# Workshop Manual

## Audi A5 Coupé 2008 ➢

## Fitting instructions: Filling roof side member with foam

Edition 08.2008

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# List of Workshop Manual Repair Groups

## Repair Group

51 - Body - centre

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Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.

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# 51 – Body - centre

RO: 51 05 55 50

## 1 Filling roof side member with foam

### 1.1 Sequence of operations

**The roof side member foam filling repair operation is to be entered in the Service plan under Verification/Workshop entry.**

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Left roof side member filled with foam: yes / no

Right roof side member filled with foam: yes / no

**Note**

- *After applying the foam fill, the vehicle must be left standing on a flat surface for 24 hours at an ambient temperature of 15° C to allow the rigid epoxy foam to harden (curing time).*
- *Work on the vehicle can only be continued following completion of the curing time.*

**WARNING**

***Up to chassis number 8T8A029218 a two-pack rigid epoxy foam must be applied instead of the expanding foam elements to provide reinforcement for a roof carrier.***

***The sequence of operations must be observed.***

**Caution**

***The structural expanding foam elements only expand as of a temperature of approx. 180°. Use is therefore made for service of a two-pack rigid epoxy foam.***

***The two-pack rigid epoxy foam -D 506 110 A3- is required for this service work.***

### 1.2 The sequence of operations shown must always be observed:

1 - Heat the structural foam cartridge for 30 minutes in a water bath with a constant temperature of approx. 60 °C.

If available, the cartridge can be heated at 60° C in a stove.

2 - Remove the inner A-pillar.

3 - Remove the decorative roof trim.

4 - Remove the side window.

5 - Prepare the static mixer for the foam filling operation.

6 - Drill off the clinch bolt at the front.

7 - Drill a ∅6 mm hole at the rear for the foam filling operation and countersink with a 90° cutter.

8 - Deburr the holes on the inside and outside and seal with one-pack wash primer LLS MAX 101-104. Then apply two-pack filler LLS MAX 201.

**Note**

- *Instructions for working with one-pack wash primer LLS MAX 101-104*
- *To avoid the need for a top coat, apply a thin layer of one-pack wash primer (use a brush if applicable) and allow to dry for 10 -15 minutes. Forced drying with a hairdryer or infrared dryer is not permissible.*
- *Then apply two-pack filler LLS MAX 201.*
- *On completion of the flash-off time, harden under an infrared lamp at 60° C for approx. 5 minutes.*

9 - Fill the holes in the side frame with foam.

10 - Coat the clinch bolt with body sealant, e.g. Terolan Hell and fit using pop rivet nut pliers -VAS 5073- .

11 - Coat the M4 pop rivet nut with body sealant, e.g. Terolan Hell and fit using pop rivet nut pliers -VAS 5073- .

12 - Seal the hole with Terolan Hell.

13 - Coat the hexagon socket head bolt with body sealant, e.g. Terolan Hell and screw in.

14 - Fit the decorative roof trim.

15 - Start the foam filling operation on the other side.

16 - Fit the side windows.

17 - Fit the inner A-pillar.

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## 1.3 Working instructions: Preparation

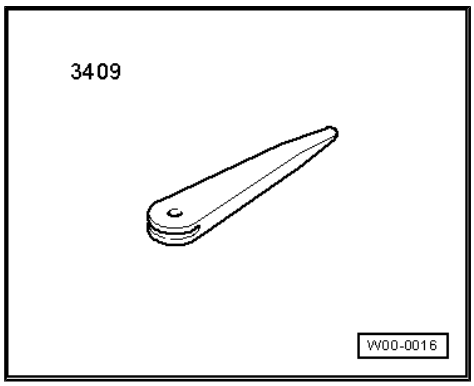
### Removing inner A-pillar

**Note**

*Removal and installation are identical on the left and right.*

### Special tools and workshop equipment required

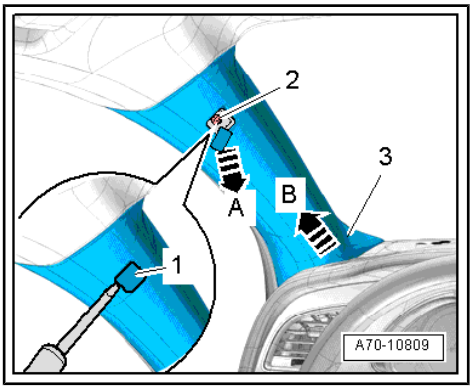
- Disassembly tool -3409-



### Removing

**WARNING**

*Heed the safety regulations for pyrotechnic components.*




– Use a screwdriver to carefully unclip the cap -1- with the “air-bag” symbol from the upper A-pillar trim.
– Screw out the bolt -2-.
– Starting at the top, carefully unclip the upper A-pillar trim -3- using the disassembly tool -3409- -arrow A-.
– Pull the upper A-pillar trim out of the dash panel -arrow B- and detach.

### Installing

**WARNING**

- *Heed the safety regulations for pyrotechnic components.*
- *Take care not to trap the head airbag when fitting the upper A-pillar trim.*

Install in reverse order, paying attention to the following:

**Note**

- *If there are still trim clips in the body mounting points, they are to be removed and inserted in the trim on installation.*

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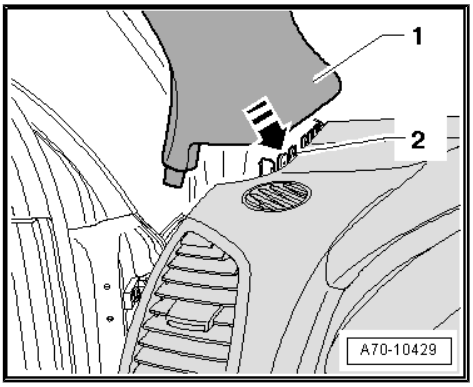
- *Check the clips for damage or deformation and replace if necessary.*

– Use a tap to remove any residual locking compound from the tapped hole for the bolt of the upper A-pillar trim.

**Note**

*If the tapped hole is not cleaned, there is a danger of the new bolt seizing on being screwed in and shearing off if removed again.*




– Insert the upper A-pillar trim -1- in the mount -2- for the dash panel and the lower A-pillar trim -arrow direction-.
– Clip in the upper A-pillar trim and fold over the lip of the door seal.

### Removing decorative roof trim

**1 - Decorative roof trim**

**Note**

*Take care not to twist or bend the decorative roof trim.*

- Detach the door seal from the body flange in the area of the “A-pillar” and the decorative roof trim.
- Drill the heads off the pop rivets, knock out the shanks and detach the decorative roof trim.
- Carefully prise the decorative roof trim out of the fasteners above the side window and detach.

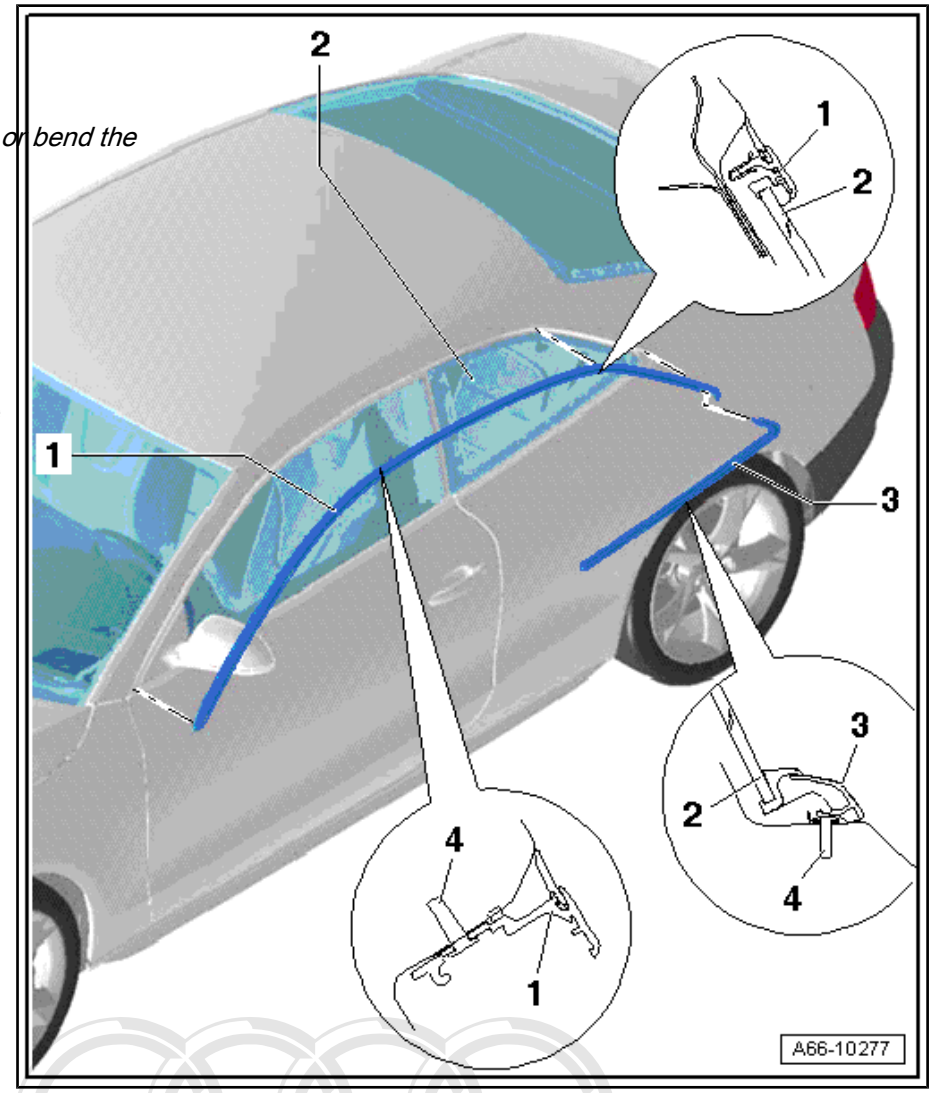
**2 - Side window**

**3 - Decorative trim**

- To remove, prise sideways out of the fasteners at the roof starting from the “B-pillar”.
- Prise the decorative trim at the side panel sideways out of the fasteners.
- Slide the decorative trim downwards out of the decorative roof trim.

**4 - Pop rivet**

❑ 9x at decorative roof trim.




**Fitting side window**

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**1 - Side window**

- ❑ Decorative roof trim and decorative side trim removed
- ❑ On fitting a new window, start by pressing in with the locating pin at the “C-pillar”, then insert fully in the window opening.
- ❑ If a removed window is to be re-installed, it must be fixed in position at the “C-pillar” with adhesive tape.

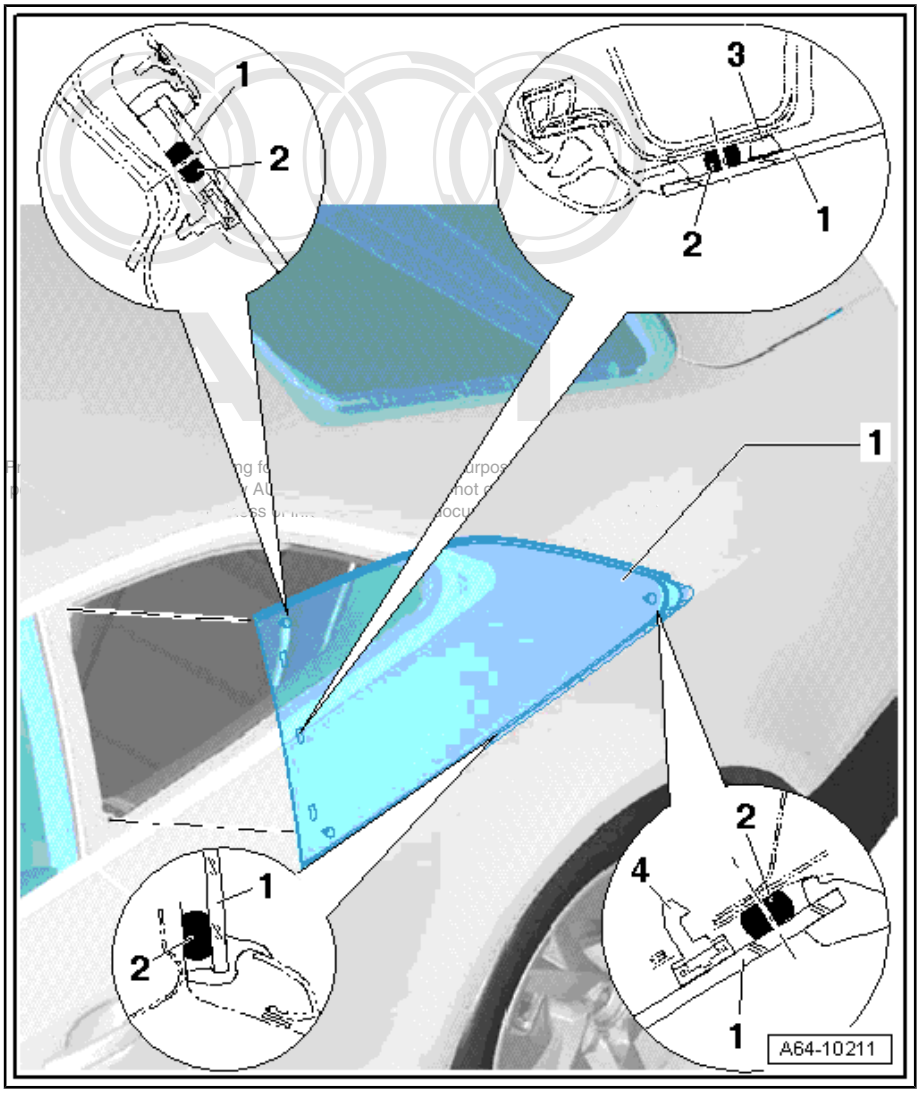
**2 - Adhesive bead**

**3 - Spacer**

- ❑ 3x

**4 - Locating pin**

- ❑ No replacement part
- ❑ Severed on removing window




## Removing intact side window

**Caution**

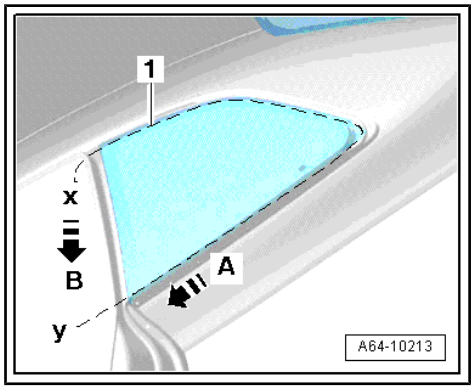
*Use adhesive tape to protect the paintwork of the side panel and roof in the window cutting area.*

– Detach the door seal in the area of the “A-pillar” and the side window.

– Decorative side trim and decorative roof trim removed

**Caution**

*Take care not to bend the decorative roof trim.*




– Route the cutting cord around the side window as shown in the illustration.
– Secure the ends X and Y in two handles from the cutting tool -V.A.G 1351- .
– Employing a gentle sawing motion, pull the cutting cord to the front in direction of arrow -A- and cut through the adhesive bead at the bottom of the side panel and at the roof frame.
– This involves first severing the locating pin at the back of the window and then the adhesive bead.
– Then pull the cutting cord downwards through the adhesive bead in direction of arrow -B-.
– Remove the window from the opening.

**Removing shattered side window**

– Protect the body and passenger compartment against glass splinters.
– Mask the flange all round with fabric-reinforced adhesive tape.
– Remove glass fragments down to the adhesive sealant.

**WARNING**

*When removing a window, always wear safety goggles and leather gloves.*

– Cut through the adhesive sealing material (with glass fragments) in the window opening using an electric cutter -V.A.G 1561A- and an offset blade -V.A.G 1561/10- (with roller stop).

**Preparation for side window installation**

– If an intact window is to be re-used, trim, but never completely remove, the residual adhesive sealing material on the window and flange with a carpet knife just before installation.

**Note**

*The remaining material serves as a bonding surface for the new adhesive sealant to be applied.*

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**Caution**

- *Keep the bonding surface clean and free from grease.*
- *Do not trim the bonding surface until shortly before installation.*
- *Do not prime the bonding surface and do not treat with cleaning fluid.*

**New window:**

– Clean the window bonding area all round with cleaning fluid -D 009 401 04- .

– Apply glass and paint primer -D 009 200 02- all round in the bonding area.

• Drying time 10 minutes

**Fitting side window**

– The decorative roof trim and decorative side trim must be fitted before installing the side window.

**Note**

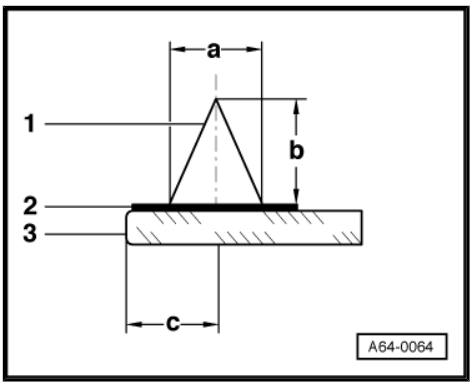
*The cross-section of the adhesive bead is determined by the opening in the tip of the nozzle and the rate of application.*

Dimensions for adhesive application:

1 - Adhesive bead

2 - Primer

3 - Window



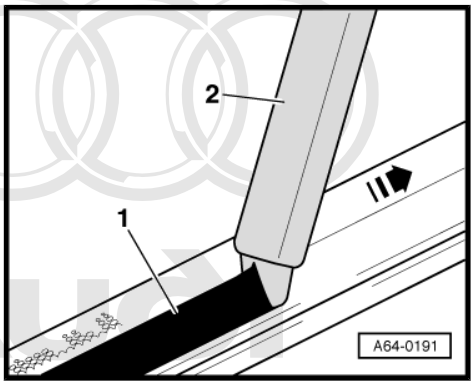

• Dimension -a- = 8 mm $^{+2\ mm}$

• Dimension -b- = 12 mm $^{+3\ mm}$

• The distance -c- = from the edge of the window is specified by the moulding.

– Apply the full surface of the nozzle -2- to the window.

• -Arrow- indicates direction of application for adhesive bead -1-.




– Apply adhesive sealant all round next to the moulding.

– If an intact window has been cut out, apply the adhesive to the residual bead.

**Note**

*Use 1-pack window adhesive -DH 009 100 03- (mini-cartridge). If more than one window has to be bonded, use can also be made of the 2-pack window adhesive set -DA 004 600 A2- .*

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– First press in the window with the locating pin at the “C-pillar”, then insert in the window opening and fix in position with adhesive tape at the “B-pillar”.

– Heed the minimum setting time.

## 1.4 Working instructions: Filling with foam

**Replacement parts**

♦ 2 x 2-pack rigid epoxy foam -D 506 110 A3-

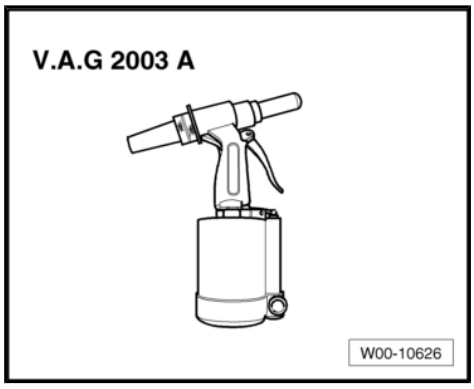
♦ Accessories 8T0 898 803 A

♦ 18 x pop rivet N 910 197 01

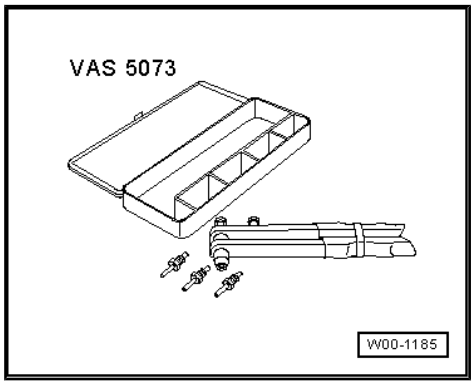
♦ Body sealant

**Special tools and workshop equipment required**

- Drill -VAS 5830-
- Twin cartridge gun -VAS 6453-
- Pneumatic pop rivet tool -V.A.G 2003A-




- Pop rivet nut pliers -VAS 5073-




– Heat the rigid epoxy foam cartridge for 30 minutes in a water bath with a constant temperature of approx. 60 °C.

If available, the cartridge can be heated at 60° C in a stove.

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**1 - 2-pack structural foam cartridge**

– Open the cap

**2 - Static mixer**

**3 - Extension hose**

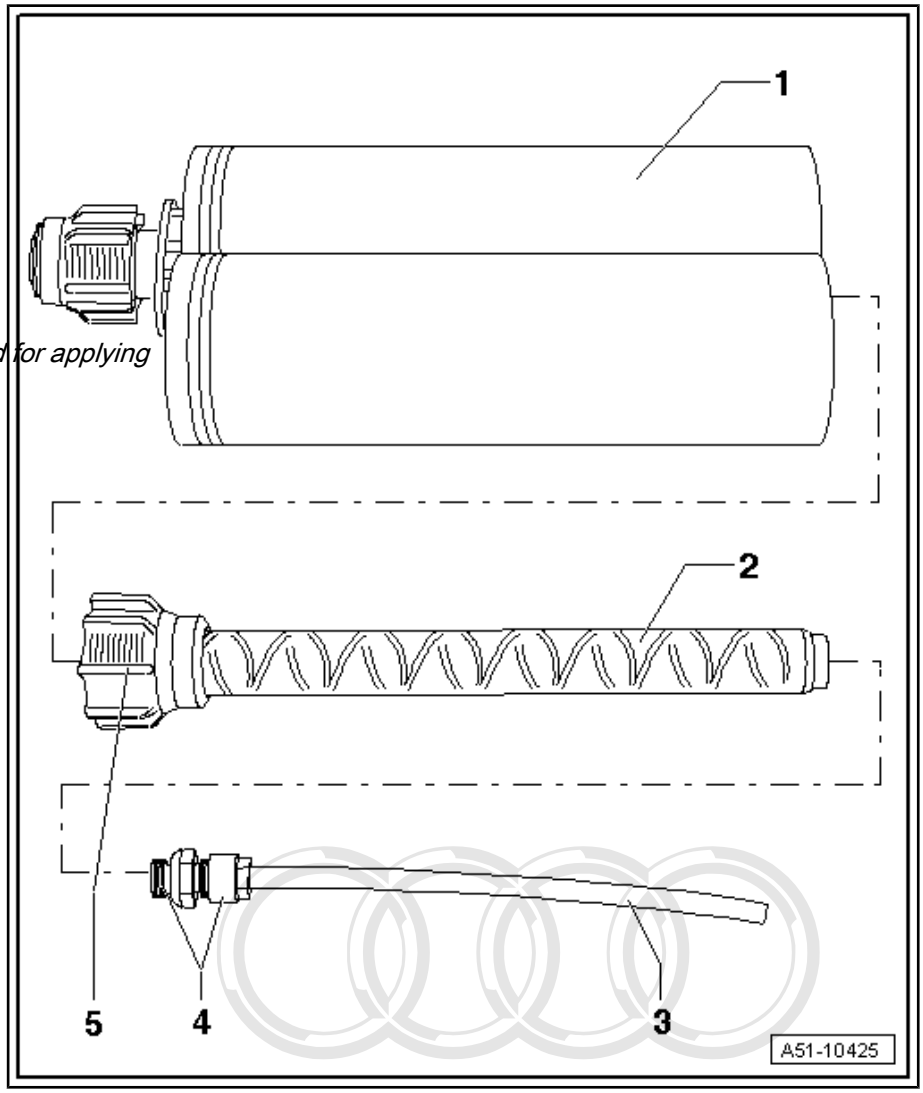
**4 - Adapter**

**Note**

*The adapter is required for applying the foam.*

**5 - Union nut**

– Screw with the static mixer -2 - onto the structural foam cartridge -1 -.




Steps 1-6 of the foam filling operation using the twin cartridge gun -VAS 6453-

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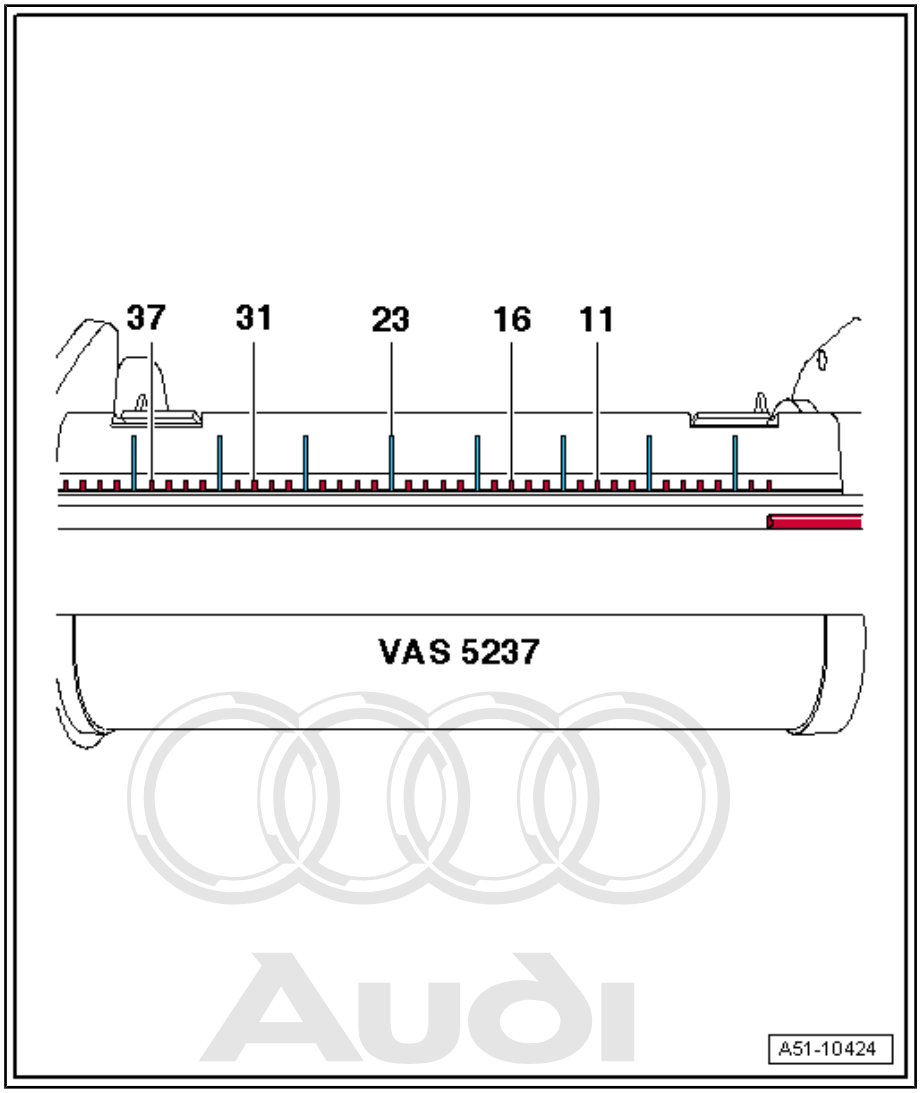


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Preparing the extension hose

– Mark the hose at 20 mm, 60 mm and 100 mm.

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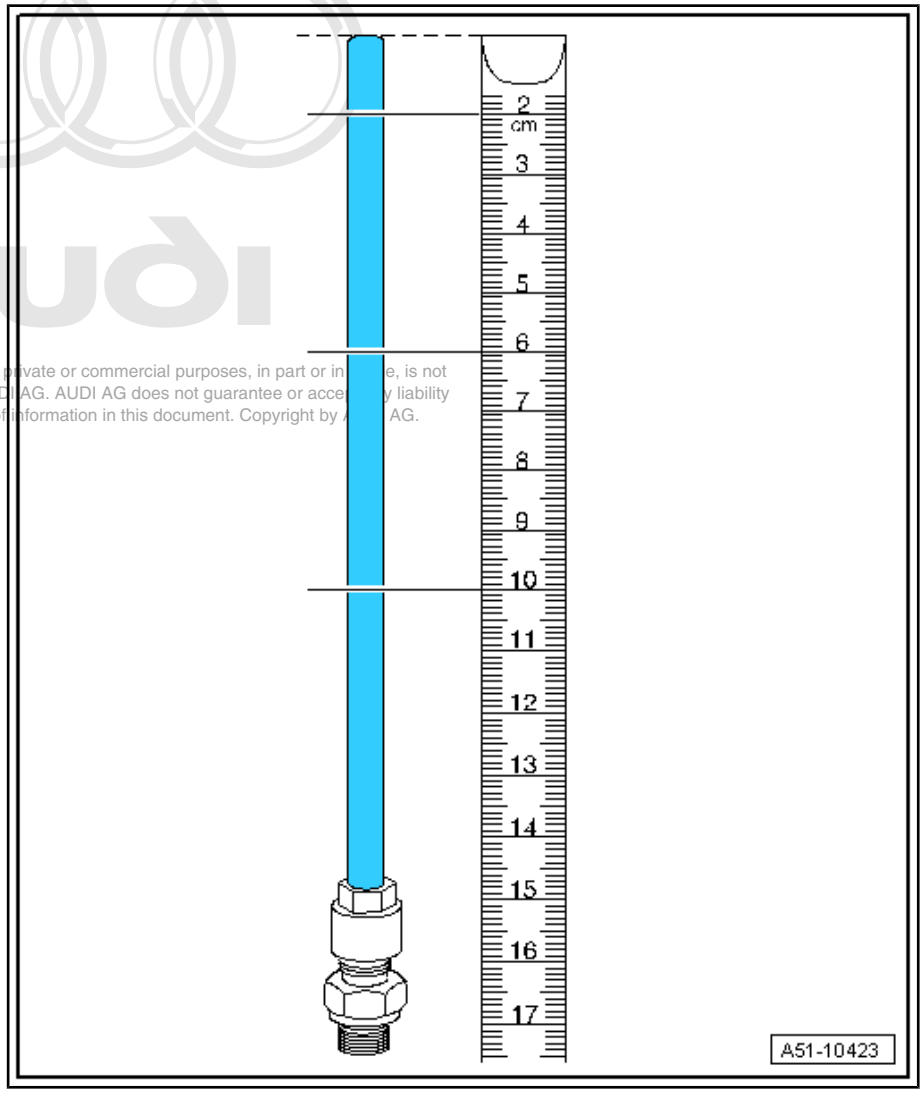


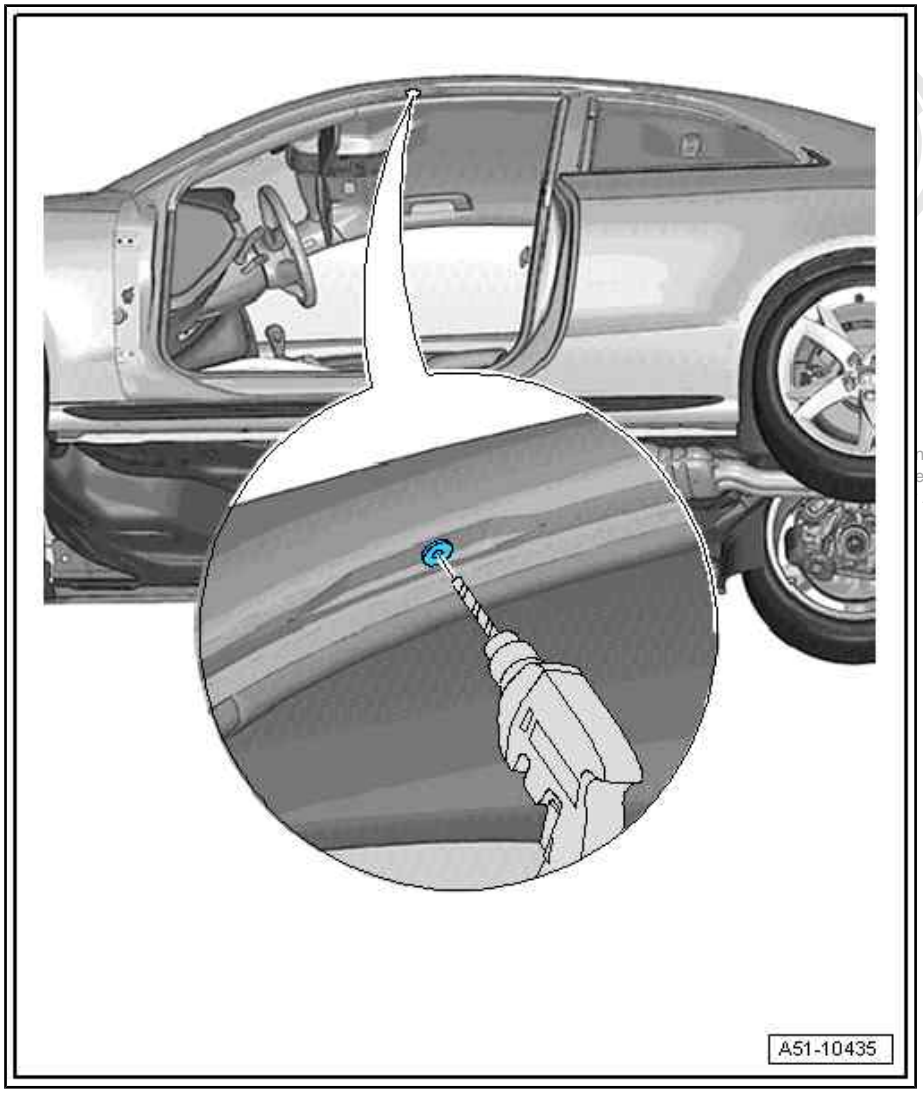

– Mask the adjacent rivet holes with commercially available adhesive tape.
– Use a ∅ 6 mm bit to drill off the clinch bolt.
– Seal the hole.

To avoid the need for a top coat, apply a thin layer of one-pack wash primer LLS MAX 101-104 (use a brush if applicable) and allow to dry for 10 -15 minutes. Forced drying with a hairdryer or infrared dryer is not permissible.

Then apply two-pack filler LLS MAX 201.

On completion of the flash-off time, harden under an infrared lamp at 60° C for approx. 5 minutes.

– Start with the foam filling operation, perform steps 1 - 3 as shown.

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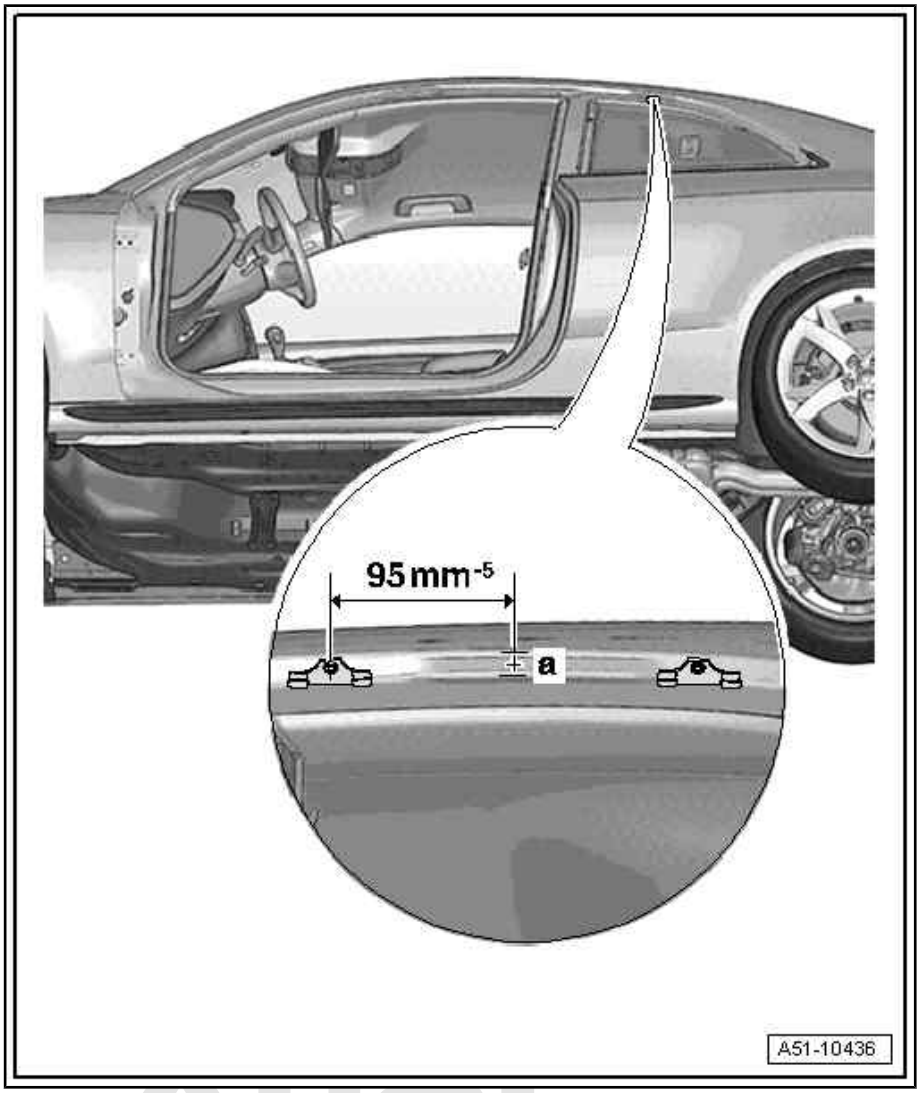
– Mark the hole for the foam filling operation (95 mm -5 mm from the rivet for the decorative roof trim) and mark the centre of and centre punch the hole - a -.
– Use a ∅ 6 mm bit to drill the hole.
– Countersink the hole with a 90° cutter.
– Seal the hole.

To avoid the need for a top coat, apply a thin layer of one-pack wash primer LLS MAX 101-104 (use a brush if applicable) and allow to dry for 10 -15 minutes. Forced drying with a hairdryer or infrared dryer is not permissible.

Then apply two-pack filler LLS MAX 201.

On completion of the flash-off time, harden under an infrared lamp at 60° C for approx. 5 minutes.

– Start with the foam filling operation, perform steps 4 -6 as shown.




Step 1

**Note**

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*To facilitate insertion between the outer and inner panels, flatten the extension hose -arrows-.*

– Insert approx. 100 mm of the extension hose vertically into the opening for the clinch bolt at the front.

– Start with the foam filling operation and apply foam as far as the first mark (graduation 11).

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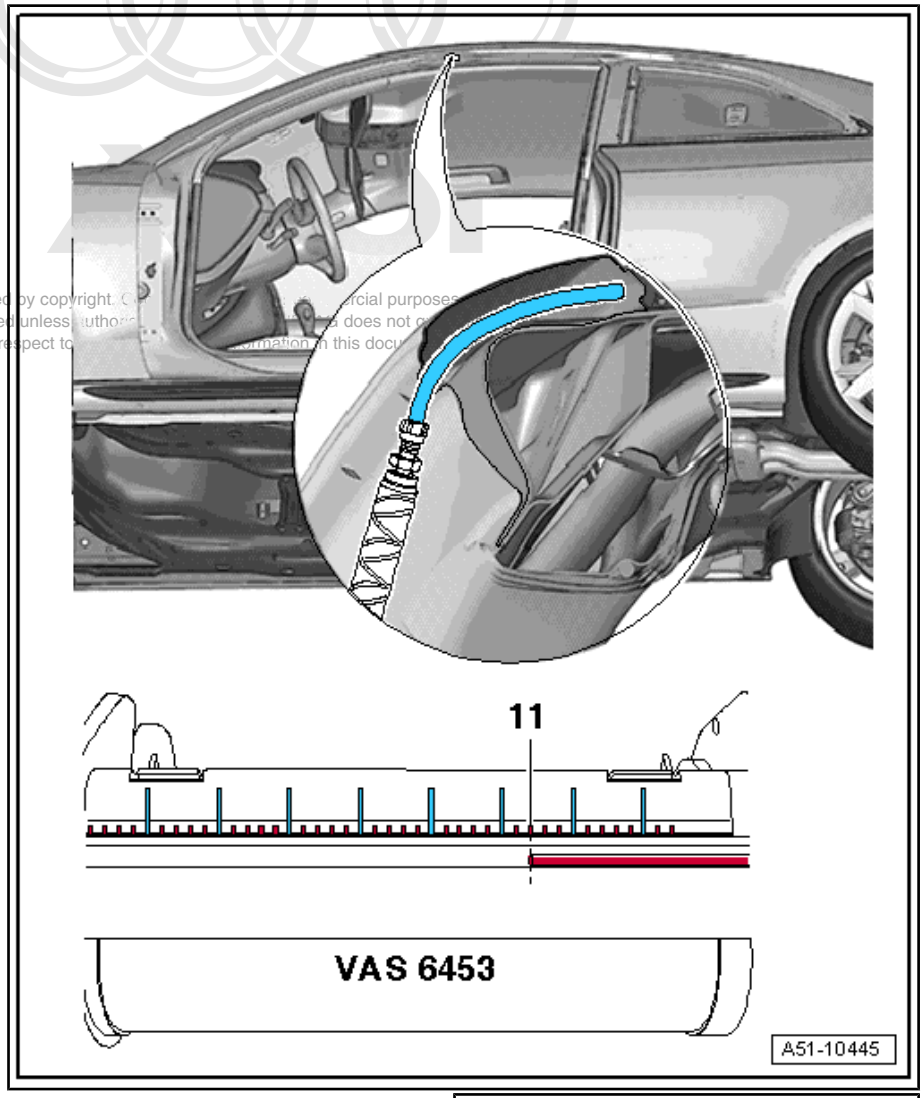
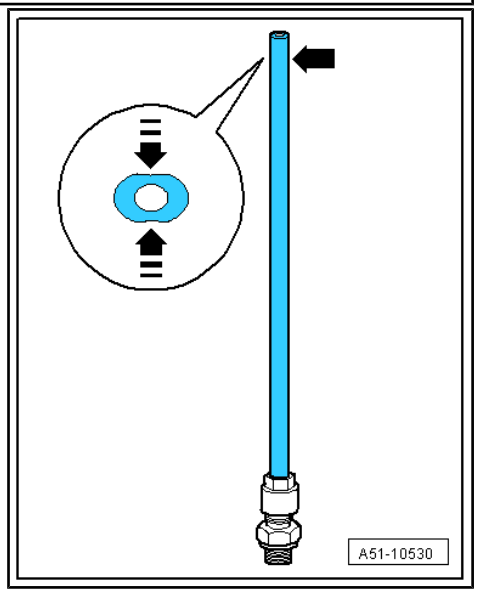
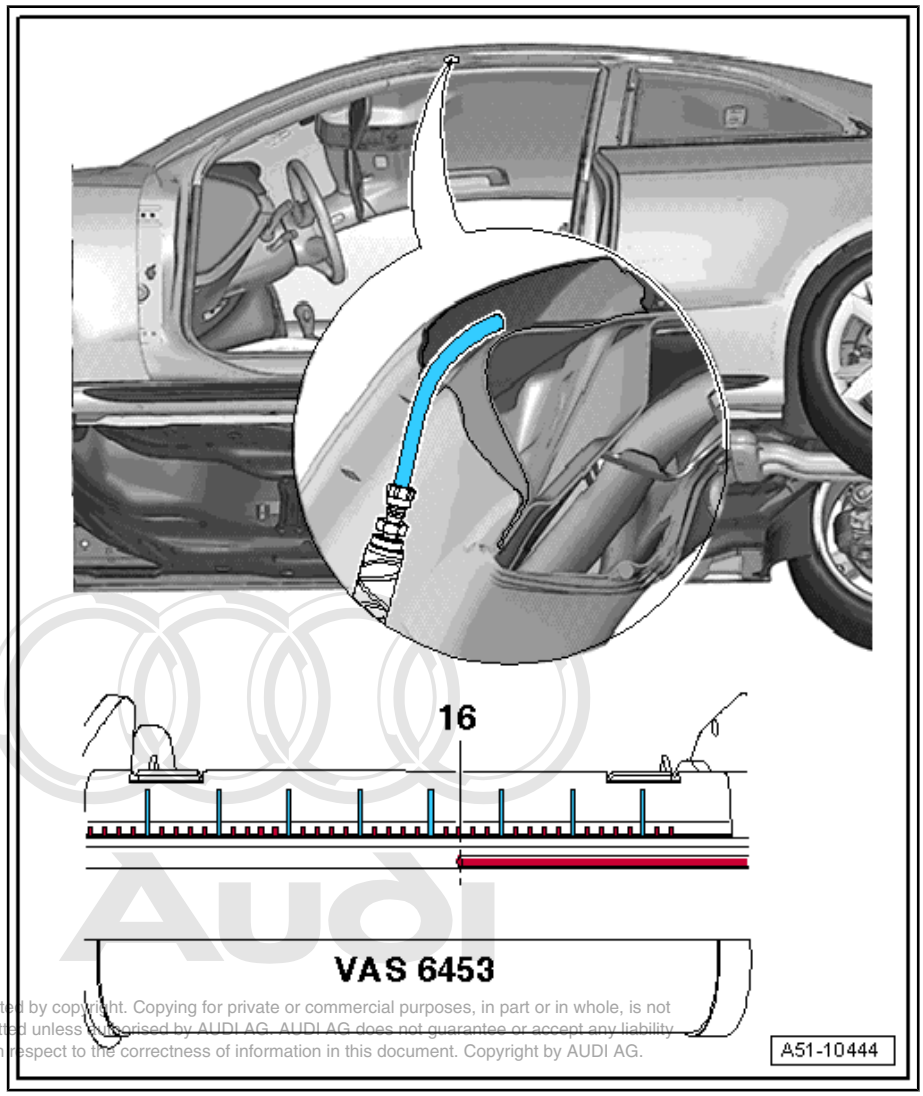



Step 2

– After reaching the first mark, the hose must be pulled out by approx. 40 mm.

– Proceed with the foam filling operation as far as the second mark (graduation 16).

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Step 3

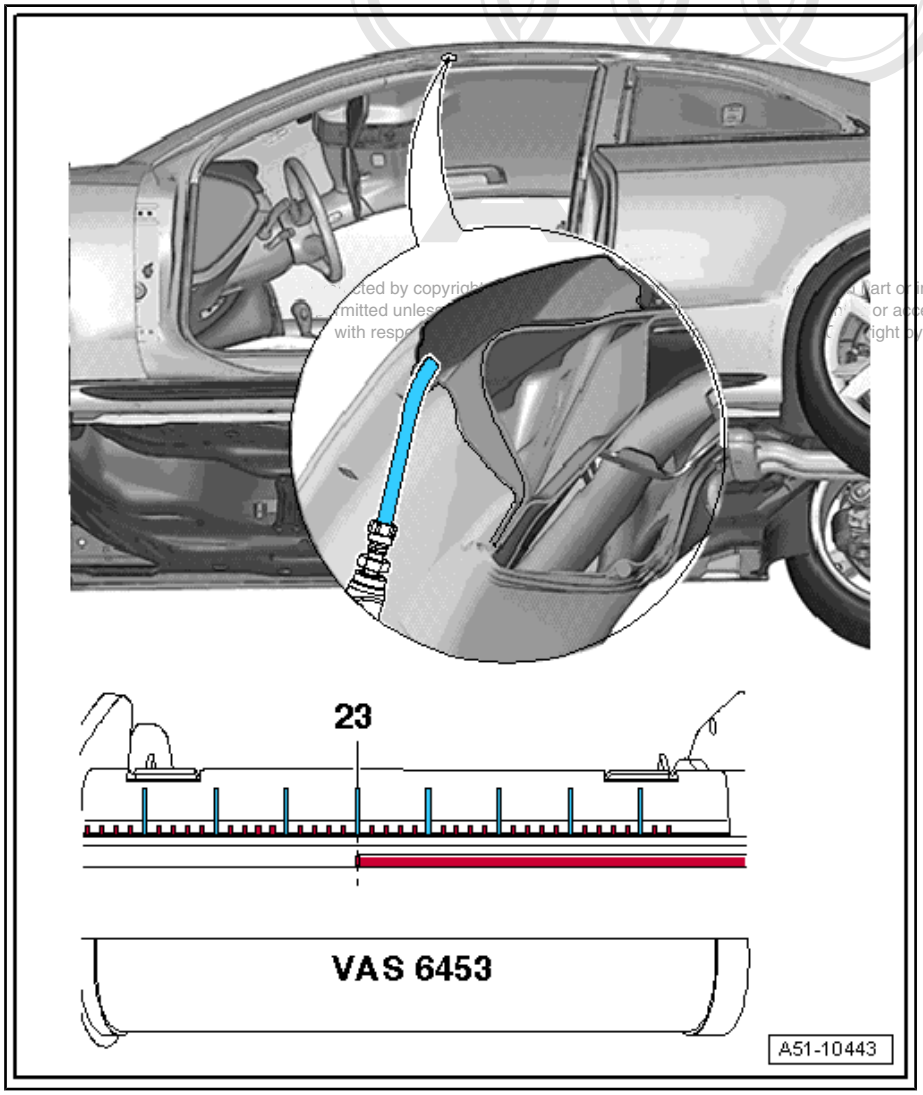
– After reaching the second mark, the hose must be pulled out by approx. 40 mm.
– Proceed with the foam filling operation as far as the third mark (graduation 23).

Pull the extension hose out of the opening.

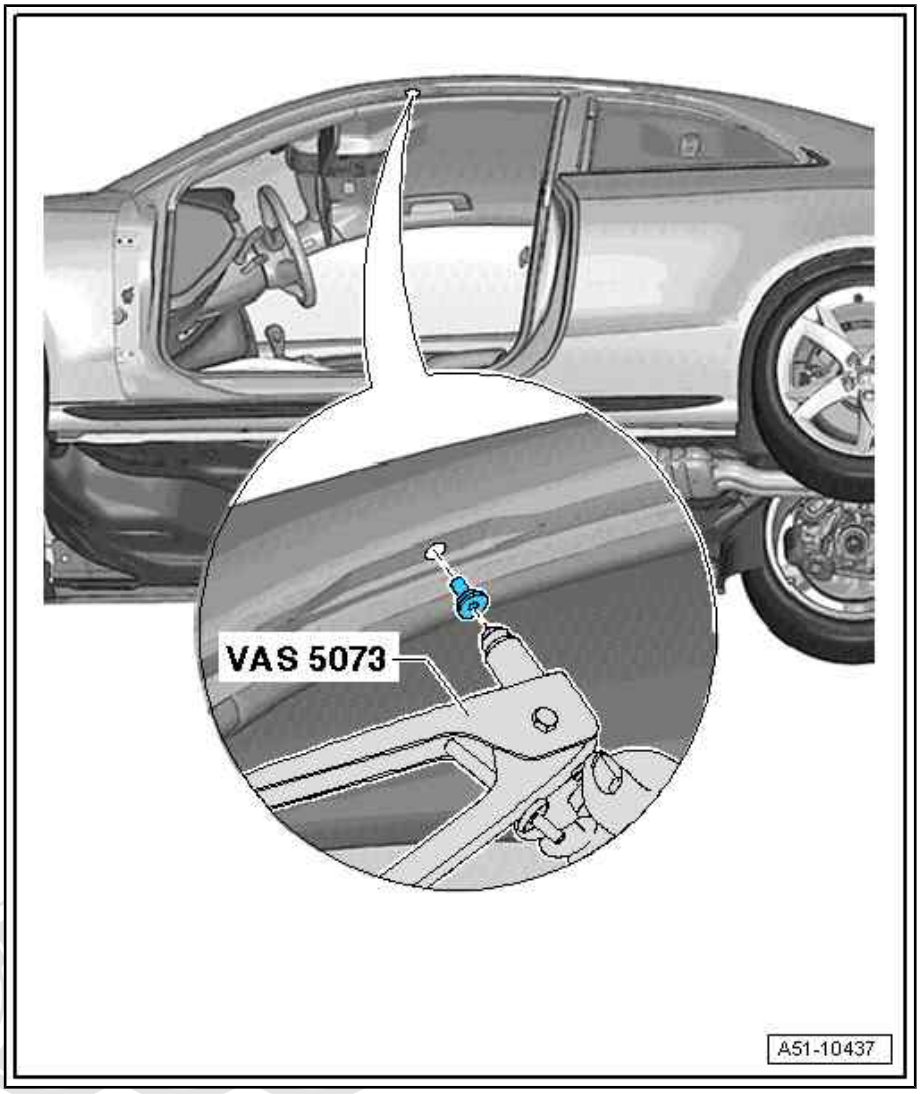
– Use a cloth to wipe off any surplus rigid epoxy foam.

**Note**

*To ensure that the decorative roof trim can be inserted, the two-pack rigid epoxy foam must be removed from the holes for the rivet.*




Insert the clinch bolt using the pop rivet nut pliers -VAS 5073- .




Step 4

– Insert approx. 100 mm of the extension hose vertically into the opening of the drilled hole at the rear.
– Start with the foam filling operation and apply foam as far as the fourth mark (graduation 31).

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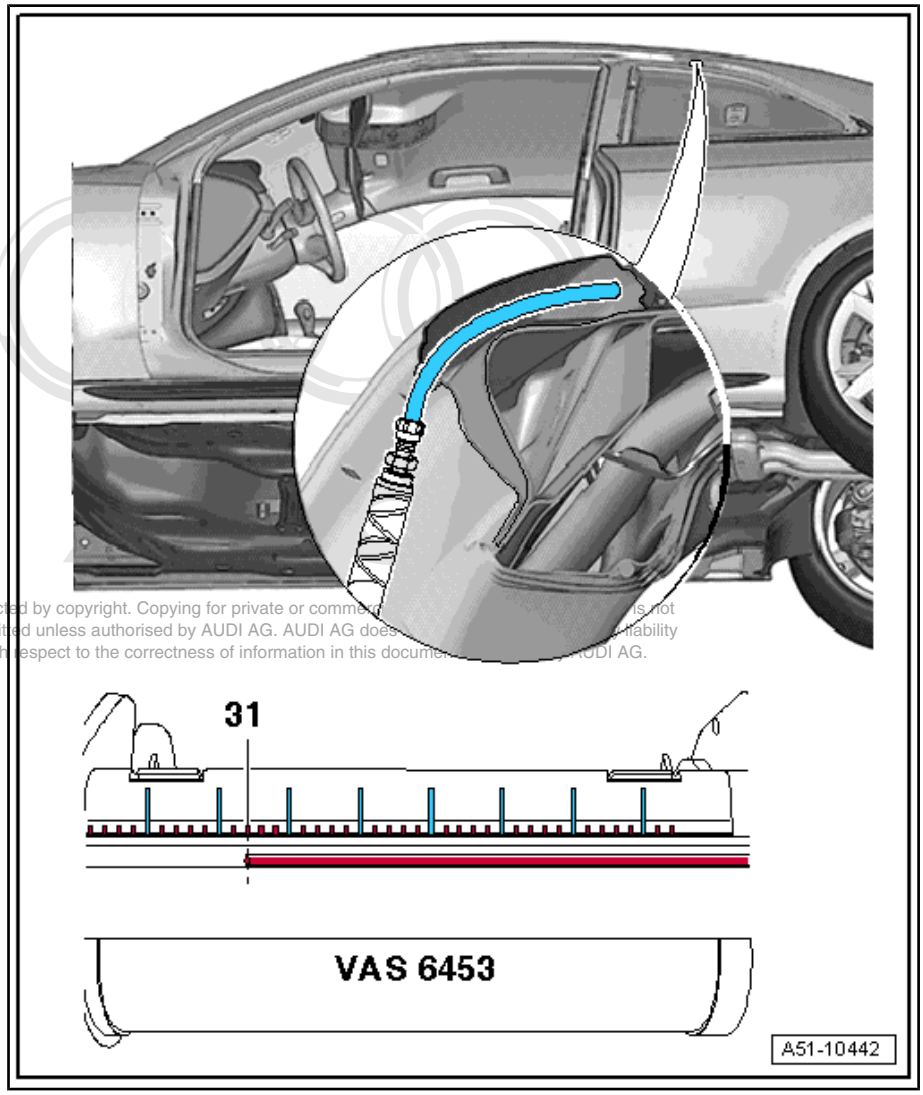


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Step 5

– After reaching the mark, the hose must be pulled out by approx. 40 mm.
– Proceed with the foam filling operation as far as the fifth mark (graduation 37).

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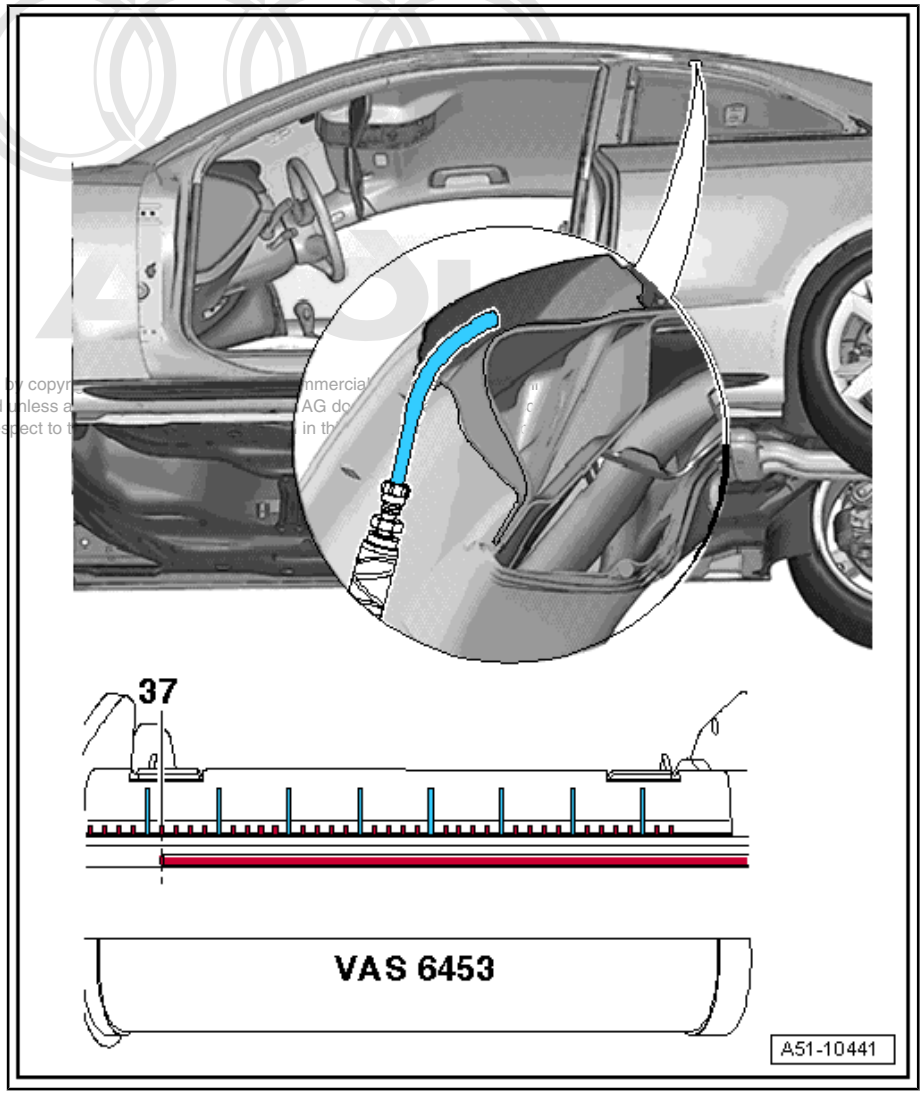
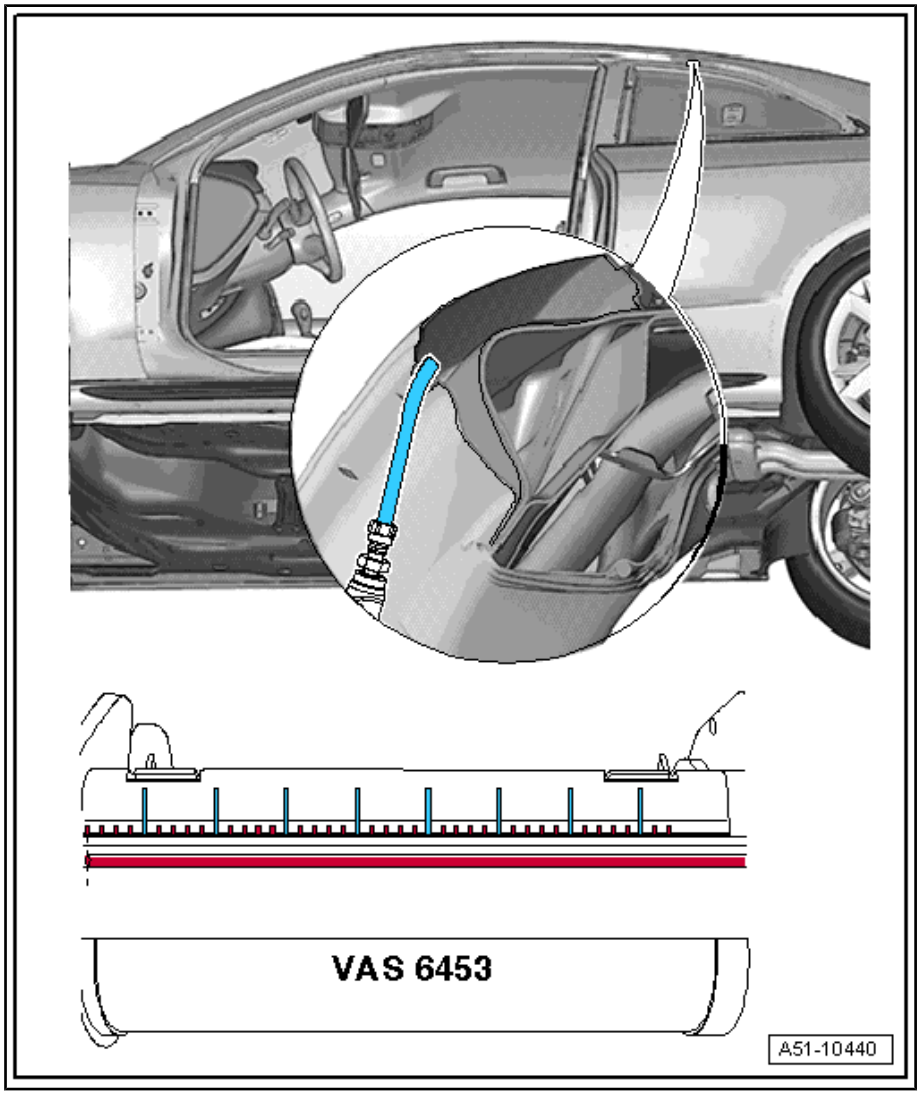



Step 6

– After reaching the mark, the hose must be pulled out by approx. 40 mm.
– Proceed with the foam filling operation and use up the whole cartridge.
– Use a cloth to wipe off any surplus rigid epoxy foam.




– Coat the pop rivet nut and the hexagon socket head bolt (M4) with body sealant, e.g. Terolan Hell.
– Insert the M4 pop rivet nut using the pop rivet nut pliers -VAS 5073- .
– Screw in the M4 hexagon socket head bolt as far as it will go and fill the hole with body sealant.
– Use a cloth to wipe off any surplus Terolan Hell body sealant.

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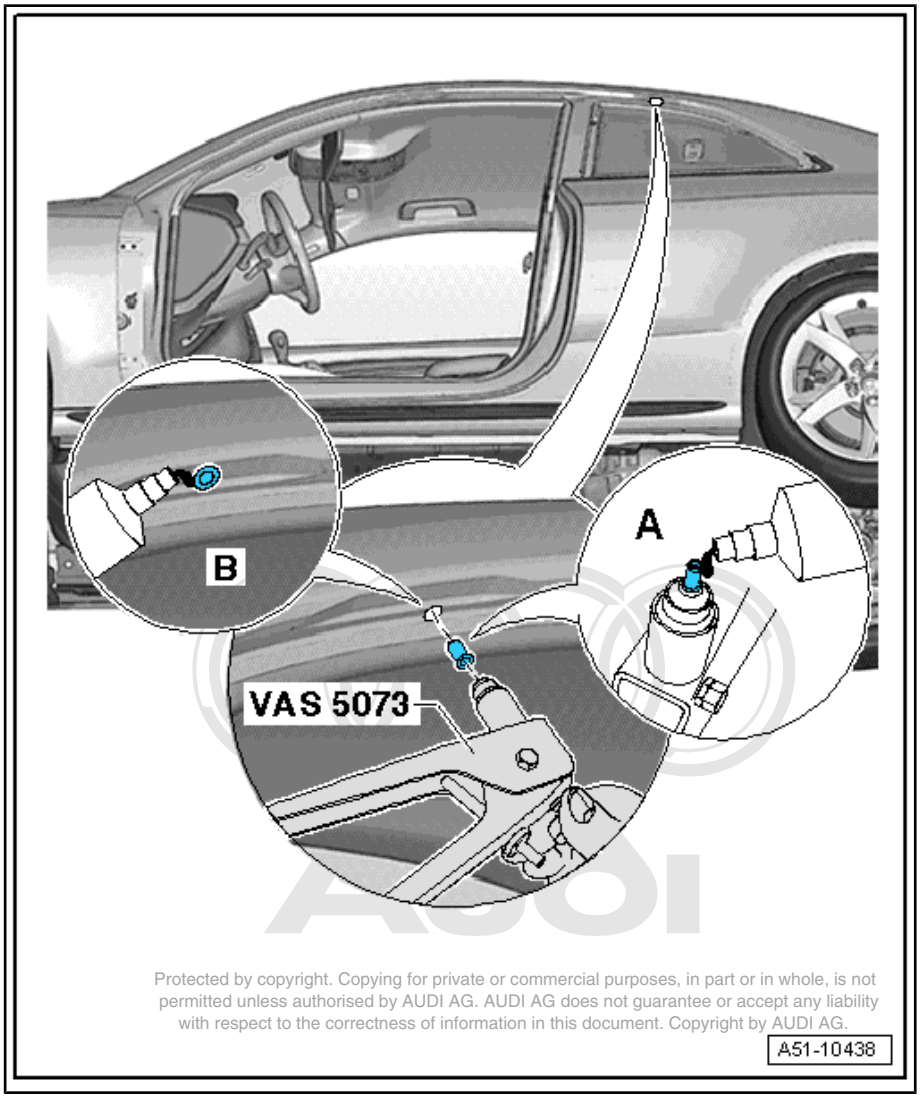


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**Note**

*After filling the first side with foam, fit the decorative roof trim and then start with the next side.*

**Note**

- *After applying the foam fill, the vehicle must be left standing on a flat surface for 24 hours at an ambient temperature of 15° C to allow the rigid epoxy foam to harden (curing time).*
- *The decorative roof trim and side window can only be re-installed on the vehicle following completion of the curing time.*