

SCANIA

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Issue 2 en-GB

Belt pretensioner and airbag

Function and work description



104 305

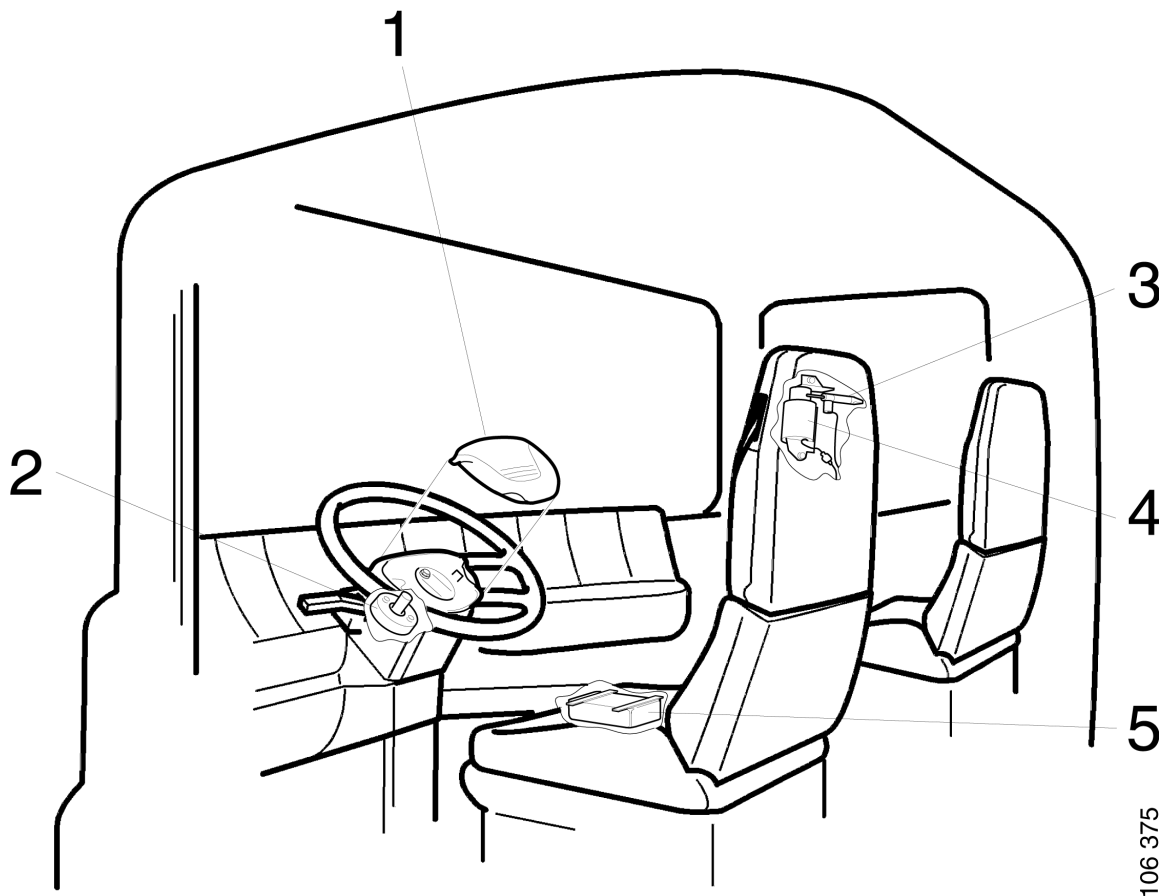
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Function description

General

The airbag and the belt pretensioner are in contact with the same control unit.

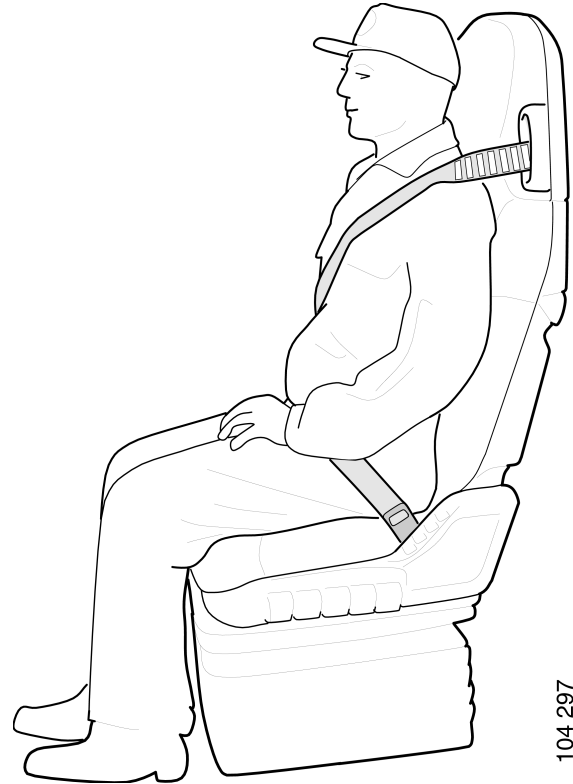


1. Airbag
2. Clock spring
3. Belt pretensioner
4. Inertia reel
5. Control unit

Safety belt with belt pretensioner

General

In a collision the belt pretensioner retracts the belt 75 mm or max 100 kg. All belt pretensioners in the truck are deployed simultaneously. Nobody needs to be sitting in the seat for the belt pretensioner to be deployed.

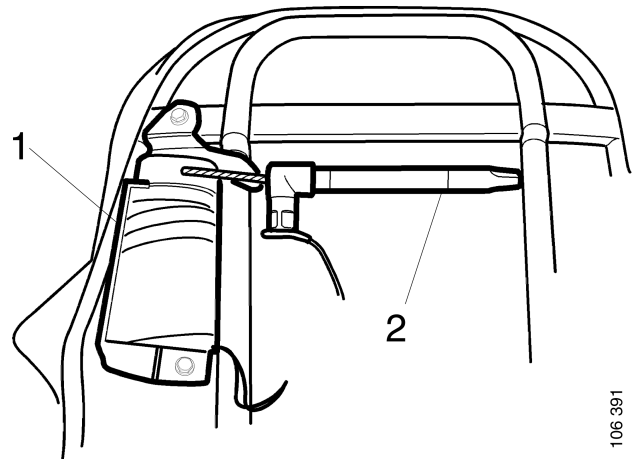


104 297

Belt pretensioner

Activation

The control unit is in constant contact with the belt pretensioner igniter. The igniter is activated at collision. When the igniter is activated, the steel wire rope is pulled, which causes the inertia reel to tighten the belt. At the same time the belt is locked.



106 391

1. Inertia reel
2. Belt pretensioner

Airbag

General

If the vehicle is equipped with both an airbag and a belt pretensioner, they will be deployed simultaneously as they receive signals from the same control unit. If the vehicle has an airbag, it must also have a belt pretensioner.

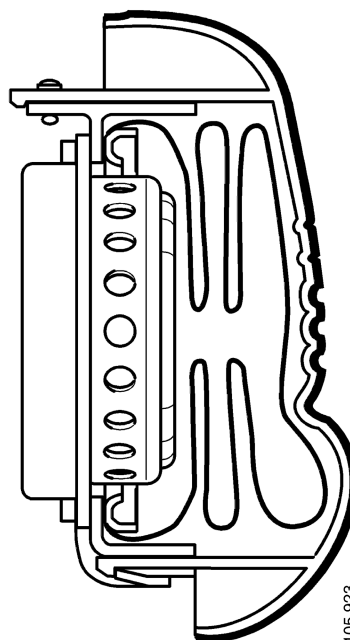


104 305

Belt pretensioner and airbag

Activation

The control unit is in constant contact with the airbag igniter. The igniter is activated on impact and ignites the substance in the gas generator. Large quantities of nitrogen build up here, inflating the airbag.



105 923

The airbag with gas generator

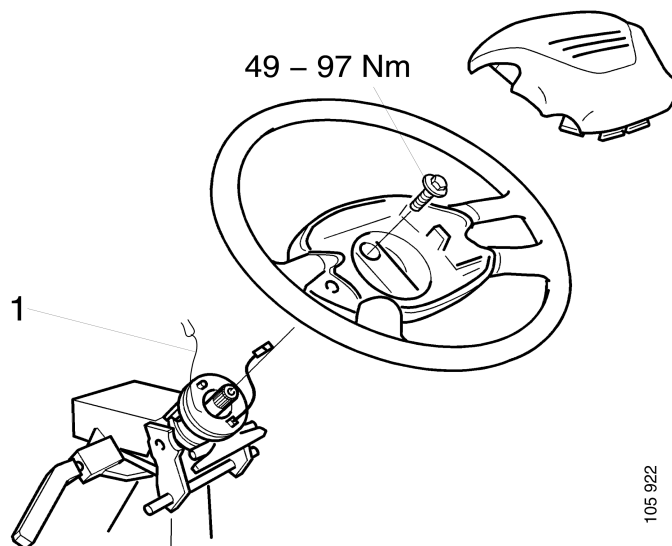
Clock spring

Function

The clock spring is placed on the steering column. All pulses between the control unit and the airbag pass through the clock spring.

When the steering wheel is turned, the clock spring also turns and pulls in or lets out the electrical cable on the reel. The clock spring's electrical cable can be turned max 3.5 turns from the centre position in each direction. New clock springs have a rotation locking device. It prevents the clock spring from turning and ensures the clock spring stays in its centre position while the steering wheel is fitted. Then the rotation locking device is removed.

To remove and fit the clock spring use strong tape to keep the clock spring in place.



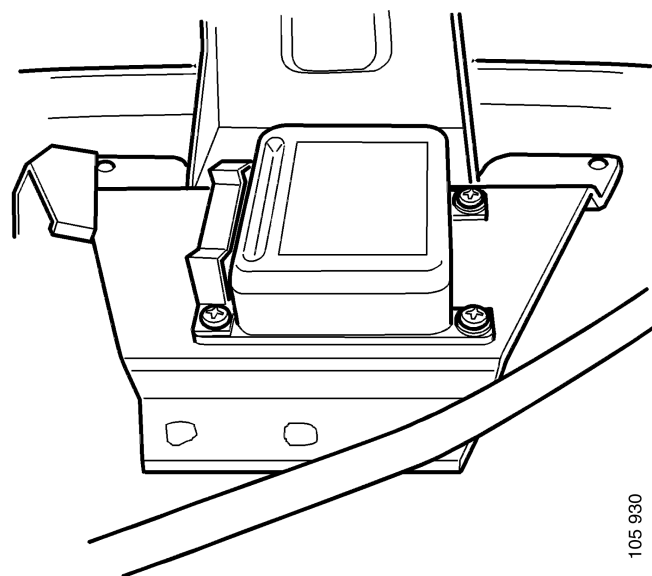
1. Clock spring

Control unit

Function

The control unit sensors detect the change in the truck's speed when a collision occurs. If the deceleration is powerful enough an ignition signal is sent to the air bag and belt pretensioner ignition outputs. Even if all three outputs are not connected to an air bag or belt pretensioner, all three outputs will always receive a signal.

The control unit is placed on the engine cover, centred below the instrument panel.



105 930

Control unit

Warning lamp

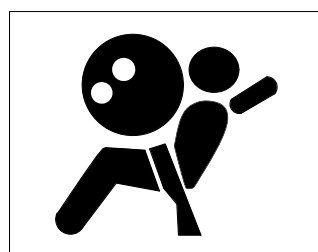
Function

The warning lamp comes on when the ignition is switched on. If there are no faults in the system, the lamp will go out after approx. 10 seconds.

The warning lamp shows that the vehicle has a belt pretensioner or belt pretensioner and airbag.

The lamp comes on when the control unit detects an electrical fault in one of the ignition circuits, e.g. an open circuit, a short circuit or an internal fault in the control unit. The control unit controls only the outputs that are configured for an airbag or belt pretensioner.

The warning lamp is yellow.



104 299

Warning lamp

Work description

This work description contains the removal and fitting of:

- Belt pretensioner
- Airbag
- Clock spring
- Control unit

Renewing the safety belt and belt pretensioner

When the system has been activated

After the system has been activated, the airbag, clock spring, all belt pretensioners, control unit, steering wheel and steering column should always be renewed. If the system has not been activated, only those parts which have been damaged in the collision should be renewed.

Storage, transport and disposal of pyrotechnic equipment

Airbags and belt pretensioners are considered pyrotechnic equipment and must be handled according to special rules. Every country has its own legislation regarding handling, but in general this equipment is considered explosive goods as soon as it is handled outside the vehicle.

For the storage, transport or disposal of non-deployed units, check with the relevant country's Scania importer which rules apply in your country.

For transport between Scania parts warehouses and workshops, the pyrotechnic equipment is transported in specially reinforced packaging. The transport is considered hazardous goods.

Removing

**WARNING!**

Disconnect all power sources from the vehicle before starting work on the belt pretensioner.

**WARNING!**

The belt pretensioner contains an explosive charge and is considered explosive goods when handled outside the vehicle. Do not perform any other work besides that described here.

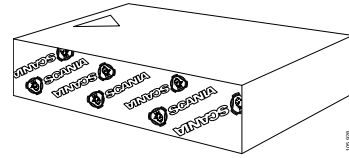
**WARNING!**

Carry the belt pretensioner with the mouth of the pipe pointing downwards. Do not hold your fingers over the pipe mouth or on the wire rope.

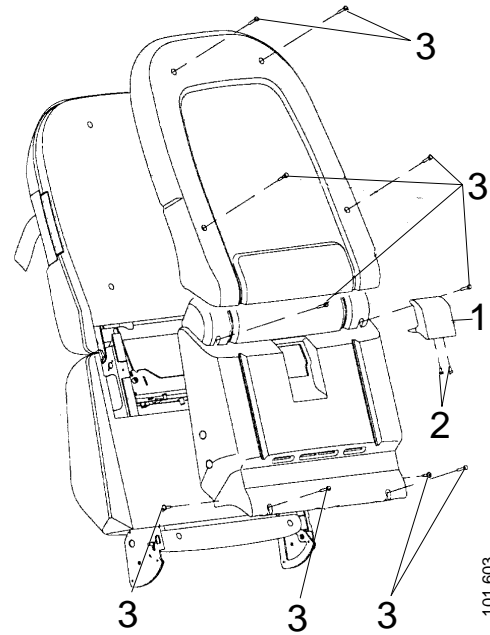
**WARNING!**

After removing the belt pretensioner, place it in its packaging.

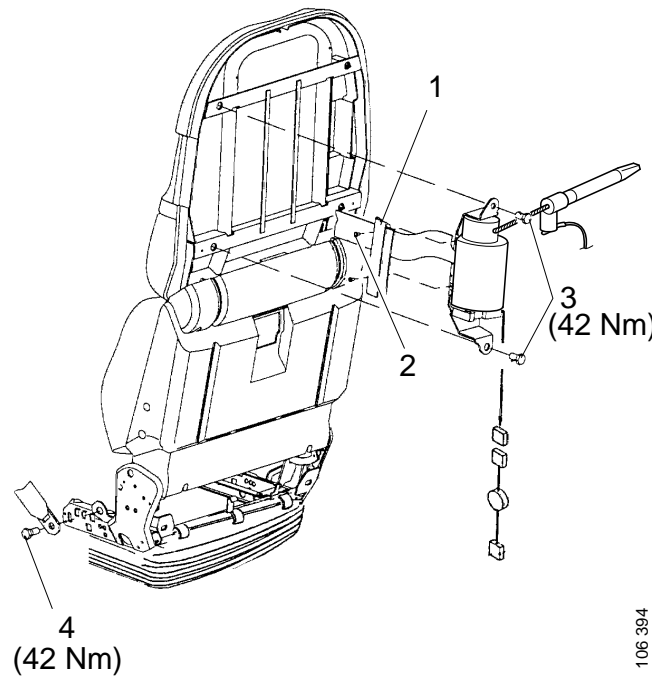
- 1 Check that you have an empty packaging to put the belt pretensioner in when you have removed it. If you are going to fit a new belt pretensioner, use its packaging for the old one.



- 2 Push the upper part of the backrest forward as far as it will go.
- 3 Remove screws 2, in grip 1.
- 4 Remove the remaining screws 3 from the casing.



- 5 Remove belt guide 1 with screws 2.
- 6 Fold away the upholstery.
- 7 Disconnect the cable harness under the belt pretensioner.
- 8 Remove screws 3.



- 9 Remove the inertia reel and igniter pipe assembly.

**IMPORTANT!**

Place the belt pretensioner in a special packaging.

Note: Airbags and belt pretensioners are considered pyrotechnic equipment and must be handled according to special rules. For the storage, transport or disposal of non-deployed units, check with the relevant country's Scania importer which rules apply in your country.

- 10 Remove the side casing with the button panel and remove the rear/lower casing.
- 11 Remove screw 4 from the belt anchorage. Refer to the lower illustration.

Fitting



WARNING!

Disconnect all power sources from the vehicle before starting work on the belt pretensioner.



WARNING!

The belt pretensioner contains an explosive charge and is considered explosive goods when handled outside the vehicle. Do not perform any other work besides that described here.



WARNING!

Keep the belt pretensioner in its packaging until you fit it into place. If you have to stop work, lock the belt pretensioner away safely in a storeroom.



WARNING!

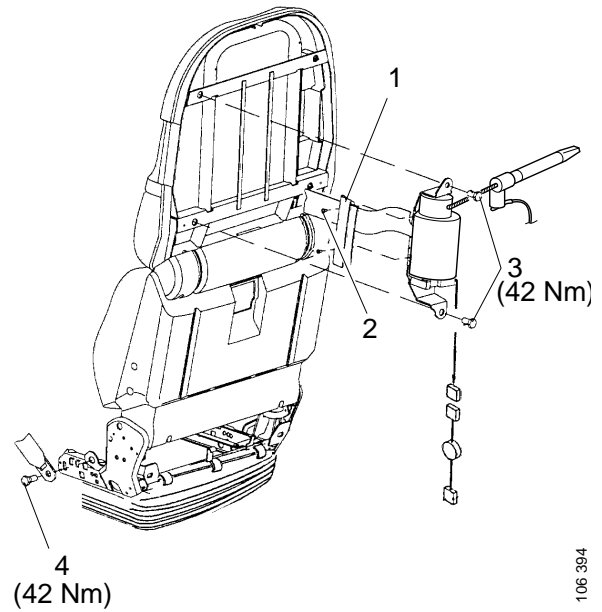
Carry the belt pretensioner with the mouth of the pipe pointing downwards. Do not hold your fingers over the pipe mouth or on the wire rope.



WARNING!

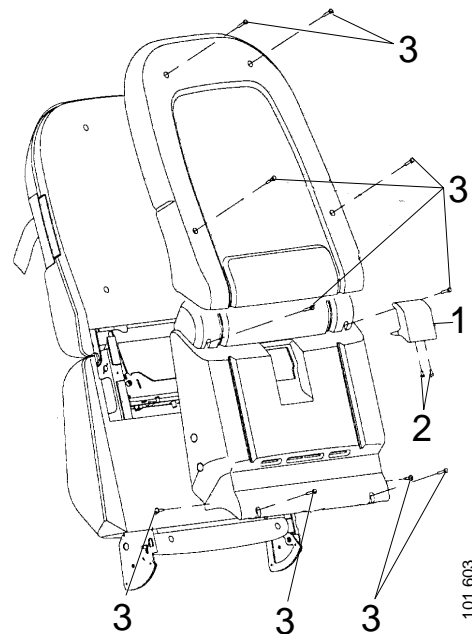
Do not use a belt pretensioner that has fallen more than 0.5 metres on to a hard surface.

- 1 Fit screw 4 using thread-locking fluid and tighten it to 42 Nm.
- 2 Fit the side casing with the button panel, and the rear lower casing.
- 3 Fit the inertia reel and igniter pipe assembly. Apply thread-locking fluid to the screws 3 and tighten them to 42 Nm.
- 4 Connect the cable harness.
- 5 Fold the upholstery back into place.
- 6 Fit belt guide 1 with screws 2.



106 394

- 7 Fit the backrest casing.



101 603

Renewing the airbag

When the system has been activated

After the system has been activated, the airbag, clock spring, all belt pretensioners, control unit, steering wheel and steering column should always be renewed. If the system has not been activated, only those parts which have been damaged in the collision should be renewed.

Storage, transport and disposal of pyrotechnic equipment

Airbags and belt pretensioners are considered pyrotechnic equipment and must be handled according to special rules. Every country has its own legislation regarding handling, but in general this equipment is considered explosive goods as soon as it is handled outside the vehicle.

For the storage, transport or disposal of non-deployed units, check with the relevant country's Scania importer which rules apply in your country.

For transport between Scania parts warehouses and workshops, the pyrotechnic equipment is transported in specially reinforced packaging. The transport is considered hazardous goods.

On contact with hazardous substances from the airbag

If inhaled

Go outdoors in the fresh air. Give the person artificial respiration or oxygen, if necessary. The person should seek medical attention.

Skin contact

Rinse with water for at least 15 minutes. Seek medical attention.

Eye contact

Rinse with water for at least 15 minutes. Seek medical attention.

If ingested

Drink 2 to 3 decilitres of water and provoke vomiting by inserting one or two fingers down the throat. Call a doctor.

If the person is unconscious or has convulsions, do not try to make him drink water or provoke vomiting. Call a doctor without delay.

Removing

**WARNING!**

Disconnect all power sources from the vehicle before starting work on the airbag.

**WARNING!**

The airbag contains an explosive charge and is considered explosive goods when handled outside the vehicle. Do not perform any other work besides that described here.

**WARNING!**

Carry the airbag with the metal casing facing down.

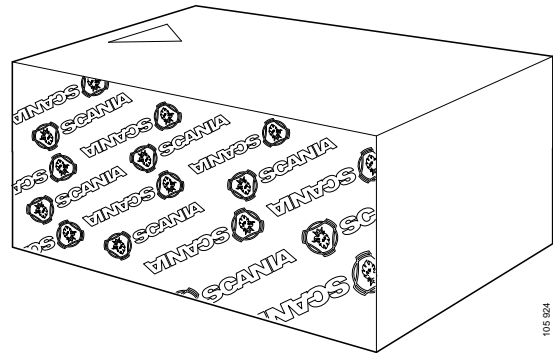
**WARNING!**

After removing the airbag, place it in its packaging.

**WARNING!**

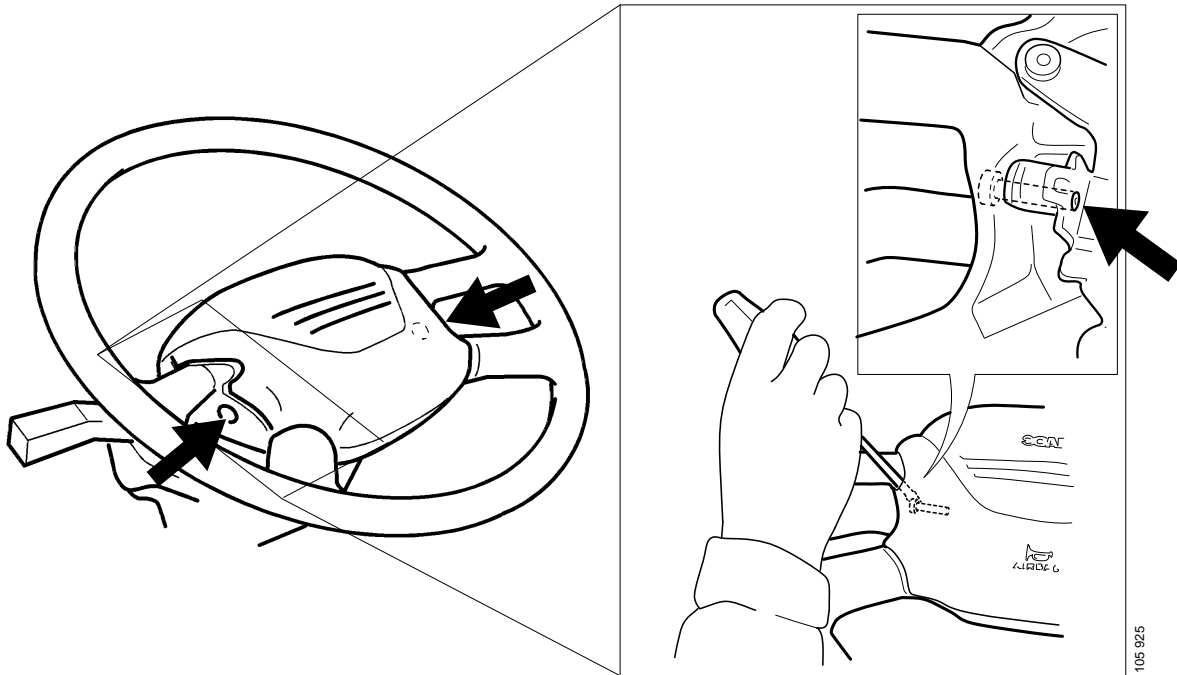
An airbag that has not been activated contains hazardous substances that can cause injury if they leak out. Before activation an airbag contains sodium azide, potassium nitrate, silicon oxide and iron oxide.

- 1 Check that you have an empty packaging to put the airbag in when you have removed it. If you are going to fit a new airbag, use its packaging for the old one.



105 924

- 2 Undo the screws securing the airbag. The screws remain in a special holder. See illustration below.



105 925

- 3 Lift away the airbag.
- 4 Disconnect the electrical cable from the airbag.



IMPORTANT!

Place the airbag in a special packaging.

Note: Airbags and belt pretensioners are considered pyrotechnic equipment and must be handled according to special rules. For the storage, transport or disposal of non-deployed units, check with the relevant country's Scania importer which rules apply in your country.

Fitting



WARNING!

Disconnect all power sources from the vehicle before starting work on the airbag.



WARNING!

The airbag contains an explosive charge and is considered explosive goods when handled outside the vehicle. Do not perform any other work besides that described here.



WARNING!

Carry the airbag with the metal casing facing down.



WARNING!

Keep the airbag in its packaging until you fit it into place. If you have to stop work, lock the airbag away safely in a storeroom.



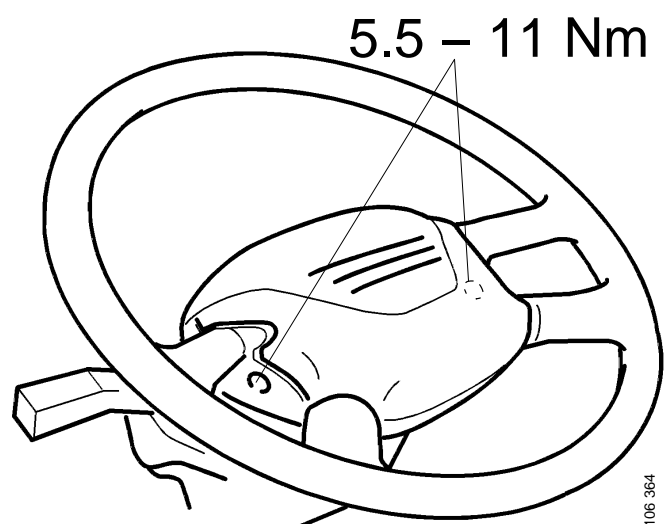
WARNING!

An airbag that has not been activated contains hazardous substances that can cause injury if they leak out. Before activation an airbag contains sodium azide, potassium nitrate, silicon oxide and iron oxide.

- 1 Connect the electrical cable to the airbag.
Make sure that it is not pinched or twisted.
- 2 Fit the airbag with the 2 screws.

**IMPORTANT!**

Tighten the screws by between 5.5 and 11 Nm.



Renewing the clock spring

When the system has been activated

After the system has been activated, the airbag, clock spring, all belt pretensioners, control unit, steering wheel and steering column should always be renewed. If the system has not been activated, only those parts which have been damaged in the collision should be renewed.

Removing

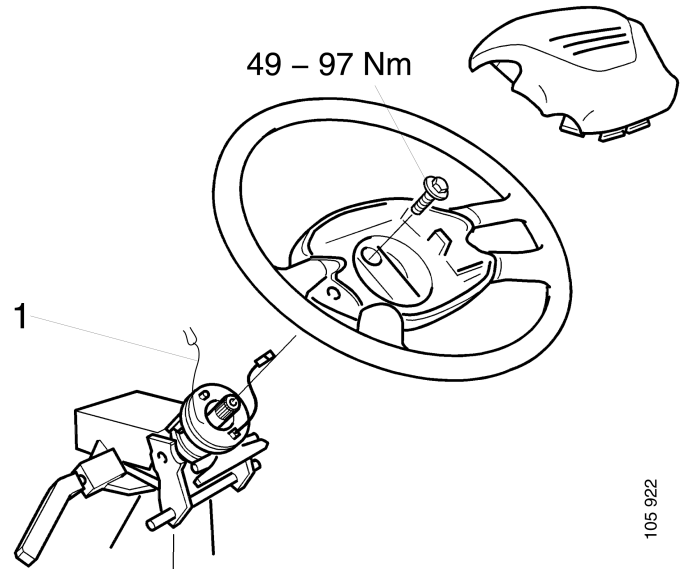
IMPORTANT!

Park the vehicle with the wheels pointing straight ahead.

- 1 Remove the airbag as described in previous instructions.
- 2 Remove the steering wheel bolt.
- 3 Disconnect the horn's electrical cable.
- 4 Remove the steering wheel.

IMPORTANT!

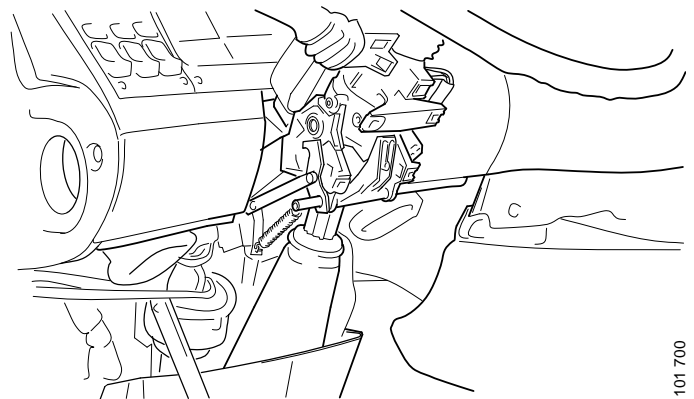
If the clock spring is to be refitted, tape it so that it stays in the correct position until the steering wheel is refitted.



*Airbag, steering wheel and steering wheel bolt
1. Horn's electrical cable*

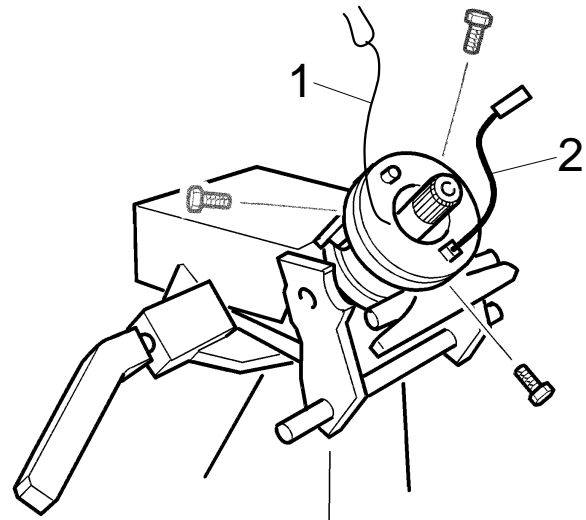
105 922

- 5 Remove the covers from under the steering wheel.



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- 6 Disconnect the clock spring's cable harness at the steering column.
- 7 Remove the clock spring.



Fitting



IMPORTANT!

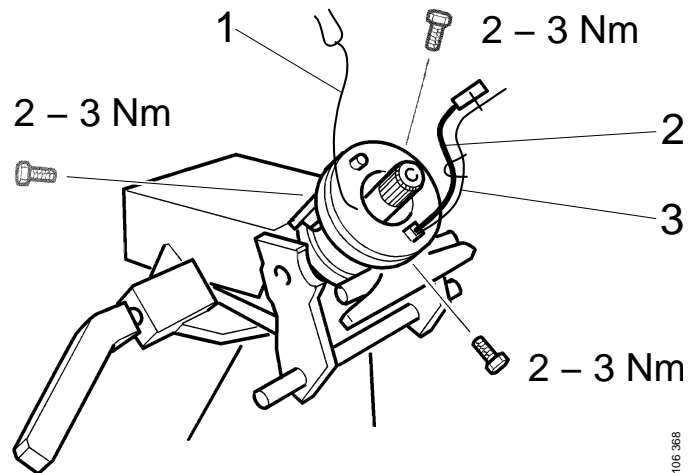
The red rotation locking device or tape must remain in place until the clock spring and the steering wheel have been fitted.

- 1 Fit the clock spring and connect it to the cable harness below the instrument panel. Attach the cable harness with cable ties.
- 2 Attach the clock spring with 3 new screws.



IMPORTANT!

Tighten the screws by 2 to 3 Nm.



1. Horn's electrical cable
2. Airbag's electrical cable
3. Rotation locking device

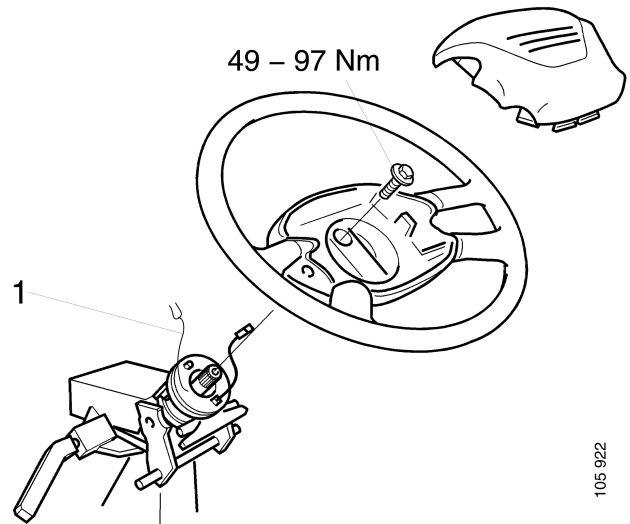
3 Fit the steering wheel with a new screw.

! IMPORTANT!

Tighten the screw by 49 to 97 Nm.

! IMPORTANT!

Do not turn the steering wheel until the rotation locking device has been removed.



*Airbag, steering wheel and steering wheel bolt
1. Horn's electrical cable*

- 4 Connect the horn's electrical cable in the steering wheel.
- 5 Remove the rotation locking device.
- 6 Fit the airbag in accordance with the previous instructions.
- 7 Fit the covers under the steering wheel.

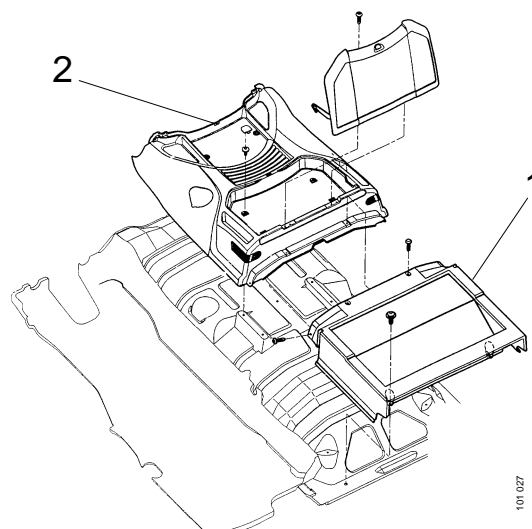
Renewing the control unit

When the system has been activated

After the system has been activated, the airbag, clock spring, all belt pretensioners, control unit, steering wheel and steering column should always be renewed. If the system has not been activated, only those parts which have been damaged in the collision should be renewed.

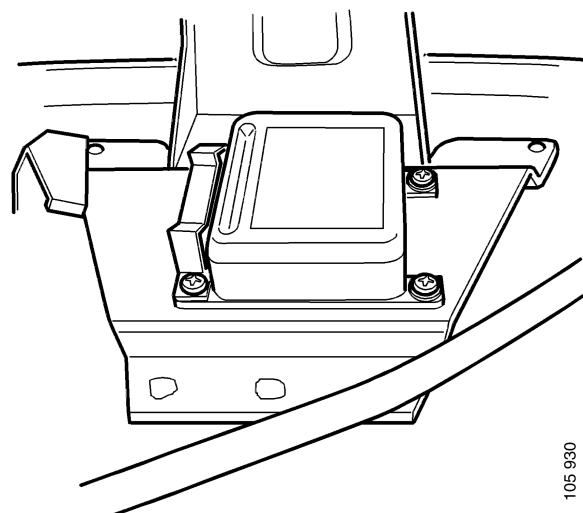
Removing

- 1 Detach the gear lever boot or the Opticruise control.
- 2 Remove the covers below the instrument panel.
- 3 Remove storage box 2.



Storage box

- 4 Detach the cable harness from the control unit.
- 5 Remove the control unit.



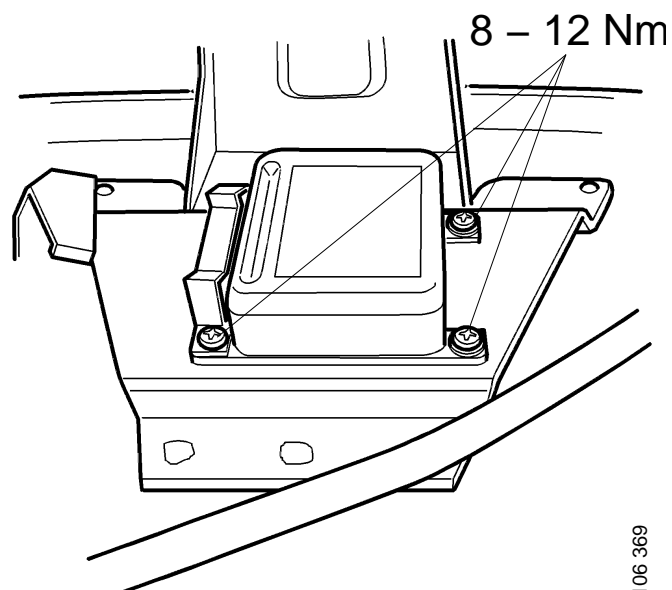
Fitting

- 1 Fit the control unit. Do not use screws which are too long.



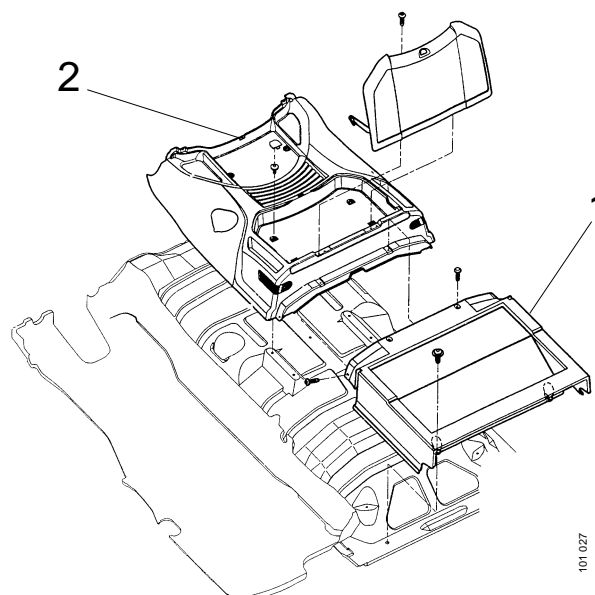
IMPORTANT!

Tighten the screws by 8 to 12 Nm.



106 369

- 2 Connect the cable harness to the control unit. Secure the connection using the latch.
- 3 Fit the storage box.



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Storage box

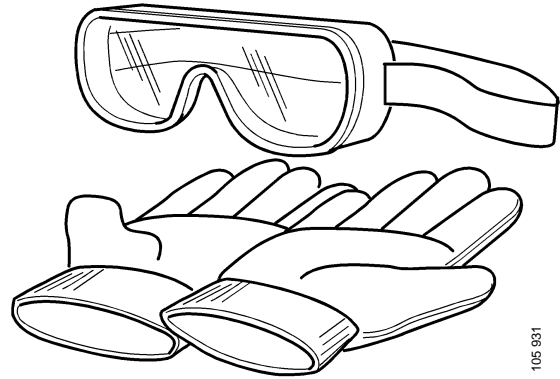
Decontaminating vehicles with deployed airbag

When the airbag deploys, talc and combustion residue that may contain caustic soda is released.



WARNING!

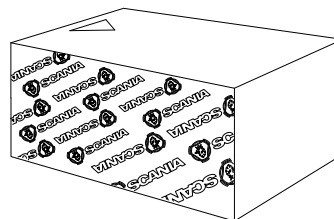
Wear protective gloves and goggles.



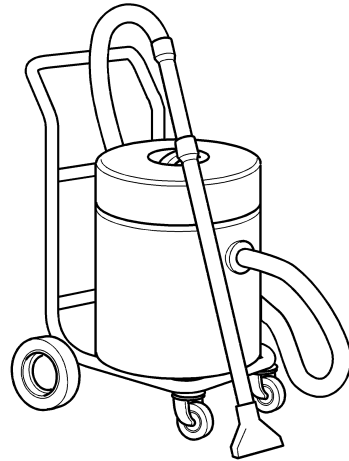
WARNING!

There is a greater chance of developing throat and eye irritation or difficulties breathing if spending several minutes inside a vehicle where the airbag has deployed.

- 1 Remove the airbag and place it in a special packaging.

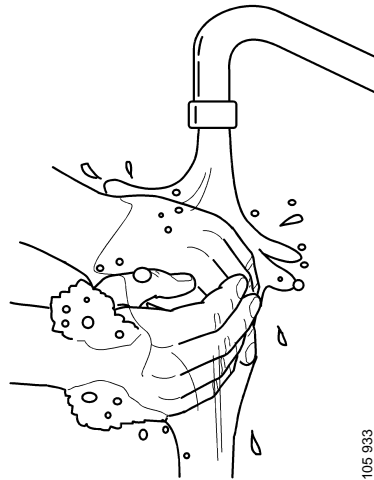


2 Vacuum thoroughly inside the vehicle.



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3 Wash your hands with soap and water.



105 933

Scrapping vehicles with SRS

Remove the belt pretensioner and airbag as described in the instructions in the previous section.

Storage, transport and disposal of airbags and belt pretensioners

Airbags and belt pretensioners are considered pyrotechnic equipment and must be handled according to special rules. Every country has its own legislation regarding handling, but in general this equipment is considered explosive goods as soon as it is handled outside the vehicle.

For the storage, transport or disposal of non-deployed units, check with the relevant country's Scania importer which rules apply in your country.

For transport between Scania parts warehouses and workshops, the pyrotechnic equipment is transported in specially reinforced packaging. The transport is considered hazardous goods.