the Master computer.
- 4 Master computer controls the trigger time for the air bag with the limit switch signal.
- 5 At 20ms from the time that 0.5G is measured on the platform, Master computer send out the trigger signal to the air bag

ATTACHMENT III-1

Information for NHTSA Regarding The 2002 TOYOTA SIEENAOccupant clearance dimension

	DRIVER	PASSENGER
HH	13.9inch	12.7inch
NR	15.4inch	N/A
CS	12inch	N/A
KDL	5.7inch	5.4inch
KDR	6.1inch	5.3inch
SH	15inch	15.6inch



HH – Head to Header

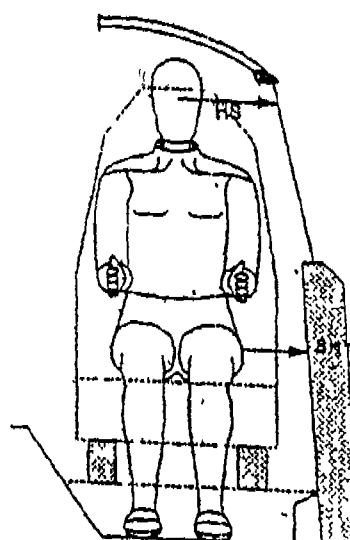
NR – Nose to Rim

CS – Steering Wheel Lower to Chest

KDL/KDR – Knee to Dash

SH – Striker to H-Point

	DRIVER	PASSENGER
SHY	10.9inch	9.2inch
HS	11.7inch	12.2inch



SHY – Striker to H-Point (Y-Dir)

HS – Head to Side Window

ATTACHMENT III - 2
Information for NHTSA Regarding The 2002 TOYOTA SIENNA

Occupant clearance dimension(Driver)

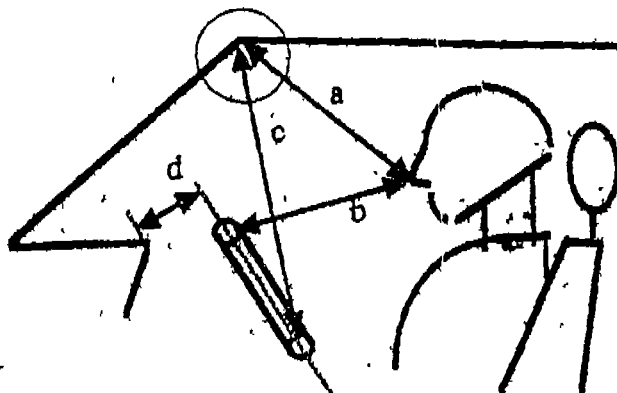
Driver

a : 13.9 inch (353mm)

b : 15.4 inch (390mm)

c : 25.2 inch (640mm)

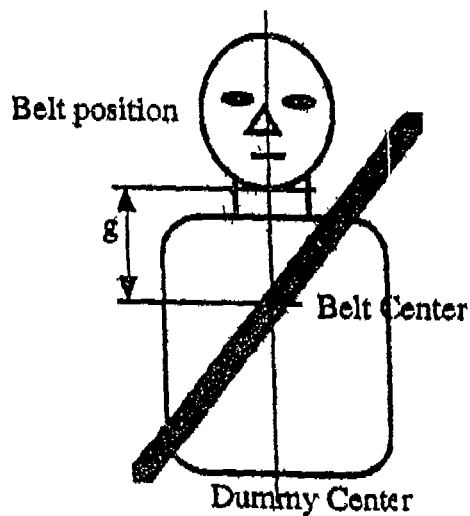
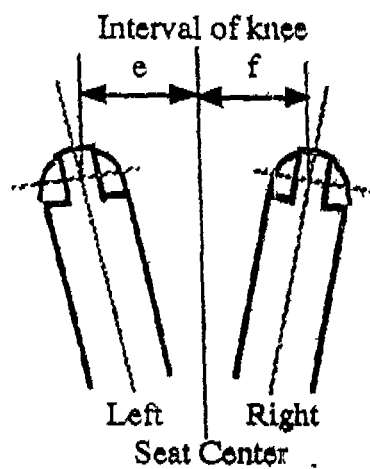
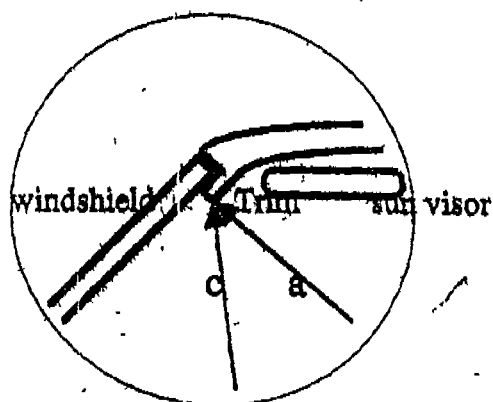
d : 4.3 inch (110mm)



e : 5.3 inch (135mm)

f : 5.5 inch (140mm)

g : 5.9 inch (150mm)



ATTACHMENT III-3
Information for NHTSA Regarding The 2002 TOYOTA SIENNA

Occupant clearance dimension(Passenger)

Passenger

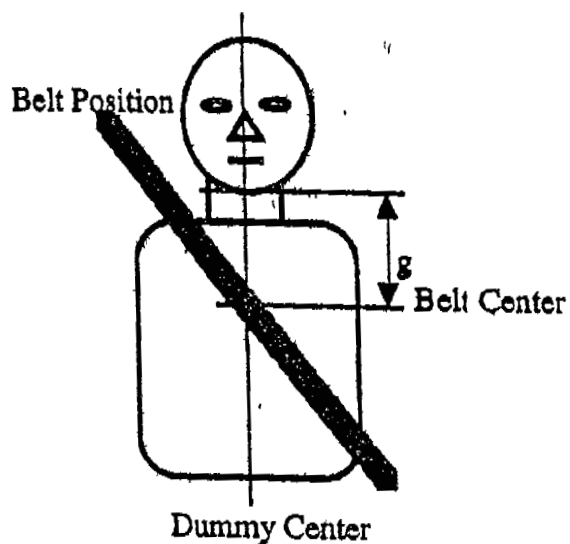
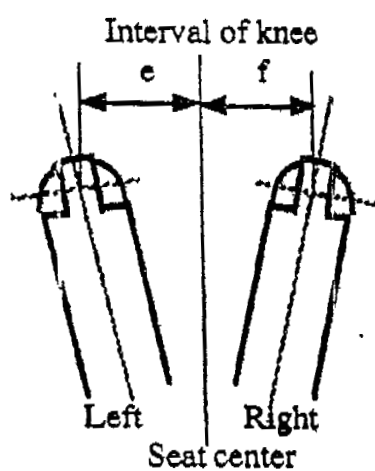
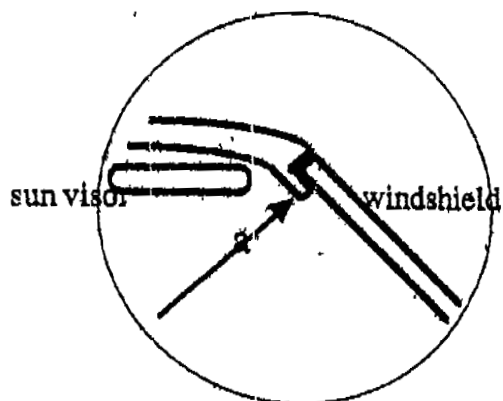
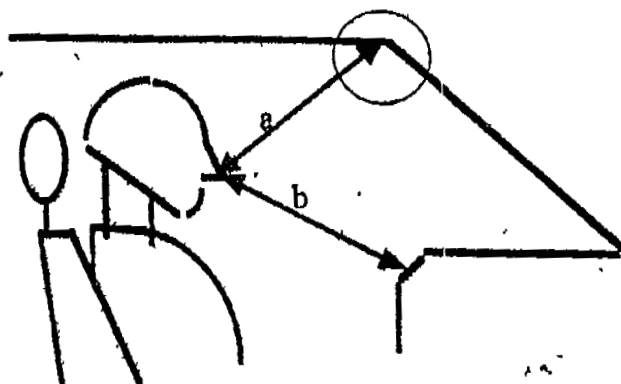
a : 13.2 inch (336mm)

b : 22.8 inch (578mm)

e : 3.9 inch (100mm)

f : 3.9 inch (100mm)

g : 6.3 inch (160mm)



ATTACHMENT IV

Information for NHTSA Regarding The 2002 TOYOTA SIENNATest Conditions for Barrier Crash Test

The following are design-related matters necessary for conducting the barrier crash test.

Test Conditions1. Useable Fuel Tank Volume 21.2 gallons

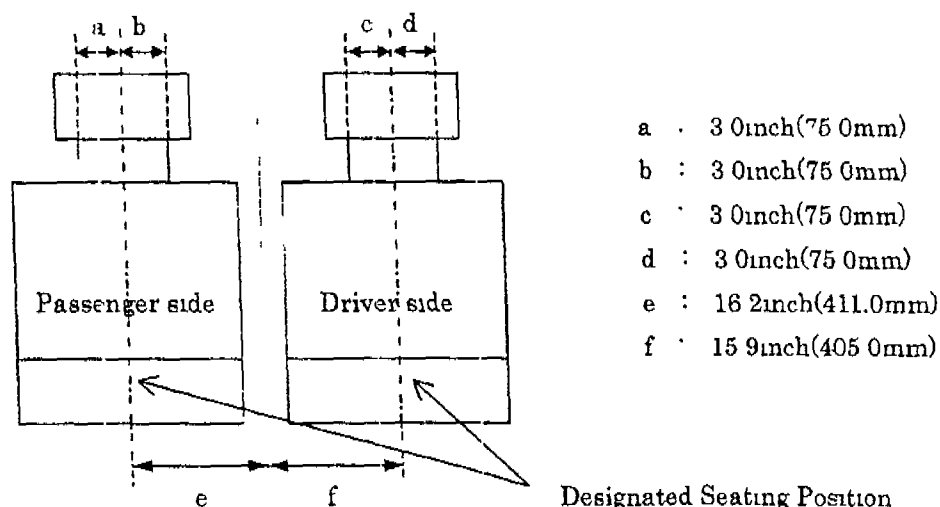
92% of useable volume 19.5 gallons

94% of useable volume 19.9 gallons

2. Vehicle Capacity Weight

Rated Cargo & Luggage Weight . XLE or LE or CE grade . 110 lbs

Designated Seating Capacity . 7

3. Tire Inflation Pressure : P205/70R15 Fr&Rr : 35 psi (2.4kgf/cm²)
P215/65R15 Fr&Rr : 32 psi (2.2kgf/cm²)4. Outboard Designated Seating Position

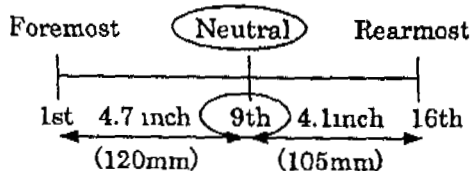
- a : 30inch(760mm)
- b : 30inch(760mm)
- c : 30inch(760mm)
- d : 30inch(760mm)
- e : 162inch(4110mm)
- f : 159inch(4050mm)

Vehicle Center

5 Front Seat Adjustment (Driver & Passenger Side) :

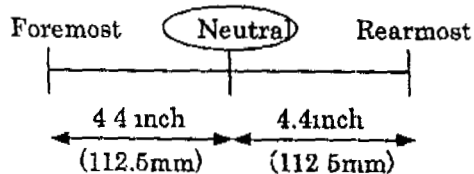
A Manual Seat (For driver and passenger)

Move the seat ninth notches
rearward from the foremost position



B Power Seat (For driver)

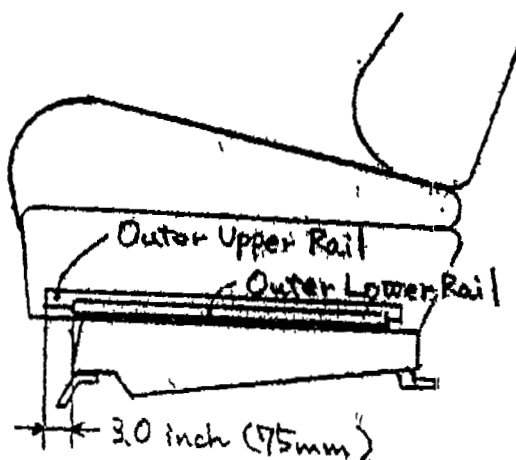
Move to the seat 4.4 inches rearward
From the foremost position



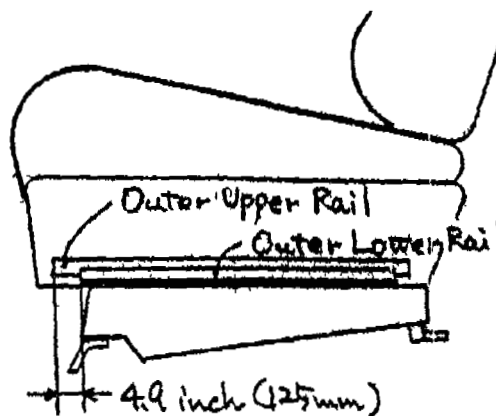
Supplementary Explanation For Seat adjustment

The length which is measured between the outer seat track upper rail to lower rail, is showed in below.

A Manual seat (For driver and passenger)



B. Power seat (For driver)



6. Seat Cushion Position

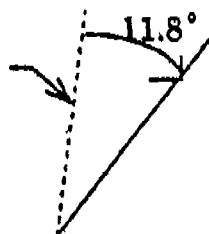
Vertical adjuster : Lowermost (Driver's seat only)

7. Designated Seat Back Position :

A ① Manual seat (For Driver : with vertical adjuster)

Recline 11.8 degrees rearward from the most upright position

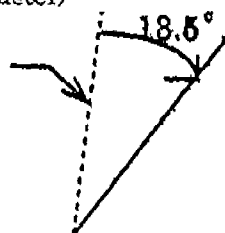
Upright



A.② Manual seat (For Passenger : without vertical adjuster)

Recline 13.5 degrees rearward from the most upright position.

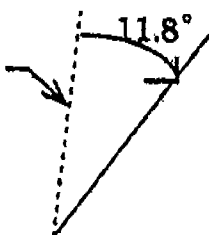
Upright



B Power seat (For Driver : with vertical adjuster)

Recline 11.8 degrees rearward from the most upright position

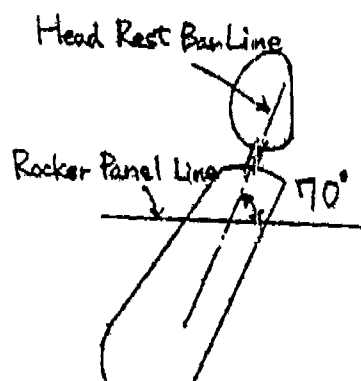
Upright



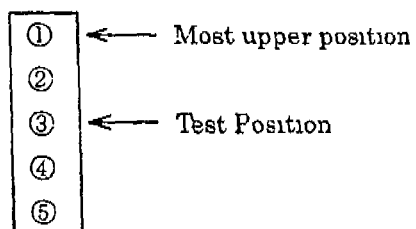
Supplementary Explanation For Seat Backs adjustment.

The head rest angle, which is measured from the rocker panel when the dummy is not placed, is showed is below.

Manual and Power Seat (For Driver and Passenger)



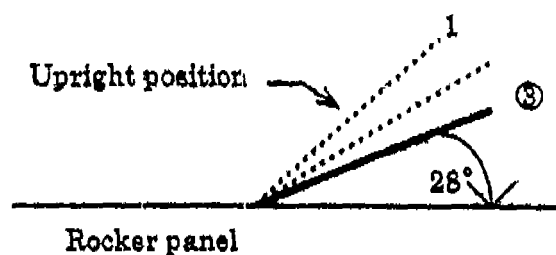
8. Shoulder Belt Anchor Position



9. Steering Column Position :

Tilt two notches downward from the upright position

Steering column angle is 28 degrees to the rocker panel.

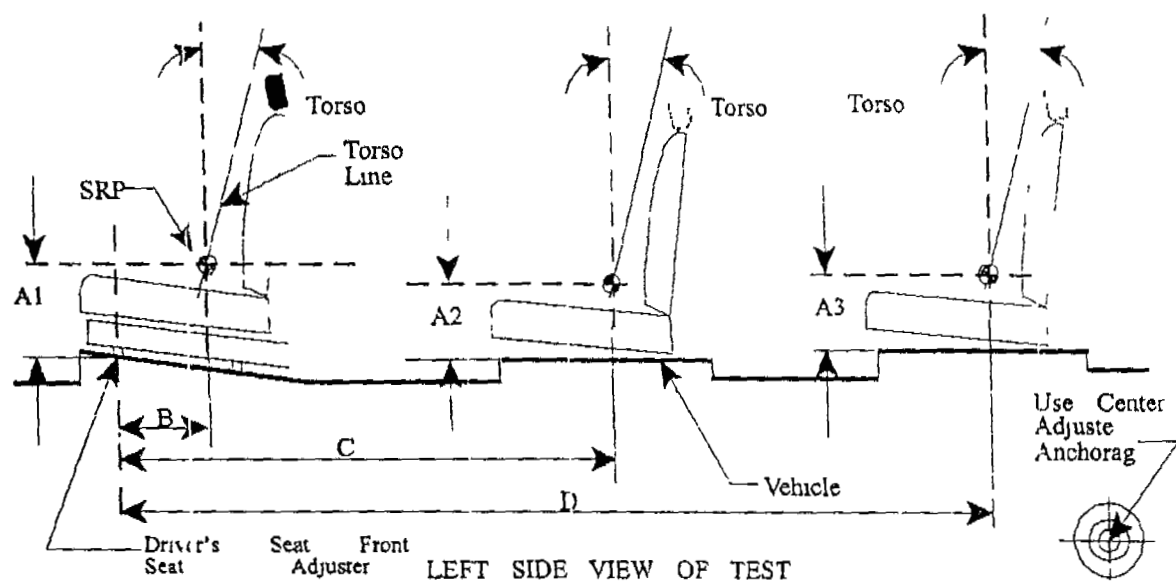


10. Another

Following is the list of vehicle components that may be removed in order to adjust the test vehicle weight

No	Part Name	Estimated weight (lbs)
1	Spare Tire	
	T45/80R16	32.8
	P205/70R15	41.1
	P215/65R15	37.9
2	Jack	4.7
3	Rear Bumper Assembly	29.5

ATTACHMENT V

Information for NHTSA Regarding The 2002 TOYOTA SIENNAFront Seat Reference Point (SRP) dataModel Year: 2002 , Make: TOYOTA ; Model: SIENNABody Style: MINI VAN ; Seat Style: Fr: Separate, Rr1 Bench or Separate, Rr2 Split Bench

		Left (Driver Side)	Center (if any)	Right
A1		(Driver) 13.3	N/A	(Front Passenger) 14.0
A2		Bench: 15.4 , Separate: 15.8		
A3		15.9	17.2	15.9
B		14.1	N/A	13.9
C		46.4	Bench: 46.4 Separate: N/A	46.4
D		79.3	78.3	79.3
Torso Angle (degree)	Front Row	22	N/A	22
	Second Row	25	N/A	25
	Third Row	25	25	25

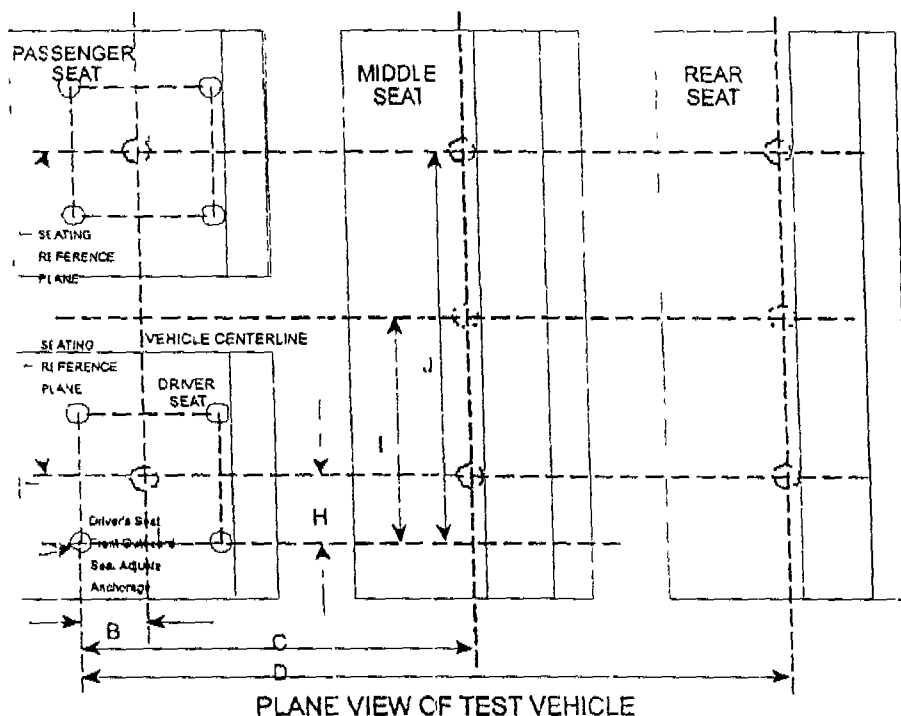
Note: All dimensions are in inch

Information for NHTSA Regarding The 2002 TOYOTA SIENNA

Second Low Seat Reference Point (SRP) data

Model Year 2001, Make TOYOTA Model: SIENNA

Body Style: MINI VAN; Seat Style: Fr Separate, Rr1 Bench or Separate, Rr2, Split Bench



B	Driver 13.3, Passenger:14.0
C	Bench, Separate:46.4
D	Outer 79.3, Center:78.3
H*	Front:8.9 Rear No 1 Bench 9.8, Separate 8.8 Rear No 2: 7.4
I*	Front:24.9 Rear No 1 Bench 24.6, Separate 24.6 Rear No 2: 21.4
J*	Front:41.0 Rear No 1 Bench 30.5, Separate 40.4 Rear No.2: 35.4

Provide all dimensions needed to locate SRP.

Note: All dimensions are in inch