638019

REPORT NUMBER 225-GTL-05-002

SAFETY COMPLIANCE TESTING FOR FMVSS NO. 225 CHILD RESTRAINT ANCHORAGE SYSTEMS LOWER AND TETHER ANCHORAGES

VOLVO GOTHENBURG SWEDEN
2005 VOLVO S40, PASSENGER CAR
NHTSA NO. C55900

GENERAL TESTING LABORATORIES, INC.
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SEPTEMBER 9, 2005

FINAL REPORT

PREPARED FOR

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NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
SAFETY ENFORCEMENT
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15. Supplementary Notes

16. Abstract

Compliance tests were conducted on the subject, 2005 Volvo S40 Passenger Car in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-225-01 for the determination of FMVSS 225 compliance.
Test failures identified were as follows:
S12 (c) Owner's Manual doesn't provide step by step instructions for attaching a tether strap.

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SECTION 1

PURPOSE OF COMPLIANCE TEST

1.0 PURPOSE OF COMPLIANCE TEST

A 2005 Volvo S40 Passenger Car was subjected to Federal Motor Vehicle Safety Standard (FMVSS) No. 225 testing to determine if the vehicle was in compliance with the requirements of the standard. The purpose of this standard is to establish requirements for child restraint anchorage systems to ensure their proper location and strength for the effective securing of child restraints, to reduce the likelihood of the anchorage systems' failure and to increase the likelihood that child restraints are properly secured and thus more fully achieve their potential effectiveness in motor vehicles.

1.1 The test vehicle was a 2005 Volvo S40 Passenger Car. Nomenclature applicable to the test vehicle are:

A. Vehicle Identification Number: YV1MS382152051631

B. NHTSA No.: C55900

C. Manufacturer: VOLVO GOTHENBURG SWEDEN

D. Manufacture Date: 06/04

1.2 TEST DATE

The test vehicle was subjected to FMVSS No. 225 testing on September 2, 2005.

SECTION 2

COMPLIANCE TEST RESULTS

2.0 TEST RESULTS

All tests were conducted in accordance with NHTSA, Office of Vehicle Safety Compliance (OVSC) Laboratory Procedures, TP-225-01 dated 11 April 2005.

Based on the test performed, the 2005 VOLVO S40 PASSENGER CAR did not appear to meet the requirements of FMVSS 225.

SECTION 3

COMPLIANCE TEST DATA

3.0 TEST DATA

The following data sheets document the results of testing on the 2005 Volvo S40 Passenger Car.

DATA SHEET 1
SUMMARY OF RESULTS

VEH. MOD YR/MAKE/MODEL/BODY: 2005 VOLVO S40 PASSENGER CAR
VEH. NHTSA NO: C55900; VIN: YV1MS382152051631
VEH. BUILD DATE: 06/04 ; TEST DATE: SEPTEMBER 2, 2005
TEST LABORATORY: GENERAL TESTING LABORATORIES
OBSERVERS: GRANT FARRAND, JIMMY LATANE

A. VISUAL INSPECTION OF TEST VEHICLE

Upon receipt for completeness, function, and discrepancies or damage which might influence the testing.

RESULTS: OK FOR TEST

B. REQUIREMENTS FOR CHILD RESTRAINT SYSTEMS AND TETHER ANCHORAGES

	PASS	FAIL
DSP a	X	
DSP b	X	
DSP c	X	

C. LOCATION OF TETHER ANCHORAGES

	PASS	FAIL
DSP a	X	
DSP b	X	
DSP c	X	

D. LOWER ANCHORAGE DIMENSIONS

	PASS	FAIL
DSP a	X	
DSP b	N/A	N/A
DSP c	X	

DATA SHEET 1 CONTINUED
SUMMARY OF RESULTS

E. CONSPICUITY AND MARKING OF LOWER ANCHORAGES

	PASS	FAIL
DSP a	X	
DSP b	N/A	N/A
DSP c	X	

F. STRENGTH OF TETHER ANCHORAGES

	PASS	FAIL
DSP a	*	
DSP b	*	
DSP c	*	

G. STRENGTH OF LOWER ANCHORAGES (Forward Force)

	PASS	FAIL
DSP a	*	
DSP b	N/A	N/A
DSP c	*	

H. STRENGTH OF LOWER ANCHORAGE (Lateral Force)

	PASS	FAIL
DSP a	*	
DSP b	N/A	N/A
DSP c	*	

	PASS	FAIL
I. OWNER'S MANUAL		X

REMARKS: * Not tested at this time.

DSP a = Left Rear Outboard, DSP b = Center, DSP c = Right Rear Outboard

RECORDED BY:_____ DATE: 09/02/05

APPROVED BY:_____

DATA SHEET 2
REQUIREMENTS FOR CHILD RESTRAINT ANCHORAGE SYSTEMS AND TETHER ANCHORAGES

VEH. MOD YR/MAKE/MODEL/BODY: 2005 VOLVO S40 PASSENGER CAR
VEH. NHTSA NO: C55900; VIN: YV1MS382152051631
VEH. BUILD DATE: 06/04 ; TEST DATE: SEPTEMBER 2, 2005
TEST LABORATORY: GENERAL TESTING LABORATORIES
OBSERVERS: GRANT FARRAND, JIMMY LATANE

Number of rows of seats: 2
Number of rear, forward-facing designated seating positions: 3
Number of required CRAS (lower anchorages only, for convertibles/school buses): 2
Number of required tether anchorages (can be additional CRAS): 3
Is the vehicle a convertible? NO
Is the vehicle a school bus? NO

Does the vehicle have a CRAS (lower anchorage only, for convertibles/school buses) installed at a front passenger seating position? NO

If NO, skip to next question.

If YES, does the vehicle have rear designated seating positions? _____

If NO, does the vehicle have an air bag on-off switch or a special exemption for no passenger air bag?

If NO = FAIL If YES = PASS

If Yes, does the vehicle meet the requirements of S4.5.4.1 (b) of S208 and have and air bag on-off switch or a special exemption for no passenger air bag?

Record the distance between the front and rear seat back: _____

If Distance <720 mm and vehicle has an air bag on-off switch or special exemption = PASS

If Distance ≥ 720 mm or no air bag on-off switch or no special exemption = FAIL

Does the vehicle have rear designated seating position(s) where the lower bars of a CRAS are prevented from being located because of transmission and/or suspension component interference? NO

If NO, skip to next question.

If YES, does the vehicle have a tether anchorage at a front passenger seating position?

YES = PASS NO = FAIL (S5(e))

Number of provided CRAS (lower anchorage only, for convertibles/school buses), indicate if a built-in child restraint is counted as a CRAS: 2

Is the number of provided CRAS (lower anchorages only, for convertible/school buses) greater than or equal to the number of required CRAS (lower anchorages only, for convertibles/school buses)? YES

YES = PASS NO = FAIL (S4.4(a) or (b) or (c))

DATA SHEET 2 CONTINUED

If the vehicle has 3 or more rows of seats is a CRAS (lower anchorage only for convertibles/school buses) provided in the second row: N/A
YES = PASS NO = FAIL (S4.4(a)(1))

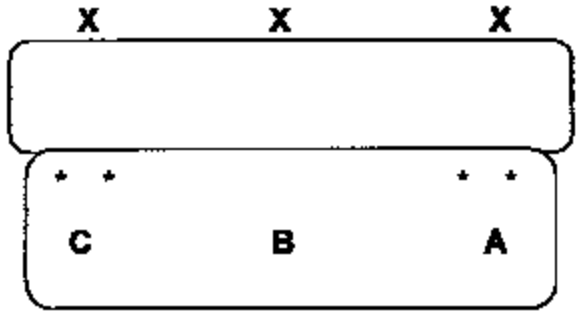
Number of provided tether anchorages (can be additional CRAS) indicate if a built-in child restraint is counted a s tether anchorage (NOTE: a built-in child restraint can only be counted toward either the required number of CRAS or tether anchorages, not both): 3

Is the number of provided tether anchorages greater than or equal to the number of required tether anchorages? YES
YES = PASS NO = FAIL (S4.4 (a) or (b) or (c))

If the vehicle has 3 or more rear dsps and a non-outboard dsp, is a tether anchorage or CRAS provided at a non-outboard dsp? YES
YES = PASS NO = FAIL (S4.4 (a)(2))

Are all tether and lower anchorages available for use at all times when the seat is configured for passenger use? YES
YES = PASS NO = FAIL (S4.6 (b))

Provide a diagram showing the location of lower anchorages and/or tether anchorages.



X = Top Tether
* = Lower Anchors

RECORDED BY:_____ DATE: 09/02/05

APPROVED BY:_____

DATA SHEET 3
LOCATION OF TETHER ANCHORAGES

VEH. MOD YR/MAKE/MODEL/BODY: 2005 VOLVO S40 PASSENGER CAR
VEH. NHTSA NO: C55900; VIN: YV1MS382152051631
VEH. BUILD DATE: 06/04 ; TEST DATE: SEPTEMBER 2, 2005
TEST LABORATORY: GENERAL TESTING LABORATORIES
OBSERVERS: GRANT FARRAND, JIMMY LATANE

DESIGNATED SEATING POSITION: ROW 2 LEFT SIDE (DSP A)

Detailed description of the location of the tether anchorage:
Located on back side of seat back cushion. You must tilt seat back to gain access to the anchor.

Based on visual inspection, is the tether anchorage within the shaded zone? YES
- If YES = PASS, skip to next section
- If NO, After constructing the shaded zone, is the tether anchorage within the shaded zone? _____
  - If YES = PASS, skip to next section
  - If NO, Is it possible to locate a tether anchorage within the shaded zone without removing a seating component?
    - If YES = FAIL (S6.2.1)
    - If NO, Is a tether routing device provided?
      - If YES = PASS
      - IF NO = FAIL (S6.2.1.2)

Is the tether anchorage recessed? YES
- If NO, skip to next question
- If YES, is it outside of the tether strap wraparound area? YES
  - YES = PASS NO = FAIL (S6.2.1)

Does the tether anchorage permit attachment of a tether hook? YES
YES = PASS NO = FAIL (S6.1(a))

Is the tether anchorage accessible without the need for any tools other than a screwdriver or coin? YES
YES = PASS NO = FAIL (S6.1(b))

After the tether anchorage is accessed, is it ready for use without the need for tools? YES
YES = PASS NO = FAIL (S6.1(c)

Is the tether anchorage sealed to prevent the entry of exhaust fumes into the passenger compartment? YES
YES = PASS NO = FAIL (S6.1(d))

If the DSP has a tether routing device, is it flexible or rigid? N/A

DATA SHEET 3 CONTINUED

DESIGNATED SEATING POSITION: ROW 2 LEFT SIDE

If the DSP has a flexible tether routing device, after installing SFAD2 record the tether strap tension: N/A (Must be 60 N ± 5 N)

If the DSP has a flexible tether routing device, record the horizontal distance between the torso reference plane and the routing device: N/A
Greater than or equal to 65mm = PASS Less than 65mm = FAIL

If the DSP has a rigid tether routing device, record the horizontal distance between the torso reference plane and the routing device: N/A
Greater than or equal to 100mm = PASS Less than 100mm = FAIL

COMMENTS:

RECORDED BY: _____ DATE: 09/02/05

APPROVED BY: _____

DATA SHEET 3A
LOCATION OF TETHER ANCHORAGES

VEH. MOD YR/MAKE/MODEL/BODY: 2005 VOLVO S40 PASSENGER CAR
VEH. NHTSA NO: C55900; VIN: YV1MS382152051631
VEH. BUILD DATE: 06/04 ; TEST DATE: SEPTEMBER 2, 2005
TEST LABORATORY: GENERAL TESTING LABORATORIES
OBSERVERS: GRANT FARRAND, JIMMY LATANE

DESIGNATED SEATING POSITION: ROW 2 CENTER POSITION (DSP B)

Detailed description of the location of the tether anchorage:
Located on back side of seat back cushion. You must tilt seat back to gain access to the anchor.

Based on visual inspection, is the tether anchorage within the shaded zone? YES
If YES = PASS, skip to next section
If NO, After constructing the shaded zone, is the tether anchorage within the shaded zone? _____
If YES = PASS, skip to next section
If NO, Is it possible to locate a tether anchorage within the shaded zone without removing a seating component?
If YES = FAIL (S6.2.1)
If NO, Is a tether routing device provided?
If YES = PASS
IF NO = FAIL (S6.2.1.2)

Is the tether anchorage recessed? YES
If NO, skip to next question
If YES, is it outside of the tether strap wraparound area? YES
YES = PASS NO = FAIL (S6.2.1)

Does the tether anchorage permit attachment of a tether hook? YES
YES = PASS NO = FAIL (S6.1(a))

Is the tether anchorage accessible without the need for any tools other than a screwdriver or coin? YES
YES = PASS NO = FAIL (S6.1(b))

After the tether anchorage is accessed, is it ready for use without the need for tools? YES
YES = PASS NO = FAIL (S6.1(c)

Is the tether anchorage sealed to prevent the entry of exhaust fumes into the passenger compartment? YES
YES = PASS NO = FAIL (S6.1(d))

If the DSP has a tether routing device, is it flexible or rigid? N/A

DATA SHEET 3A CONTINUED

DESIGNATED SEATING POSITION: ROW 2 CENTER POSITION

If the DSP has a flexible tether routing device, after installing SFAD2 record the tether strap

tension: N/A (Must be 60 N ± 5 N)

If the DSP has a flexible tether routing device, record the horizontal distance between the torso reference plane and the routing device: N/A

Greater than or equal to 65mm = PASS Less than 65mm = FAIL

If the DSP has a rigid tether routing device, record the horizontal distance between the torso reference plane and the routing device: N/A

Greater than or equal to 100mm = PASS Less than 100mm = FAIL

COMMENTS:

RECORDED BY:_____ DATE: 09/02/05

APPROVED BY:_____

DATA SHEET 3B
LOCATION OF TETHER ANCHORAGES

VEH. MOD YR/MAKE/MODEL/BODY: 2005 VOLVO S40 PASSENGER CAR
VEH. NHTSA NO: C55800; VIN: YV1MS382152051631
VEH. BUILD DATE: 06/04 ; TEST DATE: SEPTEMBER 2, 2005
TEST LABORATORY: GENERAL TESTING LABORATORIES

OBSERVERS: GRANT FARRAND, JIMMY LATANE

DESIGNATED SEATING POSITION: ROW 2 RIGHT SIDE (DSP C)

Detailed description of the location of the tether anchorage:
Located on back side of seat back cushion. You must tilt seat back to gain access to the anchor.

Based on visual inspection, is the tether anchorage within the shaded zone? YES
- If YES = PASS, skip to next section
- If NO, After constructing the shaded zone, is the tether anchorage within the shaded zone? _____
  - If YES = PASS, skip to next section
  - If NO, Is it possible to locate a tether anchorage within the shaded zone without removing a seating component?
    - If YES = FAIL (S6.2.1)
    - If NO, Is a tether routing device provided?
      - If YES = PASS
      - IF NO = FAIL (S6.2.1.2)

Is the tether anchorage recessed? YES
- If NO, skip to next question
- If YES, is it outside of the tether strap wraparound area? YES
  - YES = PASS NO = FAIL (S6.2.1)

Does the tether anchorage permit attachment of a tether hook? YES
- YES = PASS NO = FAIL (S6.1(a))

Is the tether anchorage accessible without the need for any tools other than a screwdriver or coin? YES
- YES = PASS NO = FAIL (S6.1(b))

After the tether anchorage is accessed, is it ready for use without the need for tools? YES
- YES = PASS NO = FAIL (S6.1(c)

Is the tether anchorage sealed to prevent the entry of exhaust fumes into the passenger compartment? YES
- YES = PASS NO = FAIL (S6.1(d))

If the DSP has a tether routing device, is it flexible or rigid? N/A

DATA SHEET 3B CONTINUED

DESIGNATED SEATING POSITION: ROW 2 RIGHT SIDE

If the DSP has a flexible tether routing device, after installing SFAD2 record the tether strap tension: N/A (Must be 60 N ± 5 N)

If the DSP has a flexible tether routing device, record the horizontal distance between the torso reference plane and the routing device: N/A

Greater than or equal to 65mm = PASS Less than 65mm = FAIL

If the DSP has a rigid tether routing device, record the horizontal distance between the torso reference plane and the routing device: N/A

Greater than or equal to 100mm = PASS Less than 100mm = FAIL

COMMENTS:

RECORDED BY:_____ DATE: 09/02/05

APPROVED BY:_____

DATA SHEET 4
LOWER ANCHORAGE DIMENSIONS

VEH. MOD YR/MAKE/MODEL/BODY: 2005 VOLVO S40 PASSENGER CAR
VEH. NHTSA NO: C55900; VIN: YV1MS382152051631
VEH. BUILD DATE: 06/04 ; TEST DATE: SEPTEMBER 2, 2005
TEST LABORATORY: GENERAL TESTING LABORATORIES
OBSERVERS: GRANT FARRAND, JIMMY LATANE

DESIGNATED SEATING POSITION: ROW 2 LEFT SIDE (DSP A)

Outboard Lower Anchorage bar diameter: 6.01
6mm ± 0.1 mm = PASS Other size = FAIL (S9.1.1(a))

Inboard Lower Anchorage bar diameter: 6.01
6mm ± 0.1mm = PASS Other size = FAIL (S9.1.1(a))

Are the bars straight, horizontal and transverse? YES
YES = PASS NO = FAIL

Length of the straight portion of the bar (outboard lower anchorage): 35
Length ≥25mm = PASS Length <25mm = FAIL(S9.1.1(c) (i))

Length of the straight portion of the bar (inboard lower anchorage): 35
Length ≥25mm = PASS Length <25mm = FAIL(S9.1.1(c) (i))

Length between the anchor bar supports (outboard lower anchorage): 49
Length ≤60mm = PASS Length >60mm = FAIL(S9.1.1(c) (ii))

Length between the anchor bar supports (inboard lower anchorage): 49
Length ≤60mm = PASS Length >60mm = FAIL(S9.1.1(c) (ii))

CRF Pitch angle: 20.7
Angle = 15°±10° = PASS Angle≠15°±10° = FAIL (S9.2.1)

CRF Roll angle: 0.0
Angle = 0°±5° = PASS Angle≠0°±5° = FAIL (S9.2.1)

CRF Yaw angle: 0.0
Angle = 0°±10° = PASS Angle≠0°±10° = FAIL (S9.2.1)

Distance between point Z on the CRF and the front surface of outboard anchor bar: 66
Distance ≤70mm = PASS Distance > 70mm = FAIL

Distance between point Z on the CRF and the front surface of inboard anchor bar: 56
Distance ≤70mm = PASS Distance > 70mm = FAIL

DATA SHEET 4 CONTINUED

DESIGNATED SEATING POSITION: ROW 2 LEFT SIDE

Distance between SgRP and the front surface of outboard anchor bar: 133
Distance ≥ 120mm = PASS Distance < 120mm = FAIL

Distance between SgRP and the front surface of inboard anchor bar: 140
Distance ≥ 120mm = PASS Distance < 120mm = FAIL

Based on visual observation, would a 100 N load cause the anchor bar to deform more than 5 mm? NO

If NO = PASS

If YES = FAIL (S9.1.1(g)), Provide further description of the attachment of the anchor bar:

COMMENTS:

RECORDED BY:_____ DATE:_____09/02/05_____

APPROVED BY:_____

DATA SHEET 4A
LOWER ANCHORAGE DIMENSIONS

VEH. MOD YR/MAKE/MODEL/BODY: 2005 VOLVO S40 PASSENGER CAR
VEH. NHTSA NO: C55900; VIN: YV1MS382152051631
VEH. BUILD DATE:06/04 ; TEST DATE: SEPTEMBER 2, 2005
TEST LABORATORY:GENERAL TESTING LABORATORIES
OBSERVERS: GRANT FARRAND, JIMMY LATANE

DESIGNATED SEATING POSITION: ROW 2 RIGHT SIDE (DSP C)

Outboard Lower Anchorage bar diameter:____6.01__
6mm ± 0.1 mm = PASS Other size = FAIL (S9.1.1(a))

Inboard Lower Anchorage bar diameter: 6.01
6mm ± 0.1mm = PASS Other size = FAIL (S9.1.1(a))

Are the bars straight, horizontal and transverse? YES
YES = PASS NO = FAIL

Length of the straight portion of the bar (outboard lower anchorage): 35
Length ≥25mm = PASS Length <25mm = FAIL(S9.1.1(c) (i))

Length of the straight portion of the bar (inboard lower anchorage): 35
Length ≥25mm = PASS Length <25mm = FAIL(S9.1.1(c) (i))

Length between the anchor bar supports (outboard lower anchorage): 49
Length ≤60mm = PASS Length >60mm = FAIL(S9.1.1(c) (ii))

Length between the anchor bar supports (inboard lower anchorage): 49
Length ≤60mm = PASS Length >60mm = FAIL(S9.1.1(c) (ii))

CRF Pitch angle: 20.6
Angle = 15°±10° = PASS Angle≠15°±10° = FAIL (S9.2.1)

CRF Roll angle: 0.0
Angle = 0°±5° = PASS Angle≠0°±5° = FAIL (S9.2.1)

CRF Yaw angle: 0.0
Angle = 0°±10° = PASS Angle≠0°±10° = FAIL (S9.2.1)

Distance between point Z on the CRF and the front surface of outboard anchor bar: 52
Distance ≤70mm = PASS Distance > 70mm = FAIL

Distance between point Z on the CRF and the front surface of inboard anchor bar: 58
Distance ≤70mm = PASS Distance > 70mm = FAIL

DATA SHEET 4A CONTINUED

DESIGNATED SEATING POSITION: ROW 2 RIGHT SIDE

Distance between SgRP and the front surface of outboard anchor bar: 128
Distance ≥ 120mm = PASS Distance < 120mm = FAIL

Distance between SgRP and the front surface of inboard anchor bar: 130
Distance ≥ 120mm = PASS Distance < 120mm = FAIL

Based on visual observation, would a 100 N load cause the anchor bar to deform more than 5 mm? NO

If NO = PASS
If YES = FAIL (S9.1.1(g)), Provide further description of the attachment of the anchor bar:

COMMENTS:

RECORDED BY:_____ DATE: 09/02/05

APPROVED BY:_____

DATA SHEET 5
CONSPICUITY AND MARKING OF LOWER ANCHORAGES

VEH. MOD YR/MAKE/MODEL/BODY: 2005 VOLVO S40 PASSENGER CAR
VEH. NHTSA NO: C55900; VIN: YV1MS382152051631
VEH. BUILD DATE:06/04 ; TEST DATE: SEPTEMBER 2, 2005
TEST LABORATORY:GENERAL TESTING LABORATORIES
OBSERVERS: GRANT FARRAND, JIMMY LATANE

DESIGNATED SEATING POSITION: ROW 2 LEFT SIDE (DSP A)

MARKING (Circles)

Diameter of the circle: 14.5
Diameter ≥13mm = PASS Diameter <13mm = FAIL (S9.5(a)(1))

Does the circle have words, symbols or pictograms? SYMBOL
NO skip to next question
YES, are the meaning of the words, symbols or pictograms explained in the owner's manual? YES
YES = PASS NO = FAIL (S9.5(a)(2))

Where is the circle located? Seat back or seat Cushion: Seat Back

For circles on seat backs, vertical distance from the center of the circle to the center of the anchor bar: 60
Distance between 50&100mm = PASS Other Distance=FAIL (S9.5(a)(3))

For circles on seat cushions, horizontal distance from the center of the circle to the center of the bar: N/A
Distance between 75&125mm= PASS Other Distance=FAIL (S9.5(a)(3))

Lateral distance from the center of the circle to the center of the anchor bar: 0.0
Distance≤25mm = PASS Distance >25mm = FAIL (S9.5(a)(3))

CONSPICUITY (No Circles)

Is the anchor bar or guide visible when viewed from a point 30° above the horizontal in a vertical longitudinal plane bisecting the anchor bar or guide? N/A
YES = PASS NO = FAIL (S9.5(b))

If there is a guide, is it permanently attached? N/A
YES = PASS NO = FAIL (S9.5(b))

DATA SHEET 5 CONTINUED

DESIGNATED SEATING POSITION: ROW 2 LEFT SIDE

Is there a cap or cover over the anchor bar? N/A
If YES, Is the cap or cover marked with words, symbols or pictograms? _____
If NO = FAIL (S9.5(b))
If YES, is the meaning of the words, symbols or pictograms explained in the owner's manual?
YES = PASS NO = FAIL (S9.5(b))
If NO, there are no requirements for having a cover.

RECORDED BY:_____ DATE:_____09/02/05_____

APPROVED BY:_____

DATA SHEET 5A
CONSPICUITY AND MARKING OF LOWER ANCHORAGES

VEH. MOD YR/MAKE/MODEL/BODY: 2005 VOLVO S40 PASSENGER CAR
VEH. NHTSA NO: C55900; VIN: YV1MS382152051631
VEH. BUILD DATE:06/04 ; TEST DATE: SEPTEMBER 2, 2005
TEST LABORATORY:GENERAL TESTING LABORATORIES
OBSERVERS: GRANT FARRAND, JIMMY LATANE

DESIGNATED SEATING POSITION: ROW 2 RIGHT SIDE (DSP C)

MARKING (Circles)

Diameter of the circle: 14.5
Diameter ≥13mm = PASS Diameter <13mm = FAIL (S9.5(a)(1))

Does the circle have words, symbols or pictograms? SYMBOL
NO skip to next question
YES, are the meaning of the words, symbols or pictograms explained in the owner's manual?
YES
YES = PASS NO = FAIL (S9.5(a)(2))

Where is the circle located? Seat back or seat Cushion: Seat Back

For circles on seat backs, vertical distance from the center of the circle to the center of the anchor bar: 60
Distance between 50&100mm = PASS Other Distance=FAIL (S9.5(a)(3))

For circles on seat cushions, horizontal distance from the center of the circle to the center of the bar: N/A
Distance between 75&125mm= PASS Other Distance=FAIL (S9.5(a)(3))

Lateral distance from the center of the circle to the center of the anchor bar: 0
Distance≤25mm = PASS Distance >25mm = FAIL (S9.5(a)(3))

CONSPICUITY (No Circles)

Is the anchor bar or guide visible when viewed from a point 30° above the horizontal in a vertical longitudinal plane bisecting the anchor bar or guide? N/A
YES = PASS NO = FAIL (S9.5(b))

If there is a guide, is it permanently attached? N/A
YES = PASS NO = FAIL (S9.5(b))

DATA SHEET 5A CONTINUED

DESIGNATED SEATING POSITION: ROW 2 RIGHT SIDE

Is there a cap or cover over the anchor bar? N/A

If YES, is the cap or cover marked with words, symbols or pictograms?_____

If NO = FAIL (S9.5(b))

If YES, is the meaning of the words, symbols or pictograms explained in the owner's manual?

YES = PASS NO = FAIL (S9.5(b))

If NO, there are no requirements for having a cover.

RECORDED BY:_____ DATE: 09/02/05

APPROVED BY:_____

DATA SHEET 8
OWNER'S MANUAL

VEH. MOD YR/MAKE/MODEL/BODY: 2005 VOLVO S40 PASSENGER CAR
VEH. NHTSA NO: C55900; VIN: YV1MS382152051631
VEH. BUILD DATE: 06/04 ; TEST DATE: SEPTEMBER 2, 2005
TEST LABORATORY: GENERAL TESTING LABORATORIES
OBSERVERS: GRANT FARRAND, JIMMY LATANE

Description of which DSP's are equipped with tether anchorages and child restraint anchorage systems: YES .

PASS X FAIL

Step-by-step instructions for properly attaching a child restraint system's tether strap to the tether anchorage. Diagrams are required. NO

PASS FAIL X (S12 (c))

Description of how to properly use the tether anchorage and lower anchor bars: YES

PASS X FAIL

If the lower anchor bars are marked with a circle, an explanation of what the circle indicates as well as any words or pictograms: YES

PASS X FAIL

COMMENTS: The owner's manual does not provide step by step instructions about how to properly attach a tether strap to the tether anchorage.

RECORDED BY: DATE: 09/02/05

APPROVED BY:

SECTION 4
INSTRUMENTATION AND EQUIPMENT LIST

TABLE 1 - INSTRUMENTATION & EQUIPMENT LIST

EQUIPMENT	DESCRIPTION	MODEL/ SERIAL NO.	CAL. DATE	NEXT CAL. DATE
COMPUTER	AT&T	486DX266	BEFORE USE	BEFORE USE
LOAD CELL	INTERFACE	496	01/05	01/06
LINEAR TRANSDUCER	SERVO SYSTEMS	20	BEFORE USE	BEFORE USE
SEAT BELT LOAD CELL	TRANSDUCER	135	BEFORE USE	BEFORE USE
SEAT BELT LOAD CELL	TRANSDUCER	137	BEFORE USE	BEFORE USE
LEVEL	STANLEY	42-449	02/05	02/06
FORCE GAUGE	CHATILLON	8761	BEFORE USE	BEFORE USE
CALIPER	N/A	Q9322365	BEFORE USE	BEFORE USE
CRF	MEASUREMENT FIXTURE	GTL CRF	BEFORE USE	BEFORE USE
SFAD 1	FORCE APPLICATION DEVICE	GTL SFAD 1	BEFORE USE	BEFORE USE
SFAD 2	FORCE APPLICATION DEVICE	GTL SFAD 2	BEFORE USE	BEFORE USE

SECTION 5

PHOTOGRAPHS

2006 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.1
¾ FRONTAL RIGHT SIDE VIEW OF VEHICLE

2005 VOLVO S40
NHTSA NO. C55900
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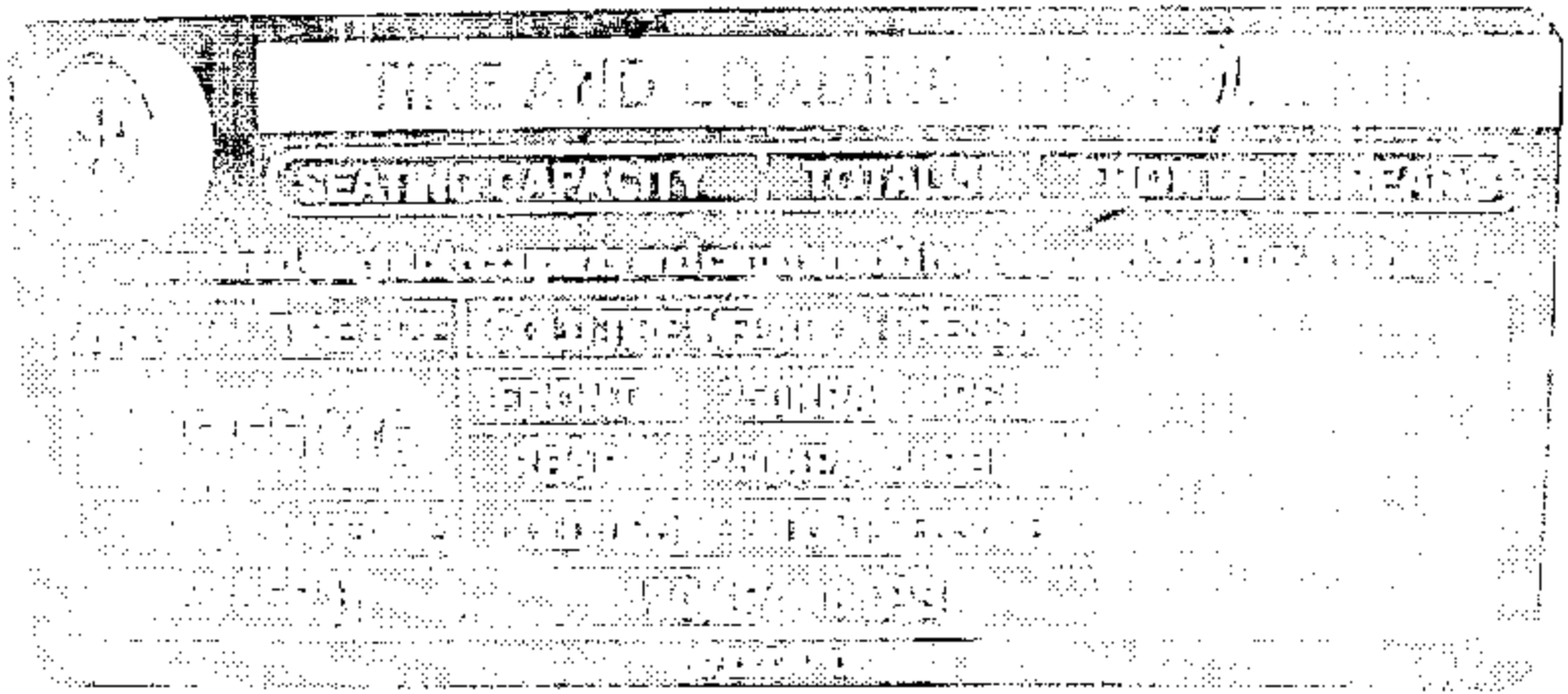
FIGURE 5.2
¾ REARWARD LEFT SIDE VIEW OF VEHICLE

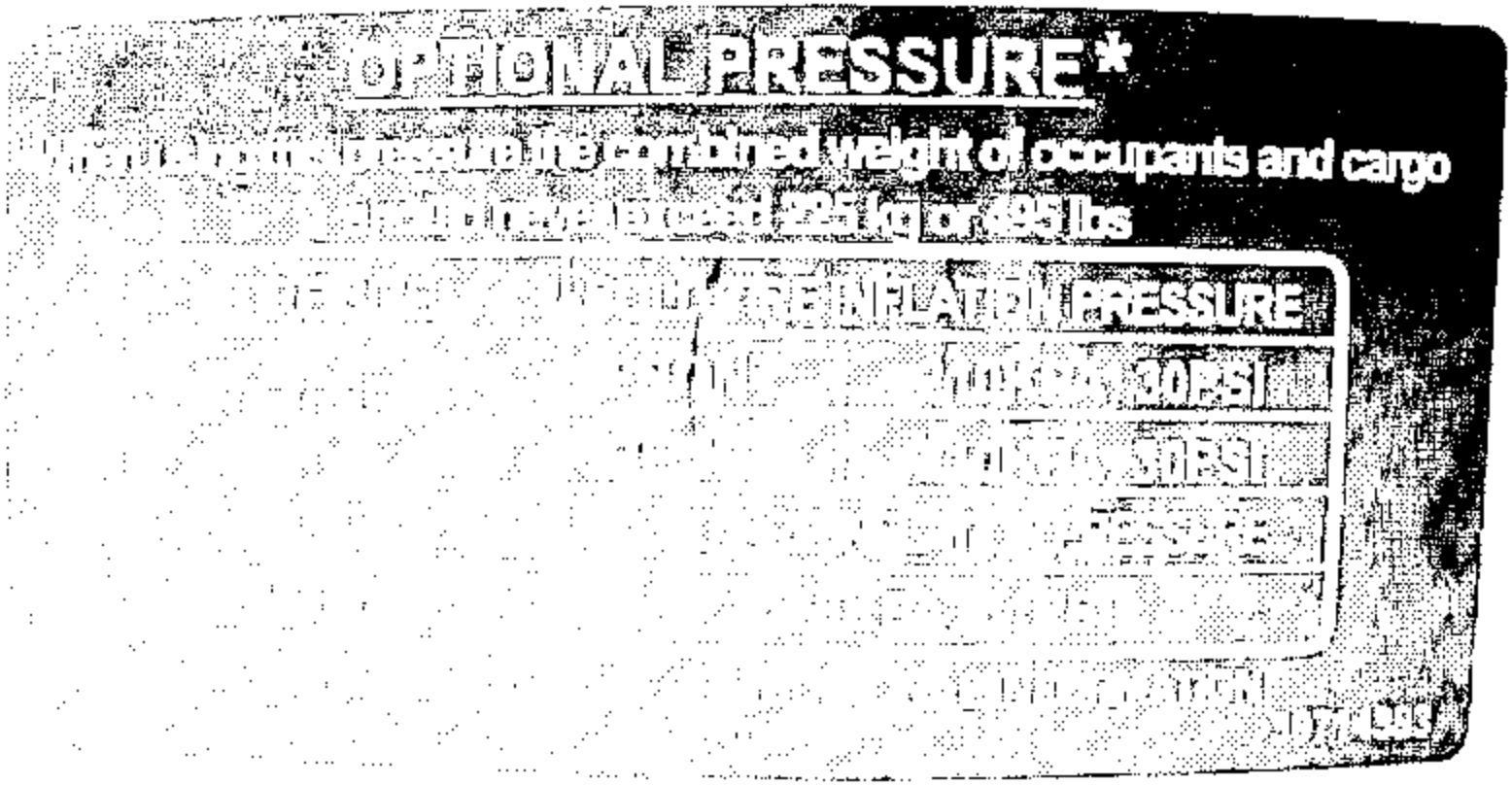
2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.3
CLOSE-UP VIEW OF VEHICLE CERTIFICATION LABEL



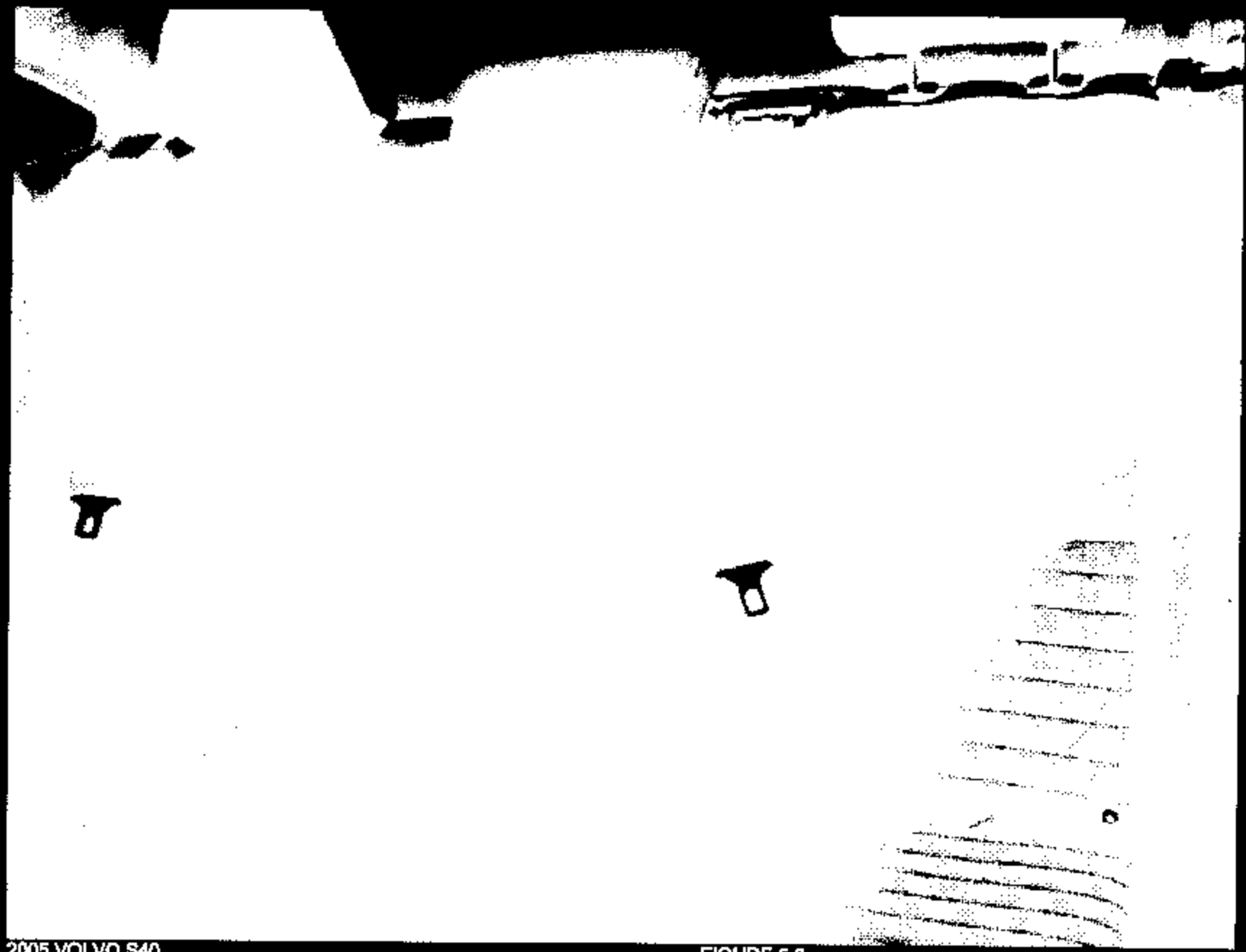
2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.4
CLOSE-UP VIEW OF VEHICLE TIRE INFORMATION LABEL



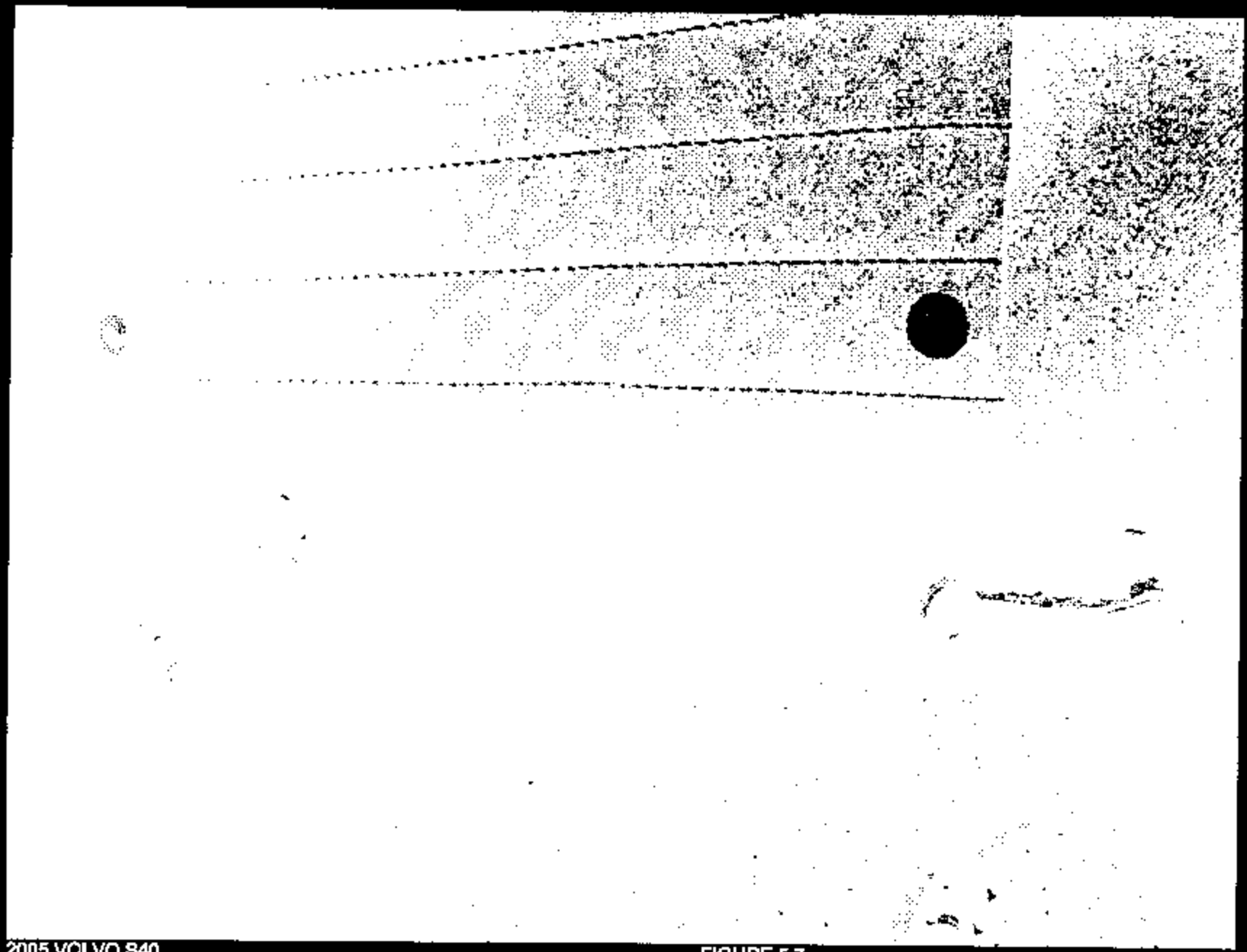
2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.5
CLOSE-UP VIEW OF OPTIONAL TIRE PRESSURE LABEL



2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.6
ROW 2, LEFT SIDE LOWER ANCHORS



2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.7
ROW 2, LEFT SIDE LOWER ANCHORS

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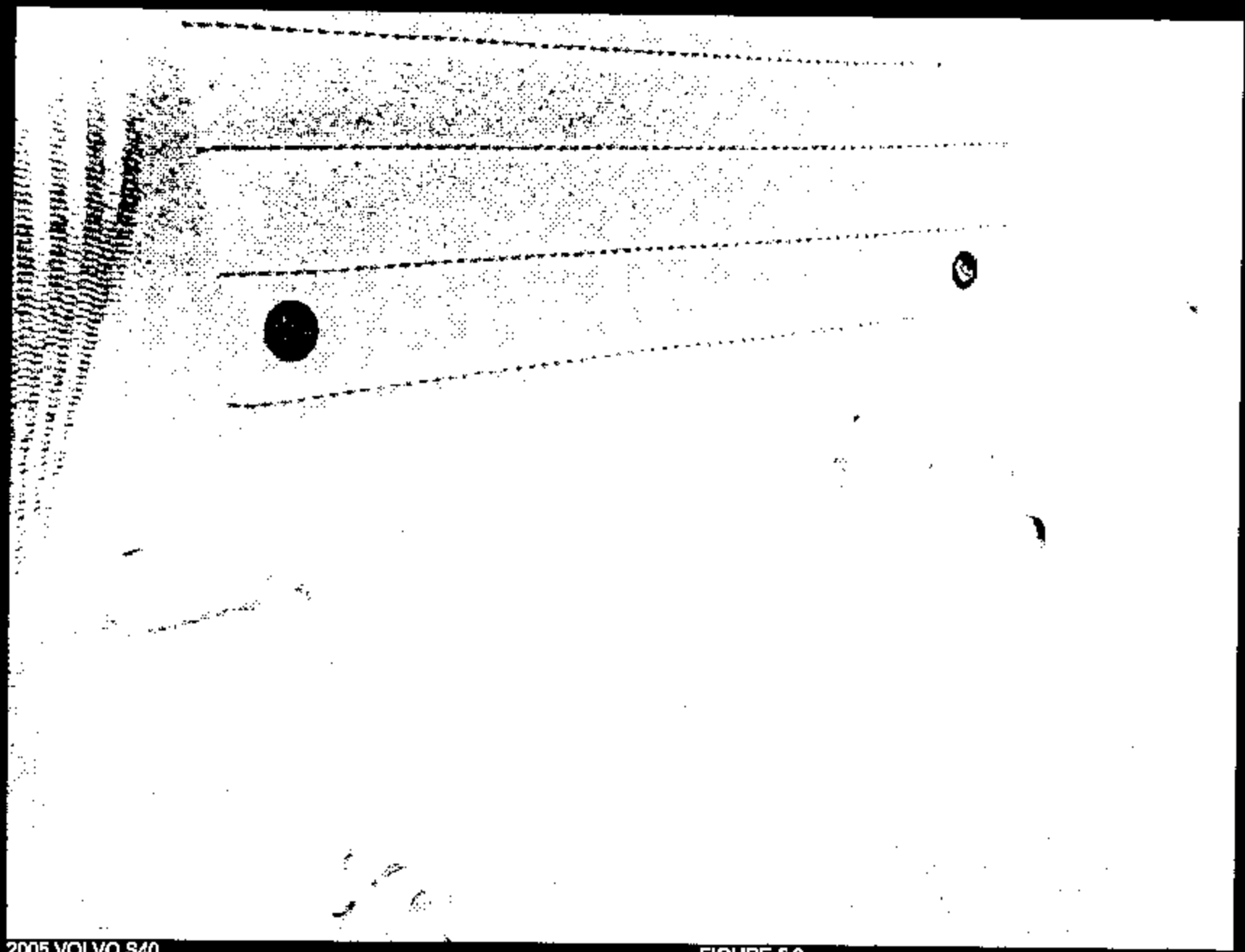
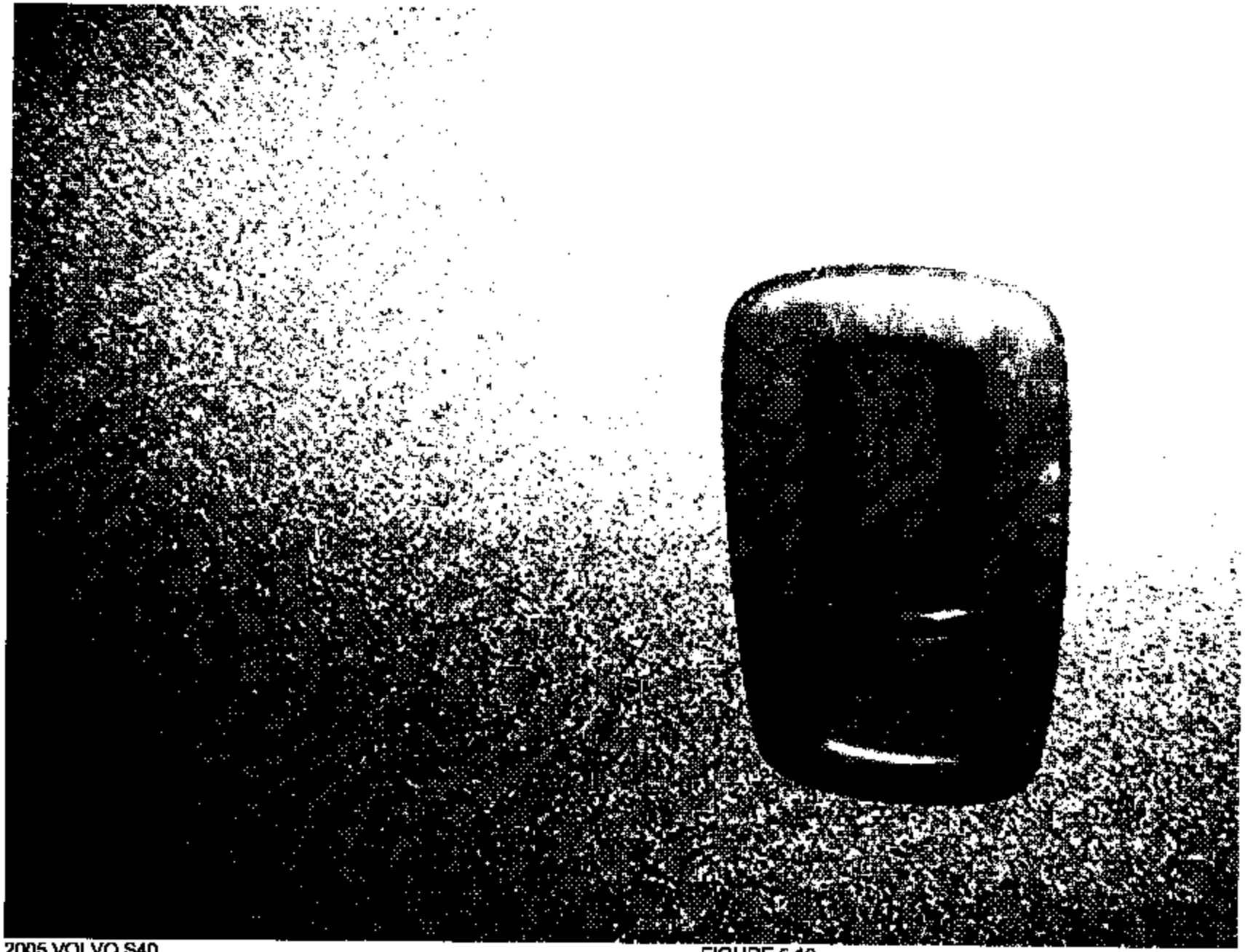
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.8
ROW 2, LEFT SIDE TOP TETHER ANCHOR



2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.9
ROW 2, RIGHT SIDE LOWER ANCHORS

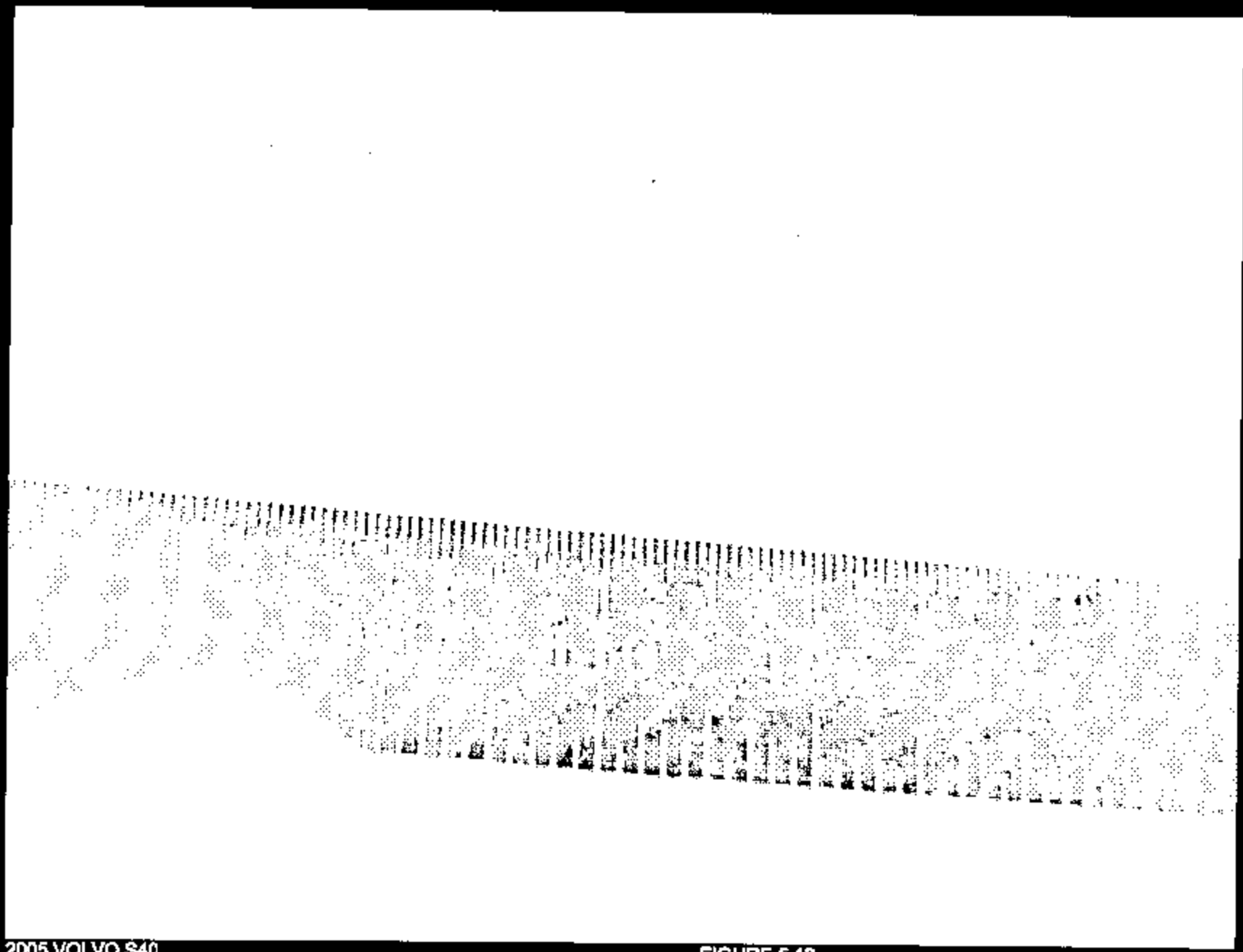


2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.10
ROW 2, RIGHT SIDE TOP TETHER ANCHOR

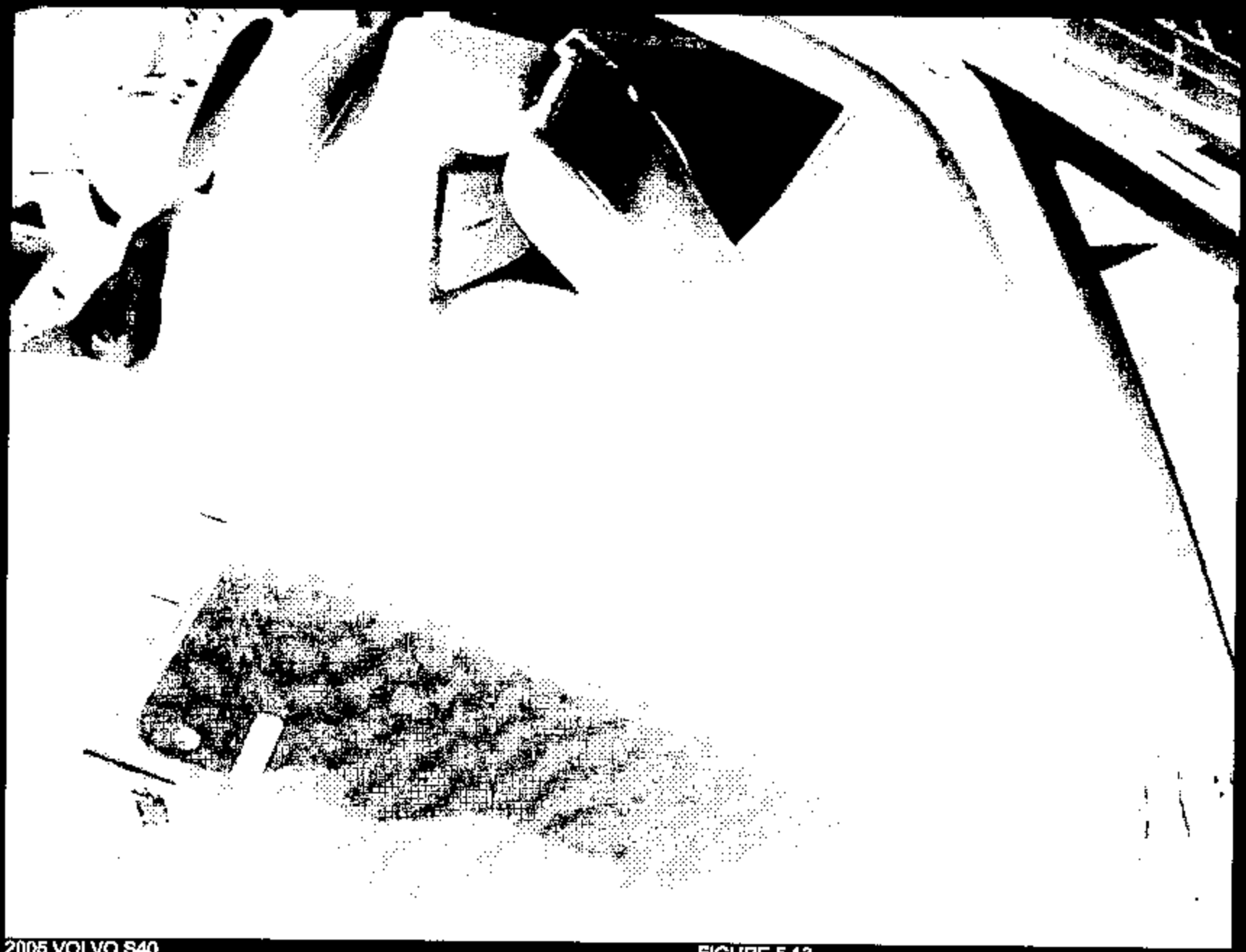
2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.11
ROW 2, CENTER POSITION TOP TETHER ANCHOR



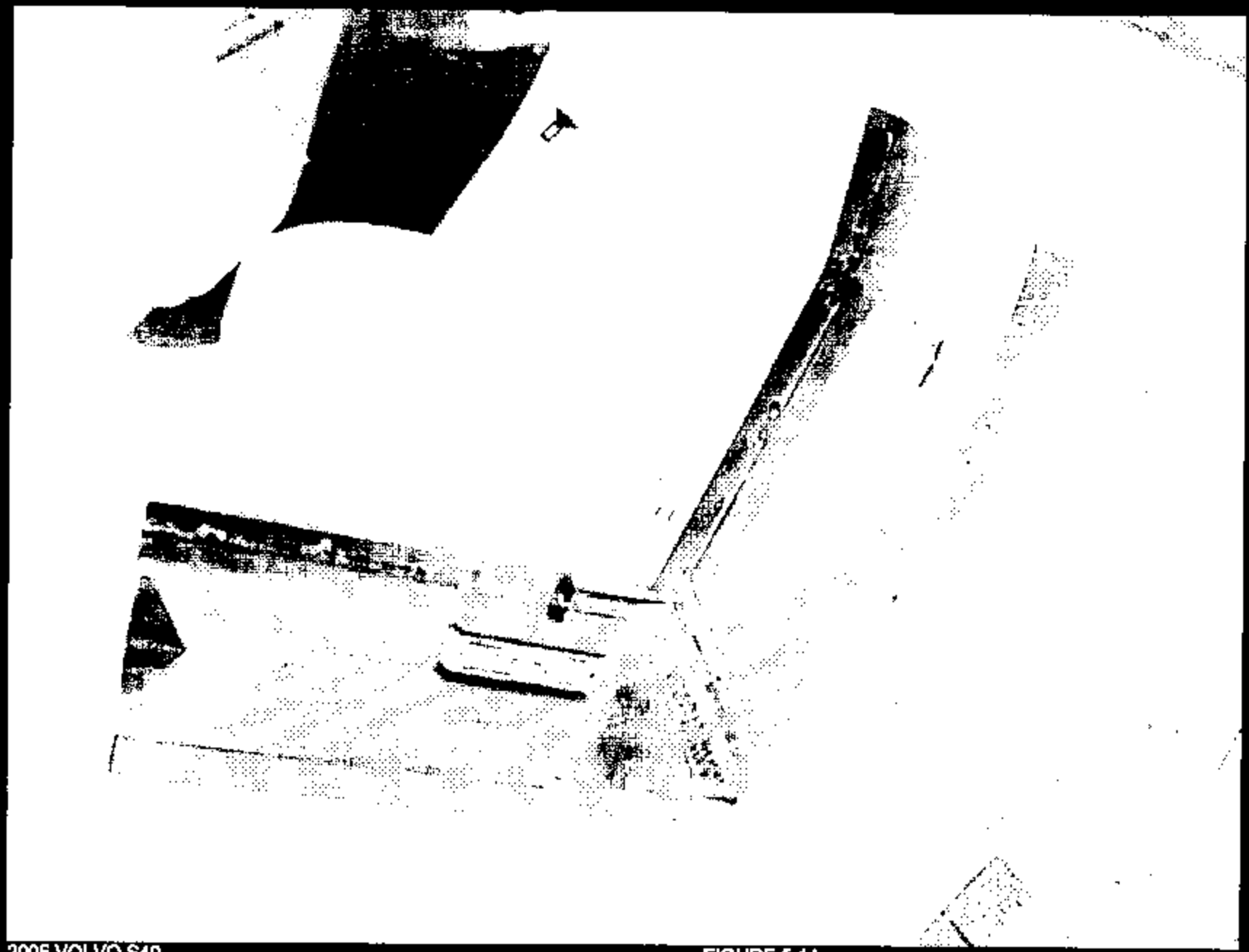
2005 VOLVO S40
NHTSA NO. C65900
FMVSS NO. 225

FIGURE 5.12
LOWER ANCHOR SYMBOL MEASUREMENT



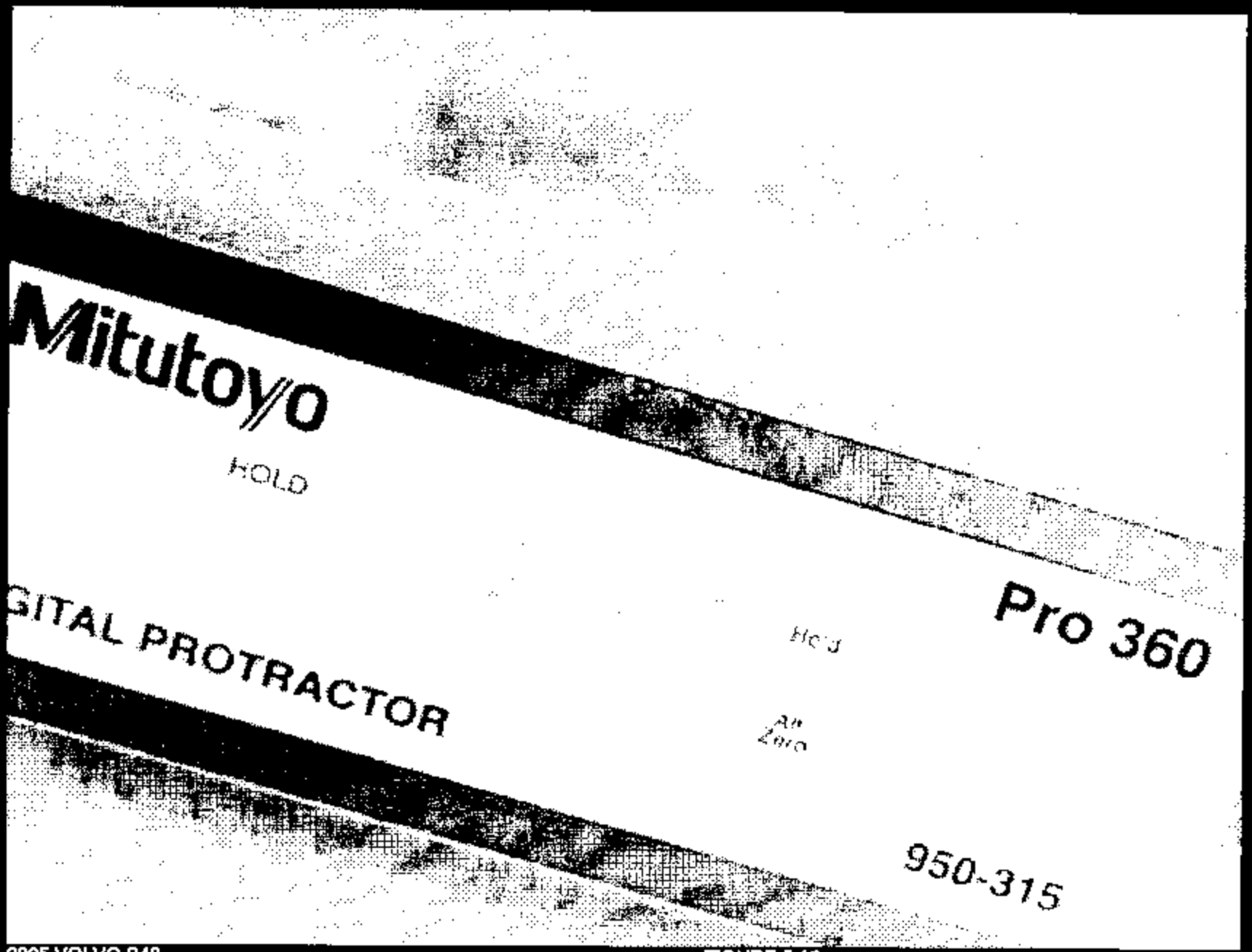
2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.13
LOCATION OF TOP TETHER ANCHORS ON SEAT BACK



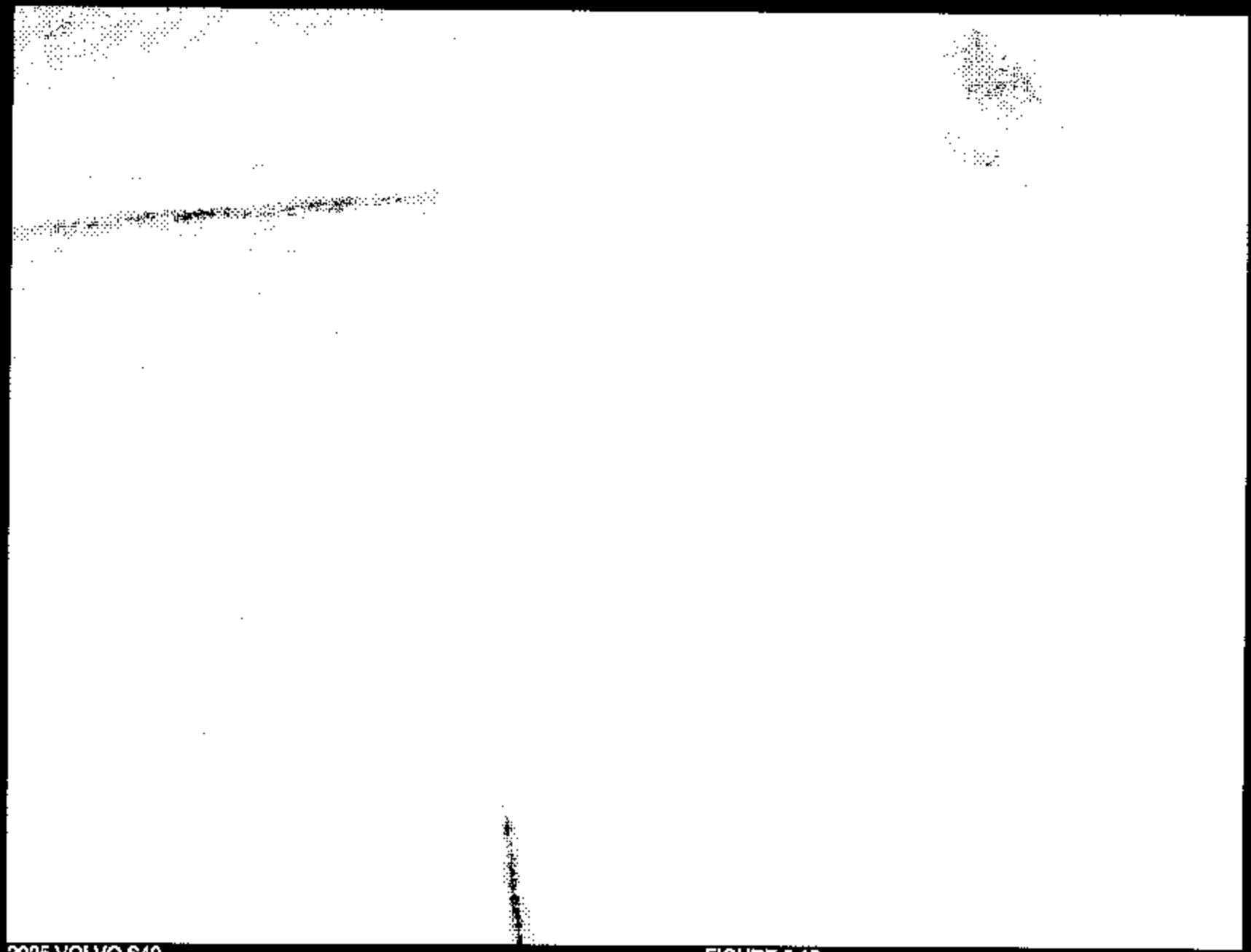
2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.14
ROW 2, LEFT SIDE WITH CRF



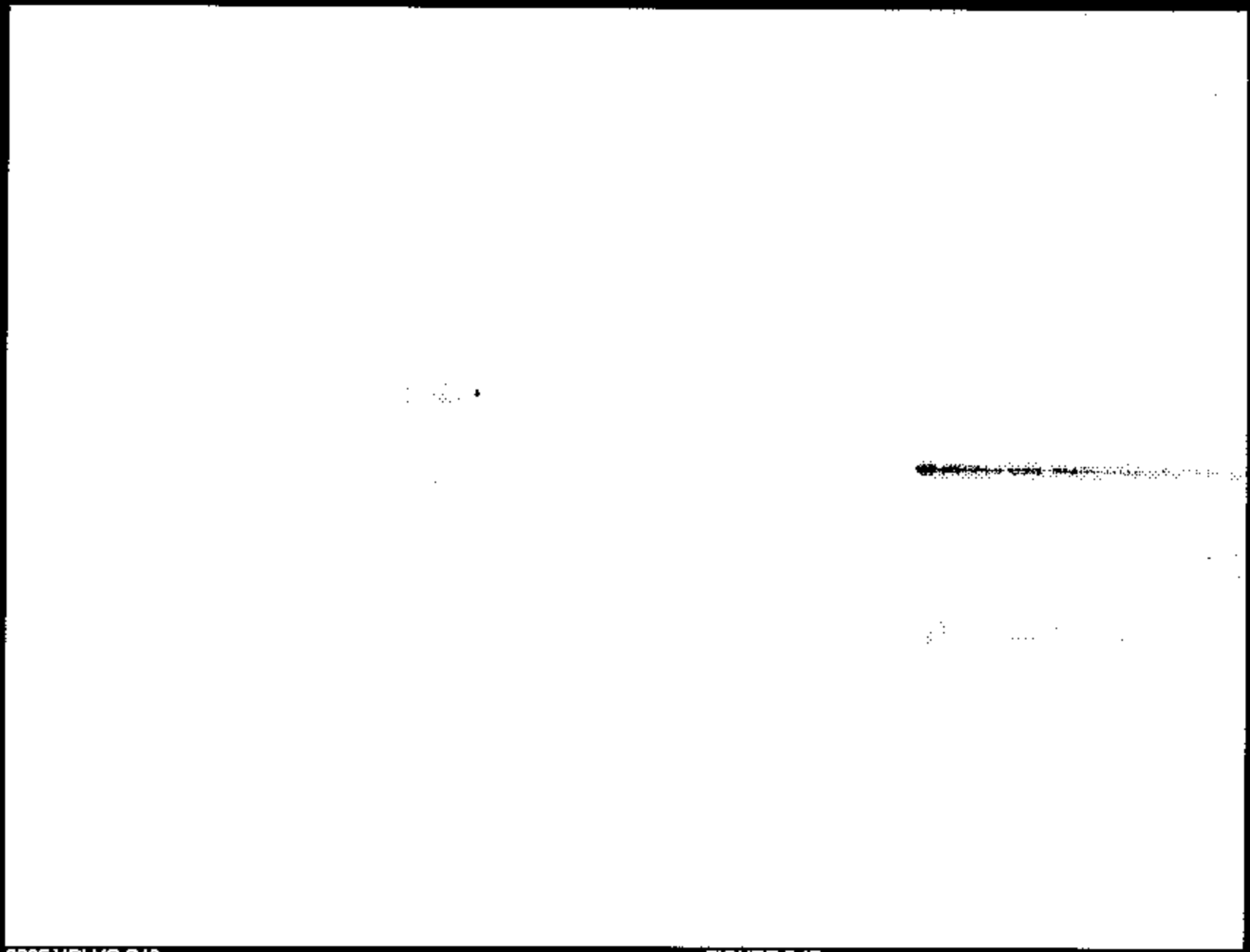
2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.15
ROW 2, LEFT SIDE CRF PITCH MEASUREMENT



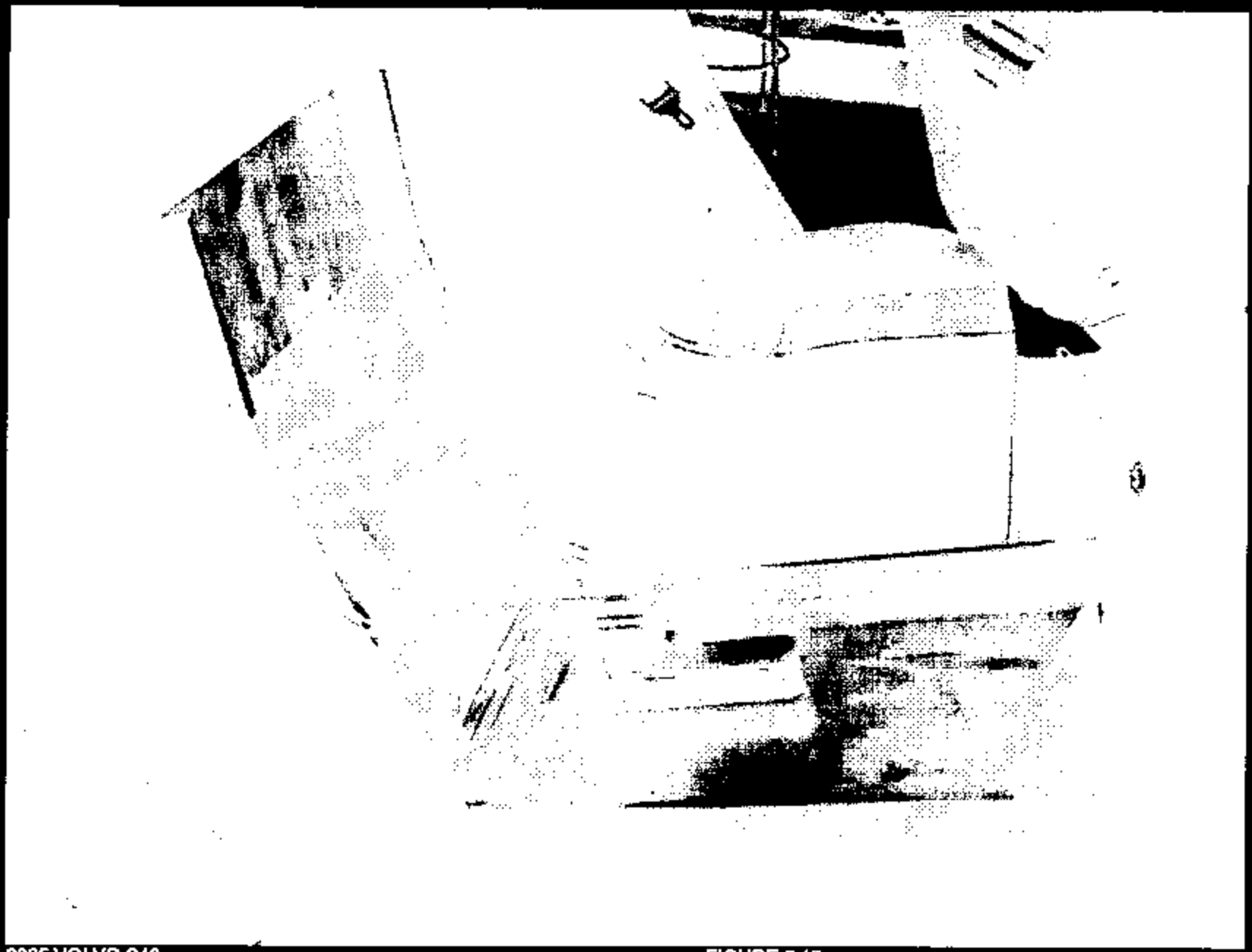
2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.16
ROW 2, LEFT SIDE OUTBOARD CRF MEASUREMENT



2006 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.17
ROW 2, LEFT SIDE INBOARD CRF MEASUREMENT



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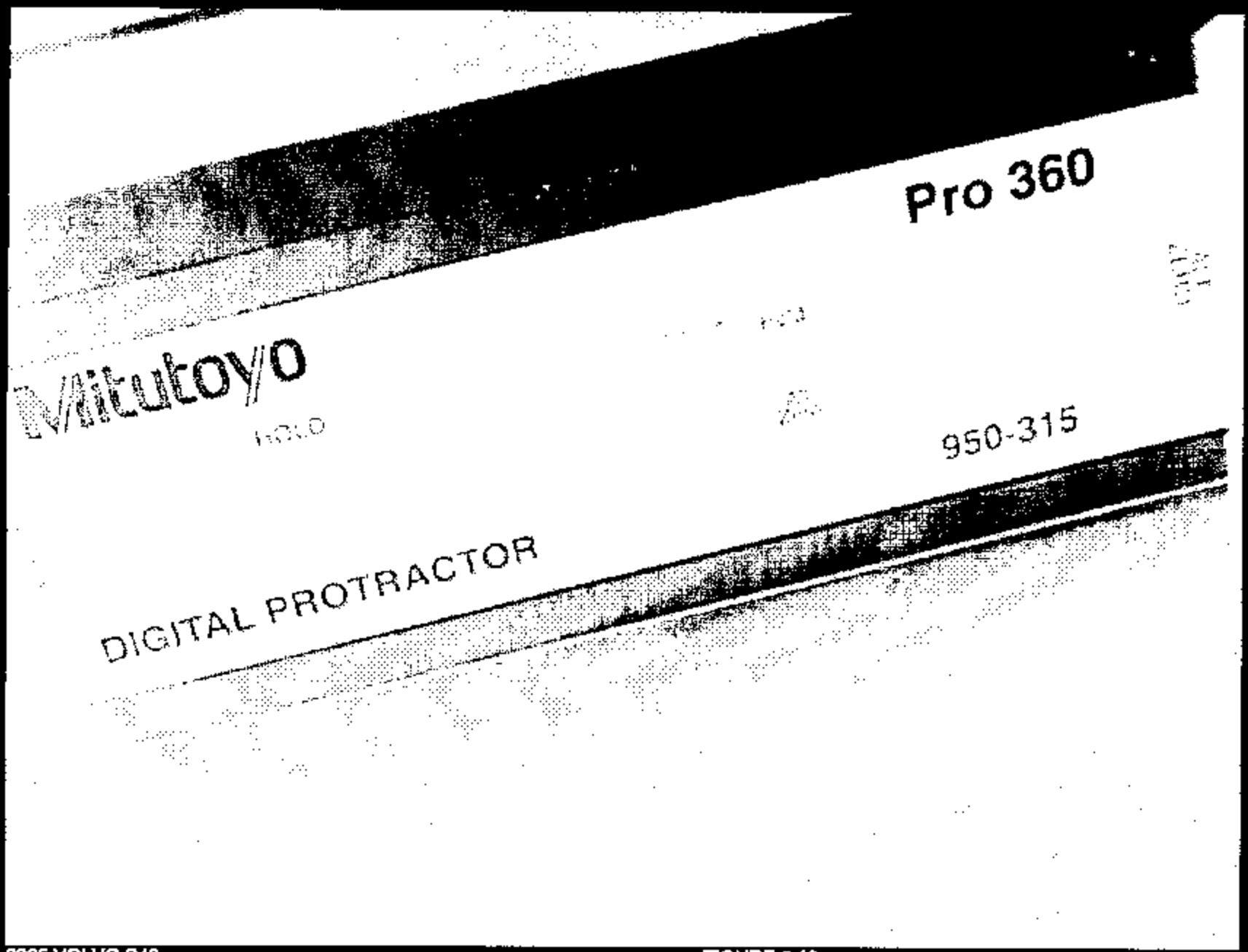
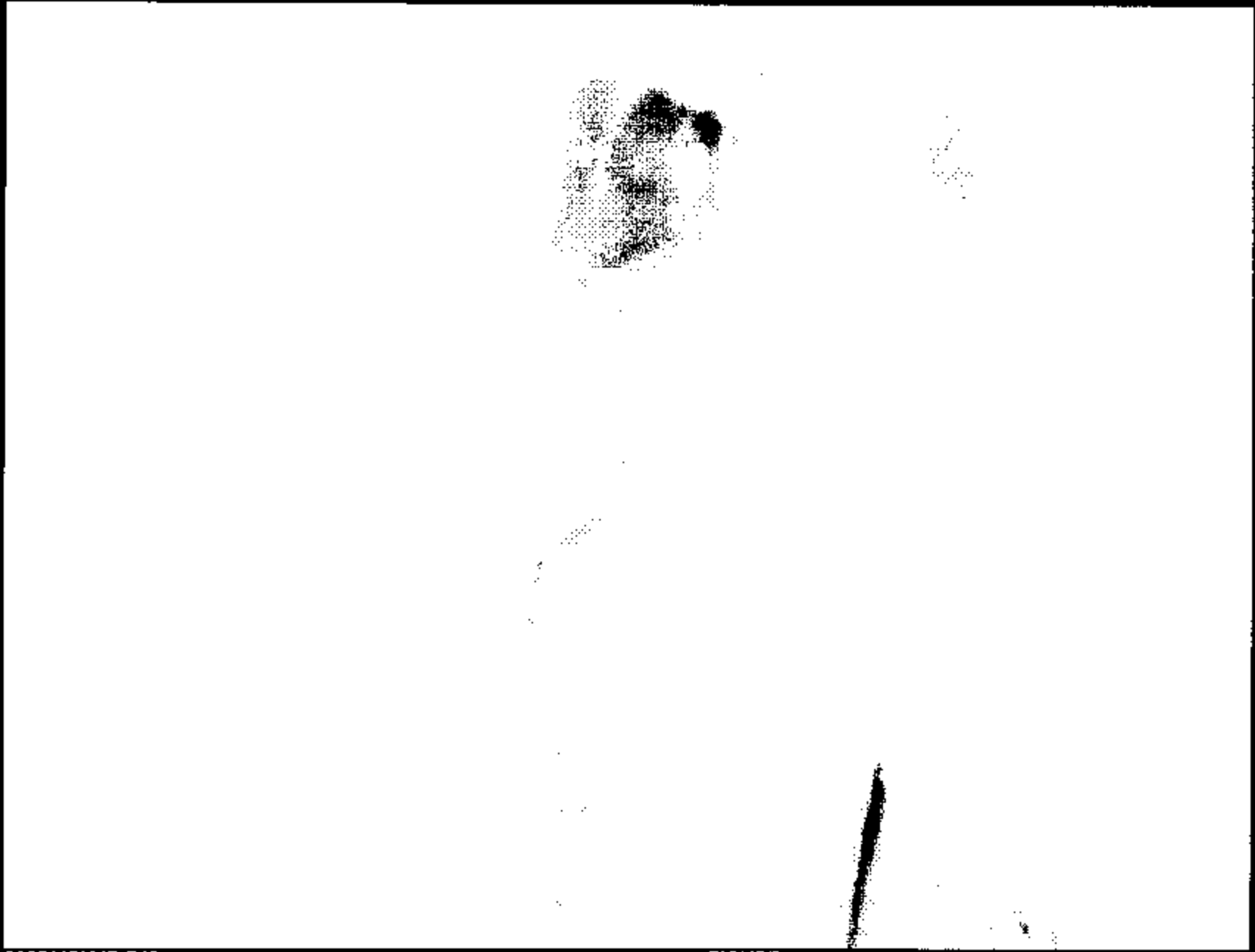
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.18
ROW 2, RIGHT SIDE WITH CRF



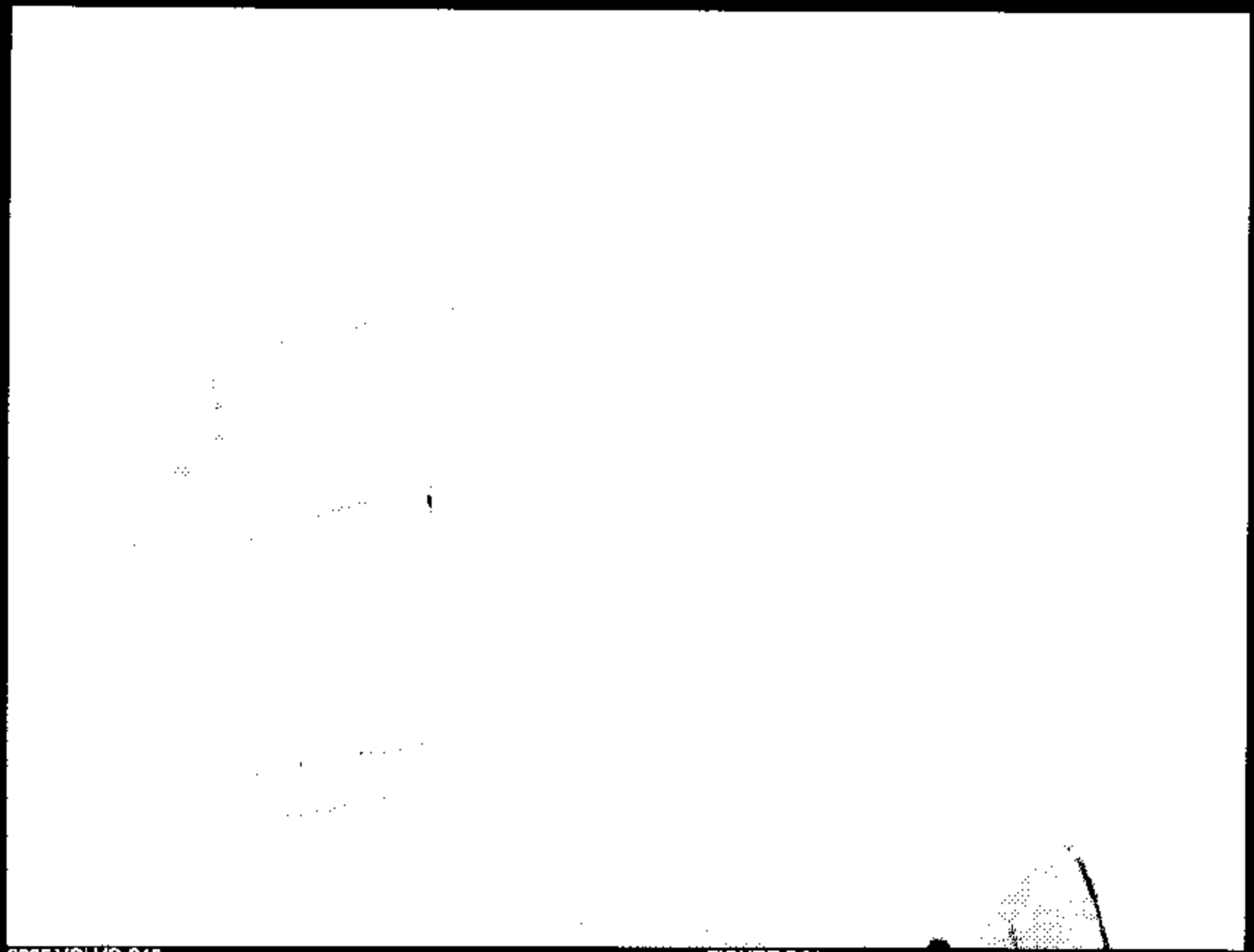
2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.19
ROW 2, RIGHT SIDE CRF PITCH MEASUREMENT



2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.20
ROW 2, RIGHT SIDE OUTBOARD CRF MEASUREMENT

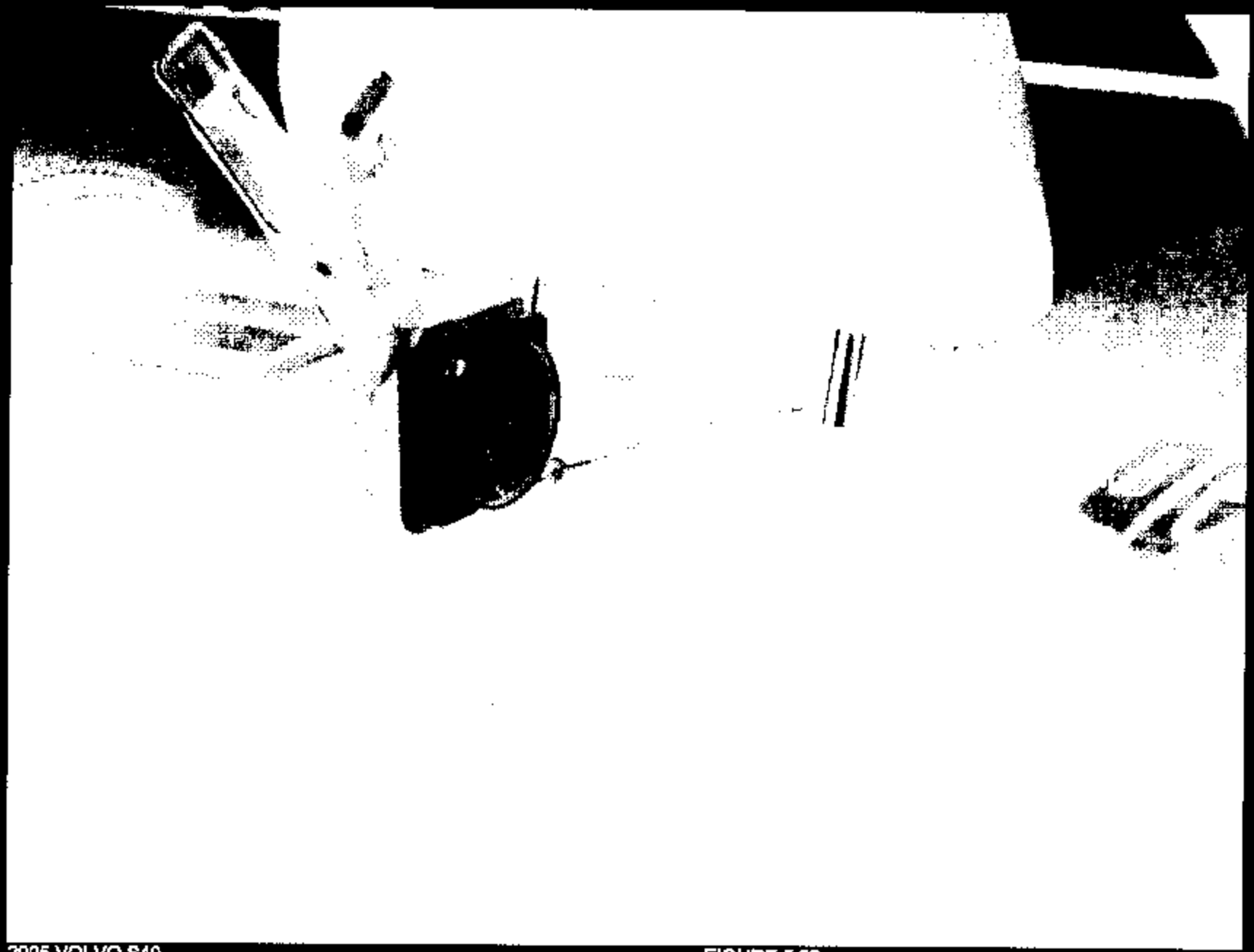


2006 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.21
ROW 2, RIGHT SIDE INBOARD CRF MEASUREMENT

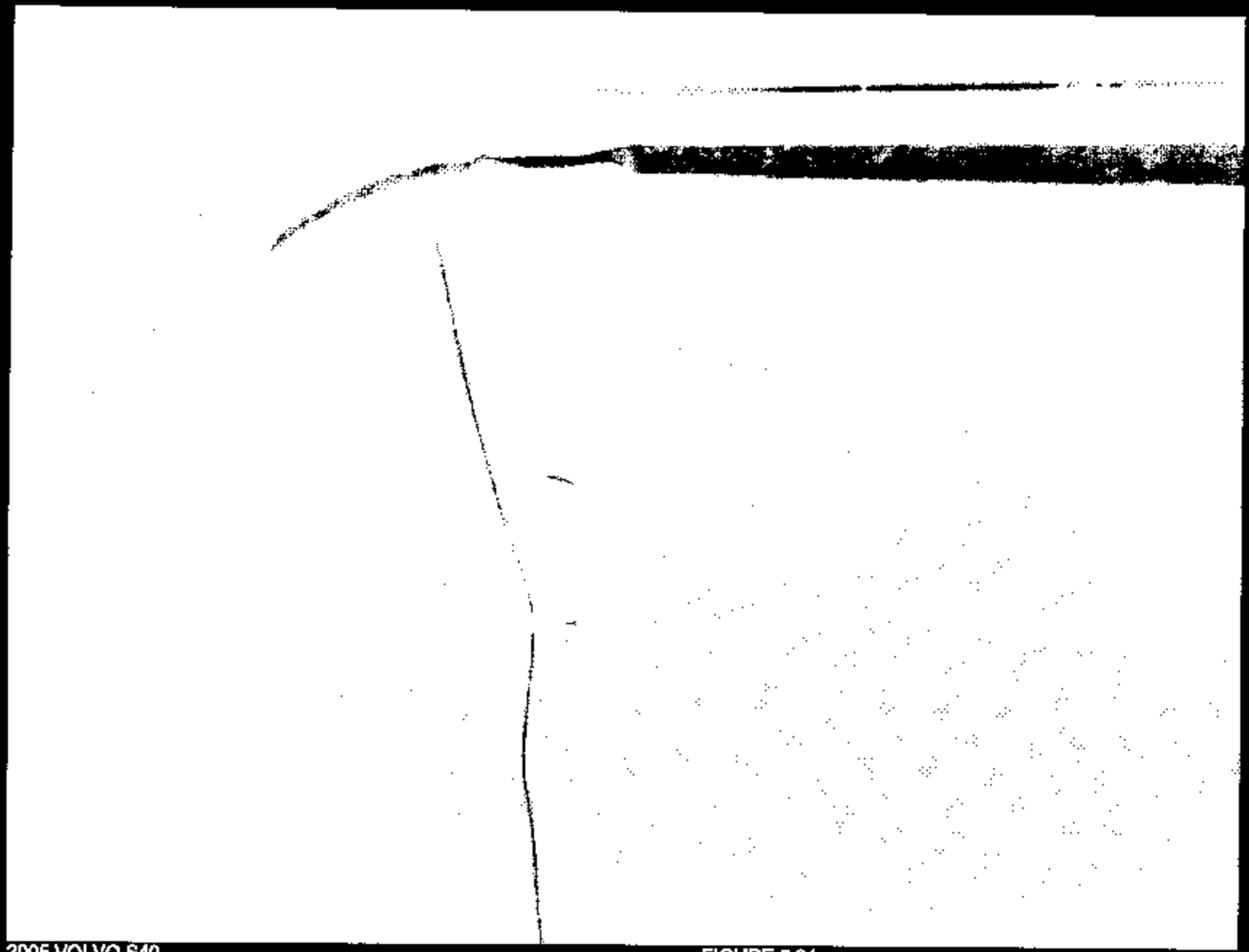
2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.22
ROW 2, LEFT SIDE WITH 2-D TEMPLATE



2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.23
ROW 2, LEFT SIDE TOP TETHER ROUTING
OVER SEAT BACK

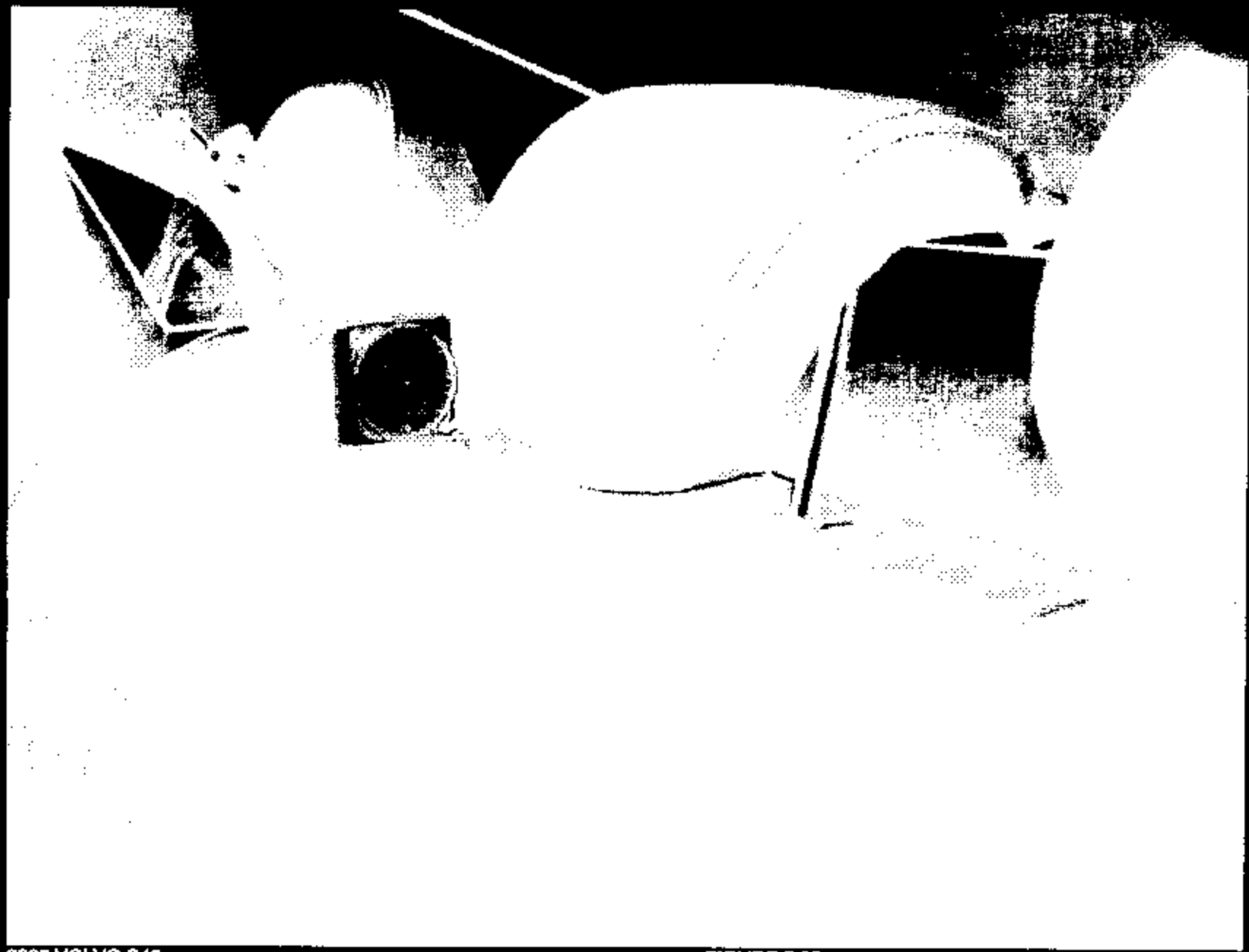


2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.24
ROW 2, LEFT SIDE TOP TETHER ROUTING
BEHIND SEAT

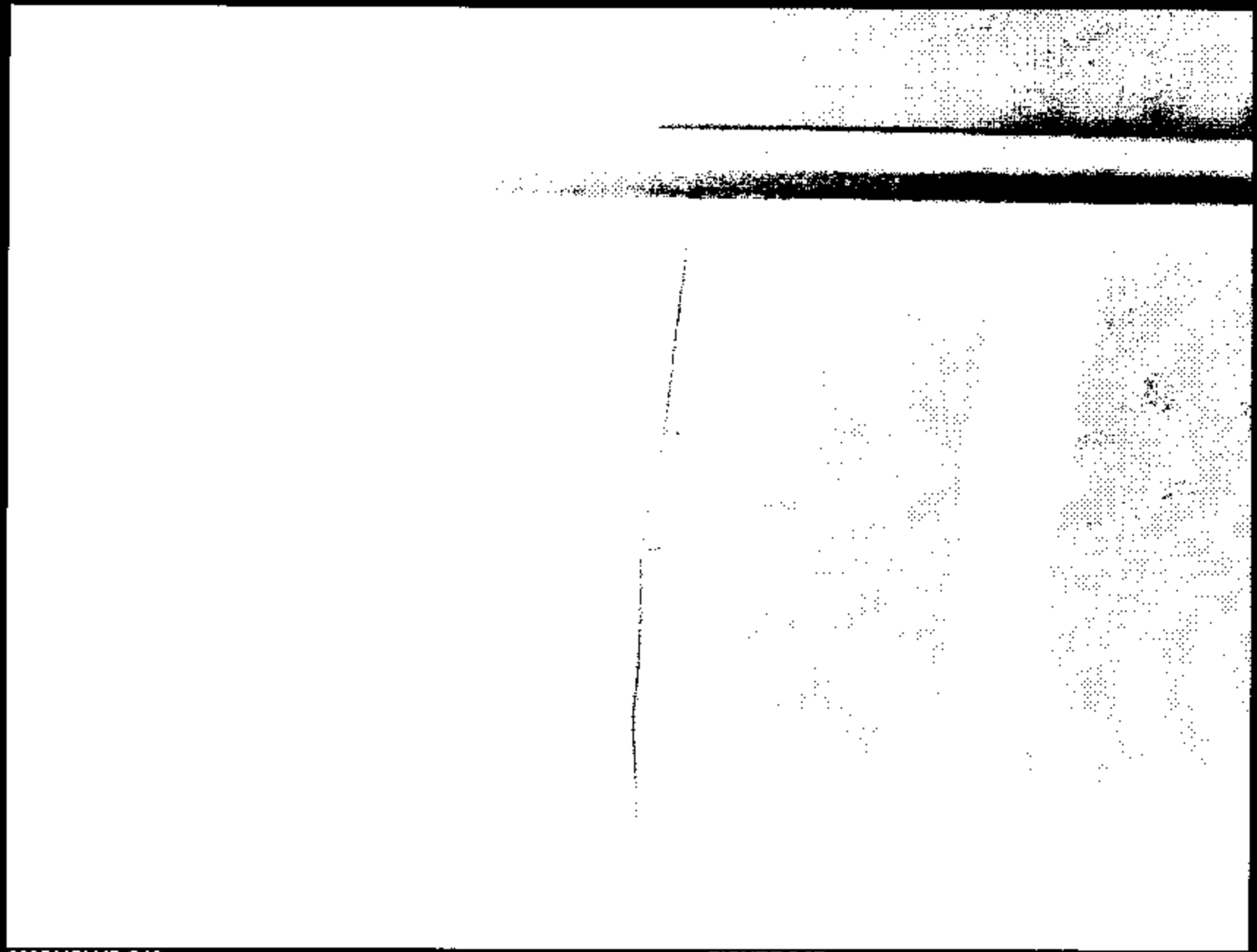
2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.25
ROW 2, CENTER POSITION WITH 2-D TEMPLATE



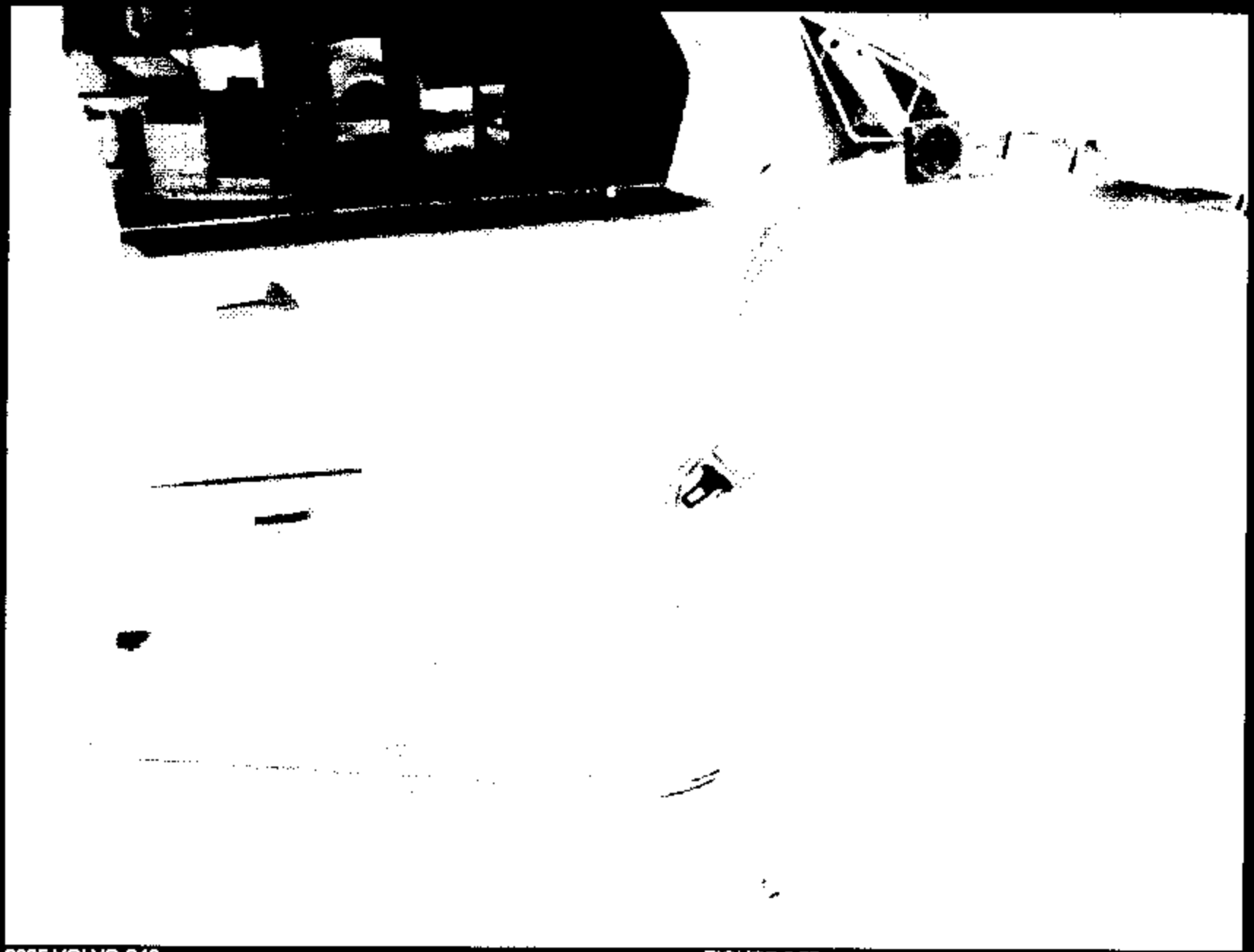
2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.26
ROW 2, CENTER POSITION TOP TETHER
ROUTING OVER SEAT BACK



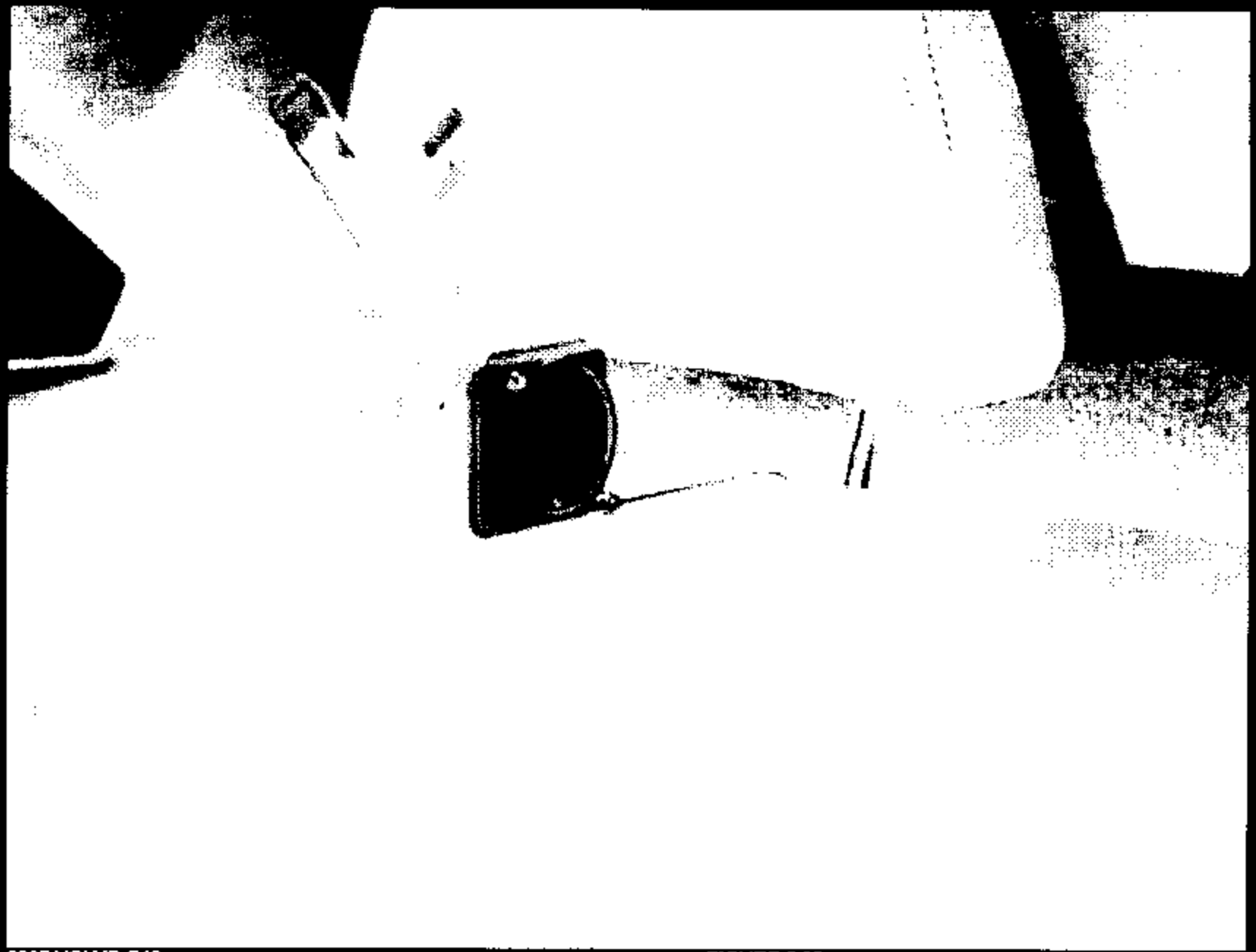
2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.27
ROW 2, CENTER POSITION TOP TETHER
ROUTING BEHIND SEAT



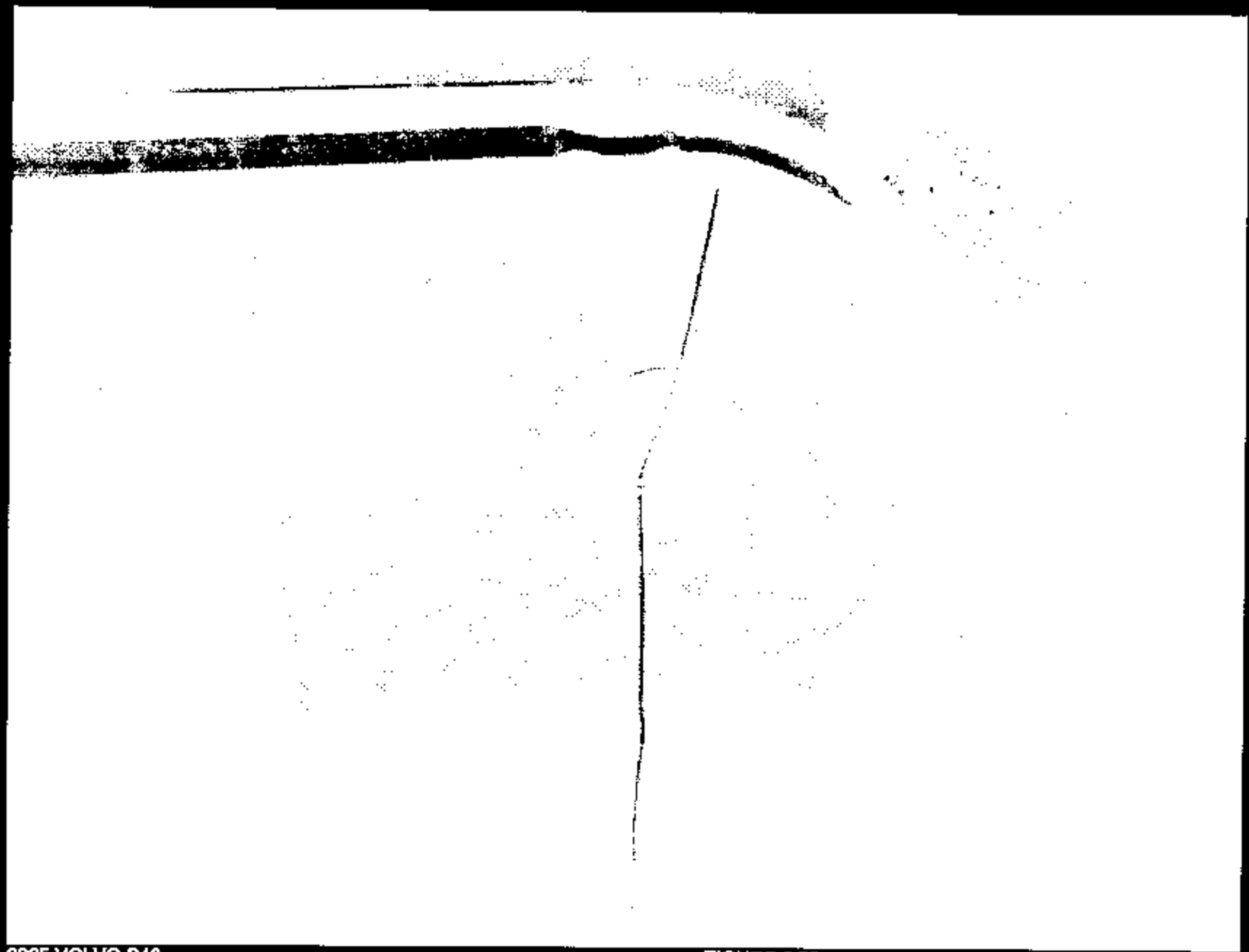
2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.28
ROW 2, RIGHT SIDE WITH 2-D TEMPLATE



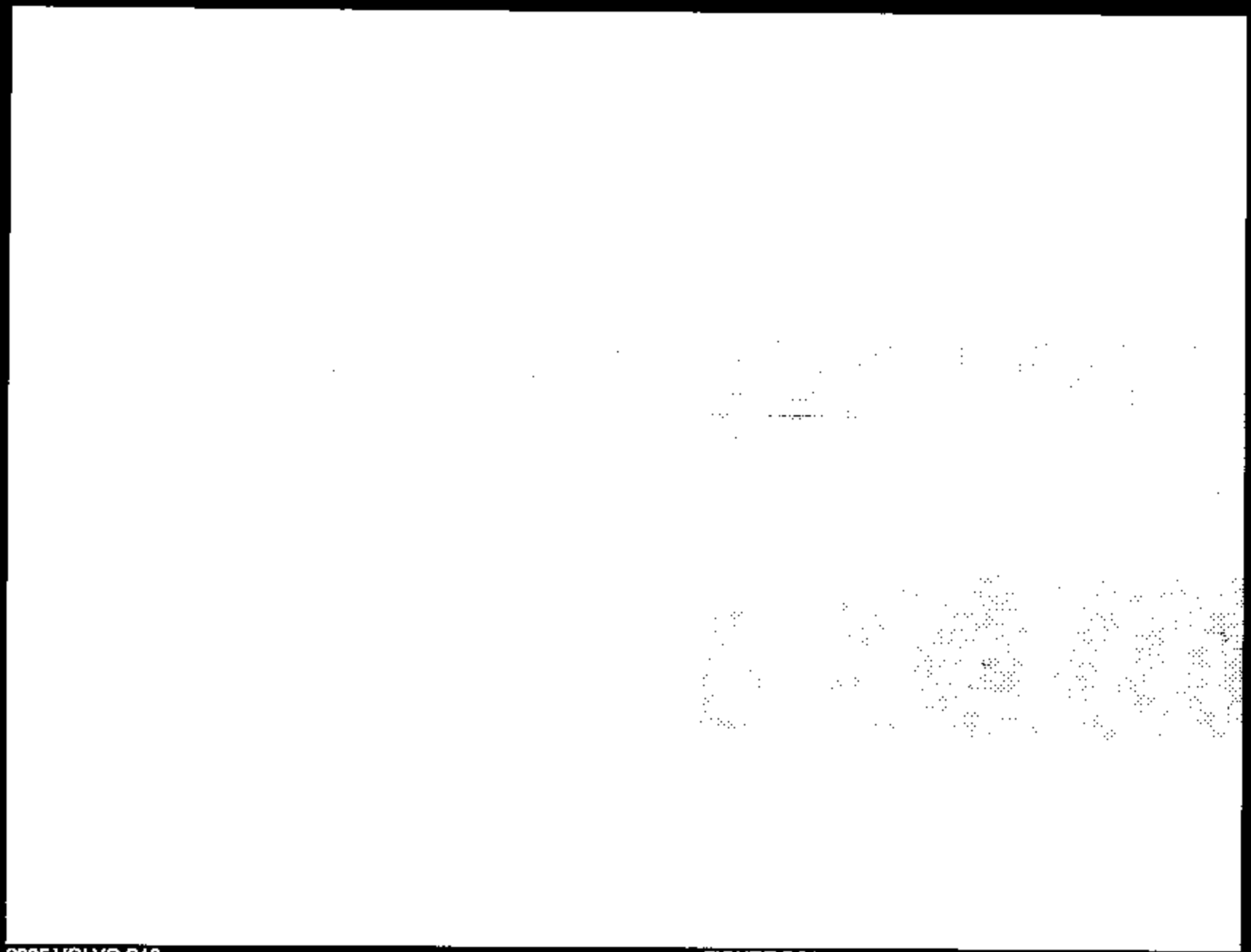
2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.29
ROW 2, RIGHT SIDE TOP TETHER ROUTING
OVER SEAT BACK



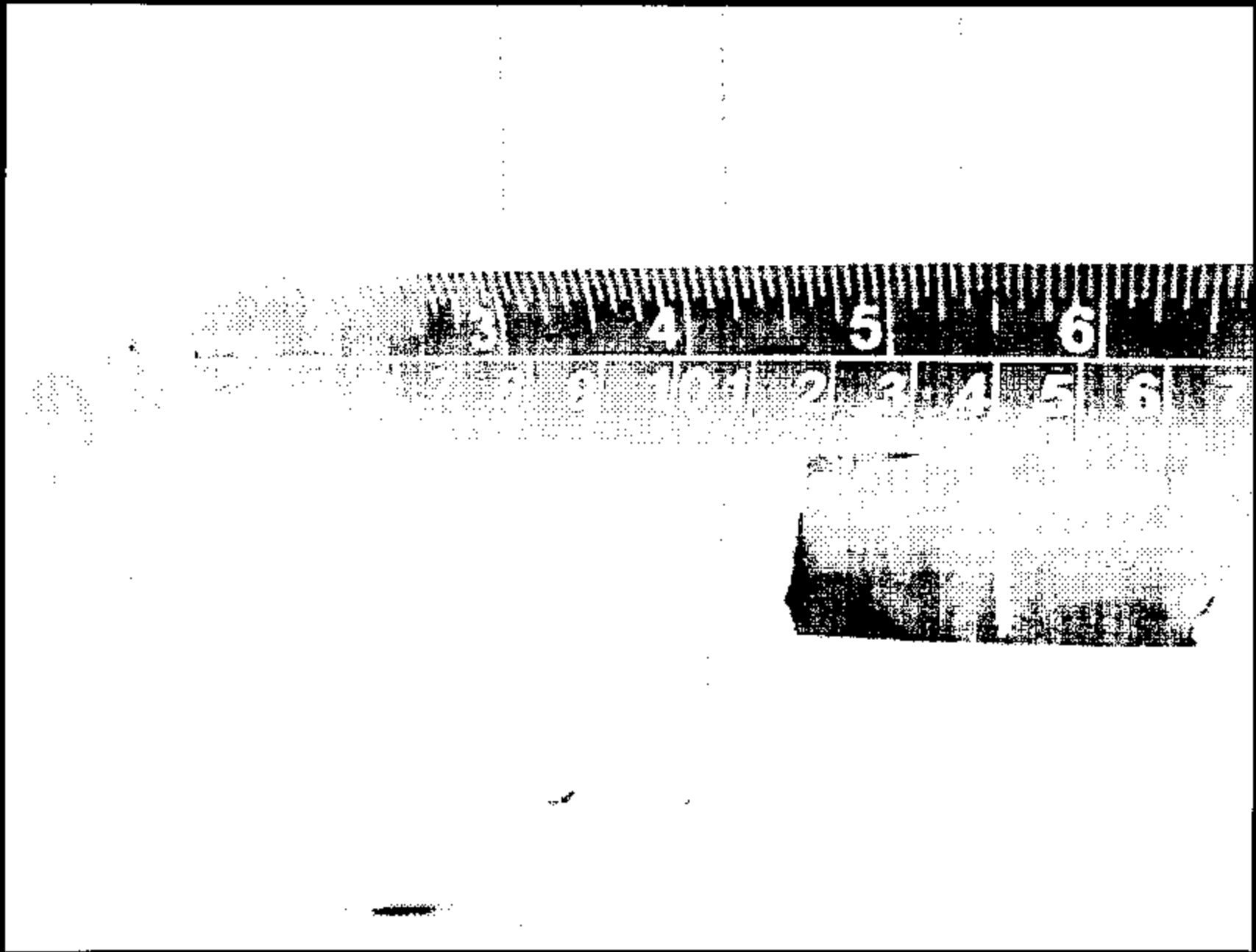
2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.30
ROW 2, RIGHT SIDE TOP TETHER ROUTING
BEHIND SEAT



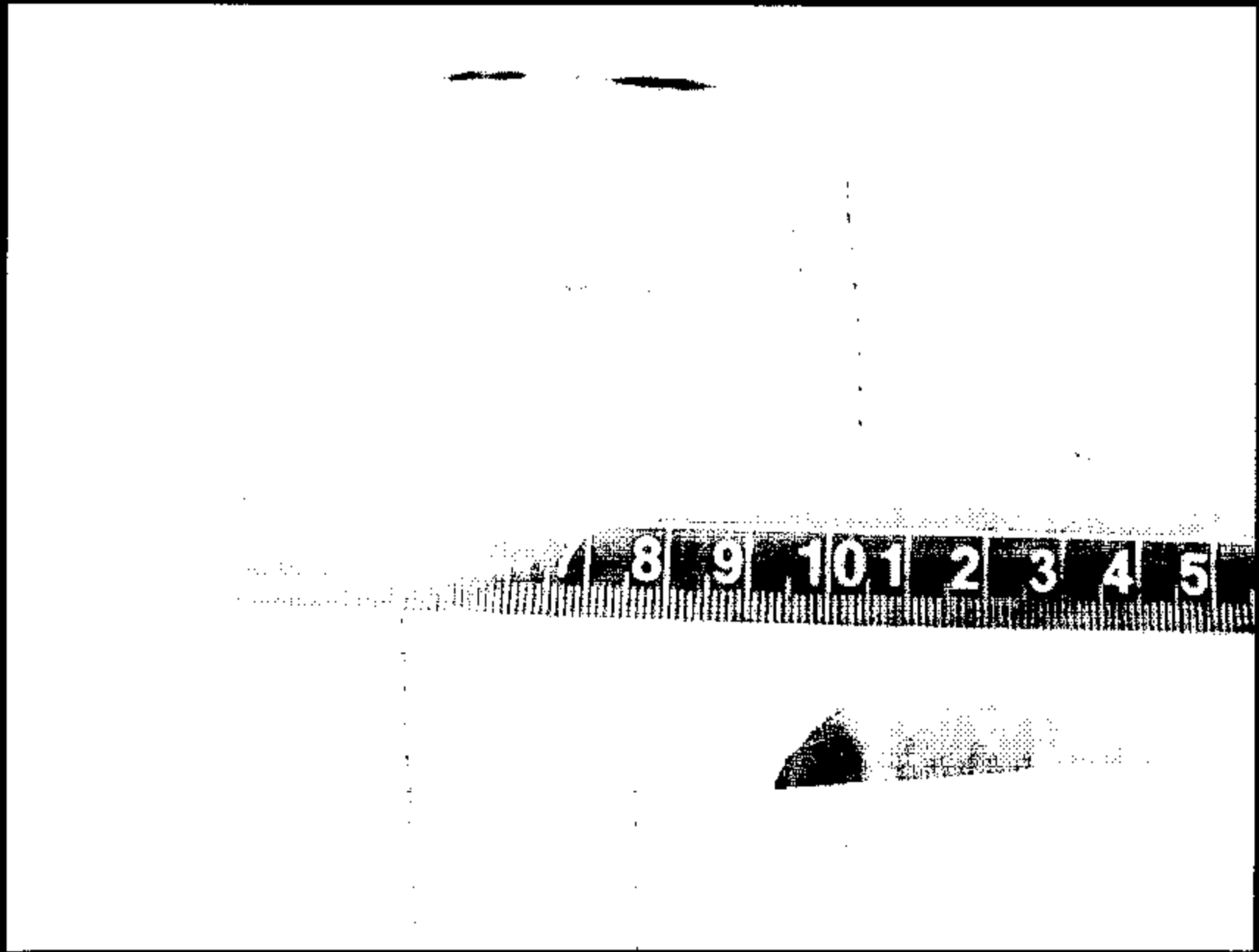
2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.31
ROW 2, LEFT SIDE LOWER OUTBOARD SRP MEASUREMENT



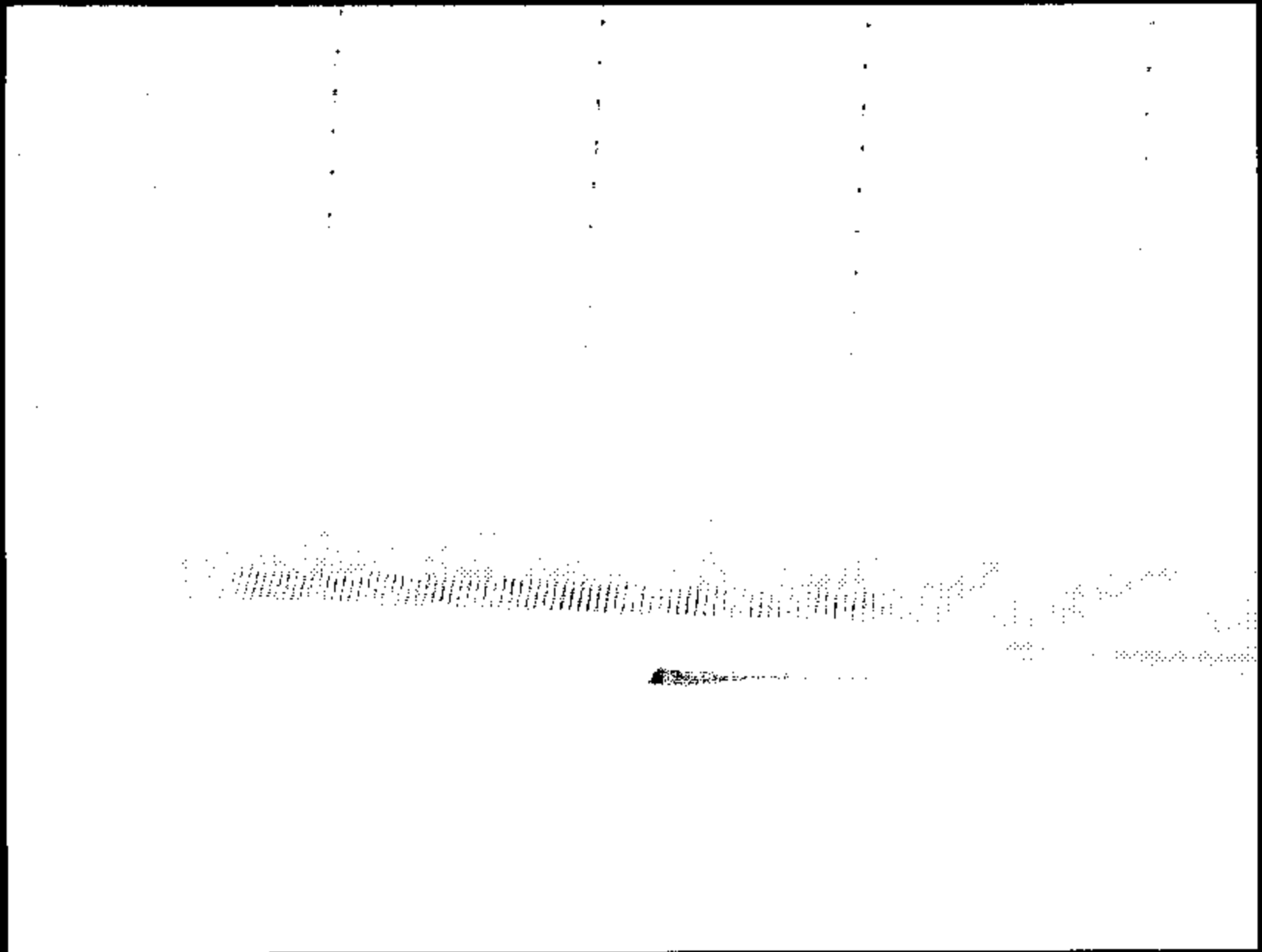
2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.32
ROW 2, LEFT SIDE LOWER INBOARD SRP MEASUREMENT



2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.33
ROW 2, RIGHT SIDE LOWER INBOARD SRP MEASUREMENT



2005 VOLVO S40
NHTSA NO. C55900
FMVSS NO. 225

FIGURE 5.34
ROW 2, RIGHT SIDE LOWER OUTBOARD SRP MEASUREMENT

APPENDIX A

OWNER'S MANUAL CHILD RESTRAINT INFORMATION

Child safety

Children should be seated safely

Volvo recommends the proper use of restraint systems for all occupants including children. Remember that, regardless of age and size, a child should always be properly restrained in a car.

Your car is also equipped with ISOFIX/ LATCH attachments, which make it more convenient to install child seats.

Restraint systems for children are designed to be secured in the vehicle by lap belts or the lap portion of a lap-shoulder belt. Such child restraint systems can help protect children in cars in the event of an accident only if they are used properly. However, children could be endangered in a crash if the child restraints are not properly secured in the vehicle. Failure to follow the installation instructions for your child restraint can result in your child striking the vehicle's interior in a sudden stop.

Holding a child in your arms is NOT a suitable substitute for a child restraint system. In an accident, a child held in a person's arms can be crushed between the vehicle's interior and an unrestrained person. The child could also be injured by striking the interior, or by being ejected from the vehicle during a sudden maneuver or impact. The same can also happen if the infant or child rides unrestrained on the seat. Other occupants should also be properly restrained to help reduce the chance of injuring or increasing the injury of a child.

All states and provinces have legislation governing how and where children should be carried in a car. Find out the regulations existing in your state or province. Recent accident statistics have shown that children are safer in rear seating positions than front seating positions when properly restrained. A child restraint system can help protect a child in a vehicle. Here's what to look for when selecting a child restraint system:

- It should have a label certifying that it meets applicable Federal Motor Vehicle Safety Standards (FMVSS 213) - or in Canada, CMVSS 213.
- Make sure the child restraint system is approved for the child's height, weight and development - the label required by the standard or regulation, or instructions for infant restraints, typically provide this information.
- In using any child restraint system, we urge you to carefully look over the instructions that are provided with the restraint. Be sure you understand them and can use the device properly and safely in this vehicle. A misused child restraint system can result in increased injuries for both the infant or child and other occupants in the vehicle.

When a child has outgrown the child safety seat, you should use the rear seat with the standard seat belt fastened. The best way to help protect the child here is to place the child on a cushion so that the seat belt is properly located on the hips (see the illustration on page 33). Legislation in your state or province may mandate the use of a child seat or cushion in combination with the seat belt, depending on the child's age and/or size. Please check local regulations.

A specially designed and tested booster cushion (not available in Canada) can be obtained from your Volvo retailer for children weighing 33 - 80 lb. (15 - 36 kg) and 38-54 inches (97 - 137 cm) in height.

⚠ WARNING!

Do not use child safety seats or child booster cushions/backrests in the front passenger's seat. We also recommend that children under 4 feet 7 inches (140 cm) in height who have outgrown these devices sit in the rear seat with the seat belt fastened.

Keep vehicle doors and trunk locked and keep keys out of a child's reach. Unsupervised children could lock themselves in an open trunk and risk injury. Children should be taught not to play in vehicles.

On hot days, the temperature in the trunk or vehicle interior can rise very quickly. Exposure to these high temperatures for even a short period of time can cause heat-related injury or death. Small children are particularly at risk.

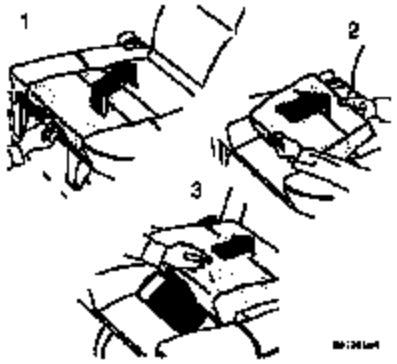
ISOFIX/LATCH anchors

Lower anchors for ISOFIX-equipped child seats are located in the rear, outboard seats, hidden below the backrest cushions. Symbols on the seat back upholstery mark the anchor positions as shown. To access the anchors, kneel on the seat cushion and locate the anchors by feel. Always follow your child seat manufacturer's installation instructions, and use both ISOFIX lower anchors and top tethers whenever possible.

Integrated booster cushion

Volvo's optional integrated booster cushions are located in the outboard seating positions. These booster cushions have been specially designed to help safeguard a child seated in the rear seat. These seats should be stowed (folded down into the seat cushion) before installing accessory child seats. When using an integrated booster cushion, the child must be secured with the vehicle's three-point seat belt.

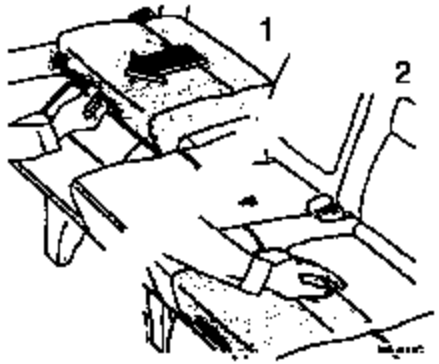
Use this booster cushion only with children who weigh between 33 and 80 lbs (15 and 36 kg) and whose height is between 38 and 54 in (97 and 137 cm).



The child should be properly seated on the booster cushion. The hip section of the three-point seat belt must fit snugly across the child's hips, not across the stomach. The shoulder section of the three-point seat belt should be positioned across the chest and shoulder (see illustration). The shoulder belt must never be placed behind the child's back or under the arm.

Folding up an integrated booster cushion

1. Pull the handle at the front of the cushion forward.
2. With both hands push the cushion rearward.
3. Push the cushion until it locks in place.



Folding down an integrated booster cushion

1. Pull the handle at the front of the cushion forward.
2. Push the cushion forward/downward.

NOTE: Canada only: This cushion may be referred to as a built-in booster cushion.

⚠ WARNING!

The booster cushion should be cleaned while in place in the vehicle if possible. If not, please consult your Volvo retailer.

⚠ WARNING!

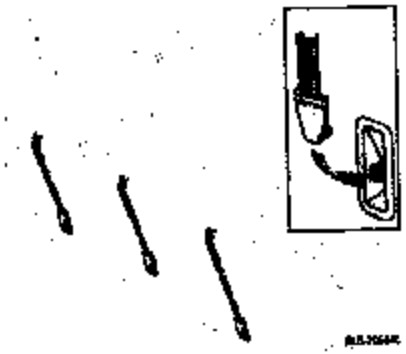
DEATH or SERIOUS INJURY can occur

Follow all instructions on the booster cushion and in the vehicle's owner's manual.

MAKE SURE THE BOOSTER CUSHION IS SECURELY LOCKED BEFORE THE CHILD IS SEATED.

Use this booster cushion only with children who weigh between 33 and 80 lbs (15 and 36 kg) and whose height is between 38 and 54 in (97 and 137 cm).

In the event of a collision while the integrated booster cushion was occupied, the entire booster cushion and seat belt must be replaced. The booster cushion should also be replaced if it is badly worn or damaged in any way. This work should be performed by an authorized Volvo retailer only.



Child restraint anchorages

Volvo cars are equipped with child restraint top tether anchorages in the rear seat. Refer to the child seat manufacturer's instructions for information on securing the child seat.

⚠ WARNING!

Child restraint anchorages are designed to withstand only those loads imposed by correctly fitted child restraints. Under no circumstances are they to be used for adult seat belts or harnesses. The anchorages are not able to withstand excessive forces on them in the event of collision if full harness seat belts or adult seat belts are installed to them. An adult who uses a belt anchored in a child restraint anchorage runs a great risk of suffering severe injuries should a collision occur.

Do not install rear speakers that require the removal of the top tether anchors or interiere with the proper use of the top tether strap.

Automatic Locking Retractor/ Emergency Locking Retractor

To make child seat installation easier, each seat belt (except for the driver's belt) is equipped with a locking mechanism to help keep the seat belt taut. When attaching the seat belt to a child seat:

- Attach the seat belt to the child seat according to the child seat manufacturer's instructions.
- Pull the seat belt out as far as possible.
- Insert the seat belt latch plate into the buckle (lock) in the usual way.
- Release the seat belt and pull it taut around the child seat.

A sound from the seat belt retractor will be audible at this time and is normal. The belt will now be locked in place. This function is automatically disabled when the seat belt is unlocked and the belt is fully retracted.

⚠ WARNING!

Do not use child safety seats or child booster cushions/backrests in the front passenger's seat. We also recommend that children who have outgrown these devices sit in the rear seat with the seat belt properly fastened.

Volvo's recommendations

Why does Volvo believe that no child should sit in the front seat of a car? It's quite simple really. A front airbag is a very powerful device designed, by law, to help protect an adult.

Because of the size of the airbag and its speed of inflation, a child should never be placed in the front seat, even if he or she is properly belted or strapped into a child safety seat. Volvo has been an innovator in safety for

over fifty years, and we'll continue to do our part. But we need your help. Please remember to put your children in the back seat, and buckle them up.

Volvo has some very specific recommendations:

- Always wear your seat belt.
- Airbags are a SUPPLEMENTAL safety device which, when used with a three-point seat belt can help reduce serious injuries during certain types of accidents[1].
- Volvo strongly recommends that ALL children sit in the rear seat of any vehicle and that they be properly restrained.
- A child should NEVER sit in the front passenger seat of any vehicle equipped with a passenger-side front airbag.
- Volvo recommends that ALL occupants (adults and children) shorter than four feet seven inches (140 cm) be seated in the back seat of any vehicle with a front passenger side airbag.

Drive safely!

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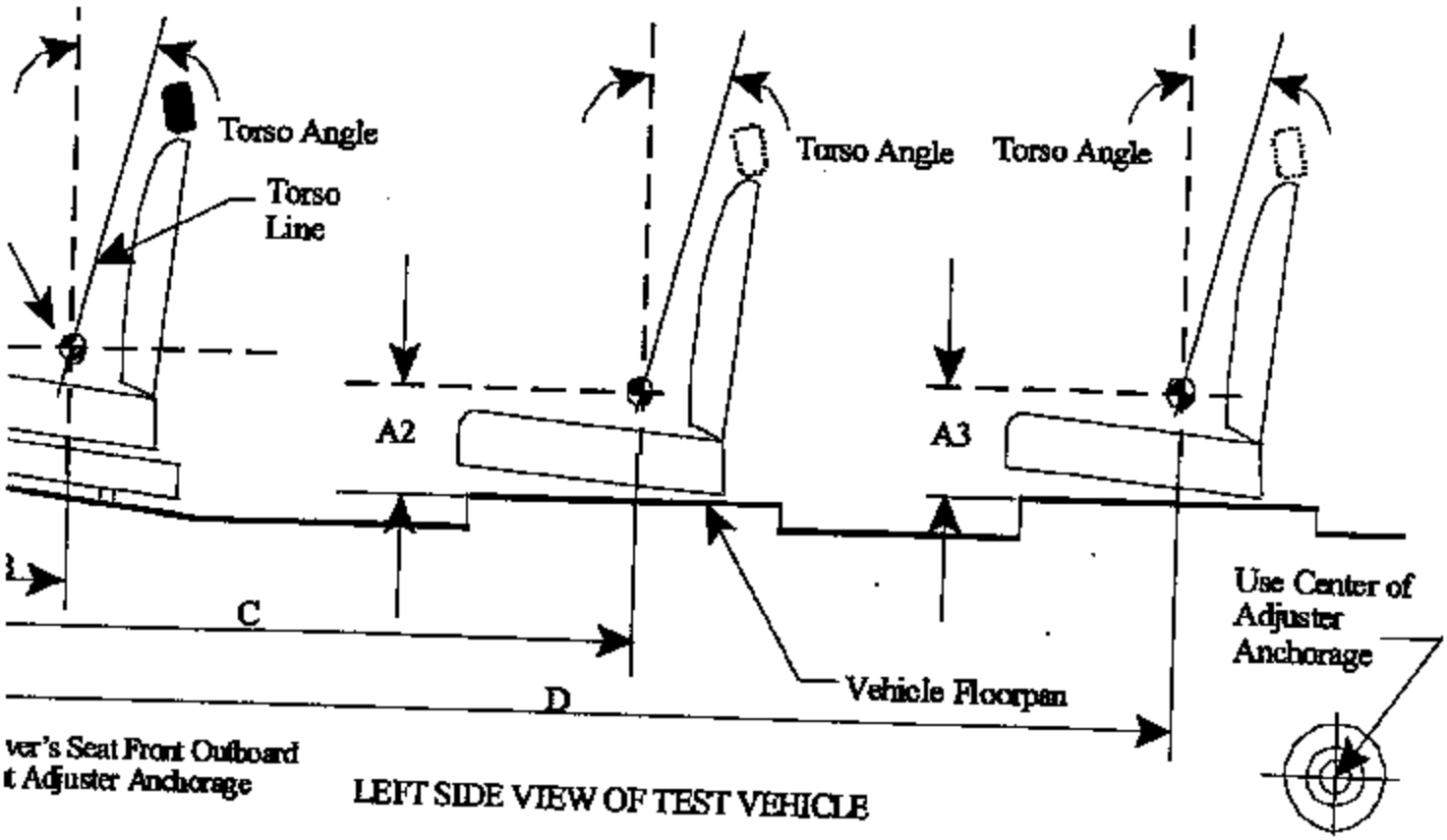
1. If a child is to be seated in the front passenger's seat, please refer to the information in the section "Disabling the passenger's side airbag" on page 19.

APPENDIX B

MANUFACTURER'S DATA

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

)5 ; Make: VOLVO ; Model: S40 ; Body Style: SEDAN
'ront row: Adjustable ; Second row: Fixed ; Third row: N/A



ver's Seat Front Outboard
t Adjuster Anchorage

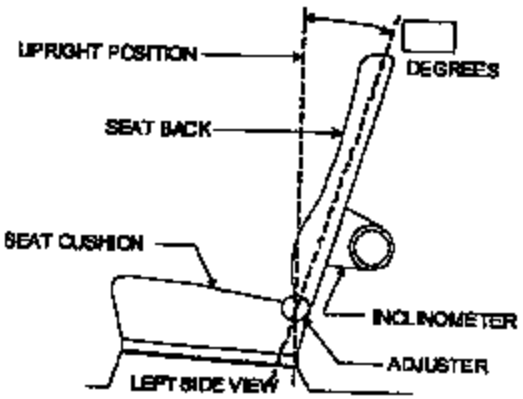
LEFT SIDE VIEW OF TEST VEHICLE

Table 1. Seating Positions[1] and Torso Angles

		Left (Driver Side)	Center (if any)	Right
A1		(Driver)214.5	N/A	(Front Passenger)214.5
A2		229.5	249.5	229.5
A3		N/A	N/A	N/A
B		375.4	N/A	375.4
C		1160.6	1120.6	1160.6
D		N/A	N/A	N/A
rso gle ree)	Front Row	25	N/A	25
	Second Row	28	28	28
	Third Row	N/A	N/A	N/A

nsions are in mm. If not, provide the unit used.

NOMINAL DESIGN RIDING POSITION – For adjustable driver, passenger, 2nd row and 3rd row seat backs, describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent if applicable. Indicate if applicable, how the detents are numbered (Is the first detent "0"or "1"?). Indicate if the seat back angle is measured with the dummy in the seat.



Seat back angle for driver's seat = 20 degrees
Measurement Instructions:
Measure line at center of the back of the Crash pad as shown in the picture no. 1. Put levellingboard against center of the back of the Crash pad and put inclinometer against the levellingboard and adjust the angle.

Seat back angle for passenger's seat = ___ degrees
Measurement Instructions:

N/A

Seat back angle for 2nd row seat = ___degrees
Measurement Instructions:

N/A

Seat back angle for 3rd row seat = ___ degrees
Measurement Instructions:

N/A

SEATING REFERENCE POINT
FOR FMVSS 225
(All dimensions in mm)
:: The Child Restraint Anchorage Location determines the 225 SRP locations)

VOLVO ; Model: S40 ; Body Style: SEDAN
stable ; Second row: Fixed ; Third row: N/A

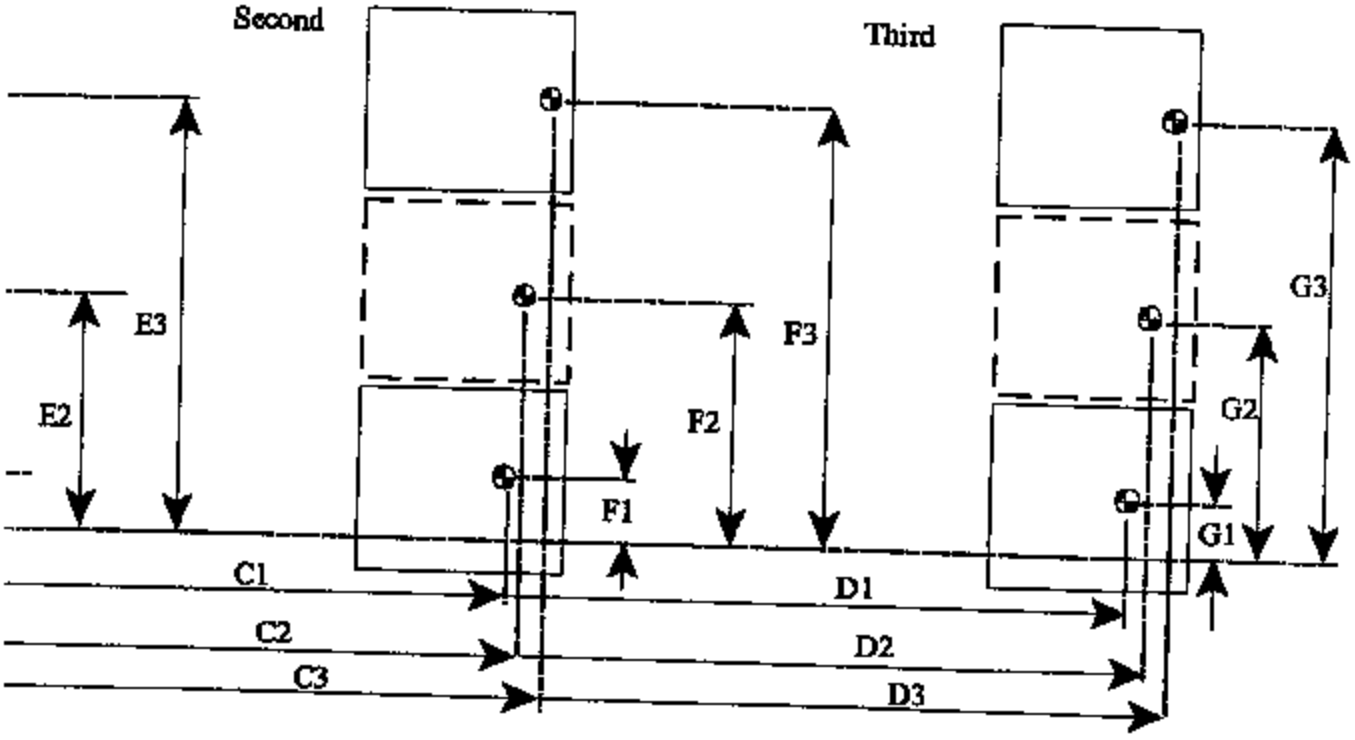
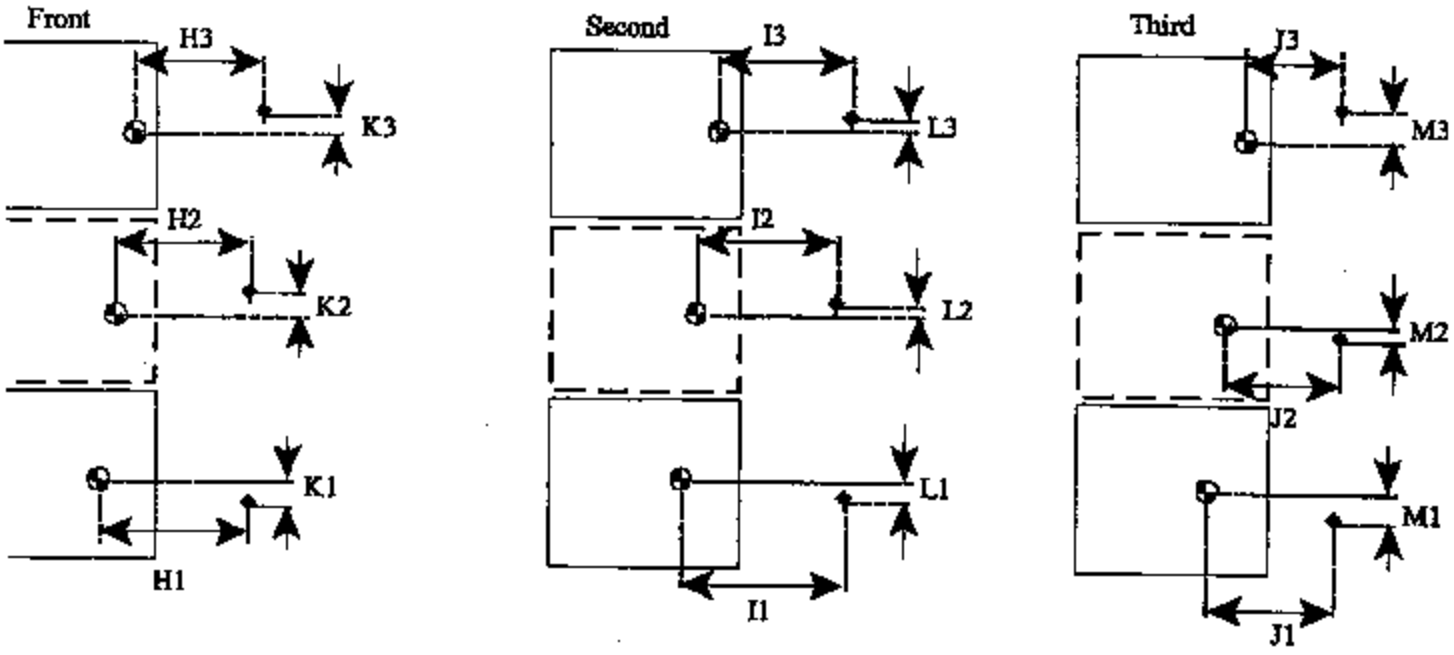


Table 2. Seating Reference Point and Tether Anchorage Locations

Seating Reference Point (SRP)		Distance from Driver's front outboard seat adjuster anchorage[1]
Front Row	B1	375.4
	E1	171.0
	B2	N/A
	E2	N/A
	B3	375.4
	E3	891.0
Second Row	C1	1160.6
	F1	181.0
	C2	1120.6
	F2	531.0
	C3	1160.6
	F3	881.0
Third Row	D1	N/A
	G1	N/A
	D2	N/A
	G2	N/A
	D3	N/A
	G3	N/A

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

2005 ; Make: VOLVO ; Model: S40 ; Body Style: SEDAN
Front row: Adjustable ; Second row: Fixed ; Third row: N/A



horage

location shall be measured at the center of anchorage.

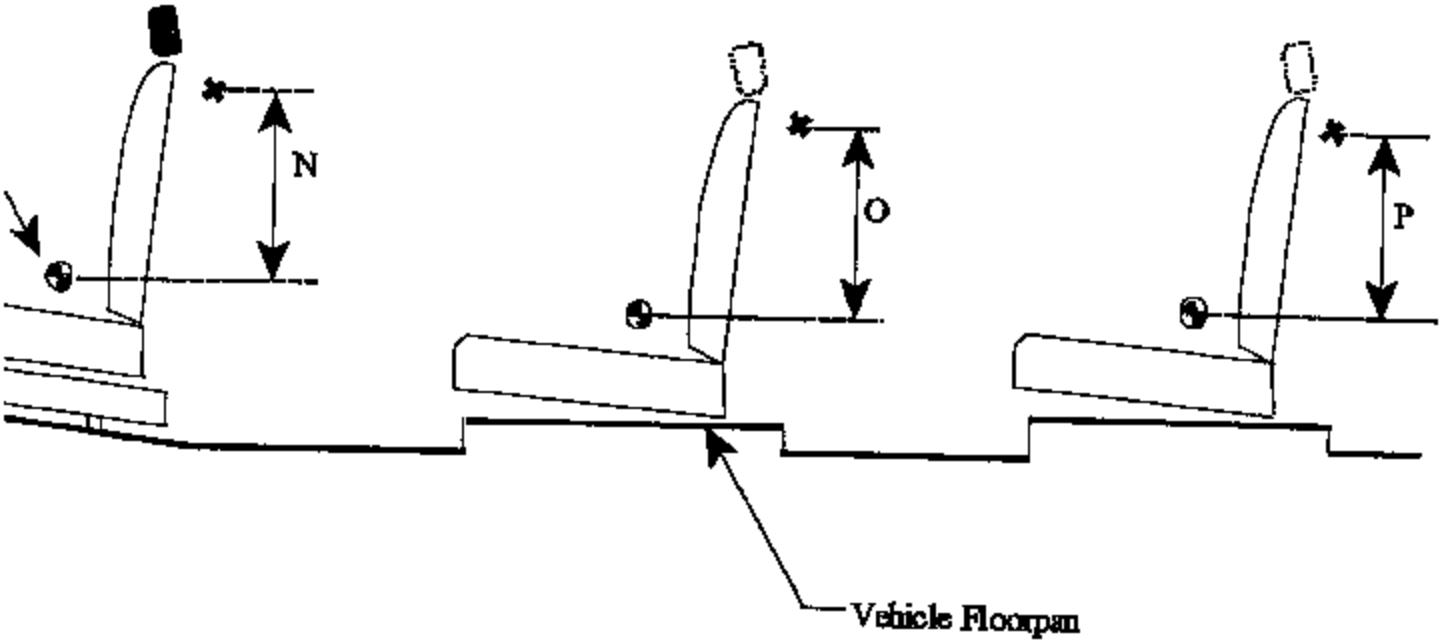
Table 3. Seating Reference Point and Tether Anchorage Locations

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	327
	L1	10
	I2	367
	L2	0
	I3	327
	L3	10
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.

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

5 ; Make: VOLVO ; Model: S40 ; Body Style: SEDAN
ont row: Adjustable ; Second row: Fixed ; Third row: N/A



LEFT SIDE VIEW OF TEST VEHICLE

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)	218.5
	O2 (Center)	198.5
	O3 (Right)	218.5
Third Row	P1 (Left)	N/A
	P2 (Center)	N/A
	P3 (Right)	N/A

1. All dimensions are in mm. If not, provide the unit anchorage.

Test Procedures Used for Compliance Tests

Lower Anchorages

For each seating location in each row record applicable FMVSS Section		FMVSS 225 Section(s)			
Block 1		Lower anchorage location certification method used (Enter applicable section used in block 1 of each position by circling A or B) **A) 9.2.1** or B) 15.1.2.2			
Block 2		Lower anchorage dimension (Enter applicable section used in block 2 by circling A or B) **A) 9.1.1** or B) 15.1.2.2 (also provide roll and yaw angles) pitch_____° roll _____° yaw_____°			
Block 3		Lower anchorage marking (Enter applicable section used in block 3 by circling A or B) **A) 9.5** or B) 15.4			
Block 4		Strength requirement (Enter applicable section used in block 4 by circling A or B) **A) Section 9** or B) Section 15			
Front **N/A** **N/A**	Driver	N/A			
	Center (if any)	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B
	Right (if any)	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B
Second **N/A**	Left	Block 1 **A** B	Block 2 **A** B **Pitch 18°, Roll 0°, Yaw 0°**	Block 3 **A** B	Block 4 **A** B
	Center	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B
	Right (if any)	Block 1 **A** B	Block 2 **A** B **Pitch 18°, Roll 0°, Yaw 0°**	Block 3 **A** B	Block 4 **A** B
N/A	Left	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B
Third **N/A**	Center	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B
N/A	Right	Block 1	Block 2 A B	Block 3	Block 4

Test Procedures Used for Compliance Tests

Tether Anchorages

For each seating location in each row record applicable FMVSS Section		FMVSS Section(s) - Req.		
Block 1		Tether anchorage location certification method used (Enter applicable section used in block 1 by circling A, B, C, D, E or F) **A) 6.2.1** B) 6.2.1.1 C) 6.2.1.2 D) 6.2.2 E) 6.2.2.1 F) 6.2.2.2		
Block 2		Number or tether anchorages based upon the applicable section (Enter applicable section used in block 2 by circling A or B) **A) 4.4** B) 4.5		
Block 3		Tether anchorage strength requirement (Enter applicable section used in block 3 by circling A, B, or C) **A) 6.3.1** B) 6.3.2 C) 6.3.4		
N/A	Driver	N/A		
Front	Center (if any)	Block 1 A B C D E F	Block 2 A B	Block 3 A B C
N/A	Right (if any)	Block 1 A B C D E F	Block 2 A B	Block 3 A B C
Second	Left	Block 1 **A** B C D E F	Block 2 **A** B	Block 3 **A** B C
	Center	Block 1 **A** B C D E F	Block 2 **A** B	Block 3 **A** B C
	Right	Block 1 **A** B C D E F	Block 2 **A** B	Block 3 A B C

APPENDIX C

LABORATORY NOTICE OF TEST FAILURE

LABORATORY NOTICE OF TEST FAILURE TO OVSC

FMVSS NO.: 225 TEST DATE: 09/08/05

LABORATORY: General Testing Laboratories, Inc.

CONTRACT NO.: DTNH22-02-D-01043 ; DELV. ORDER NO.:

LABORATORY PROJECT ENGINEER'S NAME: Grant Farrand

TEST VEHICLE MAKE/MODEL/BODY STYLE: 2005 Volvo S40

VEHICLE NHTSA NO.: C55900 ; VIN: YV1MS382152051631

VEHICLE MODEL YEAR: 2005 ; BUILD DATE: 06/04

TEST FAILURE DESCRIPTION: Owner's Manual doesn't provide step by step instructions for attaching a tether strap

S225 REQUIREMENT, PARAGRAPH S12.(c) :Include instructions that provide a step by step procedure, including diagrams, for properly attaching a child restraint system's tether strap to the tether anchorage.

NOTIFICATION TO NHTSA (COTR): Amanda Prescott

DATE: 09/08/05 BY: Grant Farrand

REMARKS: