Body Repairs

Audi A6 2011 ➤
Audi A6 Avant 2011 ➤
Audi A6 China 2012 ➤

Edition 12.2018

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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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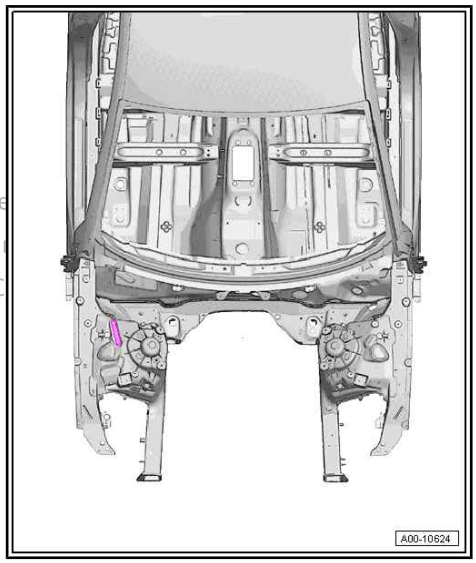
00 – Technical data

1 Vehicle identification data

(AKI000261; Edition 12.2018)

1.1 Vehicle identification number

The vehicle identification number can be found via the MMI; it also appears in the windscreen on the driver's side, on the vehicle data sticker and is stamped on the suspension turret (right-side).



NOTICE

If a component with the vehicle identification number is renewed due to damage, the repairs must be documented according to the market-specific legislation.

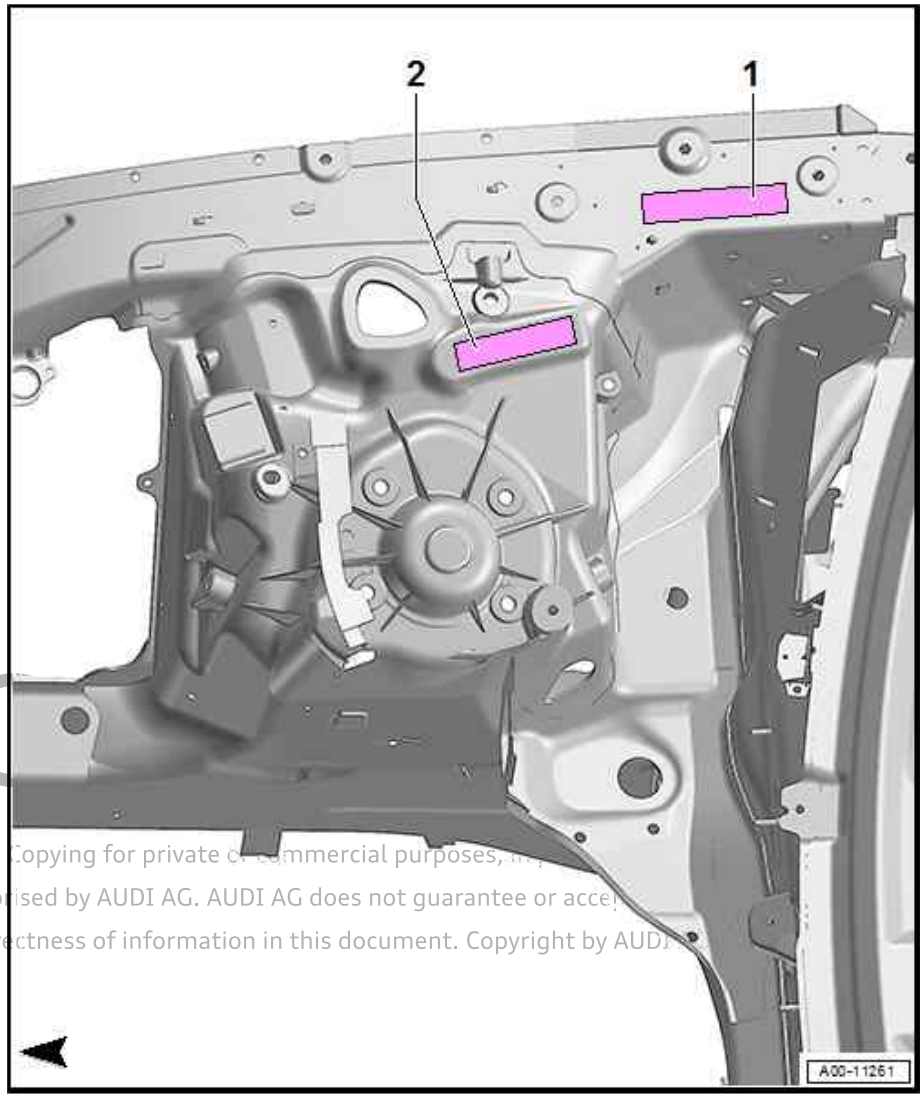
Please make sure to comply with the market-specific legislation when renewing a component with the vehicle identification number.

Before installing the new component, stamp the vehicle identification number on using stamped numbers - VAS 6939- and punched letters - VAS 6940- .

Alternative position of vehicle identification number for workshop repairs

Note

- *To avoid damaging the suspension turret (cast aluminium profile), stamp the vehicle identification number on the upper longitudinal member -1- using stamped numbers - VAS 6939- and punched letters - VAS 6940- .*
- *Standard position -2-*



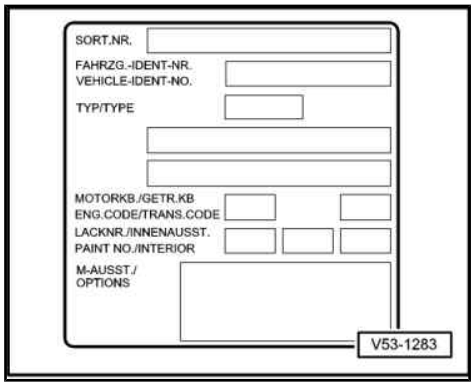
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1.2 Type plate

The type plate is located on the passenger-side door pillar. Vehicles for certain export countries have no type plate.

1.3 Vehicle data sticker

The vehicle data sticker is located in the spare wheel well under the luggage compartment floor (left-side in direction of travel).



2 Important notes

This Manual describes only selected repair operations. Where repair operations are not described: separate original joint and repair with replacement panel. Repairs requiring a method different from that used in production are described specifically.

Where sub-parts are available for a repair, they should be matched up and butt-welded in place (SG continuous seam), unless otherwise described.

Please refer to the information in the Workshop Manual, General information, Body repairs.

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3 Safety precautions

Always use an extraction system when performing welding and grinding operations.

Welding and grinding must never be performed simultaneously in the same working area.

Working area must be cleaned at regular intervals as necessary to remove dust.

Compressed air must NOT be used to blow out dust deposits.

The extraction system must be cleaned at regular intervals.

In addition, the relevant country-specific accident prevention and industrial safety regulations must be observed.

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4 Notes for vehicles with hybrid drive

CAUTION

Safety hazard: the engine can start unexpectedly.

Before carrying out general work on a vehicle with high-voltage electrical system, switch off the ignition and remove the ignition key from the vehicle.

CAUTION

When working on a vehicle with the ignition switched on or while the drive system is active, the engine can start unexpectedly and exhaust fumes can cause a health hazard in closed rooms. Moving parts can trap or draw in parts of the body and/or clothing (safety hazard).

Before switching on the ignition, perform the following steps:

- Move selector lever to position P
- Activate parking brake
- Switch off ignition
- Open bonnet
- Connect battery charger (e.g. battery charger - VAS 5095A-) to jump-start connections of 12 V electrical system
- Switch on ignition

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CAUTION

Working on vehicles with high-voltage wiring:

- Do not support yourself or tools on high-voltage wiring or associated components --> this can damage the insulation.
- High-voltage wiring must not be excessively bent or kinked --> this can damage the insulation.
- The round high-voltage connectors are colour-coded with an external coloured ring and are provided with mechanical coding or guide lugs. It is important to observe this coding when joining up the round high-voltage connectors; otherwise the connectors can be damaged.

CAUTION

Risk of fatal injury if high-voltage components are damaged.

Observe the following when working in the vicinity of high-voltage components or wiring:

- It is not permitted to use cutting or forming tools, other sharp-edged tools or heat sources such as welding, brazing, soldering, hot air or thermal bonding equipment.
- Before starting work, visually inspect the high-voltage components in the areas involved.
- Before working in the engine compartment, visually inspect the power and control electronics for electric drive - JX1- , electric drive motor - V141- , air conditioner compressor - V470- and high-voltage wiring.
- Before working on the vehicle underbody, visually inspect the high-voltage wiring and covers.
- Before working on the rear section of the vehicle, visually inspect the high-voltage wiring and the electronics box with the maintenance connector for high-voltage system - TW- .
- Visually inspect all potential equalisation lines.

Check the following when making the visual inspection:

- There must be no external damage on any component.
- The insulation of the high-voltage wiring and potential equalisation lines must not be damaged.
- There must be no unusual deformation of the high-voltage wiring.
- All high-voltage components must be identified by a red warning sticker.

CAUTION

High voltage can cause fatal injury.

Danger of severe or fatal injuries from electric shock.

- The high-voltage system may only be re-energised by a suitably qualified person (Audi high-voltage technician).
- The system may only be re-energised using the vehicle diagnostic tester via “Guided Fault Finding”.
- The vehicle is then made ready for operation again by the qualified person (Audi high-voltage technician).
- The qualified person (Audi high-voltage technician) marks the vehicle by attaching the appropriate warning signs.

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CAUTION

High voltage can cause fatal injury.

Danger of severe or fatal injuries from electric shock.

- The high-voltage system may only be de-energised by a suitably qualified person (Audi high-voltage technician).
- It must be definitely confirmed that the high-voltage system is de-energised. The system may only be de-energised using the vehicle diagnostic tester via “Guided Fault Finding”.
- The qualified person (Audi high-voltage technician) confirms that the system is de-energised and uses the locking cap - T40262- to ensure that the system cannot be re-energised. As an additional precaution, the ignition key and the maintenance connector for high-voltage system - TW- are then stored in a safe place by the qualified person.
- The qualified person (Audi high-voltage technician) marks the vehicle by attaching the appropriate warning signs.

NOTICE

Please refer to the Electronic parts catalogue when ordering replacement parts.

CAUTION

Accidents can be caused if the driver is distracted by test equipment while road-testing, or if test equipment is not properly secured.

Injuries can be caused if the passenger's airbag is triggered in a collision.

- The use of test equipment while driving causes distraction.
- There is an increased risk of injury if test equipment is not secured.
- Set front passenger seat to rearmost position.
- Use only the vehicle diagnostic and service information system - VAS 5052- or the diagnostic system - VAS 5053- .
- The test equipment -1- must rest flat on the passenger's thighs (as shown in illustration) and must be operated by the passenger.

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5 Straightening and re-alignment of body parts

Straightening and re-alignment work must not be carried out on the front section of the Audi A6 body, because this could cause cracking in the aluminium castings that may not be externally visible.

If the aluminium castings or adjoining sheet steel parts are damaged, they must be renewed.

6 Corrosion protection

Note

- *Cavity sealing must be applied after all body repairs.*
- *The bonnet and rear lid are not treated with cavity sealing at the factory. Cavity sealing only has to be applied after carrying out repairs.*

The surface to be treated must be clean, dry and free of grease.

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Applying cavity sealing after painting:

The surfaces and threads which have to be left free of cavity sealing wax are shown for the individual models in the Paintwork manual in the section on vehicle-specific information, Masked sectors.

Replacement parts

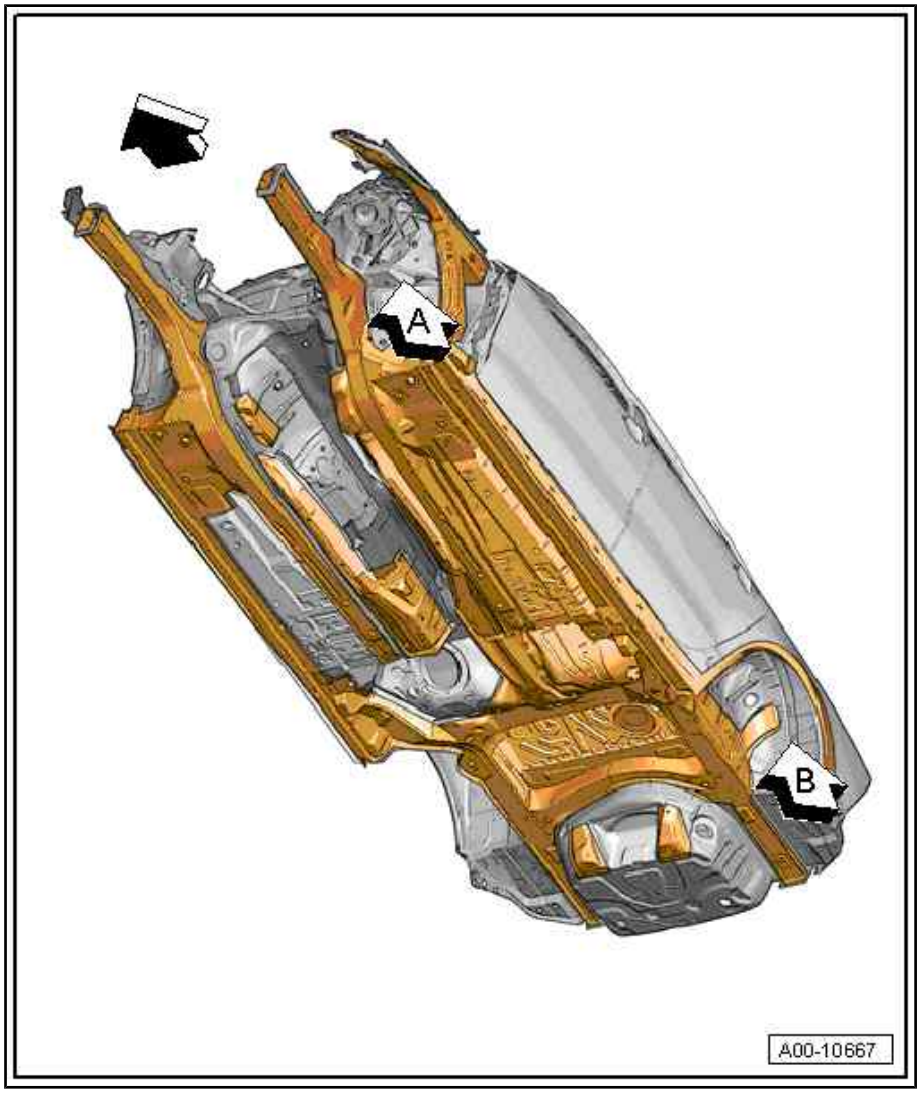
Cavity sealing agent, light tone - D 330 KD1 A2-

Cavity sealing agent - D 330 KD2 A3-

Genuine wax - AKR 321 M 15 4-

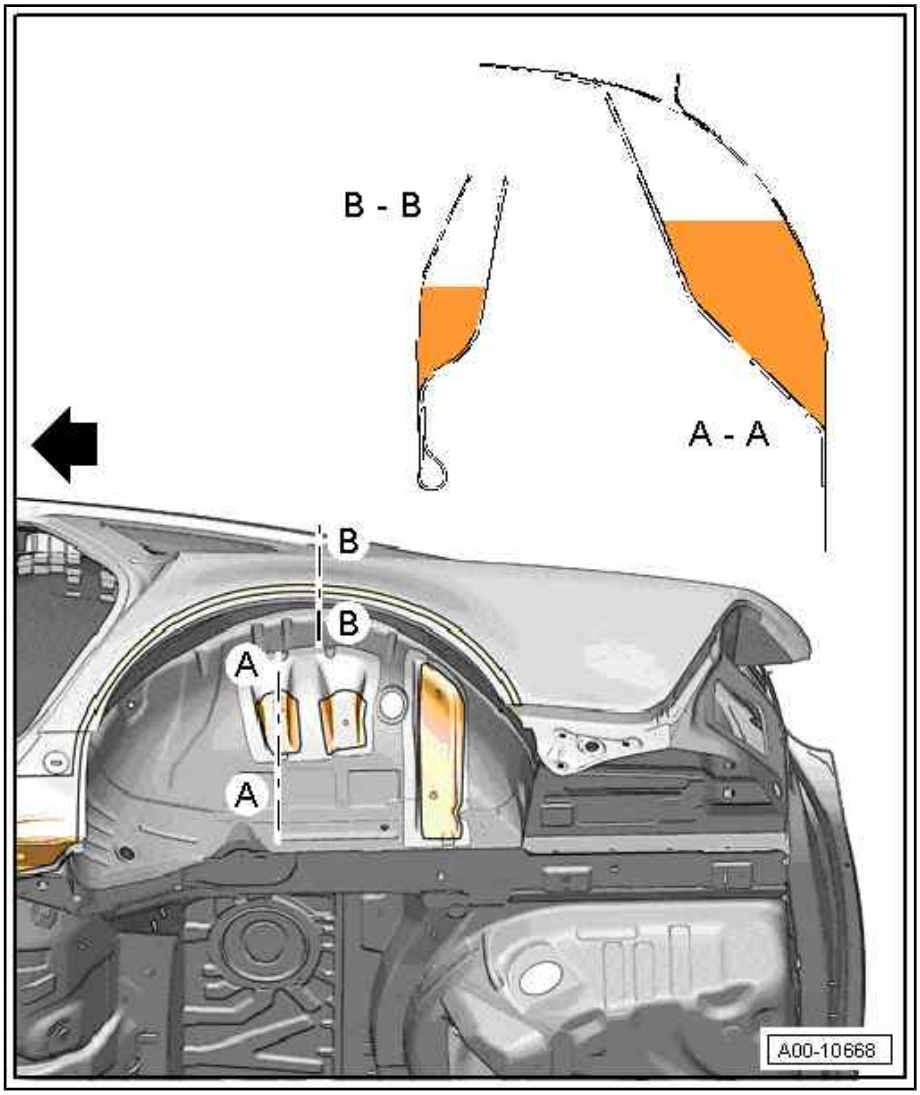
Cavity sealing agent - AKR 320 KD6 04-

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.



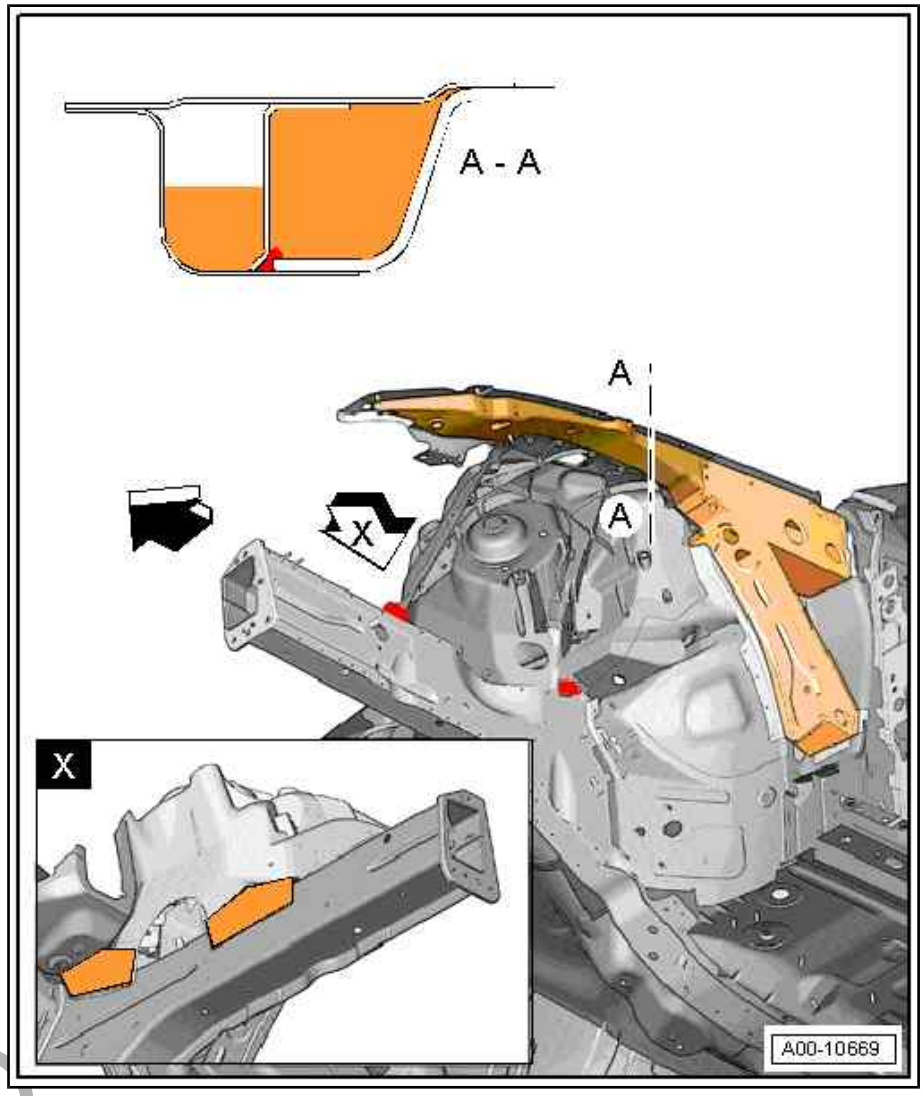
– Apply additional wax in area A - A (mixed construction).
– Apply additional wax in area B - B (mixed construction).

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– Apply additional wax in area A - A (mixed construction).

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7 Galvanised body panels, high-strength and extra-high strength steel

Note

Repairs must always be made according to the manufacturer's instructions in the respective Workshop Manual. Ultra-high-strength and hot-formed body panels may only be repaired using modern inverter technology, otherwise the optimum passenger protection after repairs is not possible. Hot-stamped steel panels are used in areas under extreme loading. These panels offer significantly greater strength than conventional high-strength panels for less weight.

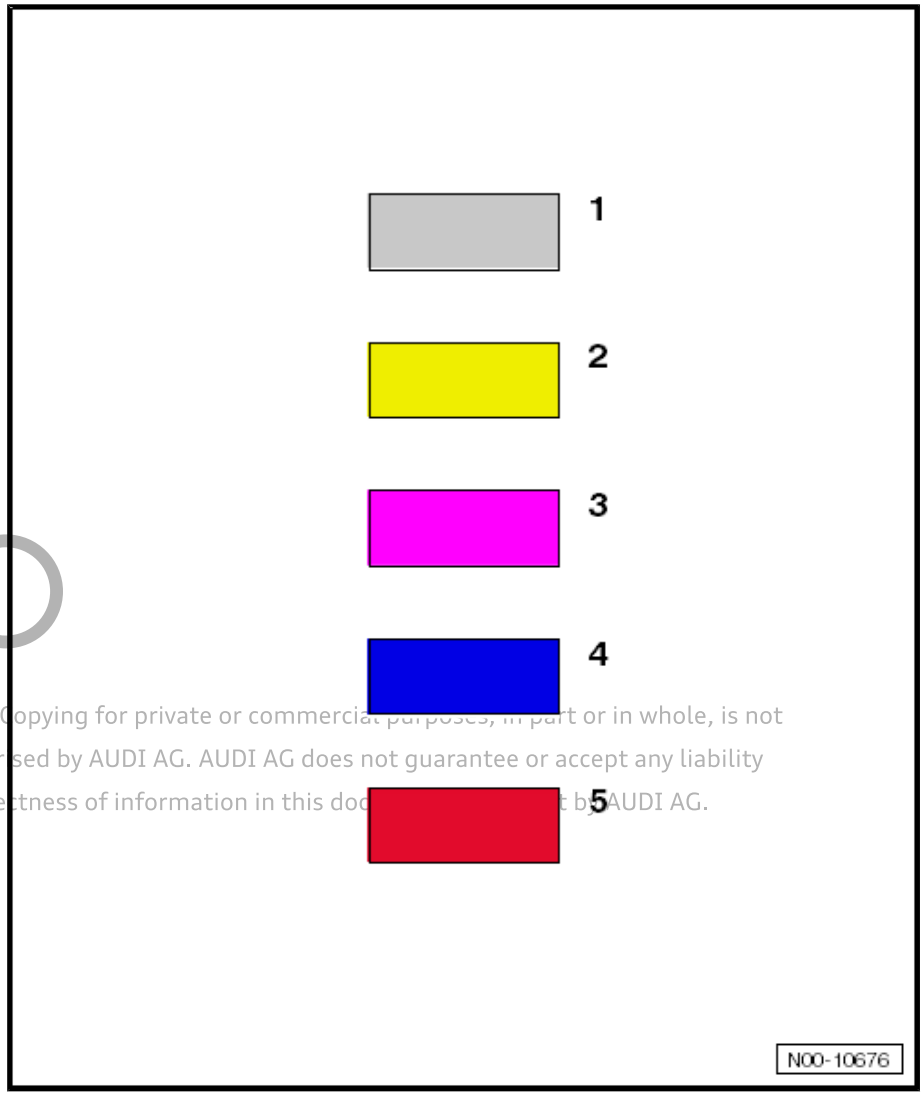
Note

- *For lightweight construction, Audi employs several different types of steel: soft steel, high-strength steel, modern high-strength steel, ultra-high strength steel and hot-formed ultra-high strength steel.*
- *Cutting and joining of these components by butt welding is only permissible at the specified locations. There is a stipulated repair method for this repair work.*
- *Spot welding is only permissible using resistance spot welders approved by AUDI AG.*

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The body of the vehicle is predominantly manufactured from galvanised steel panels.

The following illustrations show the various types of steel in different colours, ranging from soft steel to hot-formed steel (see table below).

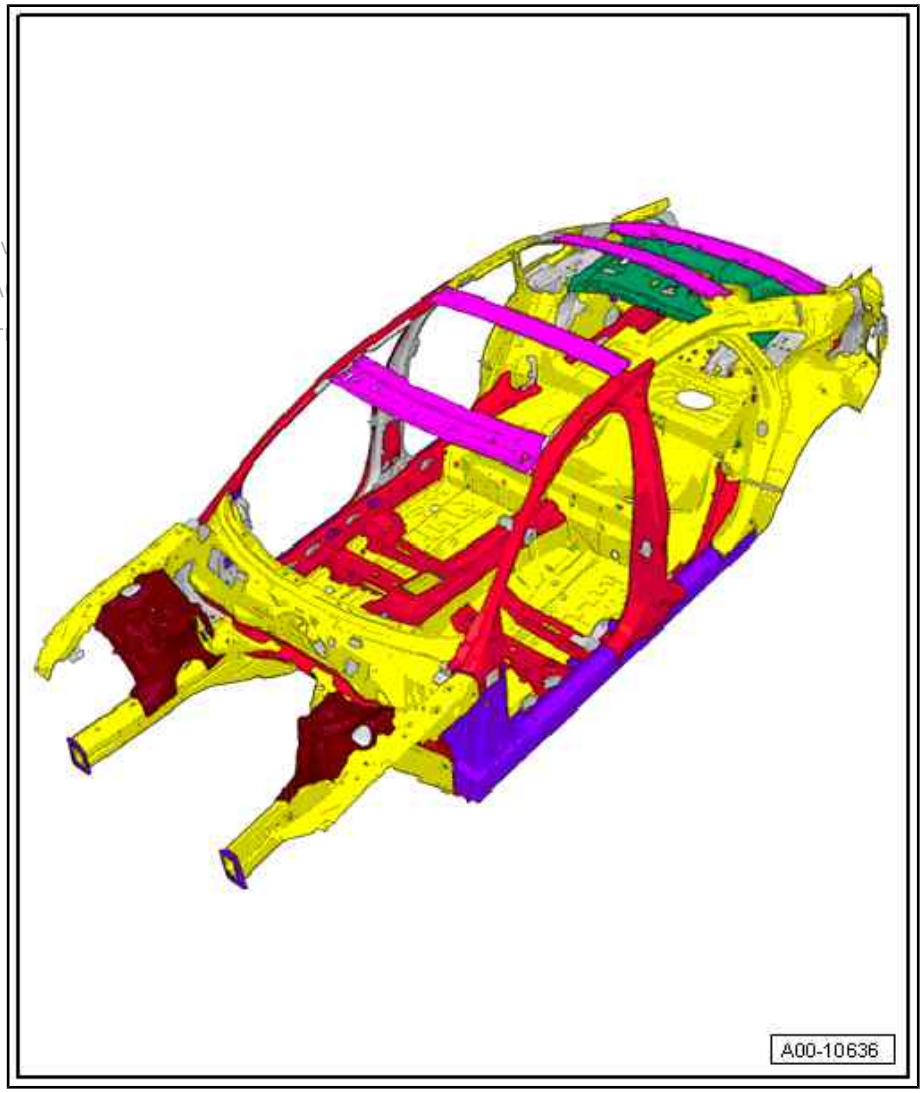


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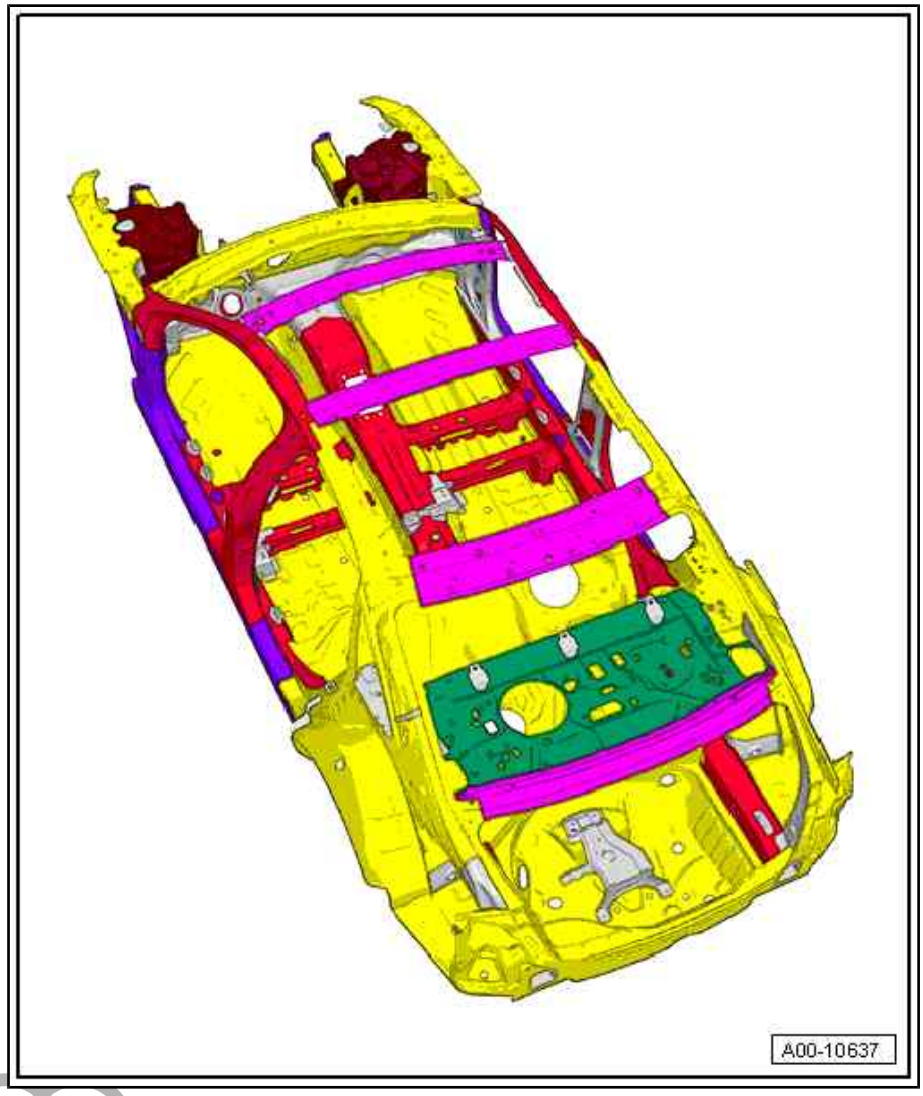
	Colour	Type of steel	Tensile strength / minimum yield strength in MPa
1	Grey	Soft	< 350
2	Yellow	High-strength steel	300 - 590
3	Magenta	Modern high-strength steel	500 - 980
4	Blue	Ultra-high-strength steel	980 - 1150
5	Red	Ultra-high-strength steel (hot-formed)	> 1400

The outer side panel and roof are removed to give a clearer illustration. These panels consist of »normal« sheet metal.

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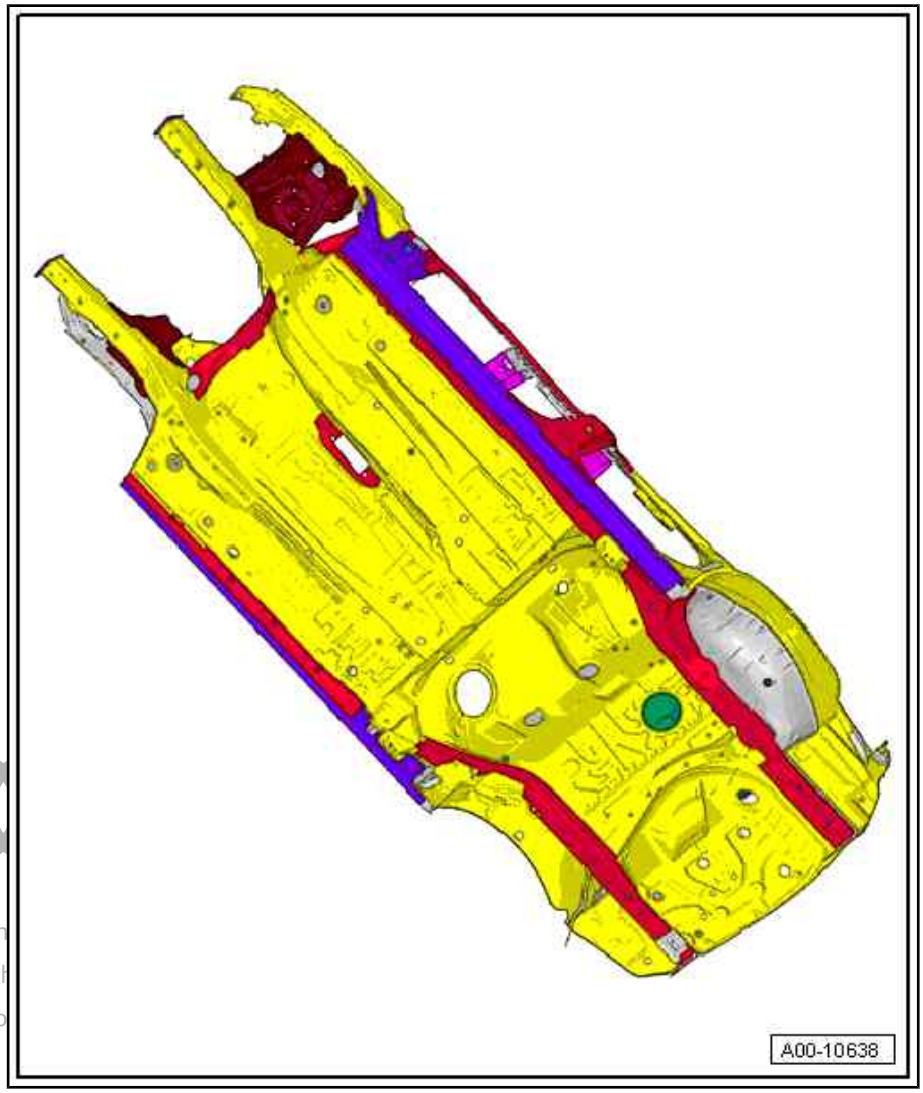


The outer side panel and roof are removed to give a clearer illustration. These panels consist of »normal« sheet metal.



The outer side panel and roof are removed to give a clearer illustration. These panels consist of »normal« sheet metal.

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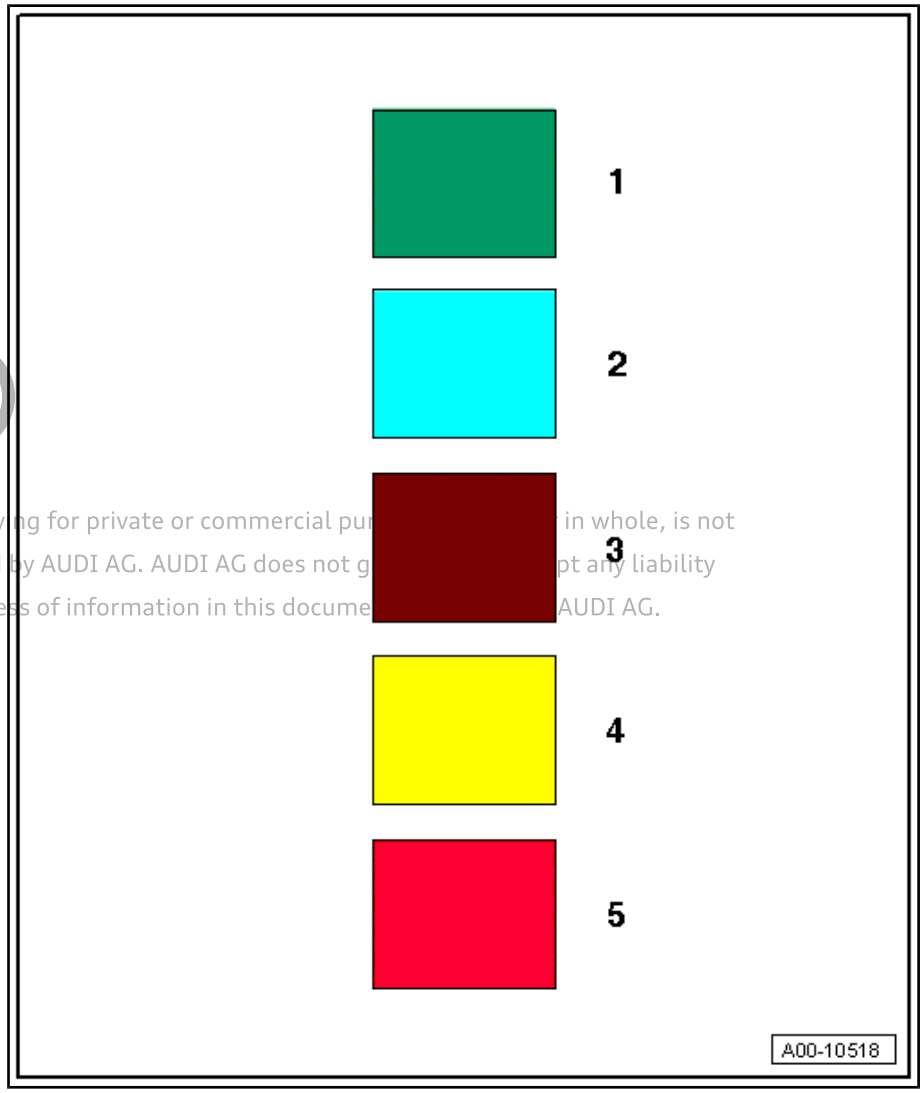


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7.1 Aluminium panels

The hang-on parts of this vehicle are made of aluminium.

The following illustrations additionally show cast aluminium profiles.



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	Colour	Aluminium
1	Green	Aluminium sheet panels
2	Blue	Aluminium extrusions
3	Brown	Cast aluminium profiles

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8 Extraction systems for steel/aluminium body repair station ("multi-material-mix" workplace)

Note

The extraction units VAS 6572/1 and VAS 6572/2 must be emptied every time before and after use.

Fine aluminium dust

Fine particles of aluminium dust are flammable and/or explosive. Extraction systems for aluminium dust must therefore be designed to prevent any external ignition sources from entering the filter or dust collector. The stationary extraction systems used up until 2009 (which are "pure" aluminium extractors, manufactured by Dansk Klimablock / Aeroweld or Nederman) do not have this protection and cannot be modified to include it. All these extraction systems and the systems available on the market for aluminium are of the type that require all ignition sources to be avoided. For this reason, since the possibility of sparks originating from steel parts cannot be entirely ruled out, vehicles with any steel body panels must NOT be repaired at these repair stations.

The mobile extractors VAS 6572/1 used since 2009 (meeting German dust filtration class M) and VAS 6572/2 (class H) have threefold protection against sparks being drawn in if steel is being worked on in the vicinity. This protection consists of a 5-metre long anti-static intake hose, a spark trap and a 5-metre long settling section. This ensures that, even if steel panels are inadvertently sanded or ground, the glowing sparks are cooled well below the temperature required to ignite aluminium dust. The system is TÜV-certified for steel sparks, which are much hotter and glow for longer than aluminium.

A second possible risk is the static charge which can build up in the metal particles due to friction in the intake hoses and pipes and which can be a source of ignition in the same way as a glowing spark. The connections on the extractor system and the intake hoses have Storz C-type fire hose couplings to ensure that only the anti-static "OHM"-type hoses can be connected and no other types of hose will fit.

The third risk is that the extractor itself can be an ignition source affecting the surroundings. However, since these extractors are based on industrial systems, they automatically possess all design features required for zone 22 and to avoid any effects as an ignition source affecting the surroundings. In any case, accident repair methods such as cutting, grinding and welding will generally produce far more ignition sources than are likely to originate from an extraction system.

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Fine steel dust

Steel sparks and steel dust present no risk in themselves. However, in a multi-material-mix workplace it is the flying steel sparks which constitute the greatest risk potential for the aluminium dust powder. For this reason, and in order to meet the requirement of keeping the processes separate, it is essential in all cases to have an extractor for steel that is allocated exclusively to that body workbay. If one were to always use the extractor for aluminium for all types of work (because it has a certified spark trap) this would in effect amount to an extreme test of its ability to prevent an explosion - right next to the person at the workplace! The extractor VAS 6571/1 is similar in design to the basic unit VAS 6572/2, but does not have the 3-stage spark trap. It is also suitable

for use in zone 22. The filter meets the requirements of class "M", which is sufficient for metal dust.

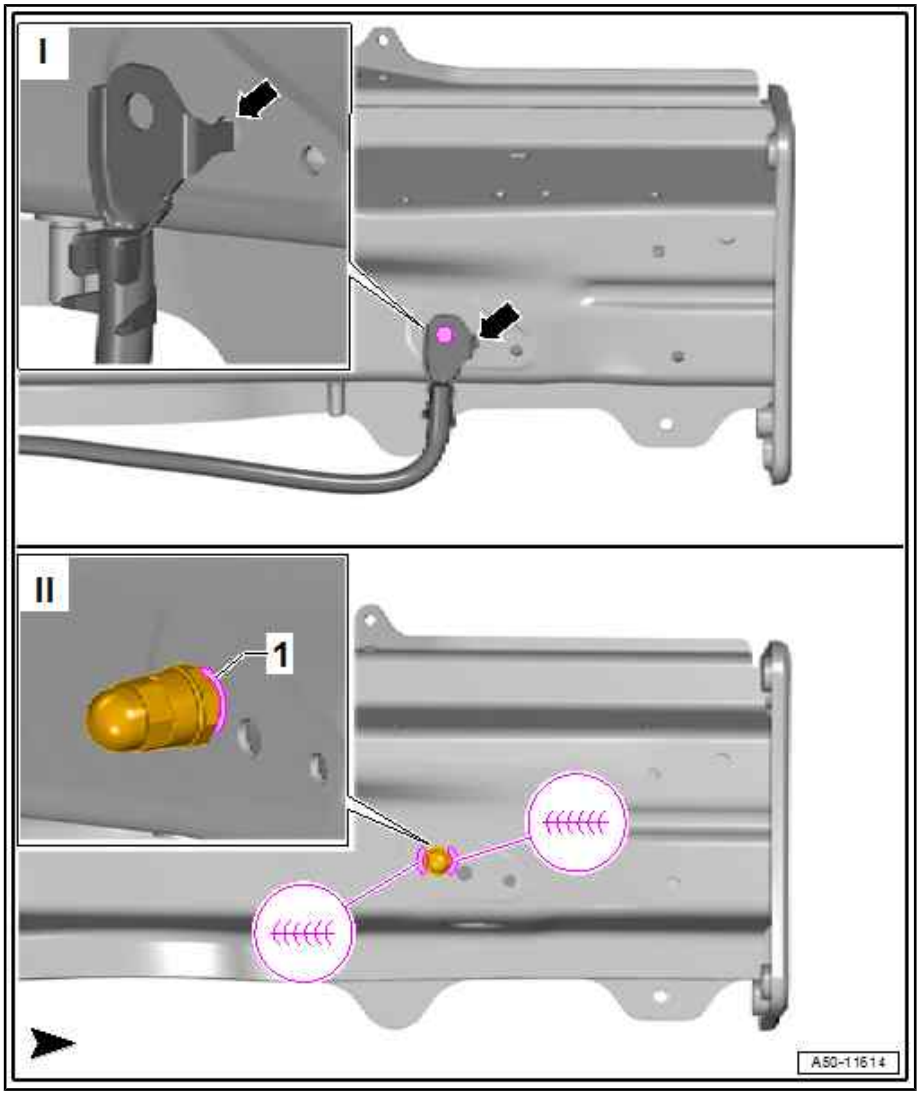
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RO: 50 80 55 00

9 Renewing studs

The procedure for renewing weld screws, studs and weld studs with cap nut is described as an example.

This procedure should be used appropriately for all types of studs, screws etc.



– Take installation position of stud from old part or mark it using appropriate aids (e.g. earth cable tab -arrow-).
– Weld stud with 2 weld seams on either side -1- using shielded arc welding equipment : SG continuous seam.

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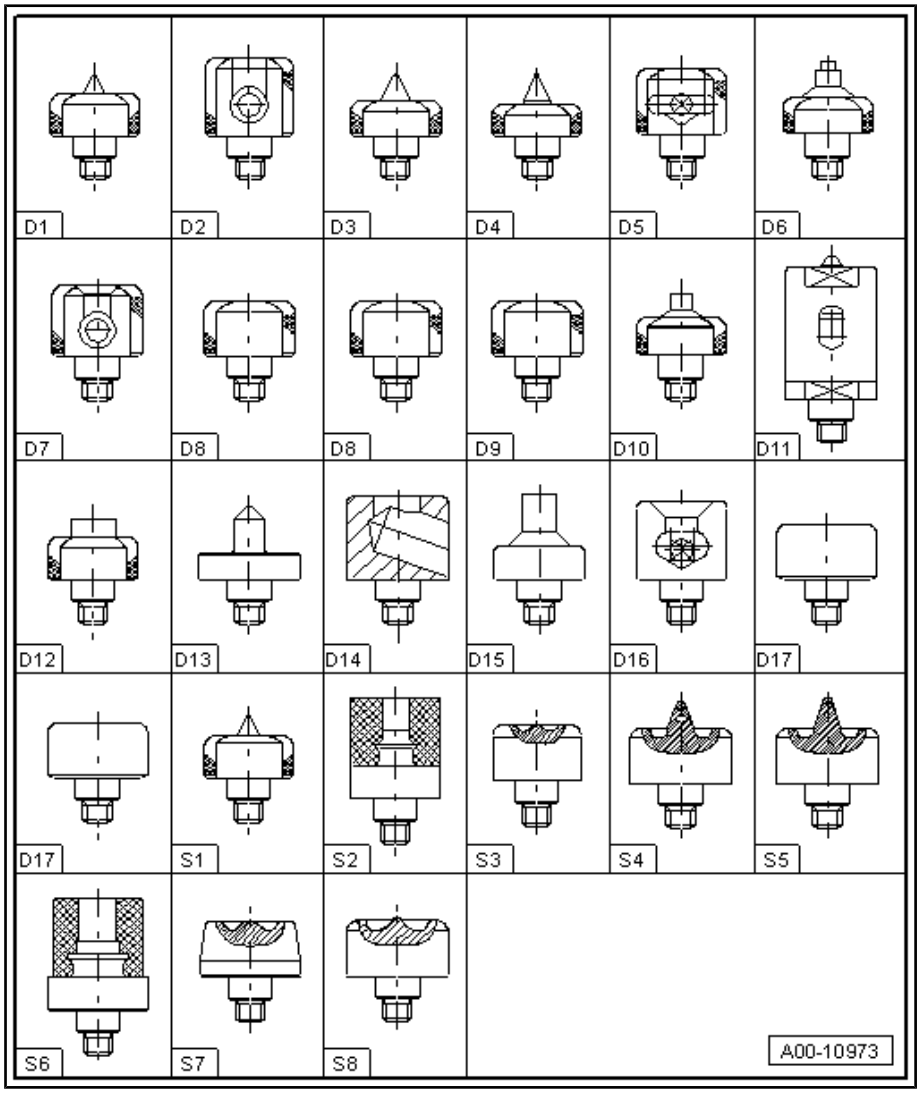
- To ensure adequate electrical conductivity, the length of the weld seams must be at least 12 mm on each side of the stud.

– Clean contact surface of stud after welding work is complete.

10 Overview of riveting attachments (pairs of tools)

Note

- *This list is intended for general information. Please refer to the operating instructions provided for a description of the procedure and areas of application.*
- *To increase the life of the riveting attachments, please use cutting oil (commercially available).*



D 1 + D 2 - Pressing out ∅ 3.2 mm punch rivet

D 2 + D 3 - Pressing out ∅ 3.2 mm punch rivet

D 2 + D 5 - Pressing out ∅ 5 mm punch rivet

D 3 + D 5 - Pressing out ∅ 5 mm punch rivet

D 4 + D 5 - Pressing out ∅ 5 mm punch rivet

D 5 + D 12 - Punching ∅ 8 mm hole for weld joint

D 6 + D 7 - Punching and countersinking hole for ∅ 4.8 mm pop rivet

D 8 + D 8 - Re-forming metal panel

D 8 + D 9 - Setting ∅ 4 mm solid rivet

D 10 + D 11 - Punching and countersinking hole for ∅ 4 mm solid rivet

D 13 + D 14 - Pressing out ∅ 5.3 x 7.5 mm punch rivet

D 17 + D 17 - Re-forming metal panel

D 15 + D 16 - Punching and countersinking hole for ∅ 6.0 mm solid rivet

D 17 + D 17 - Setting ∅ 6.0 mm solid rivet

S 1 + D 2 - Pressing out ∅ 3.2 mm punch rivet

S 2 + S 3 - Inserting and setting ∅ 3.2 mm punch rivet

S 4 + D 5 - Pressing out ∅ 5.3 x 5.5 mm punch rivet

S 5 + D 5 - Pressing out ∅ 5.3 x 6.5 mm punch rivet

S 6 + S 7 - Inserting and setting ∅ 5.3 x 5.5 mm punch rivet

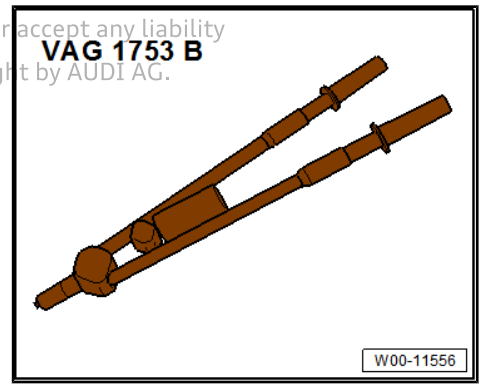
S 6 + S 8 - Inserting and setting ∅ 5.3 x 6.5 mm punch rivet

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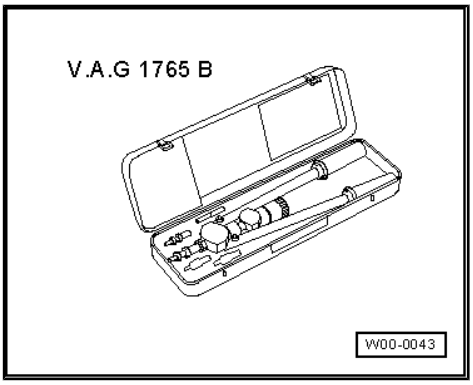
11 Overview of rivets and tools

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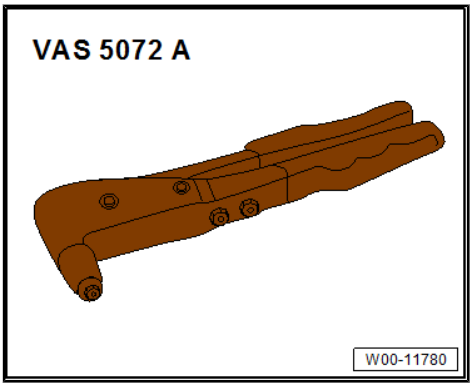
Pop rivet pliers - VAG 1753 B-



Pop rivet nut pliers - V.A.G 1765-

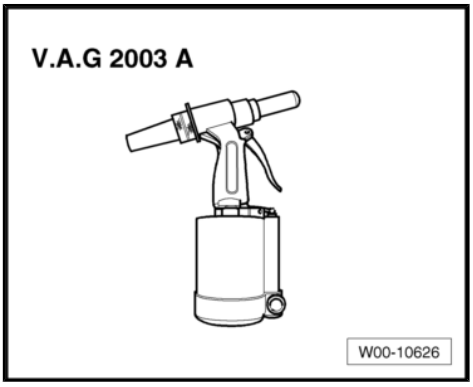


Pop rivet pliers - VAS 5072 A-



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

Pneumatic/hydraulic pop rivet pliers - VAS 6759-



Rechargeable riveter - VAS 5279 A-

Rechargeable riveter - VAS 843 001-

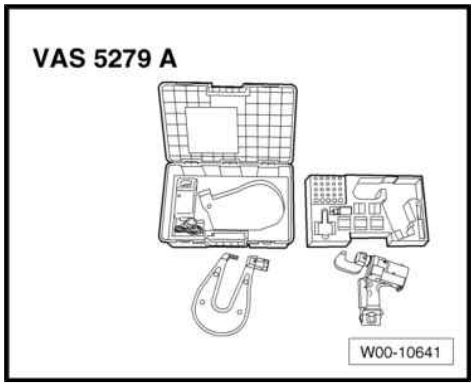
Compact booster - VAS 6790-

Compact riveter - VAS 6792-

Compact riveter - VAS 6792/2-

Socket for flow-drill screws - VAS 852 007-

Dent remover - VAS 852 001-



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Rivet	Order number Size	V.A.G 1765	VAS 5279	VAS 5072	VAG 1753B	VAG 2003A	VAS 6790	VAS 6792/2	VAS 8430001	VAS 6759	VAS 8520007	VAS 8520001
Punch rivet	4D0 803 217 N 3.35 x 5 mm		x				x		x			
Punch rivet	4D0 803 217 Q 3.35 x 4 mm		x				x		x			
Punch rivet	N 912 295 02 4.3 x 5 mm		x				x		x			
Punch rivet	4D0 803 217 L 5.3 x 5 mm		x				x		x			
Punch rivet	4D0 803 217 M 5.3 x 6.5 mm		x				x		x			
Punch rivet	N 909 261 02 5.3 x 6 mm		x				x		x			
Punch rivet	N 911 365 01 5.3 x 7.5 mm		x				x		x			
Punch rivet	N 911 348 01 5 x 4.2mm		x				x		x			
Solid aluminium rivet	N 103 239 01 4 x 8 mm		x				x		x			
Solid aluminium rivet	N 103 240 01 4 x 12 mm		x				x		x			
Solid aluminium rivet	N 107 440 01 6 x 10 mm		x				x		x			
Solid aluminium rivet	N 107 441 01 6 x 12 mm		x									

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Rivet	Order number Size	V.A.G 1765	VAS 5279	VAS 5072	VAG 1753 B	VAG 2003 A	VAS 6790	VAS 6792/2	VAS 8430 01	VAS 6759	VAS 852007	VAS 852001
Aluminium pop rivet with countersunk head	4E0 809 864 A						x	x	x	x		
Aluminium pop rivet with round head	8Z0 809 864						x	x	x	x		
Flowdrill screws	WHT 003 873 M5 x 25										x	
Flowdrill screws	WHT 006 547 M5 x 20										x	
Flowdrill screws	WHT 007 052 M5 x 18										x	
Threaded rivet	N 907 163 01 14 mm				x	x	x	x	x	x		
Threaded rivet	N 907 162 01 10 mm				x	x	x	x	x	x		
Threaded rivet	N 907 161 01 22 mm				x	x	x	x	x	x		
Threaded rivet	N 907 160 01 6 mm				x	x	x	x	x	x		
Pop rivet	WHT 005 413 A 6.5 mm Panel thickness that can be riveted: 5 – 9 mm				x	x	x	x	x	x		

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Rivet	Order number Size	V.A.G 1765	VAS 5279	VAS 5072	VAG 1753B	VAG 2003A	VAS 6790	VAS 6792/2	VAS 843001	VAS 67559	VAS 8520 07	VAS 852001
Pop rivet	WHT 005 697 6.5 mm Panel thick-ness that can be rive-ted: 3 – 4.8 mm				x	x	x	x	x	x		
Pop rivet	WHT 911 527 01 6.5 mm Panel thick-ness that can be rive-ted: 4.5 – 7.0 mm				x	x	x	x	x	x		
Pop rivet	N 909 236 01 4.8 mm Panel thick-ness that can be rive-ted: 2.4 – 4.8 mm				x	x	x	x	x	x		
Pop rivet	N. 905.344 .03 4.8 mm Panel thick-ness that can be rive-ted: 1.5 – 3.5 mm				x	x	x	x	x	x		
Pop rivet	N. 906.924 .02 4.8 mm Panel thick-ness that can be rive-ted: 1.5 – 3.5 mm				x	x	x	x	x	x		

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Rivet	Order number Size	V.A.G 1765	VAS 5279	VAS 5072	VAG 1753B	VAG 2003A	VAS 6790	VAS 6792/2	VAS 8433001	VAS 6759	VAS 8520007	VAS 8520001
Pop rivet	4S0 843 658				x	x	x	x	x	x		
Pop rivet bolt	WHT 005 180	V.A.G 1765 C/2										
Pop rivet bolt	N 910 011 01	V.A.G 1765 C/4										
Pop rivet nut	N 910 377 01 M10	V.A.G 1765										
Pop rivet nut	N 908 568 02 M8	V.A.G 1765										
Weld stud	VAS 852 001/1 5 mm							x				x
Weld stud	VAS 852 001/2 4 mm							x				x

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12 Overview of rivets used for repair measures

In production	For repair measures	To be used
Punch rivet, ∅ 3.3	Aluminium/ aluminium	Solid aluminium rivet: ∅ 4 mm N.103.239.01 N.103.240.01
Punch rivet, ∅ 5.3	Aluminium/ aluminium	Solid aluminium rivet: ∅ 6 mm N.107.440.01 N.107.441.01
Punch rivet, ∅ 3.3 and friction elements	Aluminium/ steel	Pop rivet: ∅ 4.8 mm N.905.344.03 Panel thickness that can be riveted: 1.5 - 3.5 mm N.906.924.02 Panel thickness that can be riveted: 2.4 - 5.0 mm
Punch rivet, ∅ 5.3 and flow-drill screws (where applicable)	Aluminium/ steel	Pop rivet: ∅ 6.5 mm WHT.005.413.A Panel thickness that can be riveted: 3.35 - 5.35 mm WHT.005.697 Panel thickness that can be riveted: 2.8 - 4.8 mm N.911.527.01 Panel thickness that can be riveted: 4.5 - 7.0 mm N.904.692.02 Panel thickness that can be riveted: 2.4 - 5.0 mm

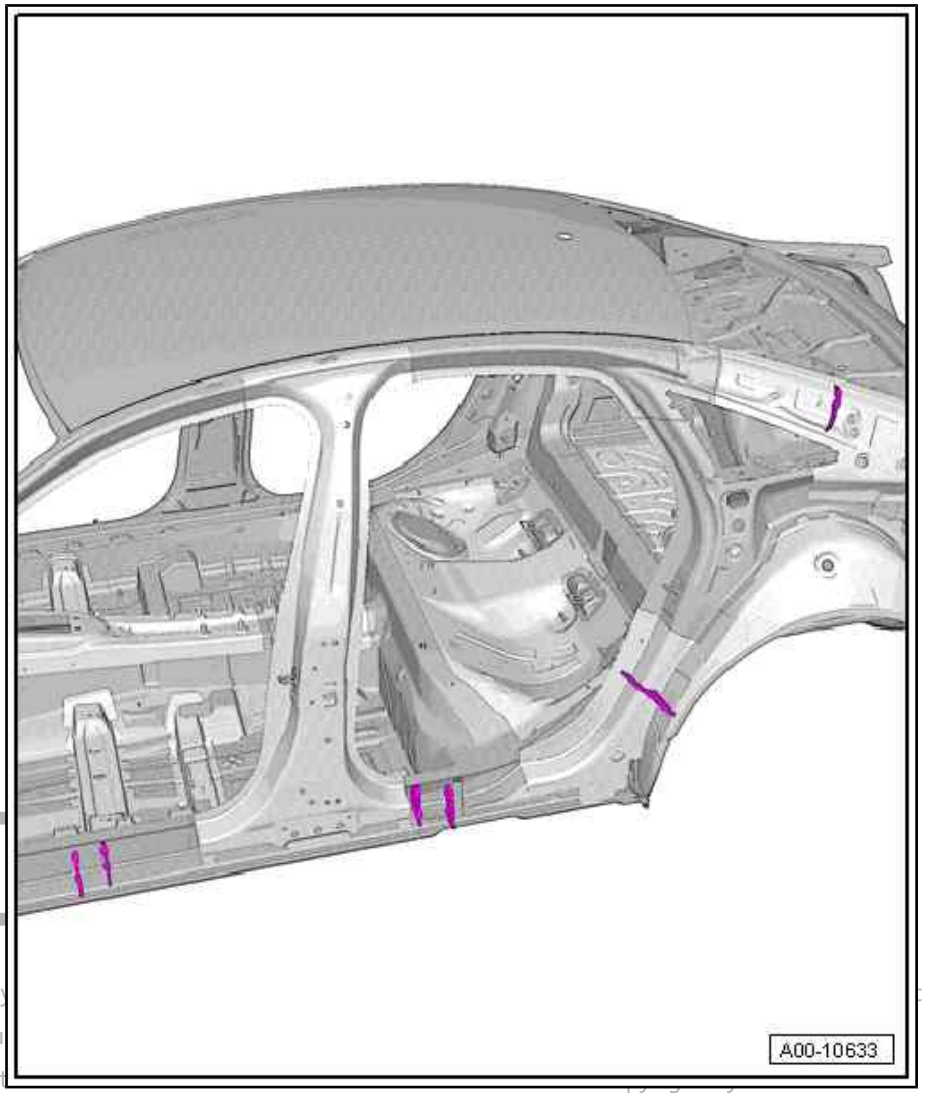
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13 Moulded foam inserts

On this vehicle, various body cavities are fitted with moulded foam inserts.

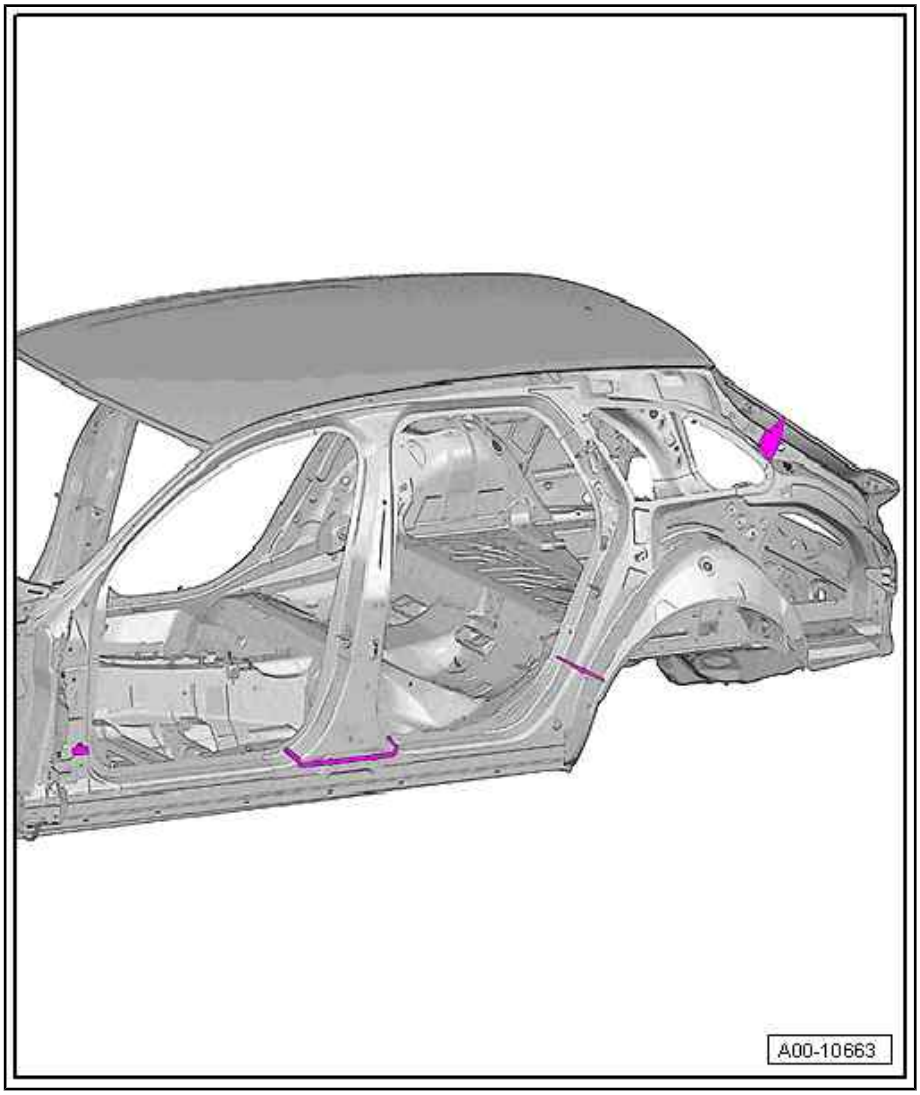
The foam inserts reduce the noise transmitted to the interior when driving.

These pre-moulded parts are fitted during body manufacture and subsequently increase their volume in the paint shop drying oven at approx. 180 °C after priming.



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Moulded foam inserts (Avant)



NOTICE

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

Filler foam required for repairs: D 506 KD1 A3 - - .

Since the temperature necessary for the foam inserts to expand cannot be achieved under normal workshop conditions, proceed as follows:

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.

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Requirement

Before continuing with this procedure, ensure that the replacement panel is ready for installation, i.e. cut to shape, matched up to the vehicle, corrosion protection applied.

Renewing moulded foam insert

Fix moulded foam insert to vehicle.

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

Secure new part in position. Gently press in new part in vicinity of moulded foam insert until it makes contact, and then weld into place.

The foam hardens within 25 minutes.

Do not weld (SG) within 15 mm of the foam insert (on either side).

After painting the vehicle the repaired area must be cavity-sealed.

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14 Laser welding

The laser welding technique employs a high-energy light beam directed onto the weld 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 weld joint with no additional material.

When performing repairs, the laser weld seams are replaced by SG plug weld seams or RP spot weld seams.

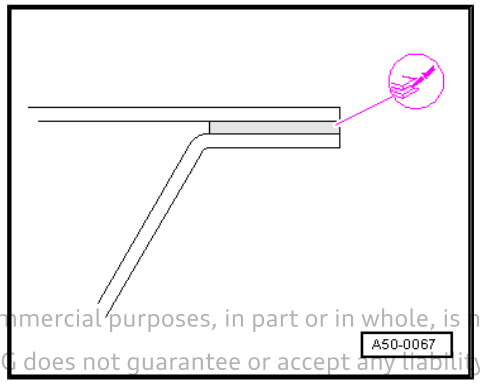
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15 Bonded joints

The body of the Audi A6 features bonded joints and spot-welded/ bonded joints for increased rigidity and strength.

Bonded joints

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



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 cause irreparable damage to the bonded joint.

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

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

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.

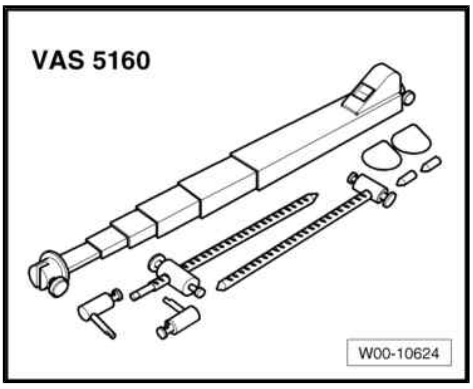
Note

- *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.

16 Body dimensions



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.*

Body - front

NOTICE

These dimensions only serve as a check. Correct dimensions are defined by the alignment bracket set.

16.1 Body - front

(Saloon and Avant identical)

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A - 1346 mm ± 2.0 mm

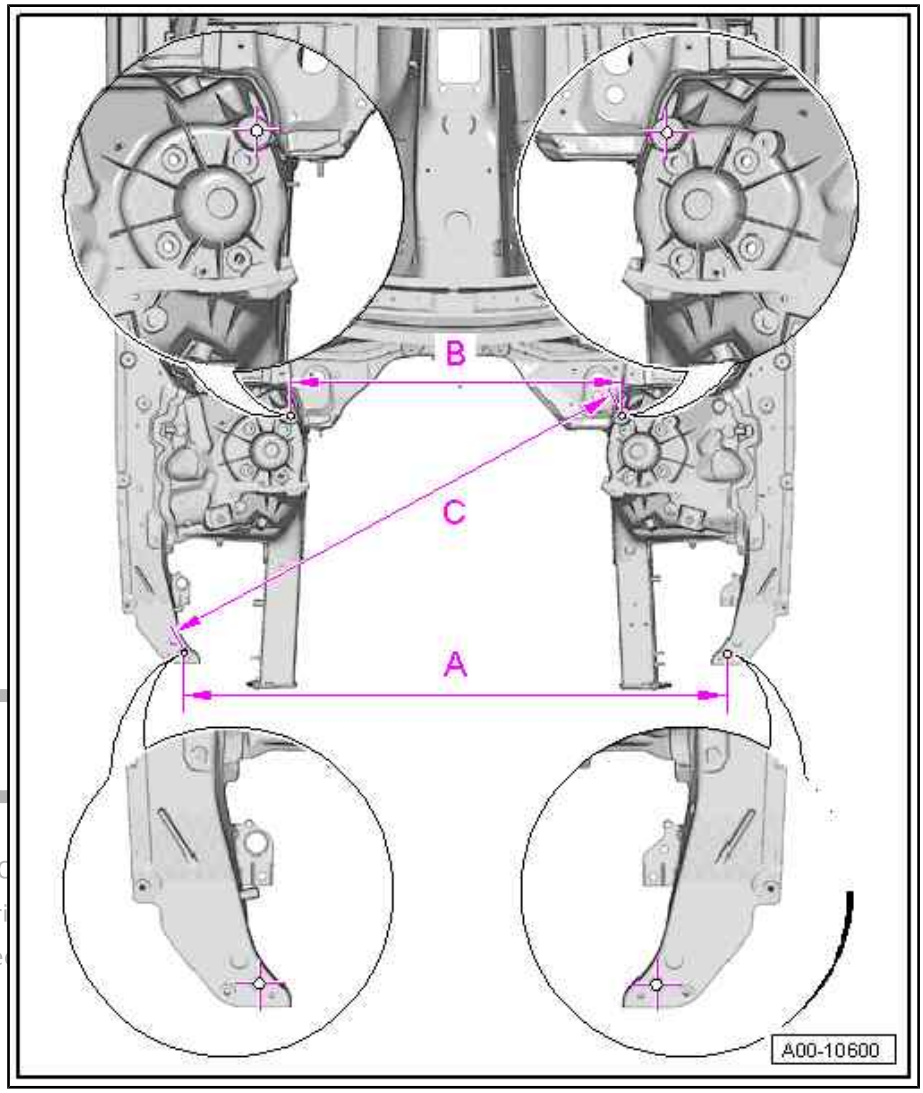
Distance between wing panel mountings

B - 821 mm ± 2.0 mm

Distance between suspension strut mountings

C - 1235 mm ± 2.0 mm

Diagonal distance between suspension strut mountings



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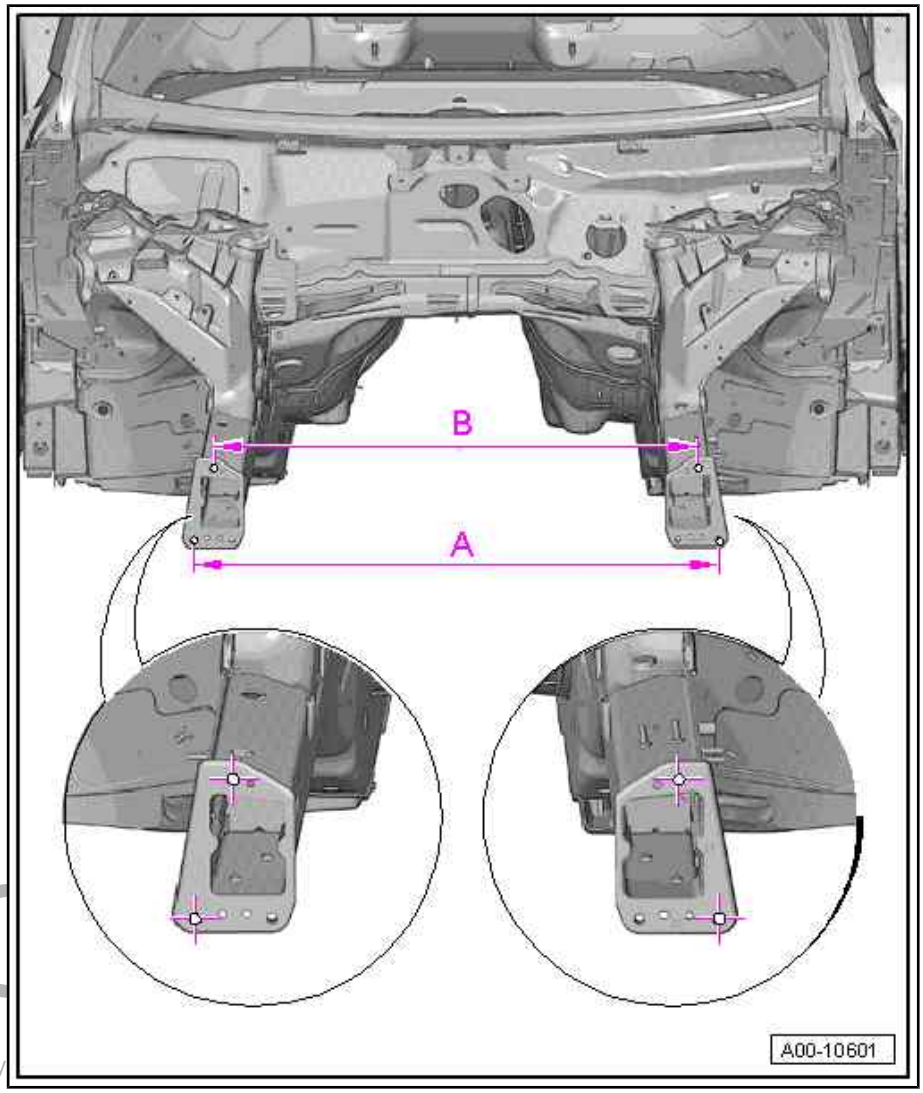
(Saloon and Avant identical)

A - 1008 mm ± 2.0 mm

Distance between impact damper mountings

B - 930 mm ± 2.0 mm

Distance between impact damper mountings



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16.2 Body - centre

(Saloon and Avant identical)

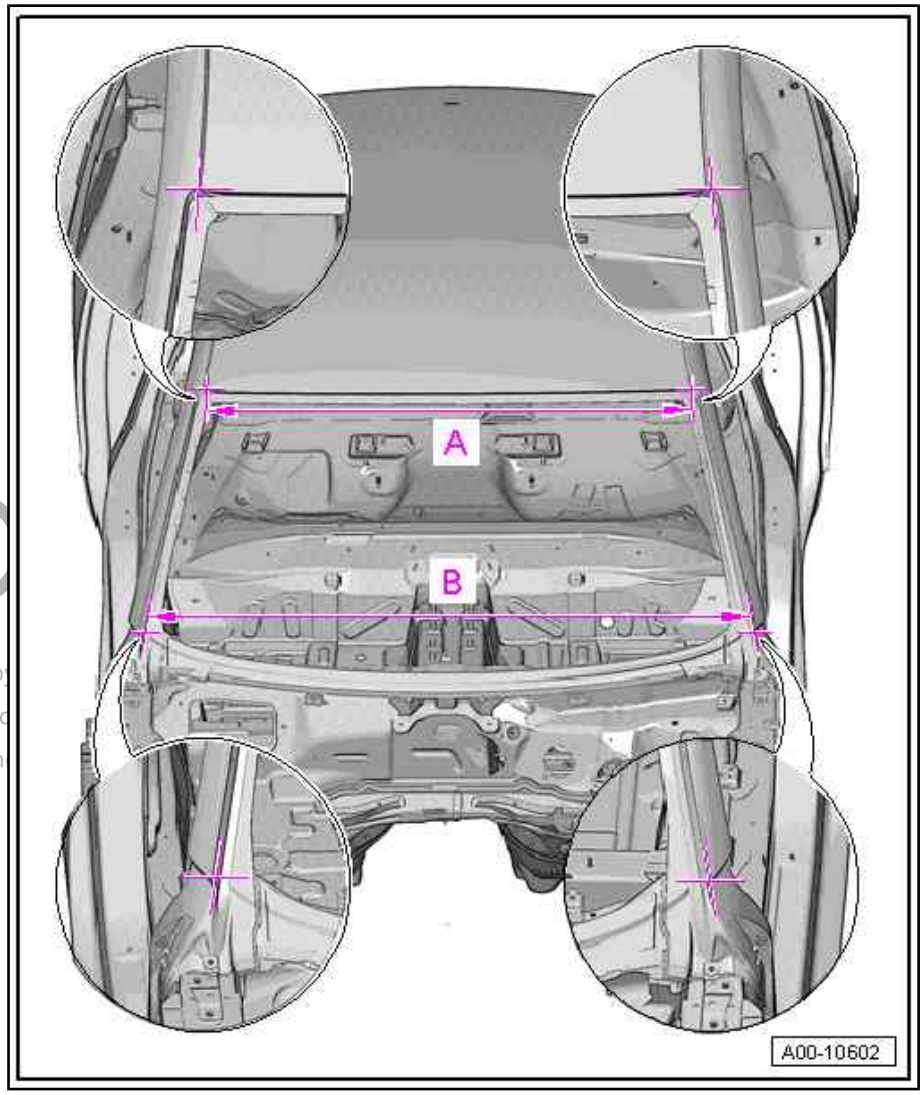
A - 1188 mm ± 2.0 mm

Windscreen opening (top)

B - 1536 mm ± 2.0 mm

Windscreen opening (bottom)

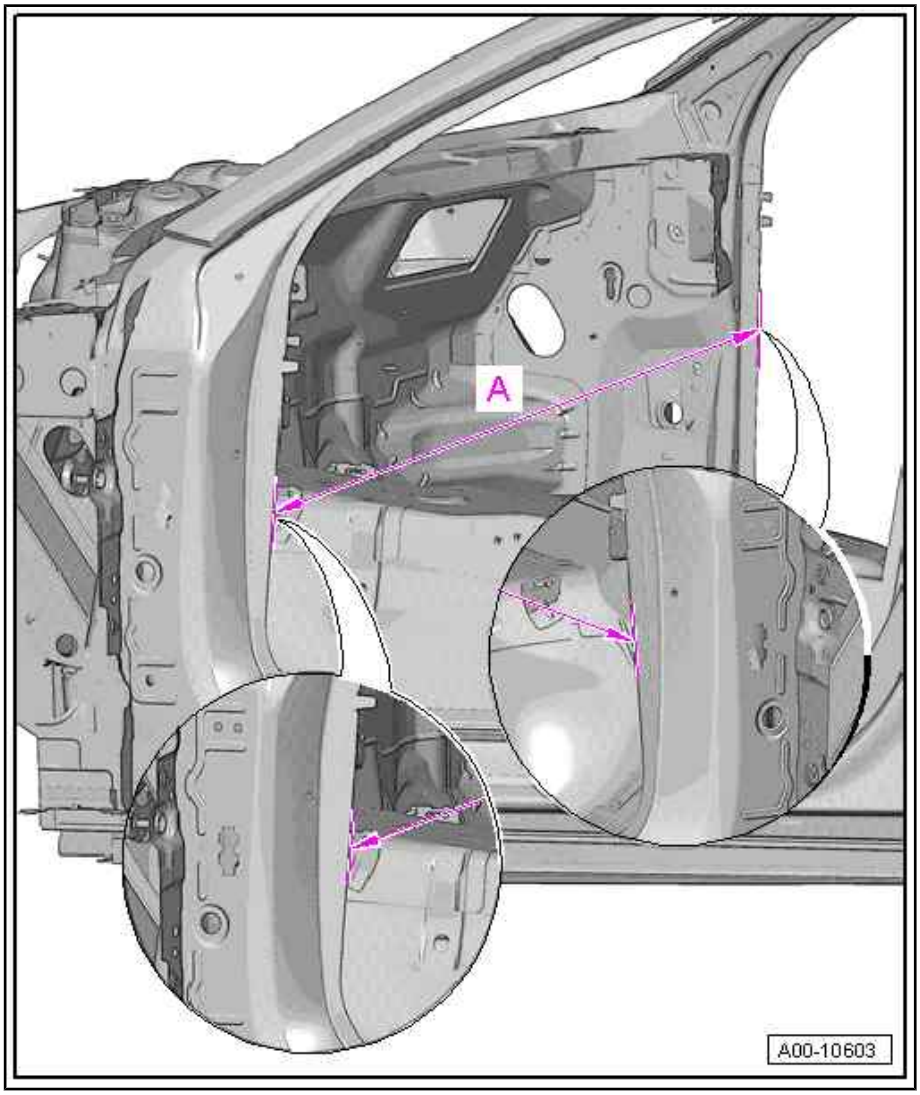
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Distance between A-pillars (Saloon and Avant identical)

A - 1526 mm ± 2.0 mm

Distance between A-pillars

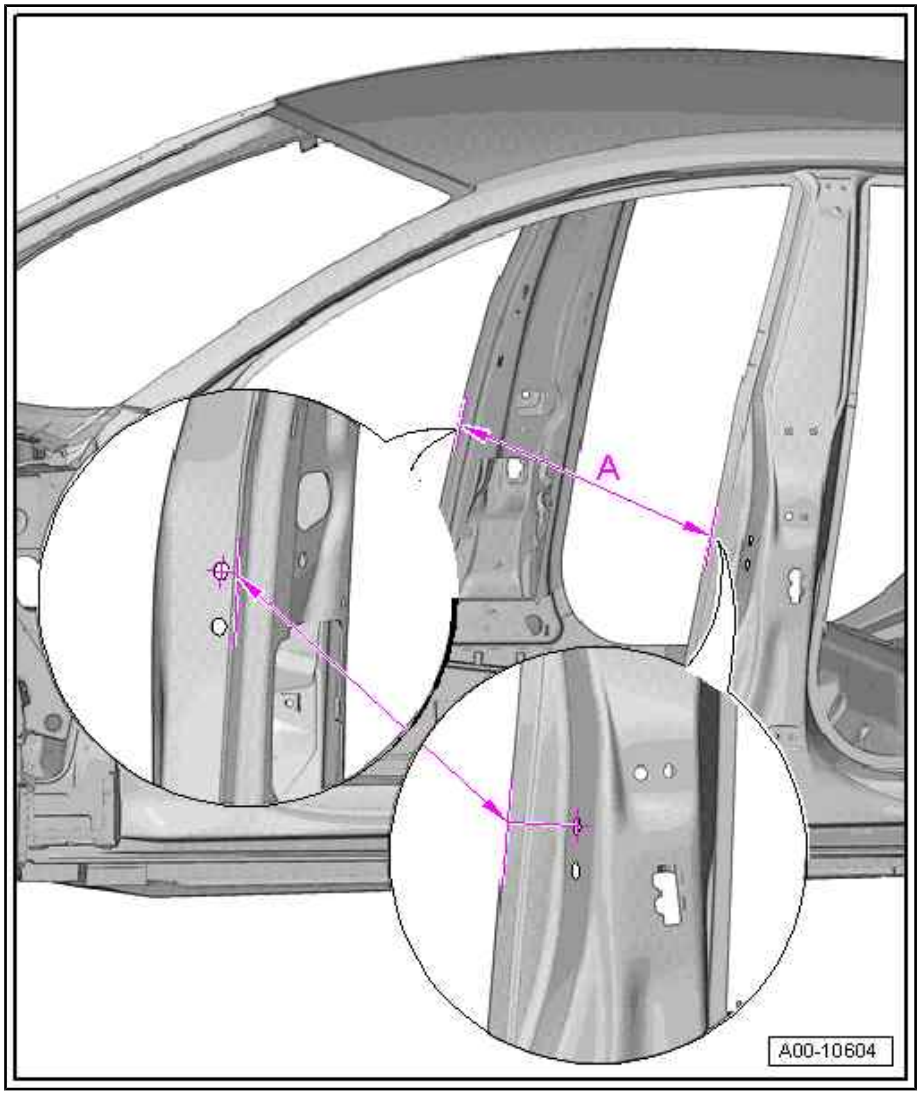


Distance between B-pillars (Saloon and Avant identical)

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A - 1490 mm ± 2.0 mm

Distance between B-pillars



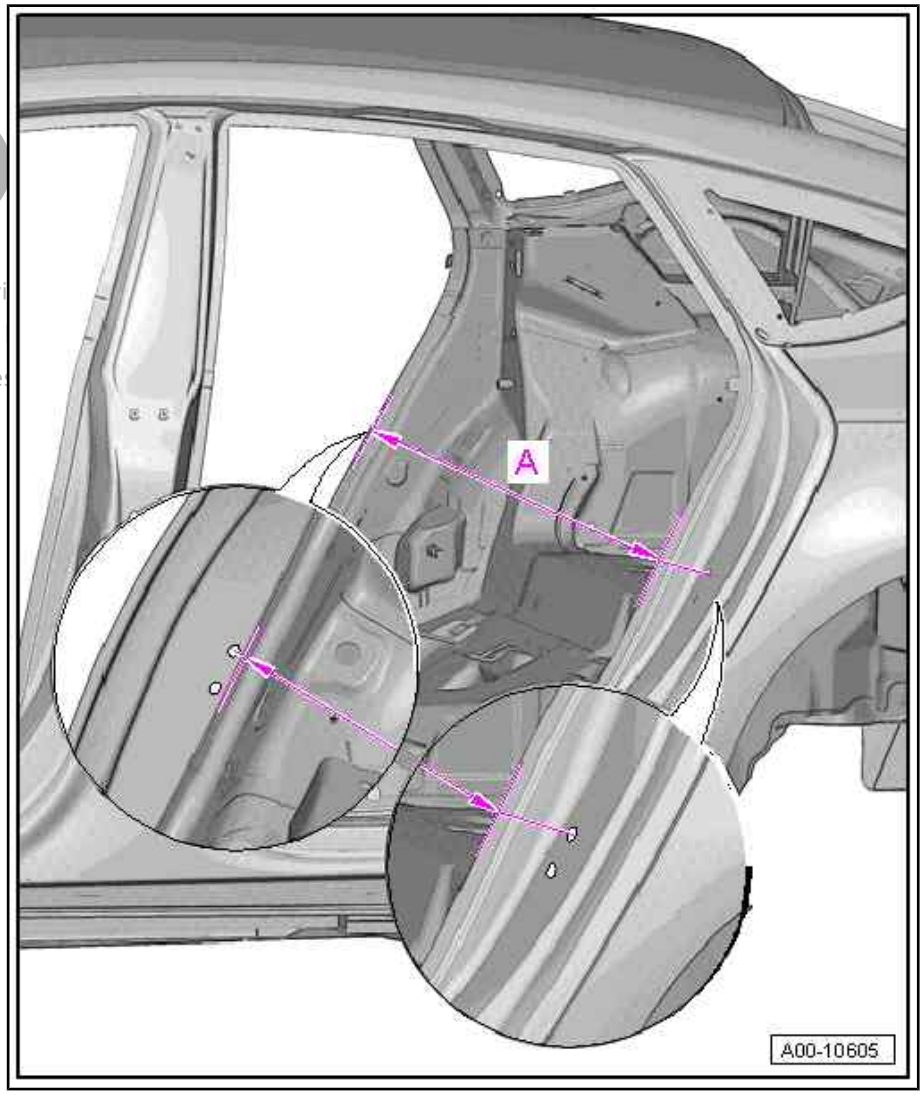
Distance between C-pillars (Saloon and Avant identical)

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A - 1438 mm ± 2.0 mm

Distance between C-pillars

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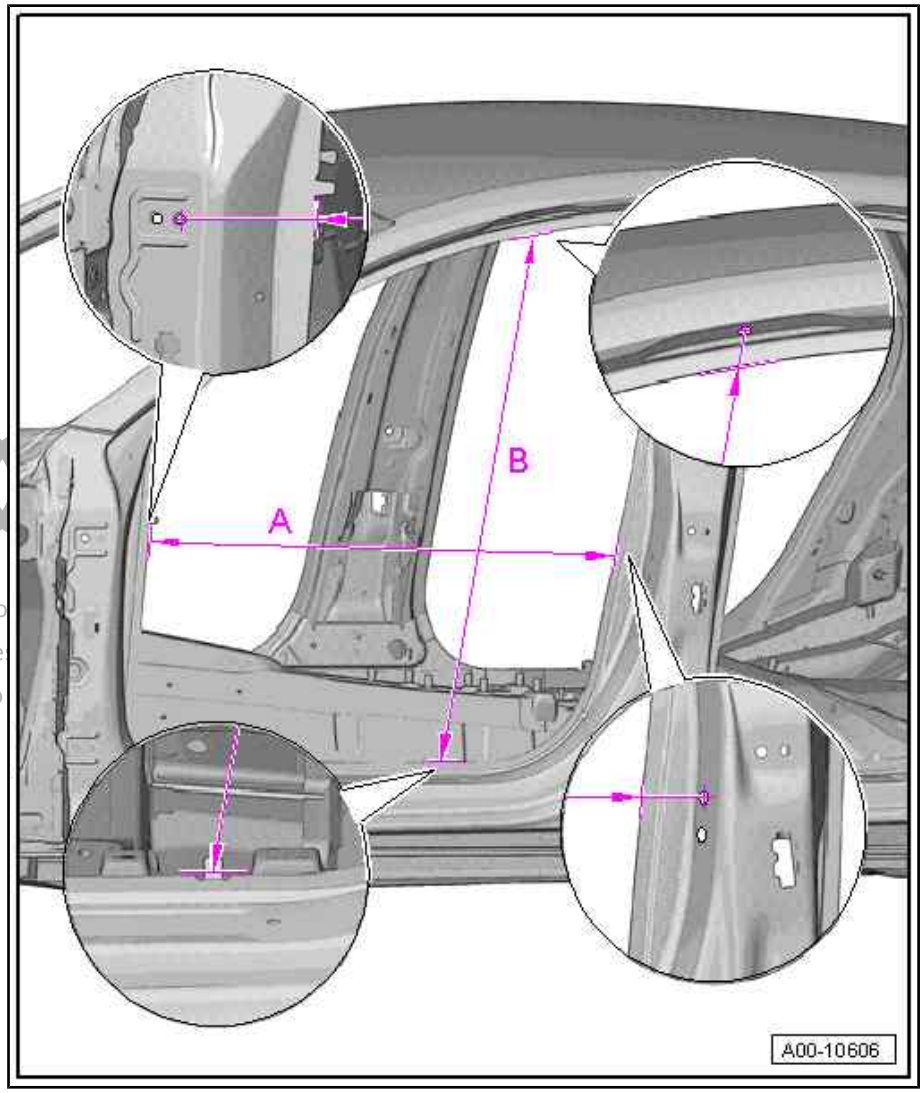
Door opening (Saloon and Avant identical)

A - 862 mm ± 2.0 mm

Distance between A-pillar and B-pillar

B - 889 mm ± 2.0 mm

Height of door opening



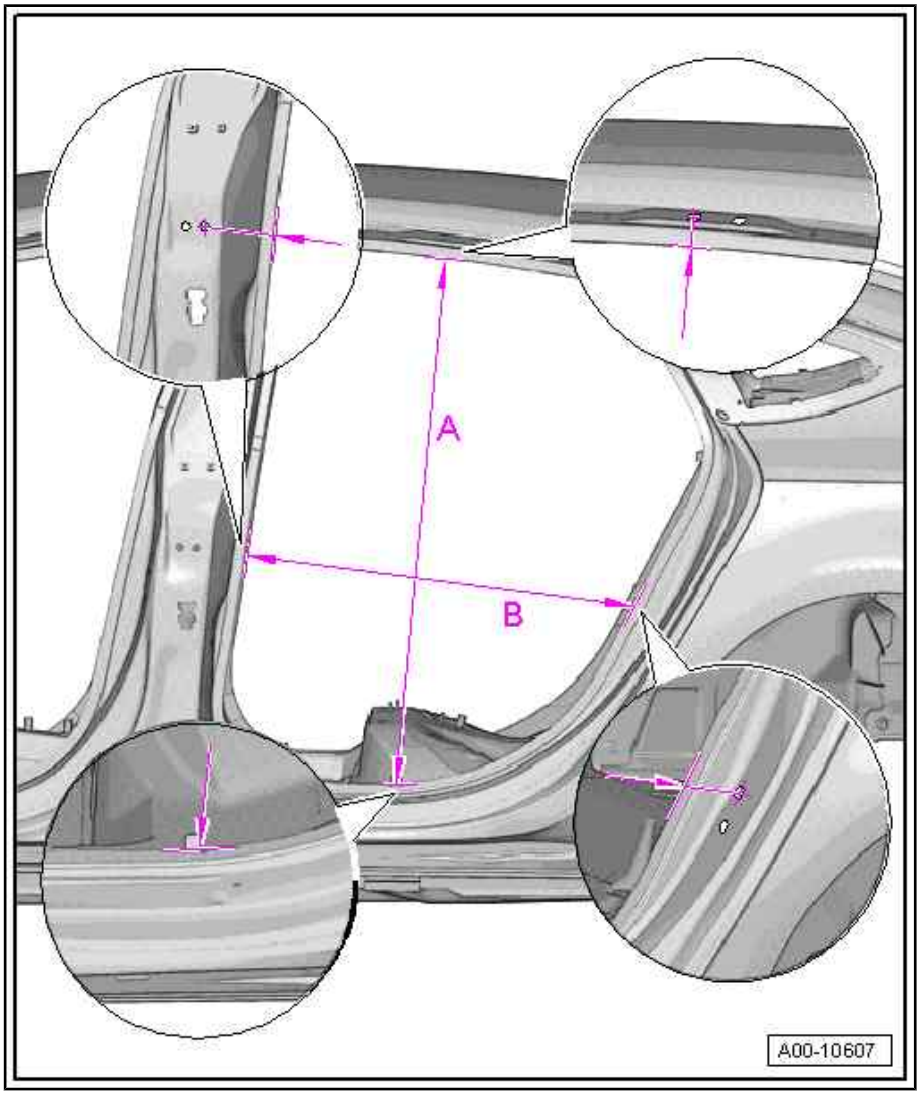
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A - 762 mm ± 2.0 mm

Distance between B-pillar and C-pillar

B - 967 mm ± 2.0 mm

Height of door opening



16.3 Floor group

(Saloon and Avant identical)

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A - 826 mm ± 2.0 mm

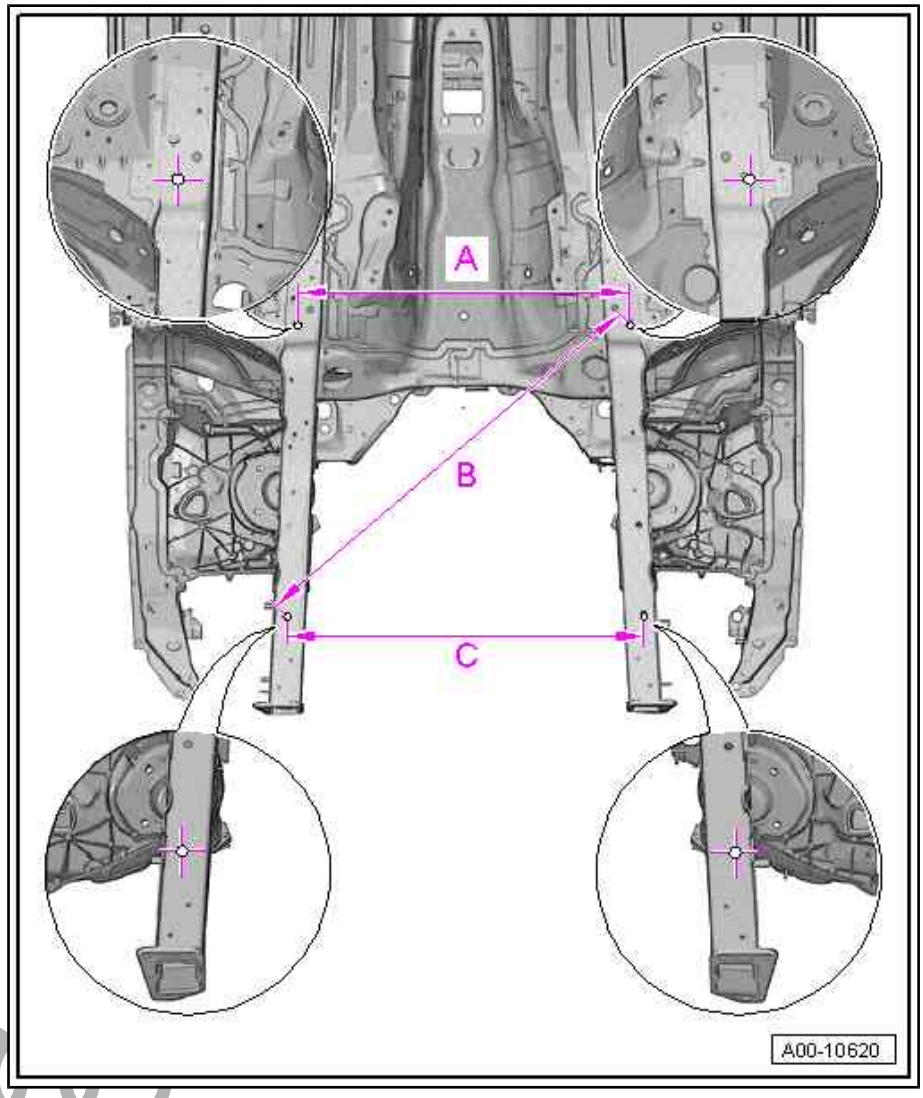
Distance between suspension strut mountings

B - 1129 mm ± 2.0 mm

Diagonal distance between front longitudinal members

C - 892 mm ± 2.0 mm

Distance between front longitudinal members



(Saloon and Avant identical)

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A - 1102 mm ± 2.0 mm

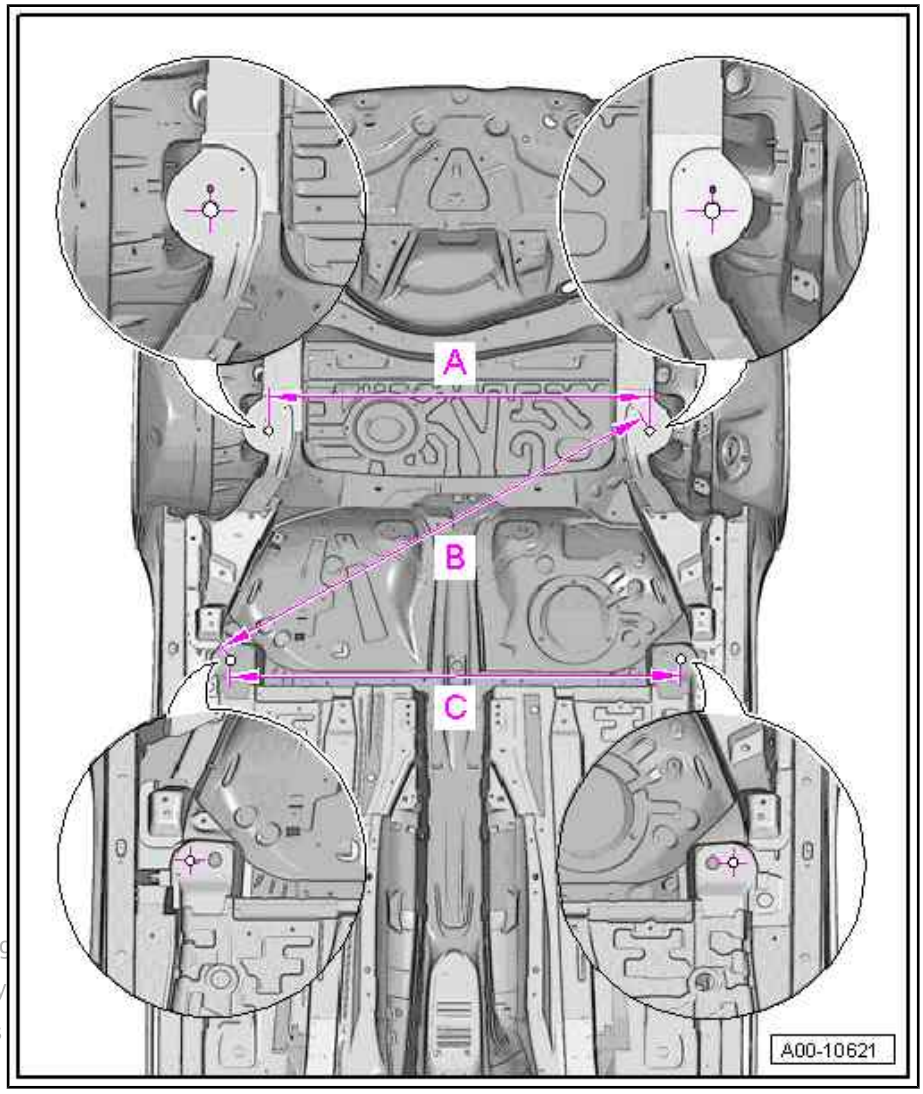
Distance between rear axle mountings

B - 1444 mm ± 2.0 mm

Diagonal distance between longitudinal members and axle mountings

C - 1300 mm ± 2.0 mm

Distance between rear longitudinal members



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16.4 Body - rear

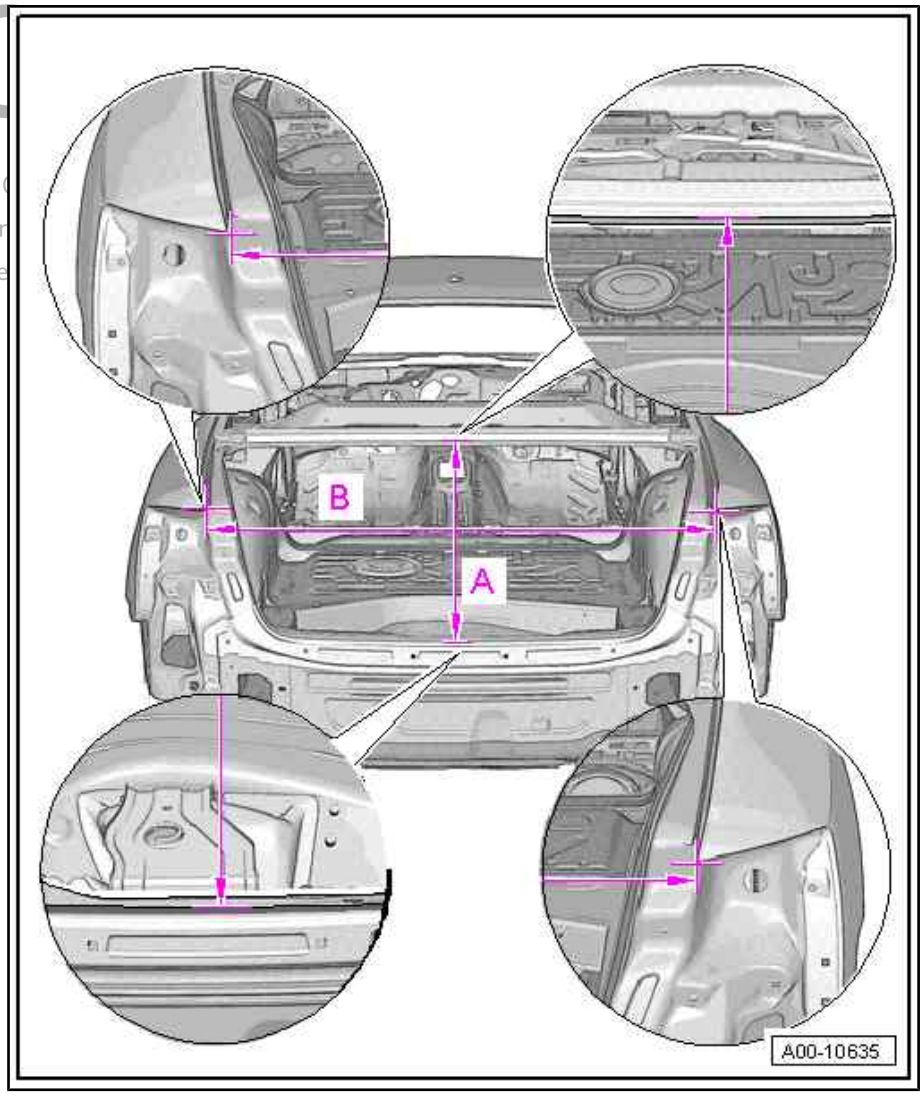
A - 556 mm ± 2.0 mm

Distance between window cross member and rear upper cross panel

B - 1221 mm ± 2.0 mm

Distance between side panels

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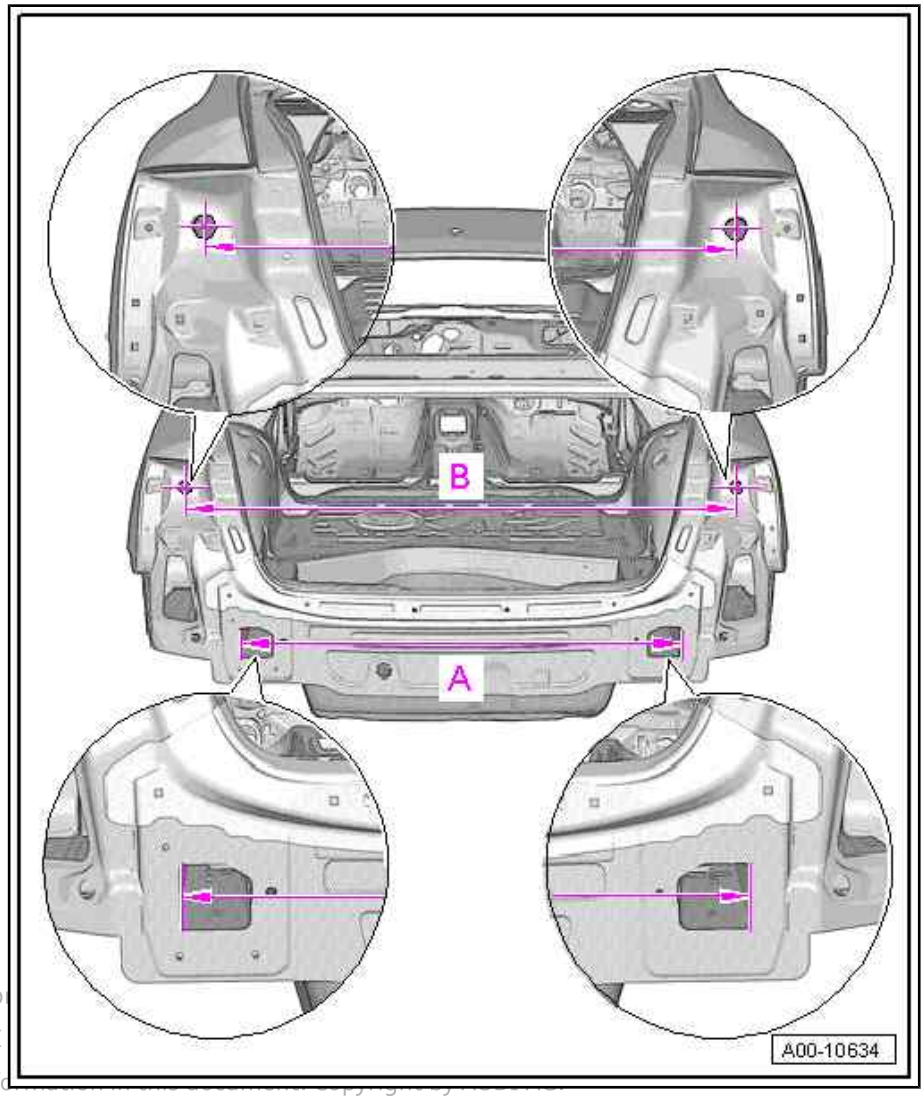


A - 1082 mm ± 2.0 mm

Distance between longitudinal members

B - 1369 mm ± 2.0 mm

Distance between tail light mountings



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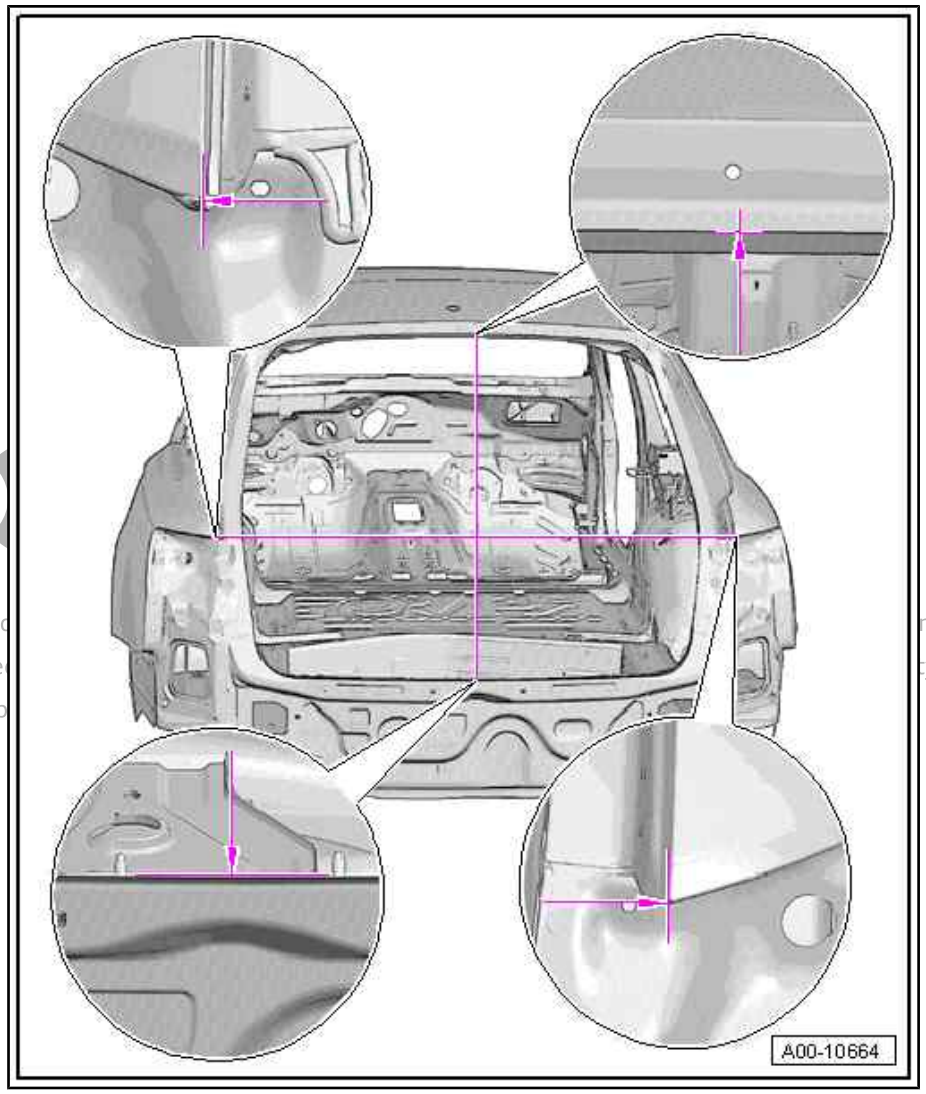
16.5 Body - rear (Avant)

A - 1010 mm ± 2.0 mm

Distance between window cross member and rear upper cross panel

B - 1252 mm ± 2.0 mm

Distance between side panels



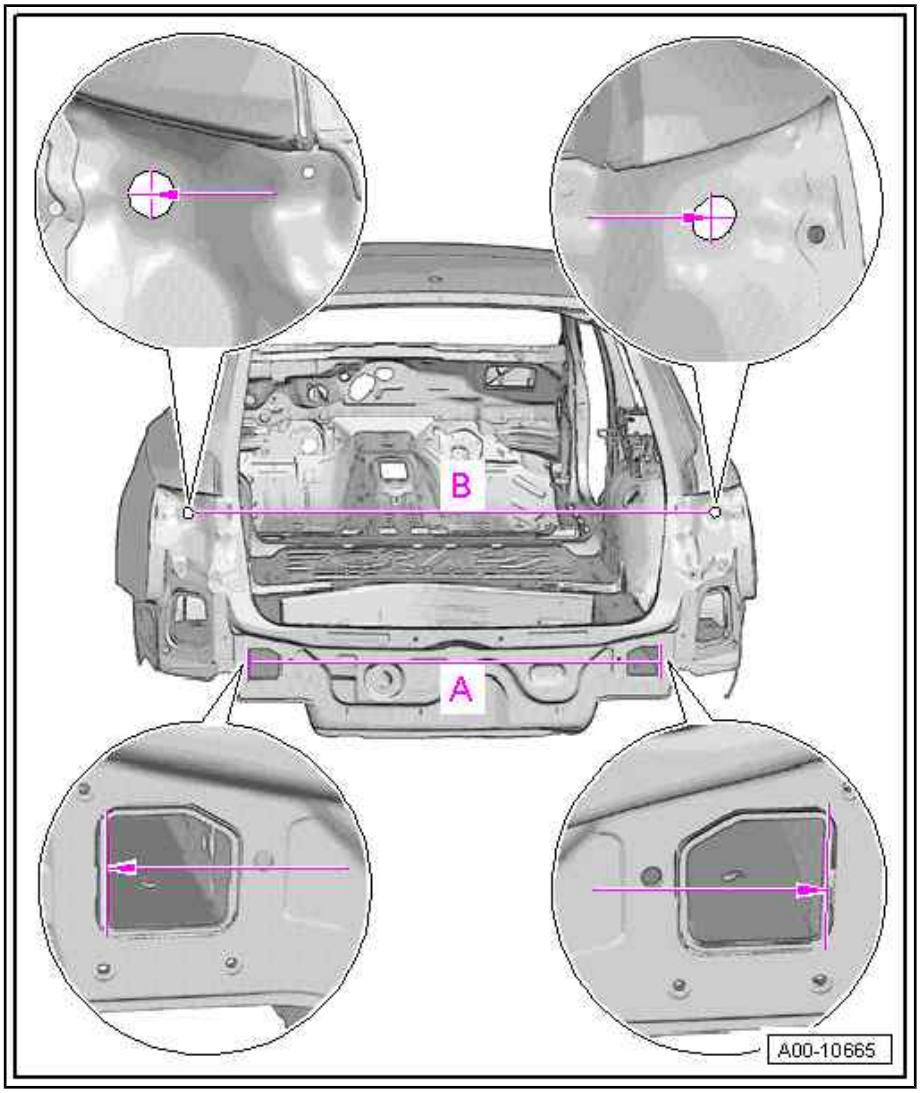
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A - 1082 mm ± 2.0 mm

Distance between longitudinal members

B - 1408 mm ± 2.0 mm

Distance between tail light mountings



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17 Thread repair for M6 pop rivet nut

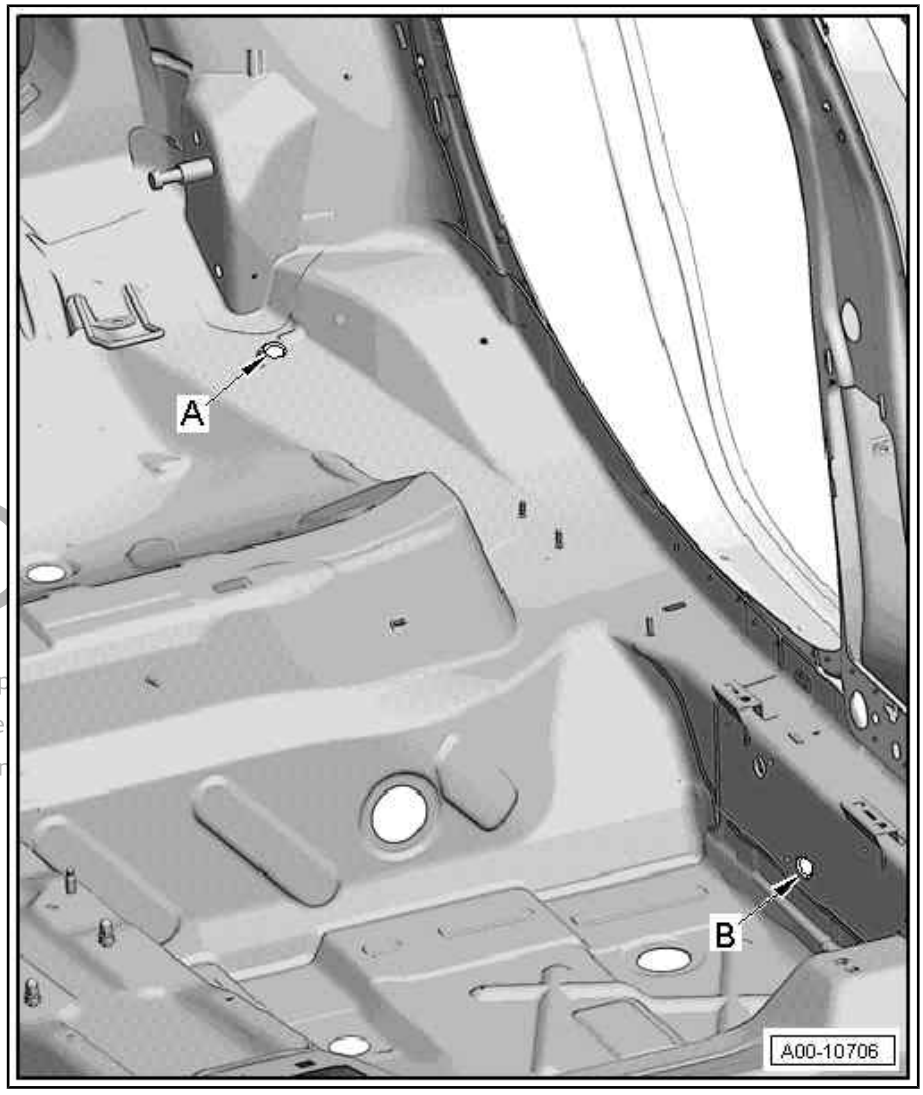
If the thread-forming screws WHT 002 605 or WHT 002 612 should fail to hold or are otherwise damaged, the repair screws WHT 006 778 can be used as a substitute. It is then not necessary to drill holes and set the pop rivet nuts.

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18 Repairing thread for seat belt anchorage

The procedure for repairing the thread is described in the installation instructions supplied with the repair set for belt anchorage - VAS 6733- .

– The rear seat belt anchorage -A- and the front seat belt anchorage -B- can be repaired with the repair set for belt anchorage - VAS 6733- .

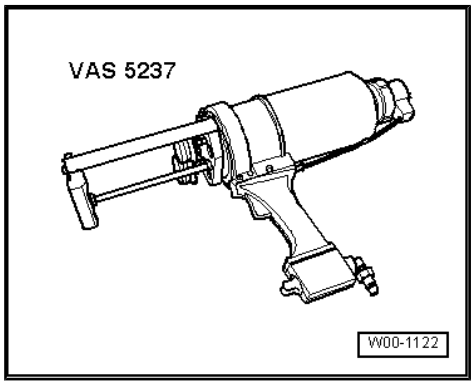


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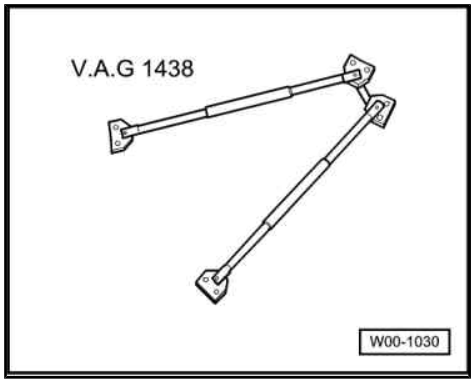
19 Tools

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 - VAS 6044- or -VAS 6045-
- Drill - VAS 5144-
- Drill - VAS 6267 A-
- Compact angle grinder - VAS 5167-
- Crack testing set - VAG 2014 -
- Compact booster - VAS 6790-
- Double cartridge gun - VAS 6453-
- Double cartridge gun - VAS 5237-

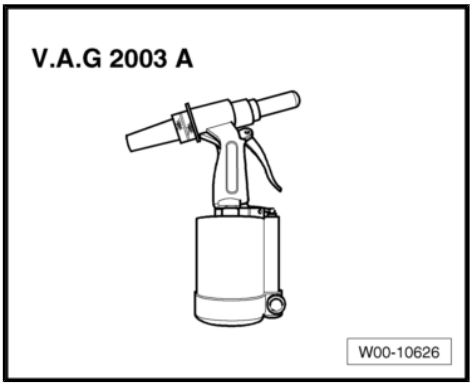


- Mechanical door tensioner - V.A.G 1438-

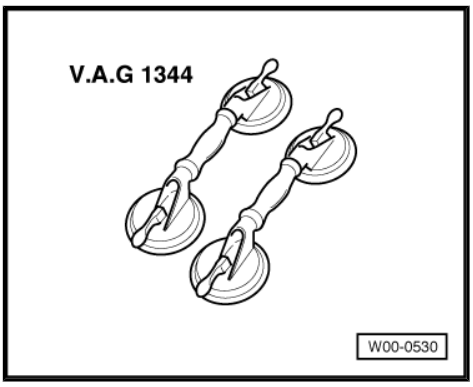


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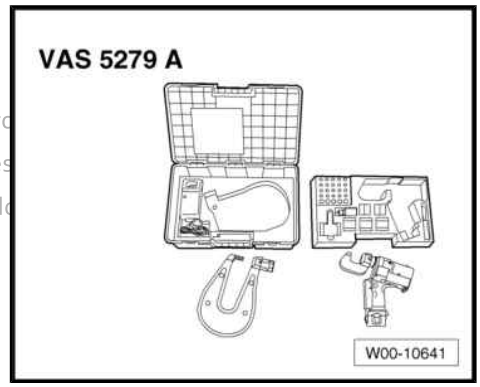
- Pneumatic pop riveter - V.A.G 2003 A-



- Suction lifter - V.A.G 1344- or magnet - VAS 6739-

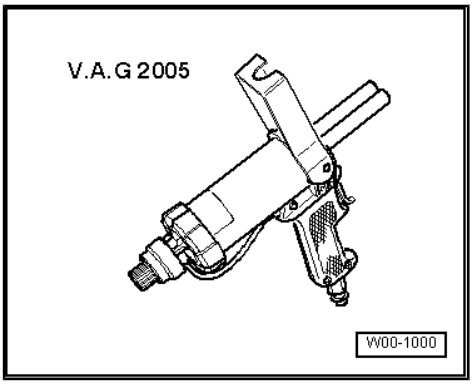


- Alternatively, you can use the rechargeable riveter - VAS 5279 B- . This is a complete set.

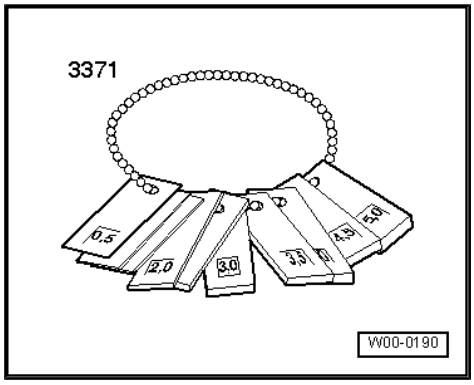


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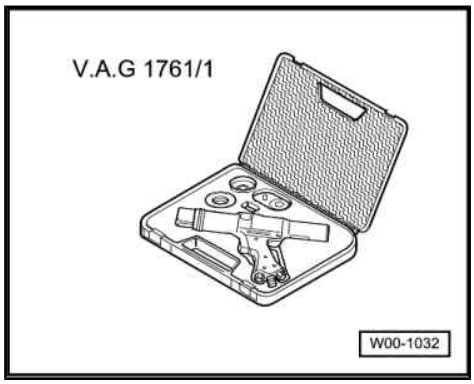
- Pneumatic glue gun - V.A.G 2005 B-



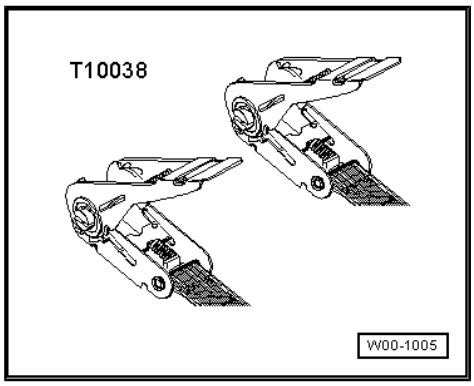
- Setting gauge - 3371-



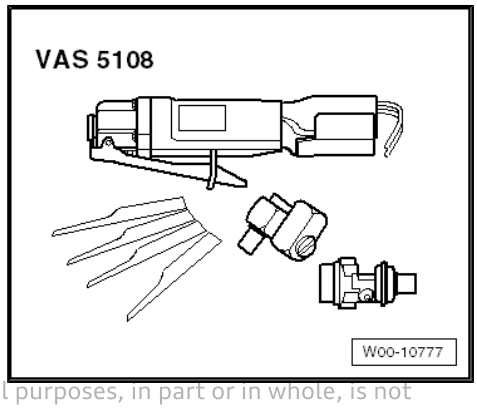
- Compressed-air gun - V.A.G 1761/1-



- Tensioning strap - T 10038-

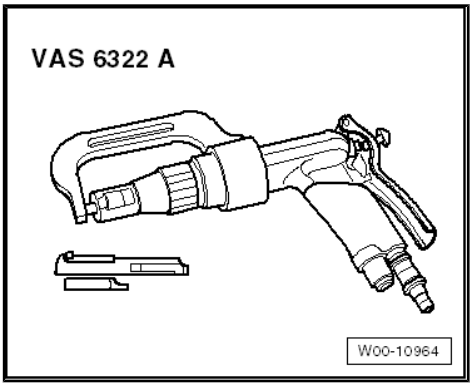


- Body saw - VAS 5108 - or - VAS 6598 - or -VAS 6780-

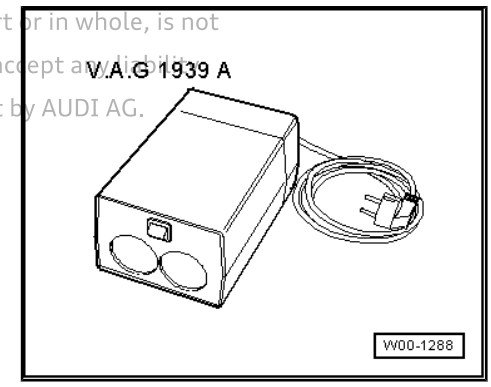


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- Spot weld breaker - VAS 6322 A-



- Cartridge heater - V.A.G 1939 A-



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20 Matching the surface contour

Repaired areas must be prepared so that all surfaces, swage lines and panel edges are accurately aligned with the surrounding body contour.

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The following requirements must be met:

- After body repair work such as dent removal, welding and filling, etc., the repaired areas and parts must be dry-sanded with a grit size of at least P 80.
- The repaired surfaces must be prepared so that the required paint finish can be achieved in no more than two stages.

For the required surface contour use the following body fillers:

For vehicles with steel body

2-component steel filler set - DA 787 300 A2 -

For vehicles with aluminium body

2-component "diamond" filler aluminium powder - DA 004 200 A2 - and hardener - DA 004 201 A1-

NOTICE

The use of body solder containing lead is prohibited as of 1st January 2003.

Note

Lead-free body solder is not approved by AUDI AG.

21 Straightening jig

CAUTION

Straightening and re-alignment work must not be carried out on the front section of the Audi A6 or Audi A6 Avant body because this could cause cracking in the aluminium castings that may not be externally visible.

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.*

Is used in conjunction with MZ Plus straightening bracket system - VAS 6630- .

Alignment bracket set supplement - VAS 6667-

– Detailed information on setting up the alignment bracket set can be found in the setup plan enclosed with the equipment.

21.1 Procedure for repairing structural body damage on Audi vehicles

- If there is reason to believe that a vehicle has suffered structural body damage, if the body dimensions do not conform to the specifications in the Workshop Manual and/or if there is visible damage to structural components, the vehicle must be mounted on an Audi-approved straightening jig system in order to check the body dimensions.

Definition of structural body damage:

Damage (denting, buckling, rupture, etc.) to and/or displacement of a structural component of the vehicle body.

All body components with the exception of outer skin panels or bolt-on parts must be regarded as structural components.

Notwithstanding the above, the bolt-on longitudinal members of an aluminium vehicle are also structural components.

If the body dimensions differ from the specifications, the vehicle must be repaired according to the instructions in the Workshop Manual.

Note

Detailed information on setting up the alignment bracket set can be found with the equipment.

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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 size is given for the alignment bracket mountings.*

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50 – Body - front

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1 Intermediate piece - Renewal

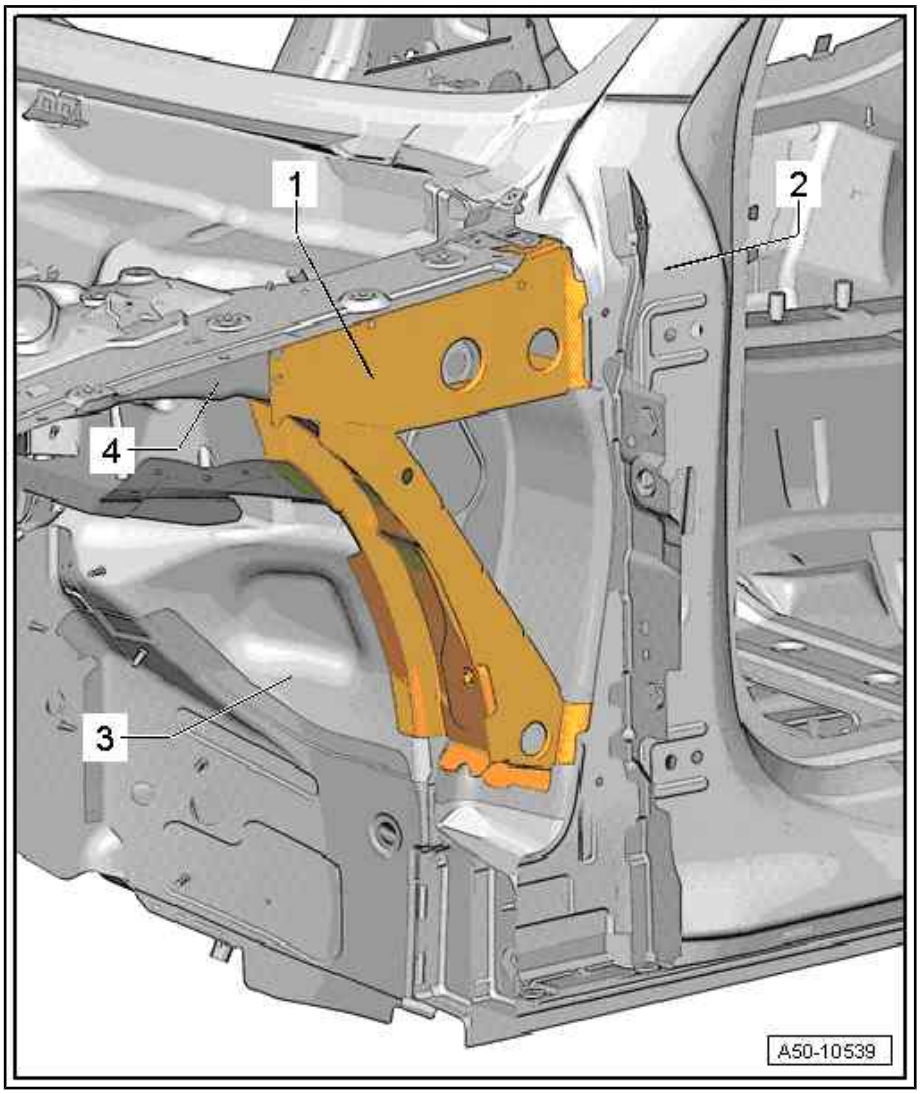
(Saloon and Avant identical)

1 - Intermediate piece

2 - A-pillar

3 - Wheel housing

4 - Wing mounting flange for upper wheel housing



1.1 Notes for vehicles with hybrid drive

⇒ page 5

1.2 Tools

Special tools and workshop equipment required

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- Resistance spot welder
- Shielded arc welding equipment
- Brush grinder
- Compact angle grinder
- Drill

- Spot weld breaker
- Body saw

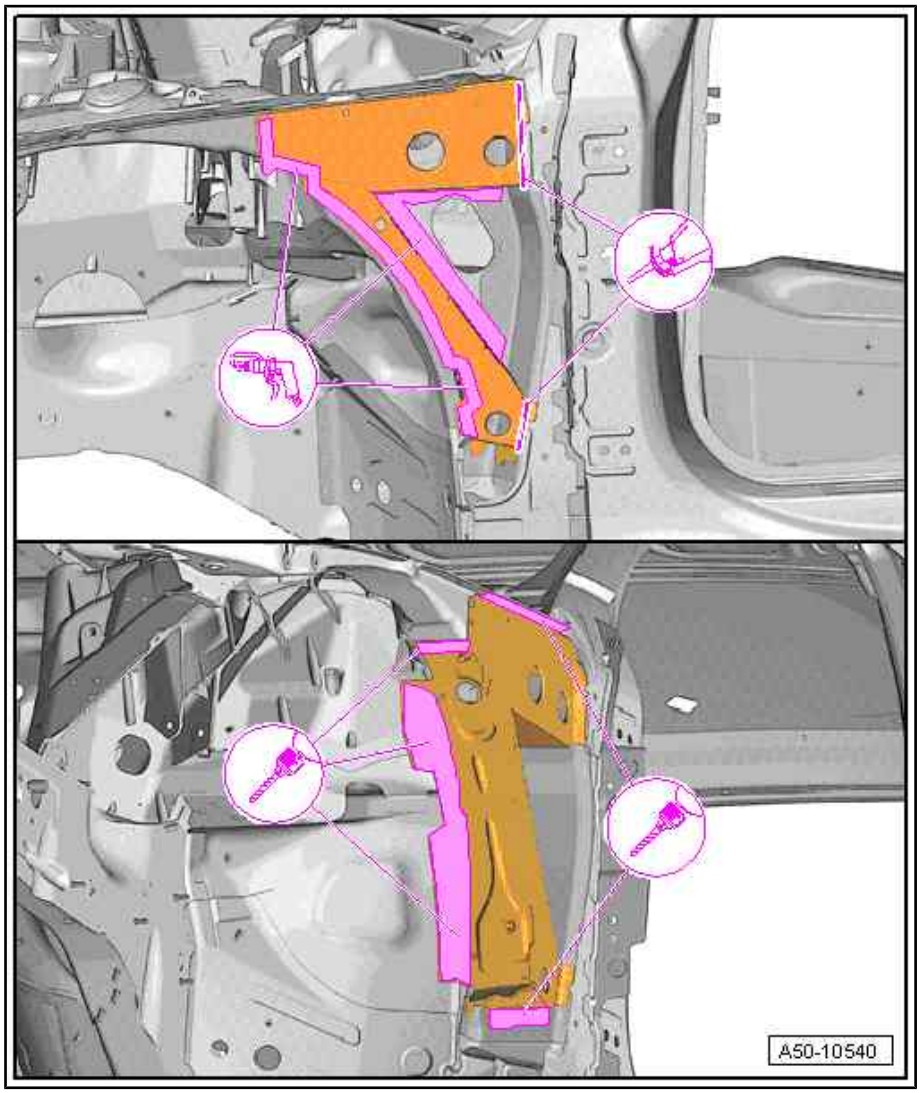
Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

1.3 Procedure

Cutting locations

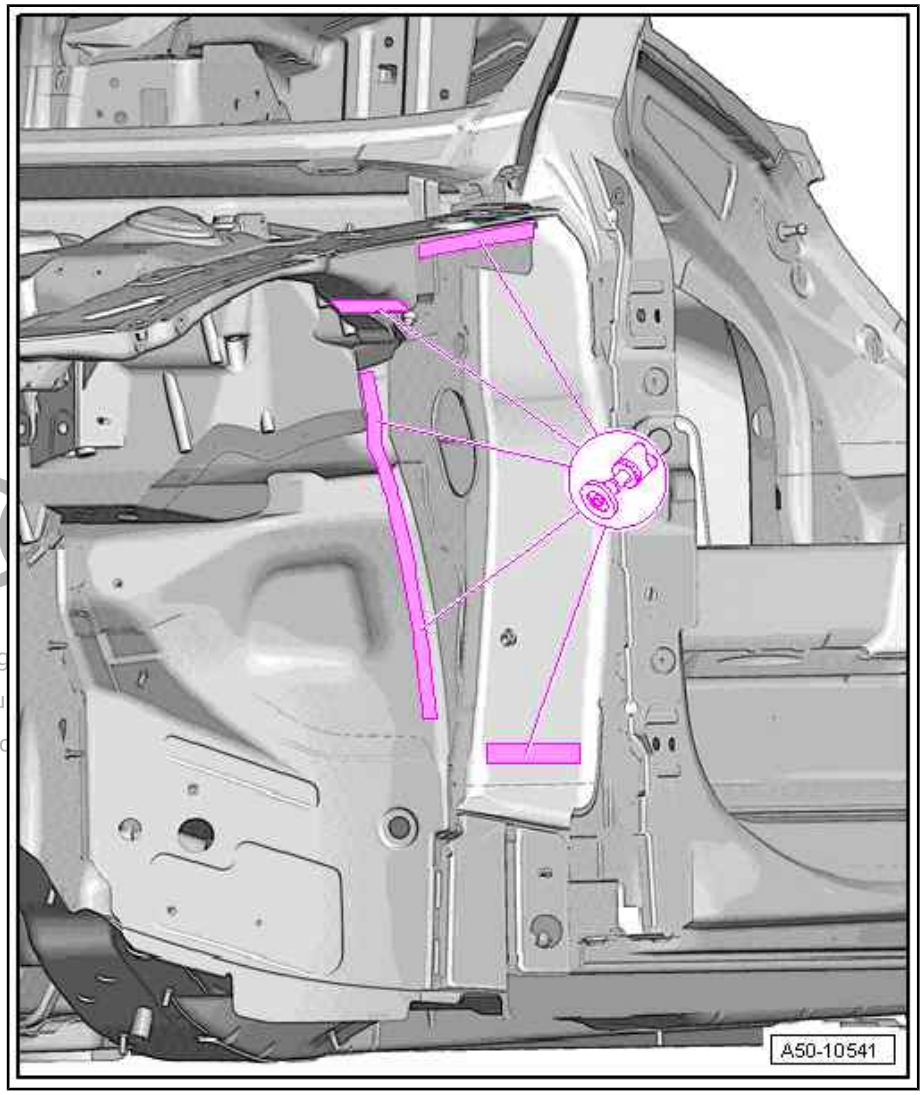
– Drill out original joint using spot weld breaker .

– Cut through joint with A-pillar using body saw .



– Remove remaining material using compact angle grinder .

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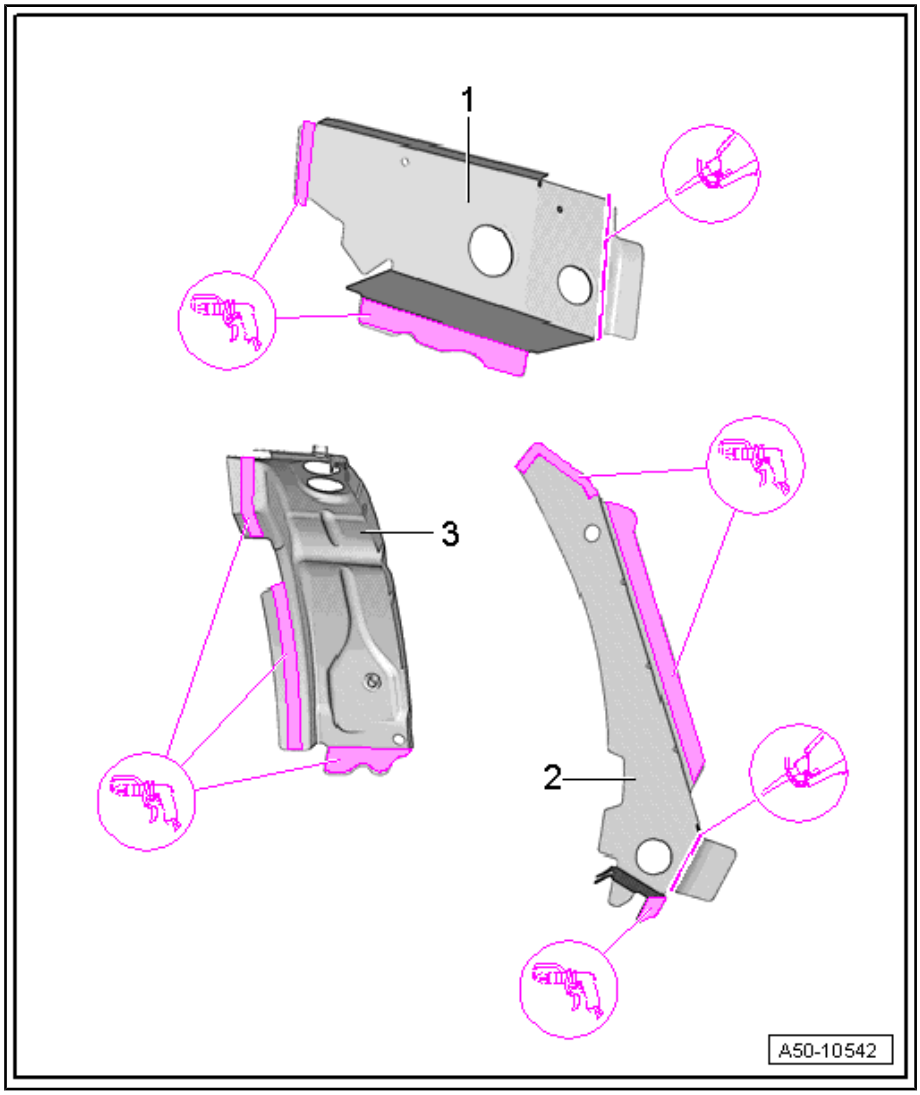
Replacement parts

- Intermediate piece

Preparing new part

– Transfer separating cuts to new parts -1- and -2- and cut to size using body saw .

– Drill holes for SG plug weld seam, 8 mm ∅ using drill .



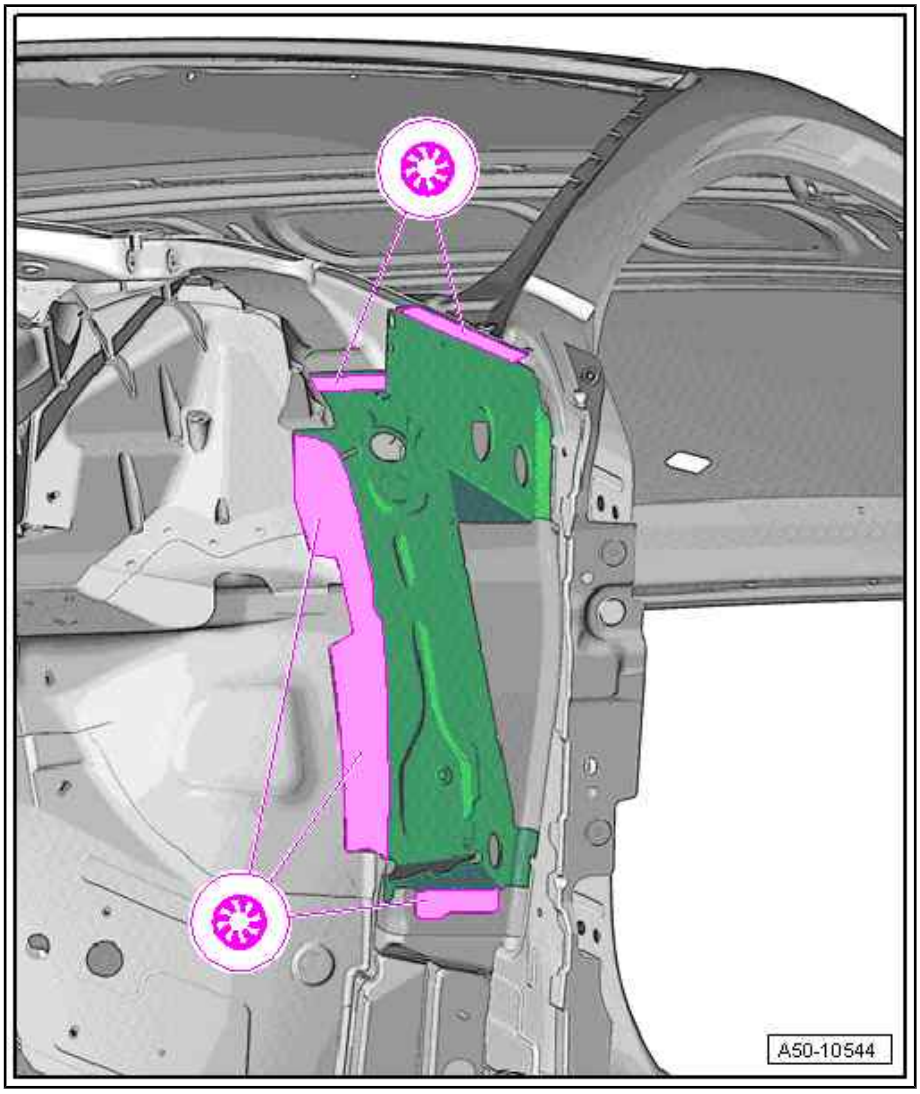
Note

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 new parts and fix in position.
- Check fit relative to adjacent parts.
- Weld in intermediate piece using shielded arc welding equipment : SG plug weld seam.

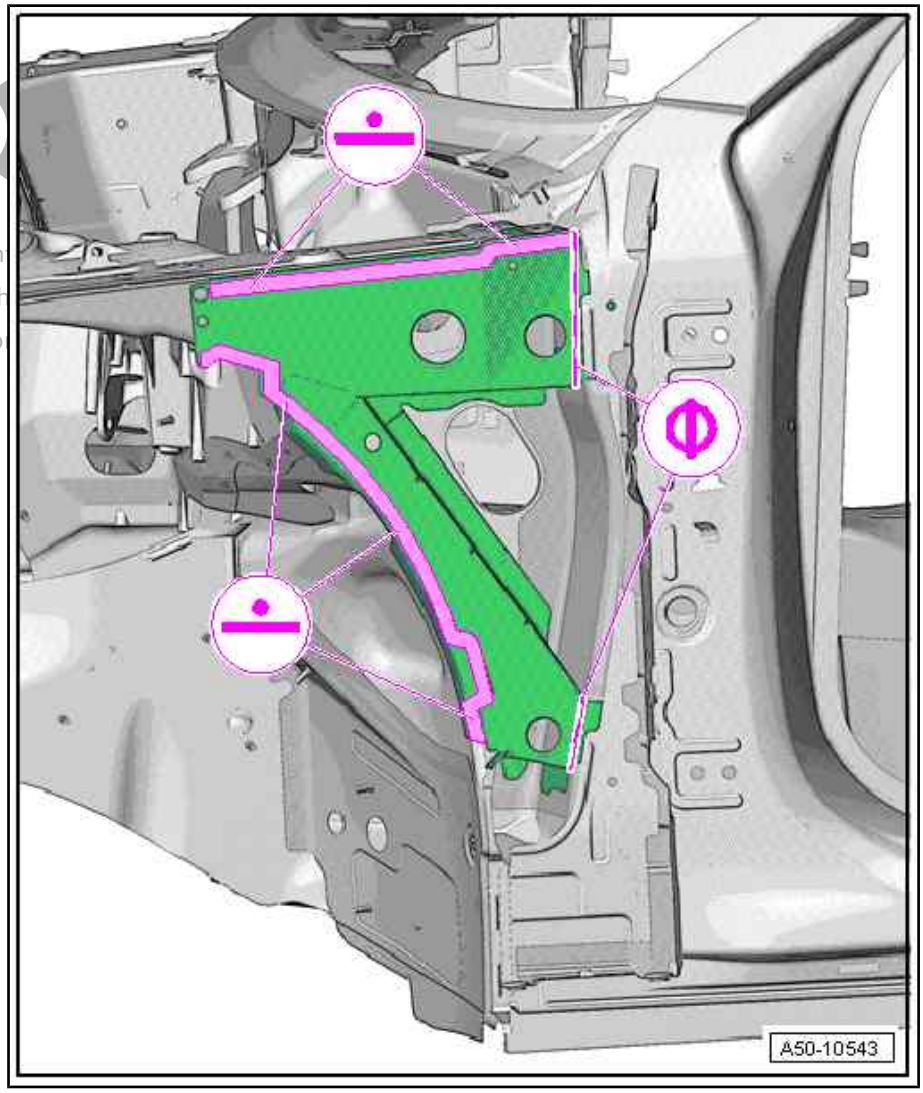
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– Remake original joint using resistance spot welder : RP spot weld seam.
– Weld in intermediate piece using shielded arc welding equipment : SG plug weld seam and SG stepped seam (stitch weld).

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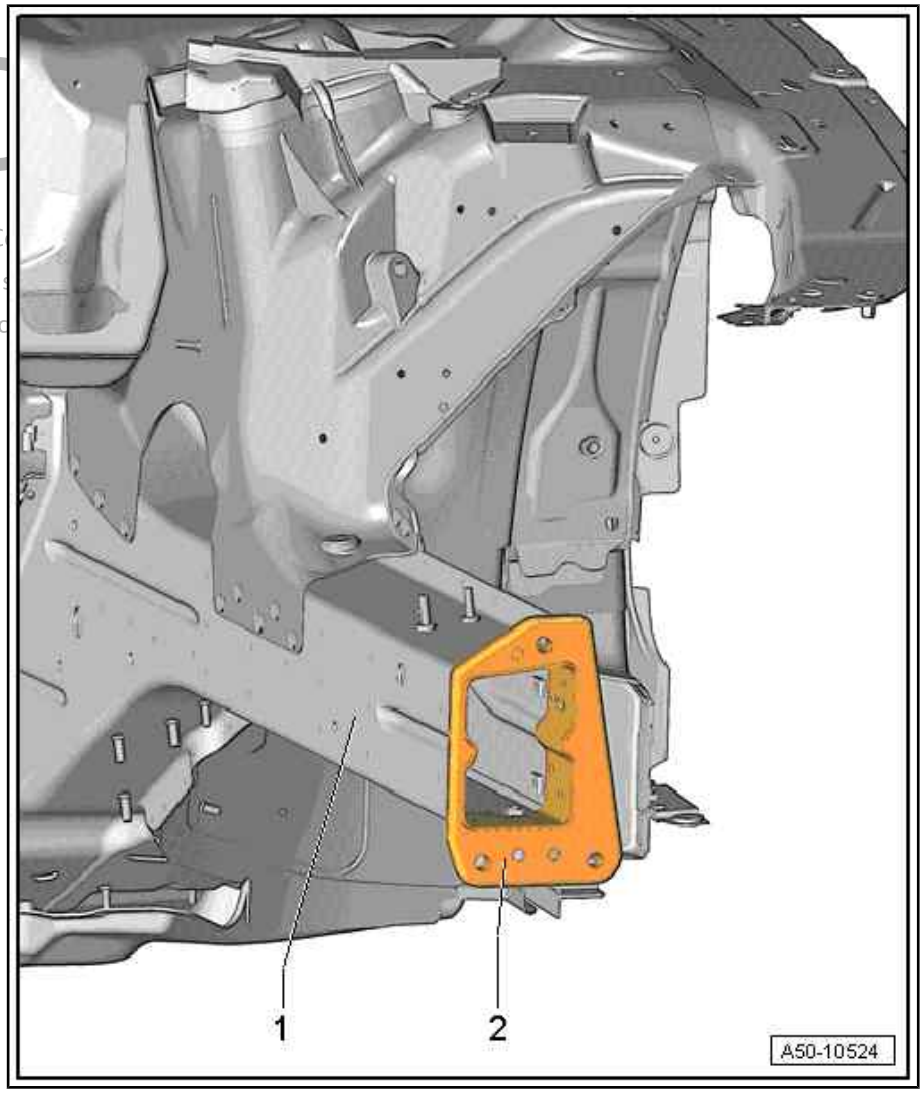
2 Front bumper bracket - Renewal

(Saloon and Avant identical)

1 - Longitudinal member

2 - Bumper bracket

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2.1 Notes for vehicles with hybrid drive

⇒ page 5

2.2 Tools

Special tools and workshop equipment required

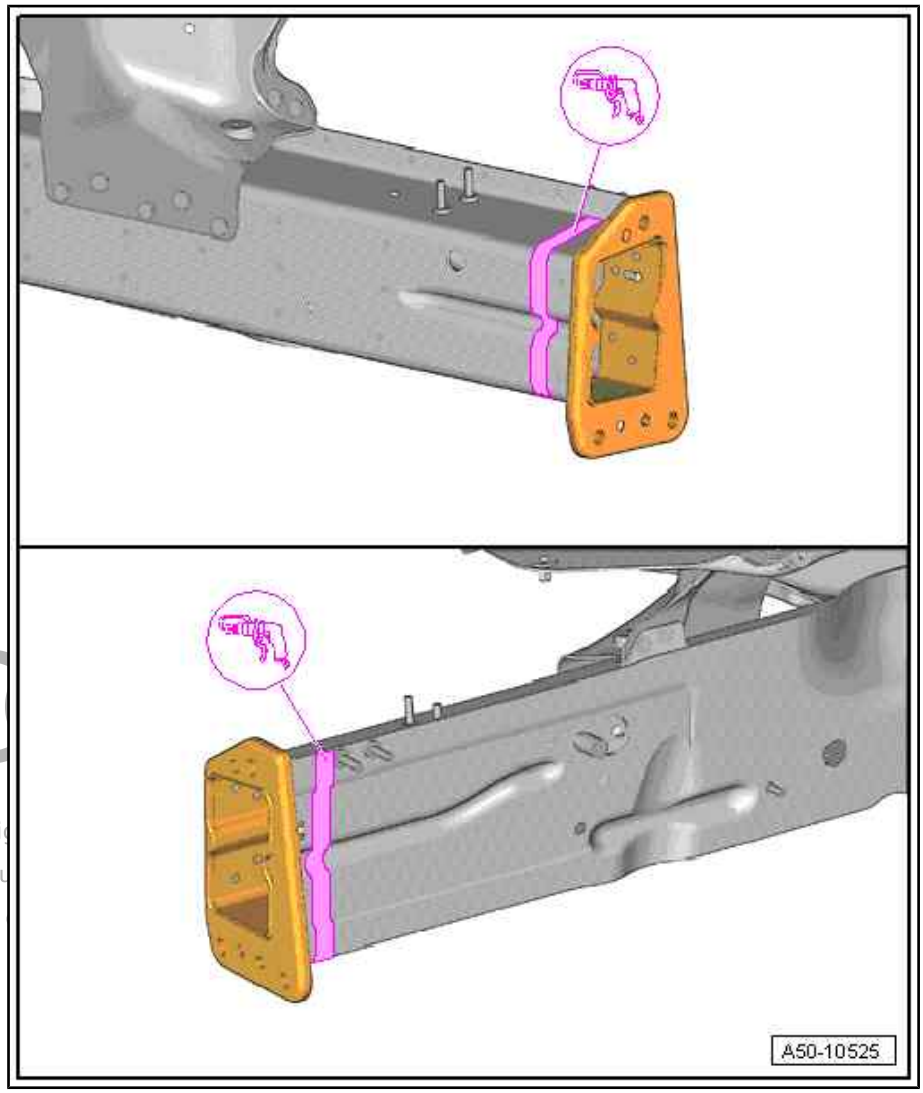
- Resistance spot welder
- Shielded arc welding equipment
- Brush grinder
- Compact angle grinder
- Drill
- Spot weld breaker
- Body saw

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

2.3 Procedure

Cutting locations

– Separate original joint using spot weld breaker .



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Replacement part

♦ Front bumper bracket

Preparing new part

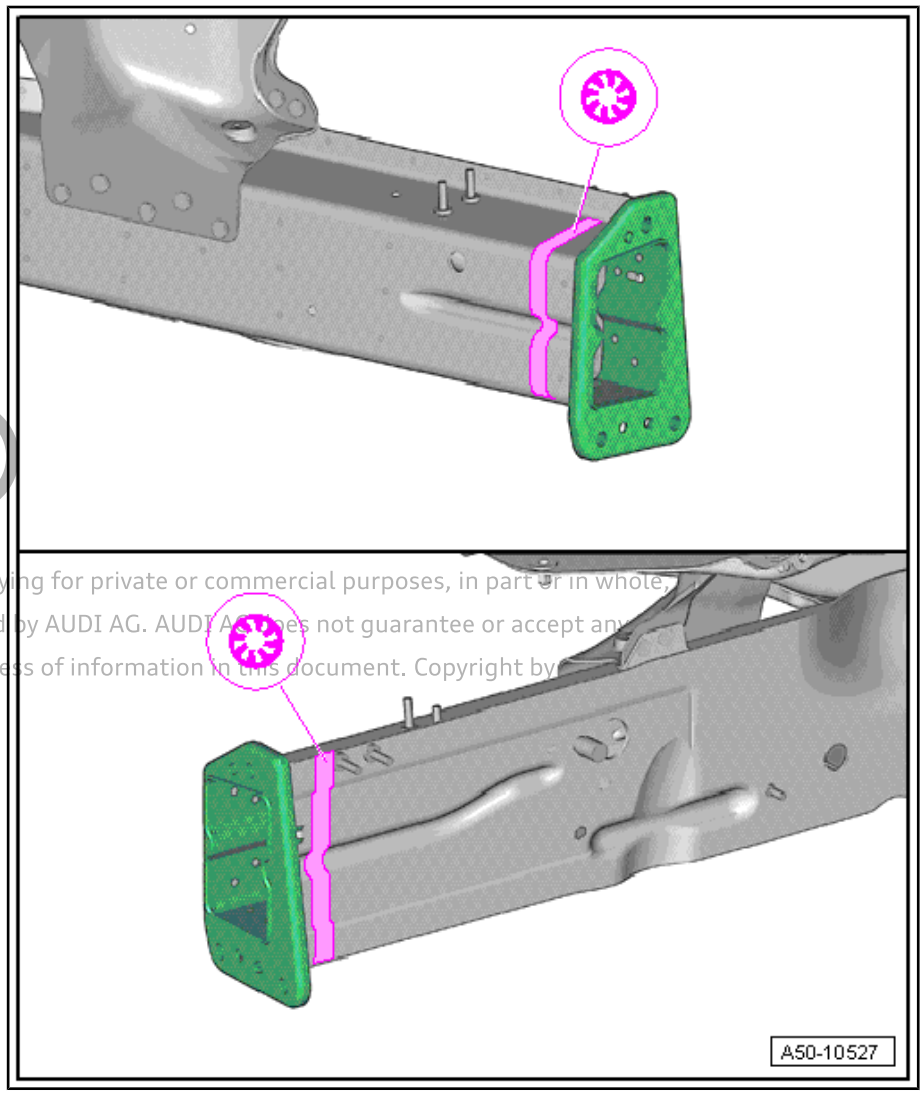
– Match up new part with vehicle positioned on alignment bracket set supplement - VAS 6667- and fix in place.

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 bumper bracket using shielded arc welding equipment : SG plug weld seam.



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RO: 50 72 55 50

3 Wing mounting flange - Renewal

(Saloon and Avant identical)

CAUTION

Straightening and re-alignment work must not be carried out on the front section of the Audi A6 body because this could cause cracking in the aluminium castings that may not be externally visible.

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1 - Suspension turret

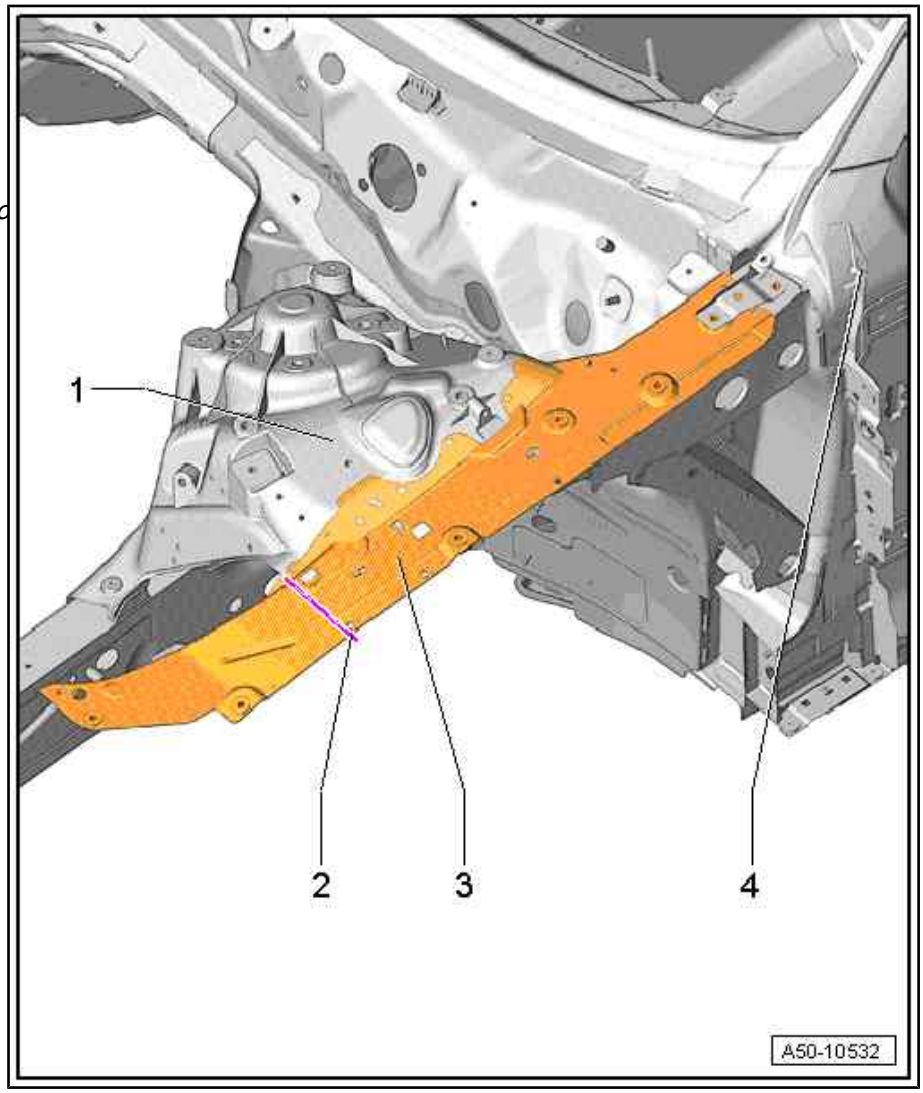
2 - Separating cut for wing mounting flange

Note

Part section repair is po
separating cut -2-.

3 - Wing mounting flange for upper wheel housing

4 - A-pillar



3.1 Notes for vehicles with hybrid drive

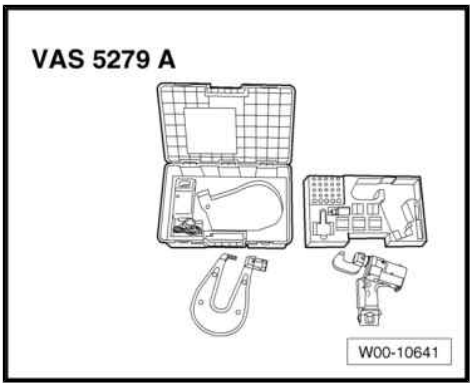
⇒ page 5

3.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment

- Compact angle grinder
- Drill
- Scraper
- Body saw
- Spot weld breaker
- Pneumatic glue gun
- Compact booster
- Alternatively, you can use the rechargeable riveter - VAS 5279 B- . This is a complete set.



Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

3.3 Procedure

CAUTION

Take care not to damage the bonnet lock cable when making the separating cut in the longitudinal member.

Cutting locations

Note

Cover over suspension turret while cutting and welding.

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Note

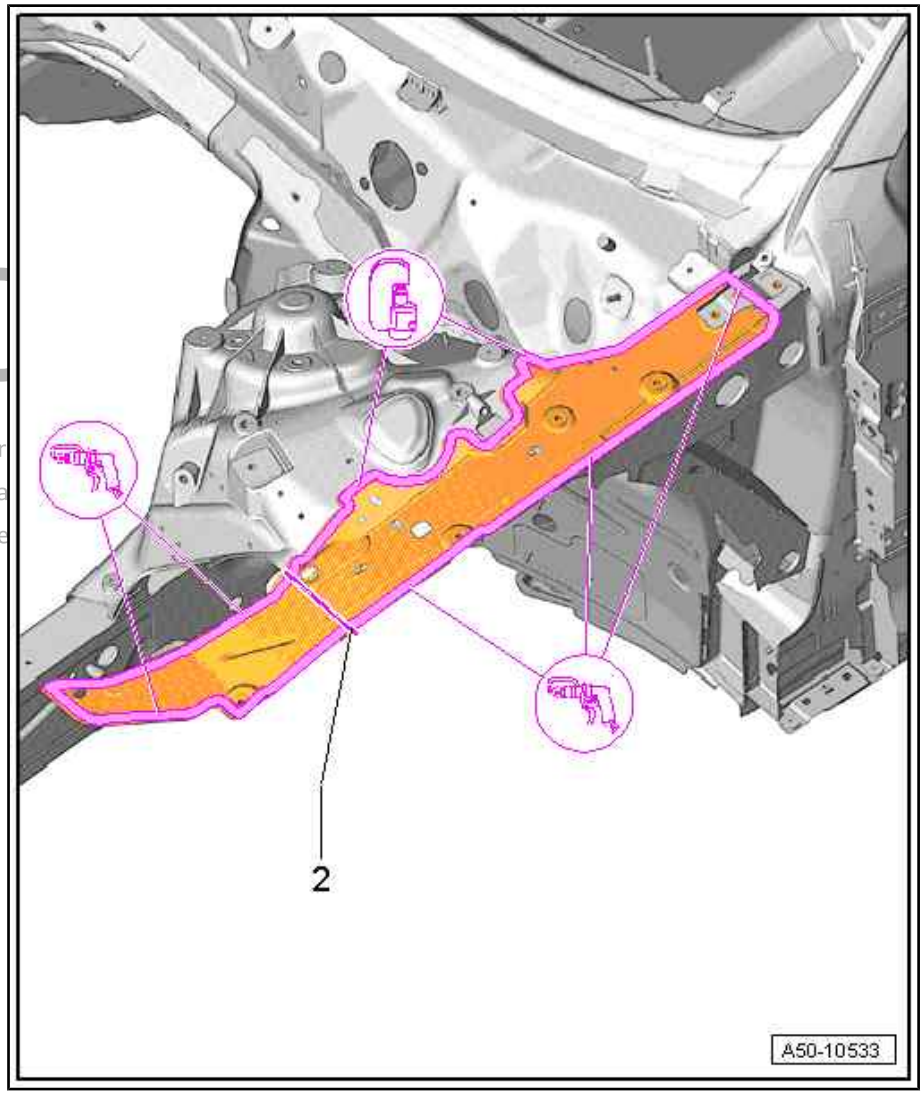
- *Part section repair is possible using separating cut -2-.*
- *Offset separating cuts between upper and lower wing mounting flanges.*

– Separate original joint between upper and lower wing mounting flanges using spot weld breaker .

Removing punch rivets ⇒ page 24

– Separate original joint at upper wing mounting flange and suspension turret using rechargeable riveter - VAS 5279 A- or compact booster - VAS 6790- .

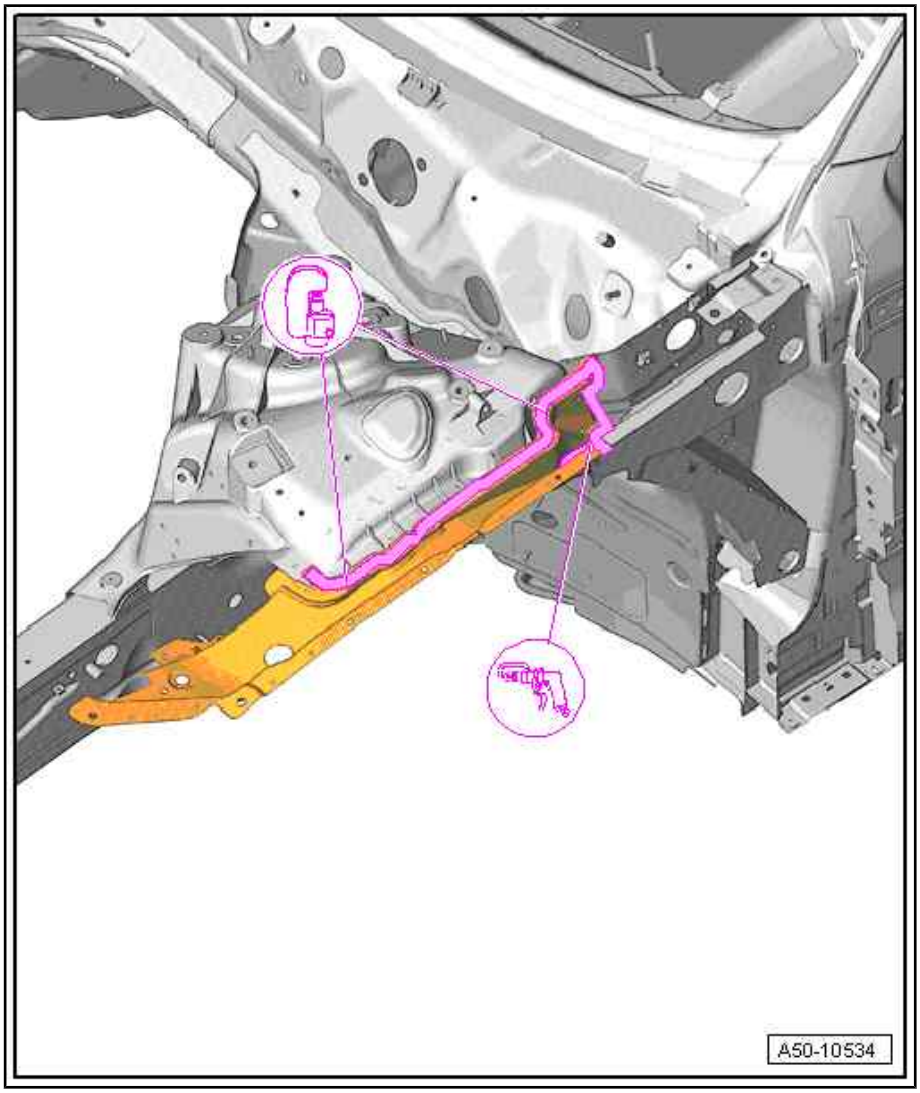
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Removing punch rivets ⇒ page 24

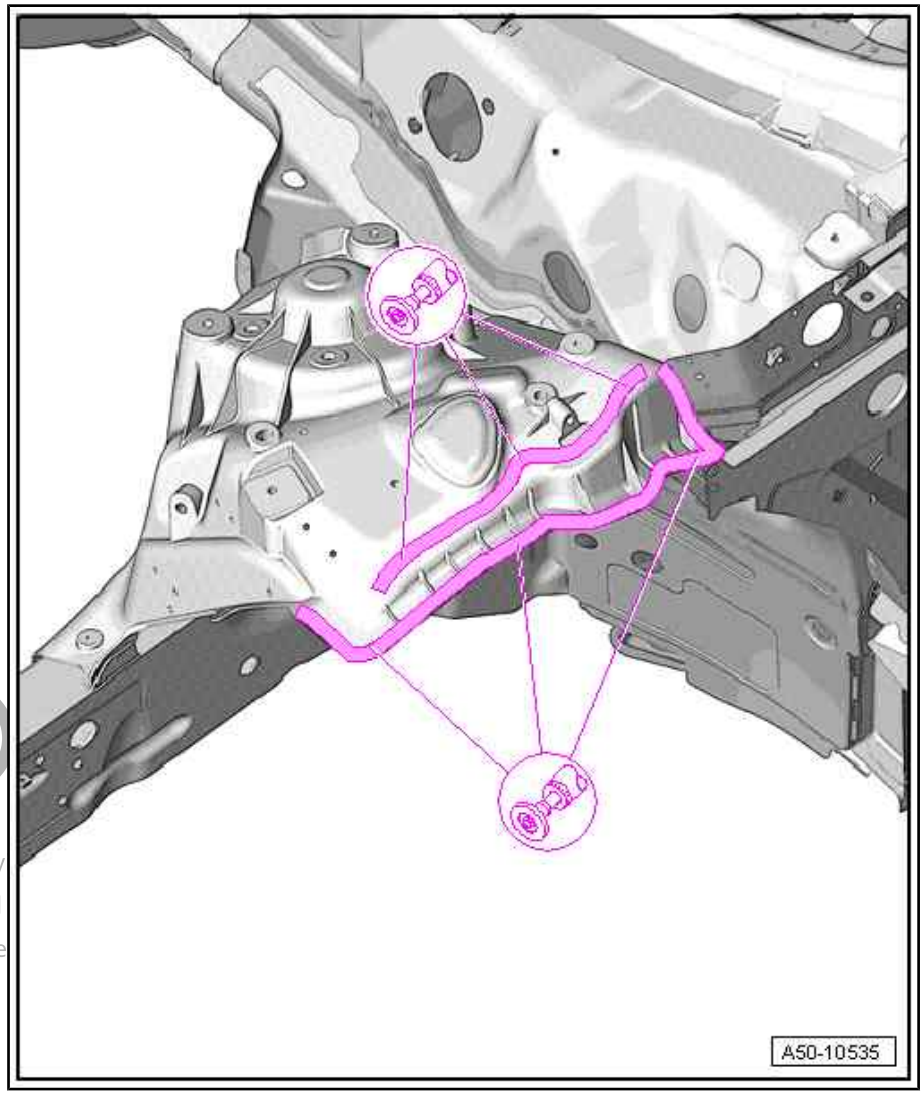
– Separate original joint at upper wing mounting flange and suspension turret using rechargeable riveter - VAS 5279 A- or compact booster - VAS 6790- .

– Separate original joint between upper and lower wing mounting flanges using spot weld breaker .



– Remove remaining material using compact angle grinder .
– Remove remaining adhesive using scraper - VAS 5448- .

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Replacement part

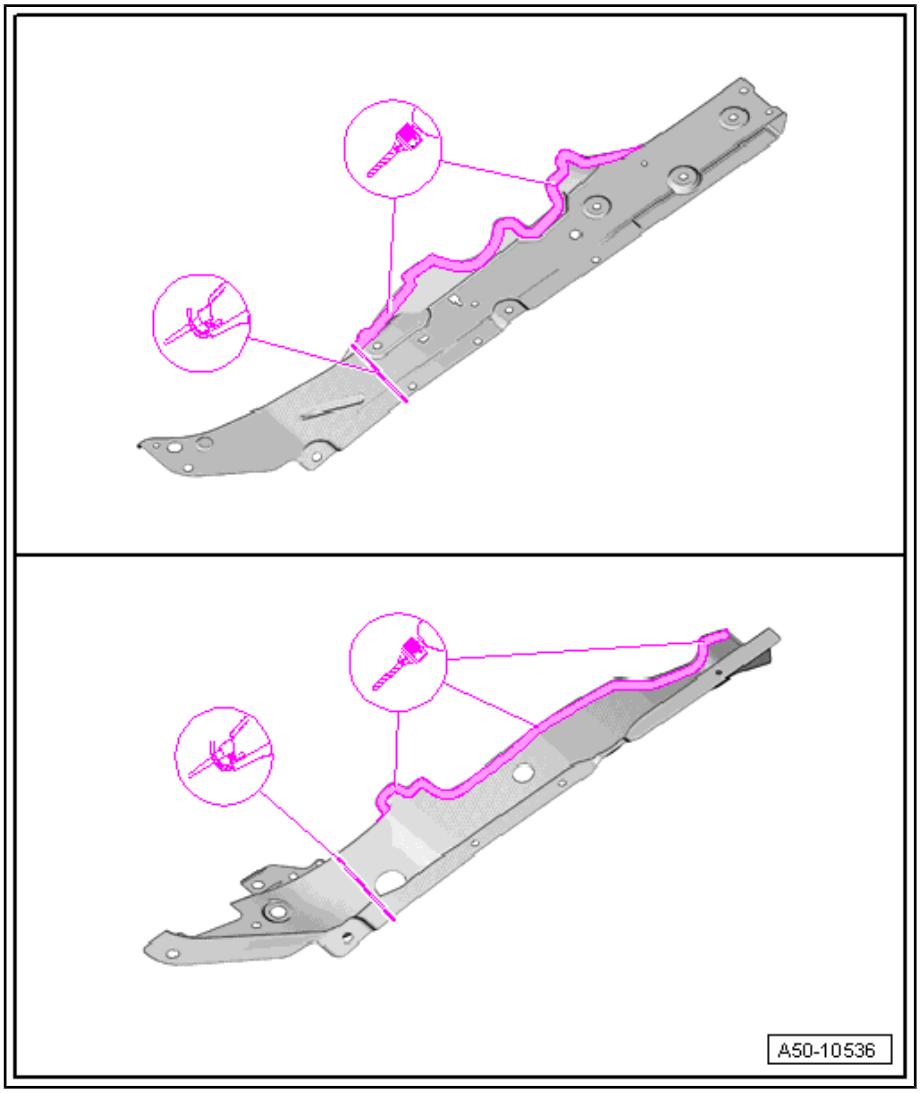
- Pop rivet - WHT 005 413-
- Wing mounting flange (upper)
- Wing mounting flange (lower)
- Cleaning solution - D 009 401 04-
- Silicate stone - DA 009 800 -
- Aluminium primer - DA 009 801 -
- Applicator - D 009 500 25 -
- 2-component epoxy adhesive - DA 001 730 A2-

Preparing new part

– Transfer separating cut to new part and cut to size using body saw .

– Drill holes (6.7 mm) for pop rivets using drill .

– Transfer holes for pop rivets from suspension turret.

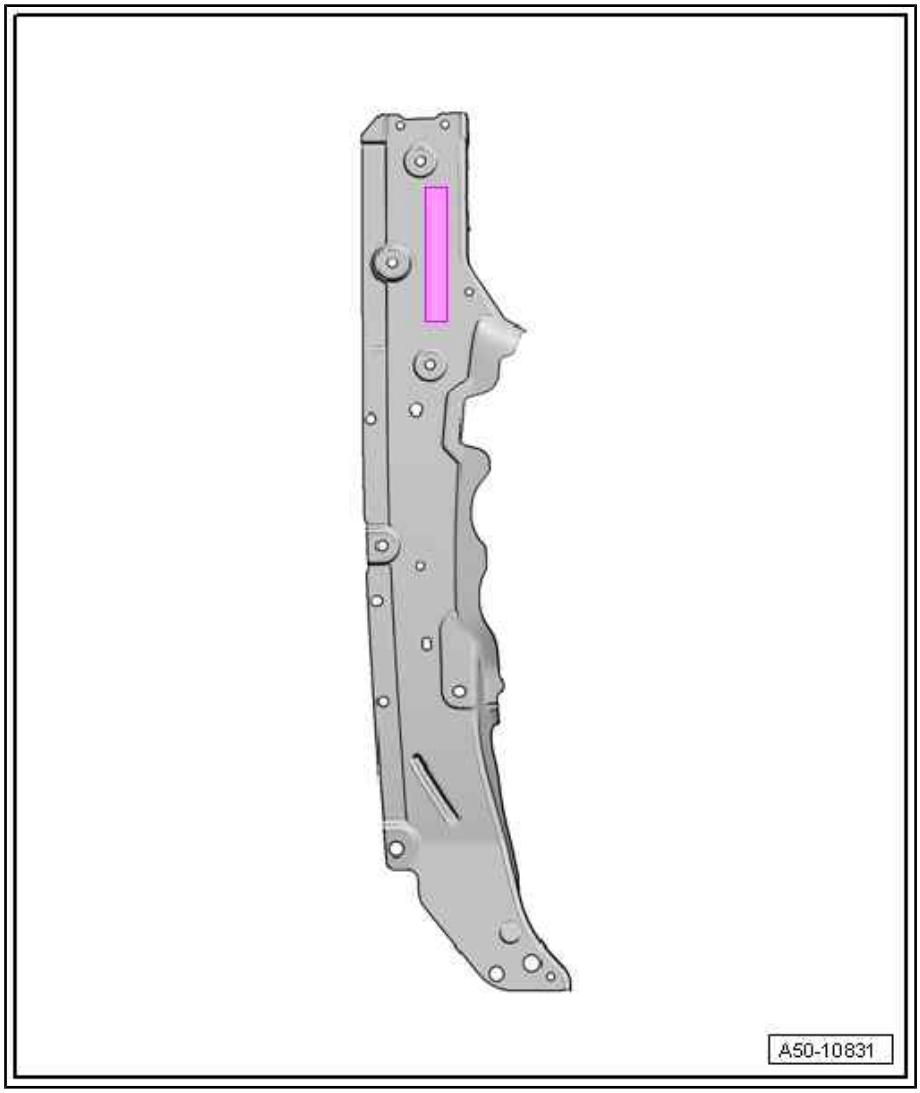


Alternative position of vehicle identification number

– It is not possible to stamp the vehicle identification number into the aluminium suspension turret casting in the workshop.

– Stamp vehicle identification number into wing mounting flange before installation.

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Preparing joints for adhesive application

– Prepare new part for riveting.
– Clean bonding surfaces with cleaning solution - D 009 401 04- .
– Prepare bonding area with silicate stone - DA 009 800 - and clean.
– Apply aluminium primer - DA 009 801 - to bonding surfaces using applicator - D 009 500 25 - .
– Apply 2-component epoxy adhesive - DA 001 730 A2- to entire riveting area using pneumatic glue gun - V.A.G 2005 B- .
– Prepare flanges on body and new parts for welding.

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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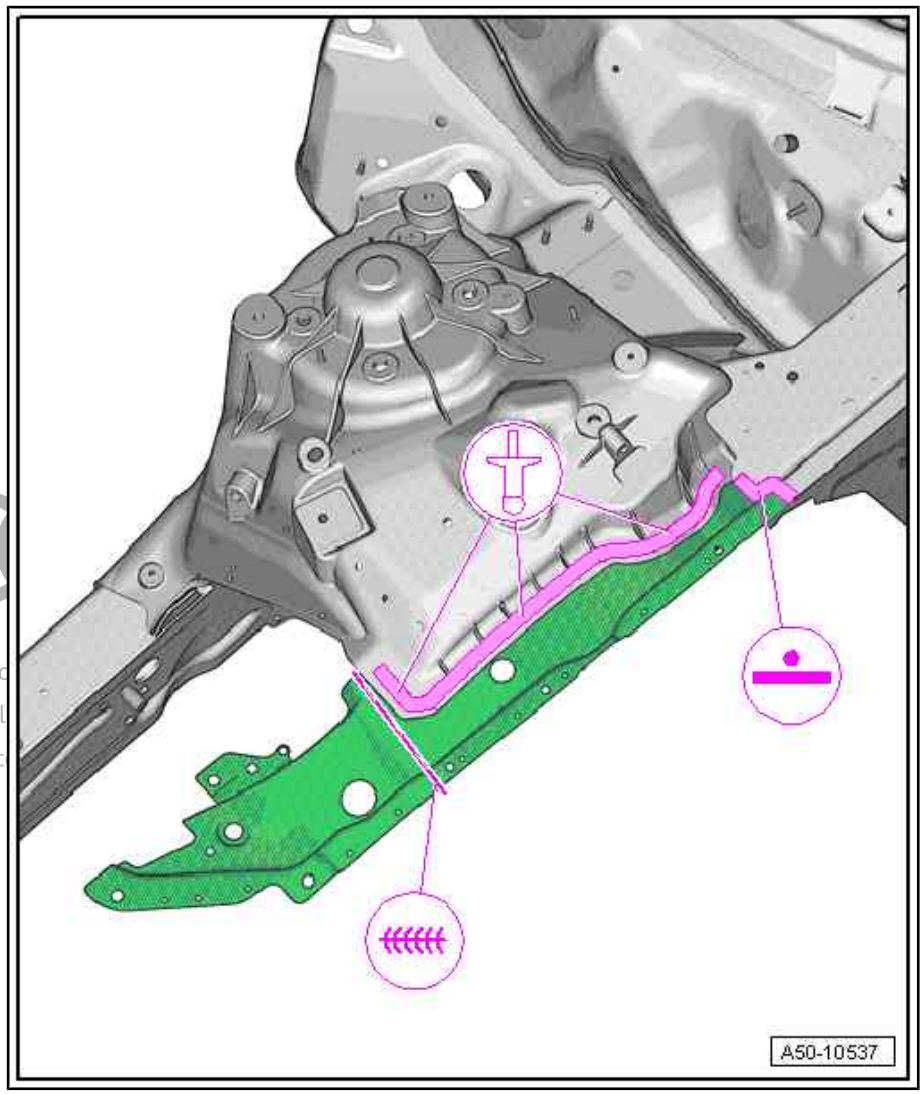
Welding in

– Match up lower wing mounting flange using alignment bracket set supplement - VAS 6667- and fix in place.

– Rivet in lower wing mounting flange using compact booster - VAS 6790/20- and pop rivets - WHT 005 413 A- .

– Weld in lower wing mounting flange using resistance spot welder : RP spot weld seam.

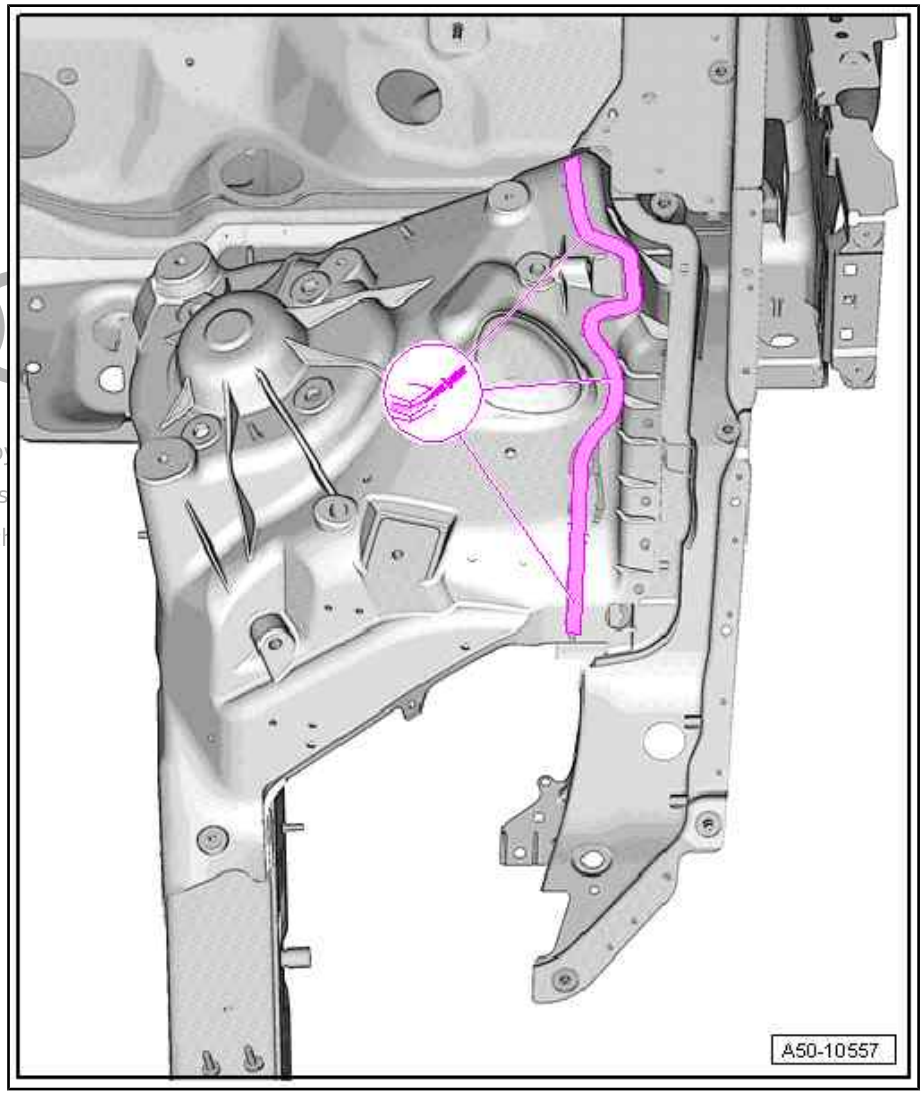
– Weld at separating cut using shielded arc welding equipment : SG continuous seam.



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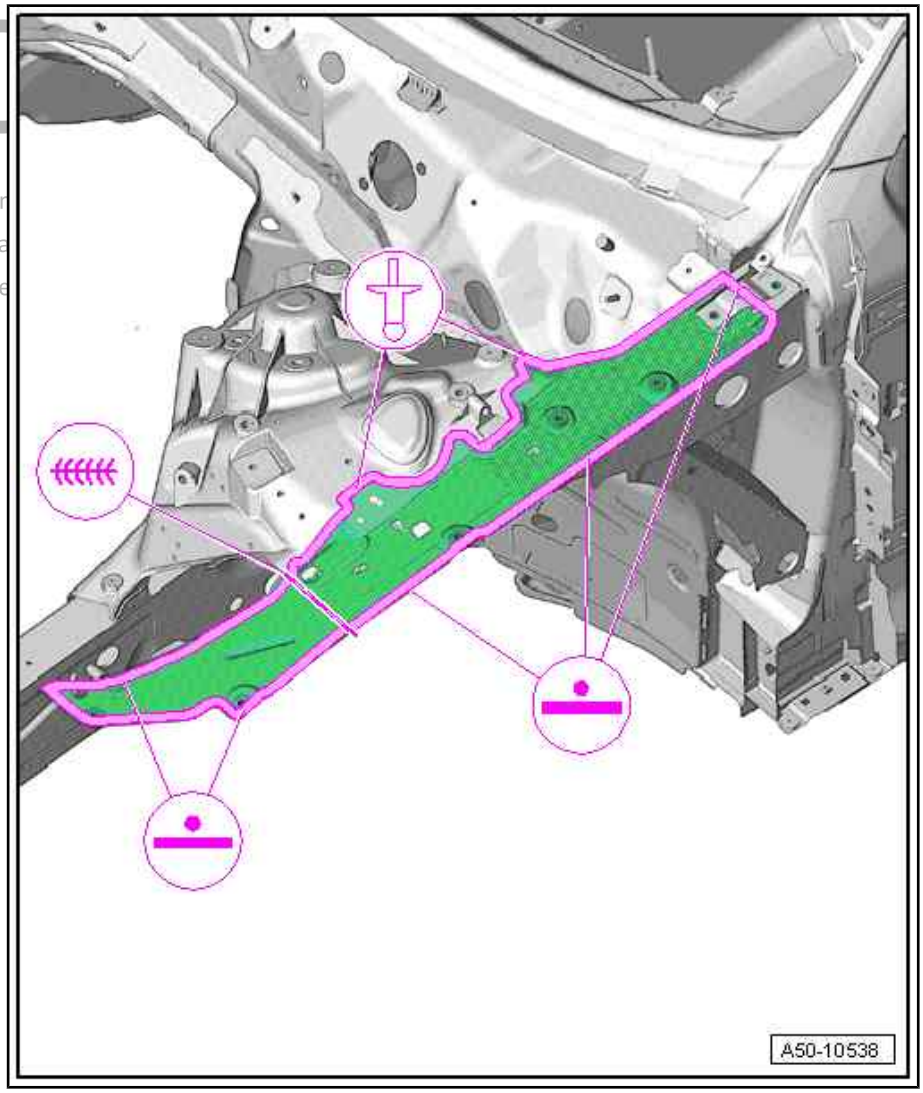
– Apply 2-component epoxy adhesive - DA 001 730 A2- to wing mounting flange in entire riveting area using pneumatic glue gun - V.A.G 2005 B- .

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– Rivet in upper wing mounting flange using compact booster - VAS 6790/20- and pop rivets - WHT 005 413 A- .
– Weld in upper wing mounting flange using resistance spot welder : RP spot weld seam.
– Weld at separating cut using shielded arc welding equipment : SG continuous seam.

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4 Suspension turret - Renewal

(Saloon and Avant identical)

CAUTION

Straightening and re-alignment work must not be carried out on the front section of the Audi A6 body, because this could cause cracking in the aluminium castings that may not be externally visible.

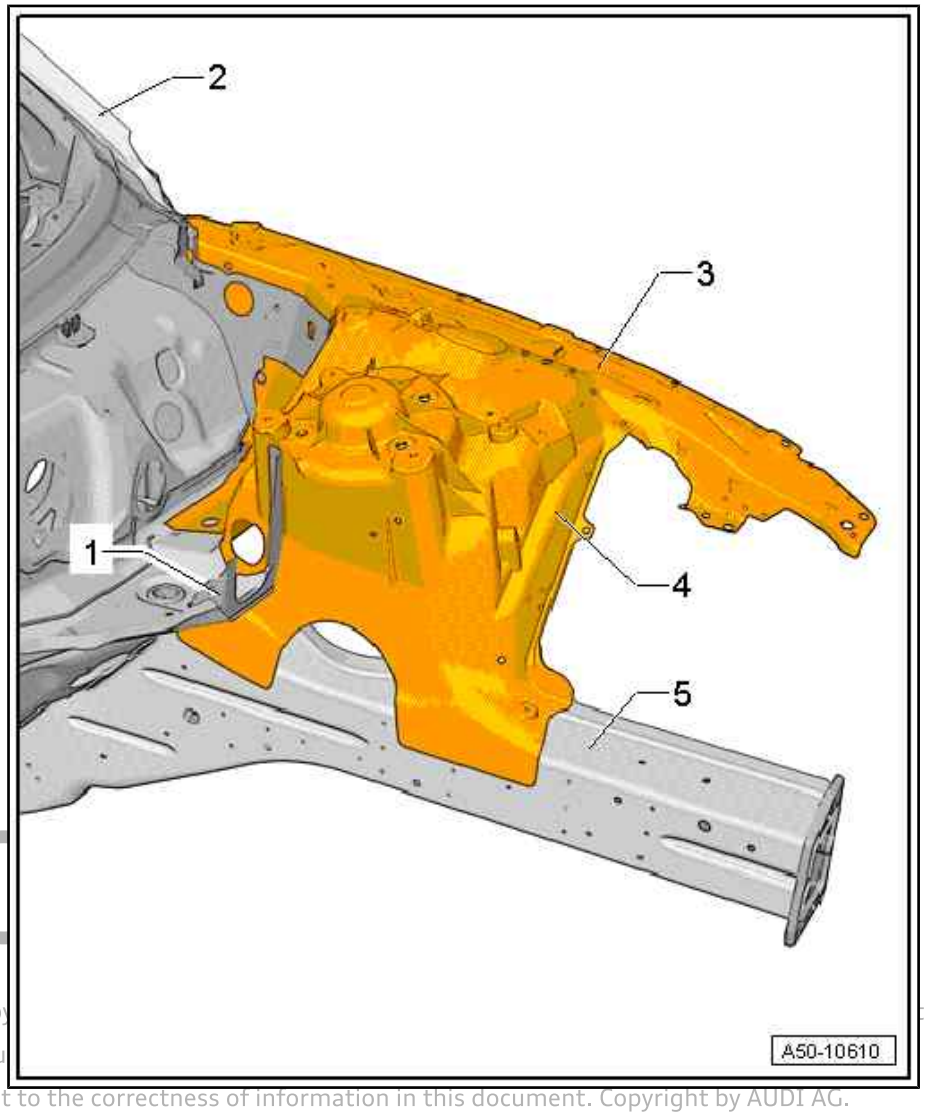
1 - Plenum chamber closure plate

2 - A-pillar

3 - Wing mounting flange

4 - Suspension turret

5 - Front longitudinal member



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4.1 Notes for vehicles with hybrid drive

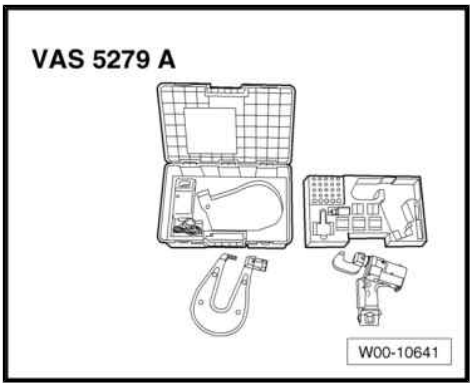
⇒ page 5

4.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment

- Crack testing set
- Compact angle grinder
- Drill
- Body saw
- Spot weld breaker
- Pneumatic glue gun
- Compact booster
- Alternatively, you can use the rechargeable riveter - VAS 5279 B- . This is a complete set.



Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

4.3 Procedure

NOTICE

When renewing the suspension turret on the right side of the vehicle, take care not to damage the suspension turret when stamping on the vehicle identification number.

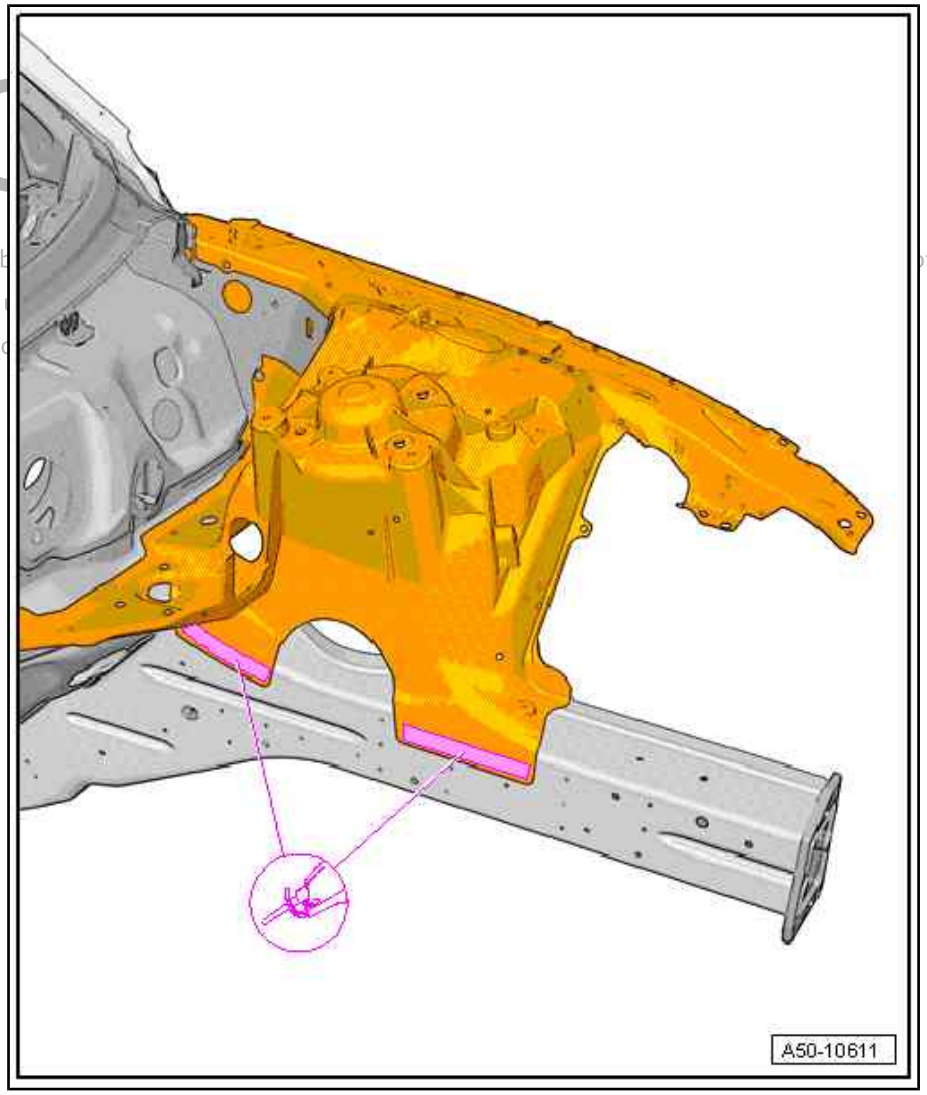
- Upper wing mounting flange cut out ⇒ page 70

Cutting locations

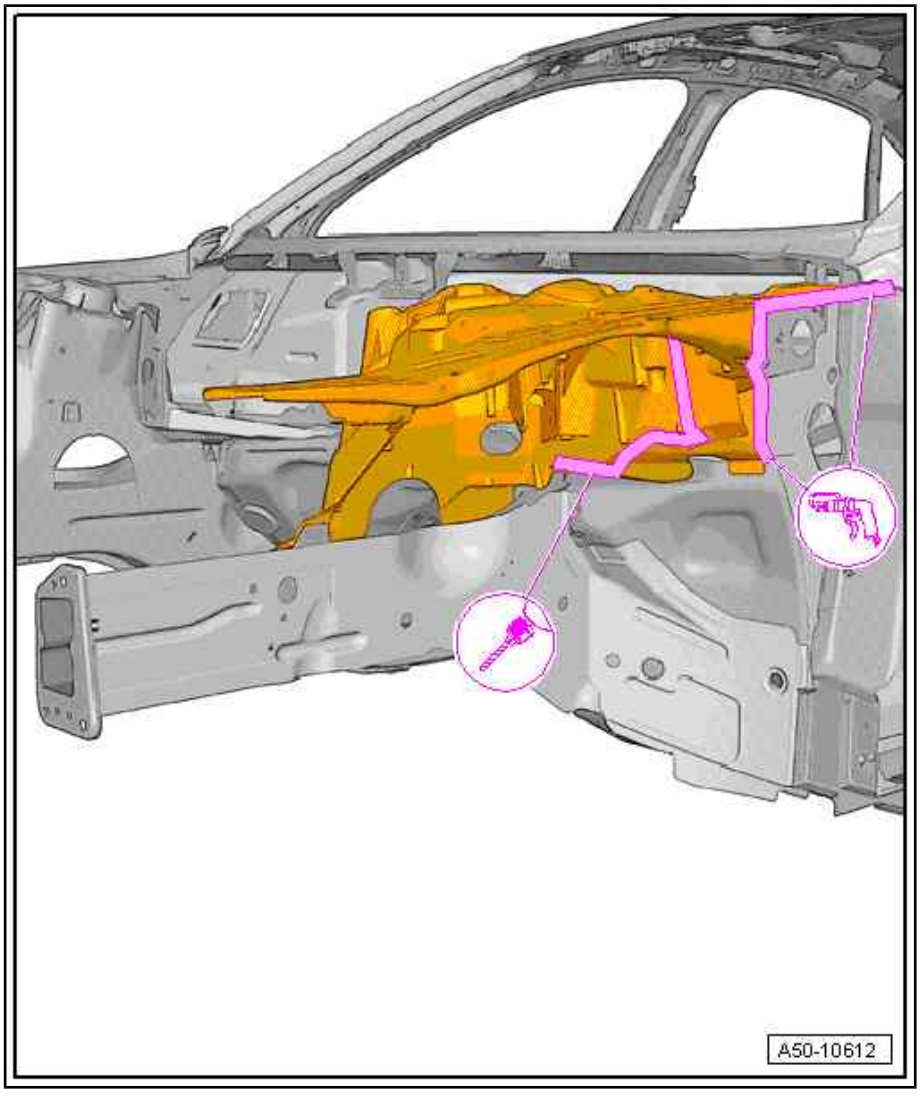
– Roughly cut out suspension turret using body saw .

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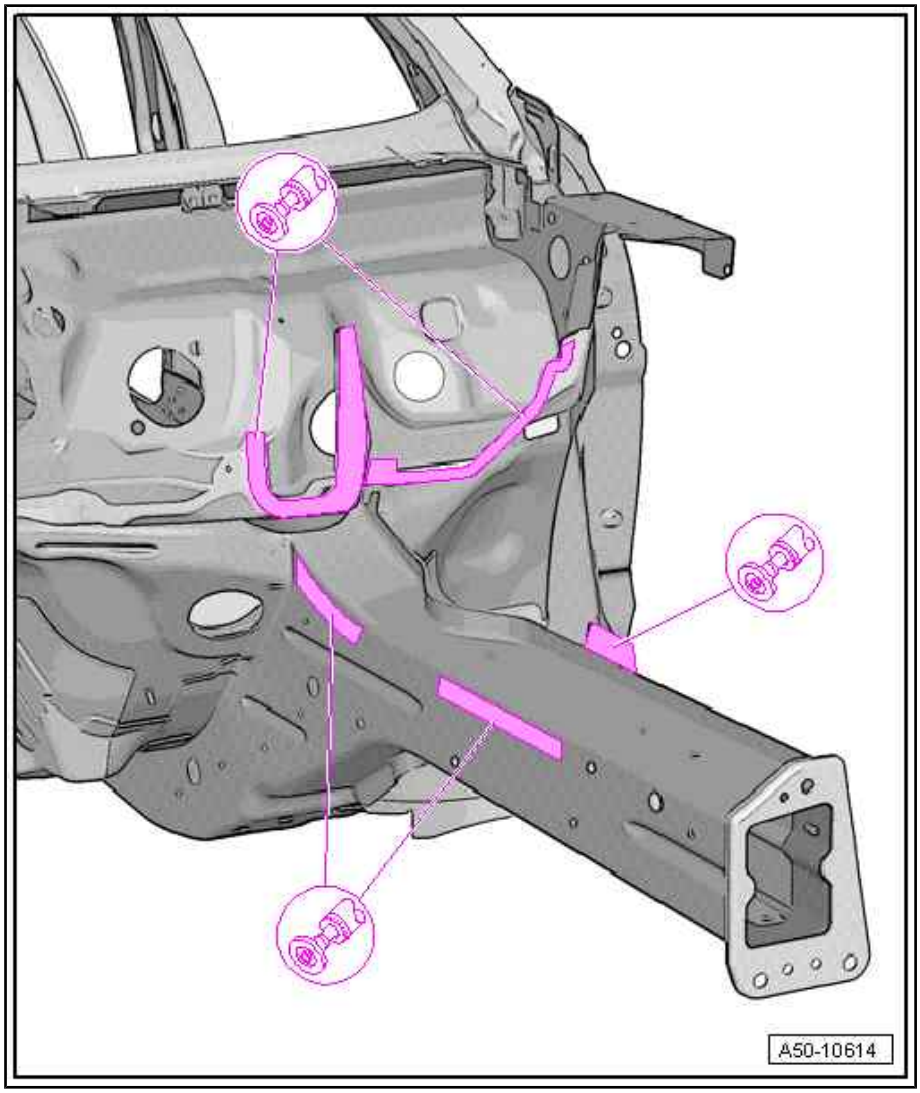


– Remove punch rivets using rechargeable riveter - VAS 5279 A- or compact booster - VAS 6790- ⇒ page 24 .
– Separate original joint using spot weld breaker .



– Remove remaining material using compact angle grinder .

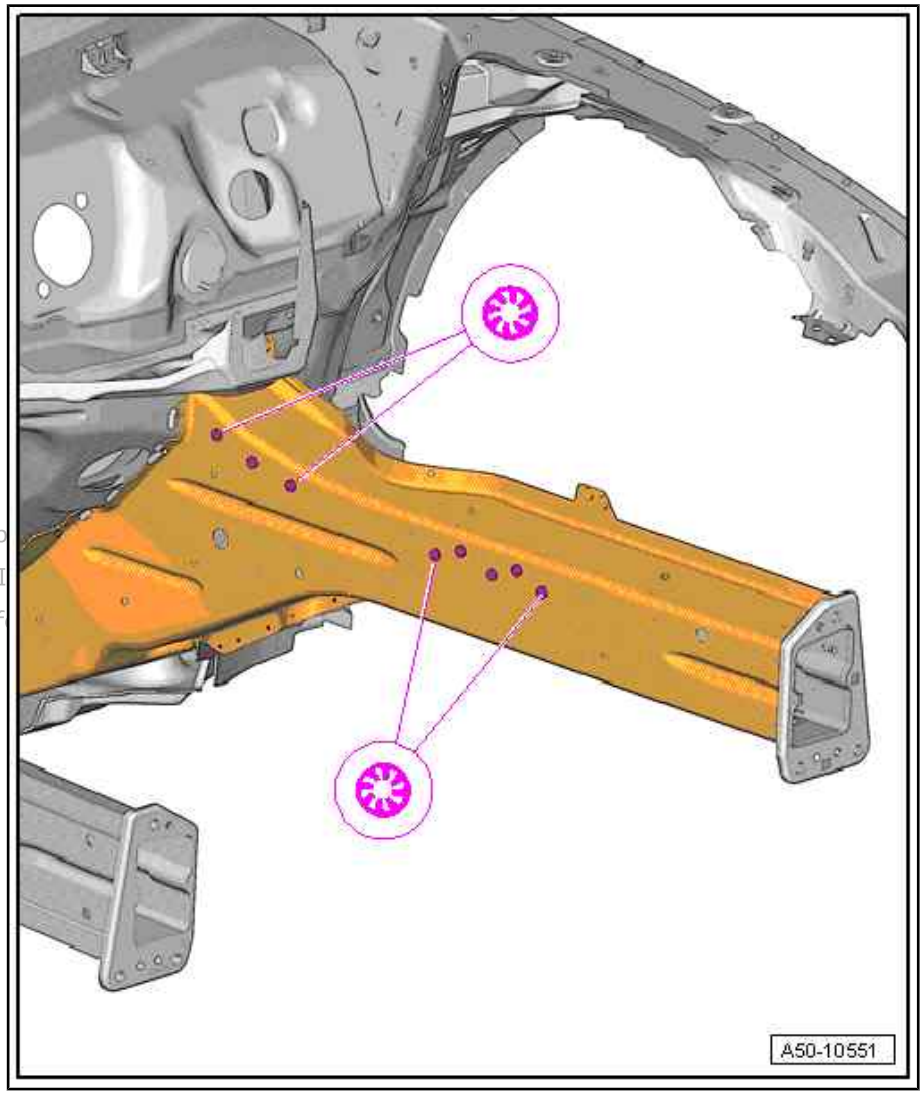
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– Weld punch rivet holes using shielded arc welding equipment and mark accordingly to avoid drilling out the same holes again later.

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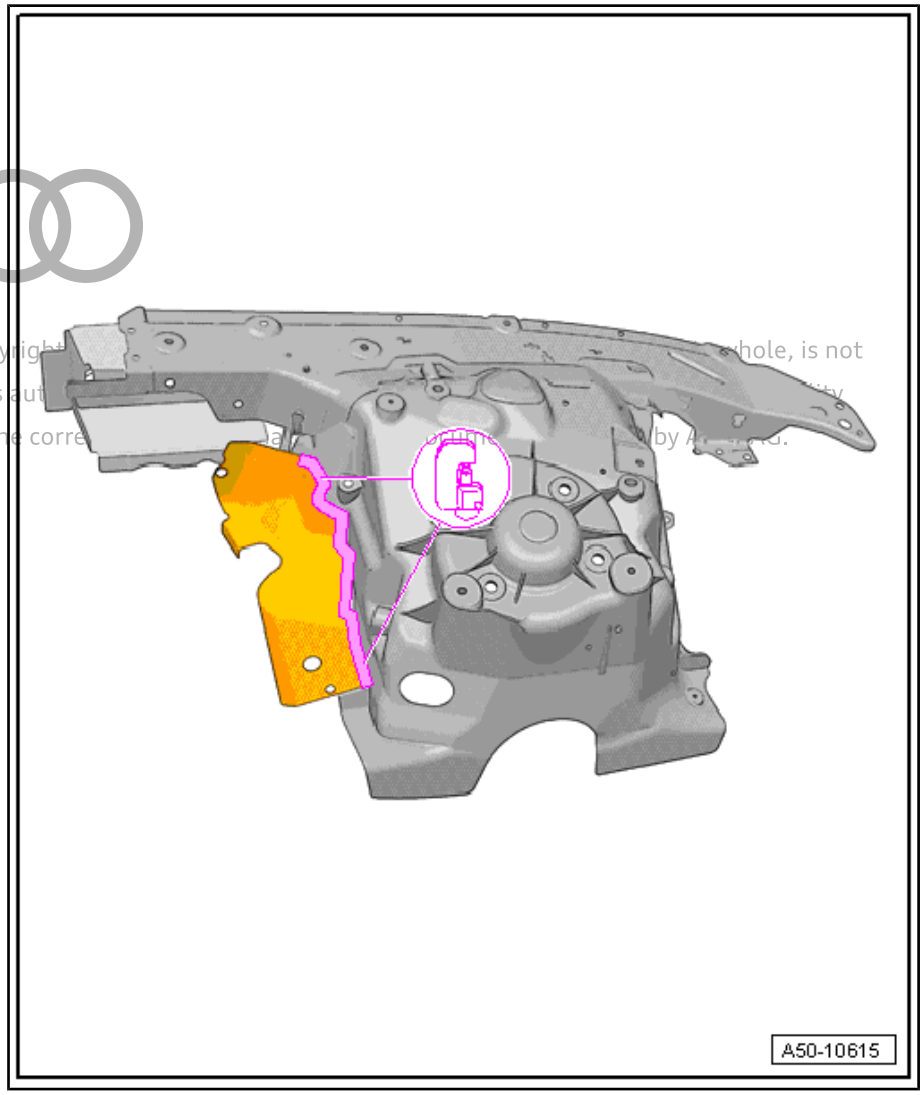
Replacement part

- Suspension turret
- 2x 2-component epoxy adhesive - DA 001 730 A2-
- Cleaning solution - D 009 401 04-
- Aluminium primer - DA 009 801 -
- Applicator - D 009 500 25 -
- Pop rivet - WHT 005 413-

Preparing new part

– Remove punch rivets from wheel housing connecting piece using rechargeable riveter - VAS 5279 A - or compact booster - VAS 6790- and detach part ⇒ page 24 .

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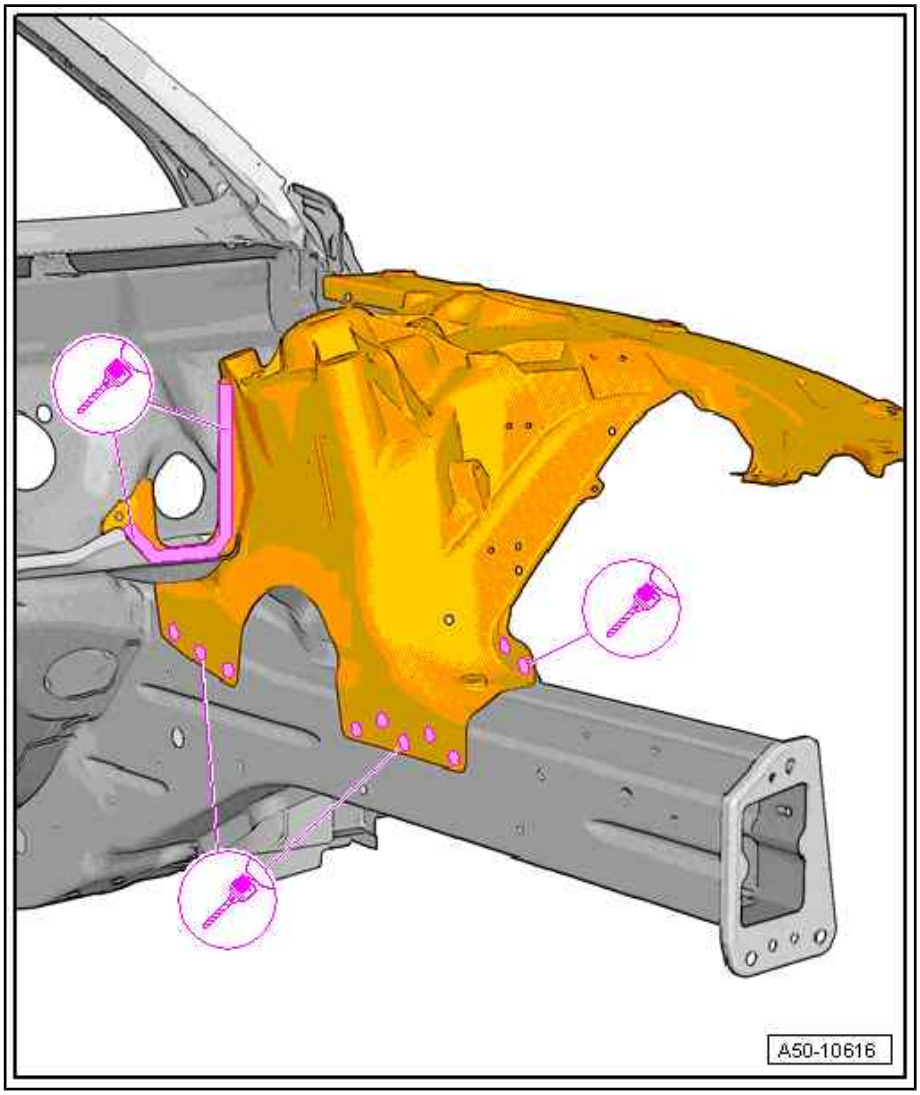


Note

The holes for the pop rivets must be made next to the original holes.

– Match up new part with vehicle positioned on alignment bracket set supplement - VAS 6667- , fix in place and drill holes to line up with adjoining parts using drill (6.7 mm ∅).

Then take off part and prepare new parts for adhesive application.



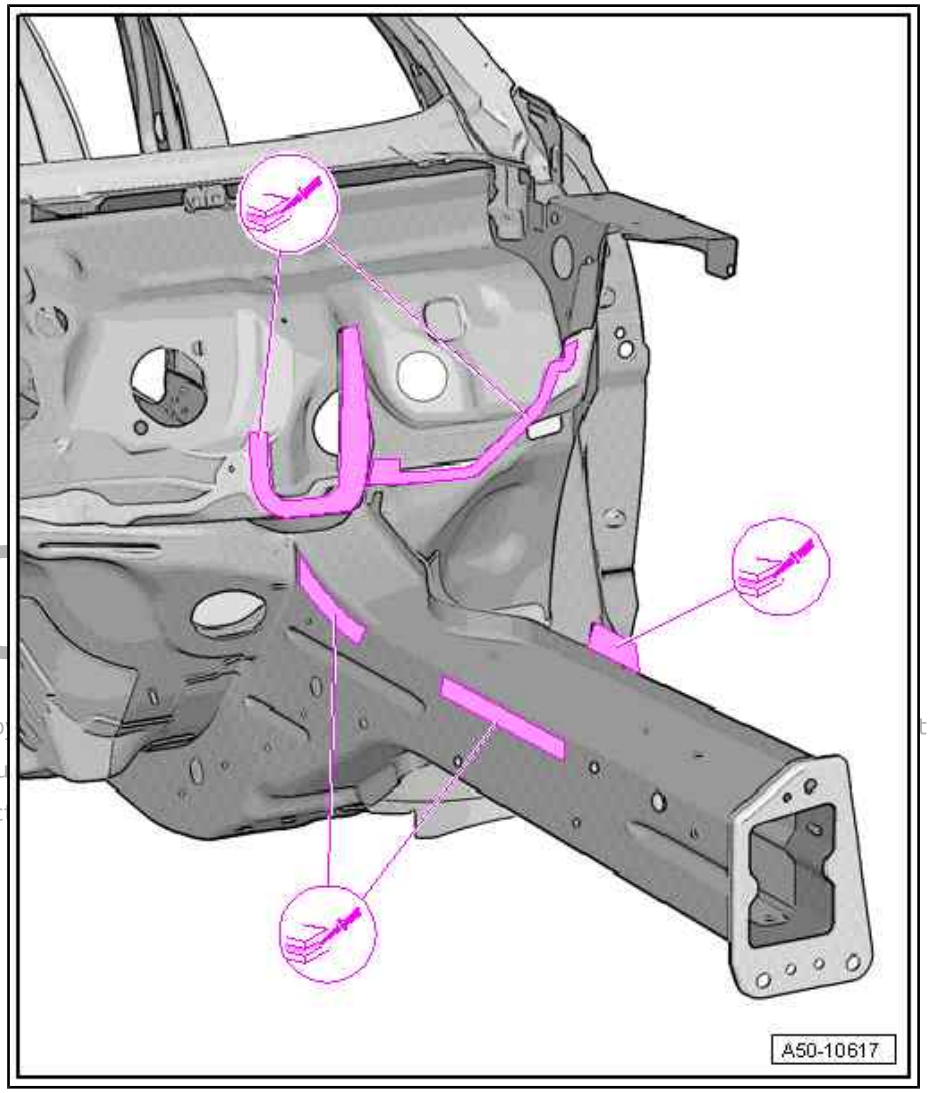
Preparing joints for adhesive application

– Prepare new part for riveting.
– Clean bonding surfaces with cleaning solution - D 009 401 04- .
– Prepare bonding area with silicate stone - DA 009 800 - and clean.
– Apply aluminium primer - DA 009 801 - to bonding surfaces using applicator - D 009 500 25 - .

Riveting in

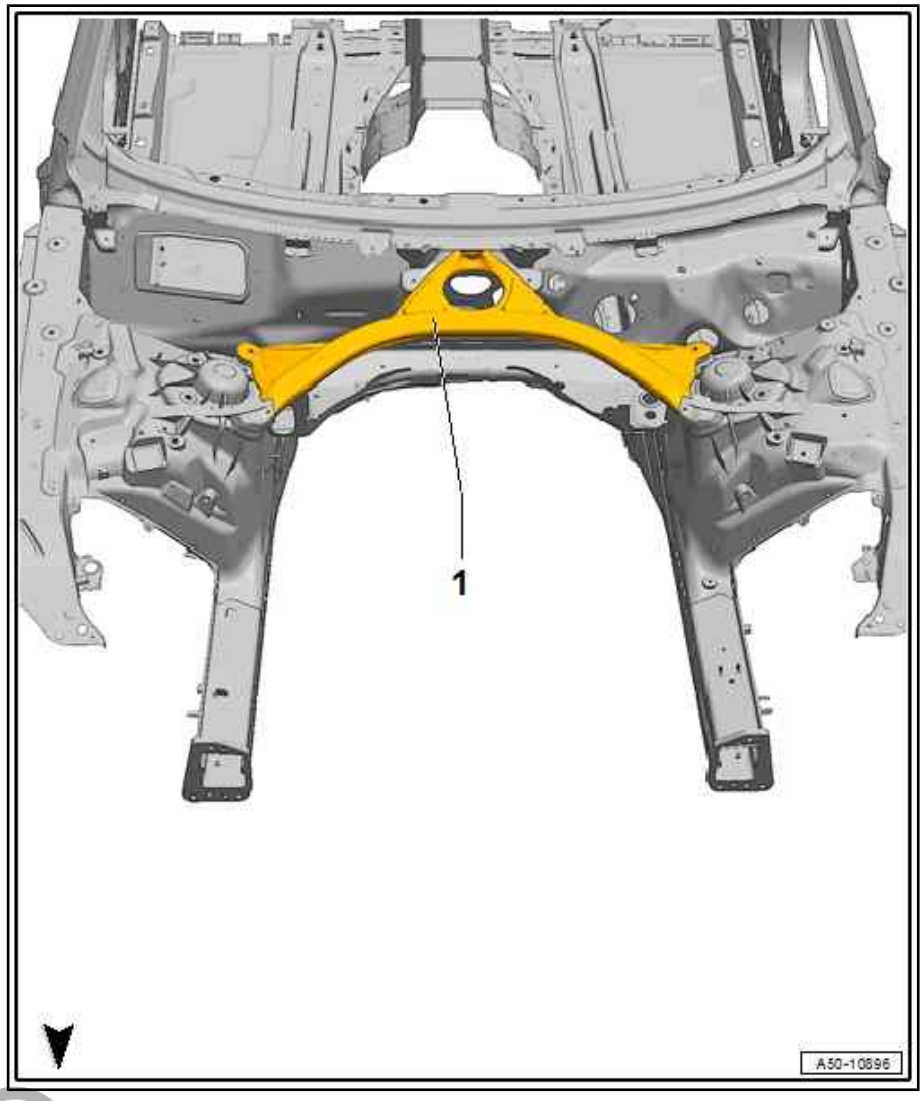
– Apply 2-component epoxy adhesive - DA 001 730 A2- to entire riveting area using pneumatic glue gun - V.A.G 2005 B- .

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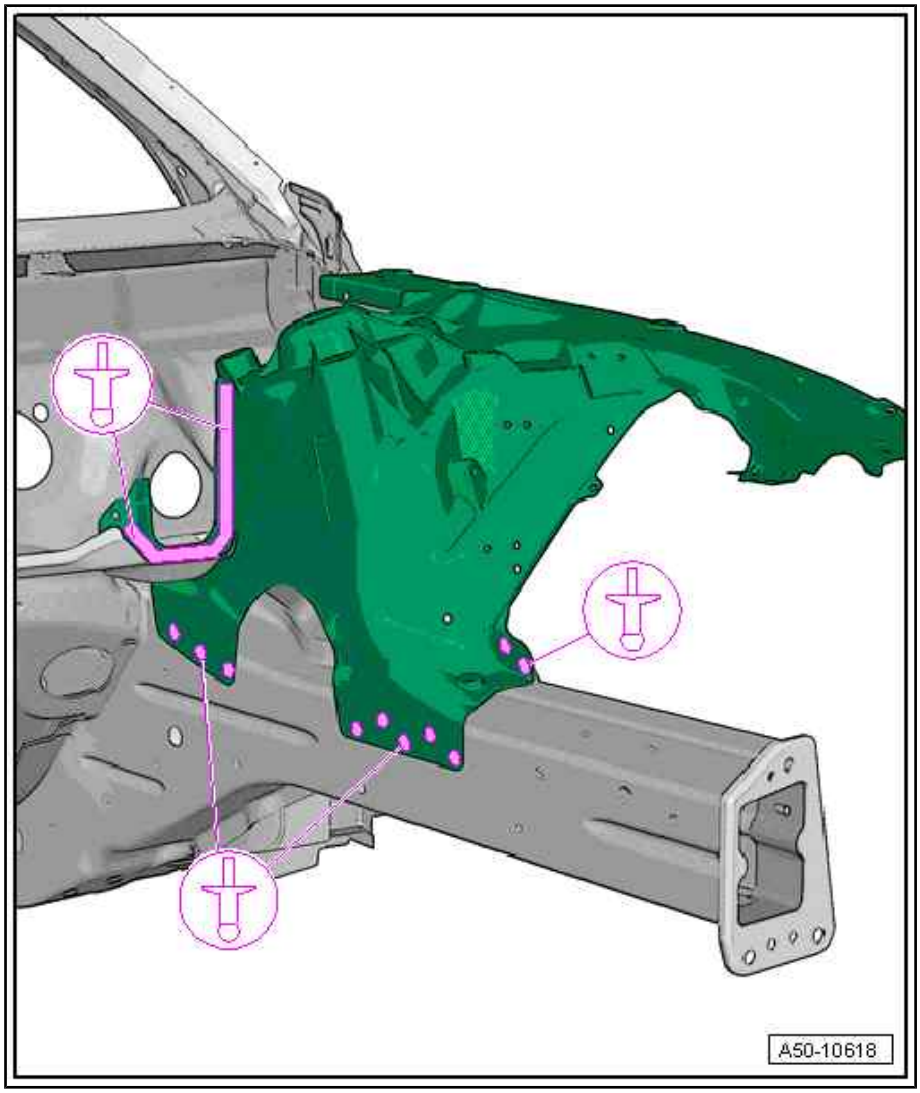
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– Match up new part with vehicle positioned on alignment bracket set supplement - VAS 6667- and fix in place.
– Bolt body brace -1- to body and suspension turrets on both sides to maintain correct dimensions.



– Rivet in suspension turret using compact booster - VAS 6790/20- and pop rivets - WHT 005 413 A- .

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Note

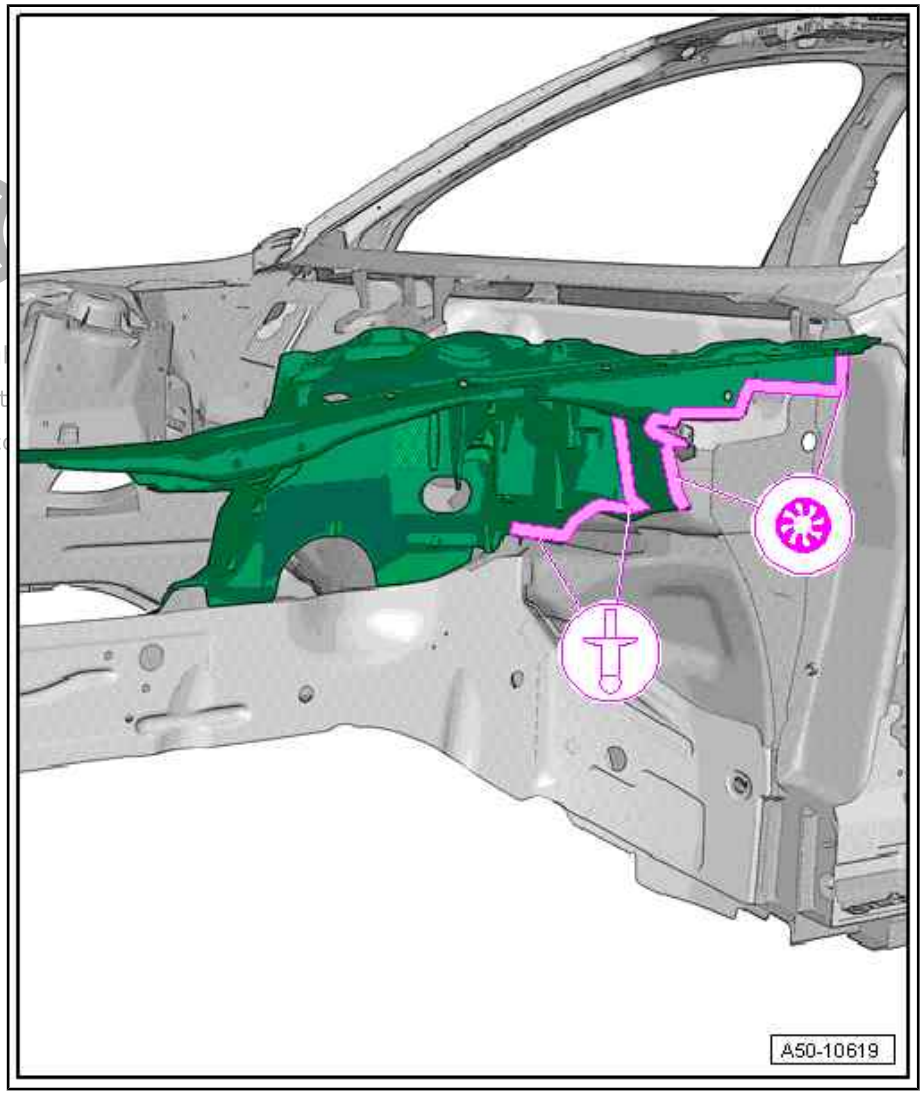
Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.

Welding in

– Rivet in suspension turret using compact booster - VAS 6790/20- and pop rivets - WHT 005 413 A- .
– Weld in new part using shielded arc welding equipment : SG plug weld seam.

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CAUTION

Allow bonded joint on suspension turret to harden for 60 minutes at approx. 65 °C using radiant heater. Check temperature constantly with temperature sensor.

- Welding in upper wing mounting flange ⇒ page 70

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5 Front longitudinal member - Renewal

(Saloon and Avant identical)

NOTICE

Straightening and re-alignment work must not be carried out on the front section of the Audi A6 body, because this could cause cracking in the aluminium castings that may not be externally visible.

1 - Suspension turret

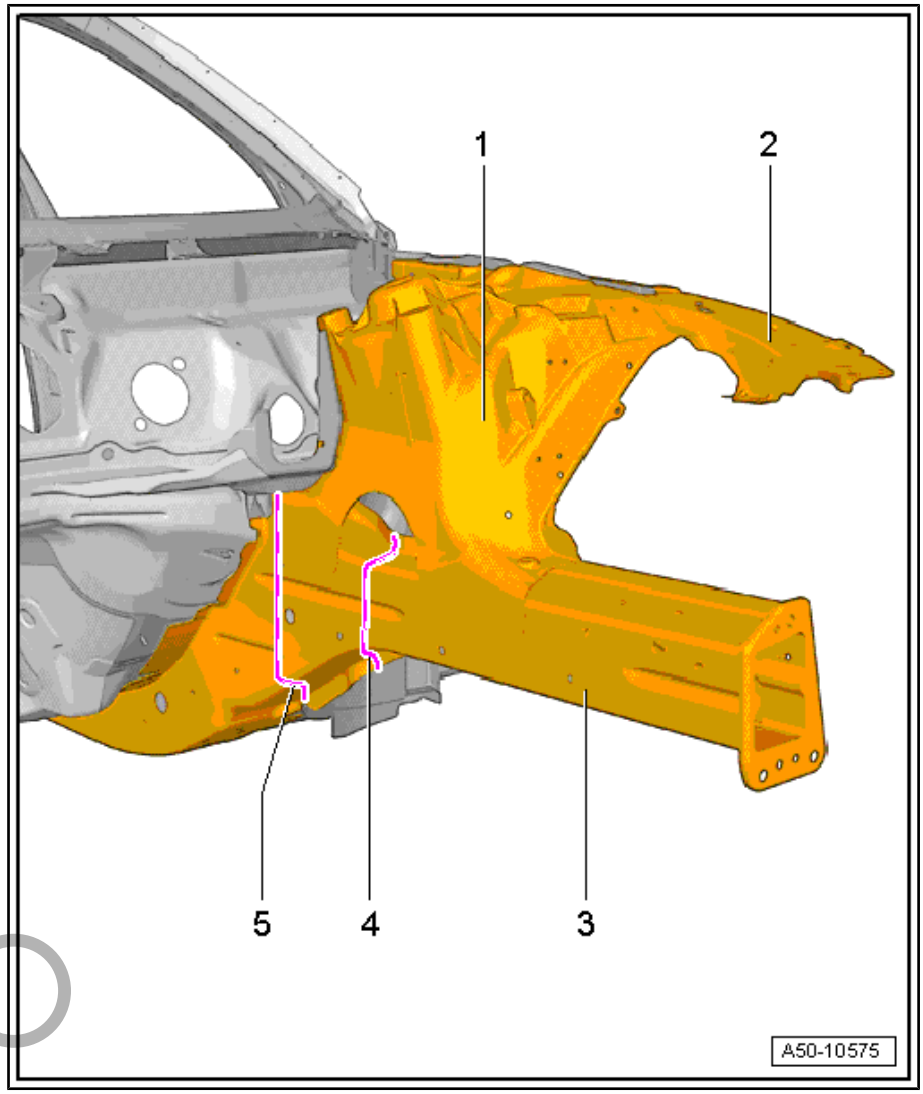
2 - Wing mounting flange

3 - Longitudinal member

4 - Separating cut for partial renewal

Partial renewal
Partial renewal of the longitudinal member is possible using this separating cut.

5 - Separating cut for longitudinal member

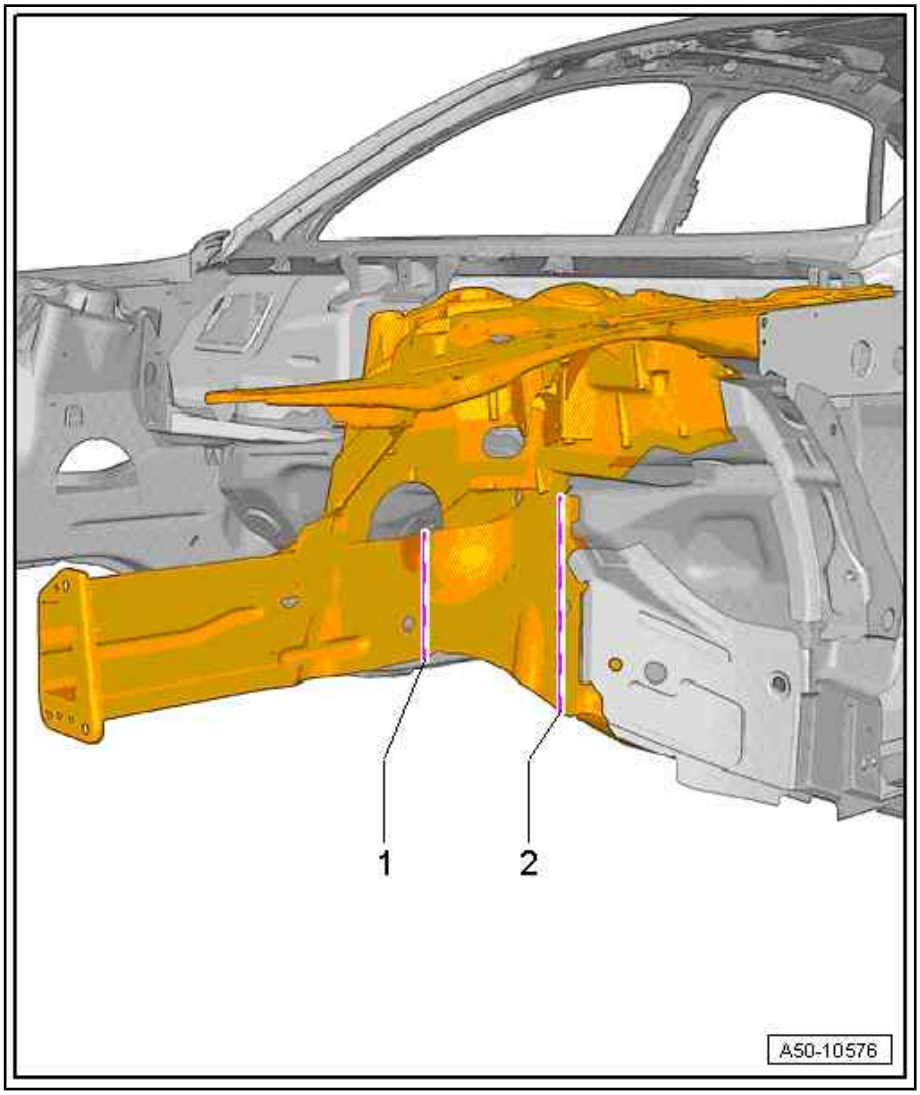


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1 - Separating cut for partial renewal

Partial renewal
Partial renewal is possible with this separating cut.

2 - Separating cut for longitudinal member



5.1 Notes for vehicles with hybrid drive

⇒ page 5

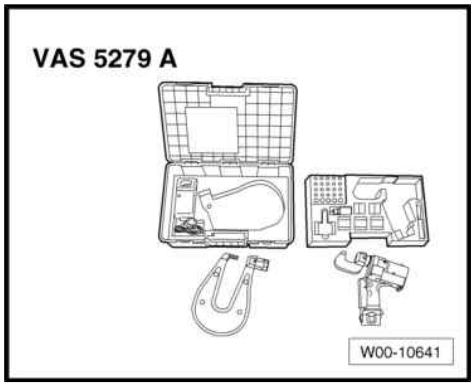
5.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Compact angle grinder
- Compact booster
- Drill
- Body saw
- Spot weld breaker
- Pneumatic glue gun
- Crack testing set

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- Alternatively, you can use the rechargeable riveter - VAS 5279 B- . This is a complete set.



Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

5.3 Procedure

Cutting locations

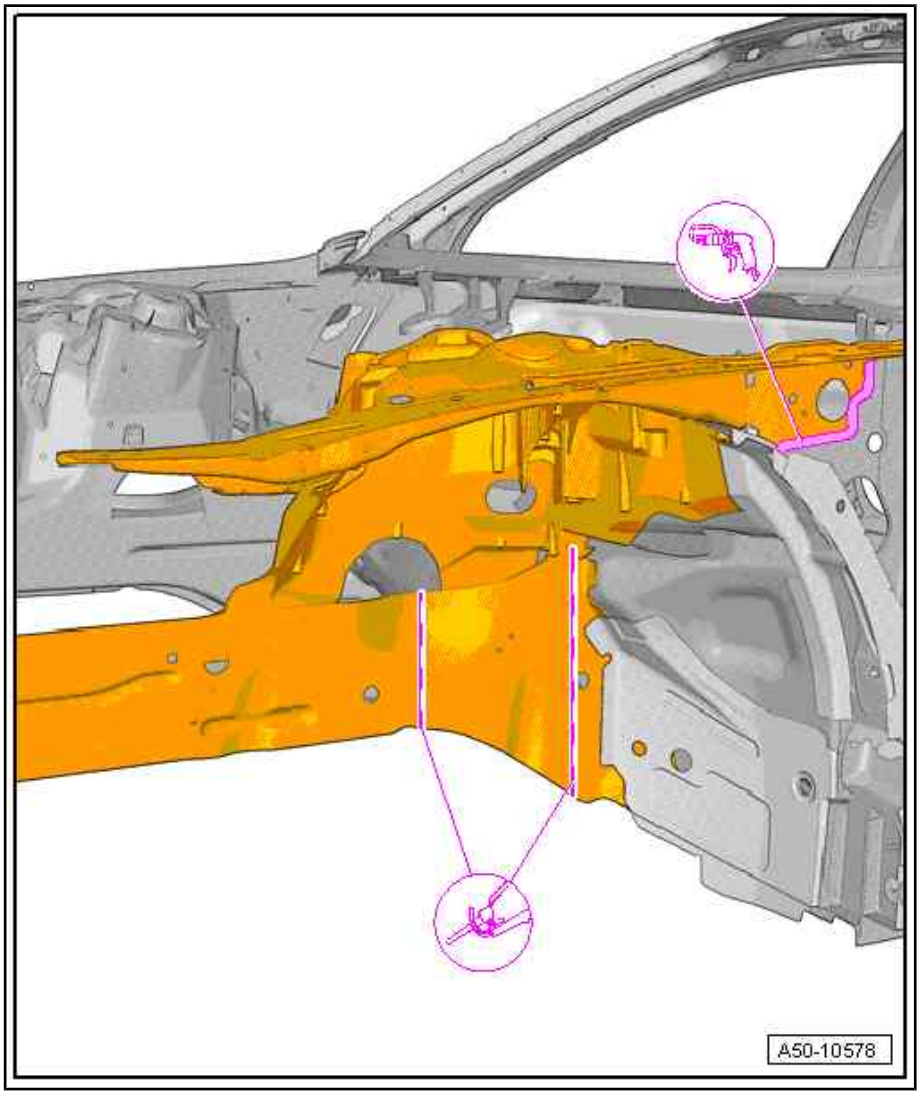
Note

Cover over suspension turret while cutting and welding.

– First make separating cuts on outer closure plate (offset from inner separating cuts) using body saw .

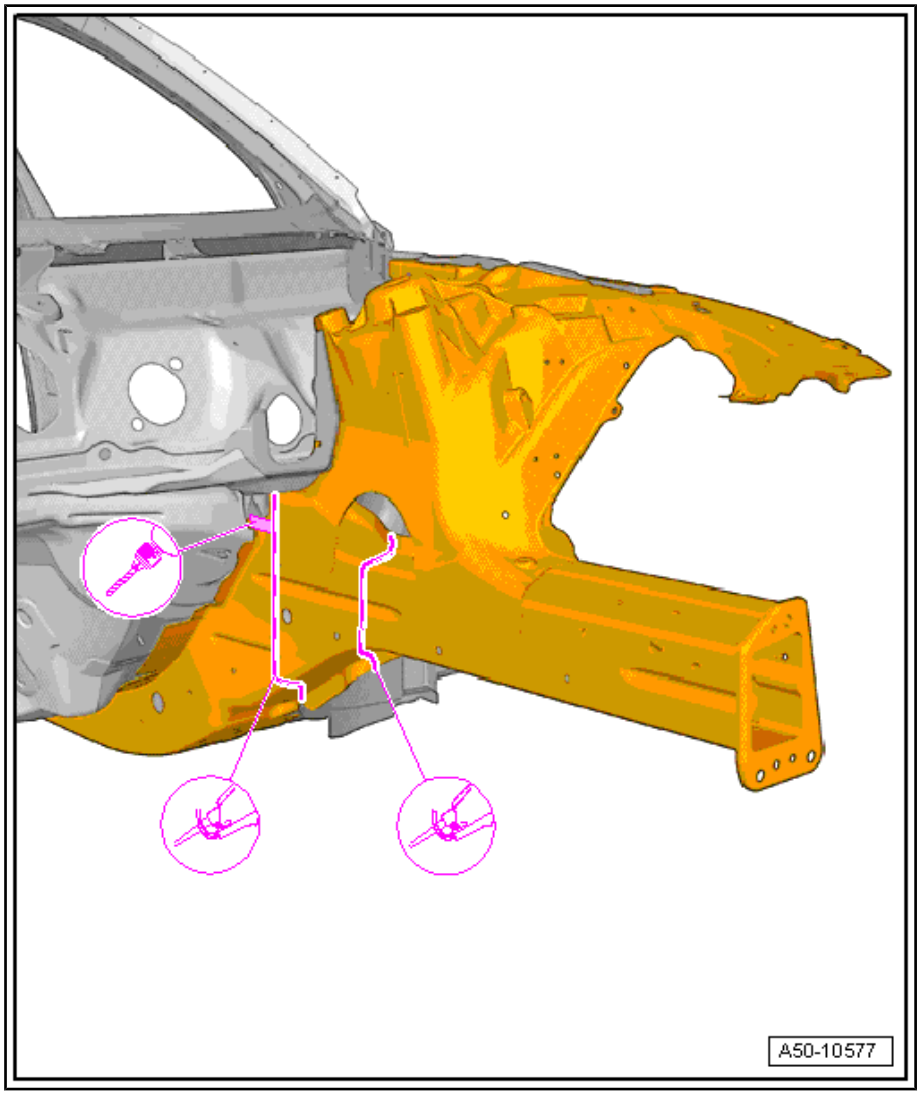
– Separate original joint using spot weld breaker .

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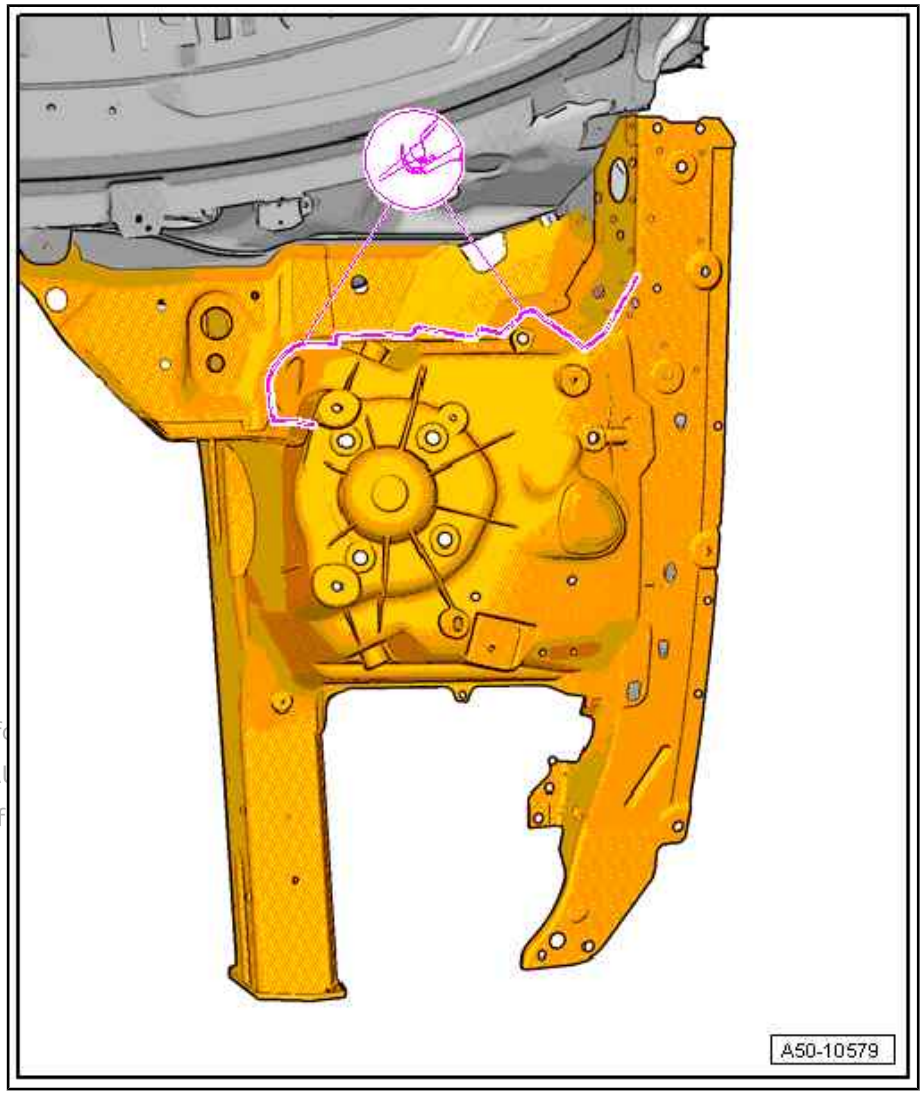
– Make separating cut as shown using body saw .
– Drill out punch rivet using drill (6.0 mm ∅).

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– Roughly cut out suspension turret using body saw .

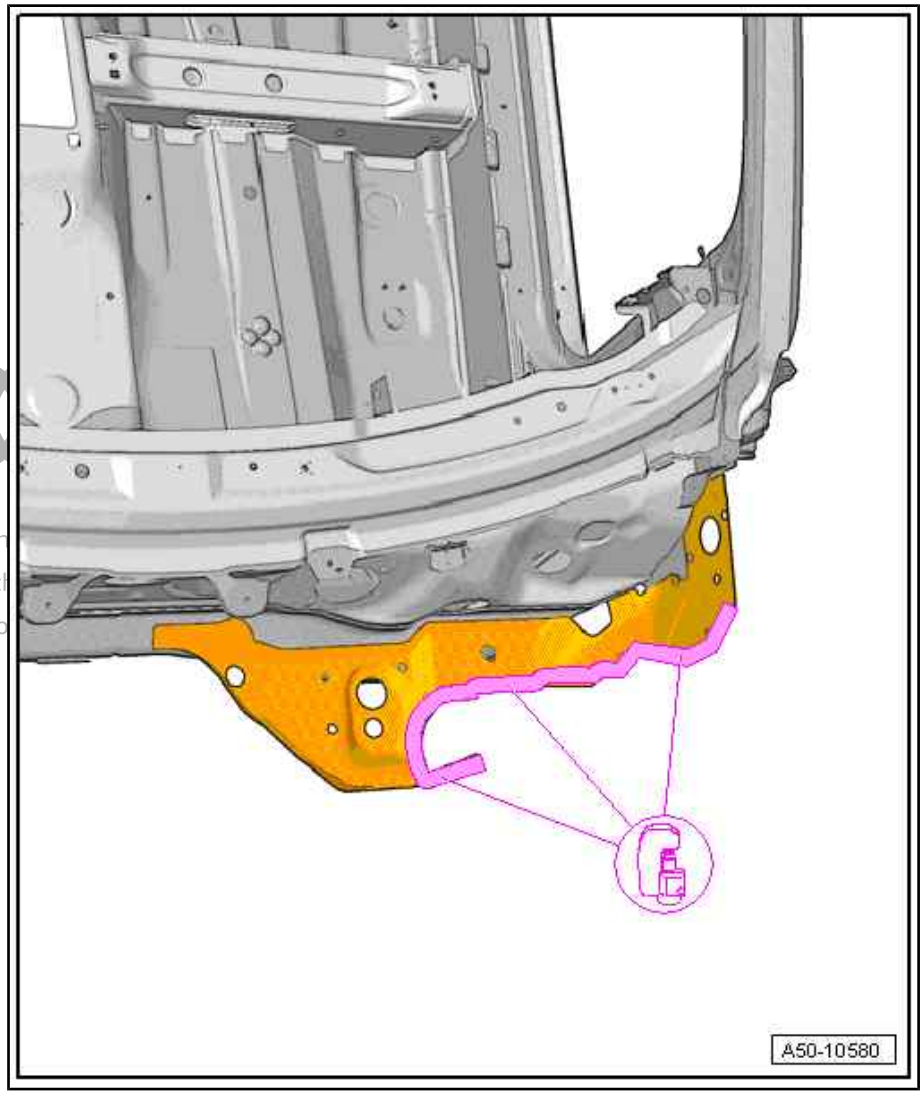
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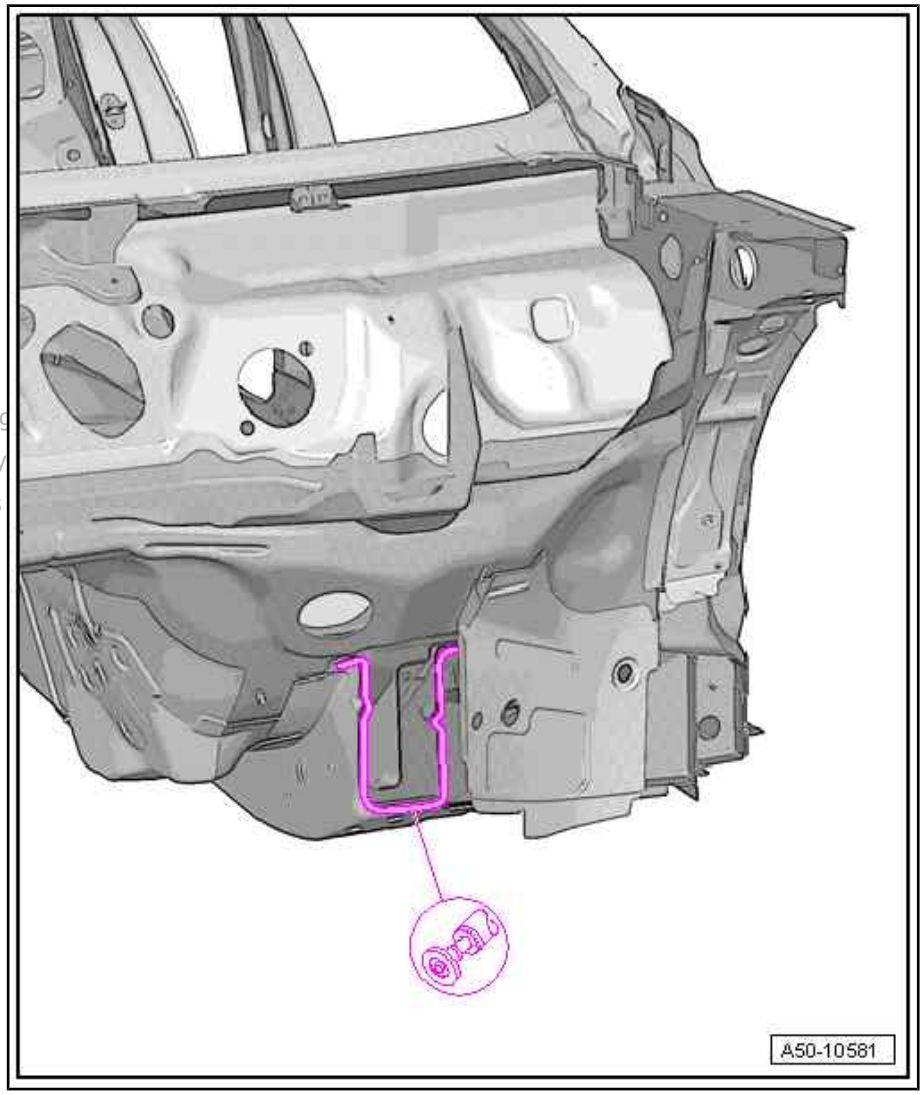
– Remove punch rivets using rechargeable riveter - VAS 5279
A- or compact booster - VAS 6790- ⇒ page 24 .

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– Remove remaining material using compact angle grinder .

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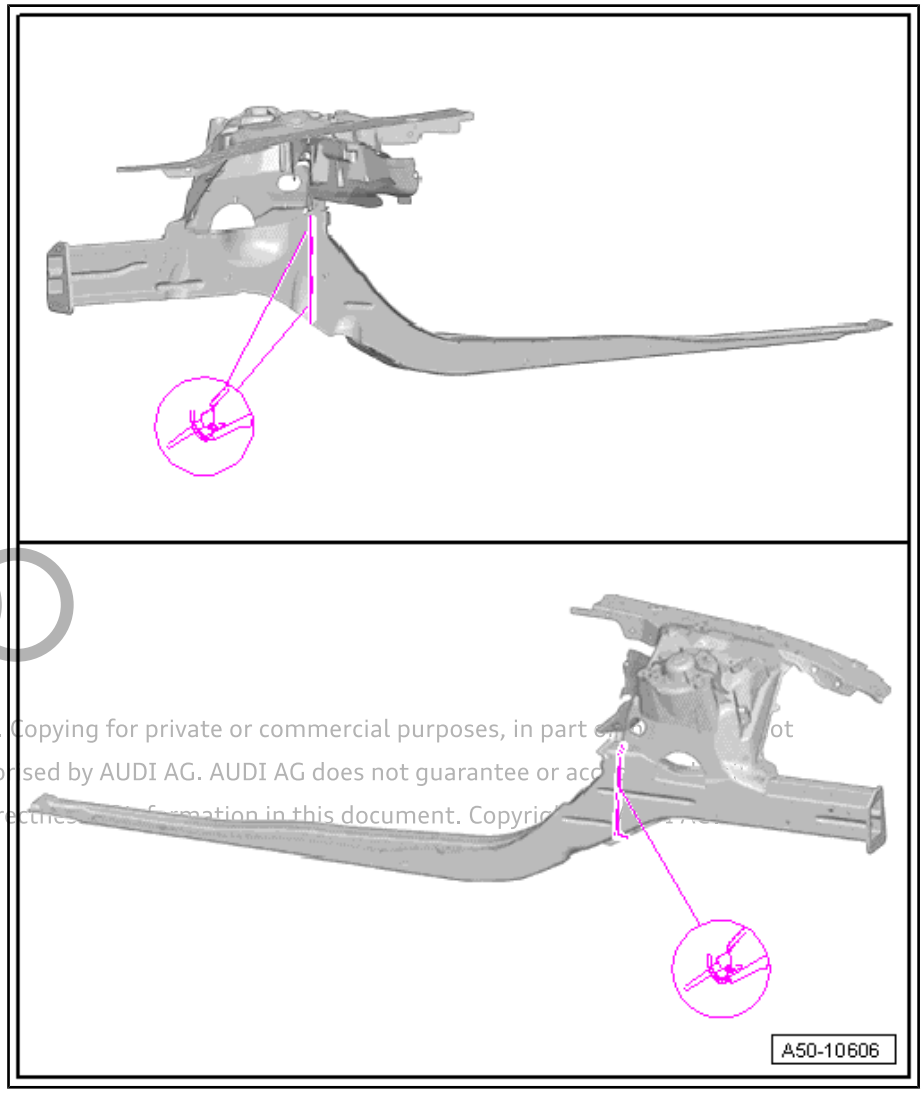


Replacement parts

- Bumper bracket
- Pop rivet - WHT 005 413-
- Longitudinal member
- Applicator - D 009 500 25 -
- Aluminium primer - DA 009 801 -
- Cleaning solution - D 009 401 04-
- 2-component epoxy adhesive - DA 001 730 A2-

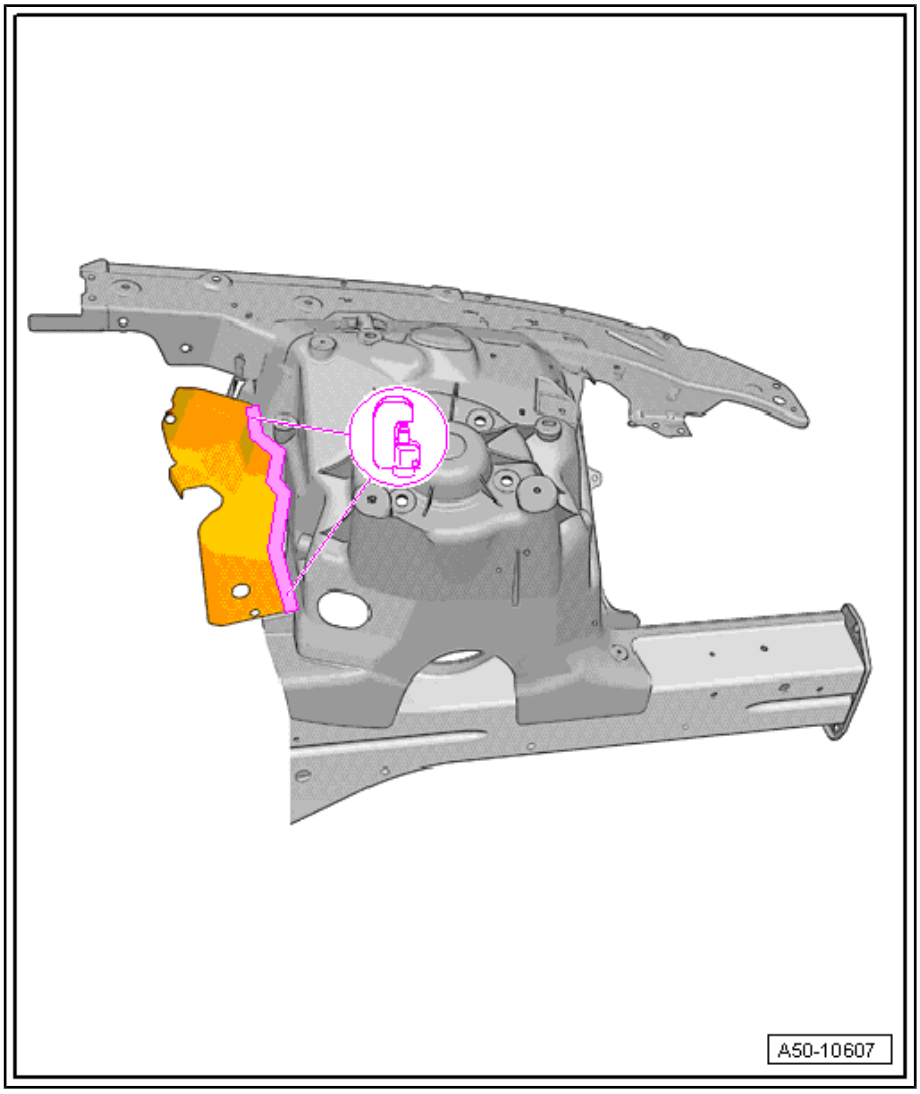
Preparing new part

– Transfer separating cuts to new part and cut to size using body saw .



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– Remove punch rivets using rechargeable riveter - VAS 5279 A- or compact booster - VAS 6790- ⇒ page 24 .

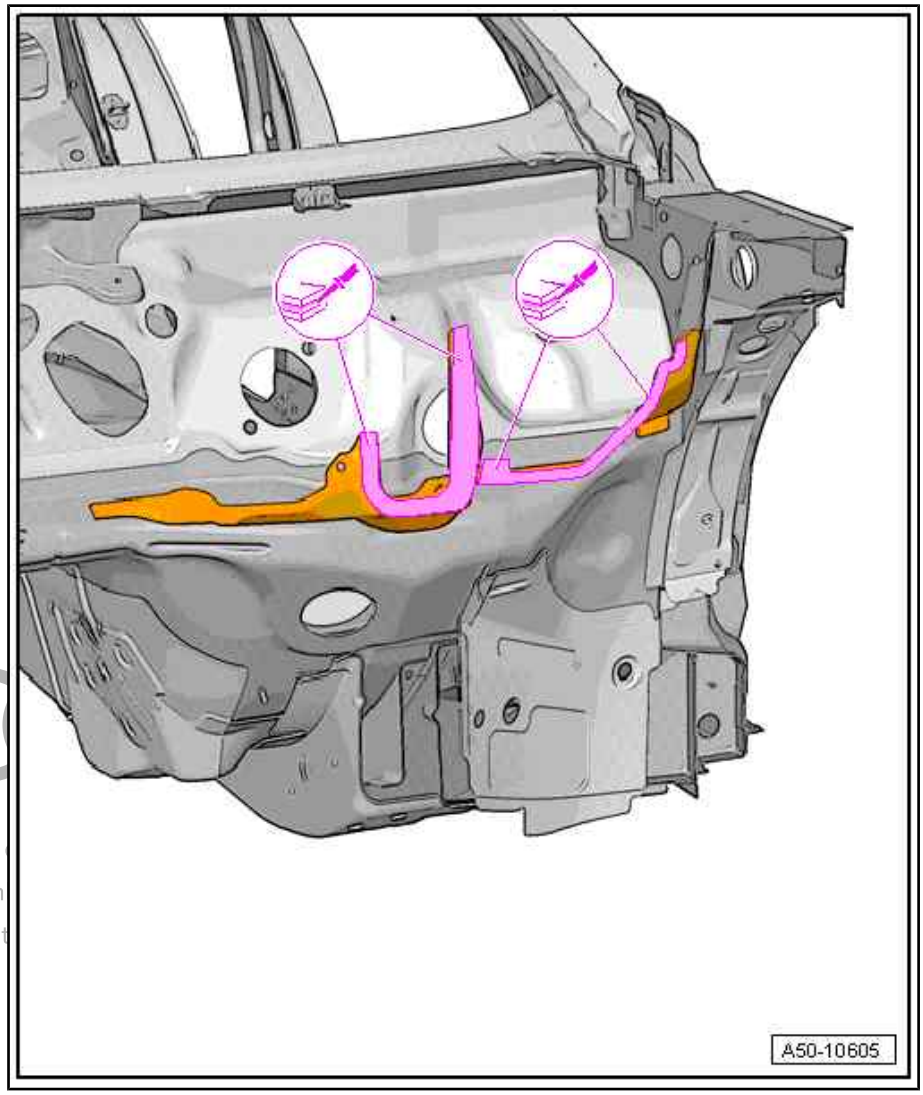


– Take off suspension turret and prepare for riveting.

Preparing joints for adhesive application

– Clean bonding surfaces with cleaning solution - D 009 401 04- .
– Prepare bonding area with silicate stone - DA 009 800 - and clean.
– Apply aluminium primer - DA 009 801 - to bonding surfaces using applicator - D 009 500 25 - .
– Apply 2-component epoxy adhesive - DA 001 730 A2- to entire riveting area using pneumatic glue gun - V.A.G 2005 B- .

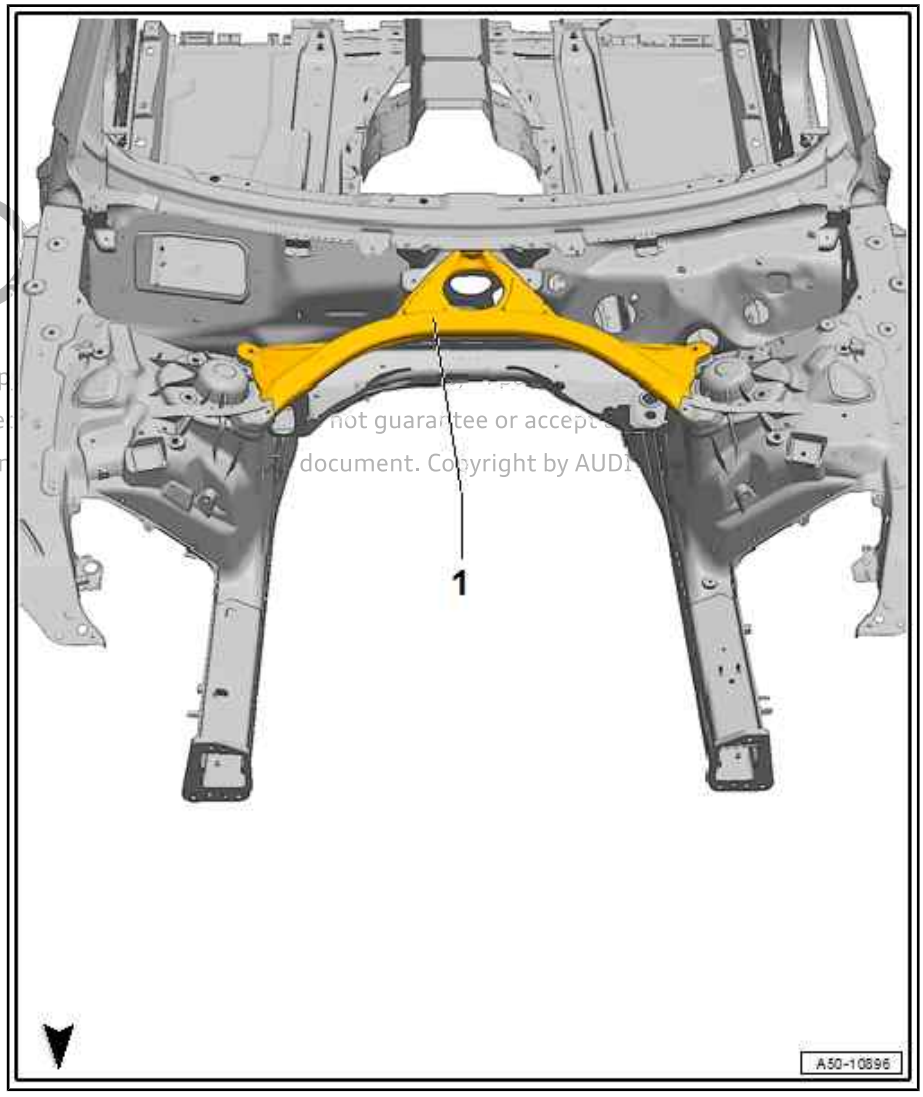
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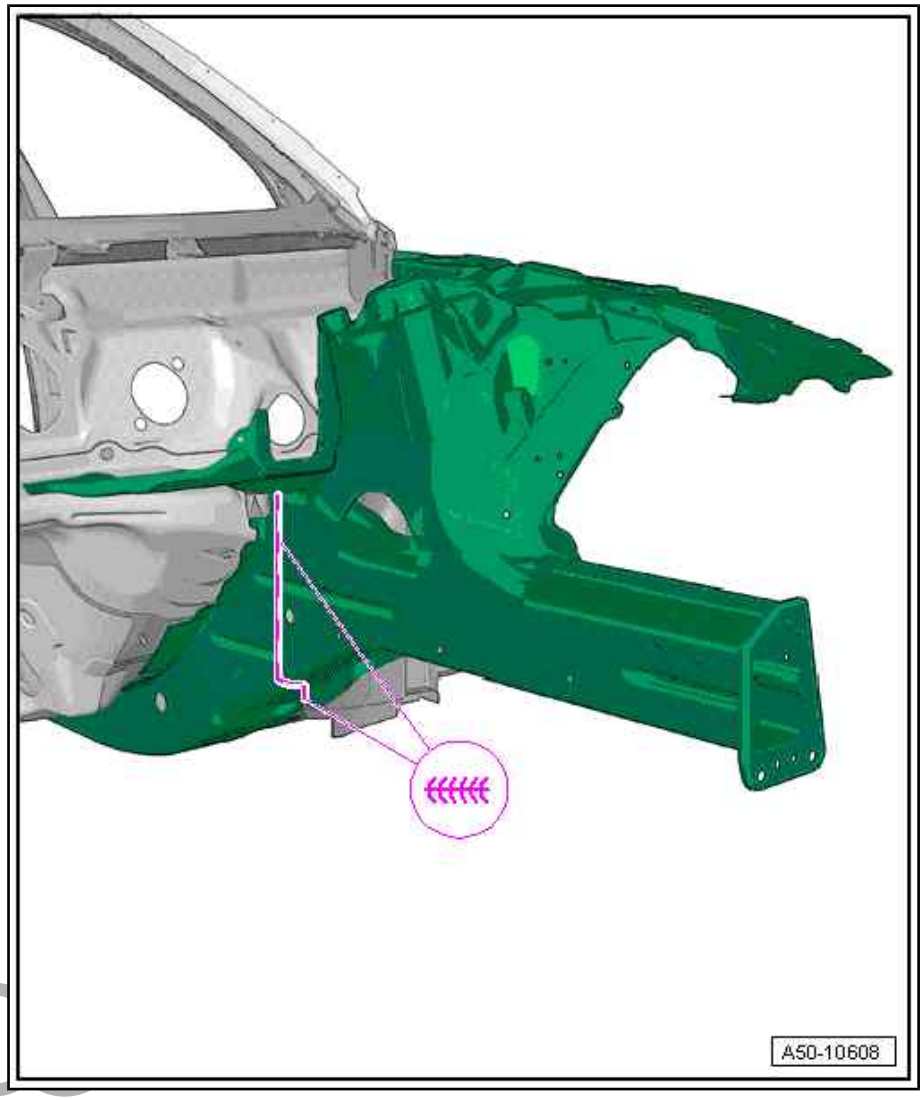
Welding in

– Match up new part with vehicle positioned on alignment bracket set supplement - VAS 6667- and fix in place.
– Bolt body brace -1- to body and suspension turrets on both sides to maintain correct dimensions.



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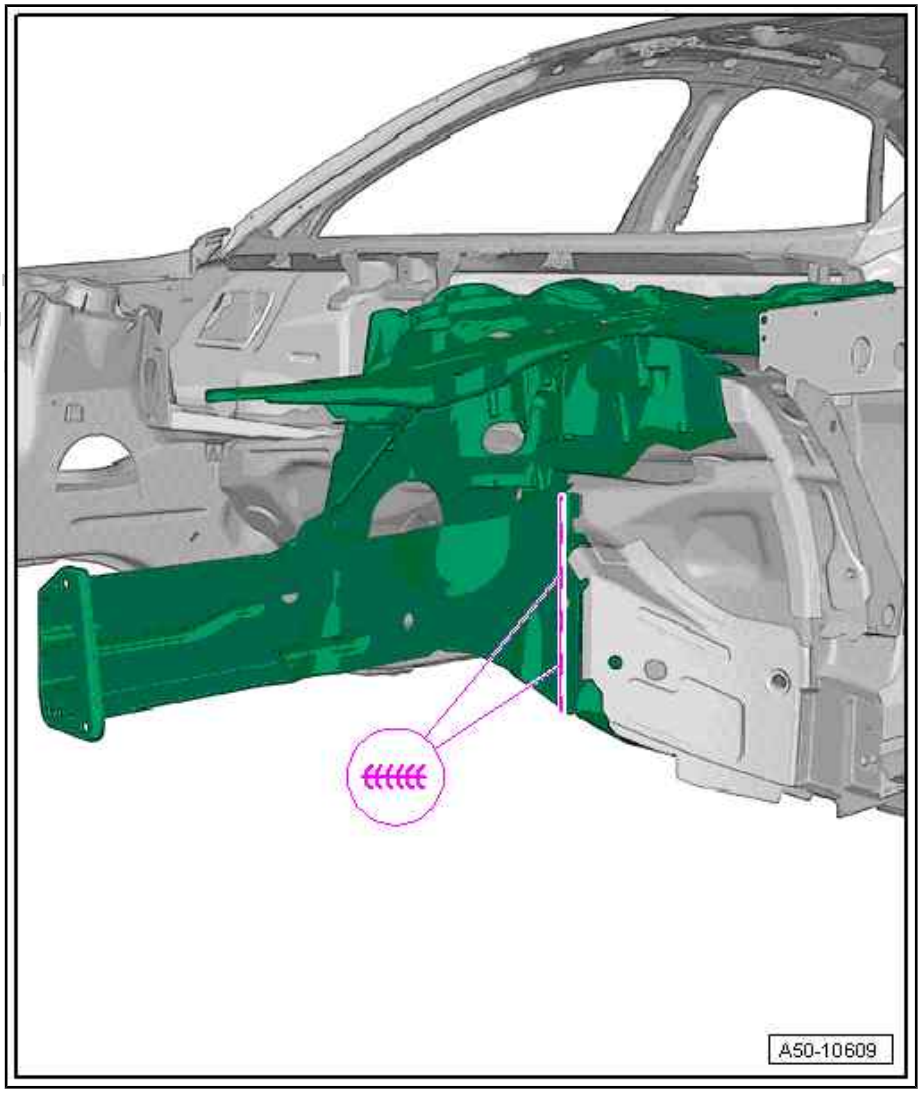
– Weld at separating cuts using shielded arc welding equipment : SG continuous seam.



– Weld at separating cuts using shielded arc welding equipment : SG continuous seam.

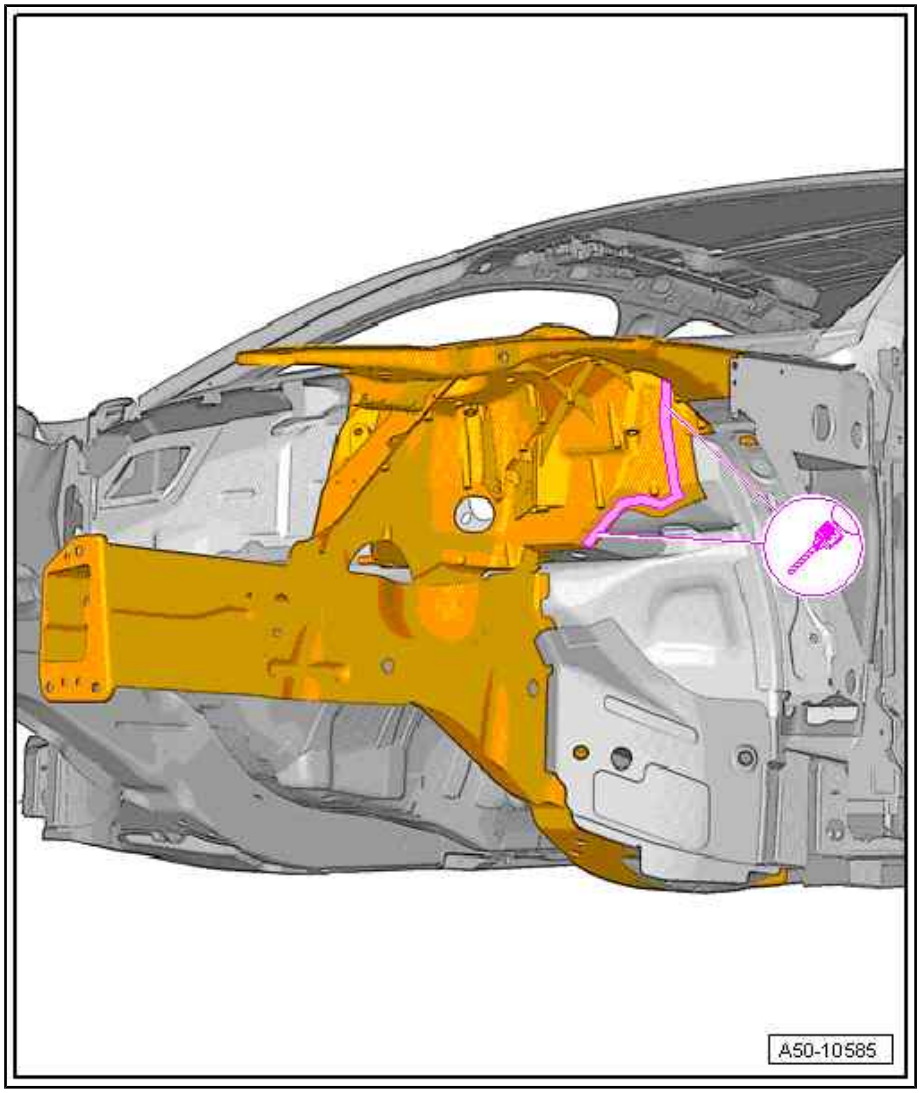
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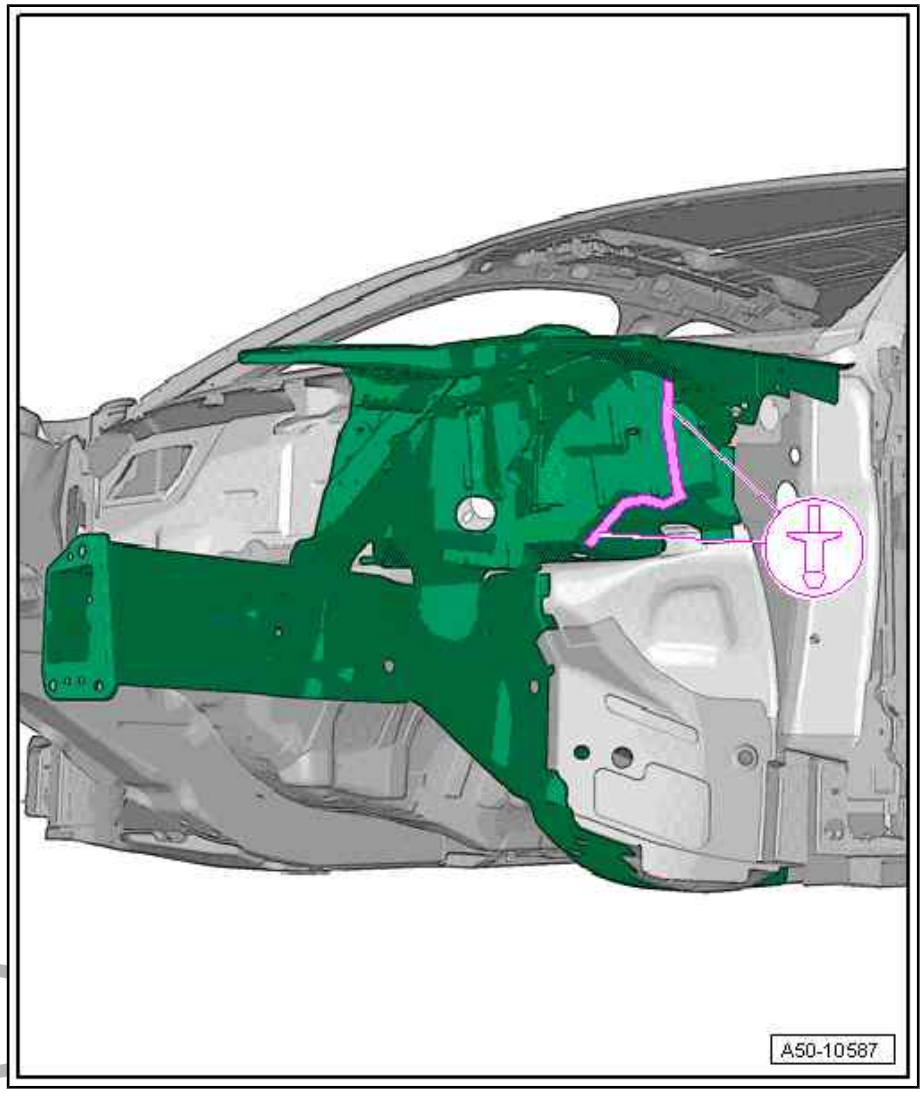
Riveting in

– Match up new part with vehicle positioned on alignment bracket set supplement - VAS 6667- and fix in place.
– Drill holes (6.7 mm ∅) for pop rivet - WHT 005 413- using drill .



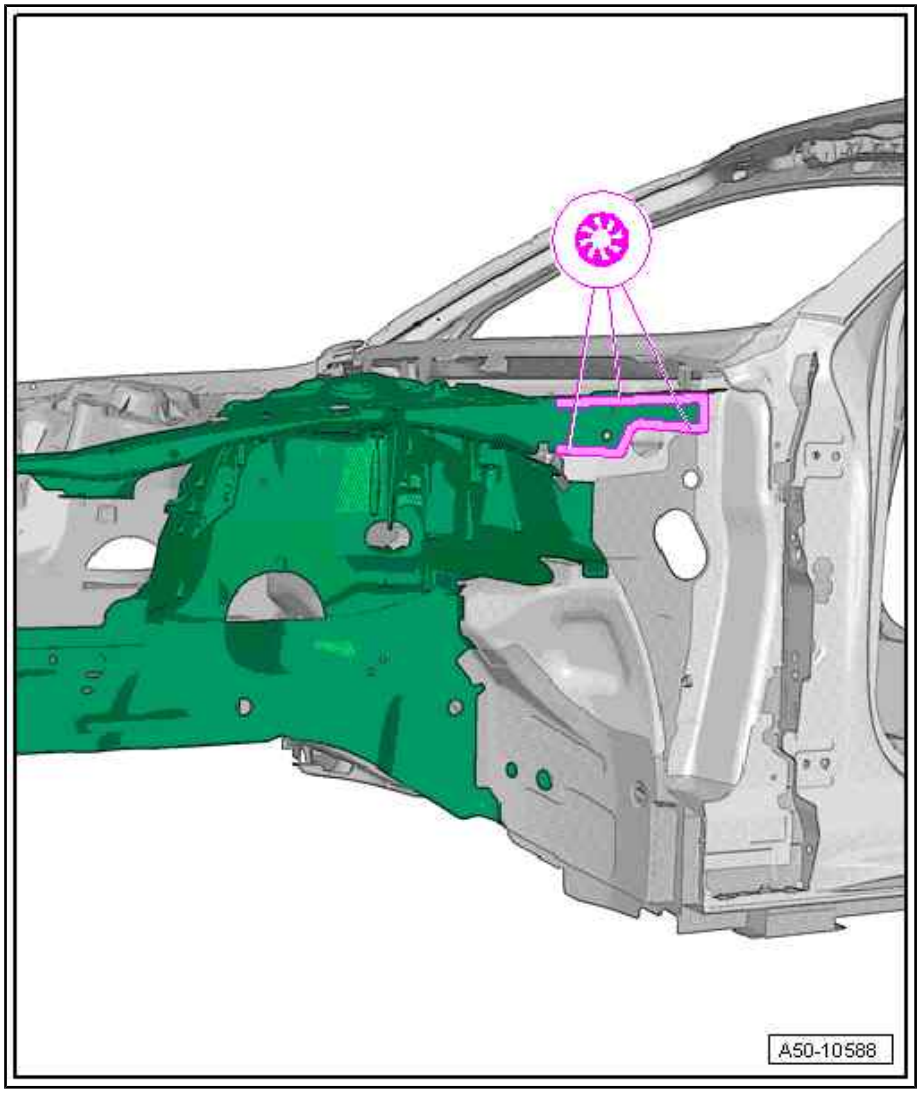
– Rivet in longitudinal member using compact booster - VAS 6790/20- and pop rivets - WHT 005 413 A- .

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– Weld in new part using shielded arc welding equipment : SG plug weld seam.



CAUTION

Allow bonded joint on suspension turret to harden for 60 minutes at approx. 65 °C using radiant heater or paint drying booth. Check temperature constantly with temperature sensor.

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6 Front longitudinal member - Partial renewal (part sections 1 + 2)

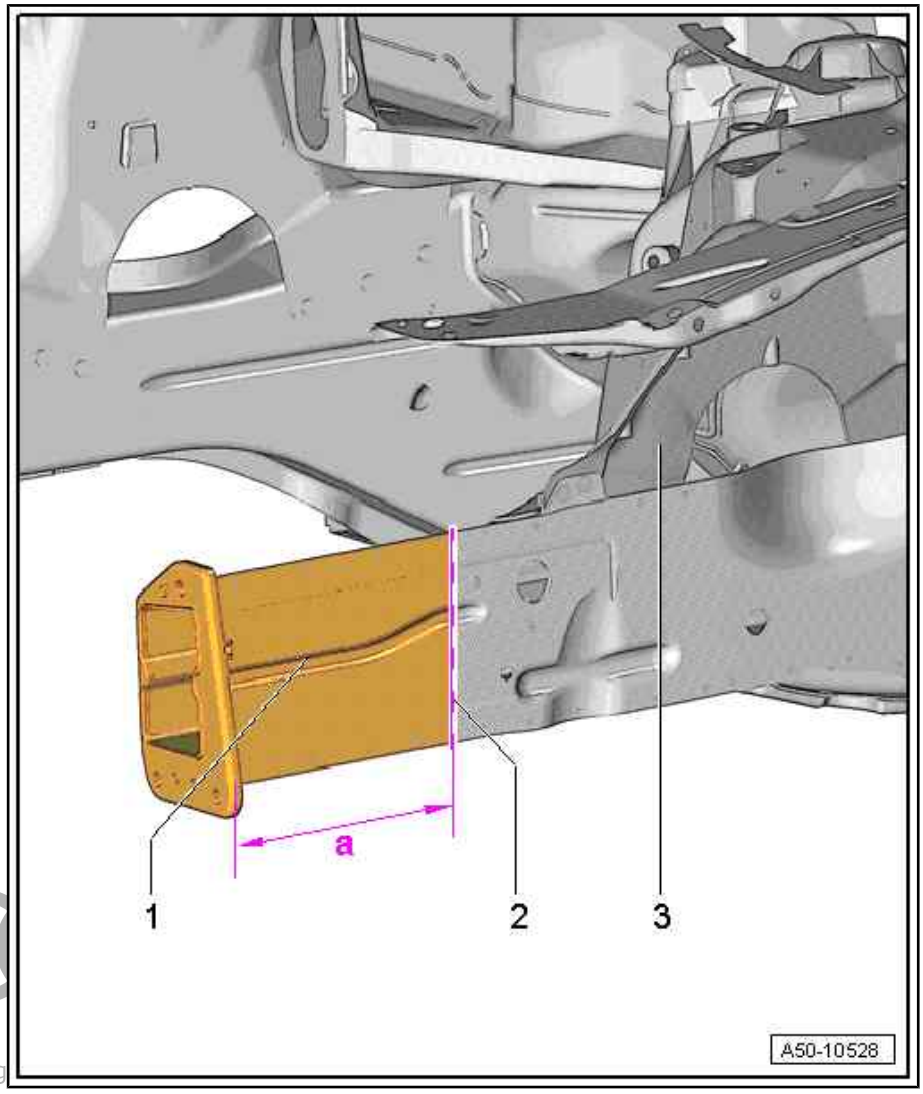
(Saloon and Avant identical)

1 - Longitudinal member (part section)

2 - Separating cut for longitudinal member

Dimension -a- = 140 mm

3 - Suspension turret



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6.1 Notes for vehicles with hybrid drive

⇒ page 5

6.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Compact angle grinder
- Body saw
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

6.3 Procedure

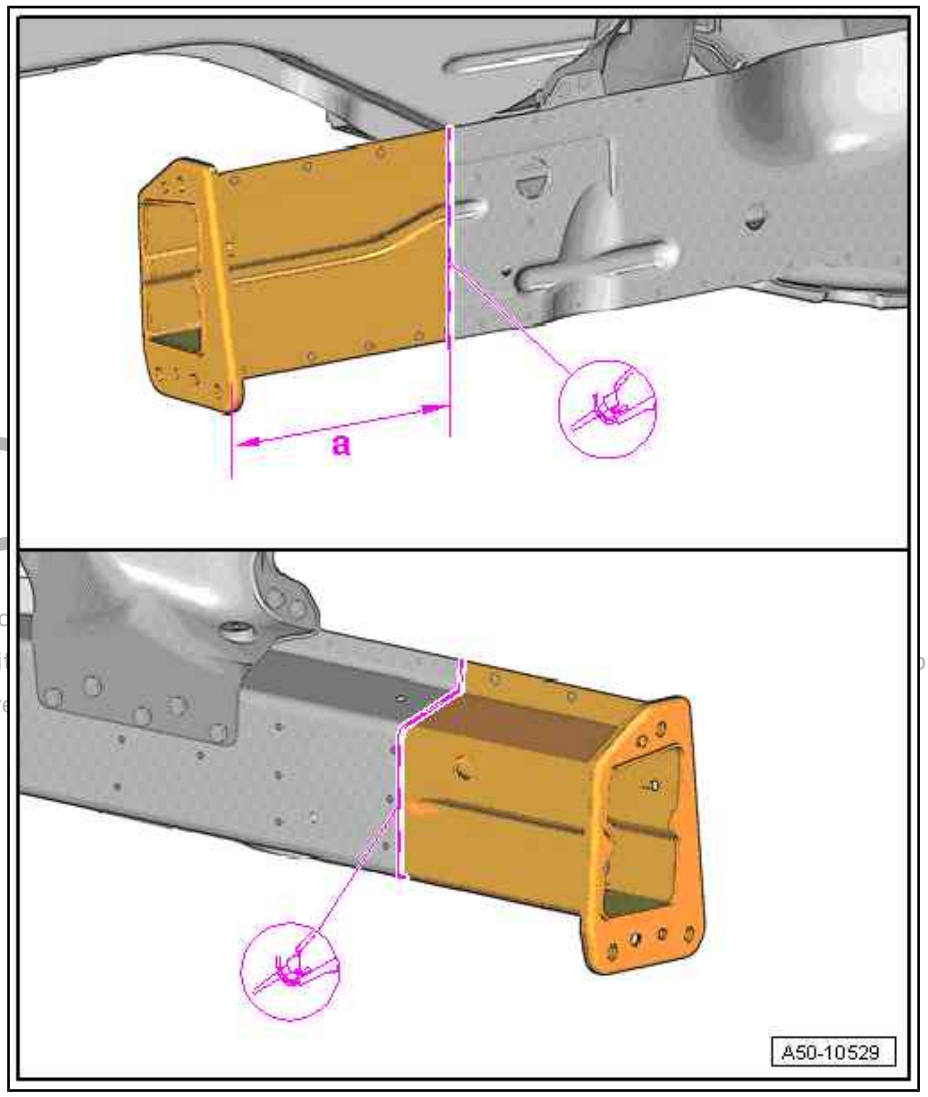
Cutting locations

– Cut out longitudinal member according to dimension -a- using body saw .

Dimension -a- = 140 mm

Note

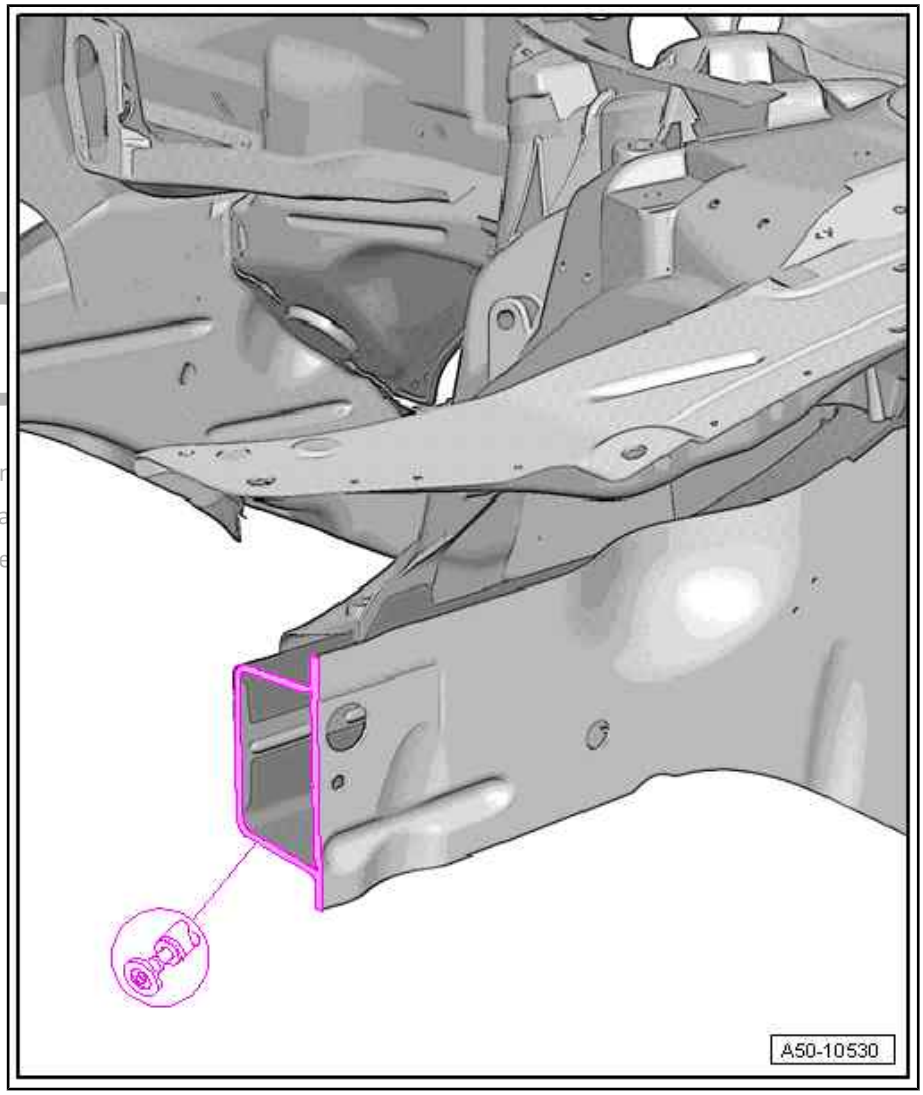
Separating cut must be a straight line.



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– Remove remaining material using compact angle grinder .

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Replacement part

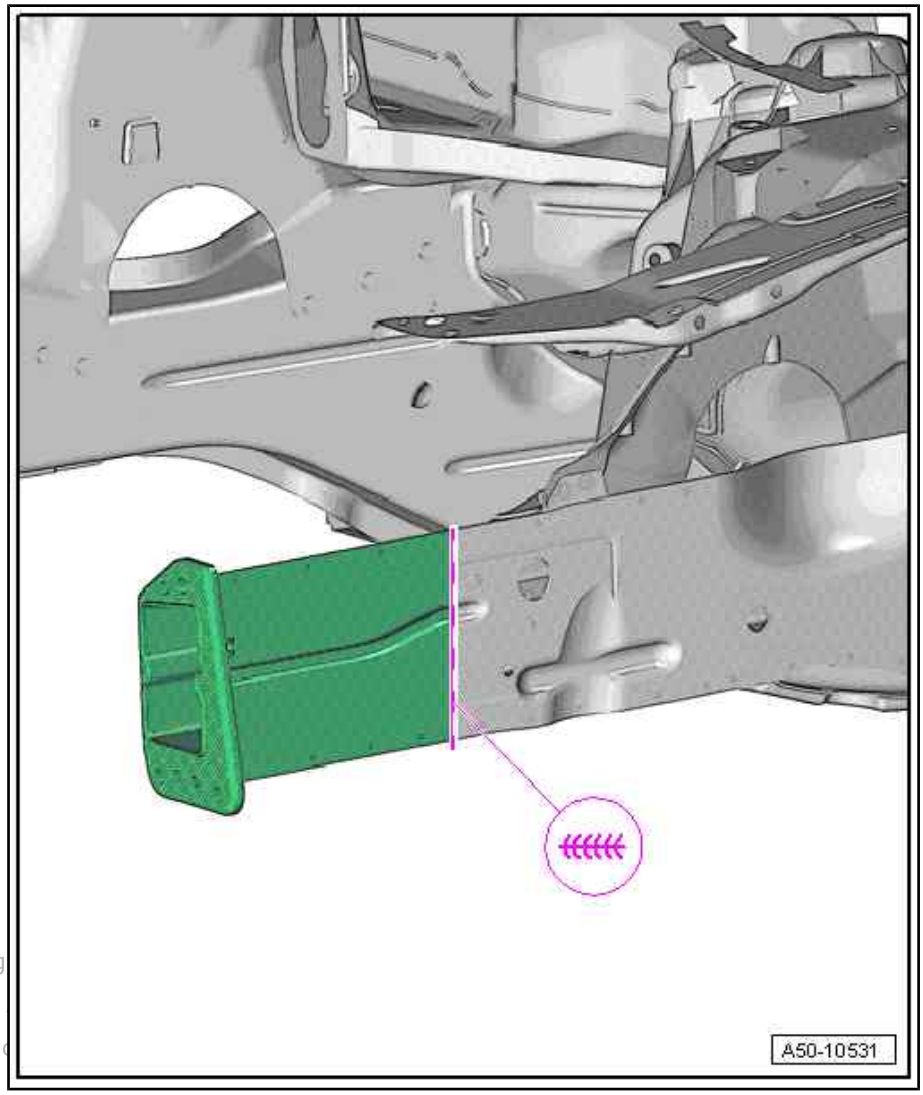
Longitudinal member (part section)

Preparing new part

– Match up new part with vehicle positioned on alignment bracket set supplement - VAS 6667- and fix in place.

Welding in

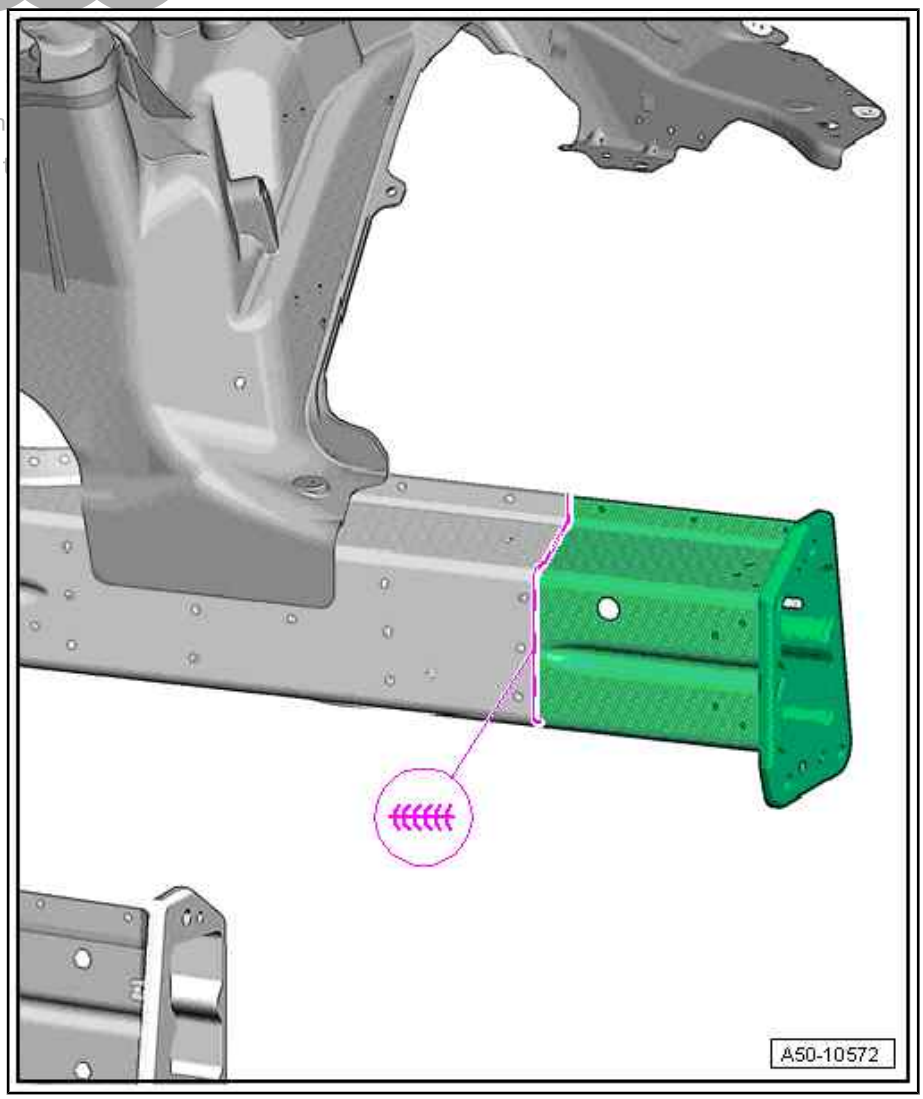
– Weld at separating cut using shielded arc welding equipment : SG continuous seam.



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– Weld at separating cut using shielded arc welding equipment :
SG continuous seam.

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6.3.1 Longitudinal member (part section)

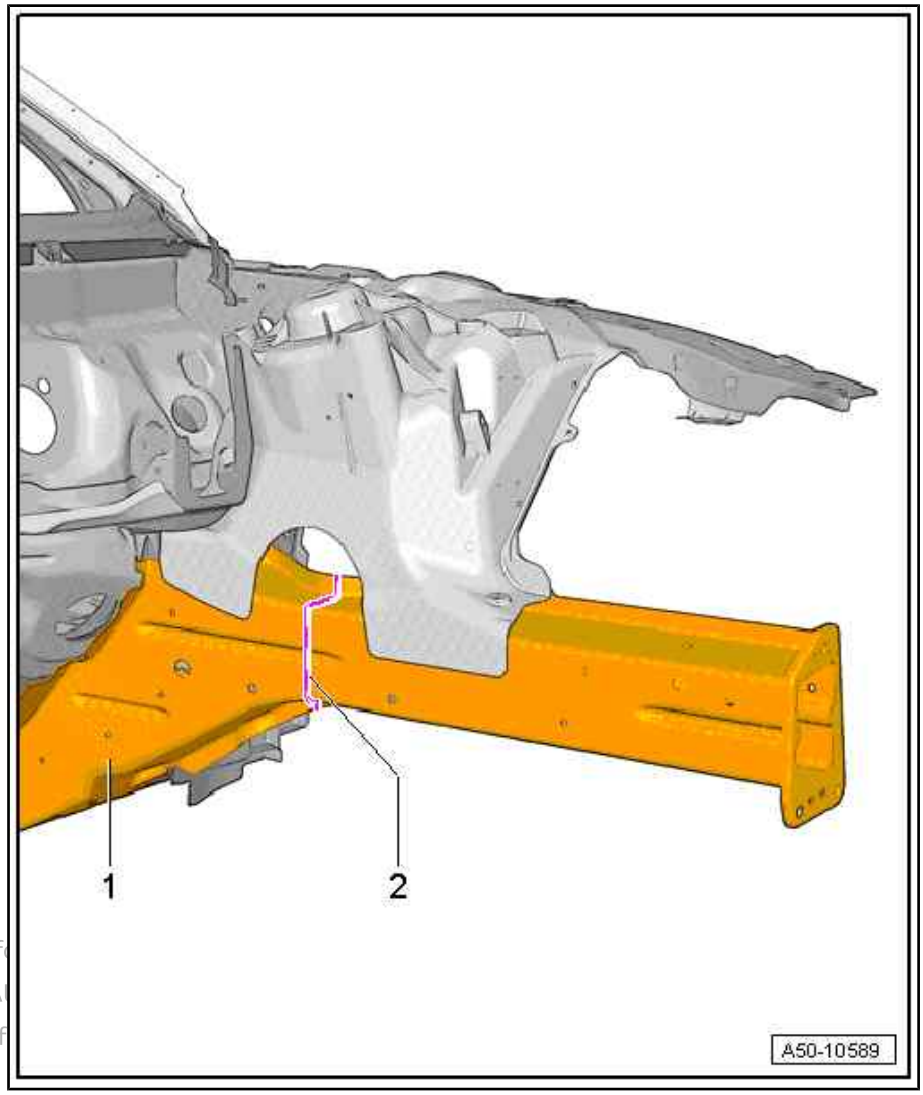
CAUTION

Straightening and re-alignment work must not be carried out on the front section of the Audi A6 body, because this could cause cracking in the aluminium castings that may not be externally visible.

1 - Longitudinal member

2 - Separating cut for partial renewal

Partial renewal
Partial renewal of the longitudinal member is possible using this separating cut.



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6.3.2 Notes for vehicles with hybrid drive

⇒ page 5

6.3.3 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Compact angle grinder
- Shielded arc welding equipment
- Body saw
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

6.3.4 Procedure

Cutting locations

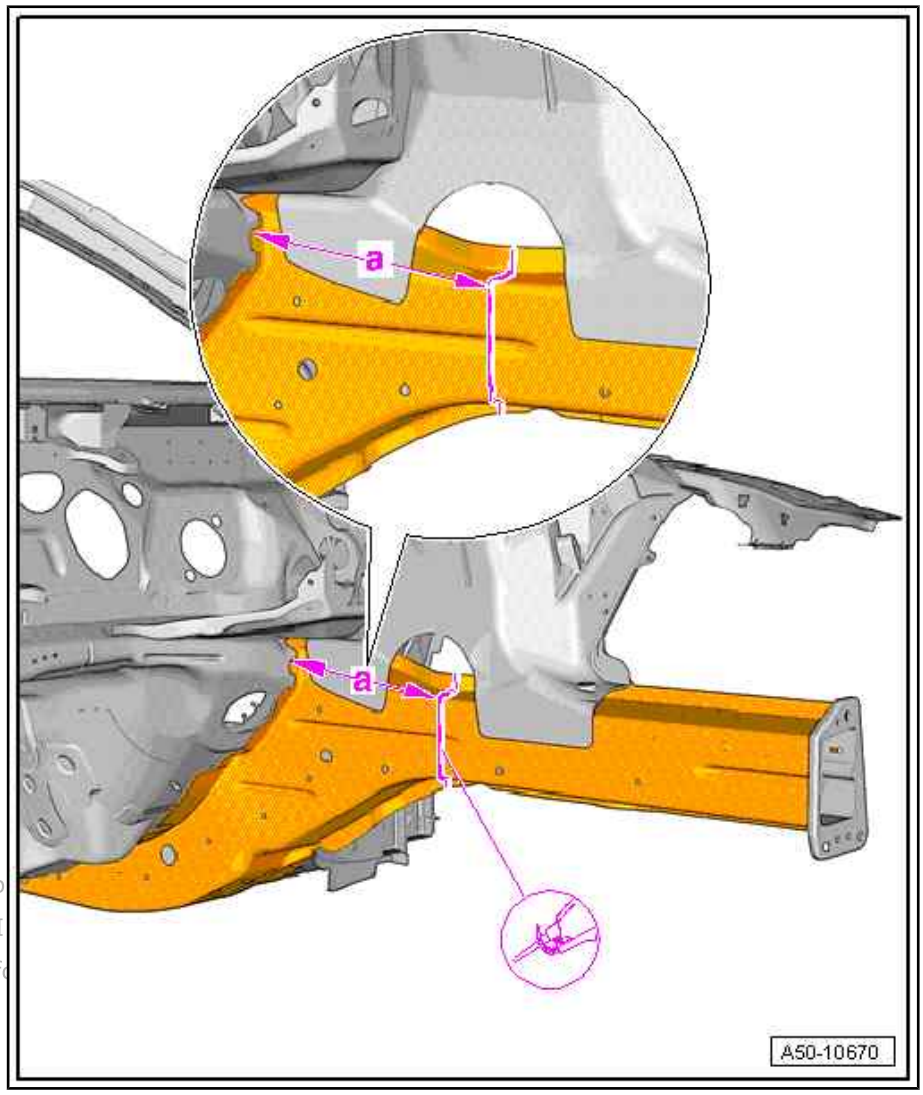
Note

This separating cut on the longitudinal member may only be made in the area shown. If damage to the longitudinal member extends further it must be renewed completely.

– Cut out longitudinal member using body saw .

– Make separating cut for longitudinal member using body saw (keep to dimension -a-).

Dimension -1- = 240 mm

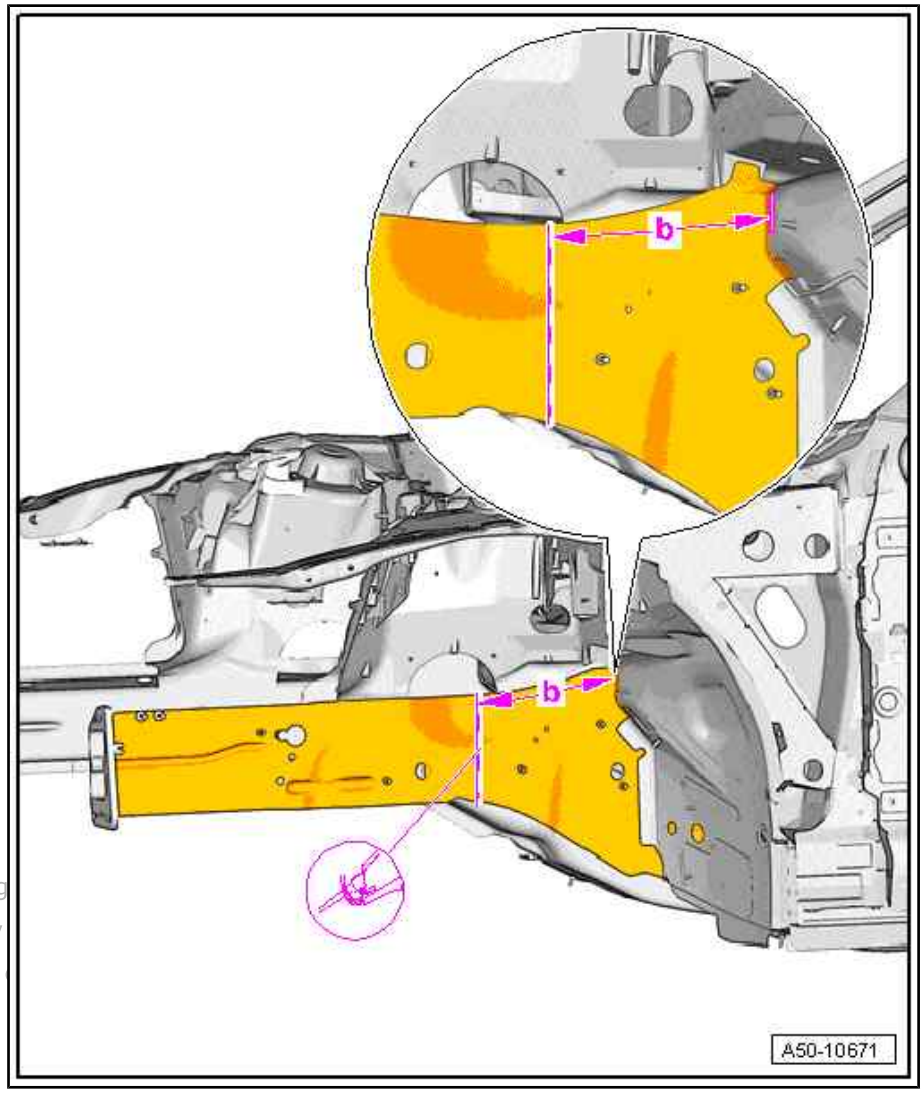


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– Drill out riveted joint using drill .

– First make separating cuts on outer closure plate according to dimension -b- using body saw .

Dimension -b- = 190 mm



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Replacement parts

- Longitudinal member
- 2-component epoxy adhesive - DA 180 A00 A2 - , 2 sets of cartridges
- Aluminium primer - DA 009 801 -
- Applicator - D 009 500 25 -
- Cleaning solution - D 009 401 04-
- Pop rivet - WHT 005 413-

CAUTION

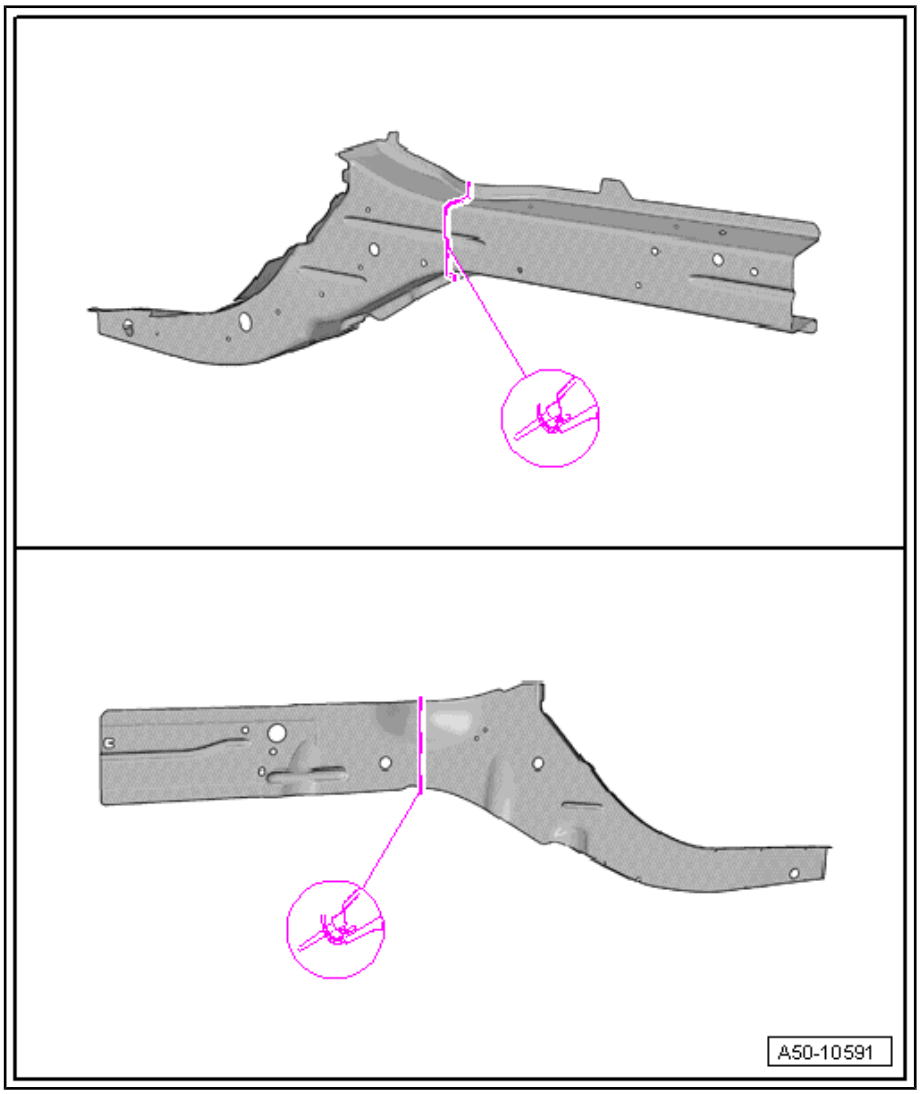
Allow bonded joint on suspension turret to harden for 60 minutes at approx. 65 °C using radiant heater or paint drying booth. Check temperature constantly with temperature sensor.

Preparing new part

– Clean bonding surfaces with cleaning solution - D 009 401 04- .

– Prepare bonding area with silicate stone - DA 009 800 - and clean.

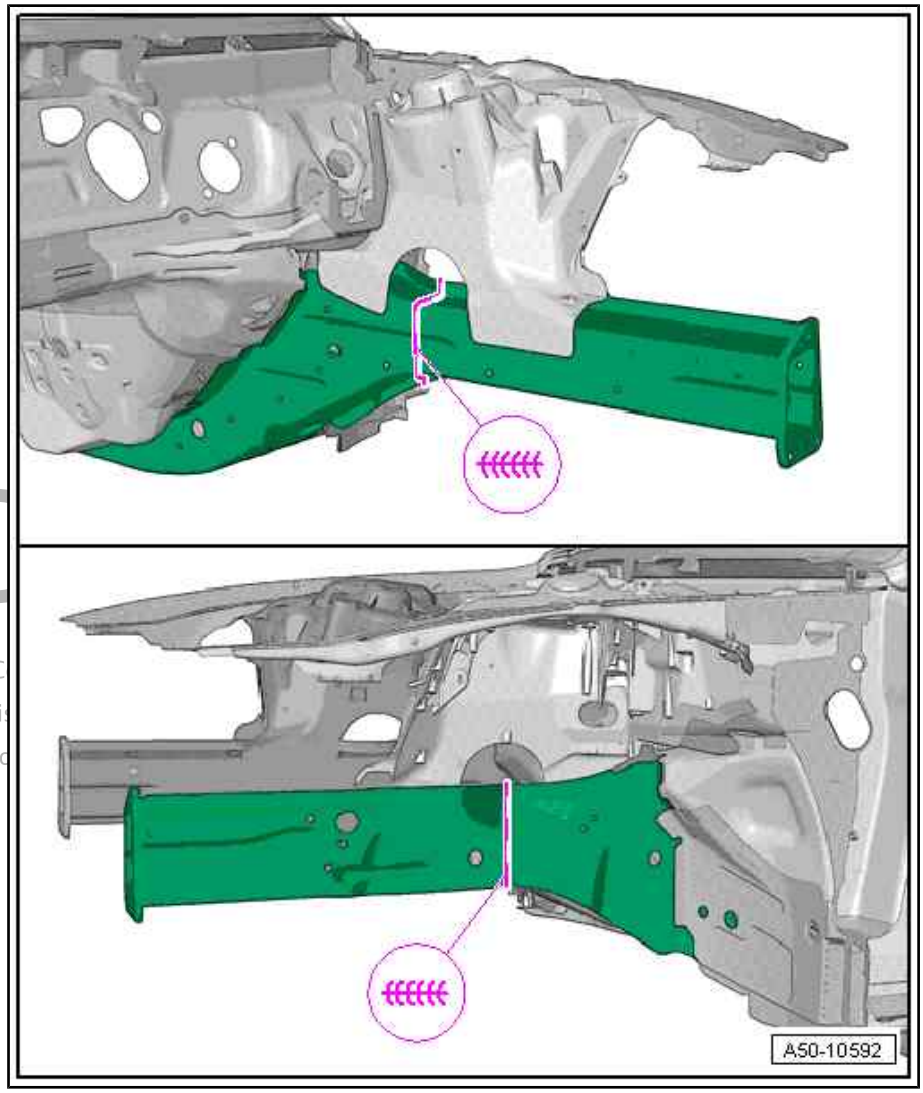
– Apply aluminium primer - DA 009 801 - to bonding surfaces using applicator - D 009 500 25 - .
– Apply 2-component epoxy adhesive - DA 001 730 A2- to entire riveting area using pneumatic glue gun - V.A.G 2005 B- .
– Transfer separating cuts to new part and cut to size using body saw .



Welding in

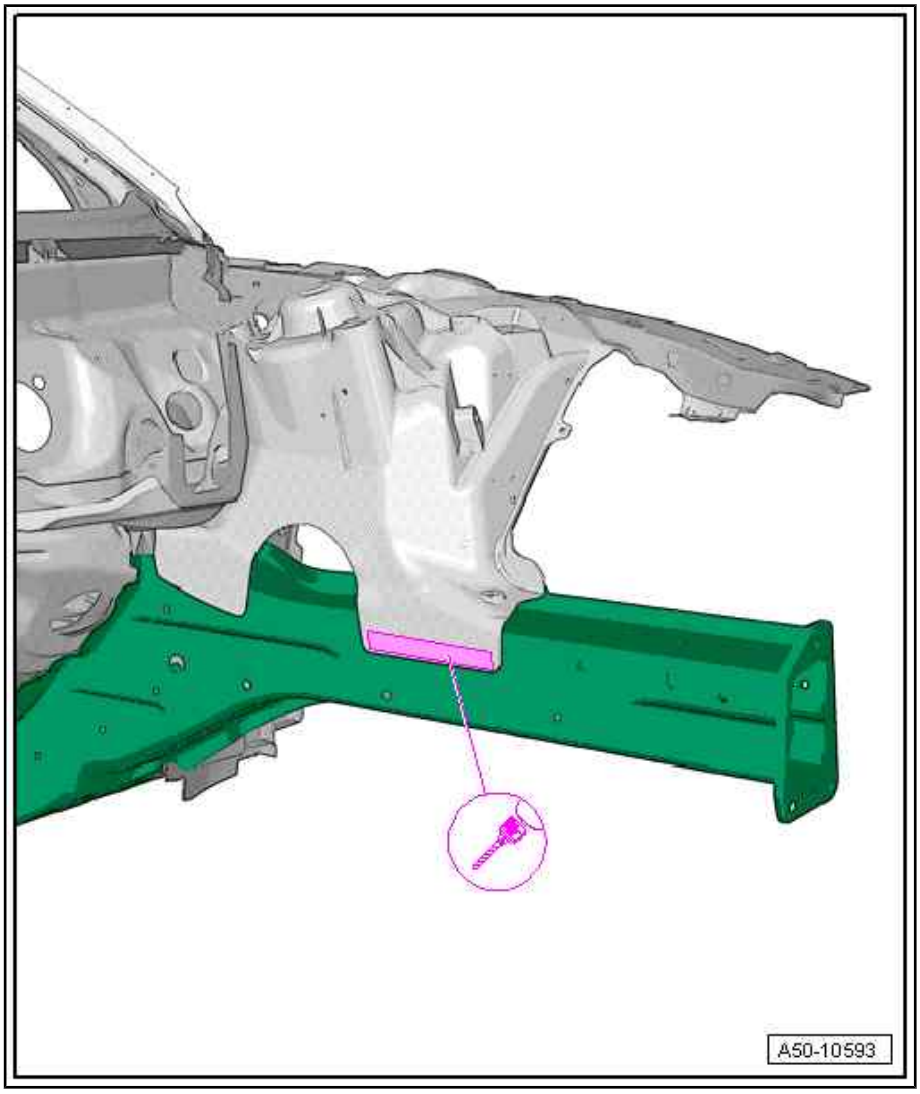
– Weld longitudinal member using shielded arc welding equipment : SG continuous seam.

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– Drill holes (6.7 mm ∅) for pop rivet - WHT 005 413- using drill .

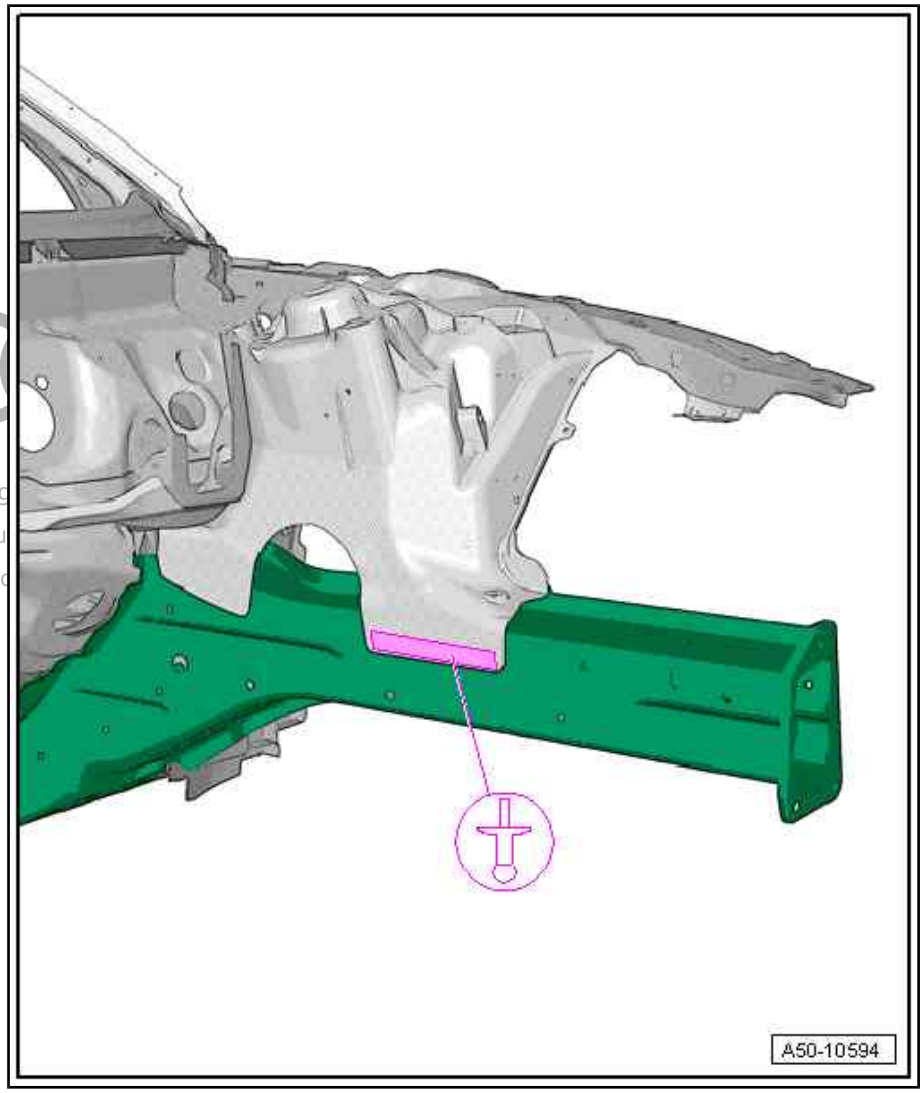


Riveting in

– Rivet in longitudinal member using compact booster - VAS 6790/20 - and pop rivet - WHT 005 413- .

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7 Repairing threads for attachment of subframe

(Saloon and Avant identical)

- Subframe removed ⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe, anti-roll bar, suspension links

Note

The following description shows the thread repair for the front subframe attachment; the procedure for the other attachments is basically the same.

7.1 Notes for vehicles with hybrid drive

⇒ page 5

7.2 Tools

Special tools and workshop equipment required

- Thread repair kit M12x1.5 - VAS 6058-
- Drill - VAS 6267-
- Compact angle grinder - VAS 5167-

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

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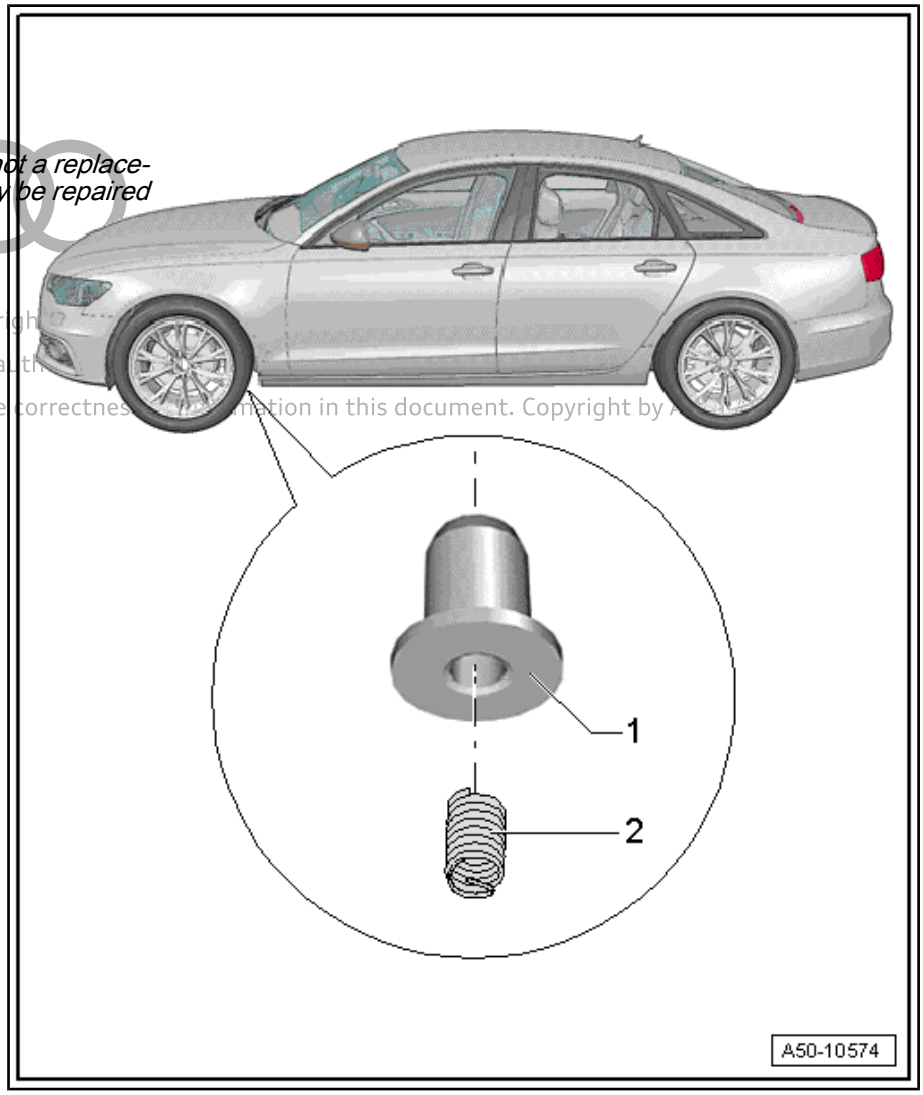
1 - Threaded plate (welded into subframe)

Note

The threaded plate is not a replacement part and may only be repaired once if damaged.

2 - Helicoil thread insert

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Contents of thread repair kit

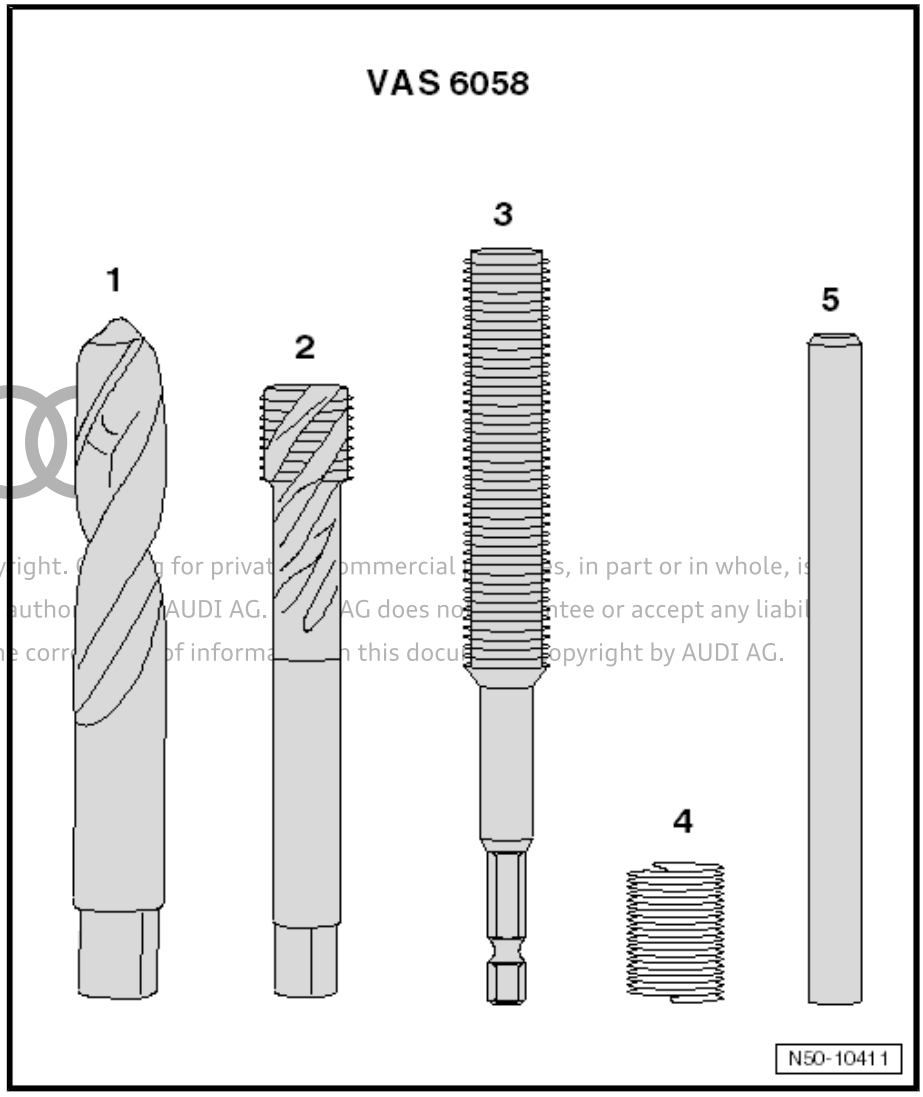
1 - Drill bit ∅ 12.5 mm

2 - Thread tap M 12 x 1.5

3 - Fitting spindle

4 - Thread insert M 12 x 1.5 x 24 (-VAS 6058/1-)

5 - Pin breaker with magnetic tip

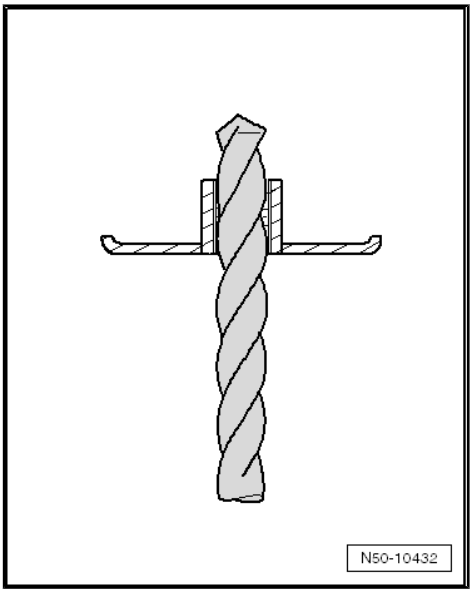


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Repairing thread

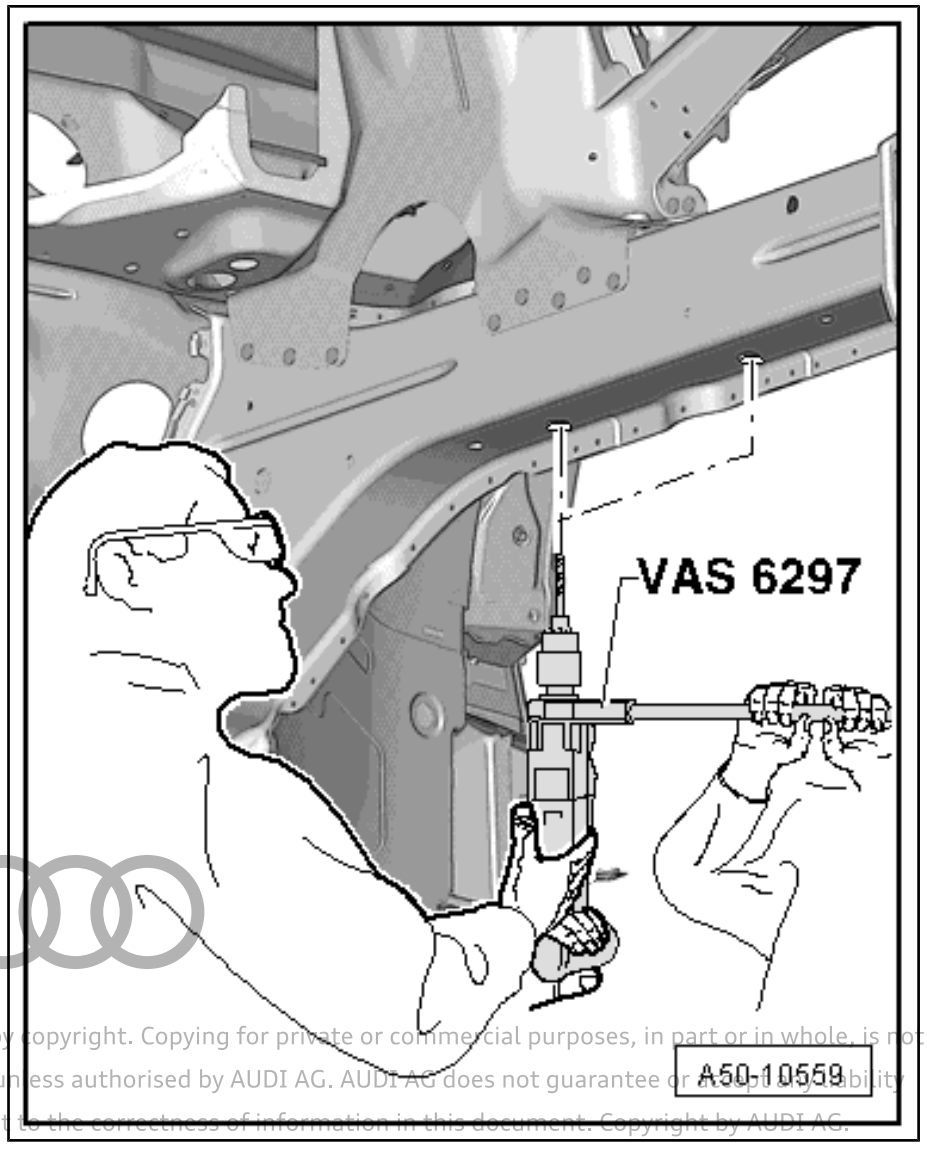
Making drilling for thread

– Drill hole for thread using drill bit (twist drill).



Note

- *Use drill - VAS 6267- for drilling and cutting.*
- *The drill must be supported by a second mechanic using the additional handle.*
- *Take care to keep the drill straight.*



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Cutting thread

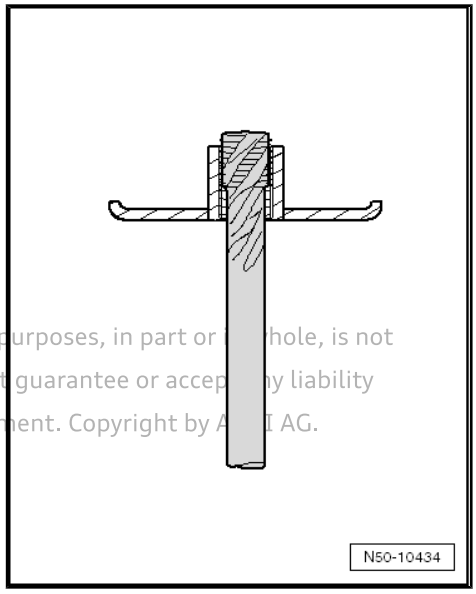
CAUTION

Always wear eye protection when cutting the thread and blowing out the threaded drilling.

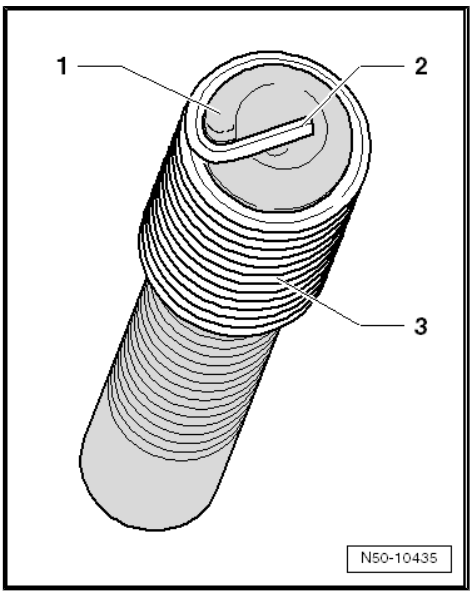
– Cut thread using thread tap.

Fitting thread insert

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– Screw thread insert -3- onto fitting spindle until driving pin -2- on thread insert makes contact with driving lug -1- on fitting spindle.

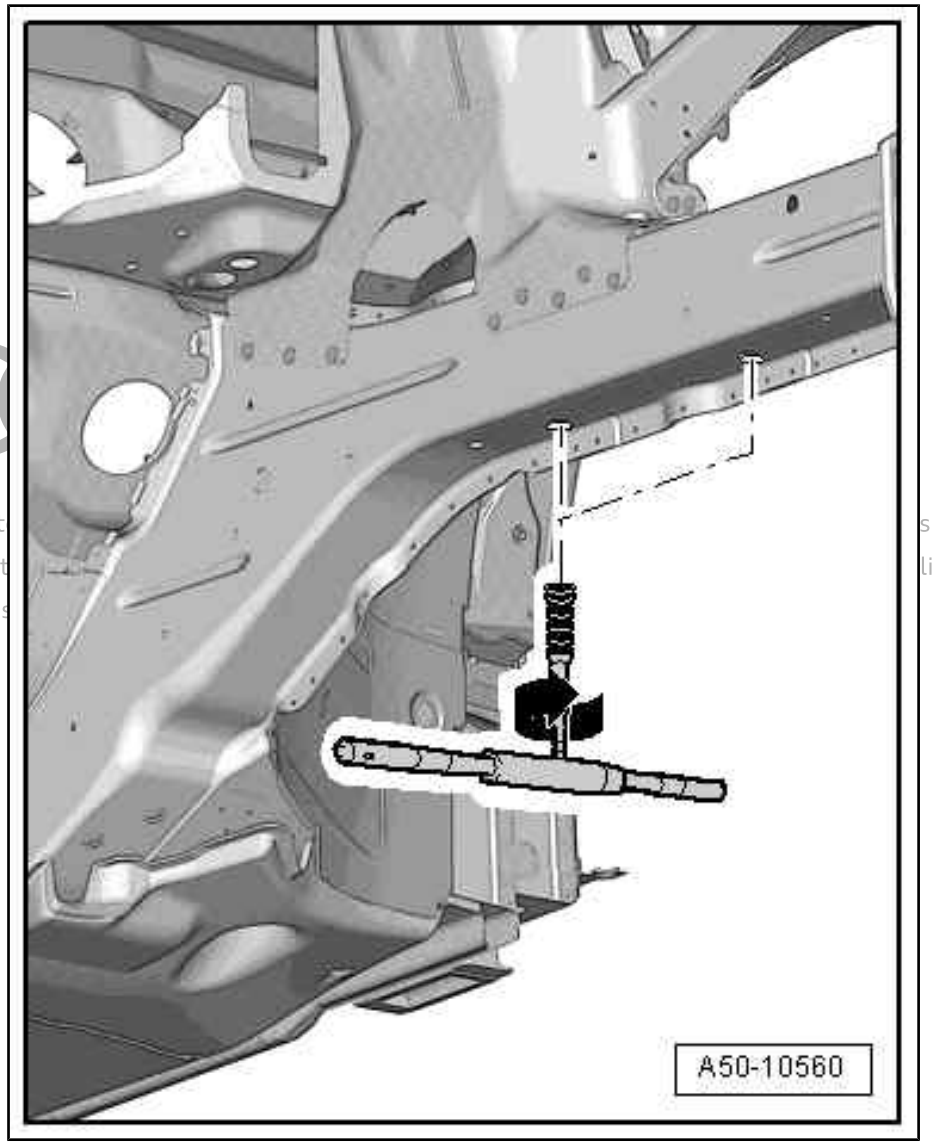


– Blow out threaded drilling with compressed air.

Note

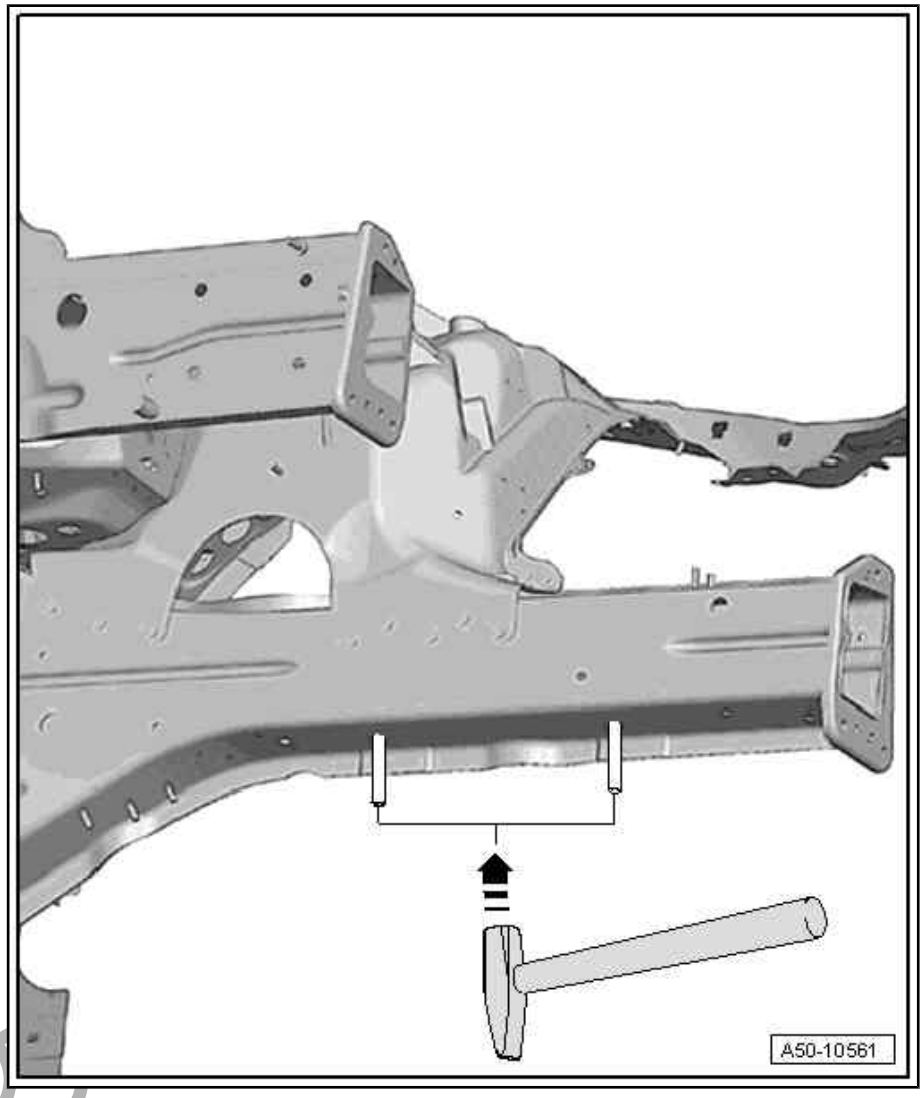
The thread insert should screw in easily.

– Screw thread insert into threaded plate until it is flush with outside of threaded plate (visual check).



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- Then screw in thread insert $^{1}/_{4}$ turn further.
- Unscrew fitting spindle.
- Break off drive pin of thread insert using pin breaker.



– Install subframe and tighten to specified torque ⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe, anti-roll bar, suspension links .

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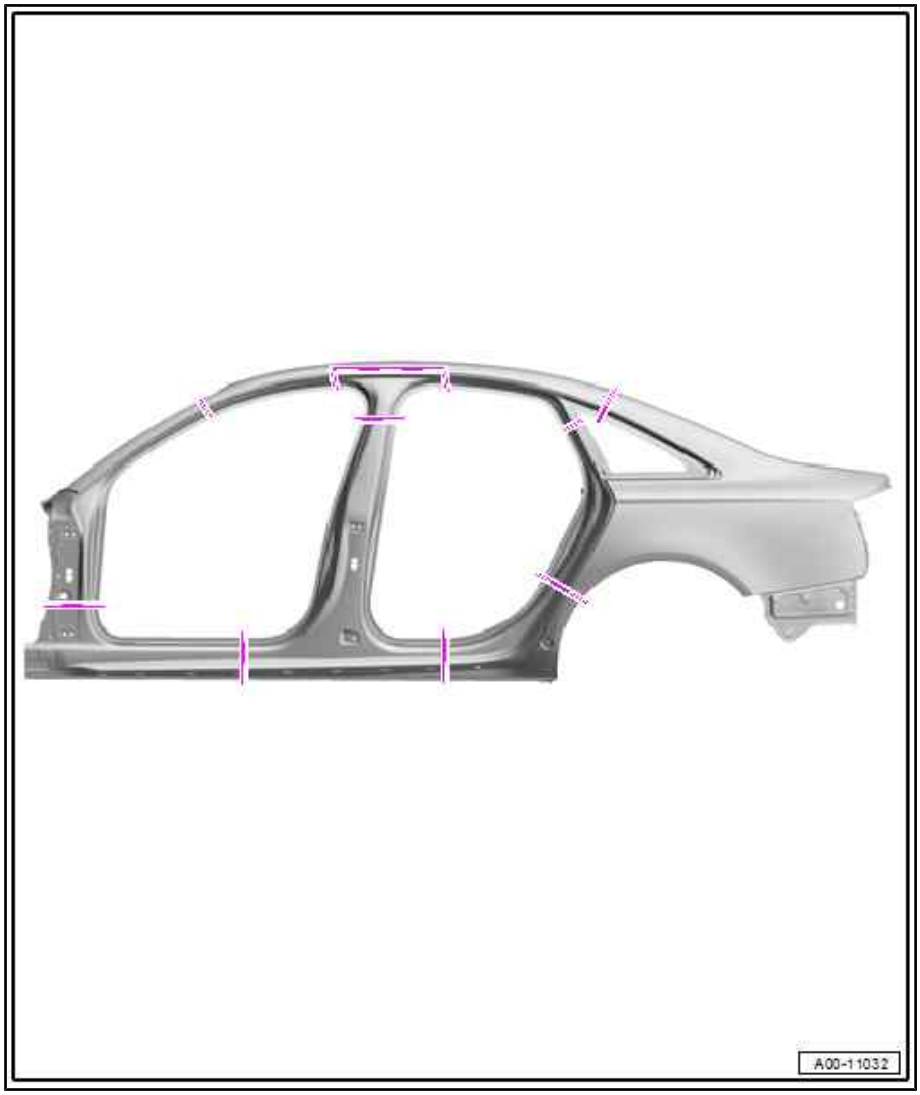
51 – Body - centre

1 Permitted separating cuts on complete side panel

Note

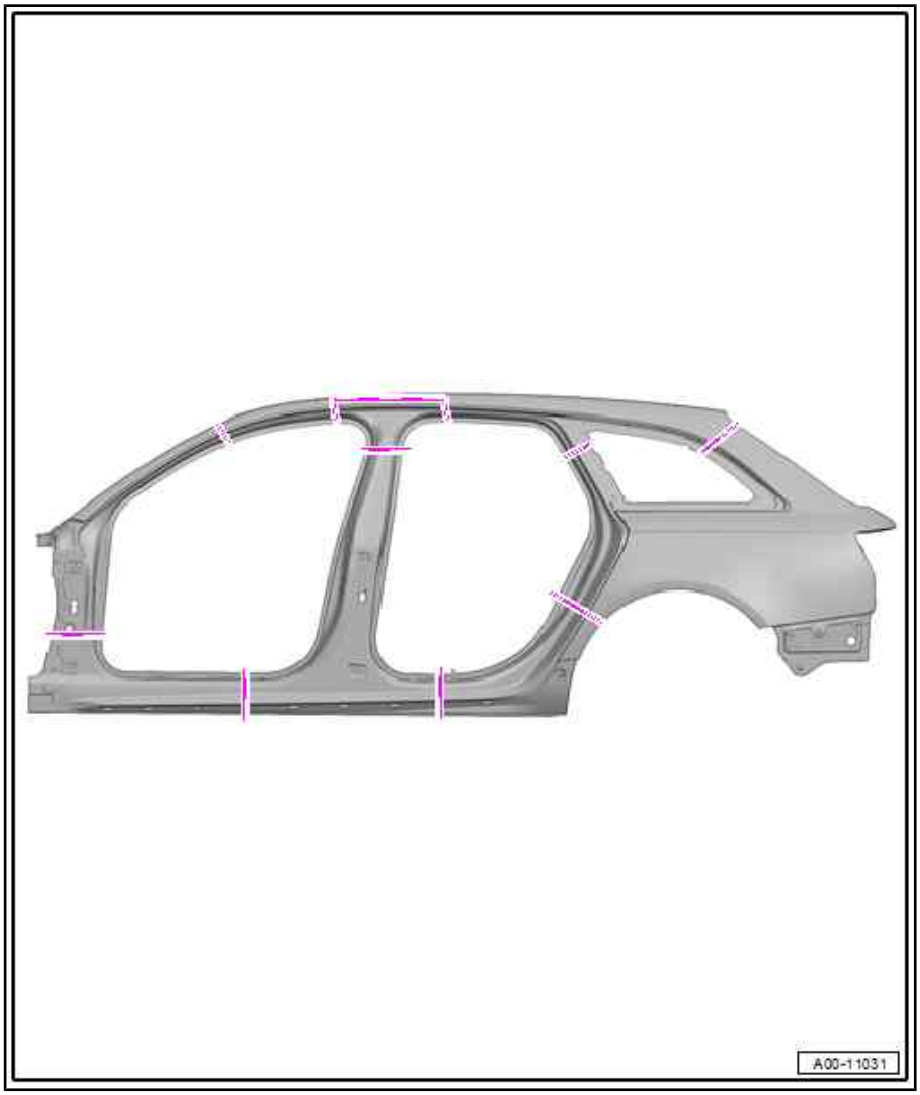
- *Use only welding equipment approved by AUDI AG.*
- *SG continuous weld seams are approved for the separating cuts shown in the illustration.*

Separating cuts (Saloon)



Separating cuts (Avant)

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1. Permitted separating cuts on complete side panel

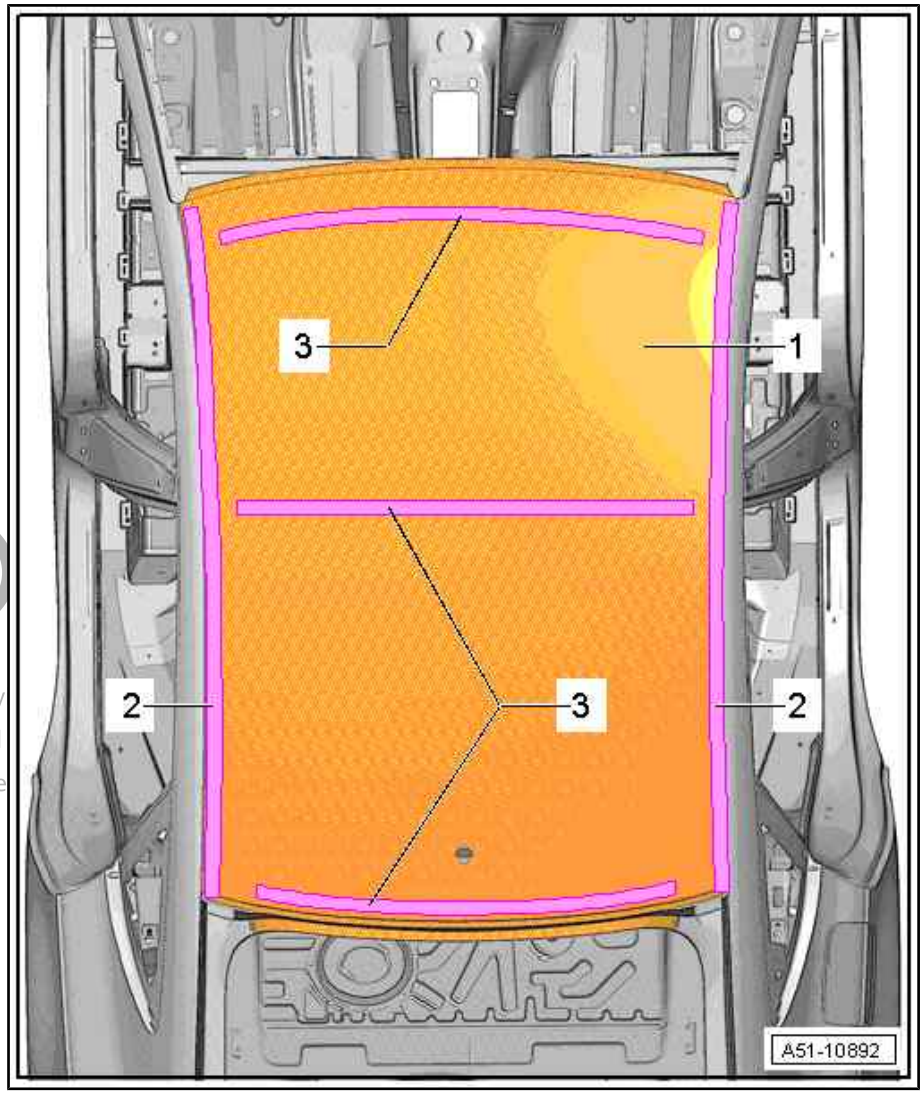
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2 Roof - Renewal (Saloon)

1 - Roof

2 - Plasmatron weld seam

3 - Bonded area



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2.1 Notes for vehicles with hybrid drive

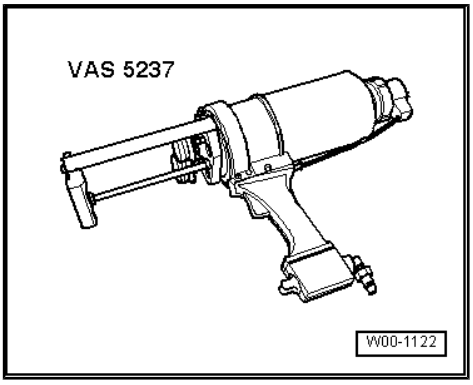
⇒ page 5

2.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Brush grinder
- Drill
- Spot weld breaker
- Body saw
- Electric cutter
- Mole grips, 18-18

- Suction lifter or magnet
- Setting gauge - 3371-
- Compressed-air gun - V.A.G 1761/1-
- Tensioning strap - T 10038-
- Double cartridge gun - VAS 6453-
- Double cartridge gun - VAS 5237-



Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

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

– Open cap.

2 - Static mixer

3 - Extension hose

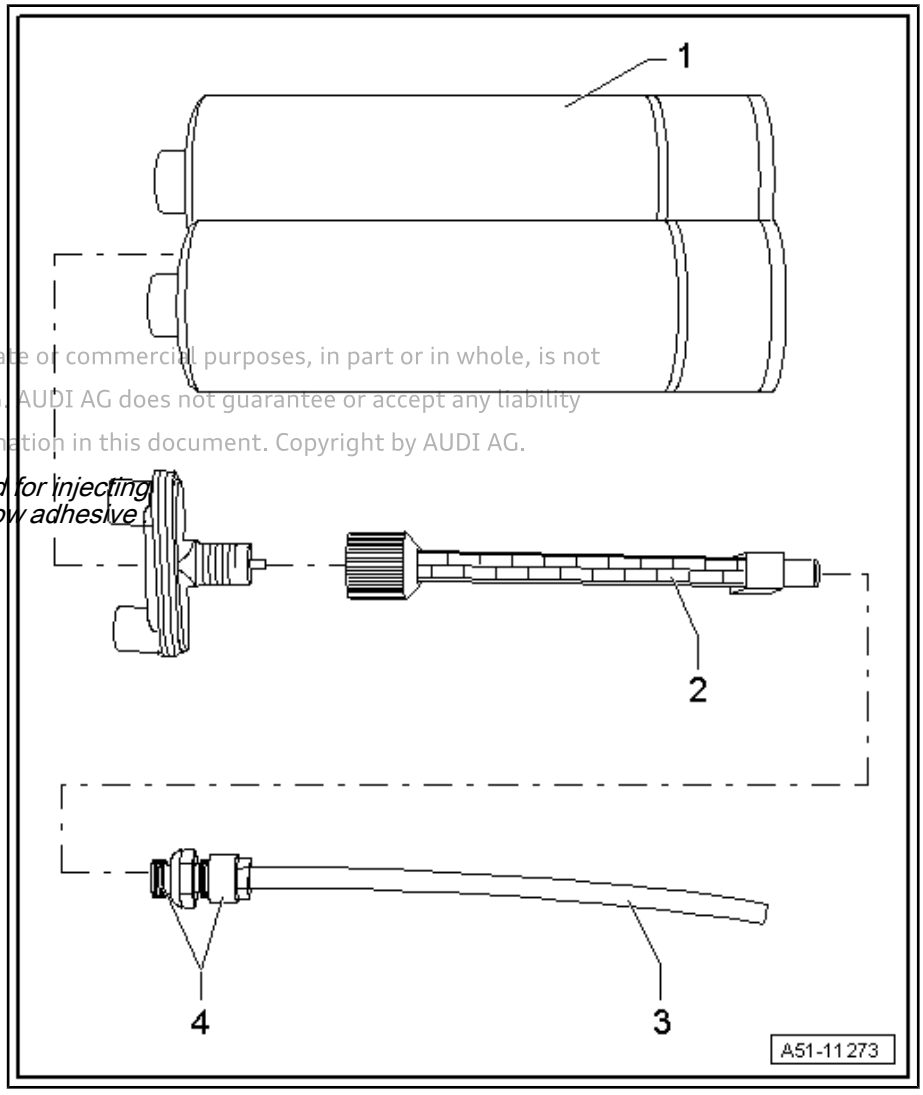
Part number 000 809 937

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

4 - Adapter

Note

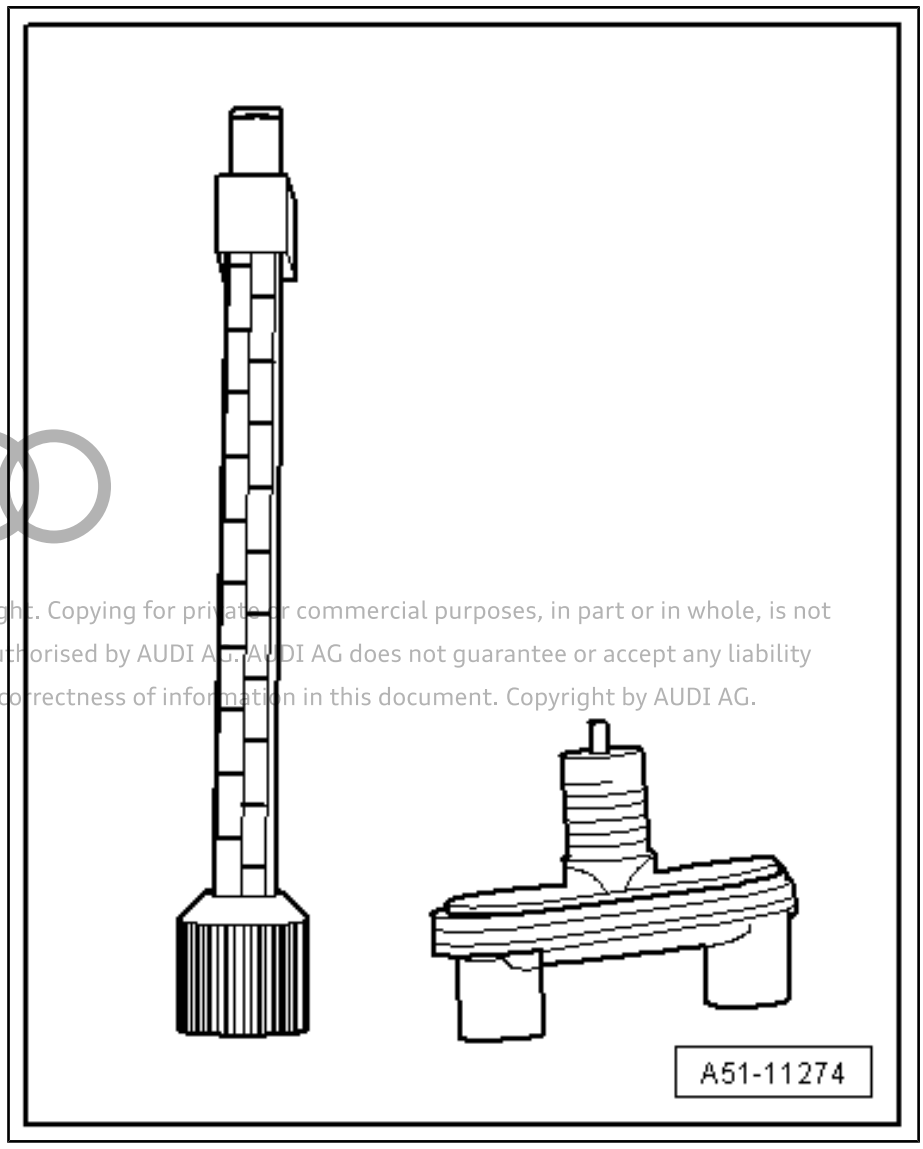
The adapter is required for injecting the 2-component window adhesive.



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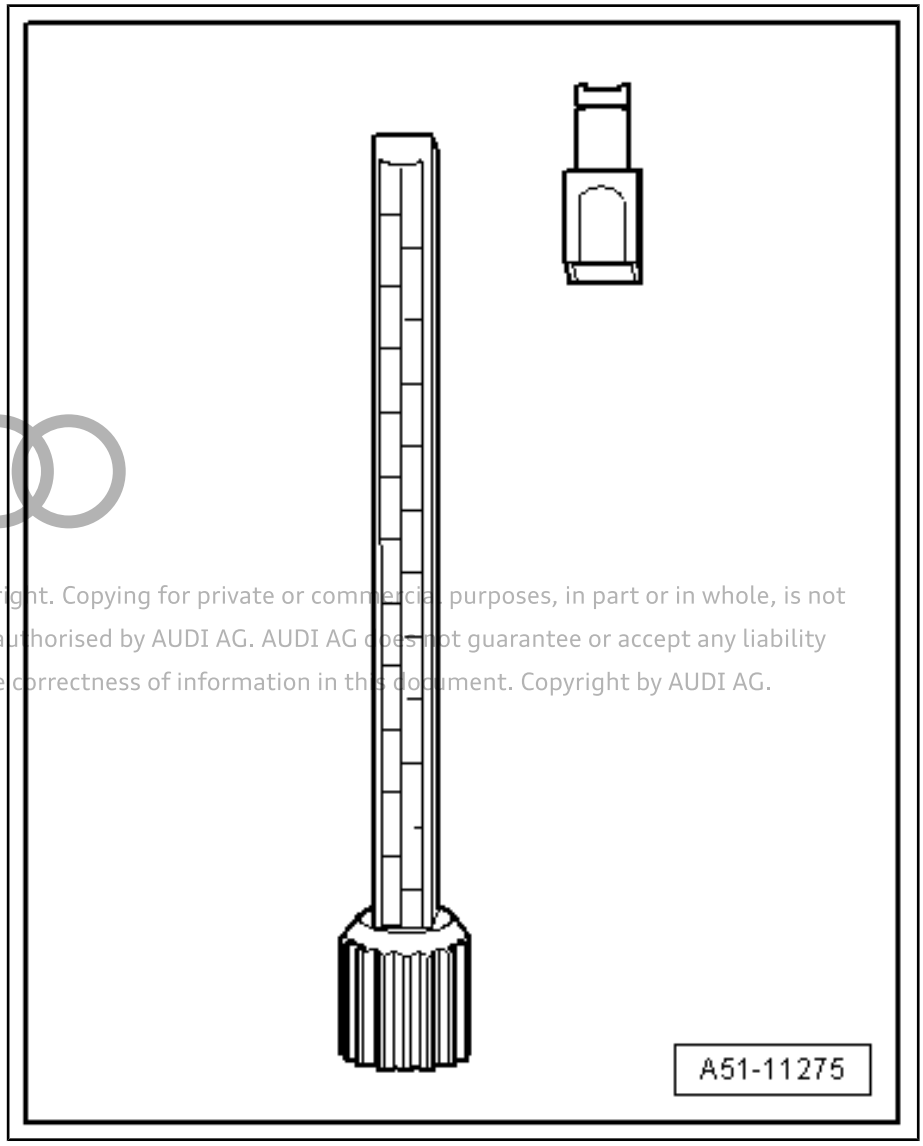
Instructions for using extension hose for window adhesive

– Take static mixer out of window adhesive kit.



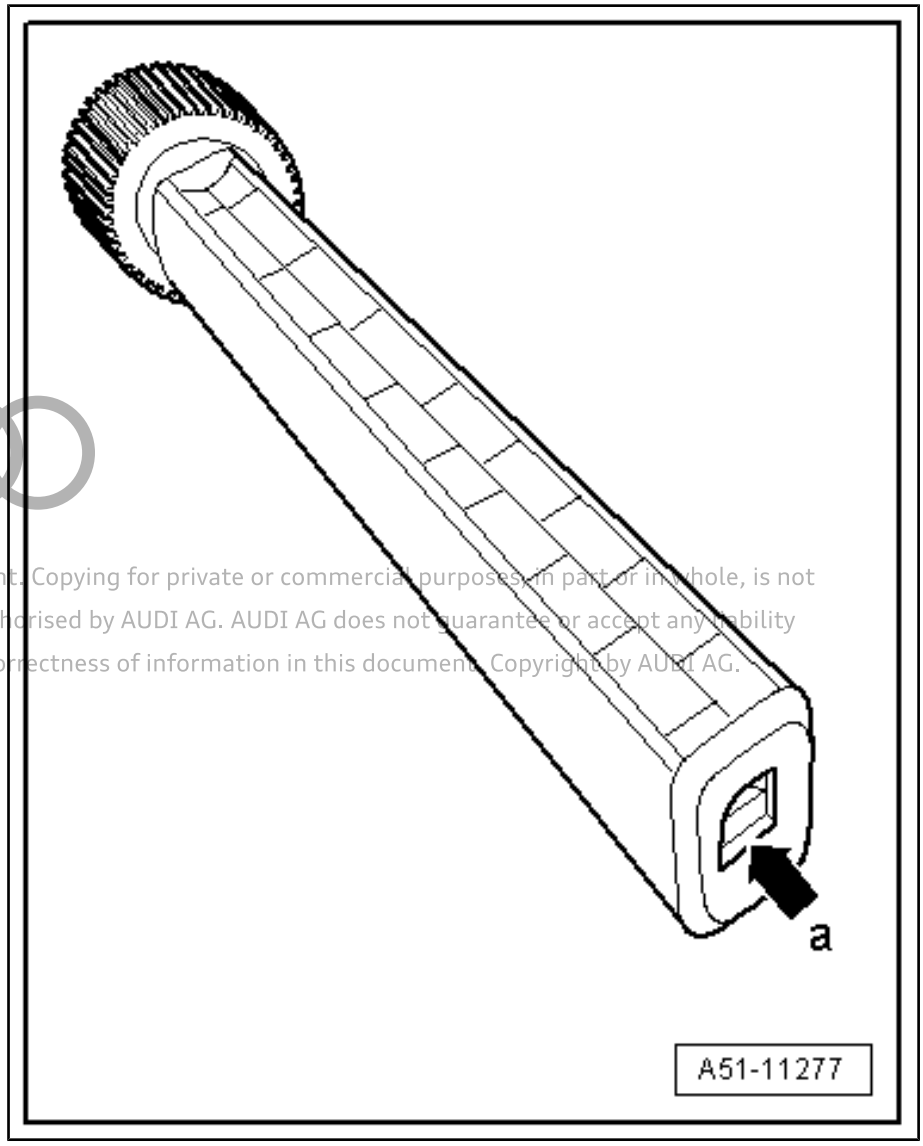
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– Remove front cap from static mixer.



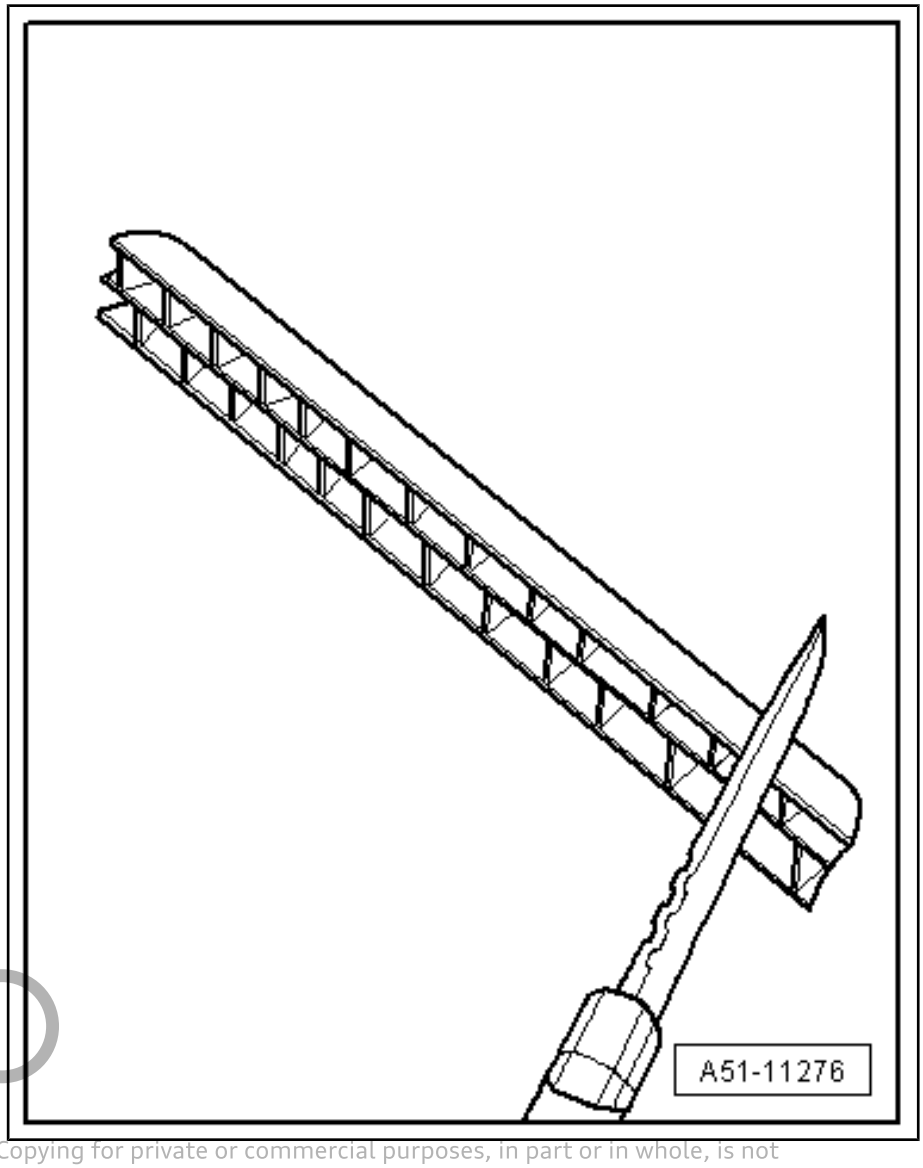
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– Drill out opening in static mixer -a- to 9 mm ∅ using drill .



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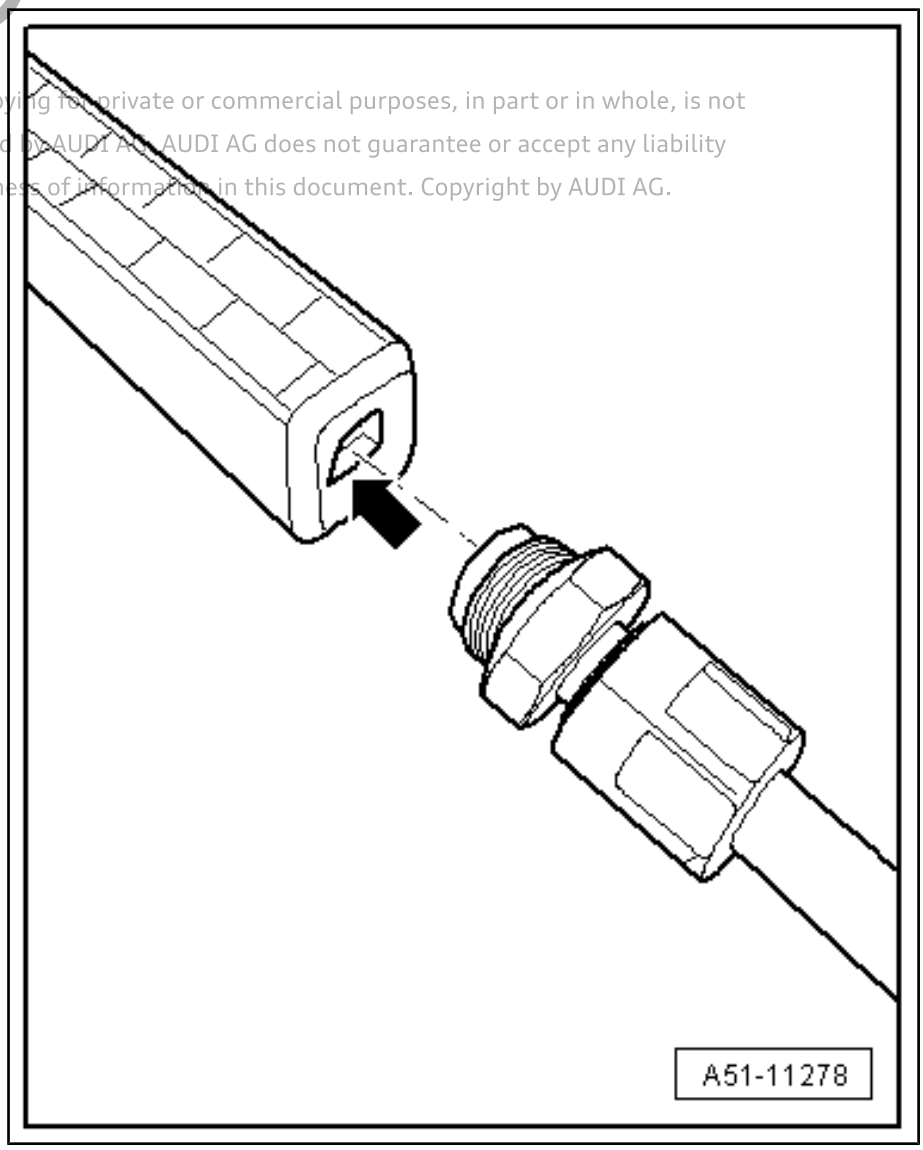
– Shorten inner section of mixer so that hose can be screwed in fully.



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– Screw extension hose onto mixer.

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2.3 Procedure

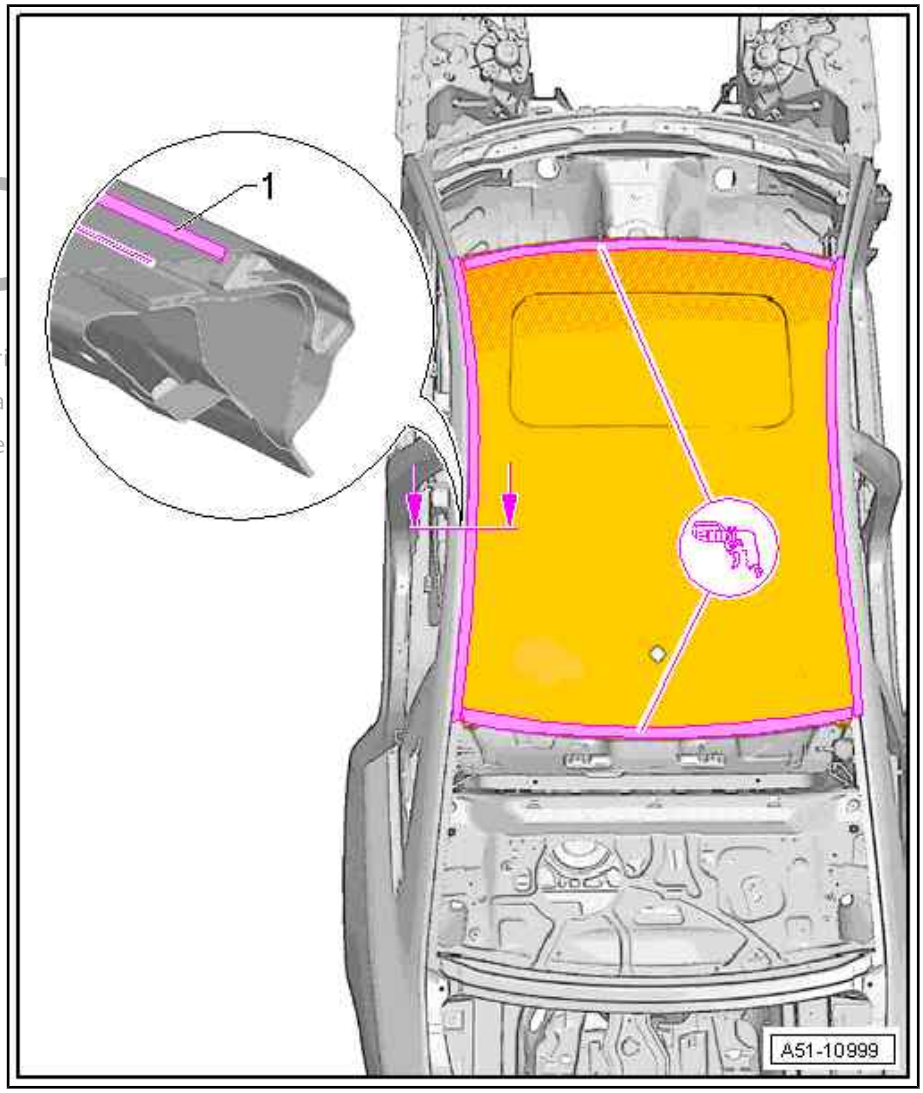
Cutting locations

– Roughly cut out roof parallel with plasmatron weld seam -1- at a distance of approx. 30 mm using body saw .

– Separate original joint to windscreen opening and rear lid opening using spot weld breaker .

– Working from passenger compartment, separate bonded joints between roof and roof cross members using electric cutter - V.A.G 1561 A- .

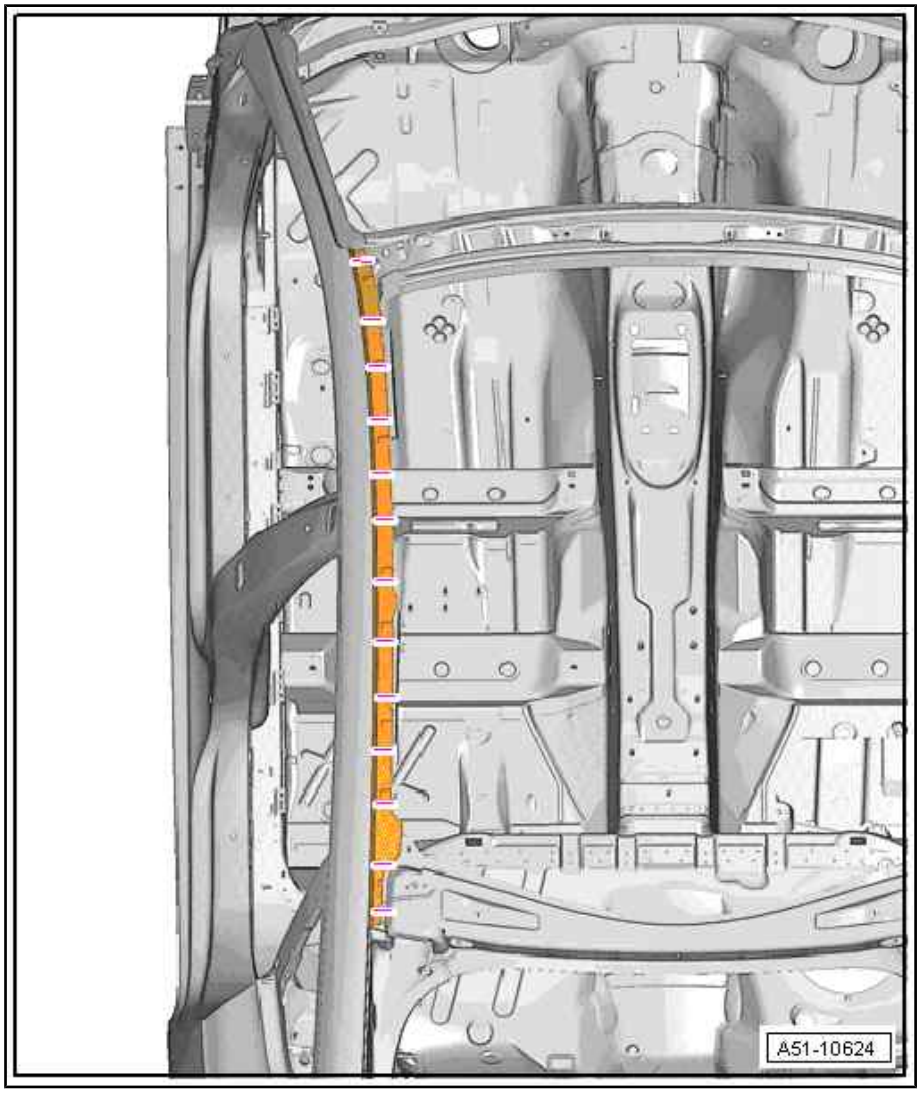
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Note

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.

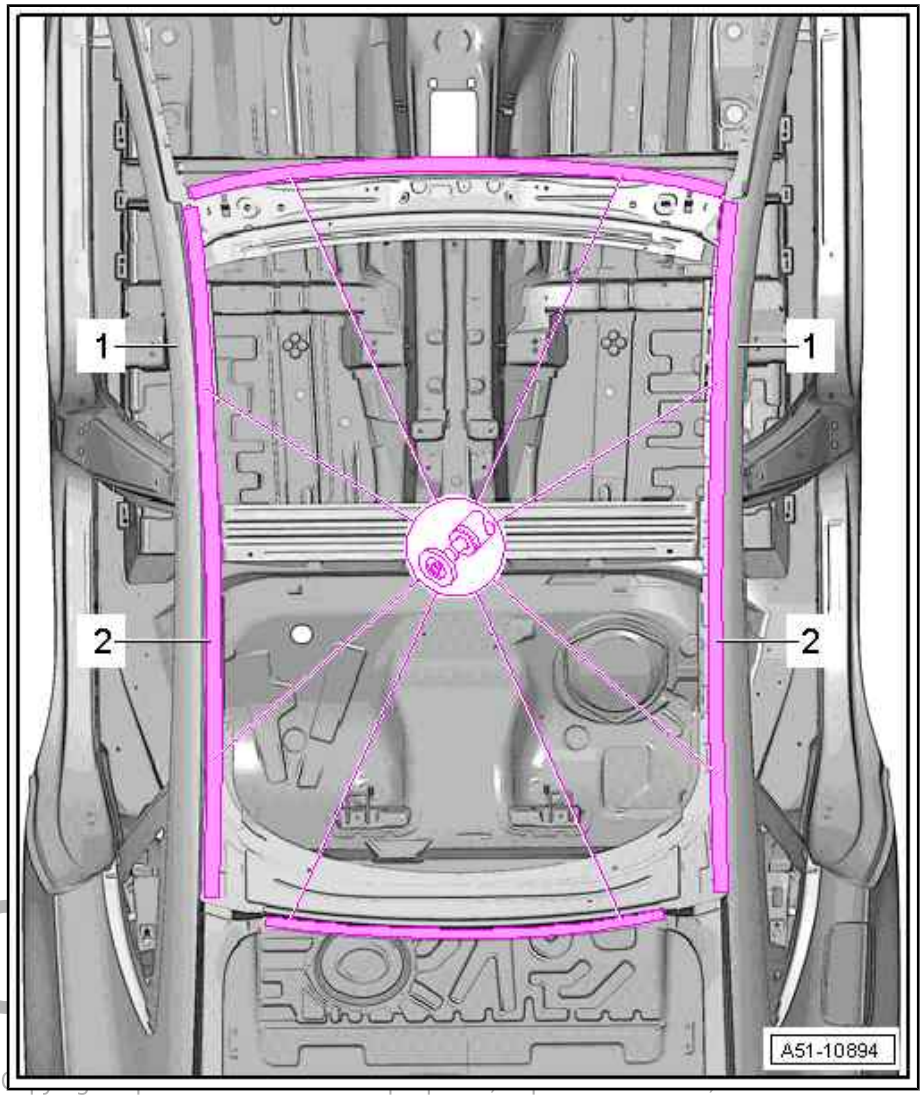


Note

- *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 .
– 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
- Cleaning solution - D 009 401 04-
- 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 - , 3 sets of cartridges

Preparing new part

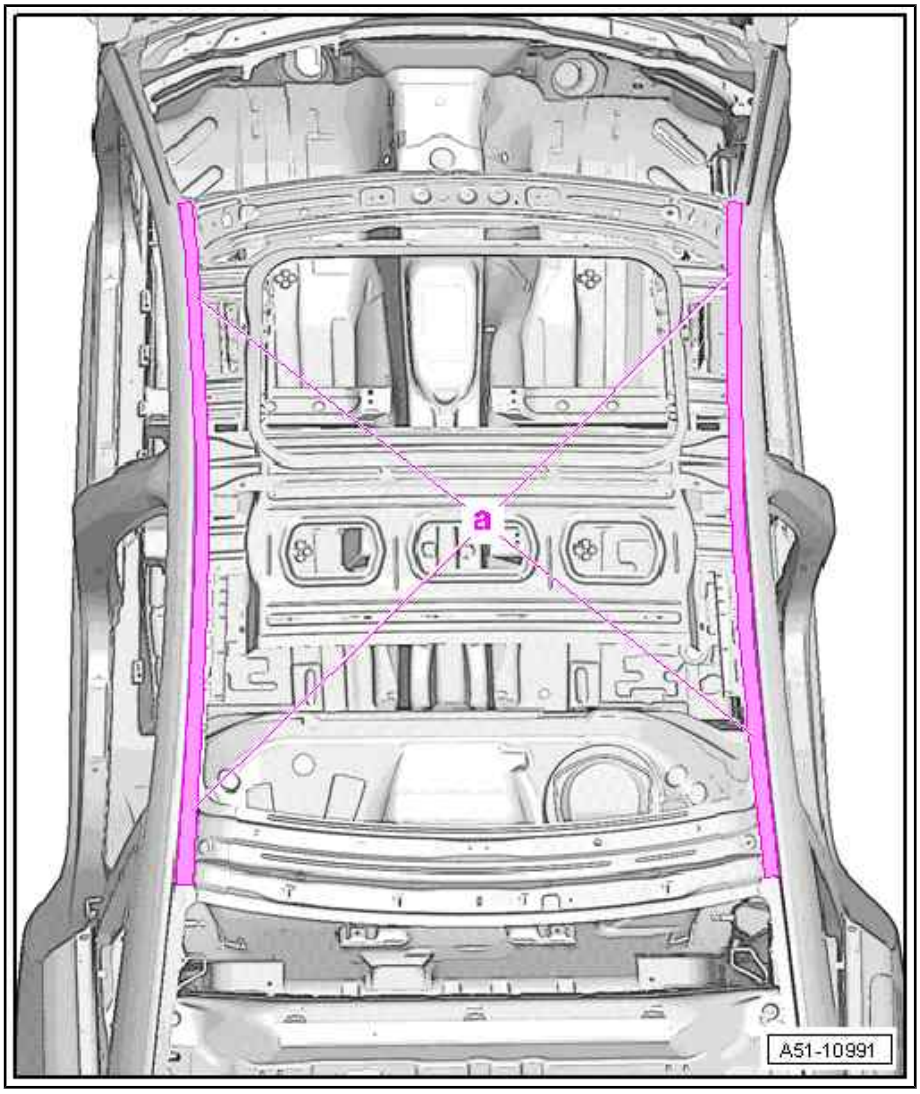
Note

- *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 (surfacer) 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

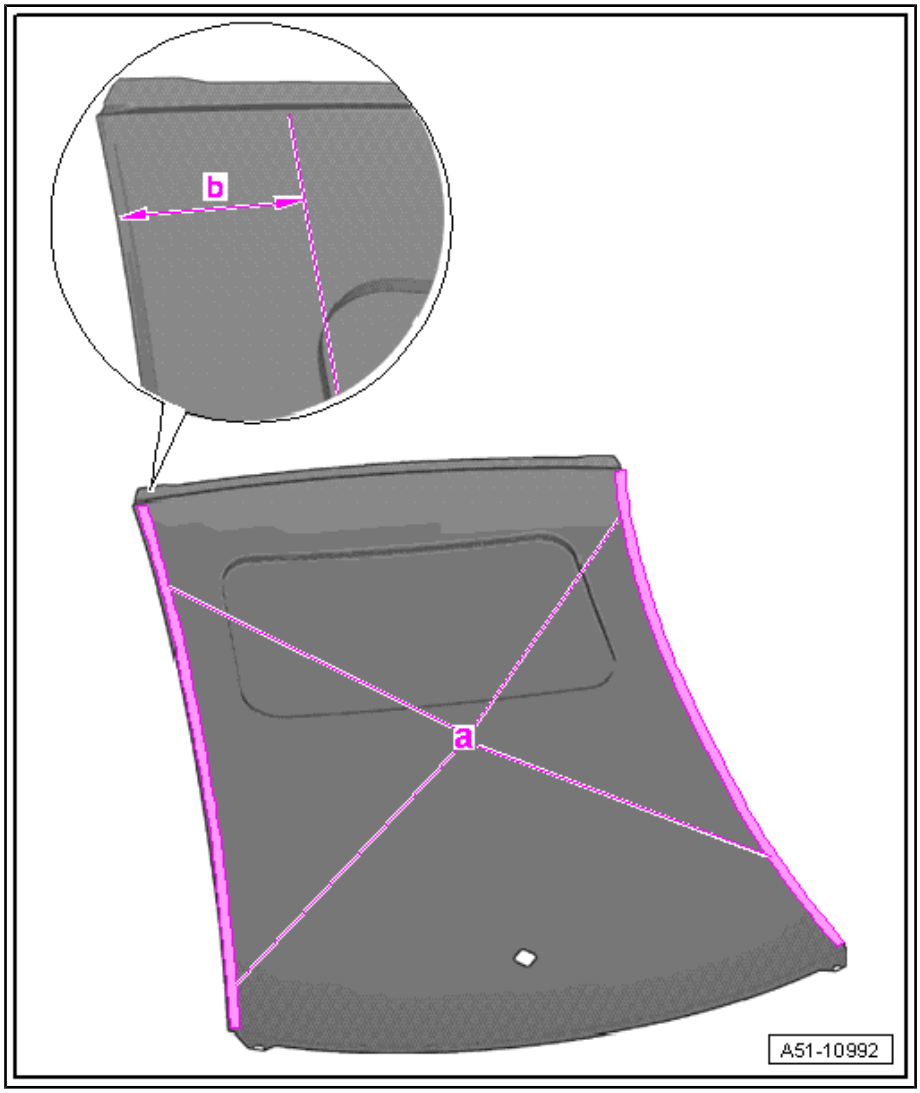
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– Position roof on roof frame and check alignment of roof with roof side members (visual inspection).
– Check fit of roof with rear lid and windscreen.
– Fix roof in position in windscreen flange and sealing flange of rear lid using one self-tapping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

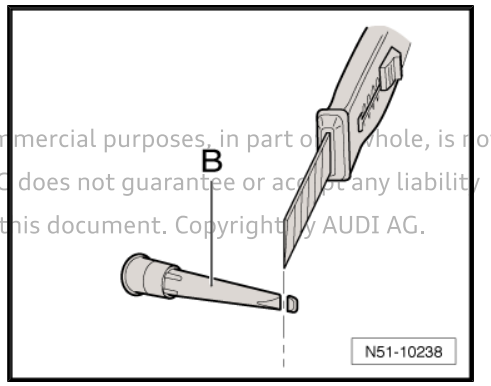


– Apply glass and paint primer - D 009 200 02- approx. 5 cm wide -b- on inner section of roof and inner side flange -a-.

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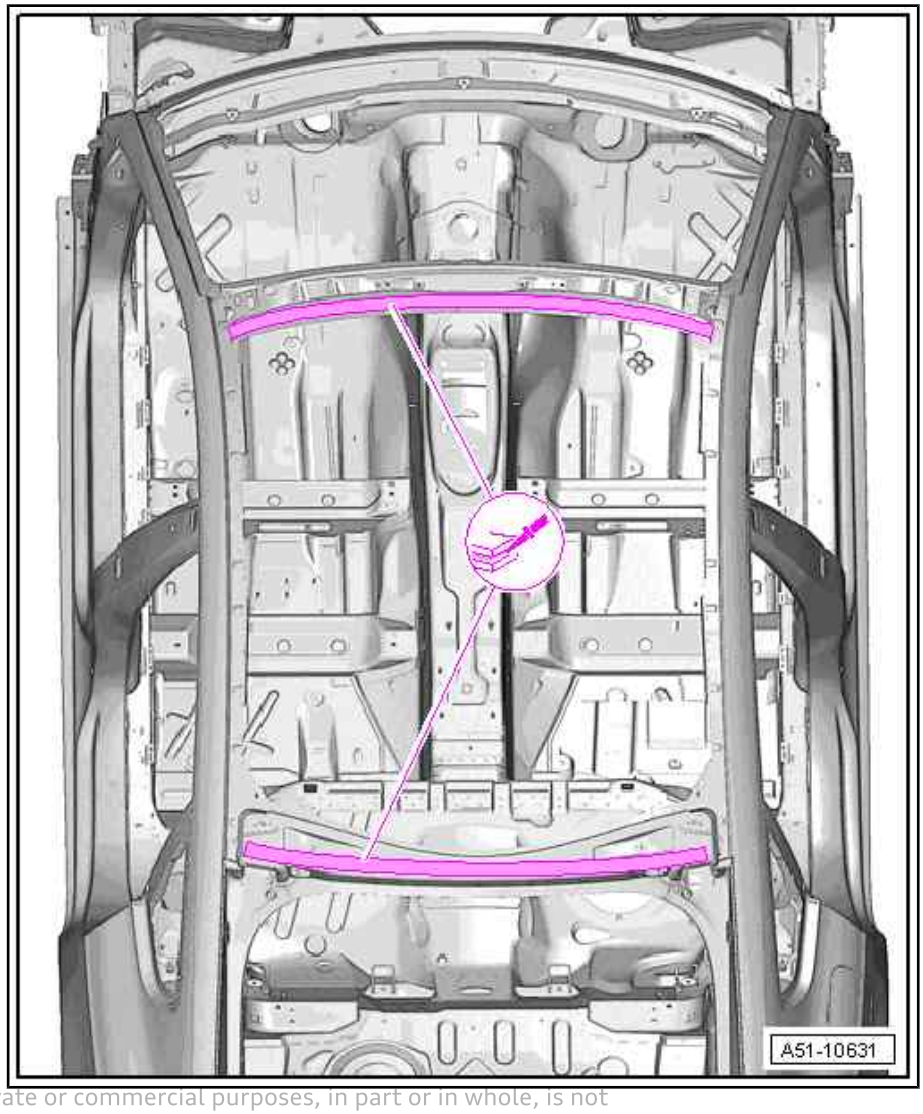


– Cut off approx. 2 mm from nozzle -B- to obtain appropriate bead geometry.



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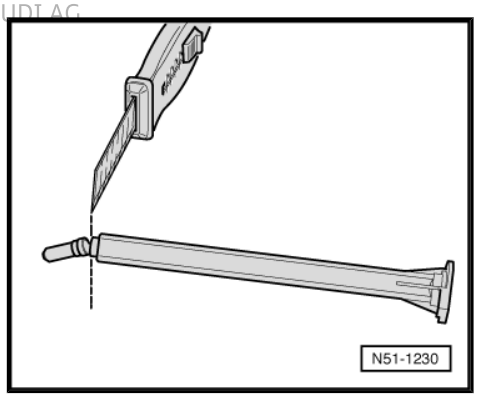
– Apply single-component assembly adhesive - D 190 MKD A3- with pneumatic cartridge gun - V.A.G 1761/1- to rear roof cross member in the area of the factory bonding location.



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Preparing new part

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

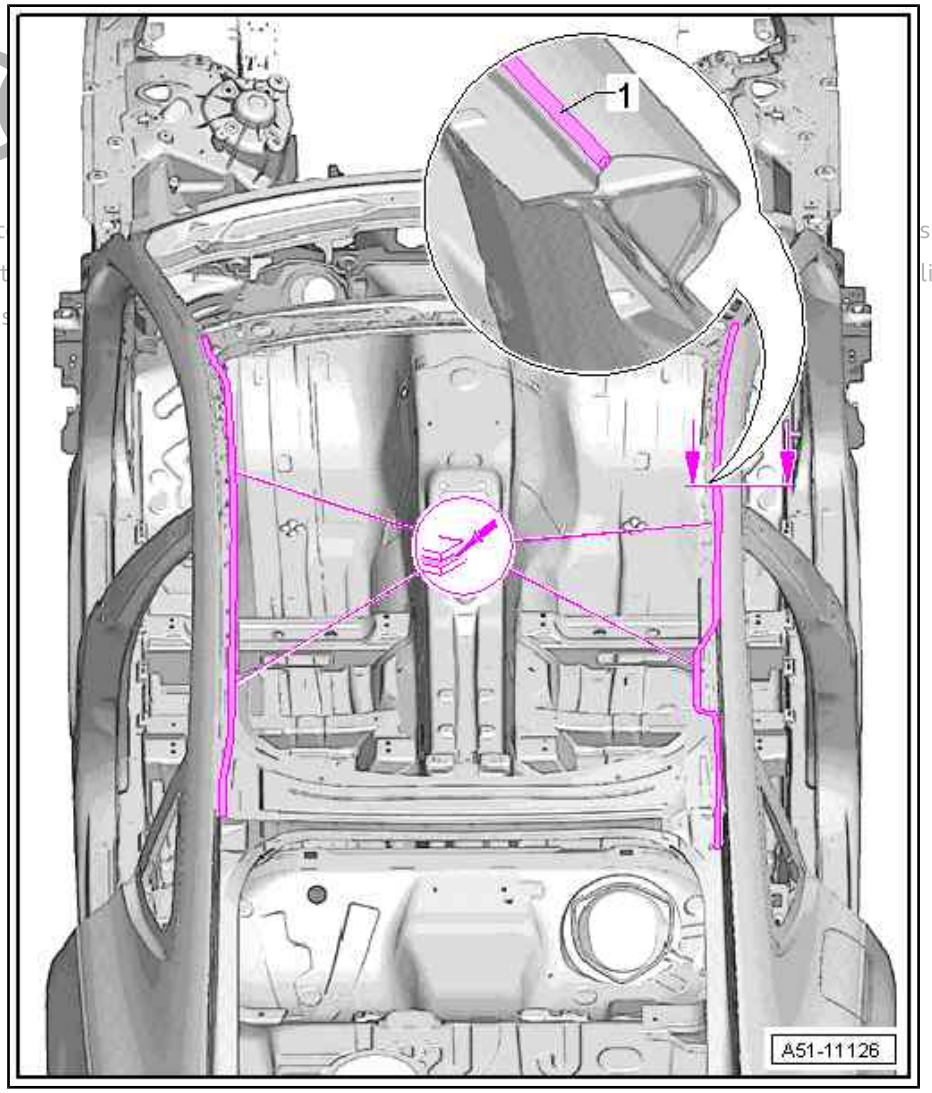


Note

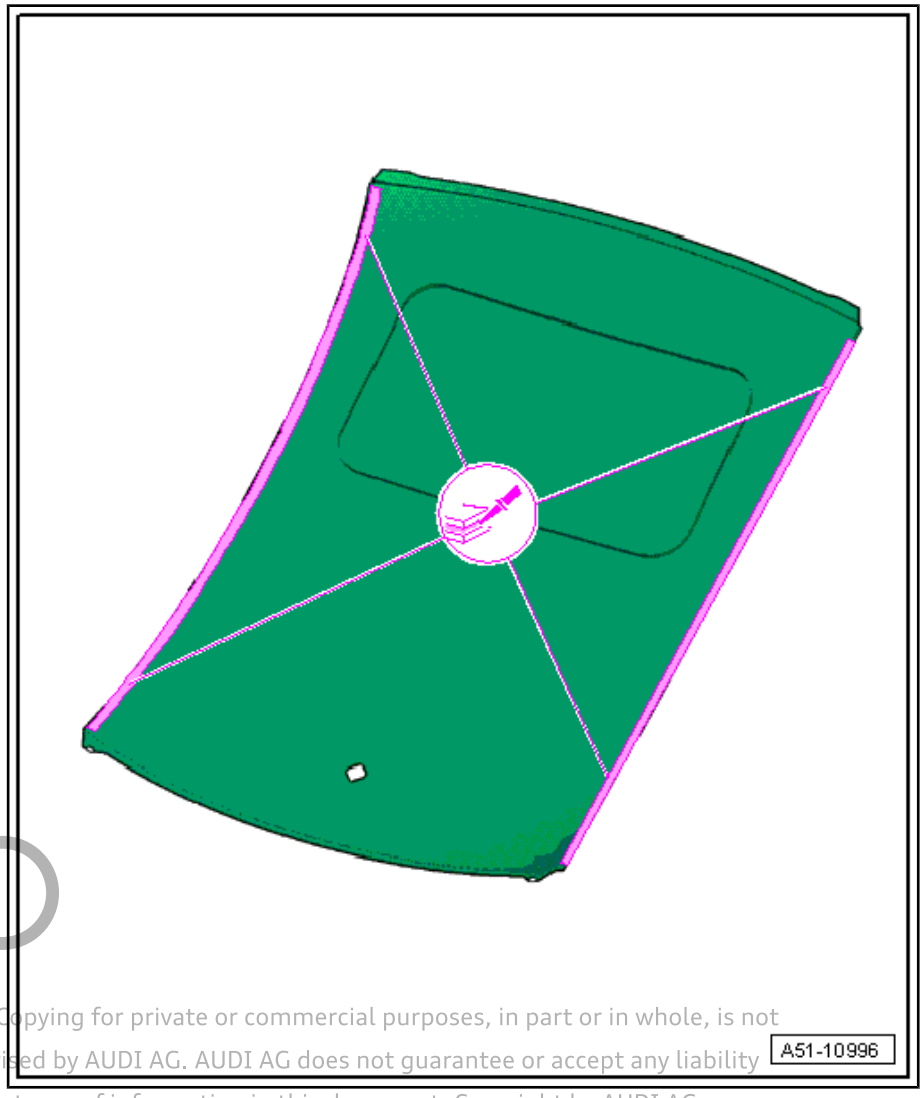
- *The pot life of the 2-component epoxy adhesive - DA 180 A00 A2- is roughly 90 minutes.*
- *A second mechanic is required for the next steps.*

– Apply continuous bead -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 using double cartridge gun - VAS 6453- .



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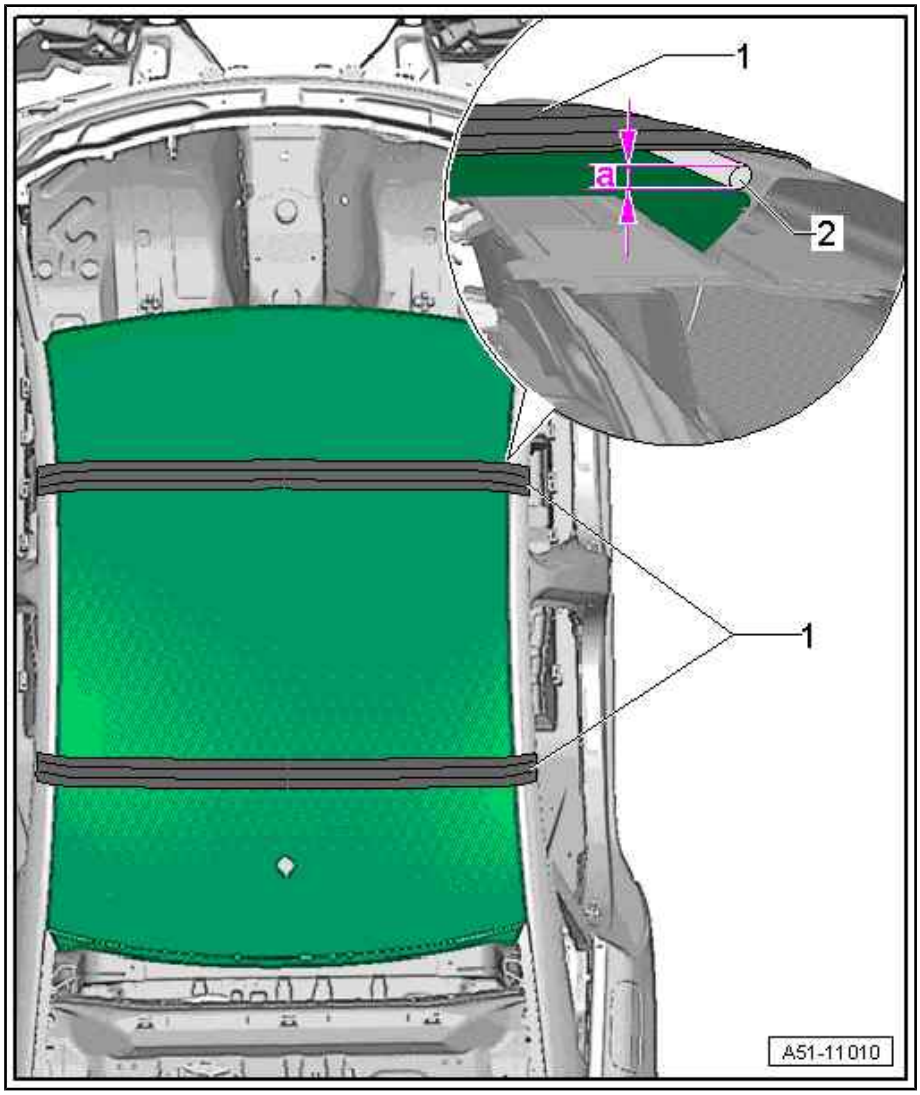
– Immediately fit and align roof.
– Use one self-tapping screw at each end to fix roof in position in centring hole in windscreen flange and sealing flange for rear lid.
– Fix roof in position at windscreen opening and rear window opening using mole grips, 18-18 - VAS 5430/1- .

Adjusting roof depth

– Additionally fix roof in position with two tensioning straps - T 10038- -1-.
– Set required depth using e.g. drill bit or suitable wooden spacer -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 edge of roof.

CAUTION

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

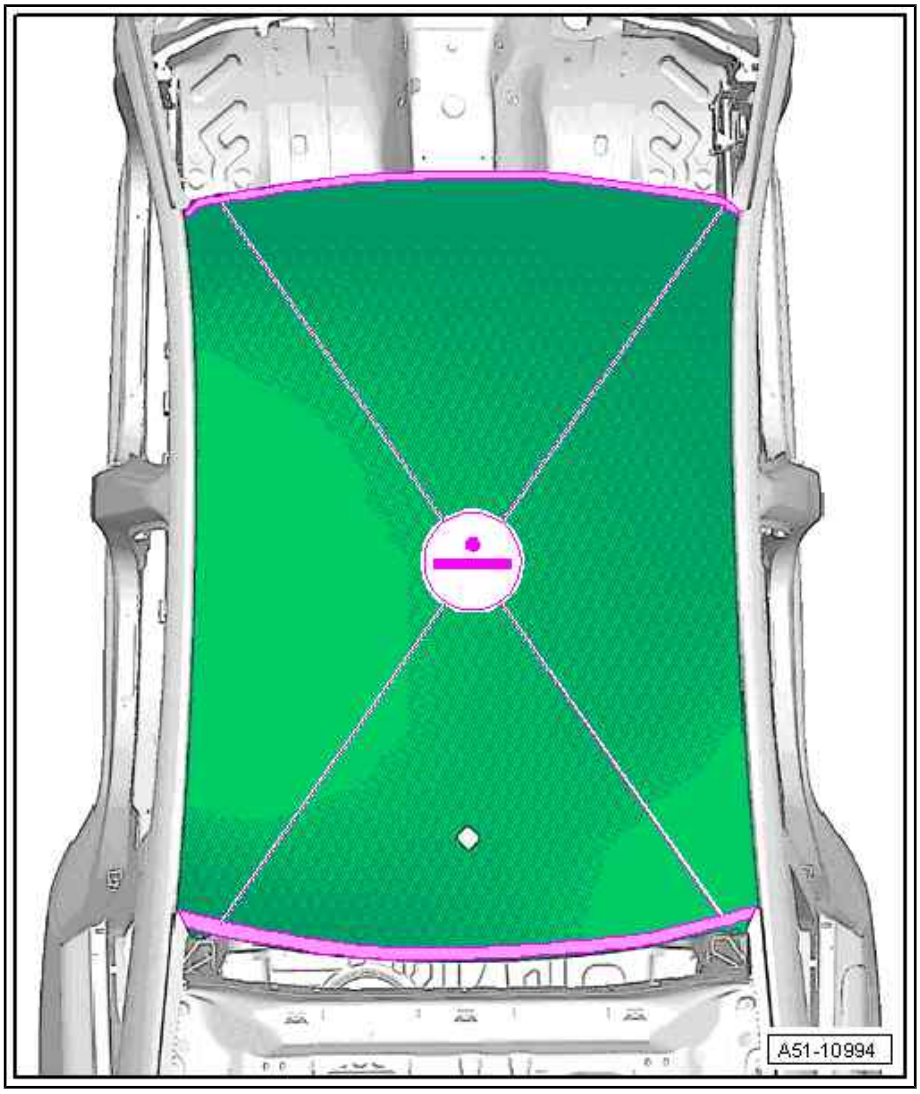
Note

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

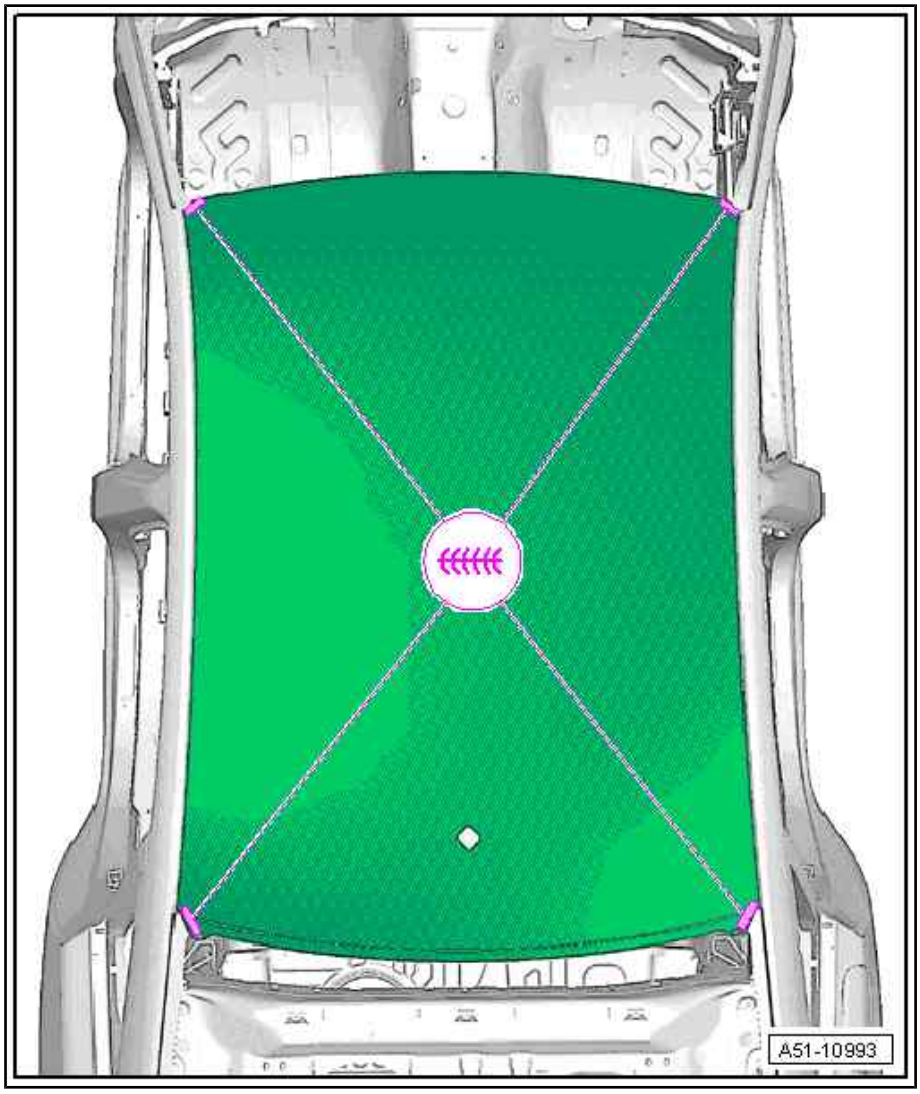
Weld in roof at front and rear using resistance spot welder : RP spot weld seam.

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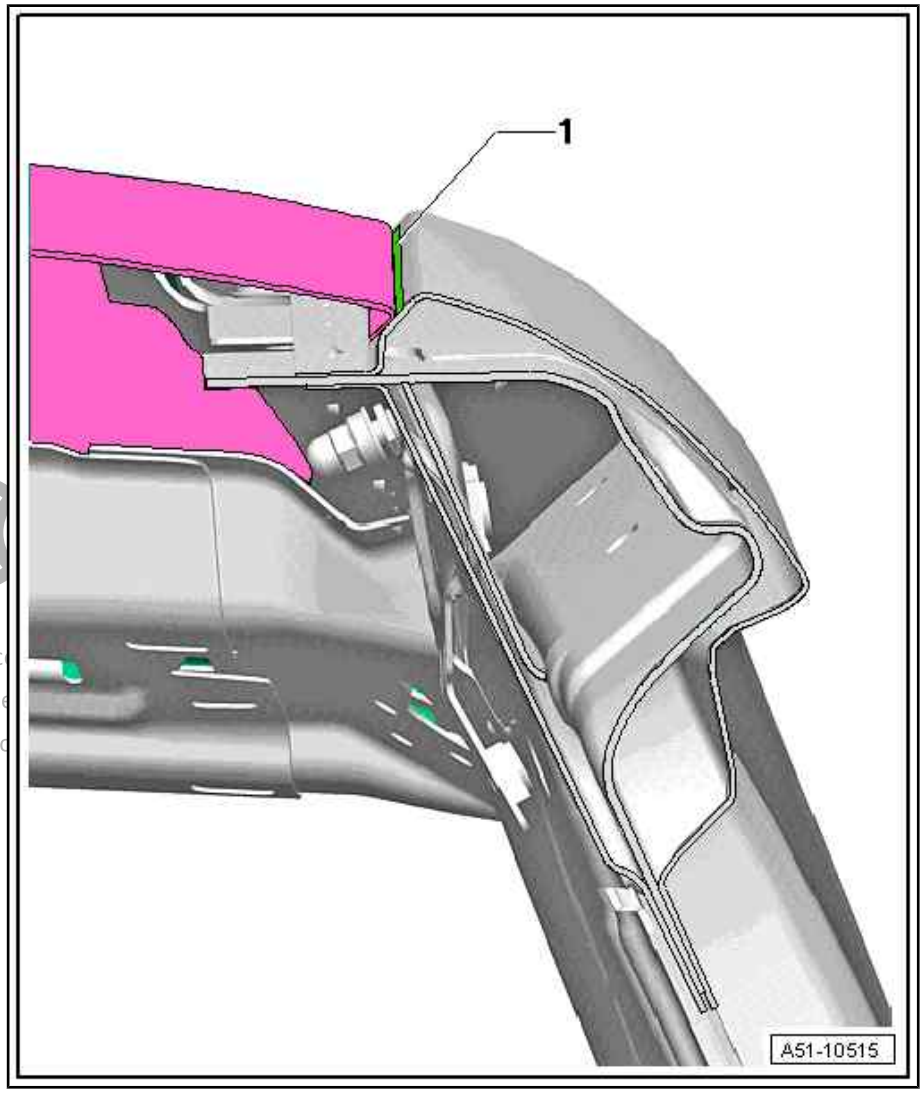
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– Weld in roof additionally at corners using shielded arc welding equipment : SG continuous seam.
– Grind down SG continuous weld seams using compact angle grinder .



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

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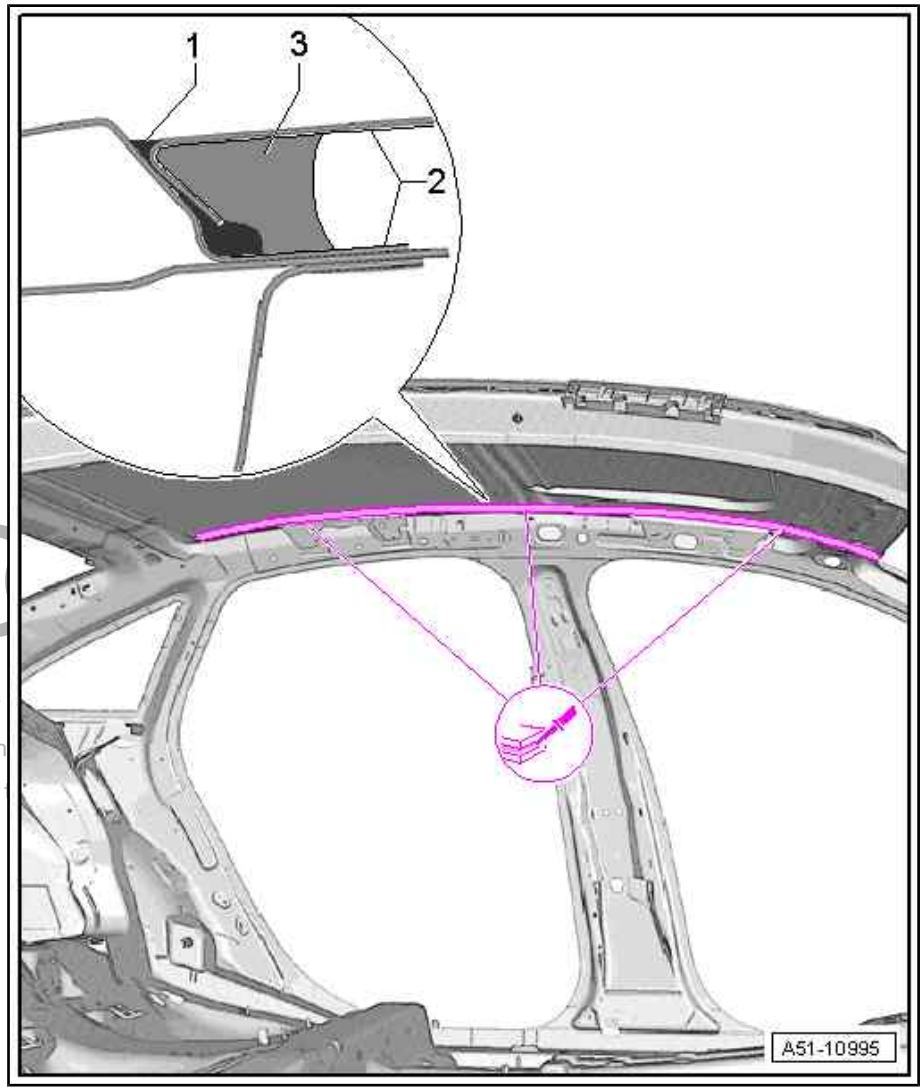
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Note

Please note instructions for use: window adhesive should be applied at a temperature of approx. 20°C.

– 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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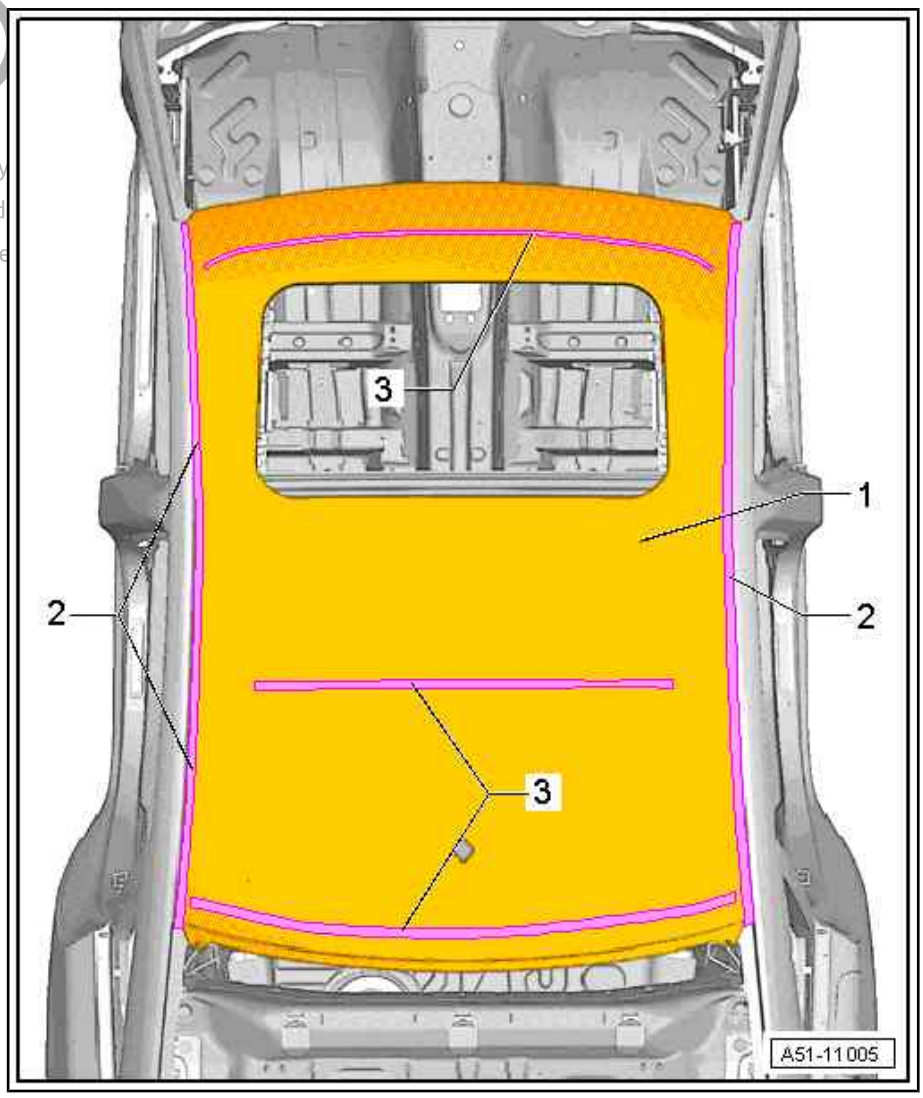
3 Roof - Renewal (Saloon with tilting sunroof)

1 - Roof

2 - Plasmatron weld seam

3 - Bonded area

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3.1 Notes for vehicles with hybrid drive

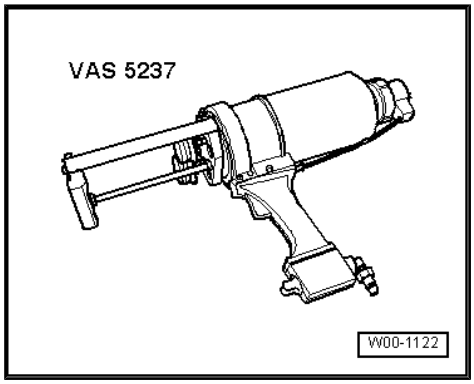
⇒ page 5

3.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Brush grinder
- Drill
- Spot weld breaker
- Body saw
- Suction lifter or magnet
- Setting gauge - 3371-

- Compressed-air gun
- Tensioning strap
- Compressed-air gun
- Electric cutter
- Mole grips, 18-18
- Double cartridge gun - VAS 6453-
- Double cartridge gun - VAS 5237-



Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

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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 ∅ drill bit.

3 - Extension hose

Part number 000 809 937

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

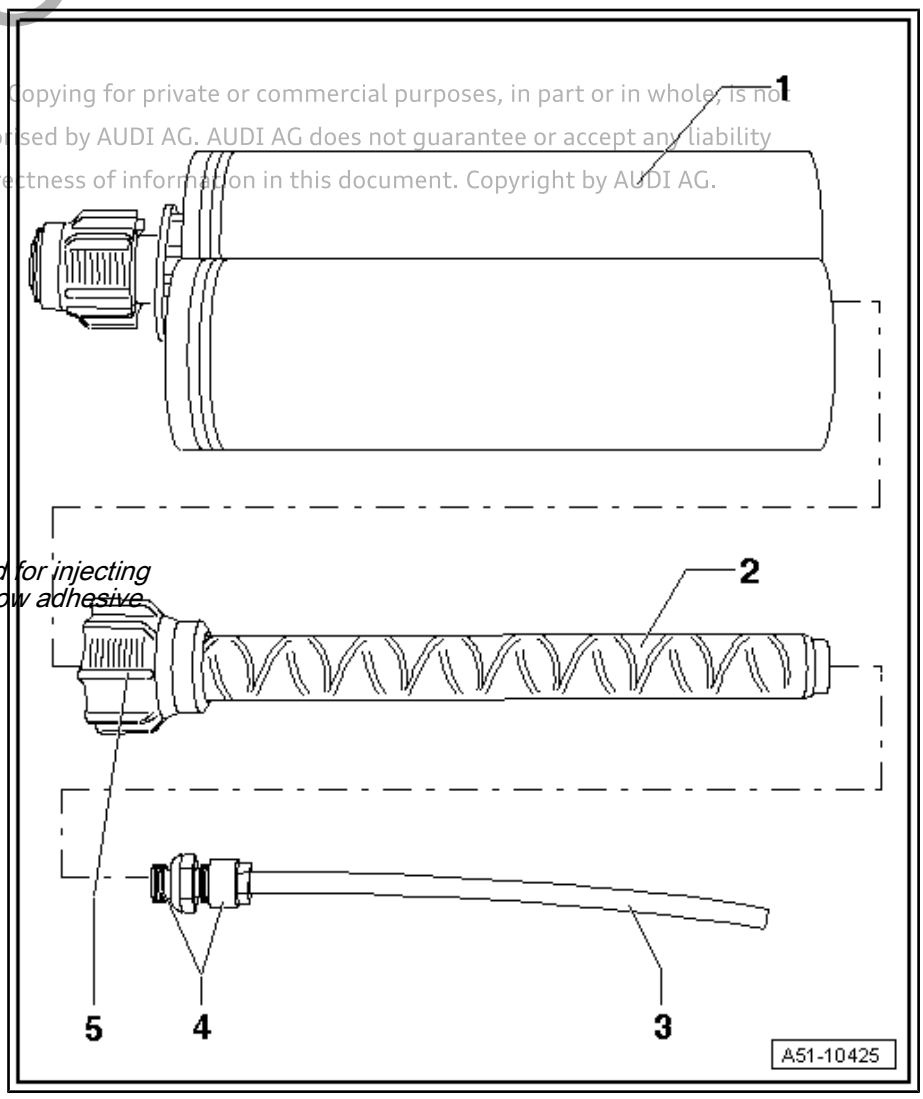
4 - Adapter

Note

The adapter is required for injecting the 2-component window adhesive - DA 004 660 M2 - .

5 - Union nut

– Screw onto 2-component window adhesive - DA 004 660 M2 - -1- together with static mix-



er -2-.

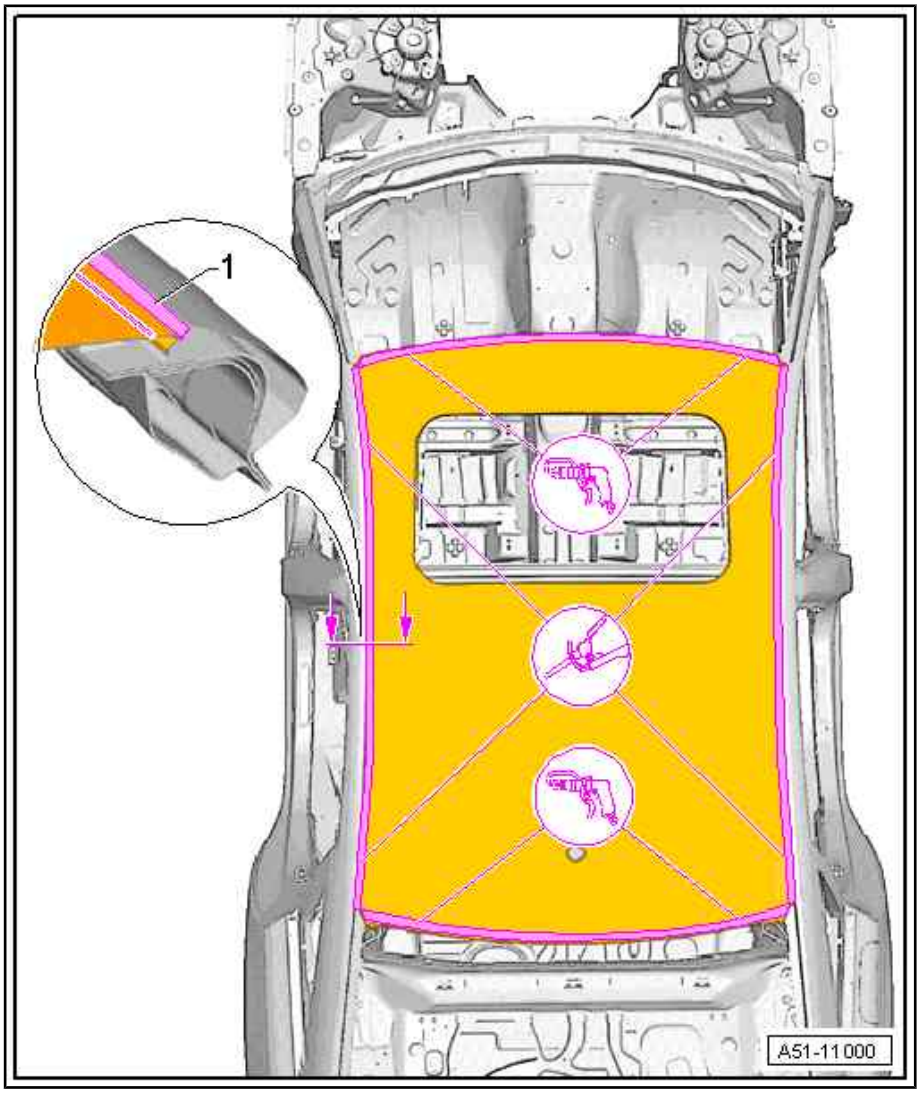
3.3 Procedure

Cutting locations

– Roughly cut out roof parallel with plasmatron weld seam -1- at a distance of approx. 30 mm using body saw .

– Separate original joint to windscreen opening and rear window opening using spot weld breaker .

– Working from passenger compartment, separate bonded joints between roof and roof cross members using electric cutter - V.A.G 1561 A- .



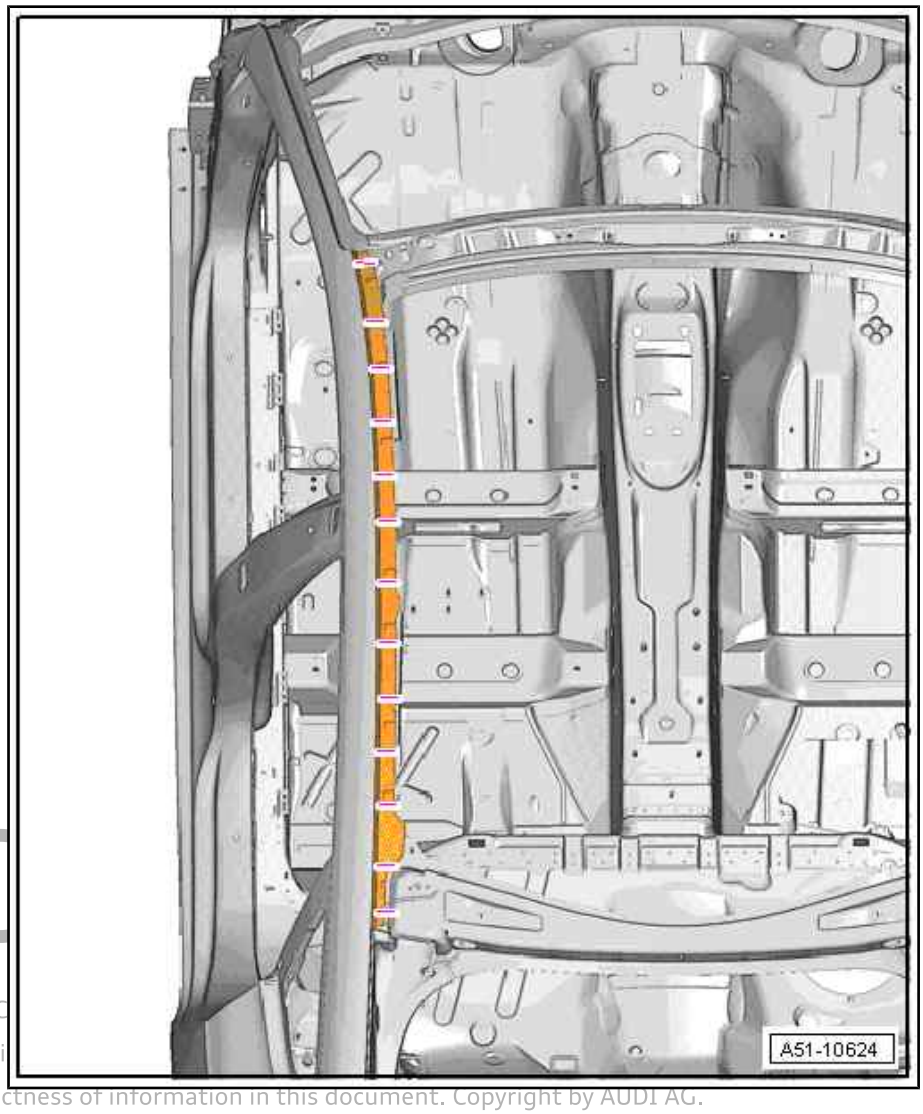
Note

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- .

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– Take hold of remaining sections with pliers and break open plasmatron weld seam by pulling up and down.

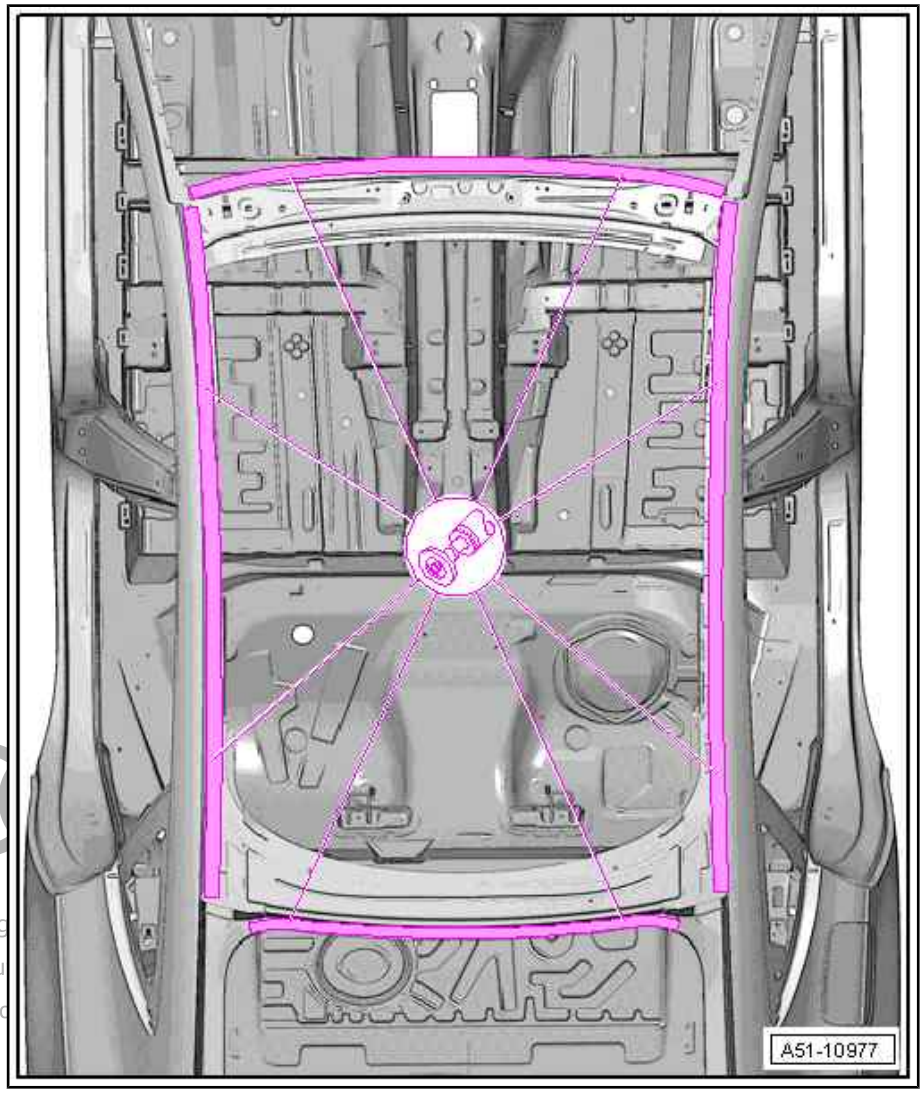


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– Remove remaining material using compact angle grinder .

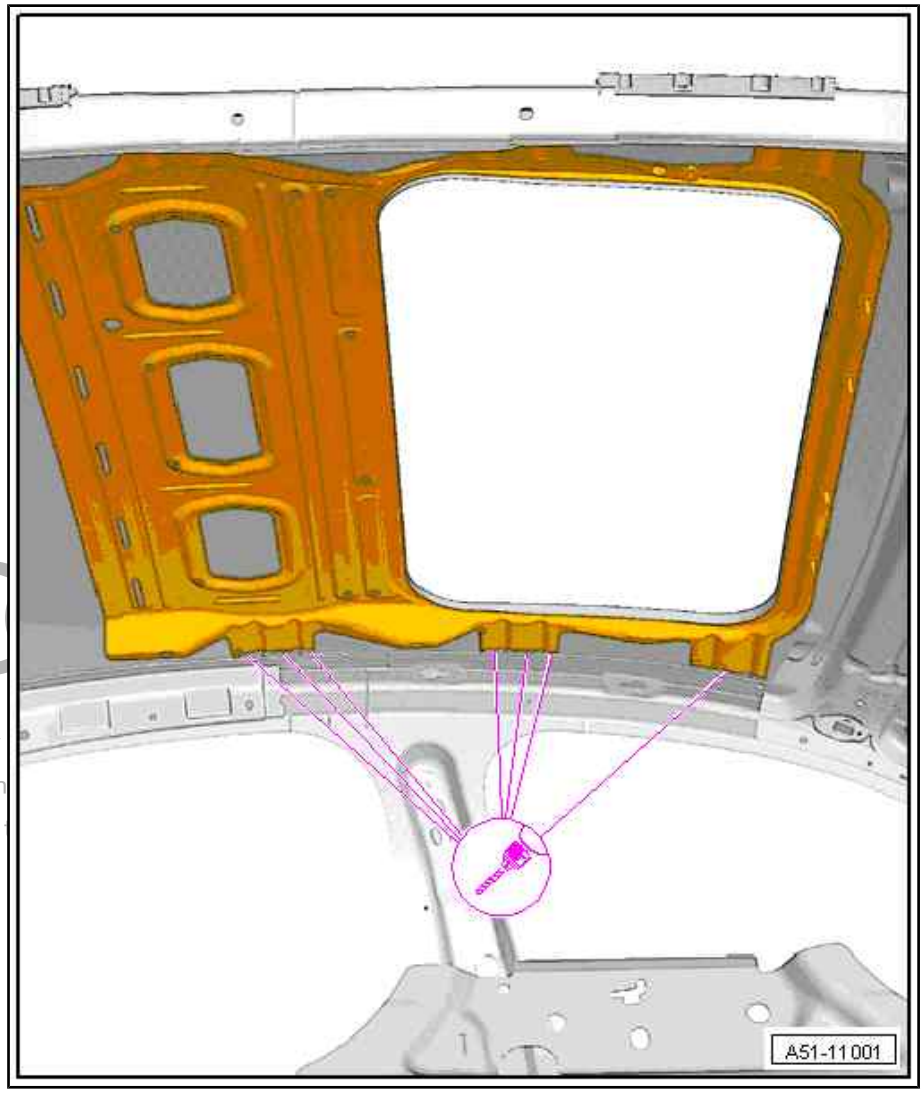
Take care not to damage roof frame when removing remaining material from roof frame.

Do not use cutting discs or rough-filing discs.



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



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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 - , 3 sets of cartridges
- Glass and paint primer - D 009 200 02-
- 2-component window adhesive - DA 004 660 M2 - , 2 sets of cartridges

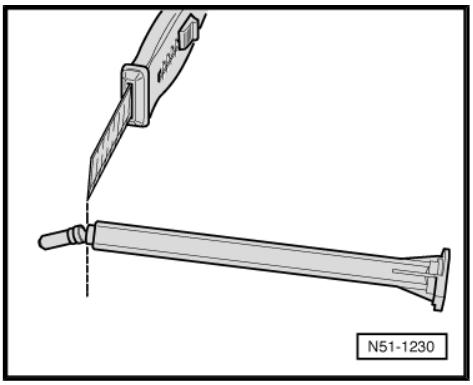
Note

- *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 (surfacer) before bonding in roof.*

Preparing new part

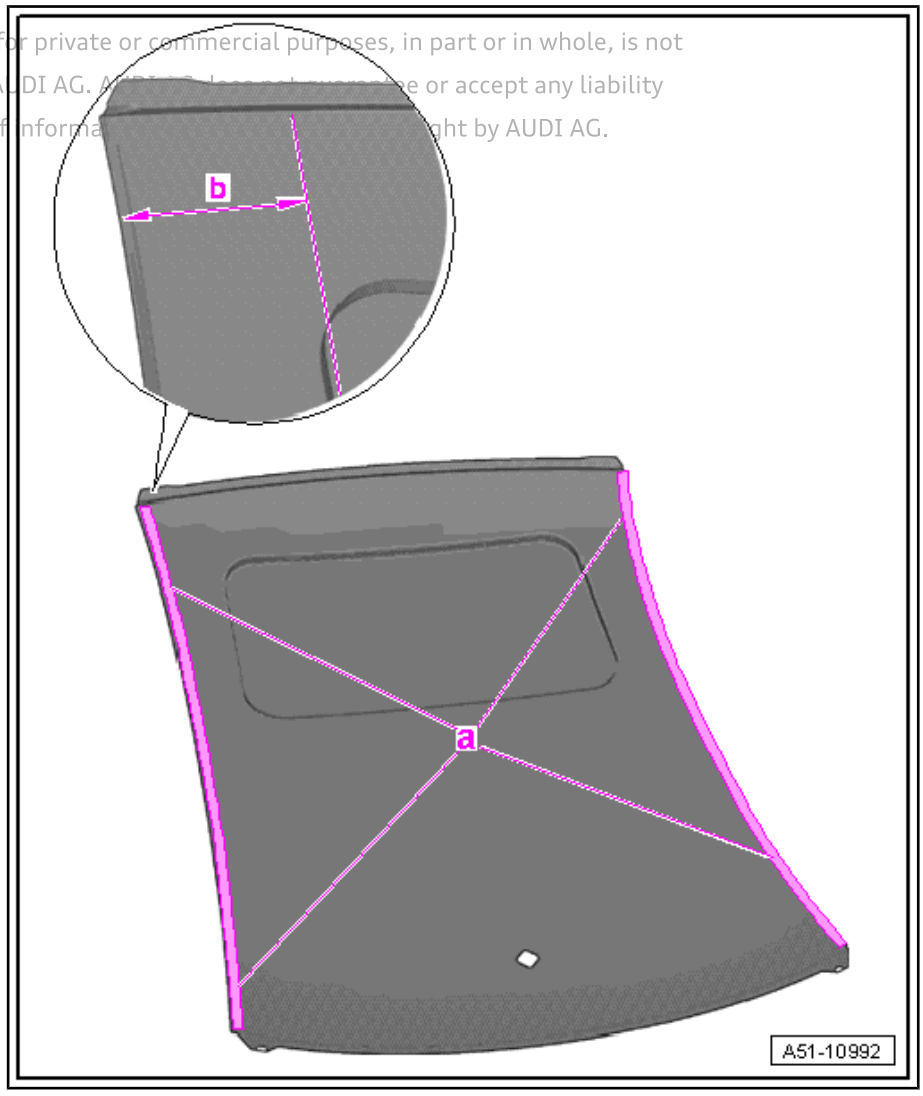
– Prepare adhesive cartridges required for bonding.

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



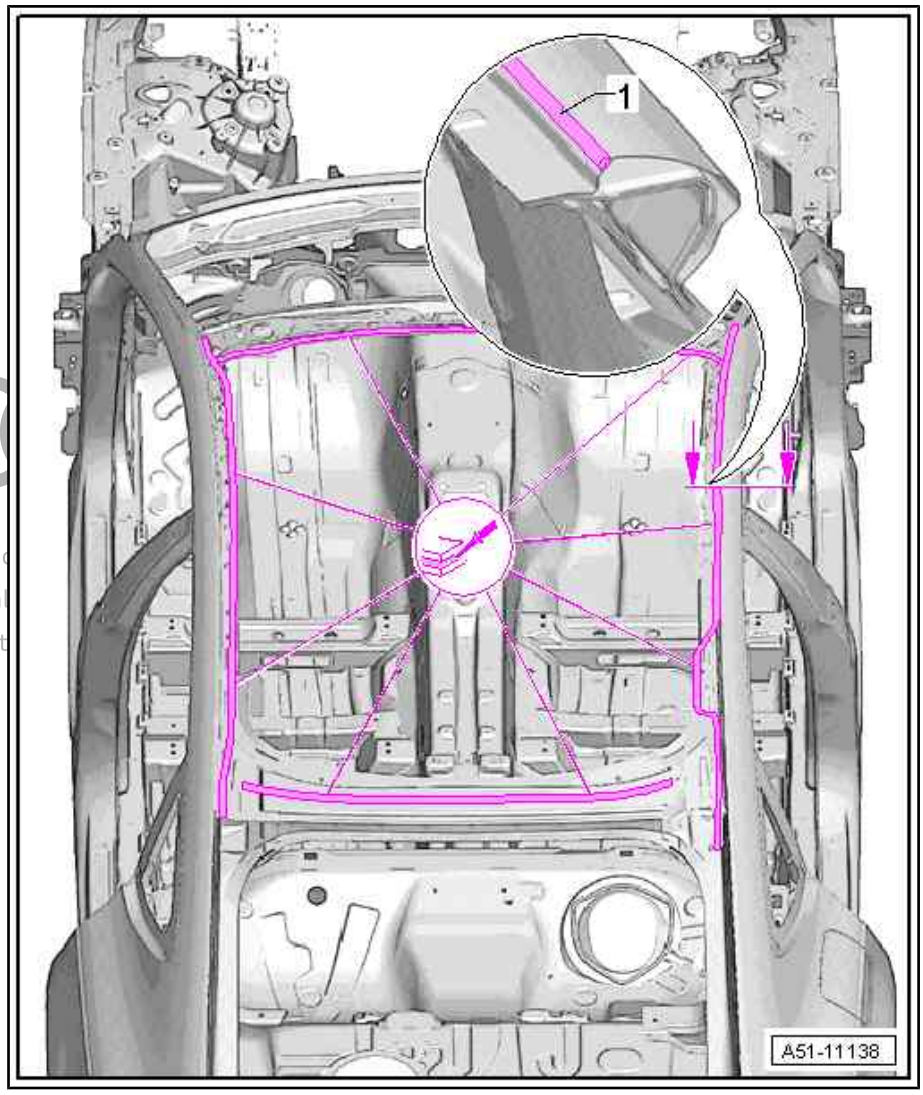
– Apply glass and paint primer - D 009 200 02- approx. 5 cm wide -b- on inner section of roof and inner side flange -a-.

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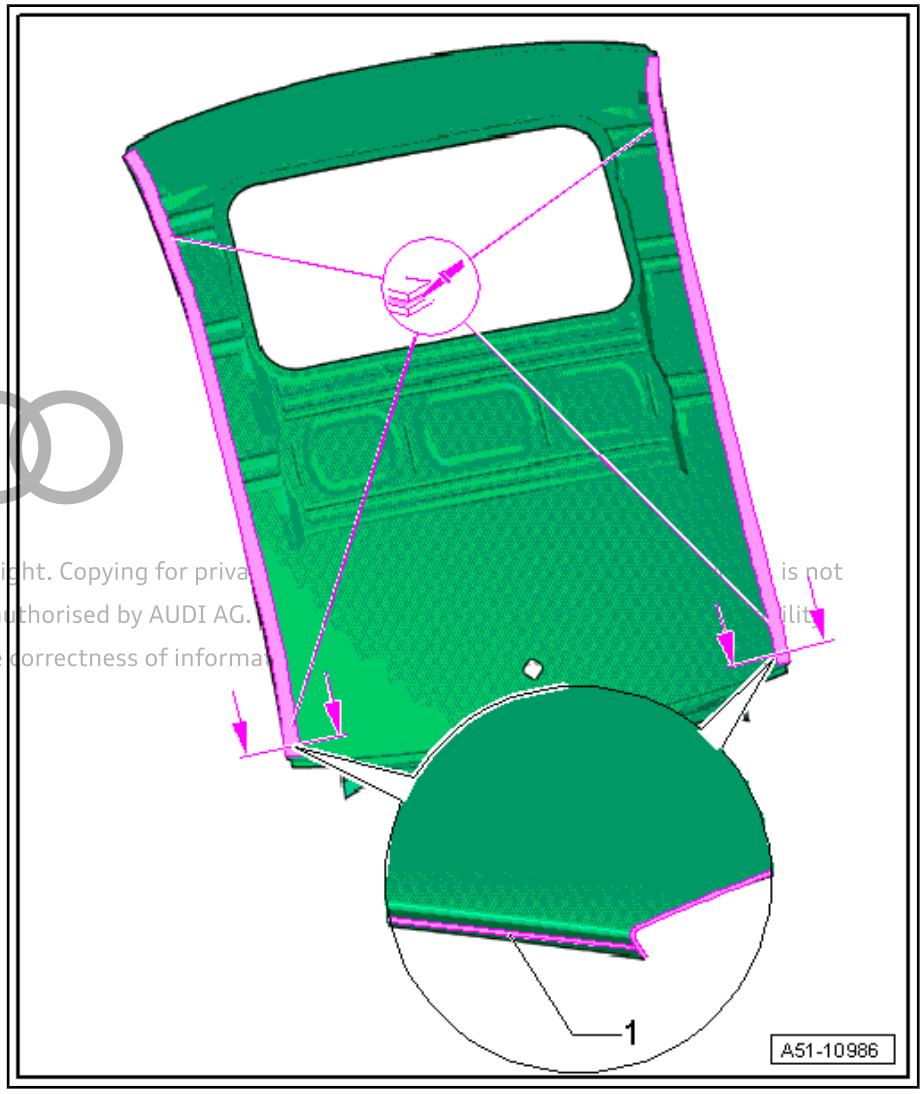
– Apply assembly adhesive D 190 MKD A3 to roof frame using pneumatic cartridge gun - V.A.G 1761/1- .

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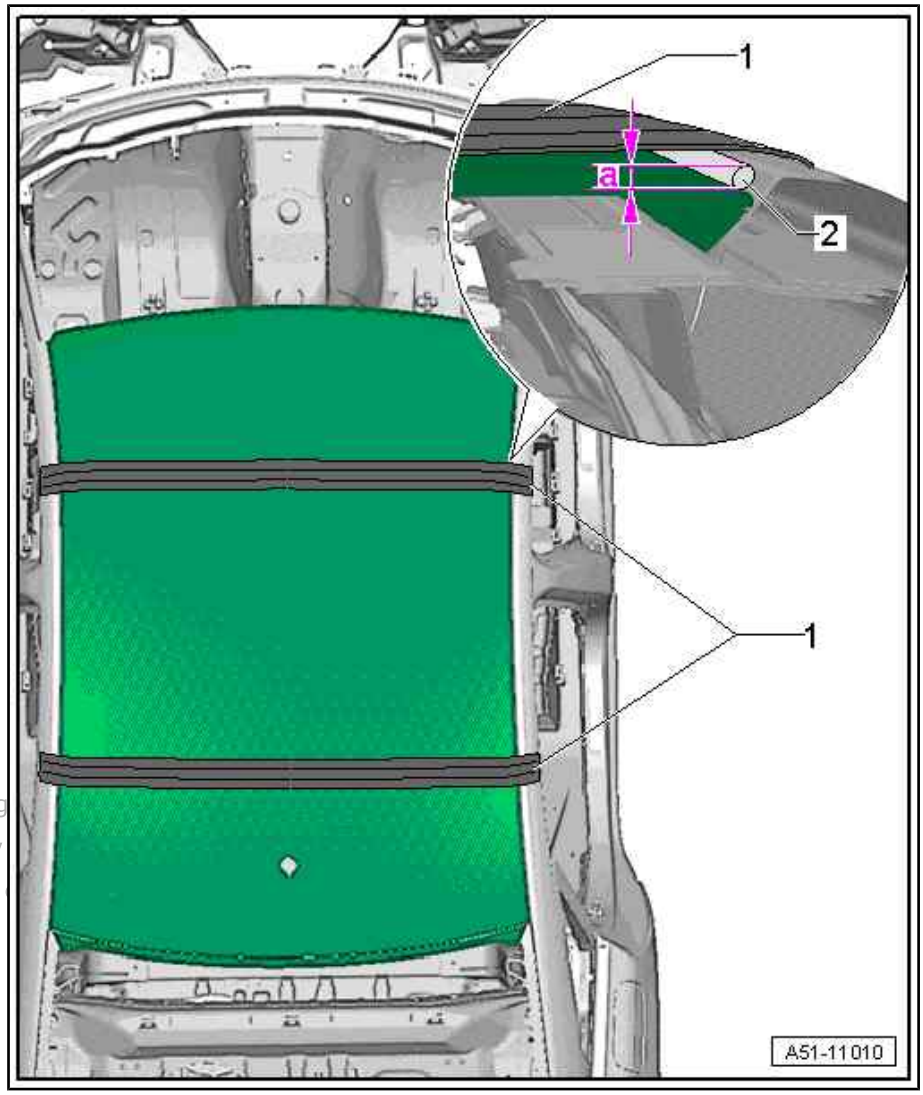
– Immediately fit and align roof.
– Use one self-tapping screw at each end to fix roof in position in centring hole in windscreen flange and sealing flange for rear lid.
– Fix roof in position at windscreen opening and rear window opening using mole grips, 18-18 - VAS 5430/1- .

Adjusting roof depth

– Additionally fix roof in position with two tensioning straps - T 10038- -1-.
– Set required depth using e.g. drill bit or suitable wooden spacer -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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CAUTION

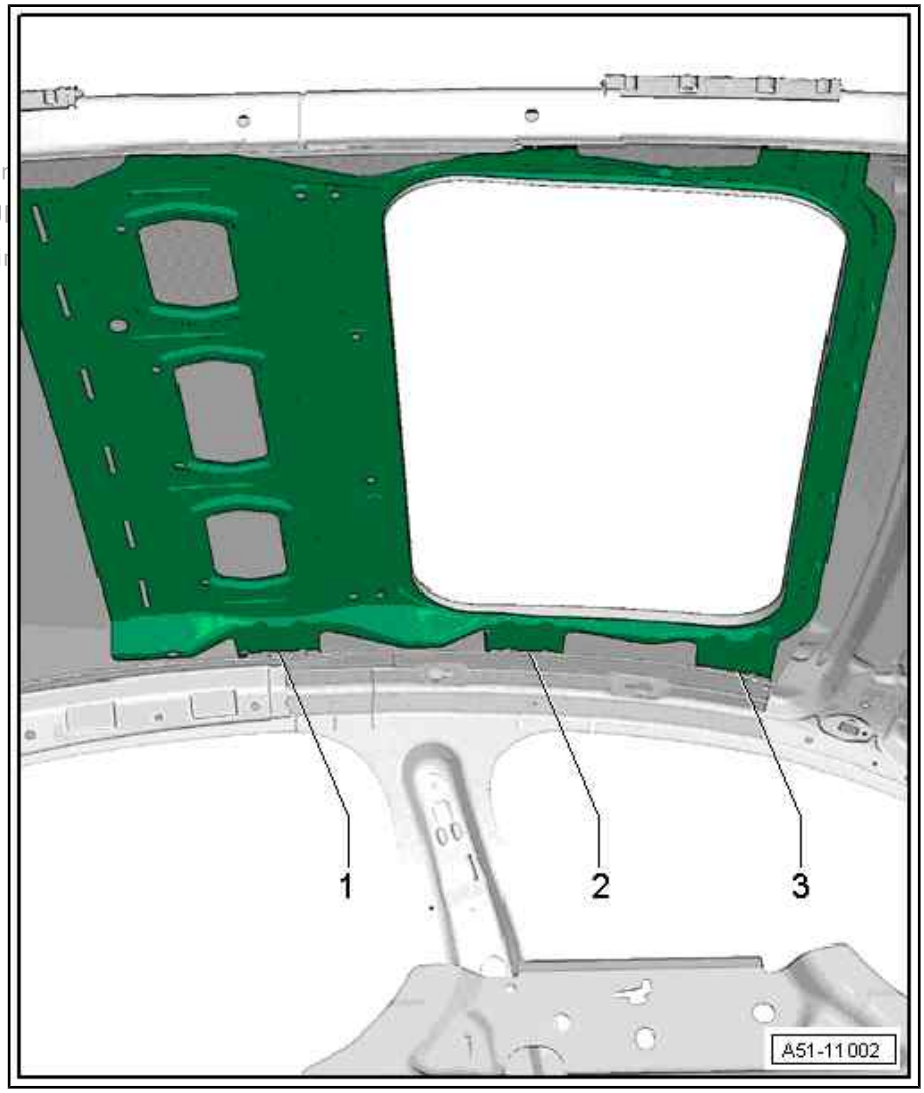
Allow bonded joint on roof to harden for 60 minutes at approx. 65 °C using radiant heater. Check temperature constantly with temperature sensor.

1 - Install 3x pop rivet - 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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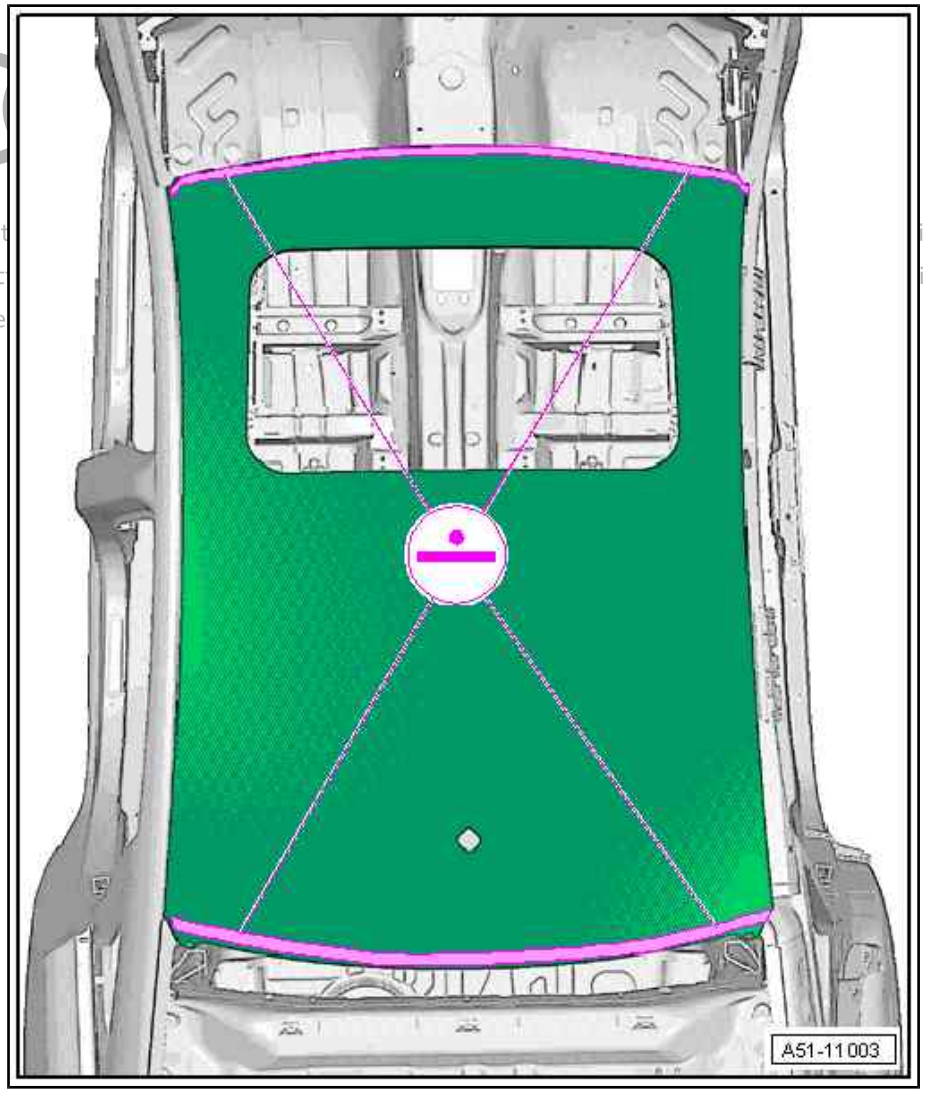
Welding in

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.

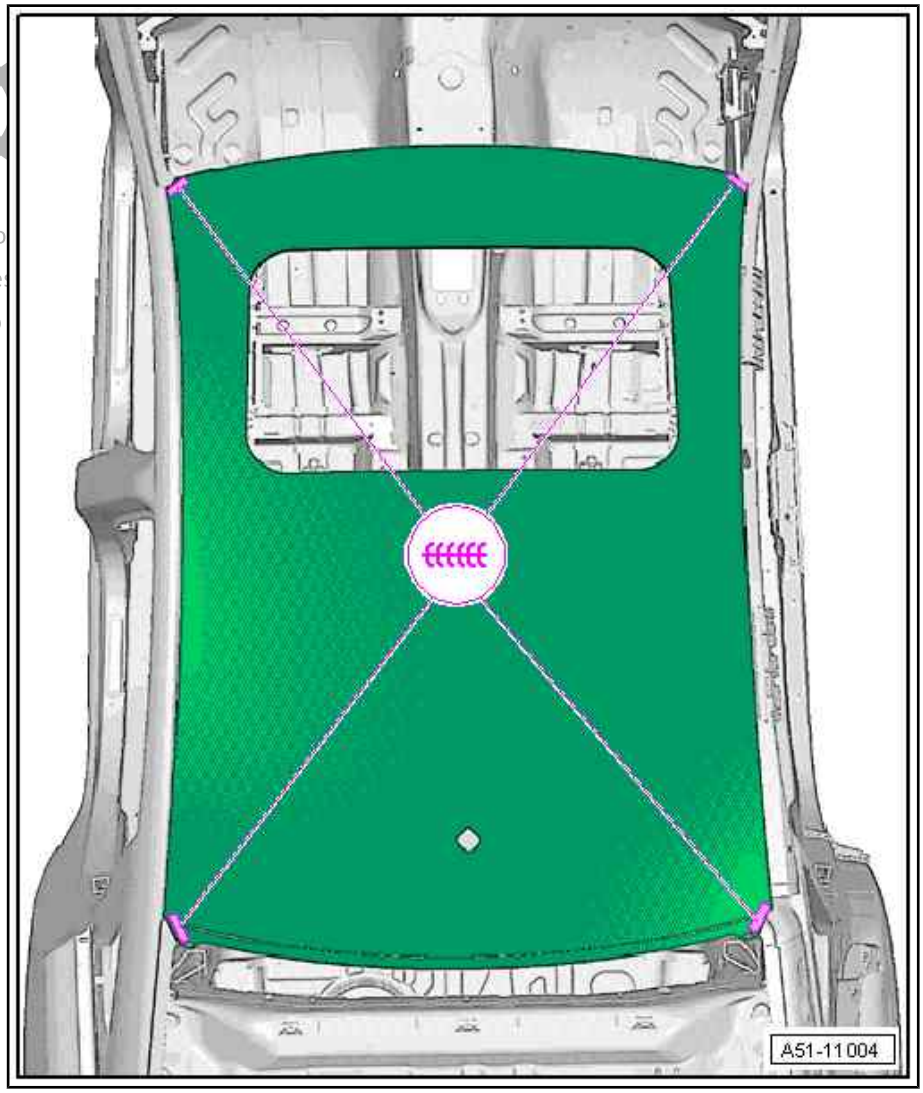
– Weld in roof using resistance spot welder : RP spot weld seam.

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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 .

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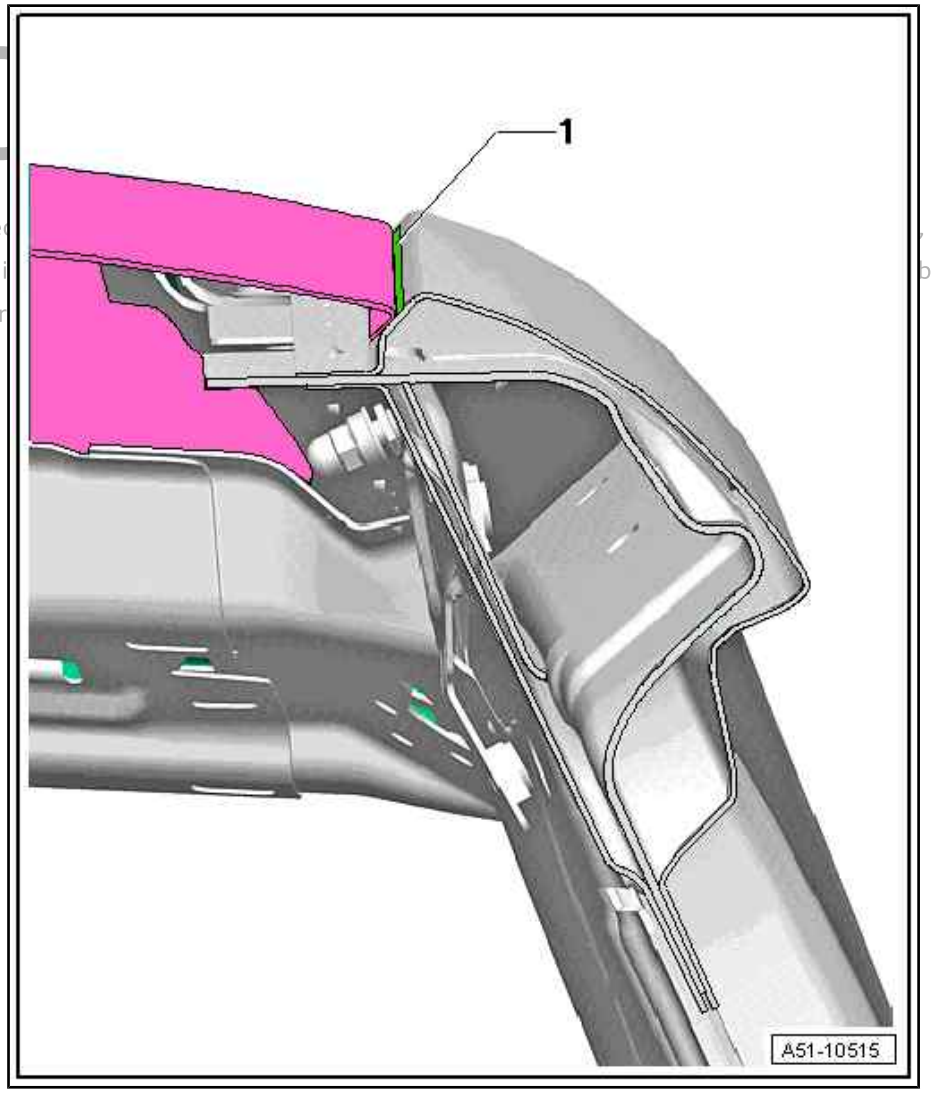


Note

- *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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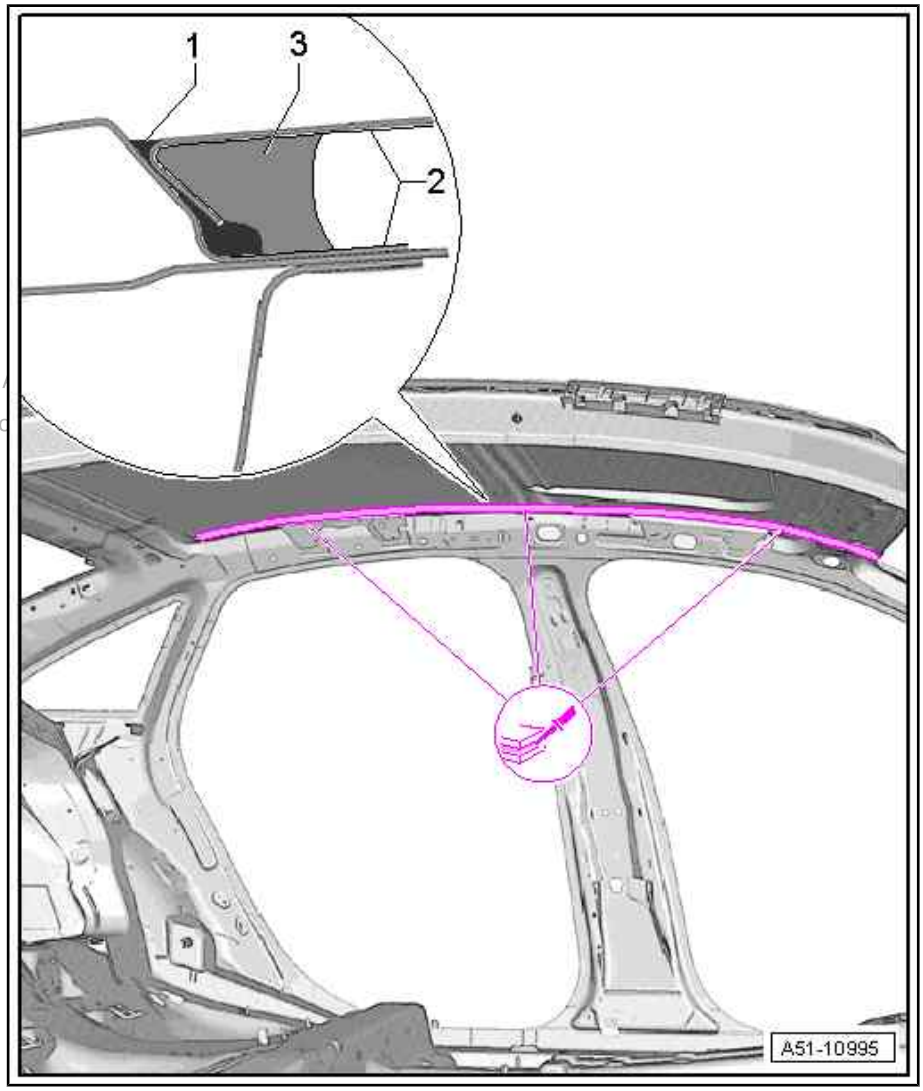
Note

Please note instructions for use: window adhesive should be applied at a temperature of approx. 20°C.

– 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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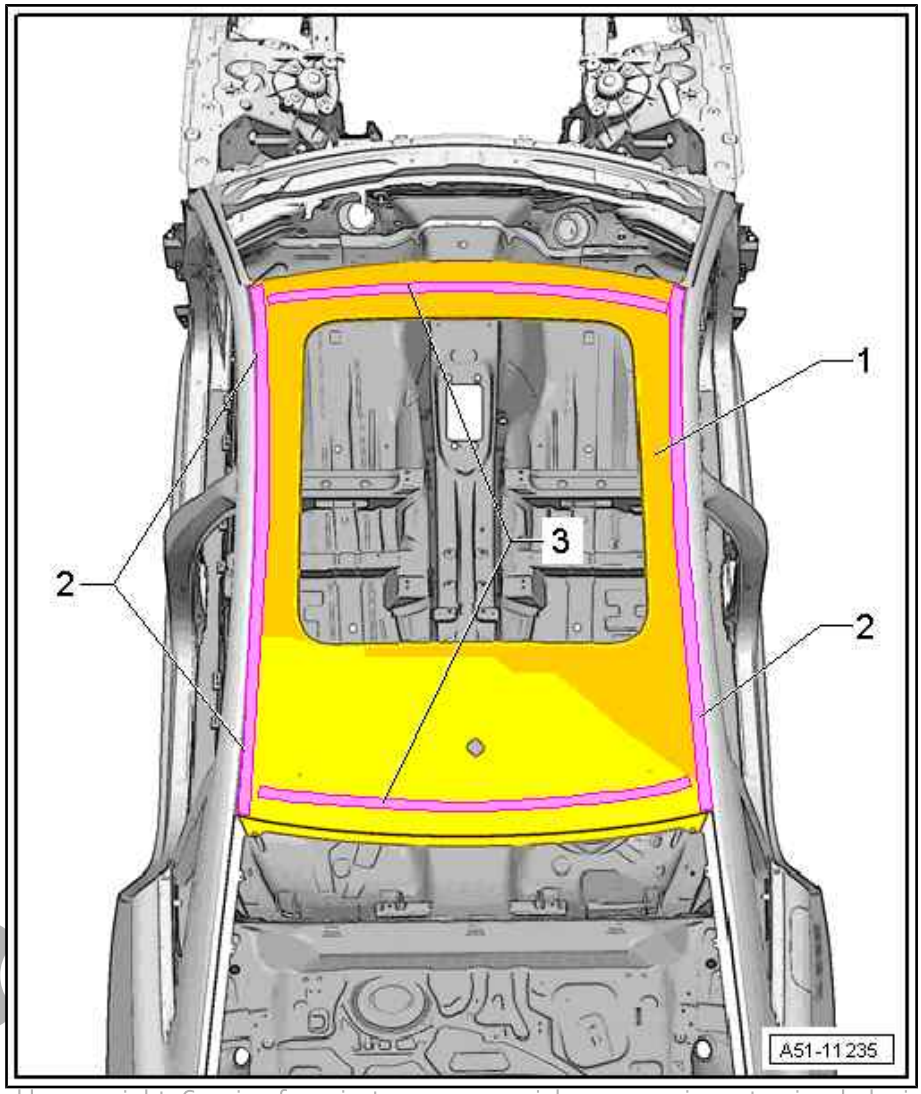
RO: 51 23 55 00

4 Roof - Renewal (Saloon with large sunroof, long version)

1 - Roof

2 - Plasmatron weld seam

3 - Bonded area



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4.1 Notes for vehicles with hybrid drive

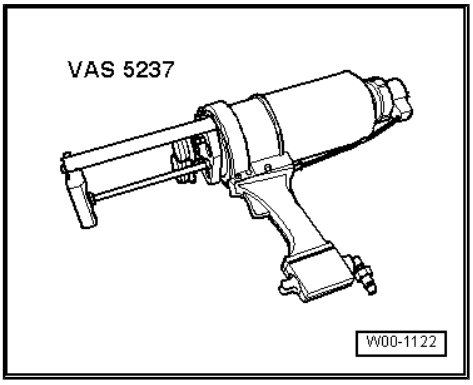
⇒ page 5

4.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Brush grinder
- Drill
- Spot weld breaker
- Body saw
- Suction lifter or magnet
- Setting gauge - 3371-

- Compressed-air gun - V.A.G 1761/1-
- Tensioning strap - T 10038-
- Electric cutter
- Mole grips, 18-18
- Double cartridge gun - VAS 6453-
- Double cartridge gun - VAS 5237-



4.3 Procedure

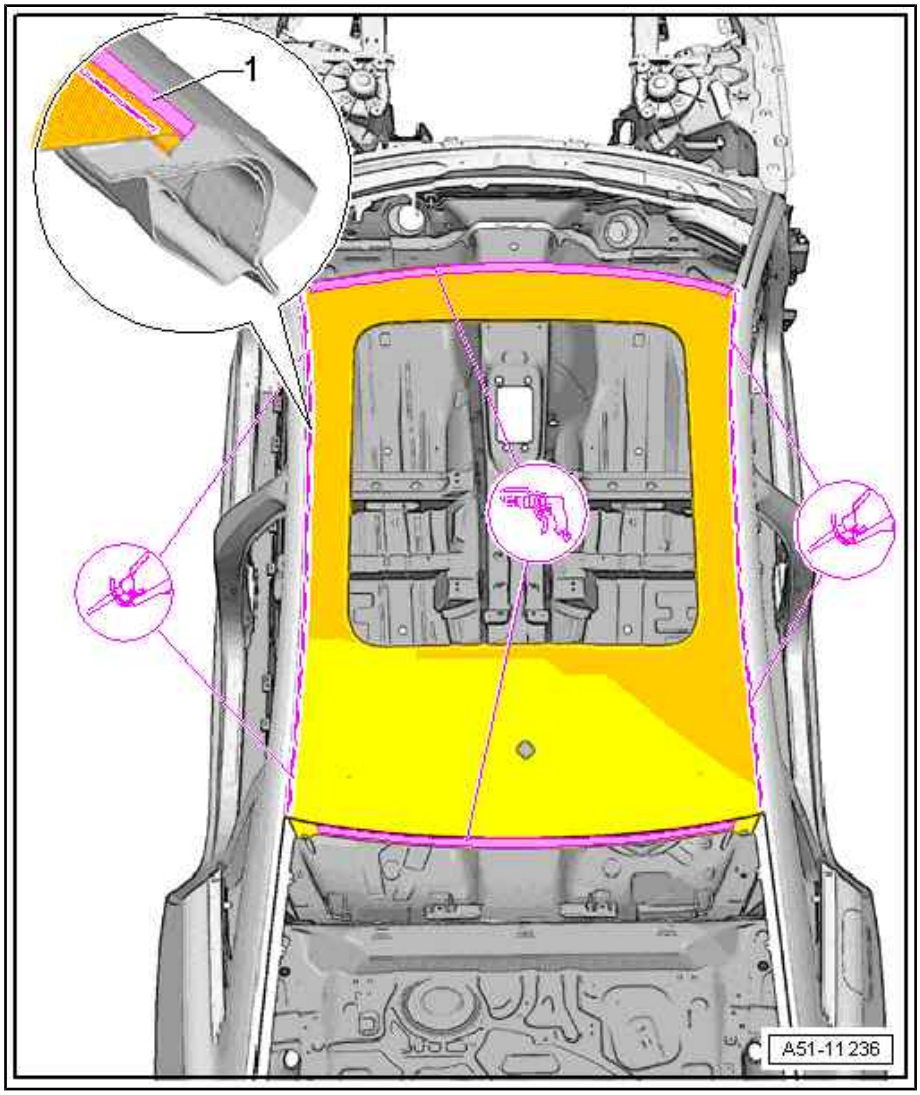
Cutting locations

– Roughly cut out roof parallel with plasmatron weld seam -1- at a distance of approx. 30 mm using body saw .

– Separate original joint to windscreen opening and rear window opening using spot weld breaker .

– 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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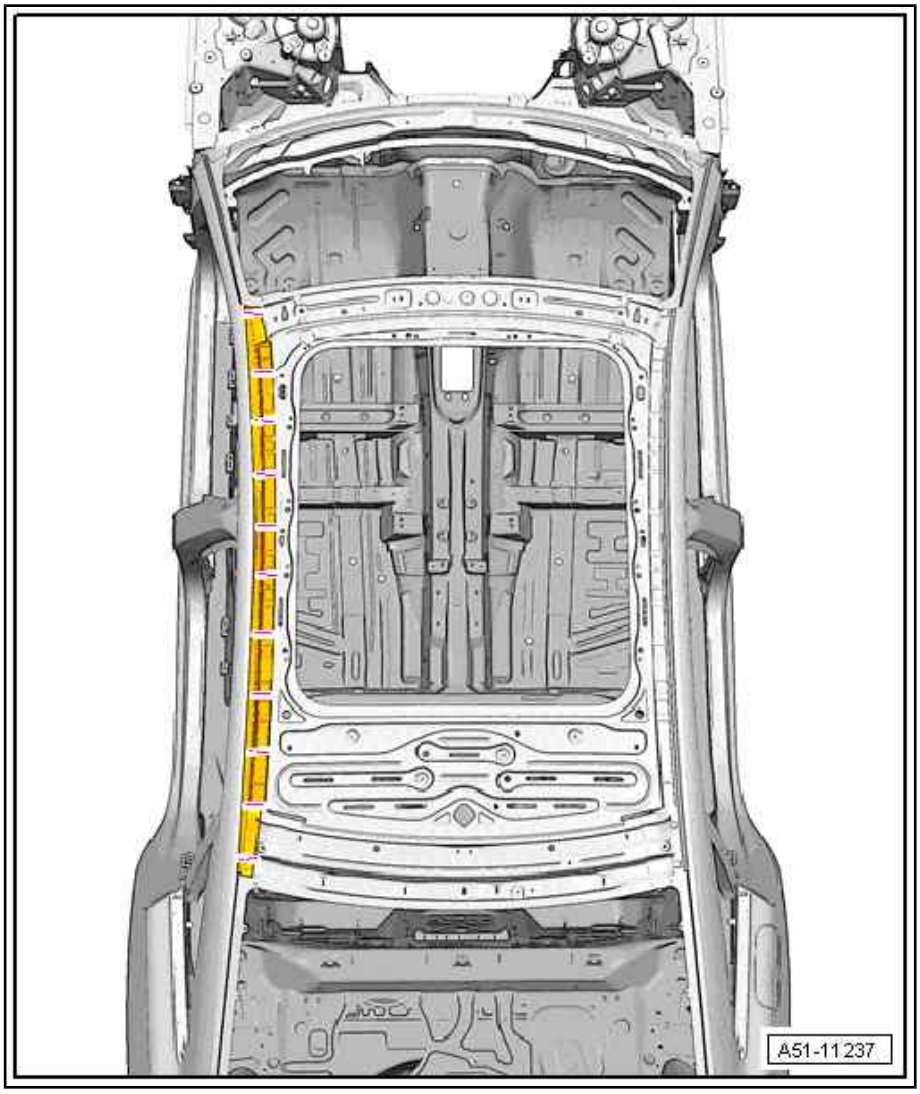


Note

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.

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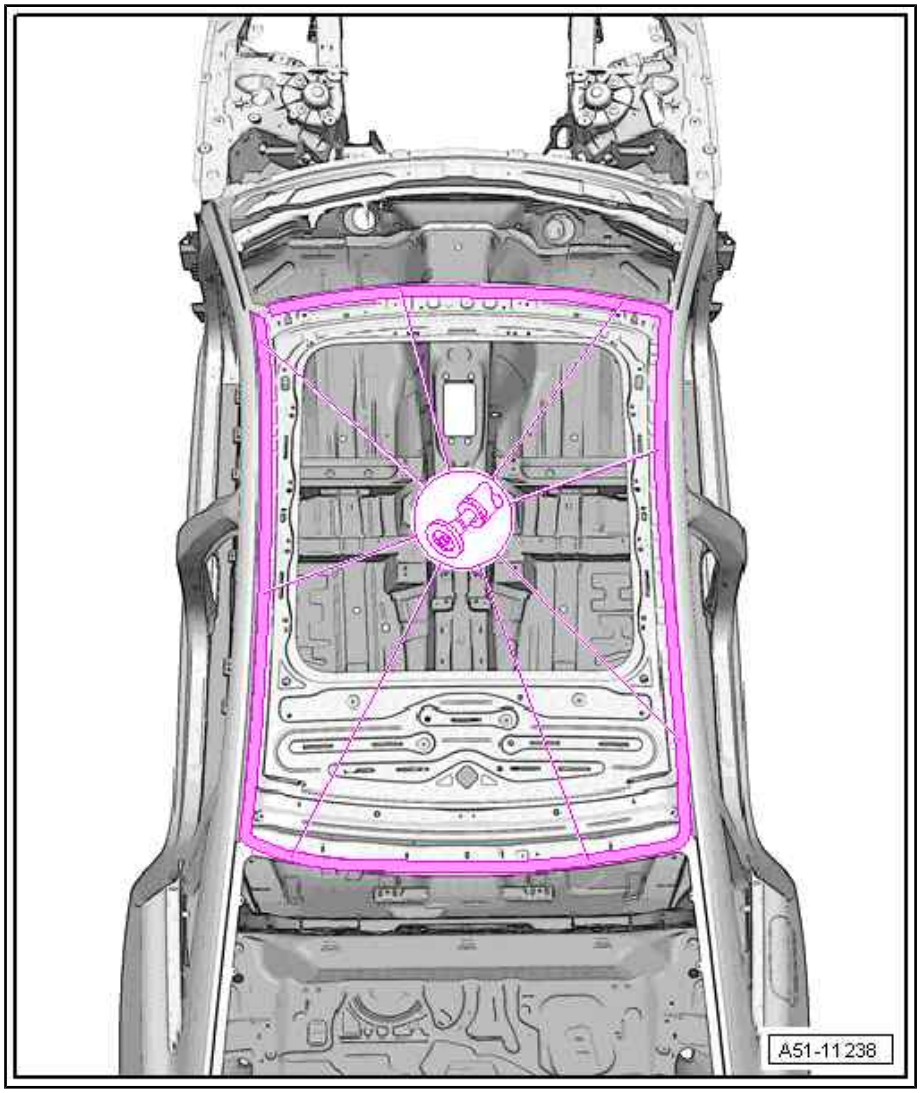


– Remove remaining material using compact angle grinder .

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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Replacement parts

- Cleaning solution - D 009 401 04-
- Roof (version with large sunroof)
- Single-component assembly adhesive - D 190 MKD A3 - , 1 cartridge
- 2-component epoxy adhesive - DA 180 A00 A2 - , 2 sets of cartridges

Note

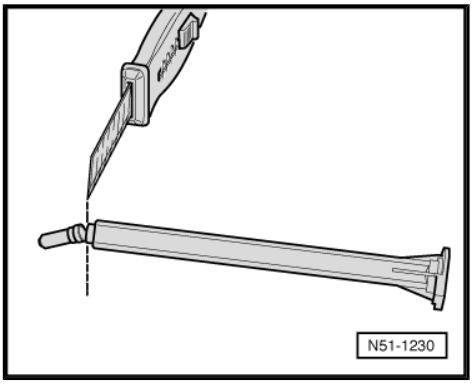
- *It is important to keep to the following procedure to ensure a satisfactory and effective roof repair.*
- *Bonding areas must not be treated with filler coat (surfacer) before bonding in roof.*

Preparing new part

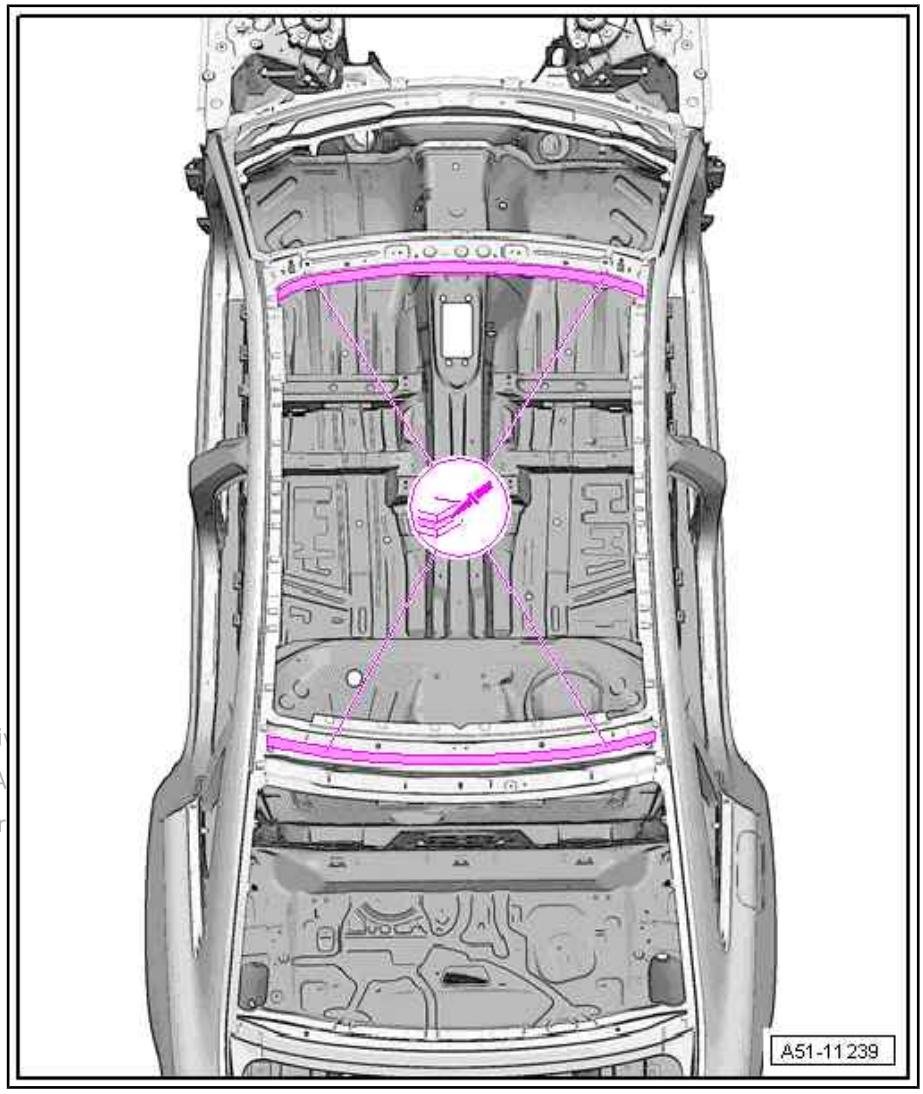
– Prepare adhesive cartridges required for bonding.

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



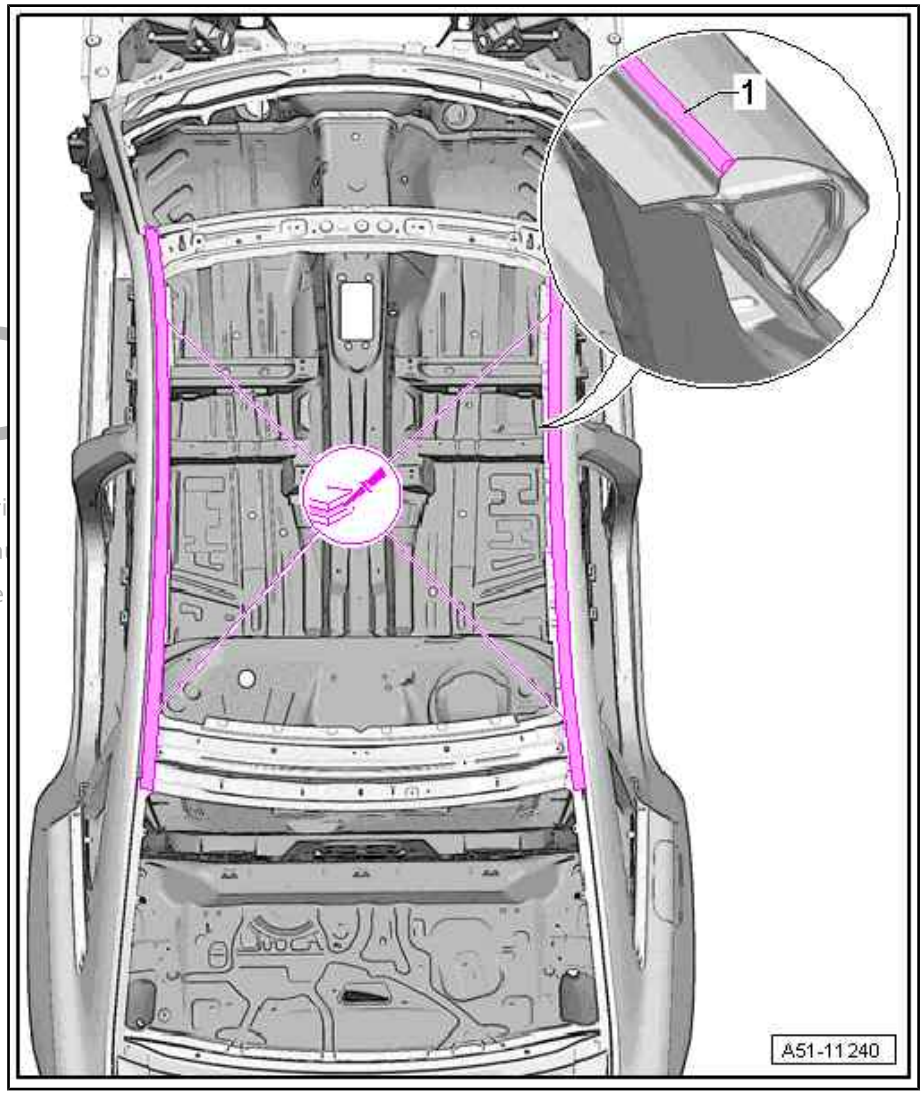
– Apply assembly adhesive D 190 MKD A3 to roof frame using pneumatic cartridge gun - V.A.G 1761/1- .



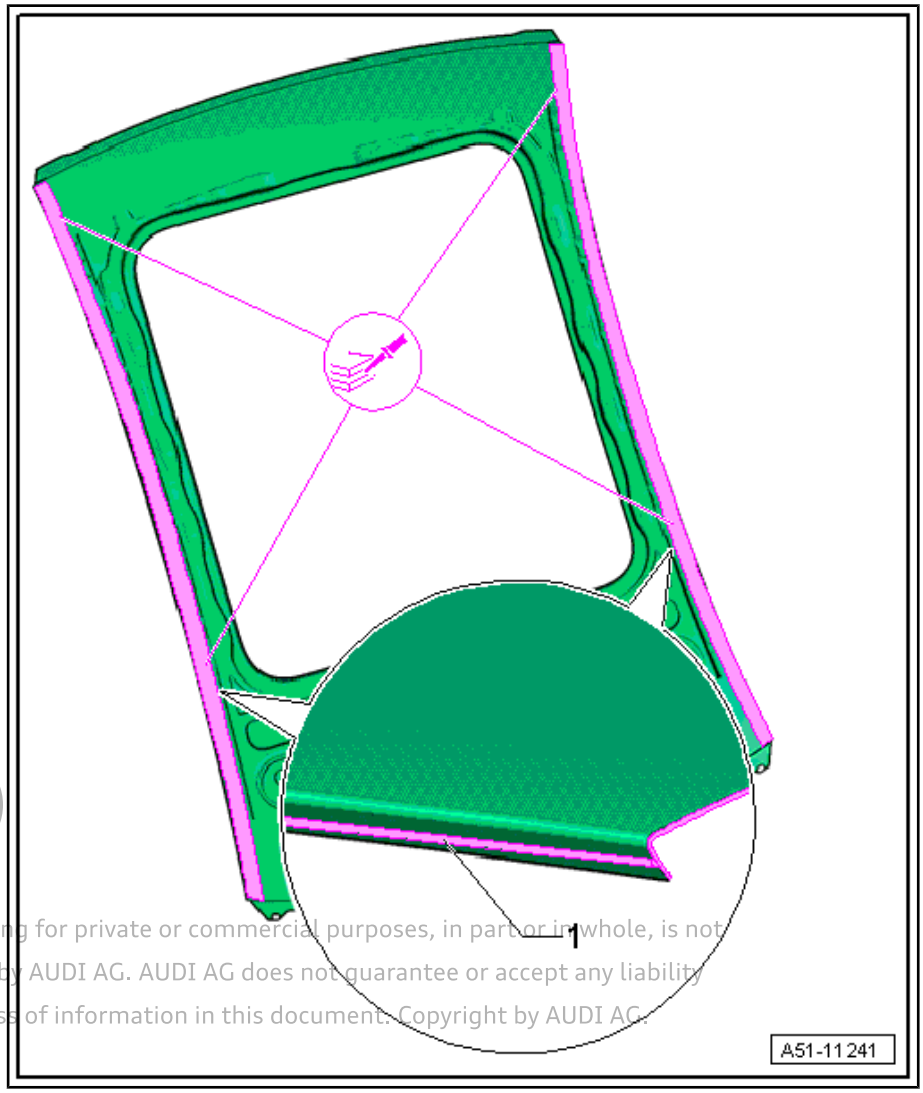
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– Apply continuous bead -1- of 2-component epoxy adhesive - DA 180 A00 A2- to bevelled sections of roof side members using double-cartridge gun - VAS 6453- .

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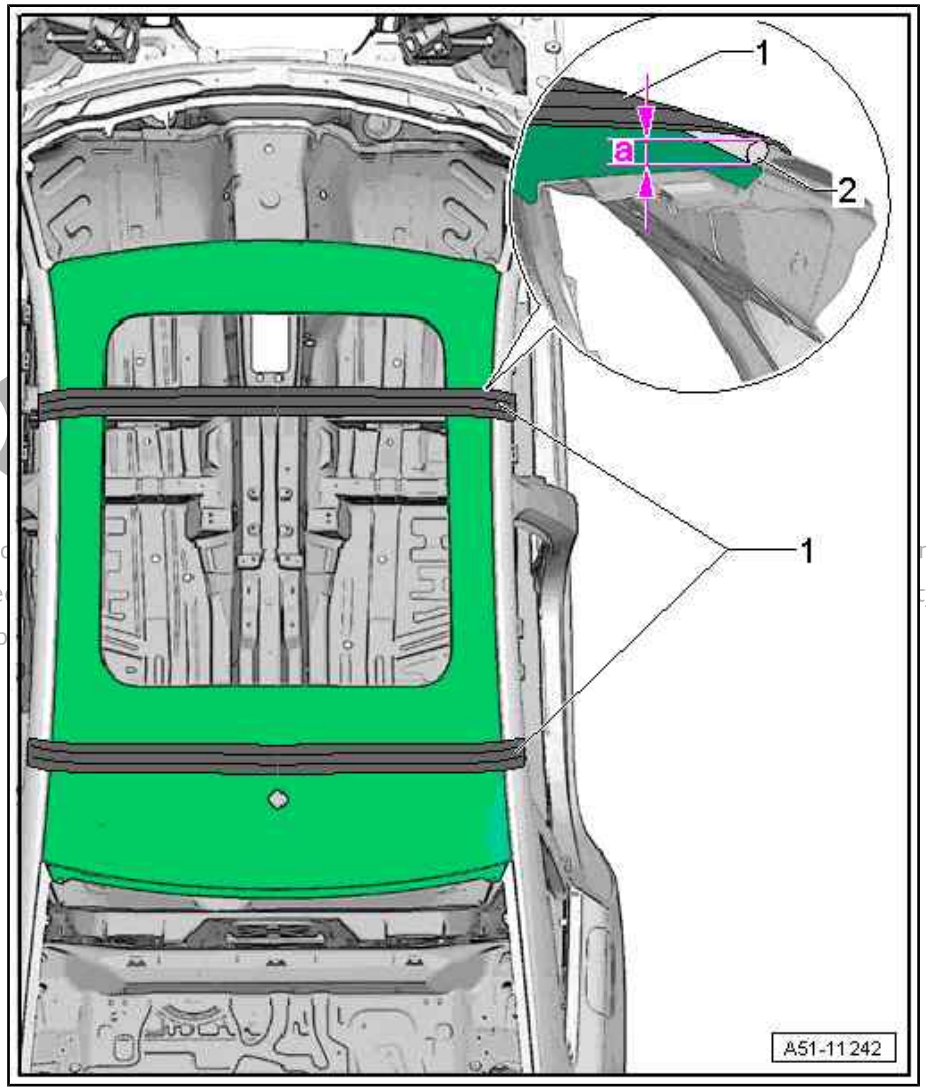
– Immediately fit and align roof.
– Use one self-tapping screw at each end to fix roof in position in centring hole in windscreen flange and sealing flange for rear lid.
– Fix roof in position at windscreen opening and rear window opening using mole grips, 18-18 - VAS 5430/1- .

Adjusting roof depth

– Additionally fix roof in position with two tensioning straps - T 10038- -1-.
– Set required depth using e.g. drill bit or suitable wooden spacer -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 edge of roof.

CAUTION

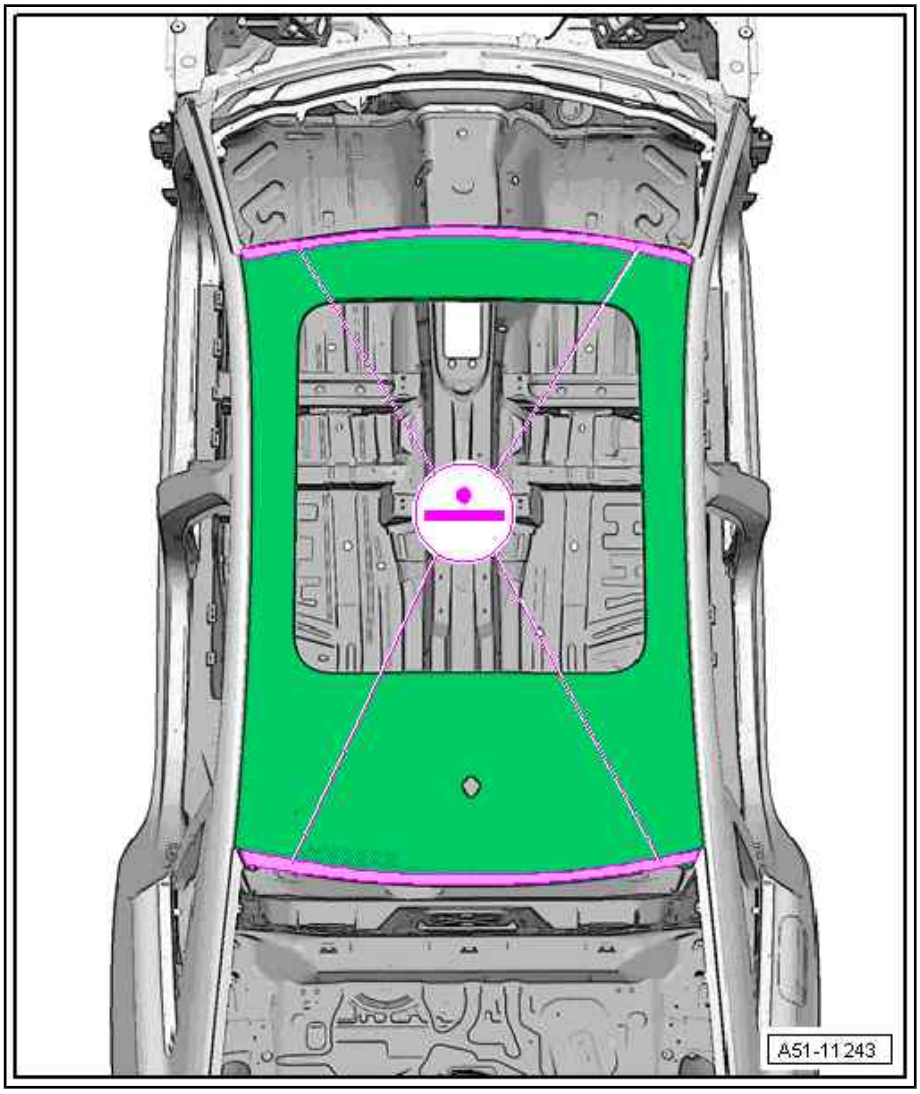
Allow bonded joint on roof to harden for 60 minutes at approx. 65 °C using radiant heater. Check temperature constantly with temperature sensor.

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.

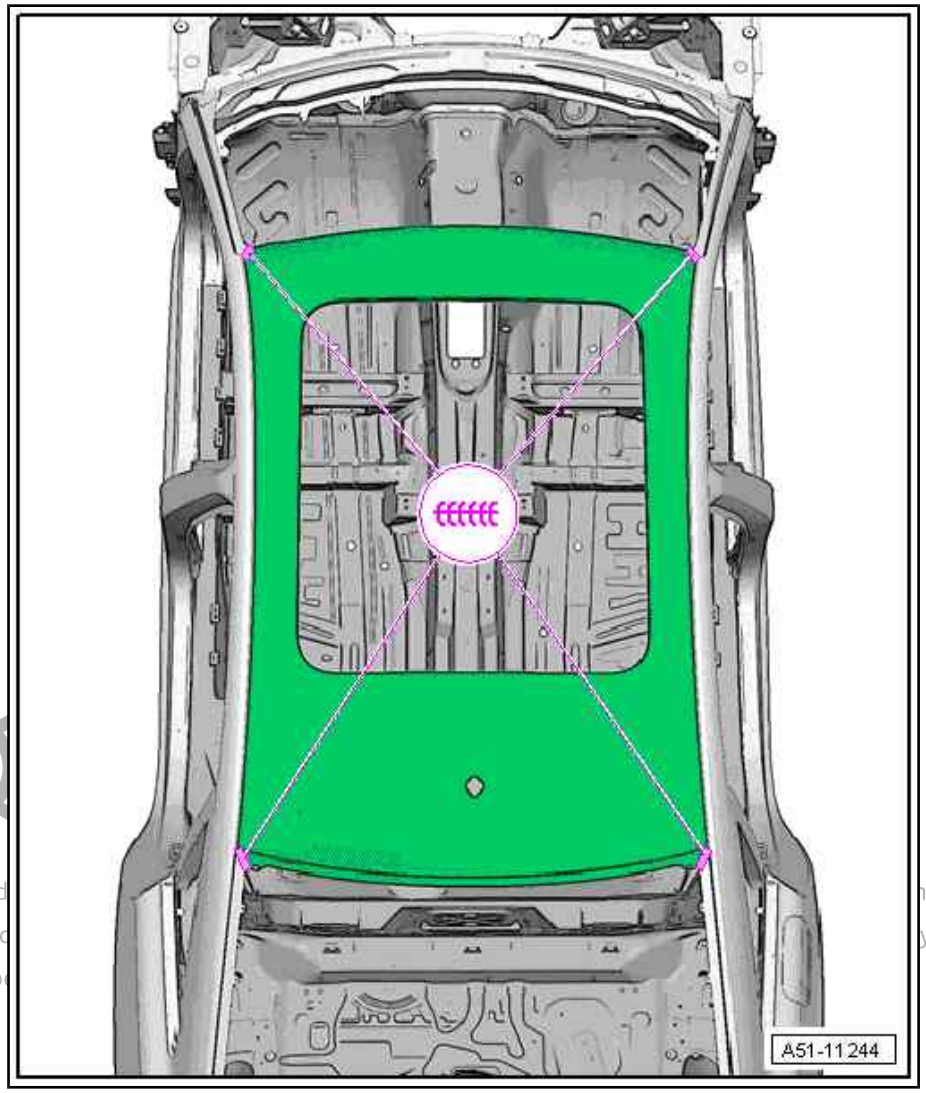
Welding in

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



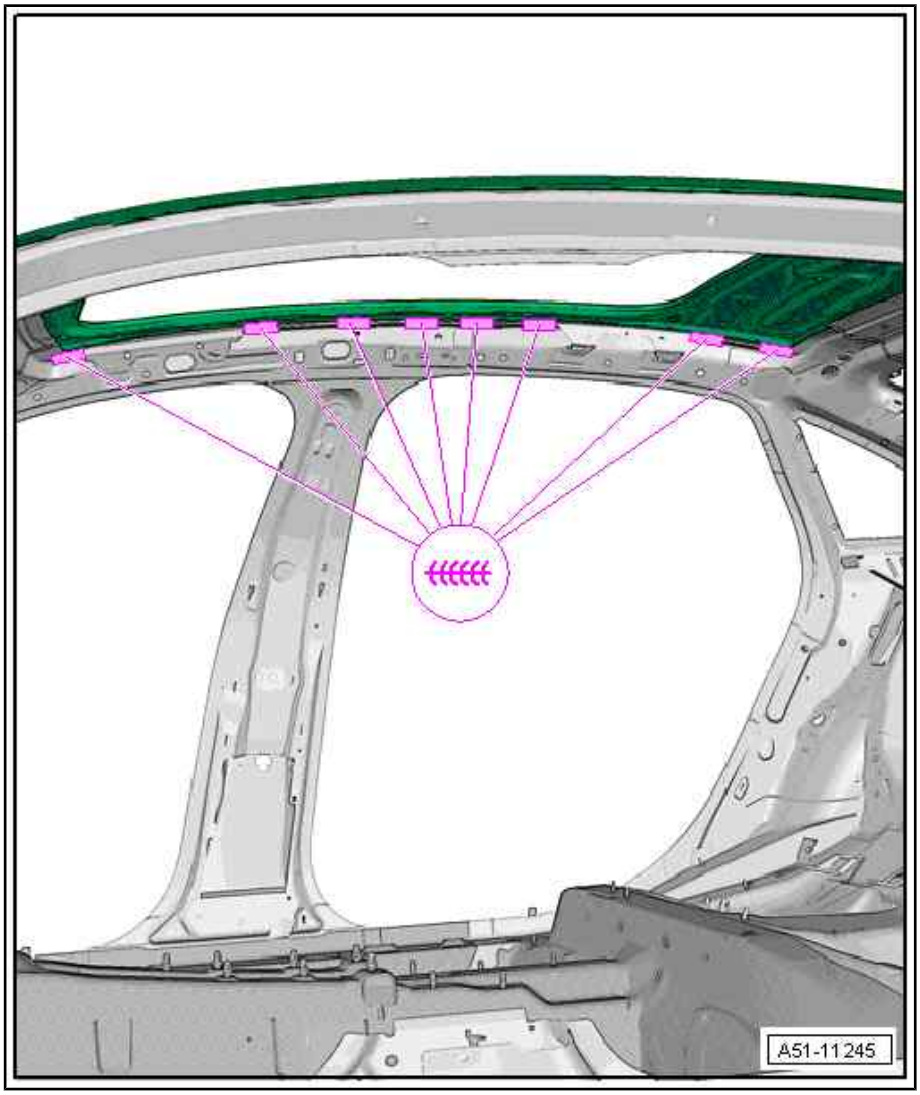
– Make additional welds for roof using shielded arc welding equipment : SG continuous seam.
– Grind down SG continuous weld seams using compact angle grinder .

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– Weld in roof using shielded arc welding equipment : SG continuous seam (8 x 15 mm).

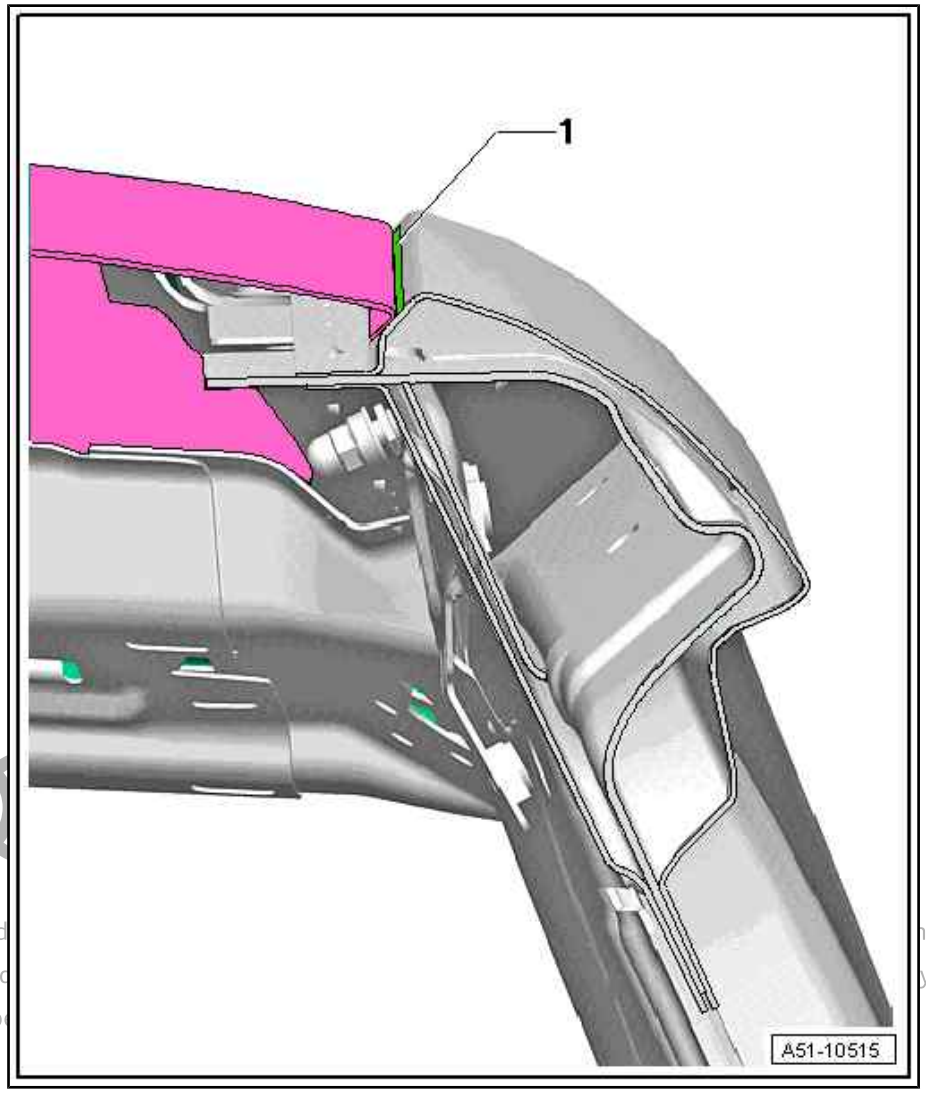


Note

- *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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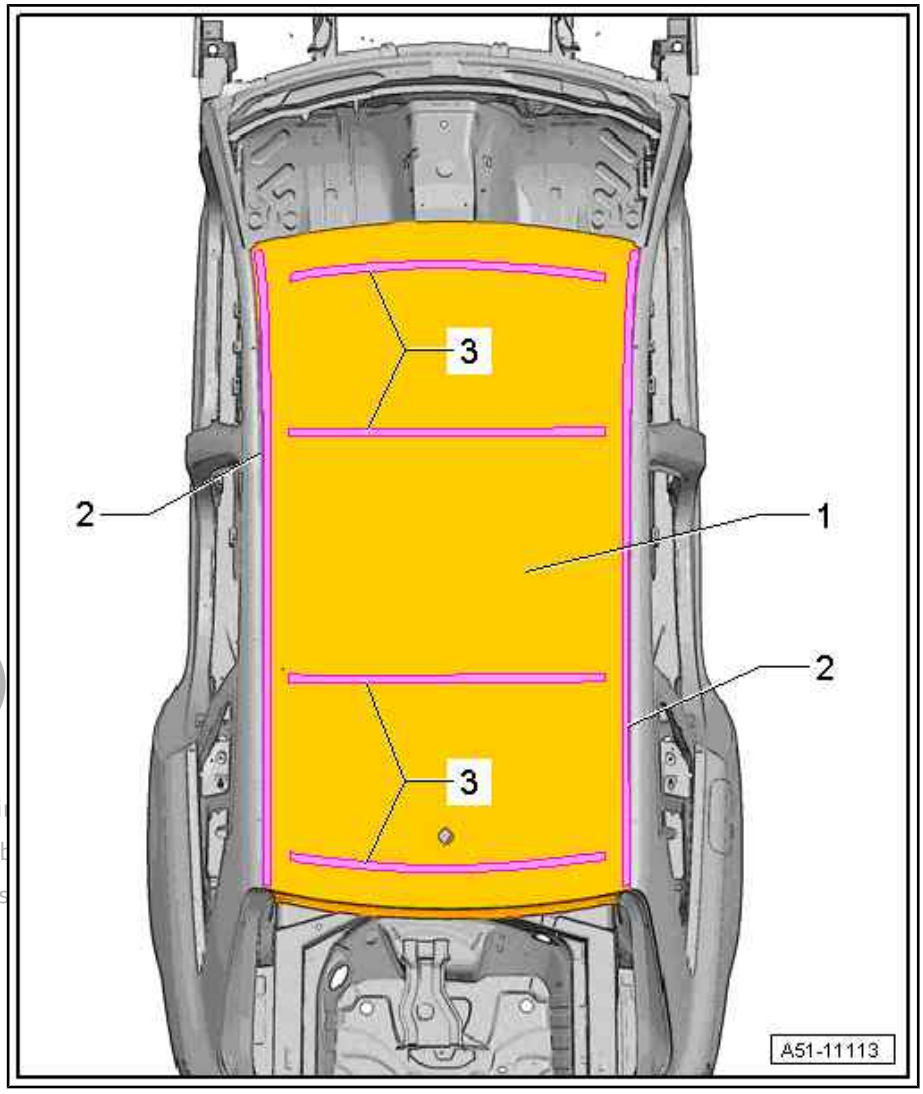
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5 Roof - Renewal (Avant)

1 - Roof

2 - Plasmatron weld seam

3 - Bonded area



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5.1 Notes for vehicles with hybrid drive

⇒ page 5

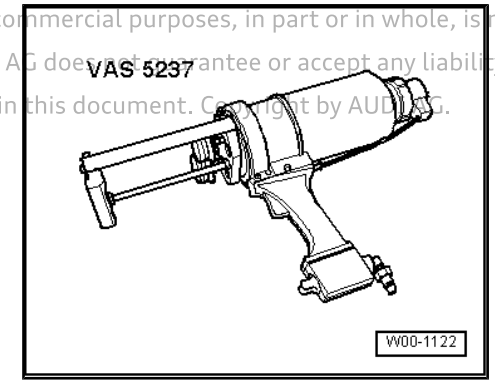
5.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Drill
- Radiant heater
- Mole grips, 18-18
- Spot weld breaker
- Body saw
- Suction lifter - V.A.G 1344- or magnet - VAS 6739-

- Setting gauge - 3371-
- Compressed-air gun - V.A.G 1761/1-
- Tensioning strap - T 10038-
- Double cartridge gun - VAS 6453-
- Tin snips
- Double cartridge gun - VAS 5237-

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Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

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

– Open cap.

2 - Static mixer

3 - Extension hose

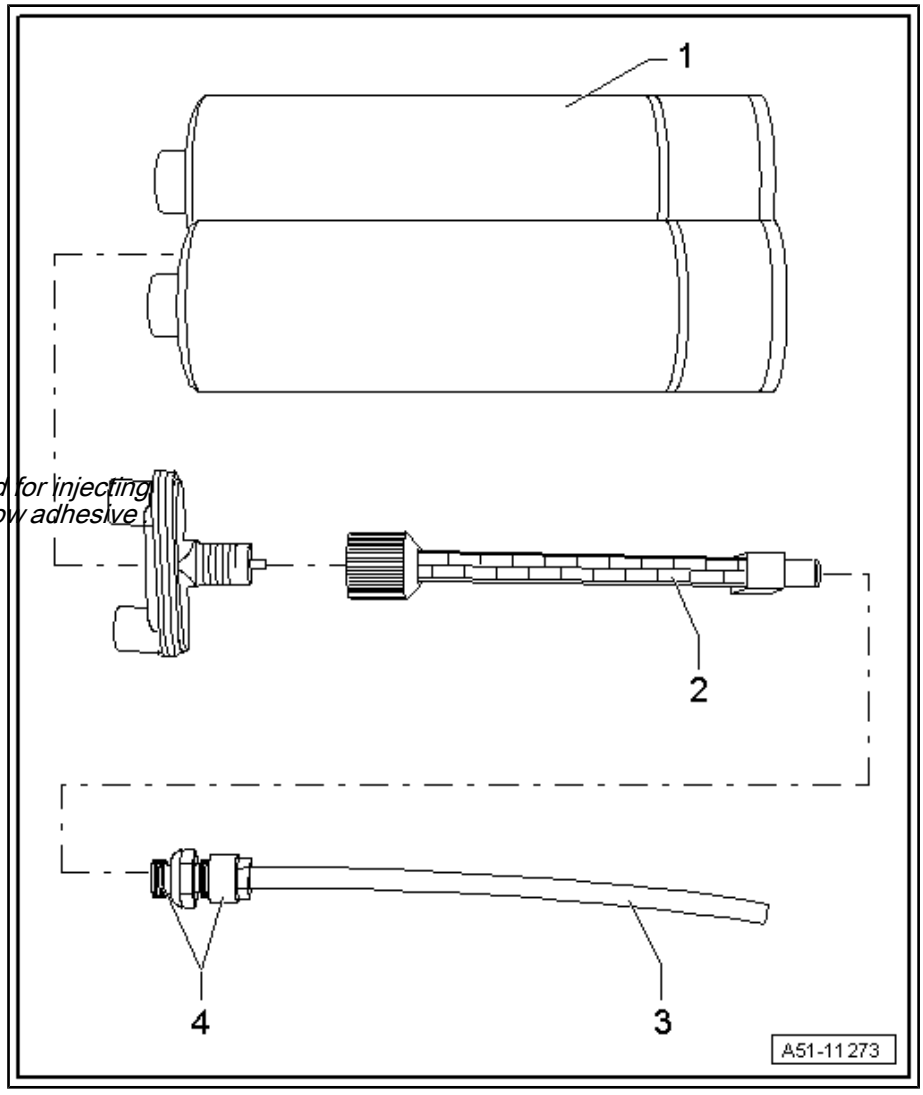
Part number 000 809 937

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

4 - Adapter

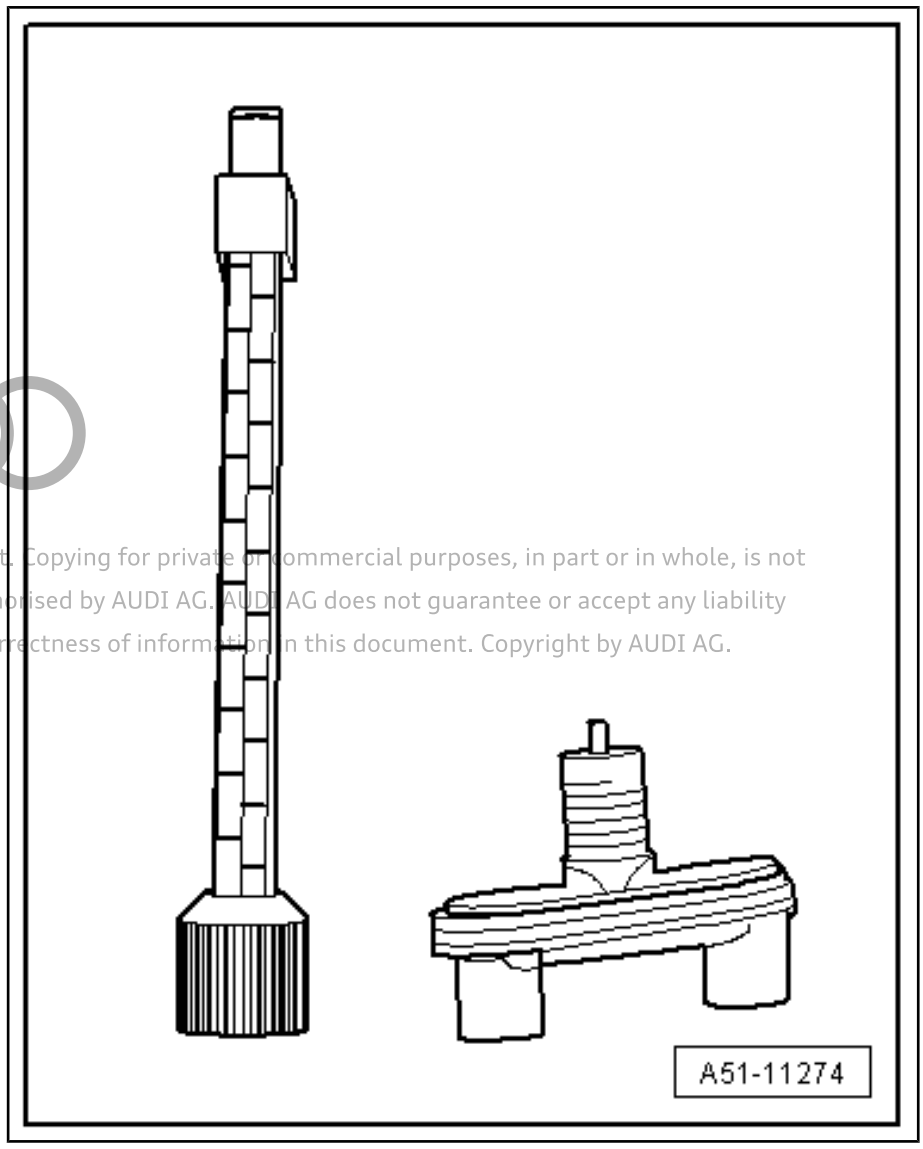
Note

The adapter is required for injecting the 2-component window adhesive.



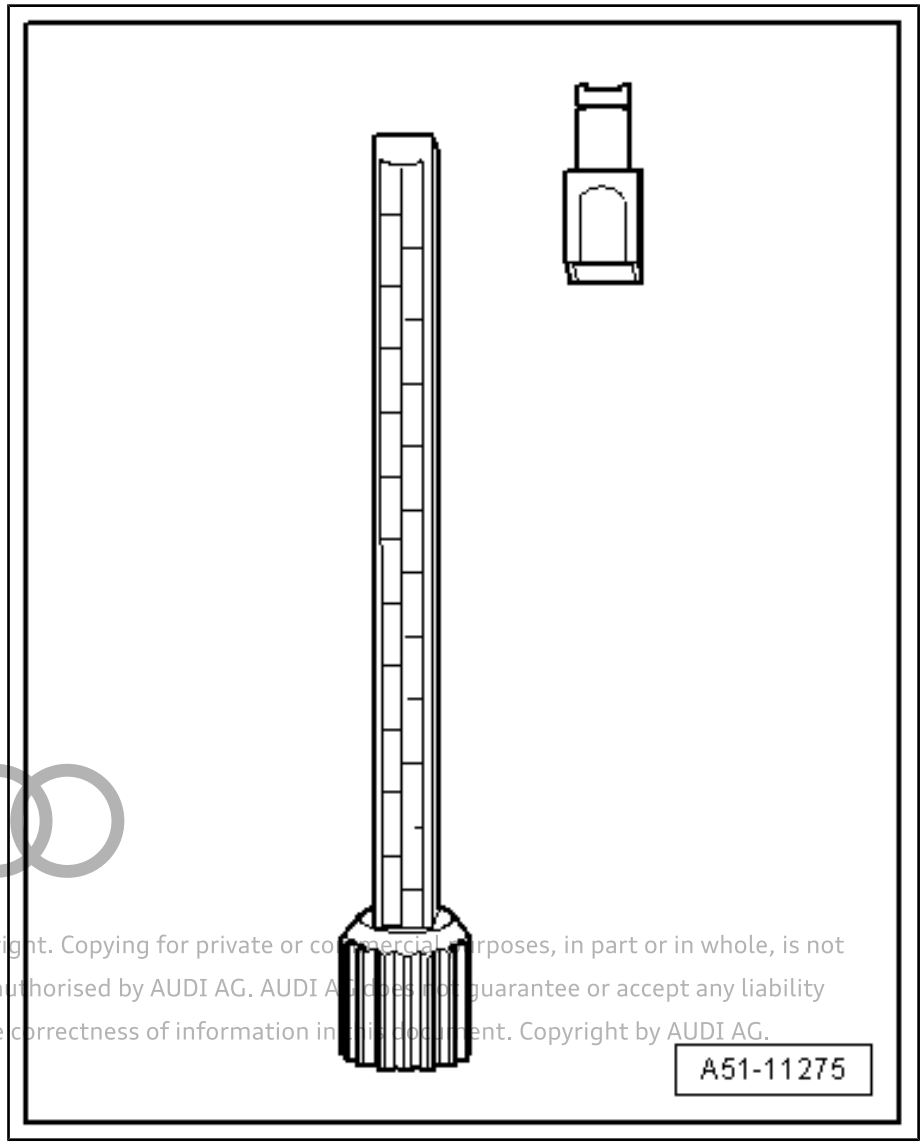
Instructions for using extension hose for window adhesive

– Take static mixer out of window adhesive kit.



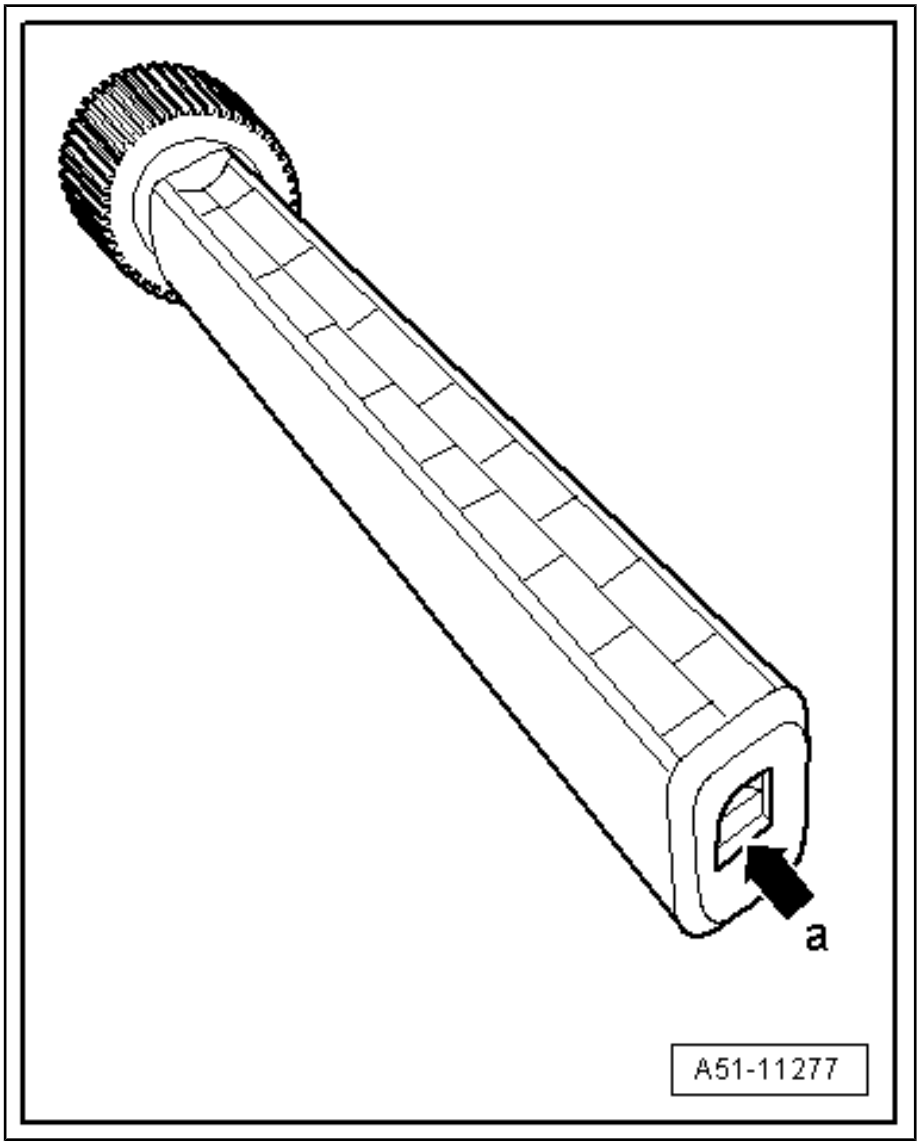
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– Remove front cap from static mixer.



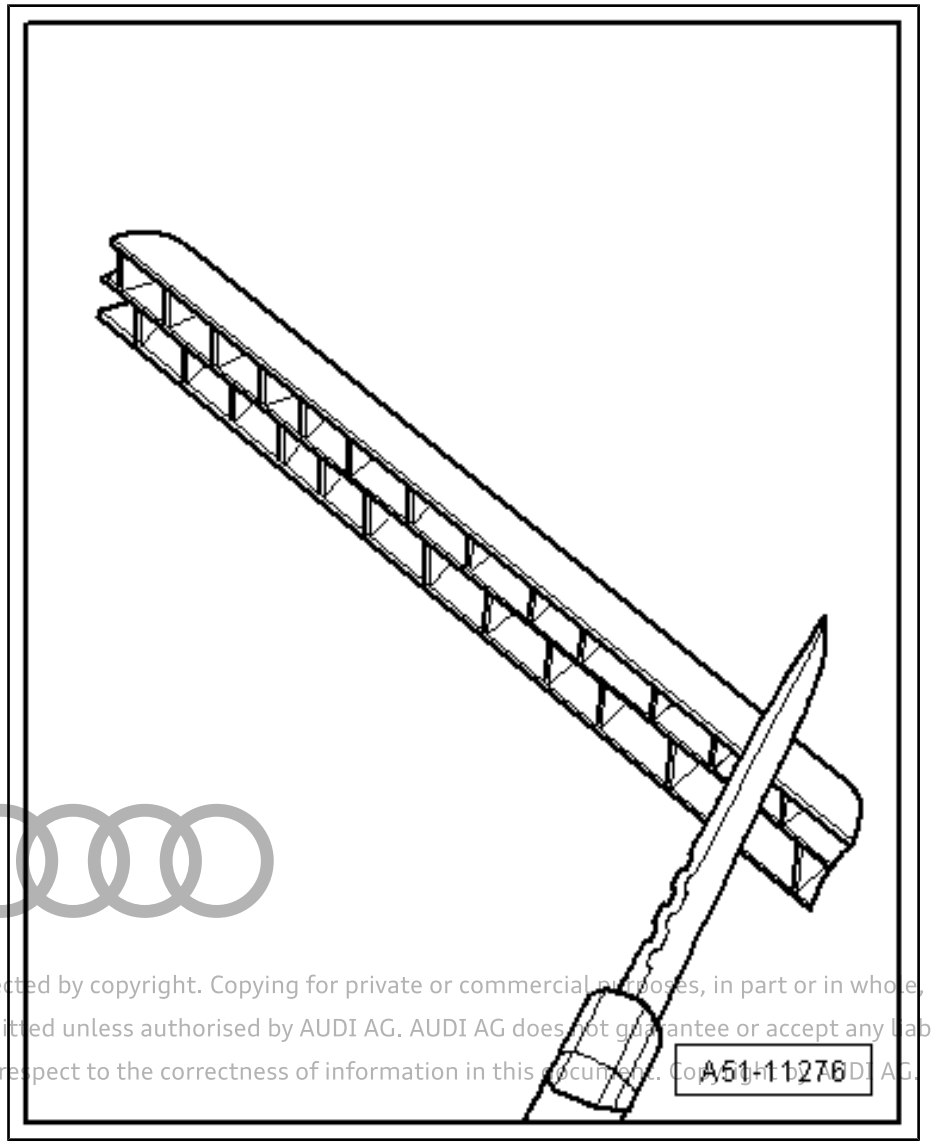
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– Drill out opening in static mixer -a- to 9 mm ∅ using drill .



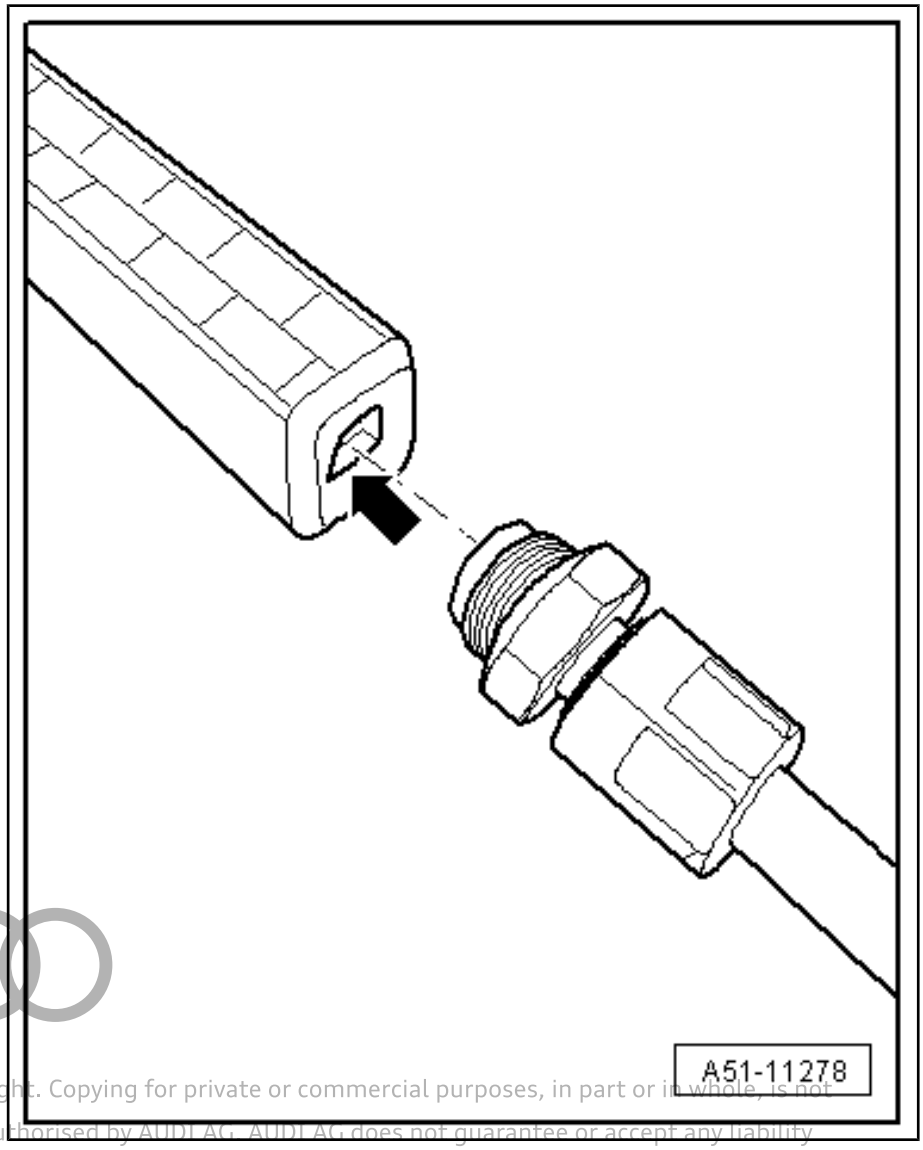
– Shorten inner section of mixer so that hose can be screwed in fully.

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– Screw extension hose onto mixer.



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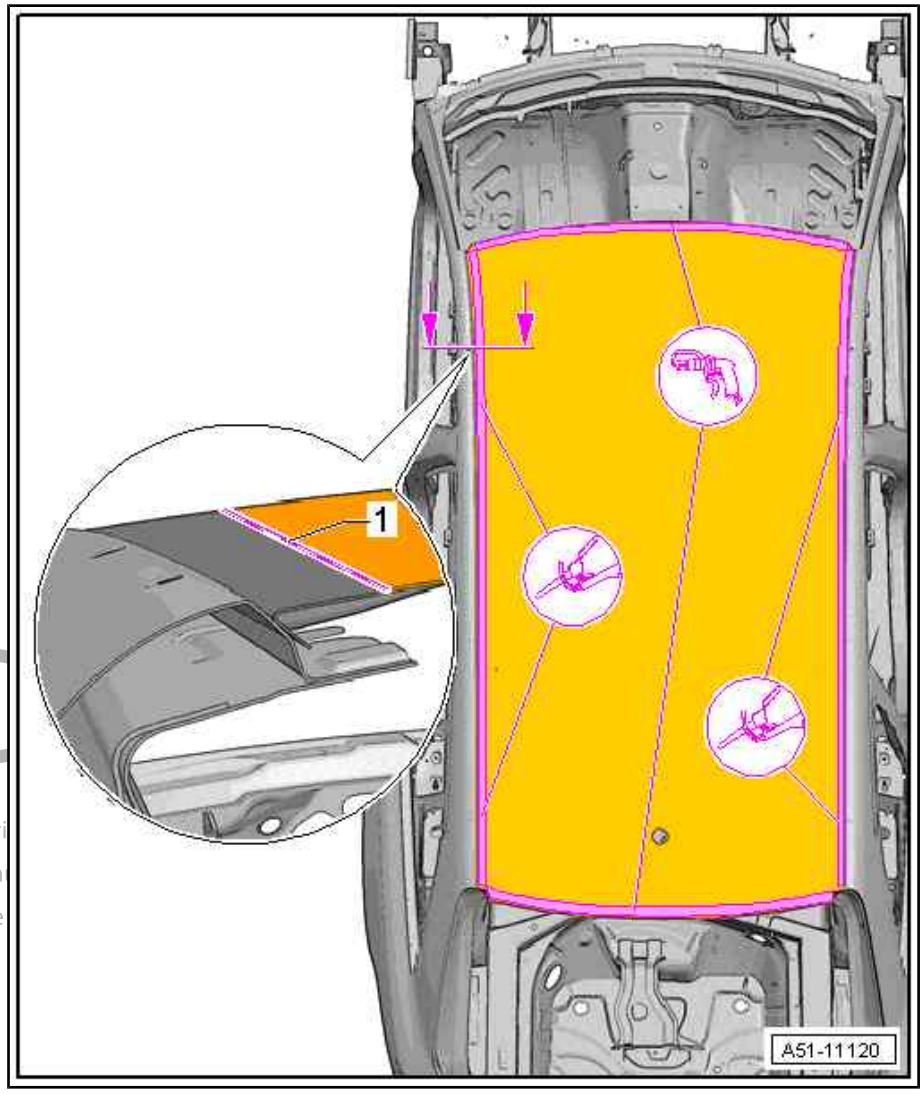
5.3 Procedure

Cutting locations

– Roughly cut out roof parallel with plasmatron weld seam -1- at a distance of approx. 30 mm using body saw .

– Separate original joint to windscreen opening and rear lid opening using spot weld breaker .

– Working from passenger compartment, separate bonded joints between roof and roof cross members using electric cutter - V.A.G 1561 A- .



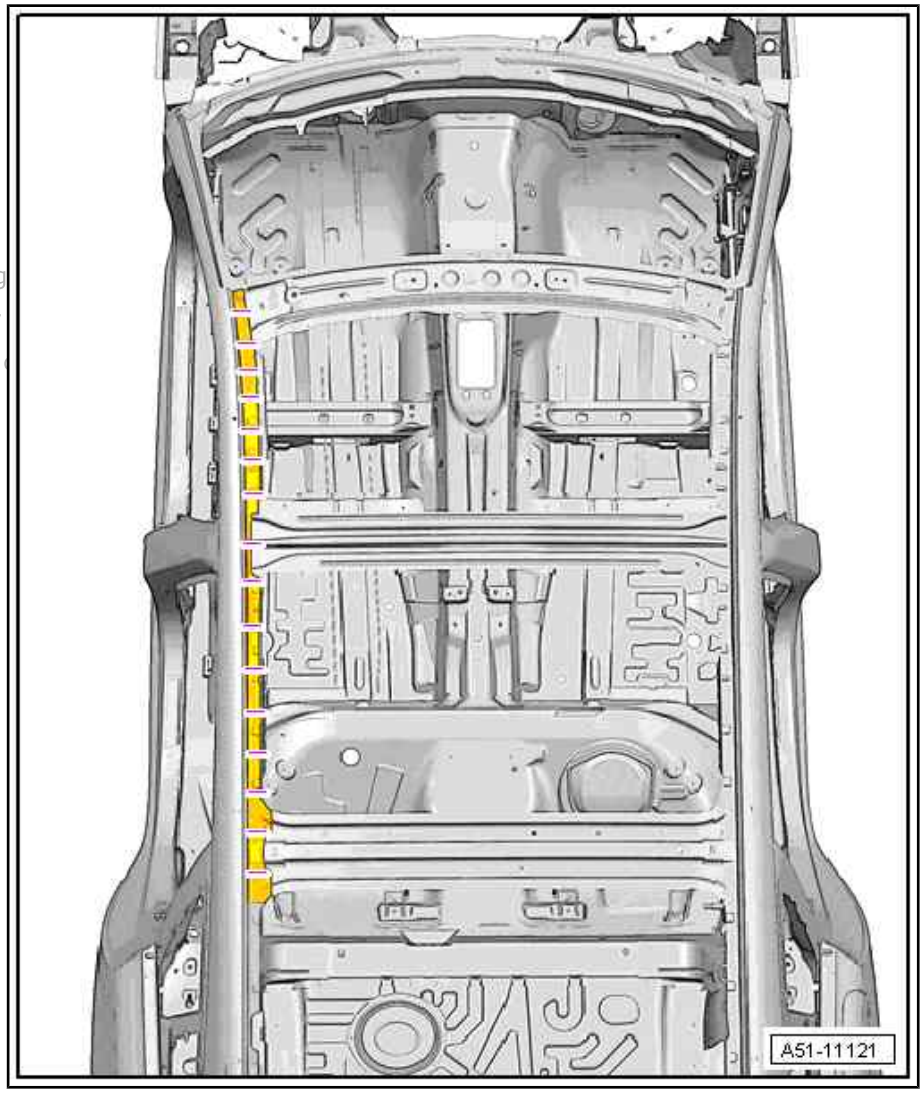
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Note

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- .
– Grip remaining sections with pliers and break open plasmatron weld seam by moving up and down.

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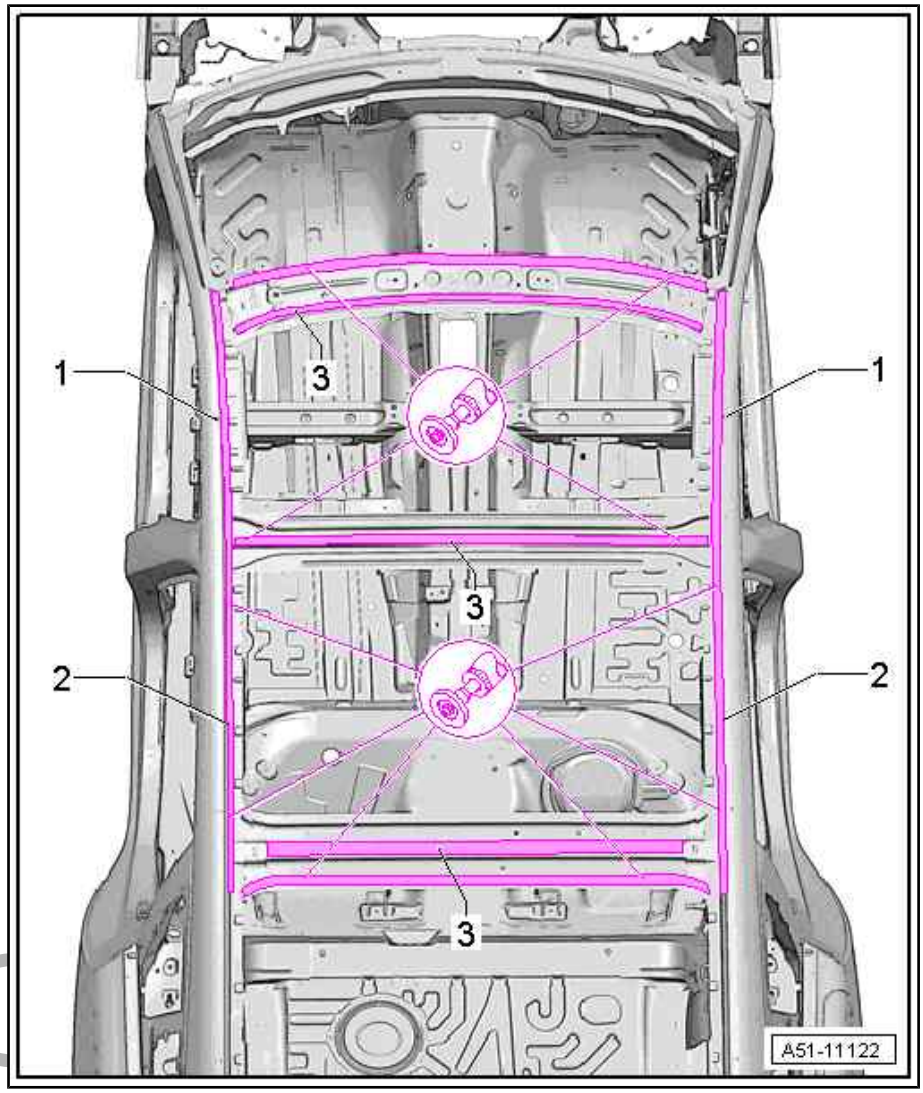
Note

- *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 .

– Remove all residual adhesive and sealing compound -3- from roof cross members using scraper - VAS 5448- .

– Grind bonding areas down to bare metal.



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Replacement parts

- Roof (normal version)
- 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 - , 3 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 (surfacer) 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.*

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Bonding in

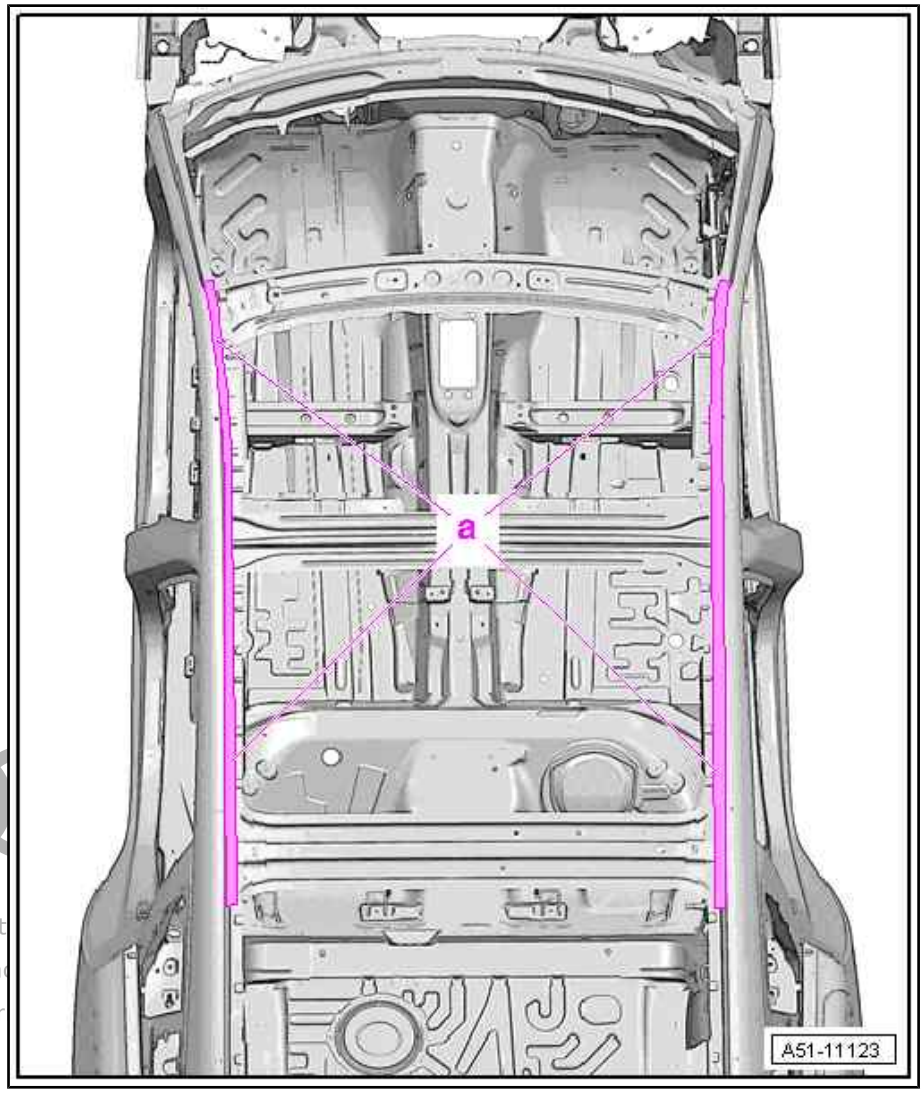
– Position roof on roof frame and check alignment of roof with roof side members (visual inspection).

– 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.

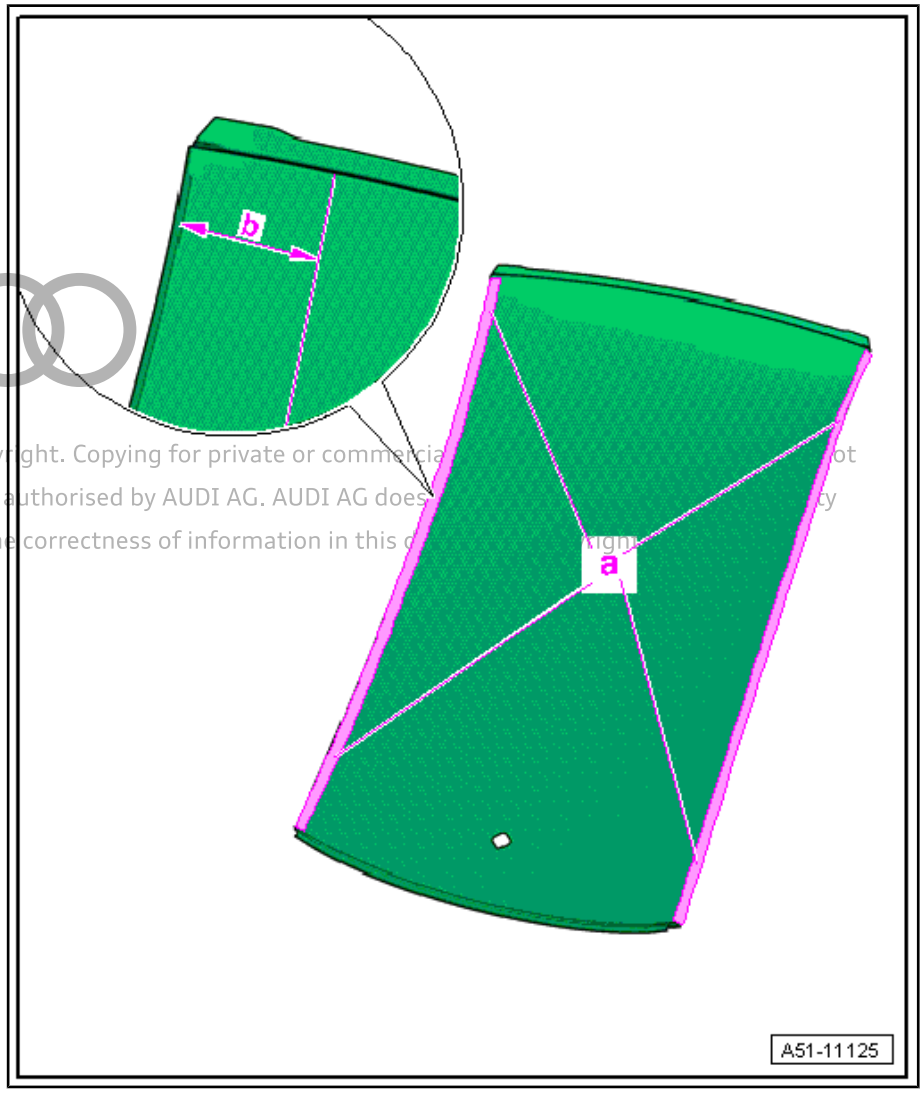
– Remove roof.

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



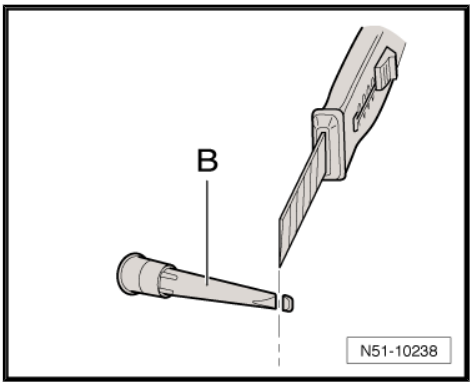
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– Apply glass and paint primer - D 009 200 02- approx. 5 cm wide -b- on inner section of roof and inner side flange -a-.

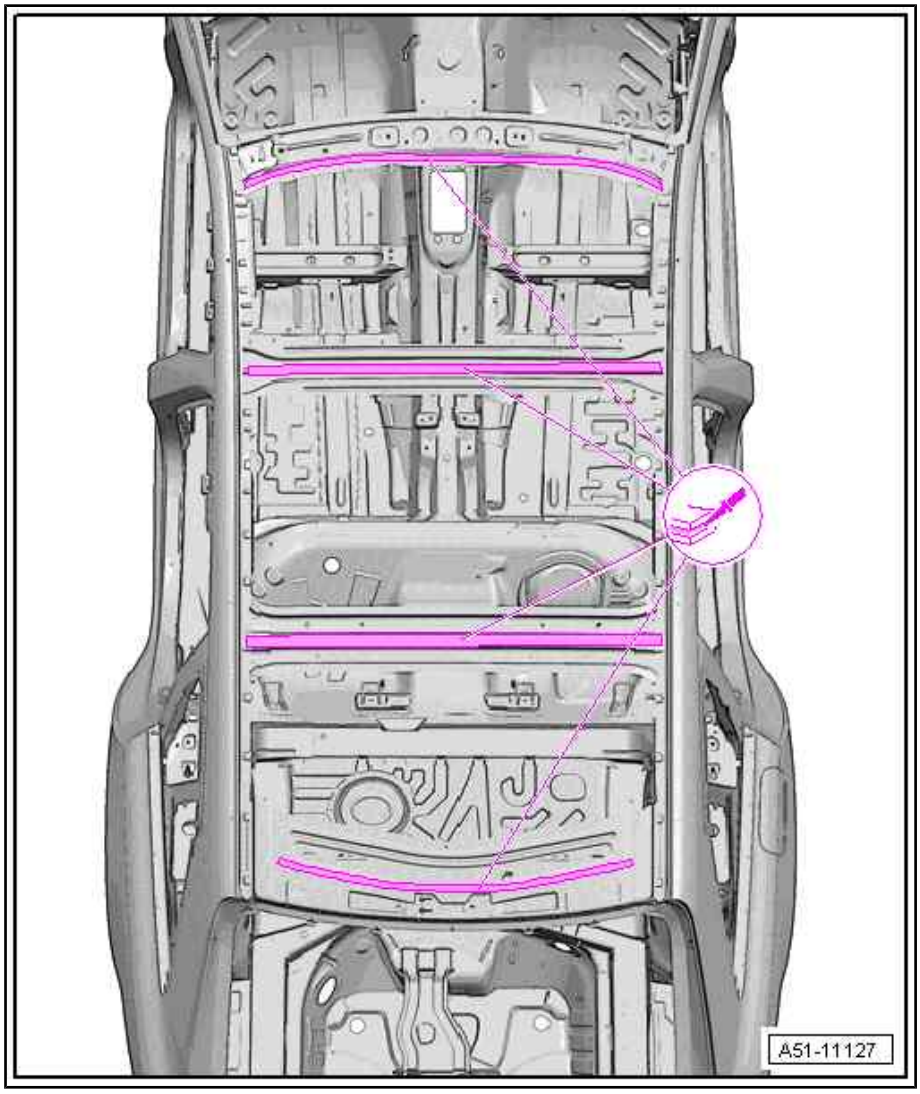


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– Cut off approx. 2 mm from nozzle -B- to obtain appropriate bead geometry.

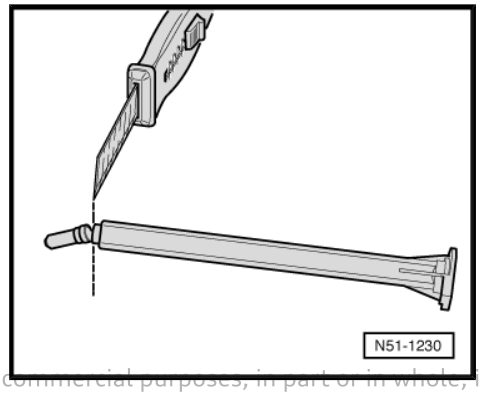


– Apply single-component assembly adhesive - D 190 MKD A3- to roof cross members in the area of the factory bonding location using pneumatic cartridge gun - V.A.G 1761/1- .



Preparing new part

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

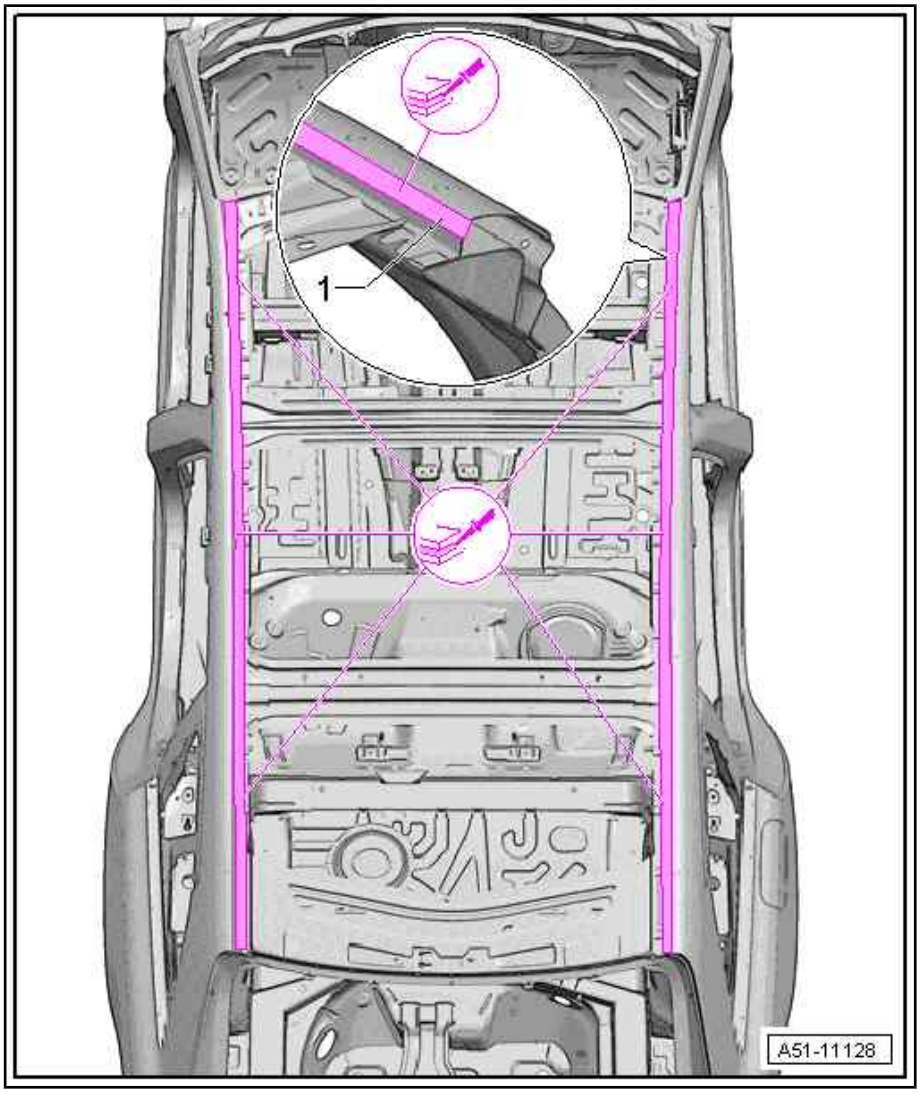


Note

- *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.*

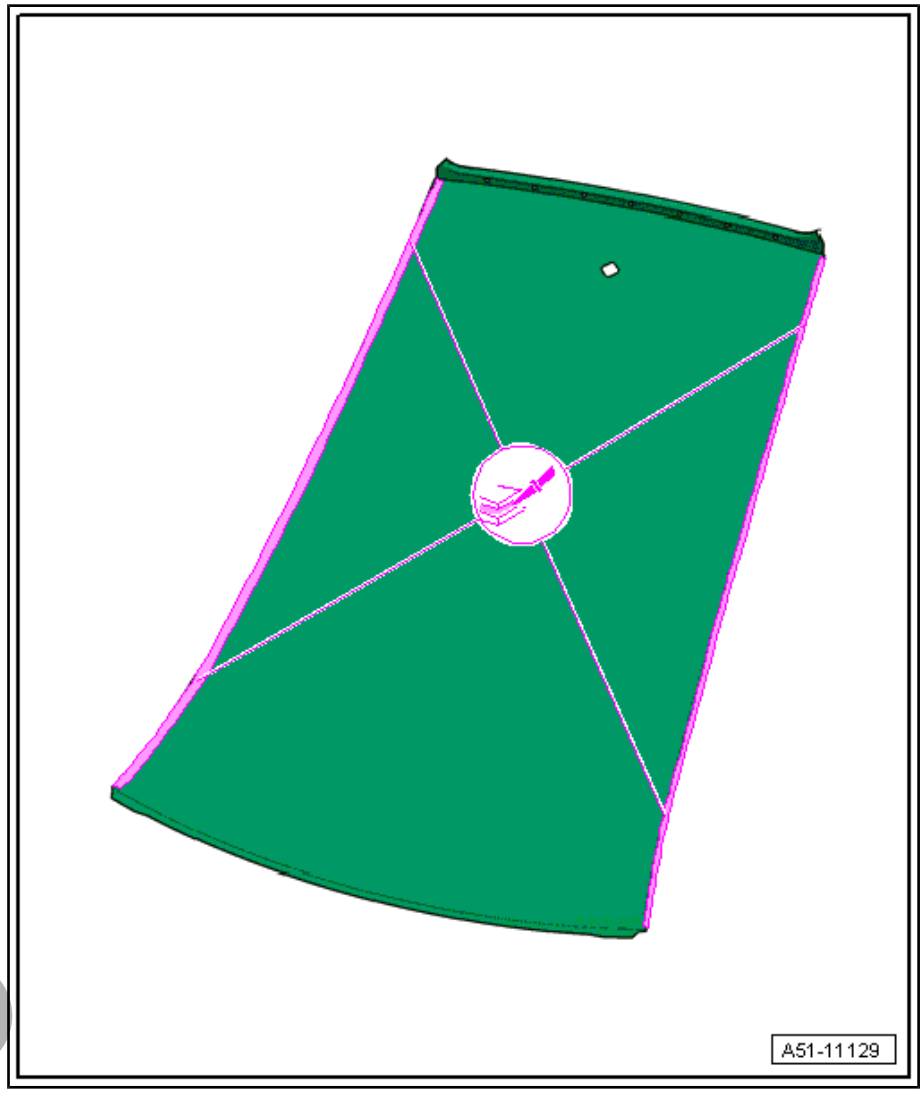
– Apply continuous bead -1- of 2-component epoxy adhesive - DA 180 A00 A2- to bevelled sections of roof side members using double-cartridge gun - VAS 6453- .

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– Apply one continuous bead of 2-component epoxy adhesive - DA 180 A00 A2- to side flanges of roof 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- .

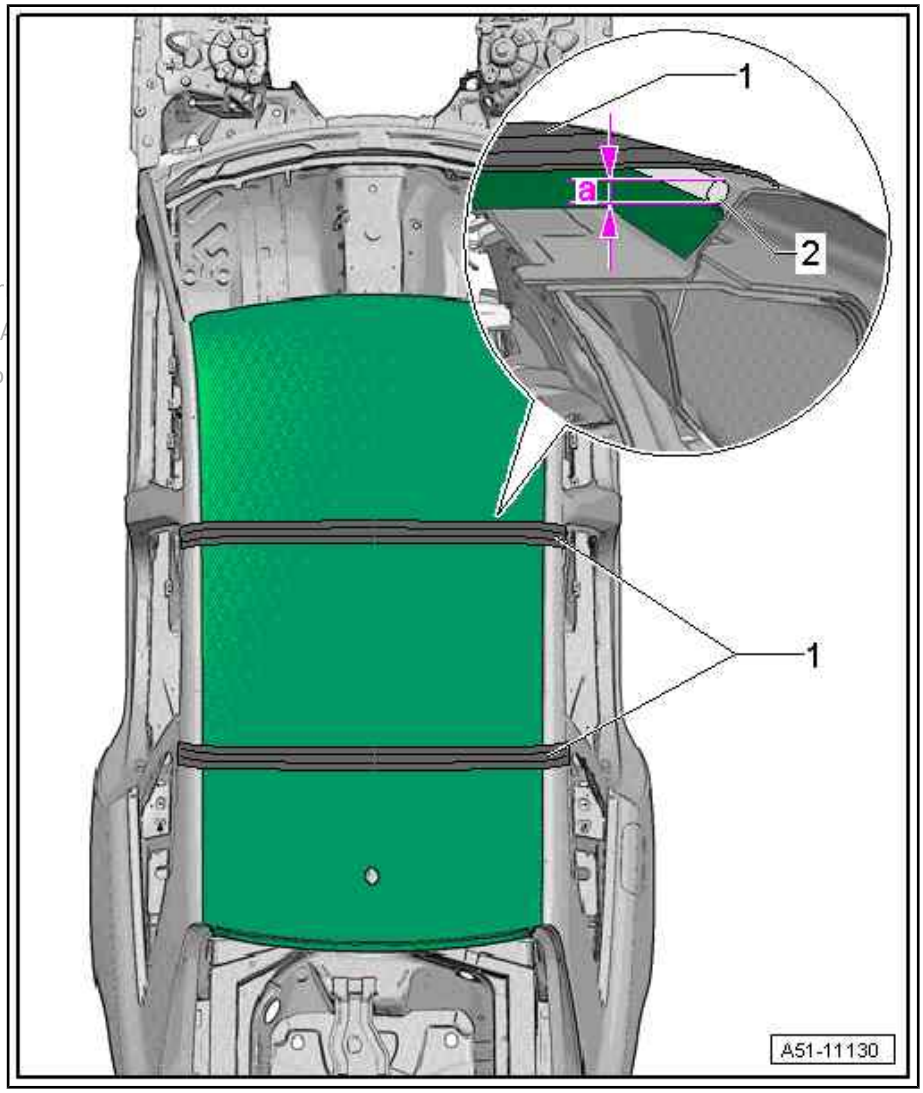
Adjusting roof depth

– Additionally fix roof in position with two tensioning straps - T 10038- -1-.
– Set required depth using e.g. drill bit or suitable wooden spacer -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 edge of roof.

CAUTION

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

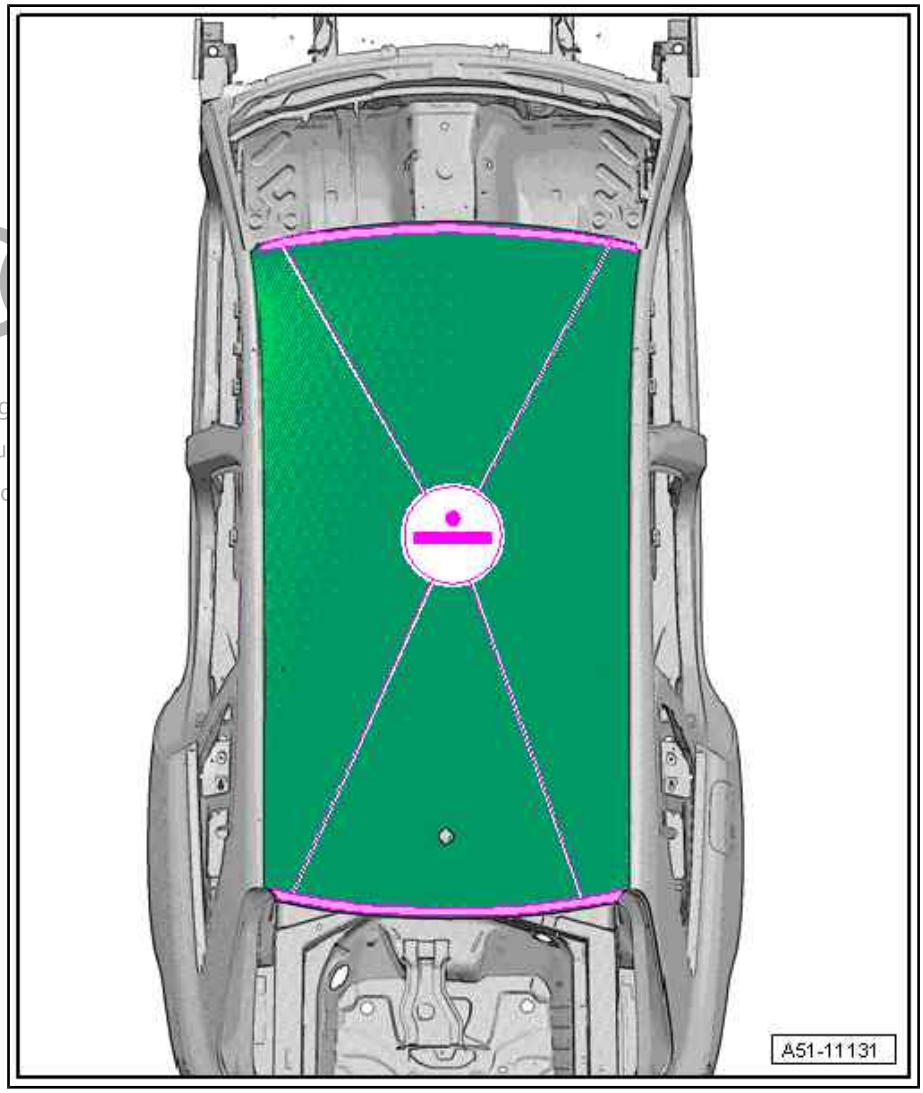
Note

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

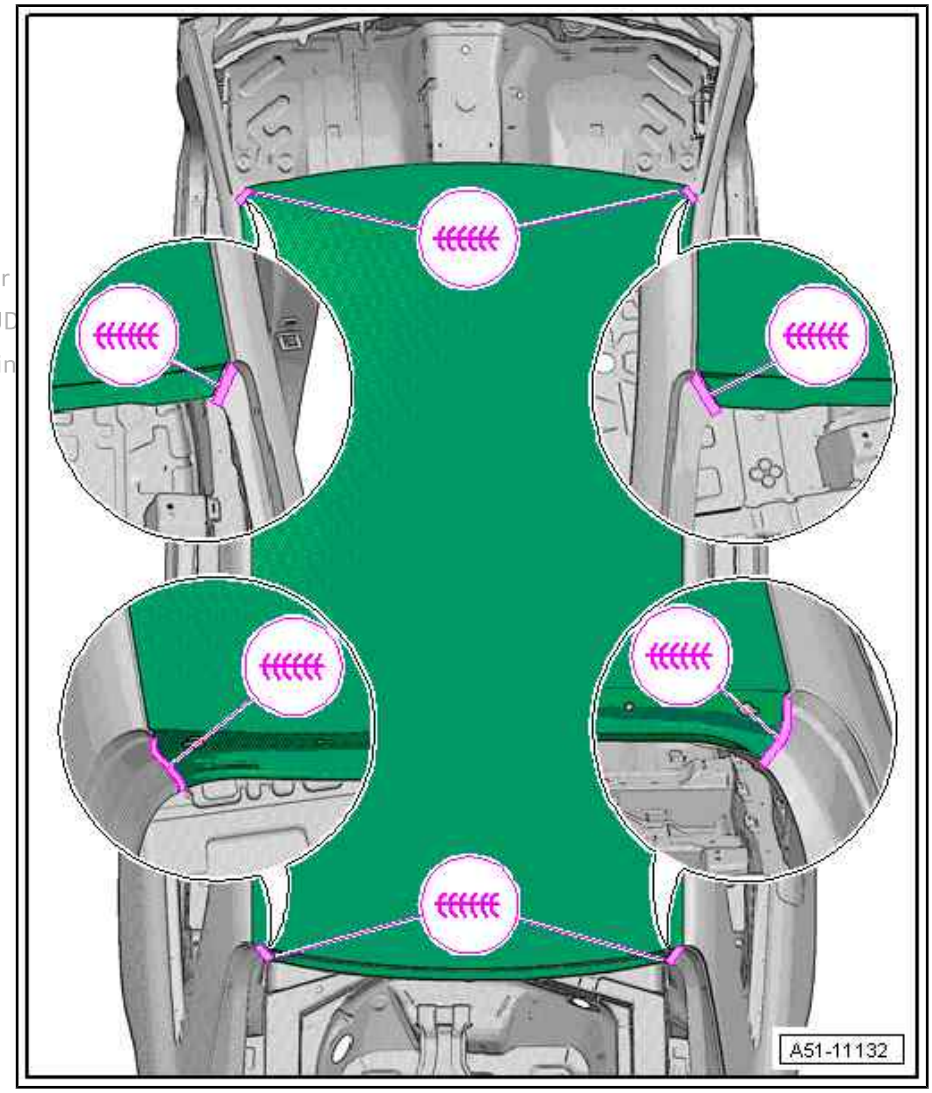
Weld in roof at front and rear using resistance spot welder : RP spot weld seam.

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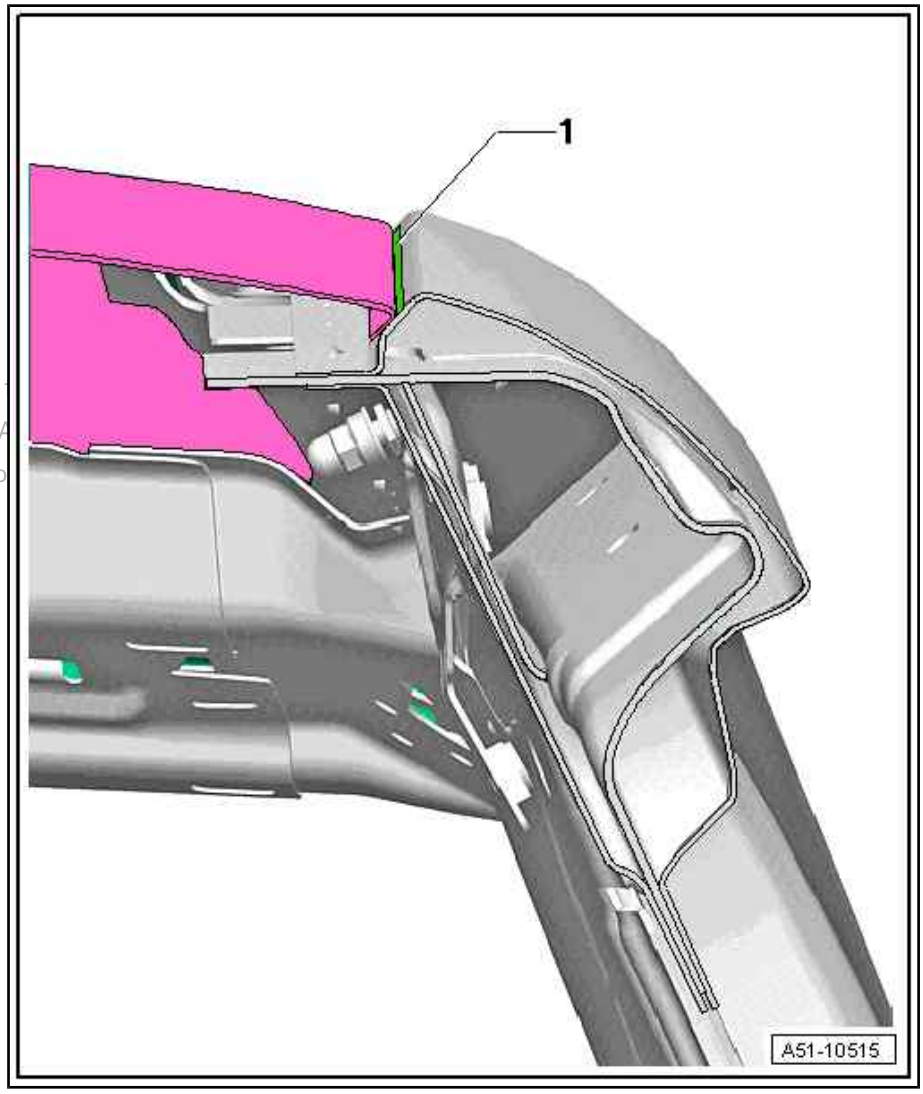
– Weld in roof additionally at corners using shielded arc welding equipment : SG continuous seam.
– Grind down SG continuous weld seams using compact angle grinder .

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

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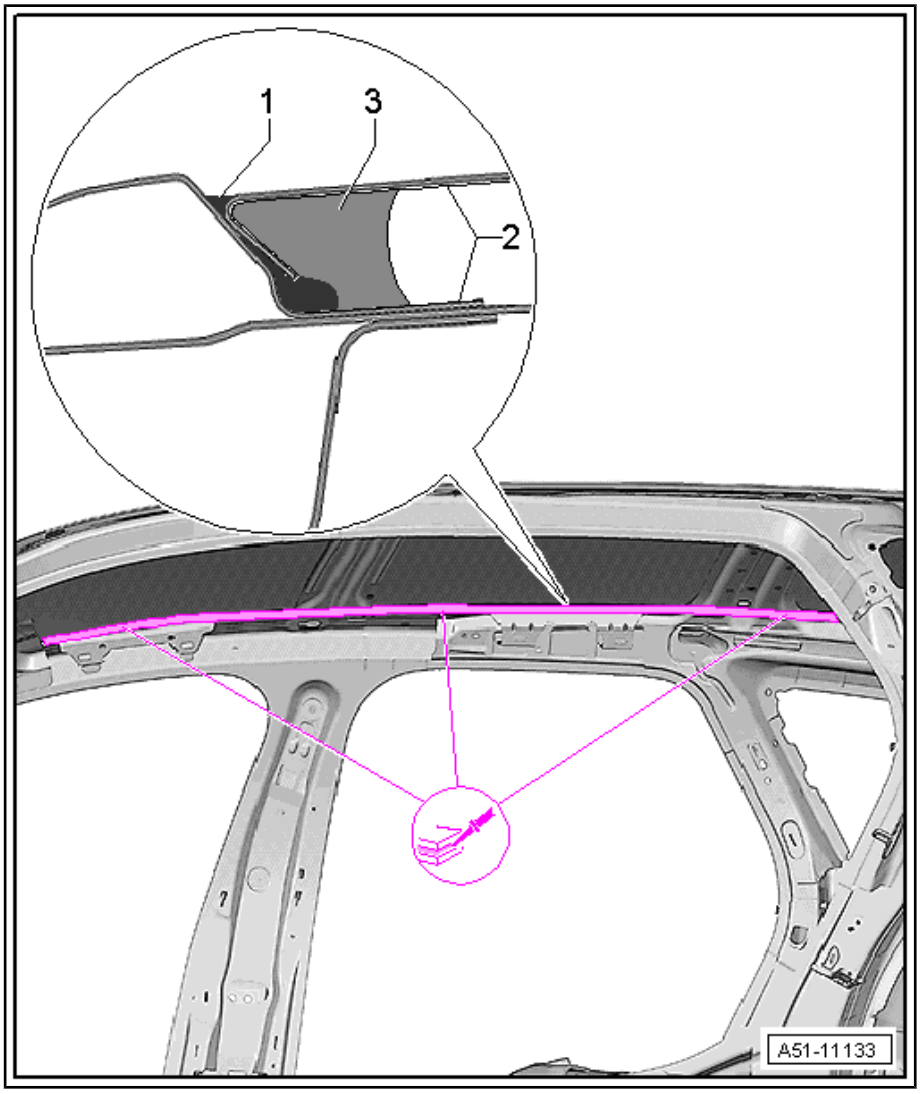


Note

Please note instructions for use: window adhesive should be applied at a temperature of approx. 20°C.

– 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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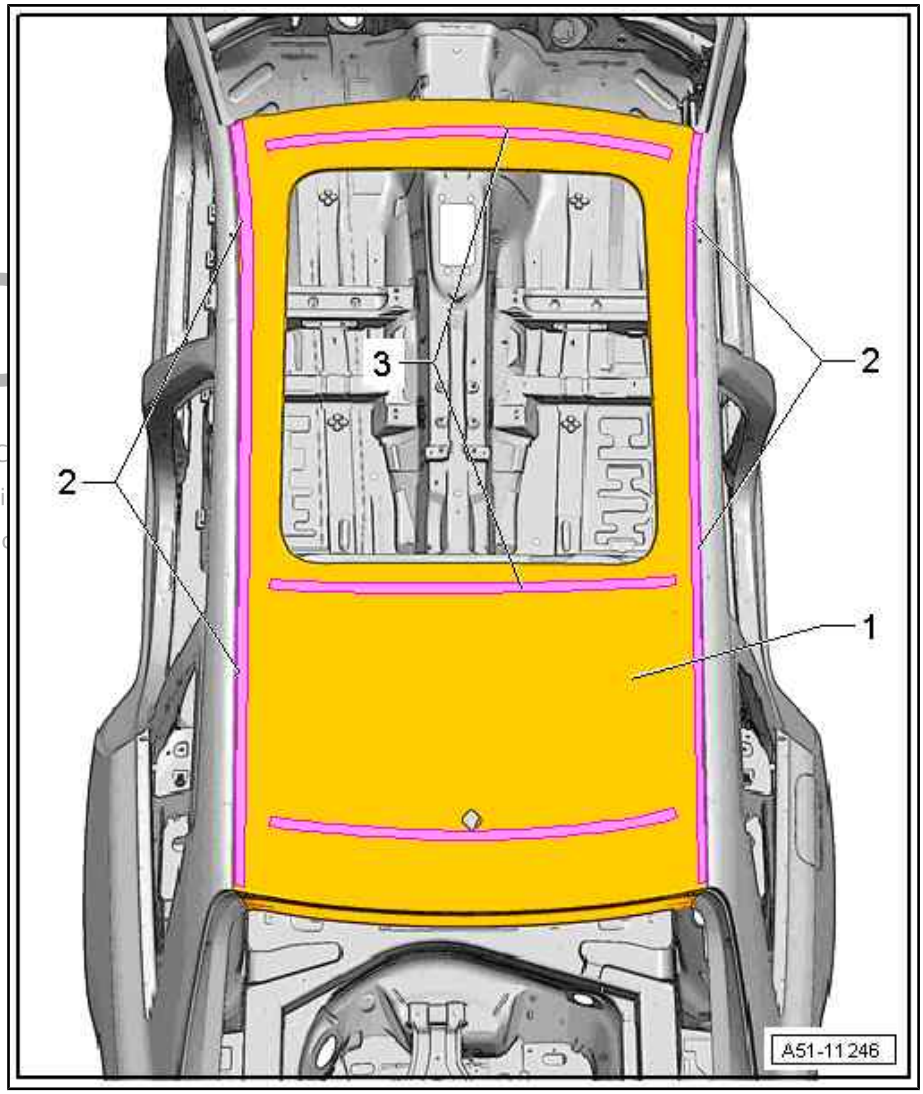
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6 Roof - Renewal (Avant with large sunroof)

1 - Roof

2 - Plasmatron weld seam

3 - Bonded area



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6.1 Notes for vehicles with hybrid drive

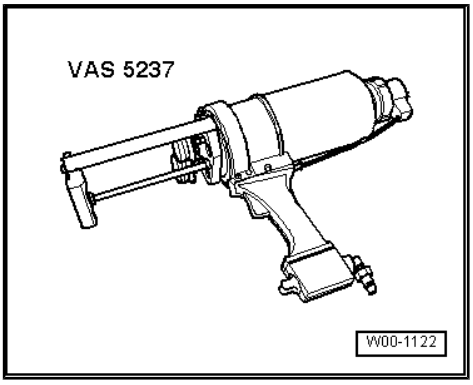
⇒ page 5

6.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Brush grinder
- Drill
- Spot weld breaker
- Suction lifter or magnet
- Setting gauge
- Compressed-air gun

- Tensioning strap
- Body saw
- Electric cutter
- Mole grips, 18-18
- Double cartridge gun - VAS 6453-
- Double cartridge gun - VAS 5237-



Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

6.3 Procedure

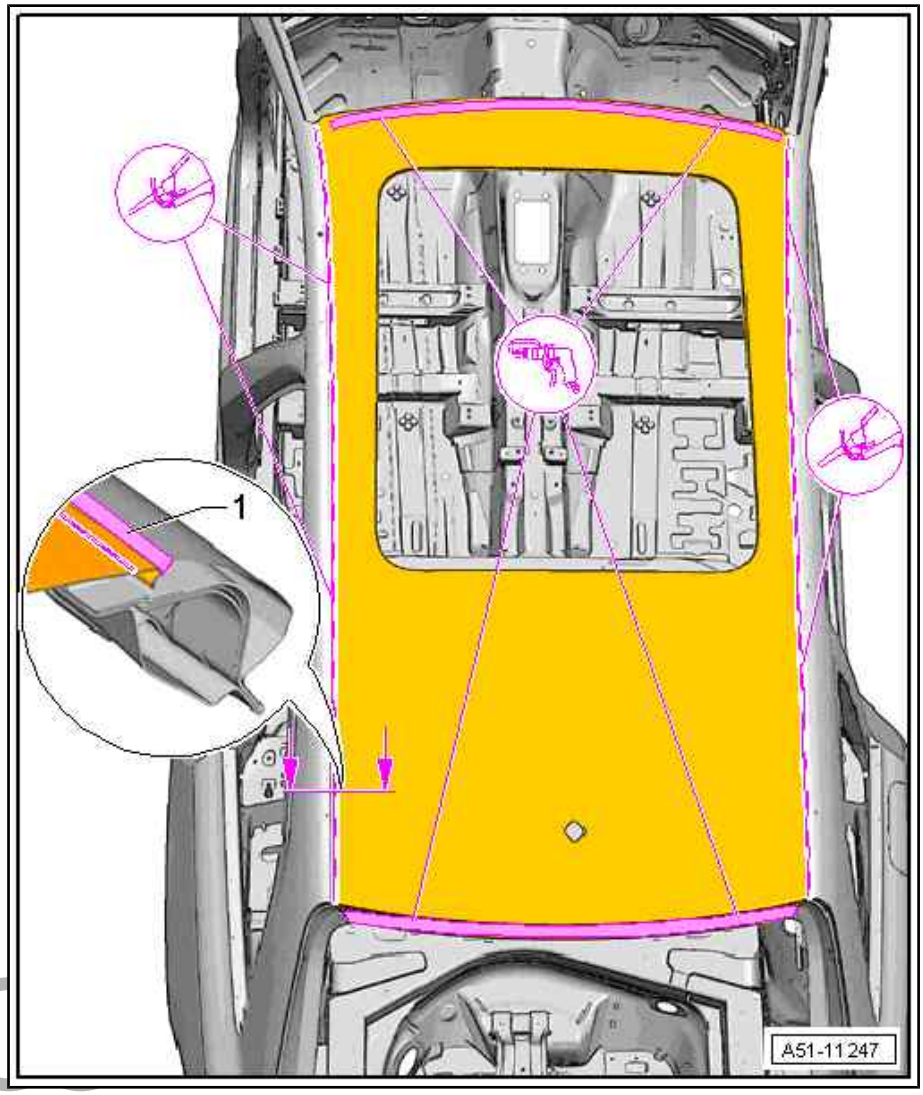
Cutting locations

– Roughly cut out roof parallel with plasmatron weld seam -1- at a distance of approx. 30 mm using body saw .

– Drill off original joint to windscreen opening and rear lid opening using spot weld breaker .

– 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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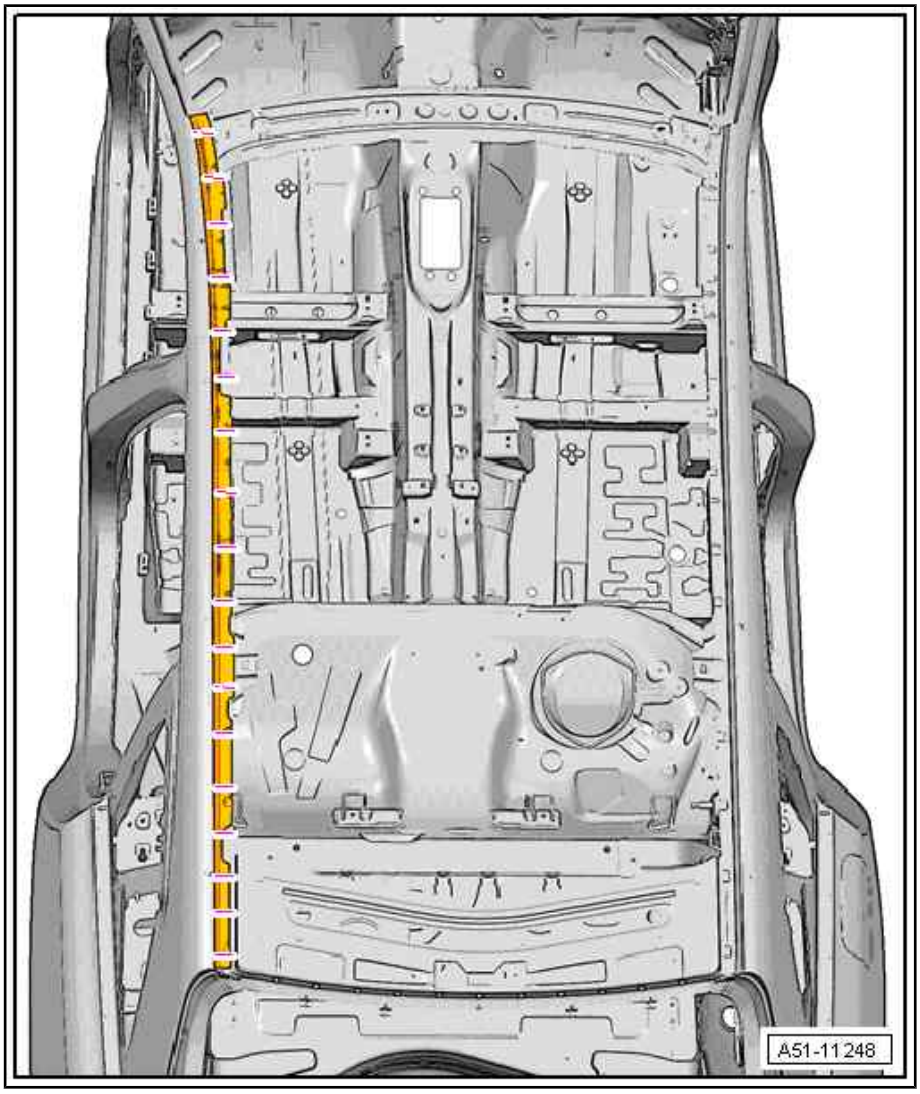


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Note

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 .
– Grip remaining sections with pliers and break open plasmatron weld seam by moving up and down.



Note

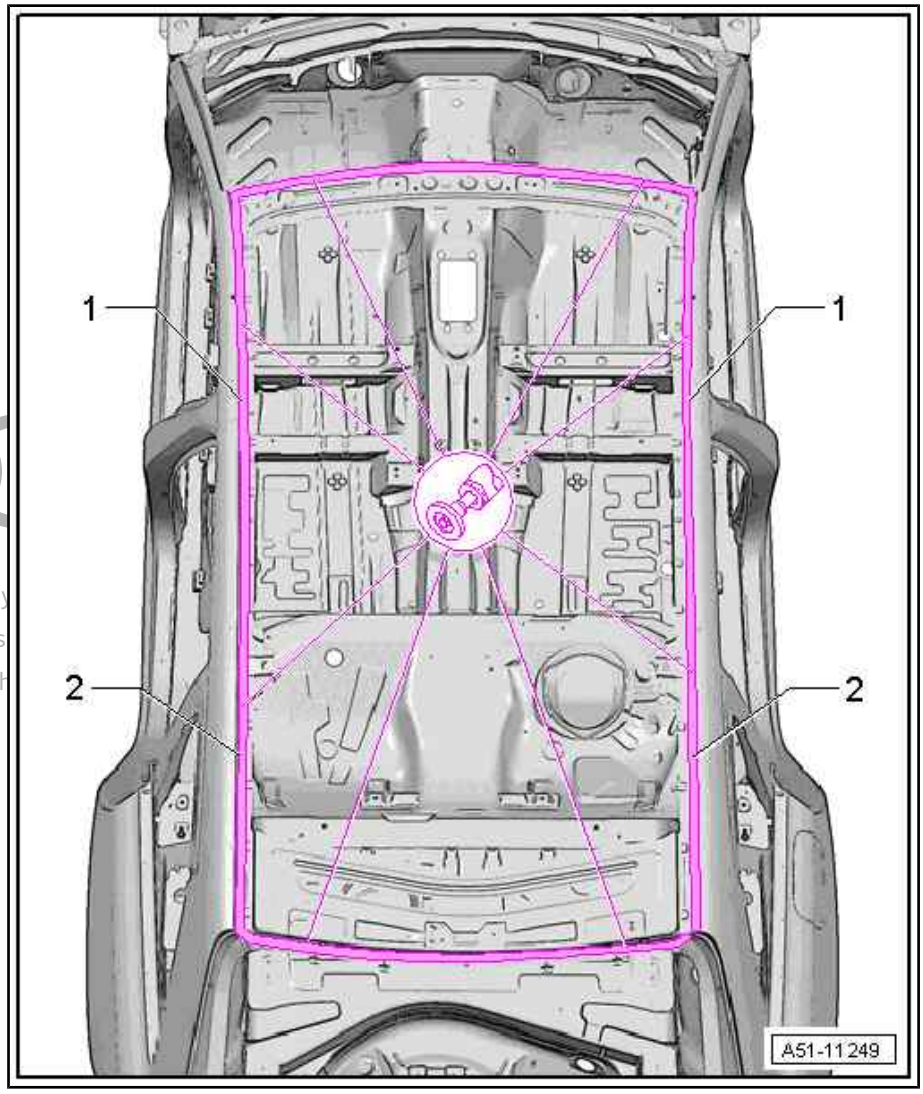
- *Take care not to damage the roof side members -1- when removing the remaining sections of the roof -2-.*
- *Use a suitable flap disc; do not use a cutting disc or rough-filing disc.*

– Remove remaining material using compact angle grinder .

– Remove all residual adhesive and sealing compound from roof cross members at front and rear using scraper .

– Grind bonding areas down to bare metal.

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Replacement parts

- Roof (version with large sunroof)
- 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-
- ⇒ Audi Paintwork manual

Preparing new part

Note

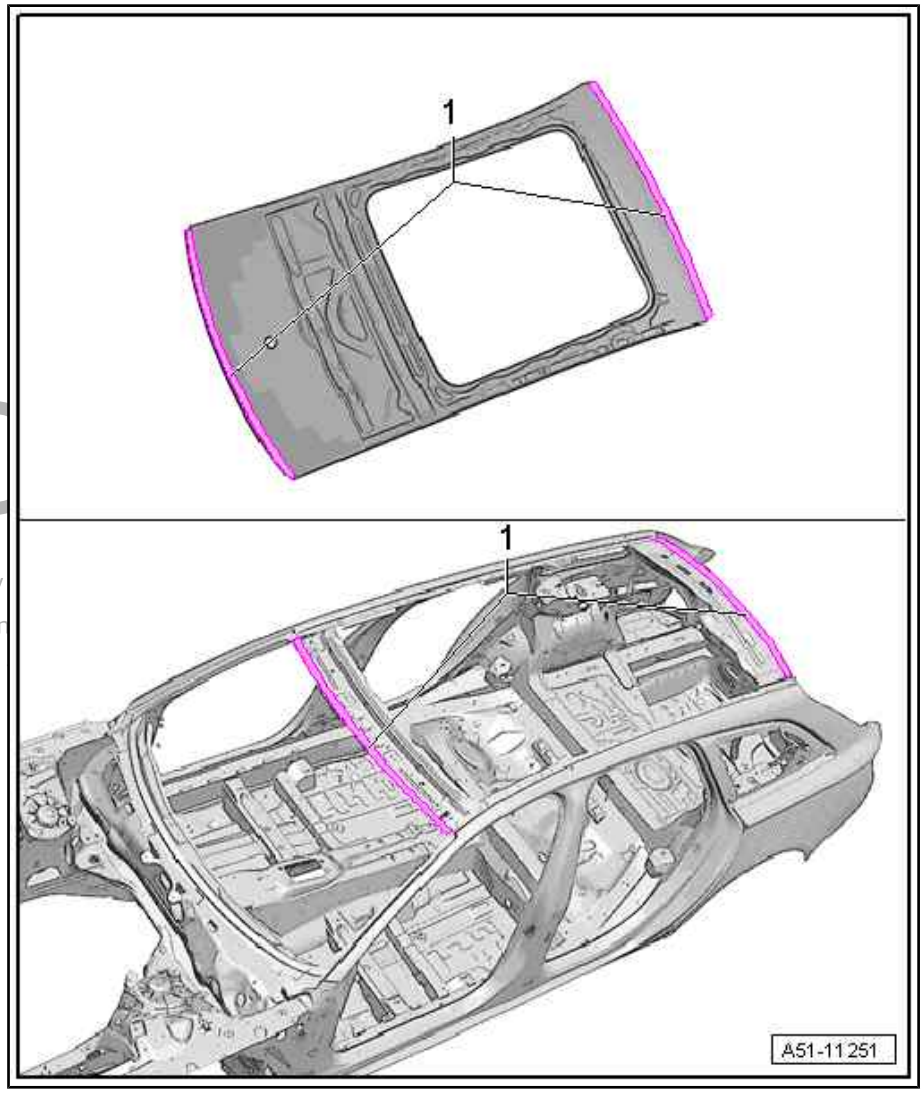
- *It is important to keep to the following procedure to ensure a satisfactory and effective roof repair.*
- *Bonded areas must not be treated with filler coat (surfacer) and painted before bonding in the roof.*
- *The adhesive materials must be applied very quickly.*
- *Make sure adhesive is applied 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 zinc spray to welding flanges for RP spot weld seam on roof cross members -1- and roof -1-.

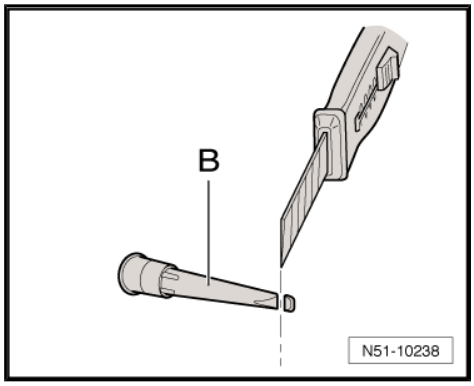
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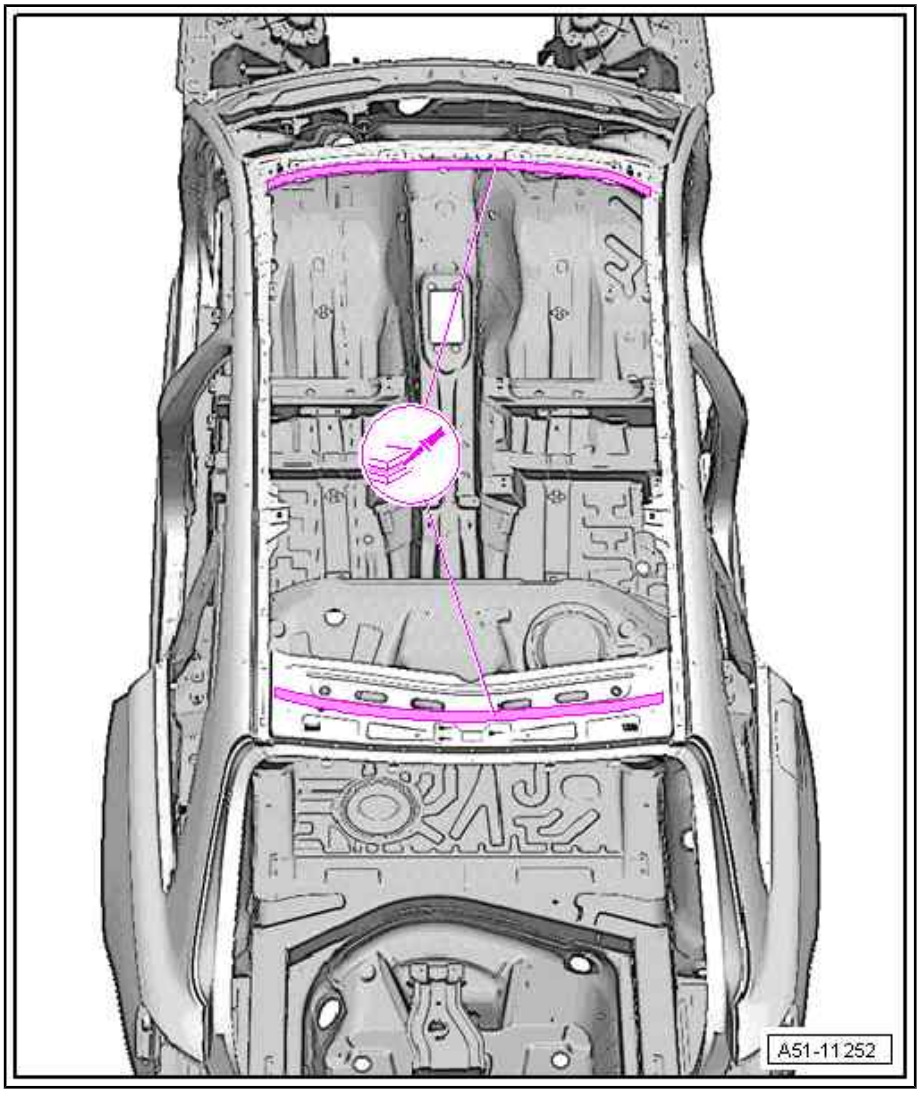
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Preparing new part

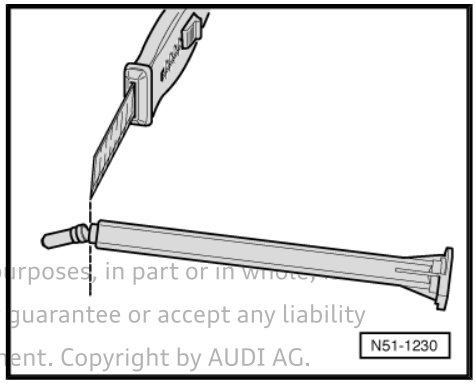
– Cut off approx. 2 mm from nozzle -B- to obtain appropriate bead geometry.



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



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



Note

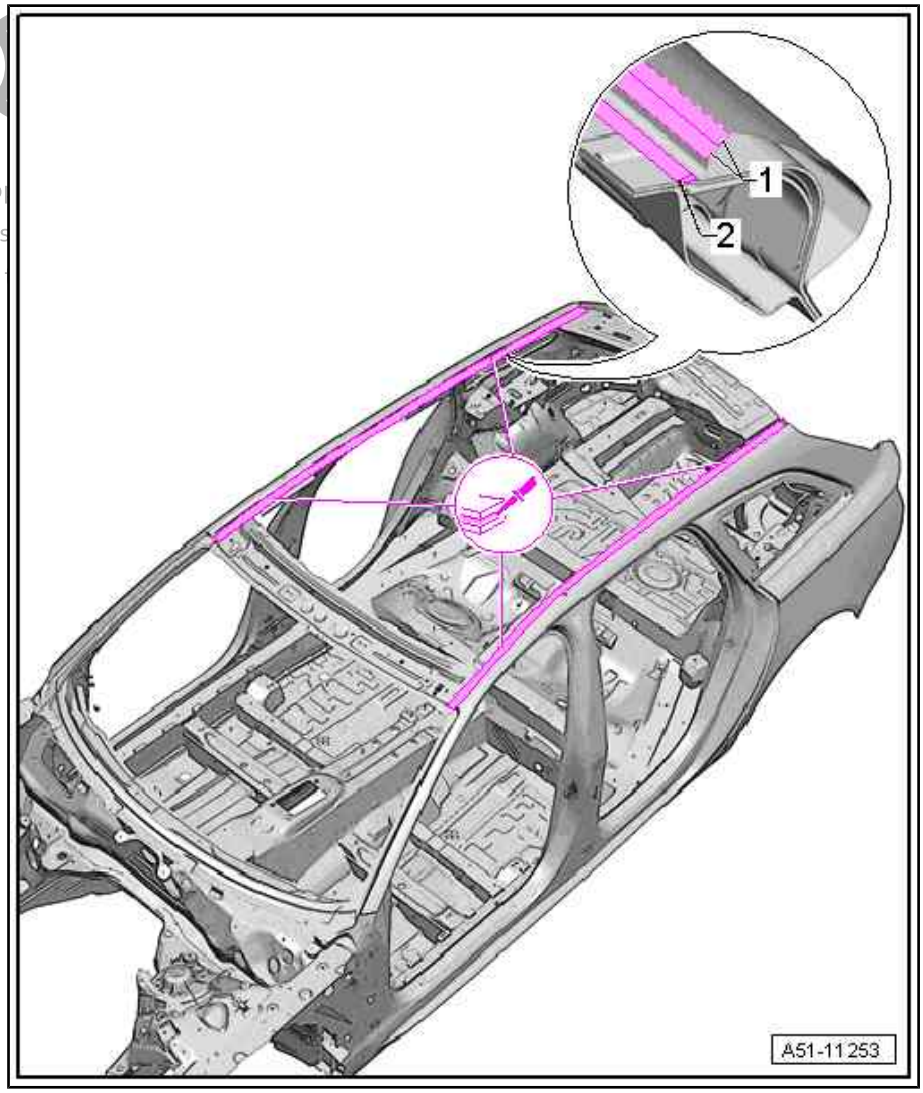
- *The pot life of the 2-component epoxy adhesive - DA 180 A00 A2- is roughly 90 minutes.*
- *A second mechanic is required for the next steps.*

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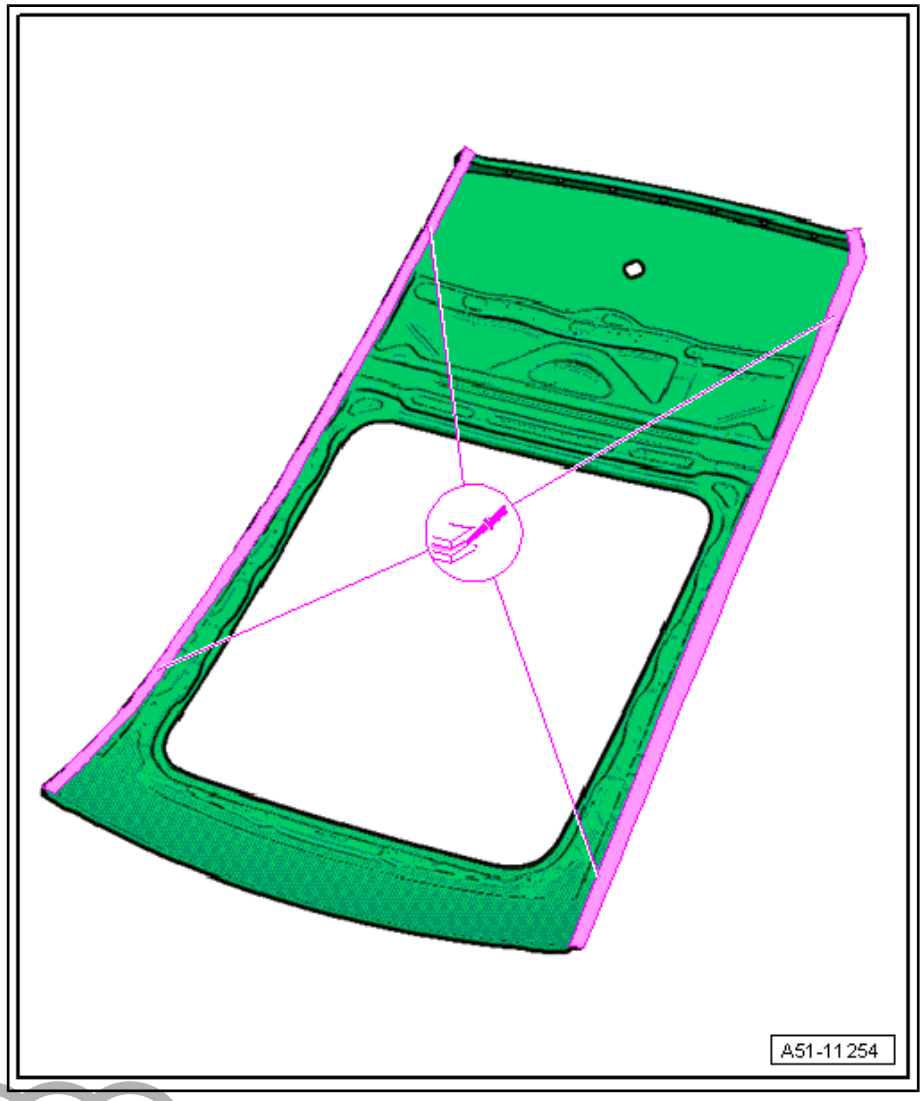
– Apply two continuous beads -1- of 2-component epoxy adhesive - DA 180 A00 A2- to bevelled sections of roof side members in area of zero-gap joint using double cartridge gun - VAS 6453- .

– Apply one continuous bead -2- of 2-component epoxy adhesive - DA 180 A00 A2- to roof frame and roof cross members over entire contact area of roof reinforcement 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 using double cartridge 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- .

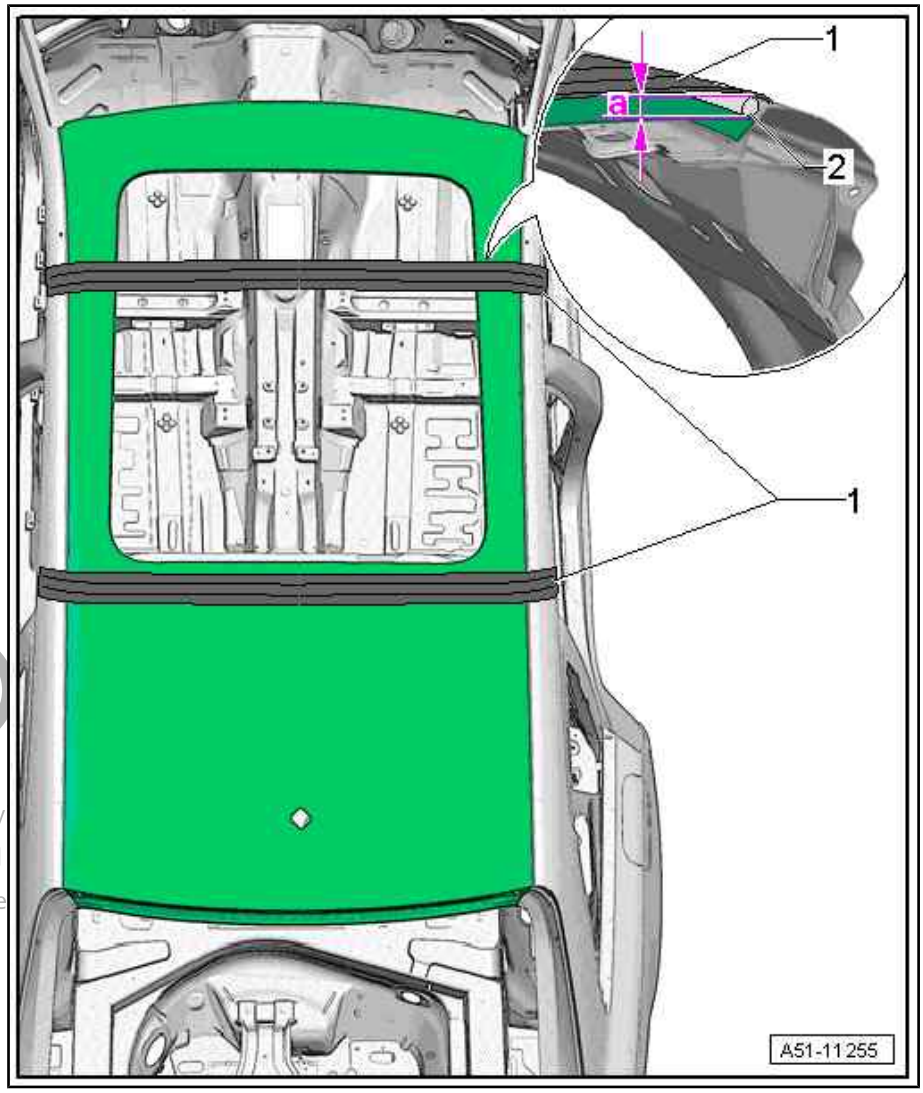
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Adjusting roof depth

– Additionally fix roof in position with two tensioning straps - T 10038- -1-.
– Set required depth using e.g. drill bit or suitable wooden spacer -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 edge of roof.

CAUTION

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

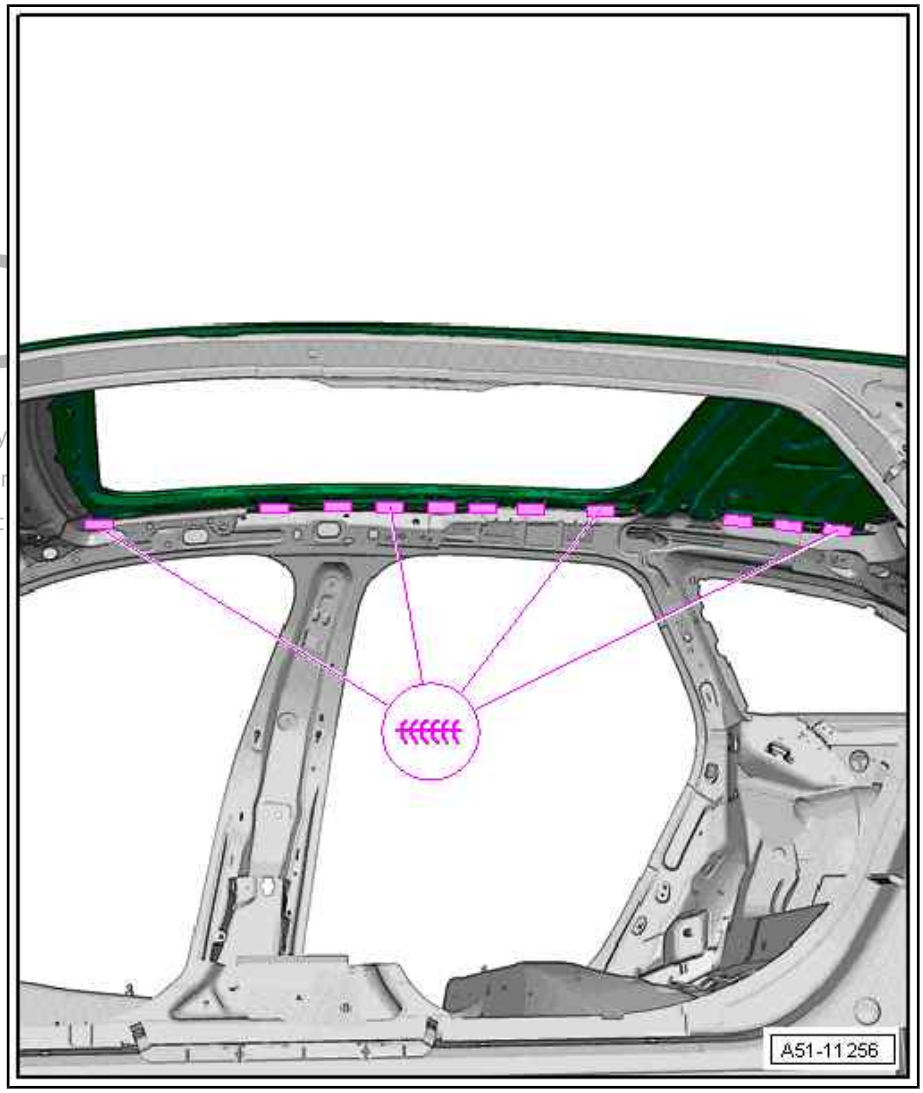
Note

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.

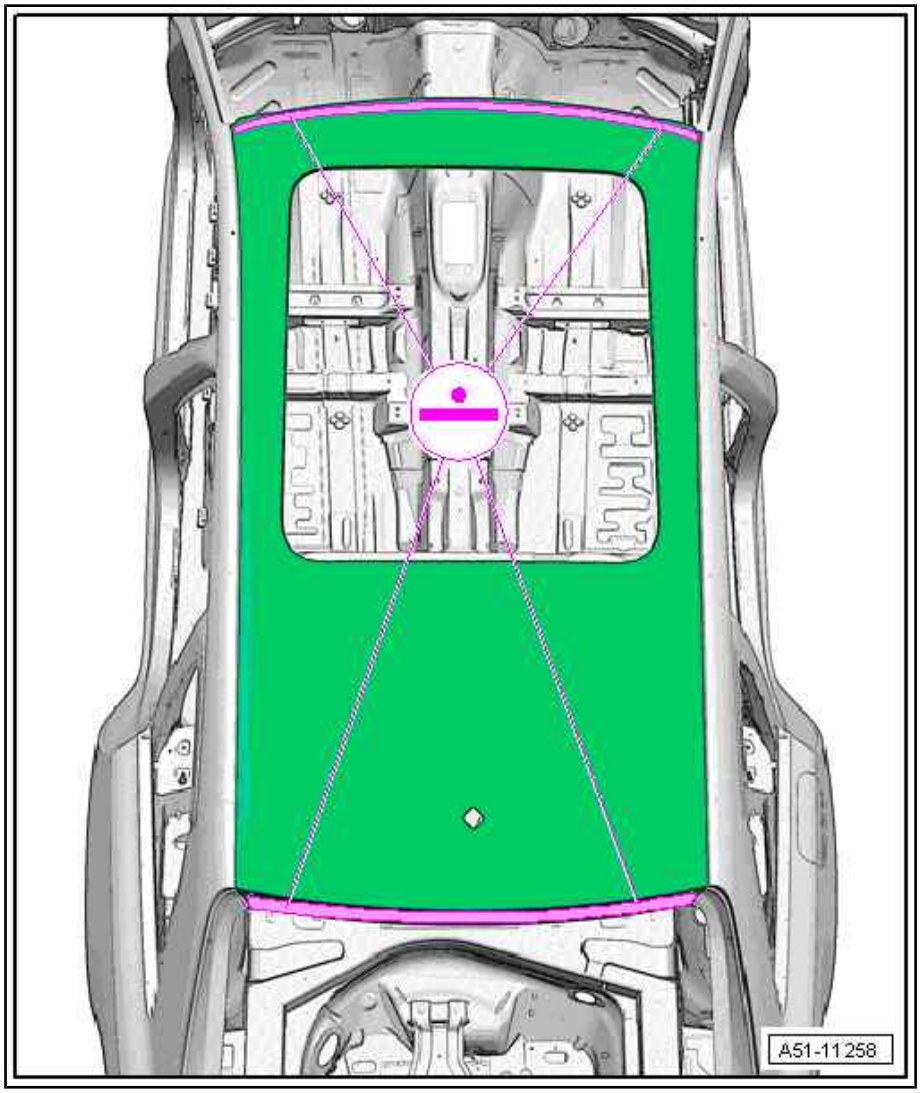
Welding in

– Weld in roof using shielded arc welding equipment : SG continuous seam (12 x 15 mm).

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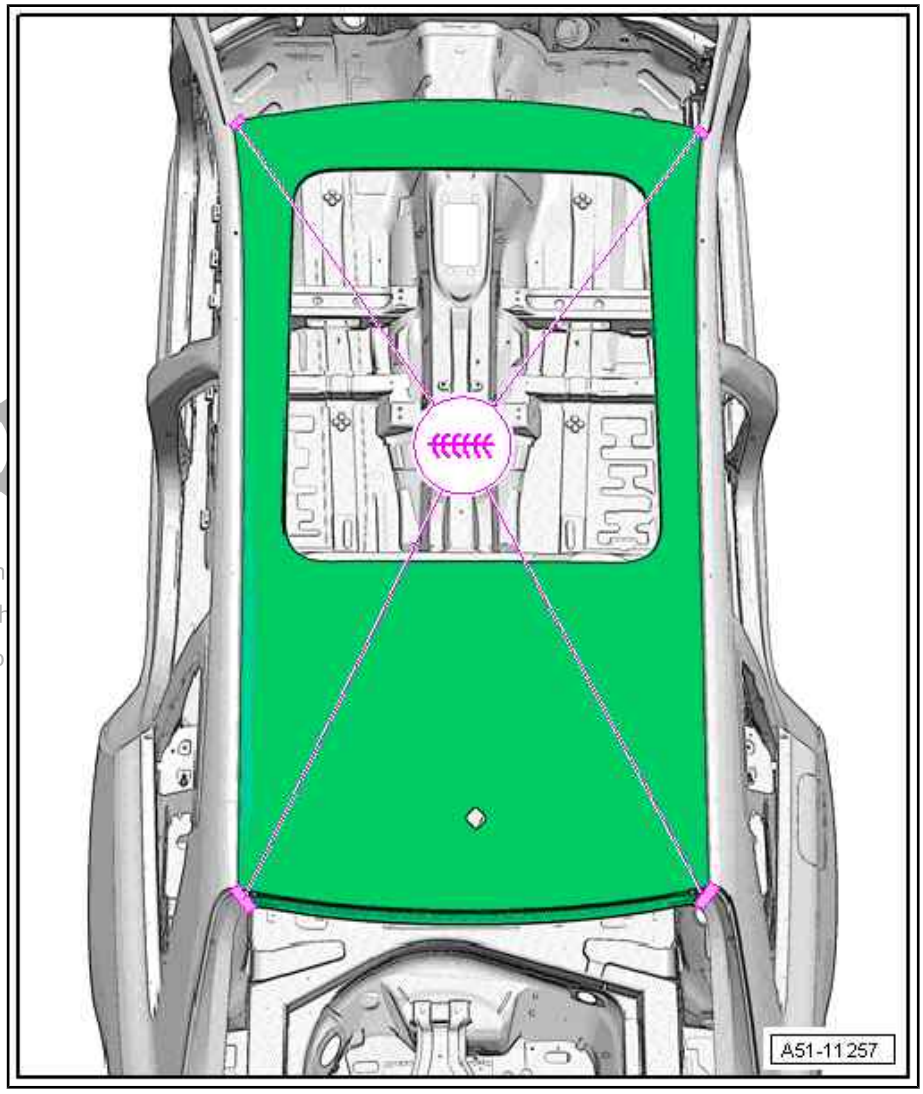


Weld in roof at front and rear using resistance spot welder : RP spot weld seam.



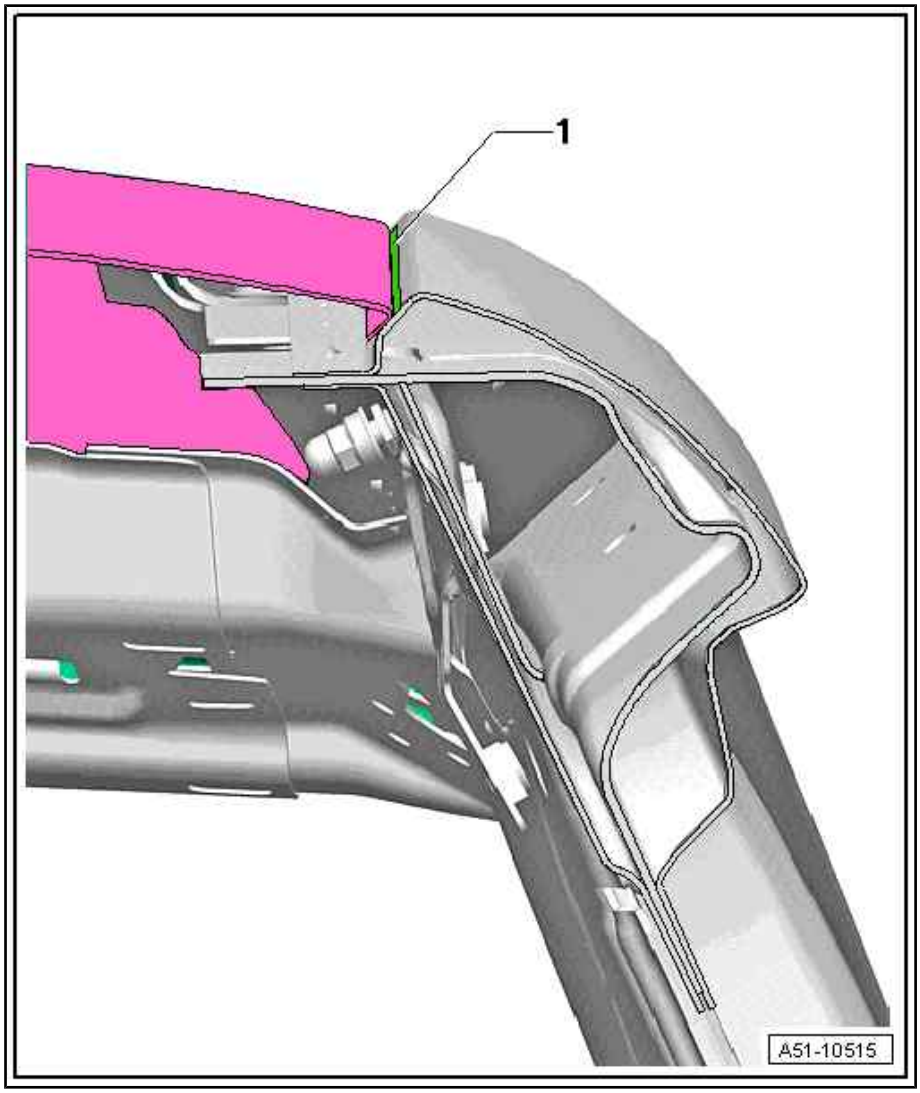
– Make additional welds for roof using shielded arc welding equipment : SG continuous seam.
– Grind down SG continuous weld seams using compact angle grinder .

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



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7 Roof side member - Renewal (Saloon)

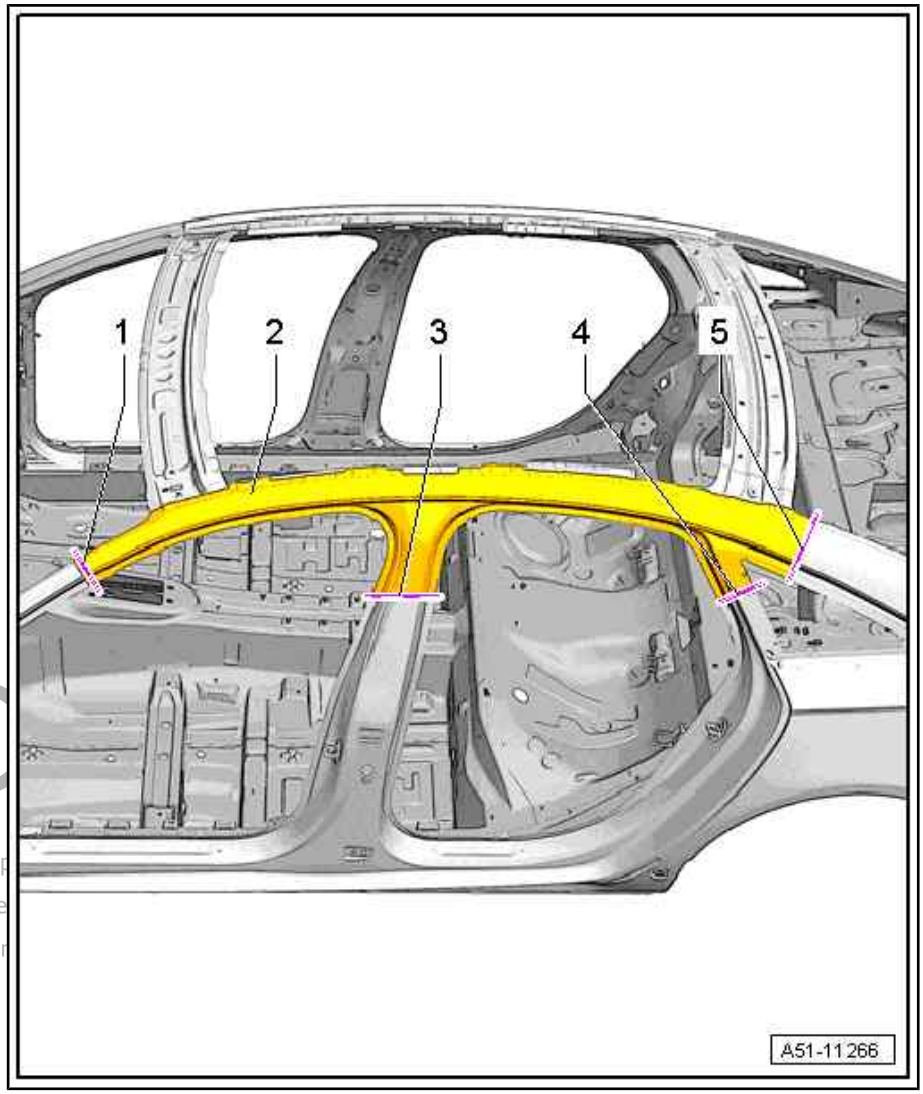
1 - Separating cut in A-pillar

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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7.1 Notes for vehicles with hybrid drive

⇒ page 5

7.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Compact angle grinder
- Body saw
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

7.3 Procedure

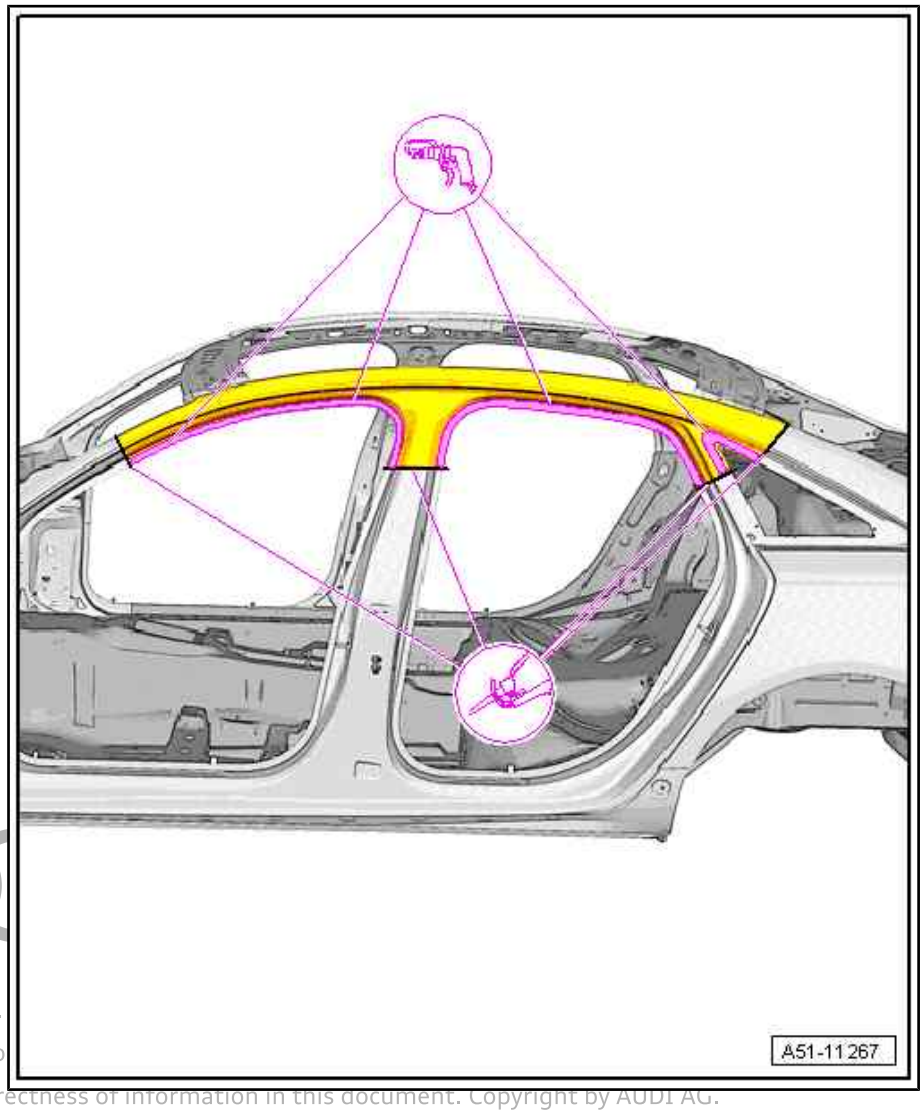
- Roof removed (Saloon) ⇒ page 130
- Roof removed (Saloon with tilting sunroof) ⇒ page 151
- Roof removed (Saloon with large sunroof, long version) ⇒ page 166

Cutting locations

Permitted separating cuts on complete side panel ⇒ page 128 .

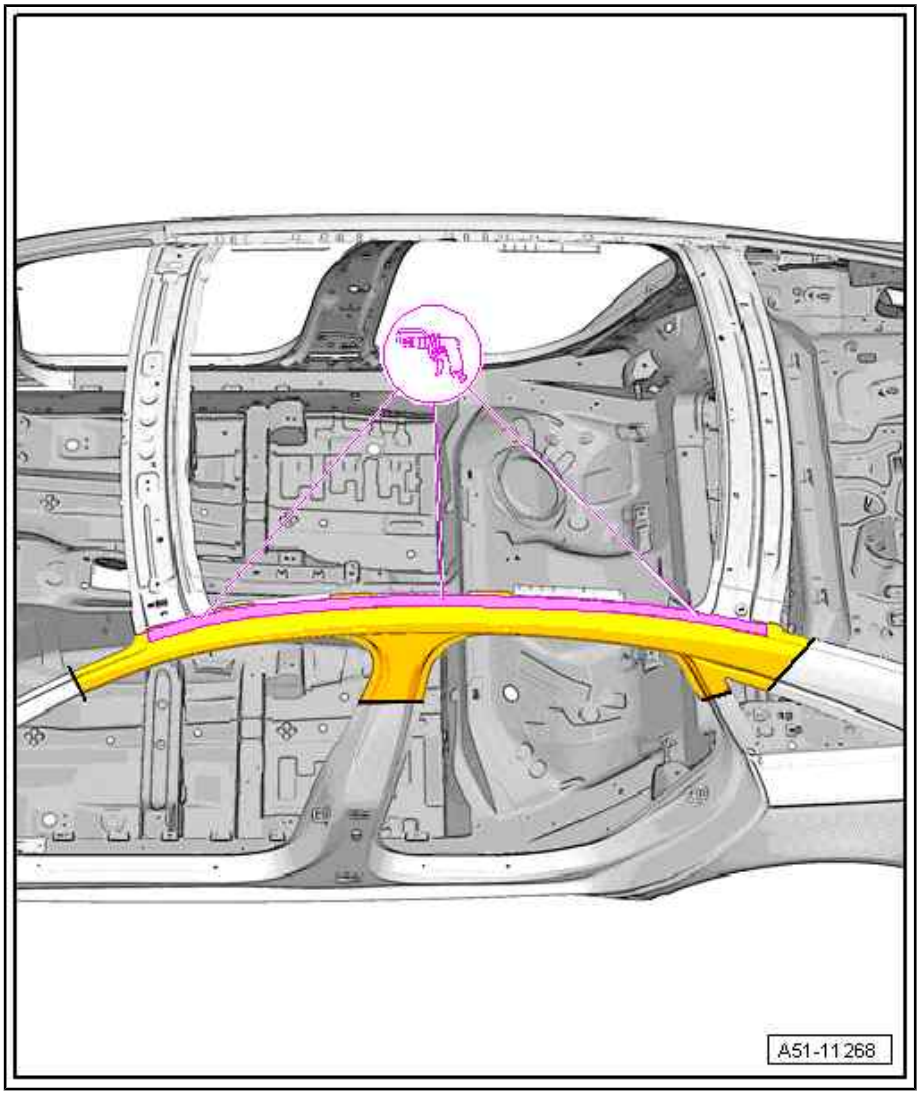
– Make separating cuts at A, B, C and D-pillars according to degree of damage using body saw .

– Separate original joint using spot weld breaker .



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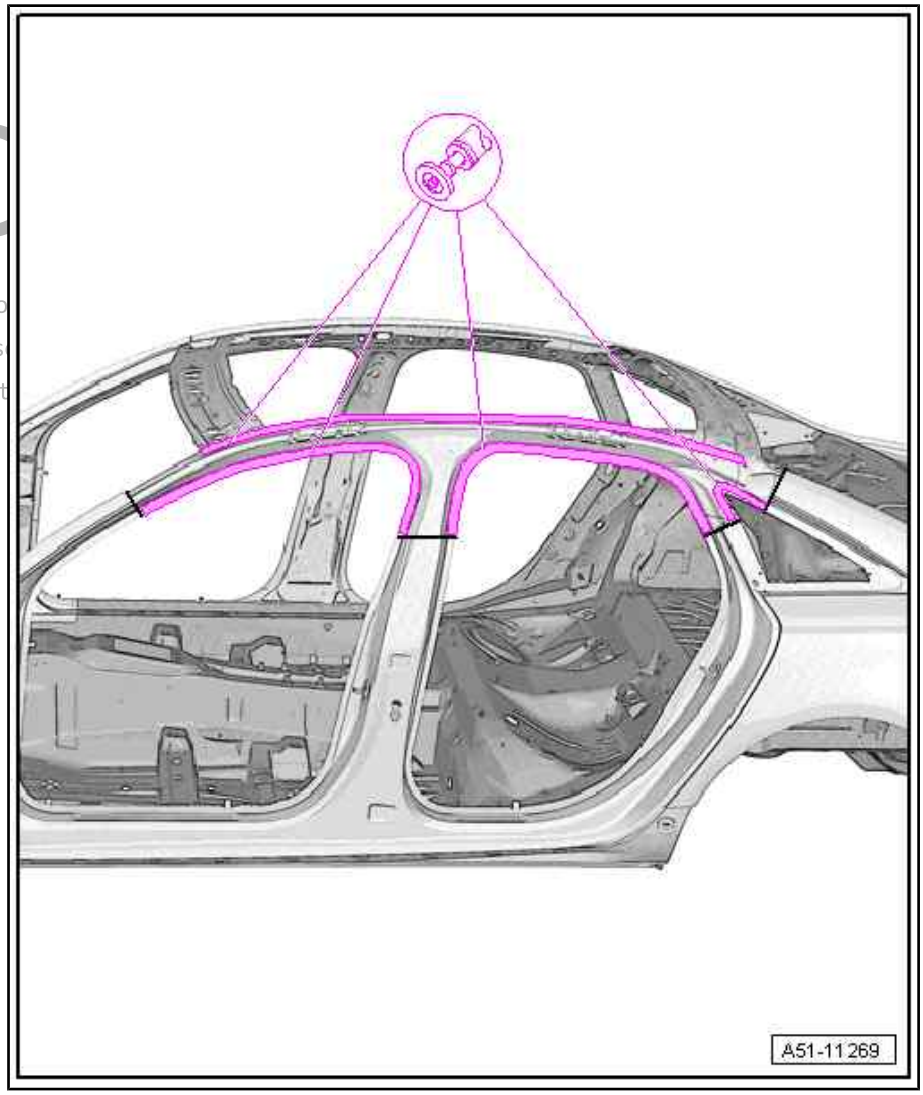
– Separate original joint using spot weld breaker .



– Remove remaining material using compact angle grinder .

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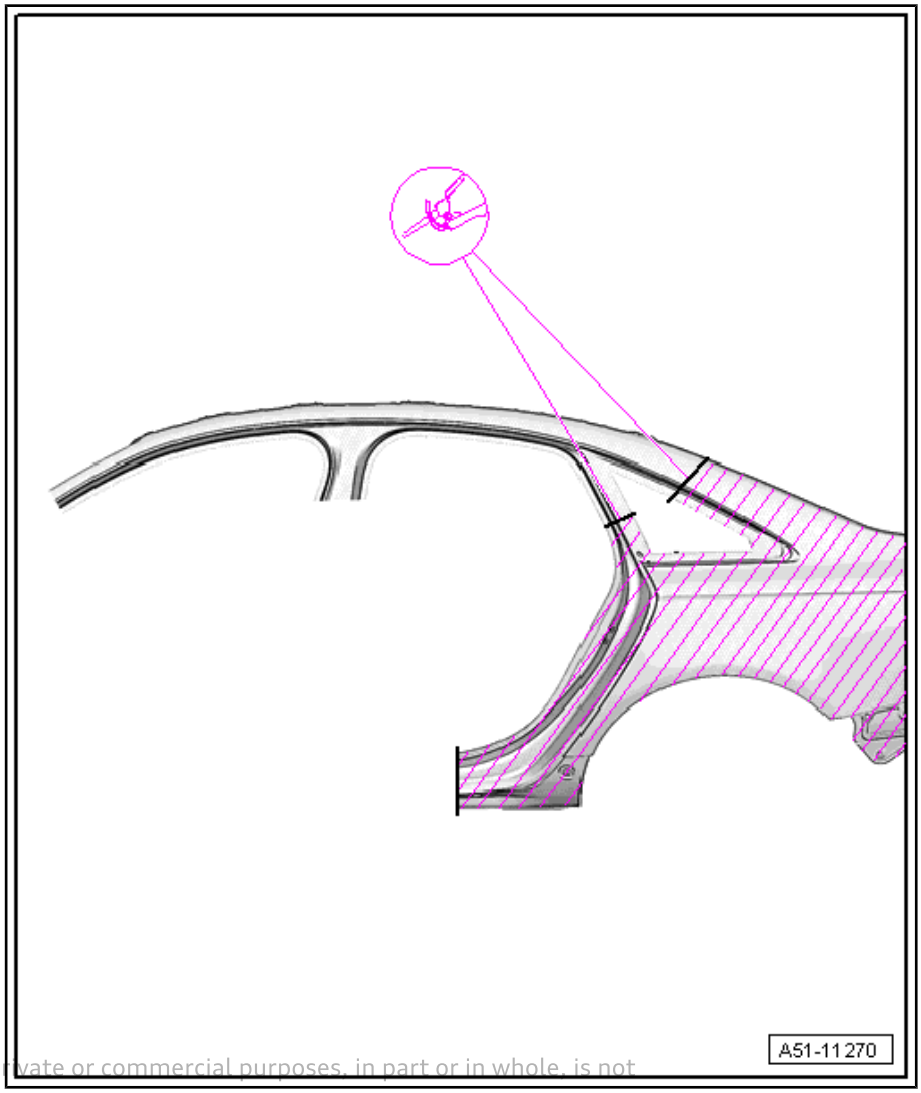


Replacement part

- Side frame

Preparing new part

– Transfer separating cuts to new part and cut off hatched area using body saw .



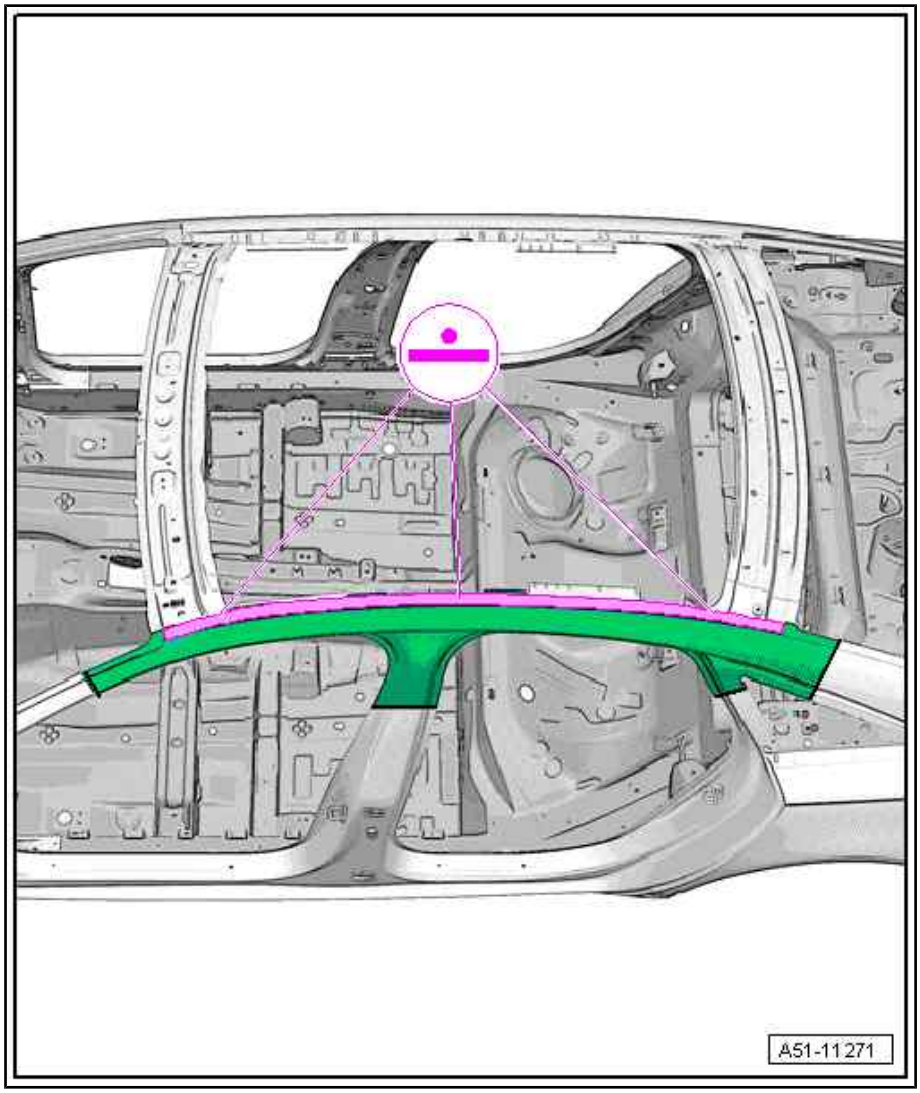
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Note

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Welding in

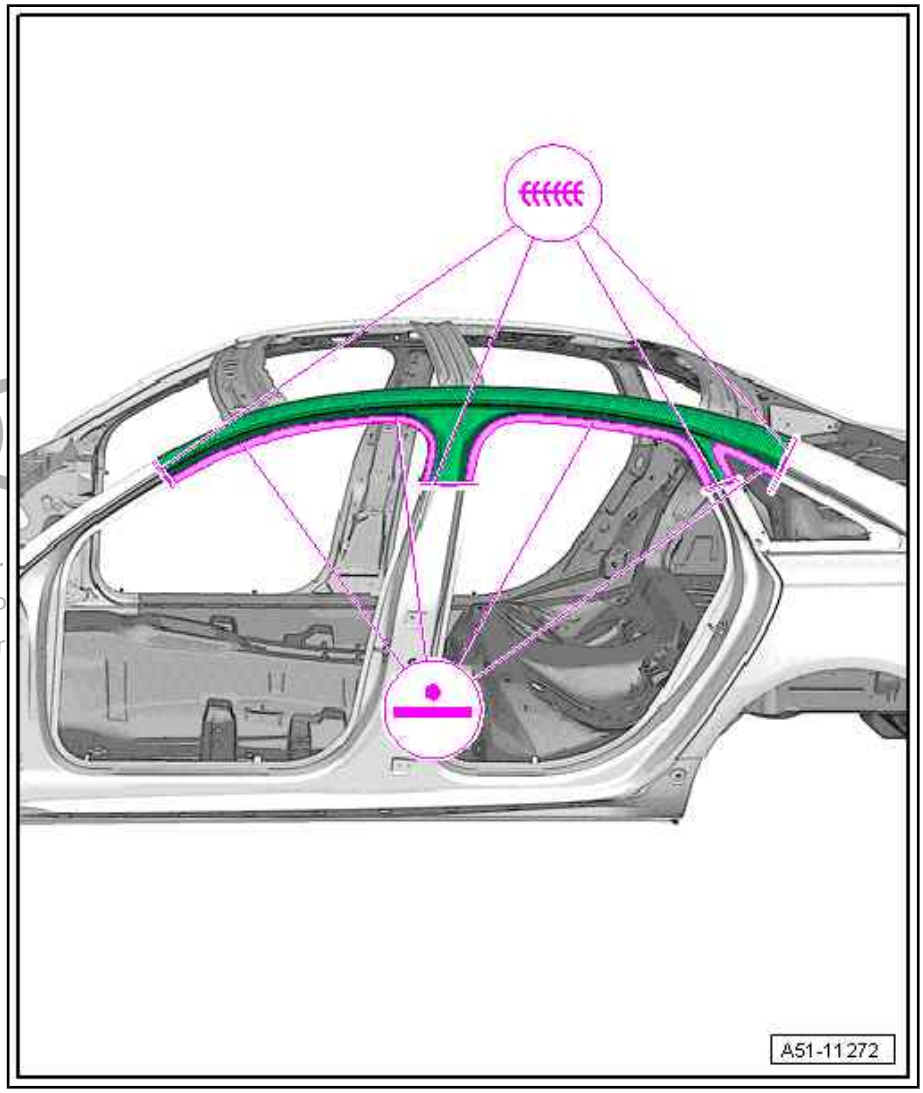
– Match up roof side member and fix in position.
– Check fit relative to bolt-on parts.
– Weld in roof side member using resistance spot welder : RP spot weld seam.



– Weld in roof side member using resistance spot welder : RP spot weld seam.
– Butt weld separating cuts using shielded arc welding equipment : SG continuous seam.

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- Welding in roof (Saloon) ⇒ page 130
- Welding in roof (Saloon with tilting sunroof) ⇒ page 151
- Welding in roof (Saloon with large sunroof, long version) ⇒ page 166

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8 Roof side member - Renewal (Avant)

1 - Separating cut in A-pillar

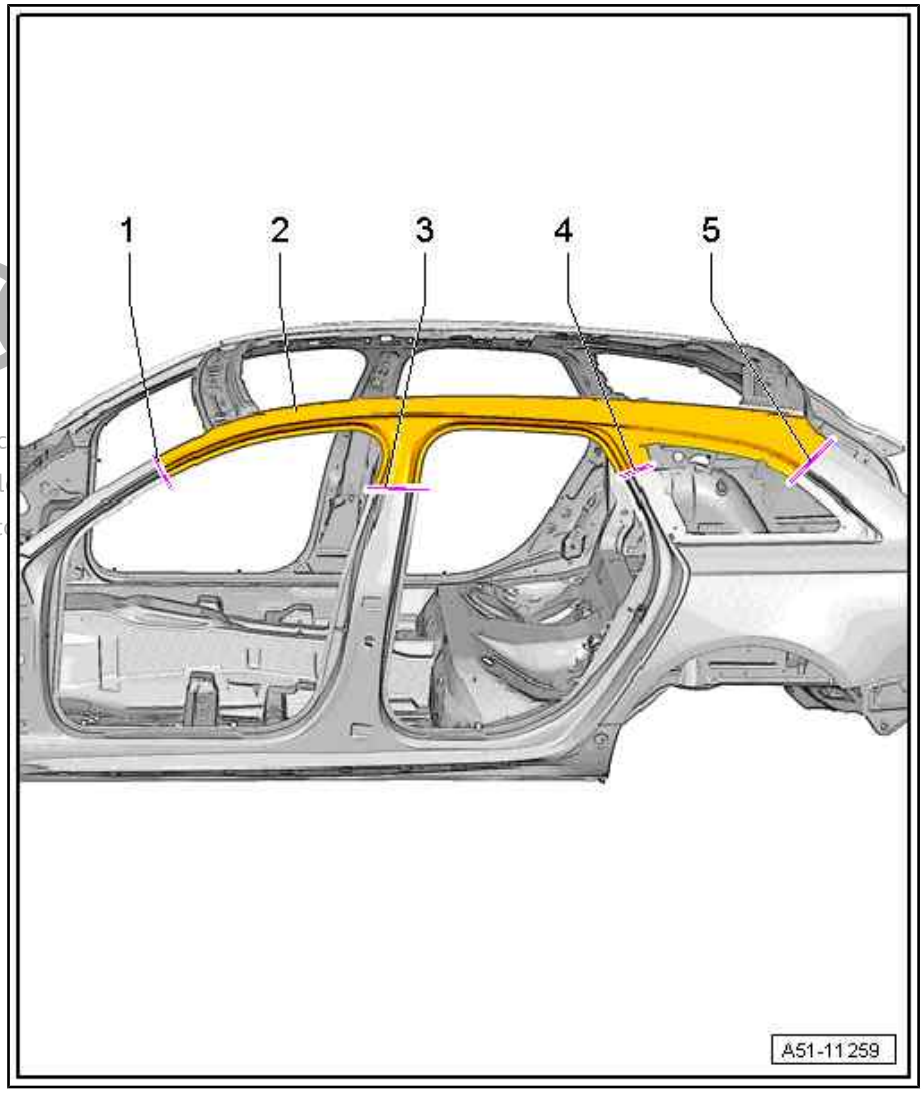
2 - Roof side member

3 - Separating cut in B-pillar

4 - Separating cut in C-pillar

5 - Separating cut in D-pillar

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8.1 Notes for vehicles with hybrid drive

⇒ page 5

8.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Compact angle grinder
- Body saw
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

8.3 Procedure

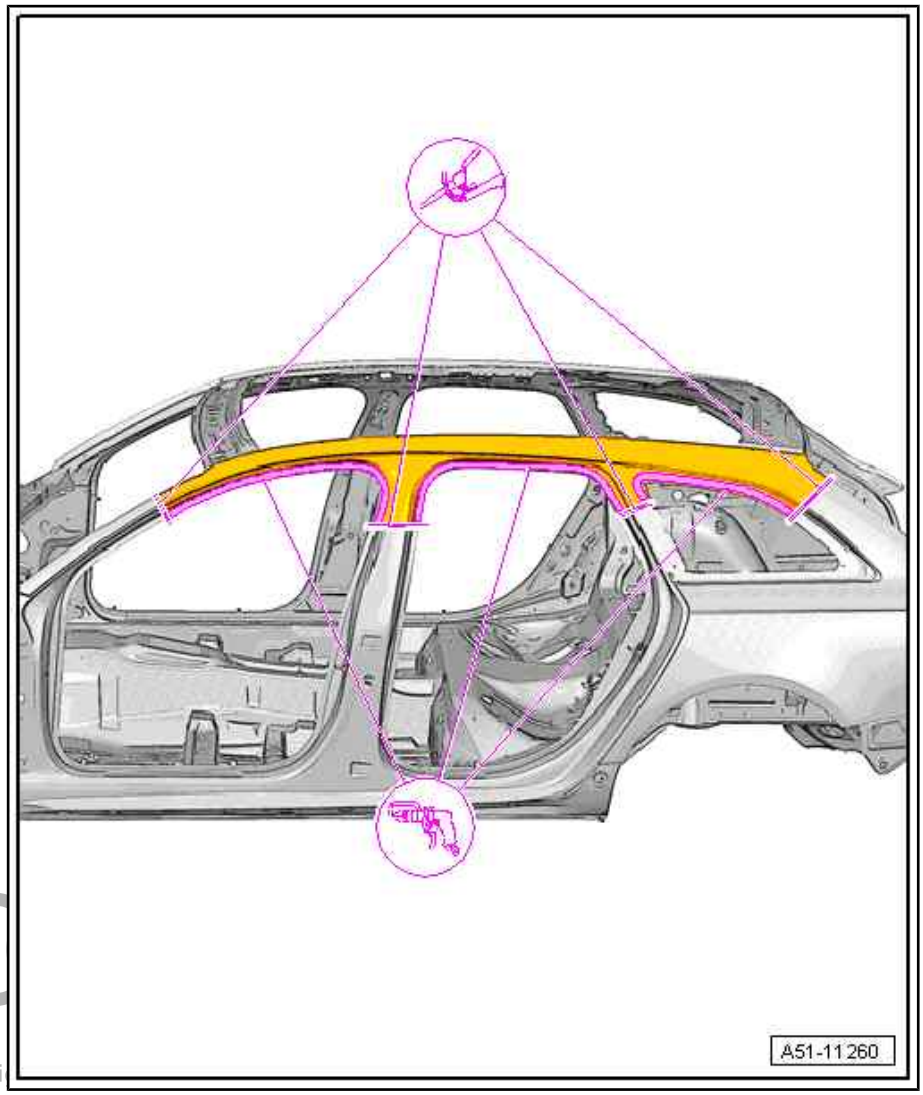
- Roof removed (Avant with large sunroof) ⇒ page 200
- Roof removed ⇒ page 179

Cutting locations

Permitted separating cuts on complete side panel ⇒ page 128 .

– Make separating cuts at A, B, C and D-pillars according to degree of damage using body saw .

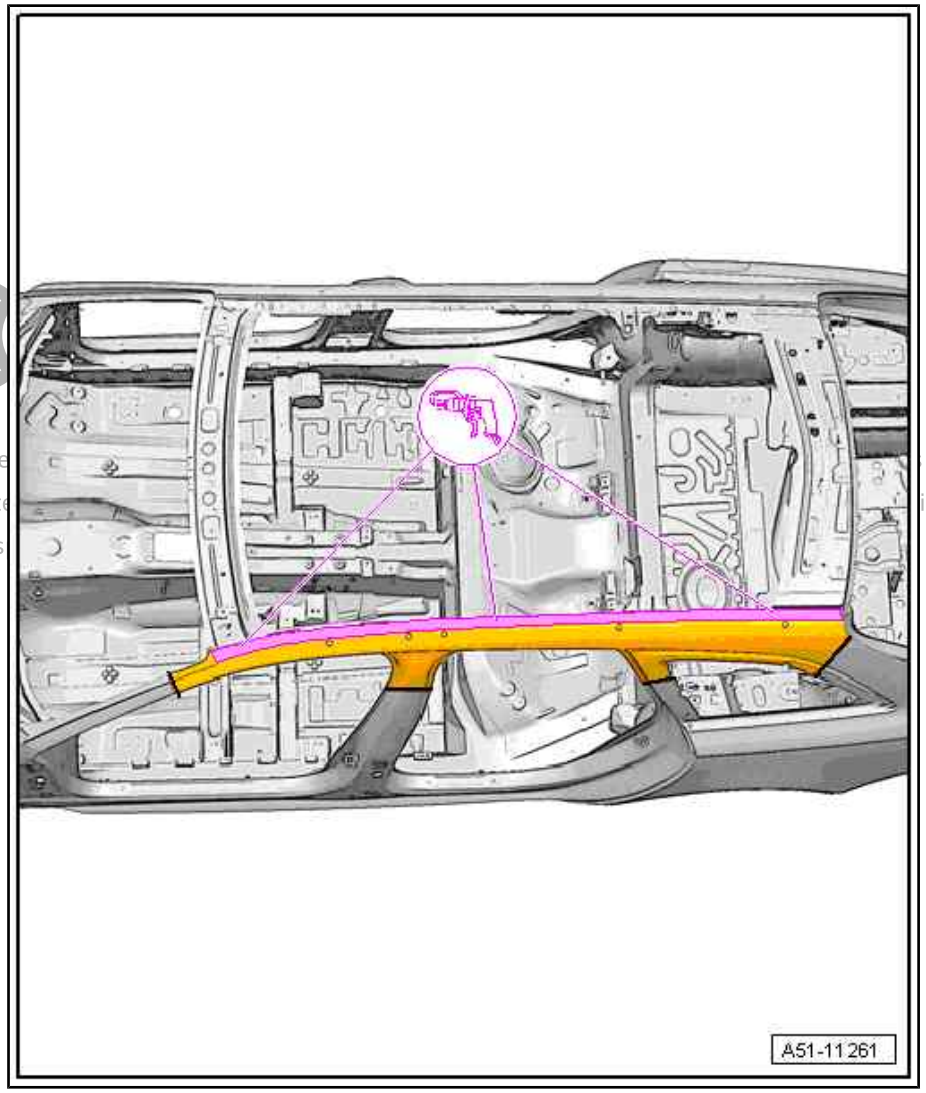
– Separate original joint using spot weld breaker .



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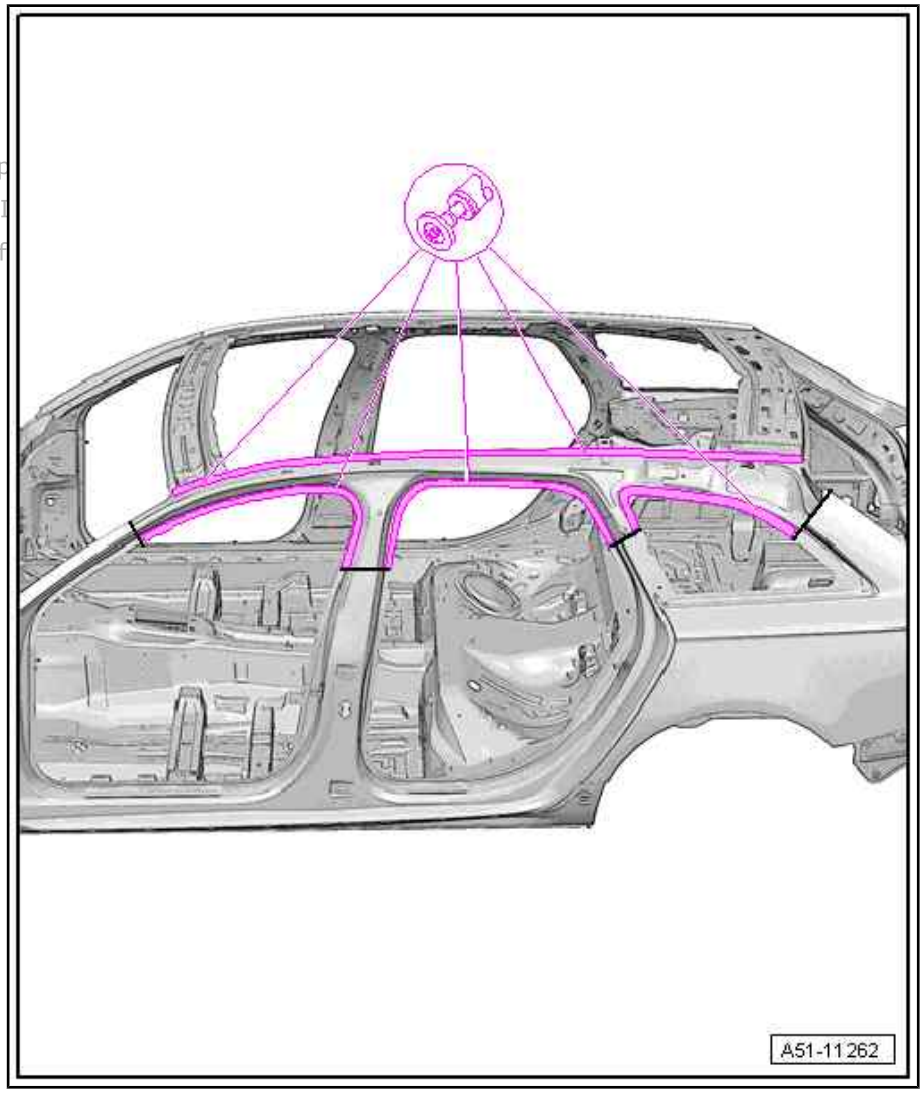
– Separate original joint using spot weld breaker .

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– Remove remaining material using compact angle grinder .

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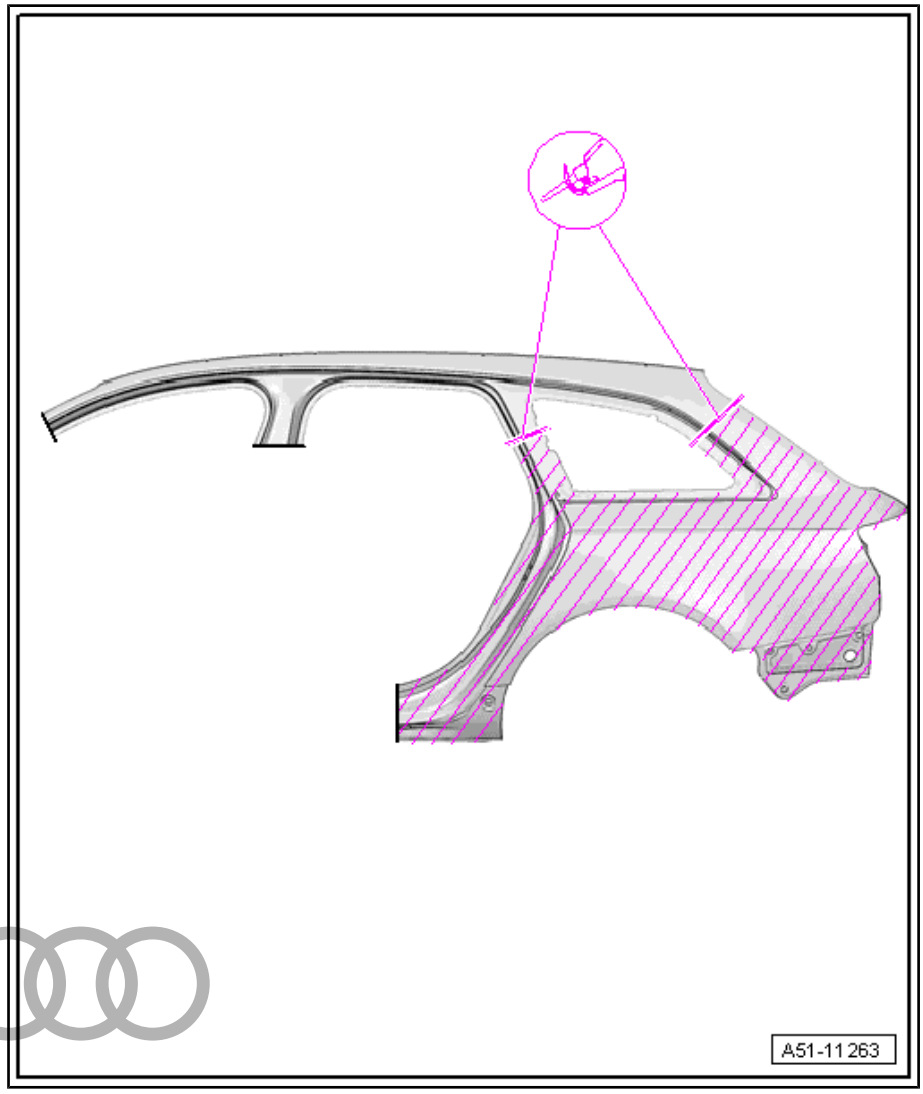


Replacement part

- Roof side member

Preparing new part

– Transfer separating cuts to new part and cut off hatched area using body saw .



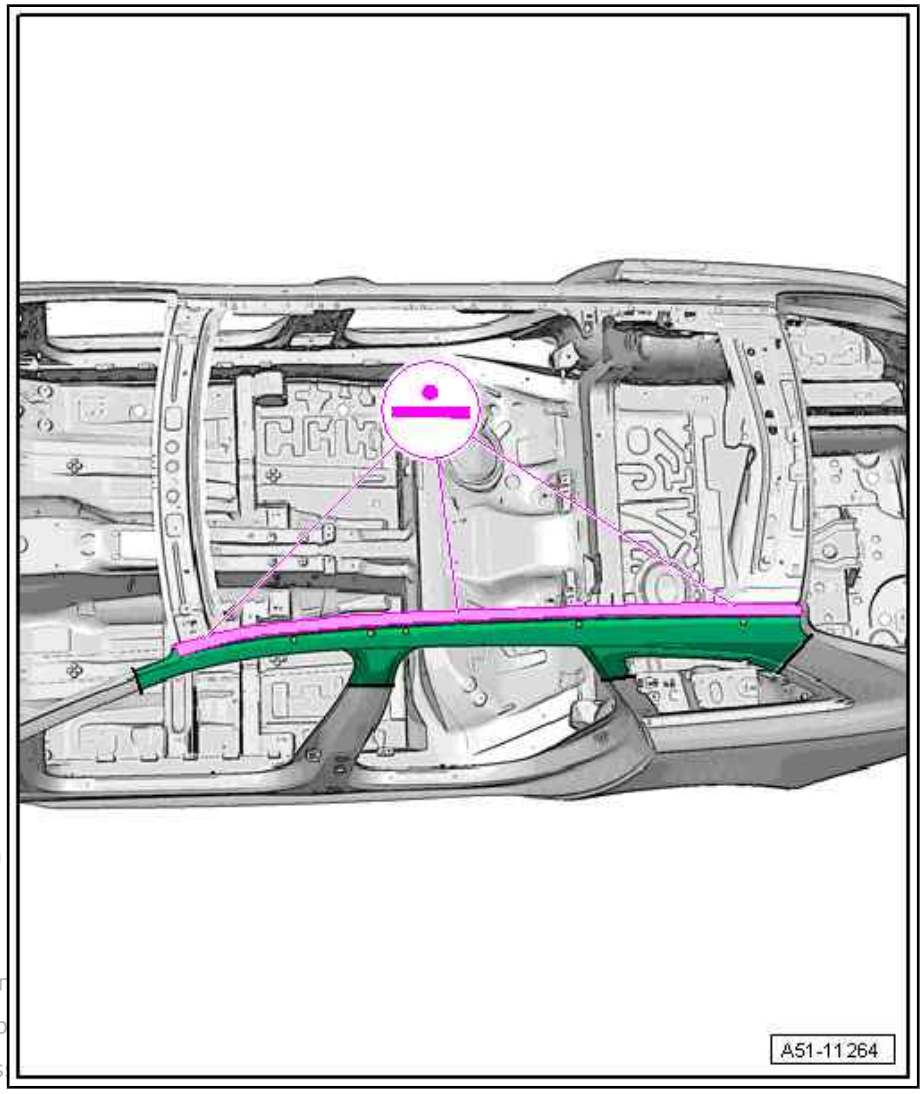
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Note

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.

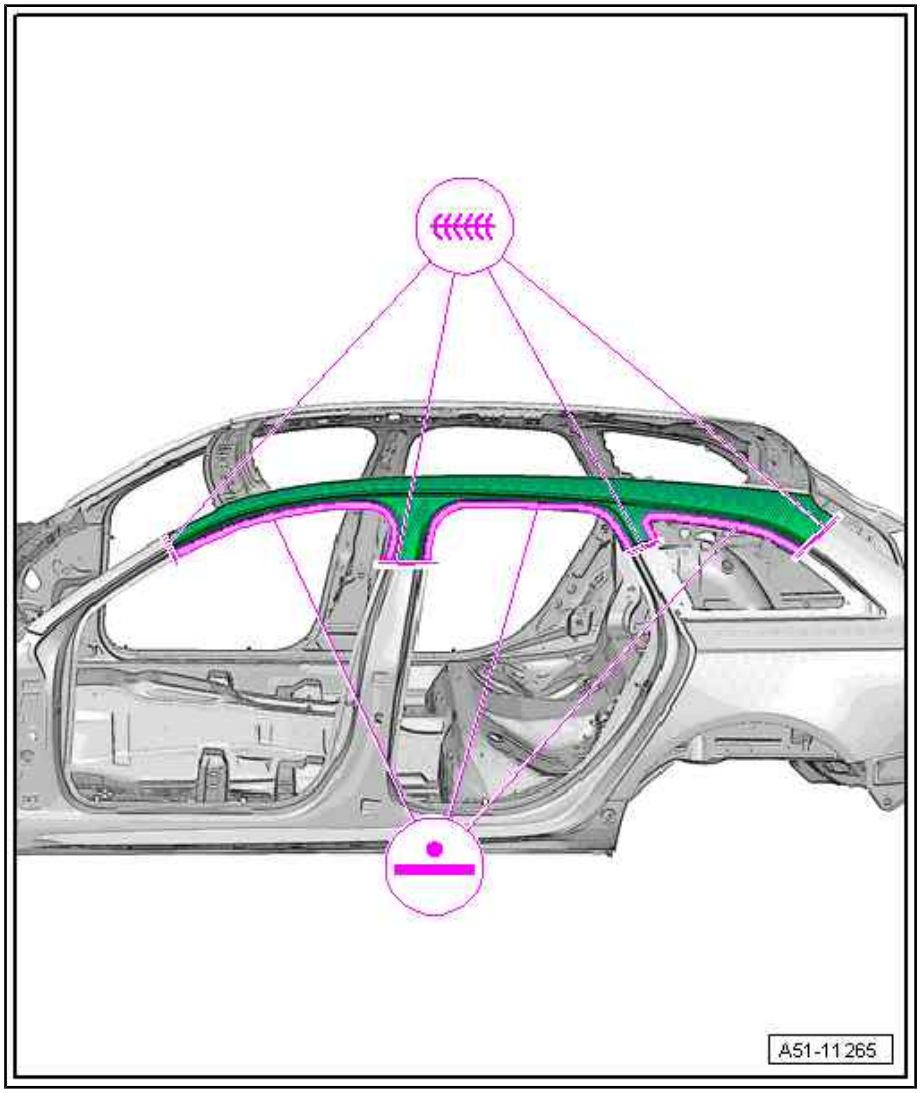
Welding in

– Match up roof side member and fix in position.
– Check fit relative to bolt-on parts.
– Weld in roof side member using resistance spot welder : RP spot weld seam.



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– Butt weld separating cuts using shielded arc welding equipment : SG continuous seam.
– Weld in roof side member using resistance spot welder : RP spot weld seam.



- Welding in roof (Avant with large sunroof) ⇒ page 200
- Welding in roof (Avant) ⇒ page 179

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RO: 51 07 55 50

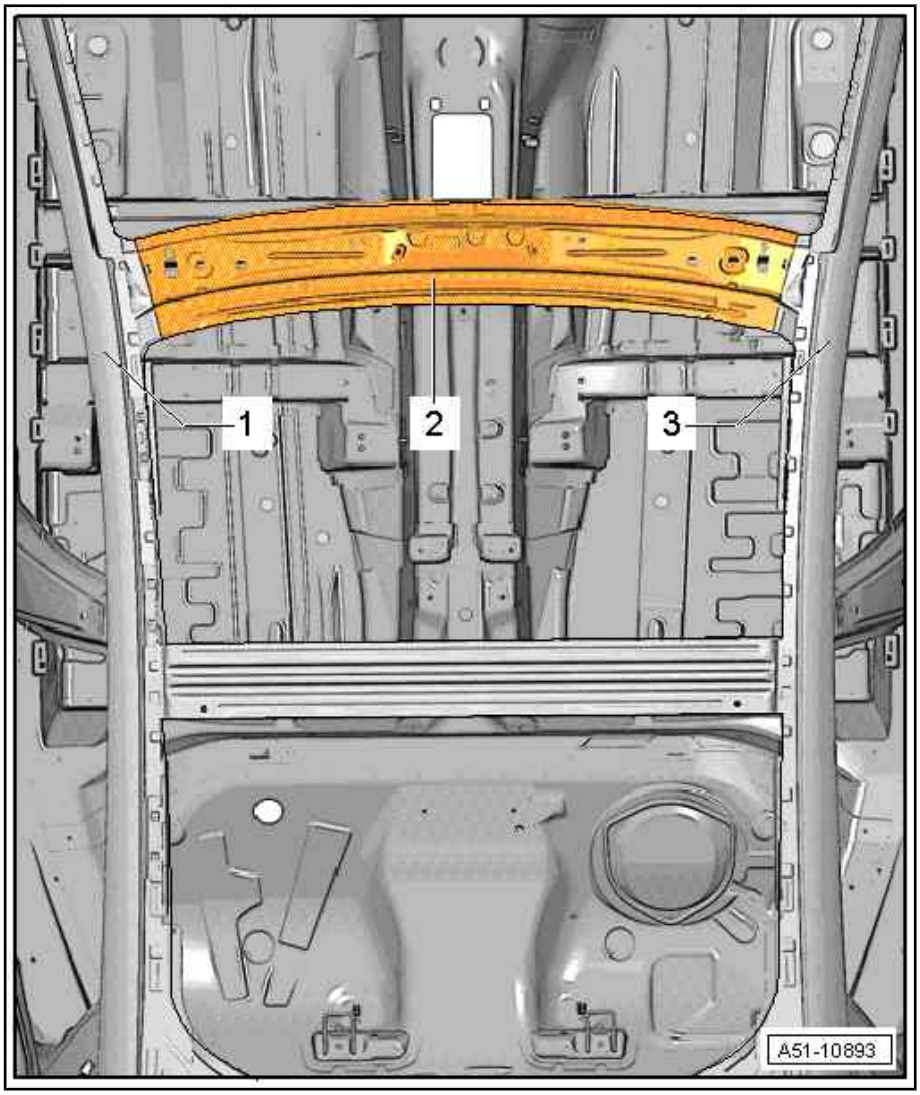
9 Front roof cross member - Renewal

(Saloon and Avant identical)

1 - Side frame (left-side)

2 - Roof cross member (front)

3 - Side frame (right-side)



9.1 Notes for vehicles with hybrid drive

⇒ page 5

9.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Compact angle grinder
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

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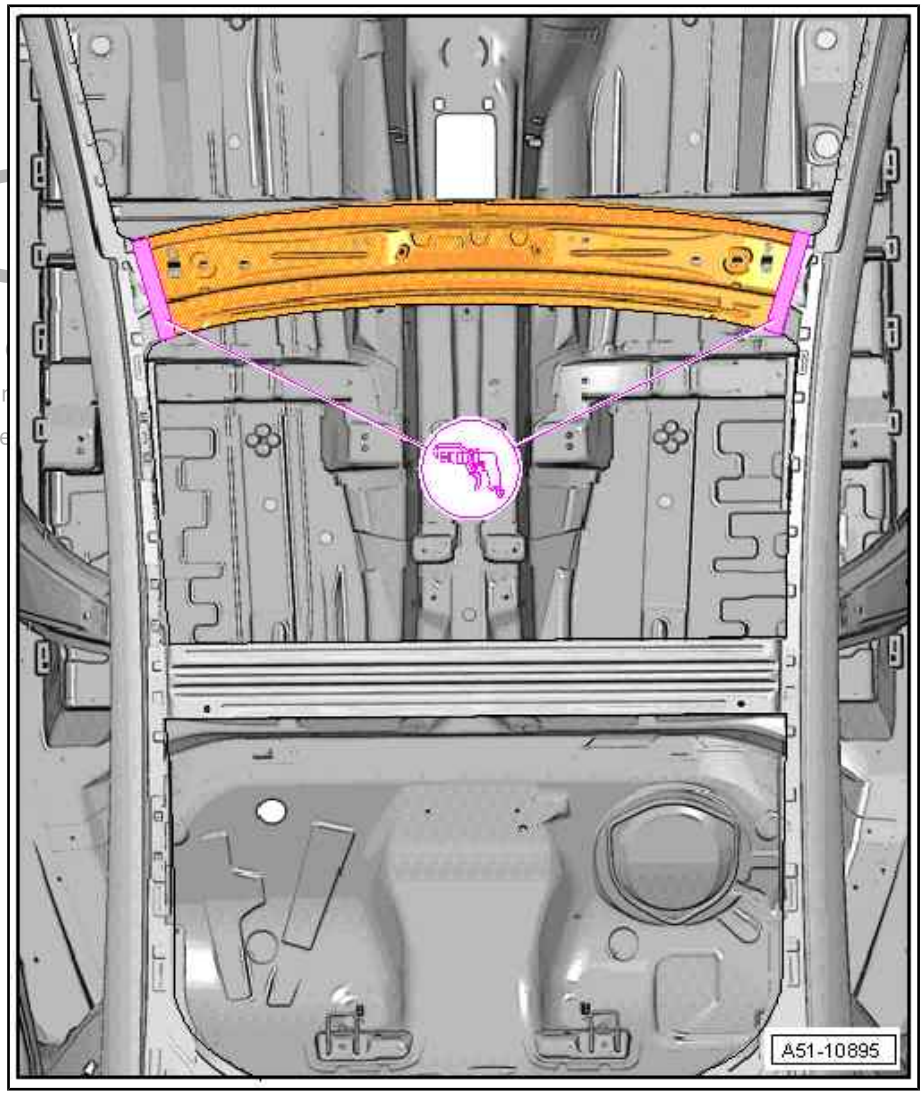
9.3 Procedure

- Roof removed (Saloon) ⇒ page 130
- Roof removed (Saloon with tilting sunroof) ⇒ page 151
- Roof removed (Saloon with large sunroof, long version) ⇒ page 166

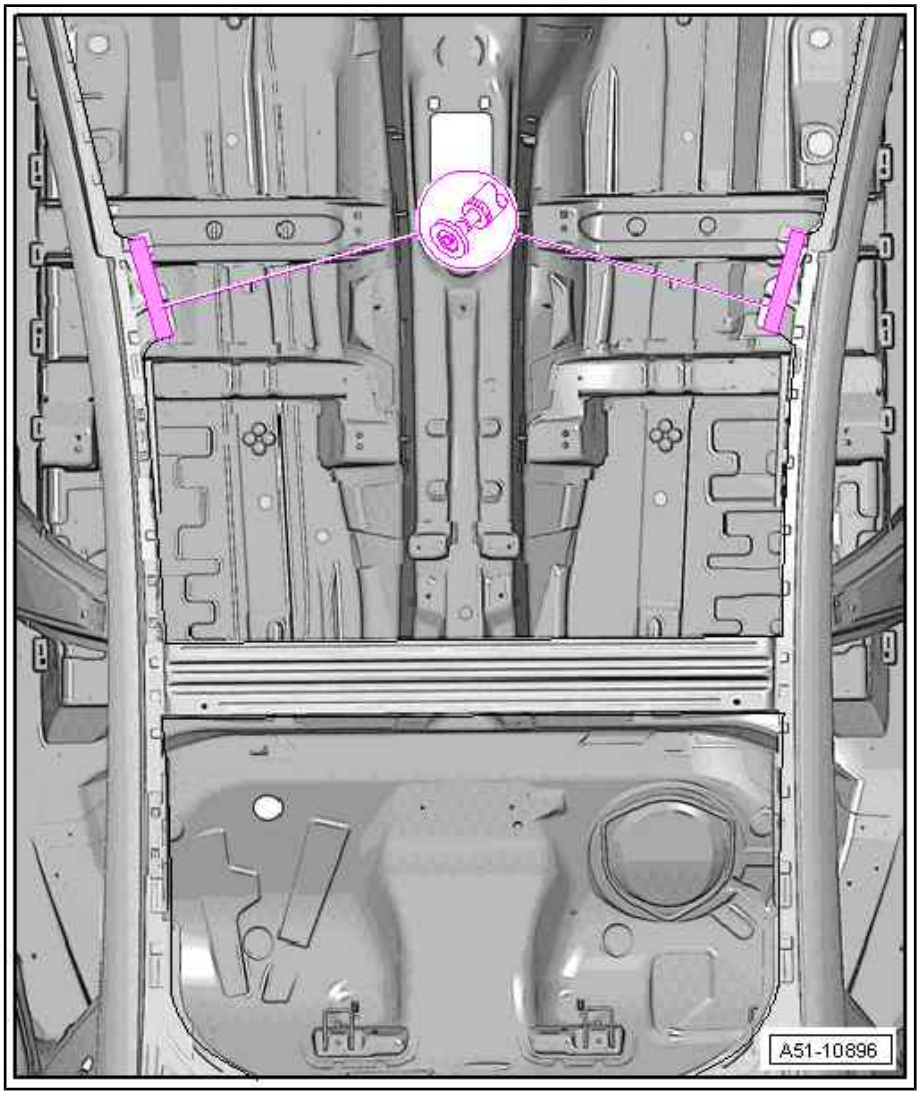
Cutting locations

– Separate original joint using spot weld breaker .

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– Remove remaining material using compact angle grinder .



Replacement part

- Roof cross member

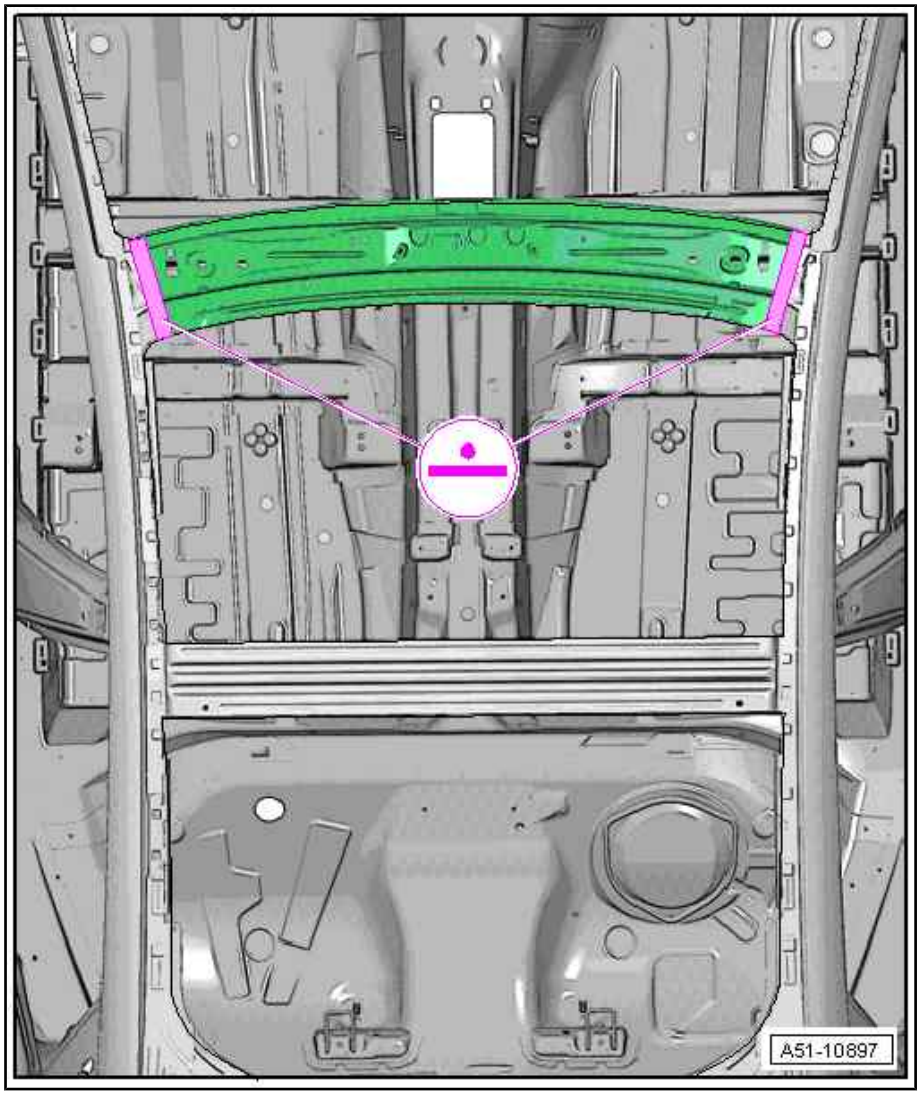
Note

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.

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- Welding in roof (Saloon) ⇒ page 130
- Welding in roof (Avant) ⇒ page 179
- Welding in roof (Saloon with large sunroof, long version) ⇒ page 166

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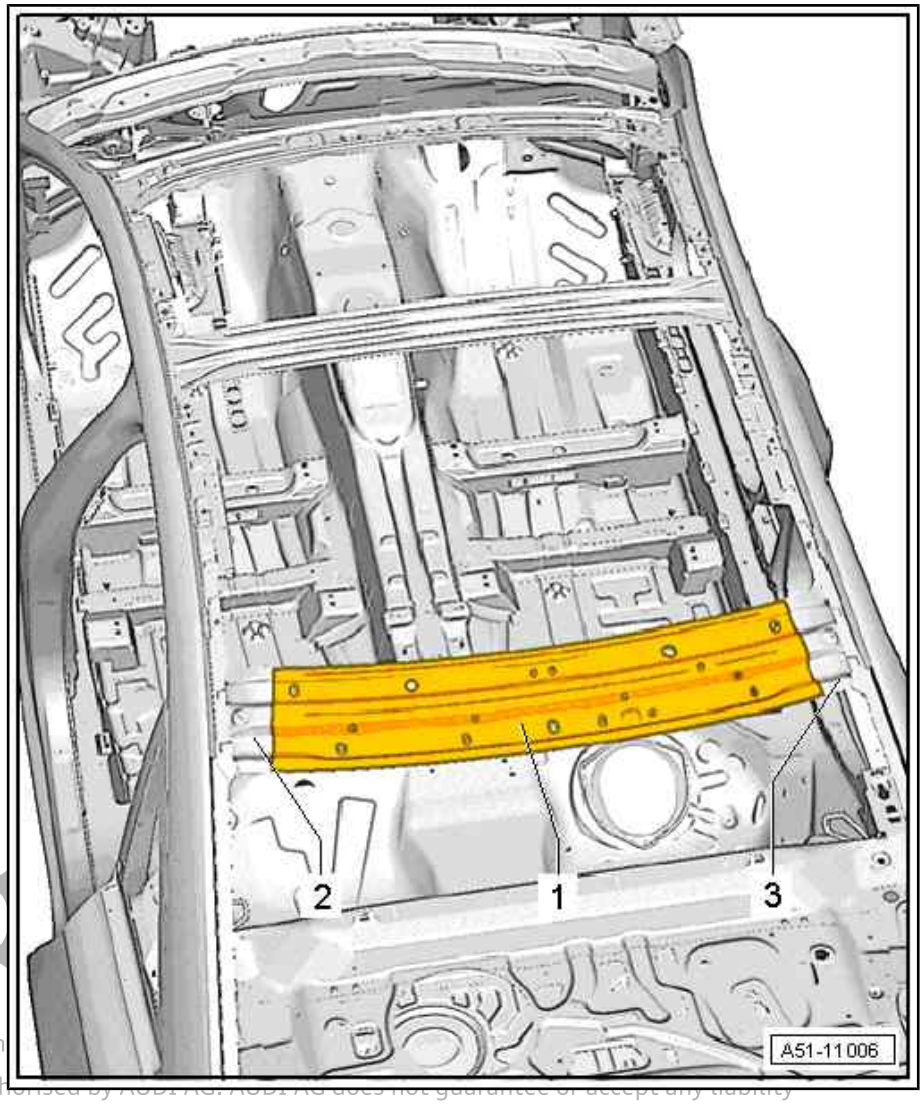
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10 Rear roof cross member - Renewal

1 - Roof cross member

2 - Right roof frame connection

3 - Left roof frame connection



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10.1 Notes for vehicles with hybrid drive

⇒ page 5

10.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Drill
- Compact angle grinder
- Body saw
- Spot weld breaker
- Pneumatic glue gun

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

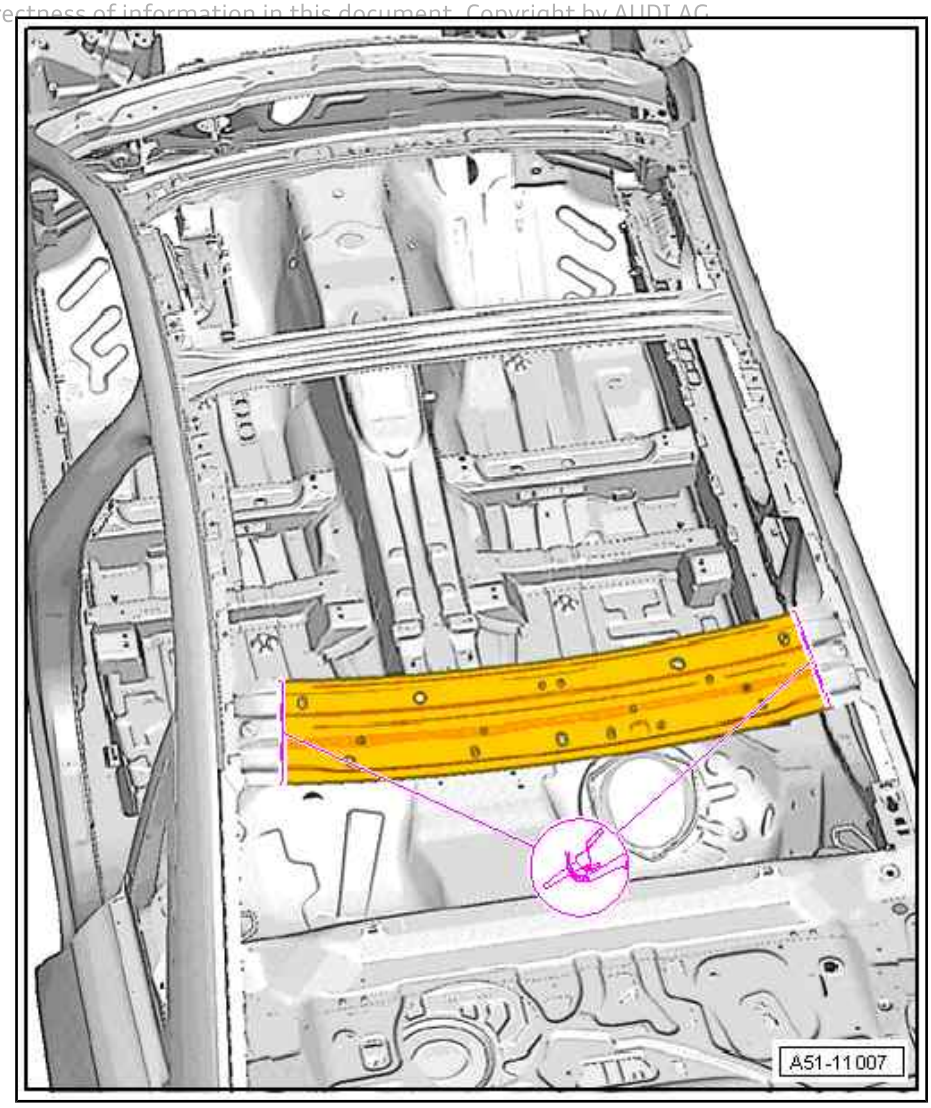
10.3 Procedure

- Roof removed (Saloon) ⇒ page 130
- Roof removed (Saloon with tilting sunroof) ⇒ page 151
- Roof removed (Saloon with large sunroof, long version) ⇒ page 166

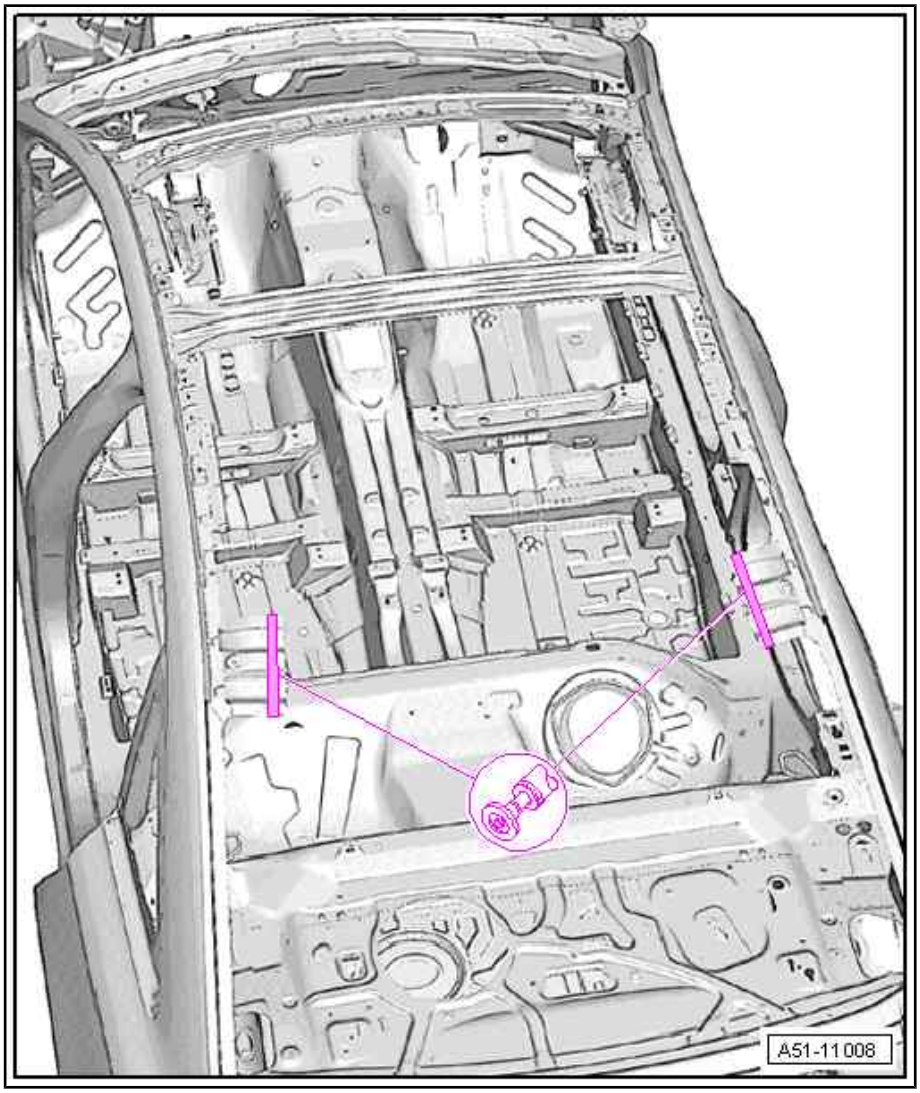
Cutting locations

– Roughly cut out roof cross member using body saw .

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– Remove remaining material using compact angle grinder .



Replacement parts

- Upper rear roof cross member
- Lower rear roof cross member

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Note

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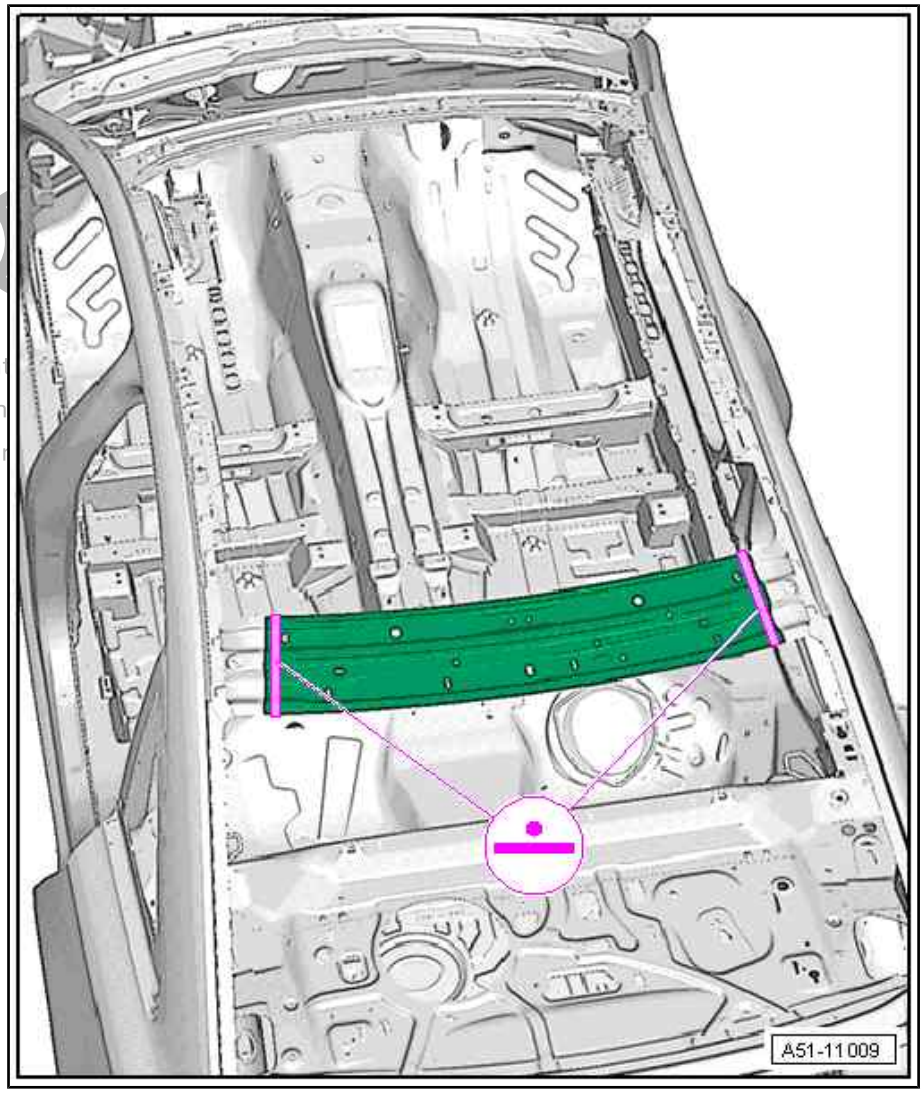
Welding in

– Match up upper rear roof cross member and fix in position.

– Check fit relative to roof.

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

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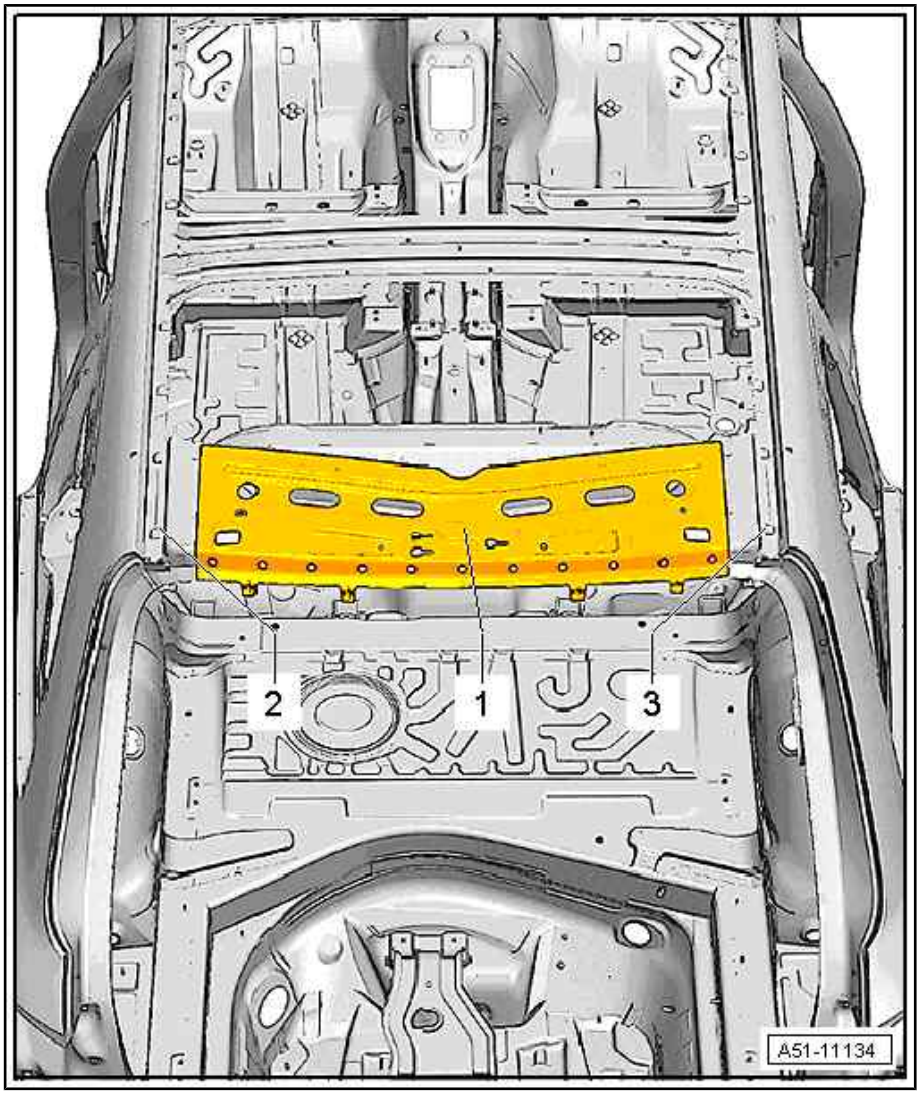


- Welding in roof (Saloon) ⇒ page 130
- Welding in roof (Saloon with tilting sunroof) ⇒ page 151
- Welding in roof (Saloon with large sunroof, long version) ⇒ page 166

RO: 51 09 55 50

11 Rear roof cross member - Renewal (Avant)

1 - Roof cross member
2 - Right roof frame connection
3 - Left roof frame connection



11.1 Notes for vehicles with hybrid drive

⇒ page 5

11.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Drill
- Compact angle grinder
- Body saw
- Spot weld breaker
- Pneumatic glue gun

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Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

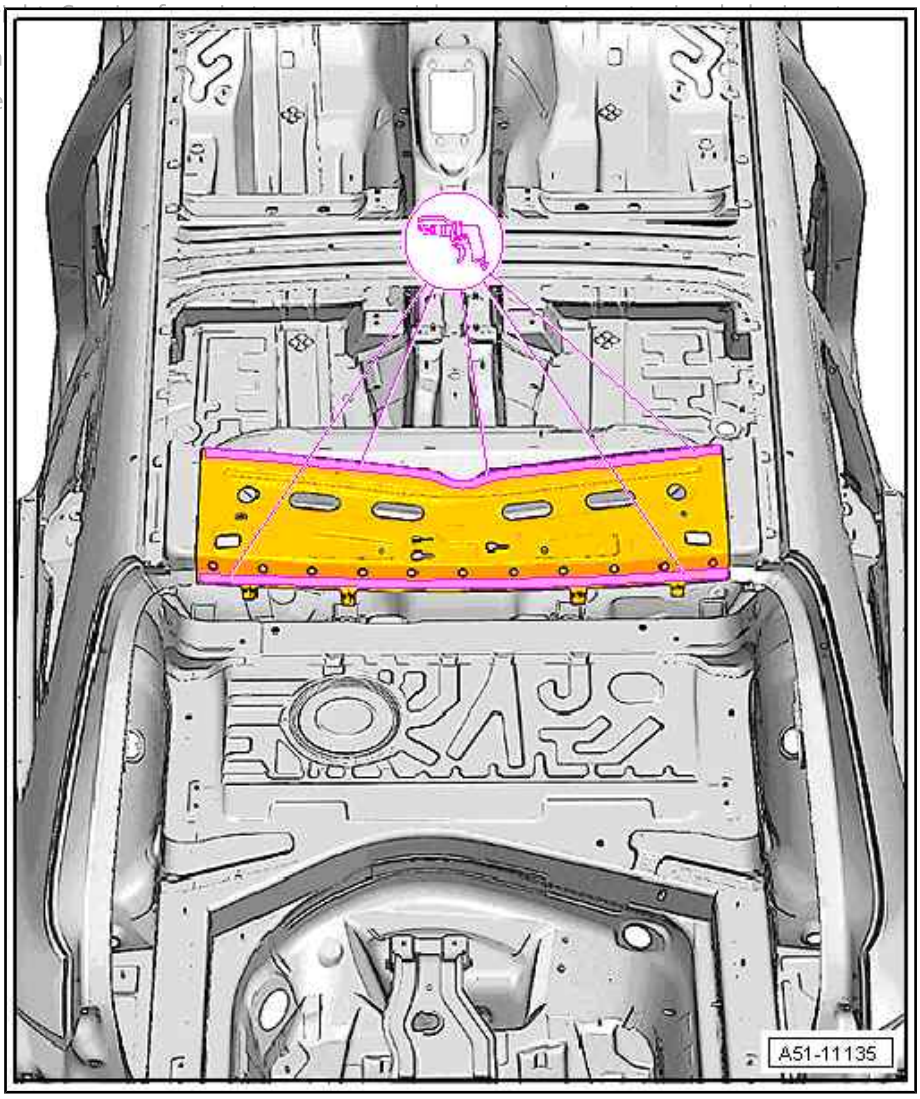
11.3 Procedure

- Roof removed ⇒ page 179
- Roof removed (version with large sunroof) ⇒ page 166

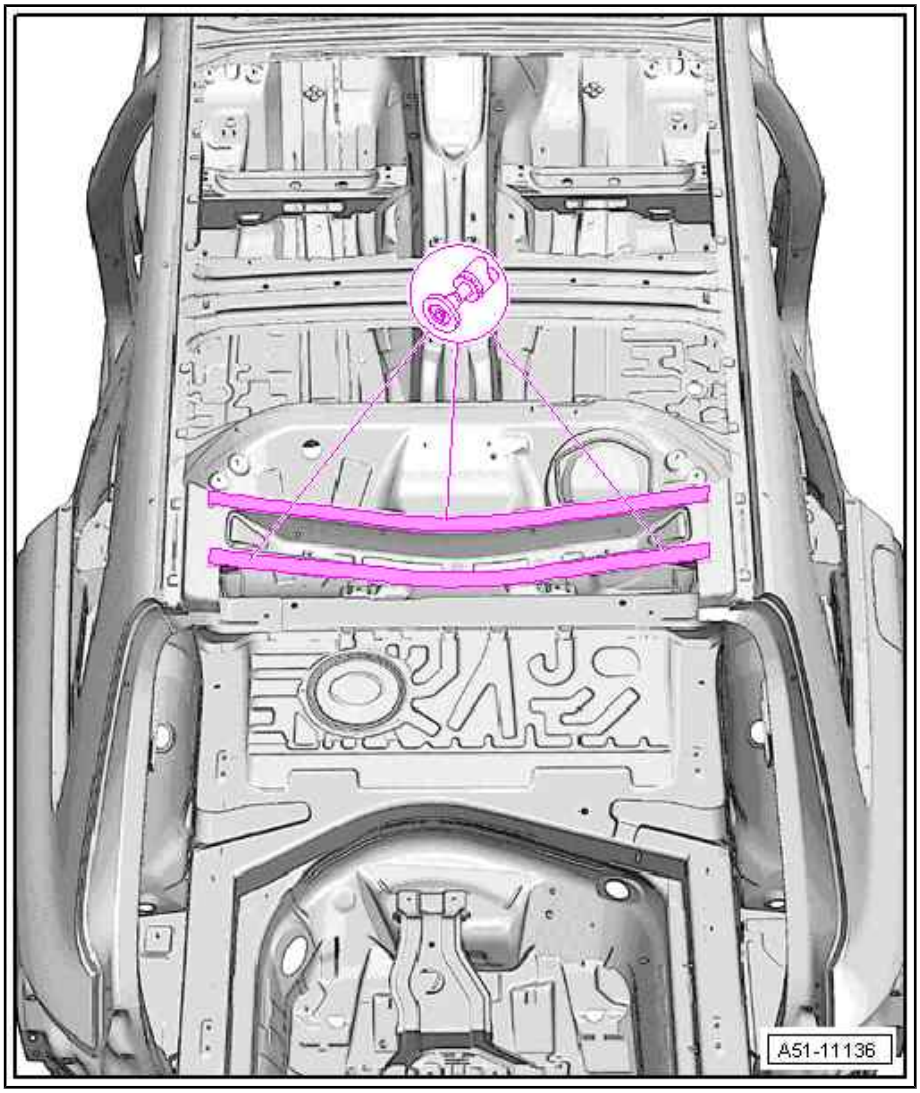
Cutting locations

– Separate original joint using spot weld breaker .

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– Remove remaining material using compact angle grinder .



Replacement parts

♦ Upper rear roof cross member

Note

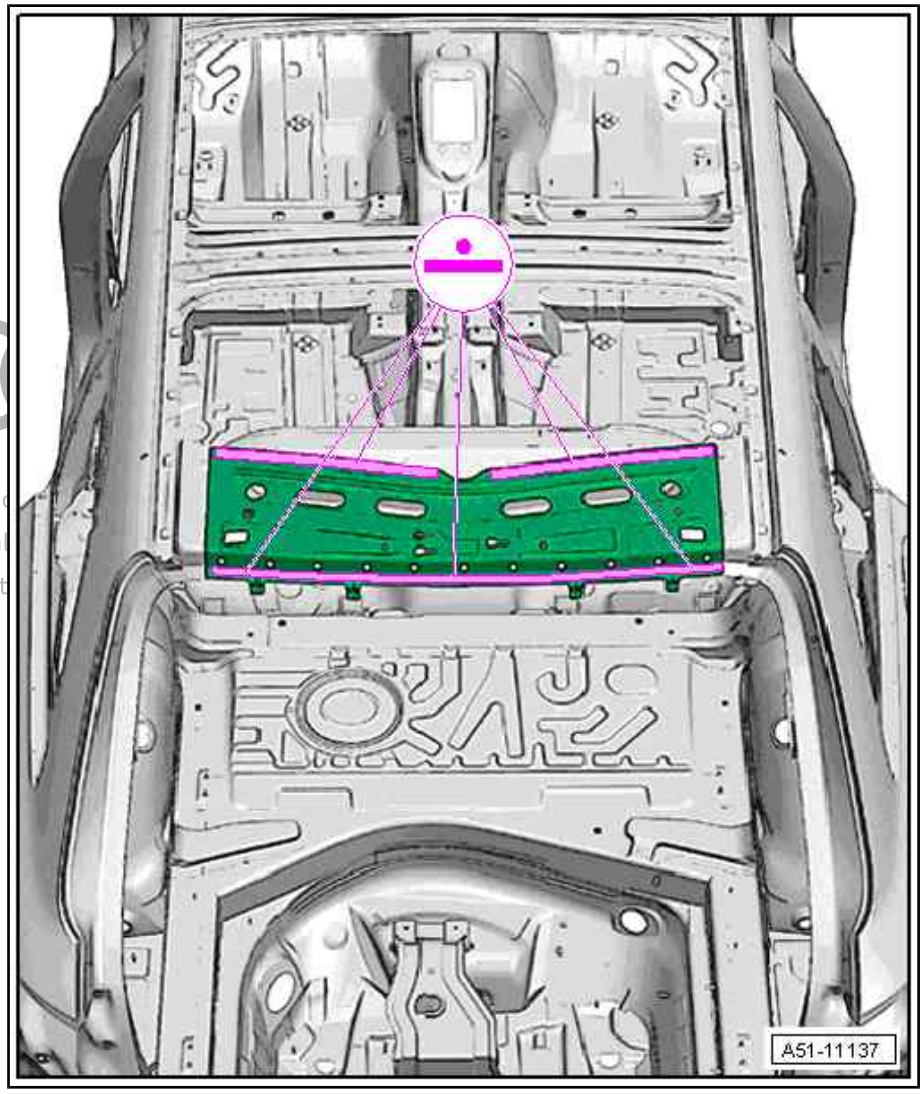
Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.

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Welding in

– Match up upper rear roof cross member and fix in position.
– Check fit relative to roof.
– Weld in roof frame using resistance spot welder : RP spot weld seam.

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- Welding in roof ⇒ page 179
- Welding in roof with large sunroof ⇒ page 166

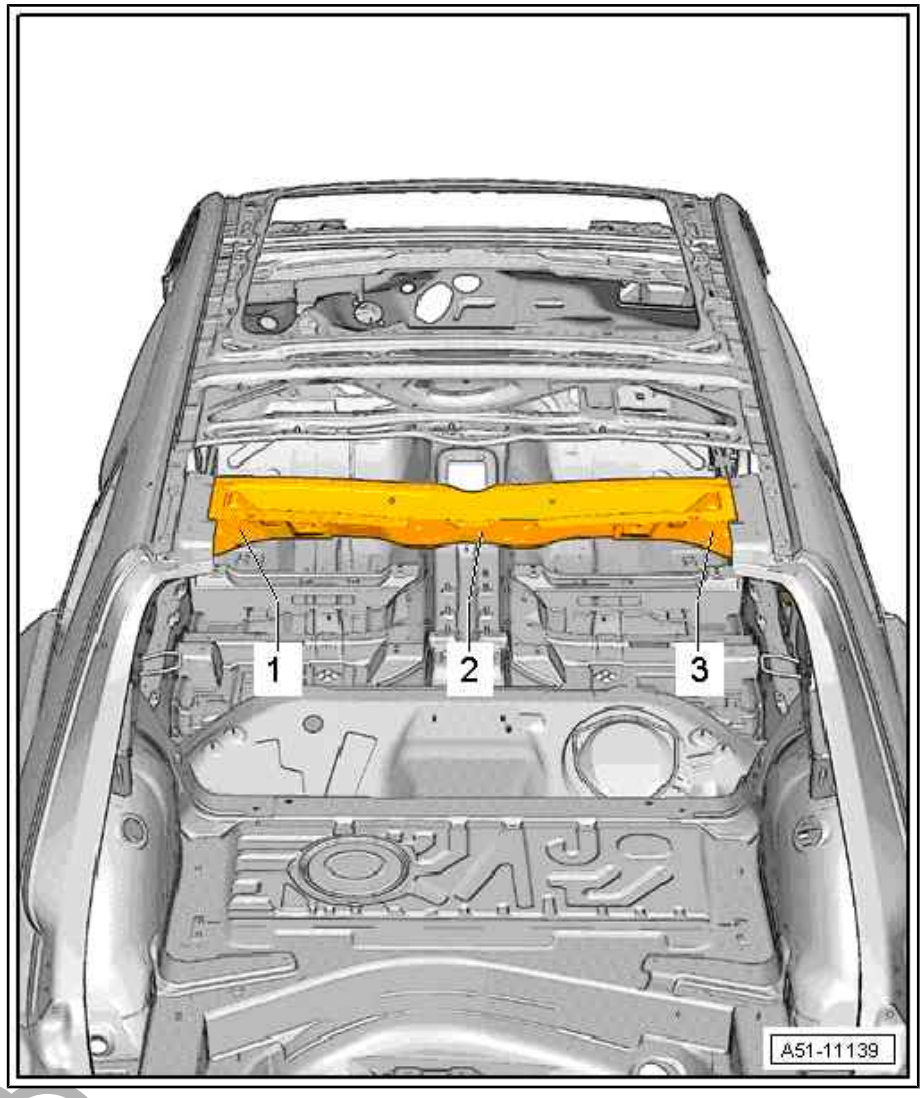
RO: 51 09 55 50

12 Inner rear roof frame - Renewal (Avant)

1 - Hinge mounting, left-side (aluminium casting)

2 - Rear roof frame (inner)

3 - Hinge mounting, right-side (aluminium casting)



12.1 Notes for vehicles with hybrid drive

⇒ page 5

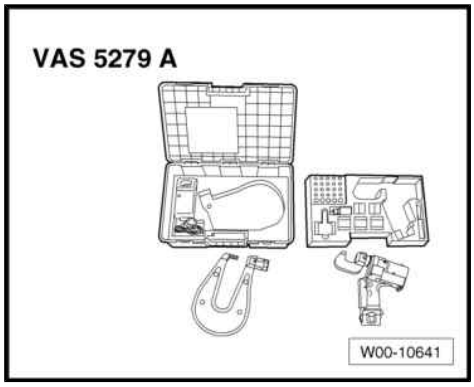
12.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Drill
- Compact angle grinder
- Crack testing set
- Body saw
- Pneumatic glue gun
- Compact booster

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♦ Alternatively, you can use the rechargeable riveter - VAS 5279 B- . This is a complete set.



Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

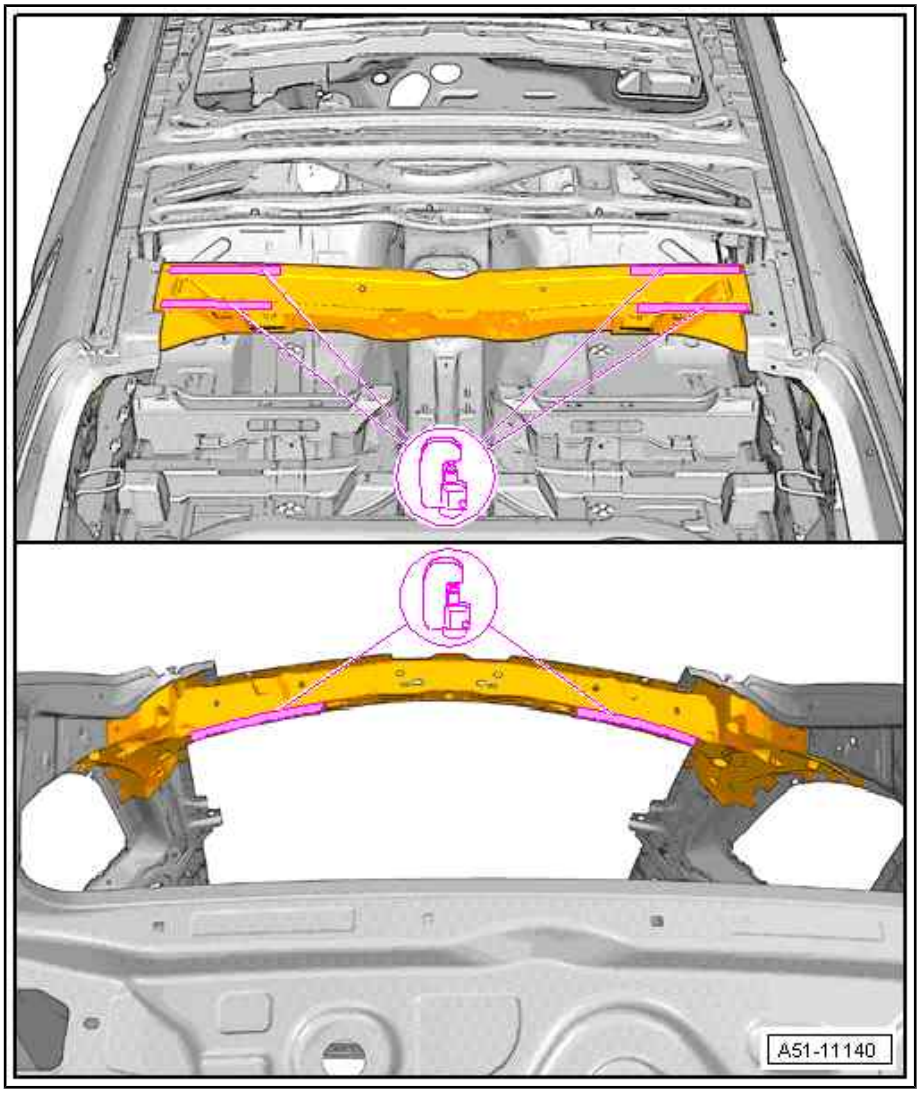
12.3 Procedure

- Roof removed (version with large sunroof) ⇒ page 200
- Roof removed ⇒ page 179
- Upper roof cross member removed ⇒ page 237

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Cutting locations

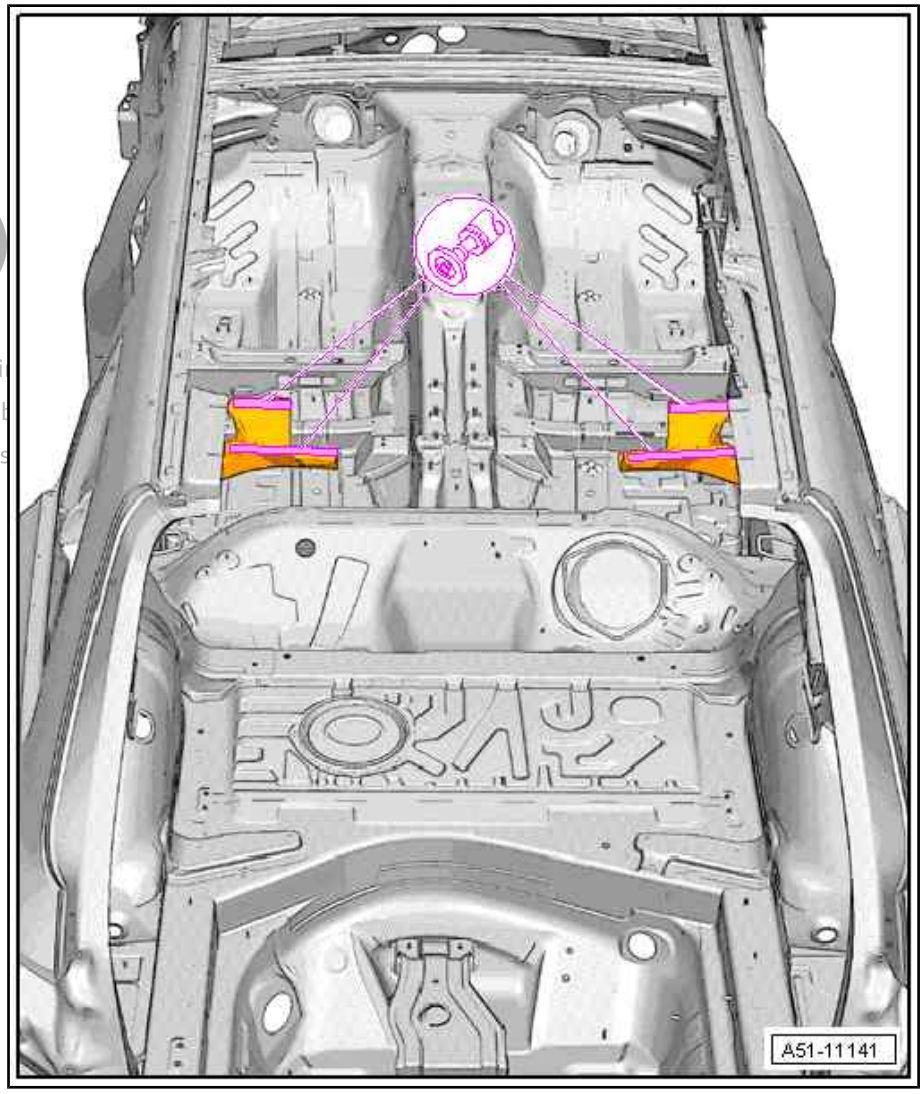
– Remove punch rivets using rechargeable riveter - VAS 5279 A- or compact booster - VAS 6790- ⇒ page 24 .



– Remove remaining material using compact angle grinder .

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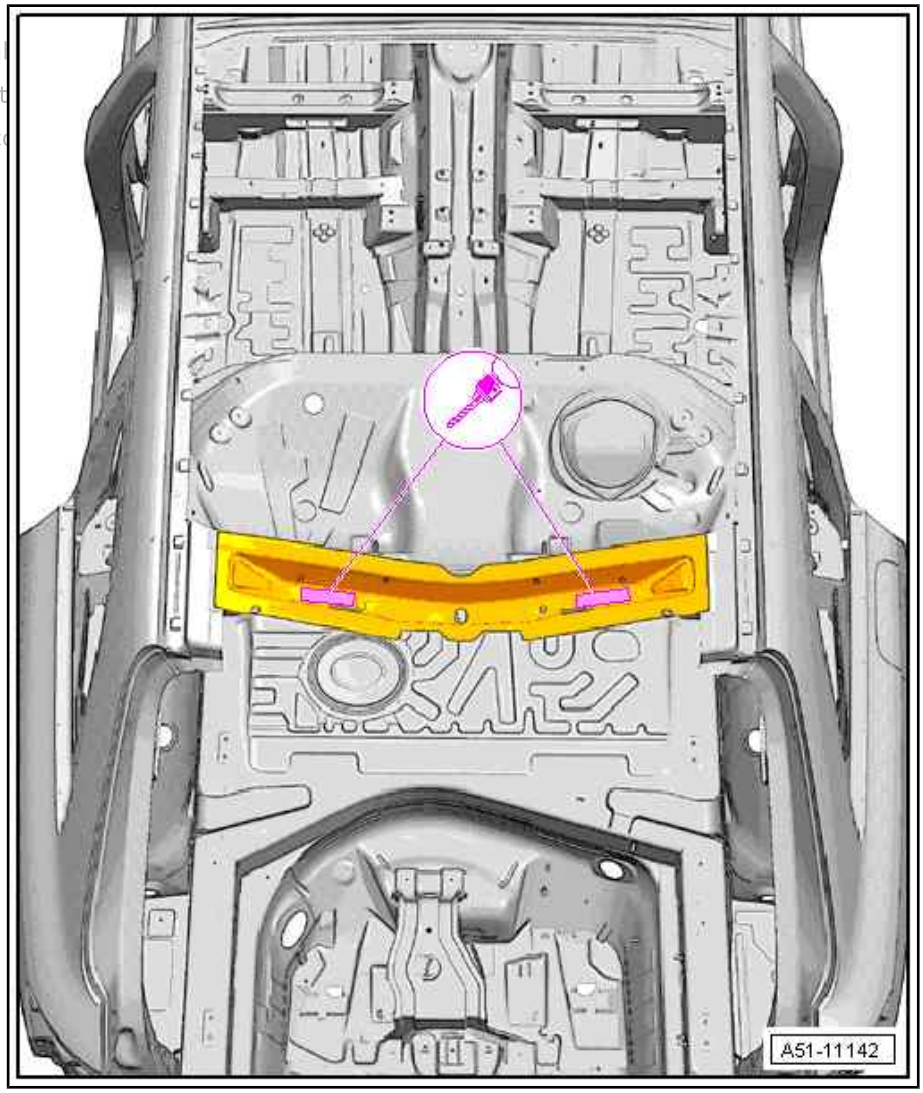
Replacement parts

- Rear roof frame (inner)
- Pop rivets (6.5 mm) - WHT 005 413 A- , 6x
- Silicate stone - DA 009 800 -
- Cleaning solution - D 009 401 04-
- Aluminium primer - DA 009 801 -
- Applicator - D 009 500 25 -
- 2-component epoxy adhesive - DA 001 730 A2-

Preparing new part

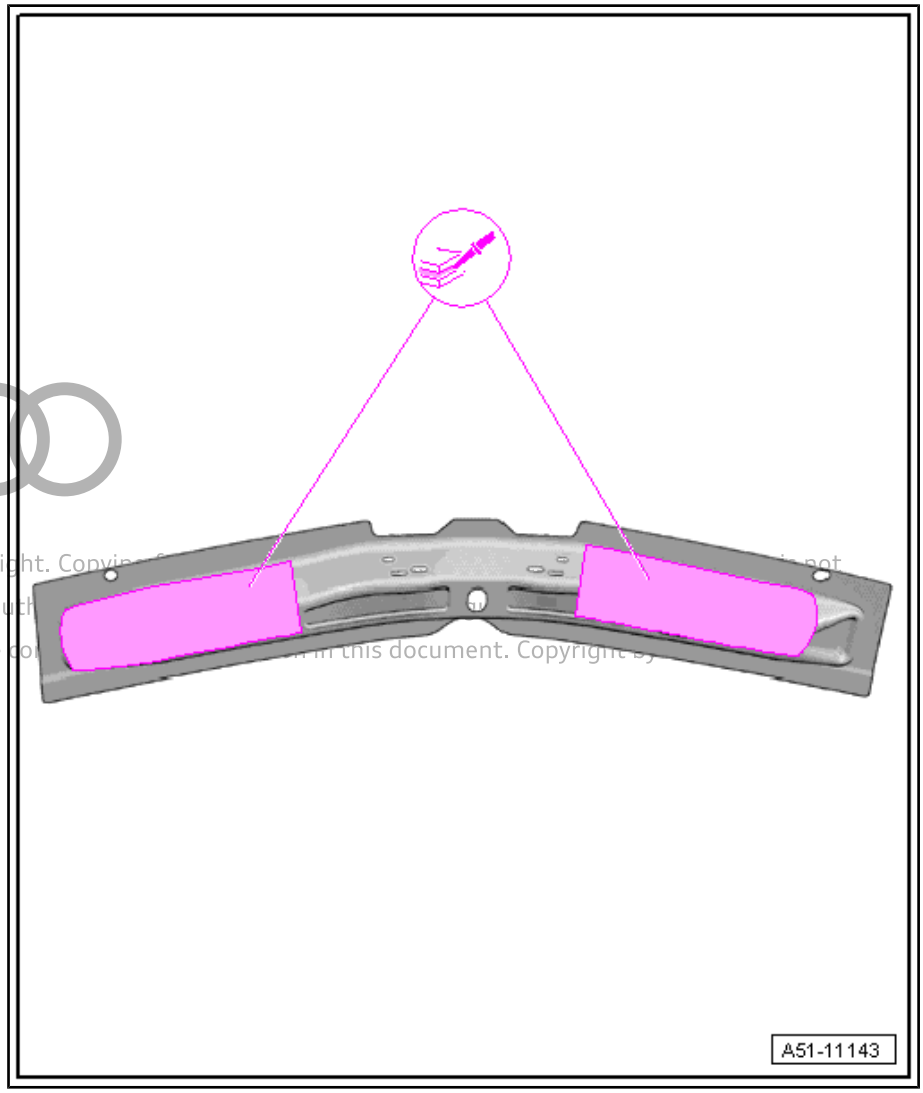
– Locate inner rear roof frame on hinge mounting and drill 3x 7.0 mm ∅ holes for pop rivet - WHT 005 413- on each side using drill .

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Preparing joints for adhesive application

- Prepare new part for riveting.
- Clean bonding surfaces with cleaning solution - D 009 401 04- .
- Prepare bonding area with silicate stone - DA 009 800 - and clean.
- Apply aluminium primer - DA 009 801 - to bonding surfaces using applicator - D 009 500 25 - .
- Apply 2-component epoxy adhesive - DA 001 730 A2- to riveting area and entire contact surface using pneumatic glue gun - V.A.G 2005 B- .



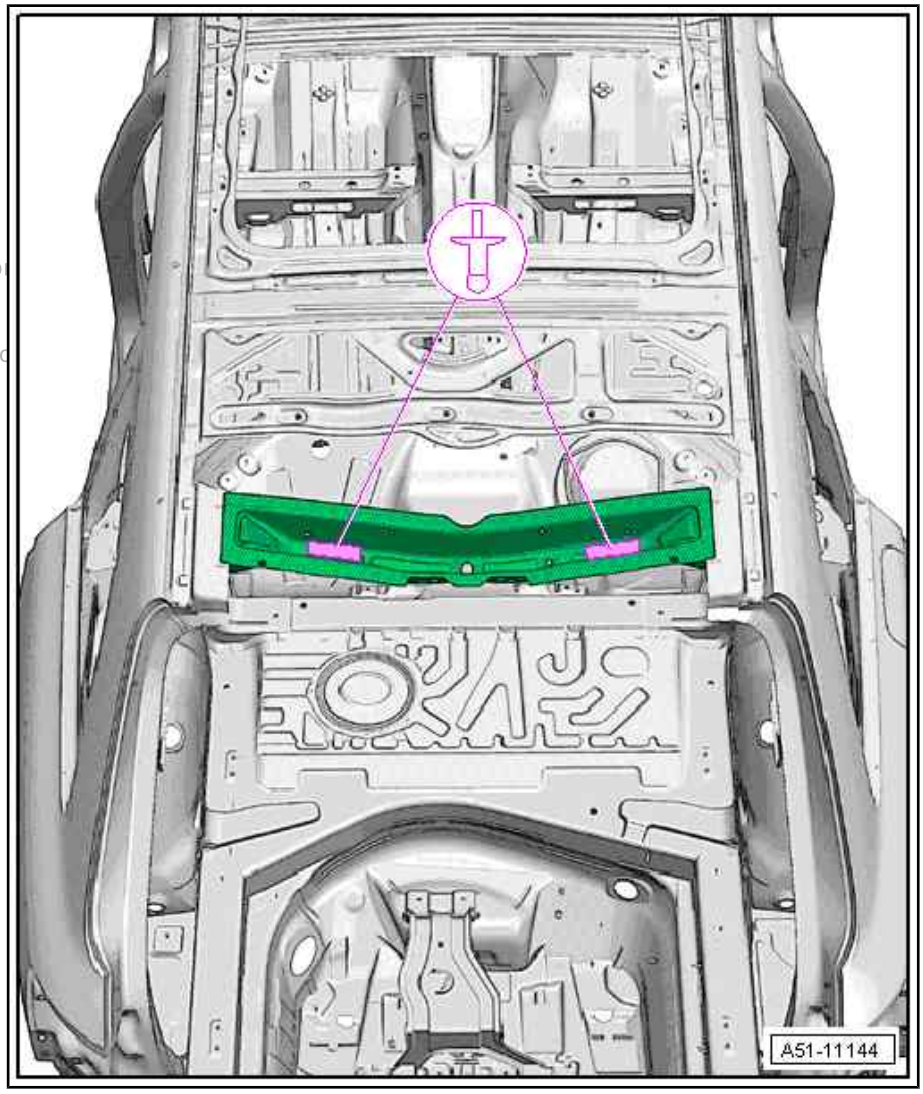
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Riveting in

– Match up inner rear roof frame and fix in position.

– Rivet in inner rear roof frame using compact booster - VAS 6790/20- and pop rivets - WHT 005 413 A- .

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- Welding in roof (version with large sunroof) ⇒ page 200
- Welding in roof ⇒ page 179
- Welding in roof cross member ⇒ page 237
- Upper roof cross member removed ⇒ page 237

RO: 51 17 55 50

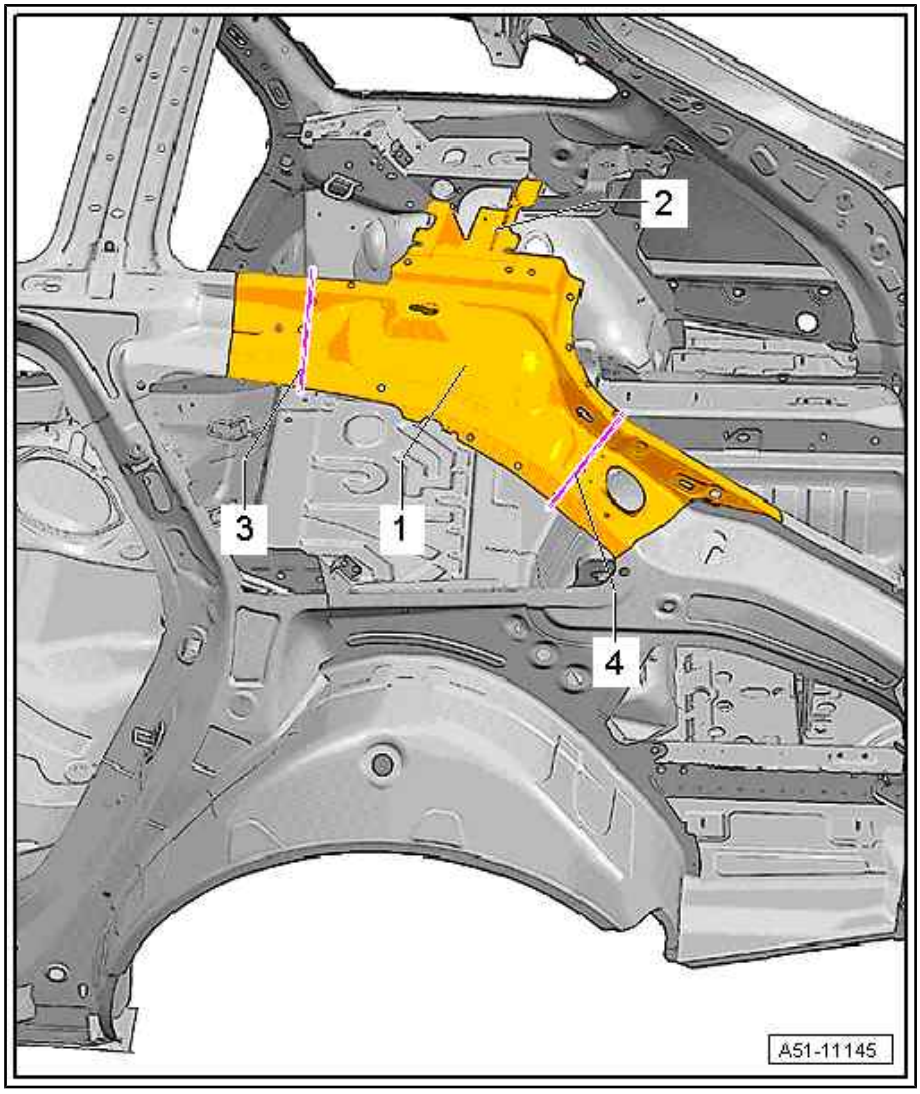
13 Hinge mounting - Renewal

1 - Inner side frame

2 - Hinge mounting (cast aluminium profile)

3 - Separating cut (top) on inner side frame

4 - Separating cut (bottom) on inner side frame



13.1 Notes for vehicles with hybrid drive

⇒ page 5

13.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Drill
- Compact angle grinder
- Body saw
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

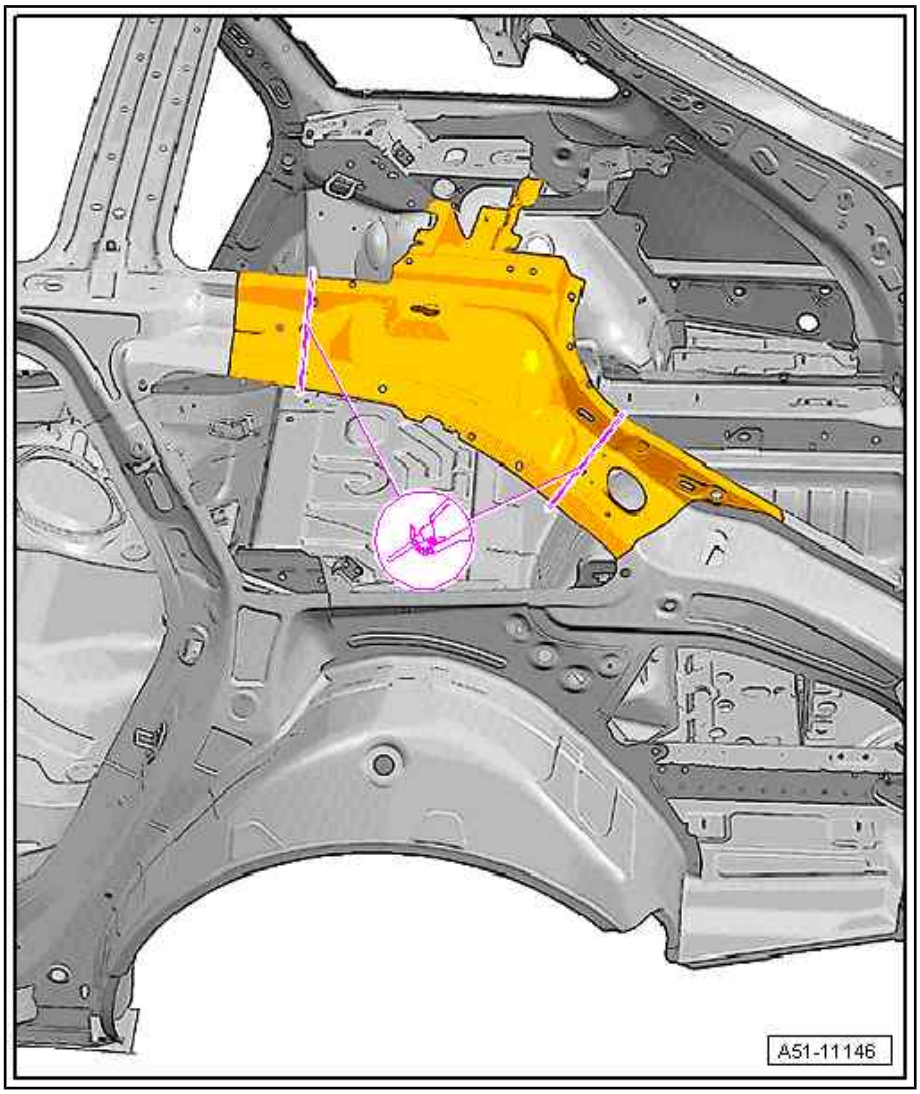
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13.3 Procedure

- Side panel removed ⇒ page 370
- Roof removed (version with large sunroof) ⇒ page 200
- Roof removed ⇒ page 179
- Upper roof cross member removed ⇒ page 237

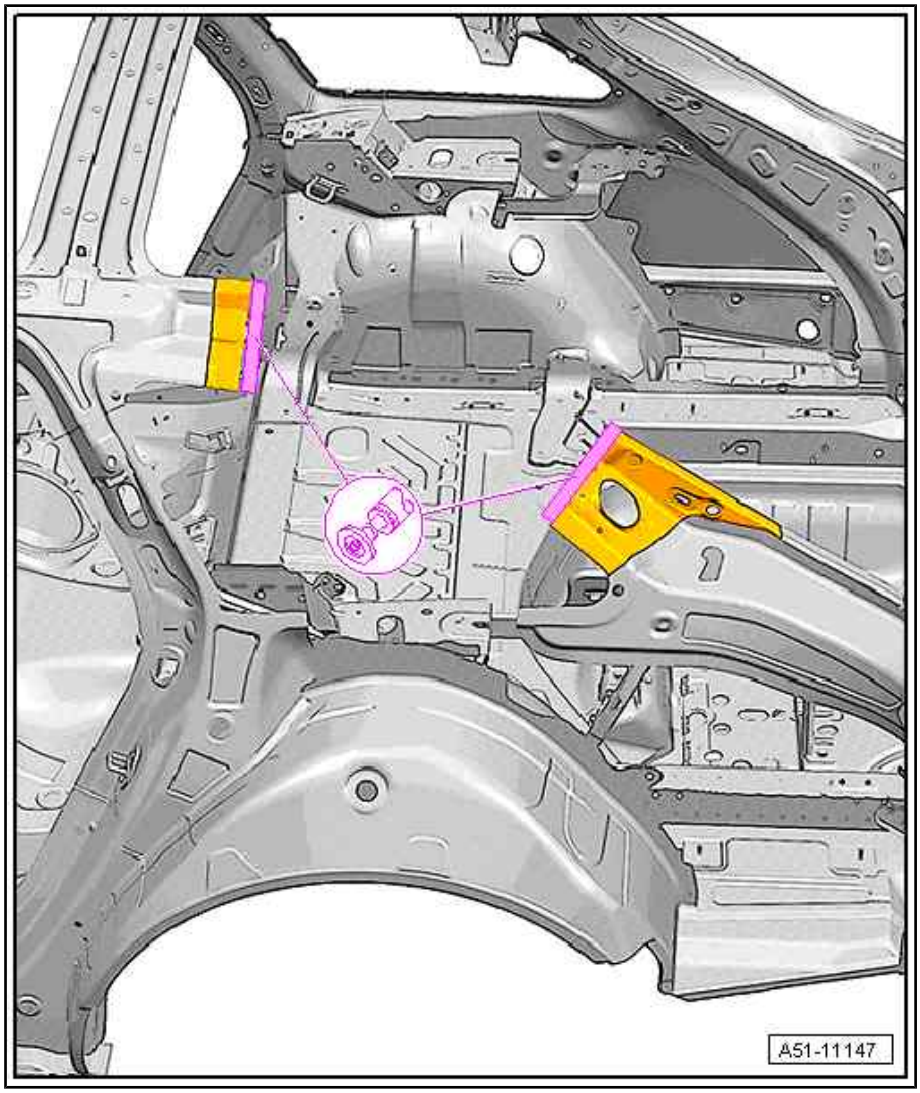
Cutting locations

– Make separating cuts on inner side frame using body saw .



– Remove remaining material using compact angle grinder .

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Replacement parts

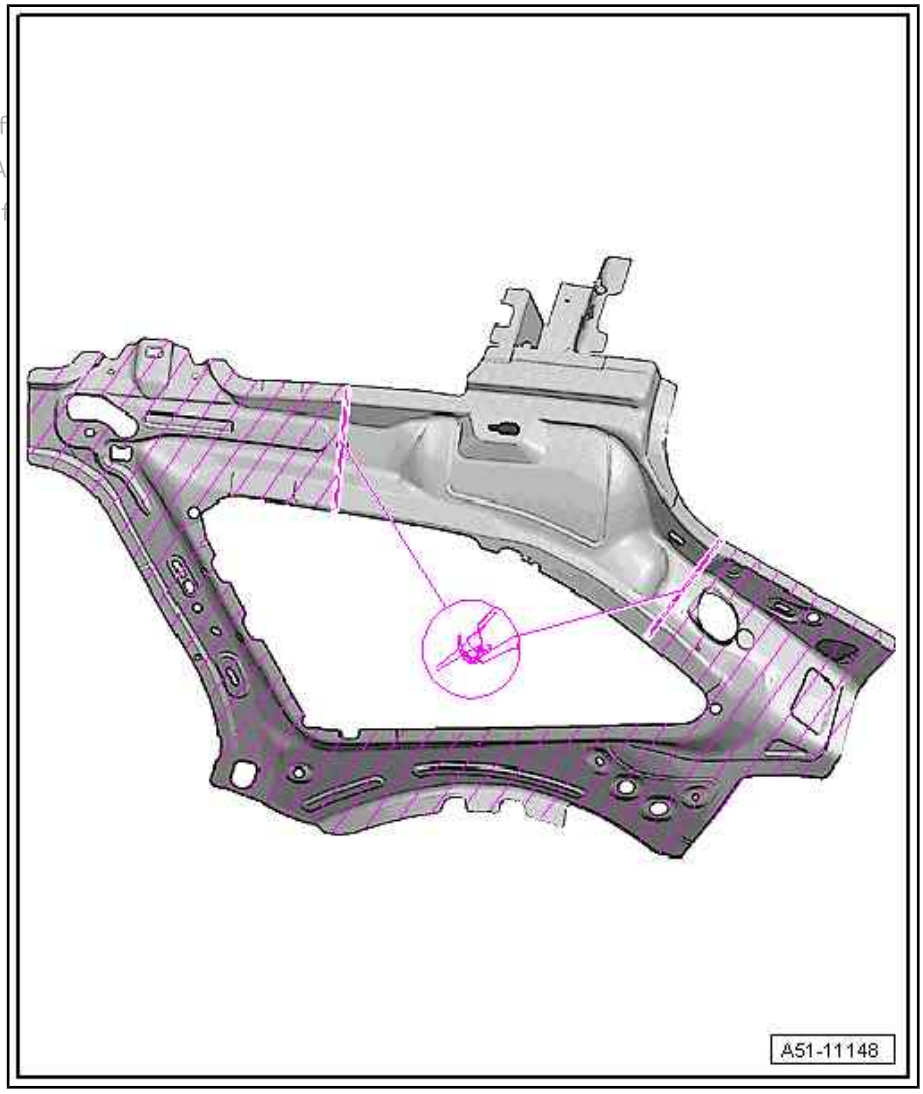
- Inner side frame

Preparing new part

– Transfer separating cuts to new part and cut to size using body saw.

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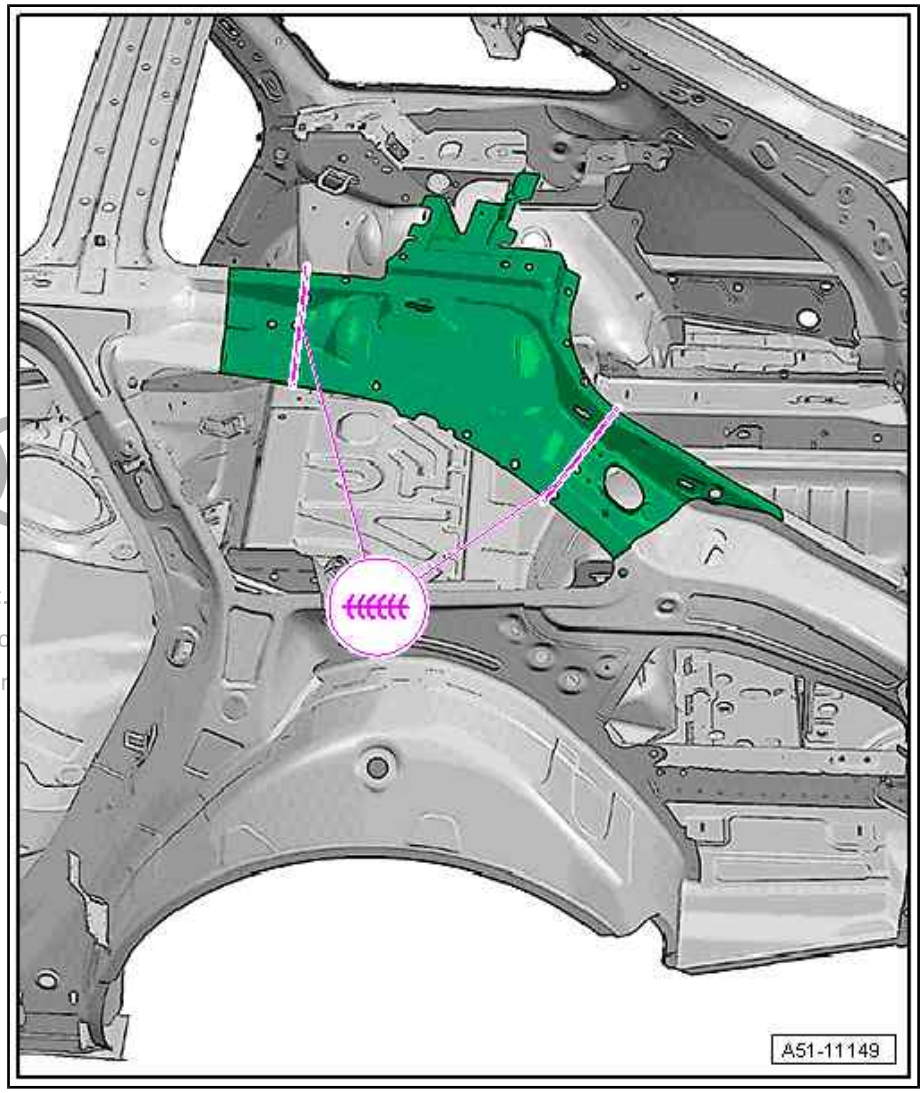


Note

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

– Match up new part with attached parts and fix position.
– Butt weld separating cuts using shielded arc welding equipment : SG continuous seam.



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- Welding in side panel ⇒ page 370
- Welding in roof with large sunroof ⇒ page 200
- Welding in roof ⇒ page 179
- Welding in roof cross member (top) ⇒ page 237
- Welding in inner roof frame ⇒ page 241

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14 Outer A-pillar - Renewal

(Saloon and Avant identical)

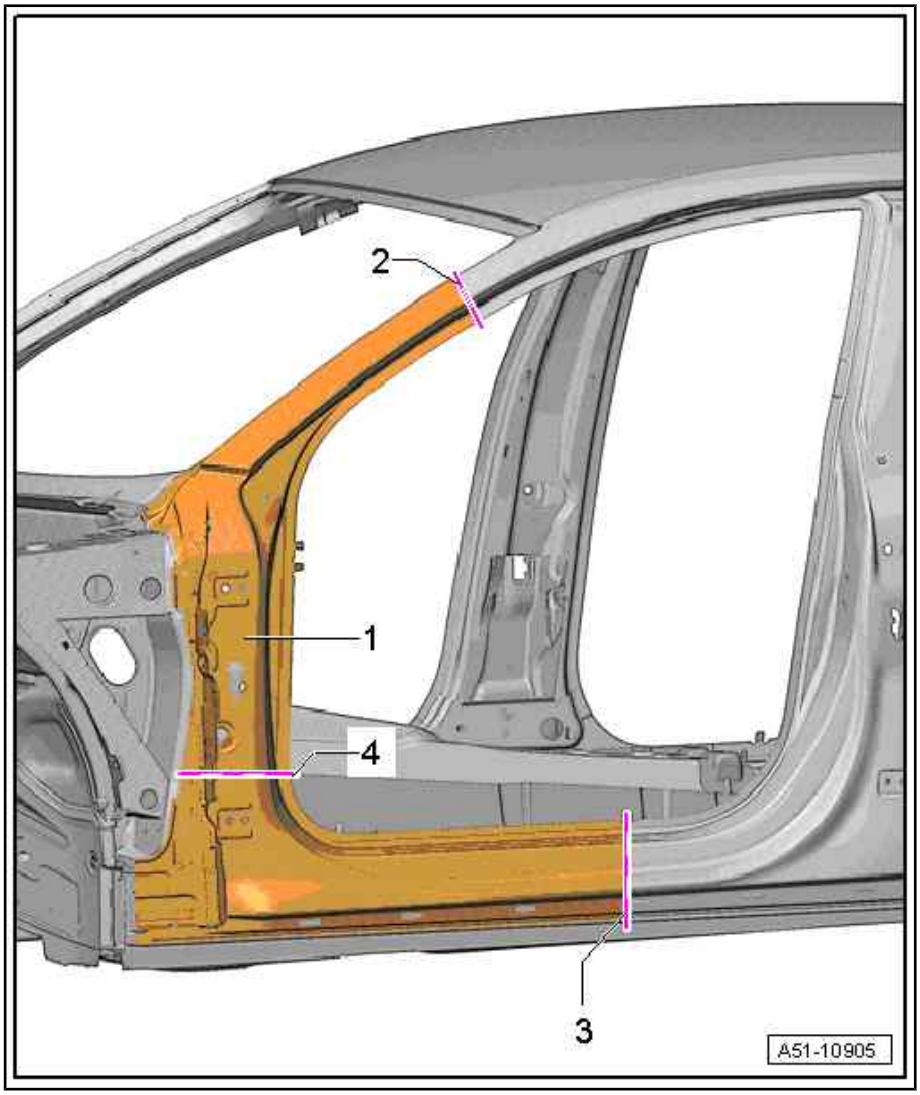
1 - A-pillar

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.



14.1 Notes for vehicles with hybrid drive

⇒ page 5

14.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Drill
- Compact angle grinder
- Body saw
- Spot weld breaker

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Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

14.3 Procedure

Cutting locations

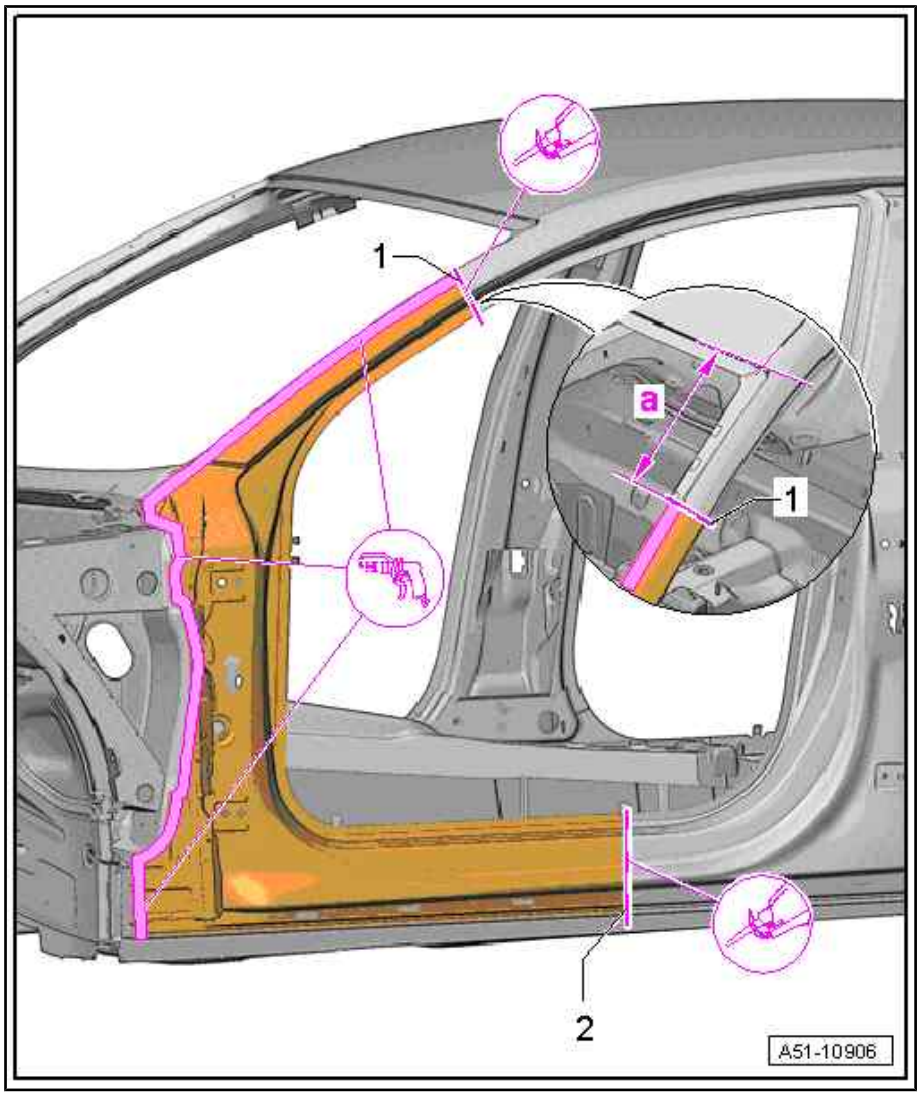
Permitted separating cuts on complete side panel ⇒ page 128 .

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Note

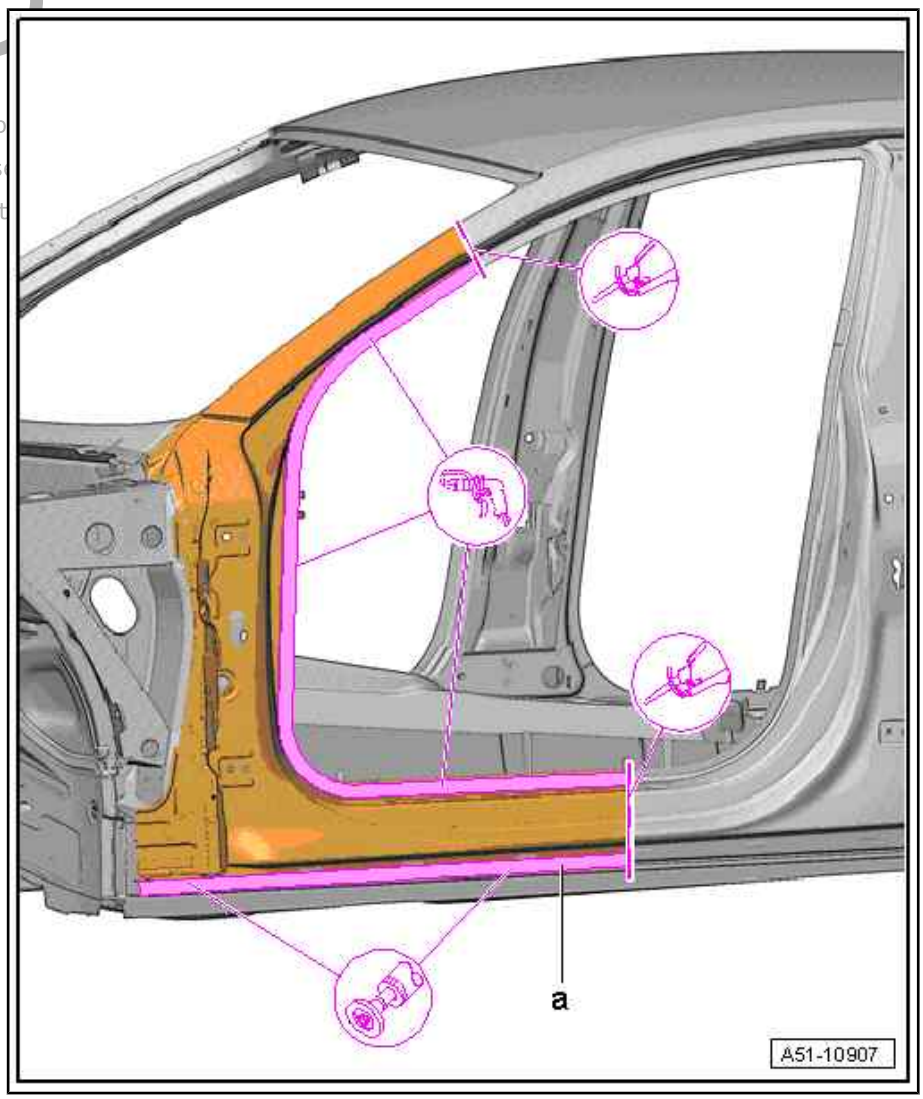
If the inner A-pillar is also being renewed, the separating cut -1- must be made at a distance of 330 mm -a- from the edge of the roof.

– Mark off separating cut -1- according to the degree of damage and make the cut using body saw .
– Mark off separating cut -2- according to the degree of damage and make the cut using body saw .



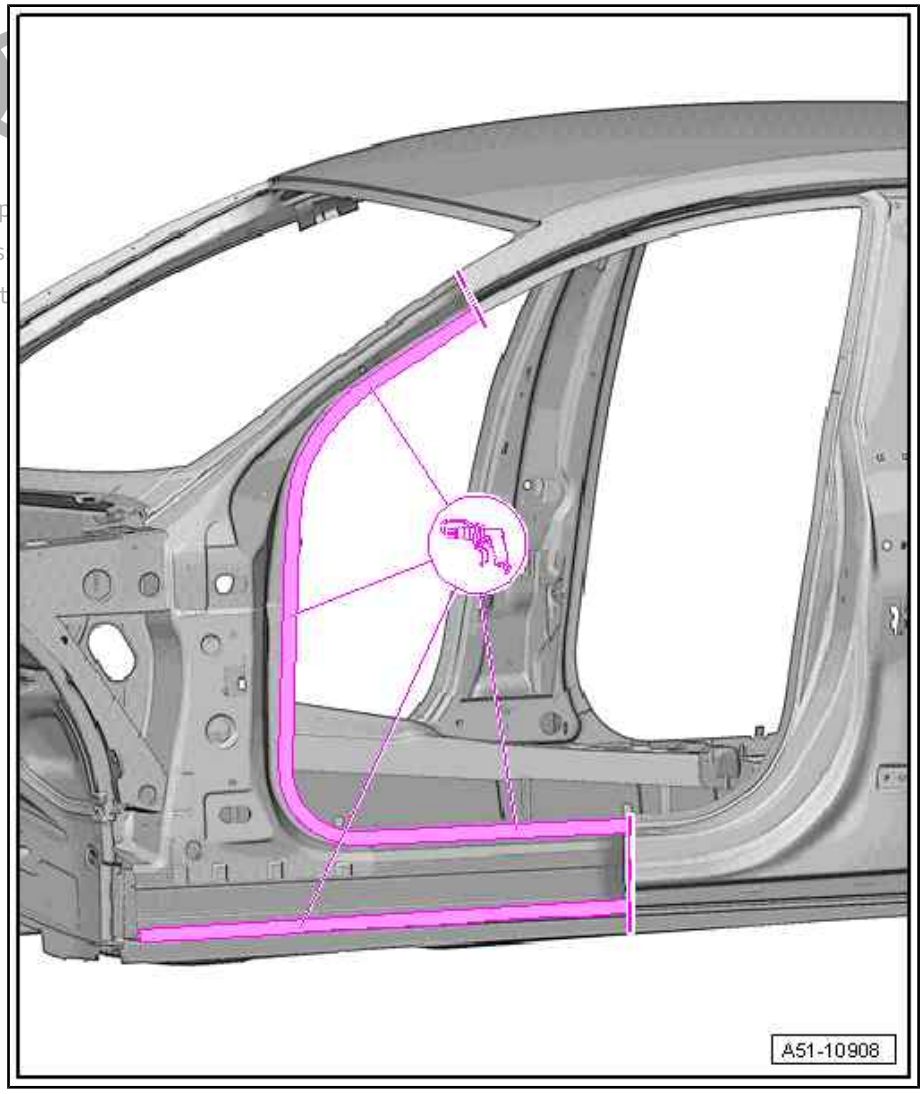
– Separate original joint using spot weld breaker .
– Make separating cut as shown using body saw .

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– Remove remaining material using compact angle grinder .

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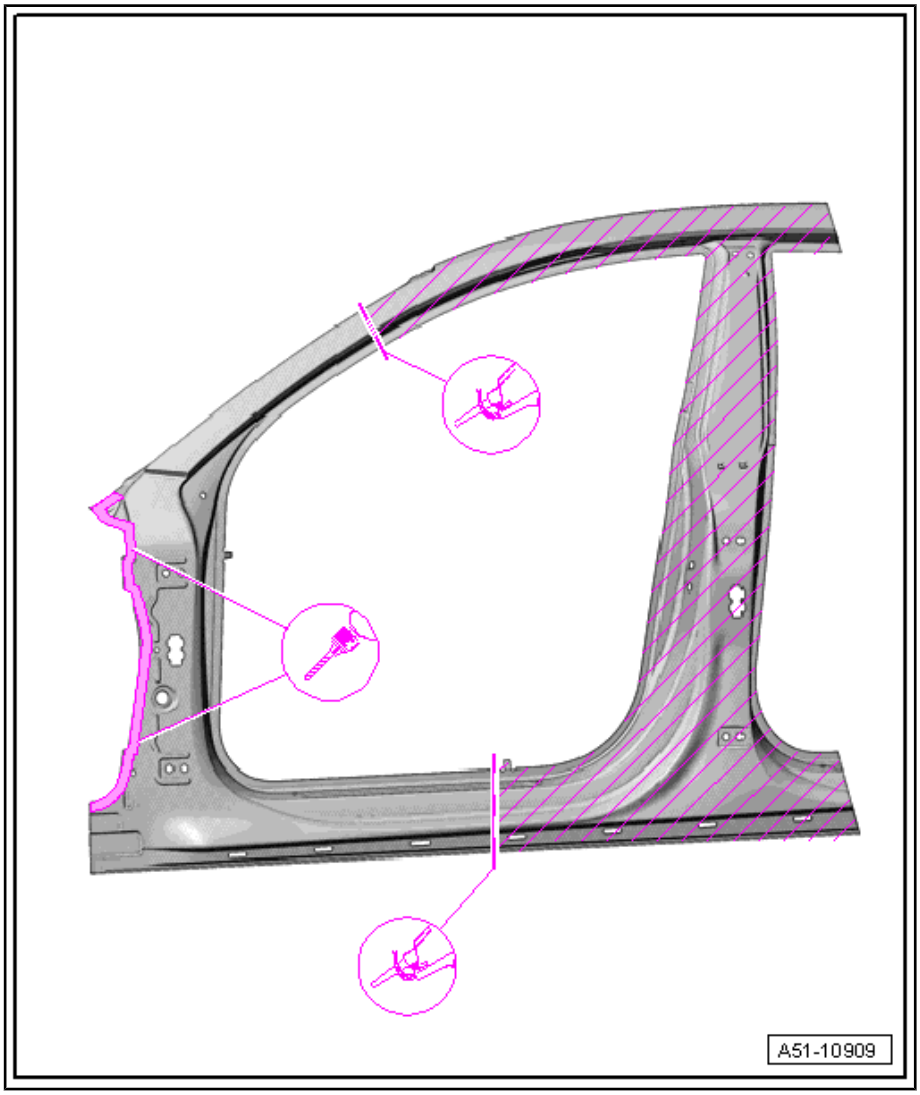
Replacement part

- A-pillar (sub-part)

Preparing new part

– Transfer separating cuts to new part and cut to size using body saw .

– Drill holes for SG plug weld seam, 8 mm ∅ using drill .



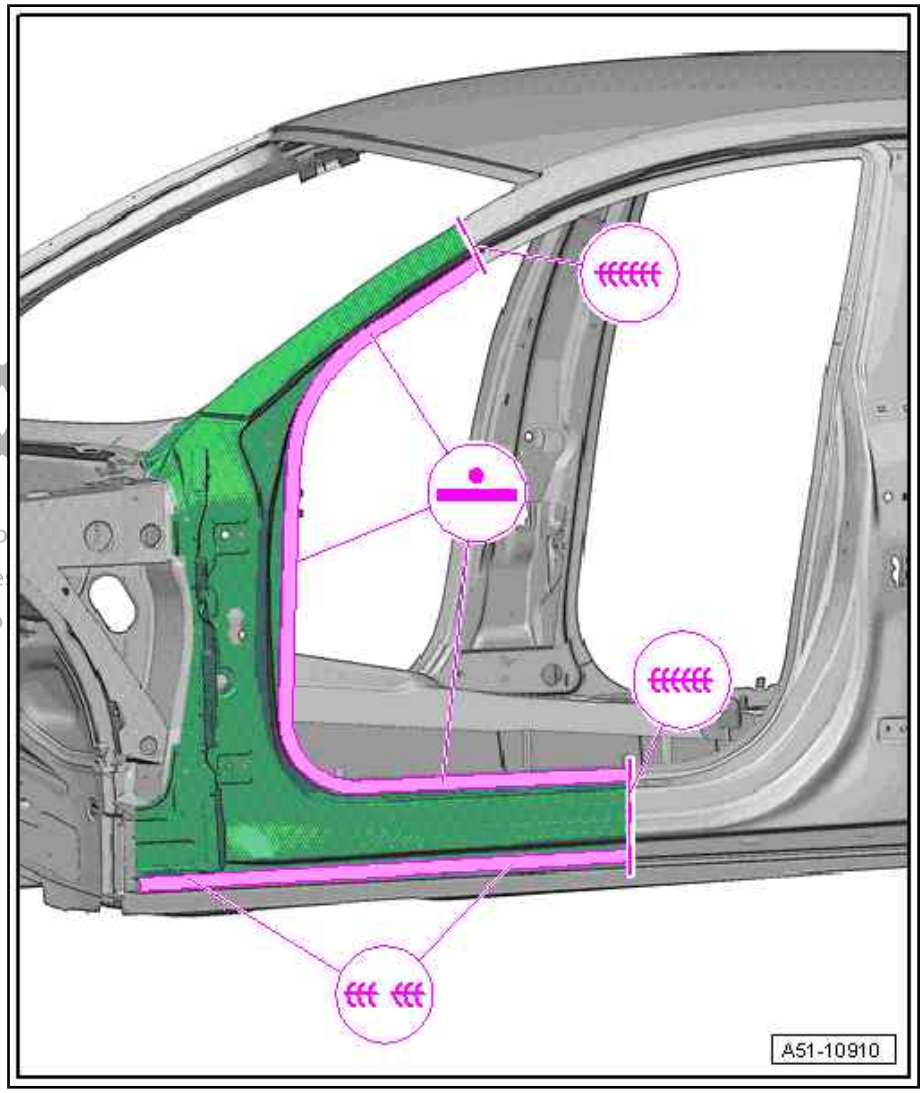
Note

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

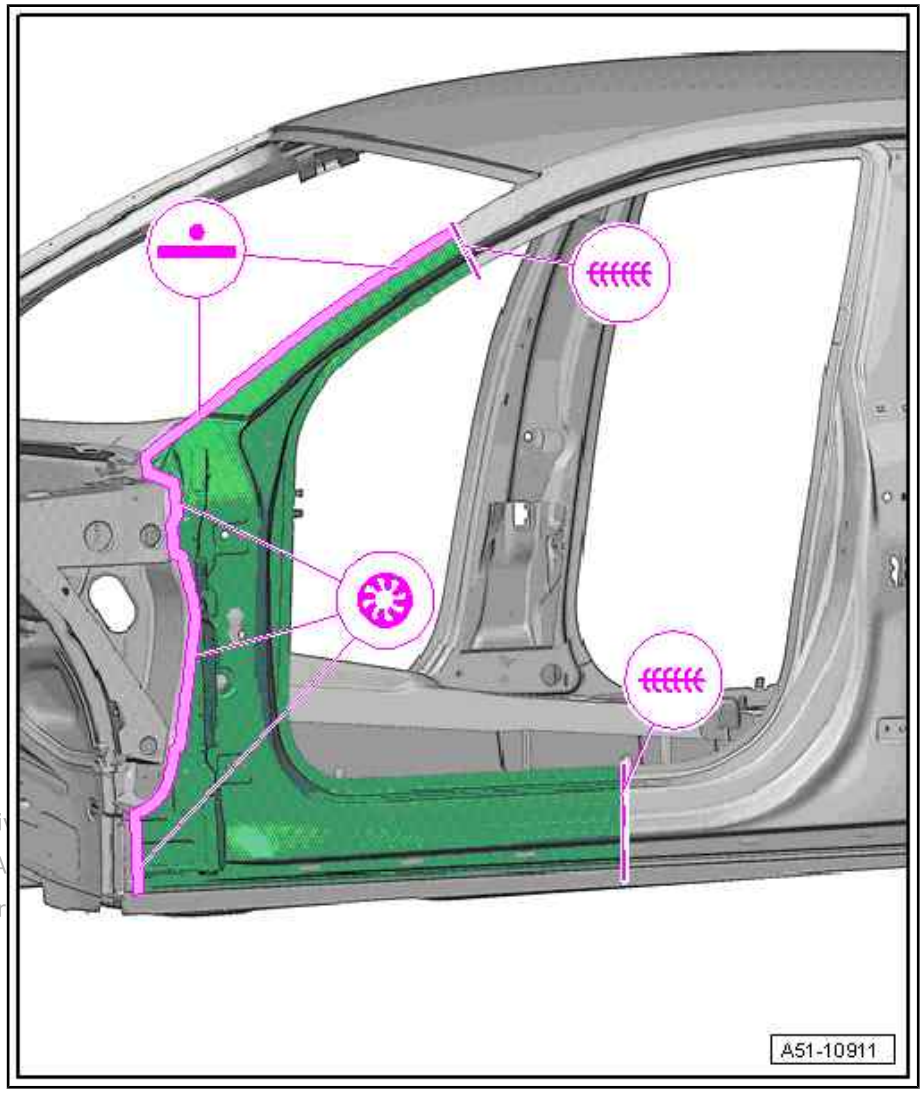
- Butt weld at separating cuts using shielded arc welding equipment : SG continuous seam.
- Weld in outer A-pillar using resistance spot welder : RP spot weld seam.
- Weld in outer A-pillar using shielded arc welding equipment : SG continuous seam (staggered - with gaps).

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– Weld in A-pillar using resistance spot welder : RP spot weld seam.
– Weld in A-pillar using shielded arc welding equipment : SG plug weld seam.



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RO: 51 38 55 50

15 Upper inner A-pillar - Partial renewal

(Saloon and Avant identical)

1 - Separating cut, inner A-pillar

2 - Side panel

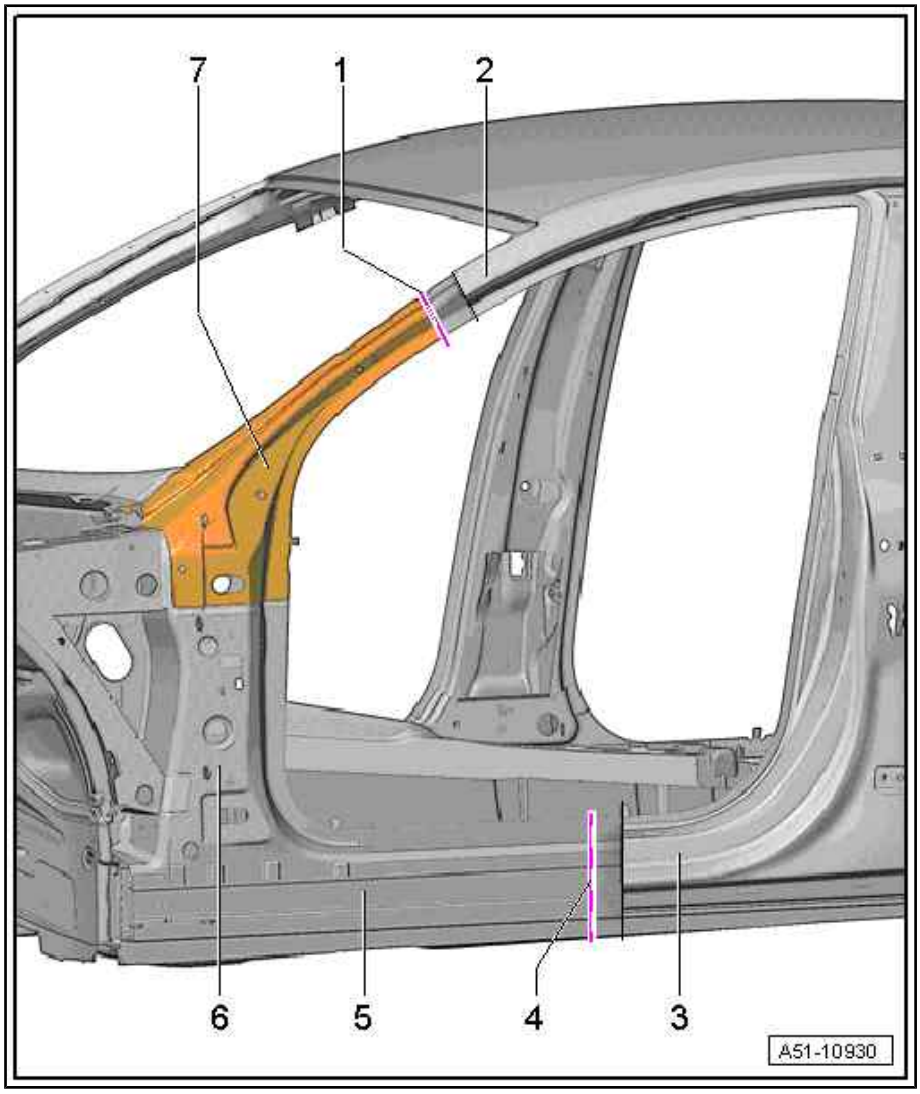
3 - Outer side member

4 - Separating cut in inner side member

5 - Inner side member

6 - Lower inner A-pillar

7 - Upper inner A-pillar



15.1 Notes for vehicles with hybrid drive

⇒ page 5

15.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Drill
- Compact angle grinder
- Body saw
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

15.3 Procedure

- Outer A-pillar removed ⇒ page 253
- Intermediate piece removed ⇒ page 61

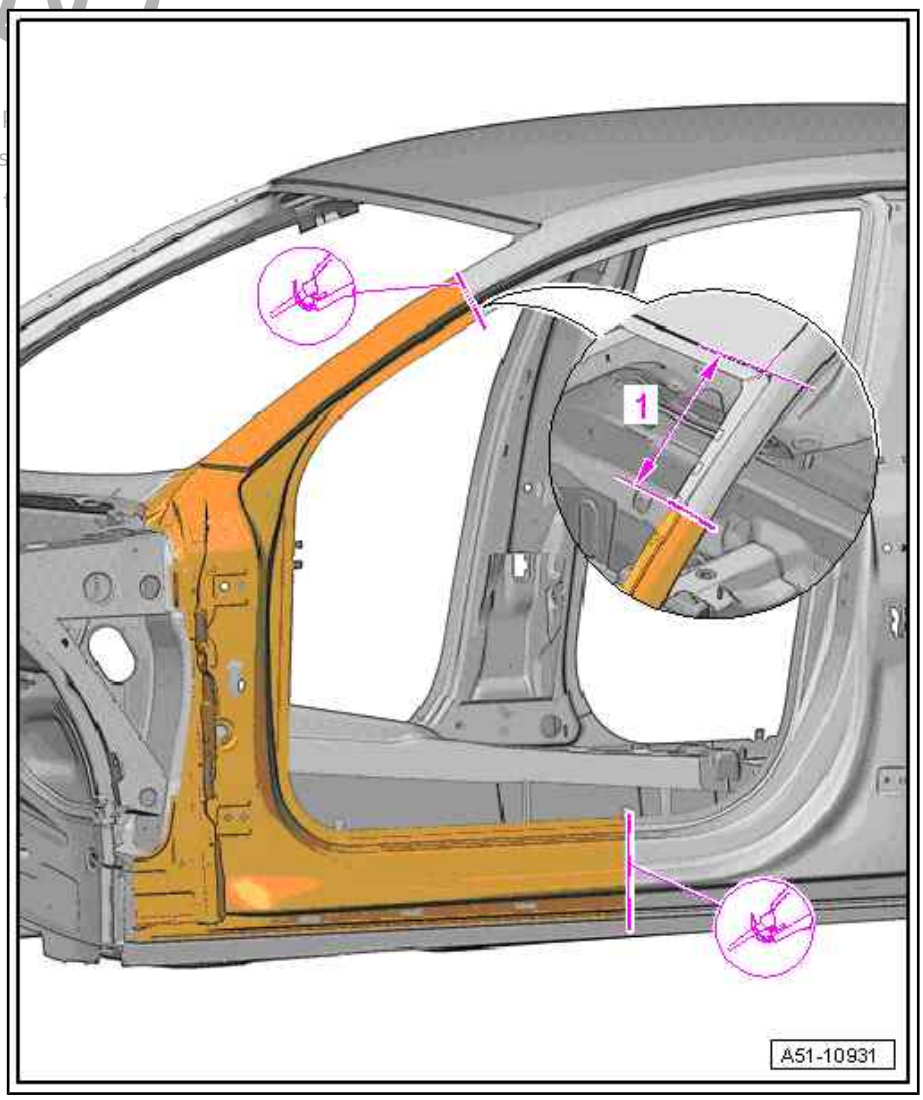
Cutting locations

Permitted separating cuts on complete side panel ⇒ page 128 .

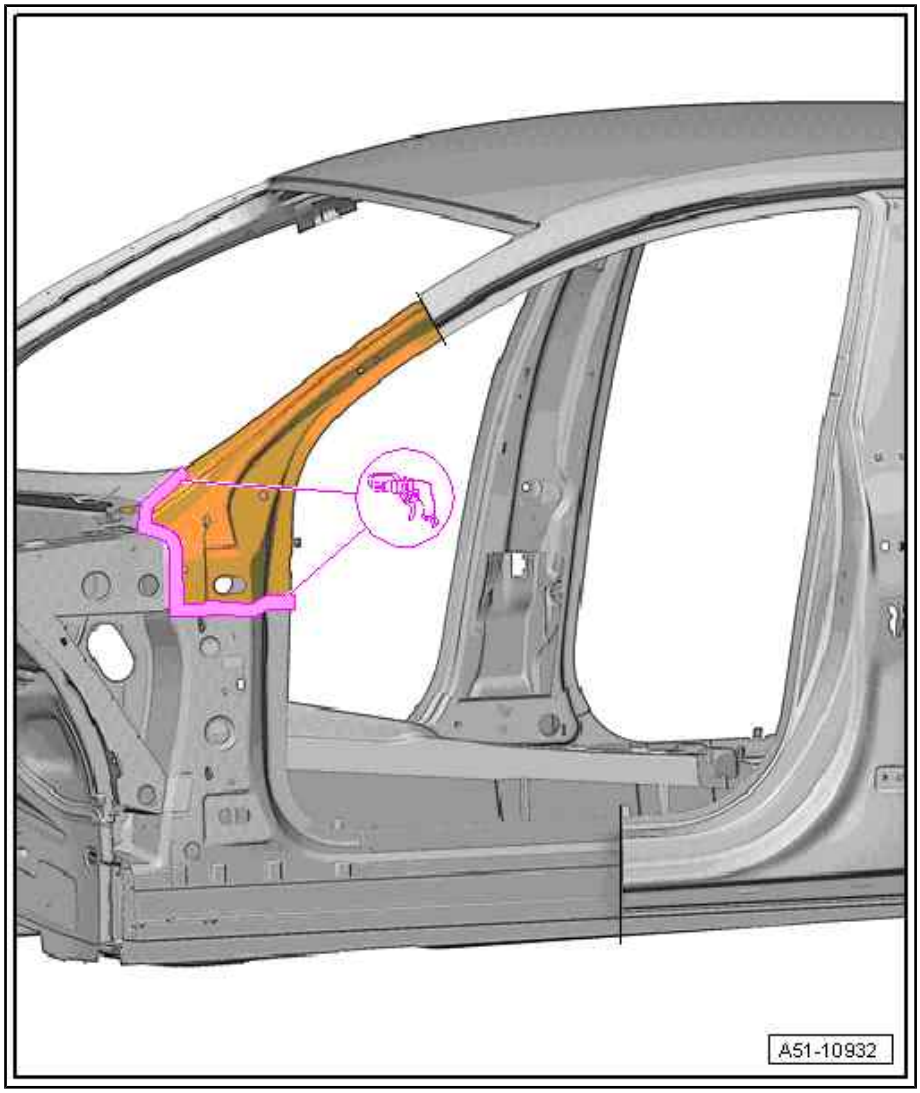
– Cut through A-pillar completely using compact angle grinder (important: keep to dimension -1- for separating cut).

Dimension -1- = 330 mm

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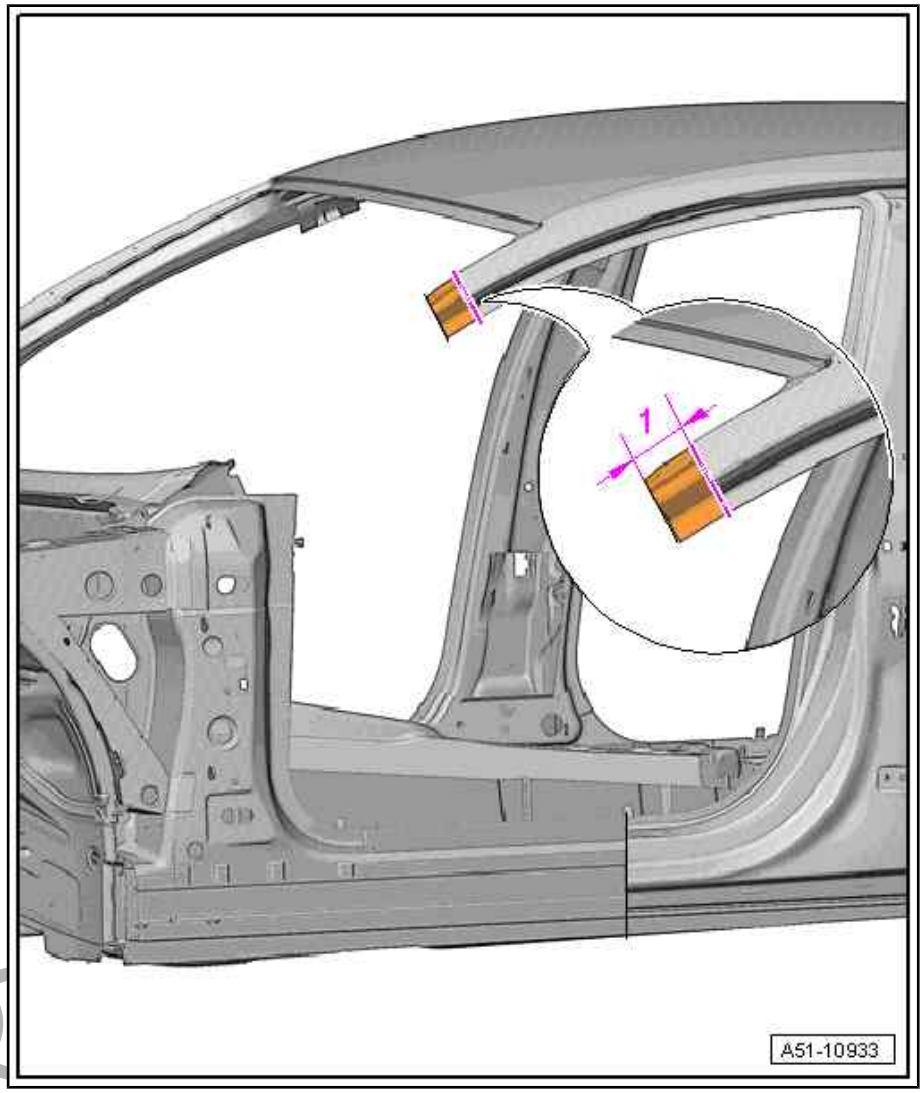
– Separate original joint using spot weld breaker .



– Make separating cut in outer A-pillar using compact angle grinder (important: keep to dimension -1-).

Dimension -1- = 70 mm

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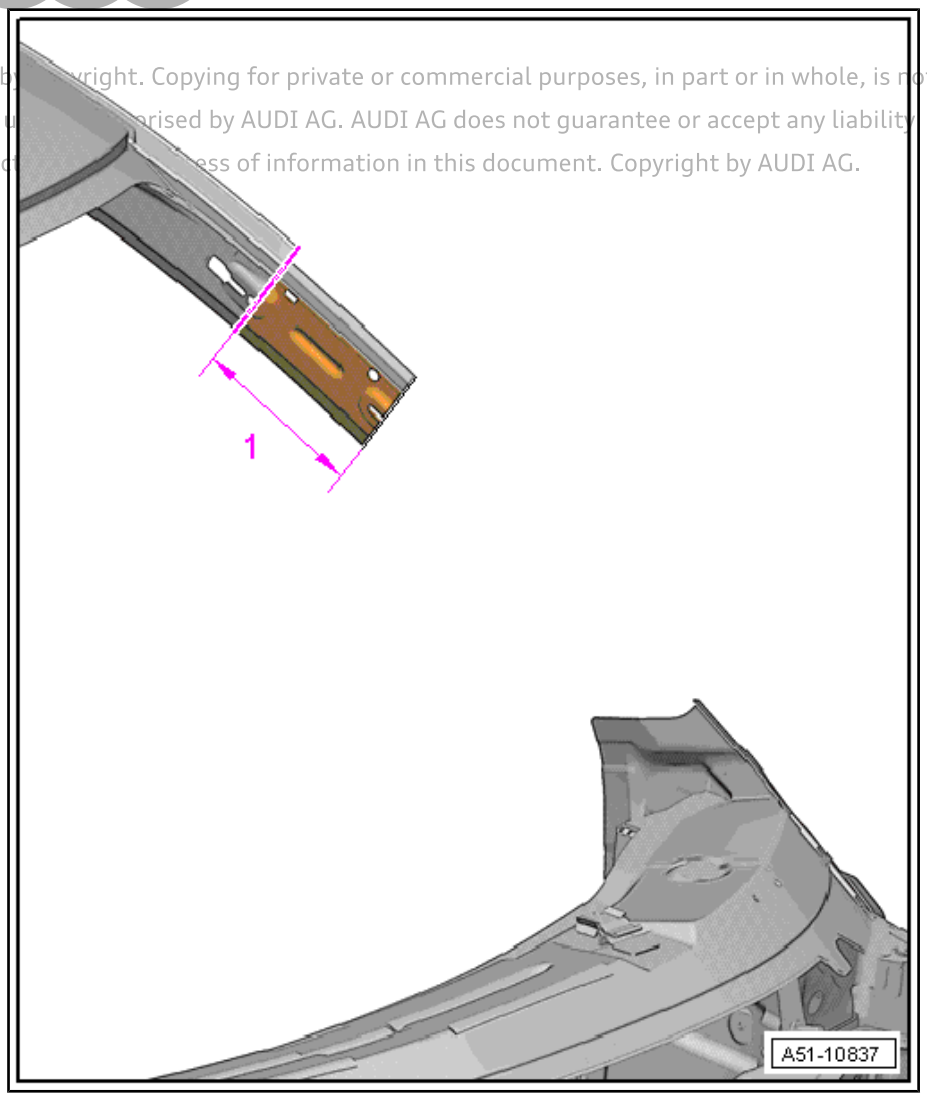


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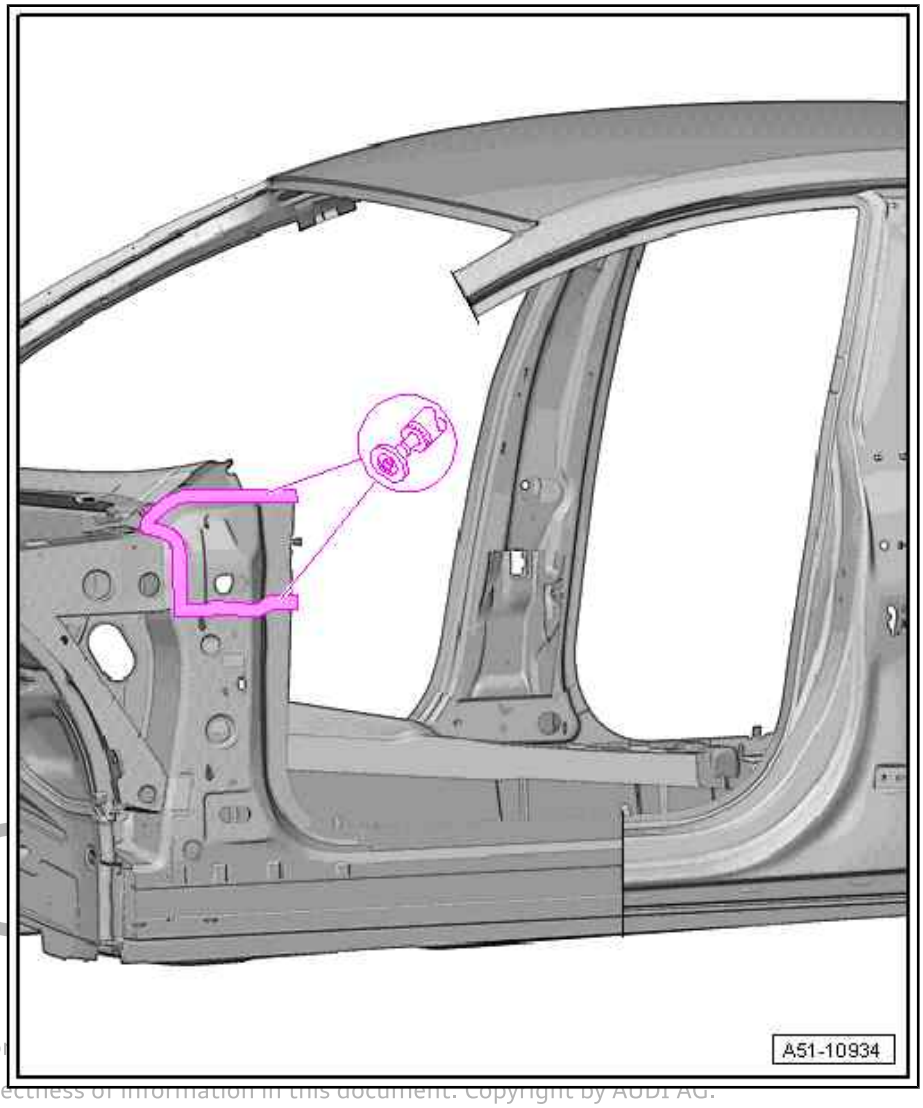
– Cut through inner A-pillar cover plate using compact angle grinder (important: keep to dimension -1- for separating cut).

Dimension -1- = 100 mm

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– Remove remaining material using compact angle grinder .



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Replacement part

Lower inner A-pillar

Upper inner A-pillar

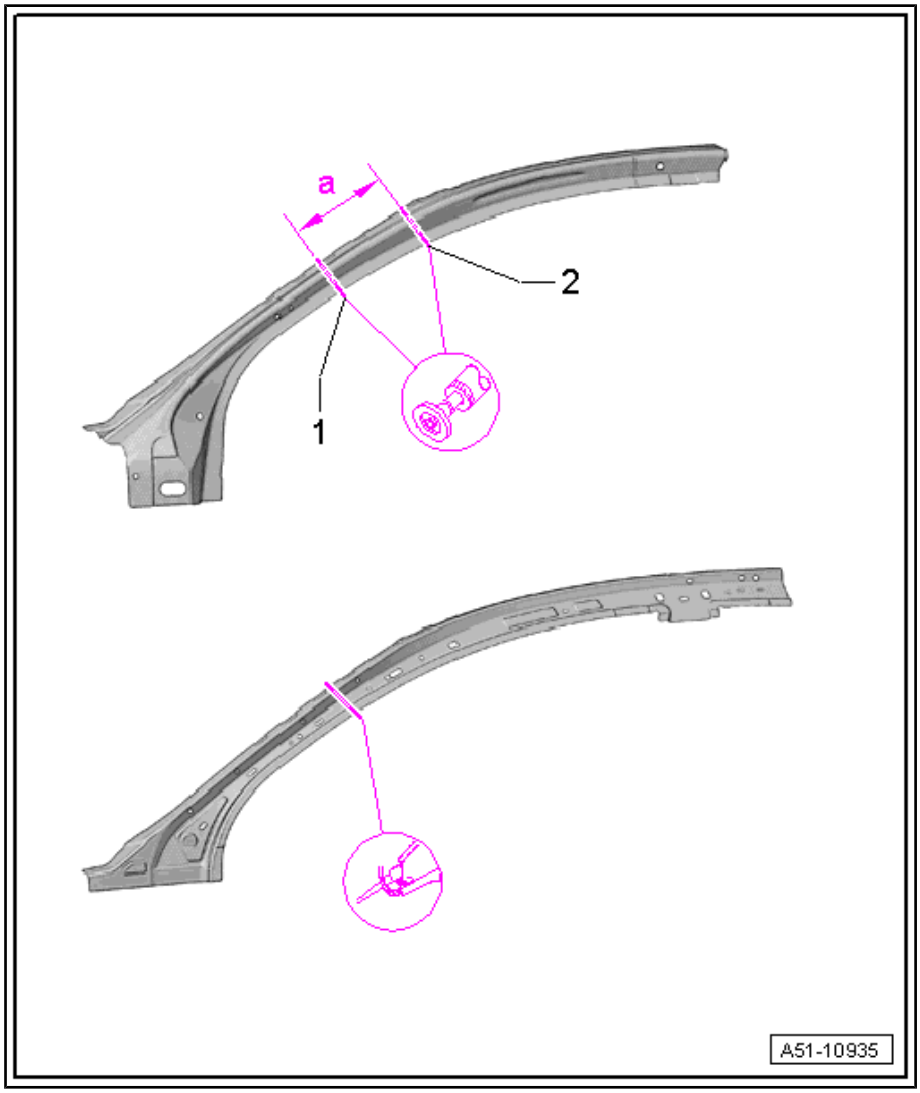
Inner A-pillar cover plate

Filler foam - D 506 KD1 A3-

Preparing new part

– Separating cut -1- for inner A-pillar part section; separating cut -2- for backing plate (important: keep to dimension -a = 120 mm-).

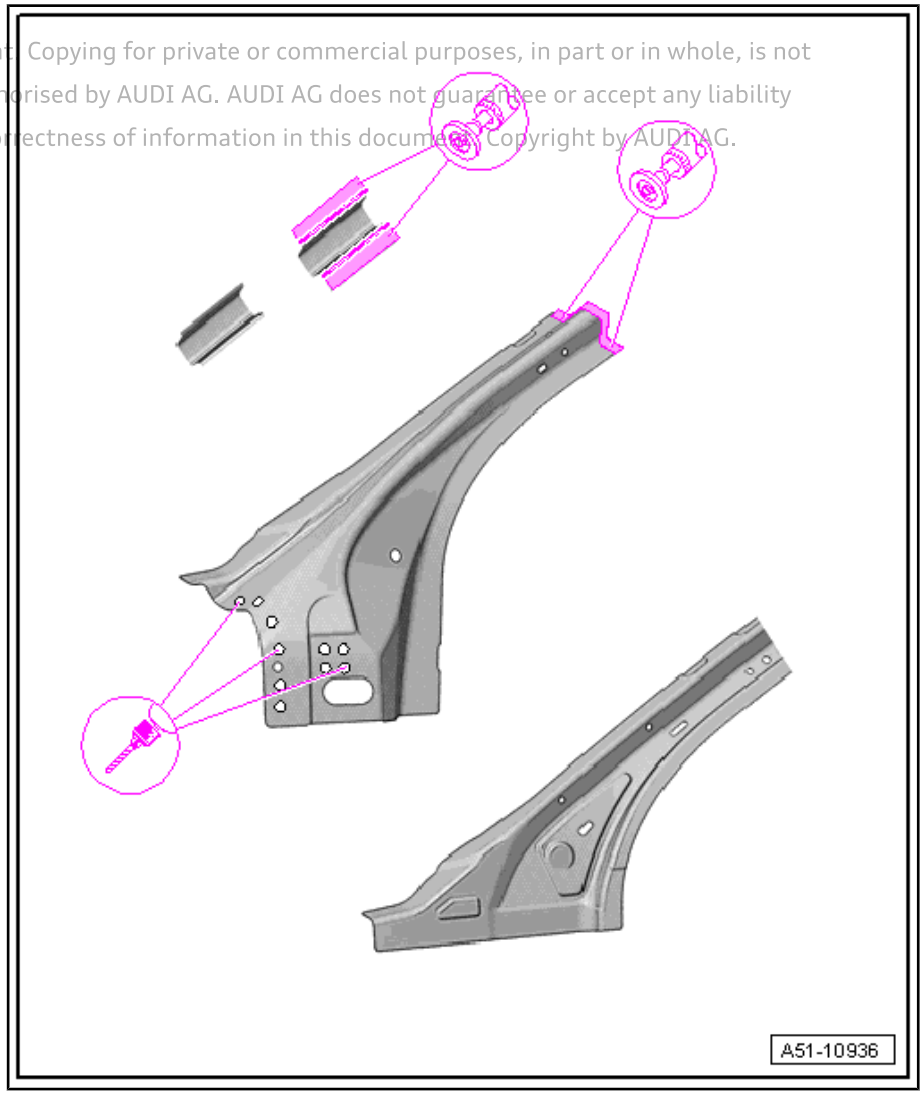
– Transfer separating cut for inner A-pillar reinforcement to new part and cut to size using body saw .



– Drill holes for SG plug weld seam, 8 mm ∅ using drill .
– Grind off area of separating cut for SG continuous weld seam using compact angle grinder .
– Prepare reinforcement plate for inner A-pillar -120 mm- using compact angle grinder .

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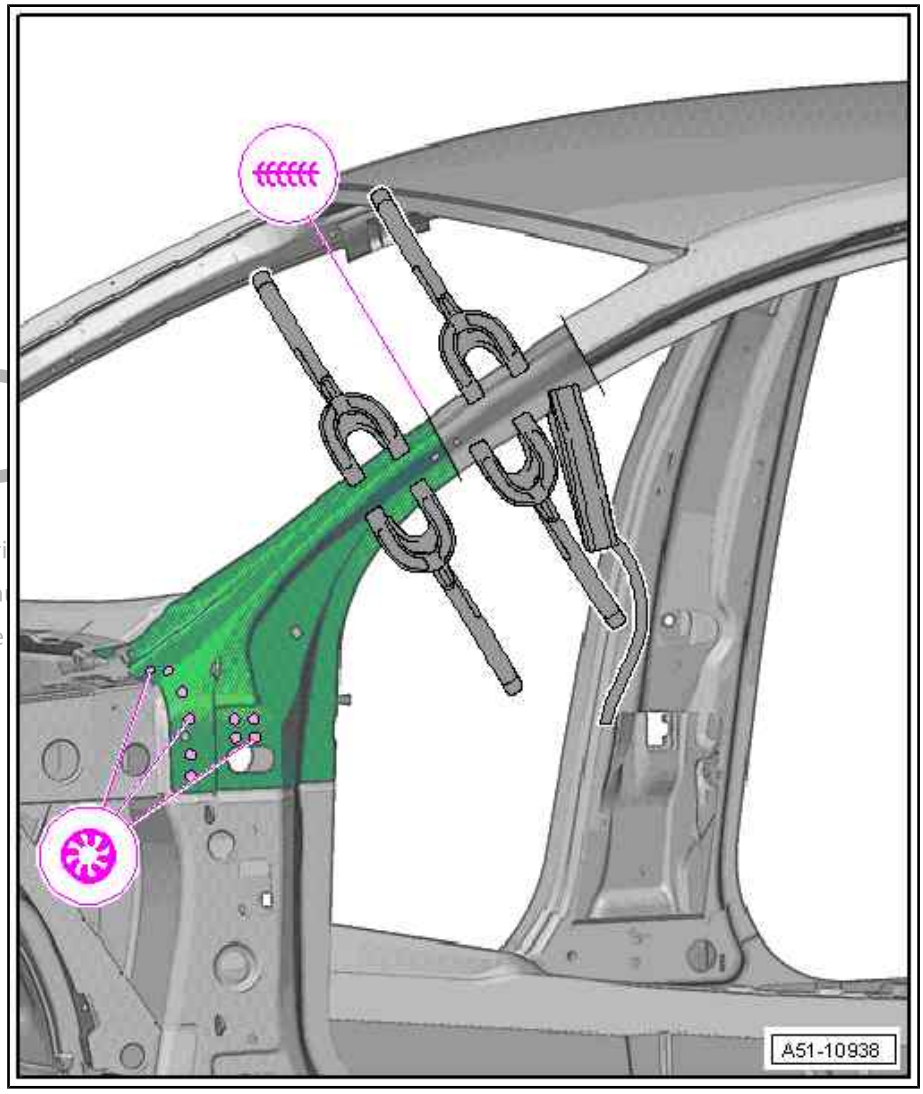
Note

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

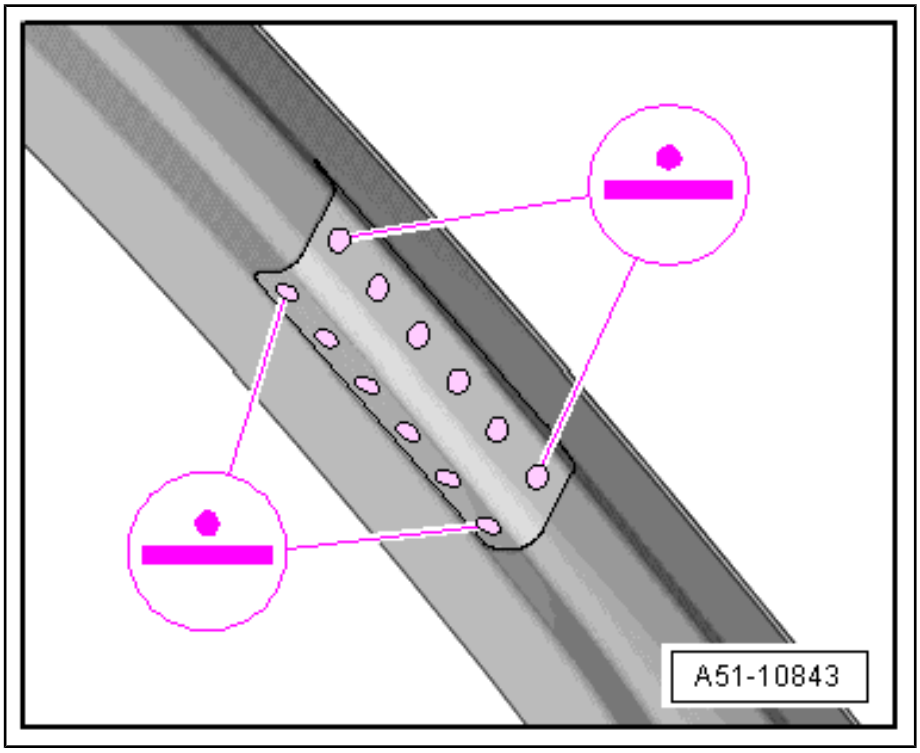
- Weld in inner A-pillar using shielded arc welding equipment : SG plug weld seam.
- Weld in inner A-pillar at separating cut from inside to outside using shielded arc welding equipment : SG continuous seam.

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View from inside

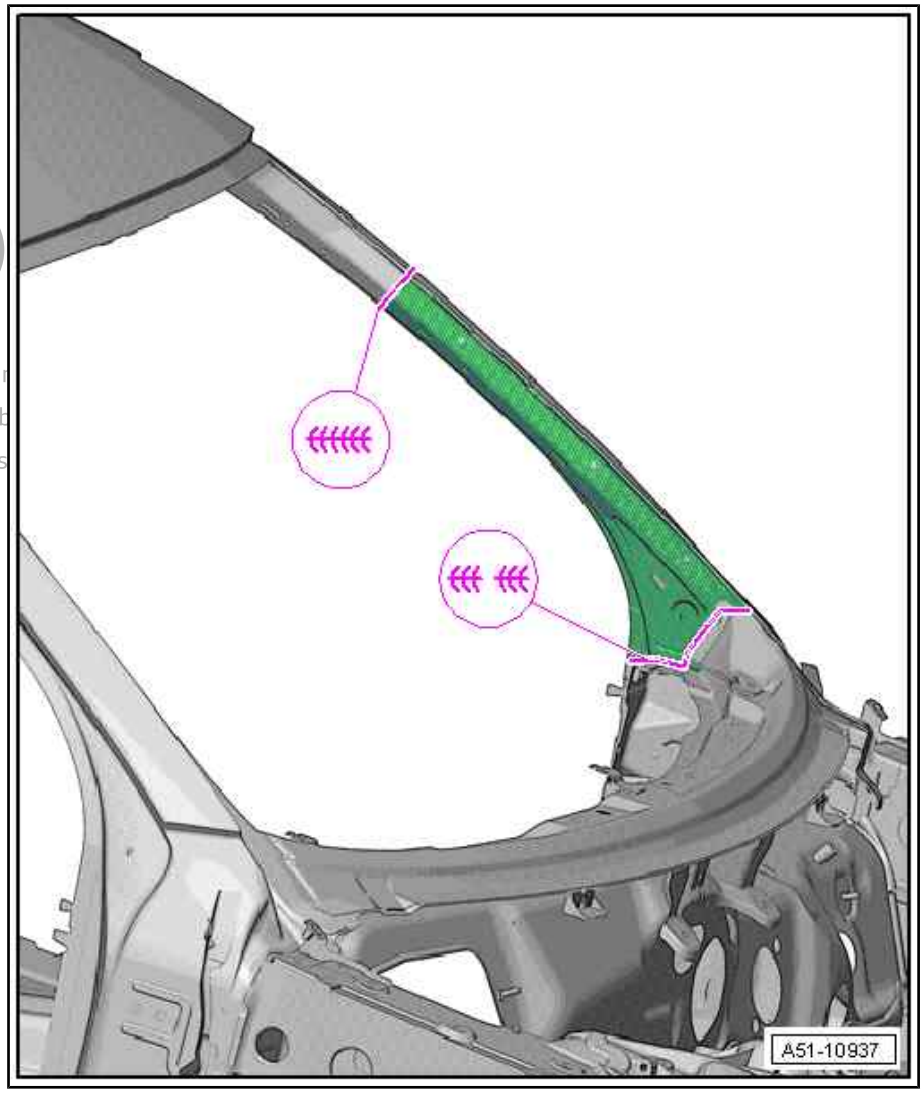
– Weld in base surface and side surface of inner A-pillar with spot welds spaced at 25 mm using resistance spot welder : RP spot weld seam.



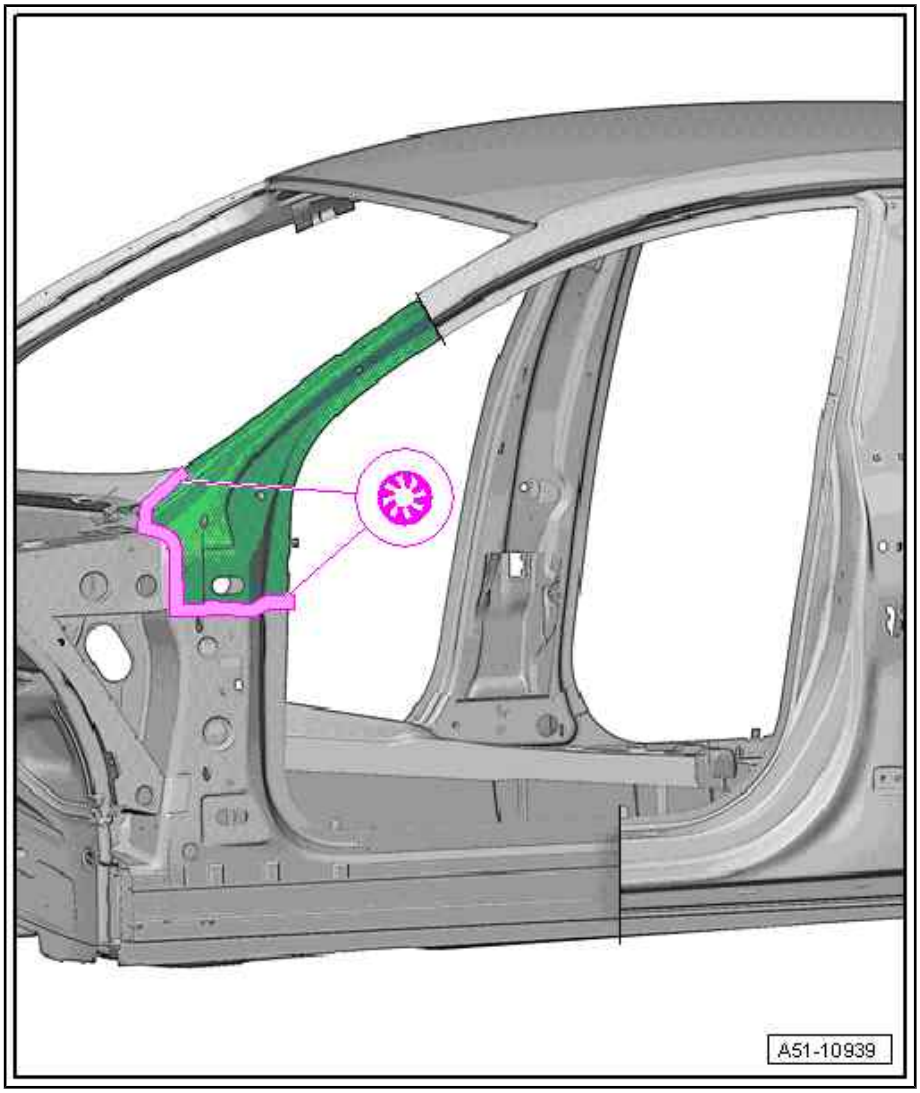
– Weld in lower cover plate for inner A-pillar using shielded arc welding equipment : SG continuous seam (staggered - with gaps).
– Weld in at separating cut using shielded arc welding equipment : SG continuous seam.
– Make 30 - 40 mm weld seam in area of inner and outer separating cuts at edges of each flange using shielded arc welding equipment : SG continuous seam.

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– Weld in inner A-pillar using shielded arc welding equipment :
SG plug weld seam.



- Welding in outer A-pillar ⇒ page 253
- Welding in intermediate piece ⇒ page 61

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RO: 51 38 55 50

16 Lower inner A-pillar - Partial renewal

1 - Inner side member

2 - Lower inner A-pillar

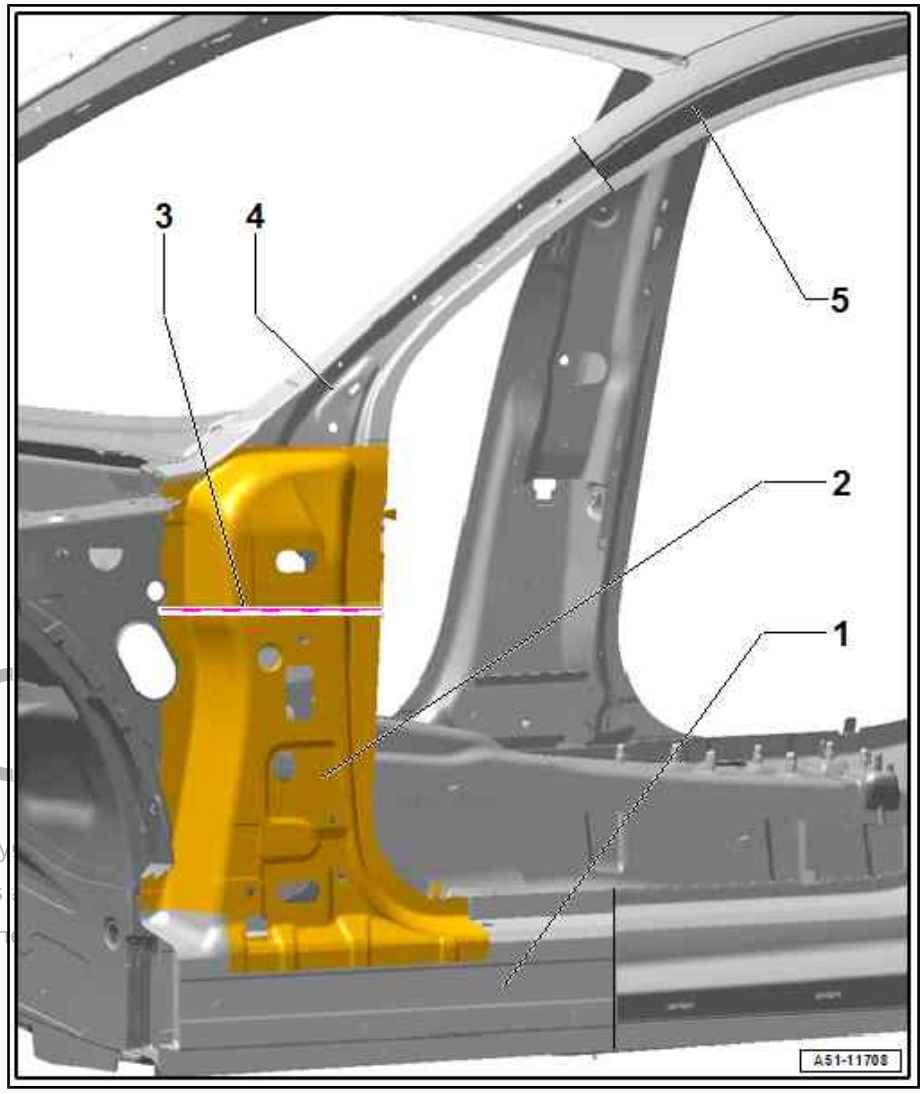
3 - Lower separating cut

Partial renewal
Partial renewal is possible with this separating cut.

Weld separating cut: SG continuous seam.

4 - Upper inner A-pillar

5 - Side panel



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16.1 Notes for vehicles with hybrid drive

⇒ page 5

16.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Drill
- Compact angle grinder
- Body saw
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

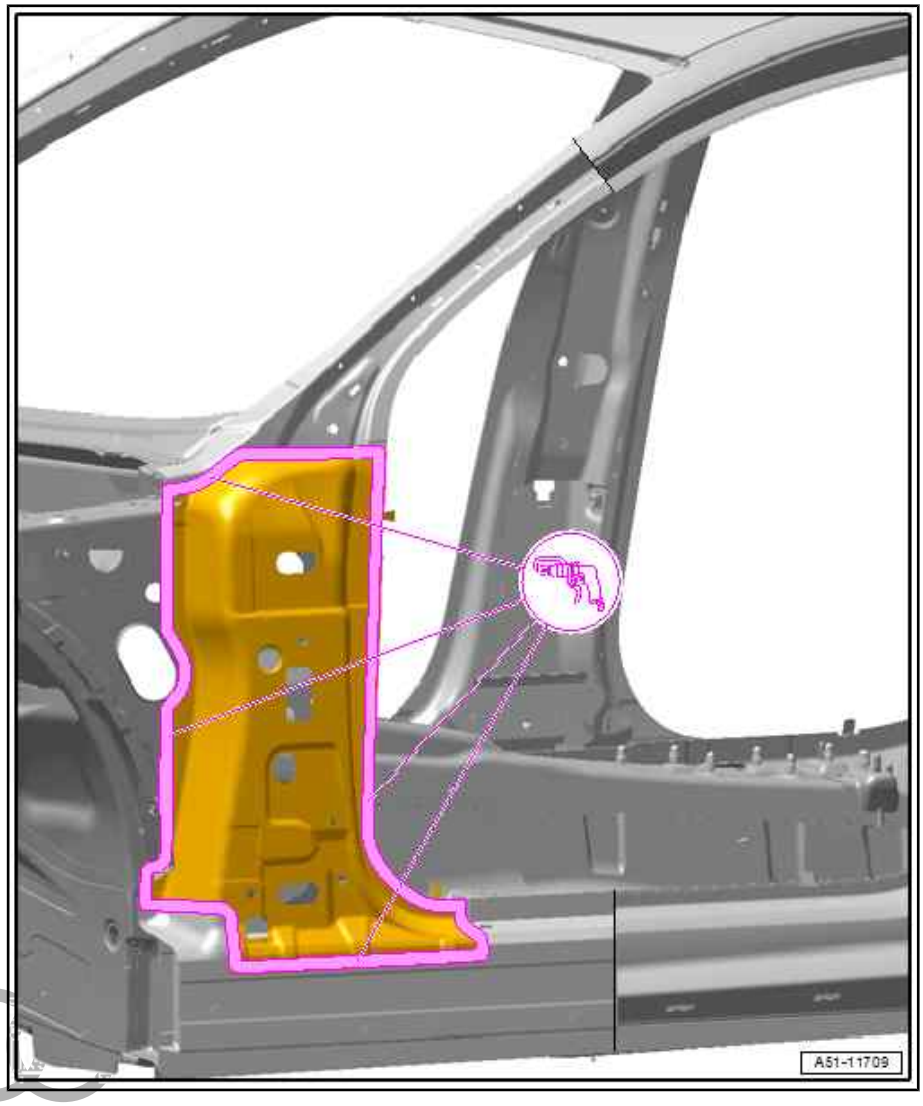
16.3 Procedure

- Outer A-pillar cut out ⇒ page 253 .
- Wing mounting flange cut out ⇒ page 70
- Upper inner A-pillar removed (partial renewal) ⇒ page 260
- Intermediate piece removed ⇒ page 61

Cutting locations

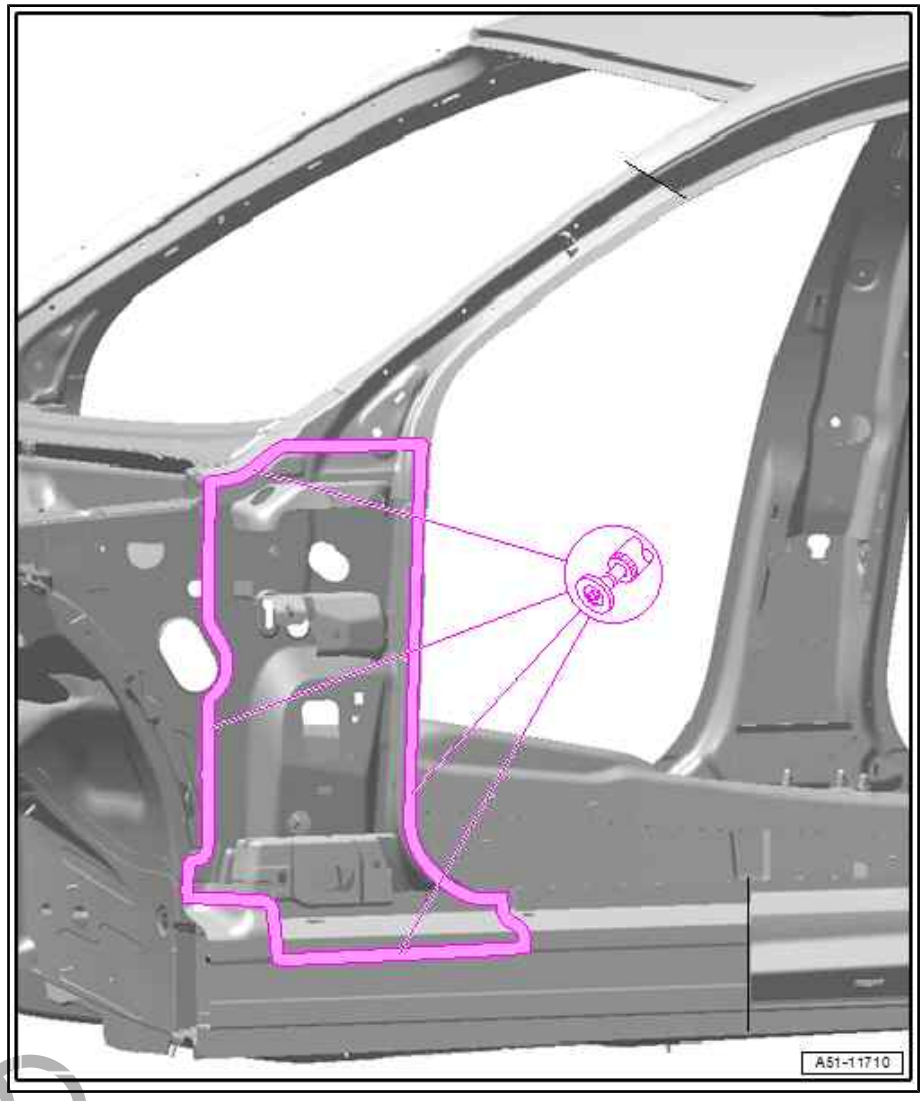
Permitted separating cuts on complete side panel ⇒ page 128 .

– Drill out original joint using spot weld breaker .



– Remove remaining material using compact angle grinder .

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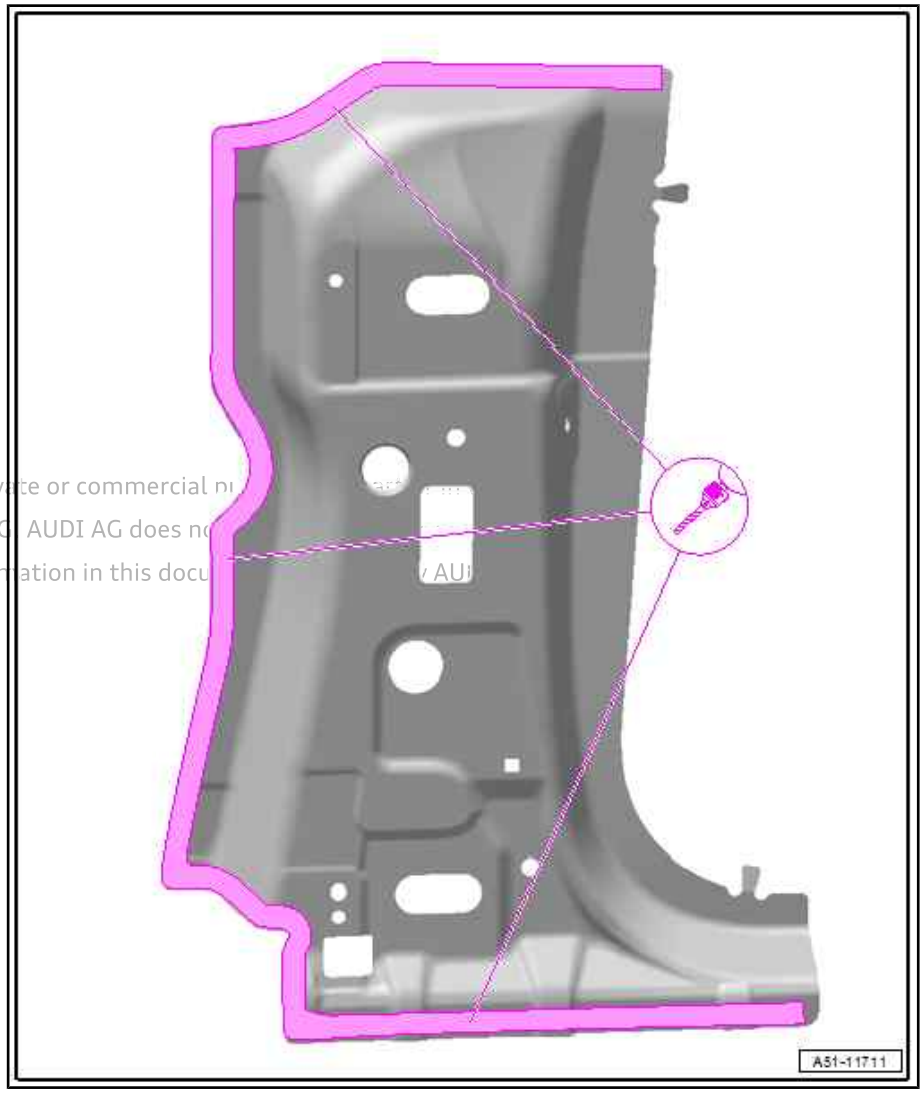
Replacement parts

Lower inner A-pillar

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Preparing new part

– Drill holes for SG plug weld seam, 8 mm ∅ using drill .



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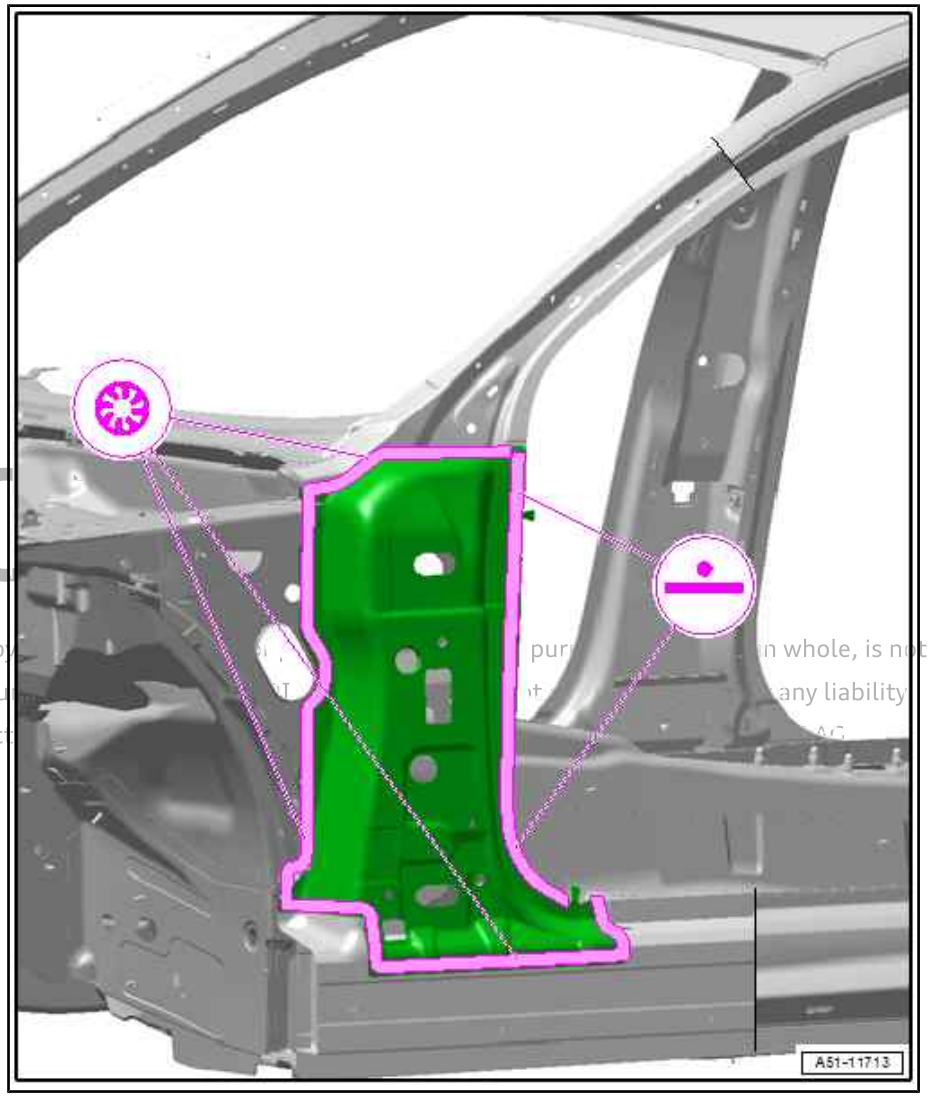
Note

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 lower inner A-pillar using shielded arc welding equipment : SG plug weld seam.

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



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- Weld in outer A-pillar ⇒ page 253 .
- Welding in wing mounting flange ⇒ page 70
- Welding in upper inner A-pillar (partial renewal) ⇒ page 260
- Welding in intermediate piece ⇒ page 61

RO: 51 41 55 50

17 Outer B-pillar - Renewal

(Saloon and Avant identical)

1 - B-pillar

Outer B-pillar

2 - Upper separating cut

3 - Lower separating cut

Partial renewal
Partial renewal is possible with this separating cut.

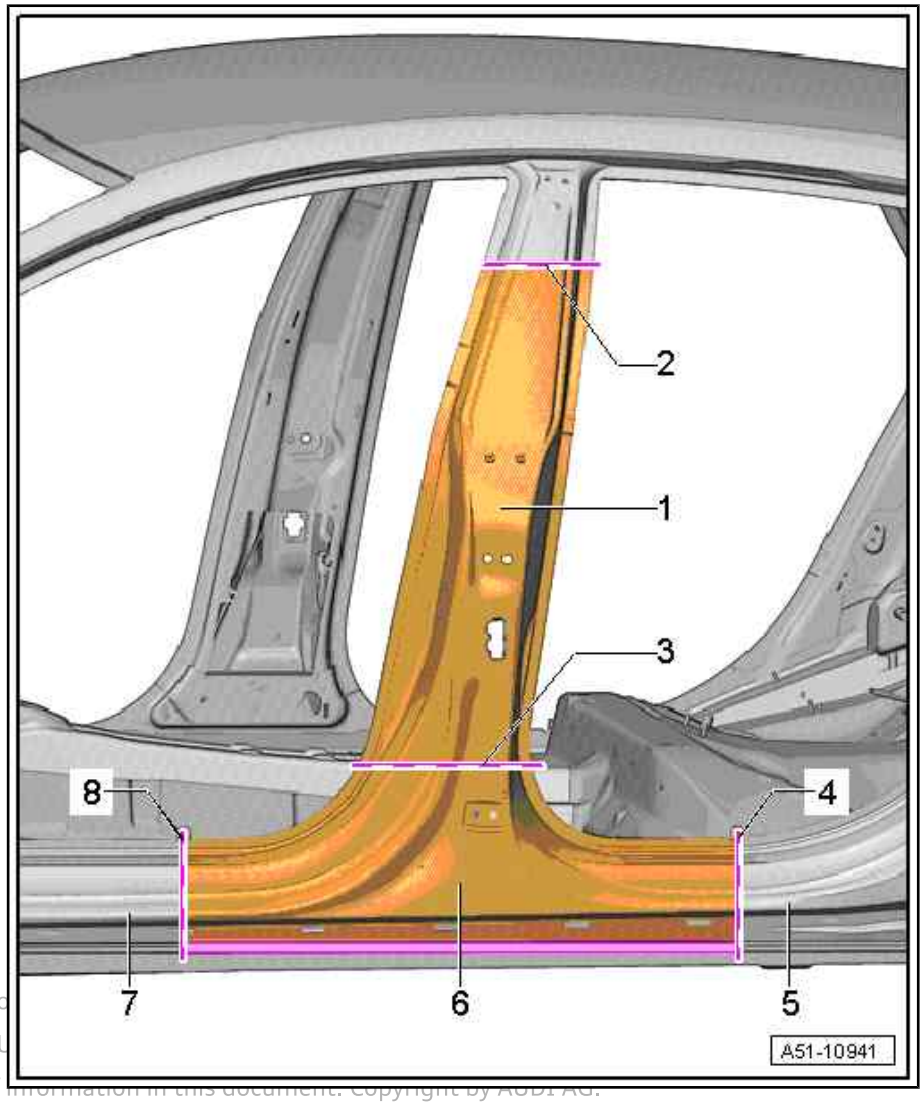
4 - Separating cut in side member (rear)

5 - Rear side member

6 - Laser weld seam

7 - Front side member

8 - Separating cut in side member (front)



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17.1 Notes for vehicles with hybrid drive

⇒ page 5

17.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Compact angle grinder
- Body saw
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

17.3 Procedure

Cutting locations

Permitted separating cuts on complete side panel ⇒ page 128 .

Note

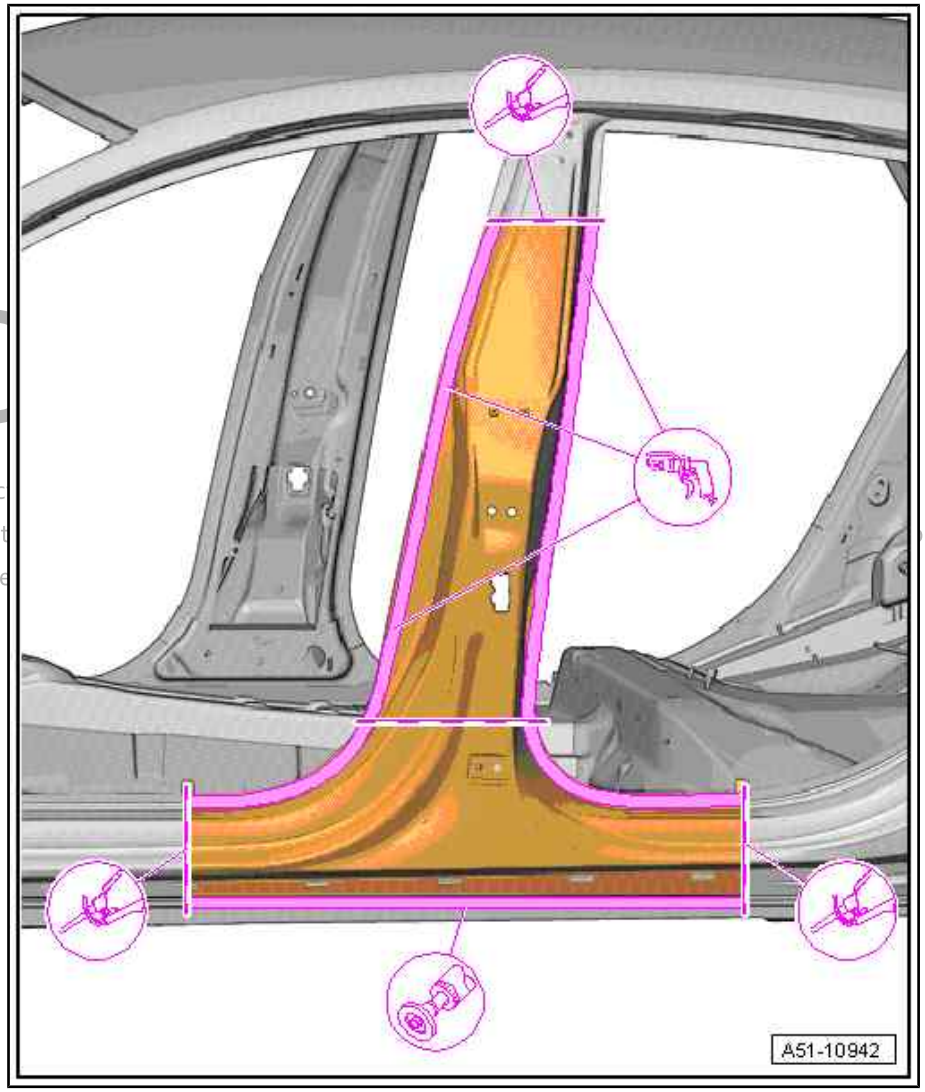
- *Part section repair is possible using separating cut -3-.*
- *Note the replacement part dimensions when making the separating cut at the rear side member -4-.*

– Drill out original joint using spot weld breaker .

– Make separating cut -2- as shown using body saw .

– Mark off separating cuts -4- and -8- according to degree of damage and make cuts using body saw .

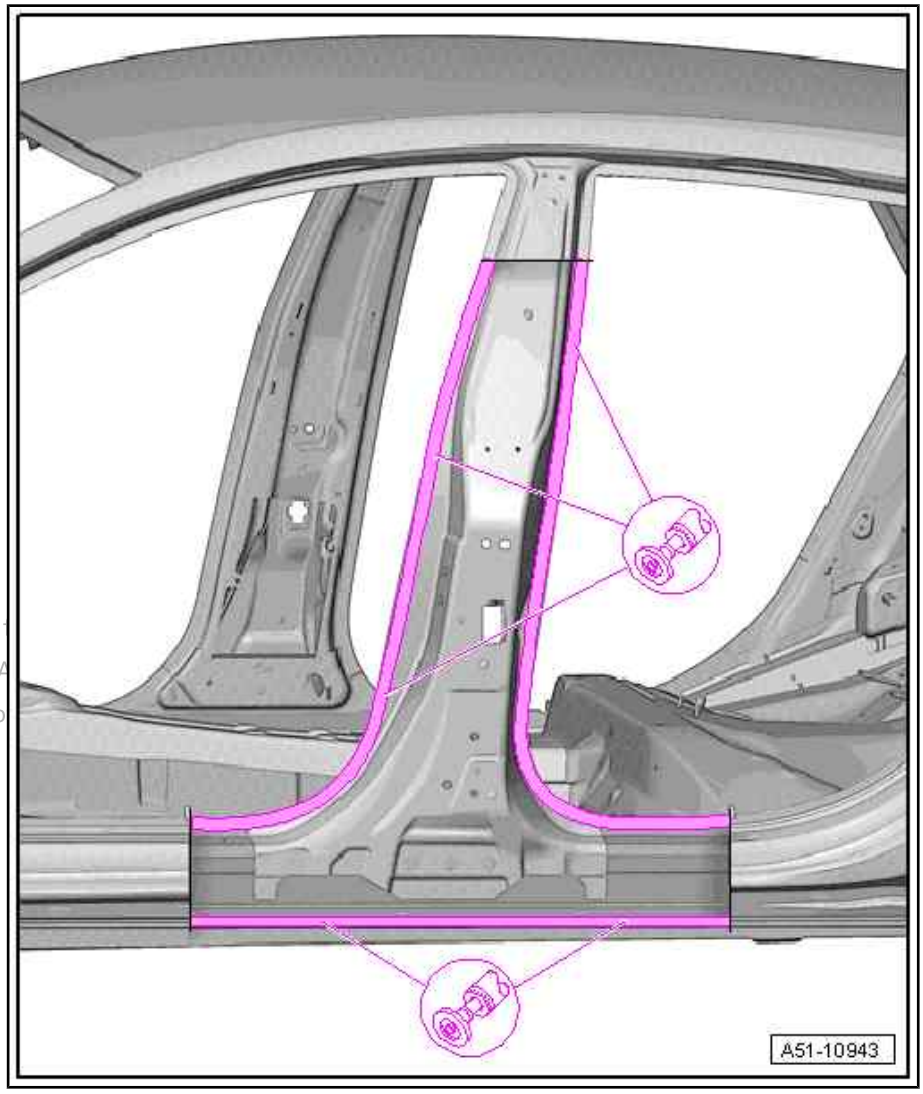
– Separate laser weld -6- using compact angle grinder .



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– Remove remaining material using compact angle grinder .

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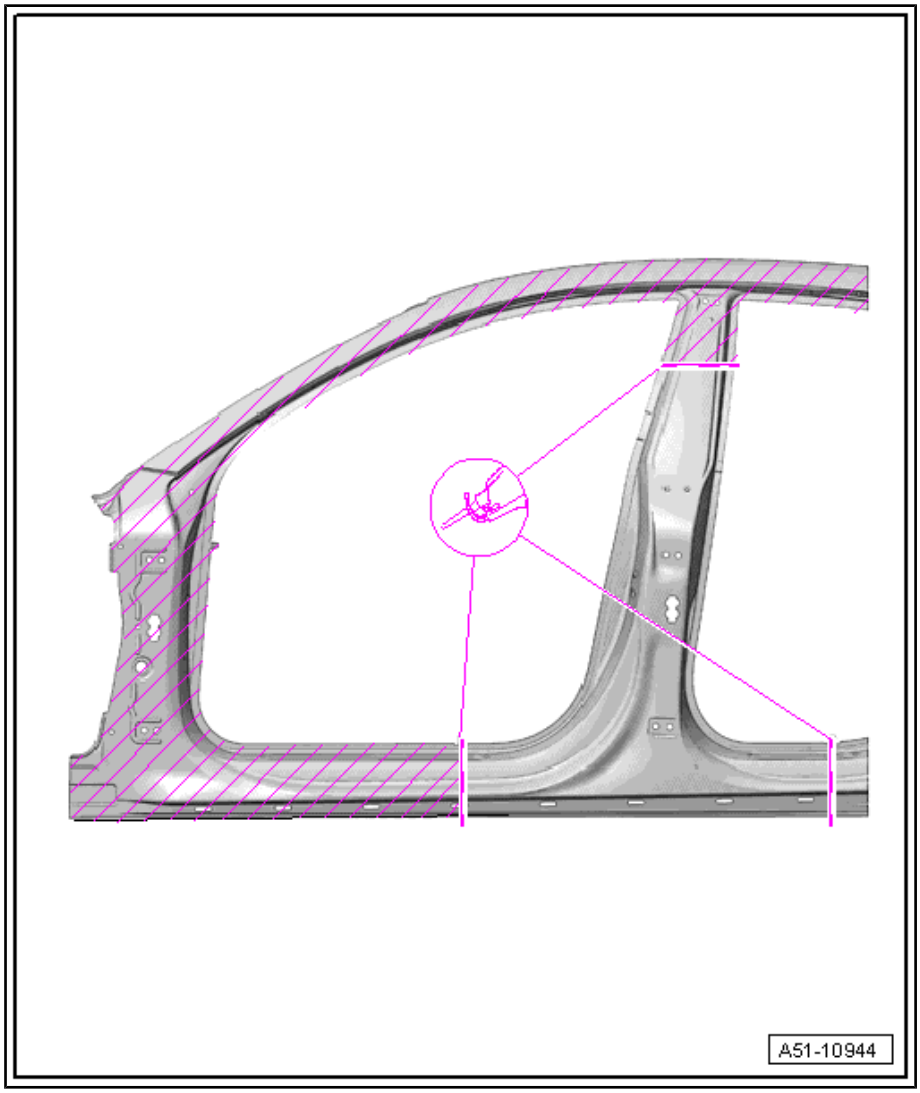


Replacement part

- B-pillar

Preparing new part

– Transfer separating cuts to new part and cut to size using body saw .



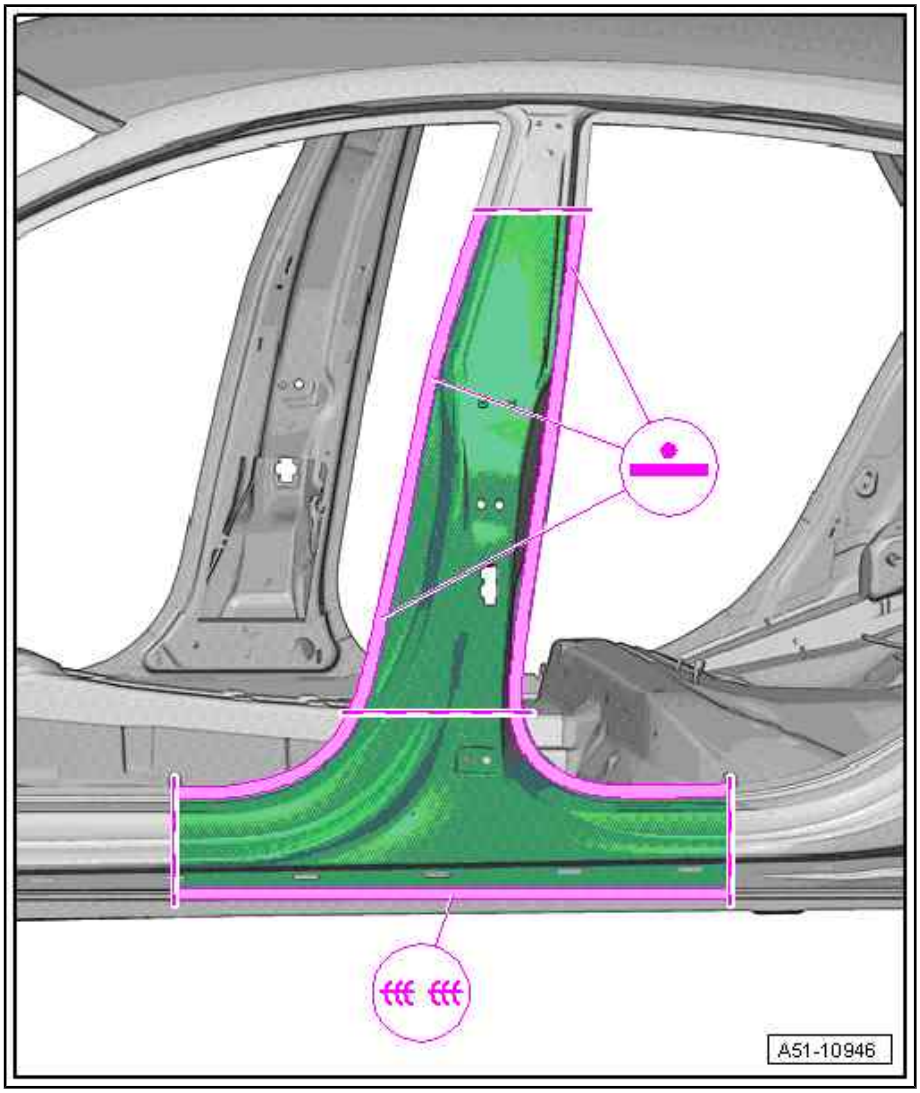
Note

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

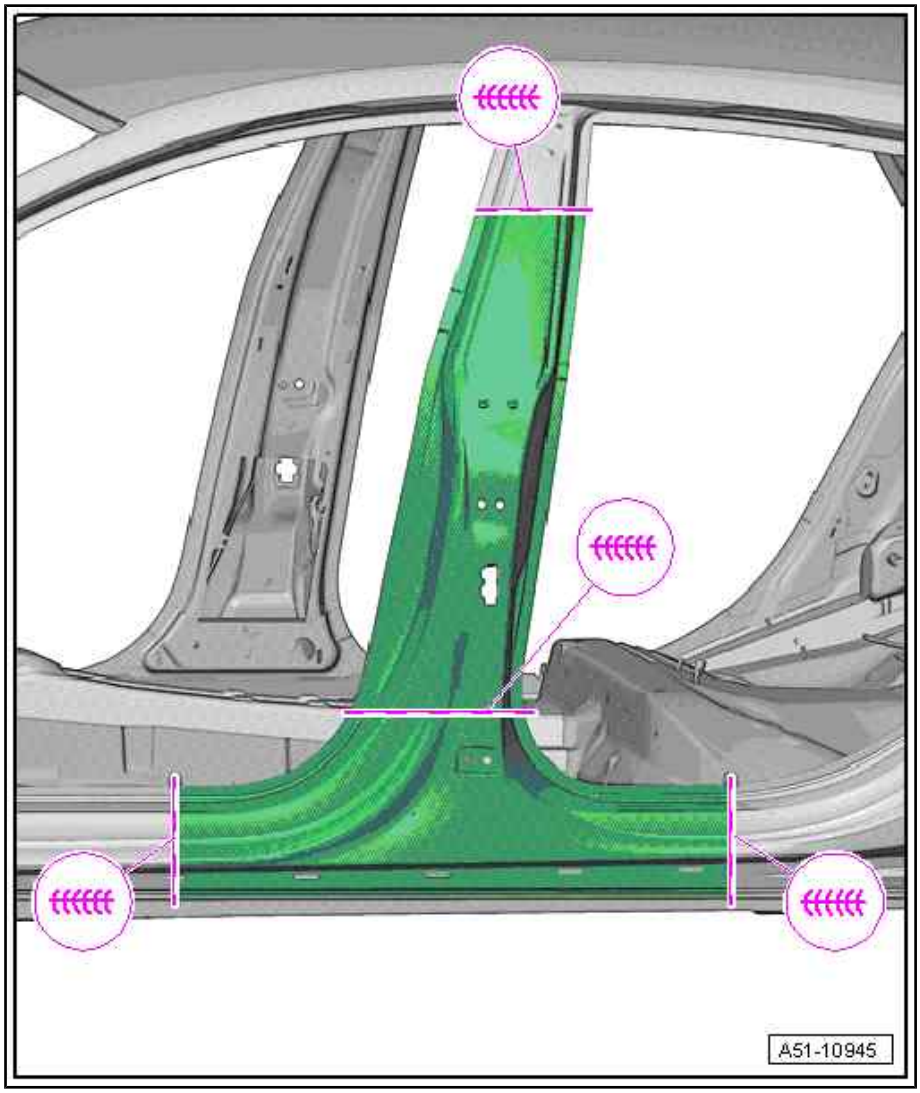
- With no load on vehicle, match up new part and fix in position on portal gauge.
- Check fit relative to bolt-on parts.
- Weld in B-pillar using resistance spot welder : RP spot weld seam.
- Weld in B-pillar using shielded arc welding equipment : SG continuous seam (staggered - with gaps) in place of laser weld.

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– Weld at separating cuts using shielded arc welding equipment : SG continuous seam.

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18 Inner B-pillar - Renewal

(Saloon and Avant identical)

1 - B-pillar

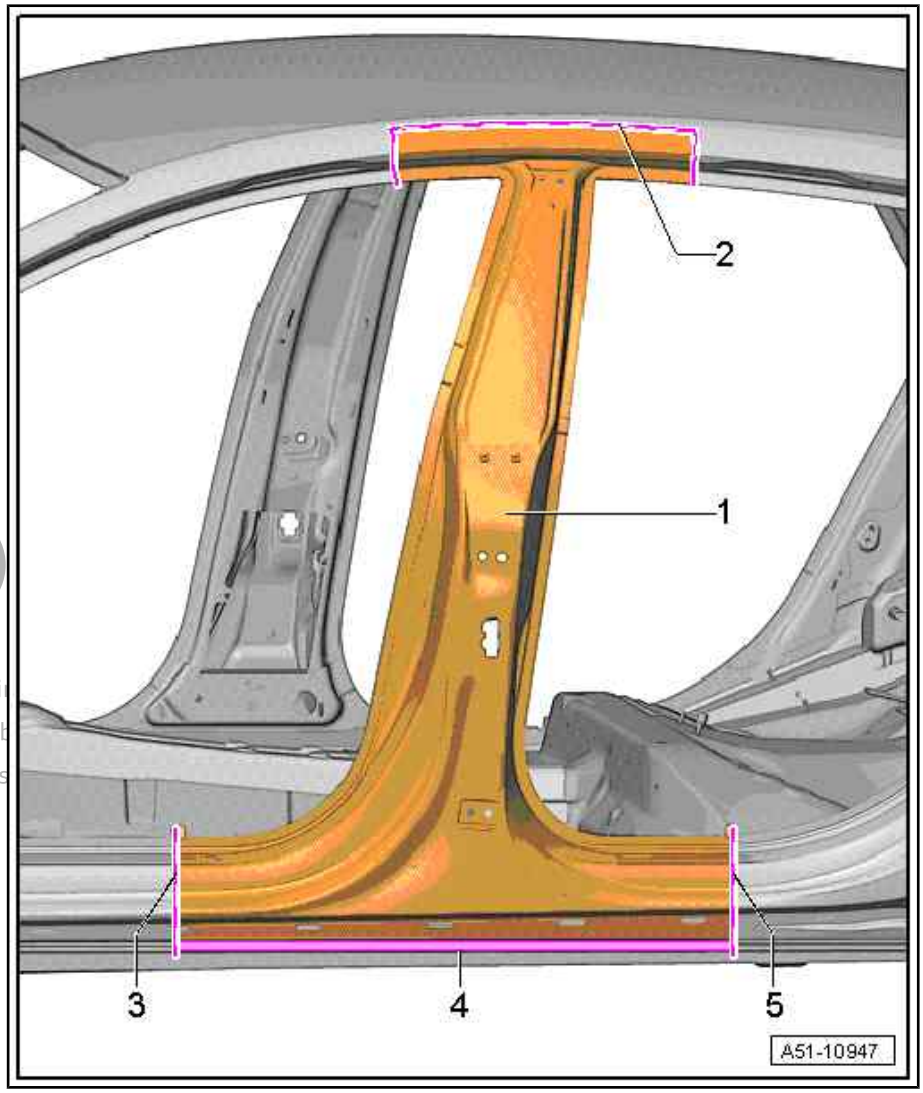
2 - Upper separating cut

Outer B-pillar

3 - Separating cut in side member (front)

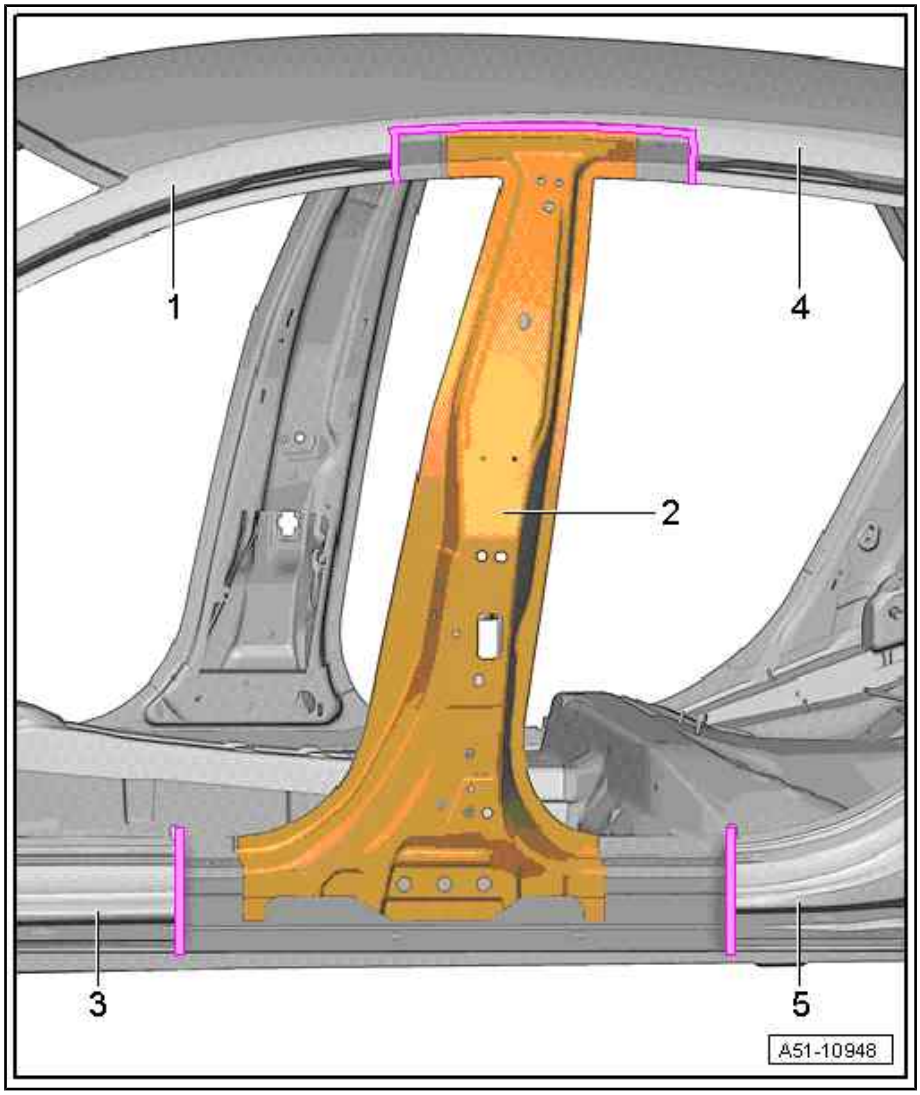
4 - Laser weld seam

5 - Separating cut in side member (rear)



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1 - Front roof side member
2 - Inner B-pillar
3 - Outer front side member
4 - Rear roof side member
5 - Outer rear side member



18.1 Notes for vehicles with hybrid drive

⇒ page 5

18.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Drill
- Compact angle grinder
- Body saw
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

18.3 Procedure

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Cutting locations

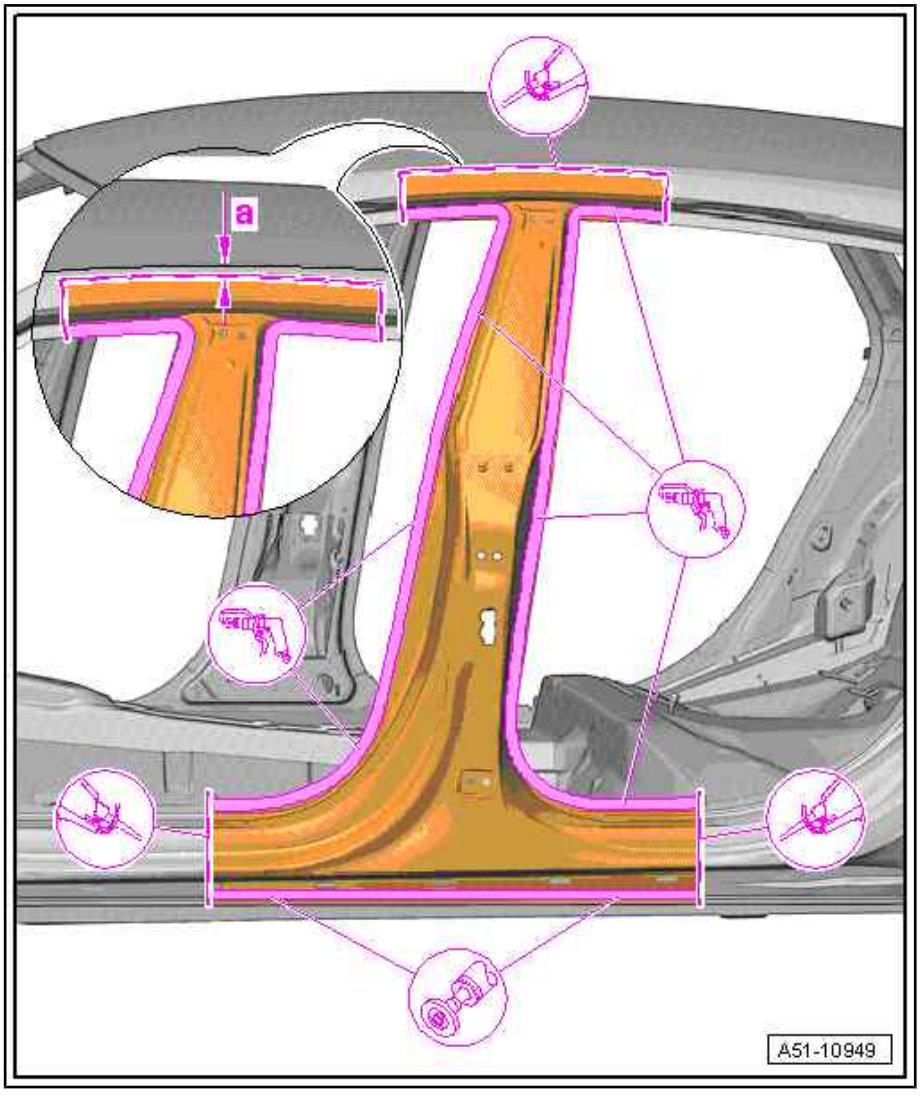
Permitted separating cuts on complete side panel ⇒ page 128 .

– Make separating cut at outer side member as shown using body saw .

• Make separating cut in roof side member, maintaining distance -a- from plasmatron weld seam.

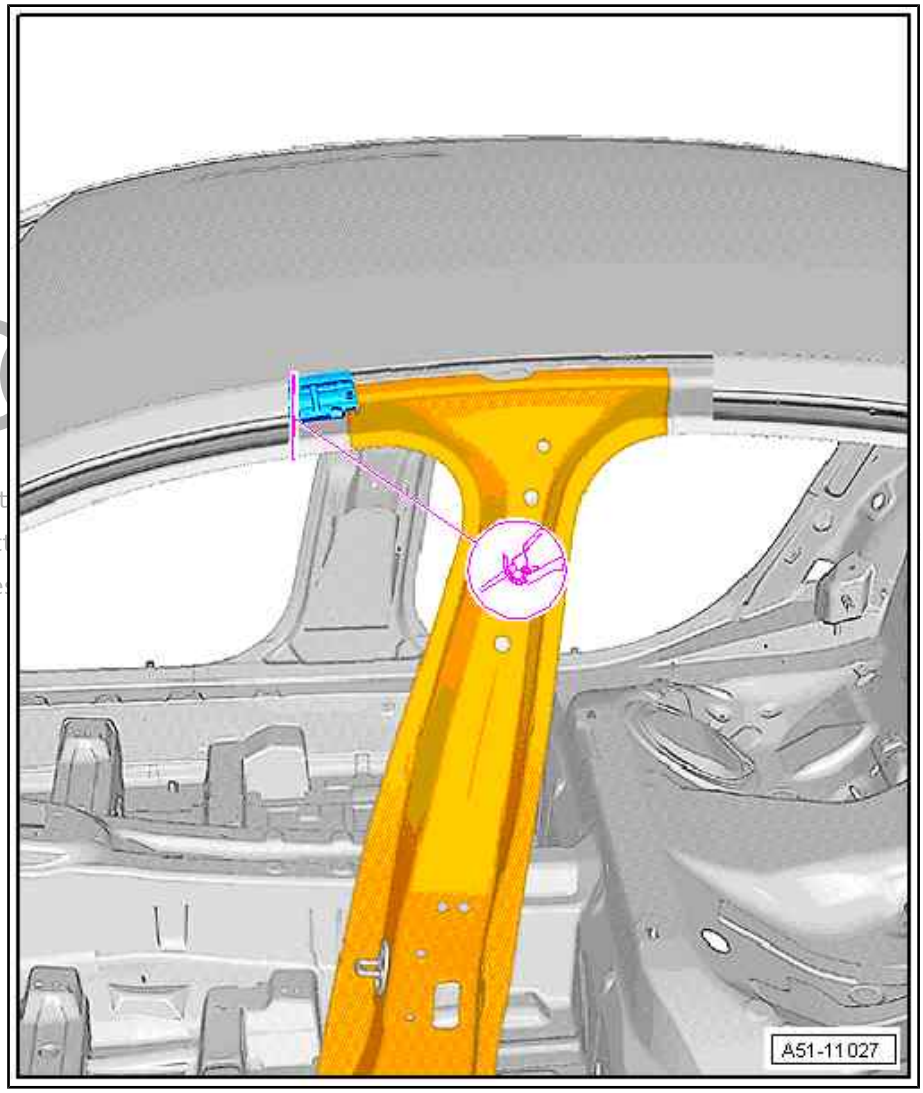
Dimension -a- = 10 mm

– Separate original joint using spot weld breaker .



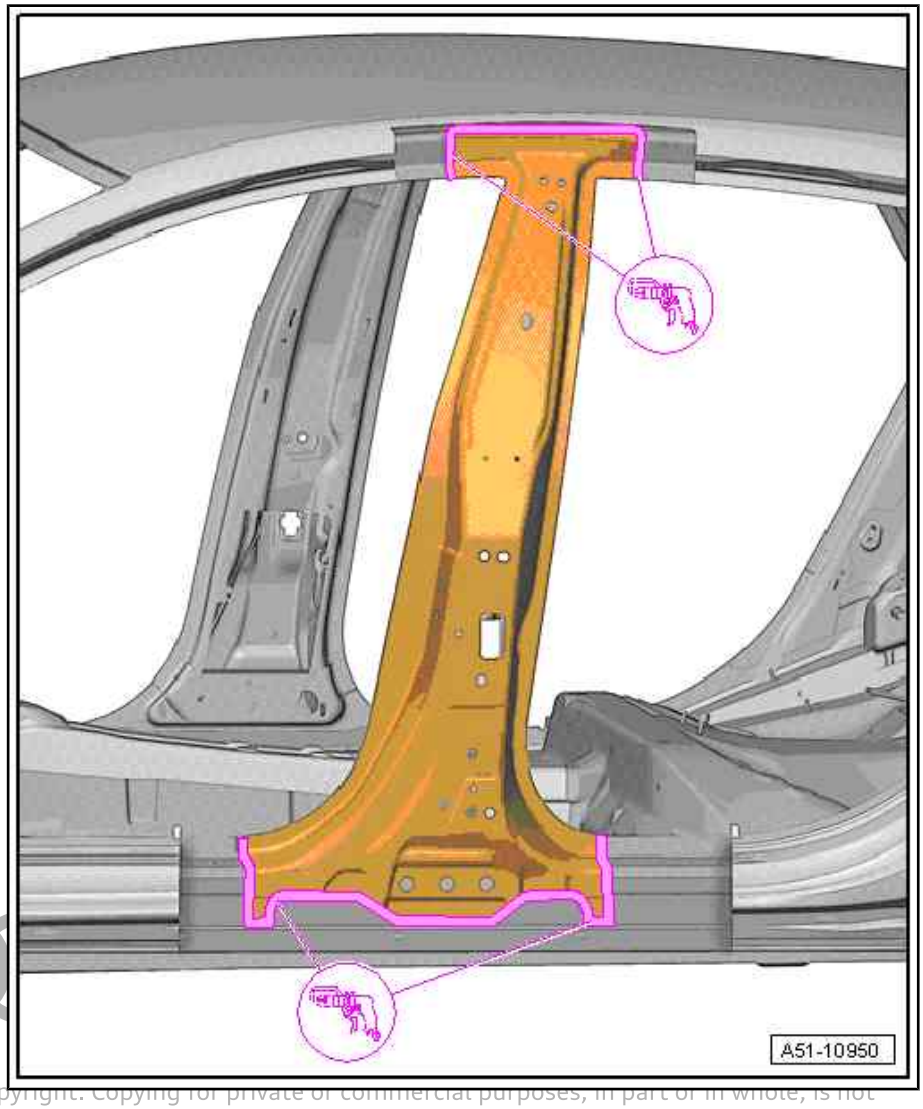
– Roof reinforcement must be shortened for welding.

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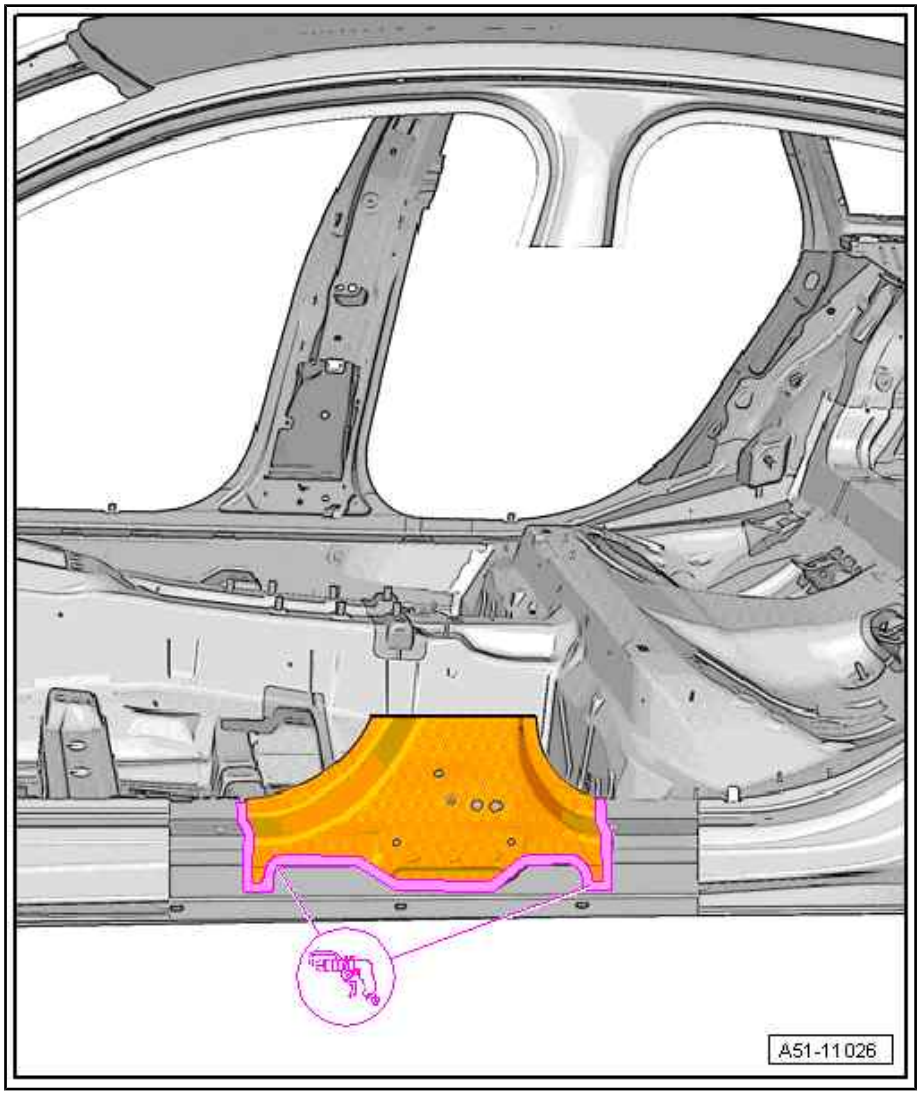
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– Roughly cut out inner B-pillar using body saw .
– Separate original joint using spot weld breaker .



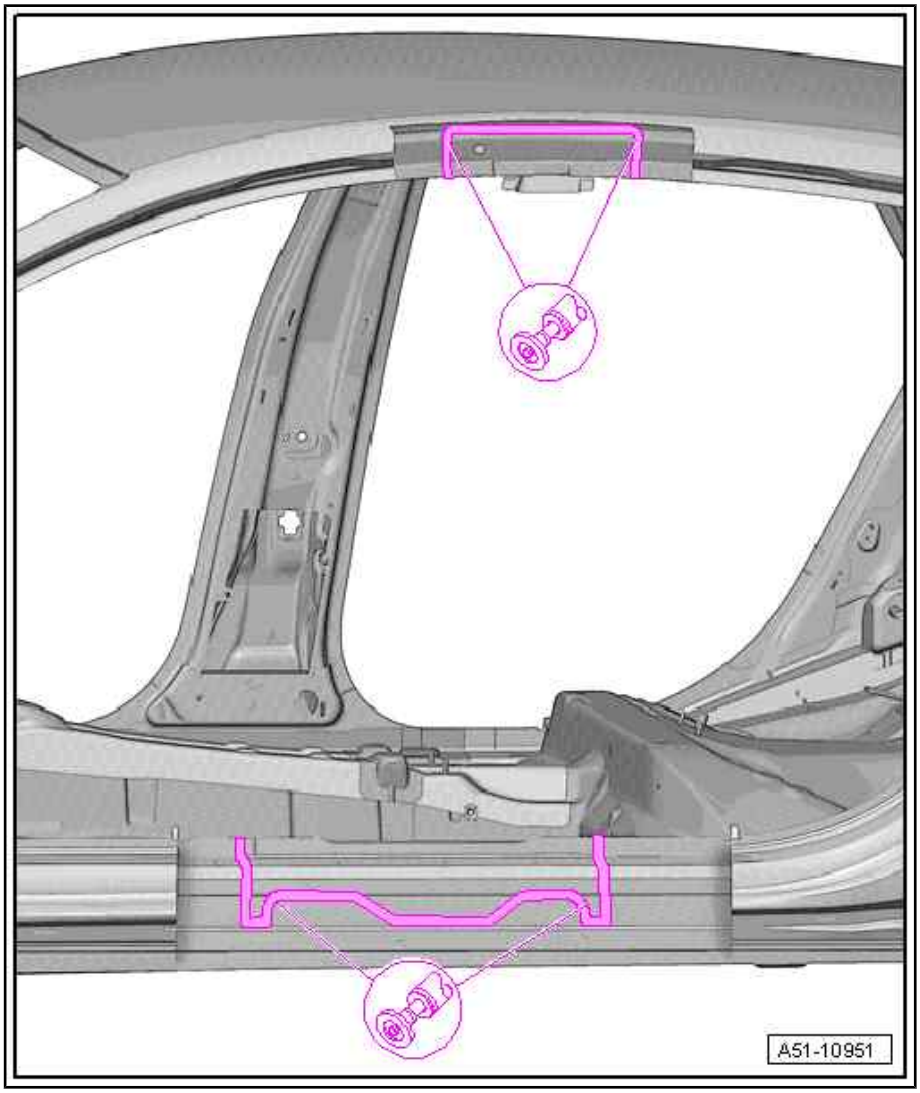
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– Drill out original joint using spot weld breaker .



– Grind areas around separating cuts and original joint down to bare metal on inside and outside.

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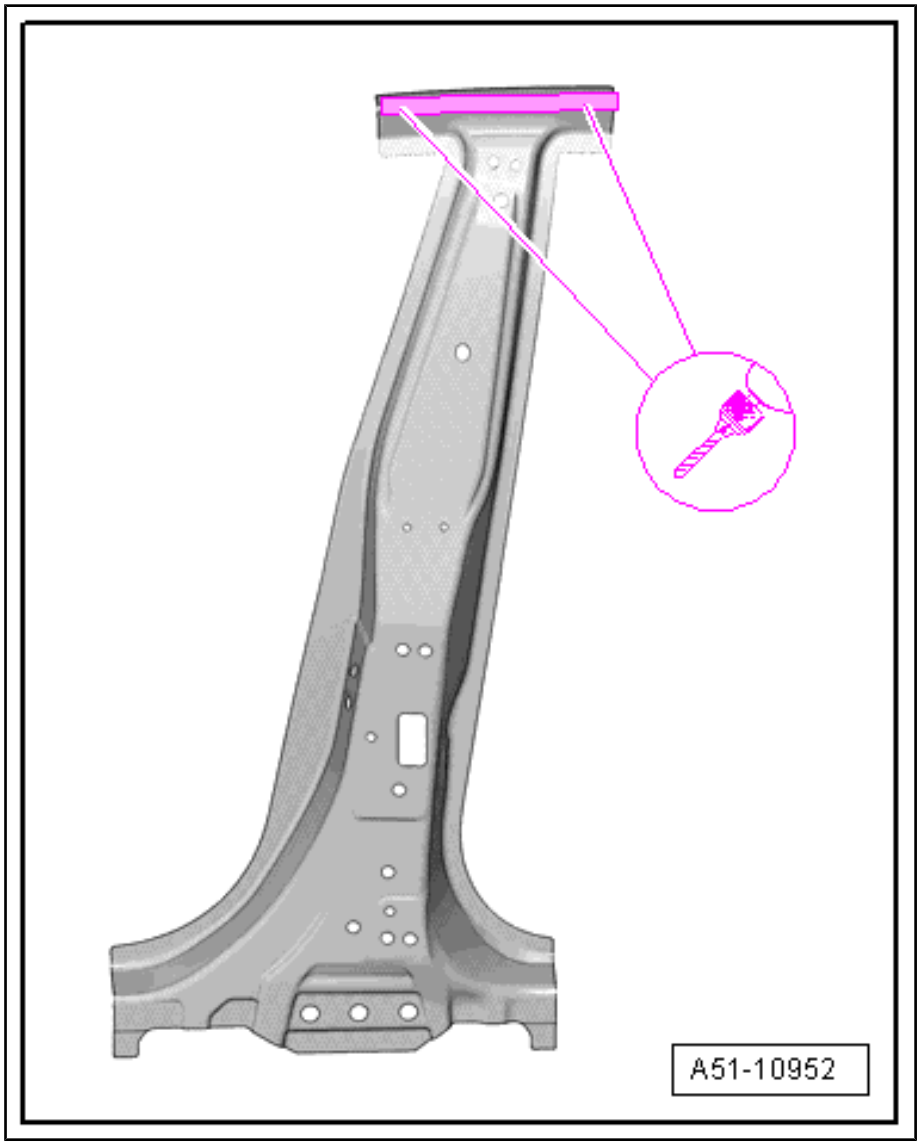
Replacement parts

- Inner B-pillar
- B-pillar reinforcement
- Closure plate

Preparing new parts

– Drill holes for SG plug weld seam, 8 mm ∅ using drill .

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Note

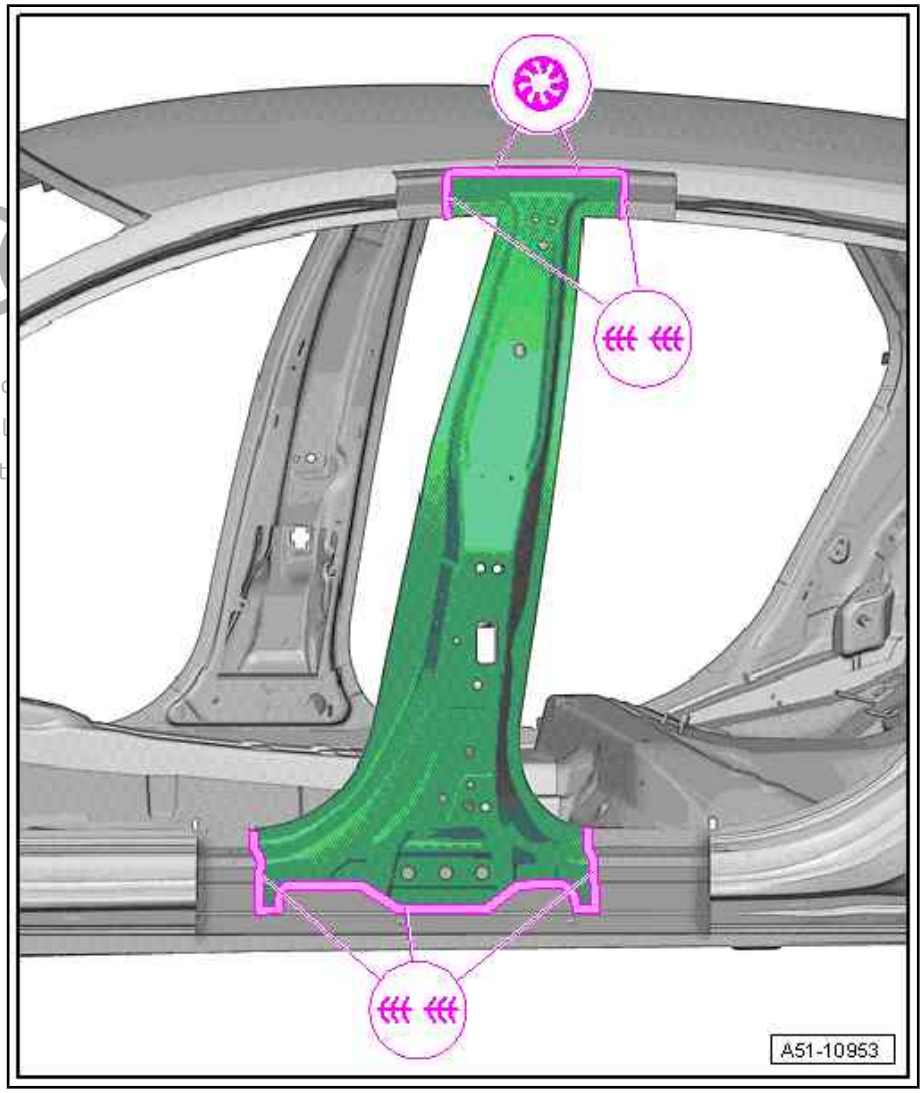
Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.

Welding in

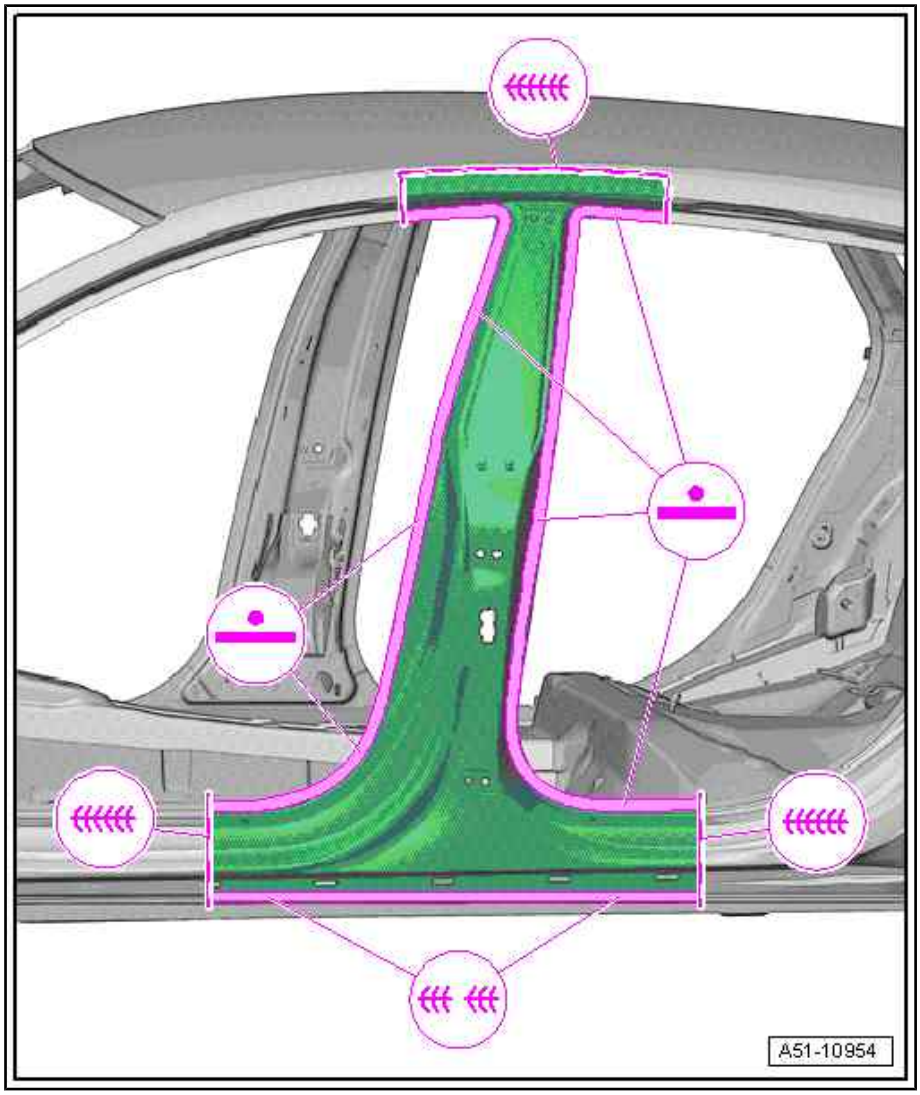
- With vehicle standing on alignment bracket set supplement - VAS 6667- , match up inner B-pillar and fix in position.
- Weld in inner B-pillar using shielded arc welding equipment : SG plug weld seam.
- Weld in inner B-pillar using shielded arc welding equipment : SG continuous seam (staggered - with gaps).

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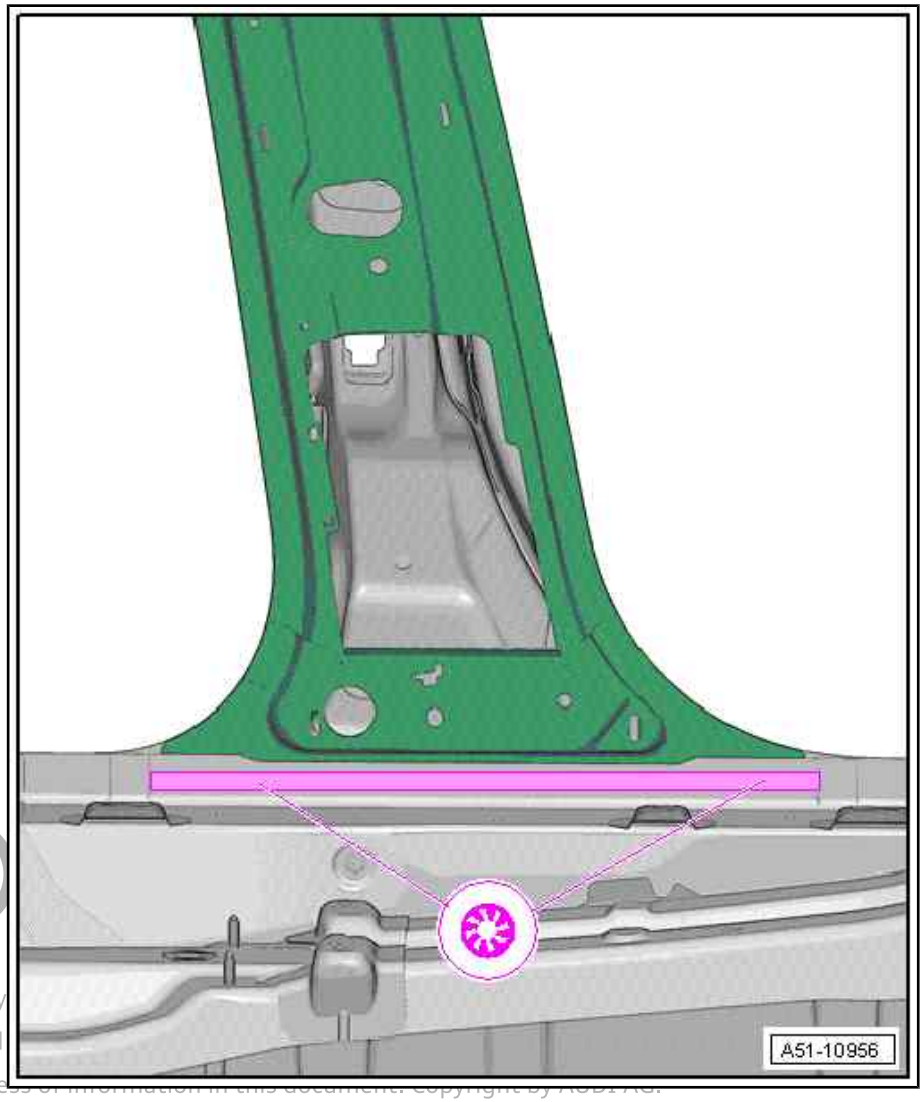


- Weld in B-pillar using shielded arc welding equipment : SG plug weld seam.
- Weld in B-pillar using shielded arc welding equipment : SG continuous seam (staggered - with gaps).
- Weld in B-pillar using resistance spot welder : RP spot weld seam.



– Weld in inner B-pillar using shielded arc welding equipment :
SG plug weld seam.

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RO: 51 45 55 00

19 Outer side member - Renewal

(Saloon and Avant identical)

1 - Outer side member

2 - Separating cut in B-pillar

3 - Separating cut in side member (rear)

Partial renewal
Partial renewal is possible with this separating cut.

4 - Separating cut at wheel arch

5 - Moulded foam insert

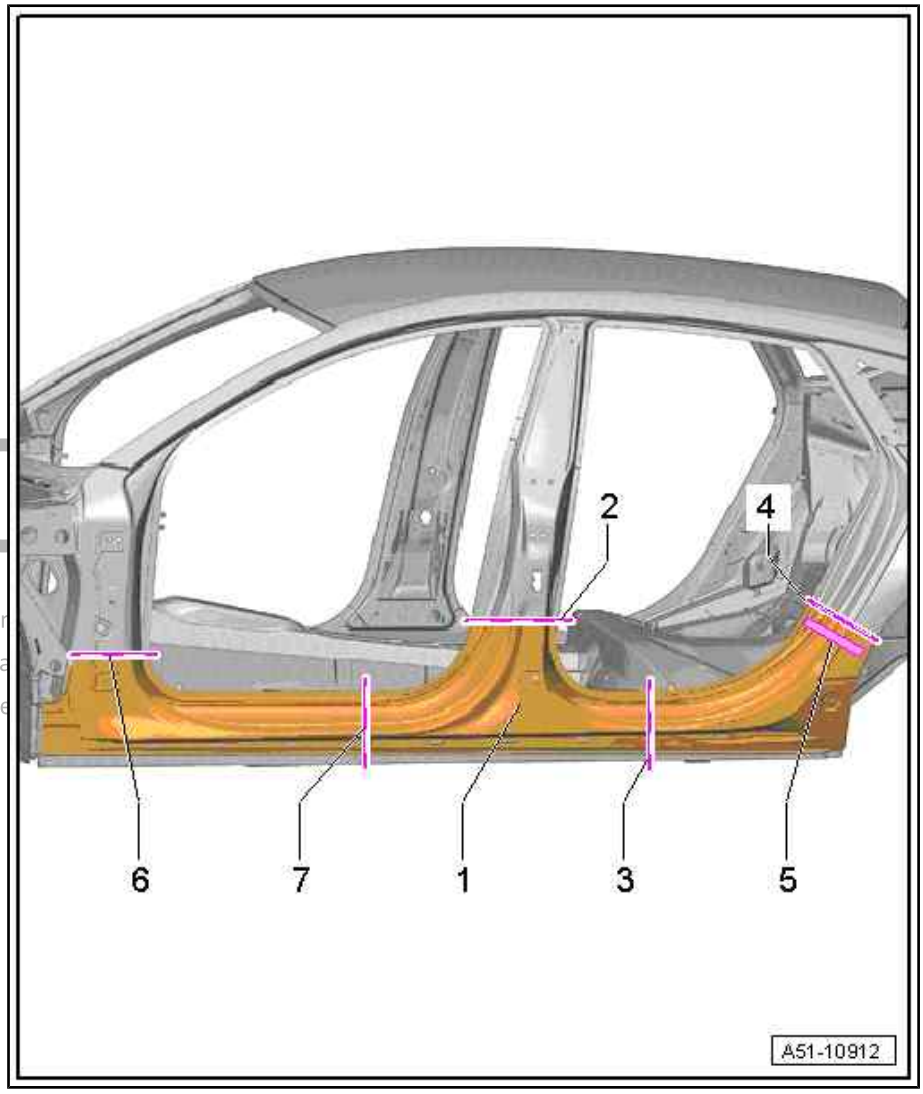
6 - Separating cut in A-pillar

7 - Separating cut in side member (front)

Partial renewal
Partial renewal is possible with this separating cut.

Make separating cut according to extent of damage.

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19.1 Notes for vehicles with hybrid drive

⇒ page 5

19.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Compact angle grinder
- Body saw
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

19.3 Procedure

Cutting locations

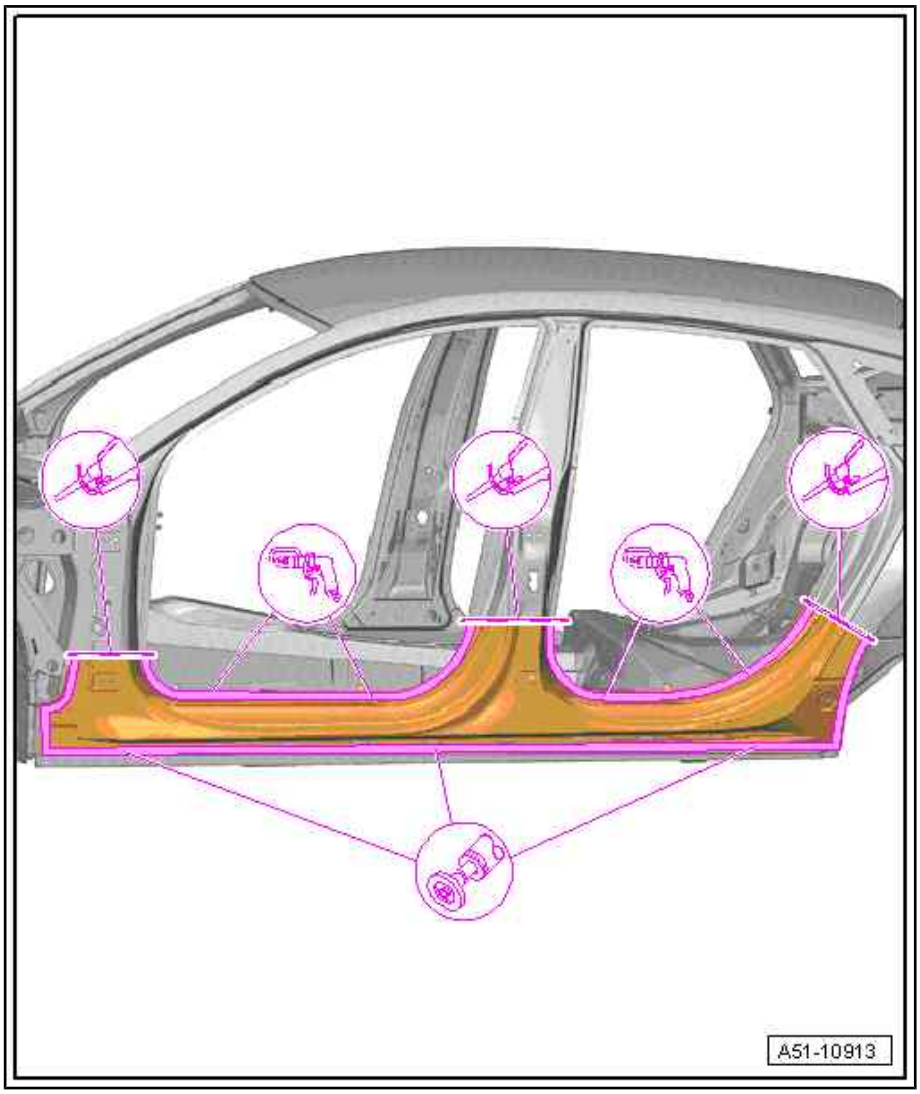
Permitted separating cuts on complete side panel ⇒ page 128 .

Note

Note the replacement part dimensions when making the separating cuts -2-, -3- and -4-.

– Mark off separating cuts according to degree of damage and make the cuts using body saw .

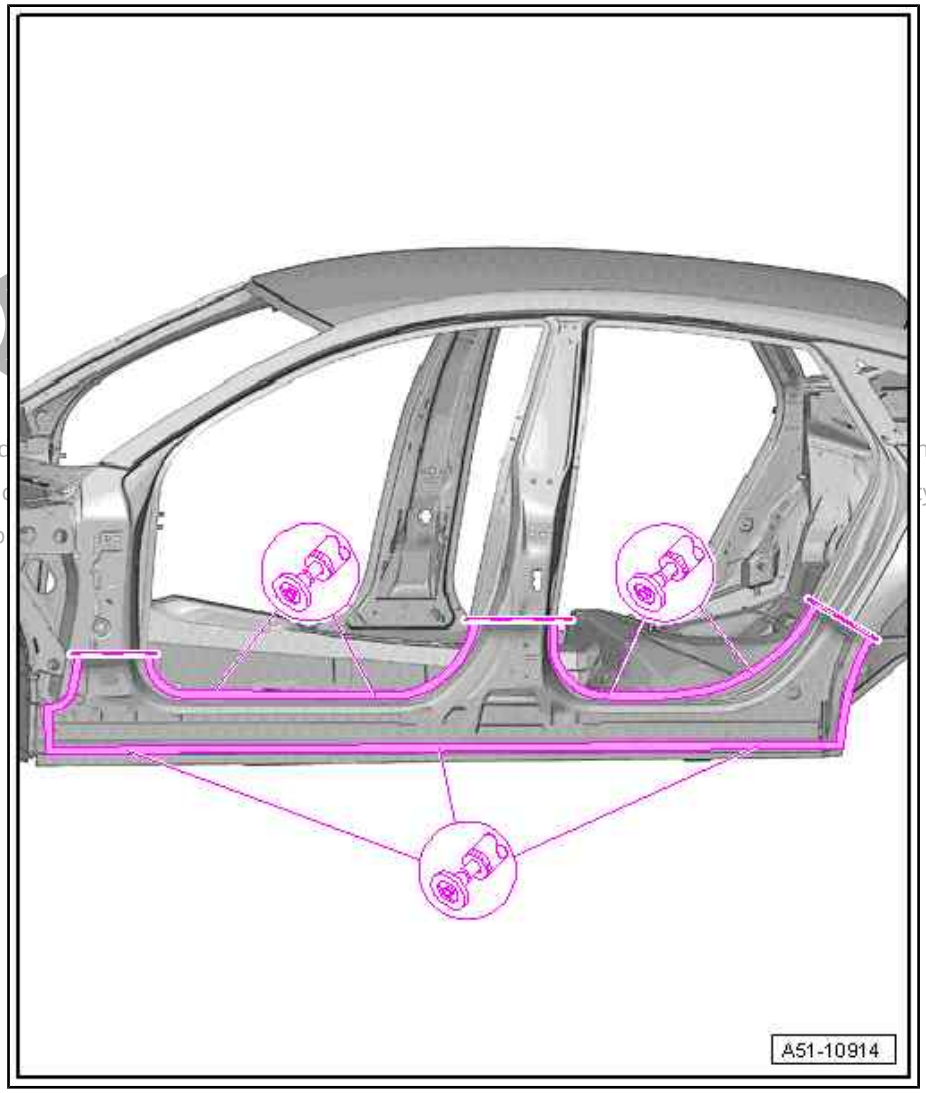
– Drill out original joint using spot weld breaker .



– Remove remaining material using compact angle grinder .

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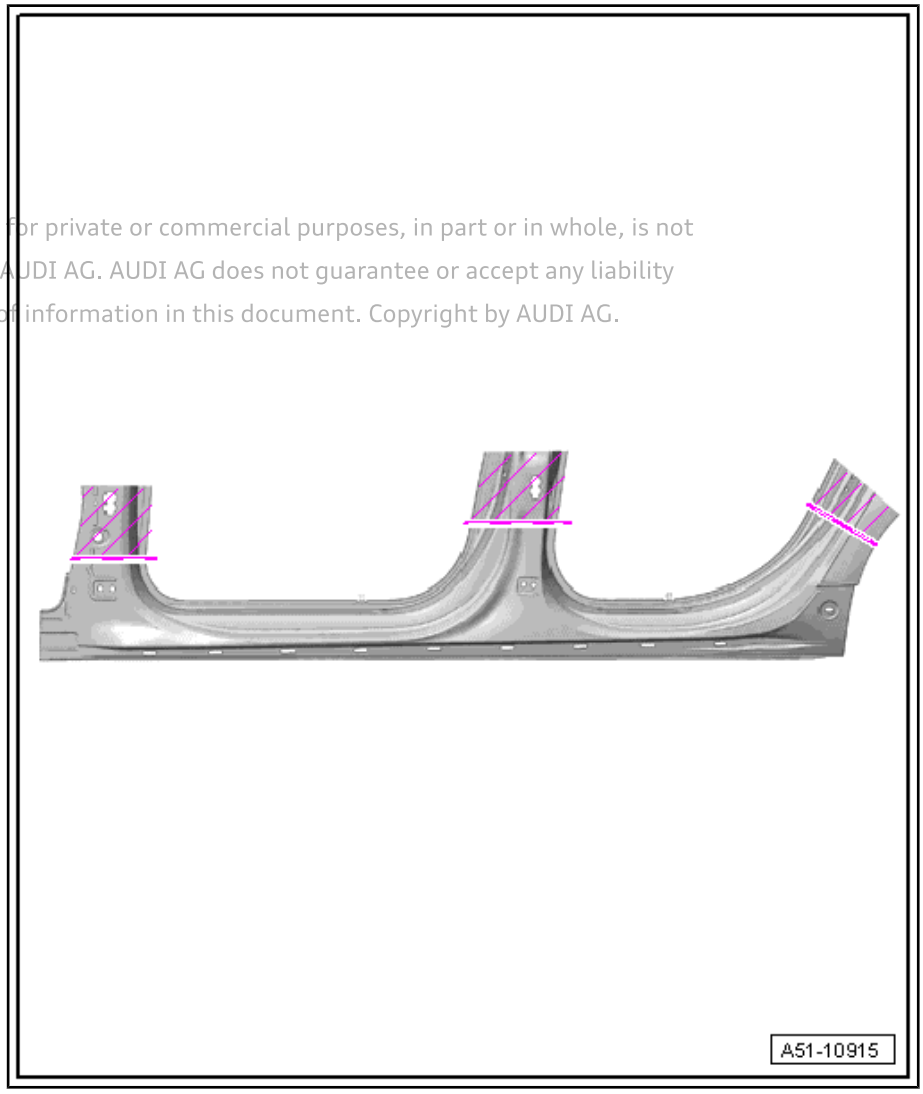
Replacement part

- Outer side member

Preparing new part

– Transfer separating cuts to new part and cut to size using body saw .

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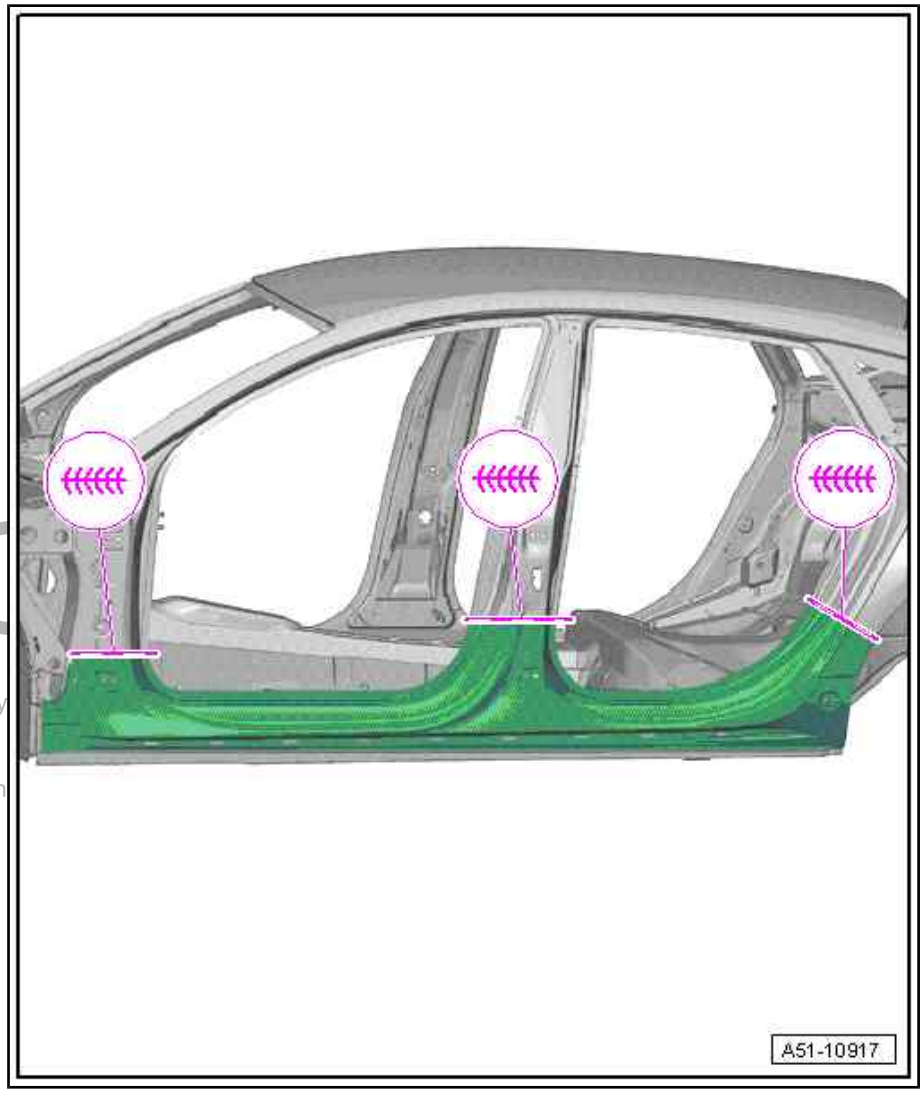


Note

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.

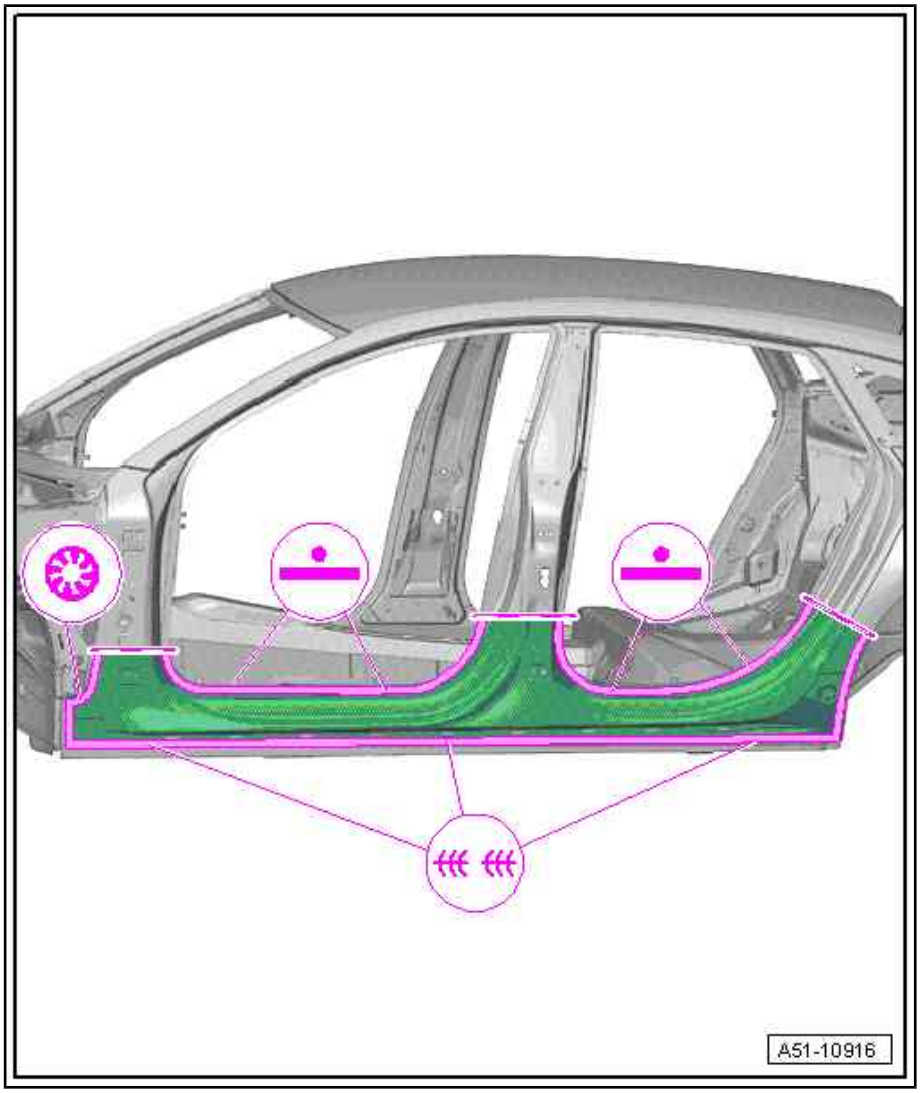
Welding in

– Match up and fix new part in position.
– Check fit relative to bolt-on parts.
– Butt weld separating cuts using shielded arc welding equipment : SG continuous seam.



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– Weld in side member using resistance spot welder : RP spot weld seam.
– Weld in side member using shielded arc welding equipment : SG continuous seam (staggered - with gaps) in place of laser weld.
– Weld in side member using shielded arc welding equipment : SG plug weld seam.



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RO: 51 47 55 50

20 Inner side member - Renewal

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1 - Inner A-pillar reinforcement

2 - Inner side member

3 - Rear wheel housing

4 - Separating cut

Partial renewal
Partial renewal is possible with this separating cut.

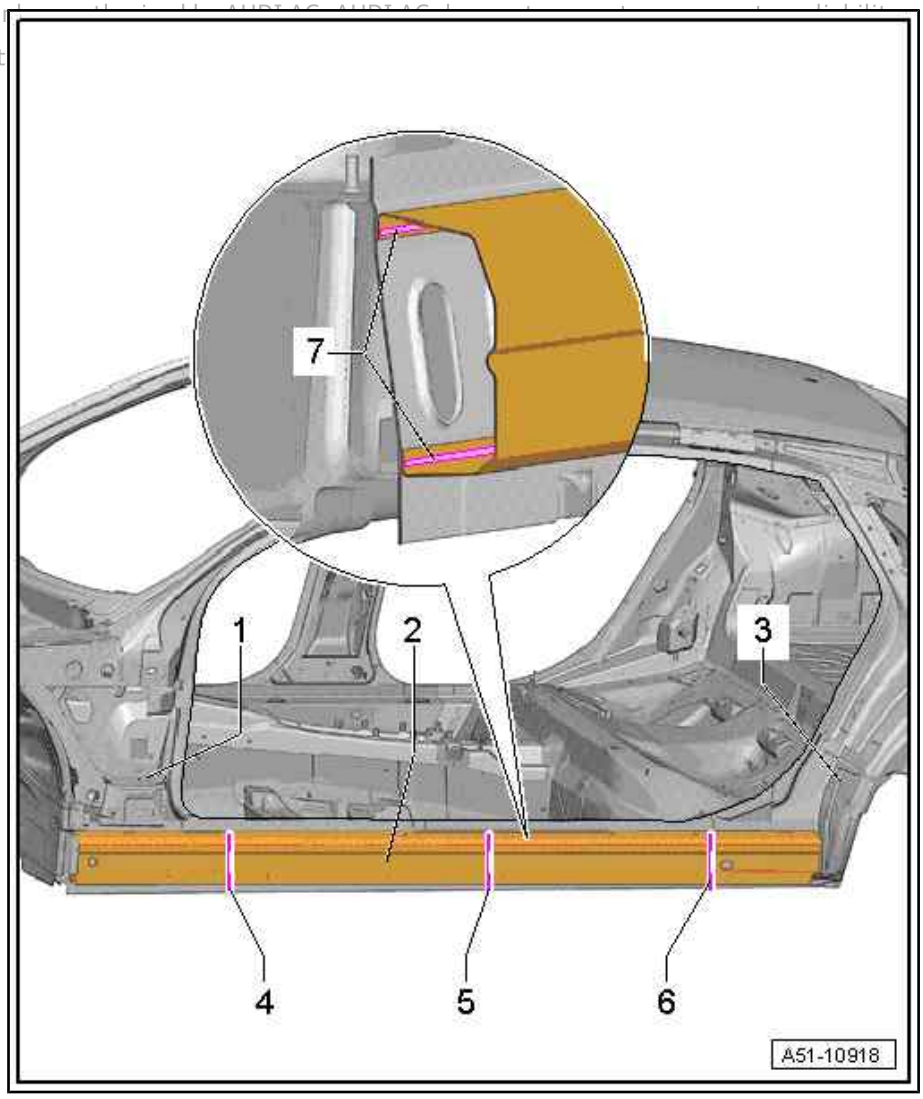
5 - Separating cut

Partial renewal
Partial renewal is possible with this separating cut.

6 - Separating cut

Partial renewal
Partial renewal is possible with this separating cut.

7 - Laser weld seam



20.1 Notes for vehicles with hybrid drive

⇒ page 5

20.2 Tools

Special tools and workshop equipment required

- Shielded arc welding equipment
- Compact angle grinder
- Body saw
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

20.3 Procedure

- Outer side member removed ⇒ page 294

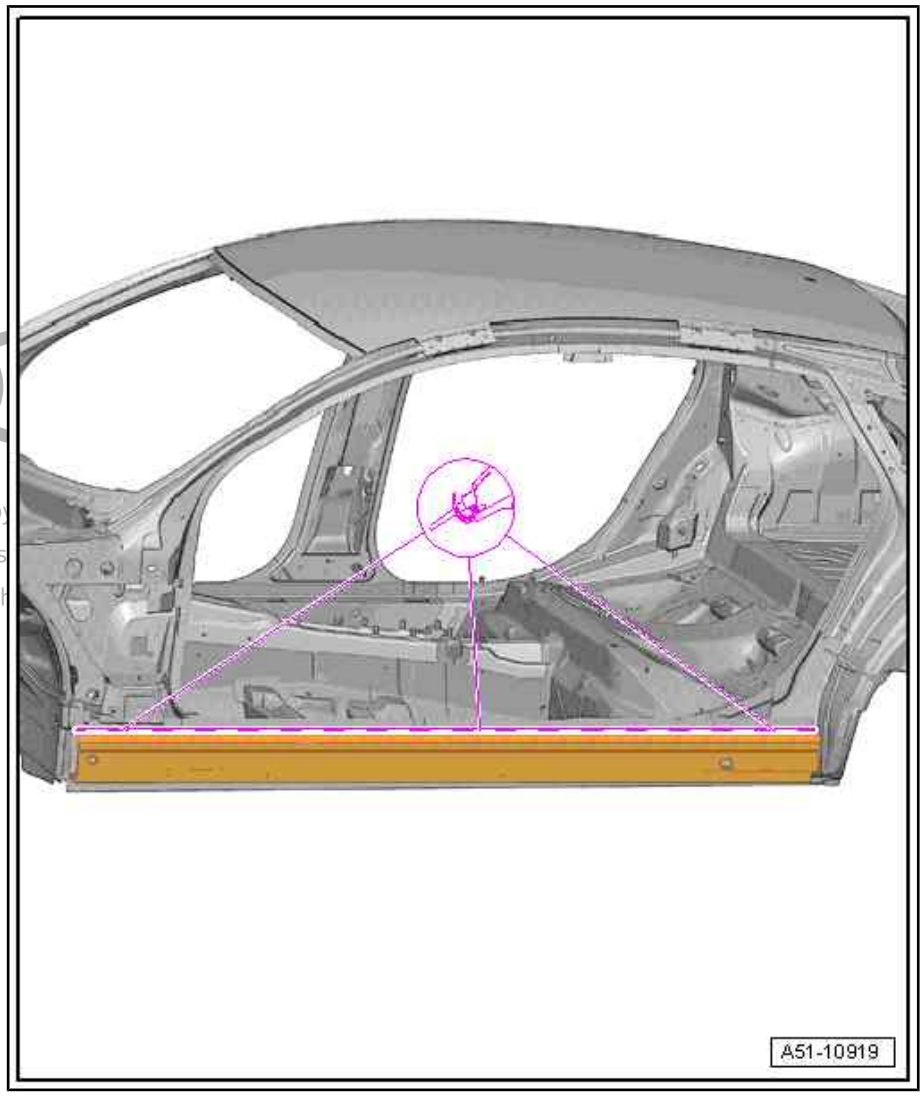
- Side panel removed (Avant) ⇒ page 370
- Side panel removed (Saloon) ⇒ page 362
- Outer A-pillar removed ⇒ page 253

Cutting locations

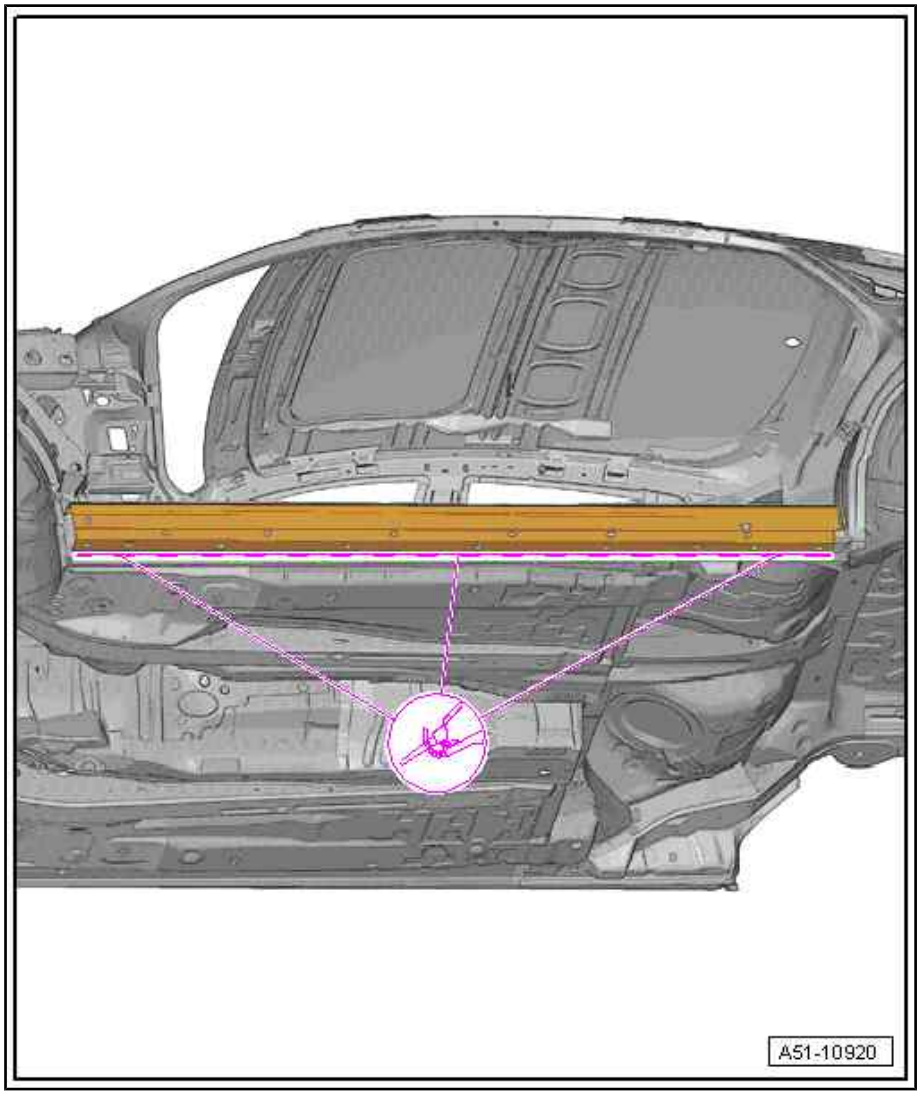
– Make separating cuts according to extent of damage using body saw .

– Make upper separating cut on side member using body saw .

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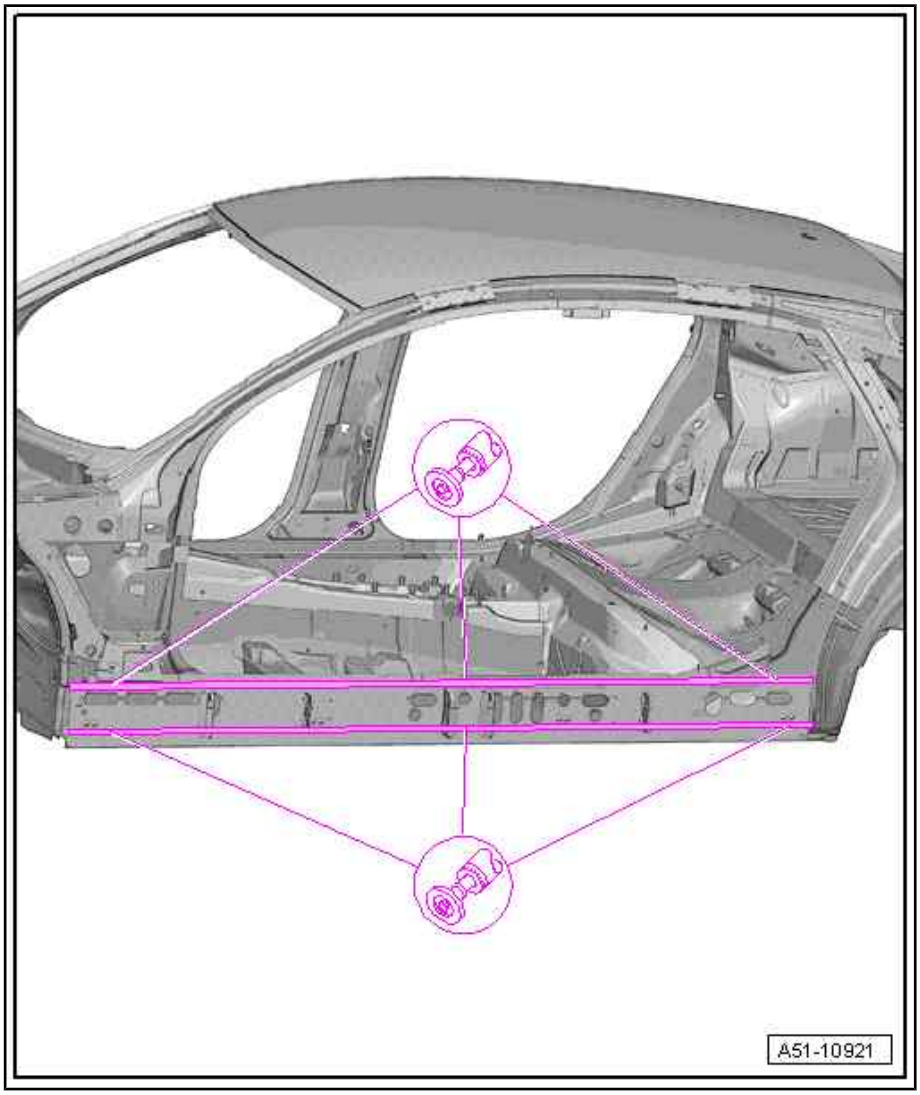


– Make lower separating cut on side member using body saw .



– Remove remaining material using compact angle grinder .

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Replacement part

- Inner side member

Note

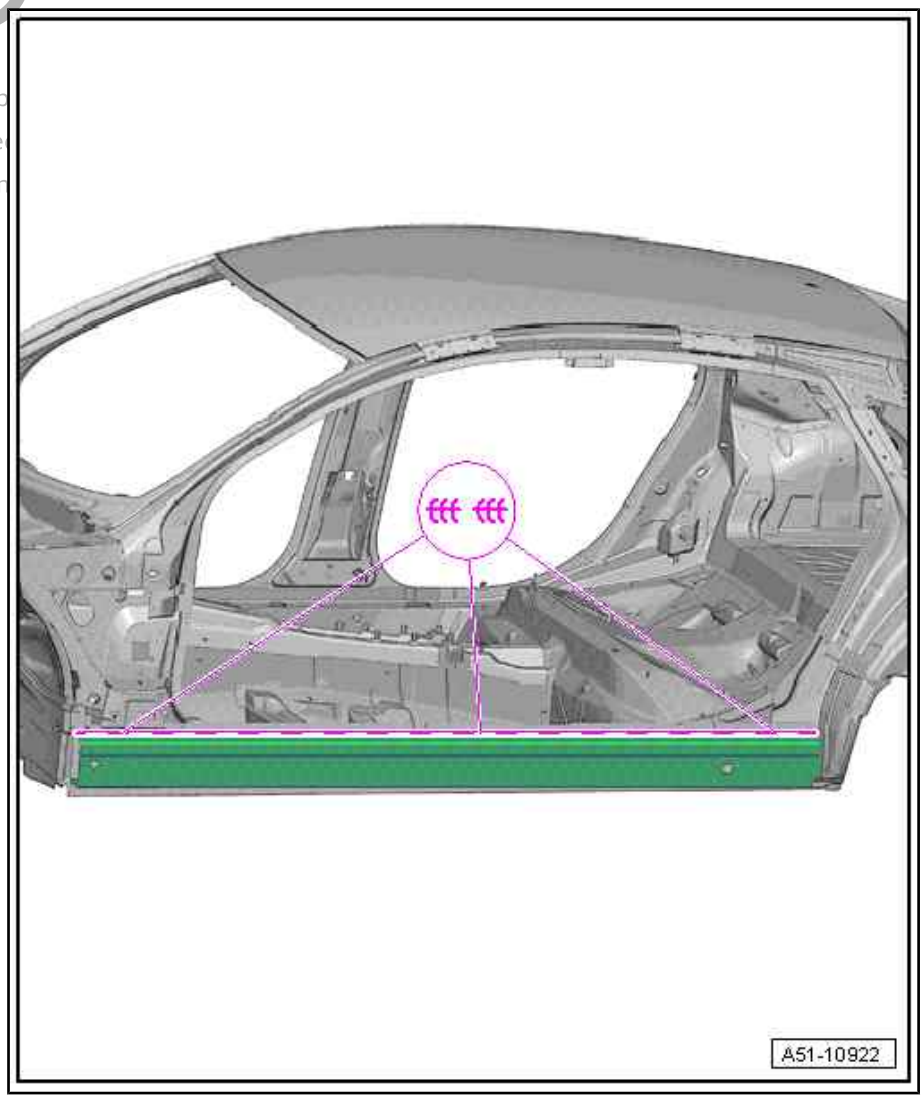
Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.

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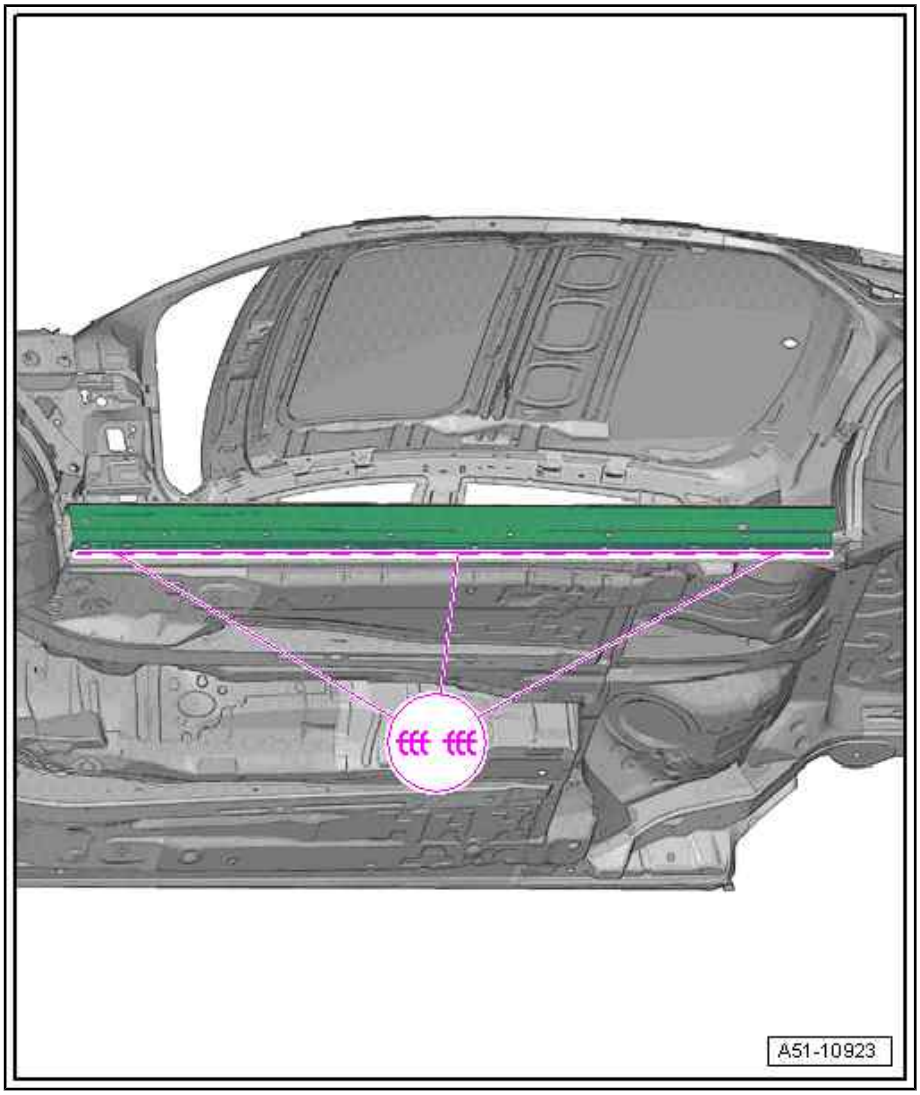
Welding in

– Weld in side member with fillet weld at inner side member reinforcement using shielded arc welding equipment : SG continuous seam (staggered - with gaps).

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– Weld in side member with fillet weld at inner side member reinforcement using shielded arc welding equipment : SG continuous seam (staggered - with gaps).



- Welding in outer side member ⇒ page 294
- Welding in side panel (Saloon) ⇒ page 362
- Welding in side panel (Avant) ⇒ page 370
- Welding in outer A-pillar ⇒ page 253
- Welding in inner A-pillar ⇒ page 260

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21 Inner side member - Renewal (Avant)

1 - Inner A-pillar reinforcement

2 - Inner side member

3 - Rear wheel housing

4 - Separating cut

Partial renewal
Partial renewal is possible with this separating cut.

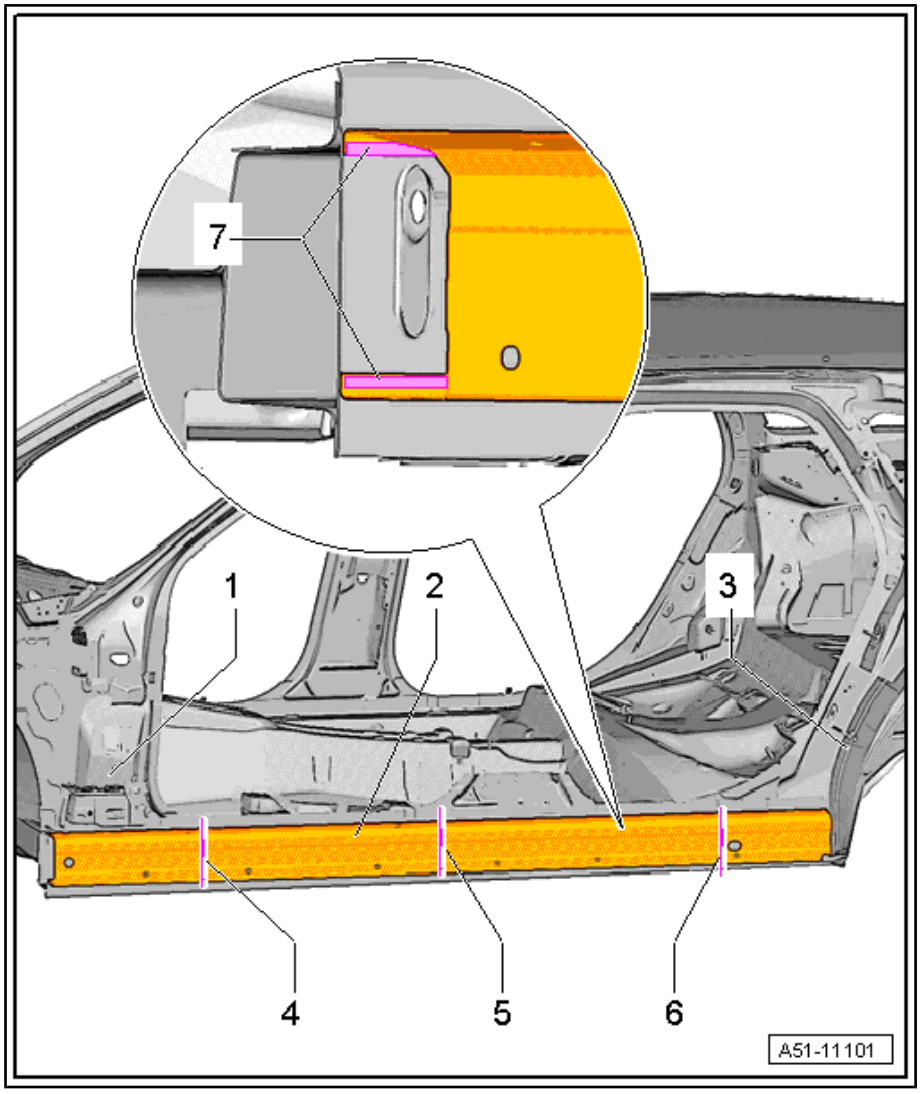
5 - Separating cut

Partial renewal
Partial renewal is possible with this separating cut.

6 - Separating cut

Partial renewal
Partial renewal is possible with this separating cut.

7 - Laser weld seam



21.1 Notes for vehicles with hybrid drive

⇒ page 5

21.2 Tools

Special tools and workshop equipment required

- Shielded arc welding equipment
- Compact angle grinder
- Body saw
- Spot weld breaker

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Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

21.3 Procedure

- Outer side member removed ⇒ page 294

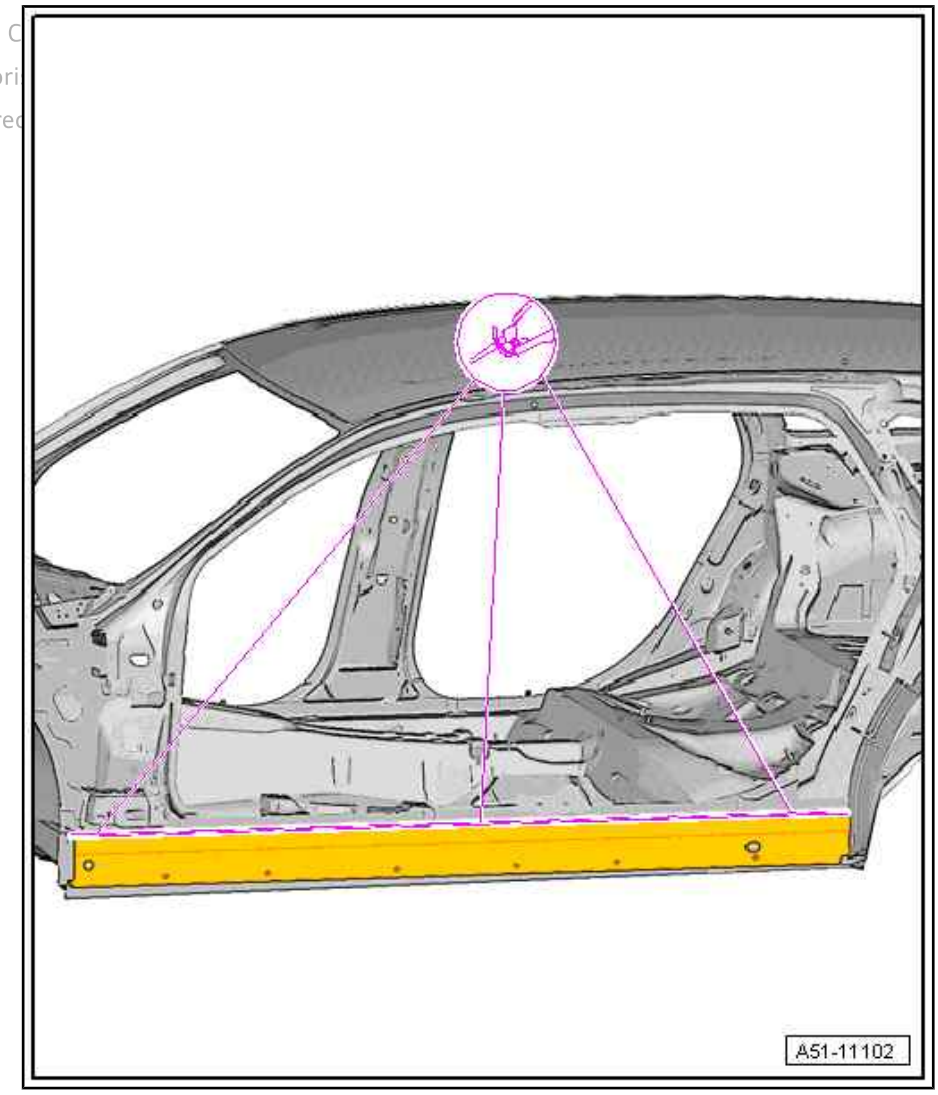
- Side panel removed (Avant) ⇒ page 370
- Side panel removed (Saloon) ⇒ page 362
- Outer A-pillar removed ⇒ page 253

Cutting locations

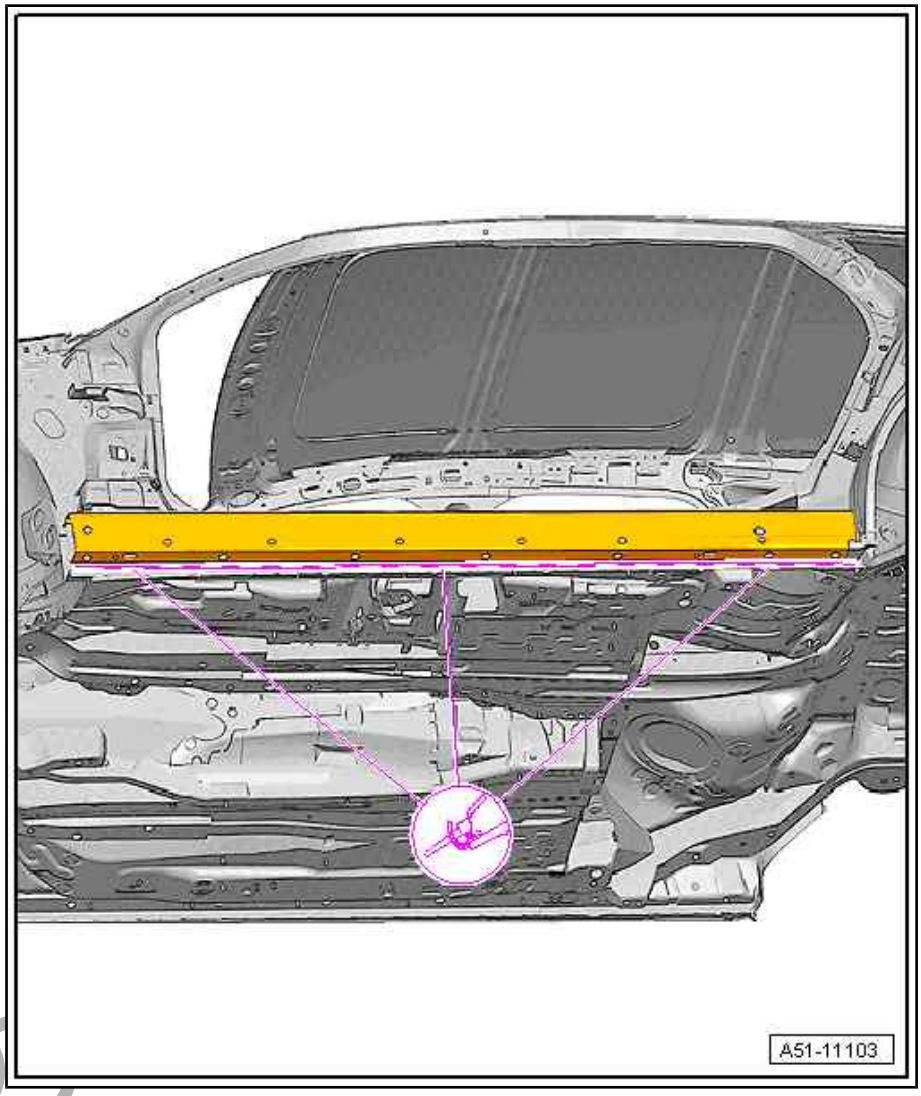
– Make separating cuts according to extent of damage using body saw .

– Make upper separating cut on side member using body saw .

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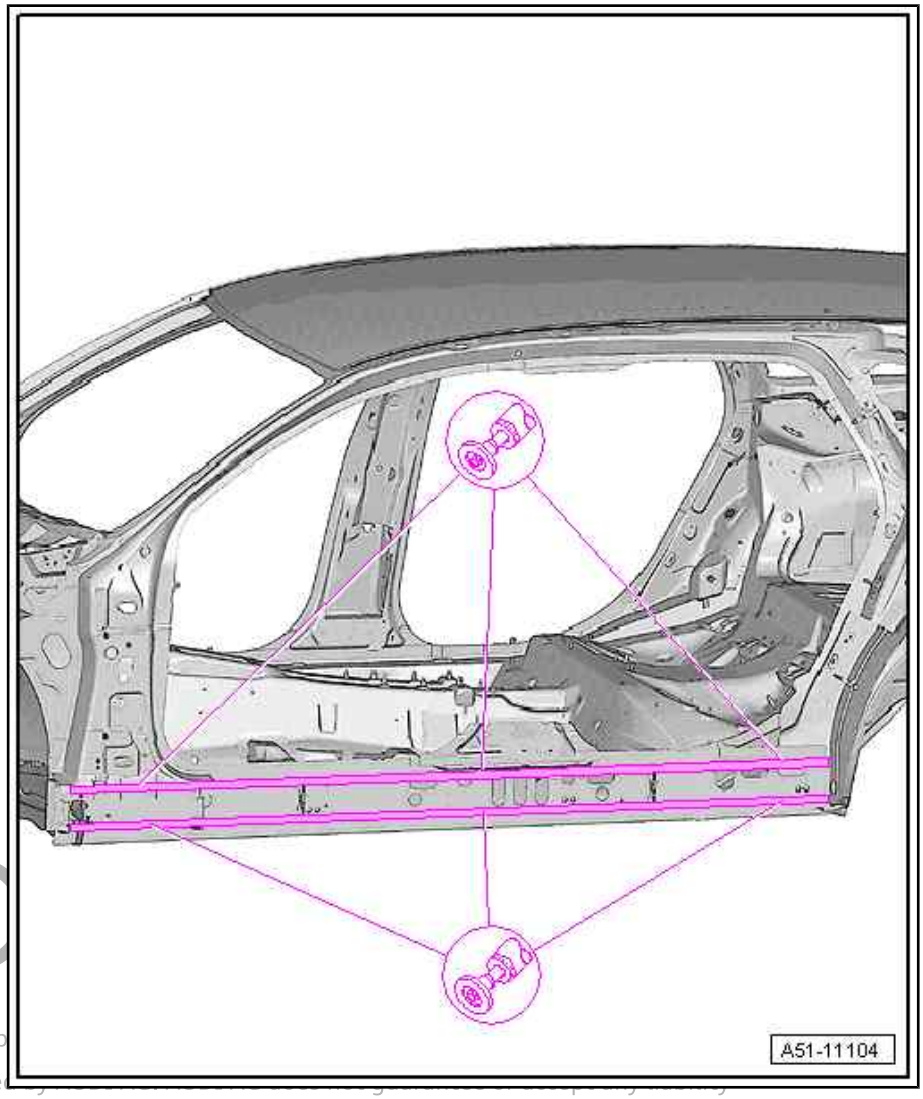


– Make lower separating cut on side member using body saw .



– Remove remaining material using compact angle grinder .

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Replacement part

- Inner side member

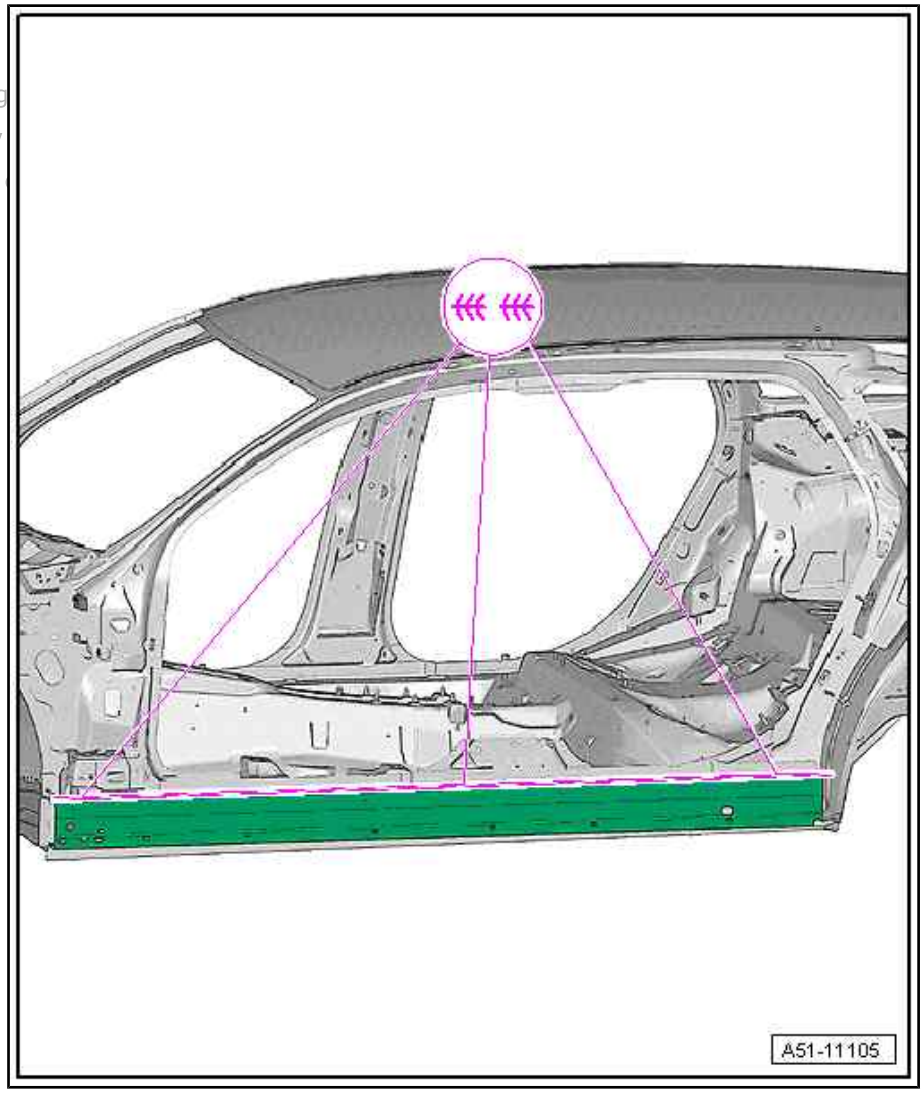
Note

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

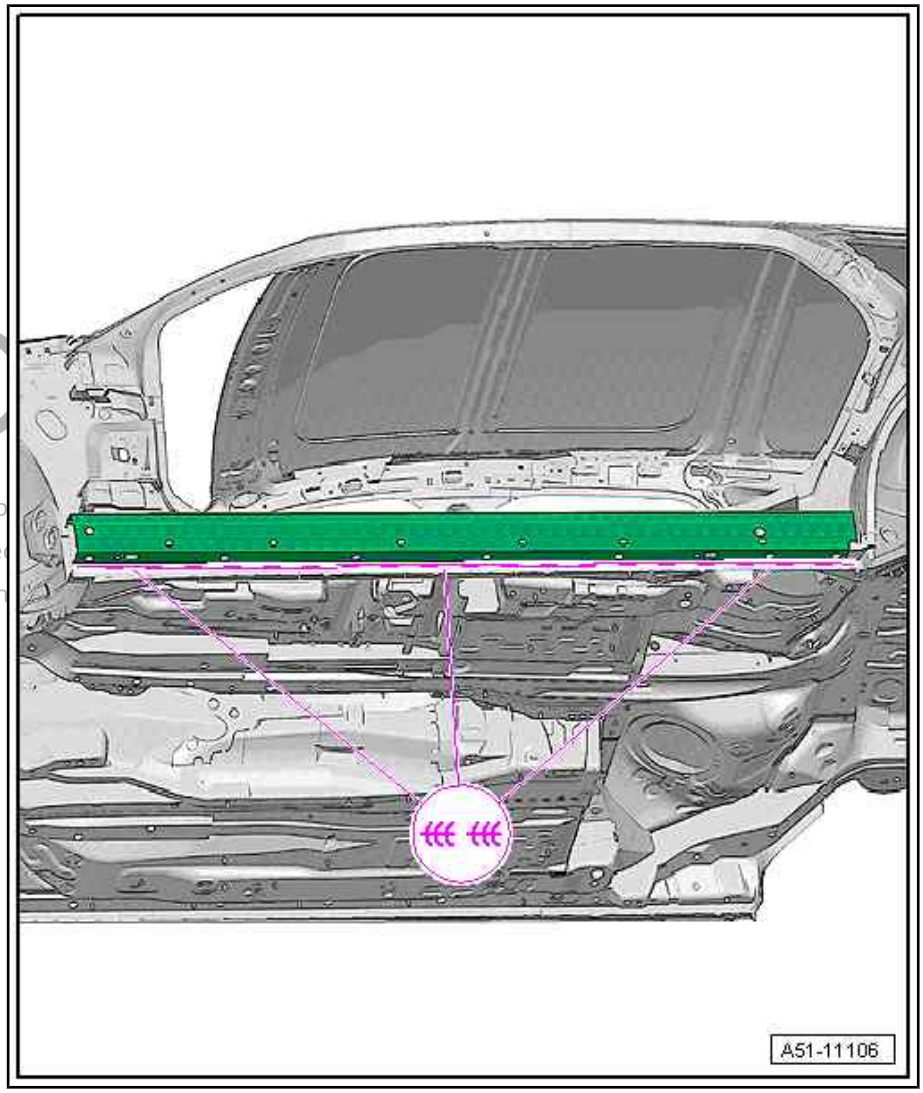
– Weld in side member with fillet weld at inner side member reinforcement using shielded arc welding equipment : SG continuous seam (staggered - with gaps).

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– Weld in side member with fillet weld at inner side member reinforcement using shielded arc welding equipment : SG continuous seam (staggered - with gaps).

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- Welding in outer side member ⇒ page 294
- Welding in side panel ⇒ page 370
- Welding in outer A-pillar ⇒ page 253
- Welding in inner A-pillar ⇒ page 260

RO: 51 47 55 50

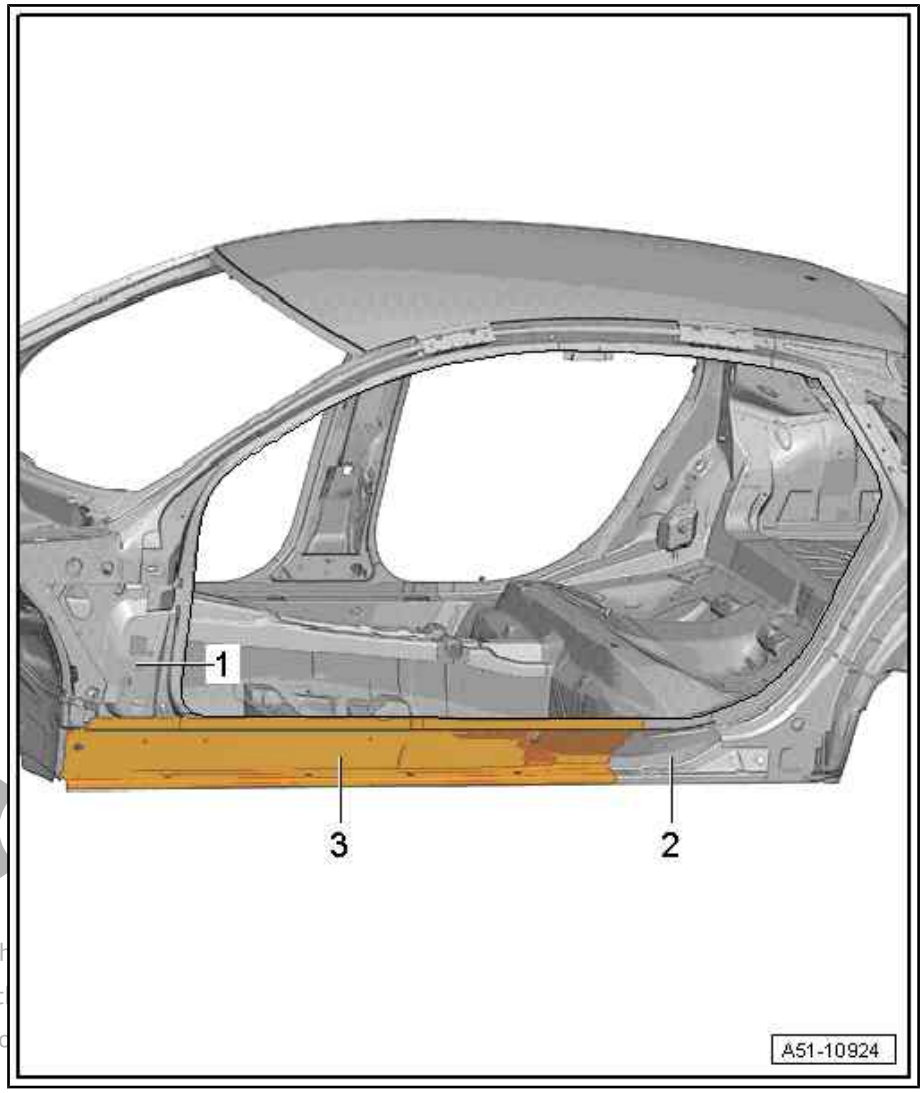
22 Inner side member reinforcement - Renewal

(Saloon and Avant identical)

1 - Inner A-pillar reinforcement

2 - Rear longitudinal member

3 - Inner side member reinforcement



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22.1 Notes for vehicles with hybrid drive

⇒ page 5

22.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Drill
- Compact angle grinder
- Body saw
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

22.3 Procedure

- Outer side member removed ⇒ page 294
- Side panel removed (Avant) ⇒ page 370
- Side panel removed (Saloon) ⇒ page 362
- Outer A-pillar removed ⇒ page 253

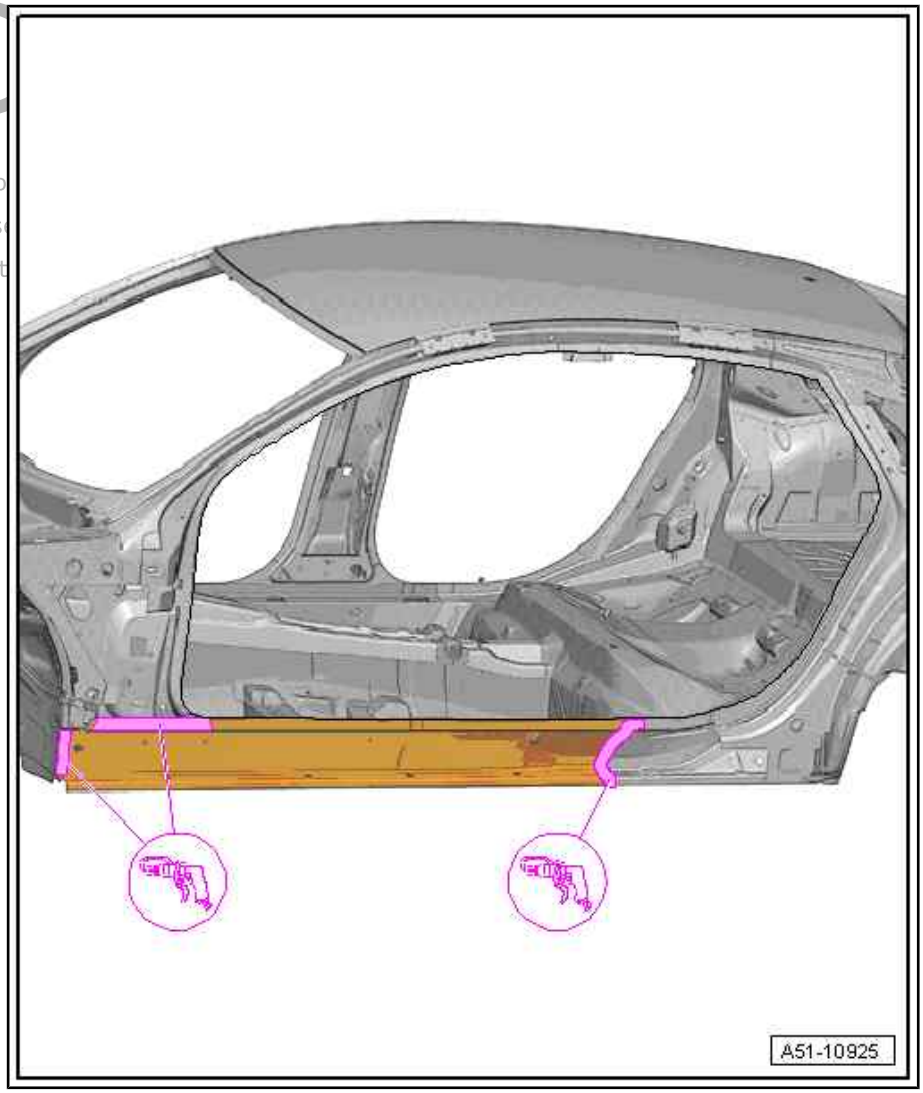
Note

The inner side member reinforcement consists of ultra-high-strength hot-formed steel.

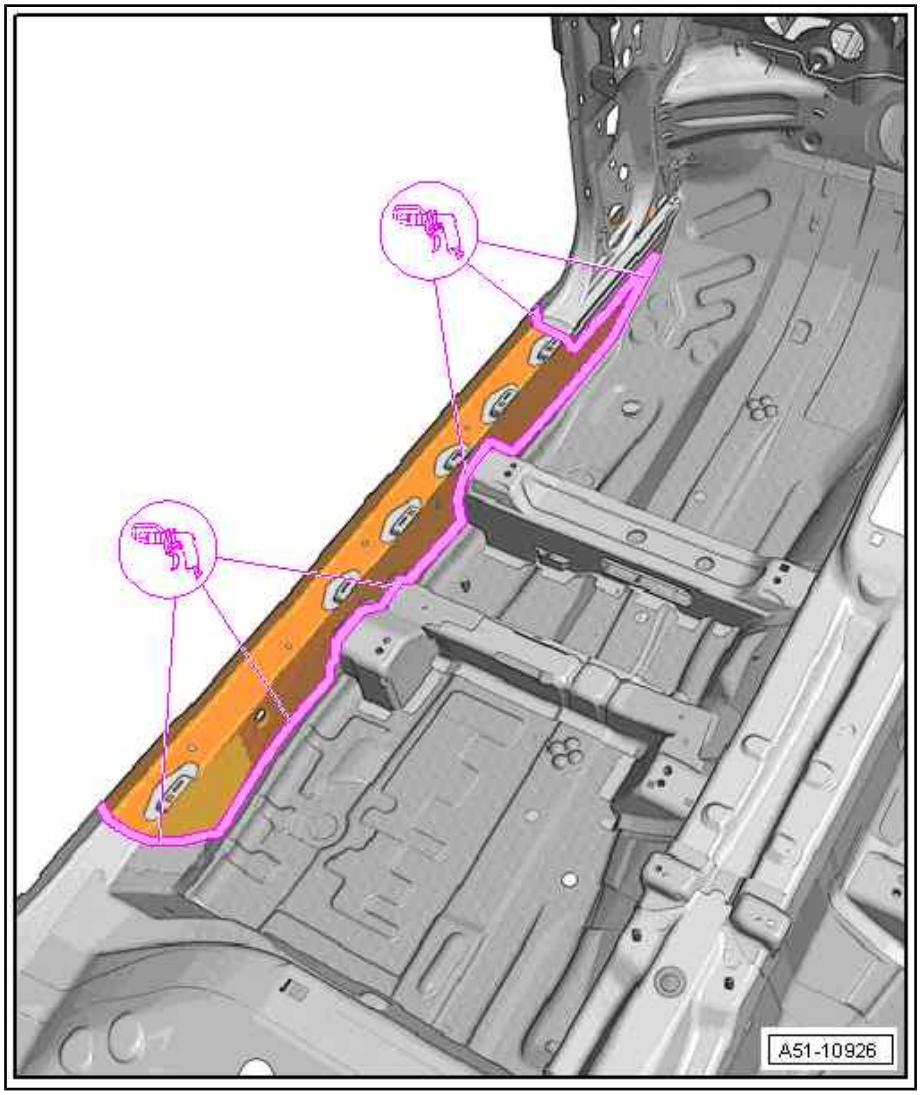
Cutting locations

– Separate original joint using spot weld breaker .

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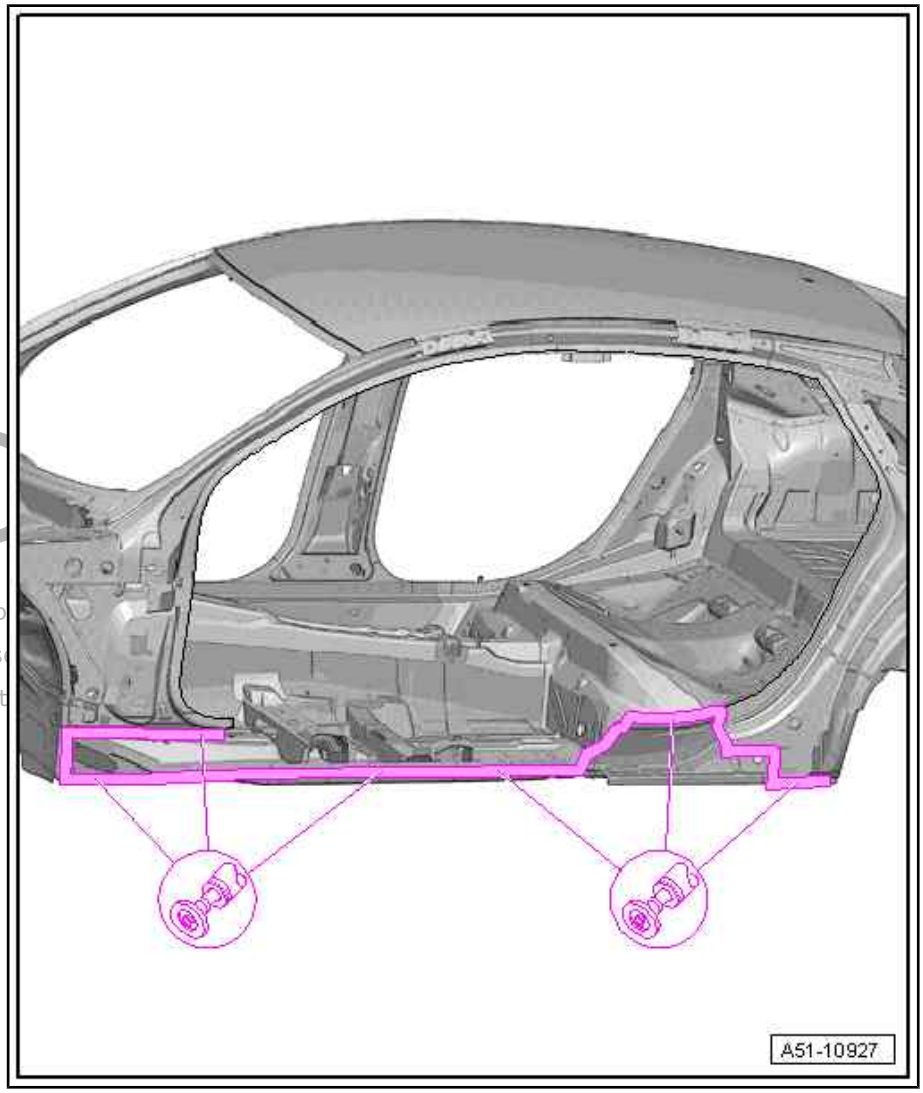
– Separate original joint at inside of floor panel using spot weld breaker .



– Remove remaining material using compact angle grinder .

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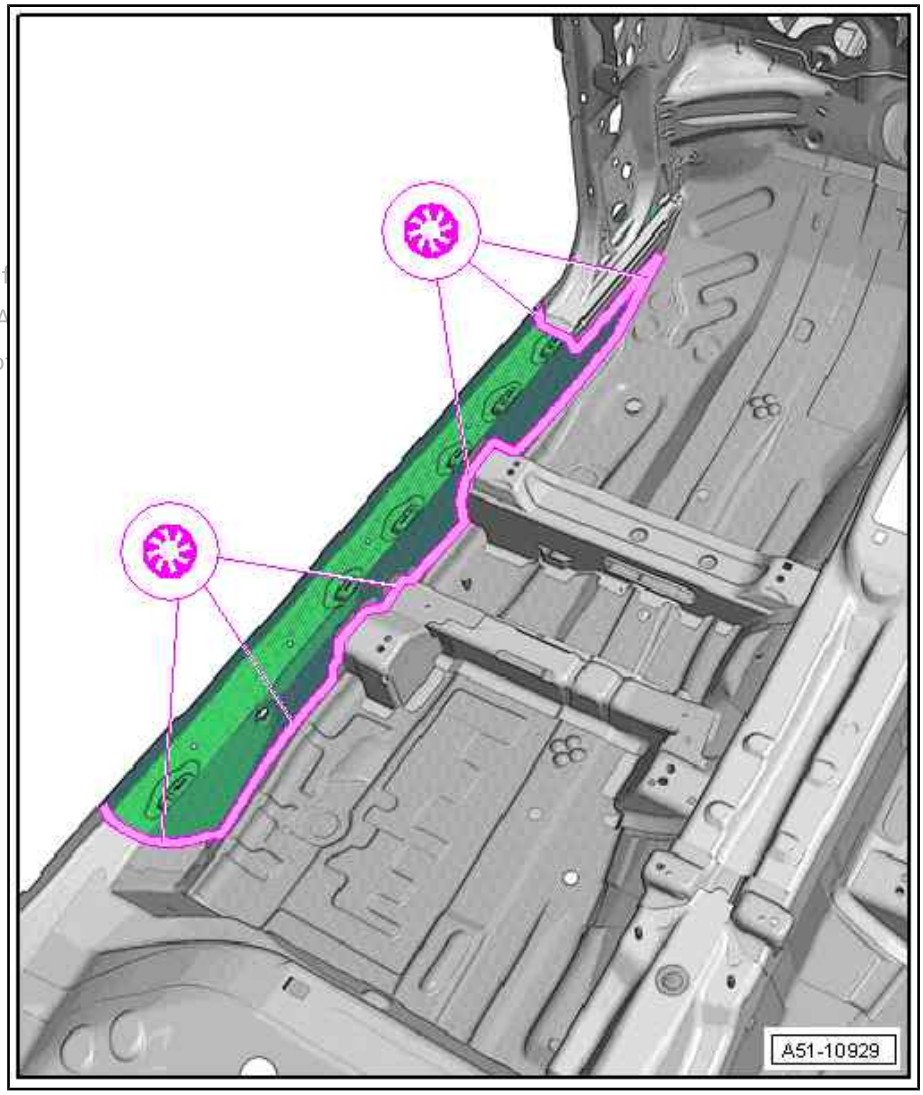
Replacement part

- Inner side member reinforcement

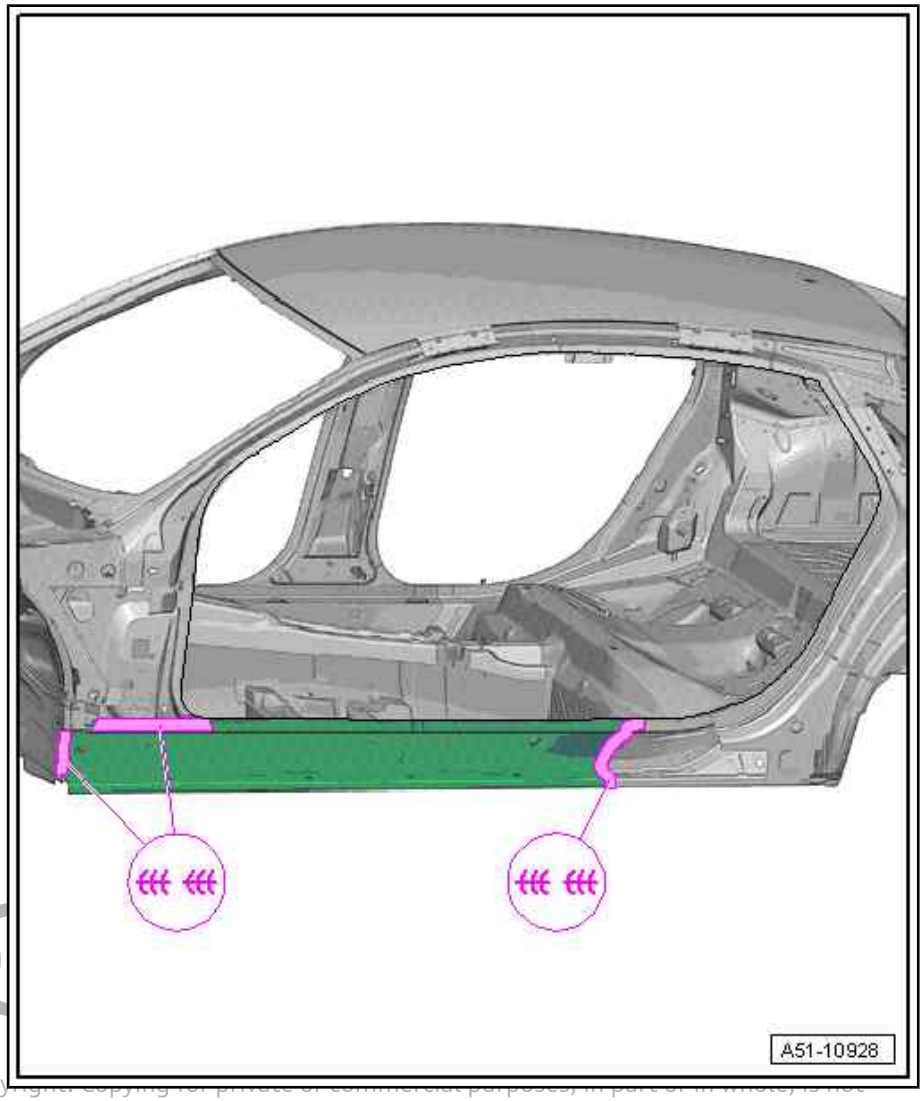
Welding in

– Weld in inner side member reinforcement using shielded arc welding equipment : SG plug weld seam.

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– Weld in inner side member reinforcement using shielded arc welding equipment : SG continuous seam (staggered - with gaps).



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- Welding in outer side member ⇒ page 294
- Welding in side panel (Saloon) ⇒ page 362
- Welding in side panel (Avant) ⇒ page 370
- Weld in outer A-pillar ⇒ page 253 .
- Welding in inner A-pillar ⇒ page 260

RO: 51 87 55 00

23 Centre seat cross member - Renewal

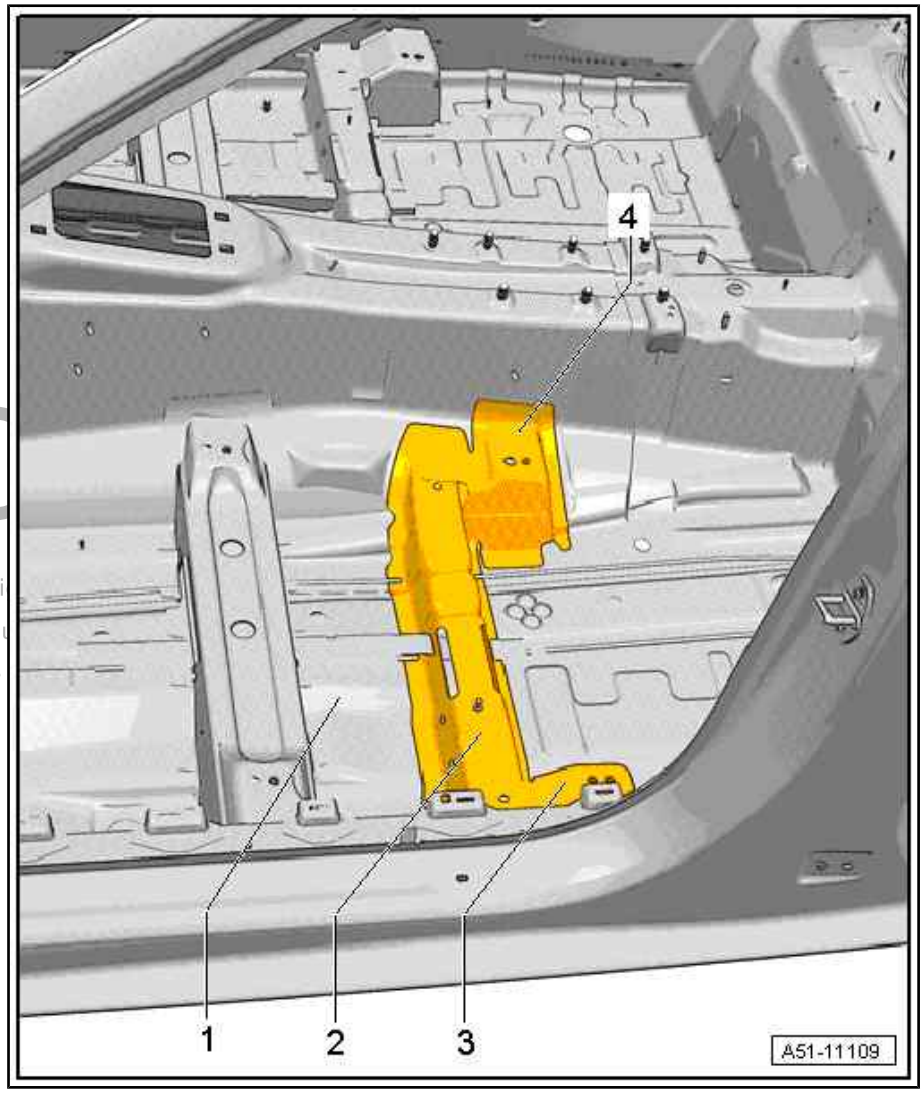
Saloon and Avant identical

1 - Floor panel

2 - Seat cross member

3 - Reinforcement for seat cross member (outer)

4 - Reinforcement for seat cross member (inner)



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23.1 Notes for vehicles with hybrid drive

⇒ page 5

23.2 Tools

Special tools and workshop equipment required

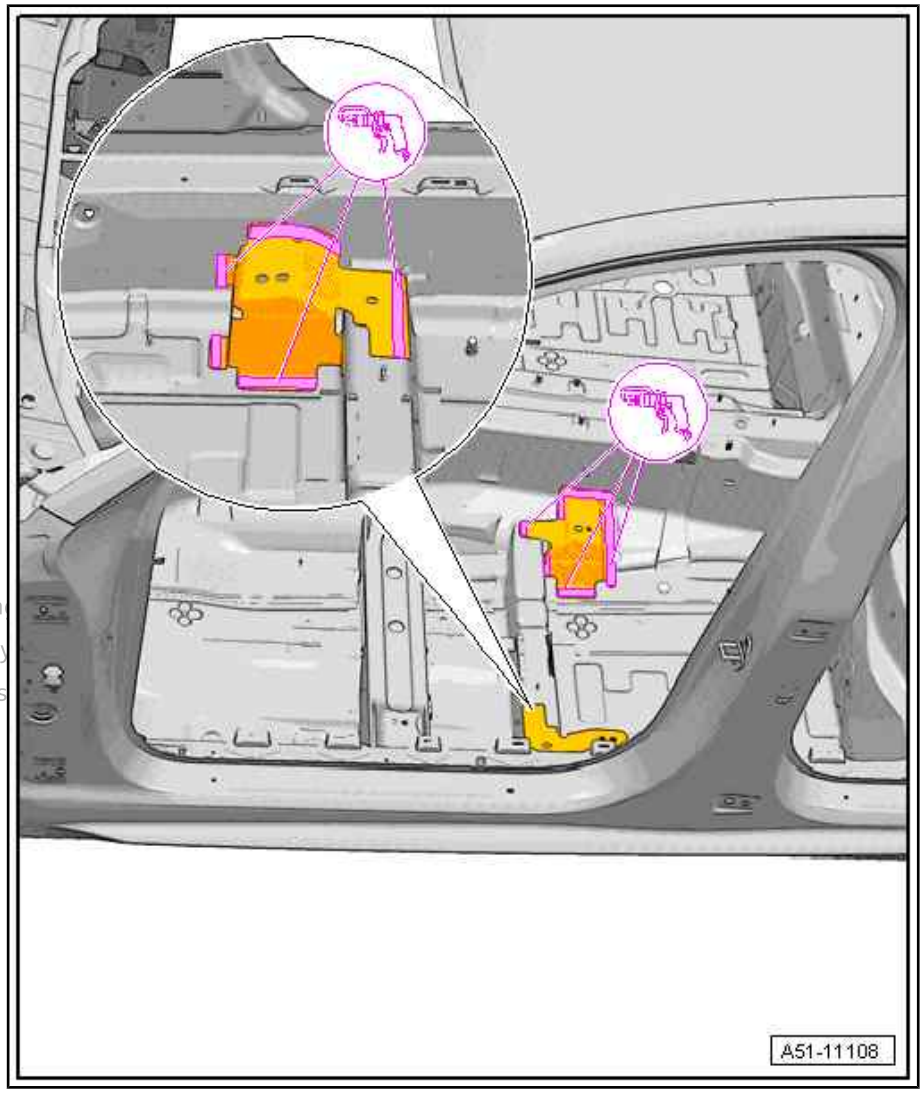
- Resistance spot welder
- Shielded arc welding equipment
- Drill
- Body saw
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

23.3 Procedure

Cutting locations

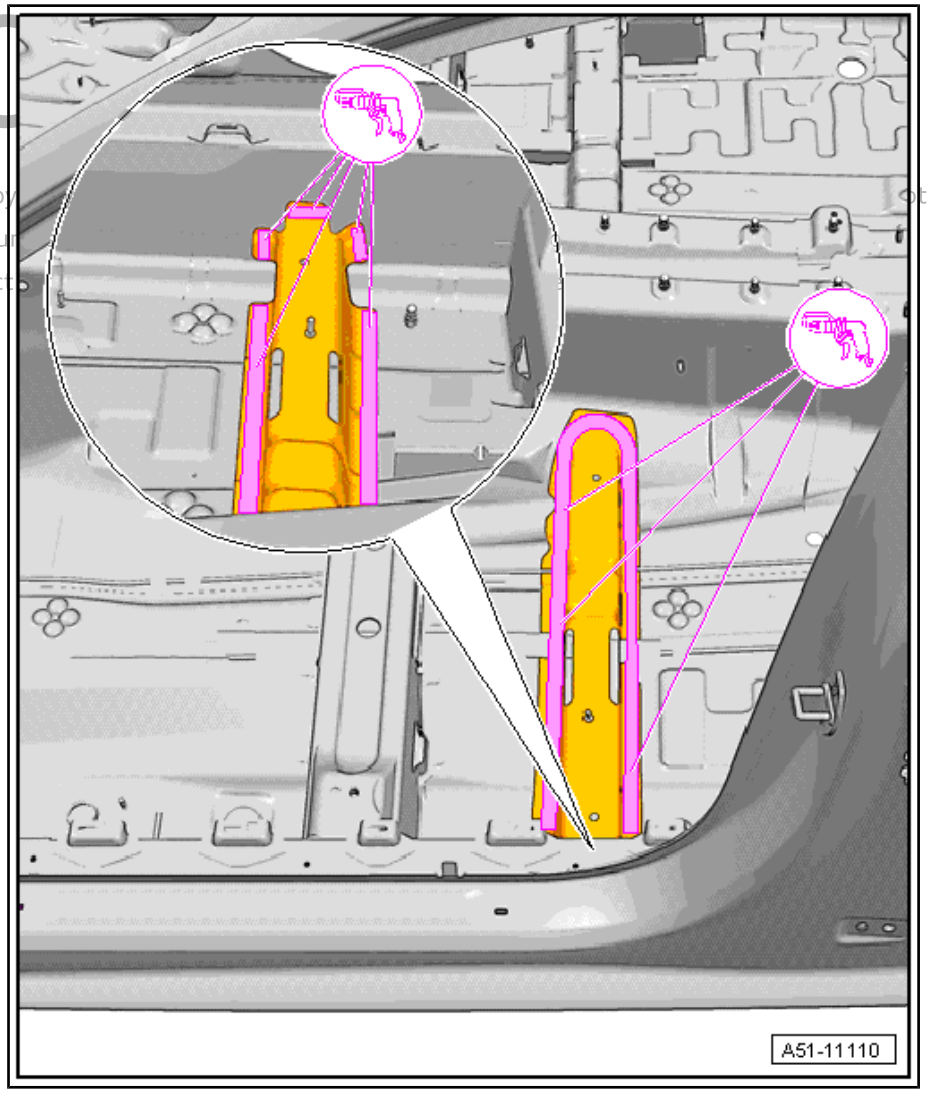
– Separate original joint between inner seat cross member and floor panel using spot weld breaker .



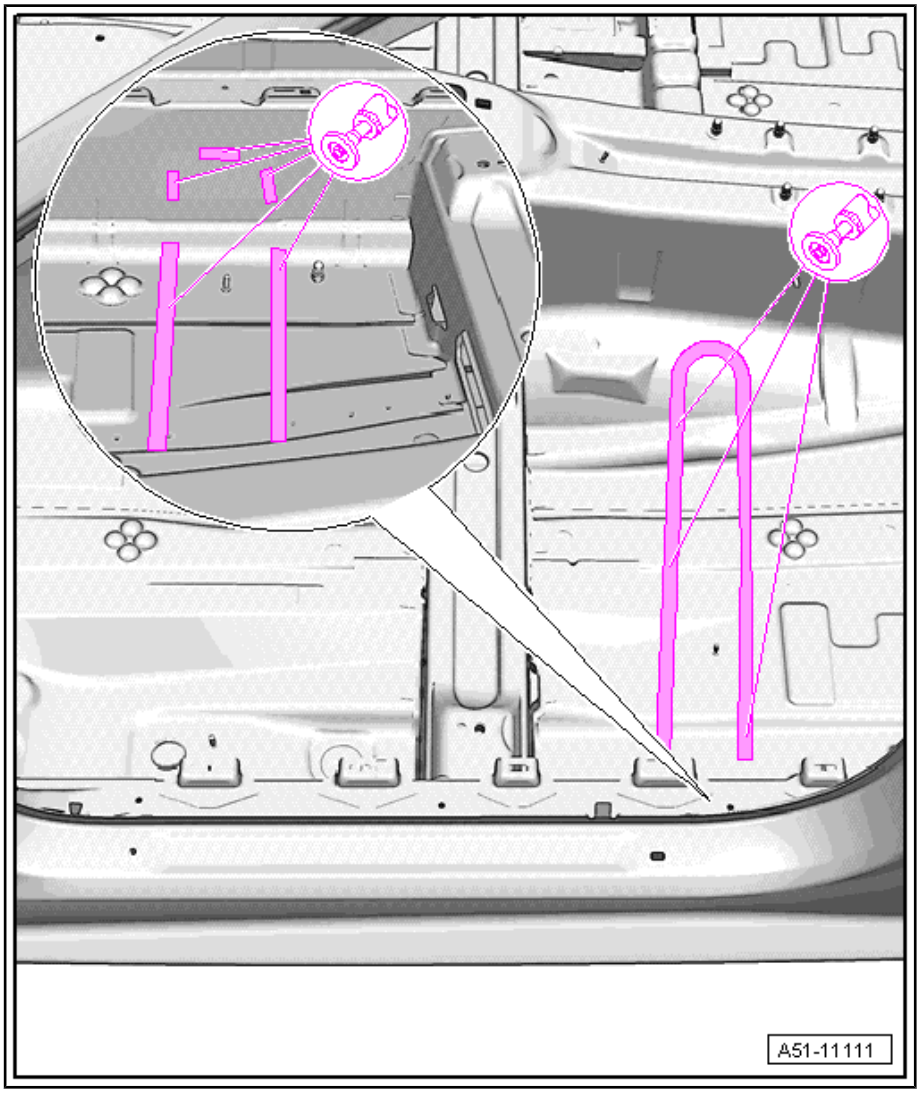
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– Separate original joint between seat cross member and floor panel using spot weld breaker .

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– Remove remaining material using compact angle grinder .



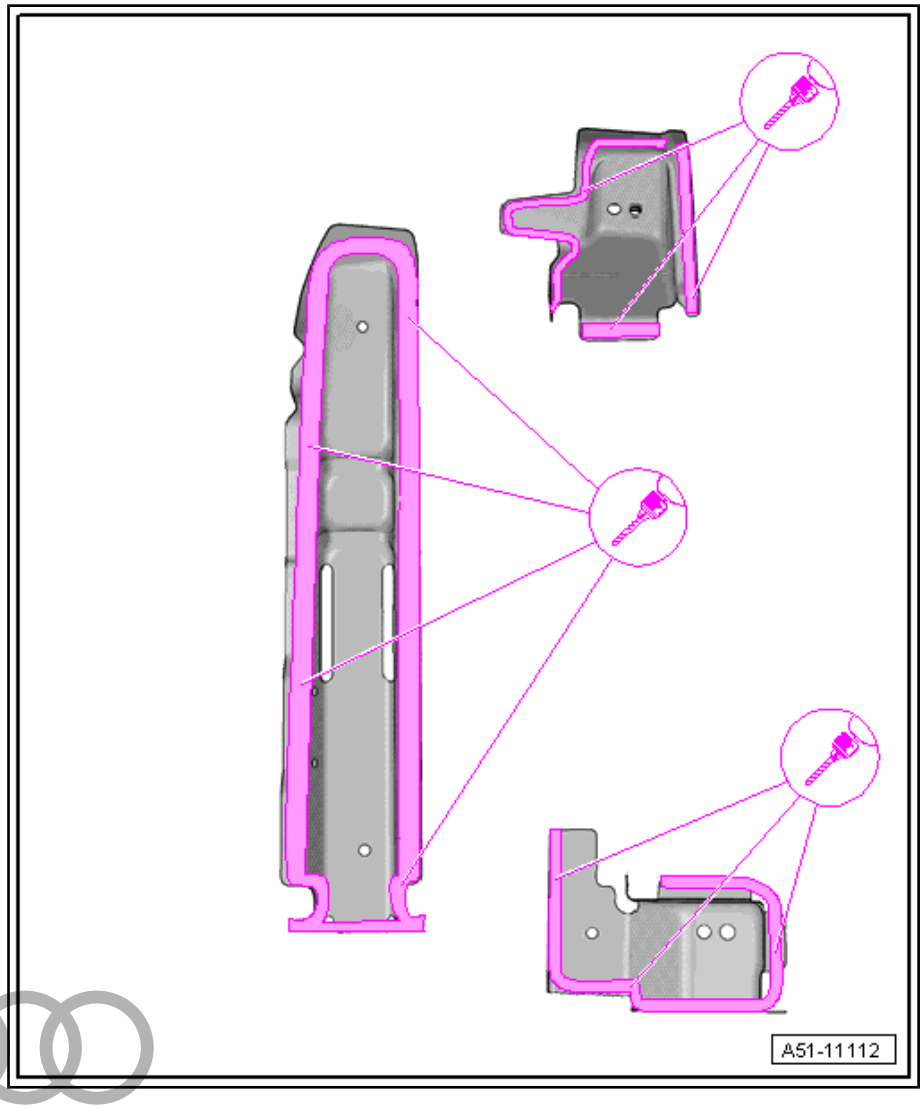
Replacement part

- Seat cross member

Preparing new part

– Drill holes for SG plug weld seam, 8 mm ∅ using drill .

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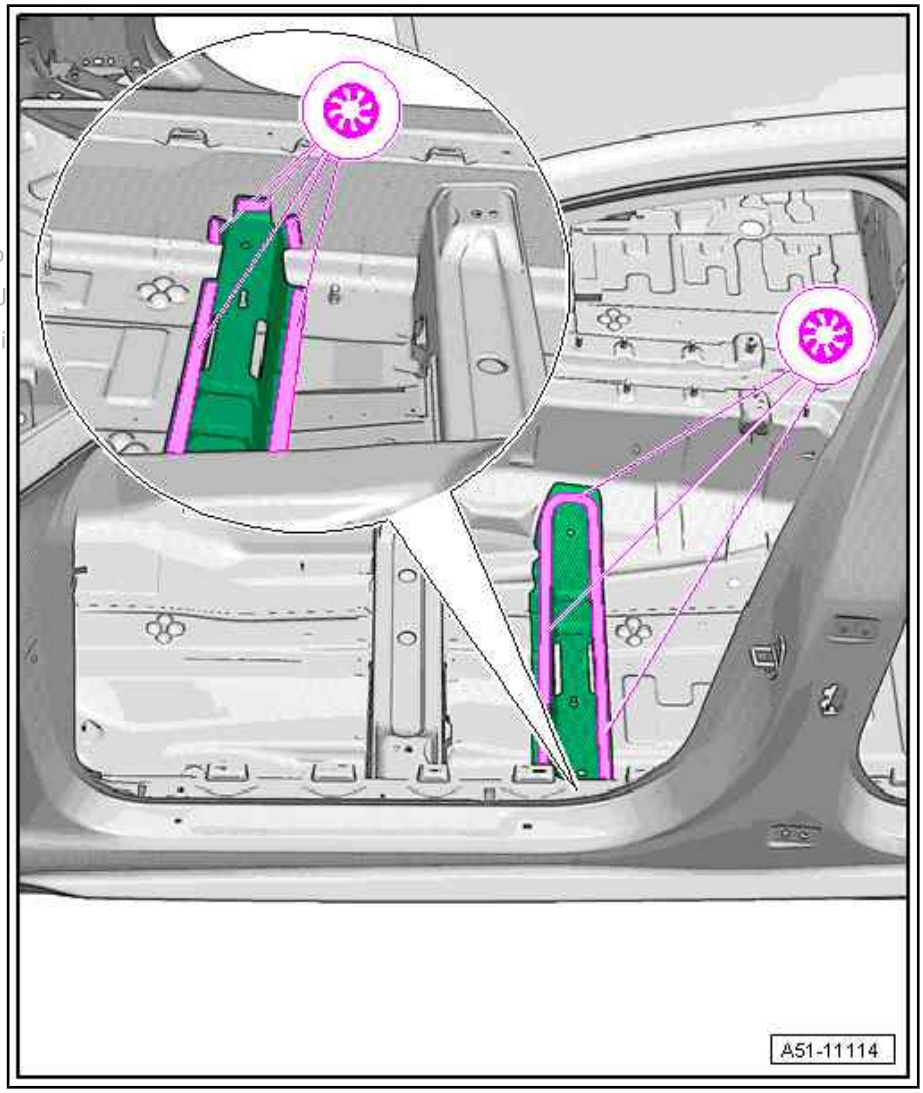


Welding in

– Match up new parts and fix in position.
– Weld in seat cross member using shielded arc welding equipment : SG plug weld seam.

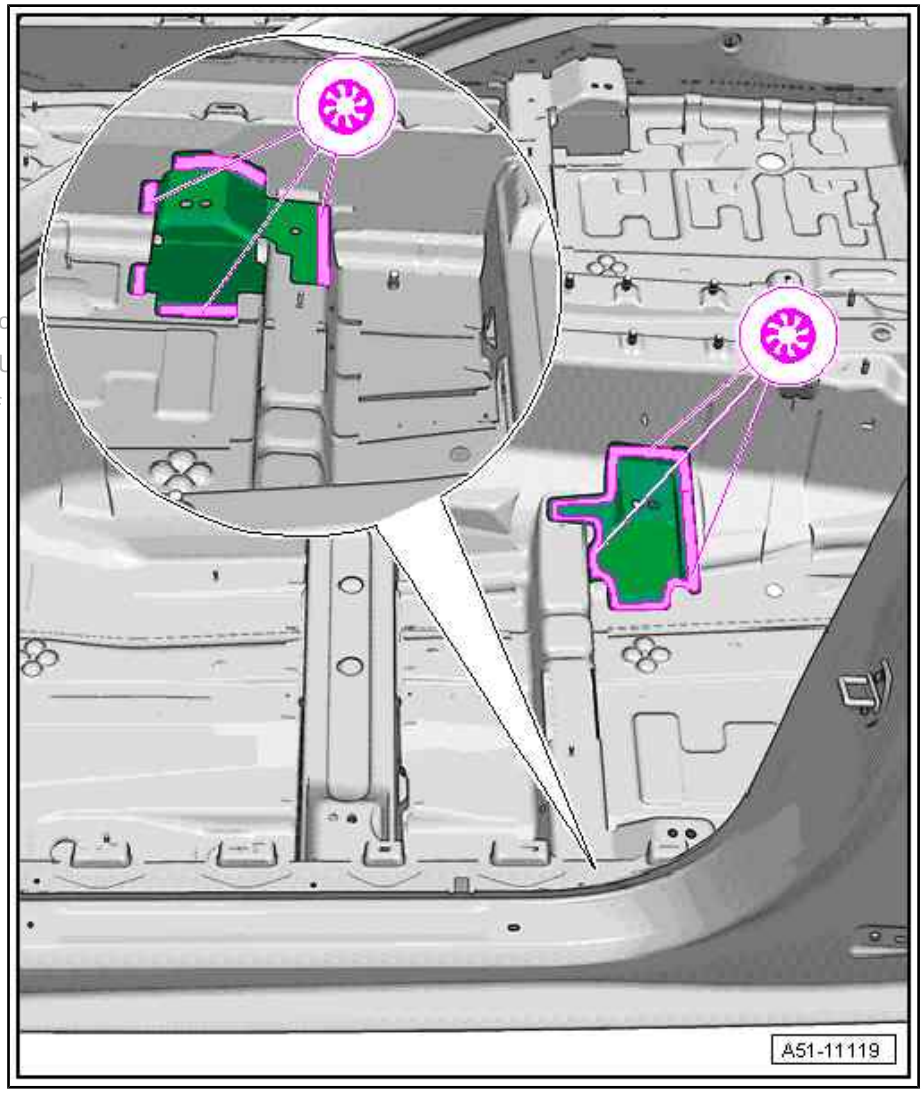
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– Weld in reinforcement for seat cross member using shielded arc welding equipment : SG plug weld seam.

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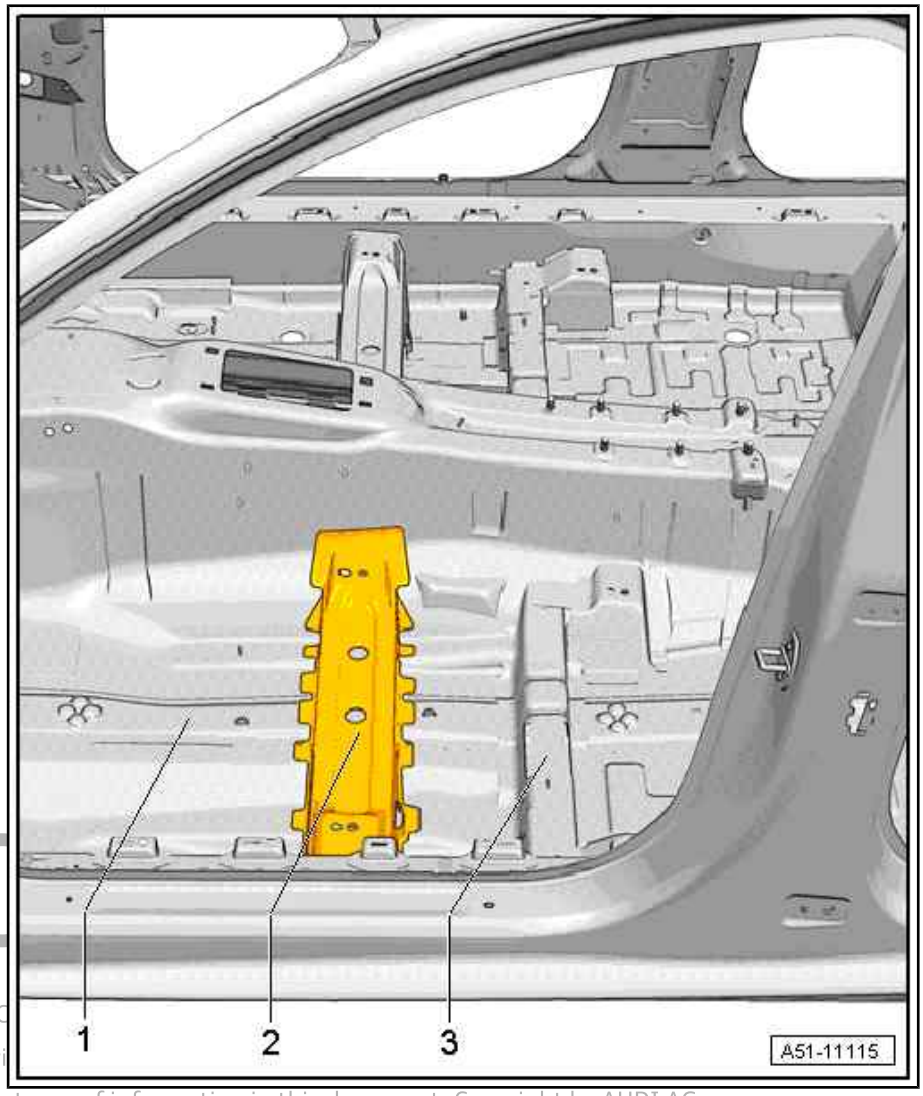
24 Seat cross member - Renewal

Saloon and Avant identical

1 - Floor panel

2 - Seat cross member

3 - Centre seat cross member



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24.1 Notes for vehicles with hybrid drive

⇒ page 5

24.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Drill
- Body saw
- Spot weld breaker

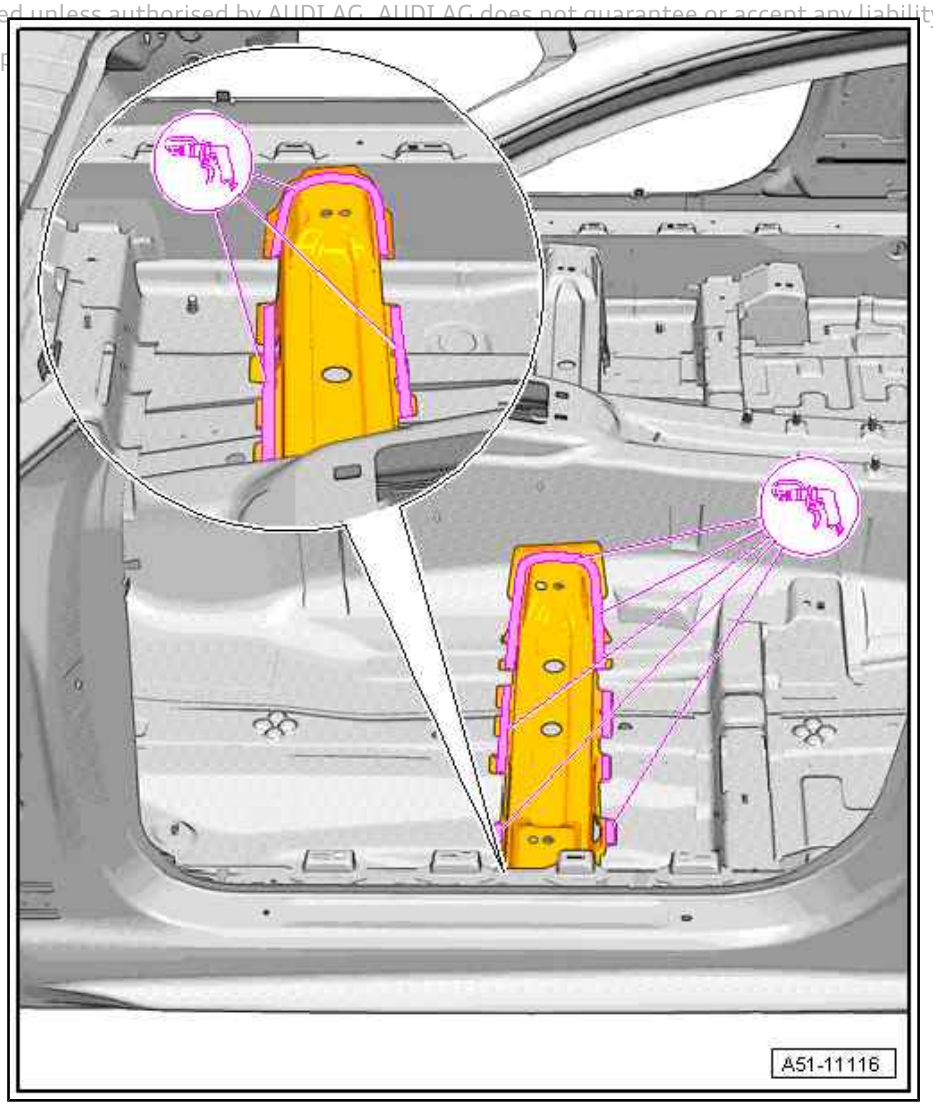
Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

24.3 Procedure

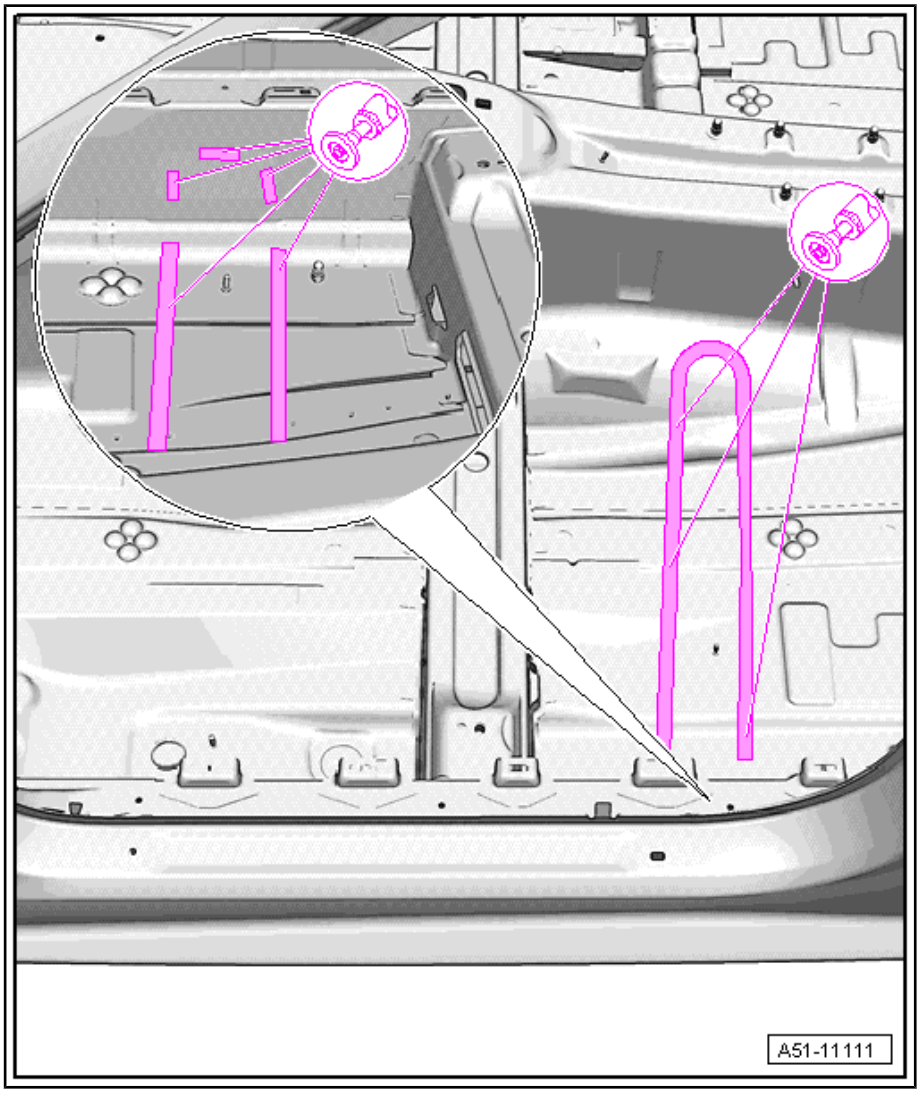
Cutting locations

– Separate original joint between inner seat cross member and floor panel using spot weld breaker .

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– Remove remaining material using compact angle grinder .



Replacement part

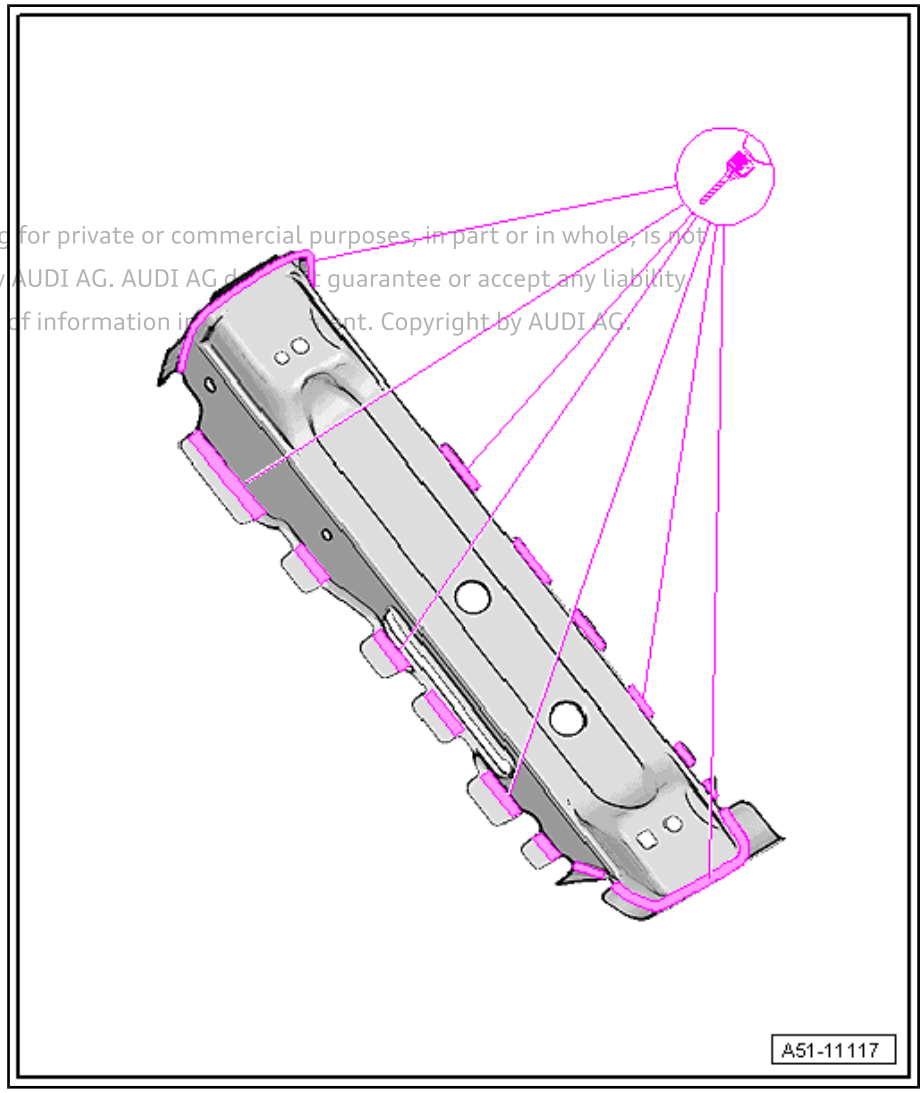
- Seat cross member

Preparing new part

– Drill holes for SG plug weld seam, 8 mm ∅ using drill .

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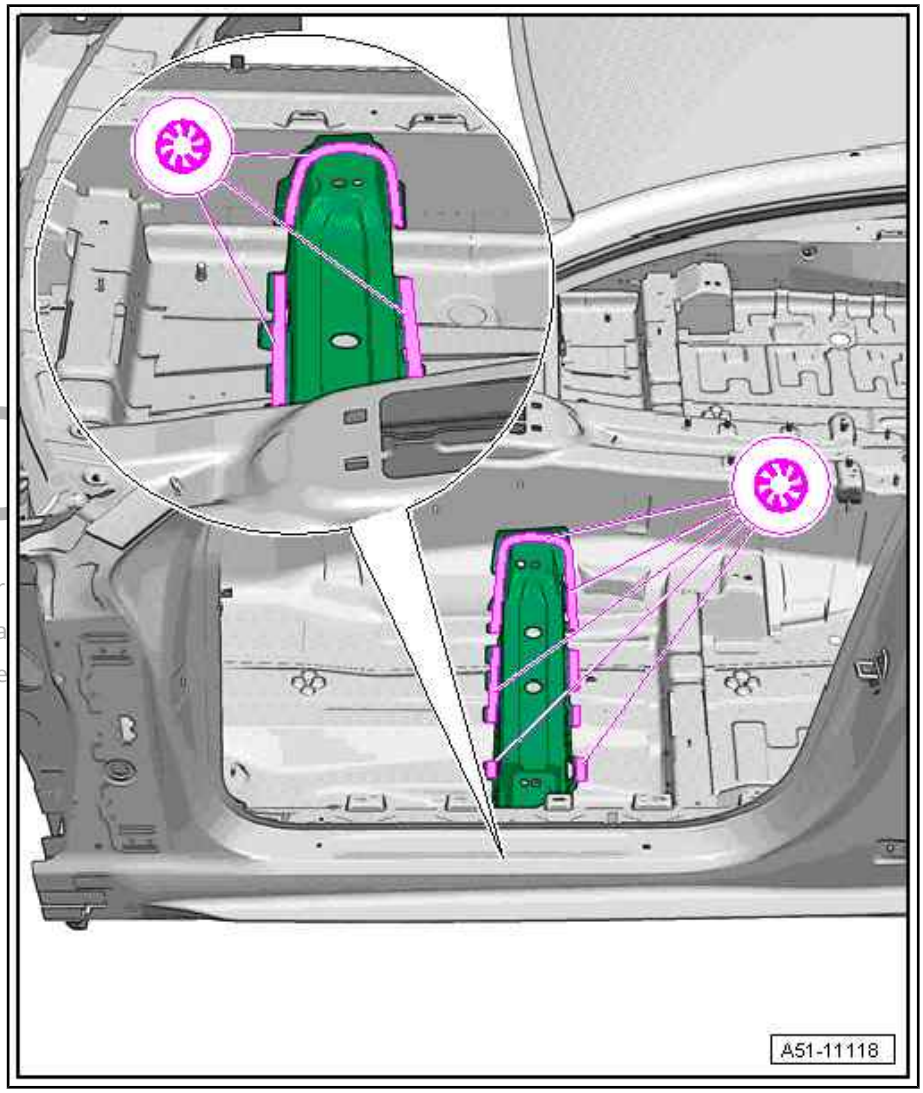
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Welding in

– Match up new parts and fix in position.

– Weld in seat cross member using shielded arc welding equipment : SG plug weld seam.



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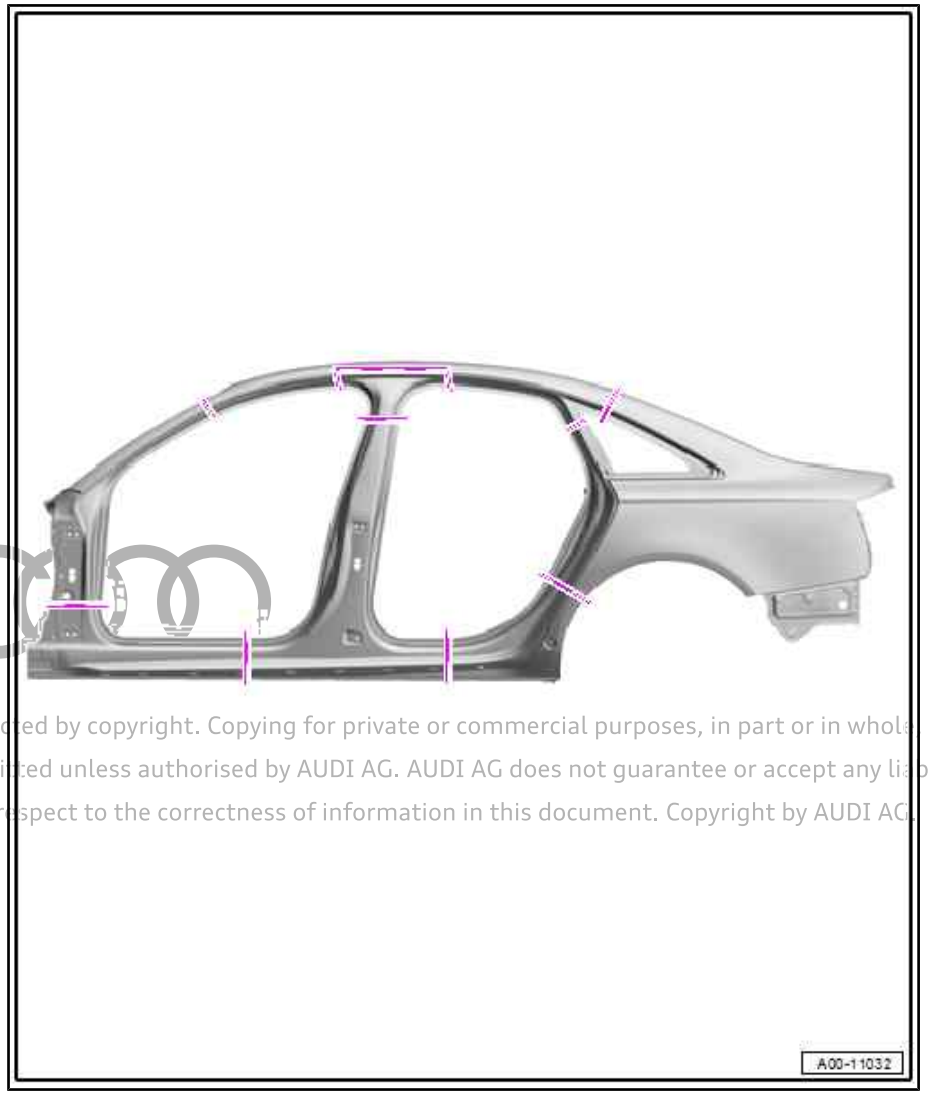
53 – Body - rear

1 Permitted separating cuts on complete side panel

Note

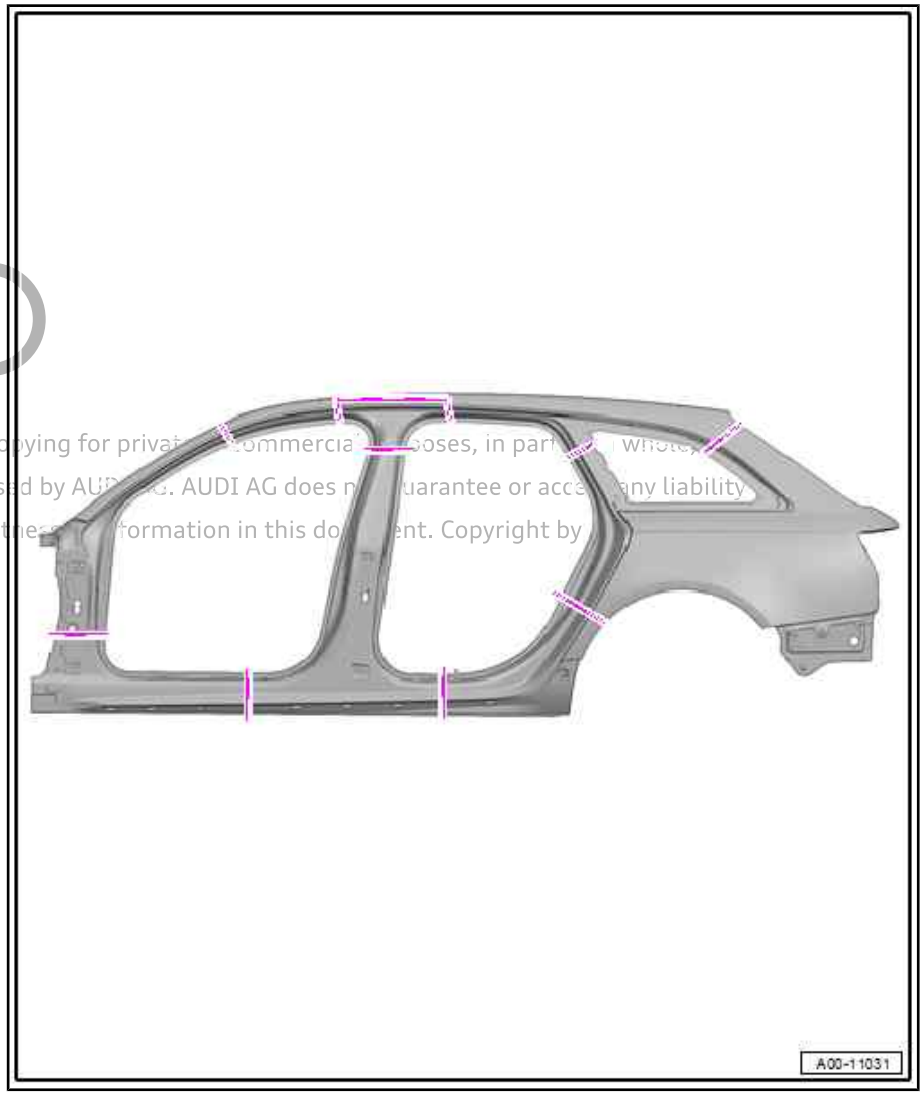
- *Use only welding equipment approved by AUDI AG.*
- *SG continuous weld seams are approved for the separating cuts shown in the illustration.*

Separating cuts (Saloon)



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Separating cuts (Avant)



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1. Permitted separating cuts on complete side panel

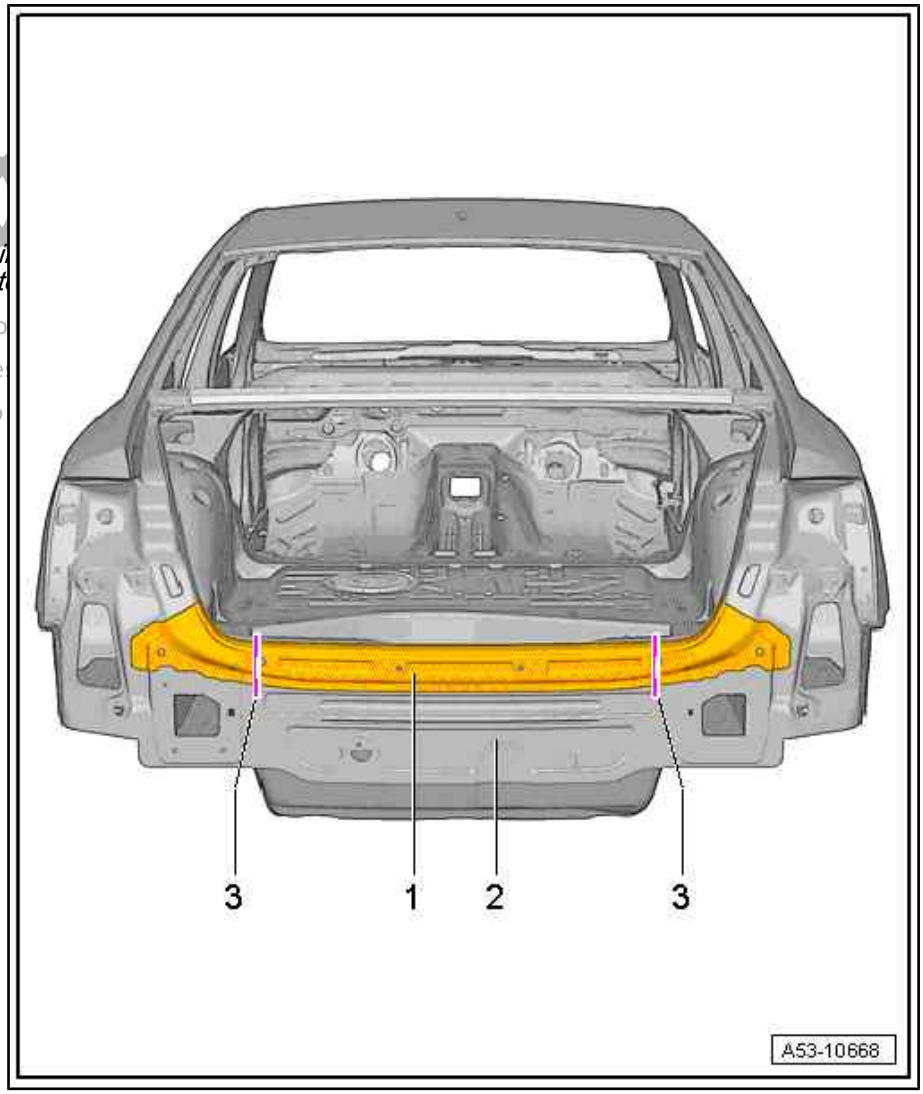
RO: 53 16 55 02

2 Rear upper cross panel - Renewal

1 - Rear upper cross panel

2 - Lower cross panel

3 - Rear cross panel separating cut



Note

Partial renewal is possi
separating cuts illustrat

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2.1 Notes for vehicles with hybrid drive

⇒ page 5

2.2 Tools

Special tools and workshop equipment required

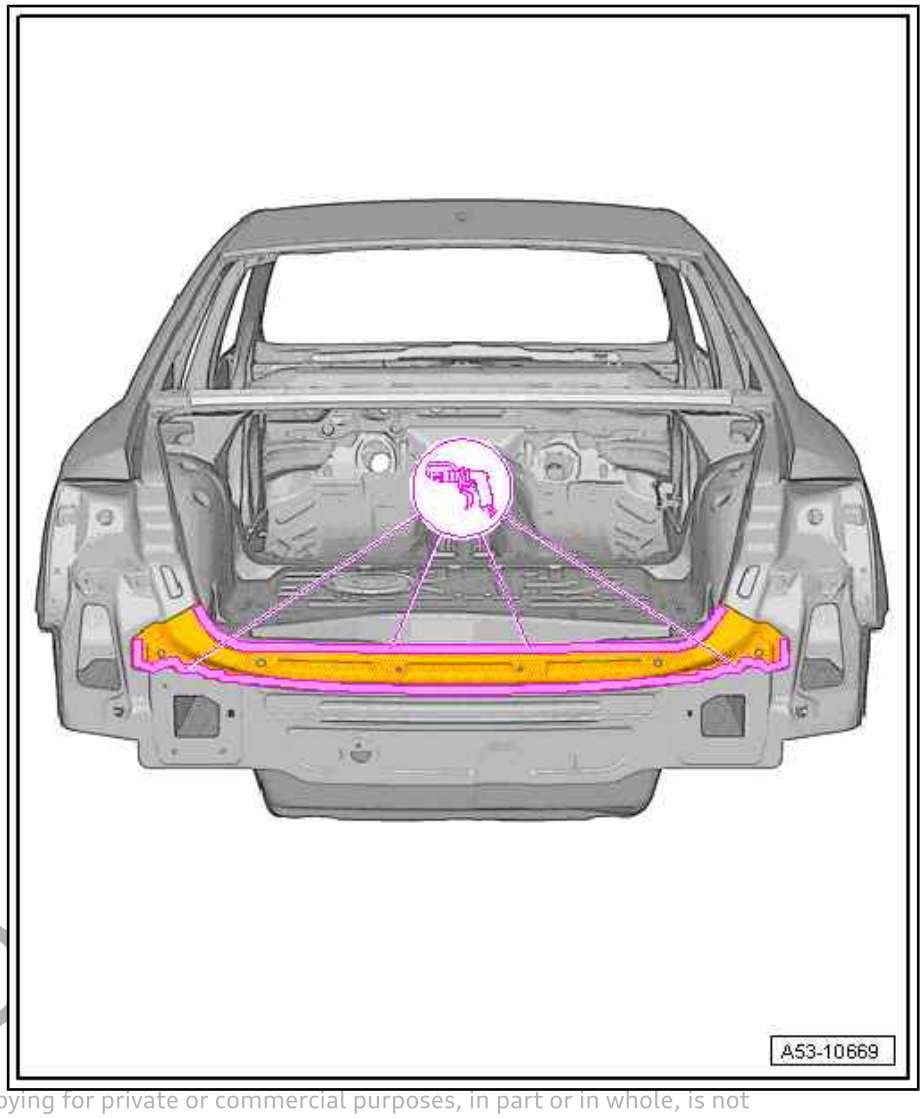
- Resistance spot welder
- Drill
- Compact angle grinder
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

2.3 Procedure

Cutting locations

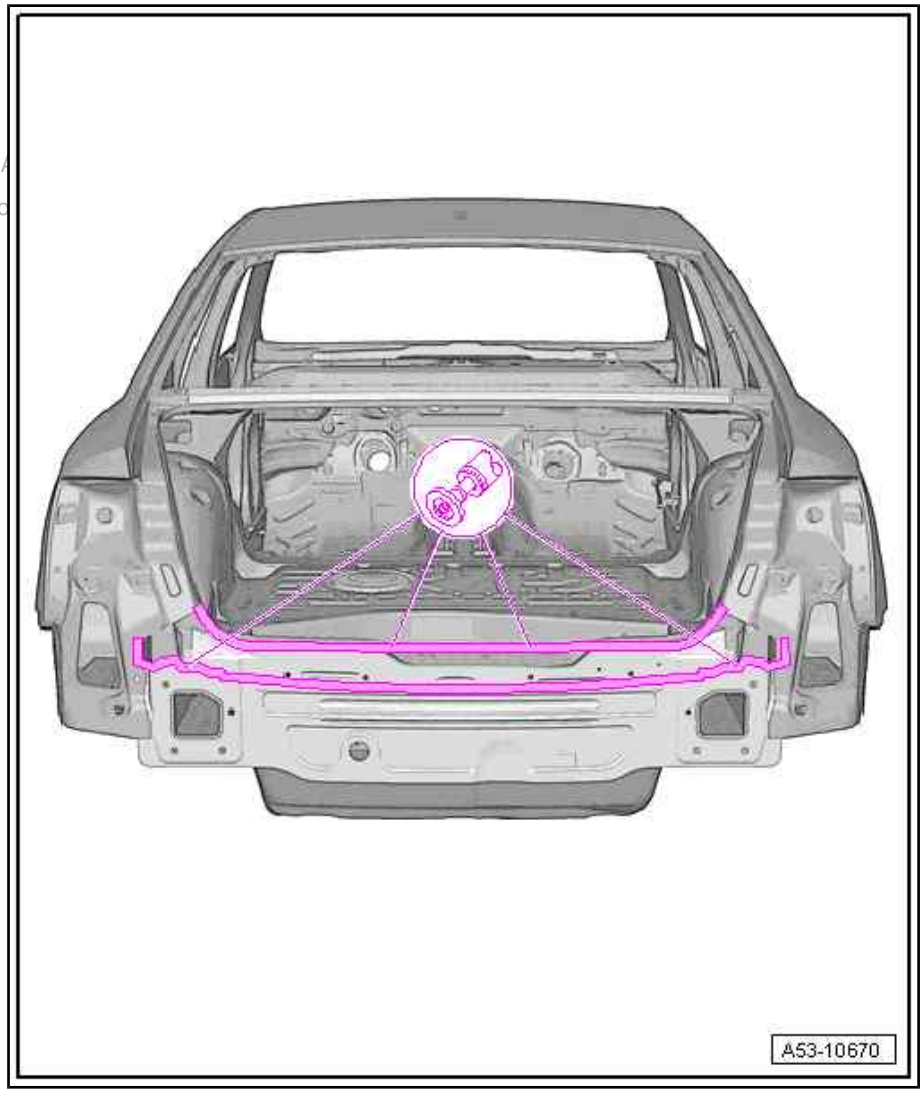
– Separate original joint using spot weld breaker .



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– Remove remaining material using compact angle grinder .

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Replacement part

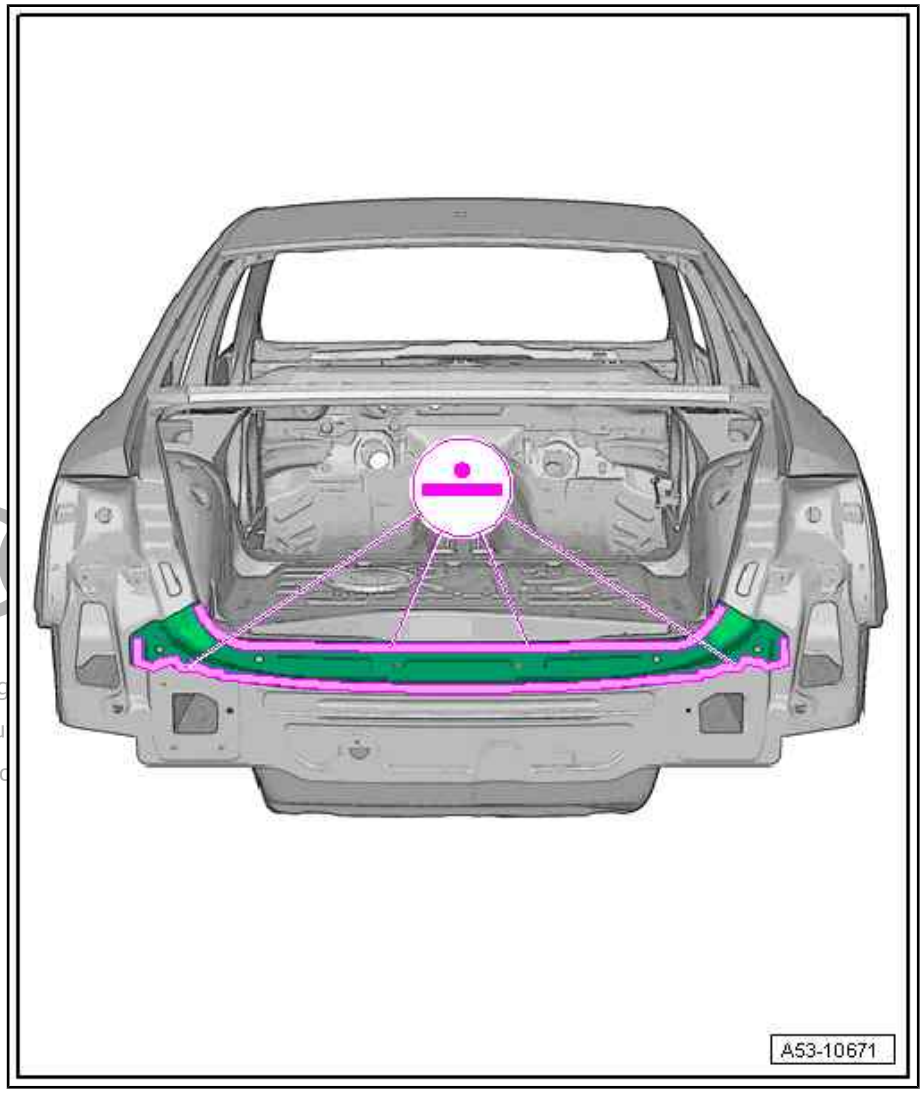
- Rear upper cross panel

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.



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3 Rear cross panel - Renewal

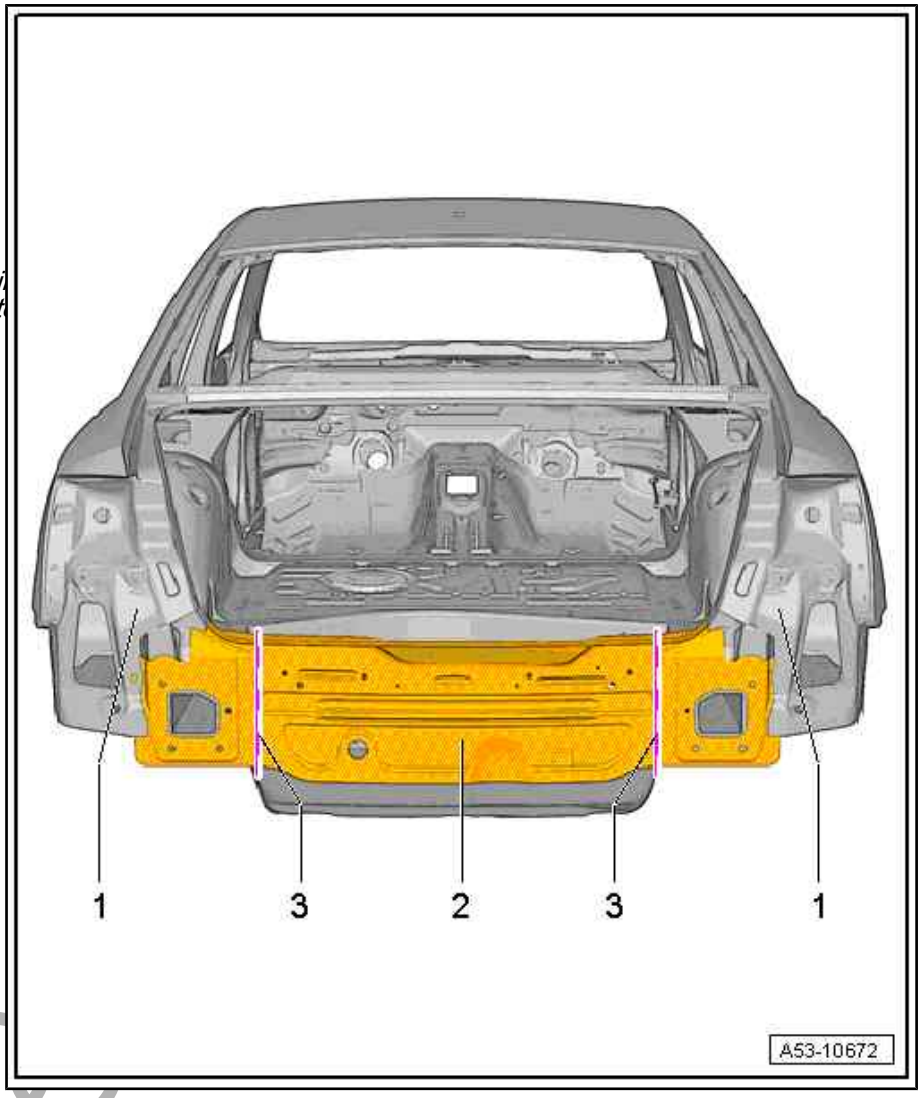
1 - Tail light mounting (left and right)

2 - Cross panel

3 - Separating cuts in cross panel

Note

Partial renewal is possi
separating cuts illustrat



3.1 Notes for vehicles with hybrid drive

⇒ page 5

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3.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Drill
- Compact angle grinder
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

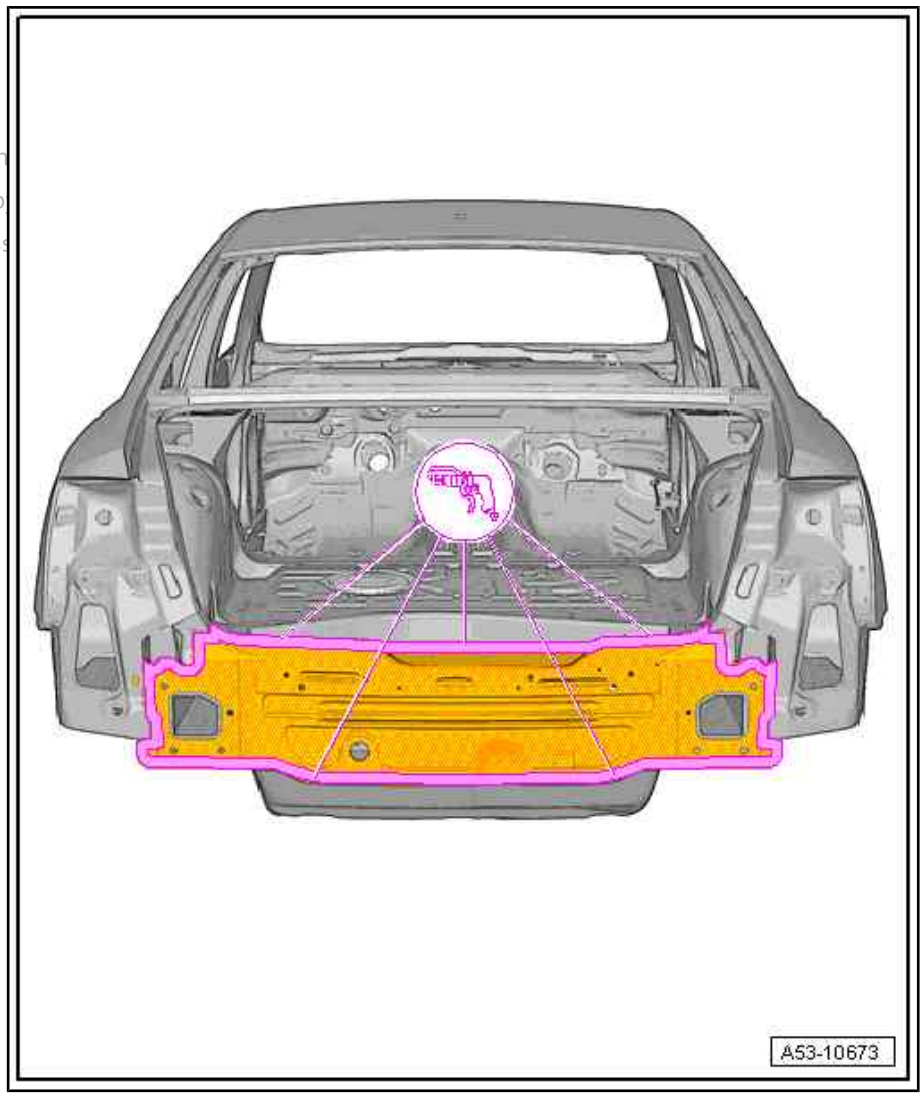
3.3 Procedure

- Upper cross panel removed ⇒ page 332

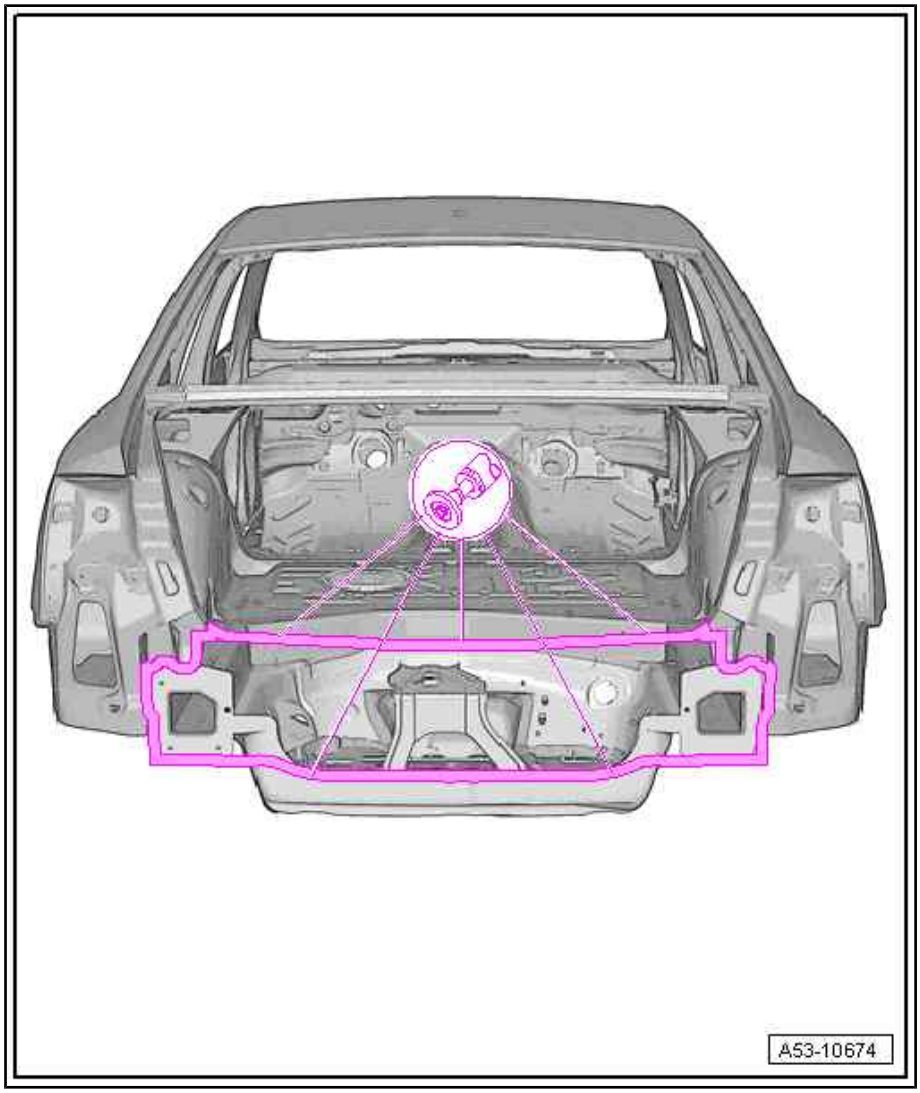
Cutting locations

– Separate original joint using spot weld breaker .

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– Remove remaining material using compact angle grinder .



Replacement part

- Rear cross panel

Note

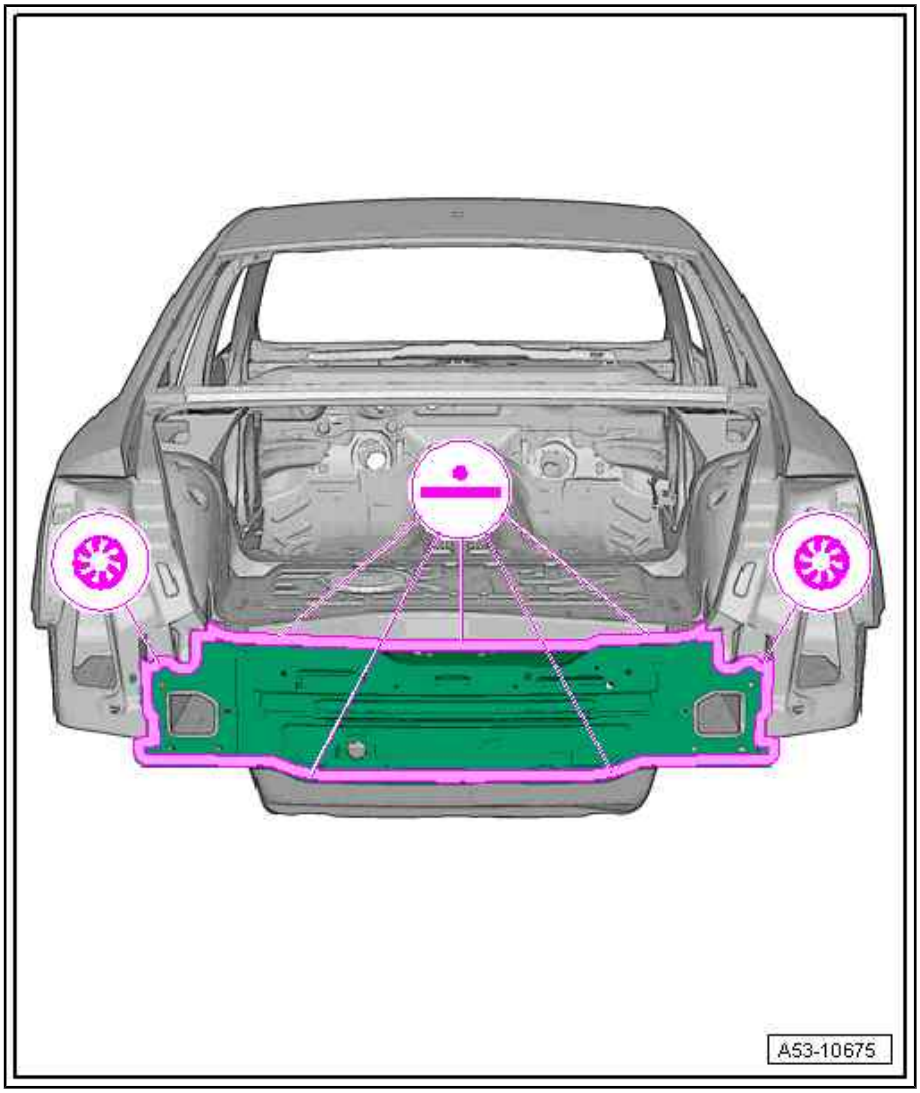
Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.

Welding in

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

– Weld in new part at tail light mountings using shielded arc welding equipment : SG plug weld seam.

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- Welding in rear upper cross panel ⇒ page 332

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4 Rear cross panel - Renewal (Avant)

1 - Tail light mounting (left and right)

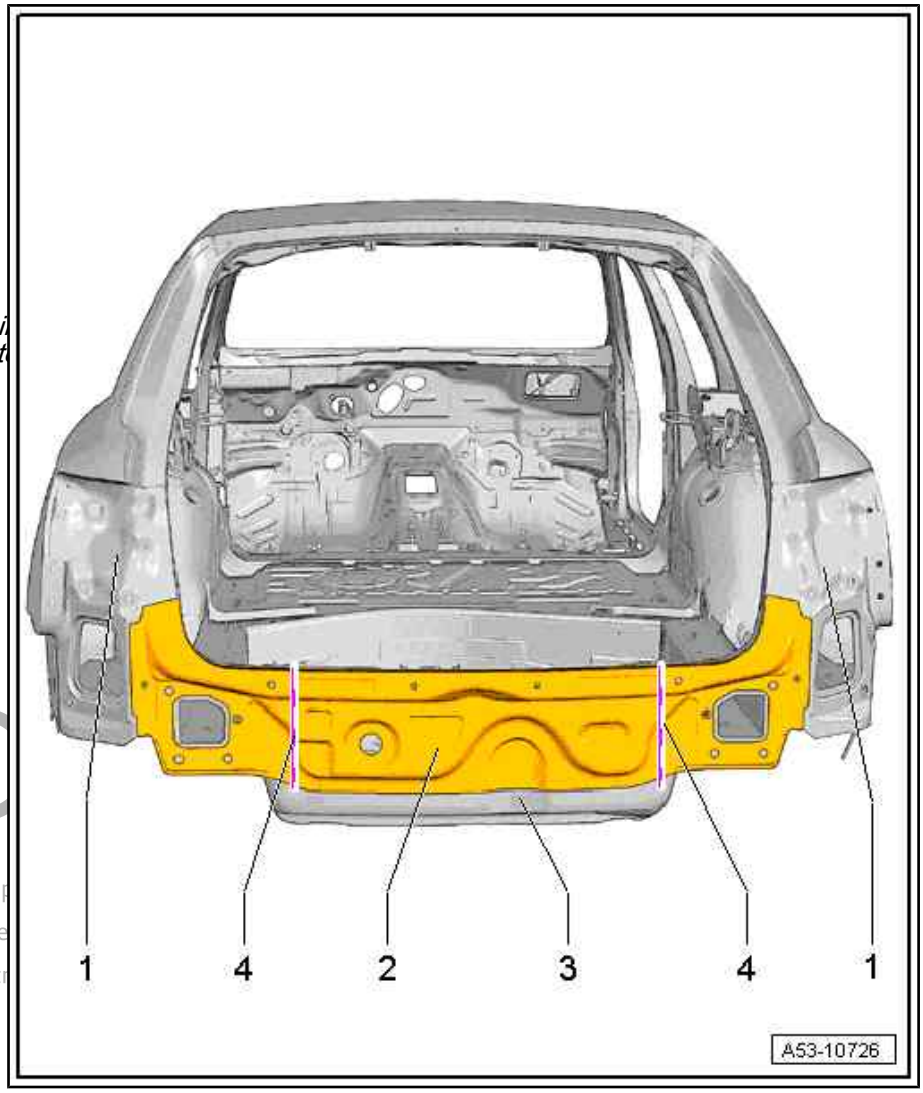
2 - Cross panel

3 - Spare wheel well

4 - Rear cross panel separating cut

Note

Partial renewal is possi
separating cuts illustrat



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4.1 Notes for vehicles with hybrid drive

⇒ page 5

4.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Drill
- Compact angle grinder
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

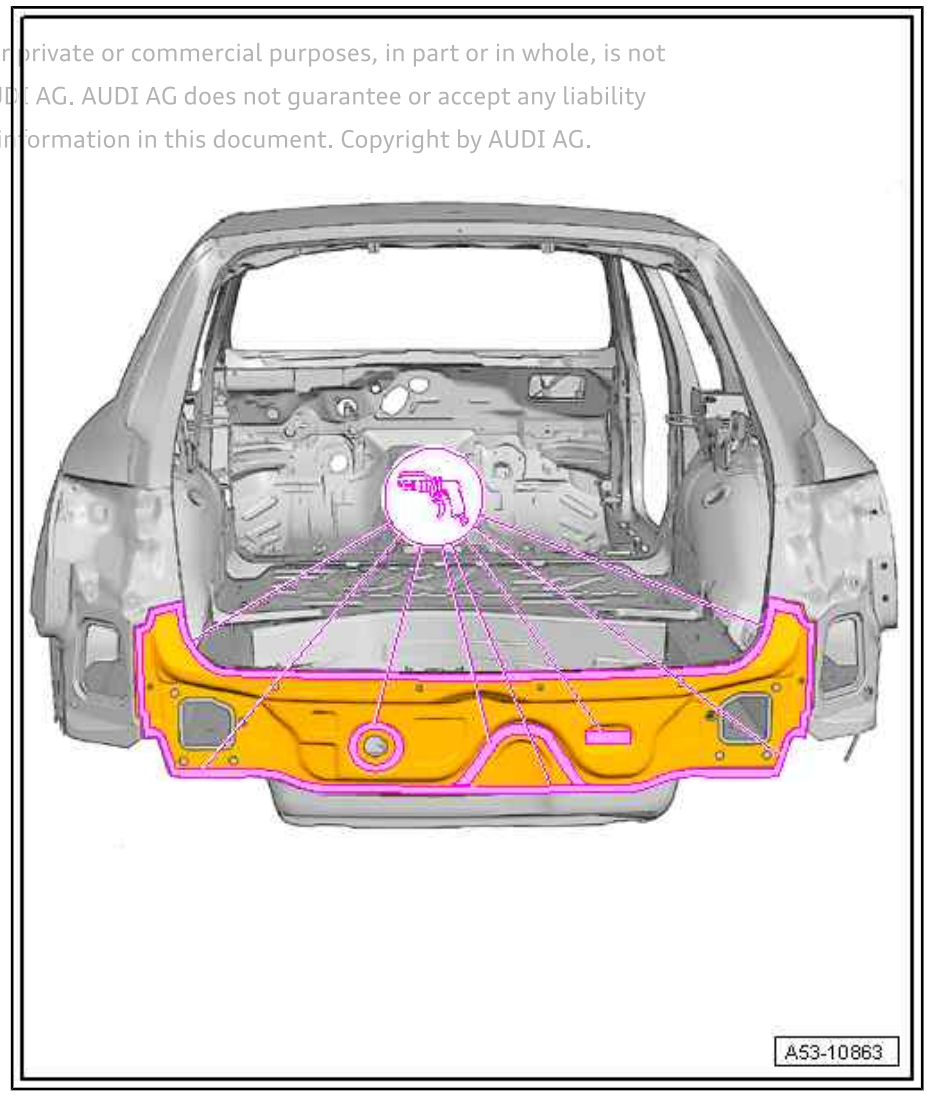
4.3 Procedure

- Upper cross panel removed ⇒ page 332

Cutting locations

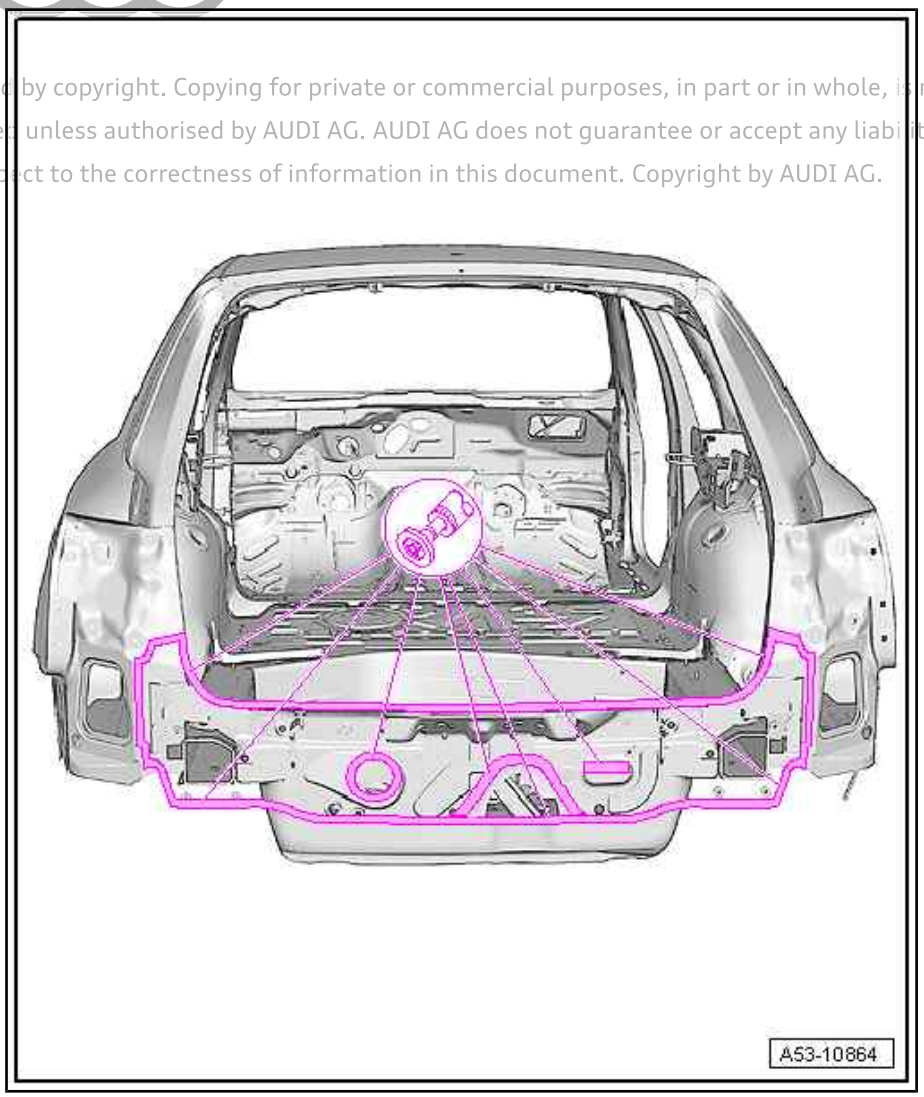
– Separate original joint using spot weld breaker .

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– Remove remaining material using compact angle grinder .

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Replacement part

- Rear cross panel

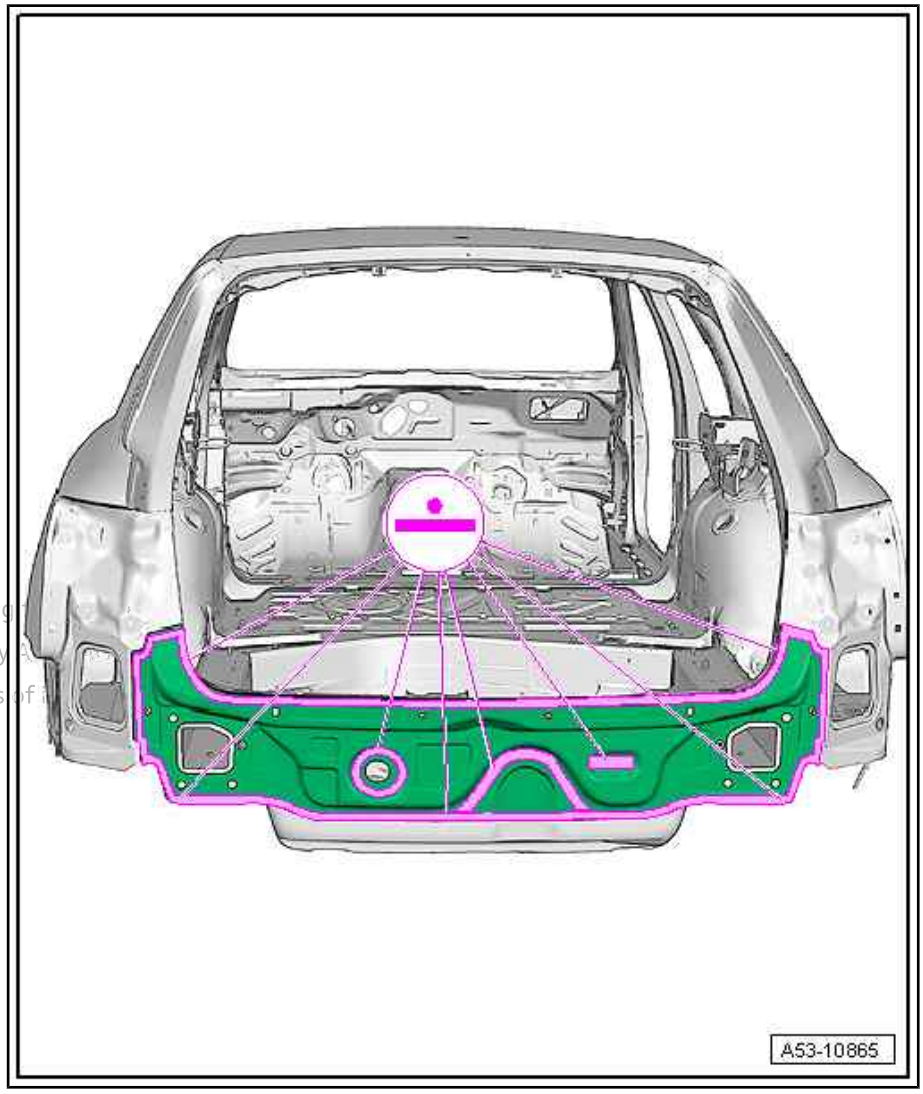
Note

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

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

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- Weld in upper cross panel ⇒ page 332 .

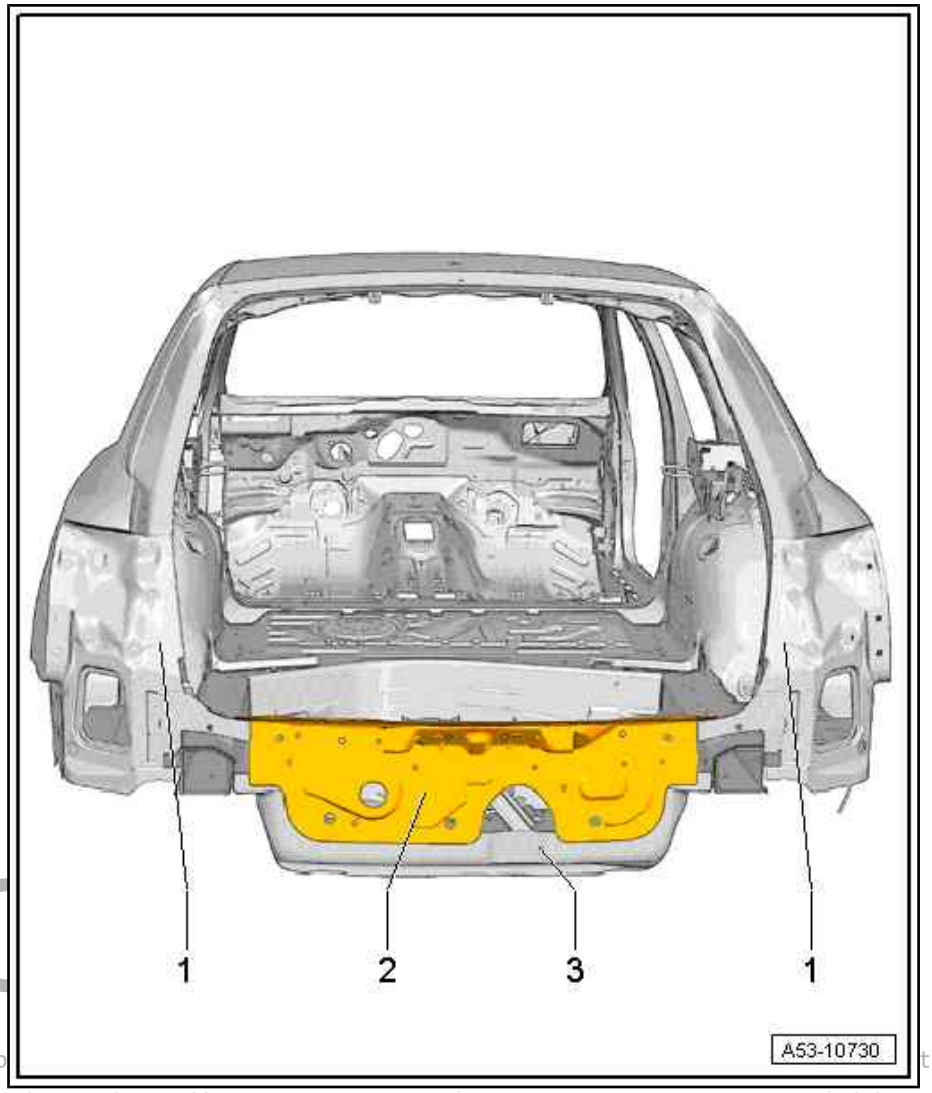
RO: 53 09 55 50

5 Cross panel - Renewal (Avant)

1 - Tail light mounting (left and right)

2 - Cross panel reinforcement

3 - Spare wheel well



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5.1 Notes for vehicles with hybrid drive

⇒ page 5

5.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Drill
- Compact angle grinder
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

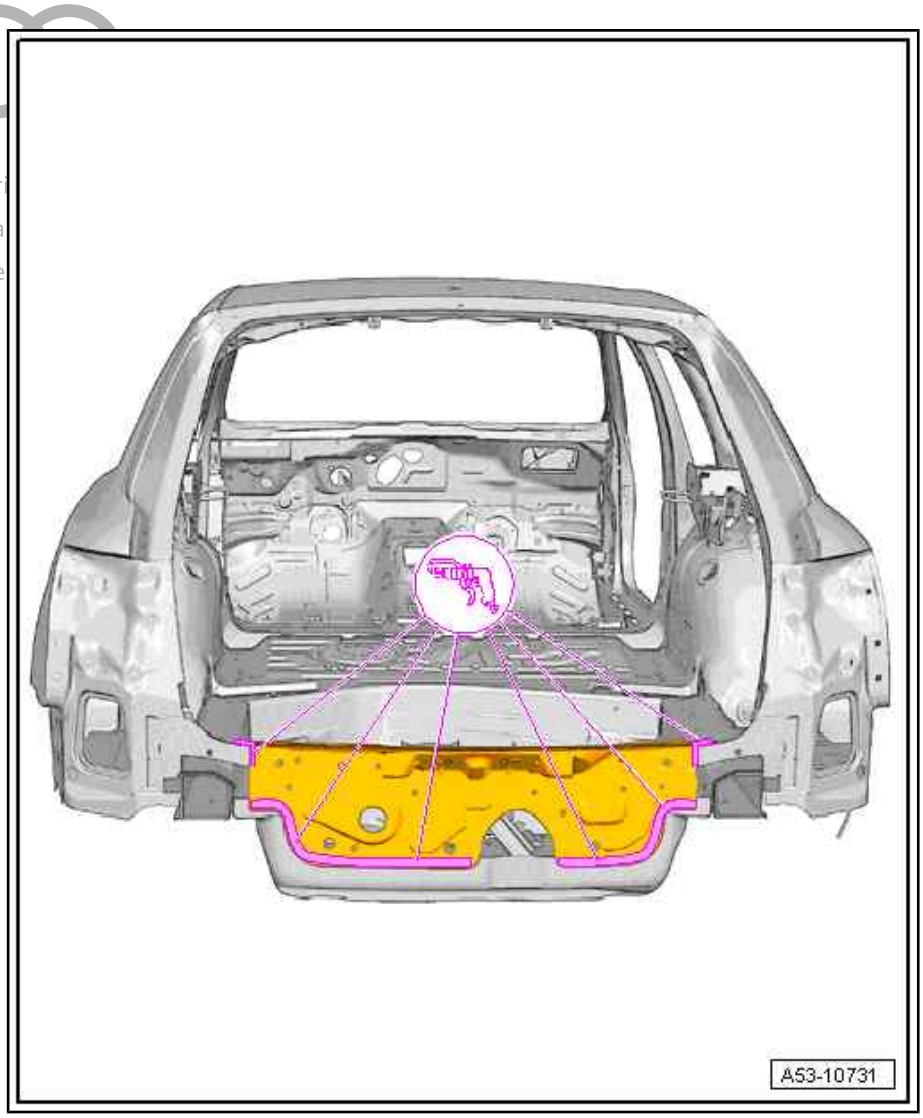
5.3 Procedure

- Upper cross panel removed ⇒ page 332

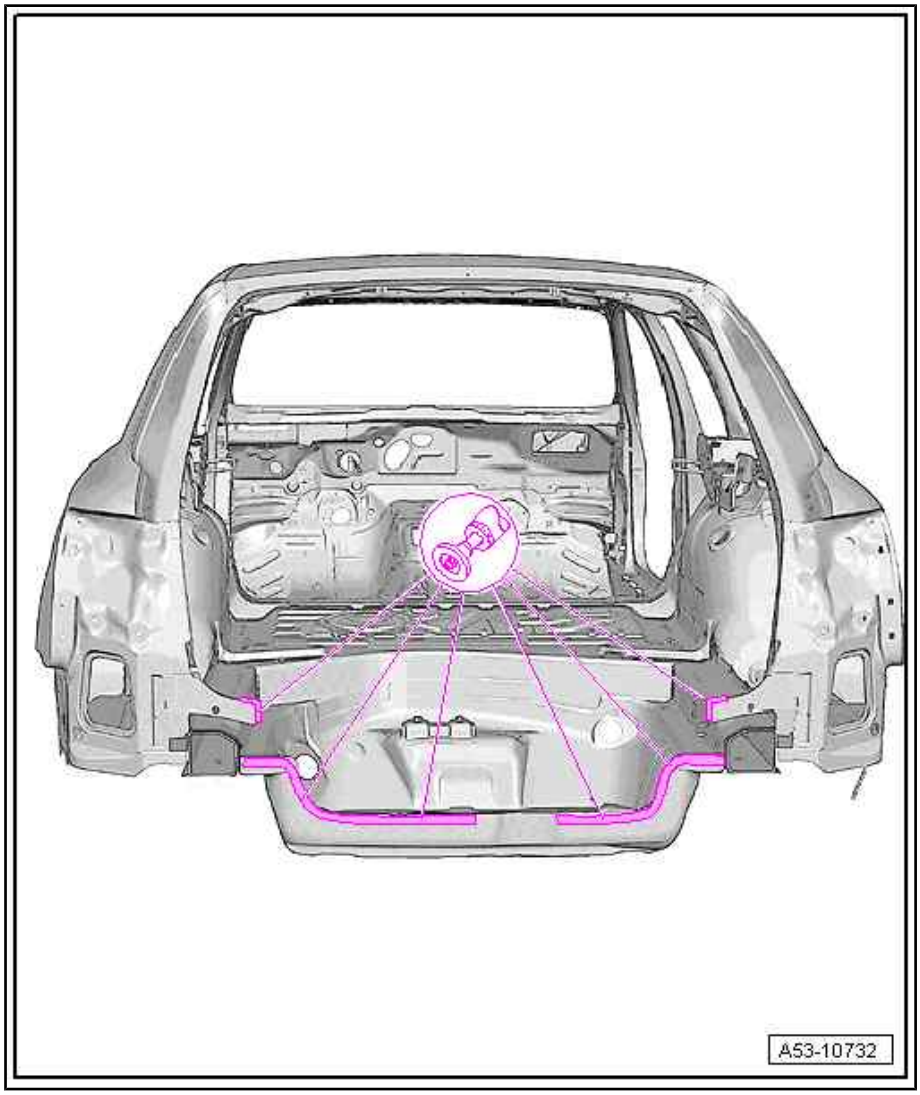
Cutting locations

– Separate original joint using spot weld breaker .

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– Remove remaining material using compact angle grinder .



Replacement part

- Rear cross panel

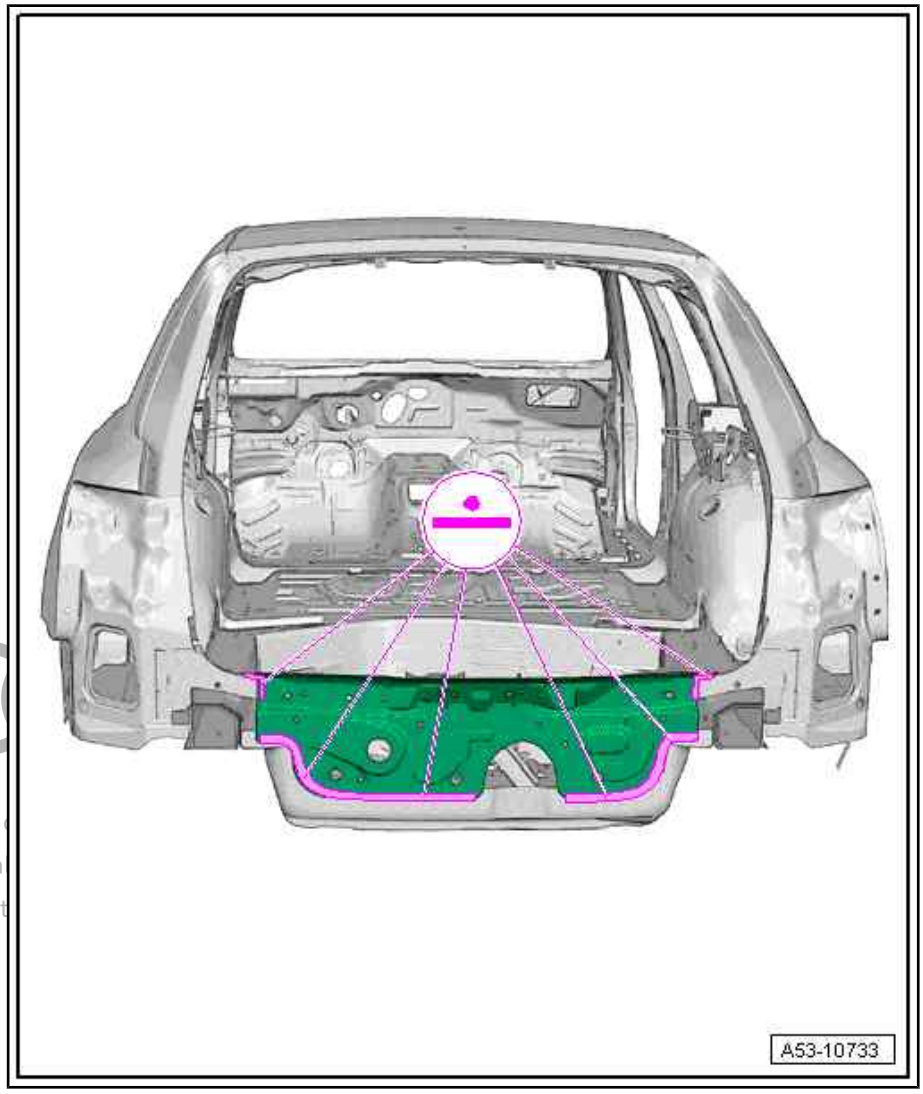
Note

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

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

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- Weld in upper cross panel ⇒ page 340 .

RO: 53 48 55 52

6 Rear longitudinal member - Partial renewal (Avant)

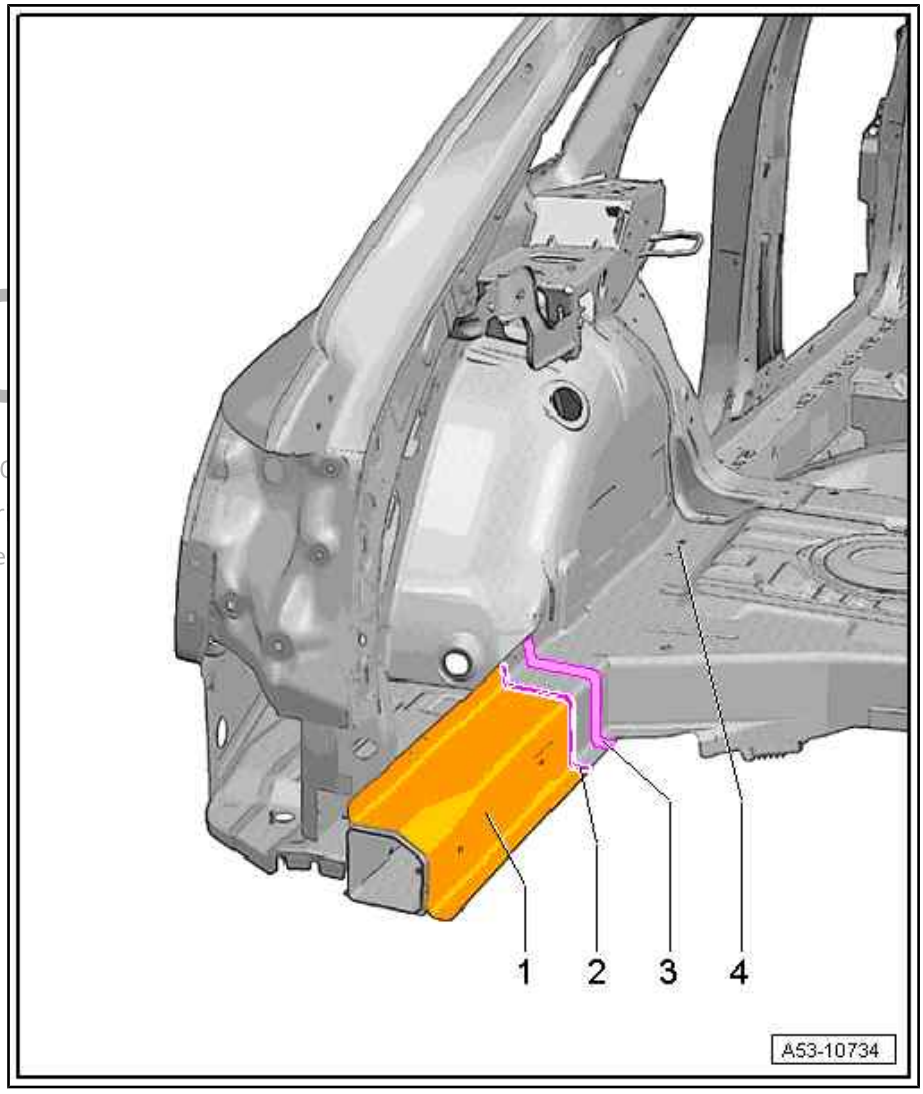
1 - Longitudinal member (part section), right-side (modern high-strength steel)

2 - Longitudinal member (part section), left-side

3 - Joint in metal blank

4 - Longitudinal member (ultra-high-strength hot-formed steel)

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6.1 Notes for vehicles with hybrid drive

⇒ page 5

6.2 Tools

Special tools and workshop equipment required

- Shielded arc welding equipment
- Drill
- Compact angle grinder
- Body saw
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

6.3 Procedure

- Cross panel removed ⇒ page 344
- Mounting plate removed ⇒ page 336
- Luggage compartment floor removed ⇒ page 395

Cutting locations

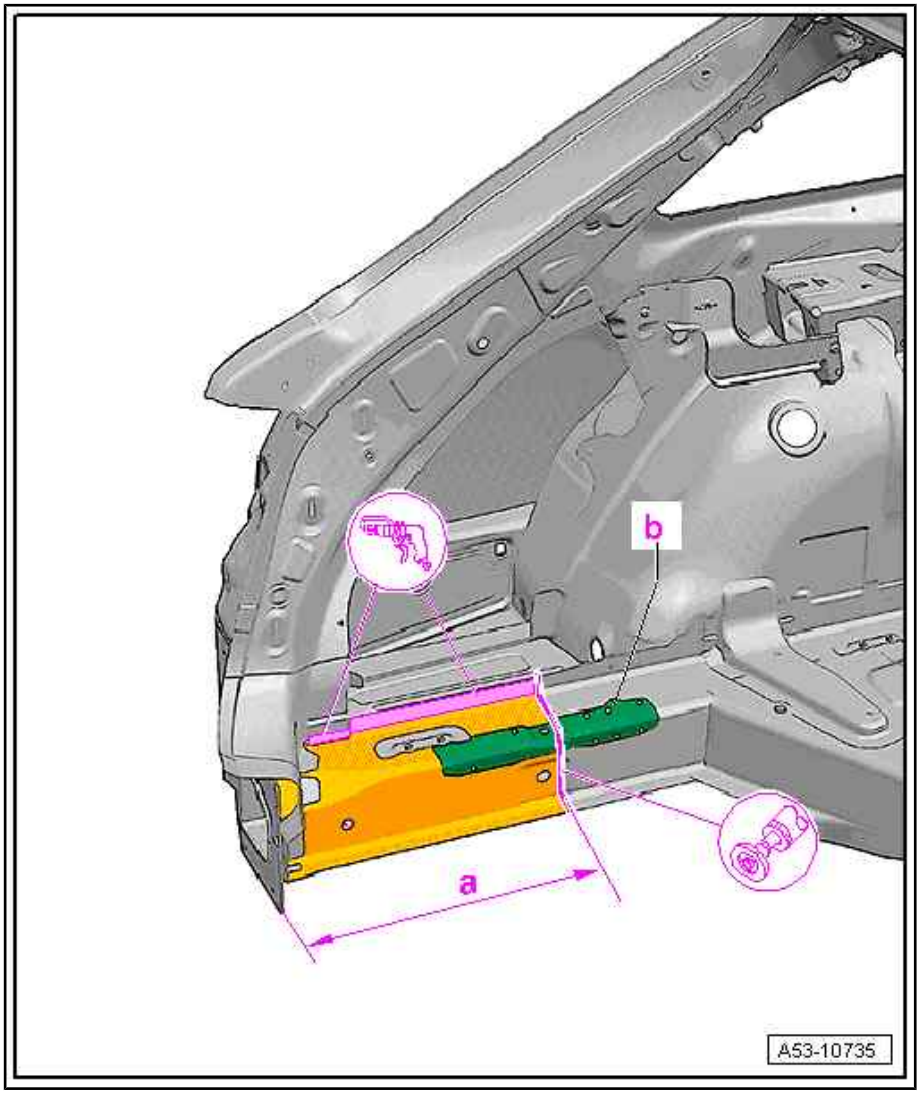
– Mark separating cut -1- as per dimension -a- and cut out.

Dimension -a- = 347 mm

– Upper inner reinforcement -b- must be cut through.

– Cut out longitudinal member (part section) using compact angle grinder .

– Separate original joint using spot weld breaker .



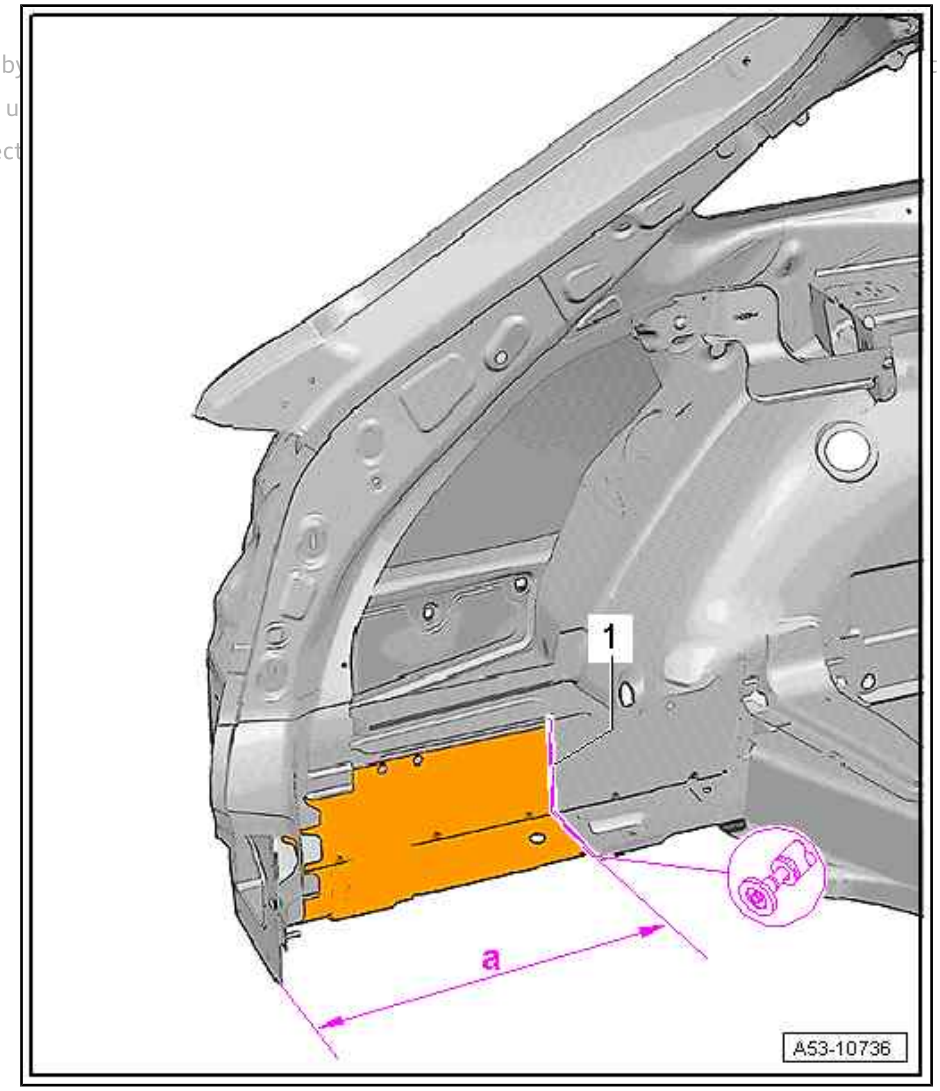
– Mark separating cut -1- as per dimension -a- and cut out.

Dimension -a- = 347 mm

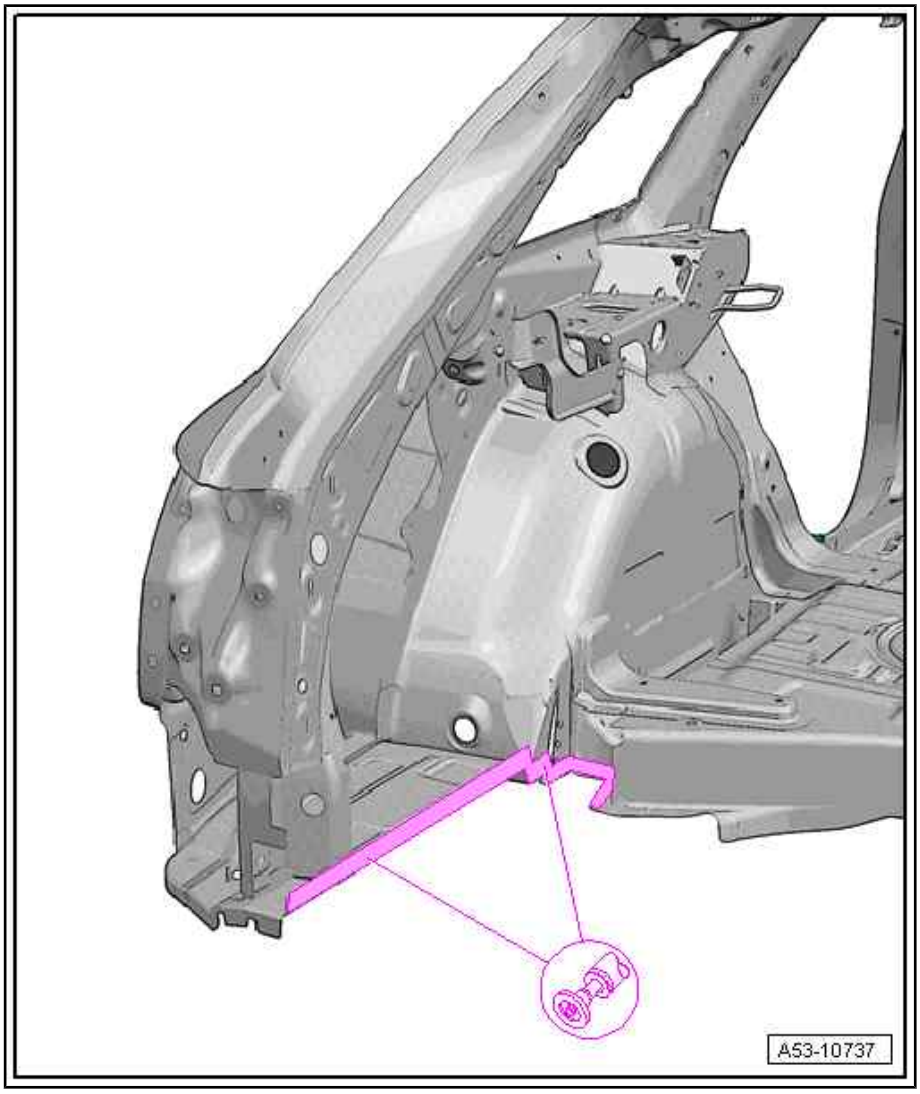
– Cut out longitudinal member (part section) using compact angle grinder .

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– Remove remaining material using compact angle grinder .

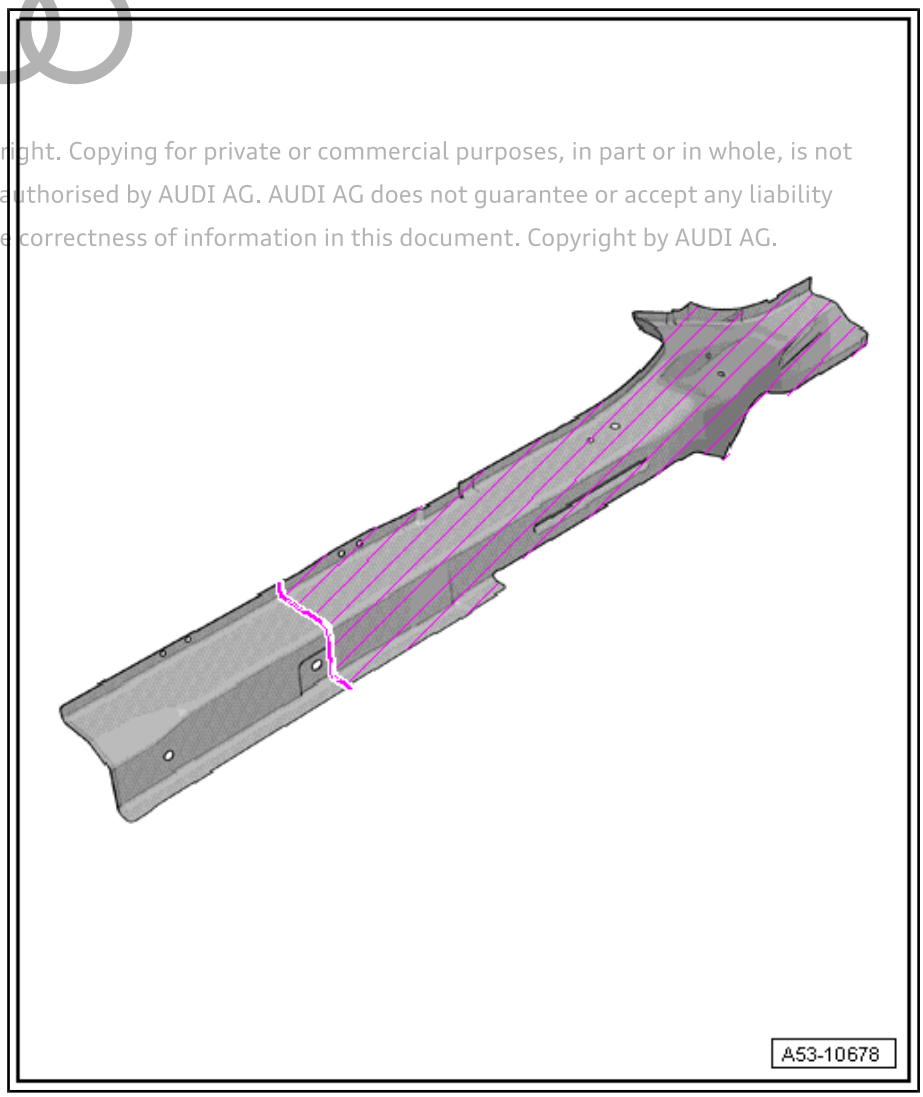


Replacement part

- ♦ Longitudinal member
- – Transfer separating cut to new part and cut to size using body saw .

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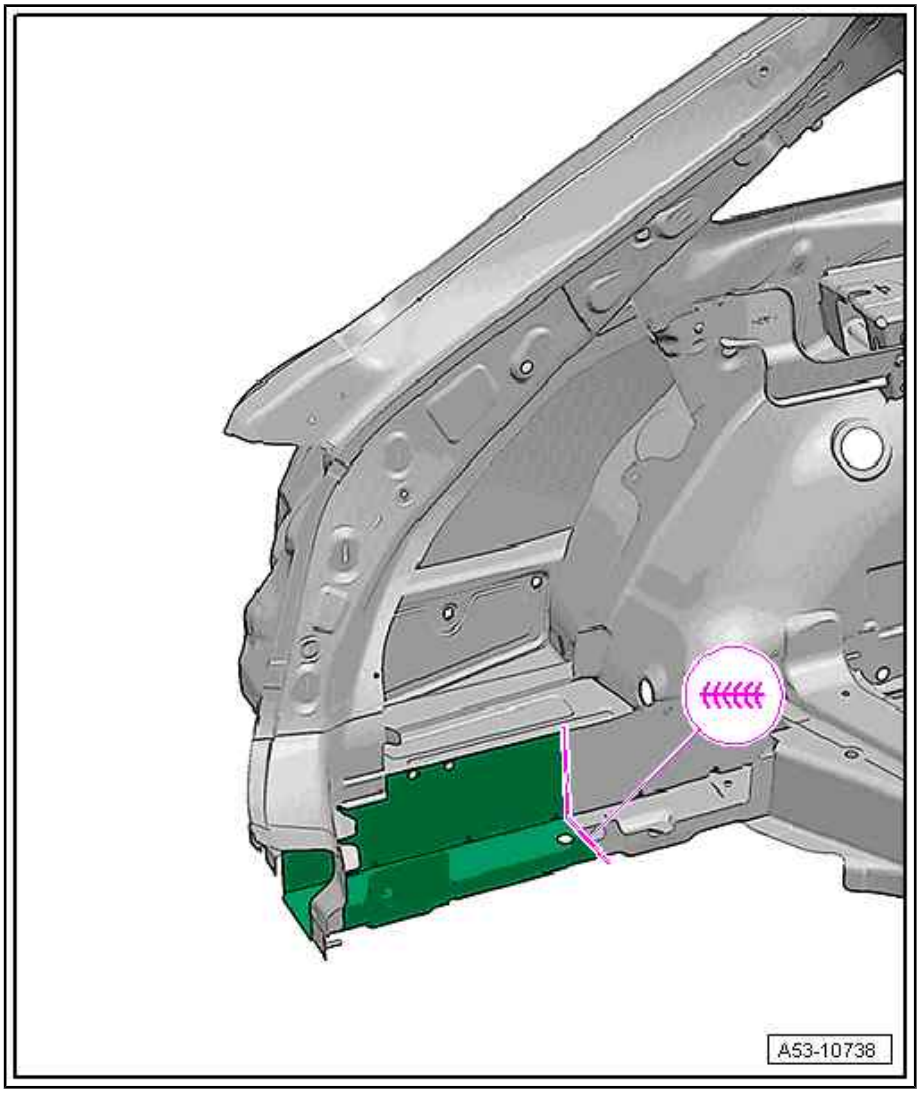
– Match up longitudinal member with vehicle positioned on alignment bracket set supplement - VAS 6667- and fix in place.

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.

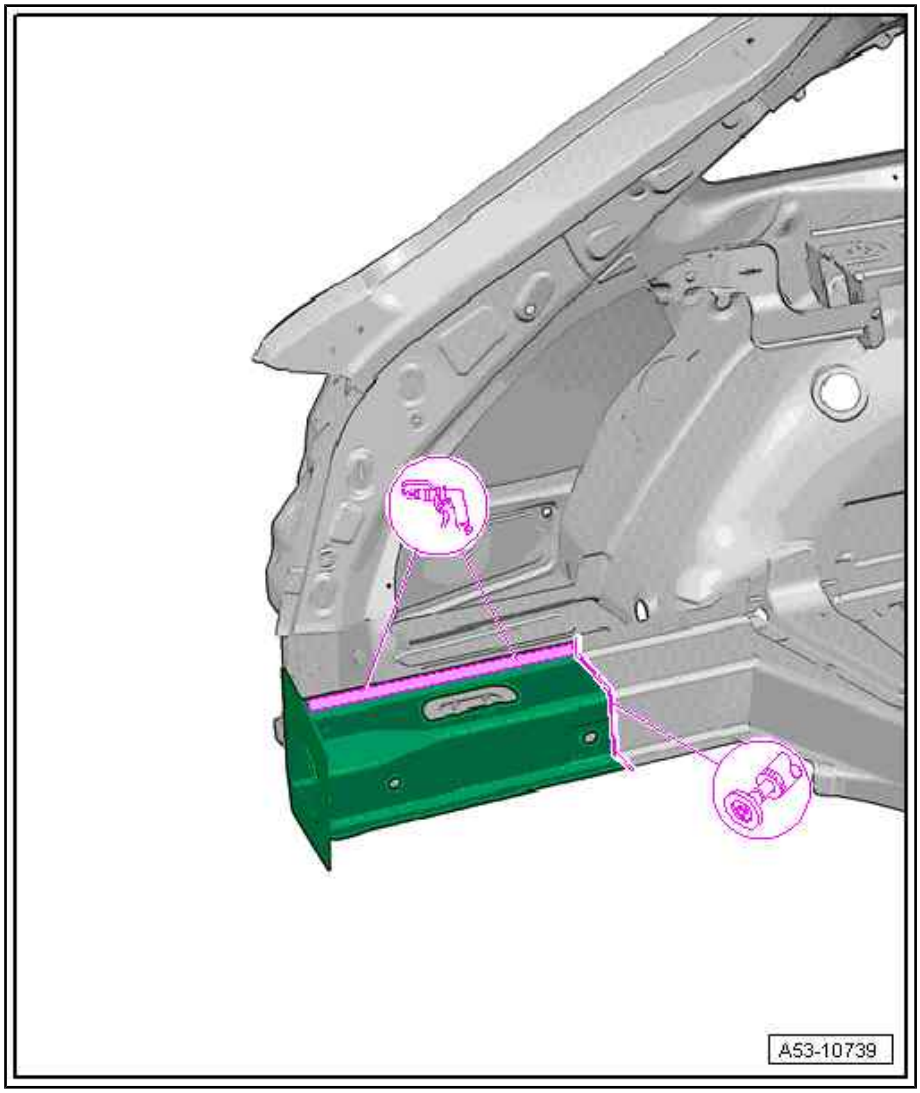
Welding in

– Butt weld longitudinal member using shielded arc welding equipment : SG continuous seam.



– Butt weld longitudinal member using shielded arc welding equipment : SG continuous seam.
– Weld in longitudinal member using resistance spot welder : RP spot weld seam.

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- Welding in cross panel ⇒ page 344
- Welding in mounting plate ⇒ page 336
- Welding in luggage compartment floor ⇒ page 395

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RO: 53 48 55 52

7 Rear longitudinal member - Partial renewal

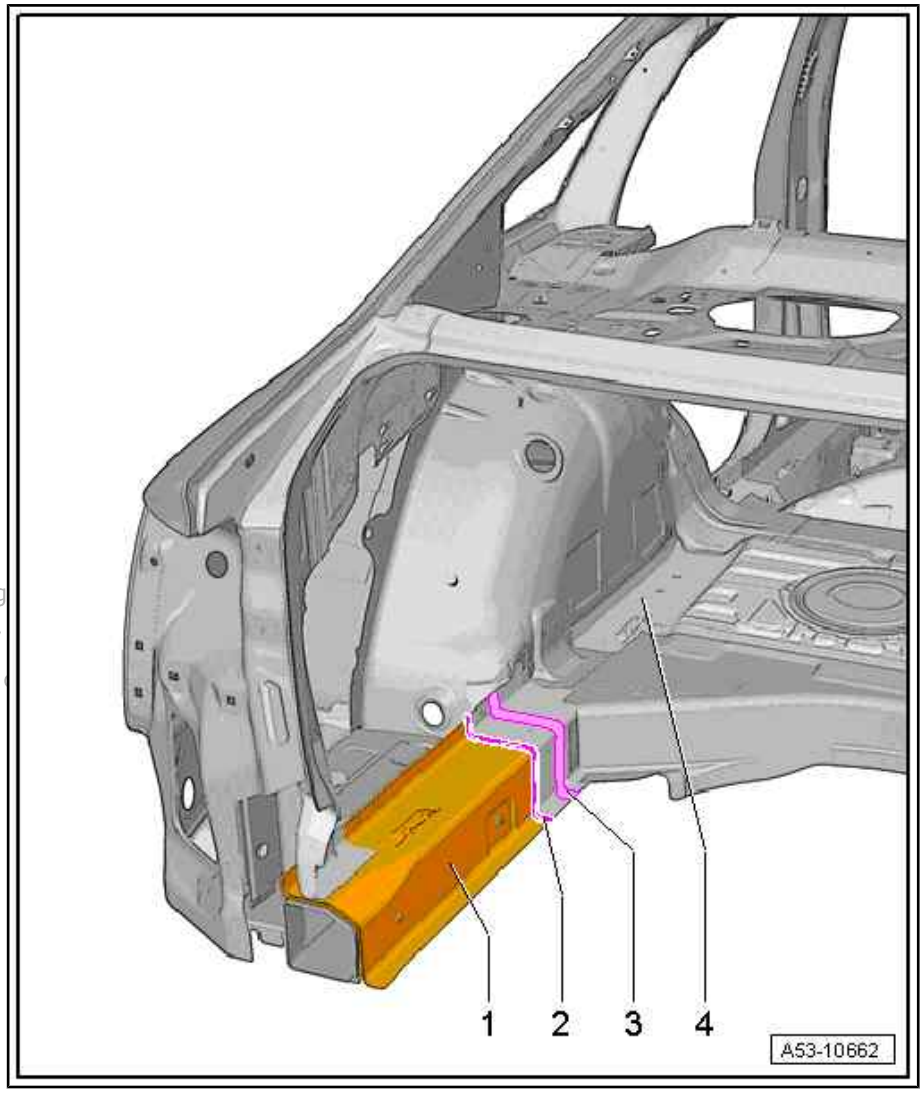
1 - Longitudinal member (part section), right-side (modern high-strength steel)

2 - Longitudinal member (part section), left-side

3 - Joint in metal blank

4 - Longitudinal member (ultra-high-strength hot-formed steel)

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7.1 Notes for vehicles with hybrid drive

⇒ page 5

7.2 Tools

Special tools and workshop equipment required

- Shielded arc welding equipment
- Drill
- Compact angle grinder
- Body saw
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

7.3 Procedure

- Rear upper cross panel removed ⇒ page 332
- Cross panel removed ⇒ page 336
- Spare wheel well removed ⇒ page 395

Cutting locations

– Mark separating cut -1- as per dimension -a- and cut out.

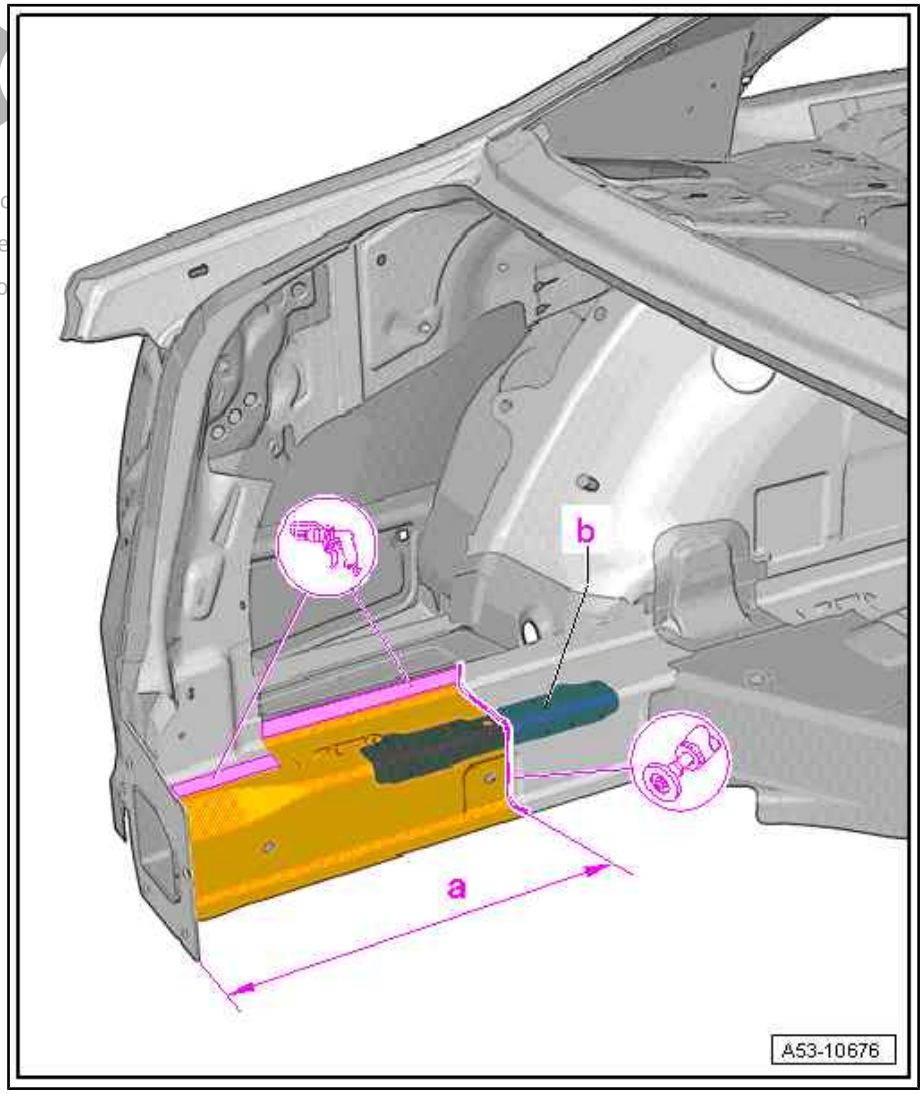
Dimension -a- = 347 mm

– Upper inner reinforcement -b- must be cut through.

– Cut out longitudinal member (part section) using compact angle grinder .

– Separate original joint using spot weld breaker .

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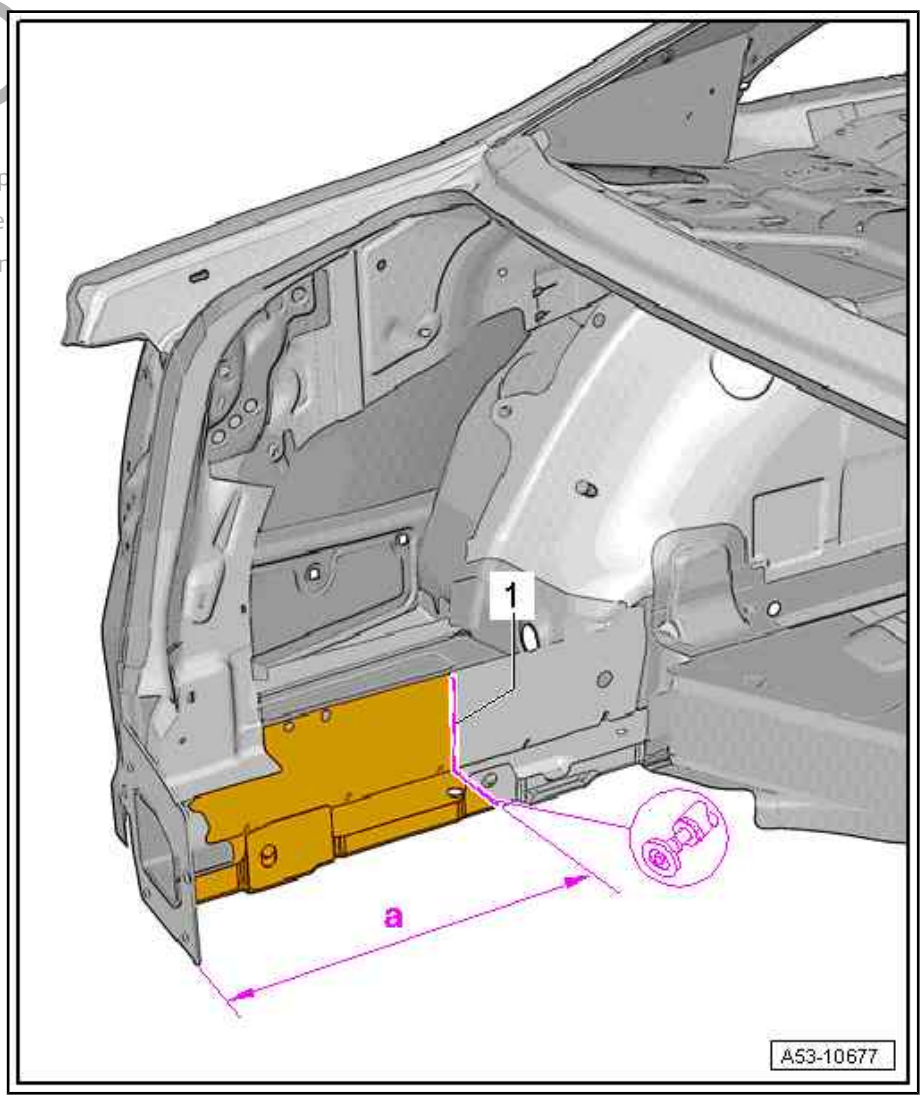


– Mark separating cut -1- as per dimension -a- and cut out.

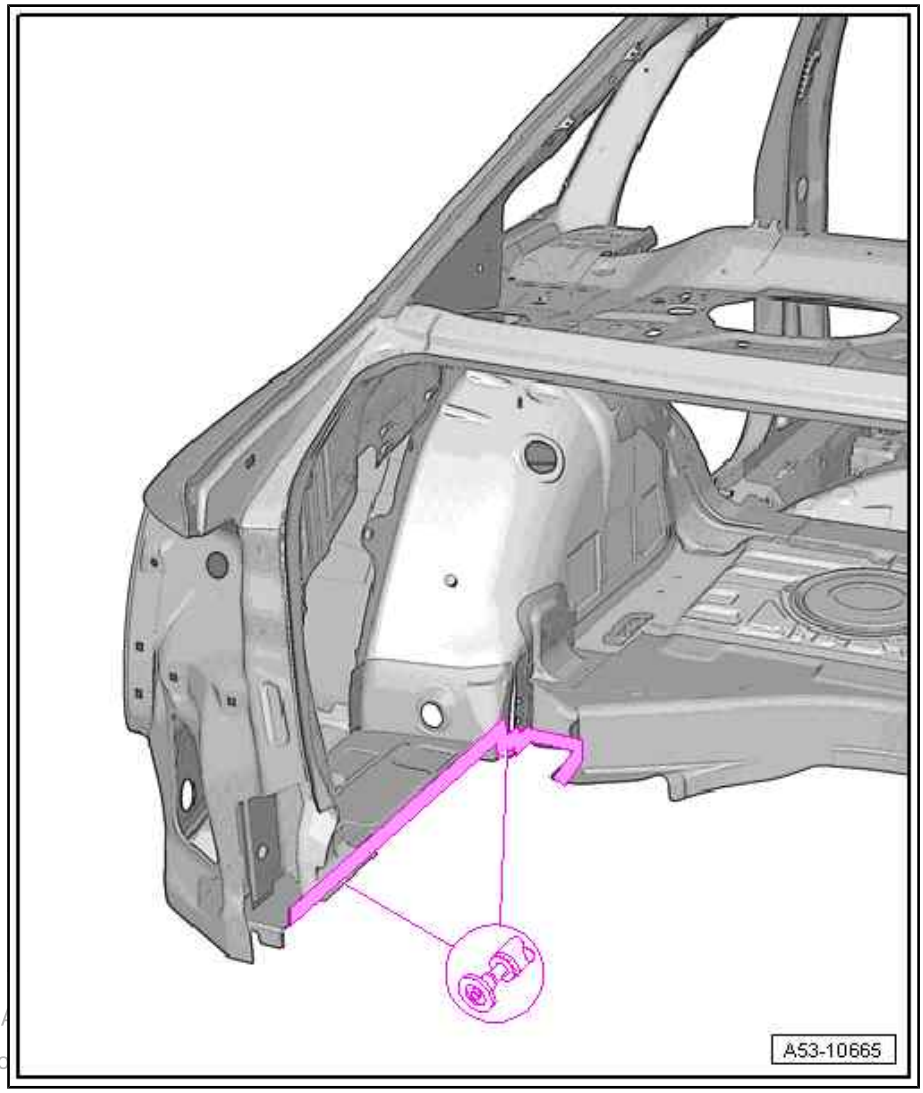
Dimension -a- = 347 mm

– Cut out longitudinal member (part section) using compact angle grinder .

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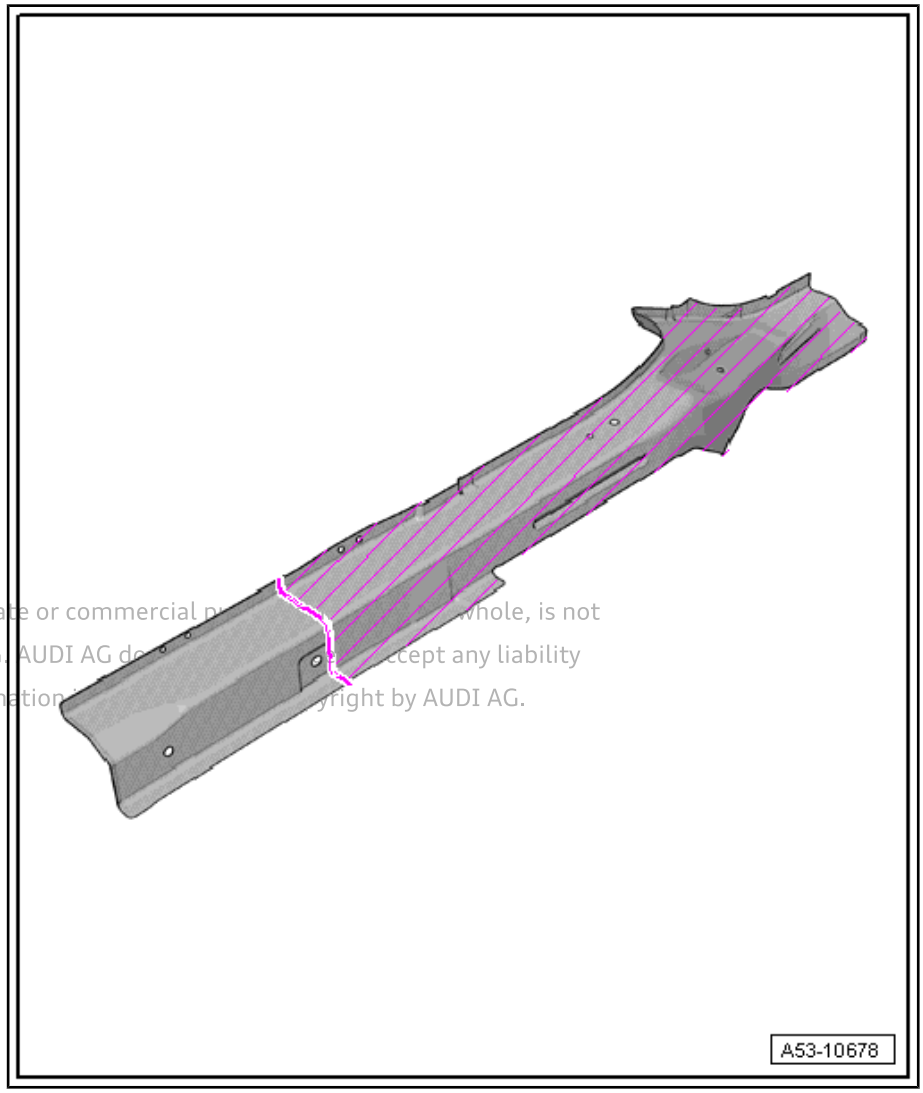
– Remove remaining material using compact angle grinder .



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Replacement part

- ♦ Longitudinal member
- – Transfer separating cut to new part and cut to size using body saw .



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– Match up longitudinal member with vehicle positioned on alignment bracket set supplement - VAS 6667- and fix in place.

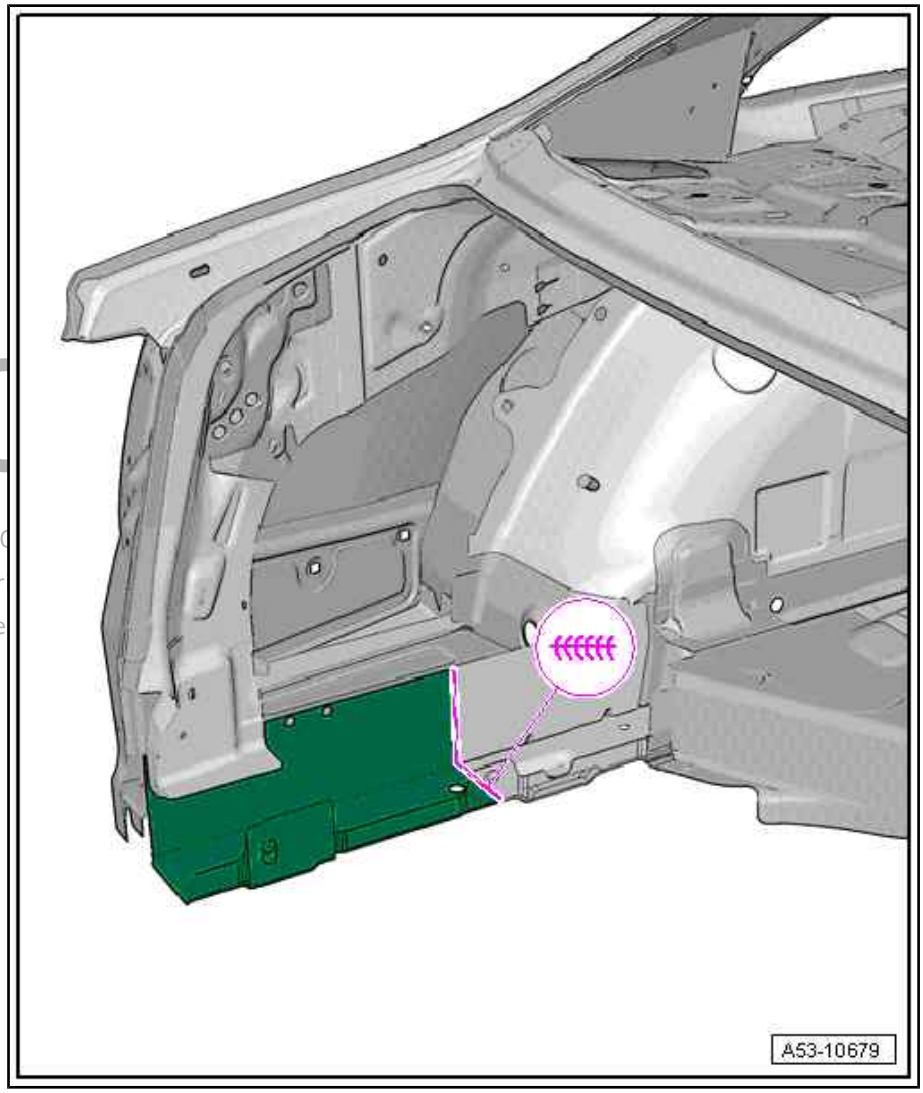
Note

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

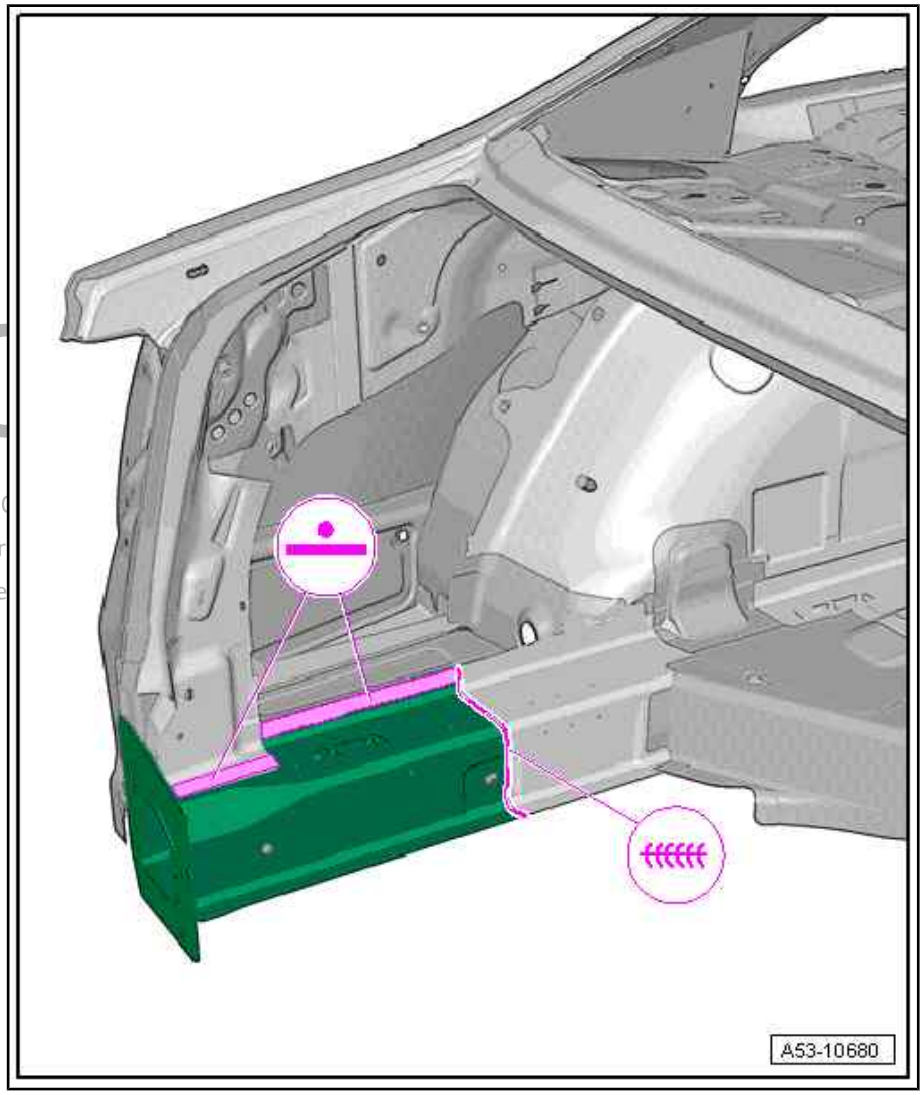
– Butt weld longitudinal member using shielded arc welding equipment : SG continuous seam.

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– Butt weld longitudinal member using shielded arc welding equipment : SG continuous seam.
– Weld in longitudinal member using resistance spot welder : RP spot weld seam.

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- Welding in rear upper cross panel ⇒ page 332
- Welding in cross panel ⇒ page 336
- Welding in spare wheel well ⇒ page 395

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8 Side panel - Renewal

Includes rain channel and tail light mounting

1 - Side panel

2 - Separating cut in C-pillar

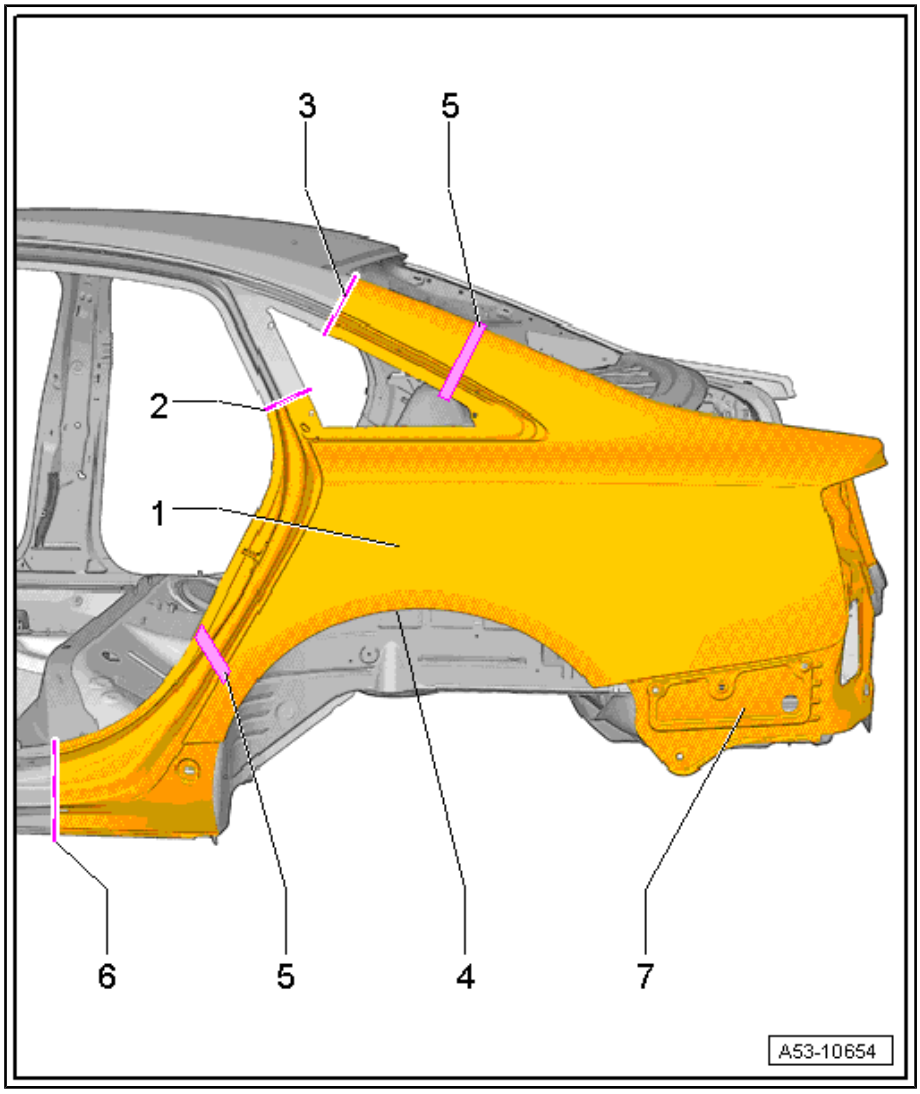
3 - Separating cut in D-pillar

4 - Bonded area

5 - Moulded foam insert

6 - Separating cut in side member

7 - Tail light mounting



8.1 Notes for vehicles with hybrid drive

⇒ page 5

8.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Drill
- Compact angle grinder
- Body saw
- Spot weld breaker
- Pneumatic glue gun

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Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

8.3 Procedure

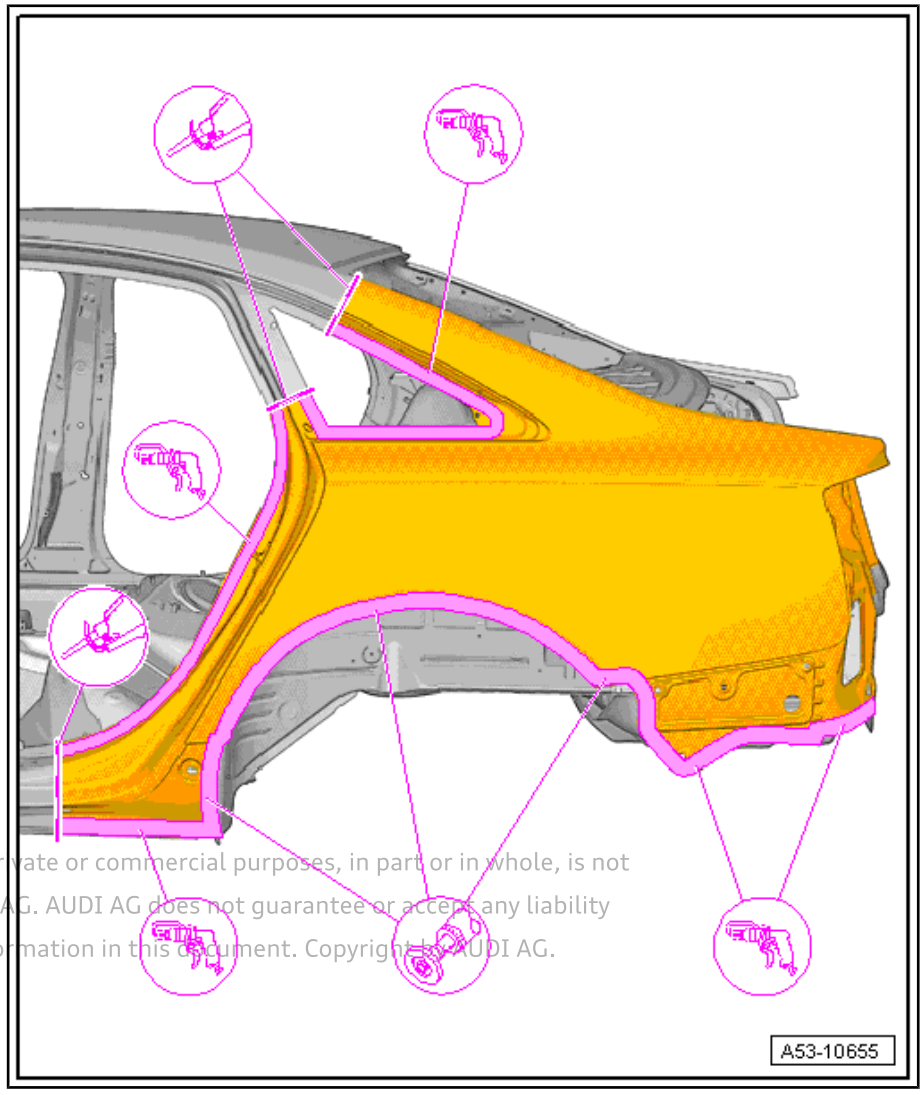
Cutting locations

Permitted separating cuts on complete side panel ⇒ page 128 .

Note

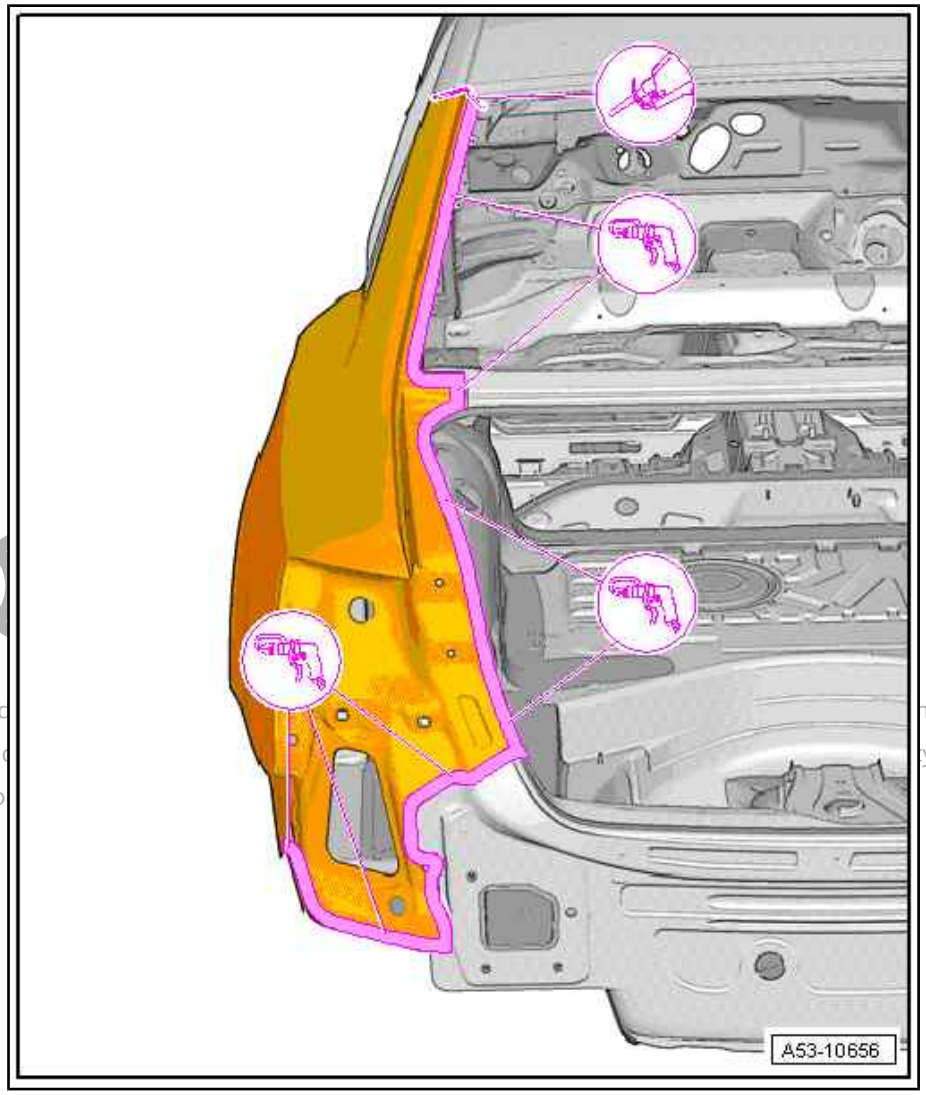
Partial renewal is possible with the separating cuts illustrated.

– Separate original joint using spot weld breaker .
– Grind through outer edge at wheel arch using compact angle grinder .
– Make separating cuts as shown using body saw .



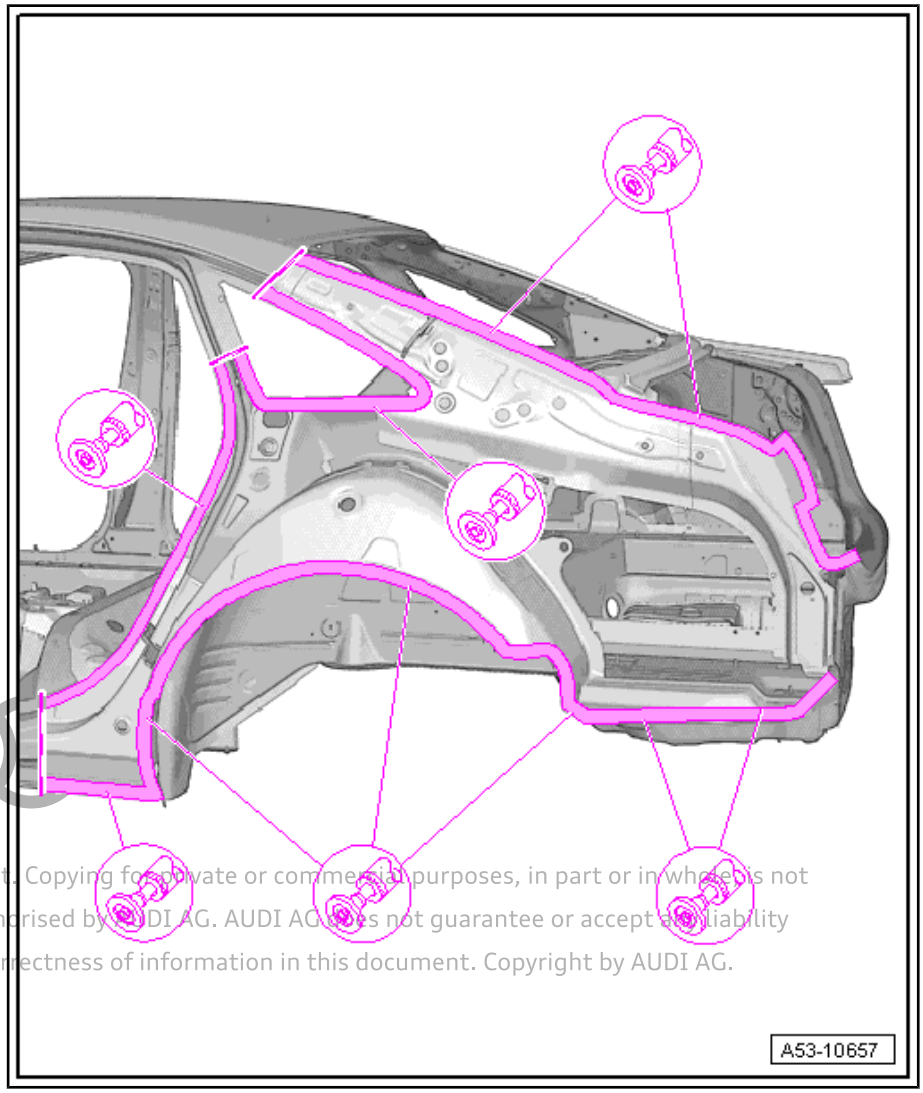
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– Make separating cuts as shown using body saw .
– Separate original joint using spot weld breaker .



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– Remove remaining adhesive completely and sand bonding surfaces down to bare metal.
– Clean bonding area with cleaning solution - D 009 401 04- (it must be free of dust and grease).
– Clean flange area with cleaning solution - D 009 401 04- (it must be free of dust and grease).



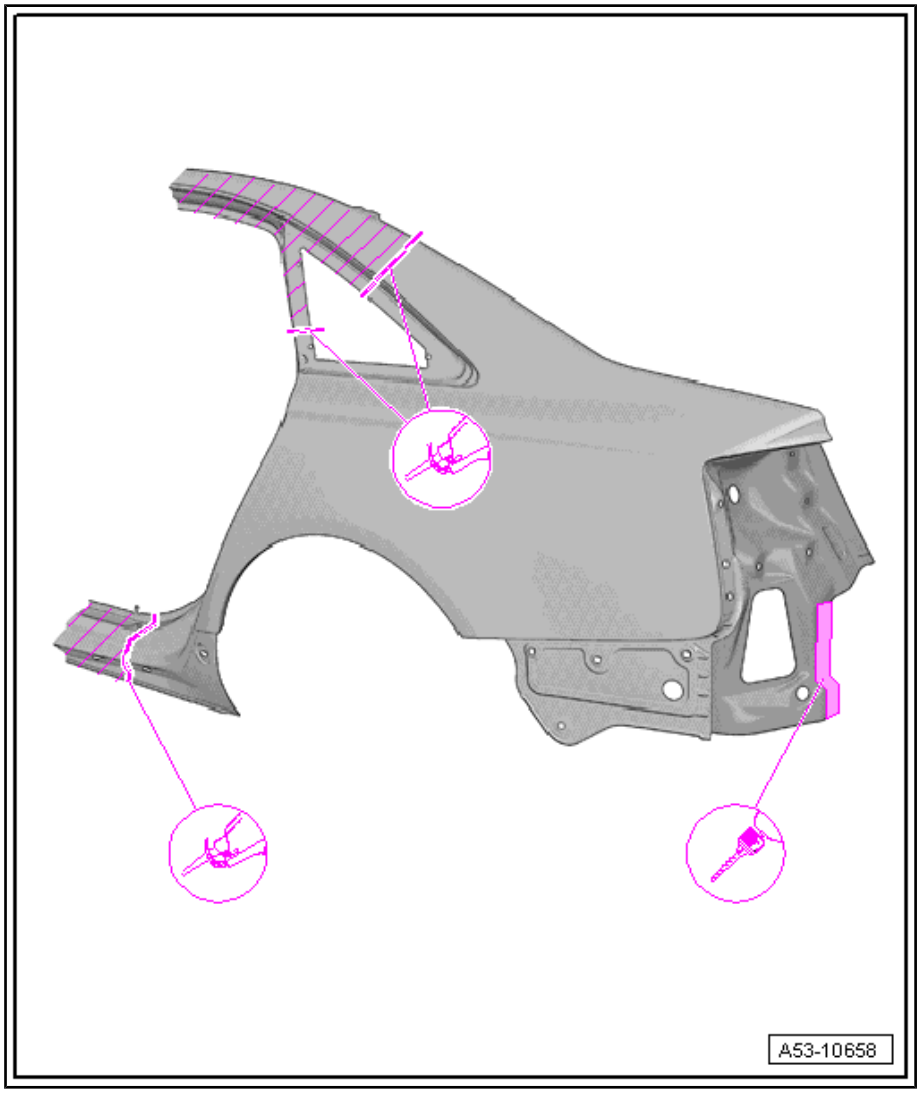
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Replacement parts

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

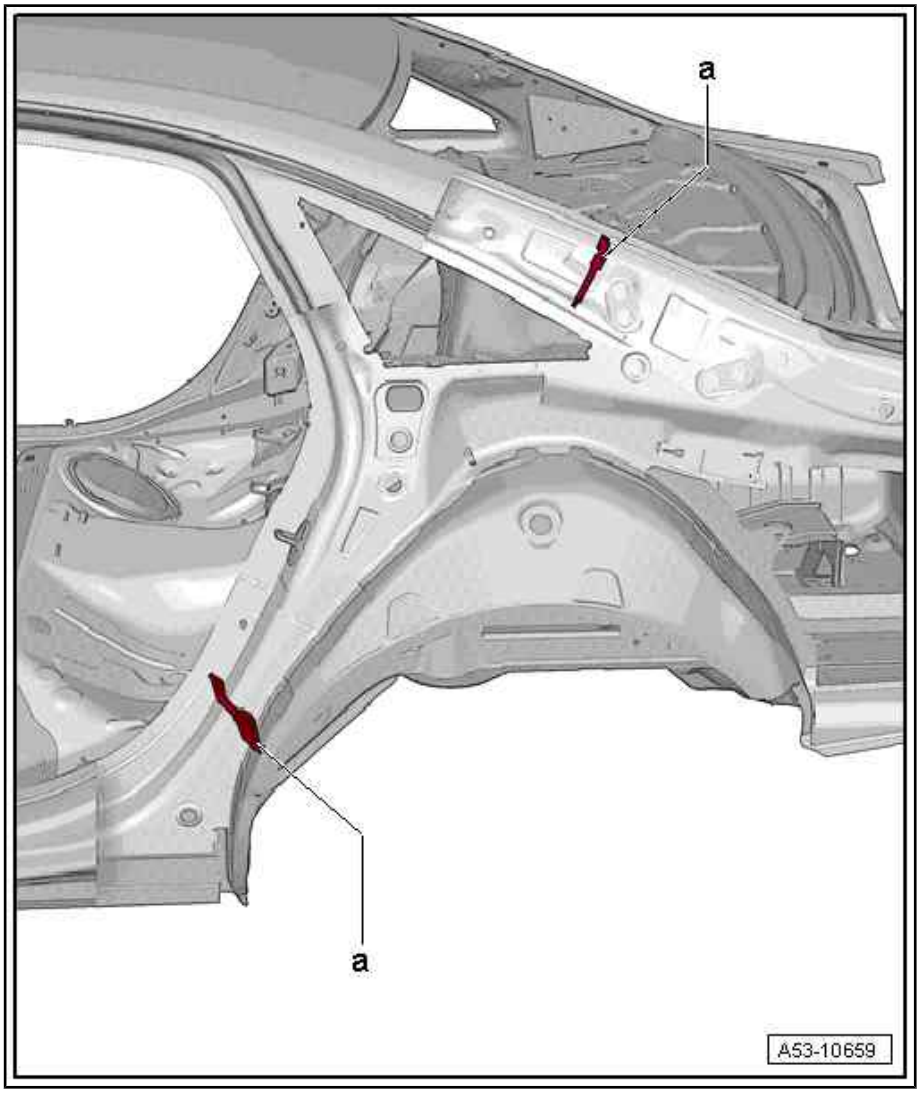
Preparing new part

- – Transfer separating cut to new part and cut off hatched area using body saw .
- – Drill holes for SG plug weld seam using drill .
- – Clean bonding area with cleaning solution - D 009 401 04- (it must be free of dust and grease).
- – Grind down bonding surface (on body side of joint) to bare metal.
- – Clean beaded flange with cleaning solution - D 009 401 04- (it must be free of dust and grease).



Fit moulded foam inserts -a-.

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– Match up side panel on portal gauge and fix in position.

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Note

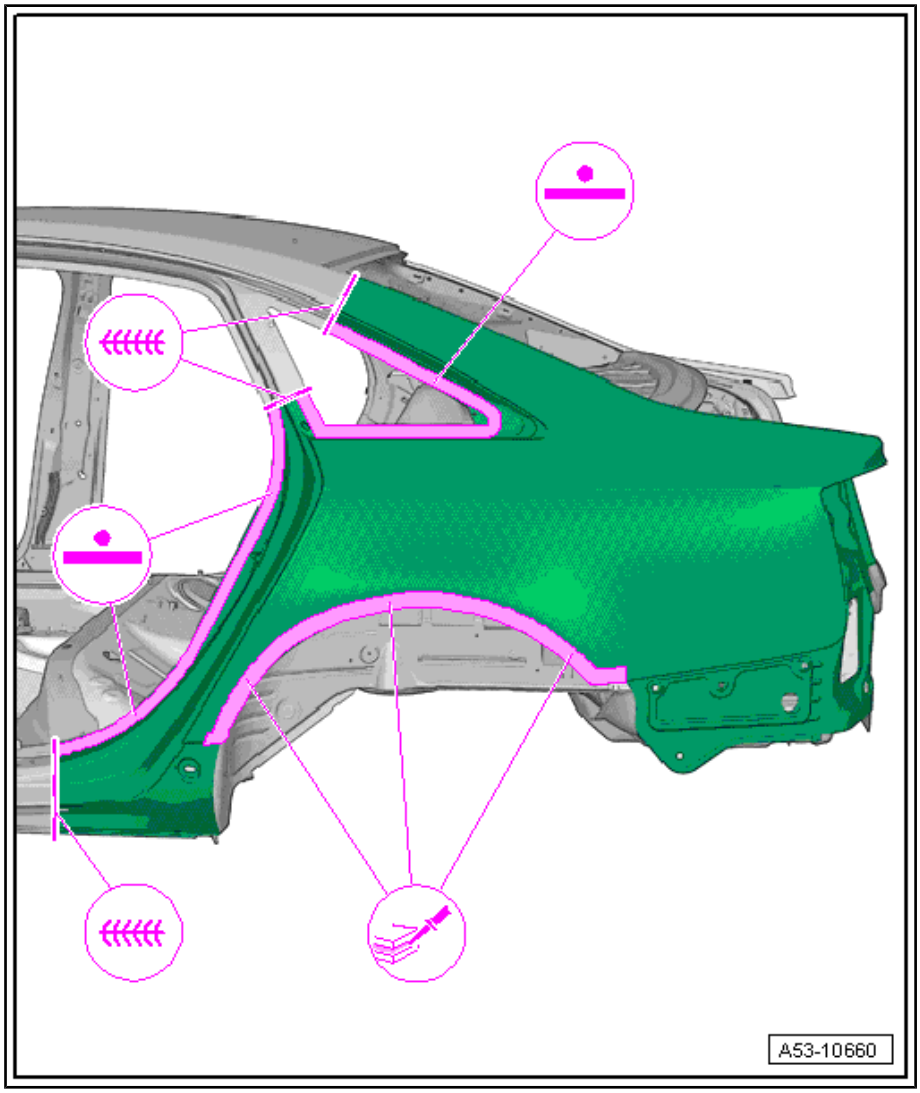
Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.

Welding in

– Weld in at separating cuts using shielded arc welding equipment : SG continuous seam.

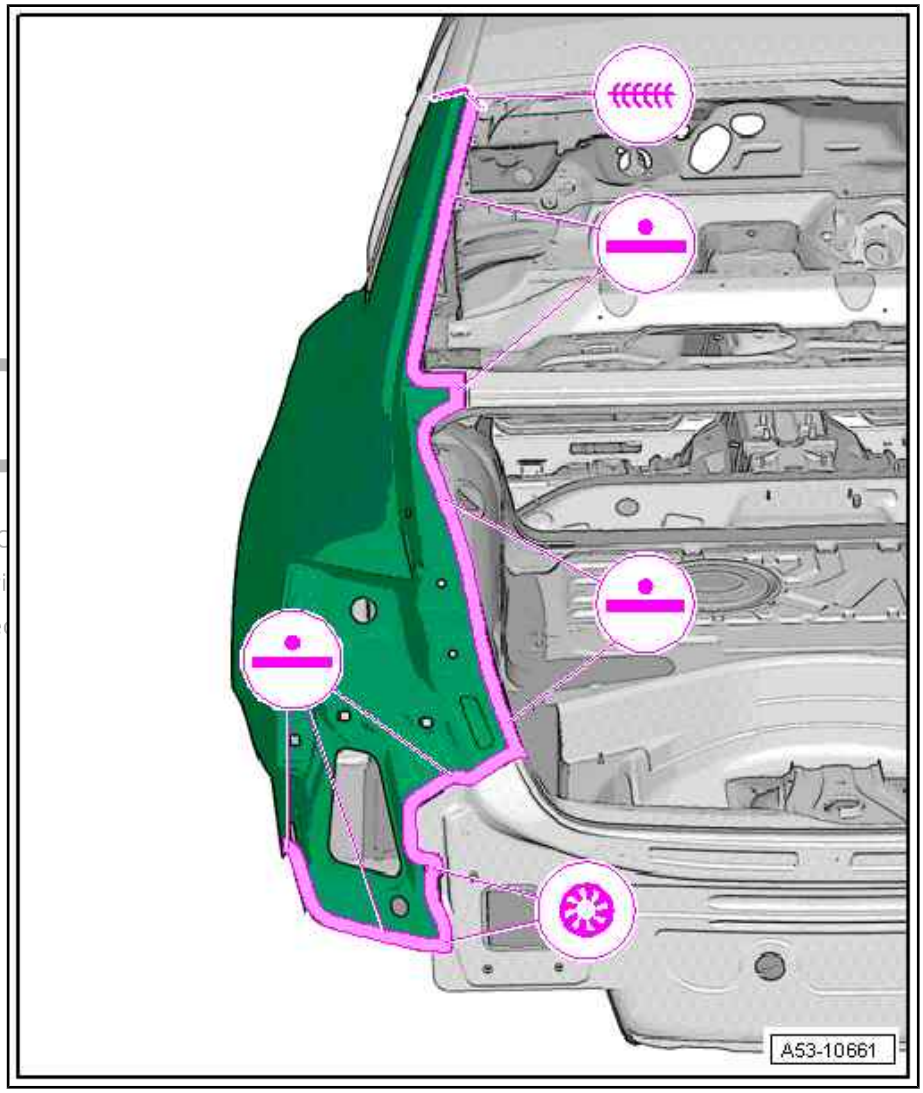
– Weld in side panel using resistance spot welder : RP spot weld seam.

– Apply 2-component epoxy adhesive - DA 001 730 A2- to side panel and flange area on wheel housing using pneumatic glue gun - V.A.G 2005 B- .



- 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.
- Weld in side panel using shielded arc welding equipment : SG plug weld seam.

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9 Side panel - Renewal (Avant)

Includes rain channel and tail light mounting

1 - Side panel

2 - Separating cut in C-pillar

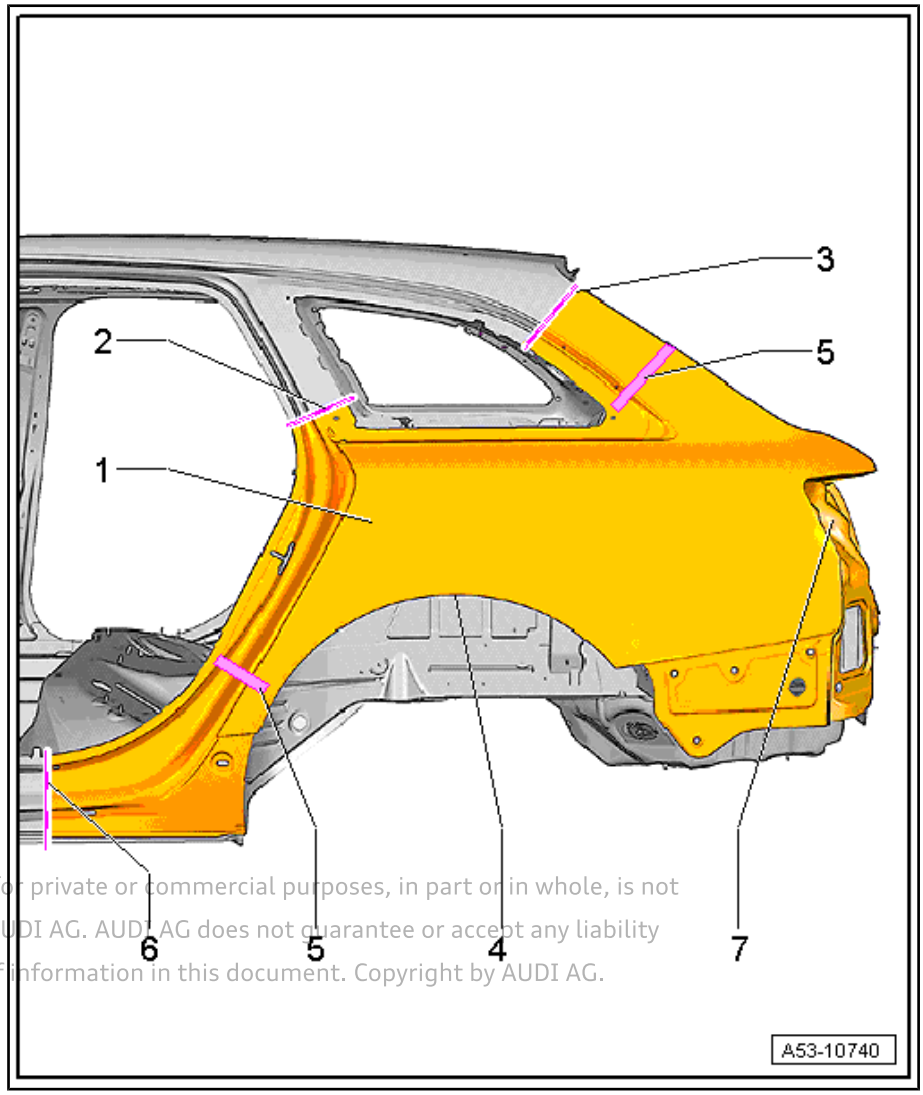
3 - Separating cut in D-pillar

4 - Bonded area

5 - Moulded foam insert

6 - Separating cut in side member

7 - Tail light mounting



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9.1 Notes for vehicles with hybrid drive

⇒ page 5

9.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Drill
- Compact angle grinder
- Body saw
- Spot weld breaker
- Pneumatic glue gun

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

9.3 Procedure

- Cross panel (part section) removed ⇒ page 332

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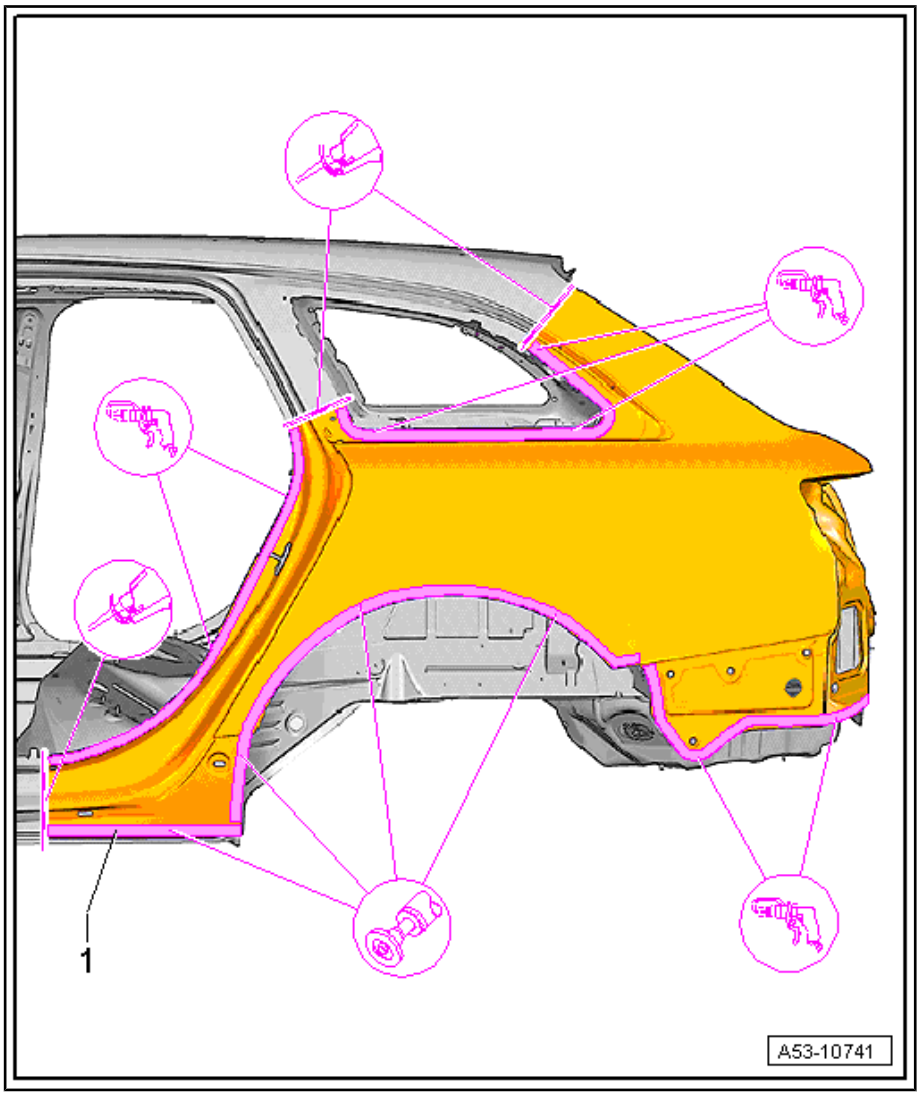
Cutting locations

Permitted separating cuts on complete side panel ⇒ page 128 .

Note

Partial renewal is possible with the separating cuts illustrated.

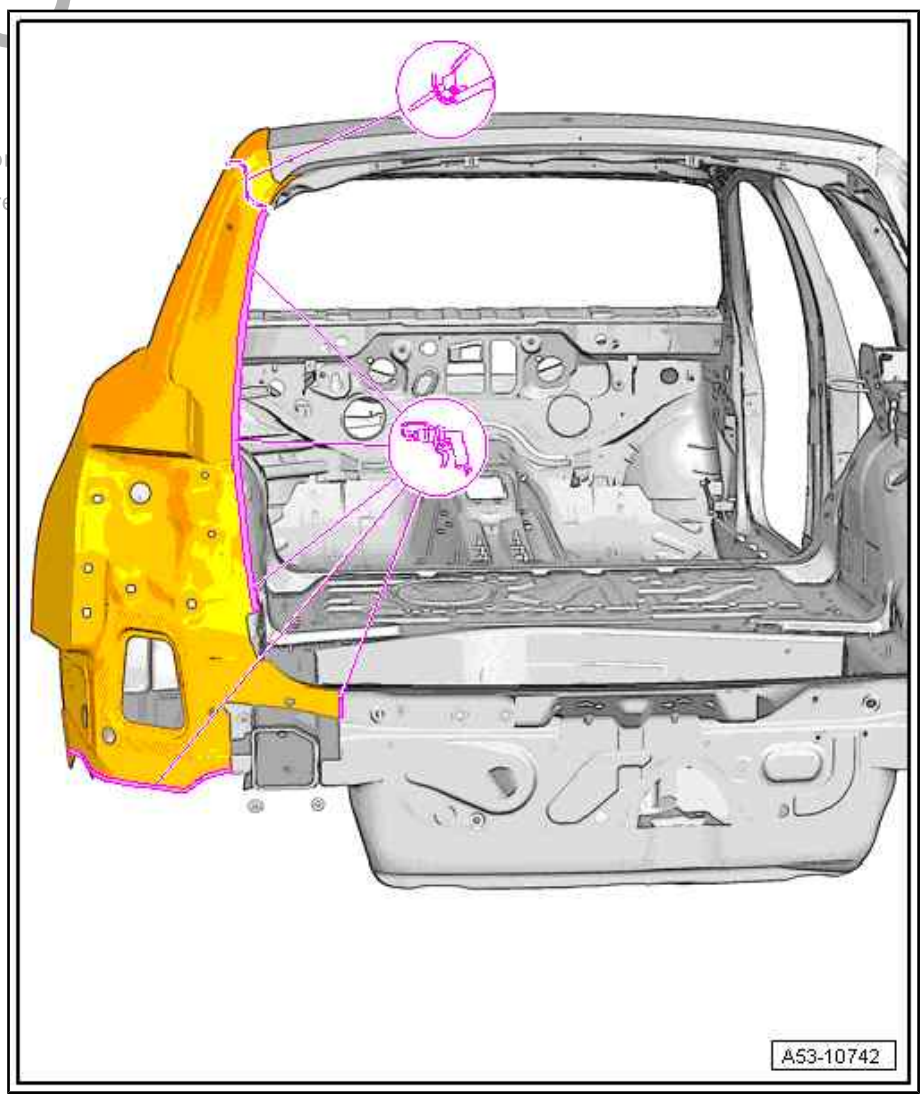
– Separate original joint using spot weld breaker .
– Grind through outer edge at wheel arch using compact angle grinder .
– Make separating cuts as shown using body saw .
– Separate laser weld -1- using compact angle grinder .



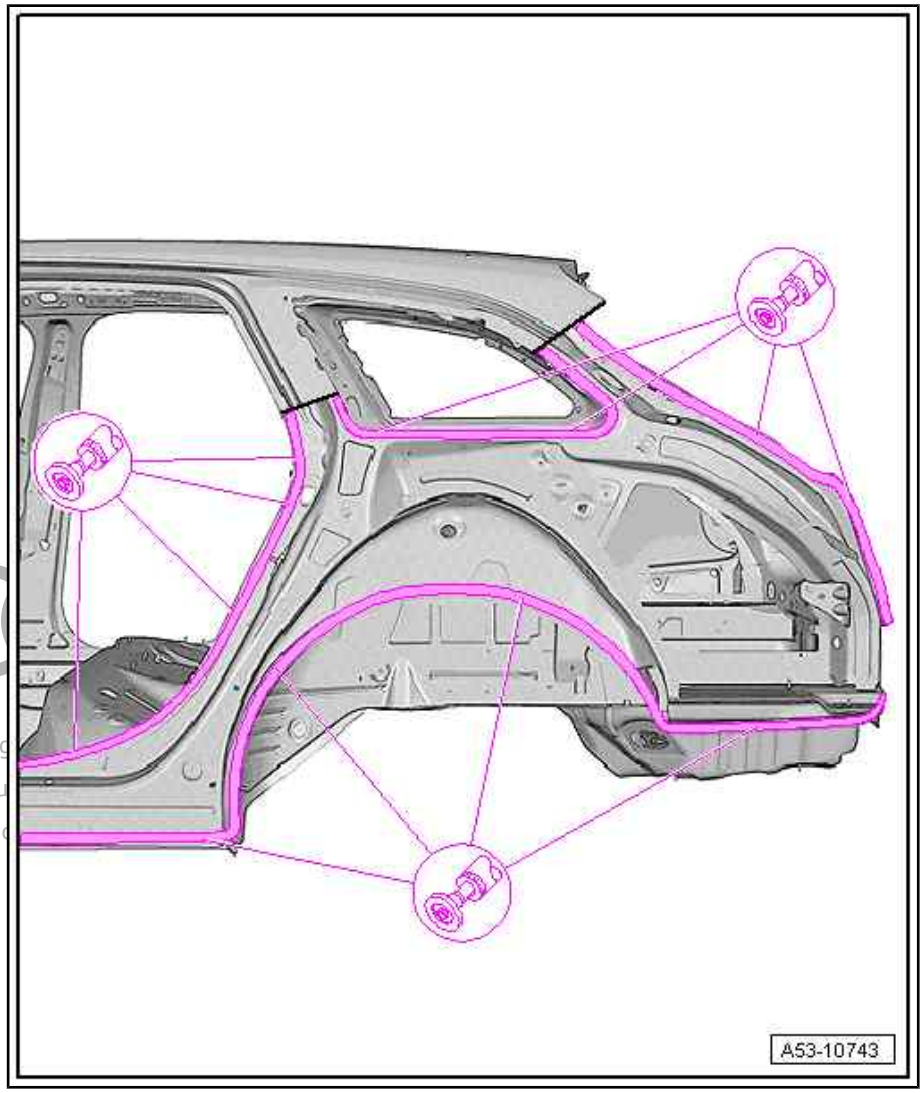
– Make separating cuts as shown using body saw .

– Separate original joint using spot weld breaker .

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– Remove remaining adhesive completely and sand bonding surfaces down to bare metal.
– Clean bonding area with cleaning solution - D 009 401 04- (it must be free of dust and grease).
– Clean flange area with cleaning solution - D 009 401 04- (it must be free of dust and grease).



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Replacement parts

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

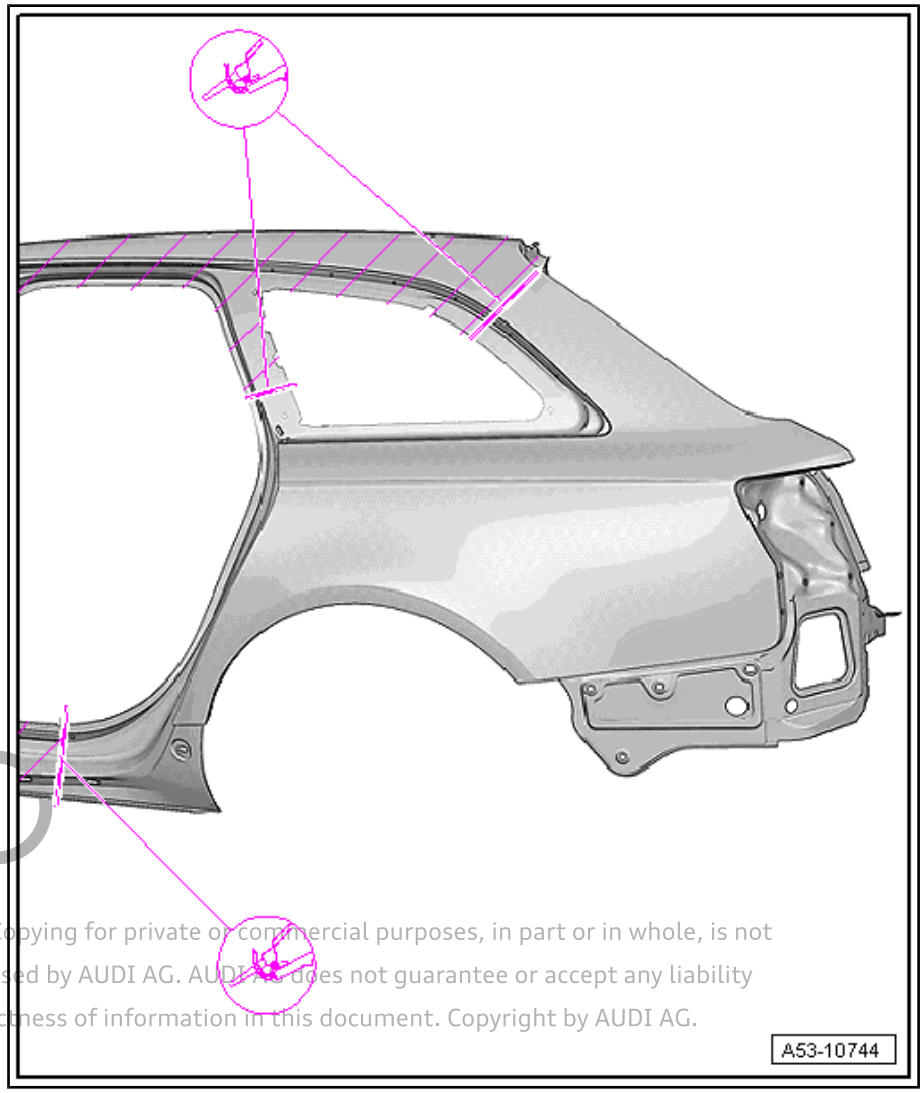
Preparing new part

– Transfer separating cut to new part and cut off hatched area using body saw .

– Clean bonding area with cleaning solution - D 009 401 04- (it must be free of dust and grease).

– Grind down bonding surface (on body side of joint) to bare metal.

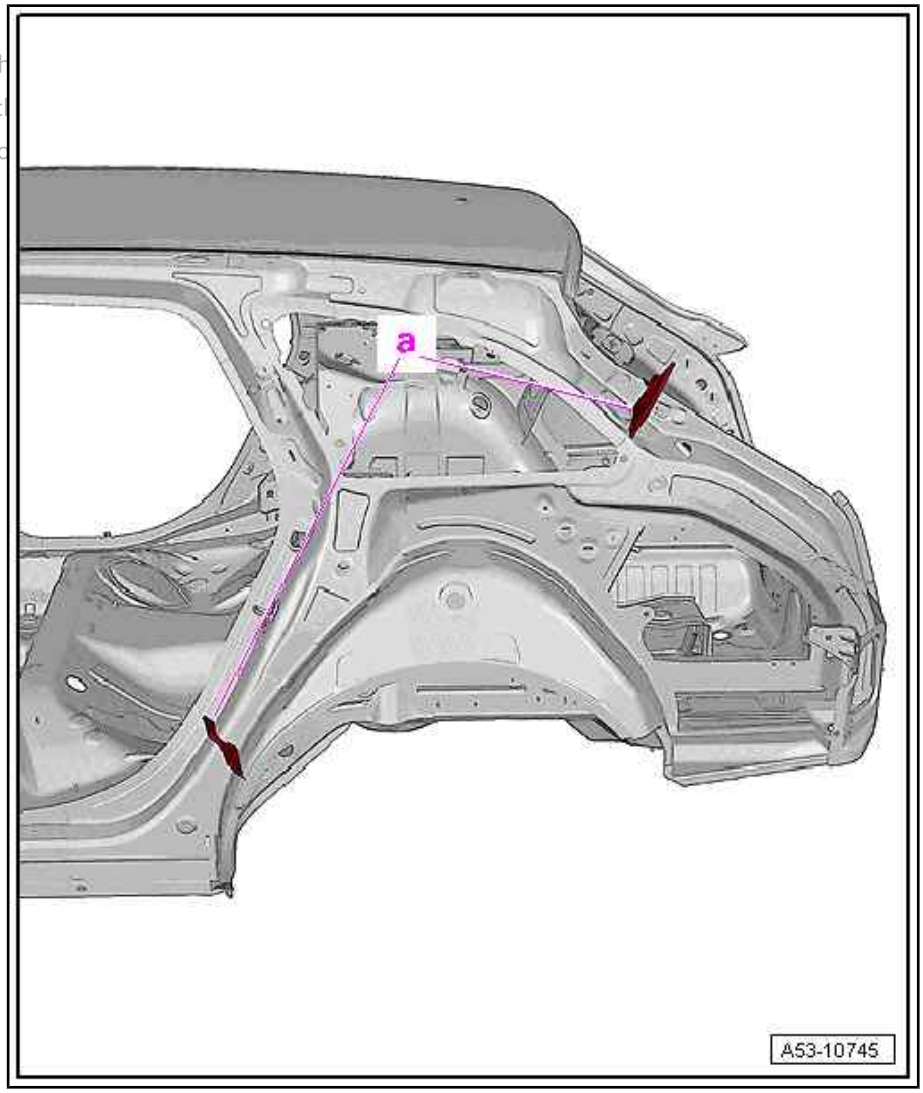
– Clean beaded flange with cleaning solution - D 009 401 04- (it must be free of dust and grease).



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Fit moulded foam inserts -a-.

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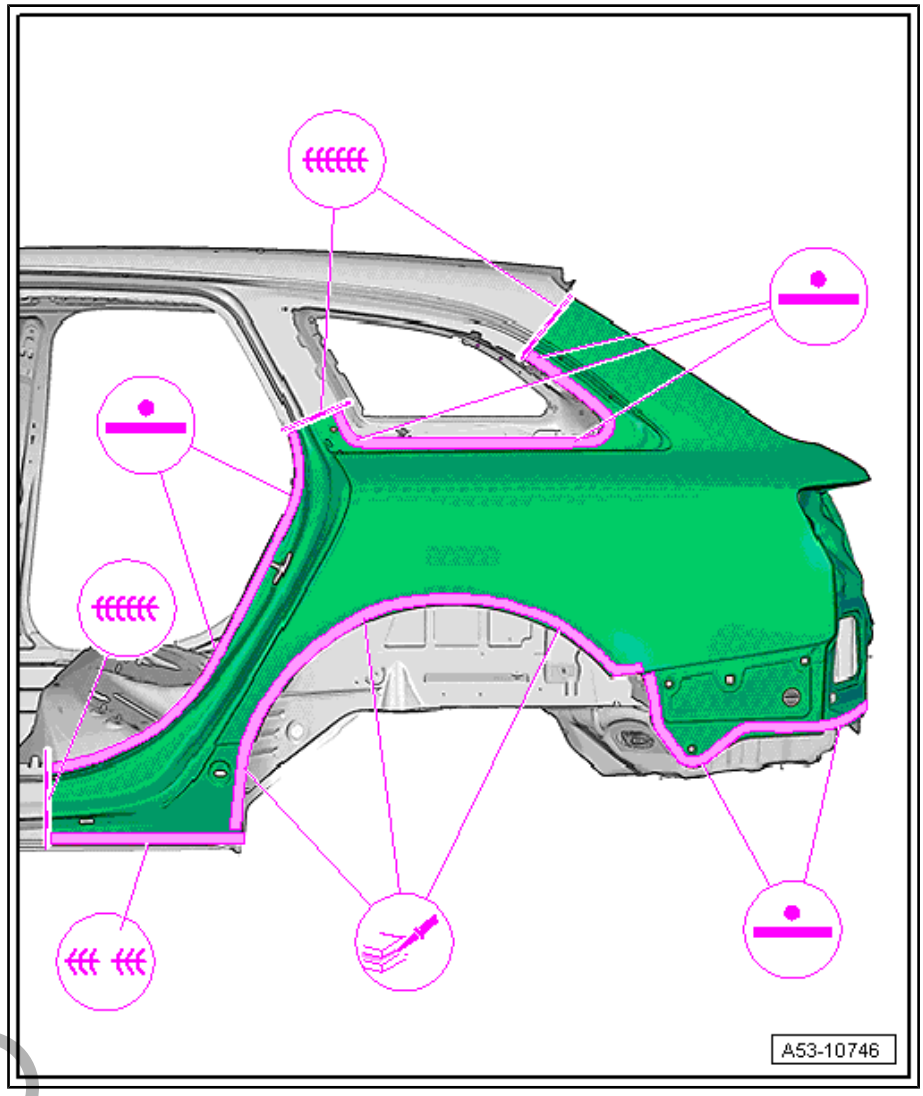
– Match up side panel on portal gauge and fix in position.

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.

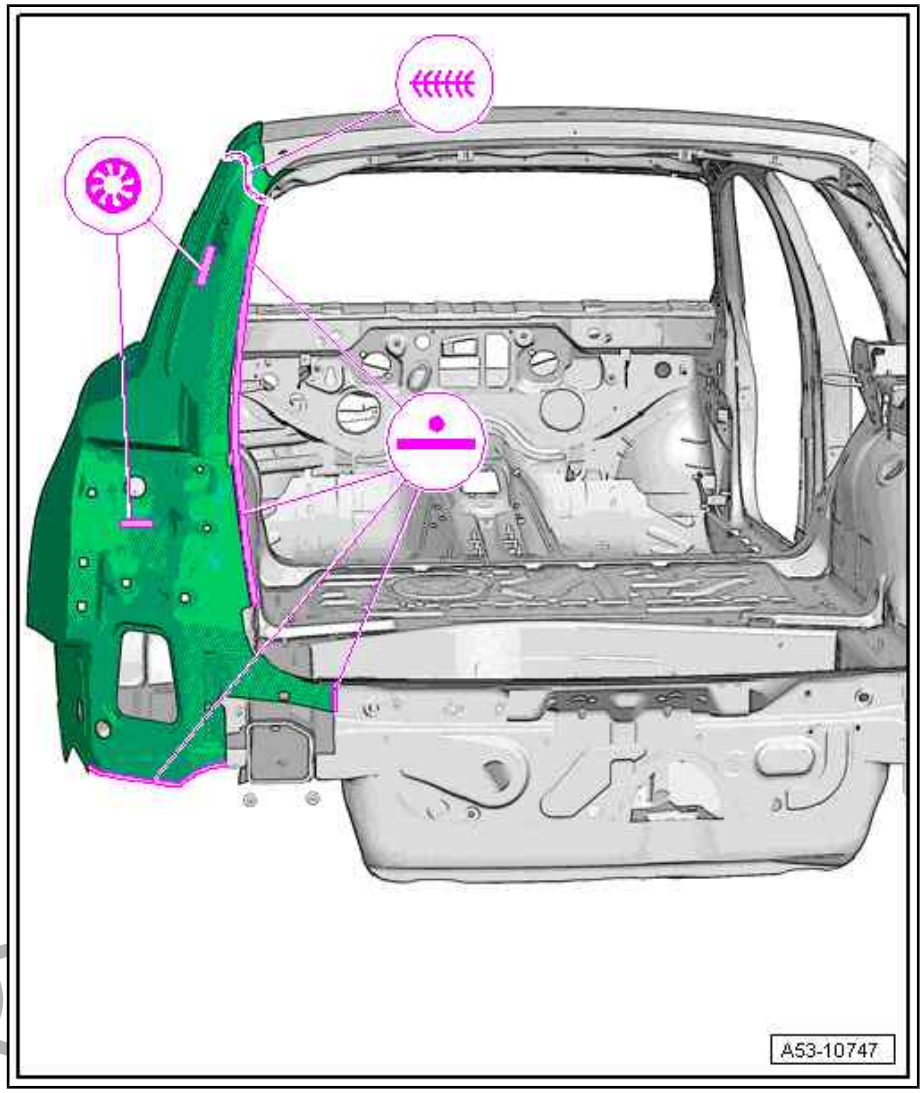
Welding in

– 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 flange area on wheel housing using pneumatic glue gun - V.A.G 2005 B- .
– Weld in side member (part section) using shielded arc welding equipment : SG continuous seam (staggered - with gaps) in place of laser weld.



– 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.

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- Welding in cross panel (part section) ⇒ page 340

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10 C-pillar reinforcement - Renewal (Saloon and Avant identical)

1 - Lower C-pillar reinforcement

2 - Separating cut

Note

- *Part section repair is ing separating cut -2*
- *Weld separating cut SG tinuous seam.*

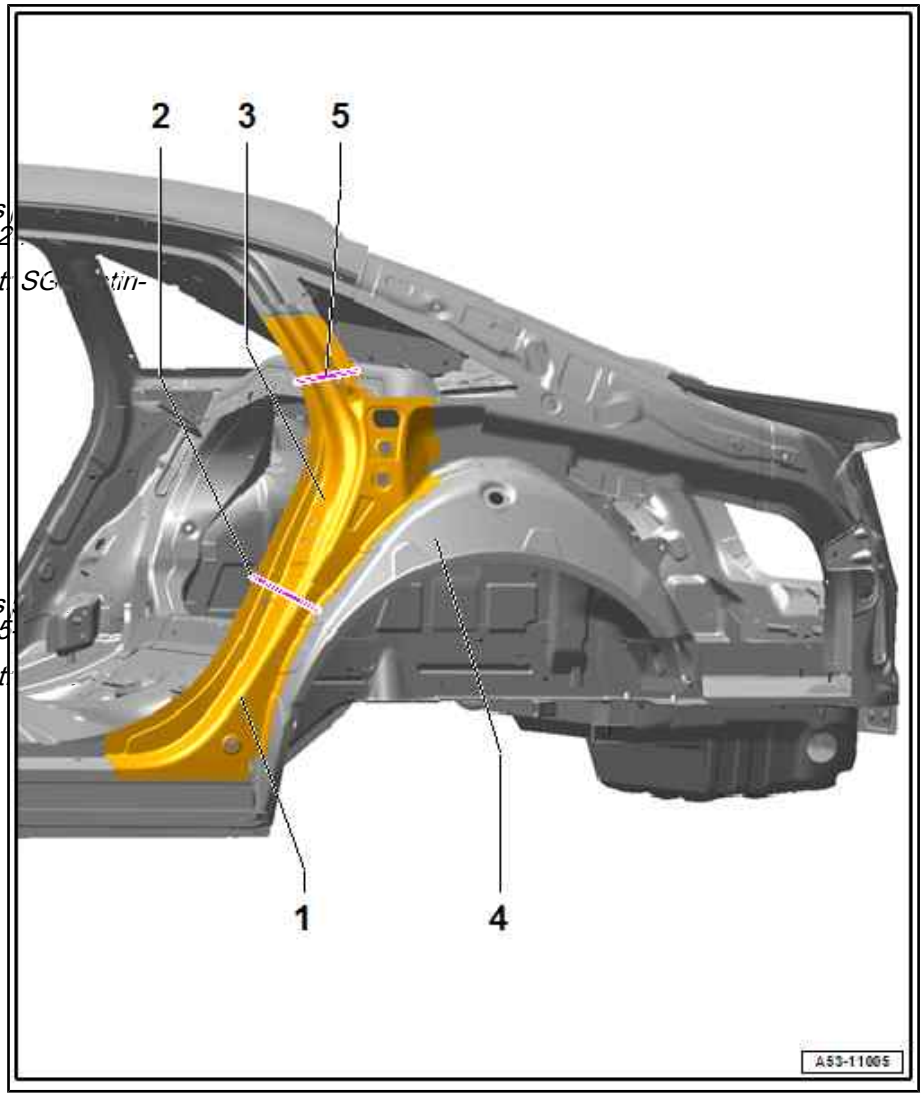
3 - Upper C-pillar reinforcement

4 - Wheel housing

5 - Separating cut

Note

- *Part section repair is ing separating cut -5*
- *Weld separating cut uous seam.*



10.1 Notes for vehicles with hybrid drive

⇒ page 5

10.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Compact angle grinder
- Body saw
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

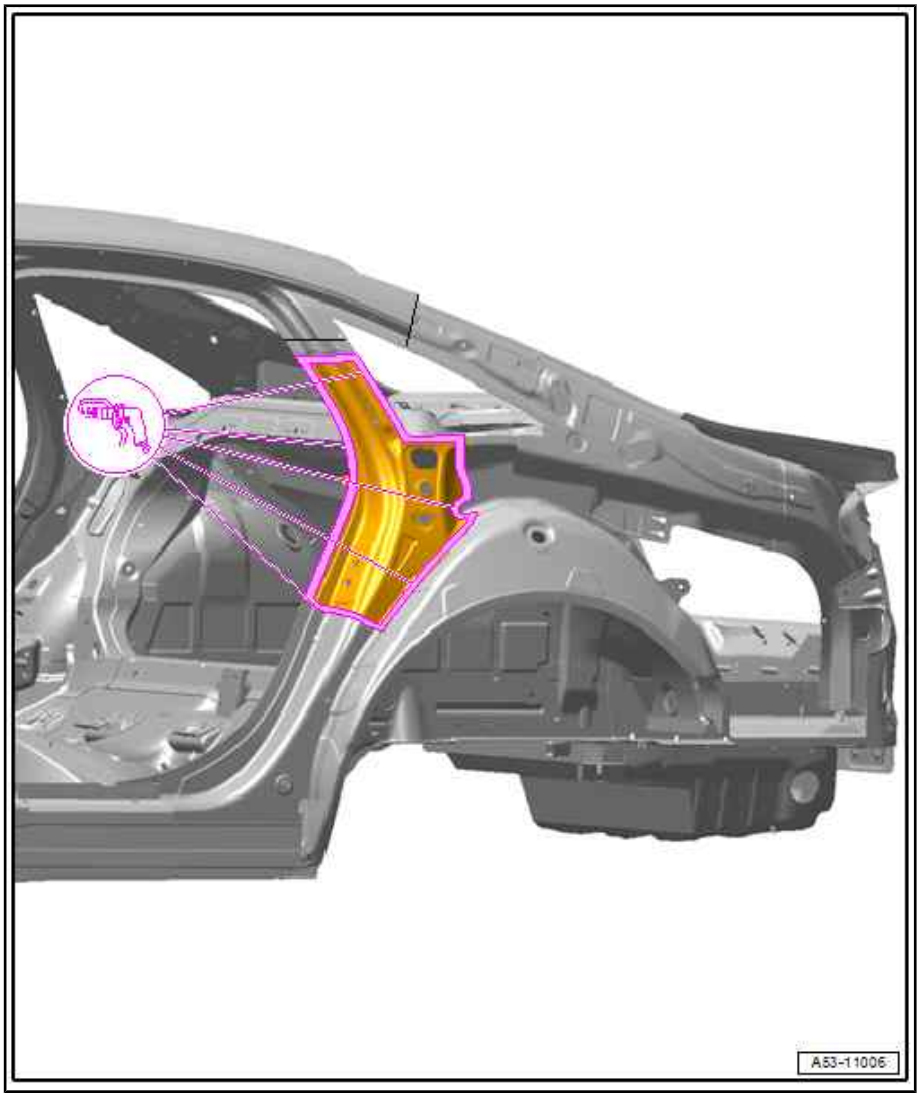
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10.3 Procedure

- Side panel removed (Saloon) ⇒ page 362
- Side panel removed (Avant) ⇒ page 362

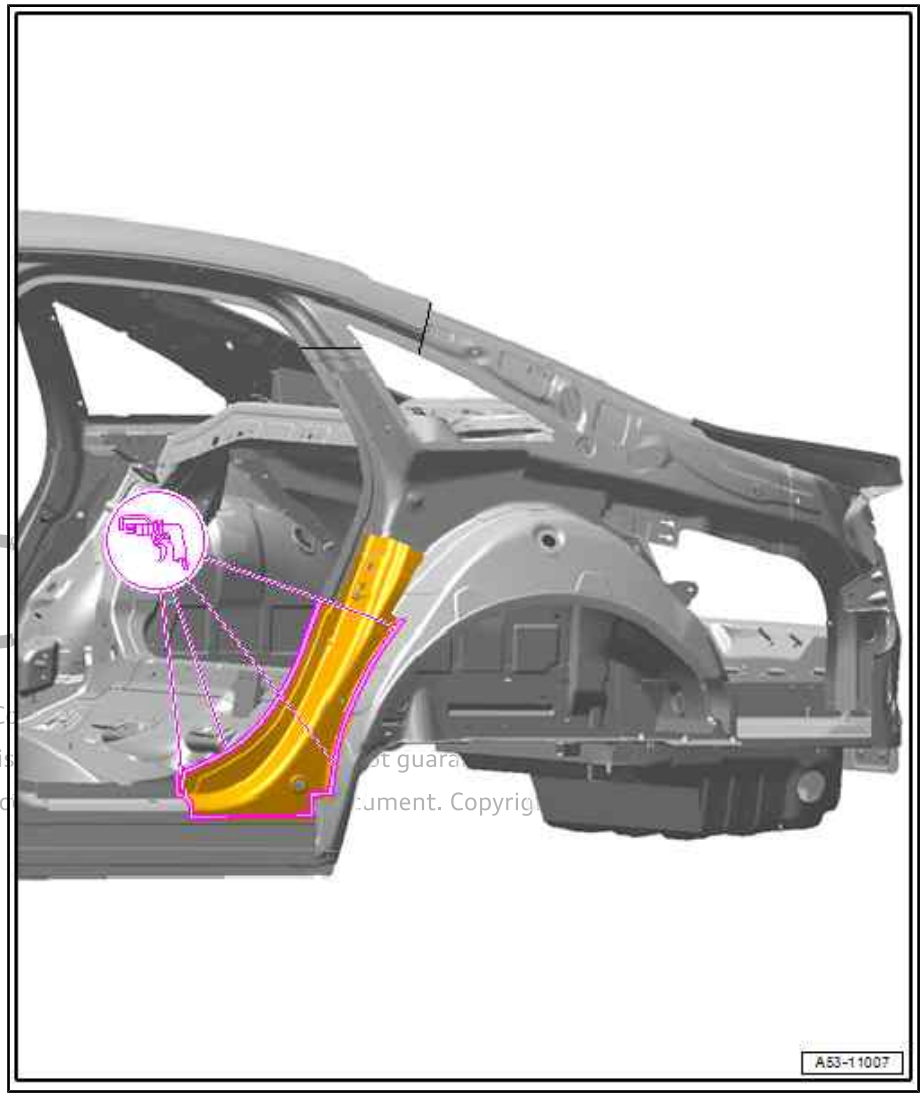
Cutting locations

– Separate original joint using spot weld breaker .



– Separate original joint using spot weld breaker .

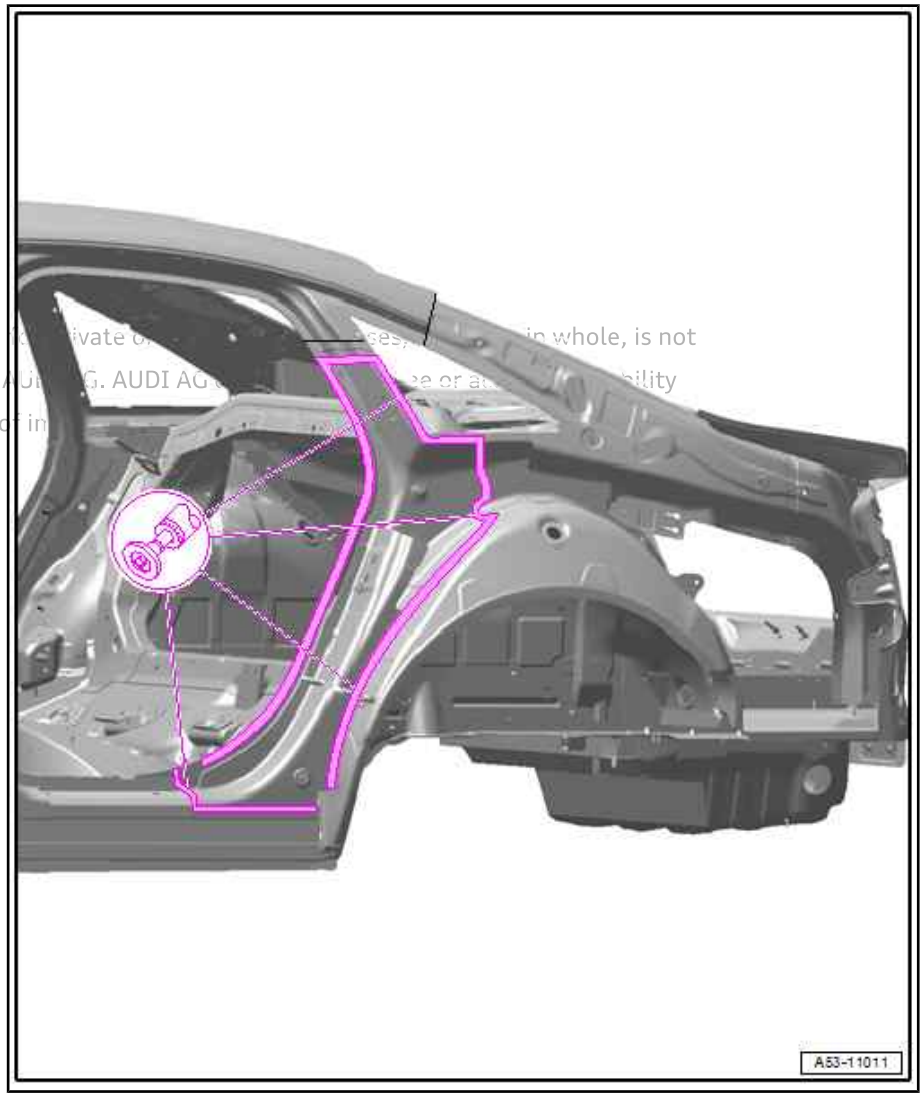
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– Remove remaining material using compact angle grinder .

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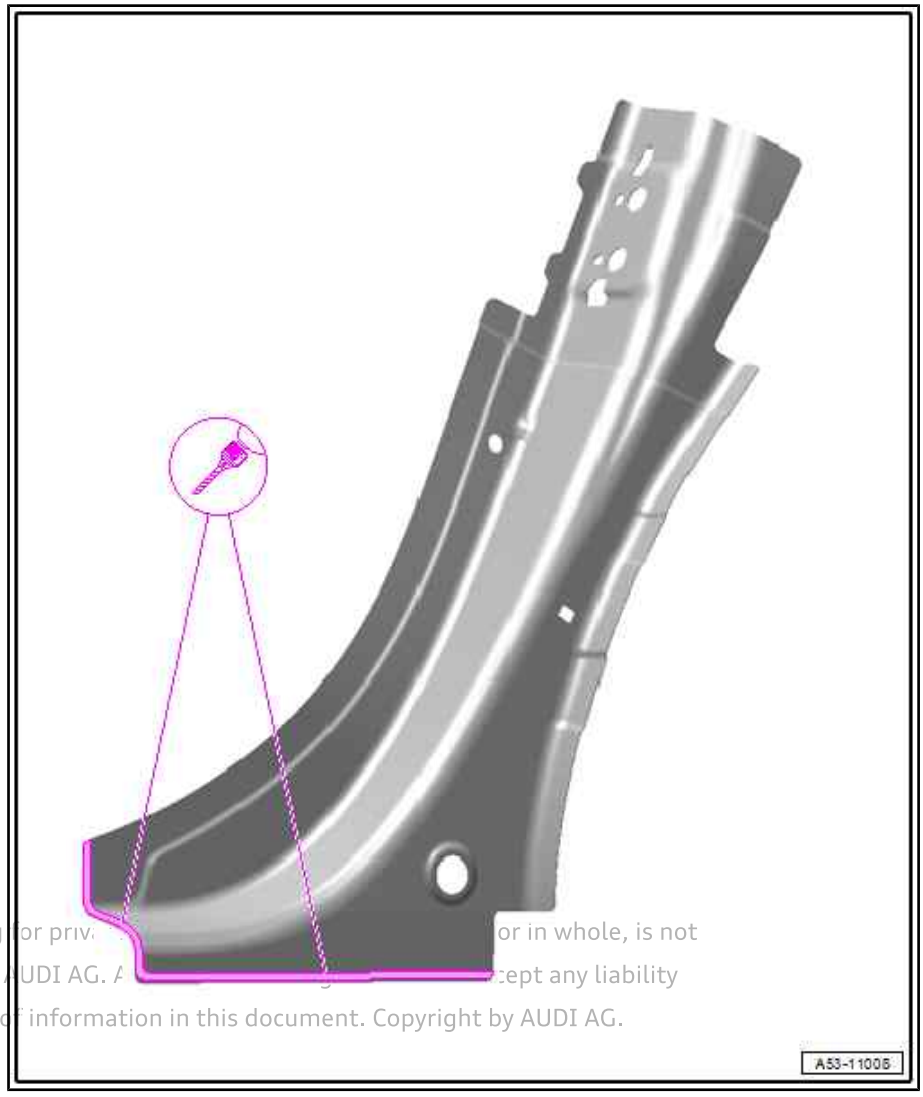


Replacement part

- Upper C-pillar reinforcement
- Lower C-pillar reinforcement

Preparing new part

– Drill holes for SG plug weld seam, 8 mm ∅ using drill .



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Note

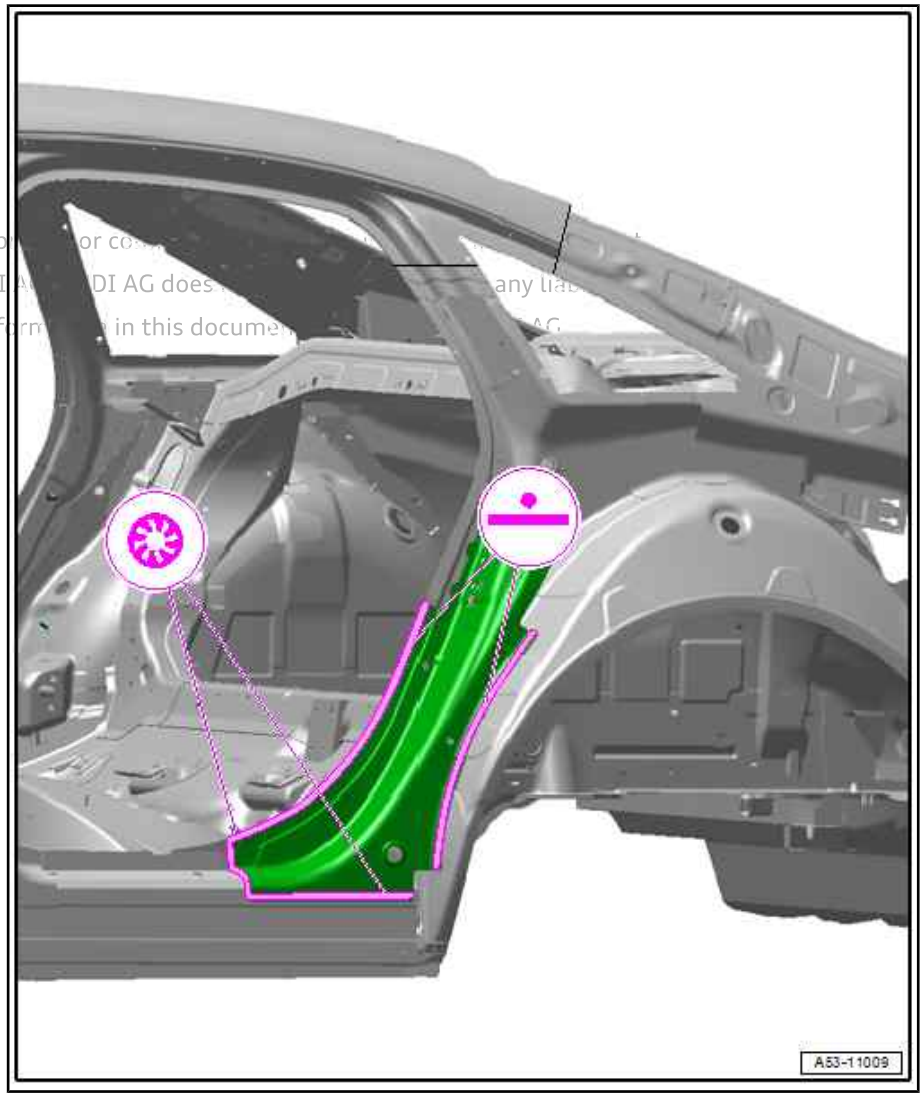
Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.

Welding in

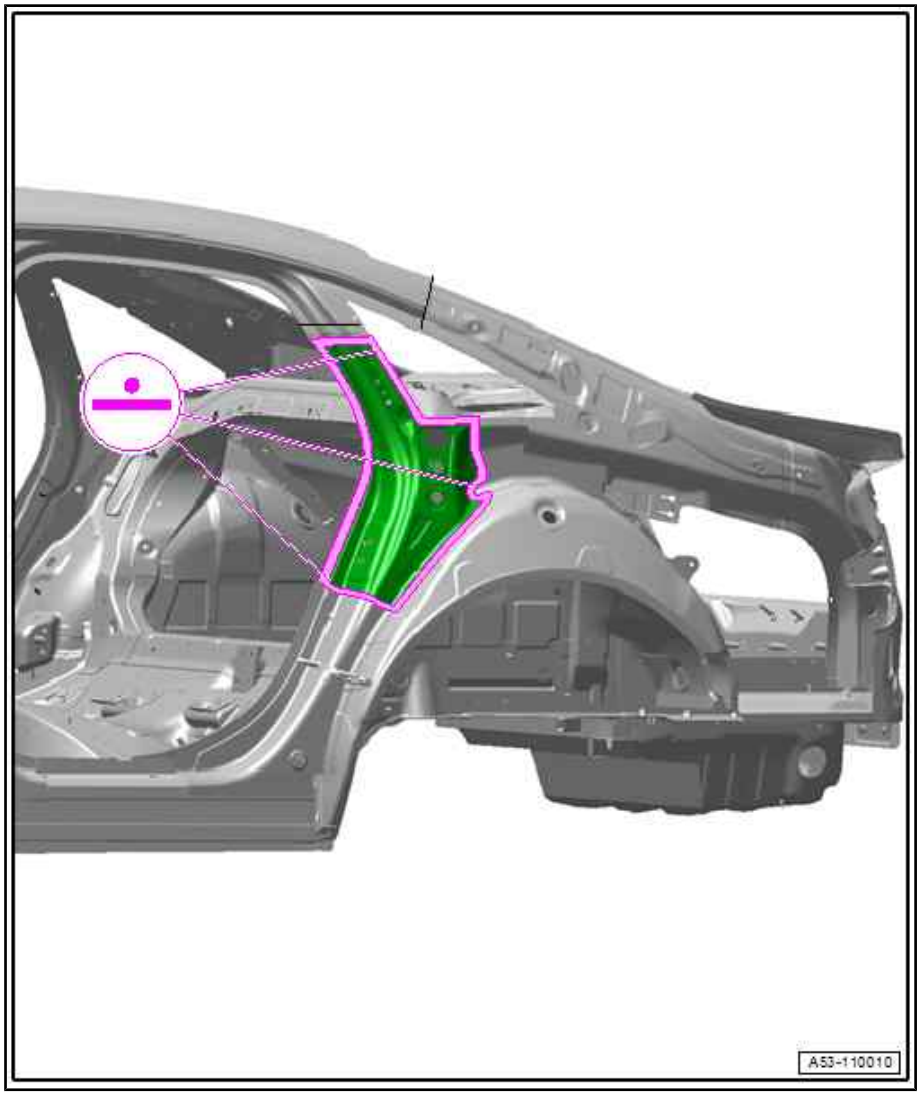
– Weld in lower C-pillar reinforcement using shielded arc welding equipment : SG plug weld seam.

– Weld in lower C-pillar reinforcement using resistance spot welder : RP spot weld seam.

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– Weld in upper C-pillar reinforcement using resistance spot welder : RP spot weld seam.



- Welding in side panel (Saloon) ⇒ page 362
- Welding in side panel (Avant) ⇒ page 362

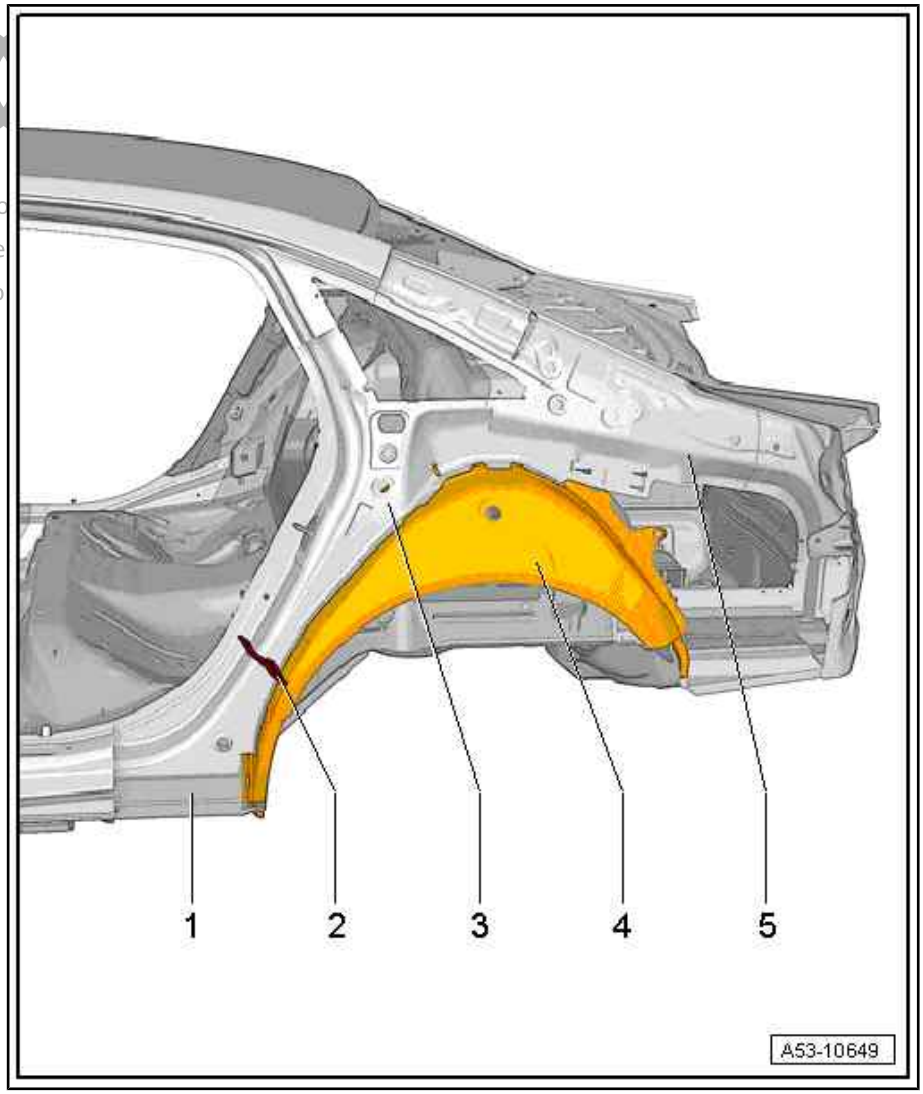
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11 Rear wheel housing - Partial renewal

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

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11.1 Notes for vehicles with hybrid drive

⇒ page 5

11.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Compact angle grinder
- Body saw
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

11.3 Procedure

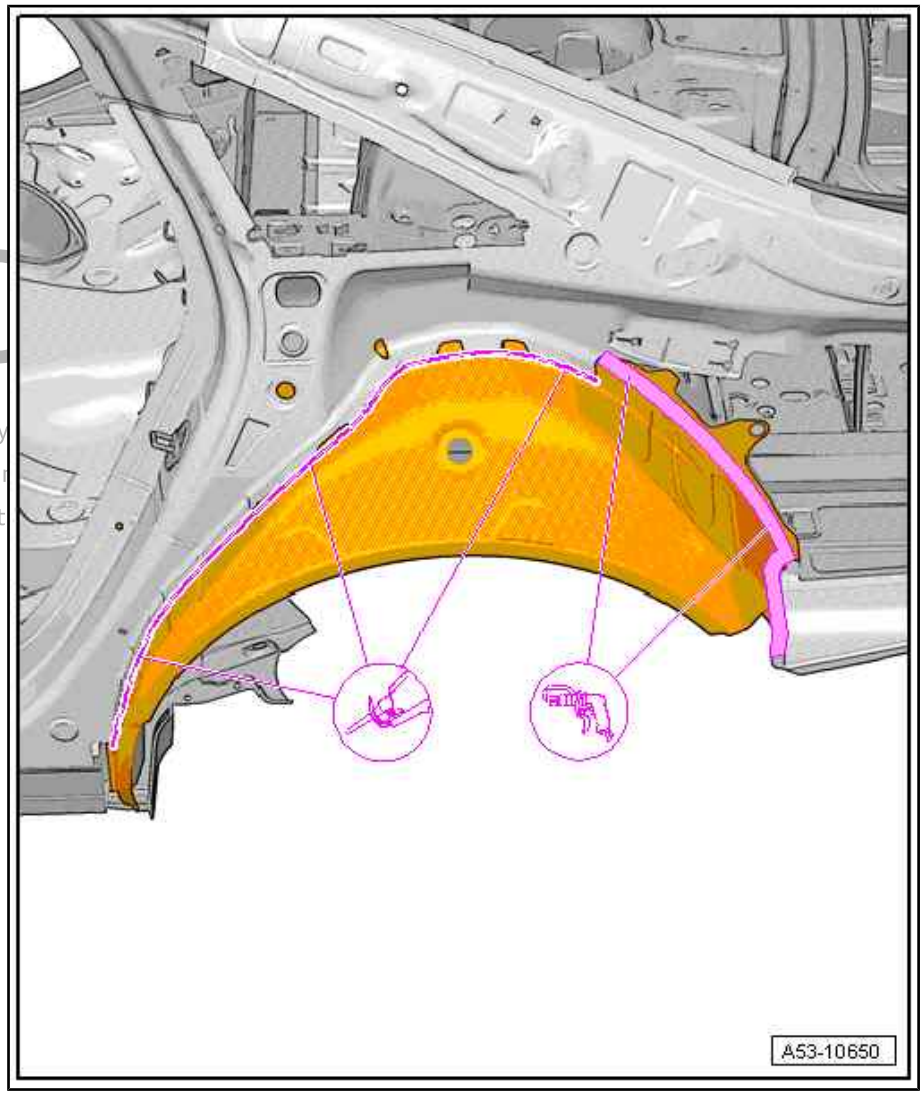
- Side panel removed (Saloon) ⇒ page 362
- Side panel removed (Avant) ⇒ page 362

Cutting locations

– Make separating cuts as shown using body saw .

– Separate original joint using spot weld breaker .

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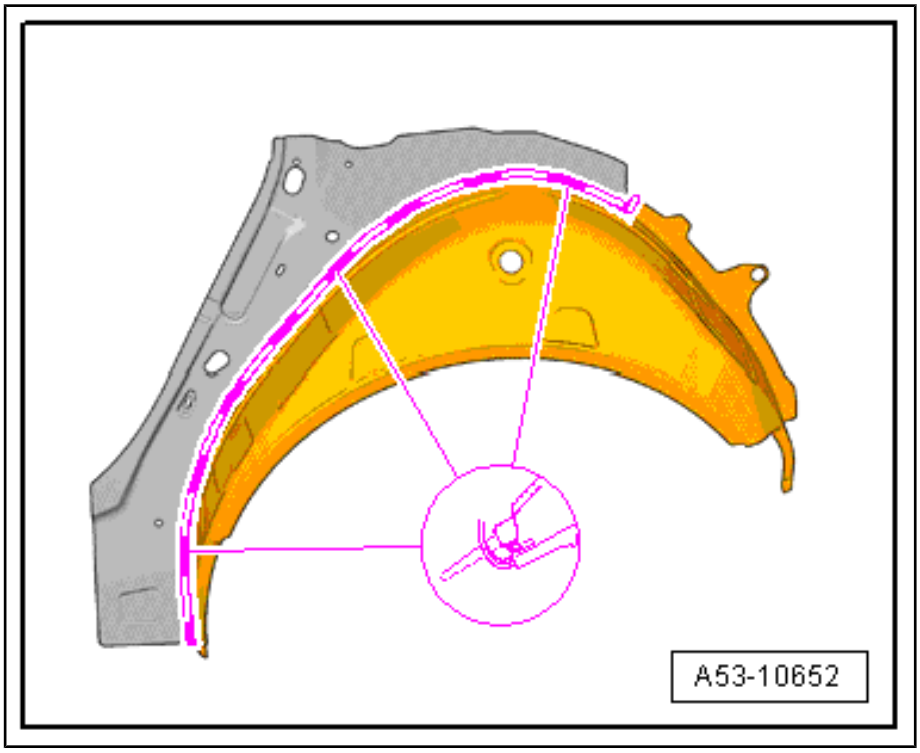
Replacement part

♦ Rear wheel housing liner

Preparing new part

– Step separating cut for joddle-join (on body side of joint).

– Transfer separating cut plus 10 mm for overlap to new part and cut off using body saw .



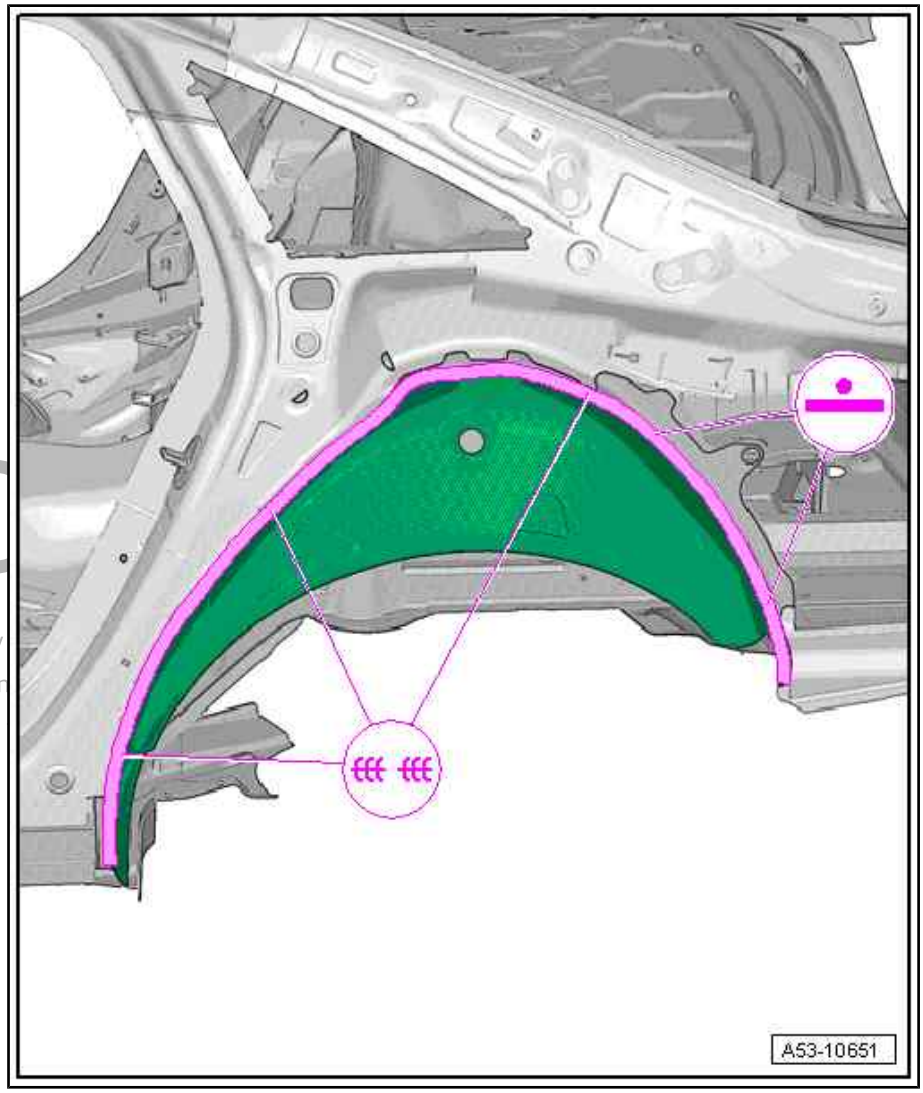
Note

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

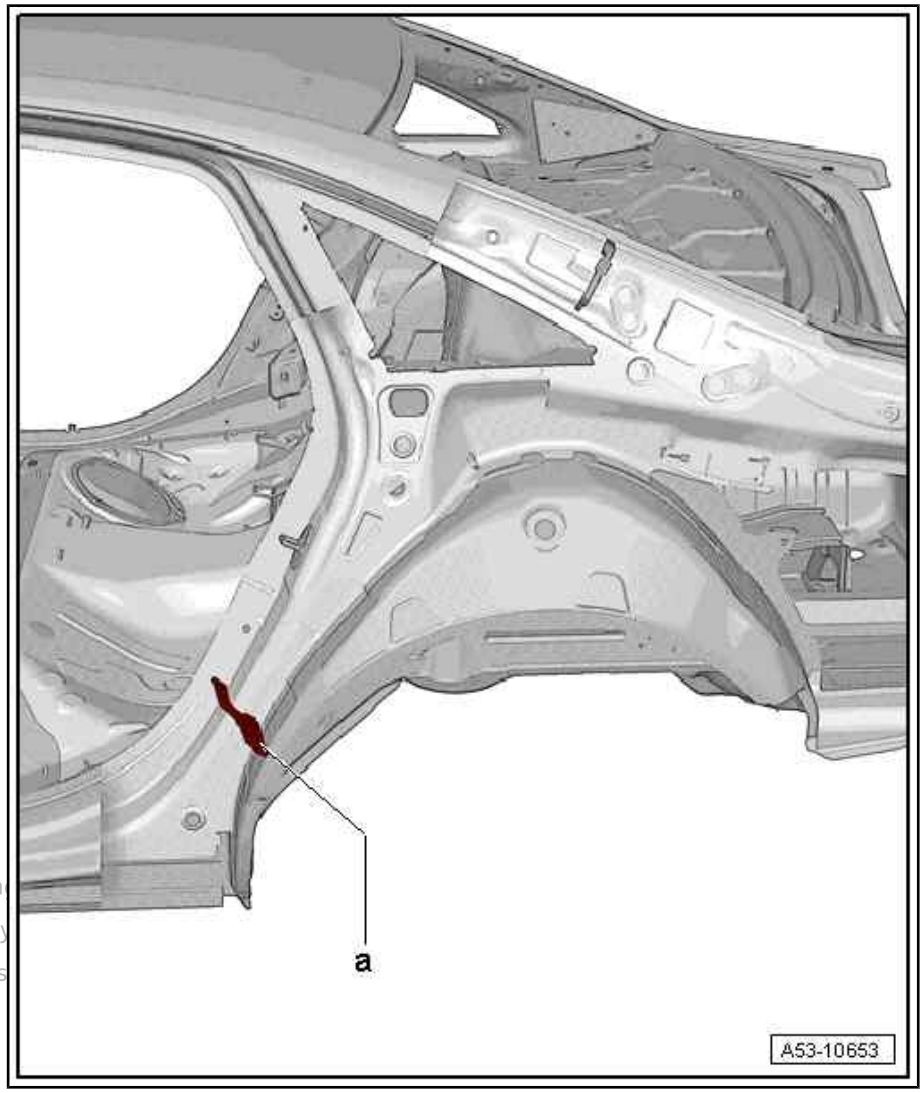
- Weld in wheel housing using shielded arc welding equipment : SG continuous seam (staggered - with gaps).
- Weld in remaining joint at wheel housing using resistance spot welder : RP spot weld seam.

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Fit moulded foam inserts -a-.



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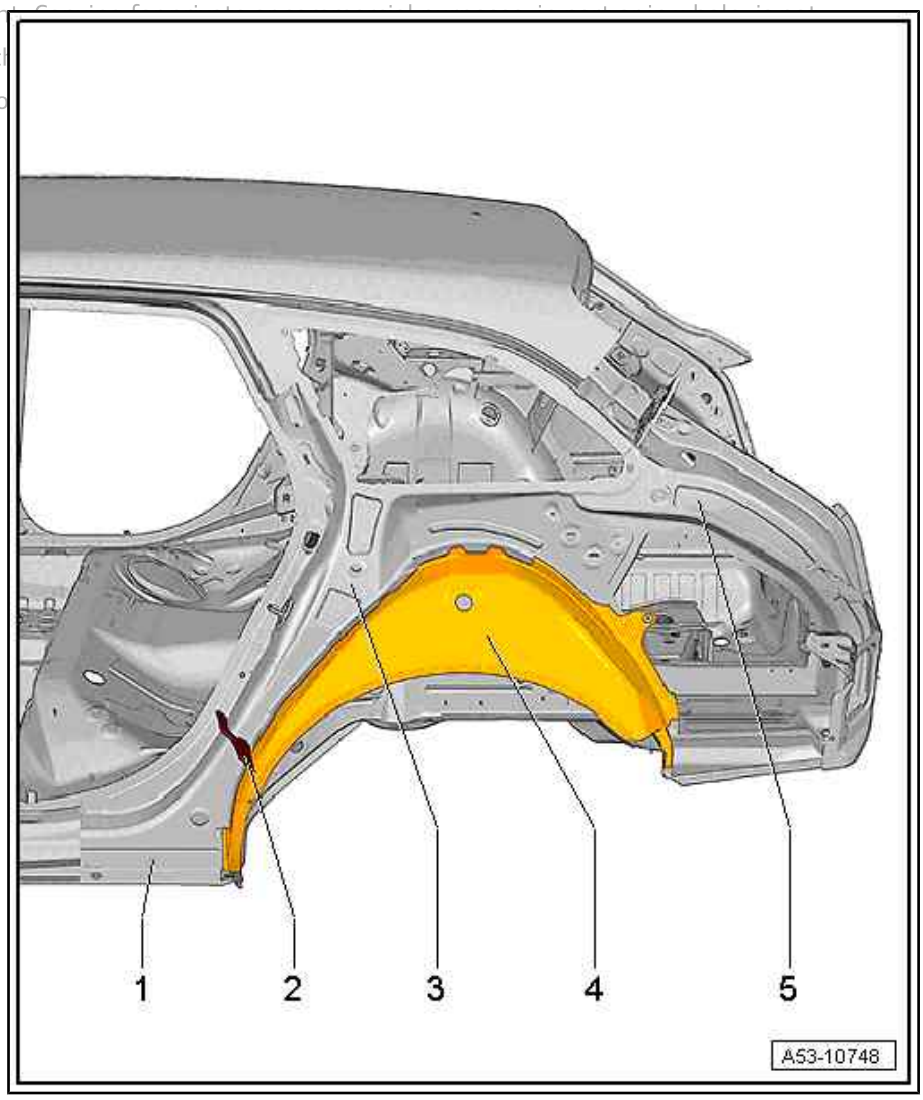
- Welding in side panel (Saloon) ⇒ page 362
- Welding in side panel (Avant) ⇒ page 362

RO: 53 69 55 52

12 Rear wheel housing - Partial renewal (Avant)

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



12.1 Notes for vehicles with hybrid drive

⇒ page 5

12.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Compact angle grinder
- Body saw
- Spot weld breaker

Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

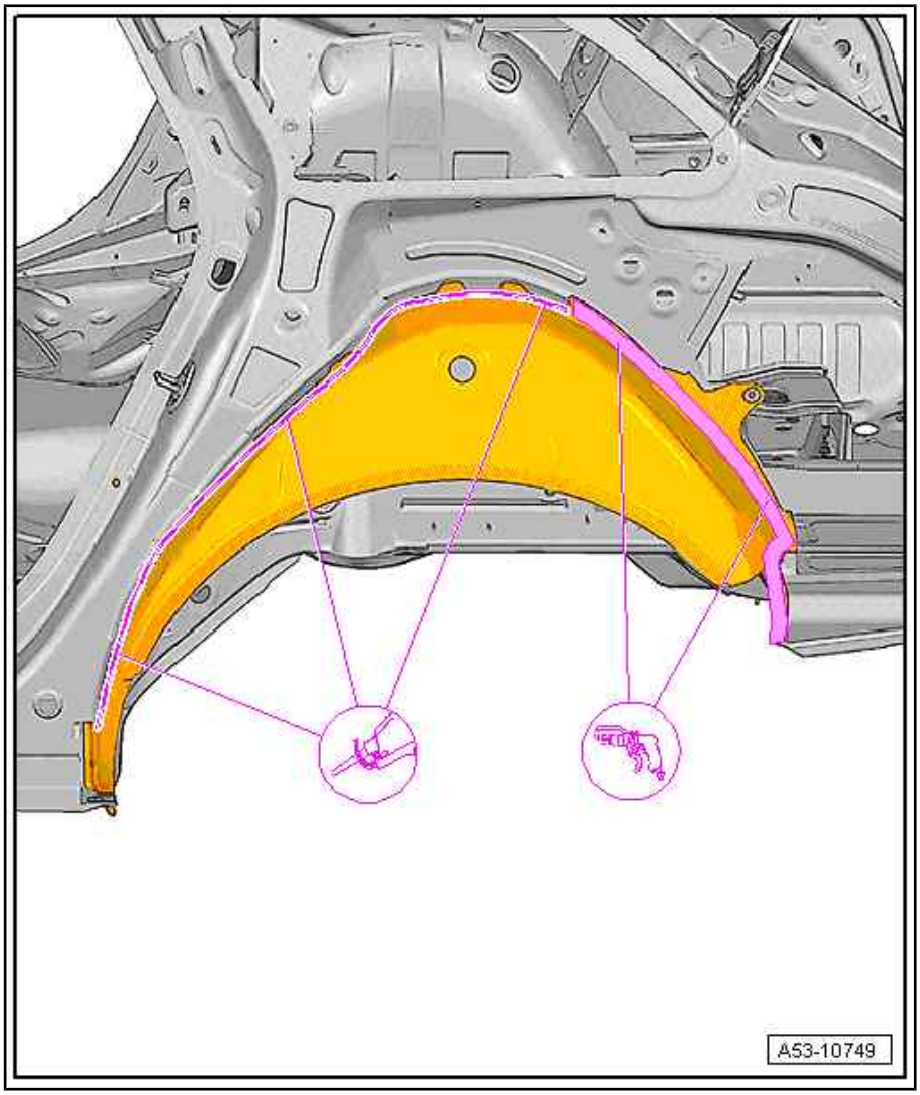
12.3 Procedure

- Side panel removed (Avant) ⇒ page 362

Cutting locations

– Make separating cuts as shown using body saw .

– Separate original joint using spot weld breaker .



Replacement part

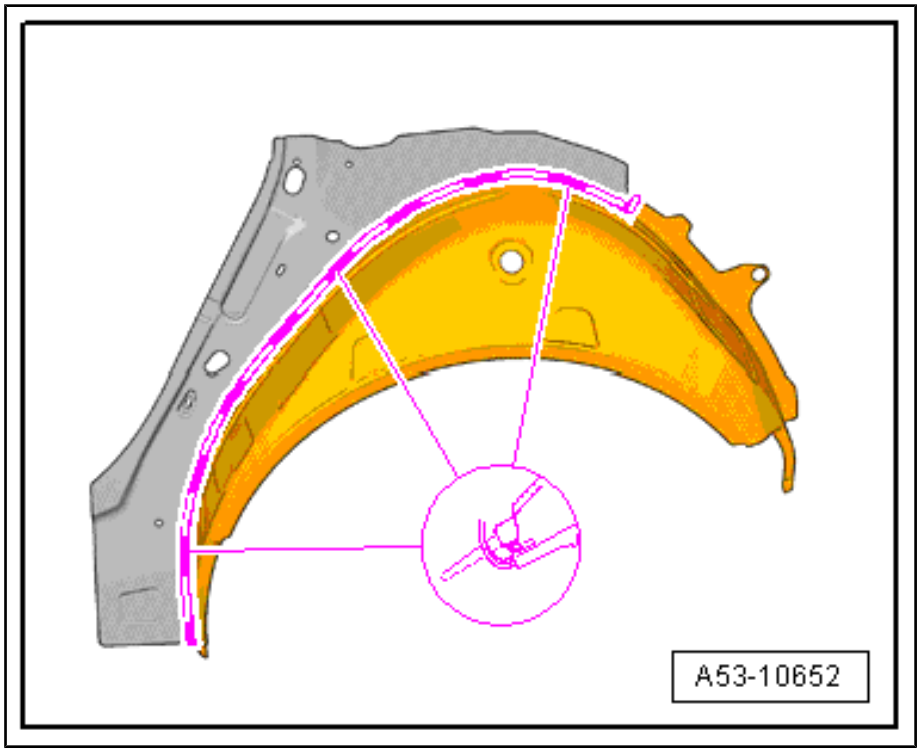
♦ Rear wheel housing liner

Preparing new part

– Step separating cut for joddle-join (on body side of joint).

– Transfer separating cut plus 10 mm for overlap to new part and cut off using body saw .

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Note

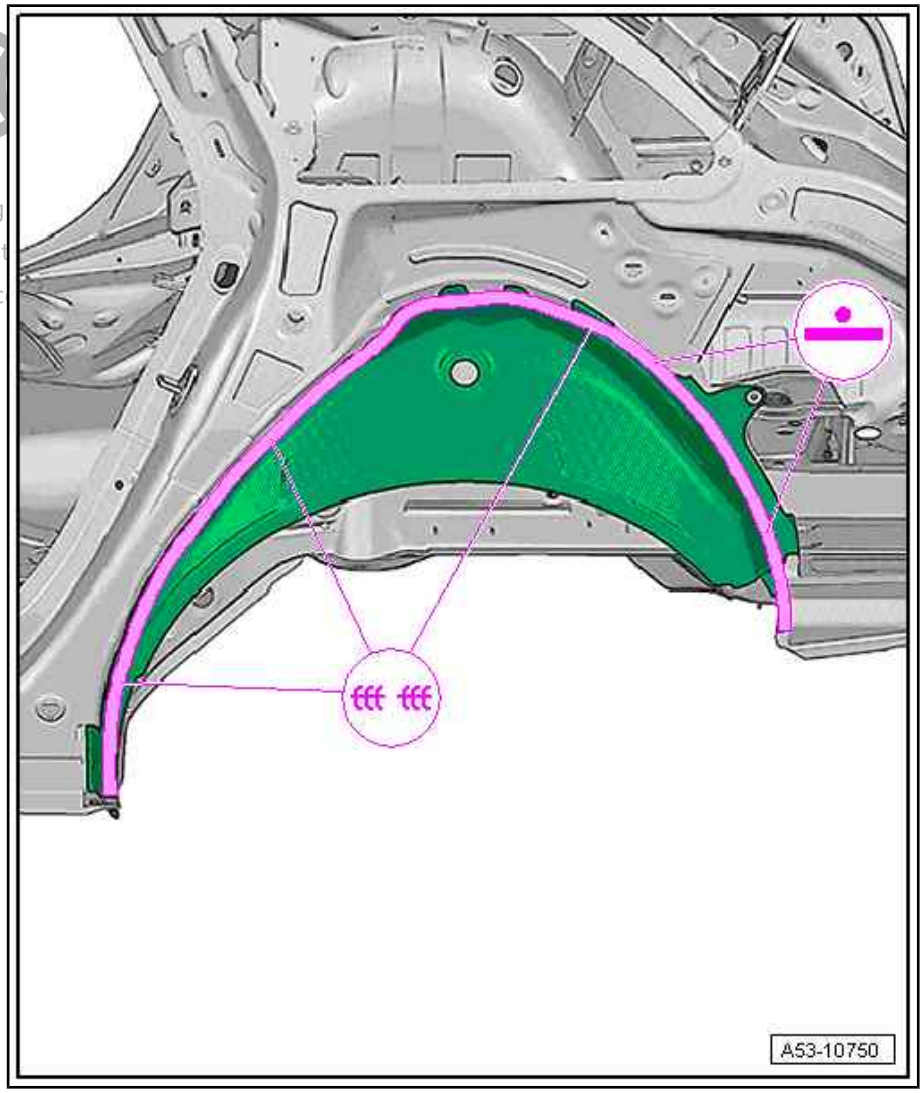
Due to the different types of steel and panel thicknesses employed, one of the resistance spot welding units listed in this manual and approved by Audi must be used to ensure correct results when spot welding.

Welding in

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

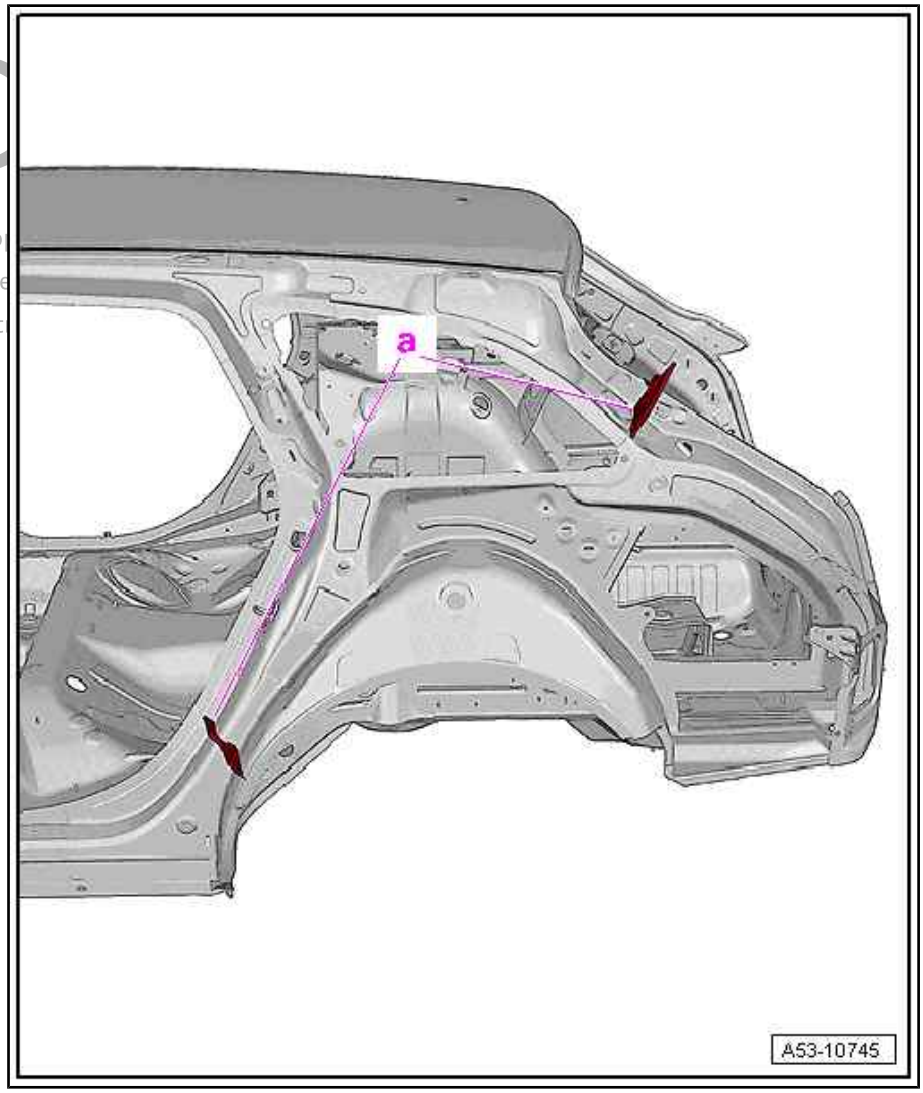
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- Welding in side panel (Avant) ⇒ page 370

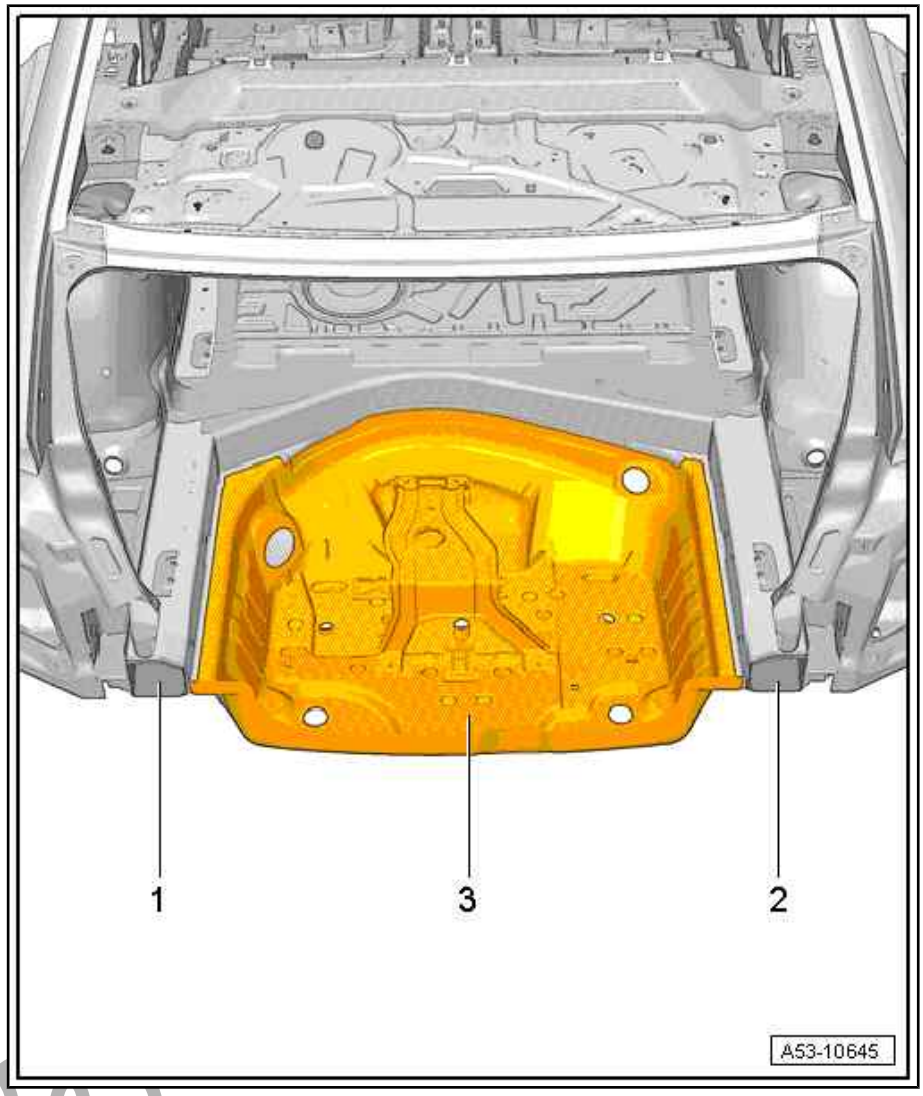
13 Luggage compartment floor - Renewal

(Saloon and Avant identical)

1 - Luggage compartment floor

2 - Rear longitudinal member (right-side)

3 - Rear longitudinal member (left-side)



13.1 Notes for vehicles with hybrid drive

⇒ page 5

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13.2 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Drill
- Compact angle grinder
- Body saw
- Spot weld breaker

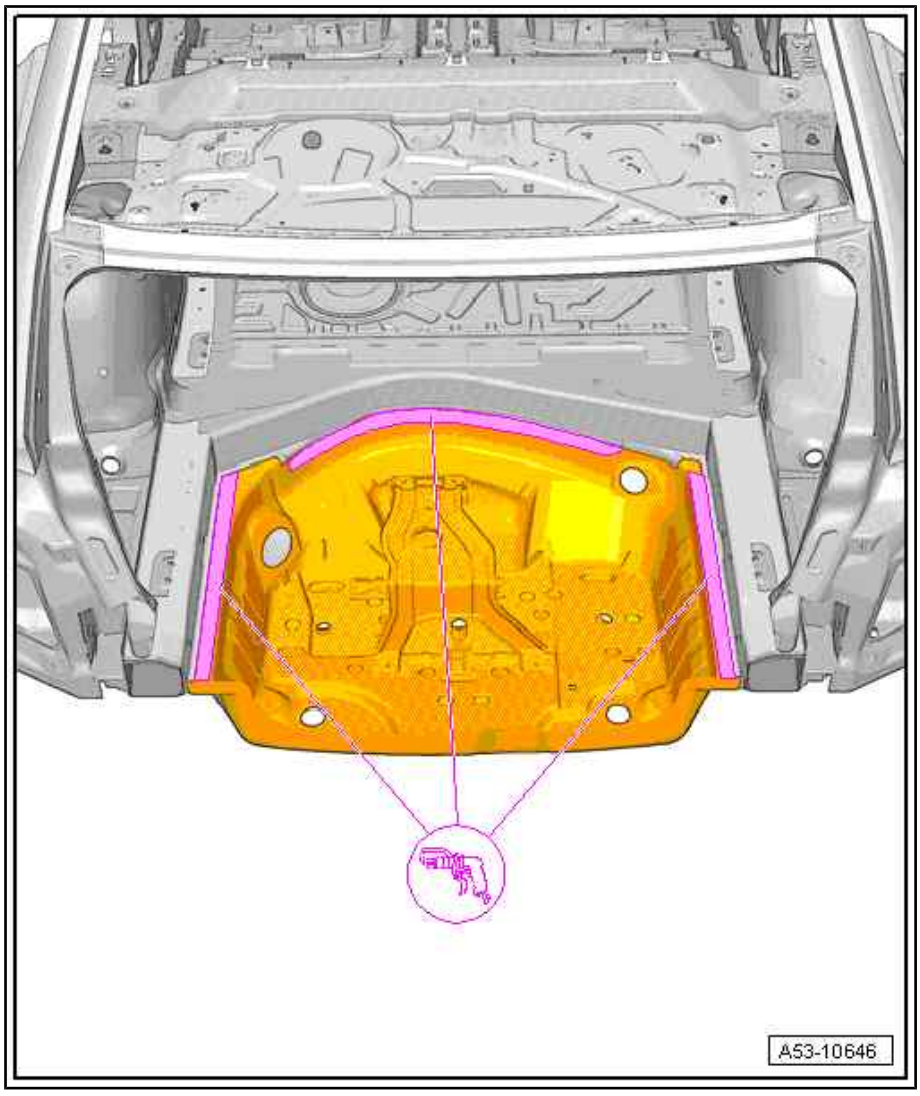
Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

13.3 Procedure

- Rear upper cross panel removed (Saloon) ⇒ page 332
- Cross panel removed (Saloon) ⇒ page 336
- Rear upper cross panel removed (Avant) ⇒ page 340
- Cross panel removed (Avant) ⇒ page 344

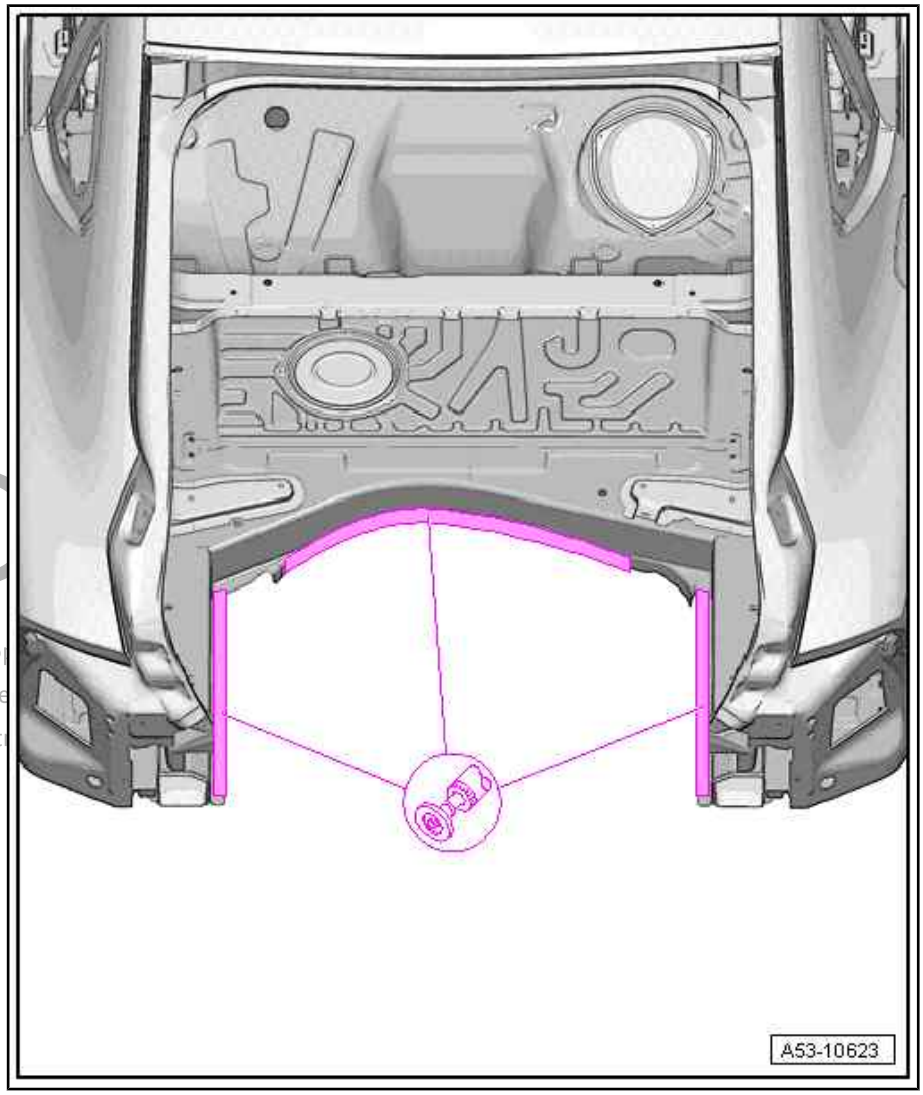
Cutting locations

– Separate original joint using spot weld breaker .



– Remove remaining material using compact angle grinder .

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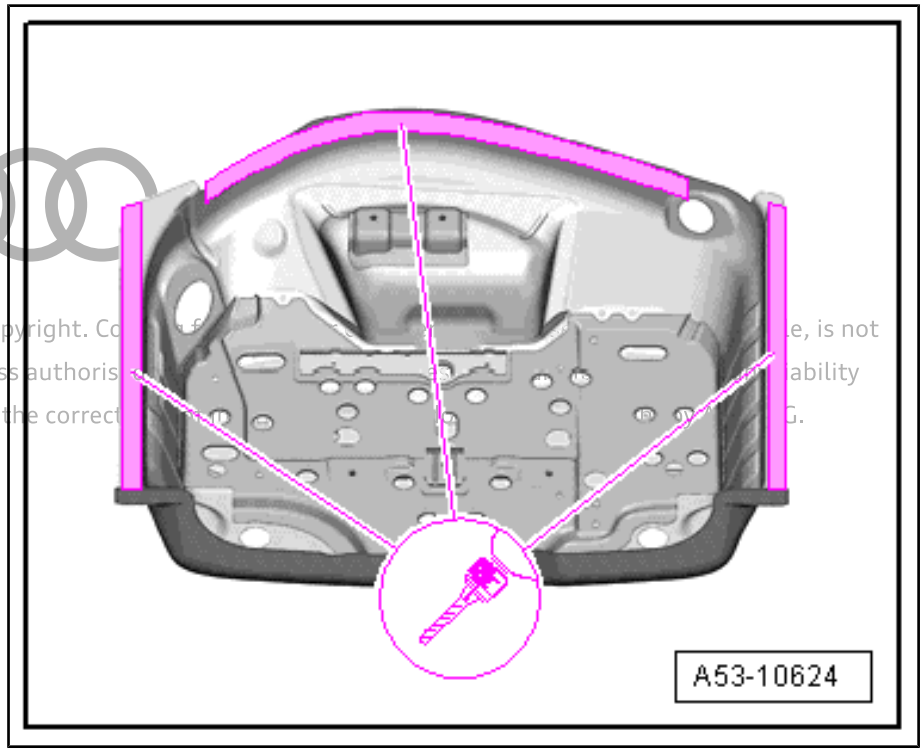
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Replacement part

- Luggage compartment floor

Preparing new part

– Drill holes for SG plug weld seam, 8 mm ∅ using drill .



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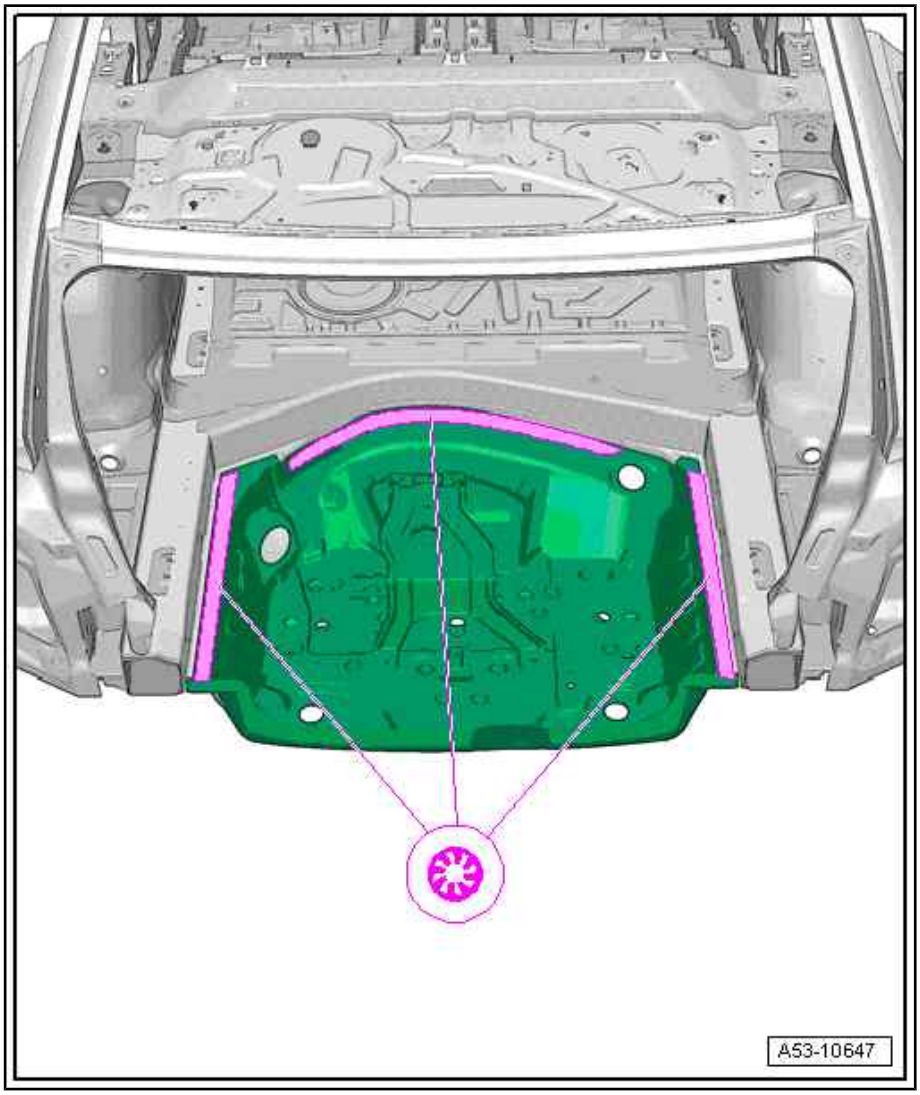
– Check fit relative to adjacent parts.

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 luggage compartment floor using shielded arc welding equipment : SG plug weld seam.



- Welding in rear upper cross panel (Saloon) ⇒ page 332
- Welding in cross panel (Saloon) ⇒ page 336
- Welding in rear upper cross panel (Avant) ⇒ page 340
- Welding in cross panel (Avant) ⇒ page 344

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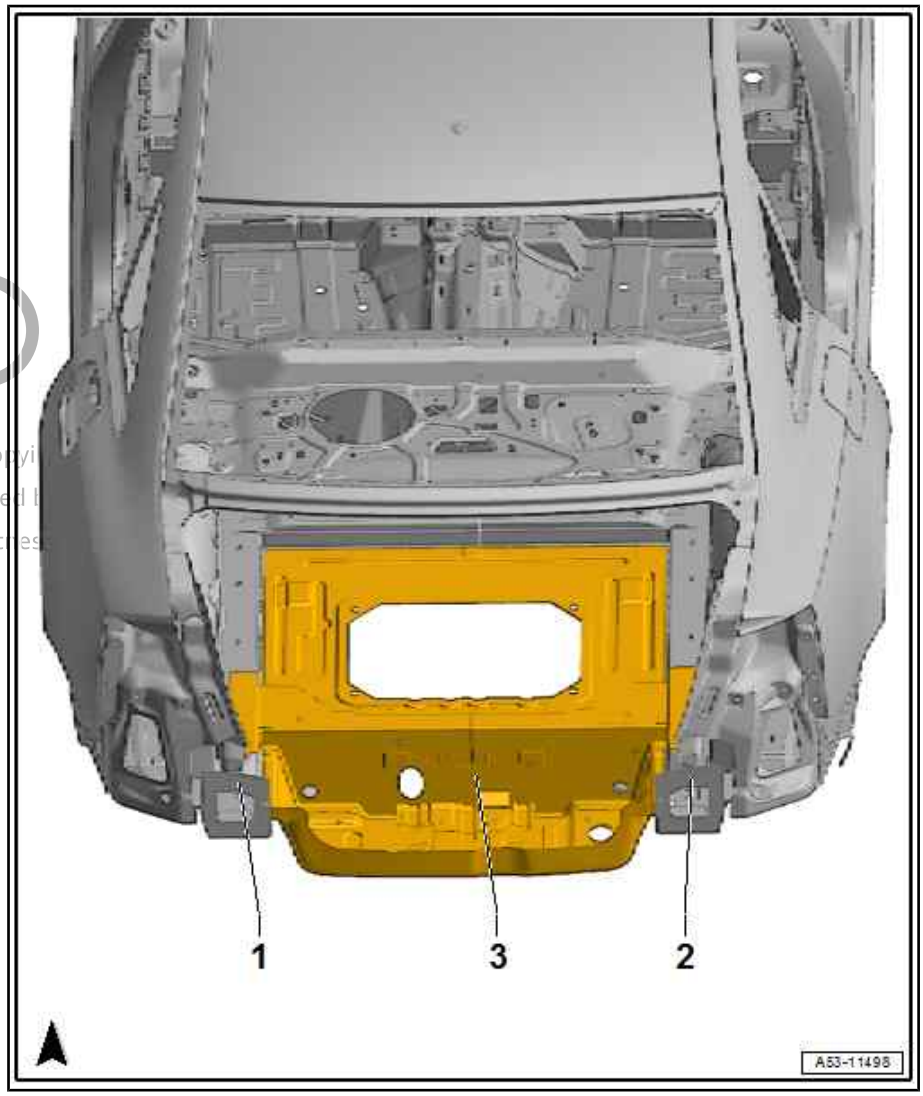
14 Luggage compartment floor - Renewal (only for PHEV vehicles, China)

1 - Rear longitudinal member (left-side)

2 - Rear longitudinal member (right-side)

3 - Luggage compartment floor

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14.1 Tools

Special tools and workshop equipment required

- Resistance spot welder
- Shielded arc welding equipment
- Drill
- Compact angle grinder
- Body saw
- Spot weld breaker

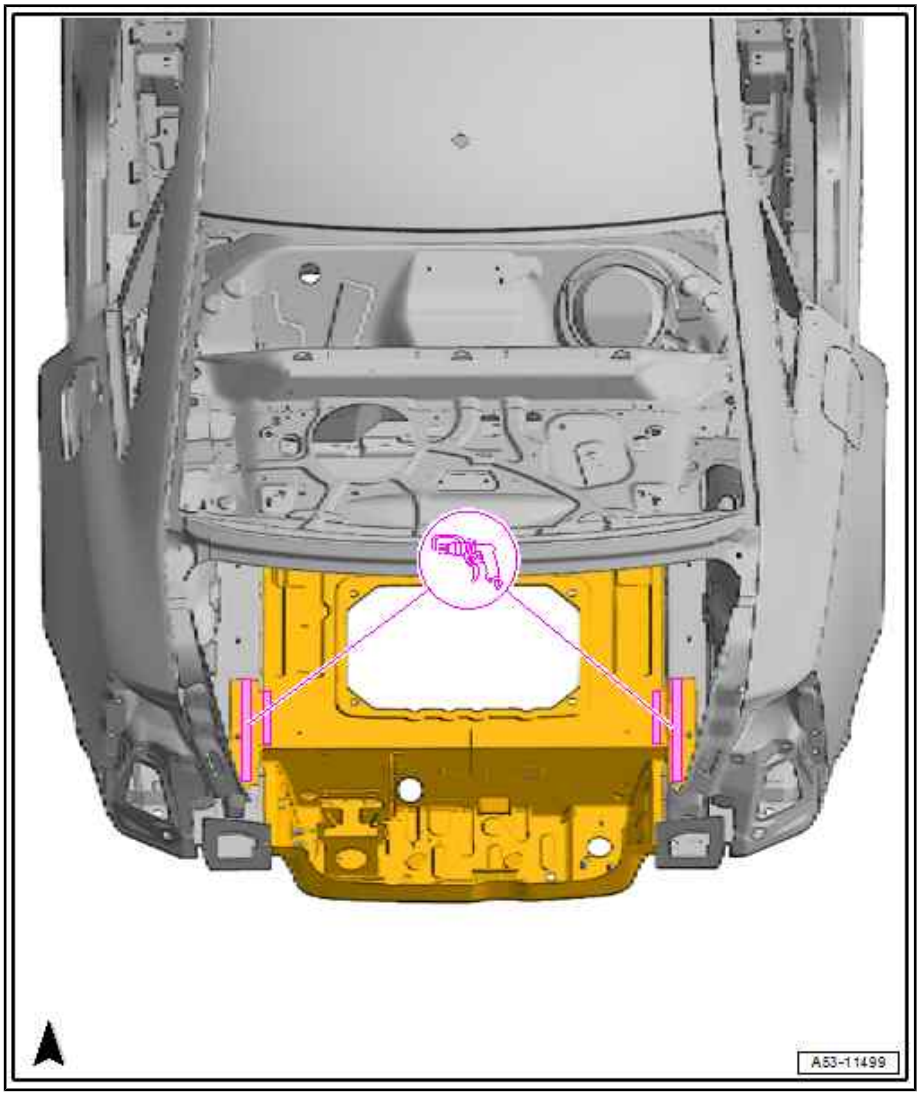
Tools approved by AUDI AG must be used to ensure correct results when carrying out repair work ⇒ page 54 .

14.2 Procedure

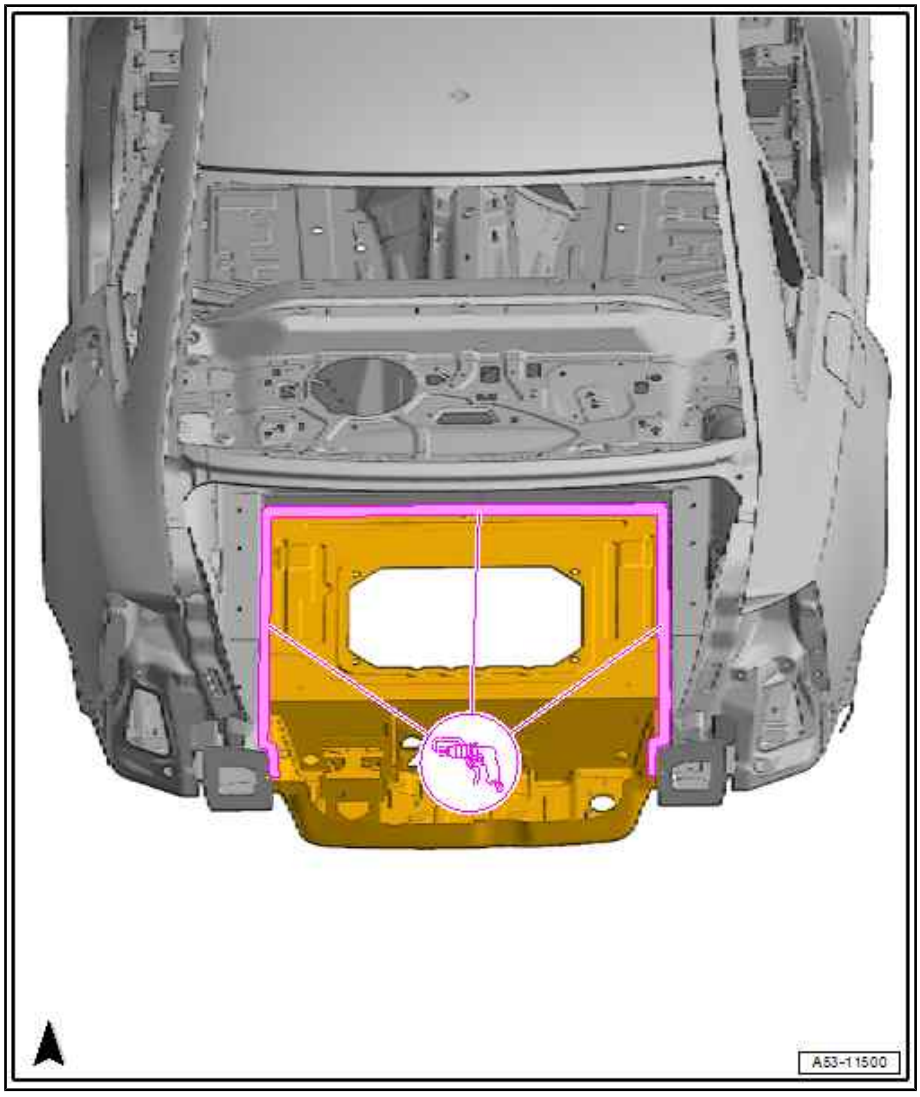
Cutting locations

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– Separate longitudinal member reinforcement using spot weld breaker .

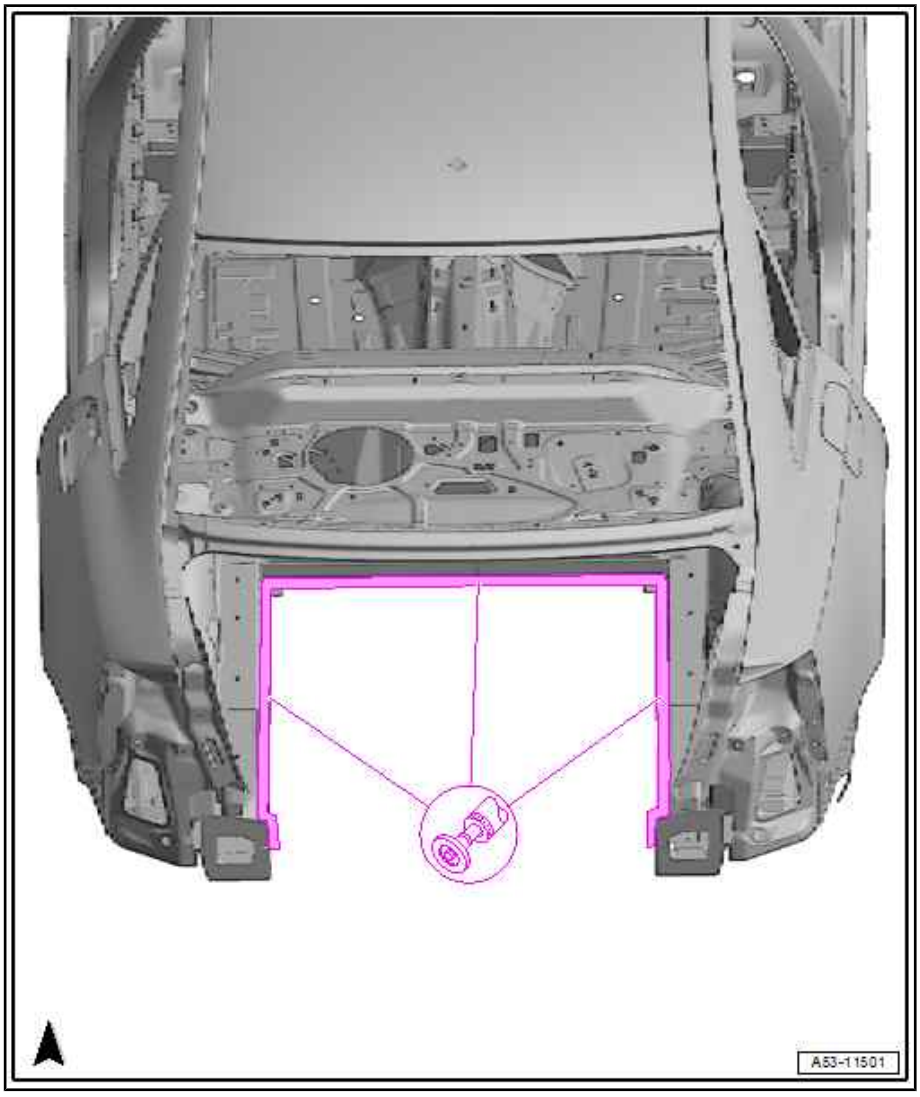


– Separate original joint using spot weld breaker .



– Remove remaining material using compact angle grinder .

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Replacement part

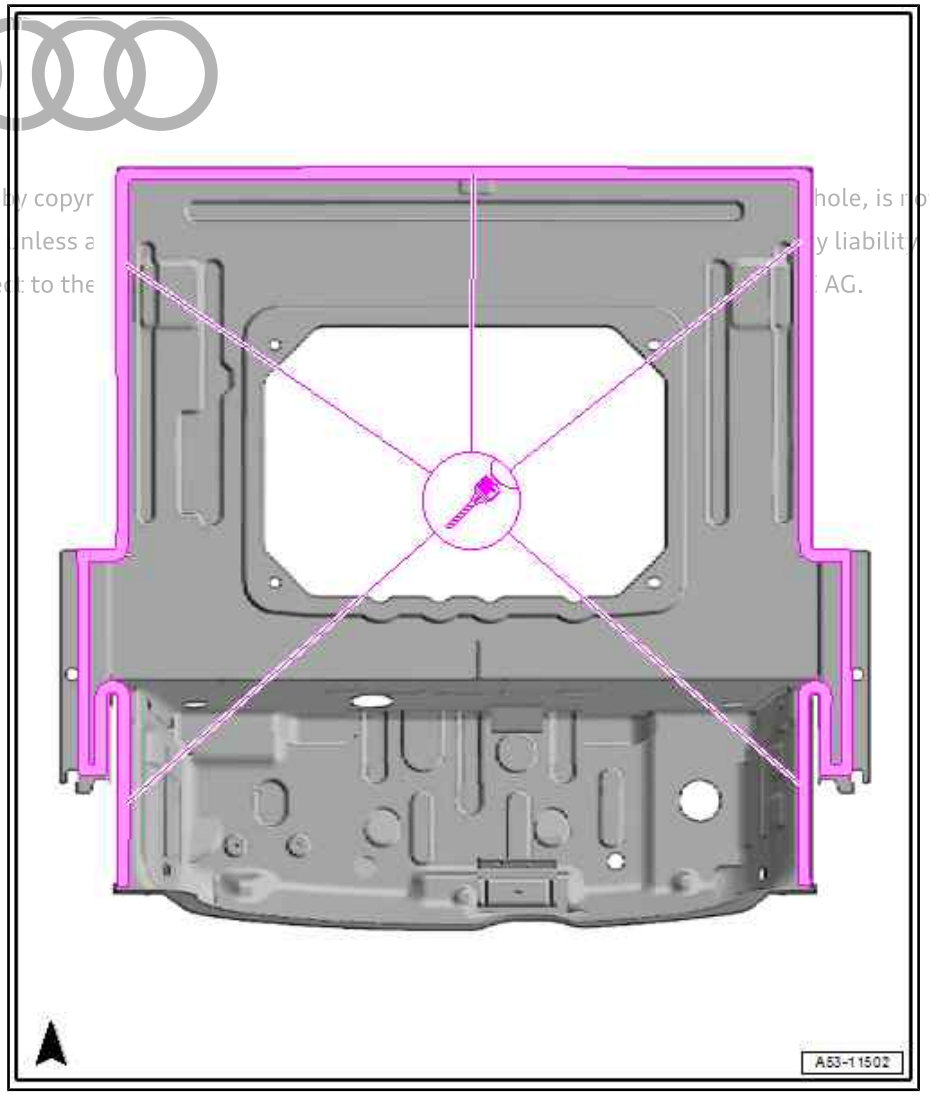
♦ Luggage compartment floor

Preparing new part

– Drill holes for SG plug weld seam, 8 mm ∅ using drill .

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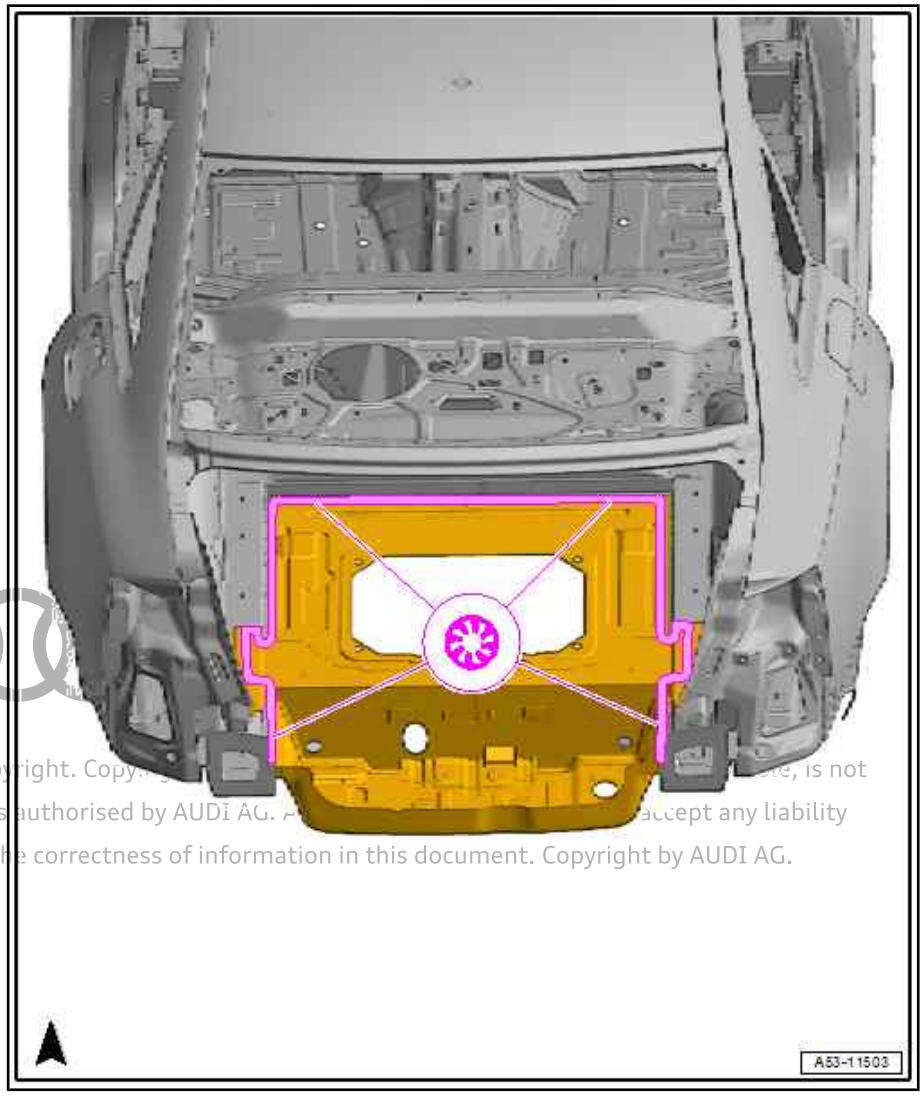
– Check fit relative to adjacent parts.

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 luggage compartment floor using shielded arc welding equipment : SG plug weld seam.



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