FINAL REPORT NUMBER 225-MGA-03-007

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

HONDA OF AMERICA, MFG.
2003 HONDA ACCORD SEDAN
NHTSA No. C35302

MGA RESEARCH CORPORATION
446 Executive Drive
Troy, Michigan 48083

Test Date: August 11, 2003
Report Date: October 9, 2003

FINAL REPORT

PREPARED FOR:

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
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_____
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Approval Date: 3/16/04

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By: _____

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9. Performing Organization Name and Address MGA Research Corporation 446 Executive Drive Troy, Michigan 48083		10. Work Unit No. 11. Contract or Grant No. DTNH22-02-D-11043
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15. Supplementary Notes

16. Abstract

A compliance testing was conducted on the subject 2003 Honda Accord Sedan, NHTSA No. C35302, 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 Honda Accord Sedan tested appears to comply with the requirements for FMVSS 225, set forth by the National Highway Traffic Safety Administration.

17. Key Words Compliance Testing Safety Engineering FMVSS 225 2003 Honda Accord Sedan		18. Distribution Statement Copies of this report are available From: NHTSA Technical Reference Division, Mail Code: NAD-52 400 Seventh Street, SW, Room 5108 Washington, D.C. 20590 Telephone No. (202) 366-4946	
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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 Honda Accord Sedan, NHTSA No. C35302, 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 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 position was equipped with a tether anchorage only. The center-to-center spacing between the rear outboard lower anchorage systems was approximately 705 mm. The lower anchorages for both rear outboard seating positions were tested with SFAD 2 fixtures in addition to the tether anchorage for the rear left occupant seating position. The tether anchorage in the rear center seating position was tested with the SFAD 1 fixture.

2.0 COMPLIANCE TEST AND DATA SUMMARY

TEST SUMMARY

The tests were conducted at MGA, Troy, Michigan on August 22, 2003.

Based on the test results, the 2003 Honda Accord Sedan, appeared to meet the performance requirements of FMVSS No. 225 for these tests.

The SFAD 2 at the left rear outboard seating position sustained a maximum force of 15,009 N and held the required load for 3 seconds with a total displacement of 45 mm, measured at Point "x". The SFAD2 at the right rear outboard seating position sustained a maximum force of 11,062 N and held the required load for 11 seconds with a total displacement of 95 mm, measured at Point "x". The SFAD 1 at the center rear seating position sustained a maximum force of 15,037 N and held the required load for 3 seconds with a total displacement of 105 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)
SE3437	SFAD II	Rear Left	15,009	45
SE3436		Rear Right	11,062	95
SE3438	SFAD I	Rear Center	15,037	105

3.0 TEST VEHICLE INFORMATION

Table 2. General Test and Vehicle Parameter Data

VEH. MOD YR/MAKE/MODEL/BODY	2003 Honda Accord Sedan
VEH. NHTSA NO.	C35302
VIN	1HGCM55343[redacted]
COLOR	Silver
VEH. BUILD DATE	1/03
TEST DATE	August 22, 2003
TEST LABORATORY	MGA Research Corporation
OBSERVERS	Brad Reaume

GENERAL INFORMATION:

Date Received: August 2003; Odometer Reading: 53

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: Honda of America, Mfg.

Date of Manufacture: 1/03; VIN: 1HGCM55343[redacted]

GVWR: 4080kg; GAWR FRONT: 2195kg

GAWR REAR: 1960kg

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT: 210kpa REAR: 200kpa

Recommended Tire Size: P205/65R15 Load Range: 385kg

Recommended Cold Tire Pressure:

FRONT: 210kpa REAR: 200kpa

Size of Tire on Test Vehicle: P205/65R15

Type of Spare Tire: Standard: T135/90D15

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 268s (11/23/03) LH & S/N 244 (11/23/03) RH
Two (2) String Potentiometers (S/N 18385 & 18386)	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)	7/3/04 (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	6.0	N/A
	Ctr		N/A		
	RH		5.9	5.9	
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	59	58	N/A
	Ctr		N/A		
	RH		54	50	
Measure the distance between the SRP to the center of the anchorage bar (mm)	LH	N/A	135		N/A
	Ctr		N/A		
	RH		135		

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

OBSERVED LOWER ANCHORAGE CONFIGURATION	SEAT POSITION				
		FRONT ROW	SECOND ROW		THIRD ROW
			I/B	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	32	N/A
	Ctr		N/A		
	RH		33	32	
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	8	No Data	3
Ctr.	N/A		N/A
RH	8		3

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
	Ctr.	
	RH	
Second Row	LH	Yes
	Ctr.	Yes
	RH	Yes
Third Row	LH	N/A
	Ctr.	
	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)	Horiz. 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
	Ctr.											
	RH											
Second Row	LH	Fixed	Fixed	Yes	2	10	18	537	15,000	15,009*	63	451
	Ctr.	Fixed	Fixed	No	1	5	40	537	15,000	15,037*	145	105
	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
	Ctr.											
	RH											

Note: (1) AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225L & 225T.

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

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

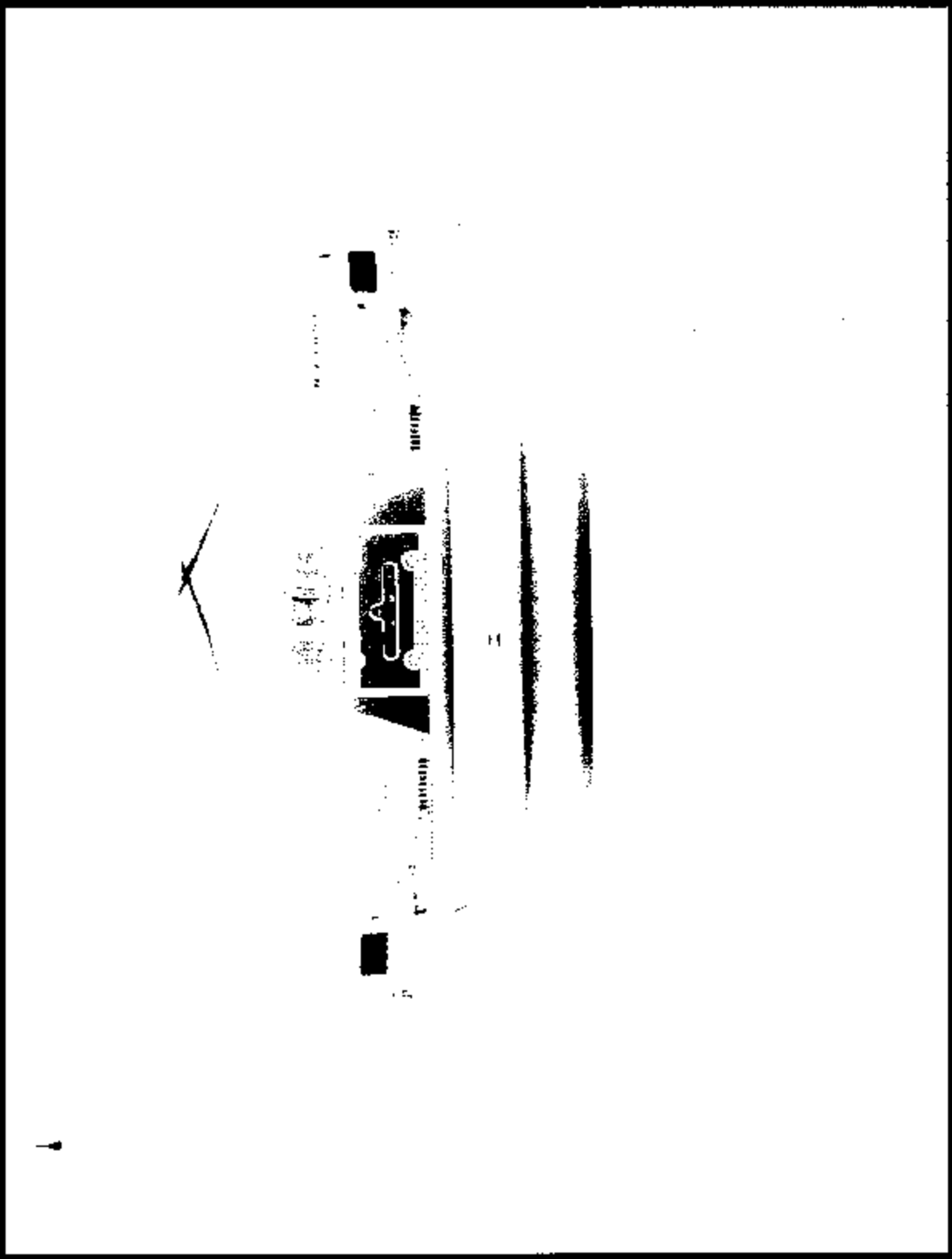
SEAT POSITION		Seat, Seat Back, & Head Restraint Positions			Type of SFAD used	Measured Angles		Initial Location (mm)	Onset Rate (N/sec.)	Force Applied (N)	Max. Load (N)	Final Location (mm)	Displ. (mm)
		Seat	Seat Back	Is There a Head Restraint ?		Vert. (deg.)	Horiz. (deg.)						
Front Row	LH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Ctr.												
	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	N/A
	Ctr.	N/A	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	2	N/A	10	21	389	11,000	11,062*	116	95
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	N/A
	Ctr.												
	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.

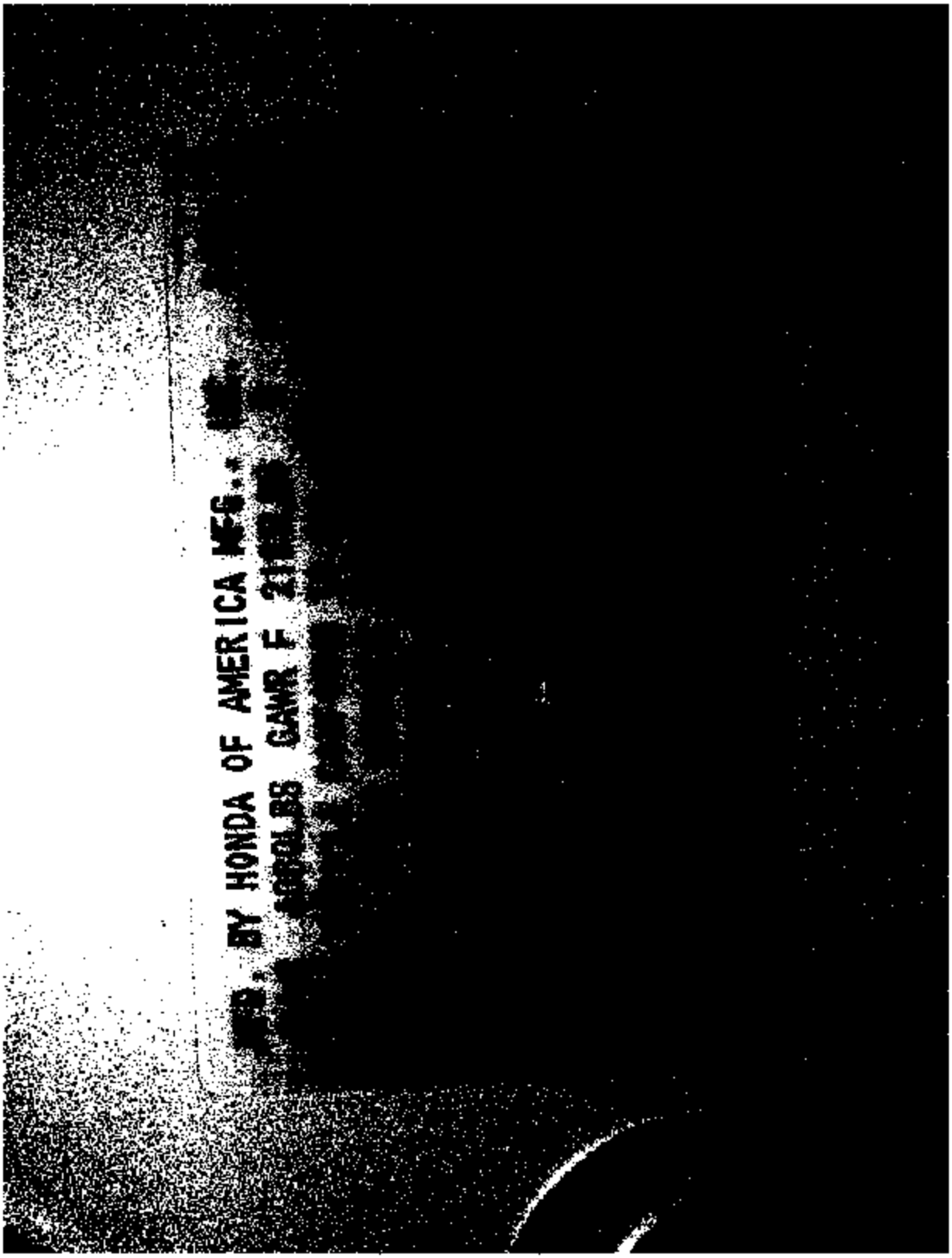
6.0 PHOTOGRAPHS

6.1 Full rear view

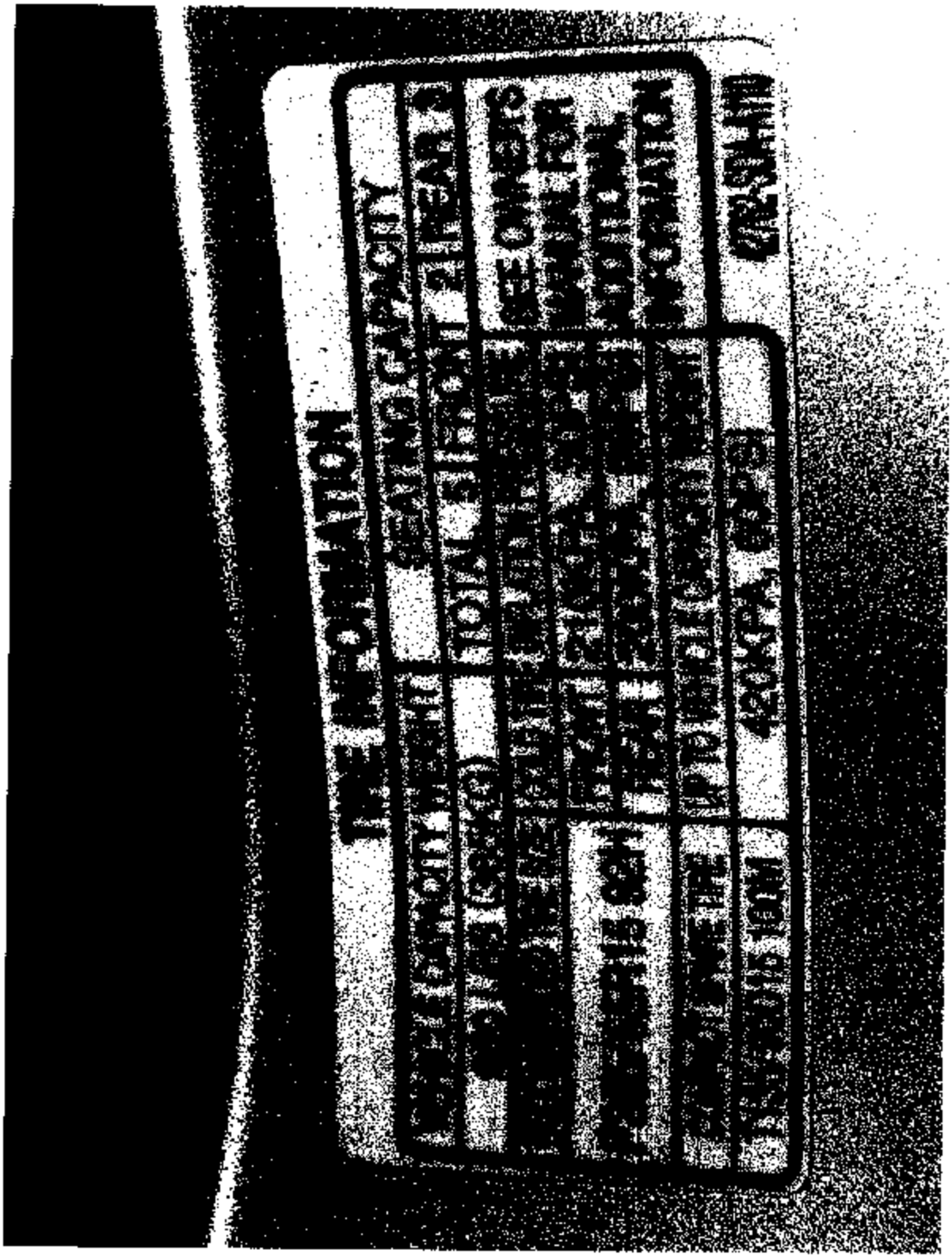


6.2 ¾ Front left view

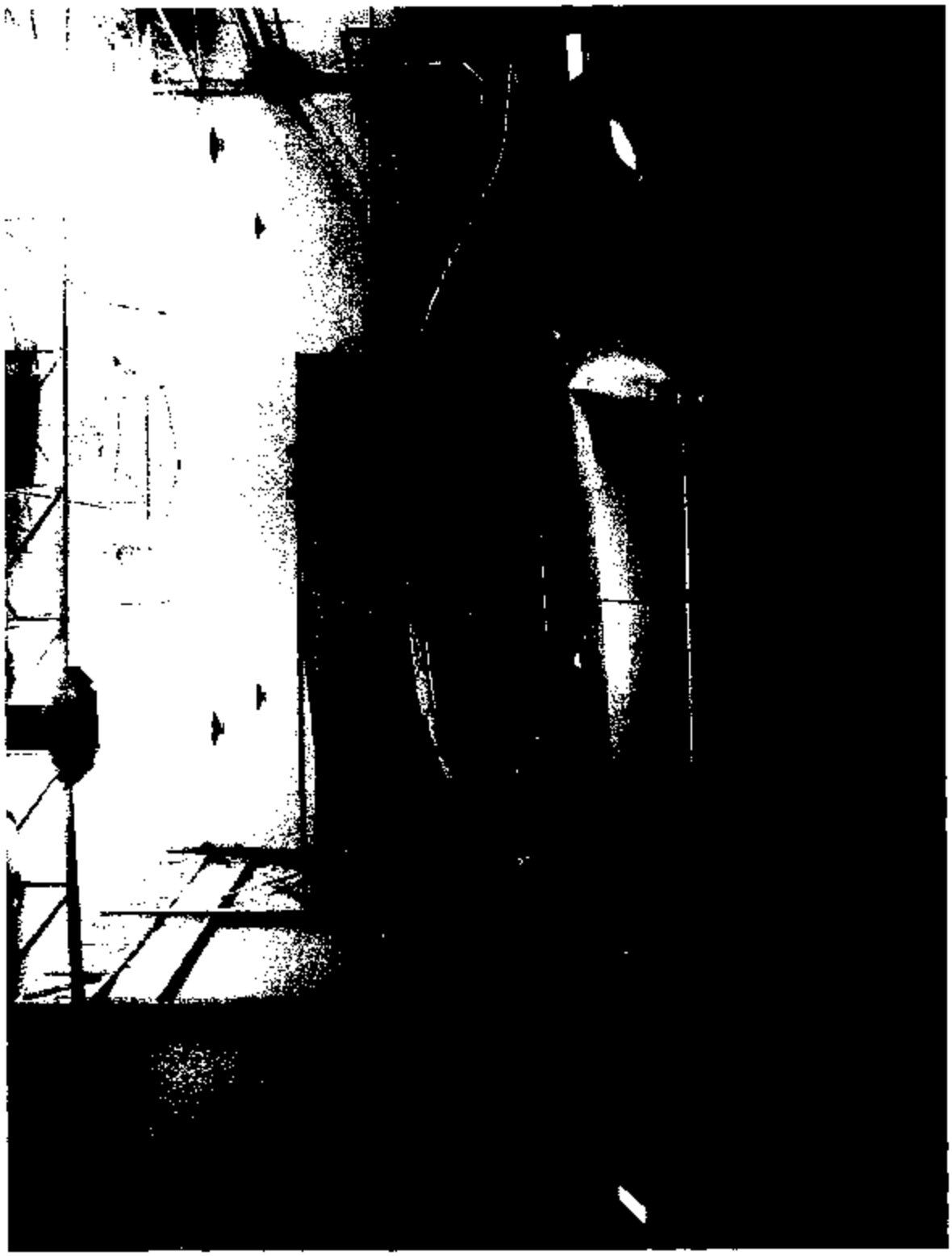
6.3 Test vehicle's certification label



6.4 Test vehicle's tire information placard



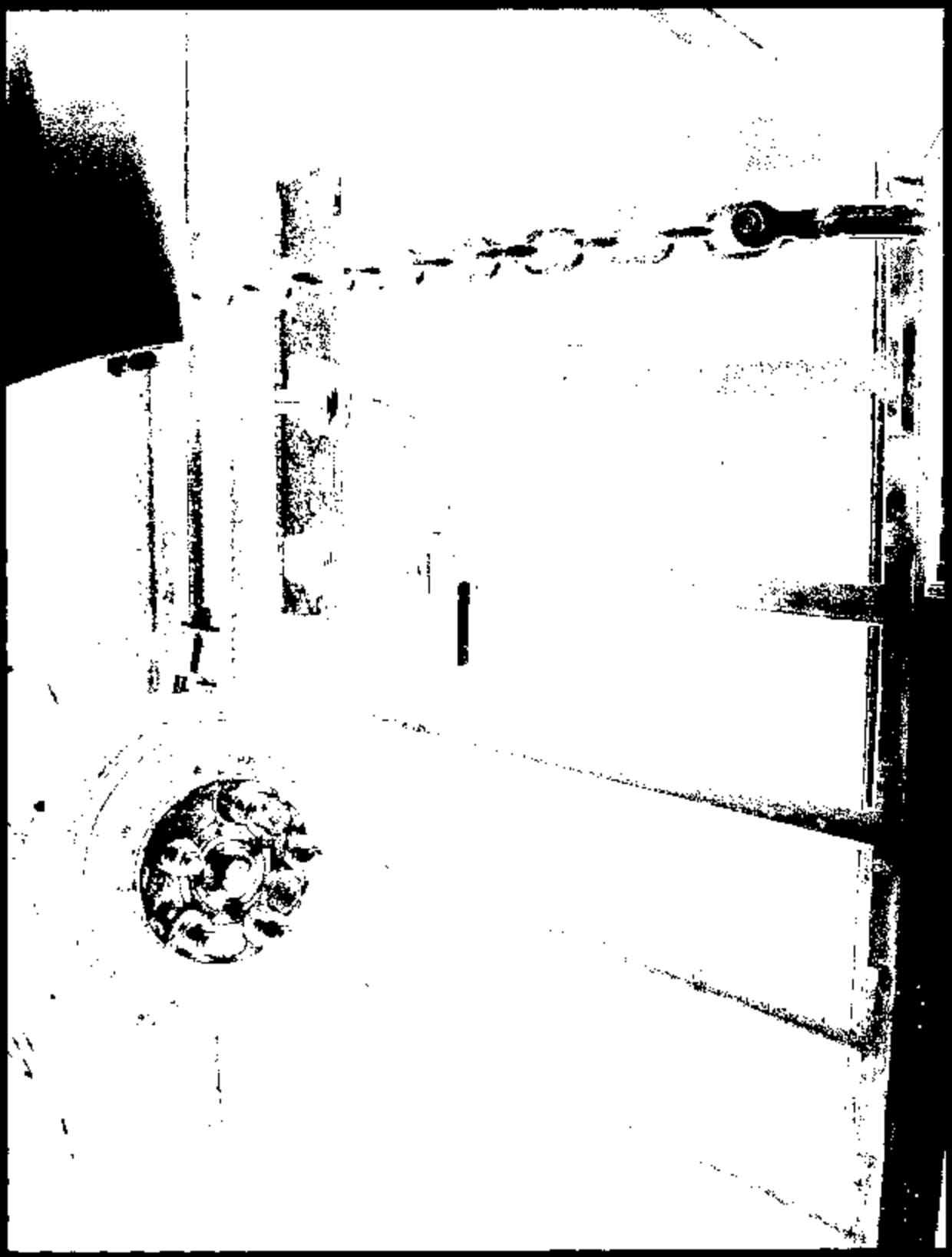
6.5 Full frontal left side view of test vehicle with test apparatus in place



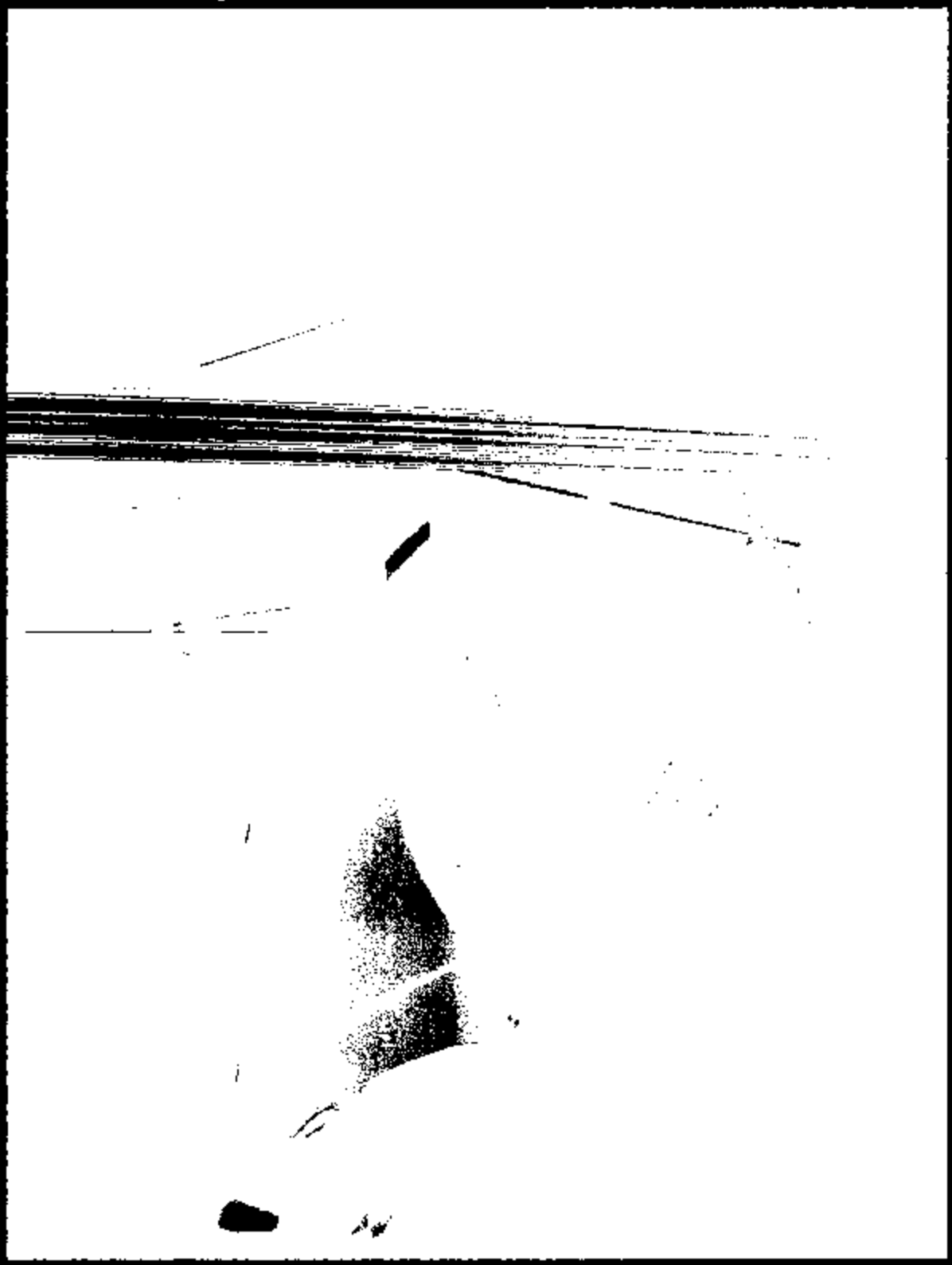
6.6 ¾ Frontal right side view of test vehicle with test apparatus in place

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

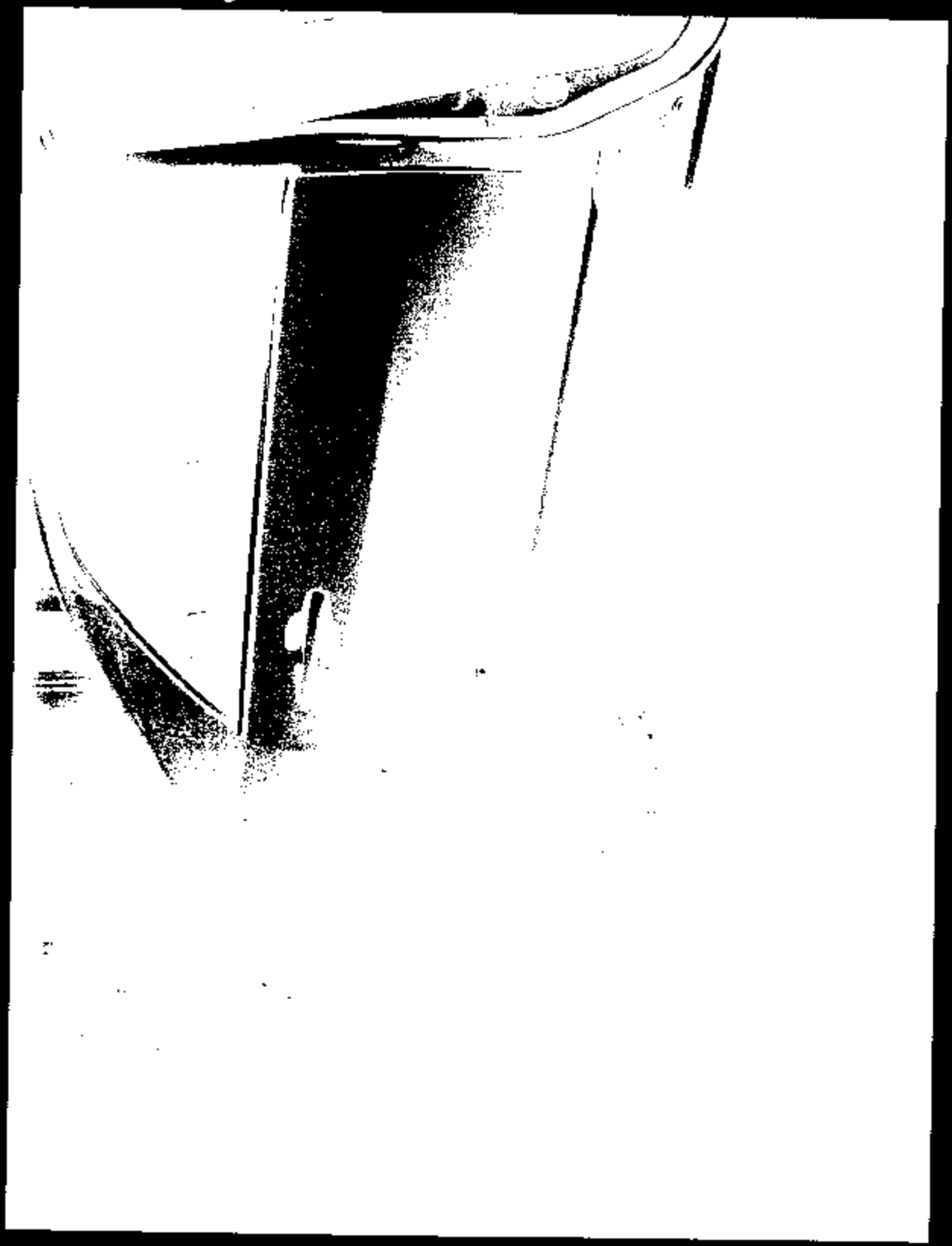
6.7.2 left rear



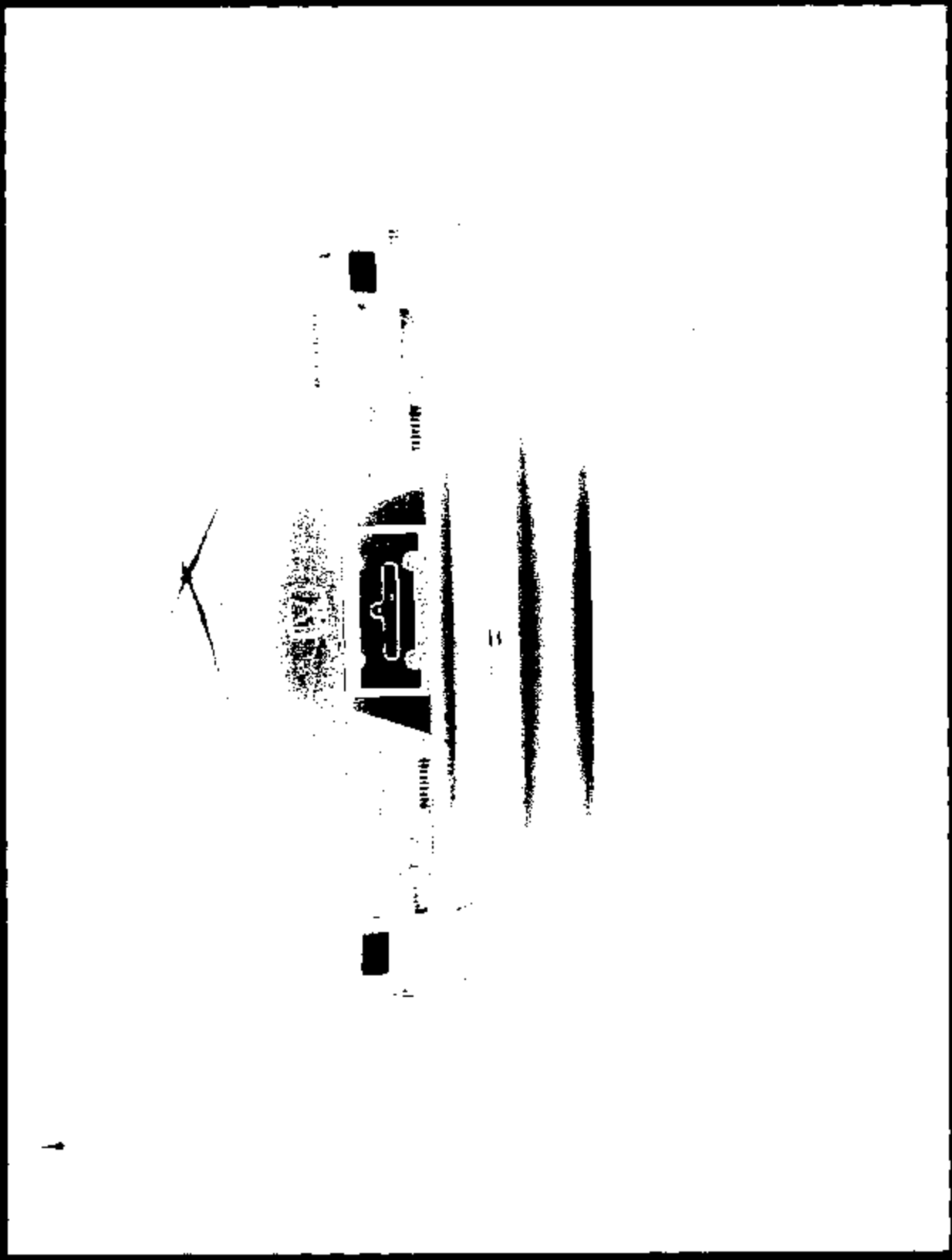
6.7.3 right front



6.7.4 right rear



6.7.5 rear vehicle

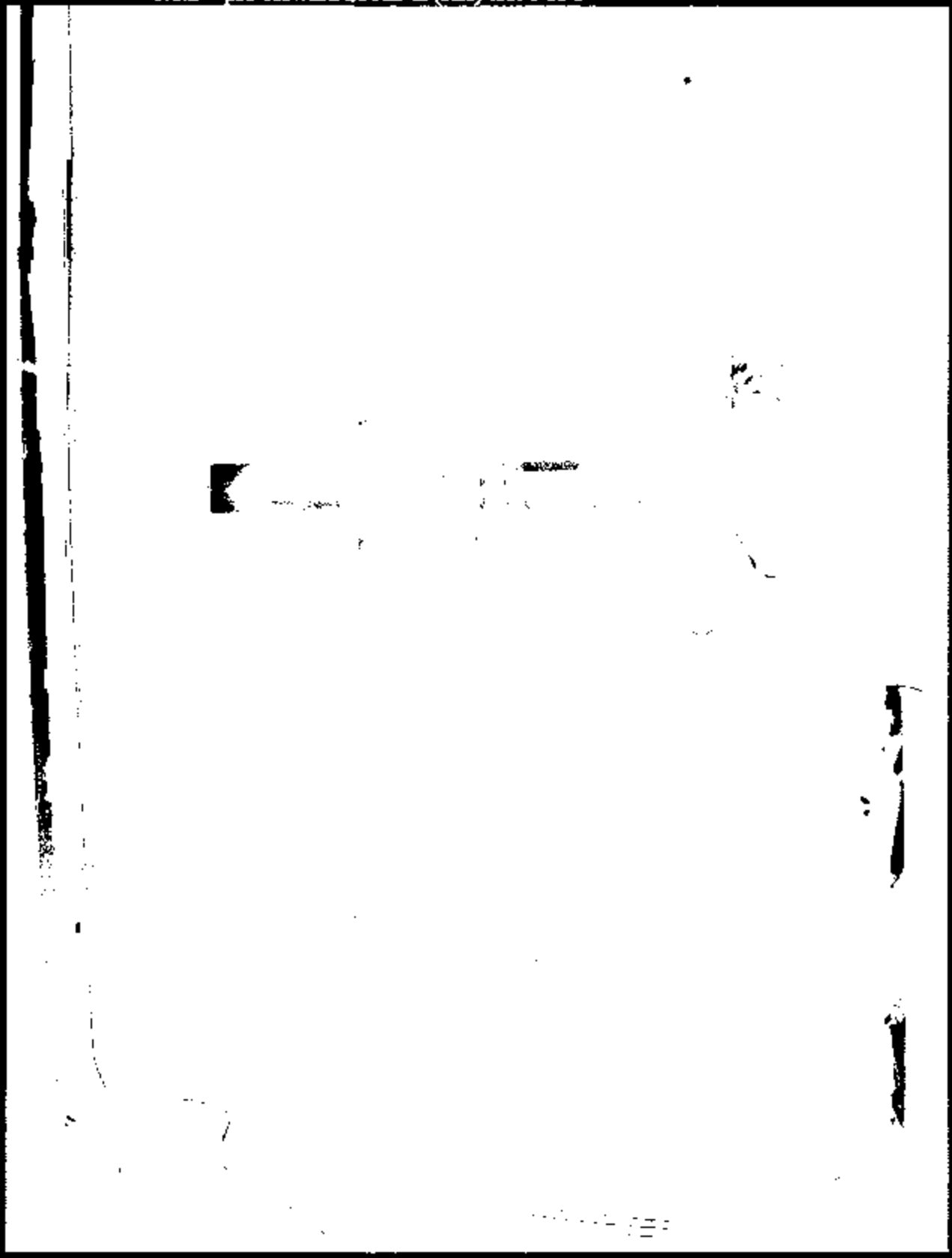


C35302

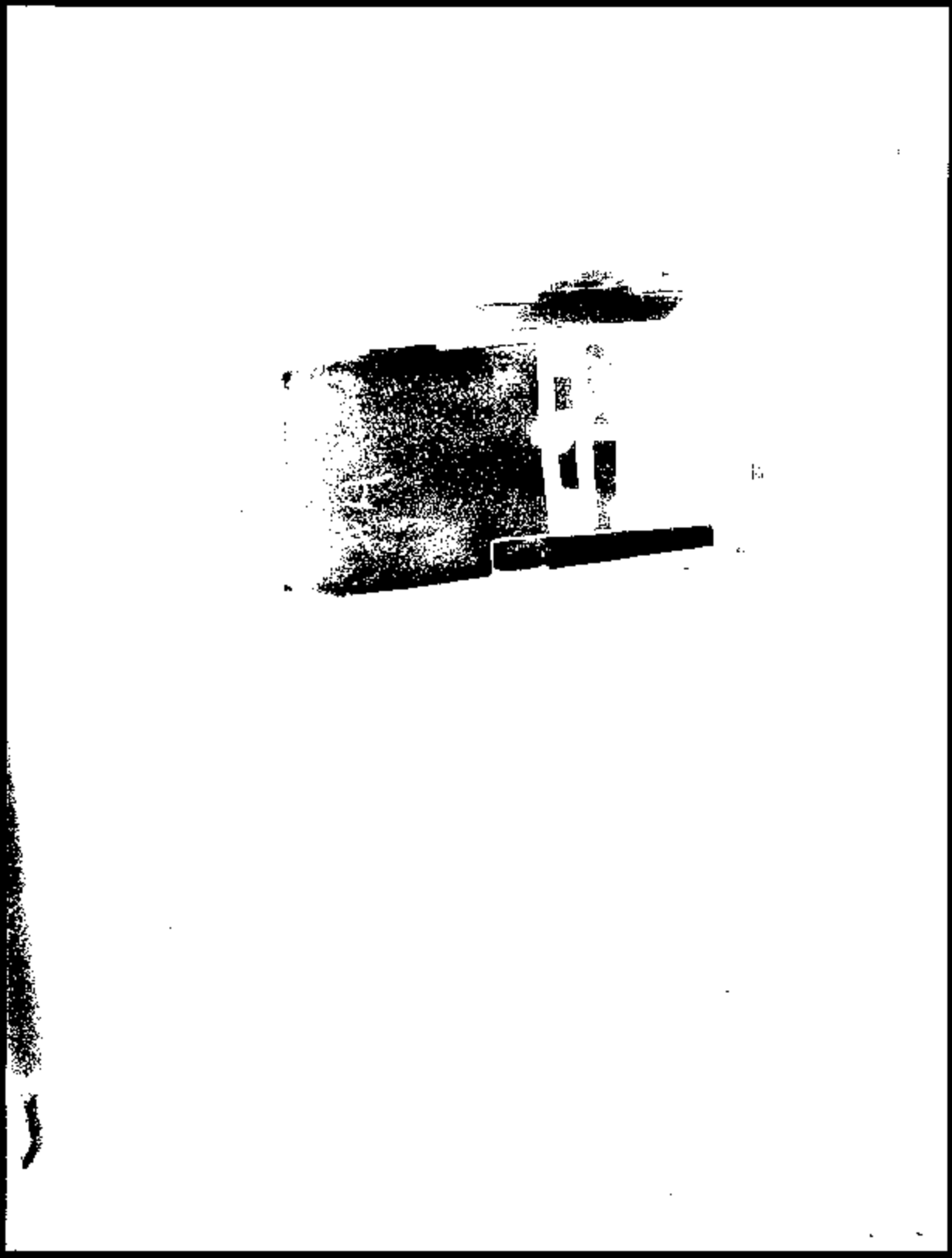
6.8 Pre-test full front and side views of each tether anchorage system instal
& pre-test condition of each lower anchorage

6.8.1 pre-forward SFAD II (LH) test 1 of 1

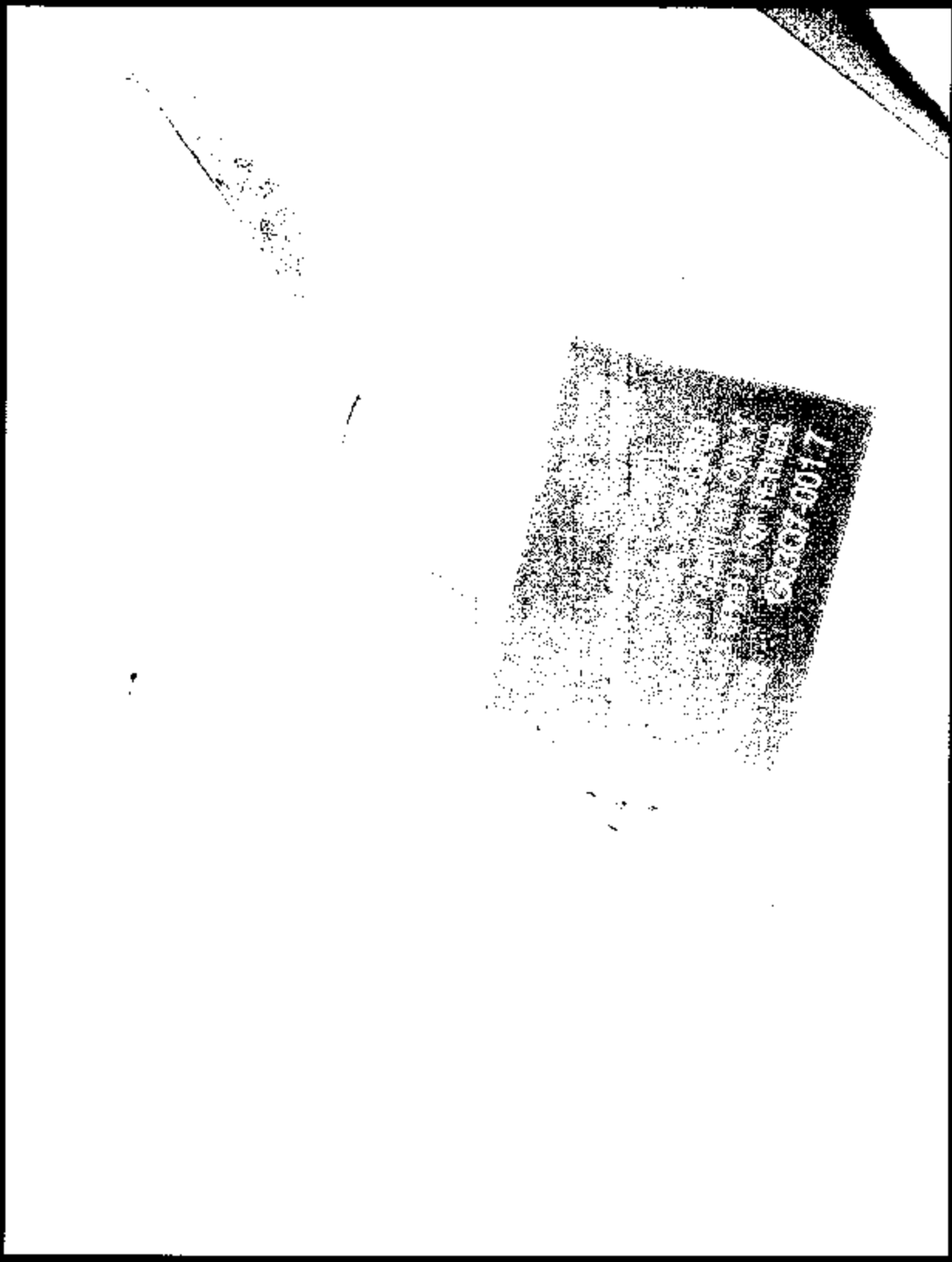
6.8.2 pre-forward SFAD II (RH) test 1 of 1



6.8.3 pre-forward SFAD I test 1 of 2

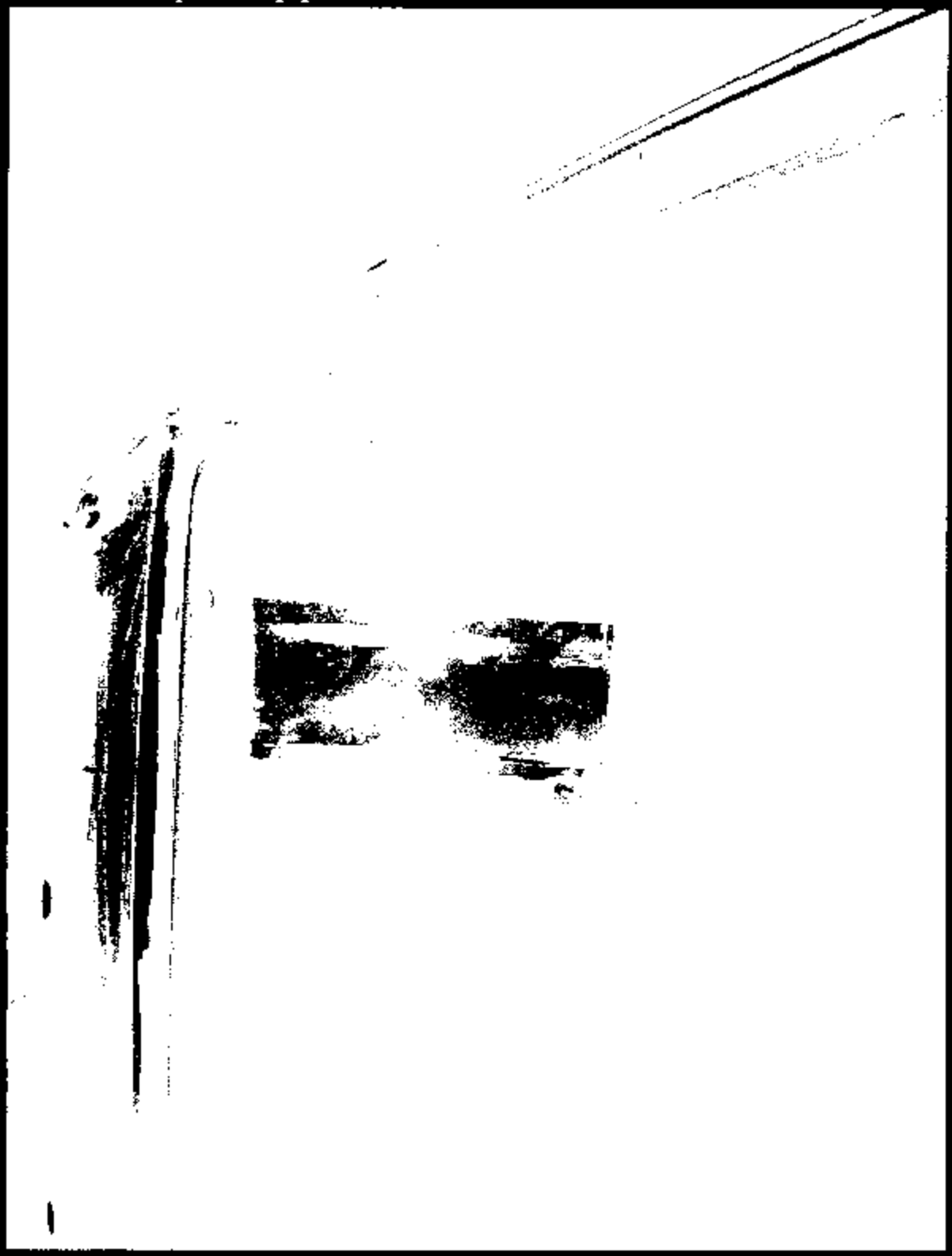


6.8.4 pre-forward SFAD I test 2 of 2



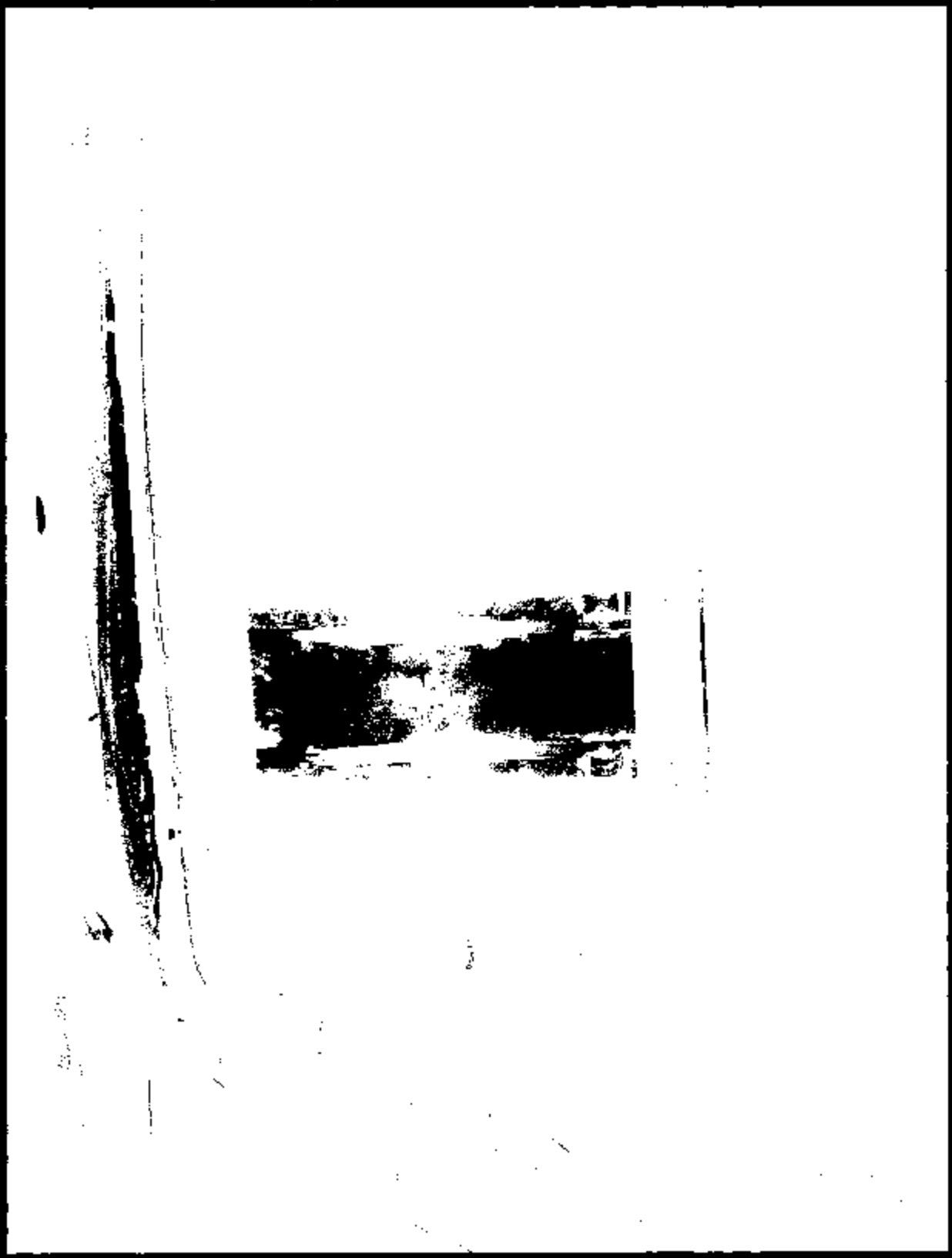
6.9 Pre-test equipment set up at each designated seating position

6.9.1 pre-test equipment 1 of 6



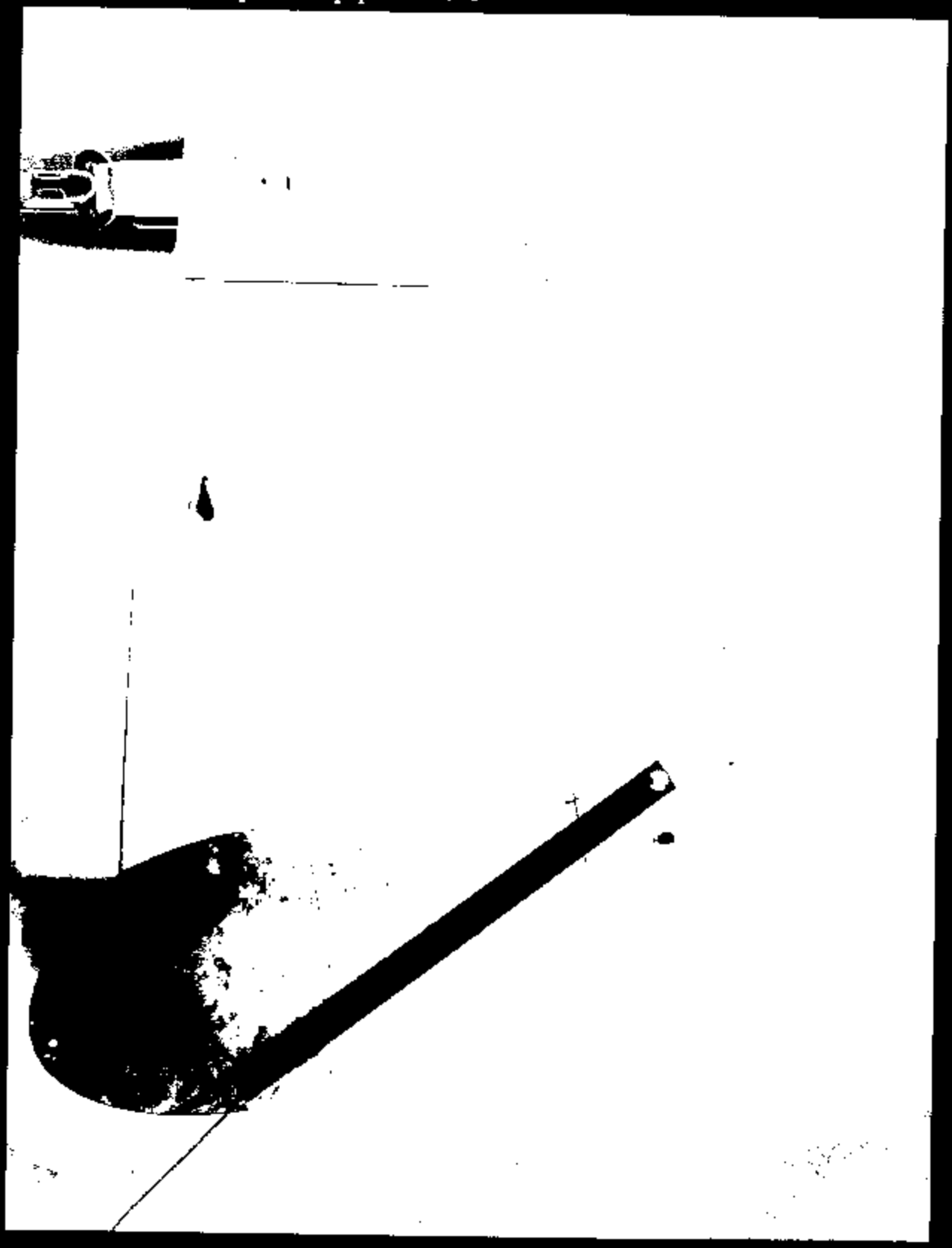
6.9.2 pre-test equipment 2 of 6

6.9.3 pre-test equipment 3 of 6

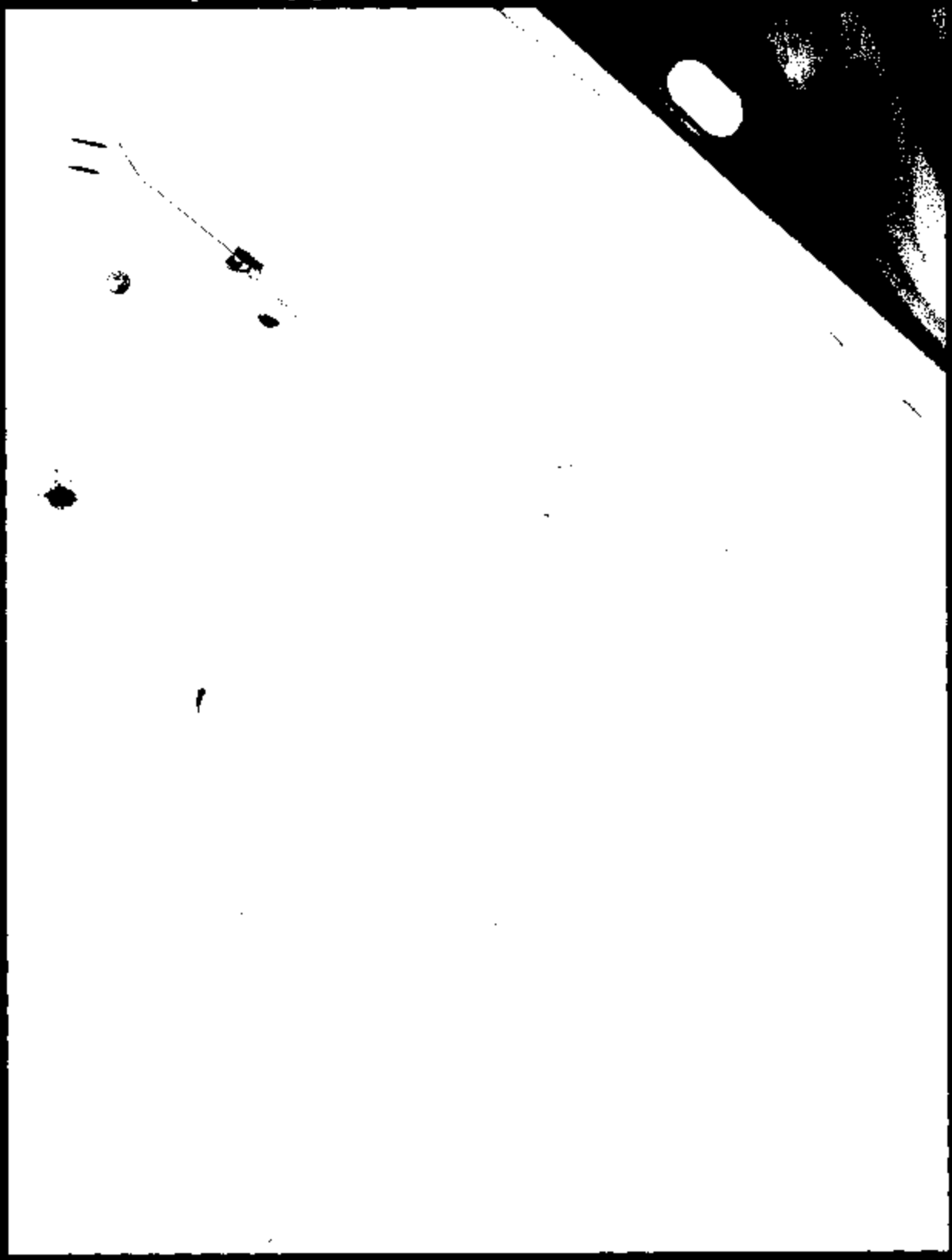


6.9.4 pre-test equipment 4 of 6

6.9.5 pre-test equipment 5 of 6



6.9.6 pre-test equipment 6 of 6

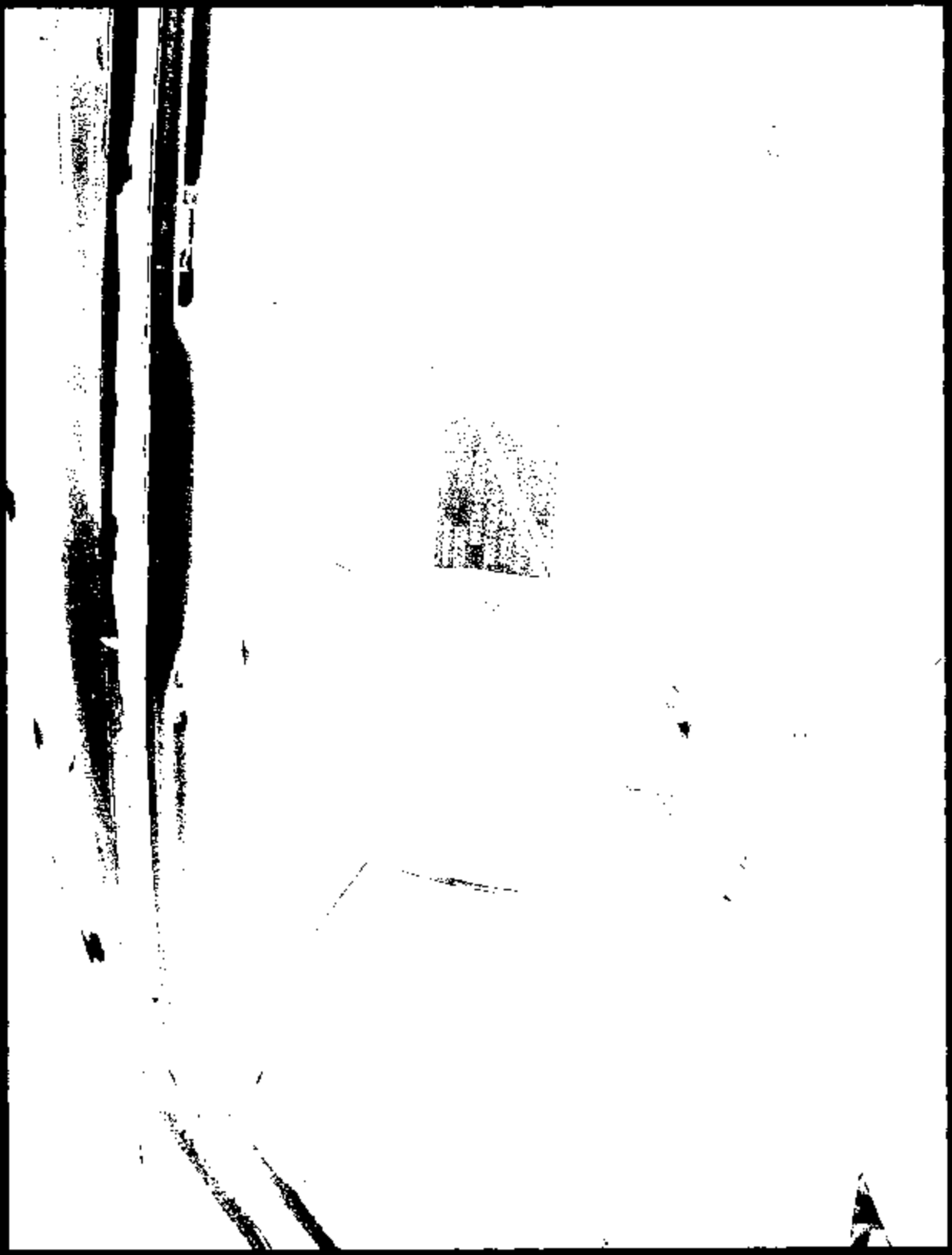


6.10 Load system control and data recording device in test positio

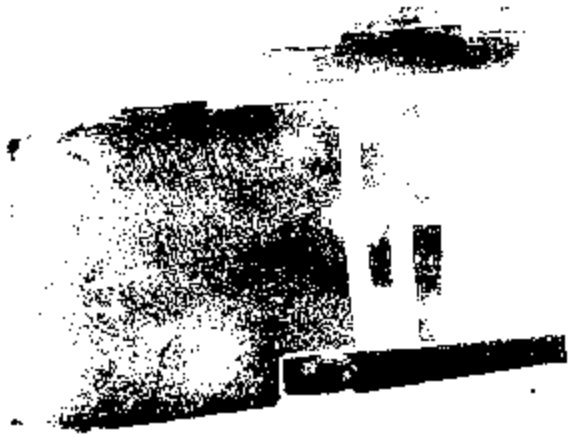
C35302 / DTH

6.10.1 forward SFAD II (LH) test

6.10.2 forward SFAD II (RH) test

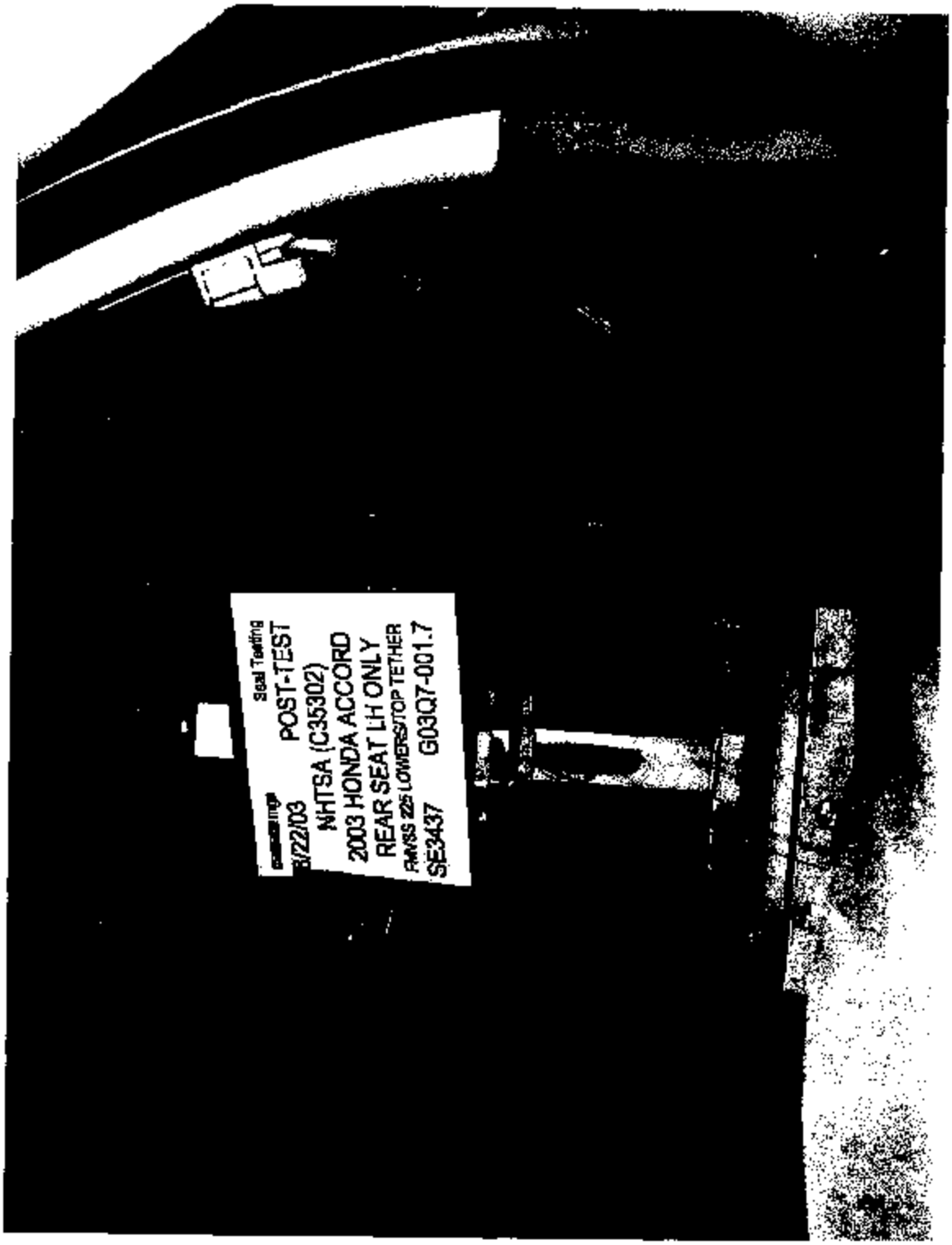


6.10.3 forward SFAD I pre-test

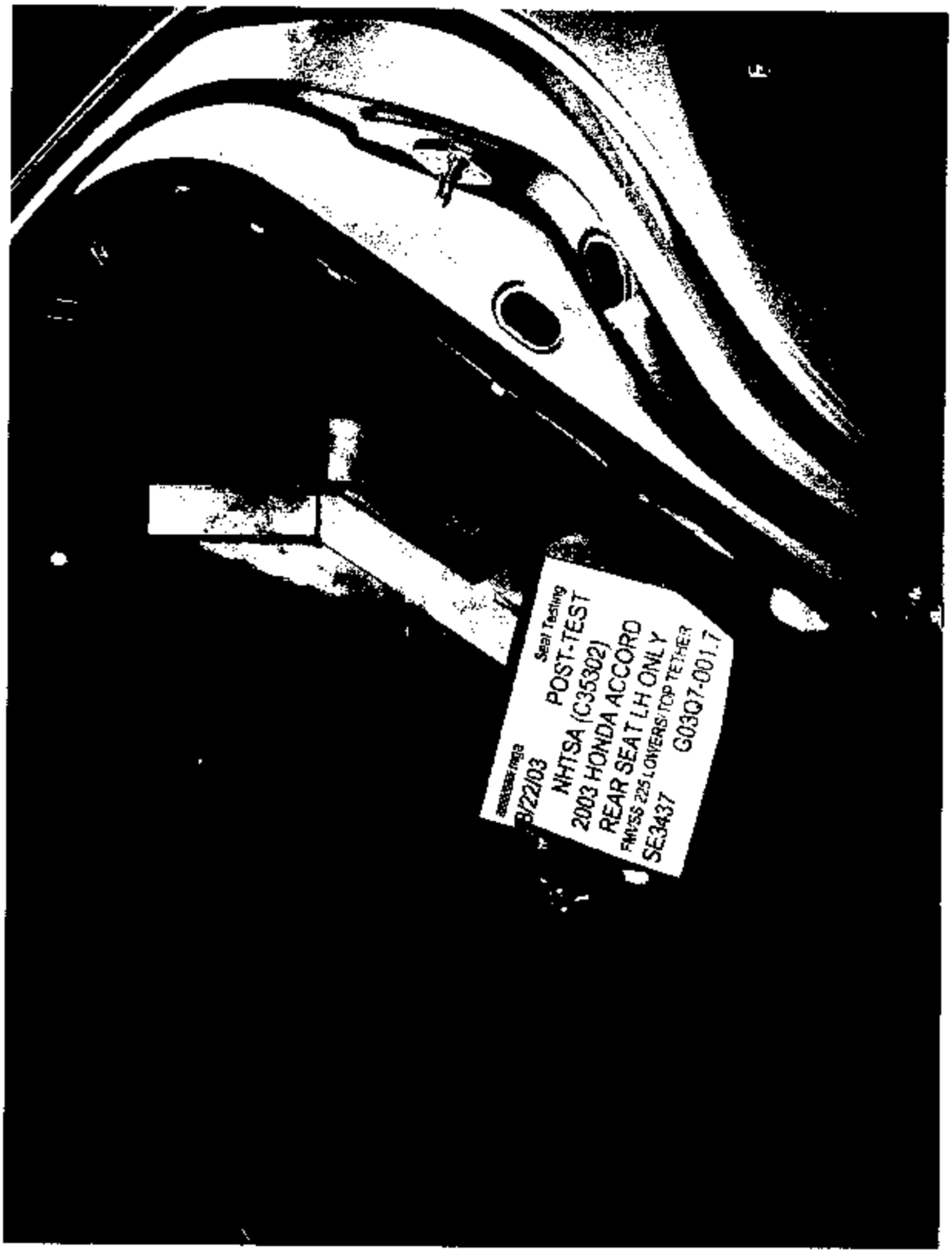


6.11 Post-test condition of each tether anchorage & post-test condition of each lower anchorage

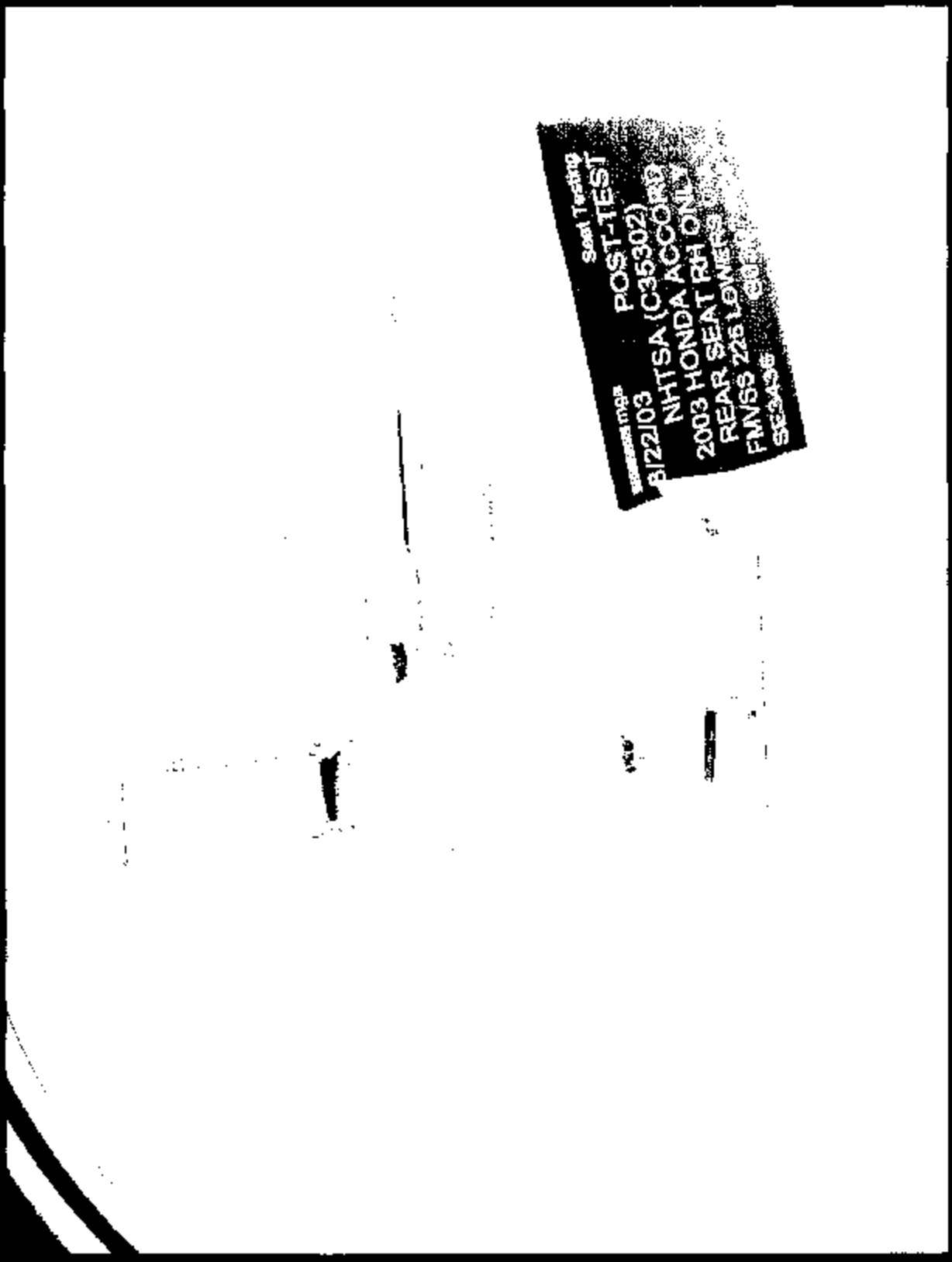
6.11.1 post-forward SFAD II (LH) test 1 of 2



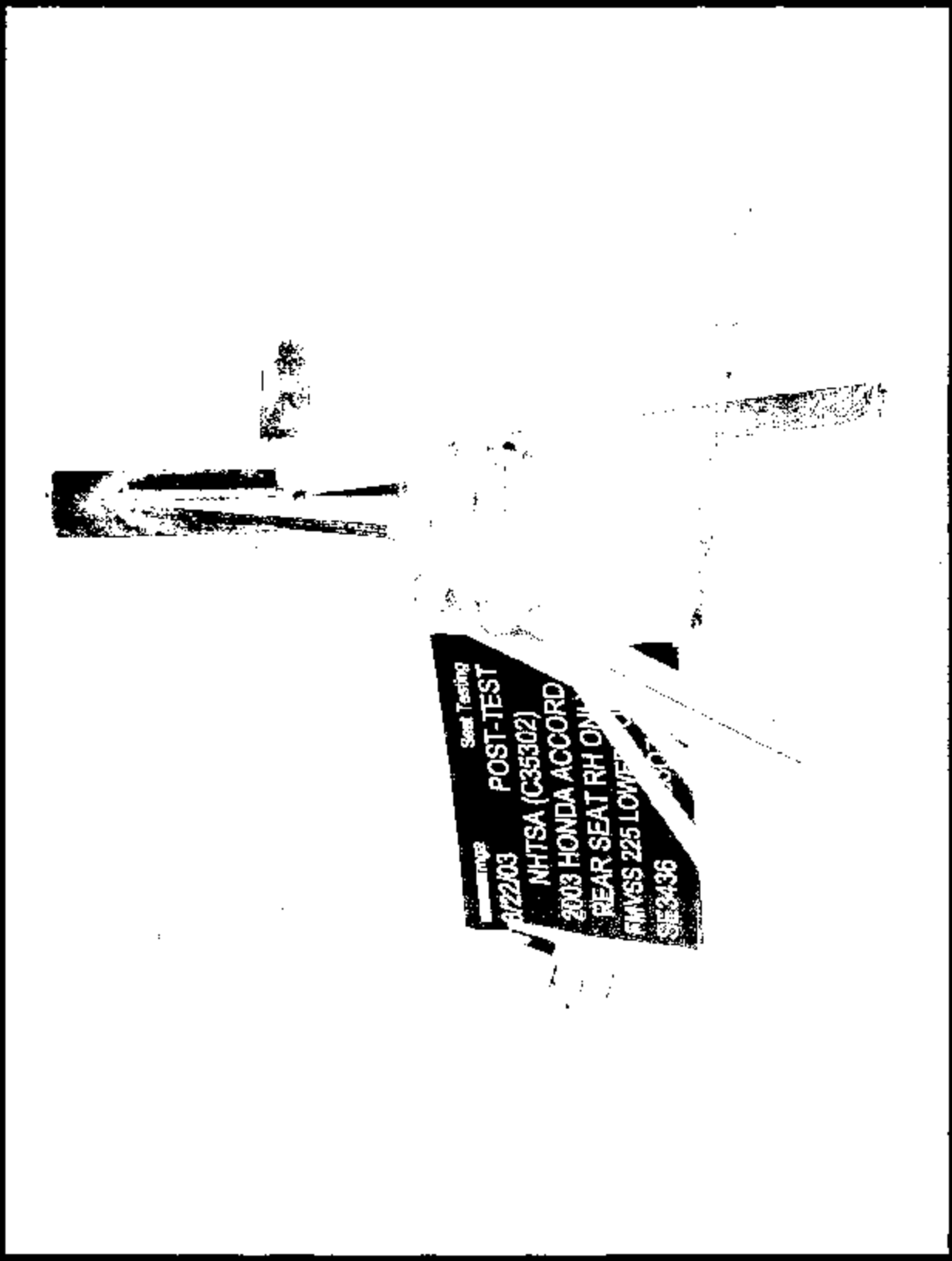
6.11.2 post-forward SFAD II (LH) test 2 of 2



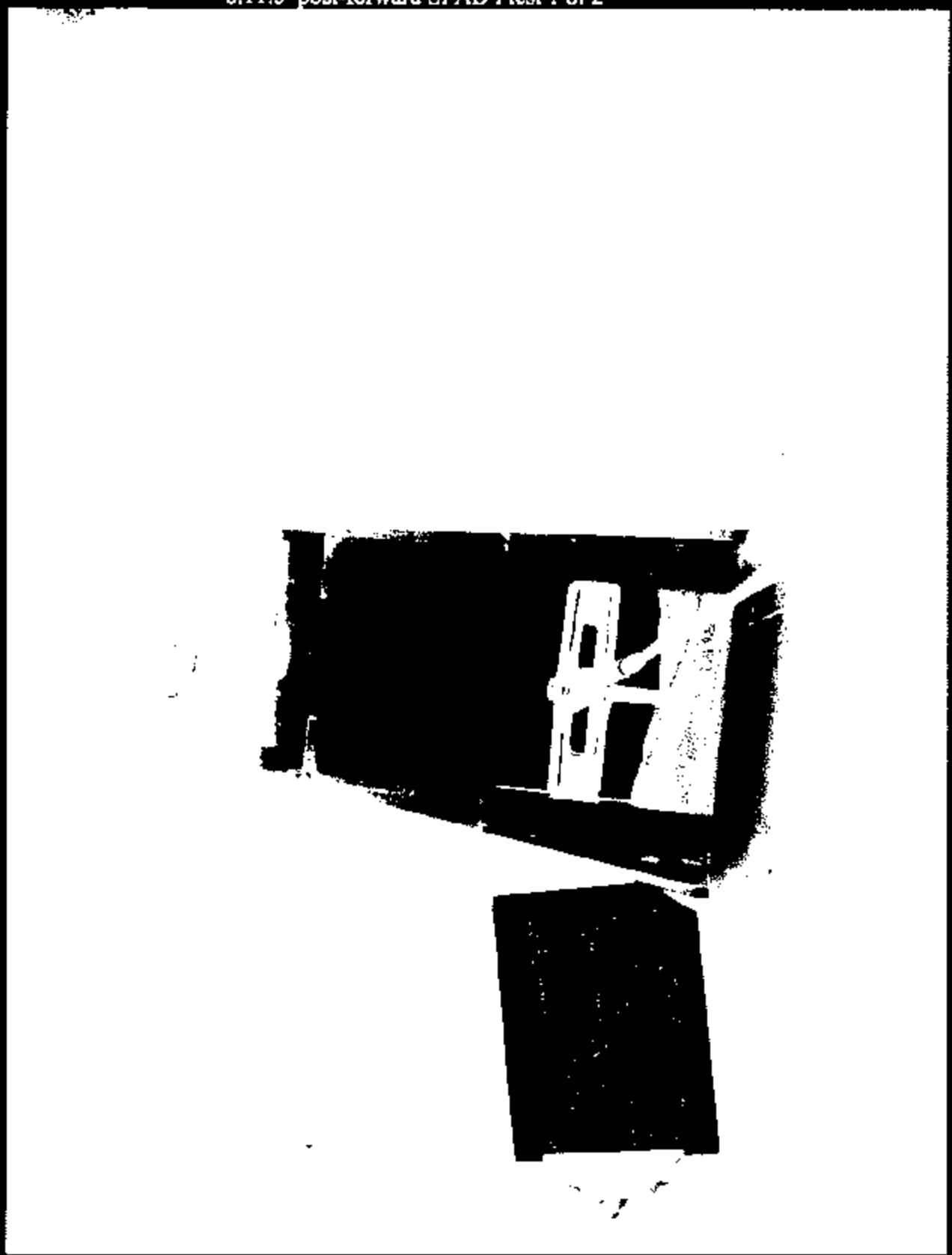
6.11.3 post-forward SFAD II (RH) test 1 of 2



6.11.4 post-forward SFAD II (RH) test 2 of 2

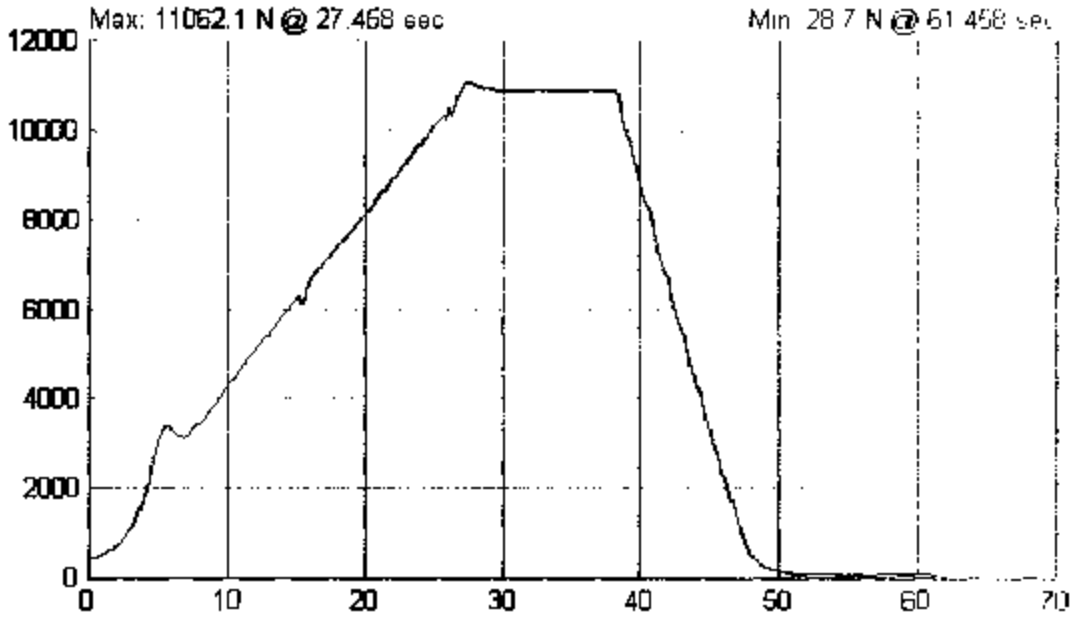


6.11.5 post-forward SFAD I test 1 of 2

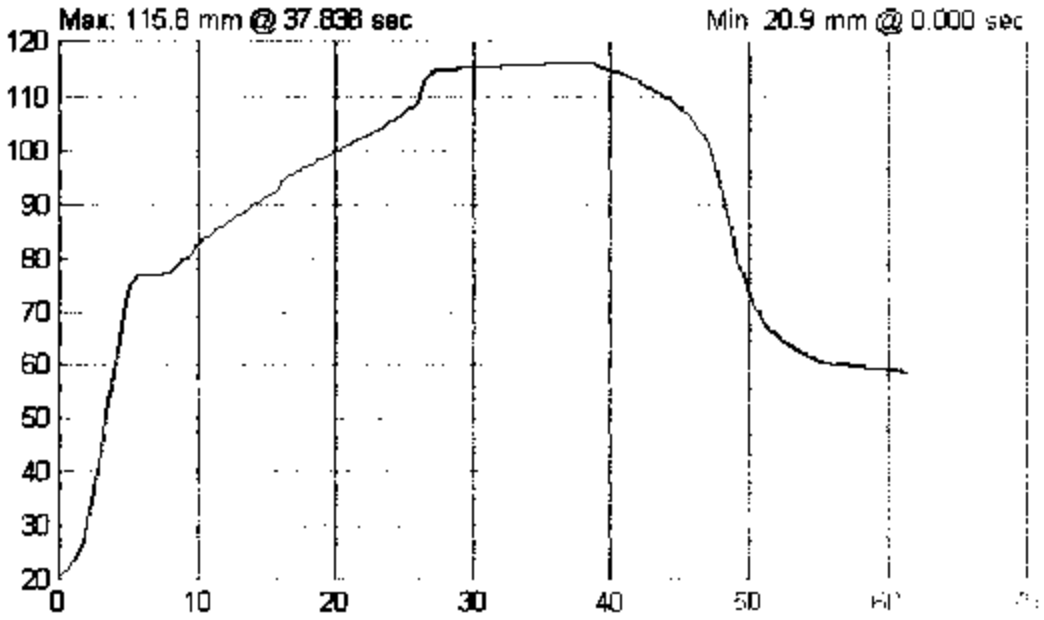


6.11.6 post-forward SFAD I test 2 of 2

7.0 PLOTS



Run# SE3436: Lower Anchor Test (S11)-Rear Right Load (N) vs. Time (sec)



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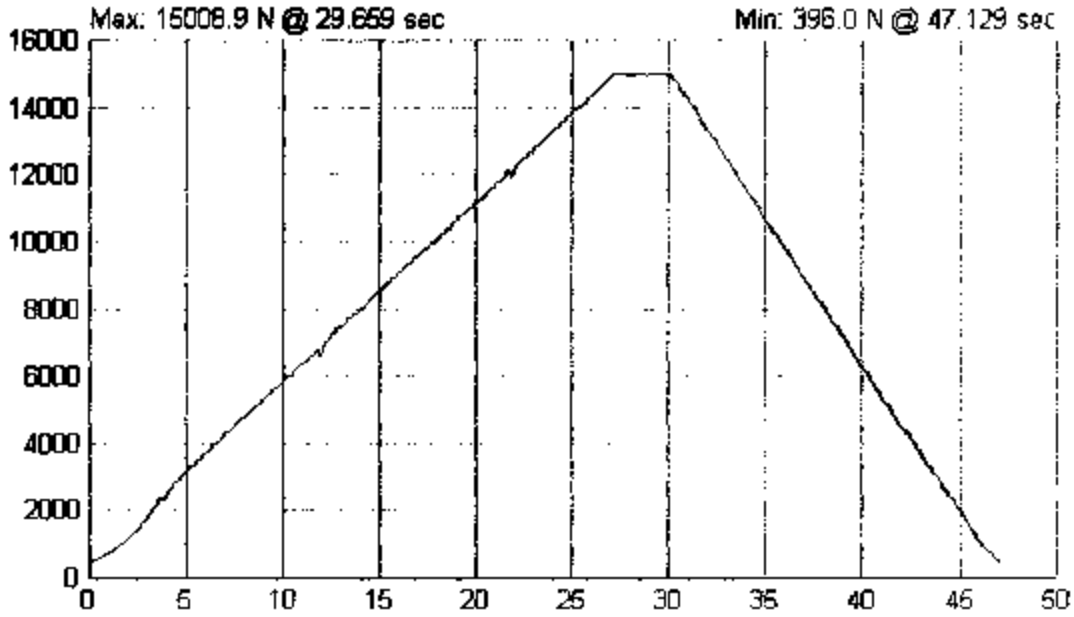

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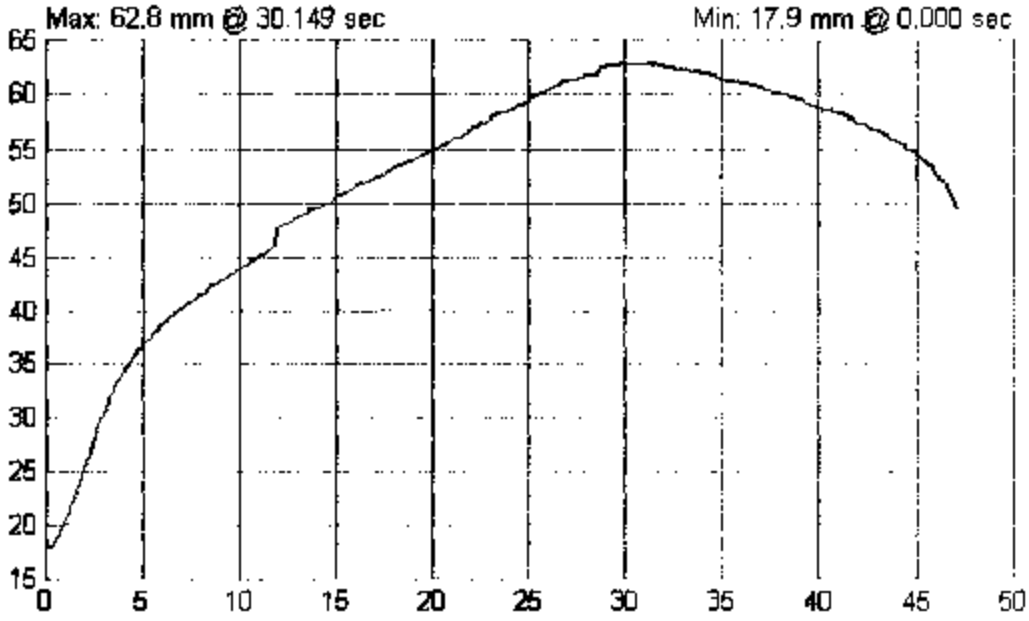

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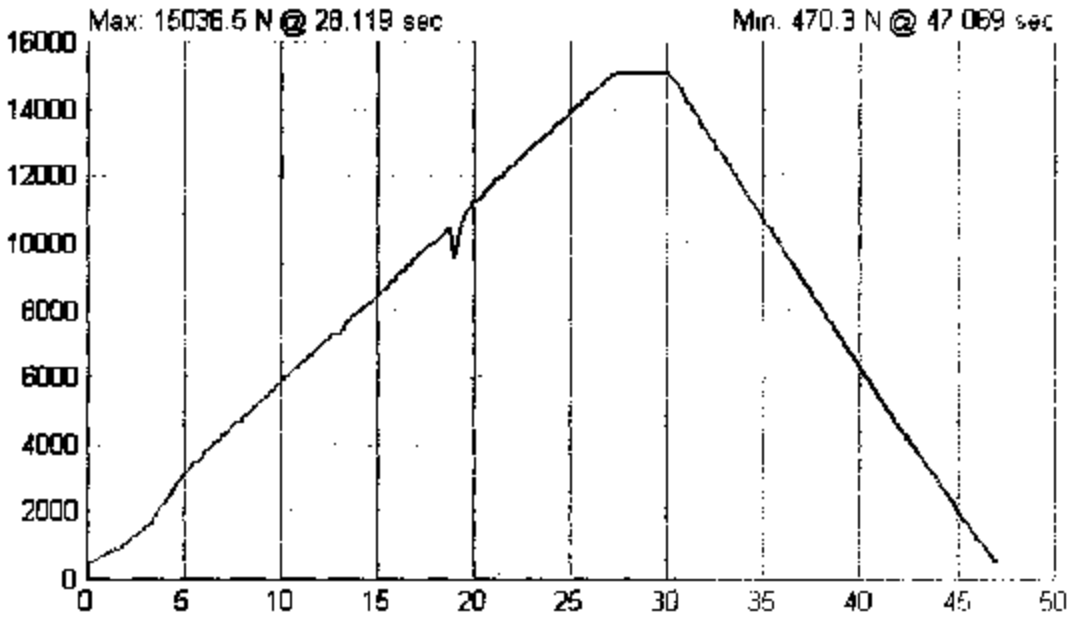

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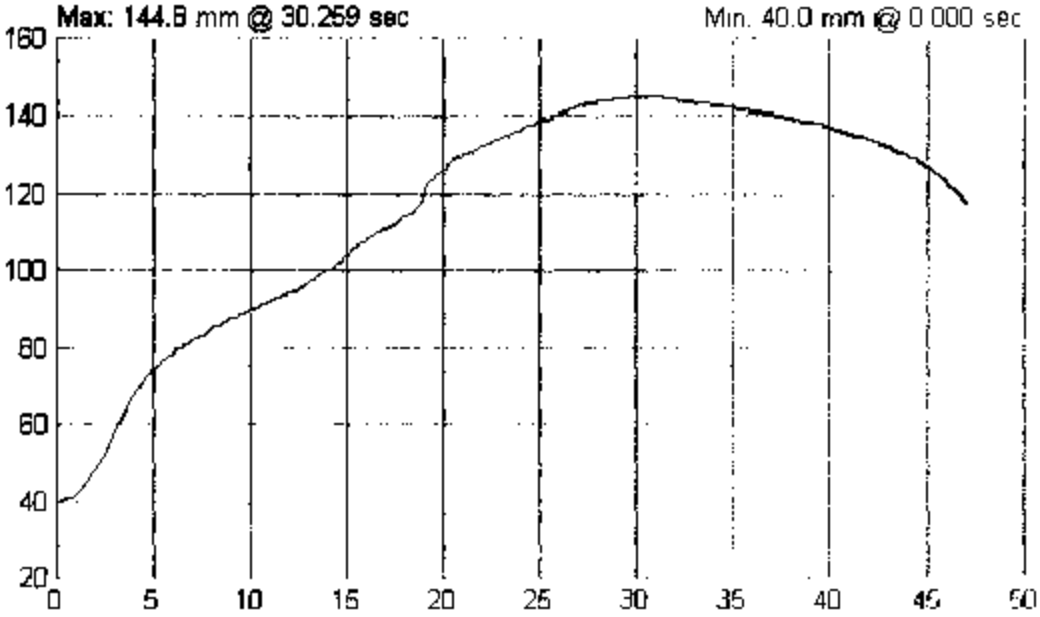


Run# SE3438: Tether Test (S6.3.1)-Rear Center SFAD1 X Displ. (mm) vs. Time (sec)

8.0 REPORT of VEHICLE CONDITION

REPORT OF VEHICLE CONDITION AT THE COMPLETION OF TESTING

CONTRACT No.: DTNH22-02-D-11043 DATE: August 22, 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. 208 Sled 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 Honda Accord Sedan

VEH. NHTSA NO.: C35302 VIN: 1HGCM55343[redacted] COLOR: Silver

ODOMETER READINGS: ARRIVAL 53 miles Date: August 1, 2003

COMPLETION 53 miles Date: August 22, 2003

PURCHASE PRICE: $19,660 DEALER'S NAME: Wilde Honda Cars

ENGINE DATA: 4 cylinder 2.4 Litera

TRANSMISSION DATA: ___Automatic X Manual No. of Speeds 5

FINAL DRIVE DATA: X Rear Drive __ Front Drive ___4 Wheel Drive

TIRE DATA: Size P205/65R15 Mfr.

CHECK APPROPRIATE BOXES FOR VEHICLE EQUIPMENT:

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Brad Reaume

X	Air Conditioning		Traction Control	X	Clock
	Tinted Glass		All Wheel Drive		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
	Power Seat(s)		Tachometer	X	Front Disc Brakes
	Power Brakes	X	Tilt Steering Wheel	X	Rear Disc Brakes
	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, I/P, & steering column removed for test. All removed parts were placed in the trunk.

Test Vehicle Condition:

Salvage only.

RECORDED BY: Kenney Godfrey DATE: August 22, 2003

APPROVED BY: Brad Reaume

APPENDIX A
OWNERS MANUAL CHILD RESTRAINT SYSTEMS

Children depend on adults to protect them. However, despite their best intentions, many parents and other adults may not know how to *properly* protect young passengers.

So if you have children, or if you ever need to drive with a grandchild or other children in your car, be sure to read this section.

Children who are unrestrained or improperly restrained can be seriously injured or killed in a crash.

Any child too small for a seat belt should be properly restrained in a child seat. A larger child should be properly restrained with a seat belt.

All Children Must Be Restrained

Each year, many children are injured or killed in car crashes because they are either unrestrained or not properly restrained. In fact, car accidents are the number one cause of death of children ages 12 and under.

To reduce the number of child deaths and injuries, every state and Canadian province requires that infants and children be restrained whenever they ride in a car.

Any child who is too small to wear a seat belt should be properly restrained in a child seat. (See page 25.)

A larger child should always be restrained with a seat belt, and use a booster, if needed. (See page 36.)

CONTINUED

Protecting Children

Additional Precautions to Parents

- ***Never hold an infant or child on your lap.*** If you are not wearing a seat belt in a crash, you could be thrown forward into the dashboard and crush the child.

  If you are wearing a seat belt, the child can be torn from your arms during a crash. For example, if your car crashes into a parked car at 30 mph (48 km/h), a 20-lb (9 kg) infant will become a 600-lb (275 kg) force, and you will not be able to hold on.

- ***Never put a seat belt over yourself and an infant or child.*** During a crash, the belt could press deep into the child and cause very serious injuries.

Children Should Sit in the Back Seat

According to accident statistics, children of all ages and sizes are safer when they are restrained in the back seat, not the front seat. The National Highway Traffic Safety Administration and Transport Canada recommend that all children ages 12 and under be properly restrained in the back seat.

In the back seat, children are less likely to be injured by striking hard interior parts during a collision or hard braking. Also, children cannot be injured by an inflating airbag when they ride in the back.

The Passenger's Front Airbag Poses Serious Risks to Children

Front airbags have been designed to help protect adults in a moderate to severe frontal collision. To do this, the passenger's front airbag is quite large, and it inflates with tremendous speed.

Infants

Never put a rear-facing child seat in the front seat of a car equipped with a passenger's airbag. If the airbag inflates, it can hit the back of the child seat with enough force to kill or very seriously injure an infant.

Protecting Children

Small Children
Placing a forward-facing child seat in the front seat of a car equipped with a passenger's front airbag can be hazardous. If the car seat is too far forward, or the child's head is thrown forward during a collision, an inflating front airbag can strike the child with enough force to kill or very seriously injure a small child.

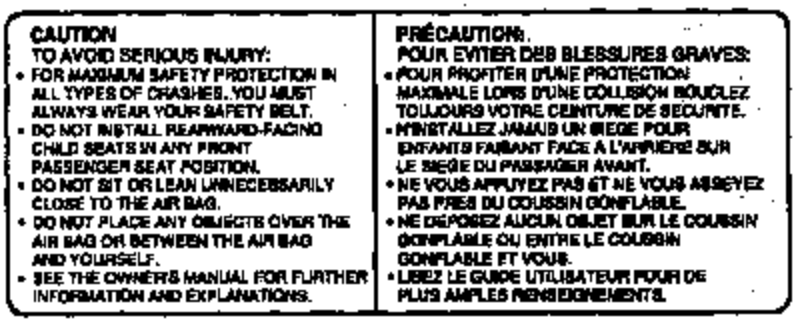
Larger Children
Children who have outgrown child seats are also at risk of being injured or killed by an inflating passenger's front airbag. Whenever possible, larger children should sit in the back seat, in a booster seat if needed, and be properly restrained with a seat belt. (See page 36 for important information about protecting larger children.)

U.S. Models
To remind you of the passenger's front airbag hazards, and that children must be properly restrained in the back seat, your car has warning labels on the dashboard and on the driver's and front passenger's visors. Please read and follow the instructions on these labels.

CONTINUED

Protecting Children

Canadian Models
To remind you of the front airbag hazards, your car has warning labels on the driver's and front passenger's visors. Please read and follow the instructions on these labels.



If You Must Drive with Several Children

Your car has three seating positions in the back seat where children can be properly restrained.

If you ever have to carry more than three children in your car:

- Place the largest child in the front seat, provided the child is large enough to wear a seat belt properly (see page 36).
- Move the car seat as far to the rear as possible (see page 13).
- Have the child sit upright and well back in the seat (see page 18).
- Make sure the seat belt is properly positioned and secured (see page 15).

If a Child Requires Close Attention

Many parents say they prefer to put an infant or small child in the front passenger seat so they can watch the child, or because the child requires attention.

Placing a child in the front seat exposes the child to hazards from the passenger's front airbag, and paying close attention to a child distracts the driver from the important tasks of driving, placing both of you at risk.

If a child requires physical attention or frequent visual contact, we strongly recommend that another adult ride with the child in the back seat. The back seat is far safer for a child than the front.

Additional Safety Precautions

- ***Use childproof door locks to prevent children from opening the doors.*** Using this feature will prevent children from opening the doors and accidentally falling out (see page 84).

- ***Use the main power window switch to prevent children from opening the rear windows.*** Using this feature will prevent children from playing with the windows, which could expose them to hazards or distract the driver (see page 96).

- ***Do not leave children alone in your car.*** Leaving children without adult supervision is illegal in most states and Canadian provinces, and can be very hazardous. For example, infants and small children left in a car on a hot day can die from heatstroke. And children left alone with the key in the ignition can accidentally set the car in motion, possibly injuring themselves or others.

CONTINUED

Protecting Children

- ***Lock all doors and the trunk when your car is not in use.*** Children who play in cars can accidentally get trapped inside the trunk and be seriously injured or could die. Teach your children not to play in or around cars. Know how to operate the emergency trunk opener and decide if your children should be shown how to use this feature (see page 85).

- ***Keep car keys/remote transmitters out of the reach of children.*** Even very young children learn how to unlock car doors, turn on the ignition, and open the trunk, which can lead to accidental injury or death.

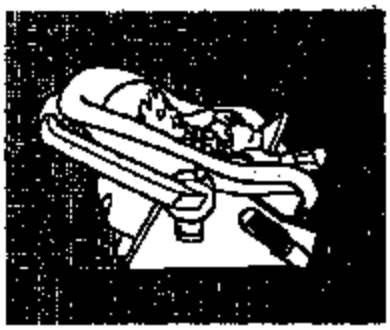
General Guidelines for Using Child Seats

The following pages give general guidelines for selecting and installing child seats for infants and small children.

Selecting a Child Seat

To provide proper protection, a child seat should meet three requirements:

1. The child seat should meet safety standards. The child seat should meet Federal Motor Vehicle Safety Standard 213 (FMVSS 213) or Canadian Motor Vehicle Safety Standard 213 (CMVSS 213). Look for the manufacturer's statement of compliance on the box and seat.



2. The child seat should be of the proper type and size to fit the child.

Infants: Children up to about one year old should be restrained in a rear-facing, reclining child seat. Only a rear-facing seat provides the proper support to protect an infant's head, neck, and back. See page 30 for additional information on protecting infants.

Protecting Children

Small Children: A child who is too large for a rear-facing child seat, and who can sit up without support, should be restrained in a forward-facing child seat. See page 33 for additional information on protecting small children.

3. The child seat should fit the car seating position (or positions) where it will be used.

Due to variations in the design of child seats, car seats, and seat belts, all child seats will not fit all car seating positions.

However, Honda is confident that one or more child seat models can fit and be properly installed in all recommended seating positions in your car.

Before purchasing a child seat, we recommend that parents test the child seat in the specific car seating position (or positions) where they intend to use the seat. If a previously purchased child seat does not fit, you may need to buy a different one that will fit.

CONTINUED

Protecting Children

Placing a Child Seat
This page briefly summarizes Honda's recommendations on where to place rear-facing and forward-facing child seats in your car.

Airbags Pose Serious Risks to Children
The passenger's front airbag inflates with enough force to kill or seriously injure an infant in a rear-facing child seat.

A small child in a forward-facing child seat is also at risk. If the car seat is too far forward, or the child's head is thrown forward during a collision, an inflating front airbag can kill or seriously injure the child.

If a small child must ride in the front, follow the instructions provided in this section.

Front Passenger's Seat
Infants: Never in the front seat, due to the front airbag hazard.

Small children: Not recommended, due to the front airbag hazard. If a small child must ride in front, move the car seat to the rear-most position and secure a front-facing child seat with the seat belt. (see page 33).

Back Seats
Infants: Recommended positions. Properly secure a rear-facing child seat (see pages 30 and 40).

Small children: Recommended positions. Properly secure a front-facing child seat (see pages 33 and 40).

Protecting Children

Installing a Child Seat
After selecting a proper child seat, and a good position to install the seat, there are three main steps in installing the seat:

1. ***Properly secure the child seat to the car.*** All child seats are designed to be secured to the car with the lap part of a lap/shoulder belt. Some child seats can be secured to the car's LATCH anchorage system instead. A child whose seat is not properly secured to the car can be endangered in a crash. See pages 31, 34 and 40 for instructions on how to properly secure child seats in this car.

2. ***Make sure the child seat is firmly secured.*** After installing a child seat, push and pull the seat forward and from side to side to verify that it is secure.

To provide security during normal driving maneuvers as well as during a collision, we recommend that parents secure a child seat as firmly as possible.

However, a child seat does not need to be "rock solid." In some cars or seating positions, it may be difficult to install a child seat so that it does not move at all. Some side-to-side or back-and-forth movement can be expected and should not reduce the child seat's effectiveness.

If the child seat is not secure, try installing it in a different seating position, or use a different style of child seat that can be firmly secured in the desired seating position.

3. ***Secure the child in the child seat.*** Make sure the child is properly strapped in the child seat according to the child seat maker's instructions. A child who is not properly secured in a child seat can be thrown out of the seat in a crash and be seriously injured.

Storing a Child Seat
When you are not using a child seat, either remove it and store it in a safe place, or make sure it is properly secured. An unsecured child seat can be thrown around the car during a crash or sudden stop and injure someone.

Protecting Children

Protecting Infants

Child Seat Type
Only a rear-facing child seat provides proper support for a baby's head, neck, and back. Infants up to about one year of age must be restrained in a rear-facing child seat.

Two types of seats may be used: a seat designed exclusively for infants, or a convertible seat used in the rear-facing, reclining mode.

Placing a rear-facing child seat in the front seat can result in serious injury or death if the passenger's front airbag inflates.

Always place a rear-facing child seat in the back seat, not the front.

We recommend that an infant be restrained in a rear-facing child seat until the infant reaches the seat maker's weight or height limit and is able to sit up without support.

Rear-Facing Child Seat Placement
In this car, a rear-facing child seat can be placed in any seating position in the back seat, but not in the front seat.

Never put a rear-facing child seat in the front seat. If the passenger's front airbag inflates, it can hit the back of the child seat with enough force to kill or seriously injure an infant. If an infant must be closely watched, we recommend that another adult sit in the back seat with the baby.

Do not put a rear-facing child seat in a forward-facing position. If placed facing forward, an infant could be very seriously injured during a frontal collision.

Protecting Children

When properly installed, a rear-facing child seat may prevent the driver or a front-seat passenger from moving the seat as far back as recommended (see page 13). Or it may prevent them from locking the seat-back in the desired upright position (see page 14).

In either case, we recommend that you place the child seat directly behind the front passenger seat, move the front seat as far forward as needed, and leave it unoccupied. Or you may wish to get a smaller child seat that allows you to safely carry a front passenger.

Rear-Facing Child Seat Installation

The lap/shoulder belts in the back seats have a locking mechanism that must be activated to secure a child seat.

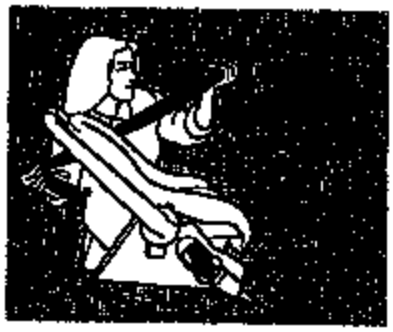
The following pages provide instructions and tips on how to secure a rear-facing child seat with this type of seat belt.

If you have a child seat designed to attach to the car's LATCH anchorage system, follow the instructions on page 40.

1. With the child seat in the desired back seating position, route the belt through the child seat according to the seat maker's instructions, then insert the latch plate into the buckle.

CONTINUED

Protecting Children



2. To activate the lockable retractor, slowly pull the shoulder part of the belt all the way out until it stops, then let the belt feed back into the retractor (you might hear a clicking noise as the belt retracts).

3. 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 you will need to repeat these steps.

4. 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 part of the belt is not tight, the child seat will not be secure. To remove slack, it may help to put weight on the child seat, or push on the back of the seat, while pulling up on the belt.

5. Push and pull the child seat forward and from side to side to verify that it is secure enough to stay upright during normal driving maneuvers. If the child seat is not secure, unlatch the belt, allow it to retract fully, then repeat these steps.

To deactivate the locking mechanism and remove a child seat, unlatch the buckle, unroute the seat belt, and let the belt fully retract.

Protecting Children

Rear-Facing Child Seat Installation Tips

For proper protection, an infant must ride in a reclined, or semi-reclined position. To determine the proper reclining angle, check with the baby's doctor or follow the seat maker's recommendations.

To achieve the desired reclining angle, it may help to put a rolled up towel under the toe of the child seat, as shown.

Protecting Small Children

Child Seat Type
A child who can sit up without support, and who fits within the child seat maker's weight and height limits, should be restrained in a forward-facing, upright child seat.

Of the different seats available, we recommend those that have a five-point harness system as shown.

We also recommend that a small child stay in the child seat as long as possible, until the child reaches the weight or height limit for the seat.

Child Seat Placement
In this car, the best place to install a forward-facing child seat is in one of the seating positions in the back seat.

Placing a forward-facing child seat in the front seat of a car equipped with a passenger's front airbag can be hazardous. If the car seat is too far forward, or the child's head is thrown forward during a collision, an inflating front airbag can strike the child with enough force to cause very serious or fatal injuries. If a small child must be closely watched, we recommend that another adult sit in the back seat with the child.

CONTINUED

Protecting Children

Improperly placing a forward-facing child seat in the front seat can result in serious injury or death if the front airbags inflate.

If you must place a forward-facing child seat in front, move the car seat as far back as possible and properly restrain the child.

If it is necessary to put a forward-facing child seat in the front, move the car seat as far to the rear as possible, be sure the child seat is firmly secured to the car, and the child is properly strapped in the seat.

Child Seat Installation
The lap/shoulder belts in the back and front passenger seating positions have a locking mechanism that must be activated to secure a child seat.

The following pages provide instructions on how to secure a forward-facing child seat with this type of seat belt.

If you have a child seat designed to attach to the car's LATCH anchorage system, follow the instructions on page 40 .

1. With the child seat in the desired seating position, route the belt through the child seat according to the seat maker's instructions, then insert the latch plate into the buckle.

2. To activate the lockable retractor, slowly pull the shoulder part of the belt all the way out until it stops, then let the belt feed back into the retractor (you might hear a clicking noise as the belt retracts).

3. 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 you will need to repeat these steps.

4. 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 part of the belt is not tight, the child seat will not be secure. It may help to put weight on the child seat, or push on the back of the seat, while pulling up on the belt.

5. Push and pull the child seat forward and from side to side to verify that it is secure enough to stay upright during normal driving maneuvers. If the child seat is not secure, unlatch the belt, allow it to retract fully, then repeat these steps.

To deactivate the locking mechanism and remove a child seat, unlatch the buckle, unroute the seat belt, and let the belt fully retract.

Protecting Children

Protecting Larger Children

When a child reaches the recommended weight or height limit for a forward-facing child seat, the child should sit in the back seat and wear a lap/shoulder belt.

If a child is too short for the shoulder part of the belt to properly fit, we recommend that the child use a booster seat until the child is tall enough to use the seat belt without a booster.

The following pages give instructions on how to check proper seat belt fit, what kind of booster seat to use if one is needed, and important precautions for a child who must sit in the front seat.

Allowing a larger child to sit improperly in the front seat can result in injury or death if the passenger's front airbag inflates.

If a larger child must sit in front, make sure the child moves the seat as far back as possible, uses a booster seat if needed, and wears the seat belt properly.

Checking Seat Belt Fit

To determine if a lap/shoulder belt properly fits a child, have the child put on the seat belt. Follow the instructions on page 15. Then check how the belt fits.

If the shoulder part of the belt rests over the child's collarbone and against the center of the chest, as shown, the child is large enough to wear the seat belt.

Protecting Children

However, if the shoulder belt touches or crosses the child's neck, or if the lap belt crosses the child's stomach, the child needs to use a booster seat.

Do not let a child wear a seat belt across the neck or over the stomach. This could result in serious neck and internal injuries during a crash.

Do not let a child put the shoulder part of a seat belt behind the back or under the arm. This could cause very serious injuries during a crash. It also increases the chance that the child will slide under the belt in a crash and be injured.

Do not put any accessories on a seat belt. Devices intended to improve occupant comfort or reposition the shoulder part of a seat belt, severely compromise the protective capability of the seat belt and increase the chance of serious injury in a crash.

Two children should never use the same seat belt. If they do, they could be very seriously injured in a crash.

Using a Booster Seat

If a child needs a booster seat, we recommend choosing a high or low-back style that allows the child to be directly secured with the lap/shoulder belt.

Whichever style you select, follow the booster seat maker's instructions.

CONTINUED

Protecting Children

A child should continue using a booster seat until they exceed the booster seat manufacturer's requirements.

Even then, they may still need to use a booster seat. Note that some states now require children to use boosters until they reach a certain age and/or weight. Be sure to check current laws in the state or states where you intend to drive.

When Can a Larger Child Sit in Front

The National Highway Traffic Safety Administration and Transport Canada recommend that all children ages 12 and under be properly restrained in a back seat.

The back seat is the safest place for a child of any age or size.

In addition, the passenger's front airbag poses serious risks to children. If the seat is too far forward, or the child's head is thrown forward during a collision, or the child is unrestrained or out of position, an inflating front airbag can kill or seriously injure the child.

The side airbag also poses risks. If any part of a larger child's body is in the path of a deploying airbag, the child could receive possibly serious injuries.

Of course, children vary widely. And while age may be one indicator of when a child can safely ride in the front, there are other important factors you should consider.

Physical Size

Physically, a child must be large enough for the lap/shoulder belt to properly fit over the hips, chest, and shoulder (see pages 16 and 36). If the seat belt does not fit properly, the child should not sit in the front.

Maturity

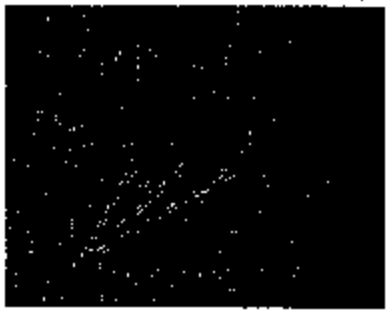
To safely ride in front, a child must be able to follow the rules, including sitting properly and wearing the seat belt properly throughout a ride.

Protecting Children

If you decide that a child can safely ride up front, be sure to:

- Carefully read the owner's manual and make sure you understand all seat belt instructions and all safety information.
- Move the car seat to the rear-most position.
- Have the child sit up straight, back against the seat, and feet on or near the floor.
- Check that the child's seat belt is properly positioned and secured.
- Remind the child not to lean toward the door because of the side airbag.
- Supervise the child. Even mature children sometimes need to be reminded to fasten the seat belts or sit properly.

Using Child Seats with Tethers



Your car has three tether anchorage points under the rear window for securing a tether-style child seat to the car.

Since a tether can provide additional security, we recommend using a tether whenever one is required or available.

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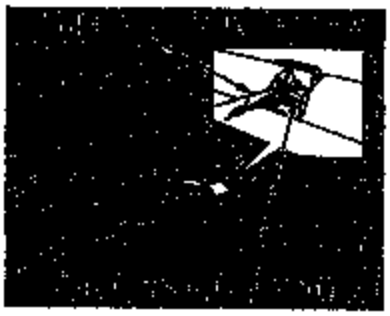
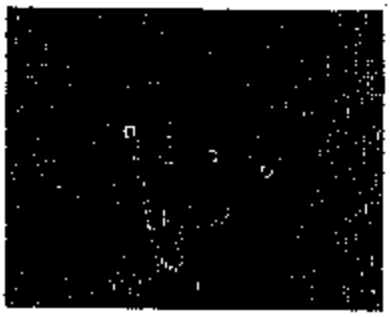
Protecting Children



To use the anchorage point, pivot its cover up.

Attach the tether strap hook to the tether anchorage point, and tighten the strap according to the child seat maker's instructions. Make sure the strap is not twisted. Route it between the legs of the head restraint.

Using LATCH



Your car is equipped with LATCH (Lower Anchors and Tethers for Children) at the outer rear seats. The lower anchors are located between the seat-back and seat bottom.

The exact location of each lower anchor is marked with a small button above the lower anchor point.

Lower anchors are to be used only with a child seat designed for use with LATCH.

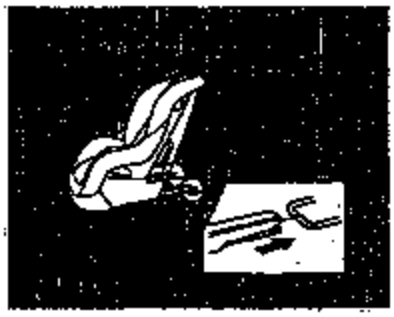
Canada Only

LOWER UNIVERSAL ANCHORAGE SYSTEM SYMBOL

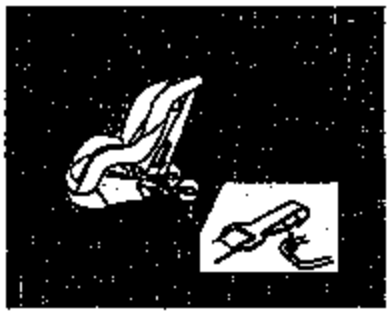
This symbol on rear or forward facing child seats or booster cushions indicates the presence of LATCH compatible hardware.

To install a LATCH-compatible child seat:

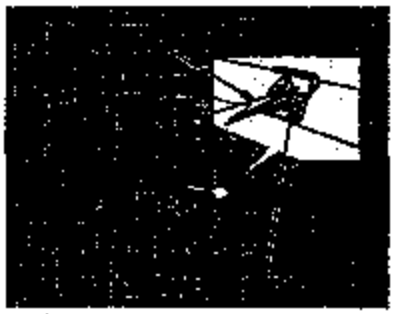
1. Move the seat belt buckle or center seat belt away from the lower anchor.
2. Make sure there are no foreign objects around the anchors. Foreign objects could get in the way of a secure connection between the child seat and the anchors.



3. Put the child seat in the rear left or right car seat, and attach the child seat to the lower anchors according to the child seat maker's instructions.



4. Follow the child seat maker's instructions for any additional advice on adjusting or tightening the fit.

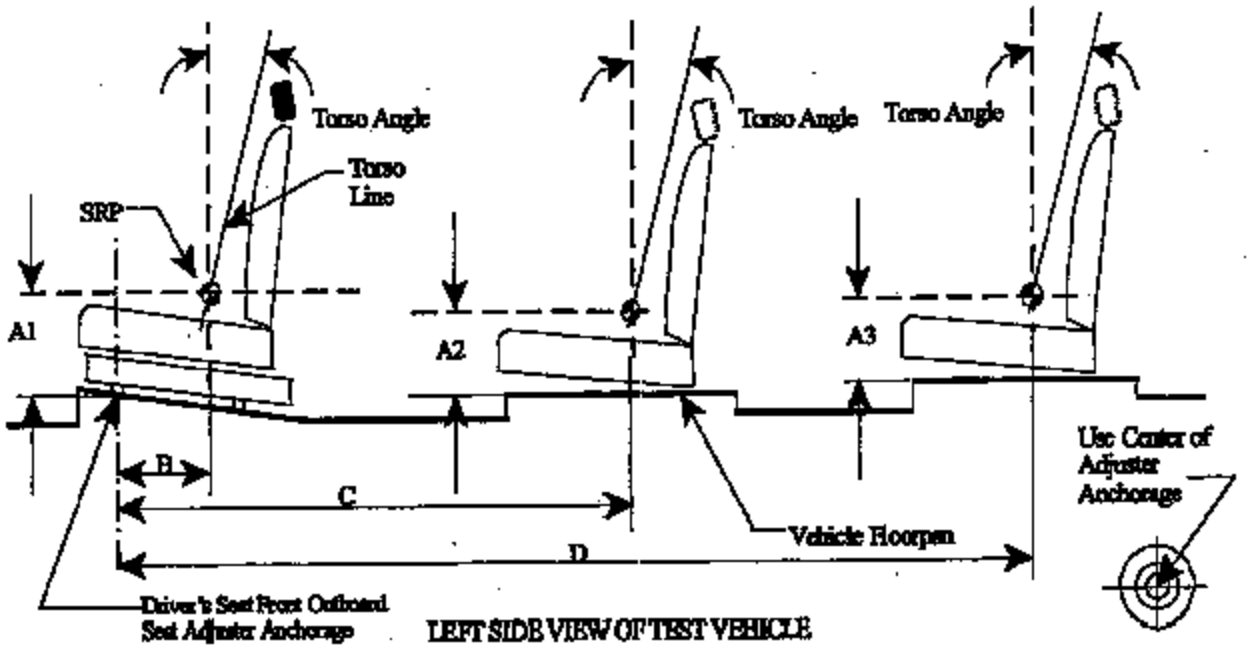


5. Attach the tether strap hook to the tether anchorage point, and tighten the strap according to the child seat maker's instructions. Make sure the strap is not twisted. Route it between the legs of the head restraint.
6. Push and pull the child seat forward and from side to side to verify that it is secure enough to stay upright during normal driving maneuvers.

APPENDIX B
MANUFACTURER'S DATA (OVSC FORM 14)

SEAT REFERENCE POINT (SRP) AND TORSO ANGLE DATA
FOR FMVSS 225
(All dimensions in mm[1])

Model Year: 2003 ; Make: HONDA ; Model: ACCORD SEDAN ; Body Style: 4 Door Sedan
Seat Style: Front row: Bucket ; Second row: Bench ; Third row: N/A



LEFT SIDE VIEW OF TEST VEHICLE

C35302

Table 1. Seating Positions[1] and Torso Angles

		Left (Driver Side)	Center (if any)	Right
A1		(Driver) 213	N/A	(Front Passenger) 223
A2		94	109	94
A3		N/A	N/A	N/A
B		331	N/A	326
C		1186	1153	1186
D		N/A	N/A	N/A
Torso Angle (degree)	Front Row	21 degree	N/A	21 degree
	Second Row	25 degree	23 degree	25 degree
	Third Row	N/A	N/A	N/A

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

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

Model Year: 2003 ; Make: HONDA ; Model: ACCORD SEDAN ; Body Style: 4 Door Sedan
Seat Style: Front row: Bucket ; Second row: Bench ; Third row: N/A

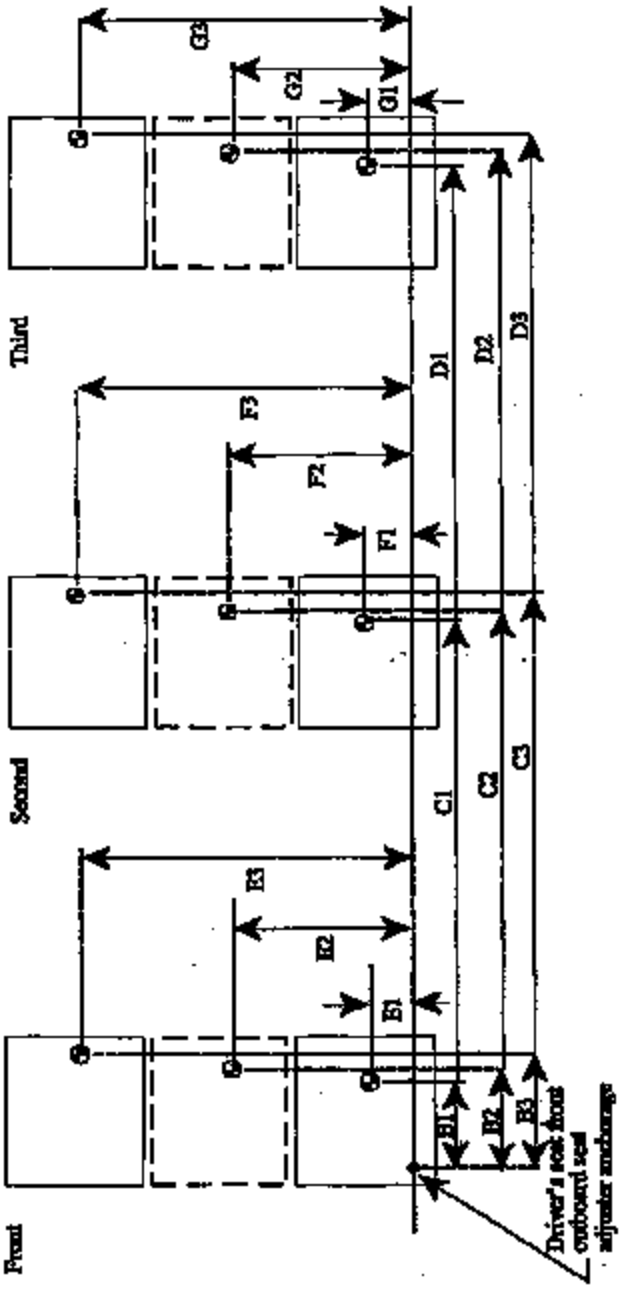


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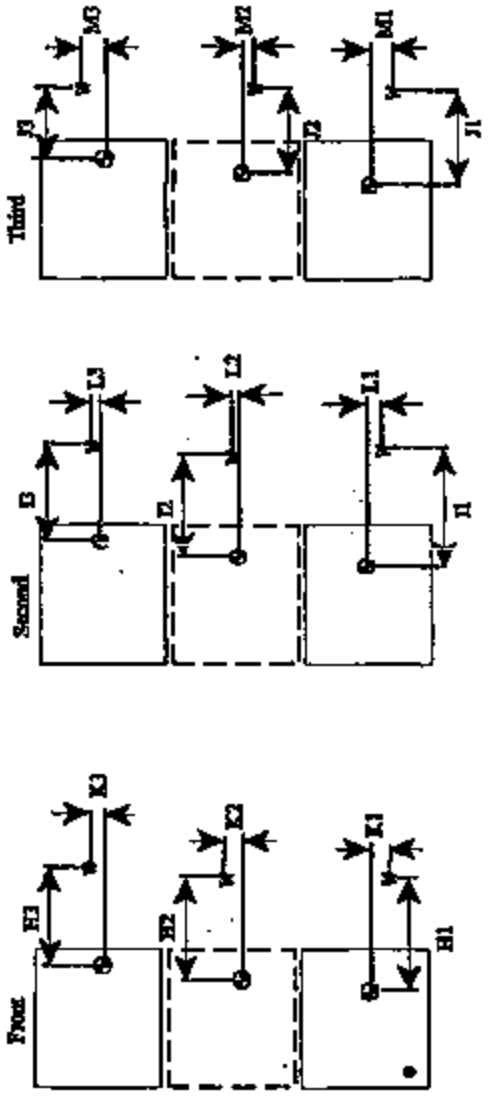
Table 2. Seating Reference Point and Tether Anchorage Locations

Seating Reference Point (SRP)		Distance from Driver's front outboard seat adjuster anchorage[1]
Front Row	B1	331
	E1	190
	B2	N/A
	E2	N/A
	B3	326
	E3	920
Second Row	C1	1186
	F1	200
	C2	1153
	F2	555
	C3	1186
	F3	910
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.

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

Model Year: 2003 ; Make: HONDA ; Model: ACCORD SEDAN ; Body Style: 4 Door Sedan
Seat Style: Front row: Bucket ; Second row: Bench ; Third row: N/A



R: SIP
W: Tether anchorage

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

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Table 3. Seating Reference Point and Tether Anchorage Locations

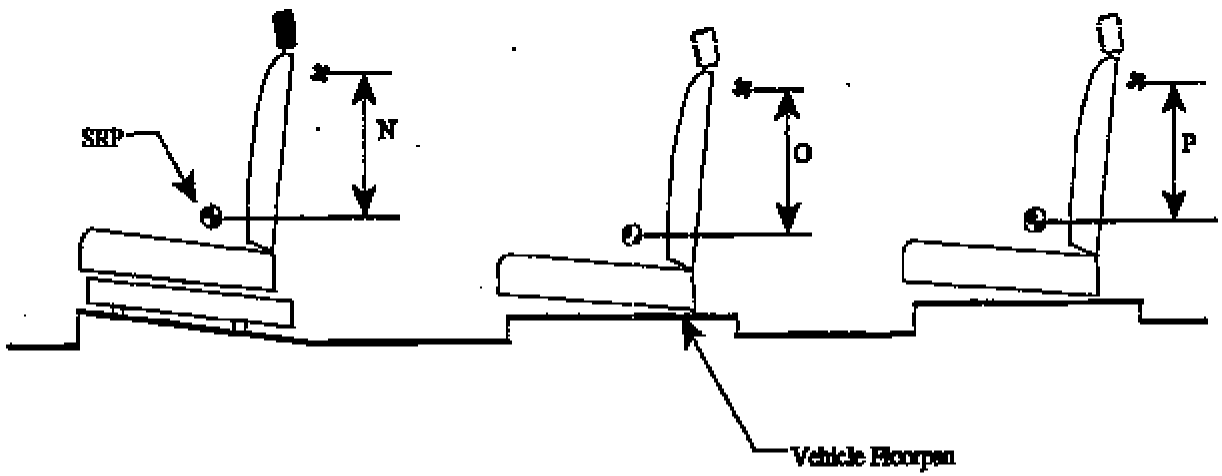
Seating Reference Point (SRP)	Distance from SRP	
Front Row	H1	N/A
	K1	N/A
	H2	N/A
	K2	N/A
	H3	N/A
	K3	N/A
Second Row	I1	541
	L1	-30 *
	I2	574
	L2	0
	I3	541
	L3	-30 *
Third Row	J1	N/A
	M1	N/A
	J2	N/A
	M2	N/A
	J3	N/A
	M3	N/A

Note: 1. Use the center of anchorage.

*: This dimension indicates that the tether anchorage is located closer to the vehicle's longitudinal centerline than the SRP.

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

Model Year: 2003 ; Make: HONDA ; Model: ACCORD SEDAN ; Body Style: 4 Door Sedan
Seat Style: Front row: Bucket ; Second row: Bench ; Third row: N/A



LEFT SIDE VIEW OF TEST VEHICLE

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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)	528
	O2 (Center)	513
	O3 (Right)	528
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.

The 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)	N/A
Second	Left	S6.3.1
	Center	S6.3.1
	Right (if any)	S6.3.1
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)	N/A
Second	Left	S9
	Center	N/A
	Right	S9
Third	Left	N/A
	Center	N/A
	Right	N/A
Fourth	Left	N/A
	Center	N/A
	Right	N/A

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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, the anchorages are certified with S9.1.

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 : No, the anchorages are certified with S9.2.

3. **Lower Anchorage Marking and Complexity:** 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 : No, the anchorages are certified with S9.5(a).

4. **Location of Tether Anchorage:** Applicable section of FMVSS No. 225 for the option used for its certification.

   Answer : S6.2.1

5. **Number of Tether Anchorage:** Applicable section of FMVSS No. 225 for the option used for its certification

   Answer : S.4.4(a)

Other things, which need to be noted:

For the strength test of this vehicle's rear tether anchorages, the right and left sides were tested simultaneously and the center was tested separately because the distance between each anchorage is less than 400 mm.