

FINAL REPORT NUMBER 225-MGA-03-006

SAFETY COMPLIANCE TESTING FOR FMVSS 225
"Child Restraint Anchorage Systems"

MITSUBISHI MOTORS CORPORATION
2003 MONTERO SPORT
NHTSA No. C35601

MGA RESEARCH CORPORATION
446 Executive Drive
Troy, Michigan 48083



Test Date: August 11, 2003
Report Date: October 29, 2003

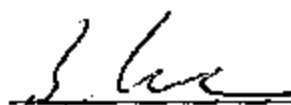
FINAL REPORT

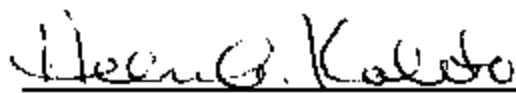
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NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
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OFFICE OF VEHICLE SAFETY COMPLIANCE
400 SEVENTH STREET, SW
ROOM 6111 (NVS-221)
WASHINGTON, D.C. 20590

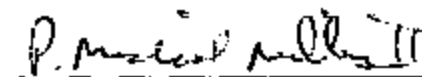
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15. Supplementary Notes			
16. Abstract A compliance testing was conducted on the subject 2003 Mitsubishi Montero Sport, NHTSA No. C35601, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-225T & 225L for the determination of FMVSS 225 compliance. The tests were conducted at MGA Research Corporation in Troy, Michigan on August 11, 2003. Test failures identified were as follows: NONE The data recorded indicates that the 2003 Mitsubishi Montero Sport tested appears to comply with the requirements for FMVSS 225, set forth by the National Highway Traffic Safety Administration.			
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1.0 PURPOSE AND PROCEDURE

PURPOSE

The child restraint anchorage test results presented in this report are part of the Federal Motor Vehicle Safety Standard (FMVSS) No. 225 compliance test program conducted for the National Highway Traffic Safety Administration (NHTSA) by MGA Research Corporation (MGA) under Contract No. DTNH22-02-D-11043. The purpose of the testing was to determine if the subject vehicle, a 2003 Mitsubishi Montero Sport, NHTSA No. C35601 meets the performance requirements of FMVSS No. 225, "Child Restraint Anchorage Systems."

PROCEDURE

These tests were conducted in accordance with NHTSA's Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedures, TP-225T (5/3/01) and TP-225L (6/11/01), and MGA's Laboratory Test Procedure, MGATP225GOV (3/20/03).

The front occupant compartment consisted of two (2) adjustable outboard bucket seats and the rear occupant compartment consisted of a three-passenger split bench seat. Each rear outboard seating position was equipped with a child restraint anchorage system (one tether and two lower anchors). The rear center occupant seating position was equipped with a tether anchorage only. The center-to-center spacing between the rear outboard lower anchorage systems was approximately 650 mm. The lower anchorages for both rear outboard seating positions were tested with SFAD 2 fixtures and the tether anchorage in the rear center seating position was tested with a SFAD 1 fixture.

2.0 COMPLIANCE TEST AND DATA SUMMARY

TEST SUMMARY

The tests were conducted at MGA, Troy, Michigan on August 11, 2003.

Based on the test results, the 2003 Mitsubishi Montero Sport, appeared to meet the performance requirements of FMVSS No. 225 for these tests.

The SFAD 2 at the rear left seating position sustained a maximum force of 11,035 N and held the required load for 11 seconds with a total displacement of 79 mm, measured at Point "x". The SFAD2 at the rear right seating position sustained a maximum force of 11,089 N and held the required load for 11 seconds with a total displacement of 81 mm, measured at Point "x". The SFAD 1 at the rear center seating position sustained a maximum force of 15,071 N and held the required load for 3 seconds with a total displacement of 69 mm, measured at Point "x". The applied maximum forces and the measured displacements are provided in Table 1.

DATA SUMMARY

Strength and displacement summary data are provided below, and data for the configuration and the location of each child restraint anchorage system are provided in Section 5.0. Photographs are found in Section 6.0 and test plots are found in Section 7.0.

Table 1. Summary Data for Strength and Displacement

MGA Test #	Fixture Type	Seating Position	Max. Load (N)	Displacement (mm)
SC3311	SFAD II	Rear Left	11,035	79
		Rear Right	11,089	81
SC3312	SFAD I	Rear Center	15,071	69

3.0 TEST VEHICLE INFORMATION

Table 2. General Test and Vehicle Parameter Data

VEH. MOD YR/MAKE/MODEL/BODY	2003 Mitsubishi Montero Sport
VEH. NHTSA NO.	C35601
VIN	JA4MT21H33J020485
COLOR	Black
VEH. BUILD DATE	September 2002
TEST DATE	August 11, 2003
TEST LABORATORY	MGA Research Corporation
OBSERVERS	Brad Reaume

GENERAL INFORMATION:

Date Received: 4/5/03 Odometer Reading: 18 miles

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: Mitsubishi Motors Corporation

Date of Manufacture: September 2002; VIN: JA4MT21H33J020485

GVWR: 2430kg; GAWR FRONT: 1200kg

GAWR REAR: 1496kg

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT: 180kpa REAR: 220kpa

Recommended Tire Size: P235/75R15

Recommended Cold Tire Pressure:

FRONT: 180kpa REAR: 220kpa

Size of Tire on Test Vehicle: P235/75R15

Type of Spare Tire: Standard: P235/75R15

VEHICLE CAPACITY DATA:

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

Number of Occupants: Front 2; Rear 3; TOTAL 5

4.0 TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

MGA Research Corporation 446 Executive Drive Troy, Michigan 48083	
Test Equipment Used for Testing	Calibration Due Date
MGA Hydraulic Test Frame	N/A
Two (2) Load Cells 3,000 lb Capability	S/N 305 8/20/03 & S/N 258 11/23/03
Two (2) String Potentiometers (S/N 20420 & 20757)	Calibrated at each use
Hydraulic Pump	N/A
MGA CRF Fixture	N/A
MGA SFAD2	N/A
MGA H-point Machine	N/A
MGA 2-Dimensional Template	N/A
Linear Scale	1/17/04 (SN# 175)
MGA Data Acquisition System	N/A
Three (3) Hydraulic Cylinders	N/A
Calipers	2/14/04 (S/N DCL002)
Force Gauge	10/11/03 (S/N FRG001)
Inclinometer (Digital)	7/03/04 (S/N DGP005)

5.0 DATA

Table 3. Child Restraint Tether Anchorage Configuration (Data Sheet 1)

Seating Position		Permit the attachment of a tether hook	Accessible without the need for any tool other than a screwdriver or coin	Ready for use without the need for any tools	Sealed to prevent the entry of exhaust fumes
Front Row		N/A	N/A	N/A	N/A
Second Row	LH	Yes	Yes	Yes	Yes
	Ctr.	Yes	Yes	Yes	Yes
	RH	Yes	Yes	Yes	Yes
Third Row		N/A	N/A	N/A	N/A

Note: AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225L & 225T.

REMARKS: NONE

Table 4. Child Restraint Lower Anchorage Configuration (Data Sheet 2)

OBSERVED LOWER ANCHORAGE CONFIGURATION	SEAT POSITION				
		FRONT ROW	SECOND ROW		THIRD ROW
			I/B	O/B	
Above anchorage, permanently marked with a circle not less than 13 mm in Dia.; and whose color contrasts with its background; and its center is not less than 50 mm and not more than 75 mm above the bar, and in the vertical longitudinal plane that passes through the center of the bar.	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Each of the bars is visible, without the compression of the seat cushion or seat back, when the bar is viewed, in a vertical longitudinal plane passing through the center of the bar, along a line marking an upward 30 degree angle with a horizontal plane.	LH	N/A	N/A		N/A
	Ctr				
	RH				
Diameter of the bar (mm)	LH	N/A	6.0	6.08	N/A
	Ctr		N/A		
	RH		6.0	6.0	
Inspect if the bars are straight, horizontal and transverse	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Optional Marking: At least one anchorage bar (when deployed for use, if storable anchorages), one guidance fixture, or one seat marking is visible.	LH	N/A	N/A		N/A
	Ctr				
	RH				
Optional Marking: If guidance fixtures are used, the fixture(s) must be installed.	LH	N/A	N/A		N/A
	Ctr				
	RH				
Measure the distance between Point "Z" of the CRF and the center of the anchorage bar (mm)	LH	N/A	47	48	N/A
	Ctr		N/A		
	RH		49	49	
Measure the distance between the SRP to the center of the anchorage bar (mm)	LH	N/A	140		N/A
	Ctr		N/A		
	RH		140		

Table 4. Child Restraint Lower Anchorage Configuration (Data Sheet 2) (continued)

OBSERVED LOWER ANCHORAGE CONFIGURATION	SEAT POSITION				
		FRONT ROW	SECOND ROW		THIRD ROW
			I/H	O/B	
Inspect if the centroidal longitudinal axes are collinear within 5 degrees	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Inspect if the inside surface of the bar that is straight and horizontal section of the bars, and determine they are not less than 25 mm, but not more than 40 mm in length (mm).	LH	N/A	33	33	N/A
	Ctr		N/A		
	RH		33	33	
Inspect if the bars can be connected to, over their entire inside length by the connectors of child restraint system.	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Measure the distance between the center of the length of one bar to the center of the length of the other bar. The requirement is 280 mm ± 1 mm (mm).	LH	N/A	280		N/A
	Ctr		N/A		
	RH		280		
Inspect if the bars are an integral and permanent part of the vehicle.	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Inspect if the bars are rigidly attached to the vehicle. If feasible, hold the bar firmly with two fingers and gently pull.	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		

PITCH, YAW, & ROLL INFORMATION

SEAT POSITION	PITCH (deg)	YAW (deg)	ROLL (deg)
LH	10	No Data	0.4
Cr.	N/A		N/A
RH	10		0.4

Note: AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225L & 225T.

REMARKS: NONE

Table 5. Tether Location and Dimensional Measurements (Data Sheet 3)

SEAT POSITION FOR TETHER		TETHER ANCHORAGE LOCATION Located in the required zone?
Front Row	LH	N/A
	Cr.	
	RH	
Second Row	LH	Yes
	Cr.	Yes
	RH	Yes
Third Row	LH	N/A
	Cr.	
	RH	

Note: AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225L & 225T.

REMARKS: NONE

Table 6. Tether Anchorage Static Loading and Displacement (Data Sheet 5)

SEAT POSITION		Seat, Seat Back, & Head Restraint Positions			Type of SFAD used	Angle (deg)	Initial Location (mm)	Onset Rate (N/sec.)	Force Applied (N)	Max. Load (N)	Final Location (mm)	Horizontal Displ. (mm)
		Seat	Seat Back	Is There a Head Restraint ?								
Front Row	LH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Cr.											
	RH											
Second Row	LH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Cr.	Fixed	Fixed	No	1	5	43	537	15,000	15,071*	112	69
	RH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Third Row	LH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Cr.											
	RH											

Note: (1) AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP225T.

REMARKS: *Applied force exceeded force specified in the test procedure.

Table 7. Lower Anchorage Static Loading and Displacement (Data Sheet 6) With SFAD 2

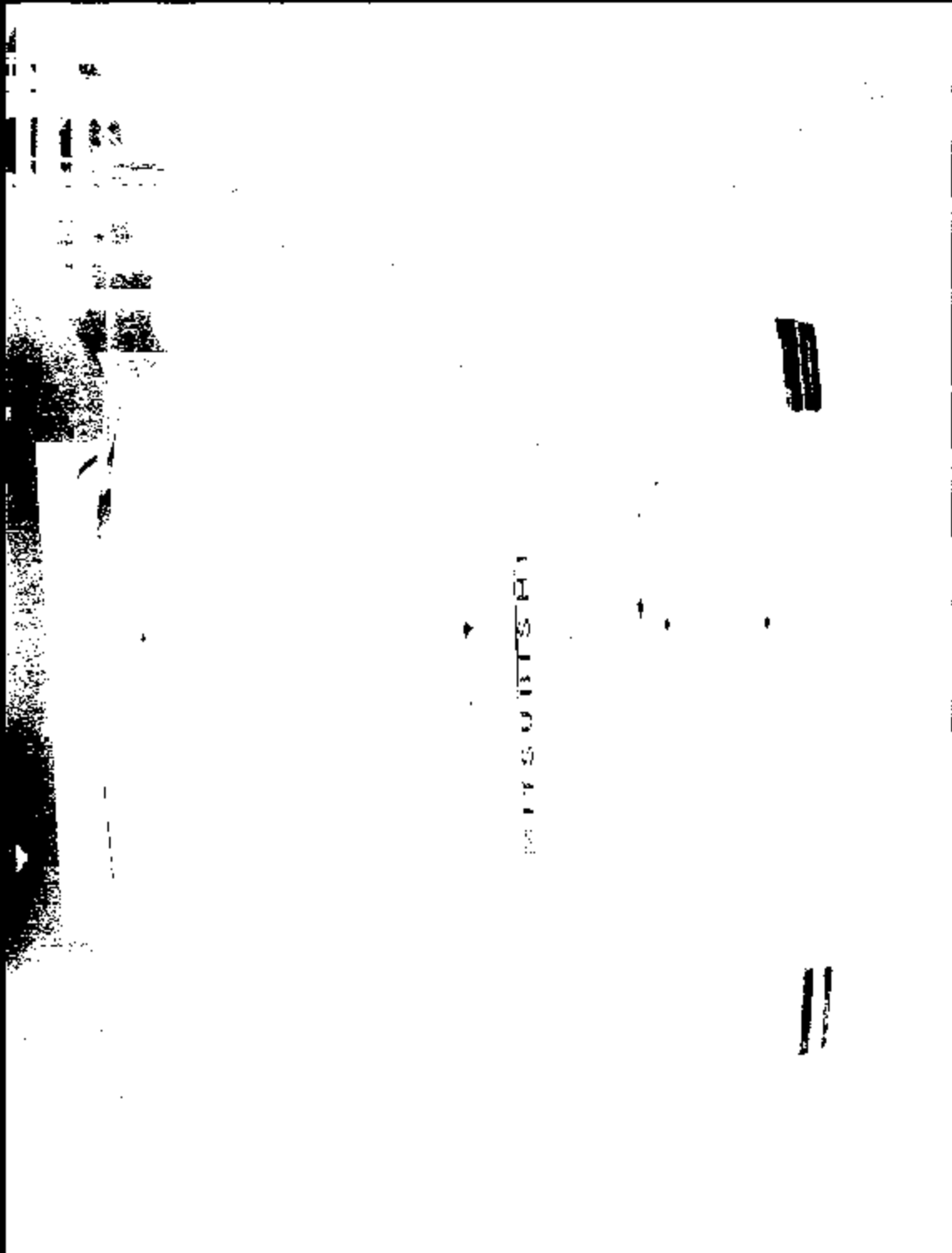
SEAT POSITION		Seat, Seat Back, & Head Restraint Positions			Measured Angles		Initial Location (mm)	Onset Rate (N/sec.)	Force Applied (N)	Max. Load (N)	Final Location (mm)	Displ. (mm)
		Seat	Seat Back	Is There a Head Restraint ?	Vertical (deg.)	Horizontal (deg.)						
Front Row	LH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Cr.											
	RH											
Second Row	LH	Fixed	Fixed	Yes	N/A	9.2	24	389	11,000	11,035*	103	79
	Cr.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	RH	Fixed	Fixed	Yes	N/A	9.2	27	389	11,000	11,089*	108	81
Third Row	LH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Cr.											
	RH											

Note: (1) AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225L.
(2) FORWARD FORCE APPLICATION

REMARKS: *Applied force exceeded force specified in the test procedure.

6.0 PHOTOGRAPHS

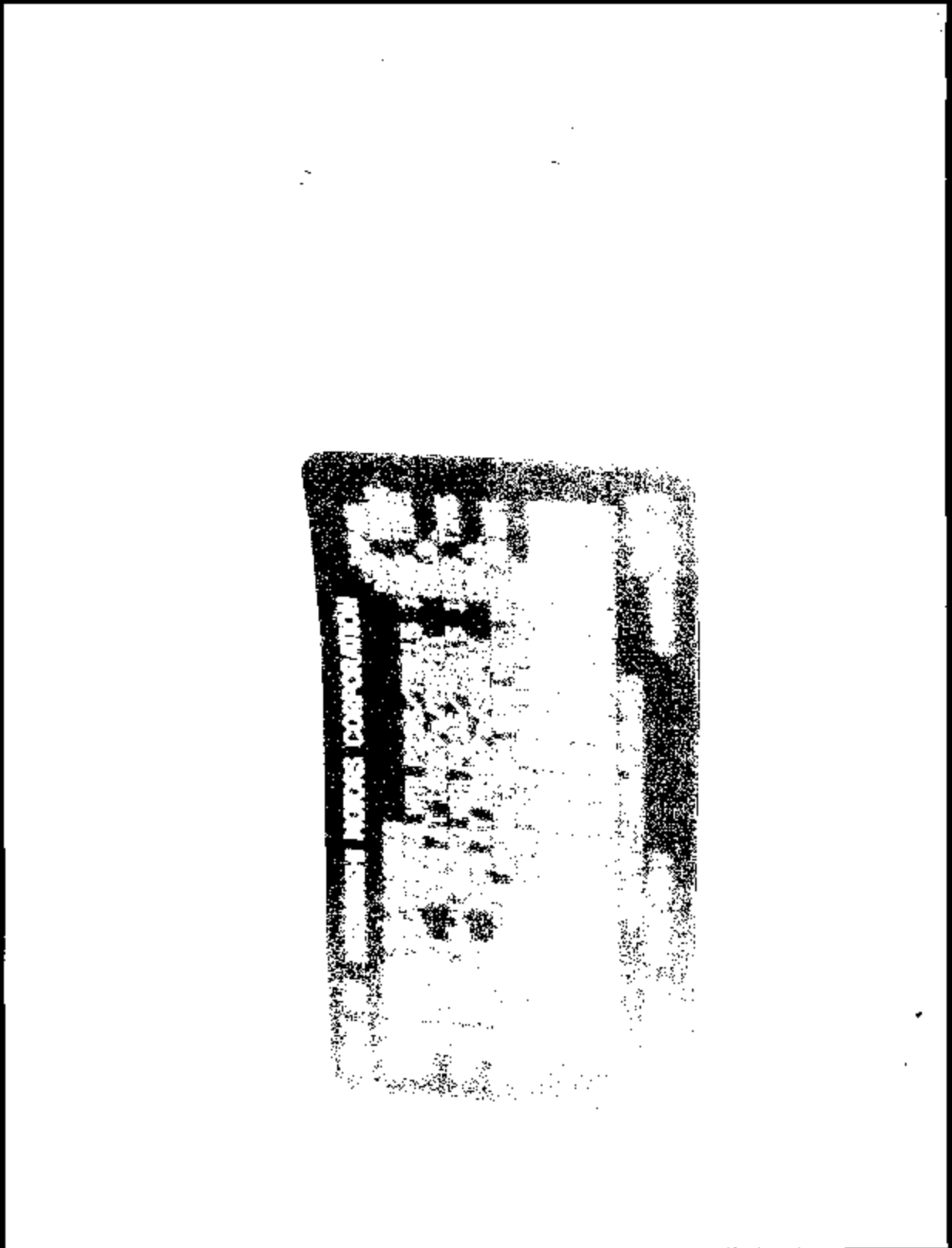
6.1 Full rear view



6.2 Full front view



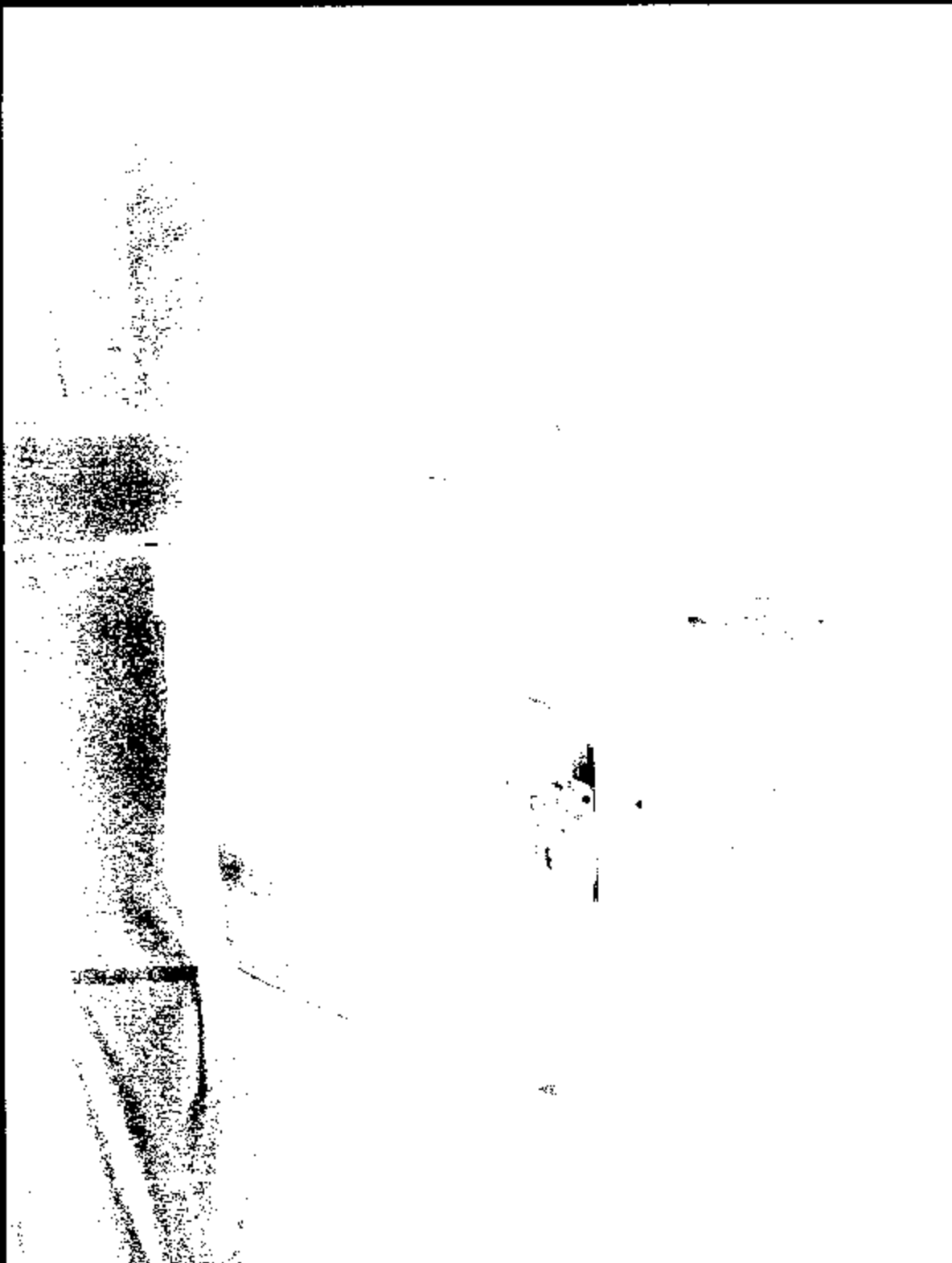
6.3 Test vehicle's certification label



6.4 Test vehicle's tire information placard



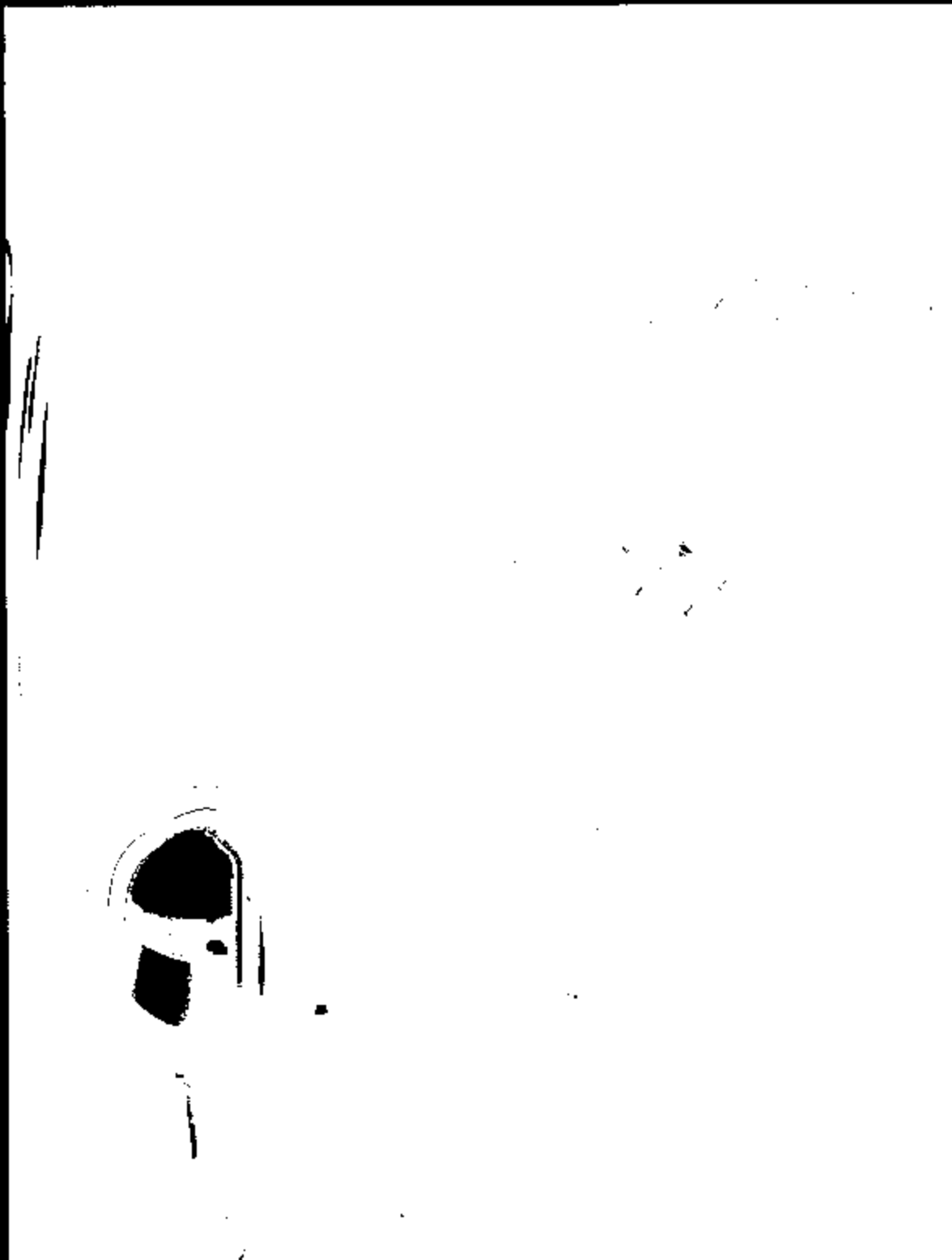
6.5 ¾ Frontal left side view of test vehicle



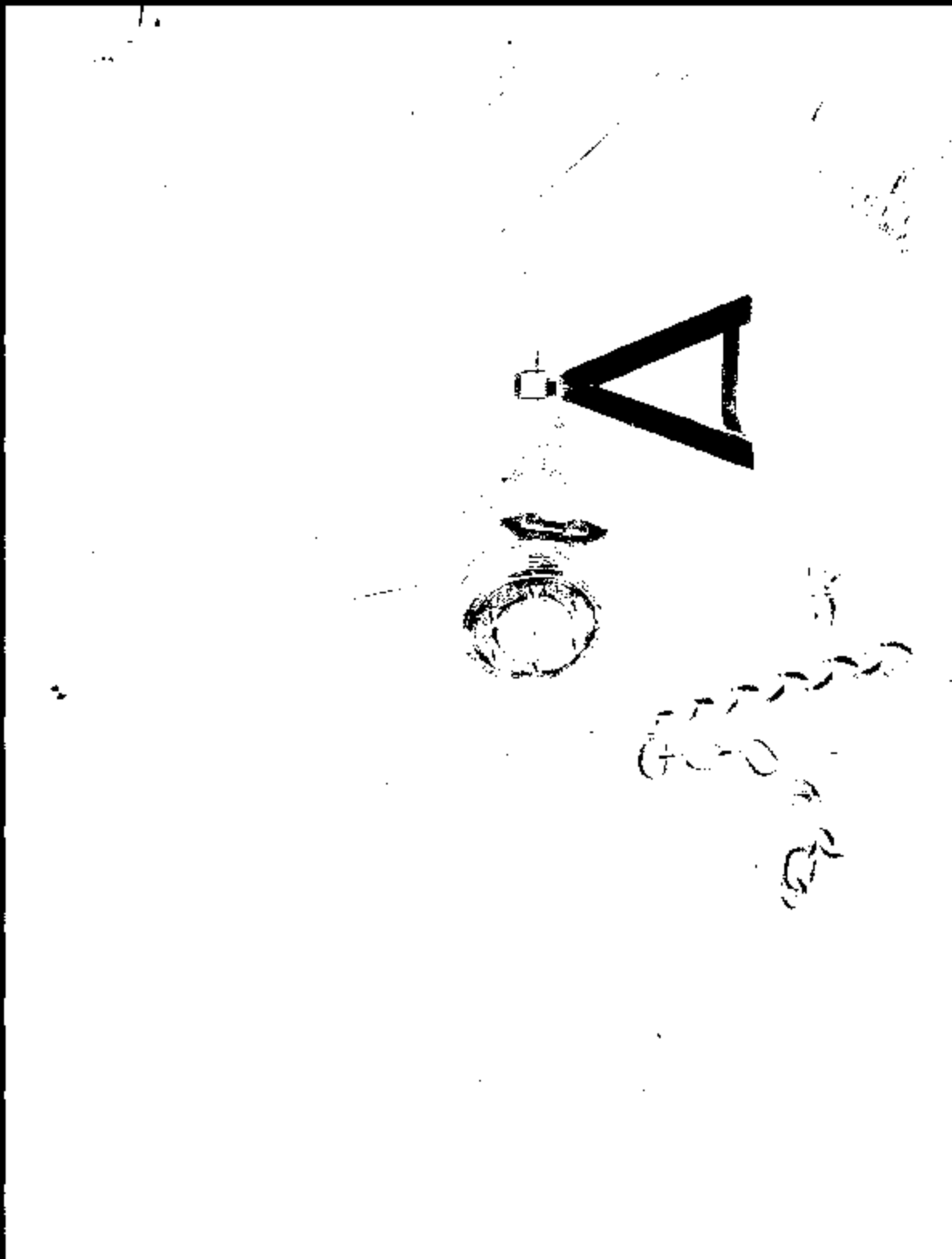
6.6 ¾ Frontal right side view of test vehicle



6.7 Vehicle tie down at each tie down location
6.7.1 left front



6.7.2 left rear

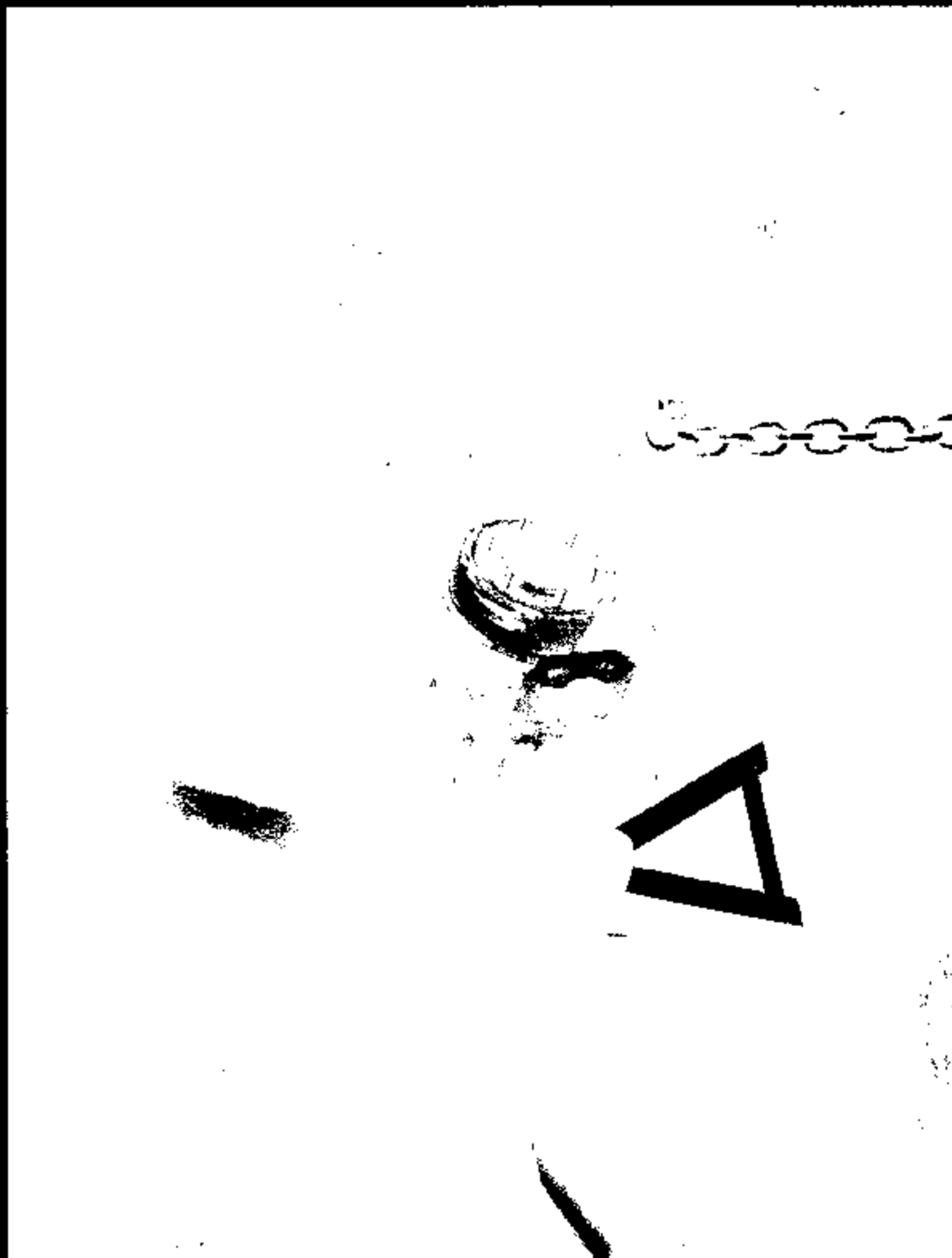


6.7.3 right front

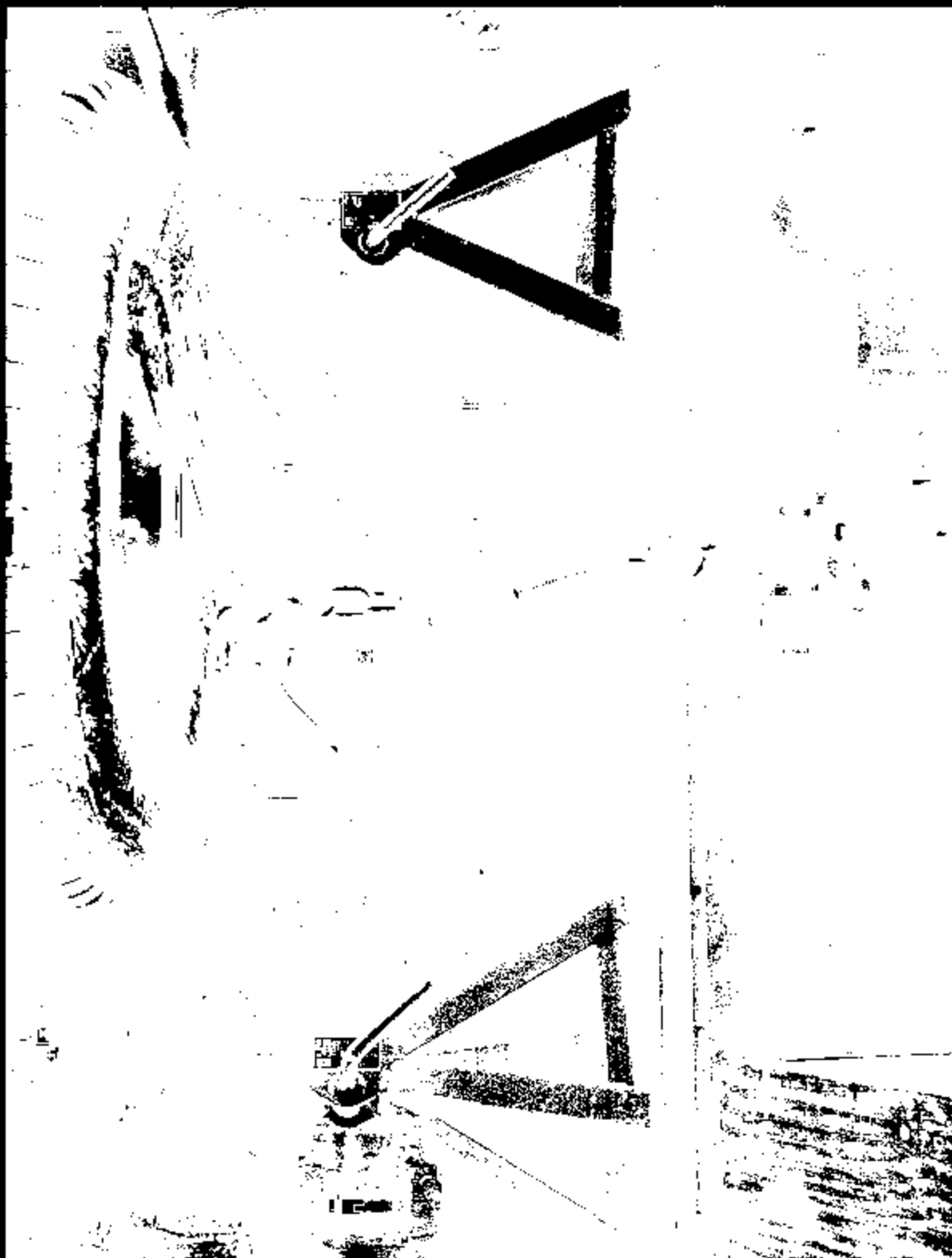


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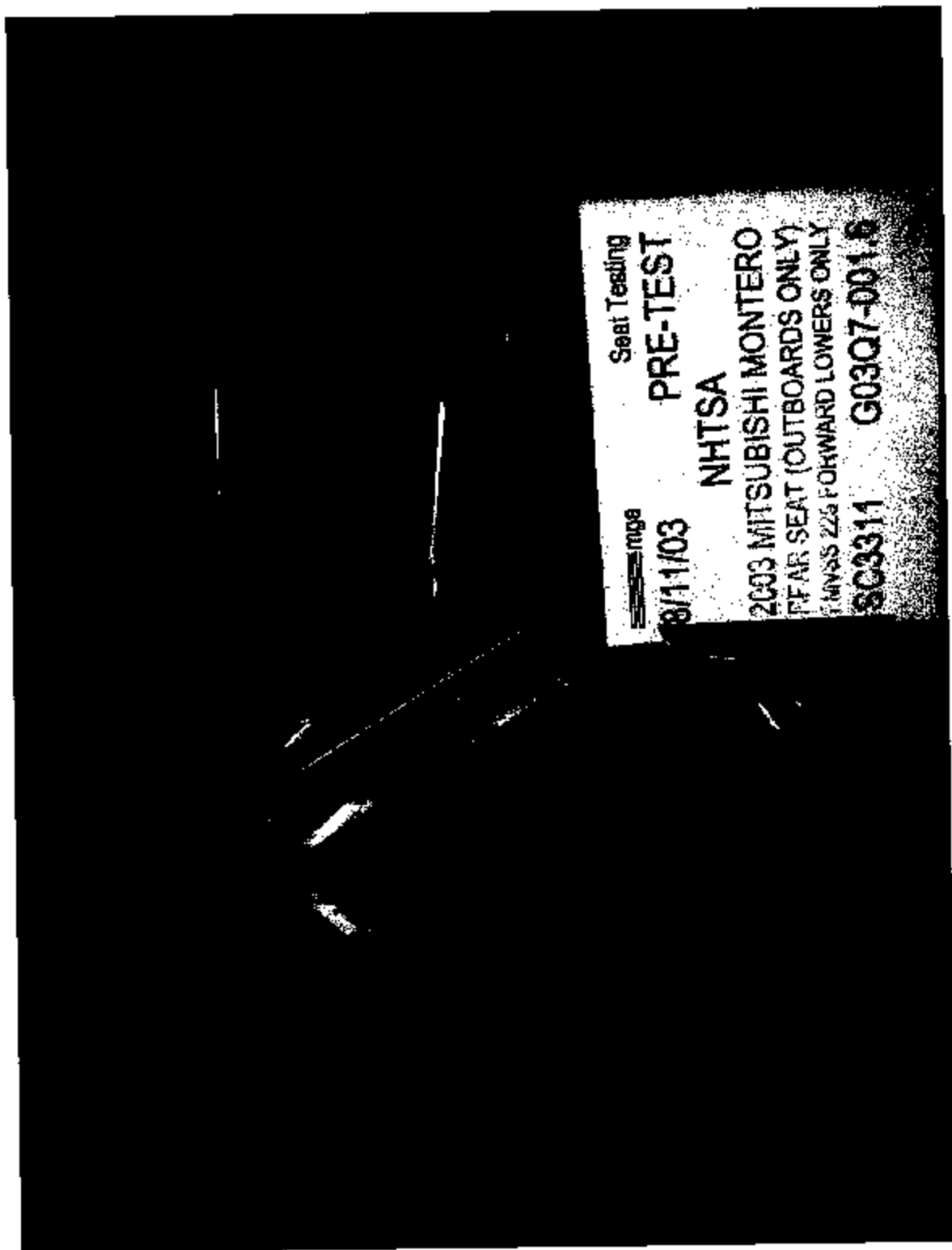
6.7.4 right rear



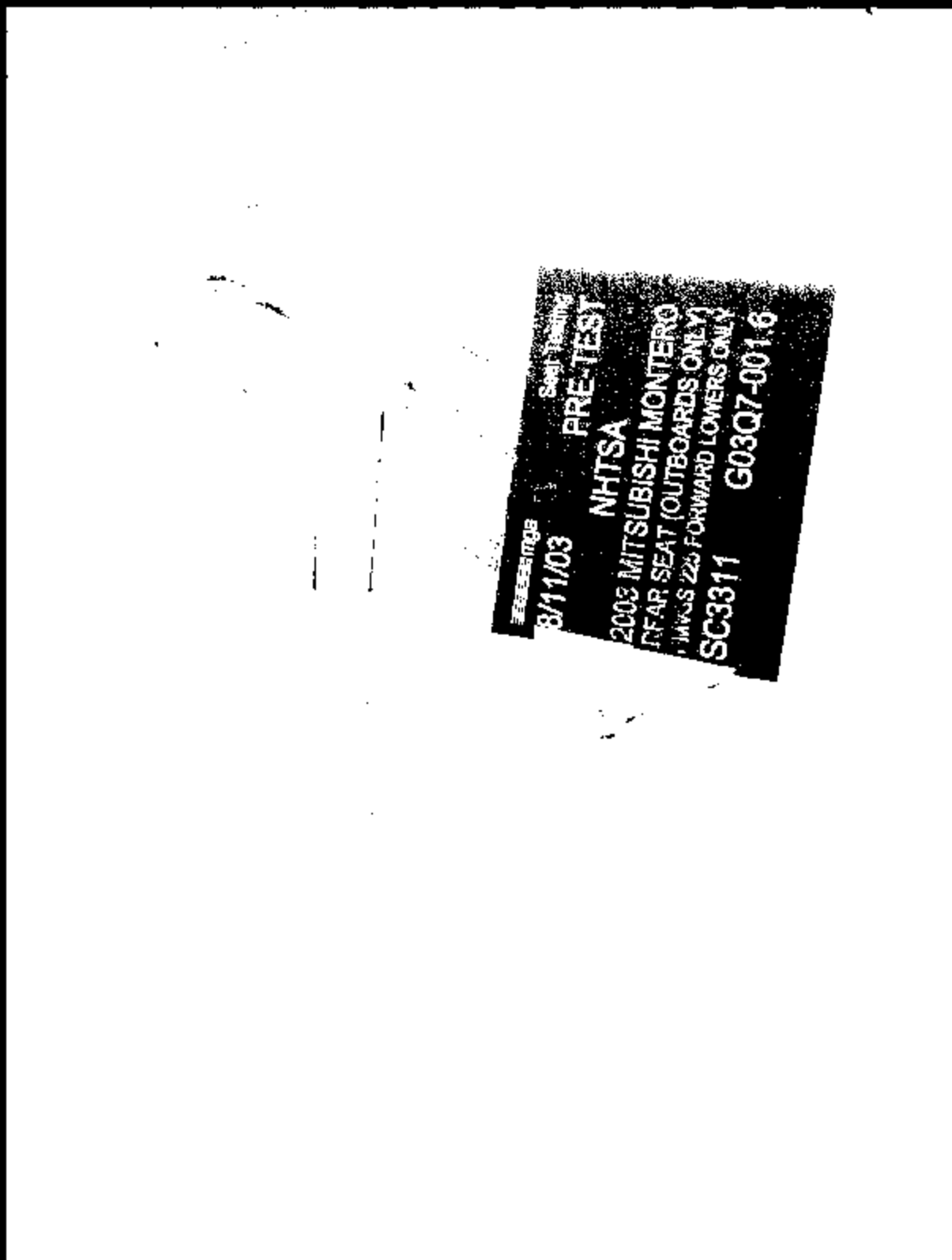
6.7.5 rear under vehicle



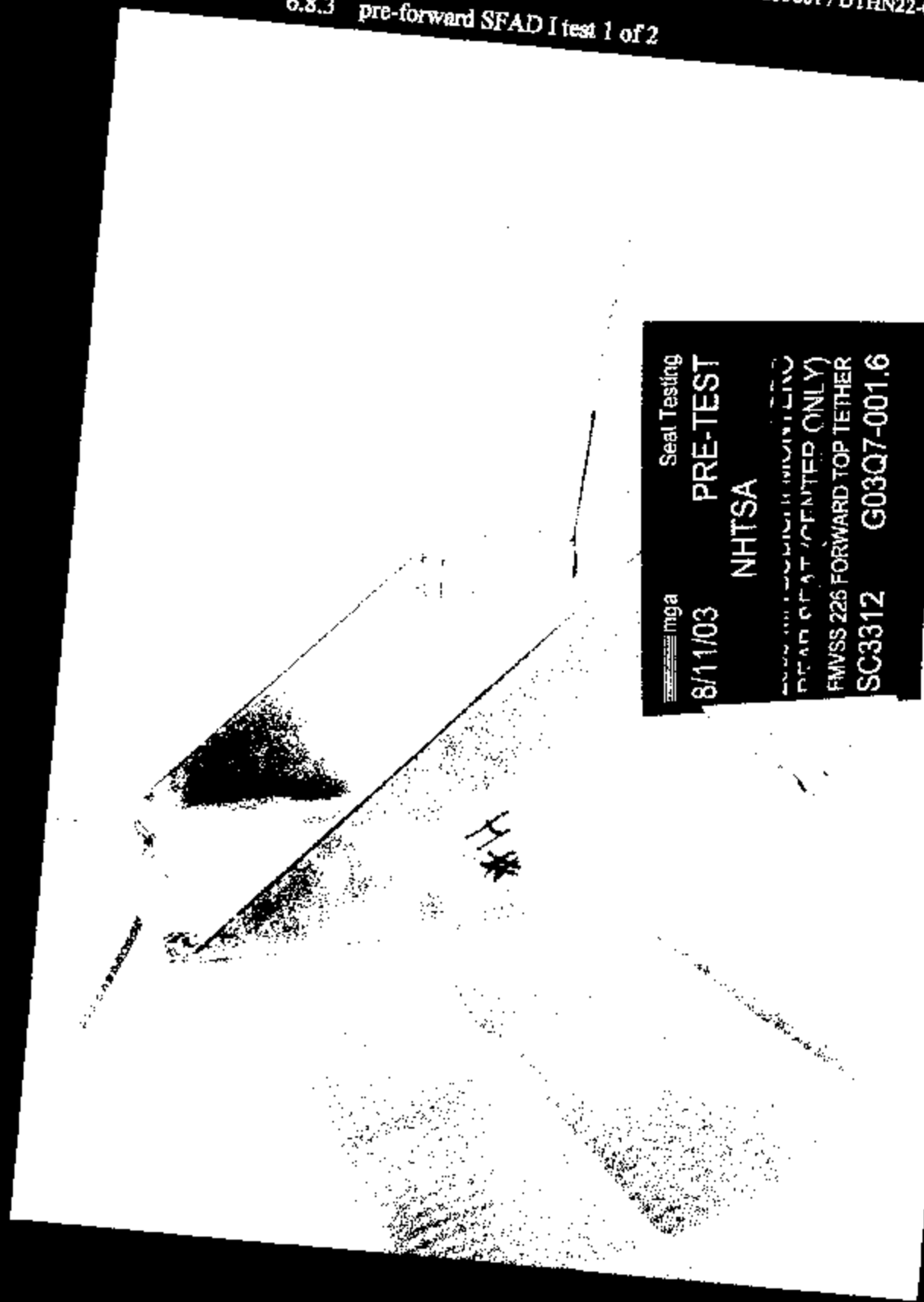
- 6.8 Pre-test views of each child restraint anchorage system installed in the vehicle
6.8.1 pre-forward SFAD II test 1 of 2



6.8.2 pre-forward SFAD II test 2 of 2

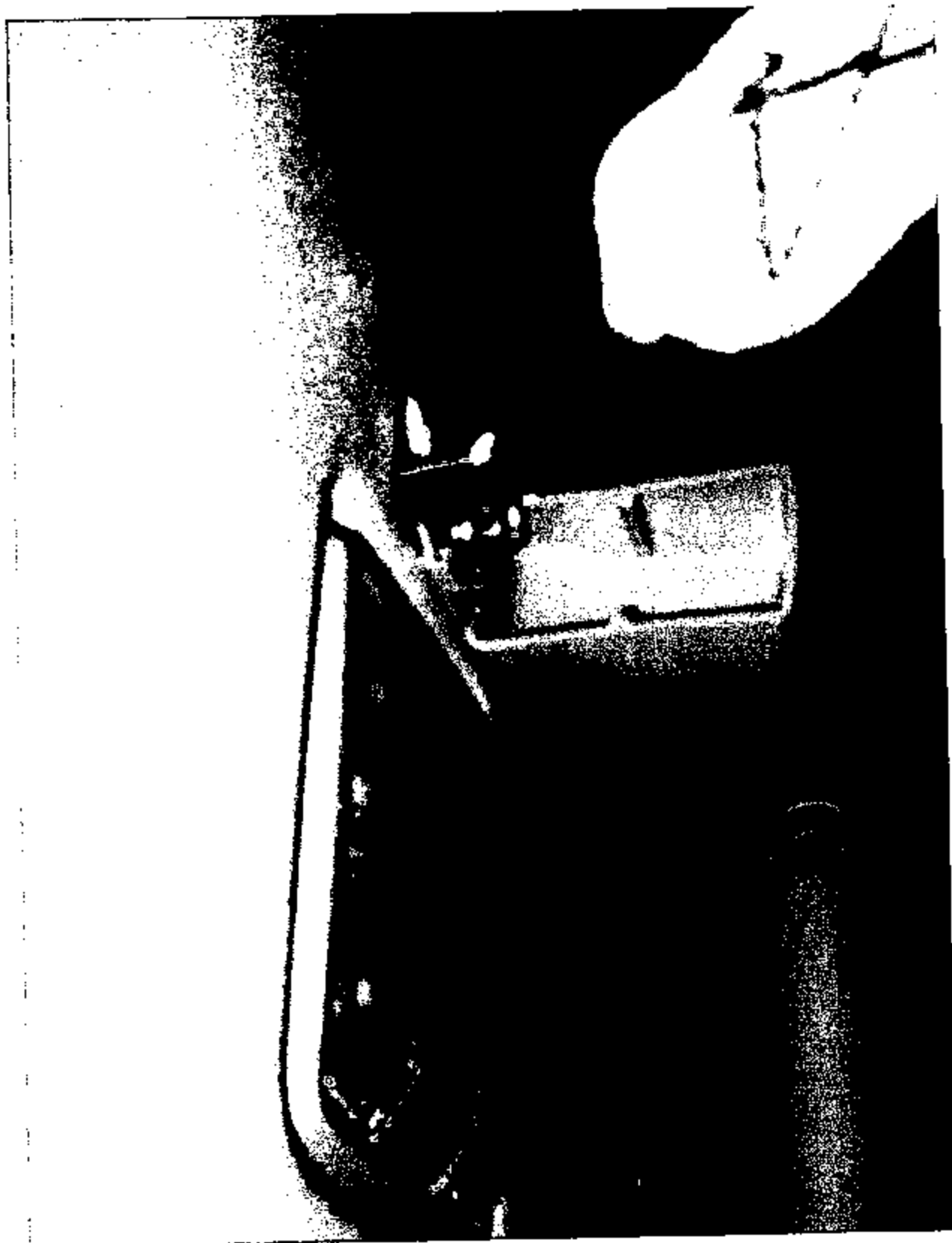


6.8.3 pre-forward SFAD I test 1 of 2

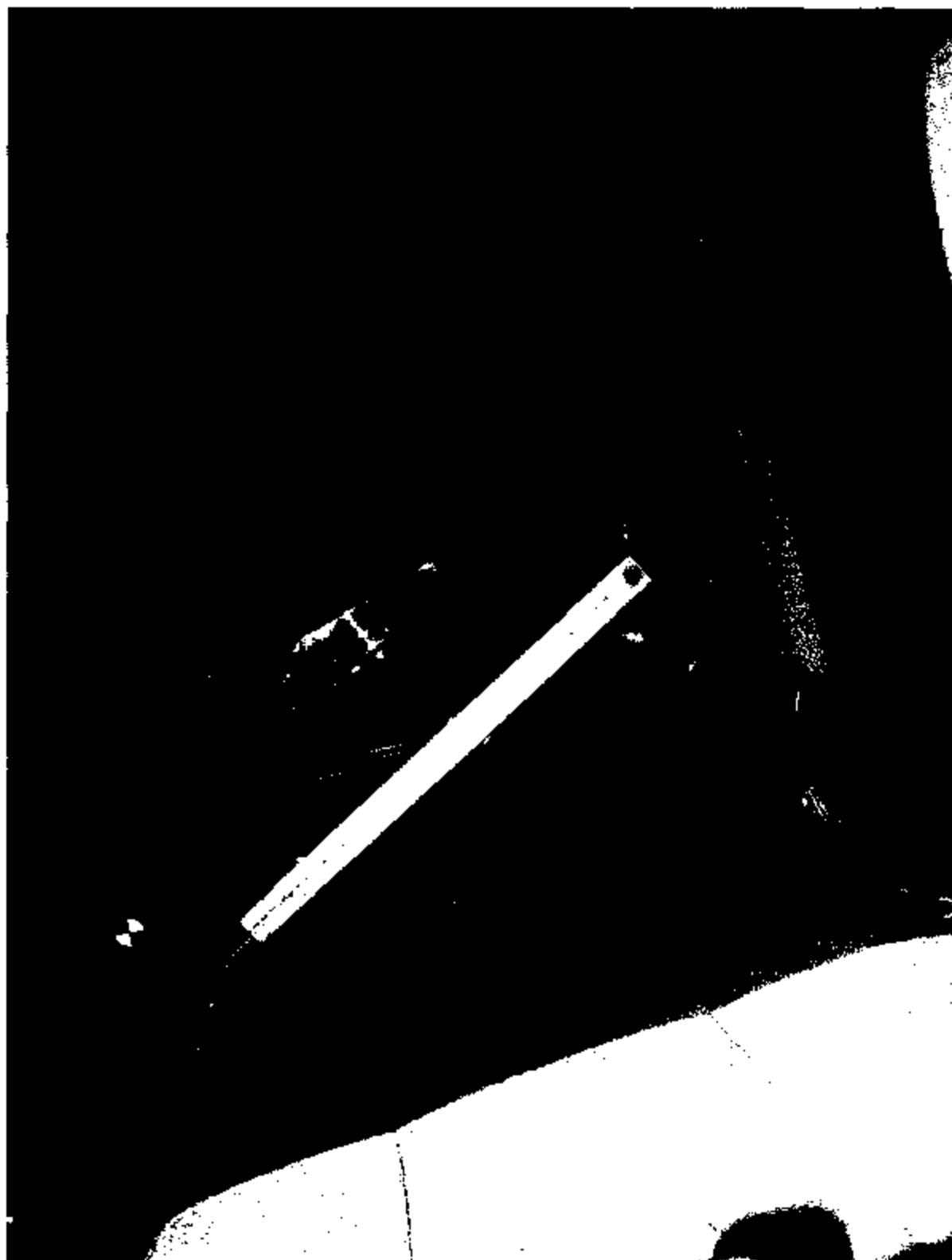


Seal Testing
PRE-TEST
NHTSA
8/11/03
FMVSS 225 FORWARD TOP TETHER
SC3312 G03Q7-001.6

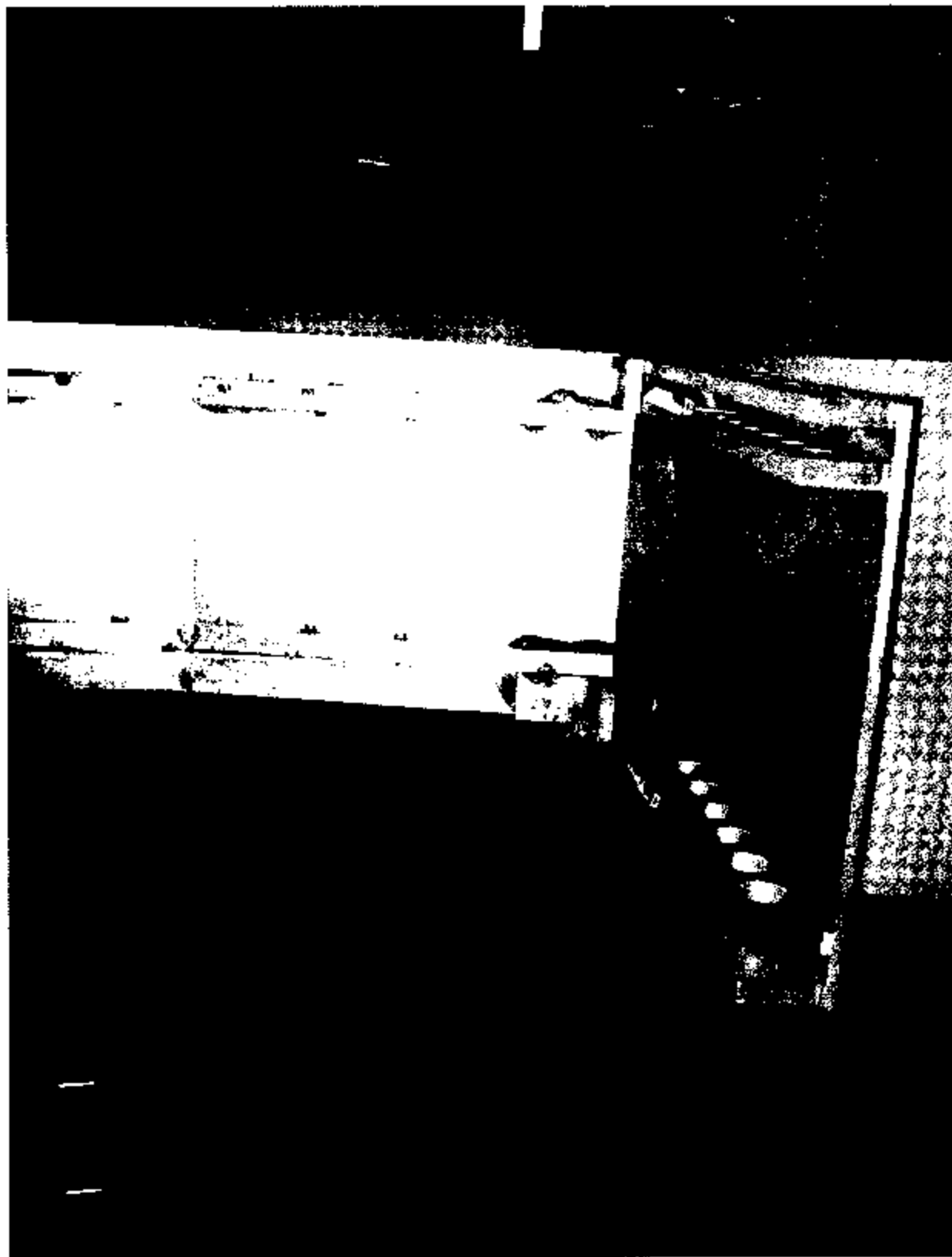
6.8.4 pre-forward SFAD I test 2 of 2



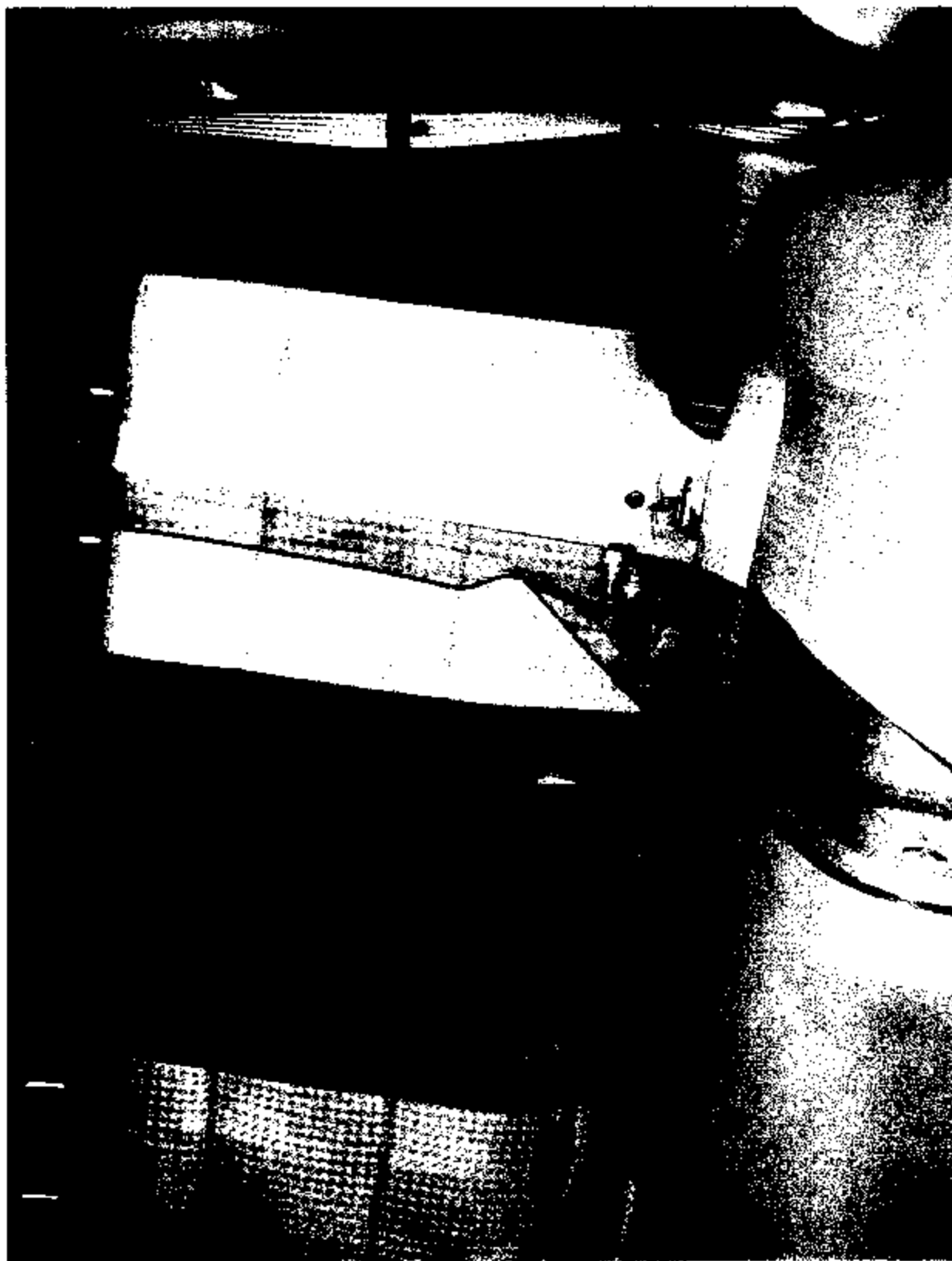
- 6.9 Pre-test equipment set up at each designated seating position
- 6.9.1 pre-test equipment 1 of 5



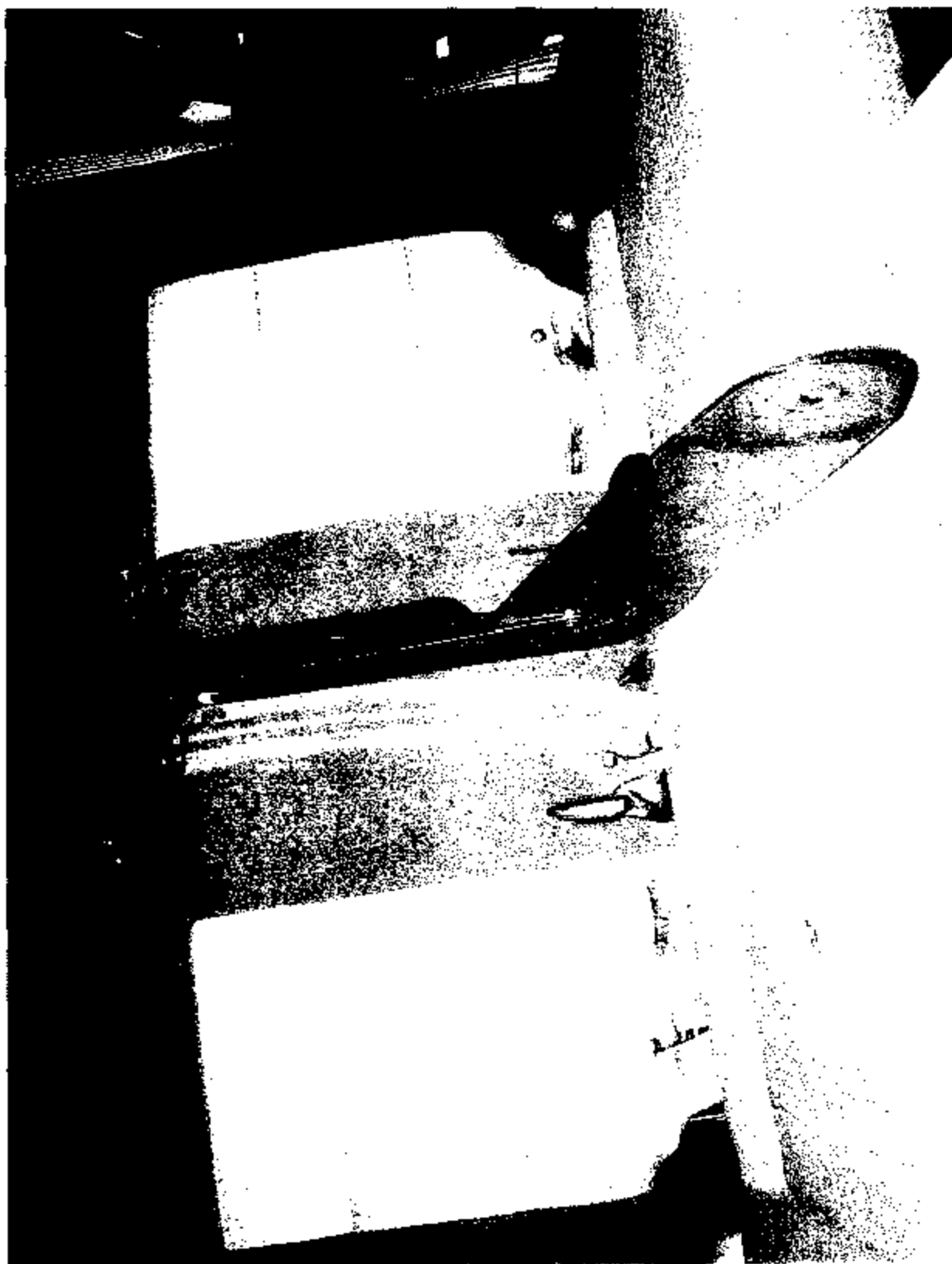
6.9.2 pre-test equipment 2 of 5



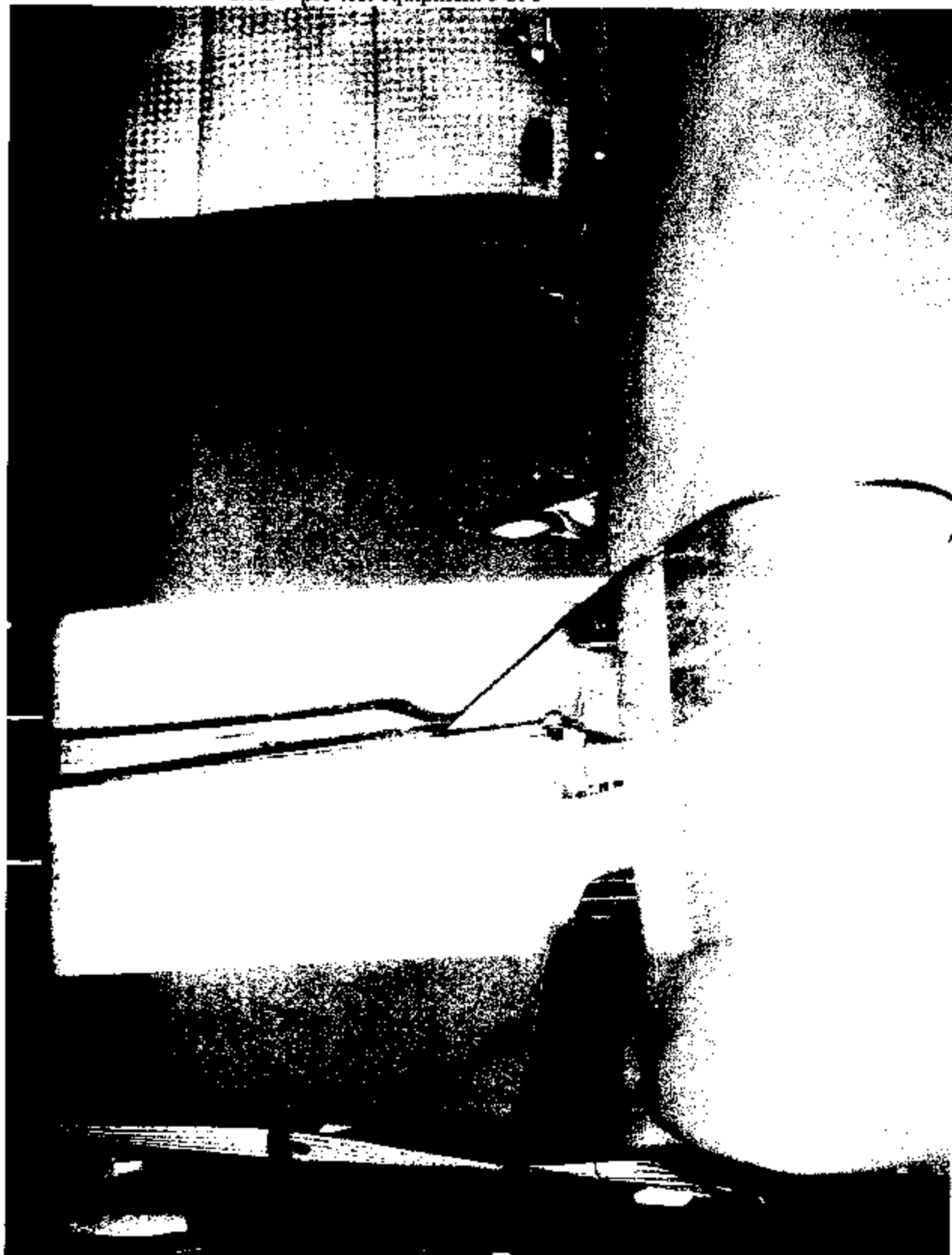
6.9.3 pre-test equipment 3 of 5



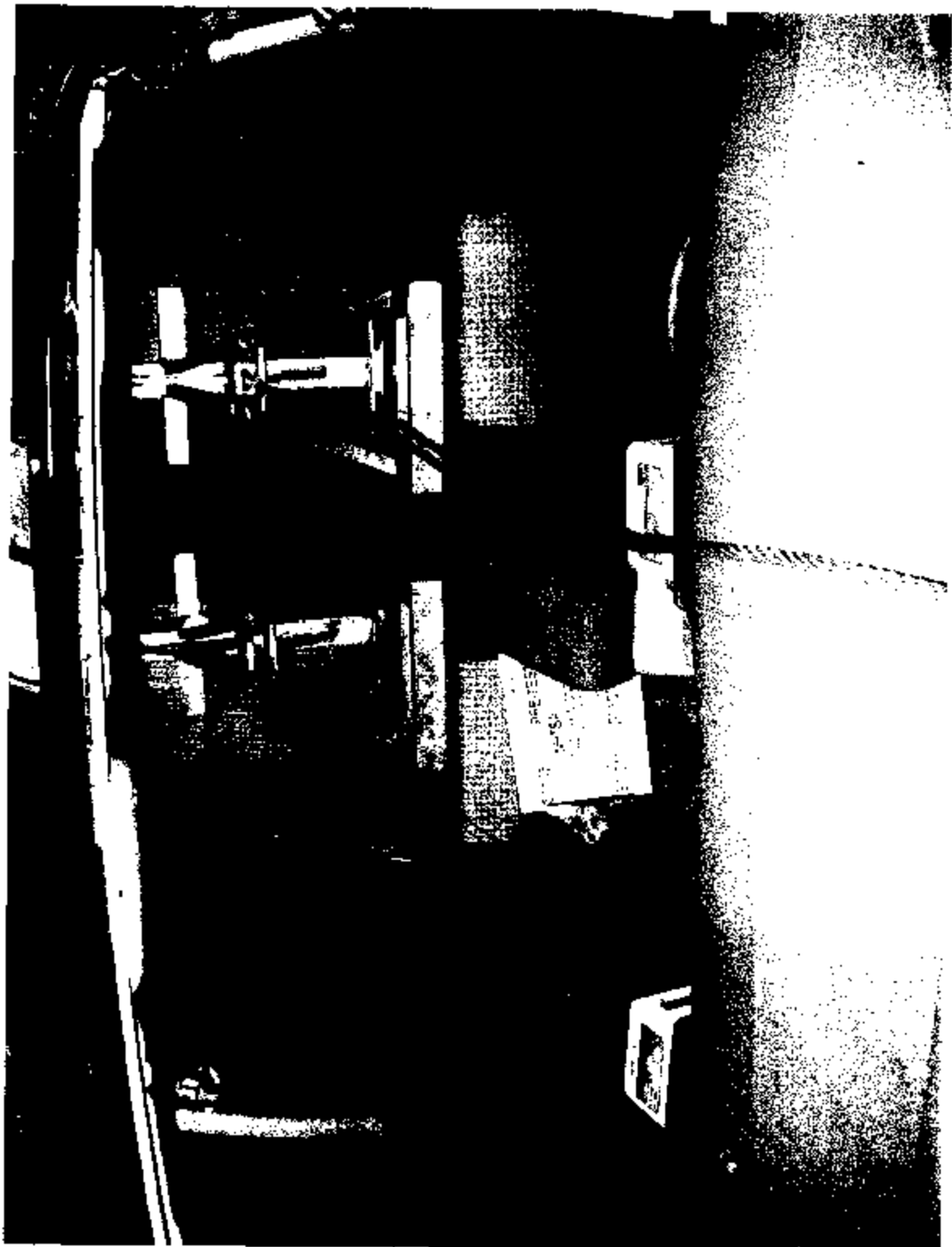
6.9.4 pre-test equipment 4 of 5



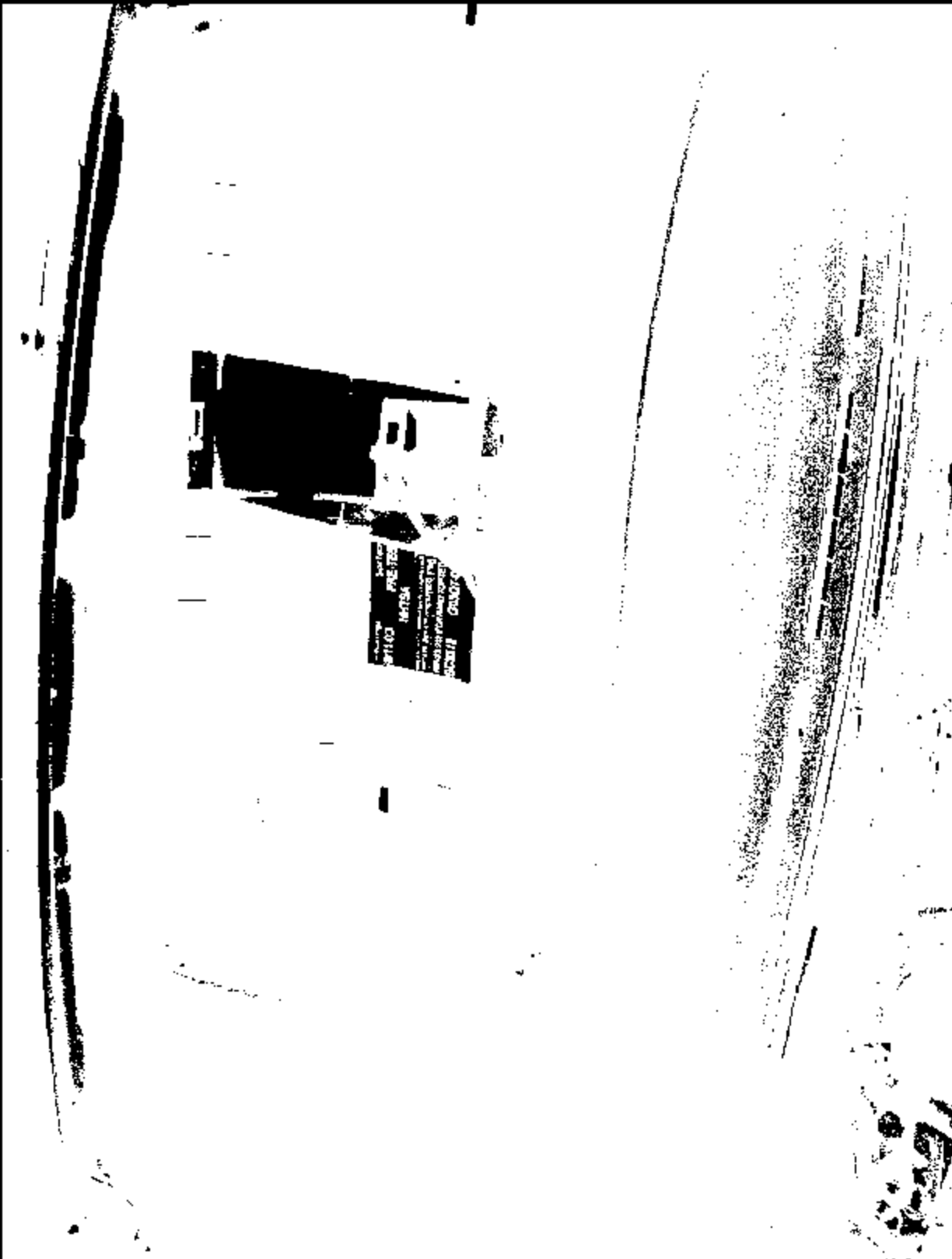
6.9.5 pre-test equipment 5 of 5



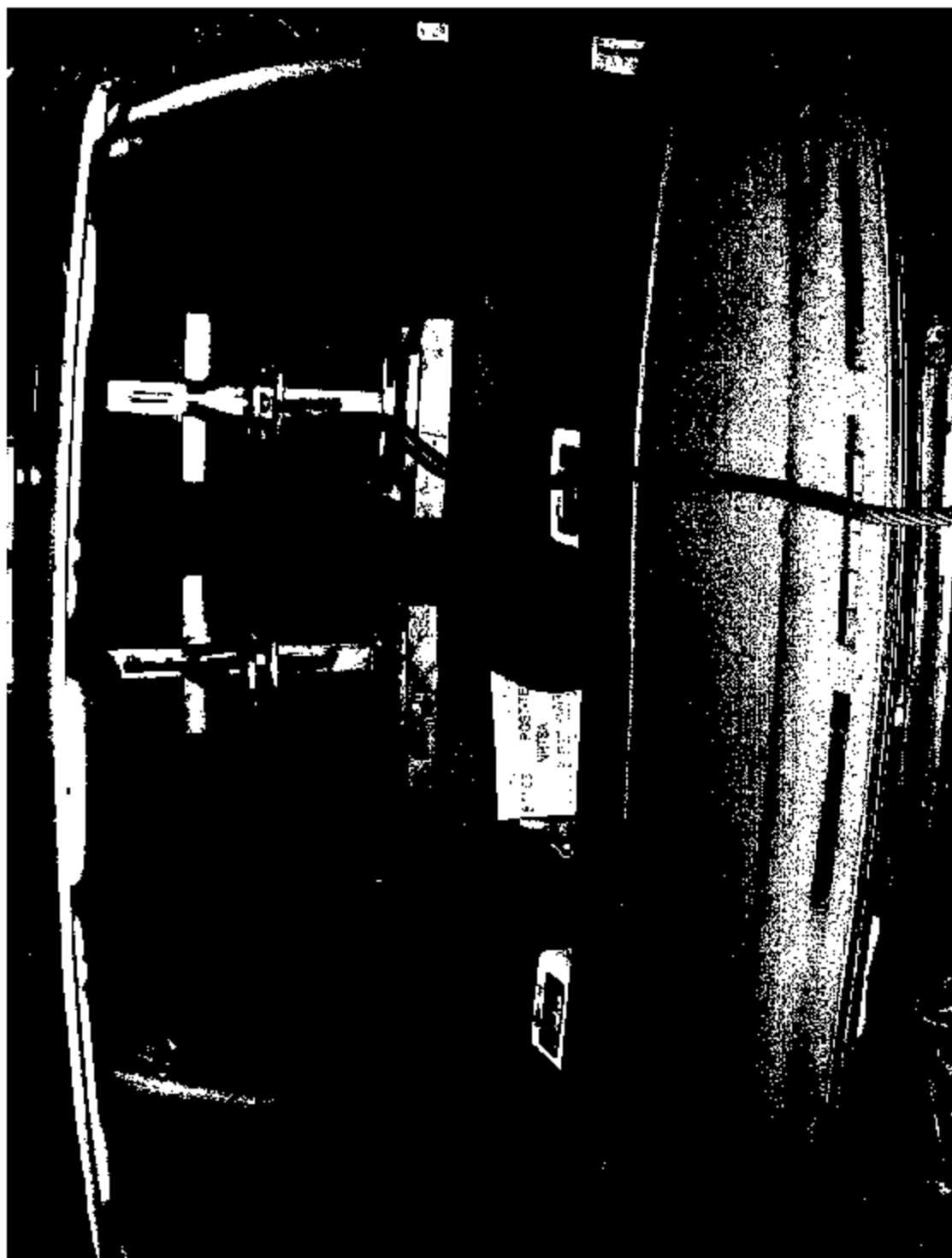
6.10 Load system control and data recording device in test position
6.10.1 forward SFAD II test



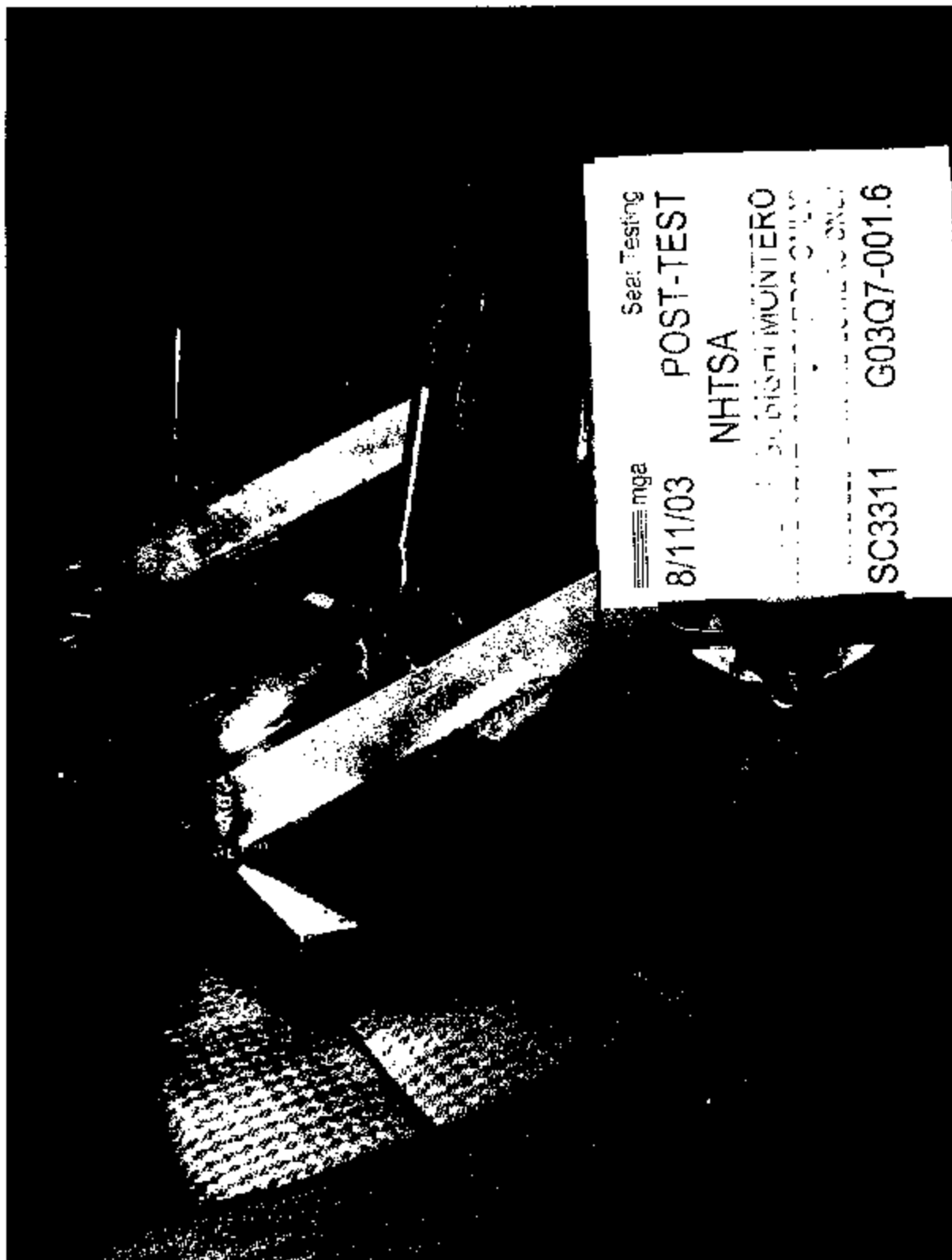
6.10.2 forward SFAD I test



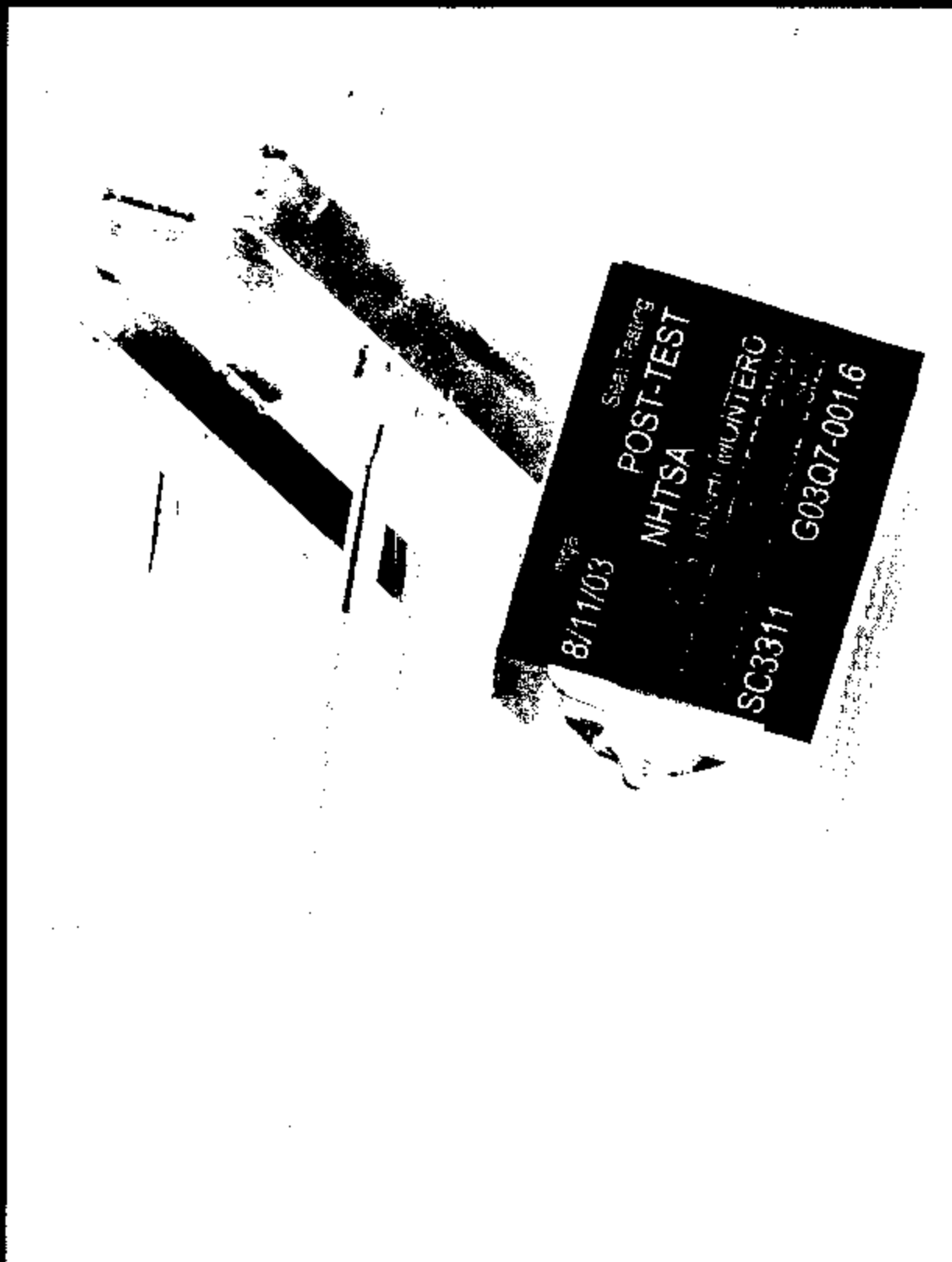
6.11 Post-test condition of each child restraint anchorage system
6.11.1 post-forward SFAD II test 1 of 3



6.11.2 post-forward SFAD II test 2 of 3



6.11.3 post-forward SFAD II test 3 of 3



6.11.4 post-forward SFAD I test 1 of 3

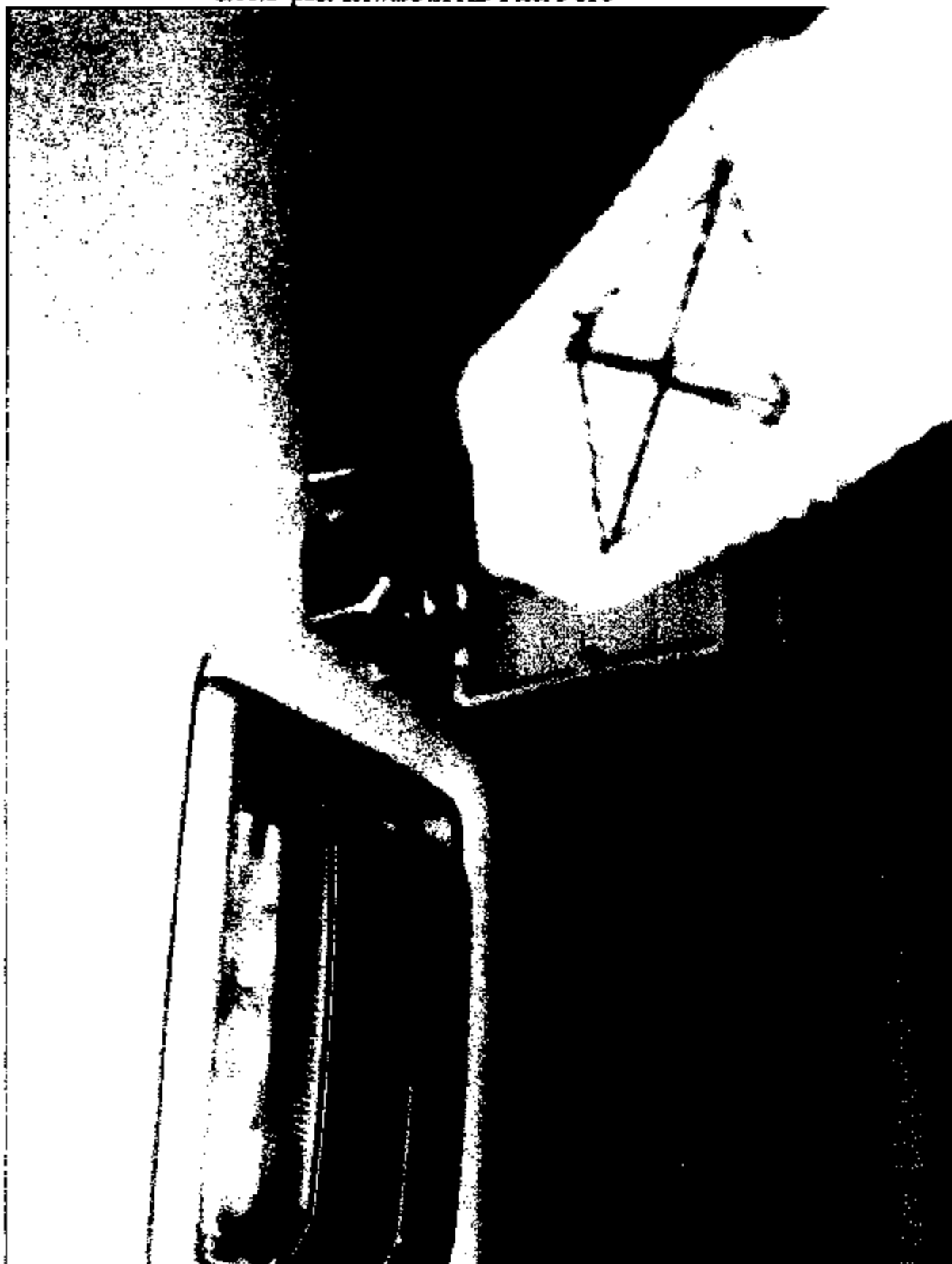


Safety Compliance Testing For FMVSS 225
"Child Restraint Anchorage Systems"

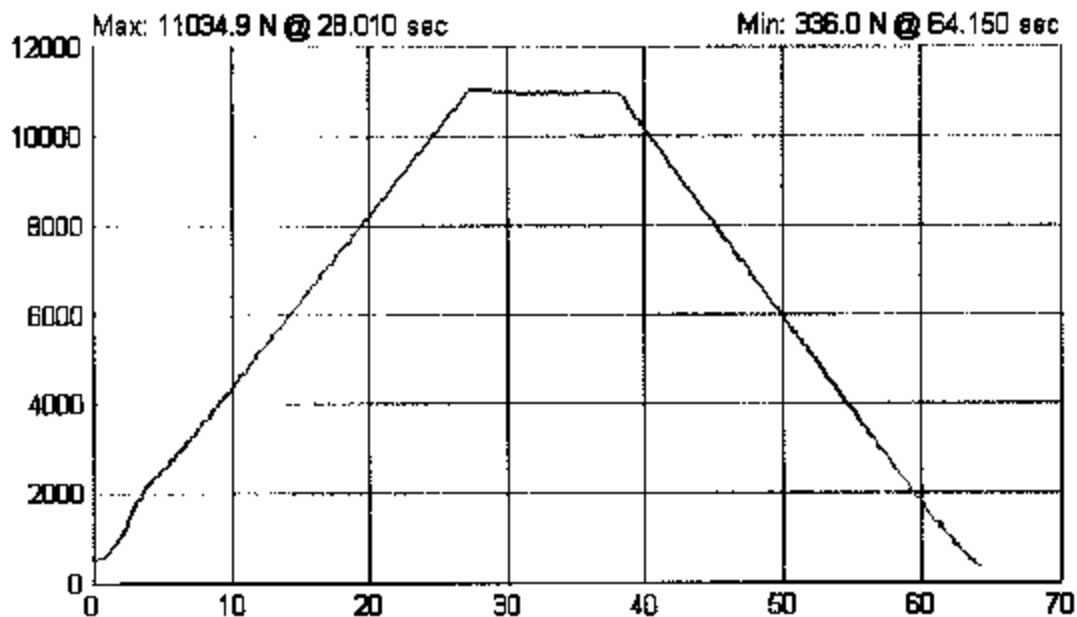
6.11.5 post-forward SFAD I test 2 of 3



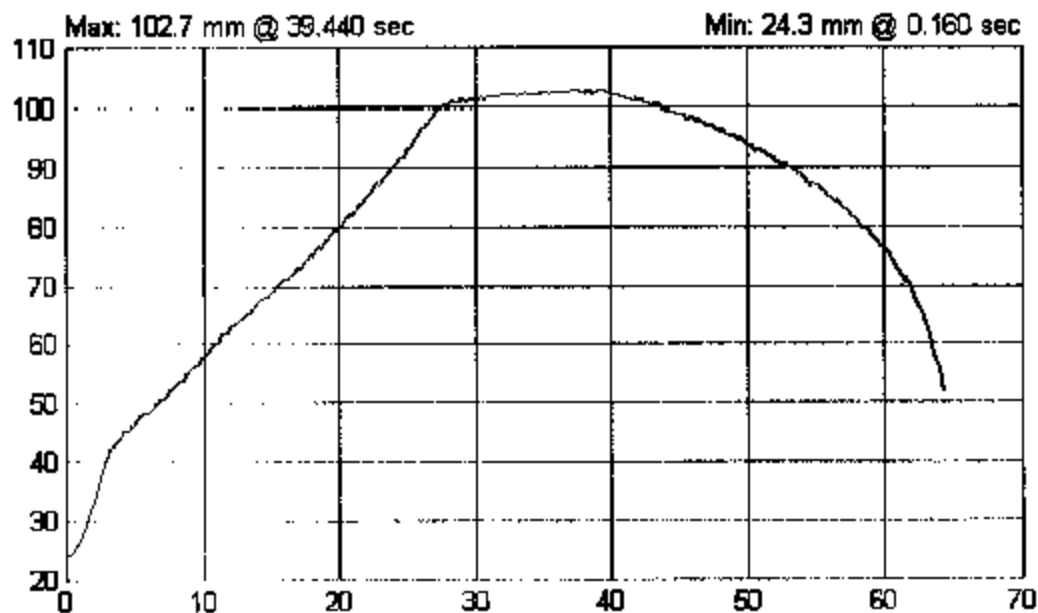
6.11.6 post-forward SFAD I test 3 of 3



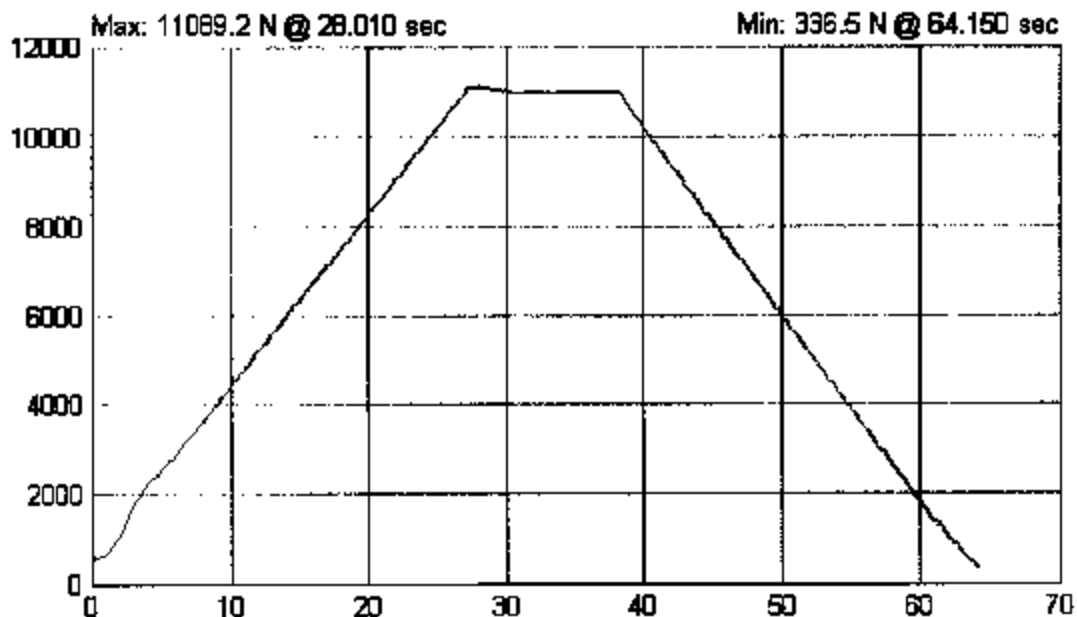
7.0 PLOTS



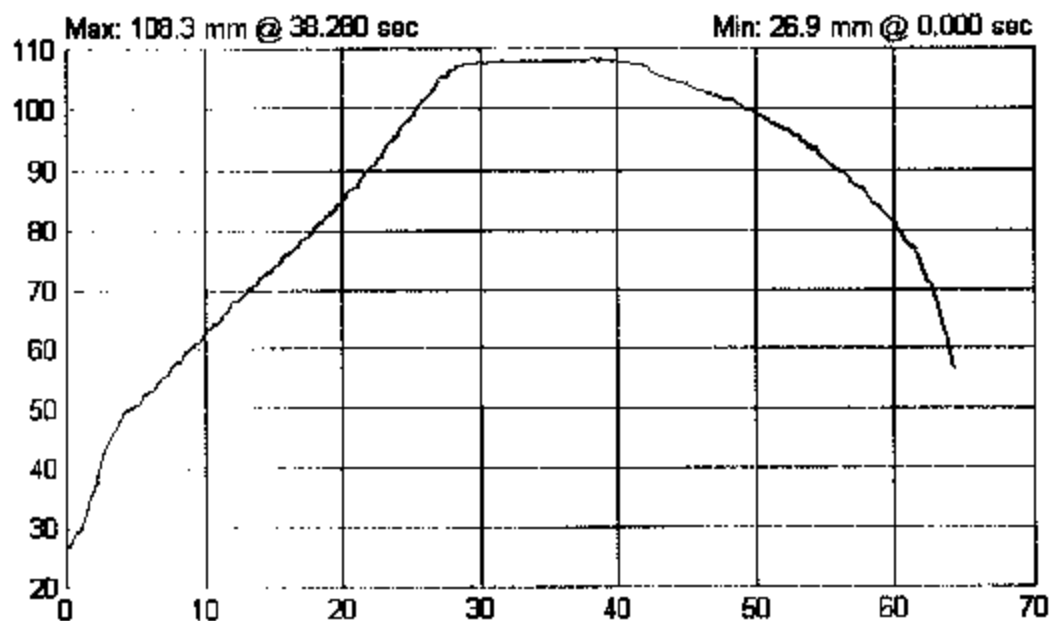
Run# SC3311: Lower Anchor Test (S11)-Rear Left Load (N) vs. Time (sec)



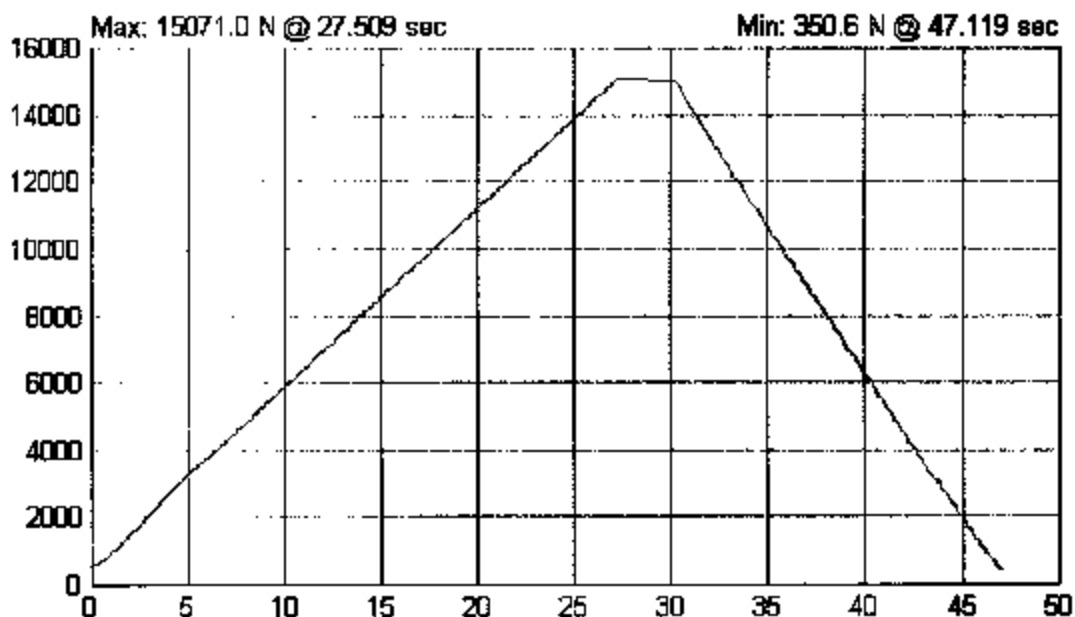
Run# SC3311: Lower Anchor Test (S11)-Rear Left SFAD2 X Displ. (mm) vs. Time (sec)



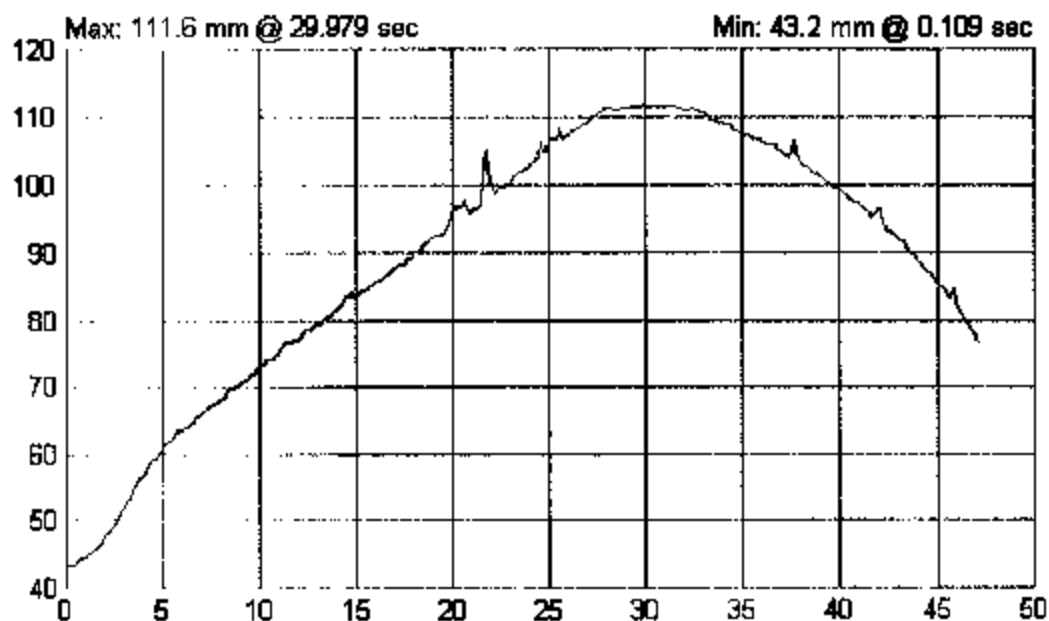
Run# SC3311: Lower Anchor Test (S11)-Rear Right Load (N) vs. Time (sec)



Run# SC3311: Lower Anchor Test (S11)-Rear Right SFAD2 X Displ. (mm) vs. Time (sec)



Run# SC3312: Tether Test (S6.3.1)-Rear Center Load (N) vs. Time (sec)



Run# SC3312: Tether Test (S6.3.1)-Rear Center SFAD1 X Displ. (mm) vs. Time (sec)

8.0 REPORT of VEHICLE CONDITION

REPORT OF VEHICLE CONDITION AT THE COMPLETION OF TESTING

CONTRACT No.: DTNH22-02-D-11043

DATE: August 11, 2003

From: MGA Research Corporation, 446 Executive Drive, Troy, MI 48083

To: NHTSA, OVSC, NVS-221

The following vehicle has been subjected to compliance testing for FMVSS Nos. 201U and 225

The vehicle was inspected upon arrival at the laboratory for the test and found to contain all of the equipment listed below. All variances have been reported within 2 working days of vehicle arrival, by letter, to the NHTSA Industrial Property Manager (NAD0-30), with a copy to the OVSC COTR. The vehicle is again inspected, after the above test has been conducted, and all changes are noted below. The final condition of the vehicle is also noted in detail.

VEH. MOD YR/MAKE/MODEL/BODY: 2003 Mitsubishi Montero Sport

VEH. NHTSA NO.: C35601 VIN: JA4MT21H3 COLOR: Black

ODOMETER READINGS: ARRIVAL 18 miles Date: 4/5/03
COMPLETION 148 miles Date: 8/12/03

PURCHASE PRICE: \$ 27,072.00 DEALER'S NAME: Moran

ENGINE DATA: 6 Cylinders 3.0 Liters Cubic Inches

TRANSMISSION DATA: X Automatic Manual No. of Speeds 4

FINAL DRIVE DATA: Rear Drive Front Drive X 4 Wheel Drive

TIRE DATA: Size 235/75R15 Mfr. Bridgestone

CHECK APPROPRIATE BOXES FOR VEHICLE EQUIPMENT:

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Brad Reaume

X	Air Conditioning		Traction Control	X	Clock
X	Tinted Glass	X	All Wheel Drive	X	Roof Rack
X	Power Steering		Speed Control	X	Console
X	Power Windows	X	Rear Window Defroster	X	Driver Air Bag
X	Power Door Locks		Sun Roof or T-Top	X	Passenger Air Bag
X	Power Seat(s)	X	Tachometer	X	Front Disc Brakes
X	Power Brakes	X	Tilt Steering Wheel	X	Rear Disc Brakes
X	Antilock Brake System	X	AM/FM/Cassette Radio		Other

REMARKS:

Salvage only.

Equipment that is no longer on the test vehicle as noted on previous pages:

All equipment inventoried and placed in vehicle.

Explanation for equipment removal:

Windshield & front seats were removed for the testing.

Test Vehicle Condition:

Salvage only.

RECORDED BY: Kenney Godfrey

DATE: August 11, 2003

APPROVED BY: Brad Reaume

APPENDIX A
OWNERS MANUAL CHILD RESTRAINT SYSTEMS

Seat and restraint systems



Child restraints

When transporting infants or small children in your vehicle, an appropriate child restraint system should always be used. This is required by law in the U.S. and Canada. Child restraints specifically designed for infants and small children are offered by several manufacturers. Choose only a child restraint system with a label certifying that it complies with Federal Motor Vehicle Safety Standard 213 or Motor Vehicle Restraint Systems and Booster Cushions Safety Regulations (RCSR). Look for the manufacturer's statement of compliance on the box and seat.

The child restraint system should be appropriate for your child's weight and height, and should properly fit your vehicle's seat.

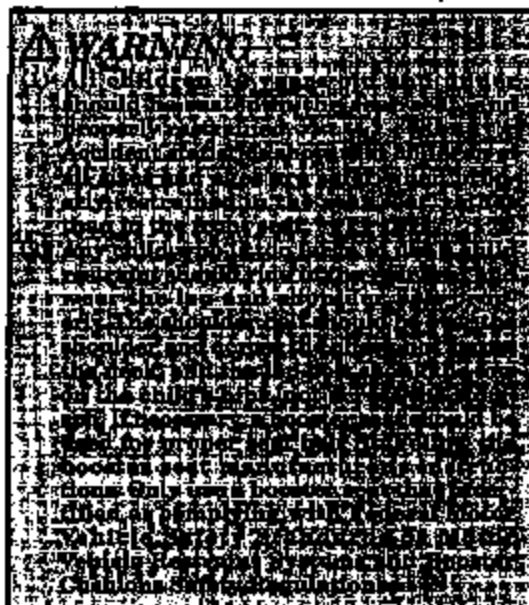
Be sure to check for other local, state, or provincial requirements for child size and age that may vary from the recommendations listed below.

All children should be restrained in the restraint device that offers the maximum protection for their size and age.

- Children less than 1 year and children less than 20 pounds (9 kilograms) MUST ride in a rear-facing child safety seat that MUST ONLY be used in the rear seat.
- Children older than 1 year who weigh less than 40 pounds (18 kilograms) or who are less than 40 (100 cm) inches tall should be in a forward-facing restraint in the rear seat.
- Children who weigh more than 40 pounds (18 kilograms) or who are more than 40 inches (100 cm) tall, regardless of age, should use a booster seat in the rear seat until the lap/shoulder belt fits properly.

1-25

Seat and restraint system



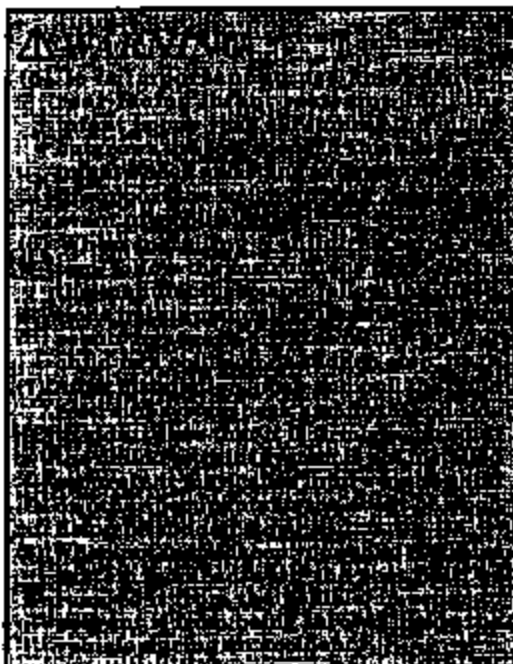
1-26

Seat and restraint systems



1-27

Seat and restraint systems



NOTE

Before purchasing a child restraint system, try installing it in the rear seat to make sure there is a good fit. Because of the location of the seat belt buckles and the shape of the seat cushion, it may be difficult to securely install some manufacturer's child restraint systems.

If the child restraint system can be pulled forward or to either side easily on the seat cushion after the seat belt has been tightened, choose another manufacturer's child restraint system.

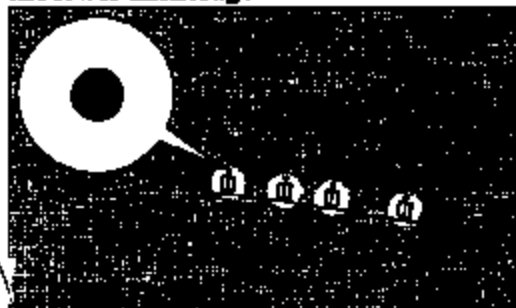
Depending on the seating position in the vehicle and the child restraint system that you have, the child restraint can be attached using one of the following, 3 locations:

- (1) To the lower anchorage in the rear seat ONLY if the child restraint complies with Federal Motor Vehicle Safety Standard 225 or Canadian Motor Vehicle Safety Standard 210.1 or 210.2 (See page 1-29).
- (2) To the lap belt in the center of the rear seat (See page 1-31).
- (3) To the UNIBELT (See page 1-32).

1-28

Seat and restraint systems

Installing a new child restraint system to the lower anchorage



Your vehicle's rear seat is fitted with lower anchorages for attaching a new child restraint system that complies with Federal Motor Vehicle Safety Standard 225 or Canadian Motor Vehicle Safety Standard 210.1 or 210.2.

NOTE

The marks on the seatback show the location of the lower anchorage points.



Lower Universal
Anchorage
System Symbol

NOTE

A child restraint system that complies with FMVSS 213 or RCSE or bears the symbol shown on the left is fitted with lower connectors for retention using the lower anchorage and can thus be fitted on this seat.

New child restraint system that complies with Federal Motor Vehicle Safety Standard 225 or Canadian Motor Vehicle Safety Standard 210.1 or 210.2



A: Rear-facing child restraint
B: Forward-facing child restraint
C: Child restraint system connectors
(These are only examples.)

1-30

Seat and restraint systems

Installation



A: Connector
B: Slit
C: Vehicle seatback
D: Vehicle seat cushion
E: Lower anchorage

1. Adjust the seatback in a upright position. Refer to "To adjust the seatback" on page 1-7.



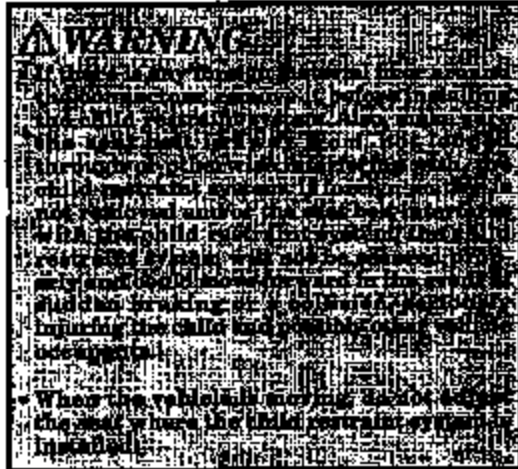
2. Push the child restraint system's connectors (A) into the slit (B) in accordance with the instructions provided by the child restraint system's manufacturer.
3. If your child restraint system requires the use of a top tether strap, refer to "Tether anchors for the child restraint systems" on page 1-34.
4. Push and pull the child restraint system in all directions to be sure it is firmly secured.

1-30

Seat and restraint systems

NOTE

For a new child restraint system that complies with Federal Motor Vehicle Safety Standard 225 or Canadian Motor Vehicle Safety Standard 210.1 or 210.2, it is not necessary to secure the child restraint system using the vehicle's seat belt (lap or unbelt).



Installing a child restraint system to the center rear seat lap belt



Installation:

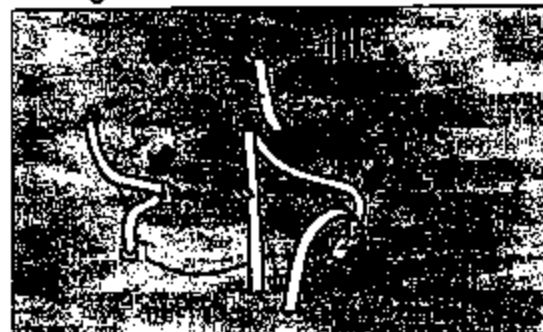
1. Route the lap belt through the child restraint system according to the child restraint system manufacturer's instructions.
2. Fasten the seat belt to secure the child restraint system. Make sure you hear a "click" when you insert the latch plate in the buckle.
3. Remove all lap belt slack by firmly pulling the belt webbing through the belt adjustment feature on the buckle.
4. Push and pull the child restraint system in all directions to be sure it is firmly secured.

1-31

Seat and restraint systems

If your child restraint system requires the use of a top tether strap, refer to "Tether anchors for the child restraint systems" on page 1-34.

Installing a child restraint system to a UNIBELT (with emergency/automatic locking mechanism)



The UNIBELT at the above seat positions can be converted from normal Emergency Locking Retractor (ELR) mode, to Automatic Locking Retractor (ALR) mode. It must be converted to the ALR mode when installing a child restraint system.

Children 12 years old and under should always be restrained in the rear seat, whenever possible, although the front passenger seat belt can also be converted to ALR mode.

1-32



Seat and restraint systems

Installation:

1. Place the child restraint system in the outboard rear seating position as shown in the illustration.



2. Route the unbelt through the child restraint system according to the child restraint system manufacturer's instructions. Then insert the unbelt latch plate into the buckle. Make sure you hear a "click" when you insert the latch plate into the buckle.



3. To activate the ALR mode, slowly pull the shoulder part of the belt all the way out of the retractor until it stops. Then let the belt feed back into the retractor.
4. After the belt has retracted, tug on it. If the belt is locked, you will not be able to pull it out. If you can pull the belt out, it is not locked and not in the ALR mode. You will need to repeat steps 3 and 4.

1-33

Seat and restraint systems



5. After confirming that the belt is locked, grab the shoulder part of the belt near the buckle and pull up to remove any slack from the lap part of the belt. Remember, if the lap belt portion is not tight, the child restraint system will not be secure. It may help to put your weight on the child restraint system and/or push on its seatback while pulling up on the belt. (see illustration).
6. If your child restraint system requires the use of a top tether strap, refer to "Tether anchors for child restraint systems" on page 1-34.
7. Before putting your child in the restraint, push and pull the restraint in all directions to be sure it is firmly secured. Do this before each use. If the child restraint system is not firmly secured, repeat steps 1 through 6.

1-34

8. To remove a child restraint system from the vehicle and deactivate the ALR mode, remove the child from the restraint. Unlatch the buckle. Then remove the belt from the restraint and let the belt fully retract.

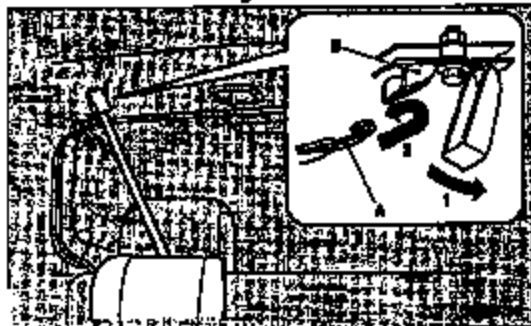
Tether anchors for child restraint systems



In compliance with the Federal Motor Vehicle Safety Standards or Canadian Motor Vehicle Safety Standards, your vehicle has 3 attachment points on the headlining, located behind the rear seat. These are for securing a child restraint system tether strap to each of the 3 rear seating positions (2 outer and 1 center) in your vehicle.

Seat and restraint systems

Tether anchor strap installation

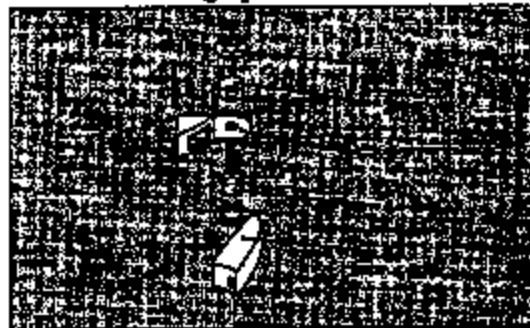


1. Remove the cover from the tether anchor installation point by pulling it back with your hand as illustrated.
2. Latch the top tether strap hook (A) of the child restraint system to the tether anchor bracket (B) and tighten the top tether strap hook so it is securely fastened.

NOTE

Adjust the head restraint height while making sure that the tether strap does not interfere with the head restraint. If it does interfere, remove the head restraint.

Tether anchorage parts



1. Fiber washer
2. Spacer 0.4 inch (10 mm)
3. Tether anchor bracket
4. Anchor bolt 1.2 inches (30 mm), Washer
5. Cover



1-38

Seat and restraint systems

Children who have outgrown child restraint systems

Children who have outgrown a child restraint system should be seated in the rear seat and wear the UNIBELT. If the shoulder belt crosses their face or neck, and/or the lap belt crosses their stomach, a commercially available booster seat must be used, to raise the child so that the shoulder belt crosses their shoulder and the lap belt remains positioned low across their hips. The booster seat should fit the vehicle seat and have a label certifying compliance with Federal Motor Vehicle Safety Standards or Motor Vehicle Safety Standards or Motor Vehicle Restraint Systems and Booster Cushions Safety Regulations.



Pregnant women restraint



1-39

APPENDIX B
MANUFACTURER'S DATA (OVSC FORM 14)

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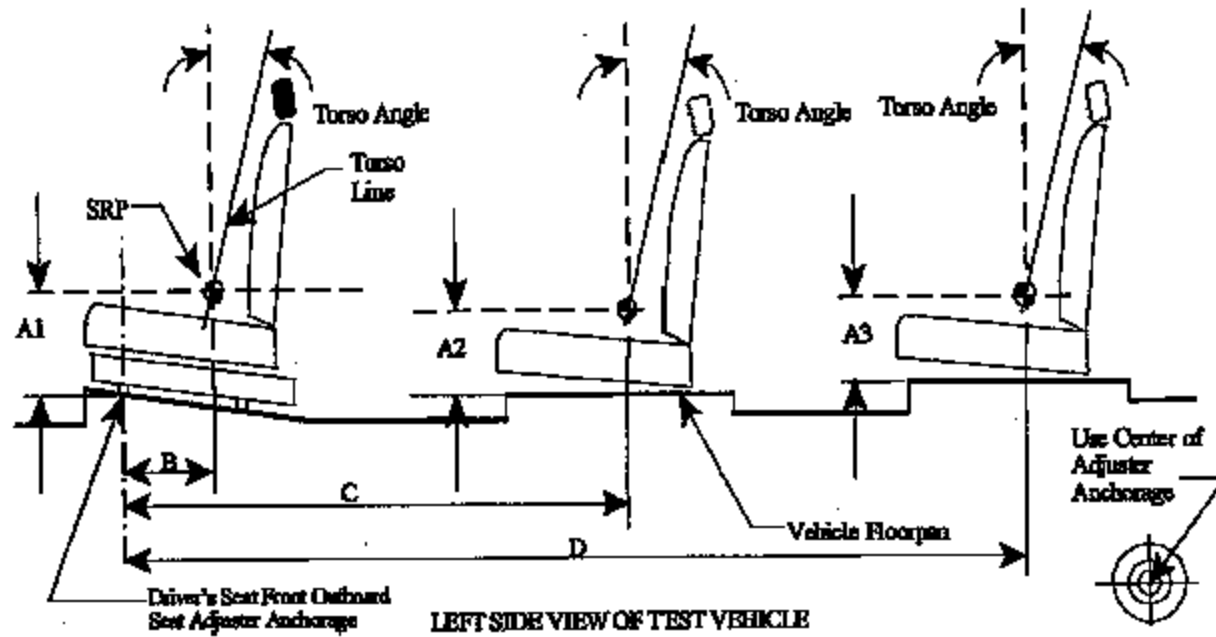
DWEC/NVE/221

0804/018

FORM 14
Page 1 of 10

SEAT REFERENCE POINT (SRP) AND TORSO ANGLE DATA
FOR FMVSS 225
(All dimensions in mm³)

Model Year: 2003 ; Make: Mitsubishi ; Model: Montero Sport ; Body Style: 4-Door Wagon
Seat Style: Front row: Separate ; Second row: Split or Bench ; Third row: Not applicable



035601

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OTSC/OTM/221

0000/010

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Table 1. Seating Positions¹ and Torso Angles

		Left (Driver Side)	Center (if any)	Right
A1		(Driver) 231 mm	N/A	(Front Passenger) 231 mm
A2		168 mm	178 mm	168 mm
A3		N/A	N/A	N/A
B		390 mm	N/A	390 mm
C		1190 mm	1190 mm	1190 mm
D		N/A	N/A	N/A
Torso Angle (degree)	Front Row	23 degree	N/A	23 degree
	Second Row	23 degree	19 degree	23 degree
	Third Row	N/A	N/A	N/A

Note: 1. All dimensions are in mm. If not, provide the unit used.

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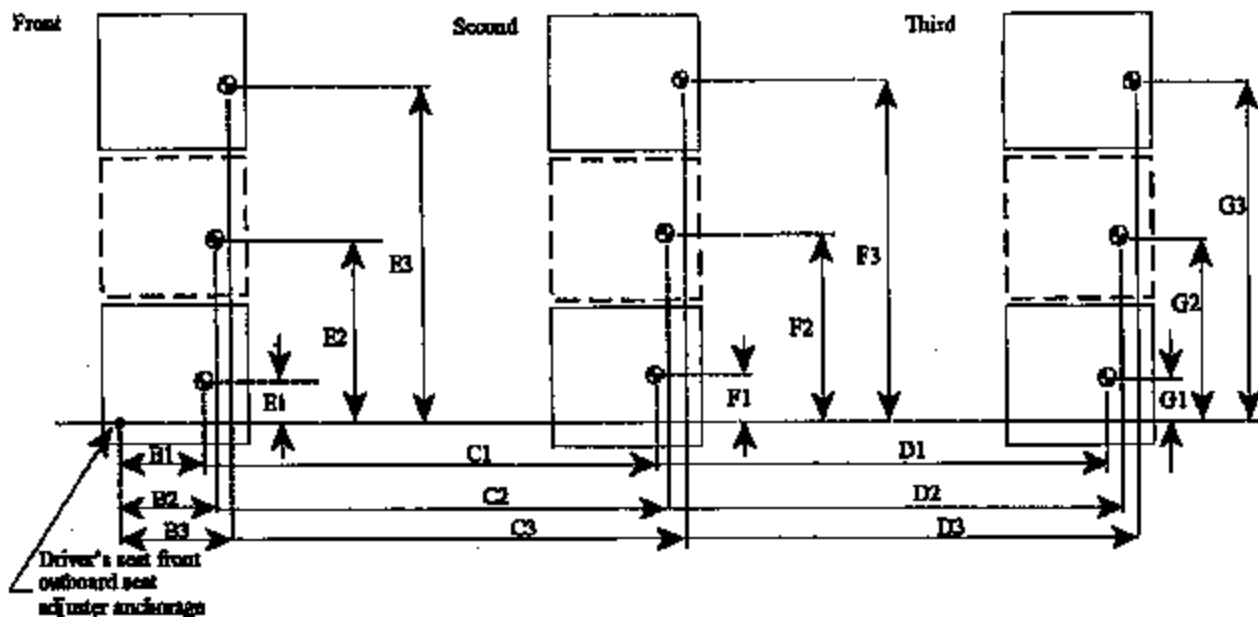
OVBC/NVS/221

0208/018

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Page 3 of 10

SEATING REFERENCE POINT
FOR FMVSS 225
(All dimensions in mm)

Model Year: 2003 ; Make: Mitsubishi ; Model: Montro Sport ; Body Style: 4-Door Wagon
Seat Style: Front row: Separate ; Second row: Split or Bench ; Third row: Not applicable



04/23/2003 10:17 FAX 202 338 3081

OVSC/NVS/221

007/013

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Table 2. Seating Reference Point and Tether Anchorage Locations

Seating Reference Point (SRP)		Distance from Driver's front outboard seat adjuster anchorage ¹
Front Row	B1	390 mm
	E1	212.5 mm
	B2	N/A
	E2	N/A
	B3	390 mm
	E3	912.5 mm
Second Row	C1	1190 mm
	F1	227.5 mm
	C2	1190 mm
	F2	562.5 mm
	C3	1190 mm
	F3	897.5 mm
Third Row	D1	N/A
	G1	N/A
	D2	N/A
	G2	N/A
	D3	N/A
	G3	N/A

Note: 1. Use the center of anchorage.

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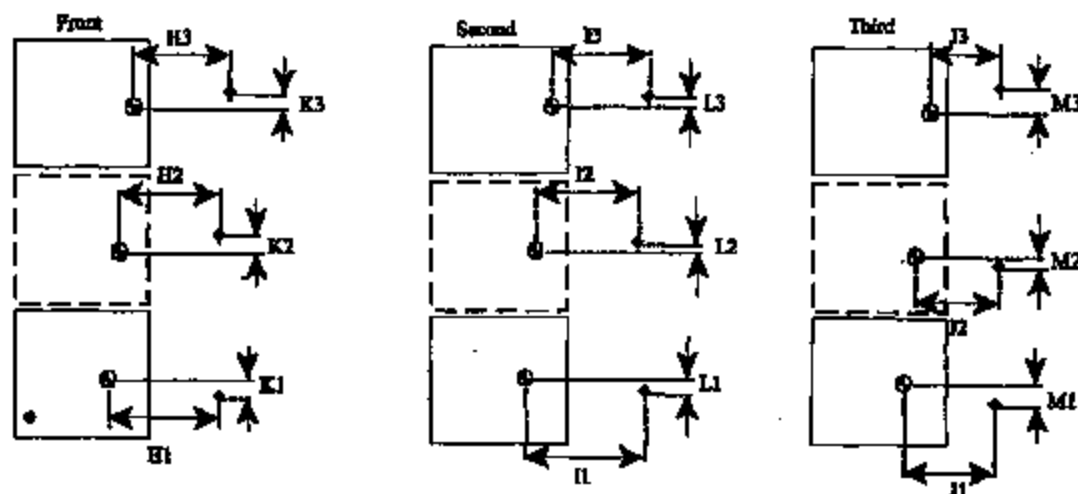
OVRC/NV8/221

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Page 5 of 10

TETHER ANCHORAGE LOCATIONS
FOR FMVSS 225
(All dimensions in mm)

Model Year: 2003 ; Make: Mitsubishi ; Model: Montero Sport ; Body Style: 4-Door Wagon
Seat Style: Front row: Separate ; Second row: Split or Bench ; Third row: Not applicable



⊙: SRP
↑: Tether anchorage

Note: 1. The location shall be measured at the center of the bar.

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UVSC/NVS/221

009/013

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Table 3. Seating Reference Point and Tether Anchorage Locations

Seating Reference Point (SRP)	Distance from SRP	
Front Row	H1	N/A
	K1	N/A
	H2	N/A
	K2	N/A
	H3	N/A
	K3	N/A
Second Row	I1	962 mm
	L1	38 mm
	I2	957 mm
	L2	83 mm
	I3	962 mm
	L3	38 mm
Third Row	J1	N/A
	M1	N/A
	J2	N/A
	M2	N/A
	J3	N/A
	M3	N/A

Note: 1. Use the center of anchorage.

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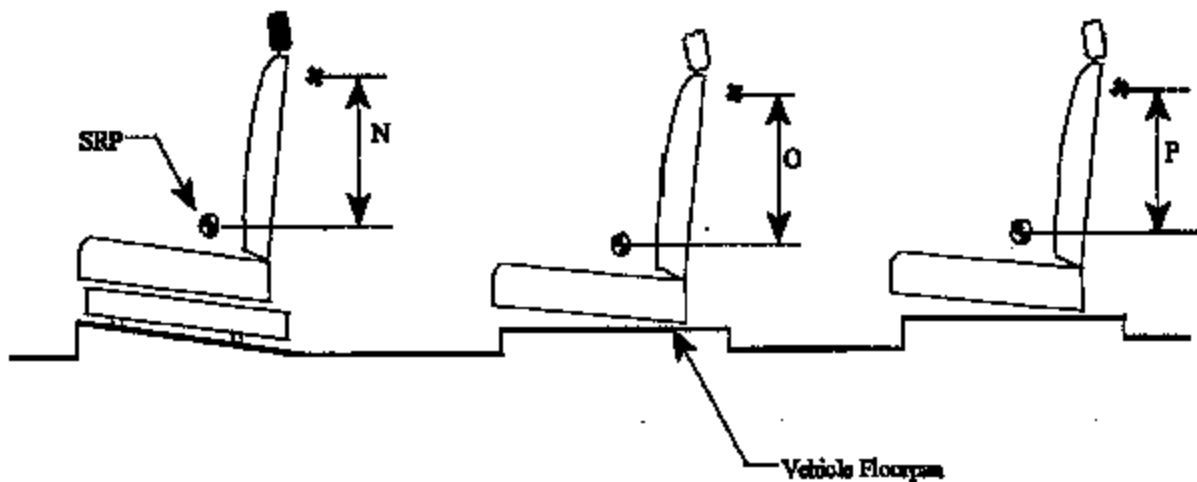
OVSC/NVS/221

0010/013

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TETHER ANCHORAGE LOCATIONS - VERTICAL
FOR FMVSS 225
(All dimensions in mm)

Model Year: 2003 ; Make: Mitsubishi ; Model: Montero Sport ; Body Style: 4-Door Wagon
Seat Style: Front row: Separate ; Second row: Split or Bench ; Third row: Not applicable



LEFT SIDE VIEW OF TEST VEHICLE

04/23/2023 15:18 FAX 202 338 3081

DTSC/NVS/REL

0011/013

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Table 4. Vertical Dimension For The Tether Anchorage

Seating Row	Vertical Distance from Seating Reference Point	
Front Row	N1 (Driver)	N/A
	N2 (Center)	N/A
	N3 (Right)	N/A
Second Row	O1 (Left)	771 mm
	O2 (Center)	785 mm
	O3 (Right)	771 mm
Third Row	P1 (Left)	N/A
	P2 (Center)	N/A
	P3 (Right)	N/A

Note: 1. All dimensions are in mm. If not, provide the unit used.

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OVSC/NYS/221

04/23/03

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Test Procedures Used for Compliance Tests

Tether Anchorages

Seating Location		FMVSS Section(s) - Req.
Front	Driver	N/A
	Center (if any)	N/A
	Right (if any)	None
Second	Left	FMVSS 225 S.6.3.1
	Center	FMVSS 225 S.6.3.1
	Right (if any)	FMVSS 225 S.6.3.1
Third	Left	N/A
	Center	N/A
	Right	N/A
Fourth	Left	N/A
	Center	N/A
	Right	N/A

Lower Anchorages

Seating Location		FMVSS Section(s) - Req.
Front	Driver	N/A
	Center (if any)	N/A
	Right (if any)	None
Second	Left	FMVSS 225 S.9
	Center	None
	Right	FMVSS 225 S.9
Third	Left	N/A
	Center	N/A
	Right	N/A
Fourth	Left	N/A
	Center	N/A
	Right	N/A

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OVSG/NVS/821

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For each anchorage system, provide the following information:

1. **Lower Anchorage Dimensions:** Whether the anchorages are certified with S15.1.2.1 of FMVSS No. 225.
Answer: No
2. **Lower Anchorage Location:** Whether the anchorages are certified with S15.1.2.2 of FMVSS No. 225. If the anchorages are certified with S15.1.2.2, provide the pitch, roll and yaw angles.
Answer: Not applicable
3. **Lower Anchorage Marking and Conspicuity:** Whether the anchorages are certified with S15.4 of FMVSS No. 225. If guidance fixtures are used, provide the location of the seating systems that are equipped with the guidance fixture.
Answer: Not applicable
4. **Location of Tether Anchorage:** Applicable section of FMVSS No. 225 for the option used for its certification.
Answer: Not applicable
Not certified for this option(S15)
5. **Number of Tether Anchorages:** Applicable section of FMVSS No. 225 for the option used for its certification.
Answer: None
Not certified for this option(S15)