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Foreword

The descriptions and service procedures contained in this manual are based on designs and methods studies carried out up to April 2001.

The products are under continuous development. Vehicles and components produced after the above date may therefore have different specifications and repair methods. When this is believed to have a significant bearing on this manual, supplementary service bulletins will be issued to cover the changes.

The new edition of this manual will update the changes.

In service procedures where the title incorporates an operation number, this is a reference to an S.R.T. (Standard Repair Time).

Service procedures which do not include an operation number in the title are for general information and no reference is made to an S.R.T.

The following levels of observations, cautions and warnings are used in this Service Documentation:

Note: Indicates a procedure, practice, or condition that must be followed in order to have the vehicle or component function in the manner intended.

Caution: Indicates an unsafe practice where damage to the product could occur.

Warning: Indicates an unsafe practice where personal injury or severe damage to the product could occur.

Danger: Indicates an unsafe practice where serious personal injury or death could occur.

Volvo Trucks North America, Inc.
Greensboro, NC USA

Order number: PV776-TSP144851

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Contents

General 3
SRS Airbag, Safety Belts and Bunk Restraints 3

Specifications 5
SRS Components, Torque Values 5
Safety Belts and Bunk Restraints, Torque Values 5

Tools 7
Special Tools 7
Other Special Equipment 8

Design and Function 9
Safety Belts and Bunk Restraints 9
Supplemental Restraint System (SRS) 10
System Overview 10
Supplemental Restraint System (SRS) Components 11
SRS Control Unit (ECU) 11
Control Unit Connector 12
Airbag Module 13
Airbag Module Connector 14
Contact Reel 14
SRS Indicators (vehicles built prior to 3/99) 15
SRS Indicators (vehicles built from 3/99) 16
Diagnostic System with Fault Codes 17
SRS Wiring Harness 17
Supplemental Restraint System (SRS) Wiring Diagram 18

Troubleshooting 21
General Work Practices 21
Test Resistor, Checking 21
Connecting the Test Resistor 22
Reading Fault Codes 23
MID 232 SID 254 FMI 12 Airbag Control Unit, Component Failure 30
MID 232 SID 1 FMI 6 Igniter Loop, Current High/Short Circuit 31
MID 232 SID 1 FMI 5 Igniter Loop, Current Low/Open Circuit 35
MID 232 SID 1 FMI 4/3 Igniter Loop, Voltage Shorted Low/High 39
MID 232 SID 240 FMI 14 SRS Airbag, Crash Data Stored 43
Faults Which Do Not Generate a Fault Code 44
SRS Lamp Does not Light 44
SRS Lamp Does not Light and “Not Responding” Message in Diagnostic Display 44
The SRS Lamp is Lighting but no Fault Code is Stored 45
Routines for a Damaged/Faulty Airbag Module 46
Safety Belts and Bunk Restraints, Inspection 47

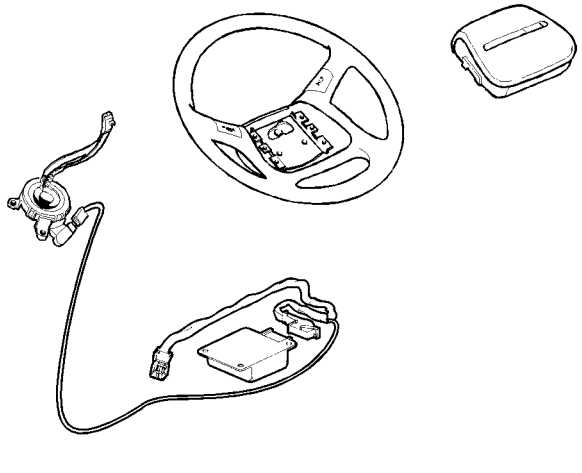
Service Procedures 51
General Work Practices 51
After the Airbag Deploys 51
Airbag Module/Contact Reel, Replacement 52
SRS ECU, Replacement 57
SRS Wiring Harness, Replacement 59
Safety Belt, Replacement (One) 63
National Seat 63
Safety Belt, Replacement (One) 65
Volvo Seat 65
Lower Bunk Restraint, Replacement 68
VN 420/610/660 68
Lower Bunk Restraint, Replacement 70
VN 770 70
Upper Bunk Restraint, Replacement 72
VN 610/660 72
Upper Bunk Restraint, Replacement 75
VN 770 75

Feedback

Operation Numbers

General

SRS Airbag, Safety Belts and Bunk Restraints



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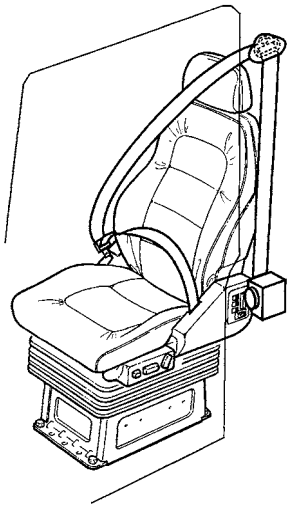
SRS Airbag



W8001834

Safety Belt

This publication contains service information about the safety belts, bunk restraints and supplemental restraint system. It is intended for use by service technicians who have attended and received certification in the Volvo Truck Supplemental Restraint System class (88A). The service procedures and fault tracing instructions may only be carried out by certified technicians. Volvo Trucks North America, Inc. will not assume any liability whatsoever for damage incurred, either damage to materials or personal injury, which may result if the service procedures are not followed or if the work is carried out by non-certified personnel.

Specifications

SRS Components, Torque Values

Airbag module	10 ± 2 Nm	89 ± 18 in-lb
Contact reel	5 ± 0.8 Nm	44 in-lb
Control unit	10 ± 2 Nm	89 ± 18 in-lb
Control unit cover	10 ± 2 Nm	89 ± 18 in-lb

Safety Belts and Bunk Restraints, Torque Values

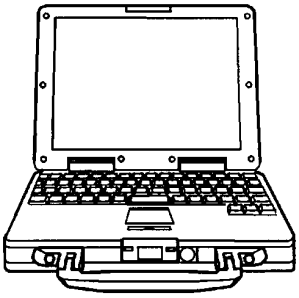
Steering wheel center bolt	85 ± 15 Nm	63 ± 11 ft-lb
Steering column covers	5 ± 0.8 Nm	44 ± 7 in-lb
Safety belt, National seat	68 ± 7 Nm	50 ± 5 ft-lb
Safety belt, Volvo seat	50 ± 10 Nm	37 ± 7 ft-lb
Bunk restraints, floor, roof and rear wall	68 ± 7 Nm	50 ± 5 ft-lb
Bunk restraints, side wall	24 ± 4 Nm	212 ± 35 in-lb

Tools

Special Tools

The following tools are required when working on the SRS. They are available from Volvo.

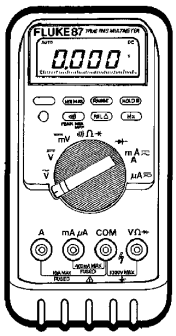
9988695
SRS Test Resistor



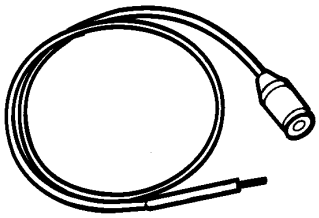
VCADS Pro
Diagnostic Tool

Other Special Equipment

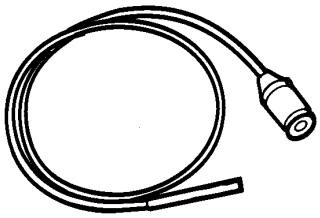
The following tools may be required when working on the SRS. Tools beginning with a J- number are available from Kent-Moore at 1–800–328–6657.



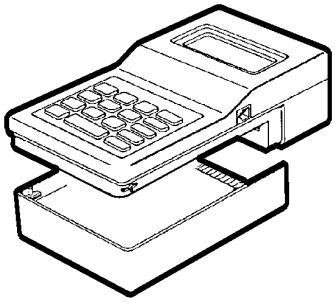
J-39200
Fluke 87
Digital Multimeter



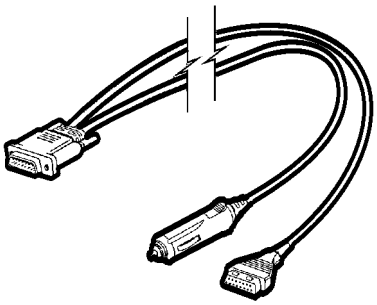
J-42449-1
Terminal Probe



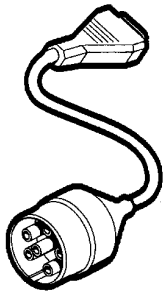
J-42449-2
Terminal Probe



J-38500-1
J-38500-2000
Pro-link 9000 and
Volvo Data Cartridge



J-38500-2
Power/Data Cable
for Pro-link



J-38500-60A
Diagnostic Adaptor Cable
for Pro-link

Design and Function

Safety Belts and Bunk Restraints

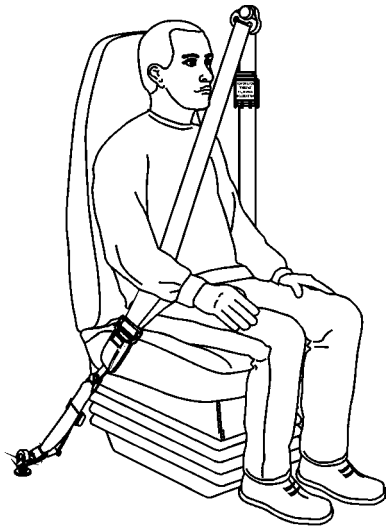
The seat safety belts and bunk restraints are the principal safety device used in the vehicle. The safety belts/bunk restraints must be worn at all times if the vehicle is in motion, even if the vehicle is equipped with a SRS system (airbag). Instructions on proper safety belt/bunk restraint use can be found in the operator's manual.

Safety belt assemblies meet FMVSS 209, Type 1 and Type 2 requirements. They are recommended for all persons weighing over 25 kg (50 lb).

A child restraint system should be used for each child weighing 25 kg (50 lb) or less. It should meet the requirements of FMVSS 213 "Child Restraint System." Carefully read and follow all manufacturer's instructions on installation and use. Make certain the child remains in the restraint system at all times while the vehicle is in motion.

DANGER

Safety belts must be properly worn at all times by the driver and all passengers while the vehicle is in motion even if the vehicle is equipped with a Supplemental Restraint System (SRS or airbag). Failure to do so can result in serious personal injury or death in the event of a collision.



W8001402

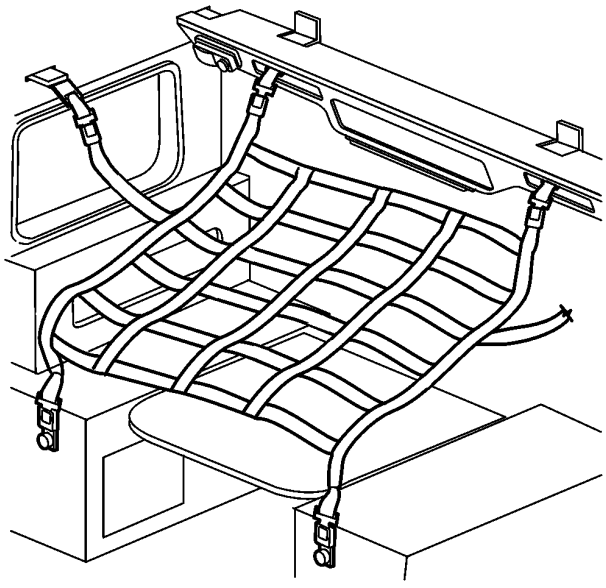
Safety Belt

The high mileage associated with heavy trucks, the continual relative movement of the seat with the cab, the possible contact with the vehicle seat or other parts of the cab structure make it crucial to inspect the safety belt system regularly.

See "Safety Belts and Bunk Restraints, Inspection" page 47 for inspection instructions.

DANGER

It is critical that any time a vehicle has been involved in an accident, the safety belt system in use at the time of the accident must be replaced, including the sleeper bunk restraints if they were in use at the time of the accident. Failure to replace the safety belt system may result in serious injury or death. See the Operator's Manual for correct safety belt usage.



W8002901

Bunk Restraint

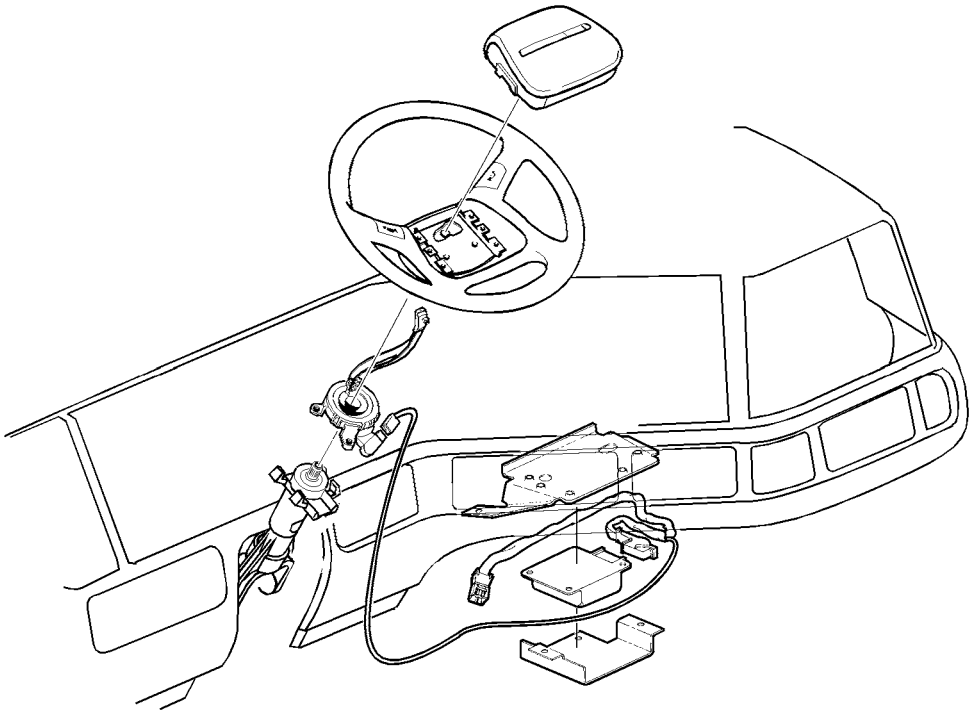
If it is determined that the safety belts/bunk restraints need to be replaced, only Volvo replacement parts should be used. Additionally, if one part of the safety belt or bunk restraint is found to need replacement, the entire assembly must be replaced. See Service Procedures for replacement instructions.

Supplemental Restraint System (SRS)

System Overview

The SRS is **supplemental protection** for use together with the safety belt.

The SRS is designed to reduce the risk of injury to the driver's face and upper body. Together with the safety belt, the bag helps to prevent the driver from being thrown against the steering wheel, windshield, and other hard surfaces in the cab.



W8001291

How SRS Works

The system consists of an inflatable bag mounted in the center of the steering wheel, and a control unit mounted on the bulkhead inside the cab. A chemical based gas generator attached to the rear of the bag inflates the bag in the event of a collision.

Sensors in the control unit detect rapid deceleration. If the control unit detects a sufficiently violent deceleration (collision), the system is activated. The gas generator activates and fills the bag with a harmless gas within a few hundredths of a second. During a collision, after the bag has been filled, the gas flows out through two holes in the back of the bag. These holes are large enough to let the airbag collapse slowly, gently catching the driver.

The control unit also contains a standby power unit which can supply the system with power for a short time should the normal power supply be broken.

Types of Collision

The Volvo SRS airbag provides increased protection in frontal collisions, where the truck collides with a fixed or heavy object with enough force for the sensors to activate the gas generator, which deploys the bag. The damage to the truck is not always proportional to whether the SRS airbag deploys or not.

The SRS airbag is **not** designed to be activated when the

- collision is from the sides
- collision is from the rear
- accident is a roll-over
- collision is at low speed or against soft objects such as bushes, snow drifts etc.

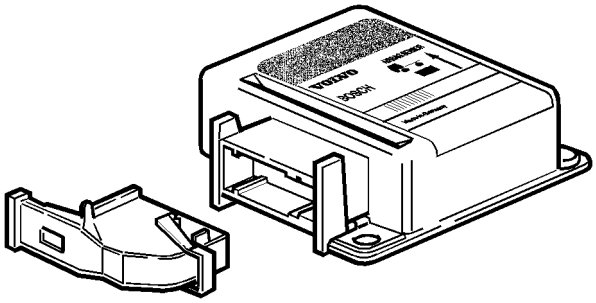
This means that the safety belt must always be used. The SRS airbag only provides supplemental protection.

Supplemental Restraint System (SRS) Components

SRS Control Unit (ECU)

The Control Unit Contains:

- two deceleration (piezo-electrical) sensors which sense the deceleration/collision. They detect a combination of the magnitude of the G-forces and the duration. In order for the control unit to activate the system, it requires both a high G-force and a prolonged deceleration (collision).
- microprocessors for evaluating the signals from two deceleration sensors and controlling the deployment of the airbag module.
- memory function, which stores information concerning possible faults in the system even after the voltage has been broken (this facilitates fault tracing).



T8006850

SRS control unit

Control Unit Function

If the control unit determines the force and duration of a collision is sufficient to activate the system, it activates the electrical igniter, which activates the gas generator, filling the airbag with a harmless gas, and deploying the bag.

The impulses sent by the control unit to deploy the airbag module are in the form of AC voltage signals. Capacitors in the airbag module connector allow these pulsating signals to pass through, but block DC voltage signals and static discharge.

For the control unit to function correctly, it is important that it is securely attached to the truck cab, otherwise it does not register the time from the beginning of the collision but instead from the moment when the control unit itself begins to decelerate.

Standby Mode

The control unit contains a standby power unit. This stores sufficient power so that the system functions even if voltage from the battery is broken (or too low: under 8.5 volts). The SRS indicator on the dash will illuminate at 7 volts. The power is stored **for a few seconds** after the voltage has been broken. The power is sufficient to trigger the igniter for less than 1 second in the event of a collision where the battery function has been broken.

The control unit will also go into standby mode if the voltage from the battery is too high (over 36 volts-see note[1]); the control unit will still try to operate to full capacity. As soon as the voltage is correct, the SRS indicators will go out and the system will function normally.

[1]The SRS ECU will operate at up to 36 volts, but other systems in the vehicle should never be exposed to voltages that high.

Control Unit Ground Connection

The control unit's ground connection is a direct ground to the SRS mounting plate, to which the SRS ECU is mounted with 3 bolts. One of the 3 bolts is attached to a ground strap which case-grounds the ECU to the plate. There should be no particles of dirt between the control unit and the mounting plate. The mounting plate is grounded to the cab body.

When replacing or installing a new SRS control unit be sure the unit is mounted properly, as shown in "SRS ECU, Replacement" page 57.

Control Unit Connector

CAUTION

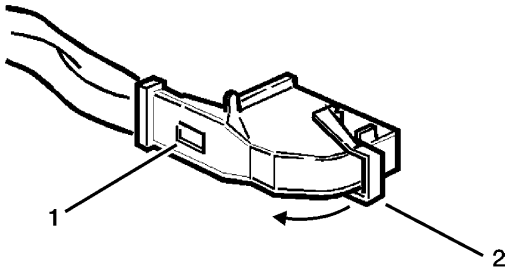
Avoid touching any of the control unit connector pins when the connector has been disconnected. Risk for electrostatic discharge, which can damage the control unit.

The control unit connector is located on the SRS wiring harness. It is a 90° angled connector that connects the wiring harness to the SRS control unit. It is equipped with a locking arm.

Before disconnecting the ECU connector, wait at least 3 seconds after voltage is removed to make certain power has discharged completely.

To disconnect the wiring harness from the control unit the locking arm (2) must be pulled back from its locked position at the locking tab, (1) and pushed back to the unlocked position, shown in the illustration. This also pushes the connector out of the socket on the control unit. Then pull gently on the connector until it comes completely out of the control unit.

To reconnect the wiring harness, carefully insert the connector into the control unit and push the locking arm back over the connector towards the locking tab (1). The latch will lock in place.



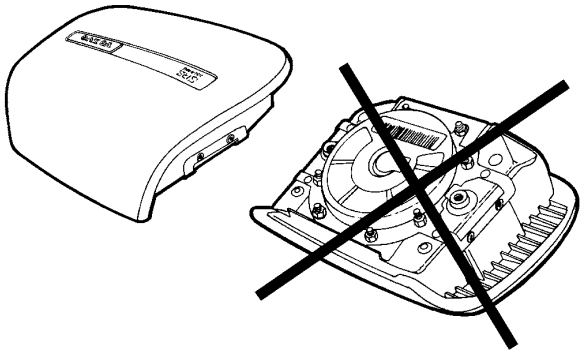
1) Locking tab
2) Locking arm shown in unlocked position. To lock, move arm in direction of arrow, to the locking tab.

Airbag Module

The airbag module should be replaced every 10 years to maintain reliability. See “Airbag Module/Contact Reel, Replacement” page 52.

DANGER

Personal injury risk. Always store a non-deployed airbag module with the metal (underneath) side down and in a place where it will not be handled carelessly. This is to reduce the chances of the airbag being ejected from its storage position if accidentally deployed, which could cause serious personal injury or death.



W8001294

Airbag Module Function

The Airbag Module Contains:

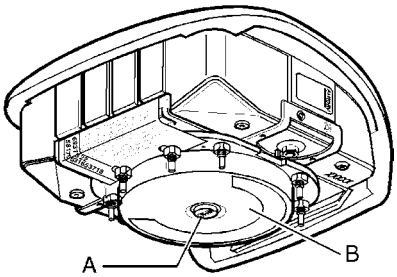
- an electric ignition device (igniter)
- gas generator
- inflatable bag

In the event of a collision that is of a high enough G-force and duration, the control unit sends electrical impulses to the **electric igniter** (A) which activates the gas generator.

The **gas generator** (B) in the airbag module is an enclosed unit which is filled with a propellant which forms a harmless gas. When the gas generator is activated, the airbag is very quickly filled by the gas.

The **airbag** is folded up and lies above the gas generator. A fully inflated bag has a volume of approximately 67 liters.

The airbag is made from a strong polyamide weave with two evacuation holes. The ventilation through the evacuation holes allows the bag to collapse at a suitable speed that retards the forward movement of the driver.



W8001292

Airbag module

A Electric igniter
B Gas generator

DANGER

An airbag module must never be taken apart. Attempting to take apart an airbag module which has not been deployed could deploy the airbag, causing serious personal injury or death.

WARNING

Attempting to take apart an airbag module which has been deployed could cause chemical burns or skin irritation.

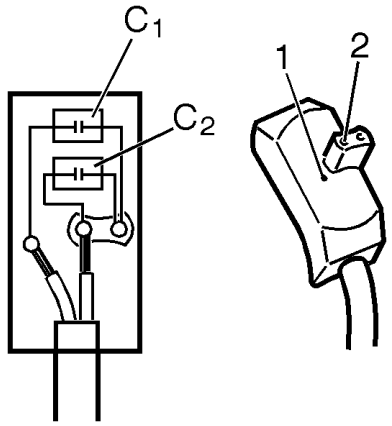
Airbag Module Connector

The airbag module connector has two built in capacitors. C1 blocks DC voltage and prevents the igniter from igniting through static electricity or through careless handling of current. C2 prevents the igniter from activating due to unintentional high-frequency disturbances.

Resistance cannot be measured on the circuit as the capacitor blocks measurement. There is a service hole (1) in the connector to facilitate fault tracing.

Testing the Cable from the Airbag Module Connector

- Place two small steel pins (for example needles, max. diameter 1 mm) in the service hole (1) and in the connector pin (2) **nearest** the service hole and perform the measurements on these. Normal resistance is 45–50 kΩ.



T8006860

Airbag module connector

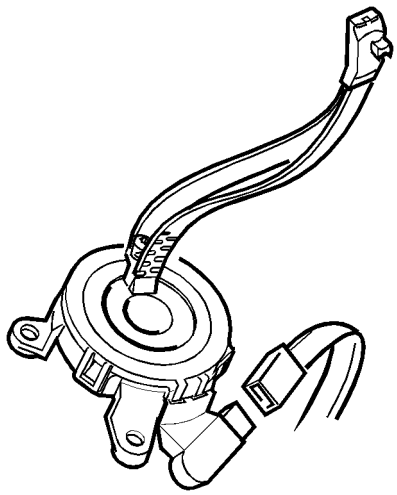
Contact Reel

The **contact reel** completes the connection between the wire harness and the airbag module on the steering wheel. The contact reel is made up of a coiled ribbon cable which makes it possible for the airbag module connector to follow the rotation of the steering wheel. The other cable provides the connection to the control unit.

There are two rings on the contact reel for the horn slip contacts.

CAUTION

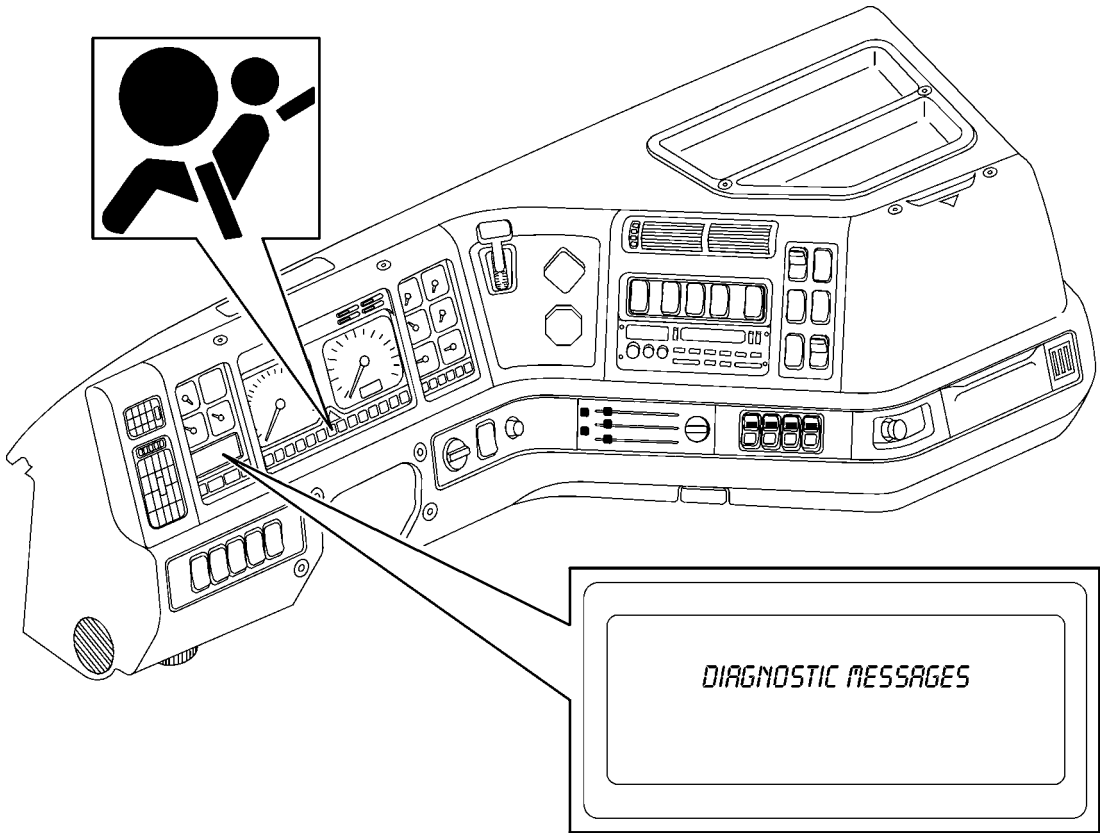
Avoid turning the contact reel more than 3 turns either direction from the centered position. This can damage the contact reel.



T8006881

Contact reel

SRS Indicators (vehicles built prior to 3/99)



SRS indicator lamp and graphic display

SRS Indicator Lamp, prior to 3/99

The SRS system is continuously monitored by microprocessors in the control unit. If a fault occurs, this is stored in the memory as an active fault code. At the same time, the SRS indicator lamp in the instrument cluster is activated.

When the ignition key is turned ON, the SRS indicator lamp lights together with the other lamps in the instrument cluster and goes out after 10 seconds.

If the SRS indicator lamp does not go out as described above, or lights up during driving, there is an active fault in the SRS system (see *Troubleshooting*).

When the control unit detects a fault, the SRS indicator lamp lights until the fault is repaired and the inactive fault code cleared.

Graphic Display, prior to 3/99

The instrument cluster is equipped with an LCD display that is located to the left of the steering column. This Graphic Display is used to display messages and faults from the various electronic control units and components on the truck.

During normal operation, the SRS indicator lamp in the instrument cluster will illuminate for 10 seconds after ignition. The lamp will go out if the system is functioning normally.

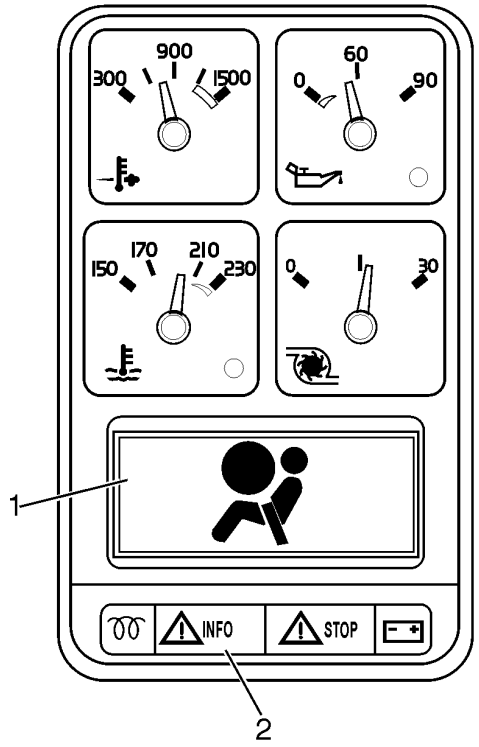
If a fault is detected in the SRS system, an active fault code will be logged into the SRS control unit. Then the SRS lamp in the instrument cluster will illuminate. The fault may be accessed by using the Graphic Display.

SRS faults will be shown in the Graphic Display as active or inactive. After repairs have been made, the fault will be shown as inactive. The SRS lamp will remain on until the fault is cleared.

SRS Indicators (vehicles built from 3/99)

Unlike the earlier instrumentation, there is no SRS indicator lamp. The SRS or airbag icon is only shown in the graphic display (1), and does not appear when the ignition key is turned on. The INFO telltale lamp (2) will illuminate at “key on” during the bulb check, along with all the other telltale bulbs in the instrument cluster.

Vehicles equipped with instrumentation built since 3/99 will display the airbag icon in the graphic display if a fault (active or inactive) is detected in the SRS system. Additionally, the INFO telltale lamp will illuminate.



W8002902

1 SRS Indicator
2 INFO Telltale Lamp

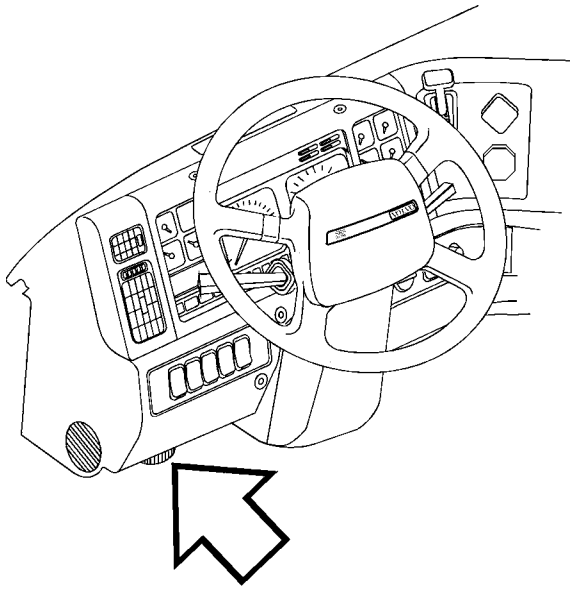
Diagnostic System with Fault Codes

The SRS control unit has a built-in diagnostic system. A microprocessor in the control unit continuously monitors the SRS system. If an active fault occurs, this is broadcast on the J1587 data link as an active fault code, and the SRS indicators in the instrument cluster are illuminated. In spite of this, the system will try to activate the airbag in the event of a collision, unless the wire to the SRS module has been damaged. If the SRS lamp remains illuminated the SRS should be repaired as soon as possible.

The fault codes can be accessed by using the graphic display in the instrument cluster, or with electronic diagnostic tools.

The diagnostic socket is located below the dash on the left hand side.

For more information, refer to *Troubleshooting*.



W8001310

Diagnostic socket

SRS Wiring Harness

The SRS wiring harness is a specially designed and manufactured cable that connects to the cab main wiring harness at one end with wires for power to the ECU, indicator lamp and data link. The other end connects to SRS control unit. From the control unit, wires are fed to the contact reel for the airbag module.

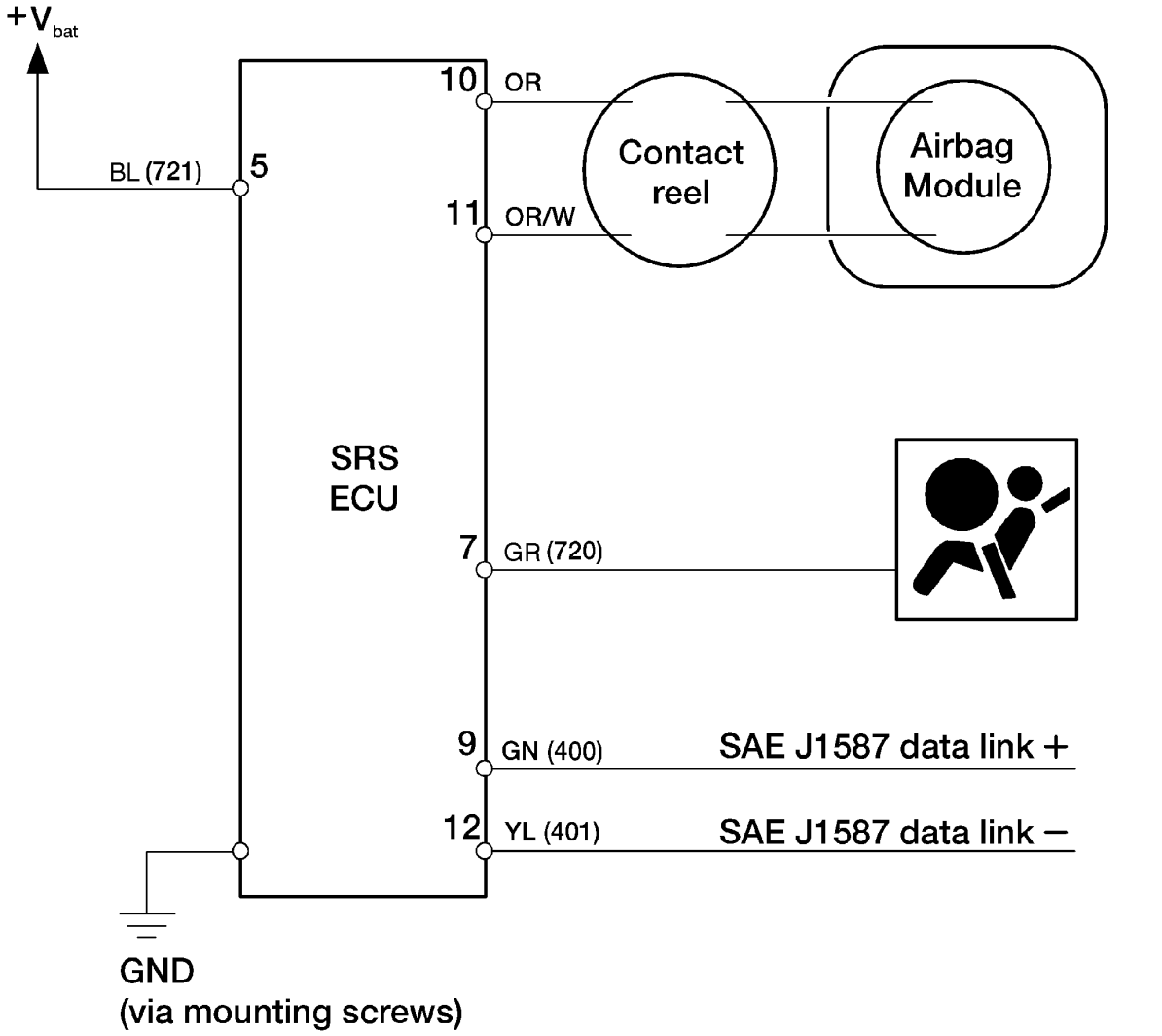
Located under the truck dash, the harness is orange in color for easy identification.

The SRS wire harness must **never** be repaired or spliced. With a faulty harness, breakage or short circuiting, it must be replaced with a new harness. Otherwise, the system may not function correctly.

See “SRS Wiring Harness, Replacement” page 59.

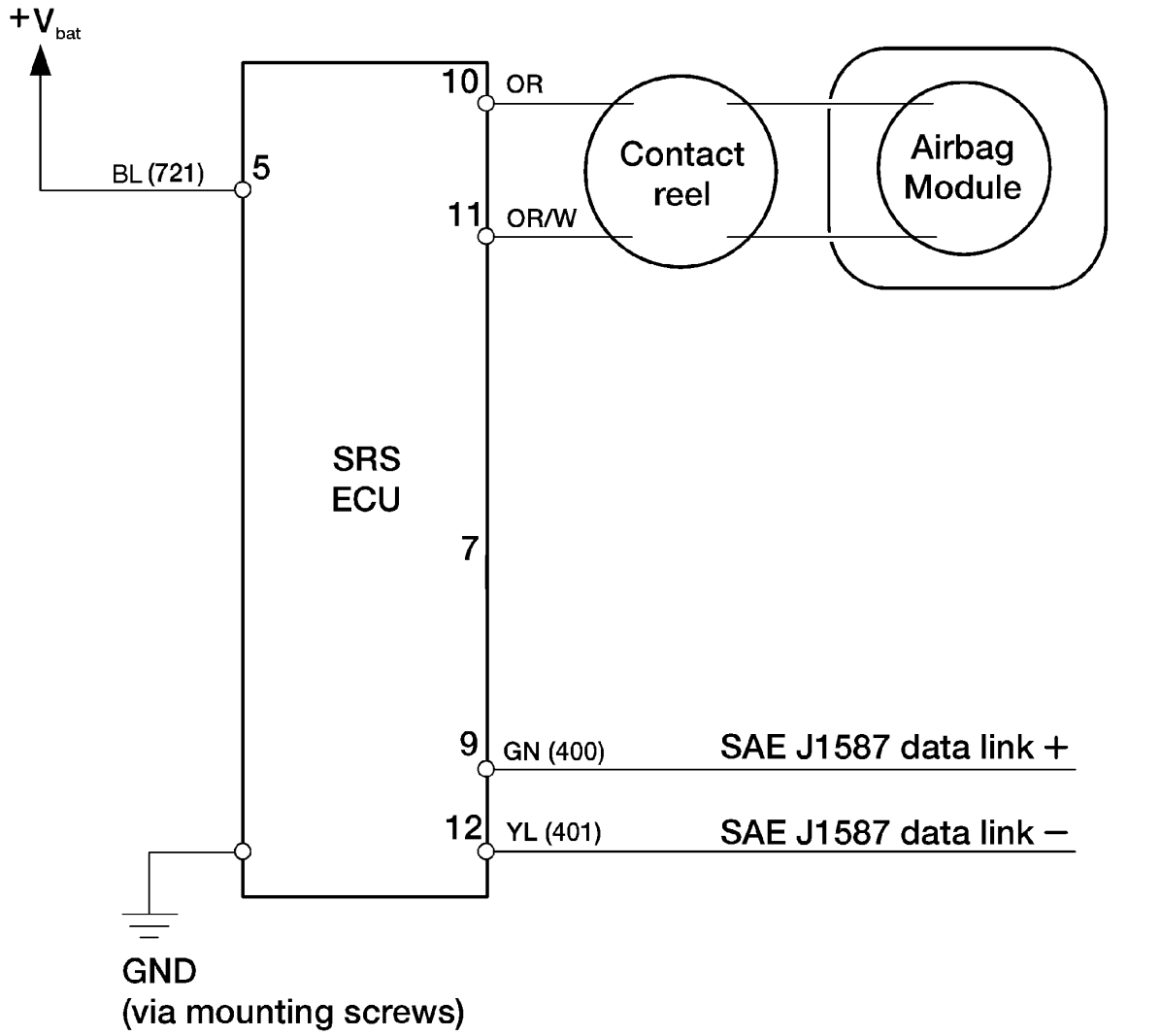
Supplemental Restraint System (SRS) Wiring Diagram

Wiring Diagram (vehicles built prior to 3/99)



Note: Numbers in parentheses are circuit numbers printed on the wire insulation.

Wiring Diagram (vehicles built from 3/99)



W8002904

Note: Numbers in parentheses are circuit numbers printed on the wire insulation.

Troubleshooting

General Work Practices

Unless otherwise stated, the ignition key should be in the OFF position during troubleshooting.

Damaged wires or connectors in the SRS system must never be repaired, spliced or partially replaced. When a fault is noted and localized to a certain connector or wire harness, the complete harness must be changed.

⚠ WARNING

The white powder residue from a deployed airbag can be an irritant to skin and tissue. To avoid injury wear gloves and a dust mask when handling a deployed module, and avoid getting this white powder in eyes or on skin. If skin irritation occurs, immediately flush the skin with water. Seek medical attention if irritation continues.

Test Resistor, Checking

When fault tracing and checking the SRS system, it is important that there is no fault on the test resistor (9988695). A defective test resistor will cause the diagnostic system to give false readings and will make fault tracing and checking more difficult.

To be sure that there is no fault in the test resistor, it should always be checked using an ohmmeter before it is used.

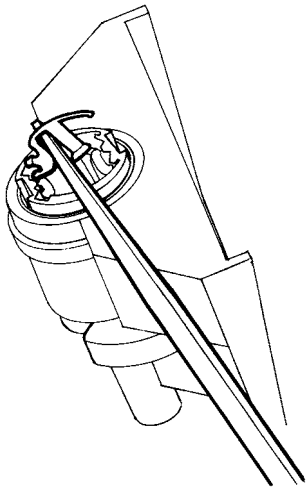
Removing the Short-Circuit Element

Before checking resistance, remove the short-circuit element between the test resistor pins as follows:

1 Wear safety glasses during this procedure.

2 Pry against the bottom edge of the element using a cotter pin puller or other sharp small diameter tool.

3 Pull the element from the resistor housing, but do not push against the resistor pins. When removing the element the retainer ring may lift; if so, push the retainer back into place.



W8001352

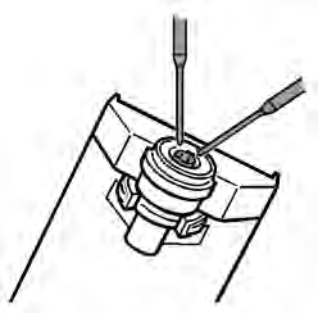
Removing the short circuit element

Measuring the Resistance

Use an ohmmeter to measure the resistance in the test resistor.
Measure over the pins as indicated in the illustration.
The ohmmeter should show between 1.8 and 2.5 Ω.

- If the Value Agrees:
  There is no fault on the test resistor.
- If the Value Deviates:

  If the ohmmeter reading deviates from the expected value, the test resistor is defective. Discard the test resistor and replace it with a new one.



T8006865

Measure the resistance

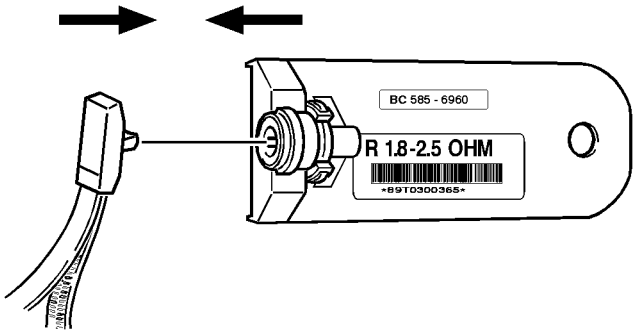
Connecting the Test Resistor

DANGER

To avoid injury, the battery must not be connected when the airbag module is being removed or installed. If the battery is connected, deployment of the airbag may occur, possibly causing personal injury or death.

Unless otherwise stated in the instructions, the test resistor (9988695) should be connected to the airbag module connector when the airbag module has been removed.

If the SRS is connected to supply voltage when an airbag module has been removed (and the test resistor is not connected), a fault will be registered which must later be erased.



T8006845

Connect the test resistor to the airbag module connector

Reading Fault Codes

Fault codes generated by the SRS control unit are displayed, read and cleared differently depending on the type of instrument cluster and electrical system that is installed in the vehicle. Vehicles built prior to 3/99 used a different instrument cluster and electrical system than vehicles built after that date. For fault code information with each type of system, see “Reading Fault Codes (vehicles built before 3/99)” page 24 or “Reading Fault Codes (vehicles built from 3/99)” page 27.

Active Faults

When a fault code is generated, there is a risk that the SRS system will not function.

The driver receives a warning that something is faulty if the SRS indicator lamp/icon comes on.

The indicator stays active until the active fault condition is repaired and the fault code cleared.

W3000982

SRS Indicator on dash

Inactive Faults

An active fault becomes inactive when the fault condition is repaired.

With an inactive fault, the fault is stored in the SRS control unit. If the fault is inactive, the dash indicator will still come on.

The dash indicator stays on until the inactive fault code is cleared.

Reading Fault Codes (vehicles built before 3/99)

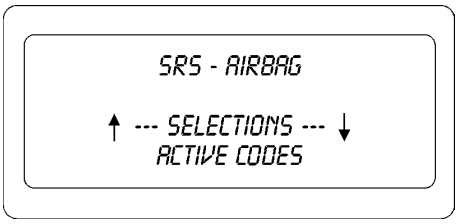
Fault codes should be read with the MPSI Pro-link 9000. The instrument cluster Graphic Display also displays fault codes. Faults may be displayed as SAE J1587 text messages or numeric codes.

Reading Fault Codes with the Pro-link 9000

1 The Pro-link 9000 with the Volvo cartridge provides easy diagnosis of faults. The Pro–link includes an adapter for connecting the Pro–link to the diagnostic socket. The diagnostic socket is located under the left side of the dash.

2 After connecting the Pro-link, turn the ignition on and follow the menus in the Pro-link to the *SRS Airbag* menu.

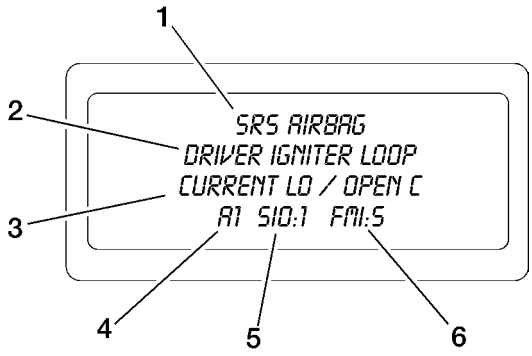
3



W8001321

After the SRS Airbag menu screen, *ECU Information* and *Diagnostics* menus may be selected. ECU Information provides hardware and software revision levels. The Diagnostics menu allows a choice of Active Codes, Inactive Codes or Clear Codes.

4



W8001324

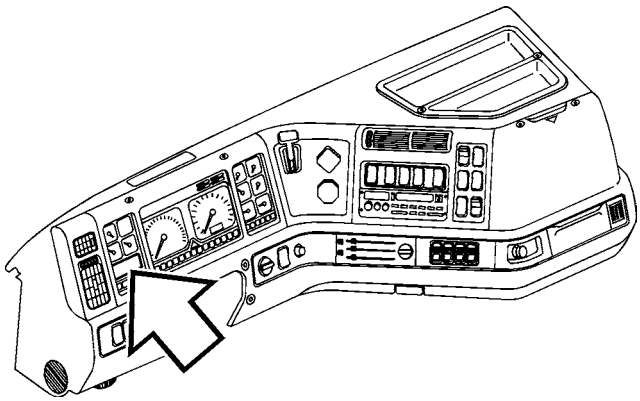
1 MID description
2 SID description
3 FMI description
4 A = Active; I = Inactive
The number following A or I represents the order in which the fault was received.
5 SAE J1587 SID fault code
6 SAE J1587 FMI fault code

Record all codes displayed.

5 To display the next stored fault code press the Down button.

6 After all faults have been repaired the display will change to *No Active Codes*. This means that the fault has become inactive and can be cleared.

Reading Fault Codes with the Graphic Display



W8001313

Graphic Display

1 Turn the ignition ON.

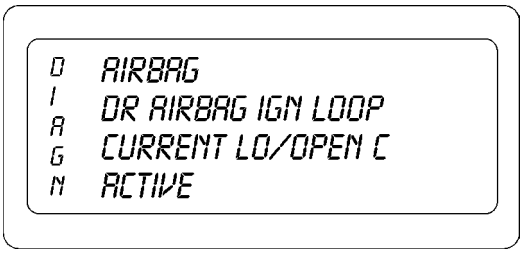
2 Press the Mode button on the instrument cluster until DIAGNOSTIC MENU is displayed in the graphic display.

3 Use the Up and Down buttons to display DIAGNOSTIC MESSAGES.

4 When DIAGNOSTIC MESSAGES is displayed, press the SET button. RECEIVING DATA, PLEASE WAIT will be displayed while the systems on the J1587 data link are polled.

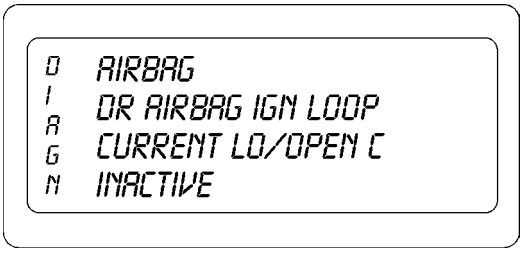
5 When the first message appears, the Set button can be pressed to toggle the display between the text description and the received data (MID, PID, SID or FMI).

a. If the condition that caused the currently displayed fault still exists, the cluster will display ACTIVE.



W8001346

b. If the condition that caused the currently displayed fault has been repaired, the cluster display will not change until the diagnostics menu is exited and entered again. If the fault has been successfully repaired, it will display INACTIVE when the diagnostic messages are displayed again.



W8001345

6 Record all codes displayed.

7 To display the next stored fault press the Down button. For more information, see:

Service information on Instrumentation in Group 38.

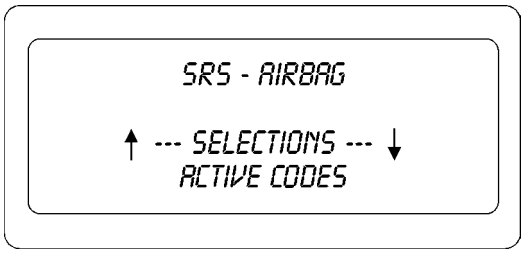
Clearing Fault Codes with a Pro-link:

Faults can be cleared with the Pro-link tool and Volvo cartridge.

All codes must be in an inactive state before clearing.

1 Connect the Pro–link to the diagnostic socket located under the left side of the dash.

2



W8001321

Turn the ignition on and follow the menus in the Pro-link to *SRS Airbag*.

3 **Important:** Record all fault codes on the workorder before they are cleared. They cannot be retrieved after clearing.

4 After the SRS Airbag menu screen, select the *Diagnostics* menu and *Clear Codes*.

5 After codes have been successfully cleared, *Codes Cleared* will be displayed on screen.

6 A final check for fault codes should be carried out after clearing codes.

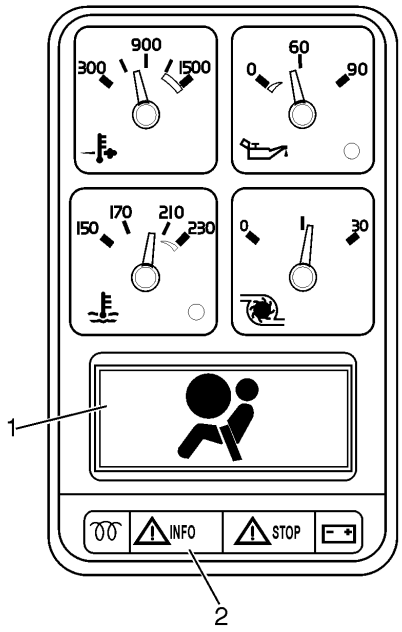
7 The indicator lamp will go out when all codes are cleared.

Note: Do not clear fault code **MID 232 SID 240 FMI 14** *Program memory, Special instructions*. This code is present after an SRS ECU has detected a crash. The SRS ECU, airbag module, contact reel, steering wheel and safety belts must be replaced after a crash. If the bunk restraint was in use, it must also be replaced.

Note: Do not clear fault code **MID 232 SID 254 FMI 12** *Controller #1, bad device*. Replace the SRS ECU (see “SRS ECU, Replacement” page 57).

Reading Fault Codes (vehicles built from 3/99)

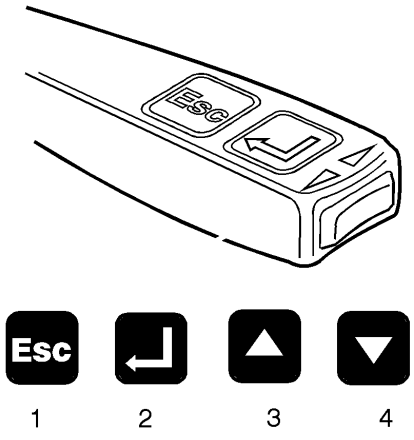
Vehicles built after 3/99 with a Volvo engine, and after 5/99 with other engines, will display the airbag icon in the graphic display (1) if a fault (active or inactive) is detected in the SRS system. The INFO telltale lamp (2) will also illuminate.



W8002902

Using the Graphic Display Control Buttons

To manually interact with the graphic display, the wiper stalk switch on the right-hand side of the steering wheel is used.



T3008810

The following commands are available:

1 “Esc” (Escape) is used to return to the previous menu and cancel a setting/operation.

2 “↵” or “Select” confirms a highlighted selection of a menu or character.

3 “Up arrow” moves the cursor up and is used when setting numerical values.

4 “Down arrow” moves the cursor down and is used when setting numerical values.

Reading Fault Codes with the Graphic Display

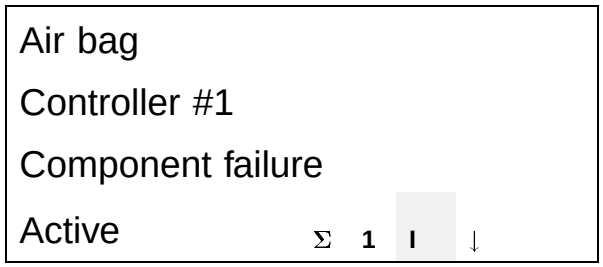
The instrument cluster Graphic Display will display fault codes. Faults may be displayed as SAE J1587 text messages or numeric codes. To check for fault codes in the SRS system:

1 Turn the key to the ON position.

2 Use the “Esc” button to access the main menu structure.

3 Select “System Diagnostic” → “Fault Diagnostic” → “Air Bag”.

4 If there is a fault code or codes the following is shown, for example:



Line 1: Identification of ECU
Line 2: Identification of parameter/component
Line 3: Identification of fault type

”Σ 1” shows how many times the fault has been registered since the last resetting. If there is no information available for how many times the fault code has been registered, only *Active* is shown (the fault remains). Or alternatively *Inactive* is shown (the fault was there previously).

The arrow in the lower, right-hand corner is shown if there is more than one fault code.

5 To switch to numerical format, press the “↵” or “Select” button.

6 Press the “Up” or “Down” arrow buttons to check for any additional fault codes. Record any fault codes for future reference.

7 To exit, press the “Esc” button as needed to return to the main menu.

Clearing Fault Codes with the Graphic Display

Note: Any faults must be inactive before they can be cleared. All system faults will be cleared, not just SRS faults.

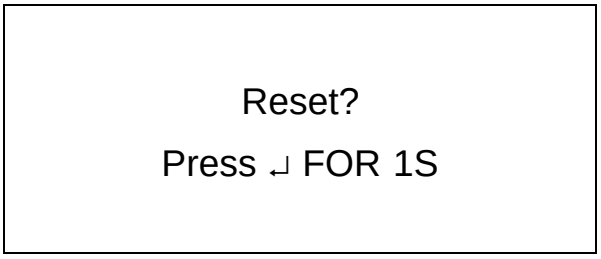
1 Turn the key to the ON position.

2 Use the “Esc” button to access the main menu structure.

3 Select “Password Input”. Use the “↵” or “Select” and “Up/Down” buttons to enter the 4–digit numerical password. The factory default password is 1234. If the vehicle owner has input another password it must be entered. For more password information, see service information on the Instrumentation in Group 38.

4 After the password has been entered, select “System Diagnostics” → “Fault Diagnostics” → “Reset All”.

5

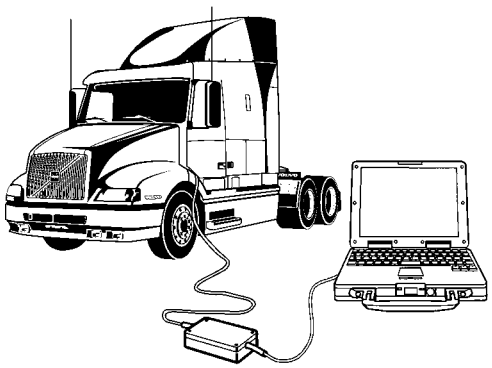


6 Press and hold the “↵” or “Select” button for 1 second. When the faults are cleared “Data Transfer Complete” will be displayed on the graphic display screen.

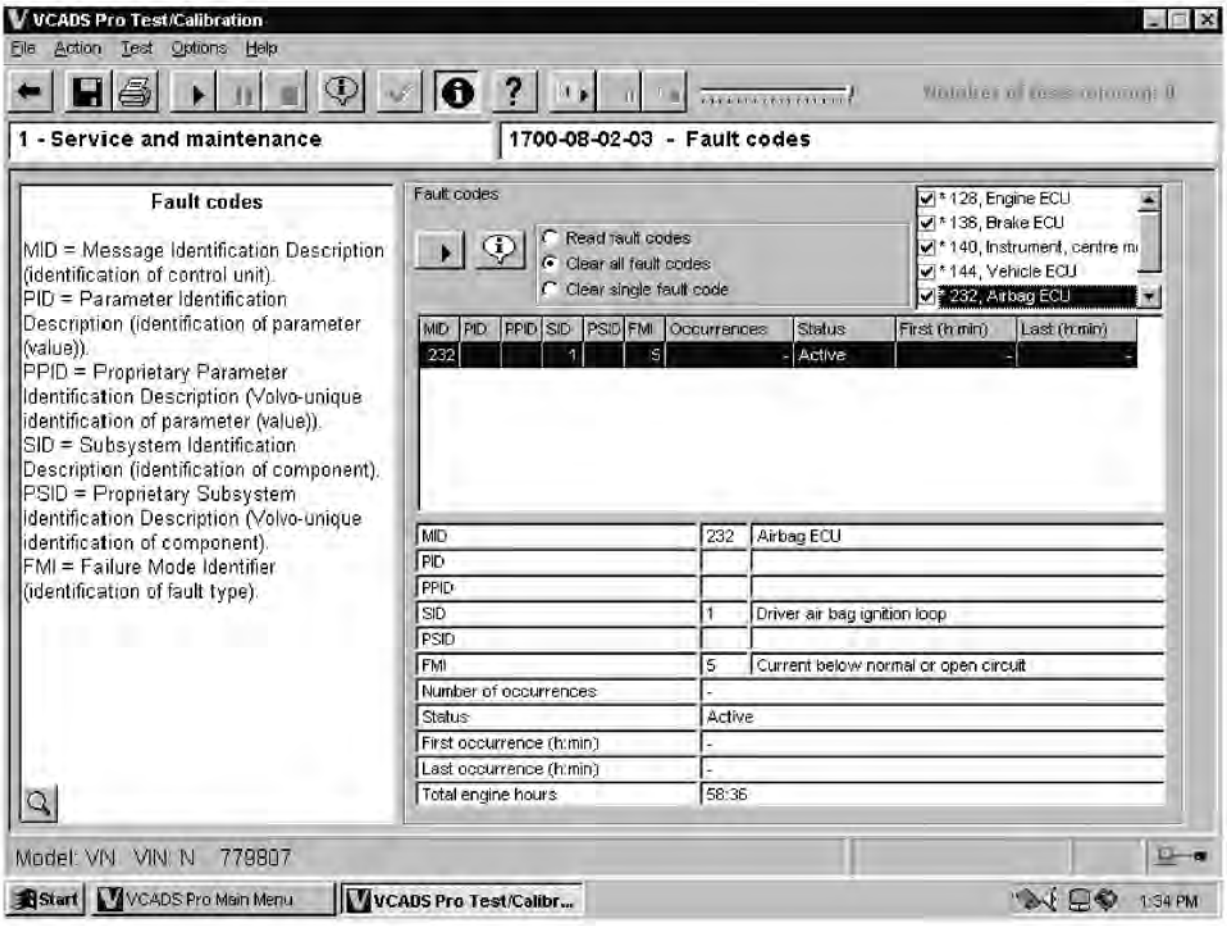
7 To exit, press the “Esc” button as needed to return to the main menu.

Reading/Clearing Fault Codes with VCADS Pro

VCADS Pro is a Windows 95–based tool that can be used to read and clear the SRS ECU (MID 232) fault codes on vehicles built since 3/99. The following is a brief description of the fault code retrieval/clearing process. For more detailed information, see the most recent VCADS Pro user manual, or the “help” menu in the tool itself.



W0001632



W8002905

1 Turn the ignition to the ON position.

2 With the VCADS Pro tool properly connected and operating select “Fault Codes” from the “Service and Maintenance” menu. From this screen, the VCADS Pro tool can be used to retrieve or clear fault codes by entering the correct prompts.

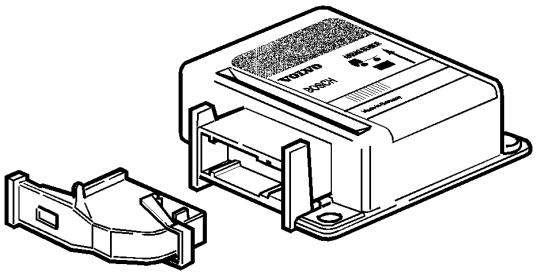
3 Before clearing the inactive fault codes, check for fault codes in other vehicle ECUs and record for later reference. When clearing fault codes, the “Clear all fault codes” request must be selected. When this command is entered, all inactive fault codes, not just SRS fault codes, will be cleared.

Note: Do not clear fault code **MID 232 SID 240 FMI 14**. This code is present after an SRS ECU has detected a crash. The SRS ECU, airbag module, contact reel, steering wheel and safety belts must be replaced after a crash. If the bunk restraint was in use, it must also be replaced.

Note: Do not clear fault code **MID 232 SID 254 FMI 12**. Replace the SRS ECU (see “SRS ECU, Replacement” page 57).

MID 232 SID 254 FMI 12 Airbag Control Unit, Component Failure

Fault in the Control Unit



T8006850

Conditions for fault code

The control unit contains, in addition to the sensors, a reserve power unit, a power amplifier for triggering the igniter in the airbag module, functions for continuous monitoring and storing of generated faults both internally in the control unit as well as the remainder of the system.

If the self-diagnostic system registers a fault in one of the internal functions, fault code **MID 232 SID 254 FMI 12** is generated.

Fault symptoms:
No symptoms apart from the SRS indicator(s).

There is a risk that the SRS will not work if this fault code is generated.

Cause of fault:
Internal fault in the control unit.

Action:

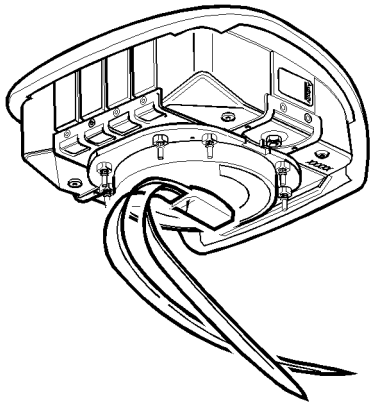
Replace the control unit (ECU). See “SRS ECU, Replacement” page 57 for replacement instructions.

MID 232 SID 1 FMI 6 Igniter Loop, Current High/Short Circuit

Airbag Module, Short Circuit

⚠ DANGER

NEVER use an ohmmeter or other live measuring instrument to measure the resistance of the airbag module. This practice could cause the airbag to deploy, causing serious injury or death.



T8006872

Airbag module

Condition for fault code:

If the resistance is too low in the airbag module or in the cable circuit (short circuiting between the cables) fault code **MID 232 SID1 FMI 6** is stored.

Fault symptoms:

No fault symptoms other than the SRS indicator. There is a risk that the SRS will not work with this fault code.

Cause of fault:

Short circuiting in the ignition cable or the connector between the airbag module and the control unit. Alternatively, short circuiting in the airbag module (too low a resistance in the igniter) or in the contact reel.

Action

To be able to find the cause of the fault, troubleshoot according to the following procedures. Follow the procedures carefully. Do not skip over an item before the cause of the fault is localized.

See “Routines for a Damaged/Faulty Airbag Module” page 46 concerning the handling of a damaged airbag module.

Fault Code MID 232 SID 1 FMI 6
Driver Side Igniter Loop, Current High/Short Circuit

Before disconnecting or connecting the airbag module, turn the ignition key OFF and remove the battery ground cable.

CAUTION

If there are other ground cables connected to the battery (such as engine ECU, satellite system, etc.), disconnect those grounds first, then remove the battery ground cable. Electronic modules may be damaged when additional grounds are connected/disconnected without the main battery ground connected. Always disconnect the main battery ground ***last***.

DANGER

Remove the airbag module and install the test resistor when troubleshooting the wiring harness for the SRS system. Failure to do so could cause the airbag to deploy during troubleshooting, causing serious personal injury or death.

WARNING

To avoid injury, the battery must not be connected when the airbag module is being removed or installed. If the battery is connected, deployment of the airbag may occur, possibly causing personal injury or death.

Step 1

Setup

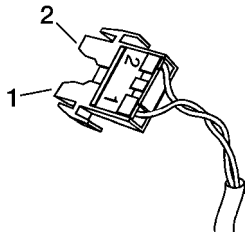
- Ignition OFF.
- Disconnect the negative lead from the battery.
- Remove the airbag module.
- Check resistance of test resistor 9988695 (see “Test Resistor, Checking” page 21). If resistance is ok, connect the resistor to the connector where the airbag module was removed.
- Ignition ON (Ignition position).
- Re-connect the battery negative lead.

Check	Symptom	Cause	Correction
Read the fault codes.	No active fault code.	Short circuiting in the airbag module.	Change the airbag module.
	The same fault code, MID 232 SID1 FMI 6, is displayed.		There is no fault in the airbag module, continue with step 2.

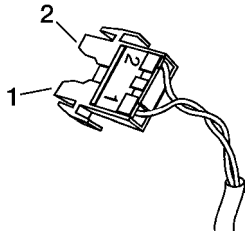
Step 2

Setup			
• Ignition OFF. • Remove test resistor 9988695.			
Check	**Value**	**Cause**	**Correction**
Measure the resistance across 1 and 2 on the airbag module connector. W8001334	Approx. 45-50 kΩ.	Bad test resistor.	Check test resistor. If bad, replace and repeat check.
	0 Ω.	Short circuiting in the ignition cable, contact reel or ECU.	Disconnect the ignition cable from the contact reel, and repeat the check at the airbag module connector. If 0 Ω replace the contact reel. If open circuit, continue with step 3.

Step 3

Check	Value	Cause	Correction
Disconnect the ignition cable from the contact reel and measure resistance between terminals 1 and 2 on the ignition cable connector.  W8001343	45-50 kΩ	Bad contact reel.	Change the contact reel.
	0 Ω	Short circuiting in the ignition cable or ECU.	Check the cable harness (go to step 4).

Step 4

Check	Value	Cause	Correction
Disconnect the ignition cable from the ECU and measure resistance between terminals 1 and 2 on the ignition cable connector.  W8001343	OL or OC (open circuit).	Ignition cable is ok. ECU possibly bad.	Check ECU (go to step 5).
	0 Ω.	Short circuiting in the ignition cable.	Replace the cable harness.

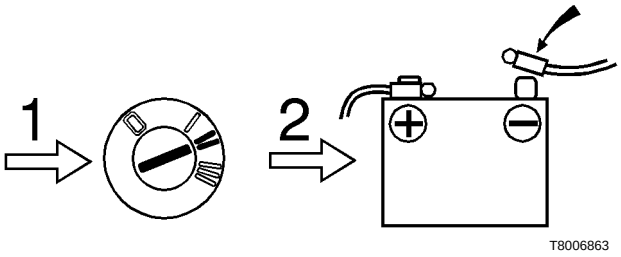
Step 5

Setup			
• Ignition OFF. • Remove SRS ECU.			
Check	**Value**	**Cause**	**Correction**
Measure the resistance between pins 10 and 11 on the ECU connector. Use tool J-42449-2 to connect test leads to pins 10 and 11.	Approx. 45-50 kΩ.	Short circuiting in the ignition cable, contact reel or airbag module.	Recheck the ignition cable, contact reel and test resistor. After a recheck of the system shows the other components are ok, replace the airbag module.
	Anything outside 45-50 kΩ.	Bad ECU.	Replace ECU.

After Fault Tracing/Repair - Connecting the Battery

When all the components in the cab have been reinstalled, turn the ignition switch to the ON position and reconnect the battery, heeding the warnings below:

Note: Leave the passenger side window open because the power locks may lock the doors when the battery is reconnected.



⚠ WARNING

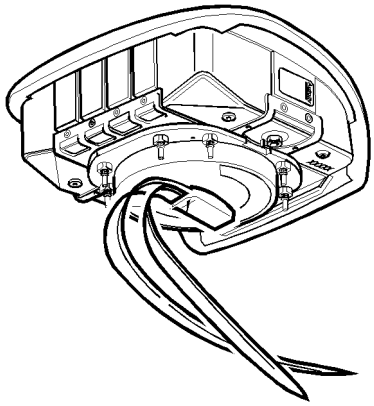
Personal injury risk. Make sure that no one is inside the cab and that the ignition switch is in the ON position when connecting the battery, and that the cab doors and driver side window are closed. Otherwise, personal injury may result due to possible deployment of the airbag.

⚠ CAUTION

Connect the negative battery lead, then connect any additional ground cables back to the battery (if additional ground cables were connected to the battery, such as engine ECU, satellite system, etc.). Otherwise, electronic modules may be damaged when additional grounds are connected/disconnected without the main battery ground connected. Always connect the main battery ground ***first***.

MID 232 SID 1 FMI 5 Igniter Loop, Current Low/Open Circuit

Airbag Module, Breakage



T8006872

DANGER

NEVER use an ohmmeter or other live measuring instrument to measure the resistance of the airbag module. This practice could cause the airbag to deploy, causing serious injury or death.

Conditions for fault code:

If the resistance is too low in the airbag module or in the cable circuit (breakage in the cable) fault code **MID 232 SID 1 FMI 5** is stored.

Fault symptoms:

No fault symptoms other than the SRS indicator illuminates. There is a risk that the SRS will not work with this fault code.

Cause of fault:

Breakage in the ignition cable or connector between the airbag module and the control unit. Alternatively, breakage in the airbag module (resistance too high in the igniter) or in the contact reel.

Action

To be able to find the cause of the fault, troubleshoot according to the following procedures. Follow the procedures carefully. Do not skip over an item before the cause of the fault is localized.

See “Routines for a Damaged/Faulty Airbag Module” page 46 concerning the handling of a damaged airbag module.

Fault Code MID 232 SID 1 FMI 5
Driver Side Igniter Loop, Current Low/Open Circuit

Before disconnecting or connecting the airbag module, turn the ignition key OFF and remove the battery ground cable.

CAUTION

If there are other ground cables connected to the battery (such as engine ECU, satellite system, etc.), disconnect those grounds first, then remove the battery ground cable. Electronic modules may be damaged when additional grounds are connected/disconnected without the main battery ground connected. Always disconnect the main battery ground ***last***.

DANGER

Remove the airbag module and install the test resistor when troubleshooting the wiring harness for the SRS system. Failure to do so could cause the airbag to deploy during troubleshooting, causing serious personal injury or death.

WARNING

To avoid injury, the battery must not be connected when the airbag module is being removed or installed. If the battery is connected, deployment of the airbag may occur , possibly causing personal injury or death.

Step 1

Setup

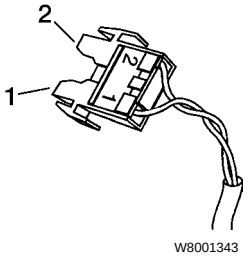
- Ignition OFF.
- Disconnect the battery negative lead.
- Remove the airbag module.
- Disconnect the connector from the airbag module.
- Check resistance of test resistor 9988695 (see “Test Resistor, Checking” page 21). If resistance is ok, connect the tool to the connector where the airbag module was removed.
- Ignition ON (Ignition position).
- Re-connect the battery negative lead.

Check	Symptom	Cause	Correction
Read off the fault codes.	No active fault code.	Breakage in the airbag module.	Change the airbag module.
	The same fault code, MID 232 SID 1 FMI 5, is displayed.		There is no fault in the airbag module, continue with step 2.

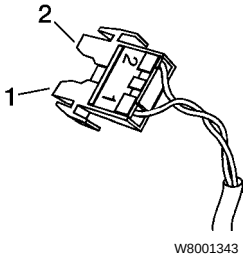
Step 2

Setup			
• Ignition OFF. • Disconnect test resistor 9988695. • Disconnect the contact reel.			
Check	**Value**	**Cause**	**Correction**
With the ignition cable disconnected from the contact reel, measure resistance between the terminals on the contact reel. Measure with one probe at the airbag module connector and the other probe at the ignition cable terminal on the contact reel.	OL or OC (open circuit).	Bad contact reel.	Change the contact reel.
	0 Ω.	Bad ignition cable.	Check the cable harness (go to step 3).

Step 3

Check	Value	Cause	Correction
Measure resistance across terminals 1 and 2 on the ignition cable connector. 	45-50 kΩ.	Bad contact reel.	Check the contact reel (go back to step 2).
	OL or OC (open circuit).	Open circuit in the ignition cable or ECU.	Check the cable harness (go to step 4).

Step 4

Setup			
• Ignition OFF. • Disconnect the ignition cable from the ECU			
Check	**Value**	**Cause**	**Correction**
Measure resistance across terminal 1 on the ignition cable connector to terminal 10 at the ECU connector. Use tool J-42449-1 to connect a test lead to terminal 10. 	OL or OC (open circuit).	Bad cable harness.	Replace the cable harness.
Measure resistance across terminal 2 on the ignition cable connector to terminal 11 at the ECU connector. Use tool J-42449-1 to connect a test lead to terminal 11.	0 Ω.	Possible bad ECU.	Check the ECU (go to step 5).

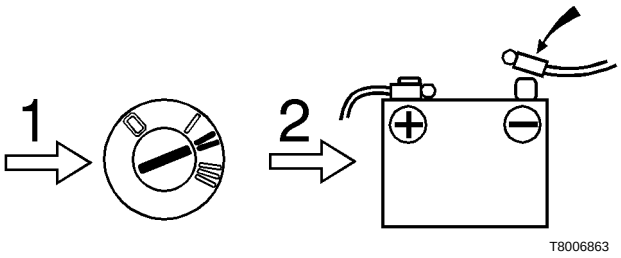
Step 5

Setup			
• Ignition OFF. • Remove SRS ECU.			
Check	**Value**	**Cause**	**Correction**
Measure the resistance between terminals 10 and 11 on the ECU connector. Use tool J-42449-2 to connect test leads to terminals 10 and 11.	Approx. 45-50 kΩ.	Short circuiting in the ignition cable, contact reel or airbag module.	Recheck the ignition cable, contact reel and airbag module.
	Anything outside 45-50 kΩ.	Bad ECU.	Replace ECU.

After Fault Tracing/Repair - Connecting the Battery

When all the components in the cab have been reinstalled, turn the ignition switch to the ON position and reconnect the battery, heeding the warnings below:

Note: Leave the passenger side window open because the power locks may lock the doors when the battery is reconnected.



⚠ WARNING

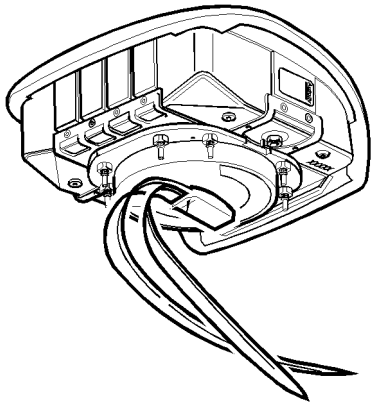
Personal injury risk. Make sure that no one is inside the cab and that the ignition switch is in the ON position when connecting the battery, and that the cab doors and driver side window are closed. Otherwise, personal injury may result due to possible deployment of the airbag.

⚠ CAUTION

Connect the negative battery lead, then connect any additional ground cables back to the battery (if additional ground cables were connected to the battery, such as engine ECU, satellite system, etc.). Otherwise, electronic modules may be damaged when additional grounds are connected/disconnected without the main battery ground connected. Always connect the main battery ground ***first***.

MID 232 SID 1 FMI 4/3 Igniter Loop, Voltage Shorted Low/High

Airbag Module, Short Circuiting to Voltage or to Ground



T8006872

Conditions for fault code:

The control unit checks if the signal is continuously high or continuously low (0 V) in the cable circuit, which means short circuiting to voltage or to ground. If this is the case, fault code **MID 232 SID 1 FMI 4** *Driver Igniter Loop, Voltage Shorted Low* or **MID 232 SID 1 FMI 3** *Driver Igniter Loop, Voltage Shorted High* will be generated.

Fault symptoms:

No fault symptoms other than the SRS indicator illuminates. There is a risk that the SRS will not work with this fault code.

Cause of fault:

Short circuiting to voltage or ground in the ignition cable or the connector between the airbag module and the SRS ECU. Alternatively, short circuiting to voltage or ground in the airbag module (resistance too low in the igniter) or in the contact reel.

Action

To be able to find the cause of the fault, troubleshoot according to the following procedures. Follow the procedures carefully. Do not skip over an item before the cause of the fault is localized.

See “Routines for a Damaged/Faulty Airbag Module” page 46 concerning the handling of a damaged airbag module.

Fault Code MID 232 SID 1 FMI 4/3
Driver Side Igniter Loop, Voltage Shorted Low/High

Before disconnecting or connecting the airbag module, turn the ignition key OFF and remove the battery ground cable.

CAUTION

If there are other ground cables connected to the battery (such as engine ECU, satellite system, etc.), disconnect those grounds first, then remove the battery ground cable. Electronic modules may be damaged when additional grounds are connected/disconnected without the main battery ground connected. Always disconnect the main battery ground ***last***.

DANGER

Remove the airbag module and install the test resistor when troubleshooting the wiring harness for the SRS system. Failure to do so could cause the airbag to deploy during troubleshooting, causing serious personal injury or death.

WARNING

To avoid injury, the battery must not be connected when the airbag module is being removed or installed. If the battery is connected, deployment of the airbag may occur, possibly causing personal injury or death.

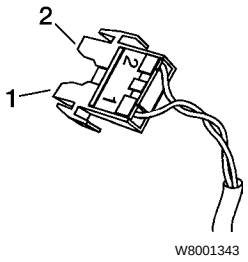
Step 1

Setup

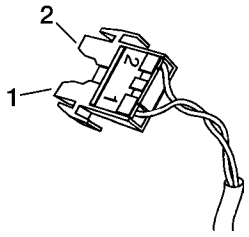
- Ignition OFF.
- Disconnect the battery negative lead.
- Disconnect the airbag module.
- Check resistance of test resistor 9988695 (see “Test Resistor, Checking” page 21). If resistance is ok, connect the tool to the connector where the airbag module was removed.
- Ignition ON (Ignition position).
- Connect the battery negative lead.

Check	Symptom	Cause	Correction
Read off the fault codes.	No active fault code.	Short circuiting to voltage or ground in the airbag module.	Change the airbag module.
	The same fault code, SID 1 FMI 4, is shown.	There is no fault in the airbag module.	Continue with step 2.
	The same fault code, SID 1 FMI 3, is shown.		Skip to step 3.

Step 2

Setup			
• Ignition OFF. • Disconnect test resistor 9988695. • Disconnect the contact reel.			
Check	**Value**	**Cause**	**Correction**
Measure resistance in the ignition cable connector (harness side). Measure resistance from terminal 1 to a known ground. Then measure from terminal 2 to a known ground. 	One or two measurements give a value of 0 Ω.	Short circuiting in the ignition cable.	Change the cable harness.
	Terminal 1: 45-50 kΩ Terminal 2: 92-98 kΩ	Short circuiting to ground.	Change the contact reel.

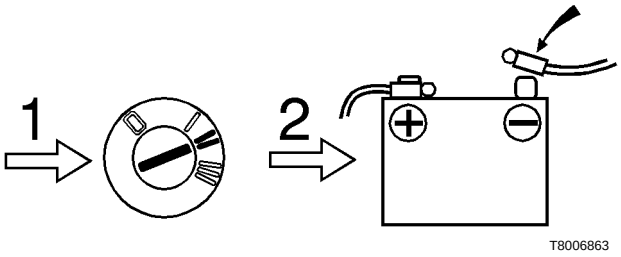
Step 3

Setup			
• Ignition OFF. • Disconnect the battery negative lead • Disconnect the contact reel. • Ignition ON.			
Check	**Value**	**Cause**	**Correction**
Measure resistance in the ignition cable connector (harness side). Measure resistance from terminal 1 (using the meter's red test lead) to a known power source (with the black test lead). 	45-50 kΩ for both measurements.	Bad contact reel.	Change the contact reel.
Then measure from terminal 2 (using the meter's red test lead) to a known power source (with the black test lead).	One or two measurements give a value of 0 Ω.	Short circuiting.	Change the cable harness.

After Fault Tracing/Repair - Connecting the Battery

When all the components in the cab have been reinstalled, turn the ignition switch to the ON position and reconnect the battery, heeding the warnings below:

Note: Leave the passenger side window open because the power locks may lock the doors when the battery is reconnected.



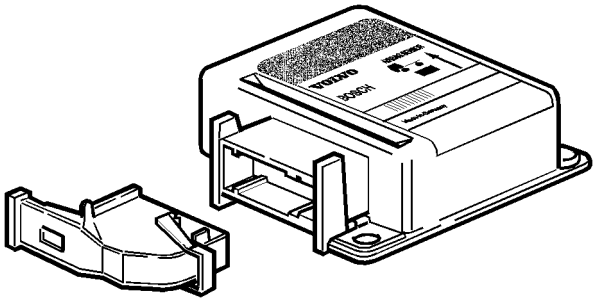
WARNING

Personal injury risk. Make sure that no one is inside the cab and that the ignition switch is in the ON position when connecting the battery, and that the cab doors and driver side window are closed. Otherwise, personal injury may result due to possible deployment of the airbag.

CAUTION

Connect the negative battery lead, then connect any additional ground cables back to the battery (if additional ground cables were connected to the battery, such as engine ECU, satellite system, etc.). Otherwise, electronic modules may be damaged when additional grounds are connected/disconnected without the main battery ground connected. Always connect the main battery ground ***first***.

MID 232 SID 240 FMI 14
SRS Airbag, Crash Data Stored



T8006850

Conditions for fault code

If the SRS ECU registers a crash condition, fault code **MID 232 SID 240 FMI 14** is generated.

Note that this fault code's description appears differently in the Pro-link and instrument cluster. In the Pro-link, the fault code is described as *SRS Airbag, Crash Event Stored, special instructions*. In the instrument cluster, it may be either way shown below:

D	AIRBAG
I	UNKNOWN
A	SPECIAL INSTRUCTIONS
G	ACTIVE
N	

Air bag
Program memory
Unknown fault
Active Σ 1 I ↓

Action:

Replace the SRS ECU, contact reel, wiring harness, airbag module, steering wheel and safety belts (including the bunk restraint, if it was in use). See *Service Procedures* for more information.

Faults Which Do Not Generate a Fault Code

Certain faults can occur without receiving any direct information via a fault code. To find the cause of the fault, fault tracing must be carried out step by step.

SRS Lamp Does not Light

Conditions for Fault (vehicles built before 3/99)

The lamp should normally illuminate when the ignition is ON and go out after 10 seconds.

During that 10 seconds, the SRS self diagnosis is being carried out. After the self diagnosis is complete, the control unit reduces the voltage to the indicating circuit (to approximately 0.8-2.0 V) and the lamp goes out. When the lamp is on, there is a voltage of approximately 12 V on the cable.

W3000982

SRS lamp

Conditions for Fault (vehicles built after 3/99)

The INFO lamp (and all other telltales) should illuminate 3–5 seconds when the ignition key is turned to ON to verify that the telltale bulbs operate.

Fault Symptom

1 The SRS/INFO lamp is always out.

Cause of Fault:

Indicator lamp broken

Incorrect voltage or improper ground in the instrument cluster.

SRS Lamp Does not Light and “Not Responding” Message in Diagnostic Display

Vehicles built before 3/99 only

1 The SRS lamp does not illuminate if the SRS is not installed in the vehicle.

2 It also does not illuminate to indicate a breakage in the J1587 data link (with the breakage occurring before the vehicle ignition is ON). (The lamp will still illuminate to indicate other faults, and for 10 seconds at ignition.)

For these conditions, when performing a diagnostic test on a vehicle without SRS, the SRS diagnostic menu in the Pro-link / instrument cluster will display *SRS AIRBAG, NOT RESPONDING*.

If condition 2 occurs, check the data link connections and wiring.

The SRS Lamp is Lighting but no Fault Code is Stored

SRS lamp

Conditions for Fault (vehicles built before 3/99 only)

The lamp should normally illuminate when the ignition is turned ON and go out after 10 seconds.

During that 10 seconds, the SRS self diagnosis is being carried out. After the self diagnosis is complete, the control unit reduces the voltage to the indicating circuit (to approx. 0.8-2.0 V) and the lamp goes out. When the lamp is on, there is a voltage of approx. 12 V on the cable.

With either a too low or too high battery voltage (< 8.5 volts or > 36 volts-see note[2]) the indicator lamp (SRS lamp) will light up, at the same time the control unit goes into standby mode, which means that the control unit will try to provide full function. As soon as the voltage is correct, the indicator lamp goes out and the system functions normally, but with, for example, undervoltage it will take a longer time to charge up the energy reserve. There is no fault code stored for incorrect battery voltage.

The SRS indicator lamp can be illuminated even if the control unit is faulty, or with a breakage in the indicator lamp wire between the control unit and instrument cluster.

Conditions for Fault (vehicles built after 3/99)

The INFO lamp (and all other telltales) should illuminate 3–5 seconds when the ignition key is turned to ON to verify that the telltale bulbs operate. With no power to SRS ECU the INFO lamp will illuminate and and the SRS icon will appear on the graphic display. When accessed, the graphic display will read “AIR BAG, MID 232, NOT RESPONDING”.

Fault Symptom

1 The SRS lamp is always on with no fault code (vehicles built before 3/99 only)

2 INFO indicator and SRS icon are always on with no fault code (vehicles built after 3/99 only).

Cause of Fault:

Open circuit on the ECU power supply wire

Blown SRS ECU fuse in fuse panel

Open circuit on the SRS indicator lamp wire (vehicles built before 3/99 only)

Improper ground connection on SRS ECU

Note: If power has been lost to the ECU, the Pro-link tool will display *NOT RESPONDING* in the SRS Diagnostic menu.

[2]The SRS ECU will operate at up to 36 volts, but other systems in the vehicle should never be exposed to voltages that high. The instrument cluster, for example, is rated at a maximum operating voltage of 18V.

Routines for a Damaged/Faulty Airbag Module

Handling

An airbag module that has not deployed must not be detonated or deployed, neither in position in the truck nor when removed from the truck. The module and the control unit must be returned to Volvo. Additionally, if there is any damage to the engine tunnel, the control unit must always be returned.

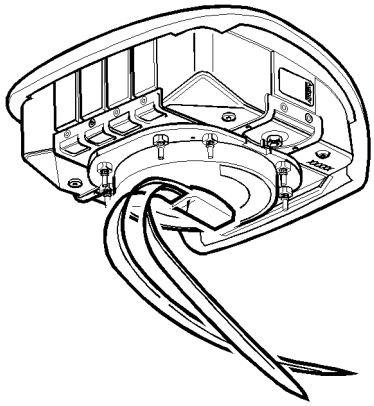
When removing the unit, refer to “Airbag Module/Contact Reel, Replacement” page 52.

Storage and Transport

During transport, the airbag module should be handled in accordance with national regulations for transport of pyrotechnic material.

The airbag module and control unit should be sent back to:

Volvo Truck Corporation
Att: TMA, Haverikommissionen
Dept. 27273, X-hallen
S-405 08 Gothenburg
Sweden



T8006872

Safety Belts and Bunk Restraints, Inspection

DANGER

Before working on a vehicle, set the parking brakes, place the transmission in neutral and chock the wheels. Failure to do so can result in unexpected vehicle movement and can cause serious personal injury or death.

DANGER

Failure to properly inspect and maintain safety belts can cause serious injury or loss of life.

DANGER

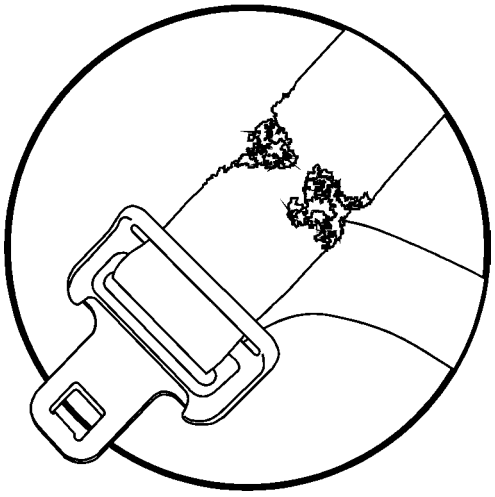
It is critical that any time a vehicle has been involved in an accident, the safety belt system in use at the time of the accident must be replaced, including the sleeper bunk restraints if they were in use at the time of accident. Failure to replace the safety belt system may result in serious injury or death.

DANGER

Safety belts must be inspected at the scheduled preventive maintenance inspection, or more often if exposed to severe environmental or vocational conditions. Failure to replace a worn or damaged seat belt assembly may result in serious injury or death.

Note: If replacement of any part of the seat is indicated through maintenance guidelines below, the entire belt assembly must be replaced, both retractor and buckle side.

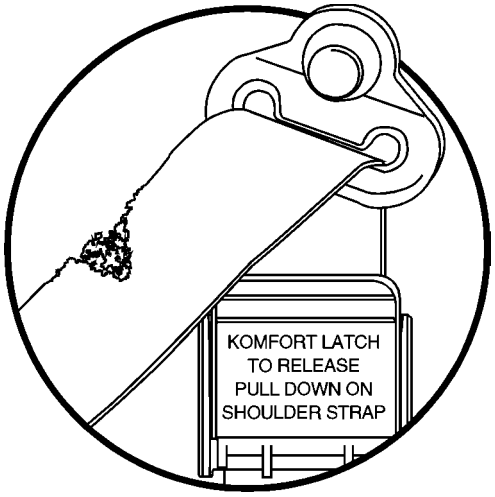
1



W8001406

Check the web wear at the latch area. The webbing must be closely examined to determine if there are any cuts, fraying or extreme wear in the webbing. Cuts, frays or excessive wear indicate the need for replacement of the safety belt system.

2



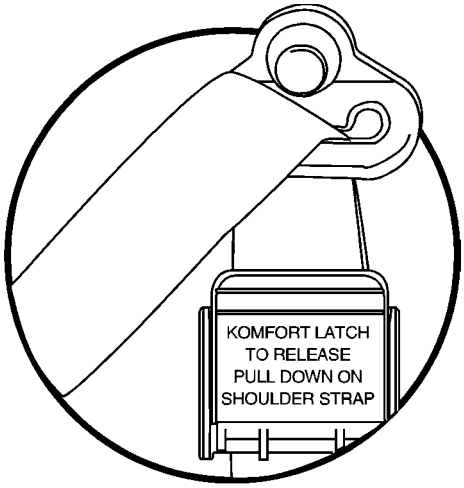
W8001405

The D-loop web guide is an area where almost constant movement of the safety belt webbing occurs because of the relative movement between the seat and the cab. Because of this constant movement this is an area where wear will often occur. The webbing must be closely examined to determine if there are any cuts, frays or extreme wear in the webbing. Cuts, frays or excessive wear indicate the need for replacement of the safety belt system.

3

Check that the D-loop web guide is rotating properly. If the guide is not rotating properly, the webbing will pull at the wrong angle through the guide, accelerating wear.

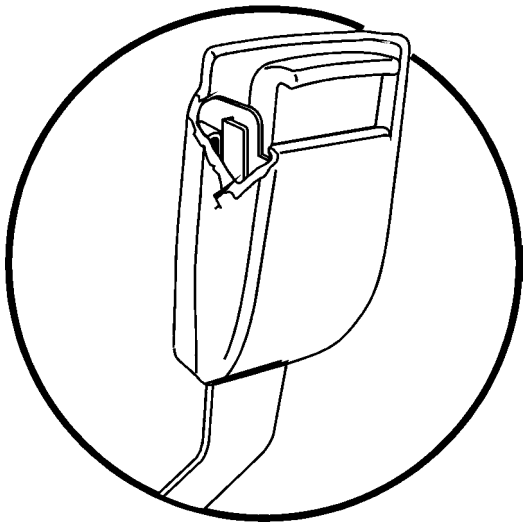
4



W8001403

Check the Komfort Latch for cracks or possible damage and that it works properly.

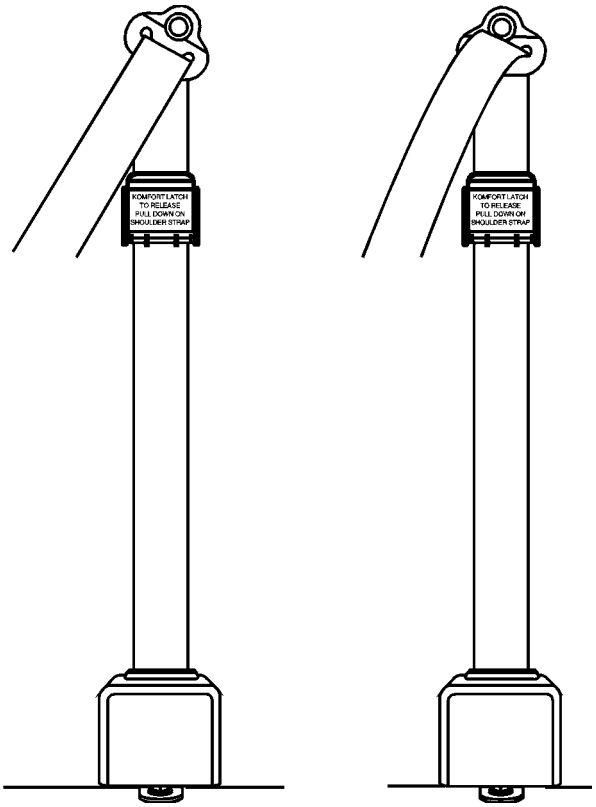
5



W8001404

Check the buckle by inserting the latch and verify proper operation. Determine if the latch plate is worn or deformed. Check the buckle and latch casing for cracks or breakage.

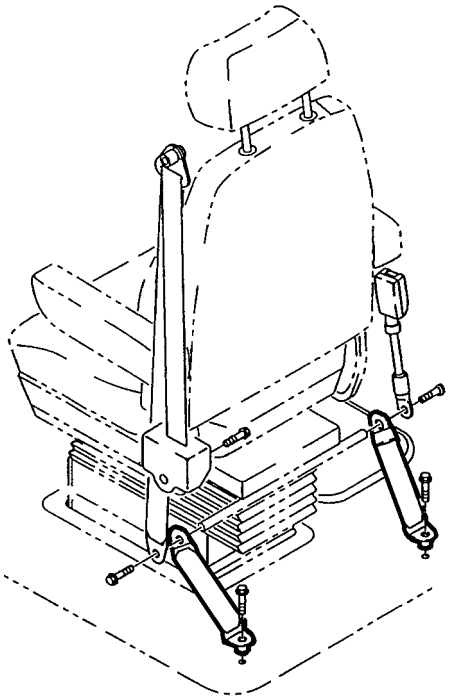
6



W8001401

The retractor web storage device is mounted on the B—pillar of the vehicle. The retractor is the heart of the safety belt system and can be damaged if abused, even unintentionally. Check the retractor web storage device operation to ensure that it is not locked and that it spools out and retracts the webbing properly.

7



W8001387

If tethers are being used to anchor the safety belts to the floor or bunk walls, make sure they are properly attached to the seat. Tethers must also be inspected for web wear and proper tightness of mounting hardware.

8

All hardware for safety belt mounting points should be evaluated for corrosion. All attachment points of the system should be checked for tightness of mounting hardware.

9

Check web in areas exposed to ultraviolet rays from the sun or extreme dust or dirt. If the original color of the web in these areas is extremely faded, the physical strength of this web may have deteriorated. If this condition exists, replace the system.

10

Check the stitching of the bunk restraint cross hatch webbing for proper integrity. Replace the bunk restraint if needed.

Service Procedures

General Work Practices

The ignition key should always be in the “OFF” position before beginning any repairs, unless otherwise stated.

When an airbag module has been removed, make sure that no particles (metal filings etc) can enter the module contact pins (igniter), so cover the terminal opening with tape. It is important that the airbag is stored in a secure place.

Damage to the wiring or connectors in the SRS must never be repaired, spliced or partly replaced. When a fault is noted and localized in a certain connector or part of the SRS wiring harness, the complete wire harness must be replaced.

Do not turn the steering wheel when the contact reel is secured in the locked position. This can damage the contact reel (see “Airbag Module/Contact Reel, Replacement” page 52).

After the Airbag Deploys

After a collision where the SRS airbag has deployed, the following components MUST always be replaced:

- Airbag Module
- Steering Wheel
- Contact Reel
- SRS Electronic Control Unit (ECU)
- SRS Wiring Harness
- Safety Belts
- Bunk Restraint (if in use during collision)

8845-03-02-01 Airbag Module/Contact Reel, Replacement

Before starting any service procedure, see:

- “General Work Practices” page 51

Important: Only certified technicians may work on the SRS.

DANGER

Before working on a vehicle, set the parking brakes, place the transmission in neutral, and block the wheels. Failure to do so can result in unexpected vehicle movement and can cause serious personal injury or death.

DANGER

The airbag module must never be taken apart. Attempting to take apart an airbag module which has not been deployed could deploy the airbag, causing serious injury or death.

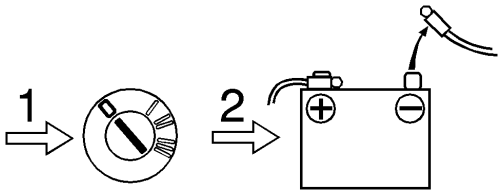
WARNING

The white powder residue from a deployed airbag can be an irritant to skin and tissue. To avoid injury wear gloves and a dust mask when handling a deployed module, and avoid getting this white powder in eyes or on skin. If skin irritation occurs, immediately flush the skin with water. Seek medical attention if irritation continues.

Removal

1
Align the vehicle wheels straight and center the steering wheel to prevent damage to the new contact reel due to the limited number of turns available.

2



T8006862

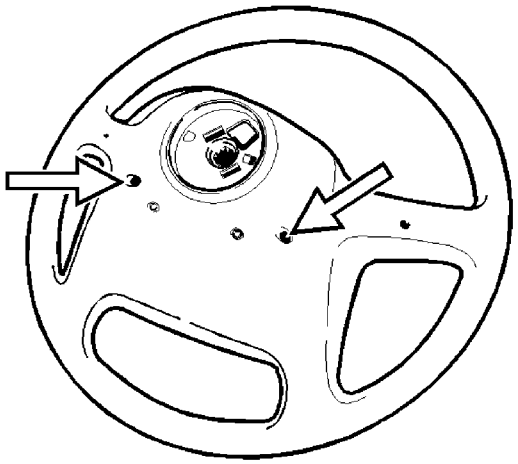
CAUTION

If there are other ground cables connected to the battery (such as engine ECU, satellite system, etc.), disconnect those grounds first, then remove the battery ground cable. Electronic modules may be damaged when additional grounds are connected/disconnected without the main battery ground connected. Always disconnect the main battery ground ***last***.

Turn the ignition switch OFF and disconnect the battery.

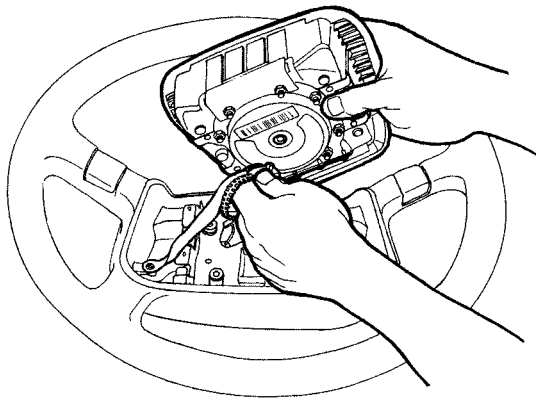
3
If the vehicle has a locking steering column, turn the ignition switch to the ON position to unlock the steering wheel.

4


W8001304

Loosen the two mounting bolts for the airbag module through the access holes on the underneath side of the steering wheel until the airbag module releases.

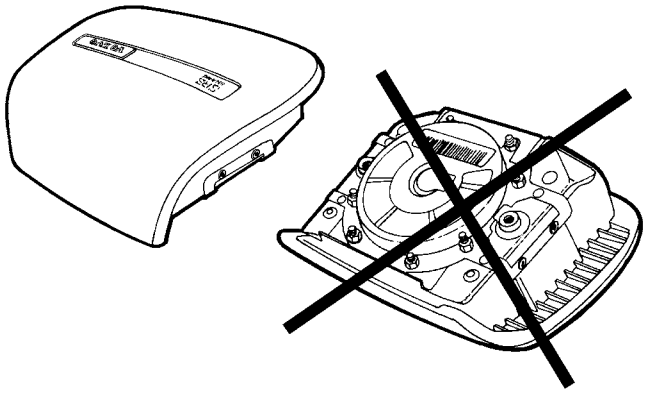
5



W8001298

Disconnect the airbag module electrical connector and remove the airbag module.

6



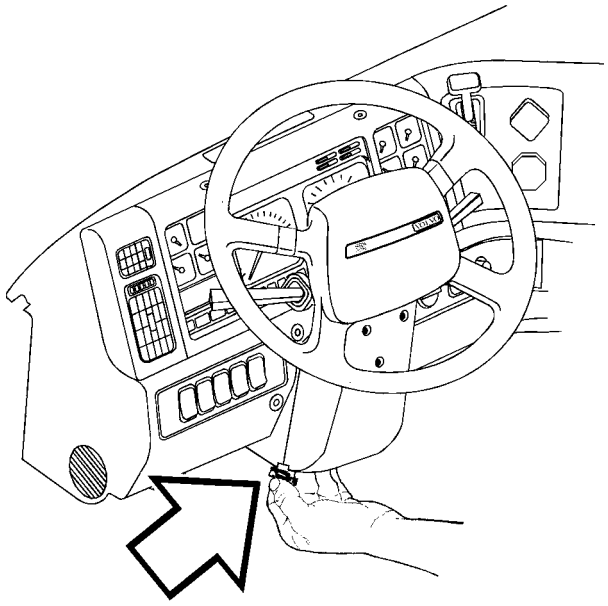
W8001294

DANGER

Always store a non-deployed airbag module with the metal (underneath) side down and in a place where it will not be handled carelessly. This is to reduce the chance of the airbag being ejected from its storage position if accidentally deployed, which could cause serious personal injury or death.

Cover the terminal opening with tape so that no particles (metal filings, etc.) can enter the module contact pins (igniter). It is important that the airbag is stored in a secure place. All airbag modules being replaced must be returned to the manufacturer according to current procedures.

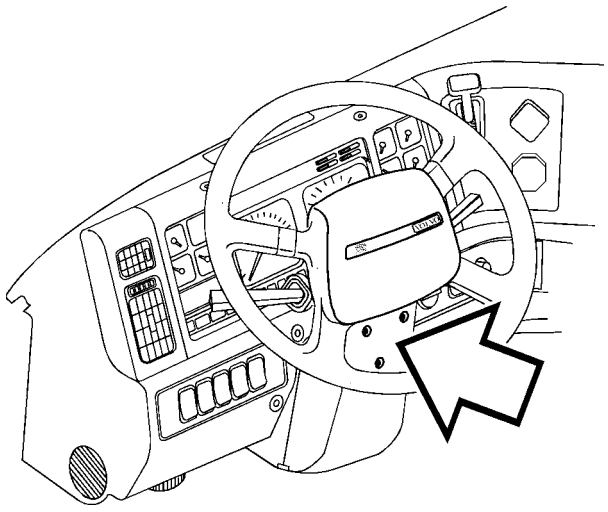
7



W8001302

Remove the 2 clips at the bottom of the steering column cover.

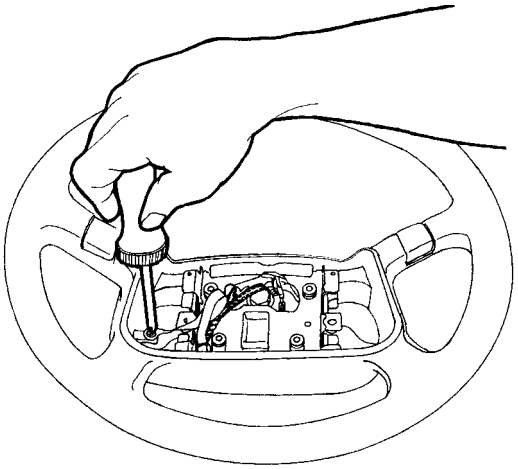
8



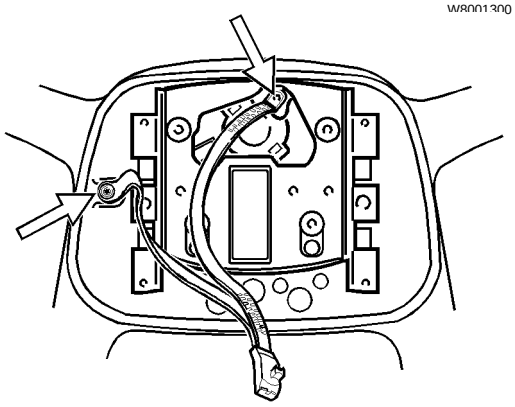
W8001303

Remove the rear steering column cover by removing the 3 torx bolts from the cover and sliding the rubber grommets off of the cover at the stalk switches. Remove the 3 torx bolts from the front cover and remove the cover.

9



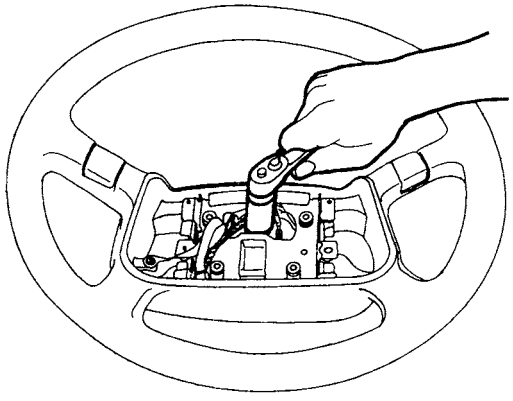
W8001300



W8001429

Unscrew the screw at the end of the contact reel caution label. Leave the screw in the label to secure the screw in the contact reel after the steering wheel is removed.

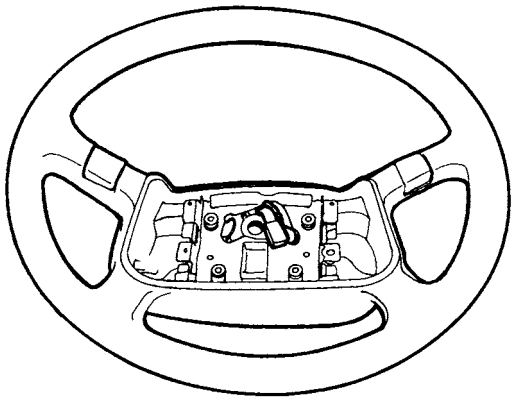
10



W8001299

Remove the mounting bolt from the center of the steering wheel.

11



W8001301

Lift the steering wheel from the shaft without turning it. Allow the cable and contact reel caution label to pass through the hole in the steering wheel.

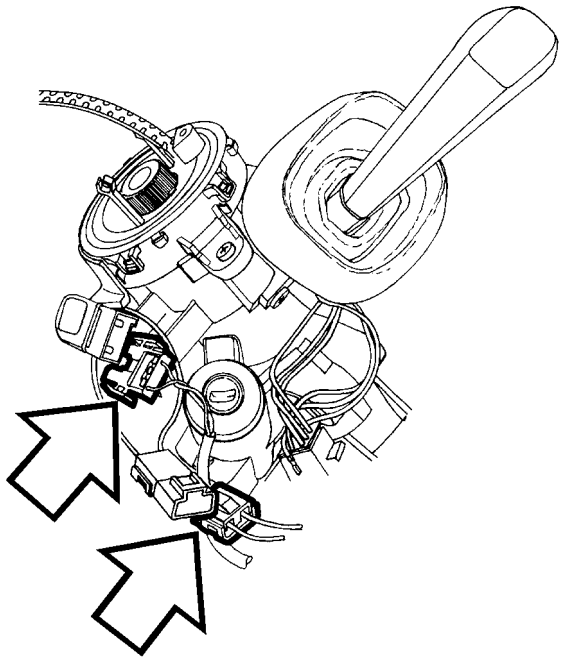
12

⚠ CAUTION

Failure to secure the contact reel label to the contact reel may result in damage to the contact reel. Do not turn the steering wheel while the contact reel is secured. Turning the wheel or shaft can damage the contact reel. (If installing a new contact reel, disregard this caution.)

Gently secure the contact reel label to the contact reel using the screw in the end of the label.

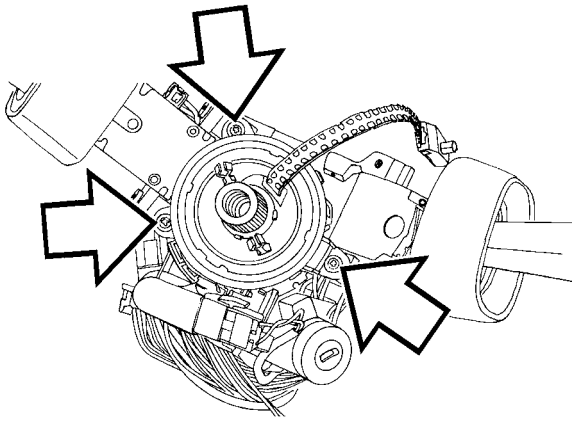
13



W8001308

Disconnect the connectors for the contact reel ignition cable and horn contacts.

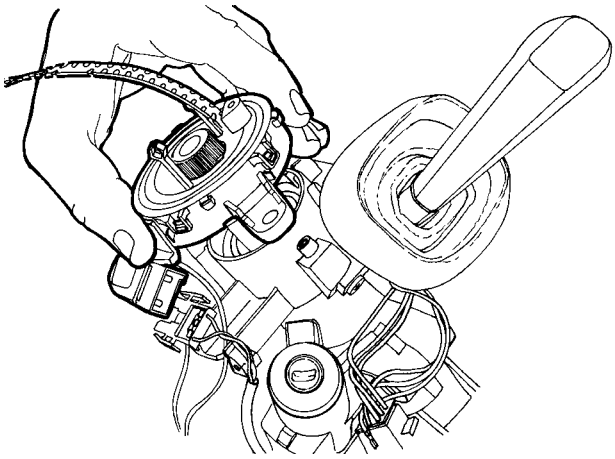
14



W8001309

Remove the 3 torx bolts from the contact reel.

15

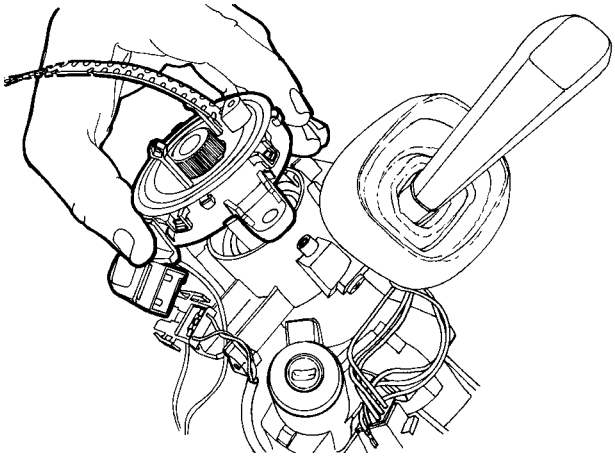


W8001305

Remove the contact reel assembly.

Installation

16



W8001305

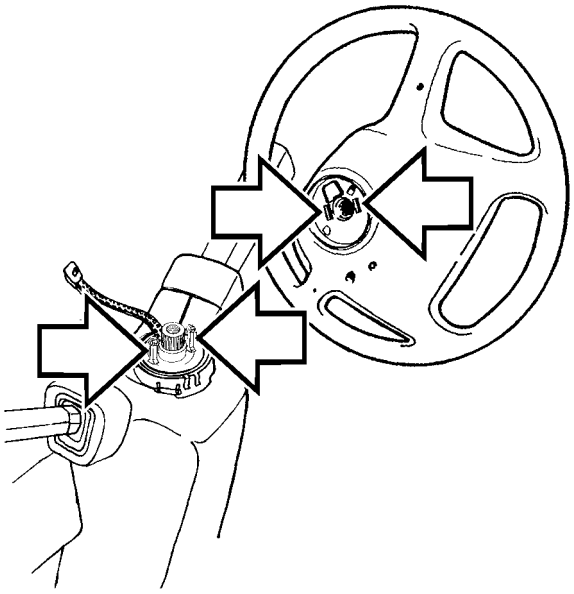
Install the new contact reel assembly onto the steering shaft and tighten the 3 torx bolts to 5 ± 0.8 Nm (44 ± 7 in-lb). Connect the connectors for the horn and the airbag module.

5 ± 0.8 Nm (44 ± 7 in-lb)

17

Install the front and rear steering column covers. Torque bolts to 5 ± 0.8 Nm (44 ± 7 in-lb). Pull the rubber grommets over the covers at the stalk switches. Install the plastic clips at the bottom of the covers.

18



W8001306

Remove the locking screw from the contact reel before installing the steering wheel. Align the 2 studs on the contact reel and feed the module connector through hole in the center of the steering wheel. Center the steering wheel and install.

19

Install a new bolt in the center of the steering wheel and torque to 85 ± 15 Nm (63 ± 11 ft-lb). Install the contact reel locking screw (with the caution label attached) into the steering wheel.

85 ± 15 Nm (63 ± 11 ft-lb)

Note: Check to be sure no metal particles are around the airbag connector pins.

20

Connect the electrical connector from the contact reel to the airbag module. Install the airbag to the steering wheel. Secure the airbag with existing bolts in the steering wheel. Access these bolts from the 2 holes in the bottom of the steering wheel. Torque the bolts to 10 ± 1.5 Nm (89 ± 13 in-lb).

10 ± 1.5 Nm (89 ± 13 in-lb)

21

⚠ WARNING

Personal injury risk. Make sure that no one is inside the cab when connecting the battery, and that the cab doors and driver side window are closed. Otherwise, personal injury may result due to possible deployment of the airbag.

⚠ CAUTION

If there are other ground cables connected to the battery (such as engine ECU, satellite system, etc.), connect the battery ground cable first, then connect those grounds. Electronic modules may be damaged when additional grounds are connected/disconnected without the main battery ground connected.

Turn the ignition switch to the ON position. Make sure nobody is in the cab. Close the cab windows and doors, but leave the passenger side window open because the power locks may lock the doors when the battery is reconnected. Then connect the negative battery lead and torque to 24–27 Nm (18–20 ft-lb).

22

View fault codes to see if any appear. If faults were present before replacing the components, they are still present as inactive faults. Clear the inactive faults.
There should be no active fault codes for the SRS system. If any active fault codes are present they need to be repaired.

Note: If either of the fault codes **MID 232 SID 240 FMI 14** or **MID 232 SID 254 FMI 12** is present, replace the SRS ECU (see “SRS ECU, Replacement” page 57).

8847-03-02-01
SRS ECU, Replacement

Before starting any service procedure, see:

- “General Work Practices” page 51

Important: Only certified technicians may work on the SRS.

DANGER

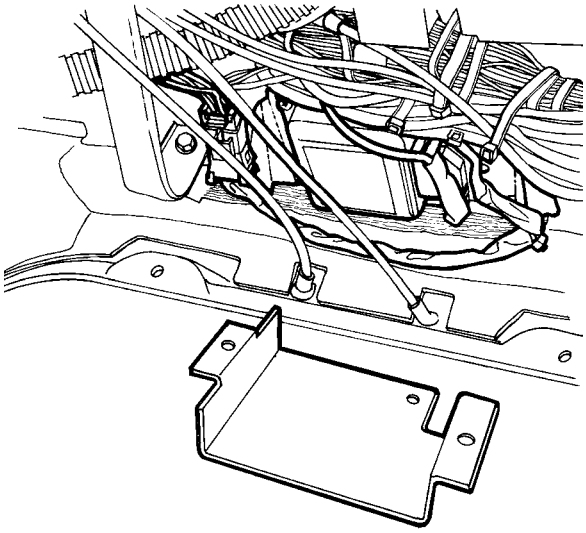
Before working on a vehicle, set the parking brakes, place the transmission in neutral, and block the wheels. Failure to do so can result in unexpected vehicle movement and can cause serious personal injury or death.

Removal

1
Turn the ignition switch OFF.

2
Remove the lower dash panels, center and right sections, by removing the 8 torx bolts and 4 plastic nuts.

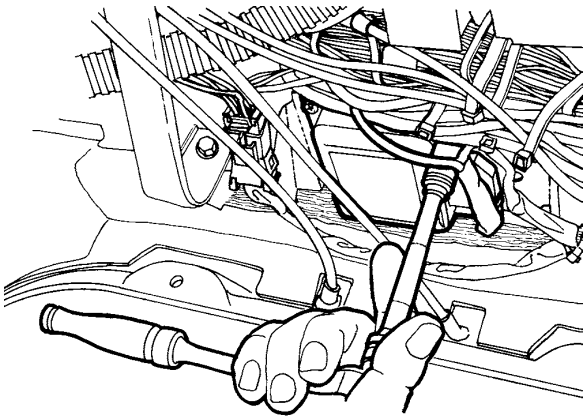
3



W8001295

Remove the 2 torx bolts in the SRS ECU cover, and remove the cover.

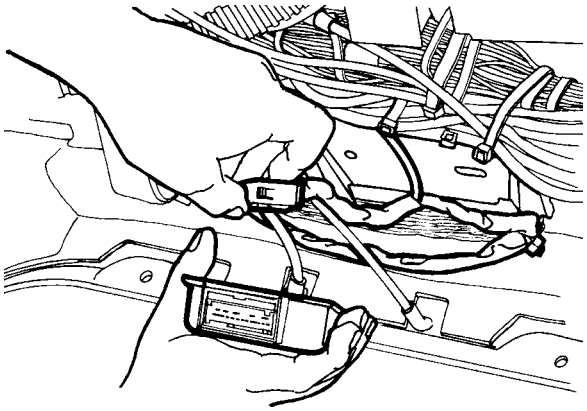
4



W8001296

Remove the 3 torx bolts from the SRS ECU.

5



W8001297

CAUTION

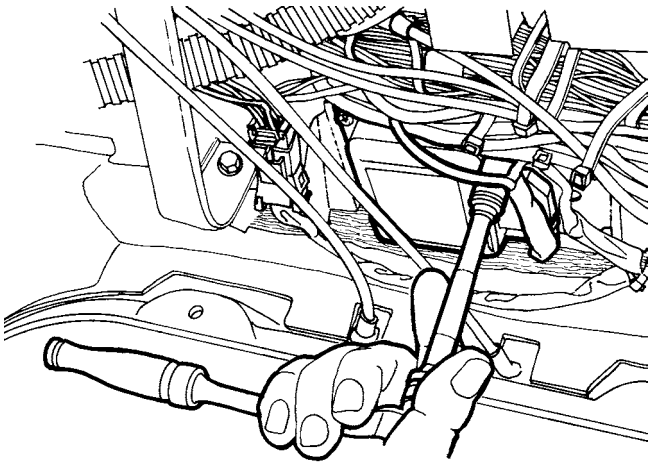
Avoid touching the control unit contact pins. There is a risk of damaging the control unit with electro-static discharge.

Disconnect the SRS ECU electrical connector. Push in on the tab holding the connector locking arm to release the connector.

Installation

6
Use only Volvo replacement parts and install the ECU only in the proper location described below.

7

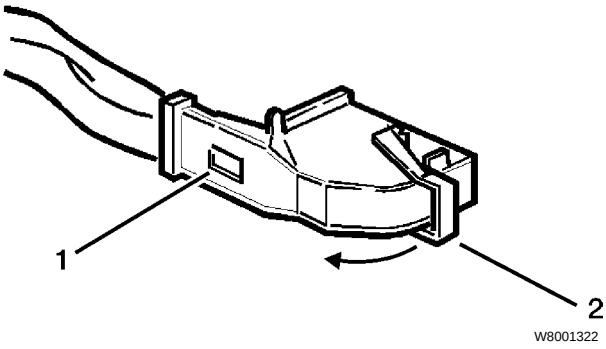


W8001296

> **⚠ CAUTION**
>
> Avoid touching the control unit contact pins. There is a risk of damaging the control unit with electro-static discharge.

Check the SRS ECU mounting plate for proper ground connection (there should be no grease, paint or dirt between the mounting plate and the cab body since the ECU is case-grounded). Install the SRS ECU to the mounting plate where the old ECU was with the 3 torx bolts. Torque to 10 ± 2 Nm (88 ± 18 in-lb).

8



W8001322

1) Locking tab

2) Locking arm shown in unlocked position

Connect the SRS ECU electrical connector, making certain the locking arm (2) is pulled back onto the locking tab (1), as shown in the illustration.

9
Install the cover for the SRS ECU by installing one torx bolt on each side of the cover. Torque to 10 ± 2 Nm (88 ± 18 in-lb).

10
Clear fault codes. There should be no active fault codes for the SRS system.

11
Install the lower dash panel, center and right sections, with 8 torx bolts and 4 plastic nuts. Torque bolts to 3.5 ± 0.5 Nm (31 ± 4.5 in-lb).

3.5 ± 0.5 Nm (31 ± 4.5 in-lb)

3741-03-02-01 SRS Wiring Harness, Replacement

Only certified technicians may work on the SRS.

Important: when replacing the SRS (airbag) wiring, the harness must be installed and routed properly. Wires may be pinched and broken when the steering column is adjusted if the harness is not routed and secured with tie straps as shown.

Damage to the wiring or connectors in the SRS must never be repaired, spliced or partly replaced. When a fault has been noted and localized in a certain connector or part of the SRS wiring harness, the complete wire harness must be replaced.

Replace all tie straps removed when removing the harness.

⚠ DANGER

Failure to follow the routing shown when installing an SRS harness can result in damage to the wiring harness, and the SRS may not function, which could result in serious injury or death in the event of an accident..

⚠ DANGER

Before working on a vehicle, set the parking brakes, place the transmission in neutral, and block the wheels. Failure to do so can result in unexpected vehicle movement and can cause serious personal injury or death.

Removal

1

⚠ CAUTION

Electronic modules may be damaged when additional grounds connected to the battery (such as engine ECU, satellite system, etc.) are connected /disconnected without the main battery ground being connected. Always disconnect the main battery ground ***last***.

Turn the ignition switch OFF and disconnect battery ground cables to any ECUs that may be connected to the battery (such as engine ECU, satellite system, etc.). Then remove the battery ground cable.

2

Remove the left front grab handle by removing the bolt cap in the trim panel, then removing the upper and lower bolts.

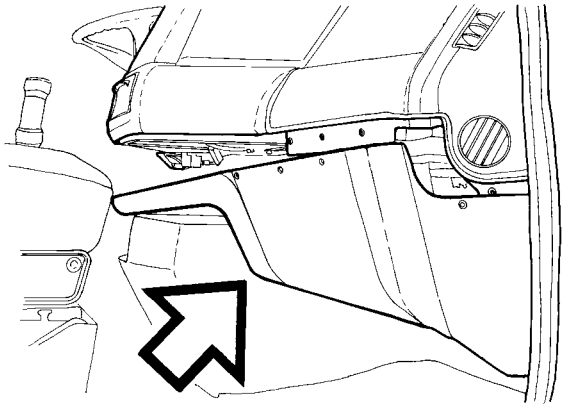
3

Remove the 3 torx bolts and plastic nut from the lower dash trim panel to the left of the steering column. Remove the diagnostic connector and vent hose from the panel, then remove the panel.

4

Remove the right front grab handle by removing the bolt cap in the trim panel, then removing the upper and lower bolts.

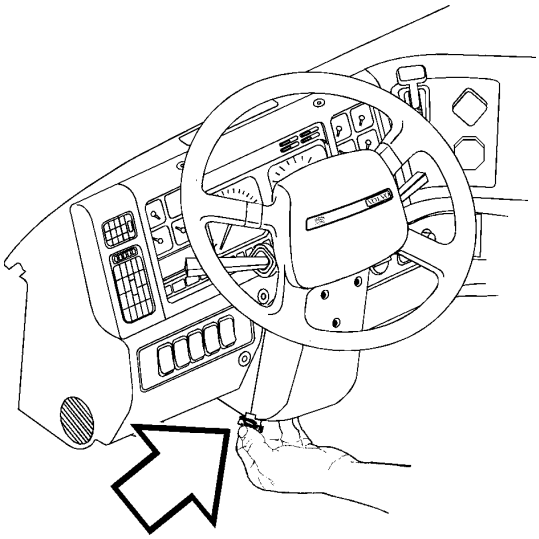
5



W8001464

To remove the right and center lower dash panels, remove the 8 bolts along the top of both panels, and the 3 plastic nuts on the bottom of the right panel, and the 1 plastic nut from the center lower panel.

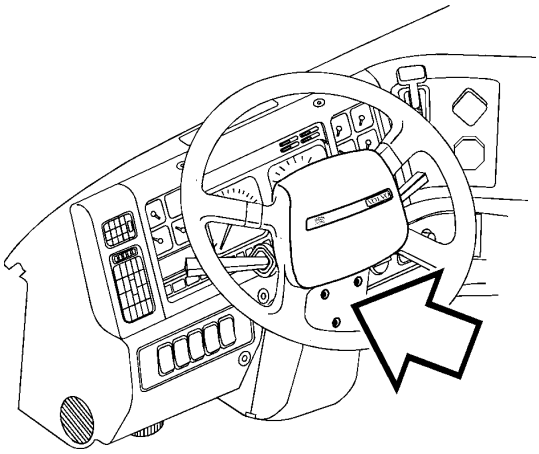
6



W8001302

Remove the 2 clips at the bottom of the steering column cover.

7



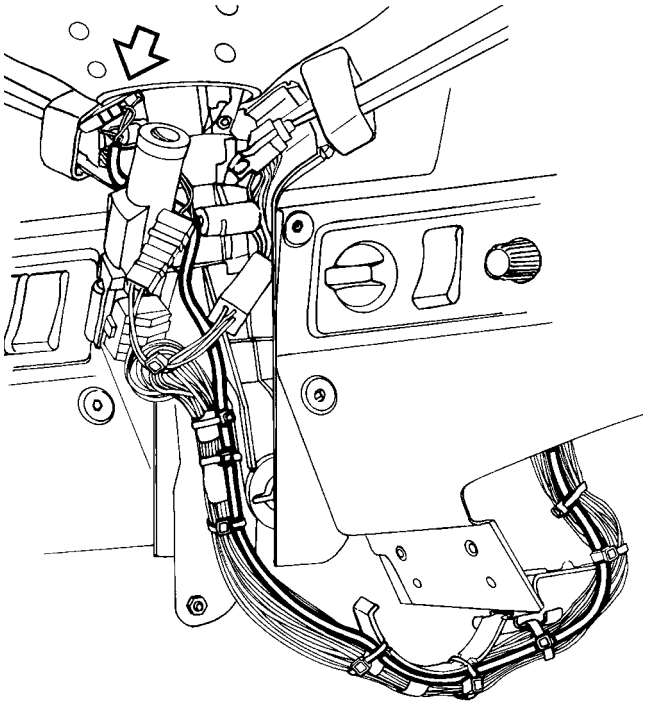
W8001303

Remove the rear steering column cover by removing the 3 torx bolts from the cover and sliding the rubber grommets off of the cover at the stalk switches.

8

Remove the lower section of the steering column cover by pushing the centers through on the plastic rivets and removing the rivets.

9

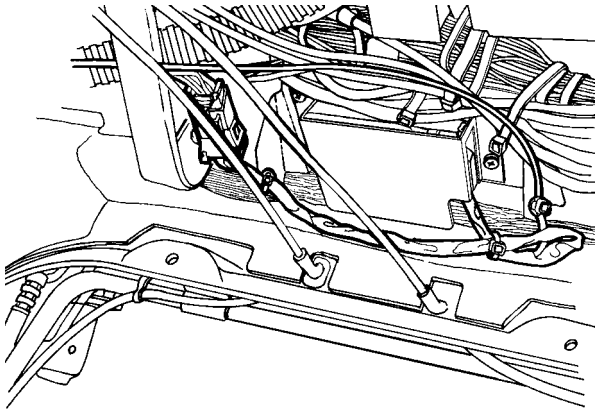


W8001463

Contact reel connector

Disconnect the SRS harness at the contact reel connector. Cut the tie straps running down the steering column bracket (3 places), being careful not to cut any wires in the main harness. Cut the 3 tie straps from the lower bracket. Pull the SRS harness from the main harness on the steering column. Cut any tie straps fastening the SRS harness to the main cab harness. Separate the SRS harness from the main cab harness between the steering column and SRS ECU.

10



W8001465

⚠ CAUTION

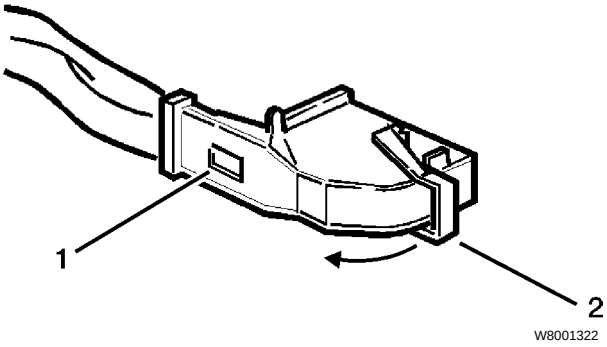
Risk of damage to the control unit from electro-static discharge (ESD). To avoid ESD damage, do not touch the control unit contact pins and wear an anti–static wrist strap grounded to the nearest electrical ground.

Cut and remove the tie straps around the SRS ECU, and disconnect the SRS ECU electrical connector. Push in on the tab holding the connector locking arm to release the connector. Remove the SRS harness.

Note: In some early production vehicles (built before May 1997), the cover must be removed from the SRS ECU to disconnect the connector. If the connector cannot be accessed with the cover on, remove the cover by removing the 2 mounting bolts.

Installation

11



W8001322

1) Locking tab

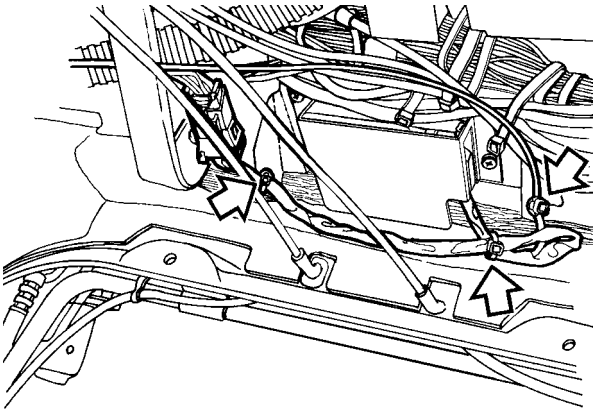
2) Locking arm shown in unlocked position

Connect the SRS ECU electrical connector, making certain the locking arm is pulled back onto the locking tab. Connect the SRS wiring harness to the main cab harness connector, making certain the connector lock is installed.

12

If the ECU cover was removed, install it with the 2 mounting bolts. Torque to 10 ±2 Nm (88 ±18 in-lb).

13



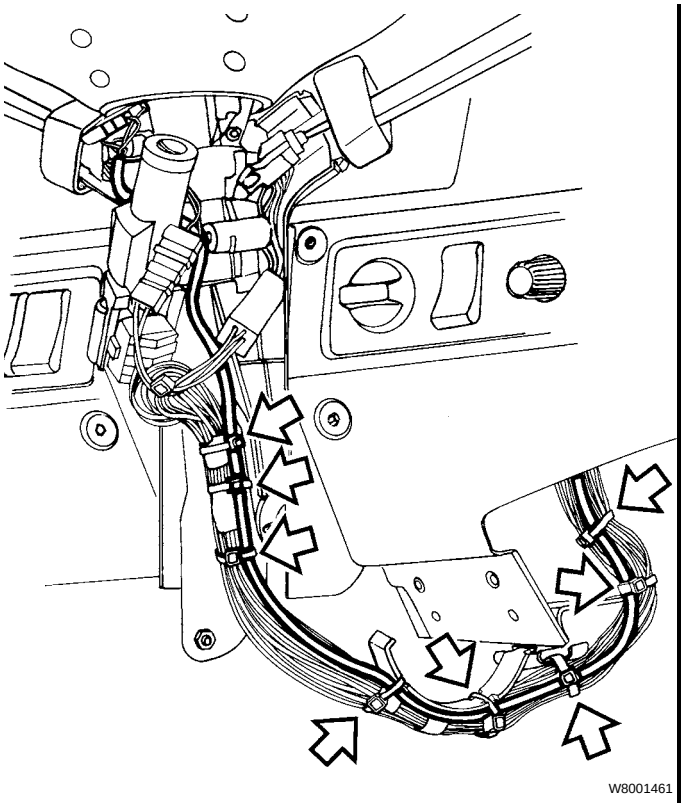
W8001460

Secure the SRS harness with tie straps to the fastening clips around the SRS ECU.

14

Route the SRS harness along the main cab harness over to the steering column.

15



W8001461

Important: Route harness exactly as shown. Use tie straps exactly where shown.

⚠ CAUTION

Failure to follow the routing shown when installing an SRS harness can result in damage to the wiring harness, and the SRS may not function.

If equipped with tilt steering, adjust the steering column to the upright position. Route the SRS harness along the steering column wiring and connect the harness connector to the contact reel. Secure the harness using 3 tie straps along the steering column as shown. Install 3 tie straps on the bracket below the steering column. Secure the SRS harness to the main cab harness between the steering column and SRS ECU.

Important: If equipped with tilt steering, move the steering column to check for pulling or pinching of the SRS or main cab harness at the steering column.

16

⚠ WARNING

Make sure that no one is inside the cab when connecting the battery, and that the cab doors and driver side window are closed. Otherwise, personal injury or death may result due to possible deployment of the airbag.

⚠ CAUTION

If there are other ground cables connected to the battery (such as engine ECU, satellite system, etc.), connect the battery ground cable first, then connect those grounds. Electronic modules may be damaged when additional grounds are connected/disconnected without the main battery ground connected.

Turn the ignition switch to the ON position. Make sure nobody is in the cab. Close the cab windows and doors, but leave the passenger side window open because the power locks may lock the doors when the battery is reconnected. Then connect the negative battery lead and torque to 24–27 Nm (18–20 ft-lb).

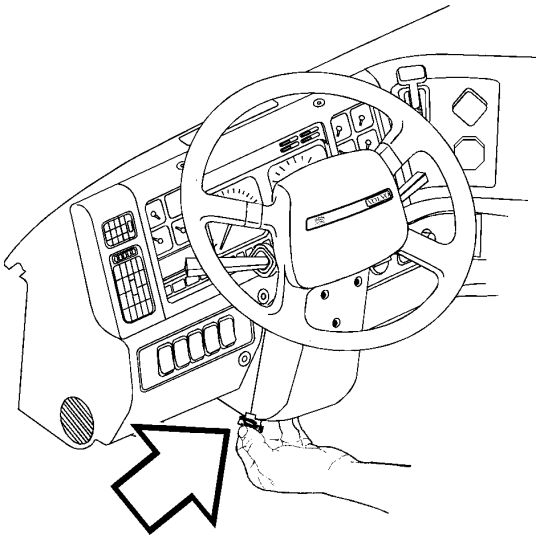
17

View faults to see if any fault codes appear. There should be no active fault codes for the SRS system. If any active fault codes are present they need to be repaired.

18

Install the lower steering column cover. Align the weld studs through the holes into the bottom of the panel. Install the plastic rivets to secure the top of the panel.

19



W8001302

Install the rear steering column cover. Torque the 3 bolts to 5 ±0.8 Nm (44 ±7 in-lb). Position the stalk switches' rubber grommets over the front and rear covers. Install the plastic clips in the bottom of the covers.

20
Install the lower dash panel, center and right sections. Torque the 8 bolts to 3.5 ±0.5 Nm (31 ±4.5 in-lb). Also install the 4 plastic nuts. Make certain to pull the mat back and align the weld studs through the holes. (Insert A/C ductwork through the center panel.)

21
Install the right front grab handle with 2 bolts. Torque to 24 ±4 Nm (18 ±3 in-lb). Install the bolt cap in the trim panel.

22
Install the lower left dash trim panel with 3 bolts and 1 plastic nut at the bottom weld stud. Make certain to insert the A/C ductwork and diagnostic connector.

23
Install the left front grab handle with 2 bolts. Torque to 24 ±4 Nm (18 ±3 in-lb). Install the bolt cap in the trim panel.

8841-03-02-01
Safety Belt, Replacement (One)

National Seat

DANGER

It is critical that any time a vehicle has been involved in an accident, the entire safety belt system must be replaced in the vehicle (which also includes the sleeper bunk restraints) if they were in use at the time of the accident. Failure to replace the safety belt system may result in serious injury or death.

DANGER

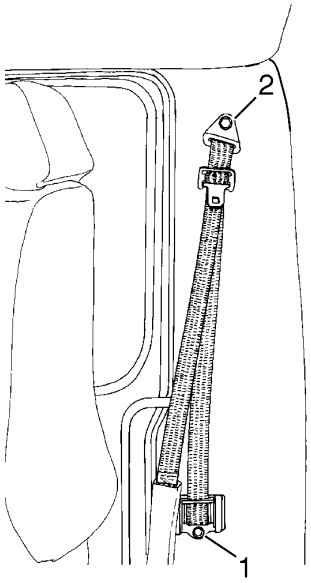
Before working on a vehicle, set the parking brakes, place the transmission in neutral, and block the wheels. Failure to do so can result in unexpected vehicle movement and can cause serious personal injury or death.

DANGER

When installing safety belt components, do not over-torque or use high-speed pneumatic tools. Doing so may cause anchor point failures, resulting in the possible failure of the safety belt anchoring system, which can cause serious personal injury or death.

Removal

1



W8002921

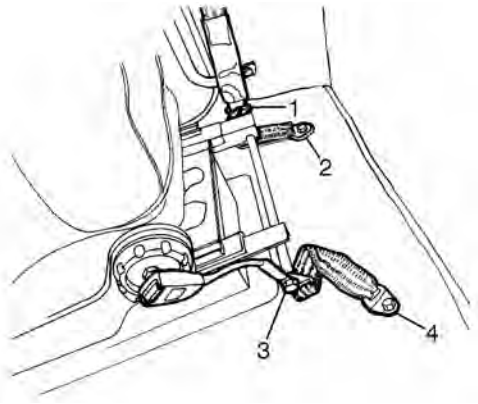
1 Hex box
2 Shoulder harness D-ring

Remove the recoiler cover by pulling the cover from the bottom. With the cover removed, remove the hex bolt (1) from the recoiler.

2

Remove the bolt cap and the torx bolt for the shoulder harness D-ring (2).

3



W8002894

1 Hex box
2 Bolt
3 Hex box
4 Bolt

Remove the hex bolt (1) in the outer side of the seat fastening the seat belt bracket and tether belt. Remove the bolt (2) fastening the tether belt to the floor.

4

Remove the hex bolt (3) on the inner side of the seat to remove the buckle assembly and tether belt. Remove the bolt (4) fastening the tether belt to the floor on the inner side of the seat (see illustration in previous step).

Installation

5
Install the buckle and tether belt to the inner side of the seat. Then install the bolt for the tether belt in the floor. Torque bolts to 68 ± 7 Nm (50 ± 5 ft-lb).

68 ± 7 Nm (50 ± 5 ft-lb)

6
Install the recoiler with the mounting bolt. Install the recoiler cover. Install the mounting bolt and D-ring. Torque bolts to 68 ± 7 Nm (50 ± 5 ft-lb). Install the mounting bolt cap.

7
Install the safety and tether belt brackets to the outer side of the seat. Torque bolts to 68 ± 7 Nm (50 ± 5 ft-lb). Install the tether belt bracket in the floor, and torque the bolt to 68 ± 7 Nm (50 ± 5 ft-lb).

8841-03-02-01 Safety Belt, Replacement (One)

Volvo Seat

DANGER

It is critical that any time a vehicle has been involved in an accident, the entire safety belt system must be replaced in the vehicle (which also includes the sleeper bunk restraints) if they were in use at the time of the accident. Failure to replace the safety belt system may result in serious injury or death.

DANGER

Before working on a vehicle, set the parking brakes, place the transmission in neutral, and block the wheels. Failure to do so can result in unexpected vehicle movement and can cause serious personal injury or death.

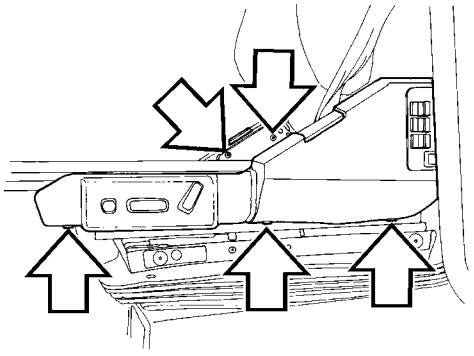
DANGER

When installing safety belt components, do not over-torque or use high-speed pneumatic tools. Doing so may cause anchor point failures, resulting in the possible failure of the safety belt anchoring system, which can cause serious personal injury or death.

Removal

1
Remove the bottom seat cushion by grasping at the front and rear of the cushion and pulling up.

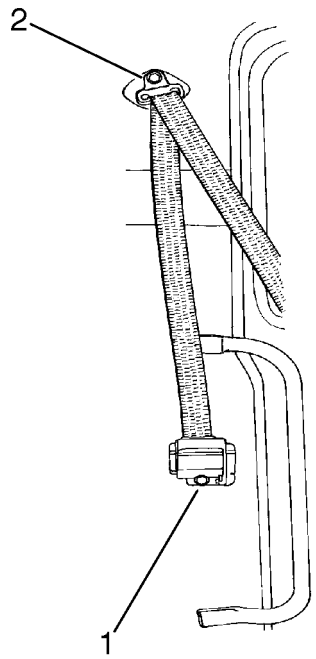
2



W8001328

Remove the 5 screws from the bottom outer seat side cover.

3

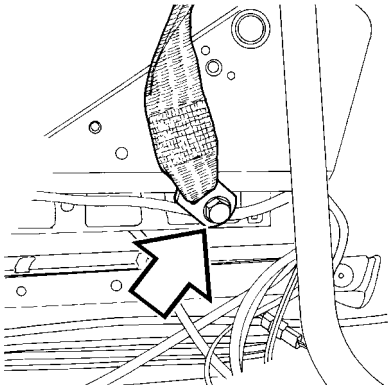


W8002922

1 and 2 are bolts

Remove the recoiler bolt (1). Remove the trim cap on the D-ring hex bolt, and remove the bolt (2).

4



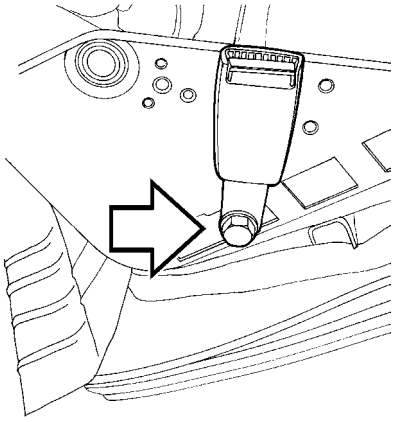
W8001330

Remove the bolt mounting the safety belt to the seat. Remove the bolt to the outside and rear of the seat.

5

Remove the 5 screws from the bottom inner seat side cover, on the latch side of the seat.

6



W8001327

Remove the latch assembly from the inner rear bottom of the seat.

Installation

7

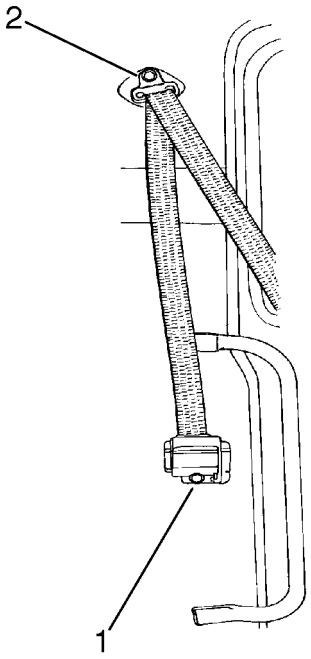
Install the latch assembly on the inner rear bottom of the seat. Torque to 50 ± 10 Nm (442 ± 80 in-lb).

50 ± 10 Nm (442 ± 80 in-lb)

8

Install the inner bottom seat side cover with 5 screws.

9



W8002922

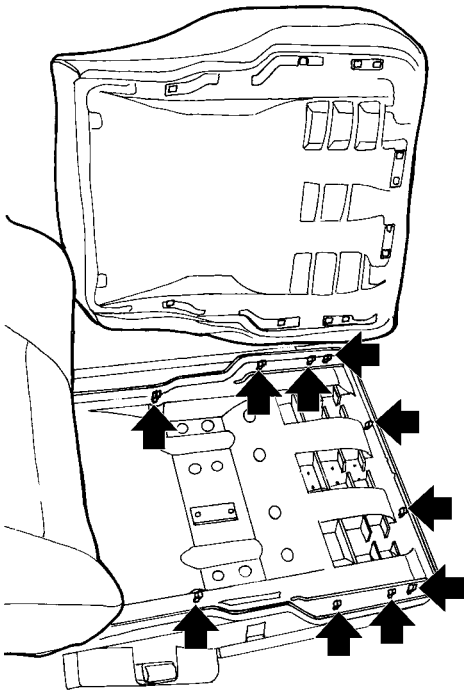
1 and 2 are bolts

Install the bolt (1) into the recoiler. Torque to 50 ± 10 Nm (442 ± 80 in-lb). Install the hex bolt (2) in the D-ring and torque to 50 ± 10 Nm (442 ± 80 in-lb).

10
Install the safety belt bolt and mount to the outer rear bottom of the seat. Torque to 50 ± 10 Nm (442 ± 80 in-lb).

11
Install the outer bottom seat side cover with 5 screws.

12

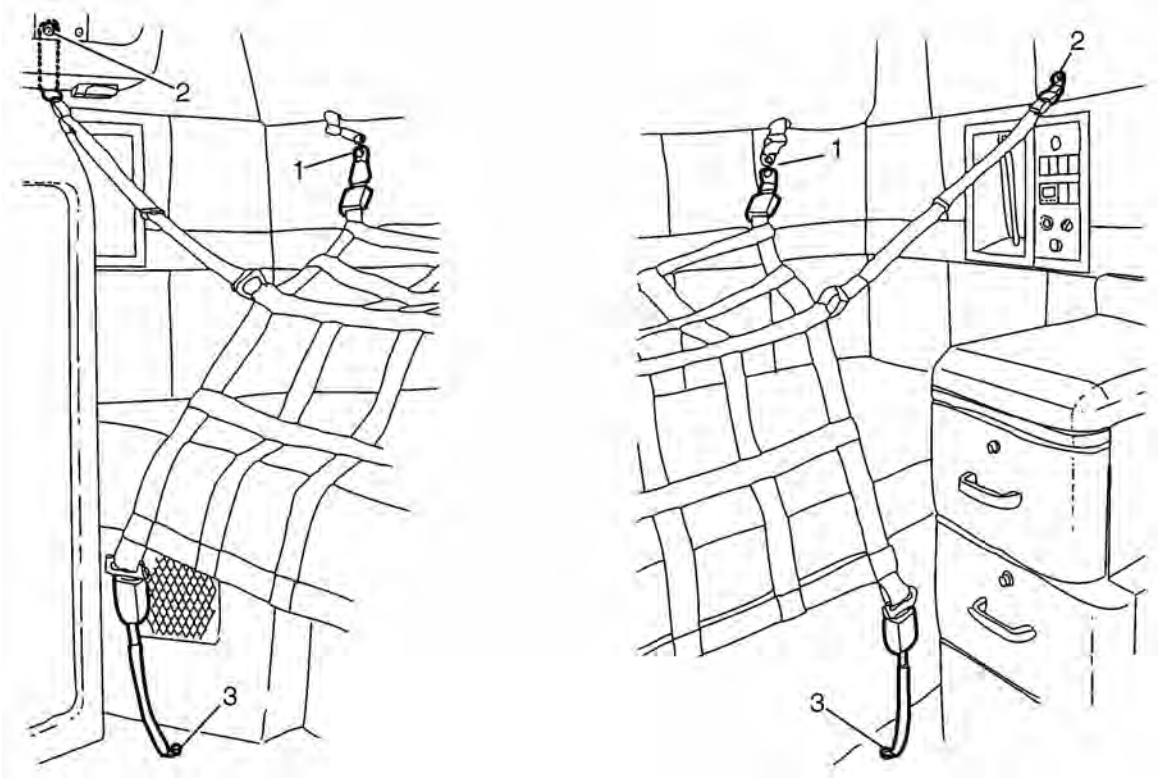


W8001329

Install the seat cushion by aligning clips and snapping into place.

8844-03-02-01
Lower Bunk Restraint, Replacement

VN 420/610/660



1 Restraint latches
2 Side tether latches
3 Bunk restraint buckles

⚠ DANGER

It is critical that any time a vehicle has been involved in an accident, the entire safety belt system must be replaced in the vehicle (which also includes the sleeper bunk restraints) if they were in use at the time of the accident. Failure to replace the safety belt system may result in serious injury or death.

⚠ DANGER

Before working on a vehicle, set the parking brakes, place the transmission in neutral, and block the wheels. Failure to do so can result in unexpected vehicle movement and can cause serious personal injury or death.

⚠ DANGER

When installing safety belt components, do not over-torque or use high-speed pneumatic tools. Doing so may cause anchor point failures, resulting in the possible failure of the safety belt anchoring system, which can cause serious personal injury or death.

Removal

1
Remove the bunk restraint webbing by releasing the 6 buckles on the restraint.

2
Remove one bolt from each of the two restraint latches (1) on the rear wall.

3
Remove the bolt from each of the side tether latches (2) on the left and right upper side wall (one on each side).

Note: Due to different bunk storage compartment configurations, it may be necessary to remove additional cover panels to access the side tether bracket bolts.

4
Remove one bolt from each of the two bunk restraint buckles (3). These buckles are mounted to the floor in front of the bunk assembly on the left and right side.

Installation

5
Install the two bunk restraint buckles (3) mounted to the floor in front of the bunk assembly, left and right side. Install the bolt and position the buckles to the correct position.
Torque each buckle assembly to 68 ± 7 Nm (50 ± 5 ft-lb).

68 ± 7 Nm (50 ± 5 ft-lb).

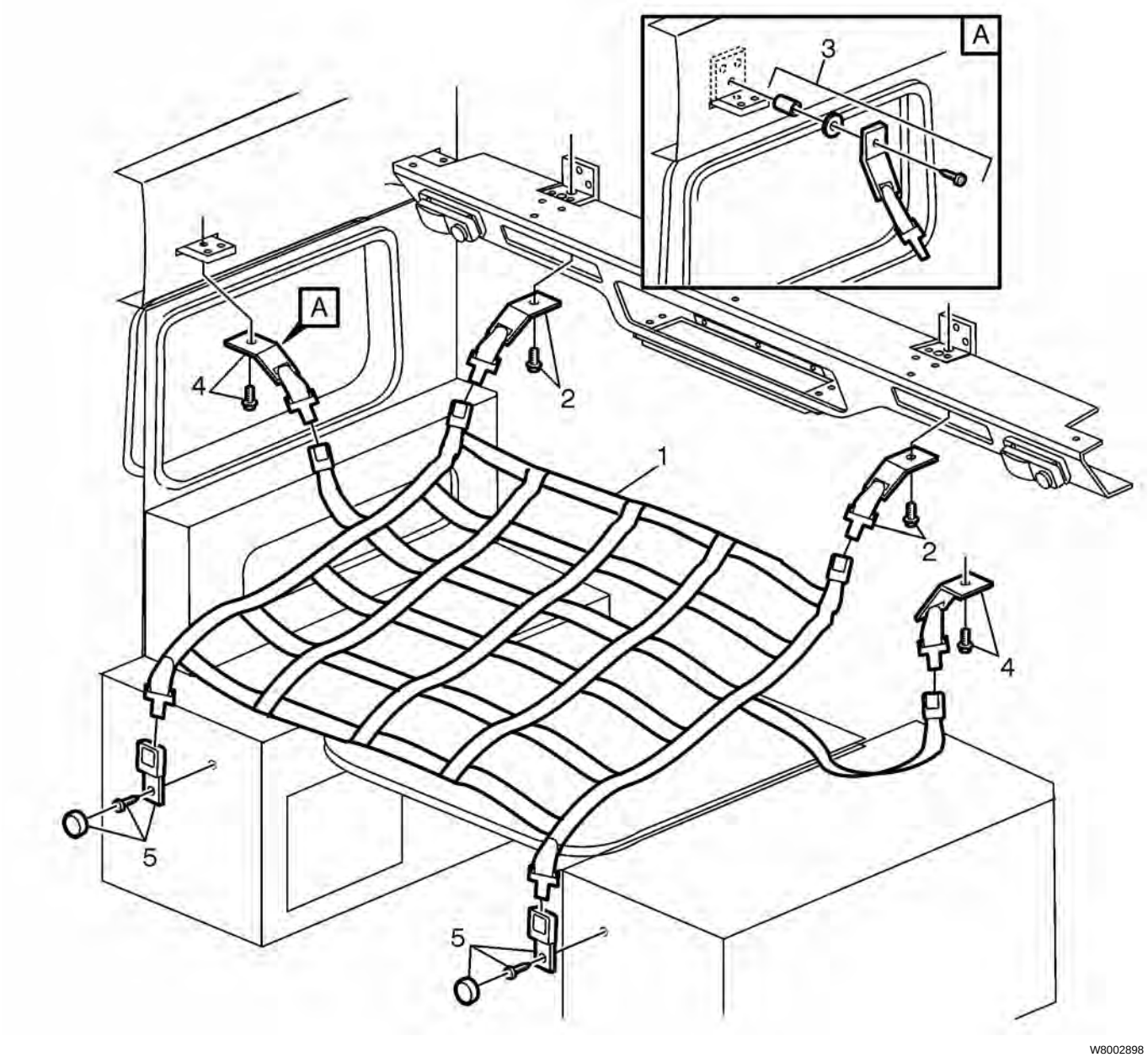
6
Install one bolt in each of the two side tether latches(2), one on each side wall. Align to the correct position and torque latch assembly to 24 ± 4 Nm (212 ± 35 in-lb).

24 ± 4 Nm (212 ± 35 in-lb)

7
Install one bolt for each of the two restraint latches on the rear wall (1). Align latch to the correct position and torque to 68 ± 7 Nm (50 ± 5 ft-lb). Install the bunk restraint webbing.

8844-03-02-01
Lower Bunk Restraint, Replacement

VN 770



W8002898

1 Lower bunk restraint
2 Restraint latch assembly
3 Side tether assembly (without upper bunk)
4 Side tether assembly (with upper bunk)
5 Restraint buckle assembly

⚠ DANGER

It is critical that any time a vehicle has been involved in an accident, the entire safety belt system must be replaced in the vehicle (which also includes the sleeper bunk restraints) if they were in use at the time of the accident. Failure to replace the safety belt system may result in serious injury or death.

⚠ DANGER

Before working on a vehicle, set the parking brakes, place the transmission in neutral, and block the wheels. Failure to do so can result in unexpected vehicle movement and can cause serious personal injury or death.

⚠ DANGER

When installing safety belt components, do not over-torque or use high-speed pneumatic tools. Doing so may cause anchor point failures, resulting in the possible failure of the safety belt anchoring system, which can cause serious personal injury or death.

Removal

1
Remove the bunk restraint (1) by releasing the 6 buckles.

2
Remove the bolts securing the restraint latches (2) on the rear wall.

3
If the vehicle is equipped with an upper bunk, remove the support cover that covers the side tether brackets.

4
Remove the bolts securing the left and right side tether brackets (3 or 4).

5
Remove the bolt head covers and bolts securing the lower restraint buckle (5).

Installation

6
Install the replacement lower restraint buckle. Torque the bolts to 68 ± 7 Nm (50 ± 5 ft-lb). Install the bolt head covers.

68 ± 7 Nm (50 ± 5 ft-lb)

7
Install the replacement left and right side tether brackets. Torque the bolts to 24 ± 4 Nm (212 ± 35 in-lb). Install the covers if removed (upper bunk models).

24 ± 4 Nm (212 ± 35 in-lb).

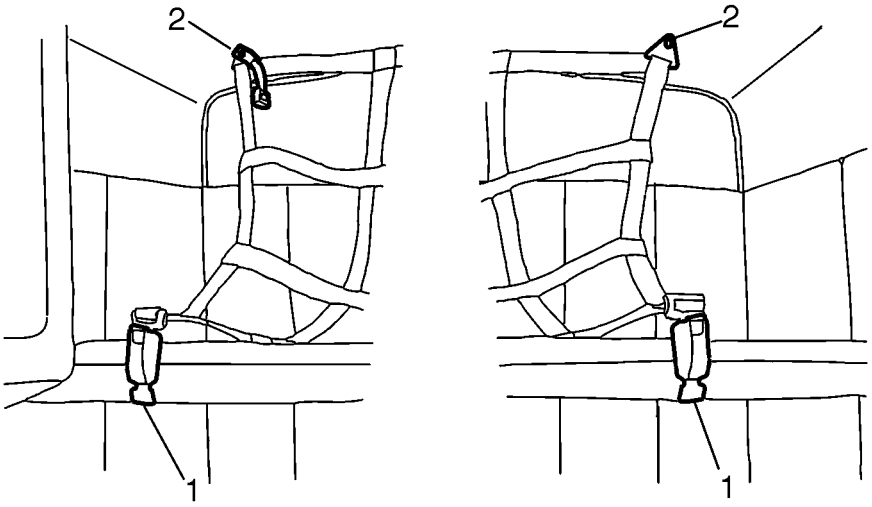
8
Install the replacement restraint latches on the rear wall. Torque the bolts to 68 ± 7 Nm (50 ± 5 ft-lb).

68 ± 7 Nm (50 ± 5 ft-lb).

9
Install the replacement bunk restraint. Check for proper fit and adjust as needed.

8844-03-02-02
Upper Bunk Restraint, Replacement

VN 610/660



W8002920

1 Upper bunk restraint buckle
2 Restraint brackets

⚠ DANGER

It is critical that any time a vehicle has been involved in an accident, the entire safety belt system must be replaced in the vehicle (which also includes the sleeper bunk restraints) if they were in use at the time of the accident. Failure to replace the safety belt system may result in serious injury or death.

⚠ DANGER

Before working on a vehicle, set the parking brakes, place the transmission in neutral, and block the wheels. Failure to do so can result in unexpected vehicle movement and can cause serious personal injury or death.

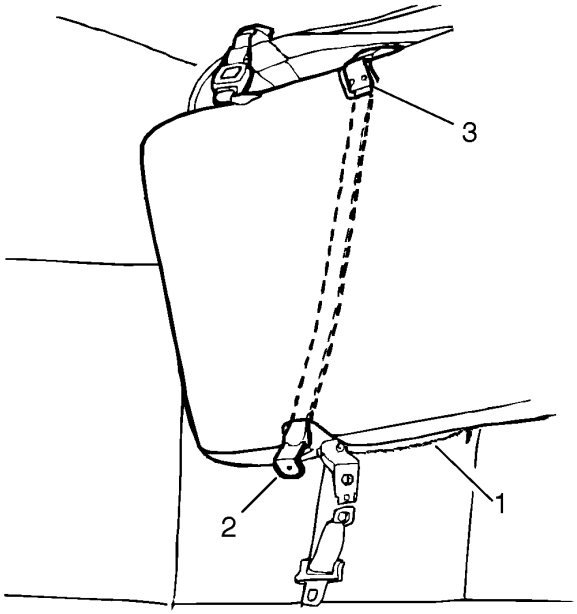
⚠ DANGER

When installing safety belt components, do not over-torque or use high-speed pneumatic tools. Doing so may cause anchor point failures, resulting in the possible failure of the safety belt anchoring system, which can cause serious personal injury or death.

Removal

1
Release the two buckles (1) on the front of the upper bunk restraint to remove the two latches. Remove one bolt from each side of the restraint brackets in the roof (2). Remove the restraint.

2



W8002924

1 Zipper
2 Mounting bracket
3 Buckle assembly

Unzip (1) the cover on the top bunk and flip the bunk to the upright position. Remove the restraint mounting bracket bolts (2) from the rear wall, one on each side.

3

Remove the mounting rivets or screws (3) from the buckle assembly in the bottom of the bunk (2 on each side). Pull on the buckle assembly to remove it, feeding the bracket through the back side.

Installation

4

Install the restraint brackets through the front of the bunk by reaching through the back of the bunk and feeding the restraint bracket through the hole in the back of the bunk. Install the bolt and align the bracket to the rear wall. Torque to 68 ± 7 Nm (50 ± 5 ft-lb).

68 ± 7 Nm
(50 ± 5 ft-lb)

5

Note: Steel rivets of the proper size (Volvo P/N 3082569 or equivalent) must be used.

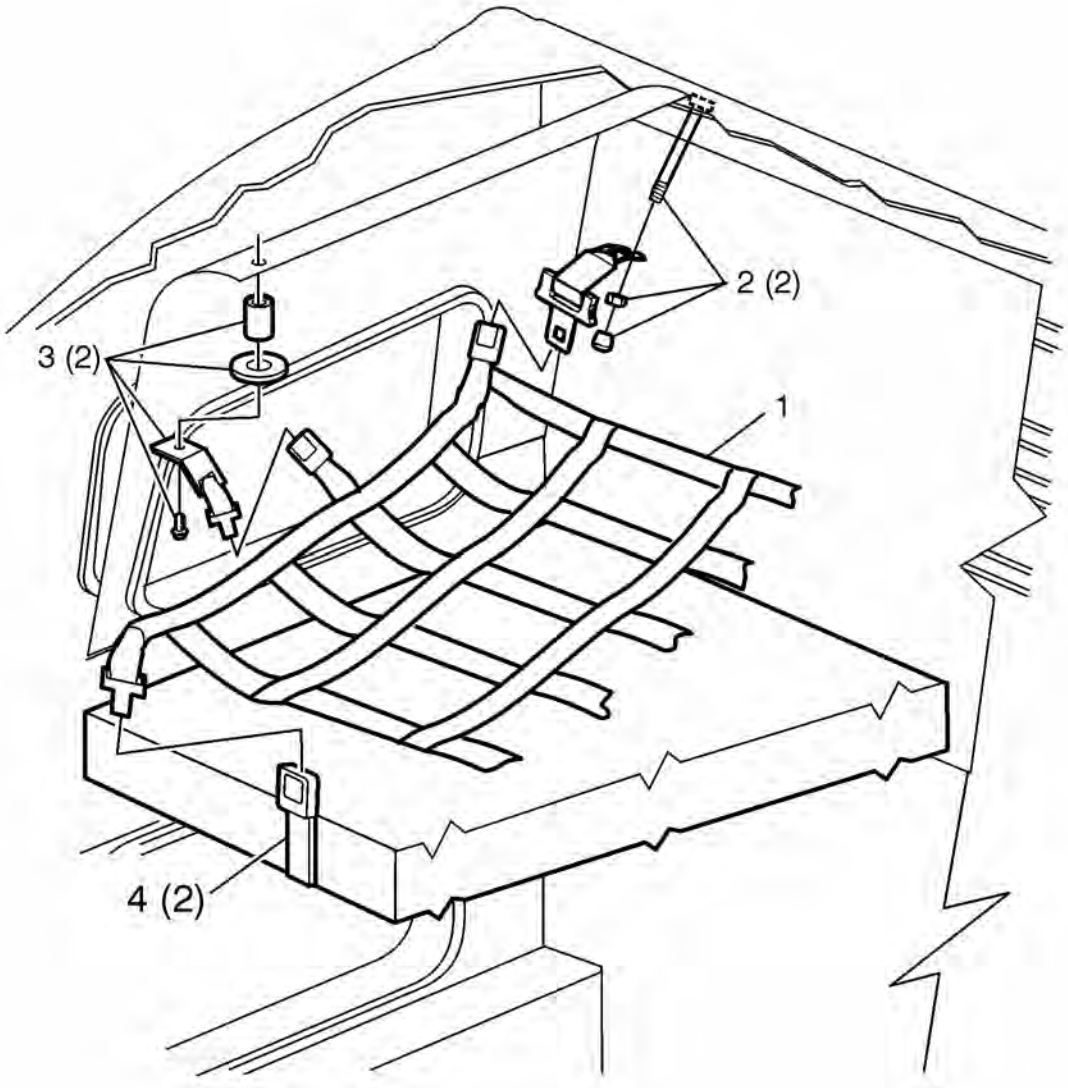
Rivet the buckle assemblies to the bottom of the bunk. Zip up the top bunk cover

6
Install the bunk restraint brackets to the roof by installing the bolt through the short buckle and restraint bracket on the left and right side. Align to the correct position and torque to 68 ± 7 Nm (50 ± 5 ft-lb).

7
Install the latches into the buckles at the front of the bunk.

8844-03-02-02
Upper Bunk Restraint, Replacement

VN 770



W8002899

1 Bunk restraint
2 Restraint latch assembly
3 Side tether assembly
4 Restraint buckle assembly

⚠ DANGER

It is critical that any time a vehicle has been involved in an accident, the entire safety belt system must be replaced in the vehicle (which also includes the sleeper bunk restraints) if they were in use at the time of the accident. Failure to replace the safety belt system may result in serious injury or death.

⚠ DANGER

Before working on a vehicle, set the parking brakes, place the transmission in neutral, and block the wheels. Failure to do so can result in unexpected vehicle movement and can cause serious personal injury or death.

⚠ DANGER

When installing safety belt components, do not over-torque or use high-speed pneumatic tools. Doing so may cause anchor point failures, resulting in the possible failure of the safety belt anchoring system, which can cause serious personal injury or death.

Removal

1
Remove the bunk restraint (1) by releasing the 6 buckles.

2
Remove the nut securing the restraint latches (2) on the rear wall.

3
Remove the bolts securing the left and right side tether brackets (3).

4
Remove the screws and bumper stops around the back and sides of the upper bunk bottom trim panel to allow access to the restraint buckle mounts. Remove the lower screw securing the “fold-up” latch release strap.

5
Gently fold the trim panel forward, and remove the restraint buckle (4) mounting screws and remove the restraint buckles.

Installation

6
Install the replacement restraint buckles. Torque the bolts to 12 ± 2 Nm (106 ± 17 in-lb).

7
Install the lower screw securing the replacement latch release strap. Secure the upper bunk bottom trim panel.

8
Install the replacement left and right side tether brackets. Torque the bolts to 24 ± 4 Nm (212 ± 35 in-lb).

9
Install the replacement latches on the rear wall. Torque the nuts to 68 ± 7 Nm (50 ± 5 ft-lb).

10
Install the replacement bunk restraint. Check for proper fit and adjust as needed.

Feedback

One of our objectives is that workshop personnel should have access to correct and appropriate service manuals where it concerns fault tracing, repairs and maintenance of Volvo trucks.
In order to maintain the high standards of our literature, your opinions and experience when using this manual would be greatly appreciated.
If you have any comments or suggestions, make a copy of this page, write down your comments and send them to us, either via telefax or mailing directly to the address listed below.

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Fax (336) 393-3170

From

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Comments/proposals

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Concerns Service Manual: .....

Operation Numbers

3741-03-02-01 SRS Wiring Harness, Replacement 59
8841-03-02-01 Safety Belt, Replacement (One) 63, 65
8844-03-02-01 Lower Bunk Restraint, Replacement 68, 70
8844-03-02-02 Upper Bunk Restraint, Replacement 72, 75
8845-03-02-01 Airbag Module/Contact Reel, Replacement 52
8847-03-02-01 SRS ECU, Replacement 57

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