

## Body Repairs Audi A6 2005 ➤ Edition 07.2012



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## Repair Group overview for Body Repairs

### Repair Group

00 - Technical data

50 - Body - front

51 - Body - centre

53 - Body - rear

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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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## 00 – Technical data

### 1 General notes

(AKI000111; Edition 07.2012)

This Workshop Manual describes standard repairs and repairs carried out using repair methods which deviate from the original manufacturing process.

Note the following for any repairs which are not described:

Separate at original joint; repair original joint using only genuine replacement parts: see General notes.

If no description is given for any sub-parts supplied, these should be matched up and butt welded with an SG continuous seam.

Please refer to the information in the Workshop Manual ⇒ General Information; Body Repairs, General Body Repairs .



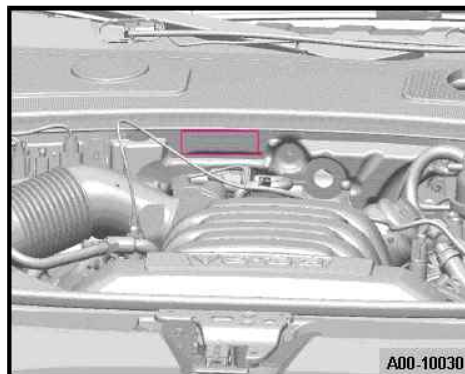
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## 2 Vehicle identification data

### 2.1 Type plate and vehicle identification number

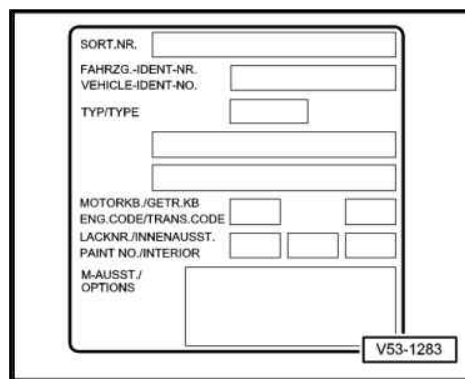
The type plate is located on the rear bulkhead in the engine compartment.

Vehicles for certain export countries have no type plate.



### 2.2 Vehicle data sticker

The vehicle data sticker is located in the spare wheel well at the rear of the vehicle.



A diagram of a vehicle data sticker form. The form contains the following fields and labels:

- SORT.NR. [ ]
- FAHRZG.-IDENT-NR. [ ]
- VEHICLE-IDENT-NO. [ ]
- TYP/TYPE [ ]
- MOTORKB./GETR.KB. [ ]
- ENG.CODE/TRANS.CODE [ ] [ ]
- LACKNR./INNENAUSST. [ ] [ ] [ ]
- PAINT NO./INTERIOR [ ] [ ] [ ]
- M-AUSST./OPTIONS [ ]

The text 'V53-1283' is visible in the bottom right corner of the form.



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### 3 Laser welding

AUDI AG introduced laser welding for the production of the Audi A6.

The laser welding technique employs a high-energy light beam directed onto the weld seam by means of optical lenses or fibre optics.

During the welding process the upper panel is fused onto the partially molten lower panel, creating a welded joint both with and without additional material.

When performing repairs, the laser weld seams are replaced (except in the case of roof repairs) by SG plug weld seams or RP spot weld seams or pop rivets.

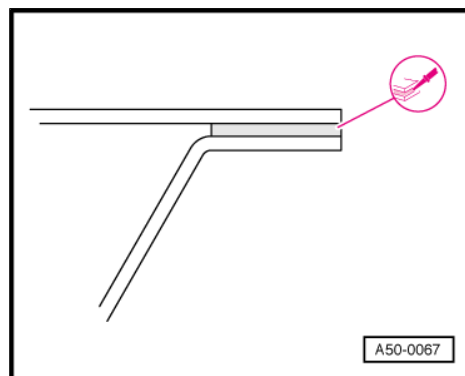
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## 4 Bonded joints

Bonded and spot-welded/bonded joints are employed on the Audi A6 for increased body stiffness and strength.

### 4.1 Bonded joints

In the case of adhesive-bonded joints, the joint between the sheet metal parts is formed only by the adhesive.



### 4.2 Inspecting and repairing bonded joints

Particular attention should be given to these joints when diagnosing accident damage and performing body repairs.

Note the following points: Do not use a chisel to test the strength of a joint or relieve stresses by hammering as this will damage or destroy the bonded joint.

These joints should be inspected particularly closely when diagnosing accident damage and after performing straightening work on the body.

If the joint is not accessible with pop rivets, it must be repaired with an arc-welded seam (SG). In this case the entire area of the joint must be re-welded, as the heat produced by welding destroys the adhesive in the bonded joint. The SG seams should be welded working from the thin to the thick panel. Always use a fume extractor.

### 4.3 Repair methods for replacing body parts

When making repairs, welded joints can be used in place of all spot-welded bonded joints and certain bonded joints if no suitable body adhesive is available.

Do not make the repair with only the same spot welds or seams as originally used in production. These alone are not adequate for a proper joint.

The repair methods are shown in detail on the following pages.



#### Note

- ◆ If the instructions call for additional spot welds, these should be applied in a single operation.
- ◆ Do not place new spot welds in-between the original spot welds.
- ◆ SG plug welding should only be performed after spot welding.
- ◆ This avoids any increased shunt current when spot welding.
- ◆ Ensure good root penetration at all joints.
- ◆ Seal off repaired joint flanges and apply cavity sealing.

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## 4.4 Repair methods for bonded joints

### Body - front

**A - Longitudinal member to closure plate and mounting: make additional SG plug weld seam between spot welds.**

Where there are 3 panel thicknesses, weld both sides from outside. Longitudinal member to mounting: make additional 4 x 20 mm SG seams at flange.

**B - Reinforcement for factory conveyor mount to rear section of front wheel housing.**

Make additional 2 x 15 mm SG seams at flange.

**C - Wheel housing extension to side frame (outer).**

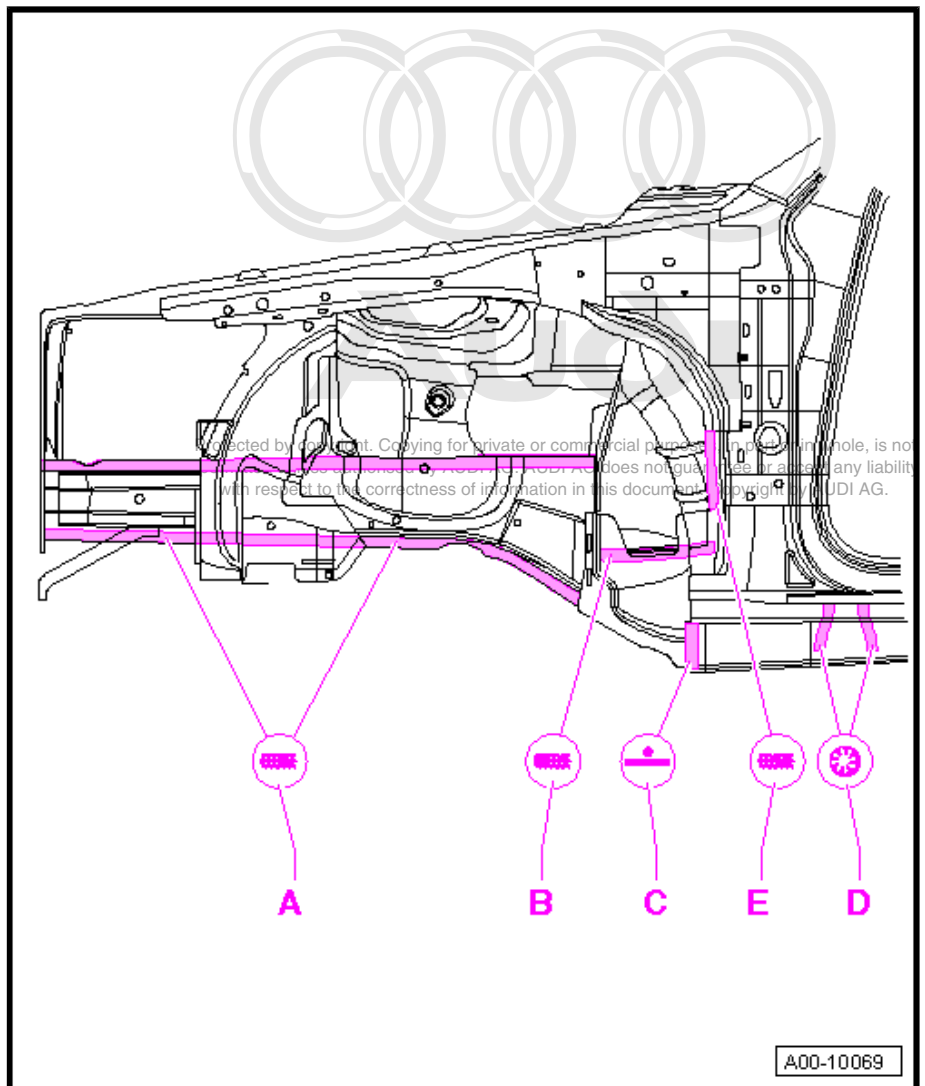
Make additional RP spot weld seams between spot welds.

**D - Jacking point (front) to side panel (inner).**

Make additional SG plug weld seams between spot welds

**E - Side panel (front, inner) to rear section of front wheel housing**

Make additional 2 x 15 mm SG seams at flange.



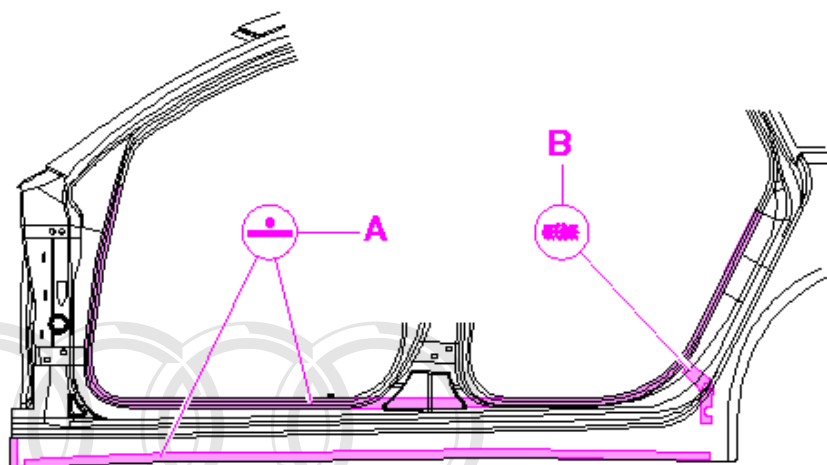
### Body - centre

**A - Side frame (outer) to side frame (inner).**

Make additional RP spot weld seams between spot welds in place of bonded joint.

**B - Sill connecting piece to end plate for wheel housing (rear).**

4 x SG plug weld seams in place of bonded joint.



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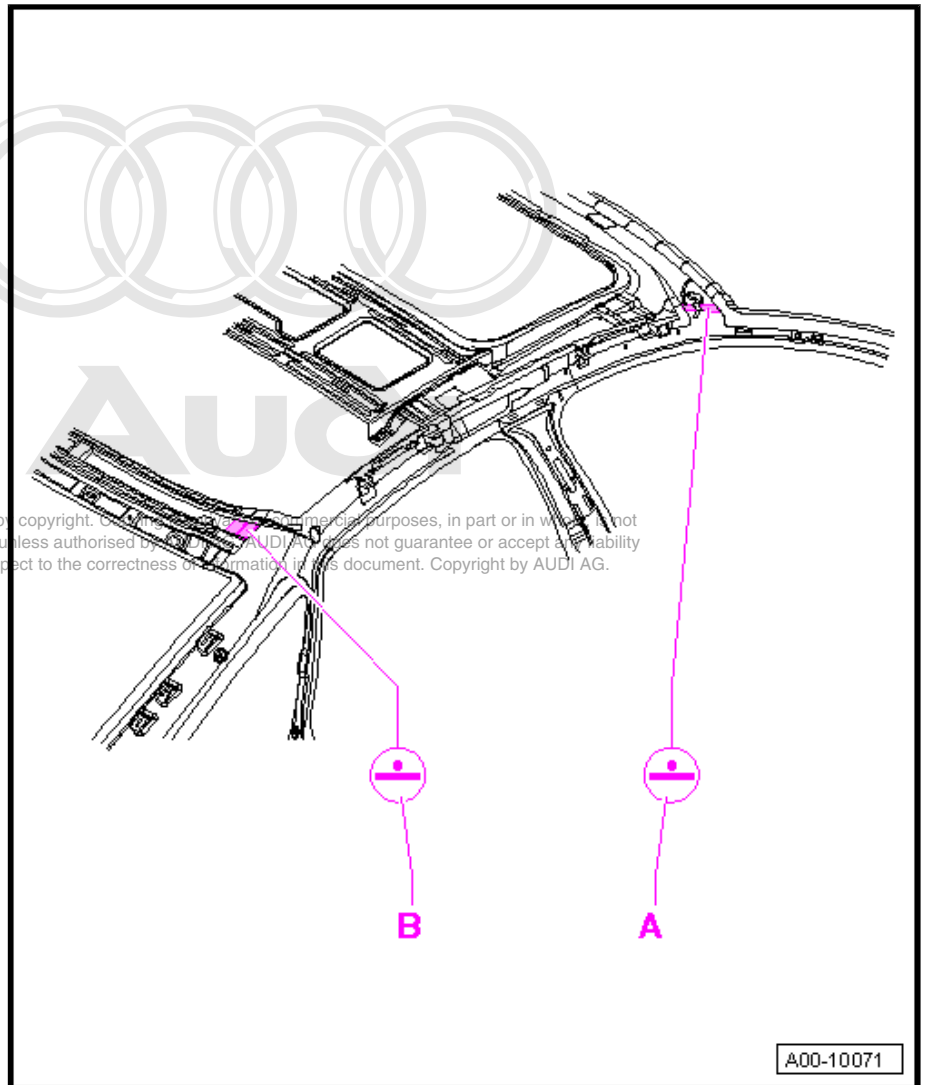
**A - Side of roof frame (front top) to roof frame**

Make additional SG plug weld seams between spot welds

**B - Side of roof frame (rear top) to roof frame**

Make additional SG plug weld seams between spot welds

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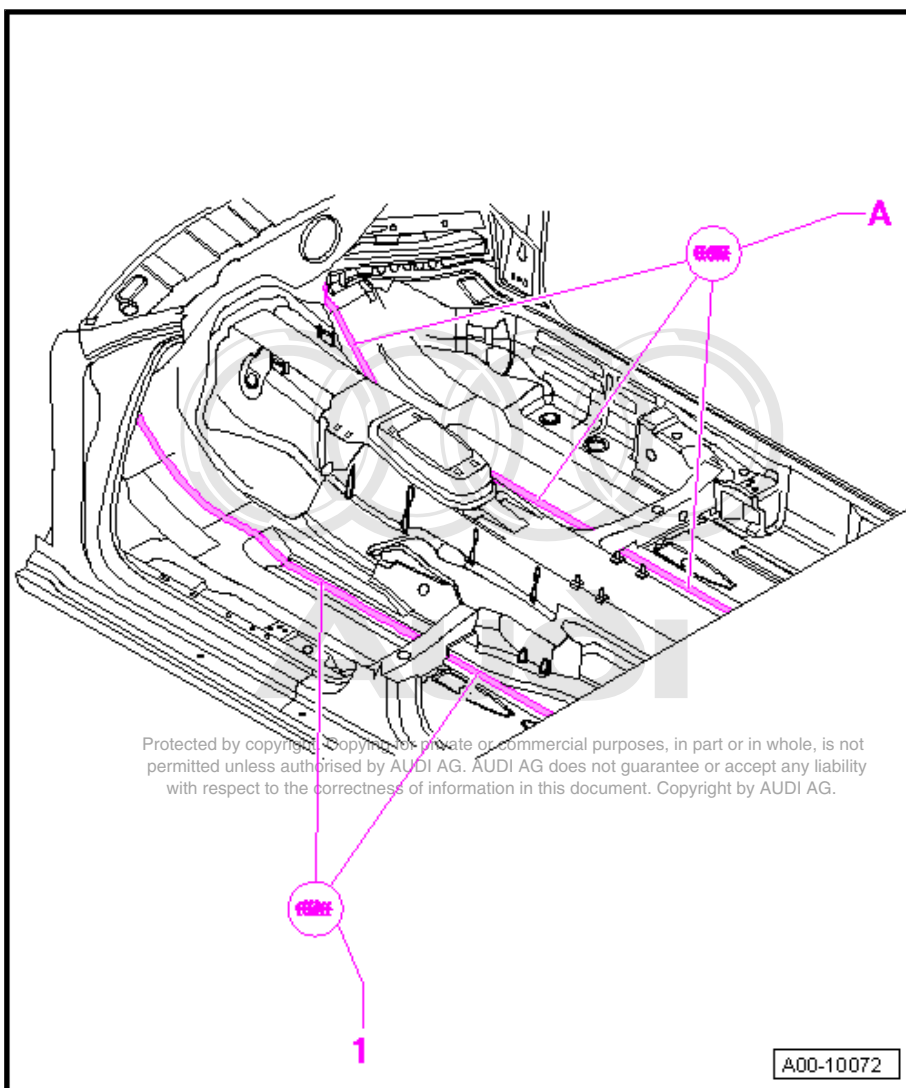


### A - Tunnel insert to side of floor panel

Make additional SG continuous seam in place of bonded joint.

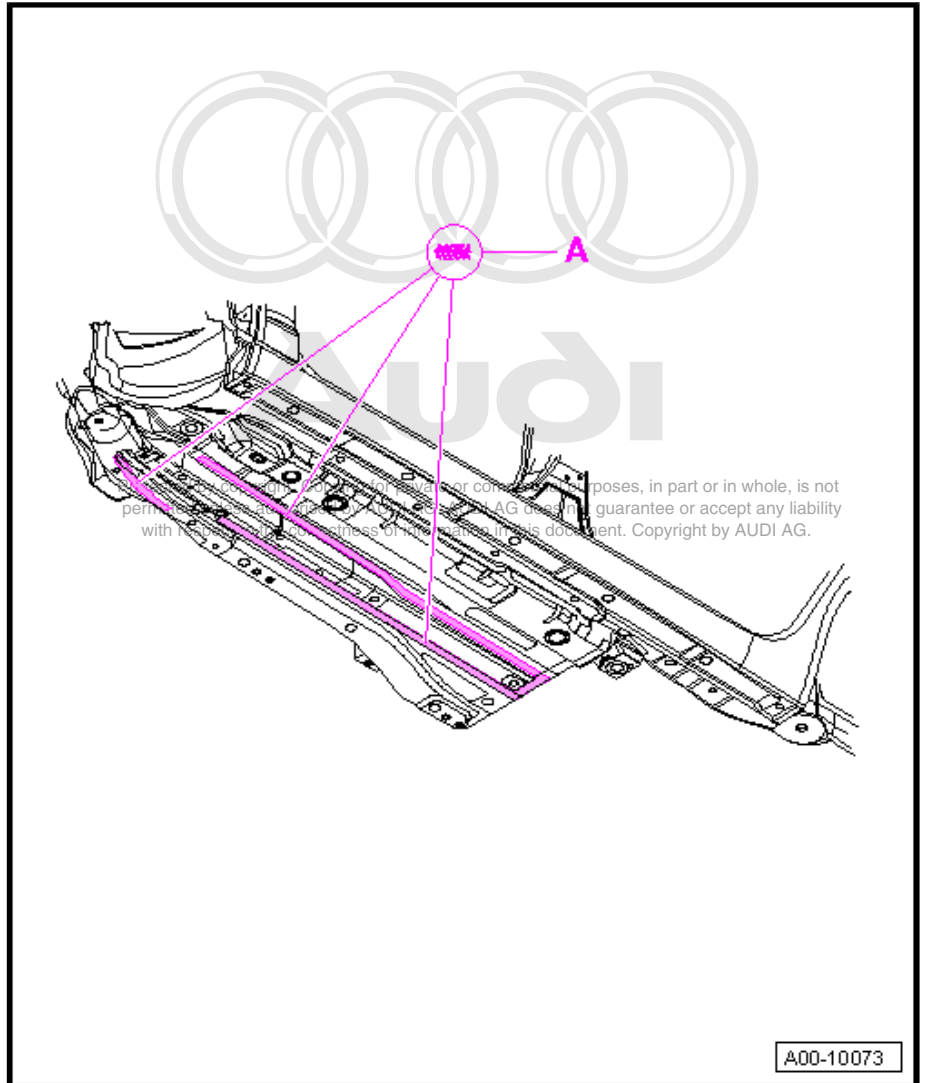
### B - Seat mounting to side of floor panel

Make additional RP spot weld seams between spot welds in place of bonded joint.



**A - Welded assembly for wheel housing to floor panel (front).**

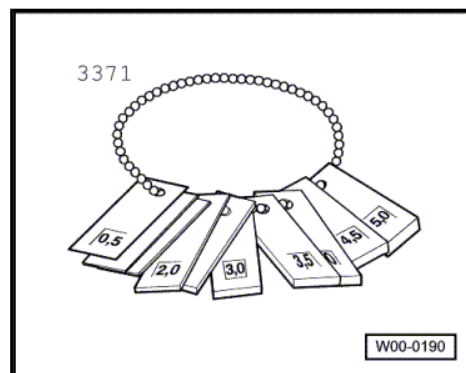
Make additional SG continuous seam in place of bonded joint.



## 5 Body panel gaps/shut lines

### Special tools and workshop equipment required

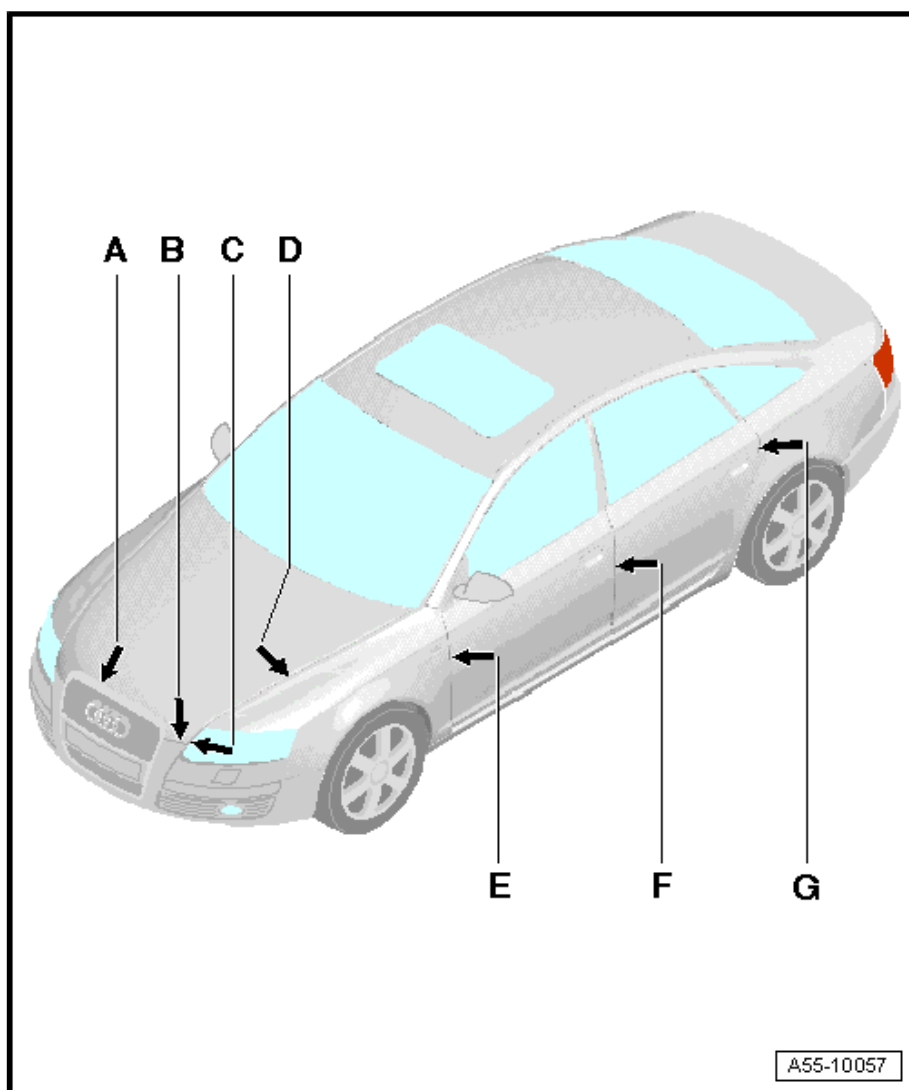
- ◆ Use the setting gauge -3371- for setting or checking.



### Body - front and centre

- ◆ Dimension -A- = 5.5 mm  $\pm$  0.5 mm
- ◆ Dimension -B- = 5.5 mm  $\pm$  0.5 mm
- ◆ Dimension -C- = 3.5 mm  $\pm$  0.5 mm
- ◆ Dimension -D- = 3.0 mm  $\pm$  0.5 mm
- ◆ Dimension -E- = 4.5 mm  $\pm$  0.5 mm
- ◆ Dimension -F- = 4.5 mm  $\pm$  0.5 mm
- ◆ Dimension -G- = 4.5 mm  $\pm$  0.5 mm

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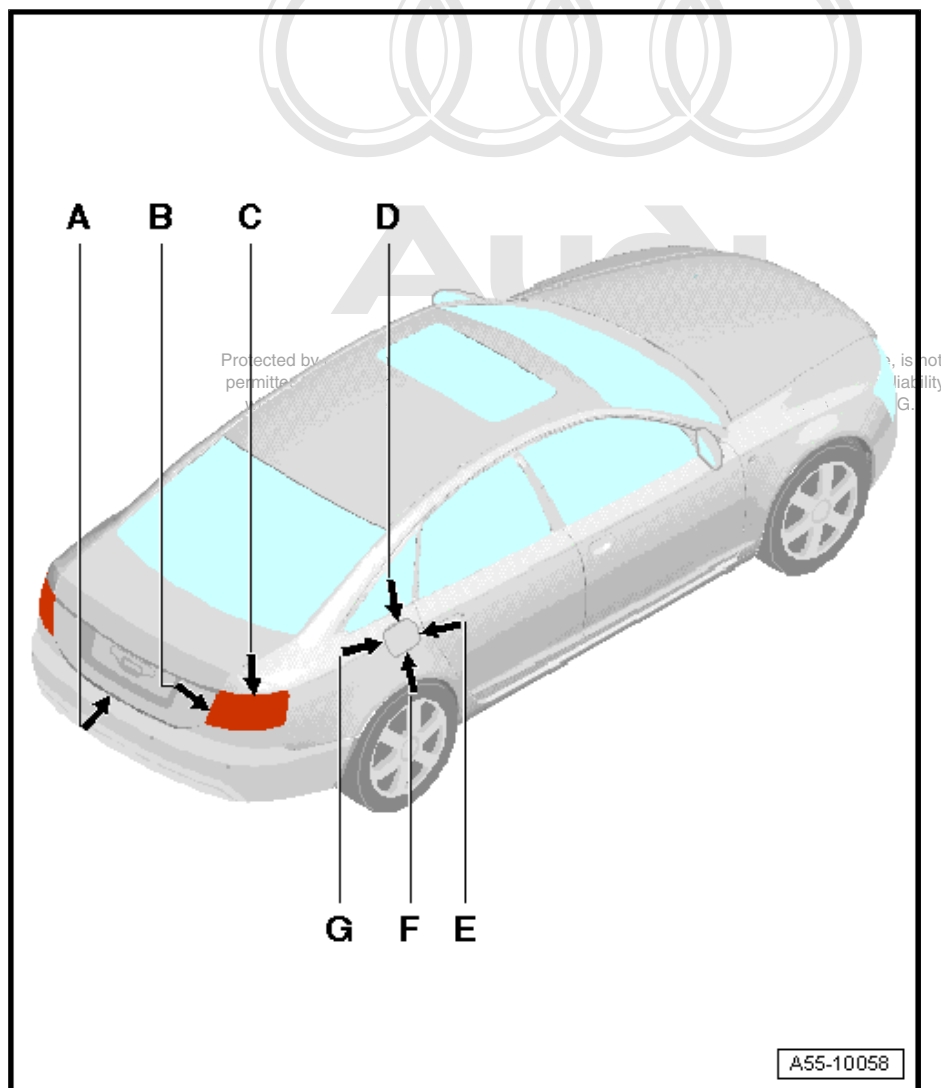


#### Body - rear

- ◆ Dimension -A- = 4.5 mm  $\pm$  0.5 mm
- ◆ Dimension -B- = 3.5 mm  $\pm$  0.5 mm
- ◆ Dimension -C- = 3.5 mm  $\pm$  0.5 mm
- ◆ Dimension -D- = 2 mm  $\pm$  0.5 mm
- ◆ Dimension -E- = 2 mm  $\pm$  0.5 mm
- ◆ Dimension -F- = 2.5 mm  $\pm$  0.5 mm
- ◆ Dimension -G- = 2 mm  $\pm$  0.5 mm
- ◆ Check that panel gaps are parallel with body lines.

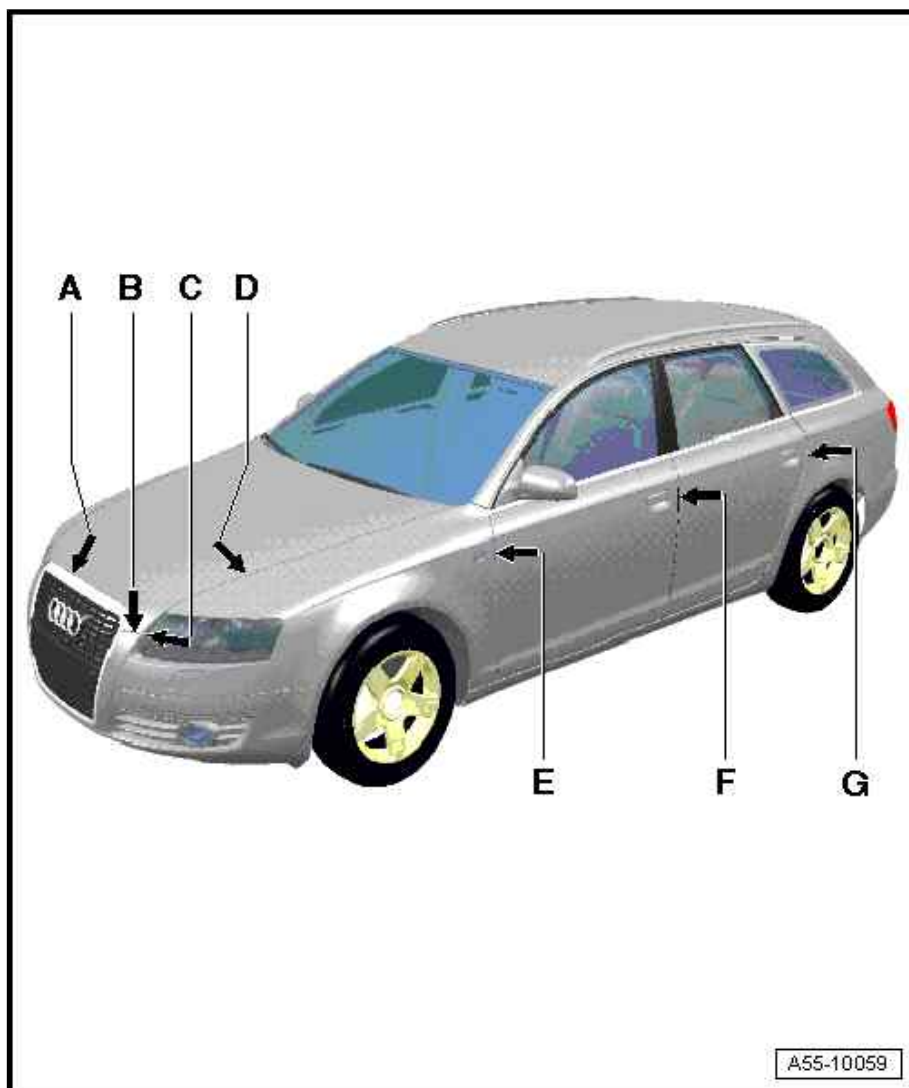


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### Panel gaps - front and centre (Avant)

- ◆ Dimension -A- = 5.5 mm  $\pm$  0.5 mm
- ◆ Dimension -B- = 5.5 mm  $\pm$  0.5 mm
- ◆ Dimension -C- = 3.5 mm  $\pm$  0.5 mm
- ◆ Dimension -D- = 3.0 mm  $\pm$  0.5 mm
- ◆ Dimension -E- = 4.5 mm  $\pm$  0.5 mm
- ◆ Dimension -F- = 4.5 mm  $\pm$  0.5 mm
- ◆ Dimension -G- = 4.5 mm  $\pm$  0.5 mm
- ◆ Check that panel gaps are parallel with body lines.

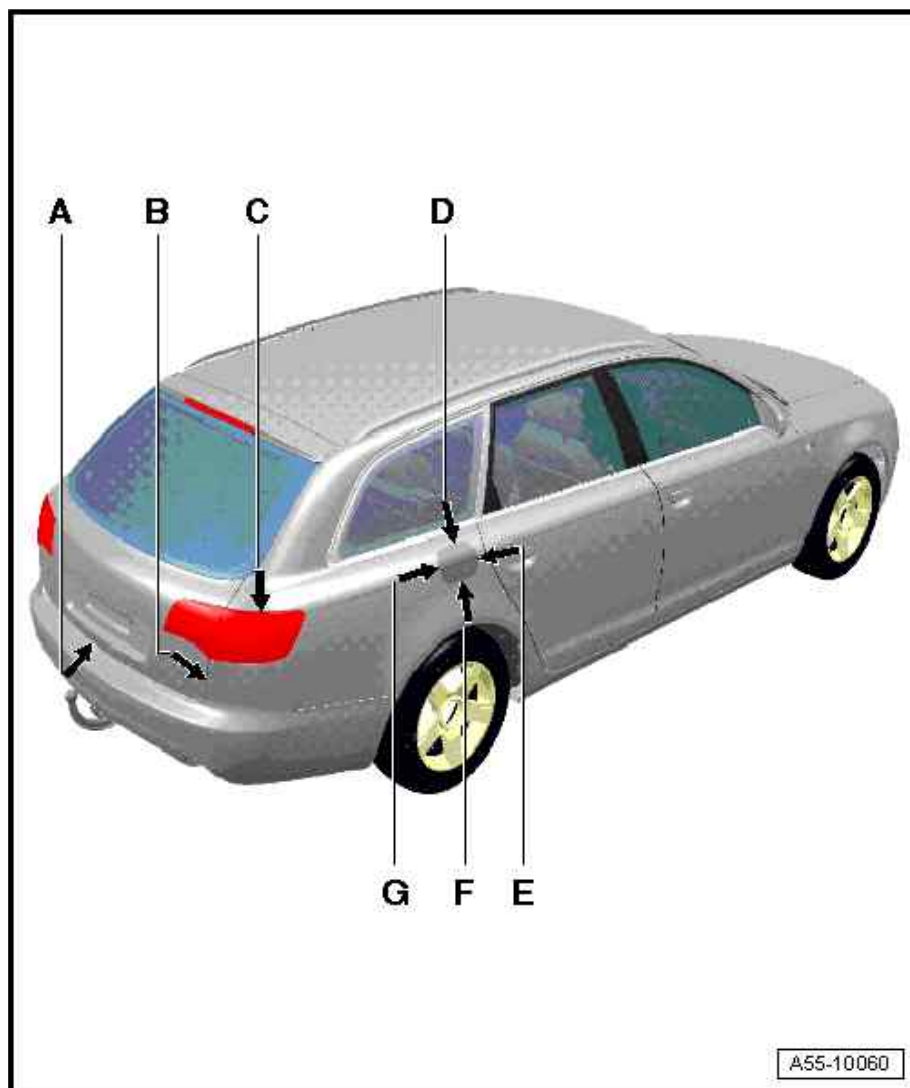


#### Panel gaps - rear (Avant)

- ◆ Dimension -A- = 4.5 mm  $\pm$  0.5 mm
- ◆ Dimension -B- = 3.5 mm  $\pm$  0.5 mm
- ◆ Dimension -C- = 0.8 mm  $\pm$  0.5 mm
- ◆ Dimension -D- = 2.0 mm  $\pm$  0.5 mm
- ◆ Dimension -E- = 2.0 mm  $\pm$  0.5 mm
- ◆ Dimension -F- = 2.0 mm  $\pm$  0.5 mm
- ◆ Dimension -G- = 2.5 mm  $\pm$  0.5 mm

- ◆ Check that panel gaps are parallel with body lines.

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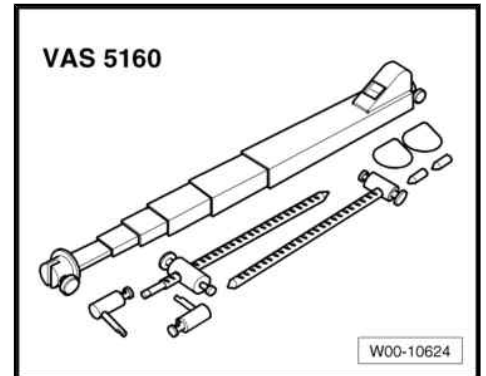
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## 6 Body dimensions

### 6.1 Floor group, front

#### Note

- ◆ Dimensions are only given for checking purposes. Correct dimensions are defined by the alignment bracket set.
- ◆ Bolts, screws, plugs, trim panels and attached components must be removed before starting the measuring process.
- ◆ The body dimensions should be measured using the telescopic gauge -VAS 5159- or the telescopic gauge -VAS 5160-.
- ◆ To avoid inaccurate measurements, make sure the measuring rods are always of equal length.



#### 1 - 813 mm ± 2 mm

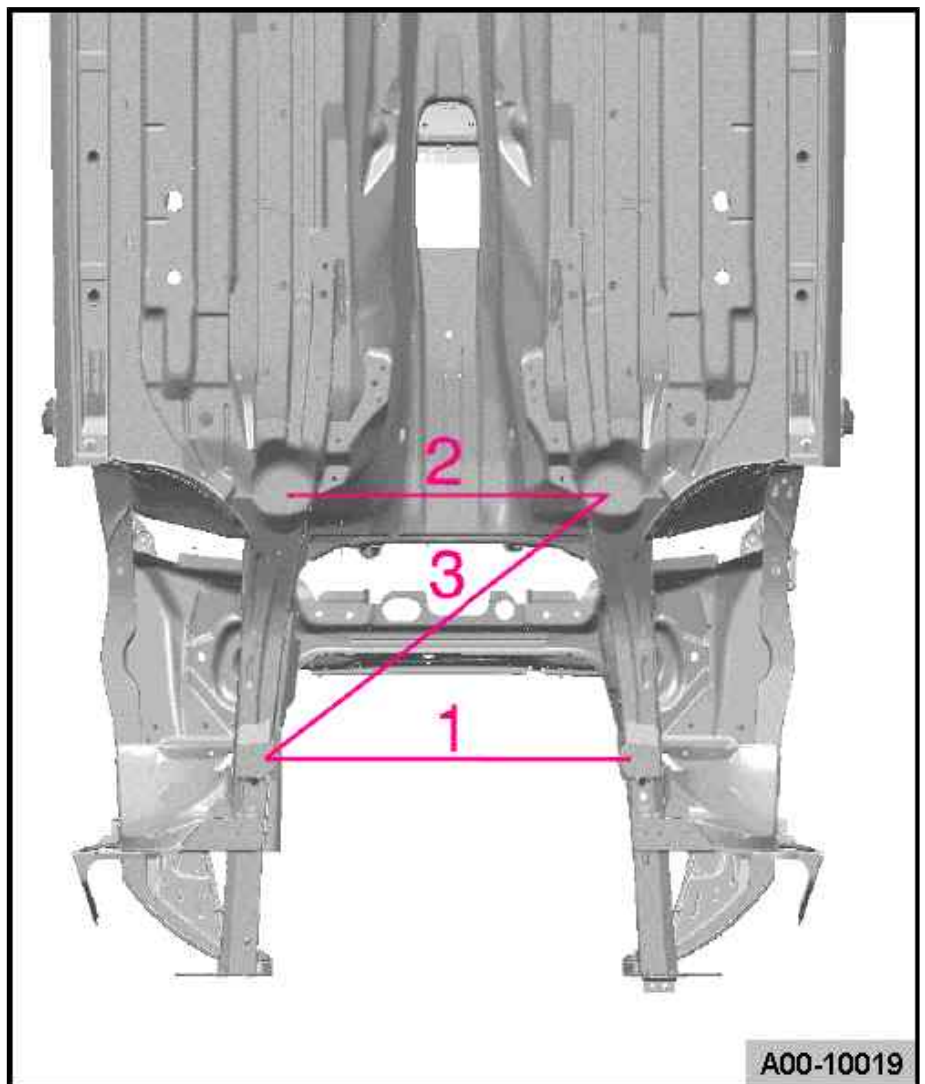
Distance between front attachment points of front suspension

#### 2 - 710 mm ± 2 mm

Distance between rear attachment points of front suspension

#### 3 - 945 mm ± 2 mm

Diagonal distance between front attachment points of front suspension



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## 6.2 Floor group, centre

### 1 - 1573 mm $\pm$ 2 mm

Rear mounting points for jacking points

### 2 - 1885 mm $\pm$ 2 mm

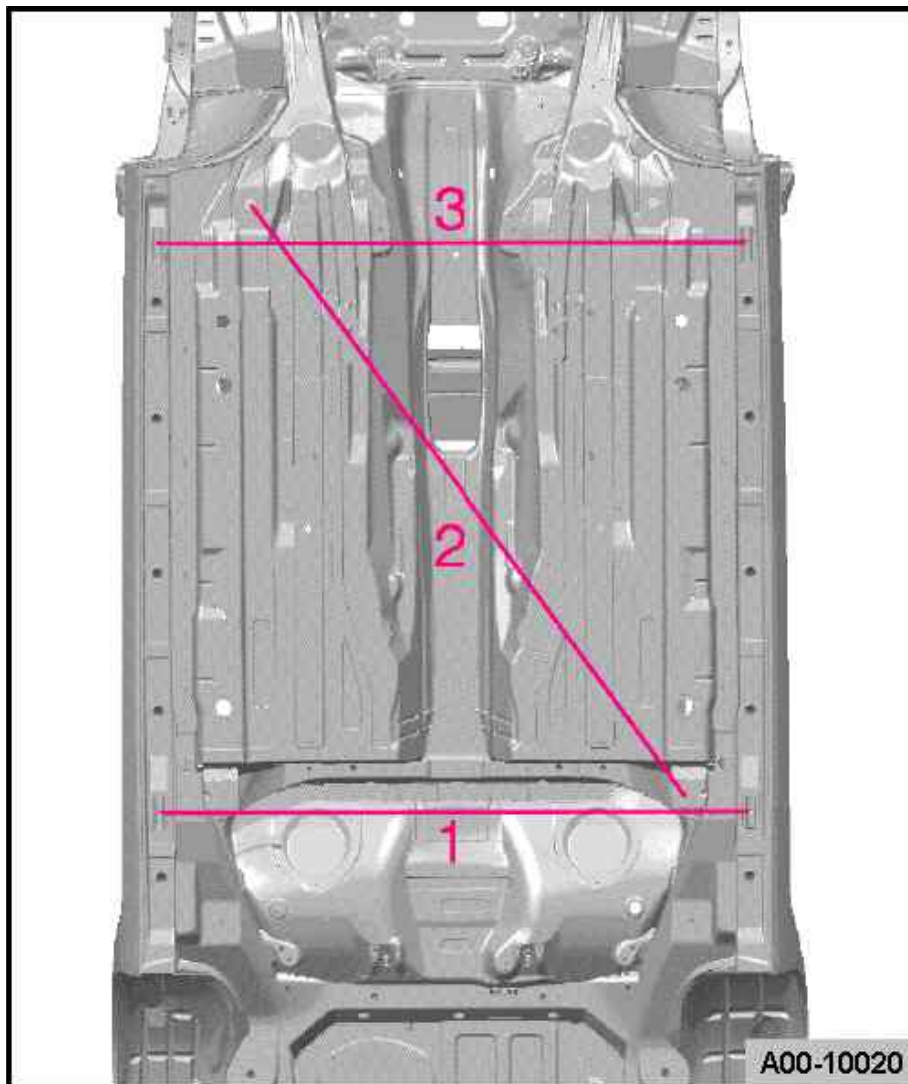
Diagonal distance between mounting points for front and rear suspension mountings



Note

### 3 - 1571 mm $\pm$ 2 mm

Front mounting points for jacking points



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## 6.3 Floor group, rear

### 1 - 1250 mm $\pm$ 2 mm

Distance between rear longitudinal members (front)

### 2 - 1243 mm $\pm$ 2 mm

Diagonal distance between rear suspension strut attachment point and rear longitudinal member (front)



Note

### 3 - 1104 mm $\pm$ 2 mm

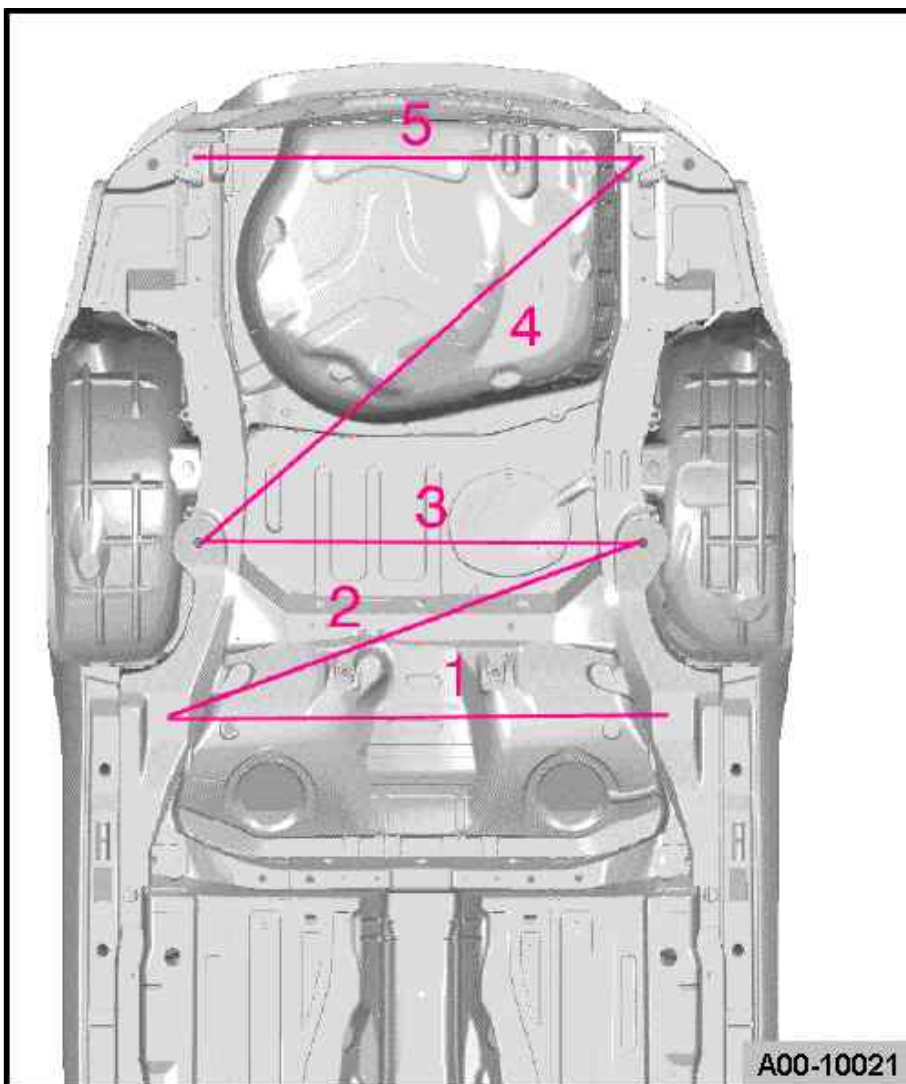
Distance between rear suspension strut attachment points

### 4 - 1422 mm $\pm$ 2 mm

Diagonal distance between mounting points at rear longitudinal members and rear suspension struts

### 5 - 1108 mm $\pm$ 2 mm

Distance between rear longitudinal members



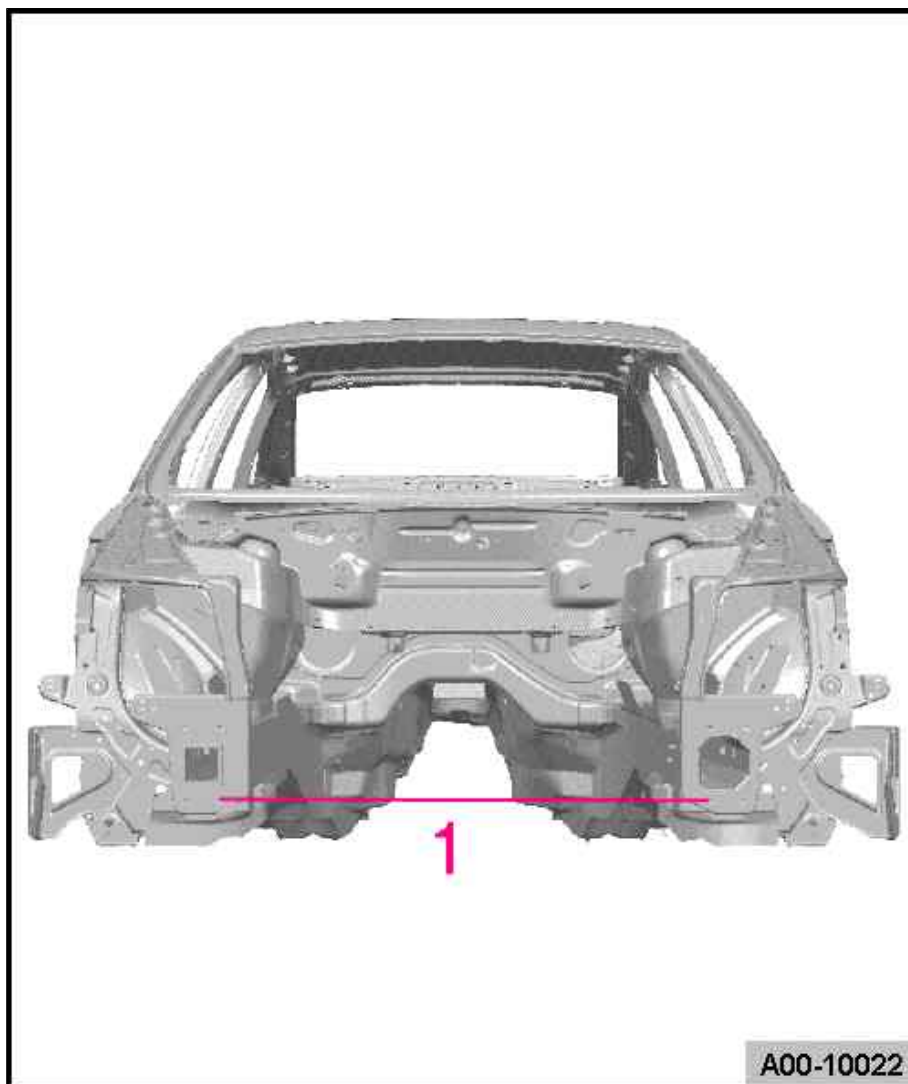
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## 6.4 Body - front

1 - 887 mm  $\pm$  2 mm

Distance between front longitudinal members



**1 - 1023 mm  $\pm$  2 mm**

Distance between wing panel mountings

**2 - 1473 mm  $\pm$  2 mm**

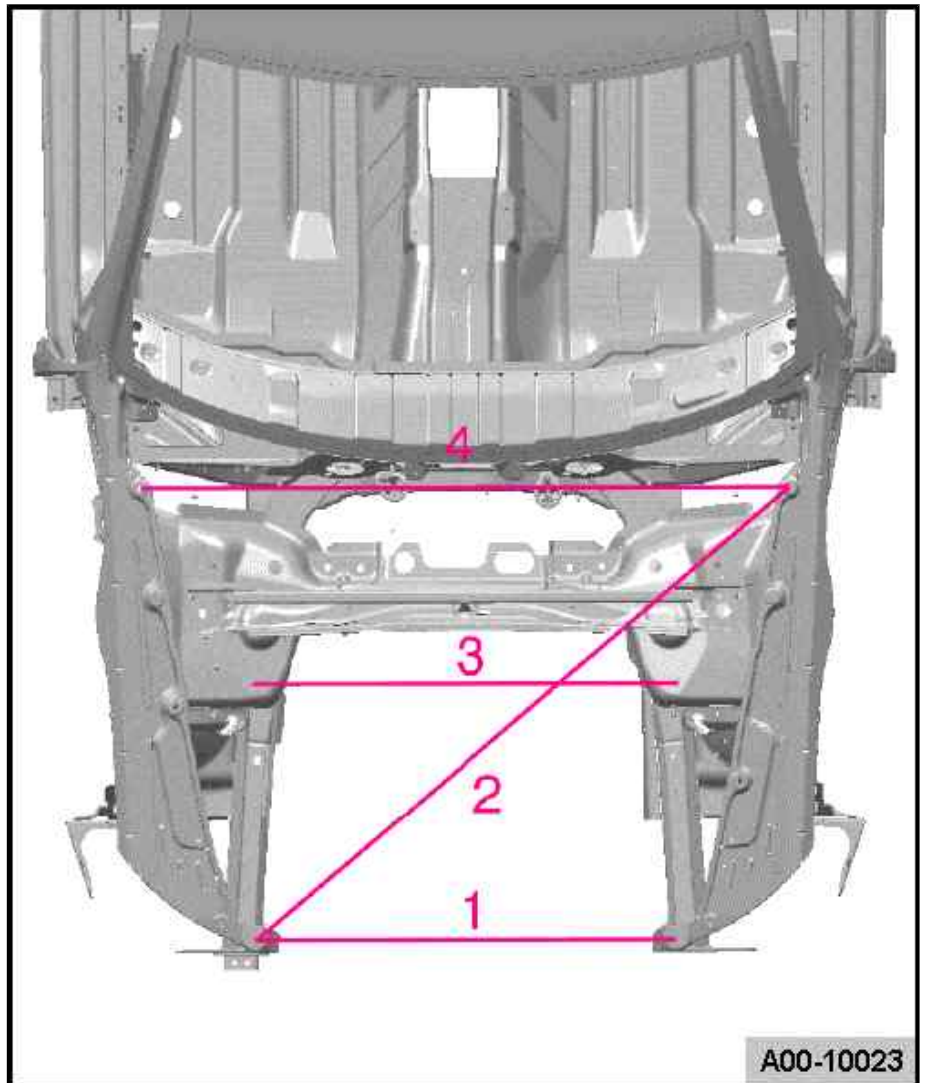
Diagonal distance between wing panel mountings (front) and wing panels (rear)

**3 - 892 mm  $\pm$  2 mm**

Distance between mounting points of suspension strut mountings

**4 - 1355 mm  $\pm$  2 mm**

Distance between wing panels (rear)



## 6.5 Body - centre

Front and rear door openings

**1 - 1472 mm ± 2 mm**

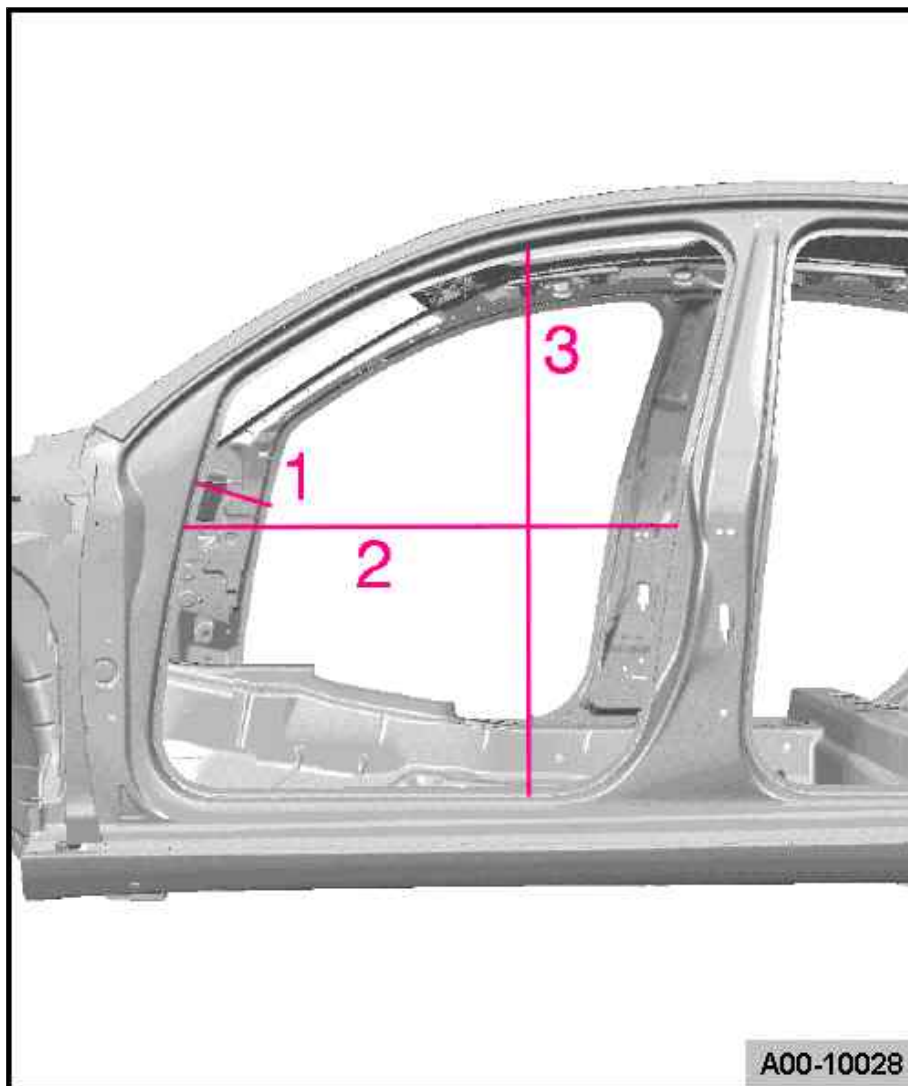
Distance between A-pillars

**2 - 868 mm ± 2 mm**

Distance between A-pillar and  
B-pillar

**3 - 974 mm ± 2 mm**

Height of door opening



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**1 - 984 mm  $\pm$  2 mm**

Height of door opening

**2 - 749 mm  $\pm$  2 mm**

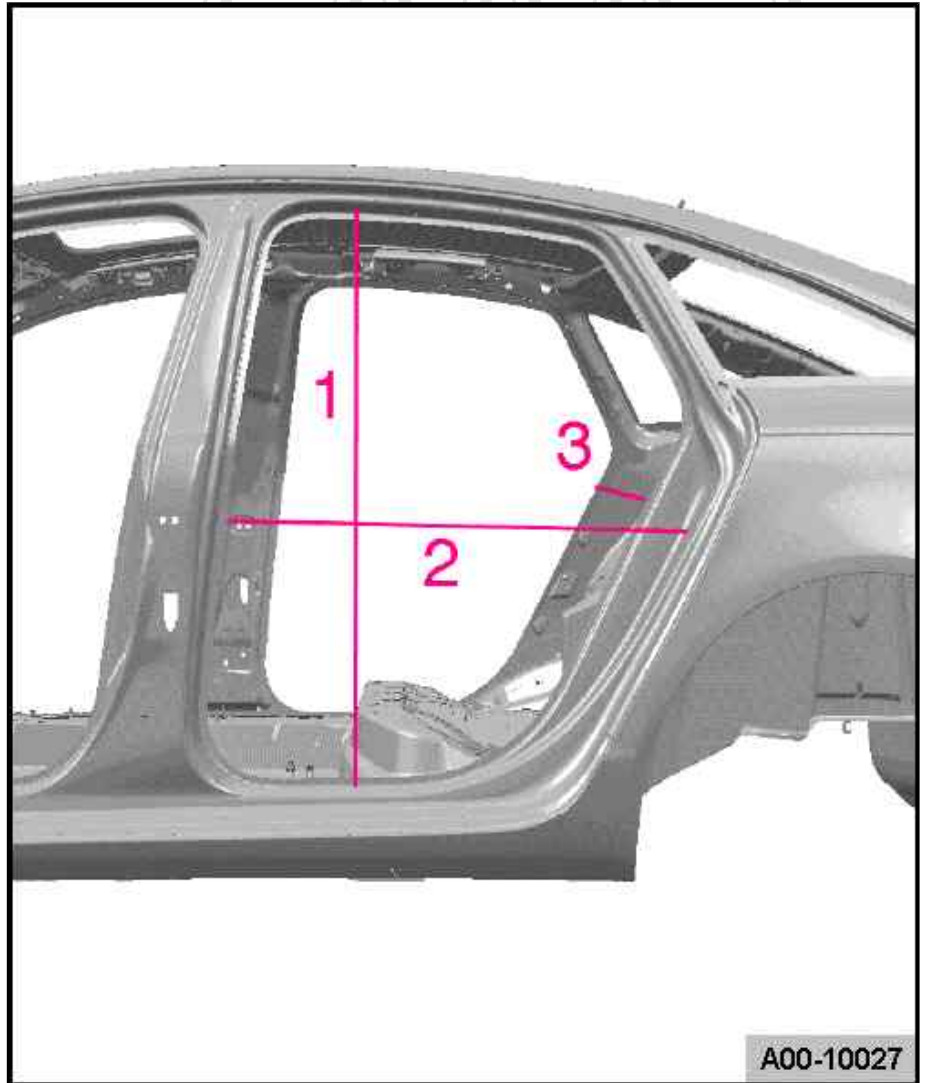
Distance between B-pillar and  
C-pillar



Note

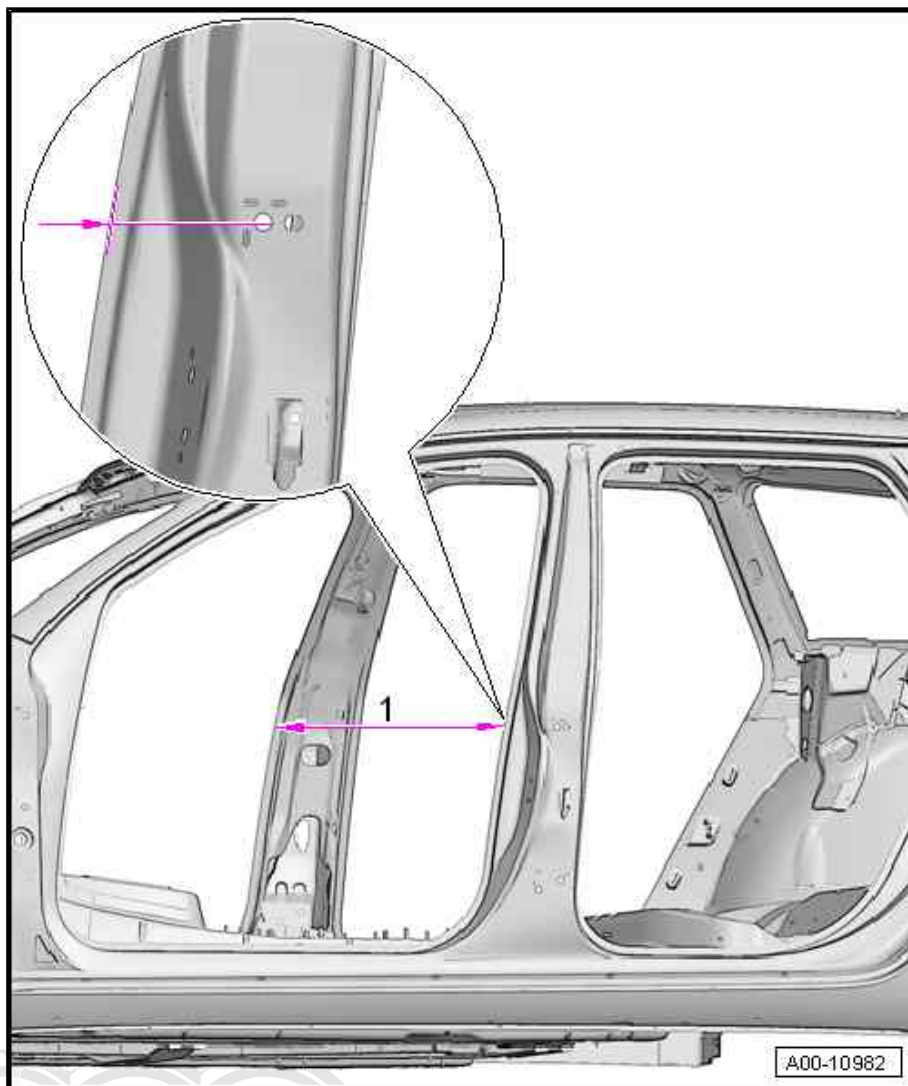
**3 - 1423 mm  $\pm$  2 mm**

Distance between C-pillars



1 - 1472 mm ± 2 mm

Distance between B-pillars



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## 6.6 Body - rear

### 1 - 1544 mm $\pm$ 2 mm

Distance between side panels  
(bottom)

### 2 - 556 mm $\pm$ 2 mm

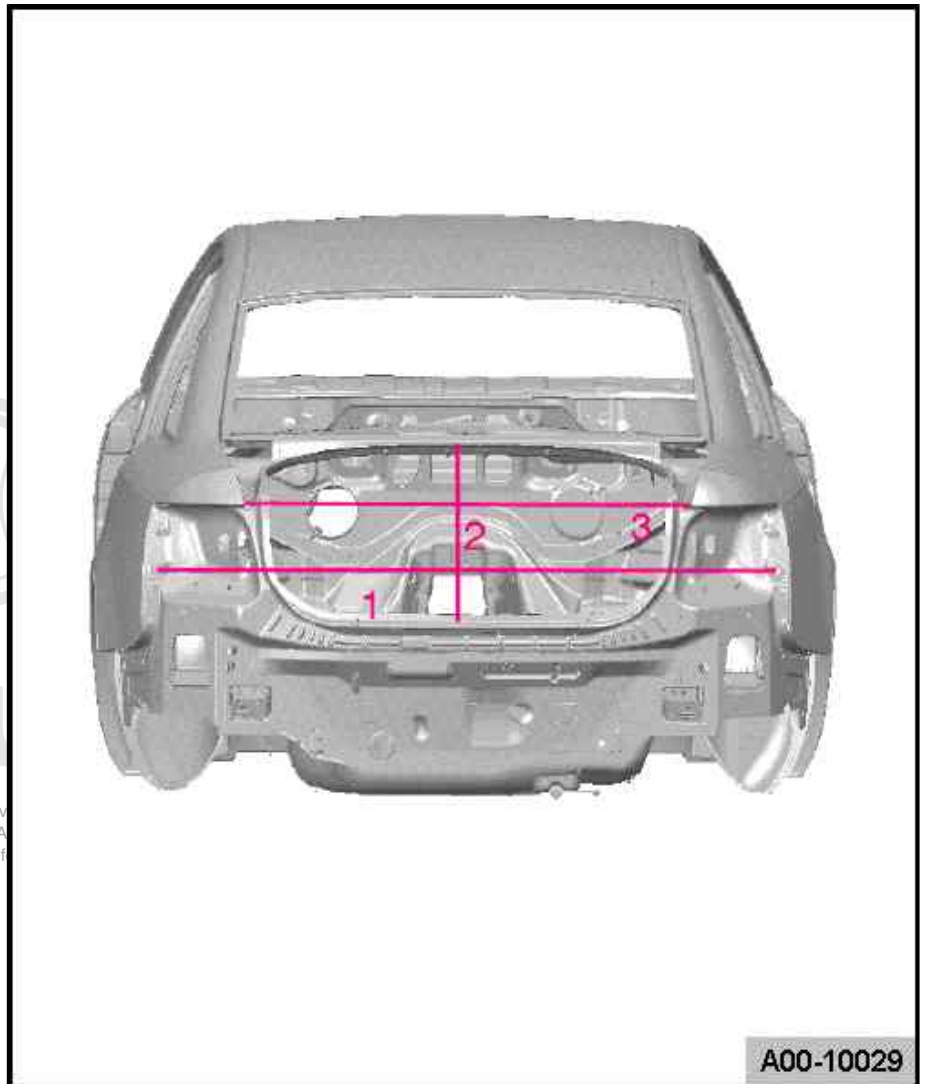
Distance between rear cross  
panel flange and flange on win-  
dow cross member

### 3 - 1116 mm $\pm$ 2 mm

Distance between side panels  
(top)



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A00-10029

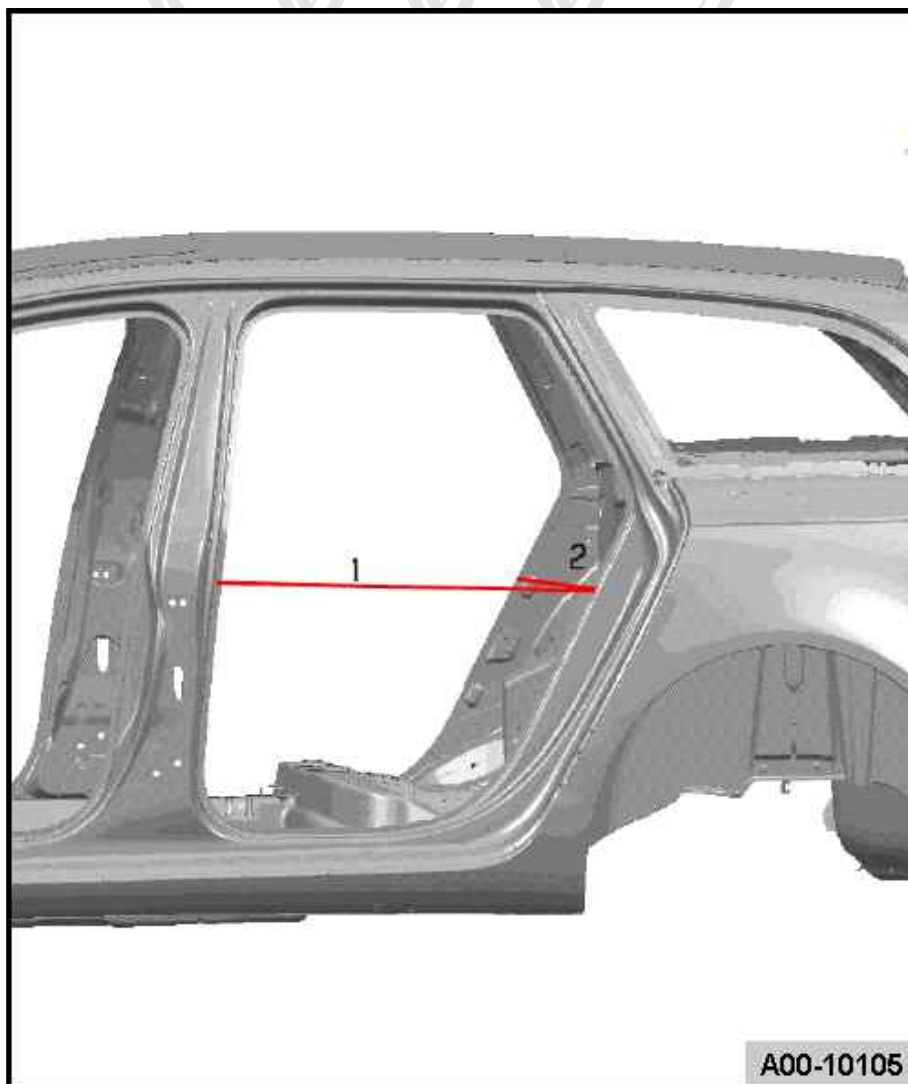
## 6.7 Rear door opening (Avant)

**1 - 753 mm ± 2 mm**

Distance between B-pillar and  
C-pillar

**2 - 1438 mm ± 2 mm**

Distance between C-pillars



## 6.8 Body - rear (Avant)

### 1 - 984 mm $\pm$ 2 mm

Distance between rear cross panel flange and flange on window cross member

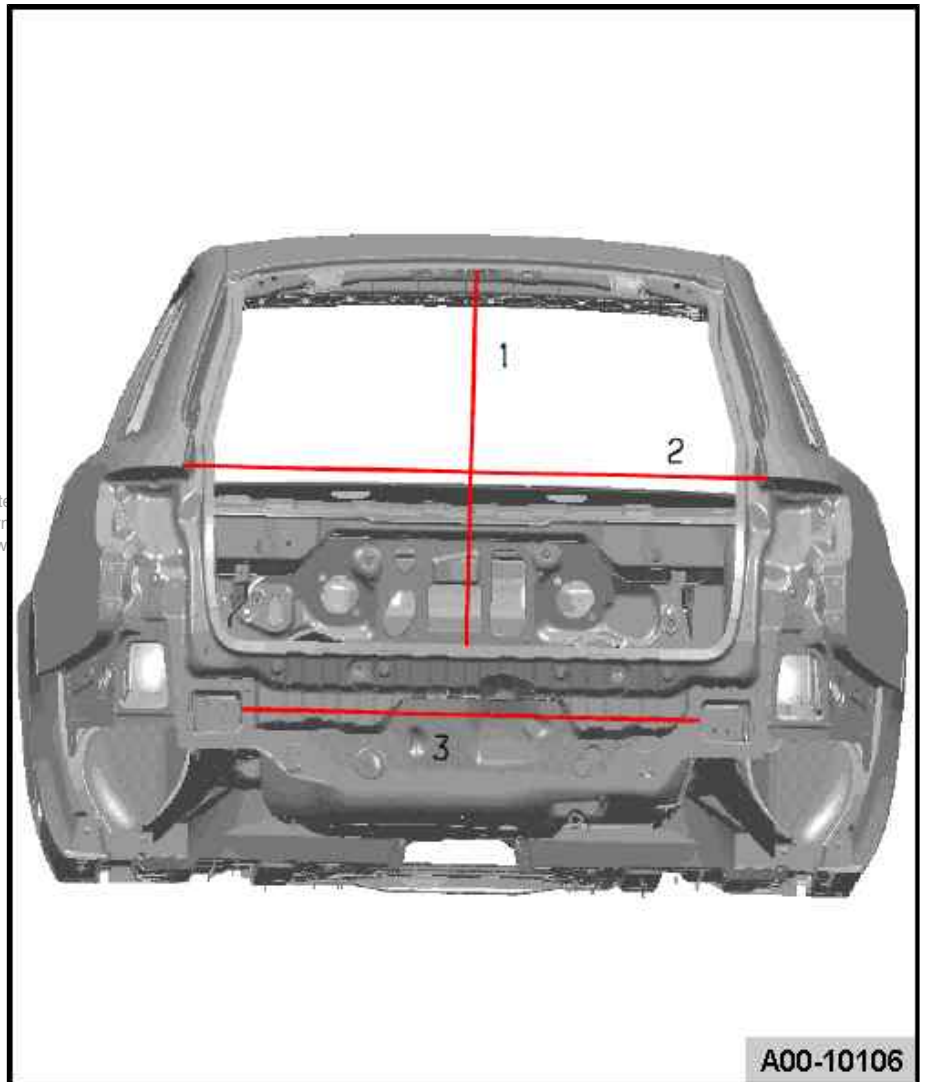
### 2 - 1239 mm $\pm$ 2 mm

Distance between side panels

### 3 - 963 mm $\pm$ 2 mm

Distance between longitudinal members

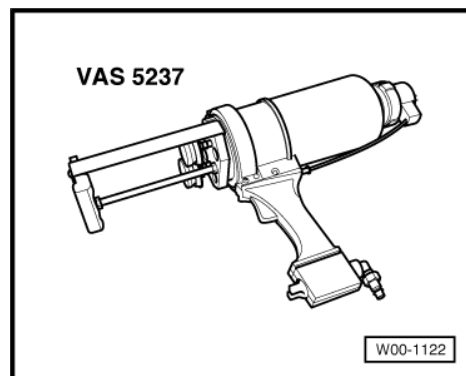
Protect  
perfora  
weld



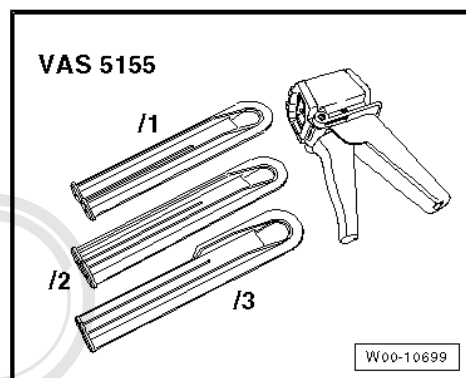
## 7 Tools

### Special tools and workshop equipment required

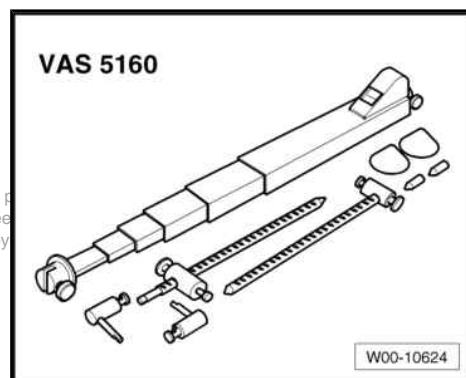
- ◆ Resistance spot welder -VAS 6239 A- or
- ◆ Resistance spot welder -VAS 6525- or
- ◆ Resistance spot welder -VAS 6530- or
- ◆ Resistance spot welder -VAS 6535- or
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment
- ◆ Drill -VAS 5830-
- ◆ Scraper -VAS 5448-
- ◆ Compact angle grinder -VAS 5167-
- ◆ Double cartridge gun -VAS 6453-
- ◆ Double cartridge gun -VAS 5237-



- ◆ Hand cartridge gun -VAS 5155-

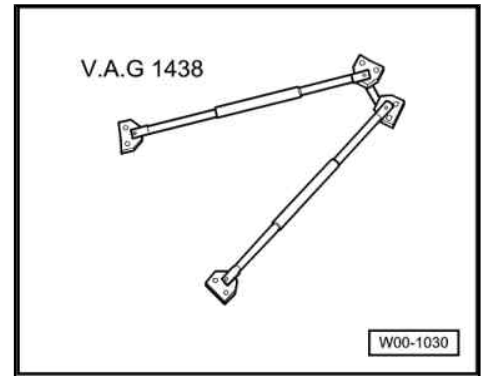


- ◆ Telescopic gauge -VAS 5160-

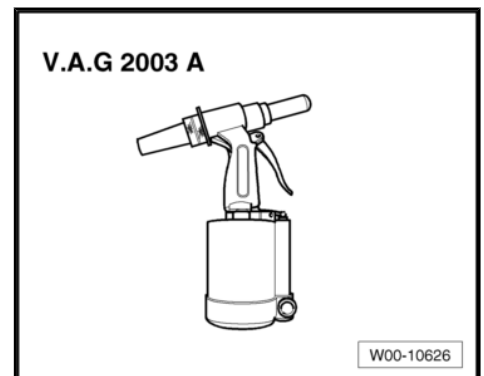


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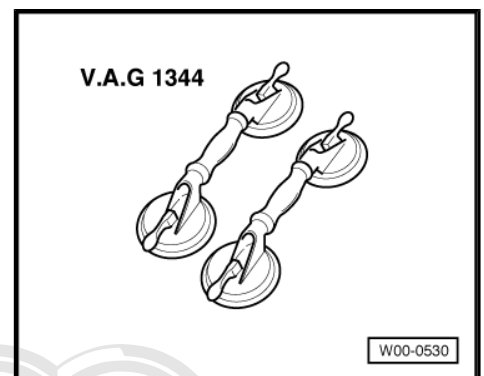
◆ Mechanical door tensioner -V.A.G 1438-



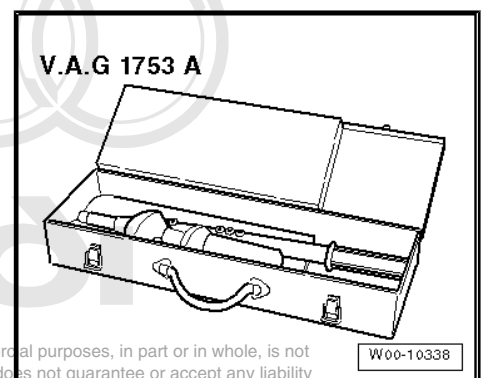
◆ Pneumatic pop riveter -V.A.G 2003 A-



◆ Suction lifter -V.A.G 1344-

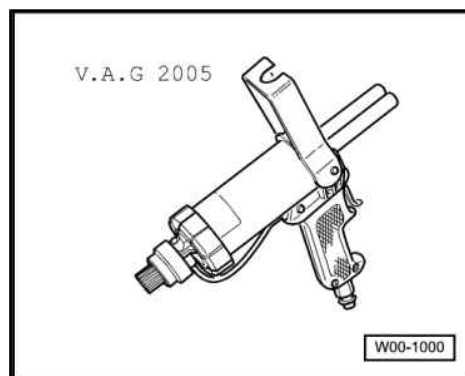


◆ Pop rivet pliers -1753 A-

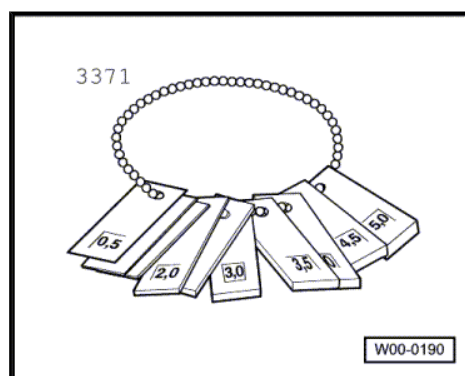


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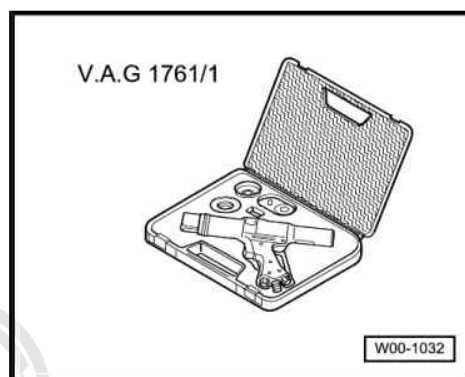
◆ Pneumatic glue gun -V.A.G 2005 B-



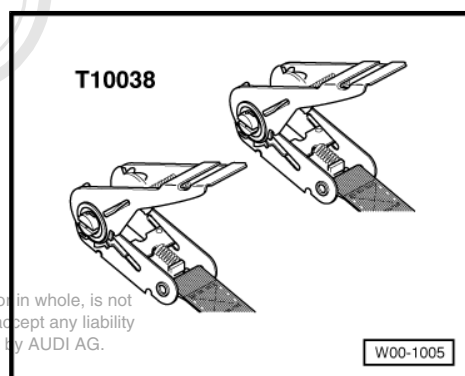
◆ Setting gauge - 3371-



◆ Pneumatic cartridge gun -V.A.G 1761/1-

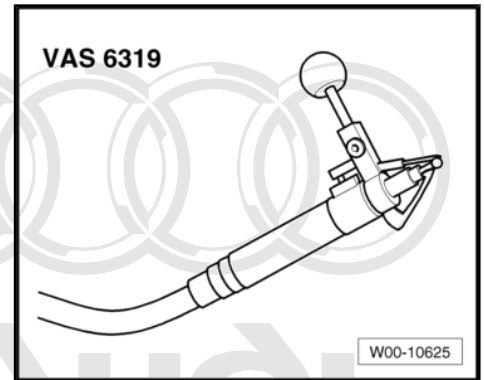


◆ Tensioning strap -T10038-



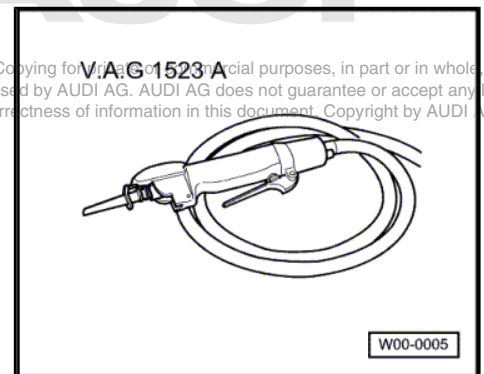
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- ◆ Laser weld seam grinder -VAS 6319-

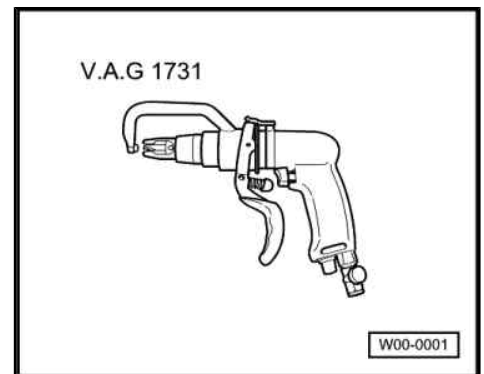


- ◆ Pneumatic sabre saw -V.A.G 1523 A-

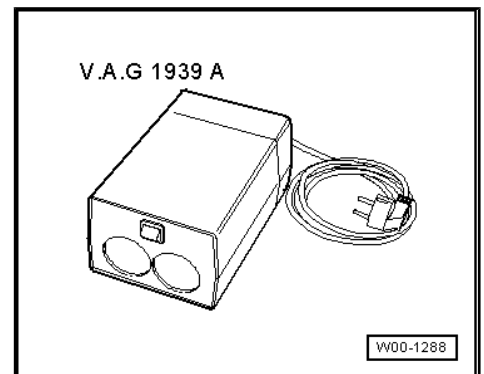
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- ◆ Spot weld breaker -V.A.G 1731-

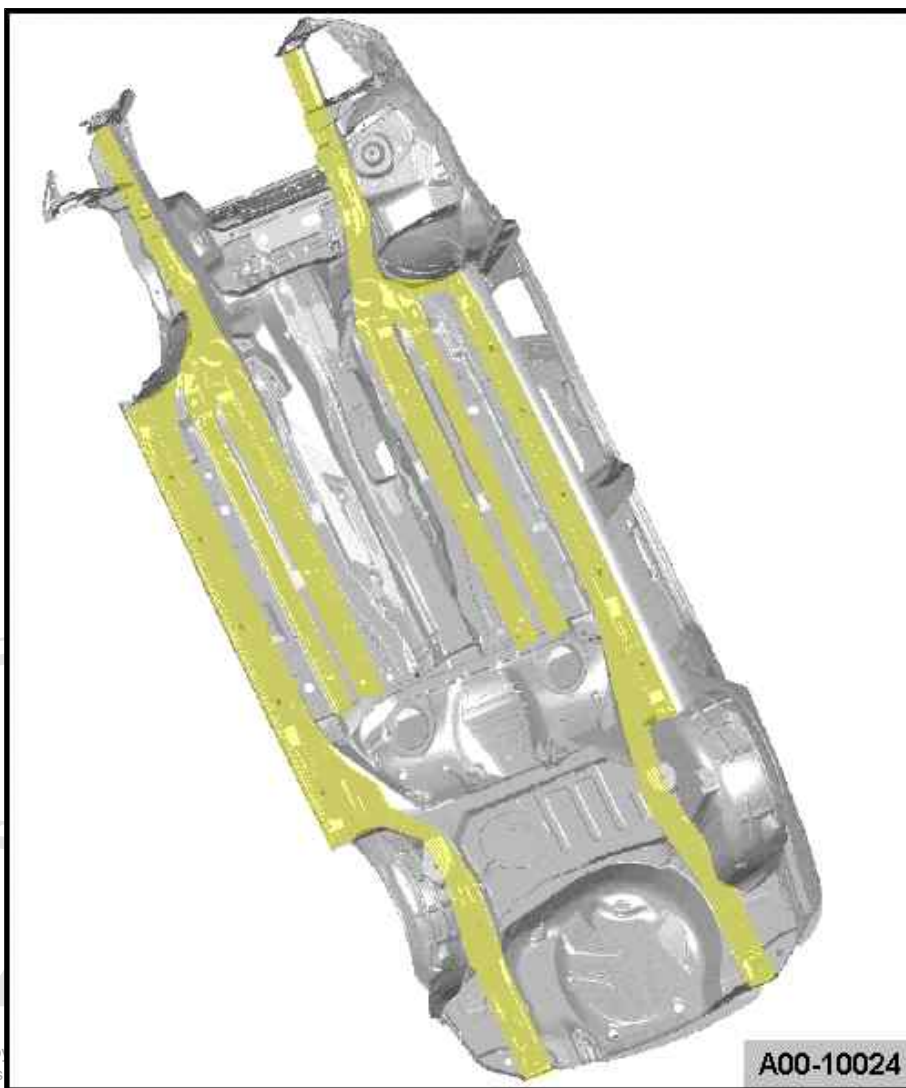


- ◆ Cartridge heater -V.A.G 1939 A-



## 8 Corrosion protection

The body is manufactured from sheet metal panels galvanised on both sides. Certain areas are cavity-sealed and have to be re-sealed after completing repair work.



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### Note

*After repairs, the surface structure of the stone-chip protection coating should be matched to the original appearance.*

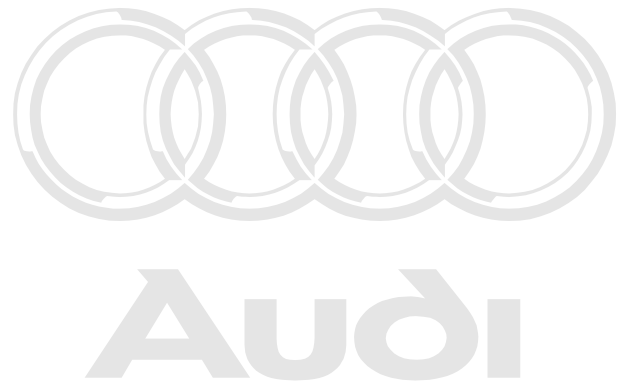
### Underseal

The wheel housings and underbody are treated with an elastic PVC coating for protection against stone chips. Due to the large amount of heat given off by the catalytic converter, the centre tunnel is given a filler coat. Areas that are especially exposed to stone chips are protected by plastic attachments (e.g. wheel housing liners).

### Wax

Corrosion protection is part of the basic body design. Openings are provided in all cavities so that cavity sealing material can be

applied to even the most inaccessible parts and to give sufficient ventilation to prevent condensation.



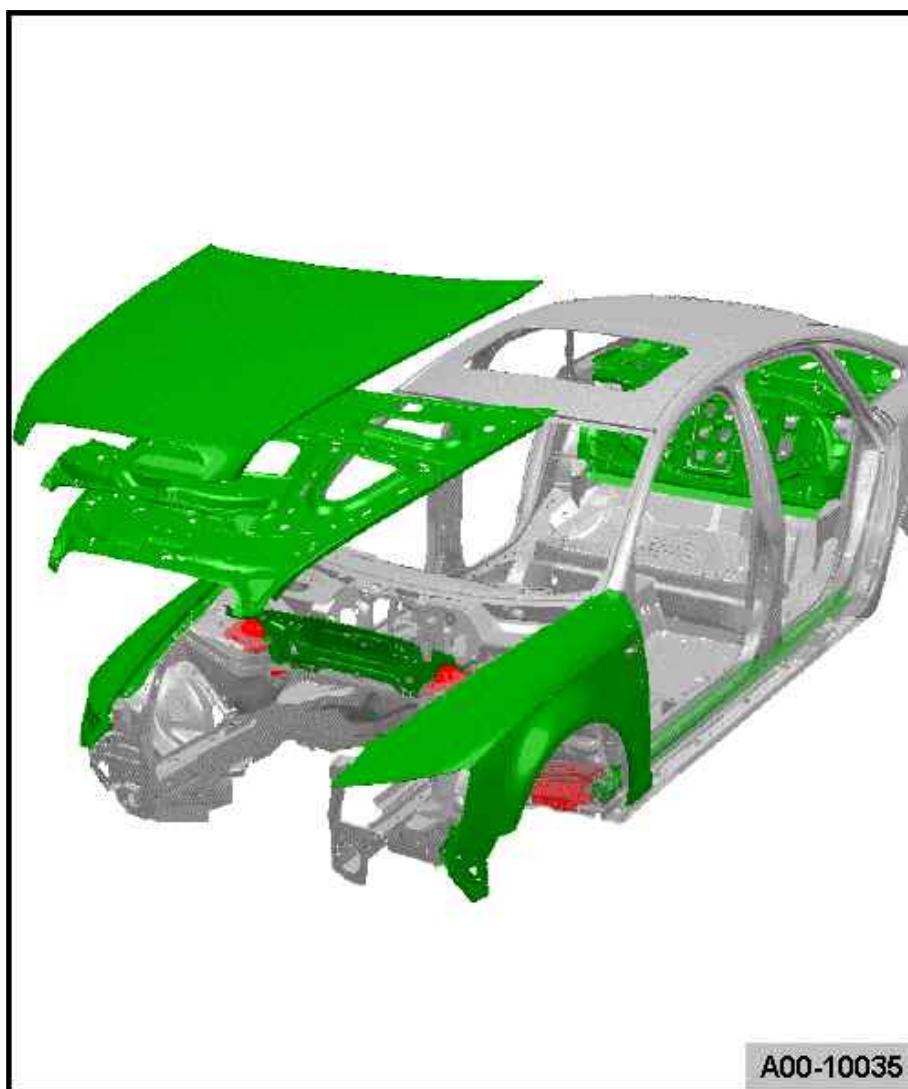
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## 9 Aluminium panels

The body panels marked in green are aluminium.

The body panels marked in red are stainless steel.

⇒ Workshop Manual, General information; chapter on Work procedures



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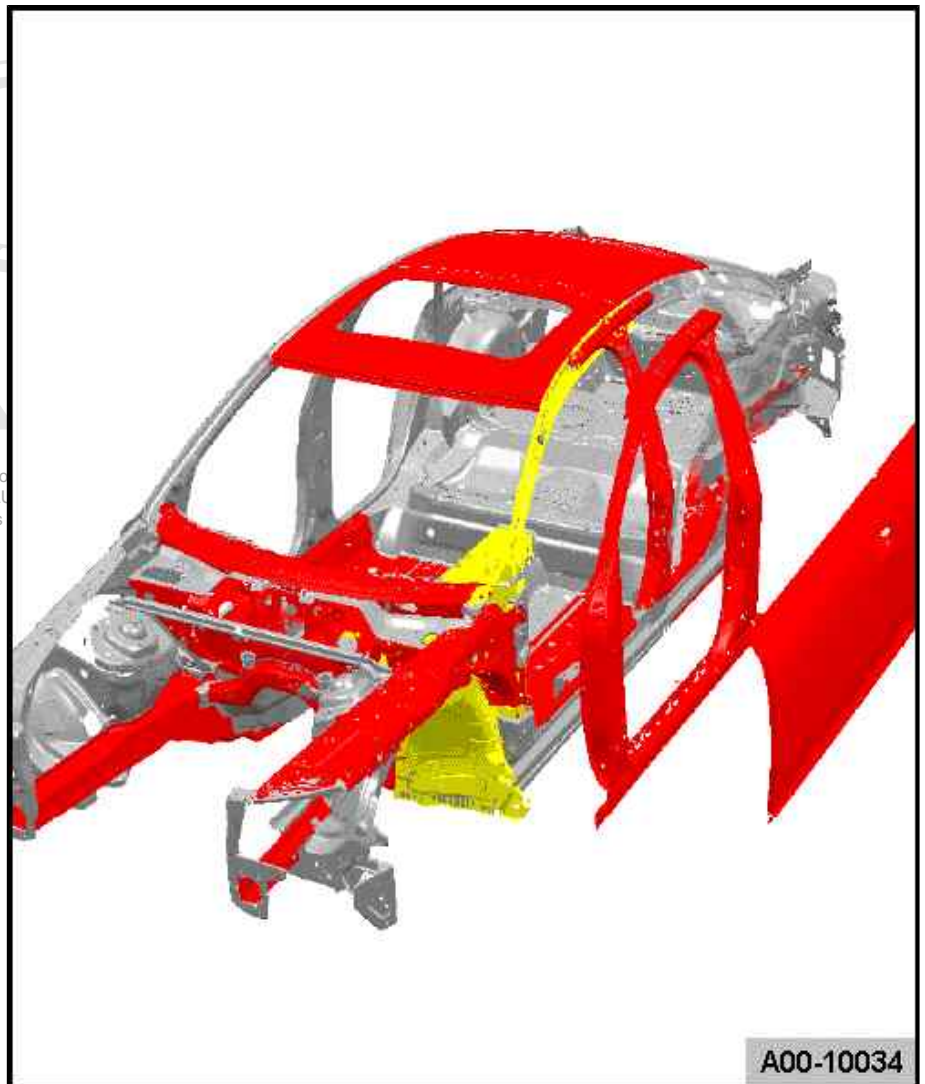
## 10 Extra-high-strength body panels

Extra-high-strength body panels are used in the following areas:

The steel panels marked in red have a tensile strength of 180 – 300 N/mm<sup>2</sup>.

The panels marked in yellow have a tensile strength of 340 – 500 N/mm<sup>2</sup>.

⇒ Workshop Manual, General information; chapter on Work procedures



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## 11 Moulded foam inserts



### Caution

*The replacement moulded foam inserts expand only after reaching 180° degrees. For this reason, an additional filler foam is used when performing repairs.*

*The material required for workshop repairs is 2-component filler foam -D 506 KD1 A3-.*

Various body cavities of the Audi A6 are fitted with moulded foam inserts.

The foam inserts reduce the noise transmitted to the interior when driving.

The moulded foam inserts are fitted during body manufacture and subsequently increase in volume in the paint shop drying booth after priming at a temperature in excess of approx. 180 °C .

As temperatures of approx. 180 °C are not attained under workshop conditions, a filler foam is used when performing repairs.

The 2-component filler foam -D 506 KD1 A3- is used for repair work.



### Note

- ◆ *The 2-component filler foam hardens within 25 minutes.*
- ◆ *No SG weld seams may be made within 15 mm of the 2-component filler foam.*
- ◆ *Before continuing with the following operations, ensure that the replacement panel is ready for installation, e.g. cut to size, matched up to the vehicle and corrosion protection applied.*
- Remove residue of foam material on vehicle.
- Restore paint coating; apply two coats (wet on wet) of glass/paint primer -D 009 200 02- if necessary; flash-off time approx. 10 minutes.

### Renewing moulded foam insert

- Fix moulded foam insert to vehicle.

Apply 2-component filler foam -D 506 KD1 A3- to replacement part.

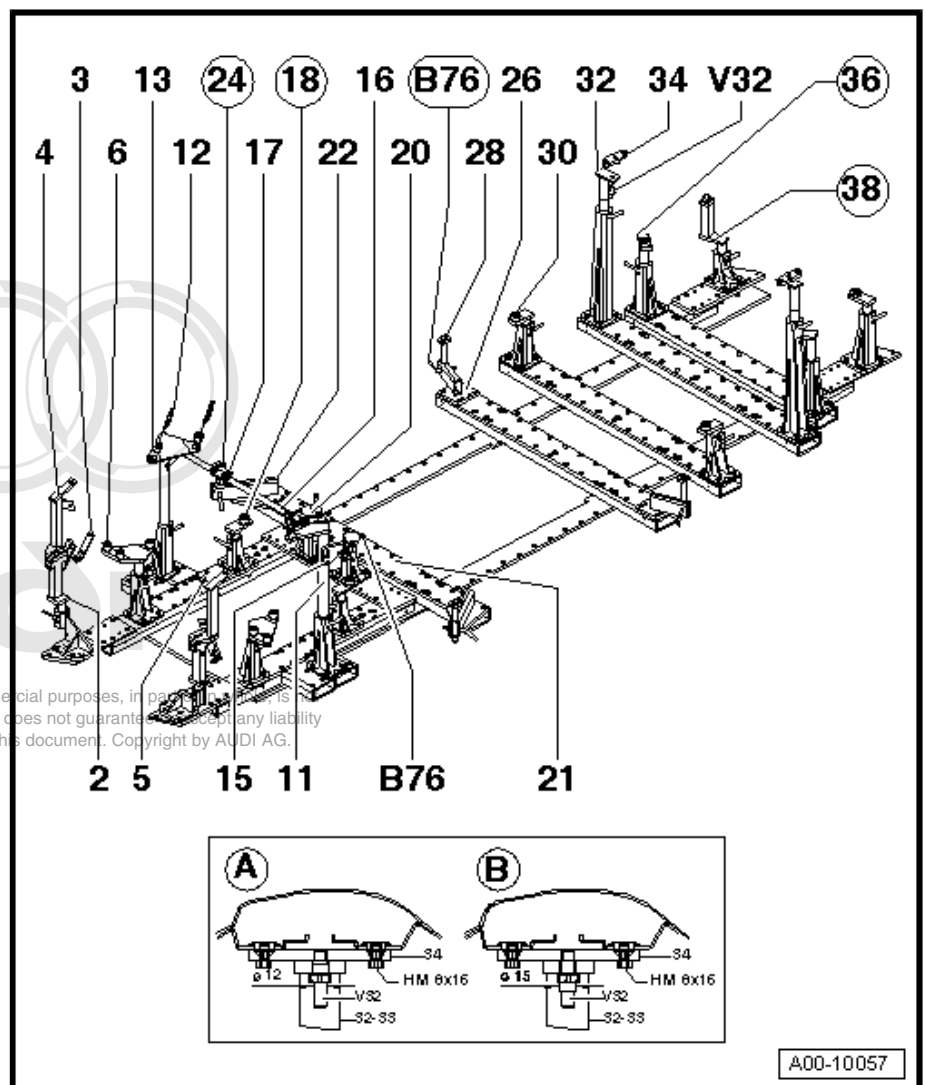
- Secure the new part in position, gently pressing in the new part in the area of the moulded foam insert, and weld in.
- After painting the vehicle the repair area must be cavity-sealed.

## 12 Straightening jig



### Note

- ◆ The item numbers in the illustrations are identical with the end numbers on the alignment bracket mountings.
- ◆ The item numbers of the alignment bracket mountings marked with a circle are for checking the body with mechanical units installed.
- ◆ The required basic set size is given for the alignment bracket mountings.
- ◆ The following illustrations show the right side of the vehicle.
- ◆ Alignment bracket set: alignment bracket set for Audi A6, 2005> -VAS 6276-
- ◆ For Audi A6 vehicles with long wheelbase, all transverse modules from numbers 27 / 28 upwards are positioned 100 mm further towards the rear.



2 - MZ 141 and TV 400

3 - Shim

4 - MZ 141, TV 400 and mounting

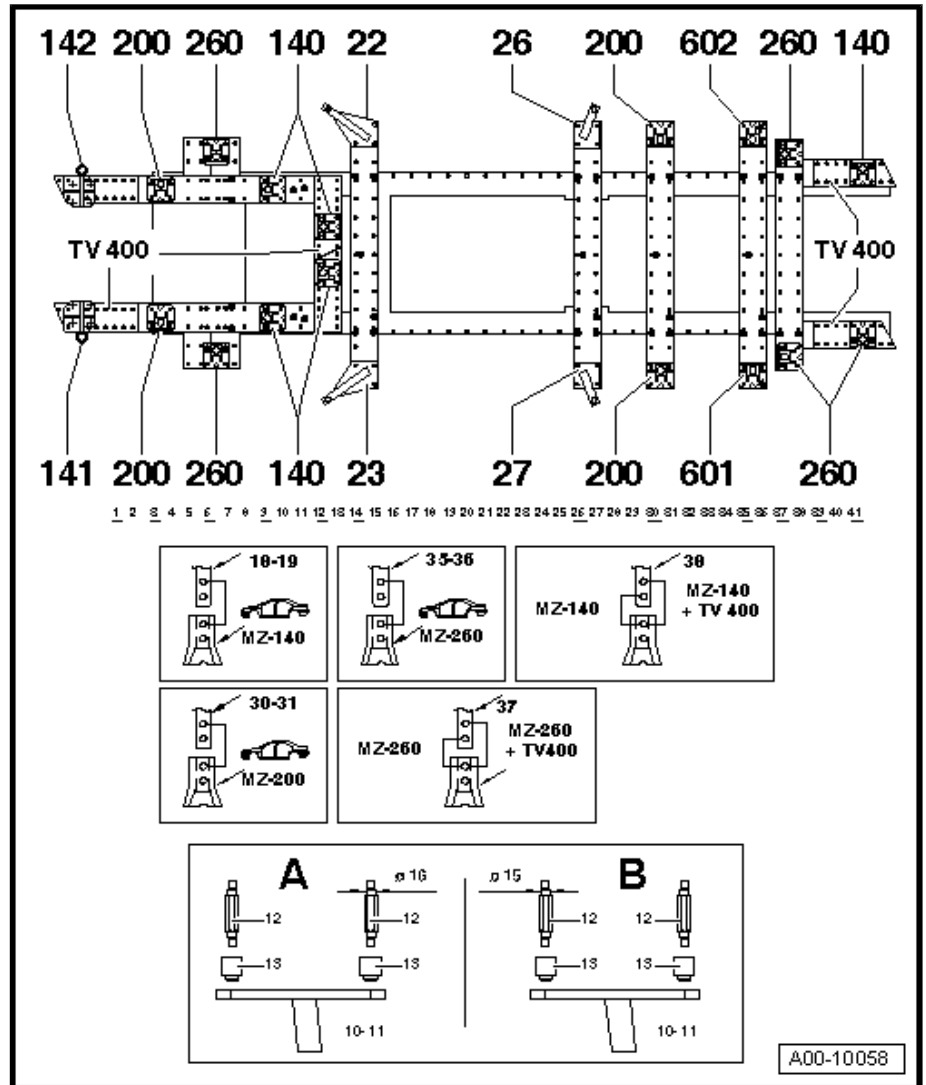
6 - MZ 200



- 10 - MZ 260
- 12 - MZ 260 and alignment bracket mounting -A = repair-
- 12 - MZ 260 and alignment bracket mounting -B = check-
- 13 - MZ 260 and alignment bracket mounting
- 14 - Mounting for bar
- 16 - Bar in place of steering box
- 17 - Mounting for steering
- 18 - Mounting for steering
- 20 - MZ 140 and TV 400
- 22 - Bracket without MZ, and front production mounting -24-
- 26 - Bracket without MZ, and front production mounting -28-
- 30 - MZ 200
- 32 - MZ 602
- 34 - Left and right spacer identical
- V 32 - Left and right centring piece identical
- 36 - MZ 260
- 38 - MZ 140, transverse module and TV 400 on straightening jig  
V.A.G 1365 A, MZ 140 transverse module on straightening jig  
V.A.G 1695/1

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- 2 - MZ 142 and TV 400
- 6 - MZ 200
- 10 - MZ 260
- 18 - MZ 140
- 20 - MZ 140
- 30 - MZ 200
- 32 - MZ 602 -A = servicing-
- 32 - MZ 602 -B = check-
- 36 - MZ 260
- 38 - MZ 140 and TV 400



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8 - MZ 080

18 - MZ 080

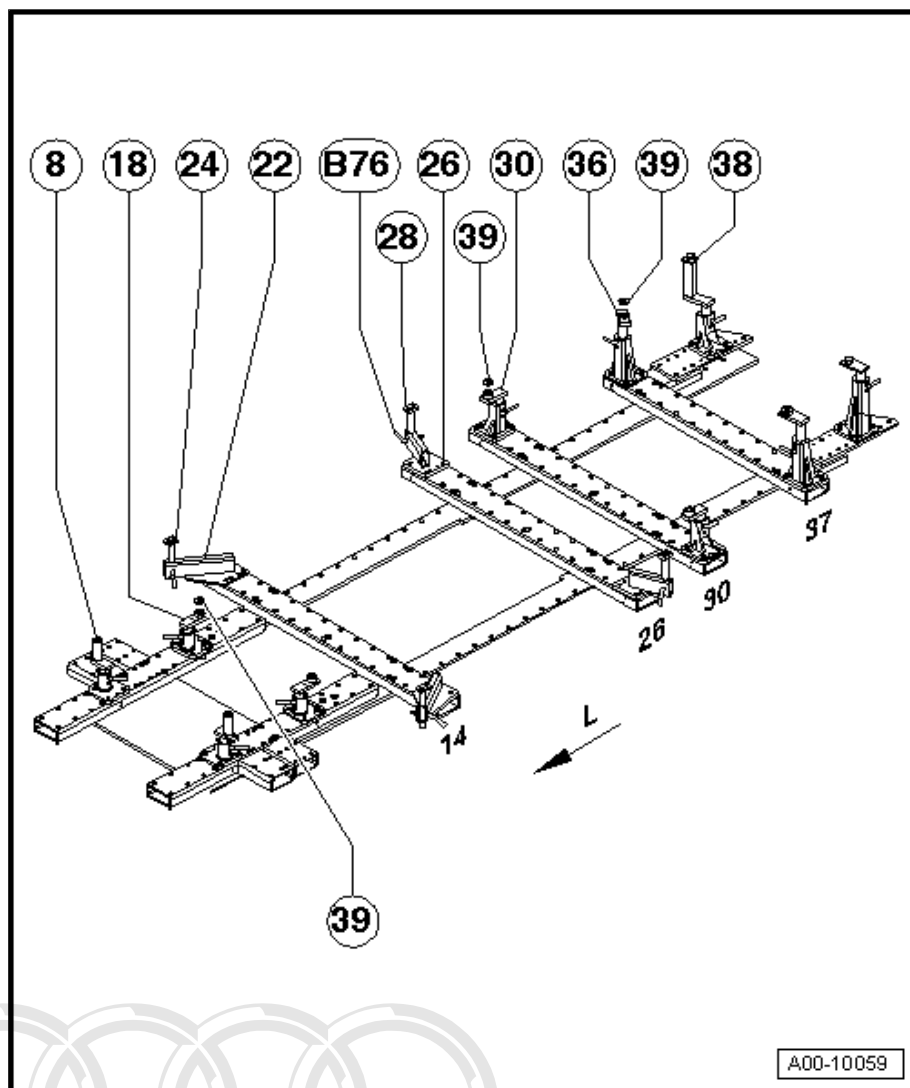
22 - Mounting for lifting platform

26 - Mounting for lifting platform

30 - MZ 140

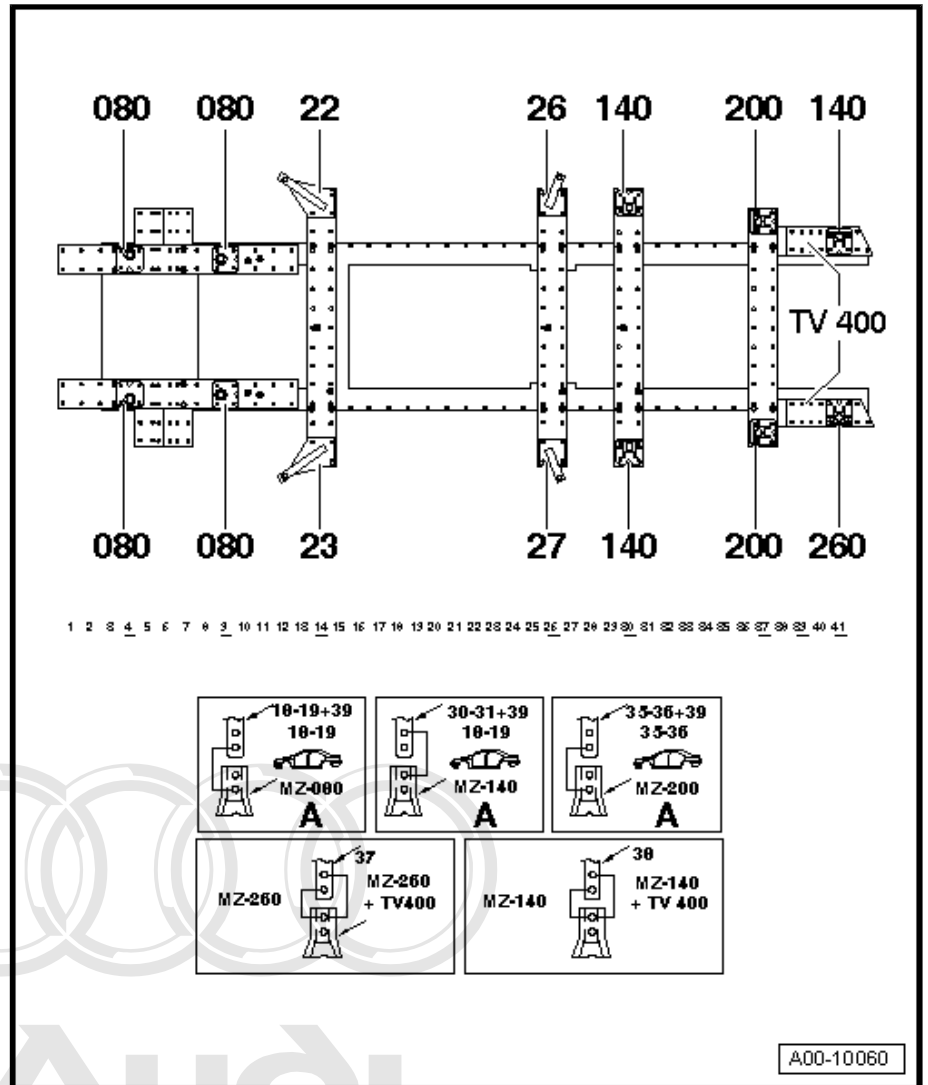
39 - Shim (identical on left and right sides)

38 - MZ 140 and TV 400

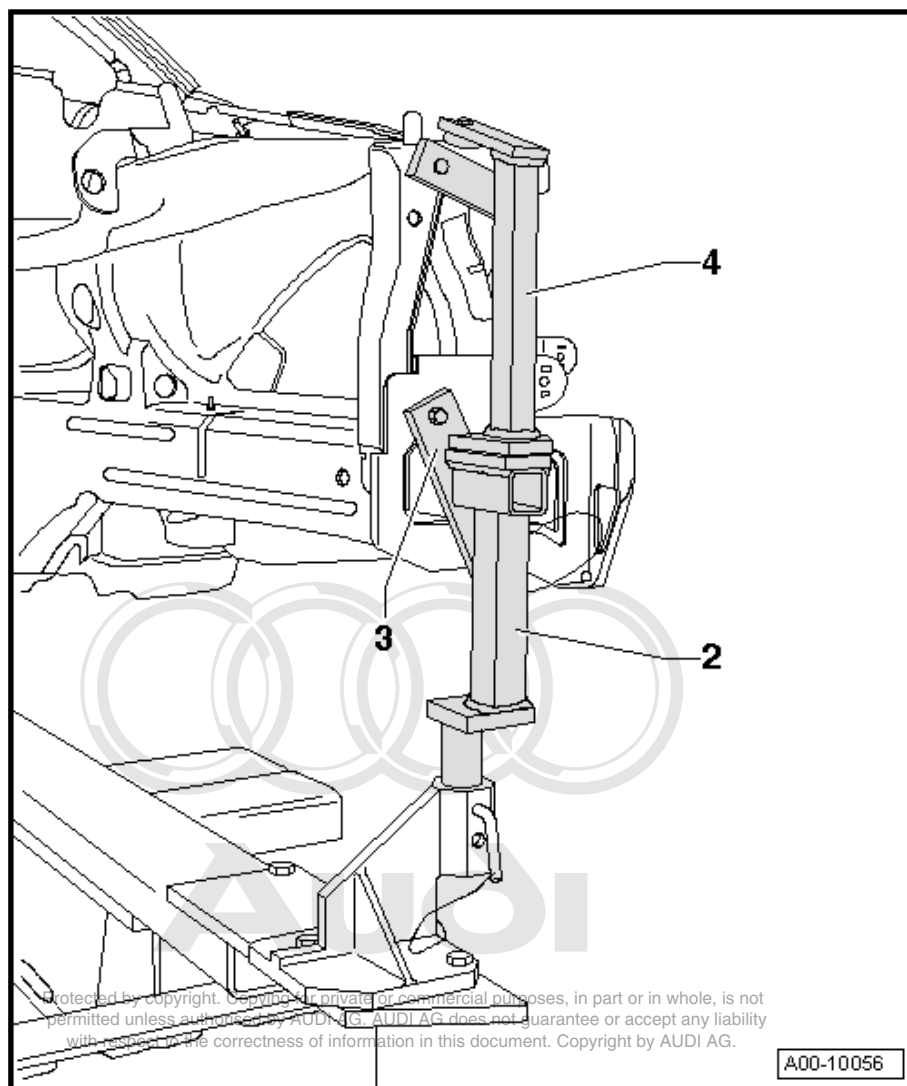


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- 8 - MZ 080
- 18 - MZ 080
- 30 - MZ 140
- 36 - MZ 140
- 38 - MZ 140 and TV 400



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## 2 - Front longitudinal member

The mounting plate for the lock carrier is welded on in production after installation of the wing panel. This means that the mounting position can vary by several mm in the longitudinal direction.

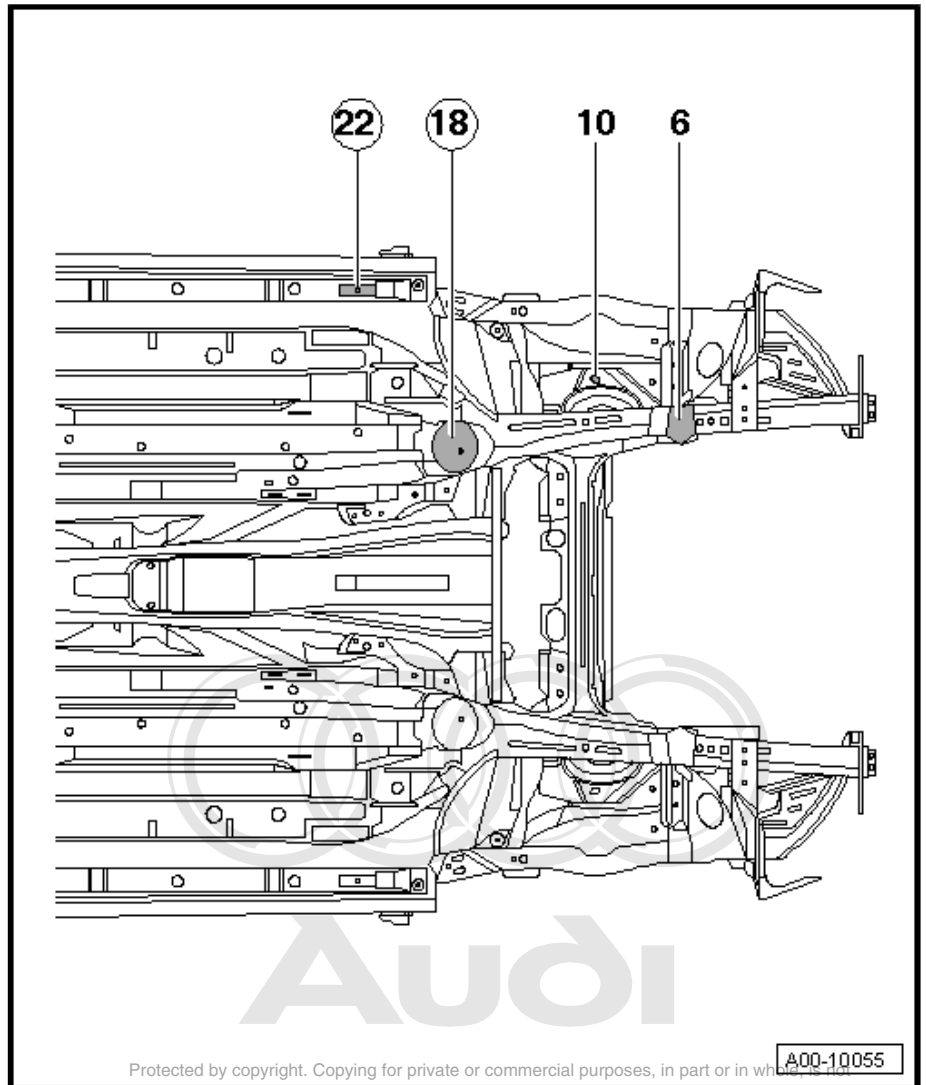
If necessary, check dimensions without bolting on the MZ element.

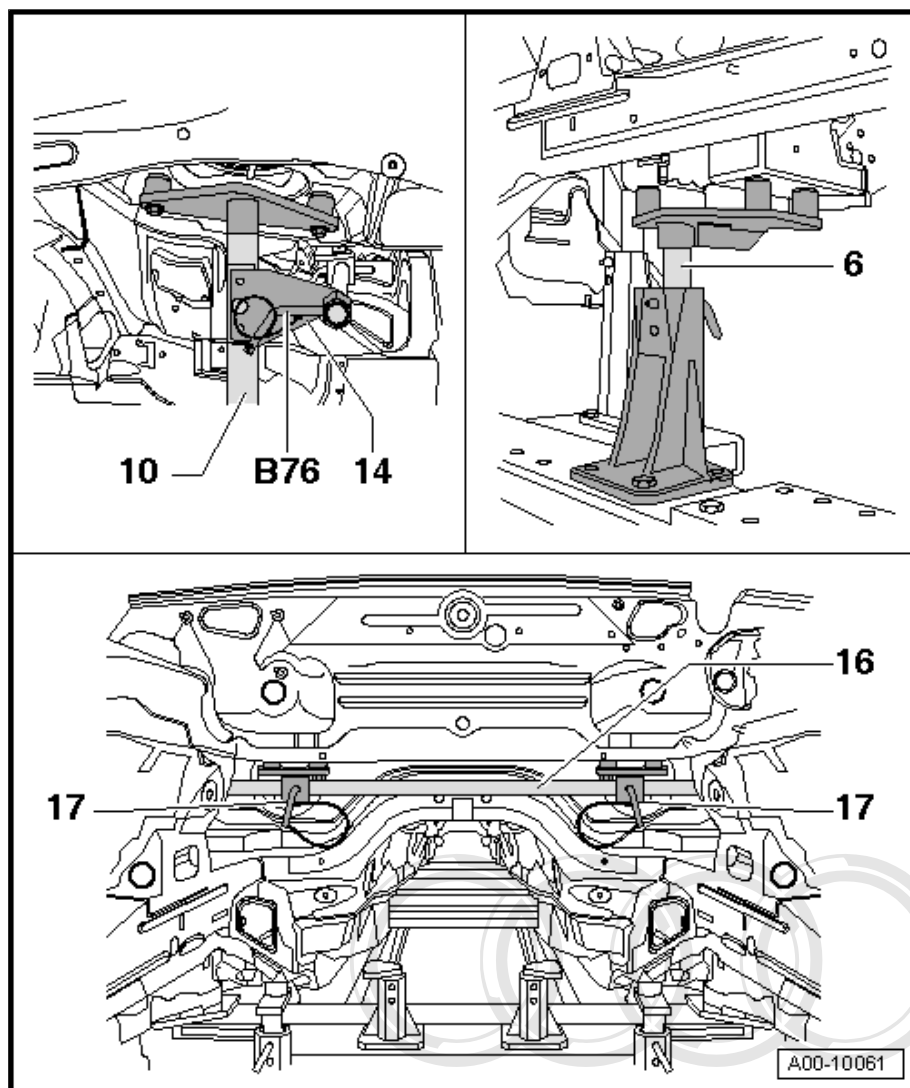
If only the longitudinal member or the connecting piece are being renewed, bolt alignment brackets 2 and 4 together, and secure MZ element to straightening jig using a screw clamp if necessary.

## 4 - Front longitudinal member / top of wheel housing

## 3 - Spacer plate

## Overview of front alignment brackets





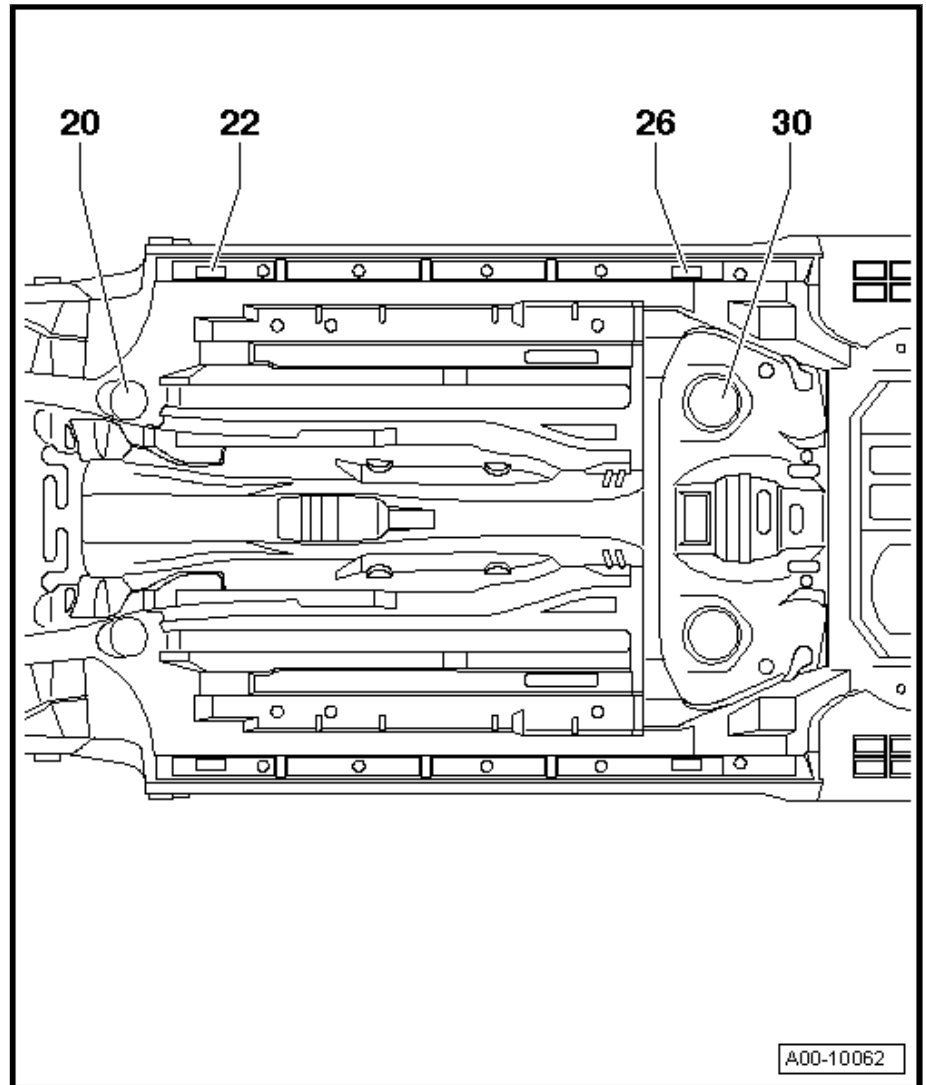
16 - Bar in place of steering box

Lubricate bar with oil and take care to avoid damage.

17 - Mounting for steering

### Overview of central alignment brackets

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20 - Mounting for subframe

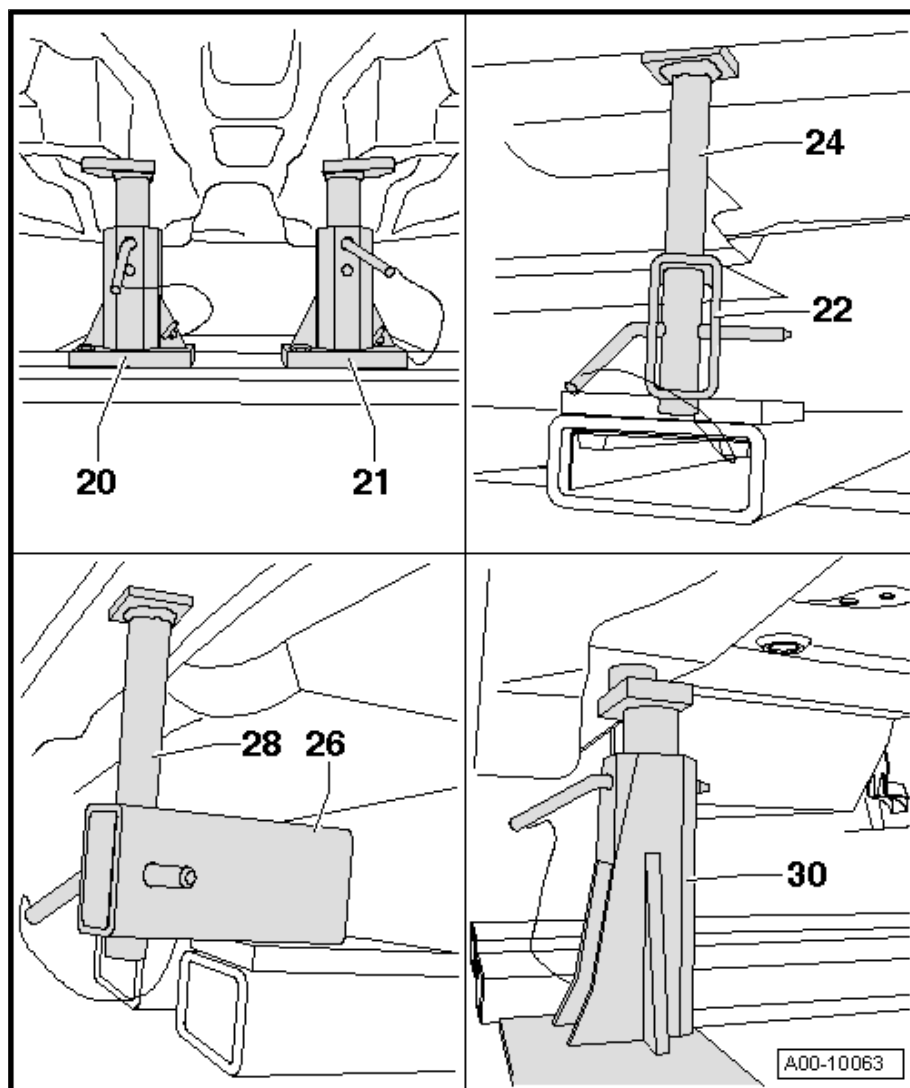
22 - Mounting for lifting platform

26 - Mounting for lifting platform

30 - Longitudinal member



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30 - Mounting for rear axle

Do not insert pin until after fitting body on jig.

32 - Suspension strut mounting

Do not insert pin until after fitting body on jig.

34 - Left and right spacer identical

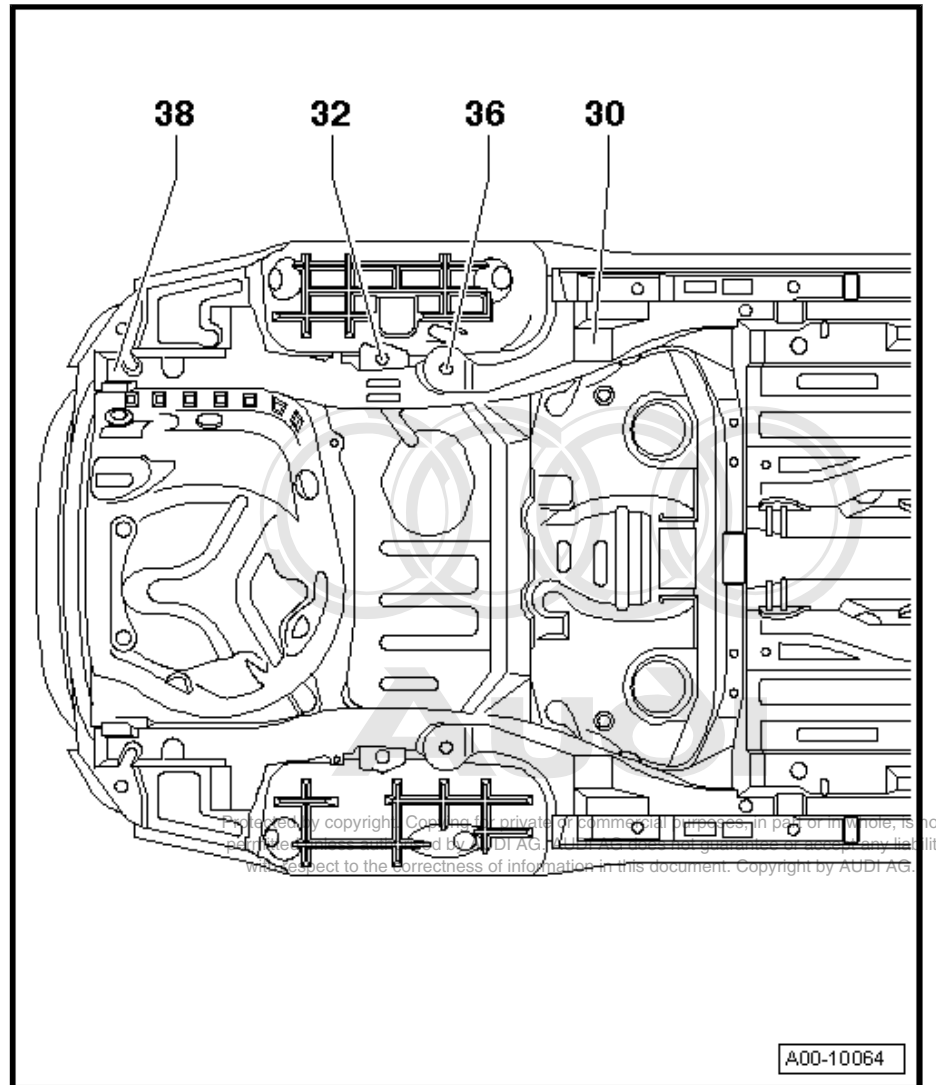
36 - Mounting for rear axle

38 - Drilling in longitudinal member

The drilling is covered over with fabric-backed tape and sprayed over with underseal. Re-seal drilling after checking body.

#### Overview of rear alignment brackets

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30 - Mounting for rear axle

Do not insert pin until after fitting body on jig.

32 - Suspension strut mounting

Do not insert pin until after fitting body on jig.

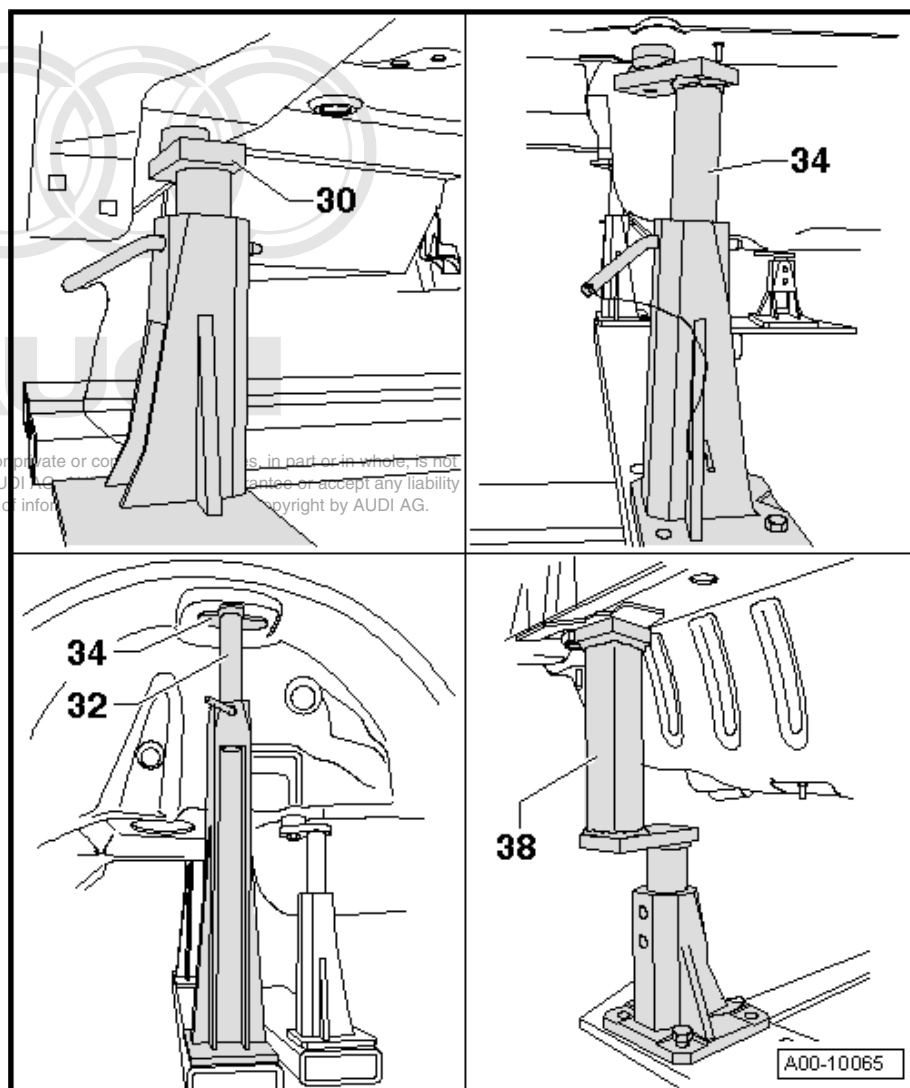
34 - Left and right spacer identical

36 - Mounting for rear axle

38 - Drilling in longitudinal member

The drilling is covered over with fabric-backed tape and sprayed over with underseal. Re-seal drilling after checking body.

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## 12.1 Portal gauge

A - Extension

B - Telescopic column

C - Cross bar 1200 mm

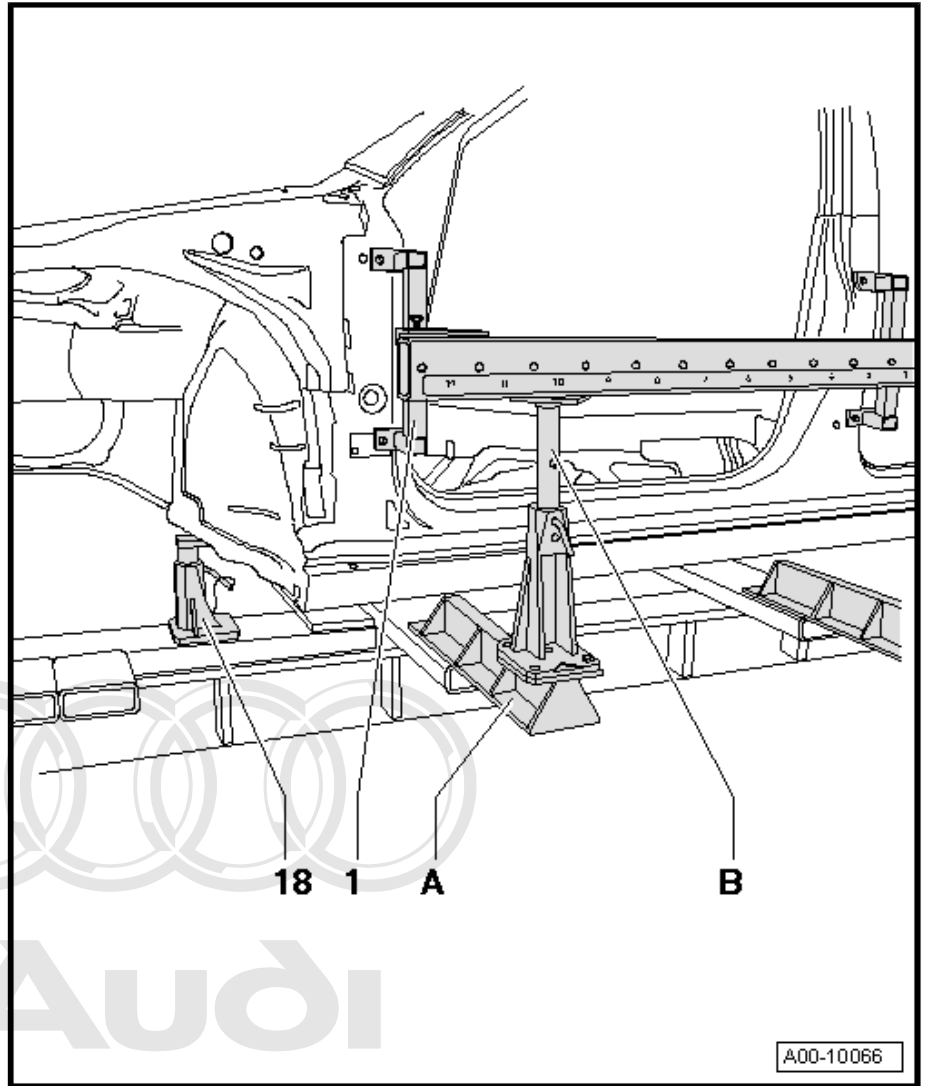
3 - MZ 260

3 - Mounting for A-pillar

18 - Mounting for subframe

Portal gauge -VAS 5007-

Portal gauge supplement for A6 -VAS 5007/6-



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A - Extension

B - Telescopic column

C - Cross bar 1200 mm

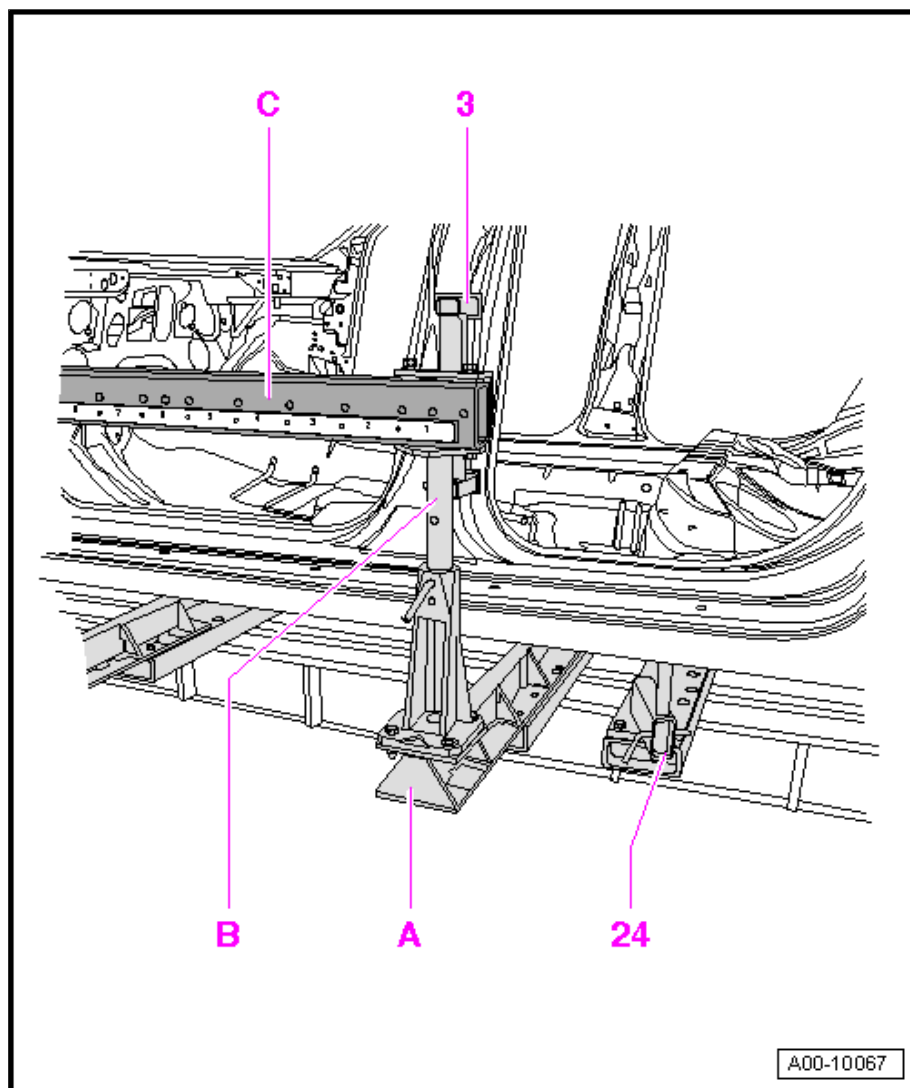
3 - MZ 260

3 - Mounting for B-pillar

24 - Mounting for lifting platform

Portal gauge -VAS 5007-

Portal gauge supplement for A6 -VAS 5007/21-



A - Extension

B - Telescopic column

C - Cross bar 1200 mm

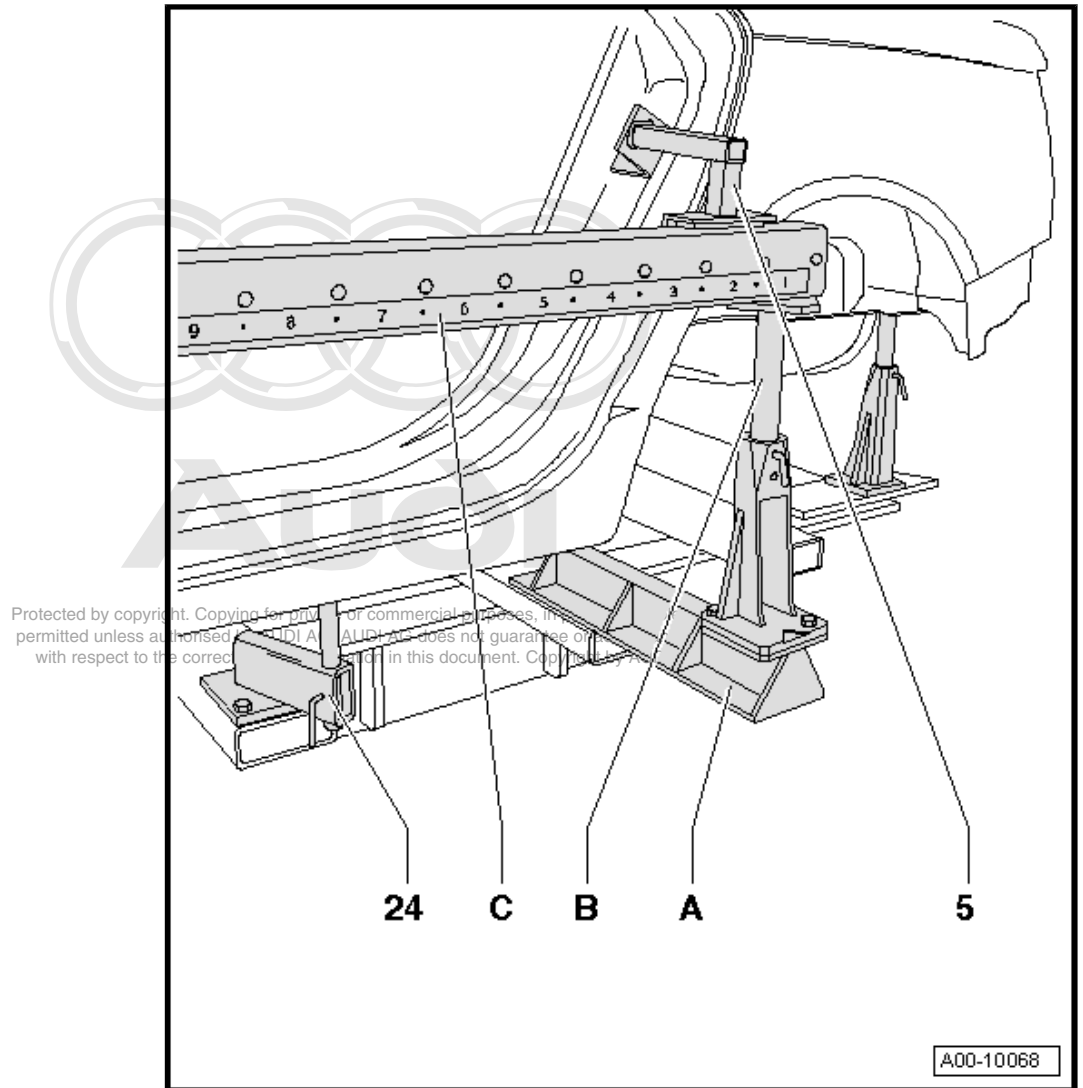
5 - MZ 260

5 - Mounting for C-pillar

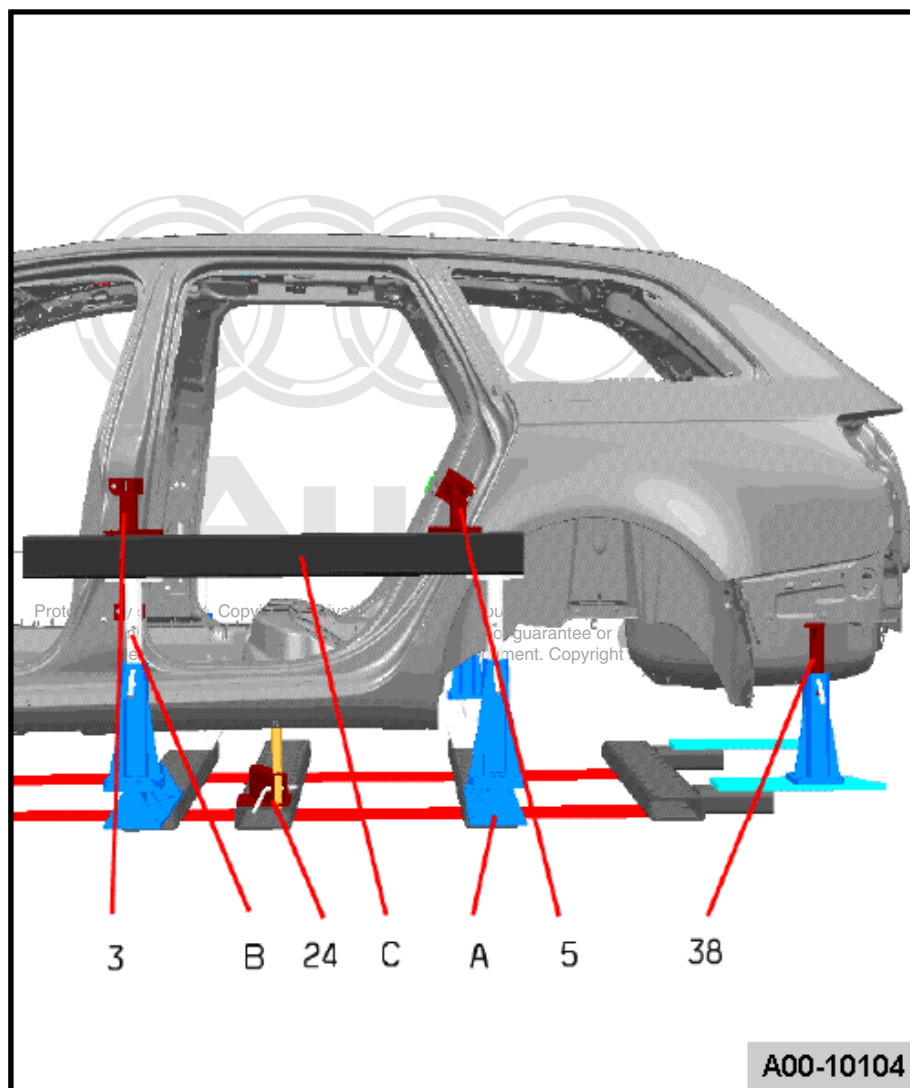
24 - Mounting for lifting platform



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- 1 - Portal gauge -VAS 5007-
- 2 - Portal gauge supplement for A6 -VAS 5007/6-
- A - Extension
- B - Telescopic column
- C - Cross bar 1200 mm
- 5 - MZ 260
- 5 - Mounting for C-pillar
- 24 - Mounting for lifting platform



## 50 – Body - front

RO: 50 79 55 00

### 1 Front longitudinal member - Renewal



#### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

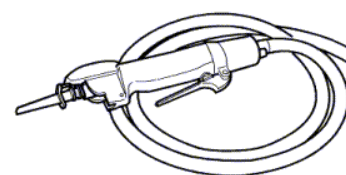
### 1.1 Tools

#### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A- or
- ◆ Resistance spot welder -VAS 6525- or
- ◆ Resistance spot welder -VAS 6530- or
- ◆ Resistance spot welder -VAS 6535- or
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Drill -VAS 5830-
- ◆ Compact angle grinder -VAS 5167-
- ◆ Pneumatic sabre saw -V.A.G 1523 A-

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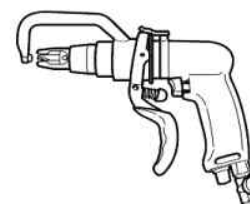
V.A.G 1523 A



W00-0005

- ◆ Spot weld breaker -V.A.G 1731-

V.A.G 1731

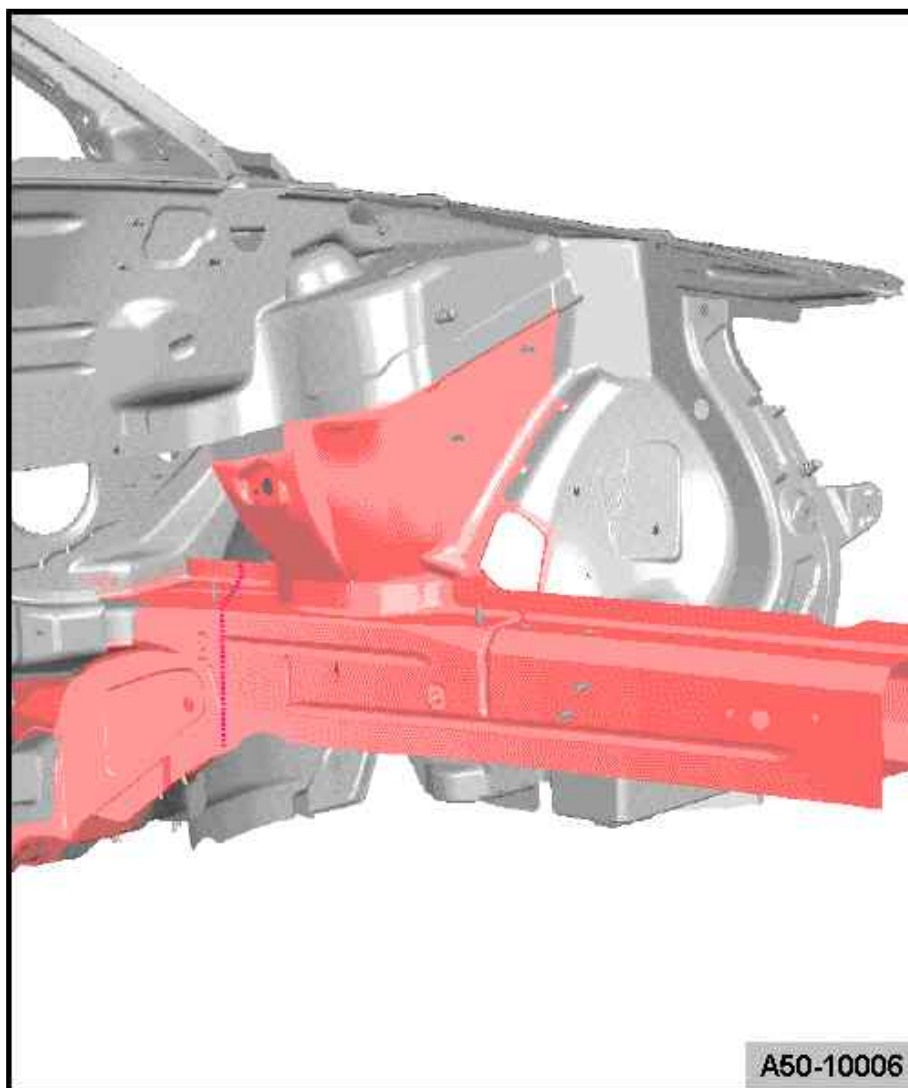


W00-0001

## 1.2 Procedure

### Cutting locations

- Separate original joint using spot weld breaker -V.A.G 1731- .
- Cut out inner longitudinal member using pneumatic sabre saw -V.A.G 1523 A- .
- Remove remaining material using compact angle grinder -VAS 5167- .



### Replacement parts

- ◆ Longitudinal member

### Preparing new parts

- Transfer separating cut to new part using pneumatic sabre saw -V.A.G 1523 A- .

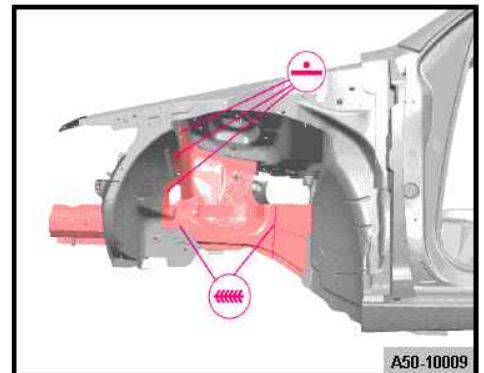
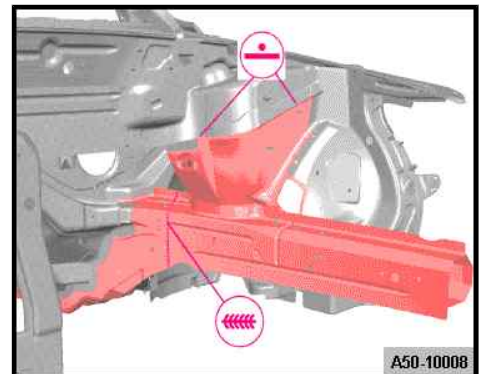
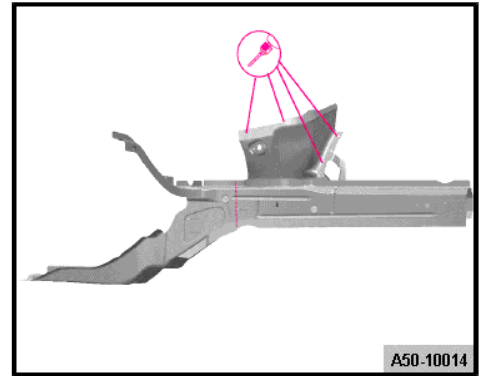
- Drill 8 mm  $\varnothing$  holes for SG plug weld seam using drill -VAS 5830-.



*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

#### Welding in

- Fix new part on alignment bracket -VAS 5007/6-.
- Butt weld at separating cut using shielded arc welding equipment 250A : SG continuous seam.
- Weld in longitudinal member using shielded arc welding equipment 250A : SG plug weld seam.
- Weld in remaining joint using resistance spot welder : RP spot weld seam.
- Butt weld at separating cut using shielded arc welding equipment 250A : SG continuous seam.
- Weld in remaining joint using resistance spot welder : RP spot weld seam.



RO: 50 79 55 12

## 2 Front longitudinal member - Partial renewal



### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

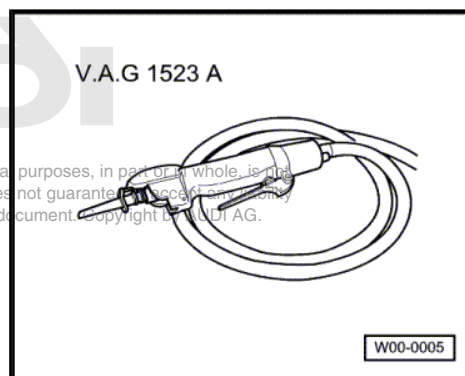
Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

### 2.1 Tools

#### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A- or
- ◆ Resistance spot welder -VAS 6525- or
- ◆ Resistance spot welder -VAS 6530- or
- ◆ Resistance spot welder -VAS 6535- or
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Compact angle grinder -VAS 5167-
- ◆ Pneumatic sabre saw -V.A.G 1523 A-

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### 2.2 Procedure

#### Cutting locations

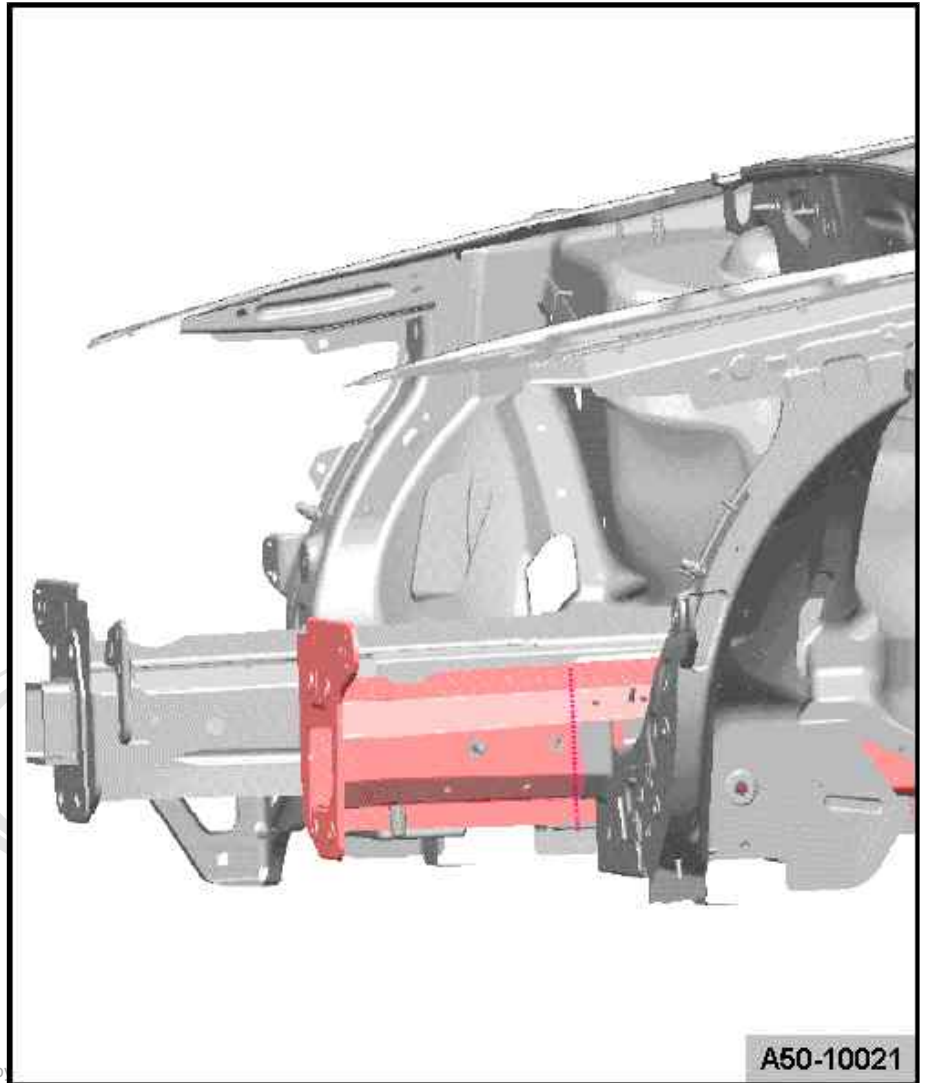
- Cut out longitudinal member.



#### Note

*Use pneumatic sabre saw -V.A.G 1523 A- to make a straight separating cut.*

- Remove remaining material using compact angle grinder - VAS 5167- .



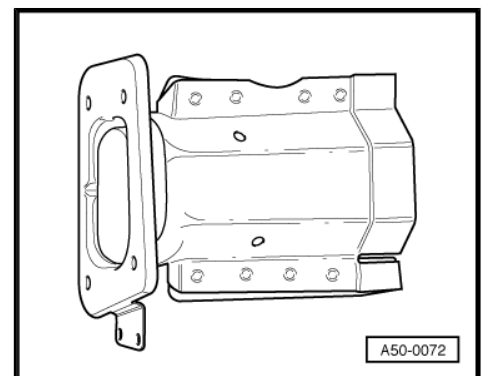
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### Replacement part

- ◆ Sub-part - longitudinal member

### Welding in

- Fix new part in position on alignment bracket set for Audi A6, 05> -VAS 6276- .

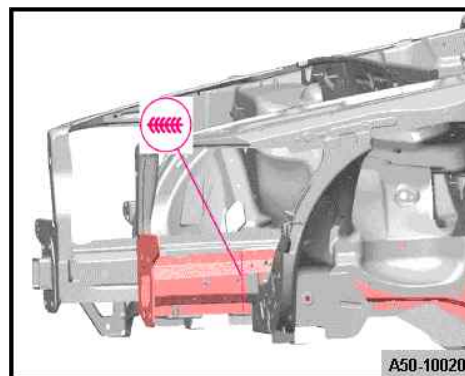


- Adapt length on body side of joint if necessary.

**Note**

*Align longitudinal member with lock carrier, cross member and headlight to bumper.*

- Weld in front longitudinal member using shielded arc welding equipment 250A : SG continuous seam, 8 x 15 mm.
- Seal weld seam.



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RO: 55 76 55 00

### 3 Upper outer longitudinal member - Renewal



#### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

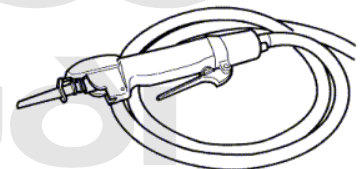
Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

### 3.1 Tools

#### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A- or
- ◆ Resistance spot welder -VAS 6525- or
- ◆ Resistance spot welder -VAS 6530- or
- ◆ Resistance spot welder -VAS 6535- or
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Hole punch pliers -V.A.G 1329-
- ◆ Compact angle grinder -VAS 5167-
- ◆ Pneumatic sabre saw -V.A.G 1523 A-

V.A.G 1523 A

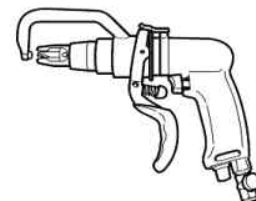


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W00-0005

- ◆ Spot weld breaker -V.A.G 1731-

V.A.G 1731

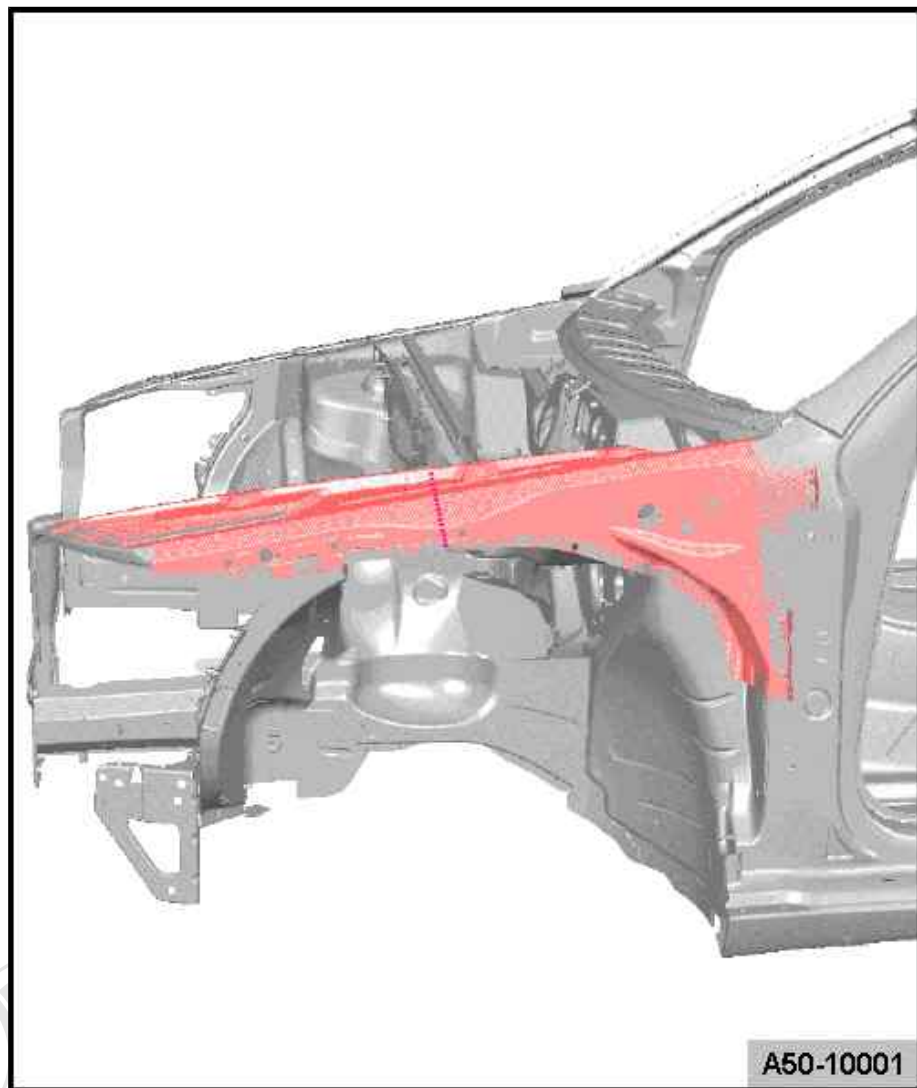


W00-0001

## 3.2 Procedure

### Cutting locations

- Separate original joint using spot weld breaker -V.A.G 1731- .
- Make separating cut according to extent of damage using pneumatic sabre saw -V.A.G 1523 A- .
- Remove remaining material using compact angle grinder -VAS 5167- .



### Replacement part

- ◆ Upper outer longitudinal member

### Preparing new part

- Transfer separating cut to new part using pneumatic sabre saw -V.A.G 1523A- .

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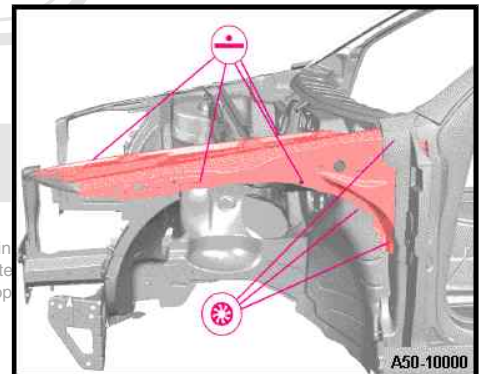
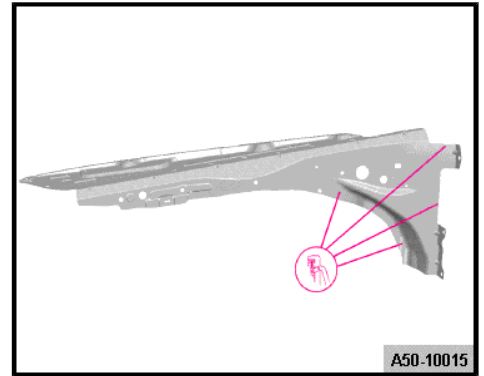
- Make 8 mm Ø holes for SG plug weld seam using hole punch pliers -V.A.G 1329- .

 **Note**

*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

**Welding in**

- Fix new part in position on alignment bracket set for Audi A6, 05> -VAS 6276- .
- Weld at separating cut using shielded arc welding equipment 250A : SG continuous seam.
- Weld in upper longitudinal member using resistance spot welder : RP spot weld seam.
- Weld in upper longitudinal member using shielded arc welding equipment 250A : SG plug weld seam.



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RO: 50 79 55 00

## 4 Upper inner longitudinal member - Renewal



### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

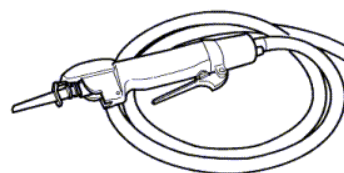
### 4.1 Tools

#### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A- or
- ◆ Resistance spot welder -VAS 6525- or
- ◆ Resistance spot welder -VAS 6530- or
- ◆ Resistance spot welder -VAS 6535- or
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Compact angle grinder -VAS 5167-
- ◆ Pneumatic sabre saw -V.A.G 1523 A-

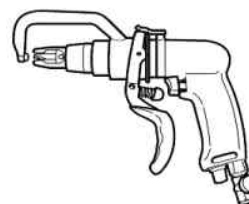
- ◆ Spot weld breaker -V.A.G 1731-

V.A.G 1523 A



W00-0005

V.A.G 1731



W00-0001

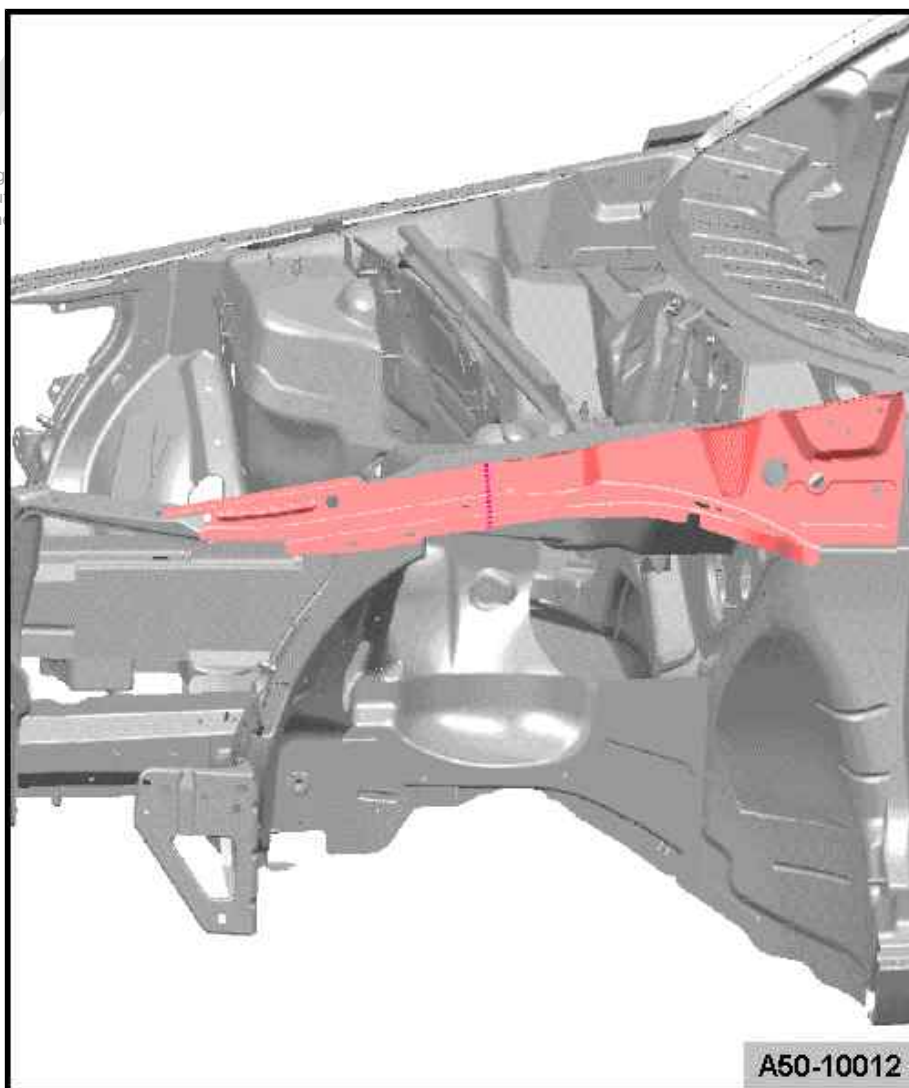
## 4.2 Procedure

- Upper outer longitudinal member already removed  
⇒ [page 57](#)

### Cutting locations

- Separate original joint using spot weld breaker -V.A.G 1731- .
- Make separating cut according to extent of damage using pneumatic sabre saw -V.A.G 1523 A- .
- Remove remaining material using compact angle grinder -VAS 5167- .

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### Replacement part

- ◆ Upper inner longitudinal member

### Preparing new part

- Make holes in new part for SG plug weld seam using hole punch pliers -V.A.G 1329- .

- Transfer separating cut to new part using pneumatic sabre saw -V.A.G 1523 A- .

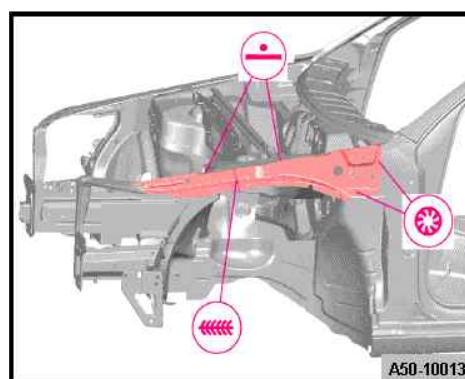
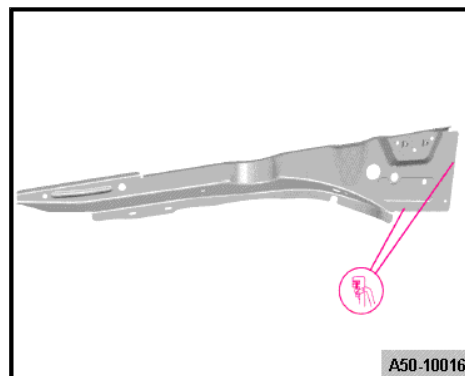


### Note

*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

### Welding in

- Fix new part in position on alignment bracket set for Audi A6, 05> -VAS 6276- .
- Weld in longitudinal member using shielded arc welding equipment 250A : SG plug weld seam.
- Butt weld at separating cut using shielded arc welding equipment 250A : SG continuous seam.
- Weld in remaining joint using resistance spot welder : RP spot weld seam.
- Welding in upper outer longitudinal member ⇒ [page 57](#)



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RO: 50 79 55 00

## 5 Impact damper plate - Renewal



### WARNING

*Always observe safety precautions.*

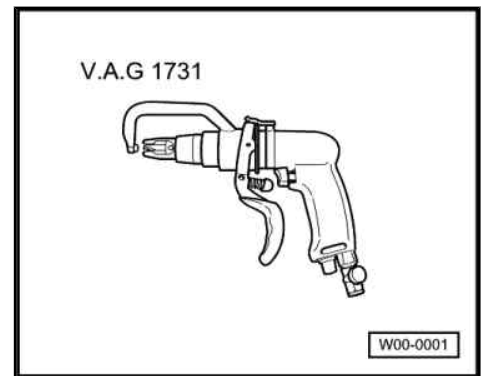
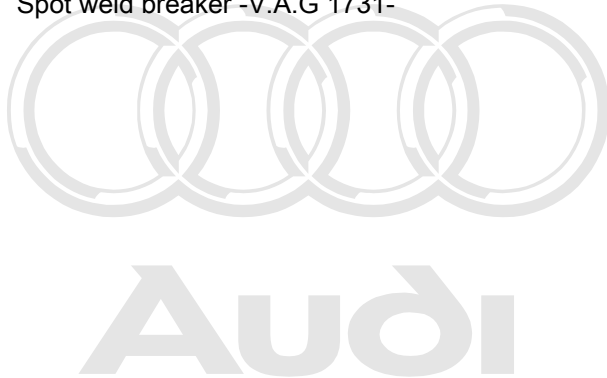
*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes → General Information; Body Repairs, General Body Repairs ; Safety notes .

### 5.1 Tools

#### Special tools and workshop equipment required

- ◆ Shielded arc welding equipment 250A
- ◆ Spot weld breaker -V.A.G 1731-

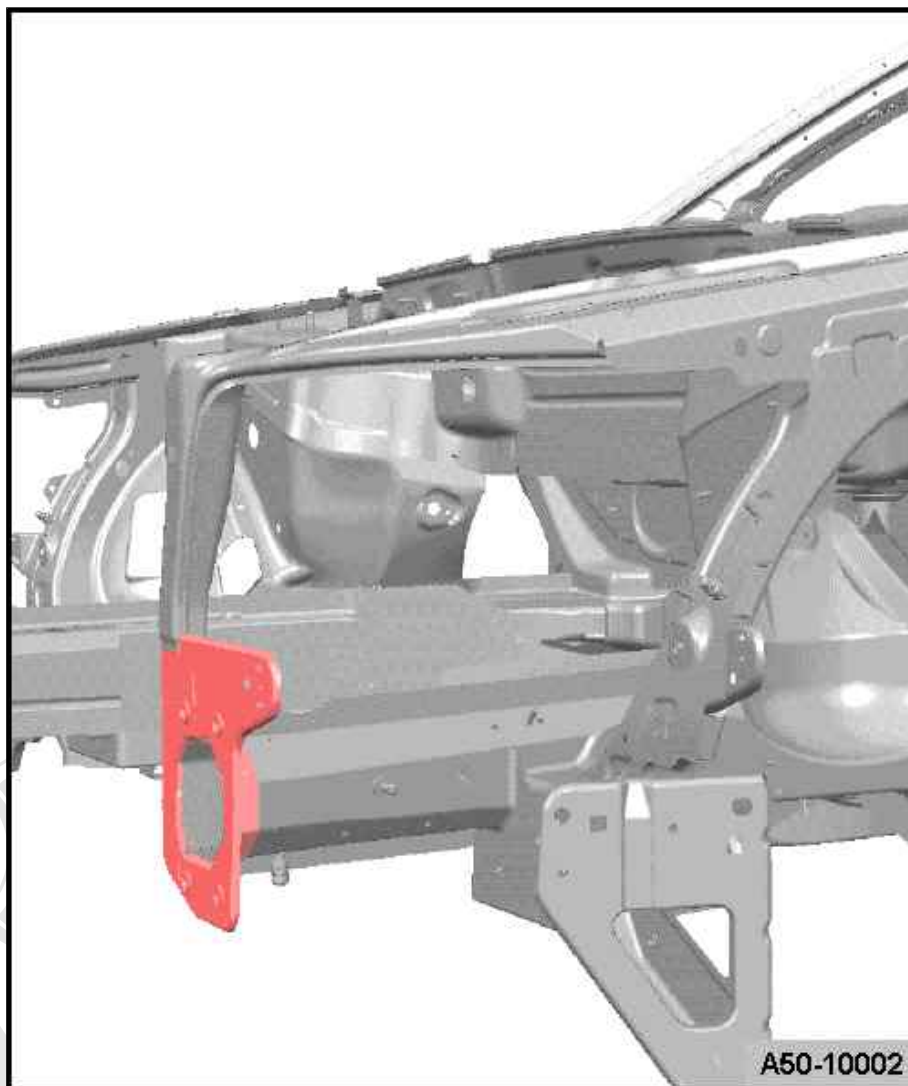


### 5.2 Procedure

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#### Cutting locations

- Separate original joint using spot weld breaker -V.A.G 1731- .
- Remove remaining material using compact angle grinder - VAS 5167- .



## Replacement part

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### ◆ Impact damper plate



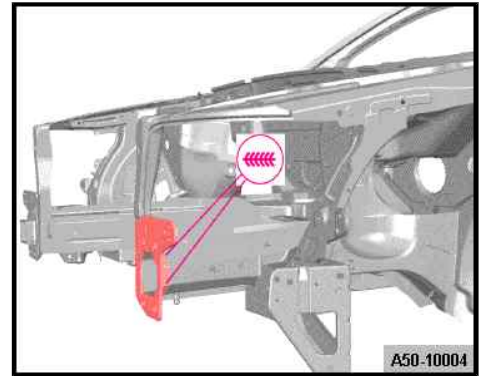
#### Note

*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

## Welding in

- Fix new part in position on alignment bracket set for Audi A6, 05> -VAS 6276- .

- Weld in impact damper plate using shielded arc welding equipment 250A : SG continuous seam.



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## 6 Headlight mounting - Renewal



### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

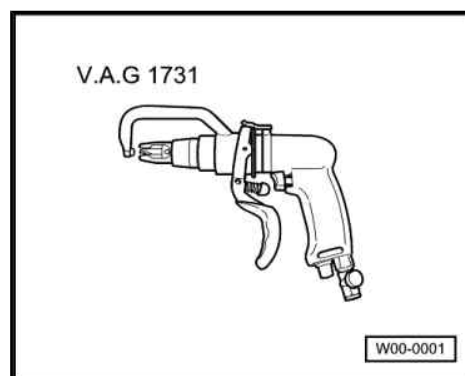
Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

### 6.1 Tools

#### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A- or
- ◆ Resistance spot welder -VAS 6525- or
- ◆ Resistance spot welder -VAS 6530- or
- ◆ Resistance spot welder -VAS 6535- or
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Compact angle grinder -VAS 5167-
- ◆ Spot weld breaker -V.A.G 1731-

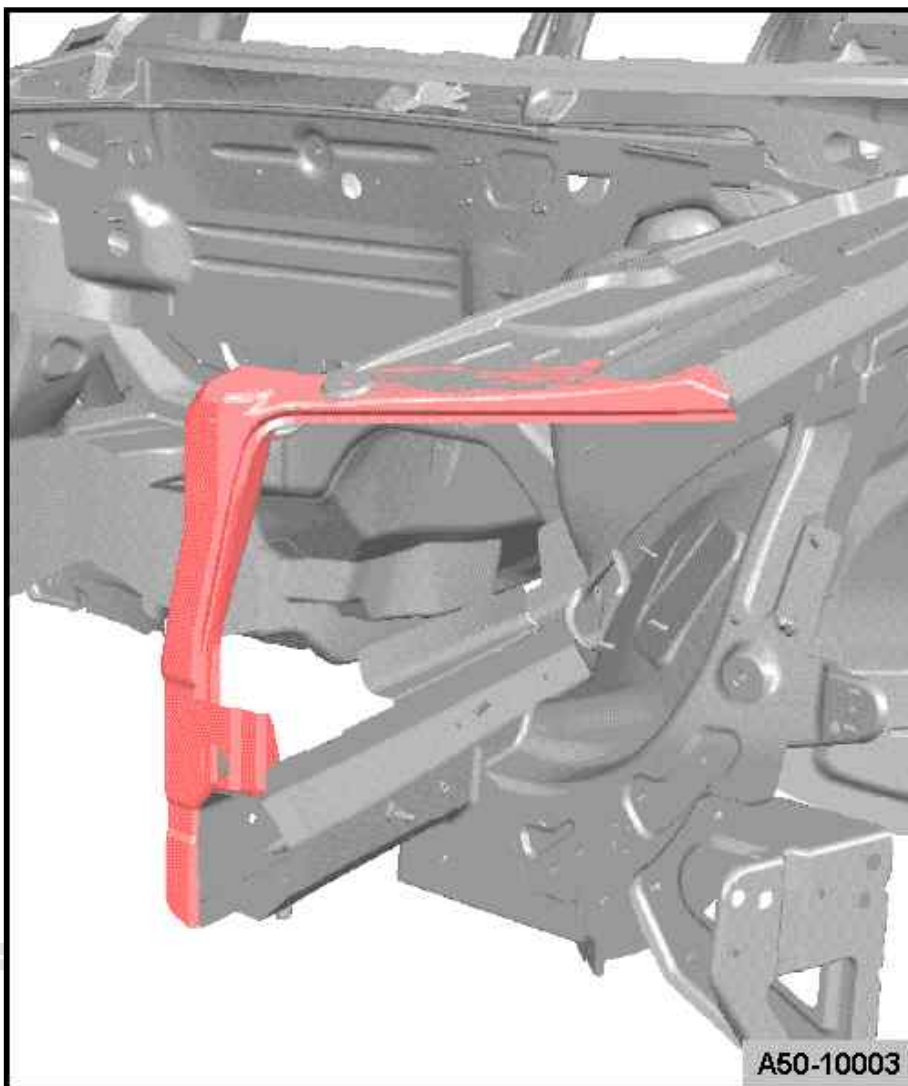
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### 6.2 Procedure

#### Cutting locations

- Separate original joint using spot weld breaker -V.A.G 1731- .
- Remove remaining material using compact angle grinder -VAS 5167- .



## Replacement parts

- ◆ Headlight mounting



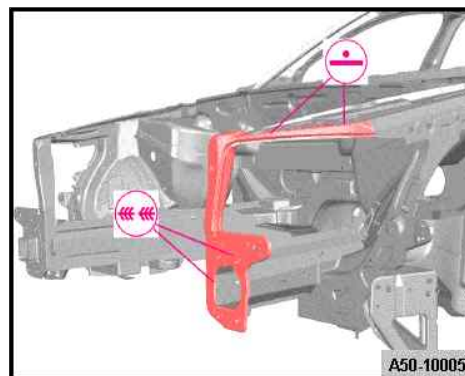
### Note

*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

## Welding in

- Fix new part in position on alignment bracket set for Audi A6, 05> -VAS 6276- .

- Weld in new part using resistance spot welder : RP spot weld seam.



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RO: 50 79 55 00

## 7 Plenum chamber - Renewal



### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes → General Information; Body Repairs, General Body Repairs ; Safety notes .



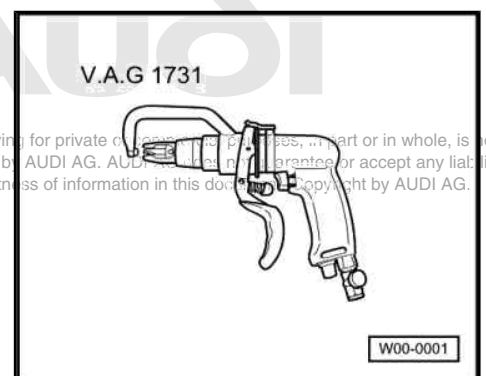
### Note

*To maintain sufficient strength, the plenum chamber can only be renewed as a complete unit.*

## 7.1 Tools

### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A- or
- ◆ Resistance spot welder -VAS 6525- or
- ◆ Resistance spot welder -VAS 6530- or
- ◆ Resistance spot welder -VAS 6535- or
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Drill -VAS 5830-
- ◆ Compact angle grinder -VAS 5167-
- ◆ Spot weld breaker -V.A.G 1731-



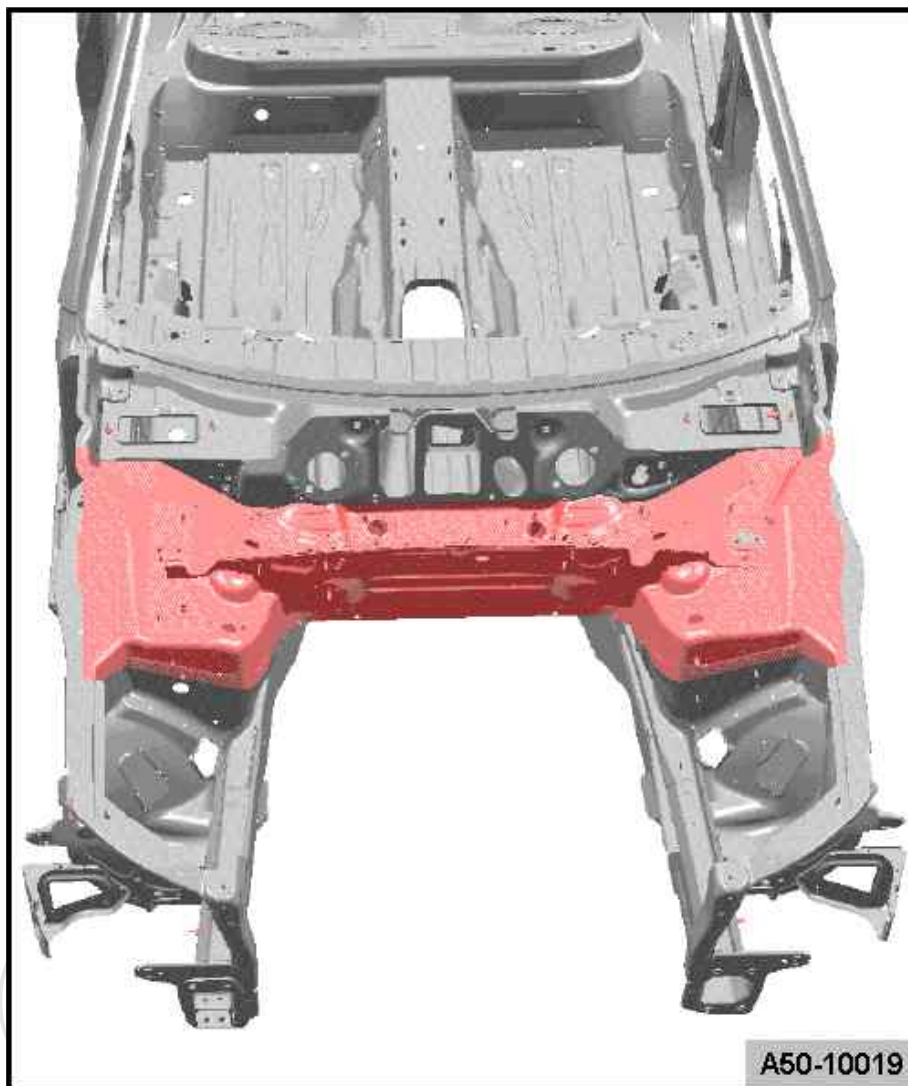
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## 7.2 Procedure

- Upper longitudinal member already removed ⇒ [page 57](#)

### Cutting locations

- Separate original joint using spot weld breaker -V.A.G 1731- .
- Remove remaining material using compact angle grinder -VAS 5167- .



A50-10019

### Replacement part

- ◆ Plenum chamber

### Preparing new part

- Drill holes for SG plug weld seam, 8 mm Ø using drill -VAS 5830- .

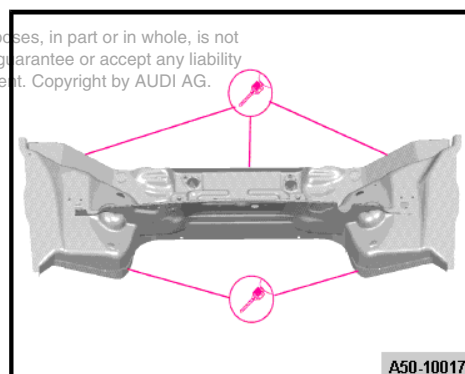


### Note

*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

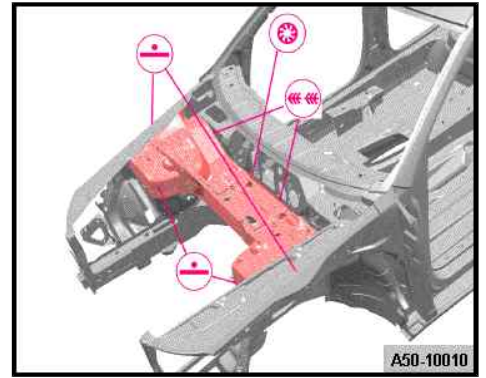
### Welding in

- Weld in new part using shielded arc welding equipment 250A : SG continuous seam (staggered - with gaps).
- Weld in new part using resistance spot welder : RP spot weld seam.



A50-10017

- Weld in new part using shielded arc welding equipment 250A :  
SG plug weld seam.
- Welding in upper longitudinal member ⇒ [page 57](#)



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## 51 – Body - centre

RO: 51 03 55 00

### 1 Roof - Renewal (saloon)



#### WARNING

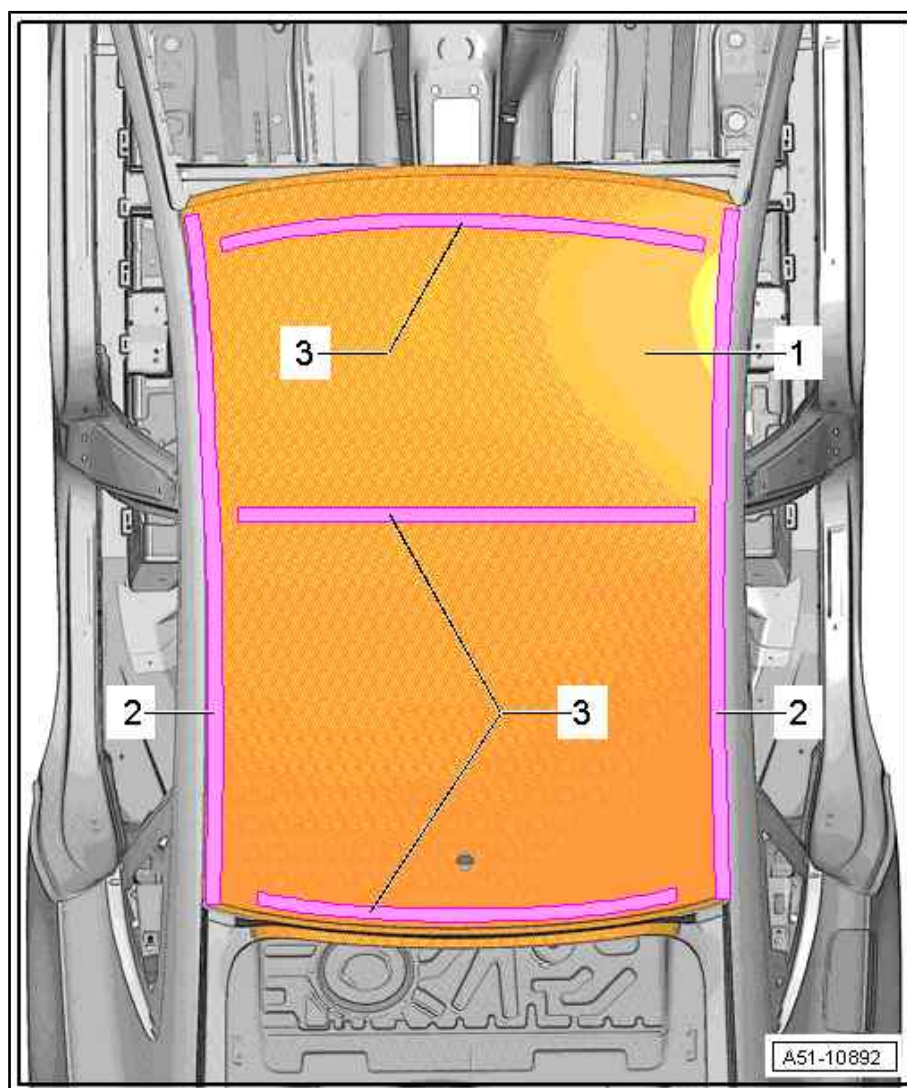
*Always observe safety precautions.*

***Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.***

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Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

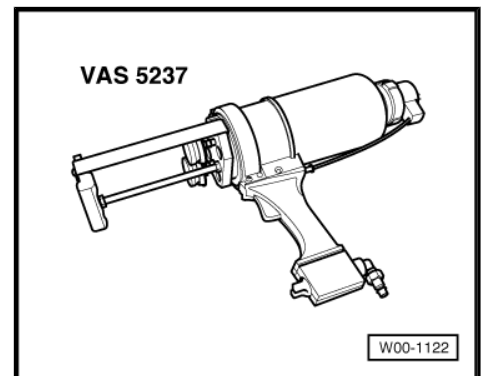
- 1 - Roof
- 2 - Plasmatron weld seam
- 3 - Bonded area



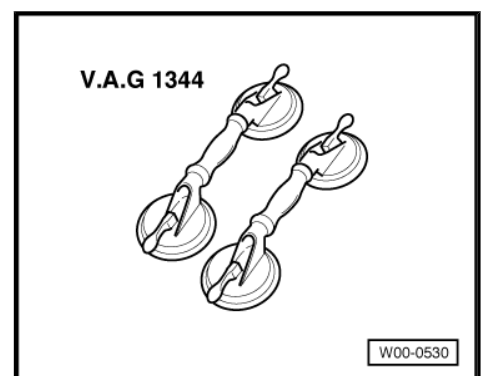
### 1.1 Tools

Special tools and workshop equipment required

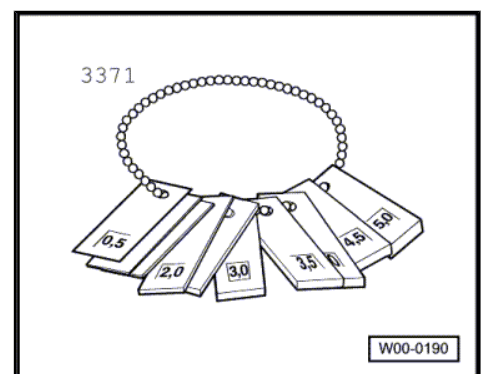
- ◆ Resistance spot welder -VAS 6239 A- or
- ◆ Resistance spot welder -VAS 6525- or
- ◆ Resistance spot welder -VAS 6530- or
- ◆ Resistance spot welder -VAS 6535- or
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment
- ◆ Drill -VAS 5830-
- ◆ Radiant heater
- ◆ Double cartridge gun -VAS 6453-
- ◆ Tin snips -VAS 5357-
- ◆ Double cartridge gun -VAS 5237-



- ◆ Suction lifter -V.A.G 1344- , 4x

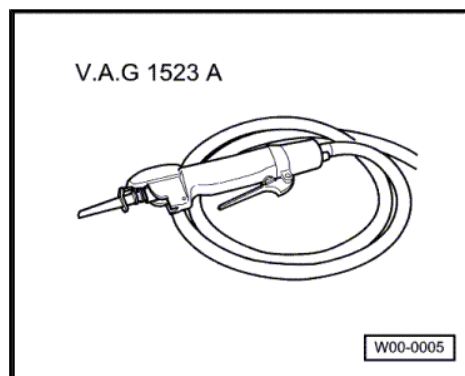


- ◆ Setting gauge - 3371-

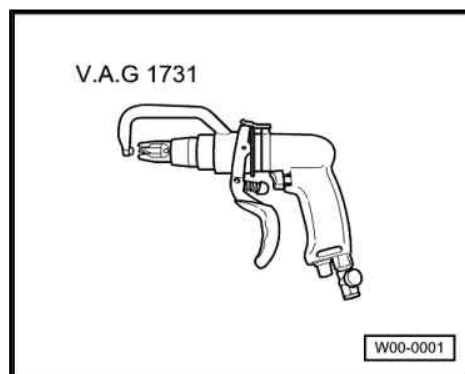


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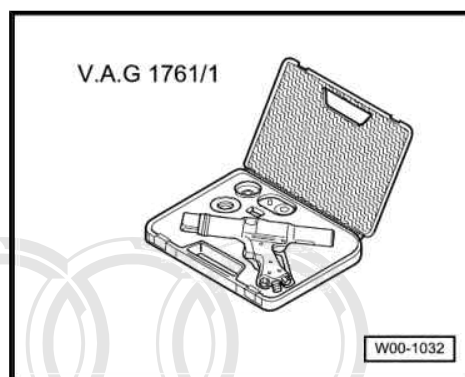
- ◆ Pneumatic sabre saw -V.A.G 1523 A-



- ◆ Spot weld breaker -V.A.G 1731-

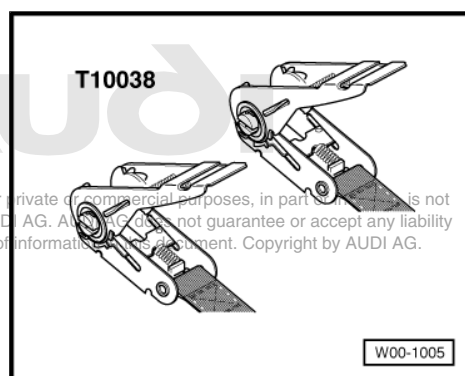


- ◆ Pneumatic cartridge gun -V.A.G 1761/1-



- ◆ Mole grips, 18-18 -VAS 5430/1-

- ◆ Tensioning strap -T10038-



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# 1 - 2-component window adhesive -DA 004 660 M2 -

- Open cap.

## 2 - Static mixer

- Drill open static mixer with 9 mm Ø drill bit.

## 3 - Extension hose

Part number 000 809 937

- Screw onto static mixer -2- with adapter -4-.

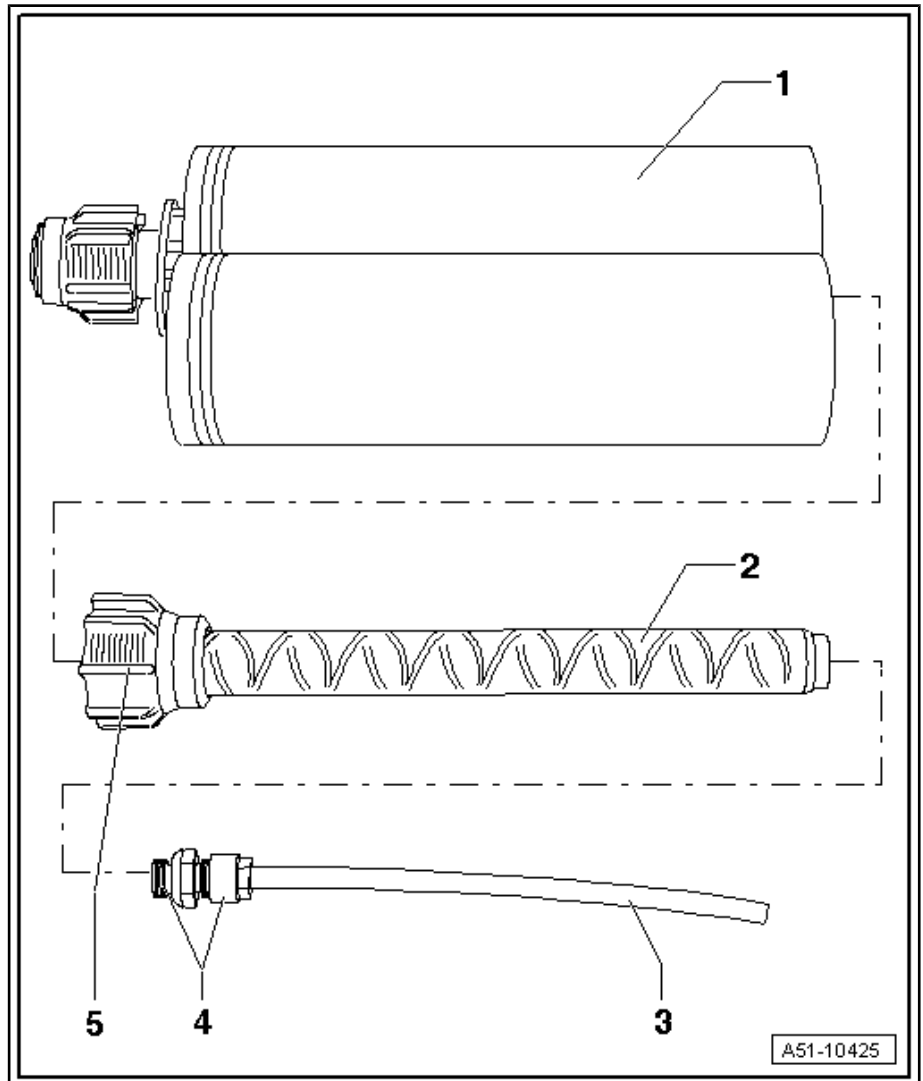
## 4 - Adapter



Note

## 5 - Union nut

- Screw onto 2-component window adhesive - DA 004 660 M2 - -1- together with static mixer -2-.



## 1.2 Procedure

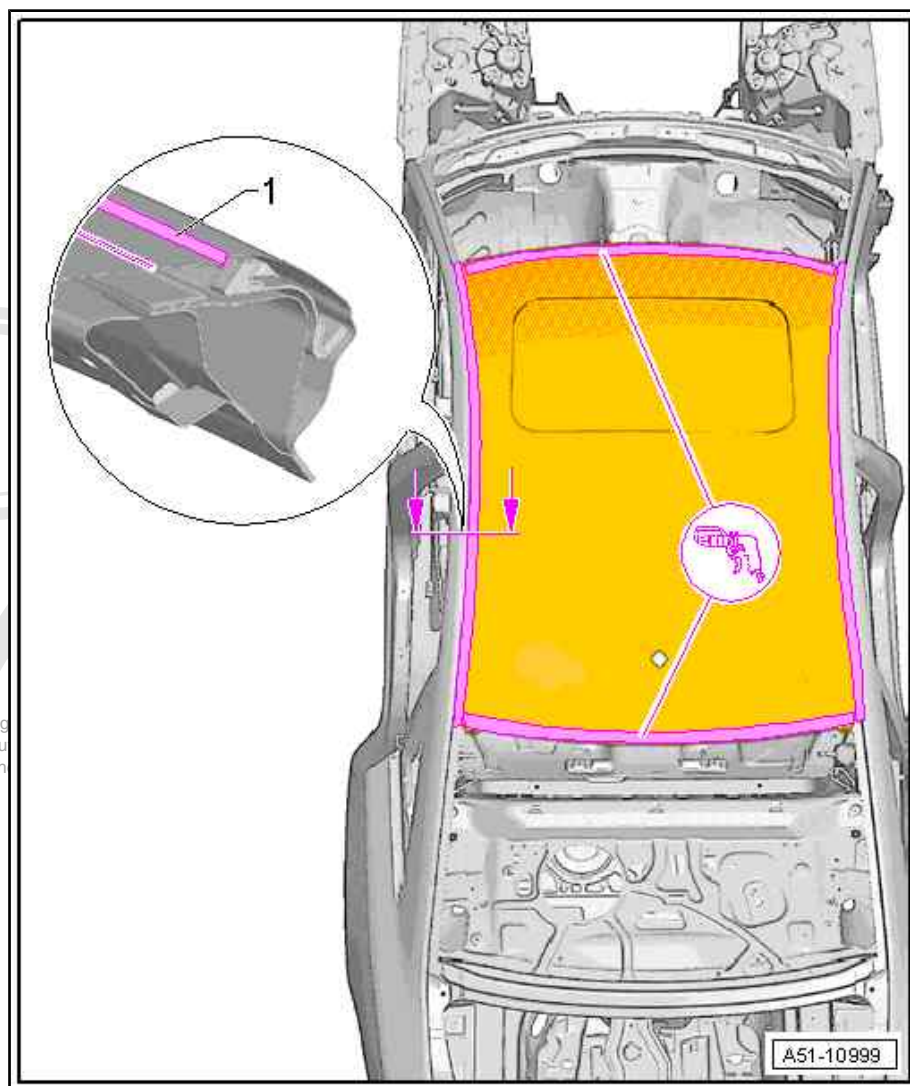
### Cutting locations



#### WARNING

*Do not damage roof cross member (front and rear) when separating.*

- Roughly cut out roof parallel with plasmatron weld seam -1- at a distance of approx. 30 mm using pneumatic sabre saw - V.A.G 1523 A-.
- Separate original joint to windscreen opening and rear lid opening using spot weld breaker -V.A.G 1731-.
- Working from passenger compartment, separate bonded joints between roof and roof cross members using electric cutter - V.A.G 1561 A-.



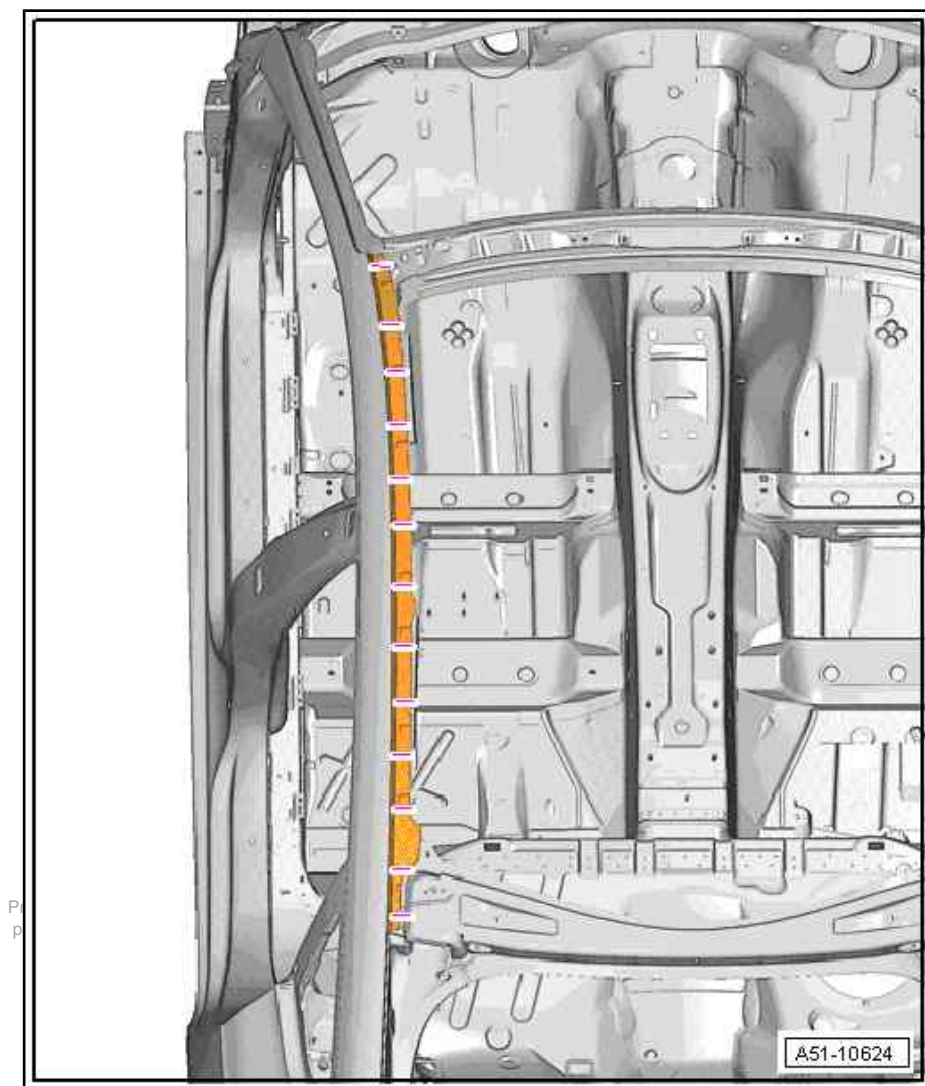
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#### Note

*Take care not to damage the roof side members when making cuts and when moving the remaining sections of the roof up and down.*

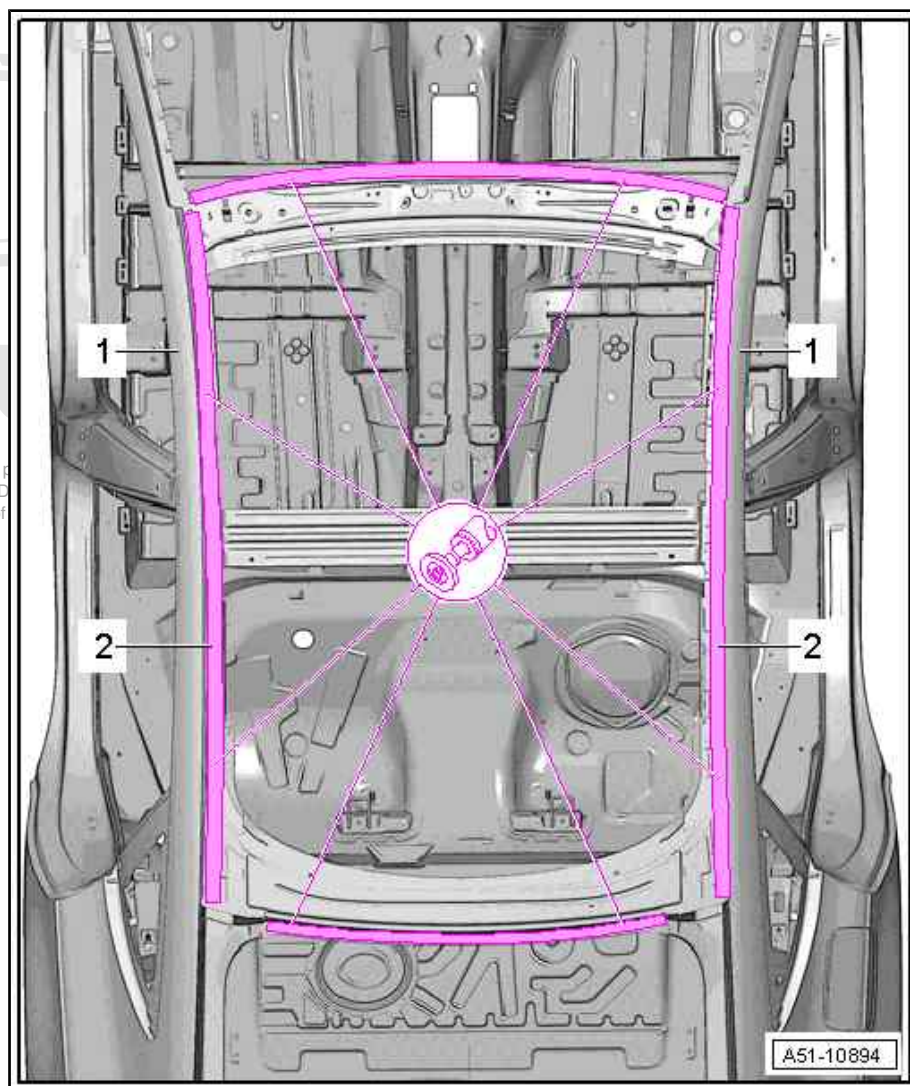
- Make cuts in remaining sections of roof using tin snips -VAS 5357- .
- Take hold of remaining sections with pliers and break open plasmatron weld seam by pulling up and down.



#### Note

- ◆ *Take care not to damage the roof side members -1- when removing the remaining sections of the roof -2-.*
- ◆ *Use a suitable flap disc; do not use a cutting disc or rough-filing disc.*
- Remove remaining material using compact angle grinder - VAS 5167- .
- Remove all residual adhesive and sealing compound from roof cross members at front and rear using scraper -VAS 5448- .
- Grind bonding areas down to bare metal.

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### Replacement parts

- ◆ Roof
- ◆ Single-component assembly adhesive -D 190 MKD A3 - , 1 cartridge
- ◆ 2-component epoxy adhesive -DA 180 A00 A2- , 2 sets of cartridges
- ◆ Cleaning solution -D 009 401 04-
- ◆ Glass and paint primer -D 009 200 02-
- ◆ 2-component window adhesive -DA 004 660 M2 - , 2 sets of cartridges

## Preparing new part



### Note

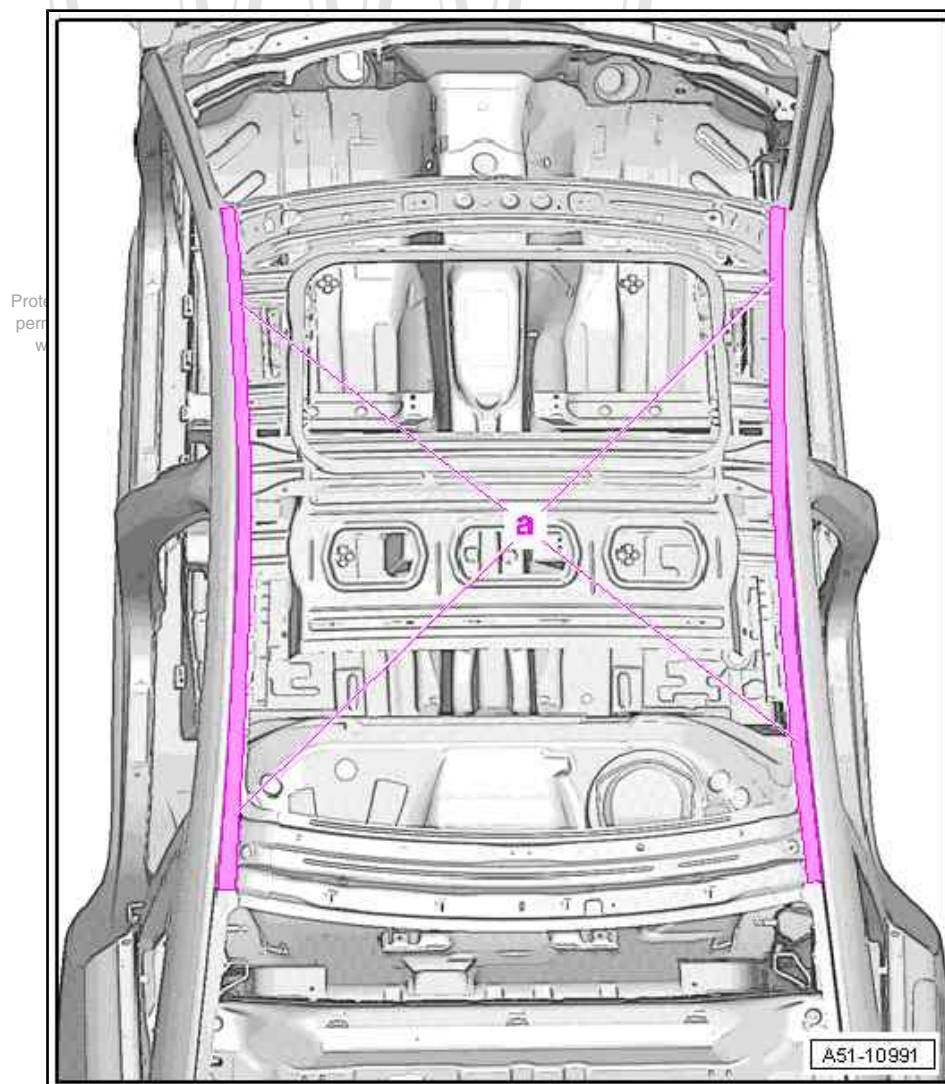
- ◆ *It is important to keep to the following procedure to ensure a satisfactory and effective roof repair.*
- ◆ *Bonded areas must not be treated with filler coat (surfacers) and painted before bonding in the roof.*
- ◆ *The adhesive materials must be applied very quickly.*
- ◆ *Make sure adhesive is applied before pot life is exceeded.*
- ◆ *Use a pneumatic cartridge gun to apply the bonding materials.*
- ◆ *Affixing adhesive tape to the roof parallel with the bonded seam on the side prevents soiling when bonding.*

## Bonding in

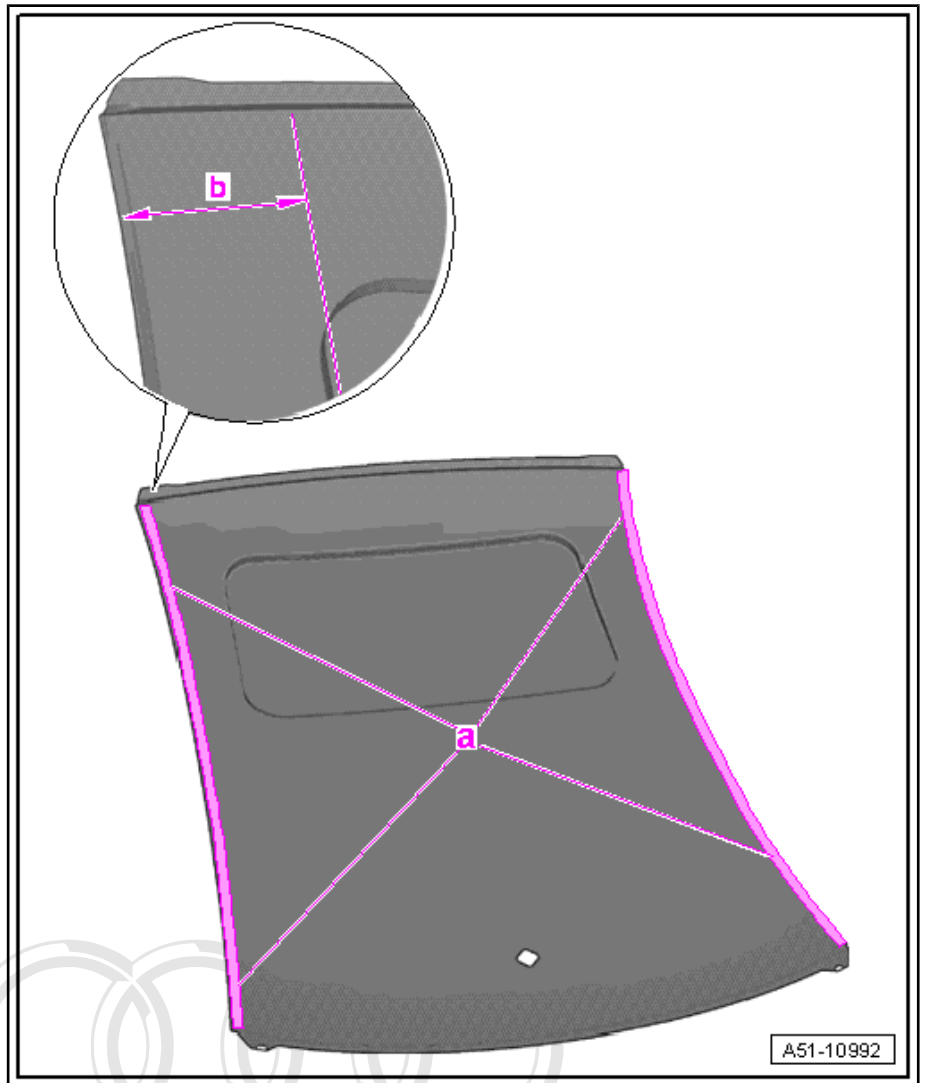
- Position roof on roof frame and check alignment of roof with roof side members (visual inspection).
- Check fit of roof with rear lid and windscreen.
- Fix roof in position in windscreen flange and sealing flange of rear lid using one self-tapping screw at each end.
- Remove roof.
- Apply glass and paint primer -D 009 200 02- in area of roof frame -a-.



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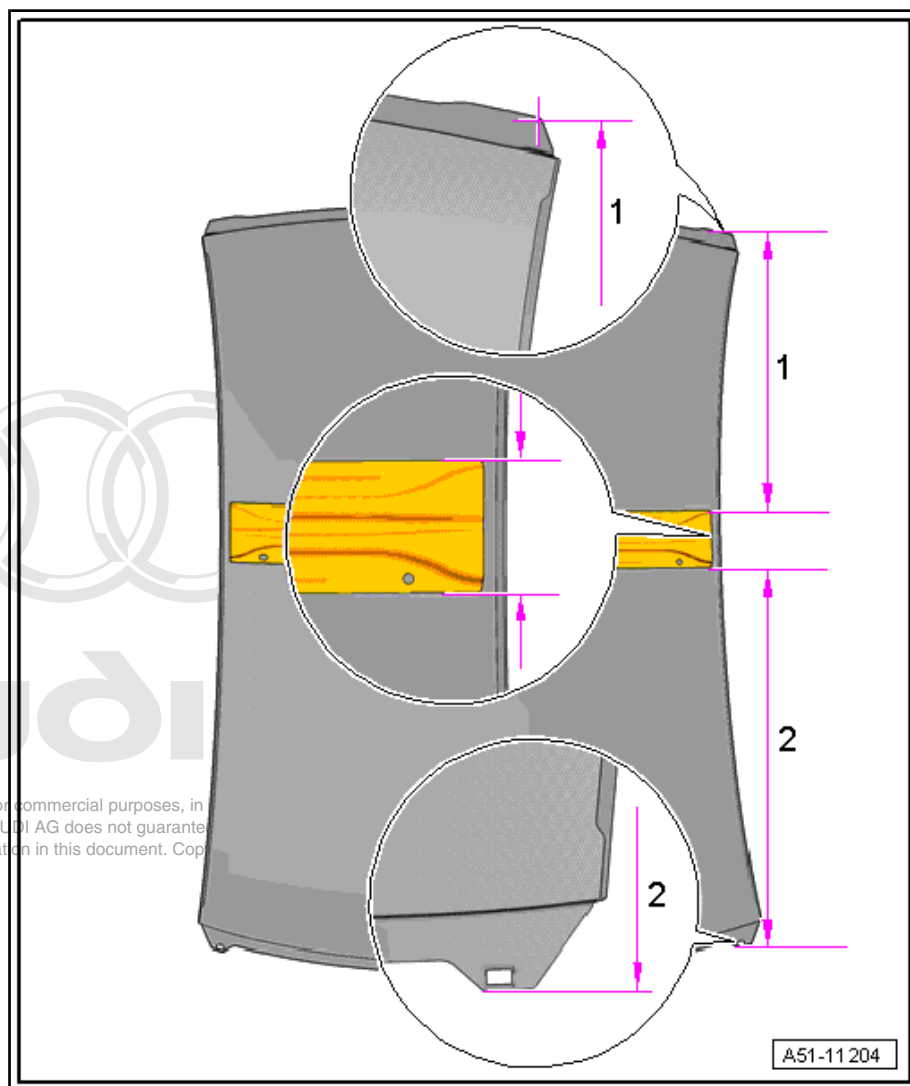
- Mask outside of roof panel parallel with side bonding area using adhesive tape.
- Attach four suction lifters -V.A.G 1344- to outside of roof panel.
- Clean roof frame, roof reinforcement and roof with cleaning solution -D 009 401 04- .
- Apply glass and paint primer -D 009 200 02- approx. 5 cm wide -b- on inner section of roof and inner side flange -a-.



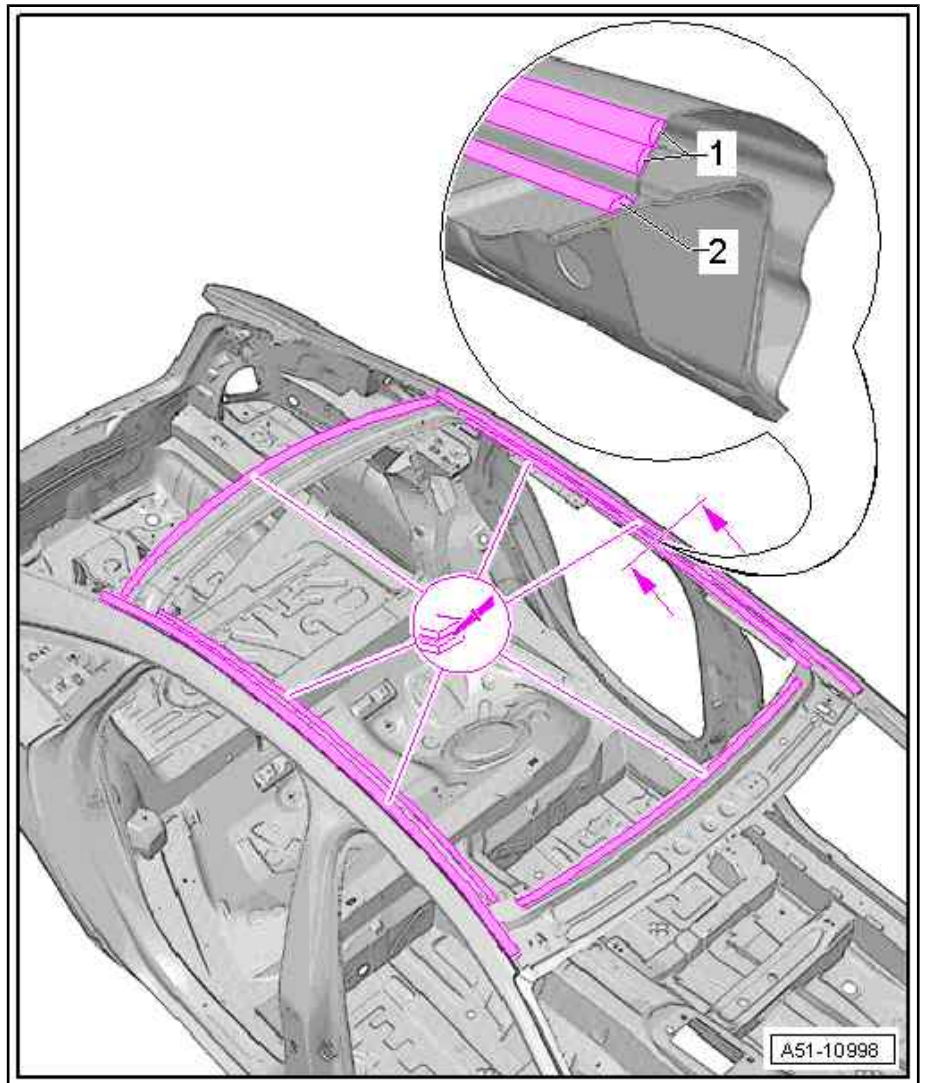
#### Only for USA vehicles

- Bond roof strut onto roof according to dimensions -1- = 610 mm (front) and -2- = 825 mm (rear) using single-component assembly adhesive -D 190 MKD A3- and pneumatic cartridge gun - V.A.G 1761/1- .

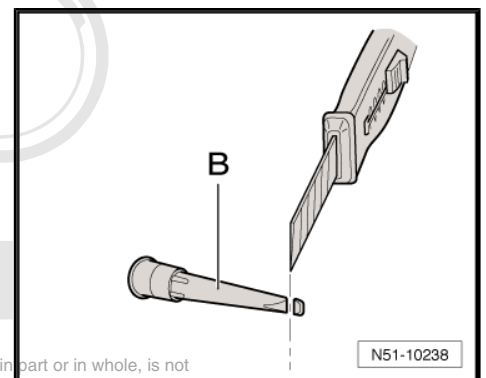
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Apply zinc spray to welding flanges for RP spot weld seam on roof cross members -1- and roof -2-.

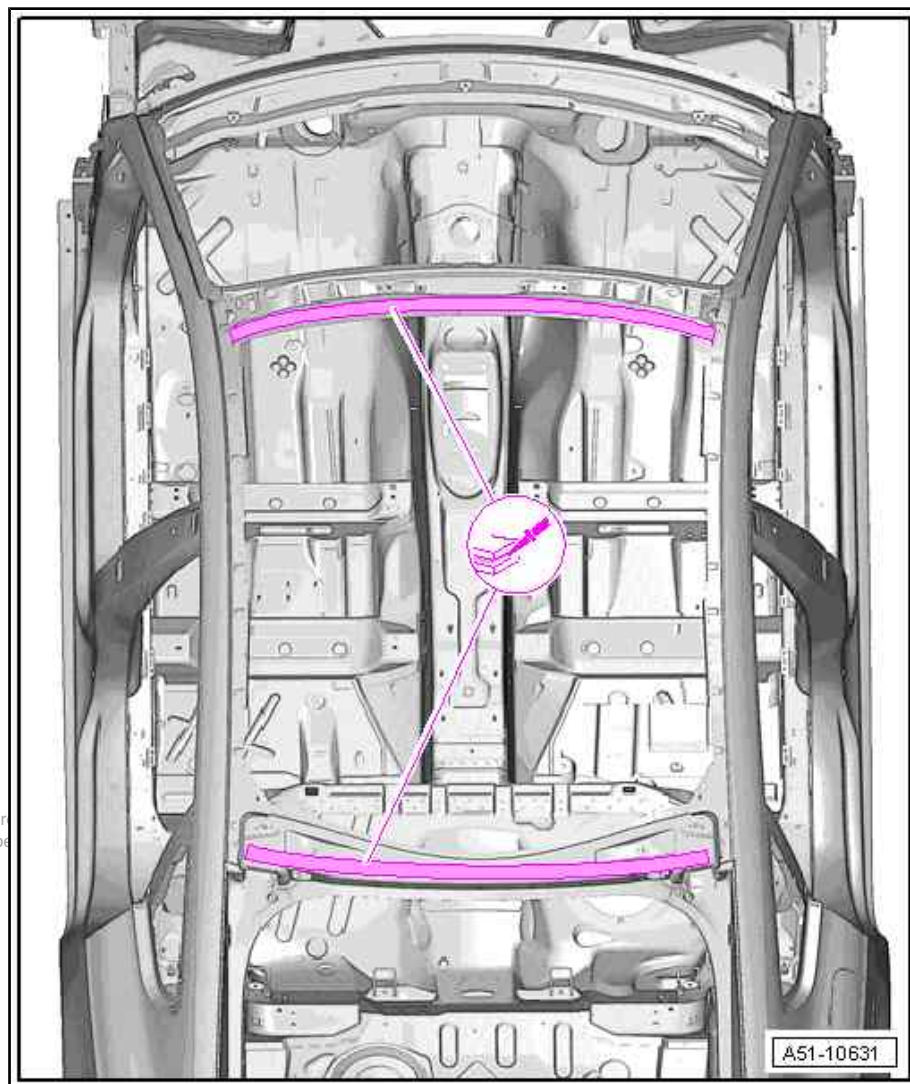


- Cut off approx. 2 mm from nozzle -B- to obtain appropriate bead geometry.



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- Apply single component assembly adhesive -D 190 MKD A3- with pneumatic cartridge gun - V.A.G 1761/1- to roof cross member at rear and front in vicinity of factory bonding location.



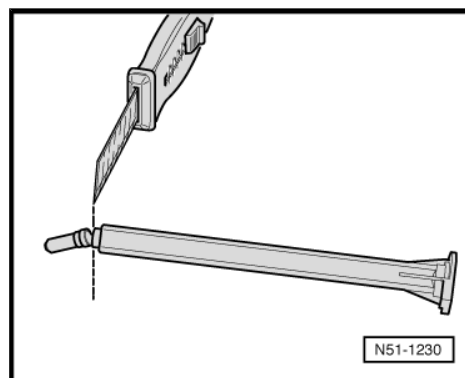
### Preparing new part

- Cut static mixer from 2-component epoxy adhesive -DA 180 A00 A2- down to 4th notch to obtain required bead cross section.

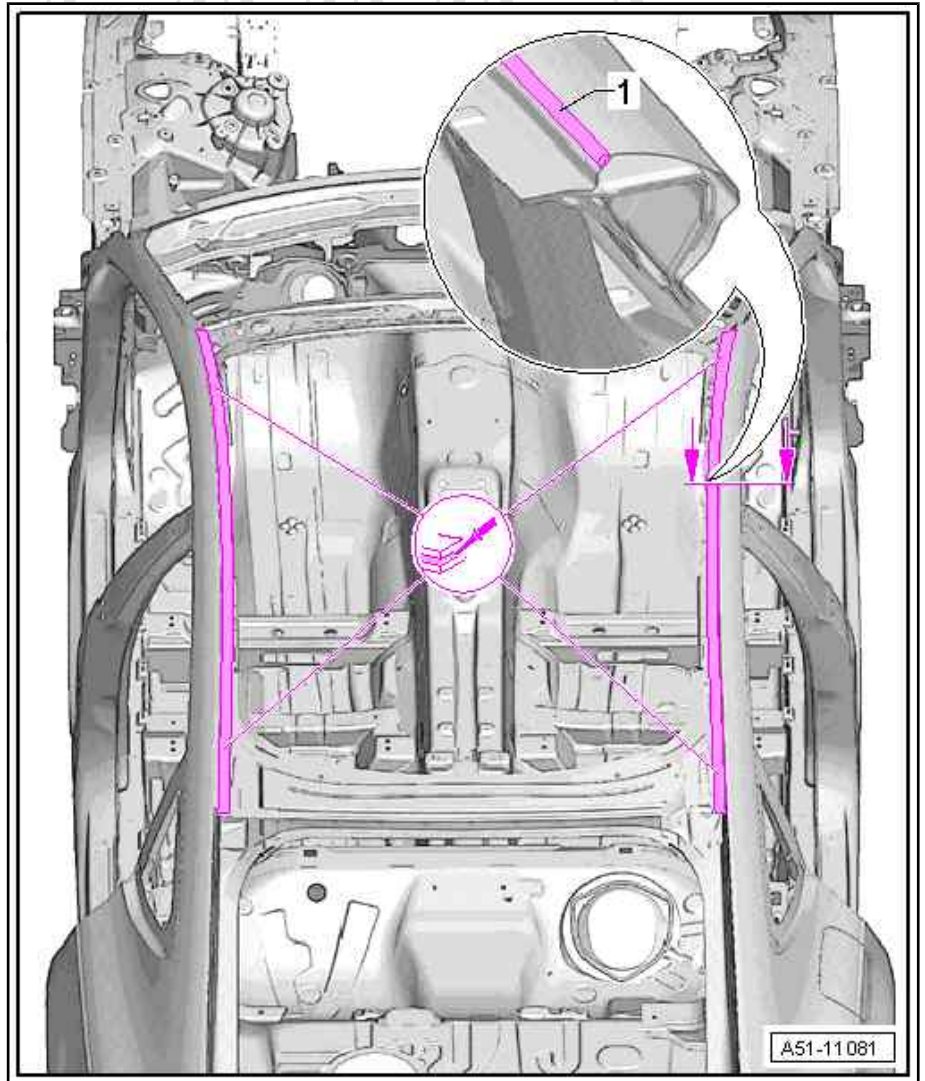


#### Note

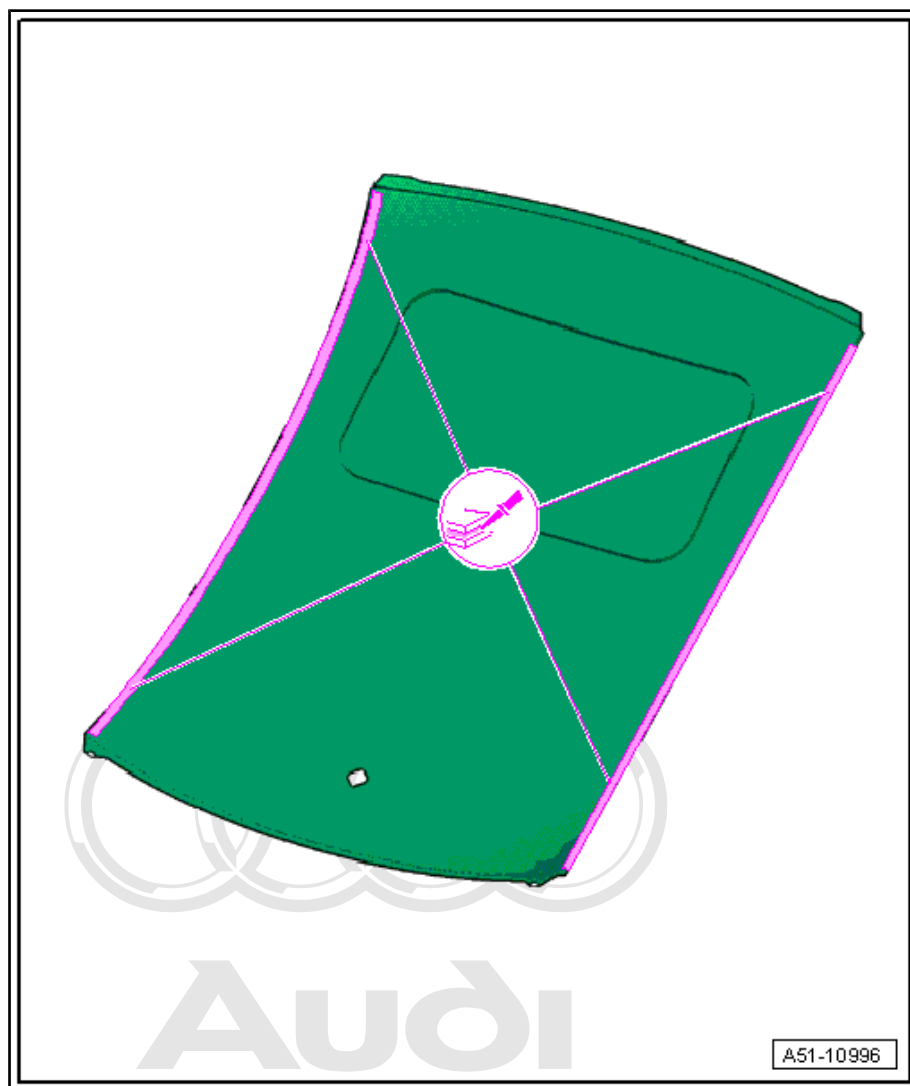
- ◆ *The pot life of the 2-component epoxy adhesive -DA 180 A00 A2- is roughly 90 minutes.*
- ◆ *A second mechanic is required for the next steps.*



- Apply two continuous beads -1- of 2-component epoxy adhesive -DA 180 A00 A2- to bevelled sections of roof side members using double-cartridge gun -VAS 6453- .



- Apply one continuous bead of 2-component epoxy adhesive - DA 180 A00 A2- to side flanges of roof using double cartridge gun -VAS 6453- .



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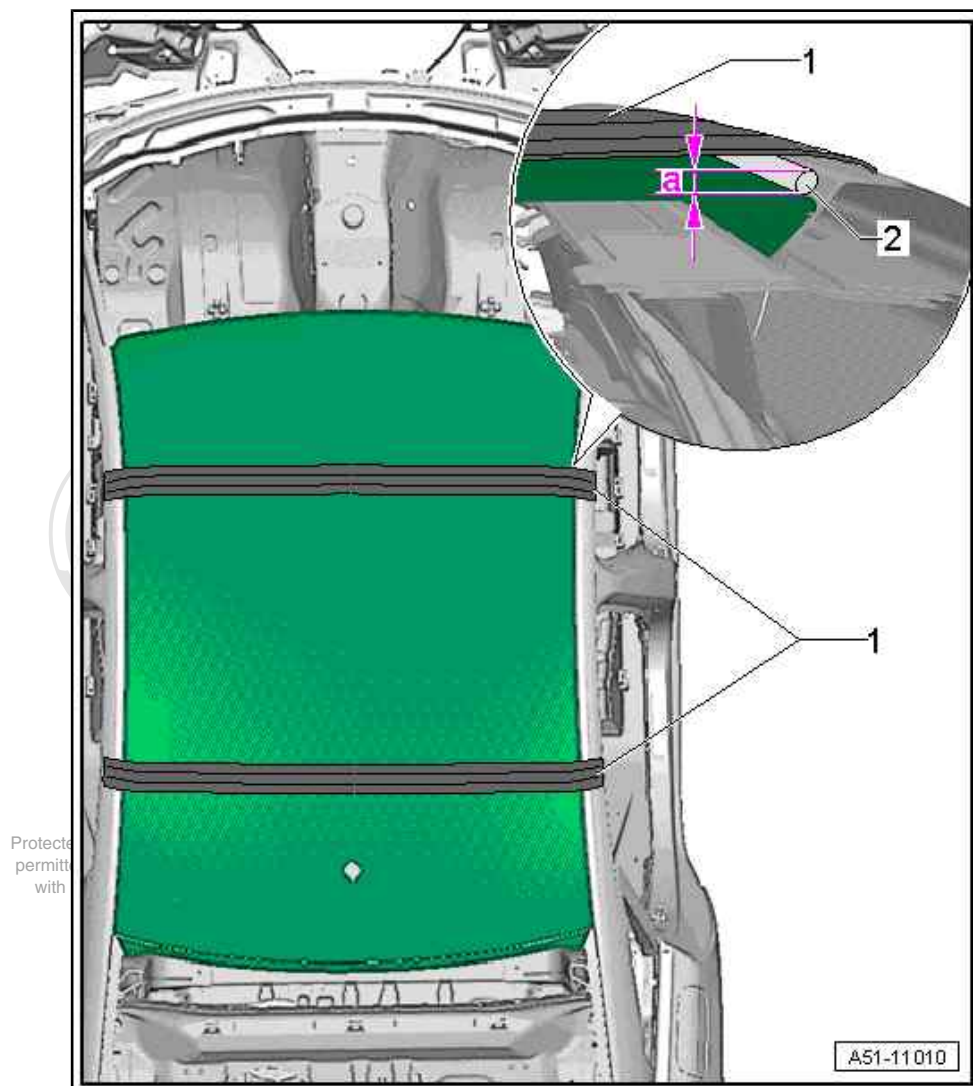
- Immediately fit and align roof.
- Use one self-tapping screw at each end to fix roof in position in centring hole in windscreen flange and sealing flange for rear lid.
- Fix roof in position at windscreen opening and rear window opening using mole grips, 18-18 -VAS 5430/1- .

#### Adjusting roof depth

- Additionally fix roof in position with two tensioning straps - T10038- -1-.
- Set required depth using drill bit or suitable wooden spacer, etc -2-.

Depth setting in centre part of front door -a = 3.0 mm-

Depth setting in centre part of rear door -a = 2.5 mm-



- Roughly spread any 2-component epoxy adhesive -DA 180 A00 A2- that comes out at the edge of the roof.



#### WARNING

*Allow bonded joint on roof to harden for 120 minutes at approx. 65° to 80° C with radiant heater. Check temperature constantly with temperature sensor.*

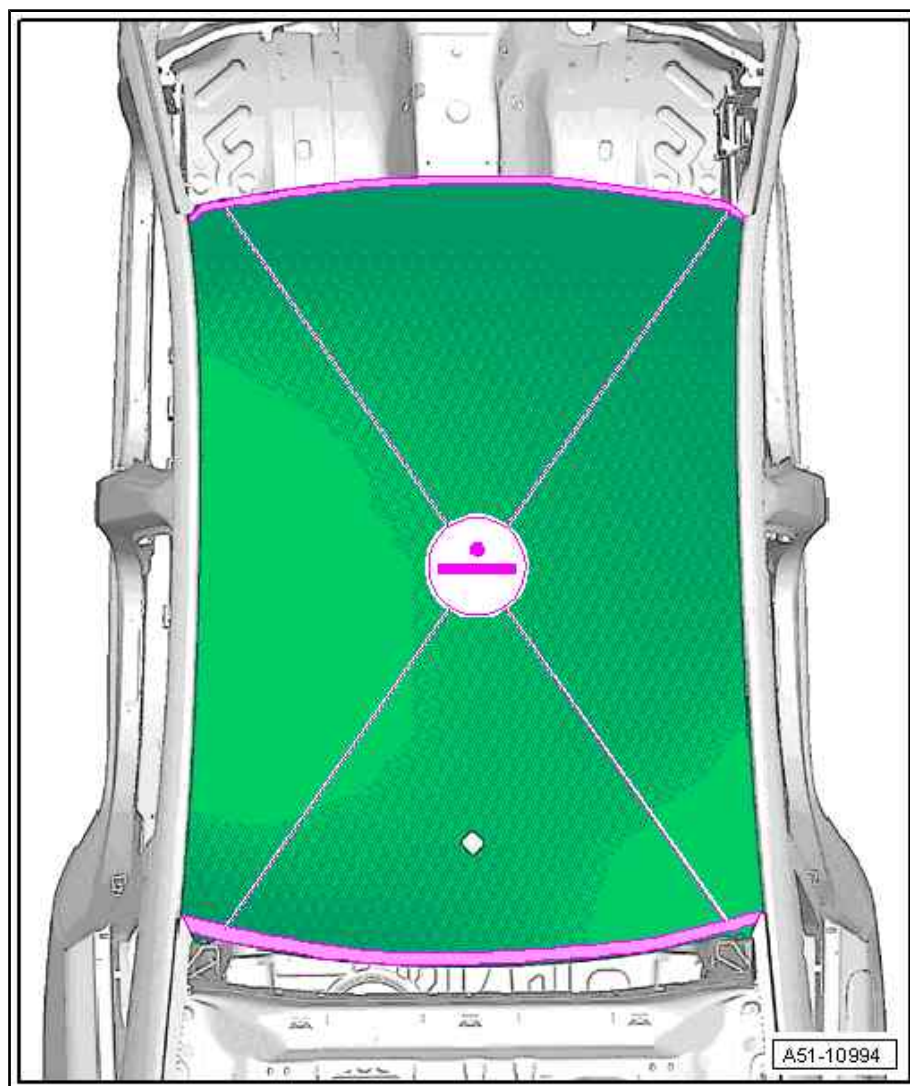


#### Note

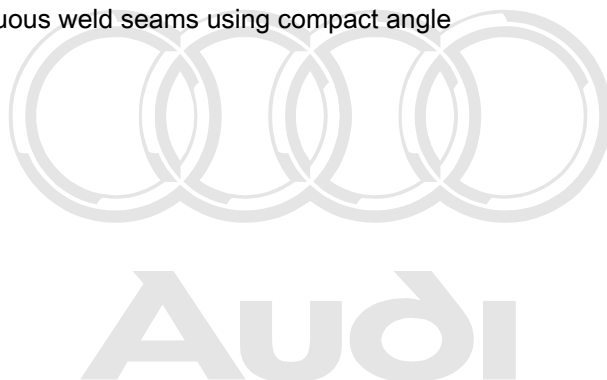
*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

#### Welding in

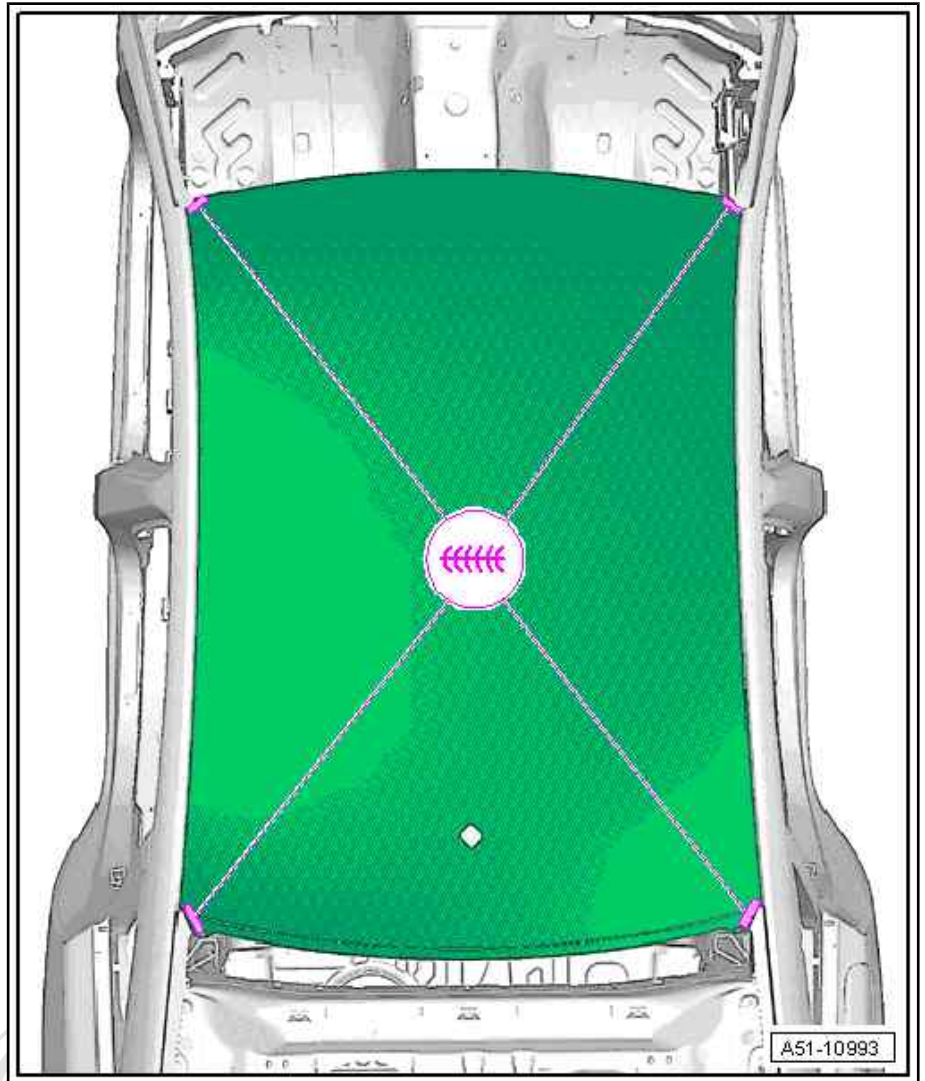
Weld in roof at front and rear using resistance spot welder : RP spot weld seam.



- Weld in roof additionally at corners using shielded arc welding equipment : SG continuous seam.
- Grind down SG continuous weld seams using compact angle grinder -VAS 5167- .



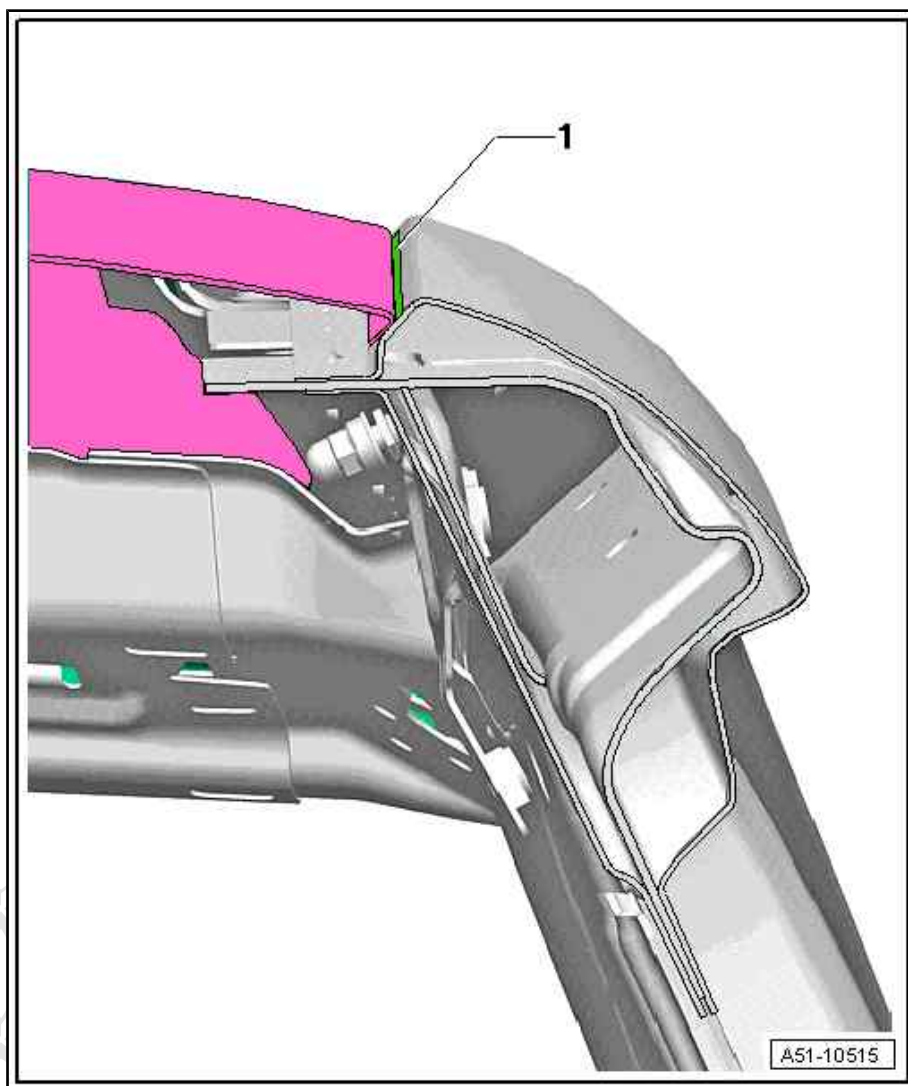
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- Grind zero-gap joint -1- into shape (left and right).

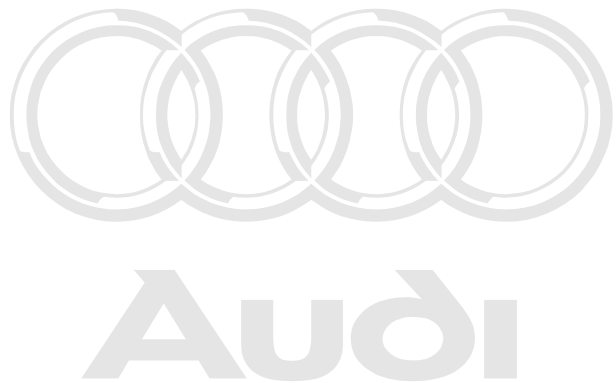
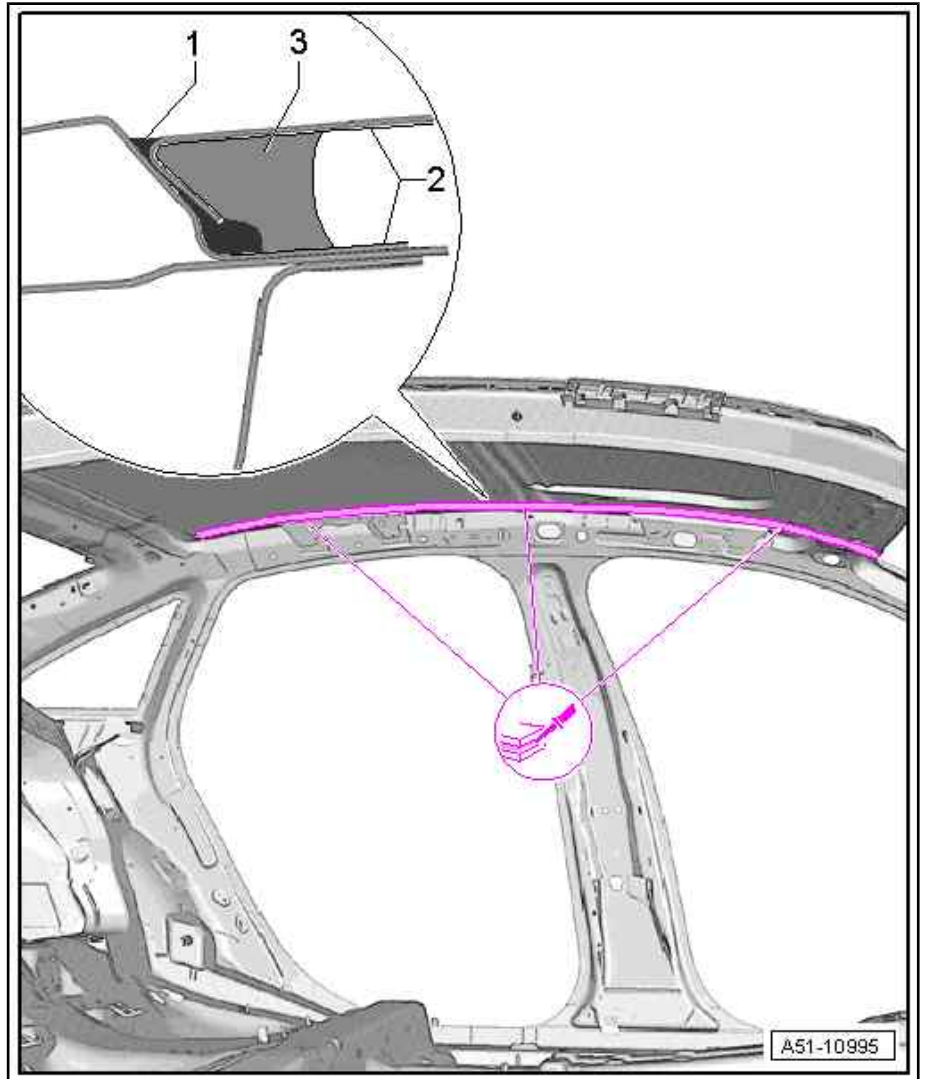
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- Apply one cartridge of 2-component window adhesive -DA 004 660 M2 - -3- into each roof side member using double cartridge gun -VAS 5237- .

- ◆ 1 = 2-component epoxy adhesive -DA 180 A00 A2-
- ◆ 2 = Glass and paint primer -D 009 200 02-
- ◆ 3 = 2-component window adhesive -DA 004 660 M2 -



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RO: 51 23 55 00

## 2 Roof - Renewal (saloon with tilting sunroof)



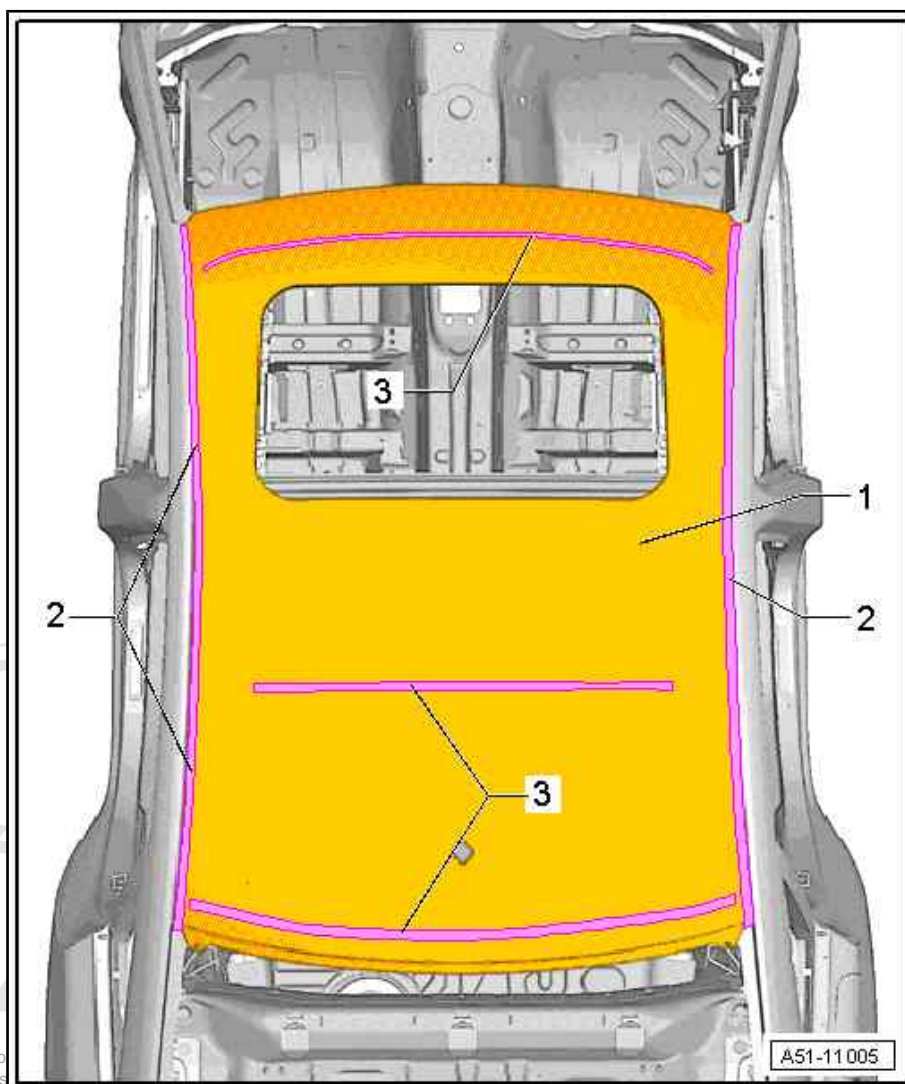
### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

- 1 - Roof
- 2 - Plasmatron weld seam
- 3 - Bonded area



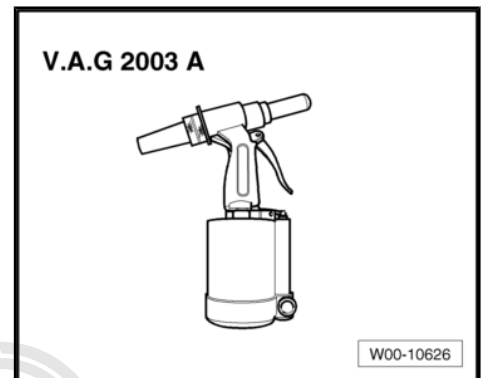
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### 2.1 Tools

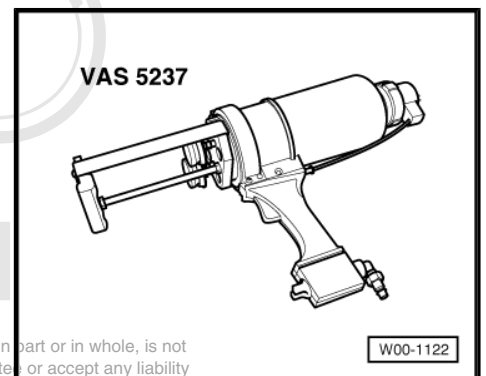
Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A- or

- ◆ Resistance spot welder -VAS 6525- or
- ◆ Resistance spot welder -VAS 6530- or
- ◆ Resistance spot welder -VAS 6535- or
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment
- ◆ Drill -VAS 5830-
- ◆ Radiant heater
- ◆ Compact angle grinder - VAS 5167-
- ◆ Double cartridge gun -VAS 6453-
- ◆ Pneumatic pop riveter -V.A.G 2003 A-

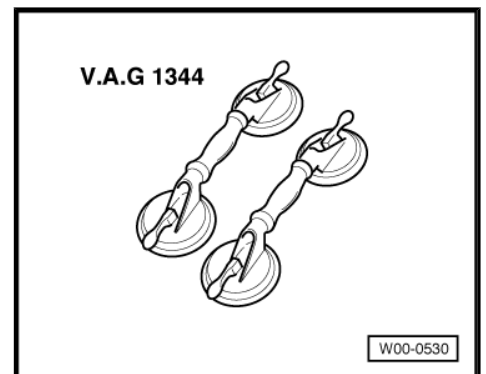


- ◆ Double cartridge gun -VAS 5237-

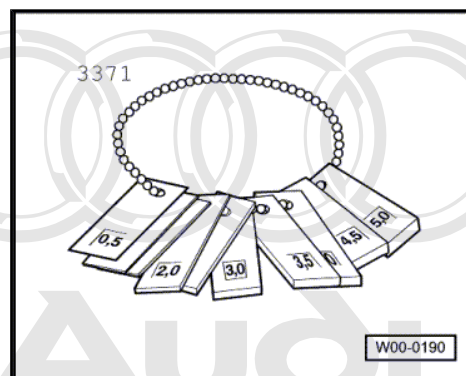


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- ◆ Suction lifter -V.A.G 1344- , 4x

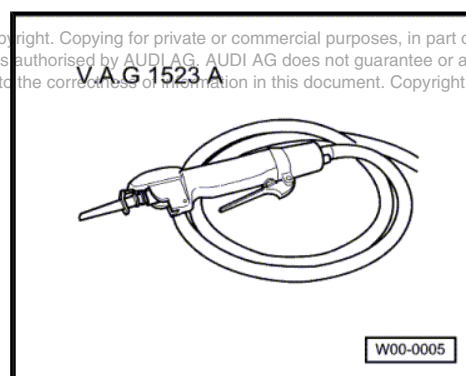


◆ Setting gauge - 3371-

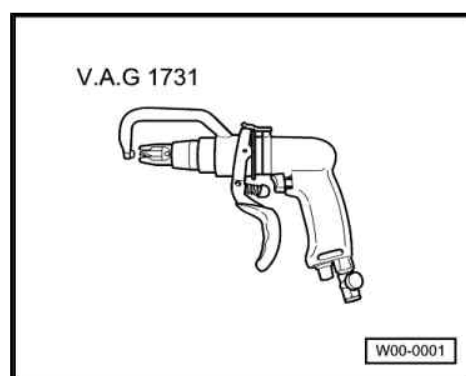


◆ Pneumatic sabre saw -V.A.G 1523 A-

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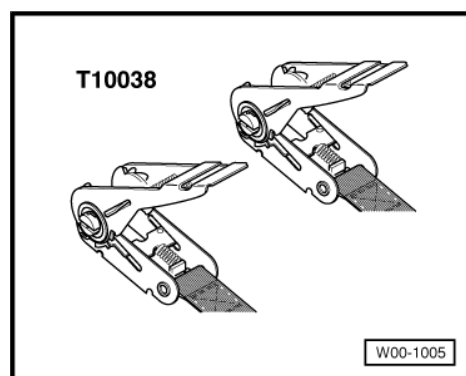
◆ Spot weld breaker -V.A.G 1731-



Mole grips, 18-18 - VAS 5430/1-

Tensioning strap - T10038-

Pneumatic cartridge gun -V.A.G 1761/1-



# 1 - 2-component window adhesive -DA 004 660 M2 -

- Open cap.

# 2 - Static mixer

- Drill open static mixer with 9 mm Ø drill bit.

# 3 - Extension hose

Part number 000 809 937

- Screw onto static mixer -2- with adapter -4-.

# 4 - Adapter

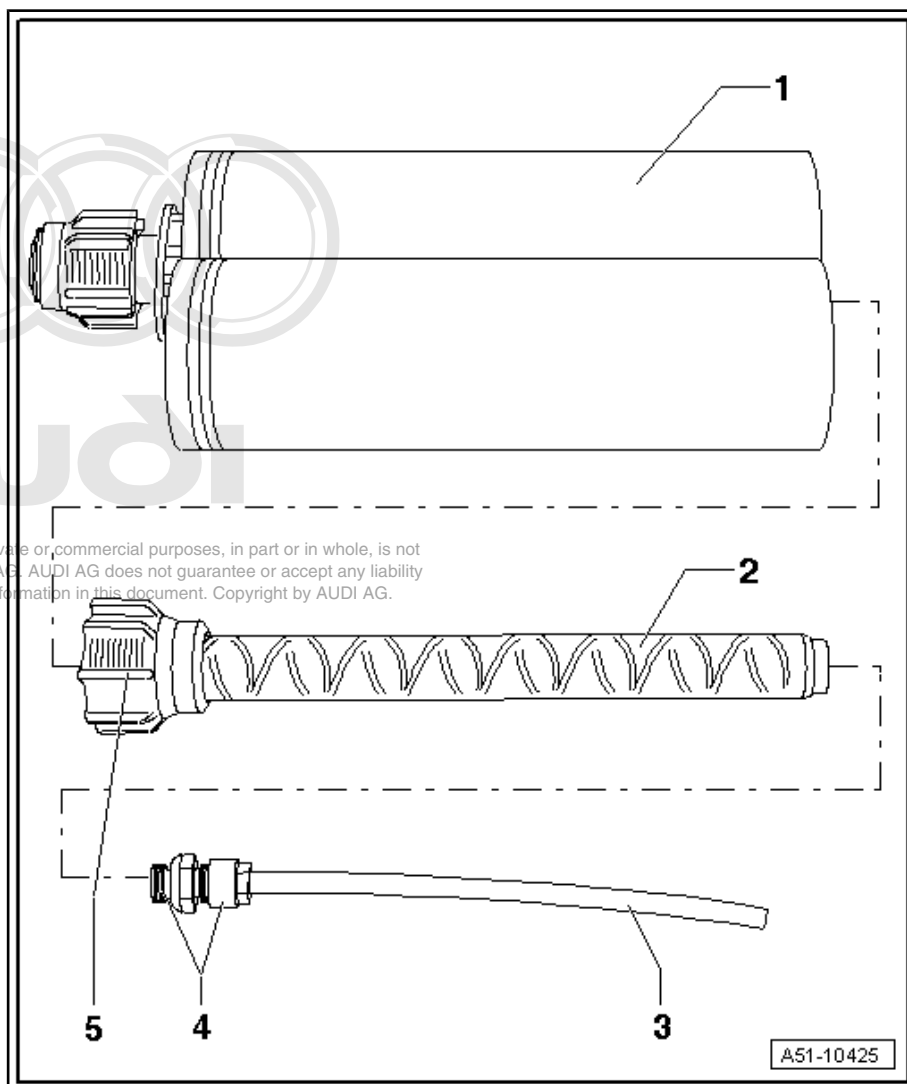


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# 5 - Union nut

- Screw onto 2-component window adhesive - DA 004 660 M2 - -1- together with static mixer -2-.



## 2.2 Procedure

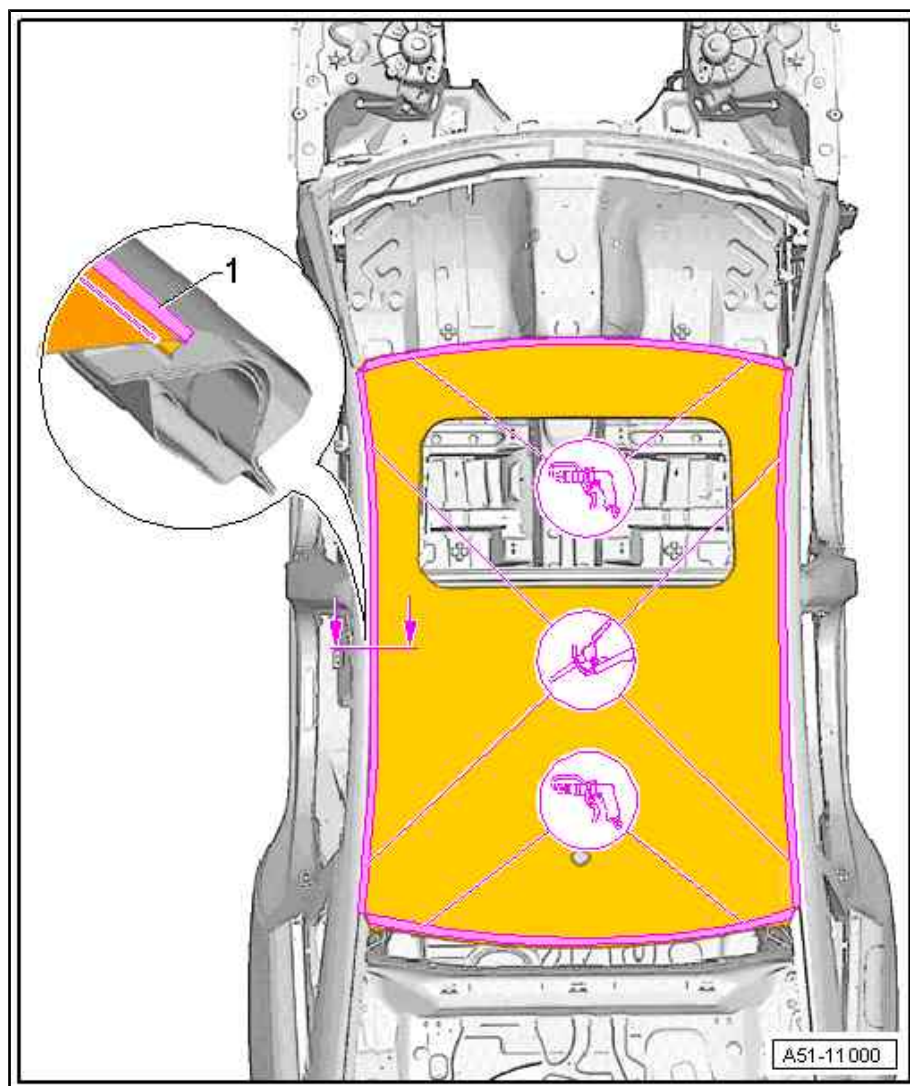
### Cutting locations



## WARNING

*Do not damage roof cross member (front and rear) when separating.*

- Roughly cut out roof parallel with plasmatron weld seam -1- at a distance of approx. 30 mm using pneumatic sabre saw - V.A.G 1523 A- .
- Separate original joint to windscreen opening and rear window opening using spot weld breaker -V.A.G 1731- .
- Working from passenger compartment, separate bonded joints between roof and roof cross members using electric cutter - V.A.G 1561 A- .

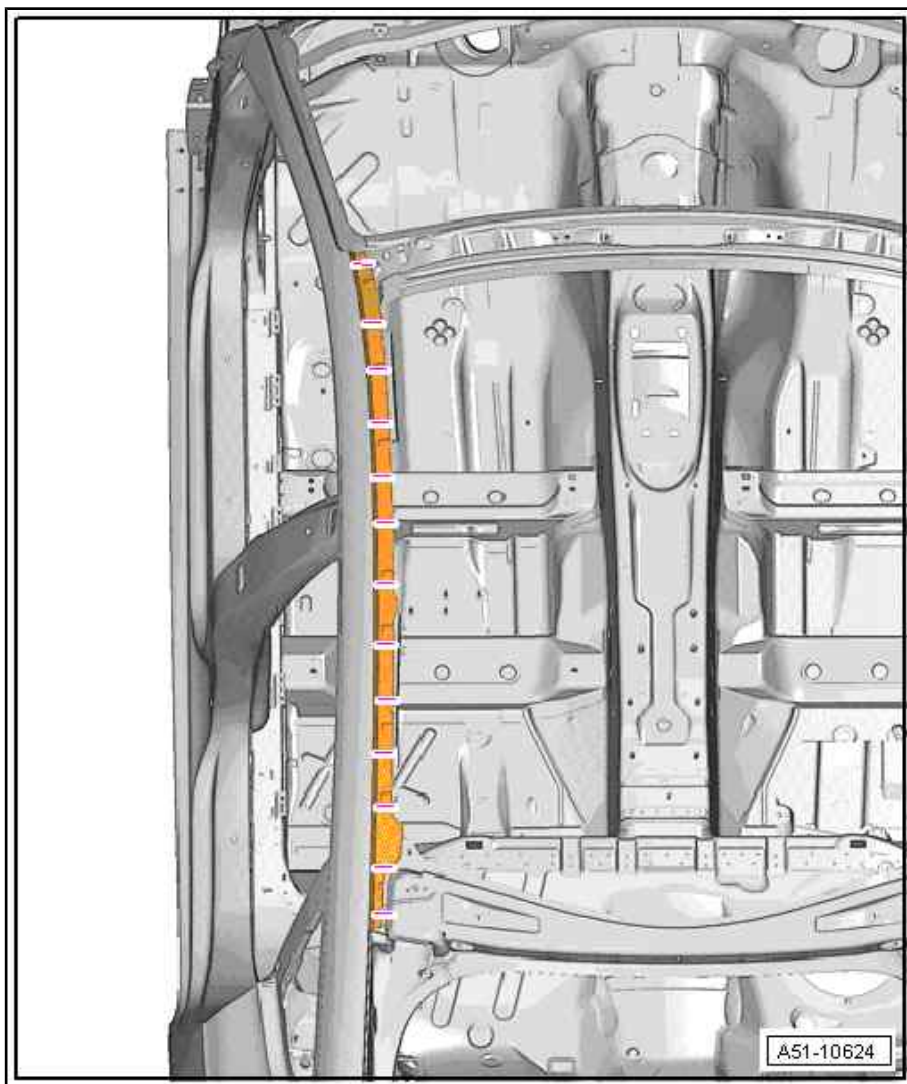


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 **Note**

*Take care not to damage the roof side members when making cuts and when moving the remaining sections of the roof up and down.*

- Make cuts in remaining sections of roof using tin snips -VAS 5357- .
- Take hold of remaining sections with pliers and break open plasmatron weld seam by pulling up and down.

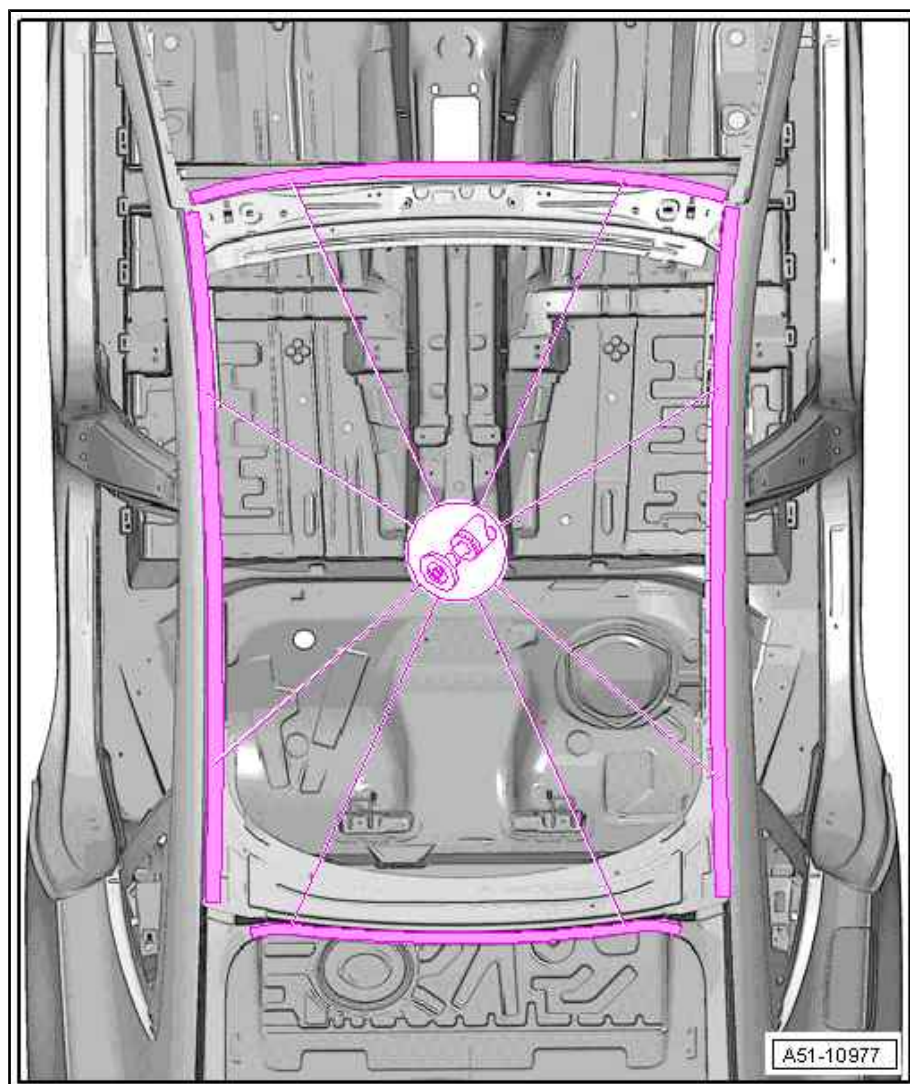


- Remove remaining material using compact angle grinder - VAS 5167- .

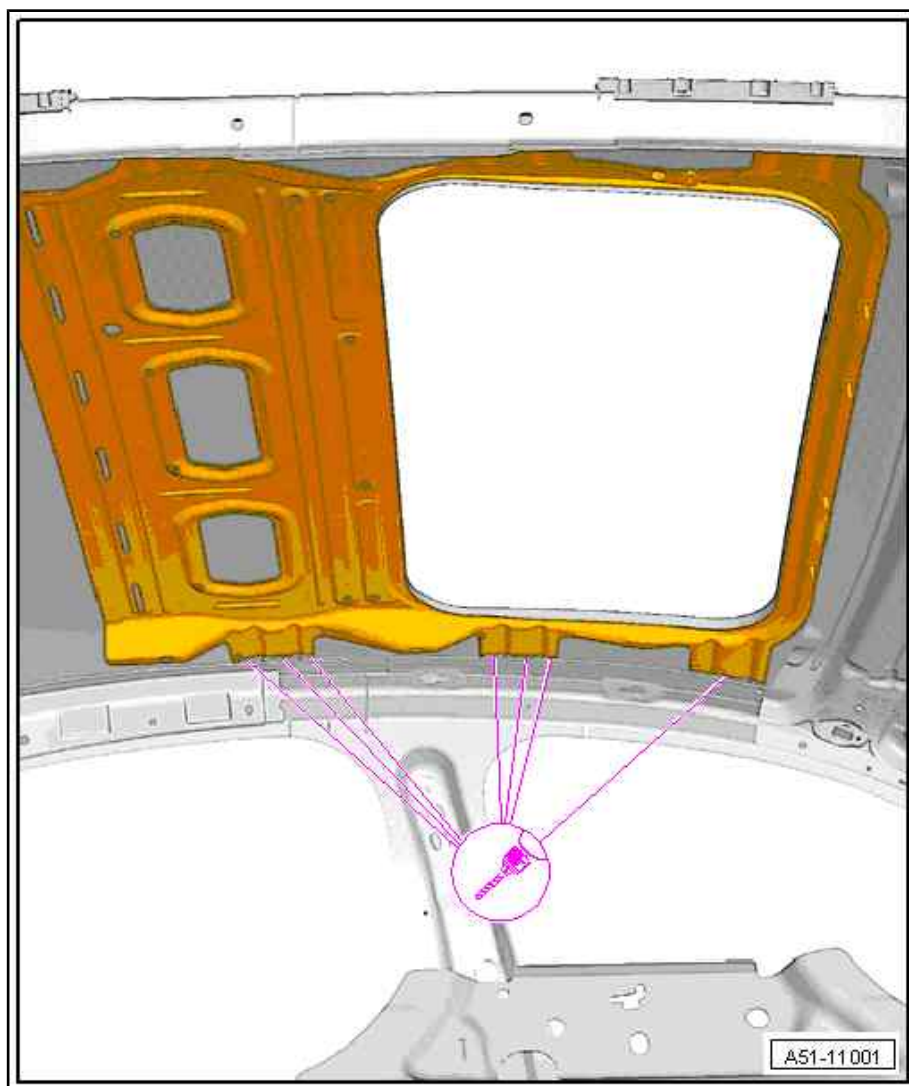
Take care not to damage roof frame when removing remaining material from roof frame.

Do not use cutting discs or rough-filing discs.

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- Place roof in position and drill 7 holes (5.0 mm Ø) for pop rivets -N 909 236 01- on both sides of roof frame reinforcement as shown in illustration using BTR drill bit and drill -VAS 5830- .



### Replacement parts

- ◆ Cleaning solution -D 009 401 04-
- ◆ Roof with tilting sunroof
- ◆ Pop rivet -N 909 236 01- , 14x
- ◆ Single-component assembly adhesive -D 190 MKD A3 - , 1 cartridge
- ◆ 2-component epoxy adhesive -DA 180 A00 A2- , 2 sets of cartridges
- ◆ Glass and paint primer -D 009 200 02-
- ◆ 2-component window adhesive -DA 004 660 M2 -

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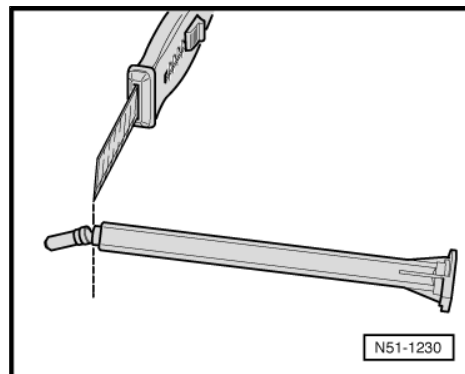


### Note

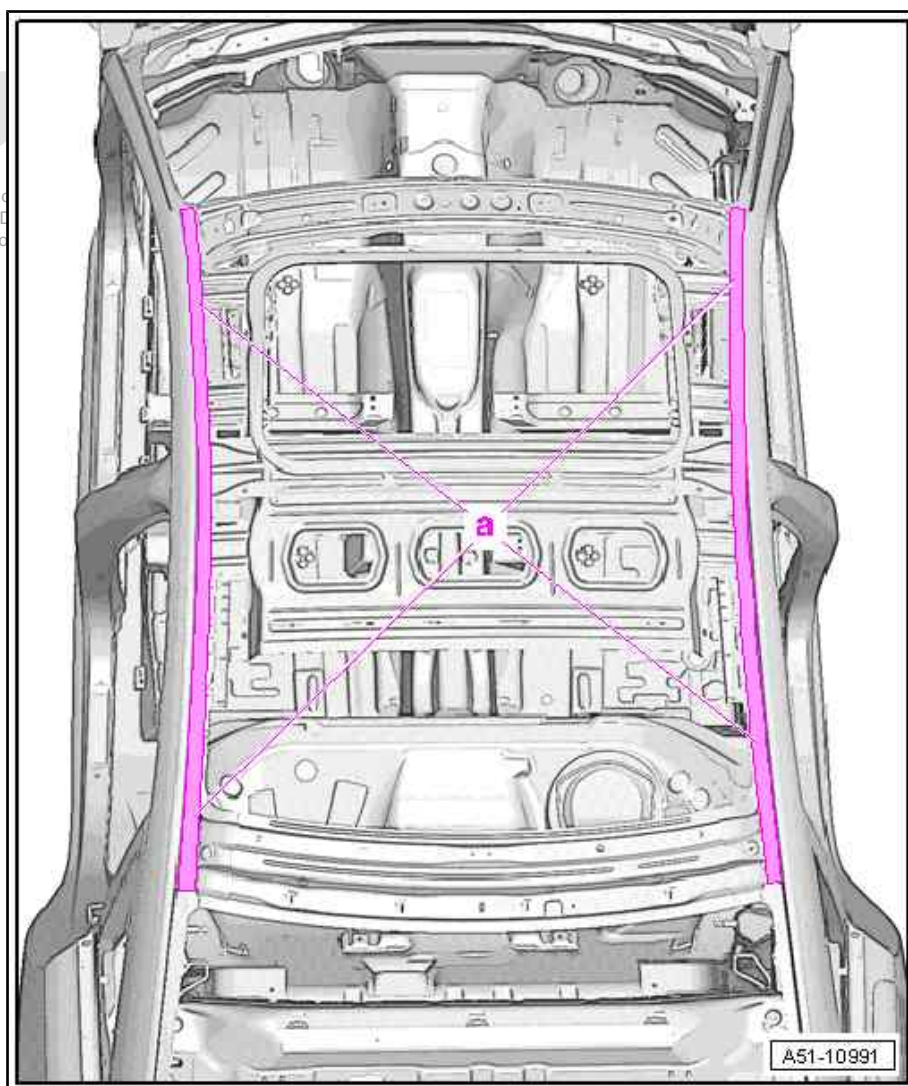
- ◆ *It is important to keep to the following procedure to ensure a satisfactory and effective roof repair.*
- ◆ *Bonding areas must not be treated with filler coat (surfacers) before bonding in roof.*

## Preparing new part

- Prepare adhesive cartridges required for bonding.
- Cut static mixer from 2-component epoxy adhesive set -DA 180 A00 A2- down to 4th notch to obtain required bead cross section.

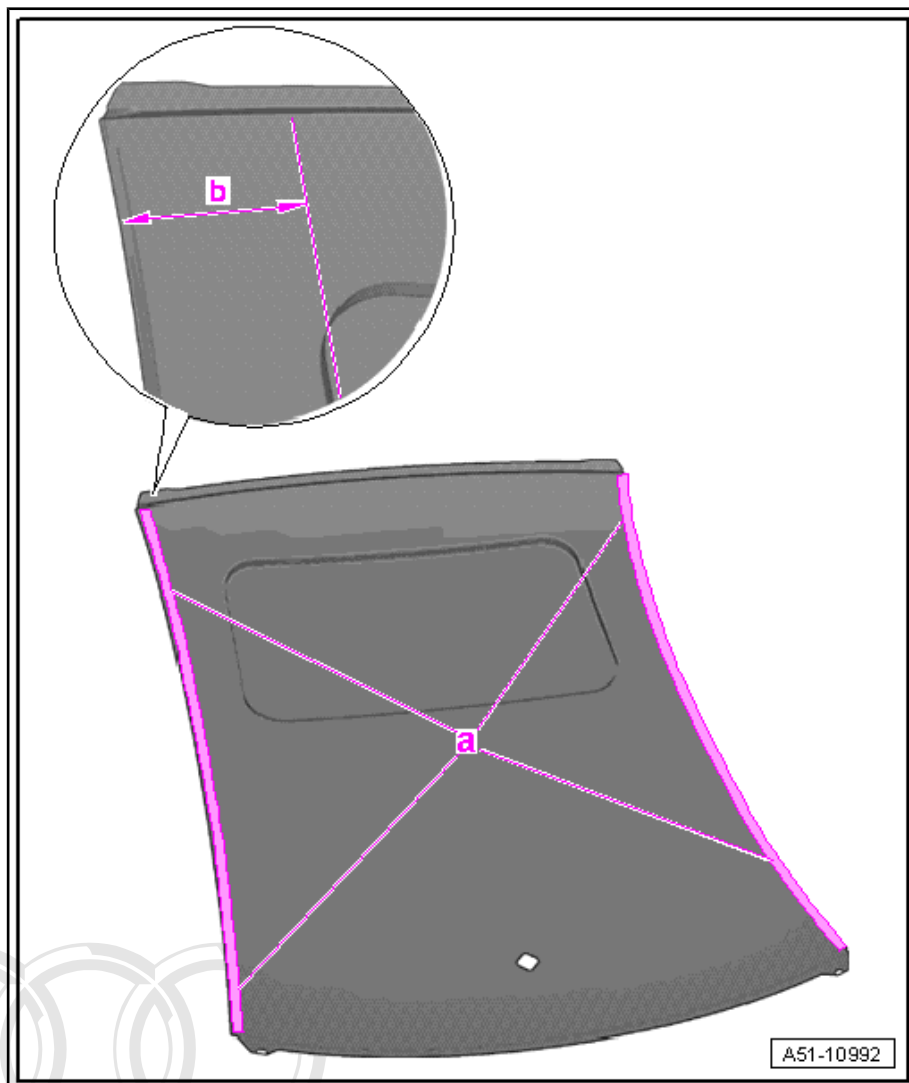


- Apply glass and paint primer -D 009 200 02- in area of roof frame -a-.



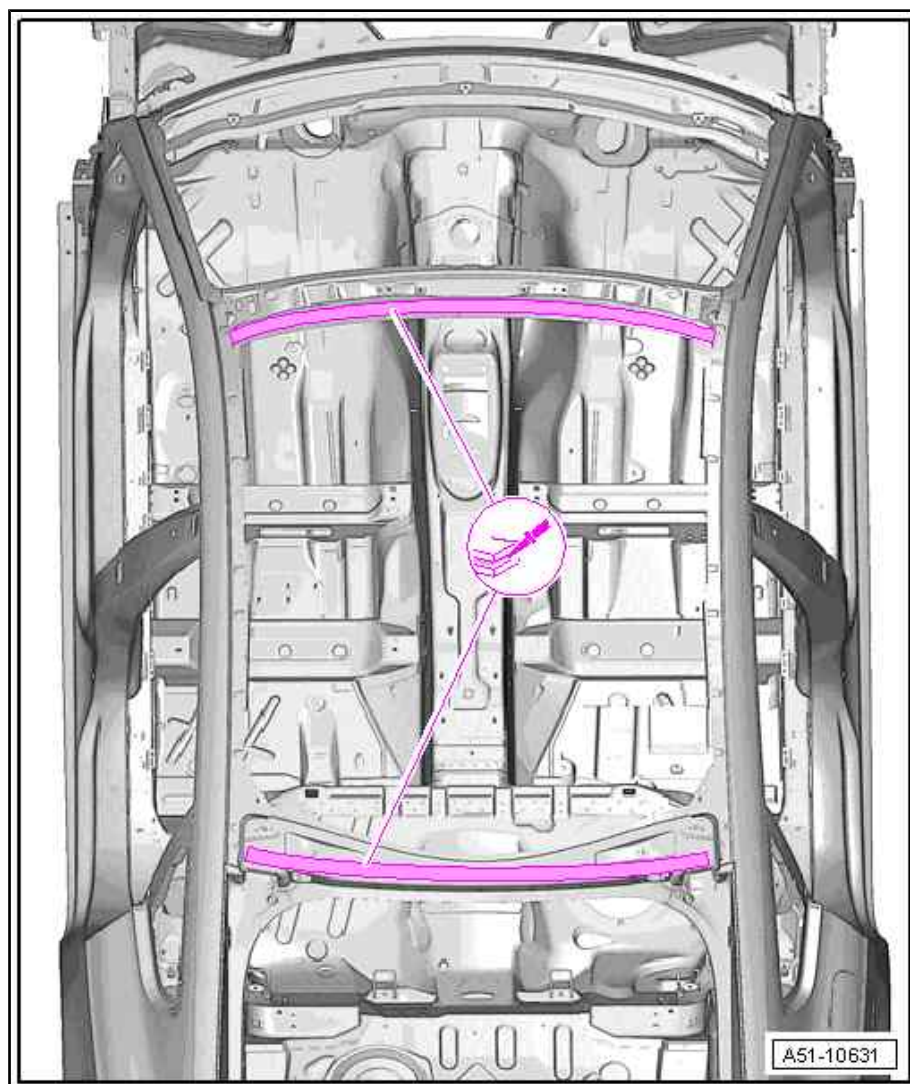
- Mask outside of roof panel parallel with side bonding area using adhesive tape.
- Attach four suction lifters -V.A.G 1344- to outside of roof panel.

- Clean roof frame, roof reinforcement and roof with cleaning solution -D 009 401 04- .
- Apply glass and paint primer -D 009 200 02- approx. 5 cm wide -b- on inner section of roof and inner side flange -a-.

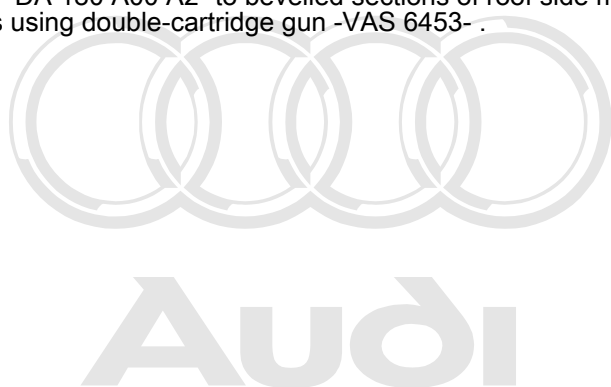


- Apply single component assembly adhesive -D 190 MKD A3- with pneumatic cartridge gun - V.A.G 1761/1- to roof cross member at rear and front in vicinity of factory bonding location.

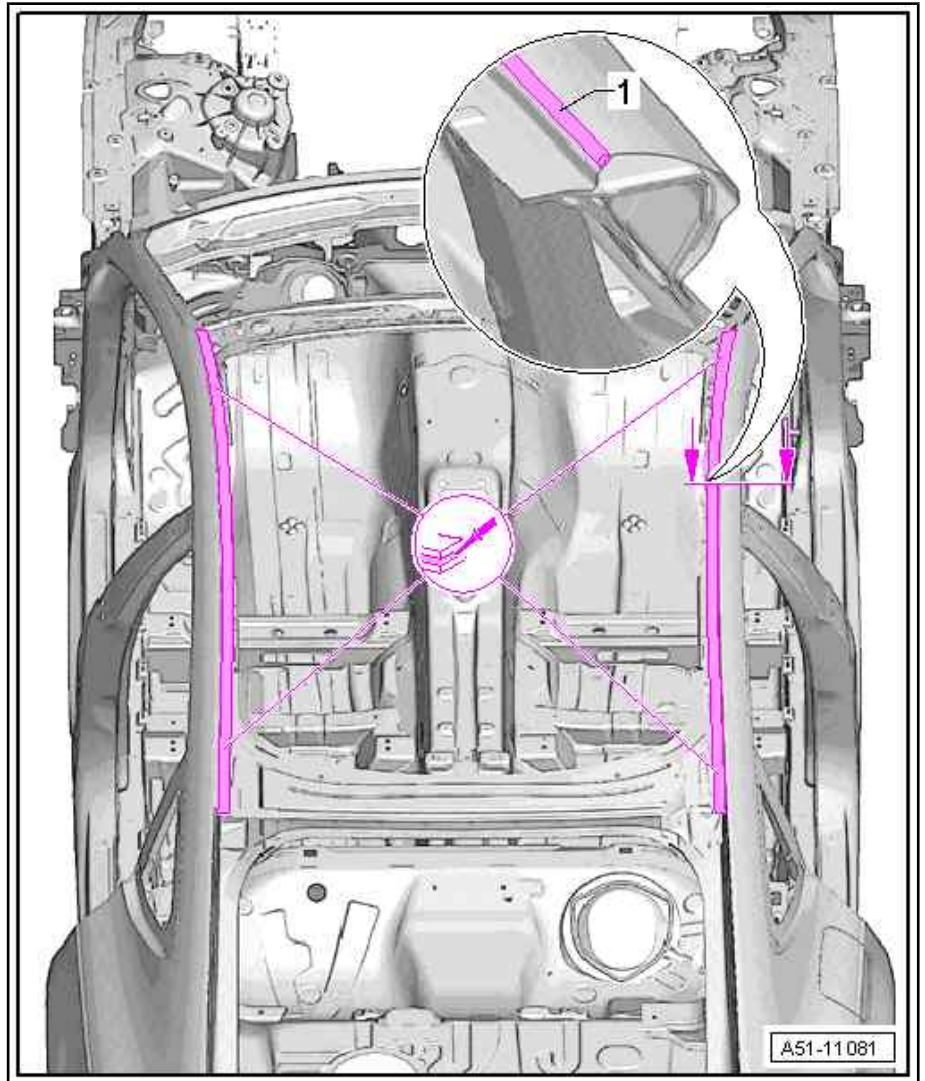
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- Apply two continuous beads -1- of 2-component epoxy adhesive -DA 180 A00 A2- to bevelled sections of roof side members using double-cartridge gun -VAS 6453- .



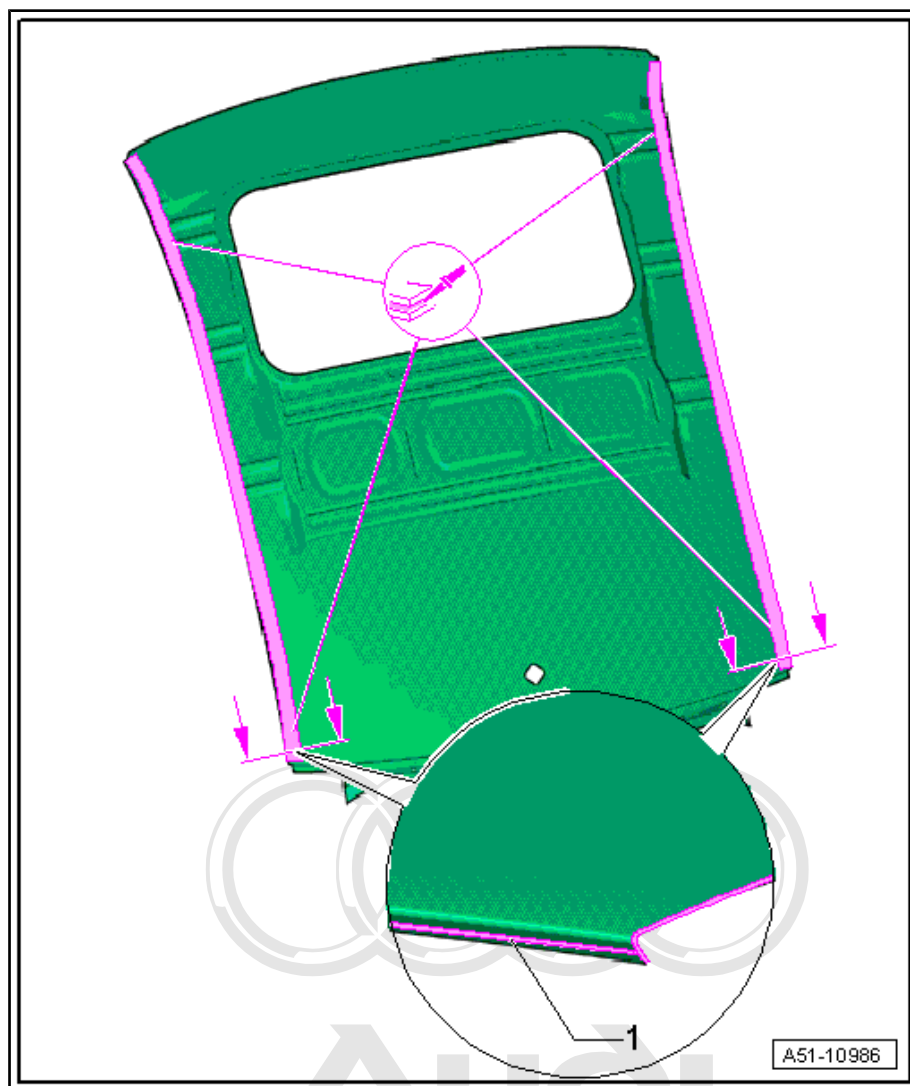
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- Apply one continuous bead of 2-component epoxy adhesive - DA 180 A00 A2- to side flanges of roof -1- using double cartridge gun -VAS 6453- .



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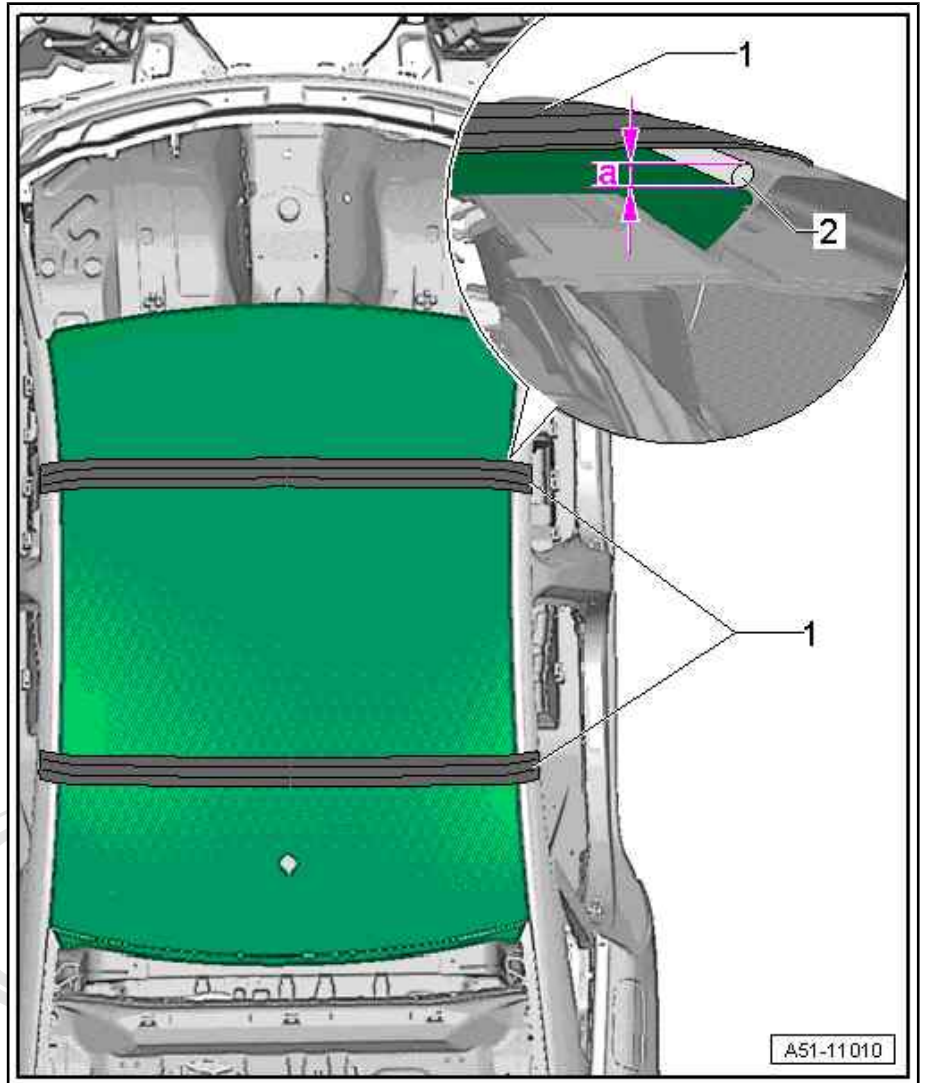
- Immediately fit and align roof.
- Use one self-tapping screw at each end to fix roof in position in centring hole in windscreen flange and sealing flange for rear lid.
- Fix roof in position at windscreen opening and rear window opening using mole grips, 18-18 -VAS 5430/1- .

#### Adjusting roof depth

- Additionally fix roof in position with two tensioning straps - T10038- -1-.
- Set required depth using drill bit or suitable wooden spacer, etc -2-.

Depth setting in centre part of front door -a = 3.0 mm-

Depth setting in centre part of rear door -a = 2.5 mm-

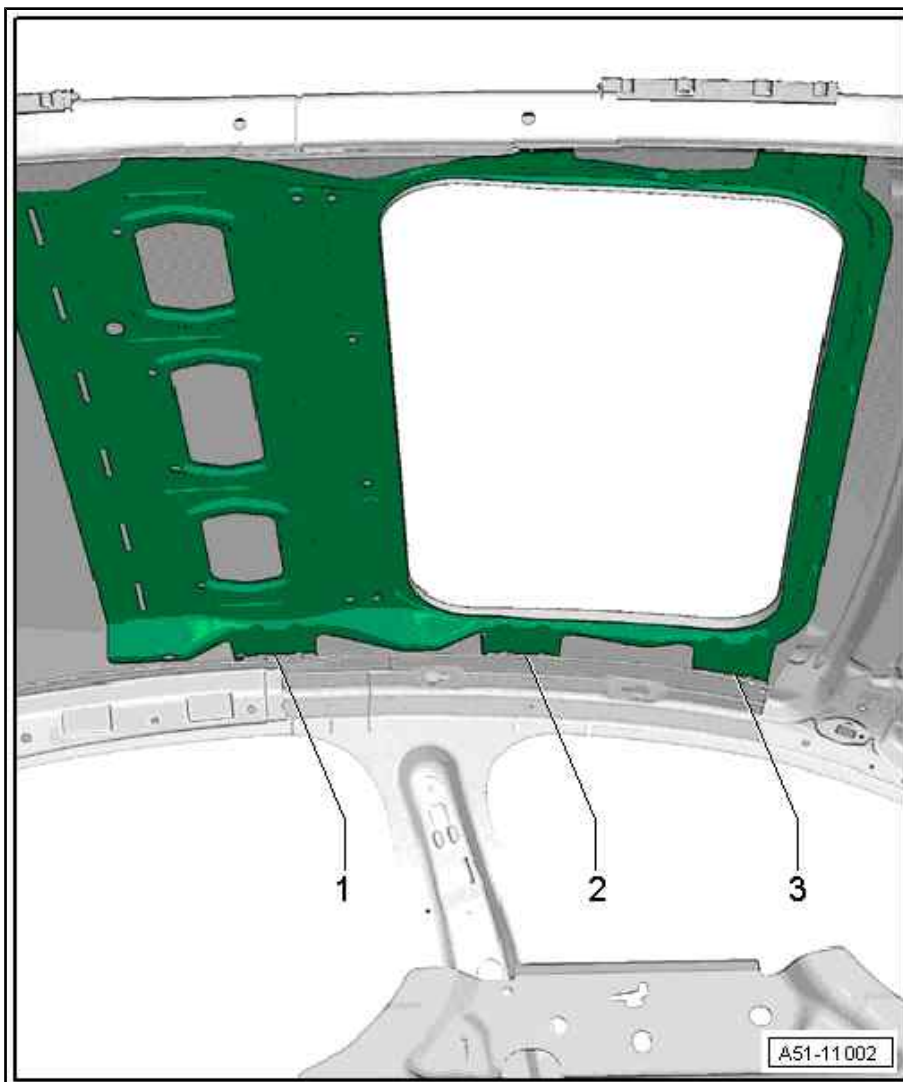


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1 - Install 3x pop rivets -N 909 236 01- -2- using pneumatic pop riveter -V.A.G 2003 A- .

2 - Install 3x pop rivets -N 909 236 01- -3- using pneumatic pop riveter -V.A.G 2003 A- .

3 - Install 1x pop rivet -N 909 236 01- -4- using pneumatic pop riveter -V.A.G 2003 A- .

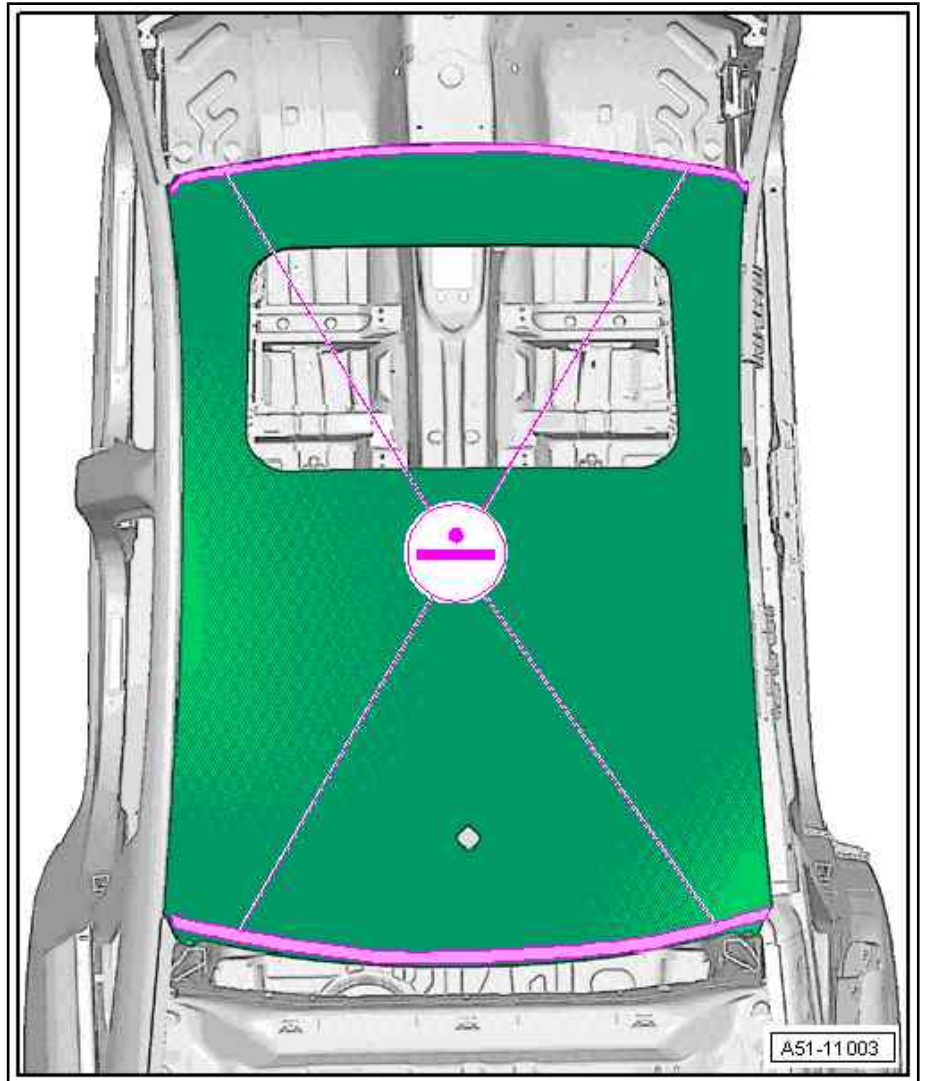


# WARNING

*Allow bonded joint on roof to harden for 60 minutes at approx. 65° to 80° C with radiant heater. Check temperature constantly with temperature sensor.*

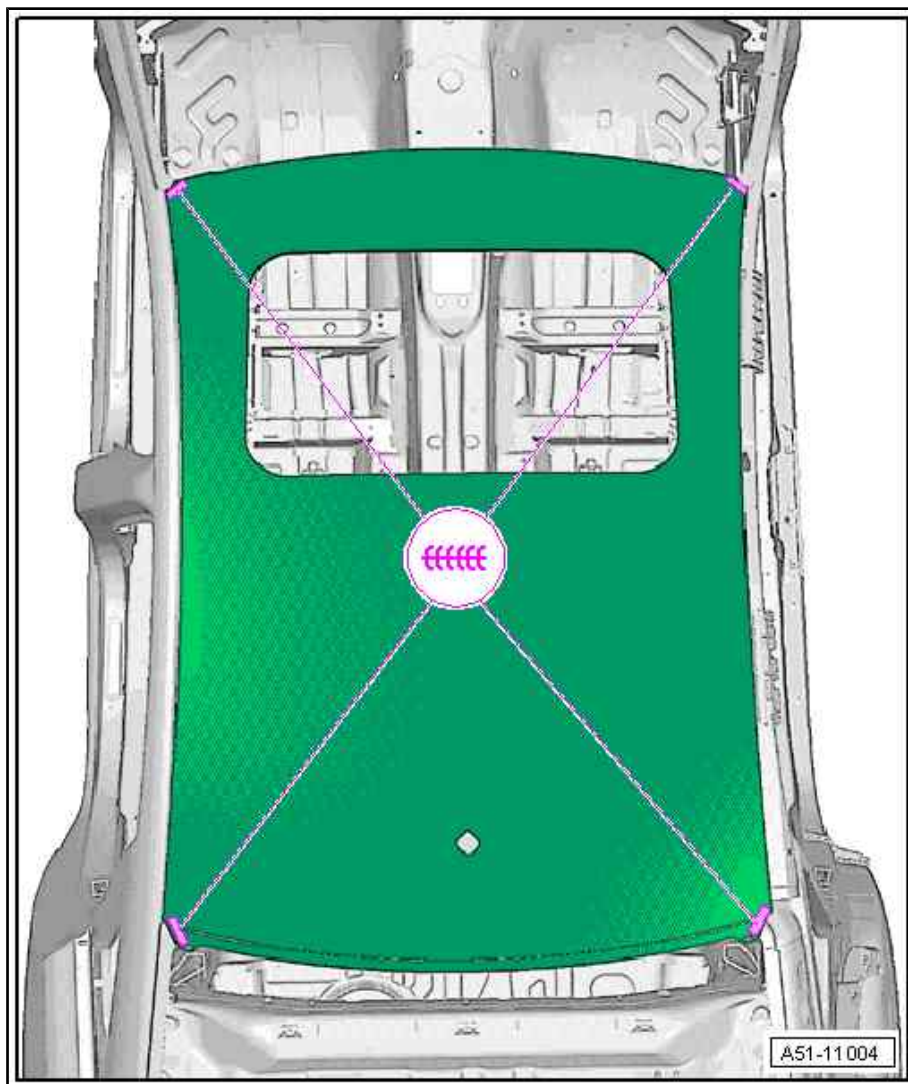
– Weld in roof using resistance spot welder : RP spot weld seam.

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- Make additional welds for roof using shielded arc welding equipment : SG continuous seam.
- Grind down SG continuous weld seams using compact angle grinder -VAS 5167- .

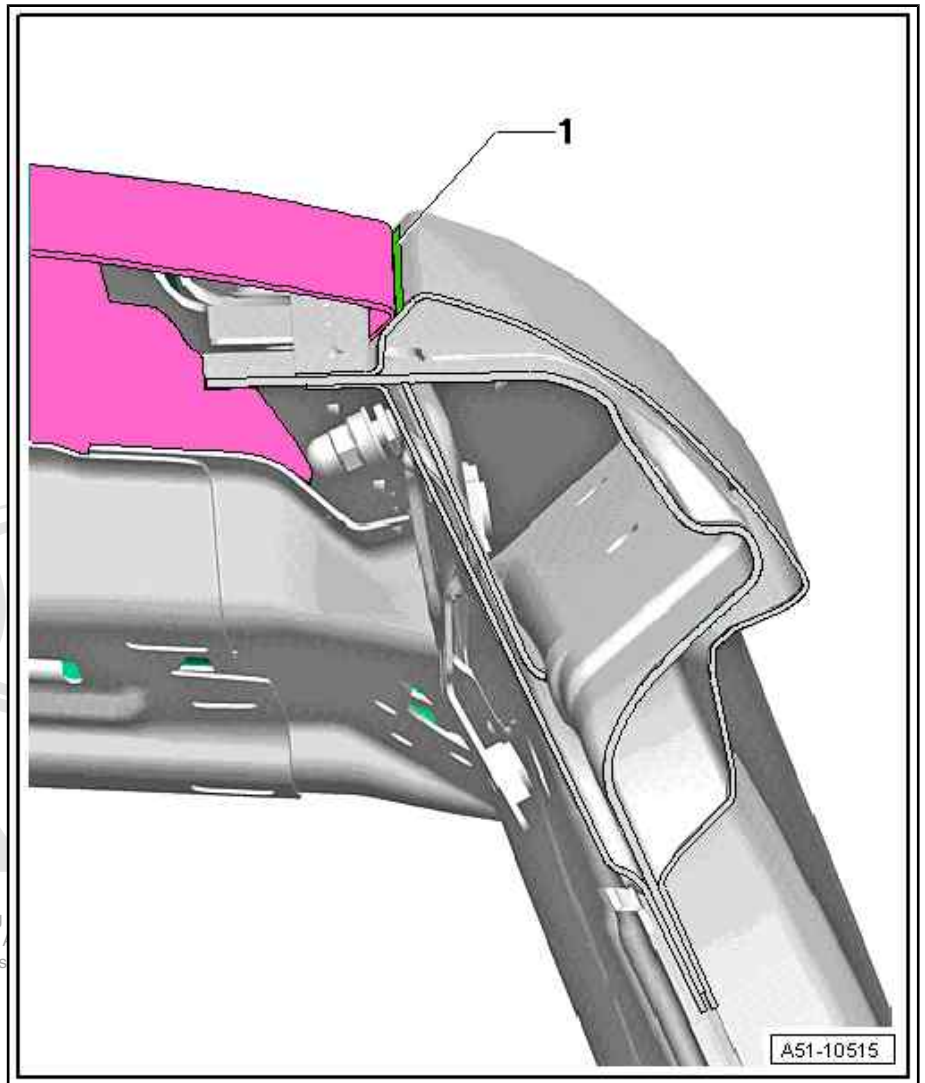


### Note

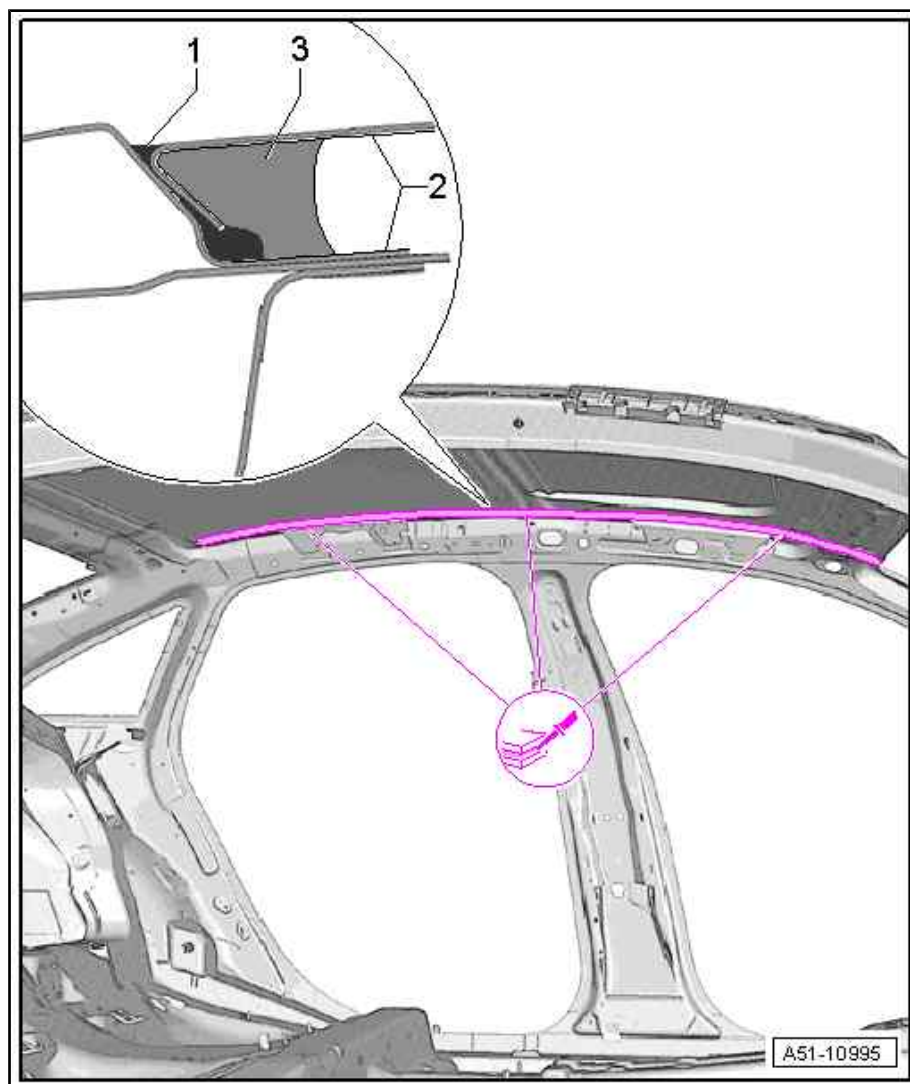
- ◆ *After completing the joint, the vehicle must be left standing for 8 hours on a level surface at a room temperature of 15°C to allow the adhesive components to harden (curing time).*
- ◆ *Do not continue working on the vehicle until the curing time has elapsed.*
- Grind zero-gap joint -1- into shape (left and right).



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- Apply one cartridge of 2-component window adhesive -DA 004 660 M2 - -3- into each roof side member using double cartridge gun -VAS 5237- .
- ◆ 1 = 2-component epoxy adhesive -DA 180 A00 A2-
- ◆ 2 = Glass and paint primer -D 009 200 02-
- ◆ 3 = 2-component window adhesive -DA 004 660 M2 -



RO: 51 03 55 00

### 3 Roof - Renewal (Avant)



#### WARNING

*Always observe safety precautions.*

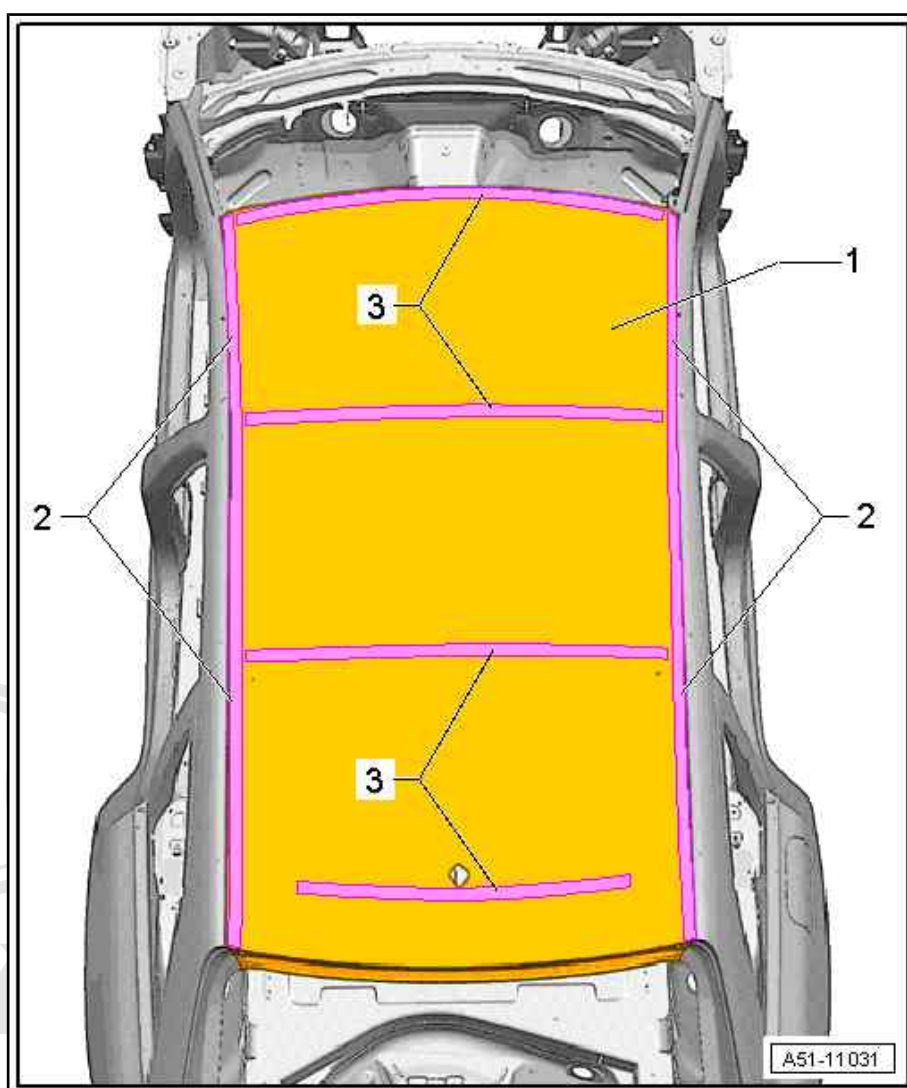
*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes → General Information; Body Repairs, General Body Repairs ; Safety notes .

1 - Roof

2 - Plasmatron weld seam

3 - Bonded area



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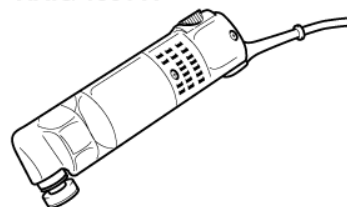
### 3.1 Tools

#### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A- or
- ◆ Resistance spot welder -VAS 6525- or

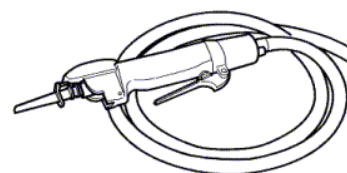
- ◆ Resistance spot welder -VAS 6530- or
- ◆ Resistance spot welder -VAS 6535- or
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Radiant heater
- ◆ Pneumatic pop riveter -V.A.G 2003A-
- ◆ Drill -VAS 5830-
- ◆ Compact angle grinder -VAS 5167-
- ◆ Suction lifter -V.A.G 1344- , 4x
- ◆ Double cartridge gun -VAS 6453-
- ◆ Electric cutter -V.A.G 1561A-

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**V.A.G 1561 A**

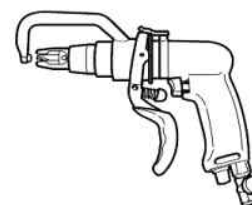
W00-0532

- ◆ Pneumatic sabre saw -V.A.G 1523 A-

**V.A.G 1523 A**

W00-0005

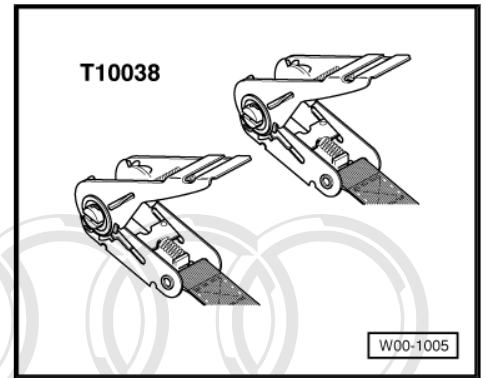
- ◆ Spot weld breaker -V.A.G 1731-

**V.A.G 1731**

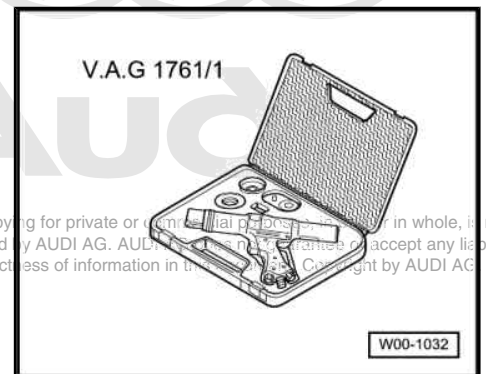
W00-0001

- ◆ Mole grips, 18-18 -VAS 5430/1-

◆ Tensioning strap -T10038-

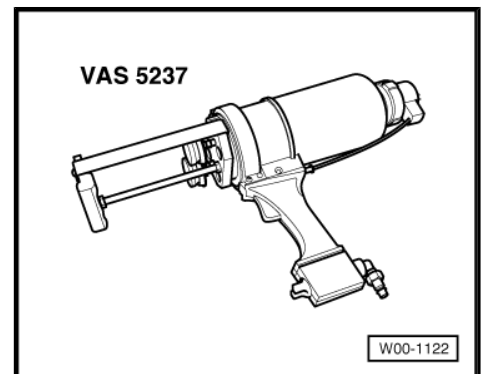


◆ Pneumatic cartridge gun -V.A.G 1761/1-



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◆ Double cartridge gun -VAS 5237-



### 1 - 2-component window adhesive -DA 004 660 M2 -

- Open cap.

### 2 - Static mixer

- Drill open static mixer with 9 mm Ø drill bit.

### 3 - Extension hose

Part number 000 809 937

- Screw onto static mixer -2- with adapter -4-.

### 4 - Adapter

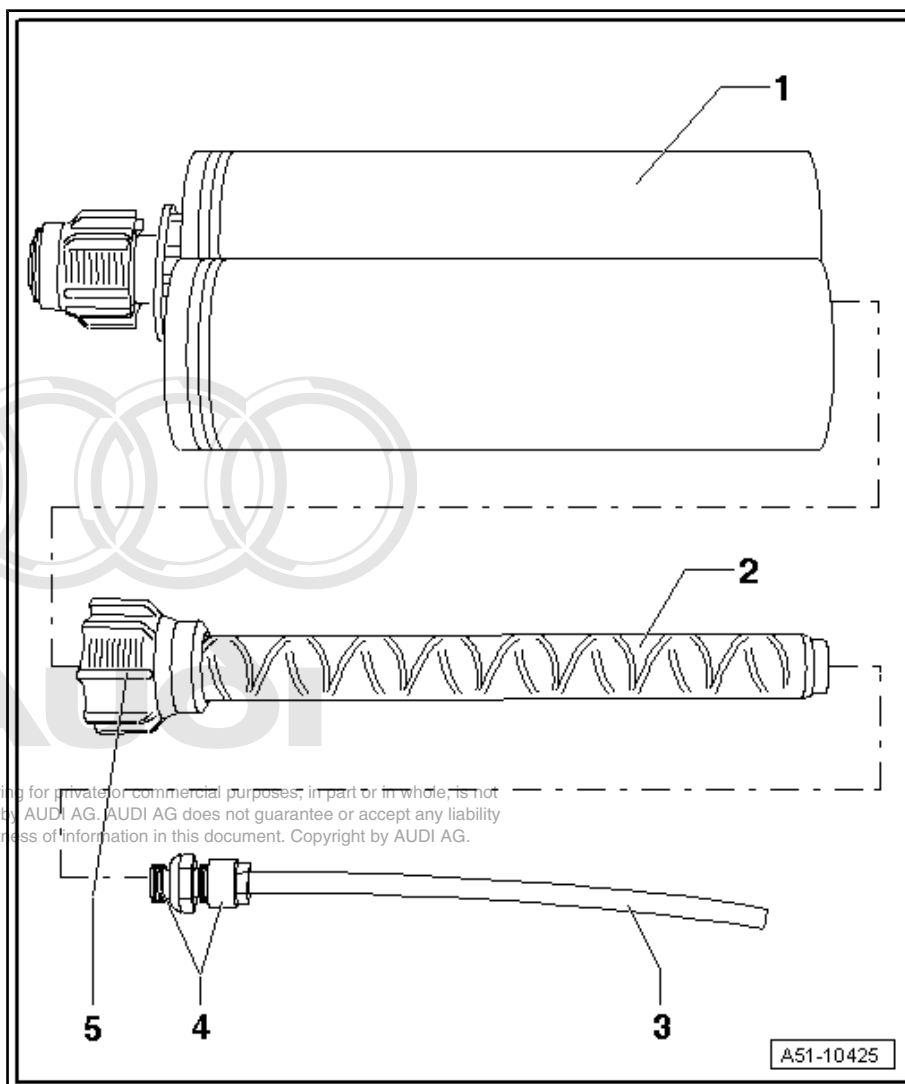


Note

### 5 - Union nut

- Screw onto 2-component window adhesive - DA 004 660 M2 - -1- together with static mixer -2-.

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## 3.2 Procedure

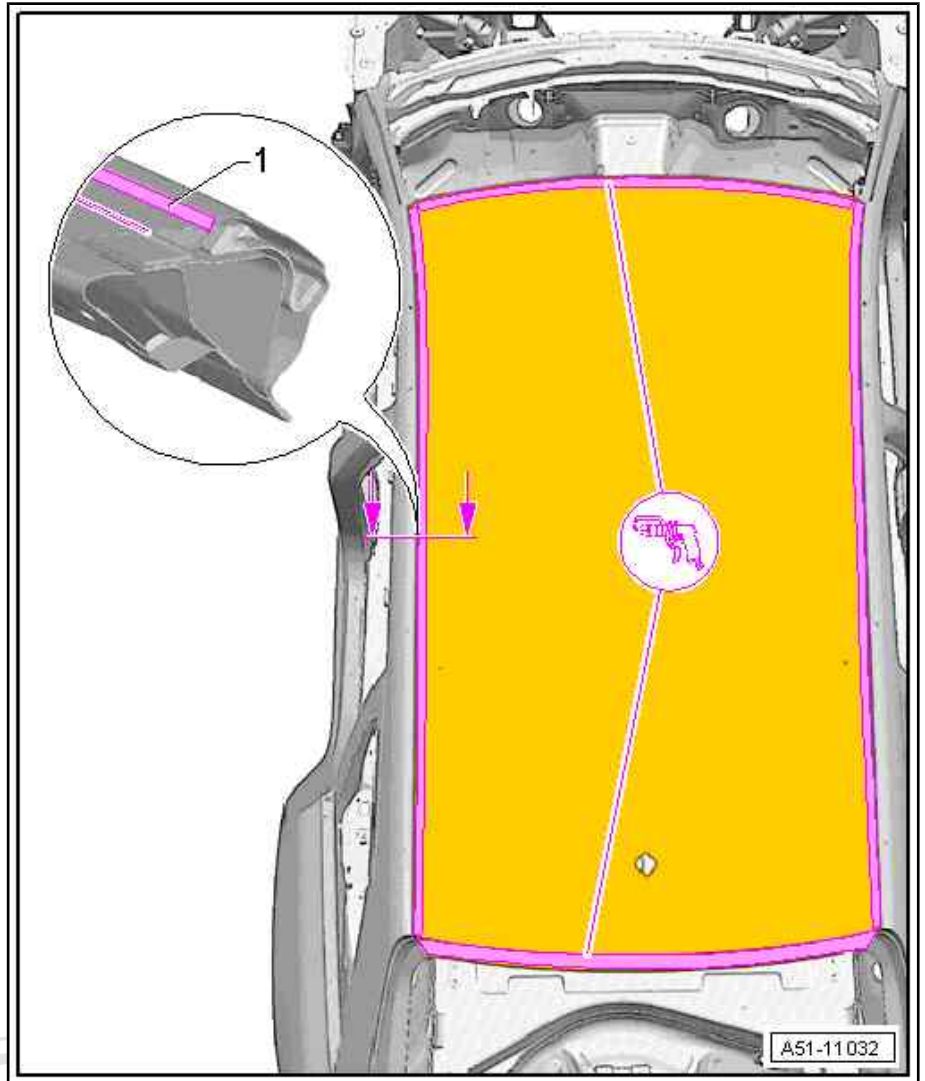
### Cutting locations



### WARNING

*Do not damage roof cross member (front and rear) when separating.*

- Roughly cut out roof using pneumatic sabre saw -V.A.G 1523A- at a distance of approx. 30 mm parallel with plasma-tron weld seam.
- Drill off original joint with windscreen and rear lid opening using spot weld breaker - VAS 6322- .
- Working from passenger compartment, separate bonded joints between roof and roof cross members using electric cutter - V.A.G 1561 A- .



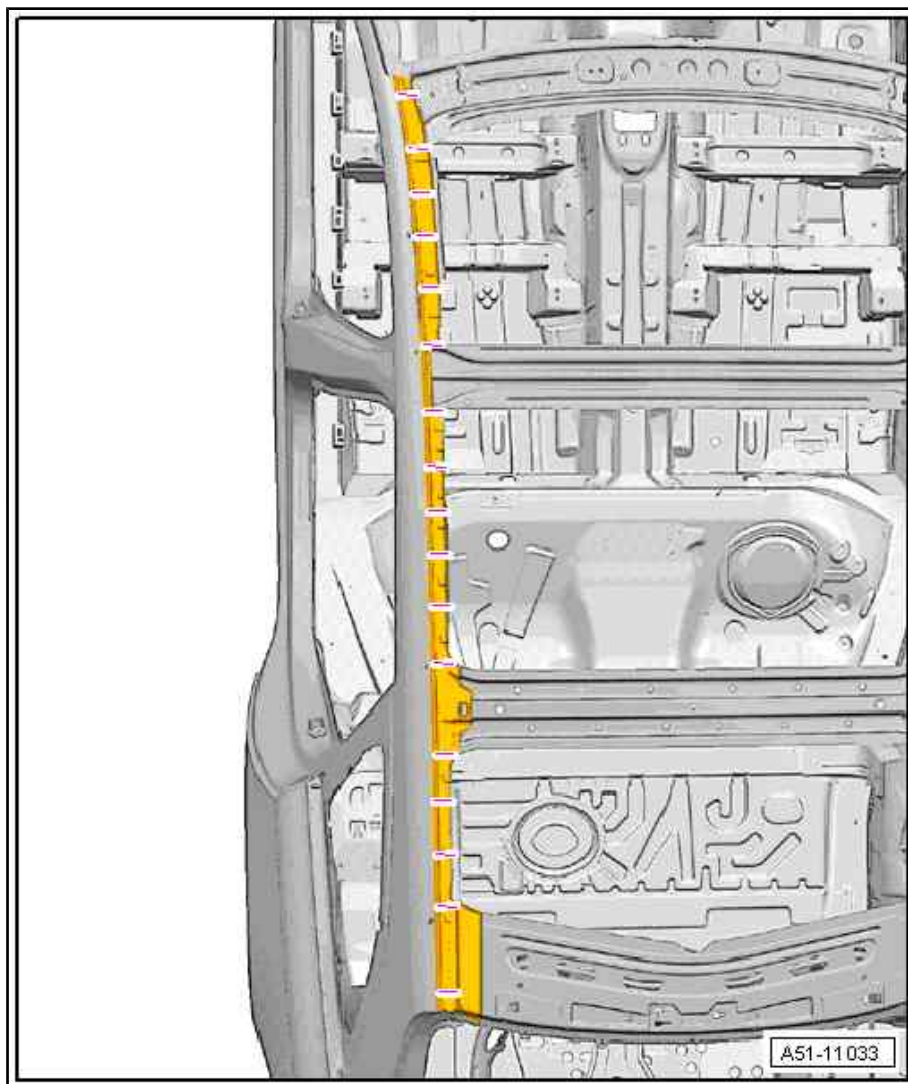
- Cut in several places as shown to make it easier to break out roof panel.
- Carefully bend open half-sections of roof until brazed joint breaks.
- Remove remaining material.



#### Note

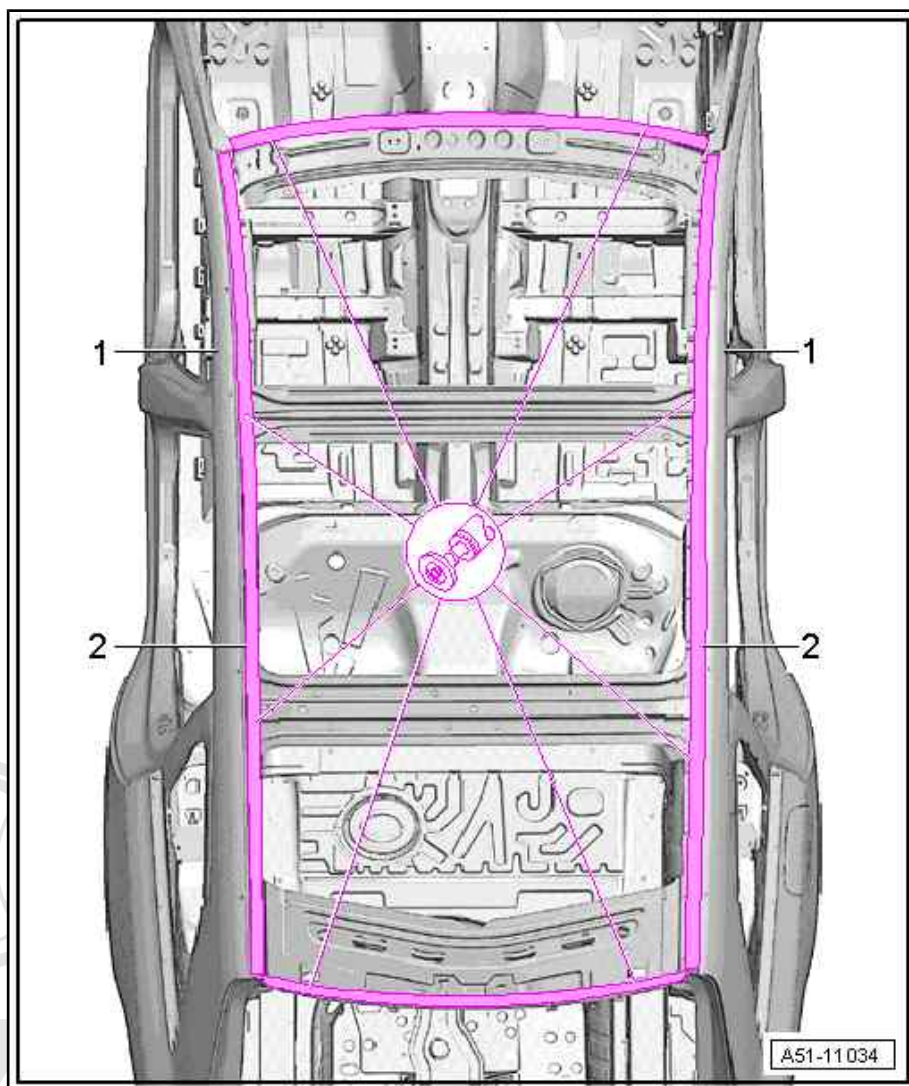
*Take care not to damage the roof side members when making cuts and when moving the remaining sections of the roof up and down.*

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### Note

- ◆ Take care not to damage the roof side members -1- when removing the remaining sections of the roof -2-.
- ◆ Use a suitable flap disc; do not use a cutting disc or rough-filing disc.
- Remove remaining material using compact angle grinder -VAS 5167- .
- Remove all residual adhesive and sealing compound from roof cross members at front and rear using scraper -VAS 5448- .



### Replacement parts

- ◆ Roof
- ◆ Single-component assembly adhesive -D 190 MKD A3- , 1 cartridge
- ◆ 2-component epoxy adhesive -DA 180 A00 A2- , 2 sets of cartridges
- ◆ Cleaning solution -D 009 401 04-
- ◆ Zinc spray
- ◆ Glass and paint primer -D 009 200 02-
- ◆ 2-component window adhesive -DA 004 660 M2 - , 2 sets of cartridges

## Preparing new part



### Note

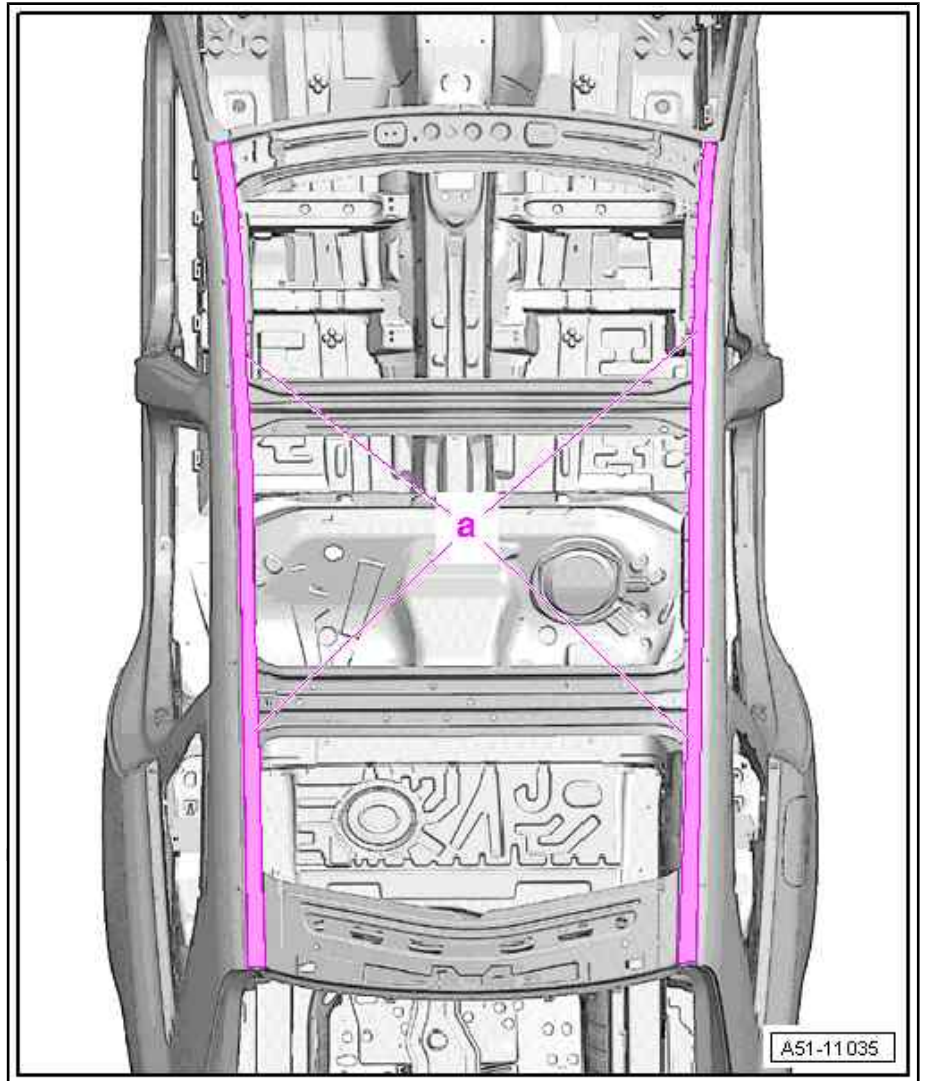
- ◆ *It is important to keep to the following procedure to ensure a satisfactory and effective roof repair.*
- ◆ *Bonded areas must not be treated with filler before bonding in centre roof section.*
- ◆ *The adhesive materials must be applied very quickly.*
- ◆ *Make sure adhesive is applied before pot life is exceeded.*
- ◆ *Use a pneumatic cartridge gun to apply the bonding materials.*
- ◆ *Affixing adhesive tape to the roof parallel with the bonded seam on the side prevents soiling when bonding.*

## Bonding in

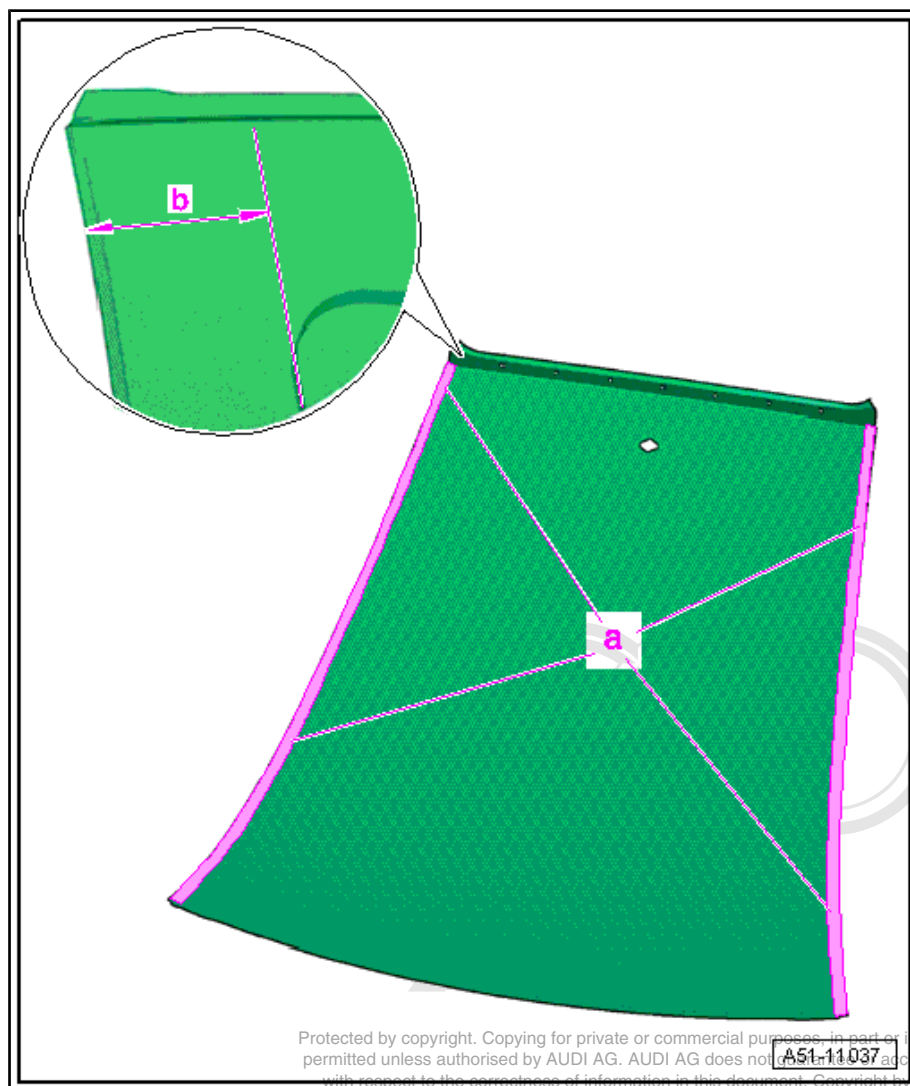
- Position roof on roof frame and check alignment of roof with roof side members (visual inspection).
- Check fit of roof with rear lid and windscreen.
- Fix roof in position in windscreen flange and sealing flange of rear lid using one self-tapping screw at each end.
- Remove roof.
- Apply glass and paint primer -D 009 200 02- in area of roof frame -a-.



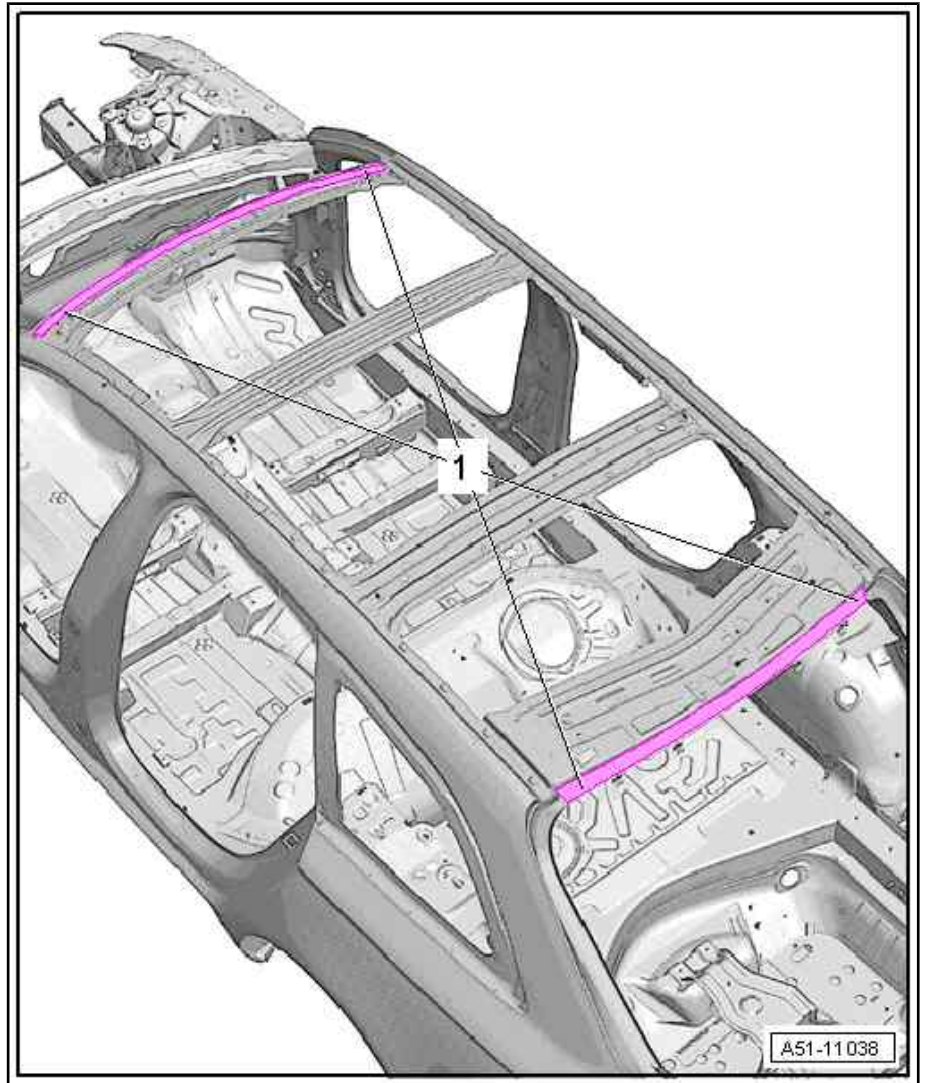
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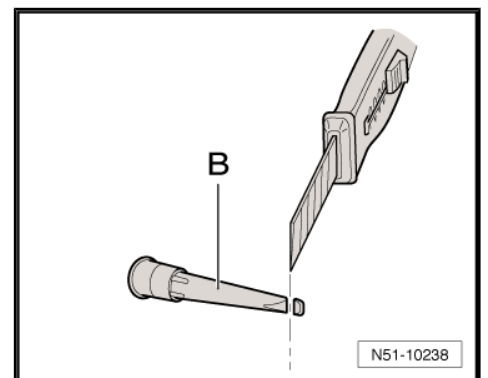
- Mask outside of roof panel parallel with side bonding area using adhesive tape.
- Attach four suction lifters -V.A.G 1344- to outside of roof panel.
- Clean roof frame, roof reinforcement and roof with cleaning solution -D 009 401 04- .
- Apply glass and paint primer -D 009 200 02- approx. 5 cm wide -b- on inner section of roof and inner side flange -a-.



Apply zinc spray to welding flanges for RP spot weld seam on roof cross members -1- and roof.

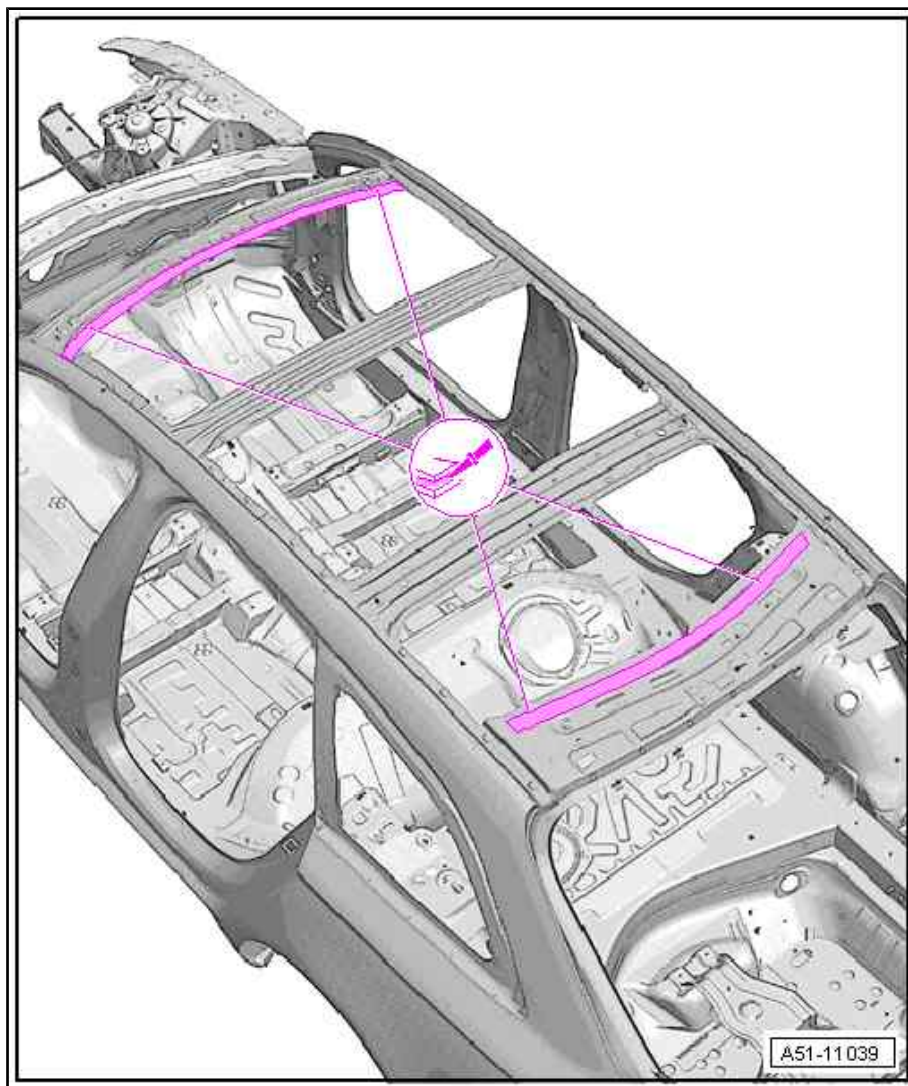


- Cut off approx. 2 mm from nozzle -B- to obtain appropriate bead geometry.



- Apply single-component assembly adhesive -D 190 MKD A3- to roof cross members in the area of the factory bonding location using pneumatic cartridge gun - V.A.G 1761/1- .

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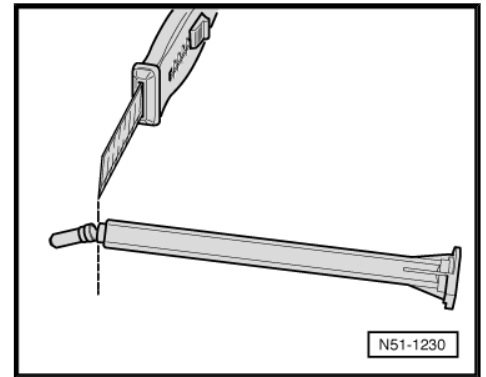
### Preparing new part

#### Note

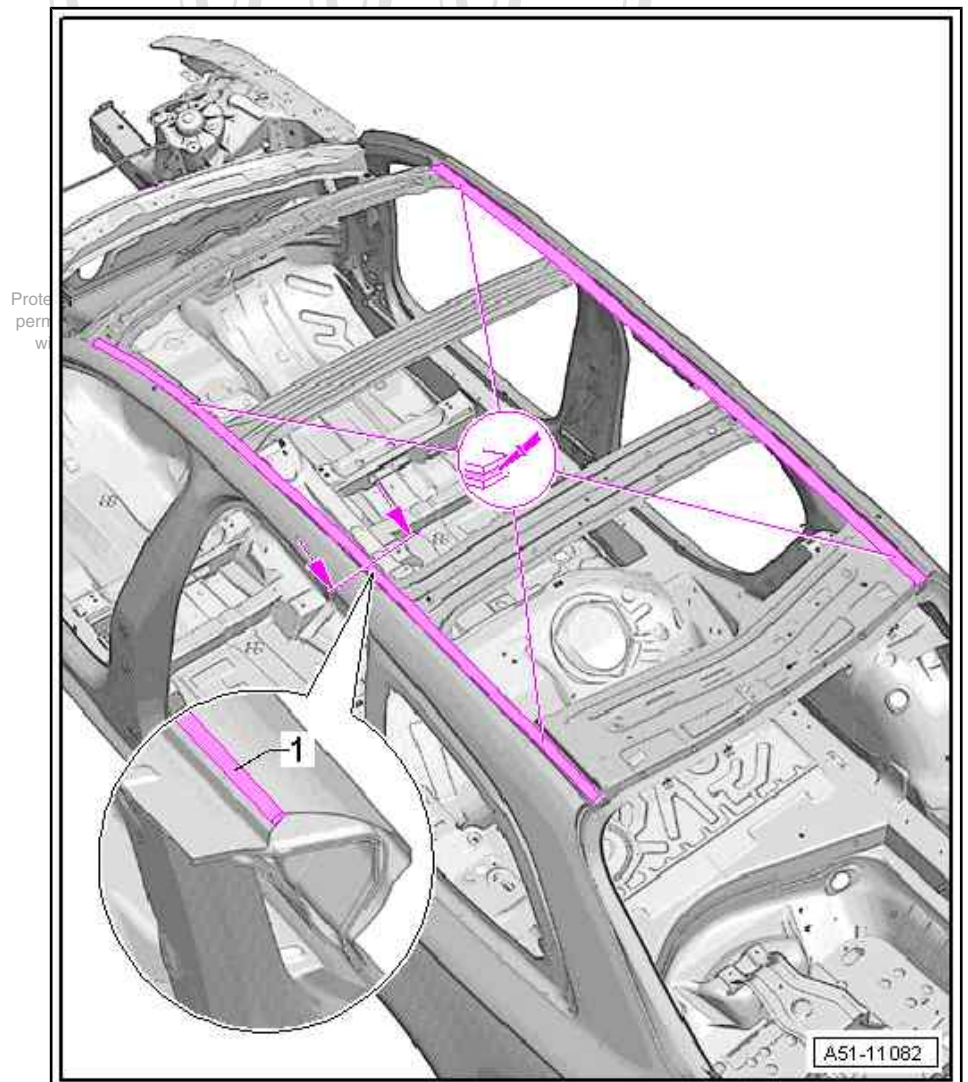
- ◆ *The pot life of the 2-component epoxy adhesive -DA 180 A00 A2- is roughly 90 minutes.*
- ◆ *A second mechanic is required for the next steps.*

**Carefully operate cartridge gun (without static mixer) until adhesive comes out of both chambers of cartridge connector evenly.**

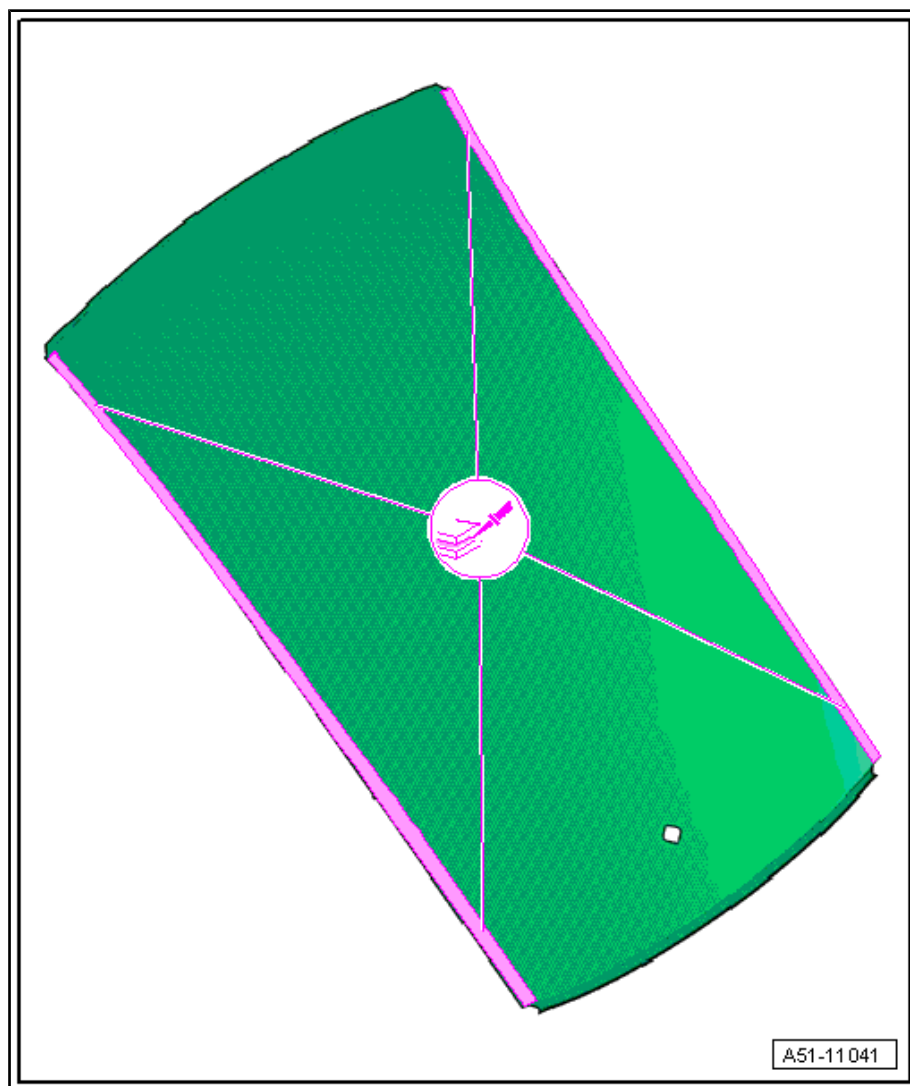
- Cut static mixer from 2-component epoxy adhesive -DA 180 A00 A2- down to 4th notch to obtain required bead cross section.
- Screw static mixer onto cartridge connector.
- Operate the pneumatic gun -VAS 6453- with the 2-component epoxy adhesive -DA 180 A00 A2- and apply a roughly 100 mm long adhesive bead to a piece of cardboard before starting application on the vehicle.



- Apply two continuous beads -1- of 2-component epoxy adhesive -DA 180 A00 A2- to bevelled sections of roof side members in area of zero-gap joint using pneumatic gun -VAS 6453- .



- Apply one continuous bead of 2-component epoxy adhesive -DA 180 A00 A2- to side flanges of roof using pneumatic gun -VAS 6453- .



- Immediately fit and align roof.
- Use one self-tapping screw at each end to fix roof in position in centring hole in windscreen flange and sealing flange for rear lid.
- Fix roof in position at windscreen opening and rear window opening using mole grips, 18-18 -VAS 5430/1- .

#### Adjusting roof depth

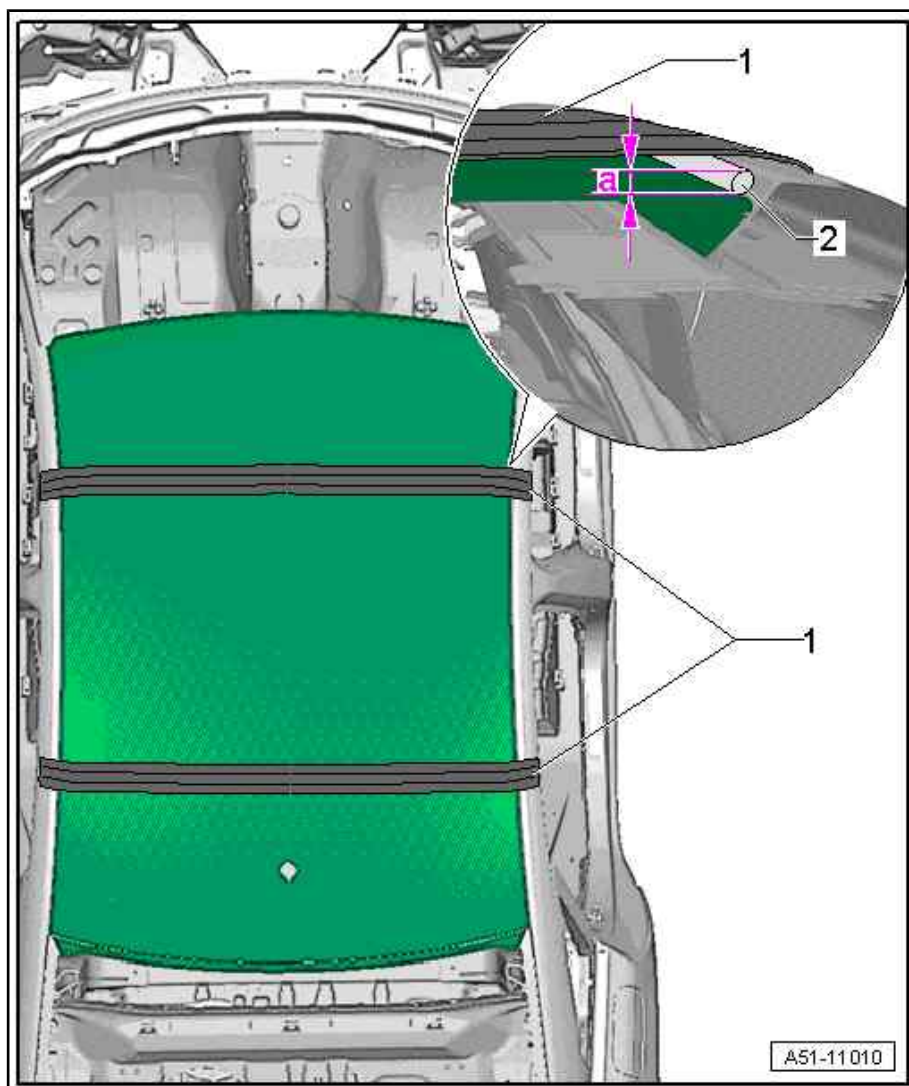
- Additionally fix roof in position with two tensioning straps - T10038- -1-.
- Set required depth using drill bit or suitable wooden spacer, etc -2-.

Depth setting in centre part of front door -a = 3.0 mm-

Depth setting in centre part of rear door -a = 2.5 mm-



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- Roughly spread any 2-component epoxy adhesive -DA 180 A00 A2- that comes out at the edge of the roof.



#### WARNING

*Allow bonded joint on roof to harden for 120 minutes at approx. 65° to 80° C with radiant heater. Check temperature constantly with temperature sensor.*



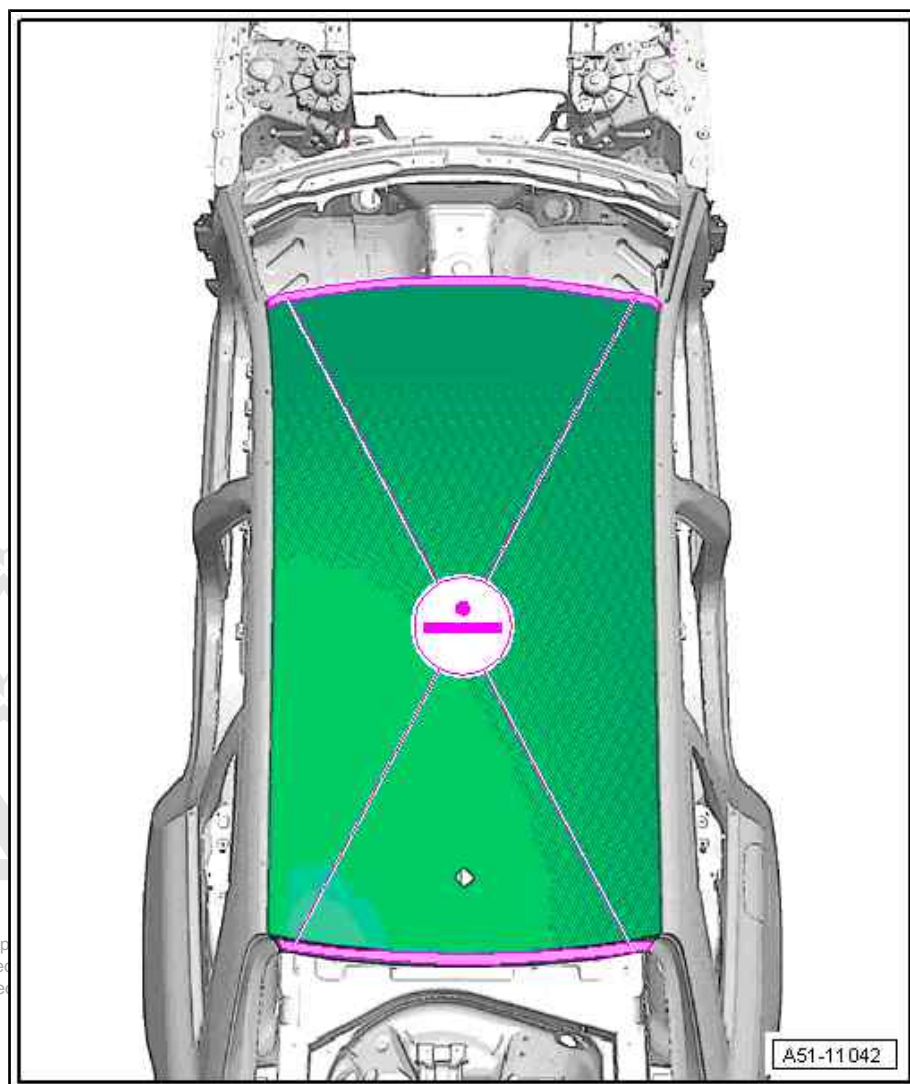
#### Note

*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

#### Welding in

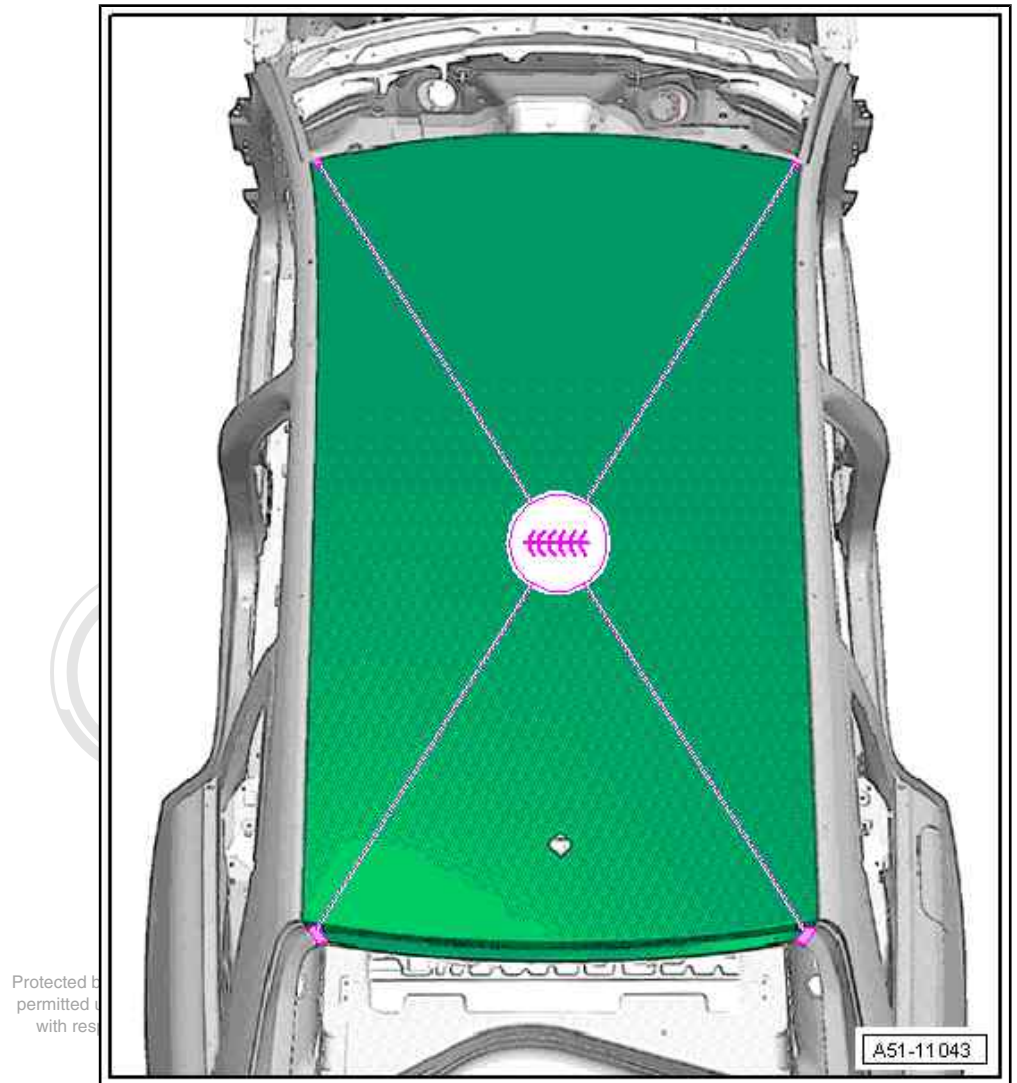
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- Weld in roof at front and rear using resistance spot welder : RP spot weld seam.

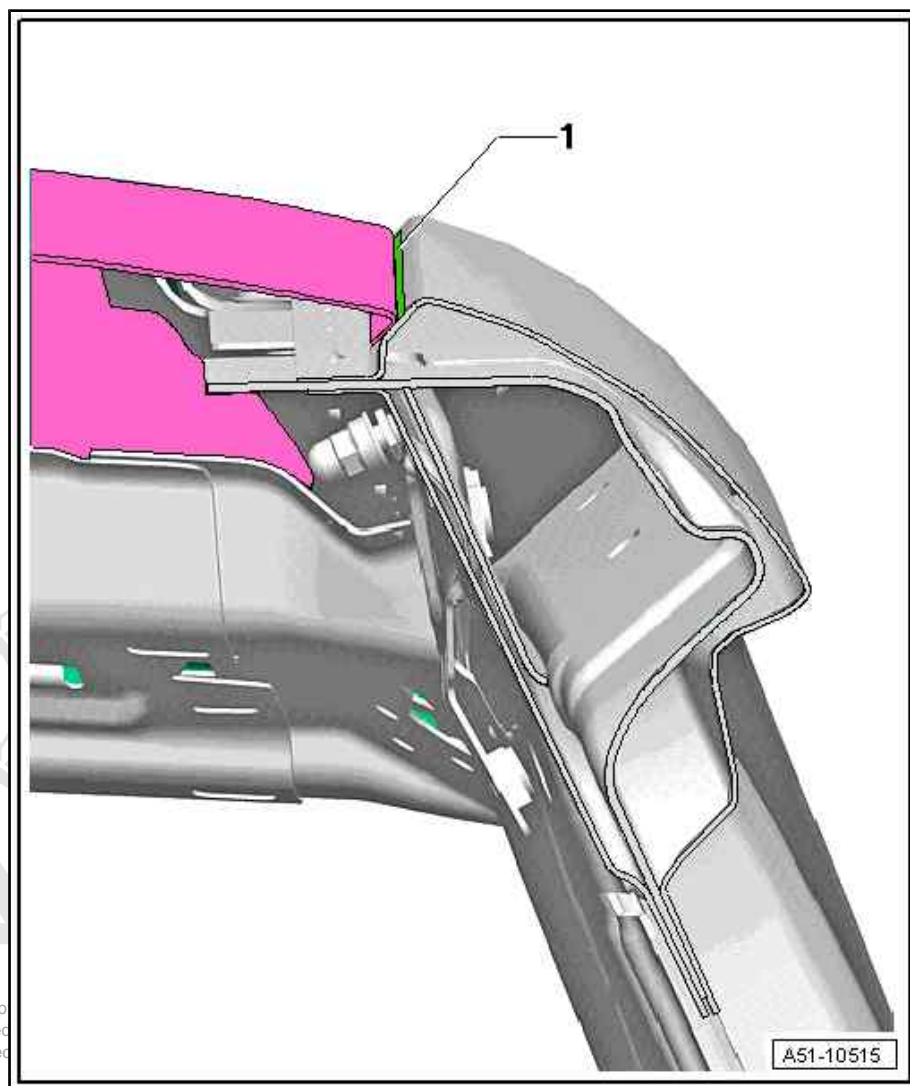


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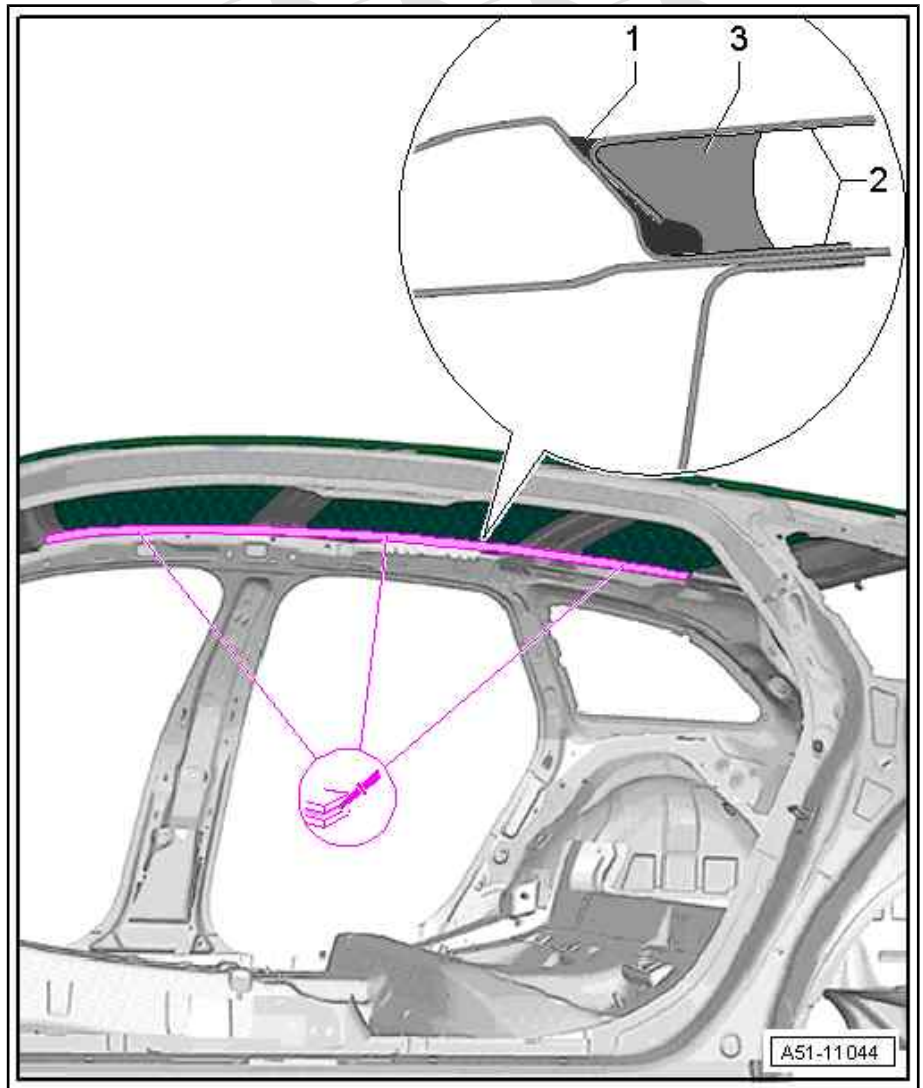
- Weld in roof additionally at corners using shielded arc welding equipment : SG continuous seam.
- Grind down SG continuous weld seams using compact angle grinder -VAS 5167- .



- Grind zero-gap joint -1- into shape (left and right).



- Apply one cartridge of 2-component window adhesive -DA 004 660 M2 - -3- into each roof side member using double cartridge gun -VAS 5237- .
- ◆ 1 = 2-component epoxy adhesive -DA 180 A00 A2-
- ◆ 2 = Glass and paint primer -D 009 200 02-
- ◆ 3 = 2-component window adhesive -DA 004 660 M2 -



RO: 51 23 55 00

## 4 Roof - Renewal (Avant with tilting sunroof)



### WARNING

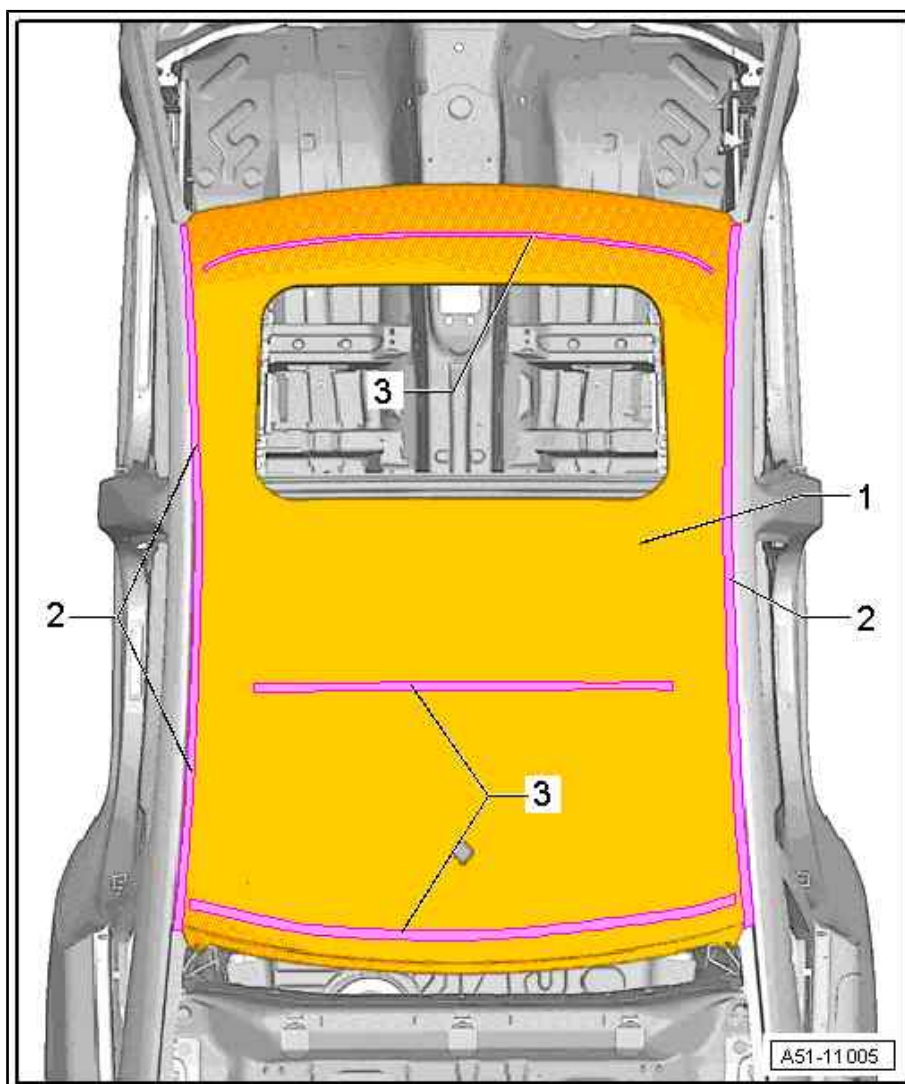
*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

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Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

- 1 - Roof
- 2 - Plasmatron weld seam
- 3 - Bonded area

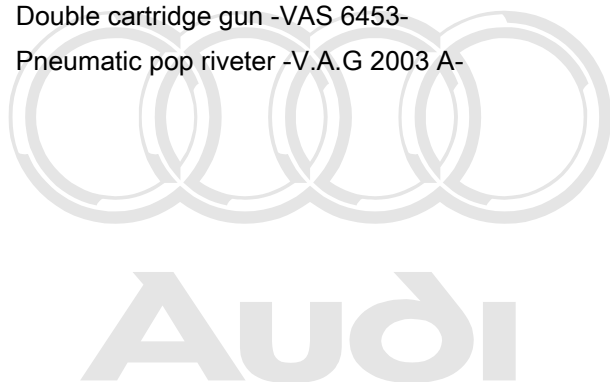


### 4.1 Tools

Special tools and workshop equipment required

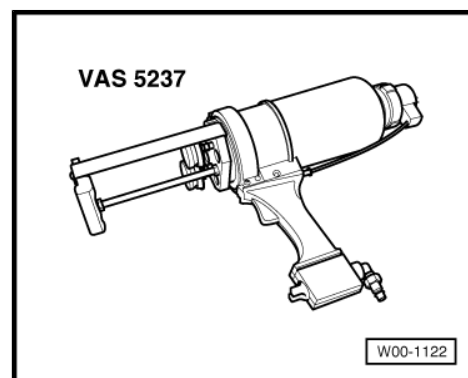
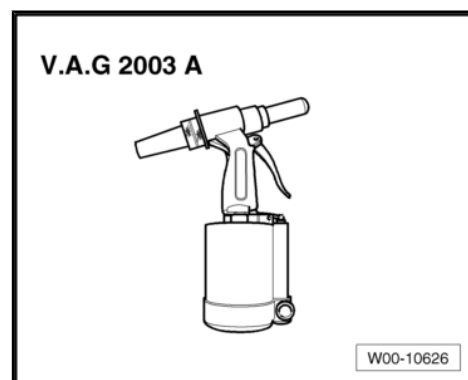
- ◆ Resistance spot welder -VAS 6239 A- or

- ◆ Resistance spot welder -VAS 6525- or
- ◆ Resistance spot welder -VAS 6530- or
- ◆ Resistance spot welder -VAS 6535- or
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment
- ◆ Drill -VAS 5830-
- ◆ Radiant heater
- ◆ Compact angle grinder - VAS 5167-
- ◆ Double cartridge gun -VAS 6453-
- ◆ Pneumatic pop riveter -V.A.G 2003 A-

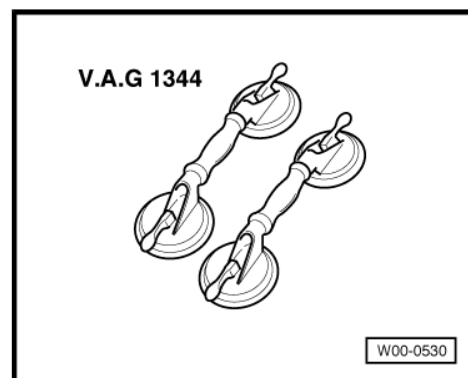


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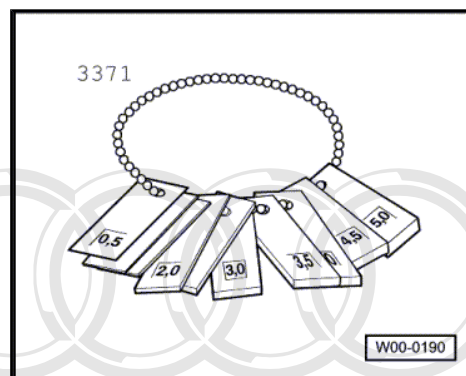
- ◆ Double cartridge gun -VAS 5237-



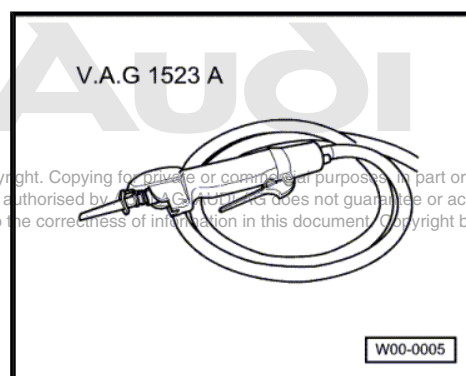
- ◆ Suction lifter -V.A.G 1344- , 4x



◆ Setting gauge - 3371-

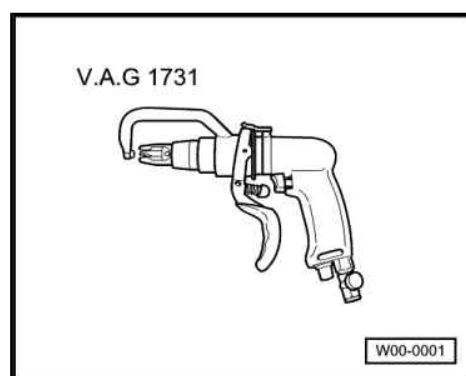


◆ Pneumatic sabre saw -V.A.G 1523 A-



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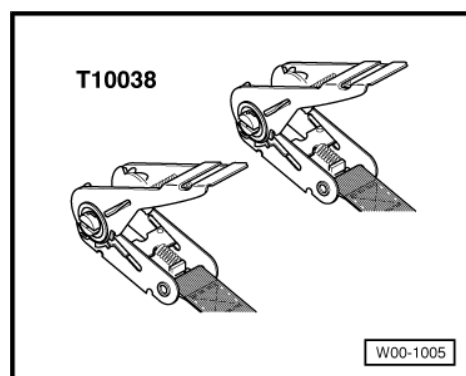
◆ Spot weld breaker -V.A.G 1731-



Mole grips, 18-18 - VAS 5430/1-

Tensioning strap - T10038-

Pneumatic cartridge gun -V.A.G 1761/1-



**1 - 2-component window adhesive -DA 004 660 M2 -**

- Open cap.

**2 - Static mixer**

- Drill open static mixer with 9 mm Ø drill bit.

**3 - Extension hose**

Part number 000 809 937

- Screw onto static mixer -2- with adapter -4-.

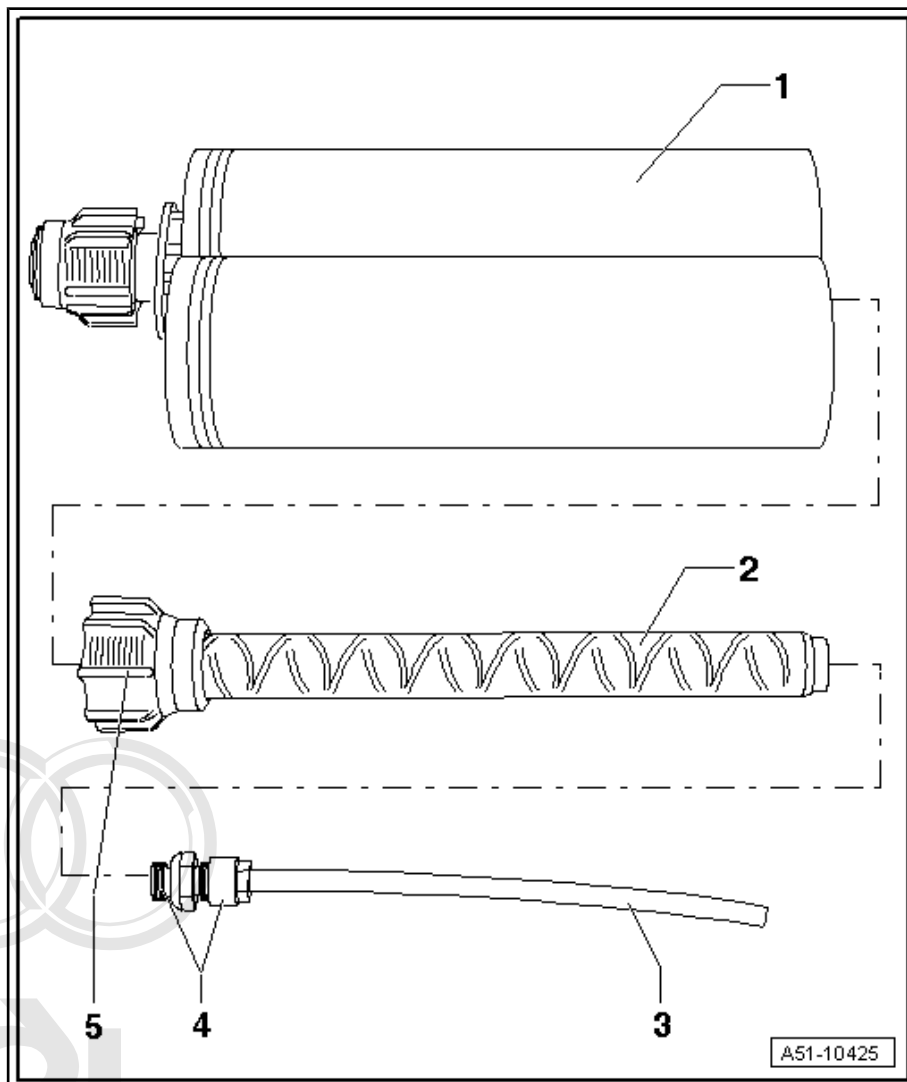
**4 - Adapter**



Note

**5 - Union nut**

- Screw onto 2-component window adhesive - DA 004 660 M2 - -1- together with static mixer -2-.



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## 4.2 Procedure

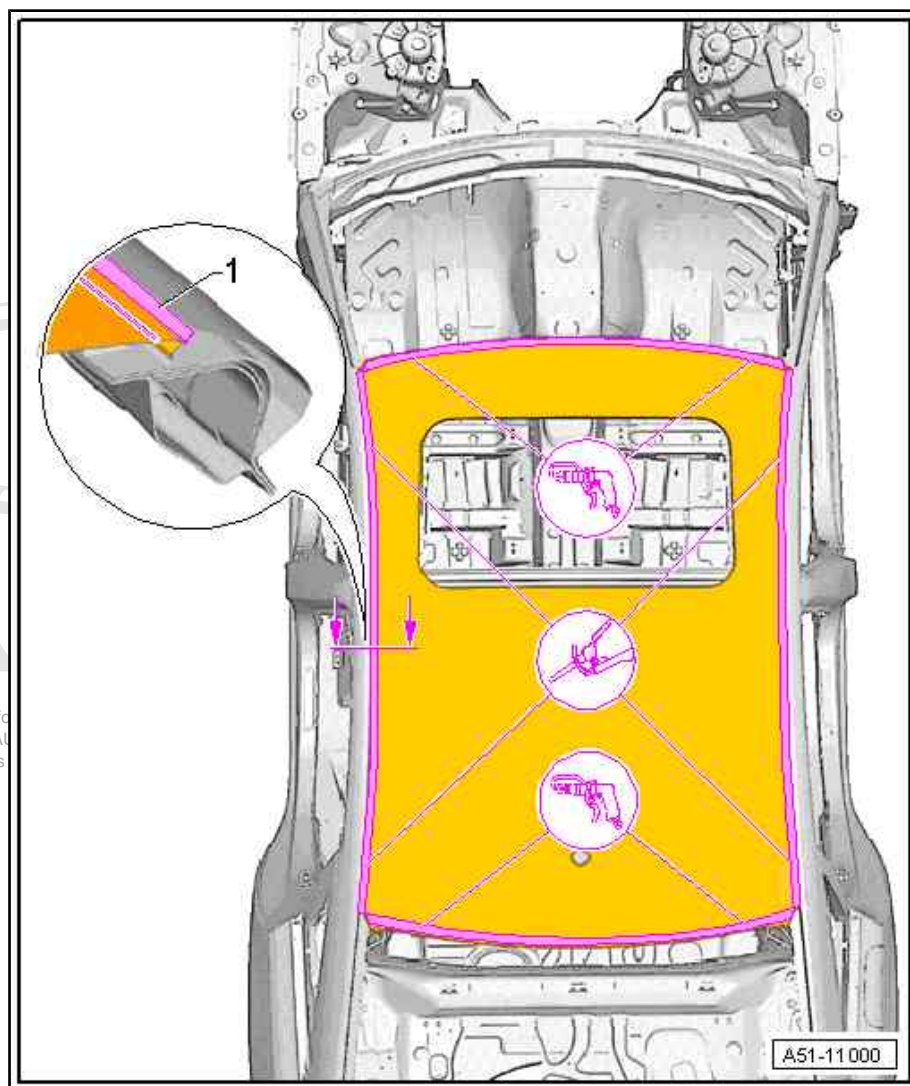
### Cutting locations



#### WARNING

**Do not damage roof cross member (front and rear) when separating.**

- Roughly cut out roof parallel with plasmatron weld seam -1- at a distance of approx. 30 mm using pneumatic sabre saw - V.A.G 1523 A- .
- Separate original joint to windscreen opening and rear window opening using spot weld breaker -V.A.G 1731- .
- Working from passenger compartment, separate bonded joints between roof and roof cross members using electric cutter - V.A.G 1561 A- .

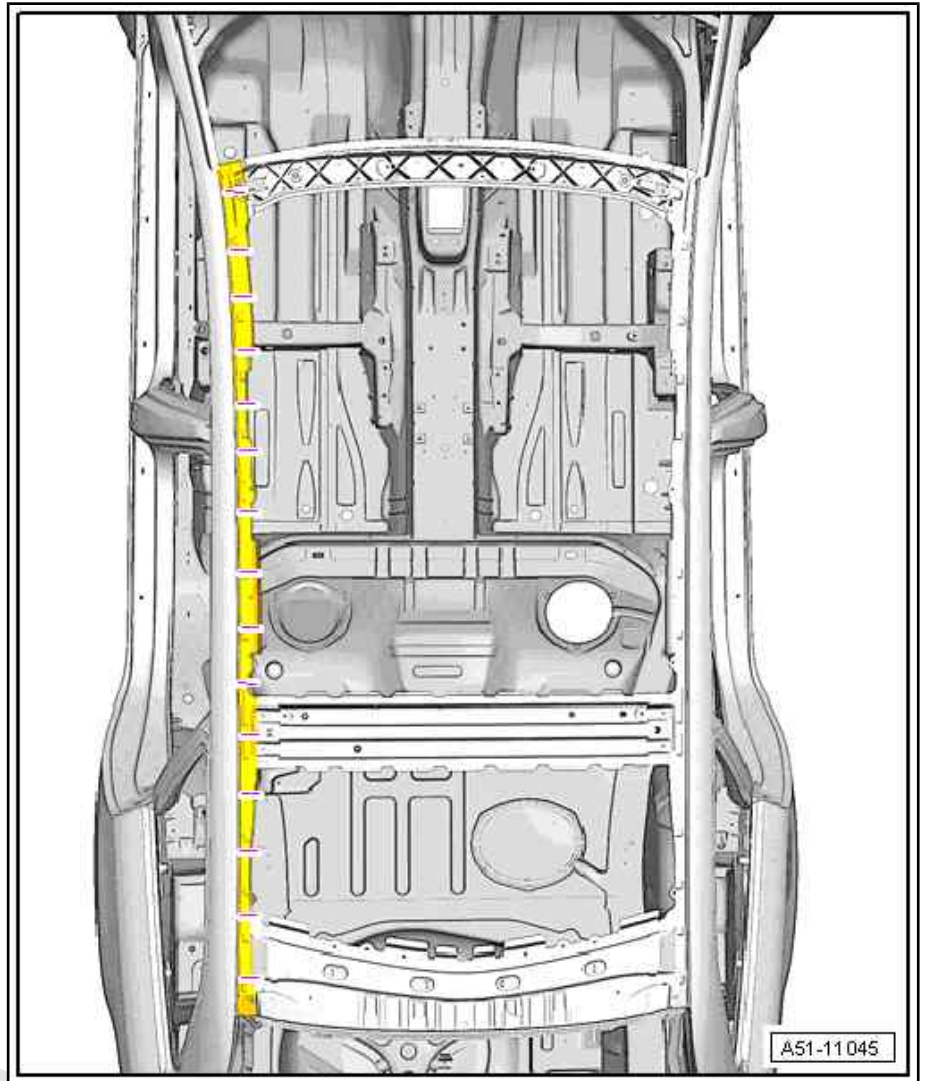


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 **Note**

*Take care not to damage the roof side members when making cuts and when moving the remaining sections of the roof up and down.*

- Make cuts in remaining sections of roof using tin snips -VAS 5357- .
- Take hold of remaining sections with pliers and break open plasmatron weld seam by pulling up and down.

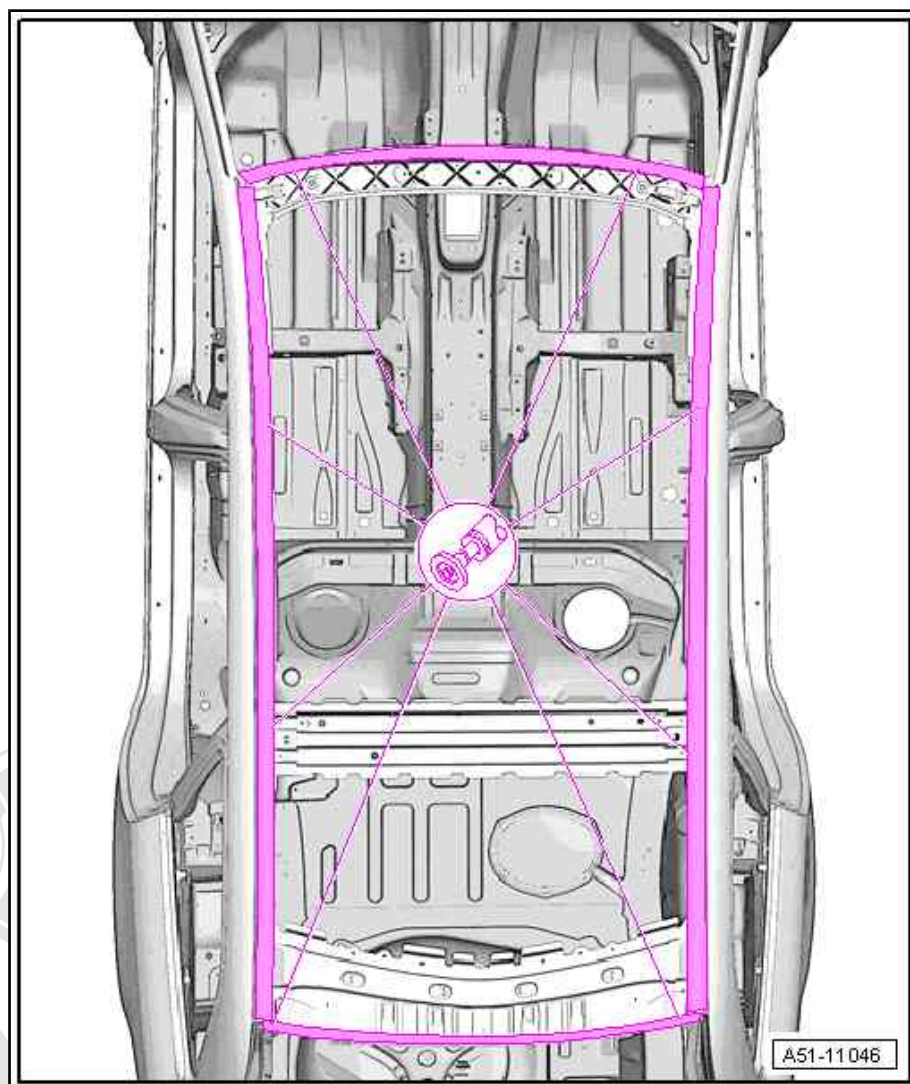


- Remove remaining material using compact angle grinder - VAS 5167- .

Take care not to damage roof frame when removing remaining material from roof frame.

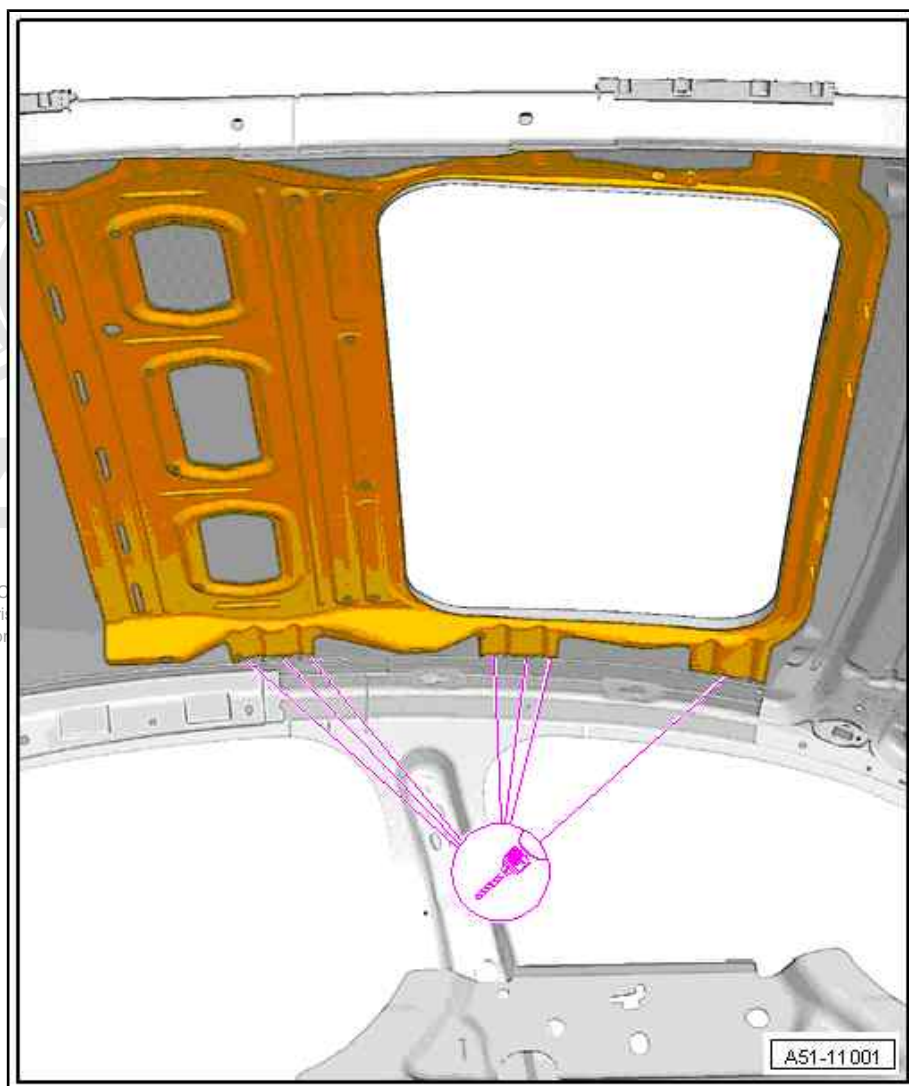
Do not use cutting discs or rough-filing discs.

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- Place roof in position and drill 7 holes (5.0 mm  $\varnothing$ ) for pop rivets -N 909 236 01- on both sides of roof frame reinforcement as shown in illustration using BTR drill bit and drill -VAS 5830- .

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#### Replacement parts

- ◆ Cleaning solution -D 009 401 04-
- ◆ Roof with tilting sunroof
- ◆ Pop rivet -N 909 236 01- , 14x
- ◆ Single-component assembly adhesive -D 190 MKD A3 - , 1 cartridge
- ◆ 2-component epoxy adhesive -DA 180 A00 A2- , 2 sets of cartridges
- ◆ Glass and paint primer -D 009 200 02-
- ◆ 2-component window adhesive -DA 004 660 M2 -

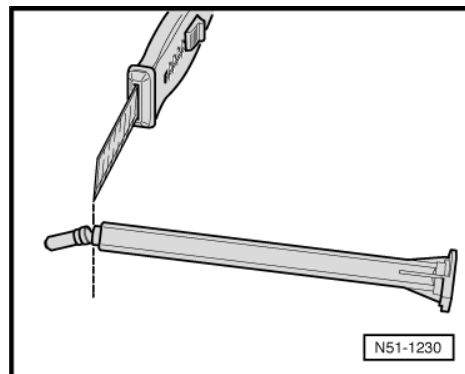


#### Note

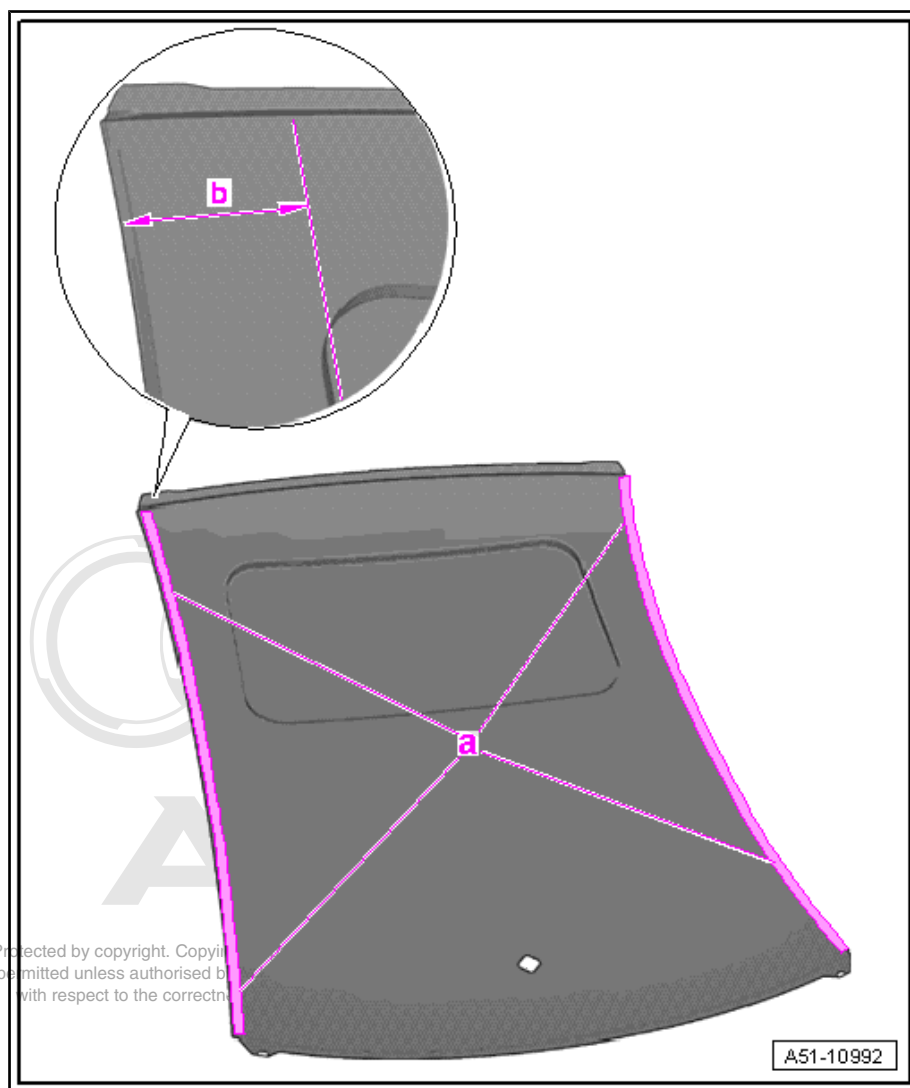
- ◆ *It is important to keep to the following procedure to ensure a satisfactory and effective roof repair.*
- ◆ *Bonding areas must not be treated with filler coat before bonding in roof.*

## Preparing new part

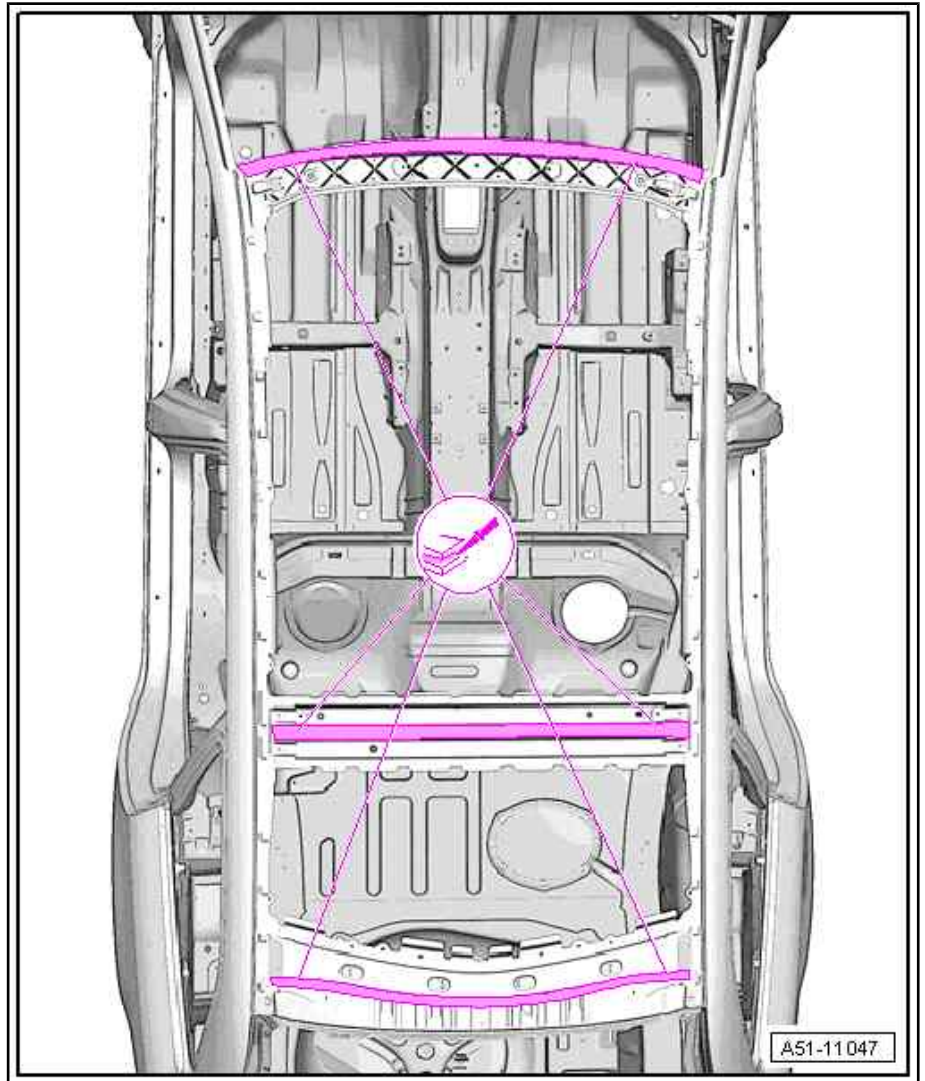
- Prepare adhesive cartridges required for bonding.
- Cut static mixer from 2-component epoxy adhesive set -DA 180 A00 A2- down to 4th notch to obtain required bead cross section.
- Mask outside of roof panel parallel with side bonding area using adhesive tape.
- Attach four suction lifters -V.A.G 1344- to outside of roof panel.
- Clean roof frame, roof reinforcement and roof with cleaning solution -D 009 401 04- .



- Apply glass and paint primer -D 009 200 02- approx. 5 cm wide -b- on inner section of roof and inner side flange -a-.



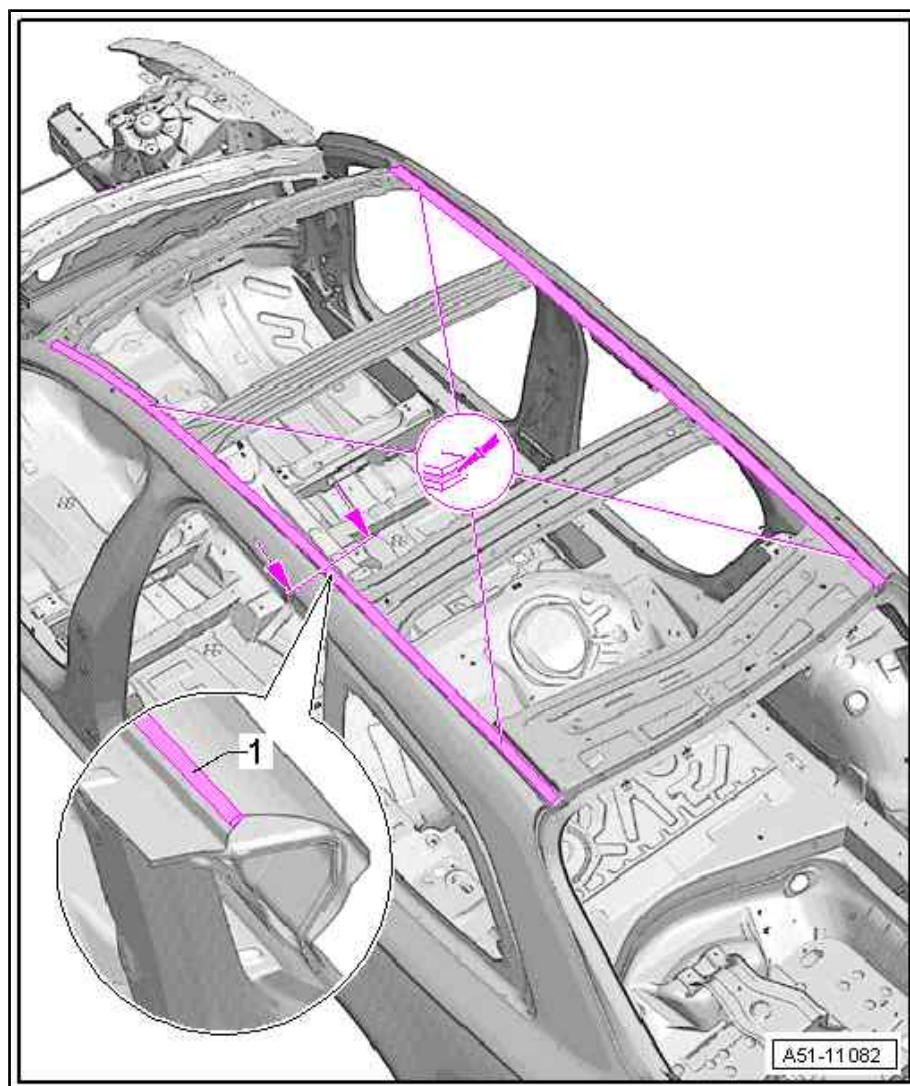
- Apply assembly adhesive -D 190 MKD A3- to roof frame using pneumatic cartridge gun -V.A.G 1761/1- .



- Apply two continuous beads -1- of 2-component epoxy adhesive -DA 180 A00 A2- to bevelled sections of roof side members in area of zero-gap joint using pneumatic gun -VAS 6453- .



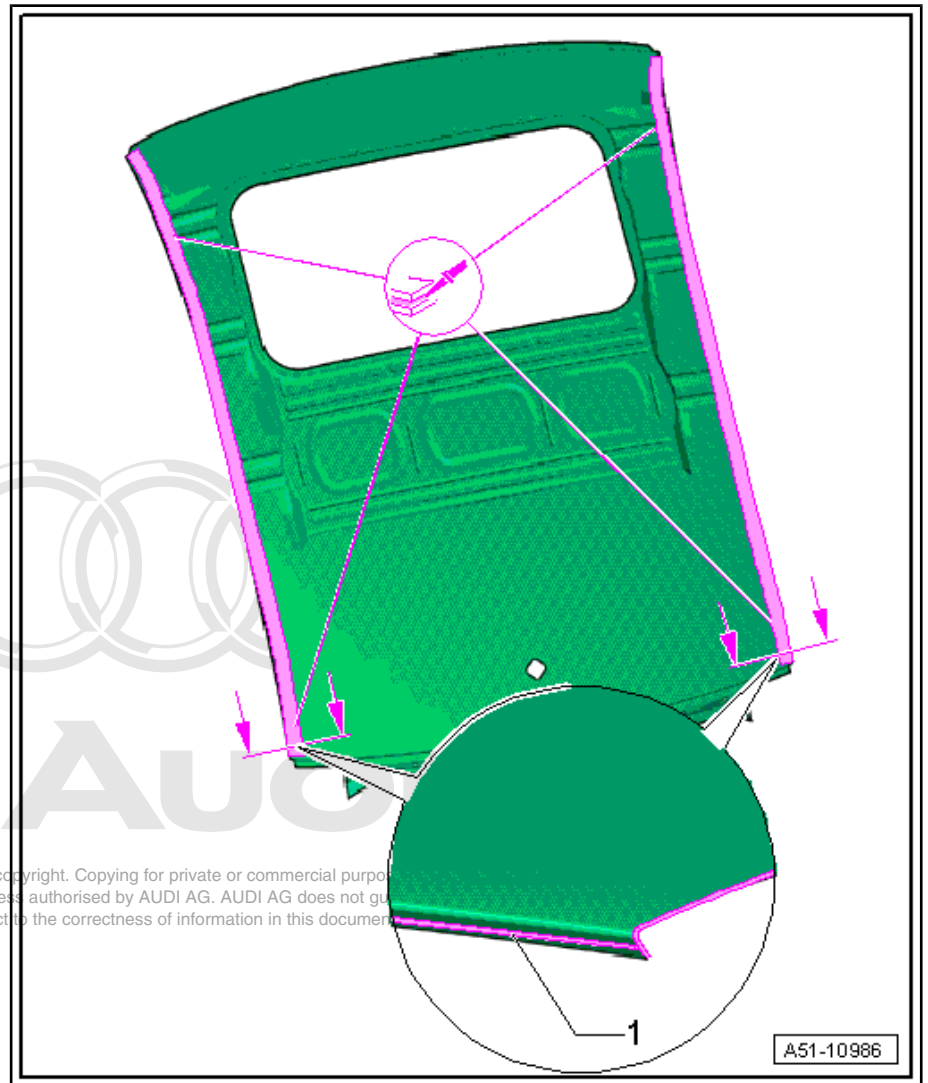
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- Apply one continuous bead of 2-component epoxy adhesive - DA 180 A00 A2- to side flanges of roof -1- using double cartridge gun -VAS 6453- .

# Audi

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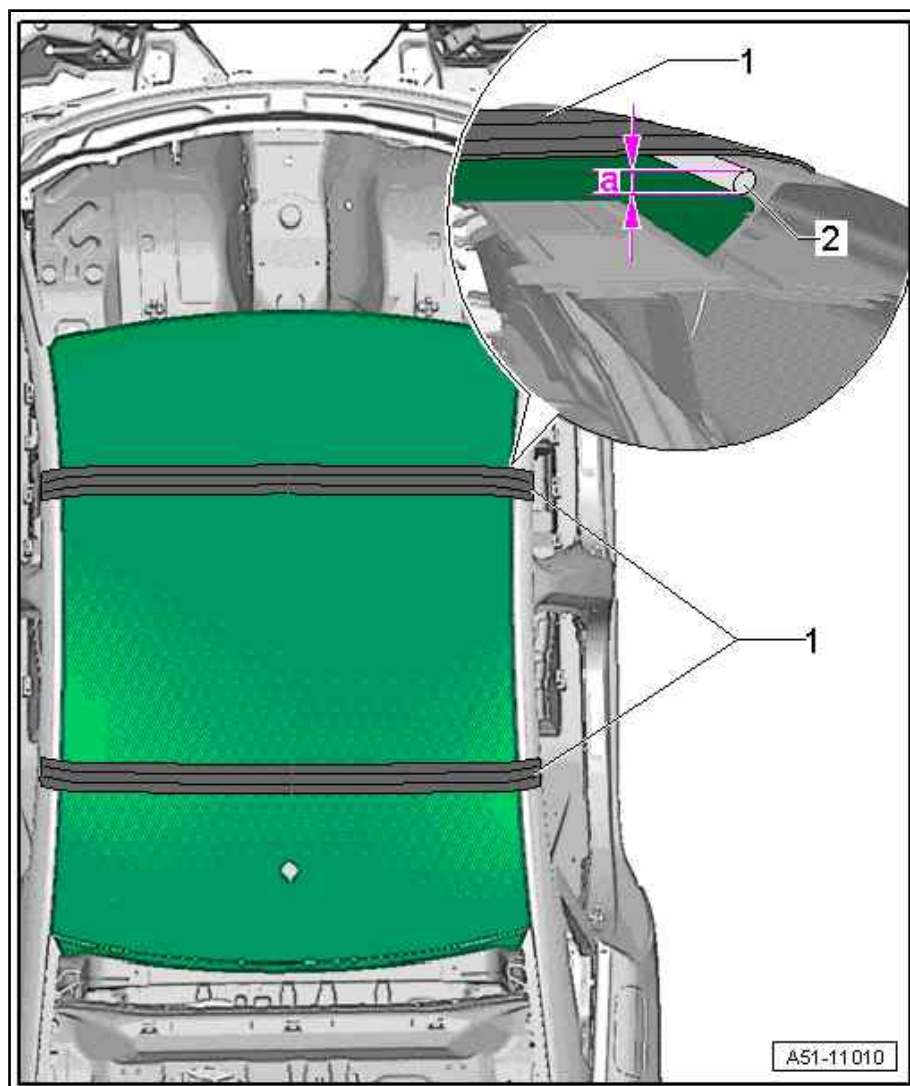
- Immediately fit and align roof.
- Use one self-tapping screw at each end to fix roof in position in centring hole in windscreen flange and sealing flange for rear lid.
- Fix roof in position at windscreen opening and rear window opening using mole grips, 18-18 -VAS 5430/1- .

#### Adjusting roof depth

- Additionally fix roof in position with two tensioning straps - T10038- -1-.
- Set required depth using drill bit or suitable wooden spacer, etc -2-.

Depth setting in centre part of front door -a = 3.0 mm-

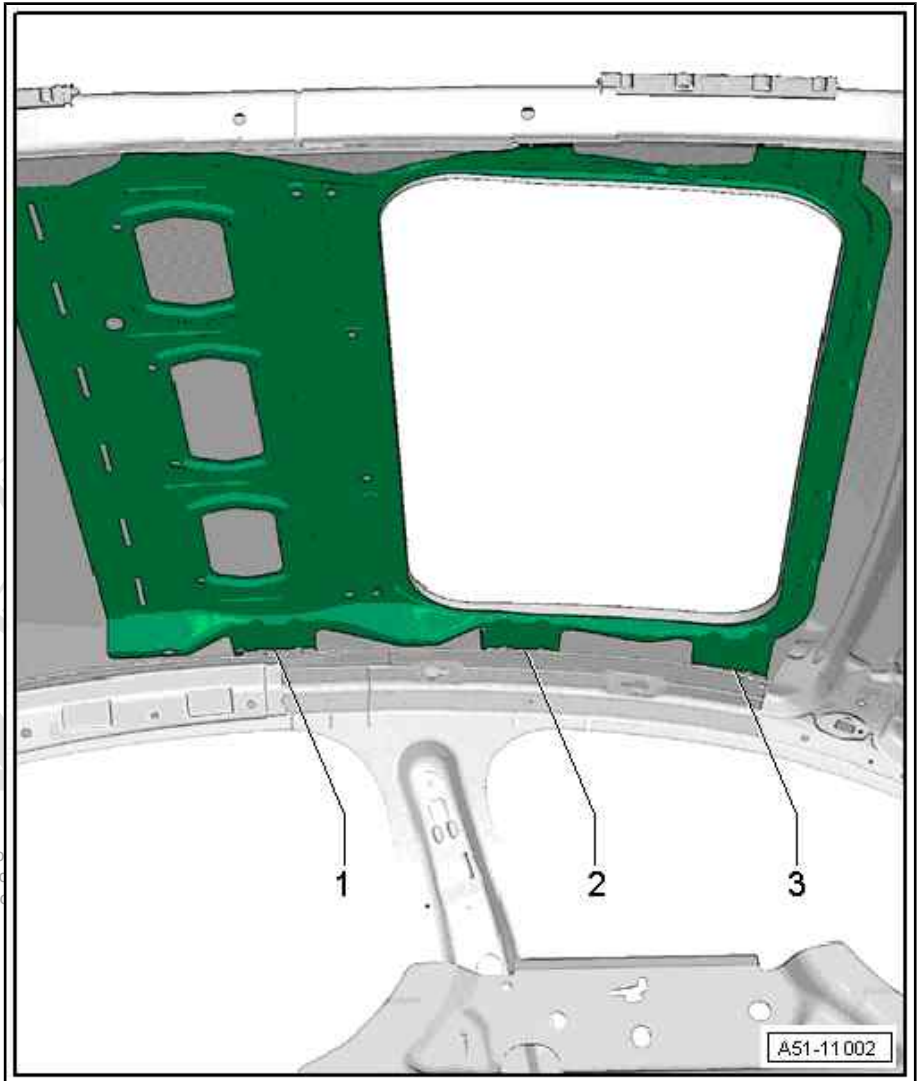
Depth setting in centre part of rear door -a = 2.5 mm-



1 - Install 3x pop rivets -N 909 236 01- -2- using pneumatic pop riveter -V.A.G 2003 A- .

2 - Install 3x pop rivets -N 909 236 01- -3- using pneumatic pop riveter -V.A.G 2003 A- .

3 - Install 1x pop rivet -N 909 236 01- -4- using pneumatic pop riveter -V.A.G 2003 A- .



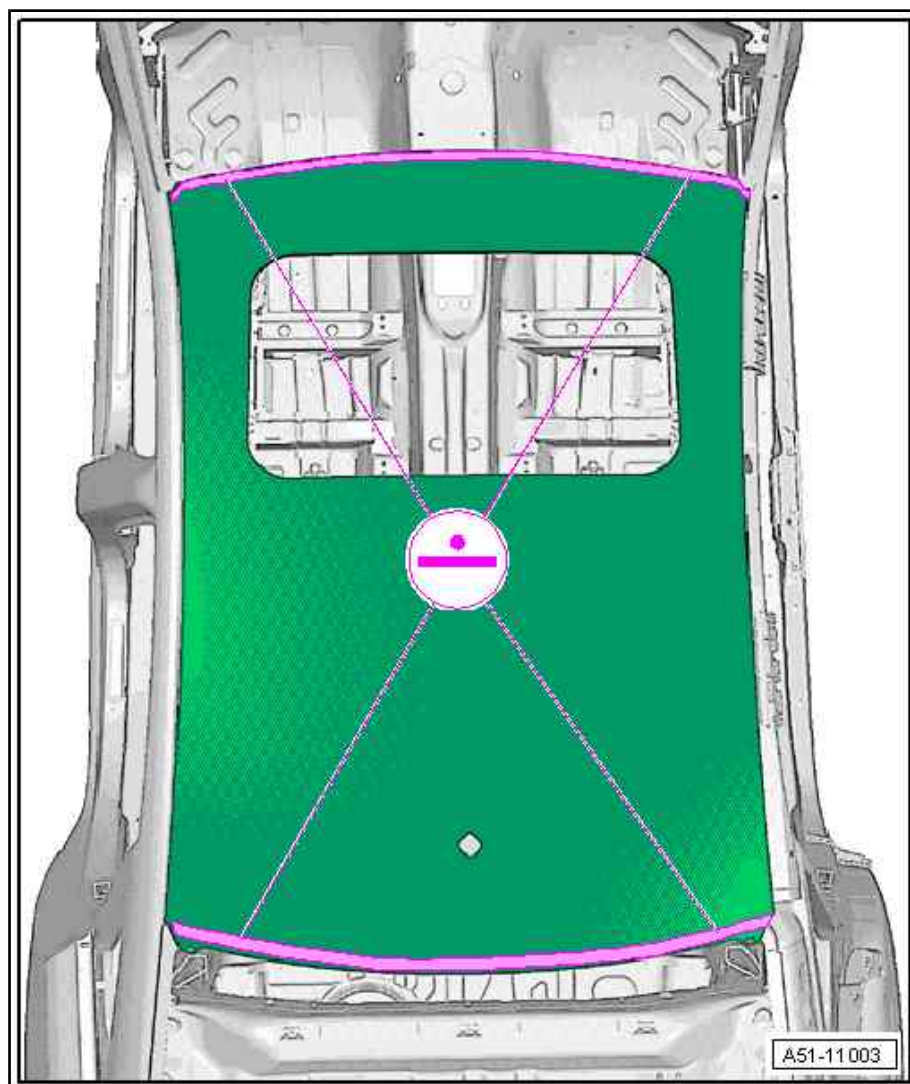
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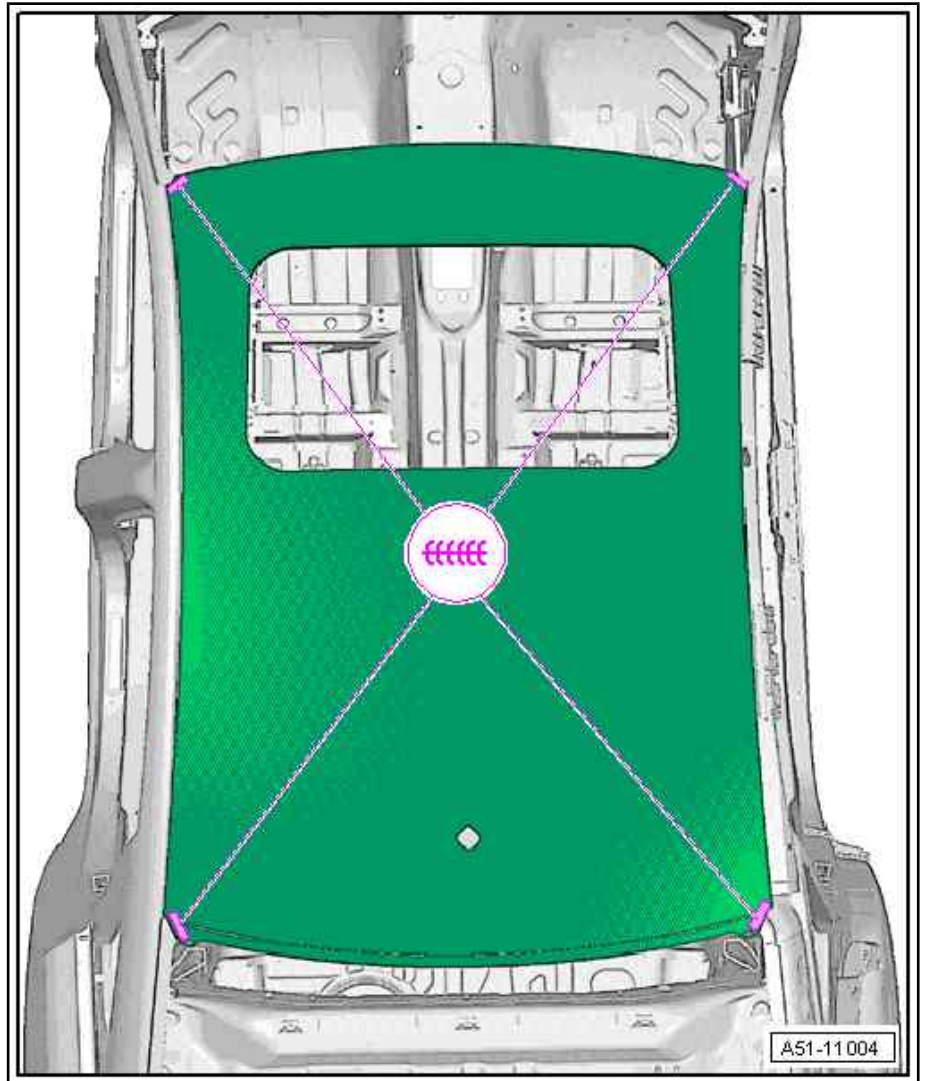
#### WARNING

*Allow bonded joint on roof to harden for 60 minutes at approx. 65° to 80° C with radiant heater. Check temperature constantly with temperature sensor.*

- Weld in roof using resistance spot welder : RP spot weld seam.

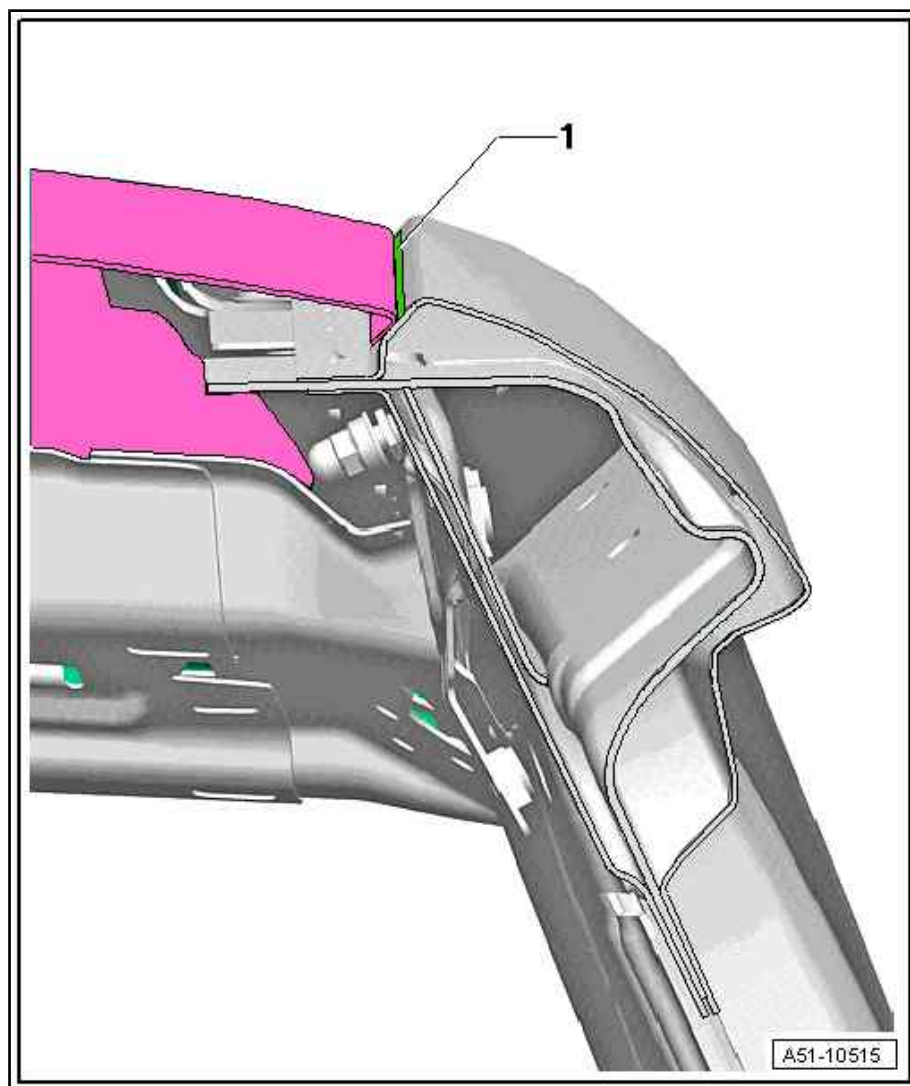


- Make additional welds for roof using shielded arc welding equipment : SG continuous seam.
- Grind down SG continuous weld seams using compact angle grinder -VAS 5167- .

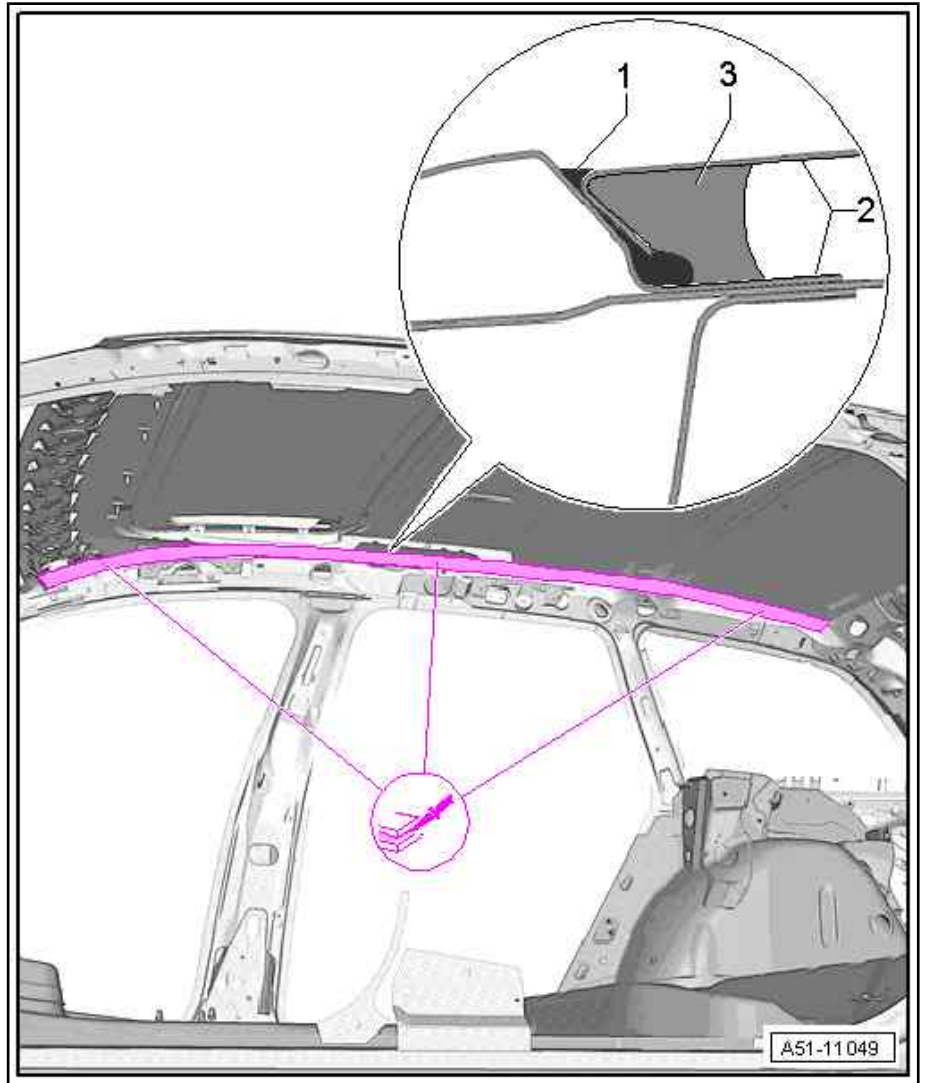


 **Note**

- ◆ *After completing the joint, the vehicle must be left standing for 8 hours on a level surface at a room temperature of 15°C to allow the adhesive components to harden (curing time).*
- ◆ *Do not continue working on the vehicle until the curing time has elapsed.*
- Grind zero-gap joint -1- into shape (left and right).



- Apply one cartridge of 2-component window adhesive -DA 004 660 M2 - -3- into each roof side member using double cartridge gun -VAS 5237- .
- ◆ 1 = 2-component epoxy adhesive -DA 180 A00 A2-
- ◆ 2 = Glass and paint primer -D 009 200 02-
- ◆ 3 = 2-component window adhesive -DA 004 660 M2 -



RO: 51 05 55 50

## 5 Roof side member - Renewal



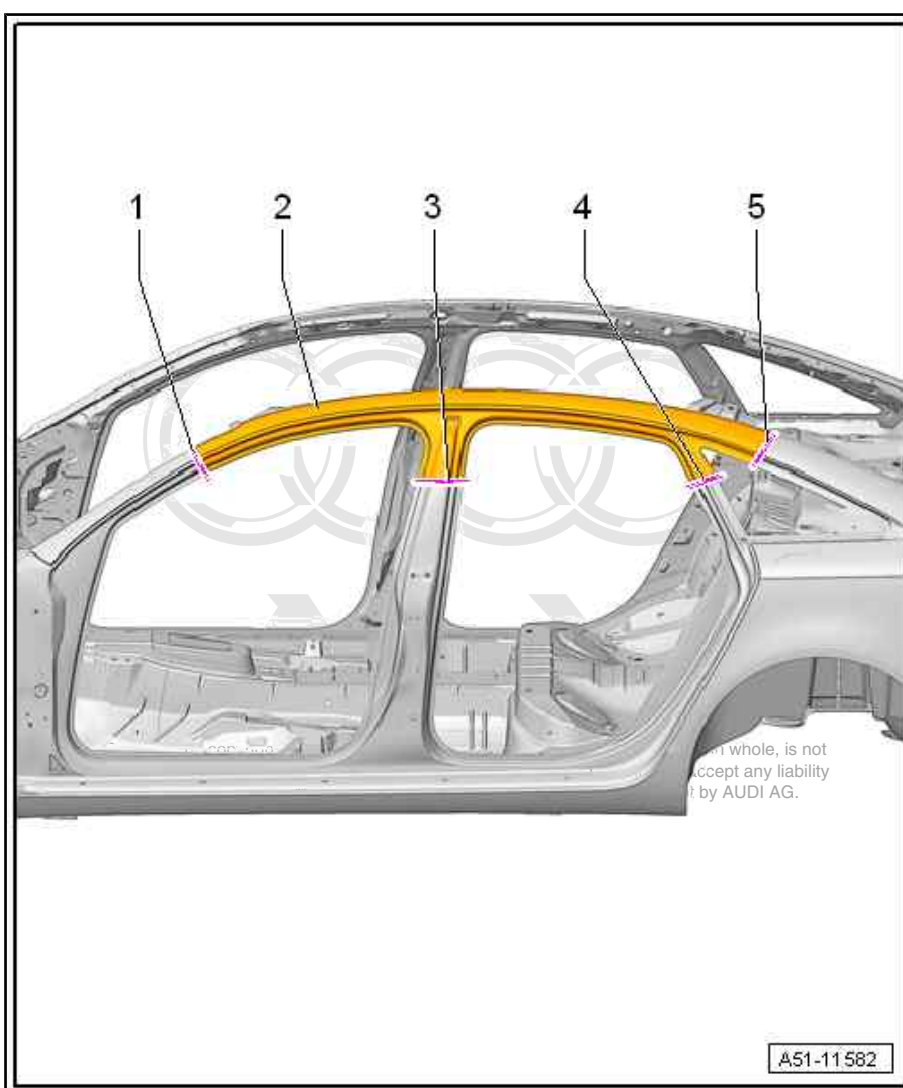
### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

- 1 - Separating cut in A-pillar
- 2 - Roof side member
- 3 - Separating cut in B-pillar
- 4 - Separating cut in C-pillar
- 5 - Separating cut in D-pillar

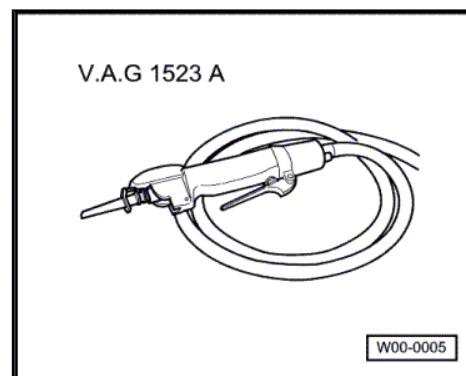


### 5.1 Tools

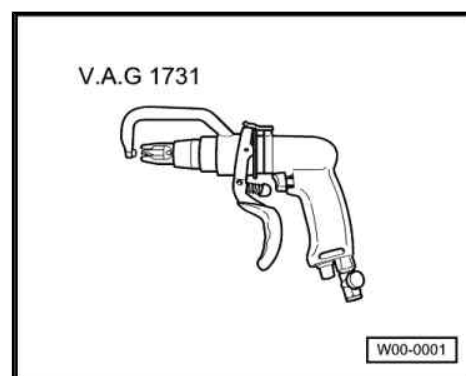
#### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A- or
- ◆ Resistance spot welder -VAS 6525- or

- ◆ Resistance spot welder -VAS 6530- or
- ◆ Resistance spot welder -VAS 6535- or
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Drill -VAS 5830-
- ◆ Compact angle grinder -VAS 5167-
- ◆ Pneumatic sabre saw -V.A.G 1523 A-



- ◆ Spot weld breaker -V.A.G 1731-



## 5.2 Procedure

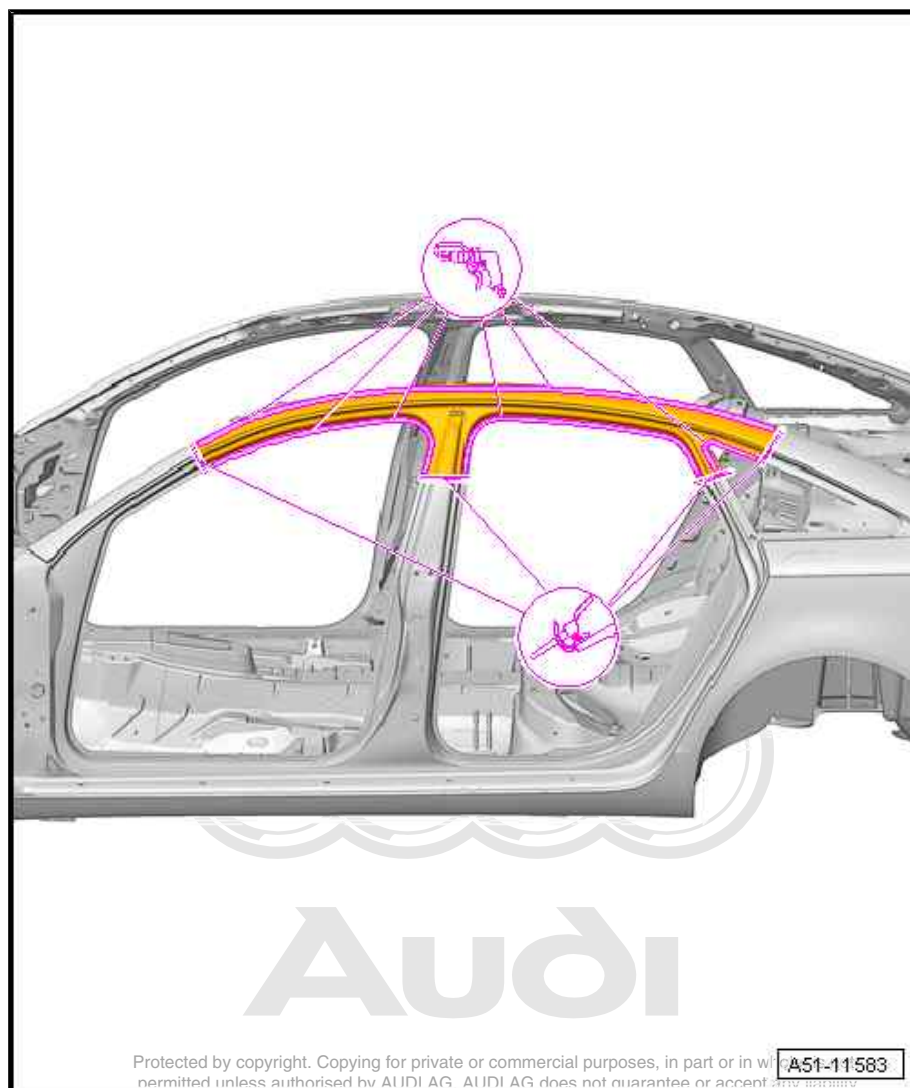
- Roof already removed ⇒ [page 72](#)

### Cutting locations

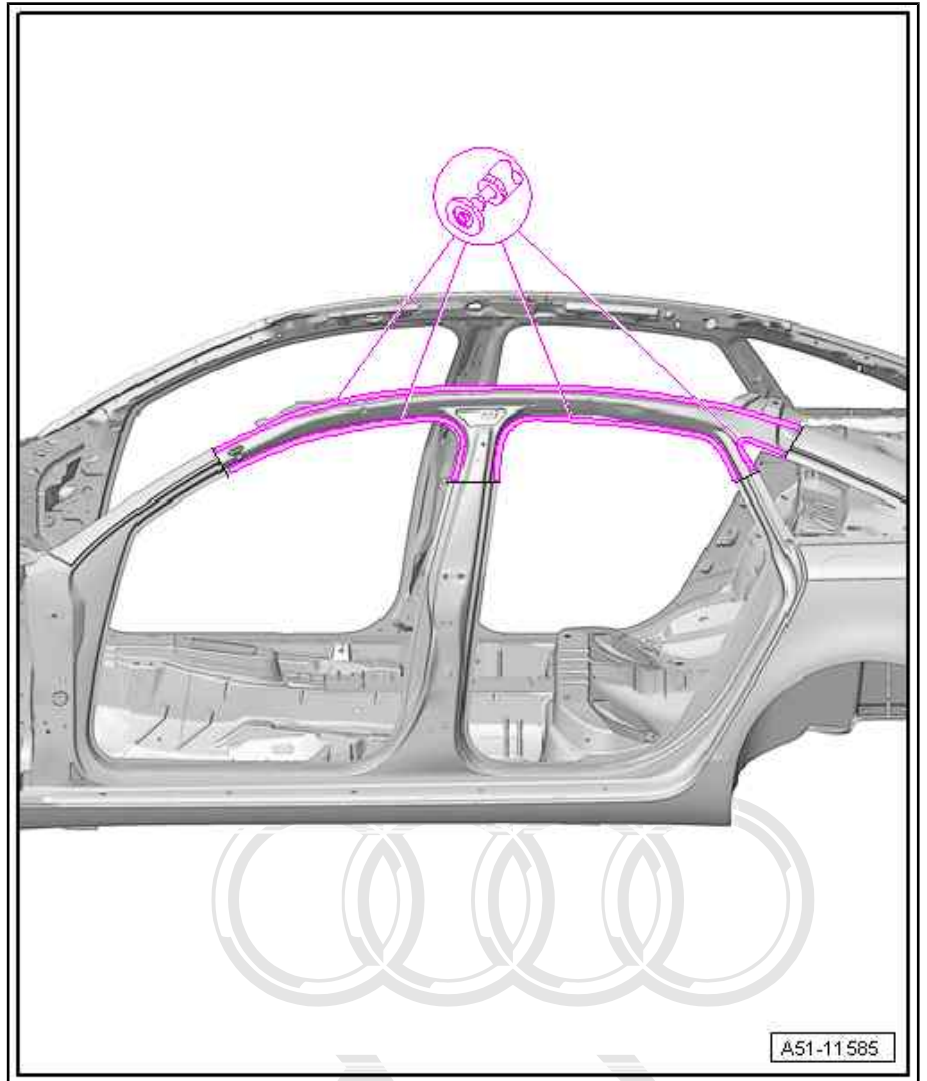
- Make separating cuts as shown using pneumatic sabre saw - V.A.G 1523 A- .

- Drill out original joint using spot weld breaker -V.A.G 1731- .

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- Remove remaining material using compact angle grinder - VAS 5167- .



### Replacement part

- ◆ Roof side member (sub-part)



### Note

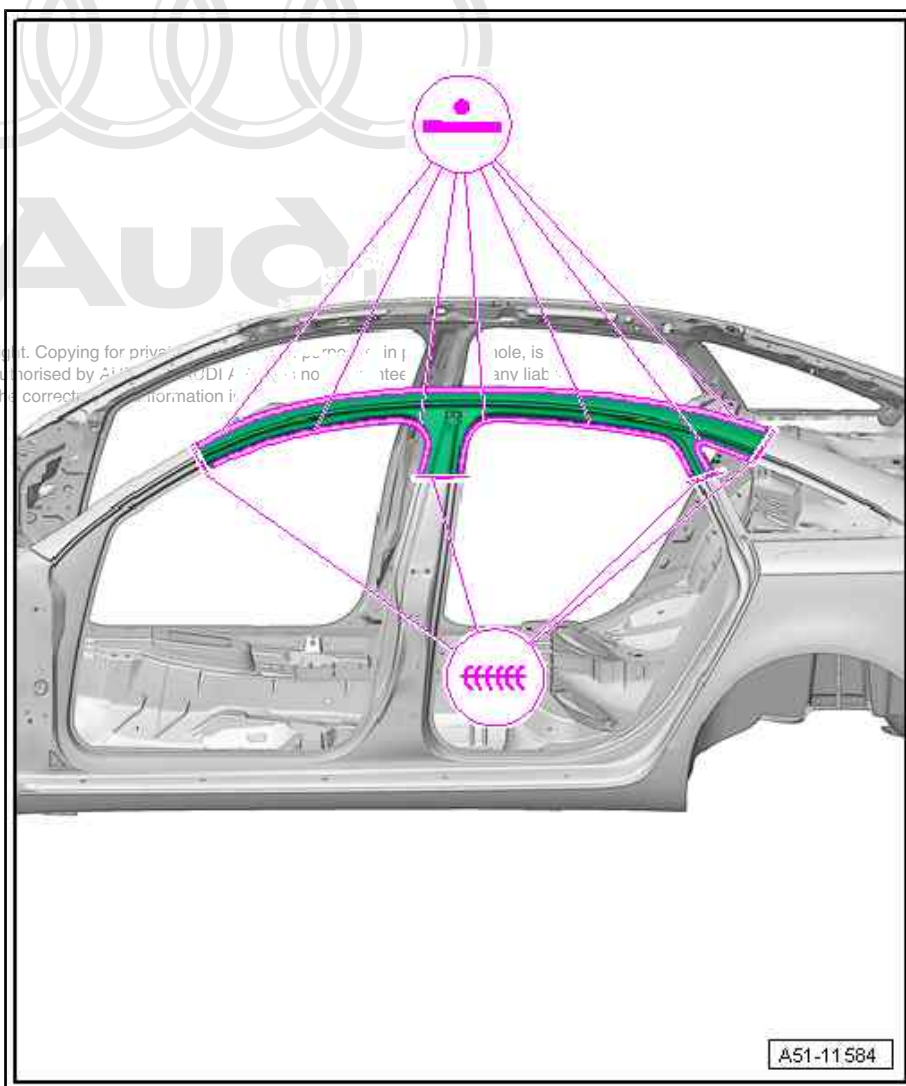
*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

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### Welding in

- Match up roof side member and fix in position.
- Weld in roof side member using resistance spot welder : RP spot weld seam.
- Weld in at separating cuts using shielded arc welding equipment 250A : SG continuous seam.

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- Welding in roof ⇒ [page 72](#) .
-

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## 6 Roof side member - Renewal (Avant)



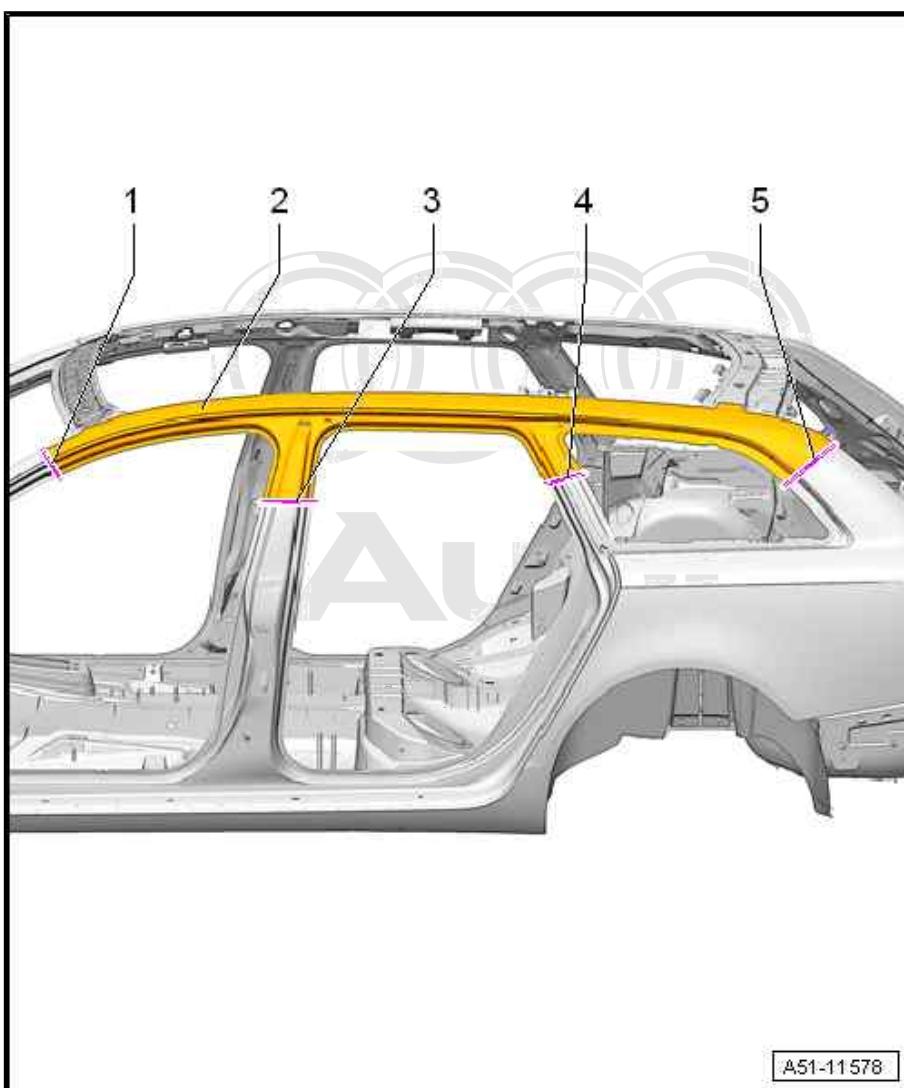
### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes → General Information; Body Repairs, General Body Repairs ; Safety notes .

- 1 - Separating cut in A-pillar
- 2 - Roof side member
- 3 - Separating cut in B-pillar
- 4 - Separating cut in C-pillar
- 5 - Separating cut in D-pillar



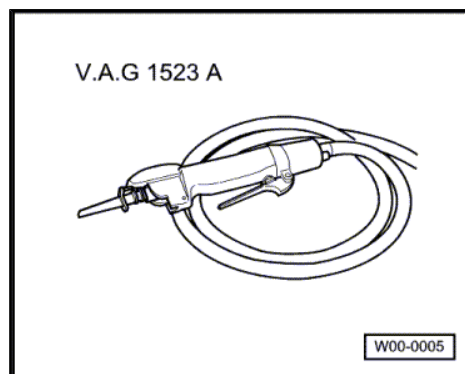
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### 6.1 Tools

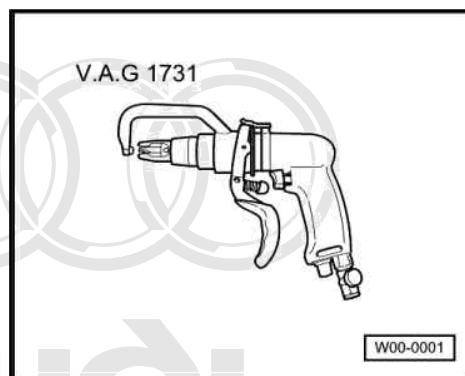
Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A- or
- ◆ Resistance spot welder -VAS 6525- or

- ◆ Resistance spot welder -VAS 6530- or
- ◆ Resistance spot welder -VAS 6535- or
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Compact angle grinder -VAS 5167-
- ◆ Pneumatic sabre saw -V.A.G 1523 A-



- ◆ Spot weld breaker -V.A.G 1731-



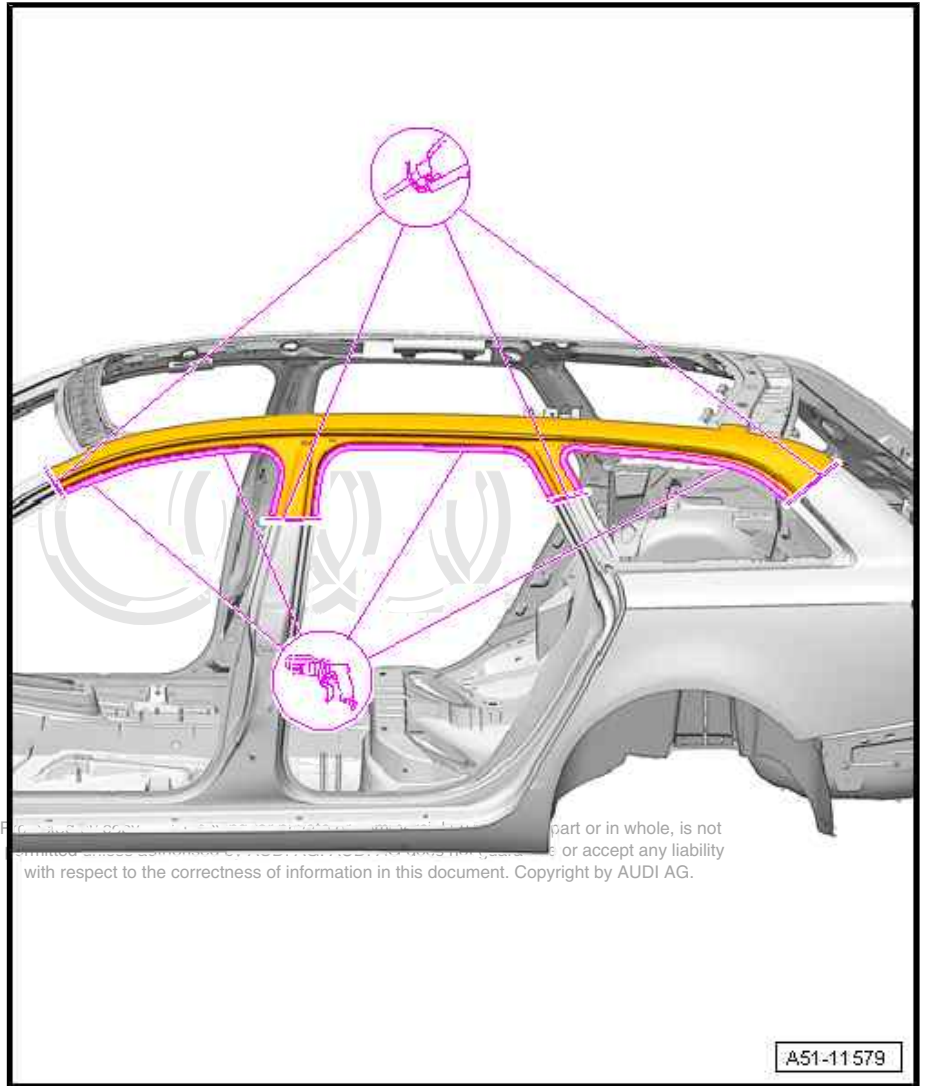
## 6.2 Procedure

- Roof already removed ⇒ [page 130](#)

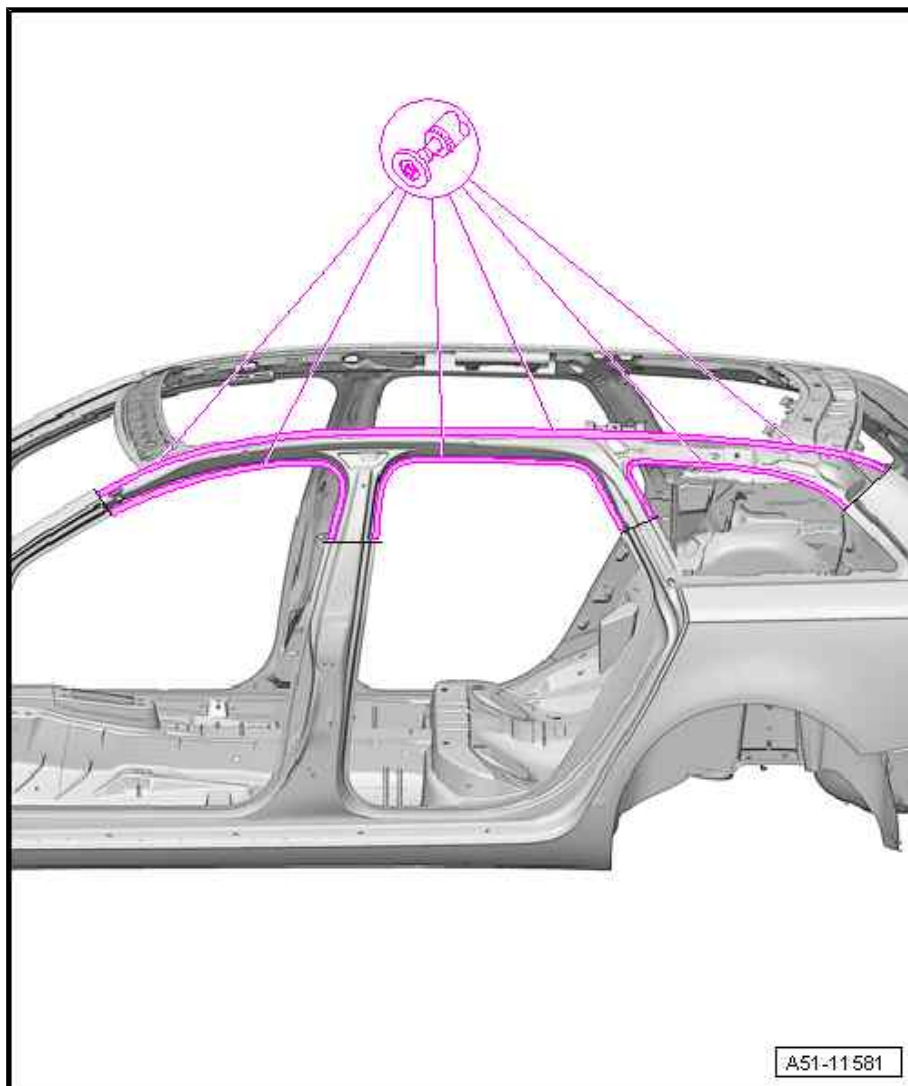
### Cutting locations

- Make separating cuts as shown using pneumatic sabre saw - V.A.G 1523A- .
- Separate original joint using spot weld breaker -V.A.G 1731- .

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- Remove remaining material using compact angle grinder - VAS 5167- .



### Replacement parts

- ◆ Roof side member for vehicles without roof railing
- ◆ Roof side member for vehicles with roof railing



#### Note

*There is no provision for retrofitting the roof railing.*



#### Note

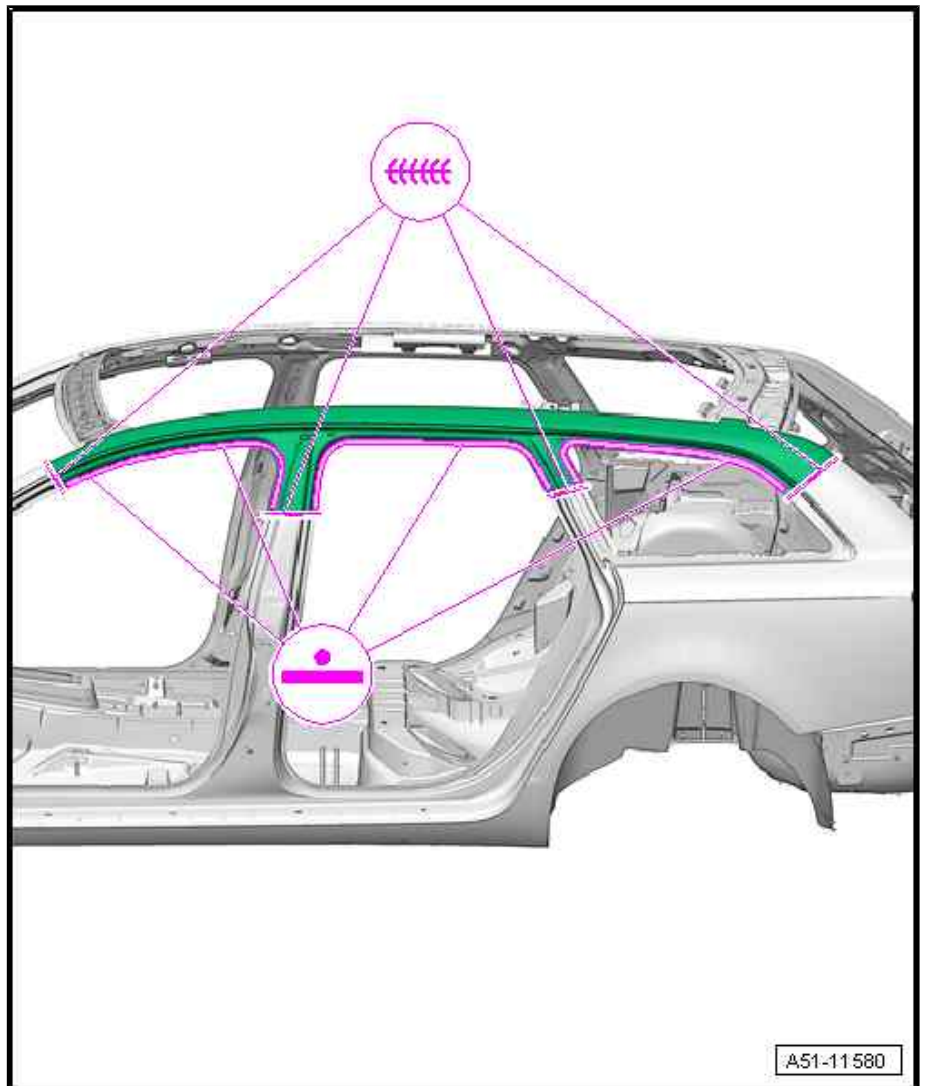
*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

### Welding in

- Match up and fix new part in position.
- Weld in roof side member using resistance spot welder : RP spot weld seam.

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- Weld in at separating cuts using shielded arc welding equipment 250A : SG continuous seam.



- Welding in roof ➤ [page 130](#)
- Welding in roof (version with tilting sunroof) ➤ [page 130](#)



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RO: 51 07 55 50

## 7 Front roof cross member - Renewal



### WARNING

*Always observe safety precautions.*

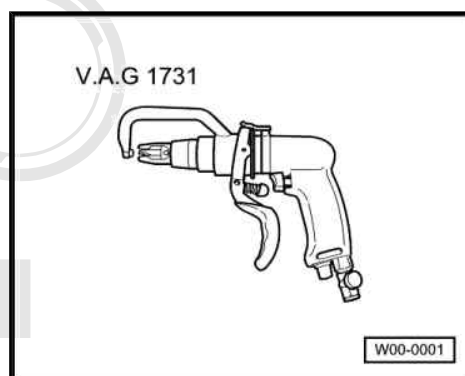
*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

### 7.1 Tools

#### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6525-
- ◆ Resistance spot welder -VAS 6530-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Resistance spot welder -VAS 6545-
- ◆ Compact angle grinder -VAS 5167-
- ◆ Spot weld breaker -V.A.G 1731-



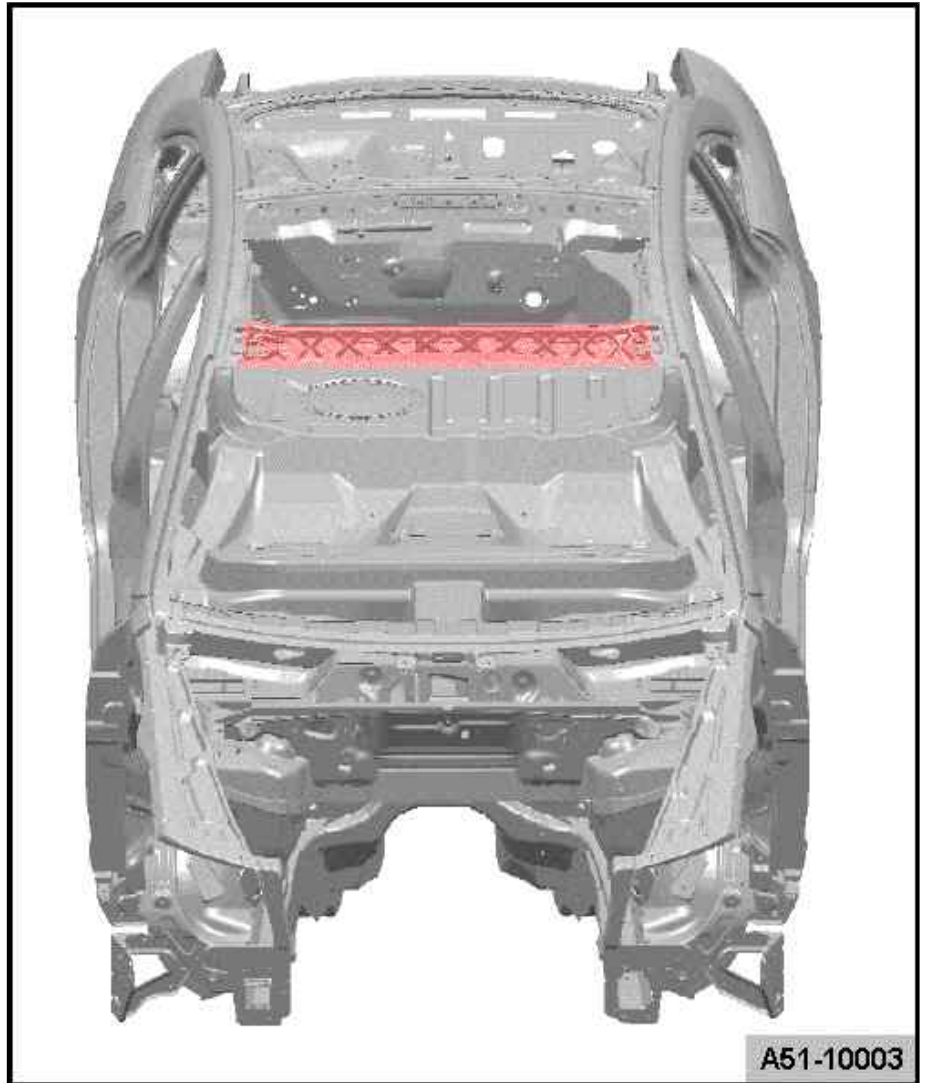
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### 7.2 Procedure

- Roof already removed ⇒ [page 92](#)

#### Cutting locations

- Separate original joint using spot weld breaker -V.A.G 1731- .
- Remove remaining material using compact angle grinder -VAS 5167- .



#### Replacement part

- ◆ Roof cross member (front)



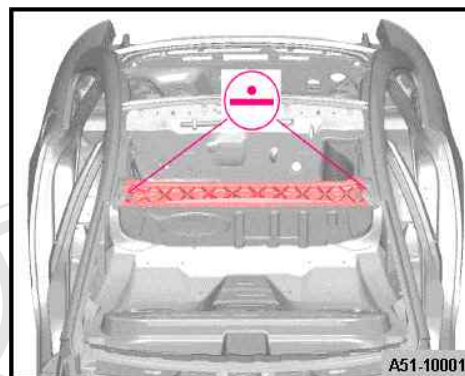
#### Note

*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

#### Welding in

- Match up and fix new part in position.

- Weld in new part using resistance spot welder : RP spot weld seam.
- Welding in roof ⇒ [page 92](#)



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RO: 51 07 55 50

## 8 Front roof cross member - Renewal (Avant)



### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

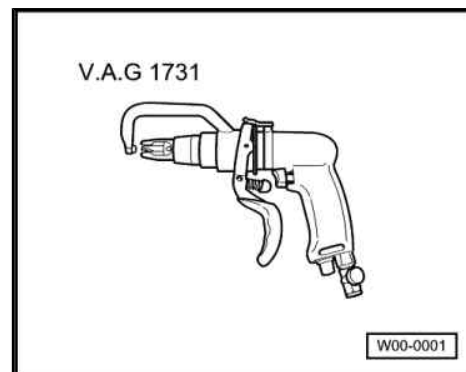
Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

### 8.1 Tools

#### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6525-
- ◆ Resistance spot welder -VAS 6530-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Resistance spot welder -VAS 6545-
- ◆ Compact angle grinder -VAS 5167-
- ◆ Spot weld breaker -V.A.G 1731-

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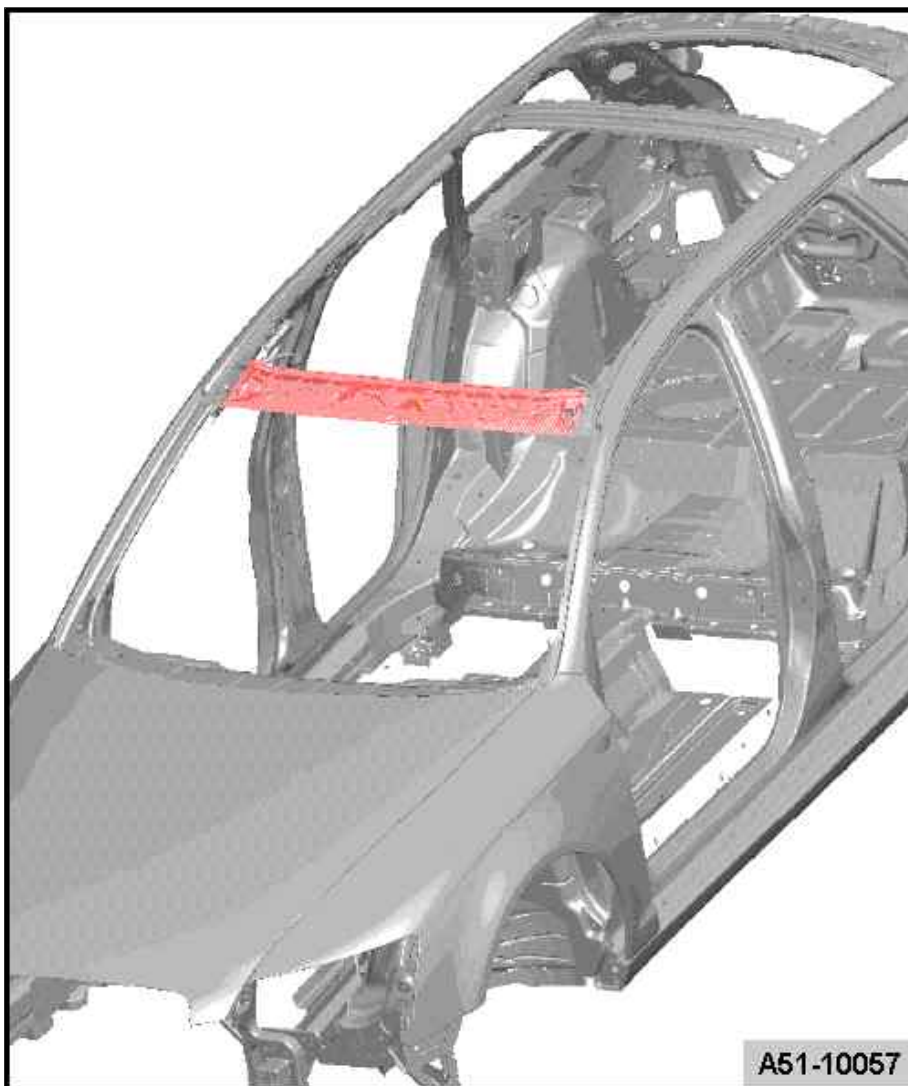


### 8.2 Procedure

- Roof already removed ⇒ [page 130](#)

#### Cutting locations

- Separate original joint using spot weld breaker -V.A.G 1731- .
- Remove remaining material using compact angle grinder -VAS 5167- .



### Replacement part

- ◆ Roof cross member (front)



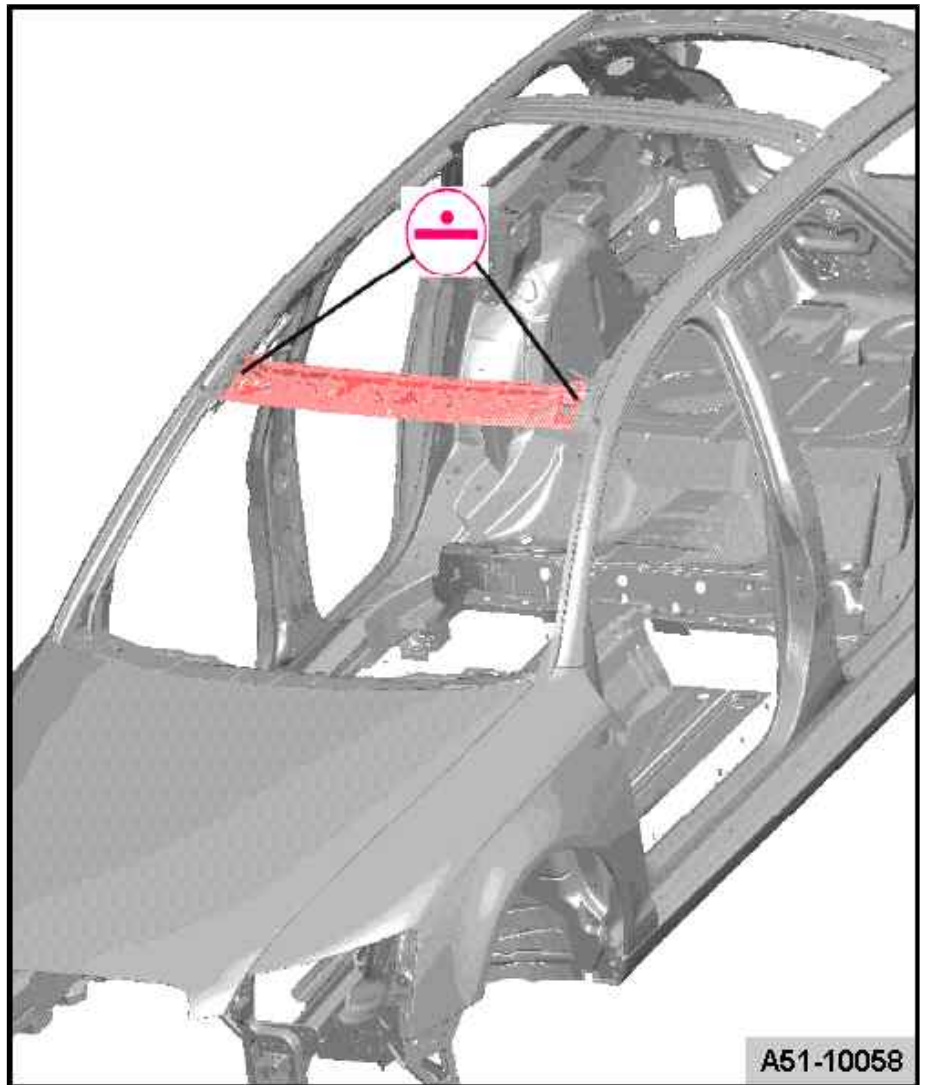
### Note

*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

### Welding in

- Match up and fix new part in position.
- Weld in new part using welding unit (inverter) : RP spot weld seam.

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- Welding in roof ⇒ [page 130](#)

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RO: 51 09 55 50

## 9 Rear roof cross member - Renewal



### WARNING

*Always observe safety precautions.*

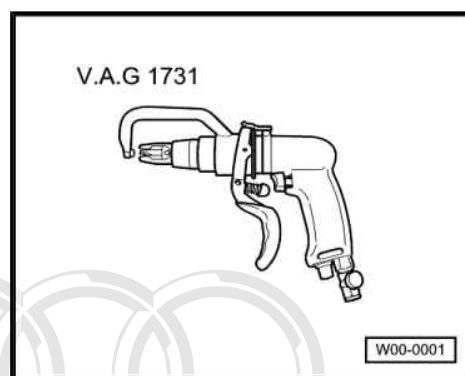
*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

### 9.1 Tools

#### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6525-
- ◆ Resistance spot welder -VAS 6530-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Resistance spot welder -VAS 6545-
- ◆ Compact angle grinder -VAS 5167-
- ◆ Spot weld breaker -V.A.G 1731-



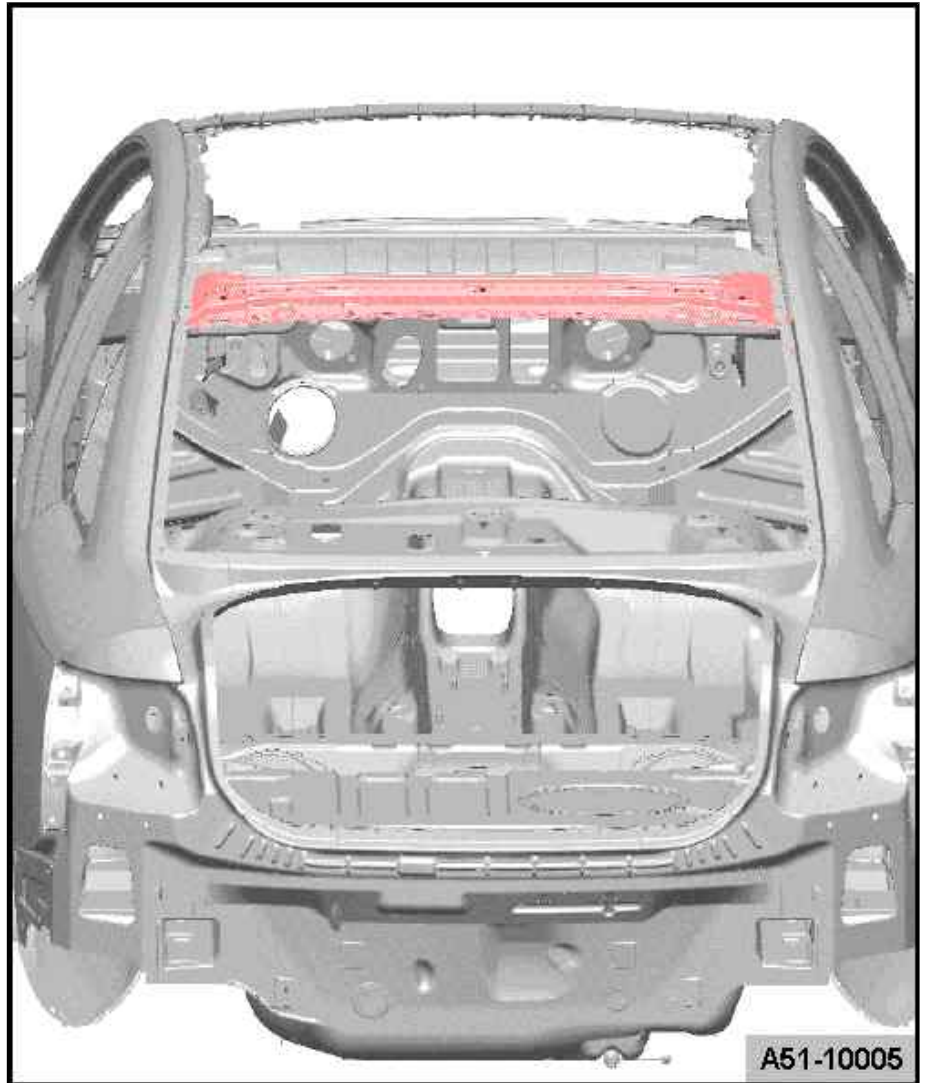
### 9.2 Procedure

- Roof already removed ⇒ [page 72](#)

#### Cutting locations

- Drill out original joint using spot weld breaker -V.A.G 1731- .
- Remove remaining material using compact angle grinder -VAS 5167- .

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#### Replacement part

- ◆ Roof frame

#### Note

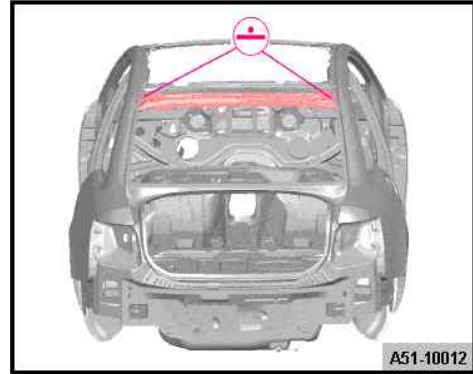
*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

#### Welding in

- Match up and fix new part in position.

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- Weld in new part using resistance spot welder : RP spot weld seam.
- Welding in roof ⇒ [page 72](#)



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## 10 Rear roof cross member - Renewal (Avant)



### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

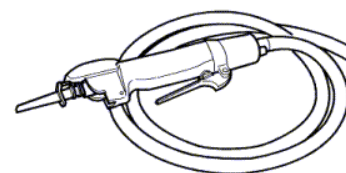
Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

### 10.1 Tools

#### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6525-
- ◆ Resistance spot welder -VAS 6530-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Compact angle grinder -VAS 5167-
- ◆ Pneumatic sabre saw -V.A.G 1523A-

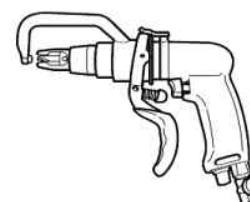
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W00-0005

- ◆ Spot weld breaker -V.A.G 1731-

V.A.G 1731



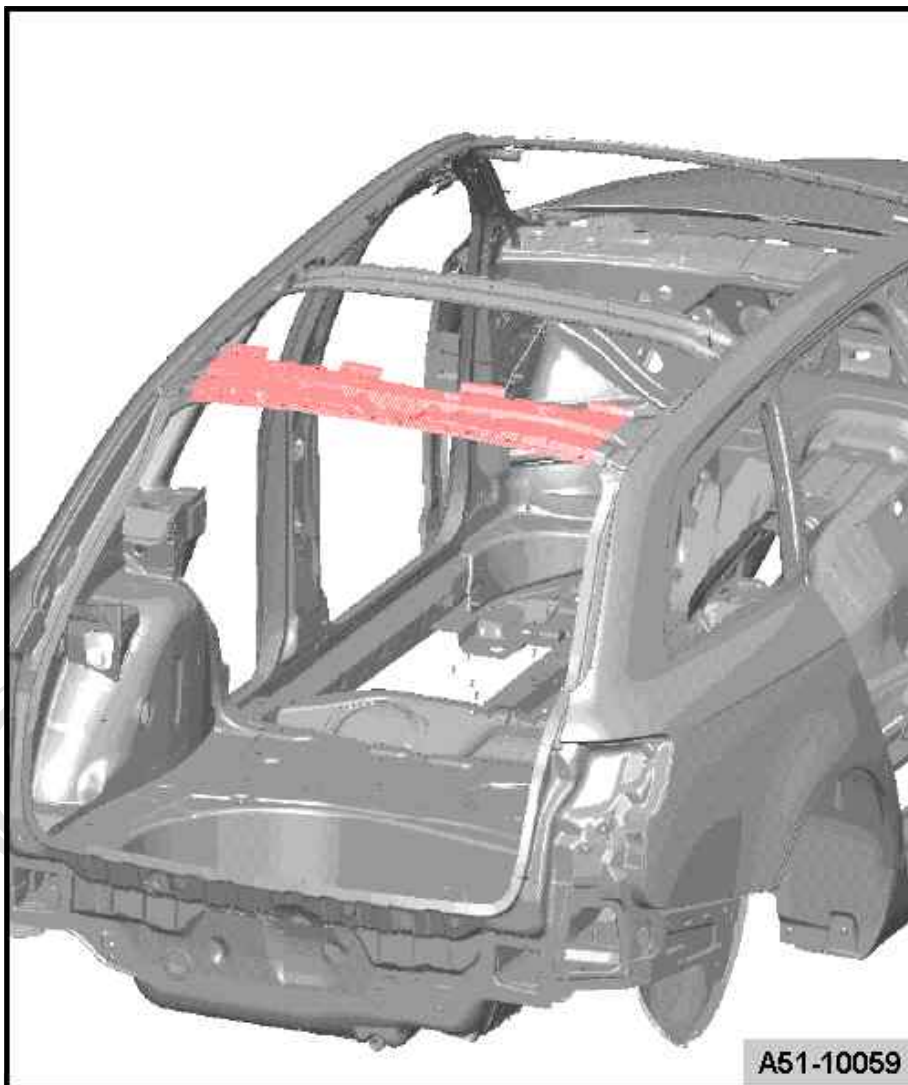
W00-0001

### 10.2 Procedure

- Roof already removed ⇒ [page 111](#)

### Cutting locations

- Drill out original joint using spot weld breaker -V.A.G 1731- .
- Remove remaining material using compact angle grinder -VAS 5167- .



A51-10059

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### Replacement part

- ◆ Rear roof frame

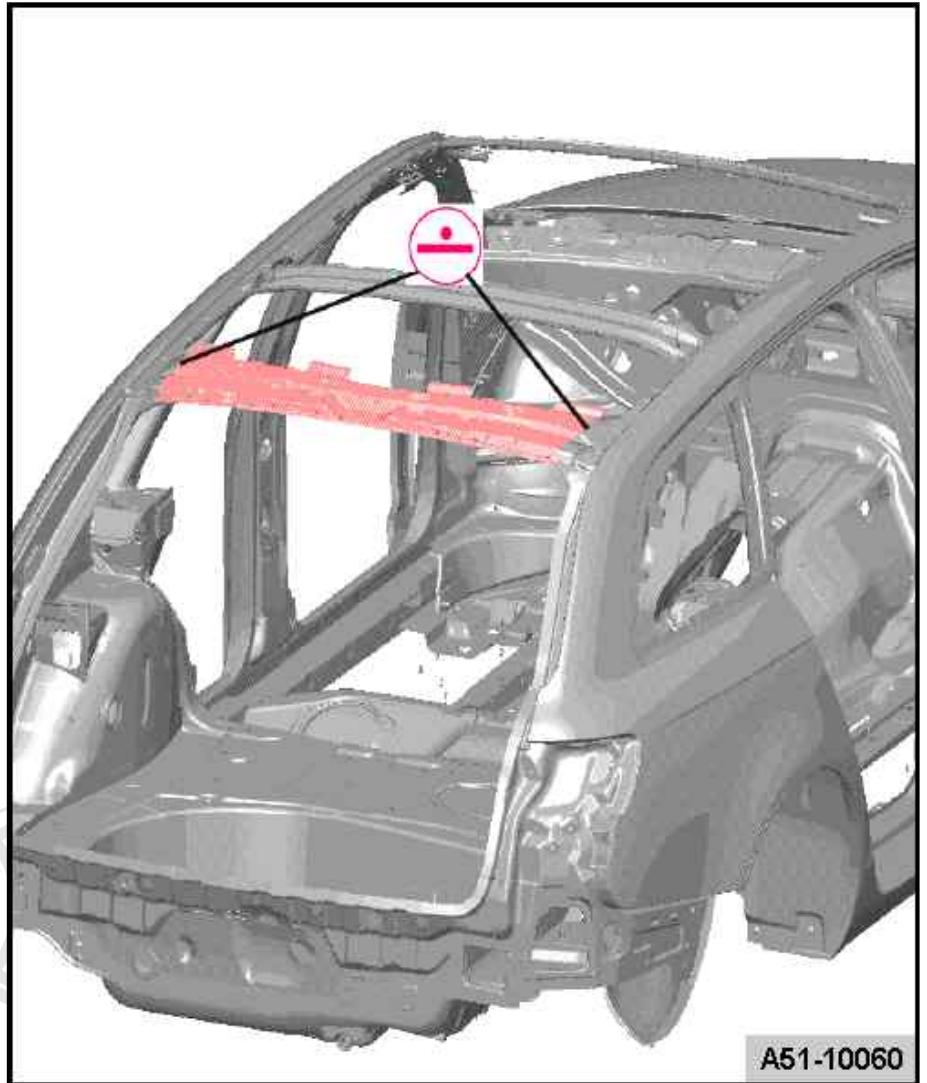


#### Note

*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

### Welding in

- Match up and fix new part in position.
- Weld in new part using resistance spot welder : RP spot weld seam.



- Welding in roof ⇒ [page 111](#)

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RO: 51 37 55 50

## 11 A-pillar - Renewal



### WARNING

*Always observe safety precautions.*

***Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.***

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Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

### 1 - Outer A-pillar

### 2 - Upper separating cut

### 3 - Separating cut in side member

### 4 - Separating cut for partial renewal

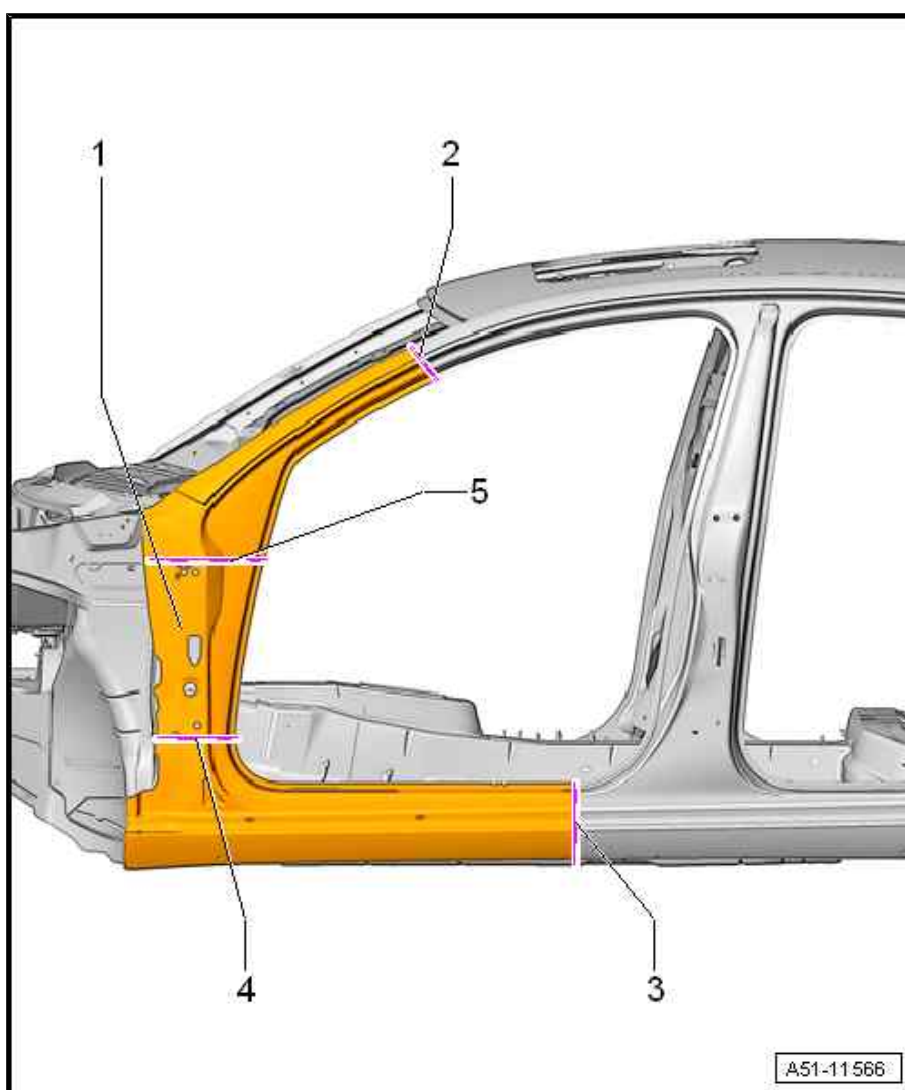
#### Partial renewal

*Partial renewal of the A-pillar is possible using this separating cut.*

### 5 - Separating cut for partial renewal

#### Partial renewal

*Partial renewal of the A-pillar is possible using this separating cut.*



A51-11566

## 11.1 Tools

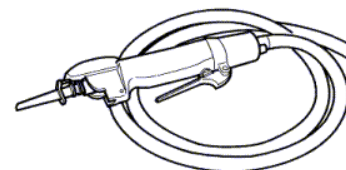
### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6525-

- ◆ Resistance spot welder -VAS 6530-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Drill -VAS 5830-
- ◆ Compact angle grinder -VAS 5167-
- ◆ Pneumatic sabre saw -V.A.G 1523A-

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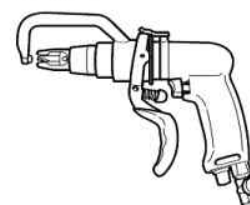
V.A.G 1523 A



W00-0005

- ◆ Spot weld breaker -V.A.G 1731-

V.A.G 1731



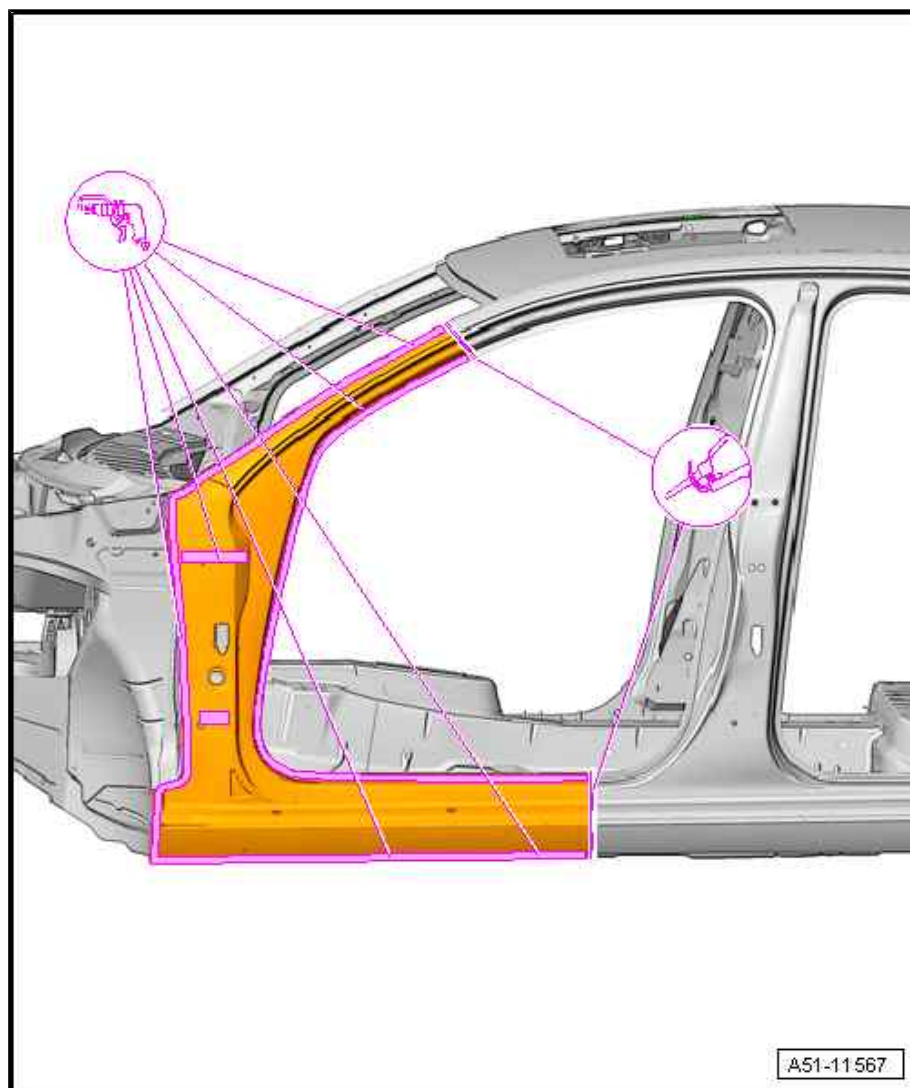
W00-0001

## 11.2 Procedure

- Upper longitudinal member already removed ⇒ [page 57](#)

### Cutting locations

- Make separating cut at top according to extent of damage.
- Separate original joint using spot weld breaker -V.A.G 1731- .

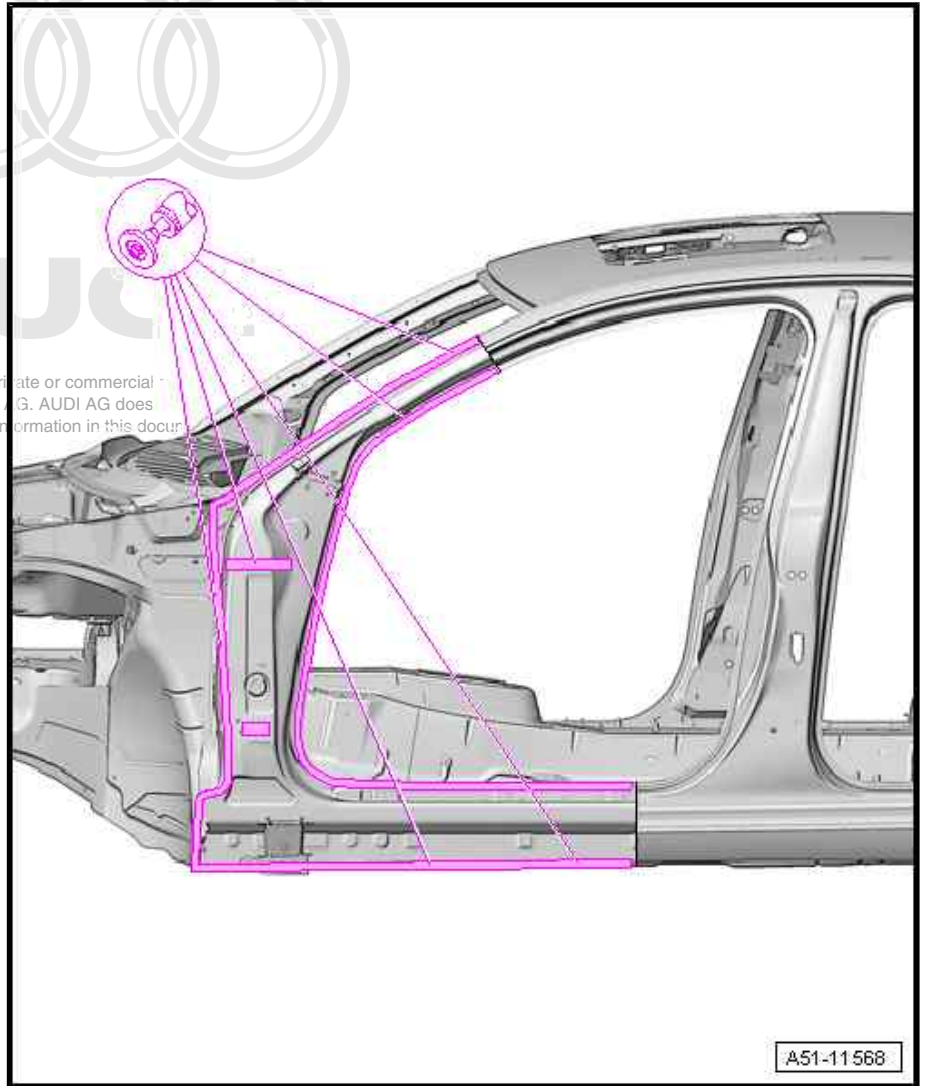


- Remove remaining material using compact angle grinder - VAS 5167- .



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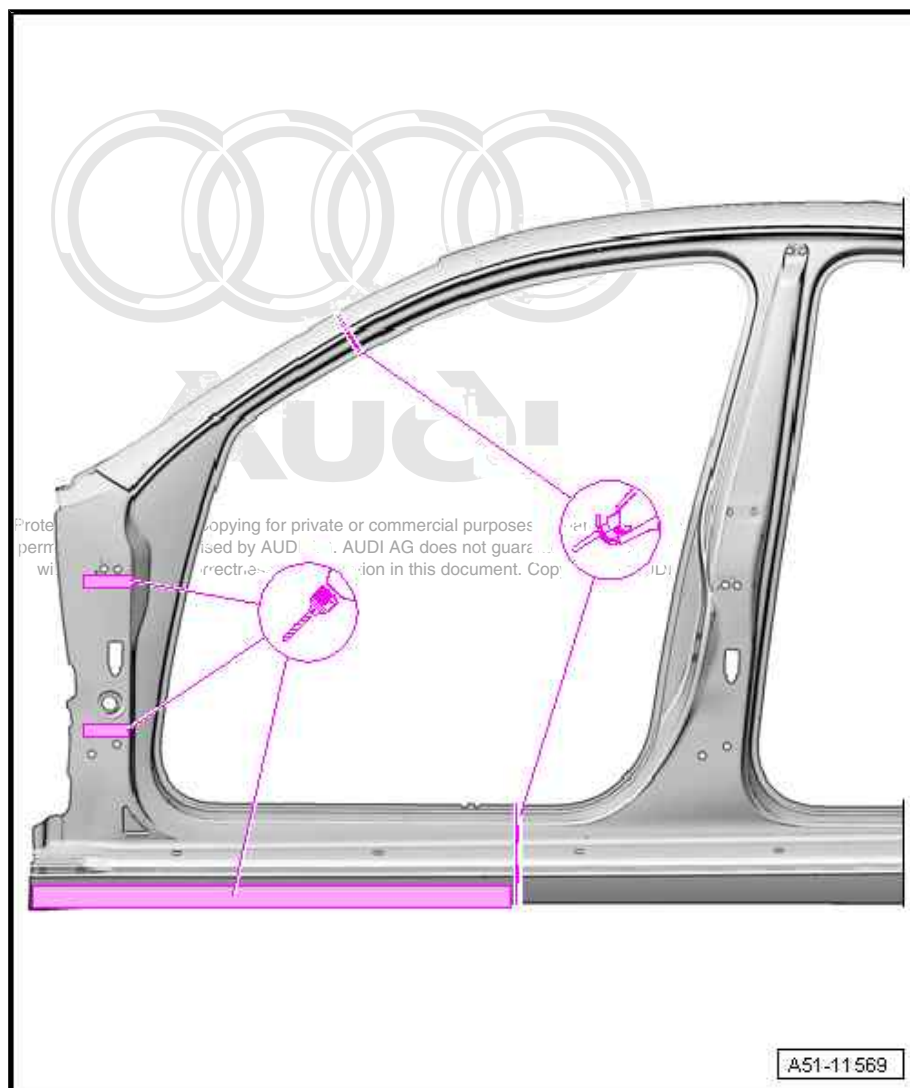


#### Replacement part

- ◆ A-pillar (sub-part)

#### Preparing new part

- Transfer separating cuts to new part and cut to size using pneumatic sabre saw -V.A.G 1523A-.
- Drill holes for SG plug weld seam, 8 mm Ø using drill -VAS 5830-.

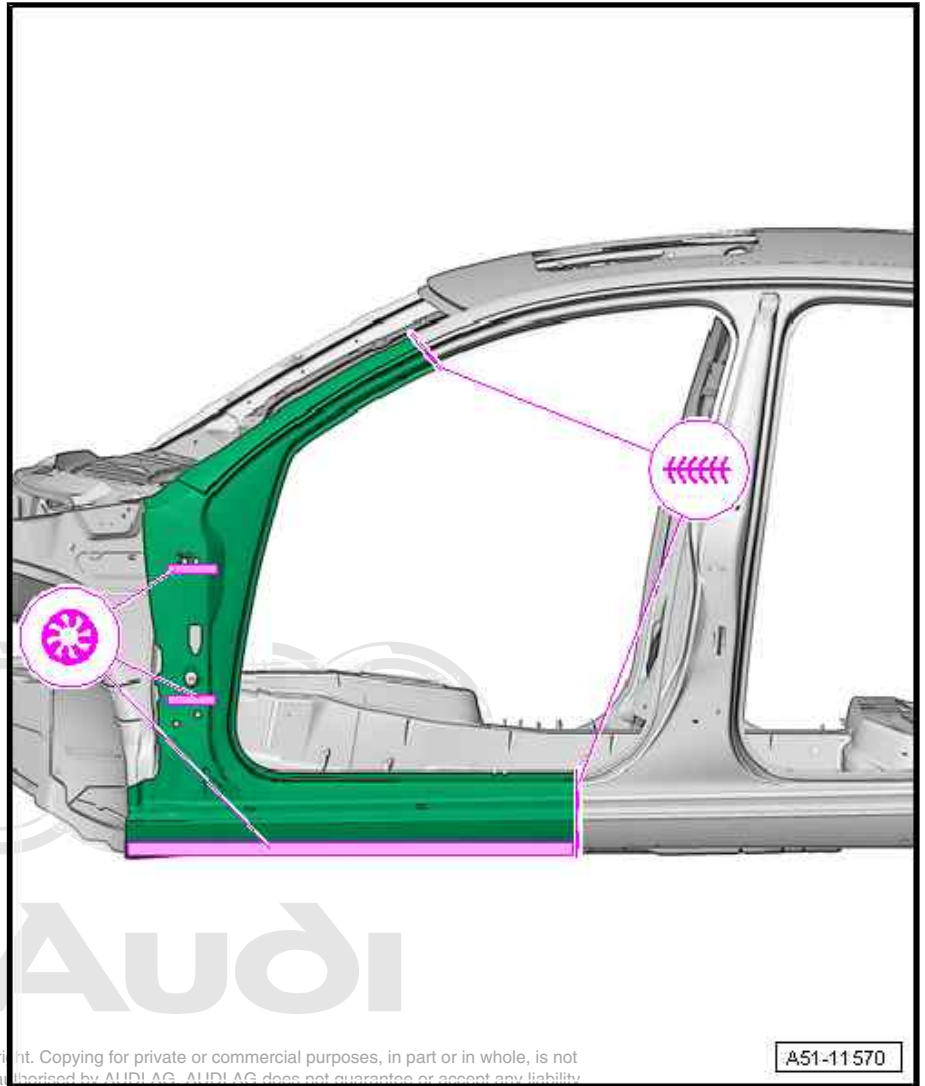


### Note

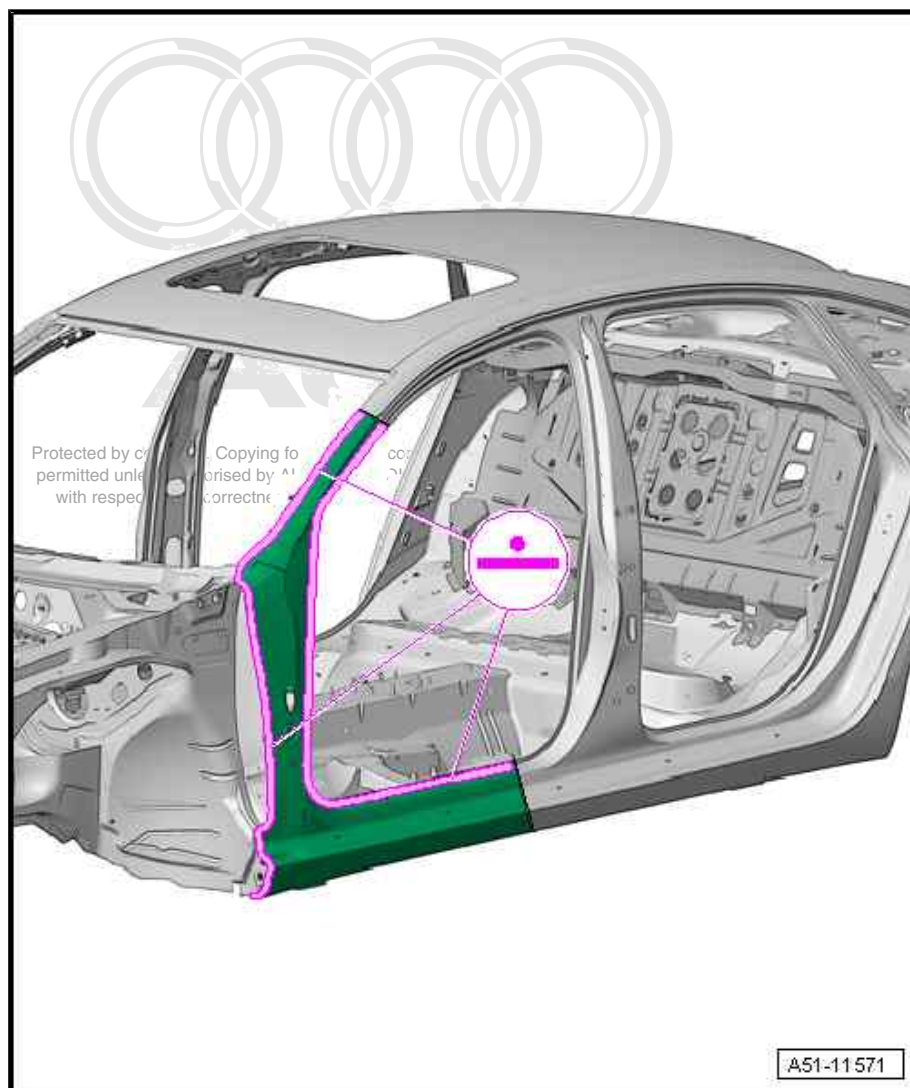
*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

### Welding in

- Fit new part on portal gauge VAS 5007/6.
- Place a backing plate of the same material behind the joints and weld in using shielded arc welding equipment 250A : SG continuous seam.
- Weld in A-pillar using shielded arc welding equipment 250A : SG plug weld seam.



- Weld in A-pillar using resistance spot welder : RP spot weld seam.



- Welding in upper longitudinal member ⇒ [page 57](#)

RO: 51 41 55 02

## 12 Outer B-pillar - Renewal



### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes → General Information; Body Repairs, General Body Repairs ; Safety notes .

### 1 - B-pillar

#### Outer B-pillar

### 2 - Upper separating cut

### 3 - Lower separating cut

#### Partial renewal

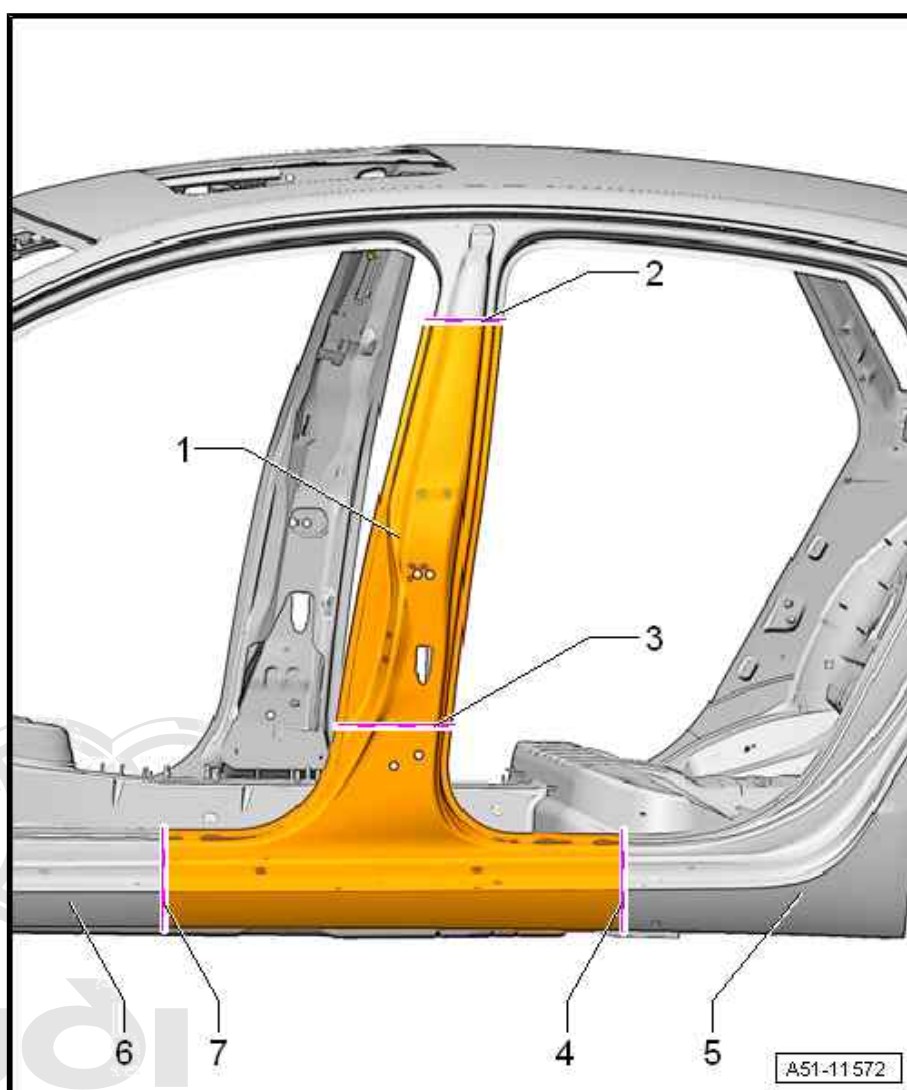
*Partial renewal is possible with this separating cut.*

### 4 - Separating cut in side member (rear)

### 5 - Rear side member

### 6 - Front side member

### 7 - Separating cut in side member (front)



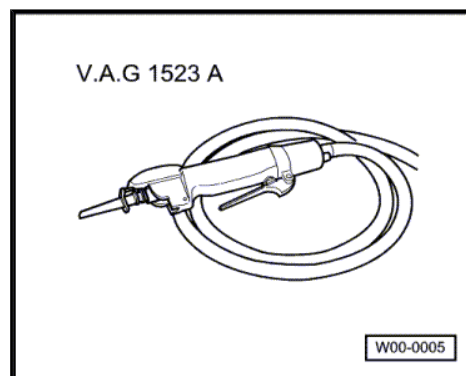
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## 12.1 Tools

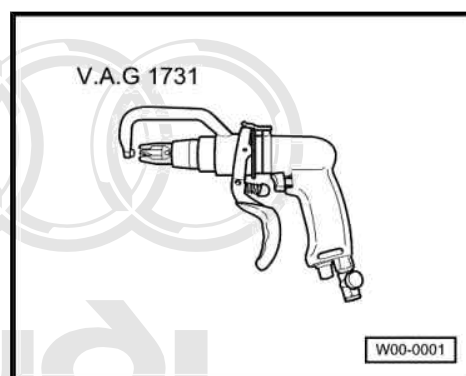
### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6525-

- ◆ Resistance spot welder -VAS 6530-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Drill -VAS 5830-
- ◆ Compact angle grinder -VAS 5167-
- ◆ Pneumatic sabre saw -V.A.G 1523A-



- ◆ Spot weld breaker -V.A.G 1731-

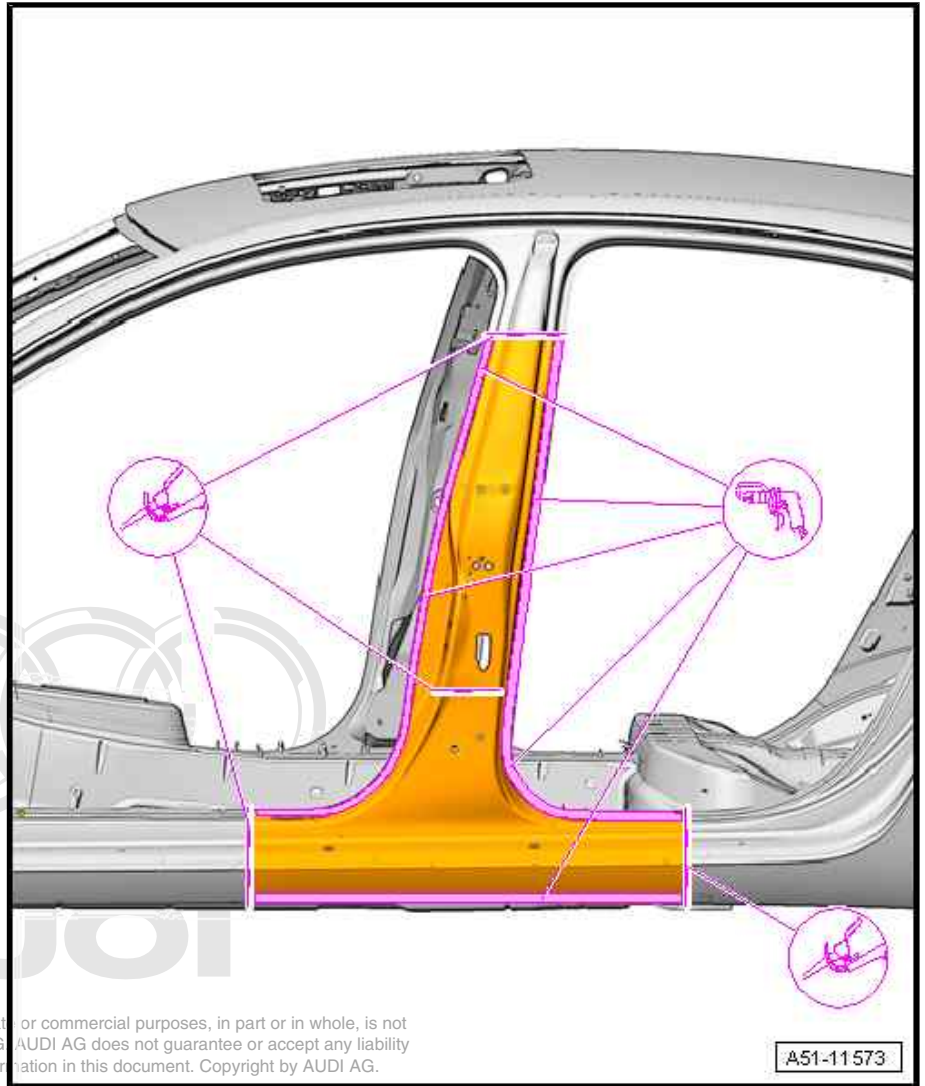


## 12.2 Procedure

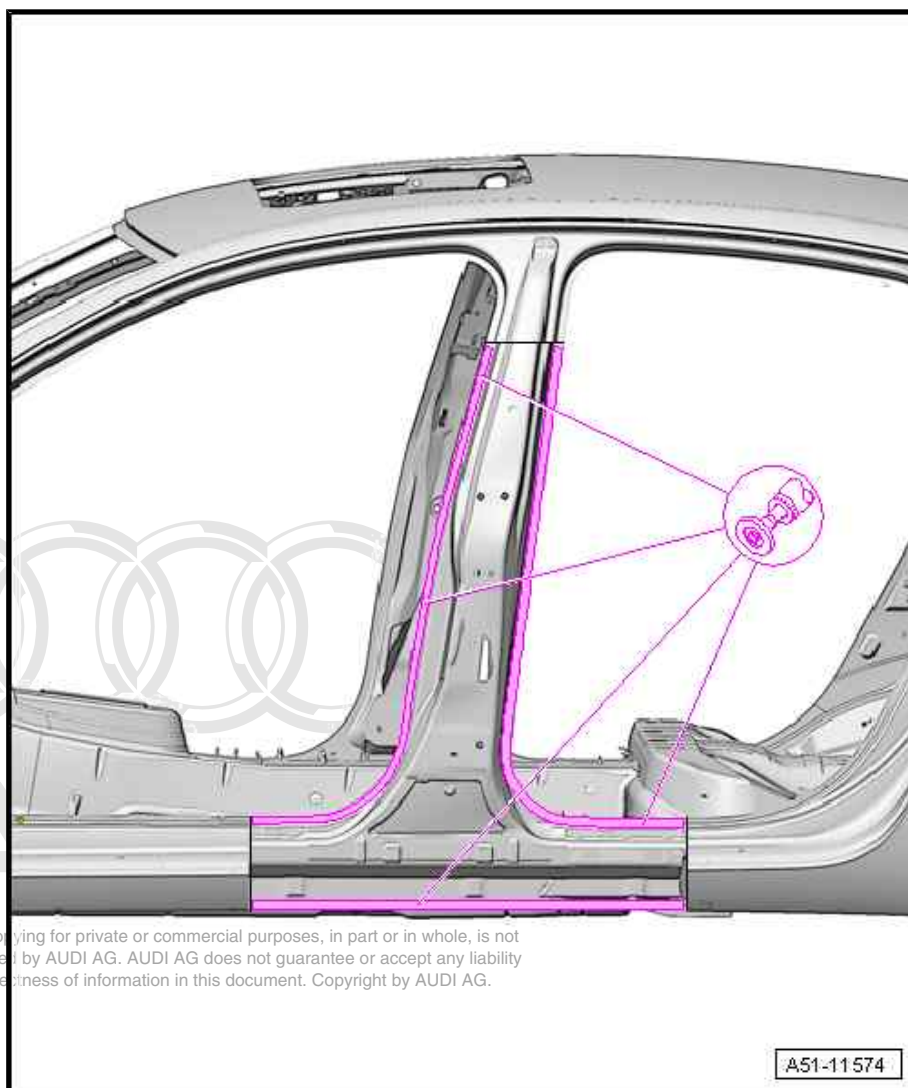
### Cutting locations

- Separate original joint using spot weld breaker -V.A.G 1731- .
- Make separating cuts as shown using pneumatic sabre saw - V.A.G 1523A- .

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- Remove remaining material using compact angle grinder - VAS 5167- .

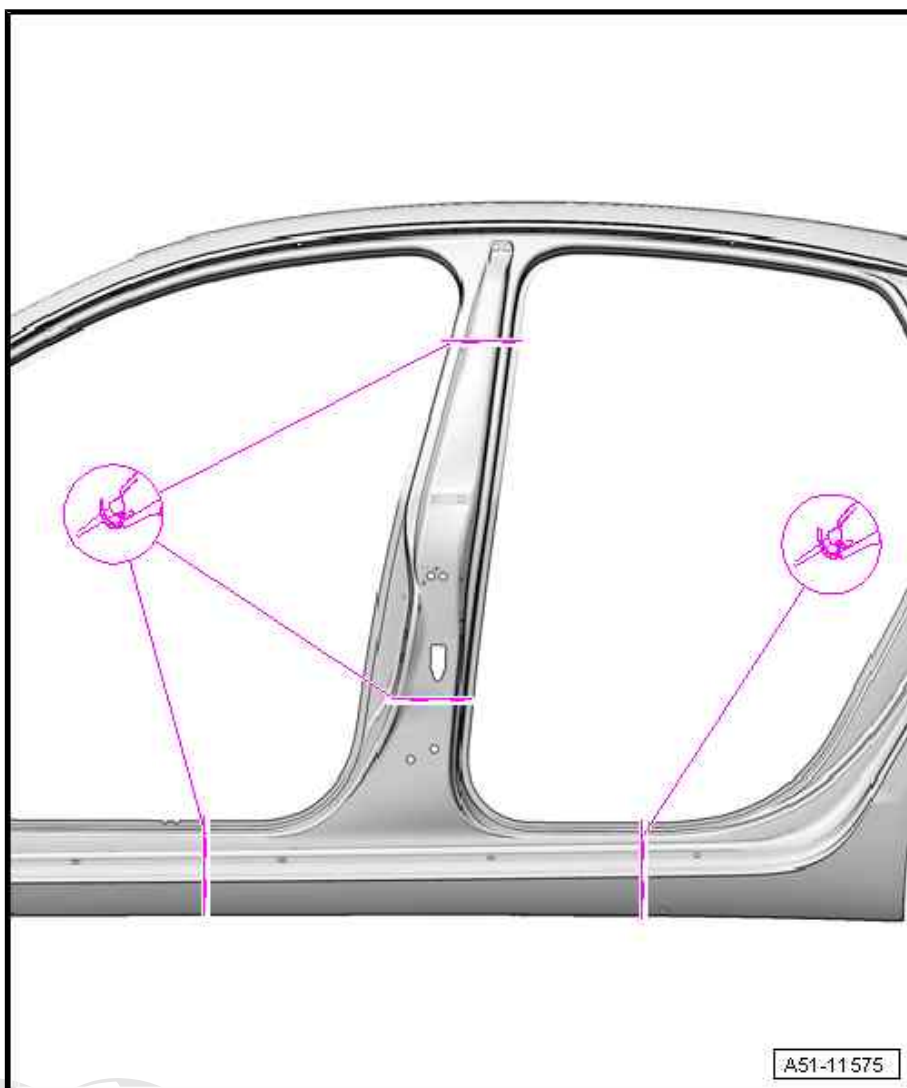


### Replacement part

- ◆ B-pillar (sub-part)

### Preparing new part

- Transfer separating cut to new part and cut new part to size using pneumatic sabre saw -V.A.G 1523A- .



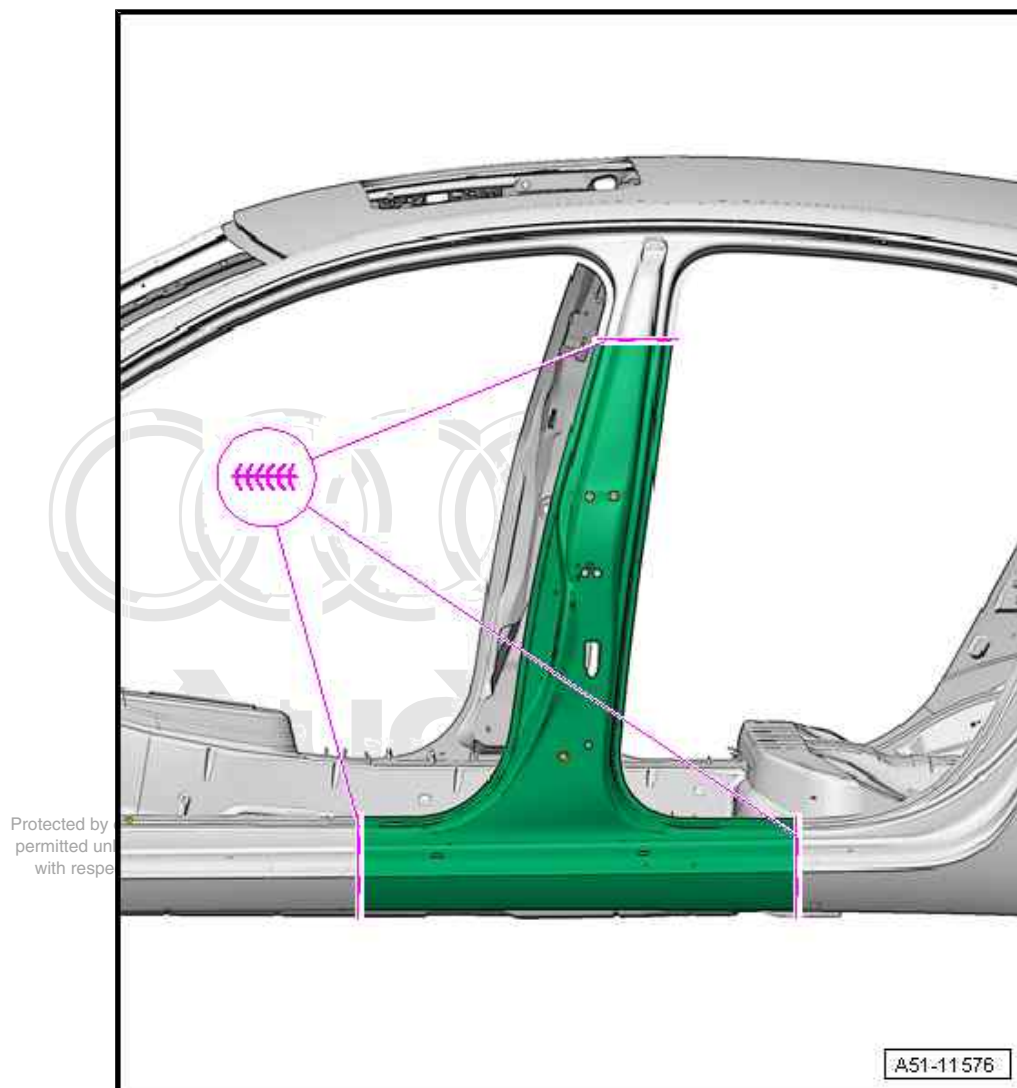
- Fit new part on portal gauge VAS 5007/6.

**i Note**

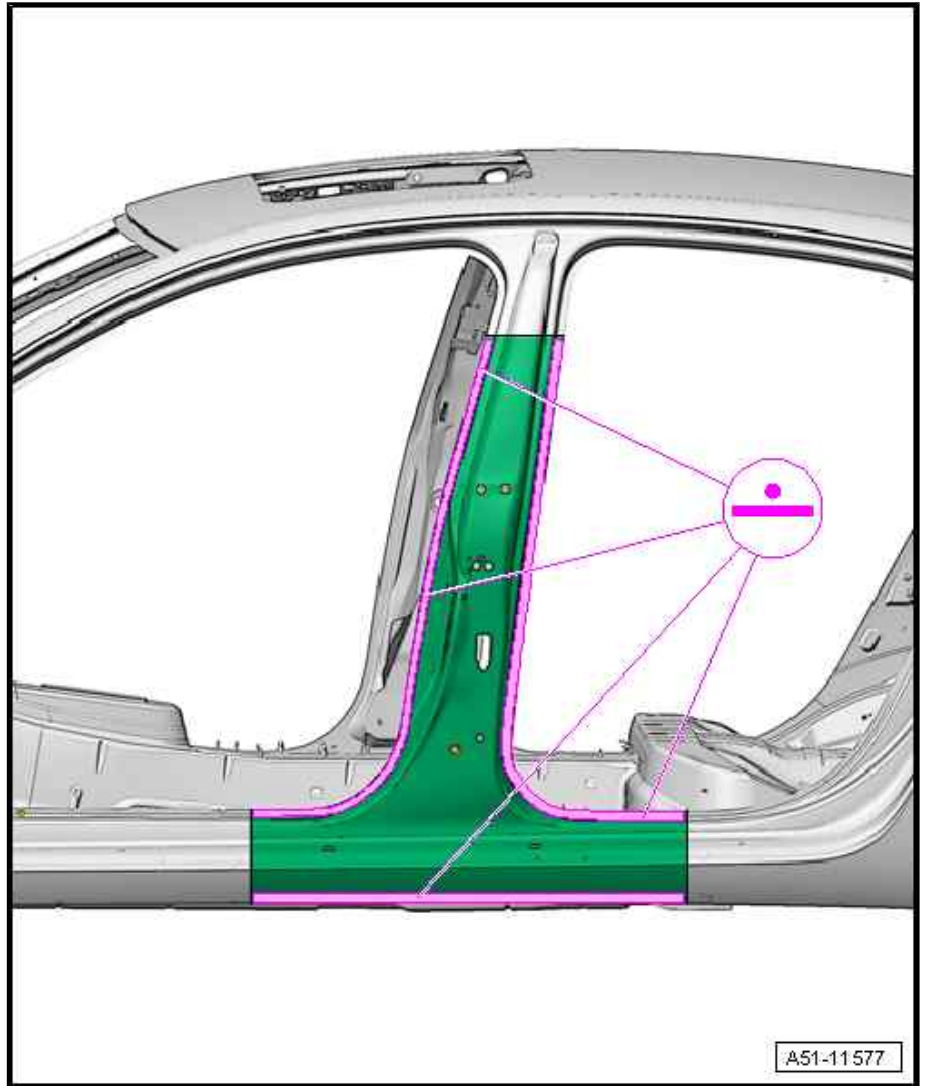
*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

**Welding in**

Place a backing plate of the same material behind the joints and weld in using shielded arc welding equipment 250A : SG continuous seam.



- Weld in B-pillar using resistance spot welder : RP spot weld seam.



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RO: 51 45 55 00

## 13 Outer side member - Renewal



### WARNING

*Always observe safety precautions.*

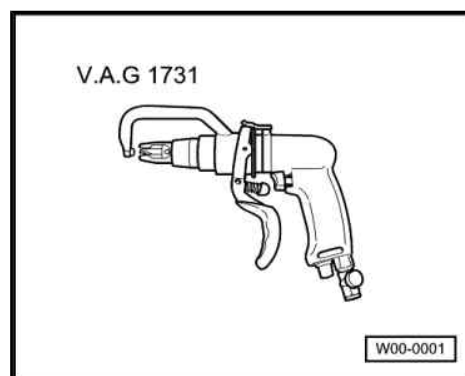
*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

### 13.1 Tools

#### Special tools and workshop equipment required

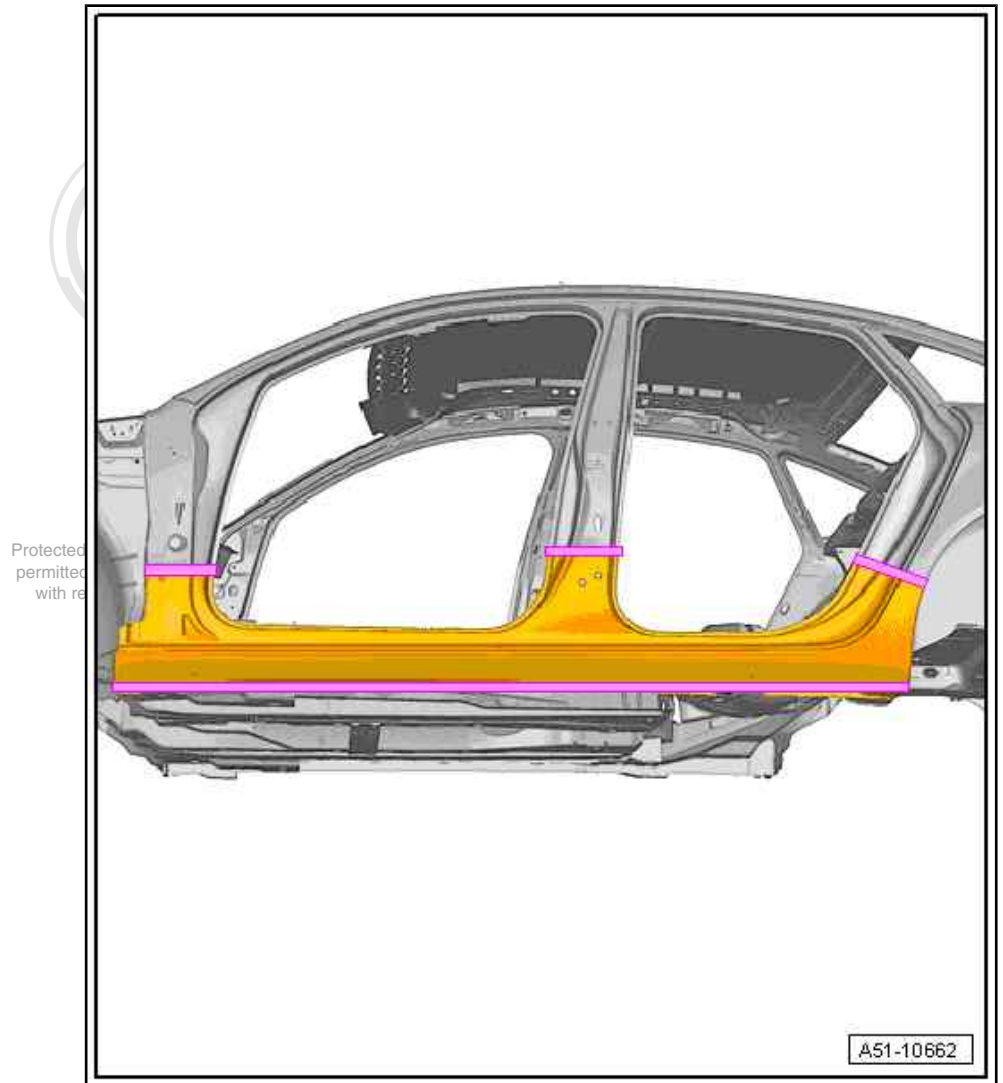
- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6525-
- ◆ Resistance spot welder -VAS 6530-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Compact angle grinder -VAS 5167-
- ◆ Spot weld breaker -V.A.G 1731-



### 13.2 Procedure

#### Cutting locations

- Make separating cuts as shown using pneumatic sabre saw - V.A.G 1523A- .
- Separate original joint using spot weld breaker -V.A.G 1731- .
- Remove remaining material using compact angle grinder - VAS 5167- .

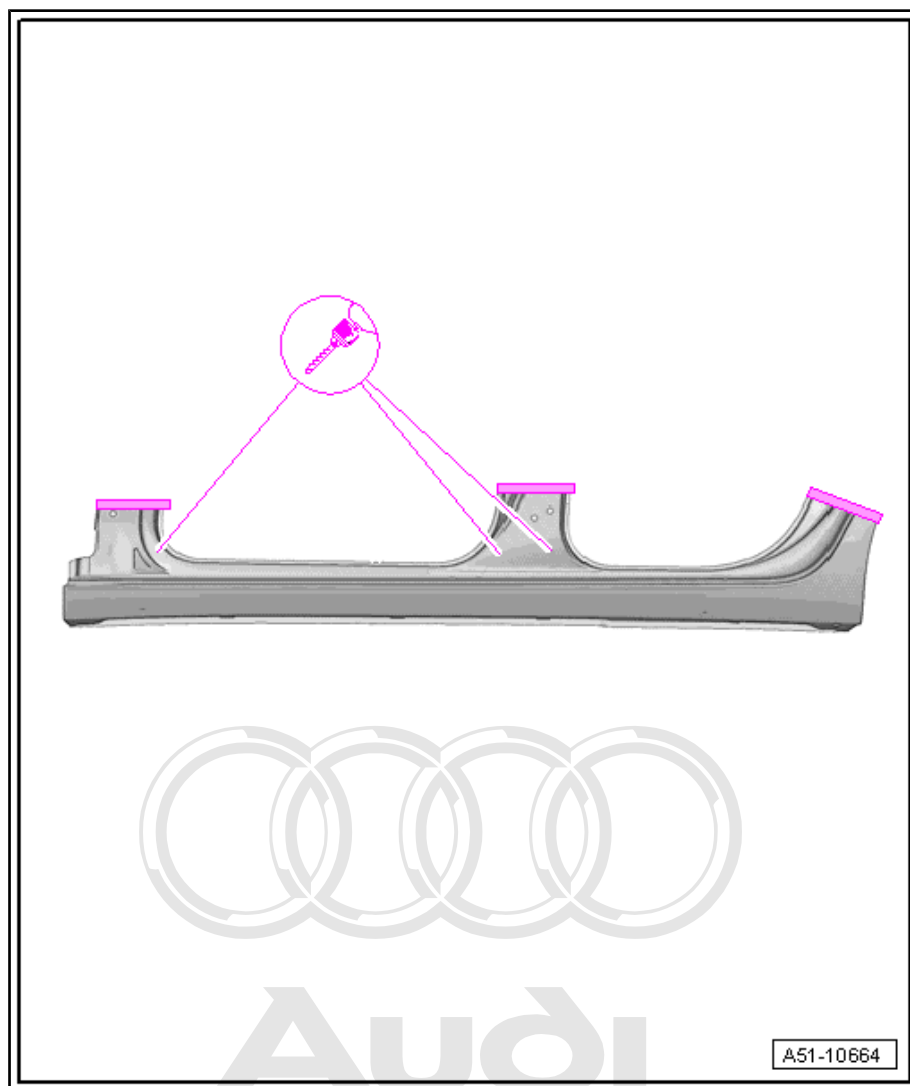


#### Replacement part

- ◆ Subpart of outer side member with outer B-pillar

#### Preparing new part

- Drill holes for SG plug weld seam, 8 mm Ø using drill -VAS 5830- .

**Note**

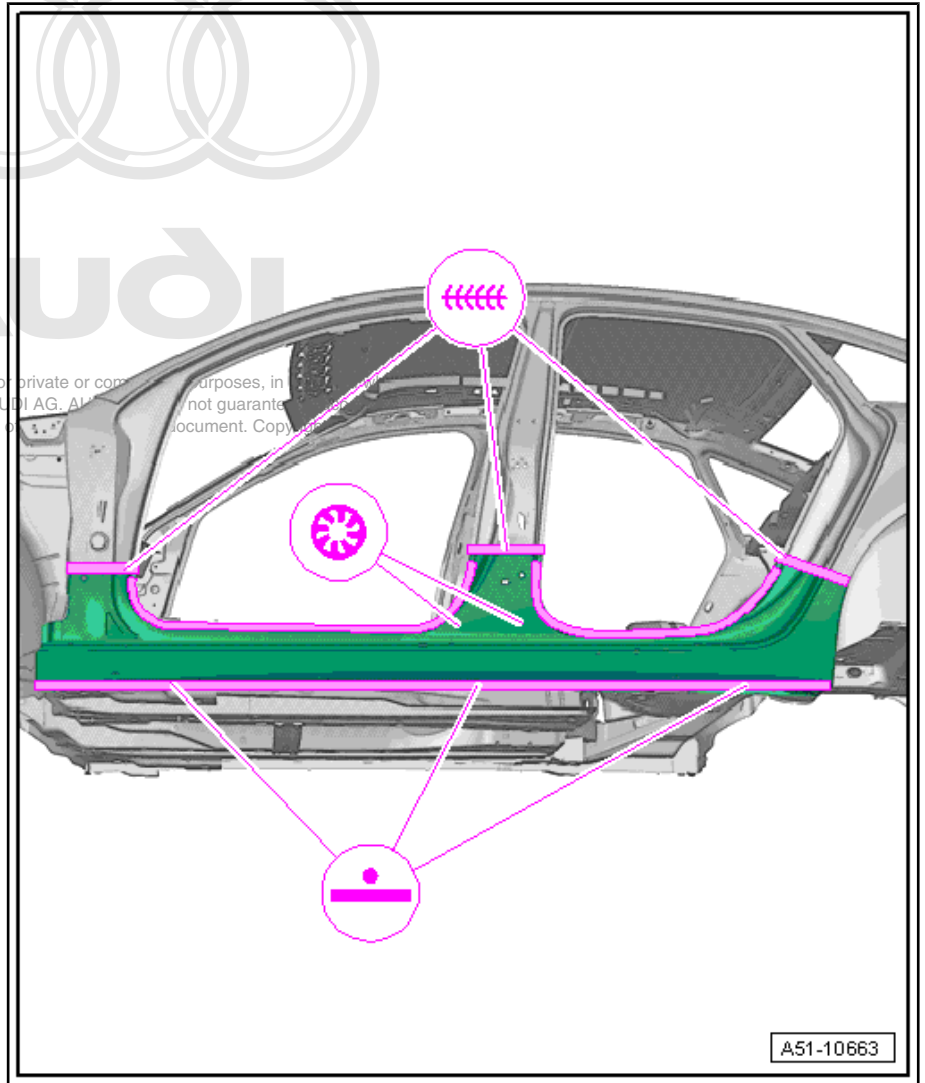
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*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

**Welding in**

- Place a backing plate of the same material behind the joints and weld in using shielded arc welding equipment 250A : SG continuous seam.
- Weld in side member using resistance spot welder : RP spot weld seam.
- Weld in B-pillar using shielded arc welding equipment 250A : SG plug weld seam.

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RO: 51 47 55 50

## 14 Side member with extrusion profile (aluminium) and inner B-pillar - Renewal



### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

### 1 - Separating cut for partial renewal

Partial renewal

*Partial renewal of the A-pillar is possible using this separating cut.*

### 2 - Separating cut for partial renewal

Partial renewal

*Partial renewal of the A-pillar is possible using this separating cut.*

### 3 - Separating cut, inner B-pillar

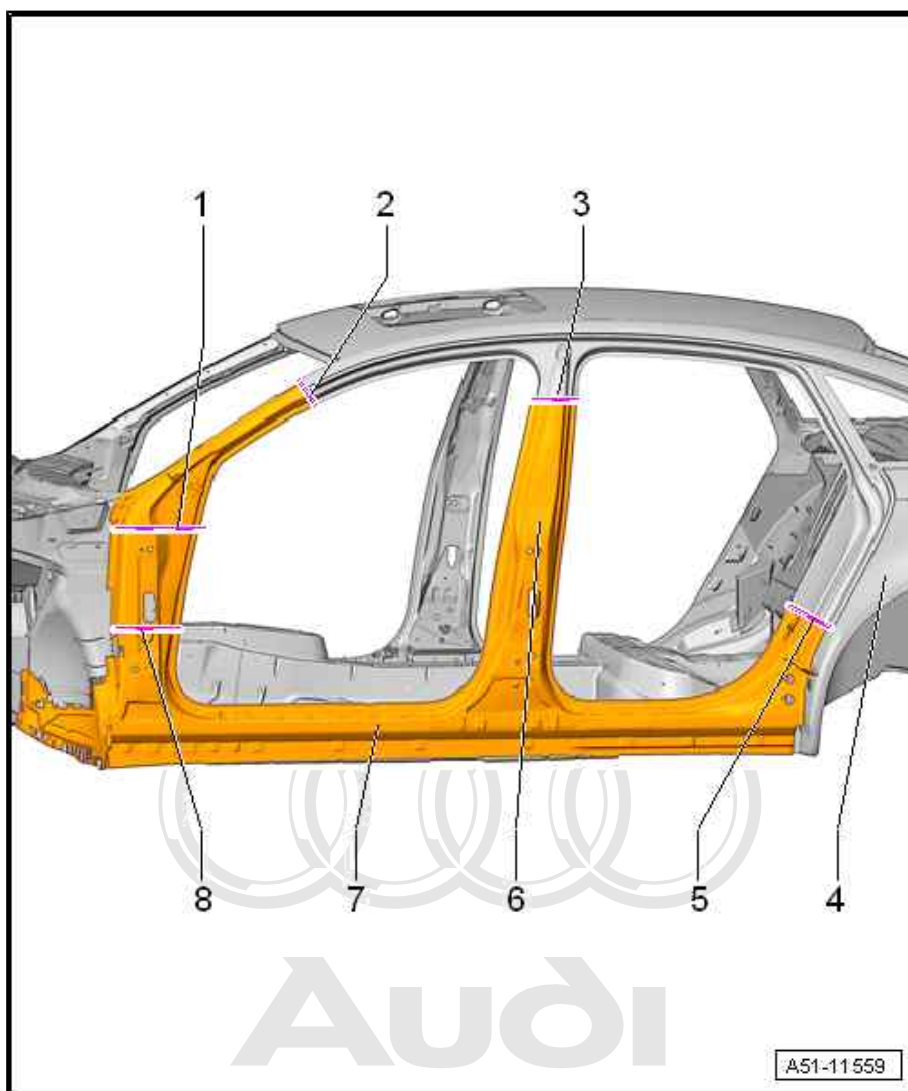
### 4 - Inner wheel housing

### 5 - Separating cut, inner C-pillar

### 6 - Inner B-pillar

### 7 - Inner side member

### 8 - Separating cut, inner A-pillar

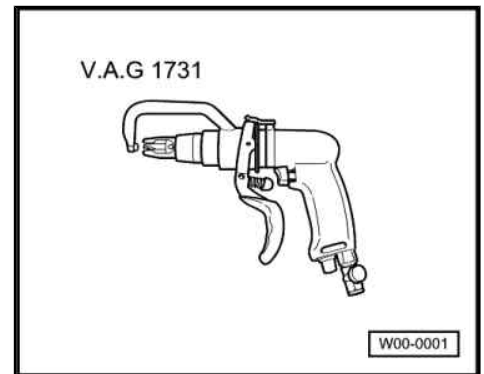


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## 14.1 Tools

Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6525-
- ◆ Resistance spot welder -VAS 6530-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Compact angle grinder -VAS 5167-
- ◆ Spot weld breaker -V.A.G 1731-



## 14.2 Procedure

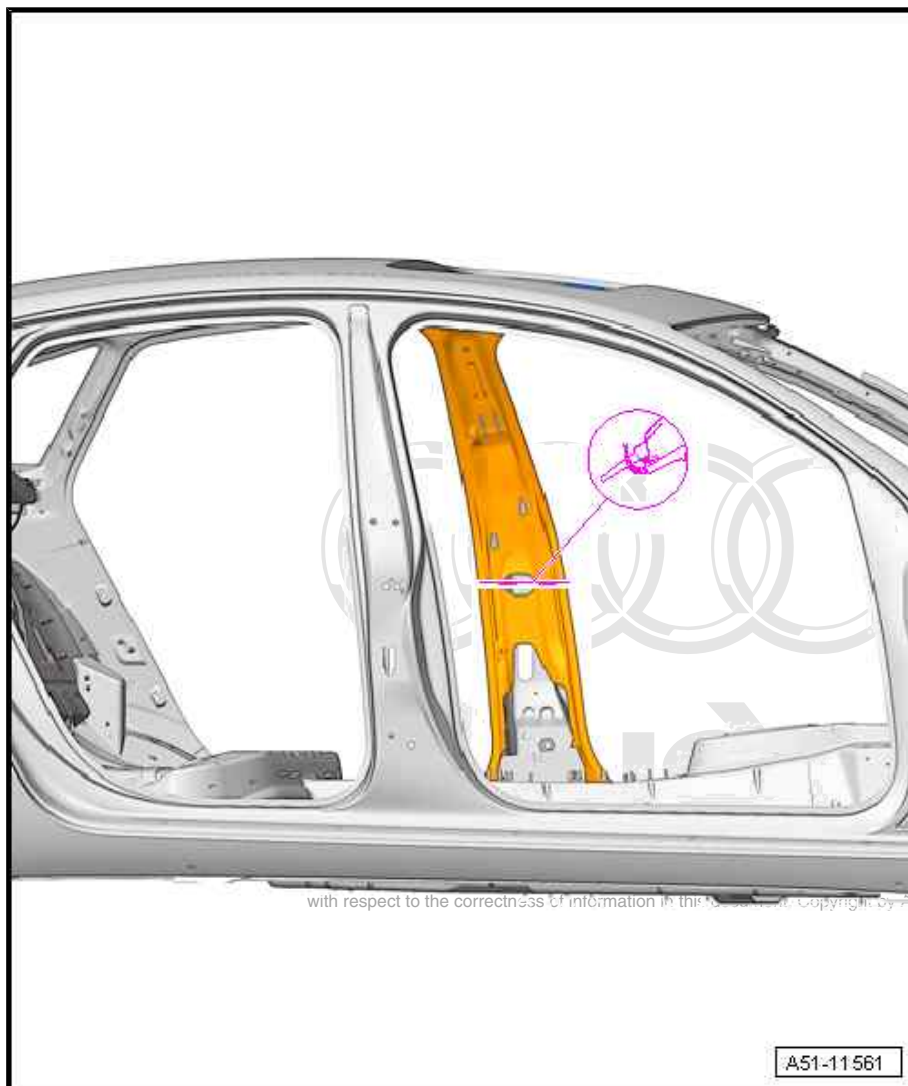
- If the inner side member is renewed, the B-pillar must also be renewed to ensure adequate strength (aluminium extrusion profile / marked green).

### Cutting locations

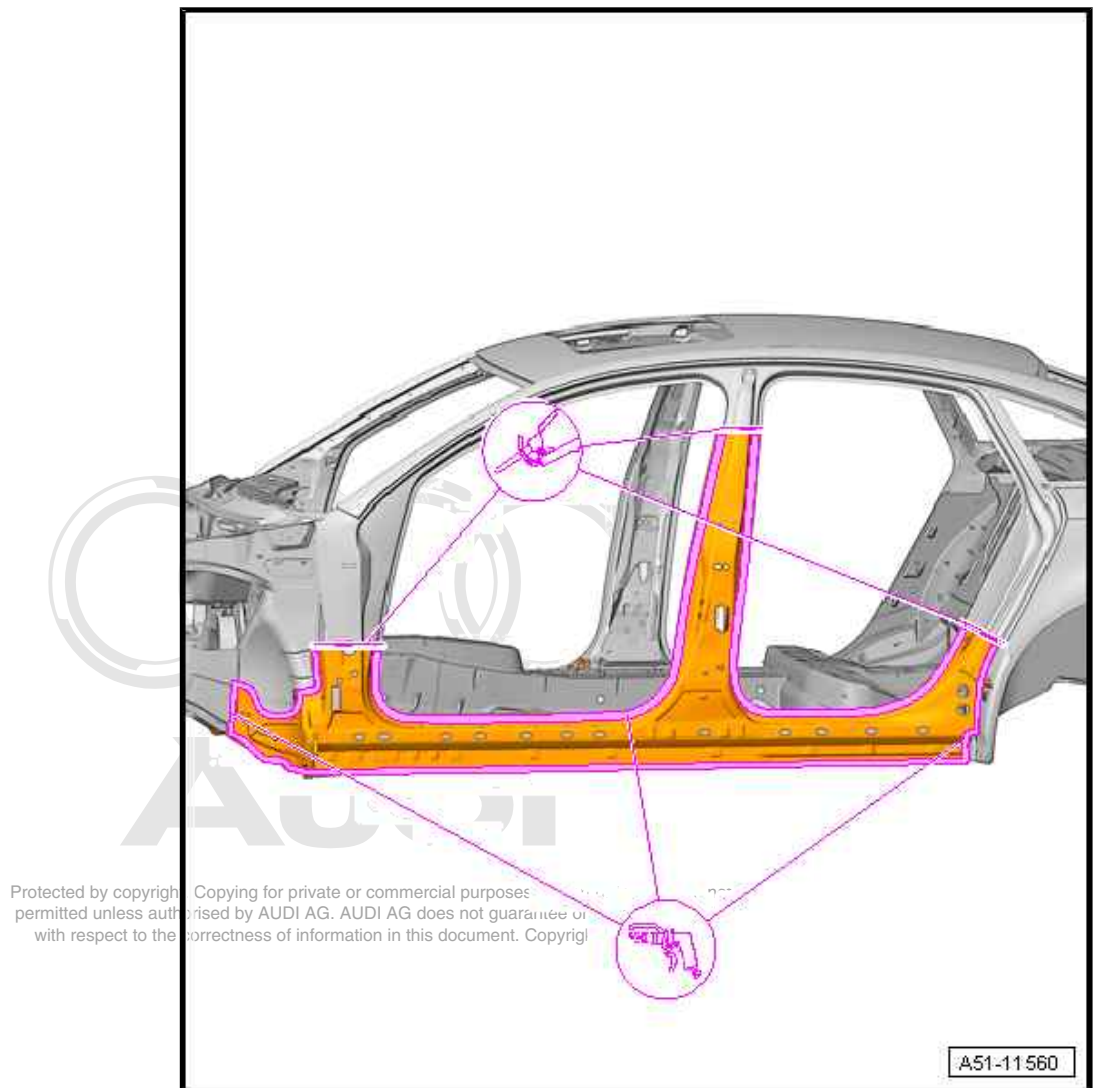
- This separating cut is made to ensure that the required rigidity is reached again.
- Make separating cut on the inner B-pillar as illustrated using pneumatic sabre saw -V.A.G 1523A- .



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- Make separating cuts as shown using pneumatic sabre saw - V.A.G 1523A- .
- Cut out inner B-pillar with reinforcement.
- Separate original joint using spot weld breaker -VAS 6322- .

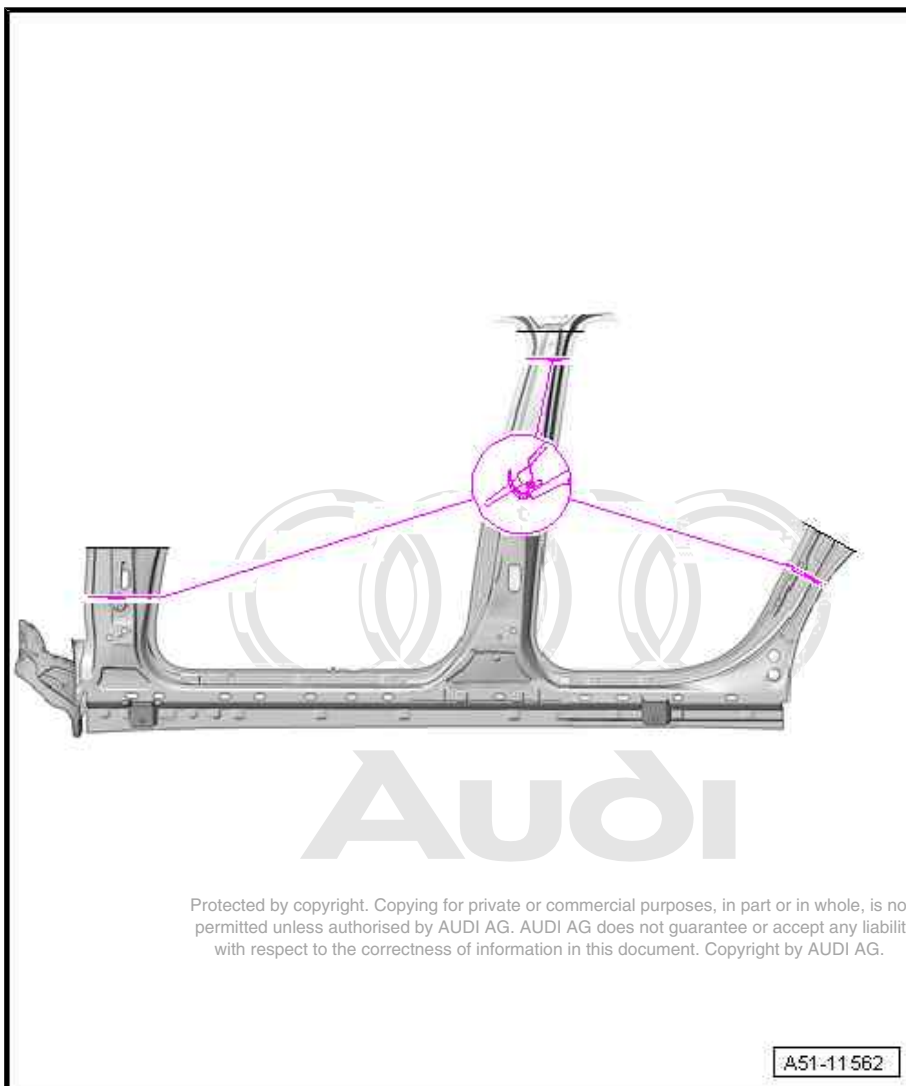


#### Replacement parts

- ◆ Side frame (inner) with extrusion profile (aluminium)
- ◆ Moulded foam inserts
- ◆ 2-component filler foam -D 506 KD1 A3-

#### Preparing new part

- Make separating cuts as shown using pneumatic sabre saw - V.A.G 1523A- .

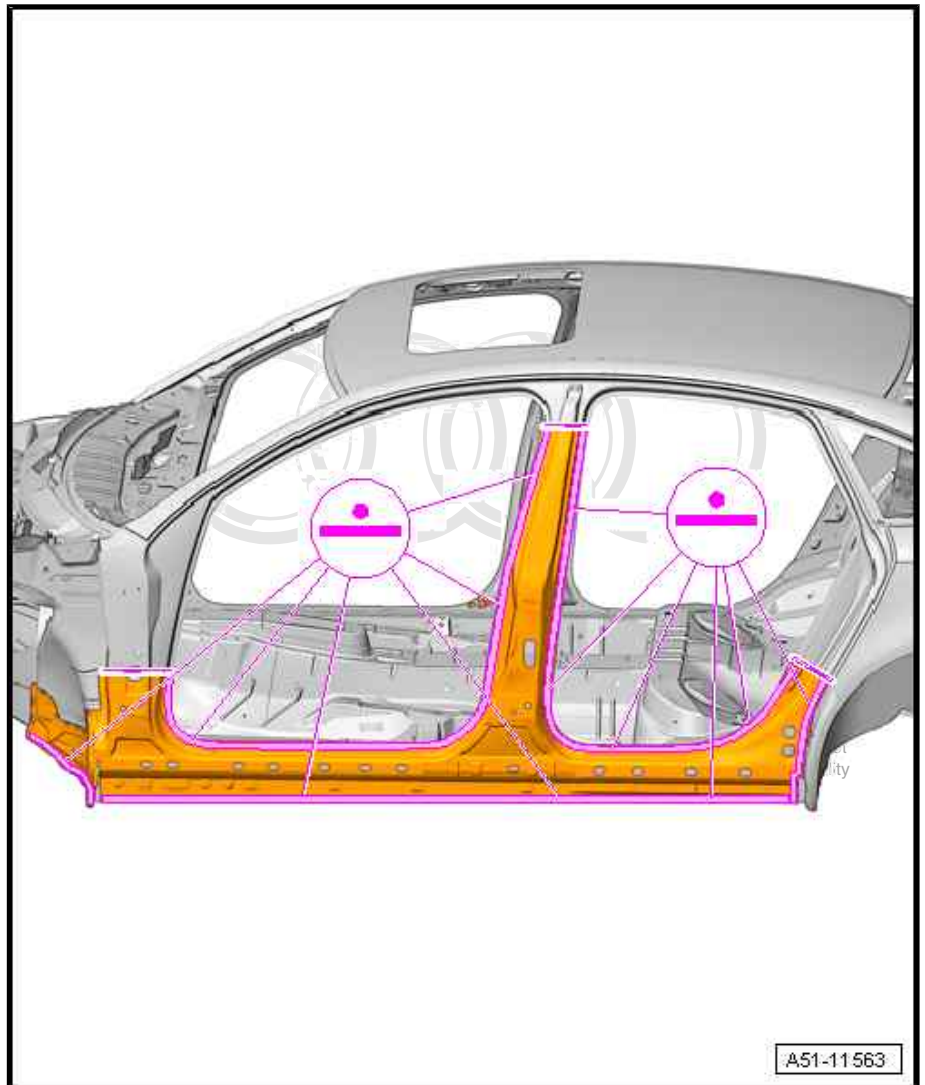


### Note

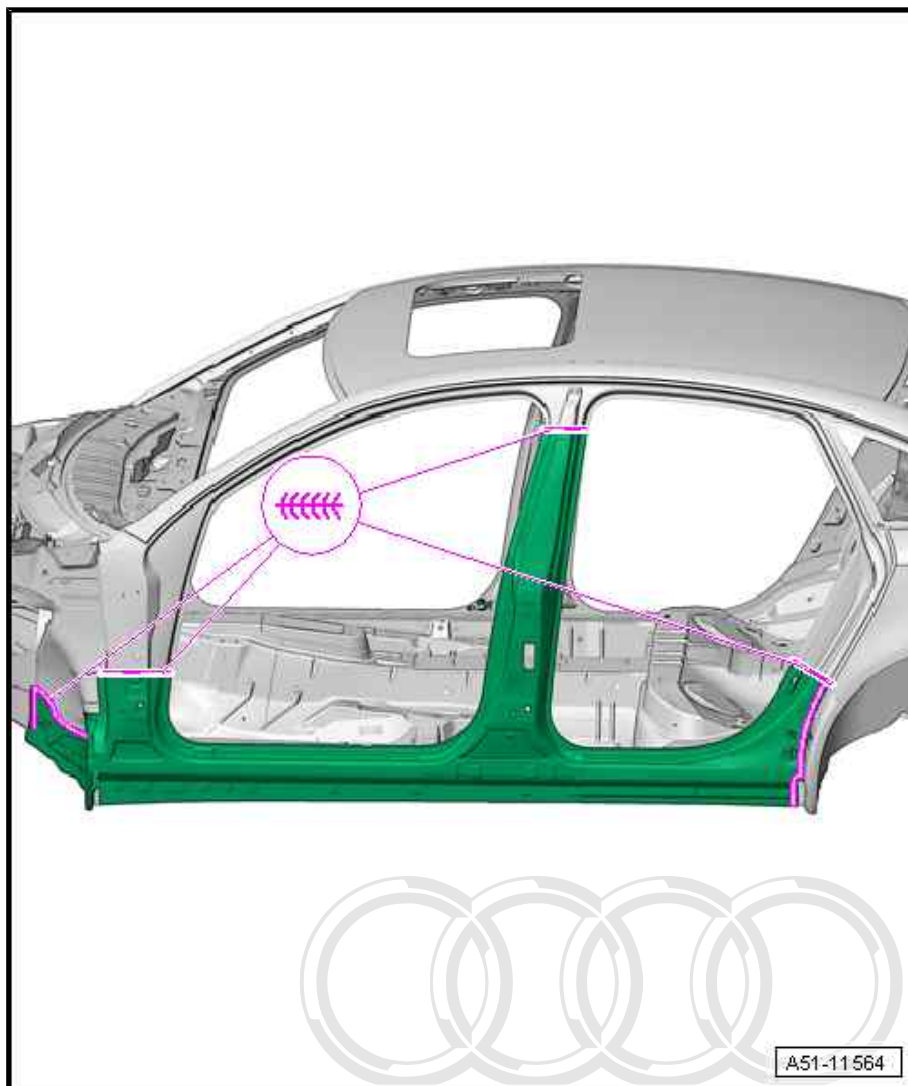
*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

### Welding in

- Fit new part on portal gauge VAS 5007/6.
- Weld in side frame using resistance spot welder : RP spot weld seam. Make double the number of welds in place of adhesive.



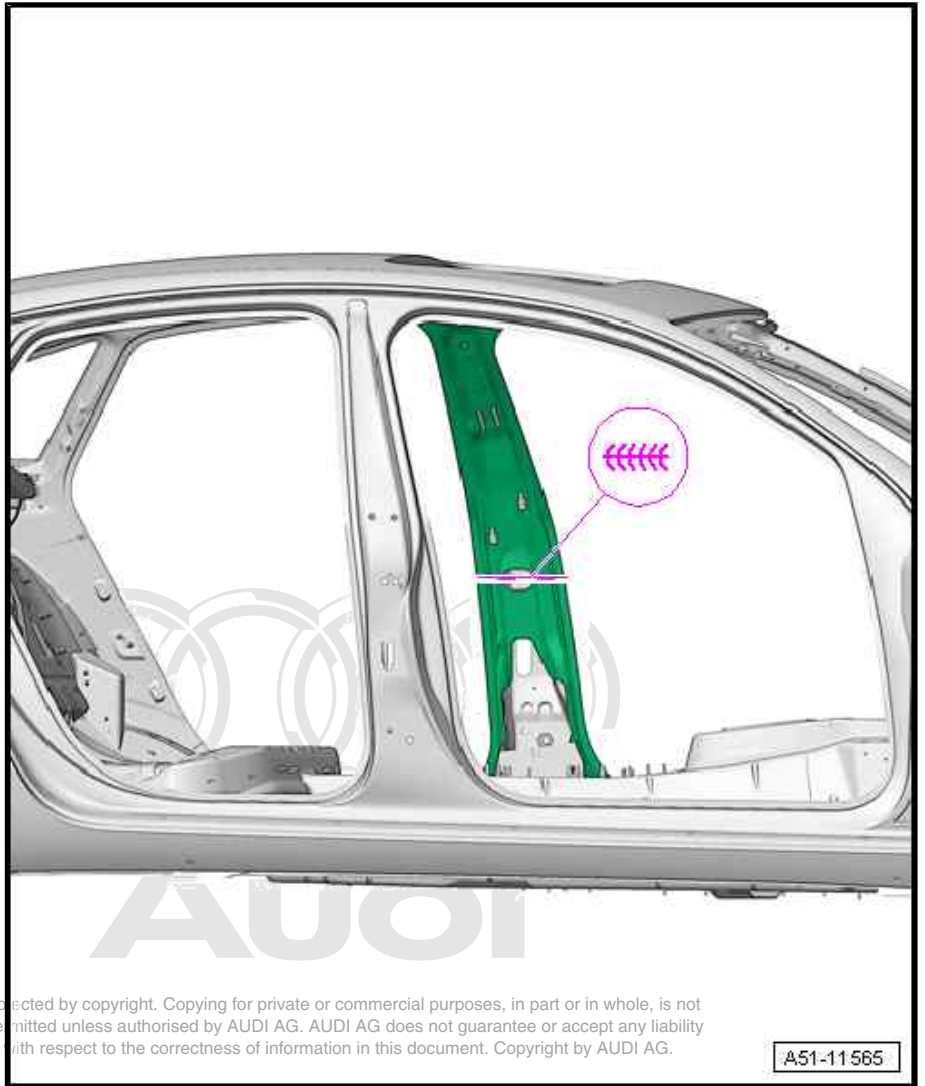
- Weld in wheel housing using shielded arc welding equipment 250A in place of MIG brazed seam: SG continuous seam.
- Place a backing plate of the same material behind the joints and weld in using shielded arc welding equipment 250A : SG continuous seam.



- Weld in inner B-pillar using shielded arc welding equipment  
250A : SG continuous seam.



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## 53 – Body - rear

RO: 53 05 55 00

### 1 Rear upper cross panel - Renewal



#### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

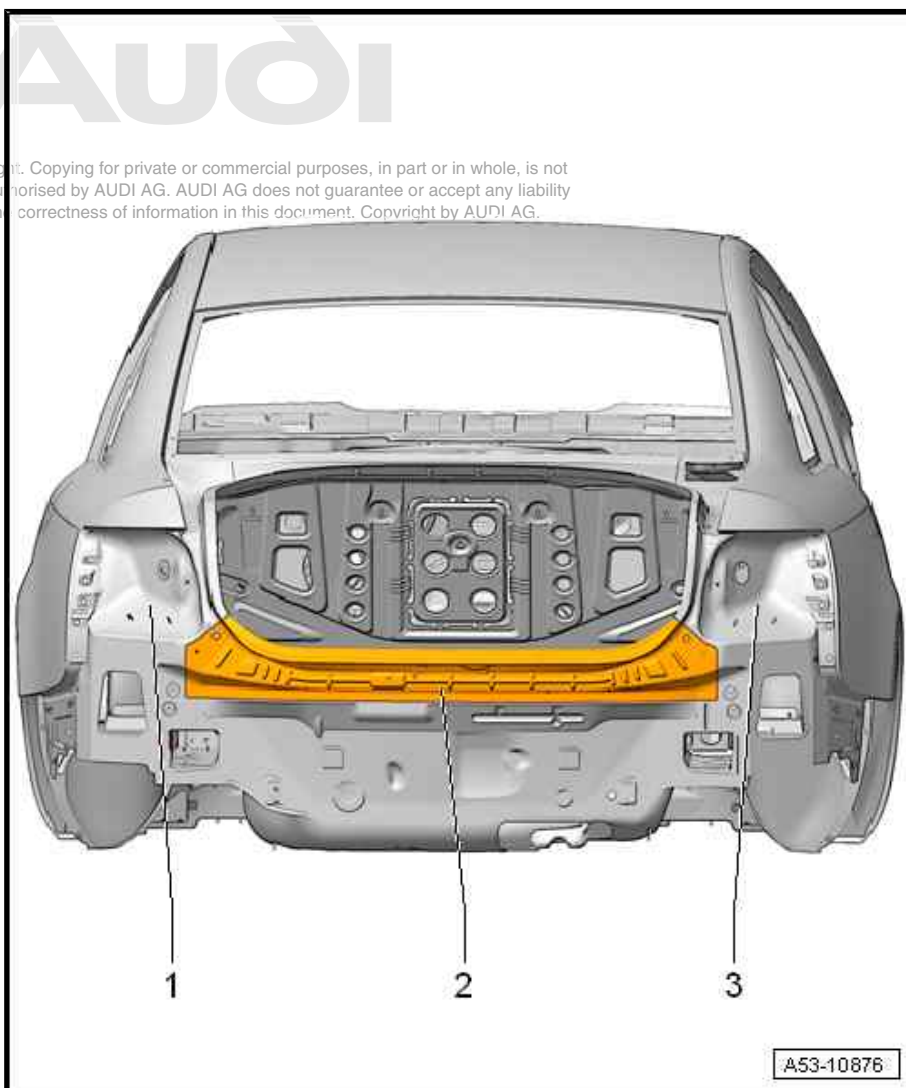
Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

1 - Tail light mounting (left-side)

2 - Rear upper cross panel

3 - Tail light mounting (right-side)

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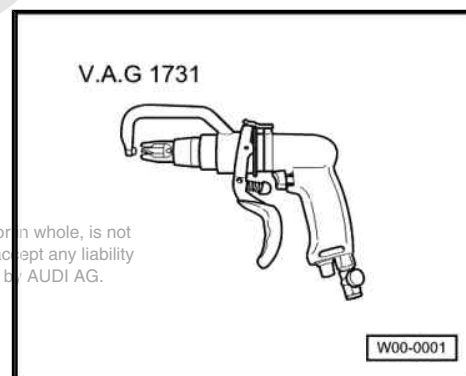


### 1.1 Tools

Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6525-
- ◆ Resistance spot welder -VAS 6530-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Compact angle grinder -VAS 5167-
- ◆ Spot weld breaker -V.A.G 1731-

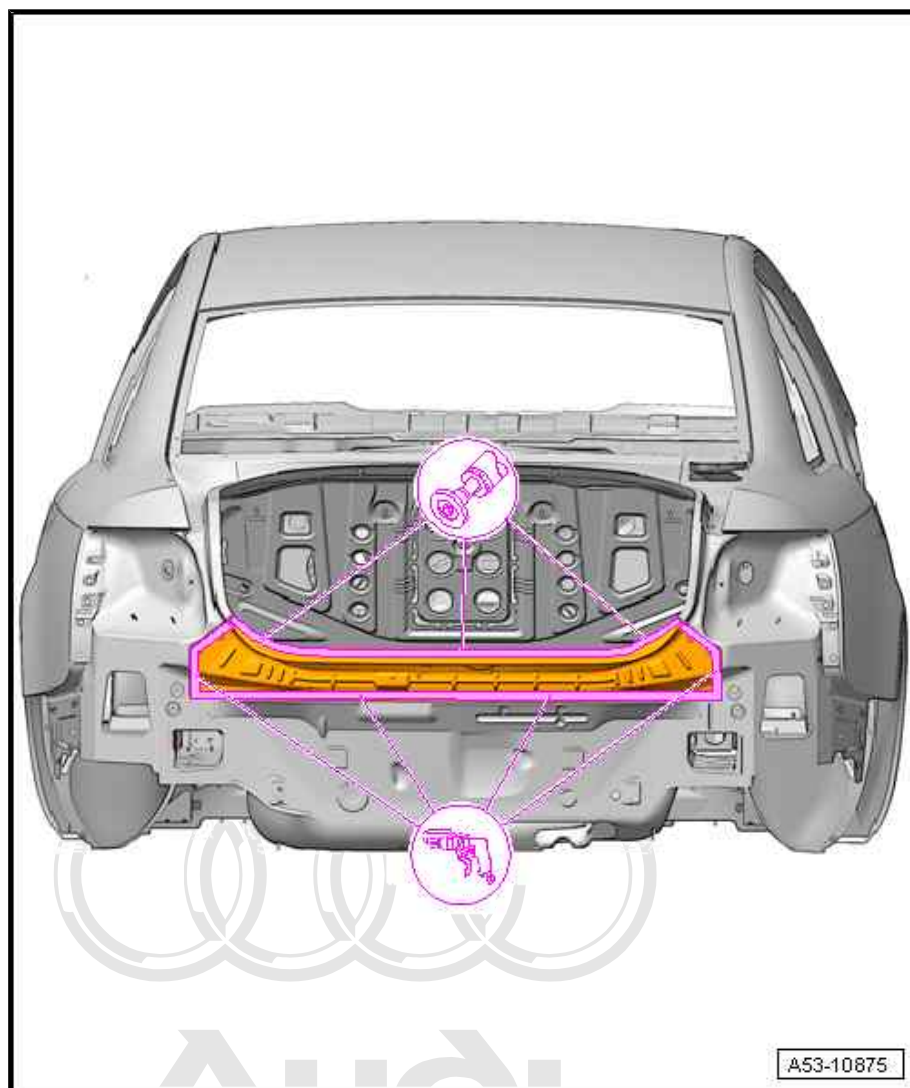
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## 1.2 Procedure

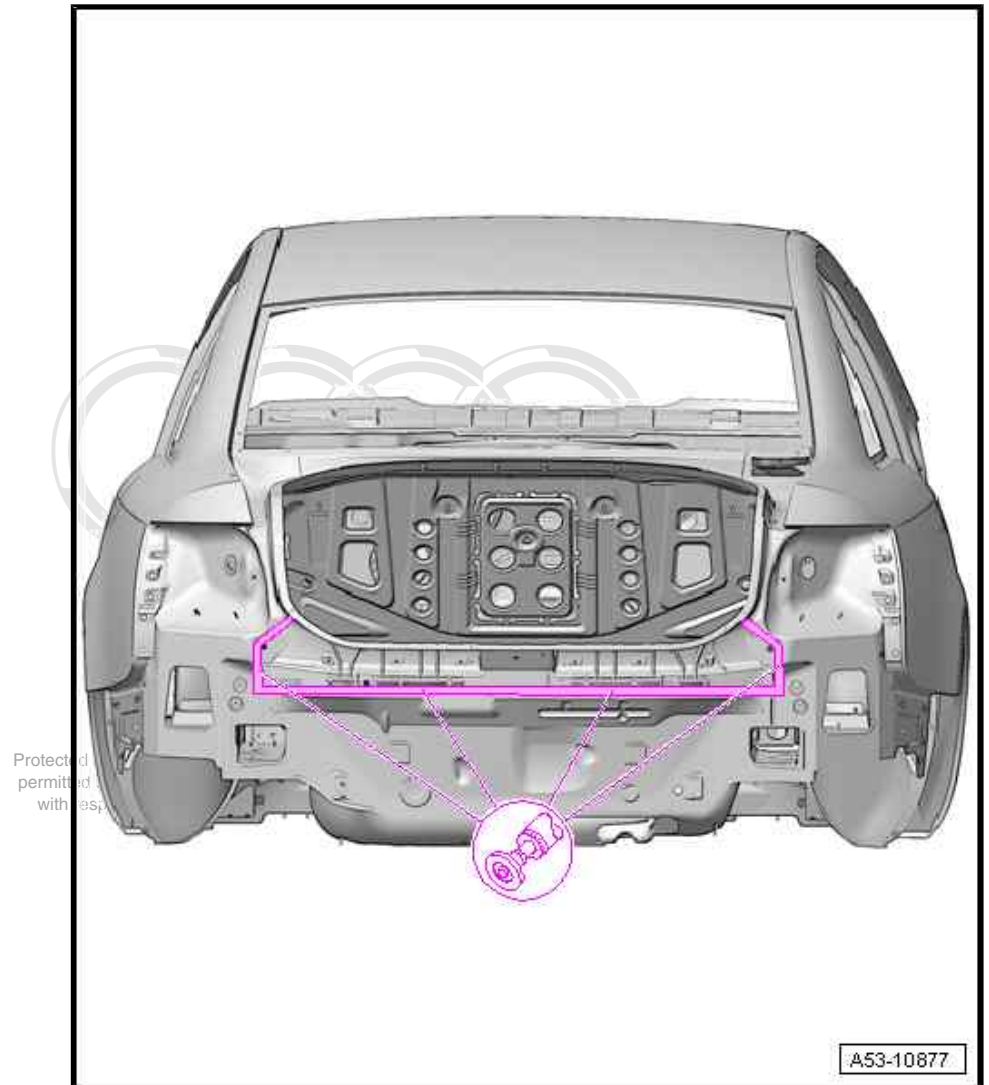
### Cutting locations

- Drill out original joint using spot weld breaker -V.A.G 1731- .
- Separate flanged seam using compact angle grinder -VAS 5167- .



- Remove remaining material using compact angle grinder - VAS 5167- .

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#### Replacement part

- ◆ Rear cross panel

#### Preparing new part

Separate flange area of cross panel from replacement part.

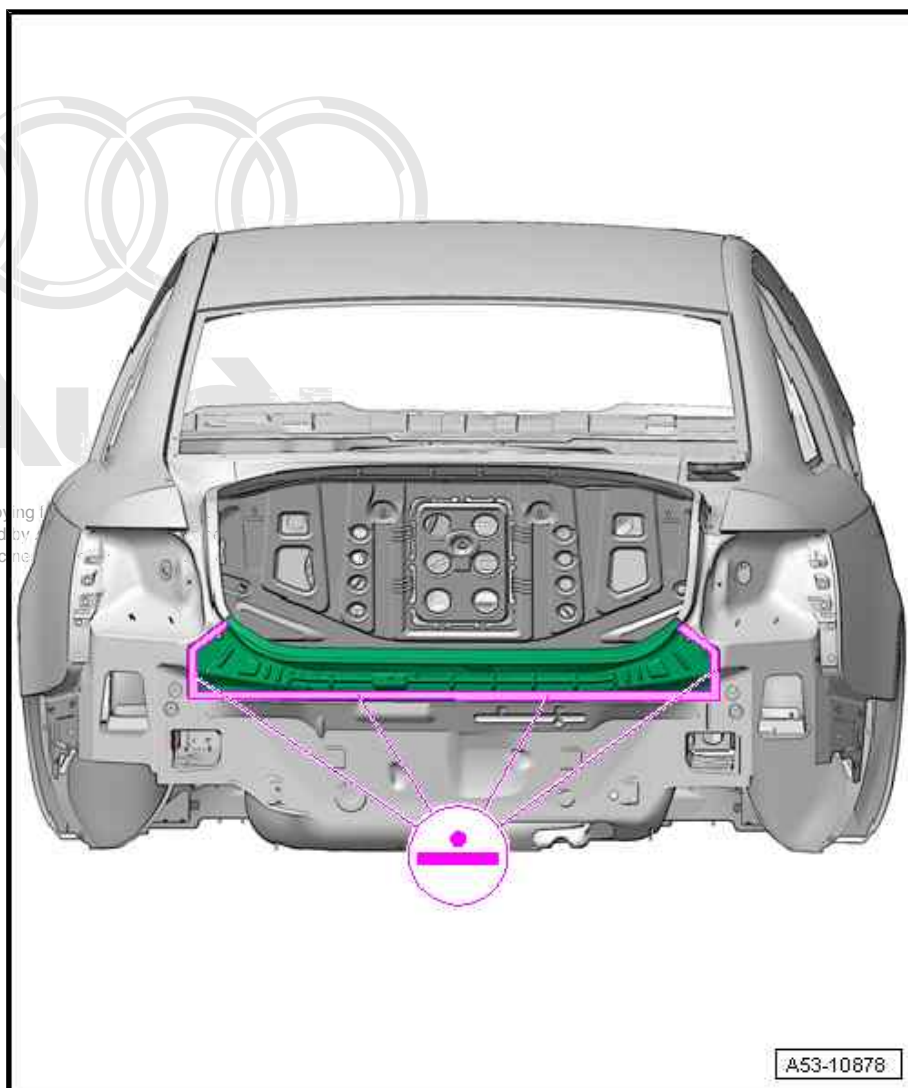
#### Note

*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

#### Welding in

- Weld in rear cross member using resistance spot welder : RP spot weld seam.

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RO: 53 09 55 50

## 2 Rear upper cross panel - Renewal (Avant)



### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

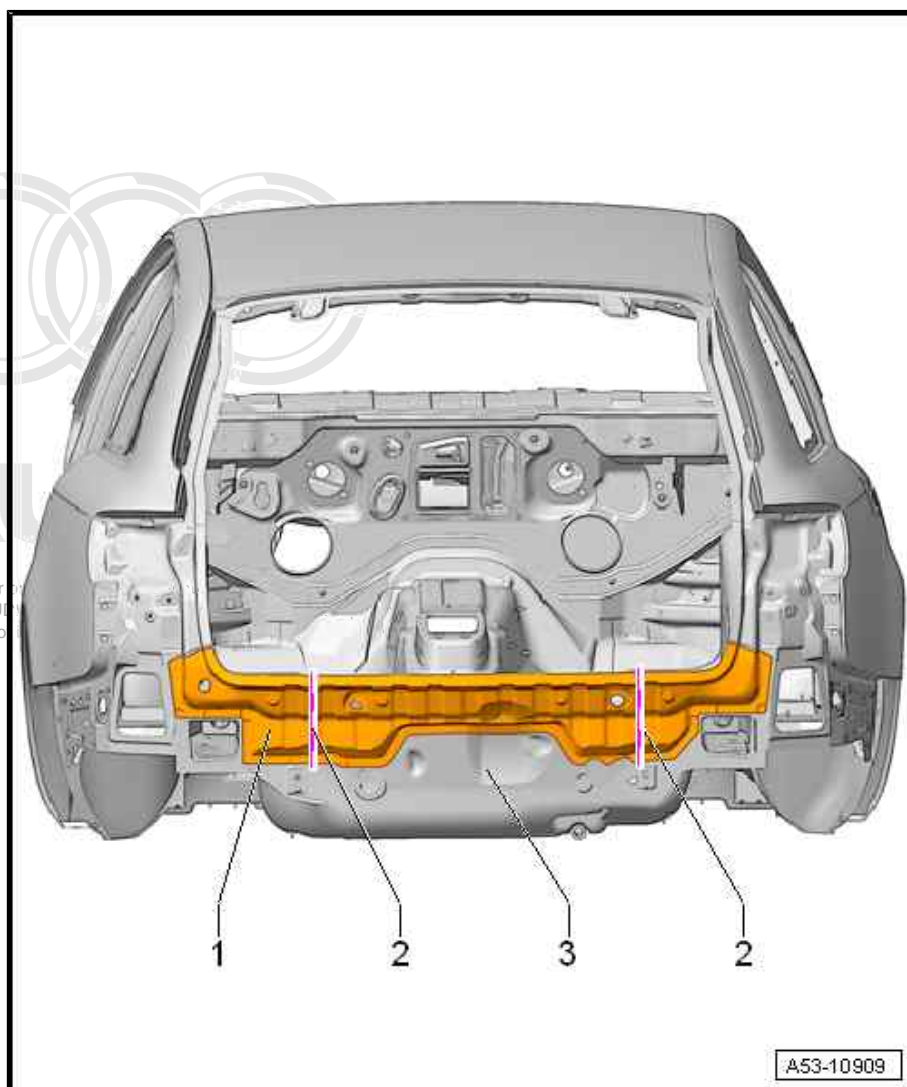
### 1 - Rear upper cross panel

### 2 - Separating cut

Partial renewal

*Partial renewal is possible with these separating cuts.*

### 3 - Lower cross panel



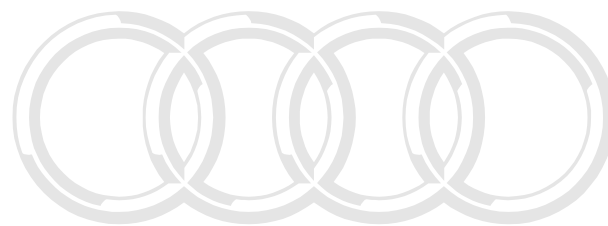
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## 2.1 Tools

Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A-

- ◆ Resistance spot welder -VAS 6525-
- ◆ Resistance spot welder -VAS 6530-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Compact angle grinder -VAS 5167-
- ◆ Spot weld breaker -V.A.G 1731-

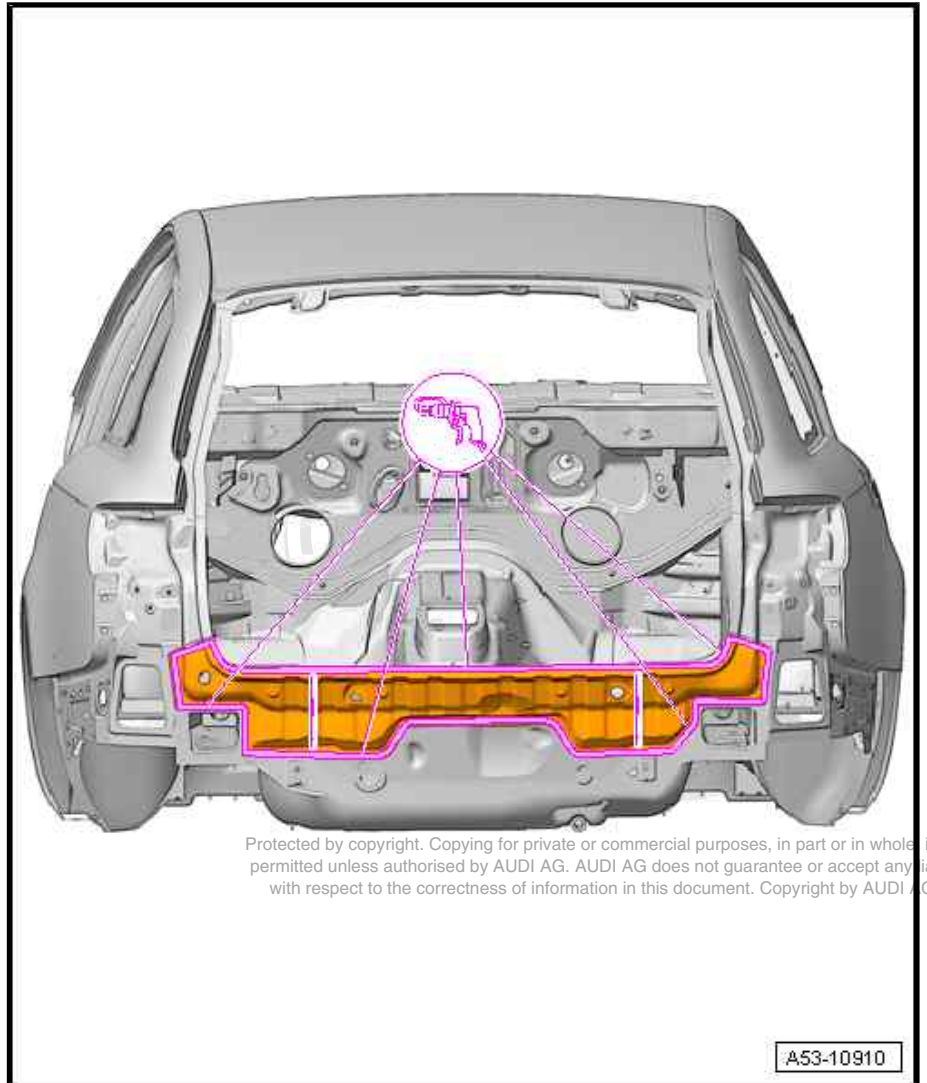


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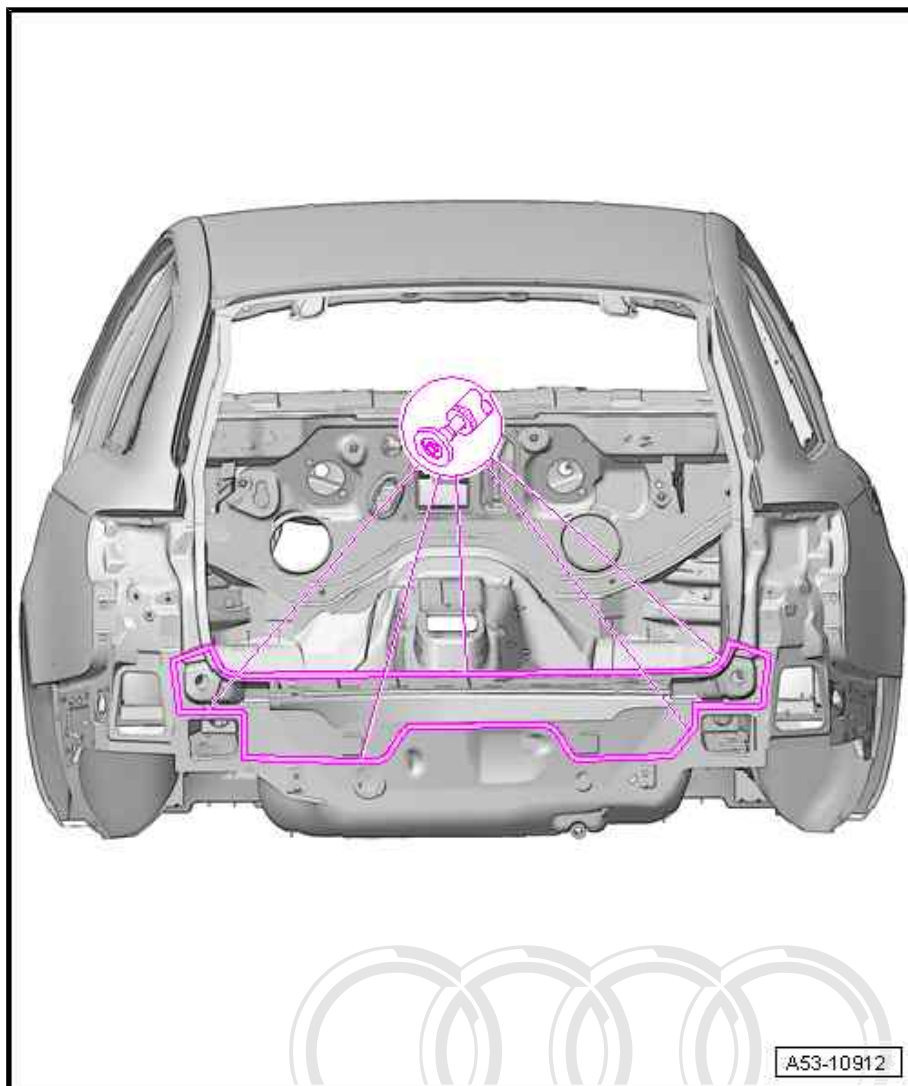
## 2.2 Procedure

### Cutting locations

- Partial renewal is possible with the separating cut shown.
- Drill out original joint using spot weld breaker -V.A.G 1731- .



- Remove remaining material using compact angle grinder - VAS 5167- .



## Replacement part

- ◆ Rear cross panel



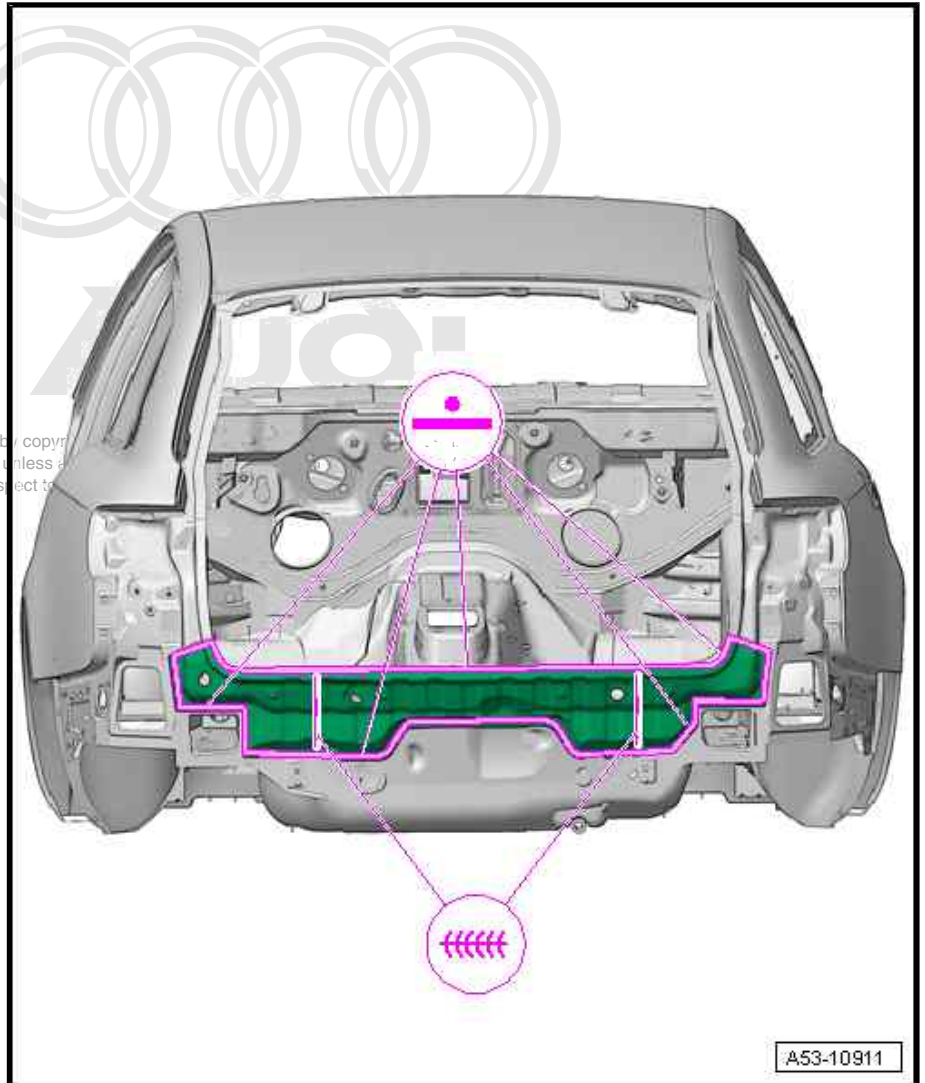
## Note

*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

## Welding in

- Butt weld at separating cuts using shielded arc welding equipment 250A : SG continuous seam.
- Weld in cross panel using resistance spot welder : RP spot weld seam.

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RO: 53 05 55 52

### 3 Inner cross panel - Renewal

**WARNING**

*Always observe safety precautions.*

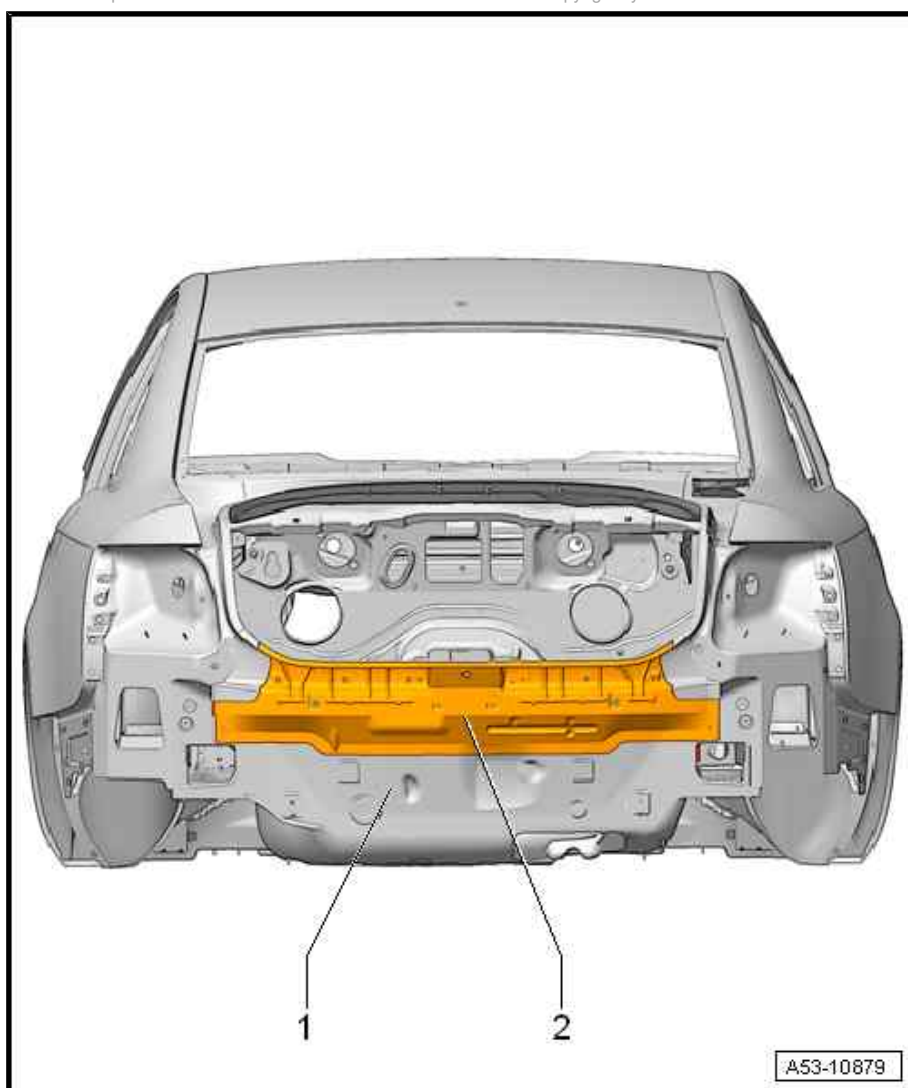
*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

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1 - Lower cross panel

2 - Inner cross panel

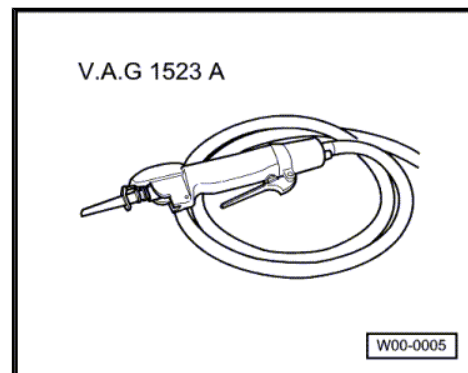


#### 3.1 Tools

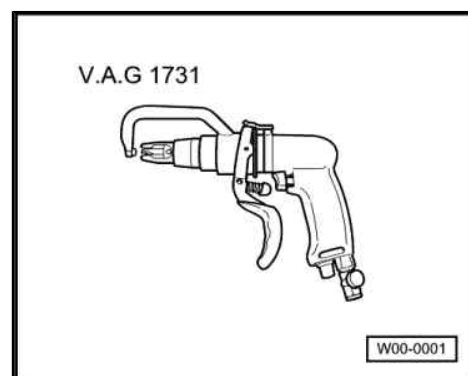
##### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6525-

- ◆ Resistance spot welder -VAS 6530-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Resistance spot welder -VAS 6545-
- ◆ Compact angle grinder -VAS 5167-
- ◆ Pneumatic sabre saw -V.A.G 1523A-



- ◆ Spot weld breaker -V.A.G 1731-



## 3.2 Procedure

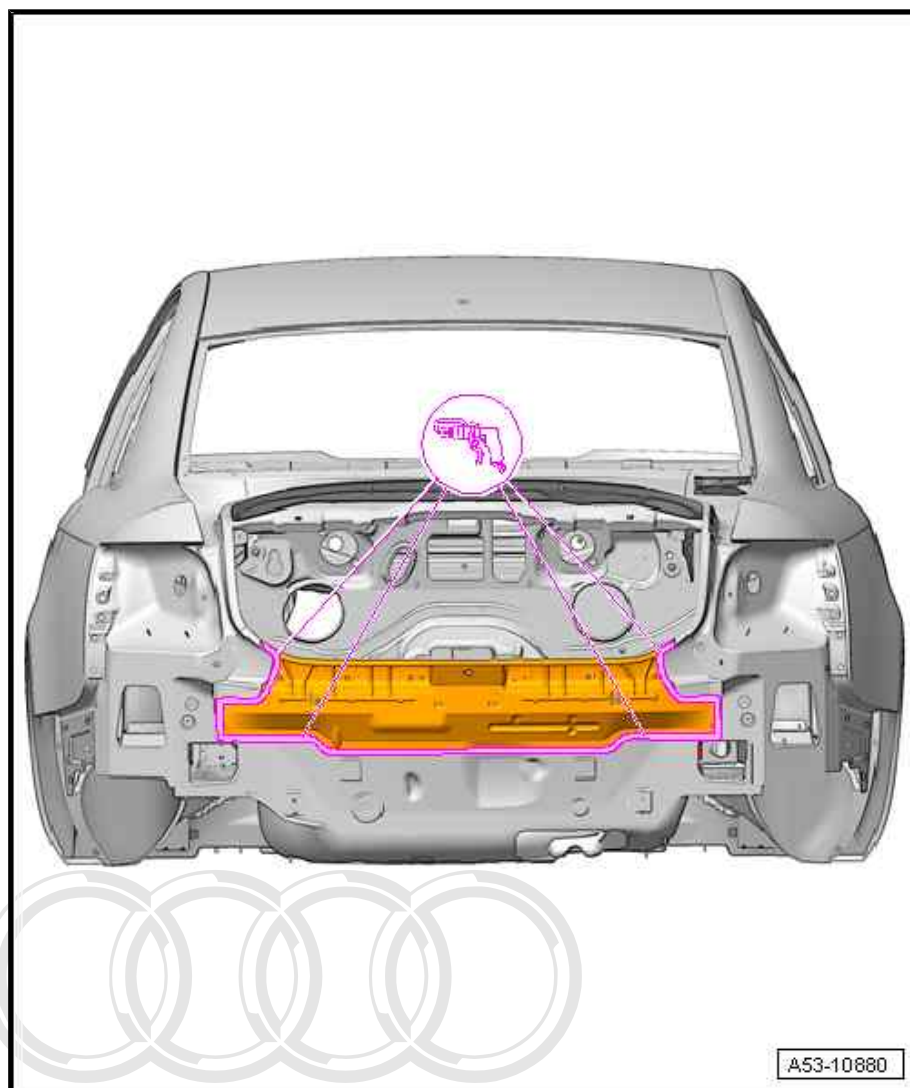
- Upper cross panel already removed ⇒ [page 196](#)

### Cutting locations

- Drill out original joint using spot weld breaker -V.A.G 1731- .
- Pull out part from above.

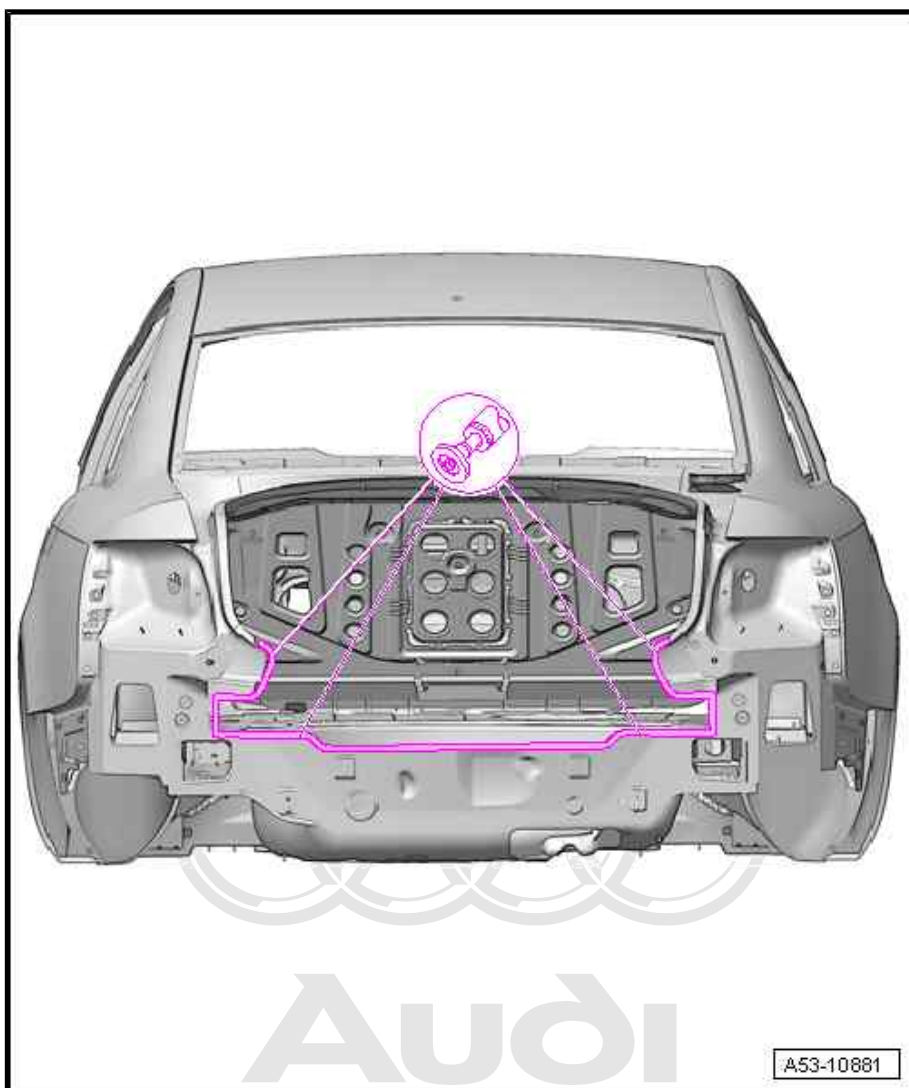


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- Remove remaining material using compact angle grinder - VAS 5167- .

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### Replacement part

- ◆ Inner cross panel

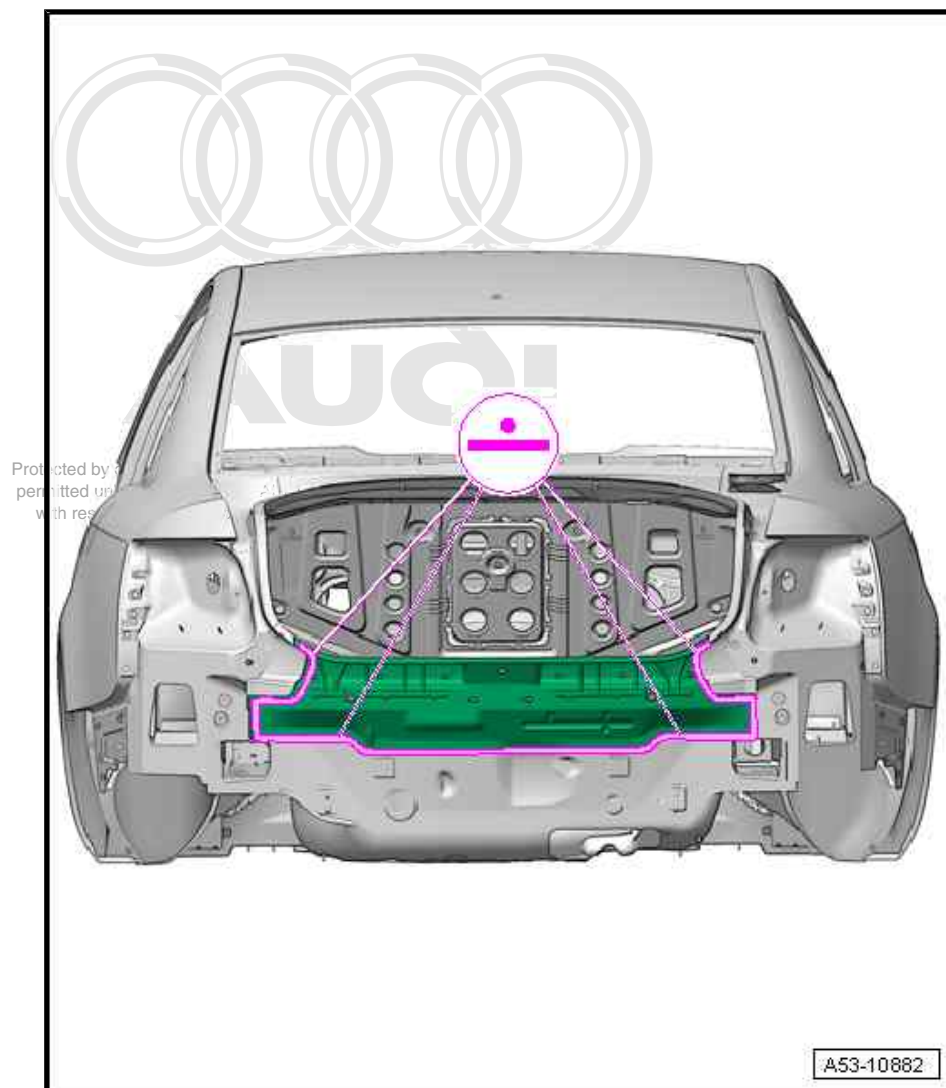


### Note

*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

### Welding in

- Guide in part from above between tail light mounting and bottom reinforcement.
- Weld in new part using resistance spot welder : RP spot weld seam.



- Welding in cross panel ⇒ [page 196](#)

RO: 53 05 55 52

## 4 Inner cross panel - Renewal (Avant)



### WARNING

*Always observe safety precautions.*

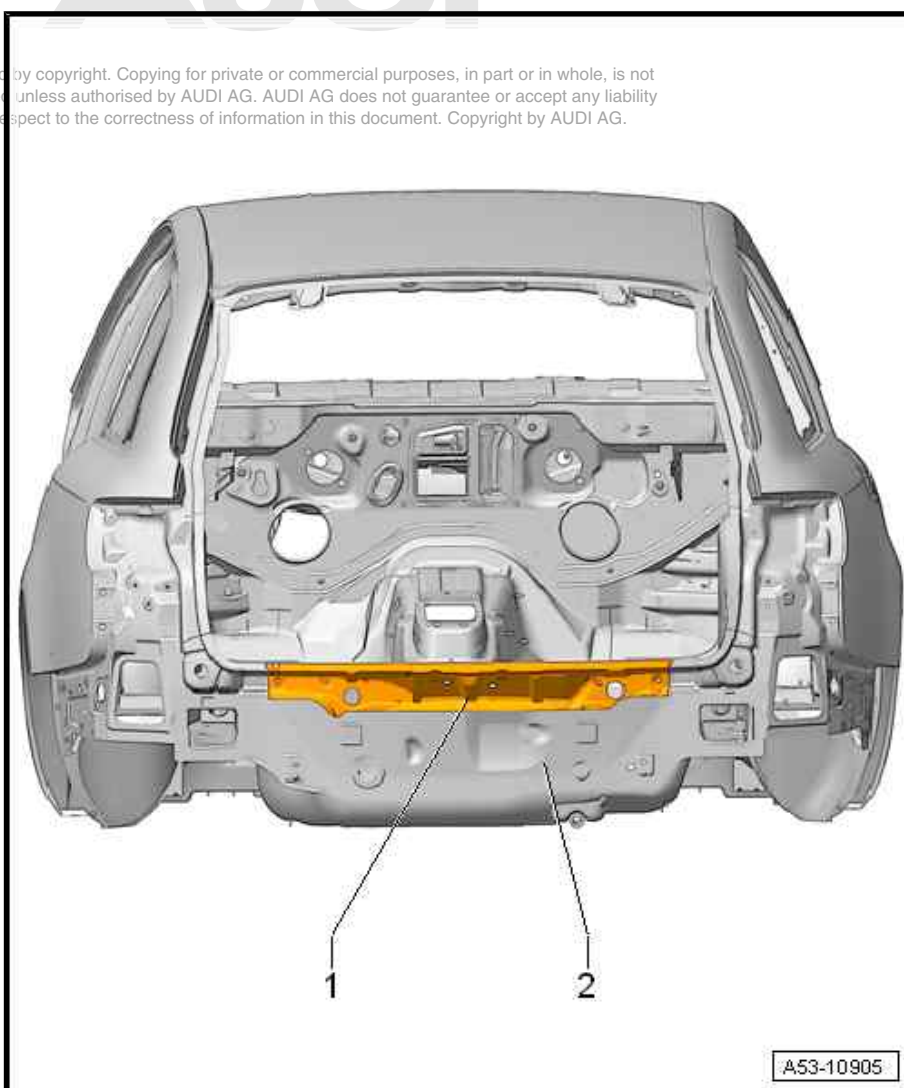
*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes → General Information; Body Repairs, General Body Repairs ; Safety notes .

1 - Inner cross panel

2 - Lower cross panel

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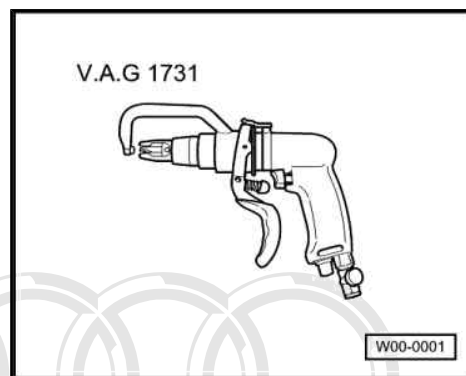
A53-10905

### 4.1 Tools

#### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6525-

- ◆ Resistance spot welder -VAS 6530-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Compact angle grinder -VAS 5167-
- ◆ Spot weld breaker -V.A.G 1731-



## 4.2 Procedure

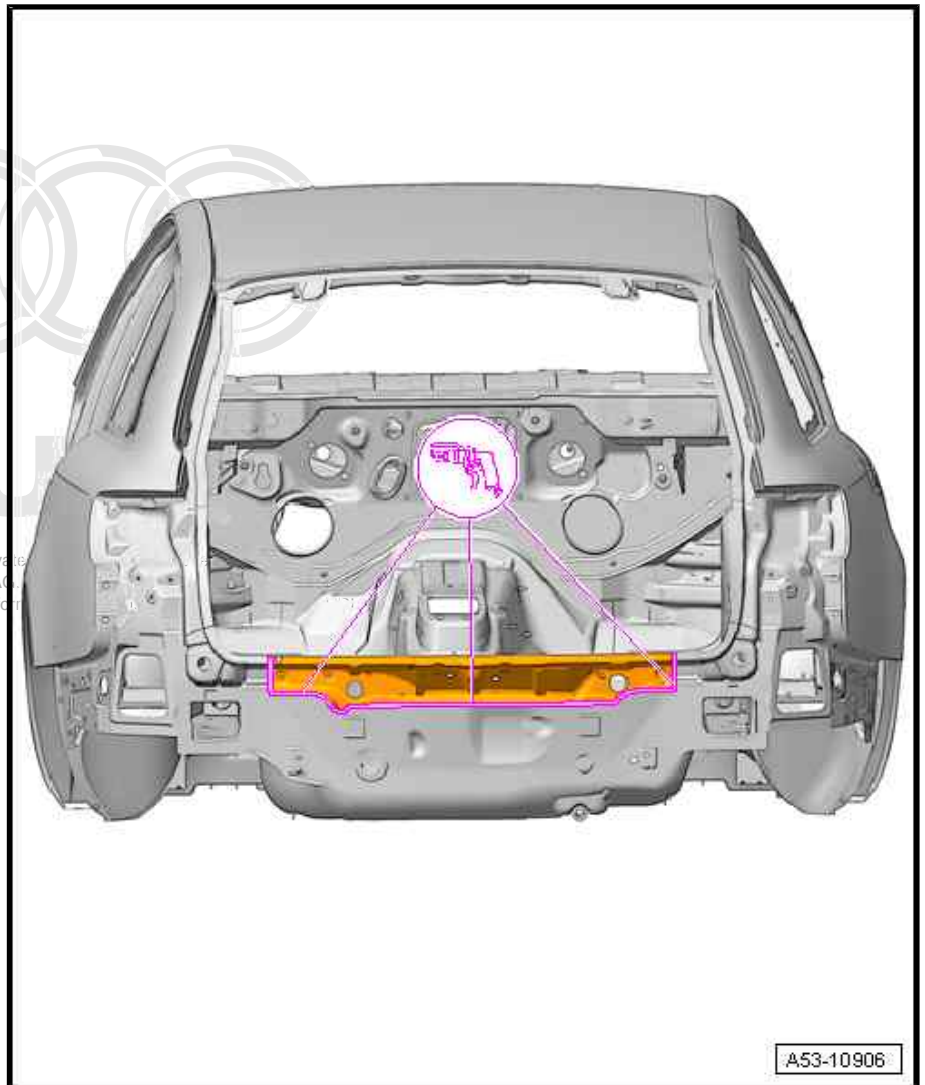
- Upper cross panel already removed ⇒ [page 196](#)

### Cutting locations

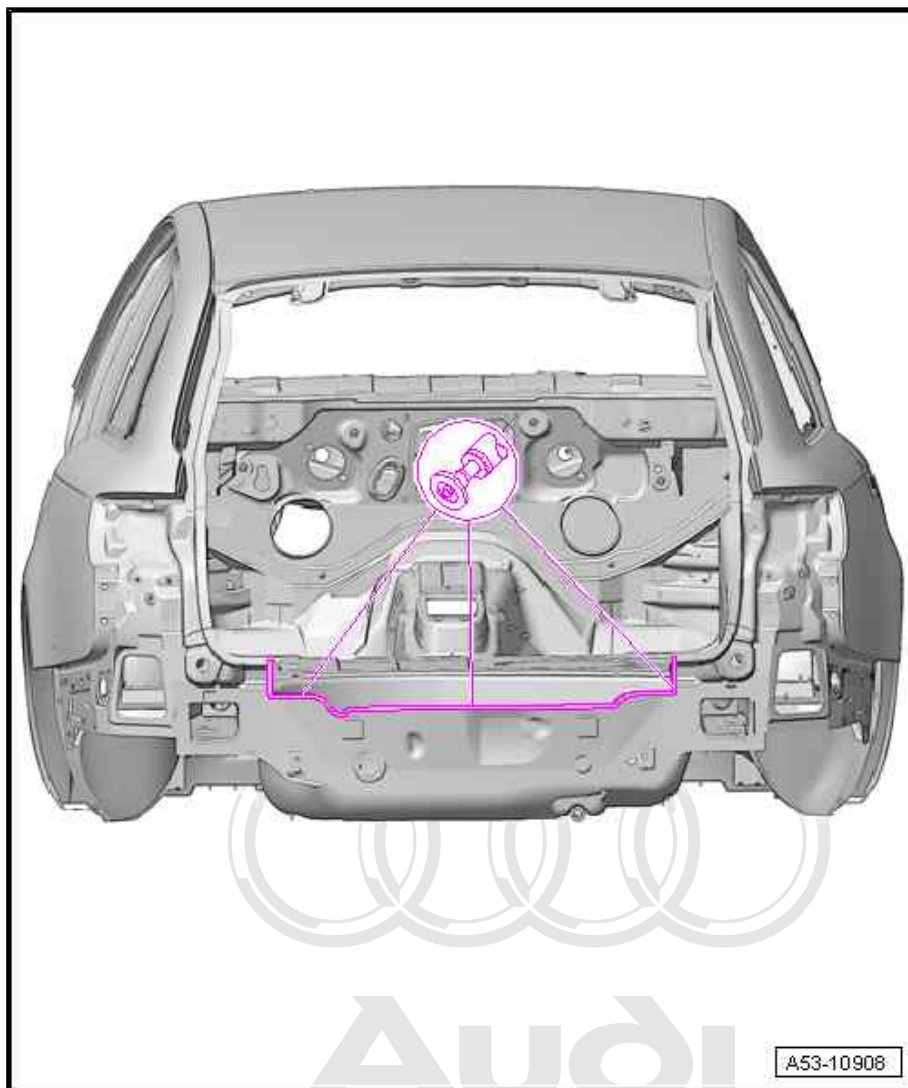
- Drill out original joint using spot weld breaker -V.A.G 1731- .

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- Remove remaining material using compact angle grinder - VAS 5167- .



### Replacement part

- ◆ Inner cross panel



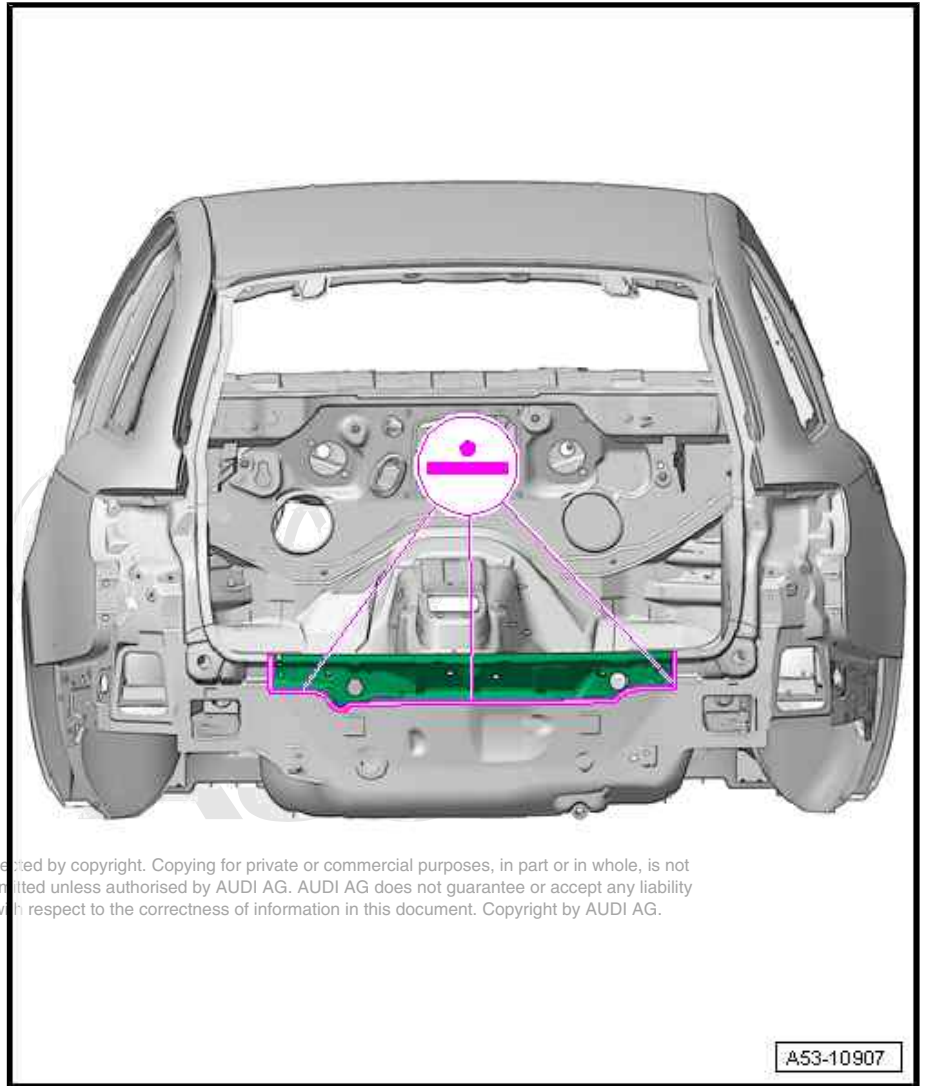
### Note

*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

### Welding in

- Guide in part from above between tail light mounting and bottom reinforcement.
- Weld in new part using resistance spot welder : RP spot weld seam.

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- Welding in upper cross panel ⇒ [page 196](#)

RO: 53 05 55 60

## 5 Lower cross panel - Renewal



### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

1 - Tail light mounting (left and right)

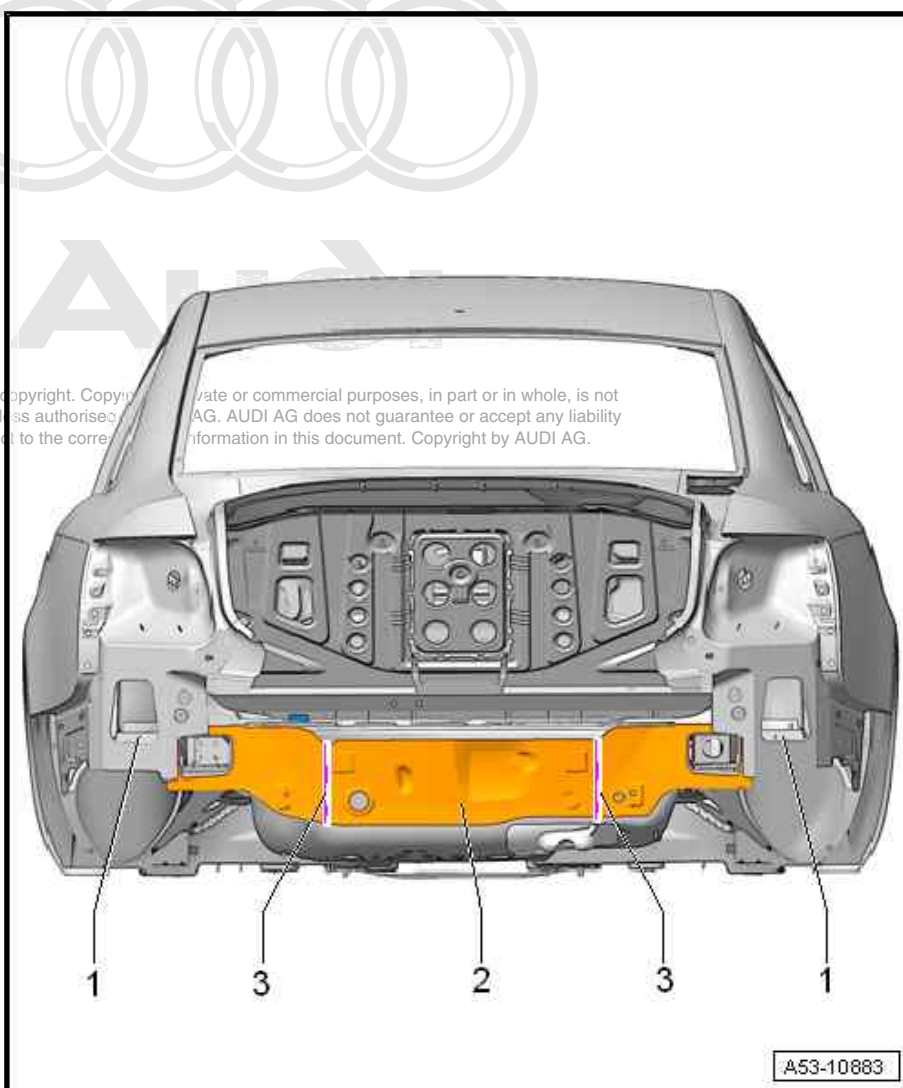
2 - Cross panel

3 - Separating cuts in cross panel



Note

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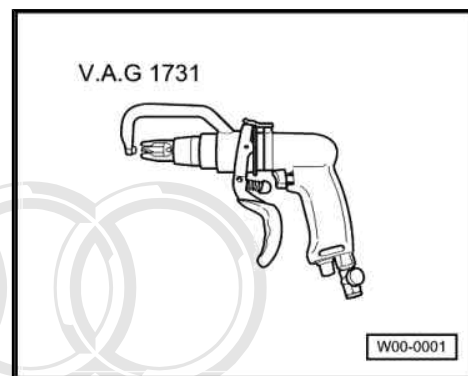


### 5.1 Tools

#### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6525-

- ◆ Resistance spot welder -VAS 6530-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Compact angle grinder -VAS 5167-
- ◆ Spot weld breaker -V.A.G 1731-



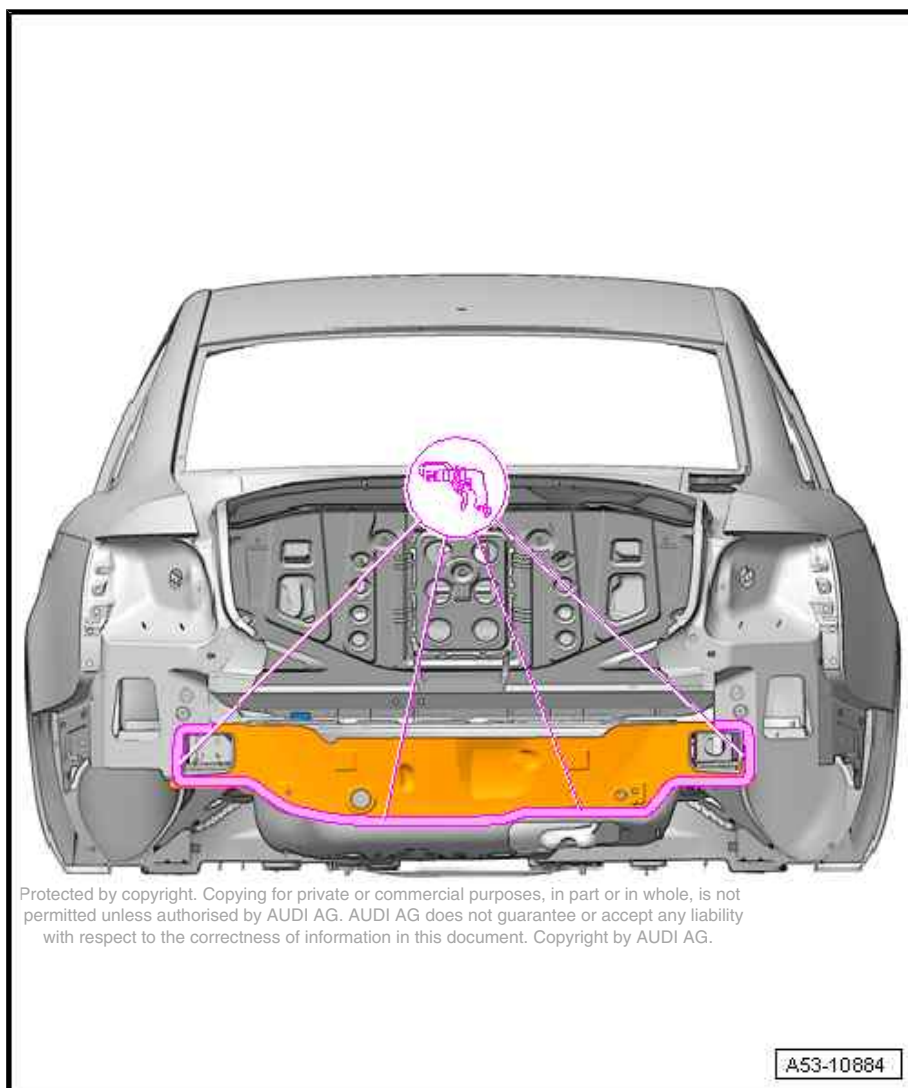
## 5.2 Procedure

- Upper cross panel already removed ⇒ [page 196](#)
- Inner cross panel already cut out ⇒ [page 206](#)

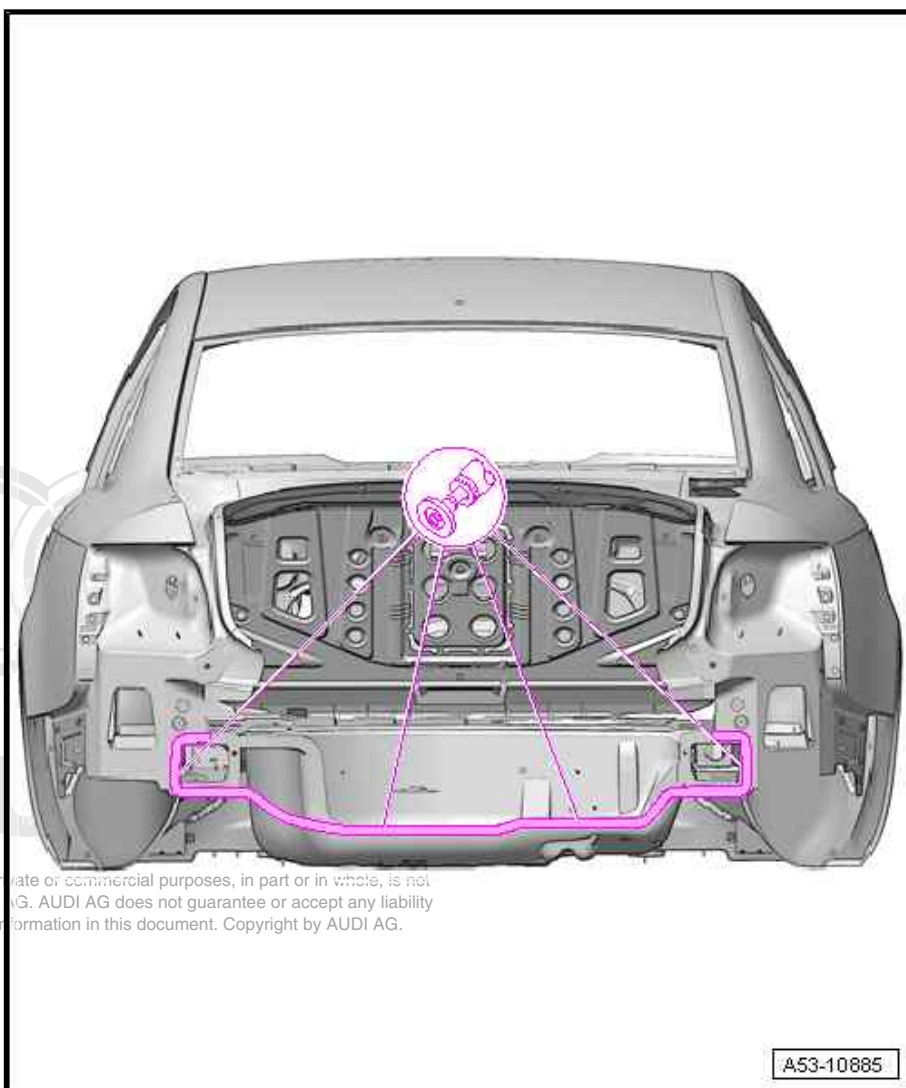
### Cutting locations

- Make separating cuts according to extent of damage using pneumatic sabre saw -V.A.G 1523A- .
- Separate original joint using spot weld breaker -V.A.G 1731- .

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- Remove remaining material using compact angle grinder - VAS 5167- .



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### Replacement part

- ◆ Lower cross panel

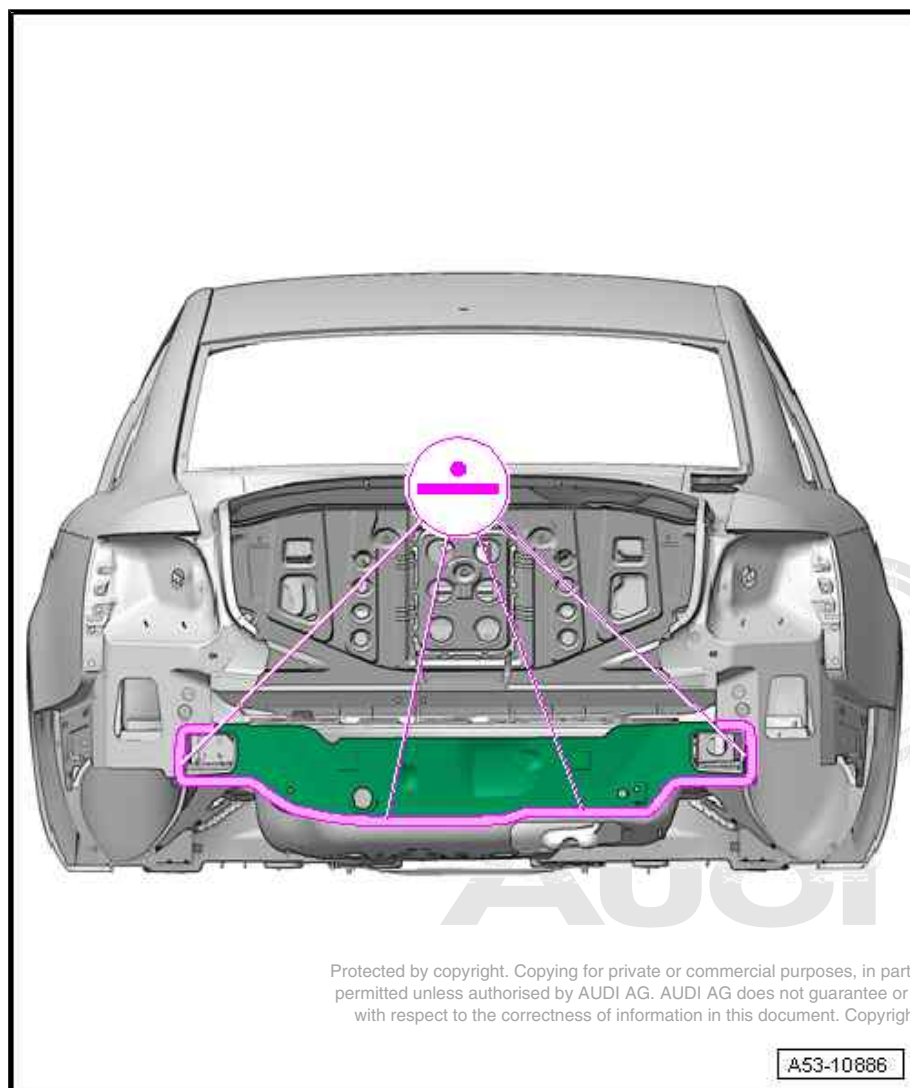


### Note

*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

### Welding in

- Weld in cross panel using resistance spot welder : RP spot weld seam.



- Welding in upper cross panel ⇒ [page 196](#)
- Welding in inner cross panel ⇒ [page 206](#)

RO: 53 05 55 60

## 6 Lower cross panel - Renewal (Avant)



### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes → General Information; Body Repairs, General Body Repairs ; Safety notes .

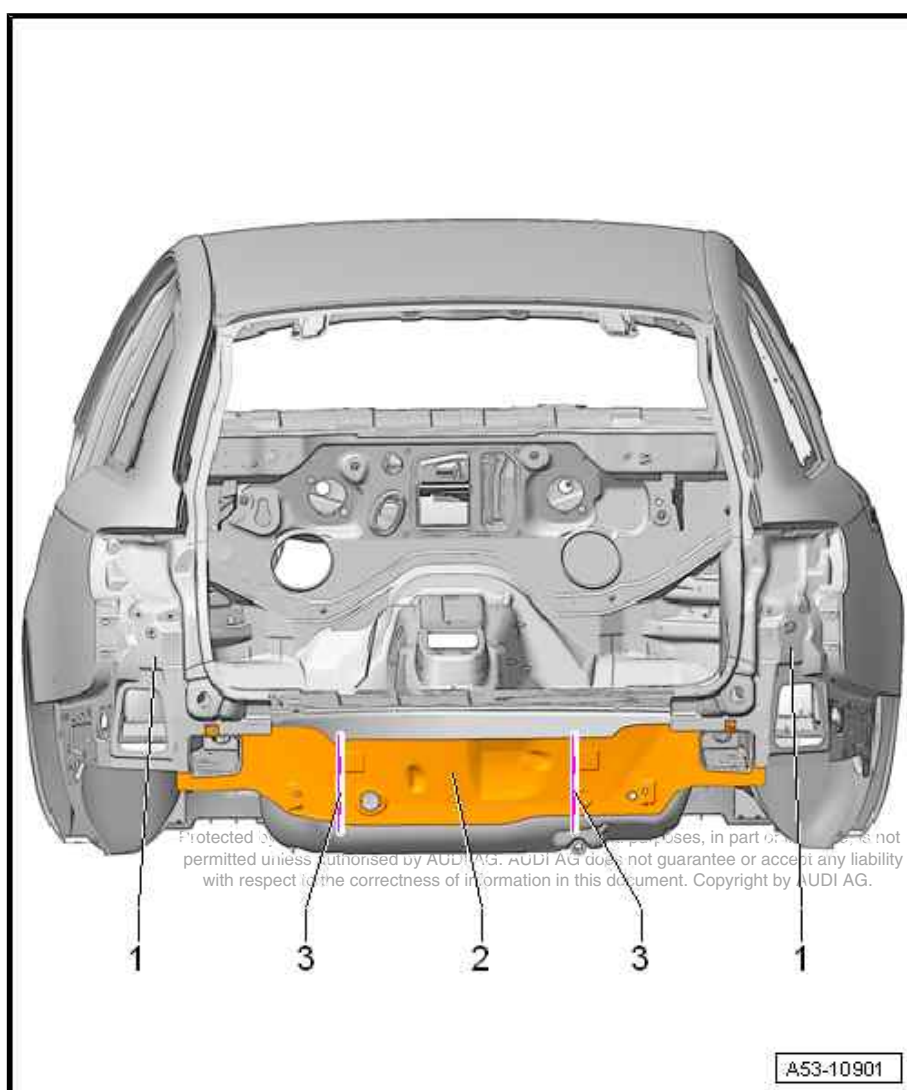
1 - Tail light mountings

2 - Cross panel

3 - Separating cuts in cross panel



Note



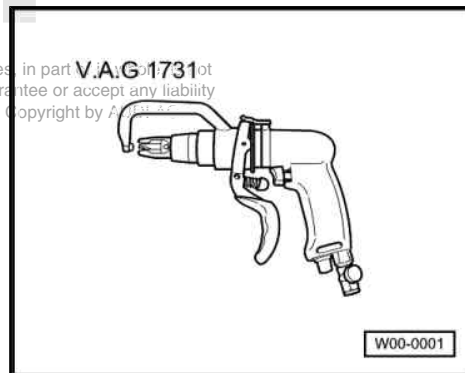
### 6.1 Tools

#### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6525-

- ◆ Resistance spot welder -VAS 6530-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Compact angle grinder -VAS 5167-
- ◆ Spot weld breaker -V.A.G 1731-

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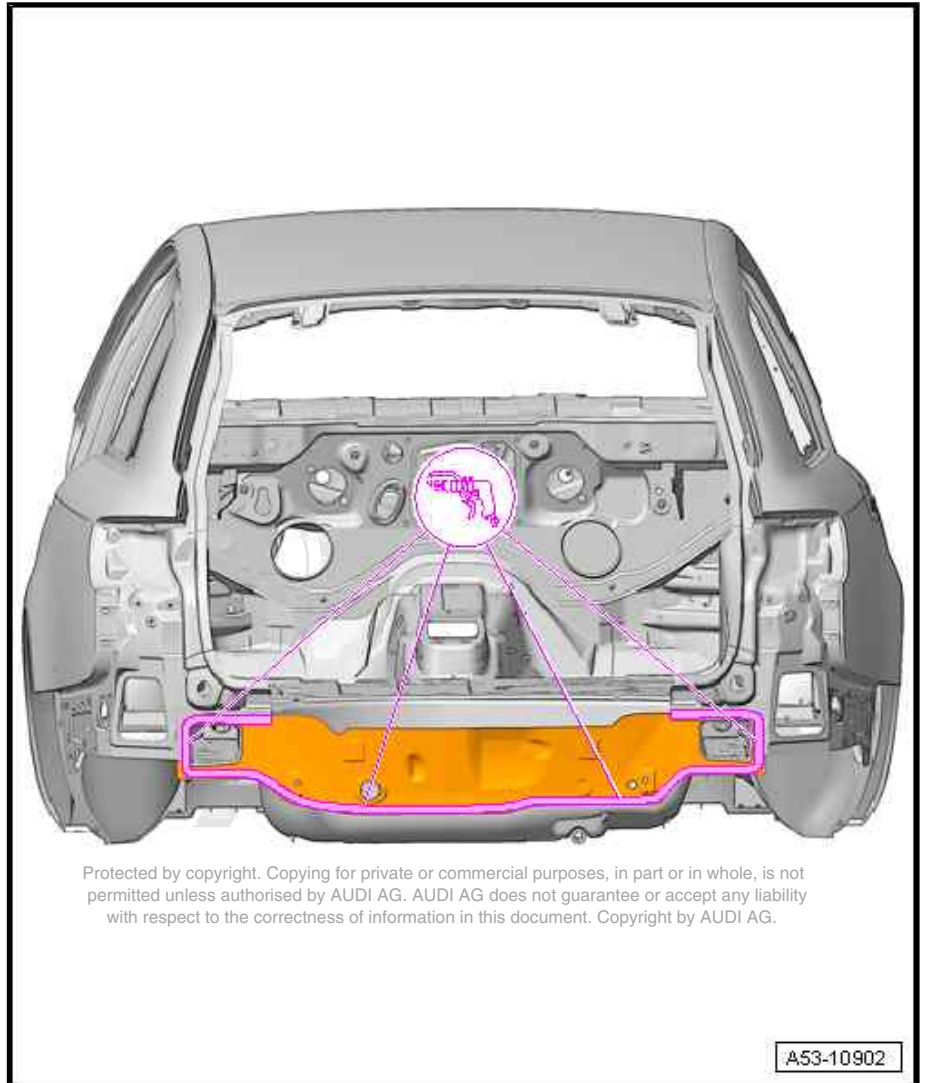


## 6.2 Procedure

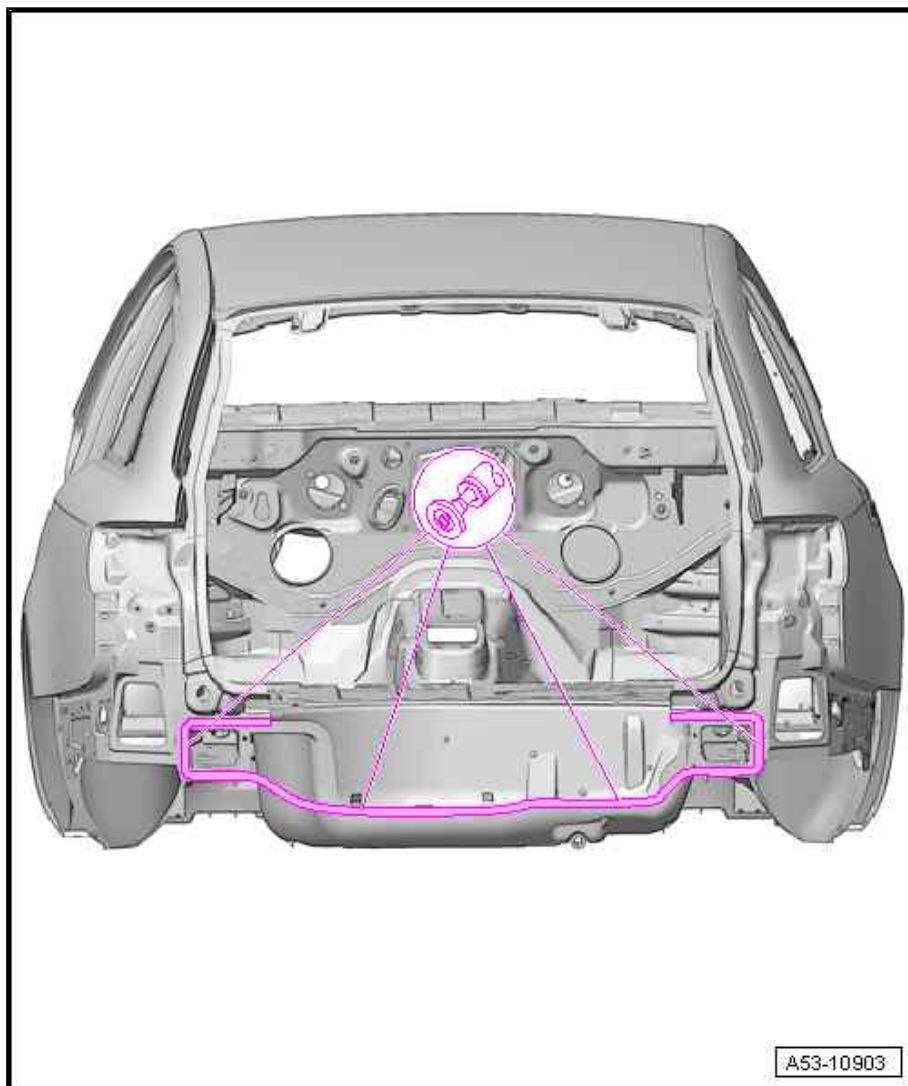
- Upper cross panel already removed ⇒ [page 196](#)
- Inner cross panel already cut out ⇒ [page 206](#)

### Cutting locations

- Mark off separating cut according to degree of damage and make cut using pneumatic sabre saw -V.A.G 1523A- .
- Drill out original joint using spot weld breaker -V.A.G 1731- .



- Remove remaining material using compact angle grinder - VAS 5167- .



## Replacement part

- ◆ Lower cross panel

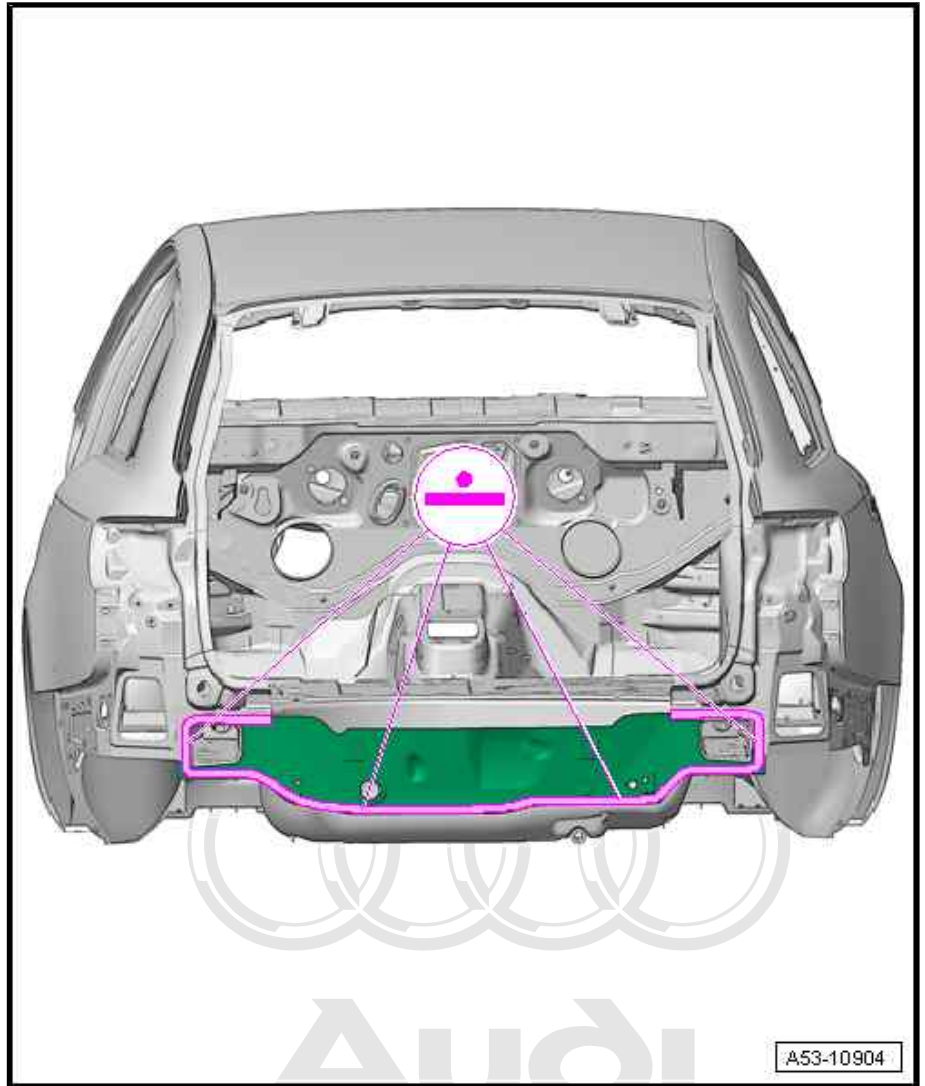


## Note

*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

## Welding in

- Weld in cross panel using resistance spot welder : RP spot weld seam.



- Welding in upper cross panel ⇒ [page 196](#)
  - Welding in inner cross panel ⇒ [page 206](#)
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RO: 53 69 55 52

## 7 Rear wheel housing - Partial renewal



### WARNING

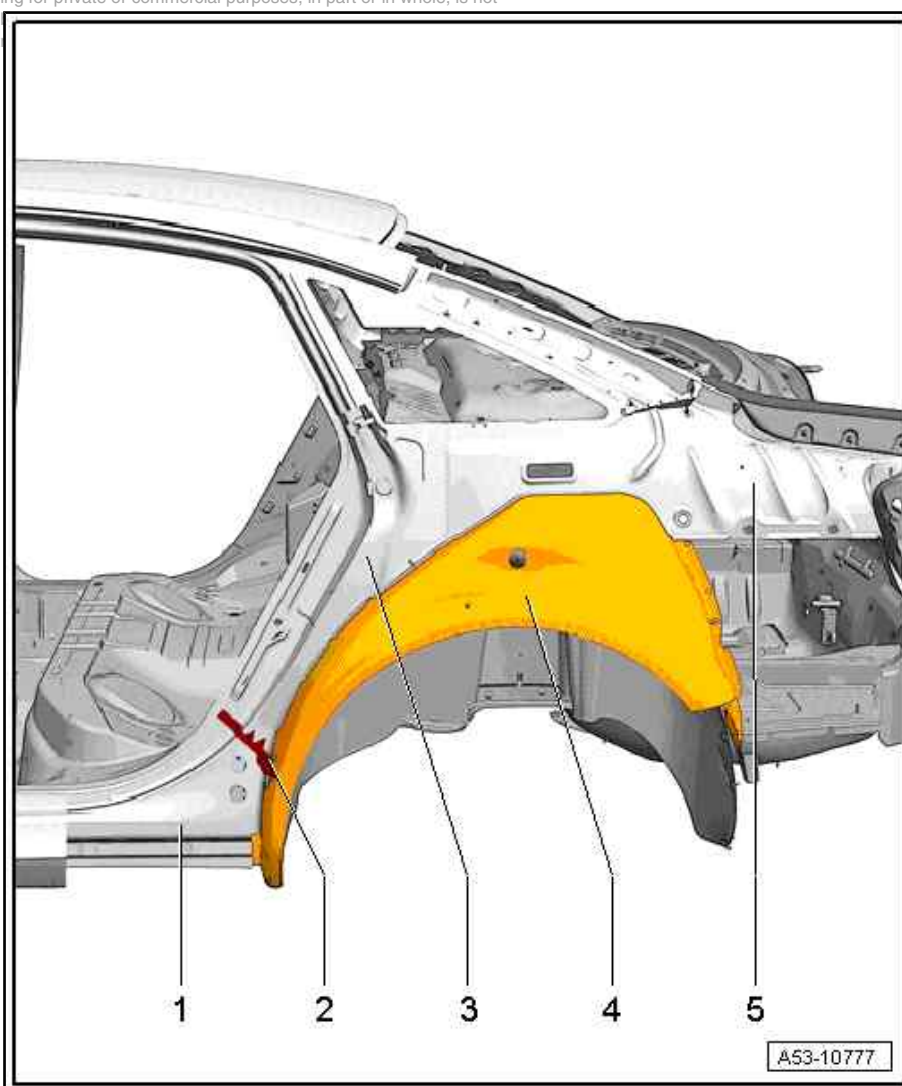
*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

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- 1 - Side member
- 2 - Moulded foam insert
- 3 - Inner side panel
- 4 - Wheel housing
- 5 - D-pillar reinforcement



### 7.1 Tools

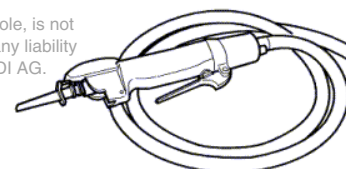
Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A- or
- ◆ Resistance spot welder -VAS 6525- or

- ◆ Resistance spot welder -VAS 6530- or
- ◆ Resistance spot welder -VAS 6535- or
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment -VAS 6045 A-
- ◆ Compact angle grinder -VAS 5167-
- ◆ Pneumatic sabre saw -V.A.G 1523 A-

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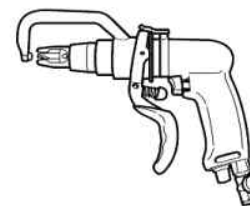
V.A.G 1523 A



W00-0005

- ◆ Spot weld breaker -V.A.G 1731-

V.A.G 1731



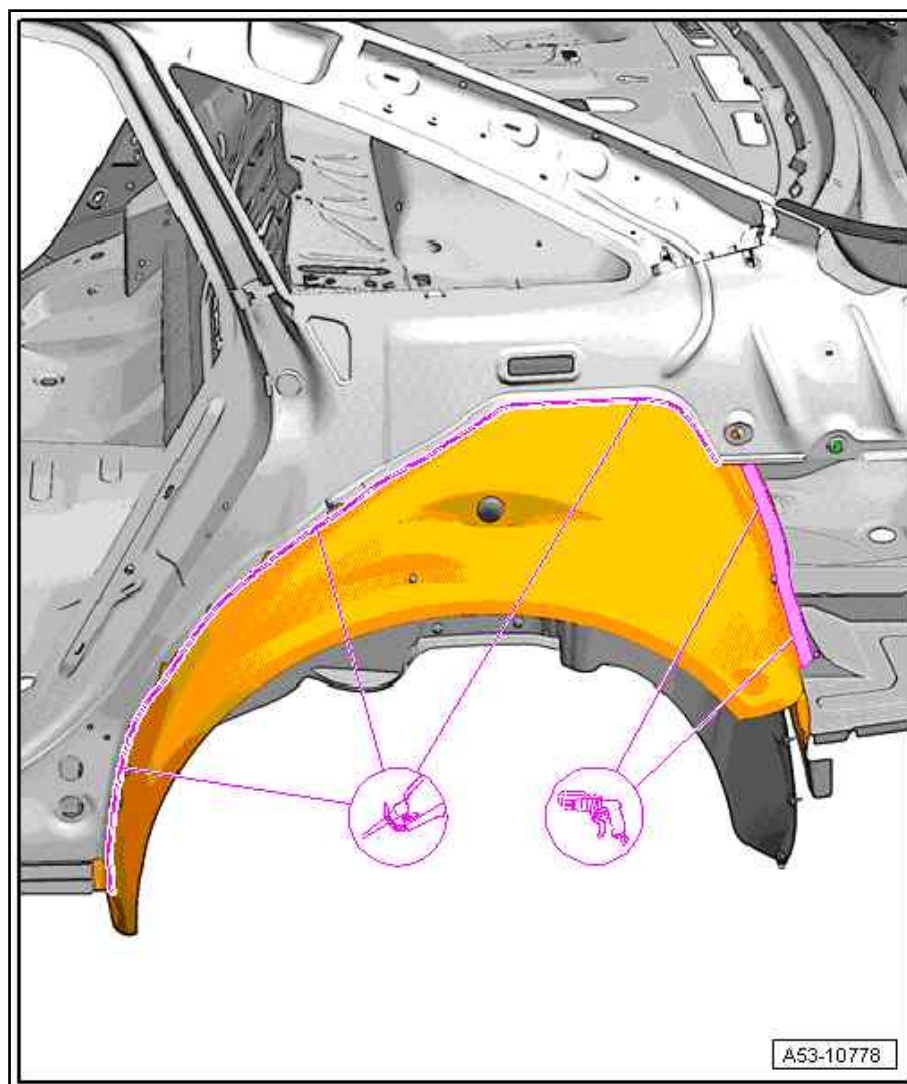
W00-0001

## 7.2 Procedure

- Side panel already cut out ⇒ [page 248](#)

### Cutting locations

- Make separating cuts as shown using pneumatic sabre saw - V.A.G 1523 A- .
- Separate original joint using spot weld breaker -V.A.G 1731- .

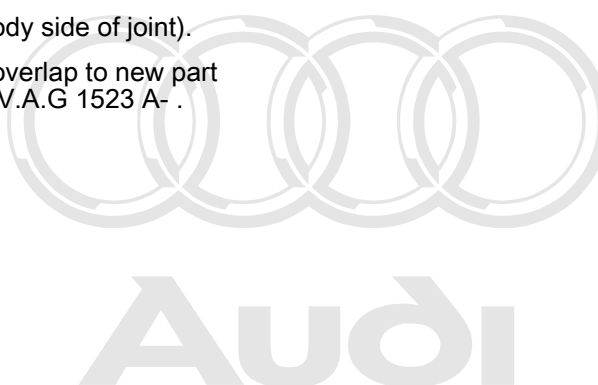


### Replacement part

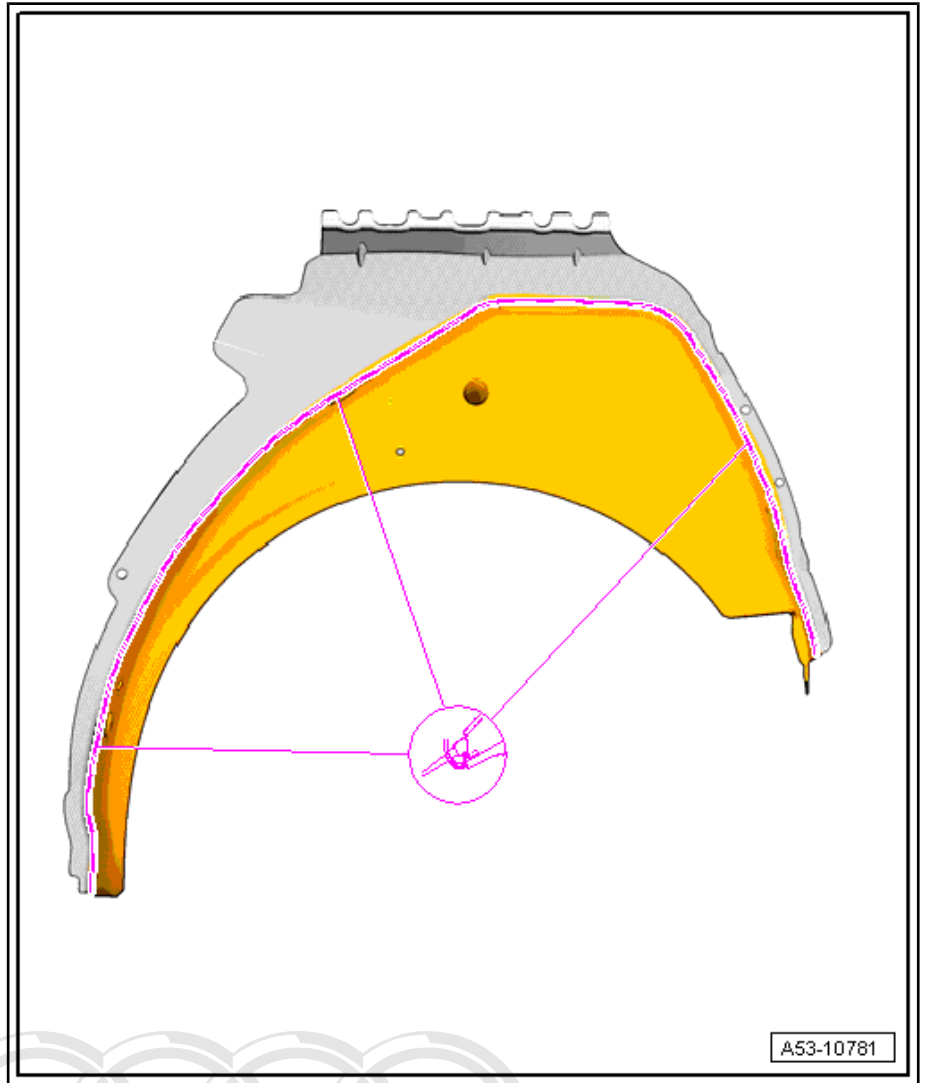
- ◆ Rear wheel housing

### Preparing new part

- Step separating cut for joggle-joint (on body side of joint).
- Transfer separating cut plus 10 mm for overlap to new part and cut off using pneumatic sabre saw -V.A.G 1523 A- .



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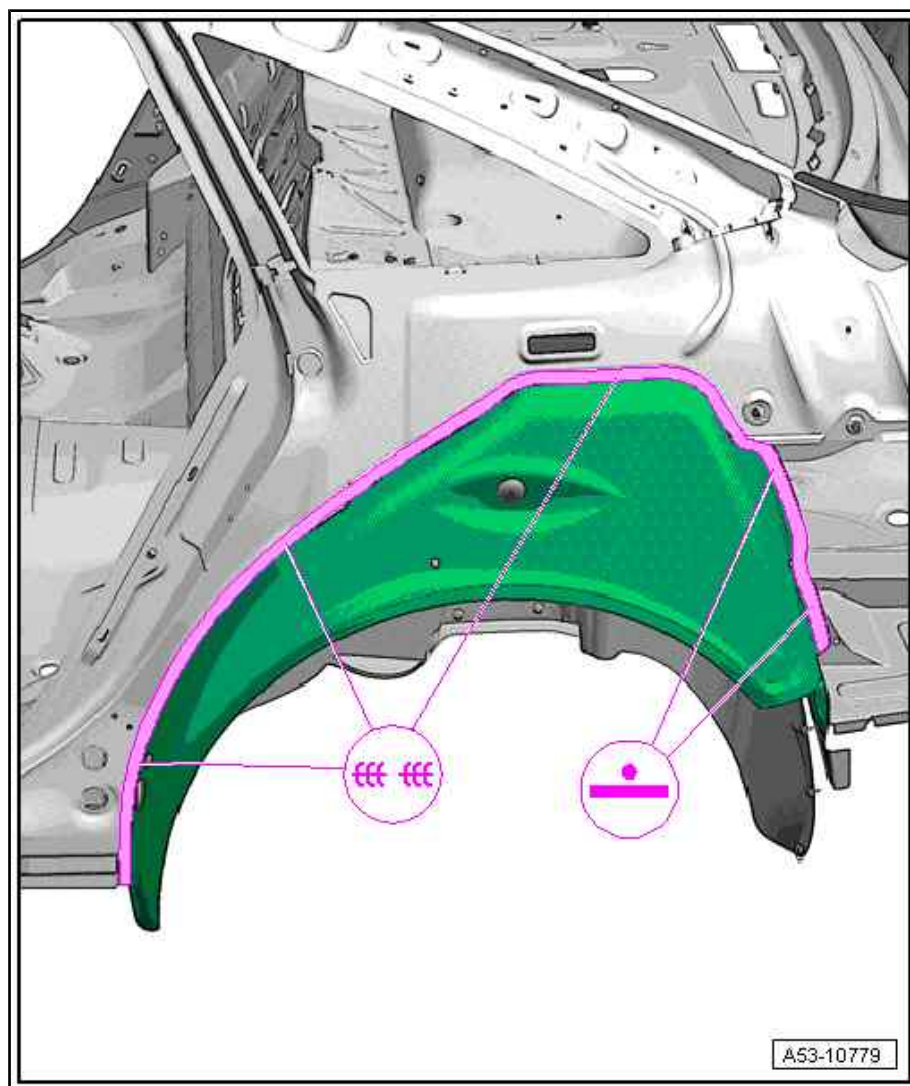


 **Note**

*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

**Welding in**

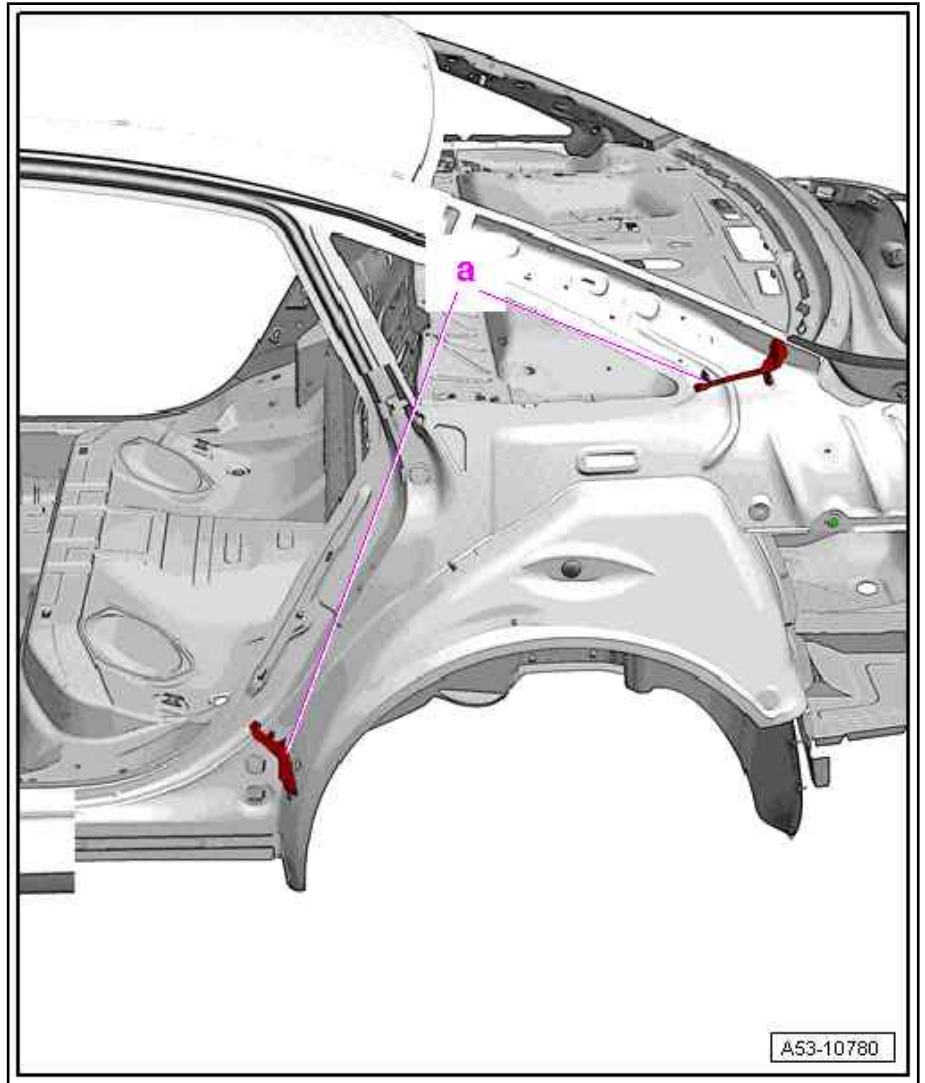
- Weld in wheel housing using shielded arc welding equipment
- VAS 6045 A : SG continuous seam (staggered with gaps)
- Weld in remaining joint at wheel housing using resistance spot welder : RP spot weld seam.



Fit moulded foam inserts -a- ⇒ [page 34](#) .



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- Welding in side panel ➤ [page 248](#)



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RO: 53 69 55 52

## 8 Rear wheel housing - Partial renewal (Avant)



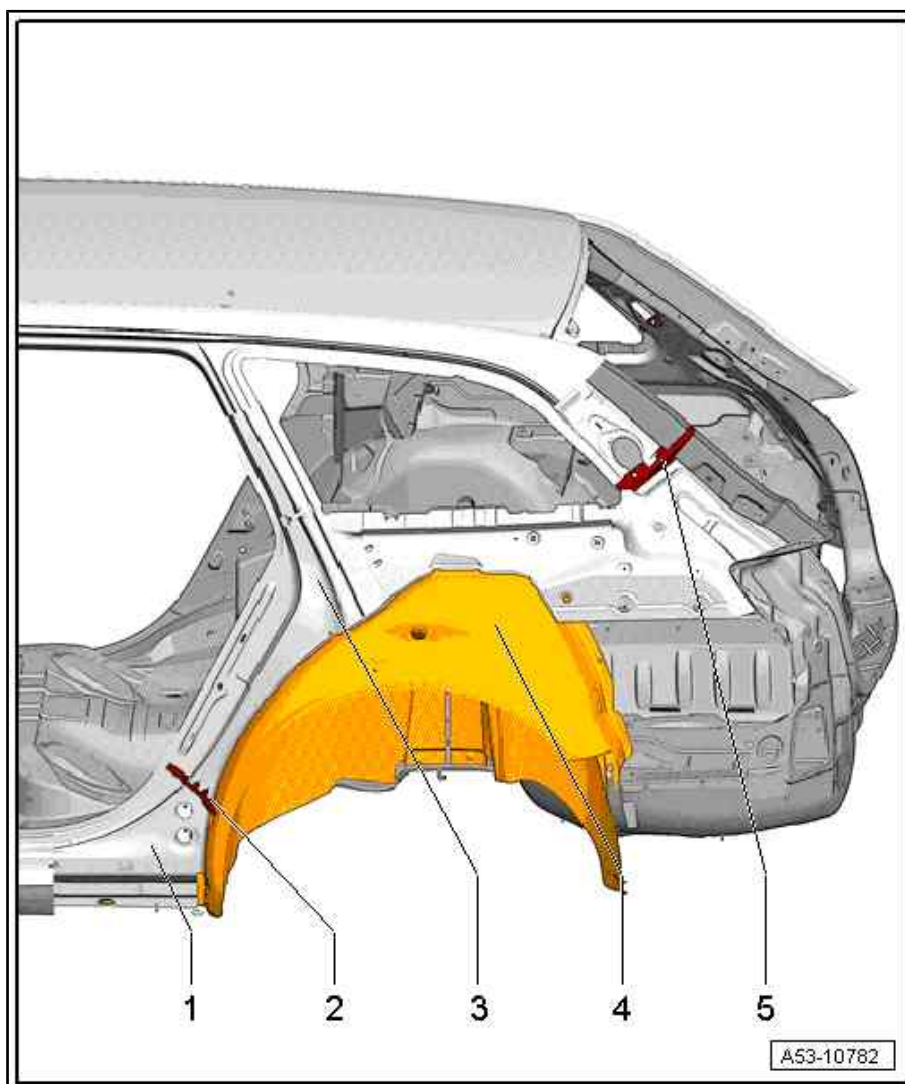
### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

- 1 - Side member
- 2 - Moulded foam insert
- 3 - Inner side panel
- 4 - Wheel housing
- 5 - D-pillar reinforcement

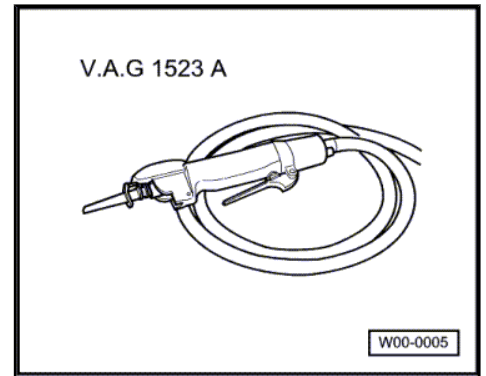


### 8.1 Tools

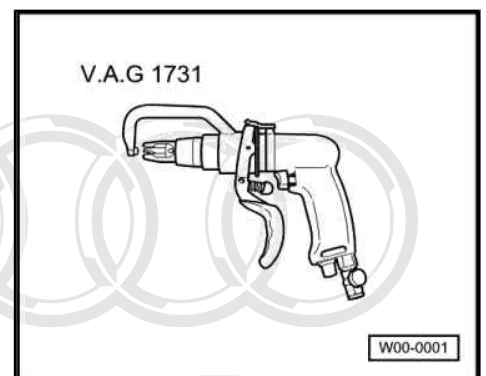
Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A- or

- ◆ Resistance spot welder -VAS 6525- or
- ◆ Resistance spot welder -VAS 6530- or
- ◆ Resistance spot welder -VAS 6535- or
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment -VAS 6045 A-
- ◆ Compact angle grinder -VAS 5167-
- ◆ Pneumatic sabre saw -V.A.G 1523 A-



- ◆ Spot weld breaker -V.A.G 1731-



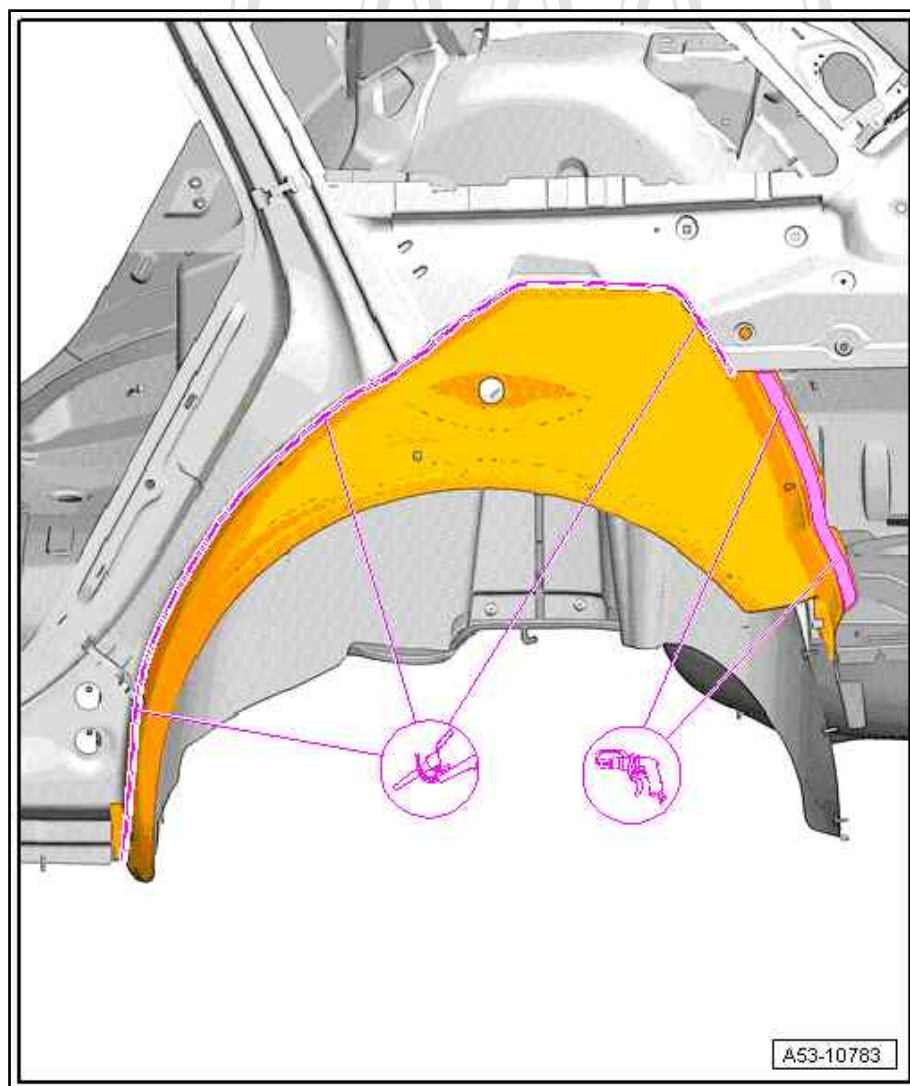
## 8.2 Procedure

- Side panel already cut out ⇒ [page 257](#)

### Cutting locations

- Make separating cuts as shown using pneumatic sabre saw - V.A.G 1523 A- .
- Separate original joint using spot weld breaker -V.A.G 1731- .

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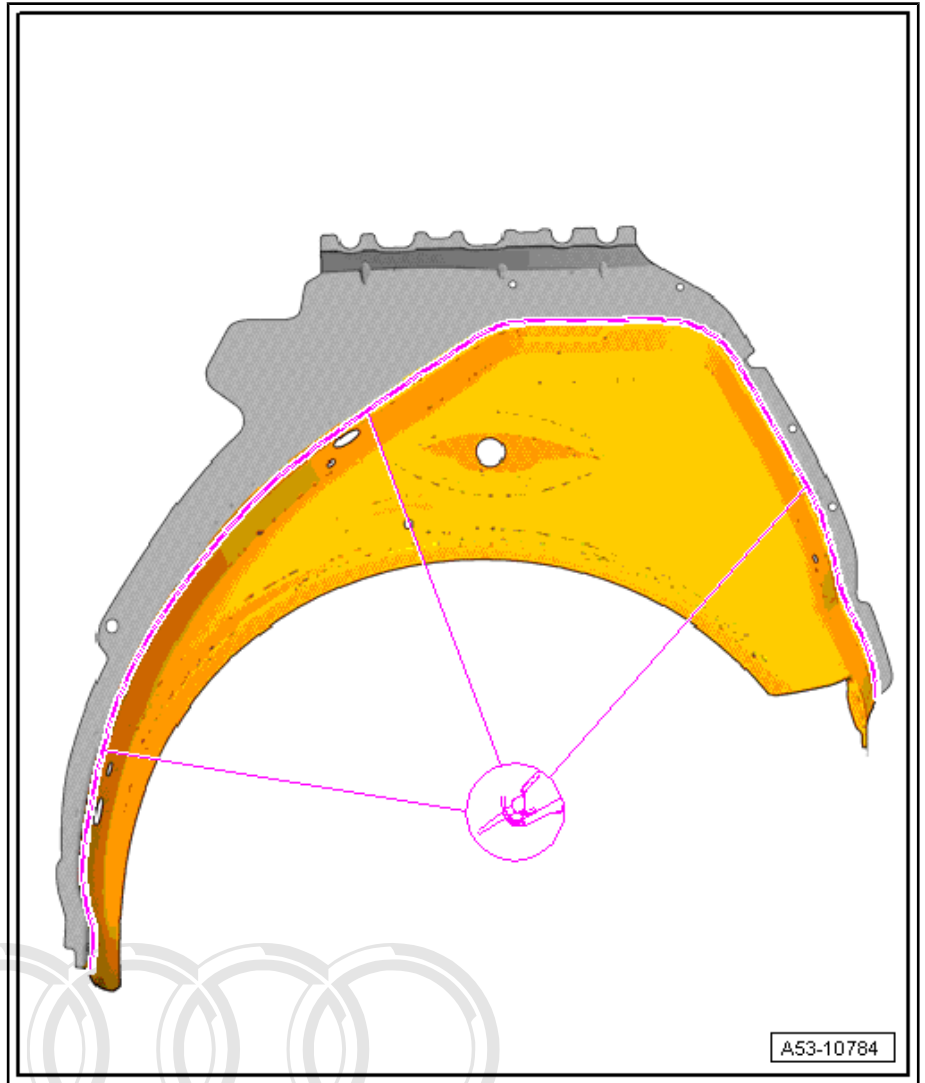


#### Replacement part

- ◆ Rear wheel housing

#### Preparing new part

- Step separating cut for joggle-joint (on body side of joint).
- Transfer separating cut plus 10 mm for overlap to new part and cut off using pneumatic sabre saw -V.A.G 1523 A- .



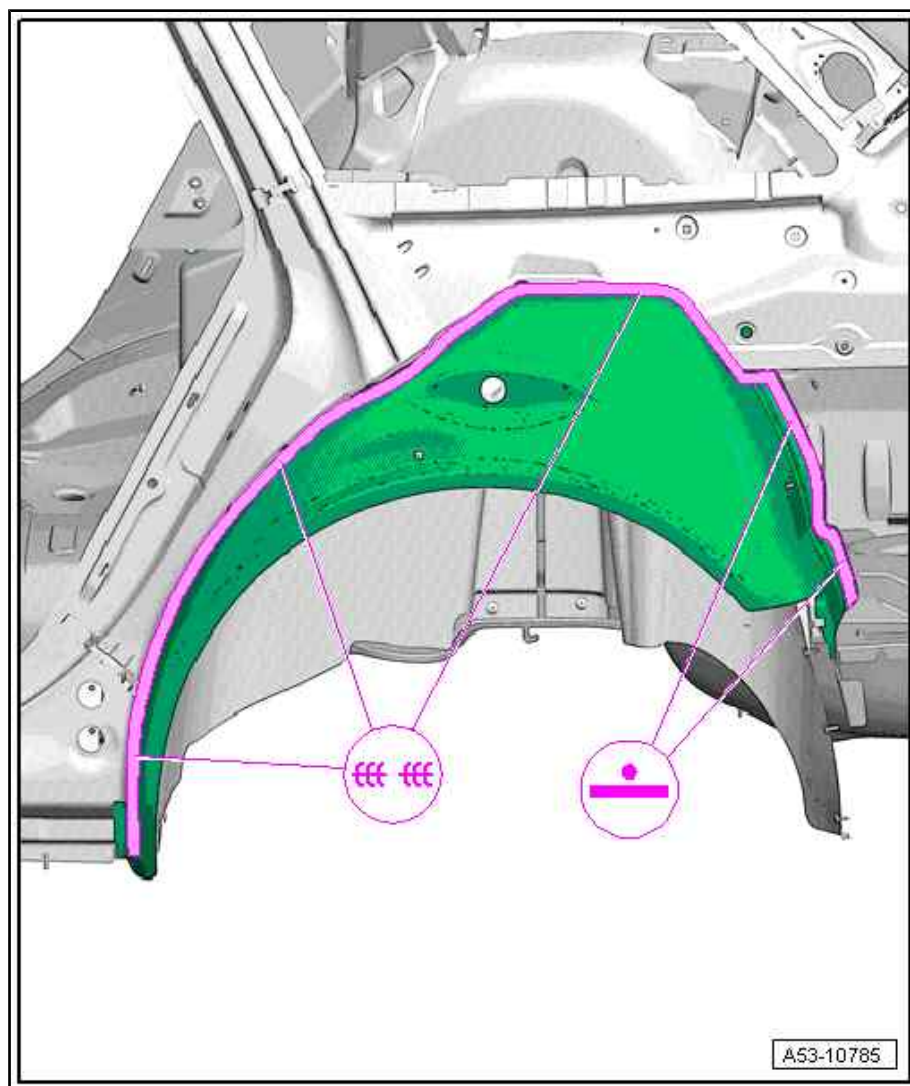
#### Note

*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

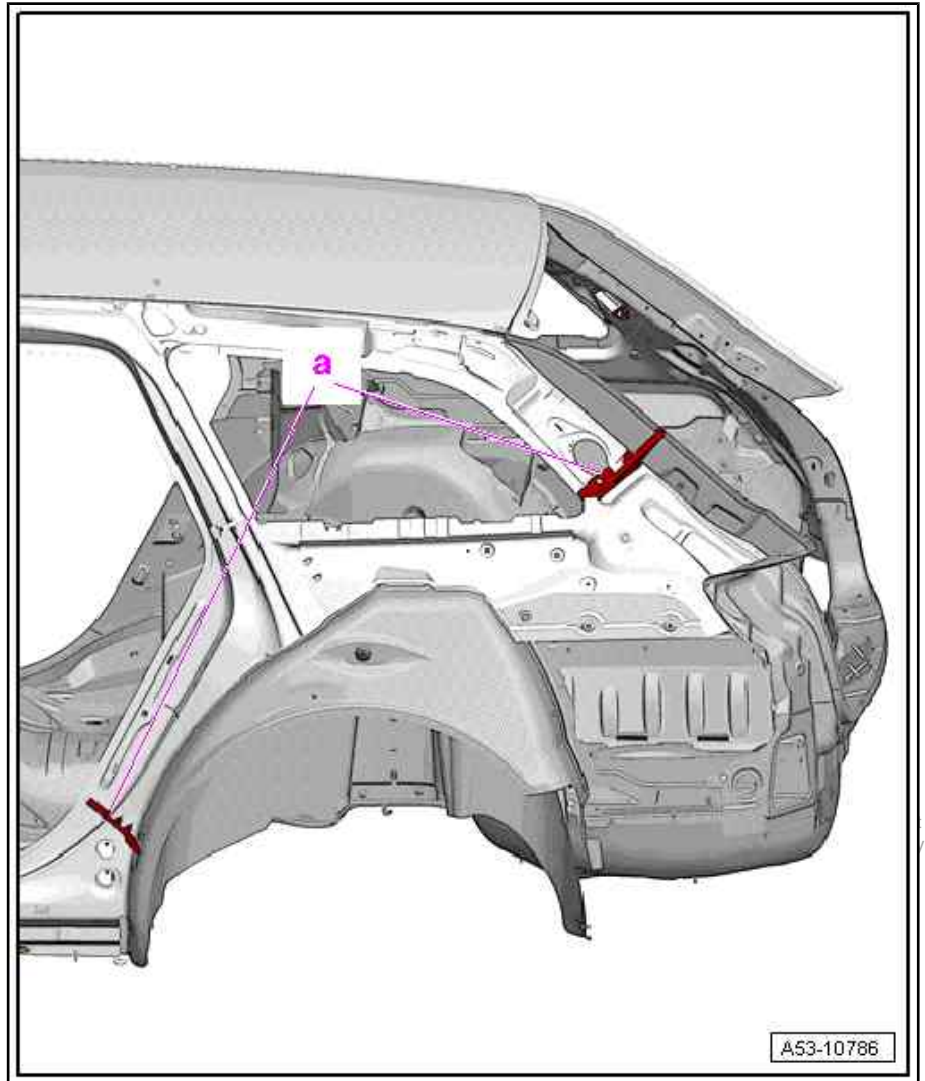
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#### Welding in

- Weld in wheel housing using shielded arc welding equipment  
-VAS 6045 A- : SG continuous seam (staggered - with gaps).
- Weld in remaining joint at wheel housing using resistance spot welder : RP spot weld seam.



Fit moulded foam inserts -a- → [page 34](#) .



- Welding in side panel ➤ [page 257](#)

RO: 53 10 55 50

## 9 Tail light mounting - Renewal



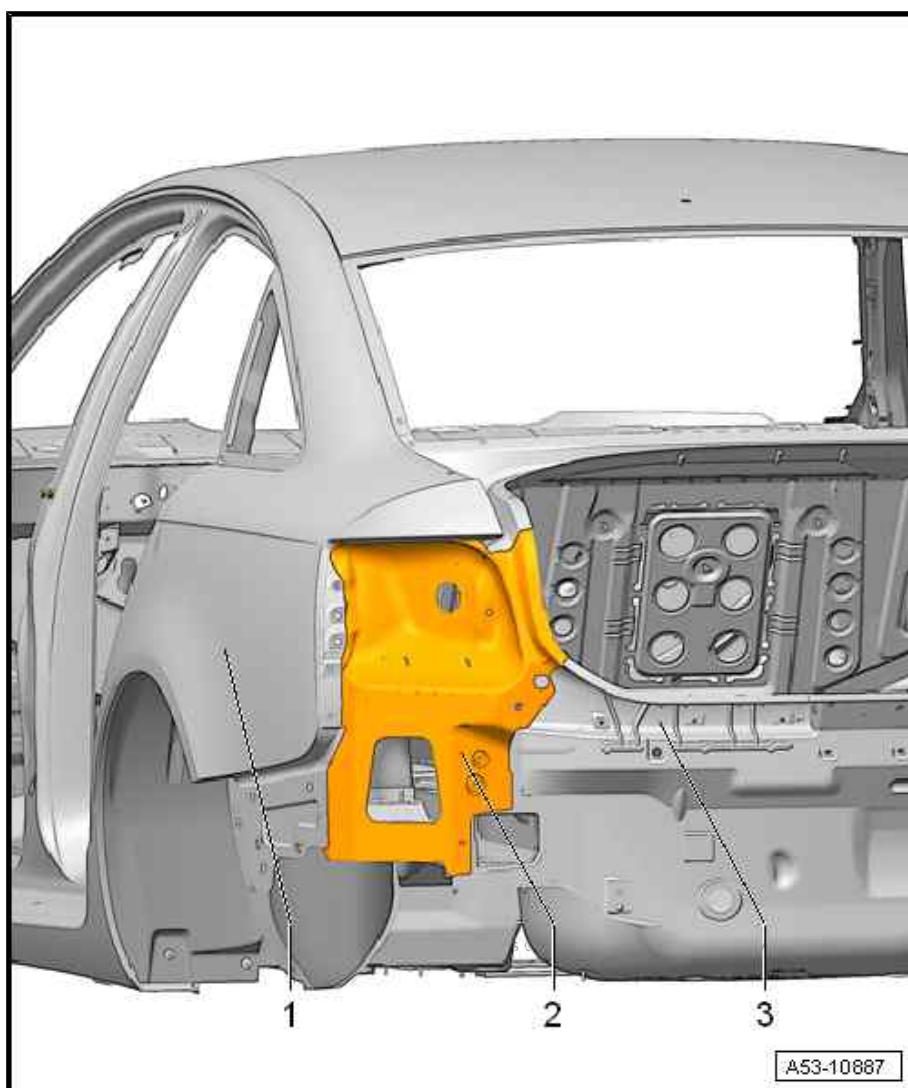
### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

- 1 - Side panel
- 2 - Tail light mounting
- 3 - Lower cross panel



### 9.1 Tools

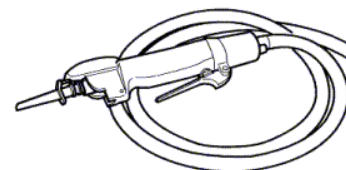
#### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6525-

- ◆ Resistance spot welder -VAS 6530-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Compact angle grinder -VAS 5167-
- ◆ Drill -VAS 5830-
- ◆ Pneumatic sabre saw -V.A.G 1523A-

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V.A.G 1523 A



W00-0005

- ◆ Spot weld breaker -V.A.G 1731-

V.A.G 1731



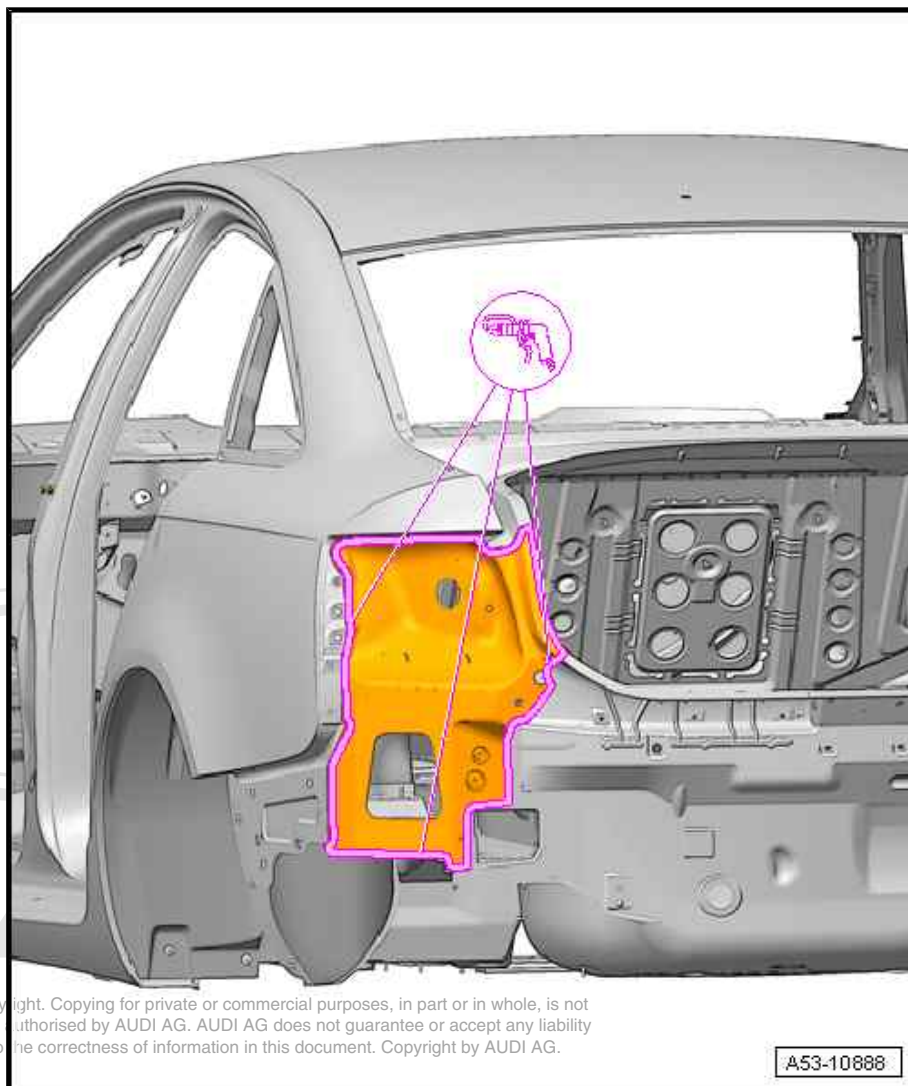
W00-0001

## 9.2 Procedure

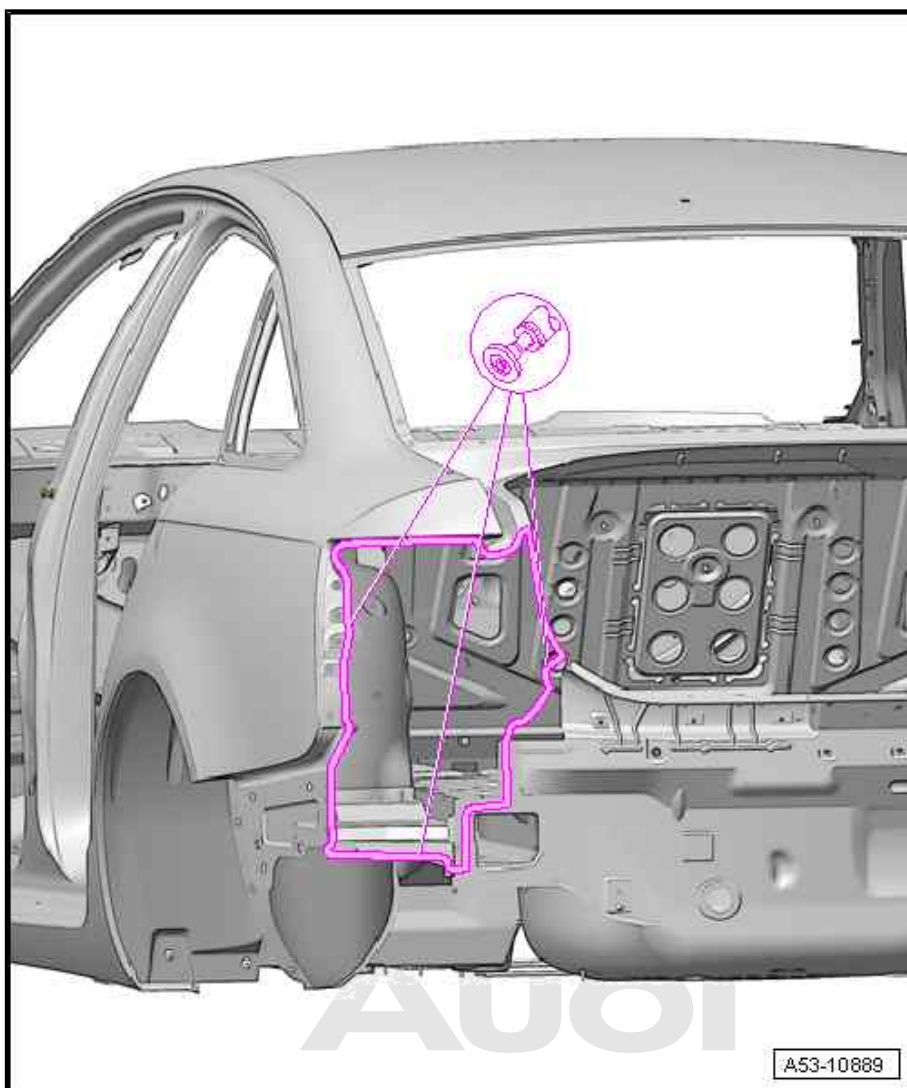
- Upper cross panel already cut out (part section) ⇒ [page 196](#)

### Cutting locations

- Drill out original joint using spot weld breaker -V.A.G 1731- .



- Remove remaining material using compact angle grinder - VAS 5167- .



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## Replacement part

- ◆ Tail light mounting

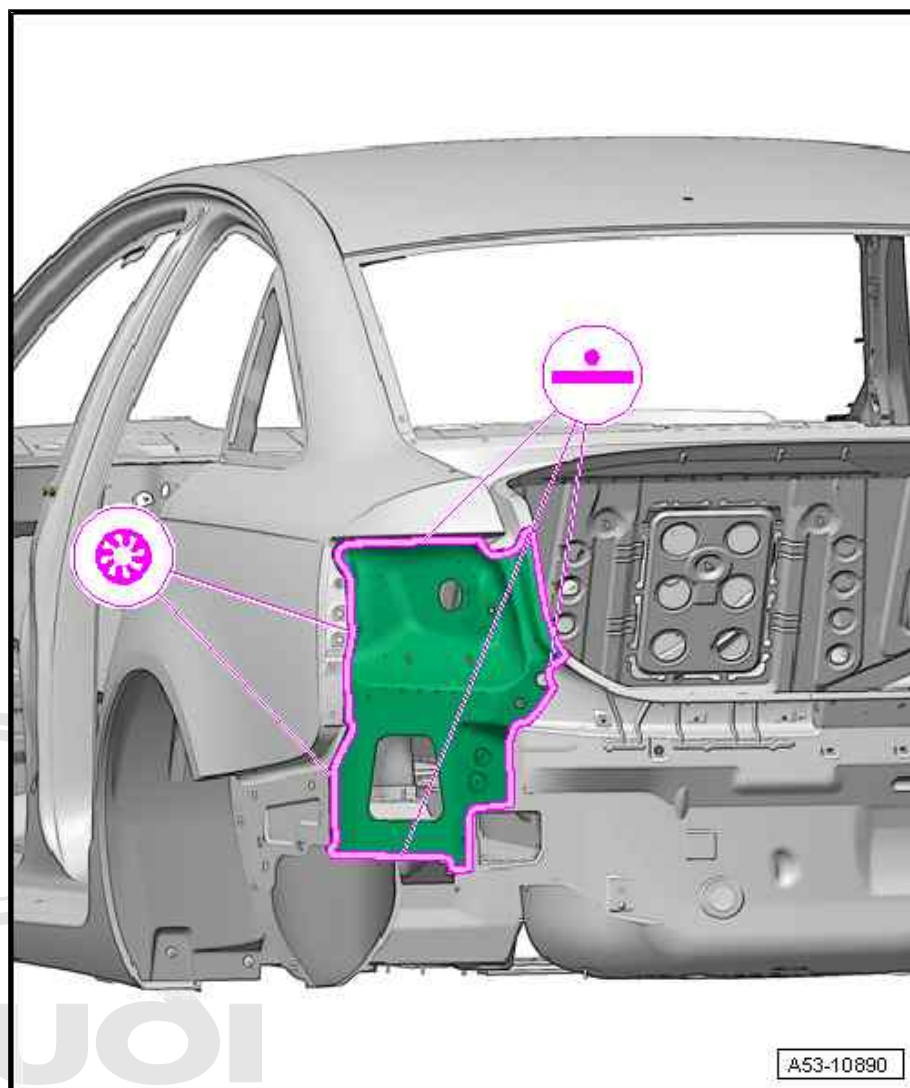


### Note

*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

## Welding in

- The cross panel is now tilted into the installation position, pulled up and fitted into place.
- Check gap between new panel and tail light / rear lid.
- Weld in cross panel using resistance spot welder : RP spot weld seam.
- Weld in new part using shielded arc welding equipment 250A : SG plug weld seam.



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- Welding in upper cross panel (part section) ⇒ [page 196](#)

RO: 53 10 55 50

## 10 Tail light mounting - Renewal (Avant)



### WARNING

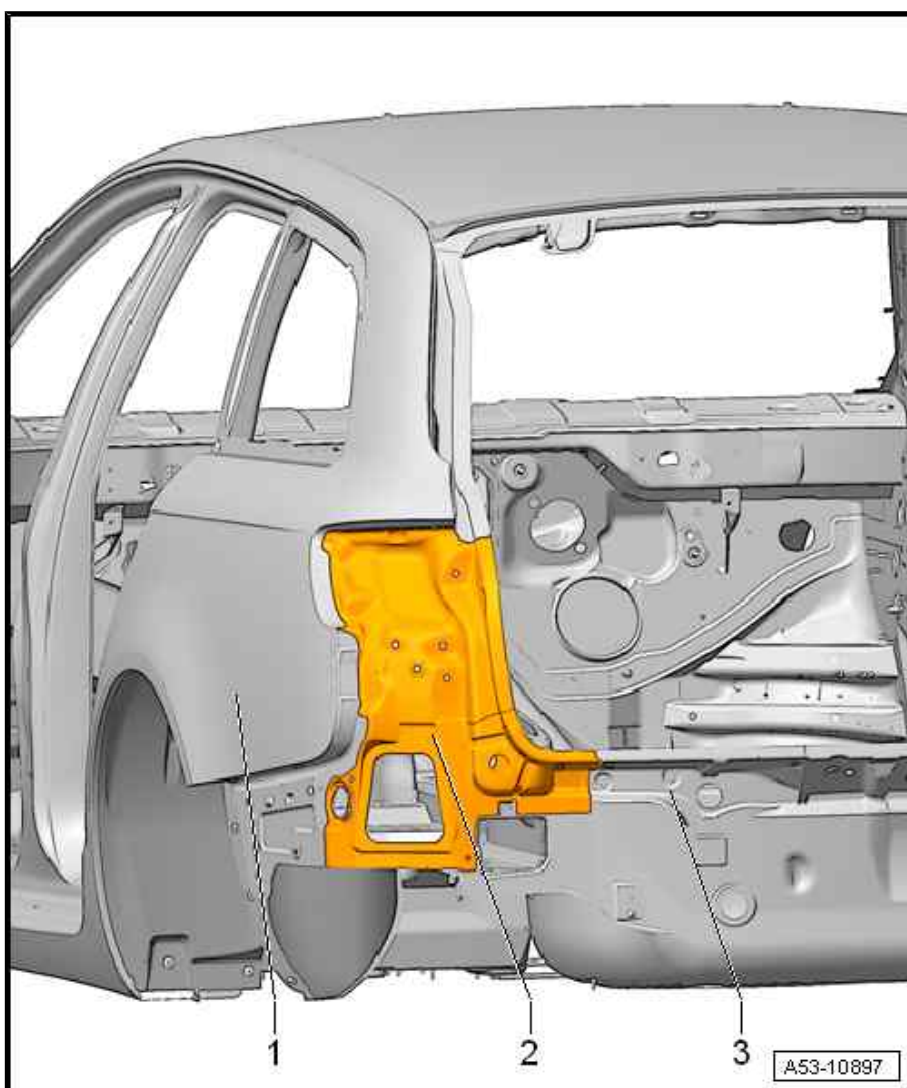
*Always observe safety precautions.*

***Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.***

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Safety notes → General Information; Body Repairs, General Body Repairs ; Safety notes .

- 1 - Side panel
- 2 - Tail light mounting
- 3 - Inner cross panel

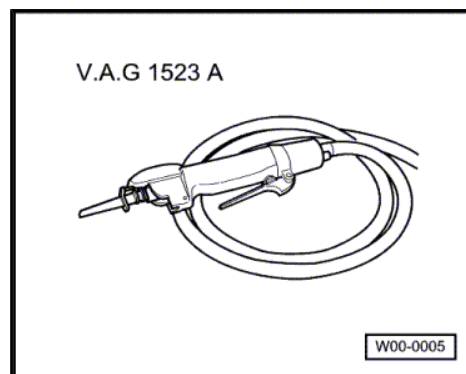


### 10.1 Tools

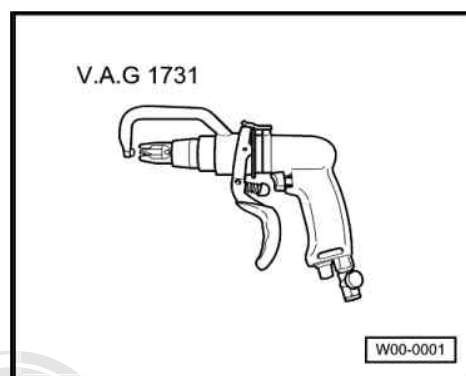
#### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6525-

- ◆ Resistance spot welder -VAS 6530-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Compact angle grinder -VAS 5167-
- ◆ Pneumatic sabre saw -V.A.G 1523A-



- ◆ Spot weld breaker -V.A.G 1731-



## 10.2 Procedure

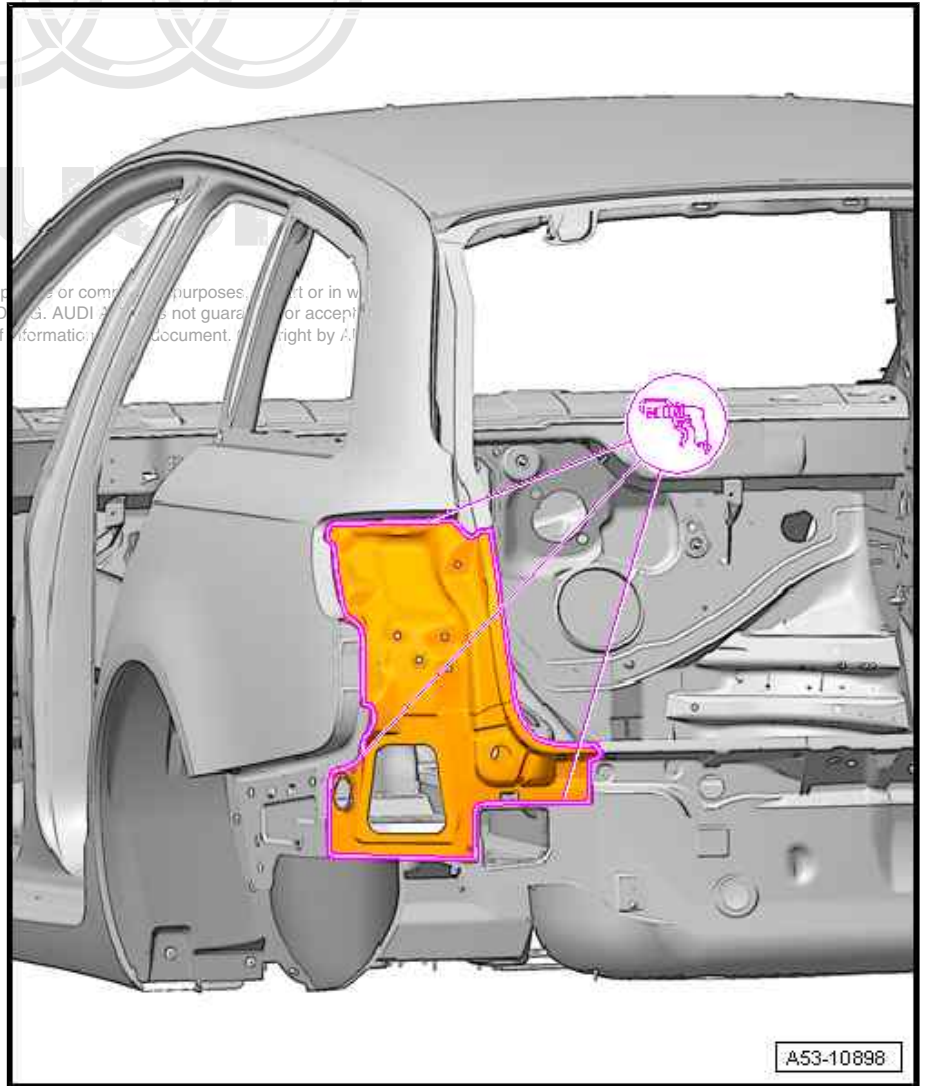
- Upper cross panel already cut out (part section) ⇒ [page 196](#)

### Cutting locations

- Separate original joint using spot weld breaker -V.A.G 1731- .

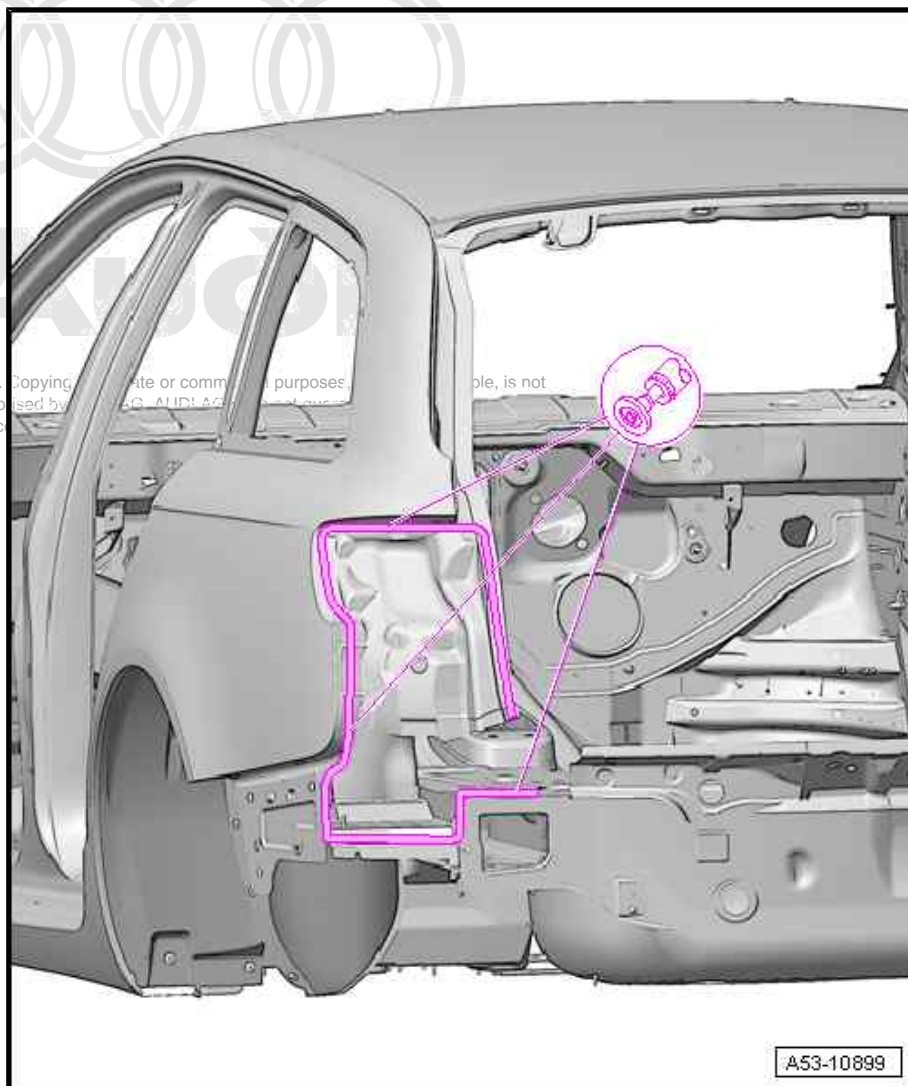
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- Remove remaining material using compact angle grinder - VAS 5167- .

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## Replacement part

- ◆ Tail light mounting



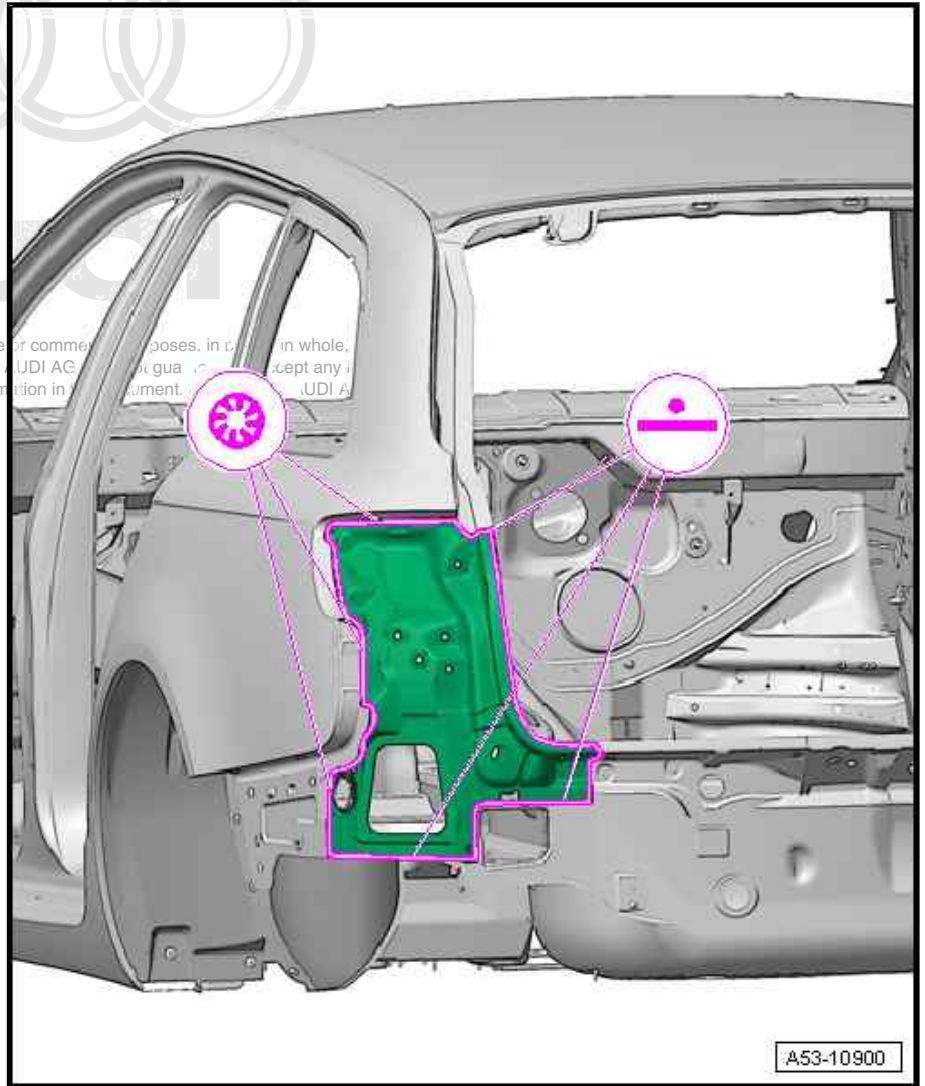
## Note

*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

## Welding in

- The cross panel is now tilted into the installation position, pulled up and fitted into place.
- Check gap between new panel and tail light / rear lid.
- Weld in cross panel using resistance spot welder : RP spot weld seam.
- Weld in new part using shielded arc welding equipment 250A : SG plug weld seam.

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- Welding in upper cross panel (part section) ⇒ [page 196](#)

RO: 53 55 55 00

## 11 Side panel - Renewal

Includes rain channel and tail light mounting.



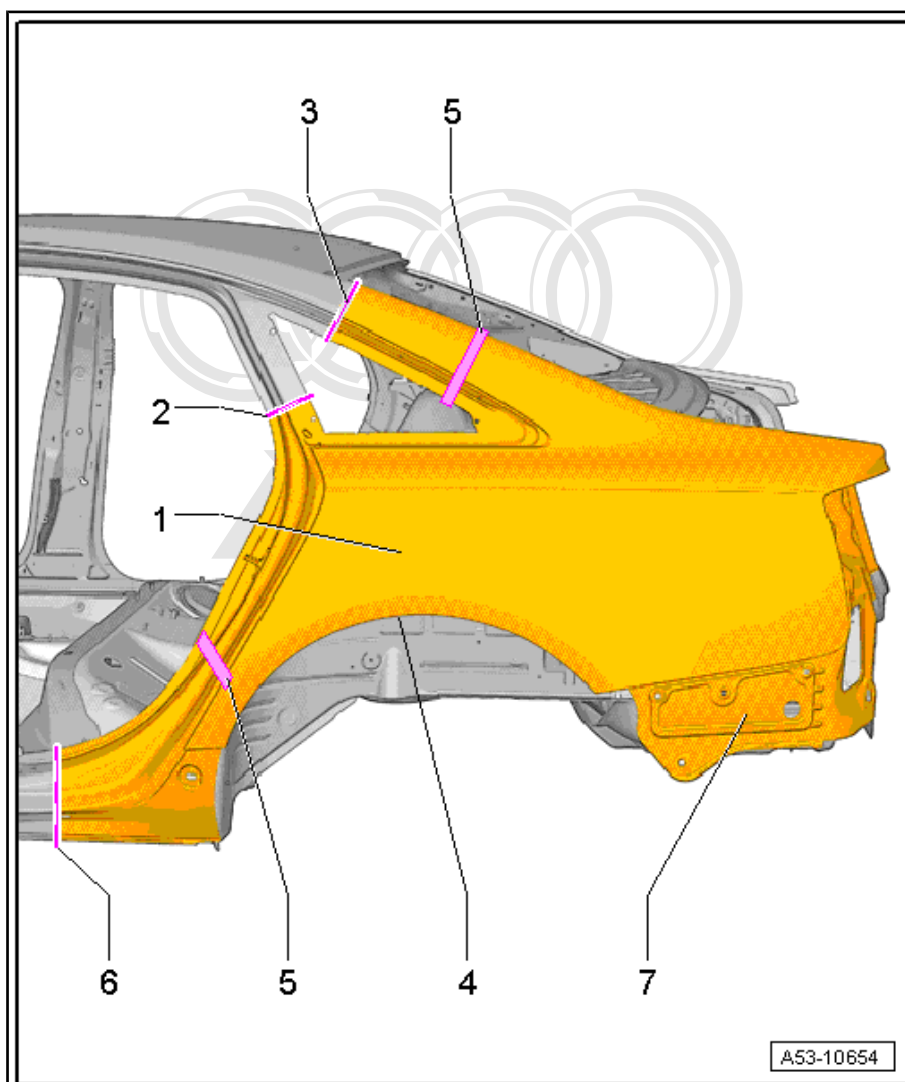
### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

- 1 - Side panel
- 2 - Separating cut in C-pillar
- 3 - Separating cut in D-pillar
- 4 - Bonded area
- 5 - Moulded foam insert
- 6 - Separating cut in side member
- 7 - Tail light mounting



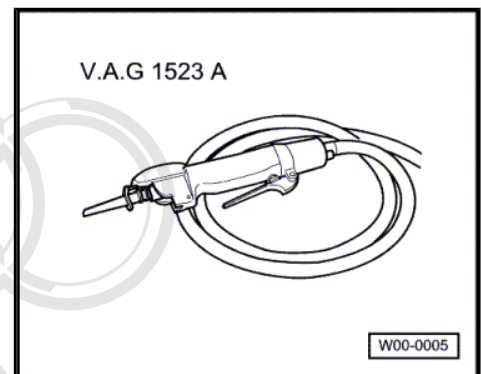
A53-10654

### 11.1 Tools

Special tools and workshop equipment required

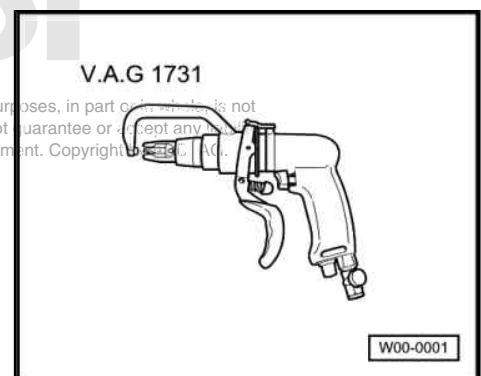
- ◆ Resistance spot welder -VAS 6239 A- or

- ◆ Resistance spot welder -VAS 6525- or
- ◆ Resistance spot welder -VAS 6530- or
- ◆ Resistance spot welder -VAS 6535- or
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment
- ◆ Drill -VAS 5830-
- ◆ Compact angle grinder -VAS 5167-
- ◆ Pneumatic sabre saw -V.A.G 1523 A-

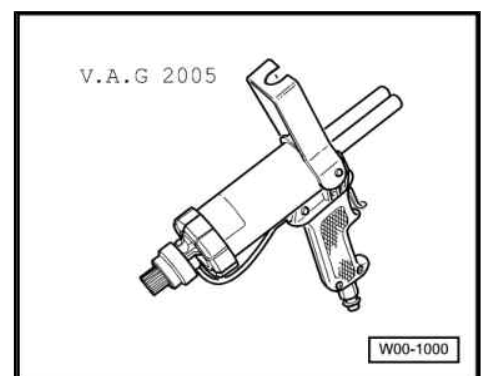


- ◆ Spot weld breaker -V.A.G 1731-

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- ◆ Pneumatic glue gun - V.A.G 2005 B-



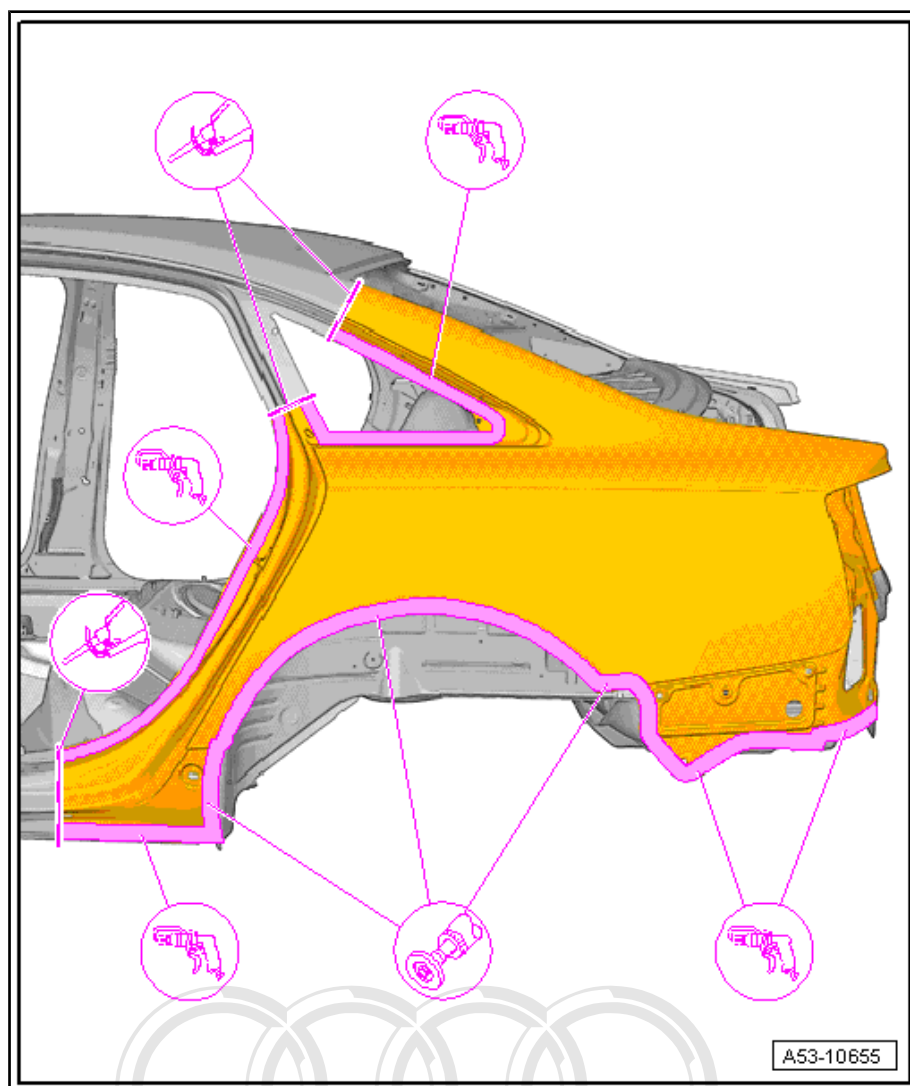
## 11.2 Procedure

- Cross panel part section already removed ⇒ [page 196](#)

### Cutting locations

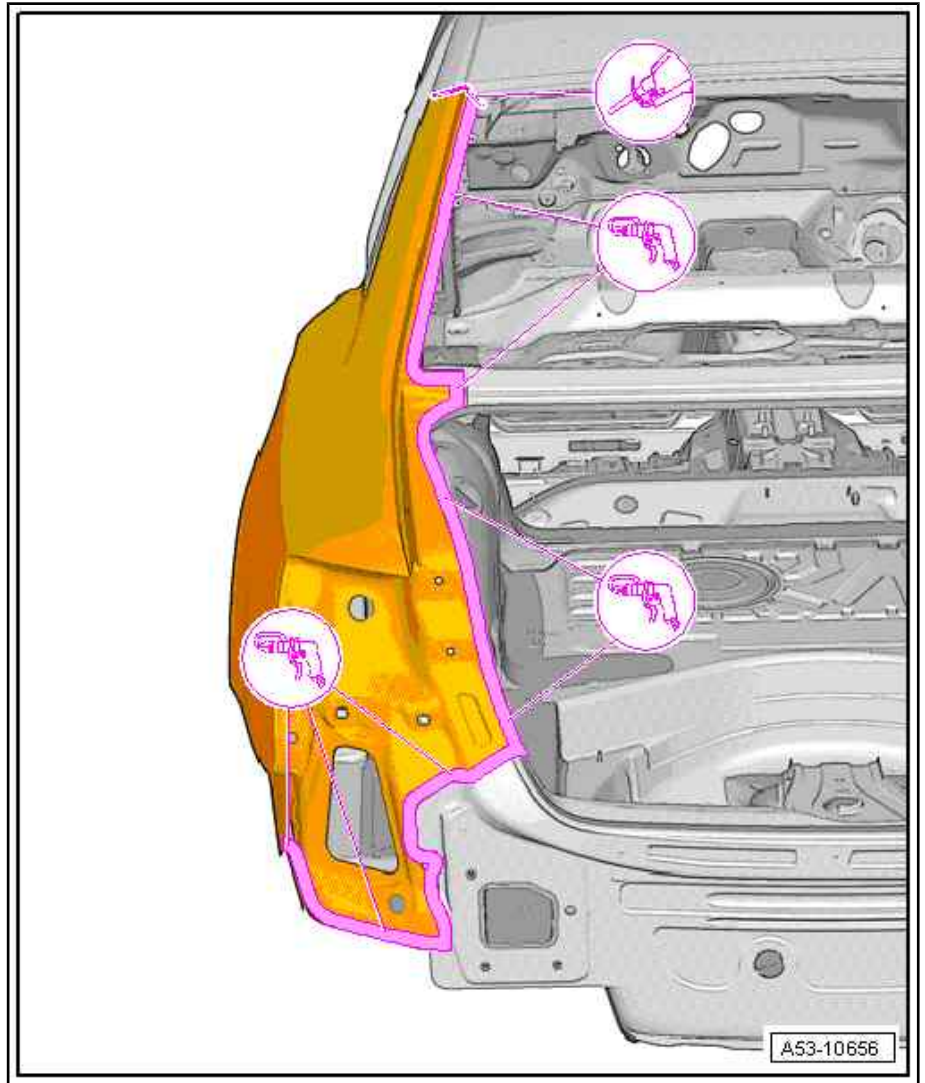
- Separate original joint using spot weld breaker -V.A.G 1731- .
- Grind through outer edge at wheel arch using compact angle grinder -VAS 5167- .

- Make separating cuts as shown using pneumatic sabre saw - V.A.G 1523 A- .

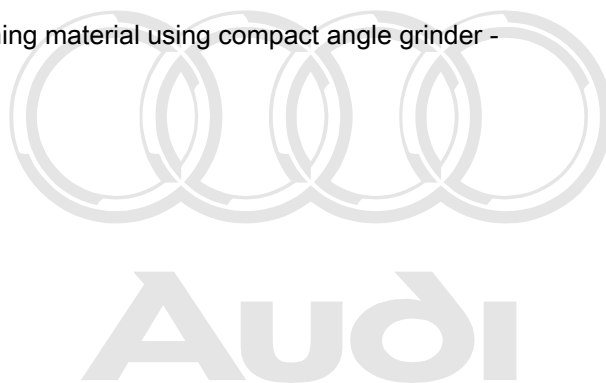


- Make separating cuts as shown using pneumatic sabre saw - V.A.G 1523 A- .
- Separate original joint using spot weld breaker -V.A.G 1731- .

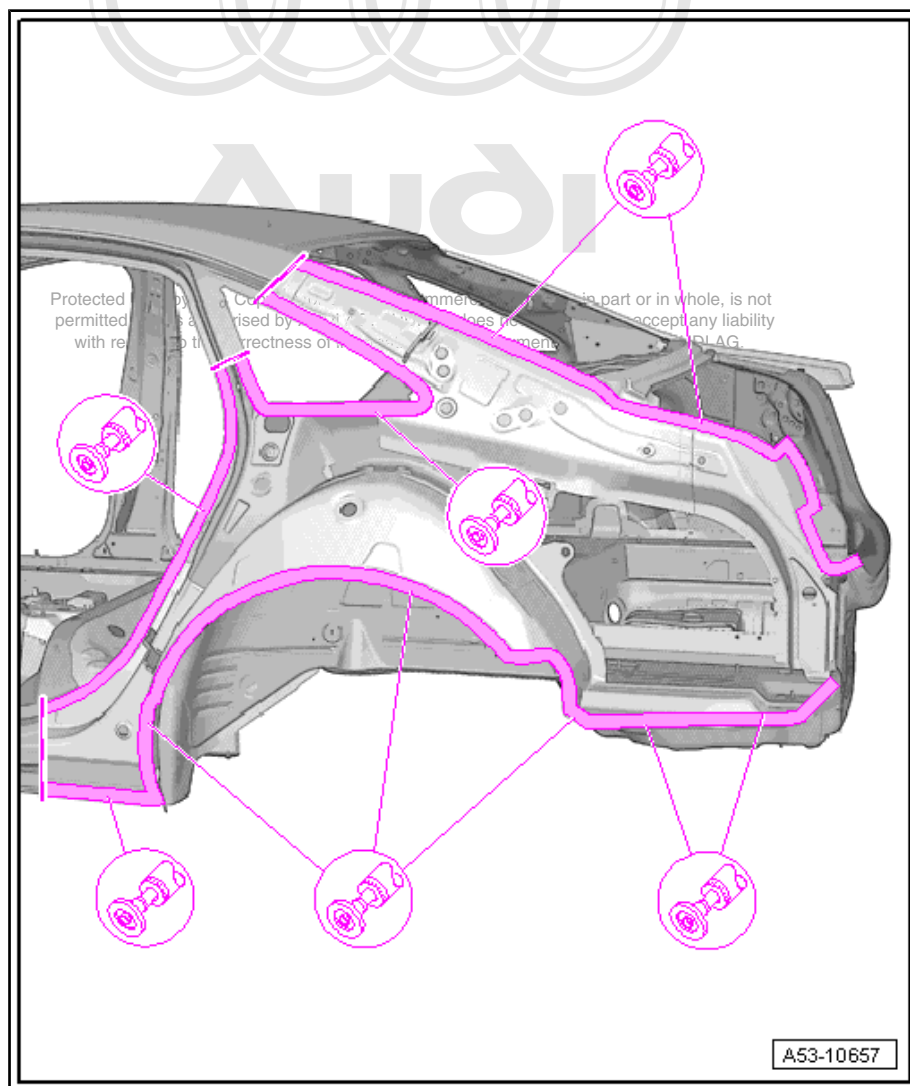
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- Remove remaining adhesive completely and sand bonding surfaces down to bare metal.
- Remove remaining material using compact angle grinder - VAS 5167- .



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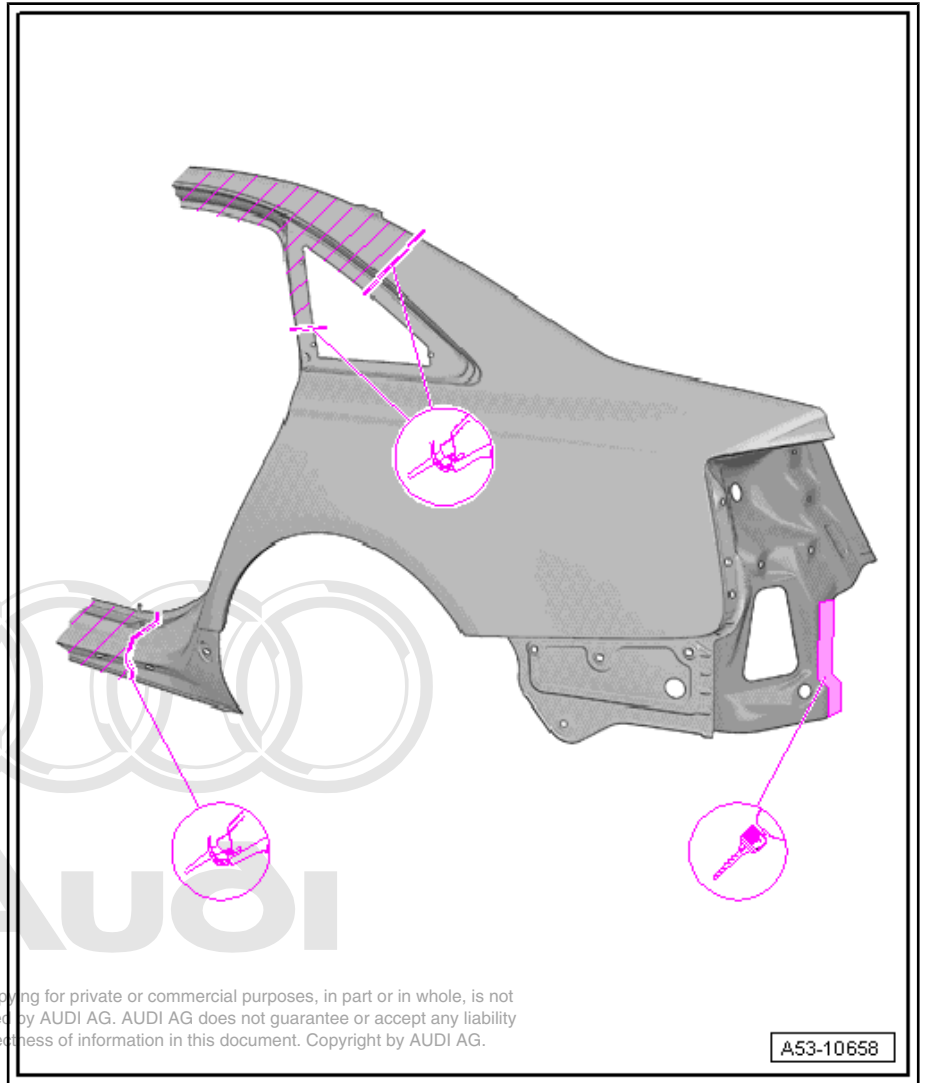


### Replacement parts

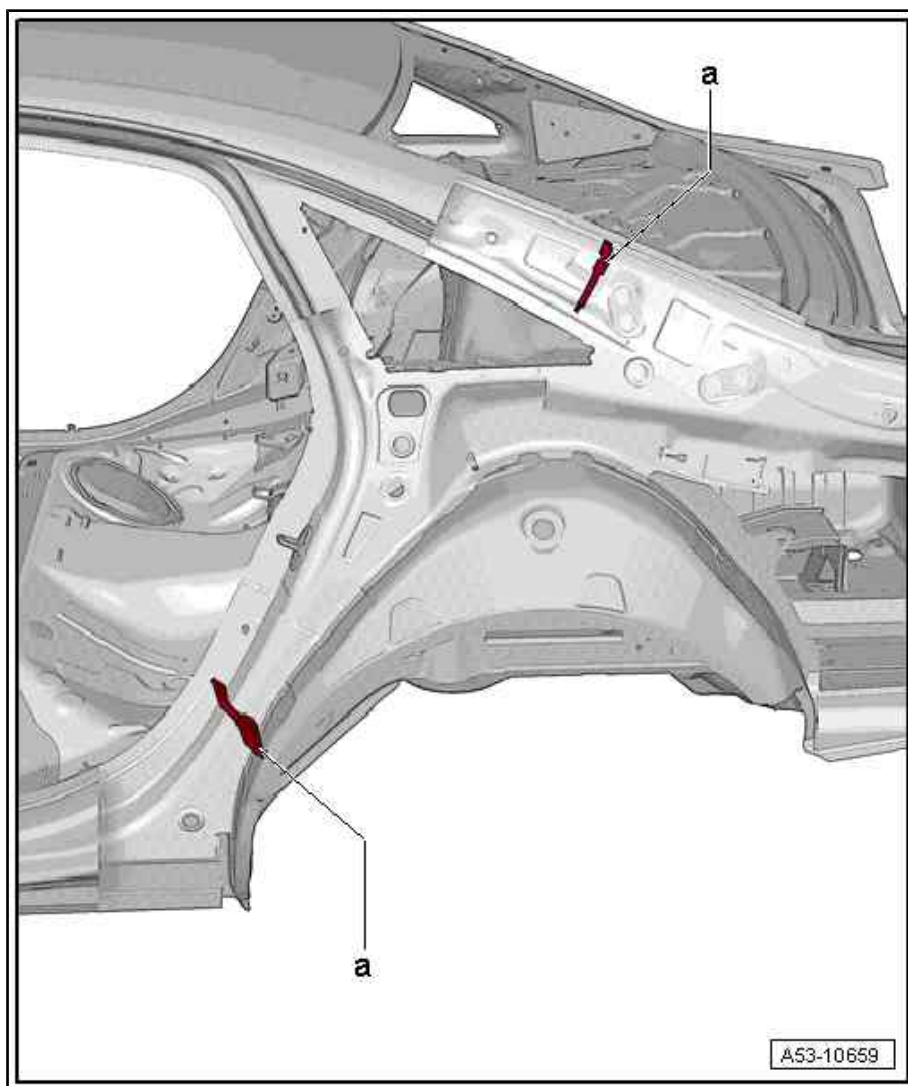
- ◆ Side panel
- ◆ Moulded foam inserts
- ◆ 2-component epoxy adhesive -DA 001 730 A2- , 1 set of cartridges
- ◆ Cleaning solution -D 009 401 04-

### Preparing new part

- Clean bonding area with cleaning solution -D 009 401 04- (it must be free of dust and grease).
- Clean beaded flange with cleaning solution -D 009 401 04- (it must be free of dust and grease).
- Transfer separating cut to new part and cut off hatched area using pneumatic sabre saw -V.A.G 1523 A- .
- Drill holes for SG plug weld seam using drill -VAS 5830- .



Fit moulded foam inserts -a- [⇒ page 34](#) .



hole, is not  
any liability  
JDI AG.

- Fit new part on portal gauge VAS 5007/6.



#### Note

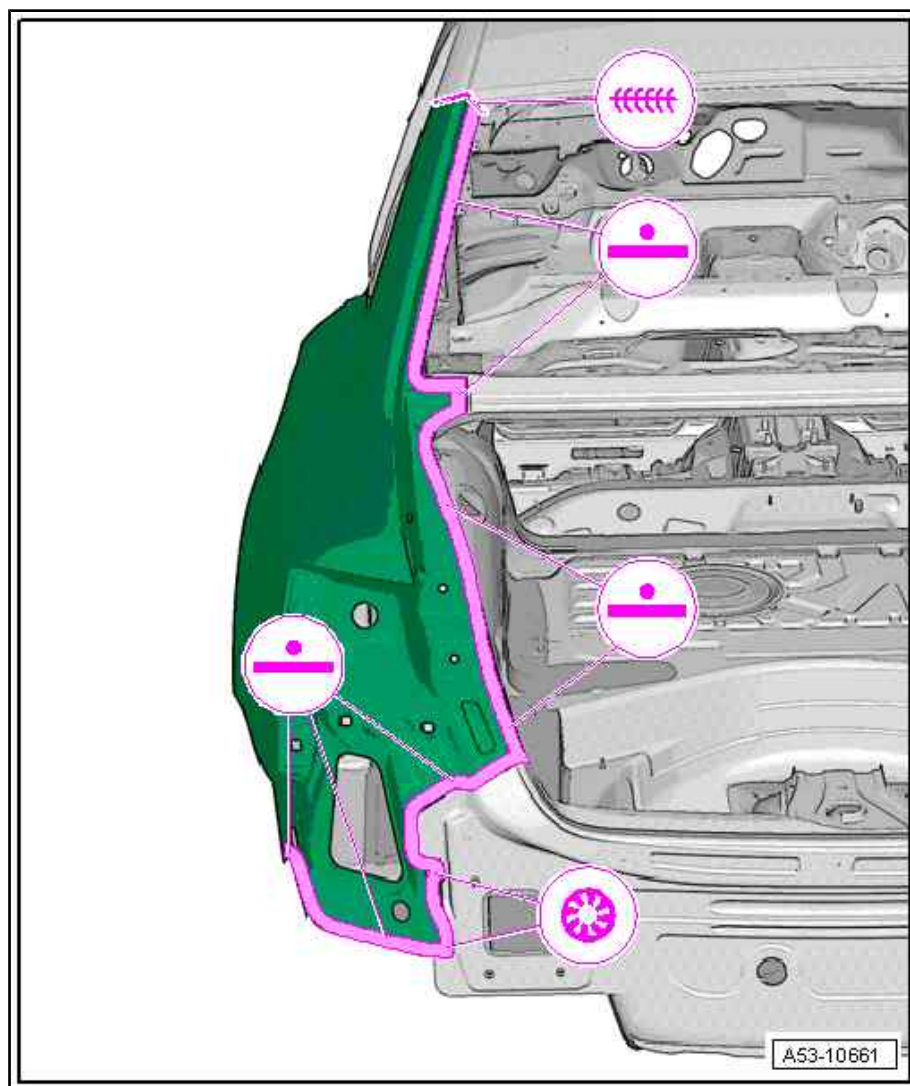
*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

#### Welding in

- Weld in at separating cuts using shielded arc welding equipment : SG continuous seam.
- Weld in side panel using resistance spot welder : RP spot weld seam.
- Apply 2-component epoxy adhesive -DA 001 730 A2- to side panel and beaded flange on wheel housing using pneumatic glue gun - V.A.G 2005 B- .



- A53-10660



- Welding in cross panel (part section) ⇒ [page 196](#)



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RO: 53 55 55 00

## 12 Side panel - Renewal (Avant)

Includes rain channel and tail light mounting.



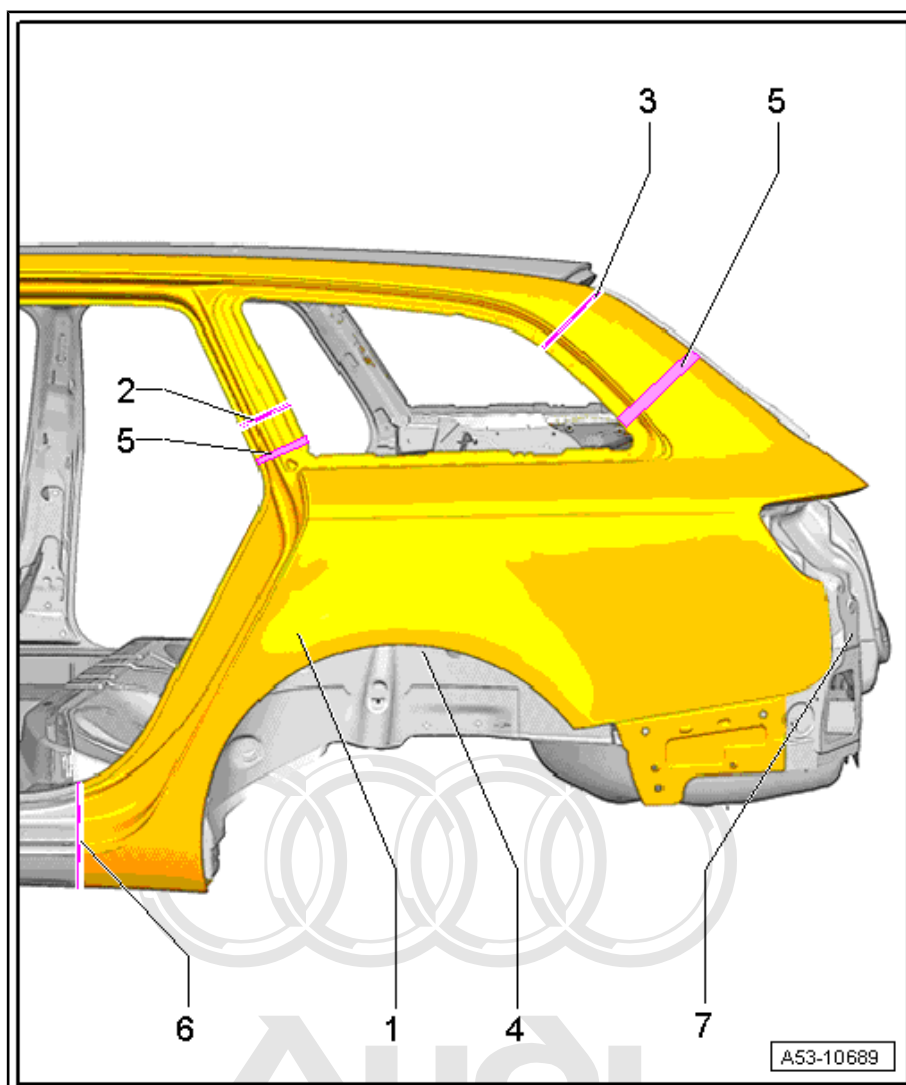
### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

- 1 - Side panel
- 2 - Separating cut in C-pillar
- 3 - Separating cut in D-pillar
- 4 - Bonded area
- 5 - Moulded foam insert
- 6 - Separating cut in side member
- 7 - Tail light mounting



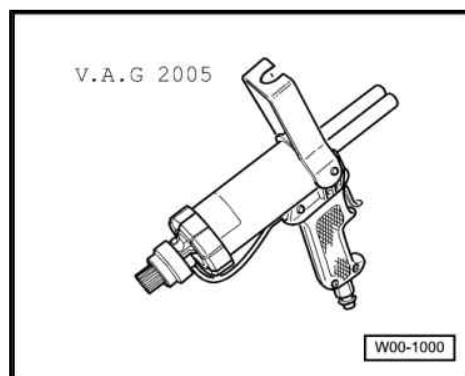
### 12.1 Tools

#### Special tools and workshop equipment required

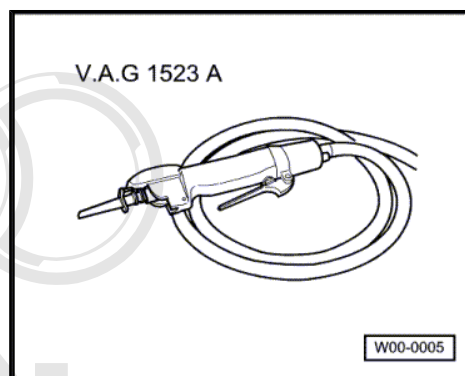
- ◆ Resistance spot welder -VAS 6239 A-

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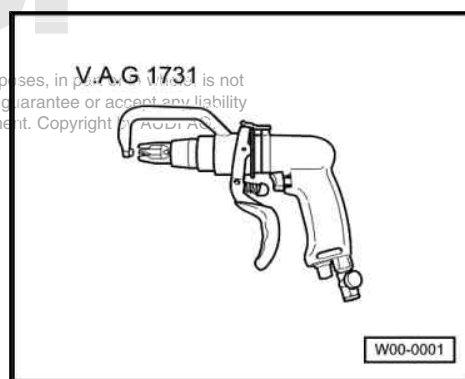
- ◆ Resistance spot welder -VAS 6525-
- ◆ Resistance spot welder -VAS 6530-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Drill -VAS 5830-
- ◆ Compact angle grinder -VAS 5167-
- ◆ Pneumatic glue gun - V.A.G 2005 B-



- ◆ Pneumatic sabre saw -V.A.G 1523A-



- ◆ Spot weld breaker -V.A.G 1731-



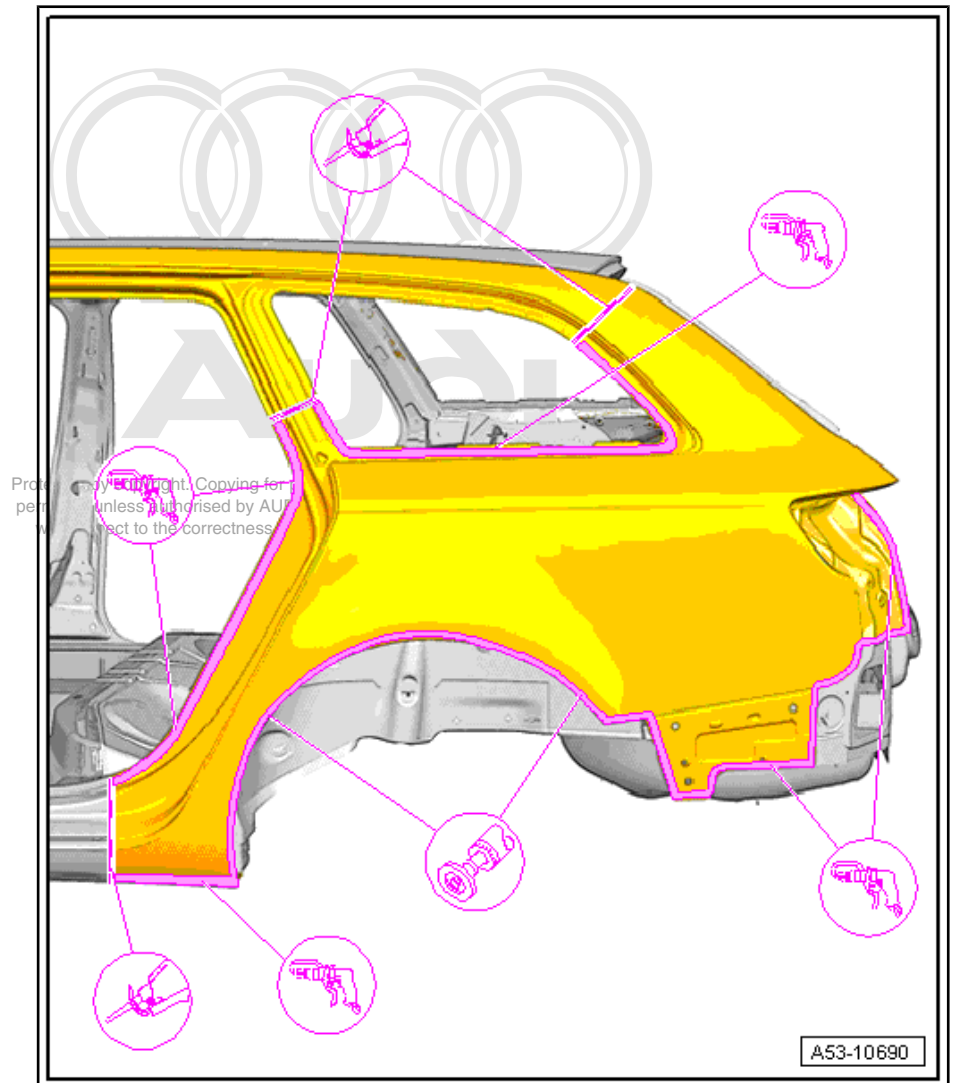
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## 12.2 Procedure

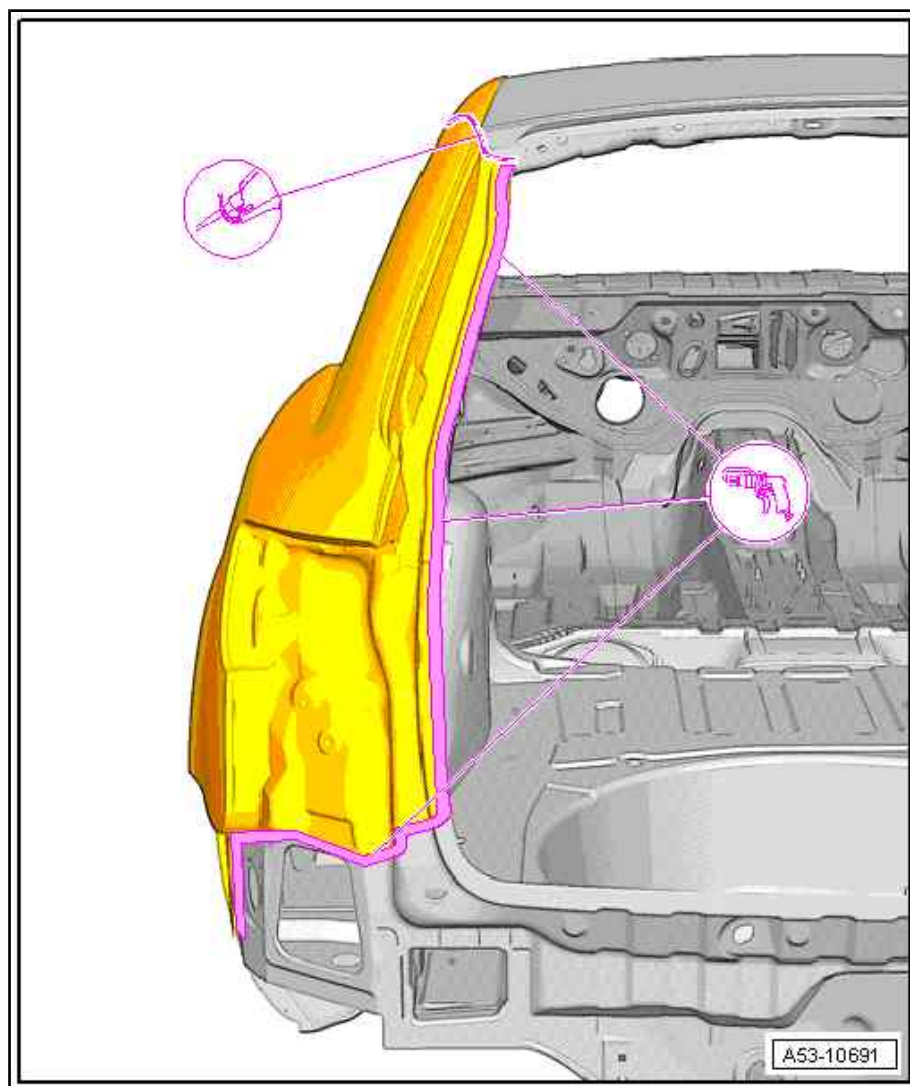
### Cutting locations

- Make separating cut on D-pillar according to extent of damage using pneumatic sabre saw -V.A.G 1523A- .
- Make separating cut on C-pillar above laser weld seam using pneumatic sabre saw -V.A.G 1523A- .
- Make separating cuts at side member according to extent of damage using pneumatic sabre saw -V.A.G 1523A- .

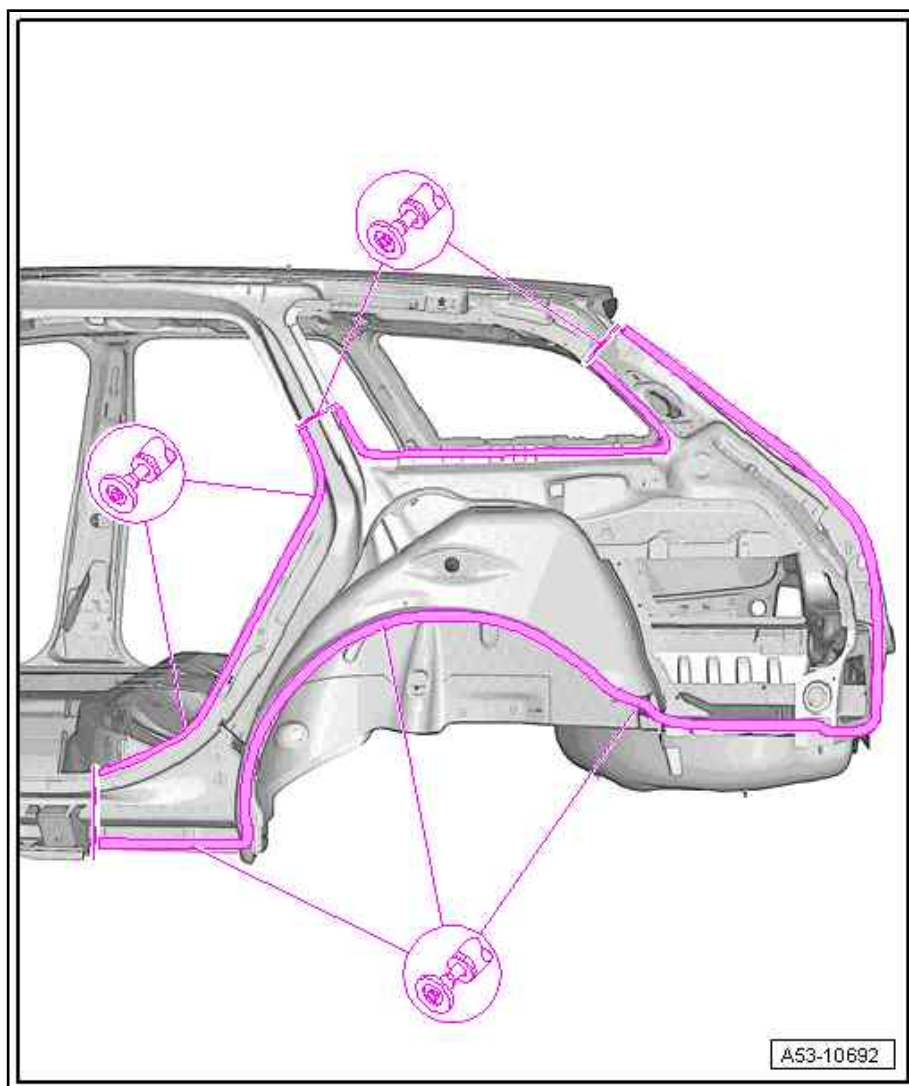
- Grind through outer edge at wheel arch using compact angle grinder -VAS 5167- .
- Grind down flange in C-pillar using compact angle grinder -VAS 5167- .



- Drill out original joint using spot weld breaker -V.A.G 1731- .
- Make separating cut on C-pillar above laser weld seam using pneumatic sabre saw -V.A.G 1523A- .



- Remove remaining material using compact angle grinder - VAS 5167- .
- Grind down bonding surface (on body side of joint) to bare metal.



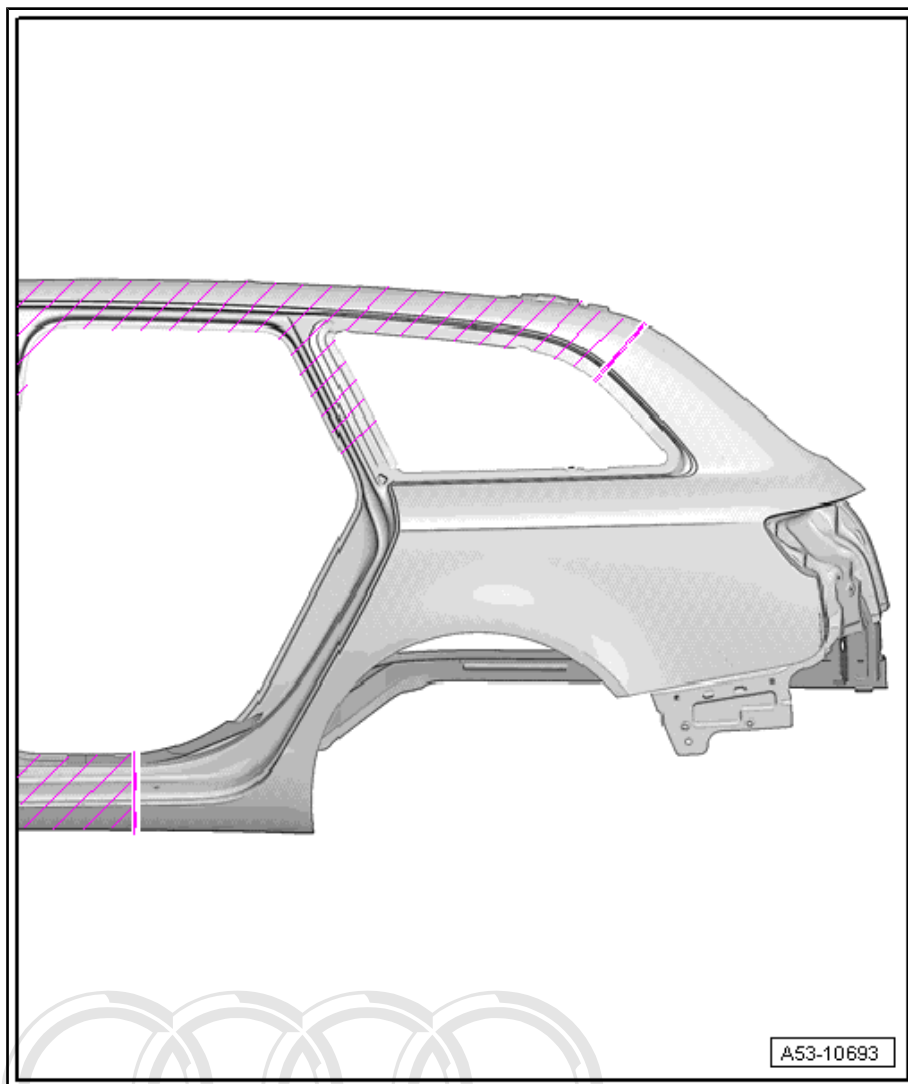
### Replacement parts

- ◆ Side panel (sub-part)
- ◆ 2-component epoxy adhesive -DA 001 730 A2- , 1 set of cartridges
- ◆ 2-component filler foam -D506 KD1 A3-

### Preparing new part

- Clean bonding area with cleaning solution -D 009 401 04- (it must be free of dust and grease).
- Clean beaded flange with cleaning solution -D 009 401 04- (it must be free of dust and grease).
- Transfer separating cut to new part and cut off hatched area using pneumatic sabre saw -V.A.G 1523 A- .

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#### Note

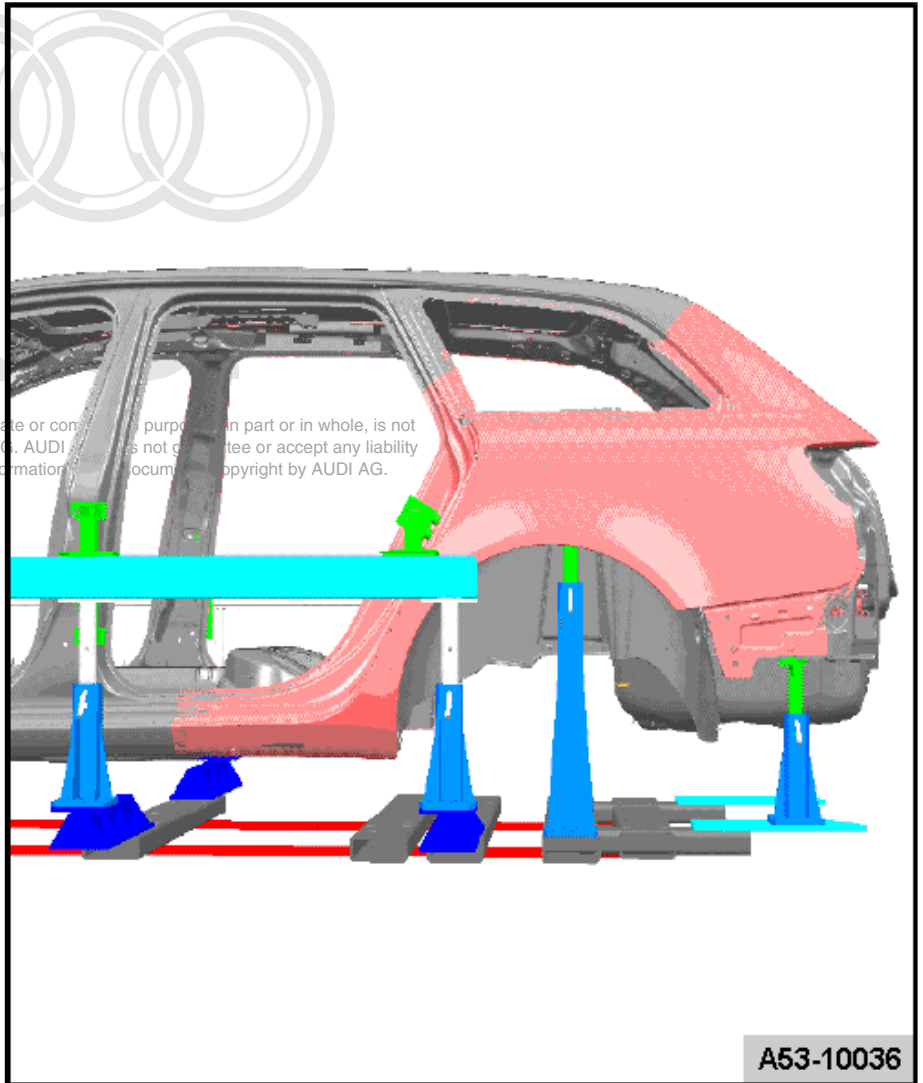
*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

#### Welding in

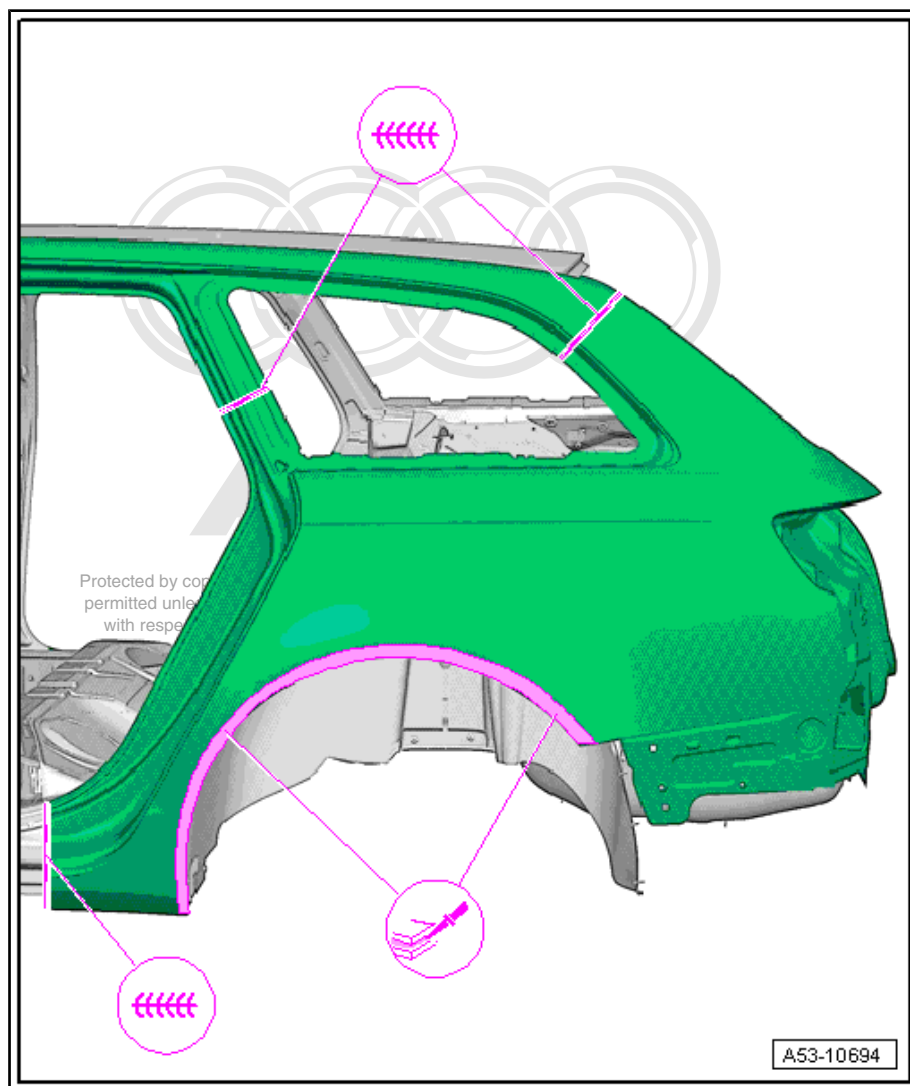
- Fix new part on portal gauge **VAS 5007**

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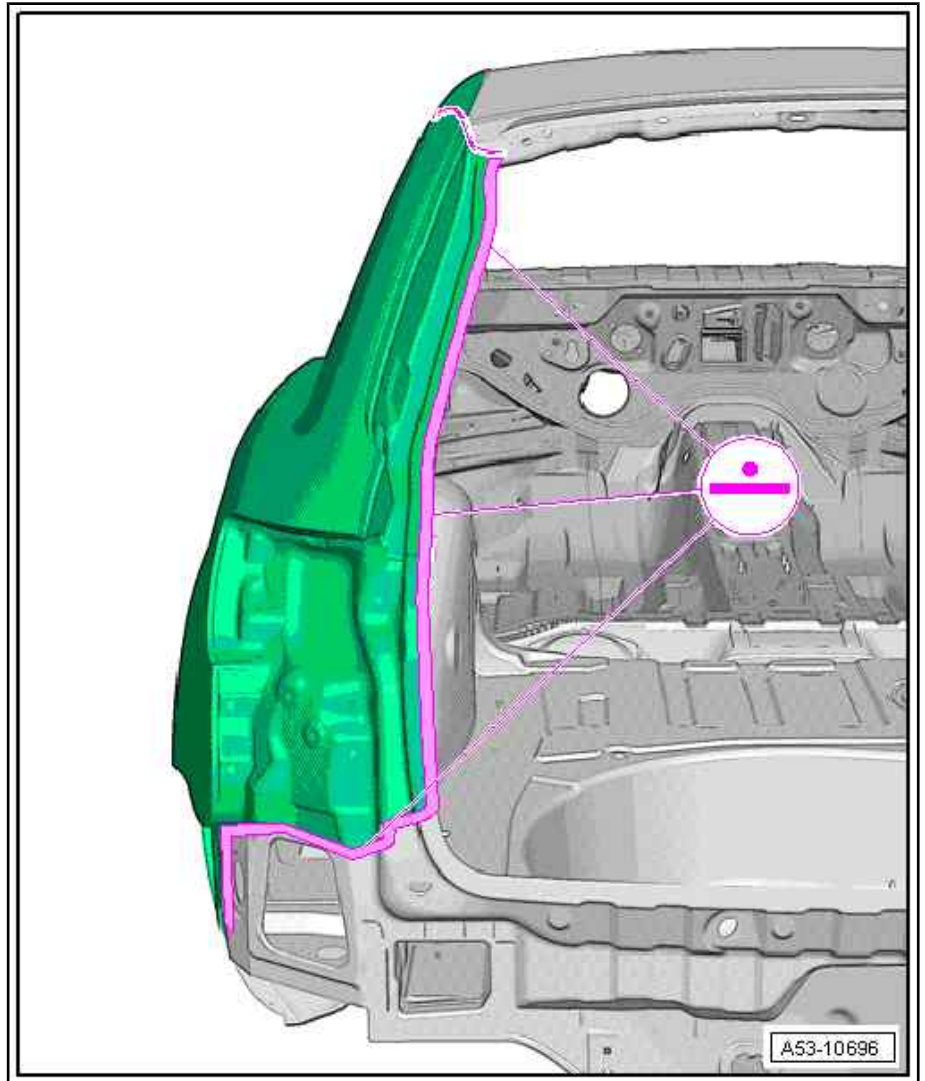
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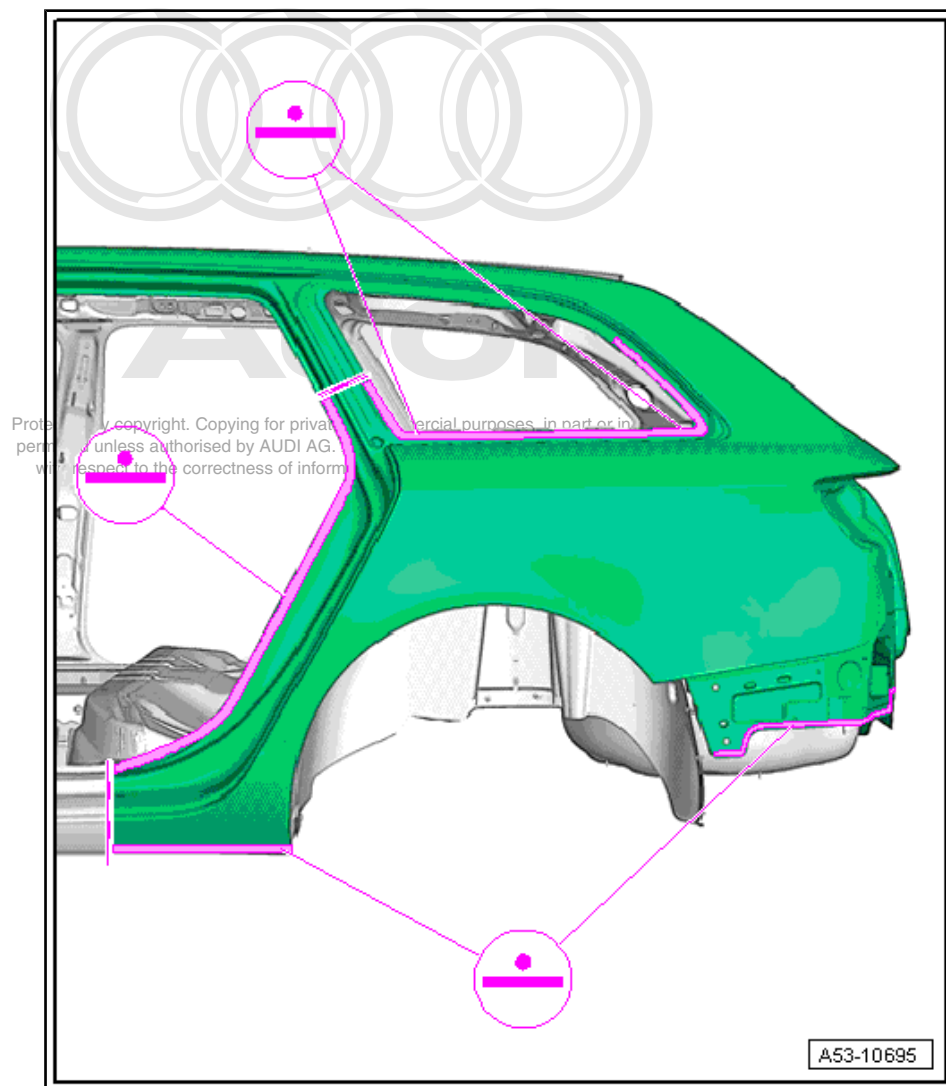
- Align flanges of roof and window cross member.
- Weld in side panel using shielded arc welding equipment  
250A : SG plug weld seam.
- Weld at separating cuts using shielded arc welding equipment  
250A : SG continuous seam.
- Bead over wheel arch flange. Wipe off emerging adhesive and seal joint.
- Apply 2-component epoxy adhesive - DA 001 730 A2- to side panel and beaded flange on wheel housing using pneumatic glue gun - V.A.G 2005 B- .



- Weld in side panel using resistance spot welder : RP spot weld seam.



- Weld in side panel using resistance spot welder : RP spot weld seam.



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## 13 Rear longitudinal member - Partial renewal



### WARNING

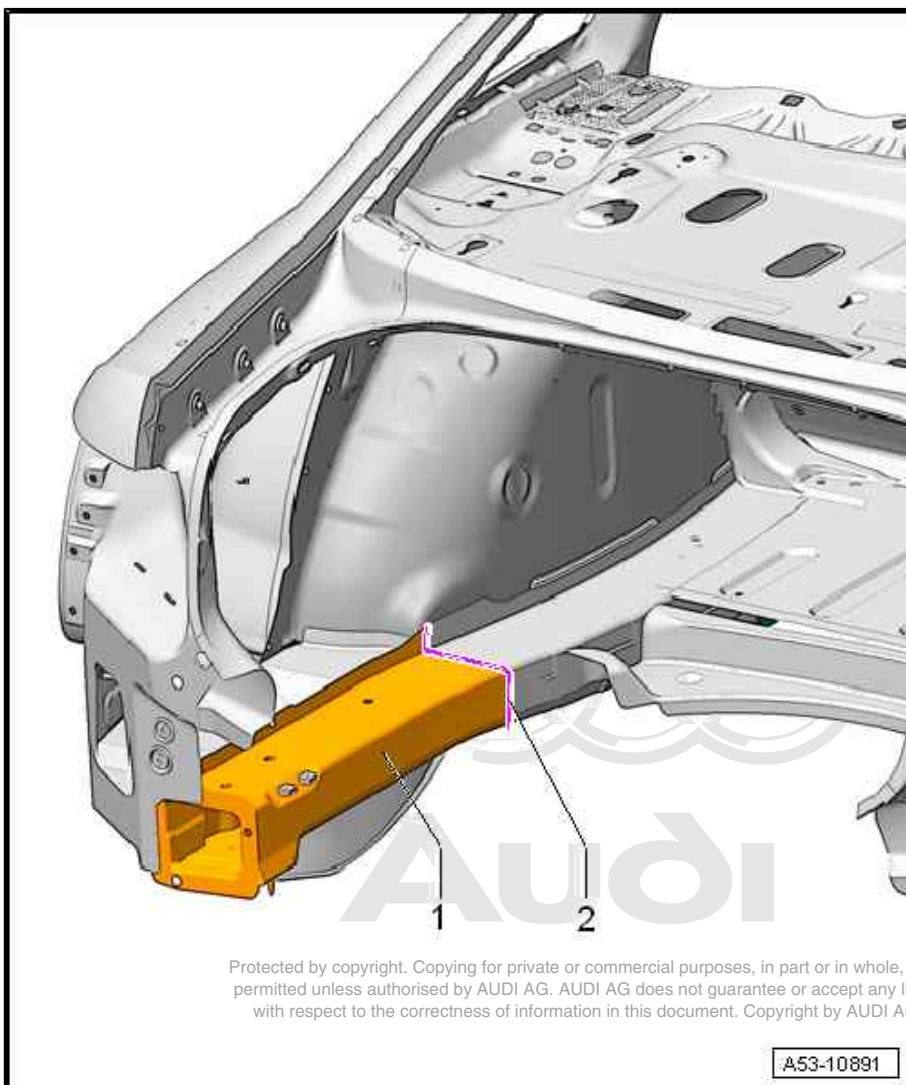
*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

1 - Rear longitudinal member

2 - Separating cut for longitudinal member

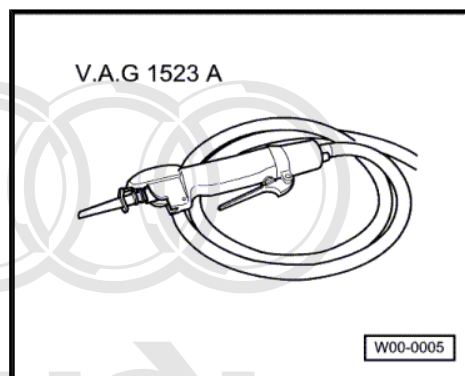


### 13.1 Tools

Special tools and workshop equipment required

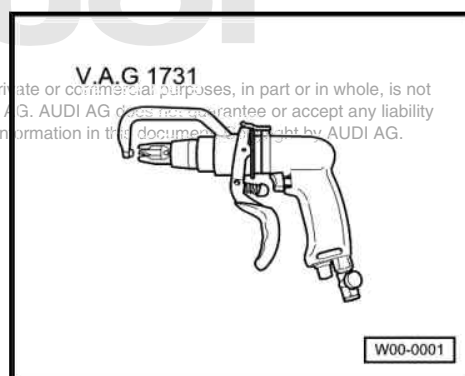
- ◆ Resistance spot welder -VAS 6239 A- or

- ◆ Resistance spot welder -VAS 6525- or
- ◆ Resistance spot welder -VAS 6530- or
- ◆ Resistance spot welder -VAS 6535- or
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Compact angle grinder -VAS 5167-
- ◆ Pneumatic sabre saw -V.A.G 1523A-

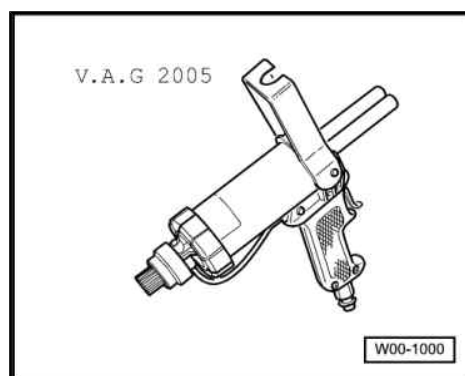


- ◆ Spot weld breaker -V.A.G 1731-

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- ◆ Mole grips, 18-18 -VAS 5430/1-
- ◆ Pneumatic glue gun -VAG 2005 B -



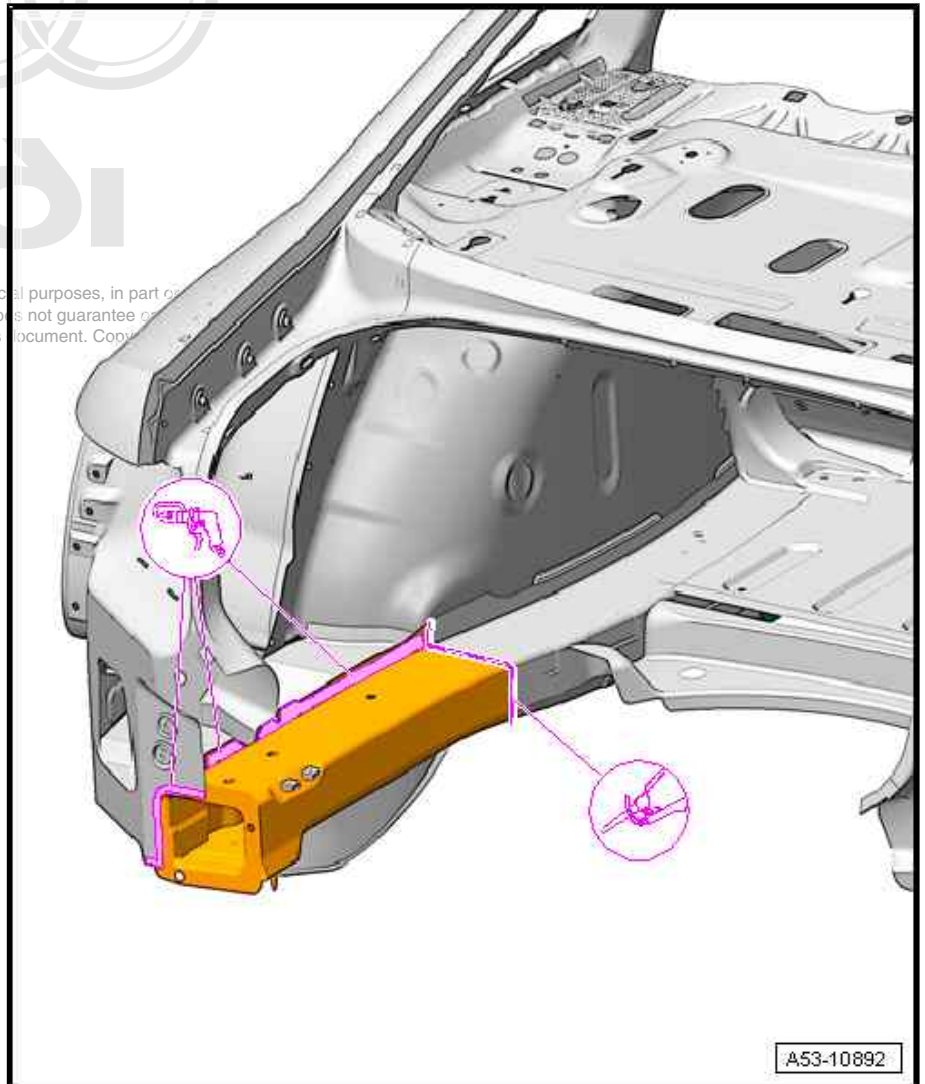
## 13.2 Procedure

- Cross panel sections and mounting plate ⇒ [page 206](#) already removed ⇒ [page 196](#)
- Spare wheel well already removed ⇒ [page 274](#)

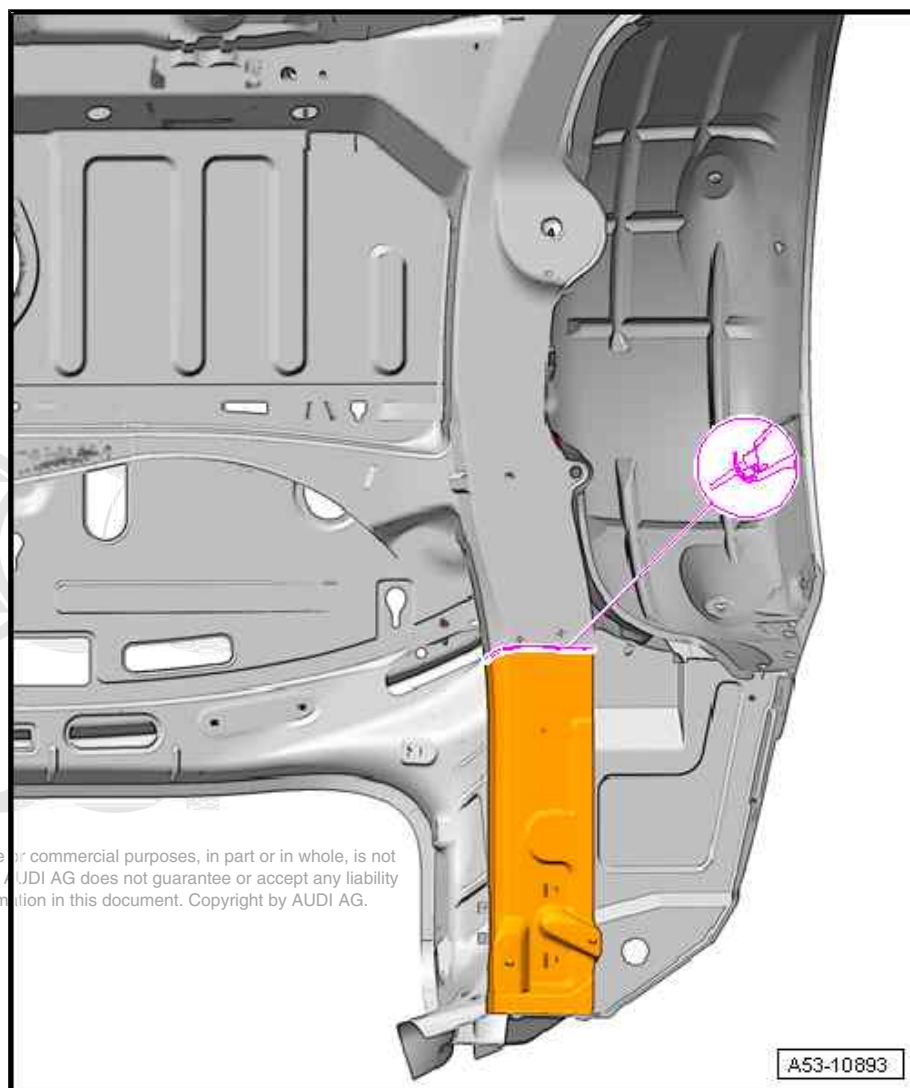
### Cutting locations

- Drill out original joint using spot weld breaker -V.A.G 1731- .

- Cut out longitudinal member (part section) using pneumatic sabre saw -V.A.G 1523A- .

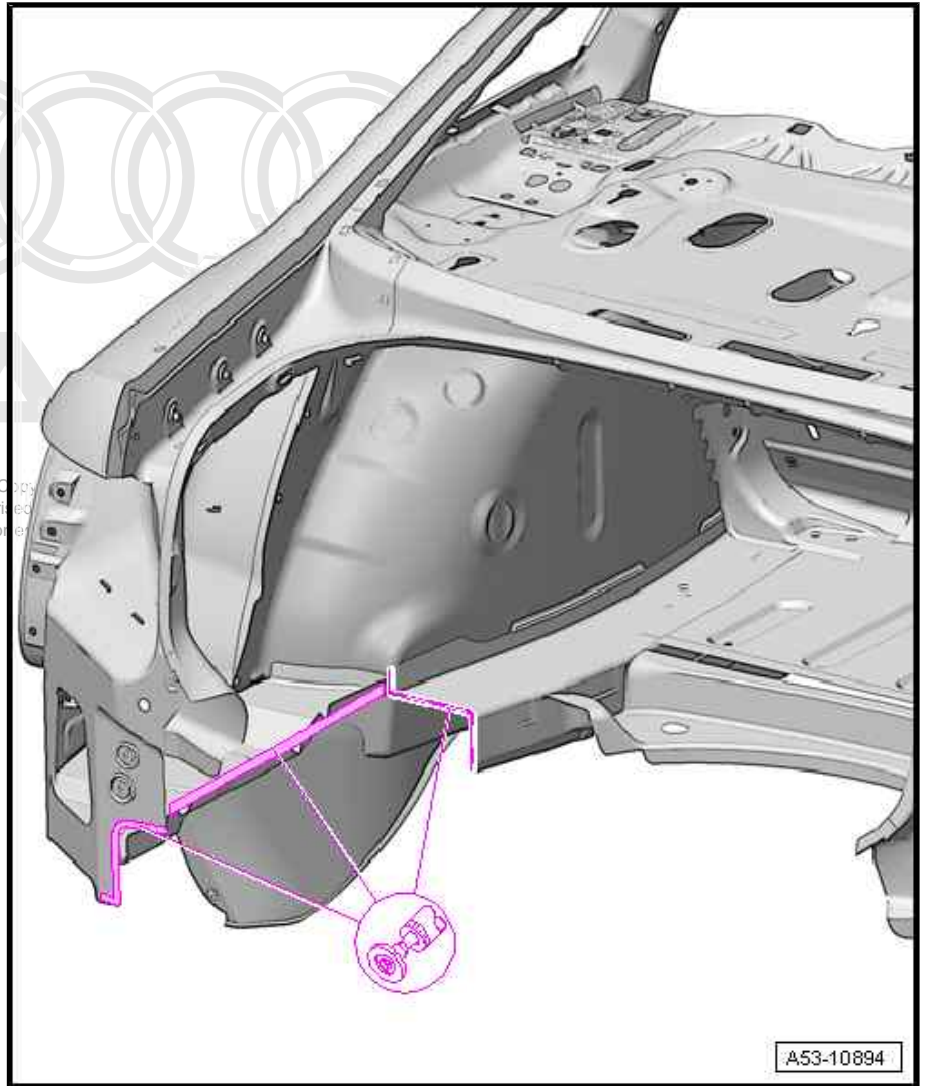


- Cut out longitudinal member (part section) using pneumatic sabre saw -V.A.G 1523A- .
- Drill out original joint using spot weld breaker -V.A.G 1731- .



- Remove remaining material using compact angle grinder - VAS 5167- .

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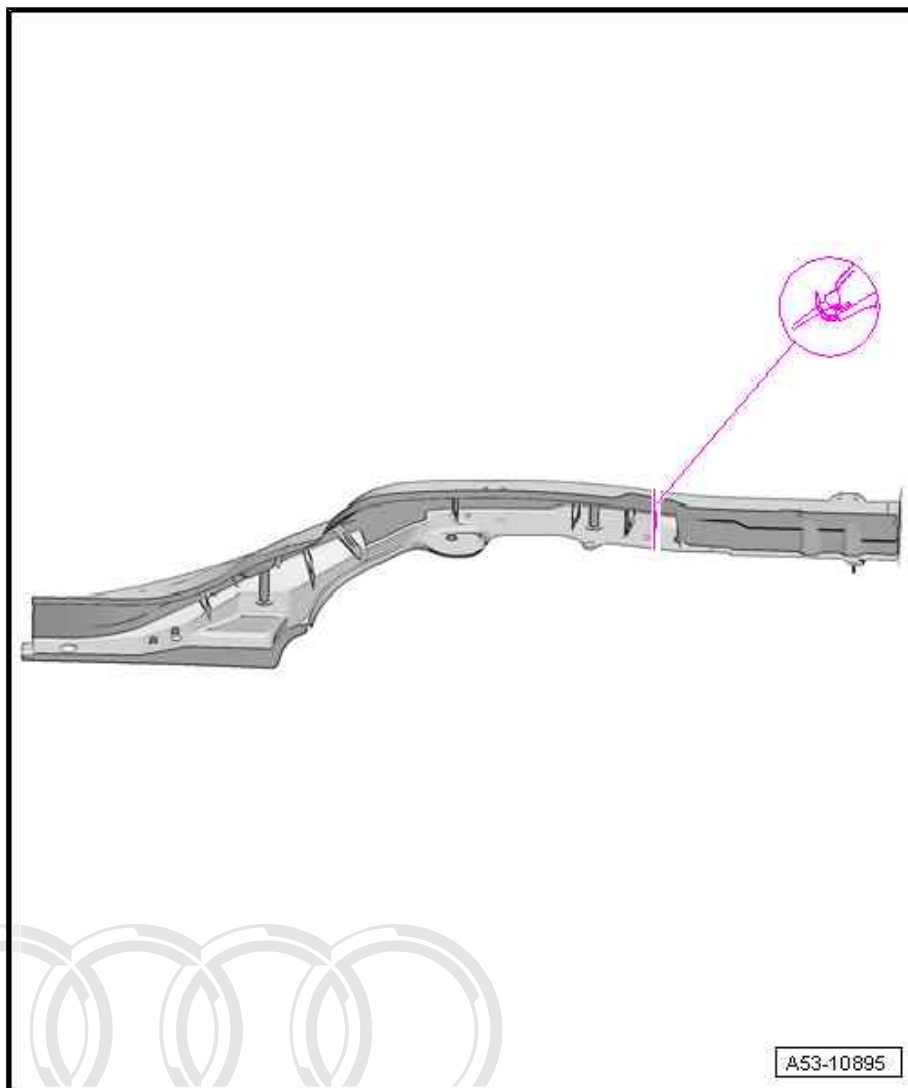


#### Replacement part

- ◆ Longitudinal member part section

#### Preparing new part

- Transfer separating cut to new part and make cut using pneumatic sabre saw -V.A.G 1523A- .



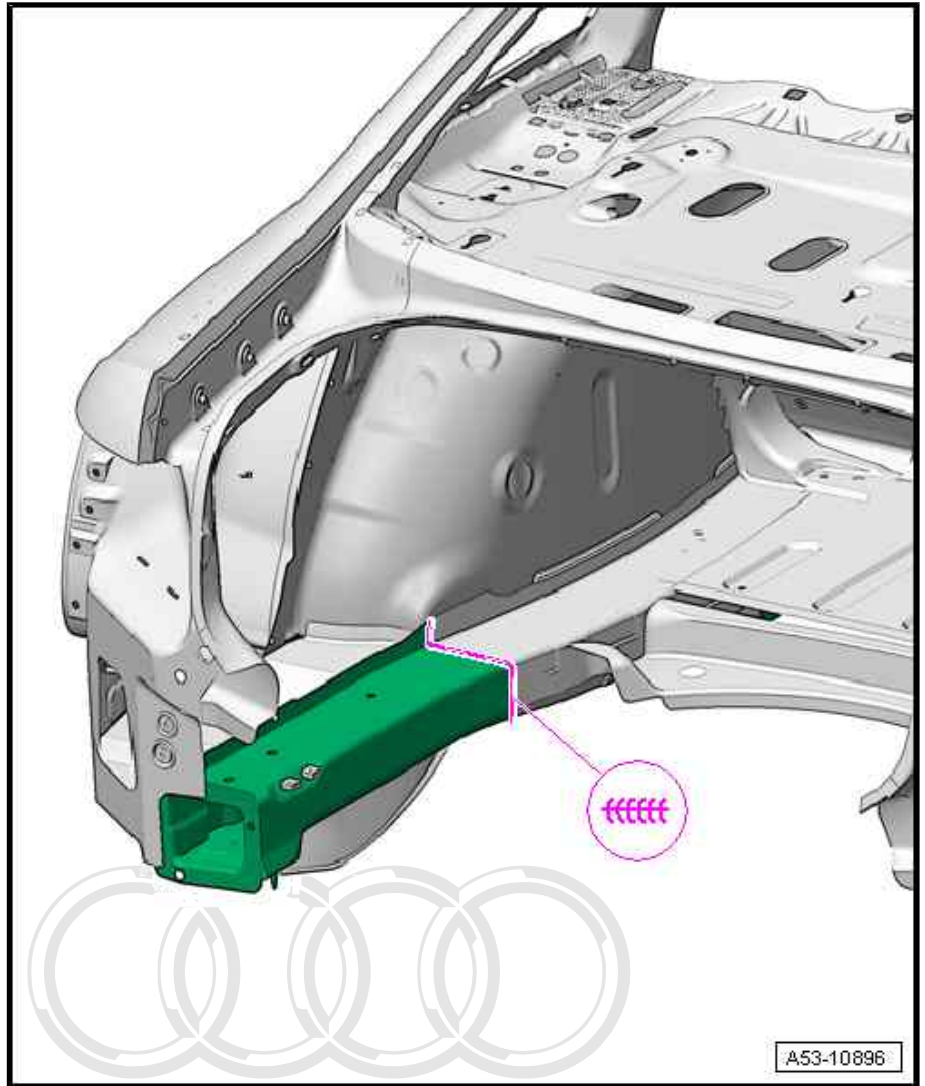
### Note

*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

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### Welding in

- Fix new part in position on alignment bracket set for Audi A6, 05> -VAS 6276- .
- With vehicle standing on alignment bracket set , match up section of longitudinal member and fix in position.
- Weld in longitudinal member using shielded arc welding equipment : SG continuous seam all round.



- Welding in cross panel sections and mounting plate  
⇒ [page 206](#) ⇒ [page 196](#)
- Welding in spare wheel well ⇒ [page 274](#)

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RO: 53 24 55 62

## 14 Spare wheel well - Renewal



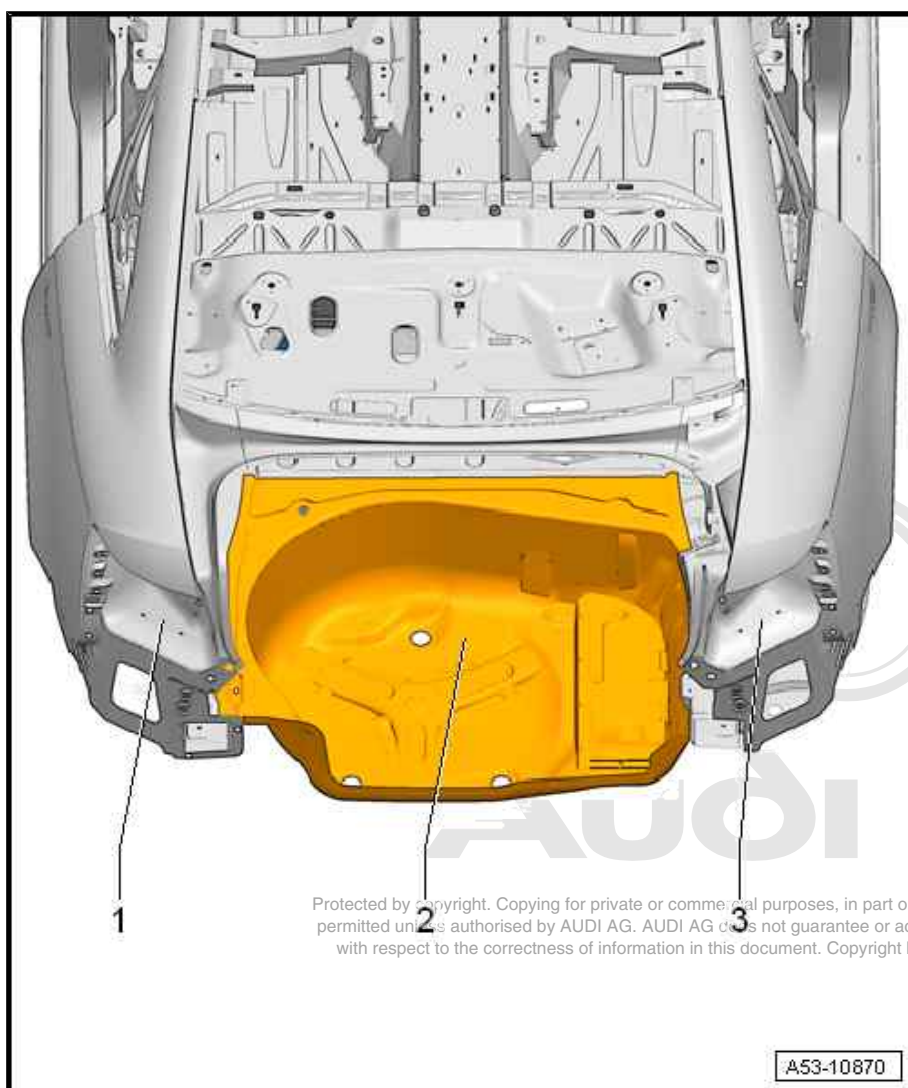
### WARNING

*Always observe safety precautions.*

*Gases which damage the environment and are hazardous to health are given off if body solder or spark-generating tools for welding or cutting are used in the vicinity of foam material; do NOT use these methods in foam-filled areas.*

Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes .

- 1 - Side panel (left-side)
- 2 - Spare wheel well
- 3 - Side panel (right-side)

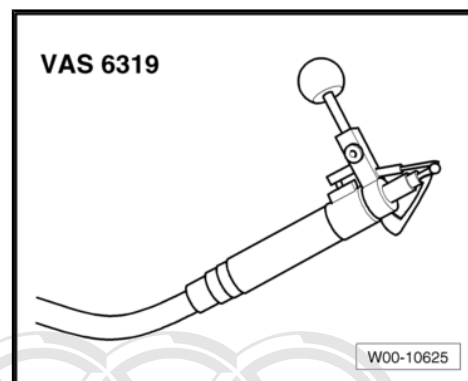


### 14.1 Tools

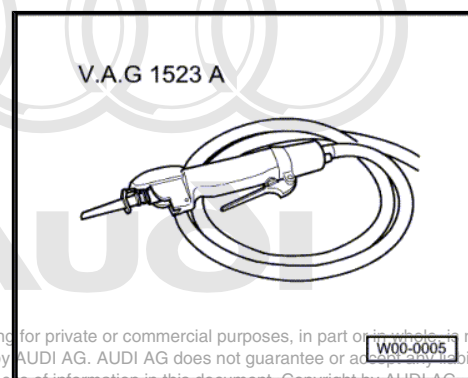
#### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6525-

- ◆ Resistance spot welder -VAS 6530-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Resistance spot welder -VAS 6545-
- ◆ Shielded arc welding equipment 250A
- ◆ Drill -VAS 5830-
- ◆ Compact angle grinder -VAS 5167-
- ◆ Laser weld seam grinder -VAS 6319-

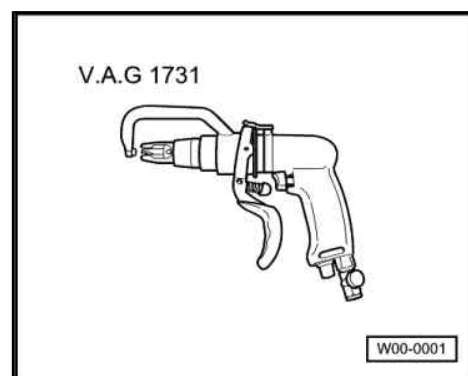


- ◆ Pneumatic sabre saw -V.A.G 1523A-



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- ◆ Spot weld breaker -V.A.G 1731-

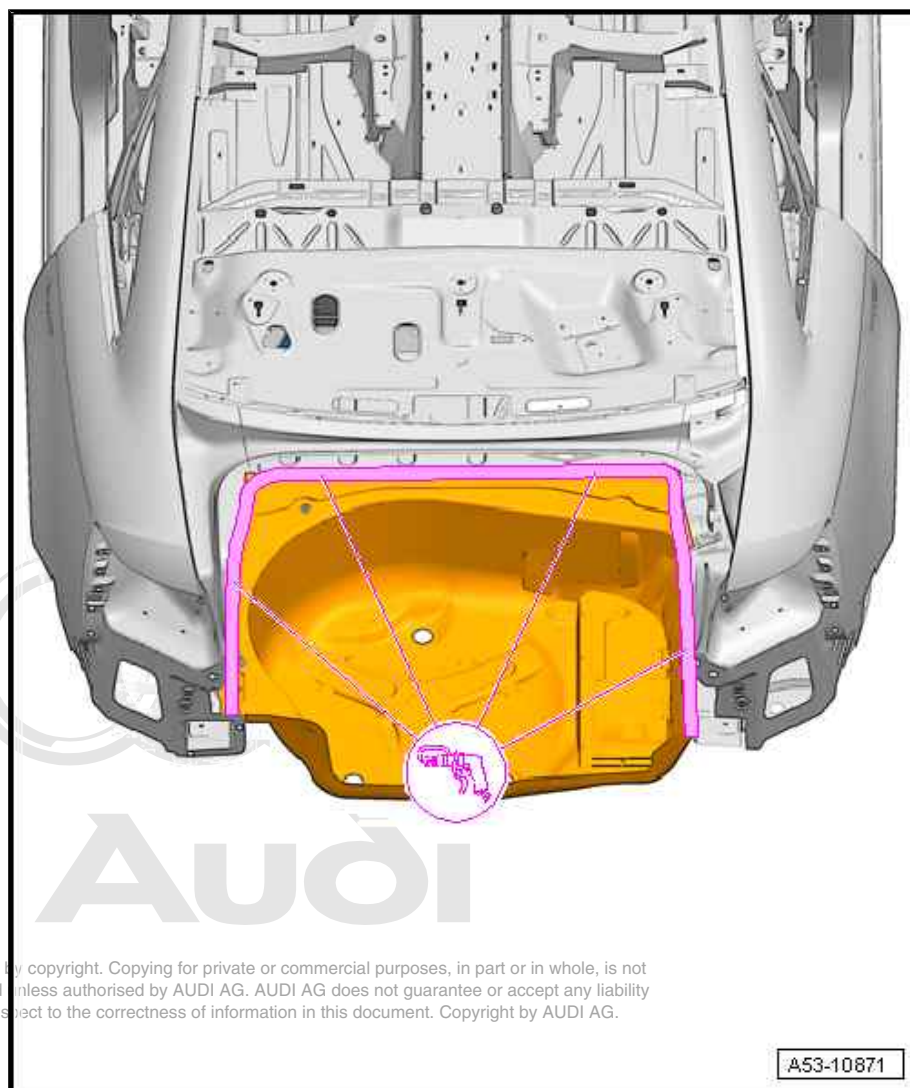


## 14.2 Procedure

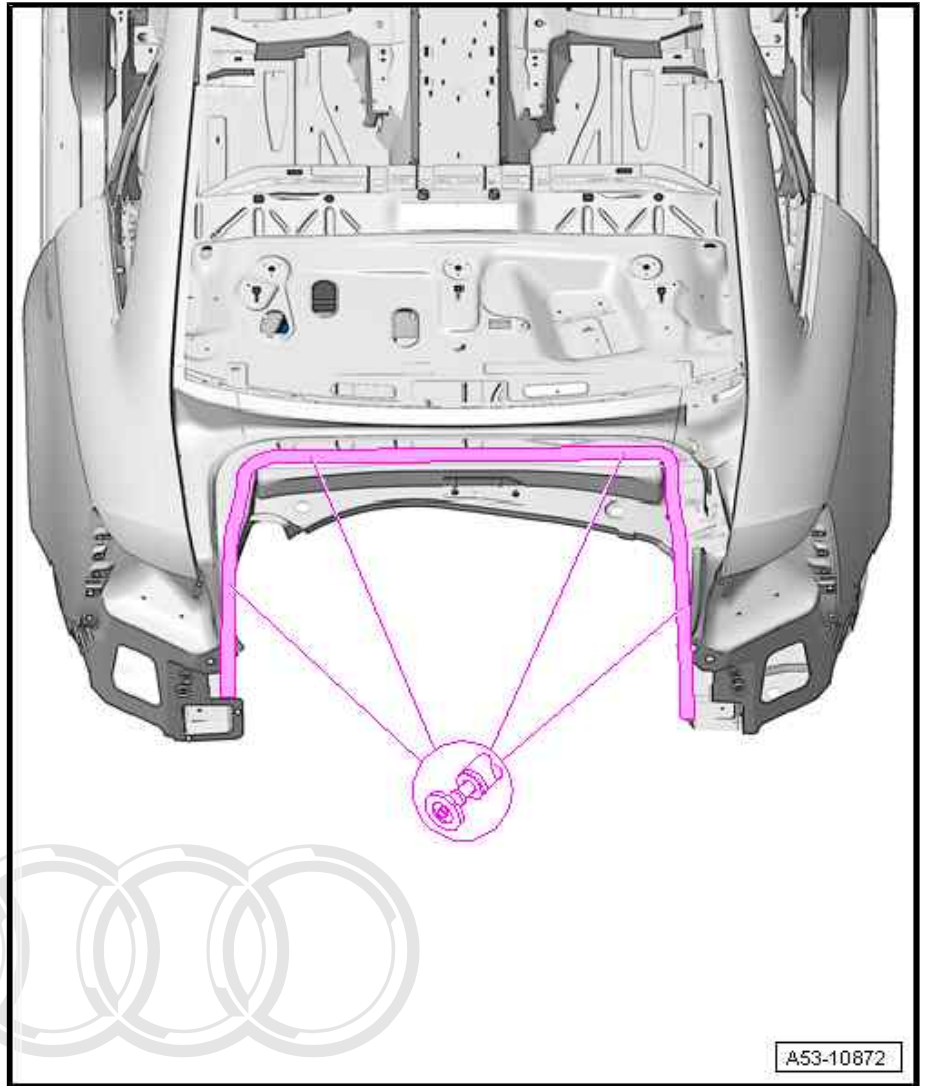
- Cross panels already removed ⇒ [page 196](#)

### Cutting locations

- Drill out original joint using spot weld breaker -V.A.G 1731- .



- Remove remaining material using compact angle grinder - VAS 5167- .

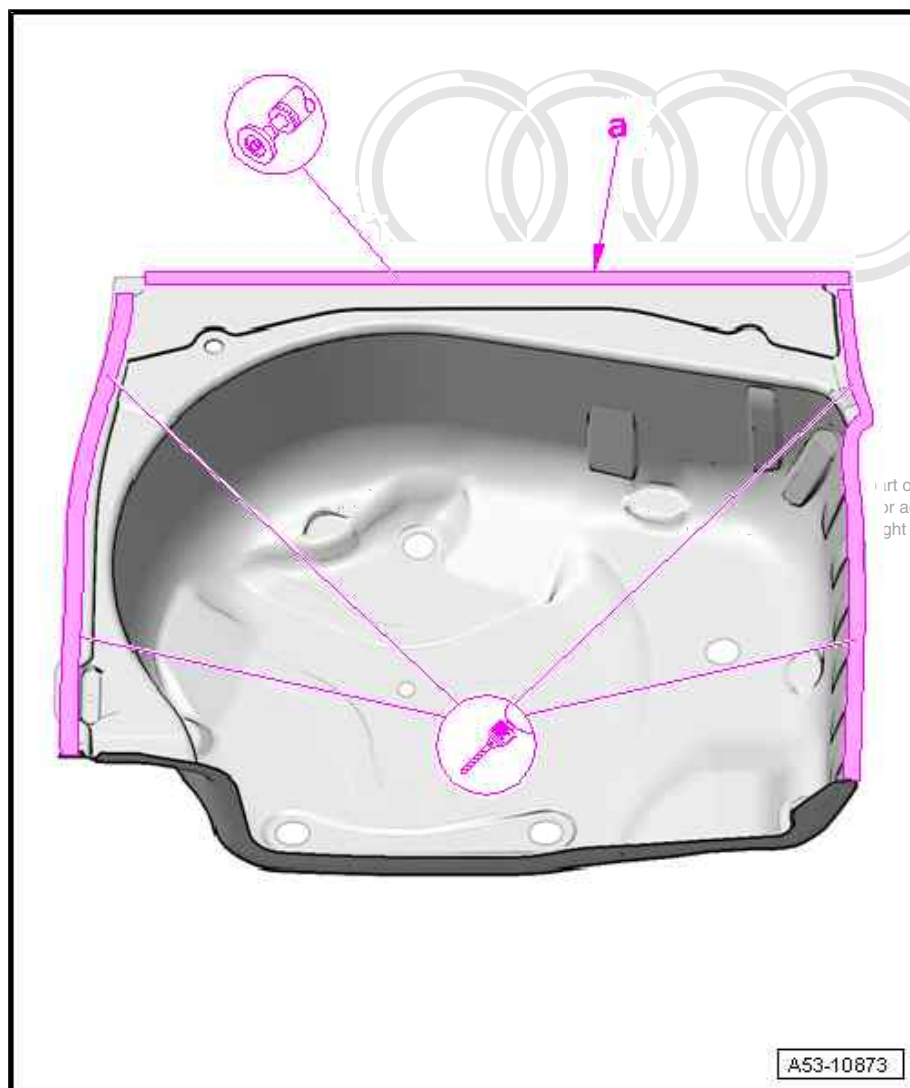


### Replacement part

- ◆ Spare wheel well

### Preparing new part

- Using compact angle grinder -VAS 5167-, grind open replacement part every 40 mm -a- for a 60 mm SG continuous seam.
- Drill holes for SG plug weld seam, 8 mm Ø using drill -VAS 5830- .



part or in whole, is not  
or accept any liability  
ght by AUDI AG.

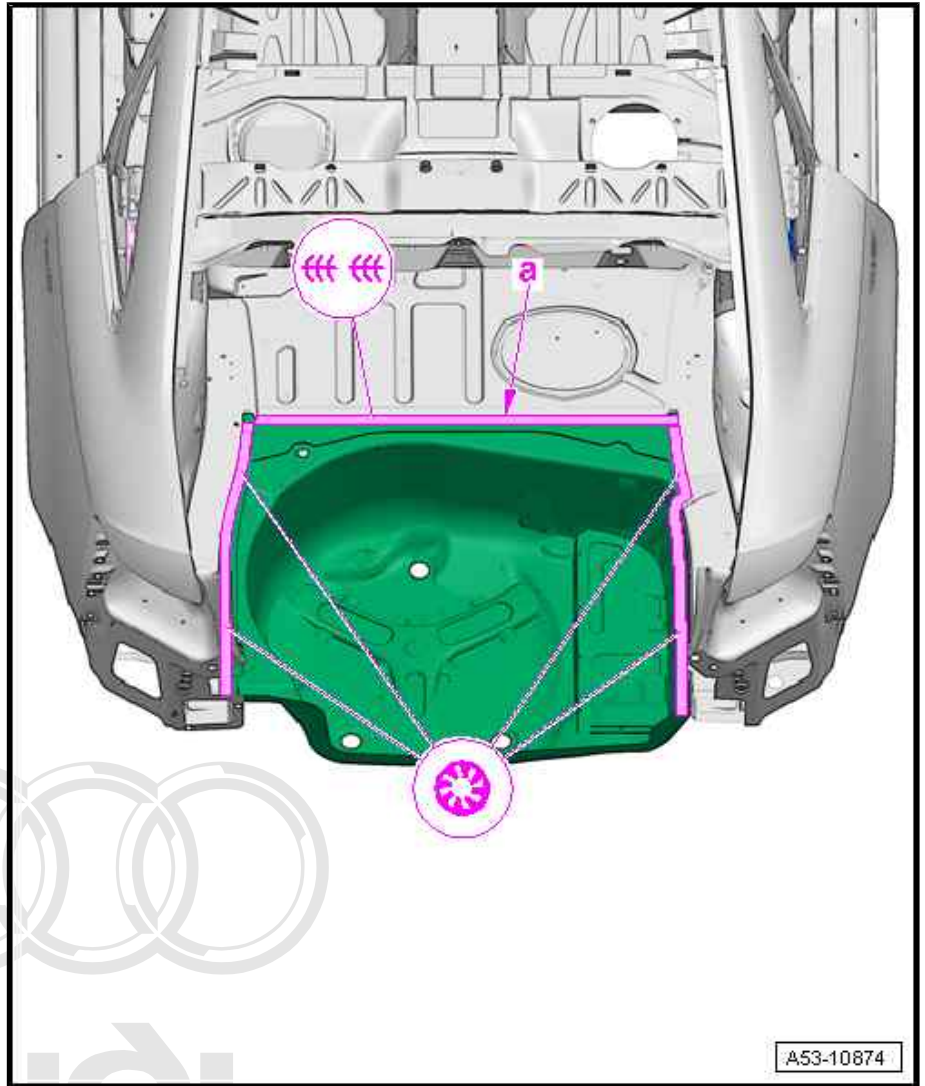


#### Note

*Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.*

#### Welding in

- In place of laser weld, weld in spare wheel well -a- using shielded arc welding equipment 250A : SG continuous seam (staggered - with gaps).
- Weld in spare wheel well using shielded arc welding equipment : SG plug weld seam.



- Welding in cross panel sections ➤ [page 196](#)

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