



Body Repairs
Passat 2011 ▶
Passat Variant 2011 ▶
Edition 04.2011





Repair Group overview for Body Repairs

Repair Group

- 00 - Technical data
- 50 - Body - front
- 51 - Body - centre
- 53 - Body - rear



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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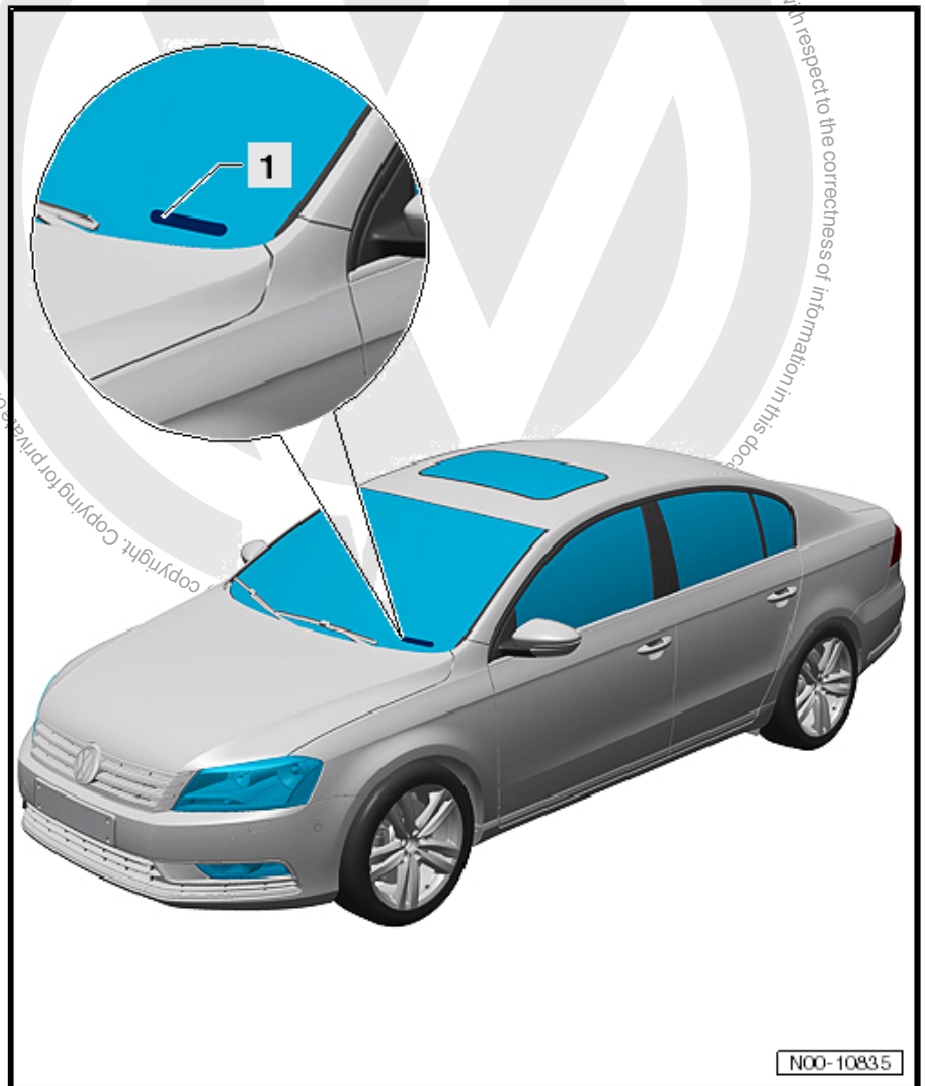
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00 – Technical data

1 Vehicle identification data

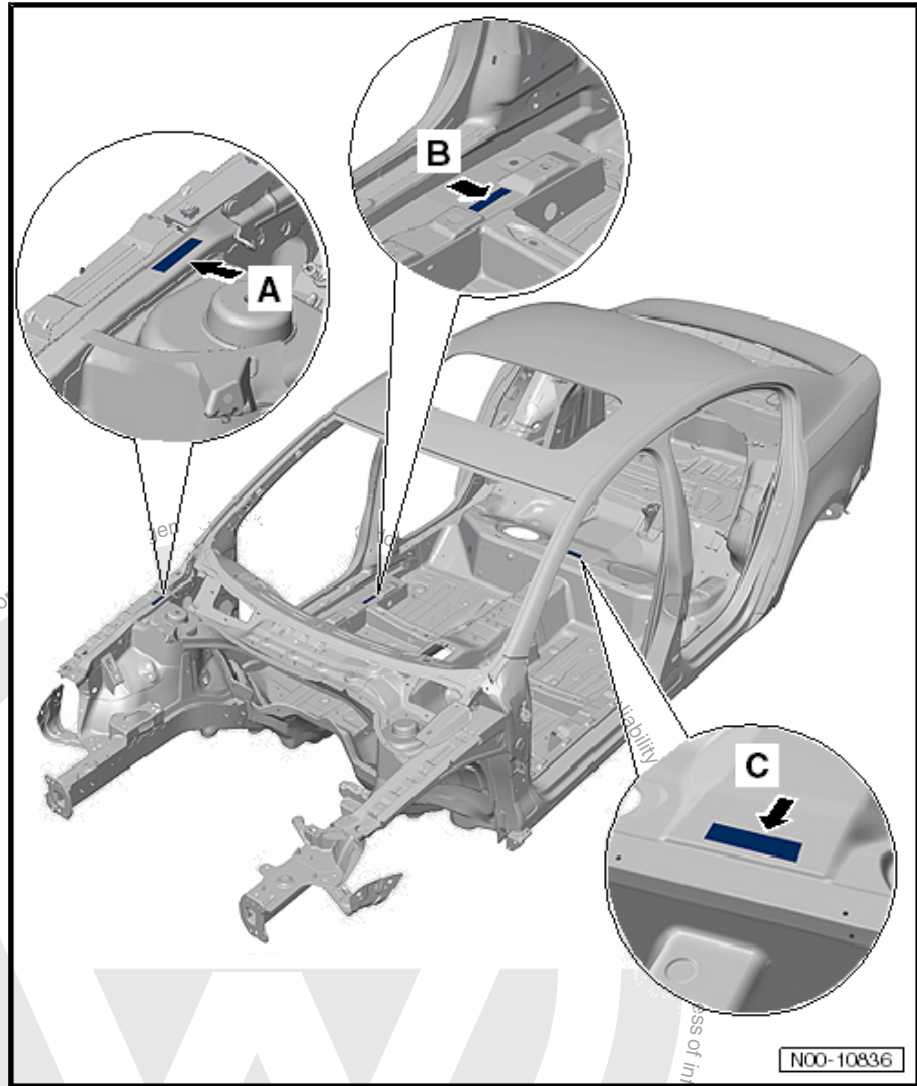
1.1 Vehicle identification number



The vehicle identification number -1- is located in the area of the lower left-hand side of the windscreen (driver's perspective).

Note

- ◆ *The vehicle identification number is also stamped at three other locations.*
- ◆ *If the component has to be renewed in the event of damage, the repair must be documented according to the market-specific legislation.*



- ◆ The vehicle identification number -arrow A- is located on the wing mounting on the right in the luggage compartment (driver's perspective).
- ◆ The vehicle identification number -arrow B- is located on the sill panel seat mounting in the vicinity of the front door on the right side of the vehicle.
- ◆ The vehicle identification number -arrow C- is located on the floor panel of the rear seats.



Note

The numbers are located at the same points on the Variant.



2 Safety instructions



WARNING

Before beginning any cutting, alignment or dent removal, refer to safety notes in the binder General information, body repairs and general body repairs.

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



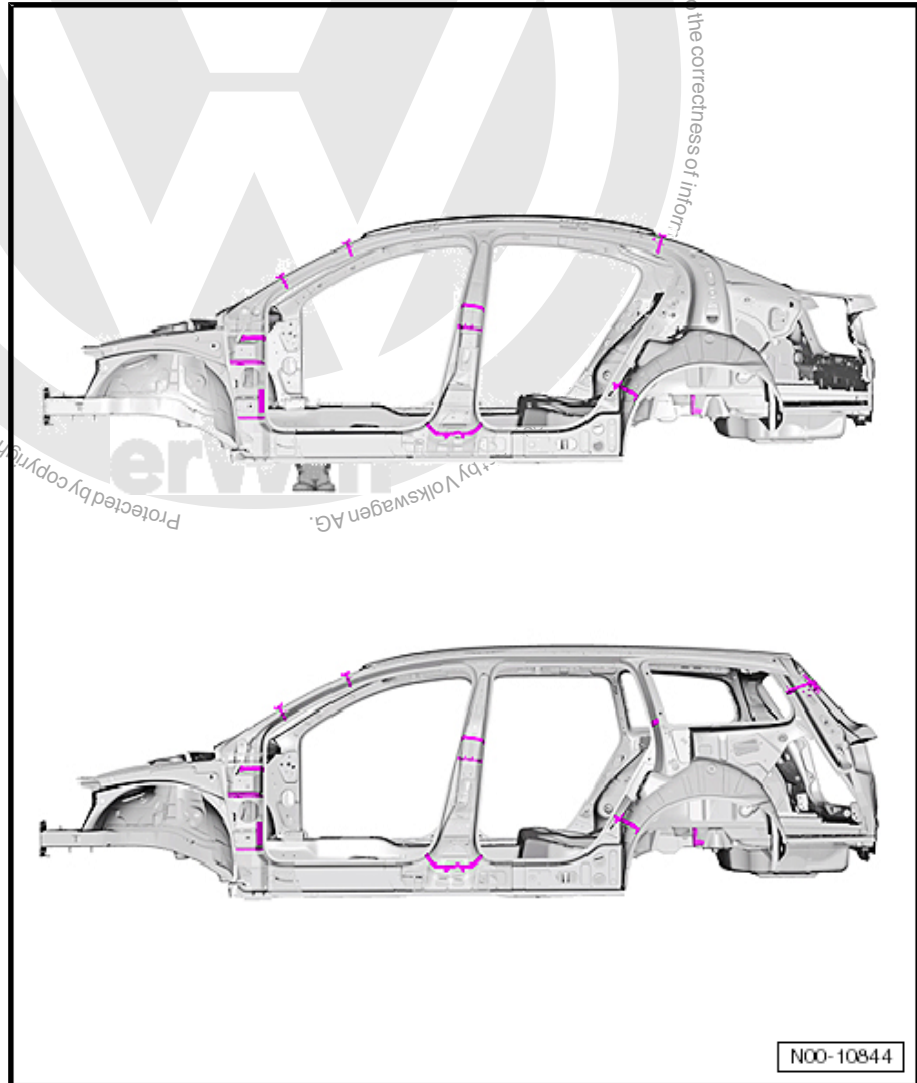


3 Moulded foam elements

On this vehicle, various bodywork cavities are fitted with moulded foam elements.

The moulded foam elements reduce the amount of driving noise that is transmitted into the interior.

The moulded elements are fitted during body shell construction and increase their volume in the paint shop drying oven at approx. 180°C, after priming.



The exact location of these moulded foam elements are shown at the beginning of the respective repair description.



Caution

The replacement moulded foam elements expand first at approx. 180°. This is why a foam filler is used in some repair cases.

The foam filler D 506 KD1 A2 is required for these repair cases.



As these temperatures cannot be achieved under normal workshop conditions, proceed as follows:

Remove foam material remains on vehicle.

- Apply corrosion protection measures according to guidelines in ⇒ Paint workshop manual: Corrosion and corrosion protection, attached and welded parts, materials .

Prerequisites

Before continuing with this procedure, ensure that the part for replacement is correctly prepared e.g. cut and adapt to fit, corrosion protection measures.

Renewing moulded foam element

Fix moulded foam element to vehicle.

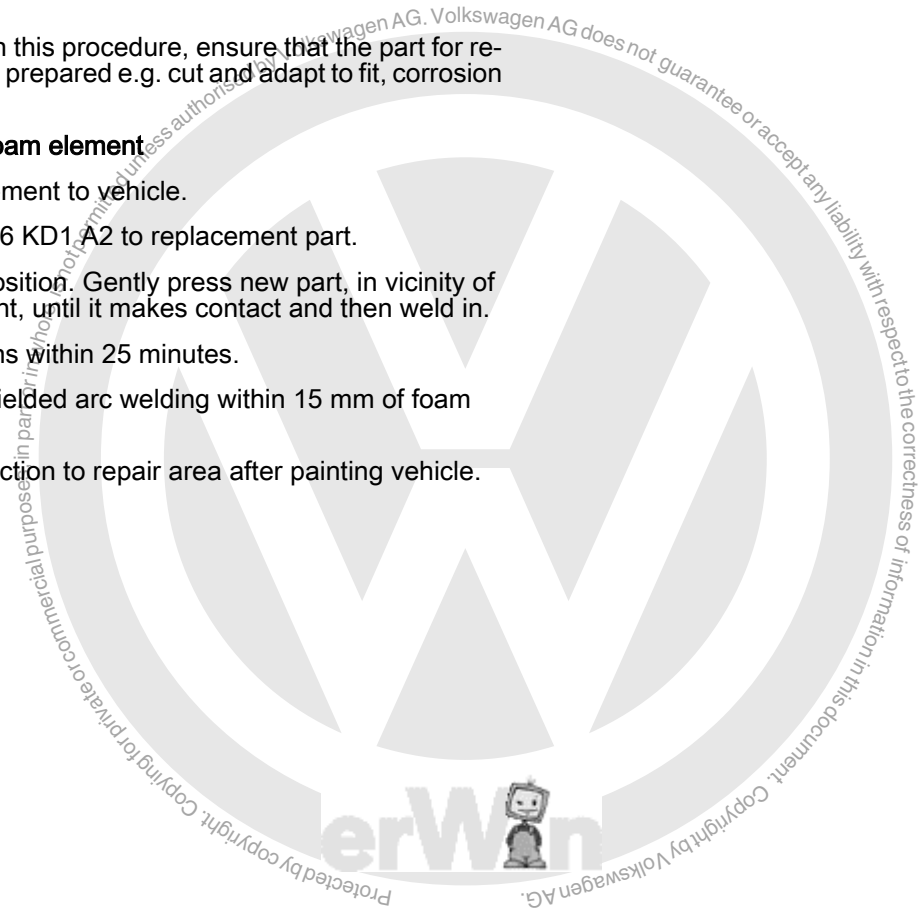
Apply foam filler D 506 KD1 A2 to replacement part.

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

The foam filler hardens within 25 minutes.

Do not do perform shielded arc welding within 15 mm of foam filler.

Carry out cavity protection to repair area after painting vehicle.





4 Galvanized body parts, high/higher-strength and hot-formed body panels

Working on galvanized body panels ⇒ General Information; Body Repairs, General Body Repairs ; Steel panel repairs; galvanized body parts .

4.1 Body



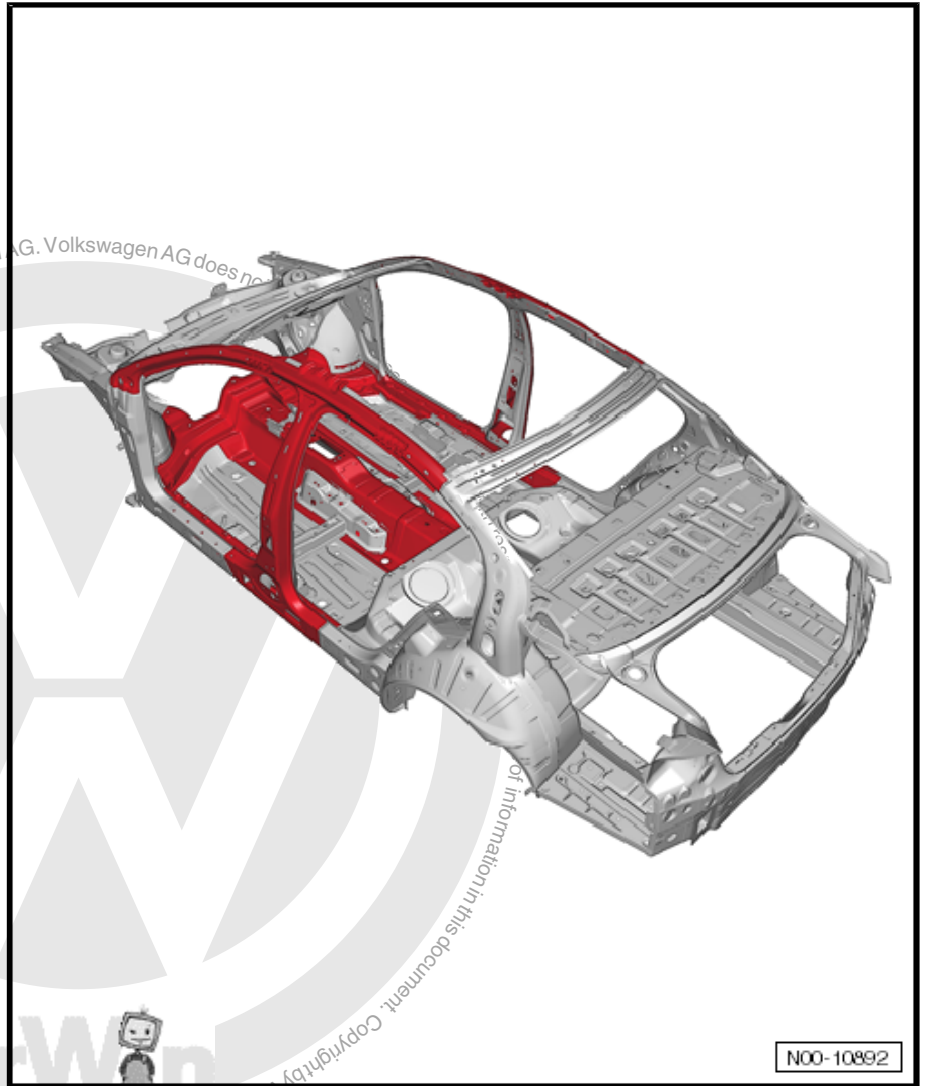
Note

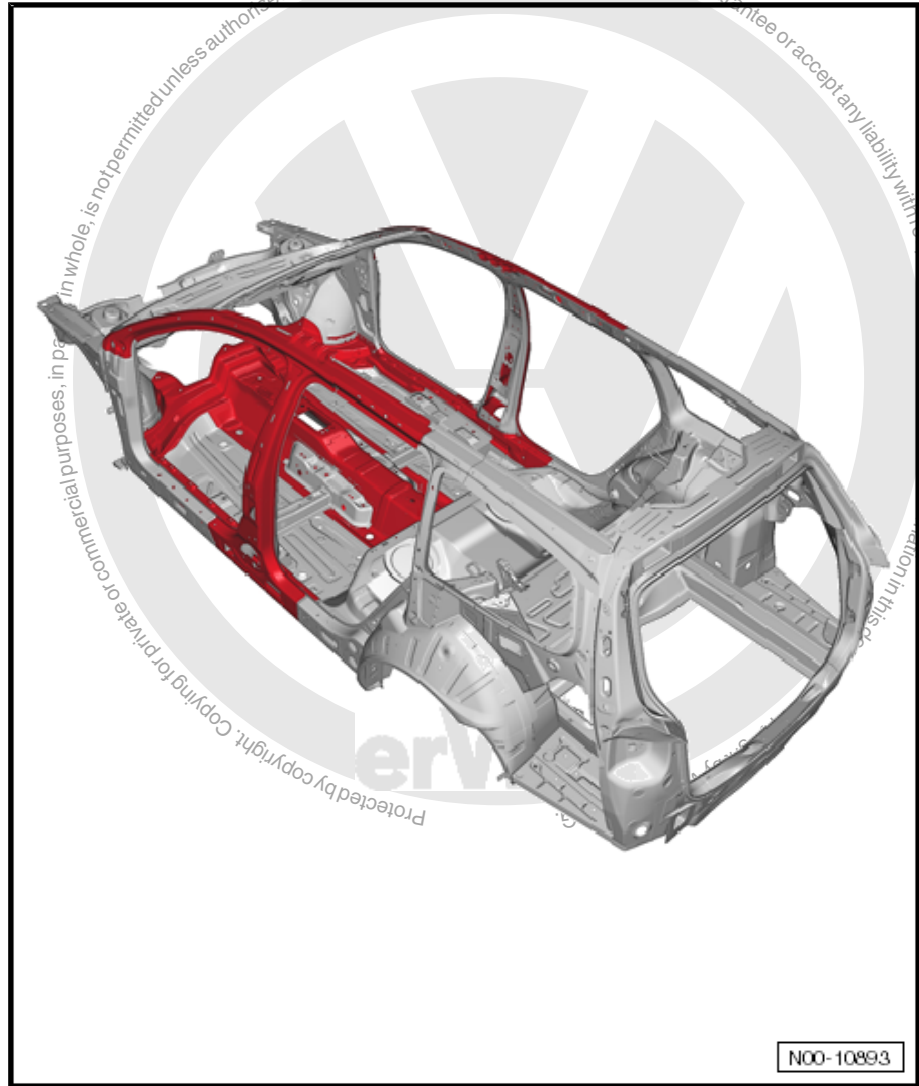
Repairs may only be made according to the manufacture instructions in the respective repair manual. Higher-strength and hot-formed body panels may only be repaired using modern inverter technology, otherwise the optimum passenger protection after repairs is not possible. Form tempered steel panels are used in areas under extreme stress. These panels offer a clearly higher strength than conventional high-strength panels for less weight.

Work on strengthened body panels must comply with guide lines in Workshop Manual ⇒ General Information; Body Repairs, General Body Repairs ; Steel panel repairs, strengthened body panels

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

This illustration shows those parts of the body manufactured from hot-formed body panels.







5 Laser welding

On this vehicle, the roof and parts of the body are laser welded.

With laser welding, a high-energy beam of light is directed over the seam to be welded by optical lenses or optical fibre.

During the welding process, the upper panel is melted onto the partially molten lower panel, creating a welded joint without the need of additional material.

For repairs (except for roof repairs), the laser weld seam is replaced by a RP spot weld seam.



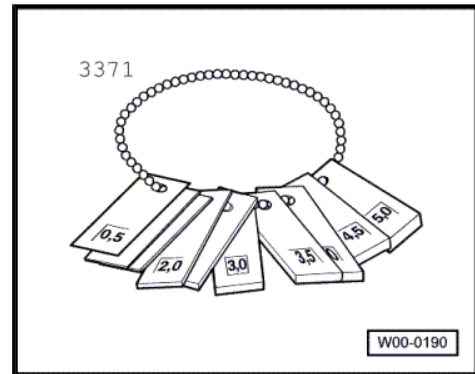


6 Body panel gaps/shut lines



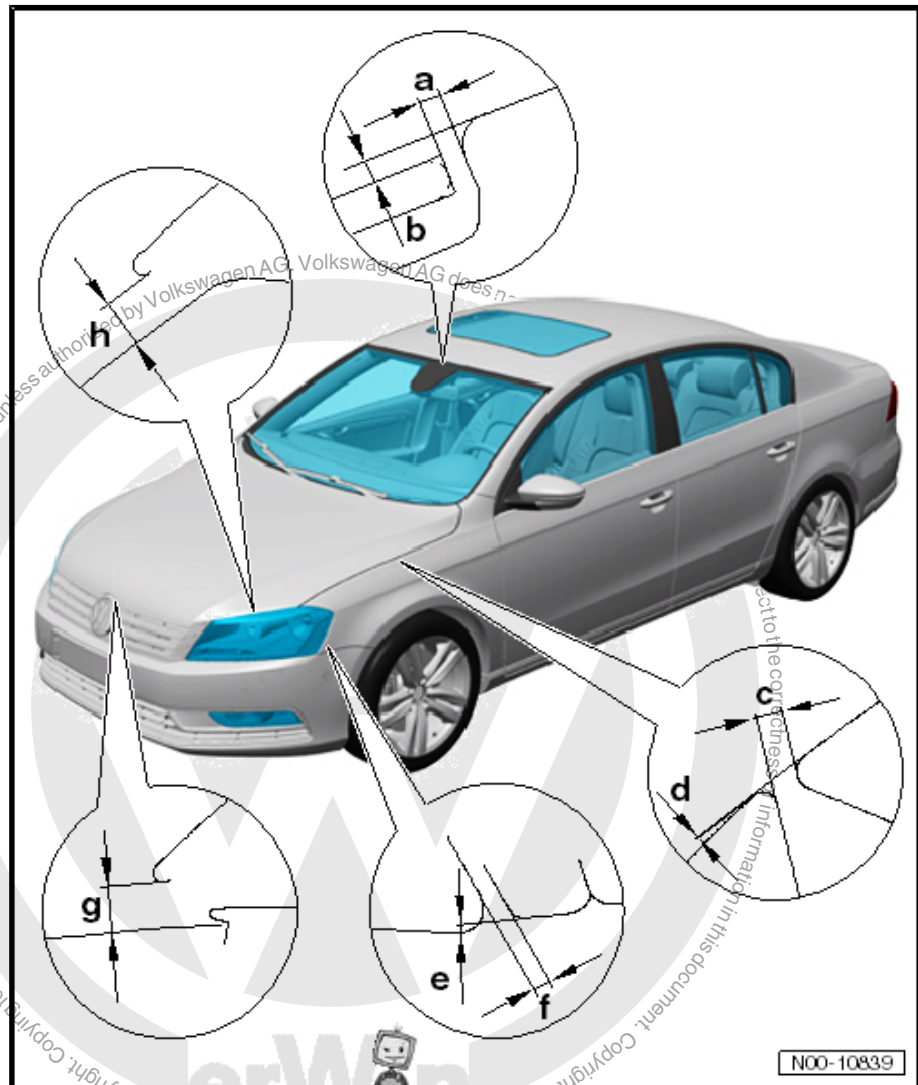
Note

Use setting gauge -3371- to set or check shut lines.



6.1 Body - front

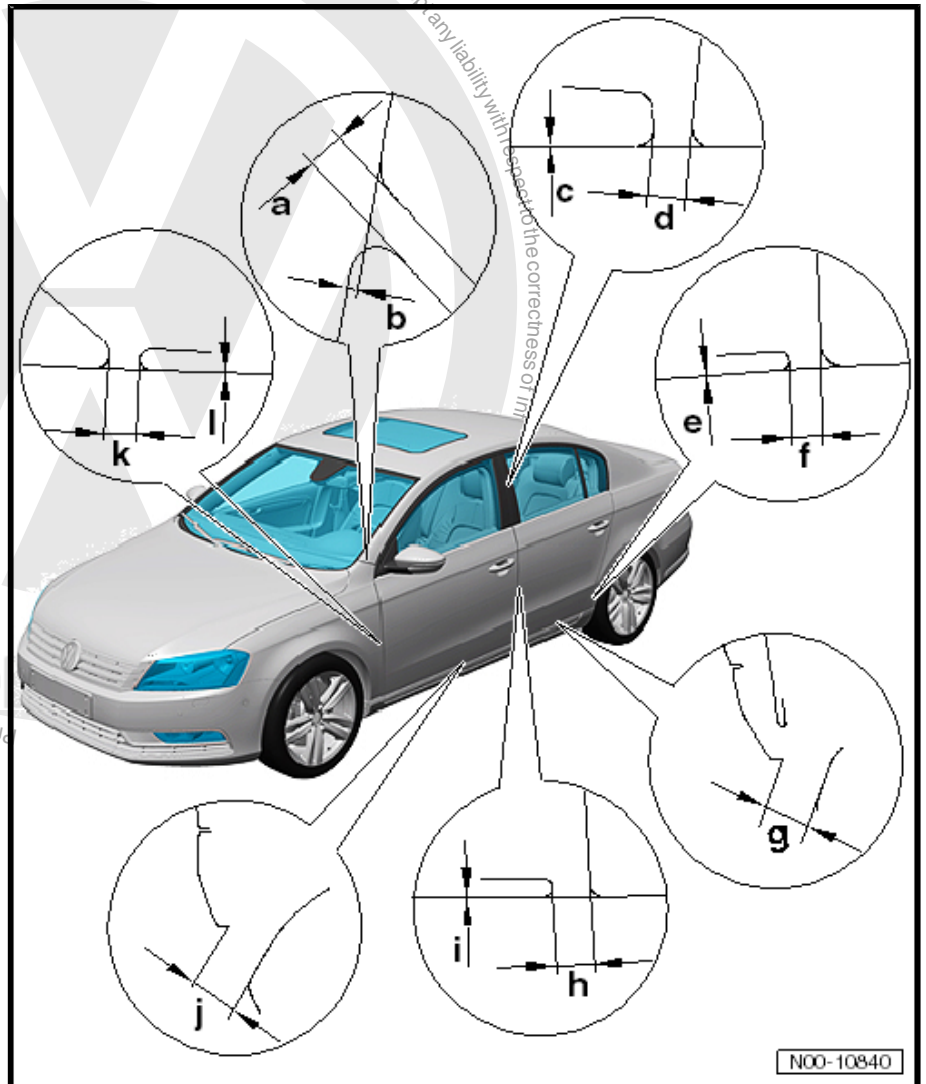
- a - 2.5 mm ± 0.5 mm
- b - 2.6 mm ± 0.8 mm
- c - 2.8 mm ± 0.5 mm
- d - 0.1 mm ± 0.5 mm
- e - 0.8 mm ± 0.5 mm
- f - 2.0 mm ± 0.5 mm
- g - 5.0 mm ± 0.5 mm
- h - 4.7 mm ± 0.5 mm





6.2 Body - centre

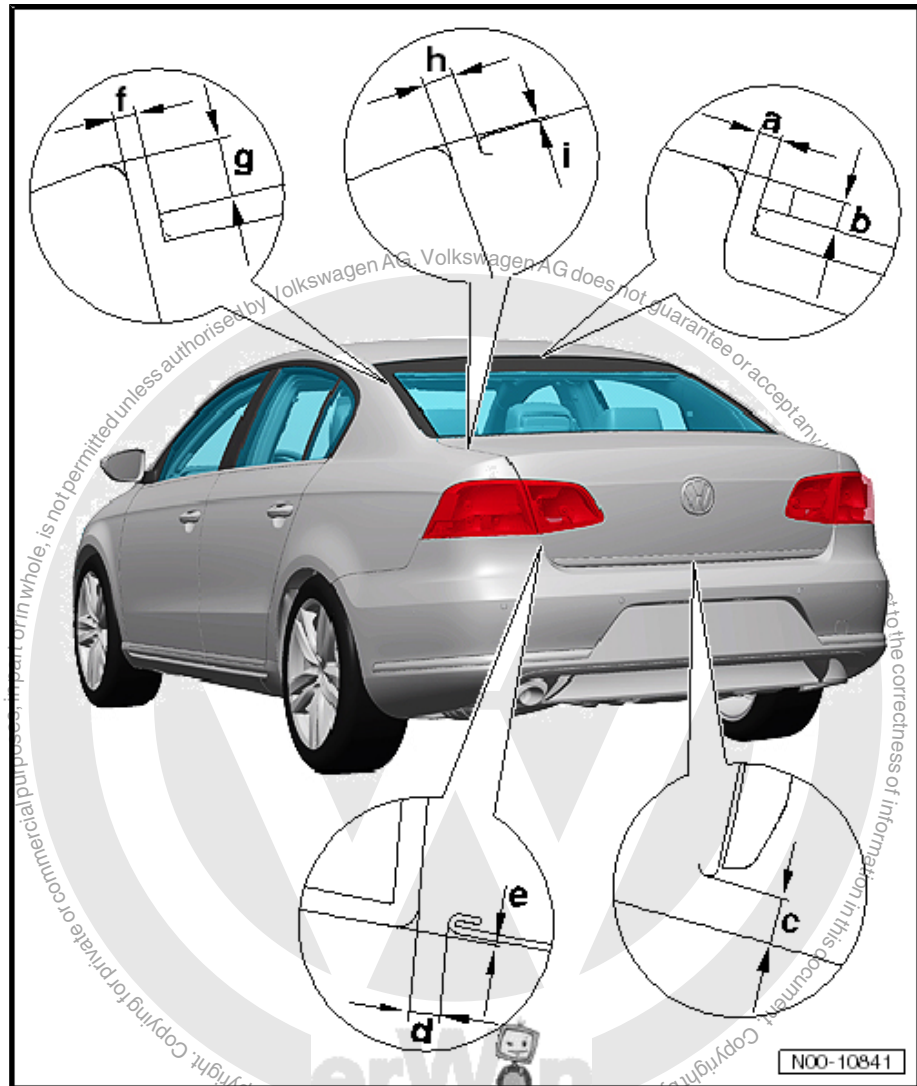
- a - 2.0 mm ± 1.0mm
- b - 0.6 mm ± 0.5 mm
- c - 0.0 mm + 1.0 mm
- d - 4.2 mm ± 1.5 mm
- e - 0.0 mm + 1.0 mm
- f - 3.2 mm - 0.5 mm + 1.0 mm
- g - 12.7 mm ± 0.5 mm
- h - 4.2 mm - 0.5 mm + 1.0 mm
- i - 0.0 mm + 1.0 mm
- j - 12.7 mm ± 0.5 mm
- k - 3.5 mm - 0.5 mm + 1.0 mm
- l - 0.0 mm - 1.0 mm





6.3 Body - rear

- a - 2.5 mm ± 0.5 mm
- b -- 3.2 mm ± 0.5 mm
- c - 5.5 mm ± 0.5 mm
- d - 3.5 mm ± 0.5 mm
- e -- 0.7 mm ± 0.5 mm
- f - 2.5 mm ± 1.0 mm
- g -- 6.6 mm ± 0.5 mm
- h - 3.5 mm ± 0.5 mm
- i -- 0.5 mm ± 0.5 mm





6.4 Body - rear (Variant)

a - 5.0 mm \pm 0.5 mm

b - -0.8 mm - 1.0 mm + 0.5 mm

c - 5.0 mm \pm 0.5 mm

d - 3.5 mm \pm 0.5 mm

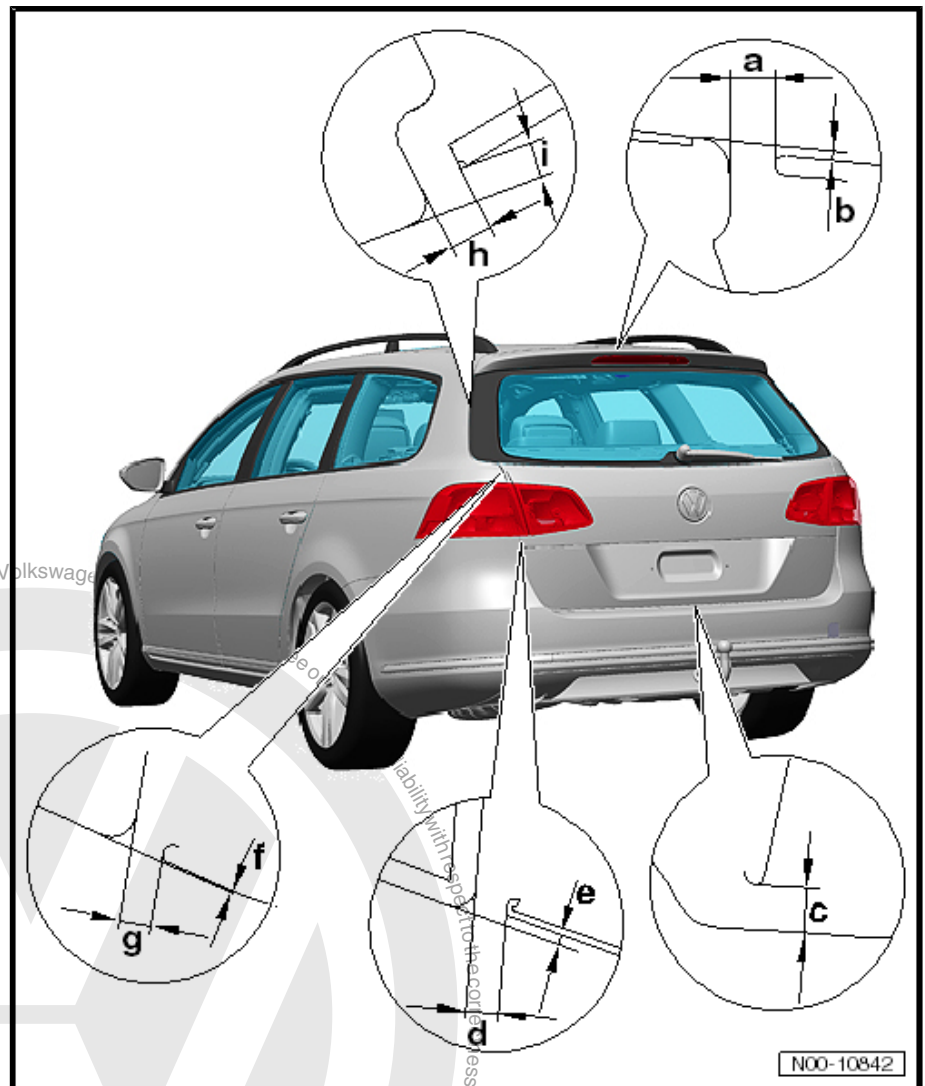
e - -1.1 mm \pm 0.5 mm

f - -0.6 mm \pm 0.5 mm

g - 3.5 mm \pm 0.5 mm

h - 5.0 mm \pm 0.5 mm

i - -4.3 mm \pm 0.5 mm



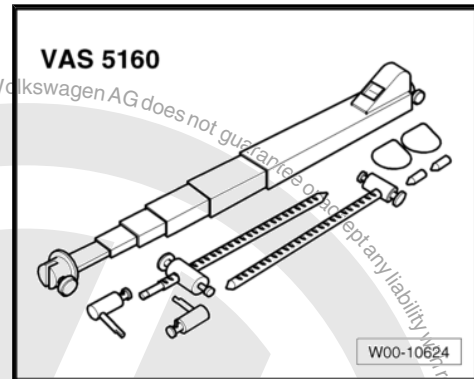


7 Body dimensions



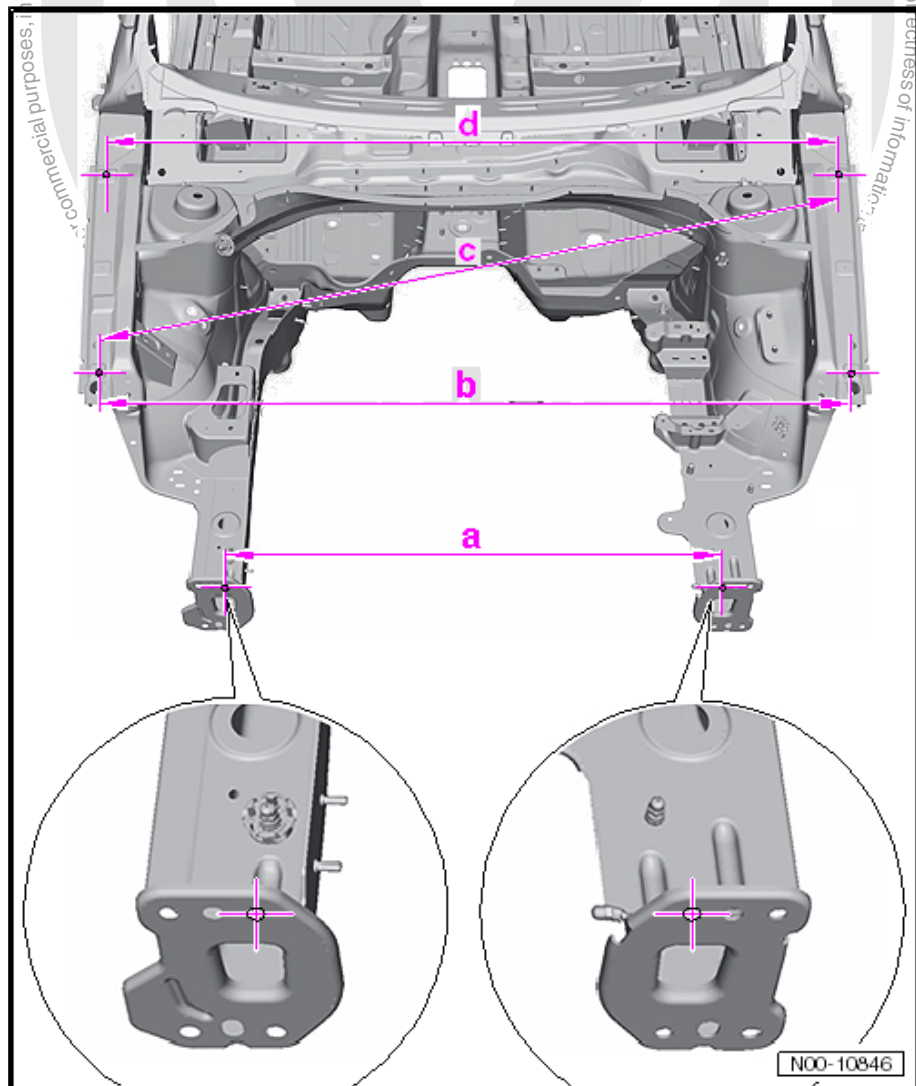
Note

- ◆ Dimensions only given for checking purposes. The alignment bracket set is the final authority.
- ◆ Bolts, screws, plugs, trim and attached components must be removed before starting the measuring process.
- ◆ Use Telescopic gauge -VAS 5159- or Telescopic gauge -VAS 5160- to determine body dimensions.
- ◆ Ensure measuring probes are always of even length to prevent inaccuracies when measuring.



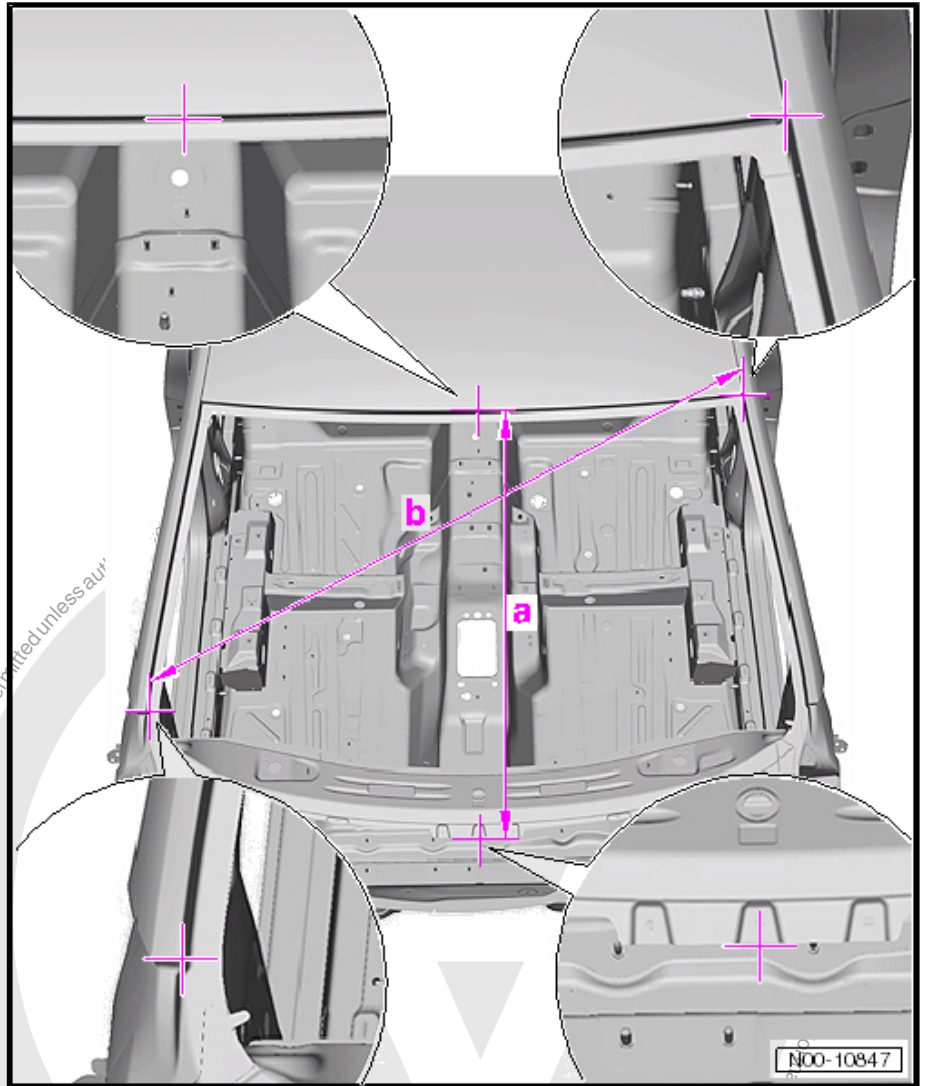
7.1 Body - front

- a - 938 mm ± 2.0 mm
- b - 1,438 mm ± 2.0 mm
- c - 1,550 mm ± 2.0 mm
- d - 1,513 mm ± 2.0 mm





- a - 920 mm ± 2.0 mm
- b - 1,479 mm ± 2.0 mm



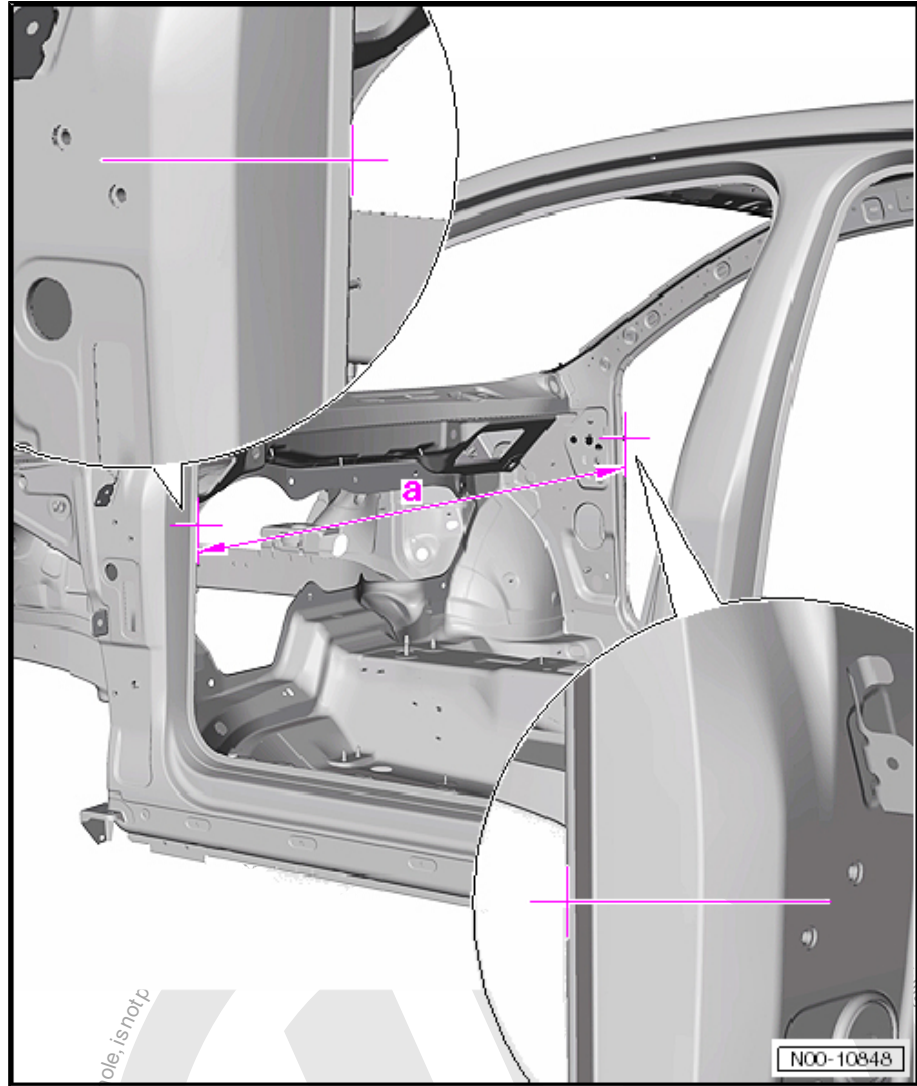
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7.2 Body - centre

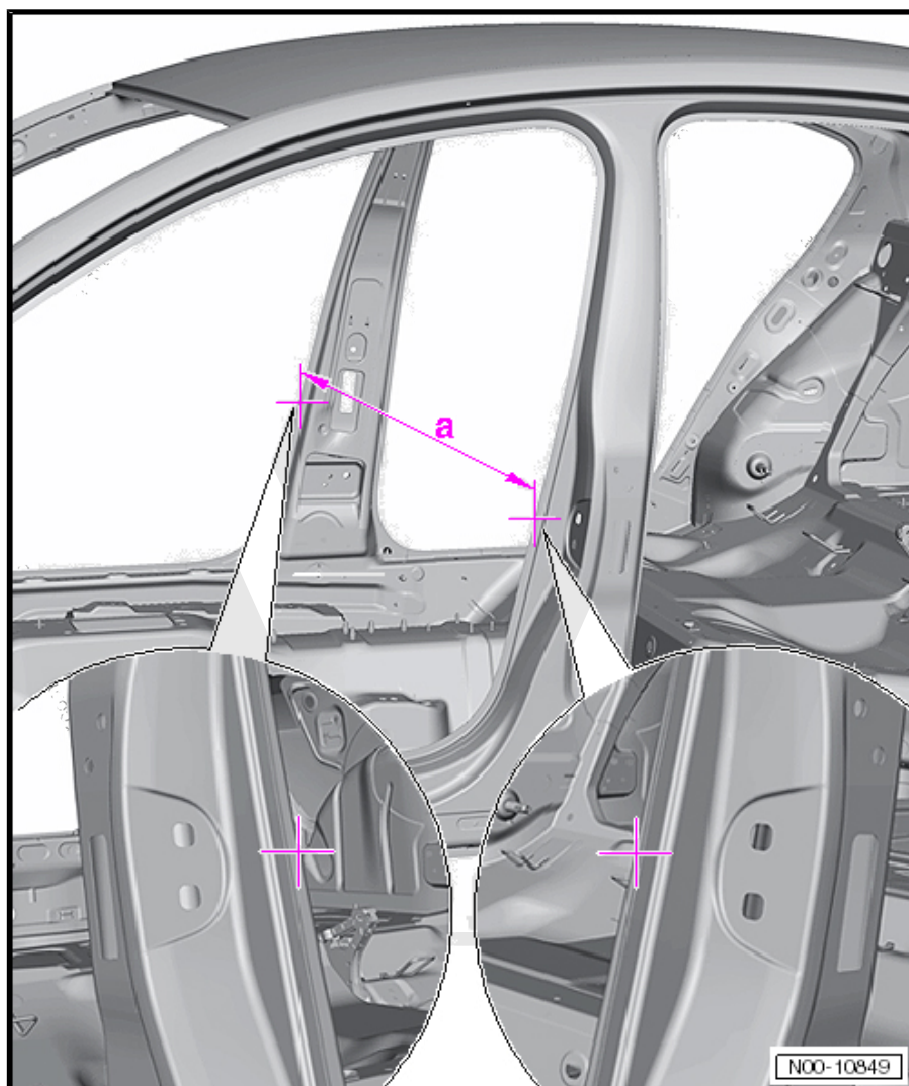
a - 1,445 mm \pm 2.0 mm



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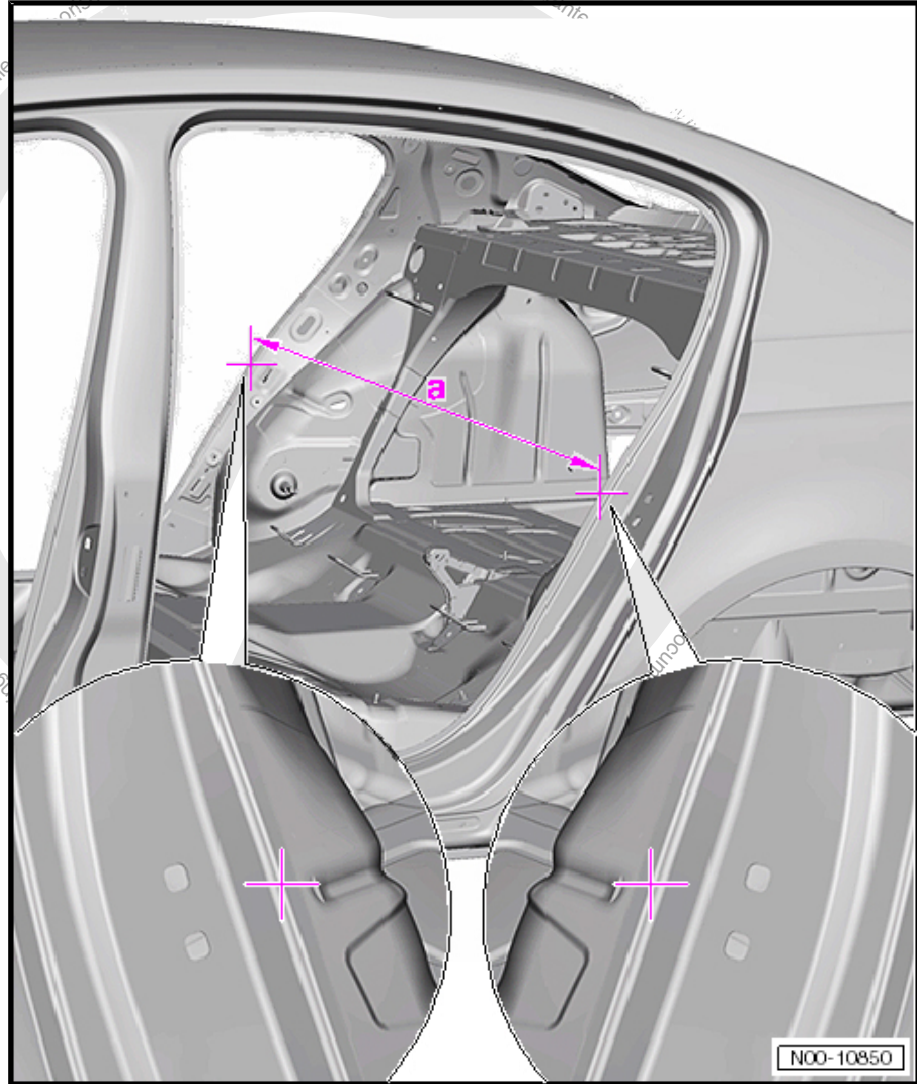


a - 1,480 mm ± 2.0 mm



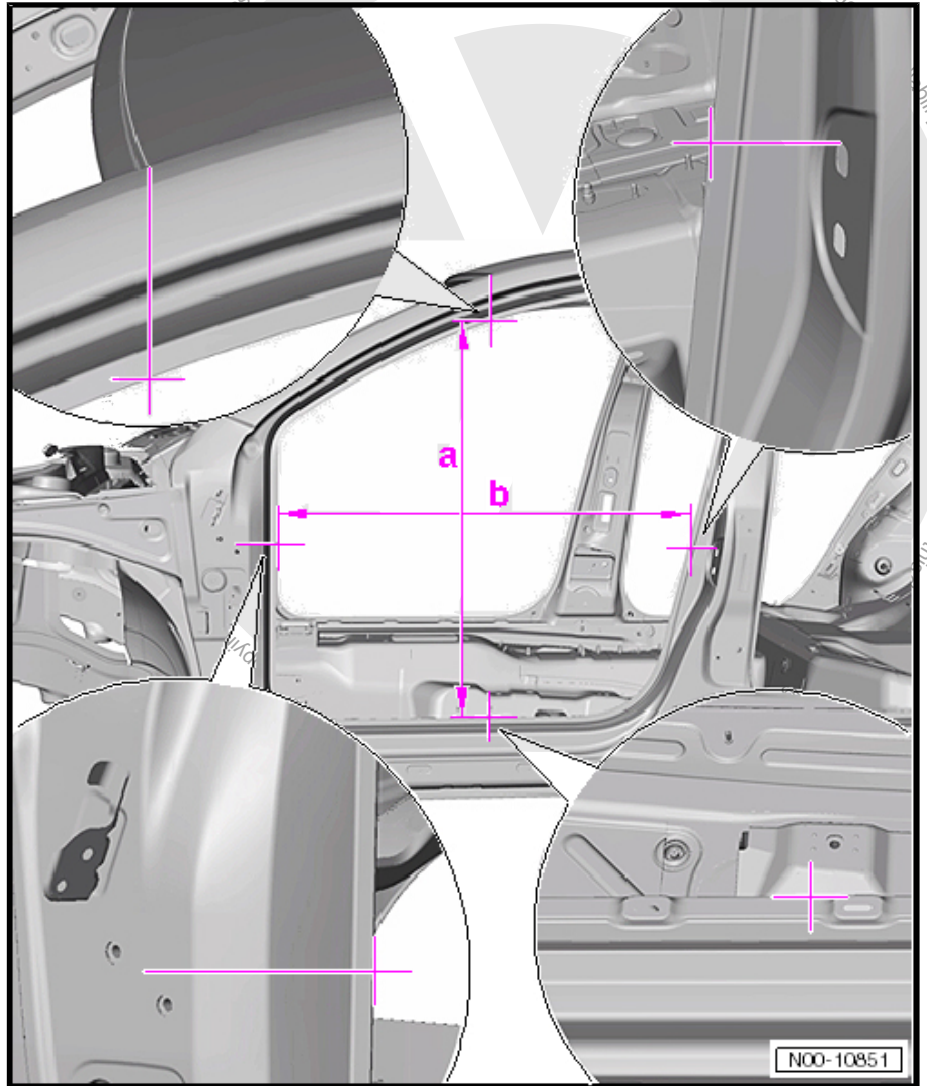


a - 1,472 mm \pm 2.0 mm





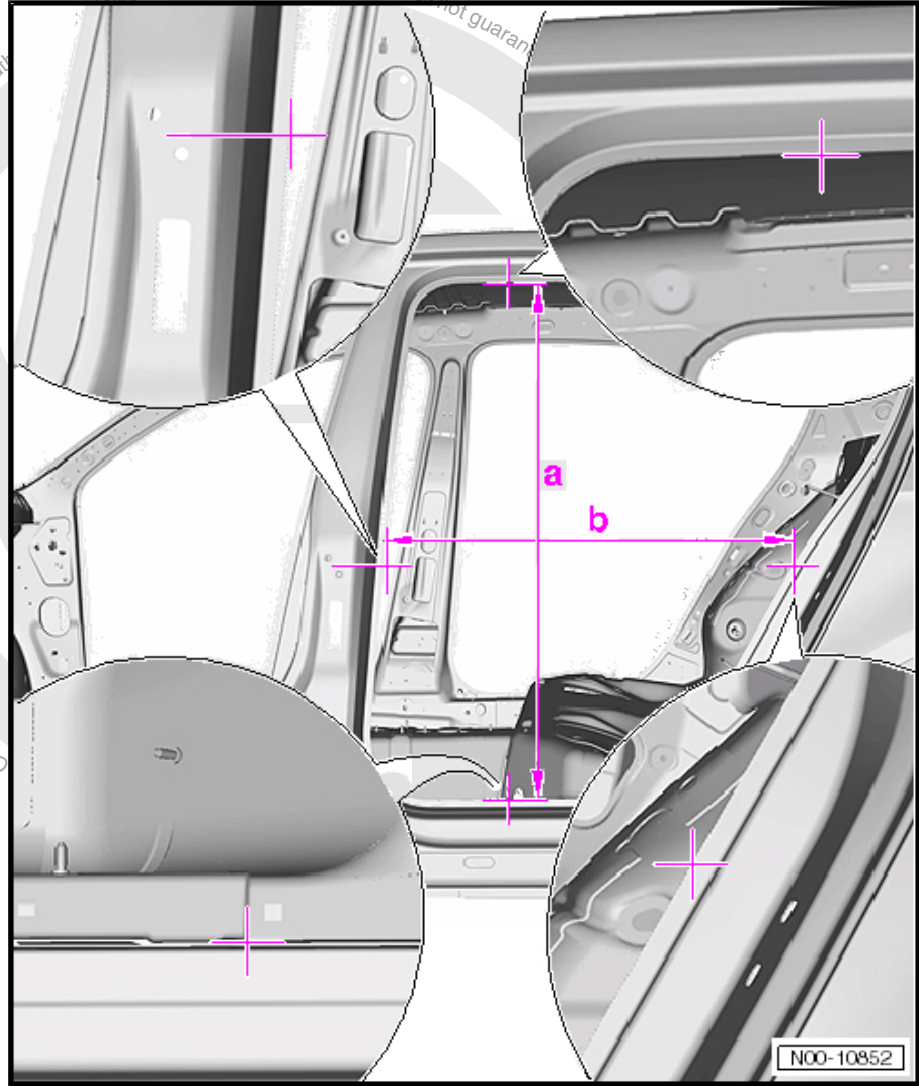
- a - 882 mm ± 2.0 mm
- b - 896 mm ± 2.0 mm





- a - 970 mm ± 2.0 mm
- b - 741 mm ± 2.0 mm

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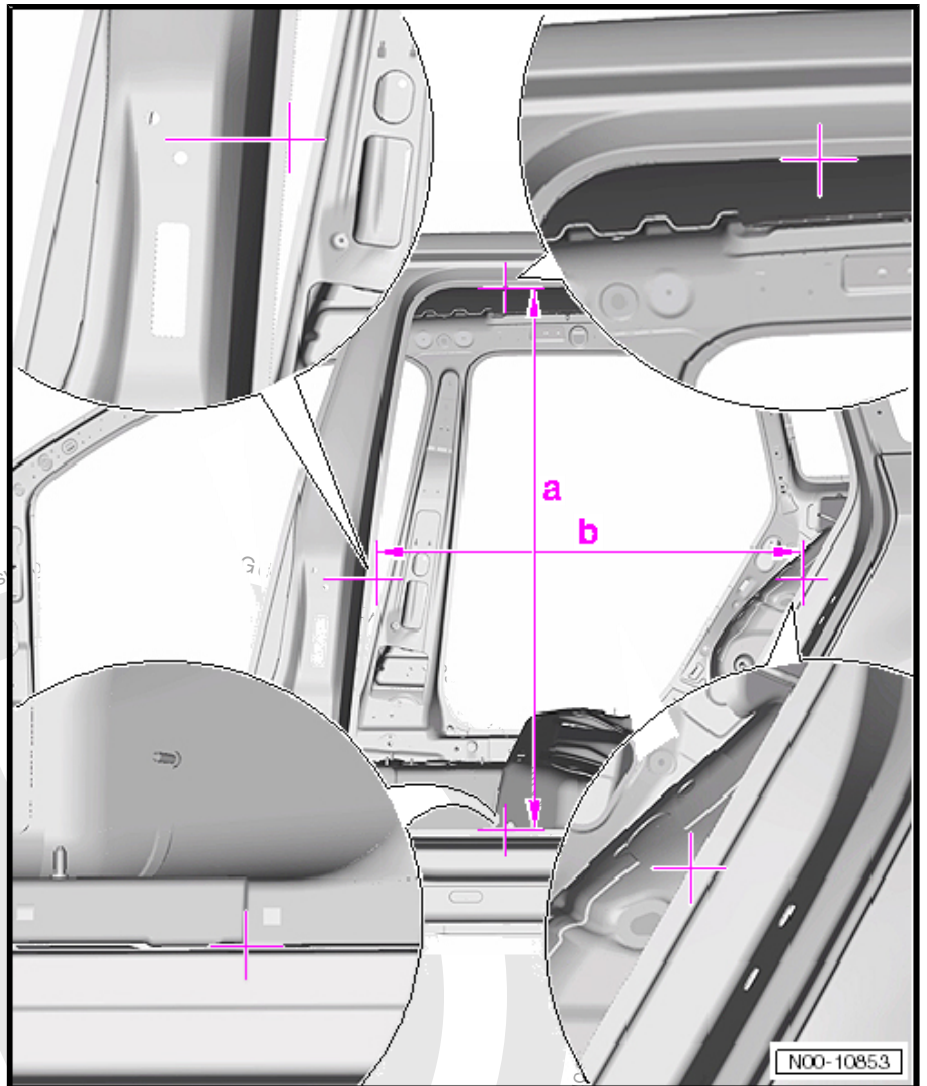




7.3 Body - centre (Variant)

a - 972 mm ± 2.0 mm

b - 740 mm ± 2.0 mm



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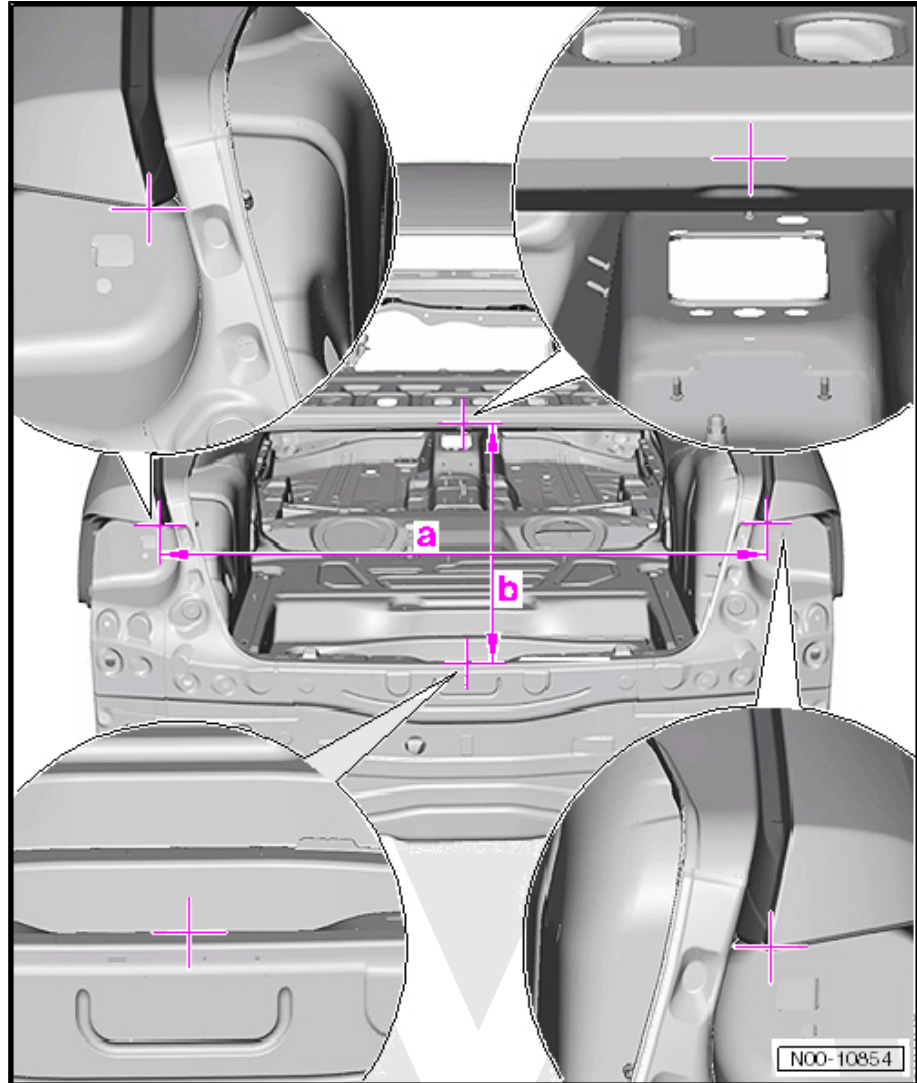




7.4 Body - rear

a - 528 mm \pm 2.0 mm

b - 1,125 mm \pm 2.0 mm



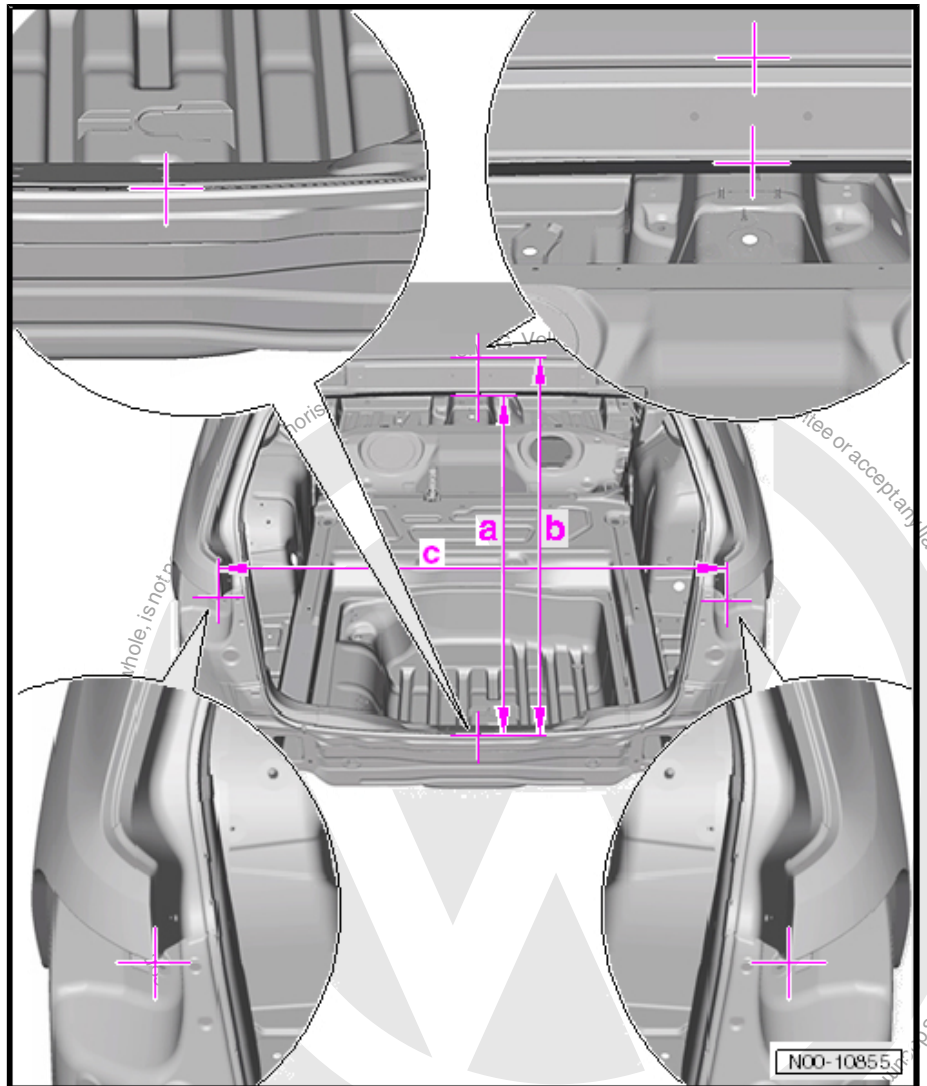
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7.5 Body - rear (Variant)

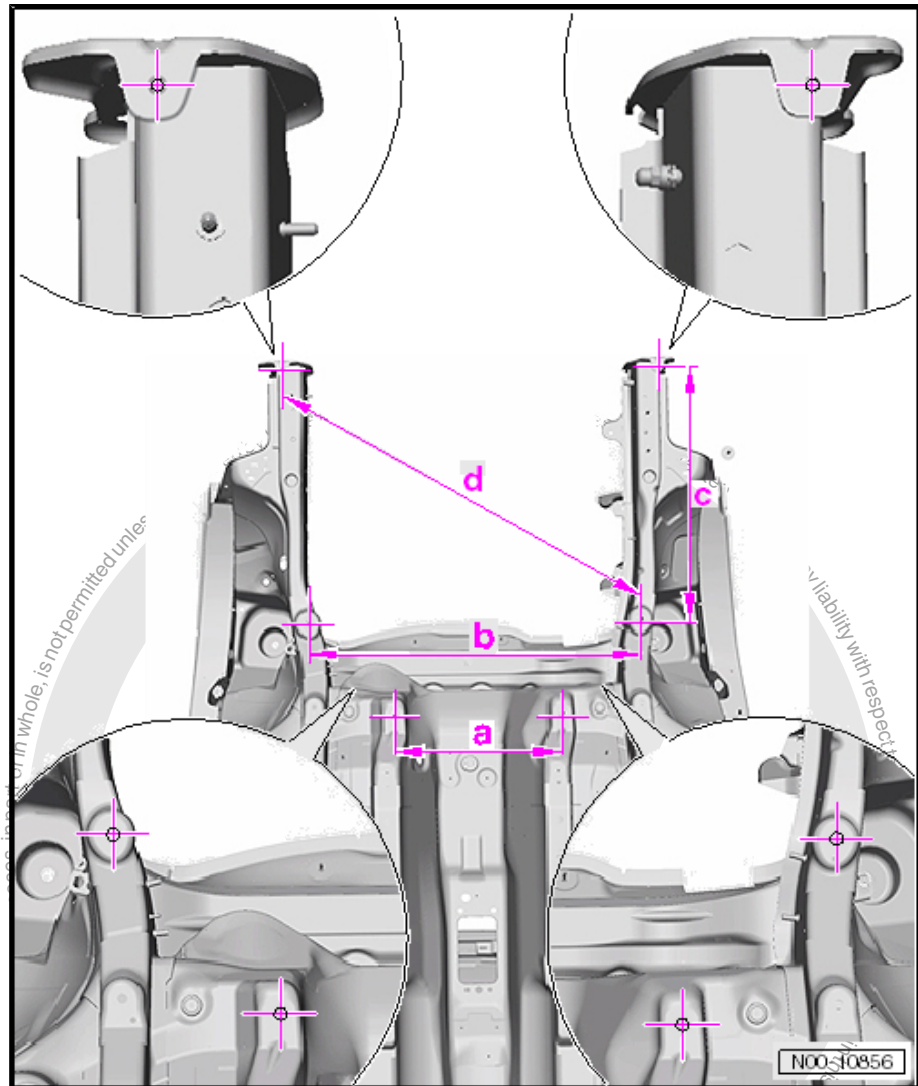
- a - 857 mm ± 2.0 mm
- b - 938 mm ± 2.0 mm
- c - 1,198 mm ± 2.0 mm





7.6 Floor group - front

- a - 430 mm \pm 2.0 mm
- b - 874 mm \pm 2.0 mm
- c - 678 mm \pm 2.0 mm
- d - 1,152 mm \pm 2.0 mm





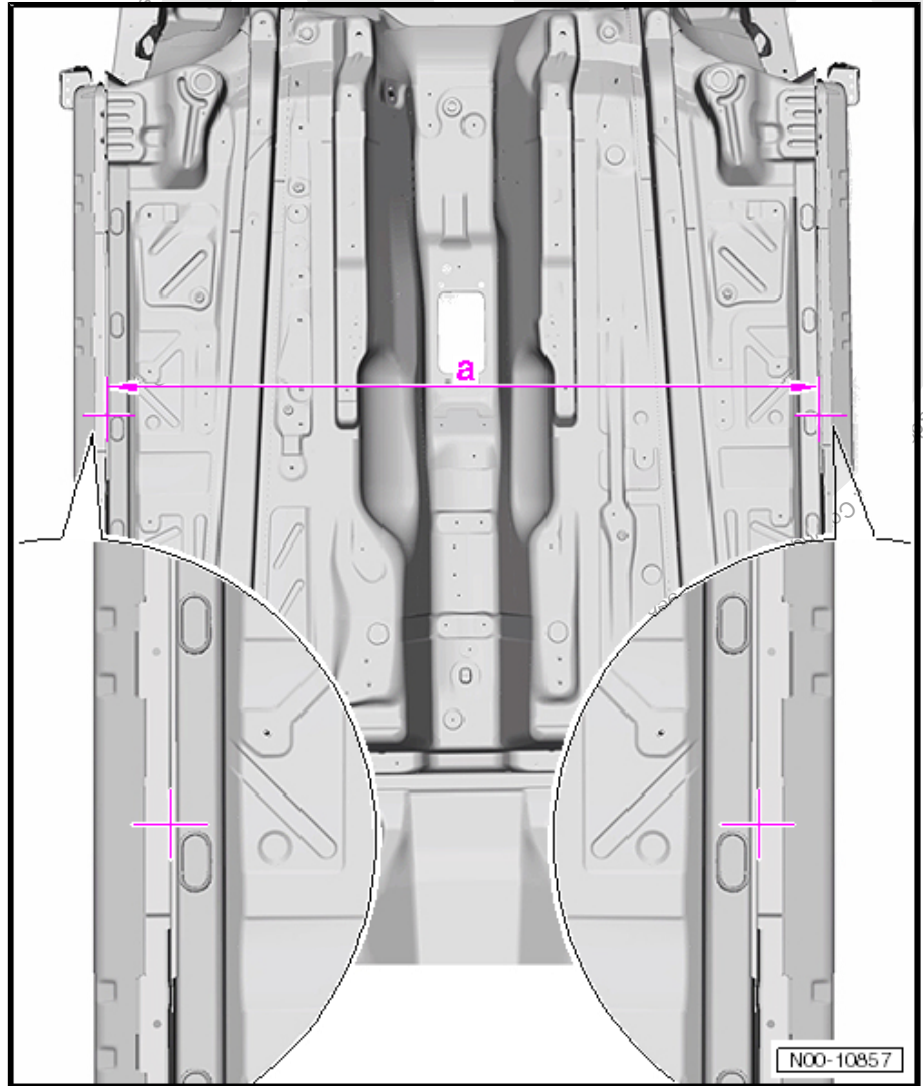
7.7 Floor group - centre



Note

Dimension -a- is measured on floor at the left and right B-pillar.

a - 1,486 mm ± 2.0 mm



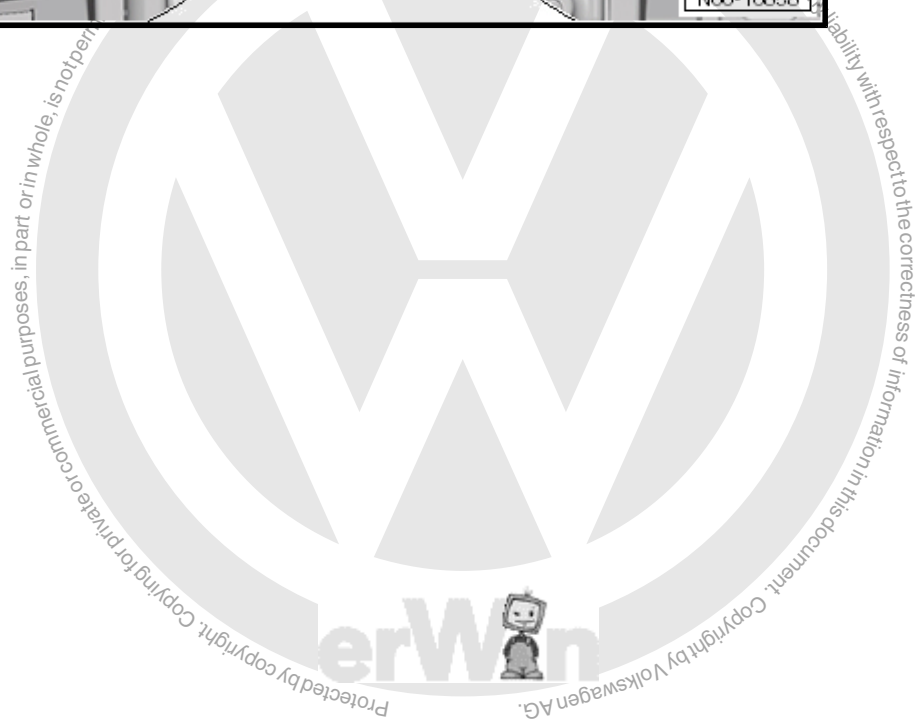
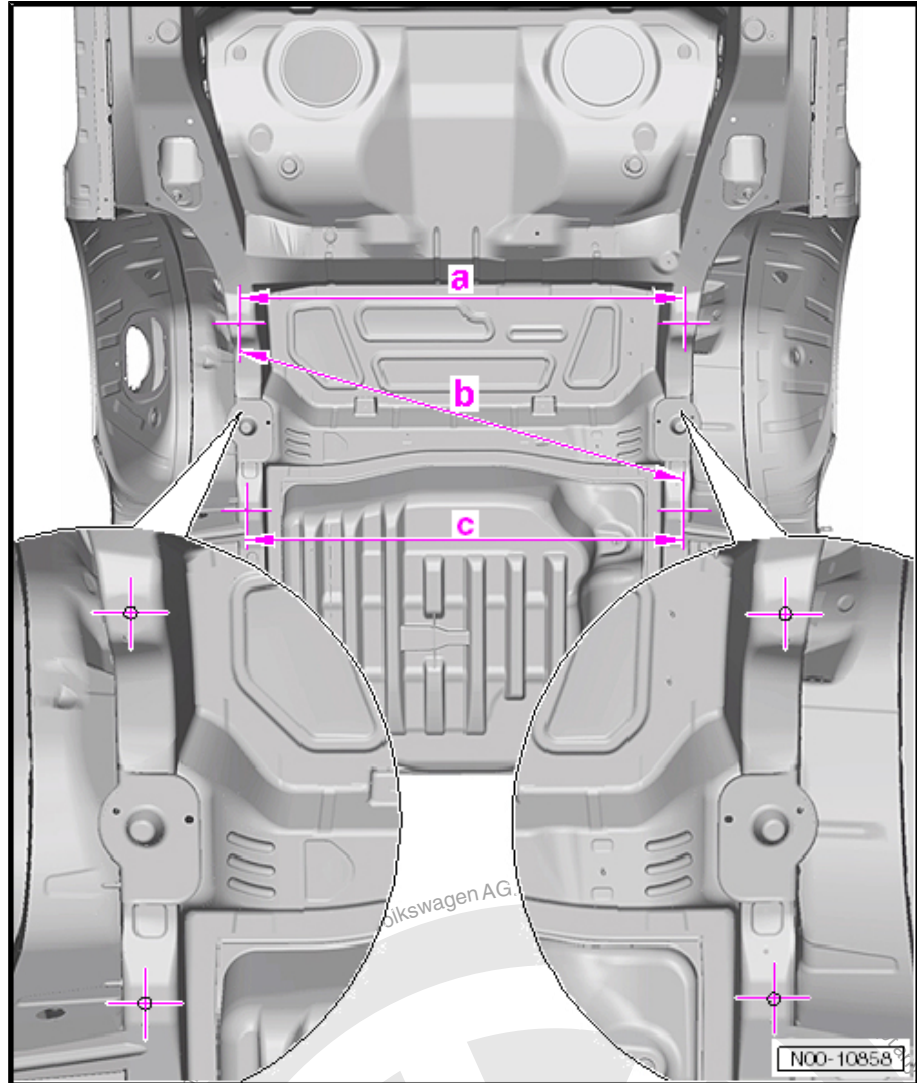


7.8 Floor group - rear

a - 1,000 mm \pm 2.0 mm

b - 1,085 mm \pm 2.0 mm

c - 987 mm \pm 2.0 mm





8 Tools



Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paint-work .*





9 Alignment bracket set



Note

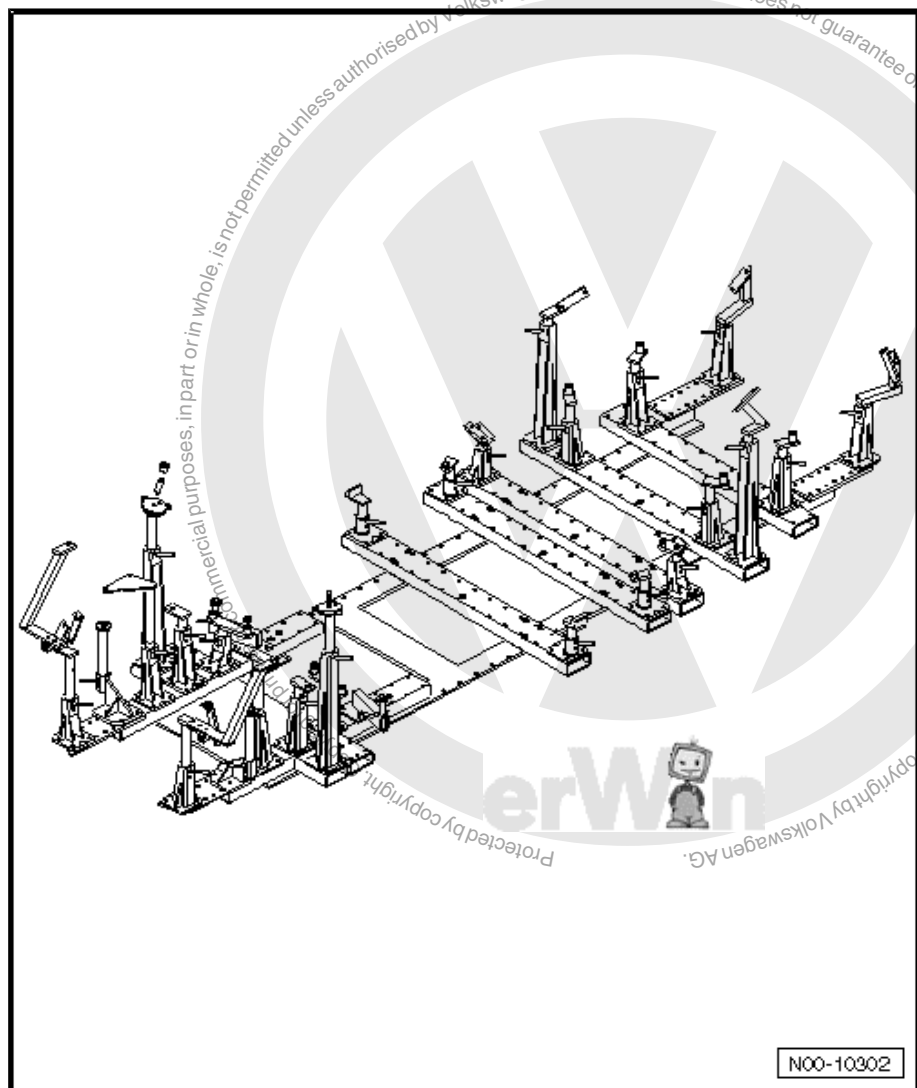
Alignment tasks may only be performed using Volkswagen AG approved alignment bracket sets or measurement and alignment systems .

9.1 Overview

Special tools and workshop equipment required

- ◆ Alignment bracket set Passat 2011 -VAS6325/3-
- ◆ Basic alignment bracket set -V.A.G 1610/-

Set up of complete alignment bracket set for Passat 2011 - VAS6325/3- .



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



10 Portal gauge



Note

Alignment tasks may only be performed using Volkswagen AG approved alignment bracket sets or measurement and alignment systems.

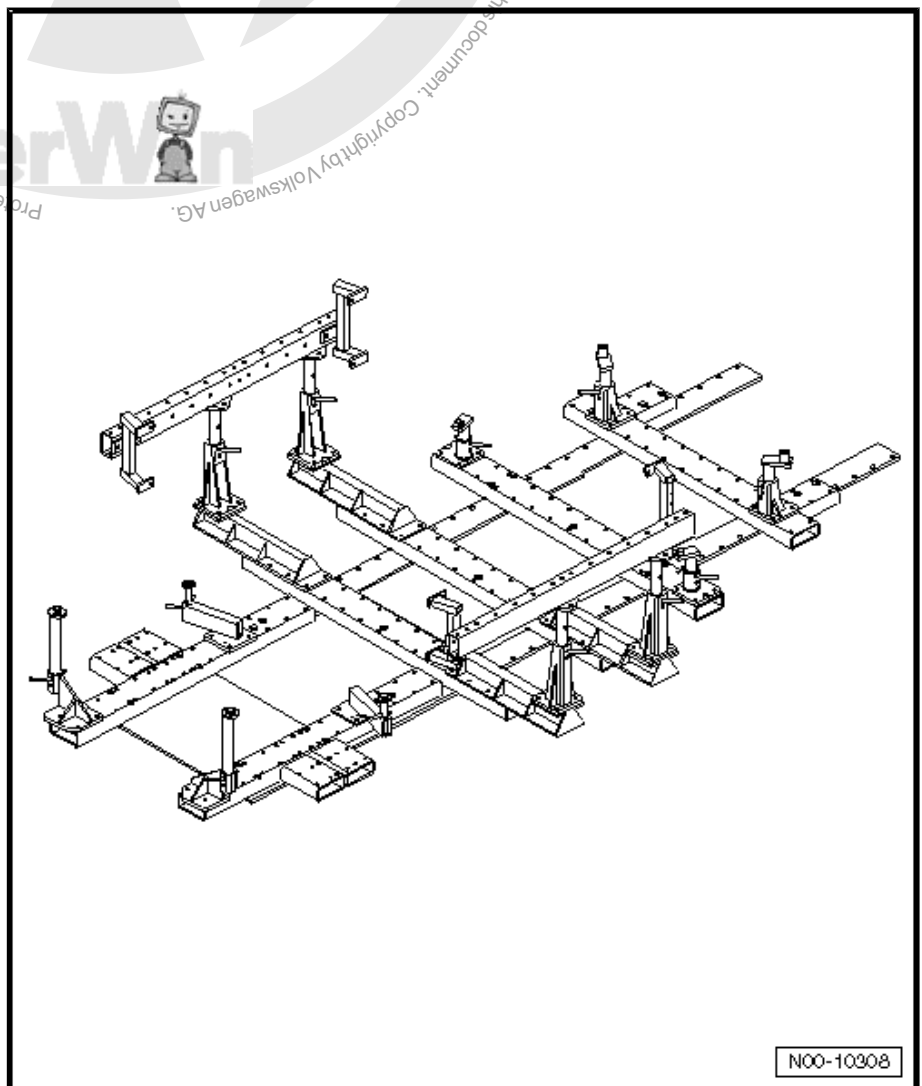
10.1 Overview

Special tools and workshop equipment required

- ◆ Portal gauge -VAS 5007-
- ◆ Portal gauge supplementary set for Passat 2006 -VAS 5007/22-
- ◆ Alignment bracket set Passat 2011 -VAS6325/3-
- ◆ Basic alignment bracket set -V.A.G 1610/-

10.1.1 Front door aperture

Set up for portal gauge -VAS 5007- with portal gauge supplement for Passat 2006 -VAS 5007/22- , front door aperture.



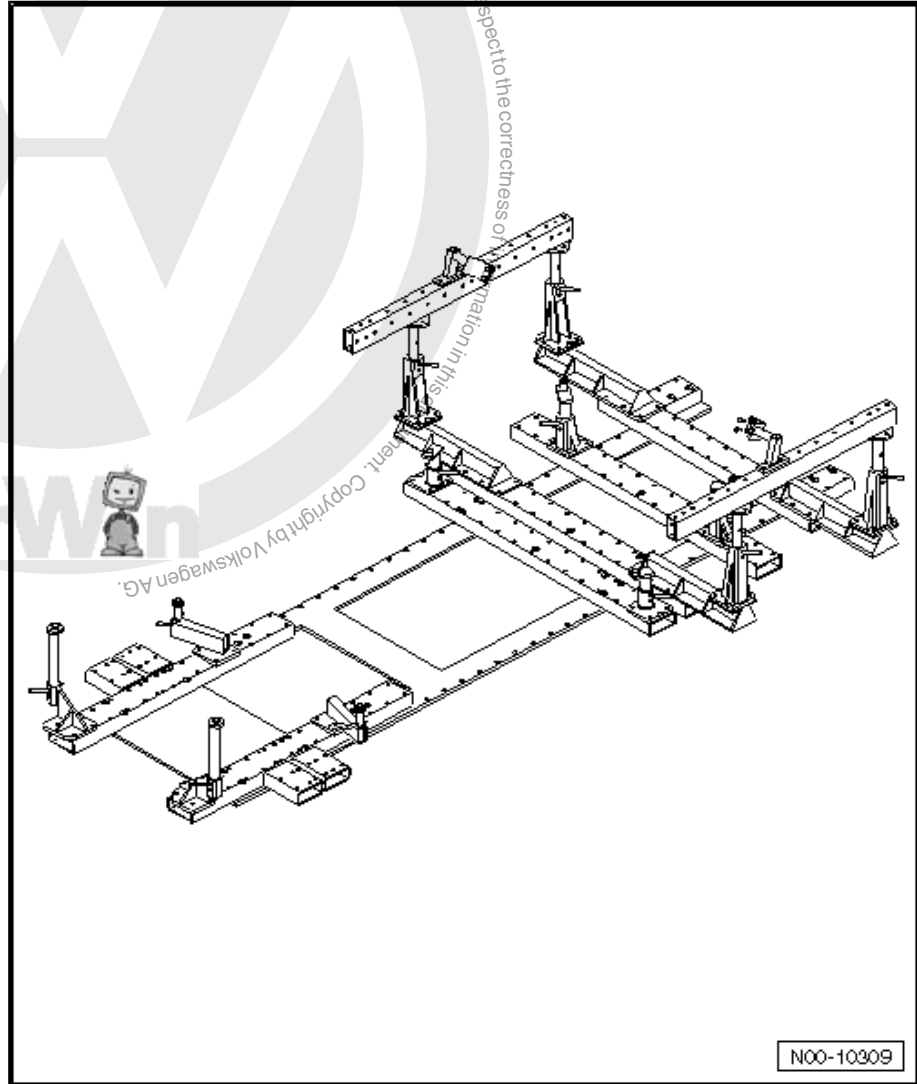
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Detailed information on setting up the portal gauge supplement for Passat 2006 -VAS 5007/22- set can be found with the equipment.

10.1.2 Rear door aperture

Set up for portal gauge -VAS 5007- with portal gauge supplement for Passat 2006 -VAS 5007/22- , rear door aperture.



Detailed information on setting up the portal gauge supplement for Passat 2006 -VAS 5007/22- set can be found with the equipment.



50 – Body - front

RO: 50 40 55 50

1 Renewing left console



WARNING

Observe safety notes!

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

1.1 Tools

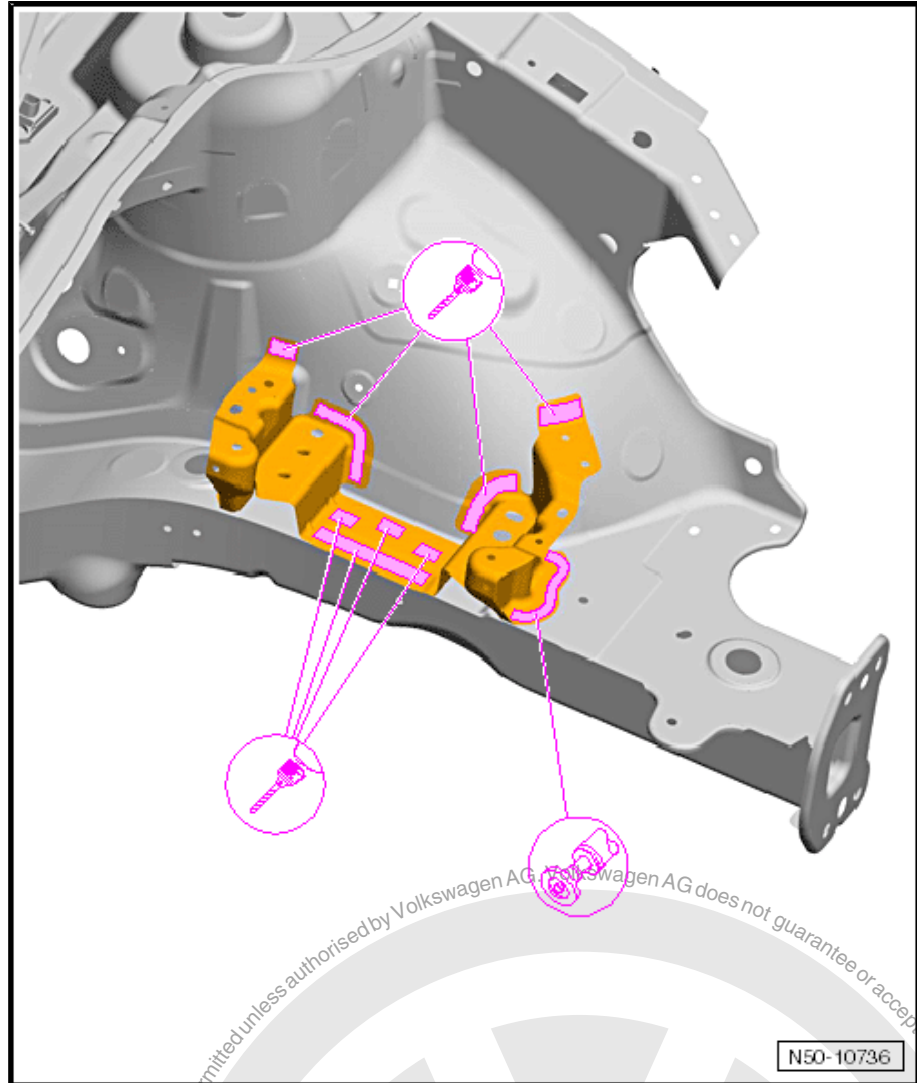


Note

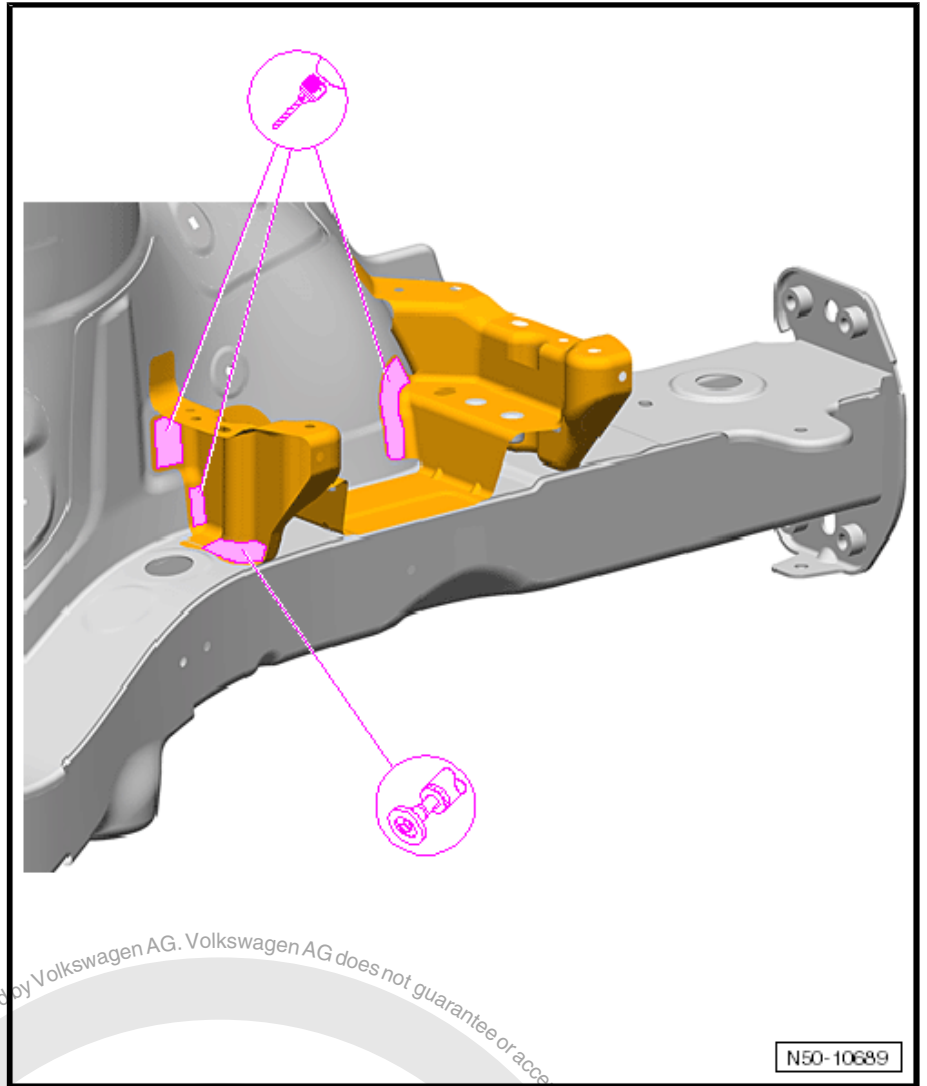
- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paint-work*



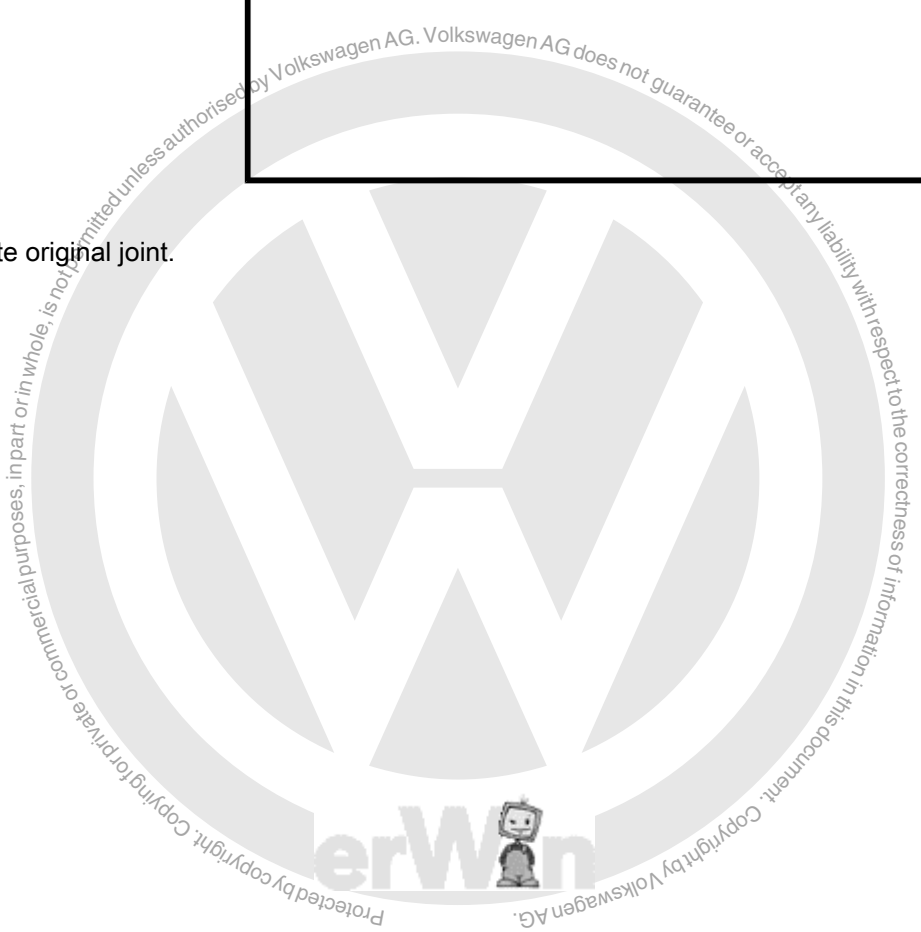
1.2 Removing

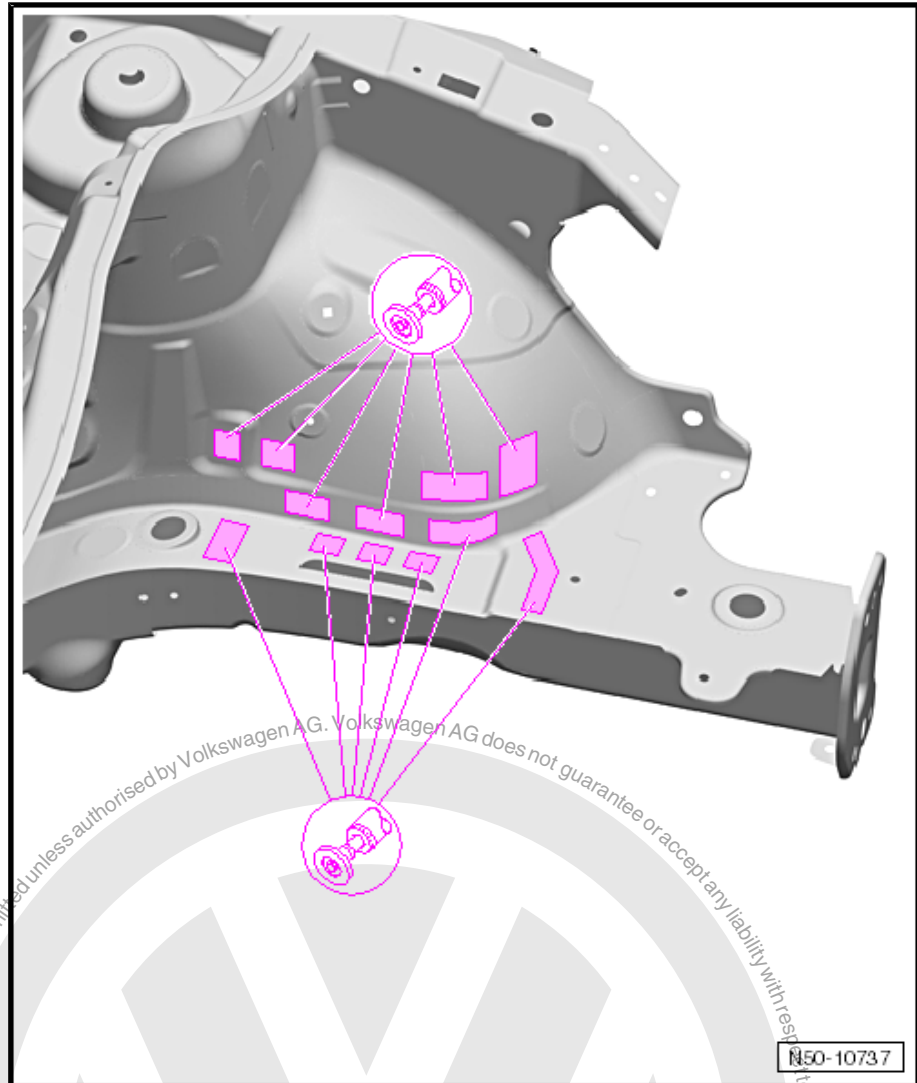


- Separate original joint.



- Separate original joint.





- Remove remaining material.

1.3 Installing



Note

*Only welding units authorised by Volkswagen AG may be used
=> [page 31](#).*

1.3.1 Preparing new part

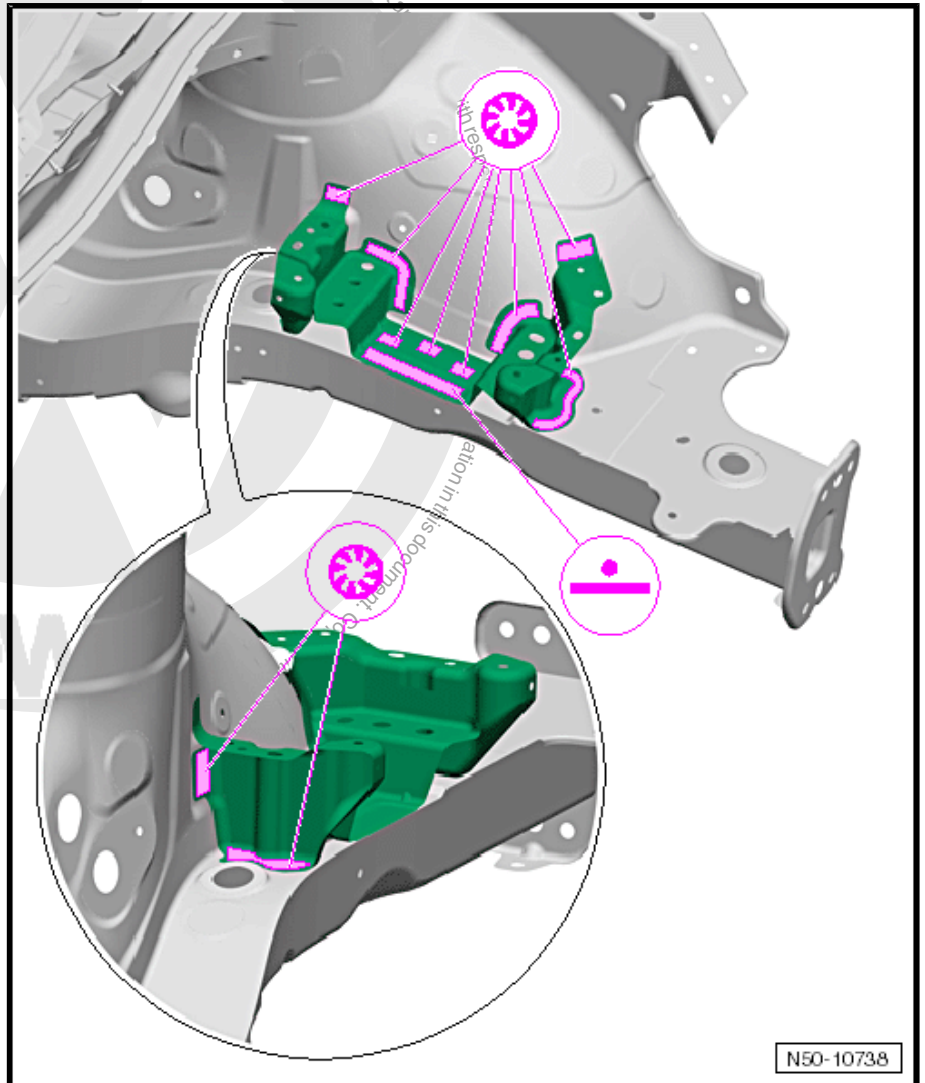
New part

- ◆ Left engine console
- Drill holes for SG plug weld seam (8 mm \varnothing).



1.3.2 Welding in

- Adapt new part with vehicle positioned on alignment bracket set and fix in place.



- Weld in console, SG plug weld seam and RP spot weld seam.



RO: 50 40 55 53

2 Renewing right console



WARNING

Observe safety notes!

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

2.1 Tools



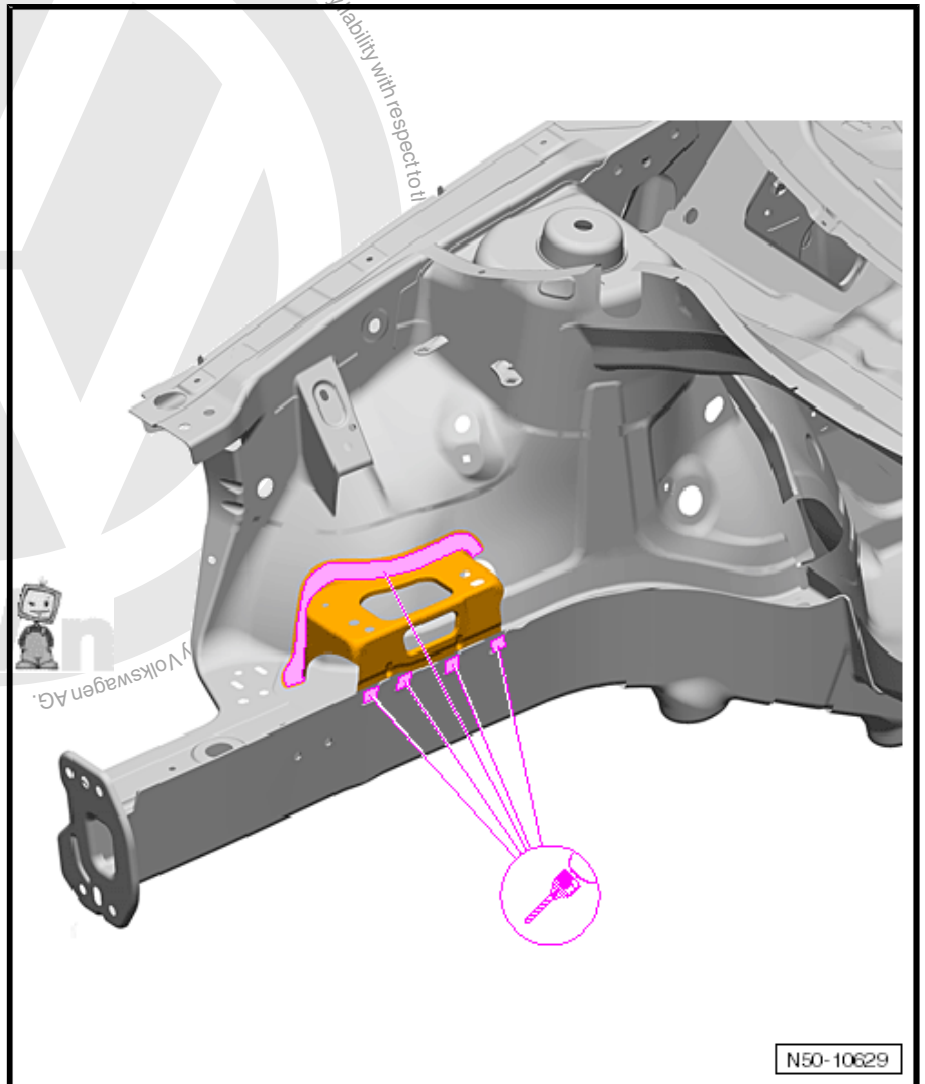
Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paint-work .*

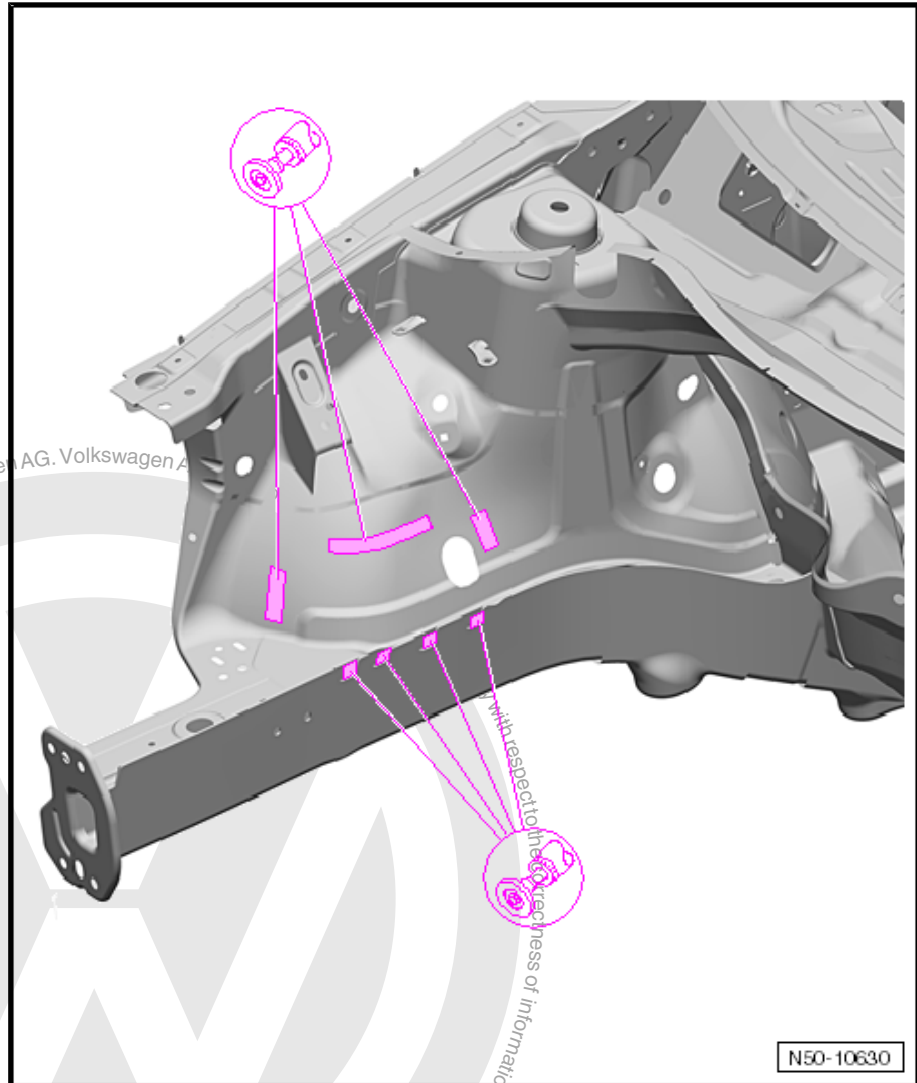




2.2 Removing



- Separate original joint.



- Remove remaining material.

2.3 Installing



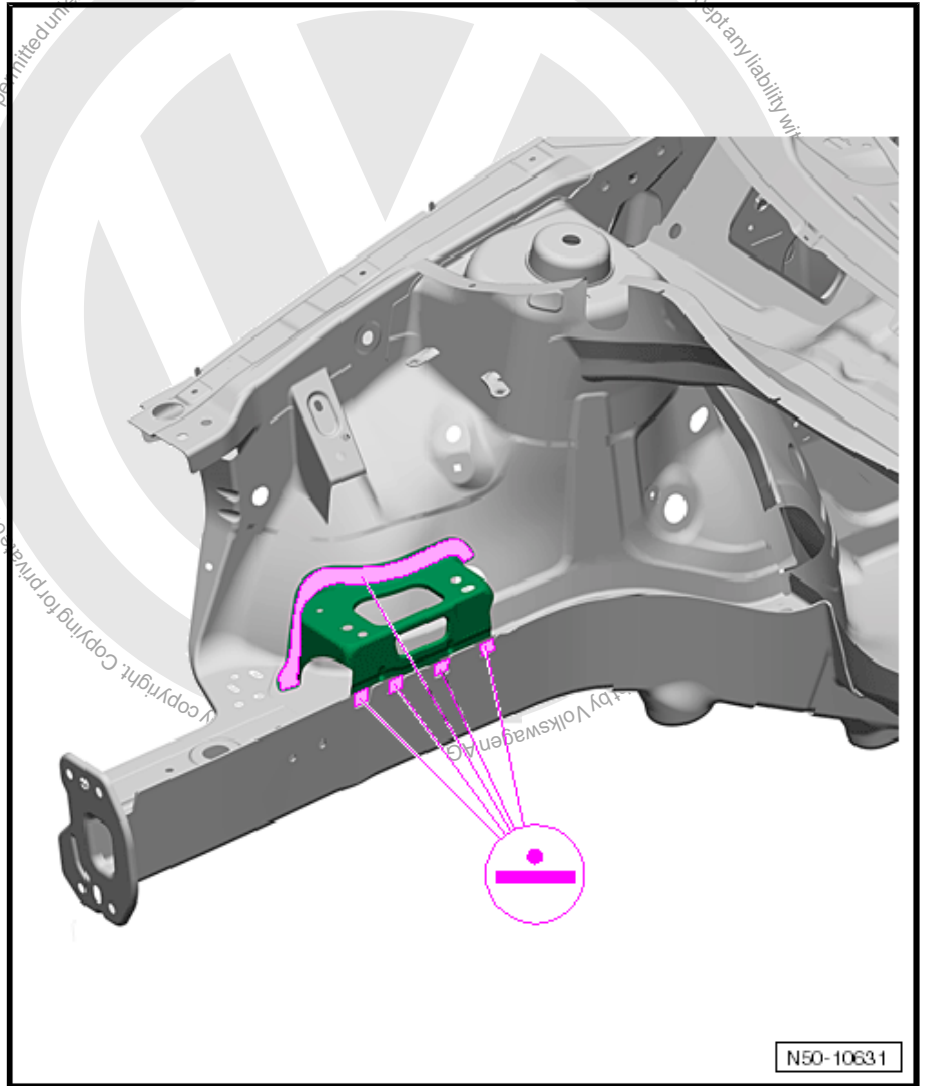
Note

*Only welding units authorised by Volkswagen AG may be used
=> [page 36](#).*

2.3.1 Welding in

New part

- ◆ Right engine bracket
- Adapt new part with vehicle positioned on alignment bracket set and fix in place.



- Weld in console, RP spot weld seam.



RO: 50 43 55 00

3 Renewing retaining bracket for sub-frame



WARNING

Observe safety notes!

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



Note

The description of the procedure for renewing the front left sub-frame retaining bracket uses this vehicle as an example. The procedure, as appropriate, should be used for the other 3 retaining brackets.

3.1 Tools



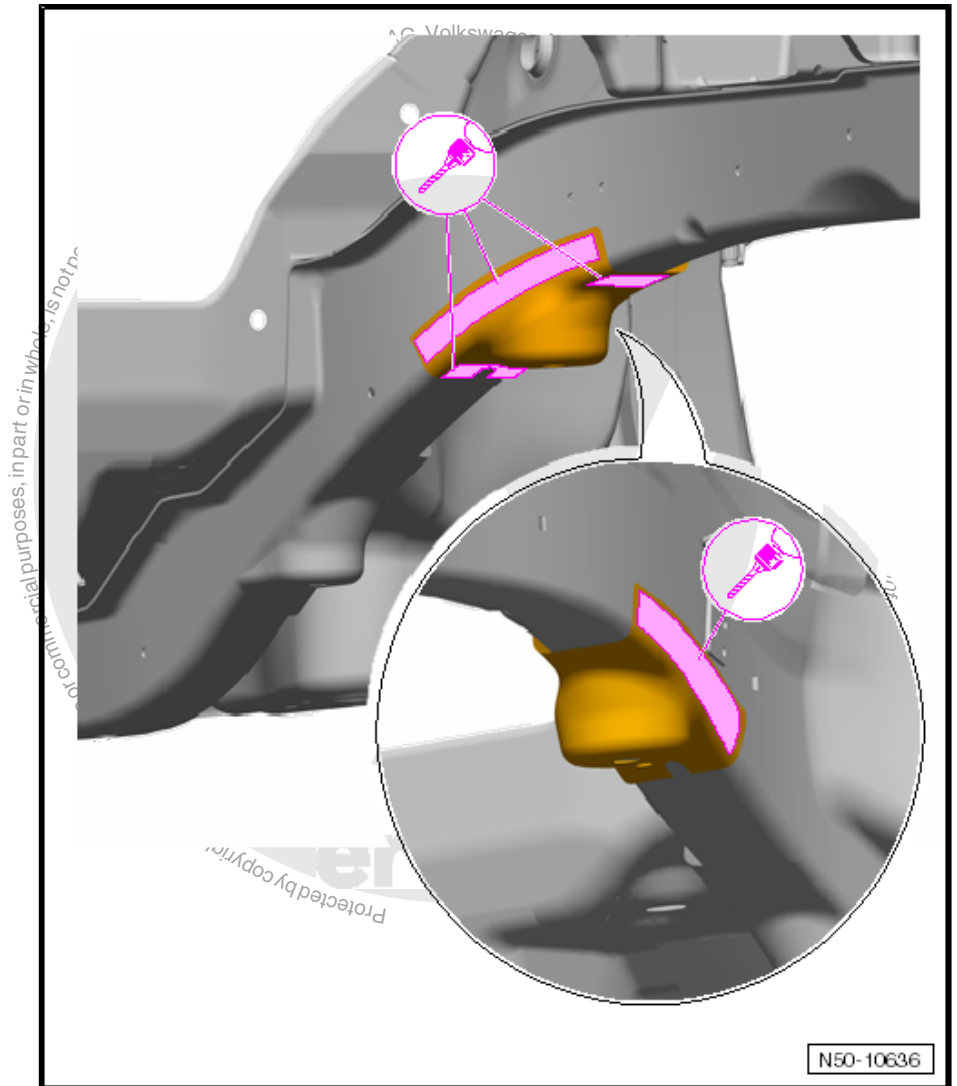
Note

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- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in → ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paint-work .*

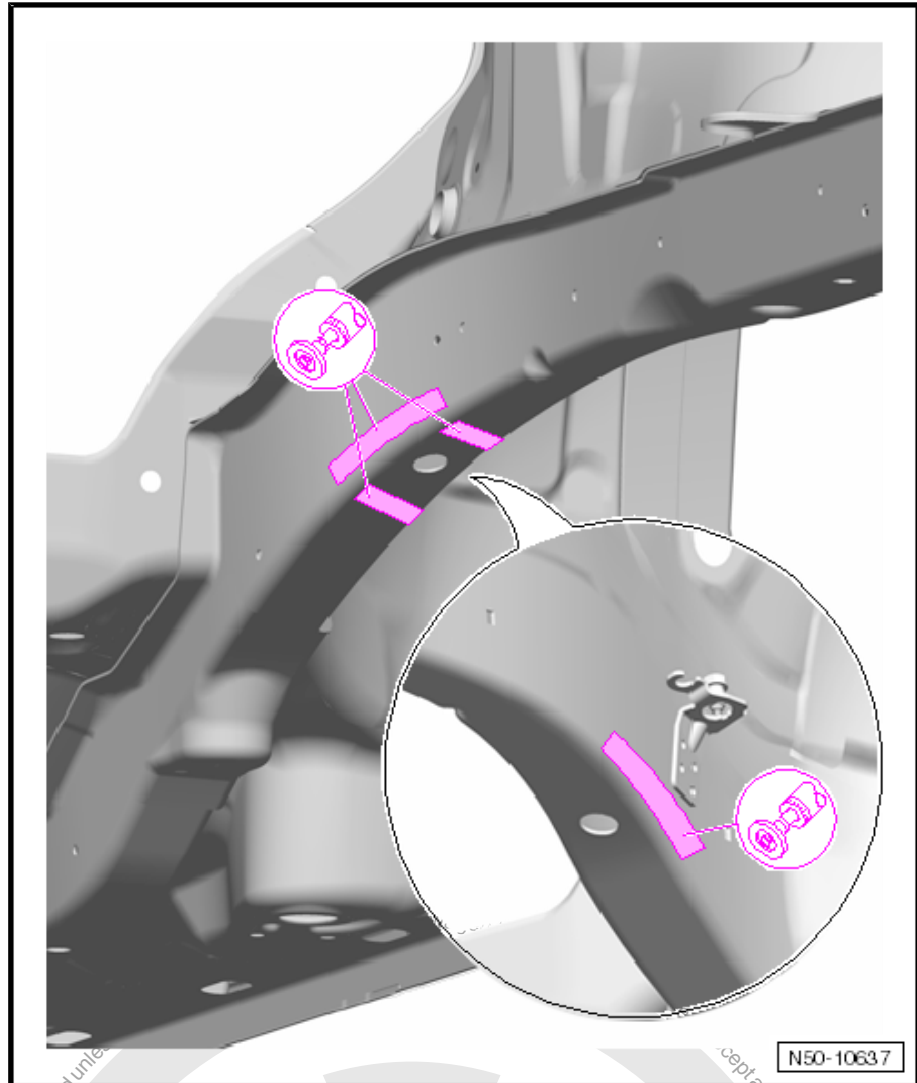




3.2 Removing



- Separate original joint.



- Remove remaining material.

3.3 Installing



Note

*Only welding units authorised by Volkswagen AG may be used
=> [page 40](#).*

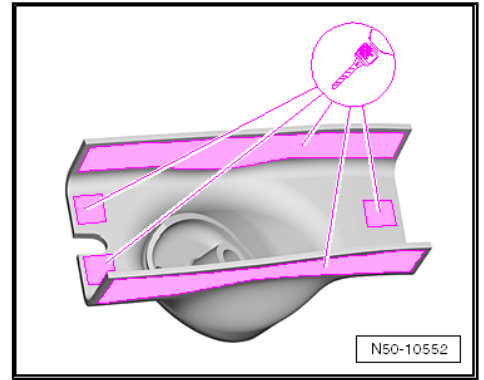
3.3.1 Preparing new part

New part

- ◆ Retaining bracket for subframe (parts designation: subframe retaining bracket)

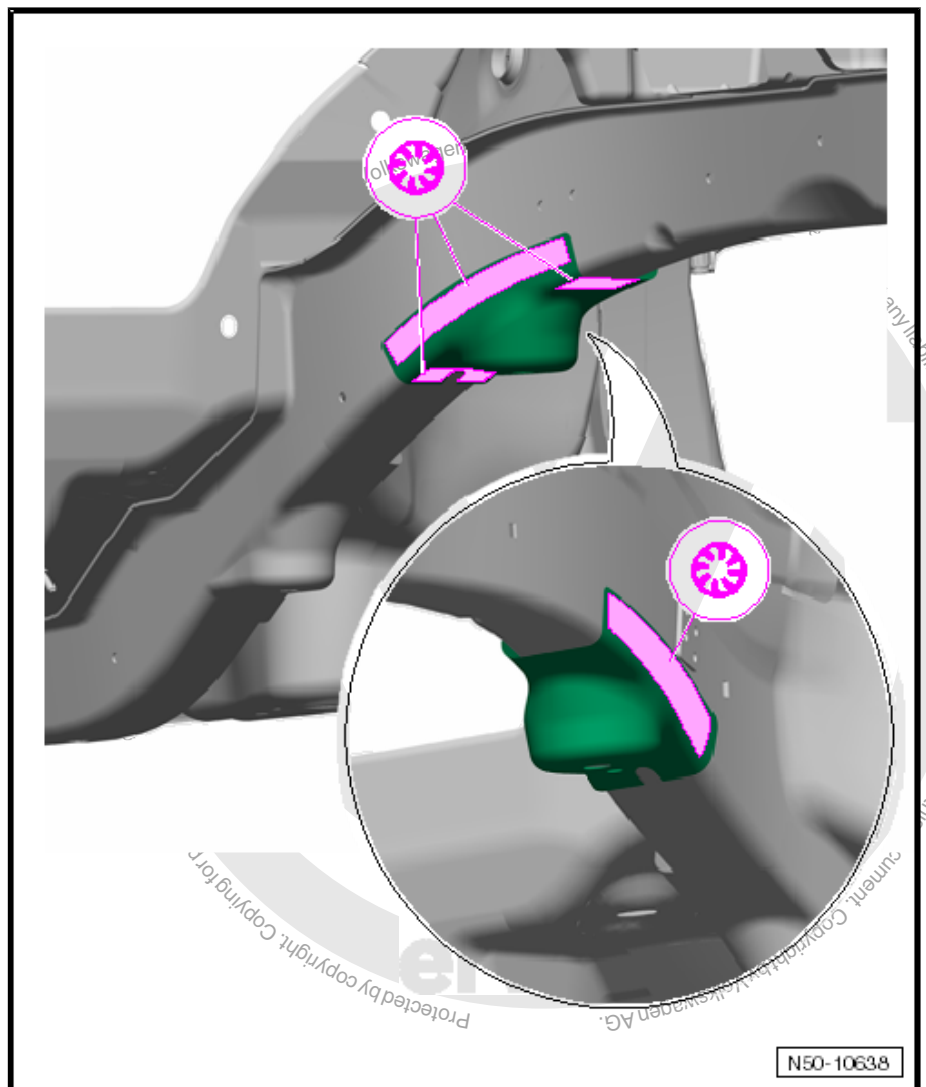


- Drill holes for SG plug weld seam (8 mm Ø).



3.3.2 Welding in

- Adapt new part with vehicle positioned on alignment bracket set and fix in place.



- Weld in new part, SG plug weld seam.



RO: 50 65 55 50

4 Renewing bumper bracket



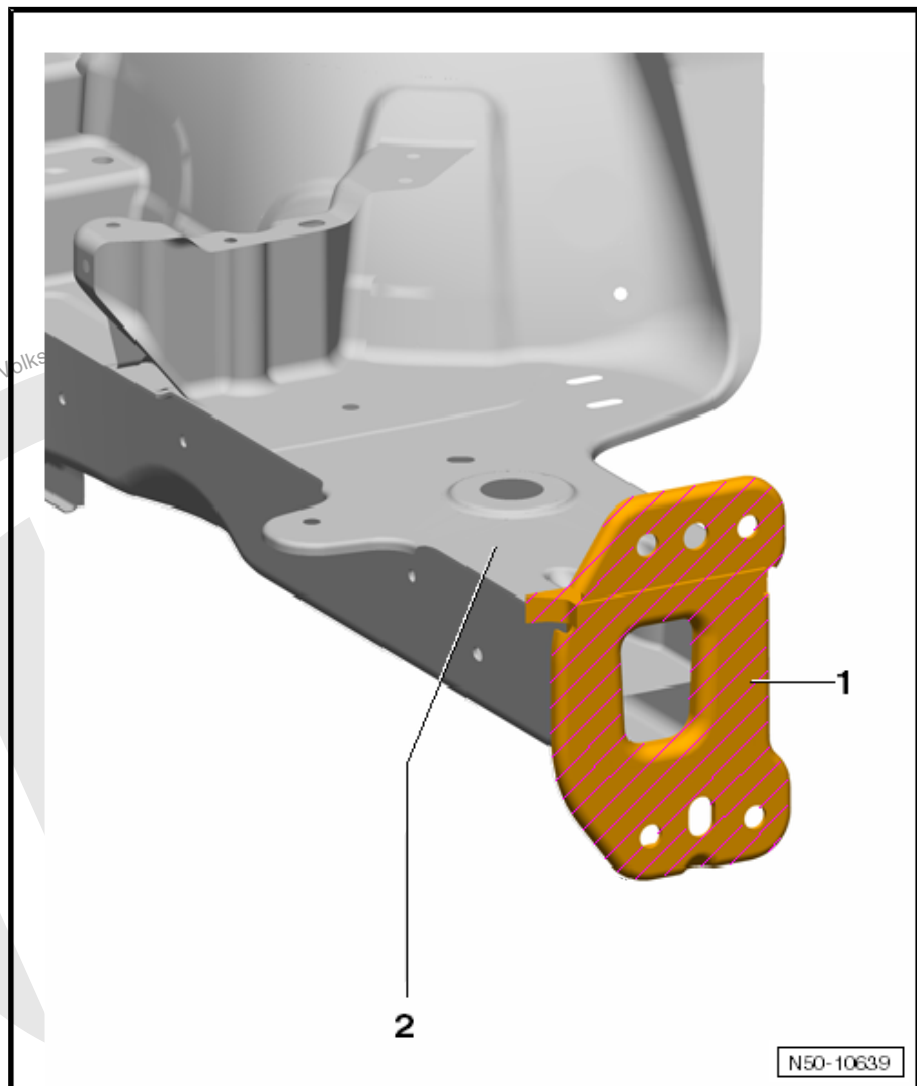
WARNING

Observe safety notes!

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

1 - Bumper bracket

2 - Longitudinal member with cover plate



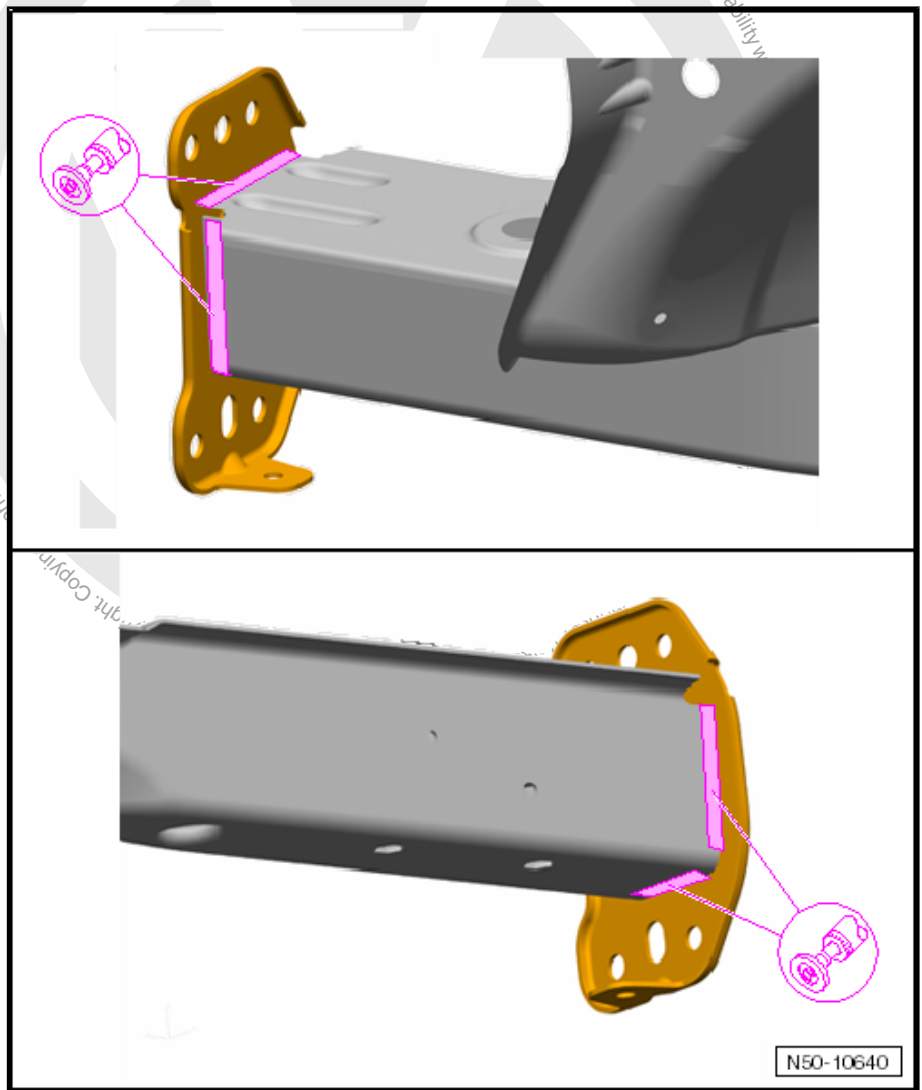


4.1 Tools

Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paintwork.*

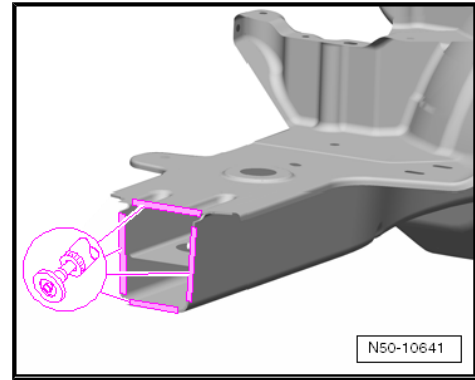
4.2 Removing



- Separate original joint.



- Remove remaining material.



4.3 Installing



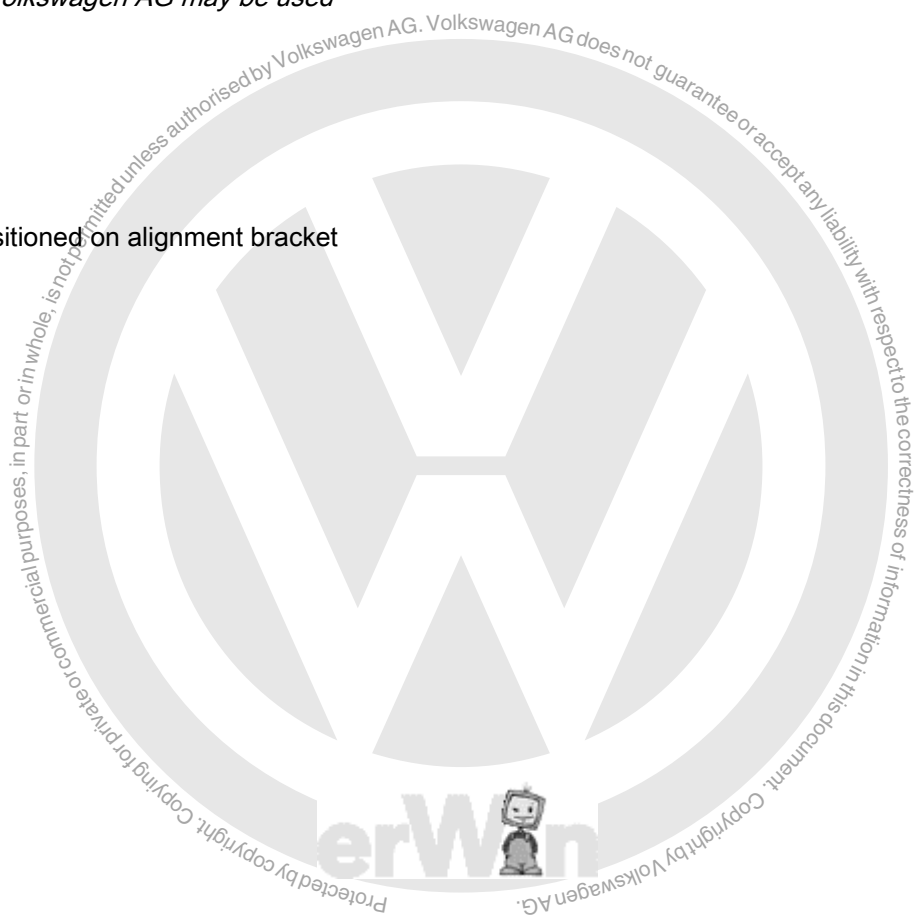
Note

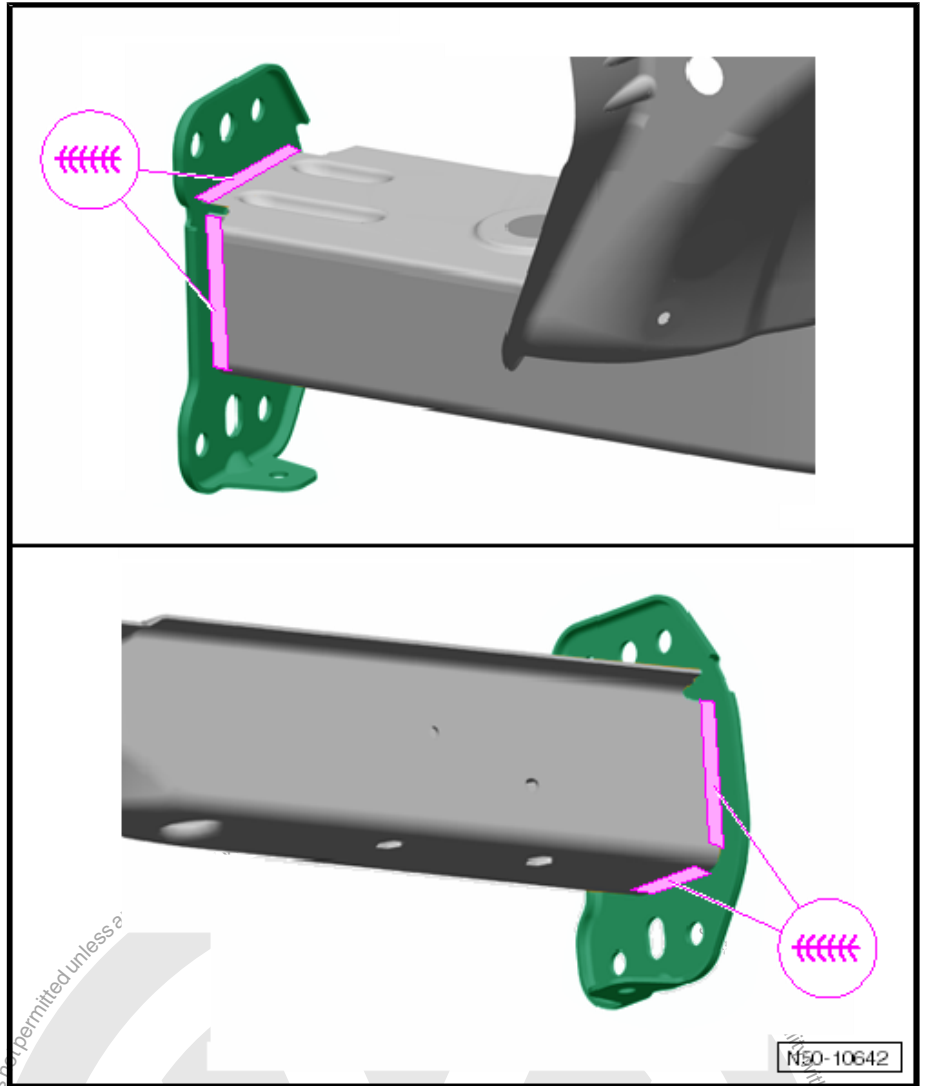
*Only welding units authorised by Volkswagen AG may be used
=> page 45 .*

4.3.1 Welding in

New part

- ◆ Front bumper bracket
- Adapt new part with vehicle positioned on alignment bracket set and fix in place.





- Weld in bumper bracket, SG continuous weld seam.

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RO: 50 72 55 00

5 Renewing upper wheel housing longitudinal member

Comprises: upper outer longitudinal member and upper inner longitudinal member



Note

- ◆ *If the upper longitudinal member for wheel housing is renewed, the repairs must be documented according to the market-specific legislation.*
- ◆ *The vehicle identification number should be installed/embossed before the new part is welded in.*



WARNING

Observe safety notes!

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



1 - Front outer longitudinal member

2 - Front inner longitudinal member

3 - Bonded area

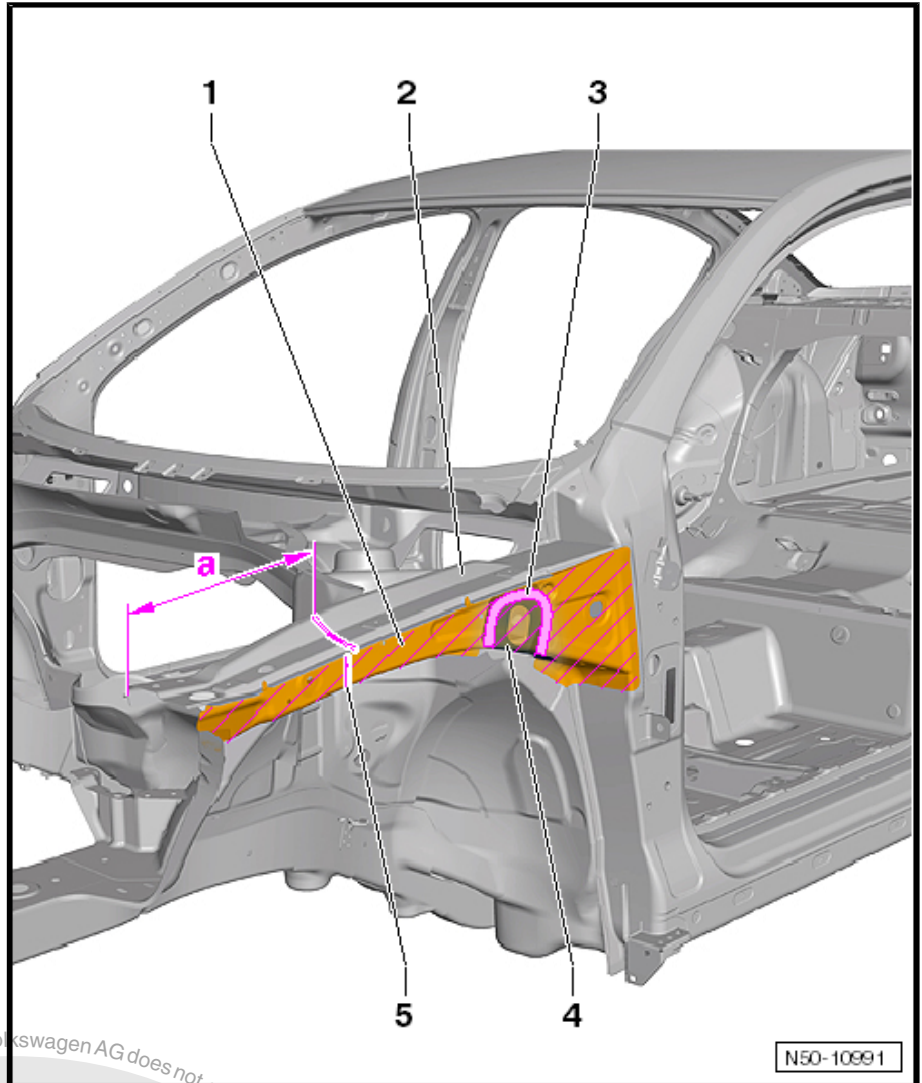
4 - Aperture to plenum chamber

Cut out together with
⇒ [Item 1 \(page 49\)](#) .

5 - Parting cut for partial replacement

A partial replacement can also be made with the specified parting cut.

Dimension -a- = 270 mm



5.1 Tools

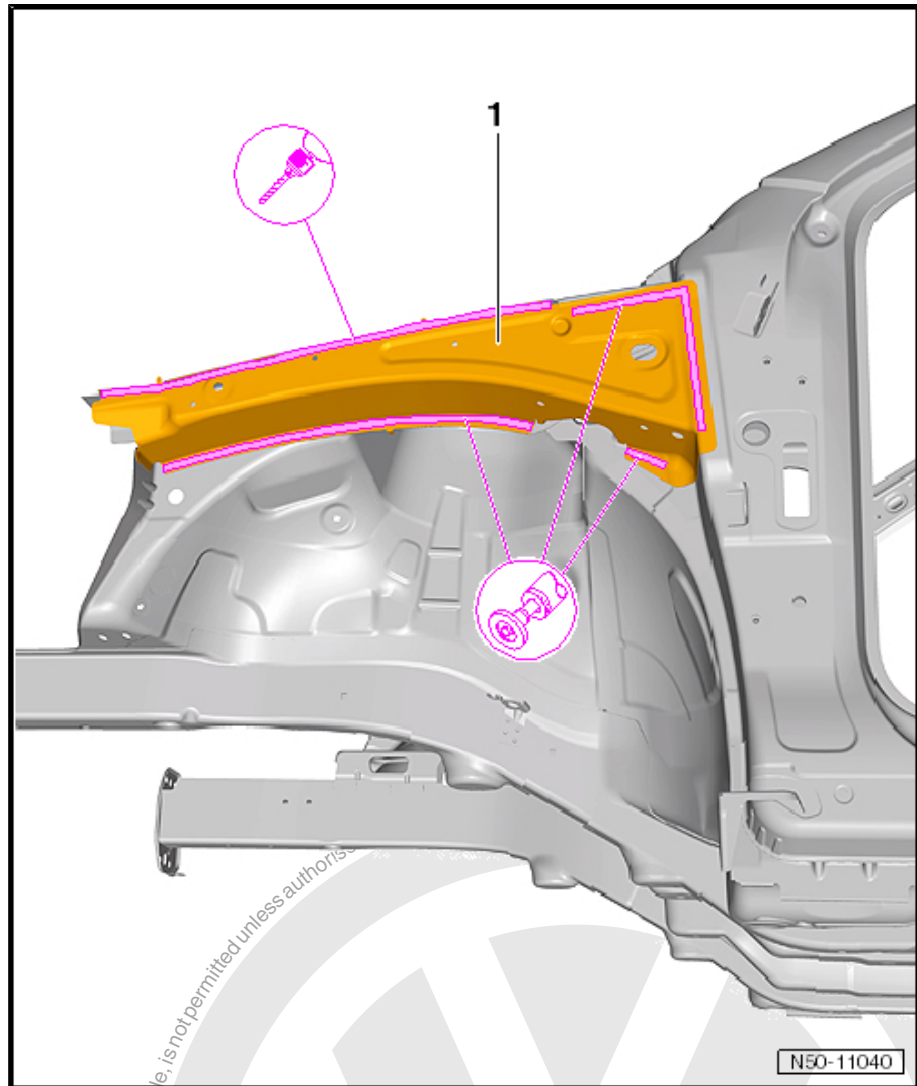


Note

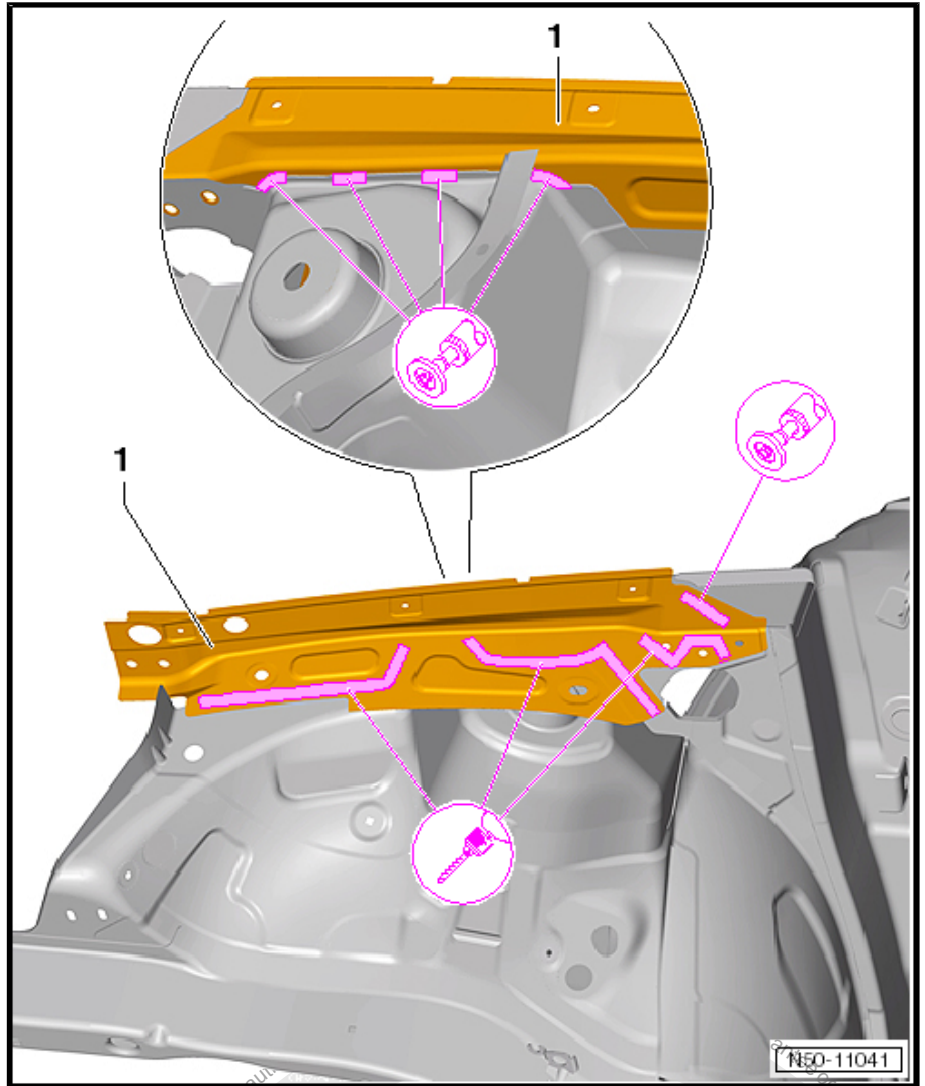
- ◆ The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.
- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ *ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paintwork* .



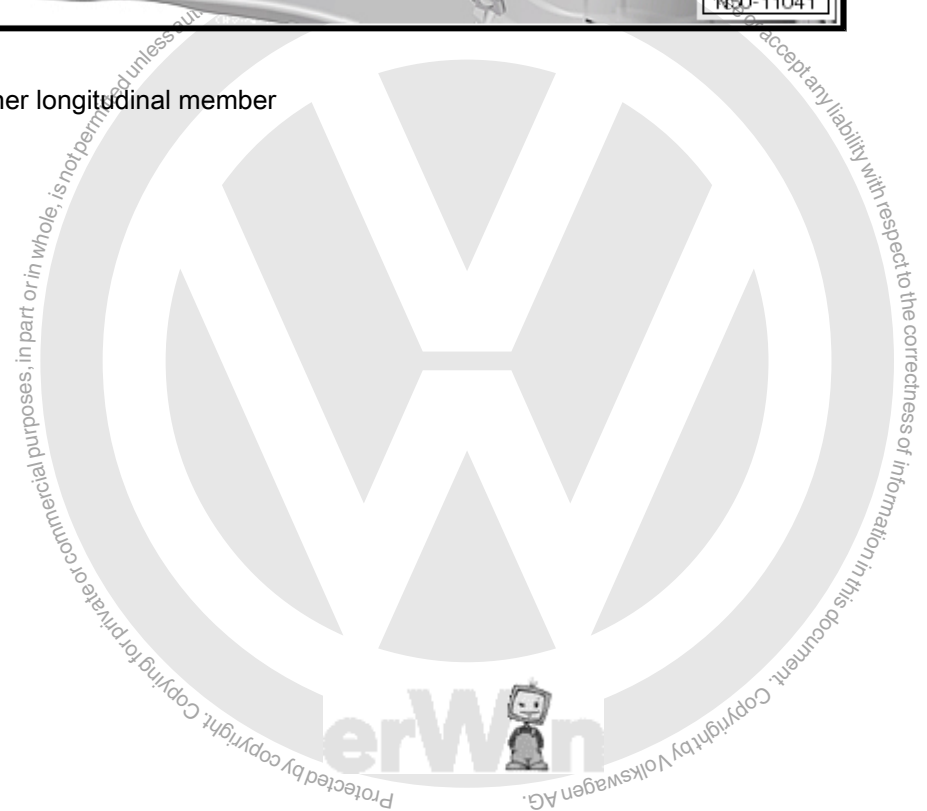
5.2 Removing

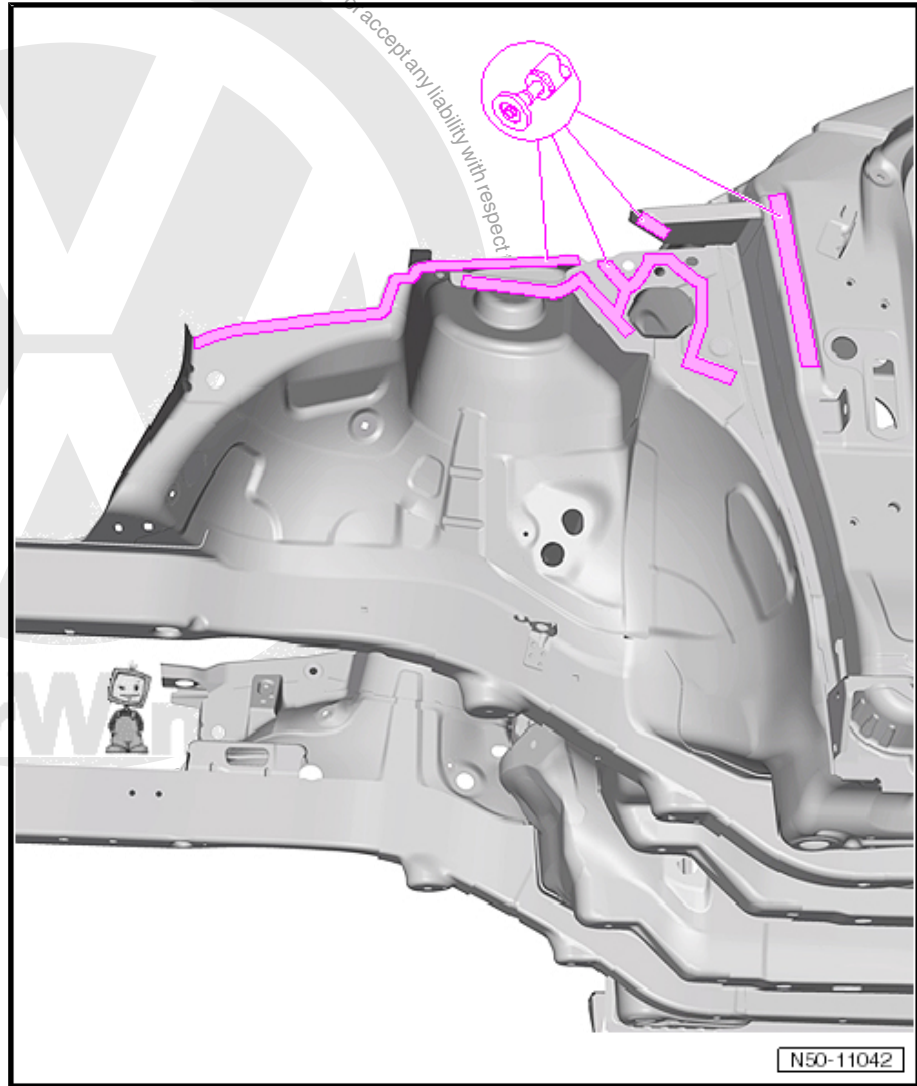


- Separate original joint at upper outer longitudinal member
-1-



- Separate original joint at upper inner longitudinal member -1-.





- Remove remaining material.

5.3 Installing



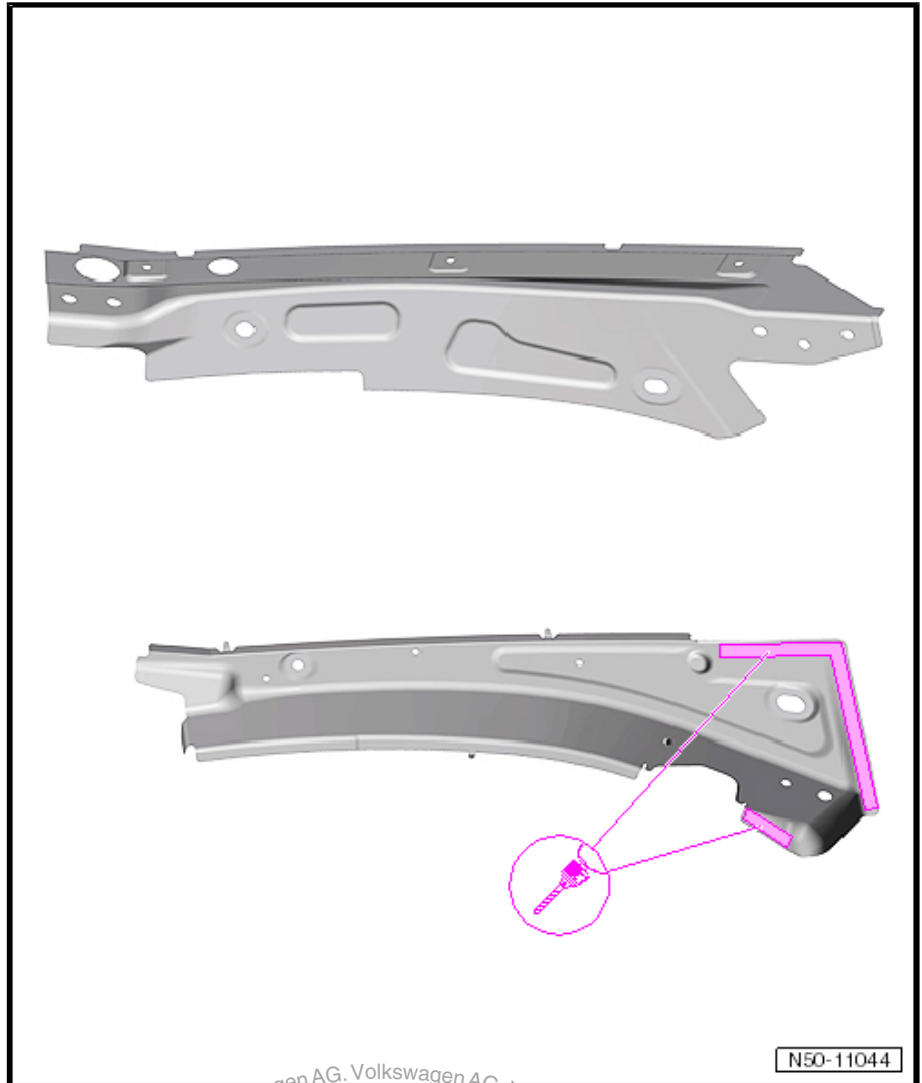
Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 49](#).*

5.3.1 Preparing new part

New part

- ◆ Upper inner longitudinal member
- ◆ Upper outer longitudinal member
- ◆ 2K body adhesive -D 180 KD3 A2-



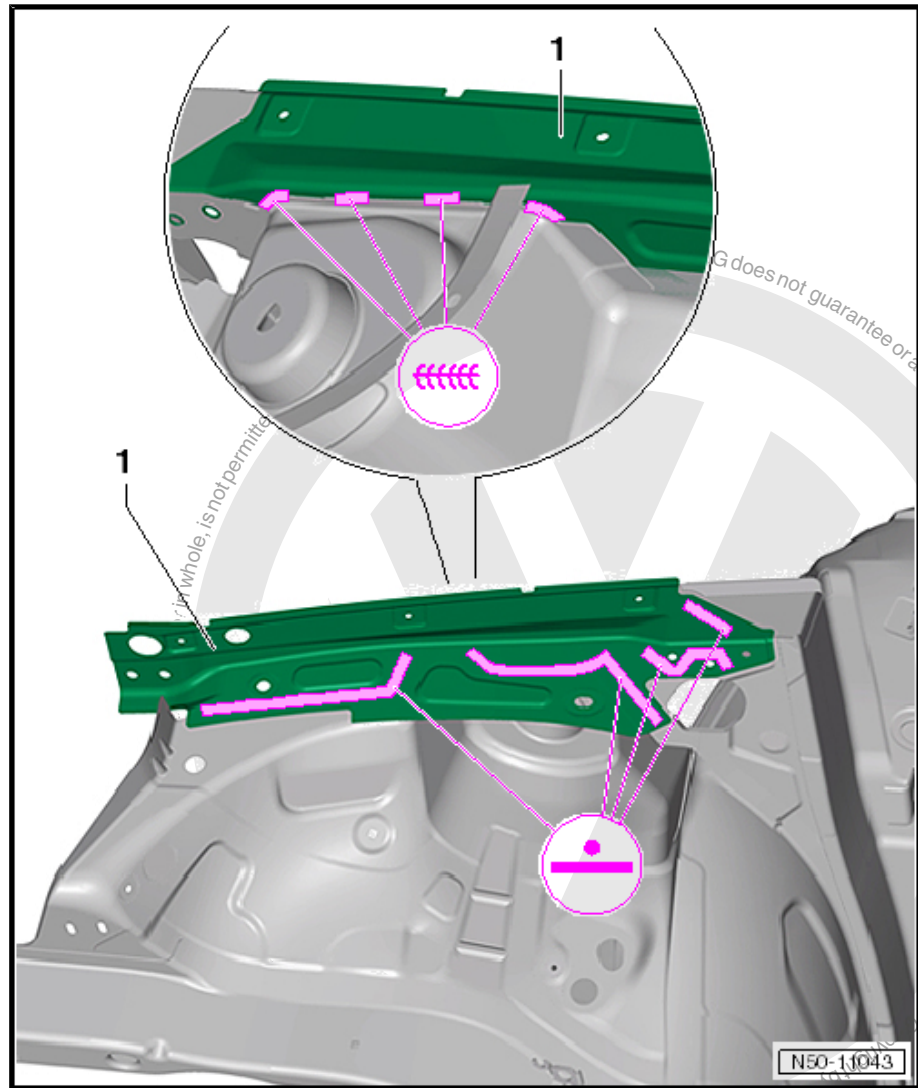
- Drill 8 mm \varnothing holes in upper outer longitudinal member for SG plug weld seam.

5.3.2 Welding in

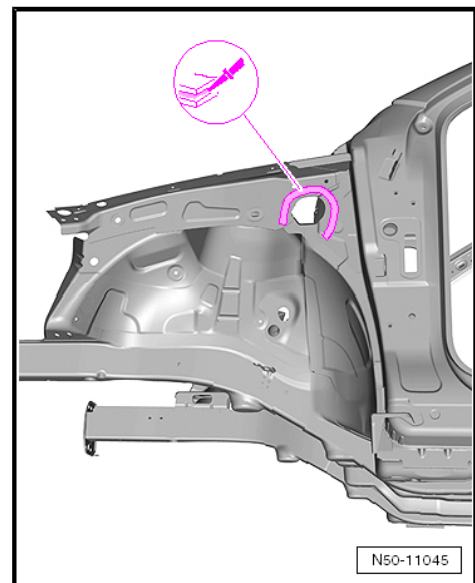
 **Note**

New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.

- Adapt new part with vehicle standing on its wheels or alignment bracket set and fix in position.
- Check fit with bolt-on parts.

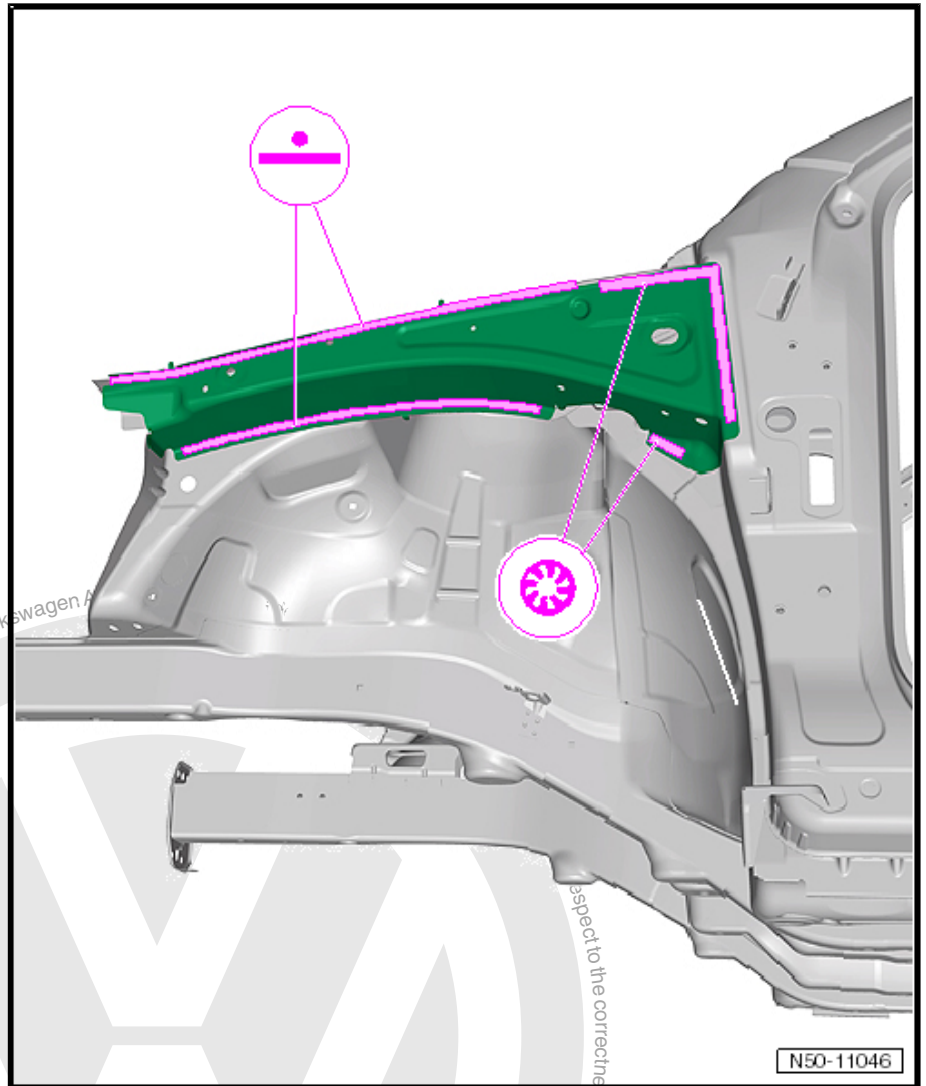


- Weld in upper inner longitudinal member -1-, RP spot weld seam and SG staggered continuous weld seam.
- Apply 2K body adhesive -D 180 KD3 A2- to areas bonded in the factory.





- Adapt upper outer longitudinal member to fit with upper inner longitudinal member and check fit with adjacent parts.



- Weld in upper outer longitudinal member, SG plug weld seam and RP spot weld seam.



RO: 50 74 55 50

6 Renewing front wheel housing

Includes: suspension strut mounting



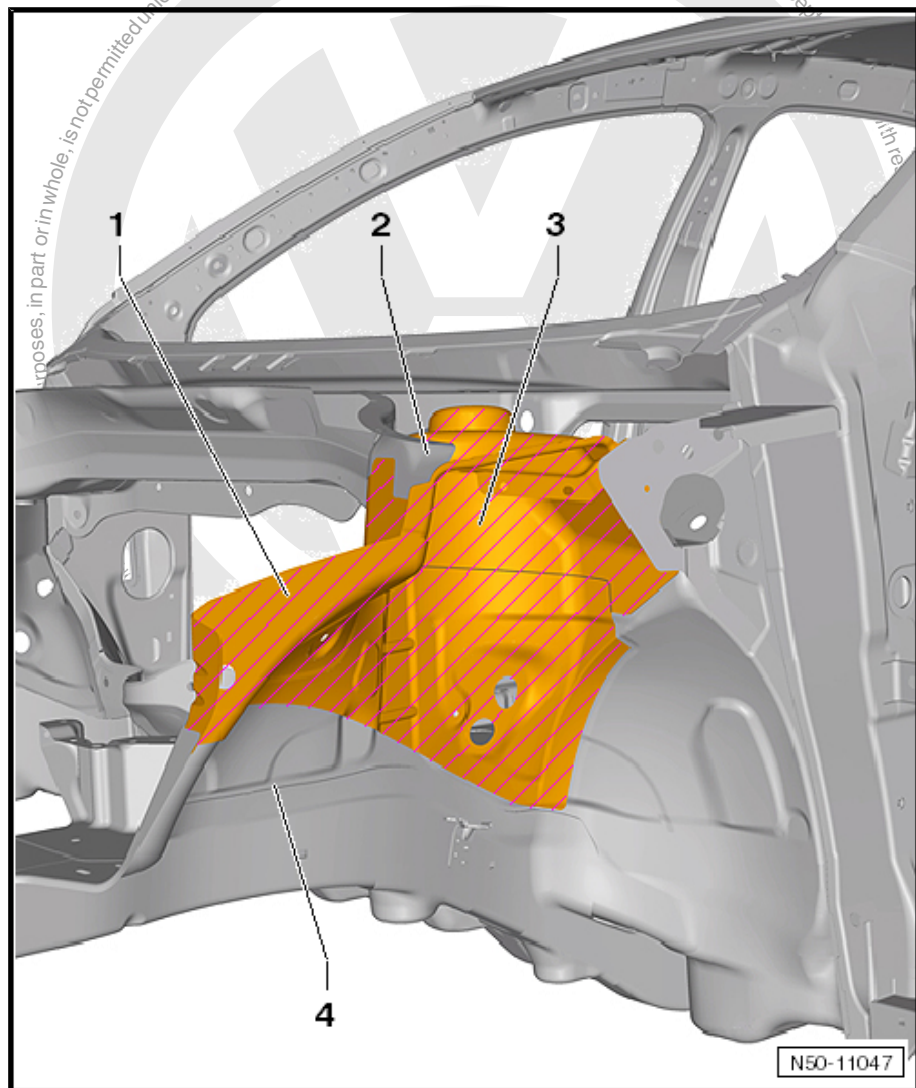
WARNING

Observe safety notes!

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

- Longitudinal member for upper wheel housing already removed ⇒ [page 48](#) .

- 1 - Wheel housing
- 2 - Plenum chamber
- 3 - Suspension strut mounting
With suspension strut mounting reinforcement
- 4 - Longitudinal member with cover plate





6.1 Tools



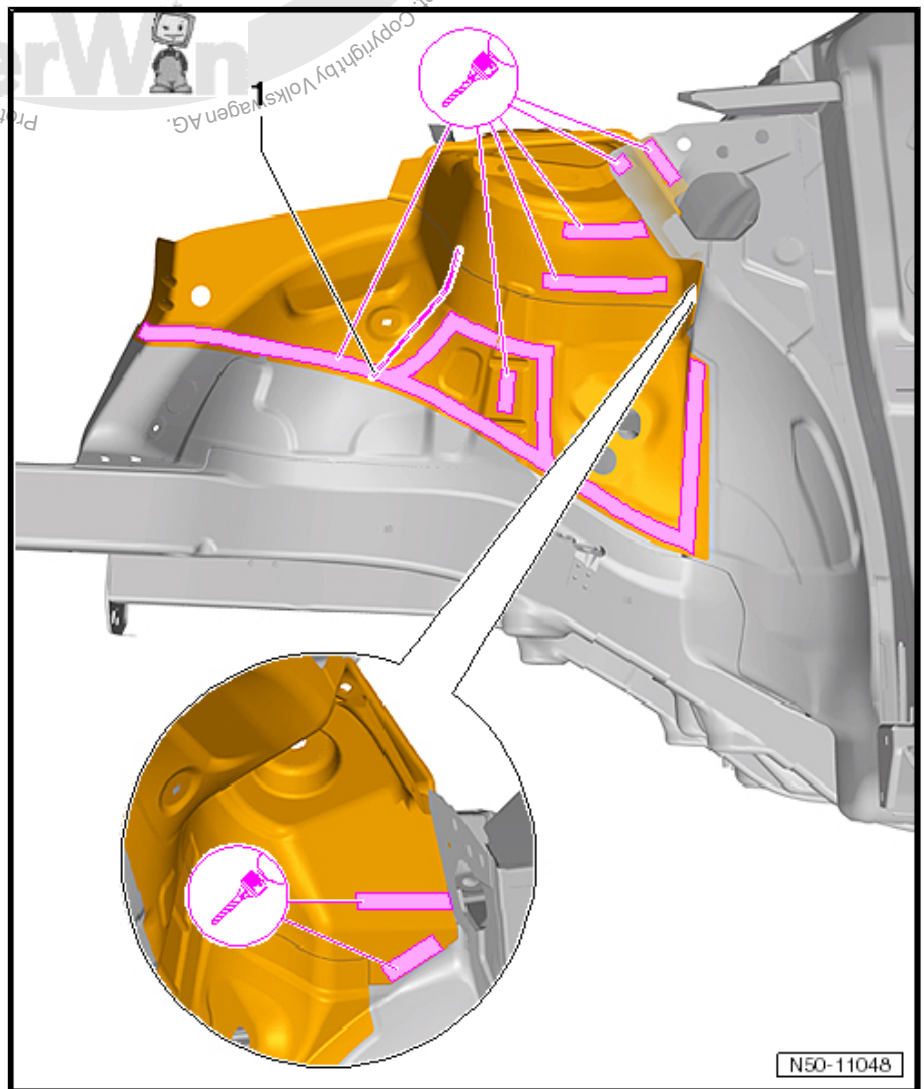
Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in → ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paint-work.*

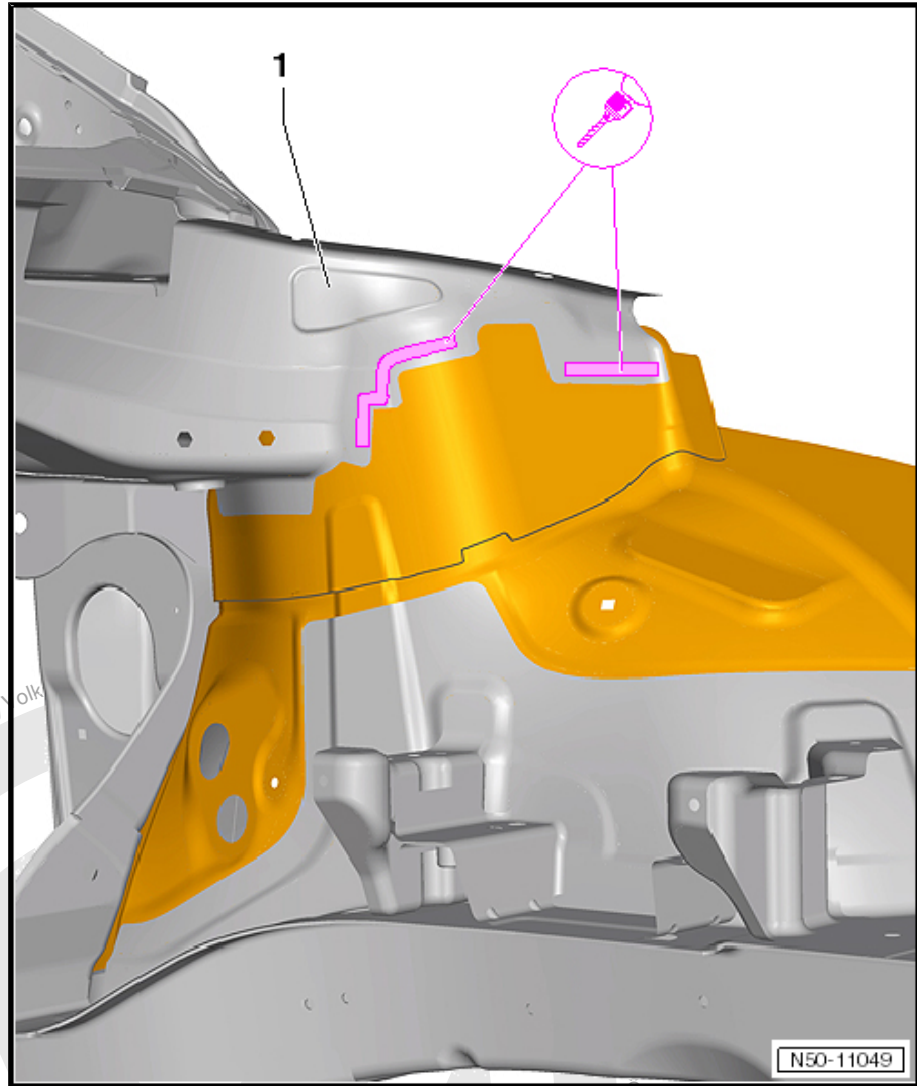
6.2 Removing

Partial renewal

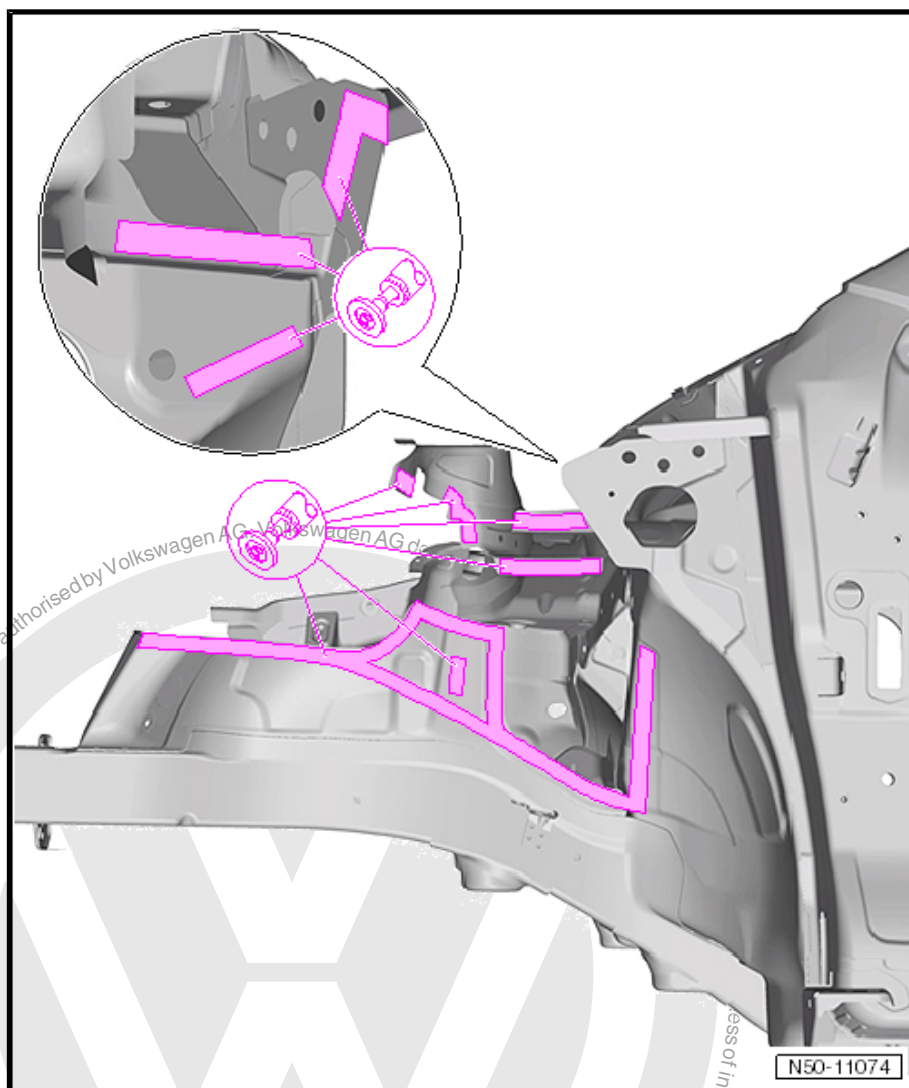
Depending on damage, a partial renewal is possible using parting cut -1-.



- Separate original joint to front longitudinal member cover plate and to plenum chamber from wheel housing side.



- Separate remainder of joint to plenum chamber -1-.



- Remove remaining material.

6.3 Installing

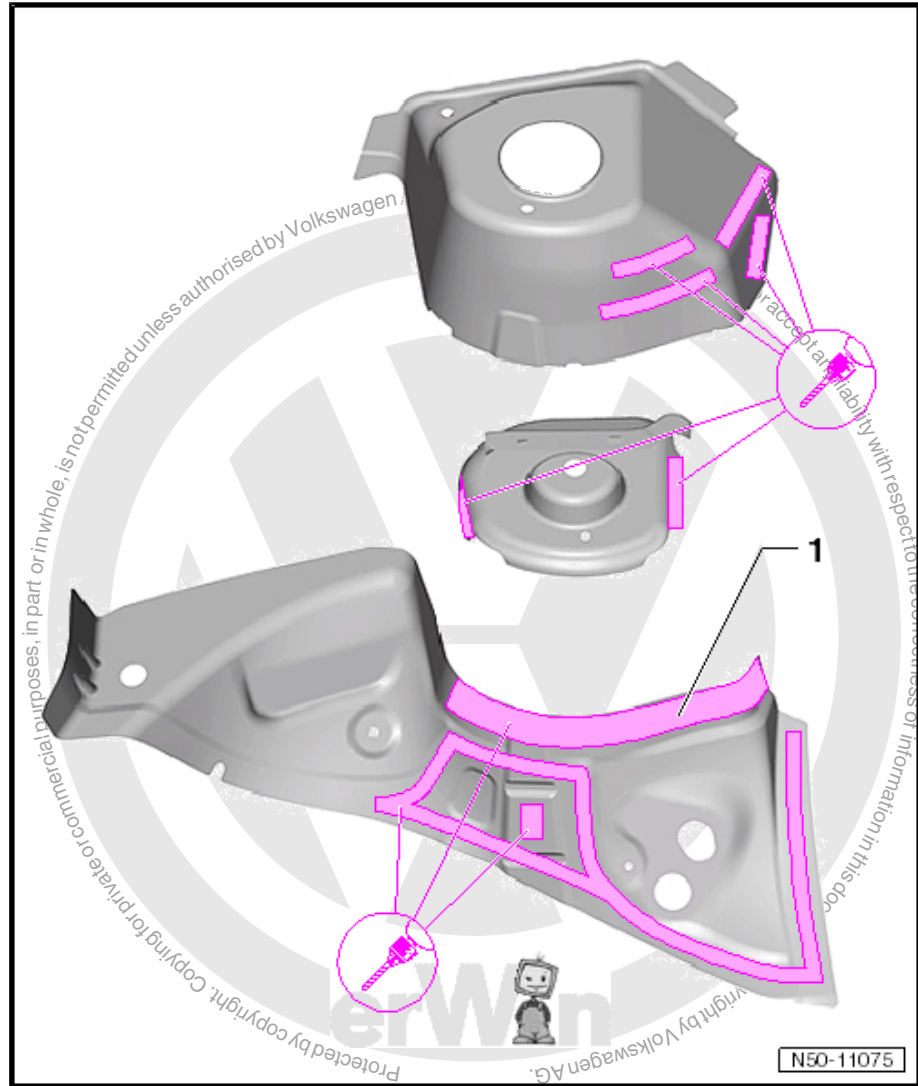


Note

Only welding units authorised by Volkswagen AG may be used
⇒ [page 57](#).

6.3.1 Preparing new parts

- ◆ Wheel housing
- ◆ Suspension strut mounting
- ◆ Suspension strut mounting reinforcement



- Drill holes for SG plug weld seam (8 mm Ø).

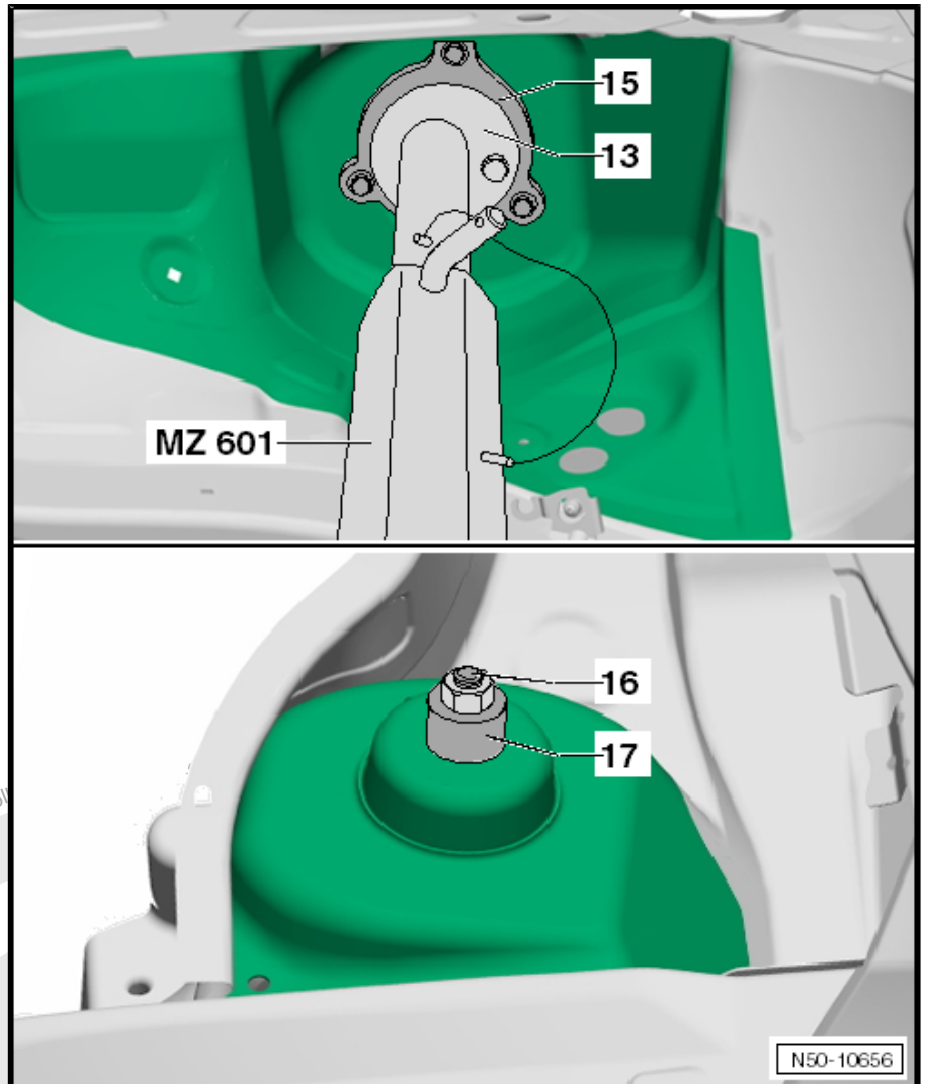


Note

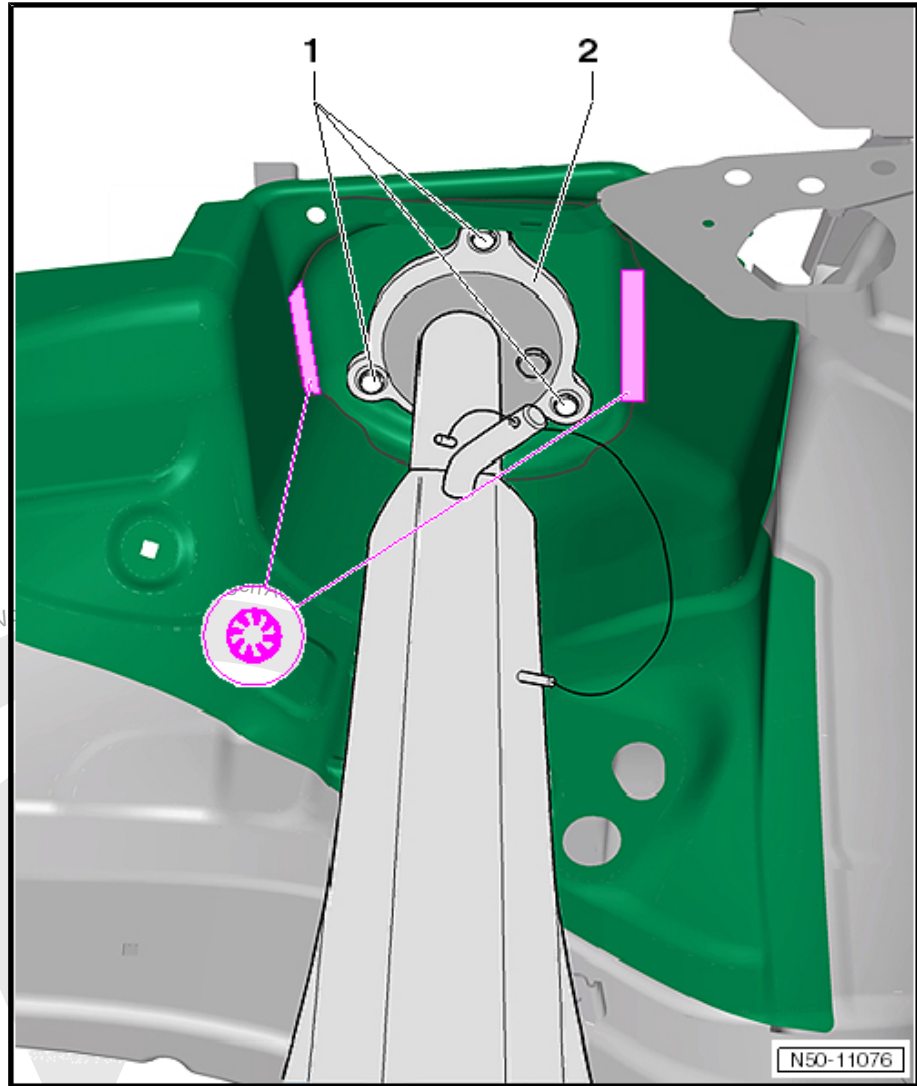
- ◆ *Drill a double row of holes in area -1-.*
- ◆ *Distance between holes: approx. 30 mm.*



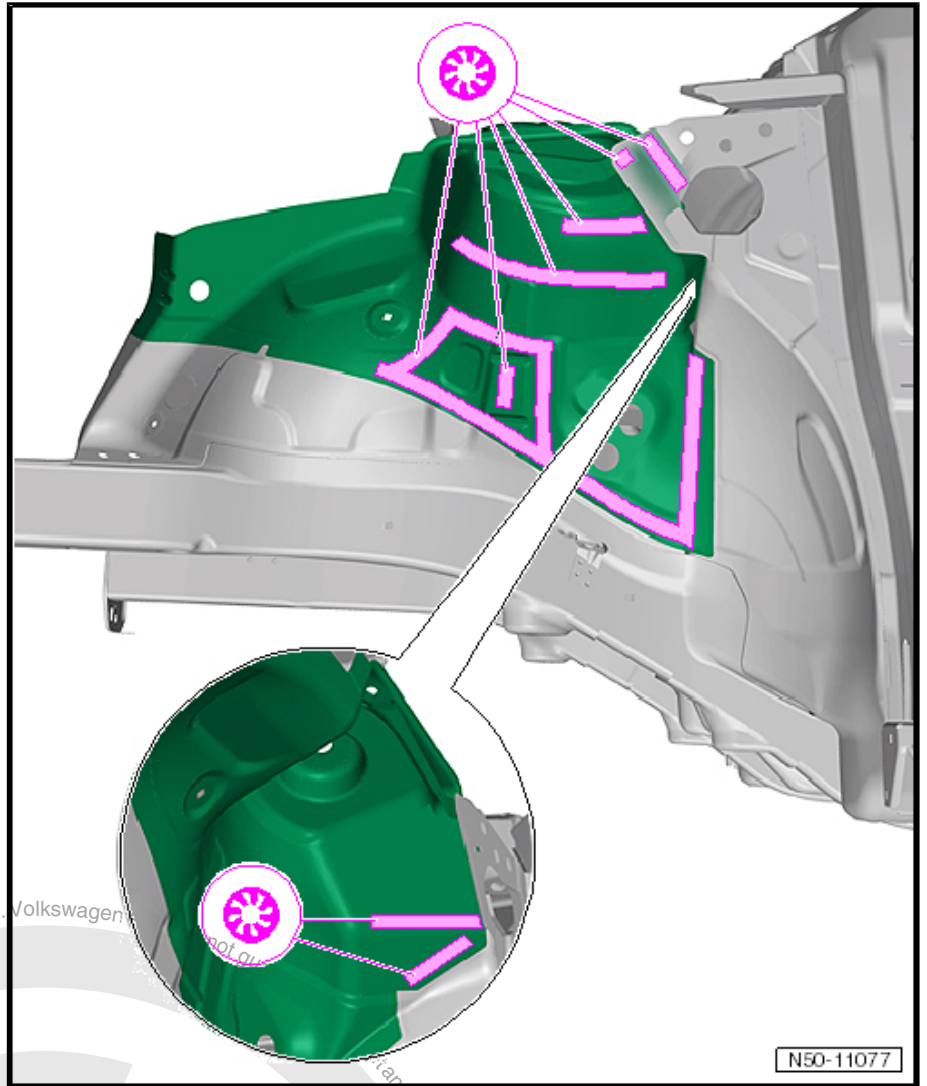
6.3.2 Welding in



- Adapt new part with assistance of alignment bracket fixtures -item 13-, -item 15-, -item 16- and -item 17- from alignment bracket set and to adjacent parts and fix in place.

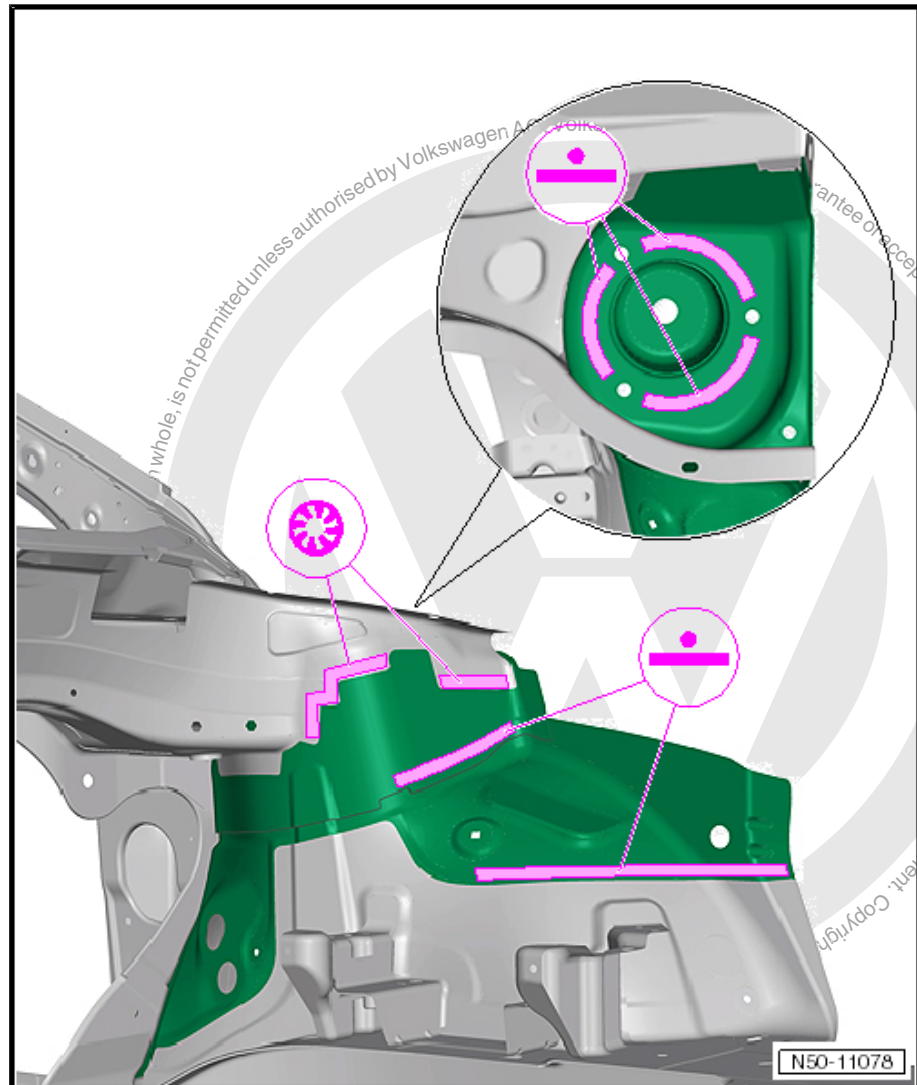


- Weld suspension strut mounting to suspension strut mounting reinforcement, SG plug weld seam.
- Drill holes -1- (10 mm Ø) for mounting suspension strut. Additionally secure suspension strut mounting and suspension strut mounting reinforcement to alignment bracket fixture -2- using bolts.

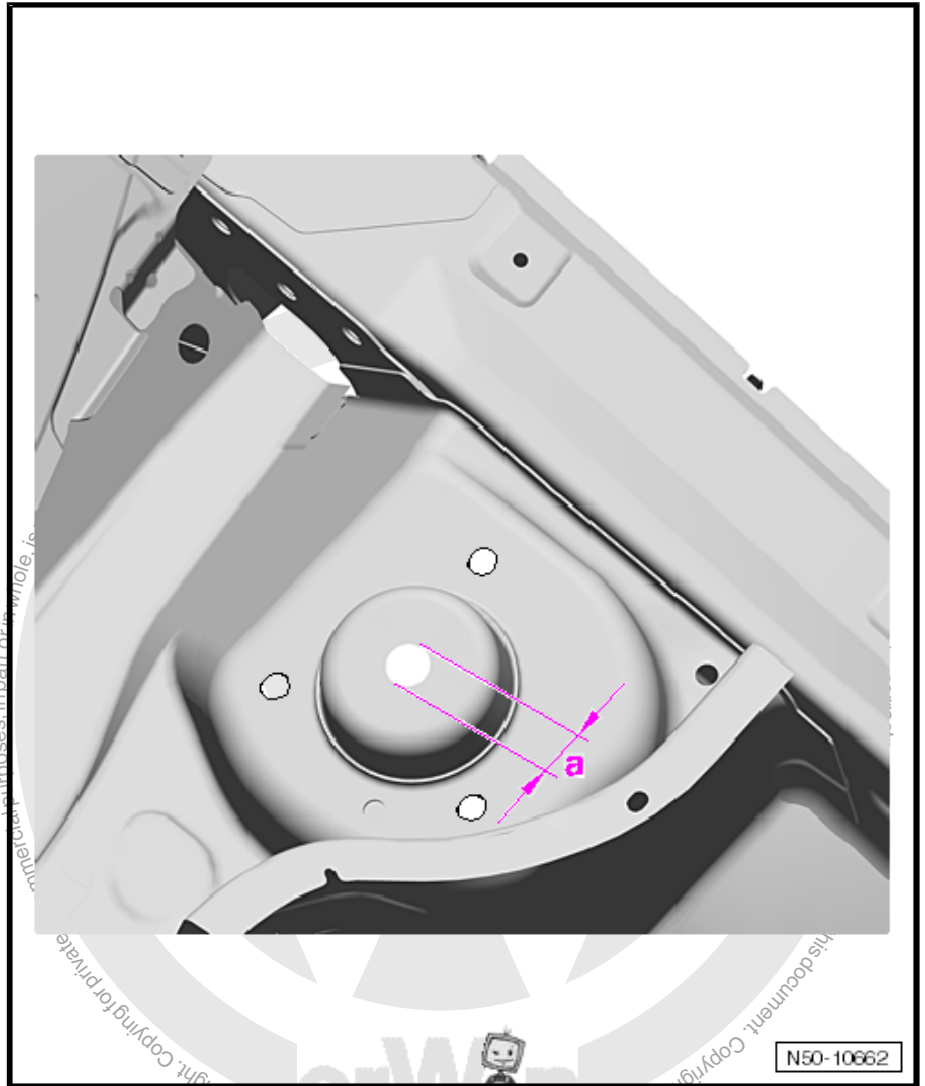


Weld wheel housing and suspension strut mounting reinforcement, SG plug weld seam.

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- Recreate joint between suspension strut mounting and plenum chamber; SG plug weld seam.
- Recreate original joint between suspension strut mounting and suspension strut mounting reinforcement, RP spot weld seam.
- Recreate remaining joints for wheel housing, RP spot weld seam.



- Enlarge hole in suspension strut mounting reinforcement to dimension -a-.

Dimension -a- = 34 mm

i Note

Item 17 of alignment bracket set can be used to check dimension -a- ⇒ [page 27](#) .

- Install upper longitudinal member for wheel housing
⇒ [page 52](#) .



RO: 50 79 49 90

7 Repairing threads for securing sub-frame (suspension subframe)



WARNING

Observe safety notes!

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



Note

The thread repair is described for the front left retaining bracket for the subframe on this vehicle and the procedure, as appropriate, should be used for the other 3 retaining brackets.

1 - Longitudinal member

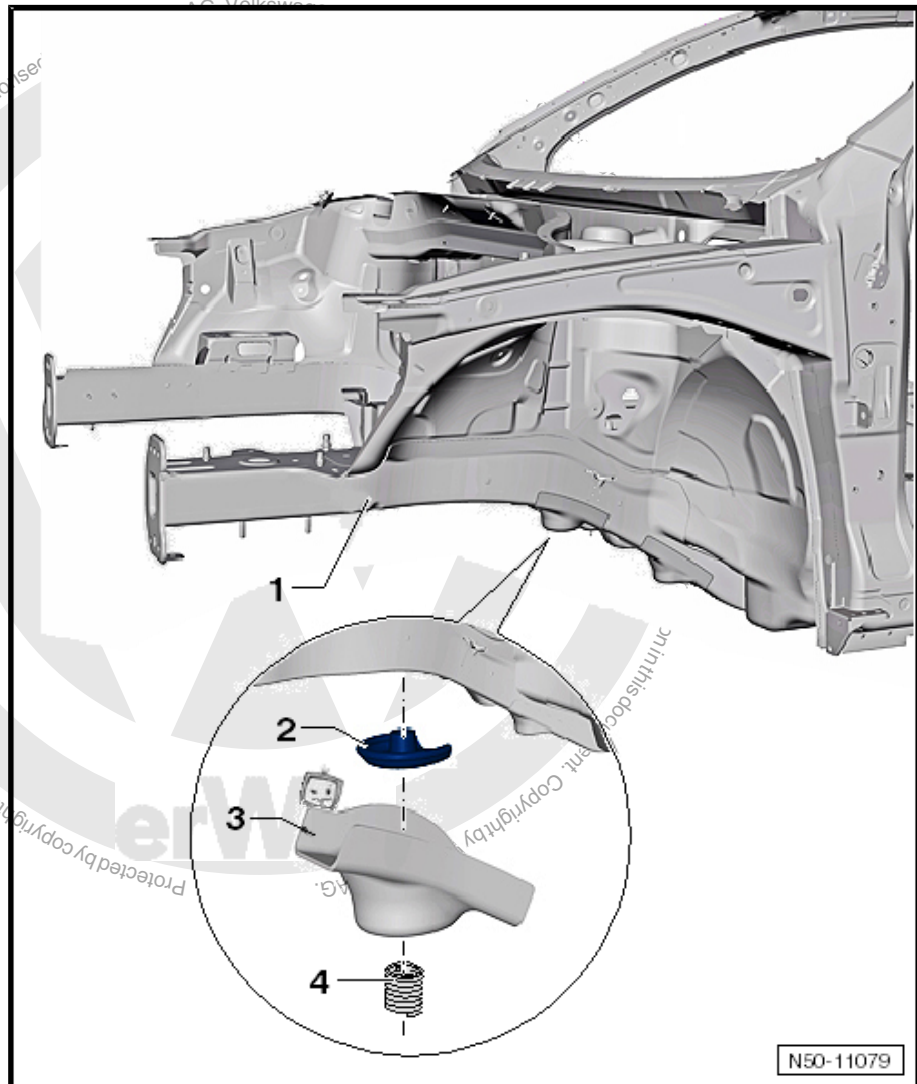
2 - Threaded plate (welded to subframe retaining bracket)



Note

3 - Retaining bracket for sub-frame

4 - Helicoil thread insert





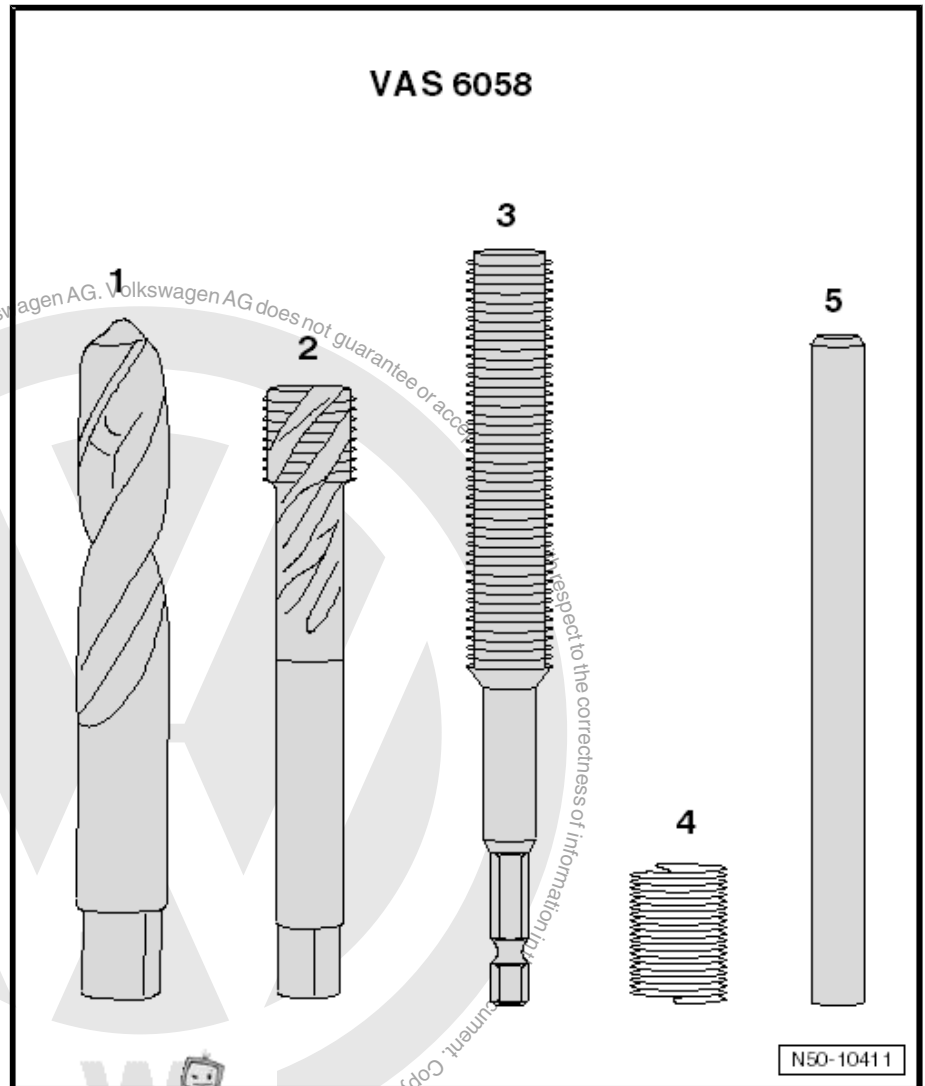
7.1 Tools

Special tools and workshop equipment required

- ◆ M12x1.5 thread repair set -VAS 6058-
- ◆ Drill -VAS 6267-

7.2 Contents of thread repair kit

- 1 - Twist drill 12.5 mm \varnothing
- 2 - Thread-cutting tap M12 x 1.5
- 3 - Fitting spindle
- 4 - Thread insert M12 x 1.5 x 24 -VAS 6058/1-
- 5 - Pin breaker with magnetic end

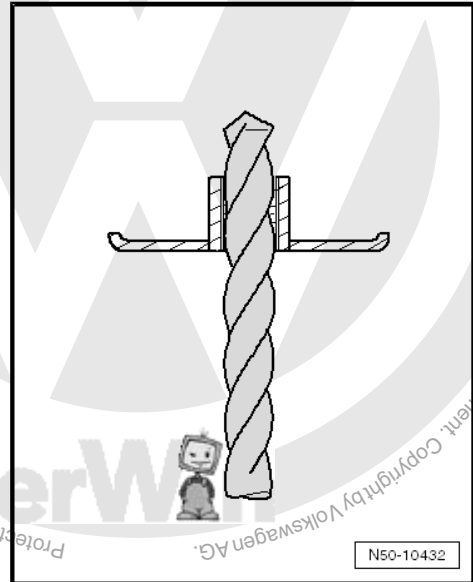




7.3 Repairing threads

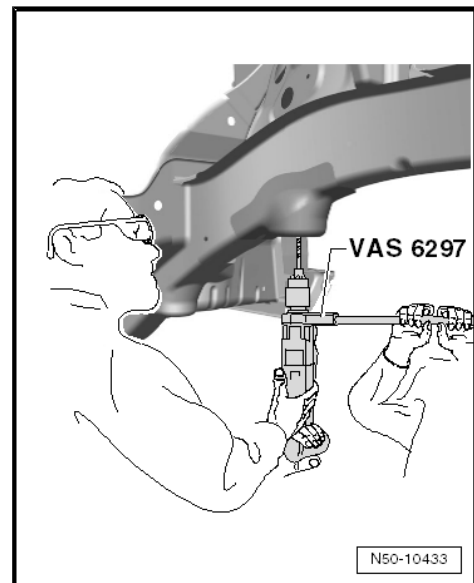
7.3.1 Drilling thread

- Drill out thread using twist drill.



Note

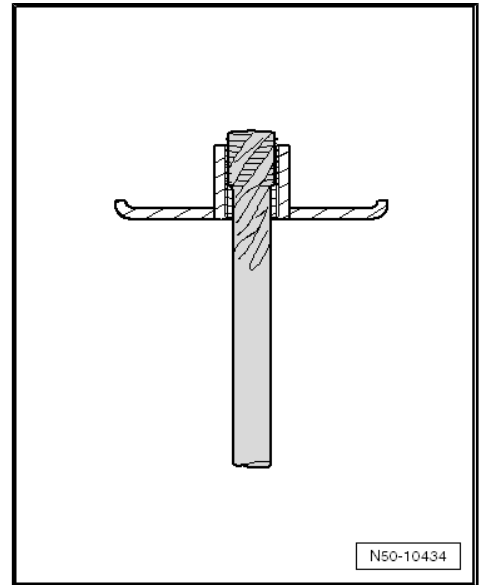
- ◆ *The drill must be held by an assistant using an additional hand support when drilling.*
- ◆ *Use drill -VAS 6267- when drilling and shaping.*
- ◆ *Do not cant drill.*





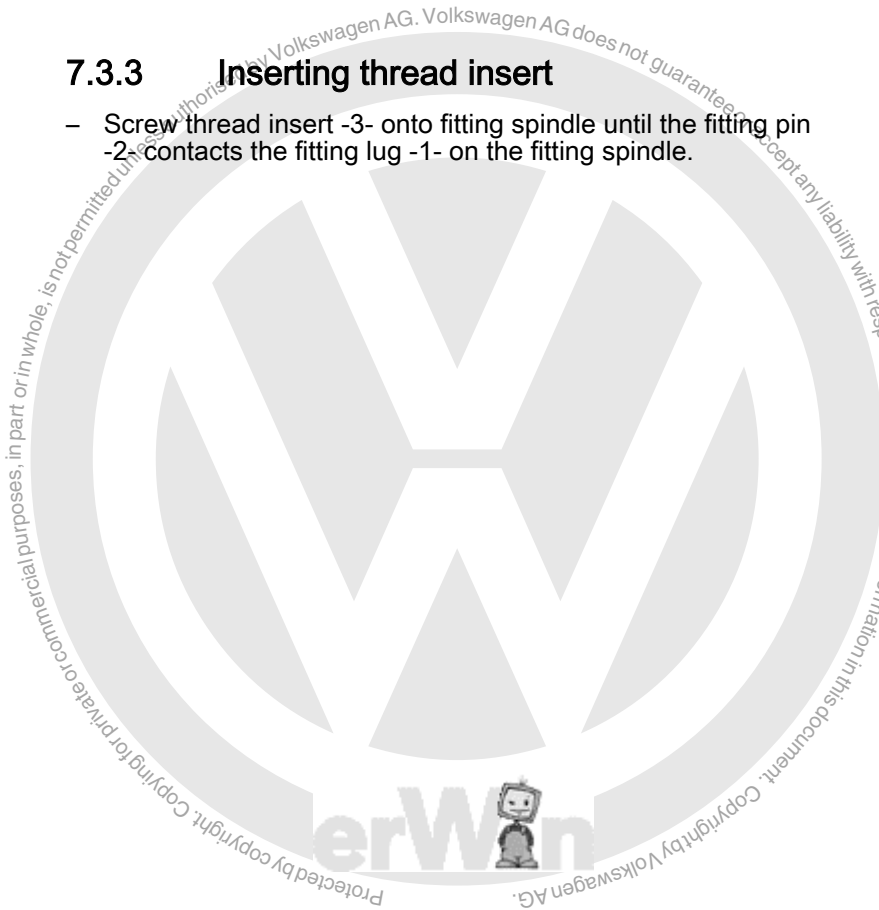
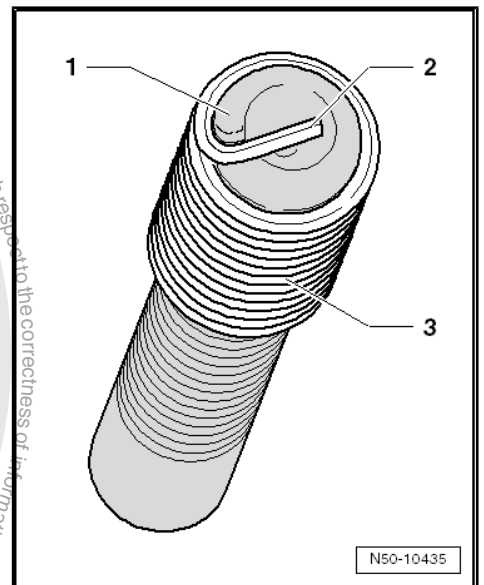
7.3.2 Cutting thread

- Cut thread with thread-cutting tap
- Clean threaded sleeve (with compressed air).



7.3.3 Inserting thread insert

- Screw thread insert -3- onto fitting spindle until the fitting pin -2- contacts the fitting lug -1- on the fitting spindle.





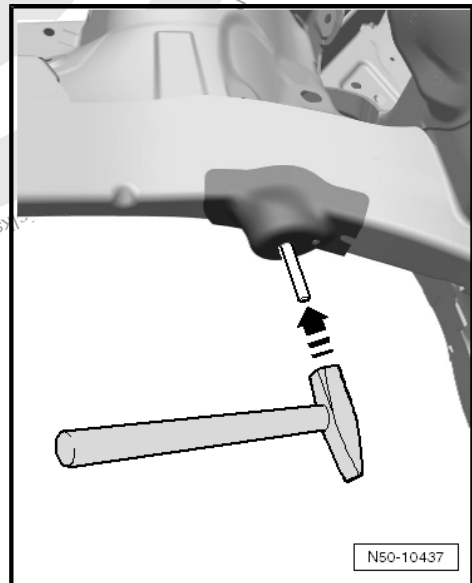
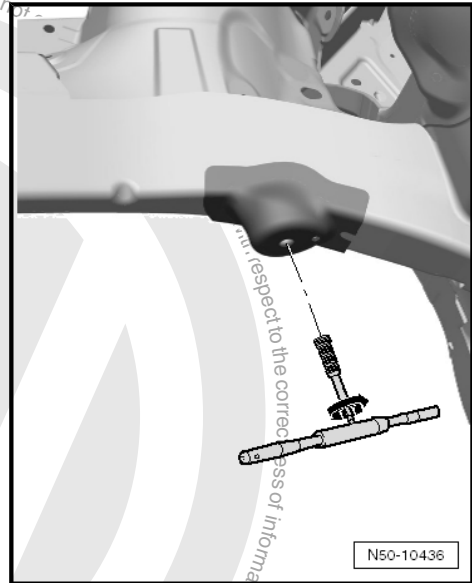
- Screw thread insert into the threaded plate until the top of the thread insert is flush with the outer edge of the threaded plate (visual check).
- Then screw thread insert inwards a $\frac{1}{4}$ turn.



Note

Thread insert must screw in easily.

- Remove fitting spindle.
- Break off drive pin of thread insert using pin breaker.
- Install subframe (suspension subframe) ⇒ Suspension, axles, steering; Rep. gr. 40; Subframe, anti-roll bar, suspension link.





RO: 50 79 55 00

8 Renewing front longitudinal member

Includes: bumper mounting



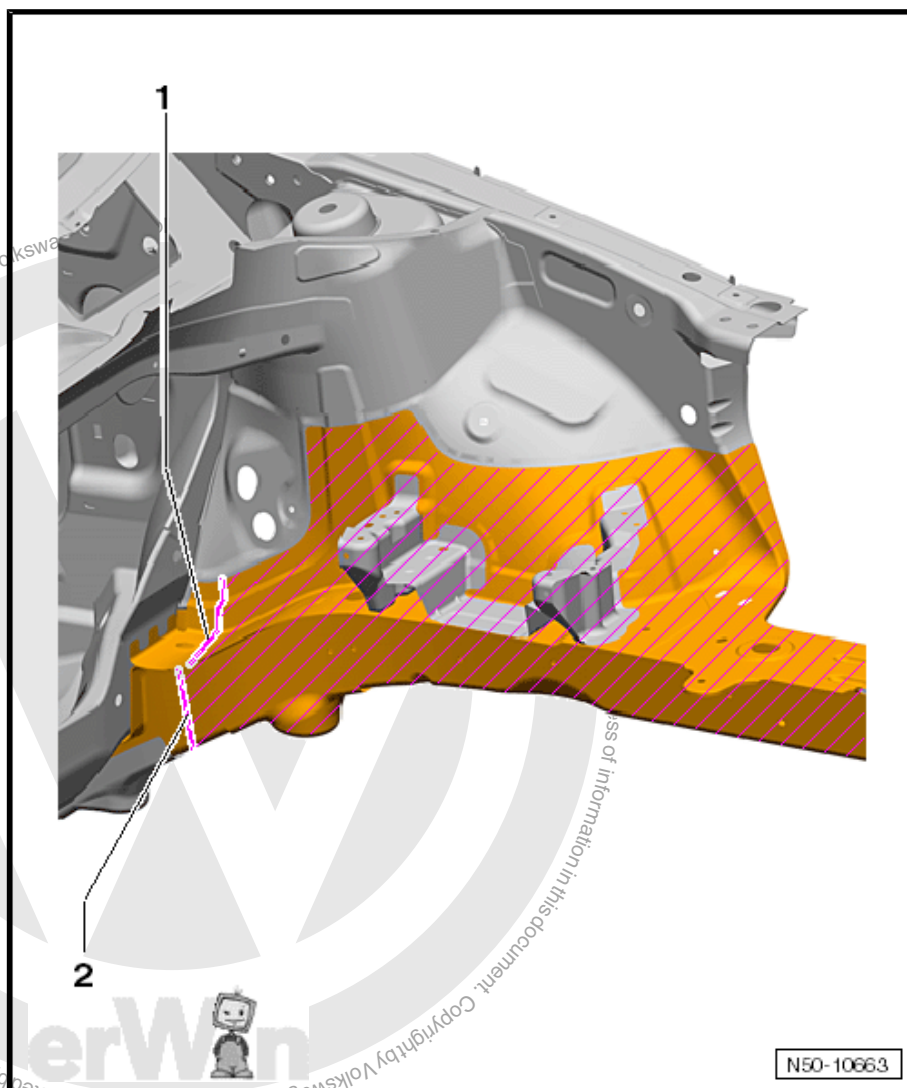
WARNING

Observe safety notes!

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

1 - Parting cut (cover plate)

2 - Parting cut (longitudinal member)





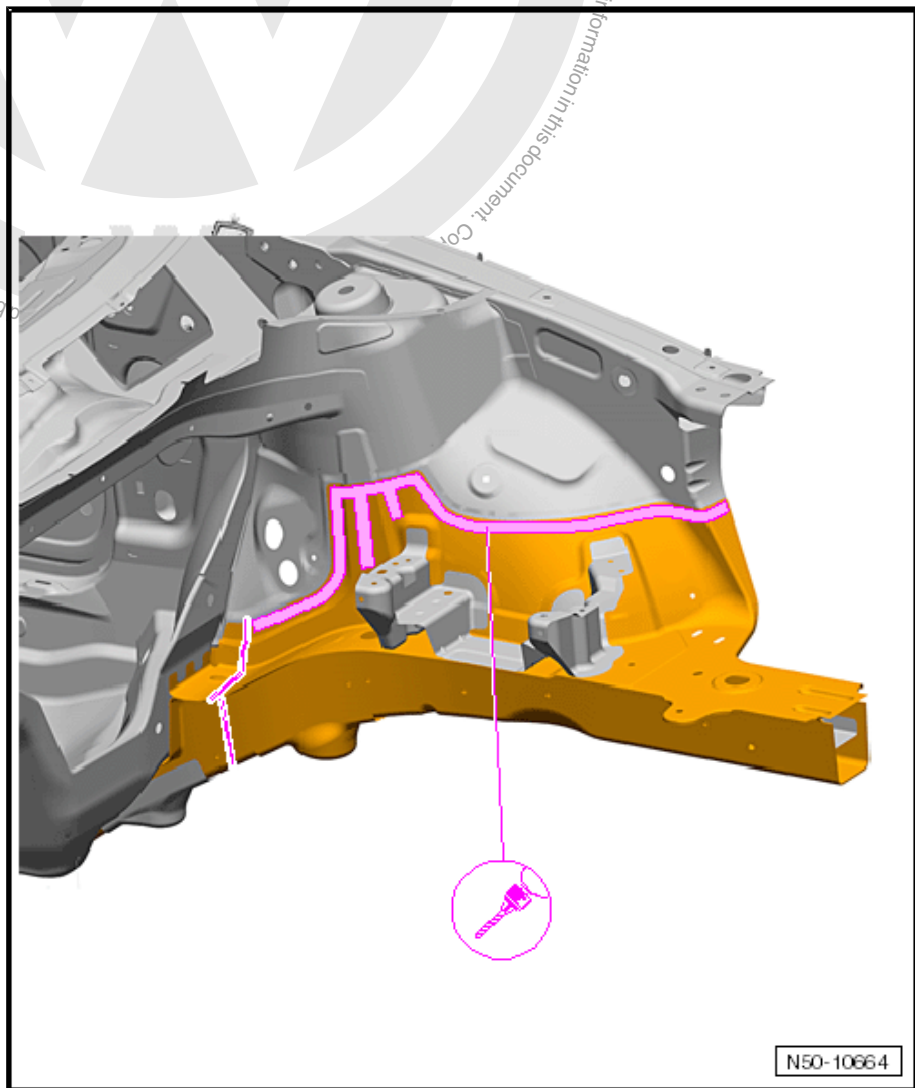
8.1 Tools



Note

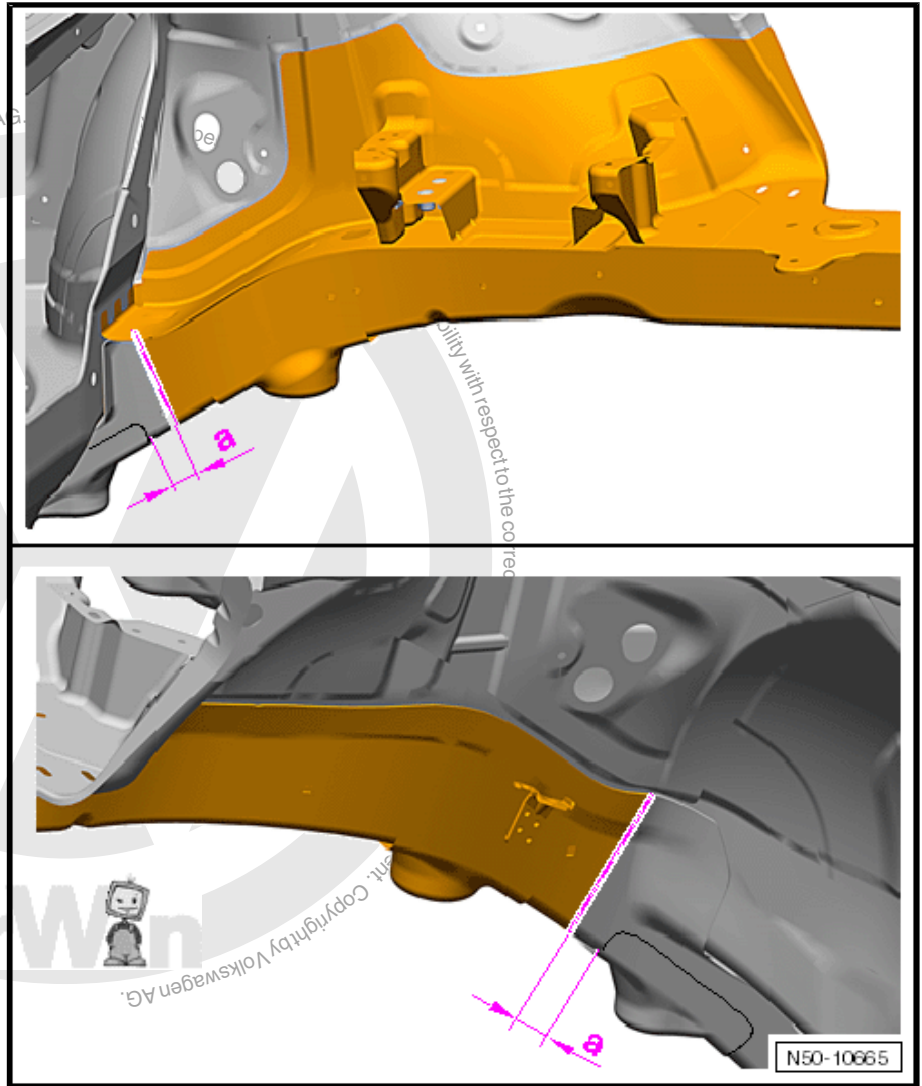
- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paintwork.*

8.2 Removing



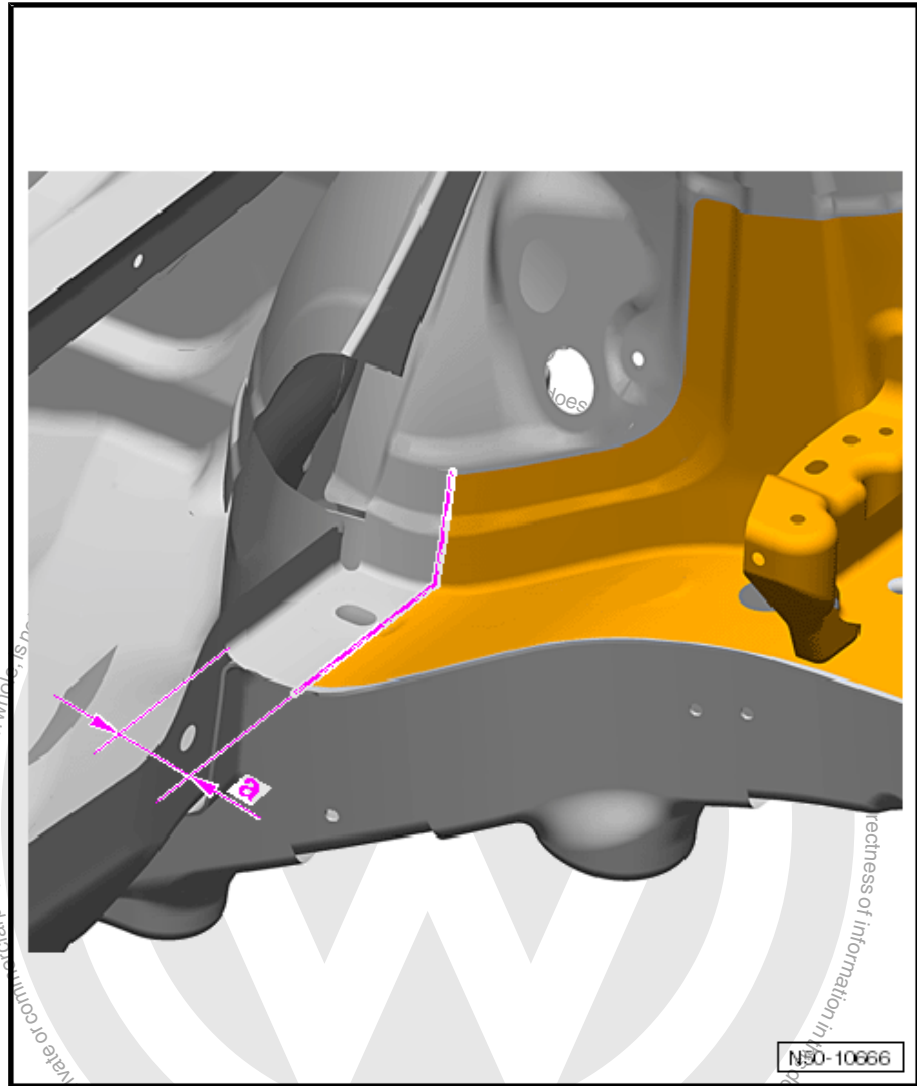
N50-10664

- Separate original joint.



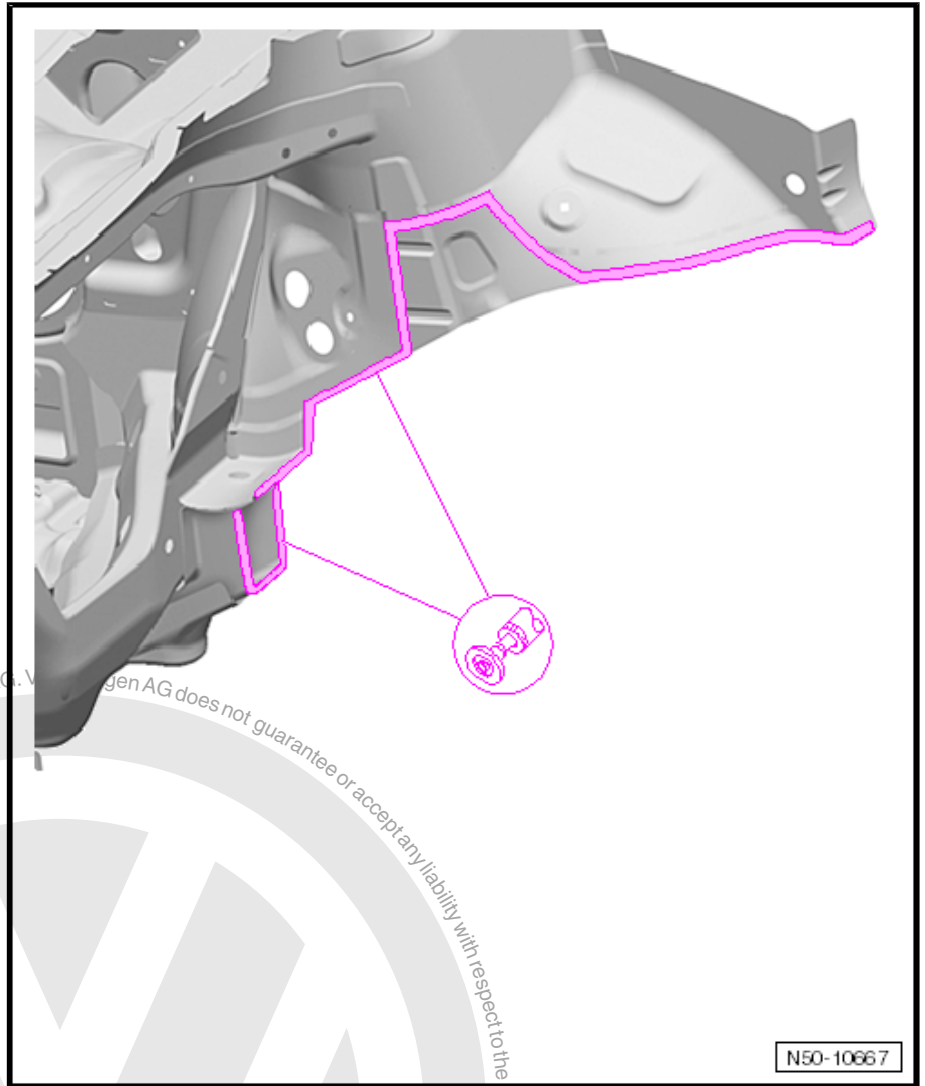
– Make parting cut on longitudinal member as shown.

Dimension -a- = 55 mm



- Make parting cut on longitudinal member cover plate as shown.

Dimension -a- = 55 mm



- Remove remaining material.

8.3 Installing

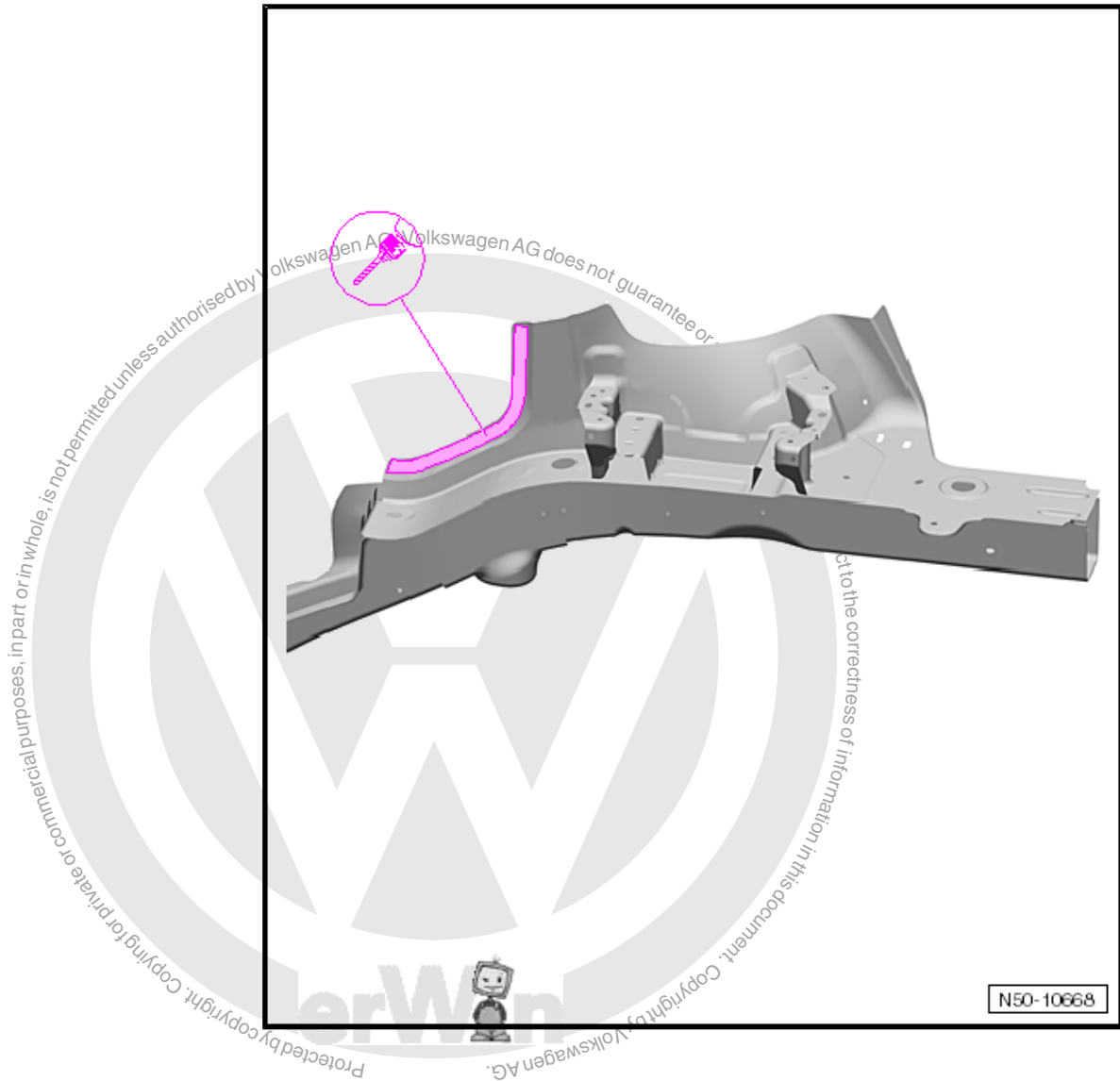
Note

*Only welding units authorised by Volkswagen AG may be used
=> [page 72](#).*

8.3.1 Preparing new part

New part

- ◆ Longitudinal member assembly



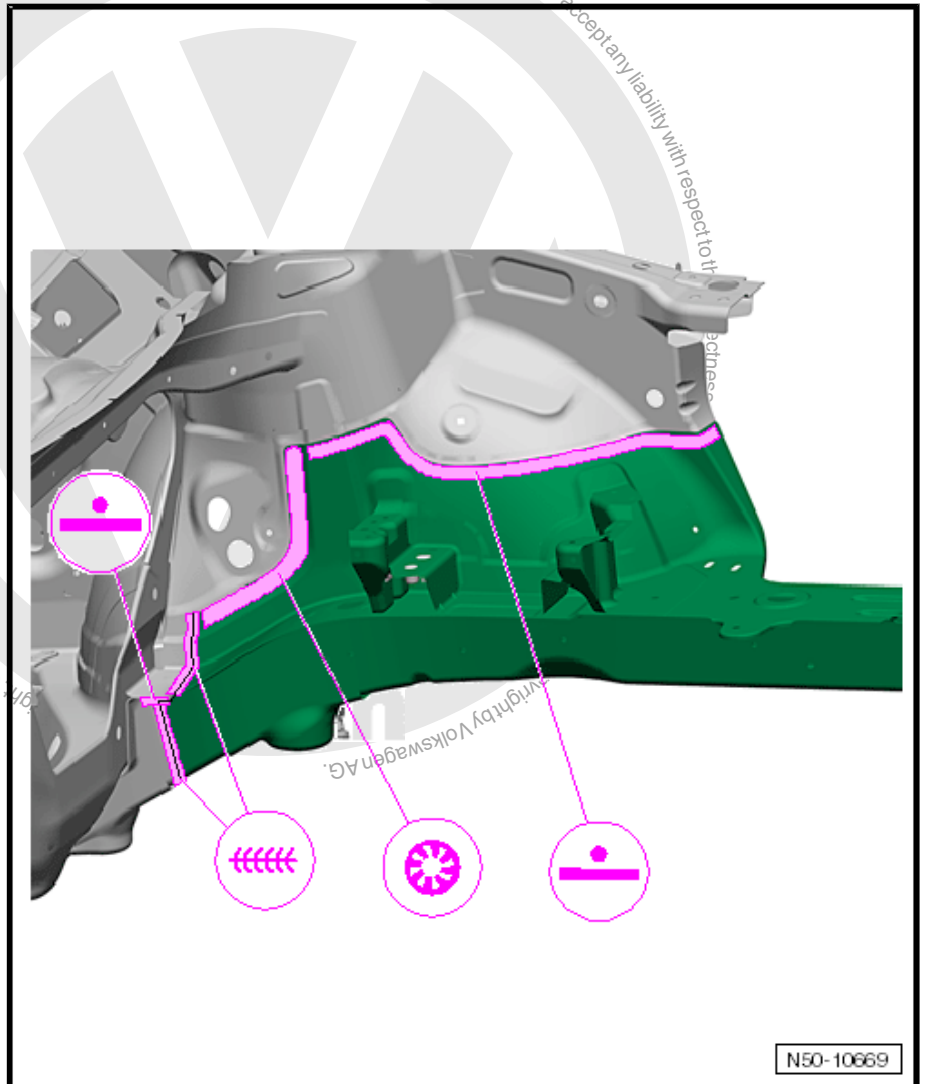
- Transfer parting cuts to new part and cut out.
- Drill holes for SG plug weld seam (8 mm Ø).

8.3.2 Welding in

- Adapt new part with vehicle positioned on alignment bracket set and fix in place.



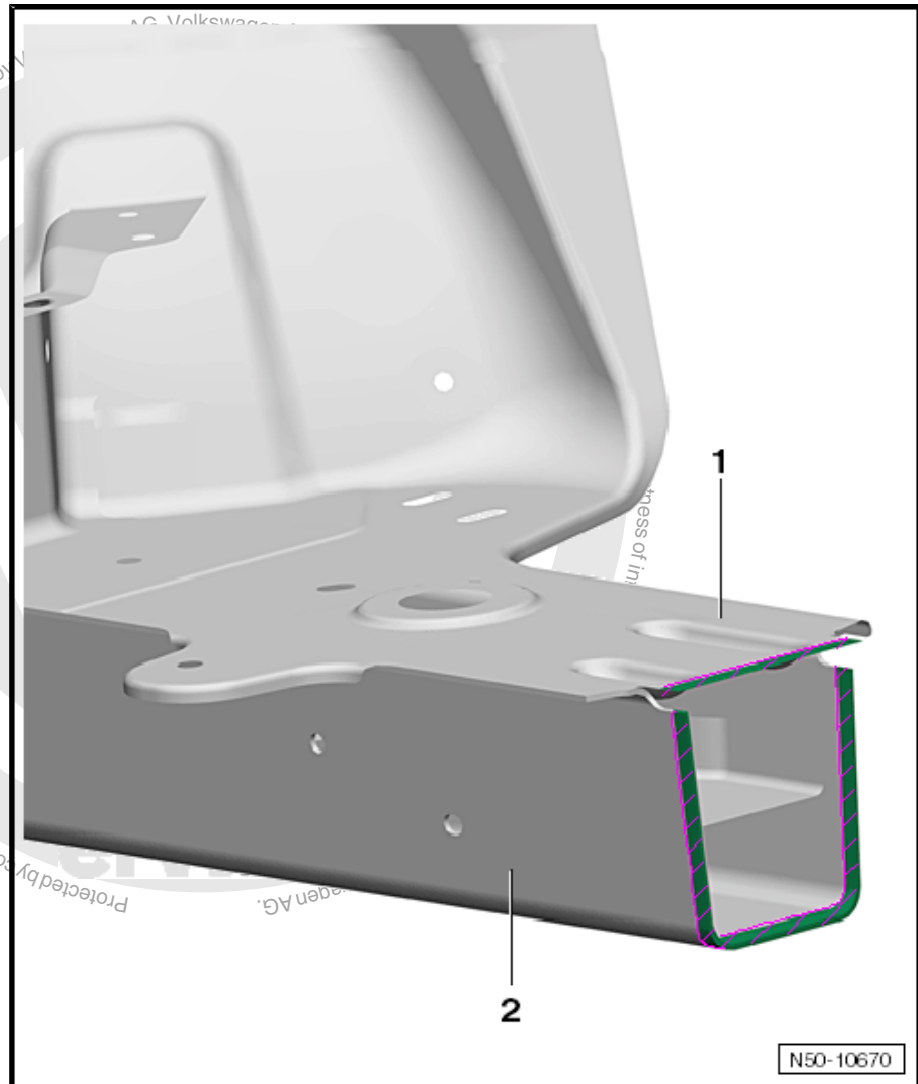
- Check fit with adjacent parts.



- Butt weld parting cut of longitudinal member all around (SG continuous weld seam).
- Butt weld cover plate parting cut, SG continuous weld seam.
- Restore remaining joint, SG plug weld seam and RP spot weld seam.

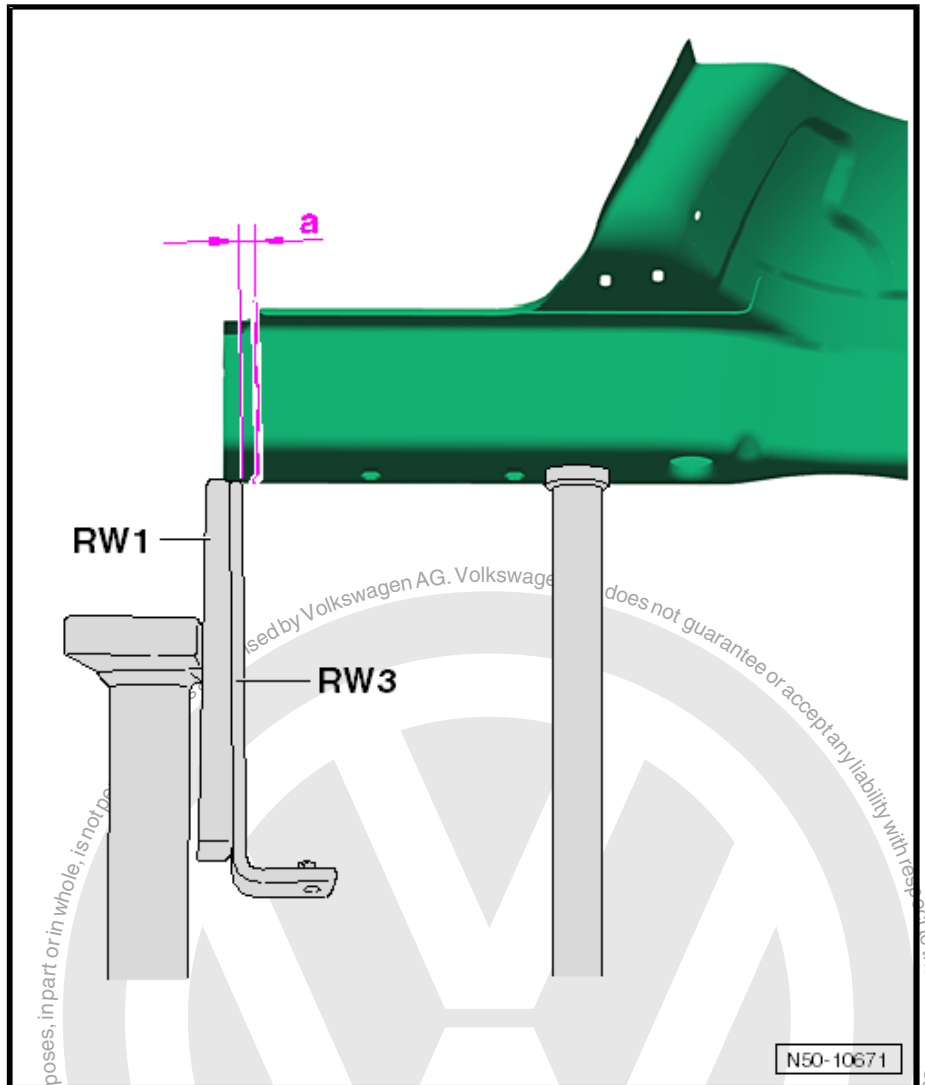


8.3.3 Shortening new longitudinal member with cover plate

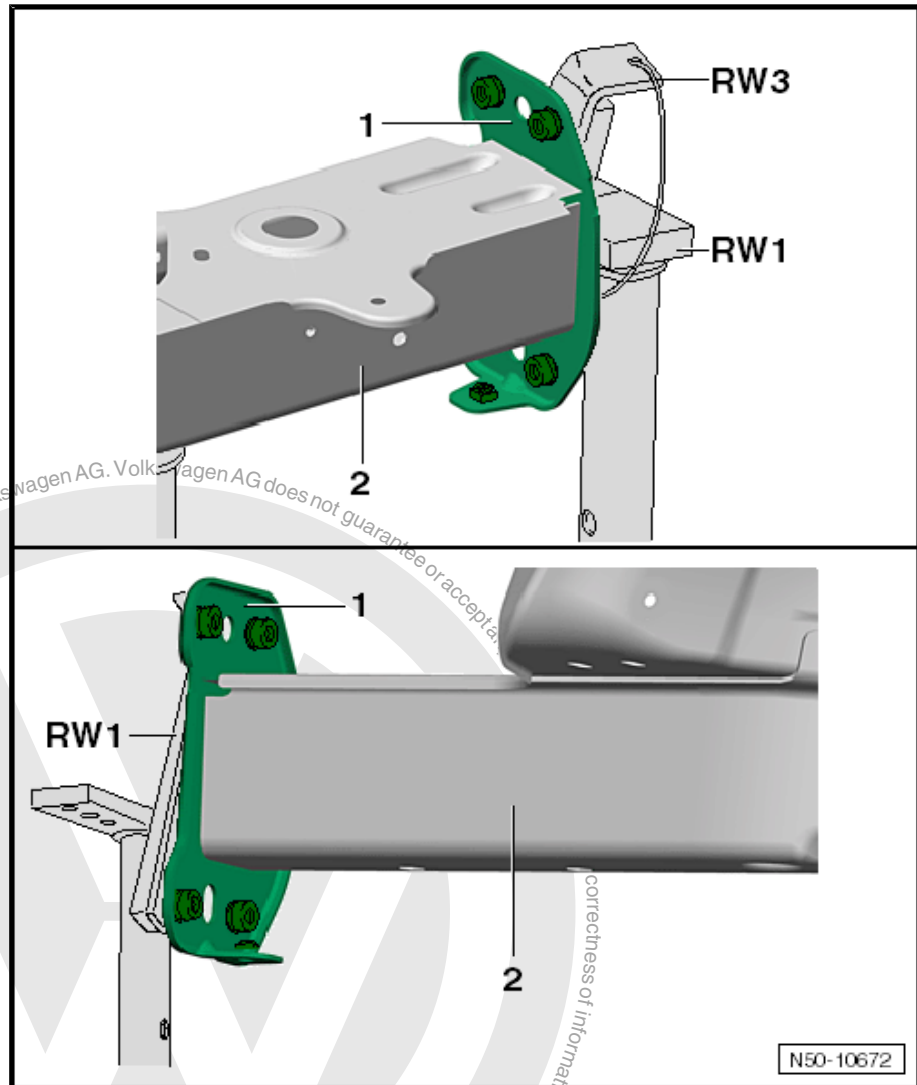


Note

The longitudinal member -2- with cover plate -1- (parts designation: longitudinal member) is too long at the front -shaded area- and must be shortened when adapting and welding in the bumper bracket.



- Assemble alignment bracket mounting for front longitudinal member -RW 1- with spacer -RW 3- as shown and hold against longitudinal member from below.
- Transfer dimensions (plus an additional 2mm) -a- to longitudinal member and cover plate and remove excessive material.

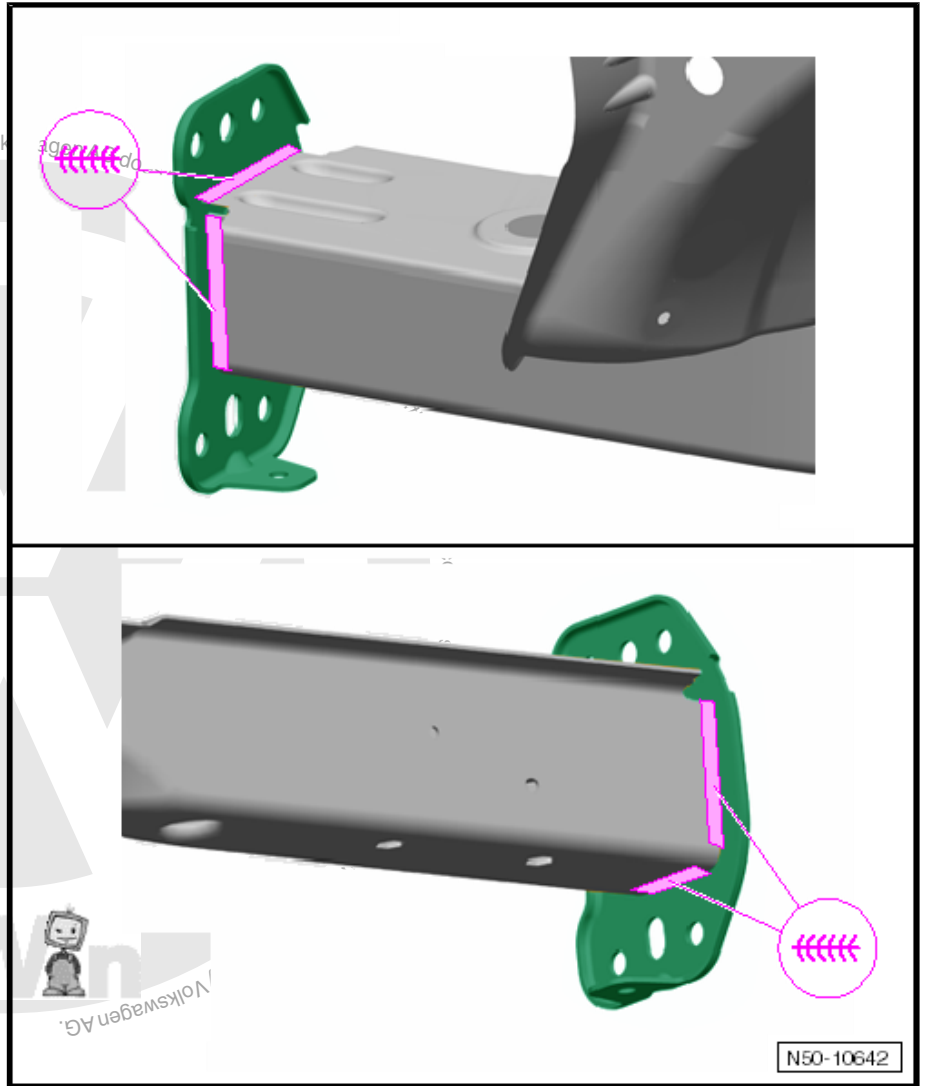


- Fix front bumper bracket -1- in position in front of longitudinal member -2- with aid of -RW 1- and -RW 3-.



Note

There must be a gap of 1-2 mm between longitudinal member -2- with cover plate -3- and bumper bracket -1-.



- Weld in bumper bracket, SG continuous weld seam.



RO: 50 79 55 02

9 Renewing front longitudinal member - part section

Includes: bumper bracket and longitudinal member reinforcement

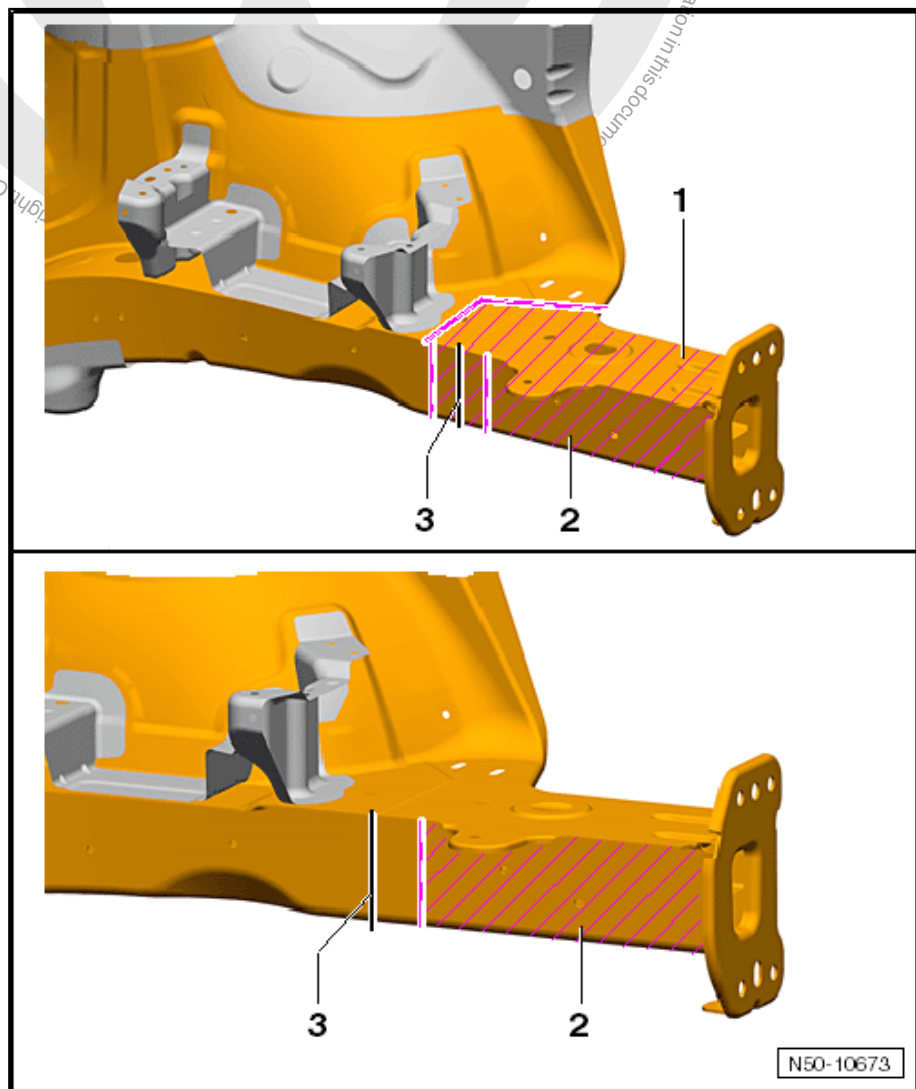


WARNING

Observe safety notes!

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

- 1 - Cover plate
- 2 - Longitudinal member
- 3 - Laser weld seam



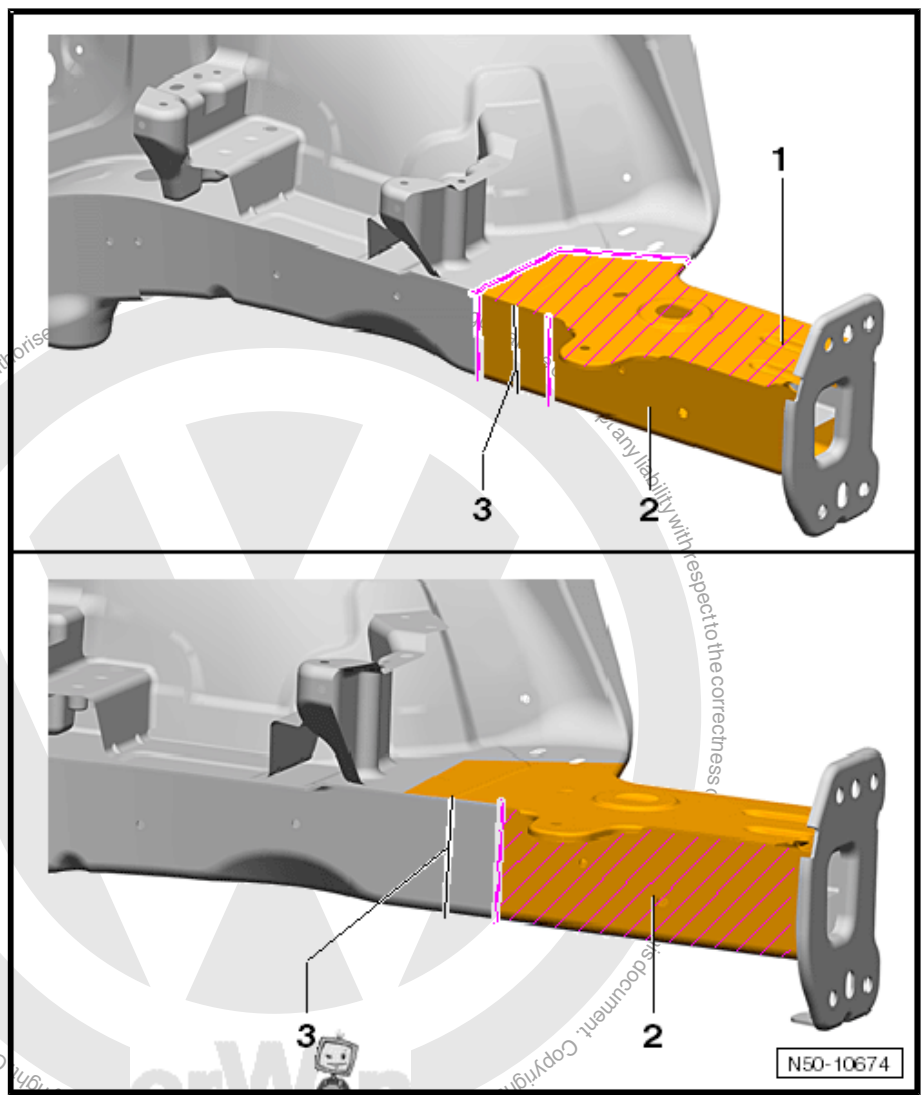


9.1 Tools

Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paint-work .*

9.2 Removing



Note

- ◆ *The parting cut for cover plate -1- and the parting cut for longitudinal member -2- must be offset.*
- ◆ *Do not cut or weld 50 mm before or after the laser weld seam -3- (shaded area).*

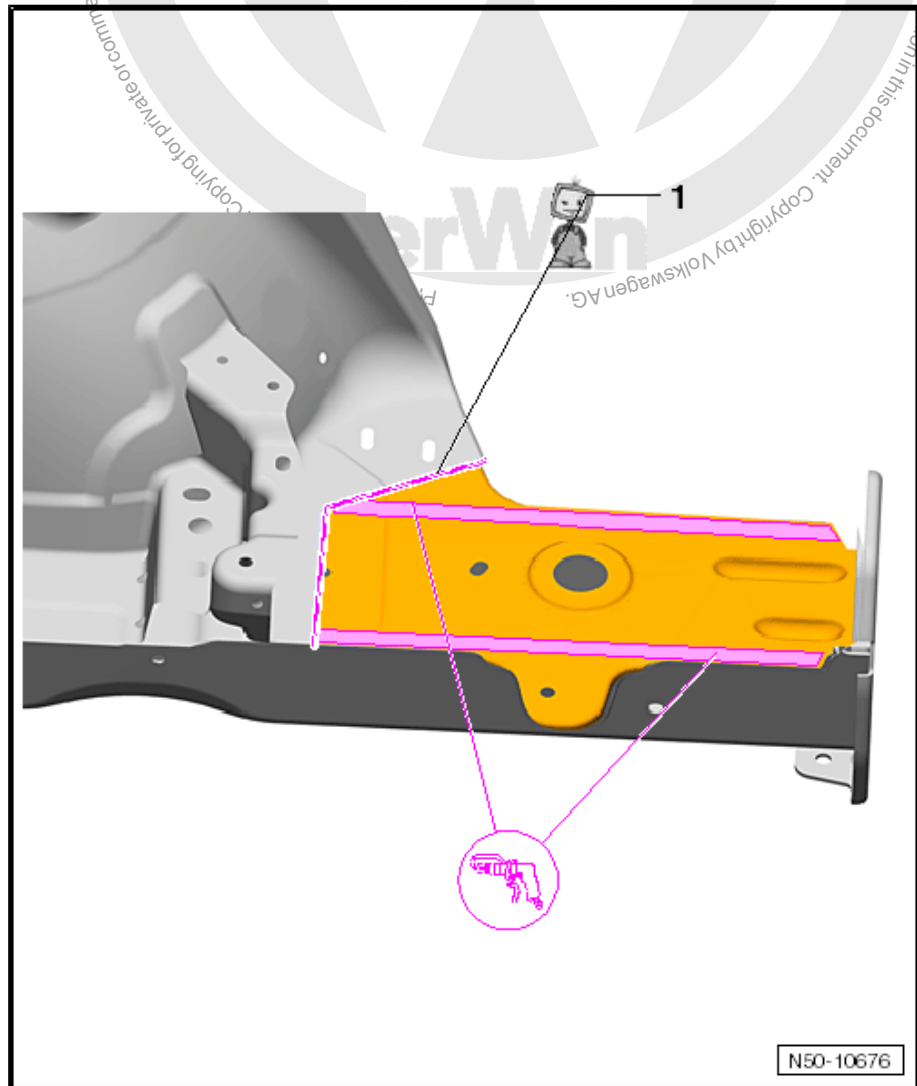
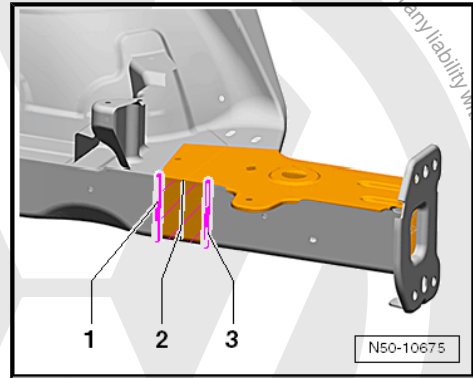


- Position parting cuts -1 and 3- on longitudinal member according to degree of damage and cut out.

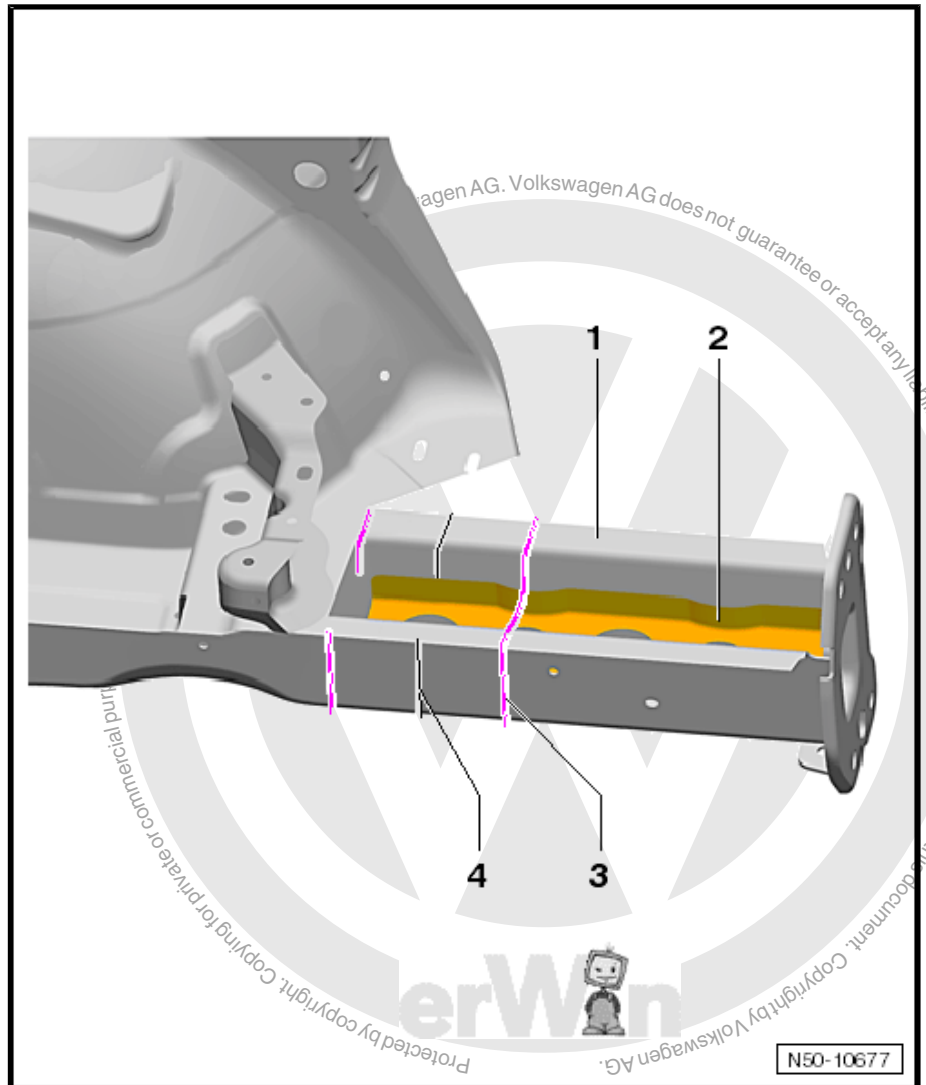


Caution

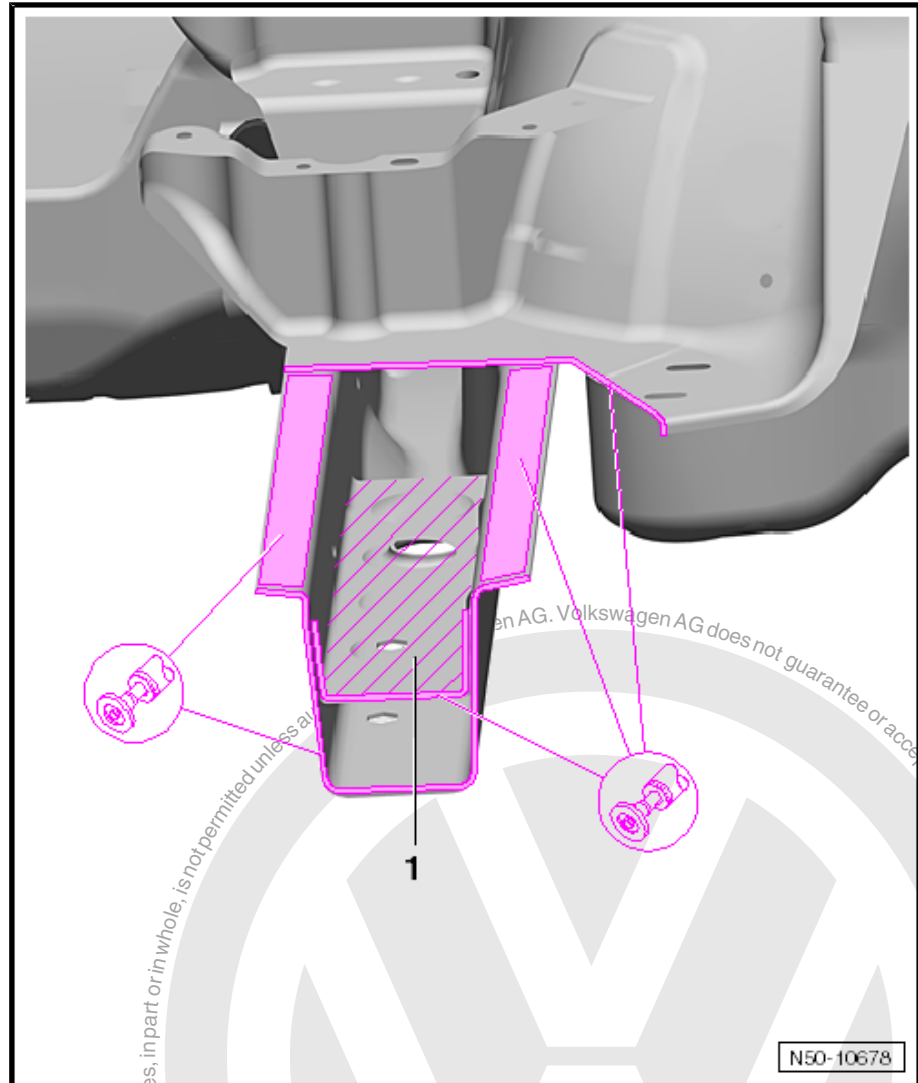
The parting cut for the longitudinal member is permitted only in the area shown. If the longitudinal member is damaged beyond this area, it must be renewed entirely.



- Position parting cut -1- for cover plate as shown and cut out.
- Separate original joint.
- Remove cover plate.



- Position parting cut -3- on longitudinal member -1- and longitudinal member -2- congruently and cut out.
- Take note of laser weld seam -4-.



- Remove residual material and remainder of longitudinal member reinforcement -1-.

9.3 Installing



Note

Only welding units authorised by Volkswagen AG may be used
=> [page 83](#).

9.3.1 Preparing new part

New part

- ◆ Longitudinal member
- ◆ Cover plate for longitudinal member
- ◆ Longitudinal member reinforcement (parts designation: bulk-head plate)



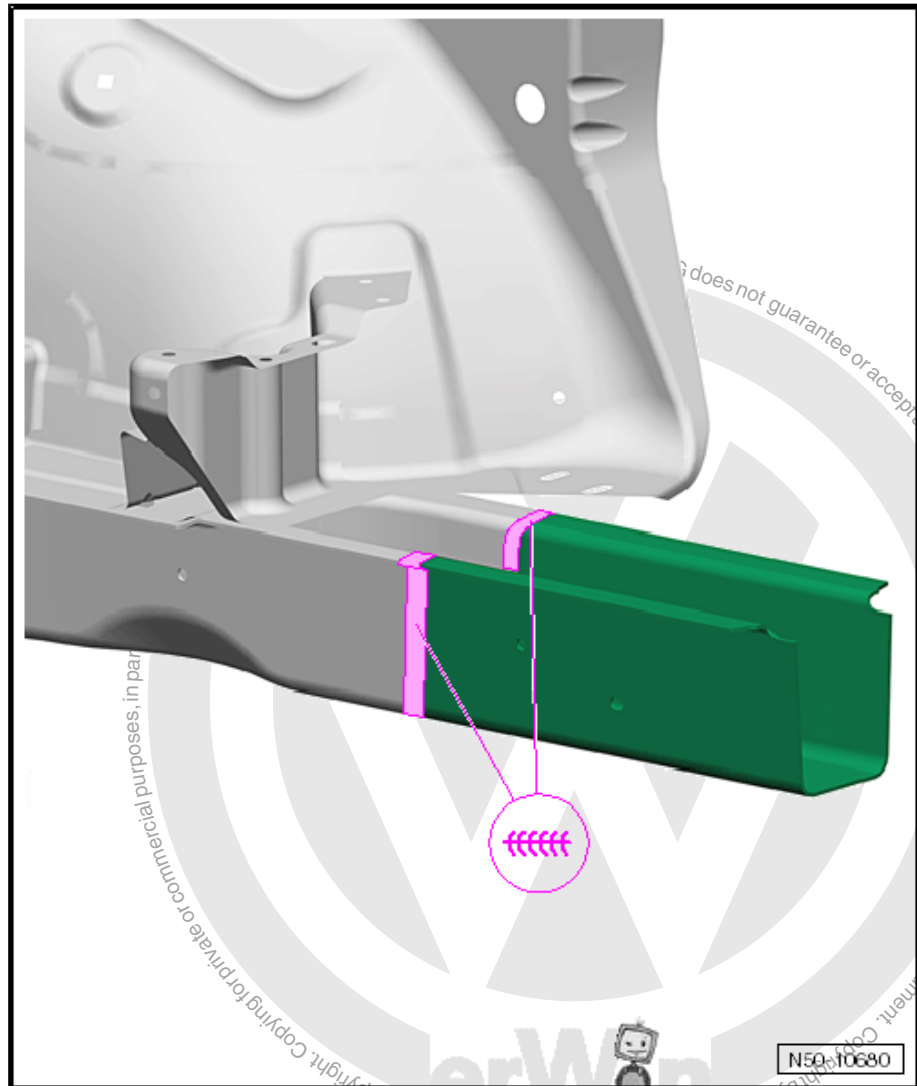
- Transfer parting cut to longitudinal member and longitudinal member cover plate and cut out.

9.3.2 Welding in

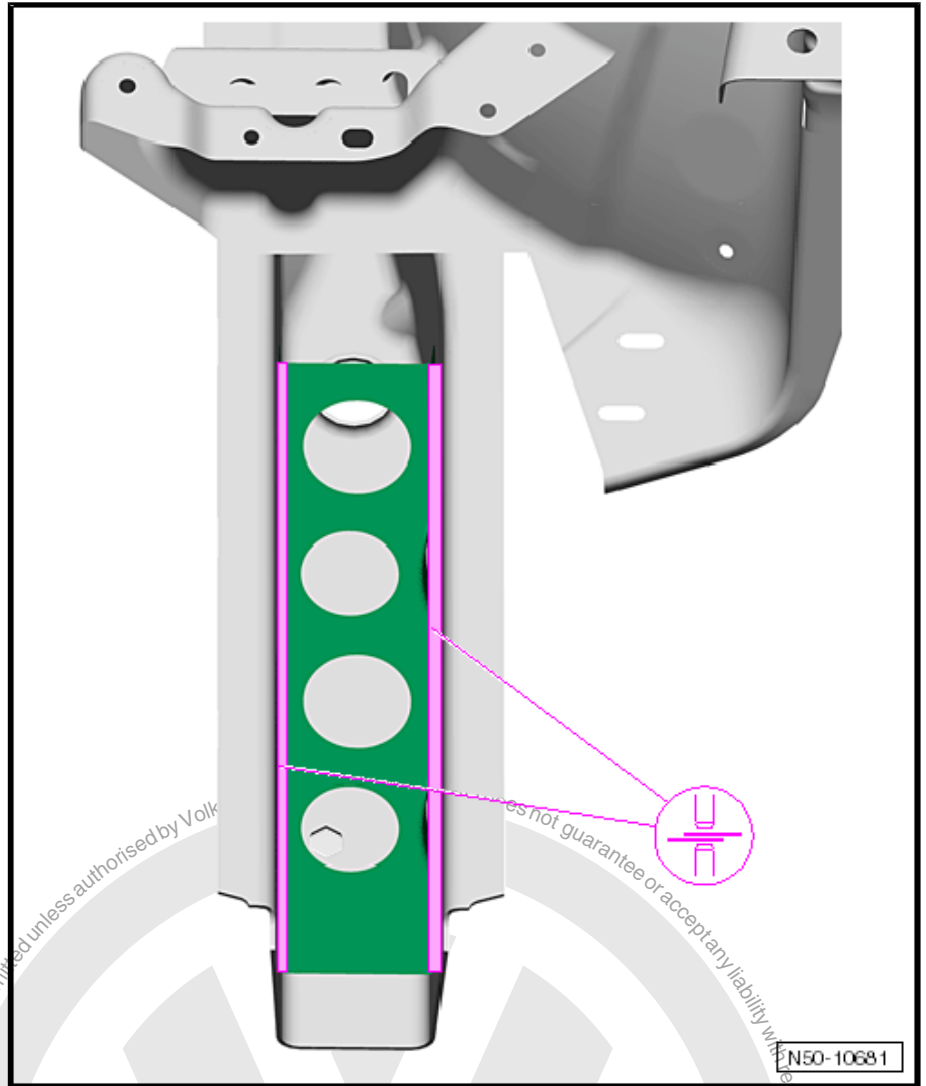
- Adapt new part with vehicle positioned on alignment bracket set and fix in place.



- Check fit with adjacent parts.

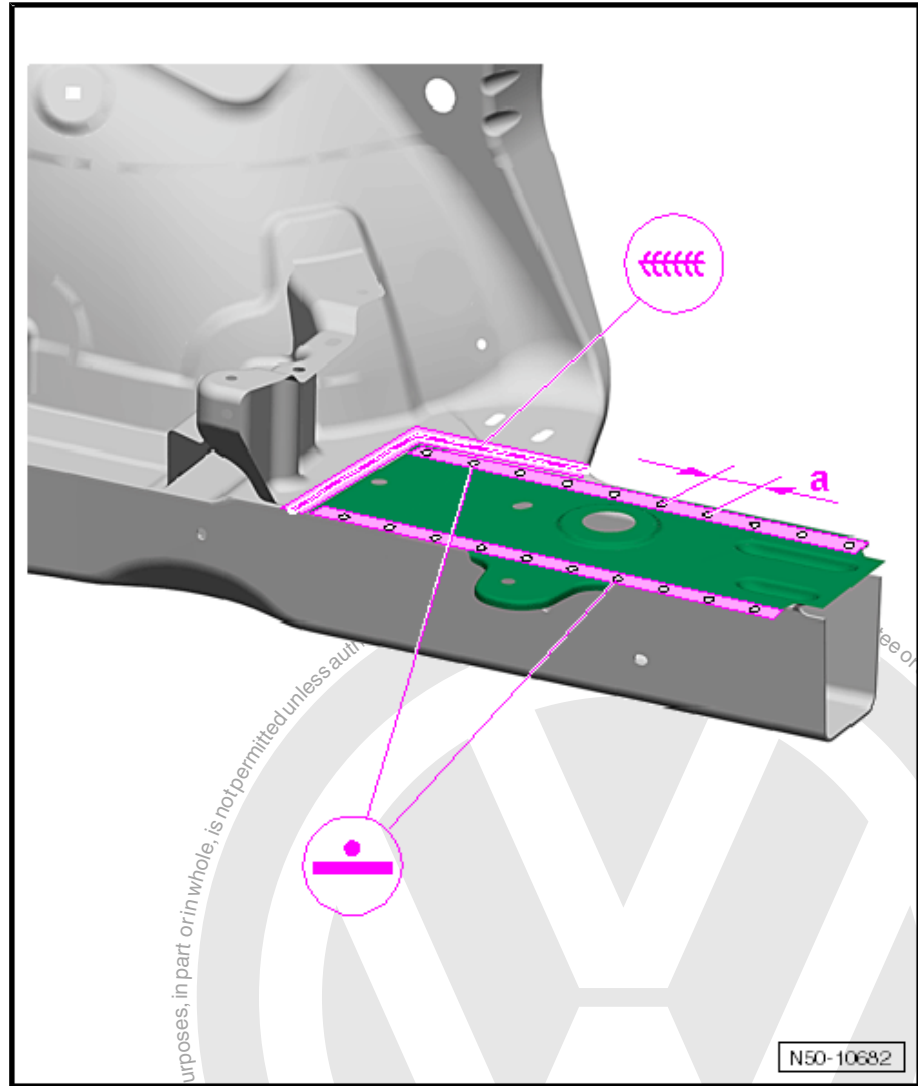


- Weld in longitudinal member parting cut (all round), SG continuous weld seam.



- Weld in longitudinal member reinforcement, RP spot weld seam.

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- Weld in cover plate, RP spot weld seam.



Note

Distance between weld points -a- approx. 35-40 mm

- Weld in cover plate parting cut, SG continuous weld seam.



51 – Body - centre

RO: 51 03 55 00

1 Renewing roof



WARNING

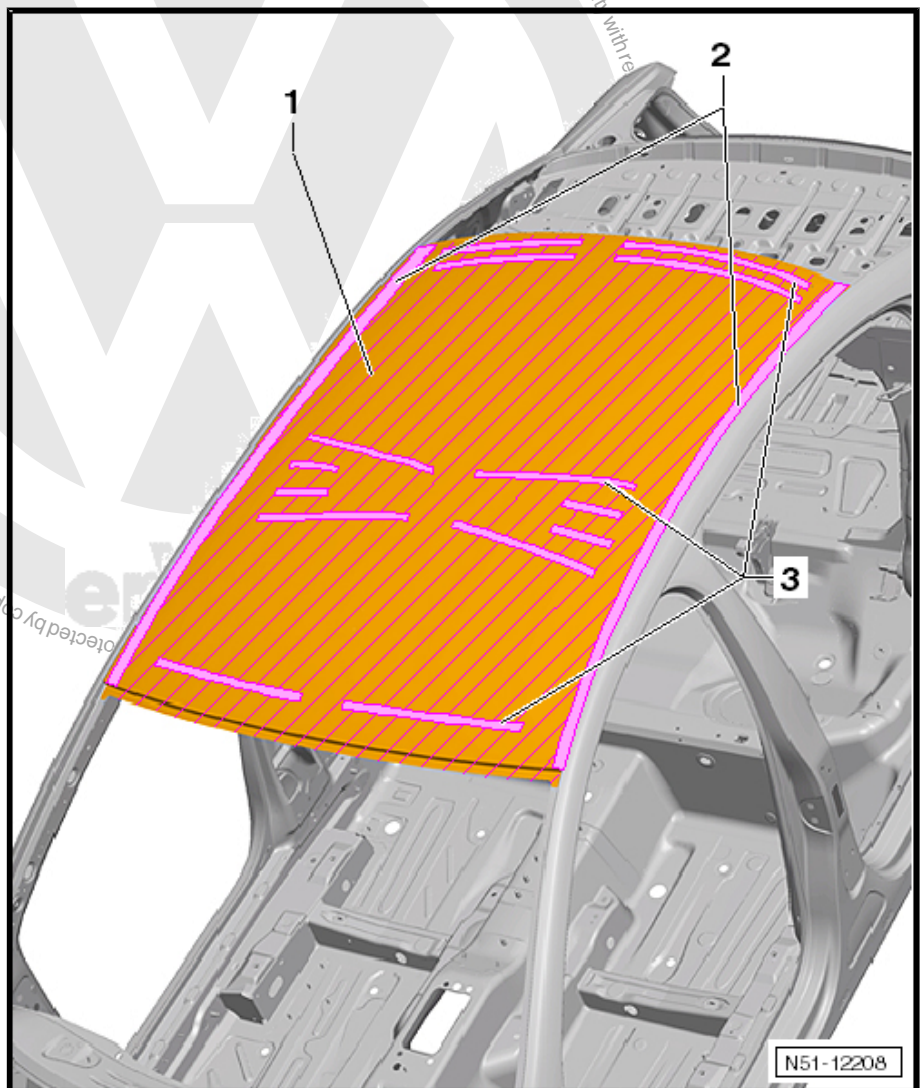
Observe safety notes!

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

1 - Roof

2 - Laser solder seam

3 - Bonded areas





1.1 Tools

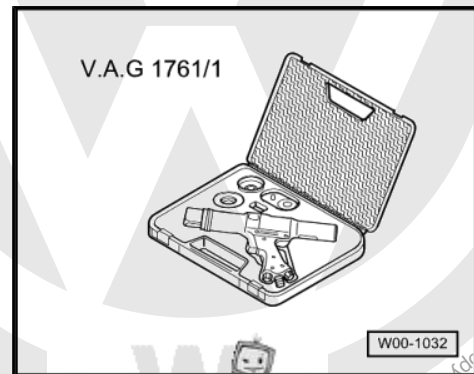


Note

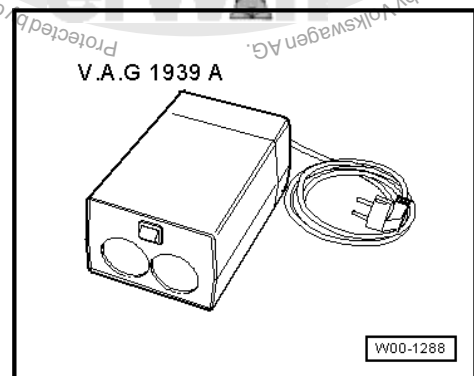
- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paint-work .*

Special tools and workshop equipment required

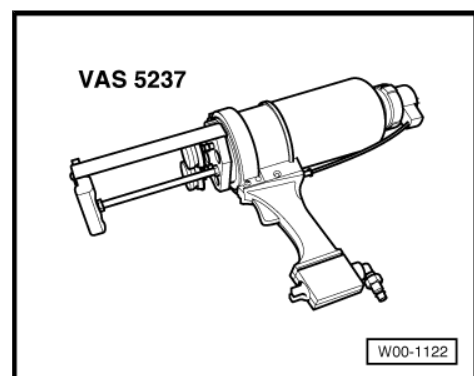
- ◆ Pneumatic cartridge gun -V.A.G 1761/1-



- ◆ Cartridge heater -V.A.G 1939 A-

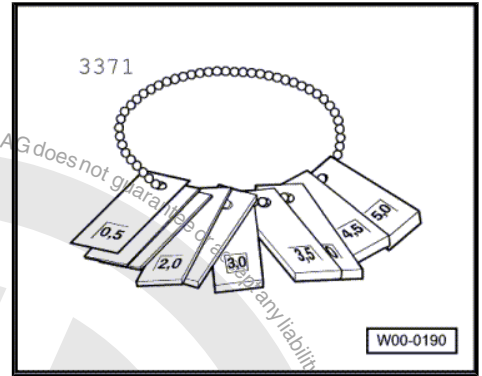


- ◆ Double-cartridge gun -VAS 5237-

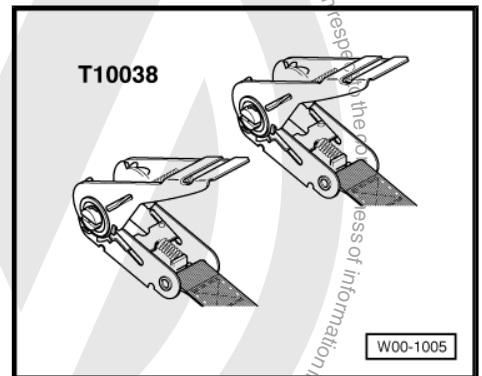




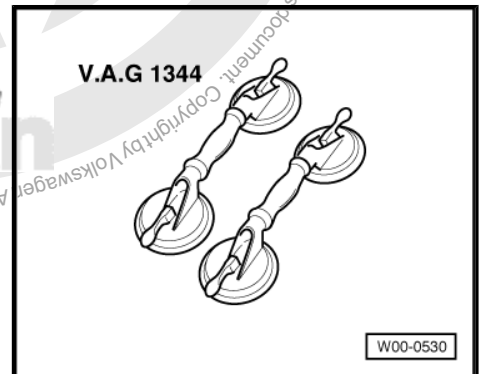
◆ Setting gauge -3371-



◆ Tensioning strap -T10038-



◆ Suction lifter -V.A.G 1344-



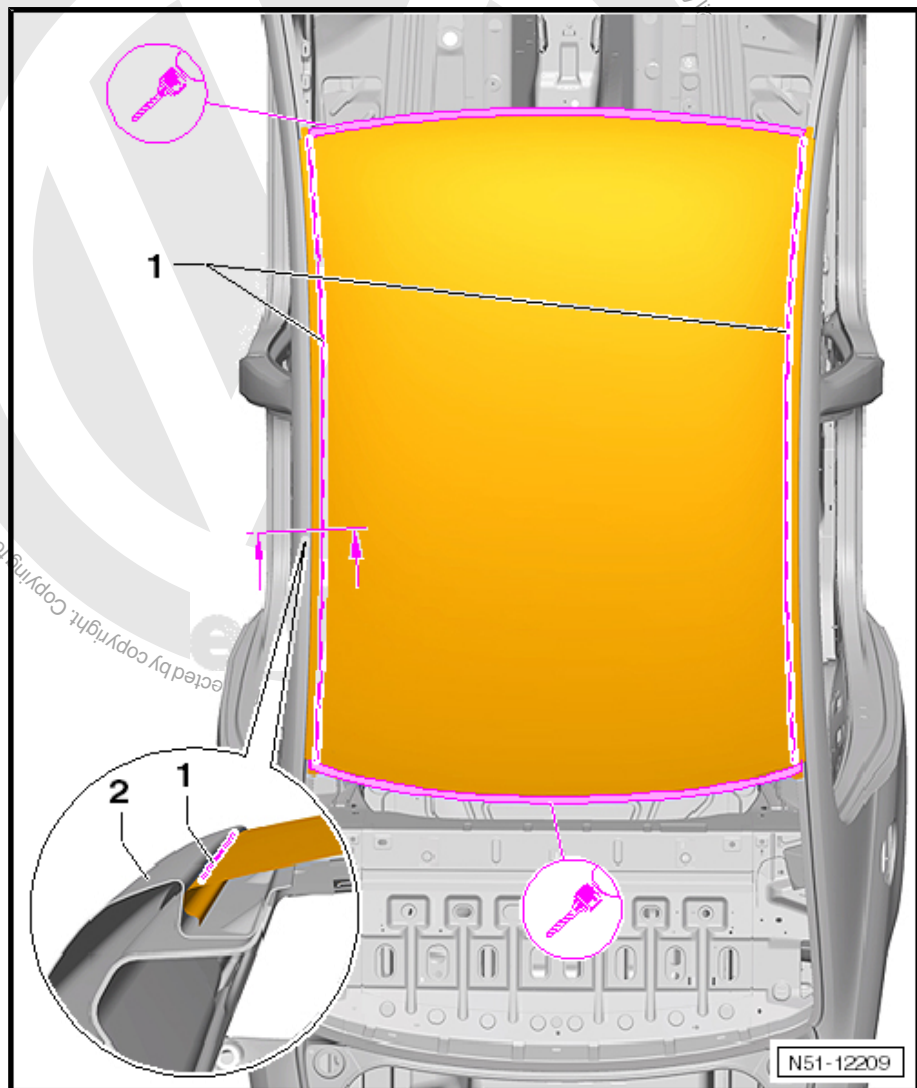


1.2 Removing



Note

- ◆ Apply textile adhesive tape on left and right roof members parallel to laser solder seams. This reduces danger of damage and contamination during repairs.
- ◆ When separating, ensure sufficient distance of to roof member -2- is kept; to assure it is not damaged during repairs.
- ◆ When making parting cuts -1-, ensure that the panels lying behind are not damaged.

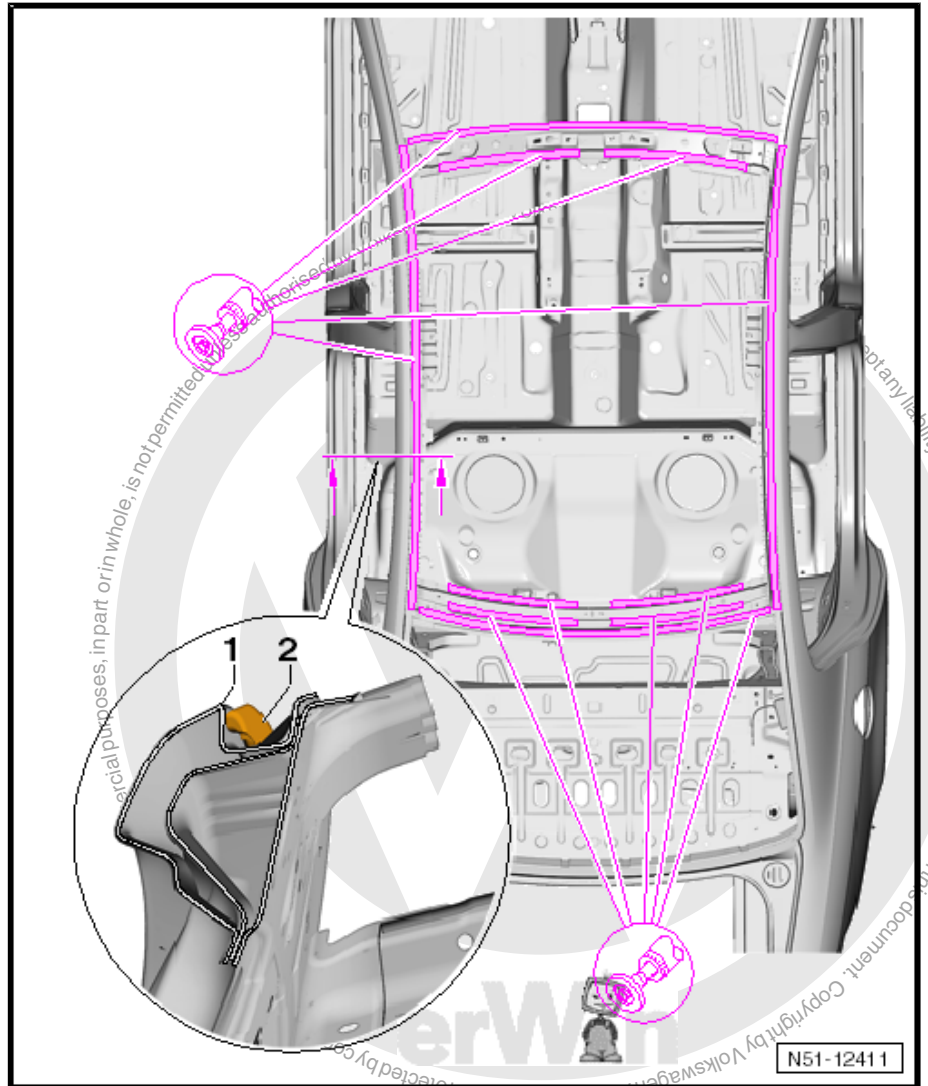


- Separate original joint to front and rear roof cross members.
- From interior, separate bonded joints to front and rear roof cross members.
- Roughly cut roof out parallel to laser solder seams.



i Note

- ◆ *Roof side member -1- must not be damaged when removing residual remains of roof -2-.*
- ◆ *Use flap or felt discs only, do not use cutting disks or rough grinding disks.*



- Remove remaining material.
- Remove all adhesive and sealant residues from front and rear roof cross members.
- Remove all adhesive residues from left and right roof side members.
- Touch up paint damage in accordance with Paint Workshop Manual.



1.3 Installing



Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 92](#).*

1.3.1 Preparing new part

New part

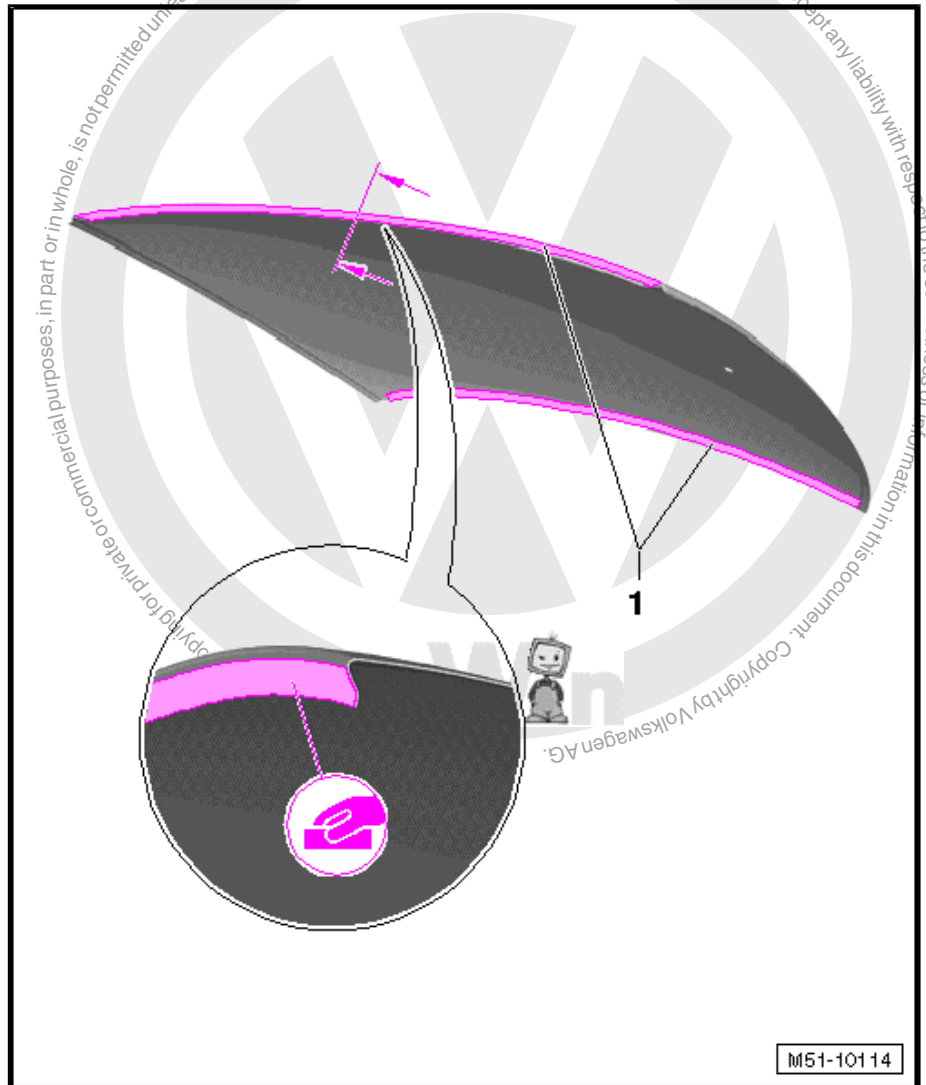
- ◆ Roof
- ◆ 1K assembly adhesive -D 190 MKD A3- (3 cartridges)
- ◆ 2K body adhesive -D 180 KD3 A2- (2 cartridge sets)
- ◆ Adhesive sealant -AKD 476 KD5 05-
- ◆ Cavity sealant -AKR 321 M15 4-
- ◆ Felt -533 867 910 B-



Note

- ◆ *Following working sequence must be adhered to in order to ensure correct and long-lasting roof repairs.*
- ◆ *For this repair, it is absolutely necessary to work with great care to prevent faults during processing.*





- Lightly sand down bonding areas on left and right of roof.

This ensures that the 2K body adhesive -D 180 KD3 A2- bonds well with bonding areas.

- 4 suction lifters -V.A.G 1344- are positioned on outer sides of roof.
- Position roof on roof frame.
- Check roof fit with windscreen and rear window.

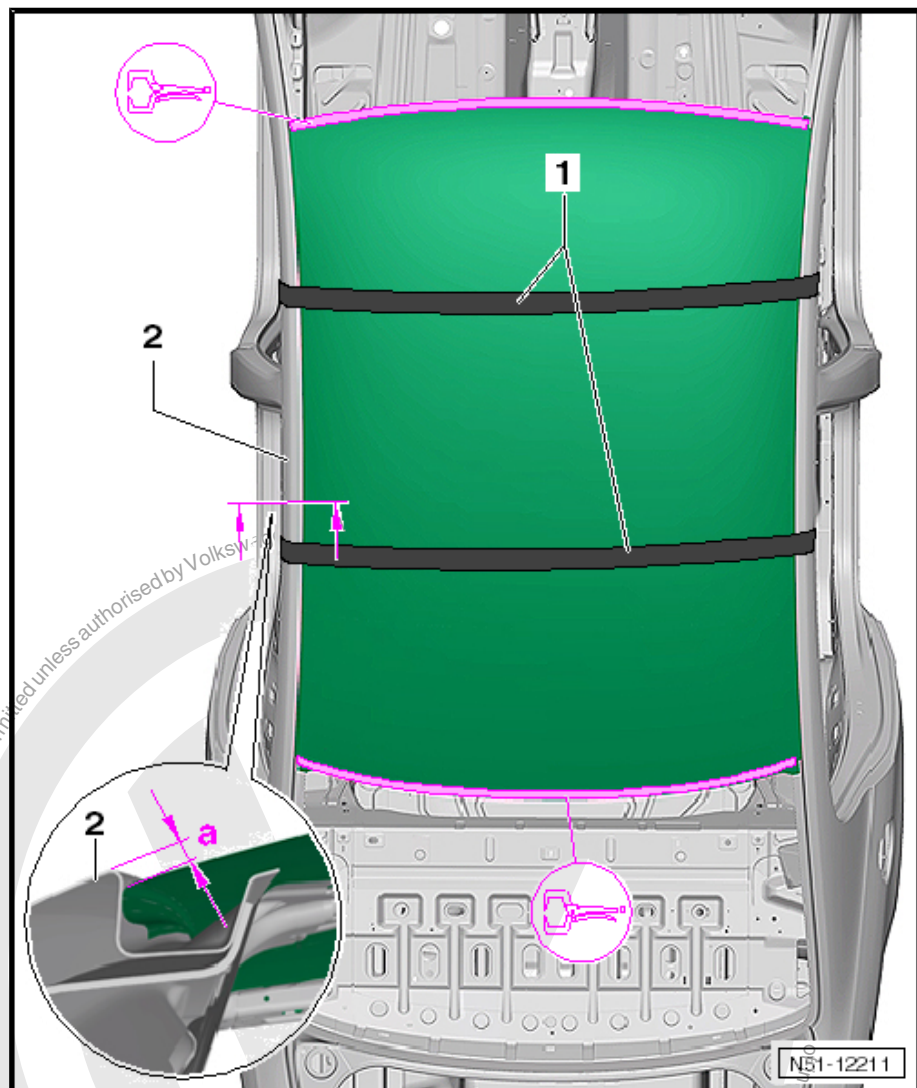


1.3.2 Adjusting roof depth



Note

- ◆ The securing belts -1- prevent the roof lifting off the roof frame or shifting during the adhesion process.
- ◆ Securing belts must not be tightened too tightly in order to avoid damage.
- ◆ Dimension -a- can be set by tightening and loosening tensioning belts, adjusts position roof relative to side parts/panels.
- ◆ Use setting gauge -3371- to check dimension -a-.



- In areas shown, tension securing belts -T10038- transversely over roof to vary height of roof.
- Secure roof in front and rear window apertures using vice-grip pliers.
- Check line of roof versus roof side members.
- ◆ Dimension -a- = 4.0 ± 0.5 mm
- If necessary for compensation purposes, place pieces of felt -533 867 910 B- on roof frame.



1.3.3 Bonding roof

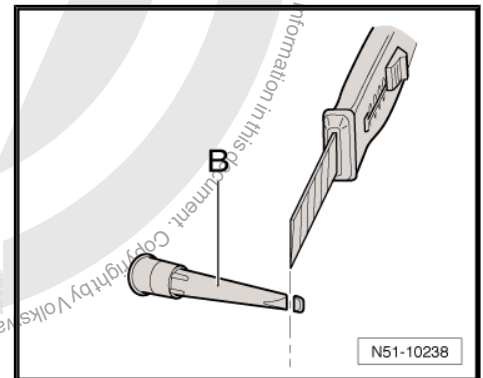
- Remove roof.
- Apply corrosion protection measures according to guidelines in ⇒ Paint workshop manual: Corrosion and corrosion protection, attached and welded parts, materials .
- Lightly sand down bonding areas on left and right roof side members.
- Clean adhesive surfaces on roof and vehicle with silicone remover -LSE 020 100 A3- .

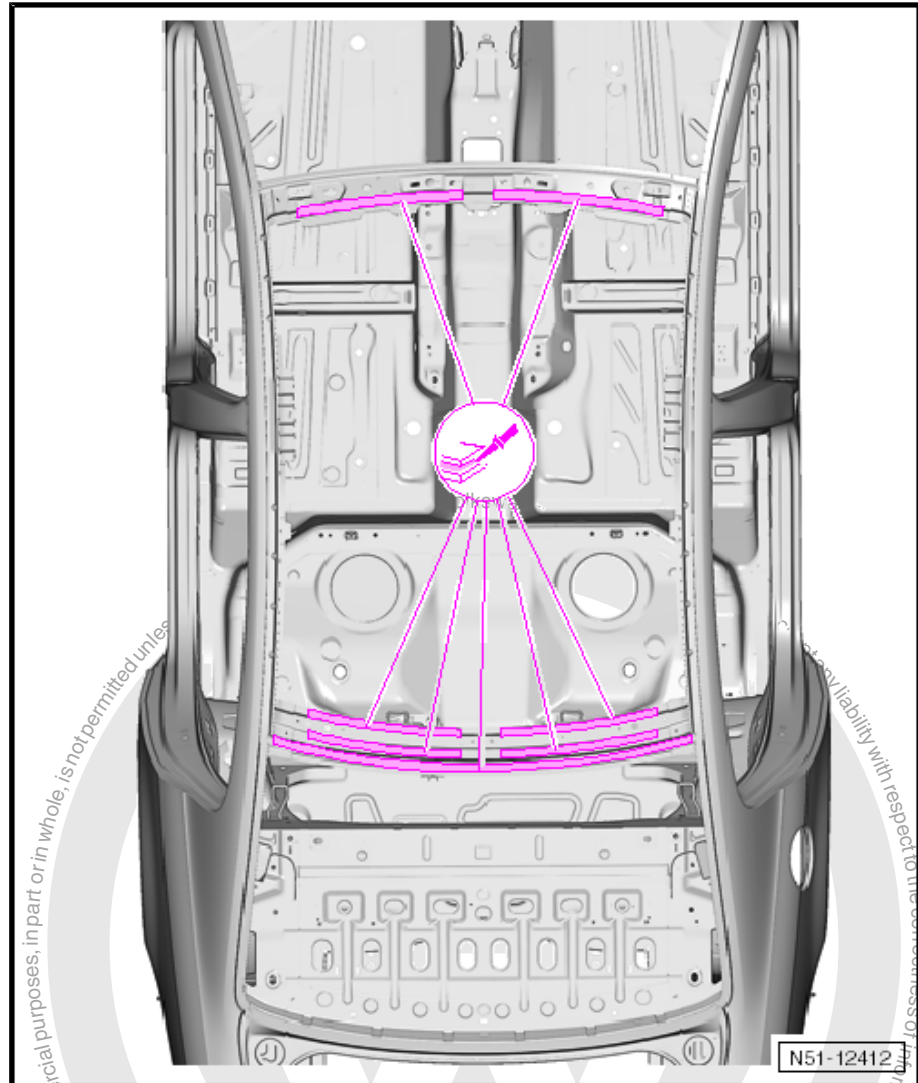
i Note

- ◆ *The adhesive must be applied very quickly.*
 - ◆ *Always observe the application time (pot life).*
 - ◆ *Use pneumatic or electric cartridge guns to apply adhesive.*
- Cut approx. 2 mm off nozzle -B- to provide appropriate bead geometry.

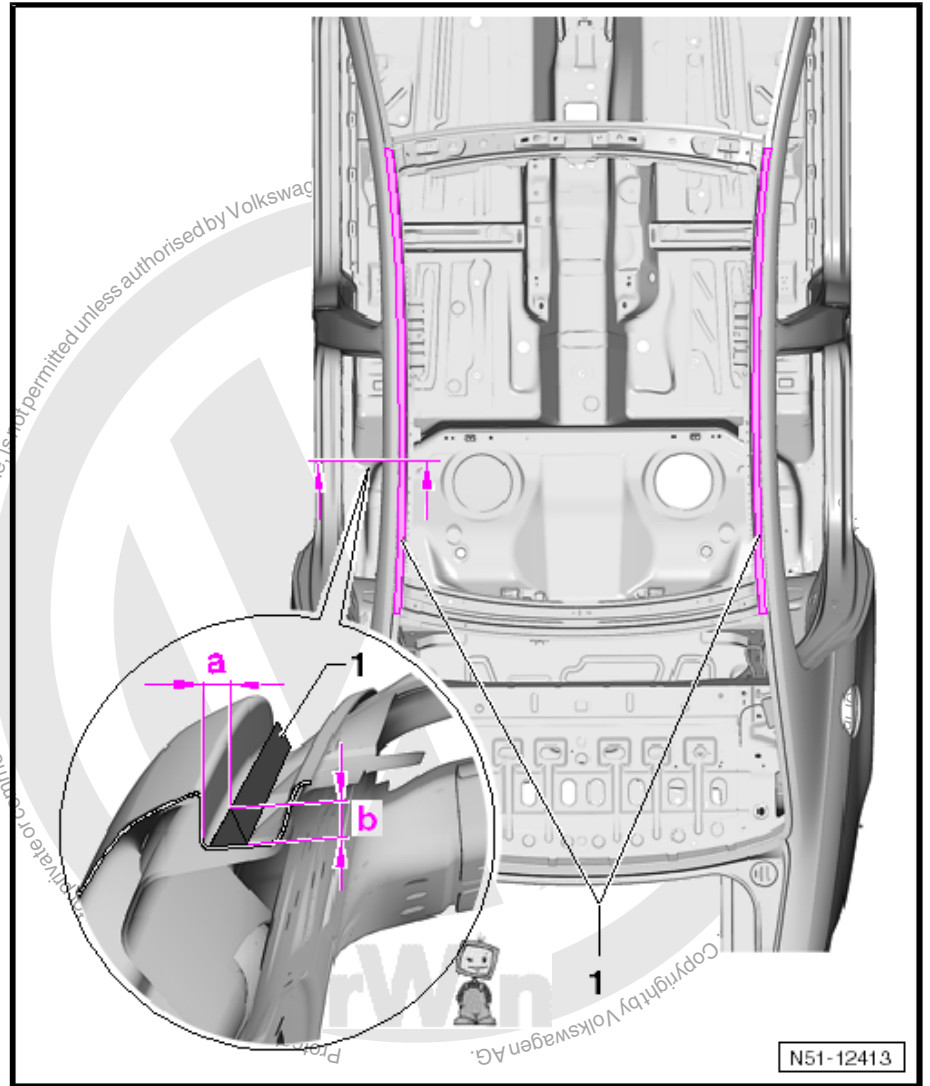
i Note

For this repair, it is absolutely necessary to work with great care to prevent faults during processing.

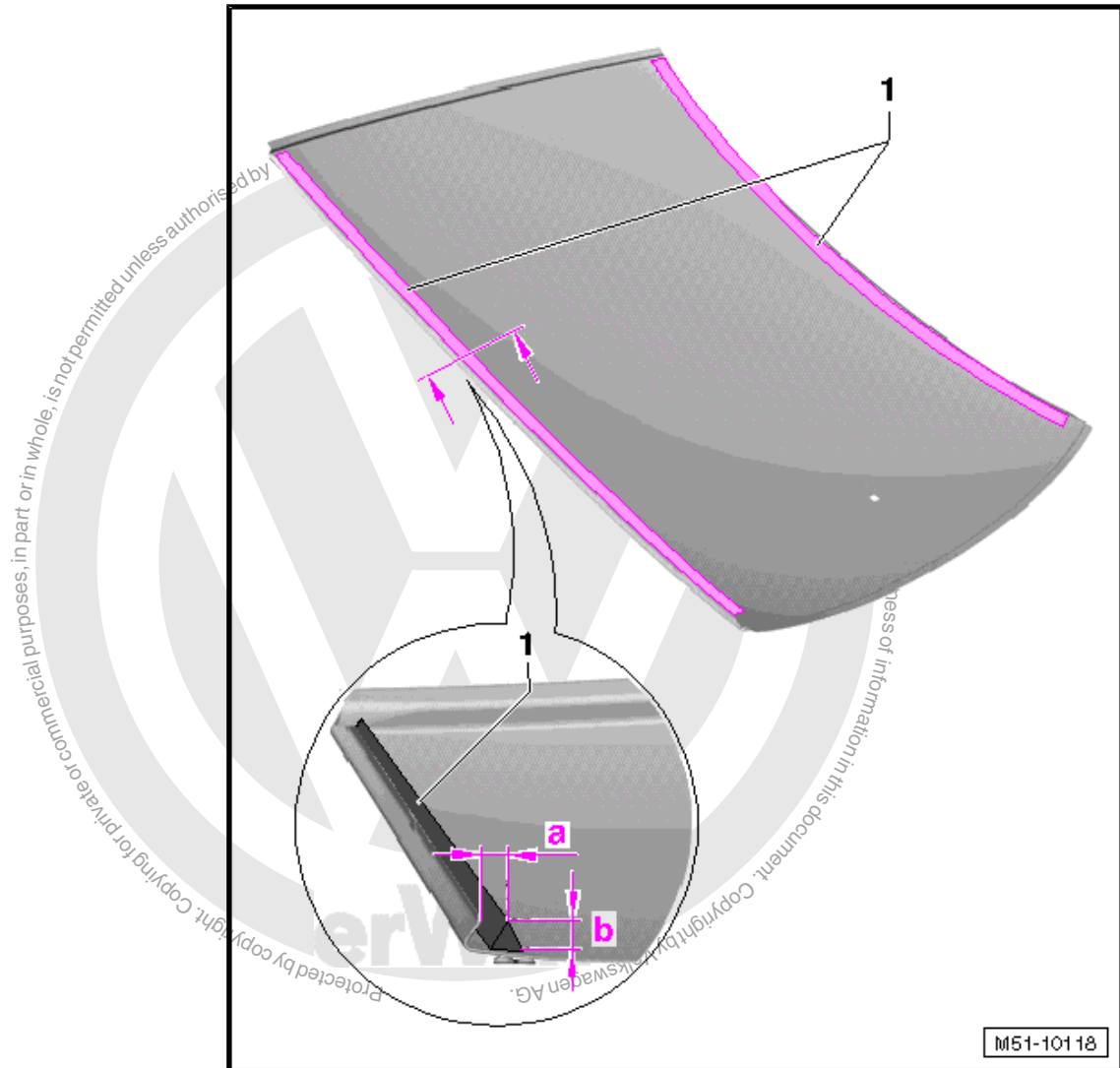




- Apply 1K assembly adhesive -D 190 MKD A3- to roof cross member in area of the factory-fitted bonds using compressed air gun -V.A.G 1761/1- .



- In area of roof side member, apply 1K assembly adhesive -D 190 MKD A3- -1- using pneumatic cartridge gun - V.A.G 1761/1- .
- ◆ Dimension -a- = approx. 12 mm
- ◆ Dimension -b- = approx. 9 mm



- Apply 1K assembly adhesive -D 190 MKD A3- on inner side of roof parallel to left and right roof flange with pneumatic cartridge gun -V.A.G 1761/1- .
- ◆ Dimension -a- = approx. 4 mm
- ◆ Dimension -b- = approx. 9 mm

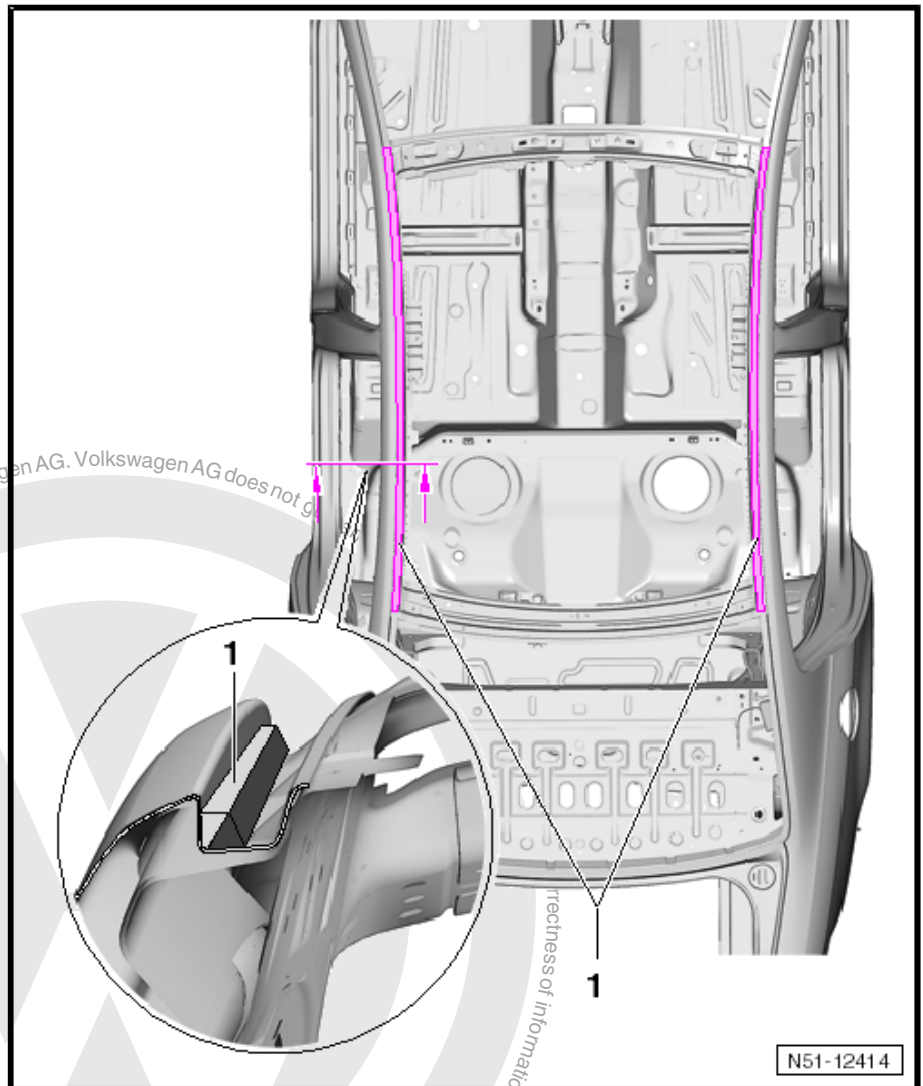
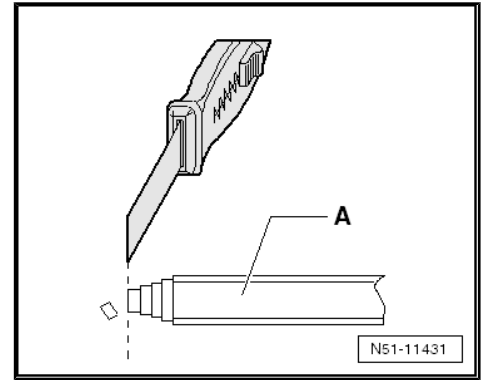


Note

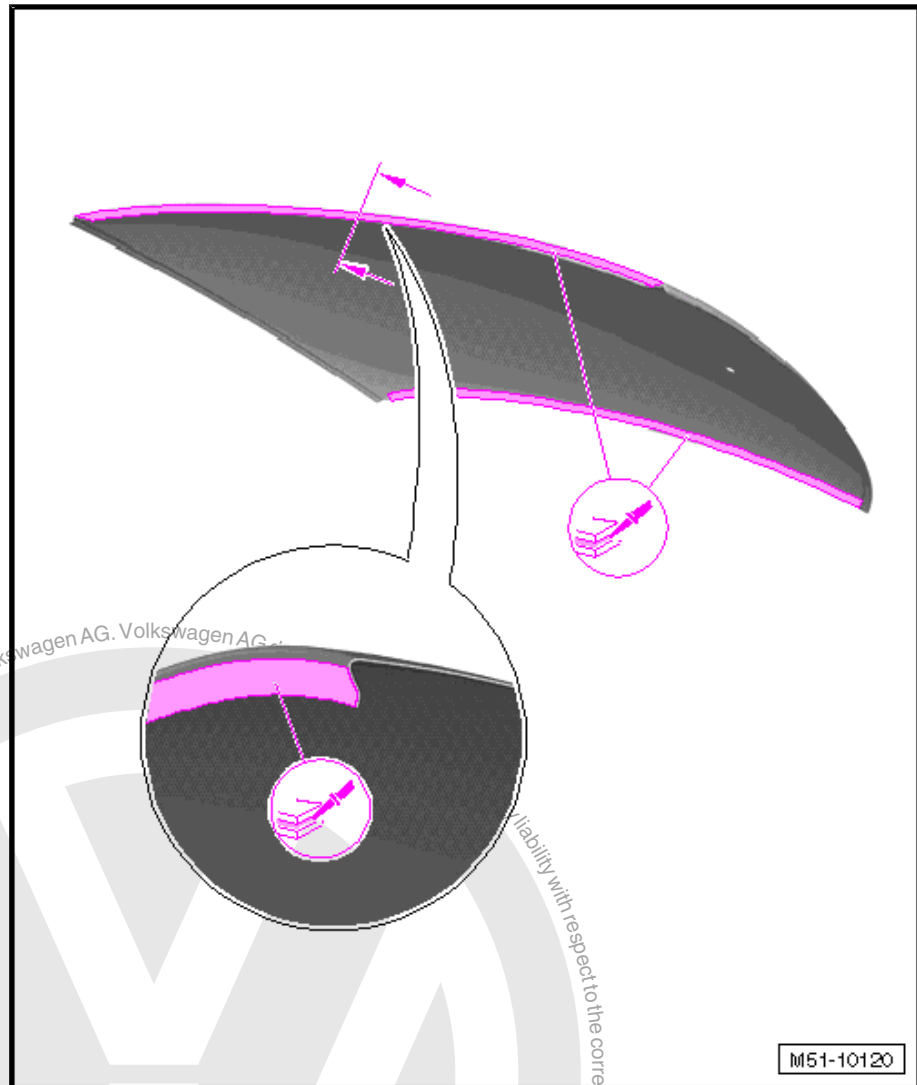
- ◆ *The application time (pot life) of the 2K body adhesive -D 180 KD3 A2- is approx. 90 min.*
- ◆ *Remove excessive 2K body adhesive -D 180 KD3 A2- from bonding areas immediately. Once cured 2K body adhesive -D 180 KD3 A2- can only be removed using mechanical means.*
- ◆ *An assistant is required for the following work.*



- Cut first step of static mixer -D- off to achieve corresponding bead cross-section.
- Carefully operate double cartridge gun -VAS 5237- without static mixer until adhesive is discharged uniformly from both chambers of cartridge connector.
- Screw static mixer onto cartridge connector.
- Apply the first 100 mm of adhesive to a piece of cardboard and only then begin to apply the adhesive to the vehicle.



- Fill area -1- with 2K body adhesive -D 180 KD3 A2- using double cartridge gun -VAS 5237- .



M51-10120

- Coat roof flanges with 2K body adhesive -D 180 KD3 A2- .
- Immediately position and align roof.
- Secure roof at front and rear window apertures using vice-grip pliers and also secure centre of roof using securing belts
=> [page 98](#) .
- Check roof depth dimension and adjust if necessary.
- Remove excessive 2K body adhesive -D 180 KD3 A2- along edge of roof immediately using a cloth soaked in silicone remover -LSE 020 100 A3- .

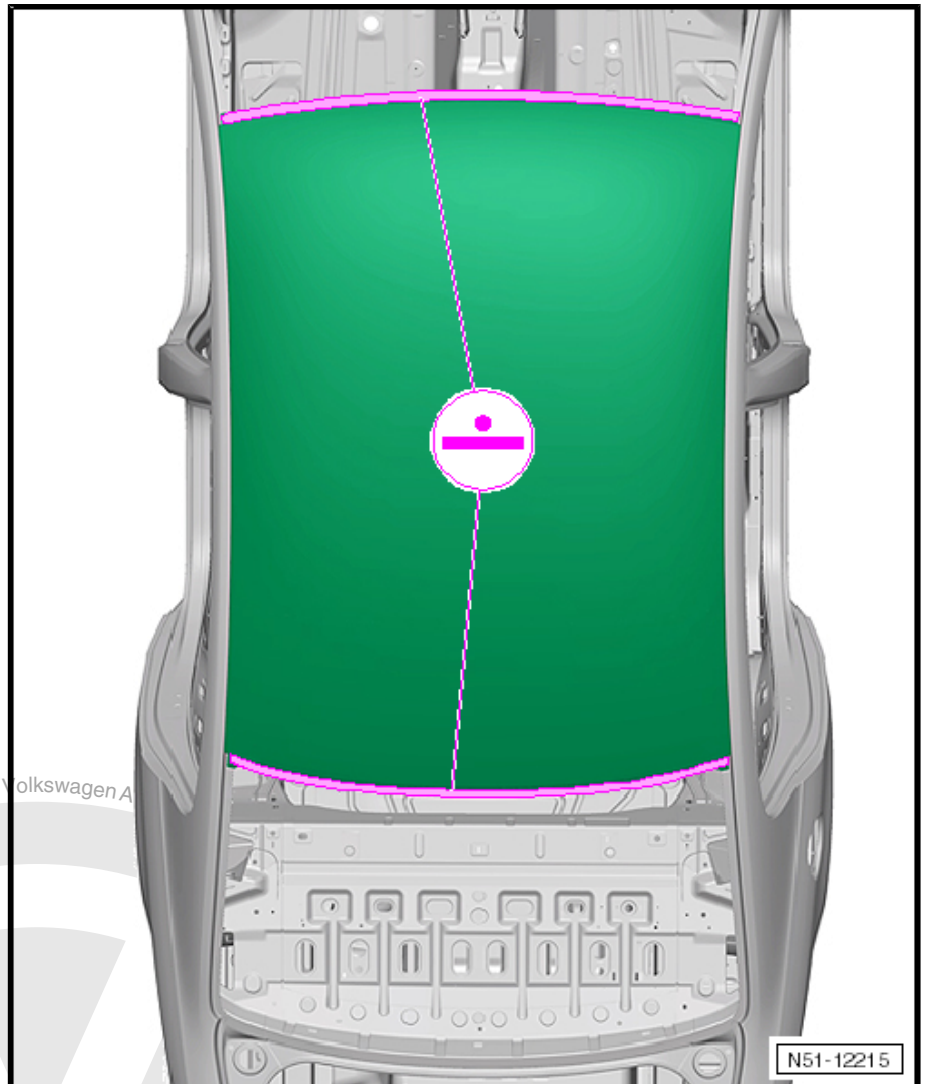


Note

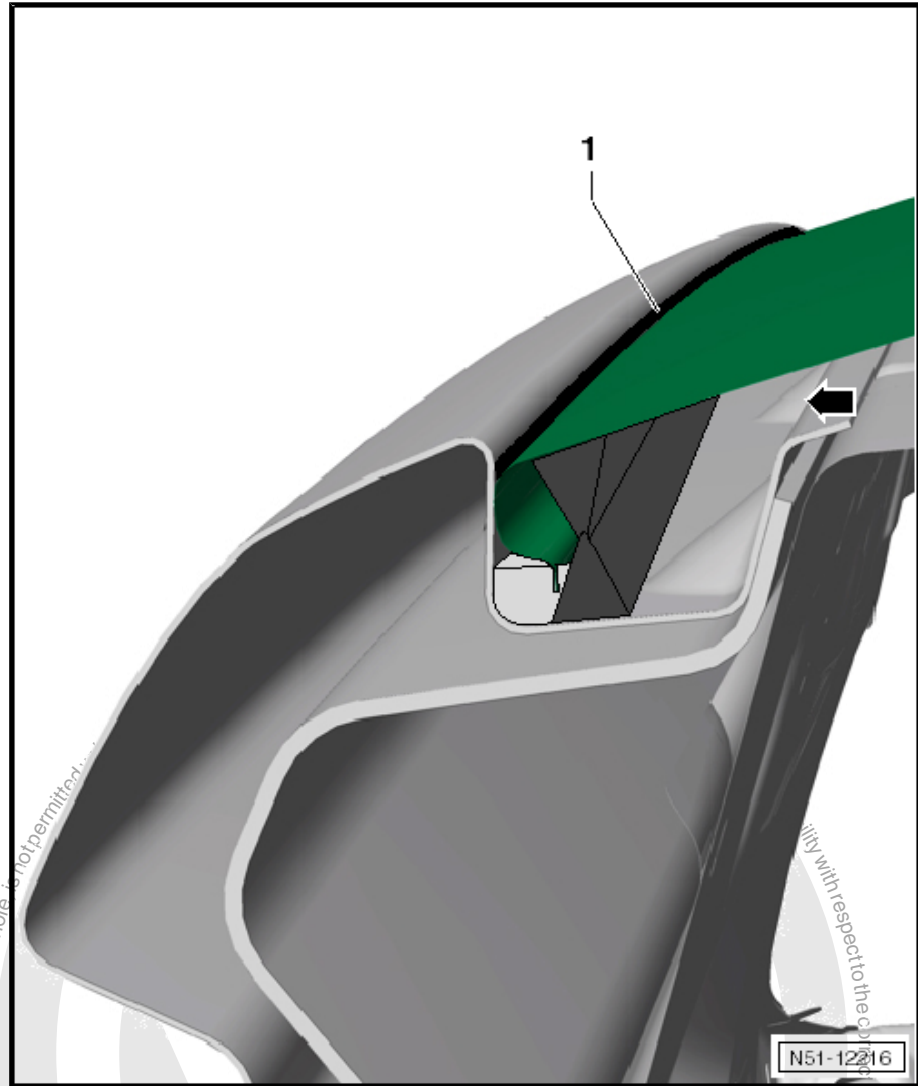
- ◆ *After bonding, vehicle must remain stationary on a level surface for 8-10 hours at room temperature (min. 15 °C) so that adhesive can harden.*
- ◆ *No further work should be performed on the vehicle until the „minimum curing time“ has expired.*



1.3.4 Welding in



- Weld roof in front and rear window apertures, RP spot weld seam.



- Apply adhesive sealant -AKD 476 KD5 05- to seam between roof and roof side member to fully seal bonded seam -1-.
- After painting, preserve roof cavities -arrow- with corrosion-preventive wax -AKR 321 M15 4- .



RO: 51 03 55 03

2 Renewing roof - vehicles with sliding/ tilting sunroof



WARNING

Observe safety notes!

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

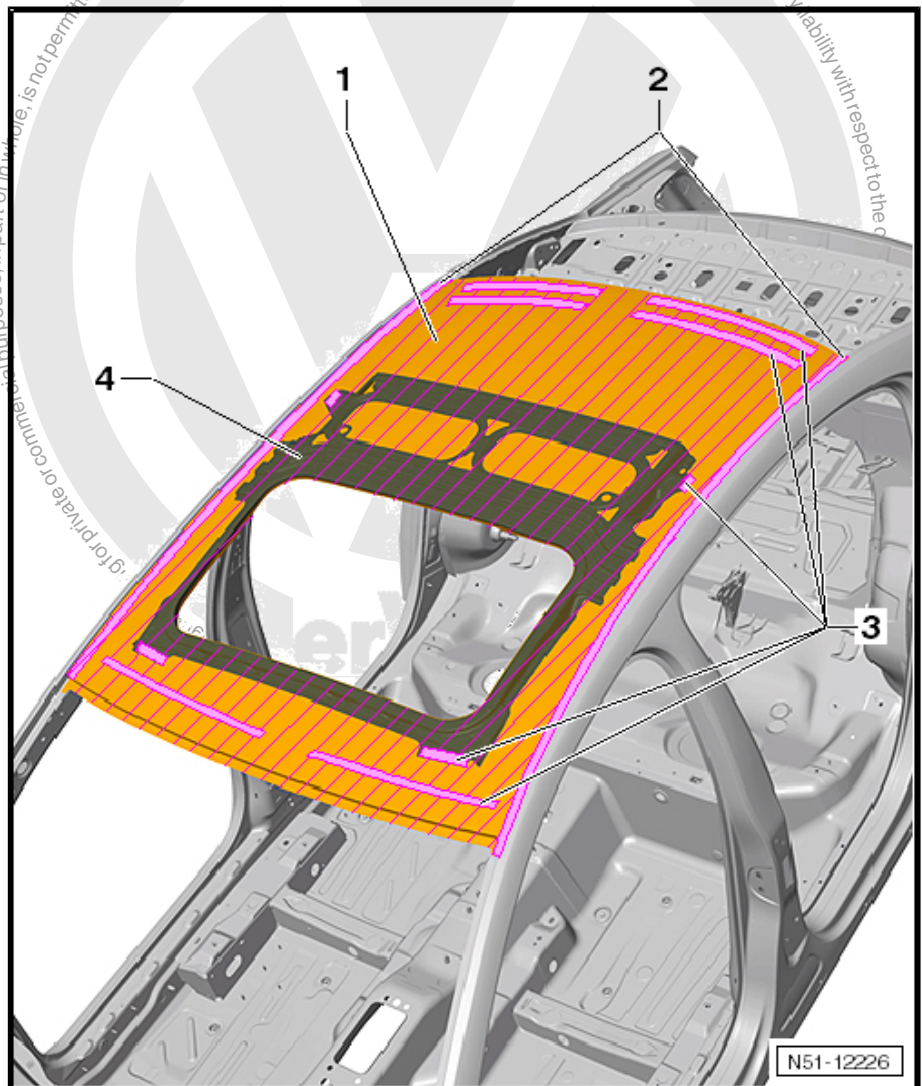
1 - Roof

2 - Laser solder seam

3 - Bonded areas

4 - Reinforcing frame

Removed along with roof when renewing roof.





2.1 Tools



Note

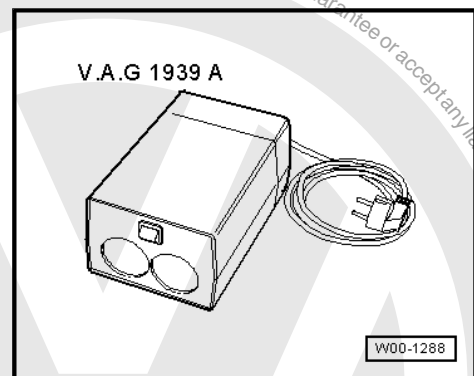
- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paint-work .*

Special tools and workshop equipment required

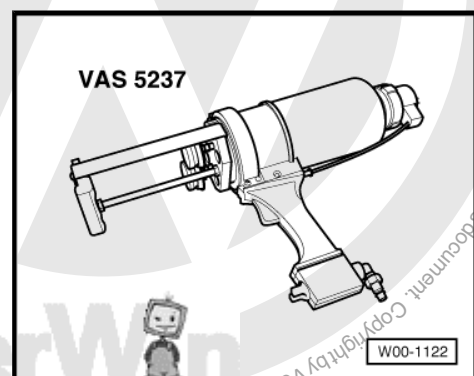
- ◆ Pneumatic cartridge gun -V.A.G 1761/1-



- ◆ Cartridge heater -V.A.G 1939 A-

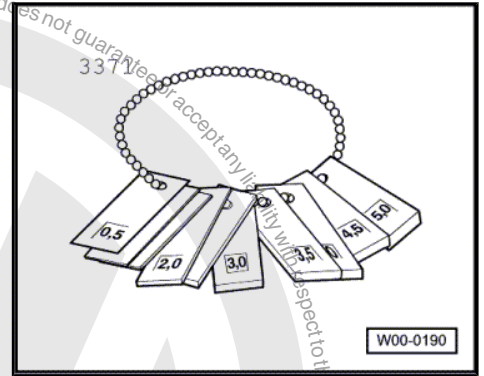


- ◆ Double-cartridge gun -VAS 5237-

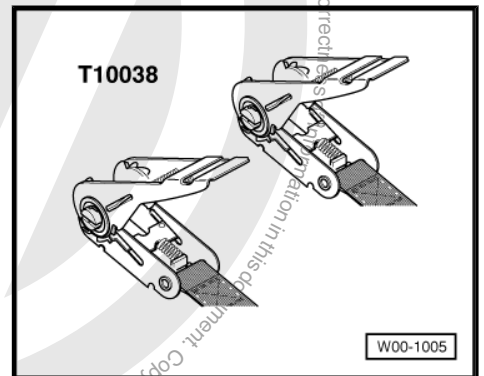




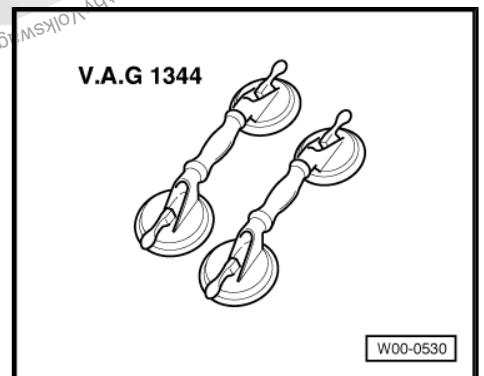
- ◆ Setting gauge -3371-



- ◆ Tensioning strap T10038-



- ◆ Suction lifter -V.A.G 1344-



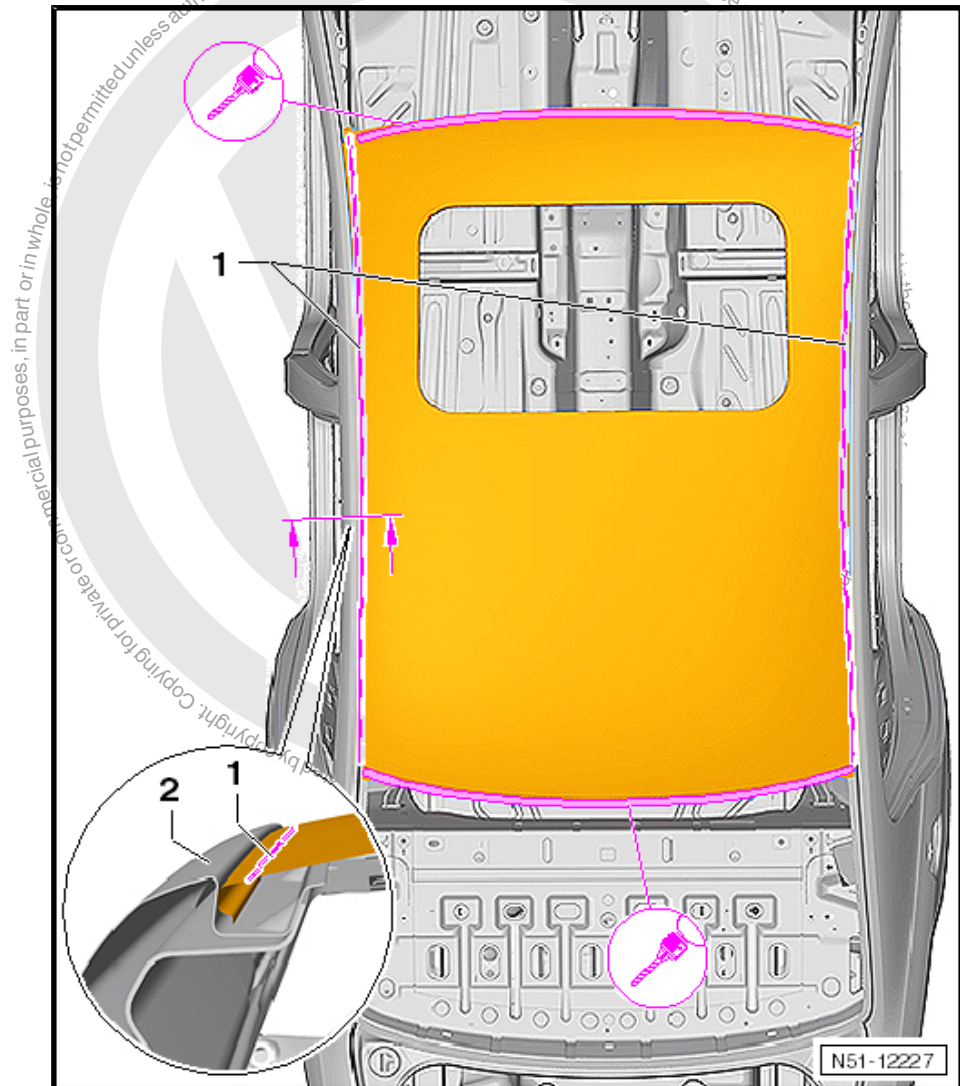


2.2 Removing

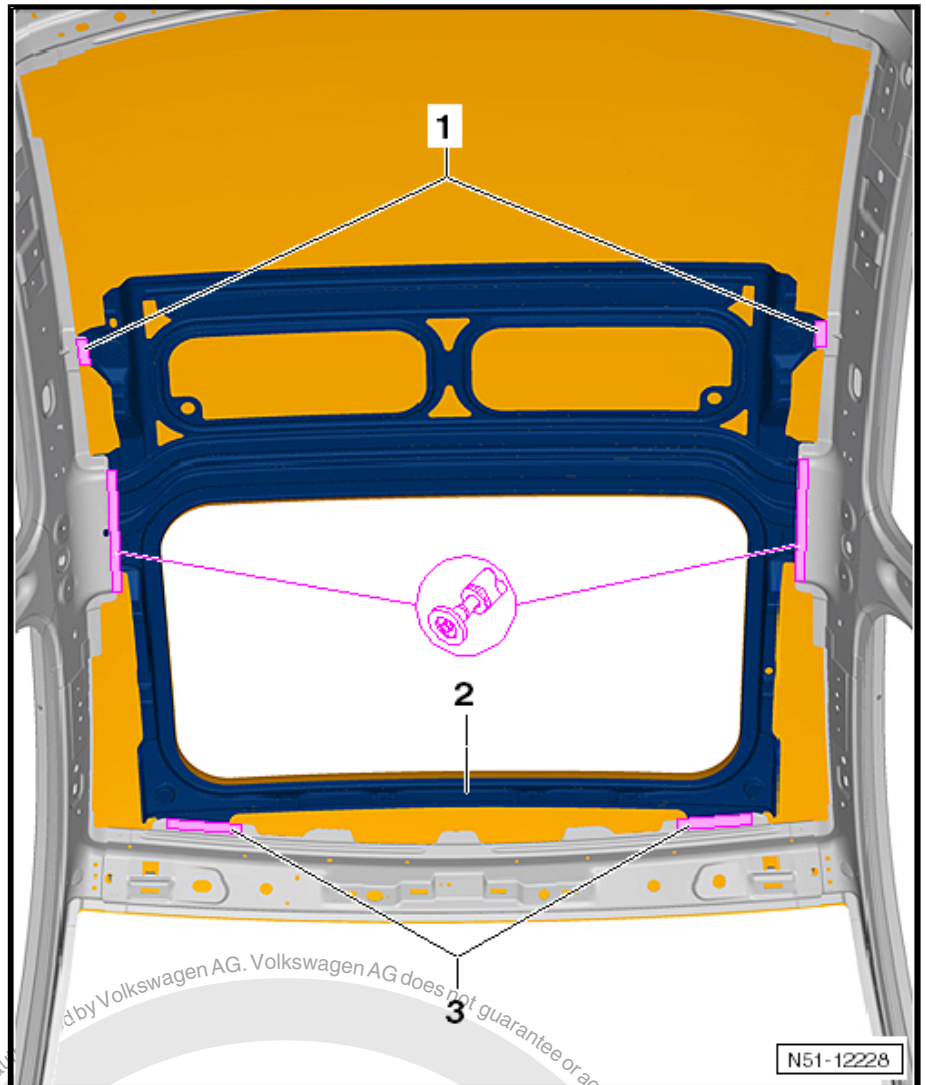


Note

- ◆ Apply textile adhesive tape on left and right roof members parallel to laser solder seams. This reduces danger of damage and contamination during repairs.
- ◆ When separating, ensure sufficient distance of to roof member -2- is kept, to assure it is not damaged during repairs.
- ◆ When making parting cuts -1-, ensure that the panels lying behind are not damaged.



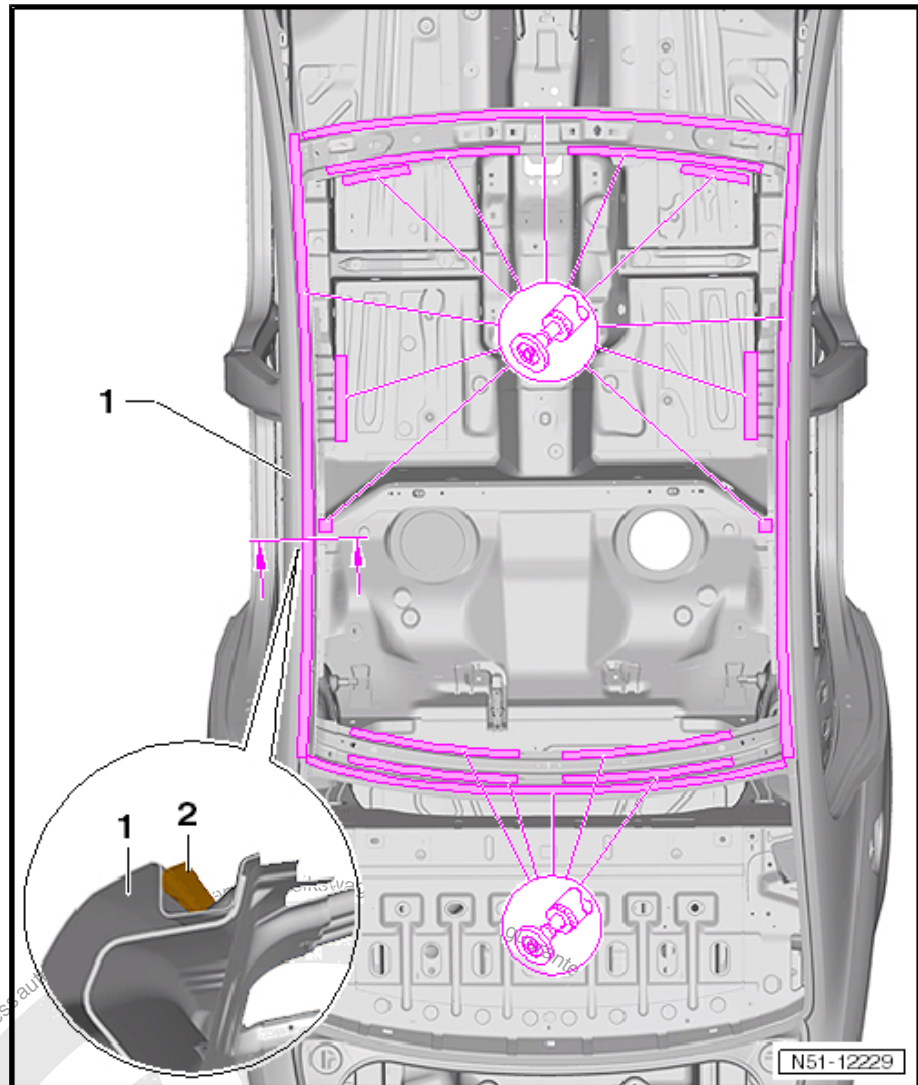
- Separate original joint to front and rear roof cross members.
- From interior, separate bonded joints to front and rear roof cross members.
- Roughly cut roof out parallel to laser solder seams.



- Release bonded joints -1 and 3- from reinforcing frame -2-.
- Separate original joint to inner side panel on left and right.

i Note

- ◆ *Roof side member -1- must not be damaged when removing residual remains of roof -2-.*
- ◆ *Use flap or felt discs only, do not use cutting disks or rough grinding disks.*



- Remove remaining material.
- Remove all adhesive and sealant residues from front and rear roof cross members.
- Remove all adhesive residues from left and right roof side members.
- Touch up paint damage in accordance with Paint Workshop Manual.

2.3 Installing



Note

Only welding units authorised by Volkswagen AG may be used
⇒ [page 108](#).

2.3.1 Preparing new part

New part

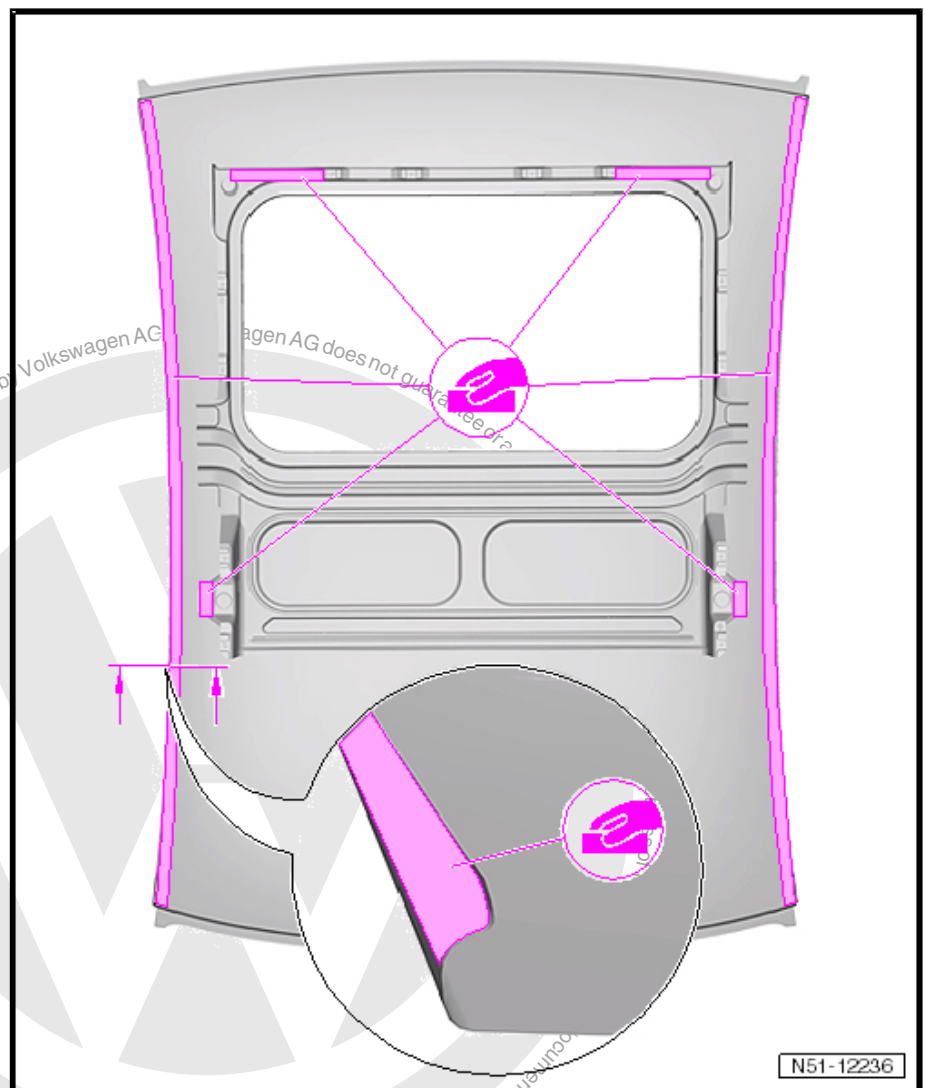
- ◆ Roof
- ◆ 1K assembly adhesive -D 190 MKD A3- (3 cartridges)



- ◆ 2K body adhesive -D 180 KD3 A2- (2 cartridge sets)
- ◆ Adhesive sealant -AKD 476 KD5 05-
- ◆ Cavity sealant -AKR 321 M15 4-
- ◆ Felt -533 867 910 B-

i Note

- ◆ *Following working sequence must be adhered to in order to ensure correct and long-lasting roof repairs.*
- ◆ *For this repair, it is absolutely necessary to work with great care to prevent faults during processing.*



- Lightly sand down bonding areas on left and right of roof and on reinforcing frame.

This ensures that the 2K body adhesive -D 180 KD3 A2- bonds well with bonding areas.

- 4 suction lifters -V.A.G 1344- are positioned on outer sides of roof.
- Position roof on roof frame.



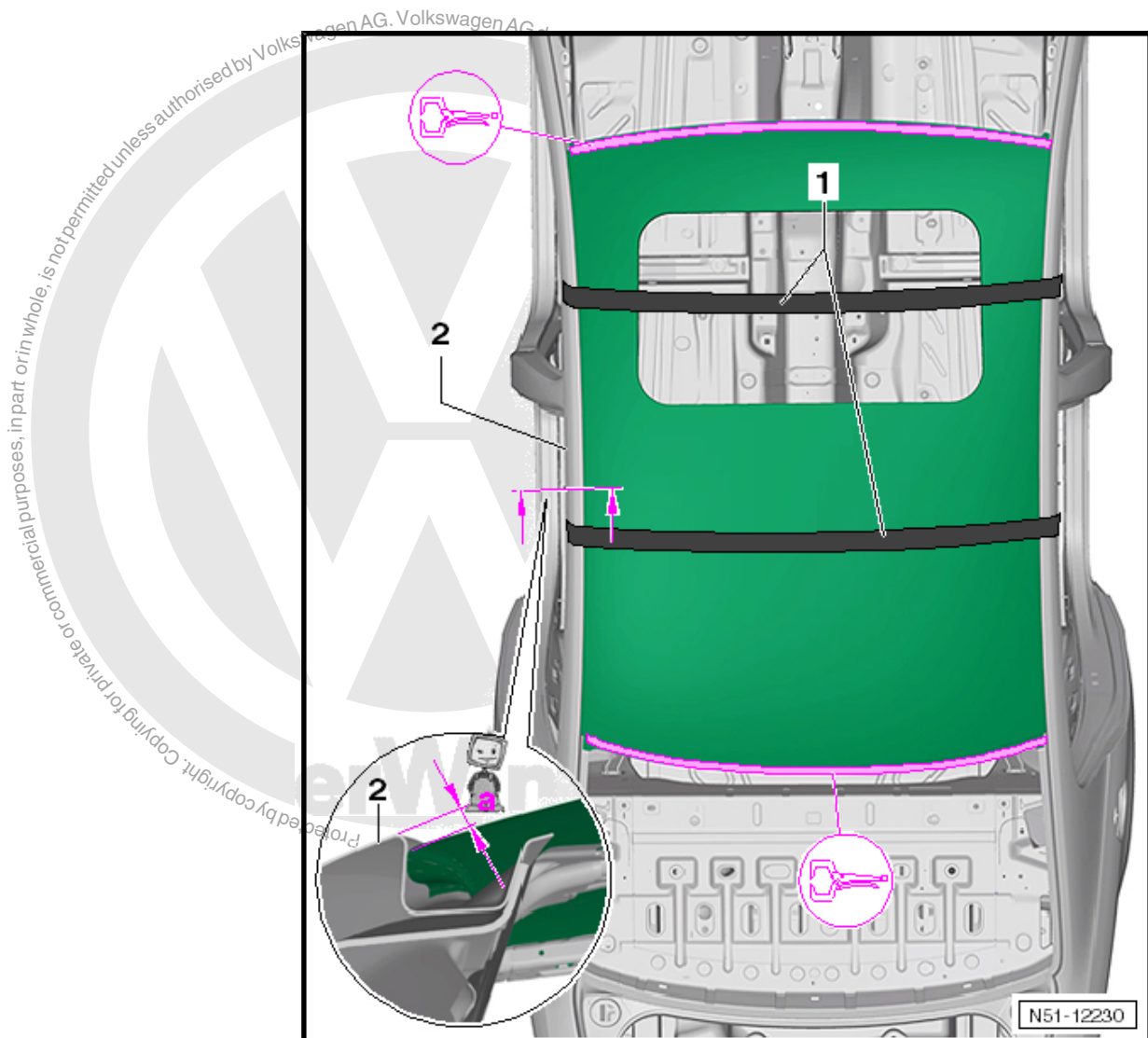
- Check roof fit with windscreen and rear window.

2.3.2 Adjusting roof depth



Note

- ◆ The securing belts -1- prevent the roof lifting off the roof frame or shifting during the adhesion process.
- ◆ Securing belts must not be tightened too tightly in order to avoid damage.
- ◆ Dimension -a- can be set by tightening and loosening tensioning belts, adjusts position roof relative to side parts/panels.
- ◆ Use setting gauge -3371- to check dimension -a-.



- In areas shown, tension securing belts -T10038- transversely over roof to vary height of roof.
- Secure roof in front and rear window apertures using vice-grip pliers.
- Check line of roof versus roof side members.
- ◆ Dimension -a- = 4.0 ± 0.5 mm



- If necessary for compensation purposes, place pieces of felt -533 867 910 B- on roof frame.

2.3.3 Bonding roof

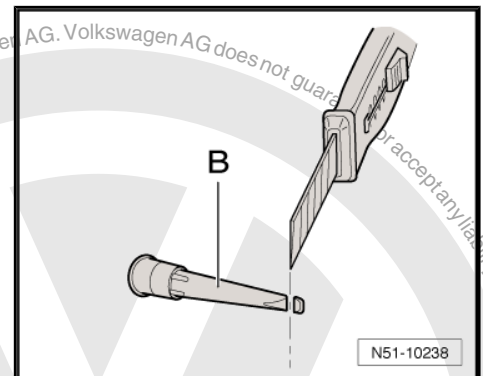
- Remove roof.
- Apply corrosion protection measures according to guidelines in ⇒ Paint workshop manual: Corrosion and corrosion protection, attached and welded parts, materials .
- Lightly sand down bonding areas on left and right roof side members.
- Clean adhesive surfaces on roof and vehicle with silicone remover -LSE 020 100 A3- .

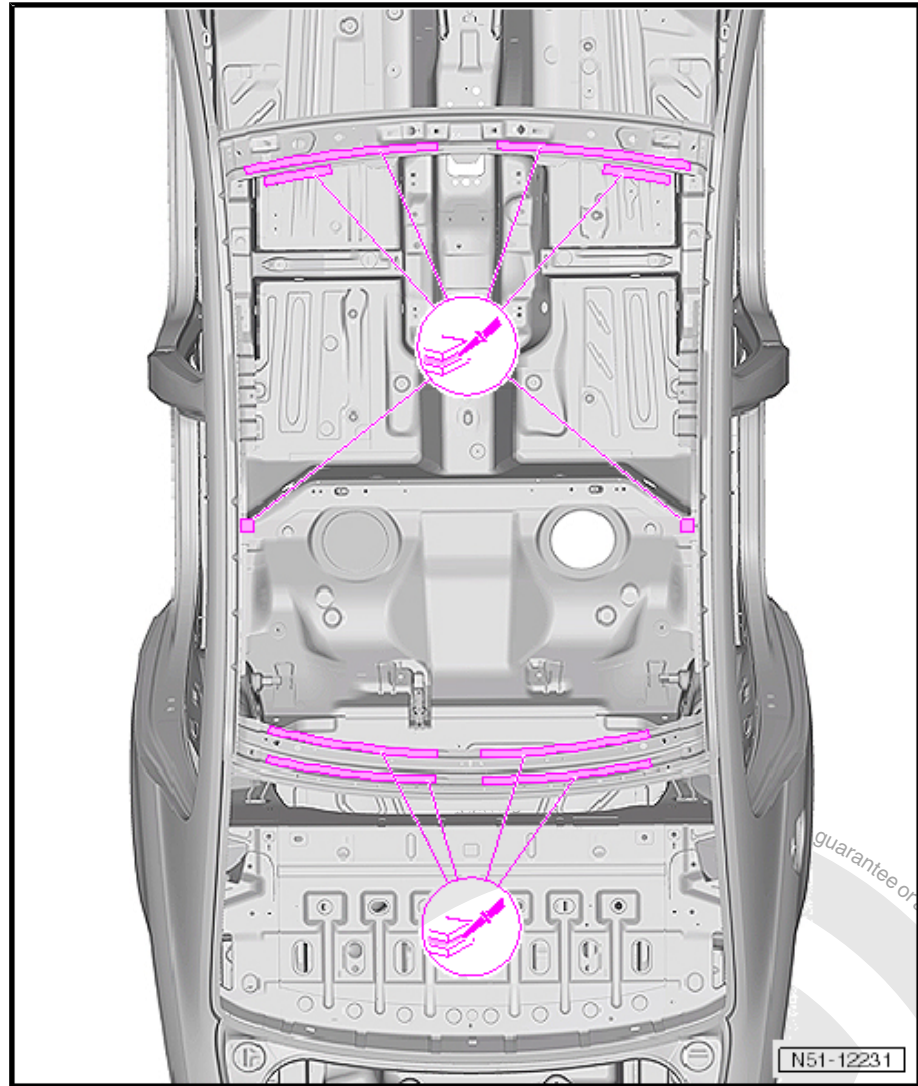
Note

- ◆ *The adhesive must be applied very quickly.*
 - ◆ *Always observe the application time (pot life).*
 - ◆ *Use pneumatic or electric cartridge guns to apply adhesive.*
- Cut approx. 2 mm off nozzle -B- to provide appropriate bead geometry.

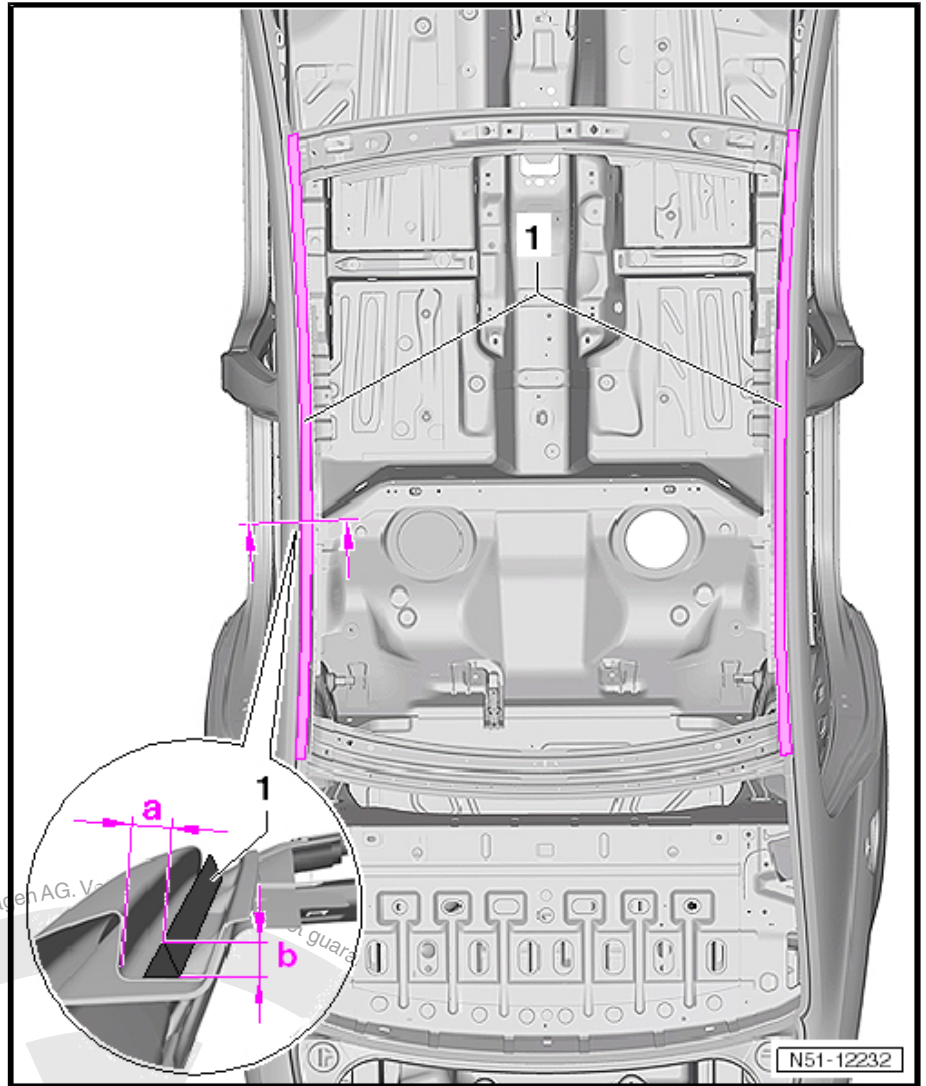
Note

For this repair, it is absolutely necessary to work with great care to prevent faults during processing.

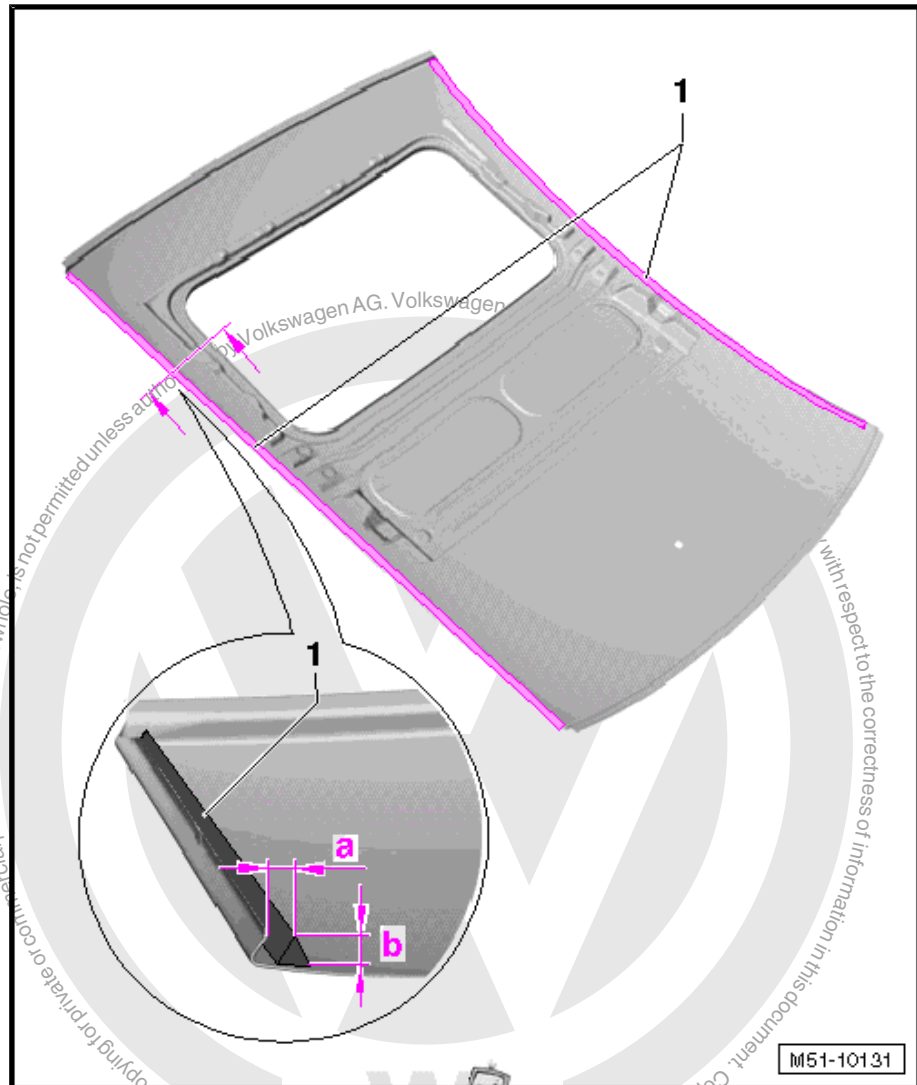




- Apply 1K assembly adhesive -D 190 MKD A3- to roof cross member and to contact surfaces of reinforcing frame in area of the factory-fitted bonds using pneumatic cartridge gun - V.A.G 1761/1- .



- In area of roof side member, apply 1K assembly adhesive -D 190 MKD A3- -1- using pneumatic cartridge gun - V.A.G 1761/1- .
- ◆ Dimension -a- = approx. 12 mm
- ◆ Dimension -b- = approx. 9 mm



- Apply 1K assembly adhesive -D 190 MKD A3- on inner side of roof parallel to left and right roof flange with pneumatic cartridge gun -V.A.G 1761/1- .
- ◆ Dimension -a- = approx. 4 mm
- ◆ Dimension -b- = approx. 9 mm

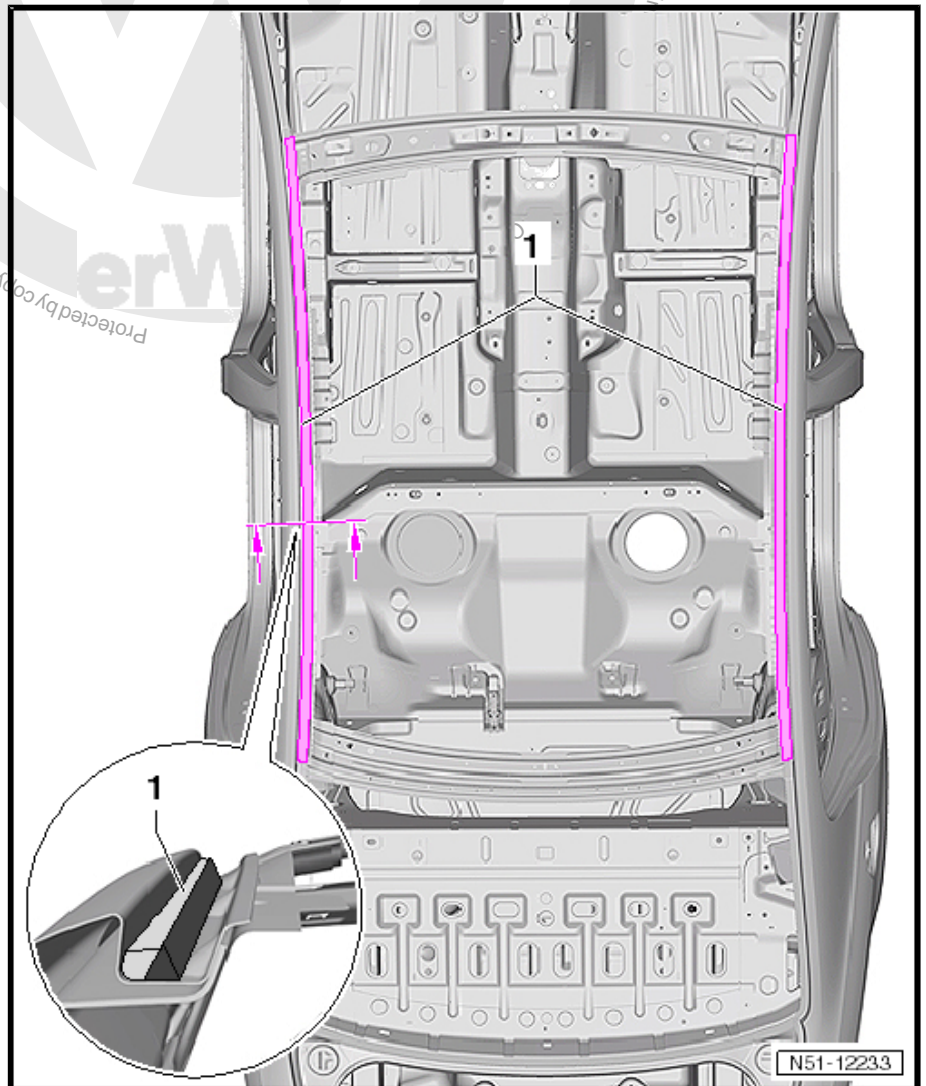
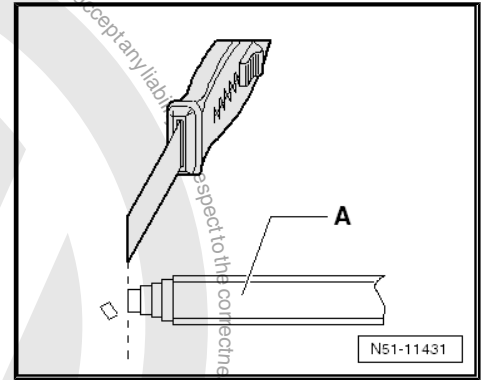


Note

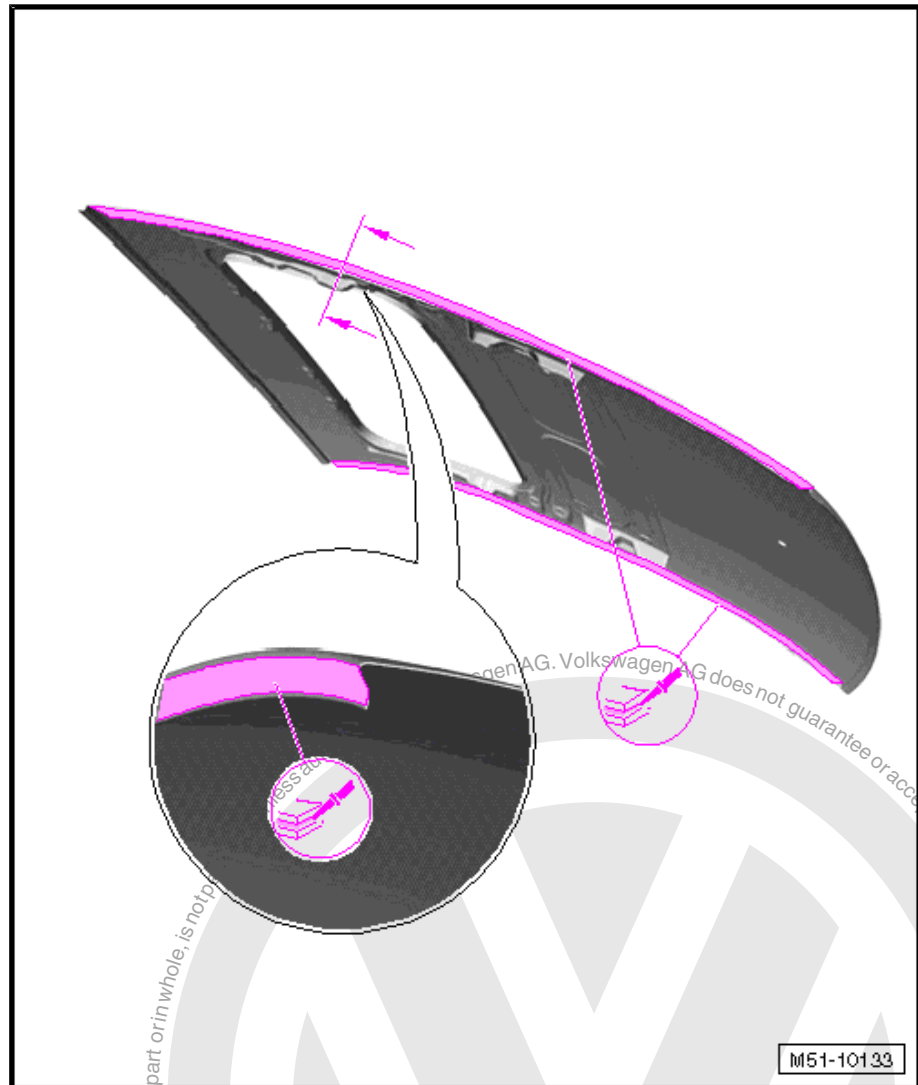
- ◆ *The application time (pot life) of the 2K body adhesive -D 180 KD3 A2- is approx. 90 min.*
- ◆ *Remove excessive 2K body adhesive -D 180 KD3 A2- from bonding areas immediately. Once cured 2K body adhesive -D 180 KD3 A2- can only be removed using mechanical means.*
- ◆ *An assistant is required for the following work.*



- Cut first step of static mixer -D- off to achieve corresponding bead cross-section.
- Carefully operate double cartridge gun -VAS 5237- without static mixer until adhesive is discharged uniformly from both chambers of cartridge connector.
- Screw static mixer onto cartridge connector.
- Apply the first 100 mm of adhesive to a piece of cardboard and only then begin to apply the adhesive to the vehicle.



- Fill area -1- with 2K body adhesive -D 180 KD3 A2- using double cartridge gun -VAS 5237- .



- Coat roof flanges with 2K body adhesive -D 180 KD3 A2- .
- Immediately position and align roof.
- Secure roof at front and rear window apertures using vice-grip pliers and also secure centre of roof using securing belts
=> [page 114](#) .
- Check roof depth dimension and adjust if necessary.
- Remove excessive 2K body adhesive -D 180 KD3 A2- along edge of roof immediately using a cloth soaked in silicone remover -LSE 020 100 A3- .

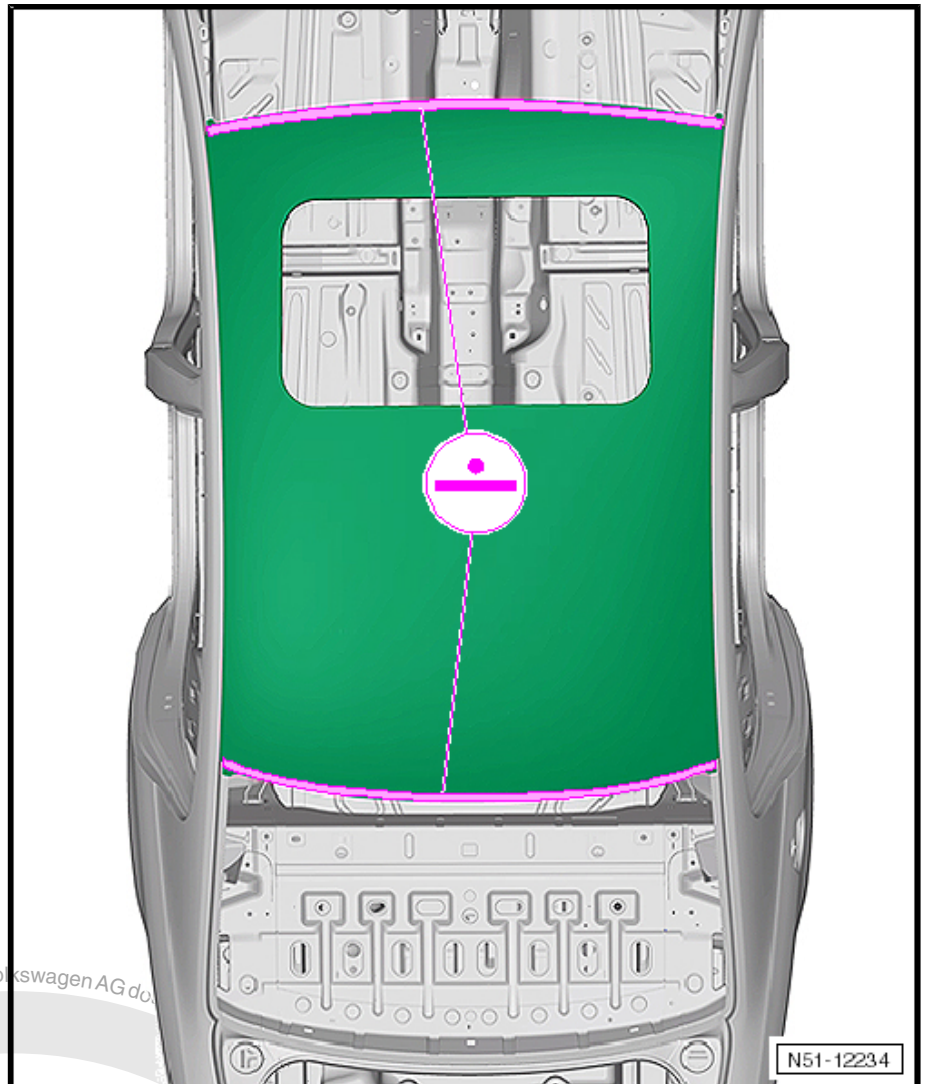


Note

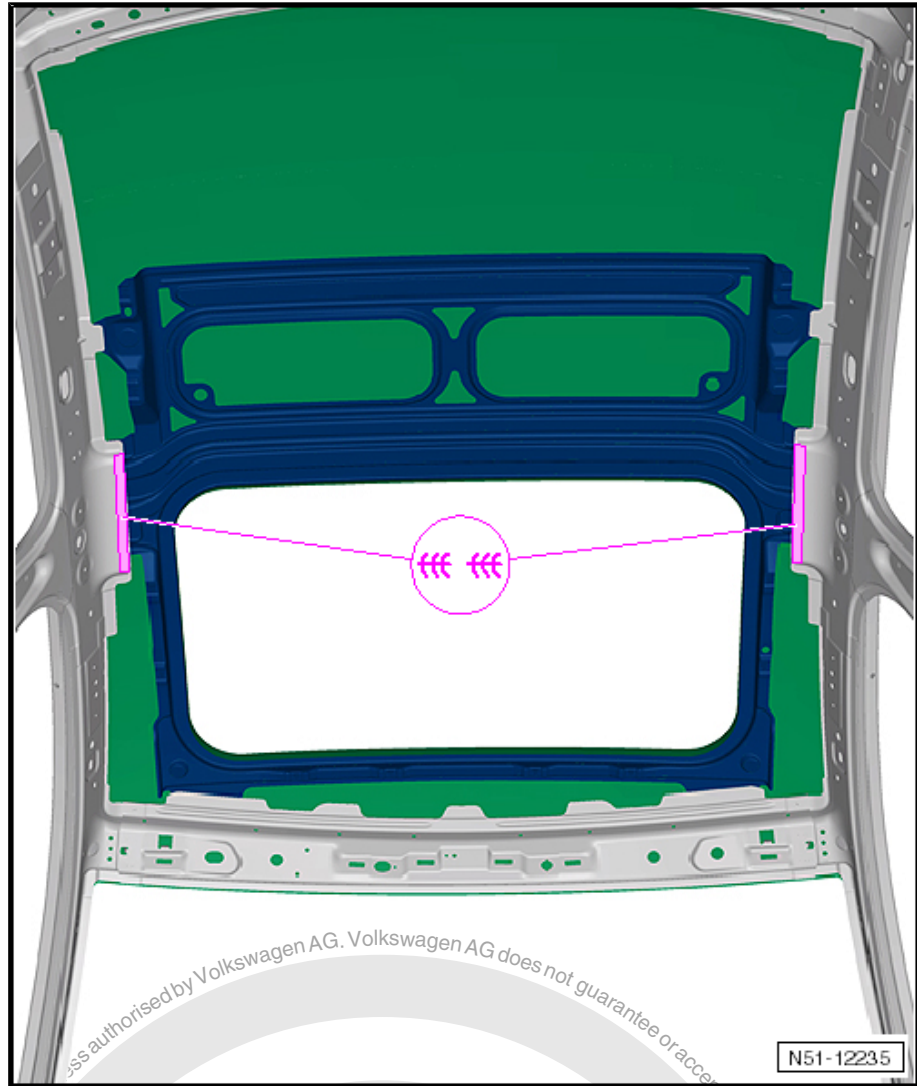
- ◆ *After bonding, vehicle must remain stationary on a level surface for 8-10 hours at room temperature (min. 15 °C) so that adhesive can harden.*
- ◆ *No further work should be performed on the vehicle until the „minimum curing time“ has expired.*



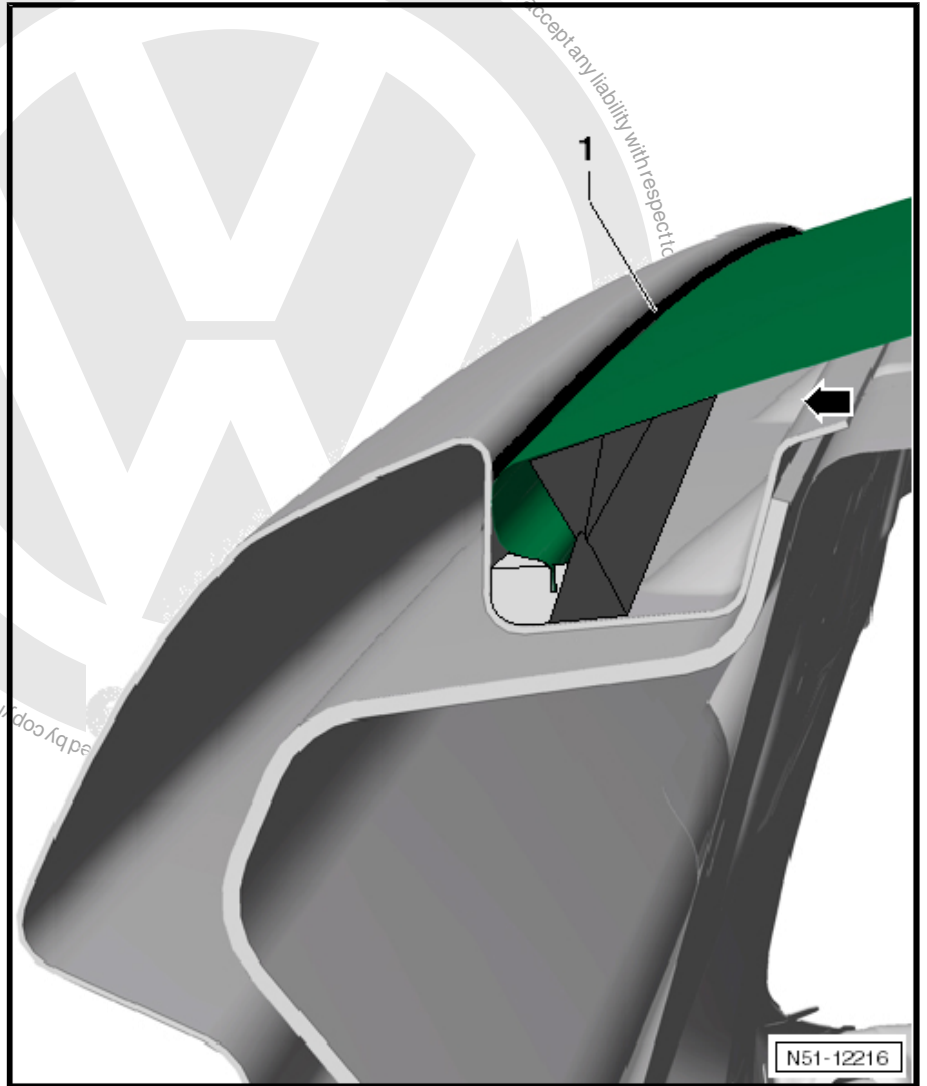
2.3.4 Welding in



- Weld roof in front and rear window apertures, RP spot weld seam.



- Weld reinforcing frame to inside of side panel, SG staggered continuous weld seam.



- Apply adhesive sealant -AKD 476 KD5 05- to seam between roof and roof side member to fully seal bonded seam -1-.
- After painting, preserve roof cavities -arrow- with corrosion-preventive wax -AKR 321 M15 4- .



RO: 51 03 55 10

3 Renewing roof (Variant)

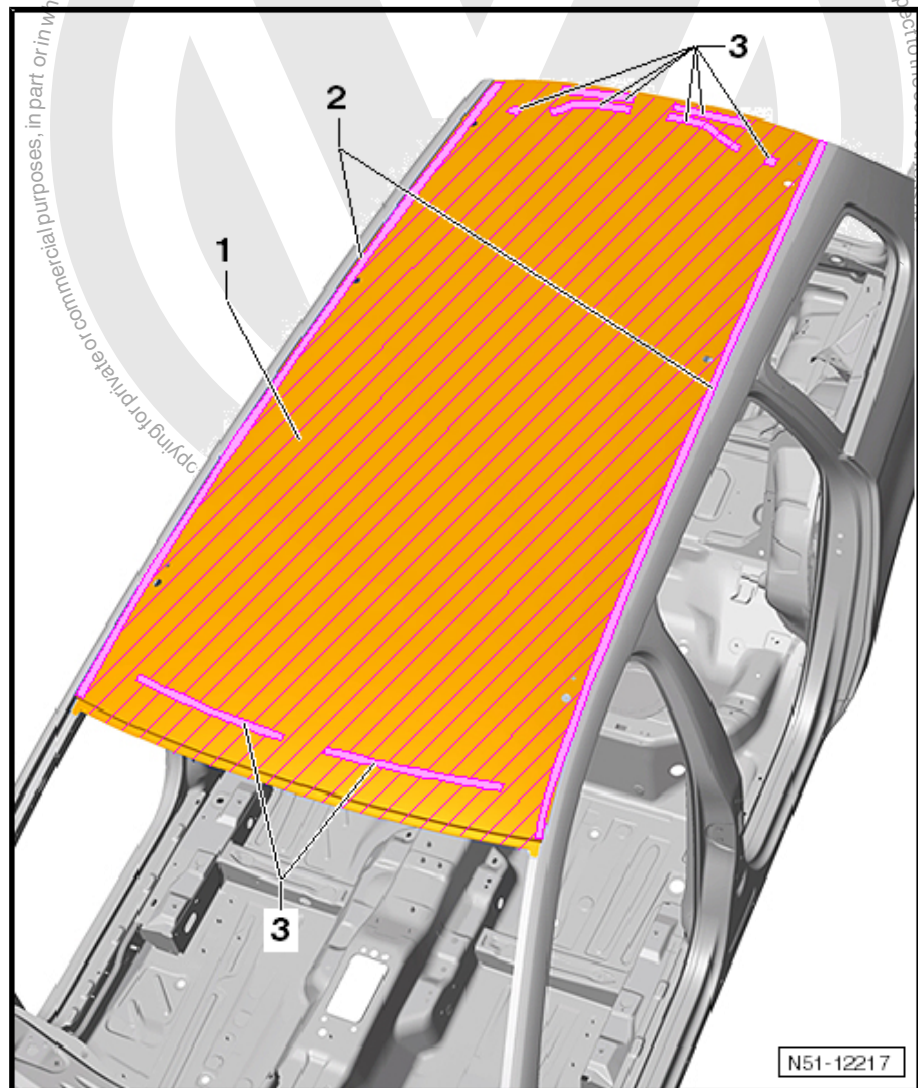


WARNING

Observe safety notes!

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

- 1 - Roof
- 2 - Laser solder seam
- 3 - Bonded areas





3.1 Tools

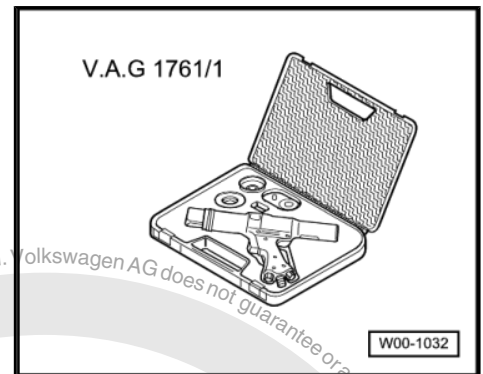


Note

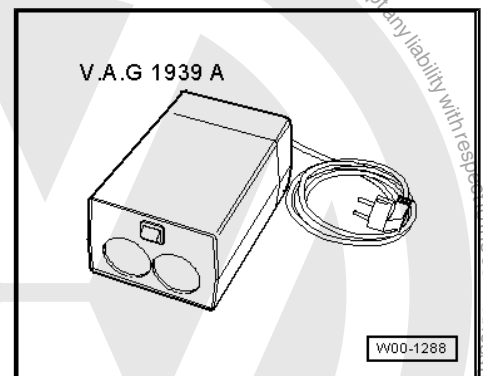
- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paint-work .*

Special tools and workshop equipment required

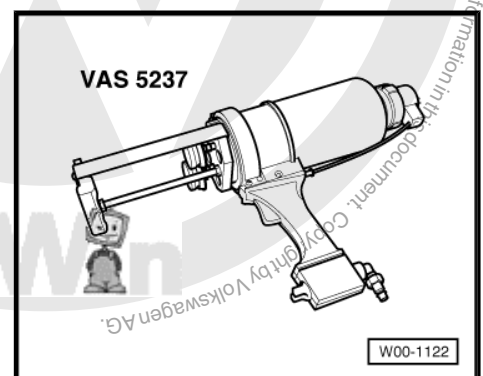
- ◆ Pneumatic cartridge gun -V.A.G 1761/1-



- ◆ Cartridge heater -V.A.G 1939 A-

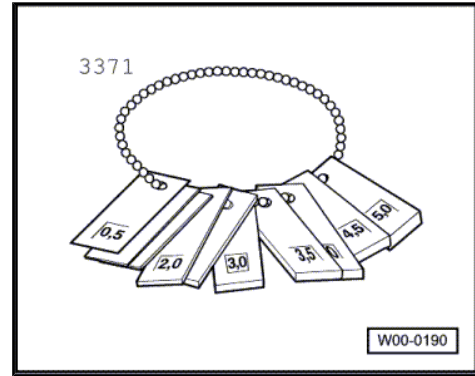


- ◆ Double-cartridge gun -VAS 5237-

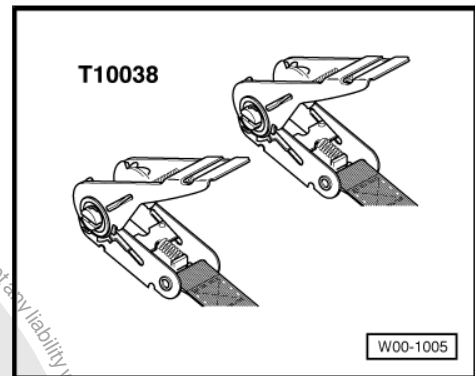




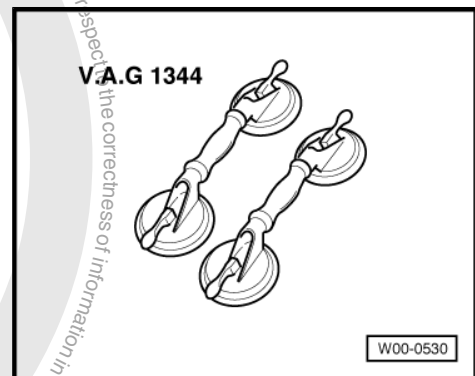
◆ Setting gauge -3371-



◆ Tensioning strap -T10038-



◆ Suction lifter -V.A.G 1344-

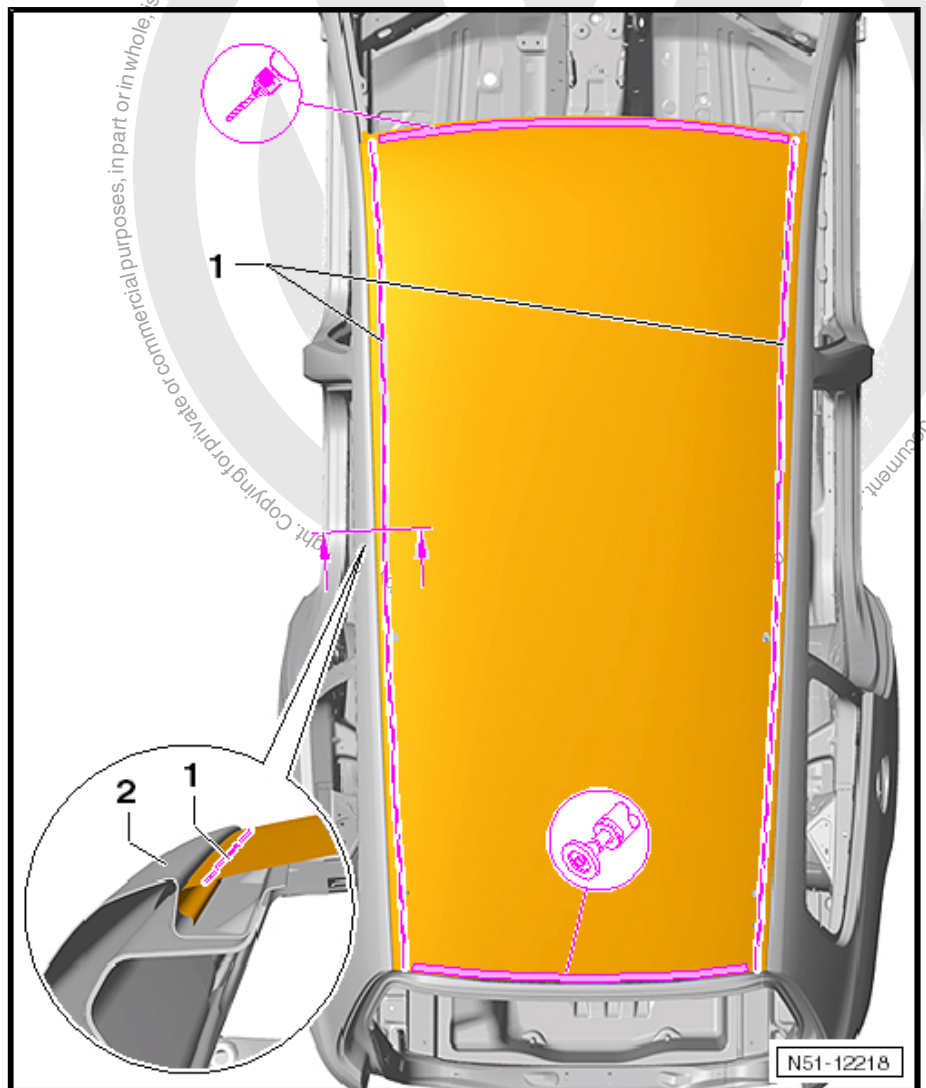




3.2 Removing

Note

- ◆ Apply textile adhesive tape on left and right roof members parallel to laser solder seams. This reduces danger of damage and contamination during repairs.
- ◆ When separating, ensure sufficient distance of to roof member -2- is kept, to assure it is not damaged during repairs.
- ◆ When making parting cuts -1-, ensure that the panels lying behind are not damaged.

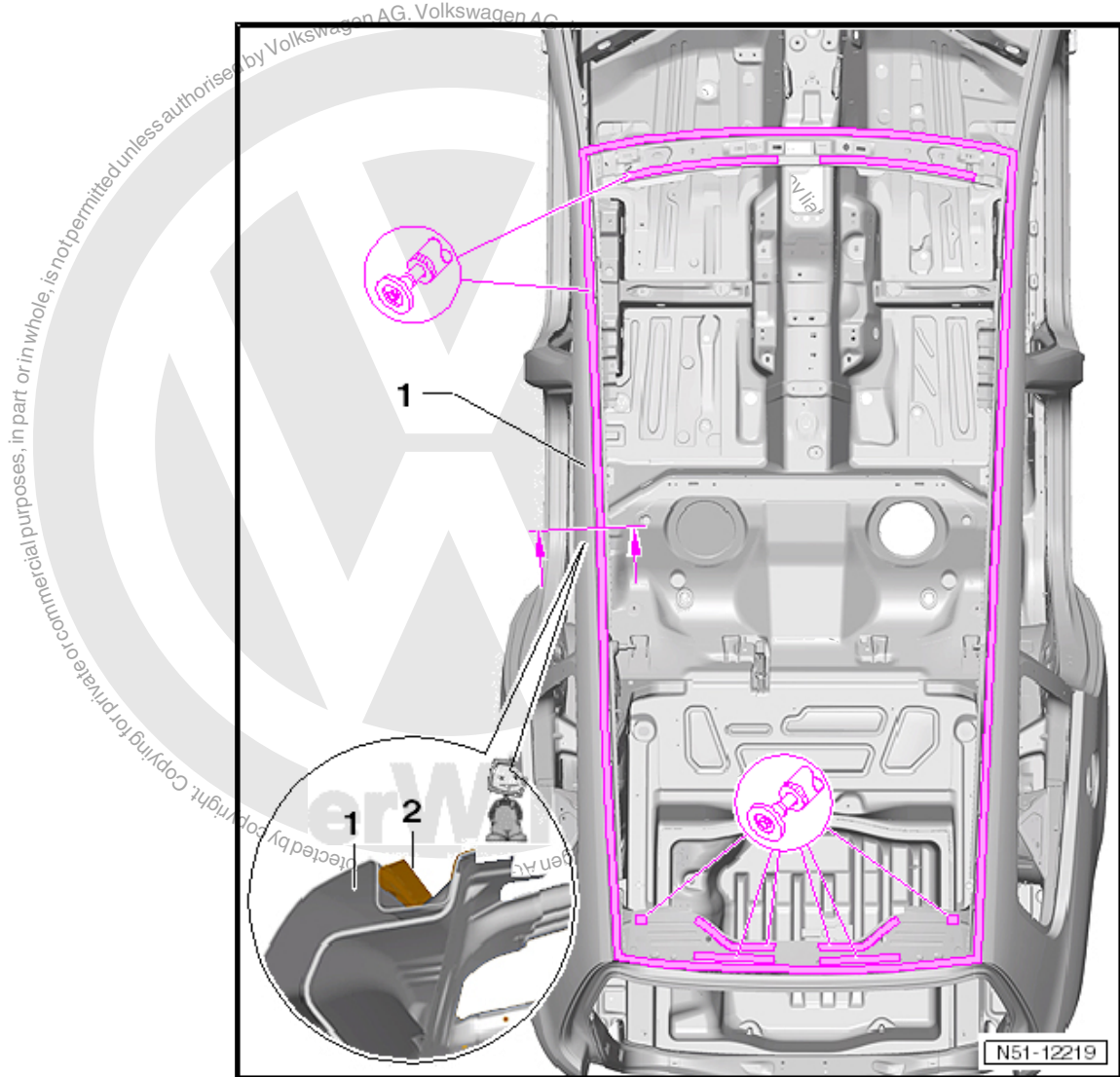


- Separate original joint to front and rear roof cross members.
- From interior, separate bonded joints to front and rear roof cross members.
- Roughly cut roof out parallel to laser solder seams.



Note

- ◆ Roof side member -1- must not be damaged when removing residual remains of roof -2-.
- ◆ Use flap or felt discs only, do not use cutting disks or rough grinding disks.



- Remove remaining material.
- Remove all adhesive and sealant residues from front and rear roof cross members.
- Remove all adhesive residues from left and right roof side members.
- Touch up paint damage in accordance with Paint Workshop Manual.



3.3 Installing

Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 125](#).*

3.3.1 Preparing new part

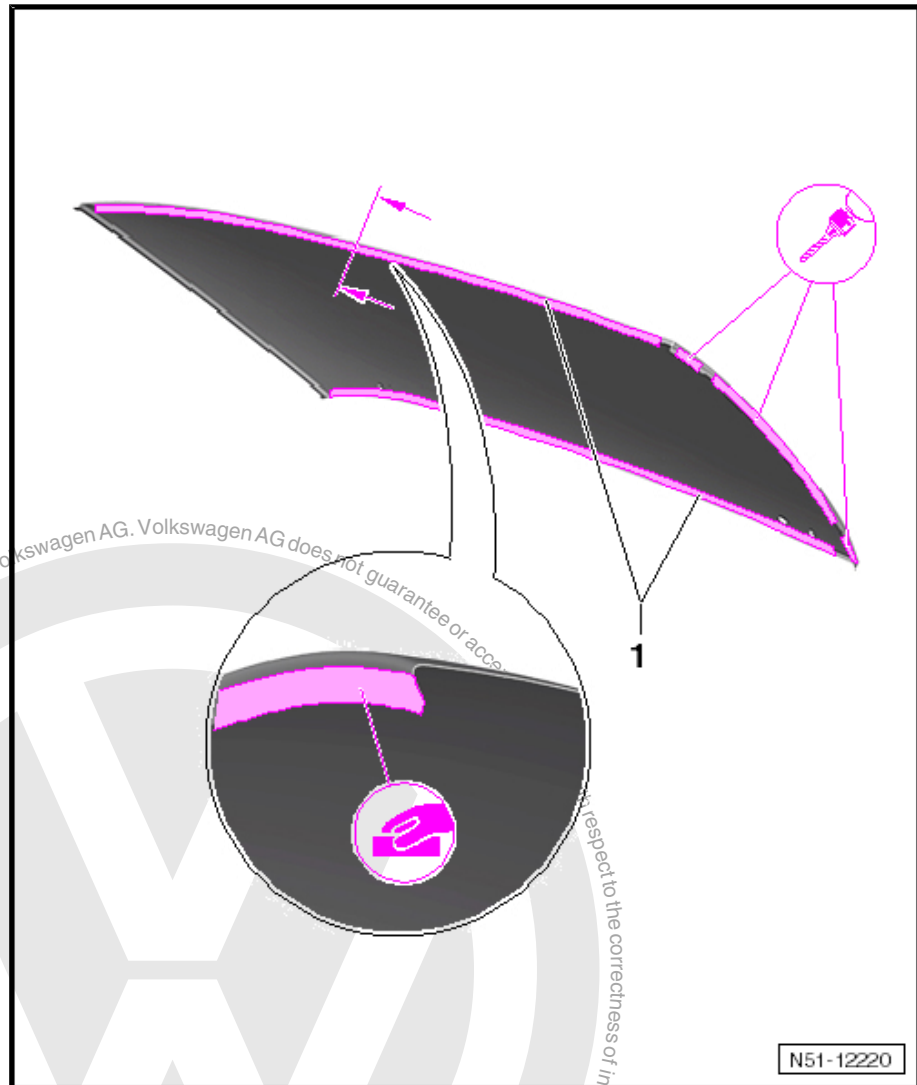
New part

- ◆ Roof
- ◆ 1K assembly adhesive -D 190 MKD A3- (3 cartridges)
- ◆ 2K body adhesive -D 180 KD3 A2- (2 cartridge sets)
- ◆ Adhesive sealant -AKD 476 KD5 05-
- ◆ Cavity sealant -AKR 321 M15 4-
- ◆ Felt -533 867 910 B-

Note

- ◆ *Following working sequence must be adhered to in order to ensure correct and long-lasting roof repairs.*
- ◆ *For this repair, it is absolutely necessary to work with great care to prevent faults during processing.*





- Drill 6 mm \varnothing holes for SG plug weld seam at transition to tailgate aperture.

- Lightly sand down bonding areas -1- on left and right of roof.

This ensures that the 2K body adhesive -D 180 KD3 A2- bonds well with bonding areas.

- 4 suction lifters -V.A.G 1344- are positioned on outer sides of roof.

- Position roof on roof frame.

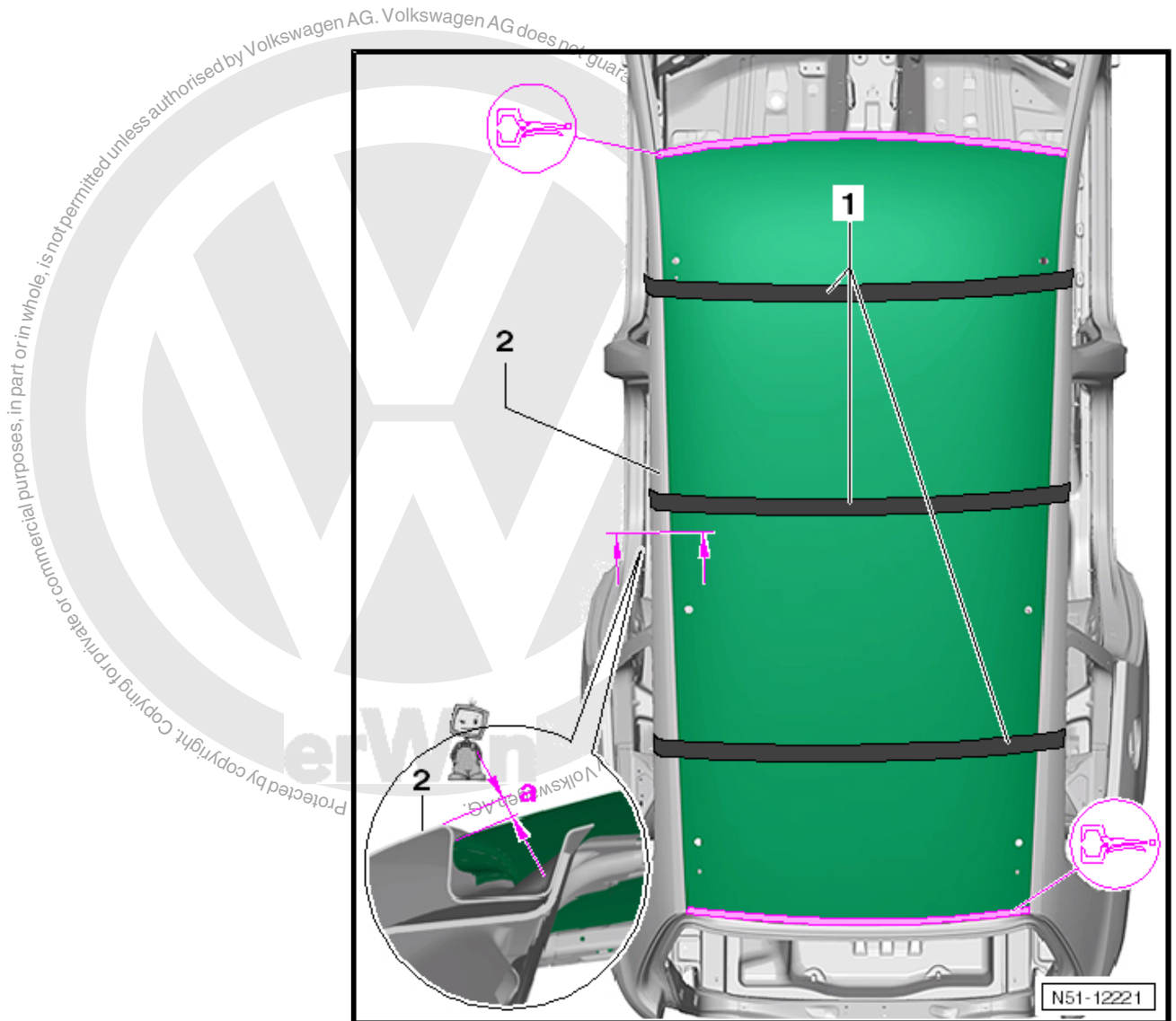
- Check roof fit with windscreen and tailgate.



3.3.2 Adjusting roof depth

Note

- ◆ The securing belts -1- prevent the roof lifting off the roof frame or shifting during the adhesion process.
- ◆ Securing belts must not be tightened too tightly in order to avoid damage.
- ◆ Dimension -a- can be set by tightening and loosening tensioning belts, adjusts position roof relative to side parts/panels.
- ◆ Use setting gauge -3371- to check dimension -a-.



- In areas shown, tension securing belts -T10038- transversely over roof to vary height of roof.
- Secure roof in windscreen aperture and tailgate aperture using vice-grip pliers.
- Check line of roof versus roof side members.
- ◆ Dimension -a- = 4.0 ± 0.5 mm
- If necessary for compensation purposes, place pieces of felt -533 867 910 B- on roof frame.



3.3.3 Bonding roof

- Remove roof.
- Apply corrosion protection measures according to guidelines in => Paint workshop manual: Corrosion and corrosion protection, attached and welded parts, materials.
- Lightly sand down bonding areas on left and right roof side members.
- Clean adhesive surfaces on roof and vehicle with silicone remover -LSE 020 100 A3- .



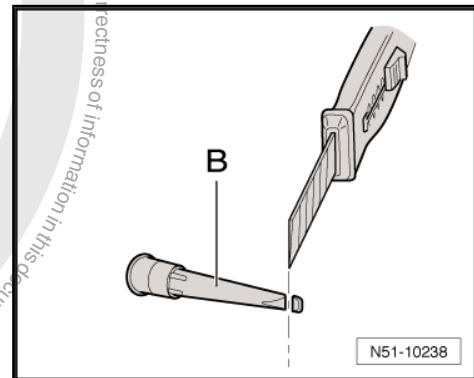
Note

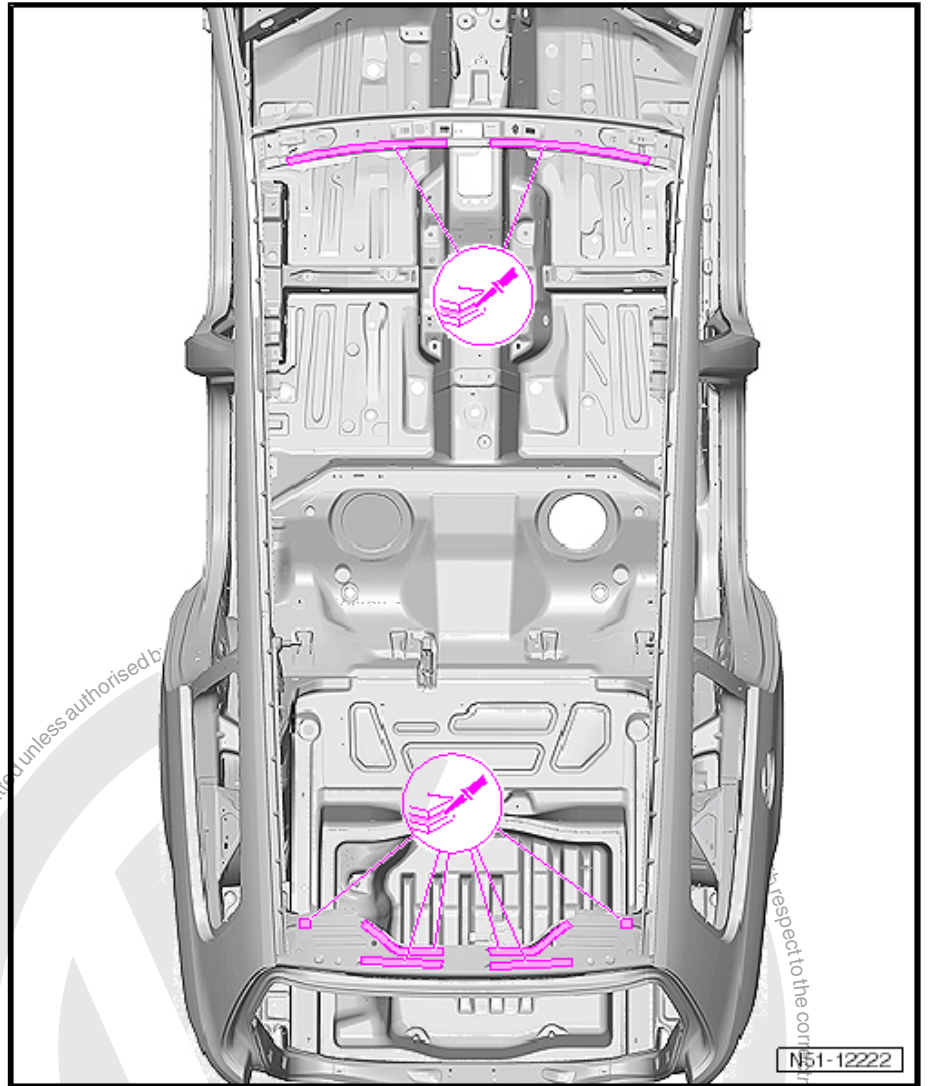
- ◆ *The adhesive must be applied very quickly.*
- ◆ *Always observe the application time (pot life).*
- ◆ *Use pneumatic or electric cartridge guns to apply adhesive.*
- Cut approx. 2 mm off nozzle -B- to provide appropriate bead geometry.



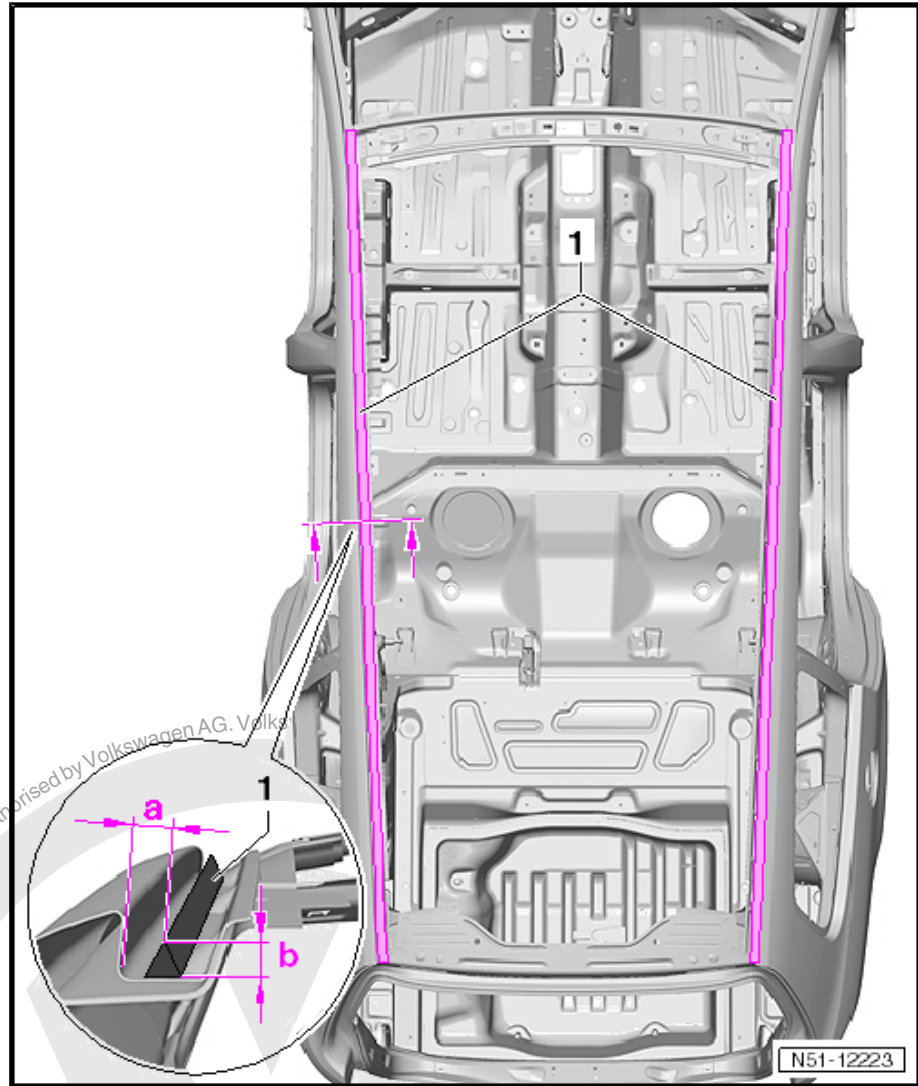
Note

For this repair, it is absolutely necessary to work with great care to prevent faults during processing.

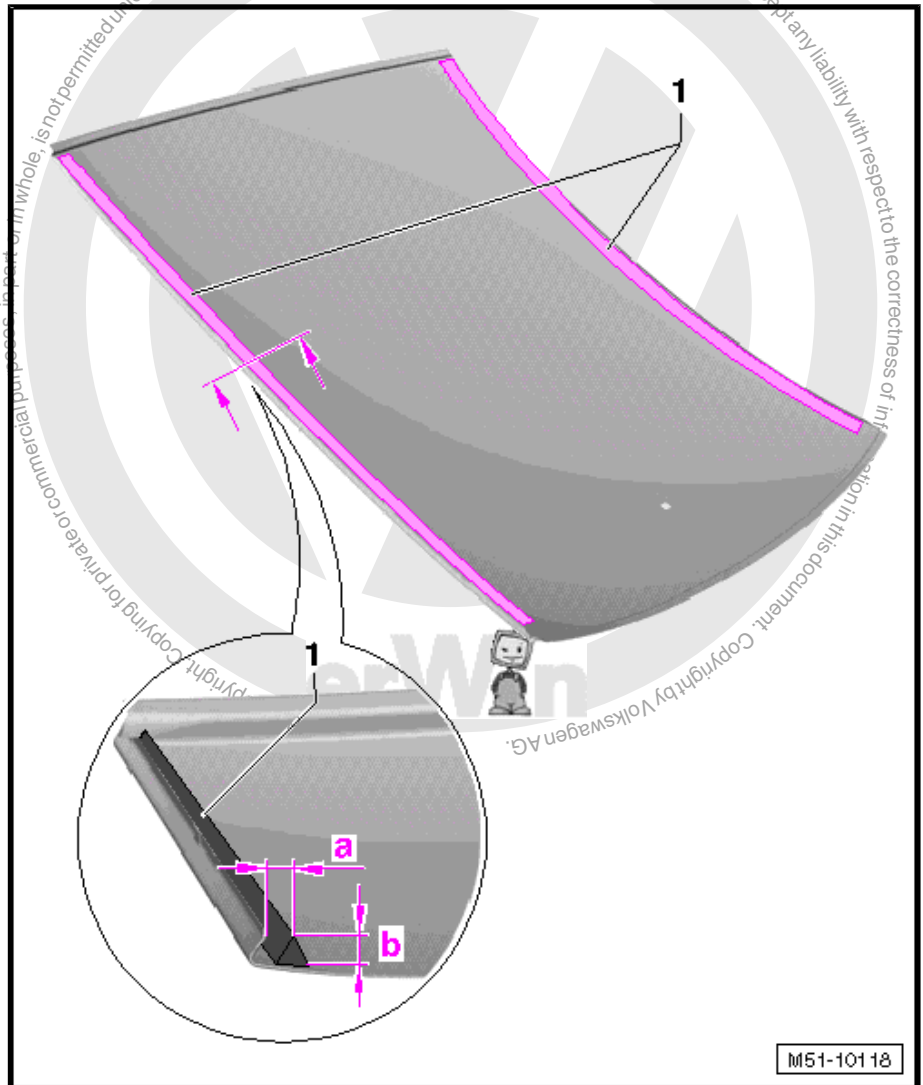




- Apply 1K assembly adhesive -D 190 MKD A3- to roof cross member in area of the factory-fitted bonds using compressed air gun -V.A.G 1761/1-



- In area of roof side member, apply 1K assembly adhesive -D 190 MKD A38-1- using pneumatic cartridge gun - V.A.G 1761/1 .
- ◆ Dimension -a- = approx. 12 mm
- ◆ Dimension -b- = approx. 9 mm



– Apply 1K assembly adhesive -D 190 MKD A3- on inner side of roof parallel to left and right roof flange with pneumatic cartridge gun -V.A.G 1761/1- .

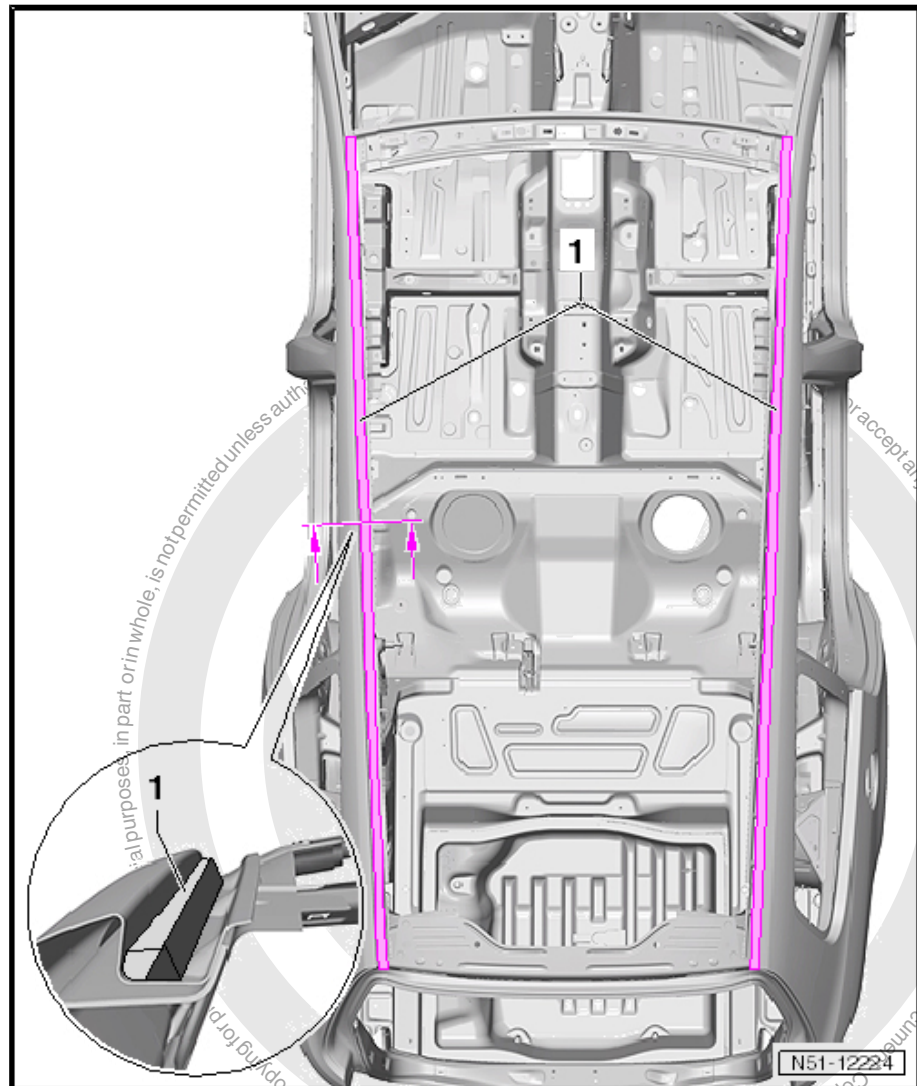
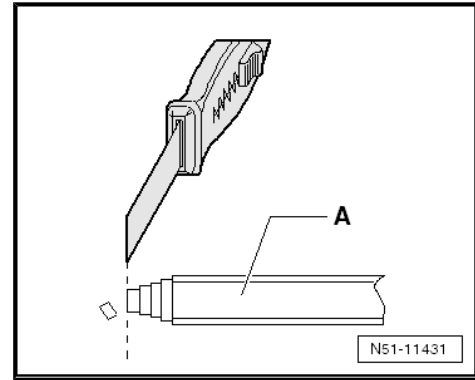
- ◆ Dimension -a- = approx. 4 mm
- ◆ Dimension -b- = approx. 9 mm

i Note

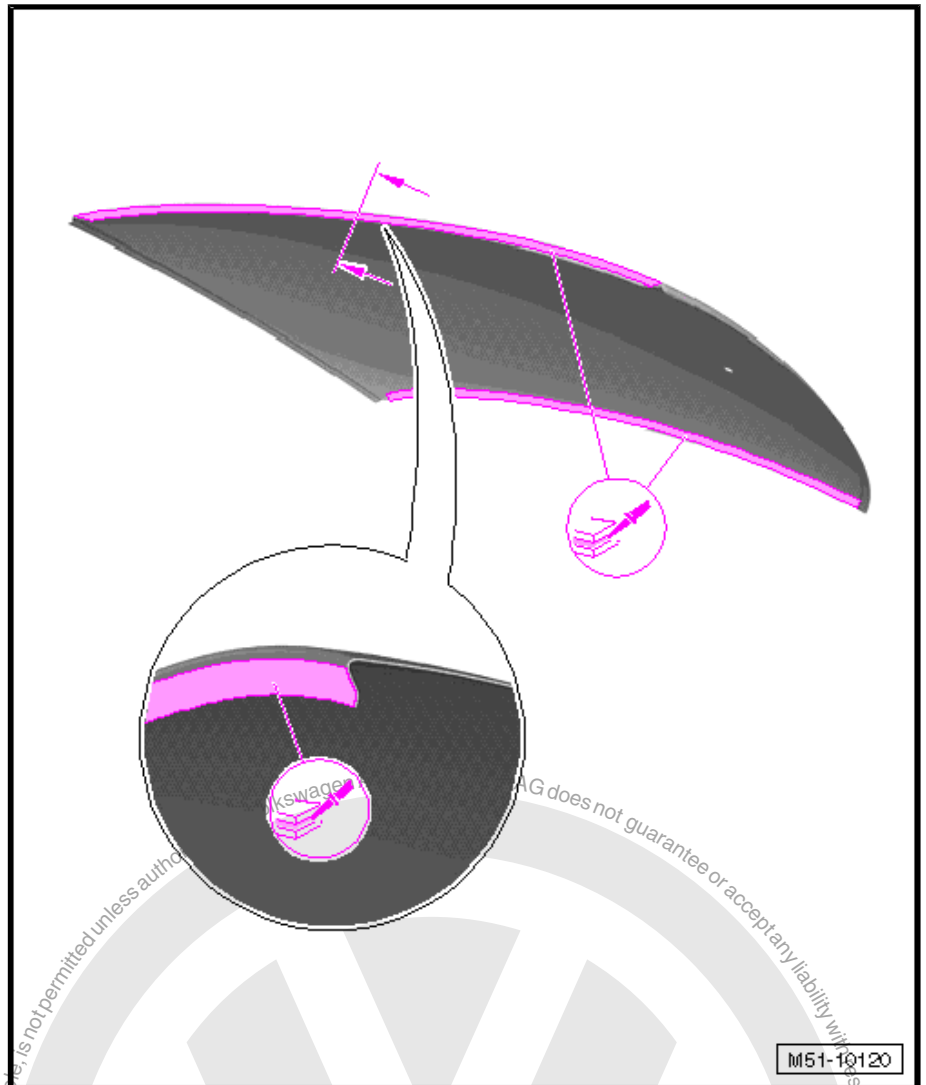
- ◆ *The application time (pot life) of the 2K body adhesive -D 180 KD3 A2- is approx. 90 min.*
- ◆ *Remove excessive 2K body adhesive -D 180 KD3 A2- from bonding areas immediately. Once cured 2K body adhesive -D 180 KD3 A2- can only be removed using mechanical means.*
- ◆ *An assistant is required for the following work.*



- Cut first step of static mixer -D- off to achieve corresponding bead cross-section.
- Carefully operate double cartridge gun -VAS 5237- without static mixer until adhesive is discharged uniformly from both chambers of cartridge connector.
- Screw static mixer onto cartridge connector.
- Apply the first 100 mm of adhesive to a piece of cardboard and only then begin to apply the adhesive to the vehicle.



- Fill area -1- with 2K body adhesive -D 180 KD3 A2- using double cartridge gun -VAS 5237- .



- Coat roof flanges with 2K body adhesive -D 180 KD3 A2- .
- Immediately position and align roof.
- Secure roof in area of windscreen aperture and tailgate aperture using vice-grip pliers and secure centre of roof using securing belts ⇒ [page 131](#)
- Check roof depth dimension and adjust if necessary.
- Remove excessive 2K body adhesive -D 180 KD3 A2- along edge of roof immediately using a cloth soaked in silicone remover -LSE 020 100 A3- .

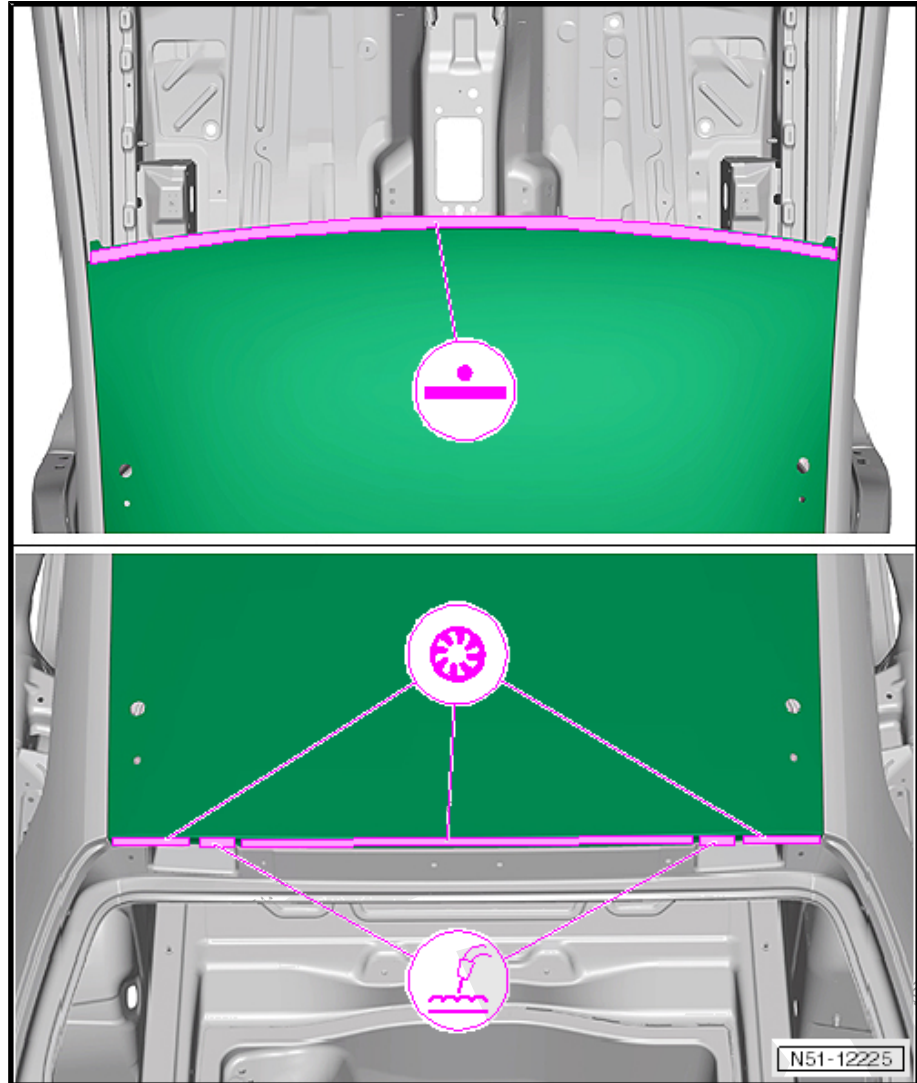


Note

- ◆ After bonding, vehicle must remain stationary on a level surface for 8-10 hours at room temperature (min. 15°C) so that adhesive can harden.
- ◆ No further work should be performed on the vehicle until the „minimum curing time“ has expired.



3.3.4 Welding in

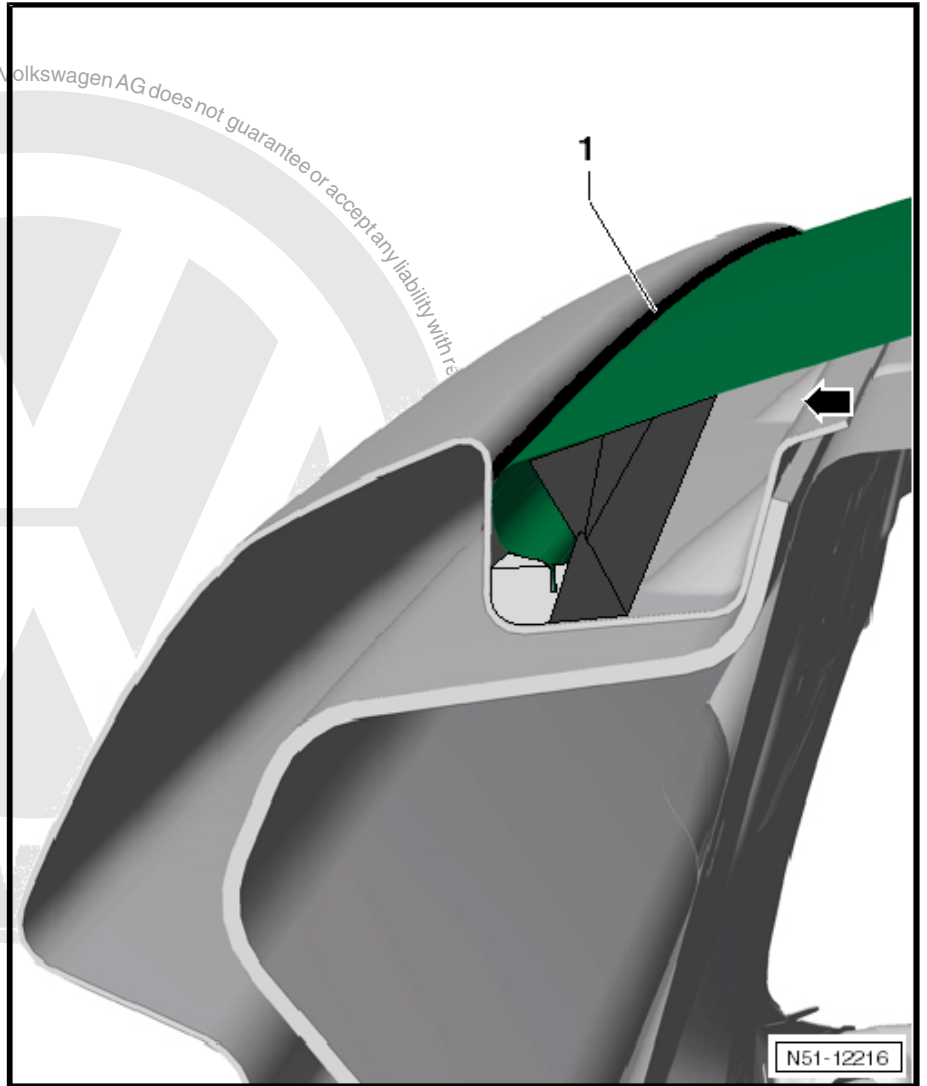


- Weld roof in windscreen aperture, RP spot weld seam.
- Weld roof in tailgate aperture, SG plug weld seam and MIG solder seam.

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- Apply adhesive sealant -AKD 476 KD5 05- to seam between roof and roof side member to fully seal bonded seam -1-.
- After painting, preserve roof cavities -arrow- with corrosion-preventive wax -AKR 321 M15 4- .



RO: 51 03 55 13

4 Renewing roof - Variant with panorama sliding sunroof



WARNING

Observe safety notes!

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

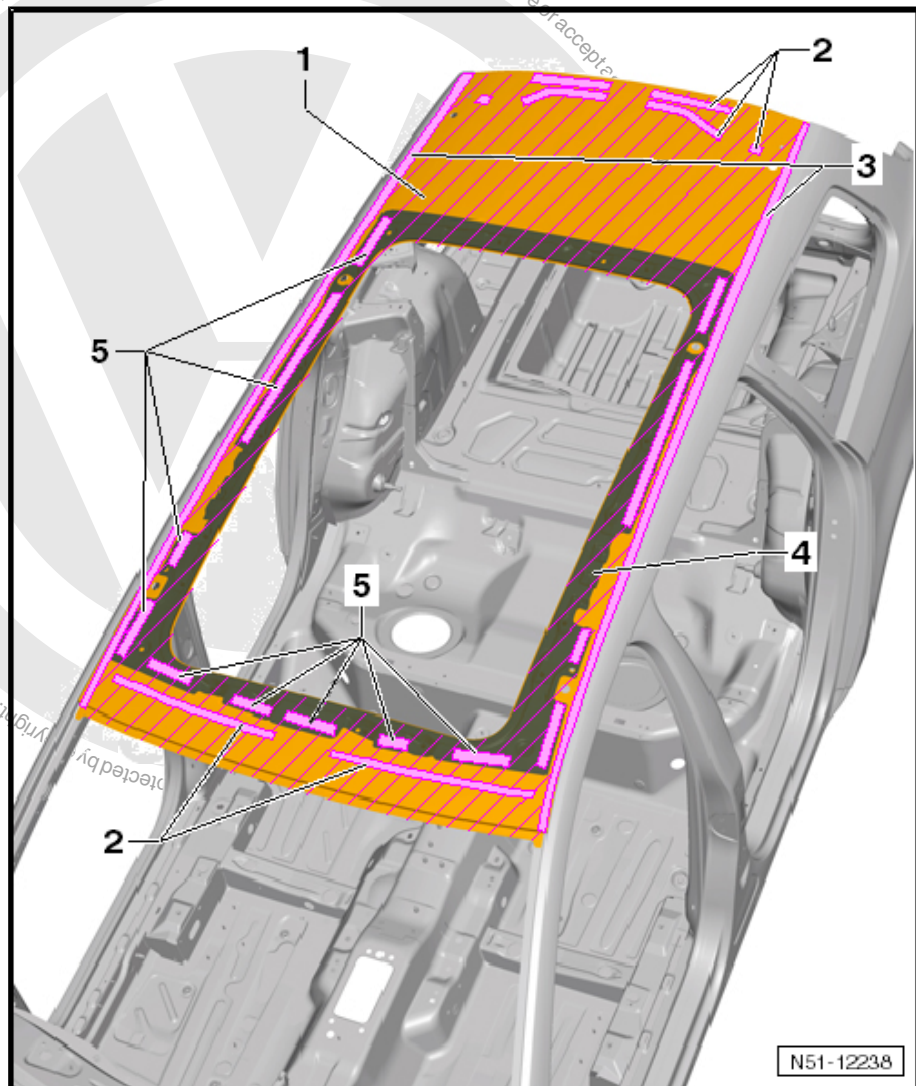
1 - Roof

2 - Bonded areas (roof cross member)

3 - Laser solder seam

4 - Reinforcing frame (panorama sliding sunroof)

5 - Bonded areas (reinforcing frame)





4.1 Tools

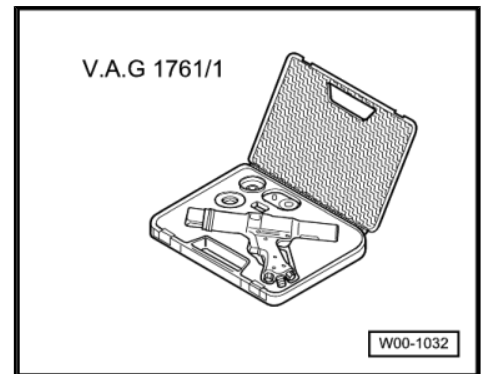


Note

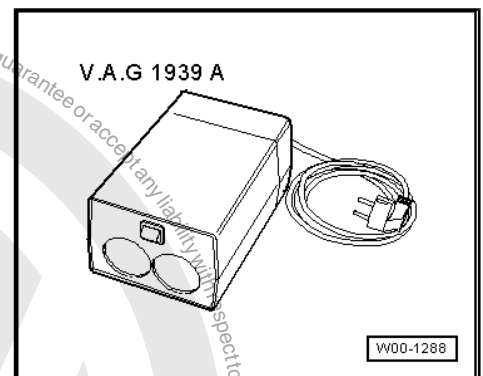
- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paint-work .*

Special tools and workshop equipment required

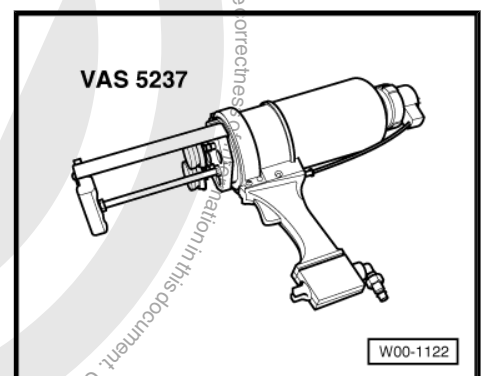
- ◆ Pneumatic cartridge gun -V.A.G 1761/1-



- ◆ Cartridge heater -V.A.G 1939 A-

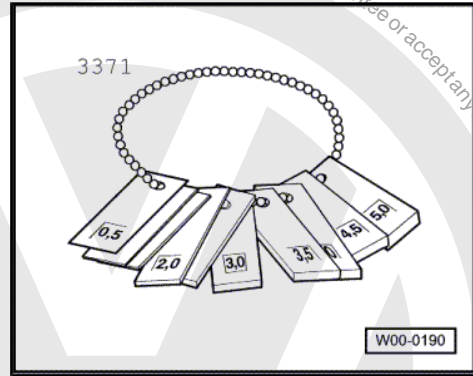


- ◆ Double-cartridge gun -VAS 5237-

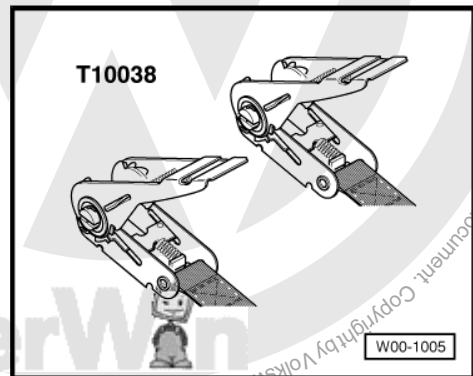




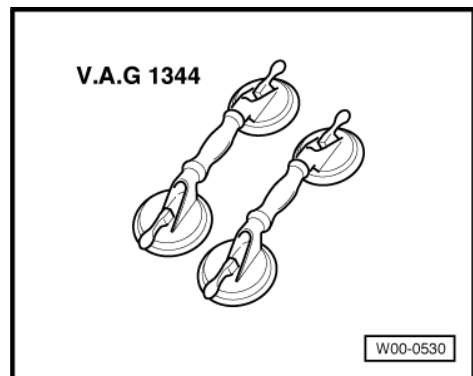
◆ Setting gauge -3371-



◆ Tensioning strap -T10038-



◆ Suction lifter -V.A.G 1344-

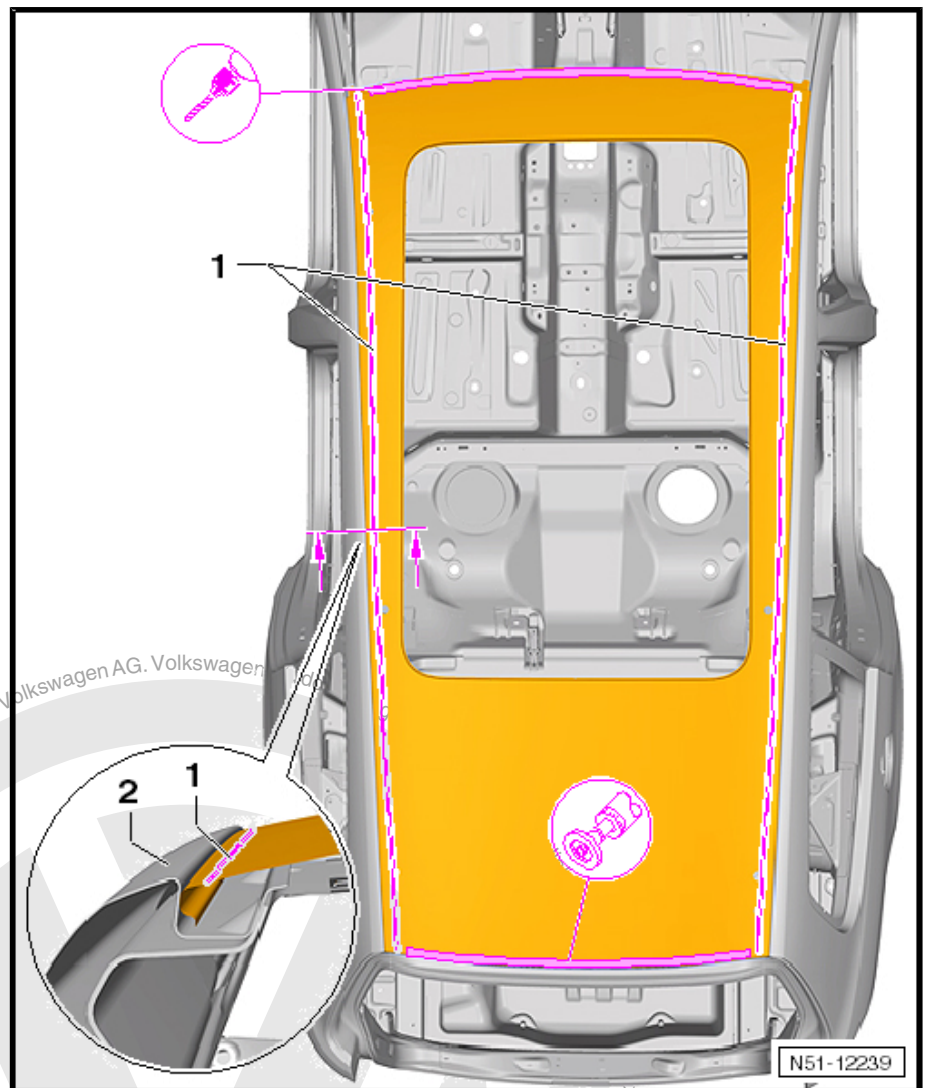




4.2 Removing

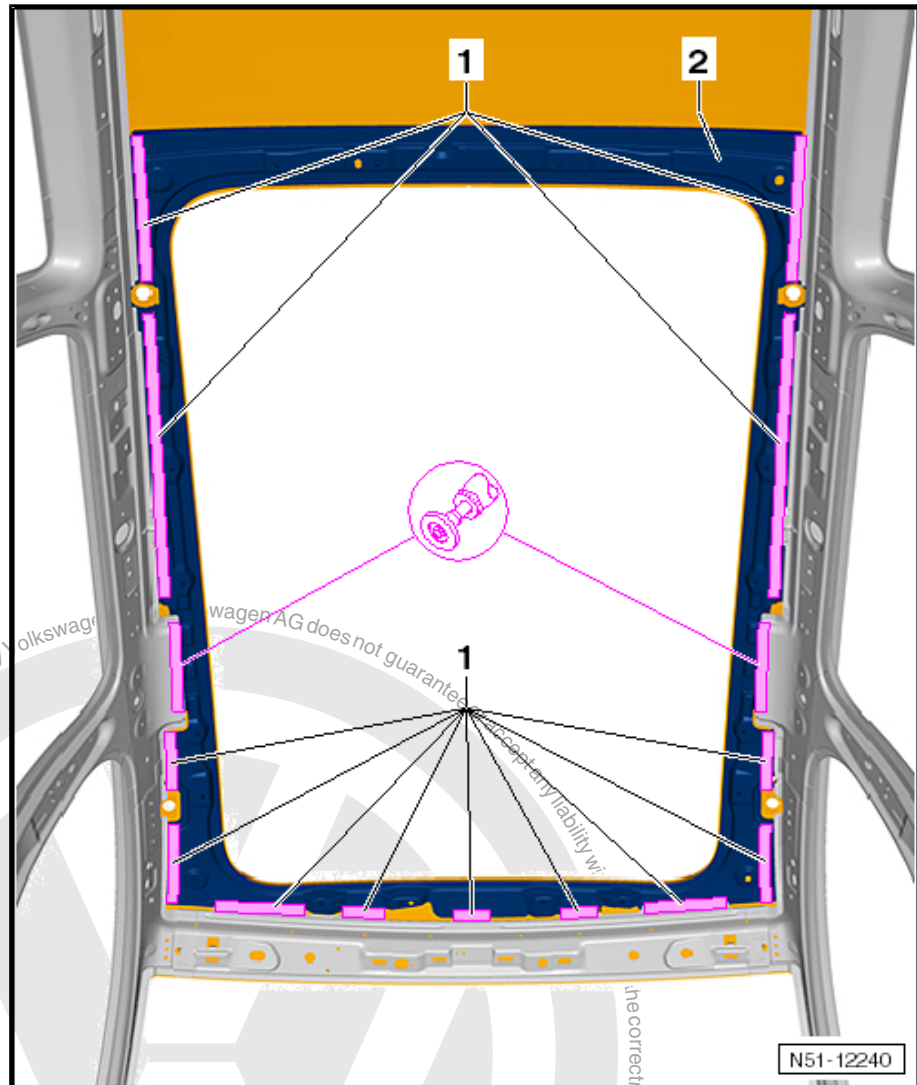
Note

- ◆ Apply textile adhesive tape on left and right roof members parallel to laser solder seams. This reduces danger of damage and contamination during repairs.
- ◆ When separating, ensure sufficient distance of to roof member -2- is kept, to assure it is not damaged during repairs.
- ◆ When making parting cuts -1-, ensure that the panels lying behind are not damaged.



- Separate original joint to front and rear roof cross members.
- Separate bonded joints to front and rear roof cross members.
- Roughly cut roof out parallel to laser solder seams.



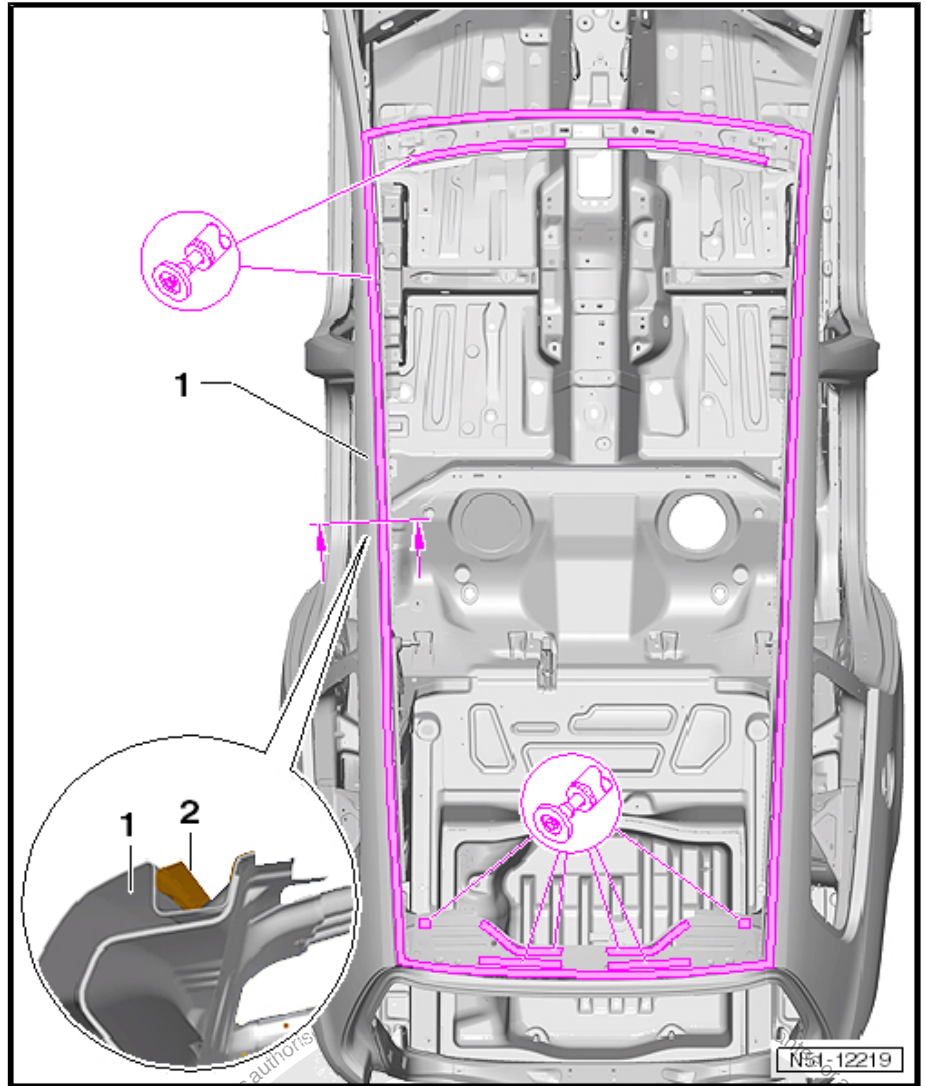


- Release bonded joints -1- from reinforcing frame -2-.
- Separate original joint to inner side panel on left and right.



Note

- ◆ *Roof side member -1- must not be damaged when removing residual remains of roof -2-.*
- ◆ *Use flap or felt discs only, do not use cutting disks or rough grinding disks.*



- Remove remaining material.
- Remove all adhesive and sealant residues from front and rear roof cross members.
- Remove all adhesive residues from left and right roof side members.
- Touch up paint damage in accordance with Paint Workshop Manual.

4.3 Installing



Note

Only welding units authorised by Volkswagen AG may be used
⇒ [page 141](#).

4.3.1 Preparing new part

New part

- ◆ Roof
- ◆ 1K assembly adhesive -D 190 MKD A3- (3 cartridges)

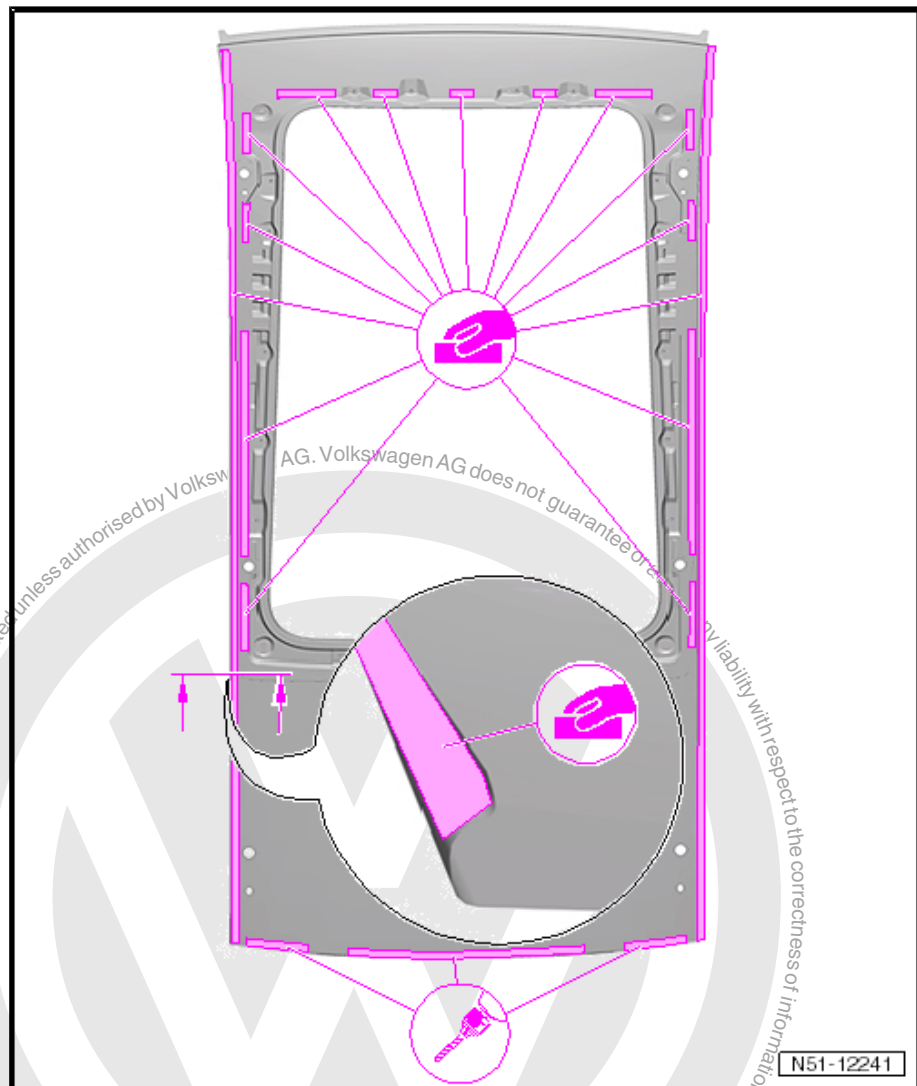


- ◆ 2K body adhesive -D 180 KD3 A2- (2 cartridge sets)
- ◆ Adhesive sealant -AKD 476 KD5 05-
- ◆ Cavity sealant -AKR 321 M15 4-
- ◆ Felt -533 867 910 B-



Note

- ◆ *Following working sequence must be adhered to in order to ensure correct and long-lasting roof repairs.*
- ◆ *For this repair, it is absolutely necessary to work with great care to prevent faults during processing.*



- Drill 8 mm \varnothing holes for SG plug weld seam at transition to tail-gate aperture.
- Lightly sand down bonding areas on left and right of roof and on reinforcing frame.

This ensures that the 2K body adhesive -D 180 KD3 A2- bonds well with bonding areas.



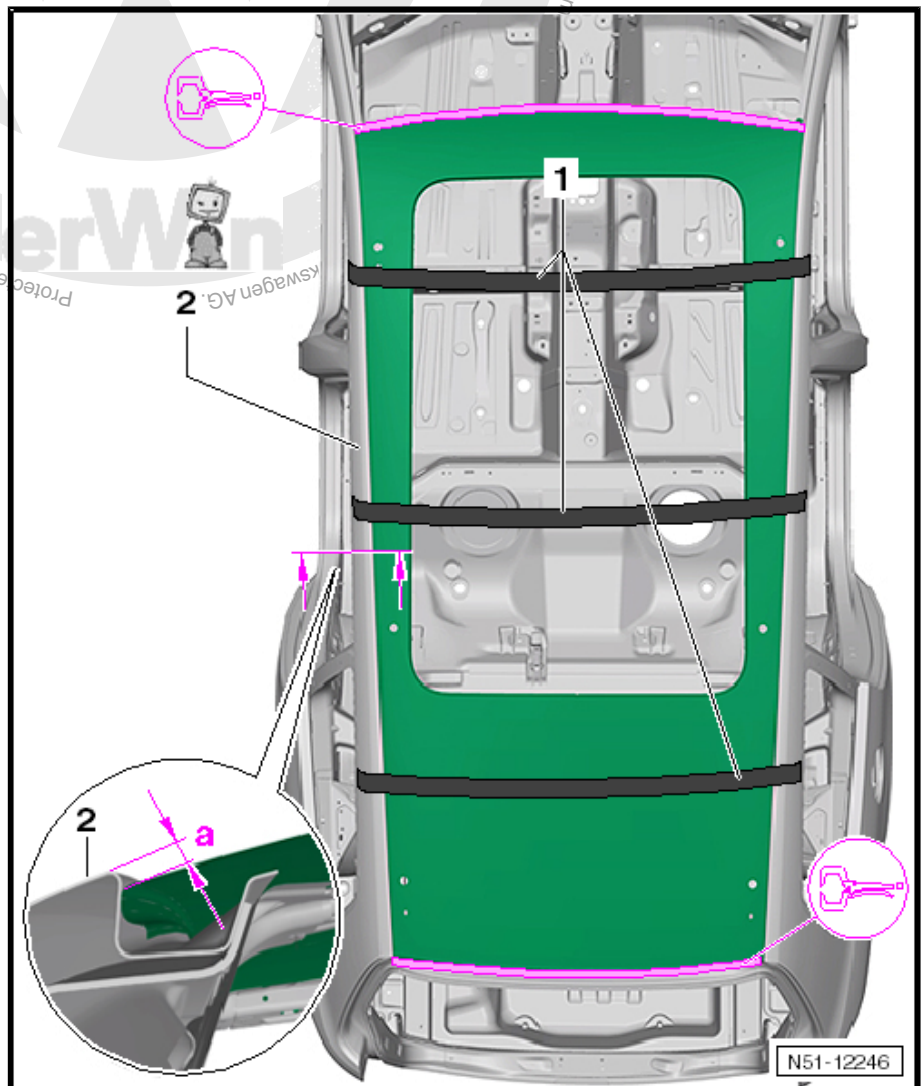
- 4 suction lifters -V.A.G 1344- are positioned on outer sides of roof.
- Position roof on roof frame.
- Check roof fit with windscreen and tailgate.

4.3.2 Adjusting roof depth



Note

- ◆ The securing belts -1- prevent the roof lifting off the roof frame or shifting during the adhesion process.
- ◆ Securing belts must not be tightened too tightly in order to avoid damage.
- ◆ Dimension -a- can be set by tightening and loosening tensioning belts, adjusts position roof relative to side parts/panels.
- ◆ Use setting gauge -3371- to check dimension -a-.



- In areas shown, tension securing belts -T10038- transversely over roof to vary height of roof.
- Secure roof in windscreen aperture and tailgate aperture using vice-grip pliers.



- Check line of roof versus roof side members.
- ◆ Dimension -a- = 4.0 ± 0.5 mm
- If necessary for compensation purposes, place pieces of felt -533 867 910 B- on roof frame.

4.3.3 Bonding roof

- Remove roof.
- Apply corrosion protection measures according to guidelines in \Rightarrow Paint workshop manual: Corrosion and corrosion protection, attached and welded parts, materials .
- Lightly sand down bonding areas on left and right roof side members.
- Clean adhesive surfaces on roof and vehicle with silicone remover -LSE 020 100 A3- .



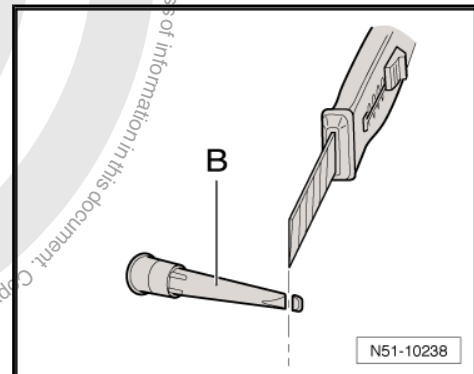
Note

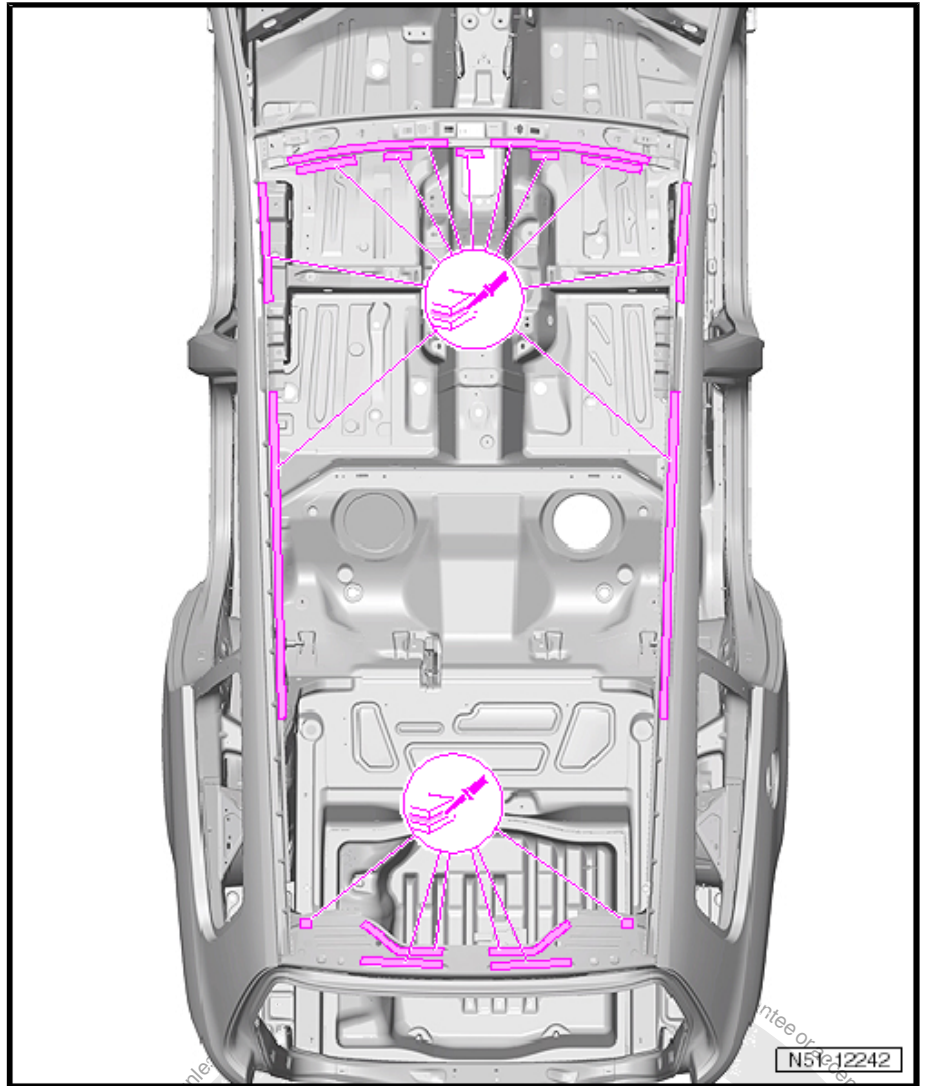
- ◆ *The adhesive must be applied very quickly.*
- ◆ *Always observe the application time (pot life).*
- ◆ *Use pneumatic or electric cartridge guns to apply adhesive.*
- Cut approx. 2 mm off nozzle -B- to provide appropriate bead geometry.



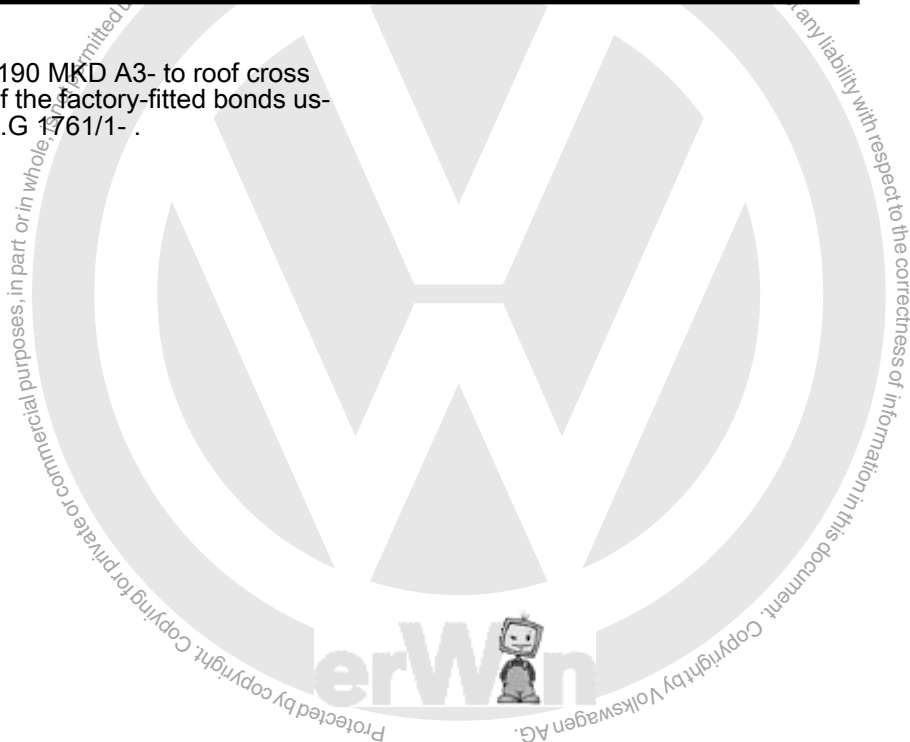
Note

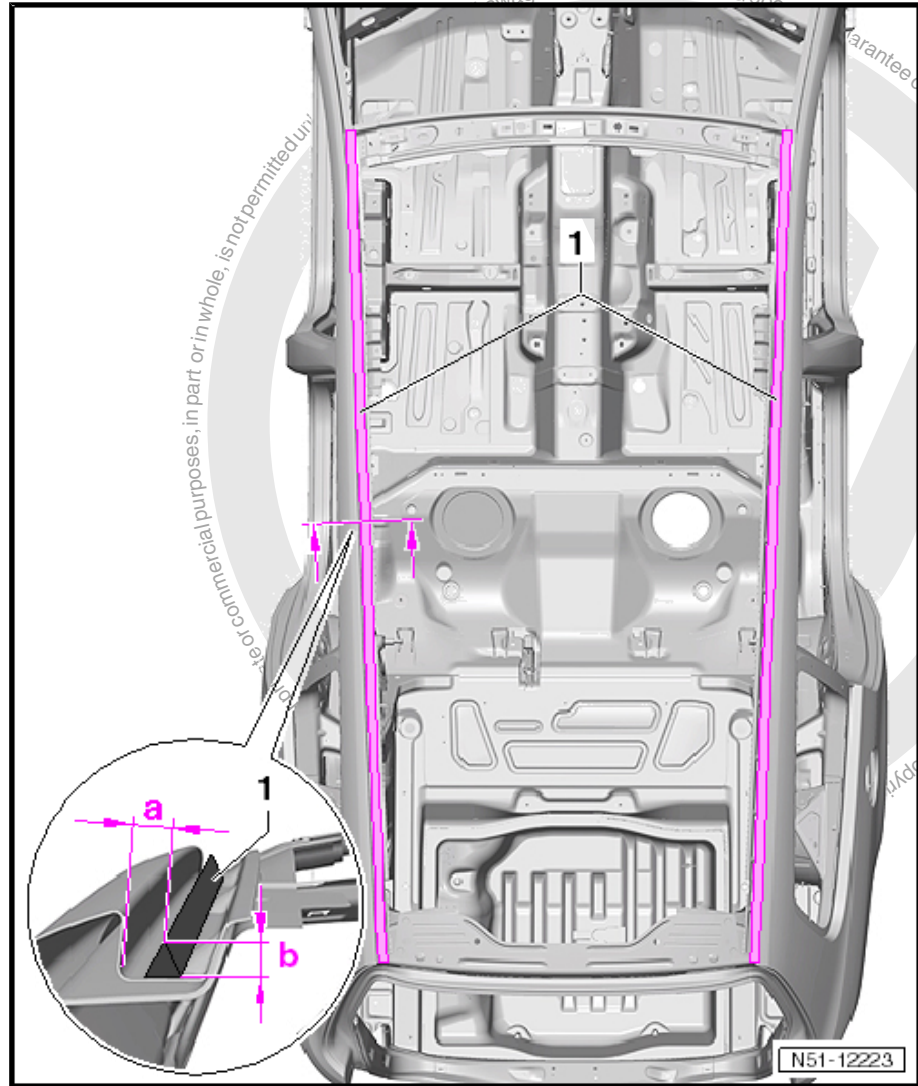
For this repair, it is absolutely necessary to work with great care to prevent faults during processing.



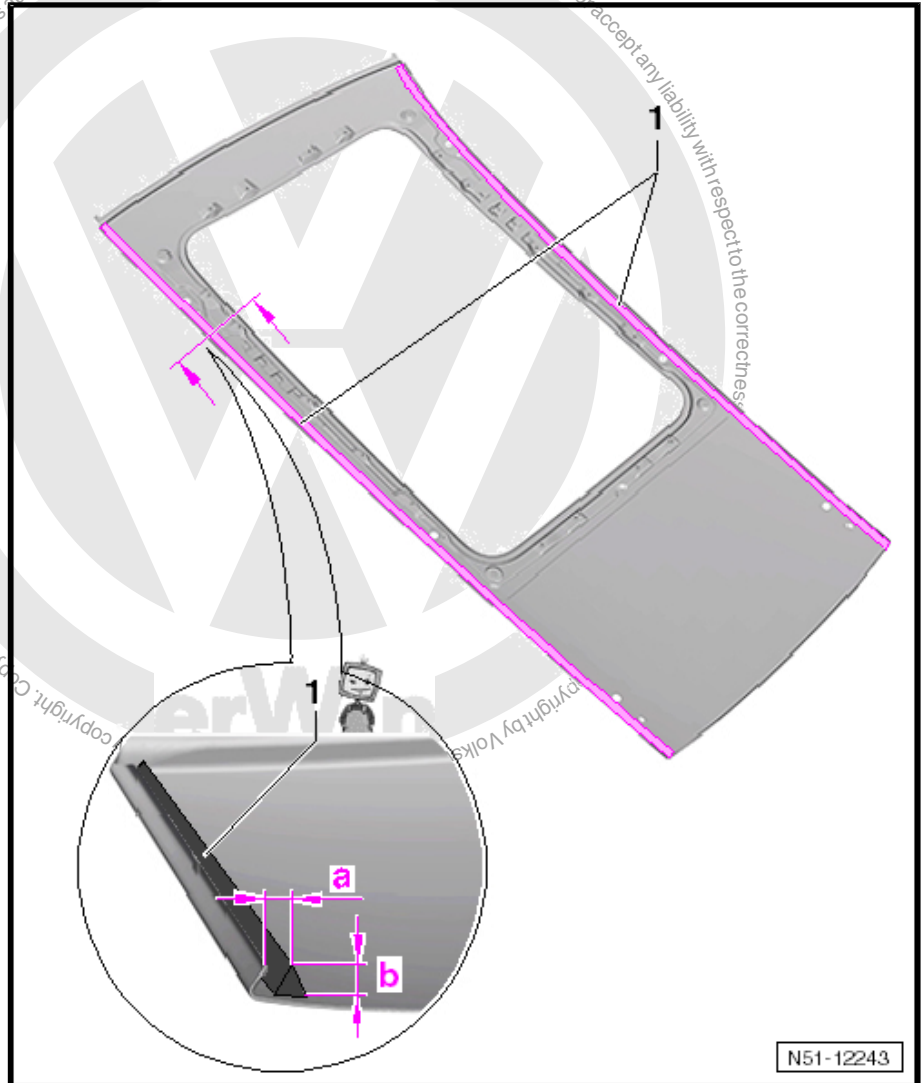


- Apply 1K assembly adhesive -D 190 MKD A3- to roof cross member and roof frame in area of the factory-fitted bonds using pneumatic cartridge gun -V.A.G 1761/1- .





- In area of roof side member, apply 1K assembly adhesive -D 190 MKD A3- -1- using pneumatic cartridge gun - V.A.G 1761/1- .
- ◆ Dimension -a- = approx. 12 mm
- ◆ Dimension -b- = approx. 9 mm



– Apply 1K assembly adhesive -D 190 MKD A3- on inner side of roof parallel to left and right roof flange with pneumatic cartridge gun -V.A.G 1761/1- .

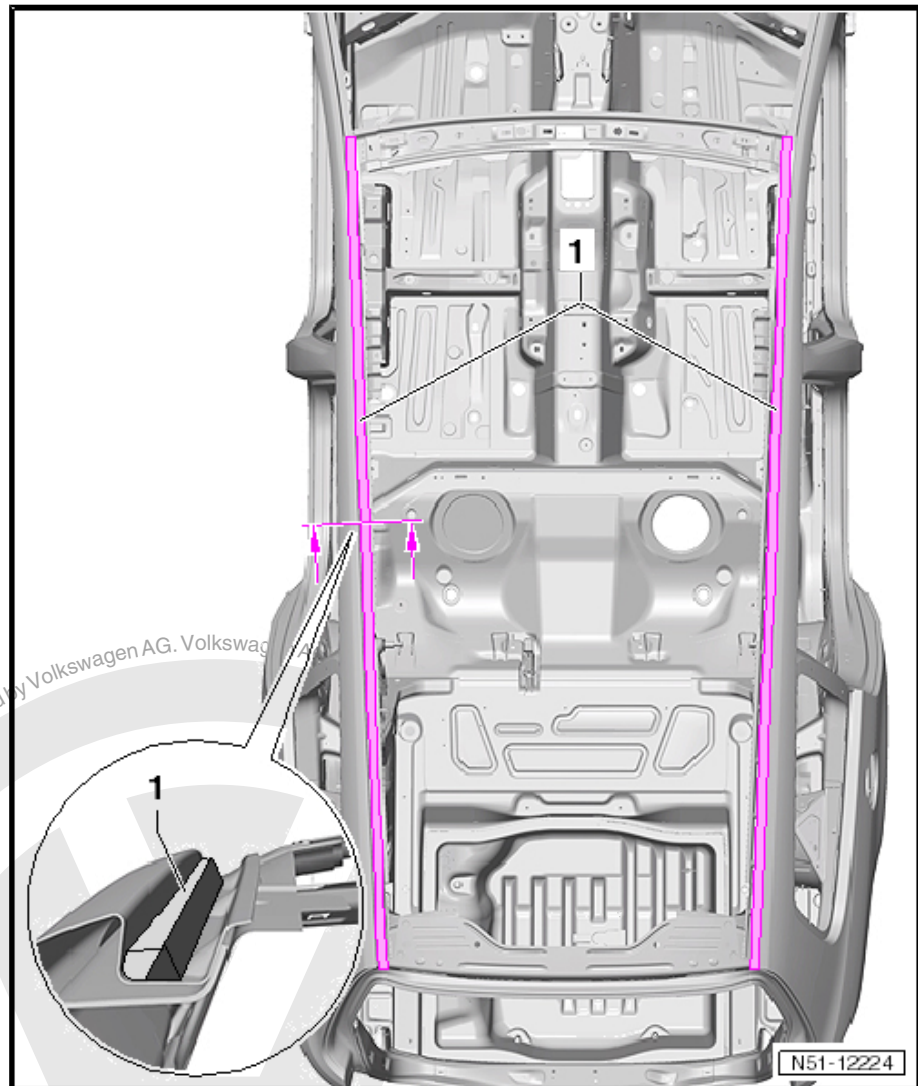
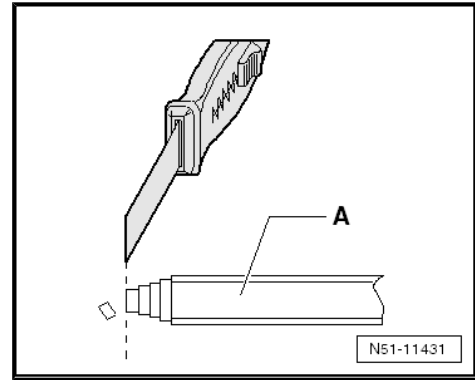
- ◆ Dimension -a- = approx. 4 mm
- ◆ Dimension -b- = approx. 9 mm

i Note

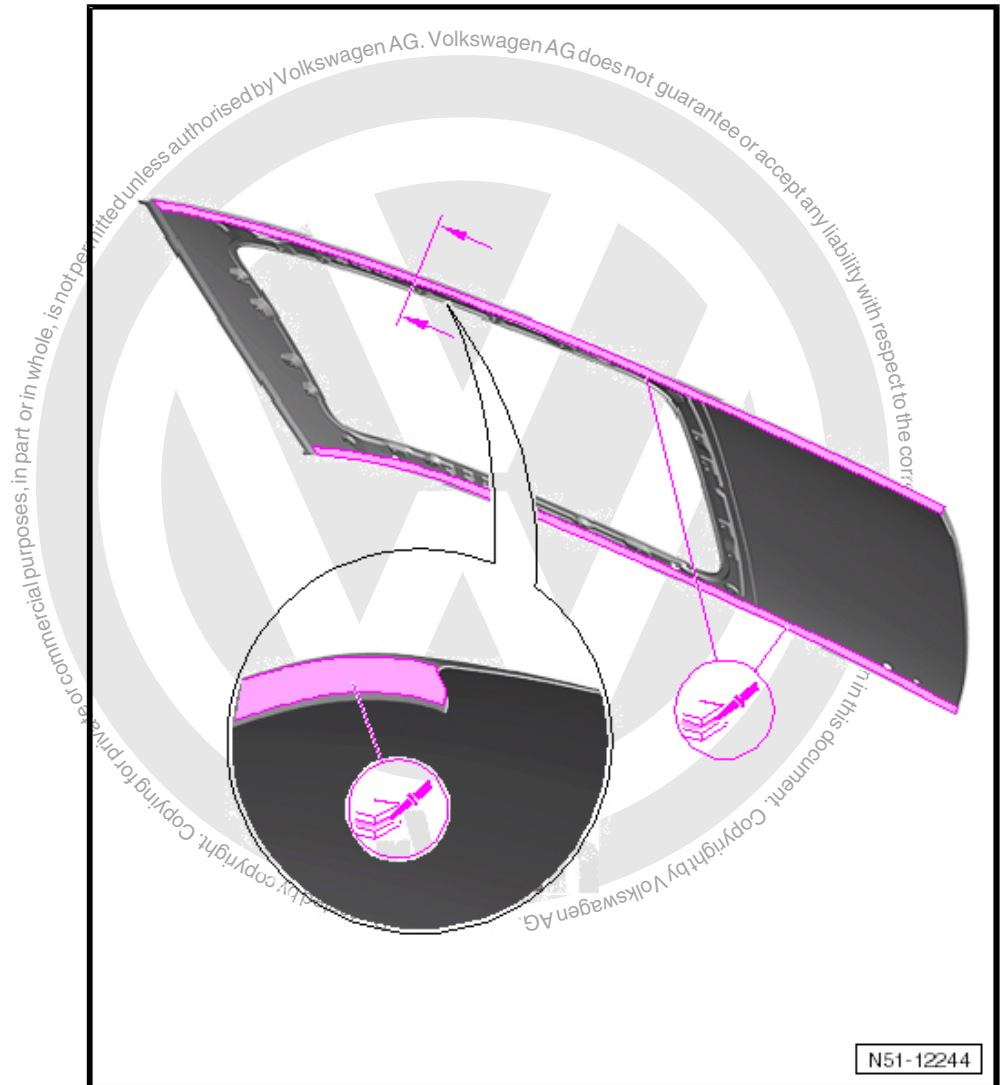
- ◆ *The application time (pot life) of the 2K body adhesive -D 180 KD3 A2- is approx. 90 min.*
- ◆ *Remove excessive 2K body adhesive -D 180 KD3 A2- from bonding areas immediately. Once cured 2K body adhesive -D 180 KD3 A2- can only be removed using mechanical means.*
- ◆ *An assistant is required for the following work.*



- Cut first step of static mixer -D- off to achieve corresponding bead cross-section.
- Carefully operate double cartridge gun -VAS 5237- without static mixer until adhesive is discharged uniformly from both chambers of cartridge connector.
- Screw static mixer onto cartridge connector.
- Apply the first 100 mm of adhesive to a piece of cardboard and only then begin to apply the adhesive to the vehicle.



- Fill area -1- with 2K body adhesive -D 180 KD3 A2- using double cartridge gun -VAS 5237- .



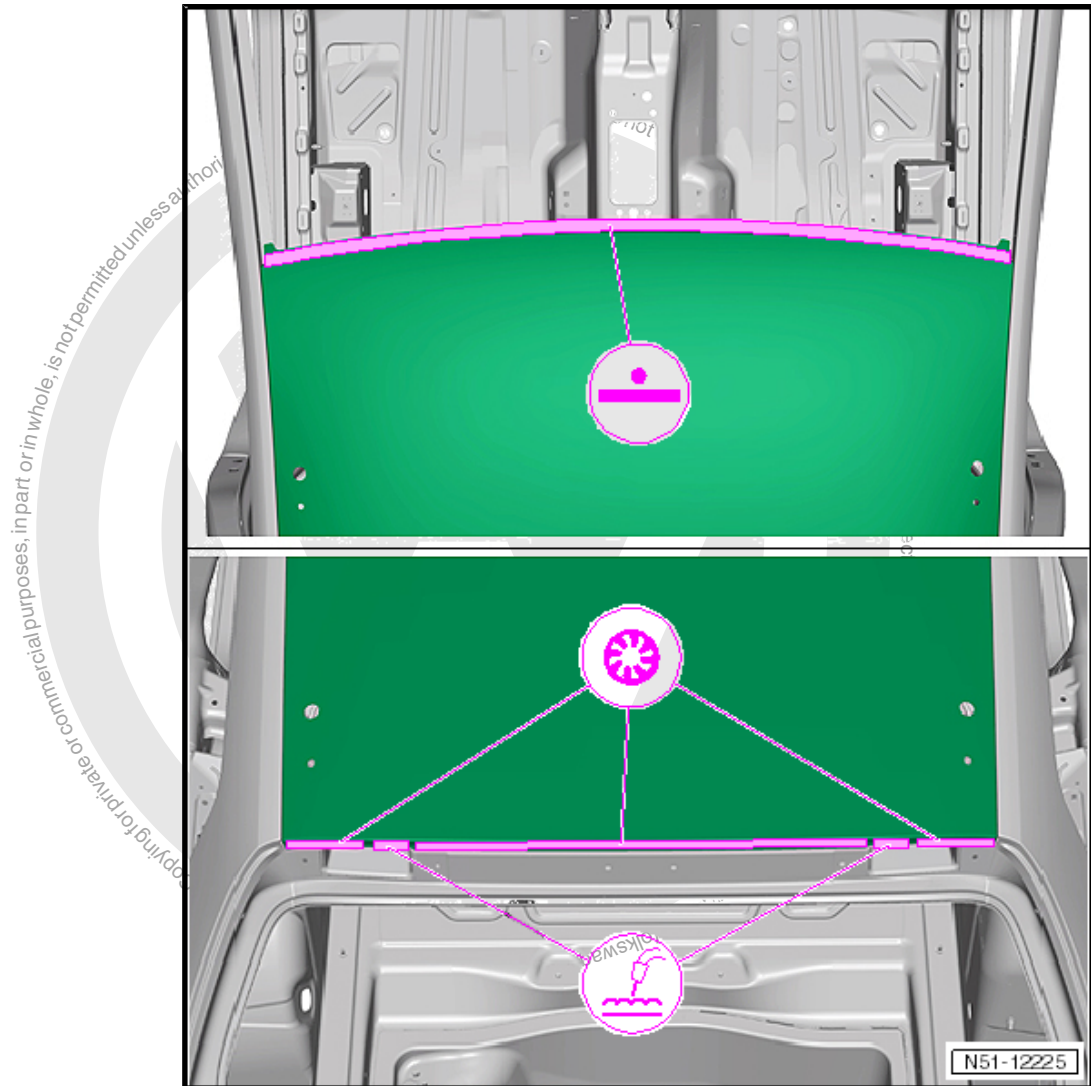
- Coat roof flanges with 2K body adhesive -D 180 KD3 A2- .
- Immediately position and align roof.
- Secure roof in area of windscreen aperture and tailgate aperture using vice-grip pliers and secure centre of roof using securing belts ⇒ [page 147](#) .
- Check roof depth dimension and adjust if necessary.
- Remove excessive 2K body adhesive -D 180 KD3 A2- along edge of roof immediately using a cloth soaked in silicone remover -LSE 020 100 A3- .

i Note

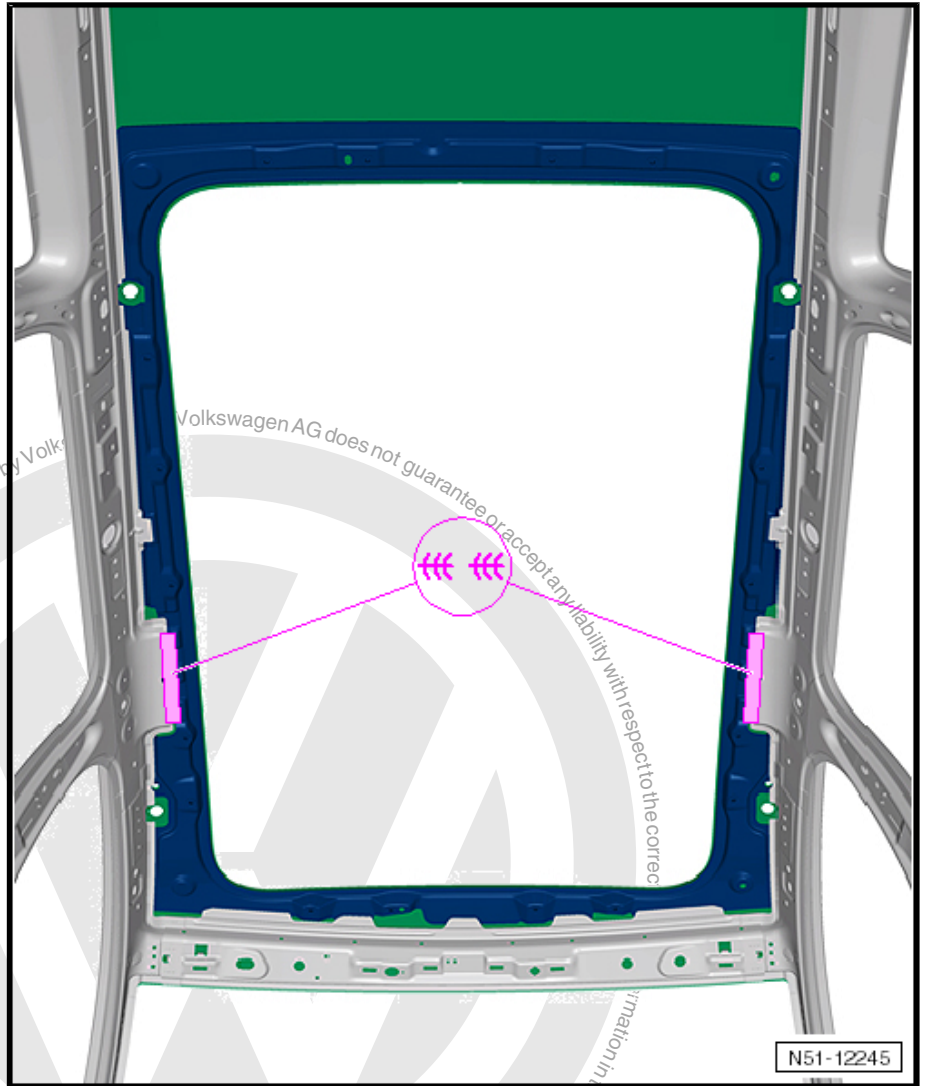
- ◆ *After bonding, vehicle must remain stationary on a level surface for 8-10 hours at room temperature (min. 15 °C) so that adhesive can harden.*
- ◆ *No further work should be performed on the vehicle until the „minimum curing time“ has expired.*



4.3.4 Welding in



- Weld roof in windscreen aperture, RP spot weld seam.
- Weld roof in tailgate aperture, SG plug weld seam and MIG solder seam.



- Weld reinforcing frame to inside of side panel, SG staggered continuous weld seam.



- Apply adhesive sealant -AKD 476 KD5 05- to seam between roof and roof side member to fully seal bonded seam -1-.
- After painting, preserve roof cavities -arrow- with corrosion-preventive wax -AKR 321 M15 4- .



RO: 51 05 55 50

5 Renewing roof side member



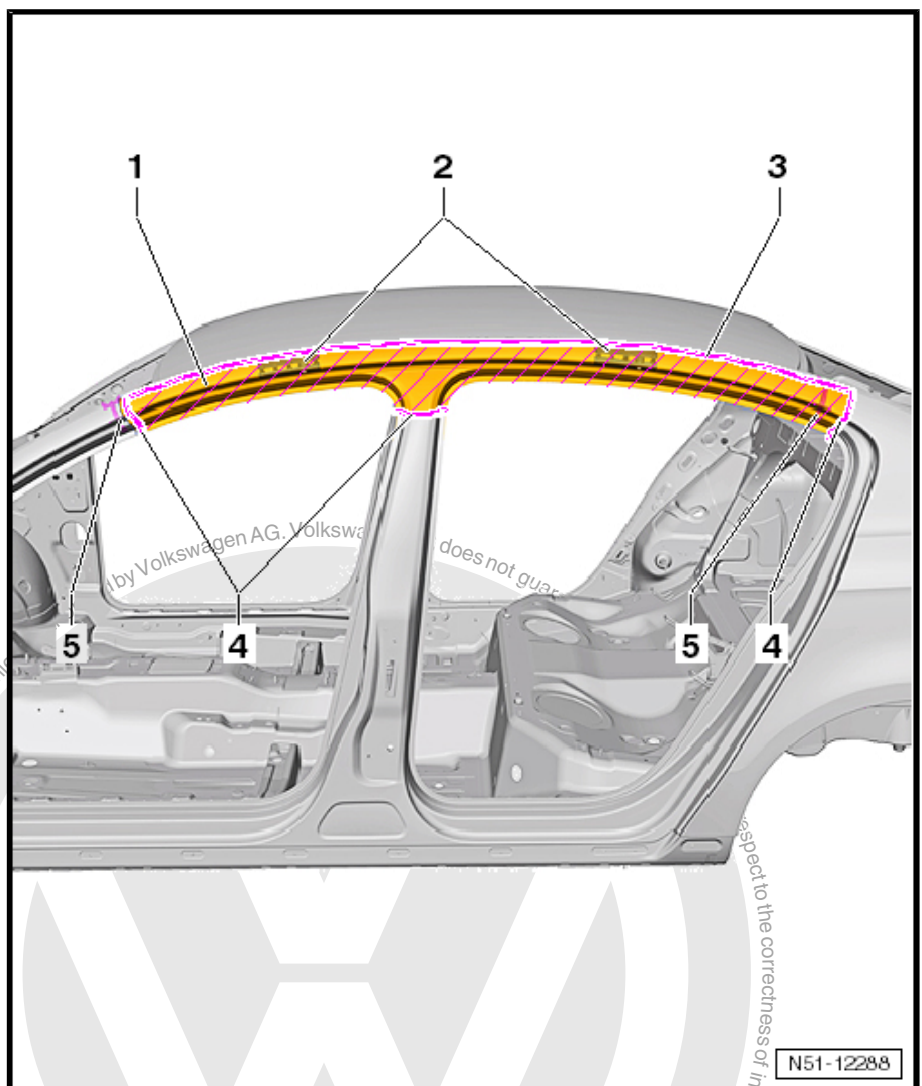
WARNING

Observe safety notes!

Welding, parting using spark generating machines/tools or tinning in foam treated areas creates gases which are hazardous to health and environment. Therefore, refrain from using these processes.

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

- 1 - Roof member
- 2 - Reinforcing (roof carrier)
- 3 - Roof cut line
- 4 - Cut line at pillars
- 5 - Moulded foam element





5.1 Tools



Note

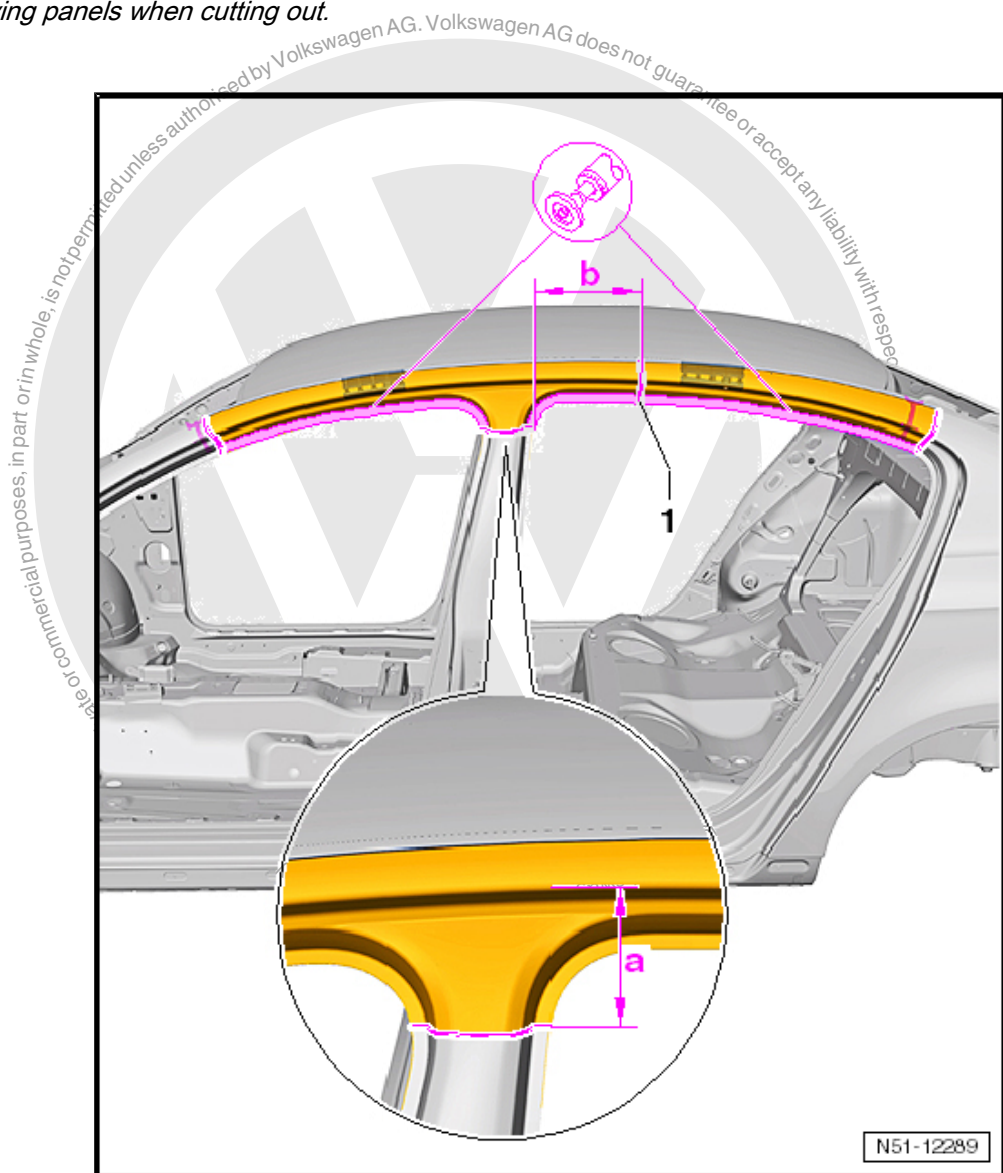
- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paint-work .*

5.2 Removing



Note

Do not damage underlying panels when cutting out.



- Position parting cut on B-pillar as shown.



Dimension -a- = 120 mm

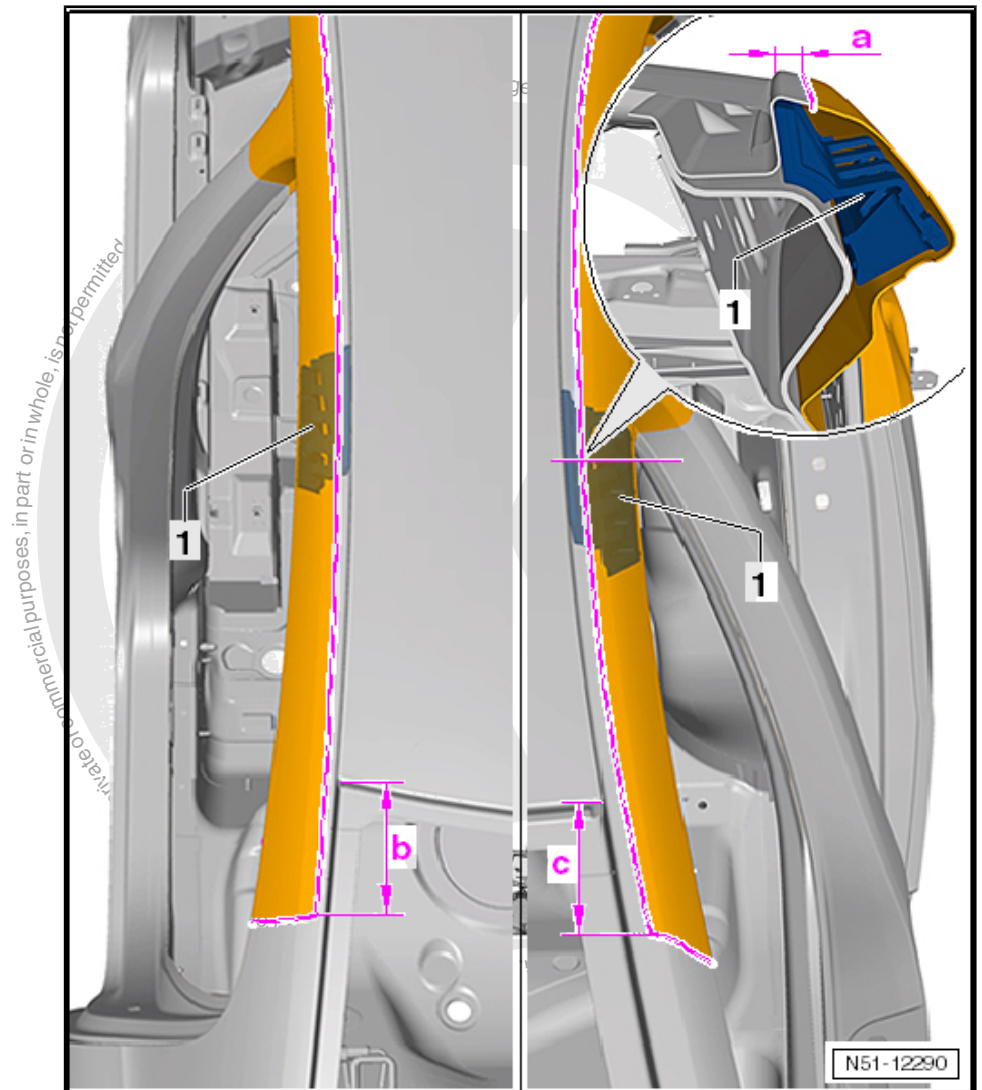
Partial renewal

A part section repair is possible using parting cut -1-.

Dimension -b- approx. 250 mm

Keep the cutting of the replacement part in mind.

- Separate original joint in door apertures.



- Separate as shown.

Dimension -a- = 15 mm

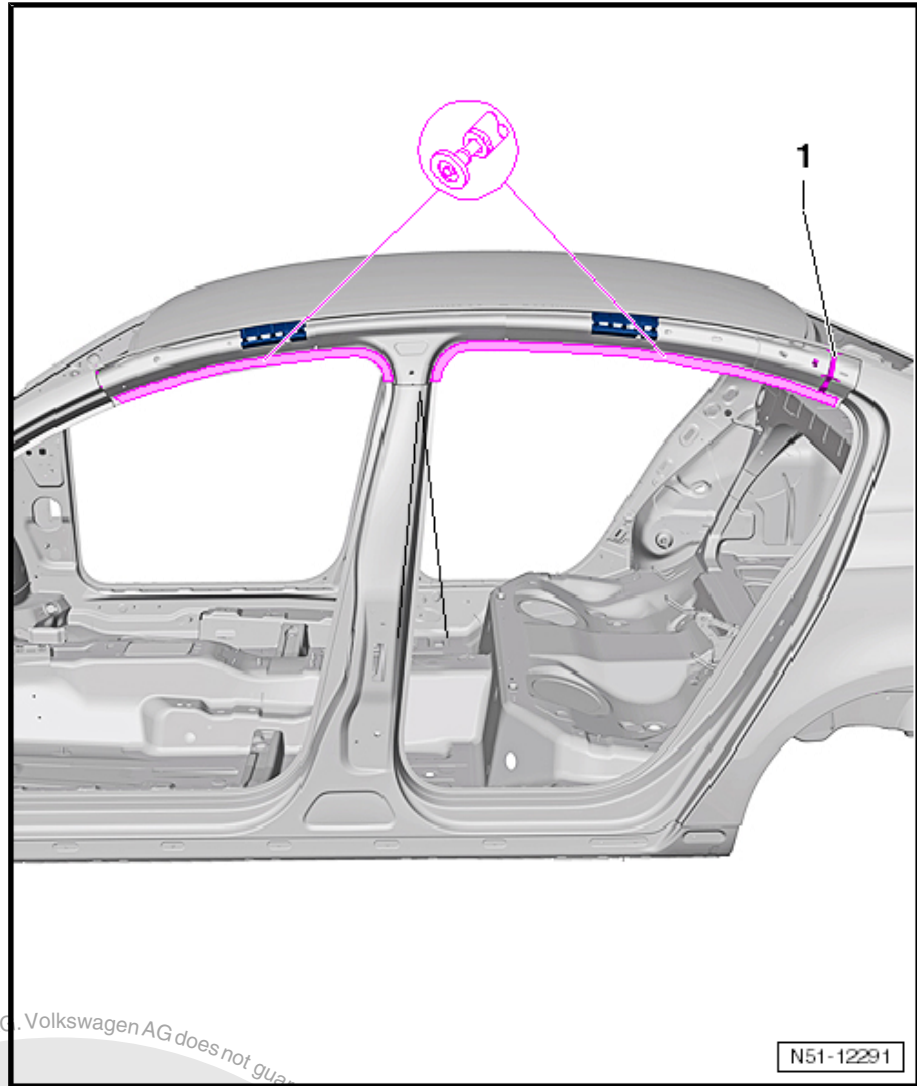
Dimension -b- = 100 mm

Dimension -c- = 50 mm

-1- Reinforcing (roof carrier)

i Note

Remove as much of the foam residue -1- as possible before starting grinding work.



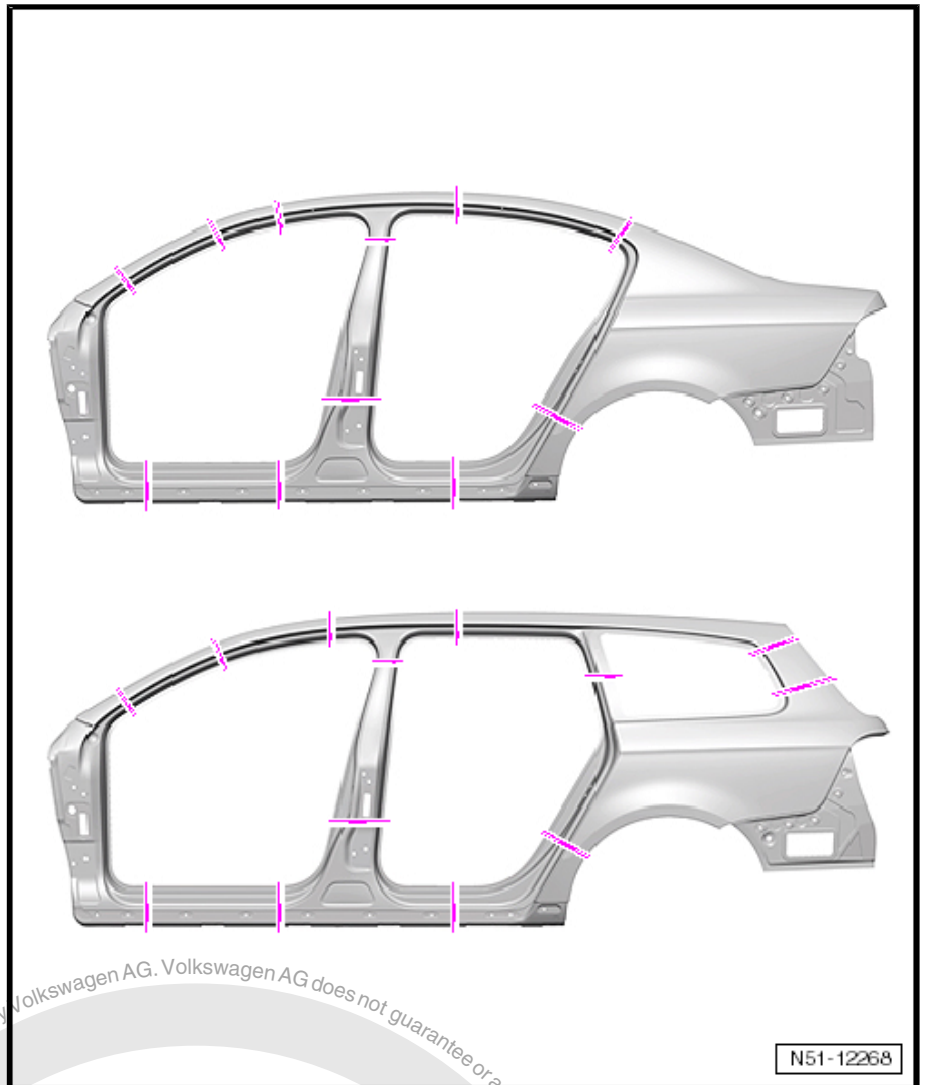
- Remove remaining material.
- Remove remaining adhesive completely and grind bonded surface back to bare metal.

5.3 Installing



Note

*Only welding units authorised by Volkswagen AG may be used
=> [page 158](#).*



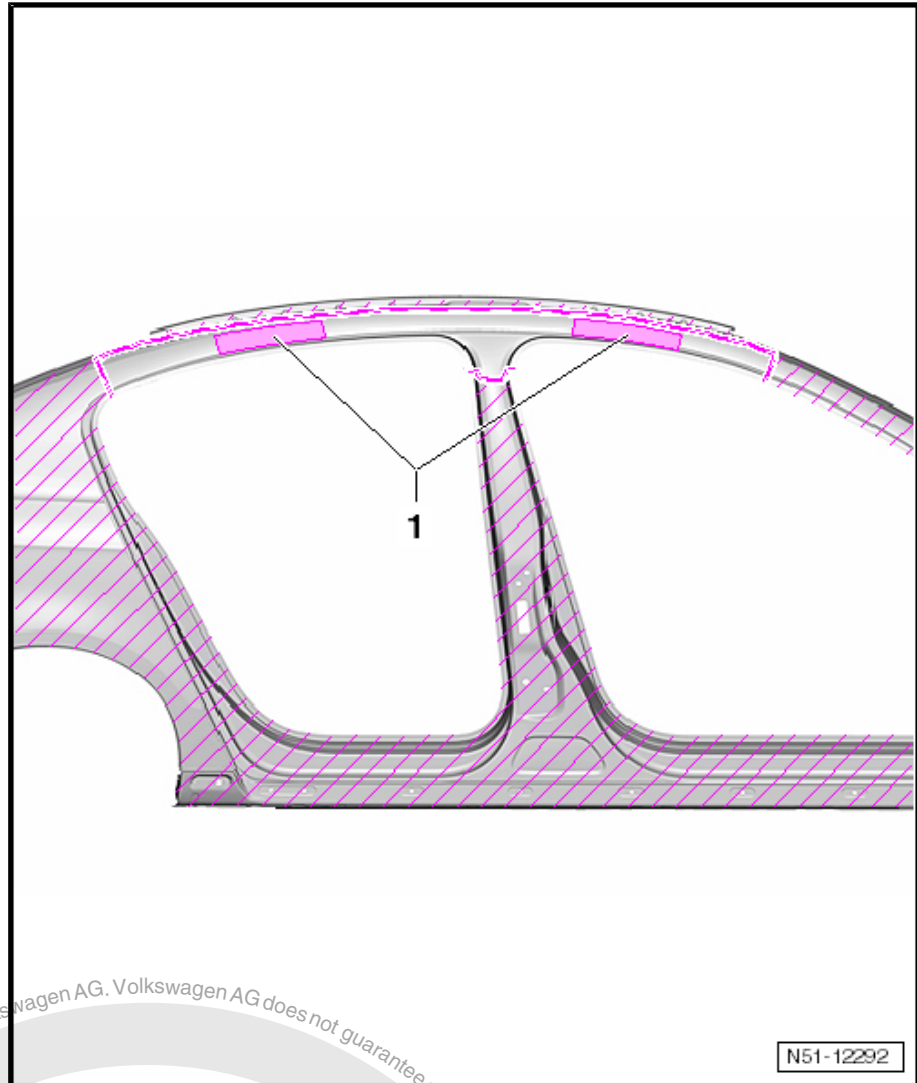
Note

MIG solder seams or SG continuous weld seams are permitted at the parting cuts shown in the illustration.

5.3.1 Preparing new part

New part

- ◆ Side panel
- ◆ Roof member cavity foam treatment kit -D 506 110 A2-
- ◆ 2K body adhesive -D 180 KD3 A2-
- ◆ Blind rivet nut



- Transfer parting cut to new part and cut out.
- Generously mask interior area to be foam treated -1- using textile adhesive tape => [Item 4 \(page 167\)](#) from roof member cavity foam treatment kit -D 506 110 A2- .



Note

- ◆ *Structural foam must not contact outer panel of roof side member.*
- ◆ *Expansion of structural foam can cause roof side member to buckle.*

5.3.2 Moulded foam elements

Follow repair instructions.

Moulded foam elements => General Information; Body Repairs, General Body Repairs ; General Notes; Moulded foam elements

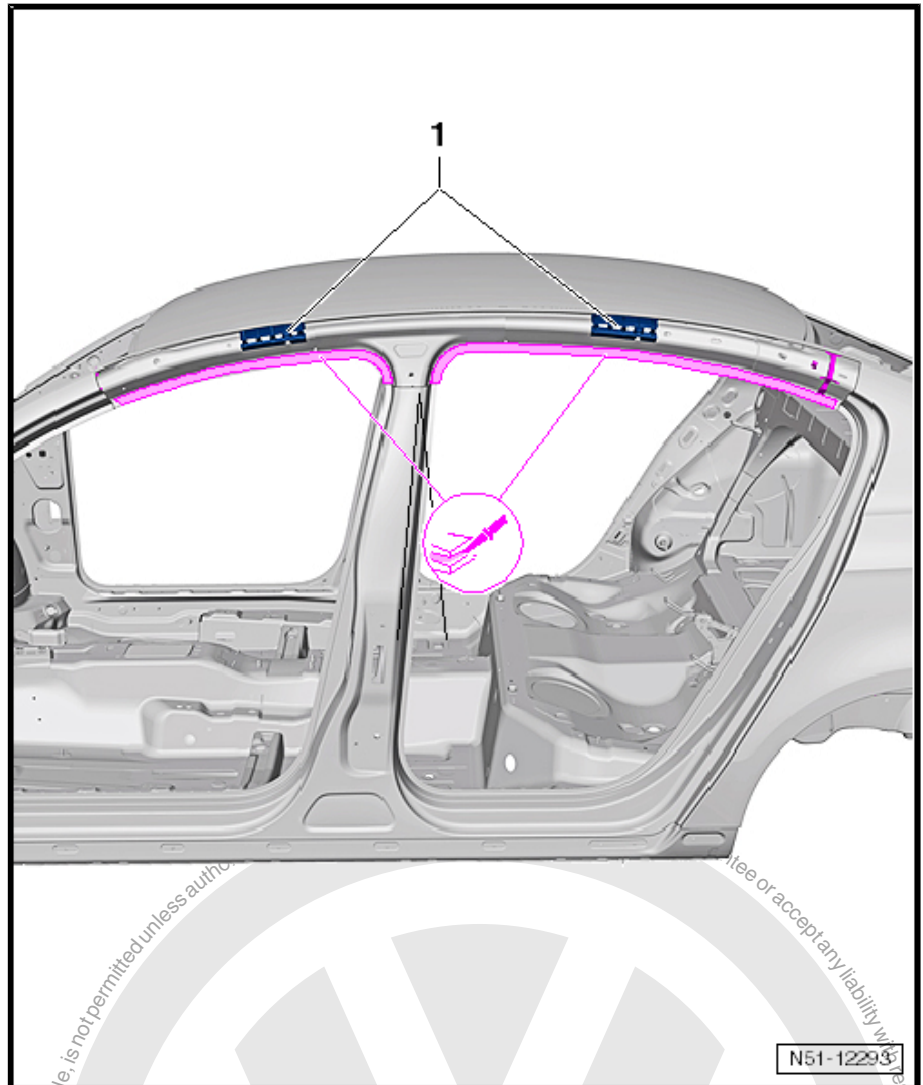
Position of the moulded foam elements => [page 4](#)



5.3.3 Welding in

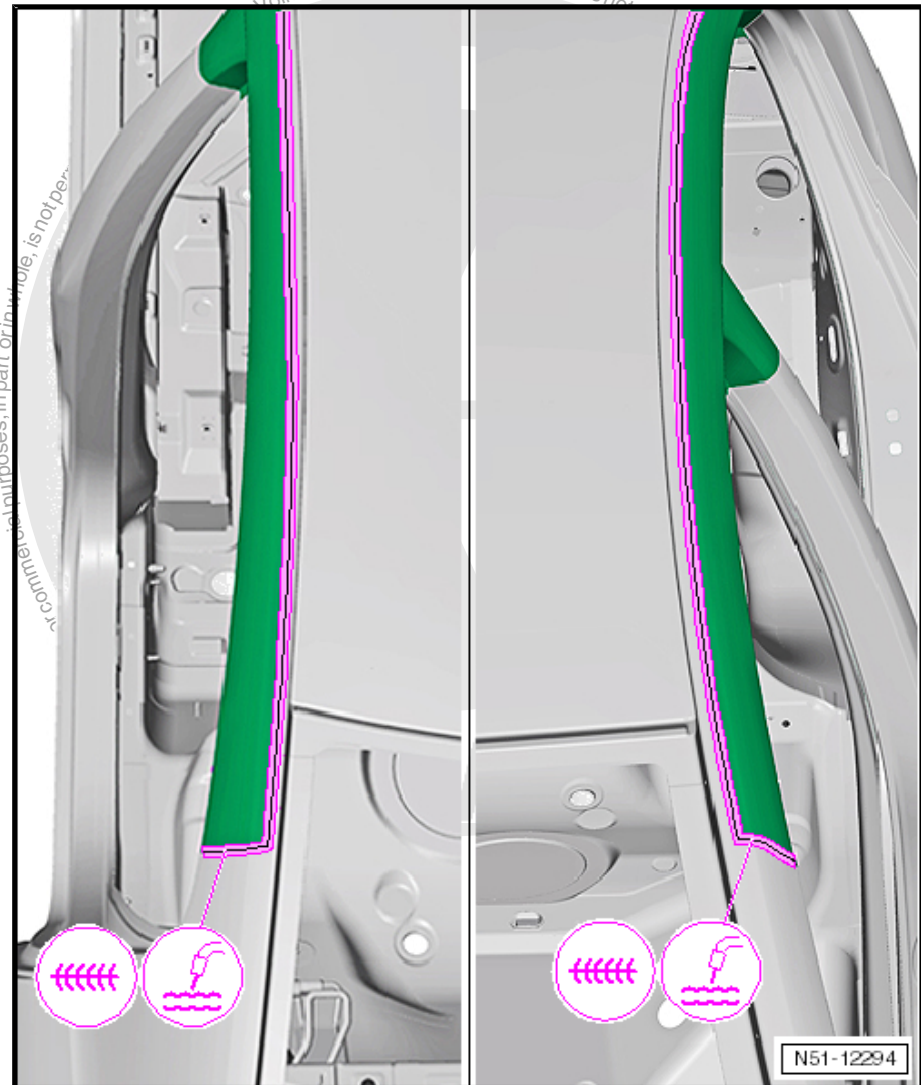


New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.



- Apply 2K body adhesive -D 180 KD3 A2- in the areas indicated.
- Secure roof carrier reinforcing 1- with adhesive.
- Adapt new part with vehicle standing on its wheels or alignment bracket set and fix in position.
- Check fit with bolt-on parts.





- Weld in parting cuts, MIG solder seam or SG continuous weld seam are permitted.



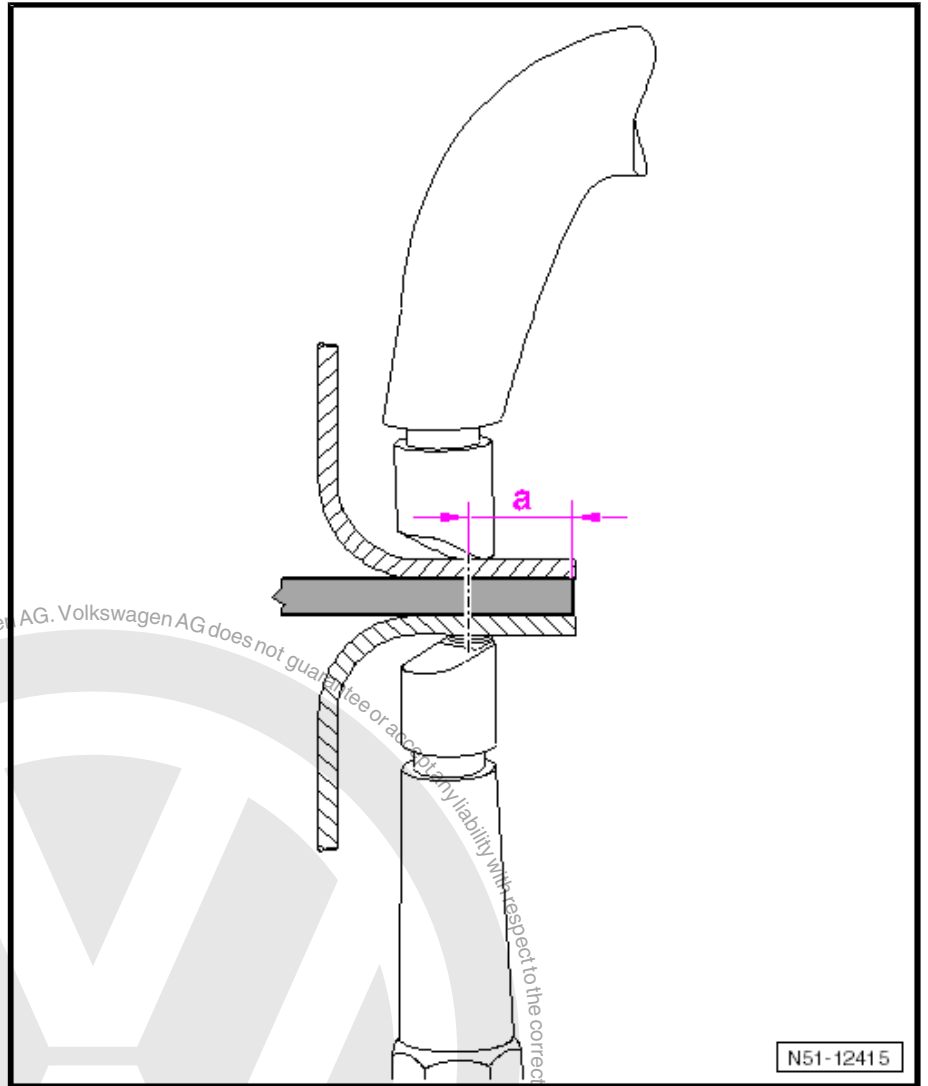
Note

Both weld symbols are shown in the figure.



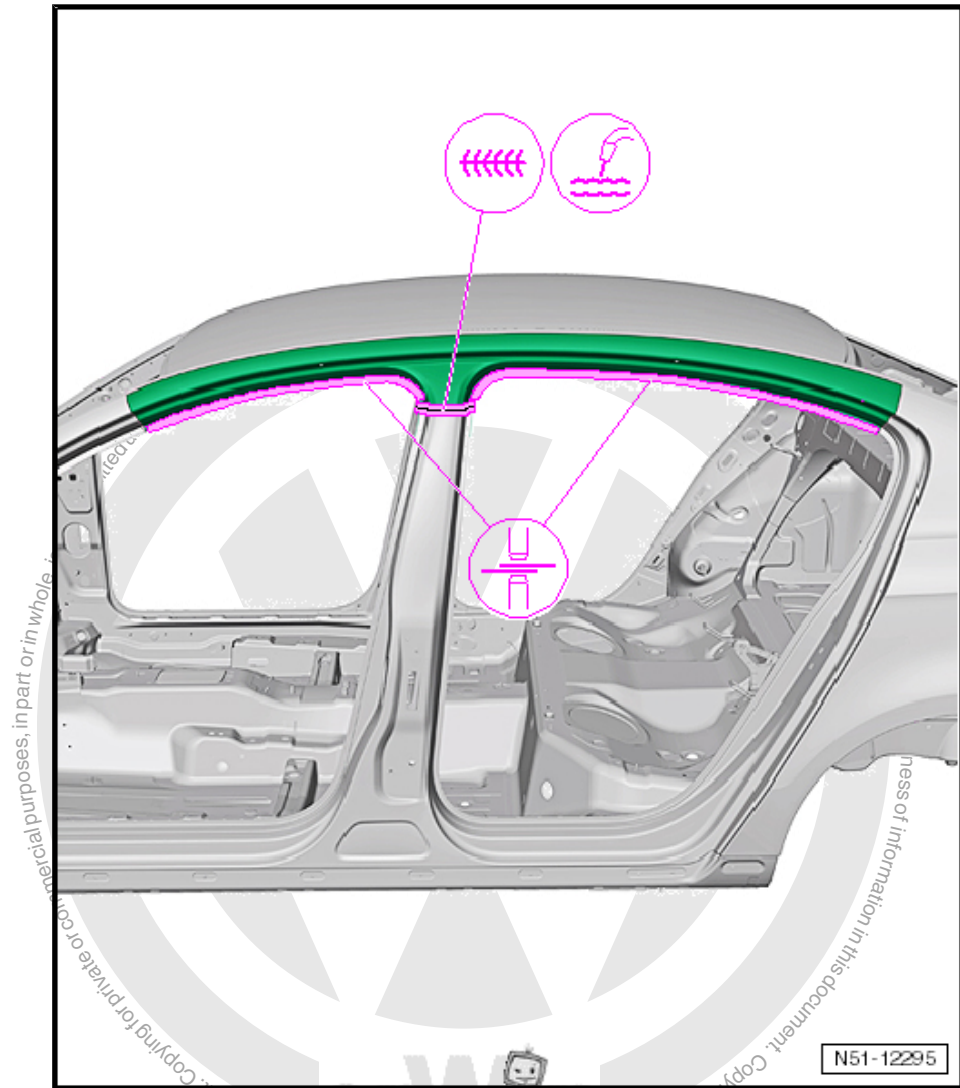
Note

- ◆ *In the area of the A, B and C-pillars, high tensile, highest tensile and hot formed steels are used. The weld flanges in these areas are about 13mm wide.*
- ◆ *If spot welds are located at the edge of hot formed steel panels, the high temperature will cause the bond between the panels to change, which will subsequently have an effect on crash safety.*



Therefore, locate spot welds as close to the centre as possible.

- Dimension -a- of 8mm can be achieved using angled welding tips.



- Weld in B-pillar parting cut, MIG solder seam or SG continuous weld seam are permitted.



Note

Both weld symbols are shown in the figure.

- Weld roof side member to door apertures, RP spot weld seam (inverter).

5.4 Foam treating roof side member

5.4.1 Treating with foam

- Heat 2K structural foam cartridge in an approx. 60 °C water bath for 20 minutes.



1 - 2K structural foam cartridge

- Open cap

2 - Static mixer

- Cut off the front section of the cone only.

3 - Extension hose

4 - Textile adhesive tape



Note

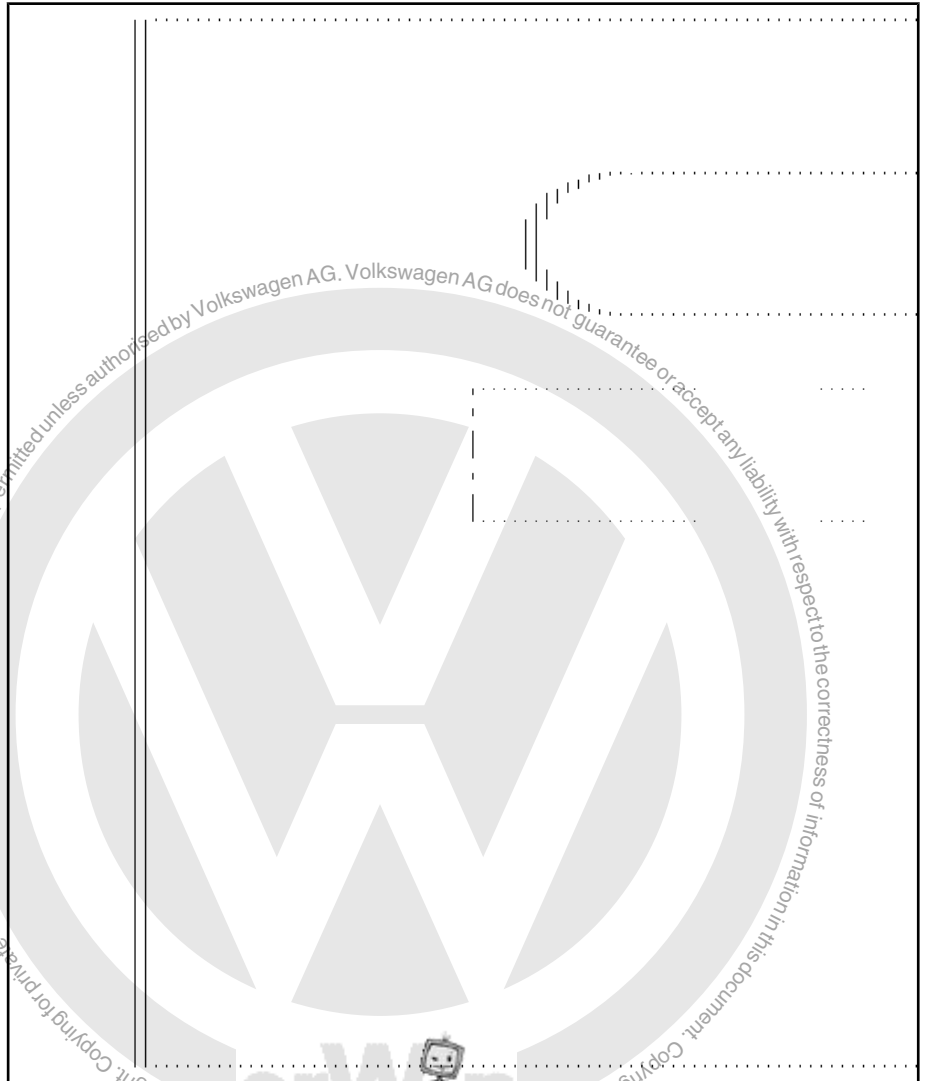
5 - Adapter

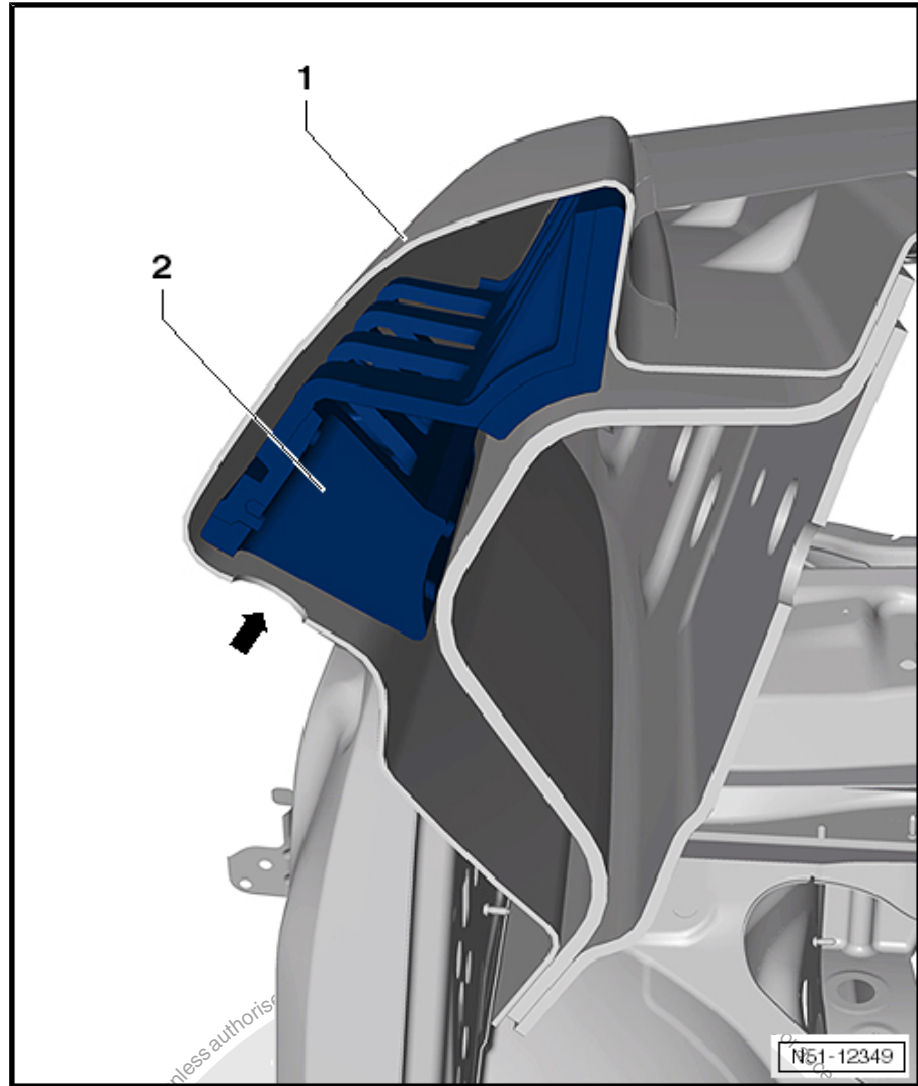


Note

6 - Union nut

- Connect static mixer 2- to 2K structural foam cartridge -1- using union nut.





- Inject structural foam through opening for blind rivet nuts -arrow- in roof -1- using pneumatic cartridge gun -V.A.G 1761/1- and static mixer.
- Then seal opening with a blind rivet nut.



RO: 51 07 55 50

6 Renewing front roof cross member



WARNING

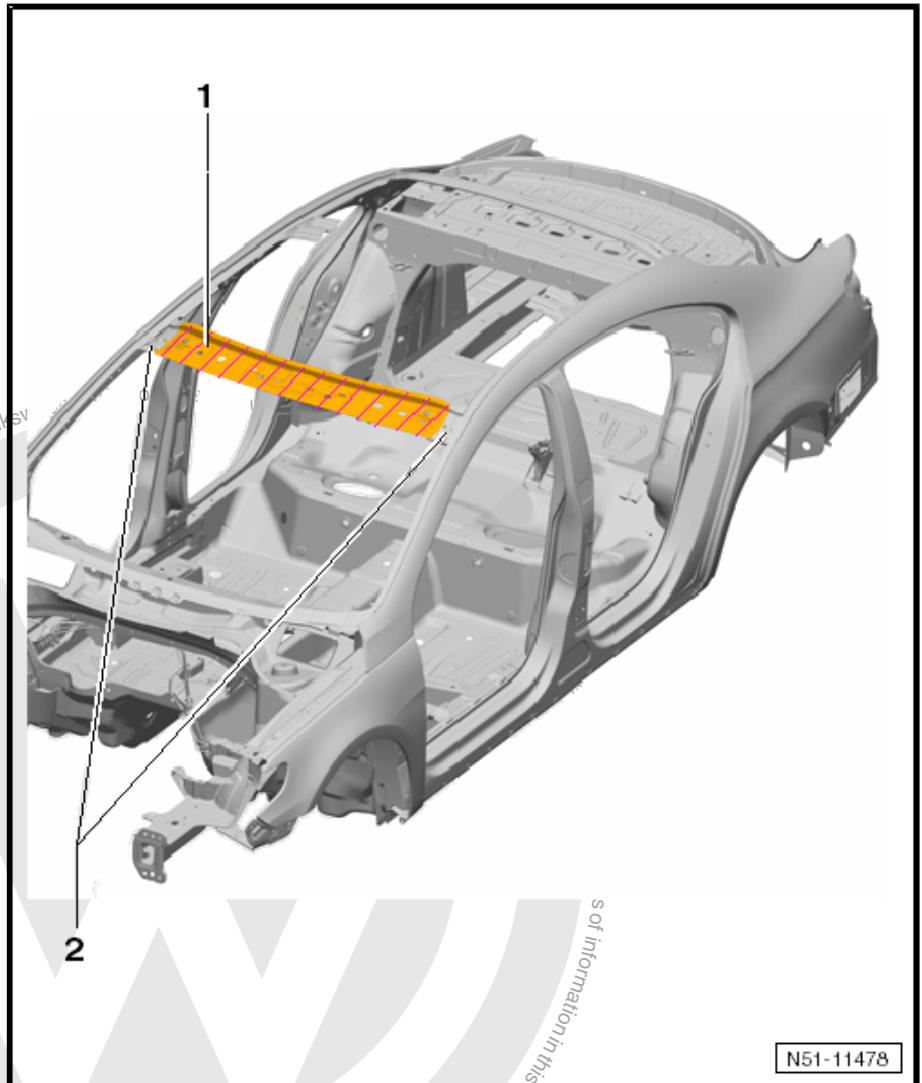
Observe safety notes!

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

Roof already removed.

- Saloon ⇒ [page 91](#)
- Saloon with sliding/tilting sunroof ⇒ [page 107](#)
- Variant ⇒ [page 124](#)
- Variant with panorama sliding sunroof ⇒ [page 140](#)

- 1 - Front roof cross member
- 2 - Left and right roof frames





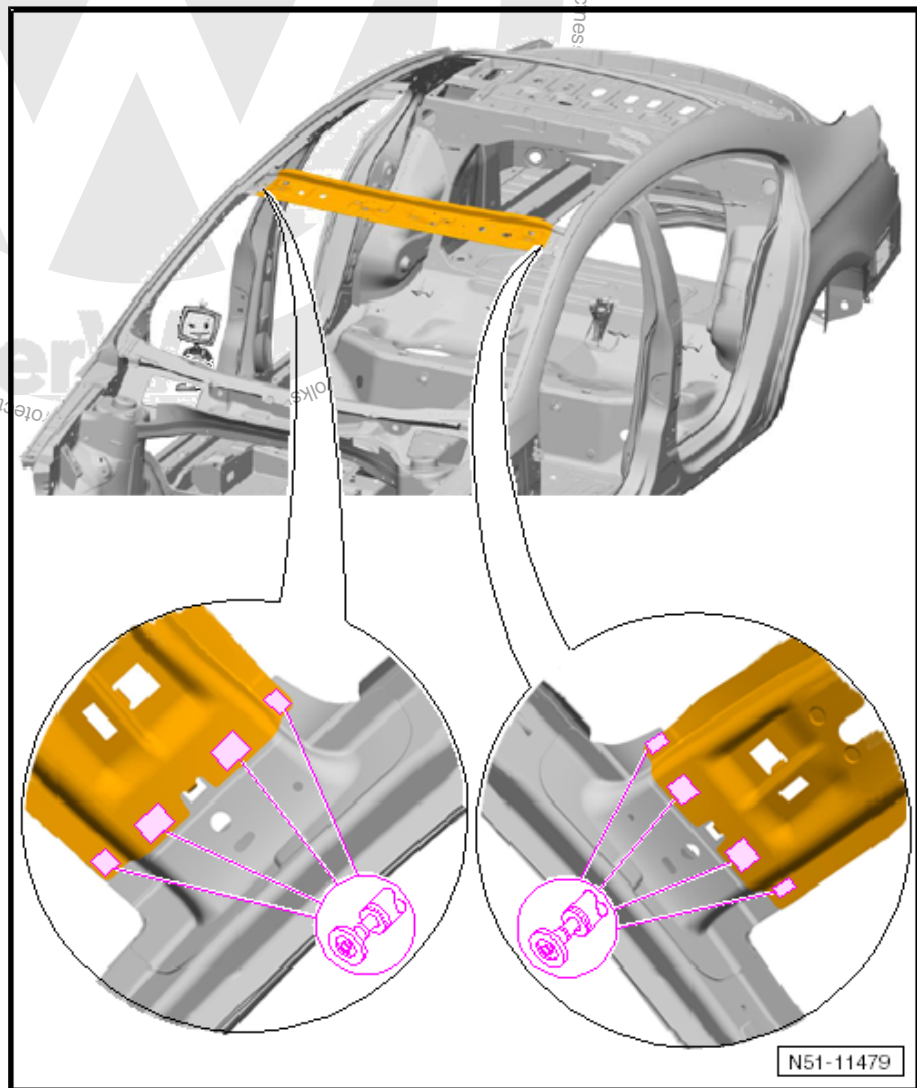
6.1 Tools



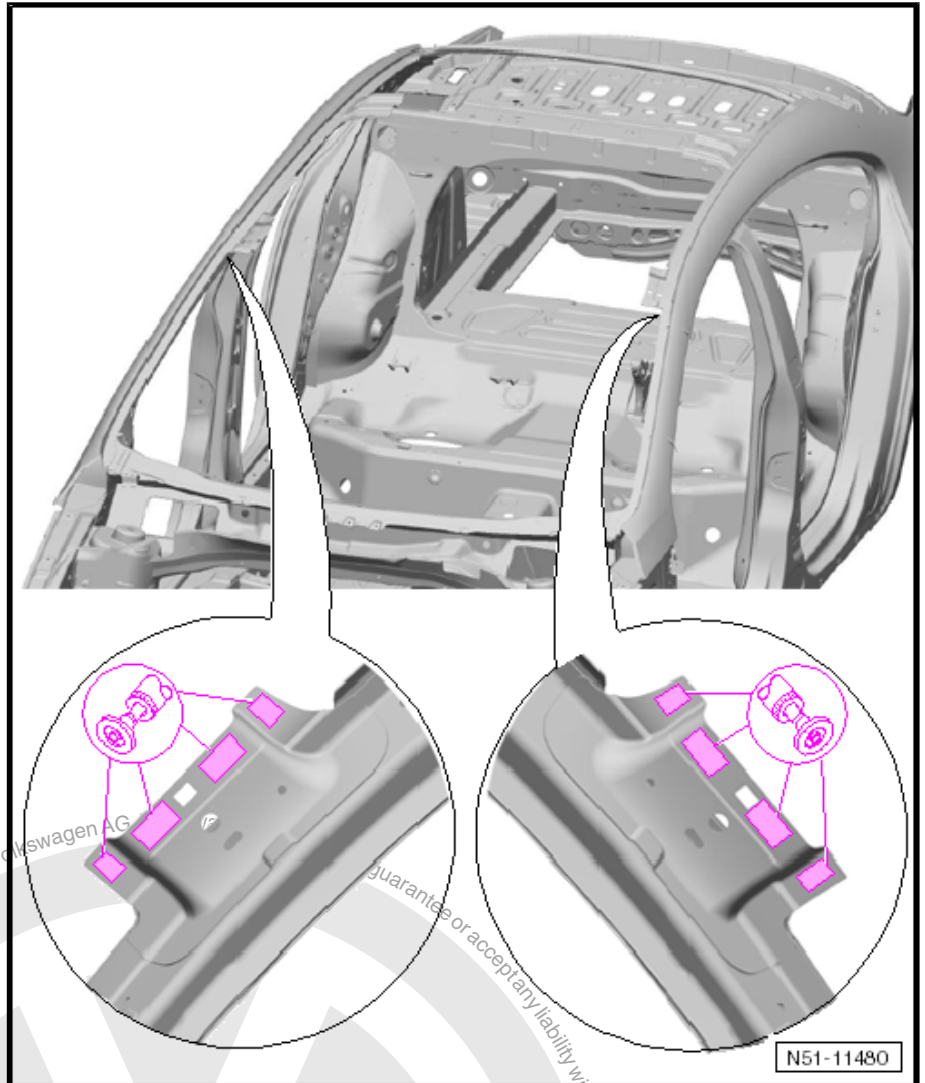
Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paintwork.*

6.2 Removing



- Separate original joint from inside.



- Remove residues at transition to left and right roof frame.

6.3 Installing



Note

*Only welding units authorised by Volkswagen AG may be used
=> [page 170](#).*

6.3.1 Welding in

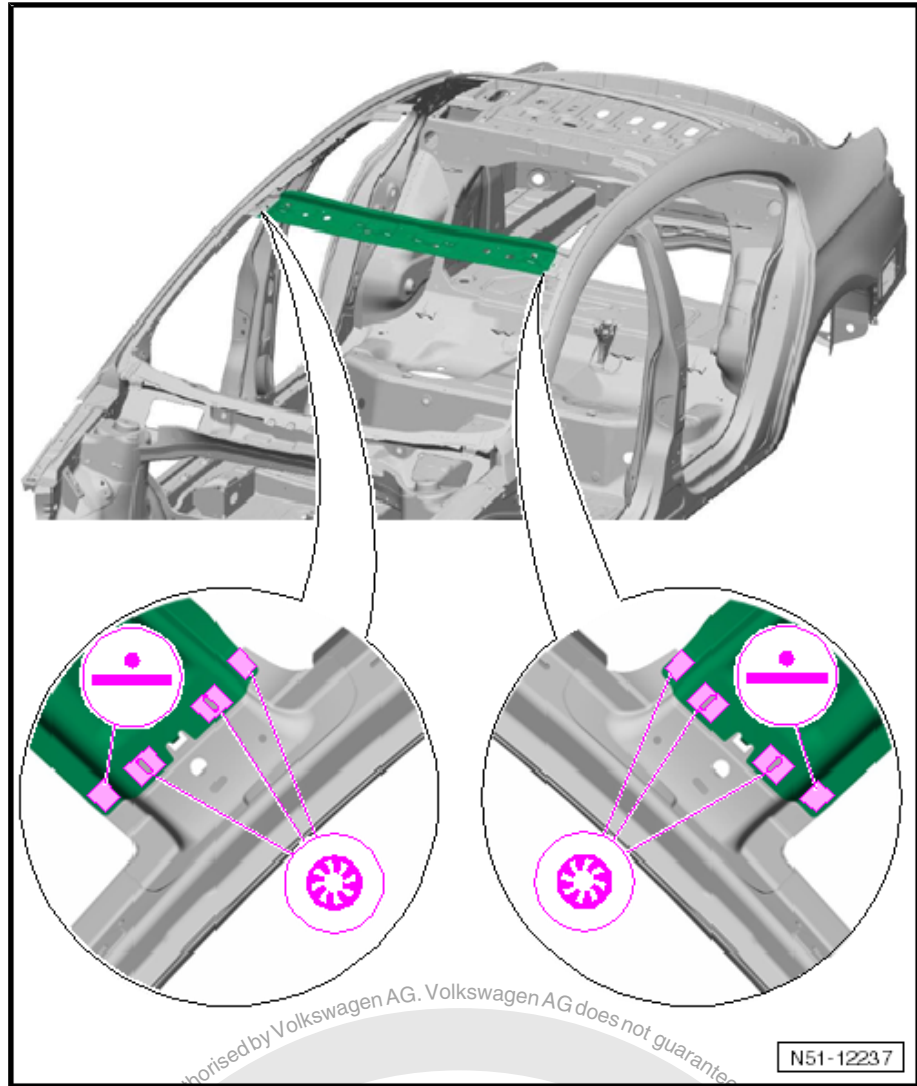
New part

- ◆ Front roof cross member
- Adapt new part with vehicle standing on its wheels or alignment bracket set and fix in position.
- Check fit of roof and windscreen.



Note

Use the existing elongated holes to weld the new part to the left and right roof frames.



- Weld in front roof cross member, RP spot weld seam and SG plug weld seam.

Install roof.

- Saloon ⇒ [page 96](#)
- Saloon with sliding/tilting sunroof ⇒ [page 112](#)
- Variant ⇒ [page 129](#)
- Variant with panorama sliding sunroof ⇒ [page 129](#)



RO: 51 09 55 50

7 Renewing rear roof cross member (saloon)



WARNING

Observe safety notes!

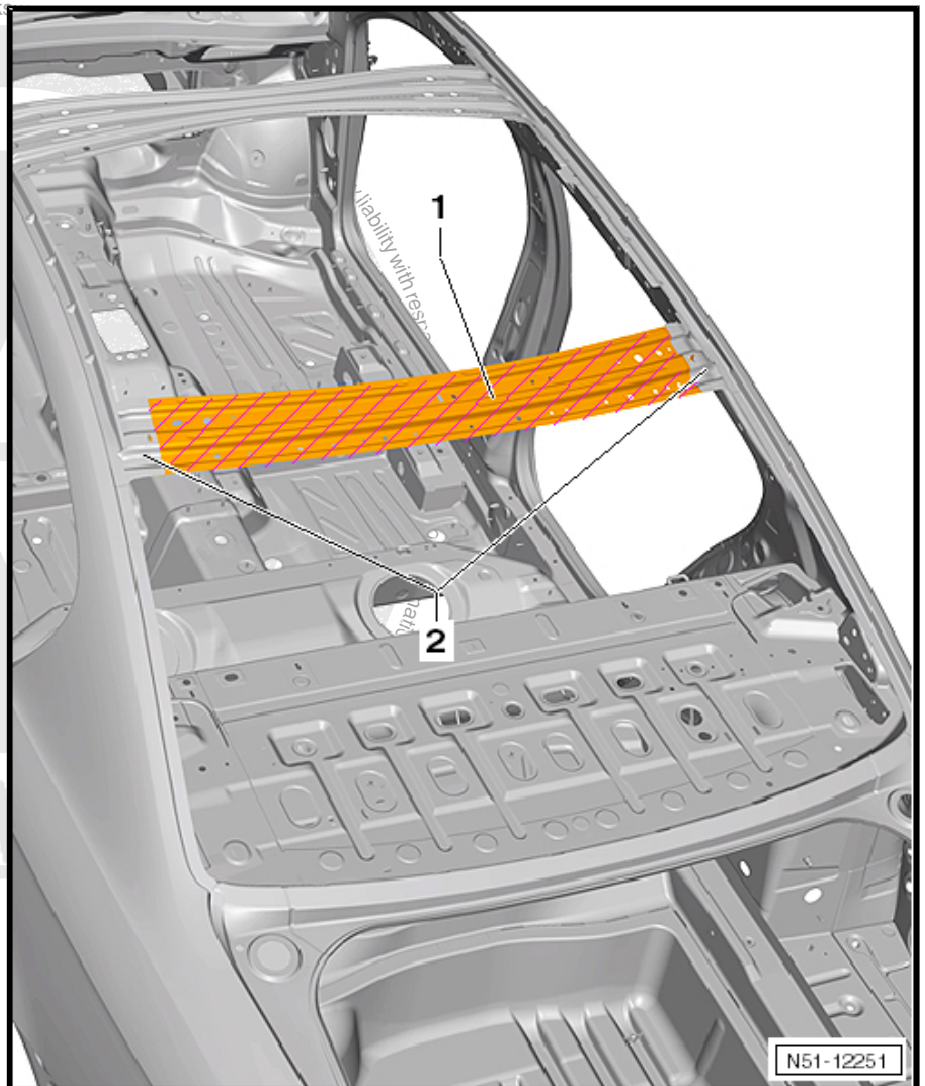
Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes

Roof already removed.

- Saloon ⇒ [page 91](#)
- Saloon with sliding/tilting sunroof ⇒ [page 107](#)

1 - Rear roof cross member

2 - Left and right roof frames





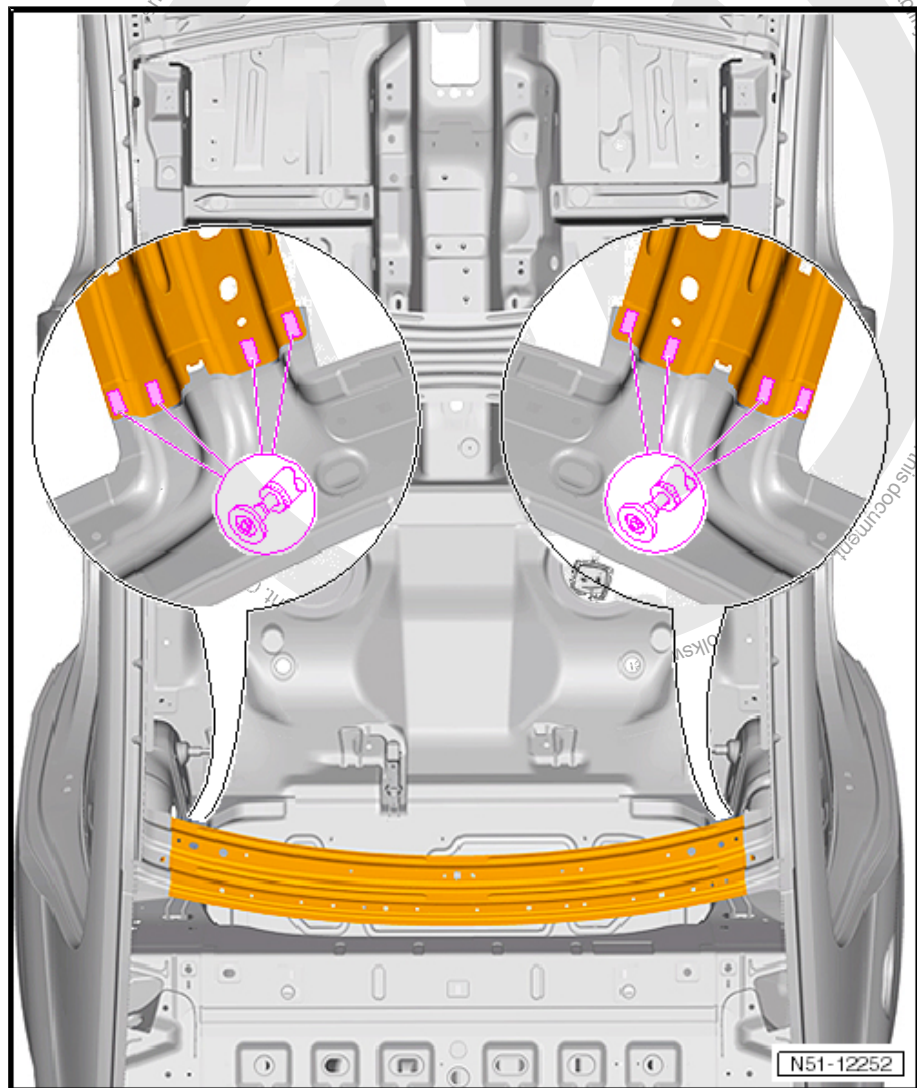
7.1 Tools



Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paint-work .*

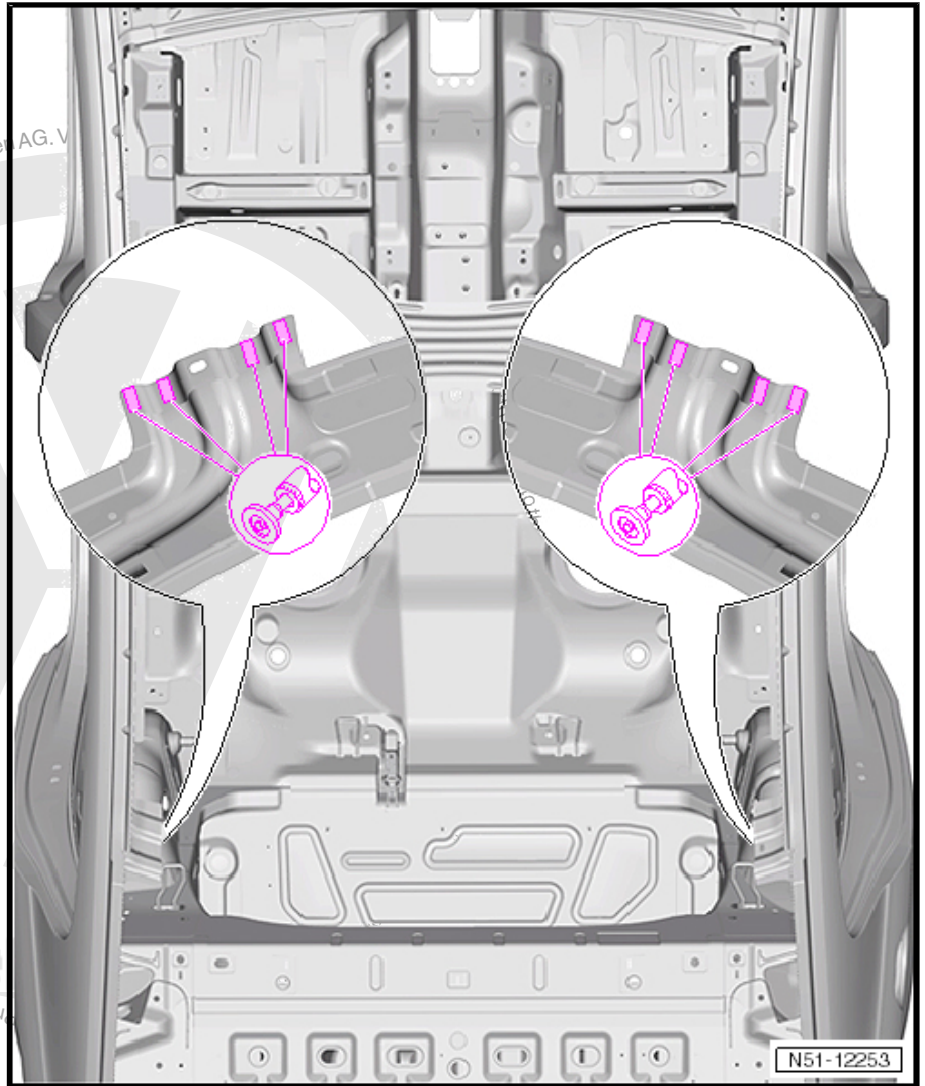
7.2 Removing



- Separate original joint.



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- Remove residues at transition to left and right roof frame.

7.3 Installing

Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 174](#).*

7.3.1 Welding in

New part

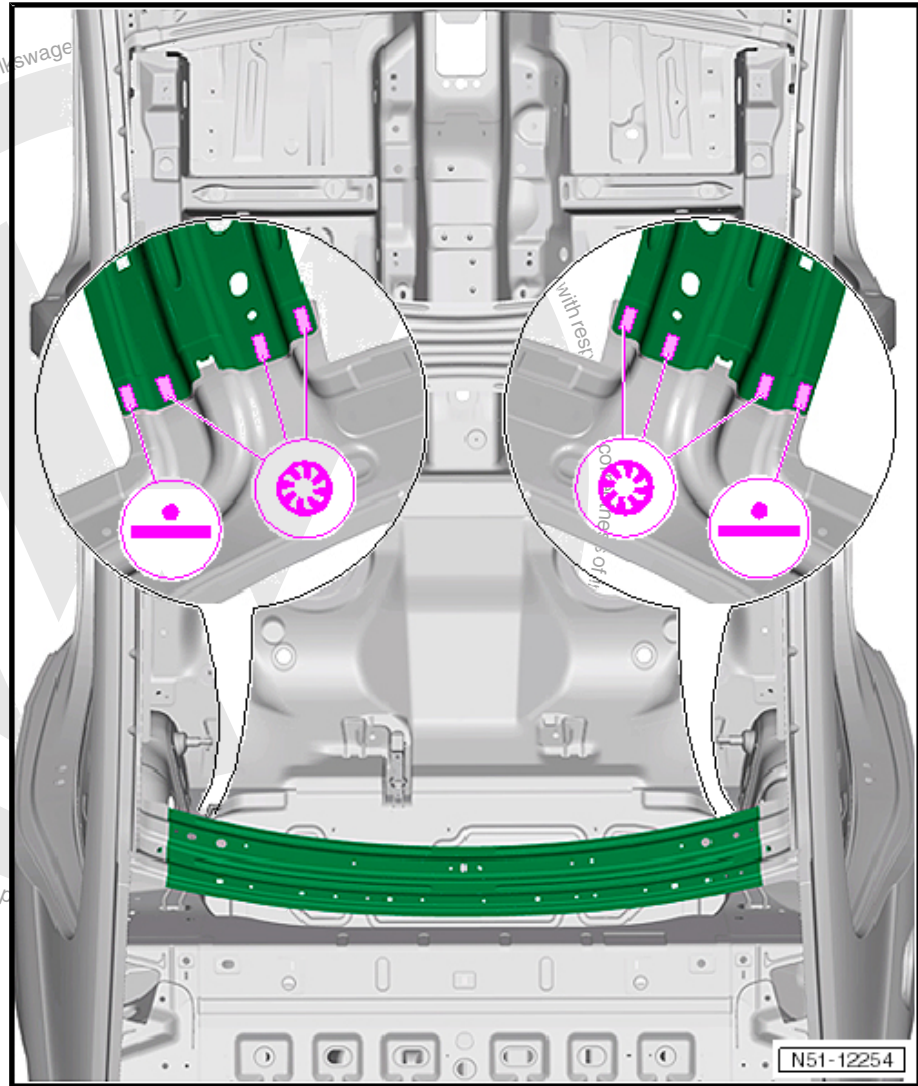
- ◆ Rear roof cross member
- Adapt new part with vehicle standing on its wheels or alignment bracket set and fix in position.
- Check fit to roof and rear window.

Note

Use the existing elongated holes to weld the new part to the left and right roof frames.



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- Weld in roof cross member, SG plug weld seam and RP spot weld seam.
- Install roof ⇒ [page 96](#) .



RO: 51 09 55 60

8 Renewing rear roof cross member (Variant)



WARNING

Observe safety notes!

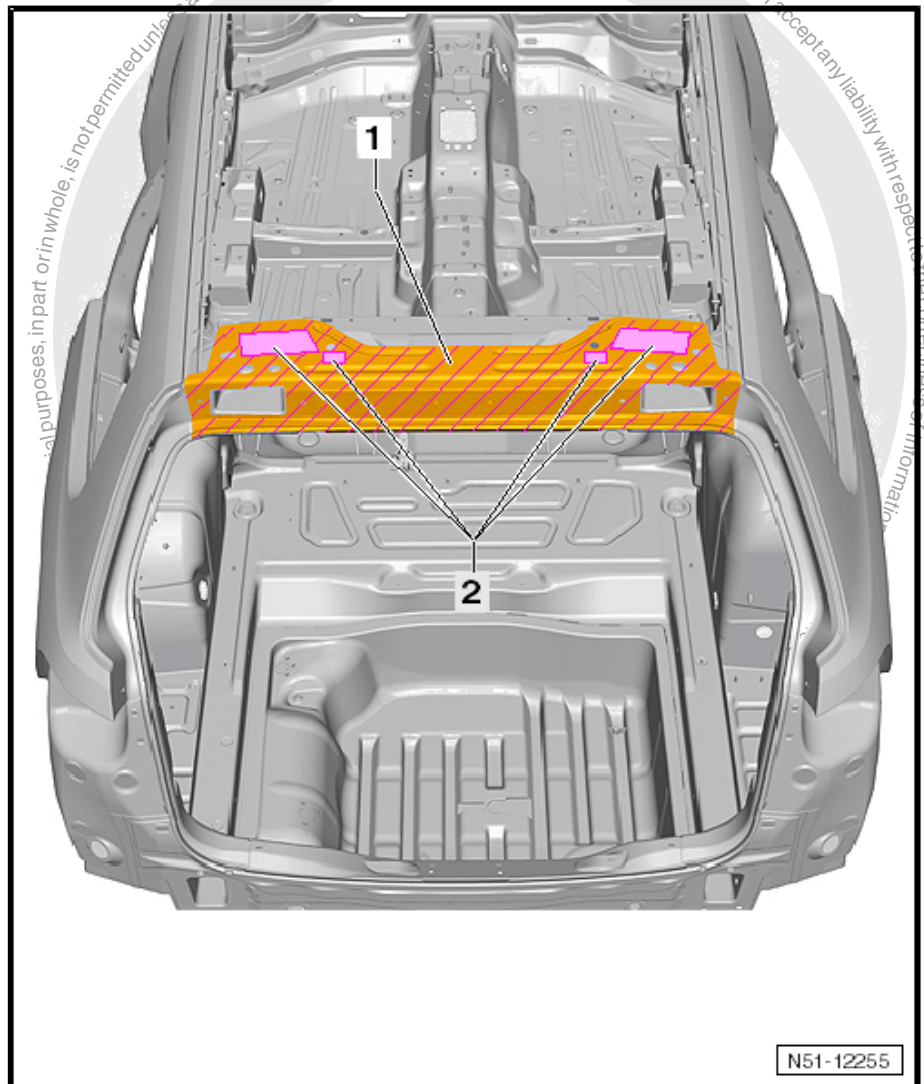
Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes

Roof already removed.

- Variant ⇒ [page 124](#)
- Variant with panorama sliding sunroof ⇒ [page 140](#)

1 - Rear roof cross member

2 - Bonded section





8.1 Tools



Note

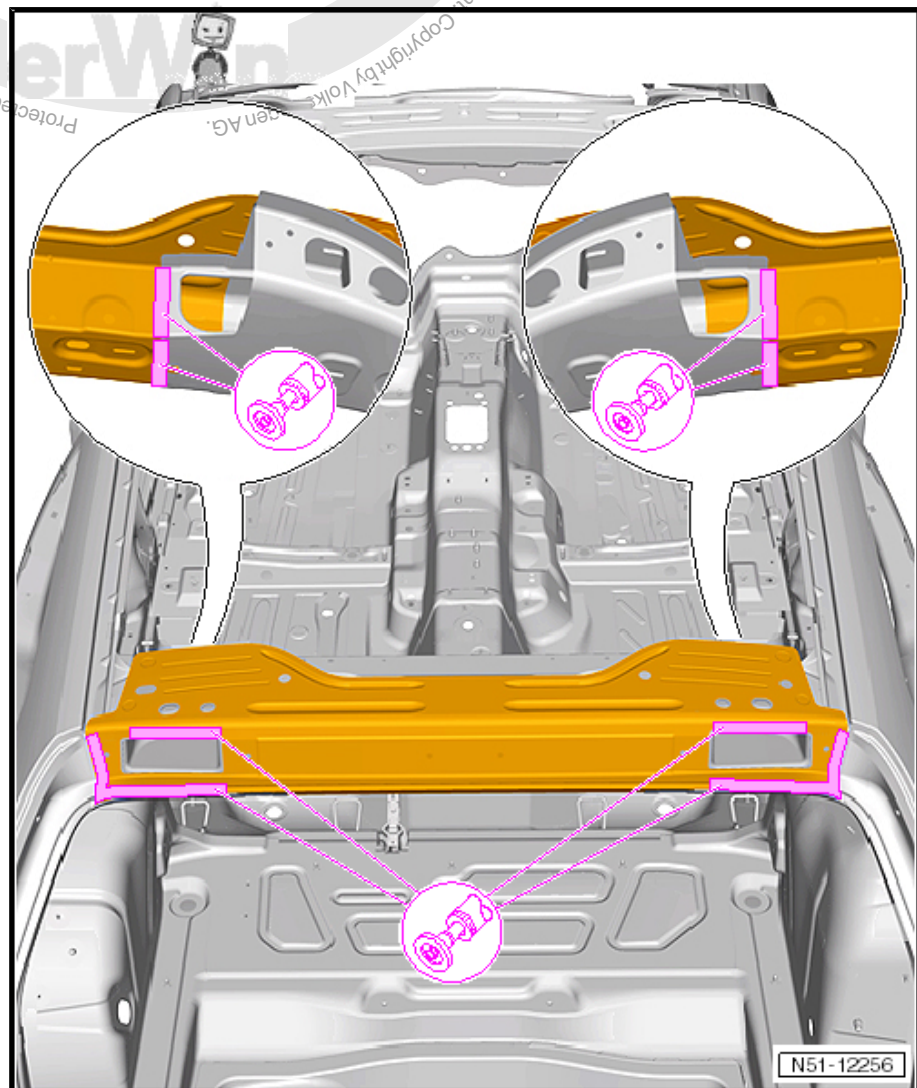
- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paintwork .*

8.2 Removing

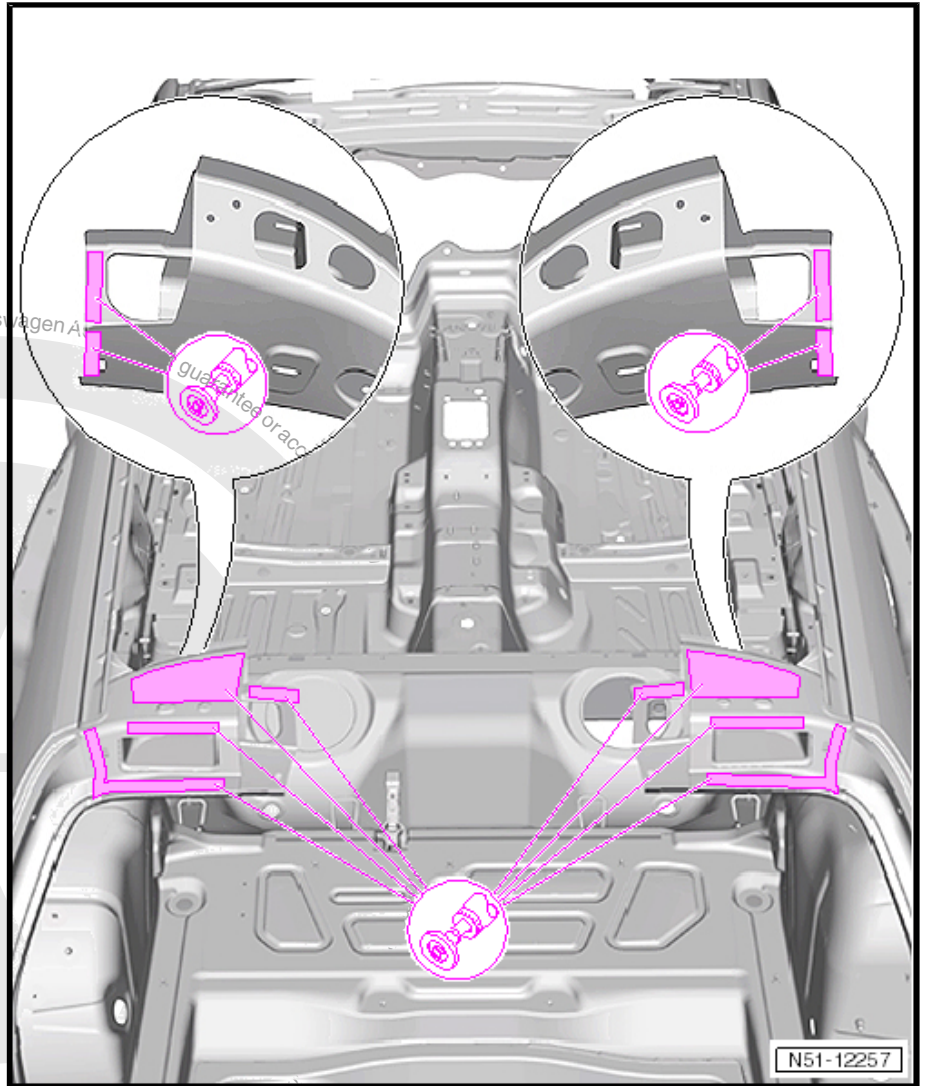


Note

Roof cross member and roof cross member reinforcement are cut out together.



– Separate original joint.



- Remove remaining material.
- Remove remaining adhesive completely and grind bonded surface back to bare metal.

8.3 Installing



Note

Only welding units authorised by Volkswagen AG may be used
⇒ [page 178](#).

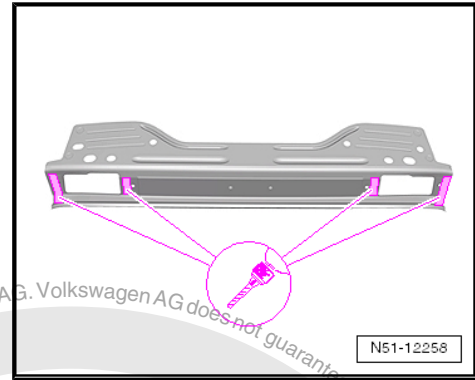
8.3.1 Preparing new part

New part

- ◆ Rear roof cross member (Variant)
- ◆ 2K body adhesive -D 180 KD3 A2-



- Drill holes for SG plug weld seam (8 mm Ø).

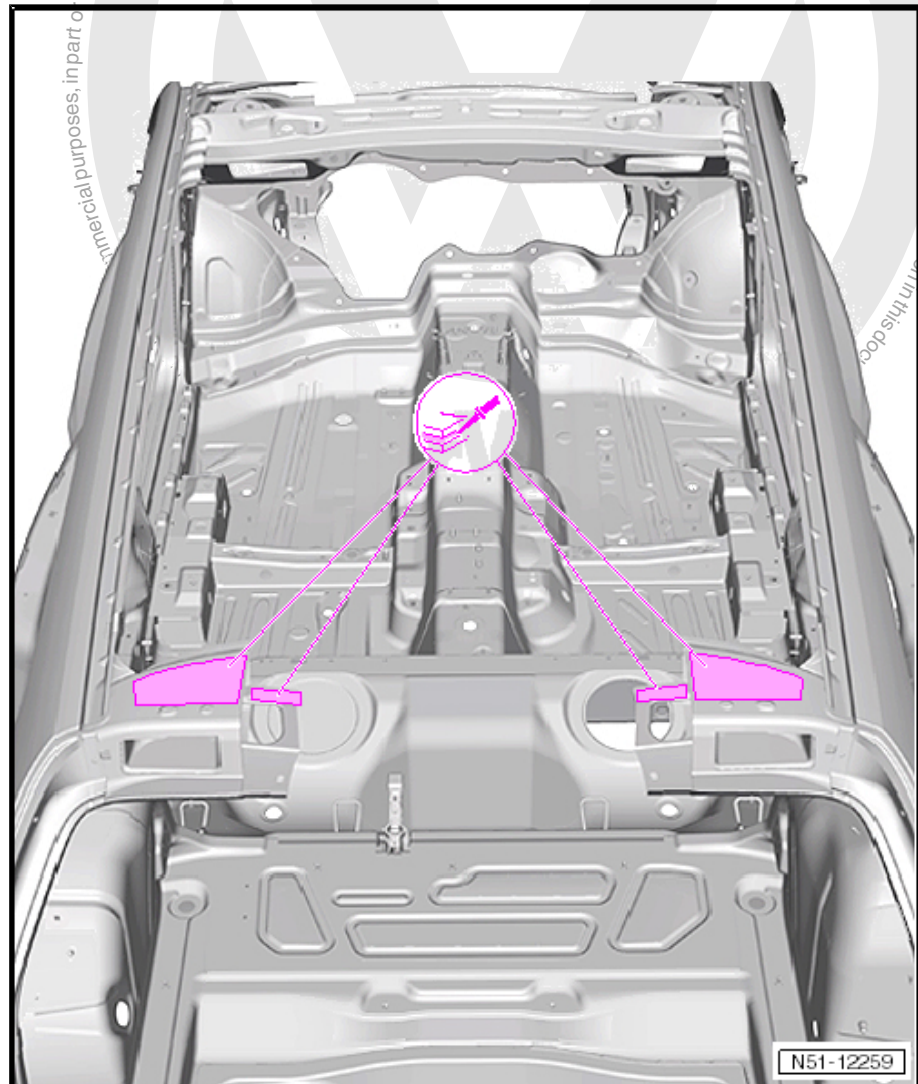


8.3.2 Welding in



Note

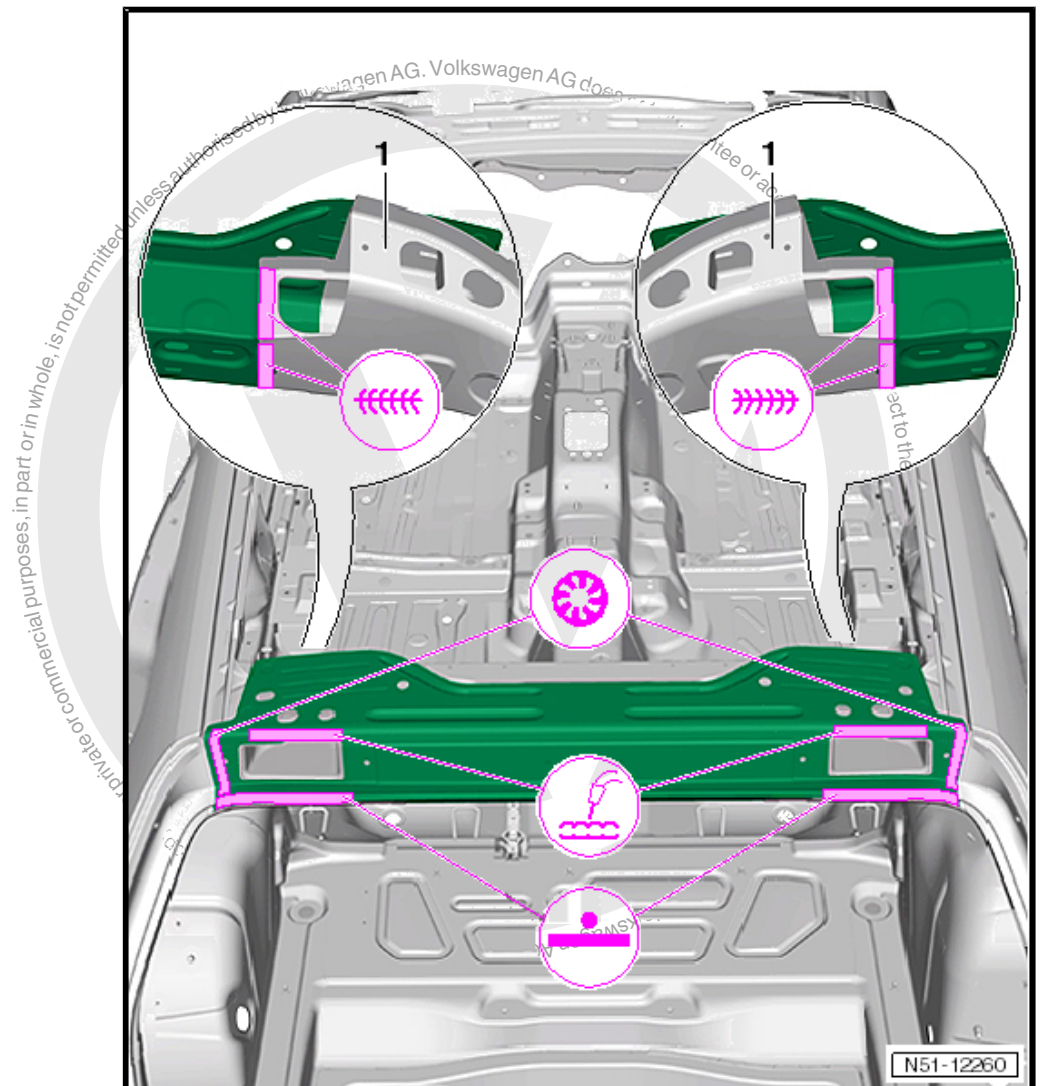
New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.



- Apply 2K body adhesive -D 180 KD3 A2- to areas bonded in the factory.



- Adapt new part with vehicle standing on its wheels or alignment bracket set and fix in position.
- Check fit to roof and tailgate.



- Weld rear roof cross member to left and right D-pillars -1- from inside, SG continuous weld seam.
- Weld in remaining joint, SG plug weld seam, MIG solder seam and RP spot weld seam.
- Install roof ⇒ [page 129](#) .
- Install roof with panorama sliding sunroof ⇒ [page 129](#) .



RO: 51 37 55 00

9 Renewing A-pillar



WARNING

Observe safety notes!

Welding, parting using spark generating machines/tools or tinning in foam treated areas creates gases which are hazardous to health and environment. Therefore, refrain from using these processes.

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

- Upper outer longitudinal member already removed
⇒ [page 50](#) .

1 - A-pillar

2 - Upper parting cut

3 - Moulded foam elements

4 - Parting cut for side member



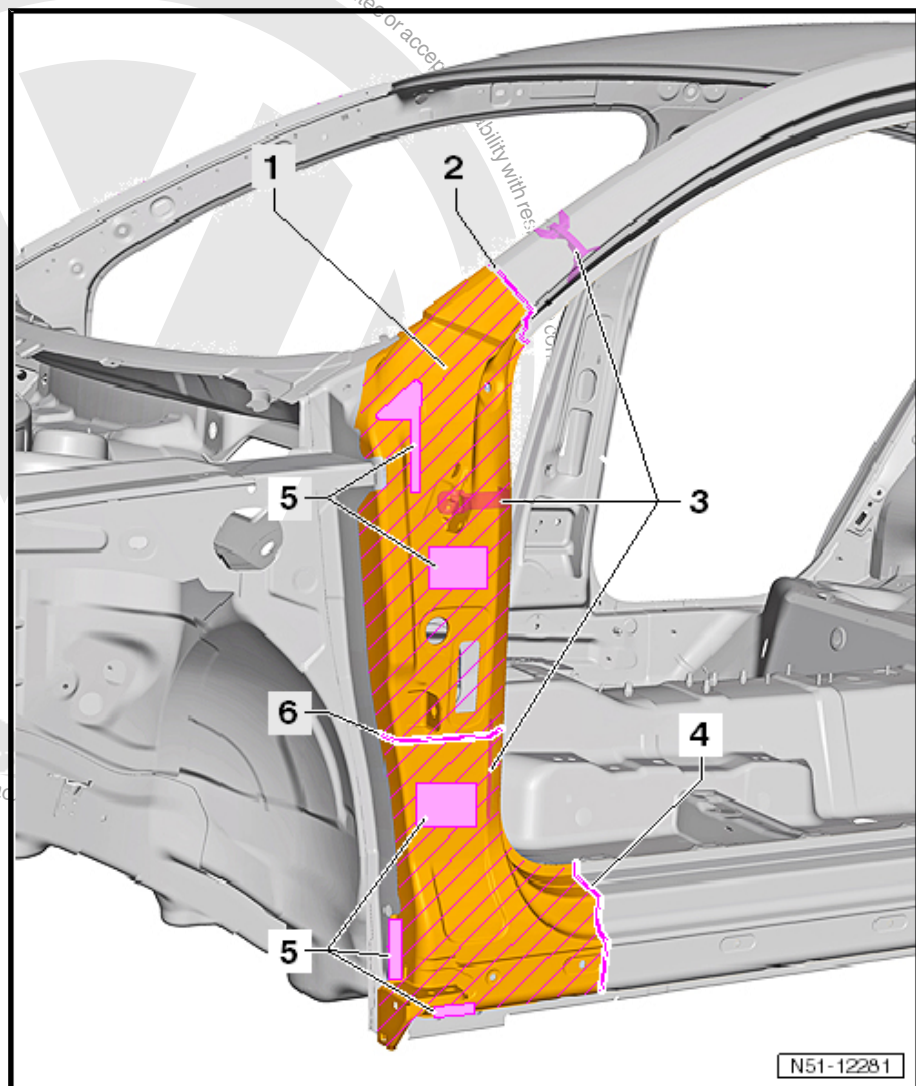
Note

5 - Bonded areas

6 - Parting cut for partial replacement

Partial renewal

Partial replacement of A-pillar is possible using this parting cut.





9.1 Tools



Note

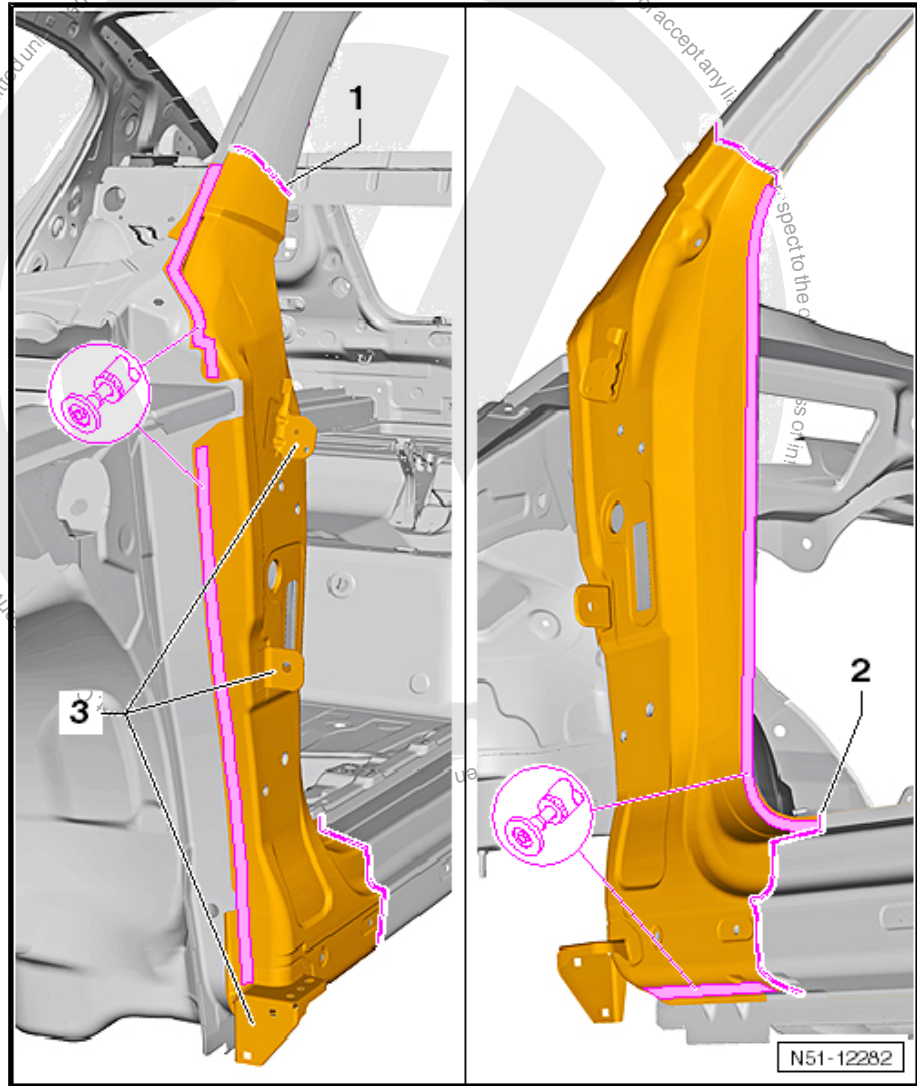
- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in → ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paintwork .*

9.2 Removing



Note

- ◆ *Do not damage underlying panels when cutting out.*
- ◆ *If the A-pillar reinforcement is damaged, it must always be renewed.*
- ◆ *Rewelding A-pillar reinforcement is not permitted due to safety reasons »crash safety«.*

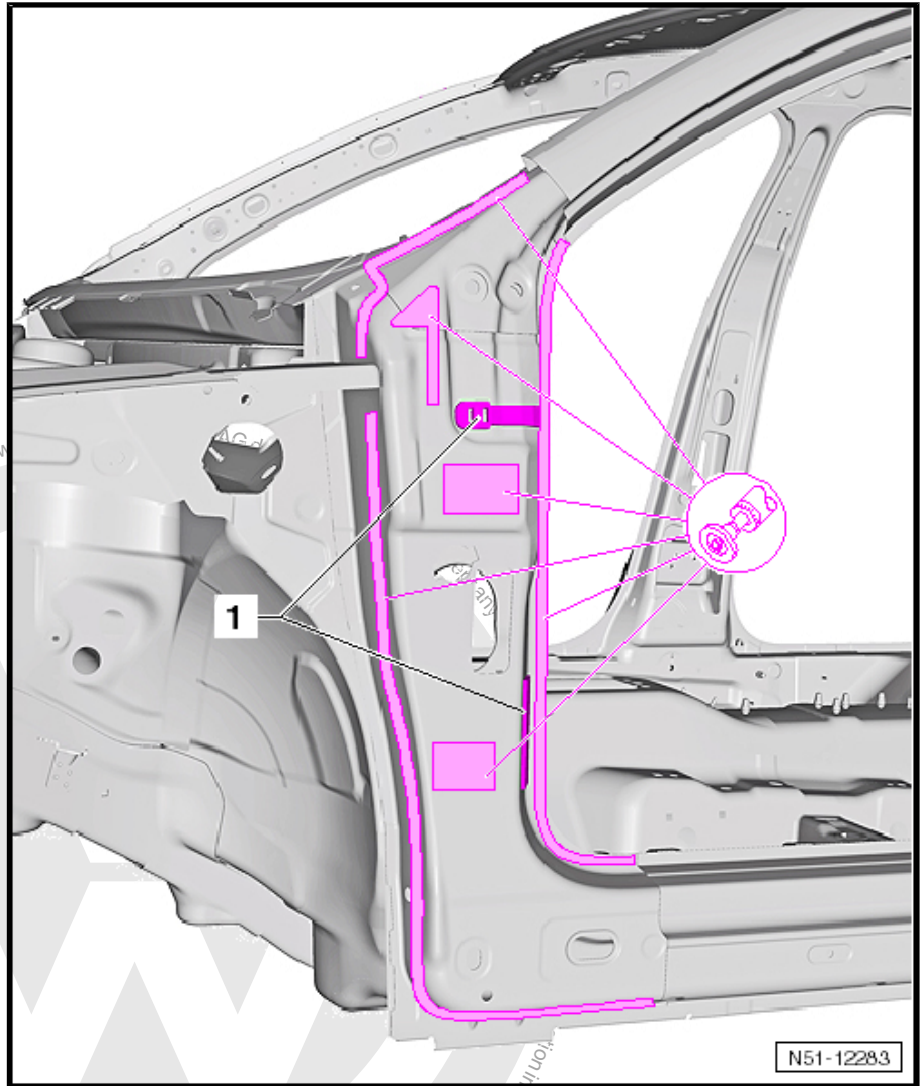


- Locate parting cuts -1- and -2- according to degree of damage and cut out.
 - Separate original joint.
- Retainer for wing -3- is cut out as well and replaced.



Note

Remove as much of the foam residue -1- as possible before starting grinding work.

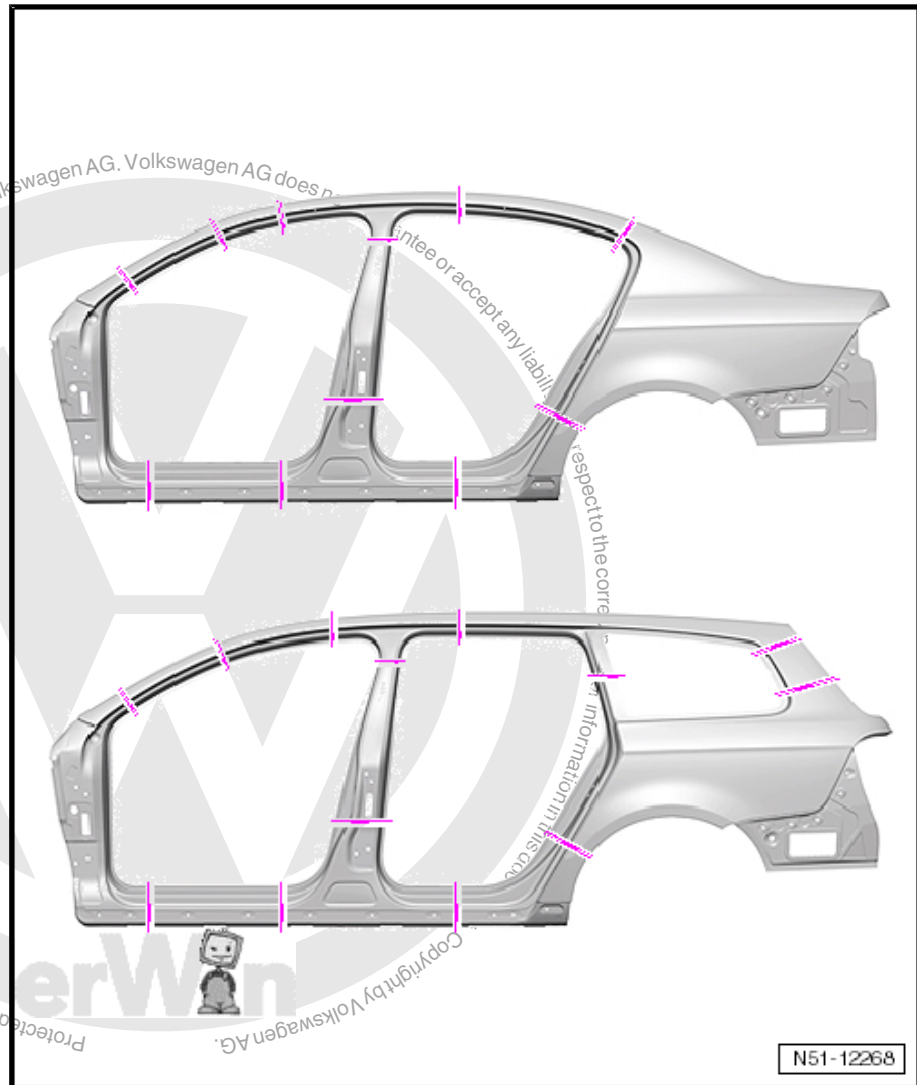


- Remove remaining material.
- Remove remaining adhesive completely and grind bonded surface back to bare metal.

9.3 Installing

i Note

Only welding units authorised by Volkswagen AG may be used
⇒ [page 183](#).



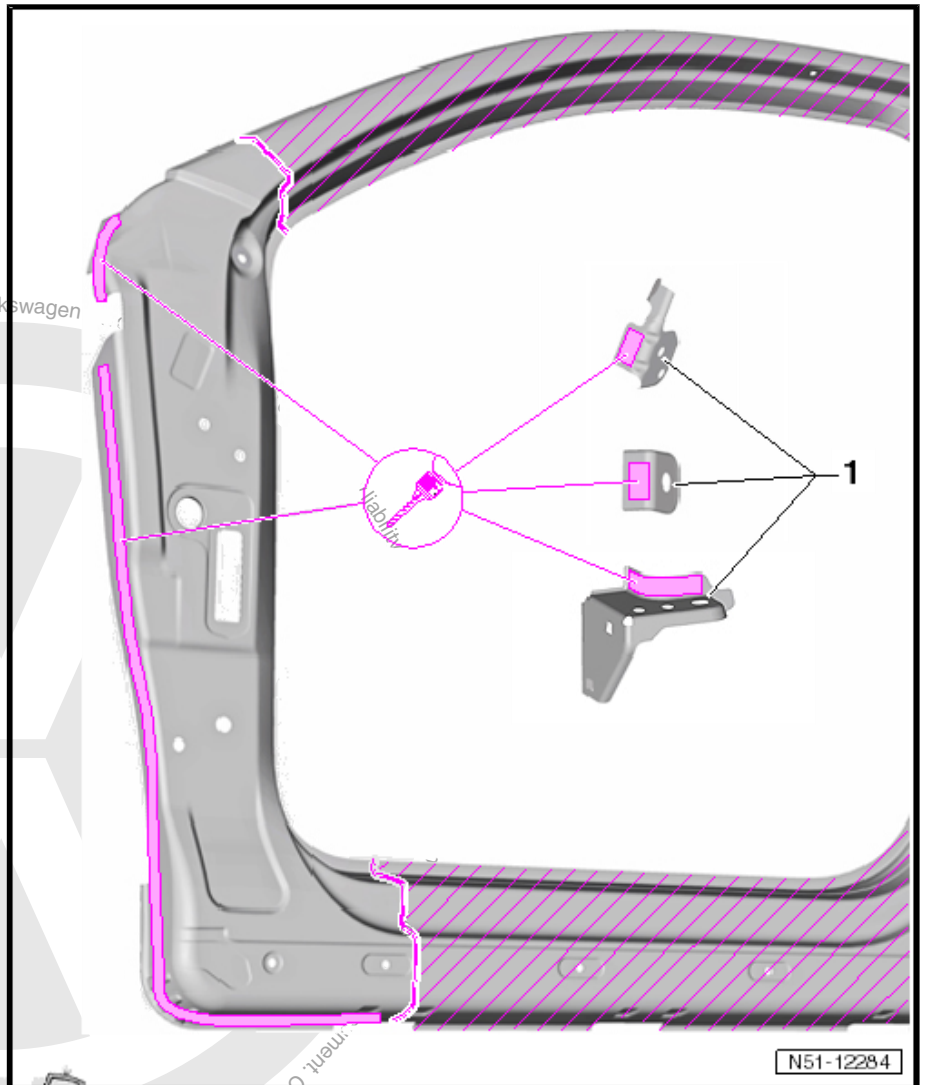
Note

MIG solder seams or SG continuous weld seams are permitted at the parting cuts shown in the illustration.

9.3.1 Preparing new part

New part

- ◆ Front side panel subpart (replacement part designation: subpart with side member)
- ◆ Moulded foam element
- ◆ 2K body adhesive -D 180 KD3 A2-



- Transfer parting cut to new part and cut out.
- Drill holes for SG plug weld seam (8 mm Ø).

9.3.2 Moulded foam elements

Follow repair instructions.

Moulded foam elements ⇒ General Information; Body Repairs,
General Body Repairs ; General Notes; Moulded foam elements

Position of the moulded foam elements ⇒ [page 4](#)

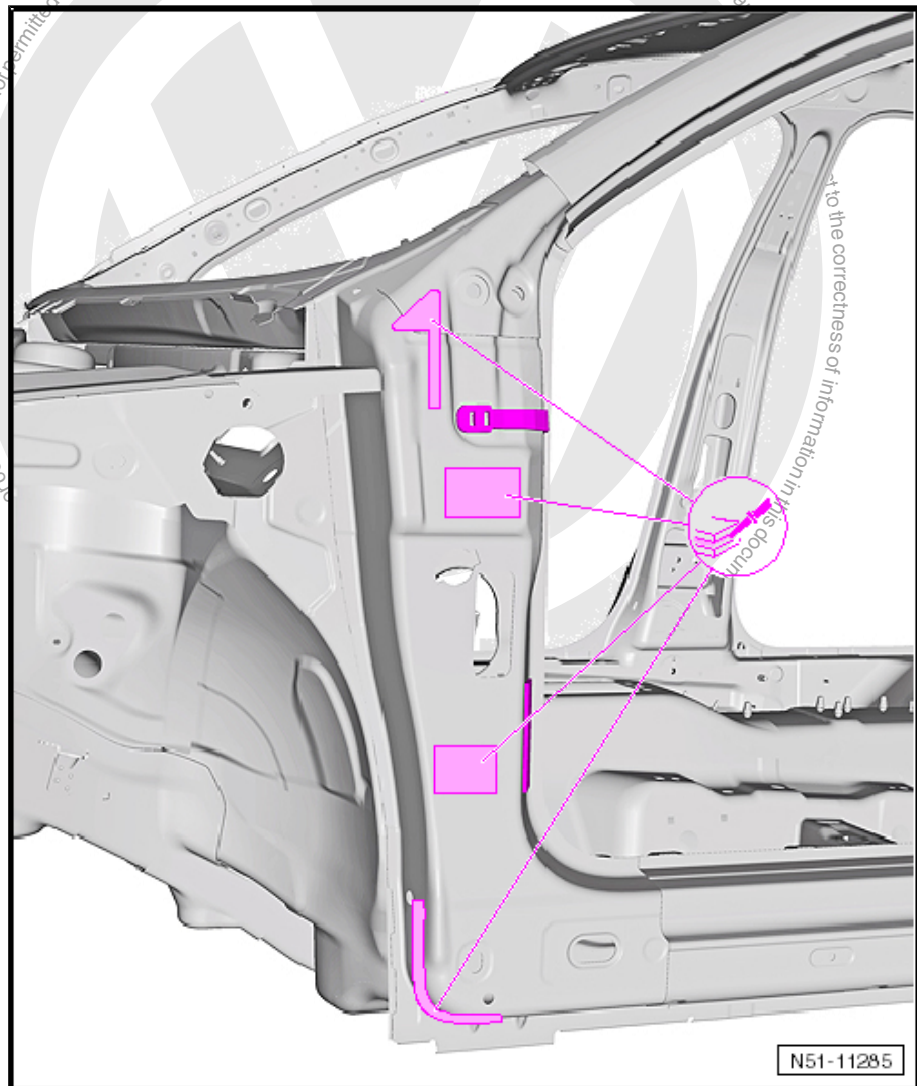


9.3.3 Welding in



Note

- ◆ *New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.*
- ◆ *Adhesive must be cleaned from holes for fastening hinges after bonding in.*

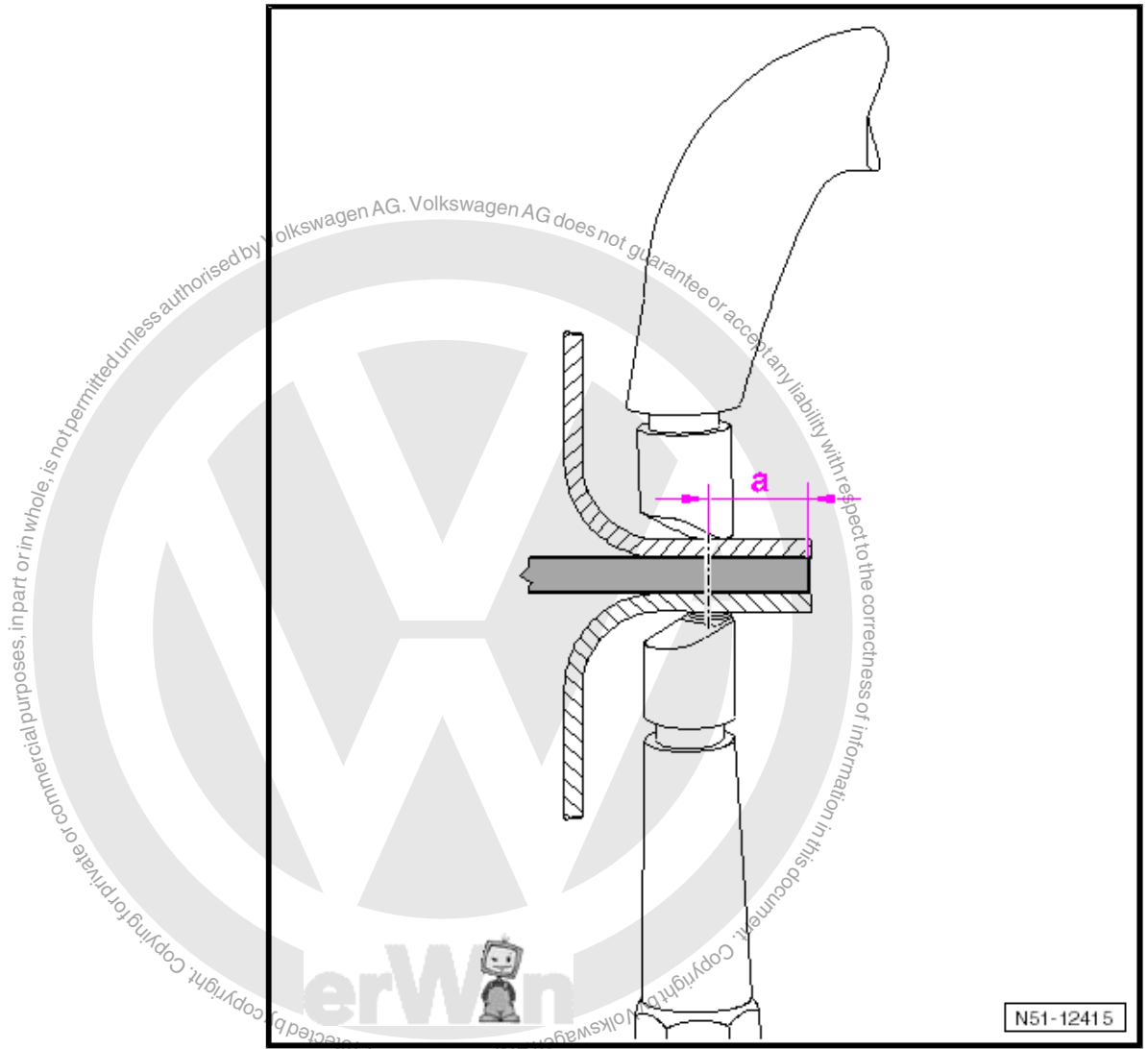


- Apply 2K body adhesive -D 180 KD3 A2- to areas bonded in the factory.



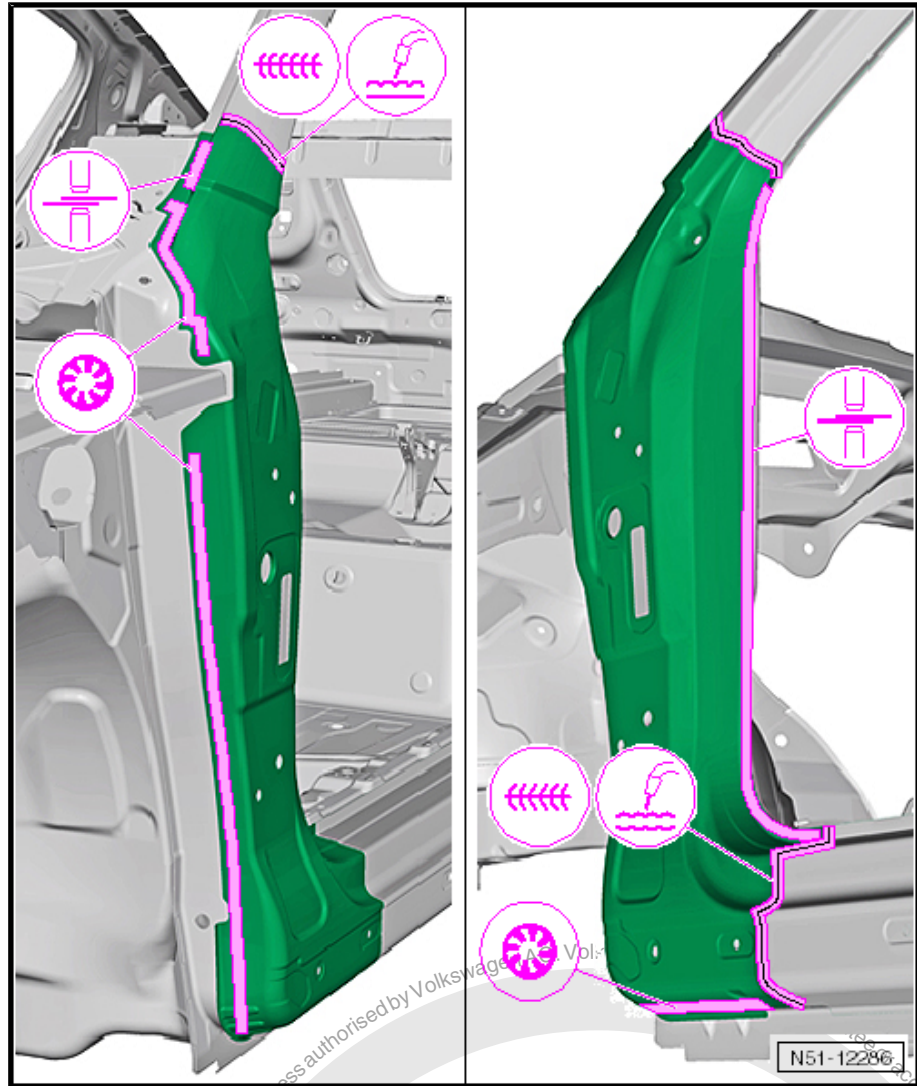
Note

- ◆ *In the area of the A, B and C-pillars, high tensile, highest tensile and hot formed steels are used. The weld flanges in these areas are about 13mm wide.*
- ◆ *If spot welds are located at the edge of hot formed steel panels, the high temperature will cause the bond between the panels to change, which will subsequently have an effect on crash safety.*



Therefore, locate spot welds as close to the centre as possible.

- Dimension -a- of 8mm can be achieved using angled welding tips.
- Adapt new part with vehicle standing on its wheels or alignment bracket set and fix in position.
- Check fit with bolt-on parts.



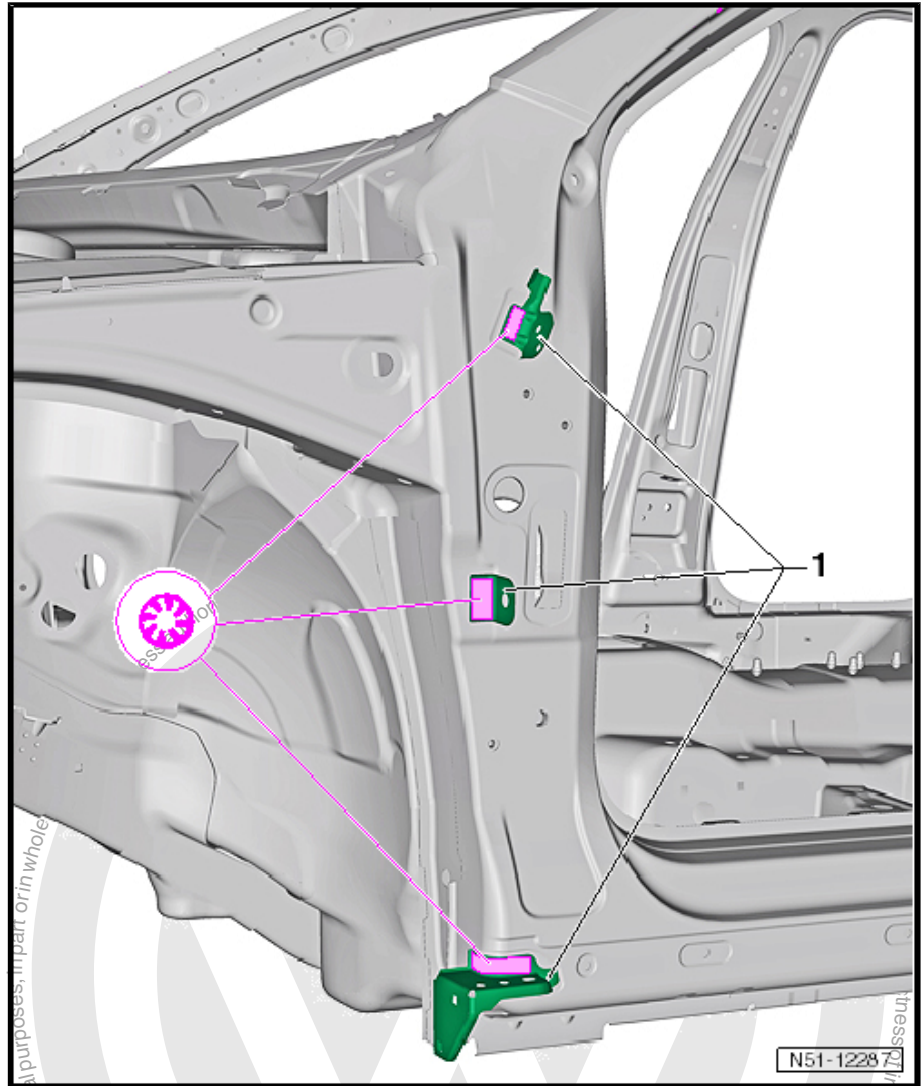
- Weld in parting cuts, MIG solder seam or SG continuous weld seam are permitted.



Note

Both weld symbols are shown in the figure.

- Weld in door aperture and windscreen aperture, RP spot weld seam (inverter).
- Weld A-pillar to A-pillar reinforcement, SG plug weld seam.



- Adapt retainers -1- for wing when adapting wing and secure.
- Check gaps/shut lines ⇒ [page 10](#)
- Weld in wing retainer, SG plug weld seam.
- Install upper longitudinal member for wheel housing ⇒ [page 52](#) .



RO: 51 38 55 53

10 Renewing A-pillar reinforcement - part section



WARNING

Observe safety notes!

Welding, parting using spark generating machines/tools or tinning in foam treated areas creates gases which are hazardous to health and environment. Therefore, refrain from using these processes.

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

- A-pillar part section already removed [→ page 183](#) .

1 - A-pillar reinforcement

2 - Hinge reinforcement

Is part of A-pillar reinforcing
and is removed as well.

3 - Bonded areas

4 - Side member reinforcement

5 - Moulded foam element

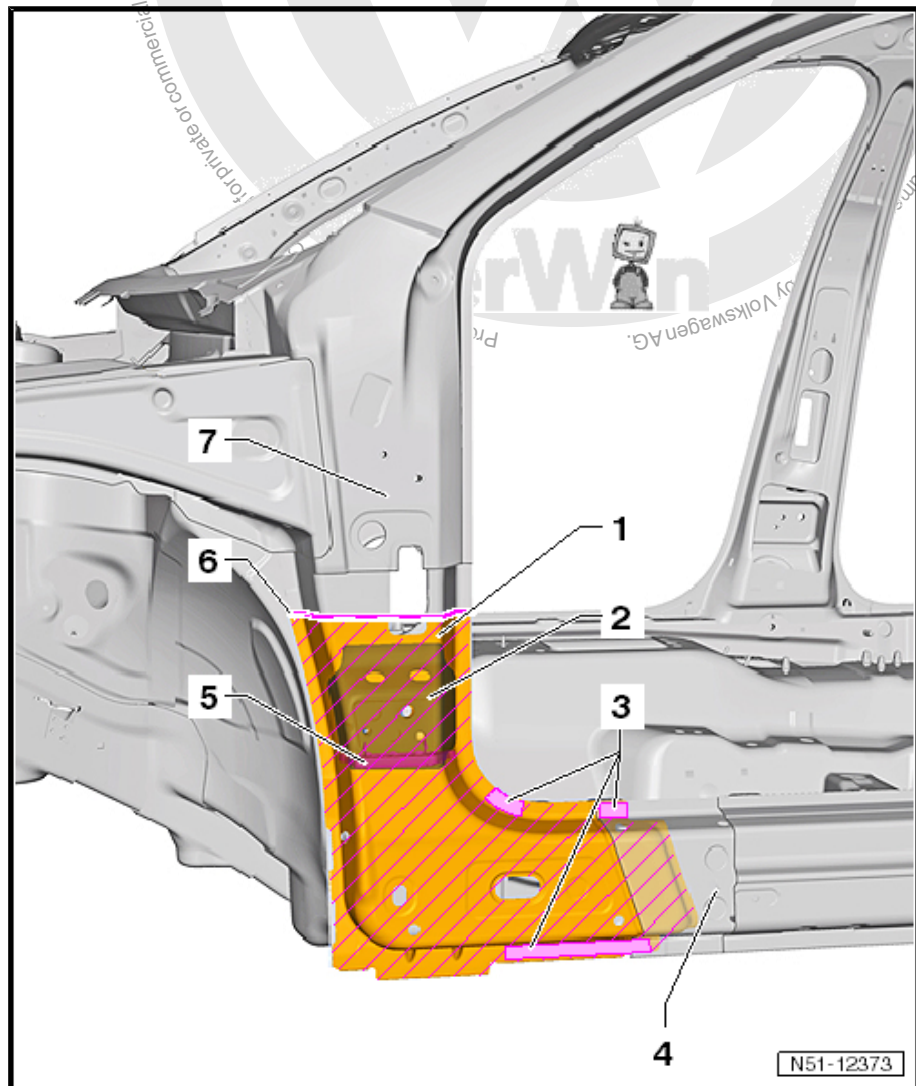


Note

6 - Cutting point

7 - A-pillar

Part section removed.





10.1 Tools

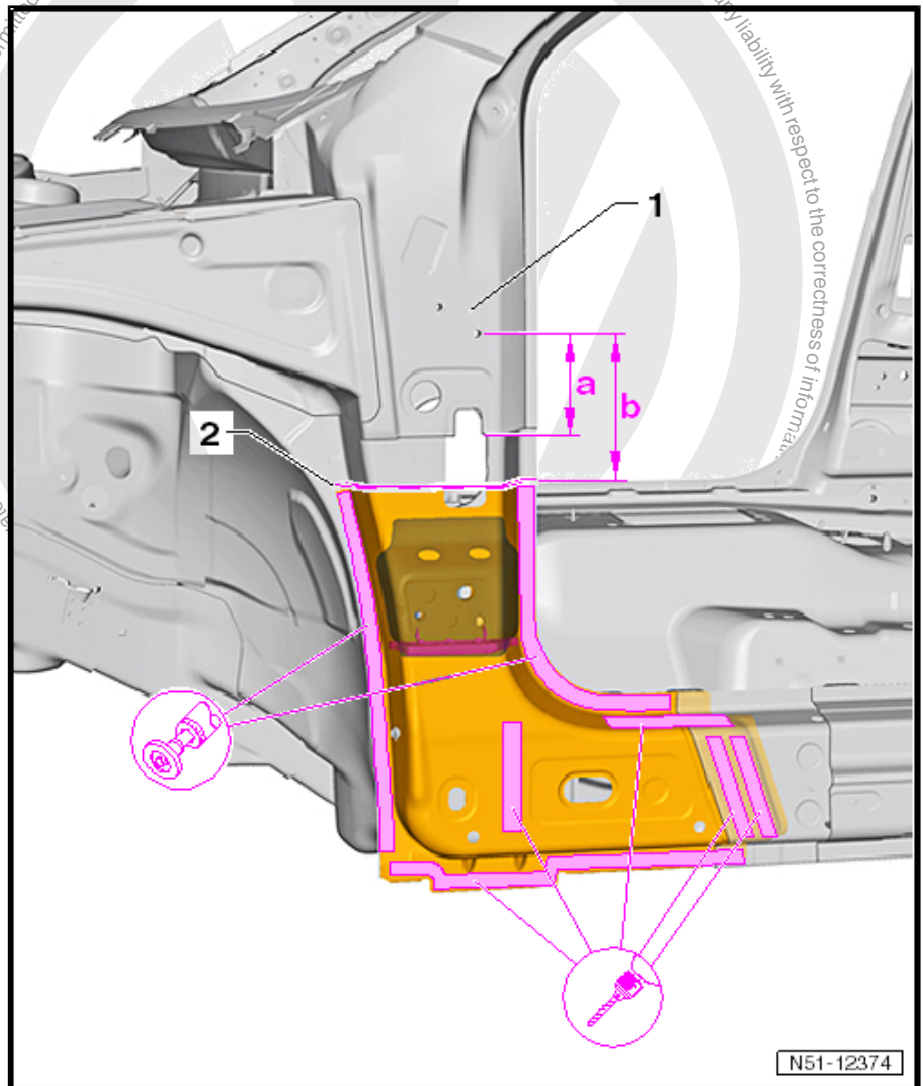
Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paintwork .*

10.2 Removing

Note

Do not damage underlying panels when cutting out.



- A-pillar -1- cut out according to dimension -a-.

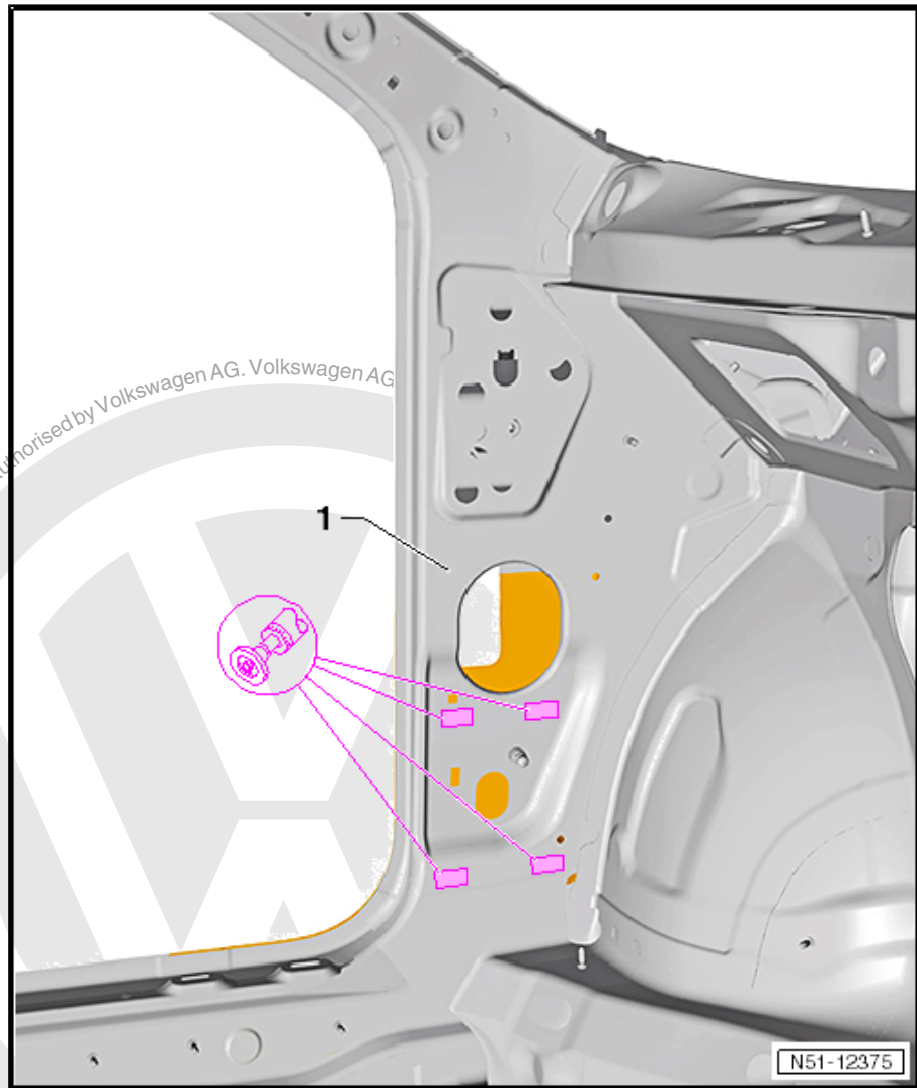


Dimension -a- = 90 mm

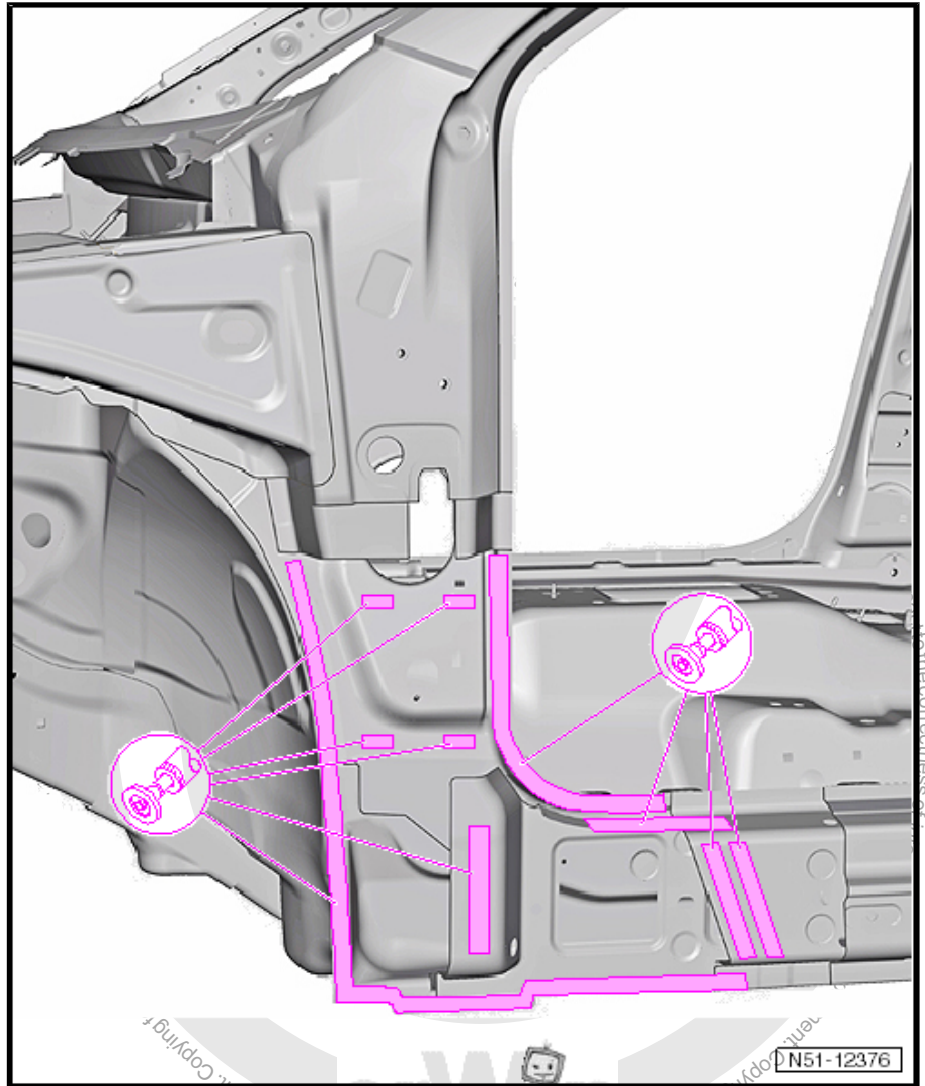
- Position parting cut -2- at A-pillar reinforcing as shown and cut out.

Dimension -b- = 140 mm

- Separate original joint of A-pillar reinforcement.



- Separate original joint for hinge reinforcing for inner A-pillar
-1-



- Remove remaining material.
- Remove remaining adhesive completely and grind bonded surface back to bare metal.

10.3 Installing

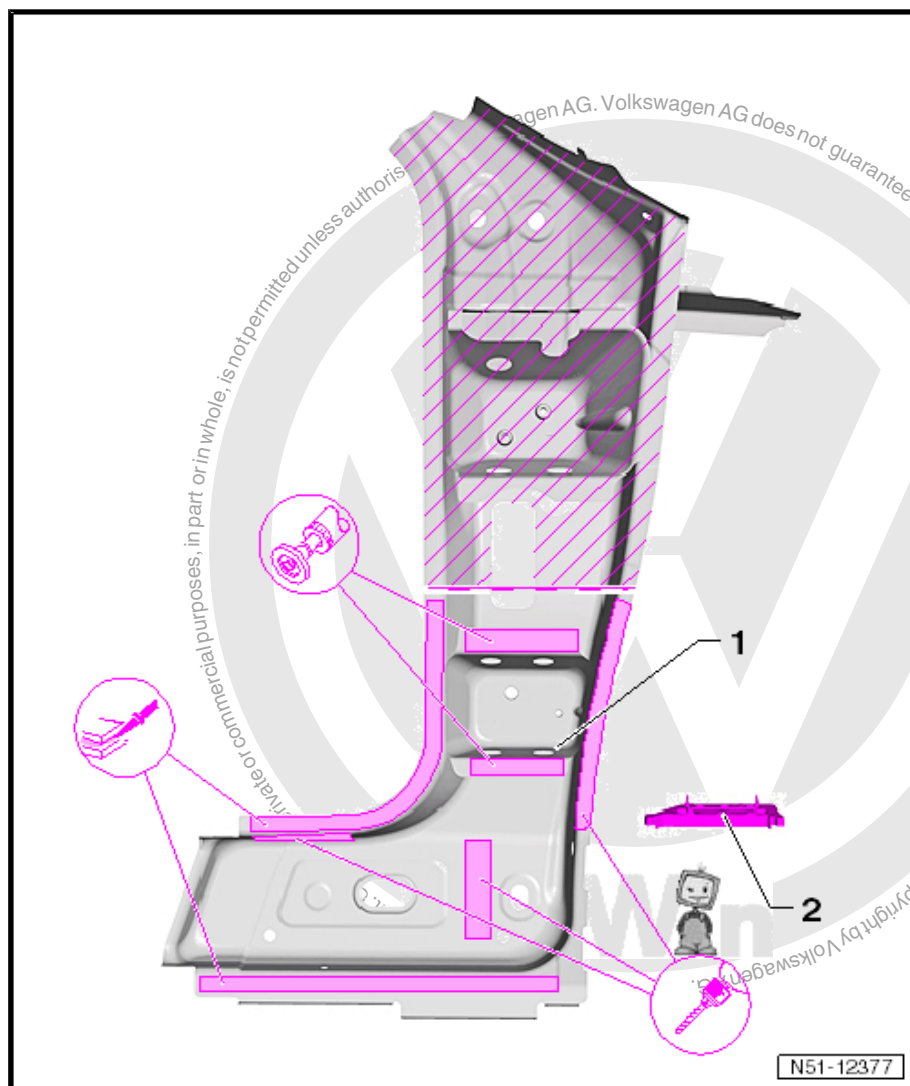
Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 193](#).*

10.3.1 Preparing new part

New part

- ◆ A-pillar reinforcement
- ◆ Moulded foam element
- ◆ 2K body adhesive -D 180 KD3 A2-



- Transfer parting cut to new part and cut out.
- Drill holes for SG plug weld seam (8 mm Ø).
- Clip new moulded foam element -2- into hinge reinforcing -1-.
- Apply 2K body adhesive -D 180 KD3 A2- in the areas indicated.

10.3.2 Moulded foam elements

Follow repair instructions.

Moulded foam elements ⇒ General Information; Body Repairs, General Body Repairs ; General Notes; Moulded foam elements

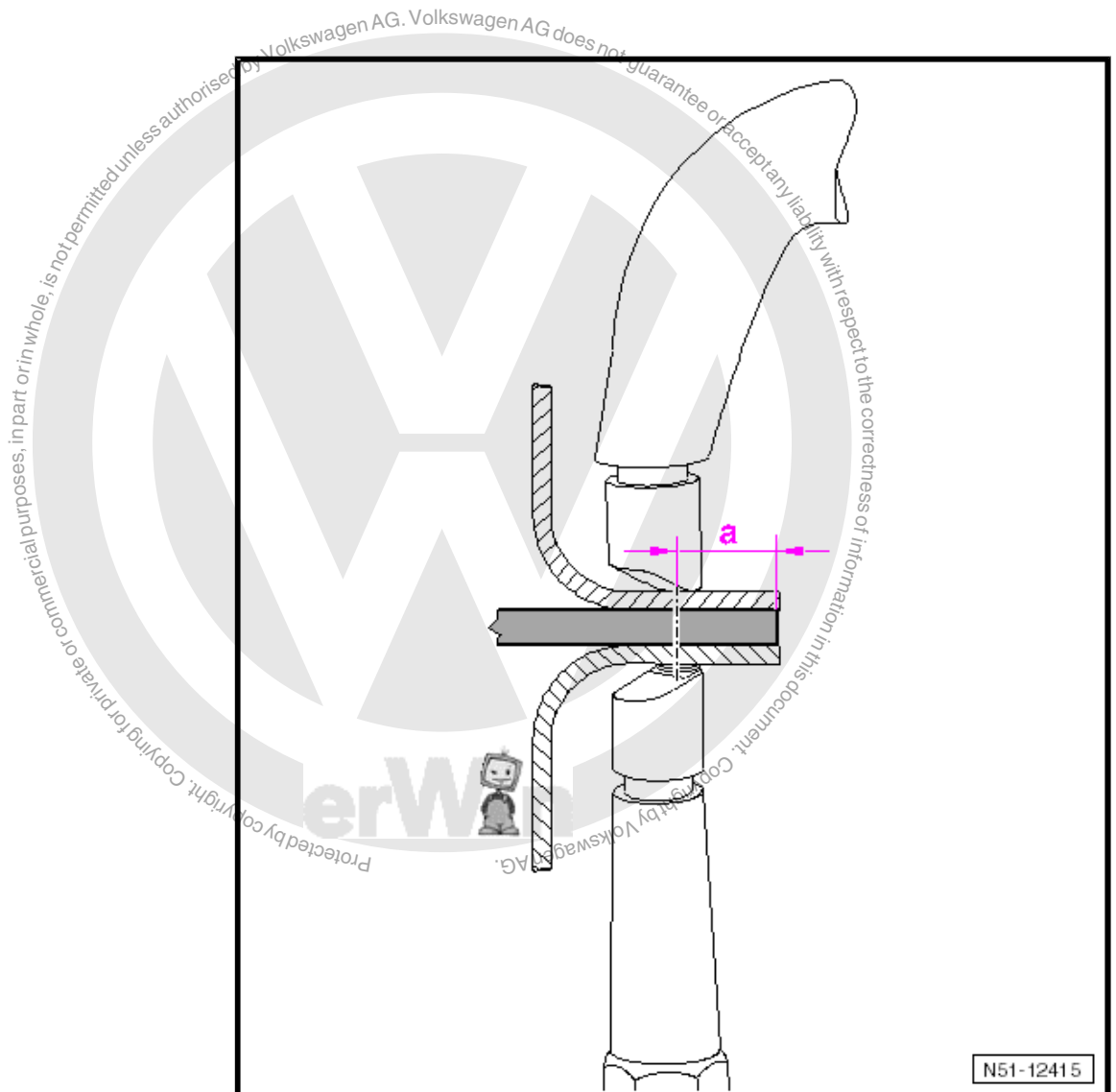
Position of the moulded foam elements ⇒ [page 4](#)



10.3.3 Welding in

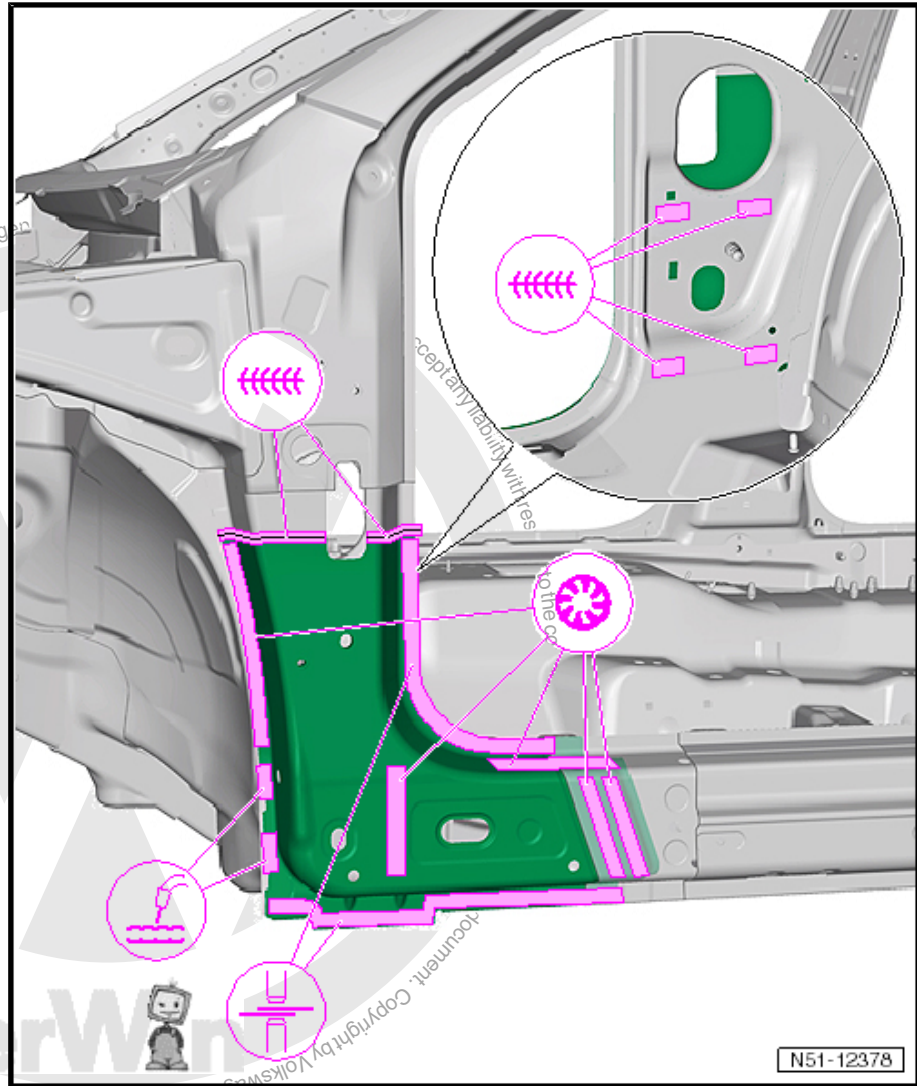
 Note

- ◆ In the area of the A, B and C-pillars, high tensile, highest tensile and hot formed steels are used. The weld flanges in these areas are about 13mm wide.
- ◆ If spot welds are located at the edge of hot formed steel panels, the high temperature will cause the bond between the panels to change, which will subsequently have an effect on crash safety.



Therefore, locate spot welds as close to the centre as possible.

- Dimension -a- of 8mm can be achieved using angled welding tips.
- Adapt new part with vehicle positioned on alignment bracket set and fix in place.
- Check fit with bolt-on parts.



- Weld in A-pillar reinforcement, SG plug weld seam and RP spot weld seam (inverter).
- Recreate original joint to front wheel housing, MIG solder seam.
- Weld in parting cut, SG continuous weld seam.
- Install A-pillar ⇒ [page 185](#) .



RO: 51 41 55 02

11 Renewing B-pillar



WARNING

Observe safety notes!

Welding, parting using spark generating machines/tools or tinning in foam treated areas creates gases which are hazardous to health and environment. Therefore, refrain from using these processes.

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

1 - Extended area of B-pillar

Must be cut out when replacing B-pillar reinforcing complete.

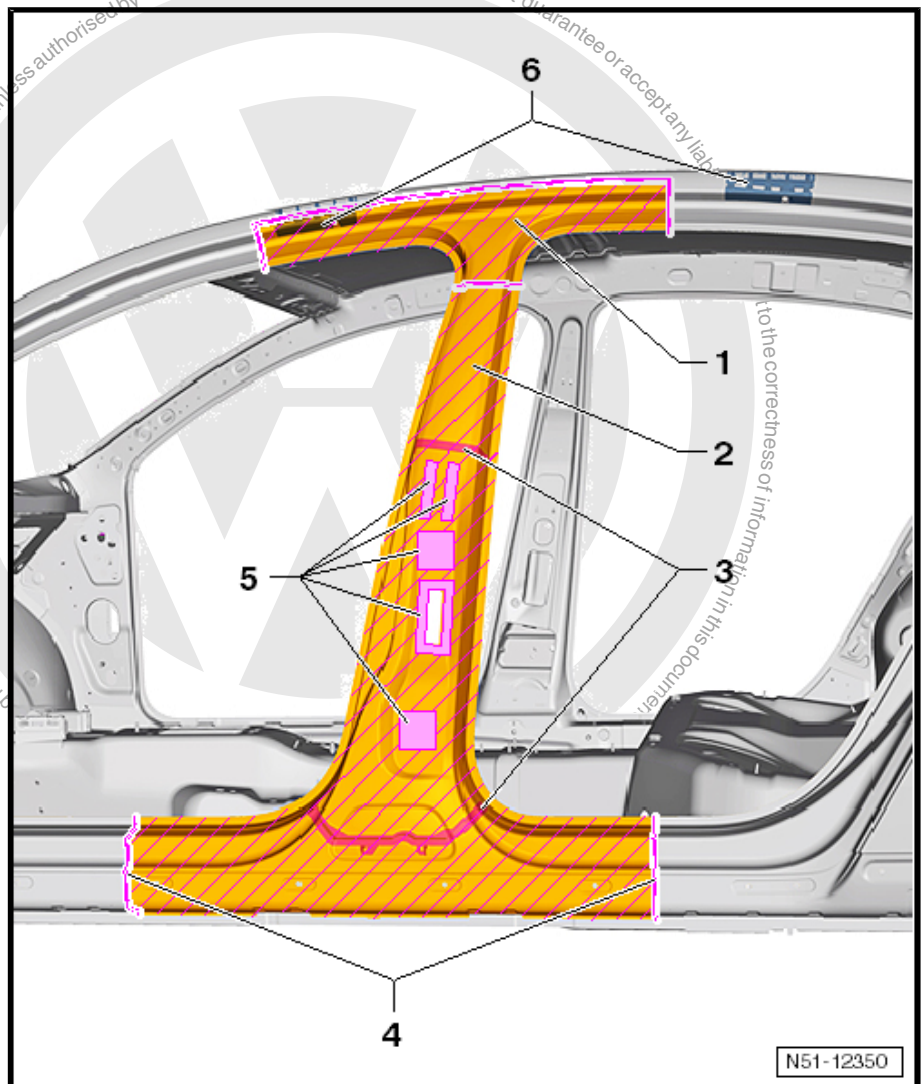
2 - B-pillar

3 - Moulded foam elements

4 - Parting cut for side member

5 - Bonded areas

6 - Reinforcing (roof carrier)



N51-12350



11.1 Tools



Note

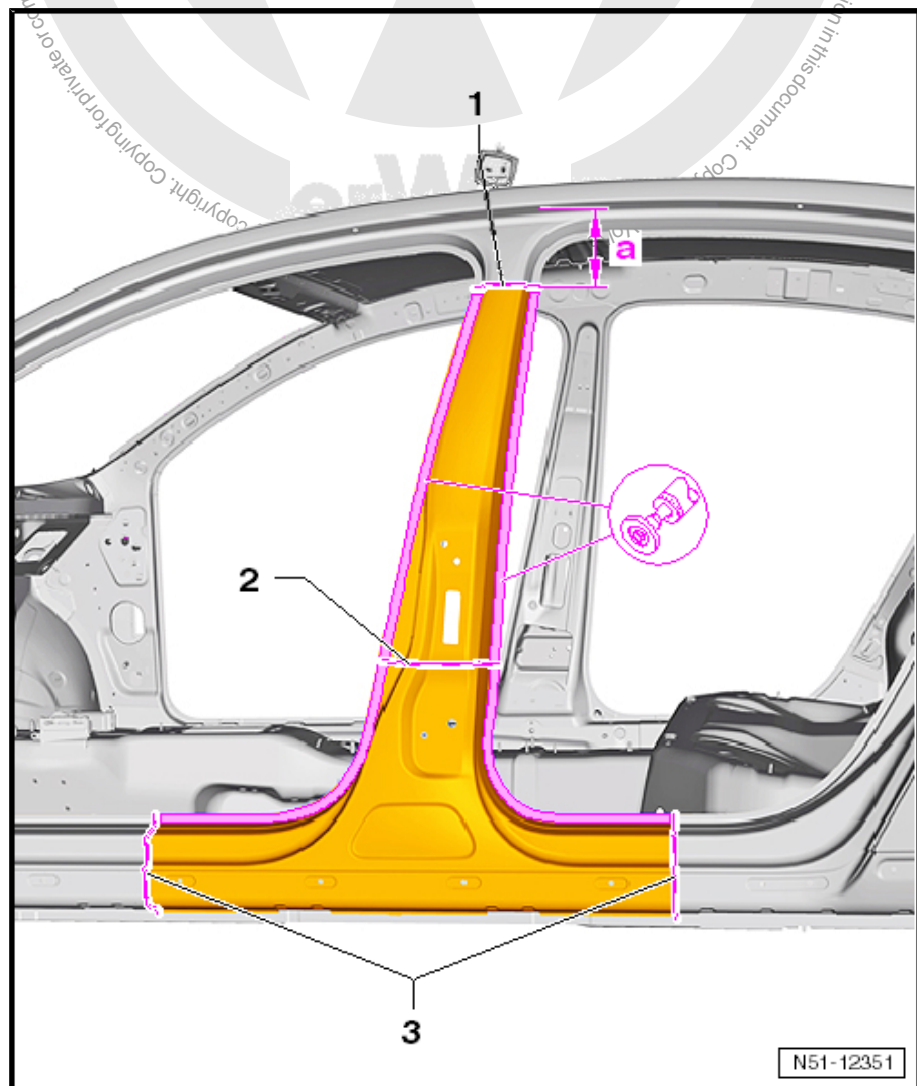
- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paint-work .*

11.2 Removing



Note

- ◆ *Do not damage underlying panels when cutting out.*
- ◆ *If the B-pillar reinforcement is damaged, it must always be renewed.*
- ◆ *For safety reasons »crash safety«, it is not permissible to reweld the B-pillar reinforcement.*





- Make parting cut -1- as shown.

Dimension -a- = 120 mm

Partial renewal

A part section repair of B-pillar is possible using parting cut -2-.

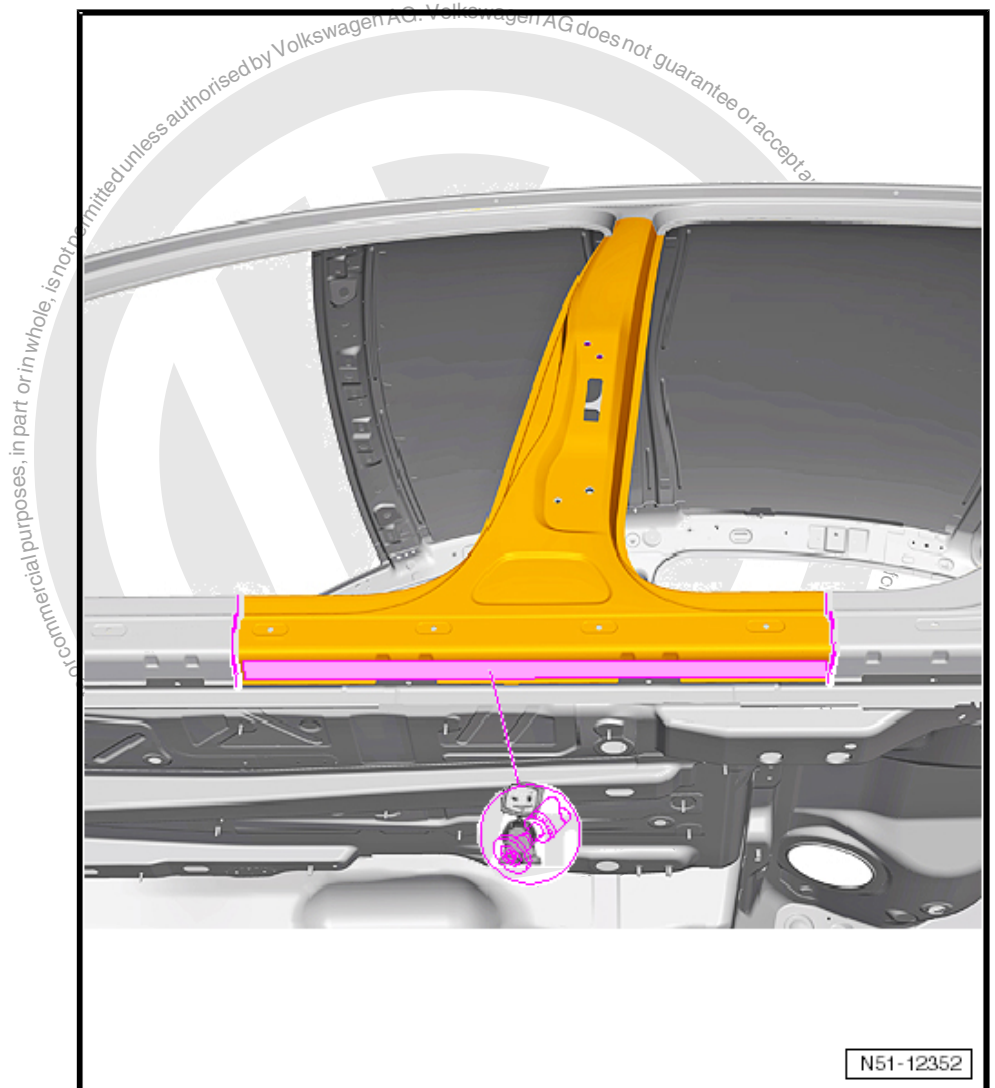
- Place parting cuts -3- according to degree of damage.



Note

Keep the cutting of the replacement part in mind.

- Separate original joint to B-pillar reinforcement.

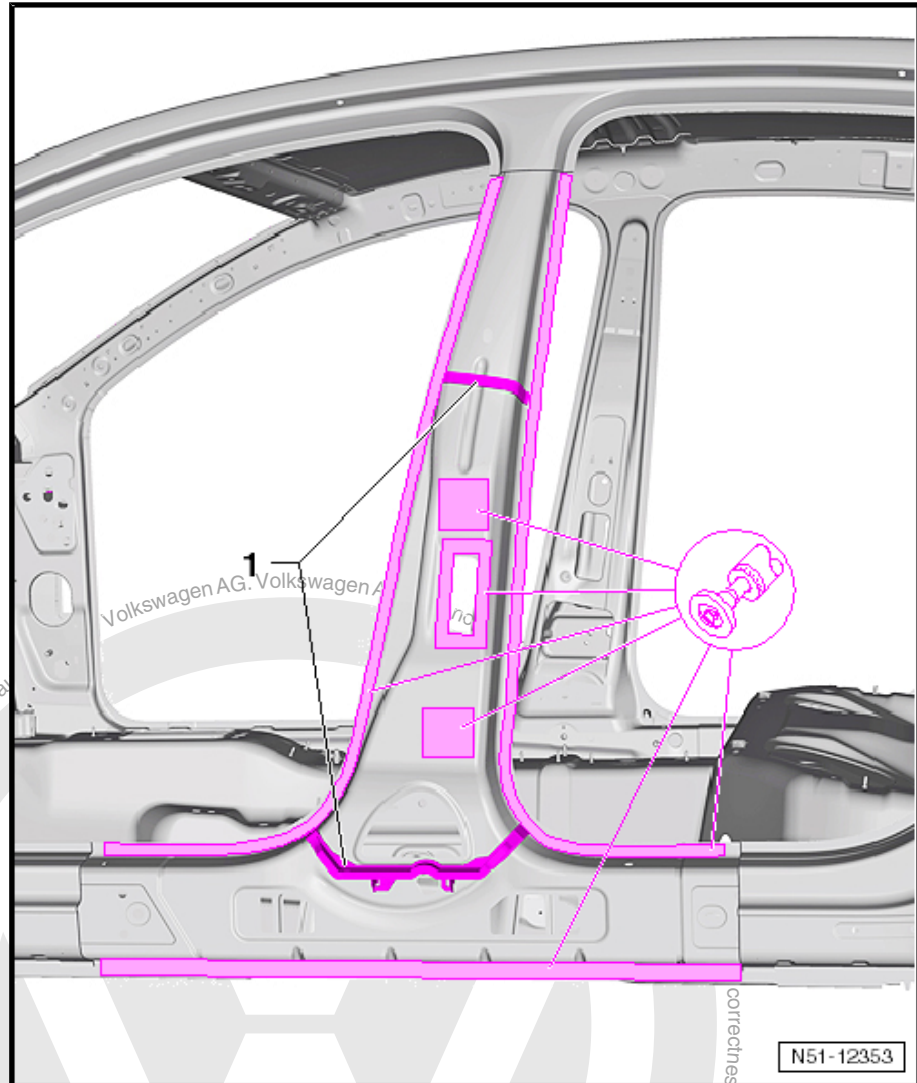


- Separate original joint to side member reinforcement.



Note

Remove as much of the foam residue -1- as possible before starting grinding work.



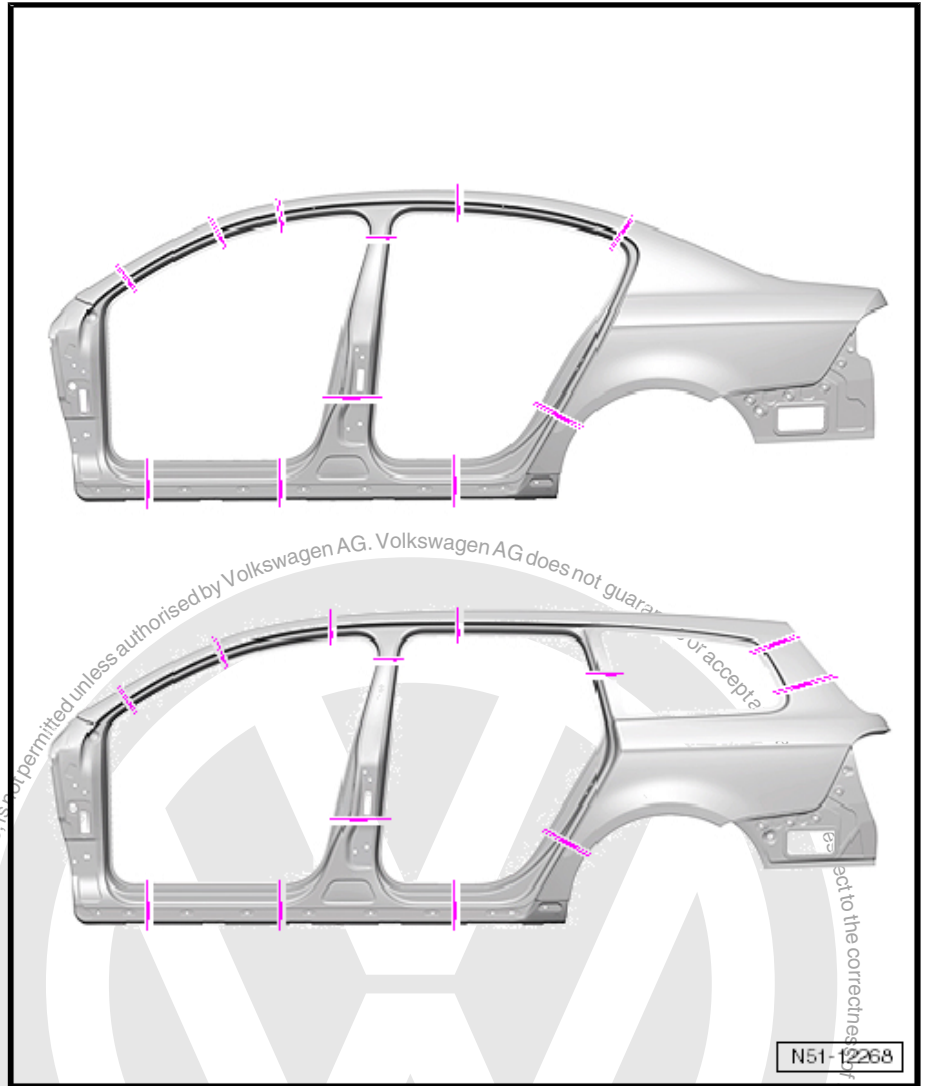
- Remove remaining material.
- Remove remaining adhesive completely and grind bonded surface back to bare metal.

11.3 Installing



Note

Only welding units authorised by Volkswagen AG may be used
[=> page 183](#).



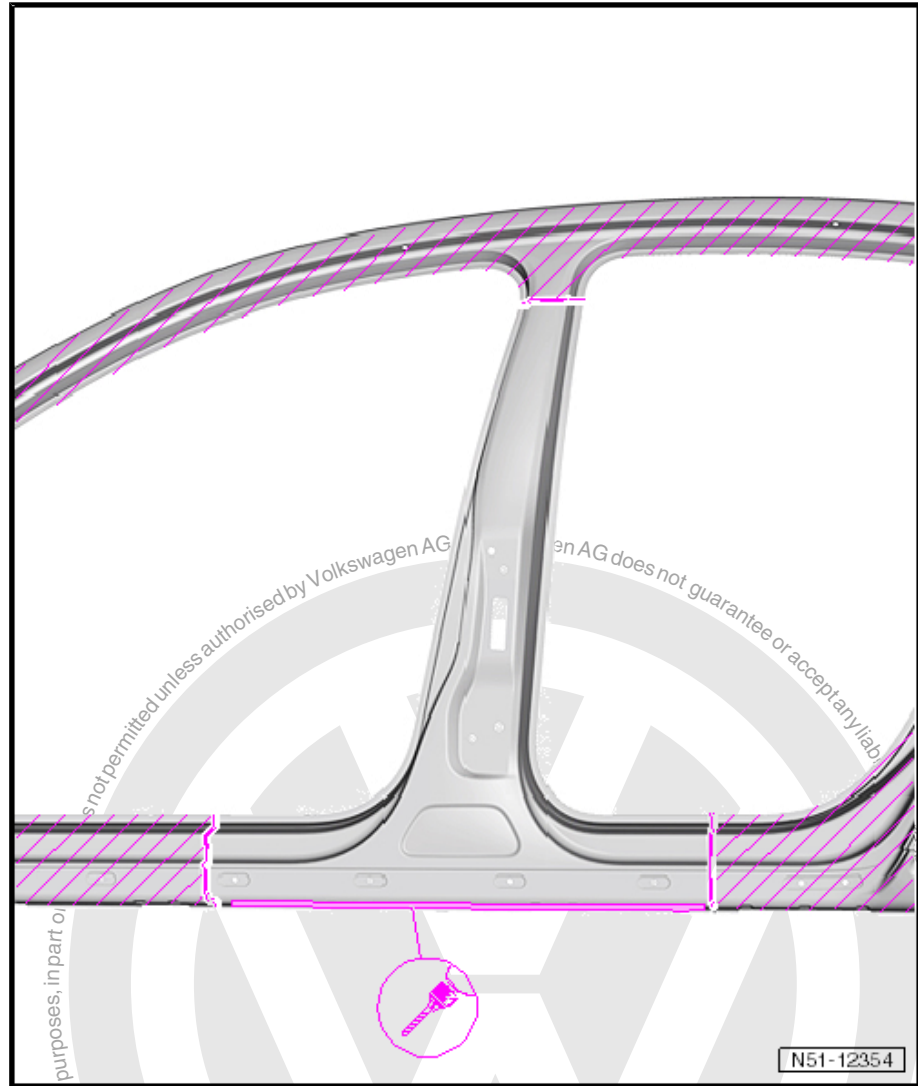
i Note

MIG solder seams or SG continuous weld seams are permitted at the parting cuts shown in the illustration.

11.3.1 Preparing new part

New part

- ◆ Subpart side panel
- ◆ Moulded foam element
- ◆ Sealing cord -AKD 497 010 04 R10-
- ◆ 2K body adhesive -D 180 KD3 A2-



- Transfer parting cut to new part and cut out.
- Drill holes for SG plug weld seam (8 mm Ø).

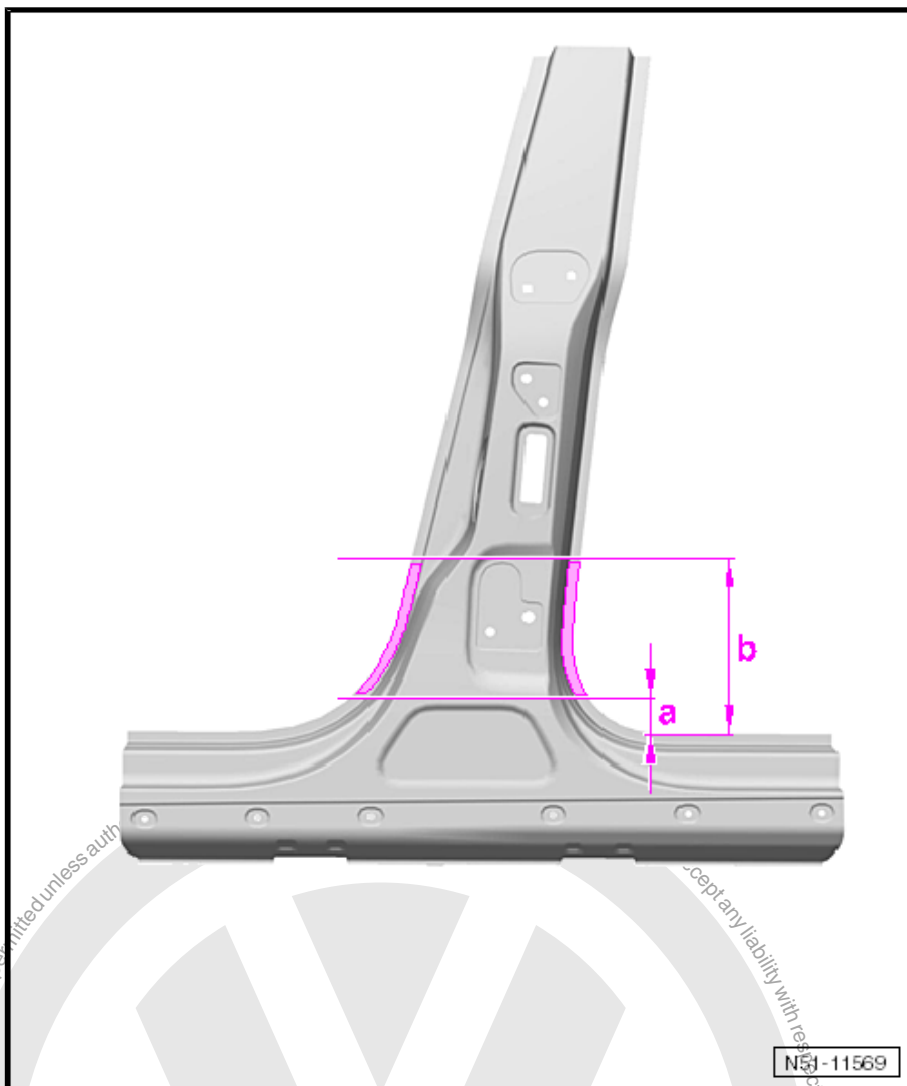
11.3.2 Marking area where no welding work may be carried out

- Mark areas on outer B-pillar where welding for safety reasons »crash safety« is prohibited.



Note

The measurements given must be adhered to.



- ◆ Dimension -a- = 50 mm
- ◆ Dimension -b- = 160 mm

11.3.3 Moulded foam elements

Follow repair instructions.

Moulded foam elements ⇒ General Information; Body Repairs,
General Body Repairs ; General Notes; Moulded foam elements

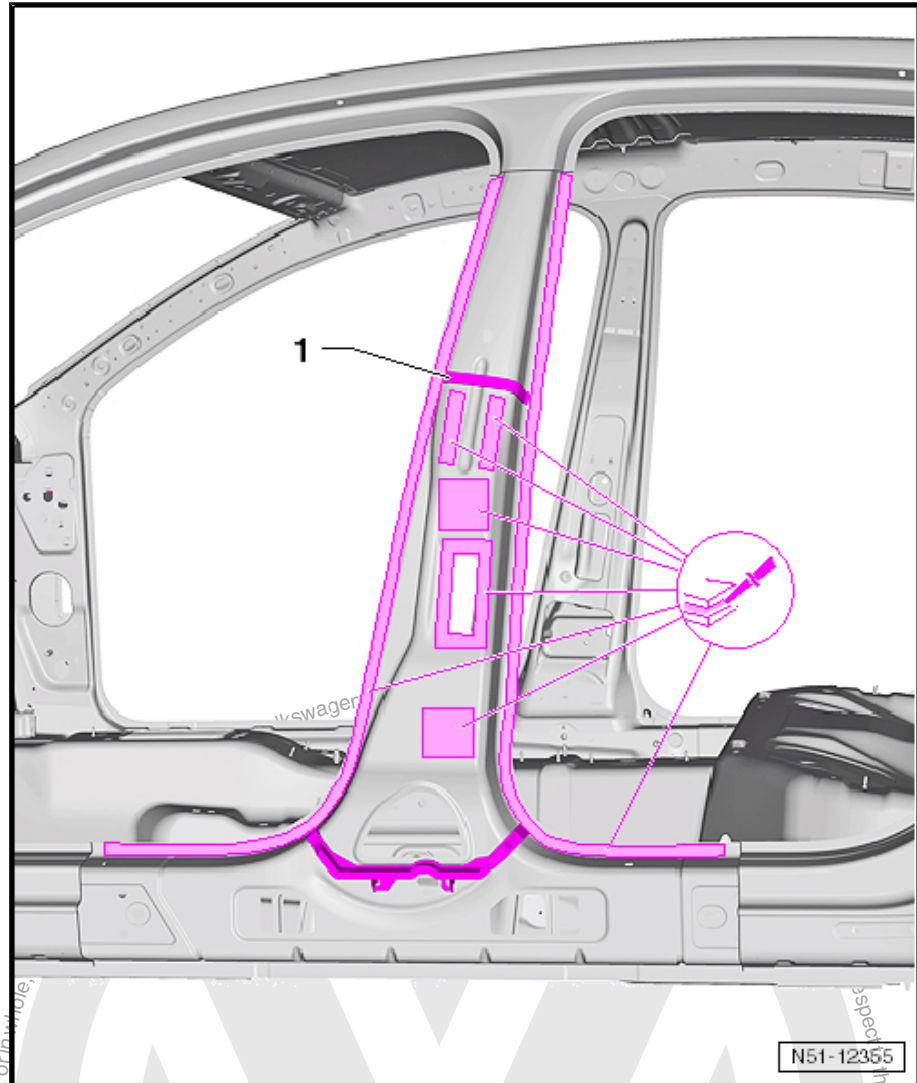
Position of the moulded foam elements ⇒ [page 4](#)

11.3.4 Welding in



Note

- ◆ *New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.*
- ◆ *Adhesive must be cleaned from holes for fastening hinges after bonding in.*

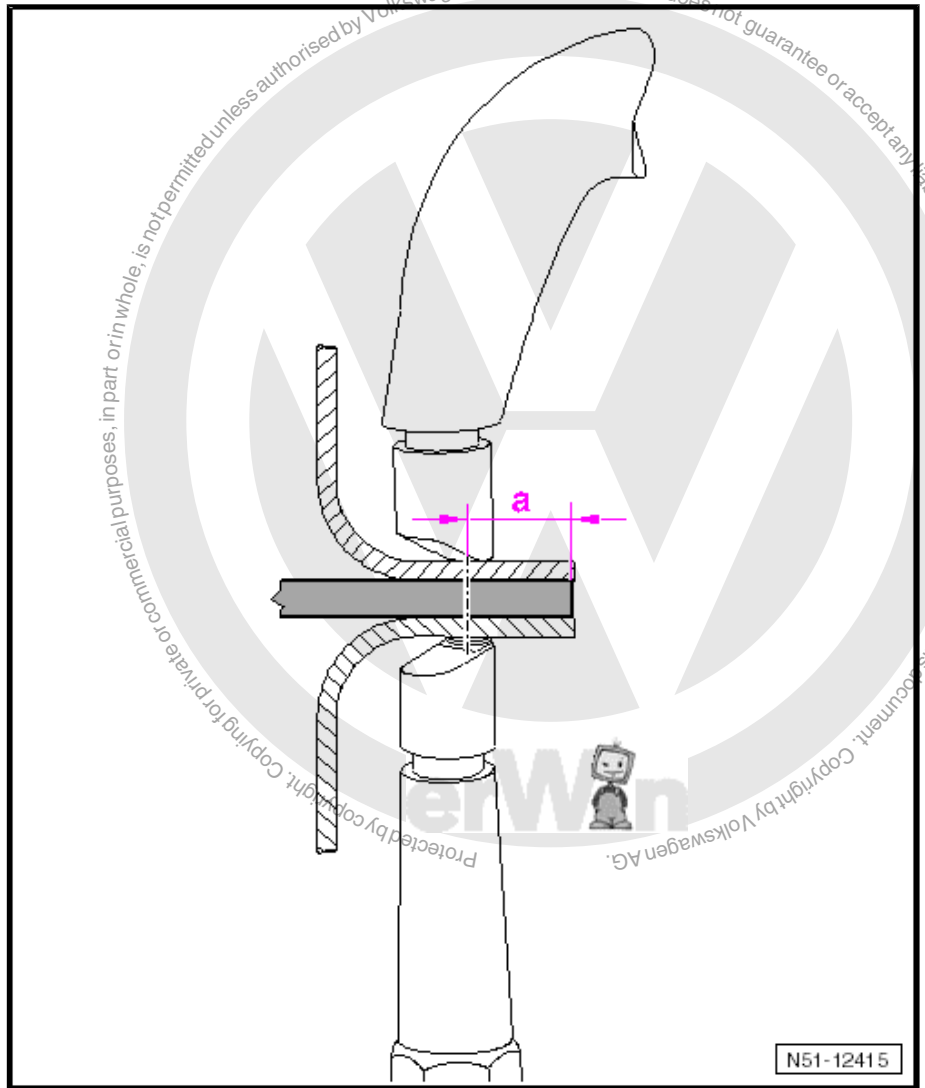


- Apply sealing cord -AKD 497 010 04 R10- to area -1-.
- Apply 2K body adhesive -D 180 KD3 A2- to areas bonded in the factory.



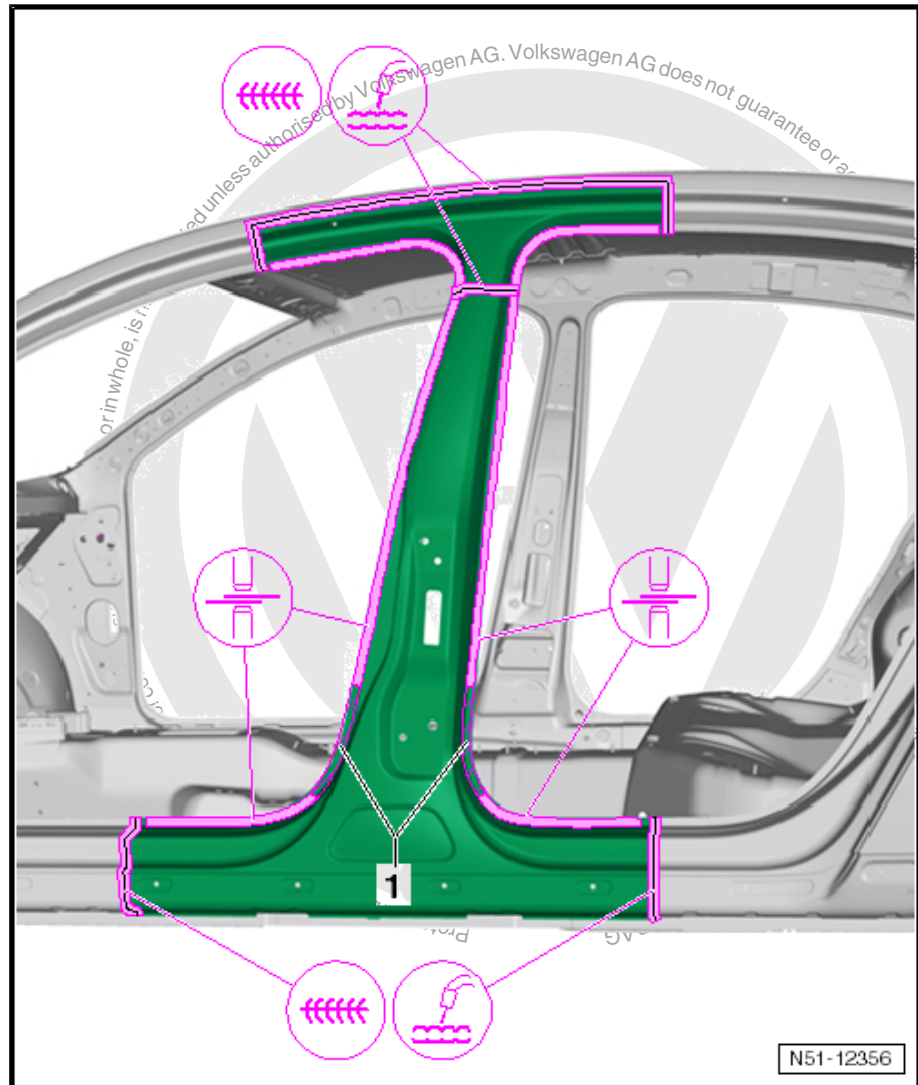
Note

- ◆ *In the area of the A, B and C-pillars, high tensile, highest tensile and hot formed steels are used. The weld flanges in these areas are about 13mm wide.*
- ◆ *If spot welds are located at the edge of hot formed steel panels, the high temperature will cause the bond between the panels to change, which will subsequently have an effect on crash safety.*



Therefore, locate spot welds as close to the centre as possible.

- Dimension -a- of 8mm can be achieved using angled welding tips.
- Adapt new part with vehicle standing on its wheels or alignment bracket set and fix in position.
- Check fit with bolt-on parts.

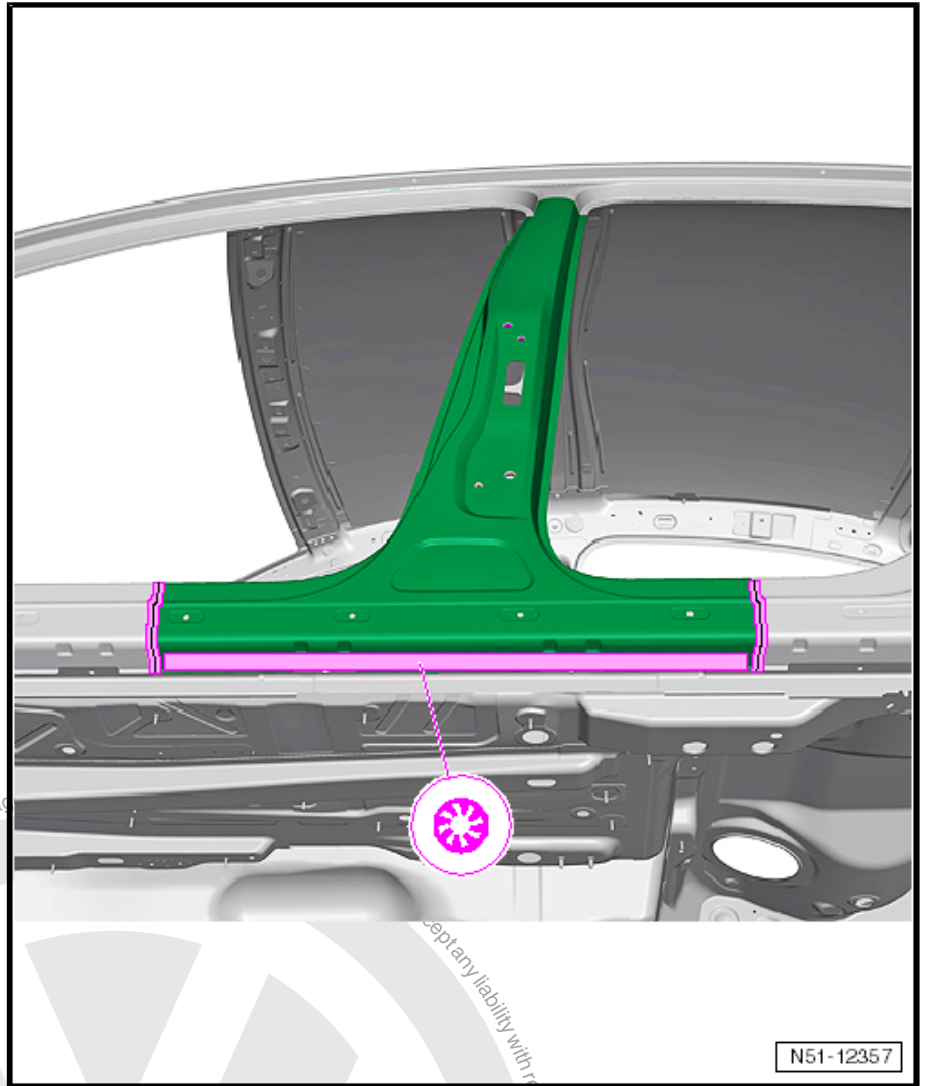


- Weld in parting cuts, MIG solder seam or SG continuous weld seam are permitted.
- Weld in B-pillar, RP spot weld seam (inverter).

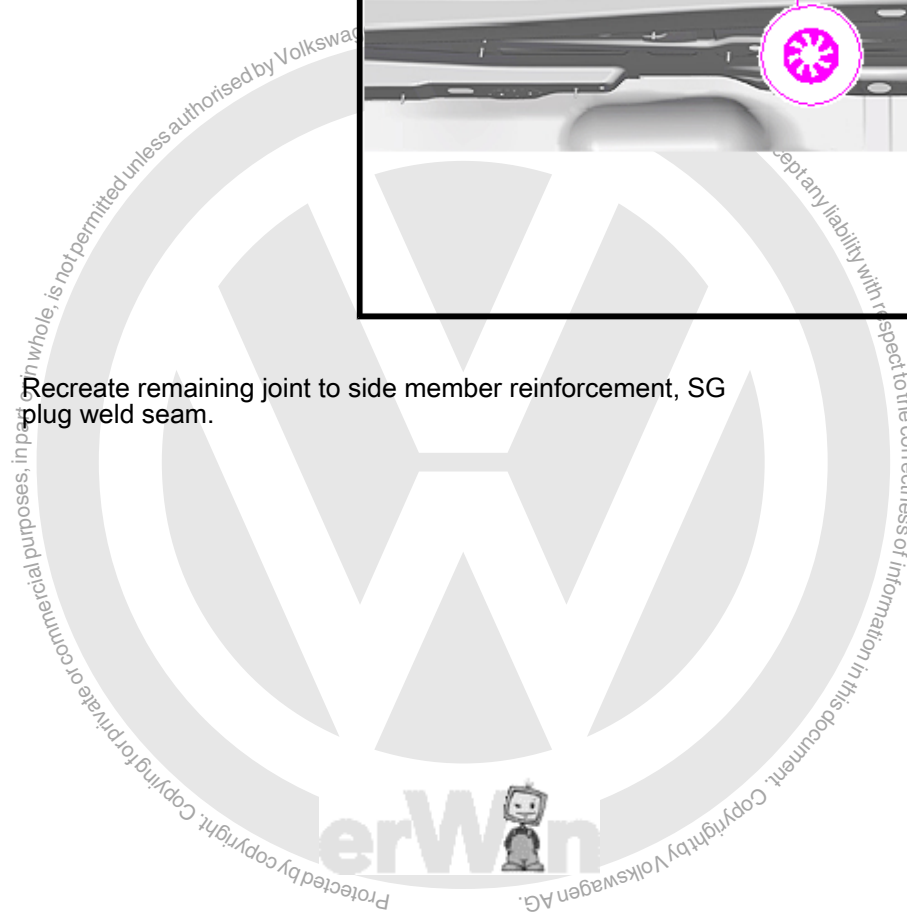


Note

Note prohibited weld areas -1- where welding is not allowed.



- Recreate remaining joint to side member reinforcement, SG plug weld seam.





RO: 51 42 55 53

12 Renewing B-pillar reinforcement - part section

Includes: front side member reinforcement (part section) and rear
side member reinforcement (part section)



WARNING

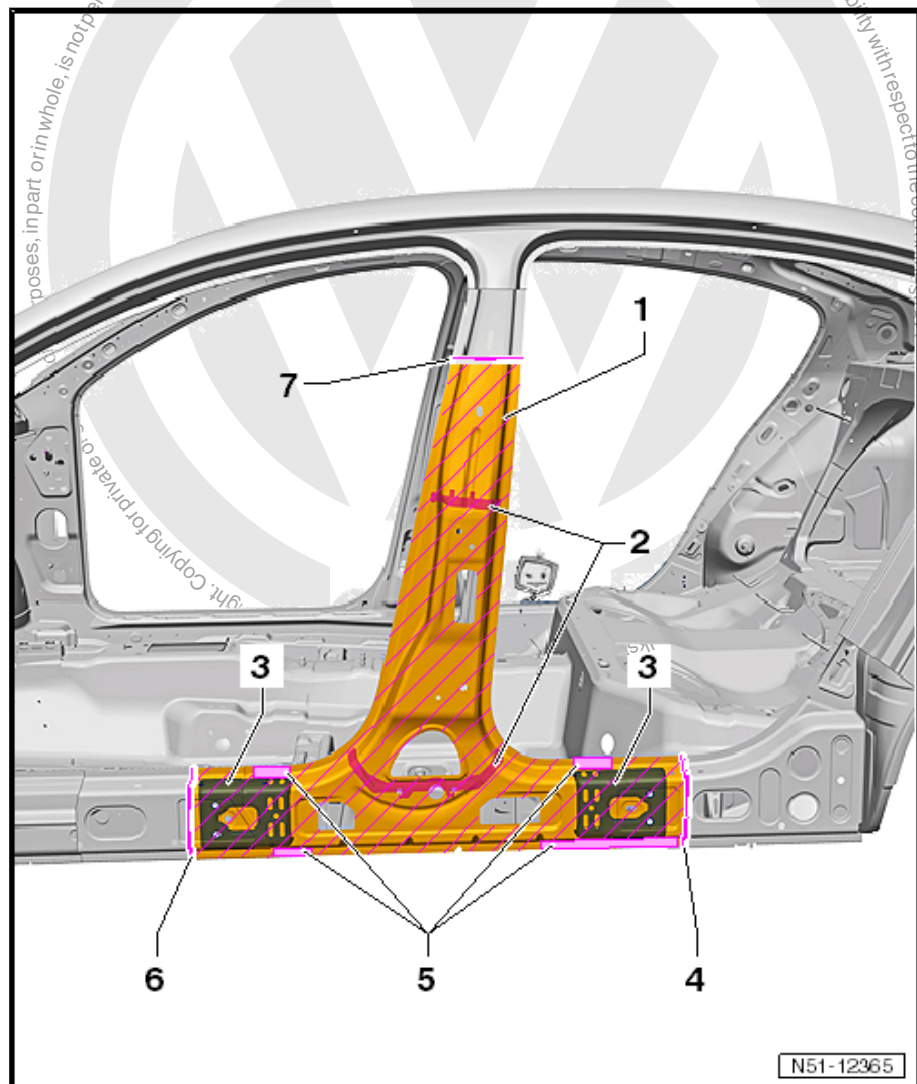
Observe safety notes!

Welding, parting using spark generating machines/tools or tinning in foam treated areas creates gases which are hazardous to health and environment. Therefore, refrain from using these processes.

- B-pillar already removed ⇒ [page 199](#) .
- Side member already removed ⇒ [page 229](#)

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

- 1 - B-pillar reinforcement
- 2 - Moulded foam elements
- 3 - Web plates
- 4 - Rear side member reinforcement parting cut
- 5 - Bonded areas
- 6 - Front side member reinforcement parting cut
- 7 - B-pillar reinforcement upper parting cut





Note

- ◆ Parting cuts for B-pillar reinforcement, front side member reinforcement and rear side member reinforcement may only be made at positions -4, 6 and 7- as shown.
- ◆ Cutting or welding at points other than the ones shown is impermissible due to safety reasons »crash safety«.
- ◆ During the repair, a section of the crash reinforcement is placed behind the B-pillar reinforcement upper parting cut ⇒ [Item 7 \(page 210\)](#) as a strengthening measure.

12.1 Tools

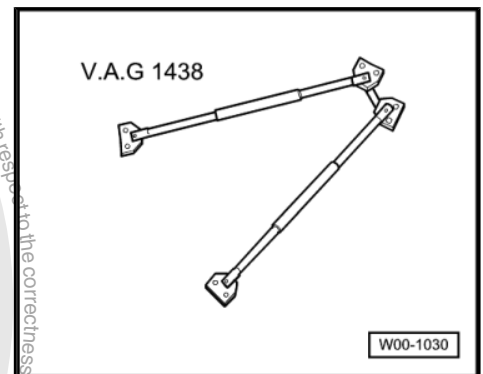


Note

- ◆ The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.
- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ► [ServiceNet](#), [Workshop Equipment](#), [EH catalogue](#), [Workshop equipment](#), [Body and paintwork](#).

Special tools and workshop equipment required

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

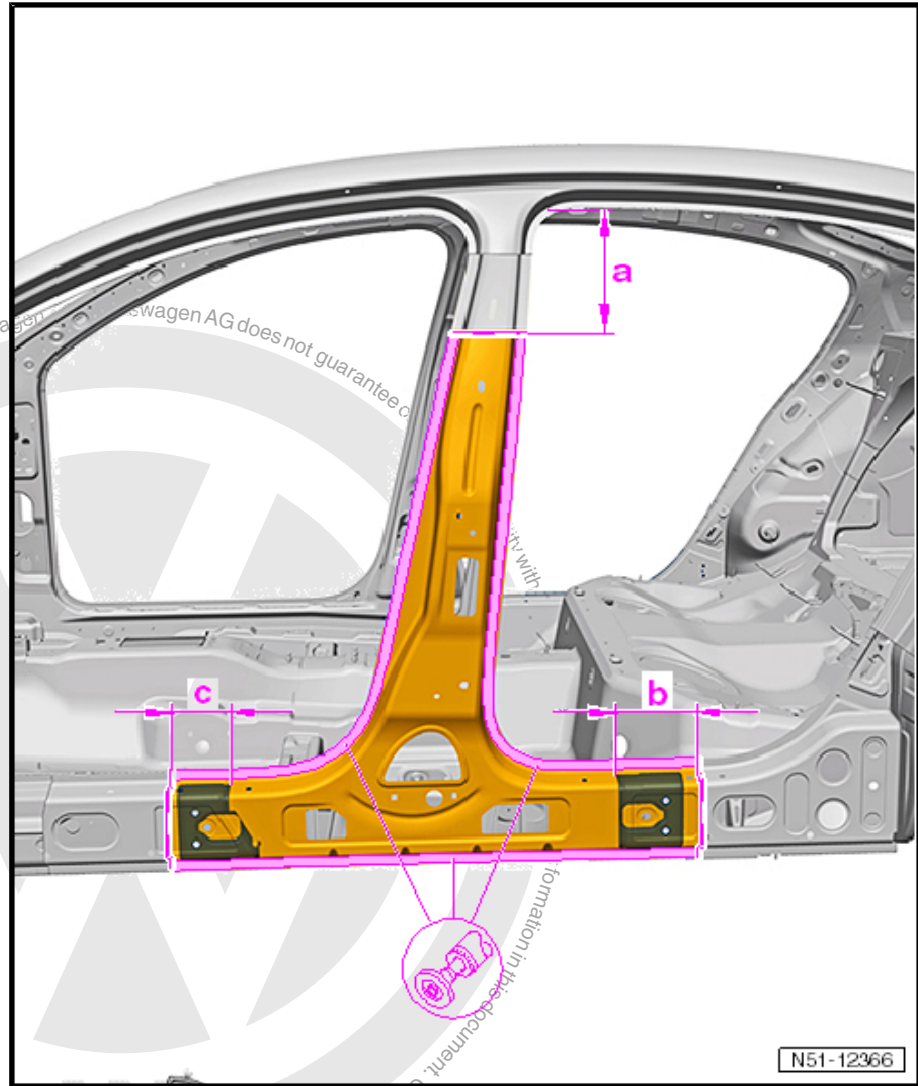


12.2 Removing



Note

Before cutting out B-pillar reinforcing, place a mechanical door tensioner -V.A.G 1438- in door apertures to ensure that the roof cannot move.



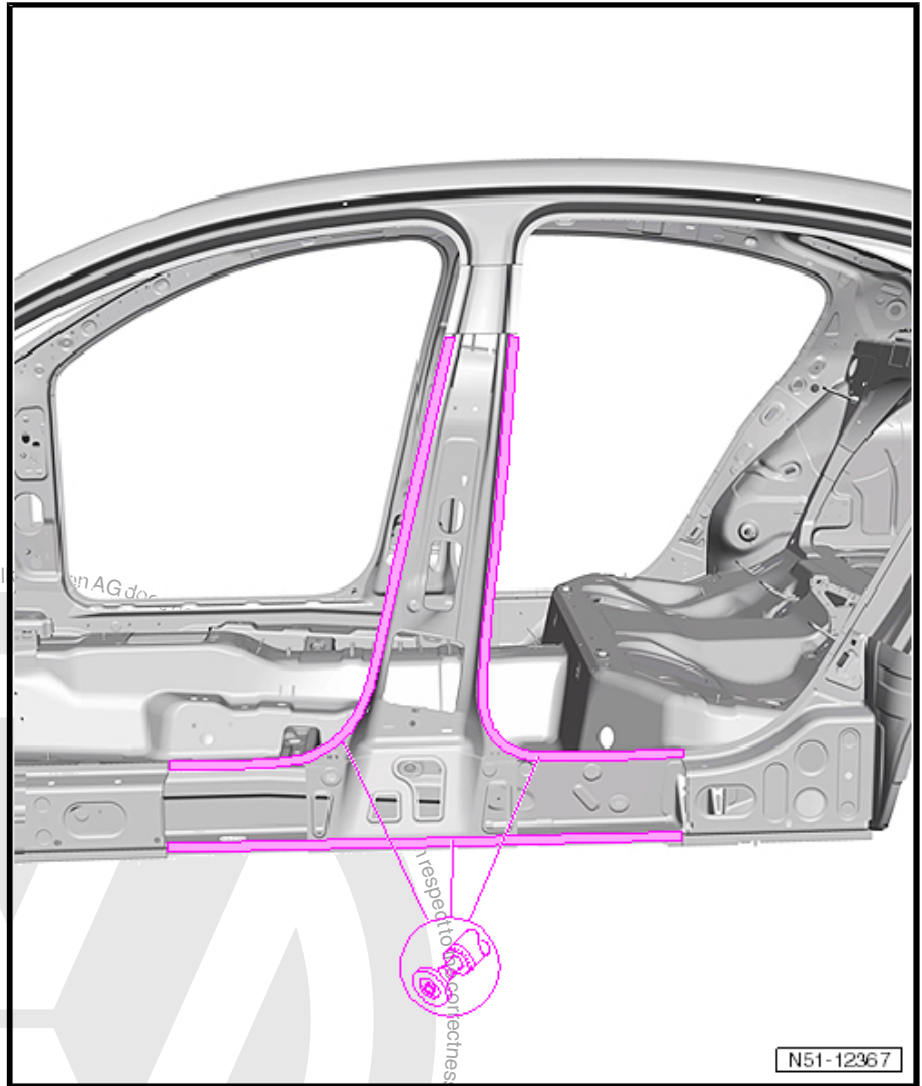
– Position and make parting cuts as shown.

Dimension -a- = 240 mm

Dimension -b- = 140 mm

Dimension -c- = 100 mm

– Separate original joint.



- Remove remaining material.
- Remove remaining adhesive completely and grind bonded surface back to bare metal.

12.3 Installing



Note

Only welding units authorised by Volkswagen AG may be used
⇒ [page 211](#).

12.3.1 Preparing new part

New part

- ◆ B-pillar reinforcement
- ◆ Front side member reinforcement
- ◆ Web plate for front side member reinforcement
- ◆ Rear side member reinforcing with web plate
- ◆ Moulded foam elements
- ◆ B-pillar crash reinforcement

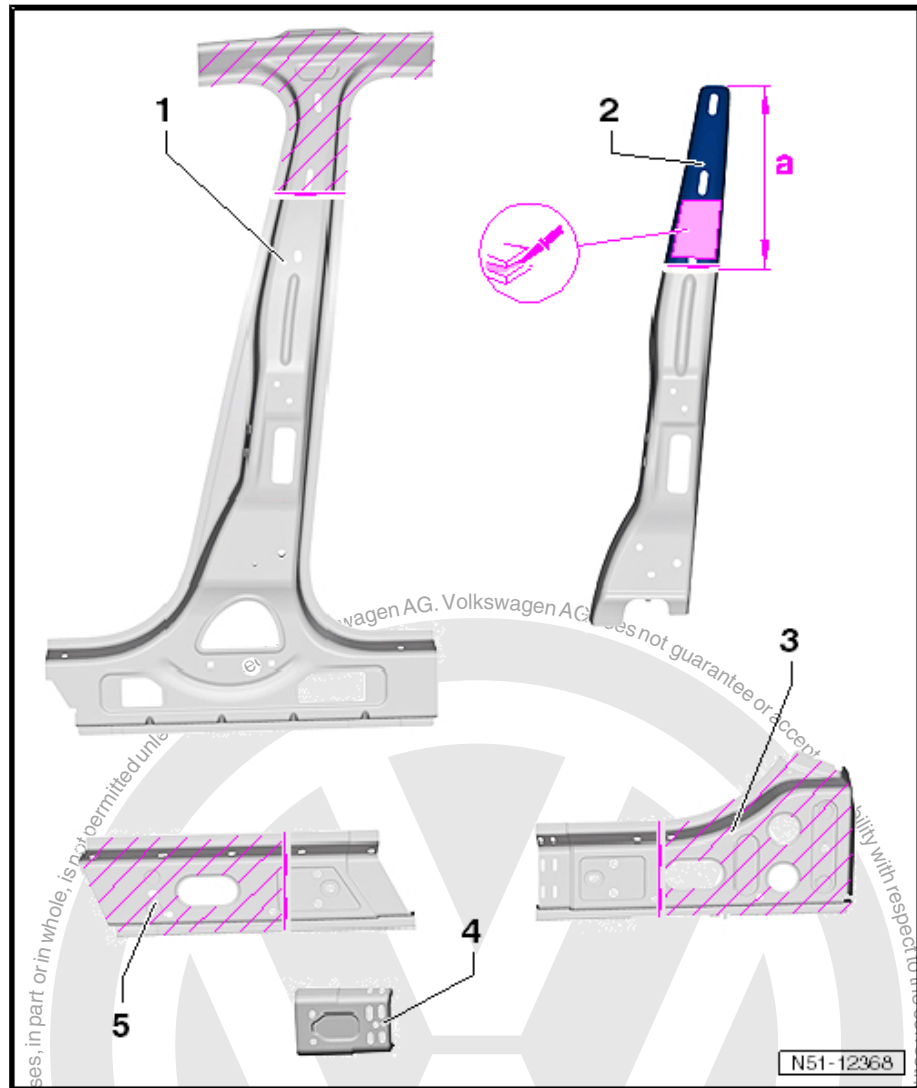


- ◆ 2K body adhesive -D 180 KD3 A2-



Note

B-pillar reinforcement is identical for saloon and Variant.



- Transfer parting cuts to B-pillar reinforcing -1-, side member rear reinforcing -3- and side member front reinforcing -5- and cut new parts accordingly.
- Separate repair piece from crash reinforcing -2-, as shown.

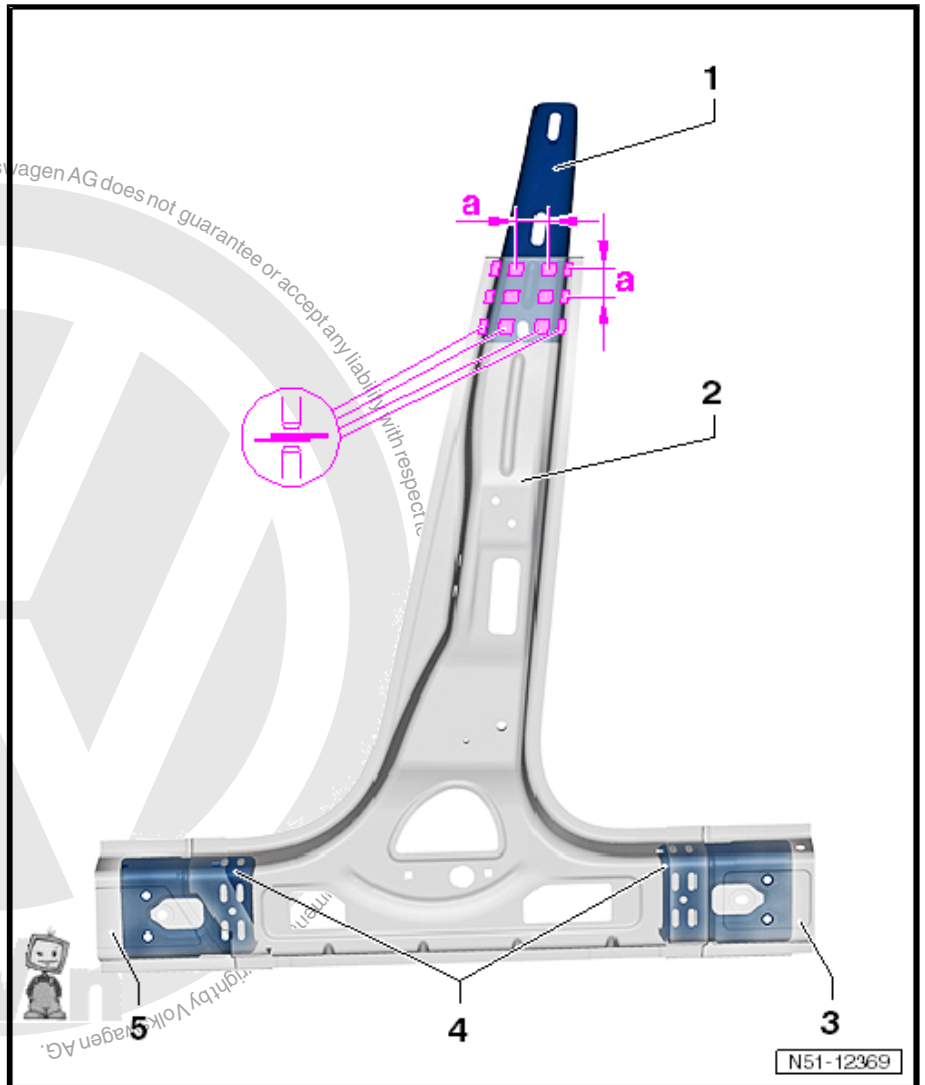
Dimension -a- = 350 mm

- Check fit of crash reinforcing -2- to B-pillar reinforcing -1-.
- Apply 2K body adhesive -D 180 KD3 A2- to areas of crash reinforcing as indicated.



Note

New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.



- Adapt crash reinforcing -1- to fit into B-pillar reinforcing -2- and weld in, RP spot weld seam (inverter).

Distance between weld points:

Dimension -a- = 40 mm

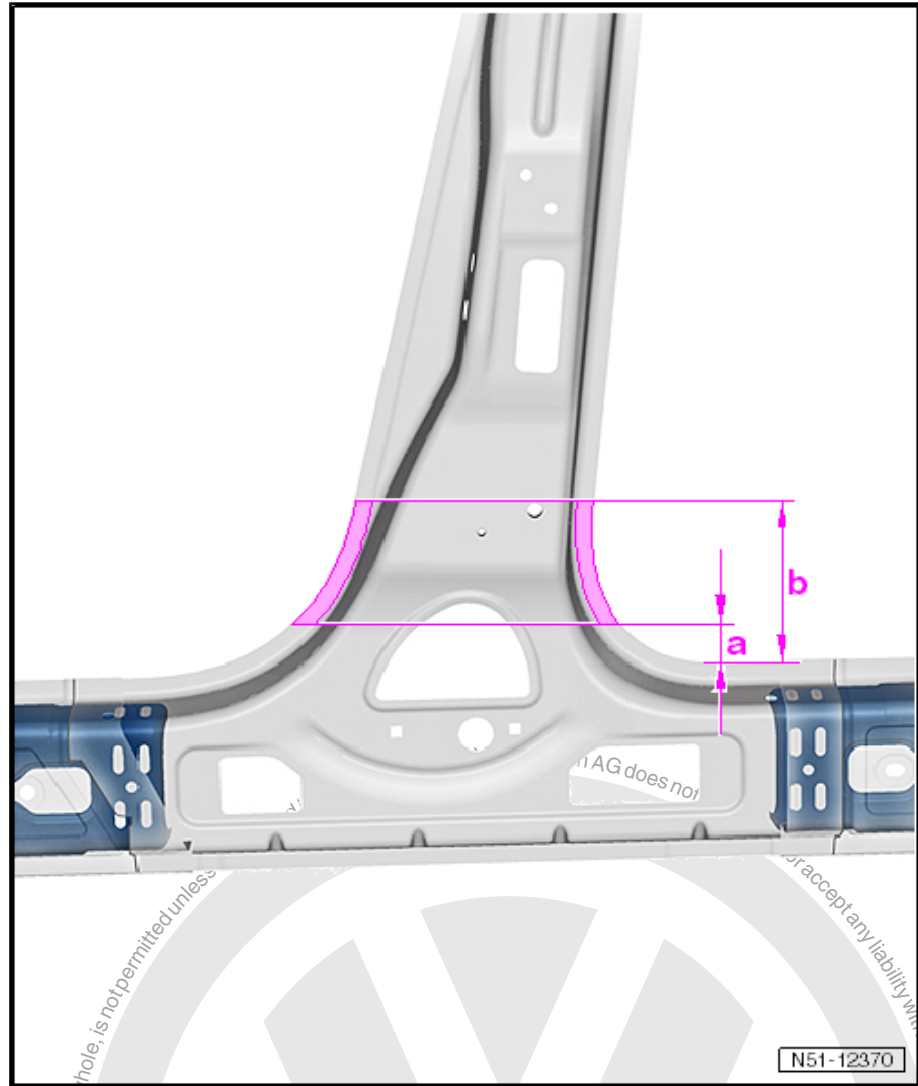
- Secure side member front reinforcing -5- and side member rear reinforcing -3- along with web plates -4- on B-pillar reinforcing.

12.3.2 Marking areas where no welding work may be carried out

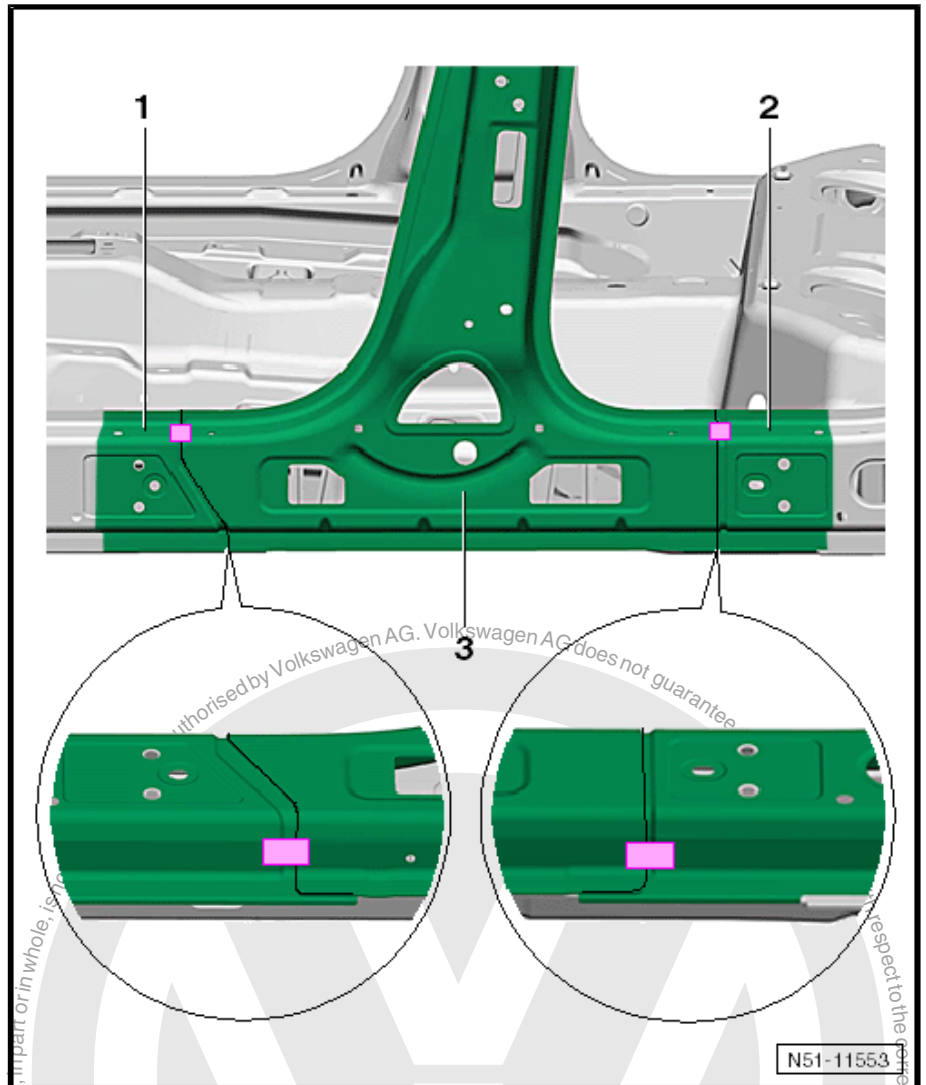


Note

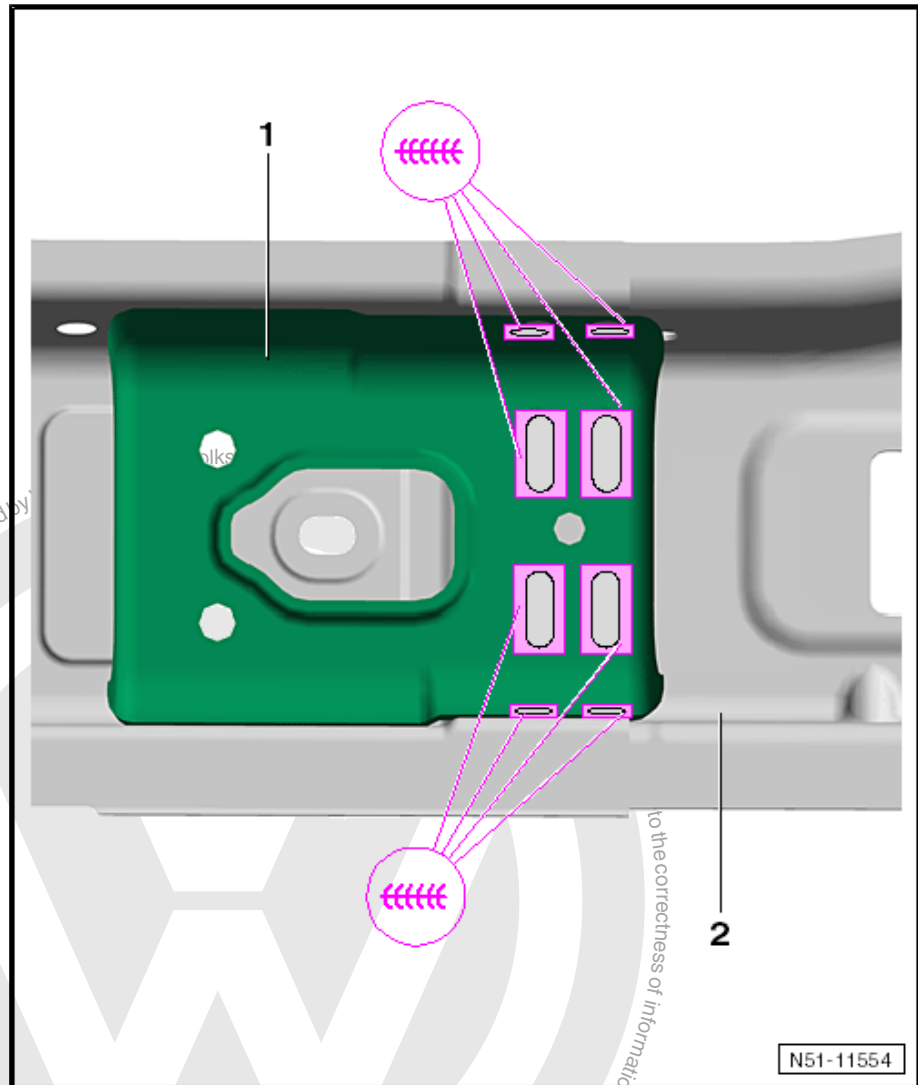
- ◆ *Welding work must not be carried out in areas marked on following illustrations due to safety reasons »crash safety« when welding in B-pillar reinforcement.*
- ◆ *The measurements given must be adhered to.*
- ◆ *Before welding in outer B-pillar, transfer dimensions of area where no welding work may be carried out to outer B-pillar.*



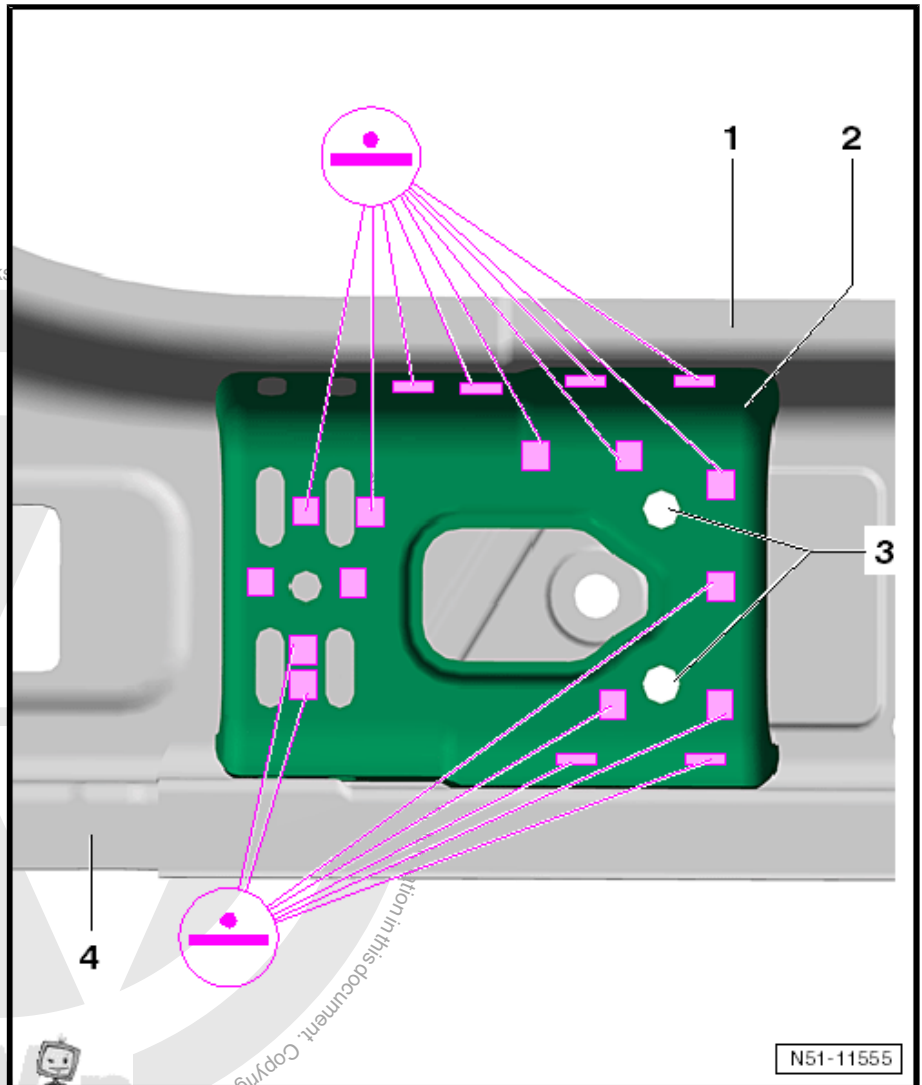
- Mark areas where welding is not permitted.
- ◆ Dimension -a- = 50 mm
- ◆ Dimension -b- = 160 mm
- Adapt new parts with vehicle positioned on alignment bracket set and fix in place.



- Tack weld front and rear side member reinforcements -1 and 2- centrally at top and bottom -shaded areas- to B-pillar reinforcement -3- using one small SG weld at each point. Remove B-pillar reinforcement with side member reinforcements again.



- Weld rear web plate -1- to B-pillar reinforcement -2- at existing elongated holes, SG continuous seam.



- Adapt web plate -2- to side member front reinforcement -1-.

i Note

The holes -3- must align.

- Weld web plate to side member front reinforcement -1- and to B-pillar reinforcement -4-, RP spot weld seam.

12.3.3 Moulded foam elements

Follow repair instructions.

Moulded foam elements ⇒ General Information; Body Repairs, General Body Repairs ; General Notes; Moulded foam elements

Position of the moulded foam elements ⇒ [page 4](#)

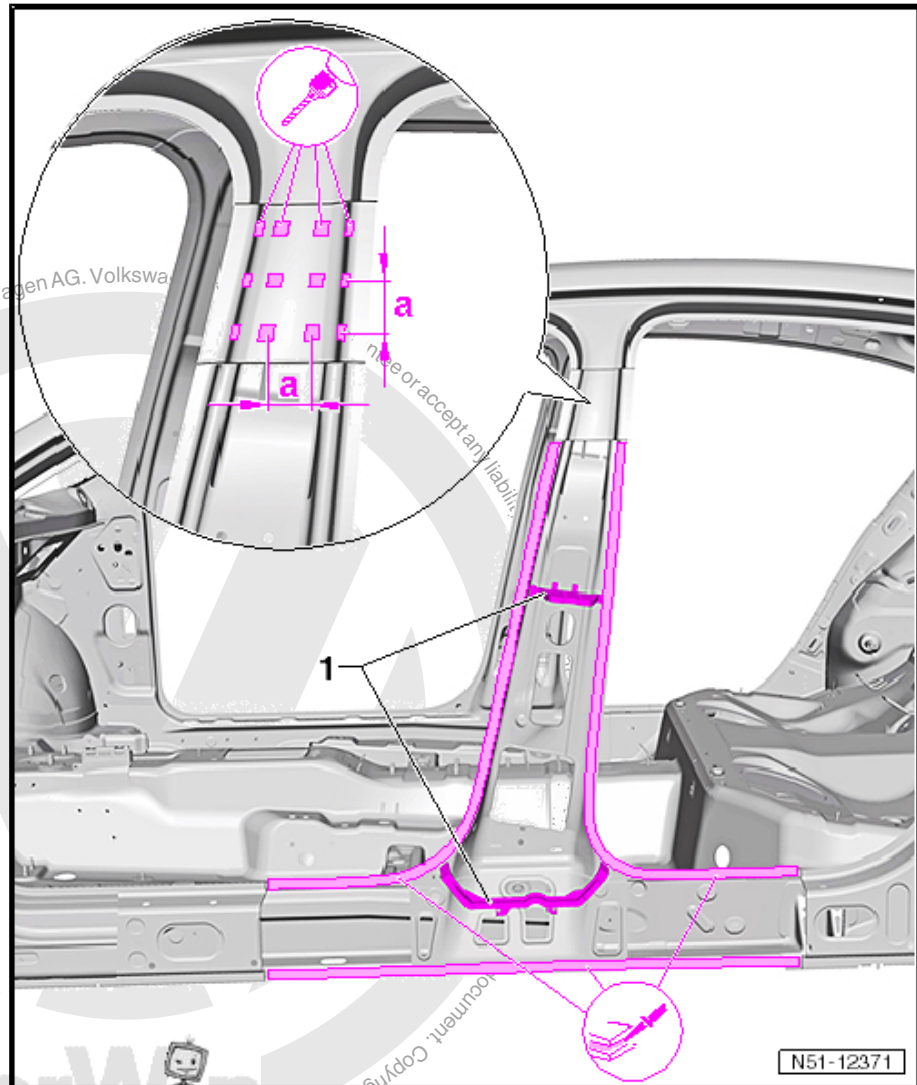


12.3.4 Welding in



Note

New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.



- Drill 8 mm \varnothing holes in B-pillar reinforcement on vehicle for SG plug weld seam.

Distance between holes:

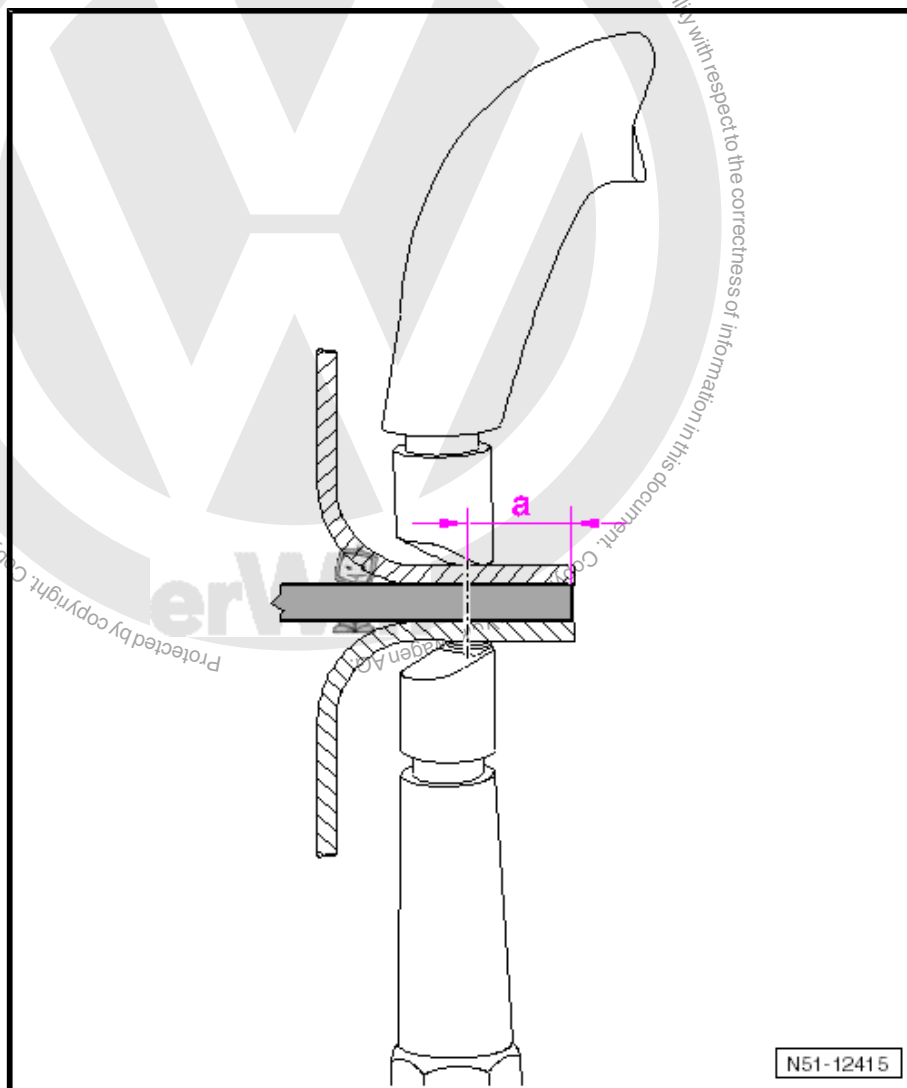
Dimension -a- = 40 mm

- Renew moulded foam element -1-, if necessary.
- Apply 2K body adhesive -D 180 KD3 A2- in the areas indicated.



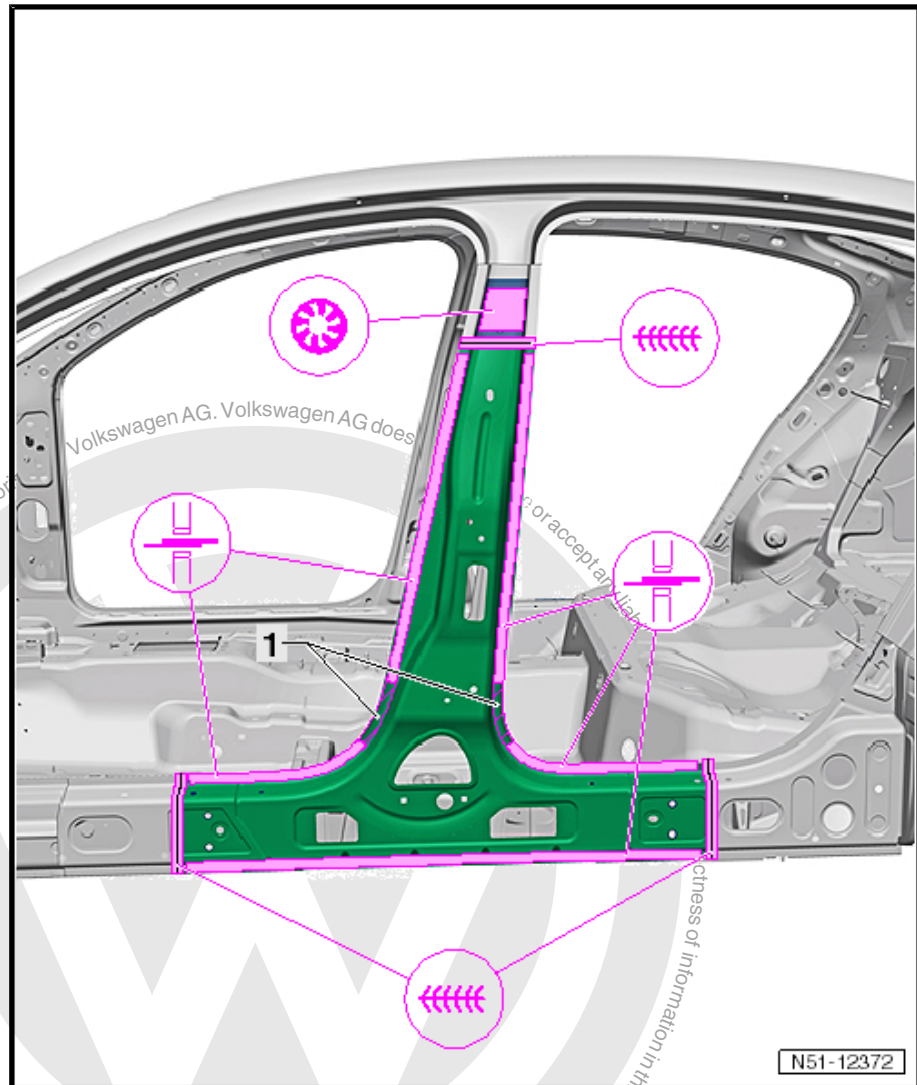
i Note

- ◆ In the area of the A, B and C-pillars, high tensile, highest tensile and hot formed steels are used. The weld flanges in these areas are about 13mm wide.
- ◆ If spot welds are located at the edge of hot formed steel panels, the high temperature will cause the bond between the panels to change, which will subsequently have an effect on crash safety.



Therefore, locate spot welds as close to the centre as possible.

- Dimension -a- of 8mm can be achieved using angled welding tips.
- Adapt new parts with vehicle positioned on alignment bracket set and fix in place.



Note

Note areas -1- where welding is not permitted.

- Weld in B-pillar reinforcement, RP spot weld seam (inverter).
- Weld crash reinforcement to B-pillar reinforcement, SG plug weld seam.
- Weld in parting cut for side member front and rear reinforcements, SG continuous weld seam.
- Weld in parting cut for upper B-pillar reinforcement, SG continuous weld seam.
- Install B-pillar ⇒ [page 202](#) .
- Install side member ⇒ [page 232](#) .



RO: 51 44 55 50

13 Renewing inner B-pillar



WARNING

Observe safety notes!

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

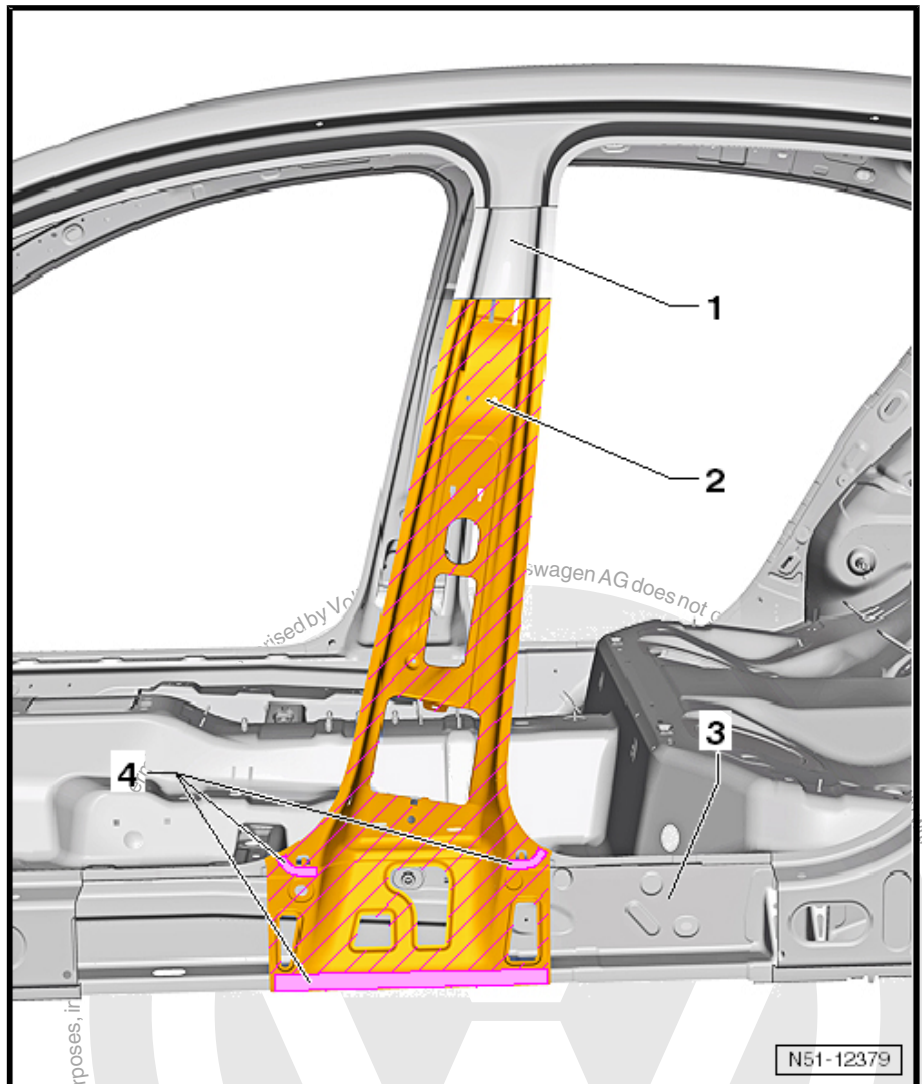
- B-pillar reinforcement already removed ⇒ [page 210](#) .

1 - Remaining section of B-pillar reinforcement

2 - Inner B-pillar

3 - Inner side member

4 - Bonded areas



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13.1 Tools

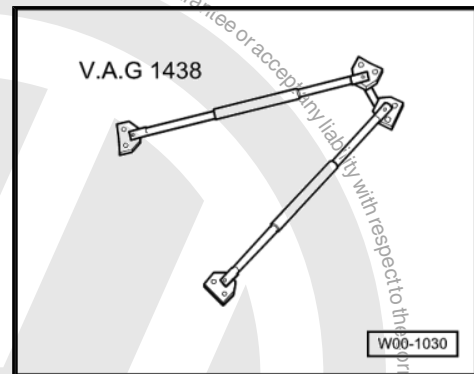


Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paint-work .*

Special tools and workshop equipment required

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

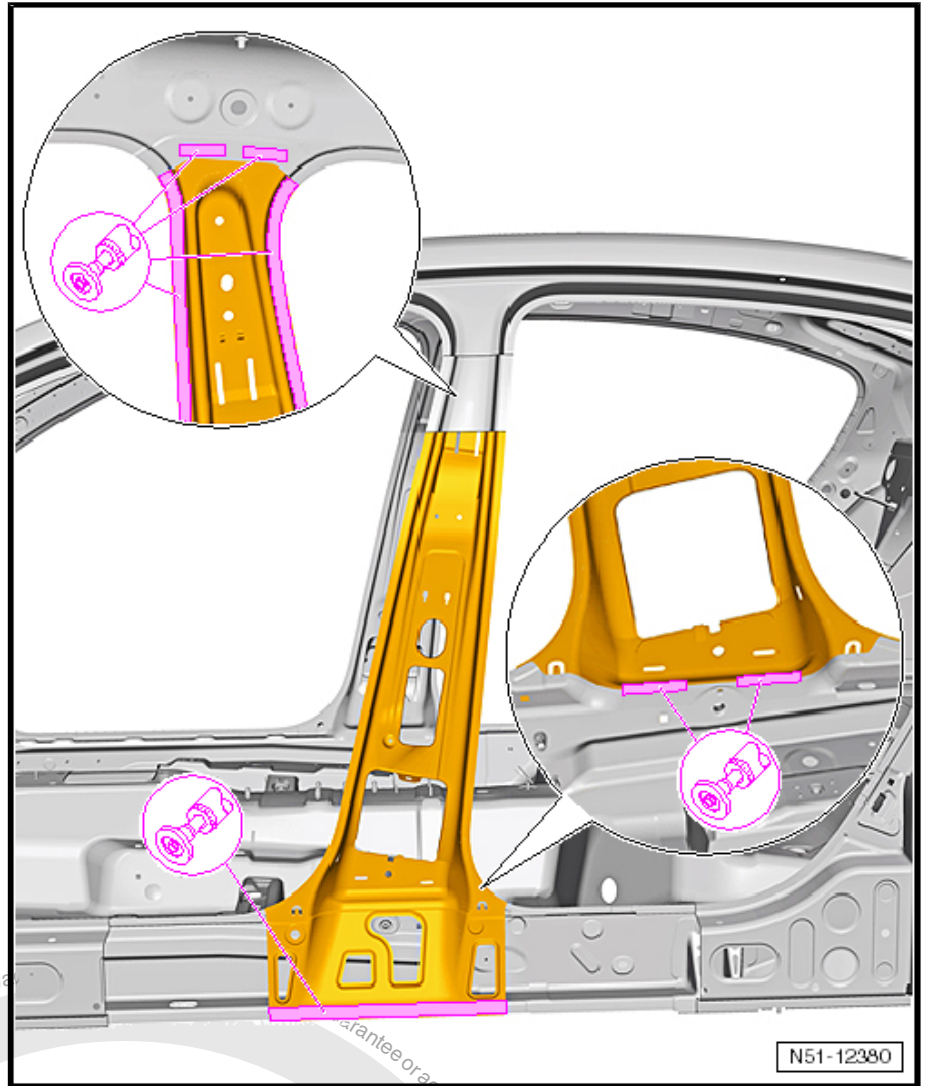


13.2 Removing

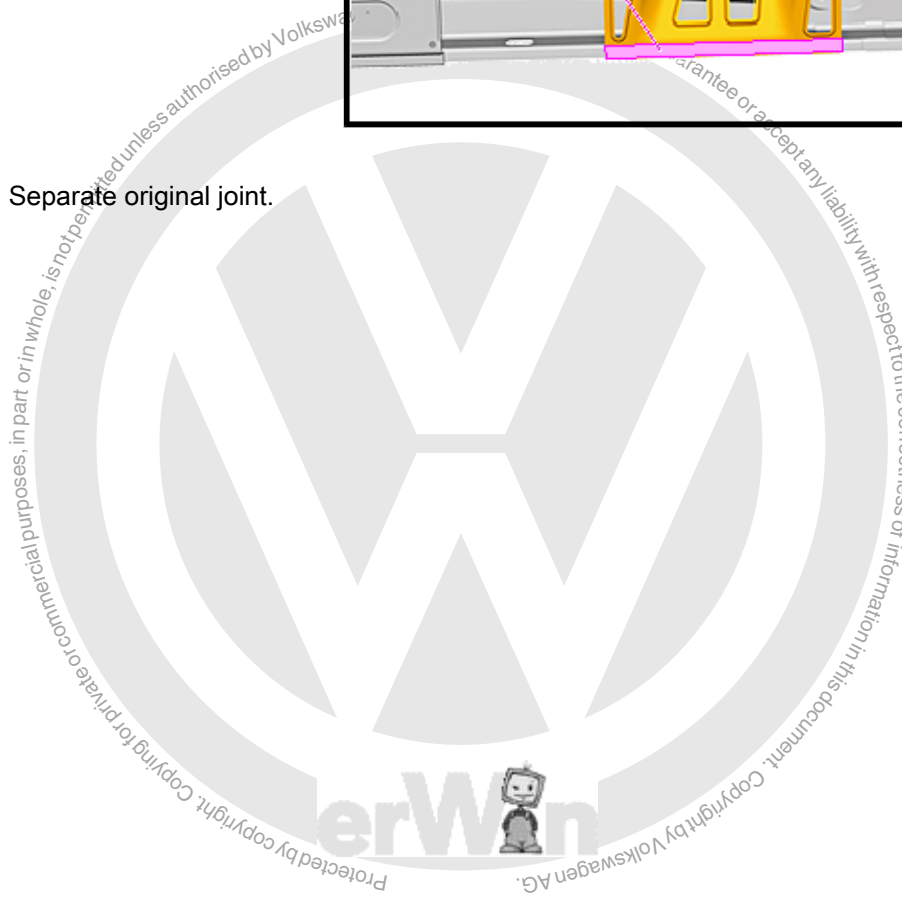


Note

Before cutting out inner B-pillar, place a mechanical door tensioner -V.A.G 1438- in door apertures to ensure that the roof cannot move.

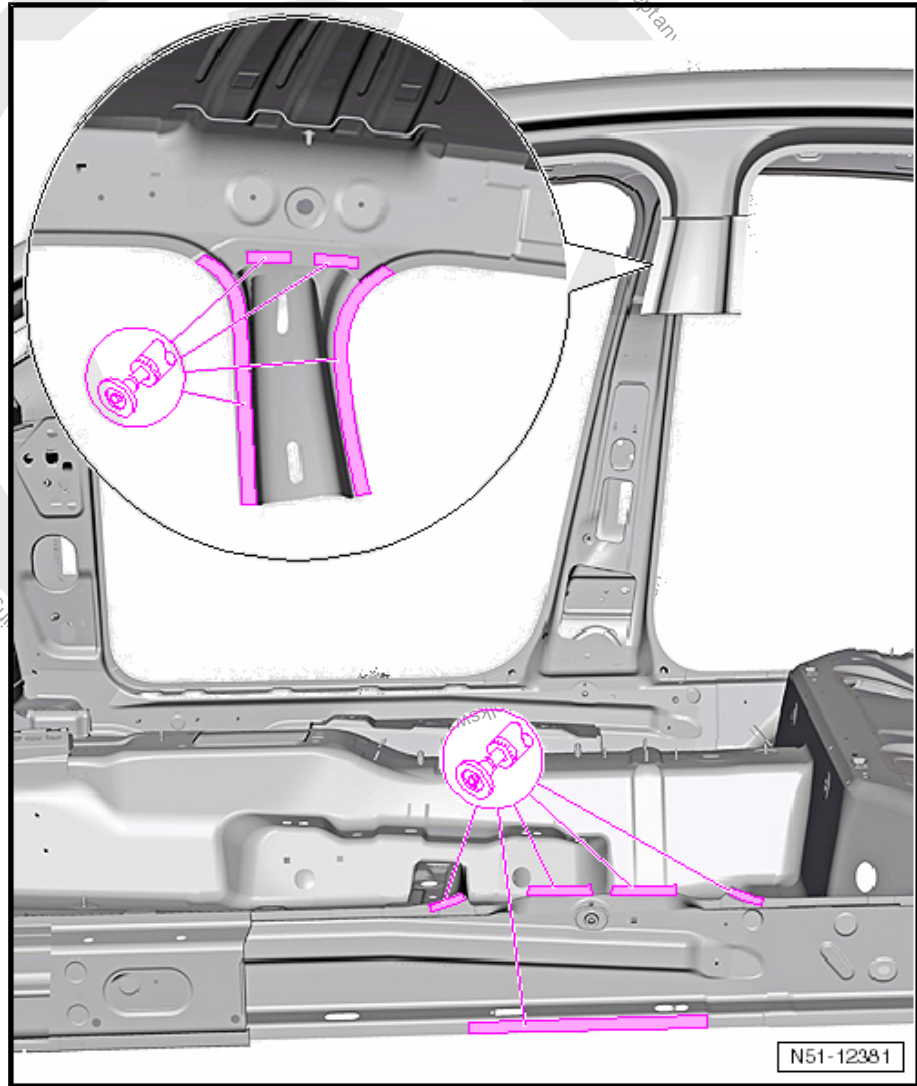


- Separate original joint.





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- Remove remaining material.
- Remove remaining adhesive completely and grind bonded surface back to bare metal.

13.3 Installing



Note

Only welding units authorised by Volkswagen AG may be used
=> [page 224](#).

13.3.1 Welding in

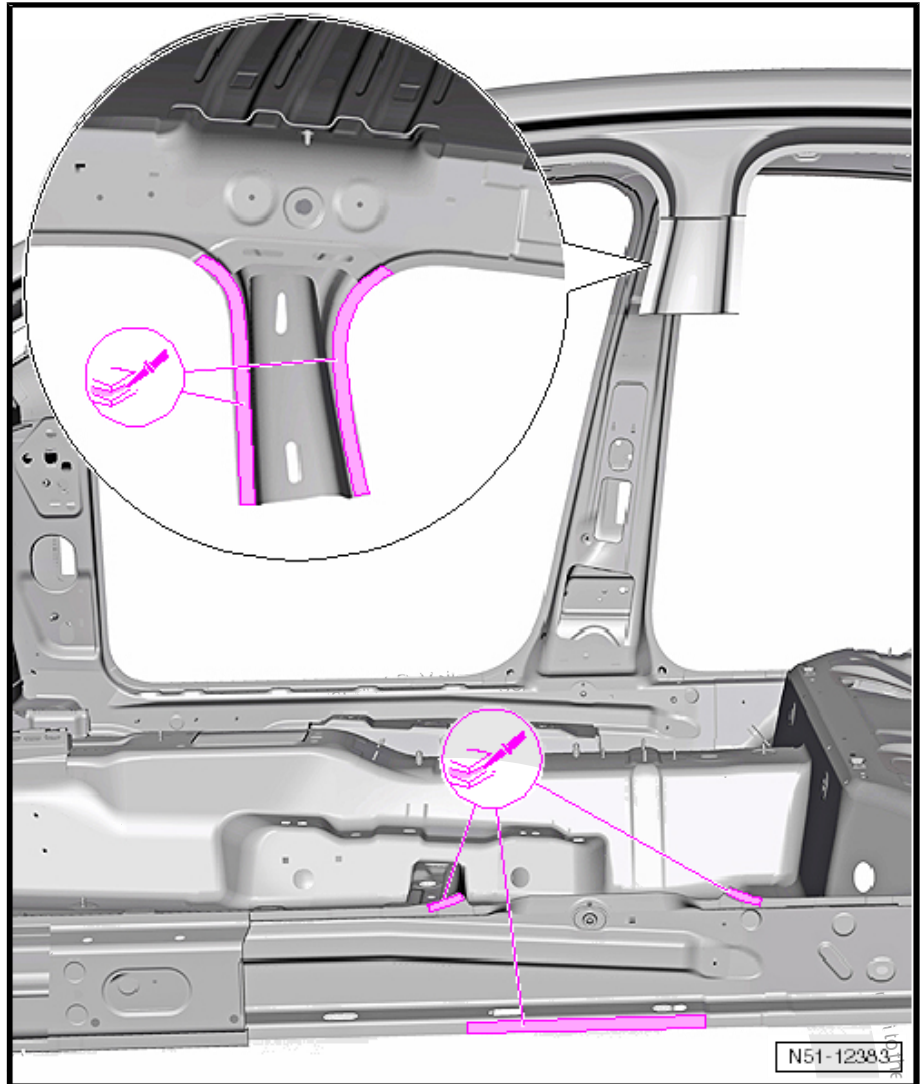
New part

- ◆ Inner B-pillar
- ◆ 2K body adhesive -D 180 KD3 A2-

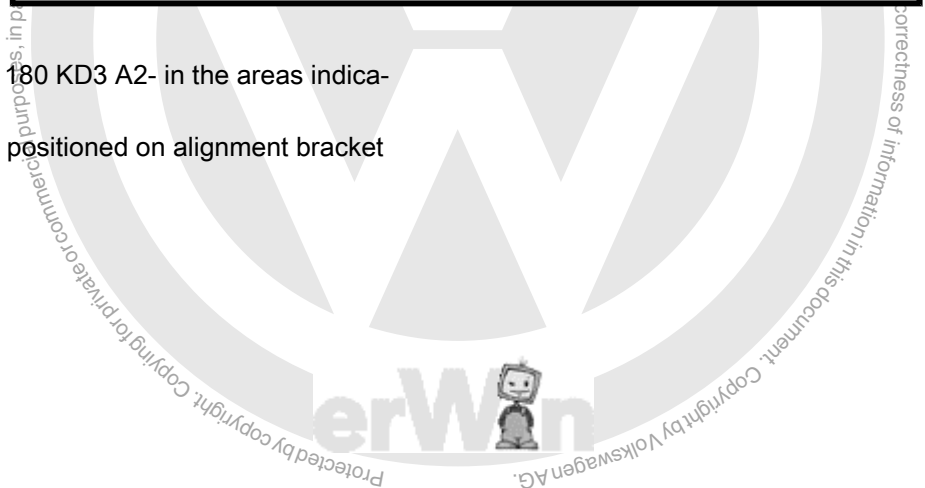


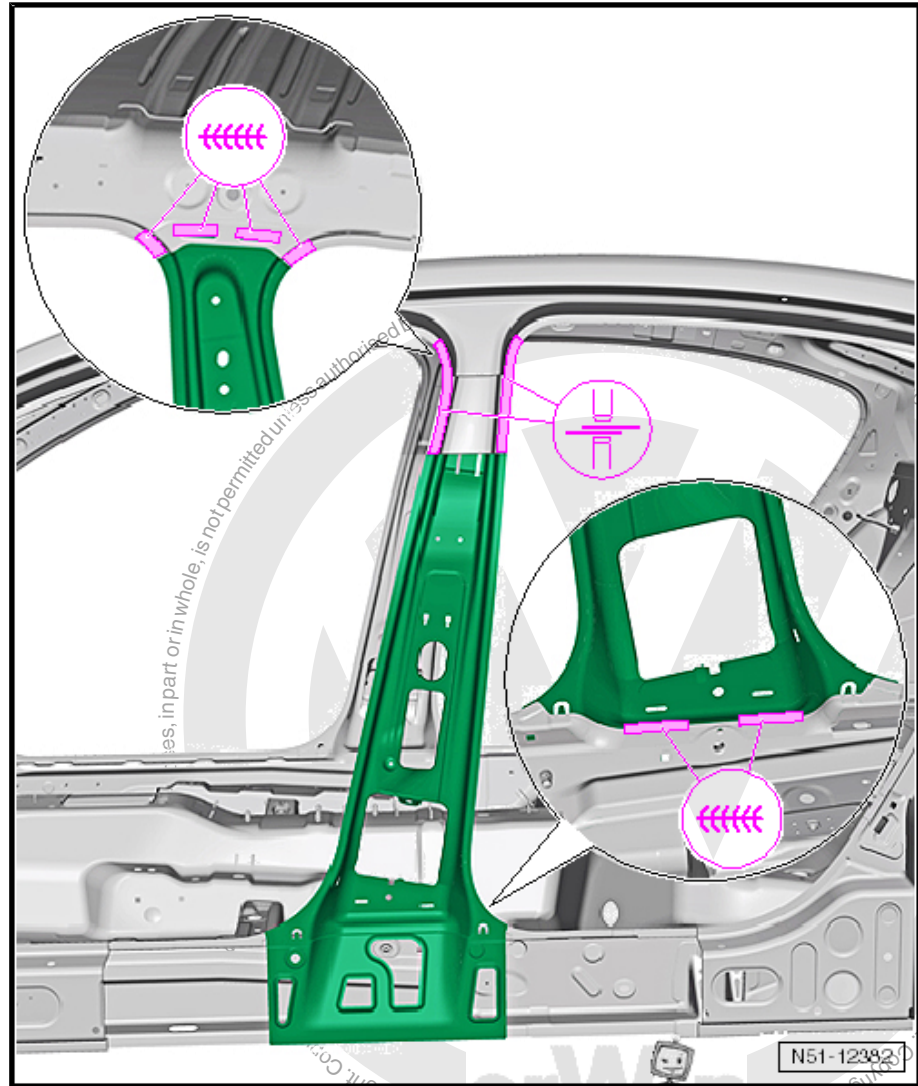
i Note

- ◆ *New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.*
- ◆ *Before installing inner B-pillar, adapt B-pillar reinforcement to fit to assure the welding period in the bonded areas is kept as short as possible.*



- Apply 2K body adhesive -D 180 KD3 A2- in the areas indicated.
- Adapt new part with vehicle positioned on alignment bracket set and fix in place.
- Check fit with bolt-on parts.





- Weld in new part, SG continuous weld seam and RP spot weld seam (inverter).



Note

- ◆ *The joint to inner side member is welded when installing B-pillar reinforcing.*
 - ◆ *The B-pillar reinforcement must be welded in within 90 minutes or adhesion of adhesive to inner B-pillar will be impaired.*
- Install B-pillar reinforcement ⇒ [page 213](#) .



RO: 51 45 55 10

14 Renewing side member



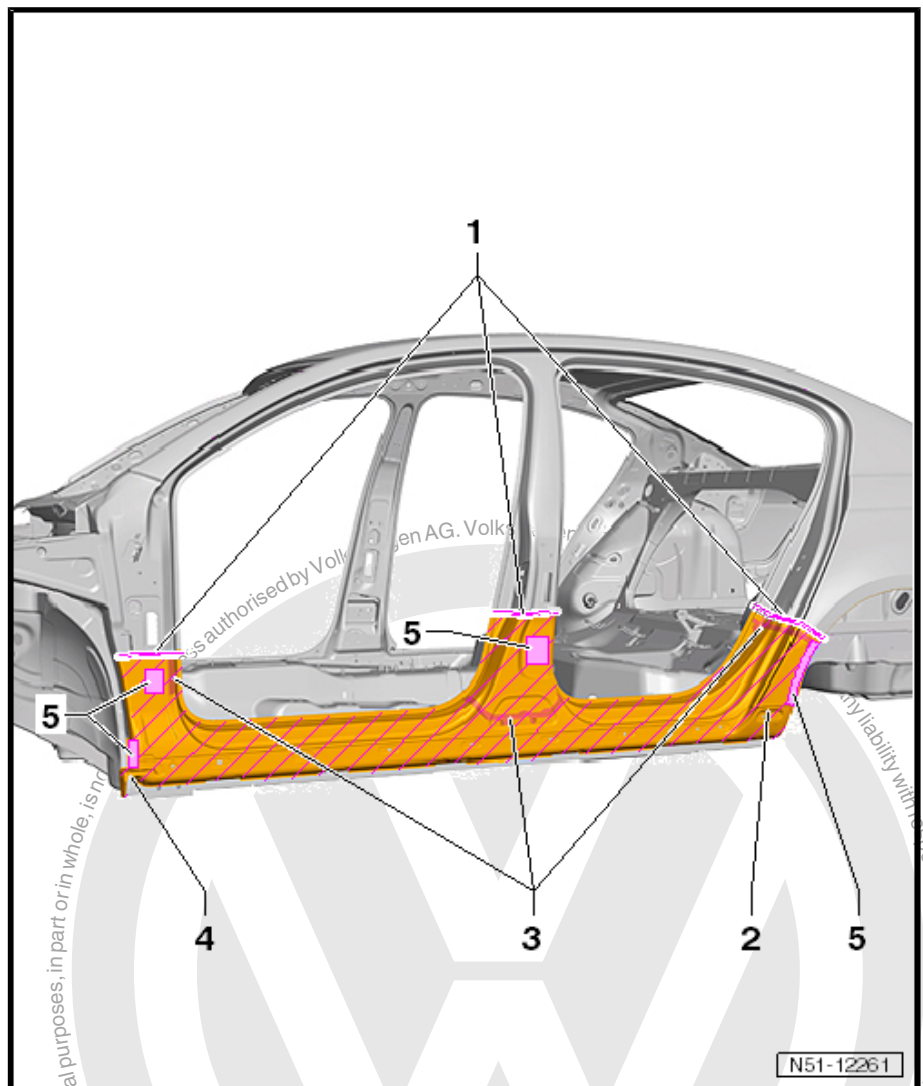
WARNING

Observe safety notes!

Welding, parting using spark generating machines/tools or tinning in foam treated areas creates gases which are hazardous to health and environment. Therefore, refrain from using these processes.

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

- 1 - Parting cuts
- 2 - Side member
- 3 - Moulded foam elements
- 4 - Lower wing retainer
- 5 - Bonded area



N51-12261



14.1 Tools



Note

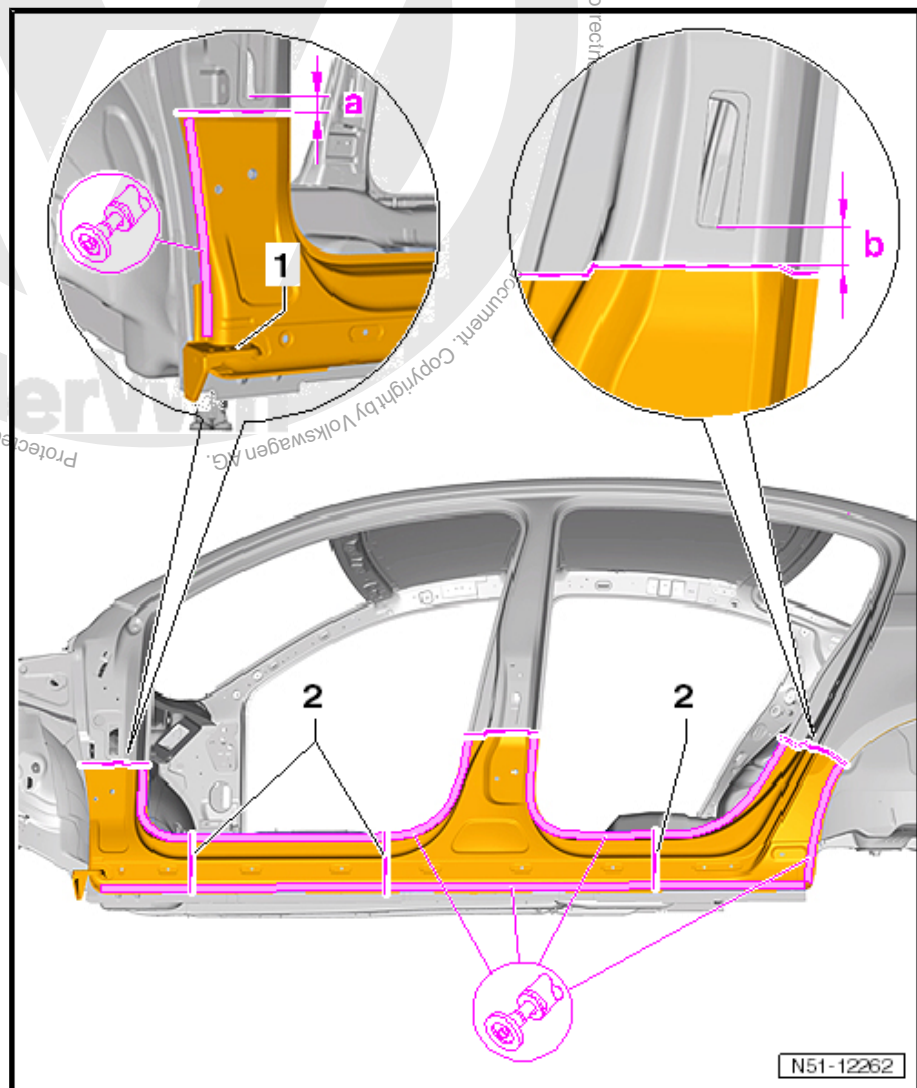
- ◆ The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.
- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG are listed in → ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paint work.

14.2 Removing



Note

- ◆ Do not damage underlying panels when cutting out.
- ◆ Wing retainer -1- is renewed as well.





- Mark parting cuts according to dimensions -a- and b- and cut.

Partial renewal

A part replacement is possible with parting cut -2-.

- Make cuts as shown.

Dimension -a- = 20 mm

Dimension -b- = 25 mm



Note

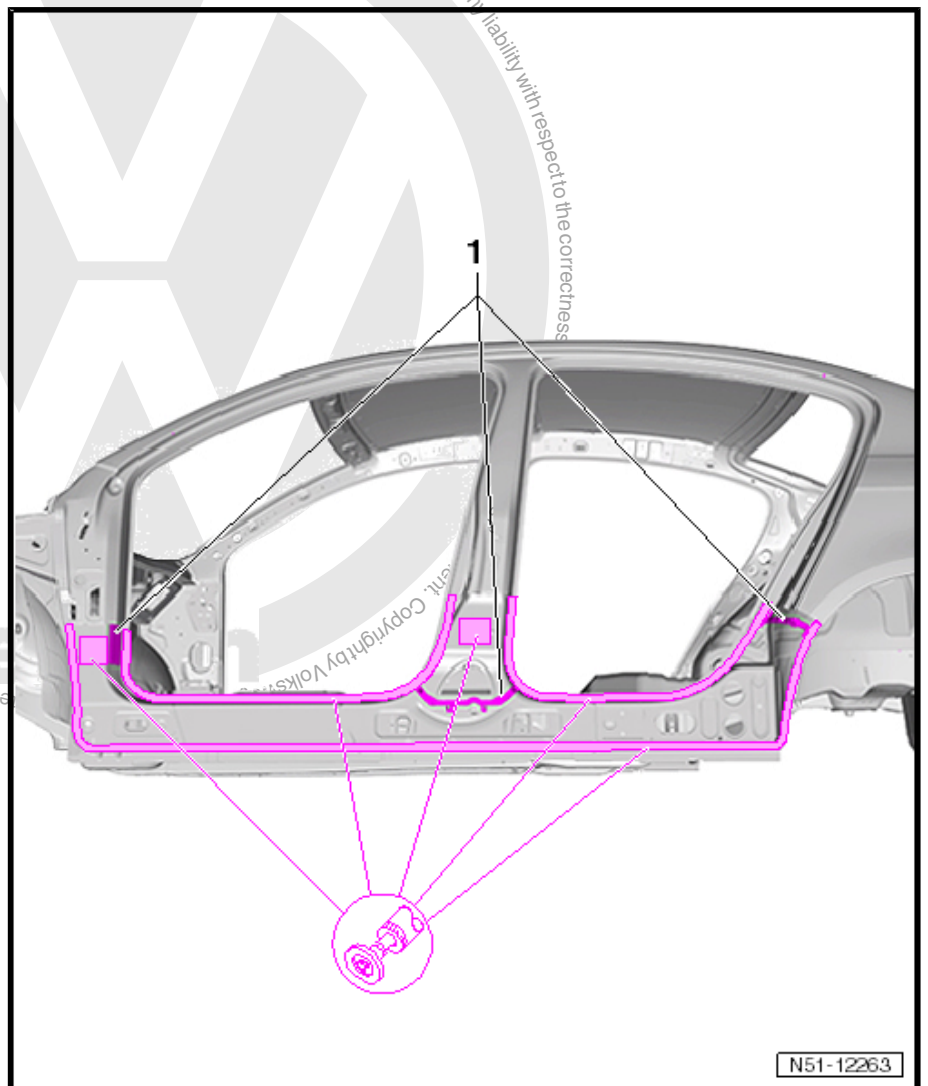
Dimensions -a- and -b- must be strictly adhered to.

- Separate original joint.
- Grind through outer edge at rear wheel arch.



Note

Remove as much of the moulded foam element -1- as possible before starting grinding work.



N51-12263



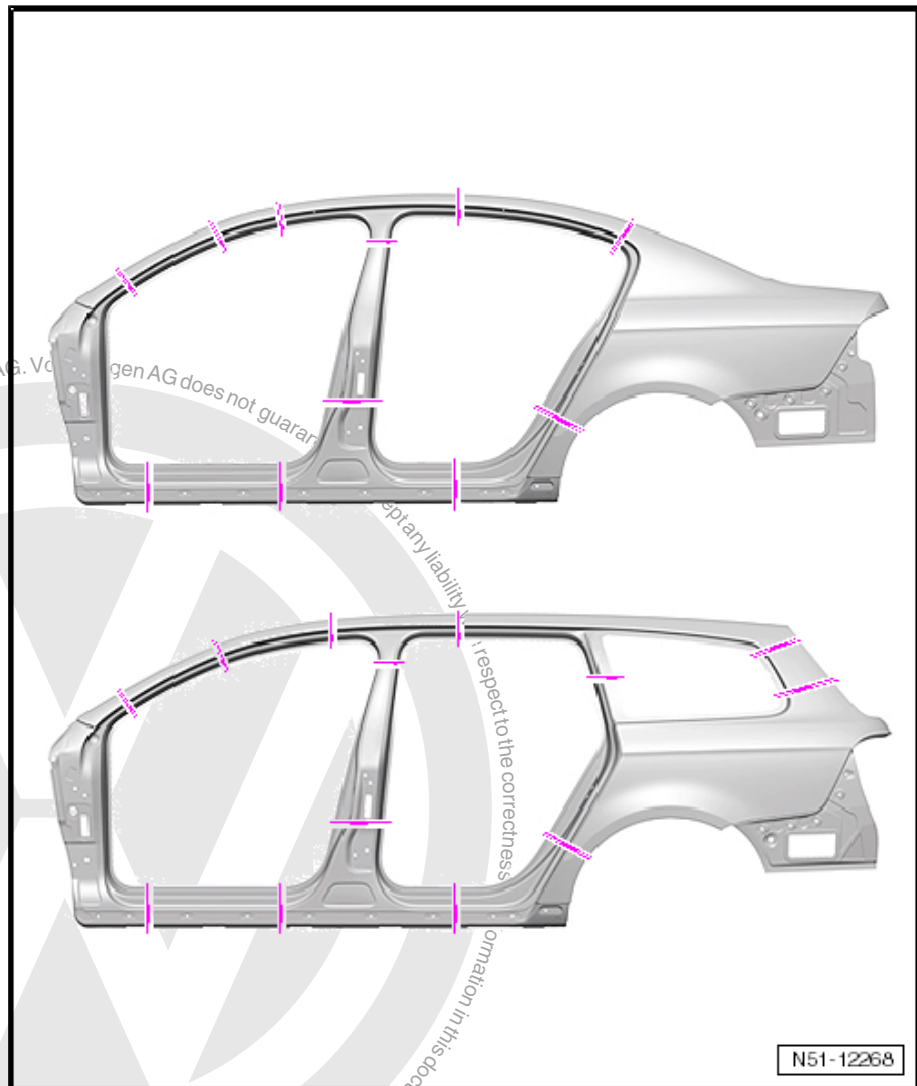
- Remove remaining material.
- Remove remaining adhesive completely and grind bonded surface back to bare metal.
- Clean any dust and grease off flange area on wheel arch.

14.3 Installing



Note

Only welding units authorised by Volkswagen AG may be used
⇒ [page 230](#).



Note

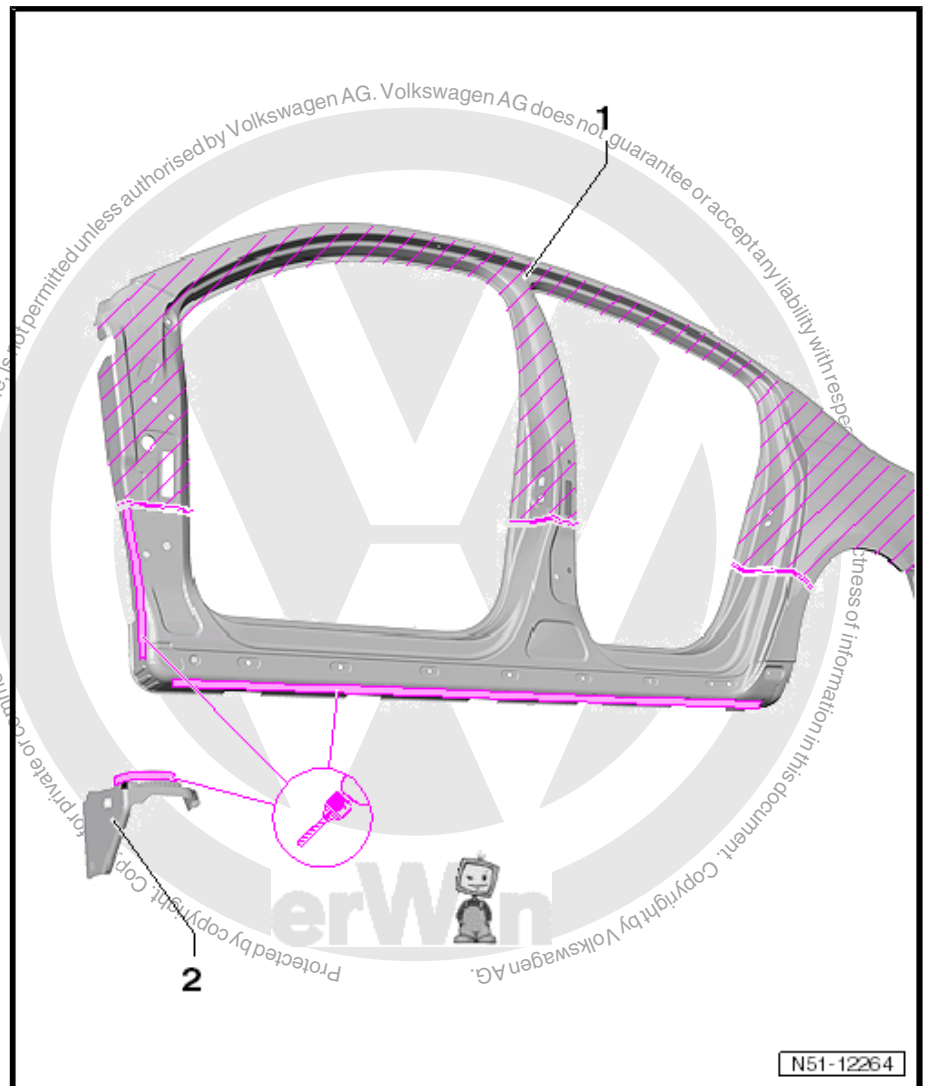
MIG solder seams or SG continuous weld seams are permitted at the parting cuts shown in the illustration.



14.3.1 Preparing new part

New part

- ◆ Side panel
- ◆ Wing bracket
- ◆ Moulded foam element
- ◆ Sealing cord -AKD 497 010 04 R10-
- ◆ 2K body adhesive -D 180 KD3 A2-



- Transfer parting cuts to side panel and cut out.
- Drill 8 mm \varnothing holes in side panel -1- and wing retainer -2- for SG plug weld seams.

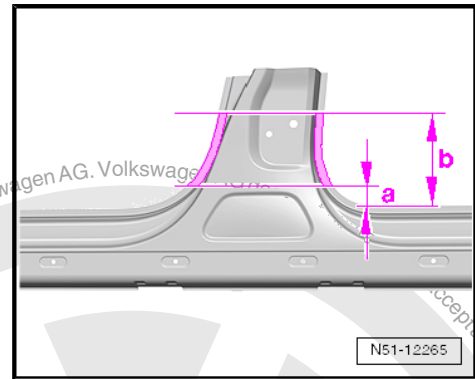


14.3.2 Marking areas where no welding work may be carried out



Note

- ◆ *Mark areas on outer side member where welding is not permitted due to safety reasons »crash safety«.*
- ◆ *The measurements given must be adhered to.*
- Mark areas where welding is not permitted.
- ◆ Dimension -a- = 50 mm
- ◆ Dimension -b- = 160 mm



14.3.3 Moulded foam elements

Follow repair instructions.

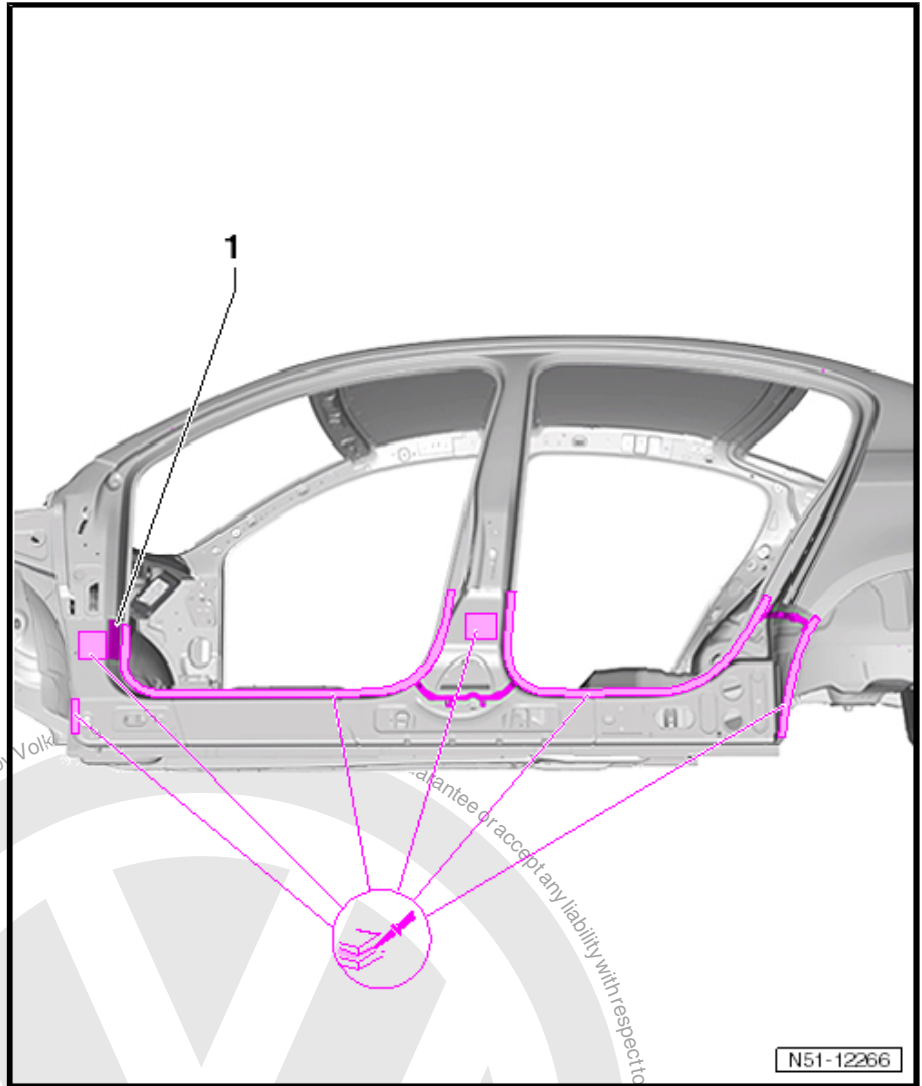
Moulded foam elements → General Information; Body Repairs, General Body Repairs ; General Notes; Moulded foam elements

14.3.4 Welding in



Note

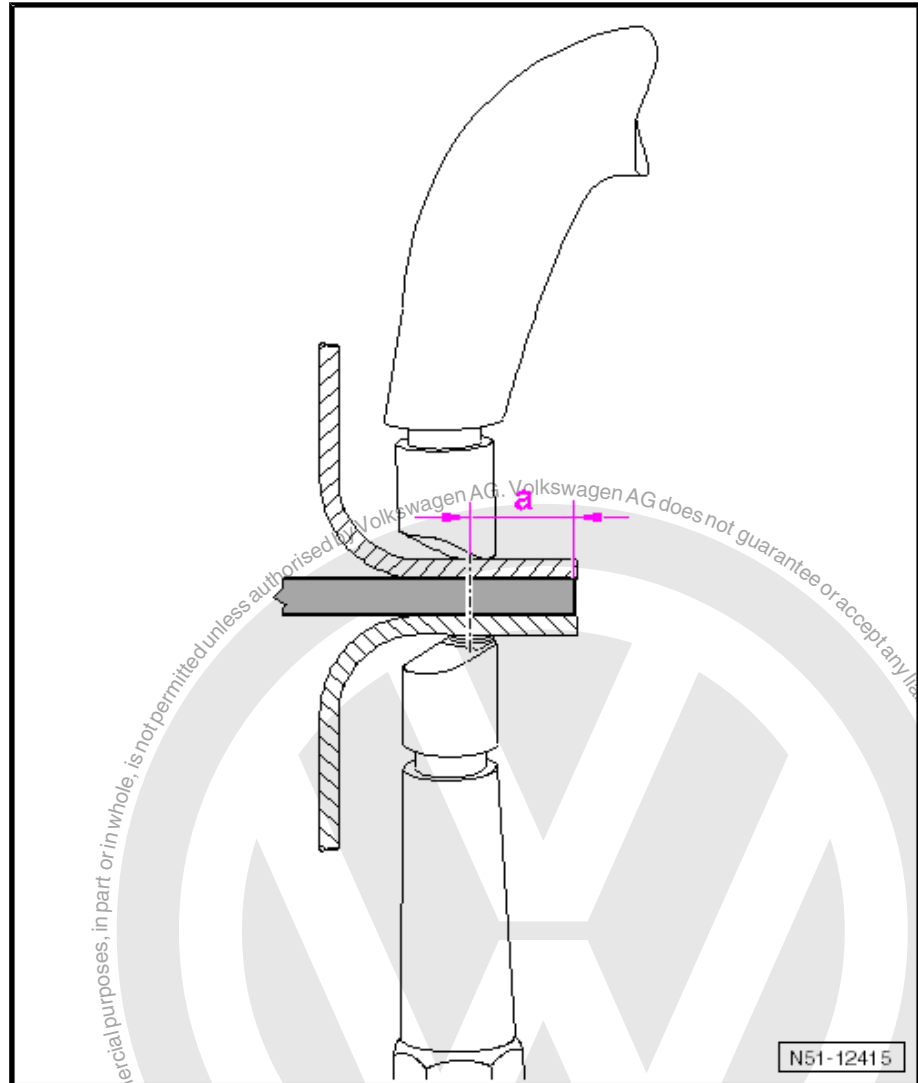
- ◆ *The new part must be welded in within 90 minutes, or adhesion of adhesive will be impaired.*
- ◆ *Adhesive must be cleaned from holes for fastening hinges after bonding in.*



- Apply sealing cord -AKD 497 010 04 R10- in area -1-.
- Apply 2K body adhesive -D 180 KD3 A2- in the areas indicated.

i Note

- ◆ *In the area of the A, B and C-pillars, high tensile, highest tensile and hot formed steels are used. The weld flanges in these areas are about 13mm wide.*
- ◆ *If spot welds are located at the edge of hot formed steel panels, the high temperature will cause the bond between the panels to change, which will subsequently have an effect on crash safety.*



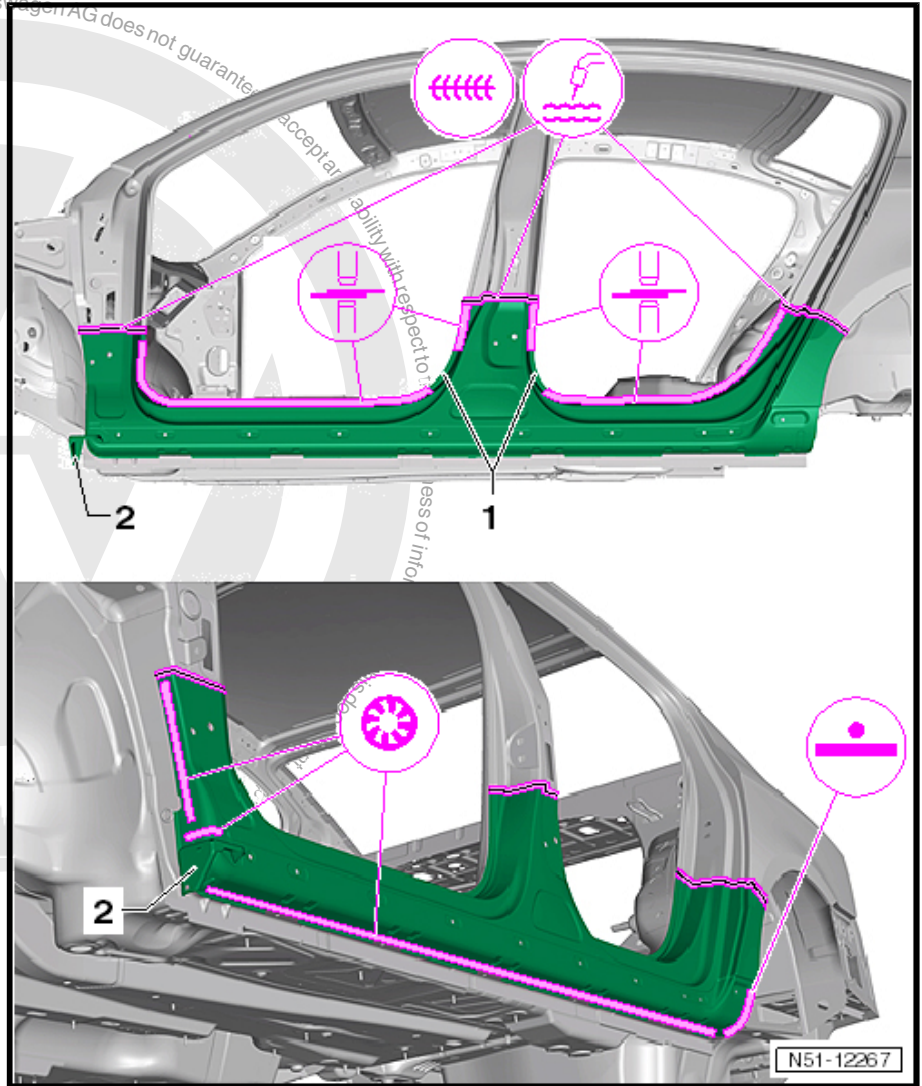
Therefore, locate spot welds as close to the centre as possible.

- Dimension -a- of 8mm can be achieved using angled welding tips.
- Adapt new part with vehicle standing on its wheels or on alignment bracket set and hold in position.
- Check fit with bolt-on parts.



Note

Note prohibited weld areas -1- where welding is not allowed.



- Weld in parting cuts, MIG-L stepped seam or SG continuous weld seam are permitted.
- Weld in door aperture, RP spot weld seam.
- Weld in remaining joint, SG plug weld seam and RP spot weld seam.
- Adapt wing retainer -2- and weld in, SG plug weld seam.
- Reform wheel housing flange.
- Wipe away excess adhesive and seal wheel arch.



RO: 51 48 55 50

15 Renewing front side member reinforcement



WARNING

Observe safety notes!

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

- Side member already removed ⇒ [page 229](#) .

1 - Front side member reinforcement

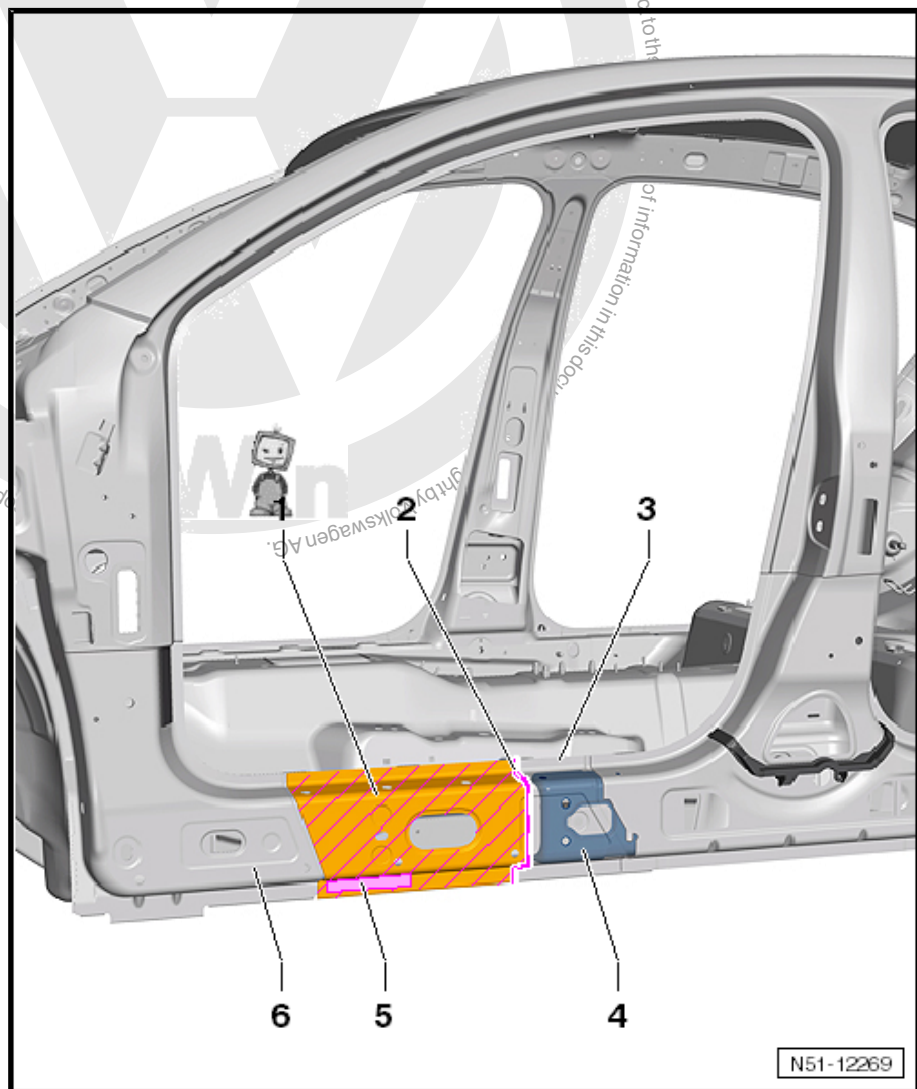
2 - Cutting point

3 - Remaining section of front side member reinforcement (remains)

4 - Web plate

5 - Bonded area

6 - A-pillar reinforcement



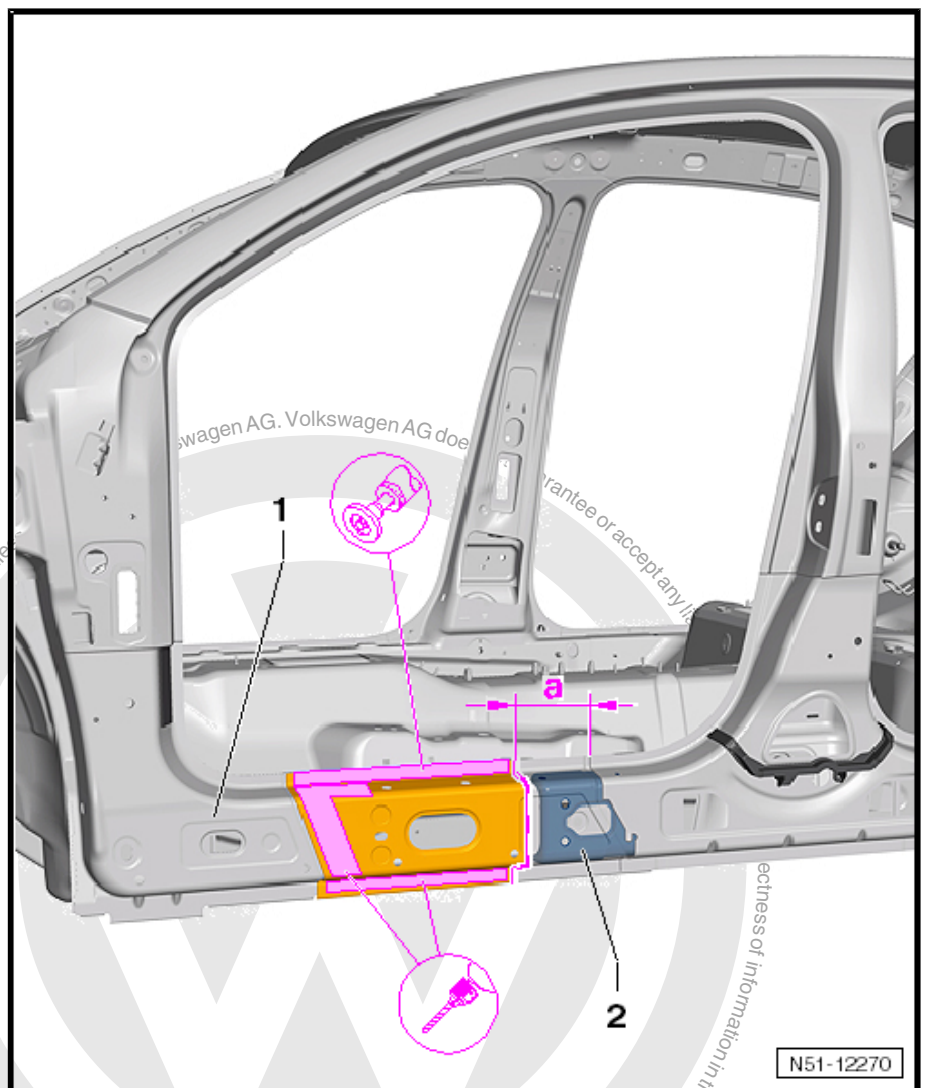


15.1 Tools

Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paintwork.*

15.2 Removing



- Position and make parting cut as shown.



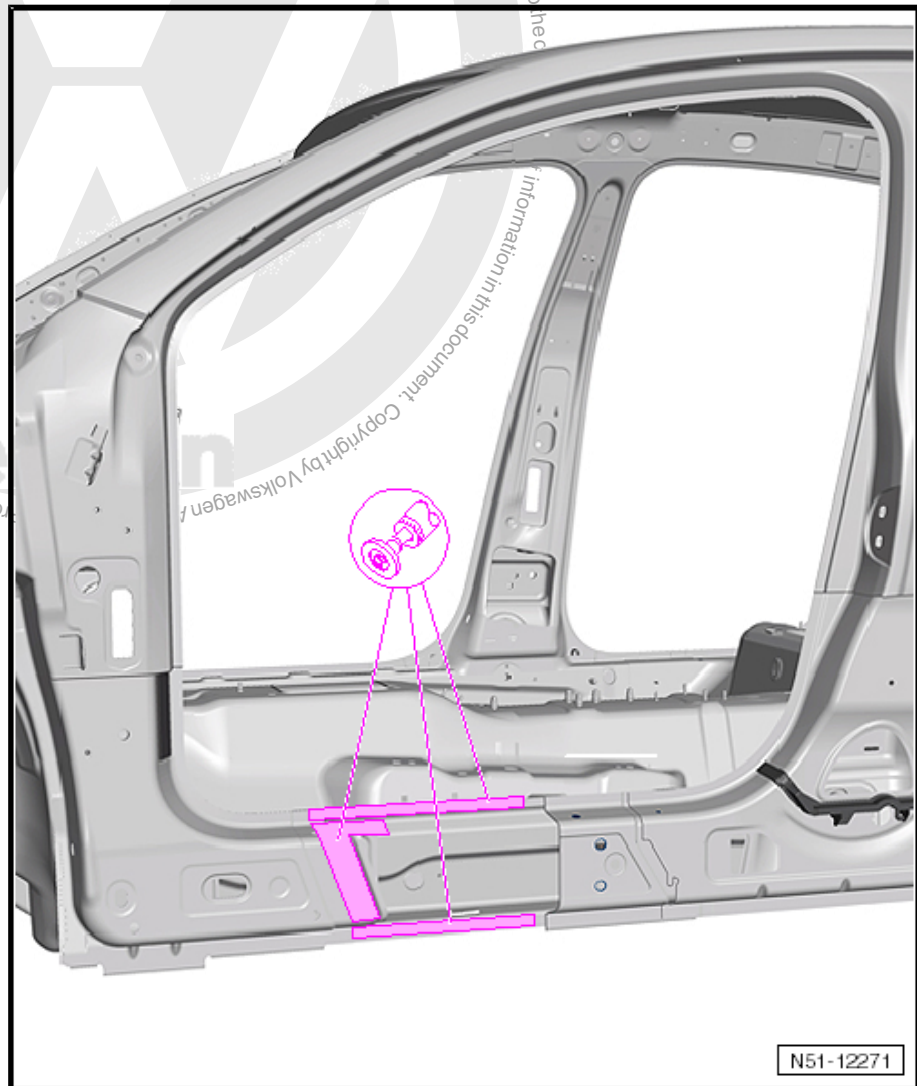
Dimension -a- = 100 mm



Note

Web plate -2- must not be damaged.

- Separate original joint to A-pillar reinforcement -1- and to inner side member.



- Remove remaining material.
- Remove remaining adhesive completely and grind bonded surface back to bare metal.

15.3 Installing



Note

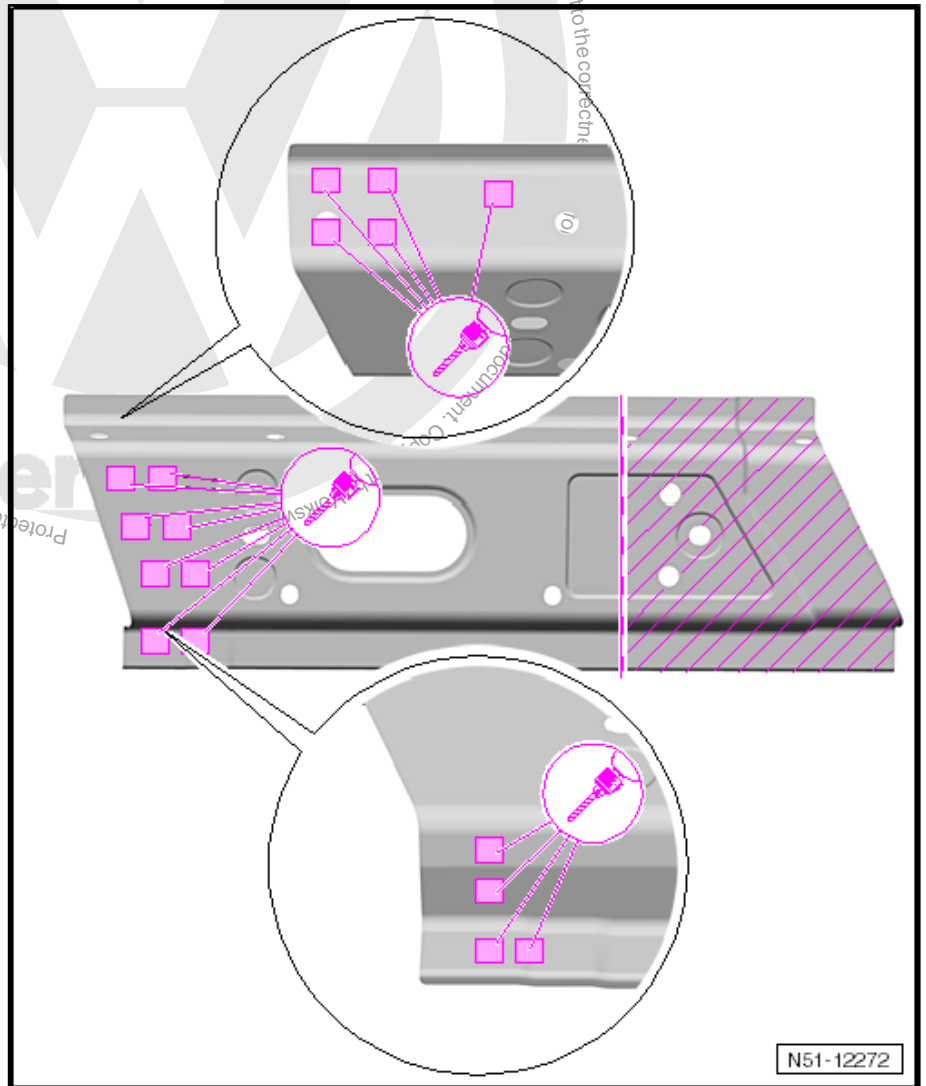
*Only welding units authorised by Volkswagen AG may be used
=> [page 239](#).*



15.3.1 Preparing new part

New part

- ◆ Front side member reinforcement
- ◆ 2K body adhesive -D 180 KD3 A2-



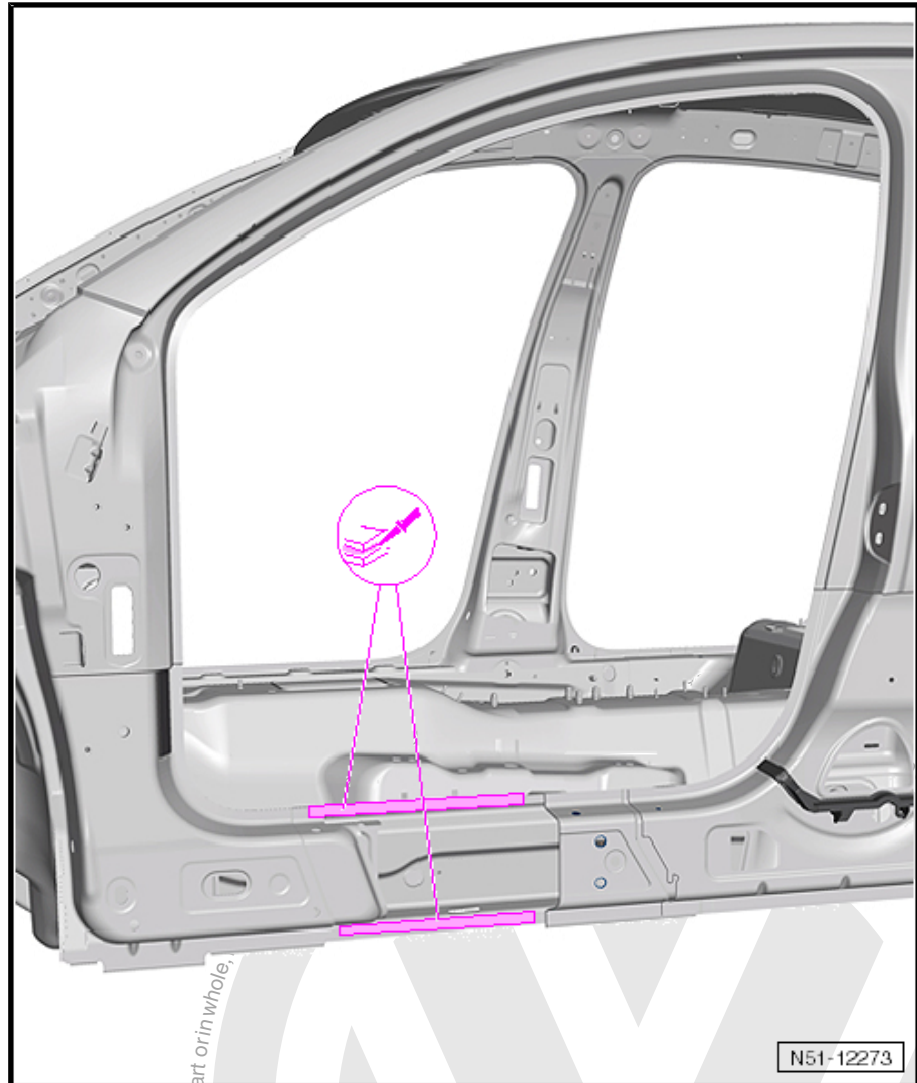
- Transfer parting cut to new part and cut out.
- Drill holes for SG plug weld seam (8 mm Ø) in area of factory-fitted weld points.

15.3.2 Welding in



Note

The new part must be welded in within 90 minutes, or adhesion of adhesive will be impaired.

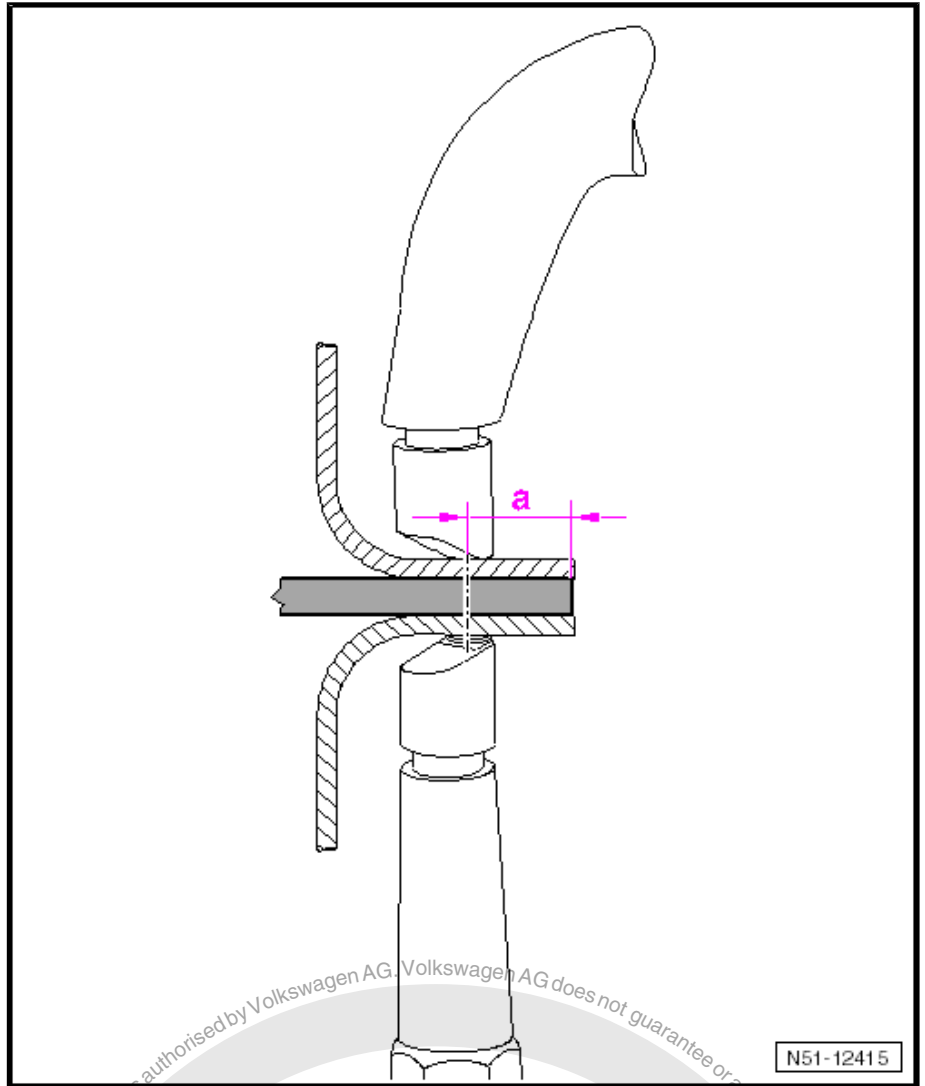


- Apply 2K body adhesive -D 180 KD3 A2- in the areas indicated.



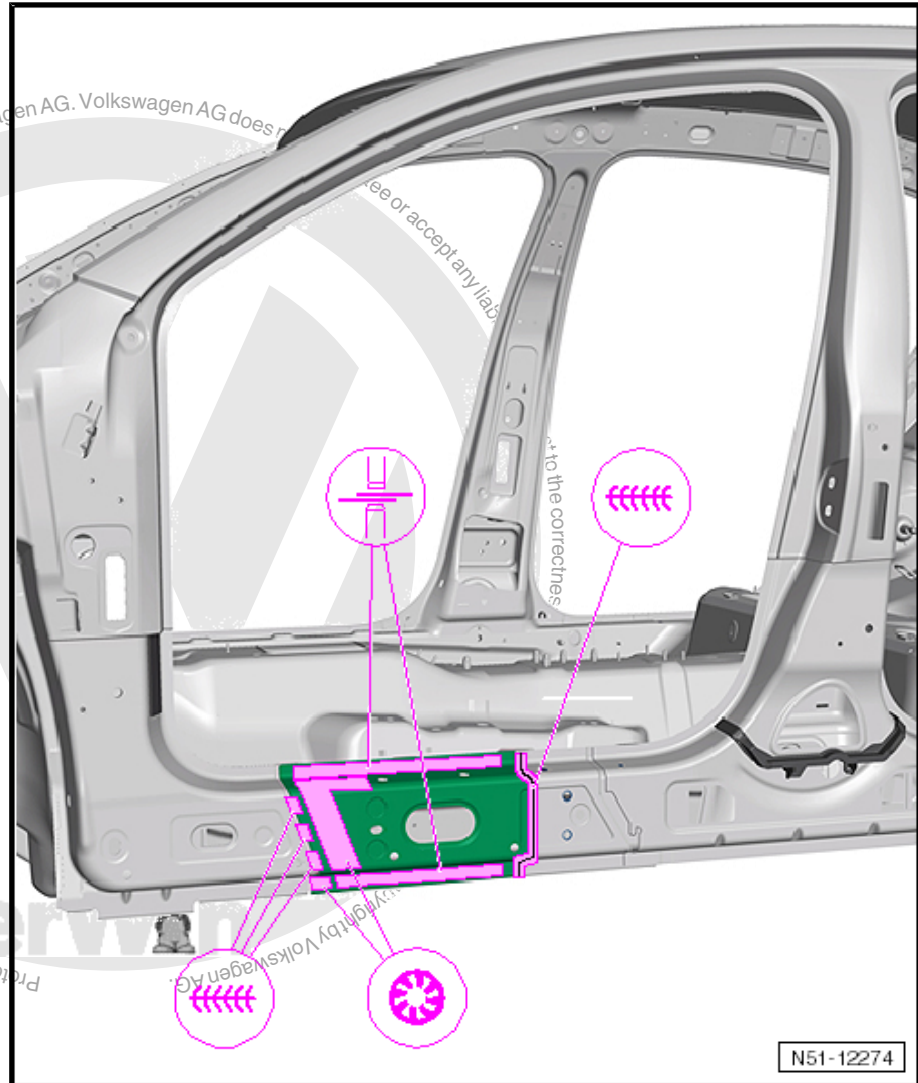
Note

- ◆ *In the area of the A, B and C-pillars, high tensile, highest tensile and hot formed steels are used. The weld flanges in these areas are about 13mm wide.*
- ◆ *If spot welds are located at the edge of hot formed steel panels, the high temperature will cause the bond between the panels to change, which will subsequently have an effect on crash safety.*



Therefore, locate spot welds as close to the centre as possible.

- Dimension -a- of 8mm can be achieved using angled welding tips.
- Adapt new part with vehicle positioned on alignment bracket set and fix in place.
- Check fit to side member.



- Weld in side member front reinforcement, SG plug weld seam and RP spot weld seam (inverter).
- Weld in parting cut, SG continuous weld seam.
- Weld in transition to A-pillar reinforcement, SG continuous weld seam (qty 3).

Length of seam 20 mm, distance between seams 20 mm.

- Install side member ⇒ [page 232](#) .



RO: 51 48 55 53

16 Renewing rear side member reinforcement



WARNING

Observe safety notes!

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

- Side member already removed ⇒ [page 229](#) .

1 - Remaining section of rear side member reinforcement (remains)

2 - Cutting point

3 - Outer wheel housing liner

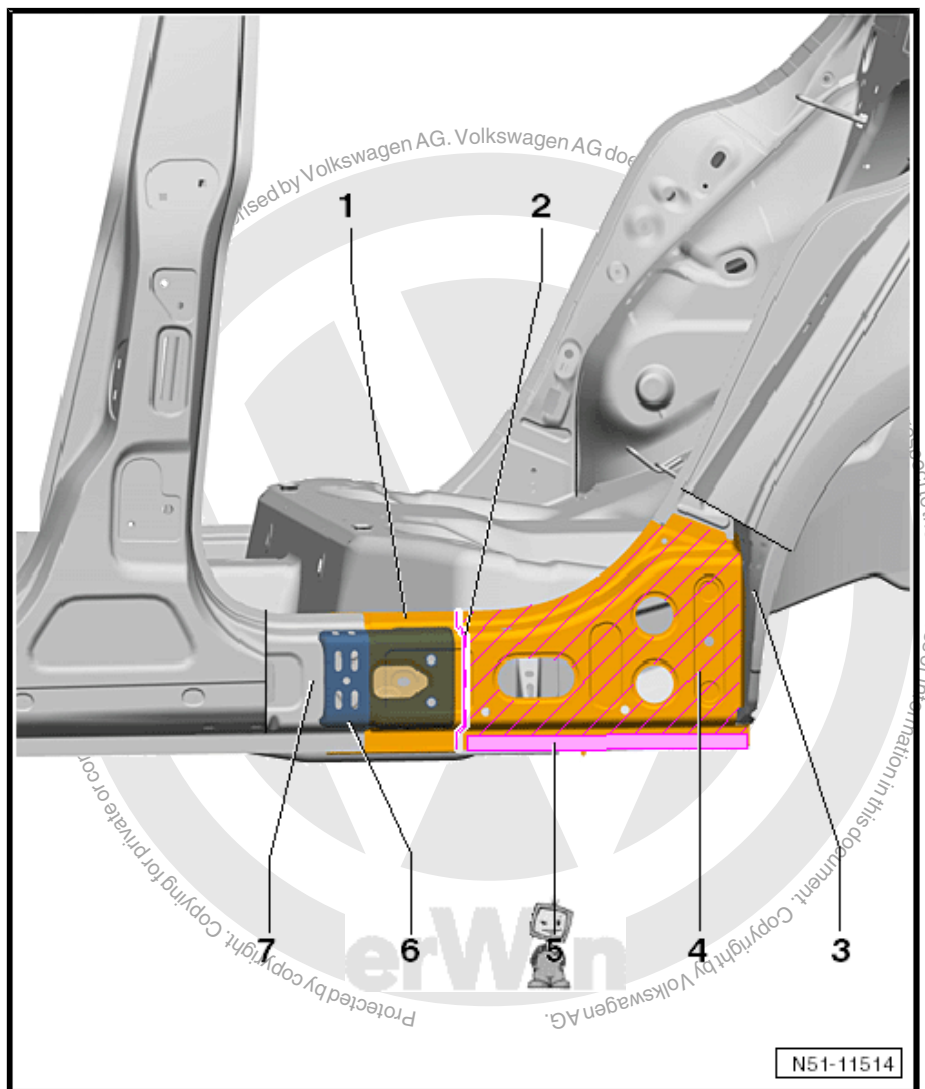
4 - Rear side member reinforcement

5 - Bonded section

6 - Web plate

- Only shown for clarity, must not be damaged.

7 - B-pillar reinforcement





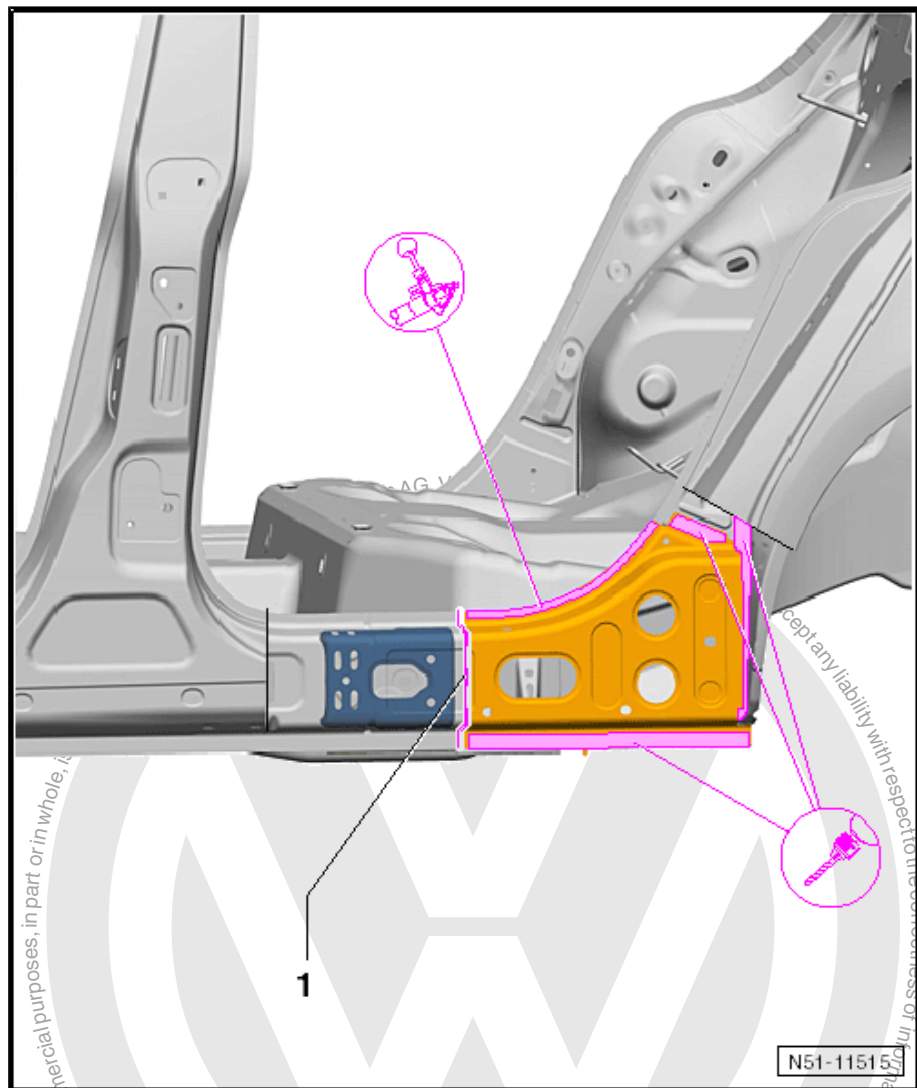
16.1 Tools



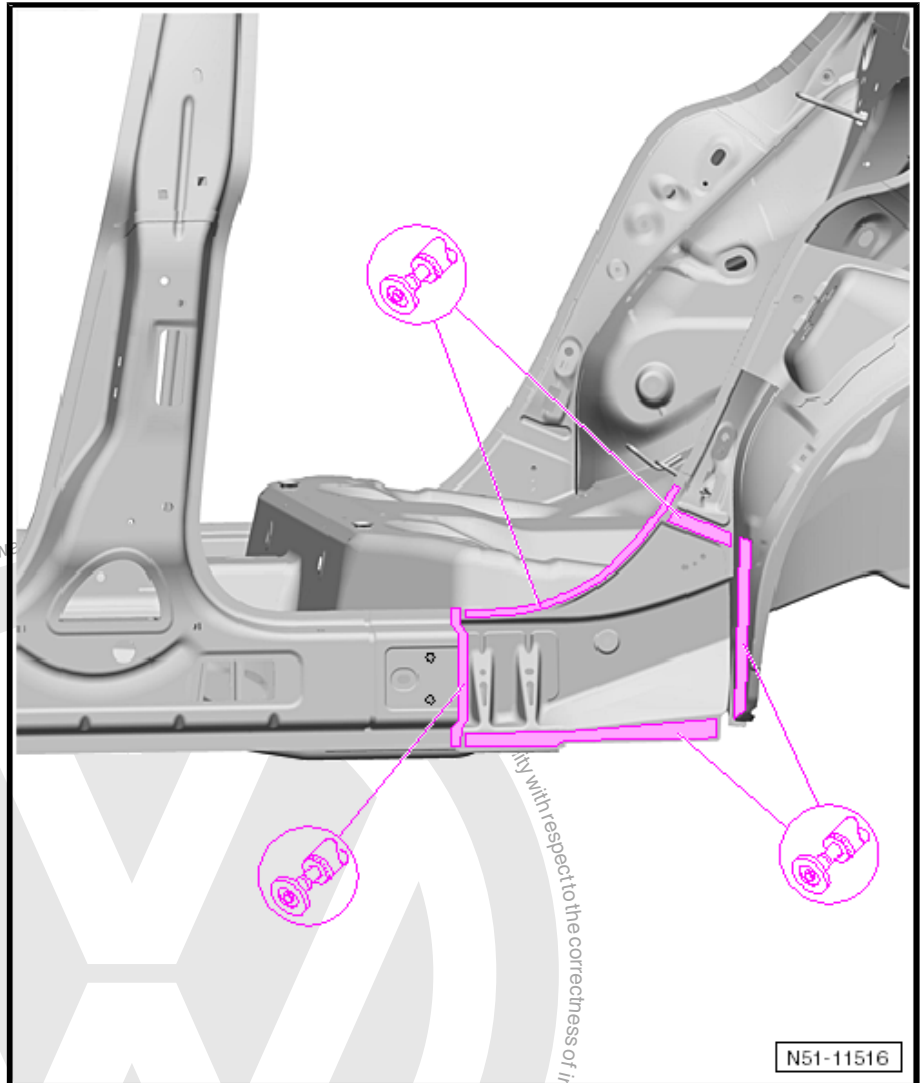
Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paintwork .*

16.2 Removing



- Separate original joint to inner side member and to outer wheel housing liner.
- Make parting cut -1- as shown.



- Remove remaining material.
- Remove remaining adhesive completely and grind bonded surface back to bare metal.

16.3 Installing



Note

Only welding units authorised by Volkswagen AG may be used
⇒ [page 246](#).

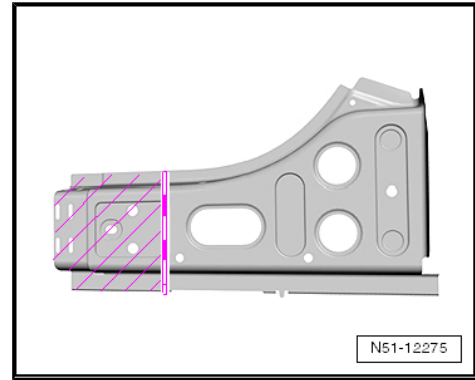
16.3.1 Preparing new part

New part

- ◆ Rear side member reinforcement
- ◆ 2K body adhesive -D 180 KD3 A2-



- Transfer parting cut to new part and cut out.



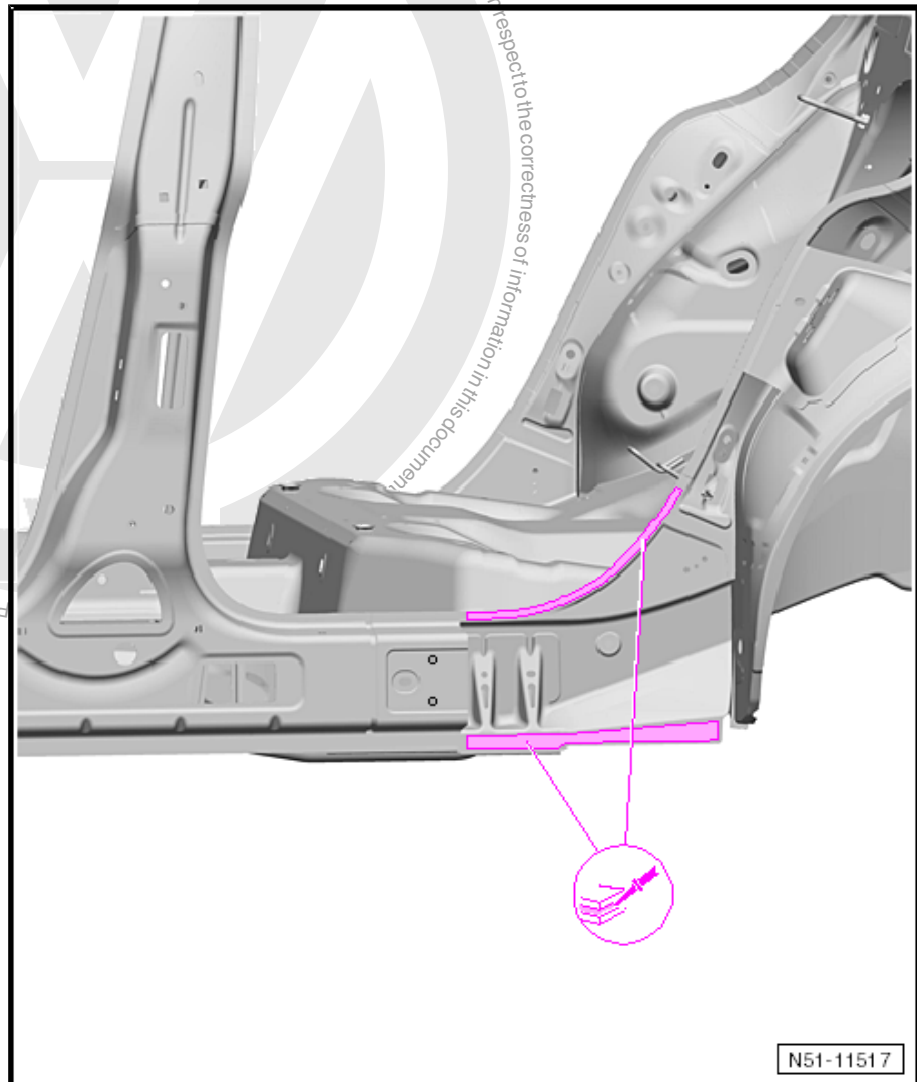
16.3.2 Welding in

New part



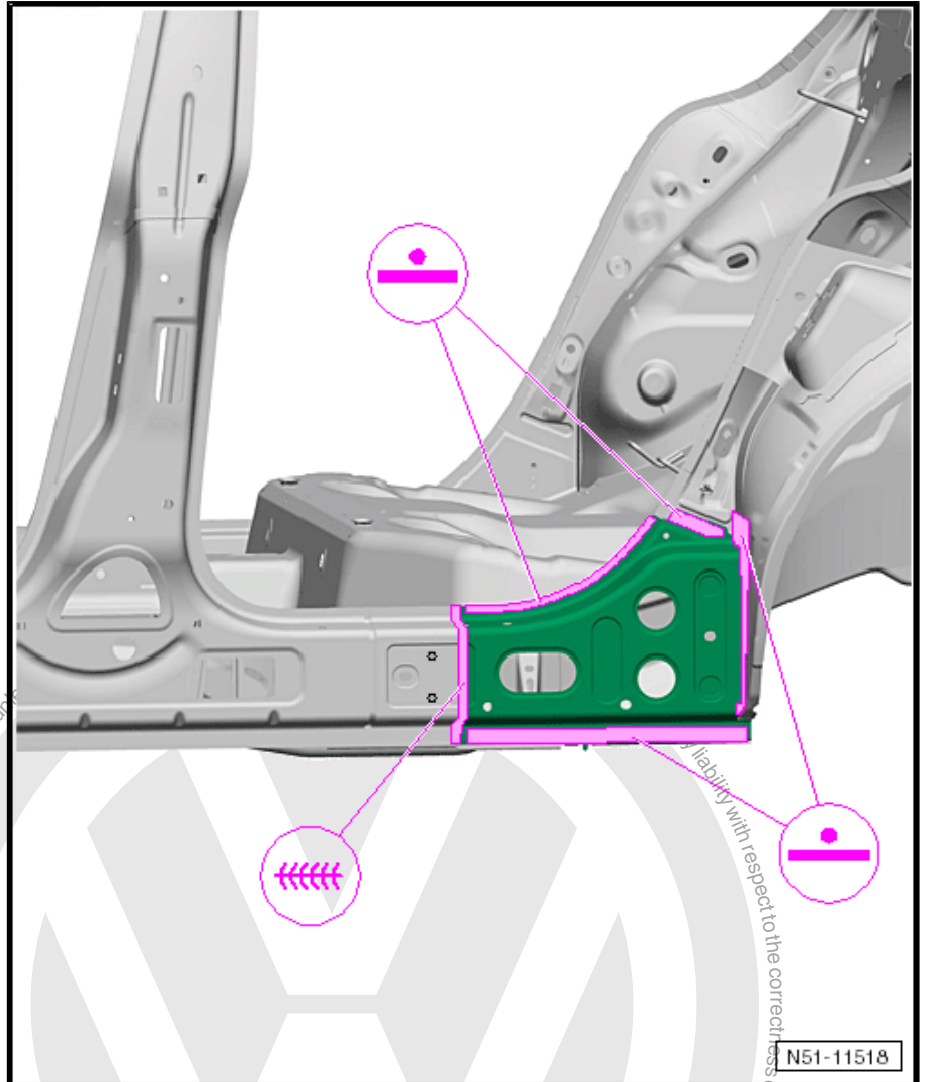
Note

The new part must be welded in within 90 minutes, or adhesion of adhesive will be impaired.





- Apply 2K body adhesive -D 180 KD3 A2- to area indicated.
- Adapt new part with vehicle positioned on alignment bracket set and fix in place.
- Check fit with bolt-on parts.



- Weld in rear side member reinforcement, SG continuous weld seam and RP spot weld seam.
- Install side member => [page 232](#) .





RO: 51 87 55 50

17 Renewing seat middle cross member



WARNING

Observe safety notes!

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

- Outer seat cross member mounting already removed
⇒ [page 260](#) .

17.1 Tools

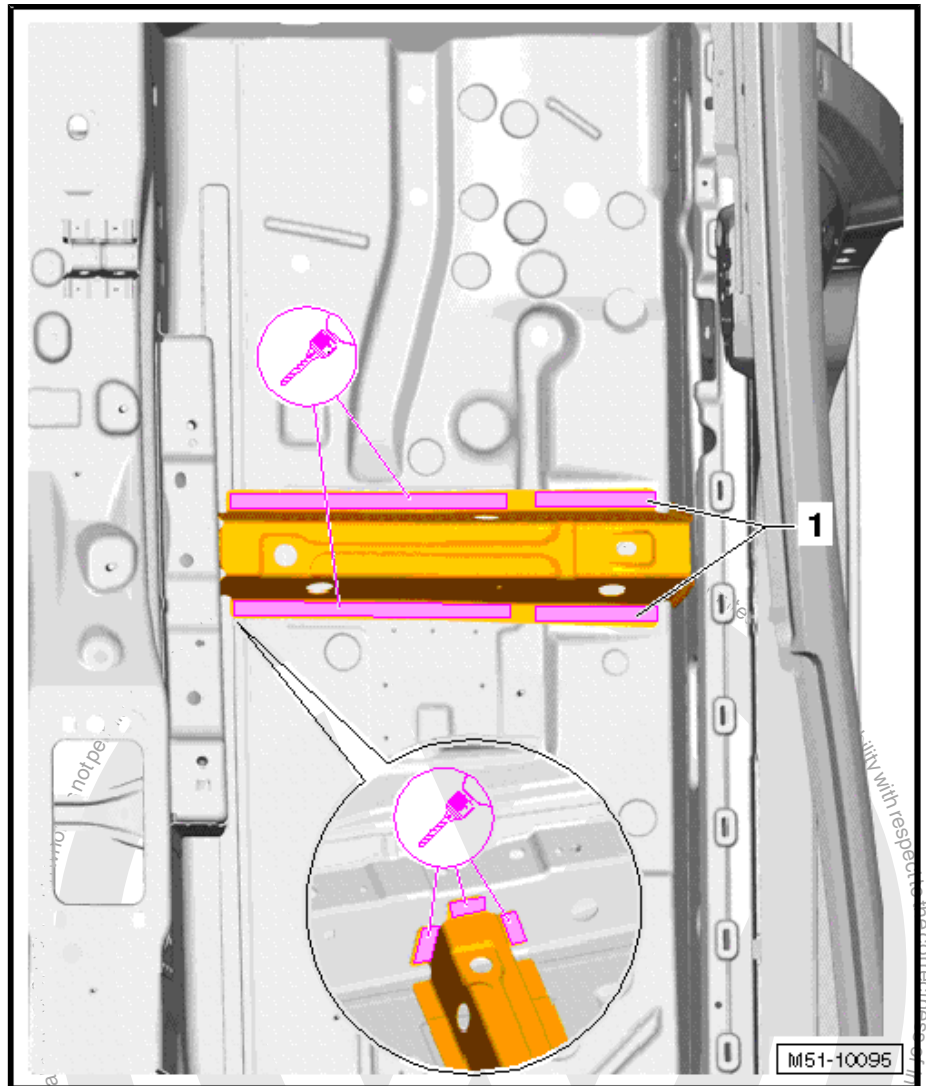


Note

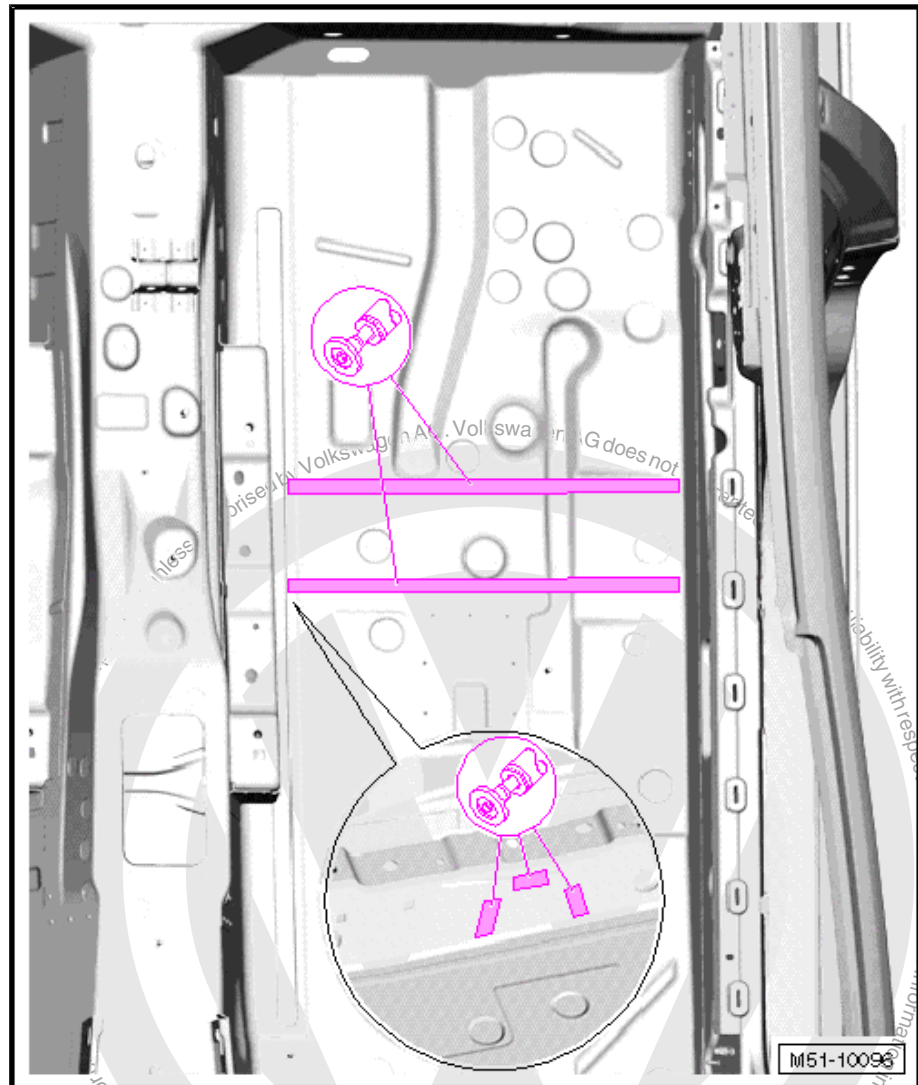
- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paint-work .*



17.2 Removing



- Separate original joint to inner mounting for seat cross member and to floor panel.
- Separate bonded connection -1- to floor panel.



- Remove remaining material.
- Remove remaining adhesive completely and grind bonded surface back to bare metal.

17.3 Installing



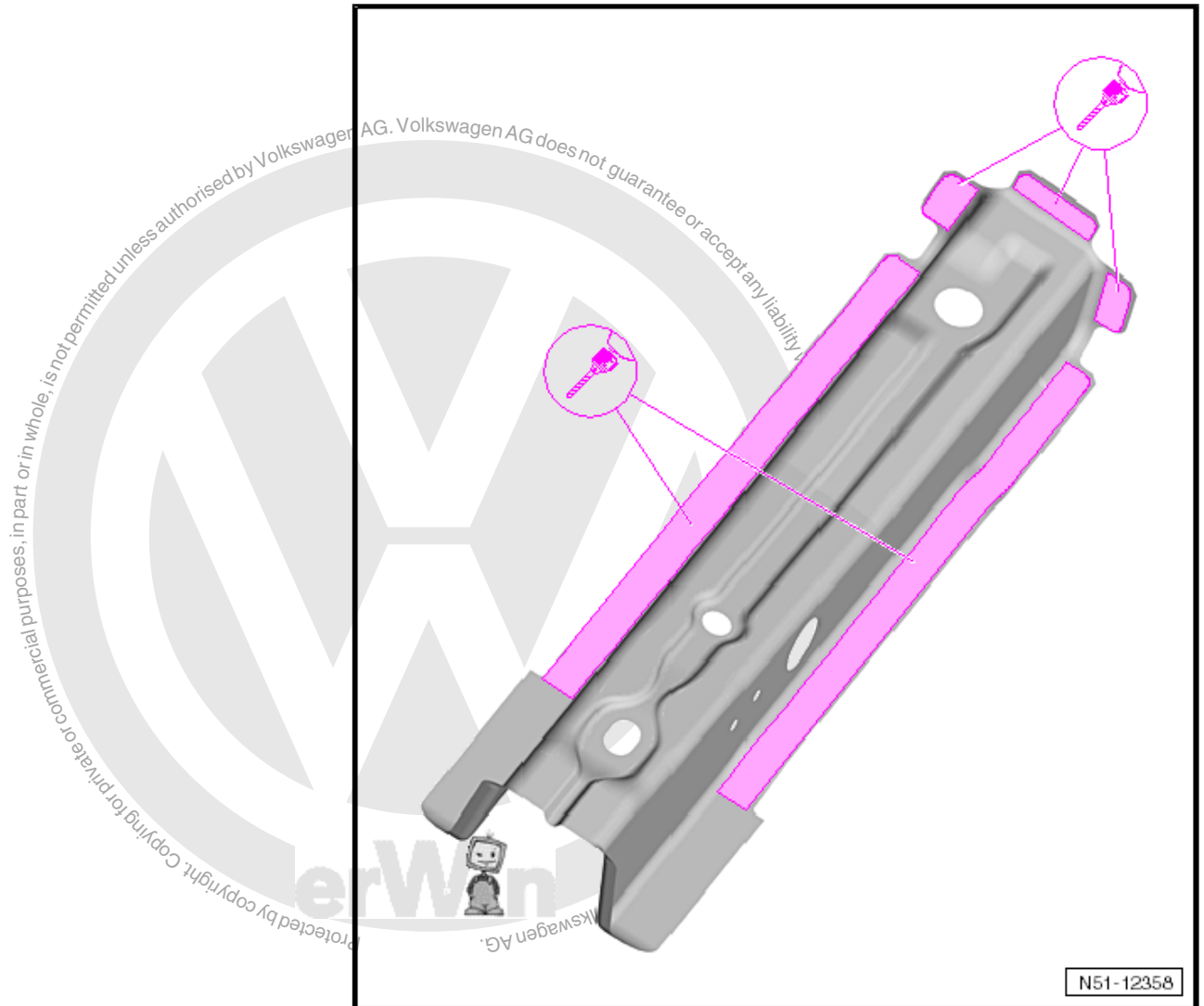
Note

Only welding units authorised by Volkswagen AG may be used
=> [page 250](#) .

17.3.1 Preparing new part

New part

- ◆ Seat mounting
- ◆ 2K body adhesive -D 180 KD3 A2-



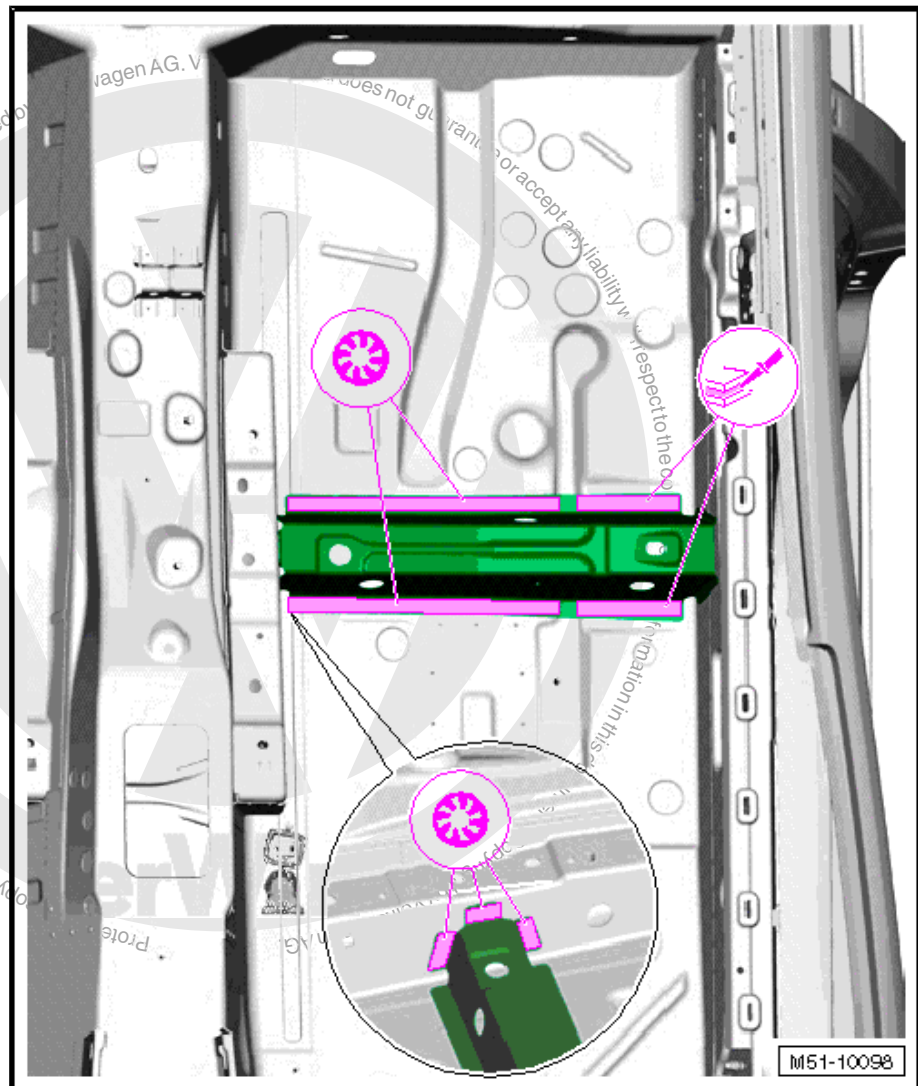
- Drill holes for SG plug weld seam (8 mm Ø).

17.3.2 Welding in

- Adapt new part and fix in position.



- Check fit to outer mounting for seat cross member and seat.



- Apply 2K body adhesive -D 180 KD3 A2- to areas bonded in the factory.
- Weld seat cross member to inner mounting for seat cross member and to floor panel, SG plug weld seam.
- Install outer cross member for seat ⇒ [page 263](#) .



RO: 51 87 55 53

18 Renewing inner mounting for seat cross member



WARNING

Observe safety notes!

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



Note

If a thread in the inner mounting for the seat cross member is damaged, the component must be replaced.

18.1 Tools



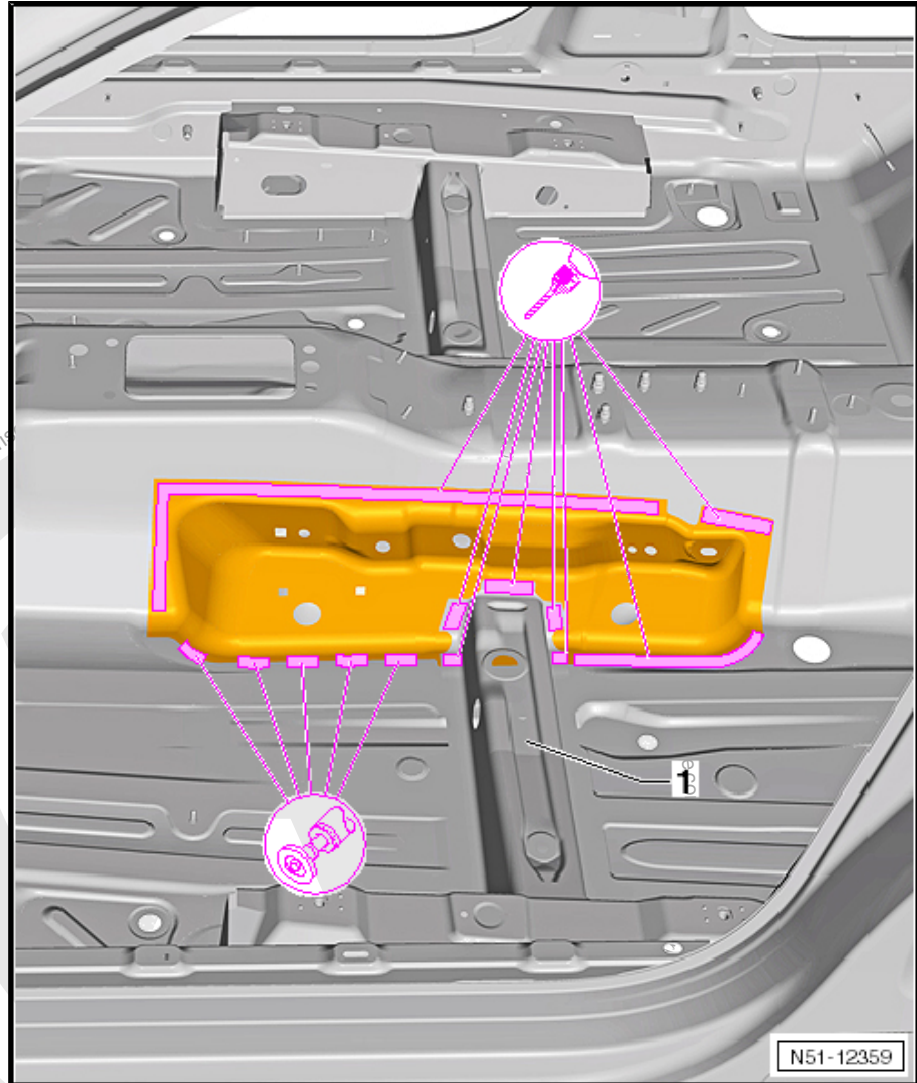
Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paint-work .*





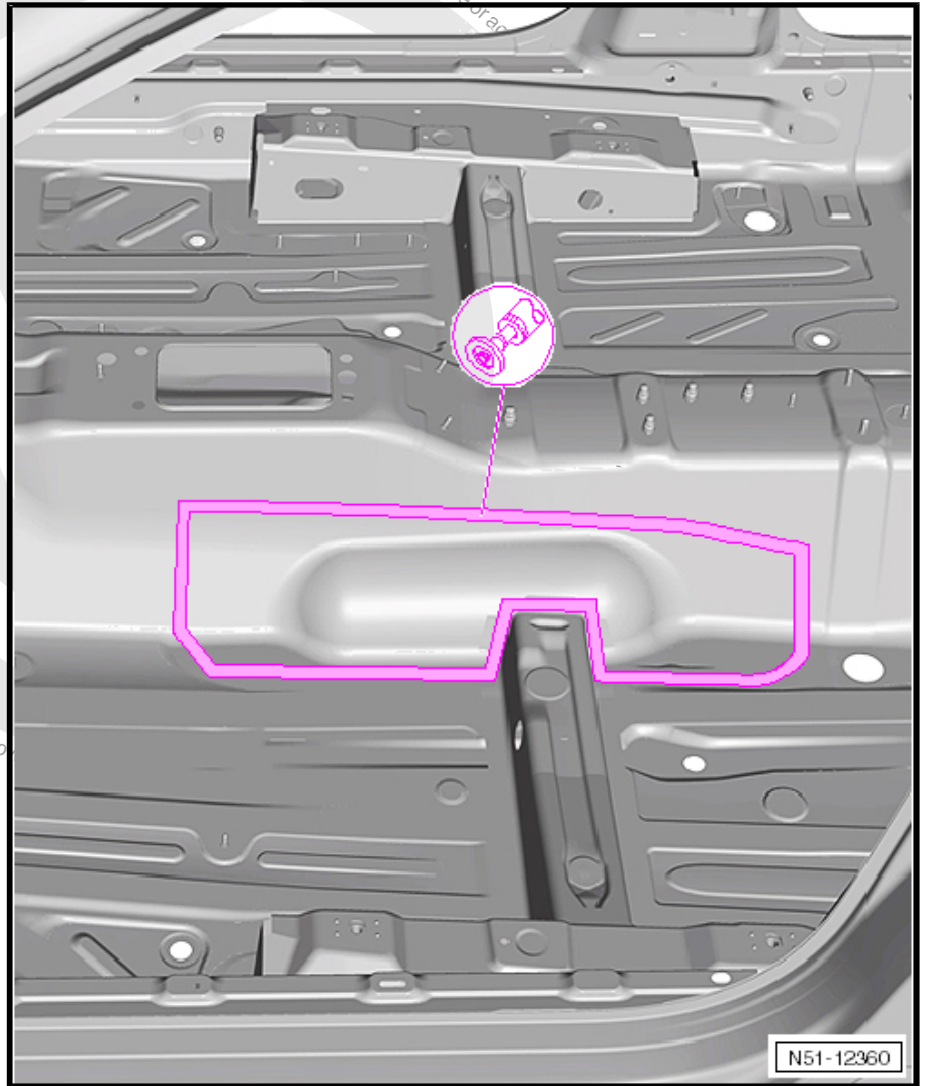
18.2 Removing



- Separate original joint to centre tunnel, to floor panel and to middle seat cross member



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– Remove remaining material.

18.3 Installing

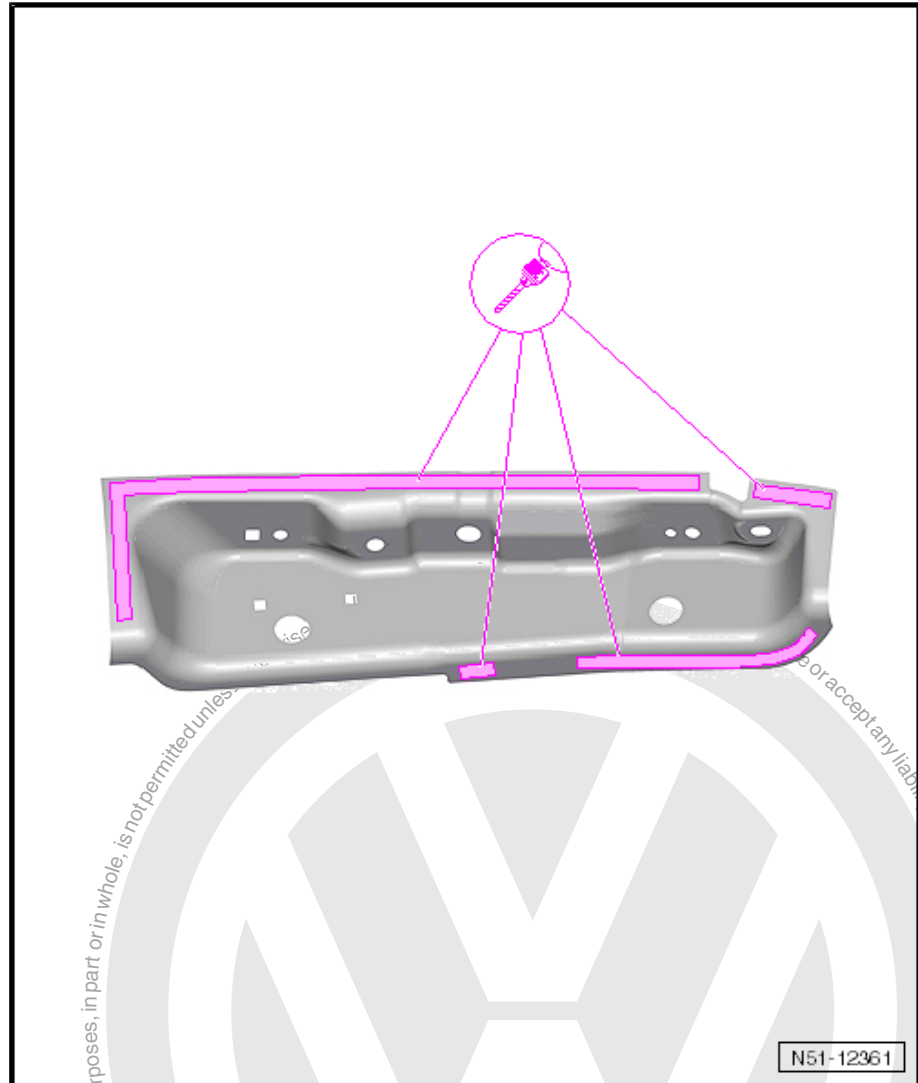
Note

*Only welding units authorised by Volkswagen AG may be used
=> [page 255](#).*

18.3.1 Preparing new part

New part

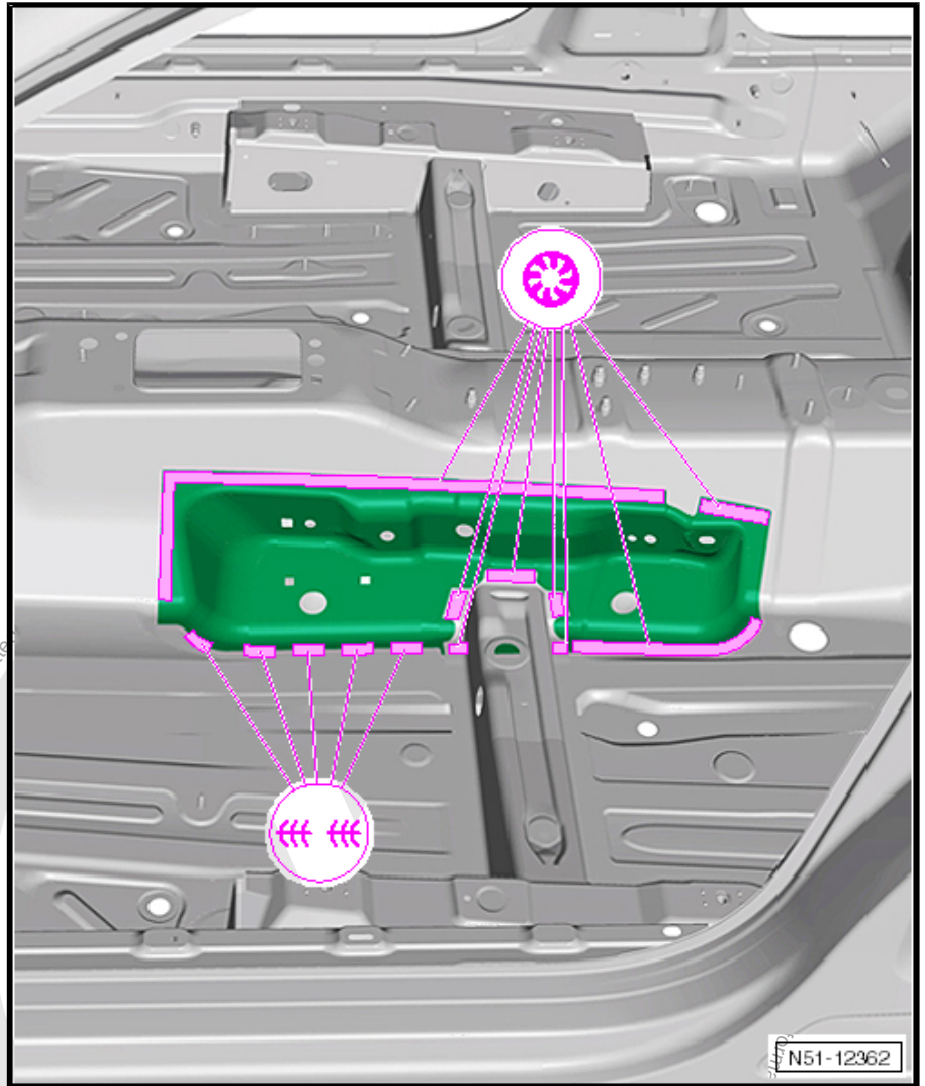
- ◆ Inner mounting for seat cross member



- Drill holes for SG plug weld seam (8 mm Ø).

18.3.2 Welding in

- Adapt new part and fix in position.
- Check fit to middle seat cross member and to seat.



- Weld inner mounting of seat cross member to centre tunnel and middle seat cross member, SG plug weld seam.
- Weld in remaining joint, SG staggered continuous weld seam.



RO: 51 87 55 56

19 Renewing outer mounting for seat cross member



WARNING

Observe safety notes!

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

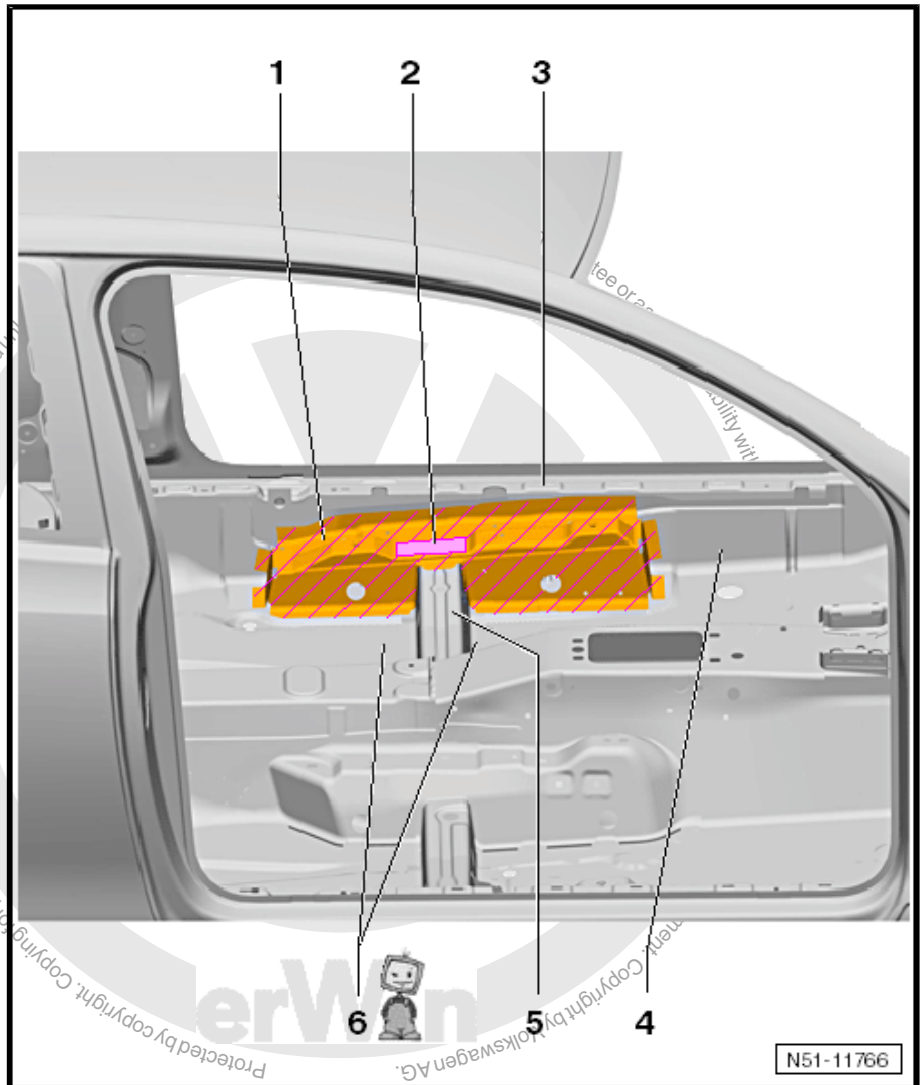


Note

- ◆ *If a thread in the outer mounting for the seat cross member is damaged, the component must be replaced.*
- ◆ *If outer mounting for seat cross member (with vehicle identity number) has to be renewed, repair must be documented according to market-specific legislation.*
- ◆ *The vehicle identification number should be reinstalled/re-stamped before the outer mounting for the seat cross member is welded in.*



- 1 - Outer mounting for seat cross member
- 2 - Vehicle identification number (only on right-hand side of vehicle)
- 3 - Inner side member assembly panel
- 4 - Inner side member
- 5 - Middle seat cross member
- 6 - Floor panel



19.1 Tools

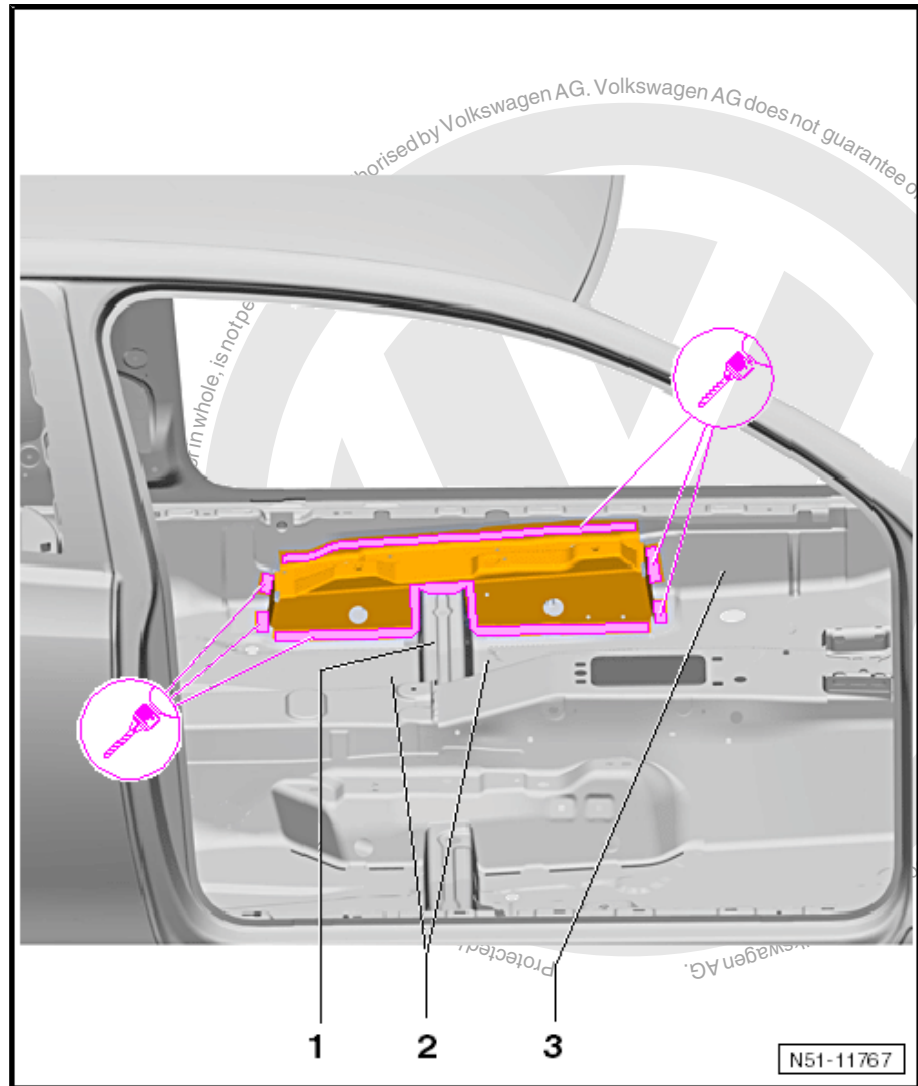


Note

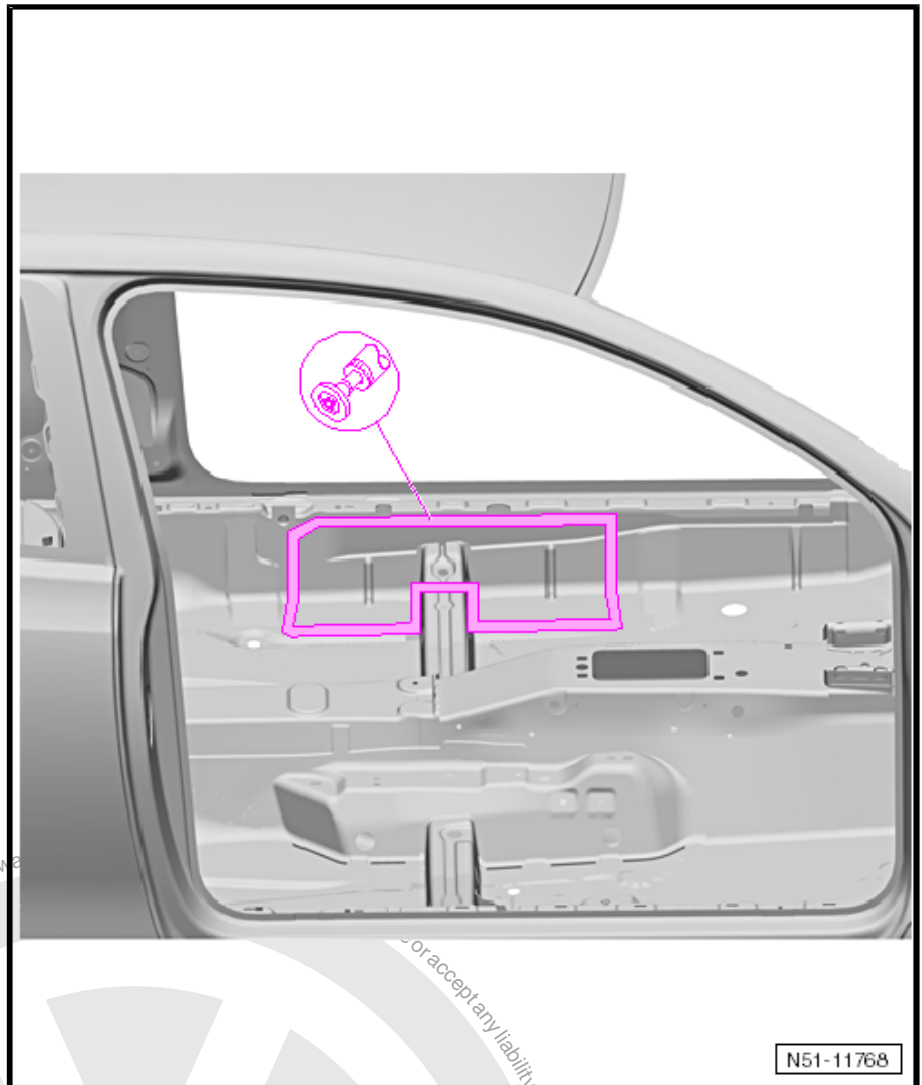
- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paintwork .*



19.2 Removing



- Separate original joints to middle cross member -1- for seat, to floor panel -2- and to side member -3-.



- Remove remaining material.

19.3 Installing



Note

*Only welding units authorised by Volkswagen AG may be used
=> [page 261](#).*

19.3.1 Preparing new part

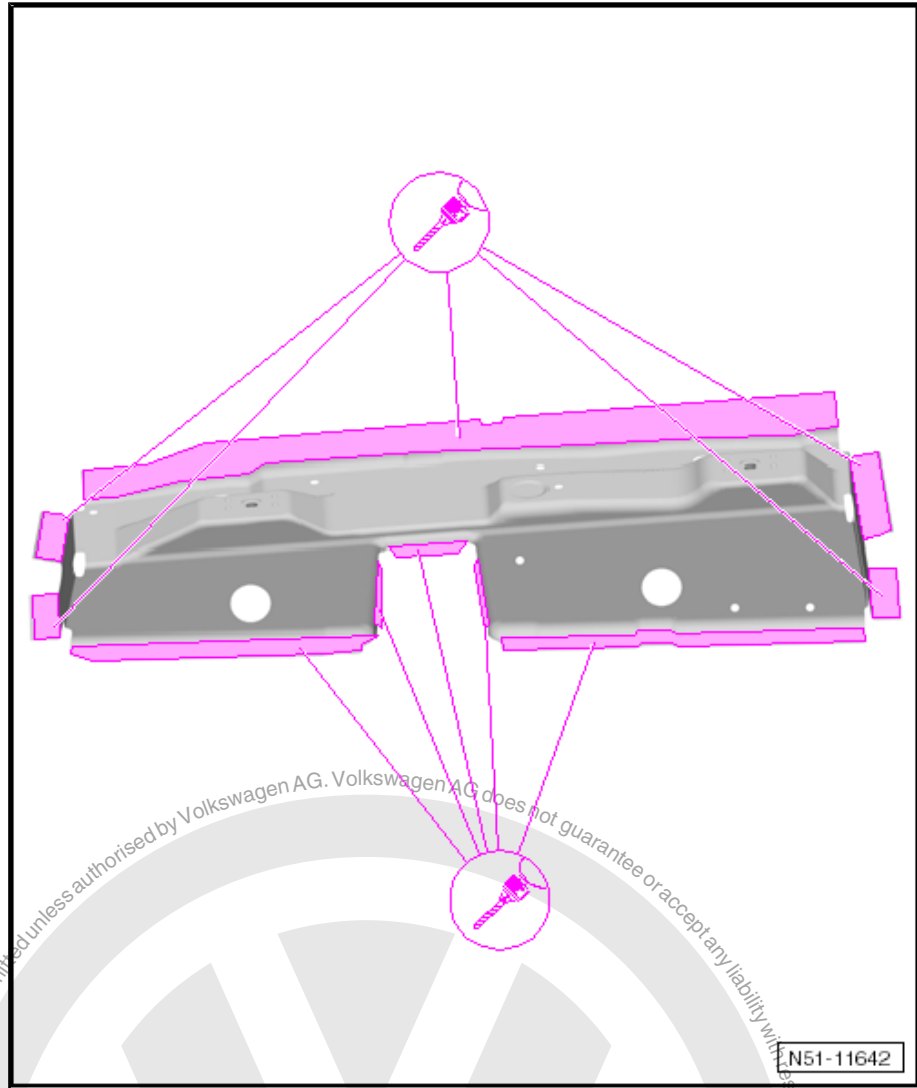
New part

- ◆ Outer mounting for seat cross member



Note

Before installing, reinstate vehicle identification number if necessary.



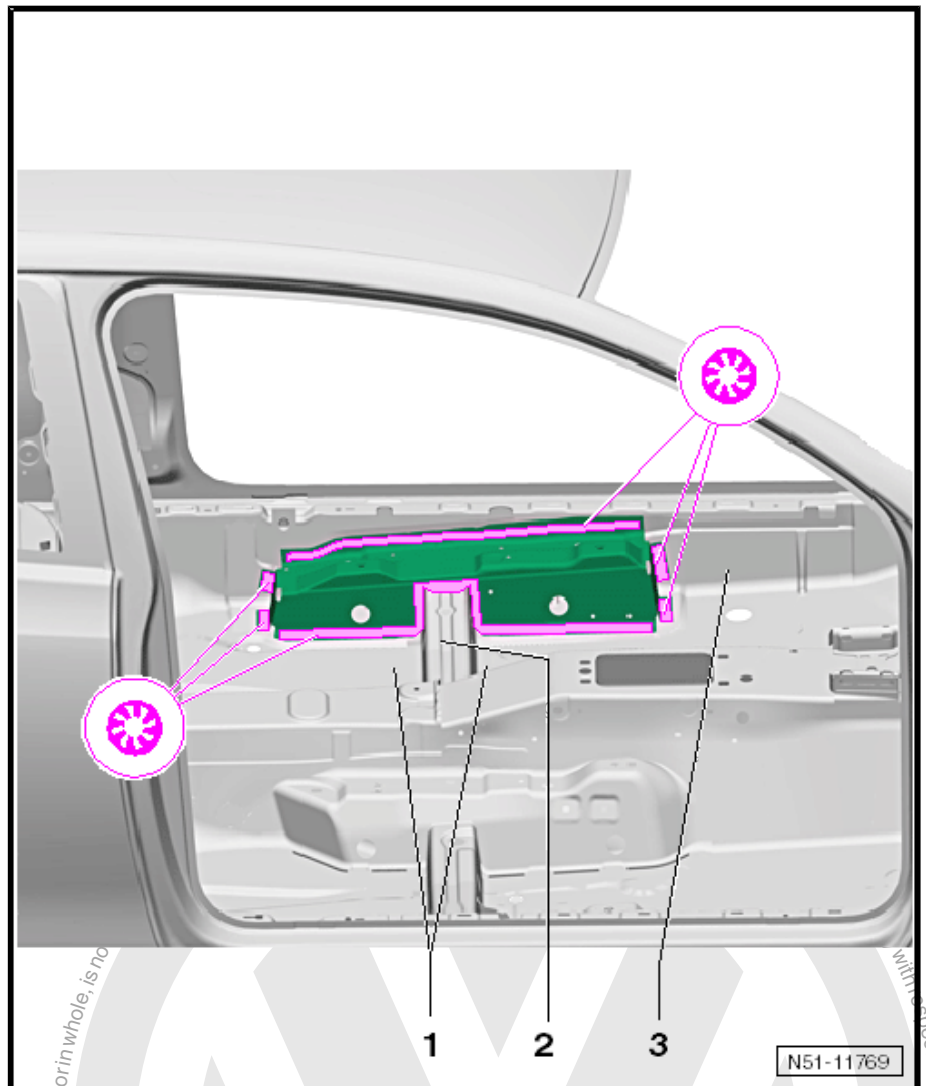
- Drill holes for SG plug weld seam (8 mm Ø).

19.3.2 Welding in

- Adapt new part to fit and fix in position.



- Check fit to seat.



- Weld outer mounting for seat cross member -1-, to middle cross member -2- for seat and to inner side member -3-, SG plug weld.



53 – Body - rear

RO: 53 05 55 50

1 Renewing rear cross panel

Includes: cross member for rear cross panel, left and right exhaust system retainers and lock carrier



WARNING

Observe safety notes!

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

- Spare wheel well already removed ⇒ [page 370](#) .

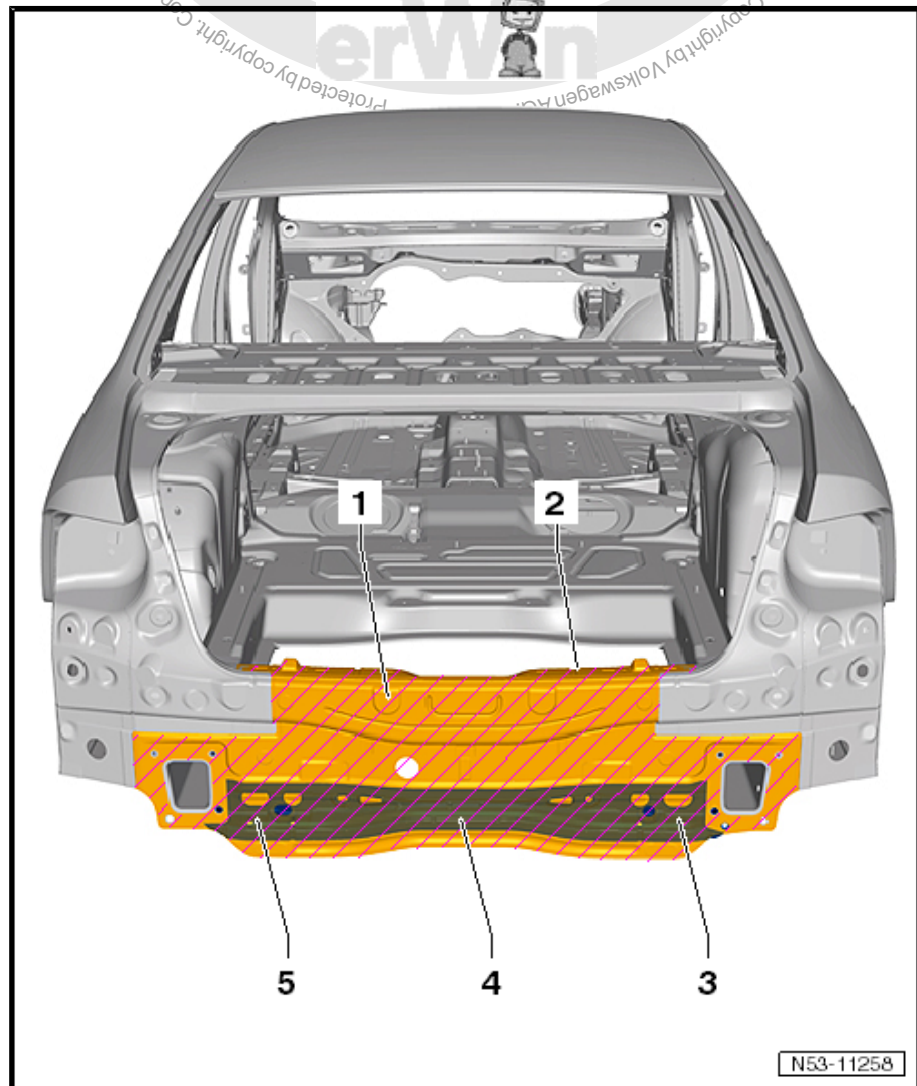
1 - Cross panel

2 - Lock carrier

3 - Right exhaust system retainer

4 - Cross member for rear cross panel

5 - Left exhaust system retainer



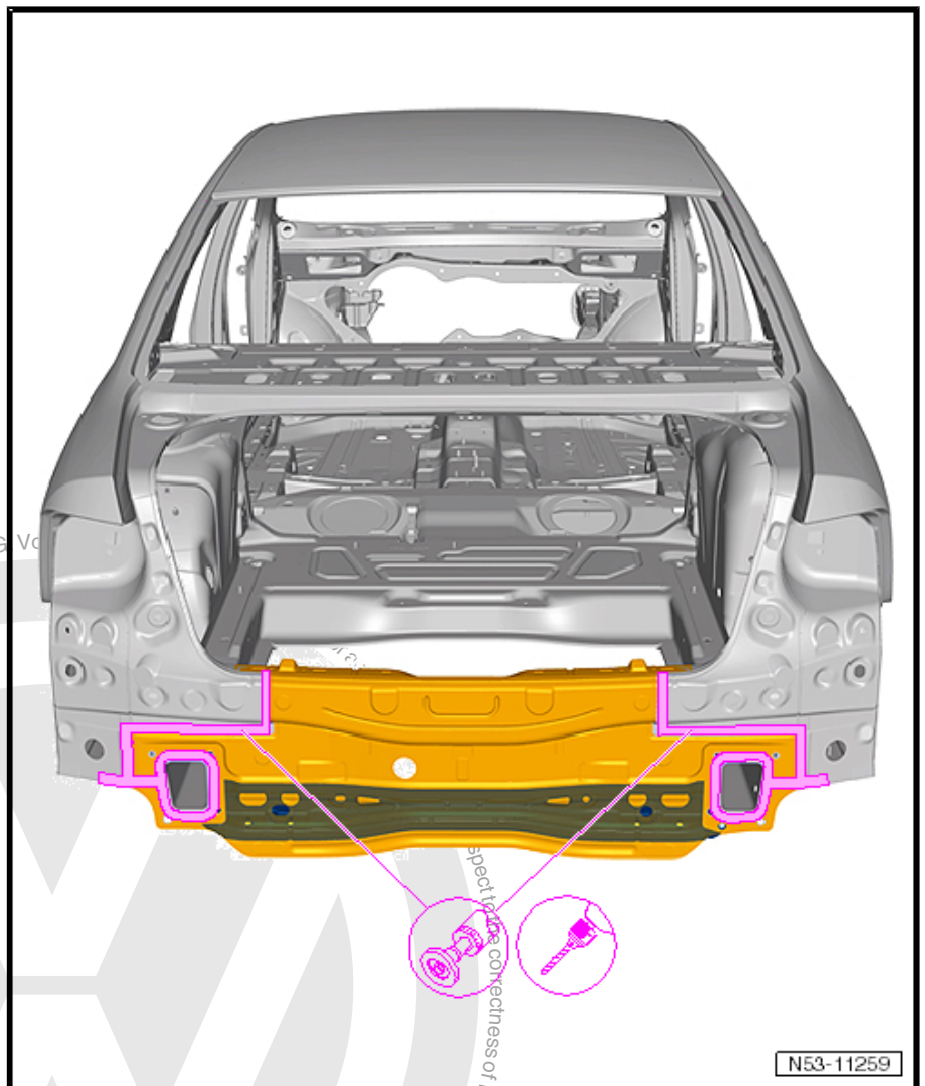


1.1 Tools

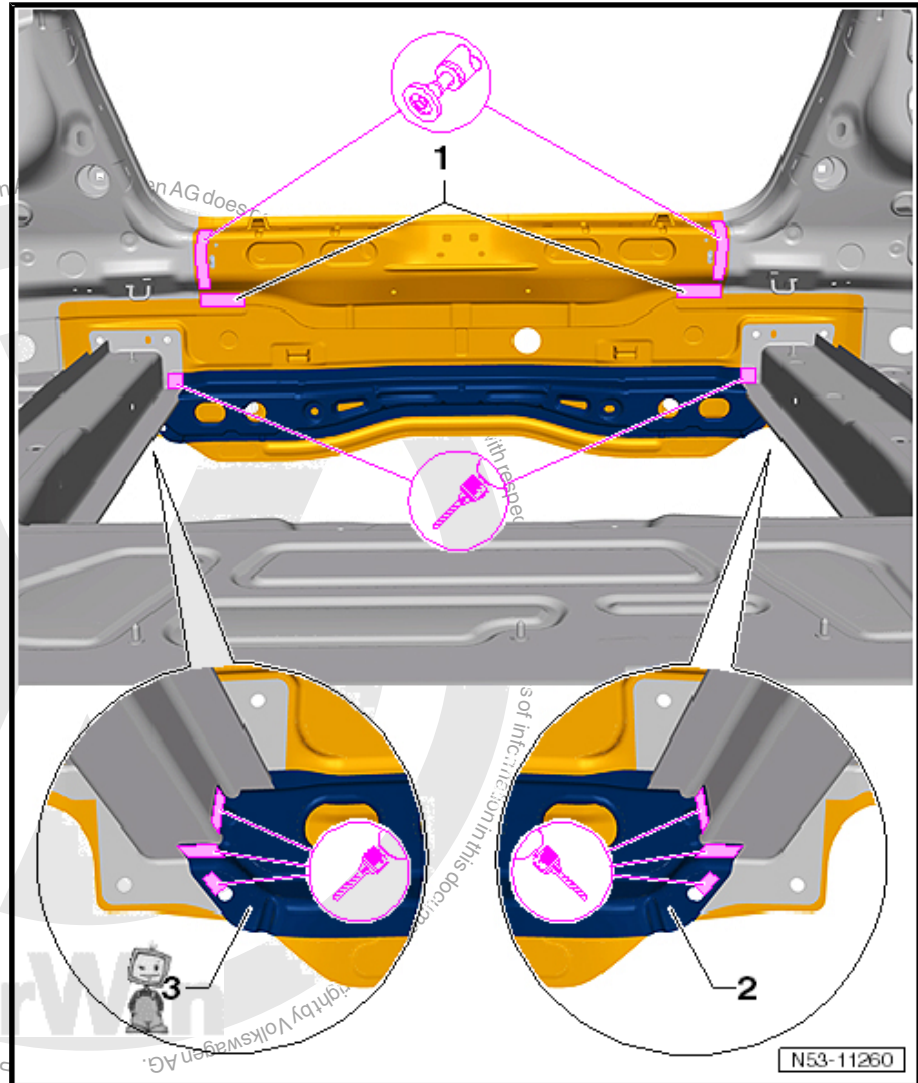
Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paintwork.*

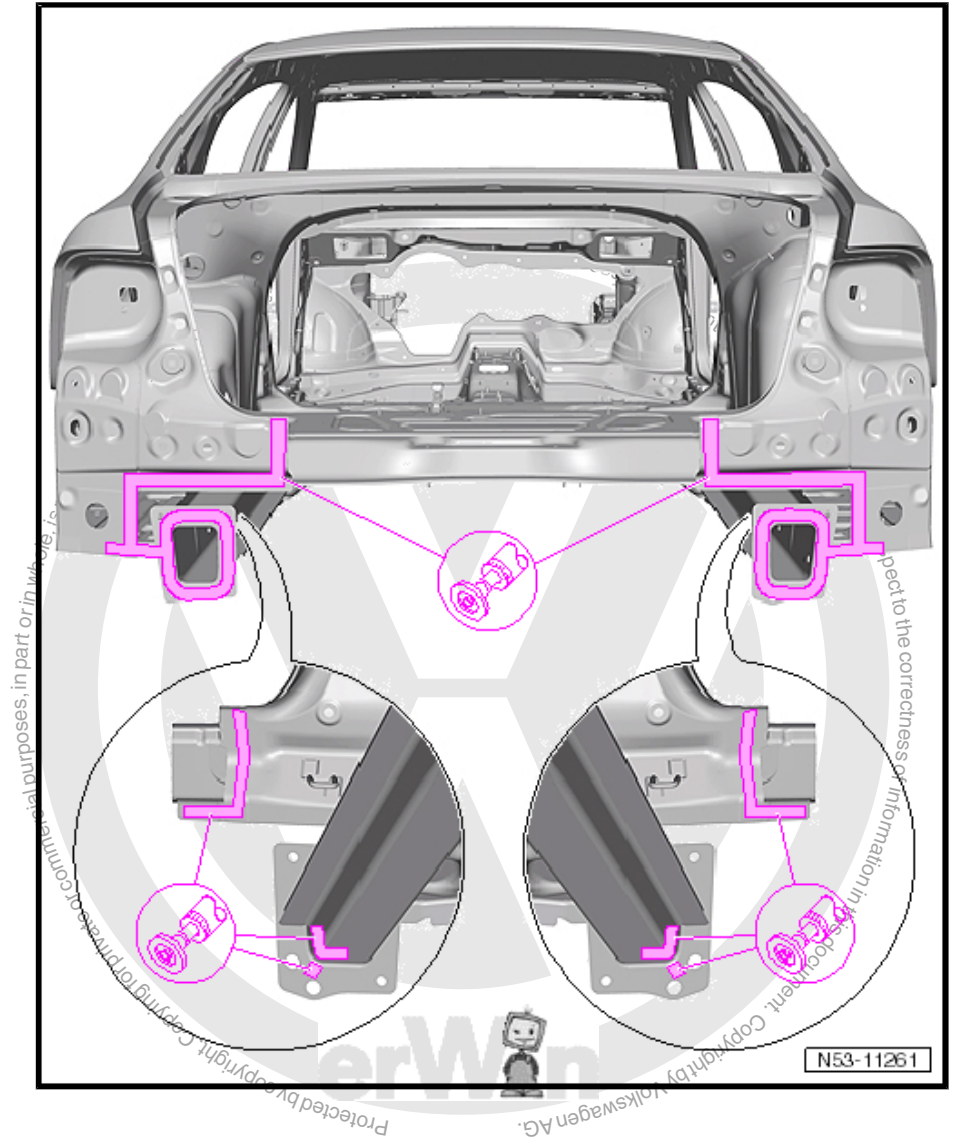
1.2 Removing



Separate original outer joint.



- Separate original joint for lock carrier.
- Separate bonded areas -1-.
- Separate original joints of left and right exhaust system retainers -2 and 3-.



– Remove remaining material.

1.3 Installing



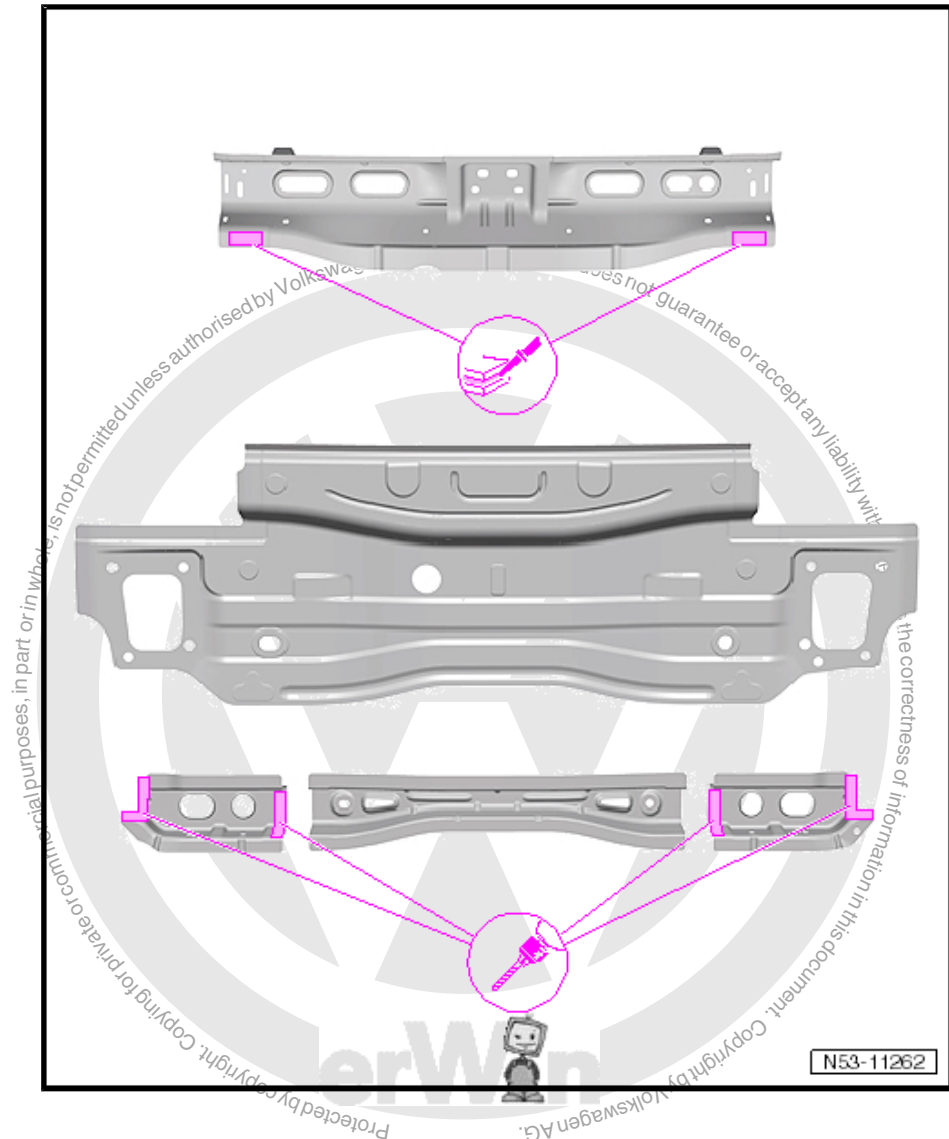
Note

*Only welding units authorised by Volkswagen AG may be used
=> [page 267](#).*

1.3.1 Preparing new part

New part

- ◆ Lock carrier
- ◆ Cross panel
- ◆ Cross member for rear cross panel
- ◆ Left exhaust system retainer
- ◆ Right exhaust system retainer
- ◆ 2K body adhesive -D 180 KD3 A2-



- Drill holes for SG plug weld seam (8 mm Ø).
- Grind bonding surfaces back to bare metal.
- Apply 2K body adhesive -D 180 KD3 A2- to areas bonded in the factory.

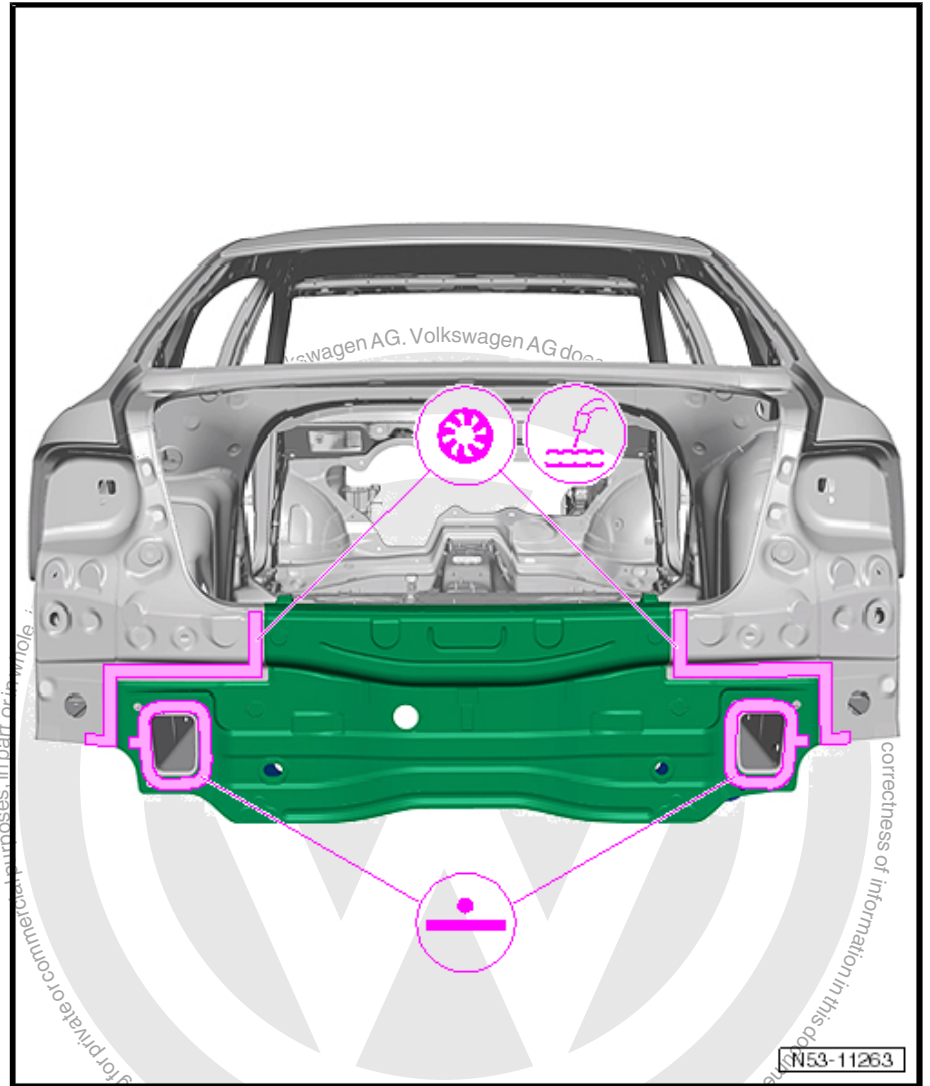
1.3.2 Welding in



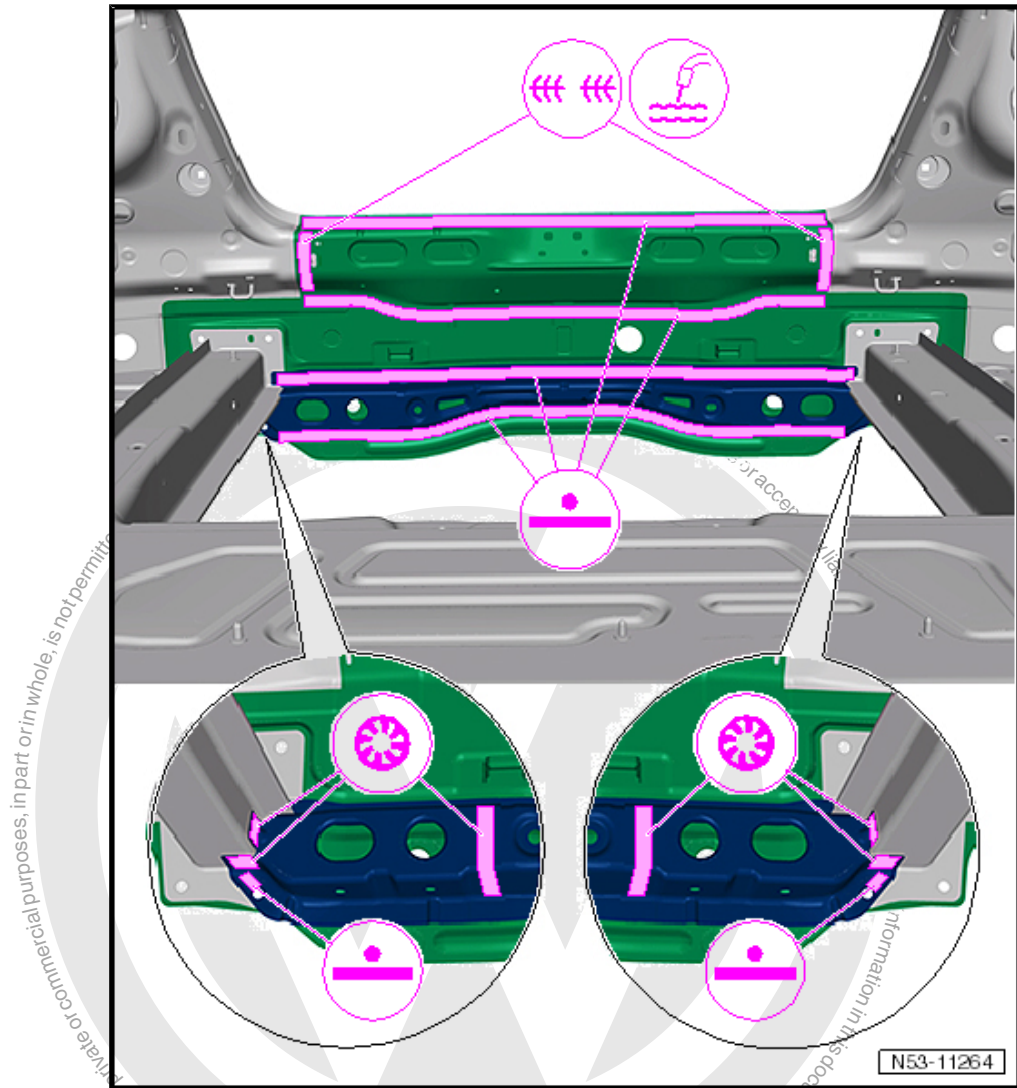
Note

New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.

- Adapt new part with vehicle standing on its wheels or alignment bracket set and fix in position.
- Check fit with bolt-on parts.



- Weld in rear cross panel, RP spot weld seam and SG plug weld seam or MIG solder seam.



- Weld in exhaust system retainers and cross member for rear cross panel, SG plug weld seam and RP spot weld seam.
- Weld in lock carrier, RP spot weld seam and SG staggered continuous weld seam or MIG staggered continuous weld seam.



Note

Spare wheel well may only be installed after reinstating paintwork finish.

- Install spare wheel well ⇒ [page 373](#) .



RO: 53 05 55 60

2 Renewing rear cross panel (Variant)

Includes: cross member for rear cross panel, left and right exhaust system retainers and lock carrier



WARNING

Observe safety notes!

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

- Spare wheel well already removed ⇒ [page 370](#) .

1 - Cross panel

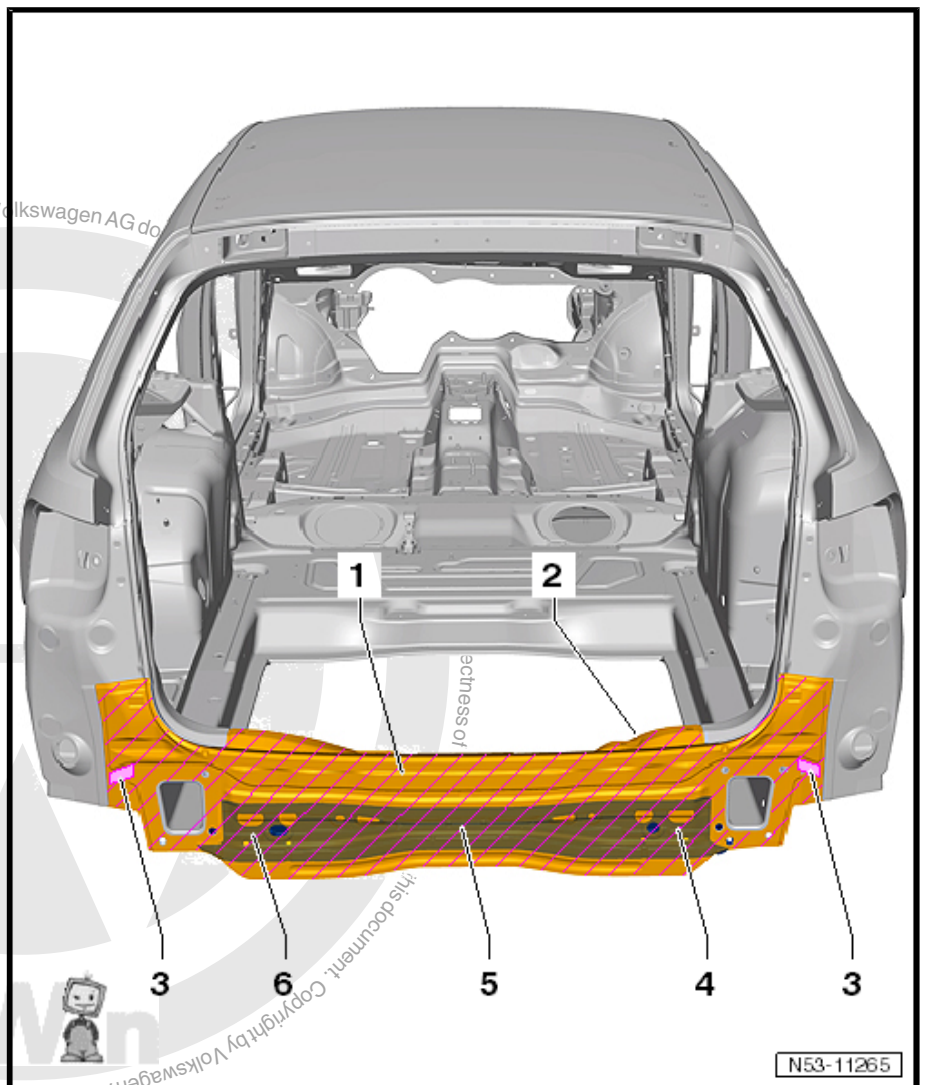
2 - Lock carrier

3 - Bonded area

4 - Right exhaust system retainer

5 - Cross member for rear cross panel

6 - Left exhaust system retainer





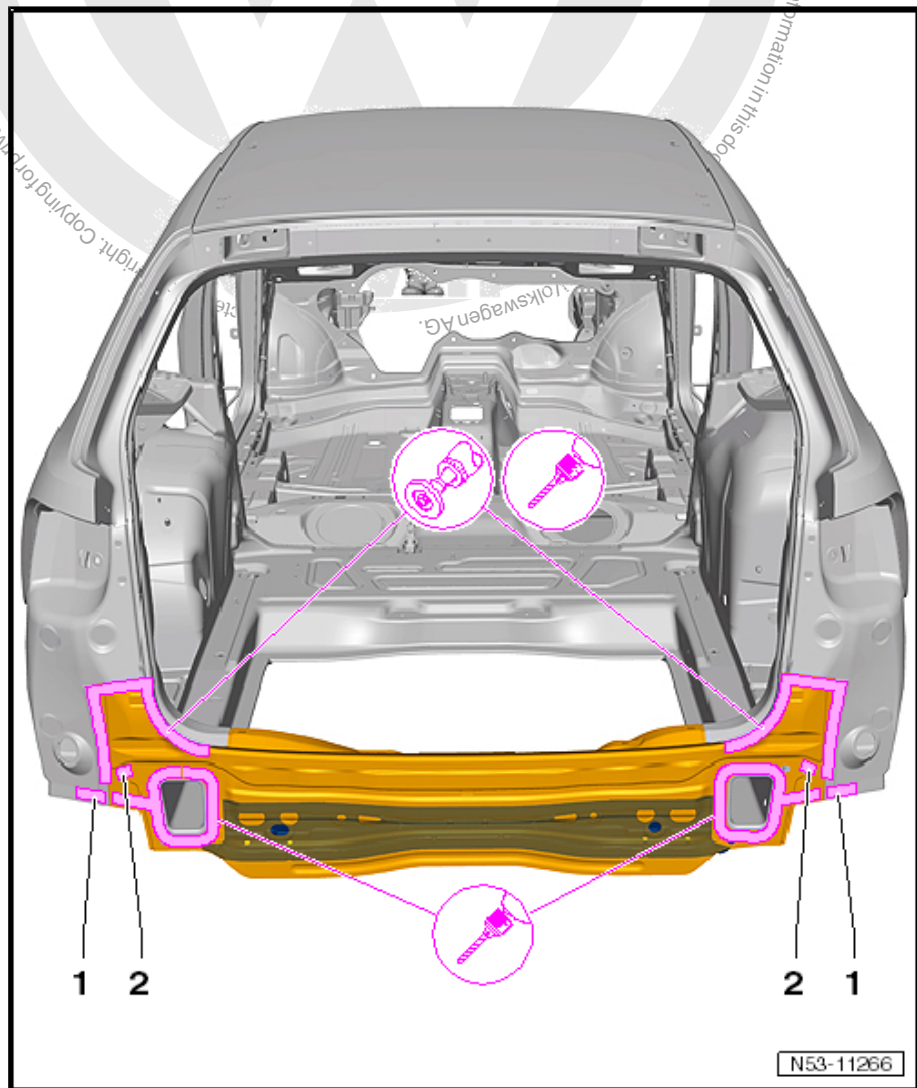
2.1 Tools



Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in => ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paint-work .*

2.2 Removing

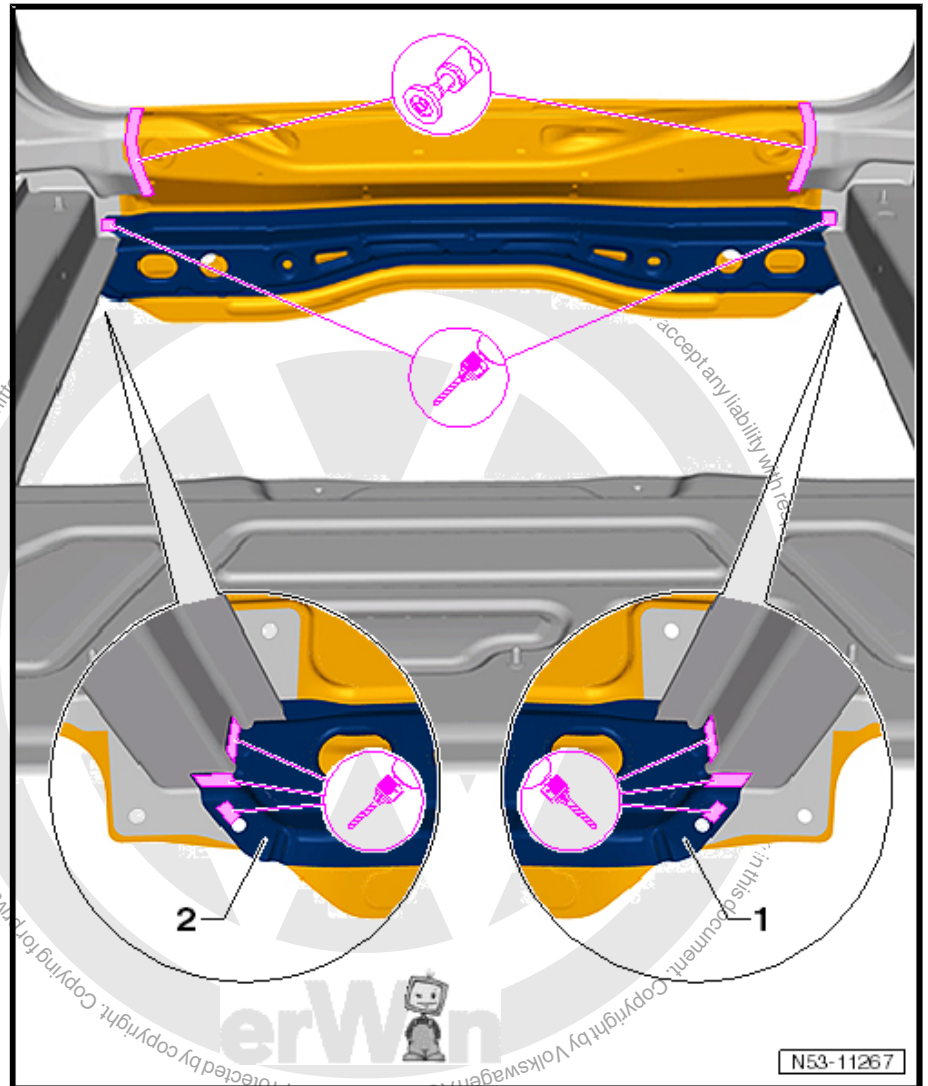


- Separate original outer joint.
- Separate bonded areas -2-.

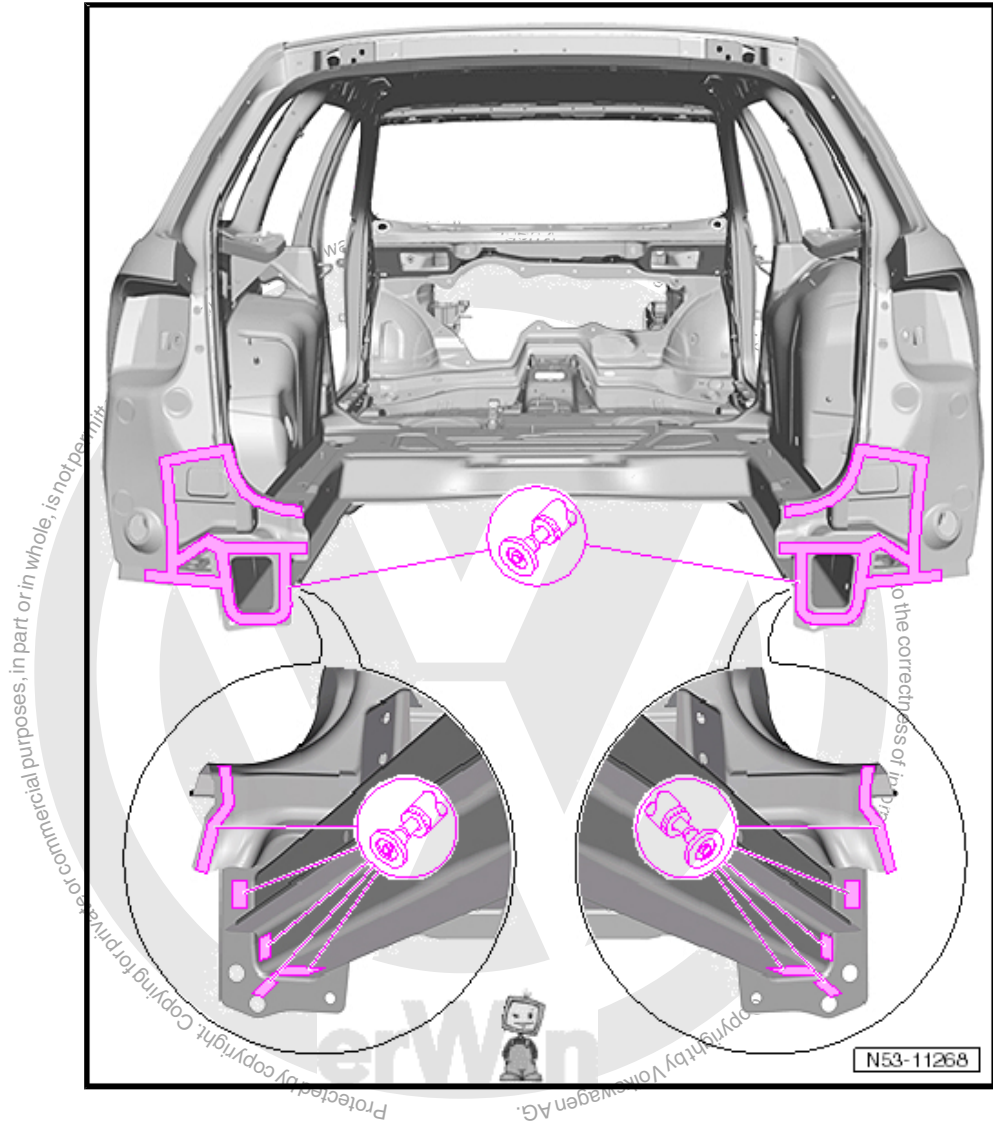


i Note

It is advisable to additionally open a section of the original joint to left and right tail light mountings -1- and to pull the tail light mounting outwards slightly, to ease the removal of the old rear cross panel and the installation of the new rear cross panel.



- Separate inner original joint.
- Separate original joints of left and right exhaust system retainers -1 and 2-.



- Remove remaining material.
- Remove remaining adhesive completely and grind bonded surface back to bare metal.

2.3 Installing



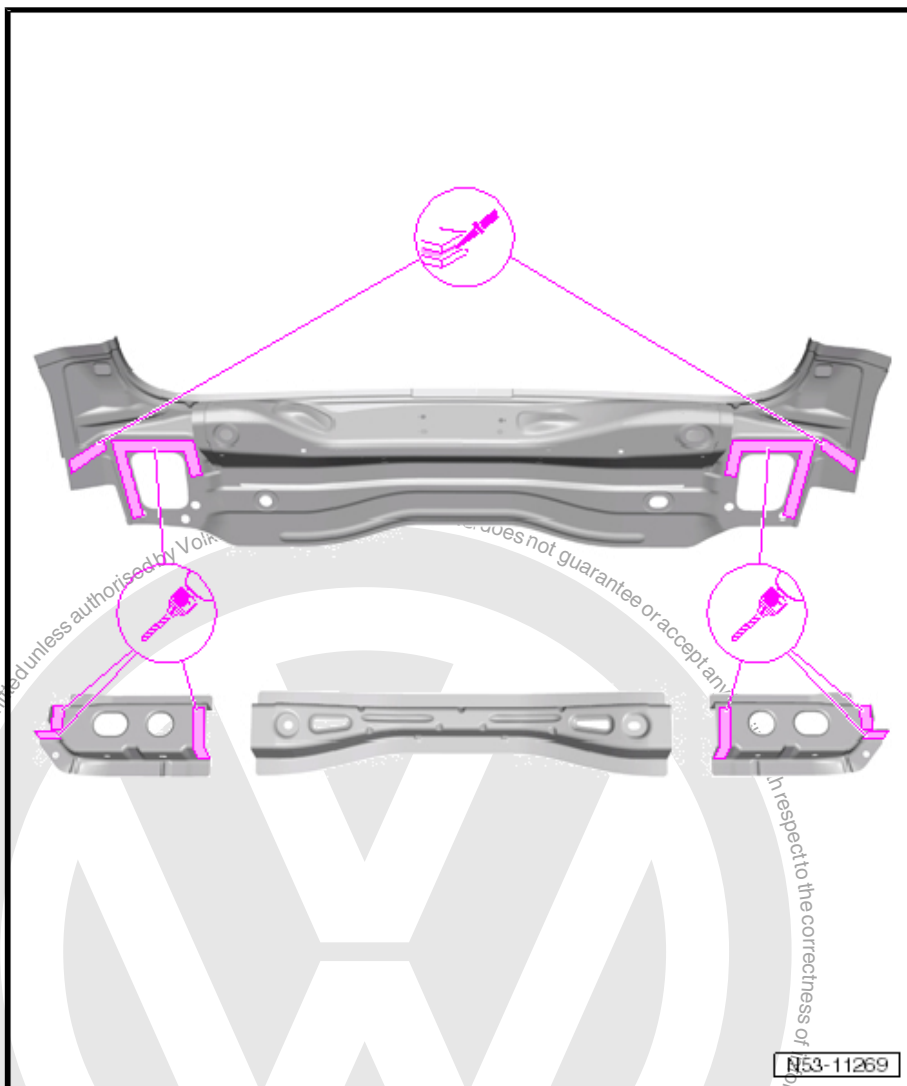
Note

Only welding units authorised by Volkswagen AG may be used
⇒ [page 274](#).

2.3.1 Preparing new part

New part

- ◆ Cross panel with lock carrier
- ◆ Cross member for rear cross panel
- ◆ Left exhaust system retainer
- ◆ Right exhaust system retainer
- ◆ 2K body adhesive -D 180 KD3 A2-



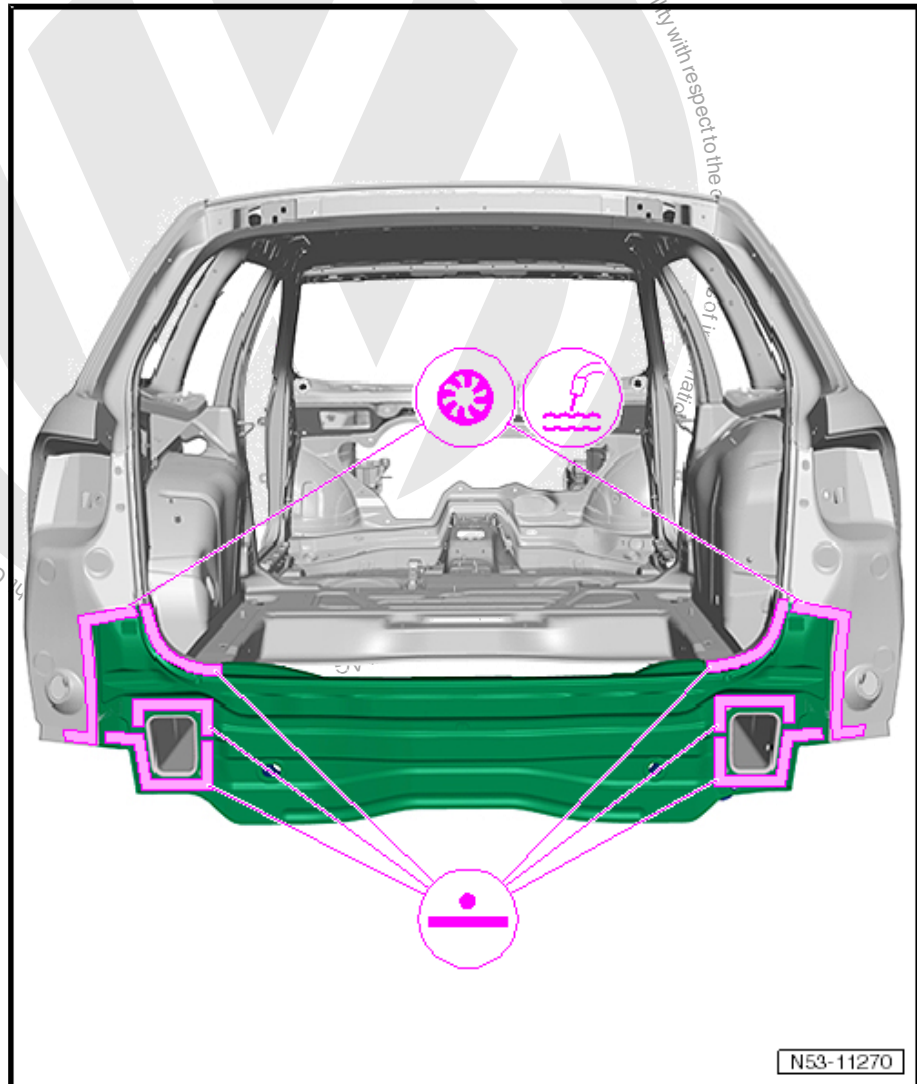
- Drill holes for SG plug weld seam (8 mm Ø).
- Grind bonding surfaces back to bare metal.
- Apply 2K body adhesive -D 180-KD3 A2- to areas bonded in the factory.

2.3.2 Welding in

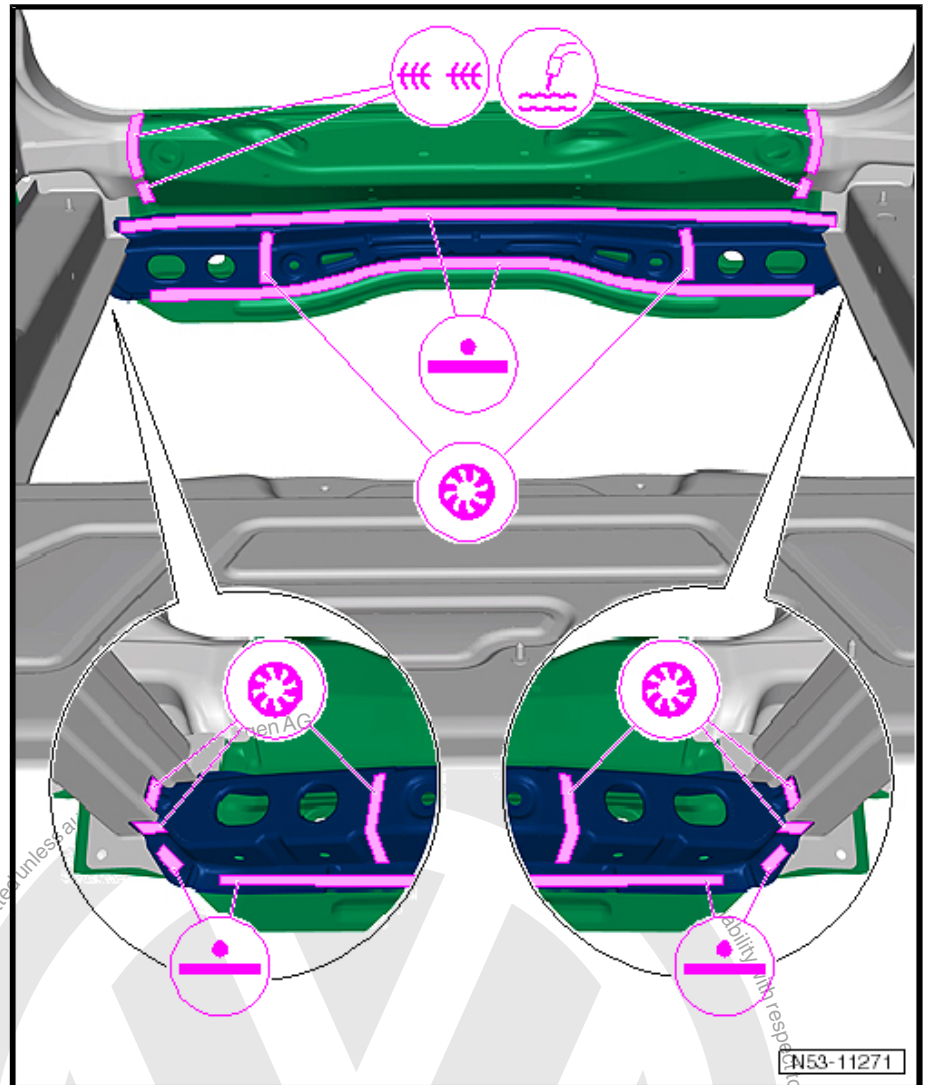
- Adapt new part with vehicle standing on its wheels or alignment bracket set and fix in position.



- Check fit with bolt-on parts.



- Weld in rear cross panel, RP spot weld seam and SG plug weld seam or MIG solder seam.



- Weld in exhaust system retainers and cross member for rear cross panel, SG plug weld seam and RP spot weld seam.
- Weld in lock carrier, SG staggered continuous weld seam or MIG staggered continuous weld seam.

i Note

Spare wheel well may only be installed after reinstating paintwork finish.

- Install spare wheel well ⇒ [page 373](#) .



RO: 53 09 55 50

3 Renewing lock carrier



WARNING

Observe safety notes!

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

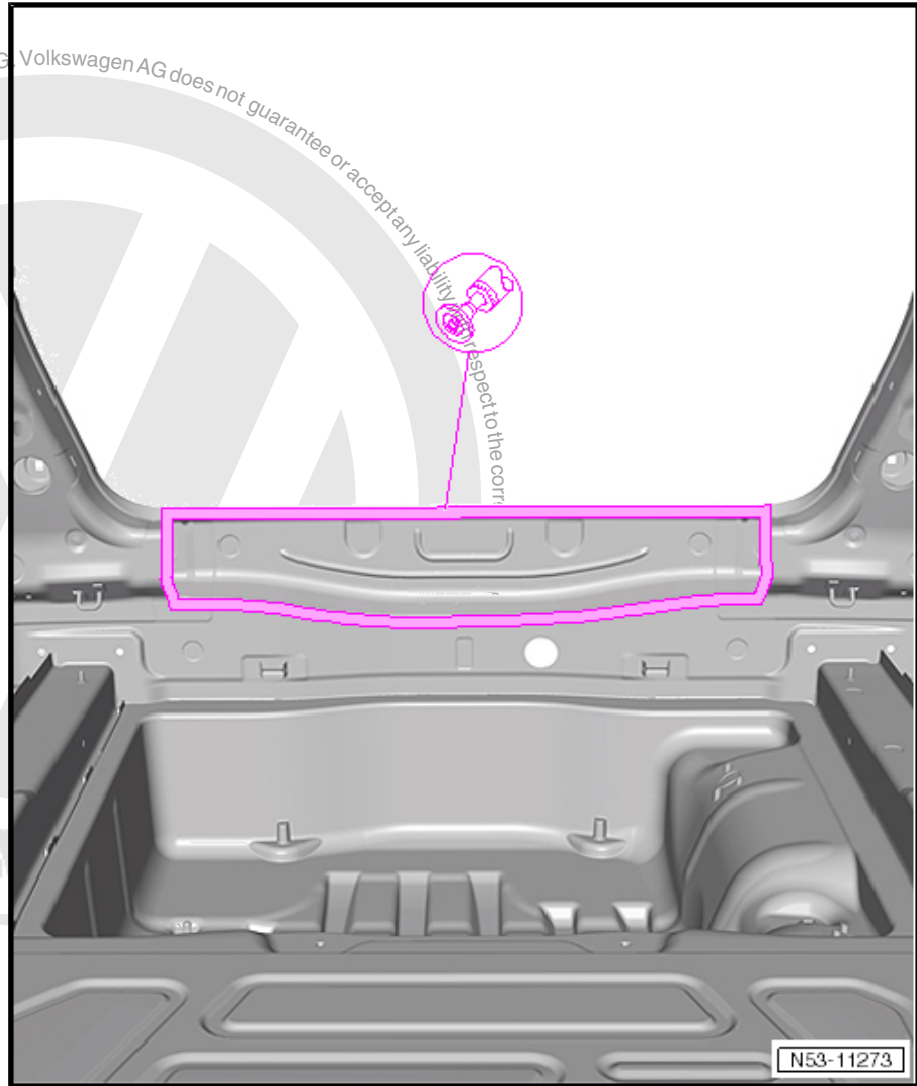
3.1 Tools



Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paint-work .*





- Remove remaining material.
- Remove remaining adhesive completely and grind bonded surface back to bare metal.

3.3 Installing



Note

Only welding units authorised by Volkswagen AG may be used
⇒ [page 280](#) .

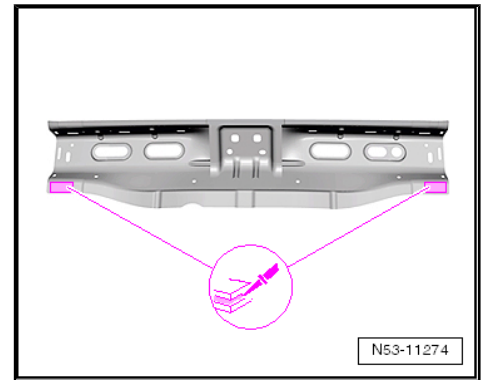
3.3.1 Preparing new part

New part

- ◆ Lock carrier

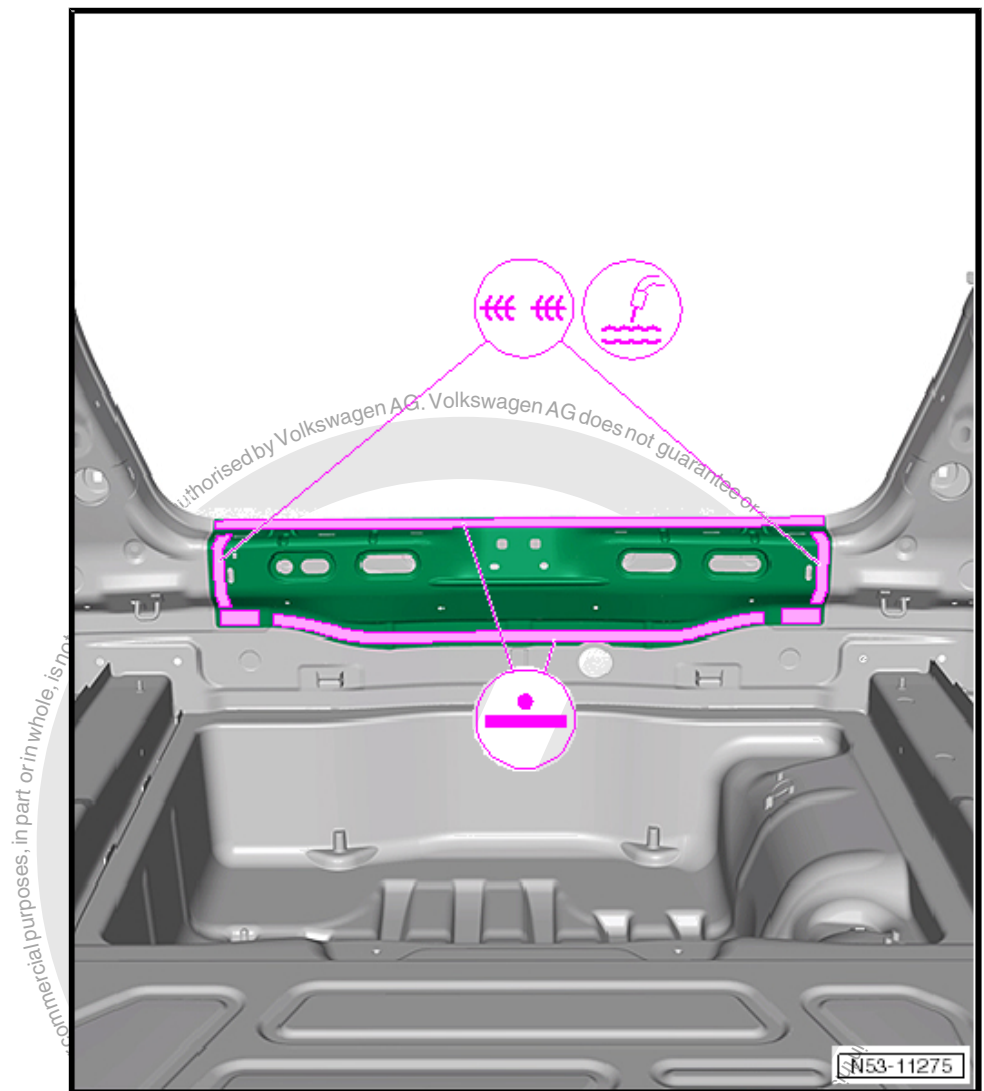


- Apply 2K body adhesive -D 180 KD3 A2- to areas bonded in the factory.



3.3.2 Welding in

- Adapt new part with vehicle standing on its wheels and fix in place.
- Check fit with bolt-on parts.



- Weld in lock carrier, RP spot weld seam and SG staggered continuous weld seam or MIG staggered solder seam.



RO: 53 10 55 50

4 Renewing tail light mounting

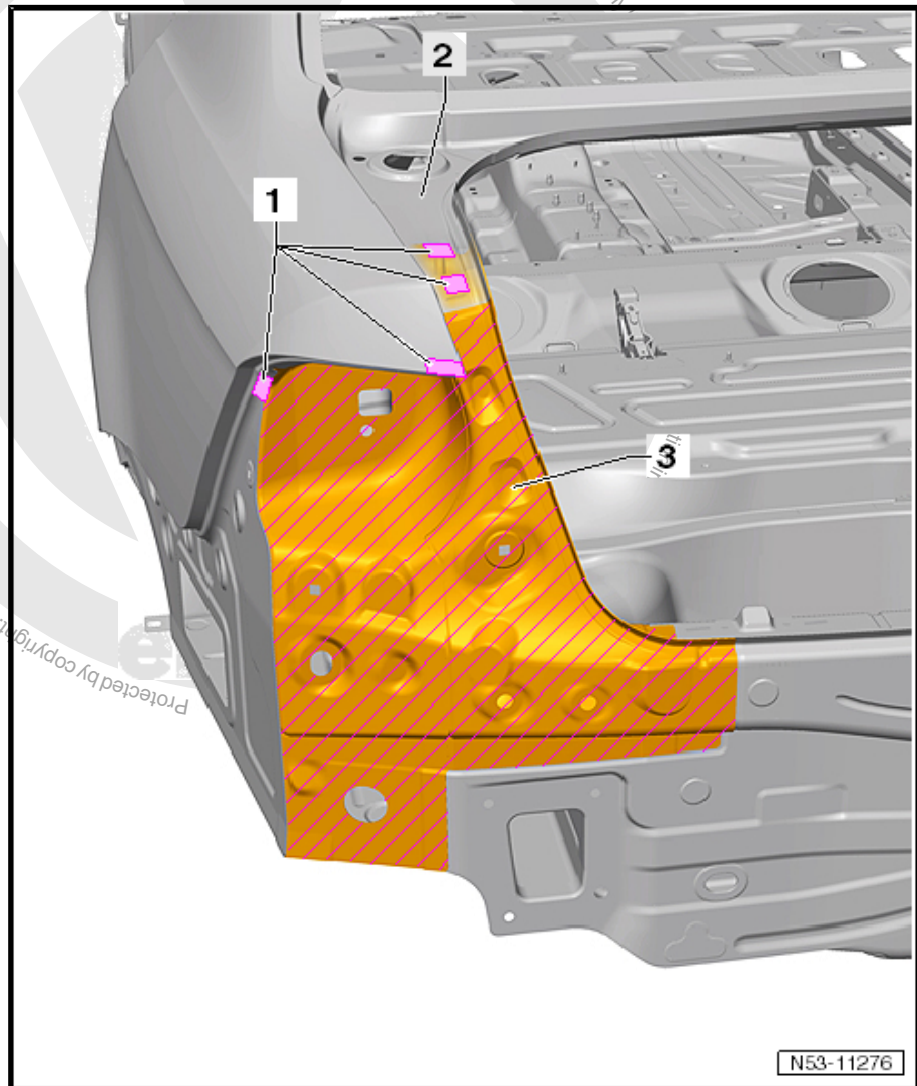


WARNING

Observe safety notes!

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

- 1 - Bonded areas
- 2 - Sealing channel
- 3 - Tail light mounting



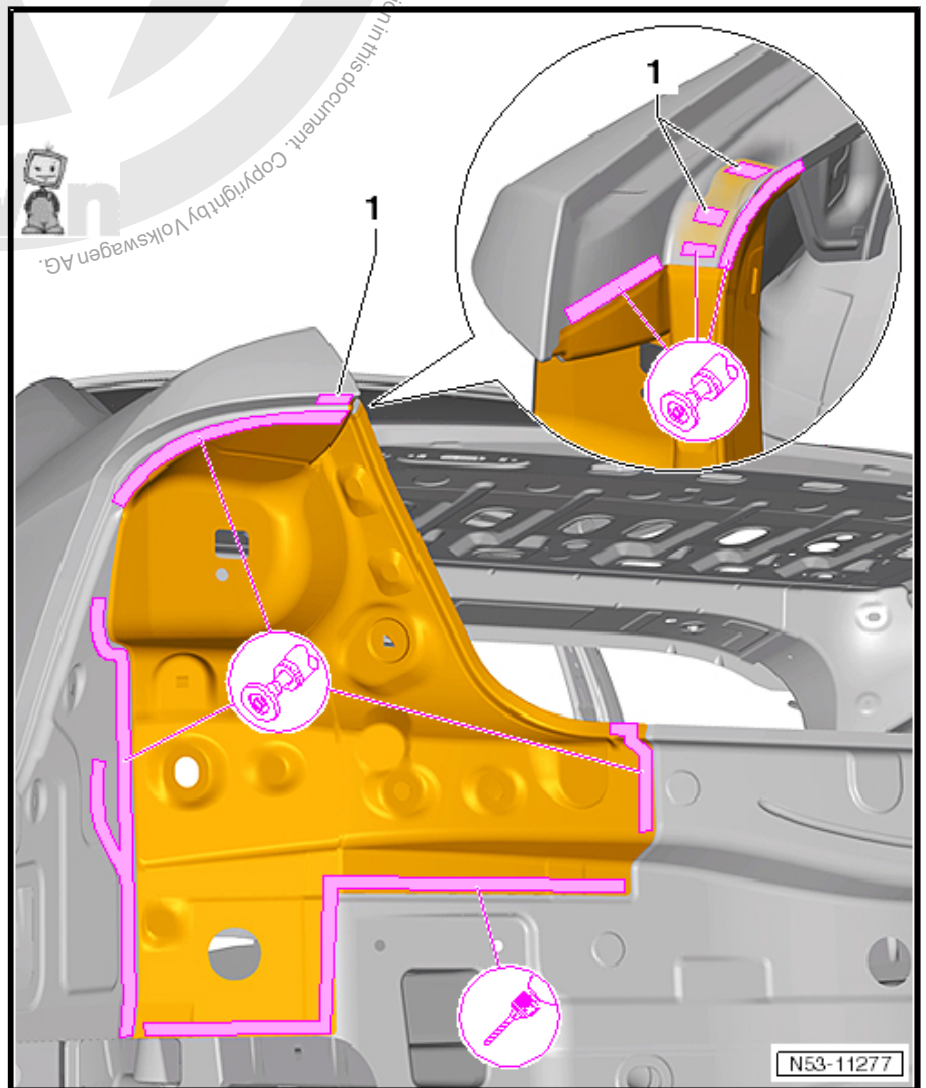


4.1 Tools

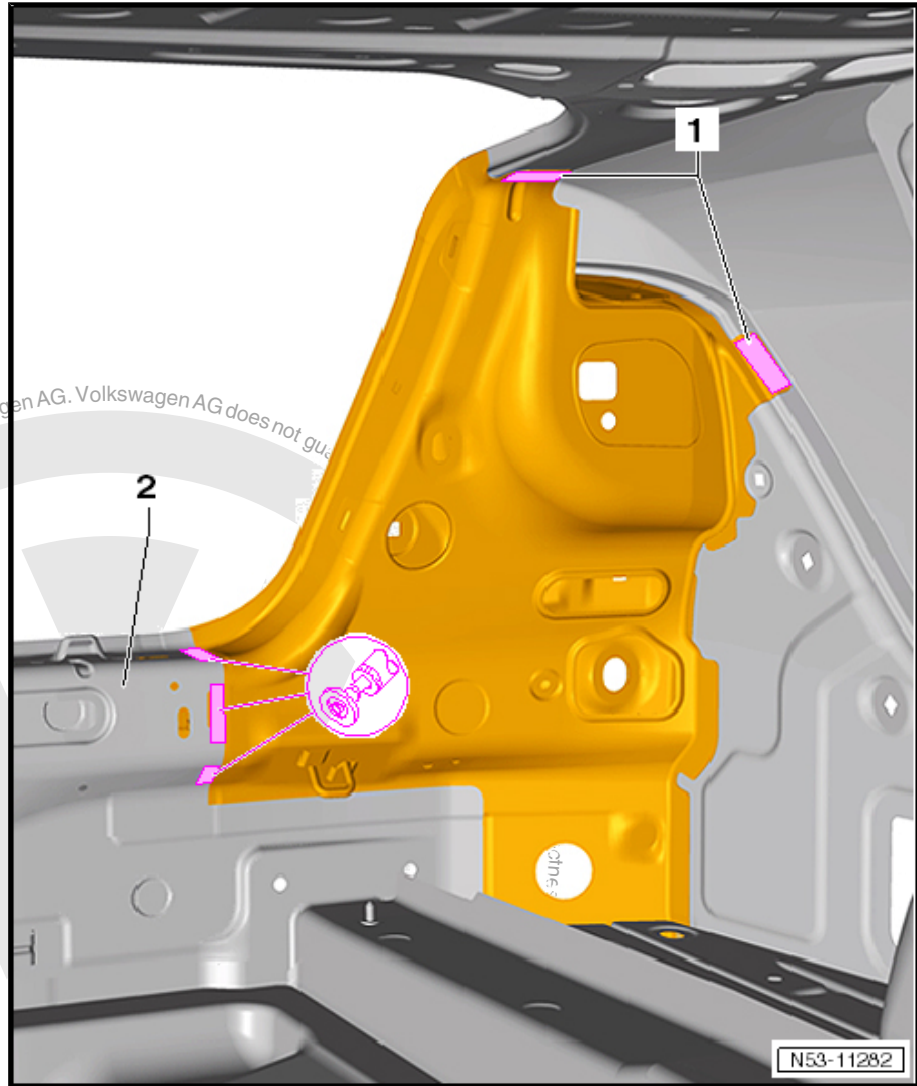
Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in → ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paintwork .*

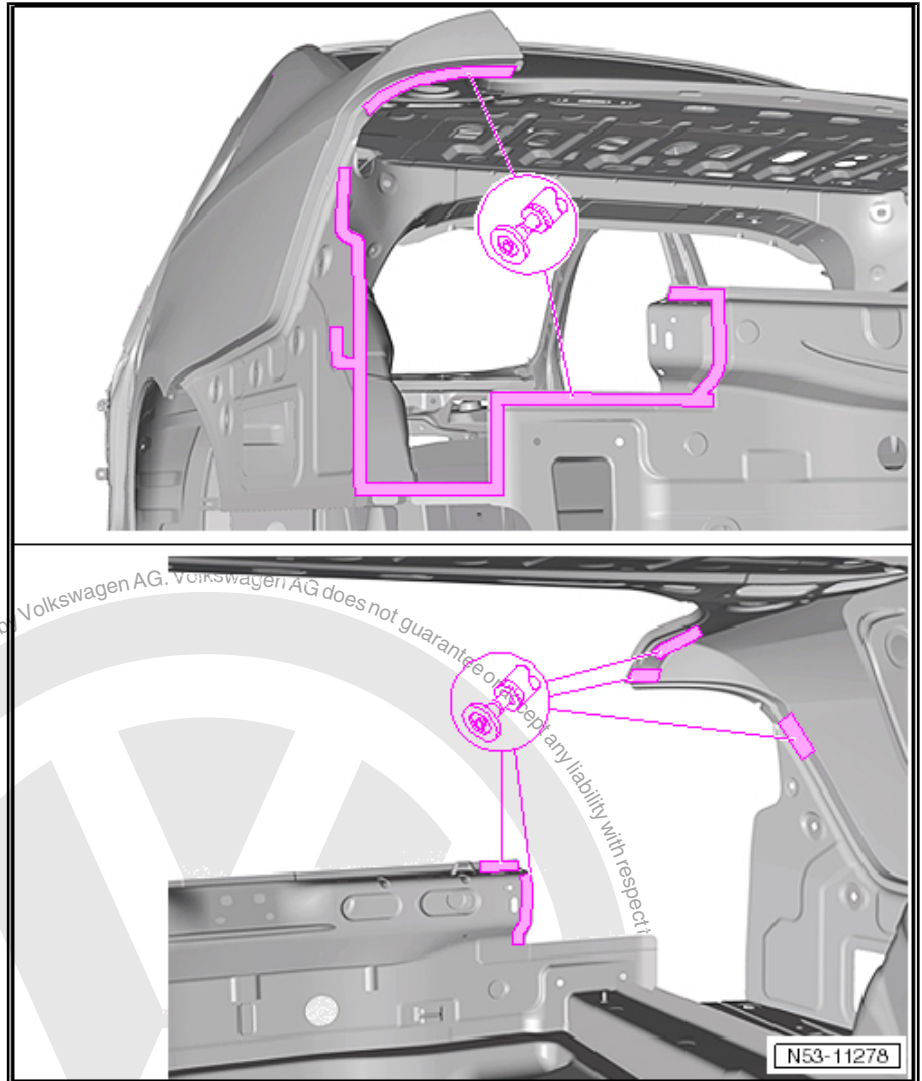
4.2 Removing



- Separate original outer joint.
- Separate bonded areas -1- on sealing channel.



- Release original joint to lock carrier -2-
- Separate bonded areas -1-



- Remove remaining material.
- Remove remaining adhesive completely and grind bonded surface back to bare metal.

4.3 Installing



Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 285](#).*

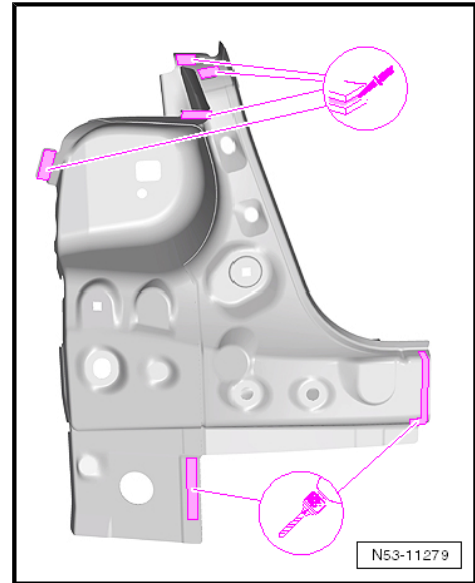
4.3.1 Preparing new part

New part

- ◆ Tail light mounting
- ◆ 2K body adhesive -D 180 KD3 A2-



- Drill holes for SG plug weld seam (8 mm Ø).
- Apply 2K body adhesive -D 180 KD3 A2- to areas bonded in the factory.



4.3.2 Welding in

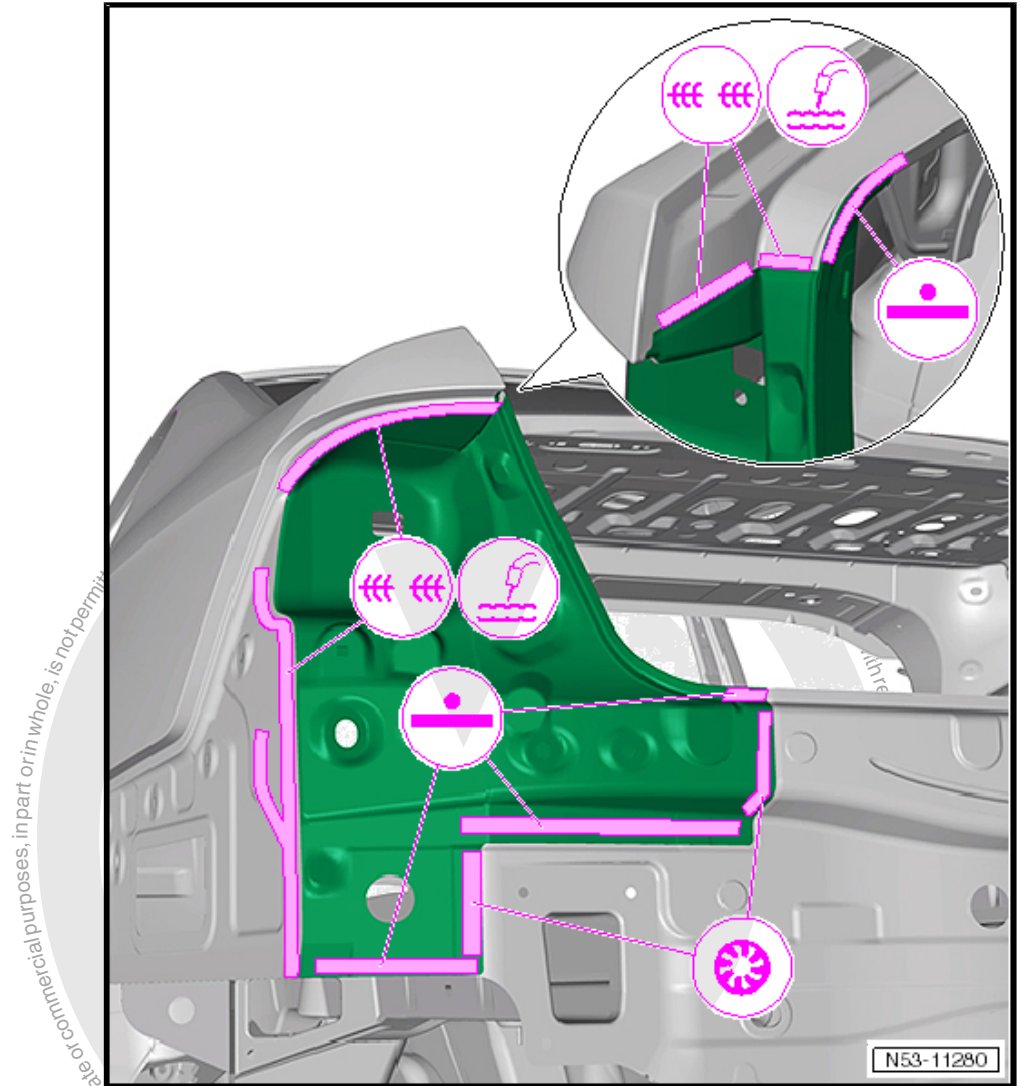


Note

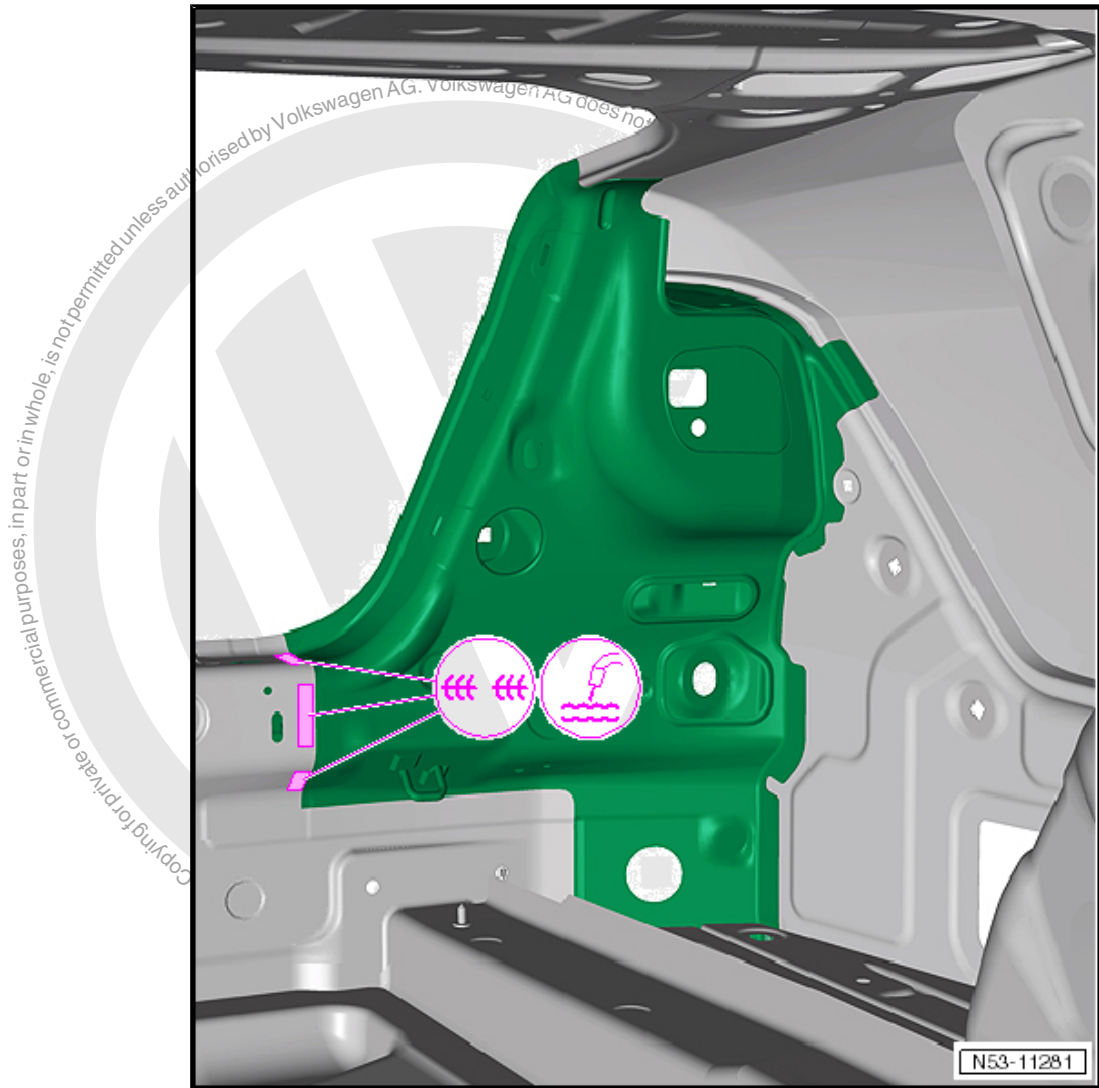
The new part must be welded in within 90 minutes, or adhesion of adhesive will be impaired.

- Adapt new part with vehicle standing on its wheels or alignment bracket set and fix in position.
- Check fit with bolt-on parts.





- Weld in new part, SG plug weld seam and RP spot weld seam.
- Weld in remaining joints to side panel and sealing channel, SG staggered continuous weld seam or MIG staggered continuous weld seam.



- Weld in remaining joints to lock carrier, SG staggered continuous weld seam or MIG staggered continuous weld seam.



RO: 53 10 55 60

5 Renewing tail light mounting (Variant)



WARNING

Observe safety notes!

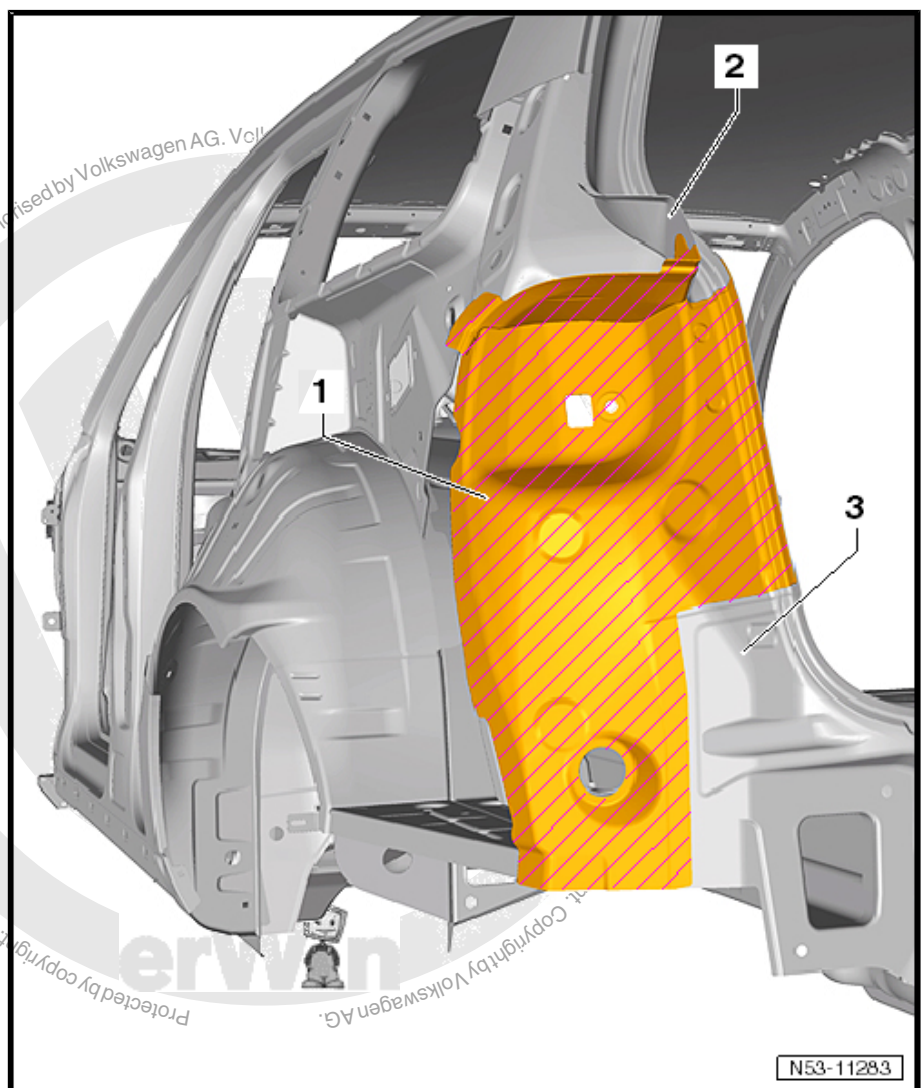
Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes

- Side panel already removed ⇒ [page 342](#) .

1 - Tail light mounting

2 - Sealing channel

3 - Cross panel





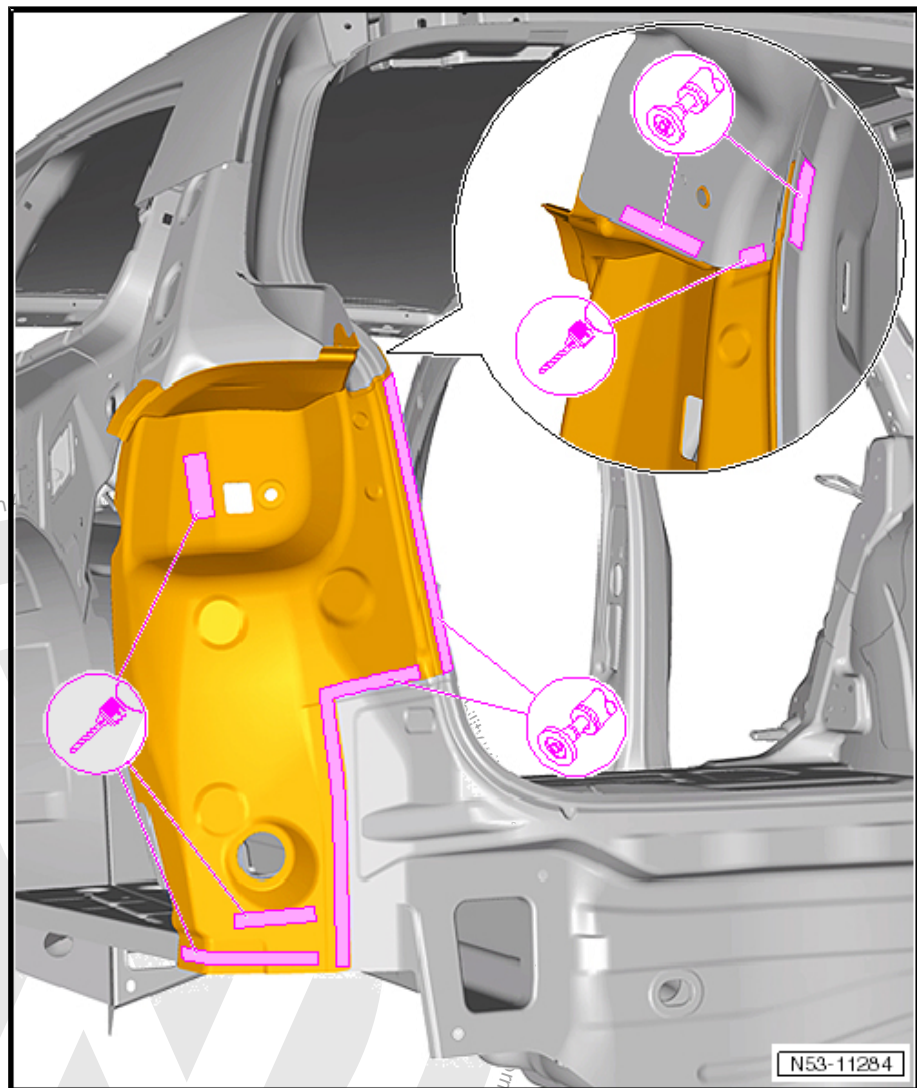
5.1 Tools



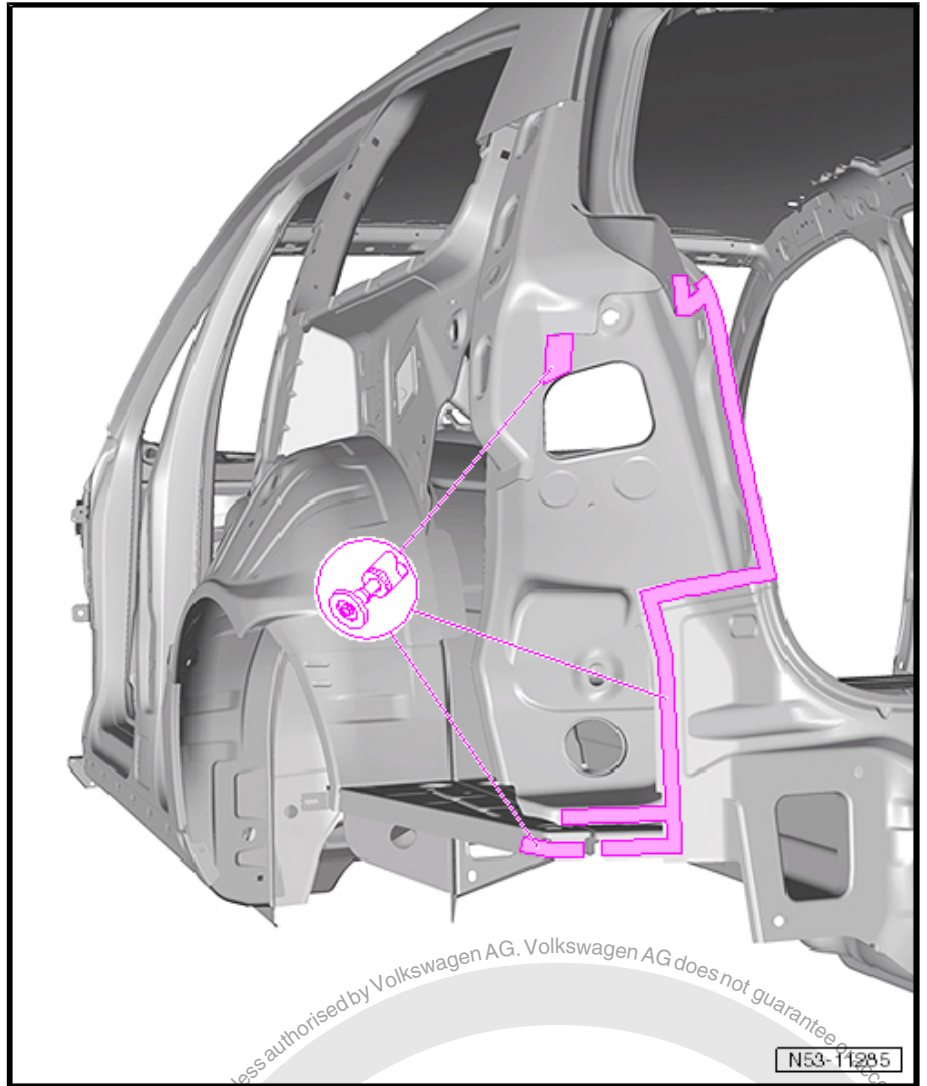
Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paintwork .*

5.2 Removing



- Separate original joint.



– Remove remaining material.

5.3 Installing



Note

*Only welding units authorised by Volkswagen AG may be used
=> [page 292](#).*

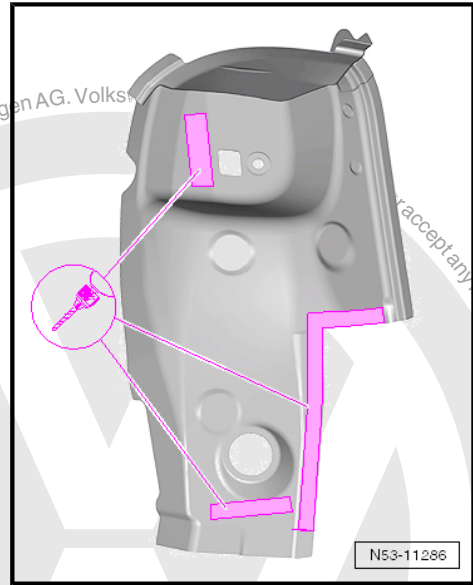
5.3.1 Preparing new part

New part

- ◆ Tail light mounting



- Drill holes for SG plug weld seam (8 mm Ø).

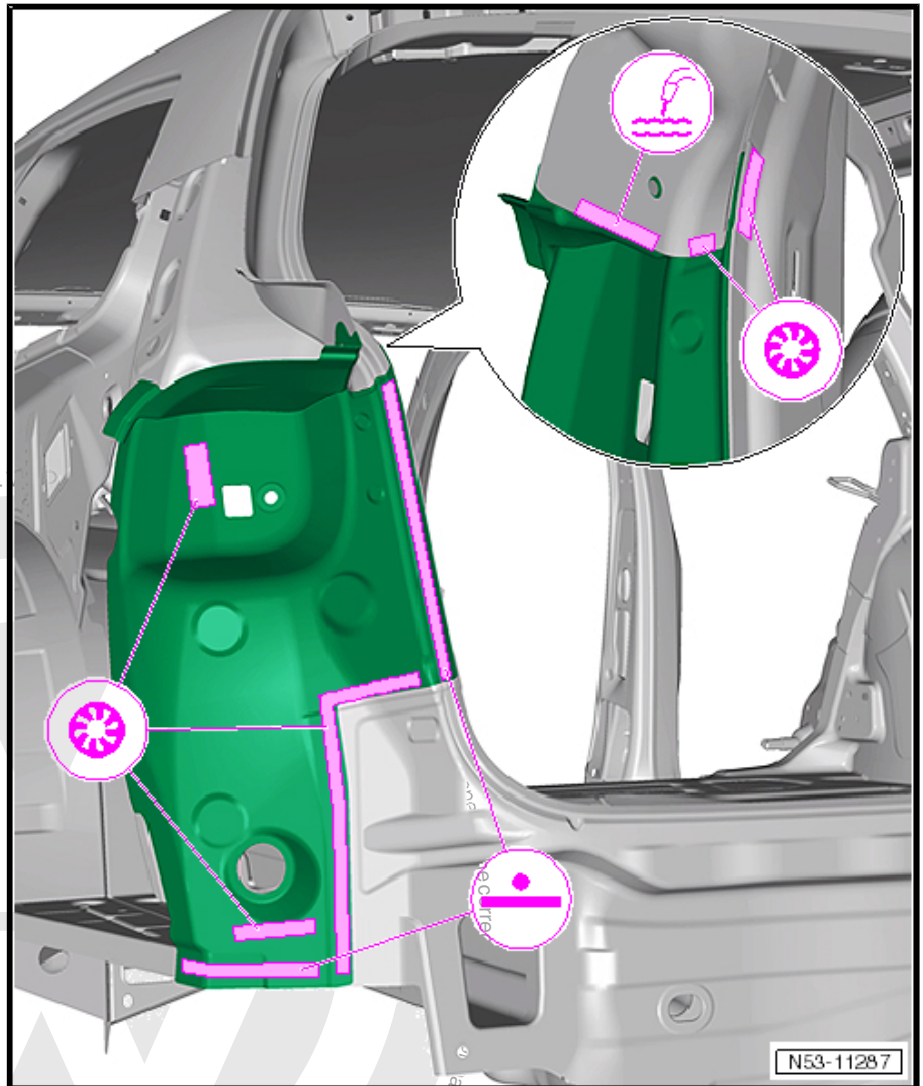


5.3.2 Welding in

- Adapt new part with vehicle standing on its wheels or alignment bracket set and fix in position.



- Check fit with bolt-on parts.



- Weld in new part, SG plug weld seam and RP spot weld seam.
- Weld in remaining joints to sealing channel, MIG continuous weld seam.
- Install side panel for Variant, ⇒ [page 345](#).



RO: 53 29 55 50

6 Renewing C-pillar reinforcement



WARNING

Observe safety notes!

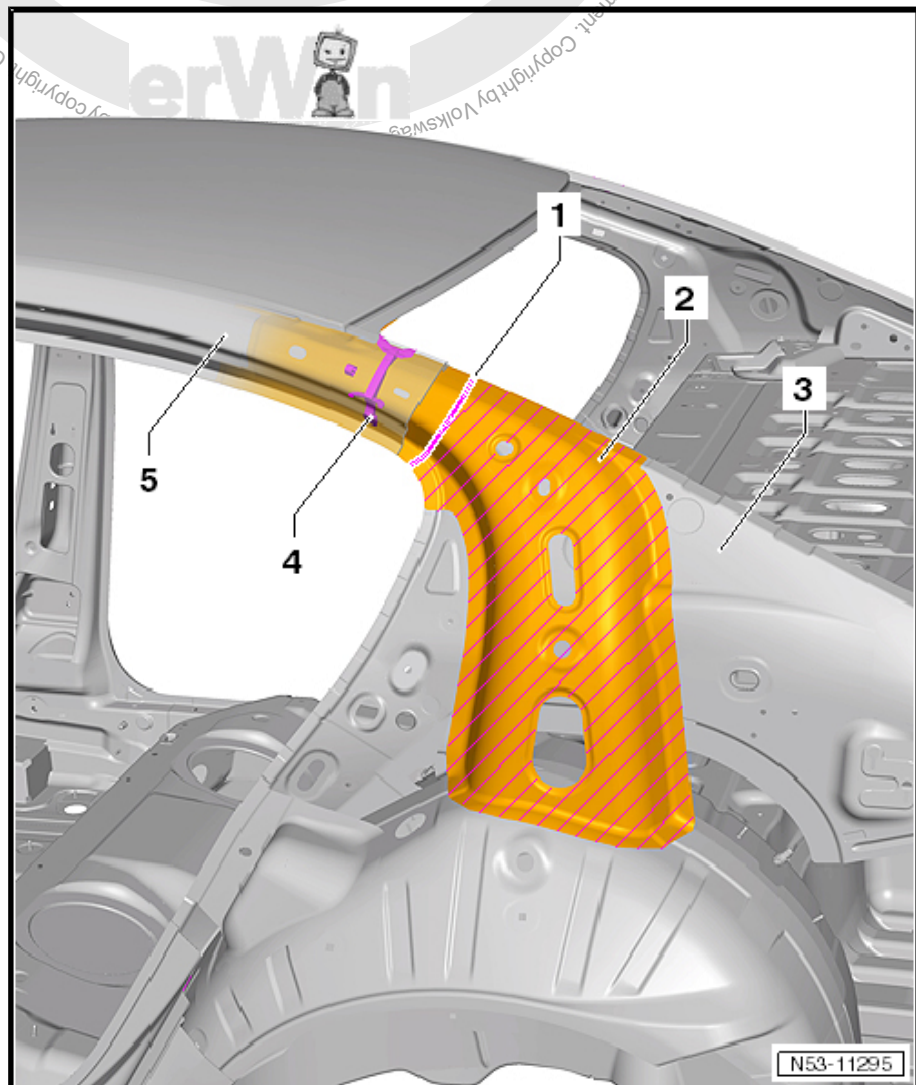
Welding, parting using spark generating machines/tools or tinning in foam treated areas creates gases which are hazardous to health and environment. Therefore, refrain from using these processes.

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

- Side panel already removed ⇒ [page 332](#) .

- 1 - Cutting point
- 2 - C-pillar reinforcement
- 3 - Inner side panel
- 4 - Moulded foam element
- 5 - Side panel

Part section removed.





6.1 Tools

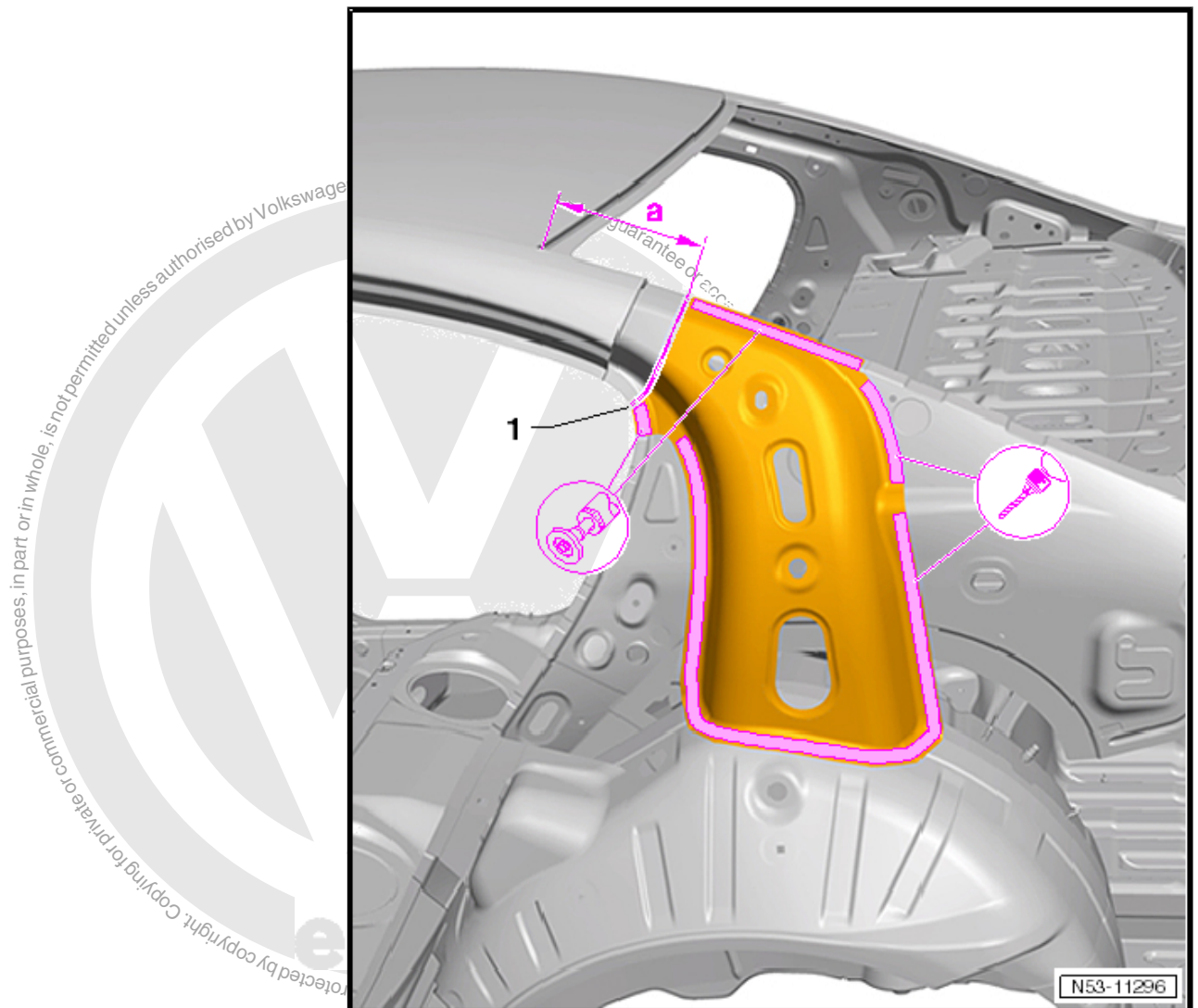
Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paintwork .*

6.2 Removing

Note

Do not damage underlying panels when cutting out.

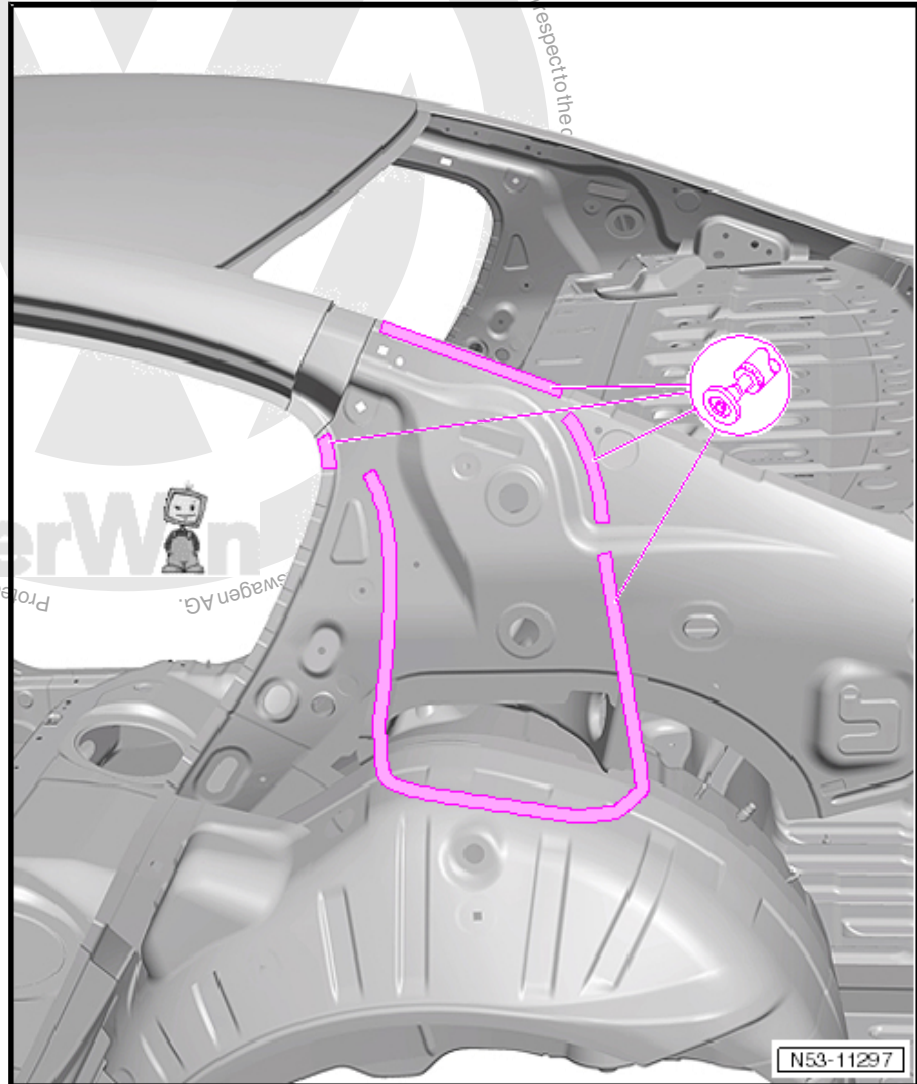


- Position parting cut -1- as shown and cut out.



Dimension -a- = 150 mm

- Separate original joints to inner side panel and to wheel housing.



- Remove remaining material.

6.3 Installing



Note

Only welding units authorised by Volkswagen AG may be used
=> [page 297](#).

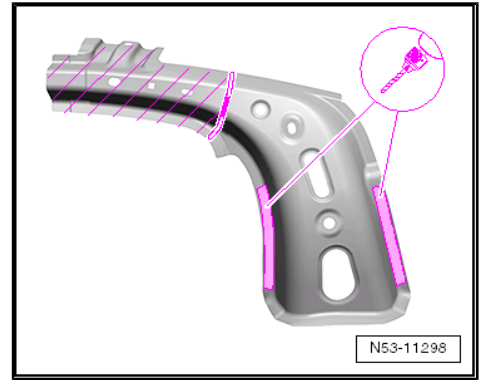
6.3.1 Preparing new parts

New part

- ◆ C-pillar reinforcement



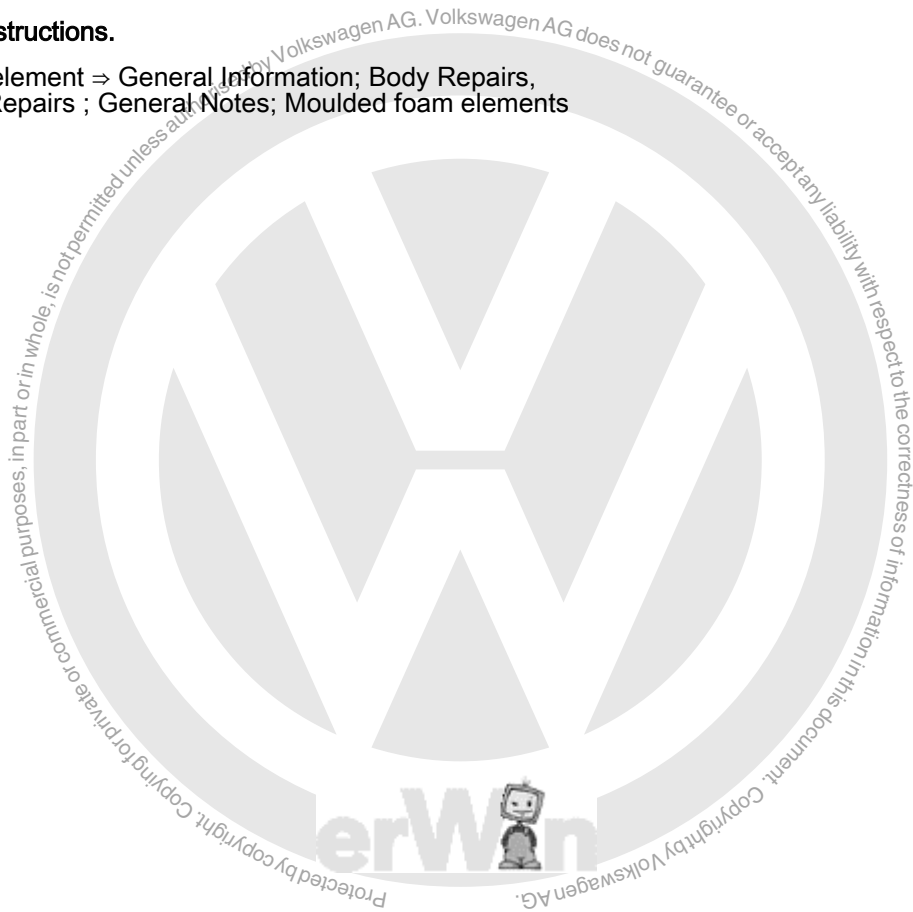
- Transfer parting cut to new part and cut out.



6.3.2 Moulded foam elements

Follow repair instructions.

Moulded foam element → General Information; Body Repairs,
General Body Repairs ; General Notes; Moulded foam elements



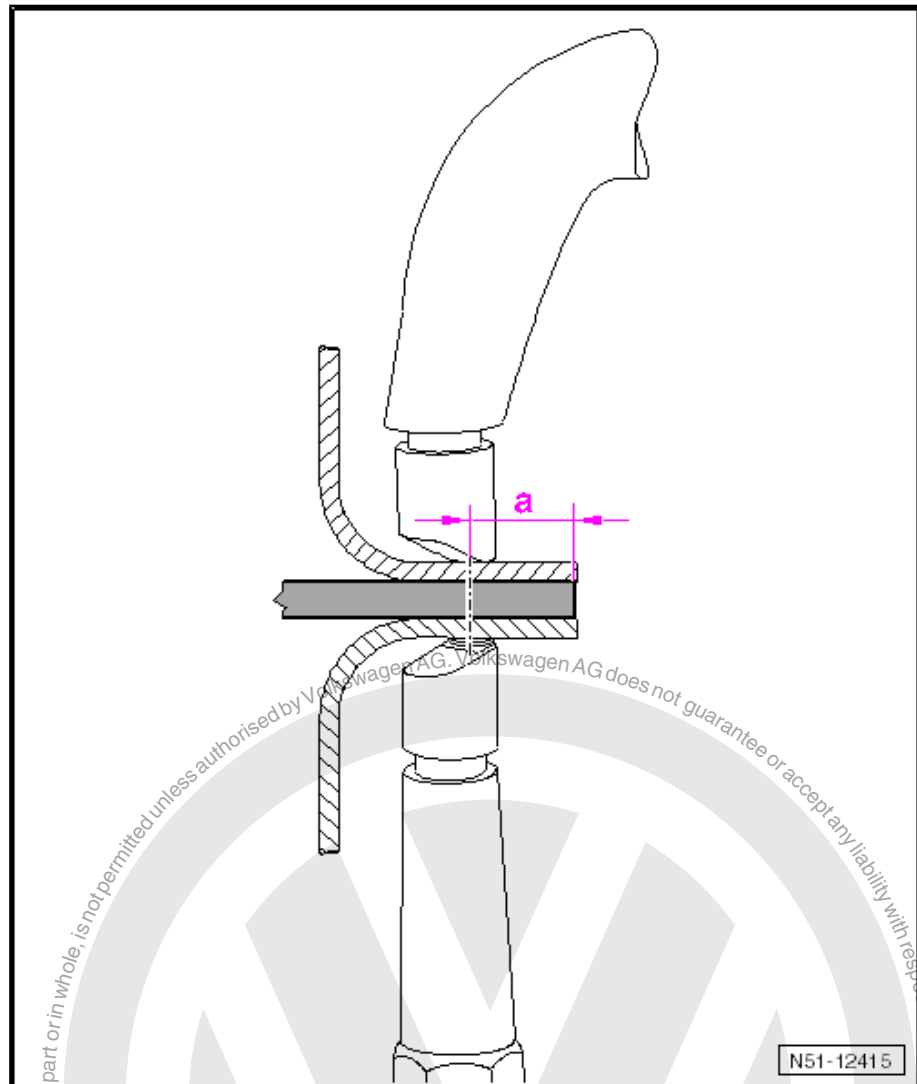


6.3.3 Welding in



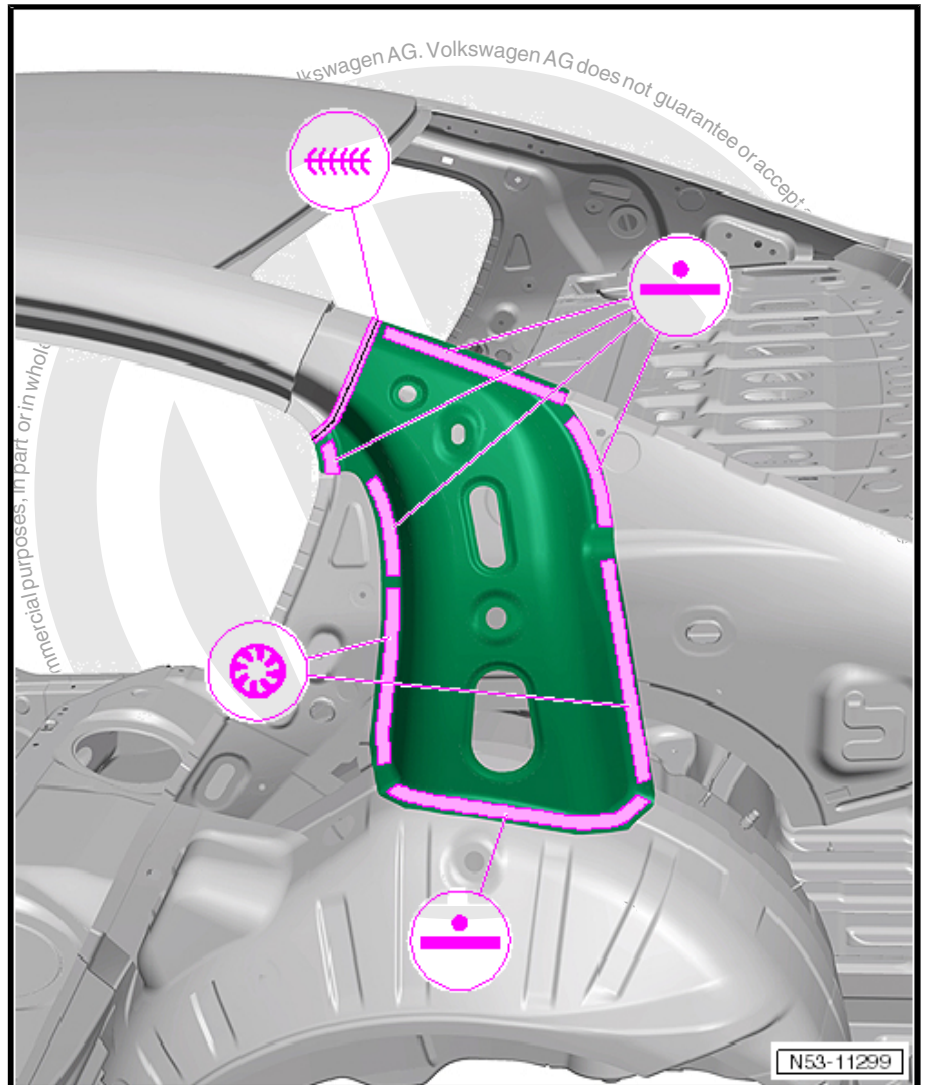
Note

- ◆ In the area of the A, B and C-pillars, high tensile, highest tensile and hot formed steels are used. The weld flanges in these areas are about 13mm wide.
- ◆ If spot welds are located at the edge of hot formed steel panels, the high temperature will cause the bond between the panels to change, which will subsequently have an effect on crash safety.



Therefore, locate spot welds as close to the centre as possible.

- Dimension -a- of 8mm can be achieved using angled welding tips.
- Adapt new part with vehicle positioned on alignment bracket set and fix in place.
- Check fit with bolt-on parts.



- Weld in C-pillar reinforcement, RP spot weld seam and SG plug weld seam.
- Weld in parting cut, SG continuous weld seam.
- Install side panel => [page 335](#) .



RO: 53 29 55 60

7 Renewing C-pillar reinforcement (Variant)

Includes: lock reinforcement



WARNING

Observe safety notes!

Welding, parting using spark generating machines/tools or tinning in foam treated areas creates gases which are hazardous to health and environment. Therefore, refrain from using these processes.

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

- Side panel already removed ⇒ [page 342](#) .

1 - C-pillar reinforcement

2 - Water drain hose

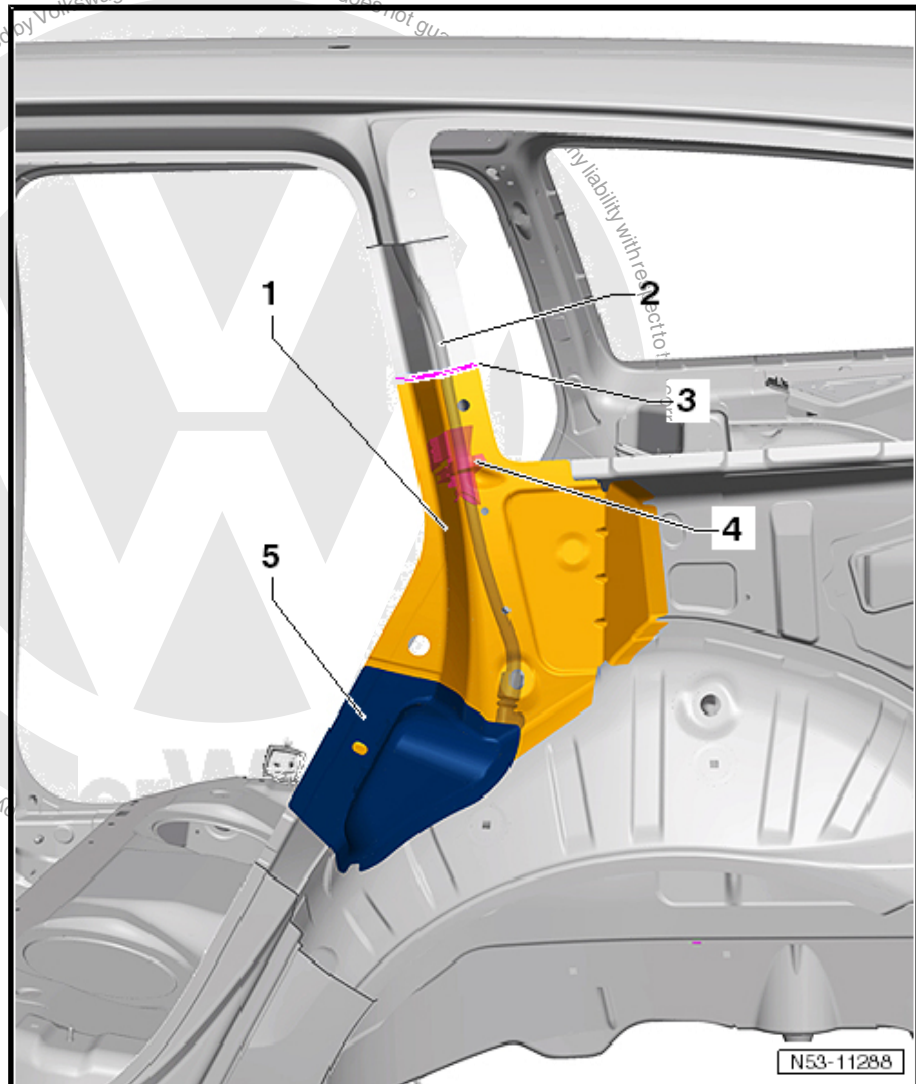
For models with panorama sliding sunroof.

3 - Cutting point

4 - Moulded foam element

With opening for water drain hose.

5 - Lock reinforcement





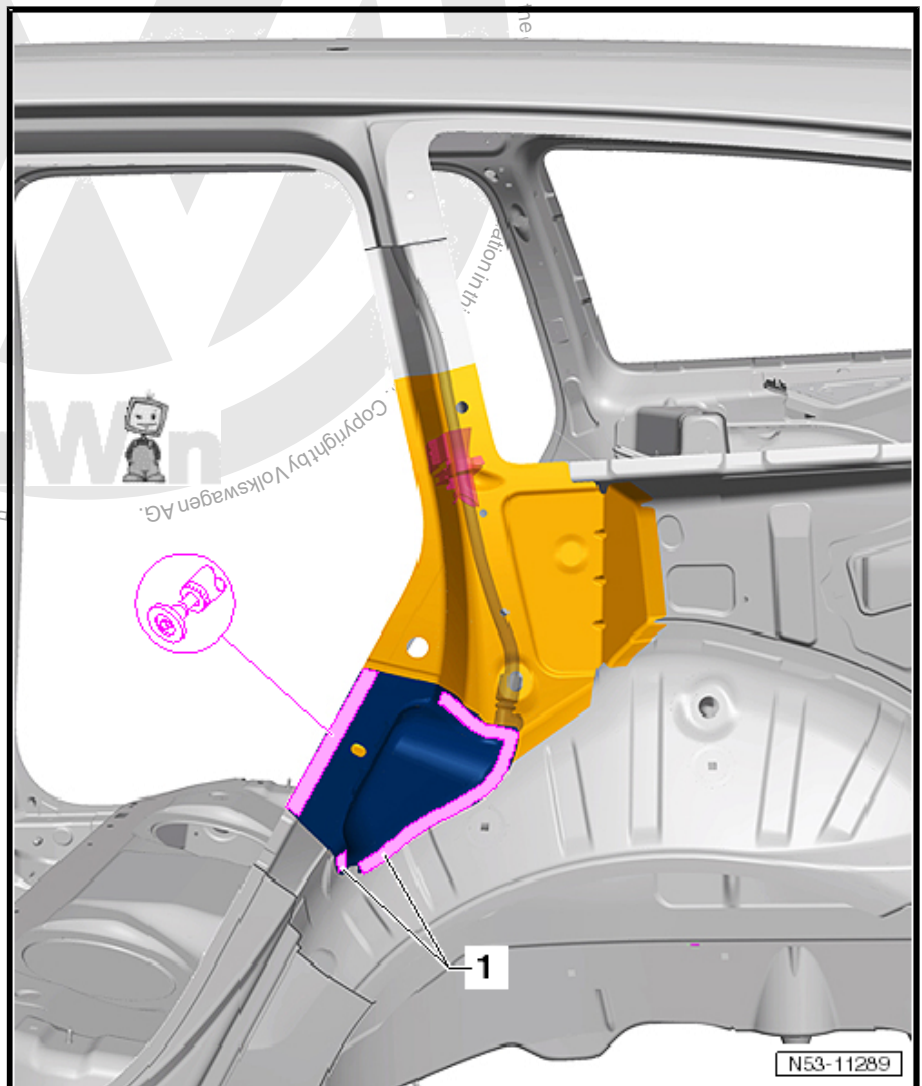
7.1 Tools



Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paintwork.*

7.2 Removing

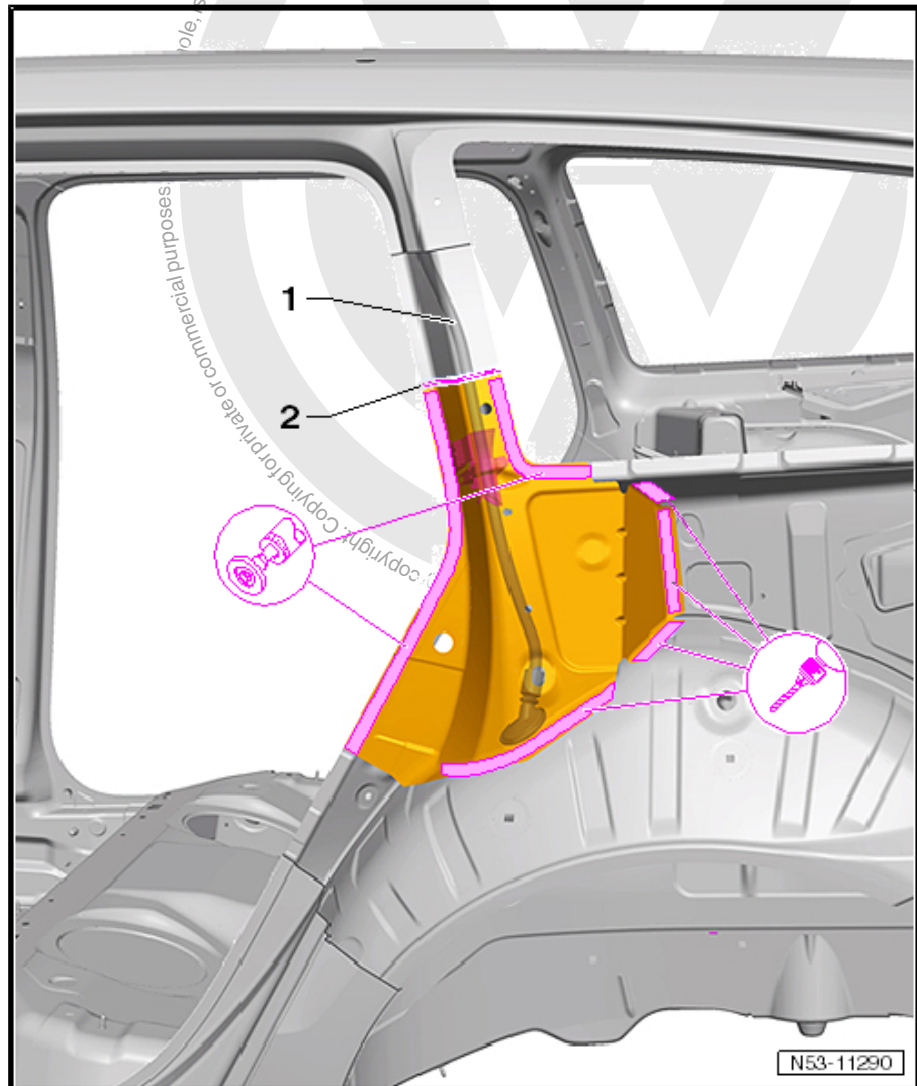


- Release adhesive joint -1- between lock reinforcing, C-pillar reinforcing and wheel housing liner.
- Separate original joint between lock reinforcing and rear door aperture.



Note

- ◆ Do not damage underlying panels when cutting out.
- ◆ Do not damage water drain hose -1- on models with a panorama sliding sunroof.

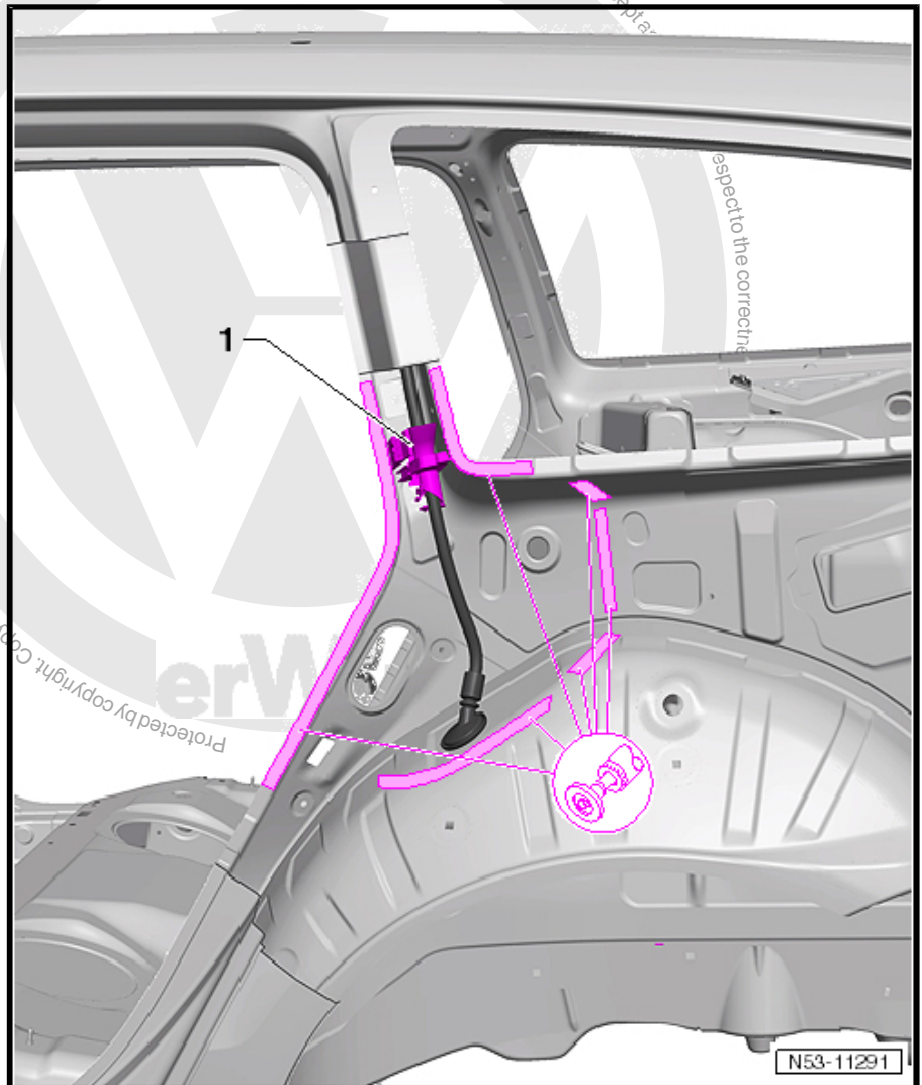


- Make parting cut -2- according to degree of damage.
- Separate original joint.



Note

Remove as much of the foam residue as possible at the water drain hose opening -1- before starting grinding work.



- Remove remaining material.
- Remove remaining adhesive completely and grind bonded surface back to bare metal.

7.3 Installing

Note

Only welding units authorised by Volkswagen AG may be used
⇒ [page 303](#).

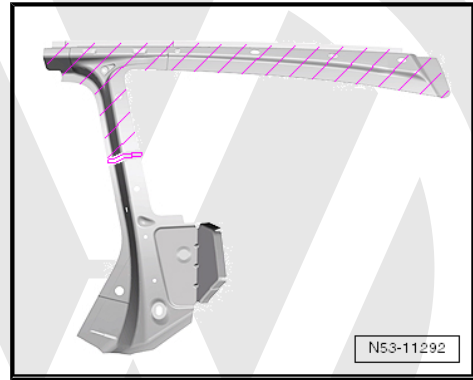
7.3.1 Preparing new parts

New part

- ◆ C-pillar reinforcement
- ◆ Lock reinforcement
- ◆ 2K body adhesive -D 180 KD3 A2-



- Transfer parting cut to new part and cut out.



7.3.2 Moulded foam elements

Follow repair instructions.

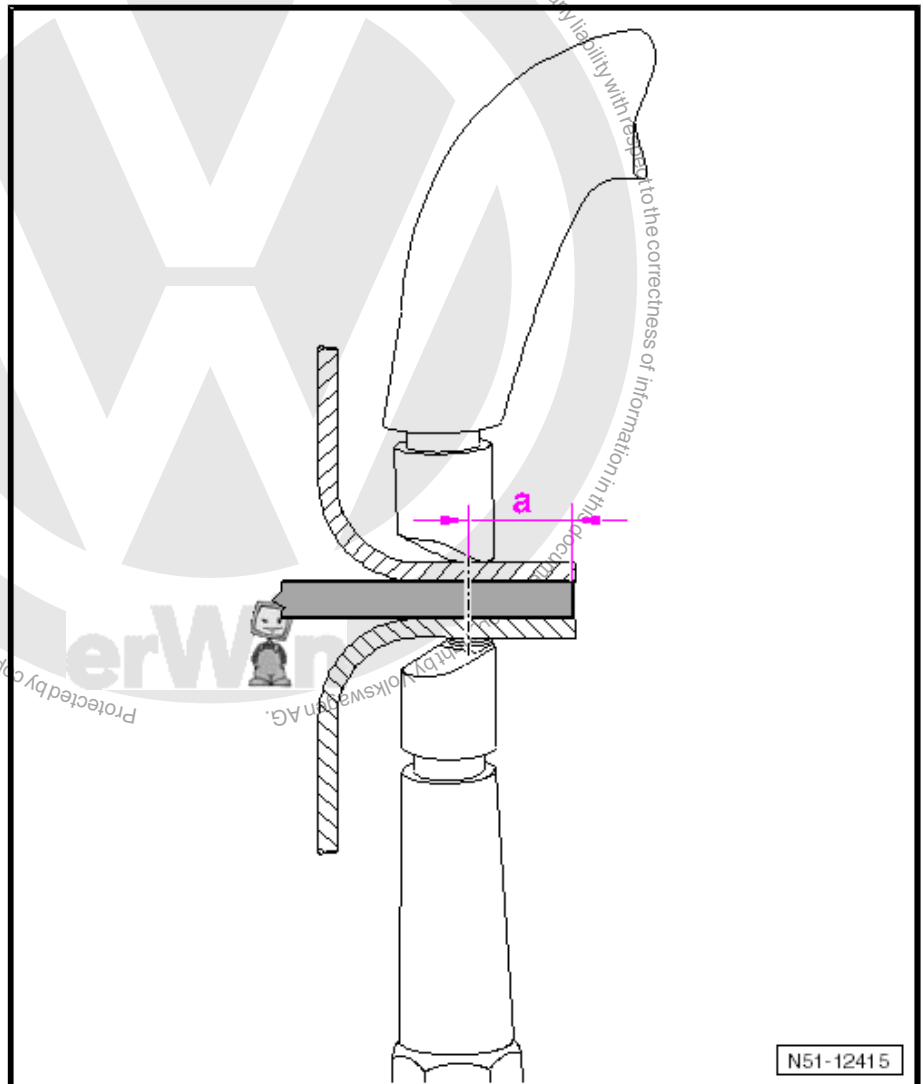
Moulded foam element → General Information; Body Repairs,
General Body Repairs ; General Notes; Moulded foam elements



7.3.3 Welding in

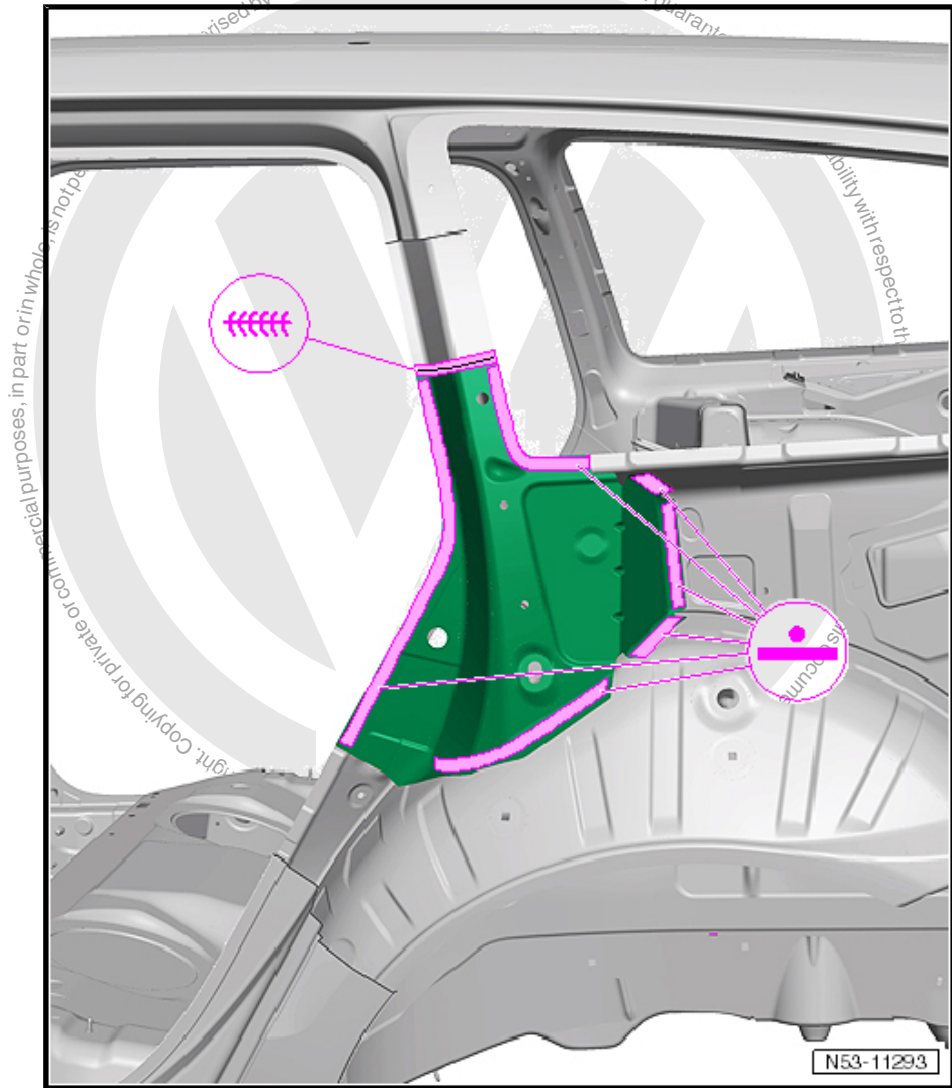
i Note

- ◆ In the area of the A, B and C-pillars, high-tensile, highest tensile and hot formed steels are used. The weld flanges in these areas are about 13mm wide.
- ◆ If spot welds are located at the edge of hot formed steel panels, the high temperature will cause the bond between the panels to change, which will subsequently have an effect on crash safety.



Therefore, locate spot welds as close to the centre as possible.

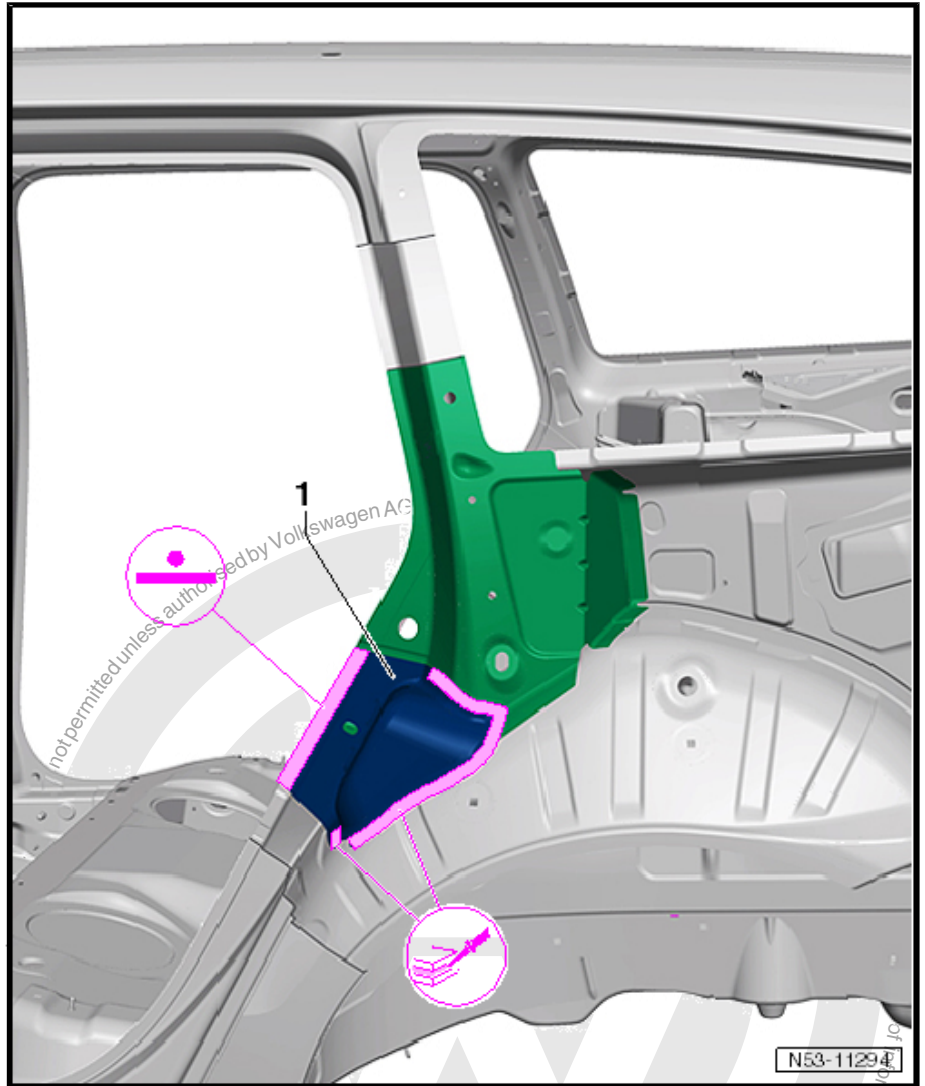
- Dimension -a- of 8mm can be achieved using angled welding tips.
- Adapt new part with vehicle positioned on alignment bracket set and fix in place.
- Check fit with bolt-on parts.



- Weld in C-pillar reinforcement, RP spot weld seam.
- Weld in parting cut, SG continuous weld seam.

Lock reinforcing plate -1- must be welded in within 90 minutes or adhesion of adhesive will be impaired.

- Check fit with side panel.



- Apply 2K body adhesive -D 180 KD3 A2- to areas bonded in the factory.
- Weld in lock reinforcement -1-, RP spot weld seam.
- Install side panel => [page 345](#) .



RO: 53 30 55 50

8 Renewing D-pillar reinforcement - part section

Includes: sealing channel - part section



WARNING

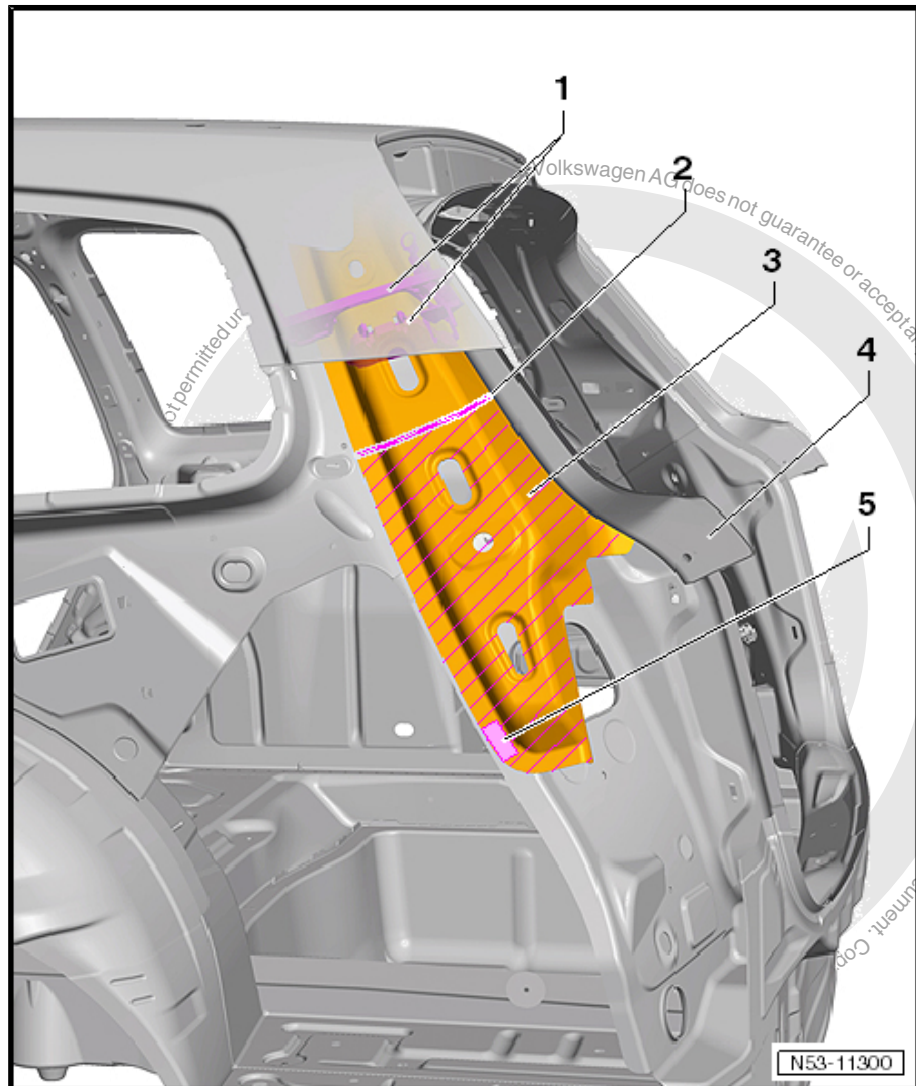
Observe safety notes!

Welding, parting using spark generating machines/tools or tinning in foam treated areas creates gases which are hazardous to health and environment. Therefore, refrain from using these processes.

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

- Side panel already removed ⇒ [page 342](#) .
- Tail light mounting already removed ⇒ [page 291](#) .

- 1 - Moulded foam elements
- 2 - Cutting point
- 3 - D-pillar reinforcement
- 4 - Sealing channel
- 5 - Bonded area





8.1 Tools

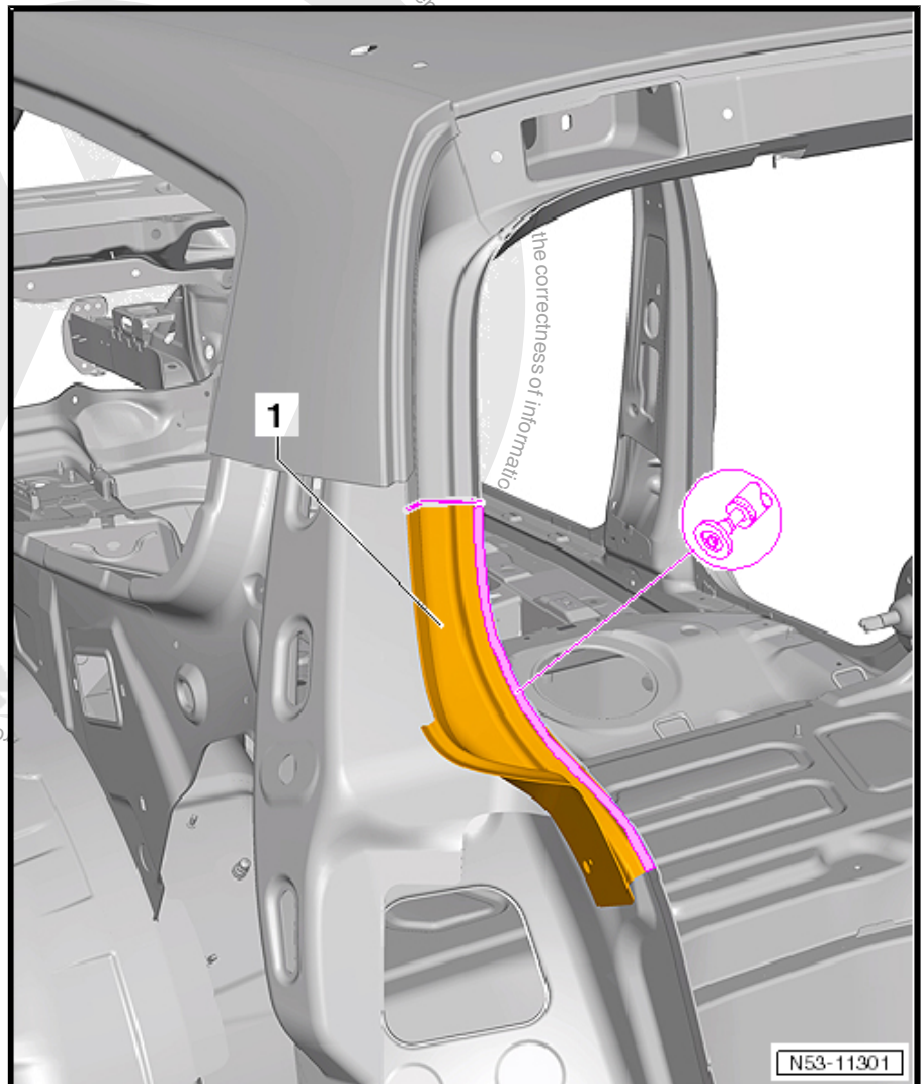
Note

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- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paintwork .*

8.2 Removing

Note

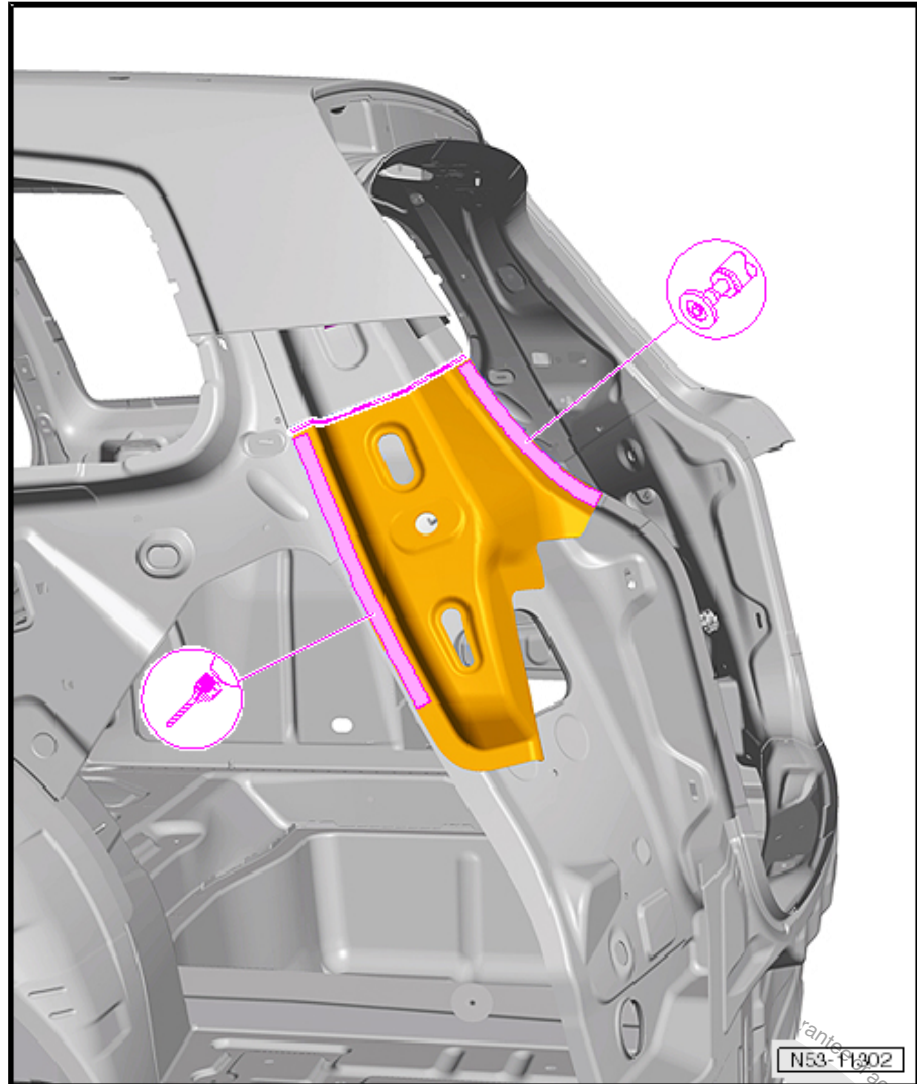
Do not damage underlying panels when cutting out.



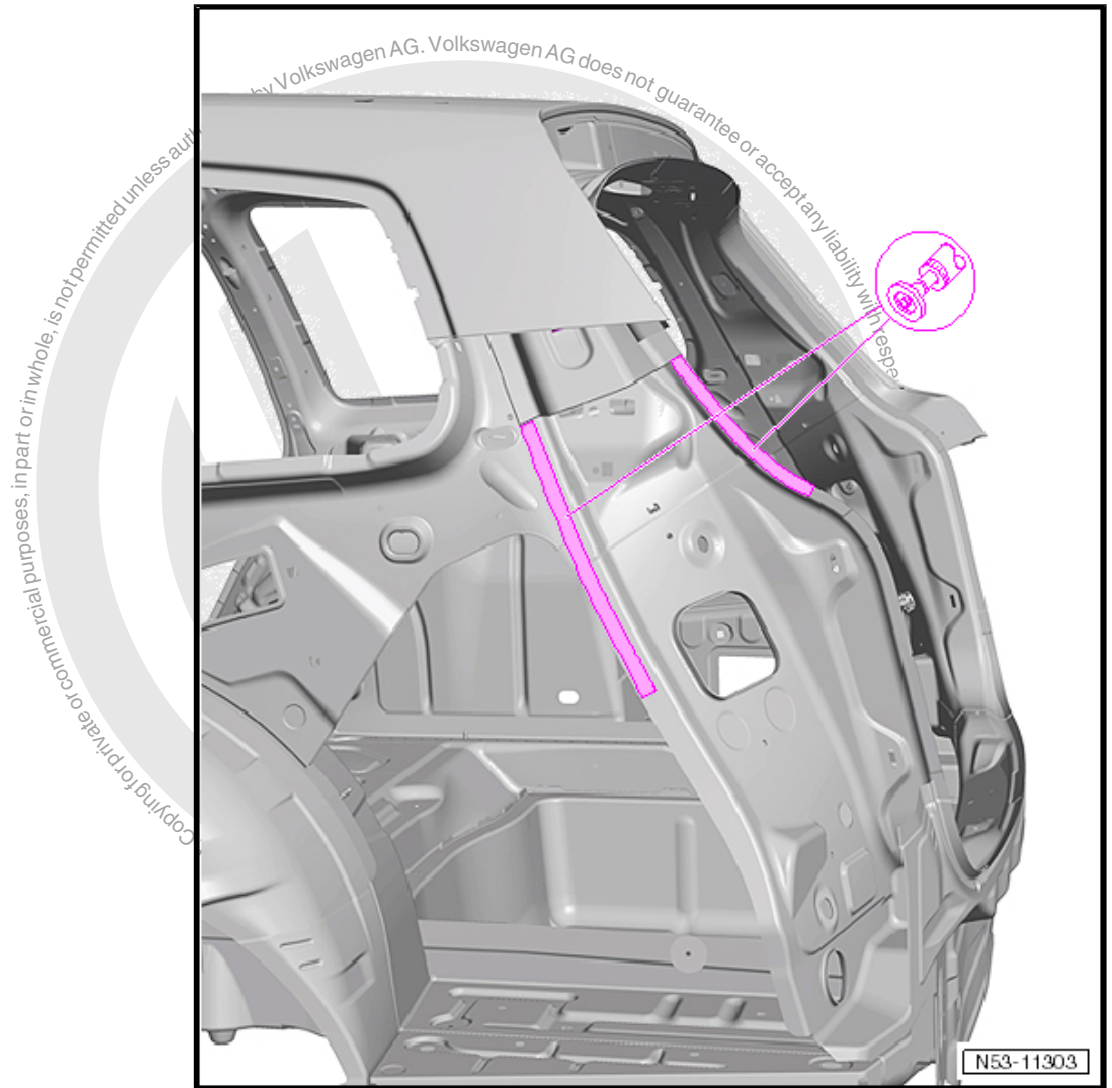
- Position parting cut on sealing channel -1- as shown and cut out.



- Separate original joint.



- Position parting cut at D-pillar reinforcing as shown and cut out.
- Separate original joint.



- Remove remaining material.
- Remove remaining adhesive completely and grind bonded surface back to bare metal.

8.3 Installing

Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 311](#).*

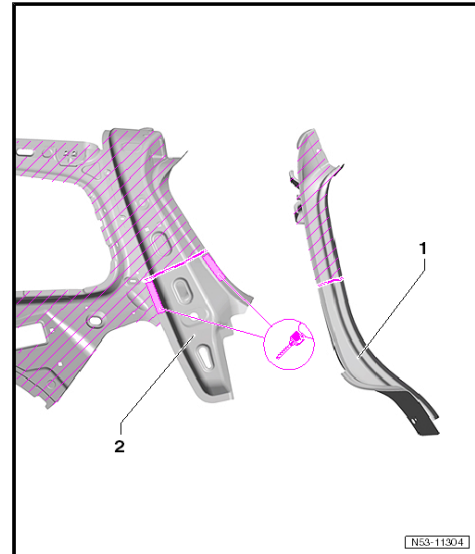
8.3.1 Preparing new part

New part

- ◆ Inner side panel
- ◆ Sealing channel
- ◆ 2K body adhesive -D 180 KD3 A2-



- Transfer parting cut to sealing channel -1- and to D-pillar reinforcing -2- and cut to size.
- Separate original joint from D-pillar reinforcement part section.



8.3.2 Welding in

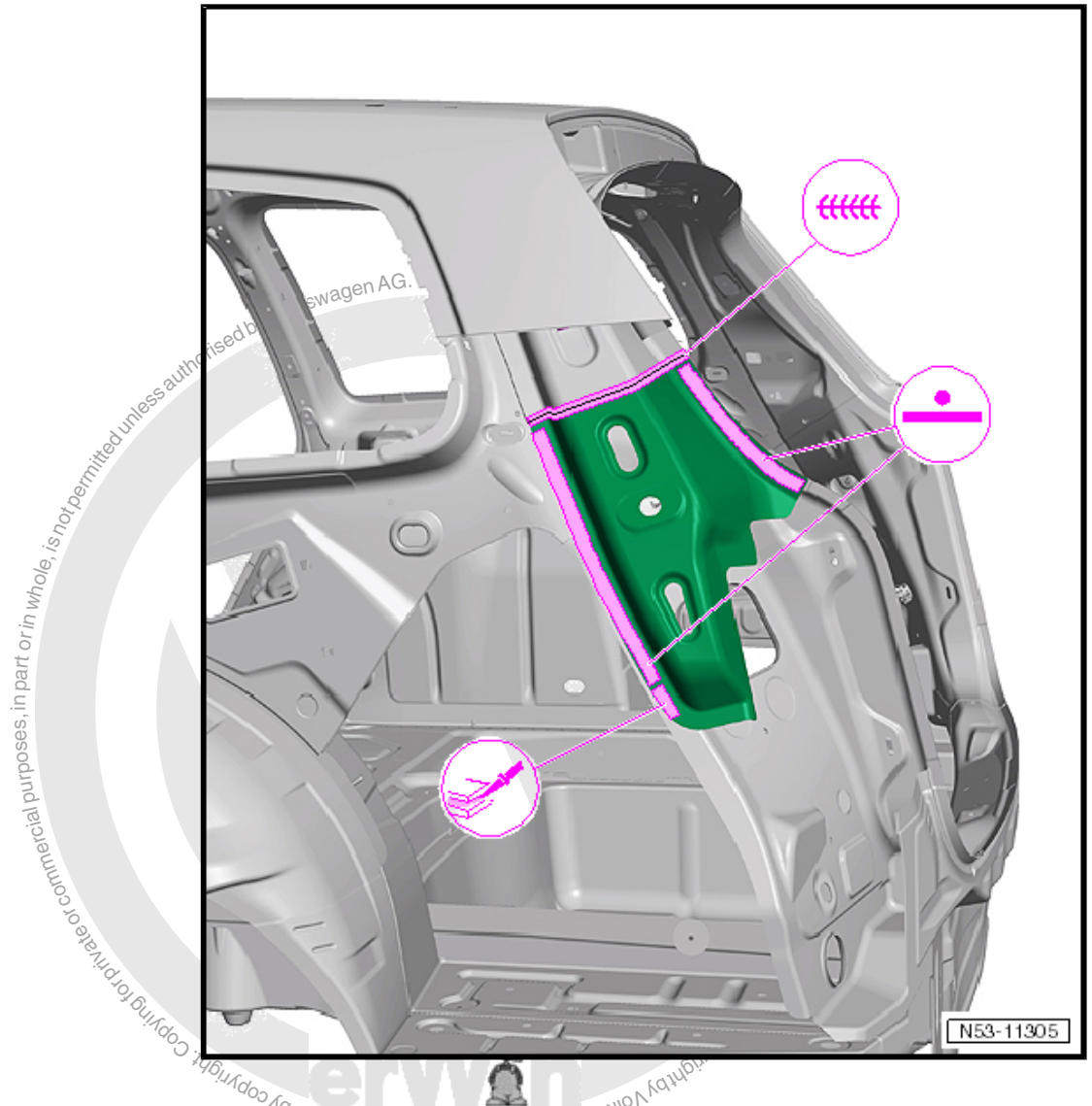


Note

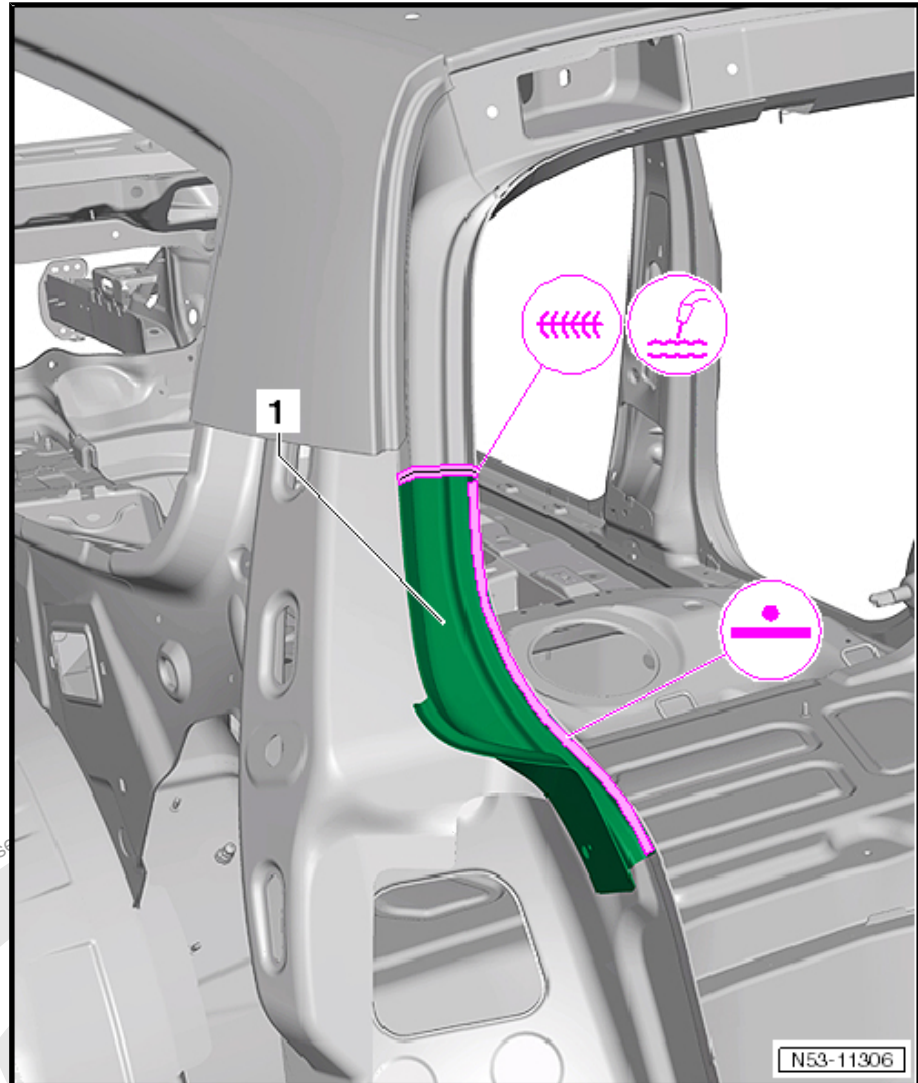
New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.

- Adapt new part with vehicle positioned on alignment bracket set and fix in place.
- Check fit with bolt-on parts.





- Apply 2K body adhesive -D 180 KD3 A2- to areas bonded in the factory.
- Adapt D-pillar reinforcing to fit and secure in position.
- Weld in parting cut, SG continuous weld seam.
- Weld in D-pillar reinforcing, RP spot weld seam.
- Adapt sealing channel -1- to fit and fix in position.
- Check fit with bolt-on parts.



- Weld in parting cut on sealing channel -1-, MIG continuous weld seam or SG continuous weld seam are permitted.
- Spot weld remaining joint in, RP spot weld seam.
- Install tail light mounting ⇒ [page 293](#) .
- Install side panel ⇒ [page 345](#) .



RO: 53 30 55 52

9 Renewing inner D-pillar



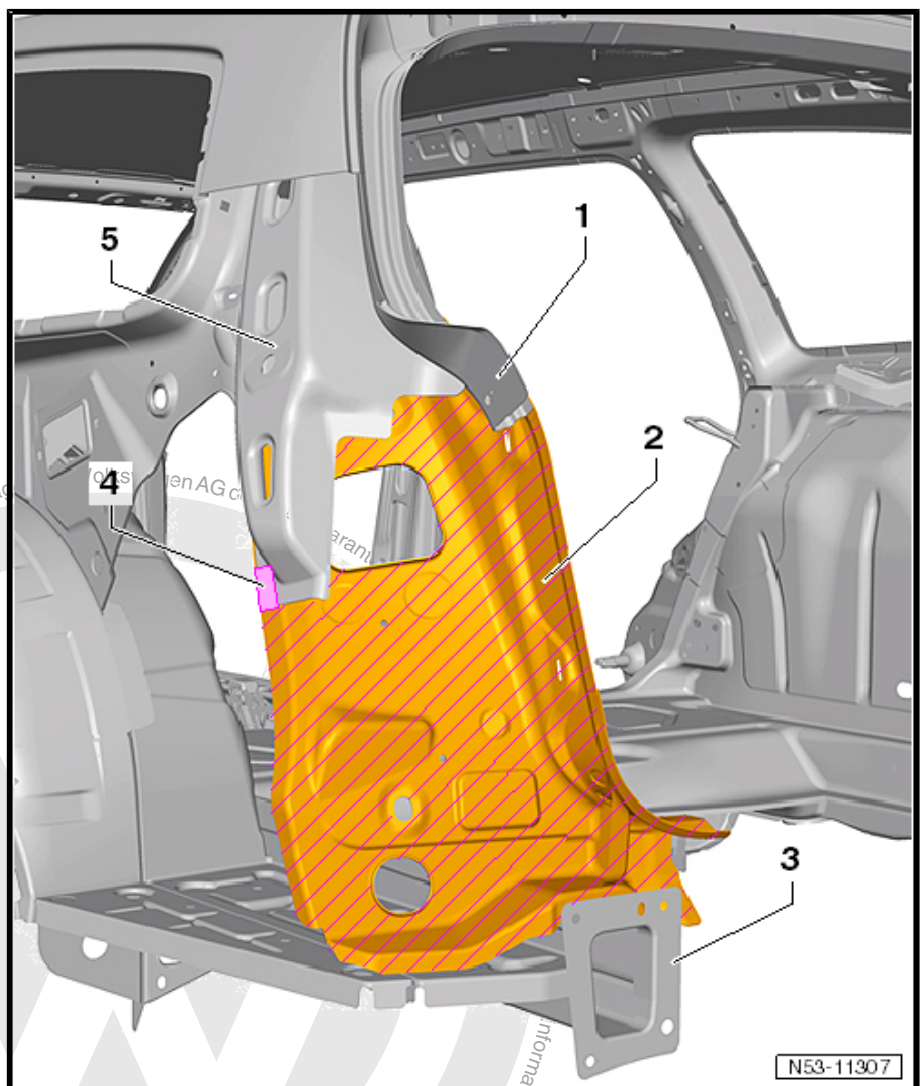
WARNING

Observe safety notes!

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

- Side panel already removed ⇒ [page 342](#) .
- Tail light mounting already removed ⇒ [page 291](#) .
- Cross panel already removed ⇒ [page 273](#)

- 1 - Sealing channel
- 2 - Inner D-pillar
- 3 - Rear longitudinal member
- 4 - Bonded area
- 5 - D-pillar reinforcement



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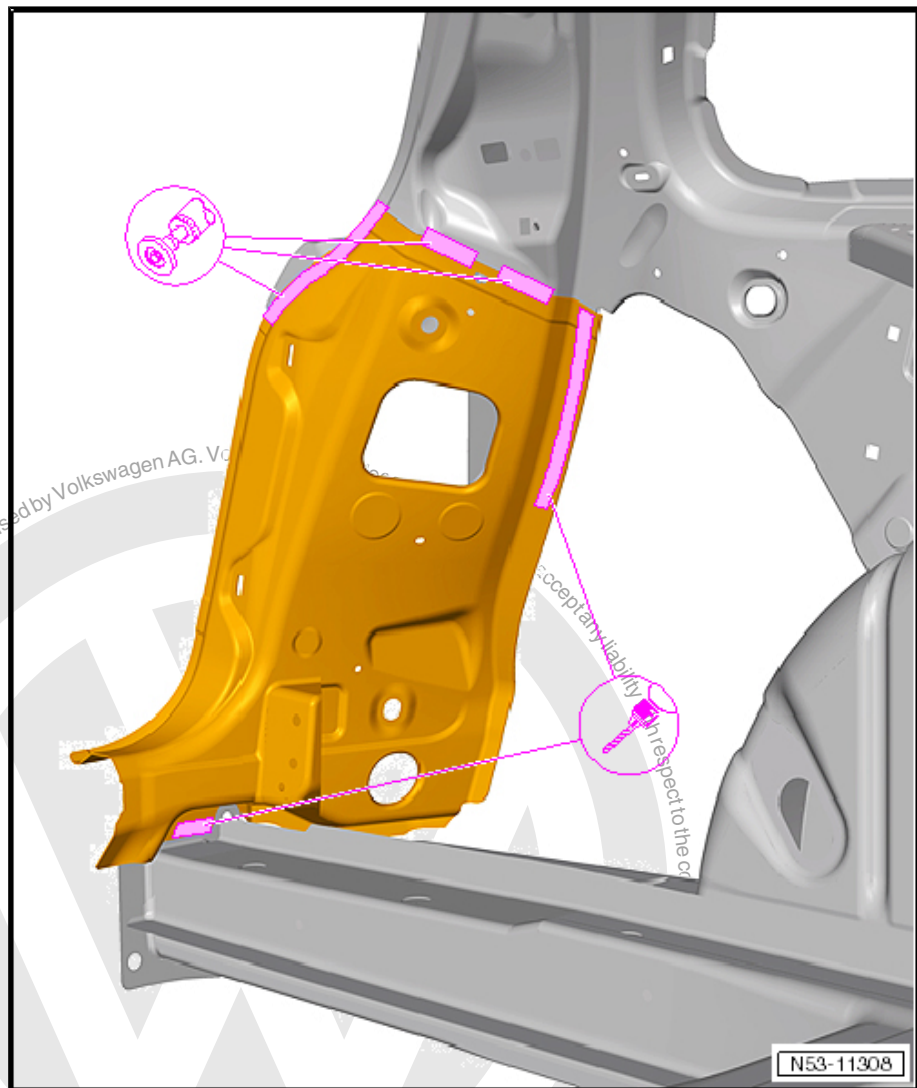
9.1 Tools



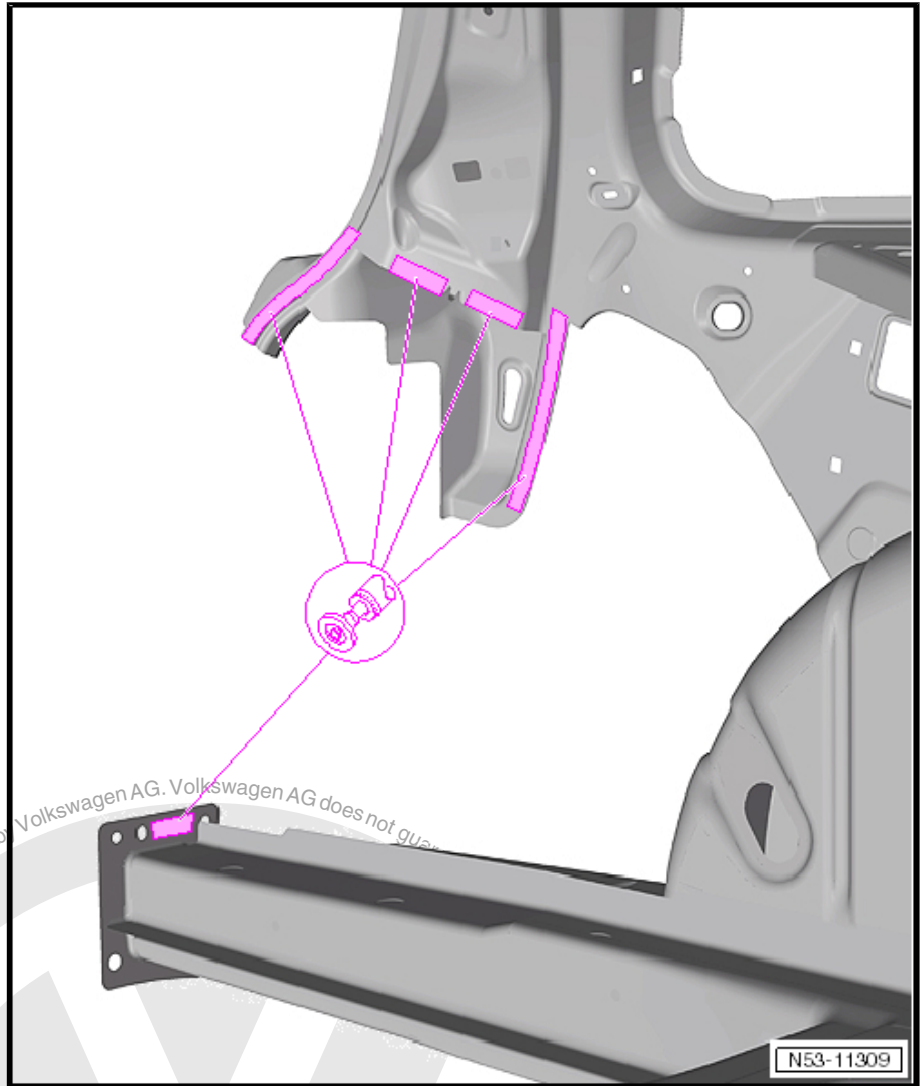
Note

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- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paintwork .*

9.2 Removing



- Separate original joint to inner side panel and to rear longitudinal member.



- Remove remaining material.
- Remove remaining adhesive completely and grind bonded surface back to bare metal.

9.3 Installing



Note

Only welding units authorised by Volkswagen AG may be used
⇒ [page 318](#).

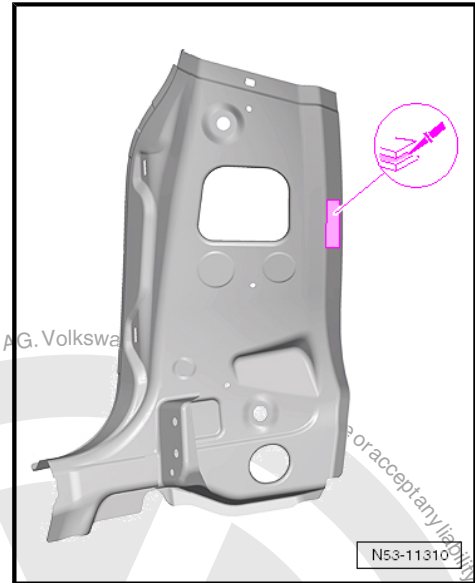
9.3.1 Preparing new part

New part

- ◆ Inner D-pillar (parts designation: reinforcement)
- ◆ 2K body adhesive -D 180 KD3 A2-



- Apply 2K body adhesive -D 180 KD3 A2- to areas bonded in the factory.

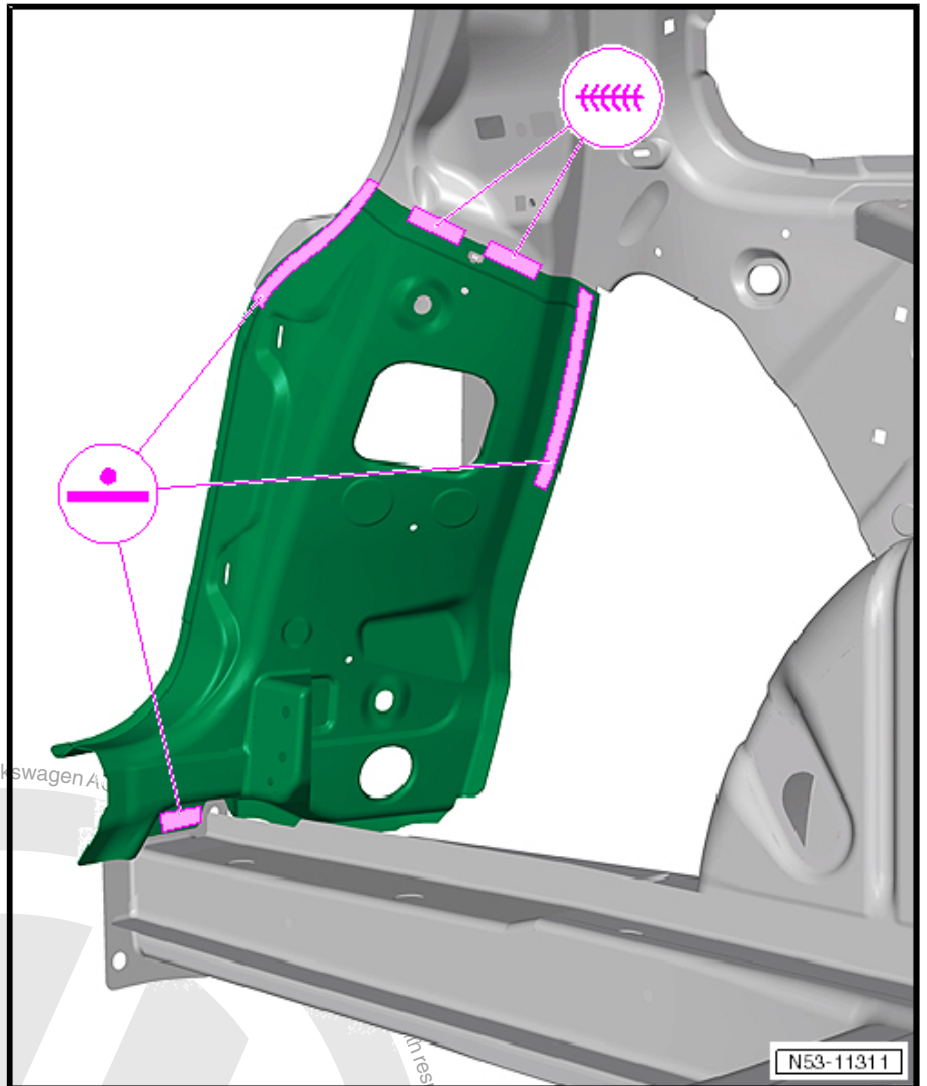


9.3.2 Welding in

- Adapt new part with vehicle standing on its wheels or alignment bracket set and fix in position.



- Check fit with bolt-on parts.



- Weld new part to longitudinal member and inner side panel, RP spot weld seam and SG continuous weld seam.
- Install tail light mounting ⇒ [page 293](#) .
- Install rear cross panel with lock carrier ⇒ [page 276](#) .
- Install side panel ⇒ [page 345](#) .



RO: 53 48 55 50

10 Renewing rear longitudinal member - part section

Includes: floor panel, rear cross panel, longitudinal member cover
plate and bumper mounting



WARNING

Observe safety notes!

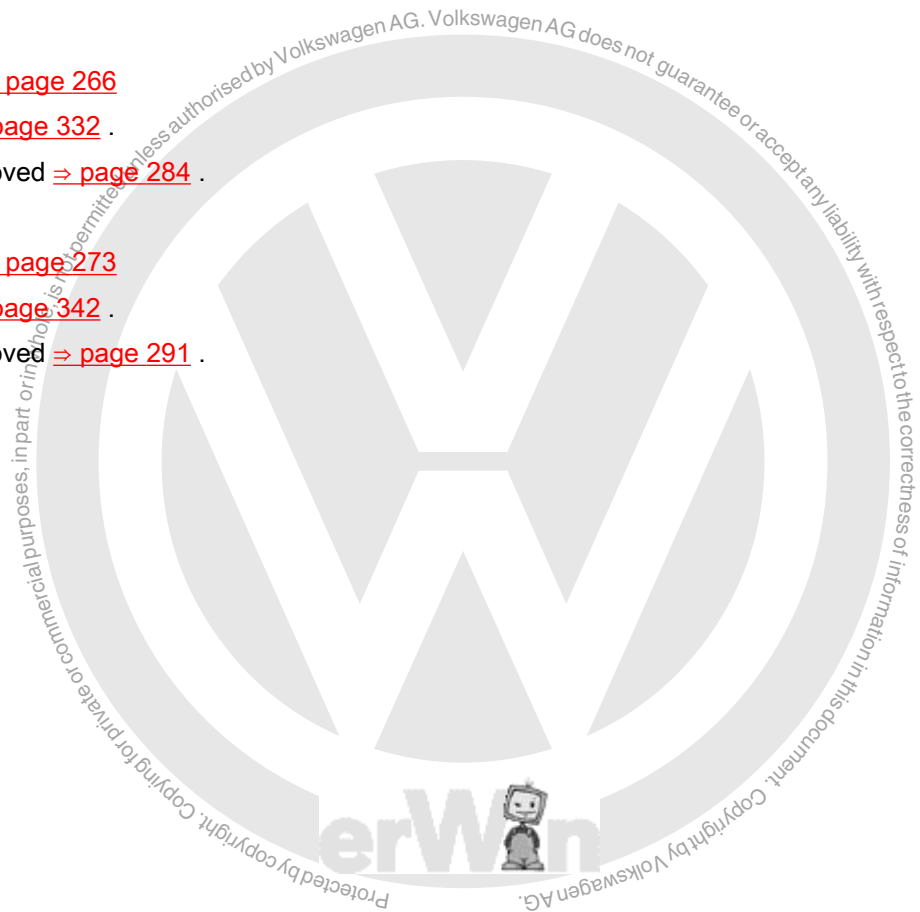
Safety notes ⇒ General Information; Body Repairs, General Body
Repairs ; Safety notes

Saloon

- Cross panel already removed ⇒ [page 266](#)
- Side panel already removed ⇒ [page 332](#) .
- Tail light mounting already removed ⇒ [page 284](#) .

Variant

- Cross panel already removed ⇒ [page 273](#)
- Side panel already removed ⇒ [page 342](#) .
- Tail light mounting already removed ⇒ [page 291](#) .

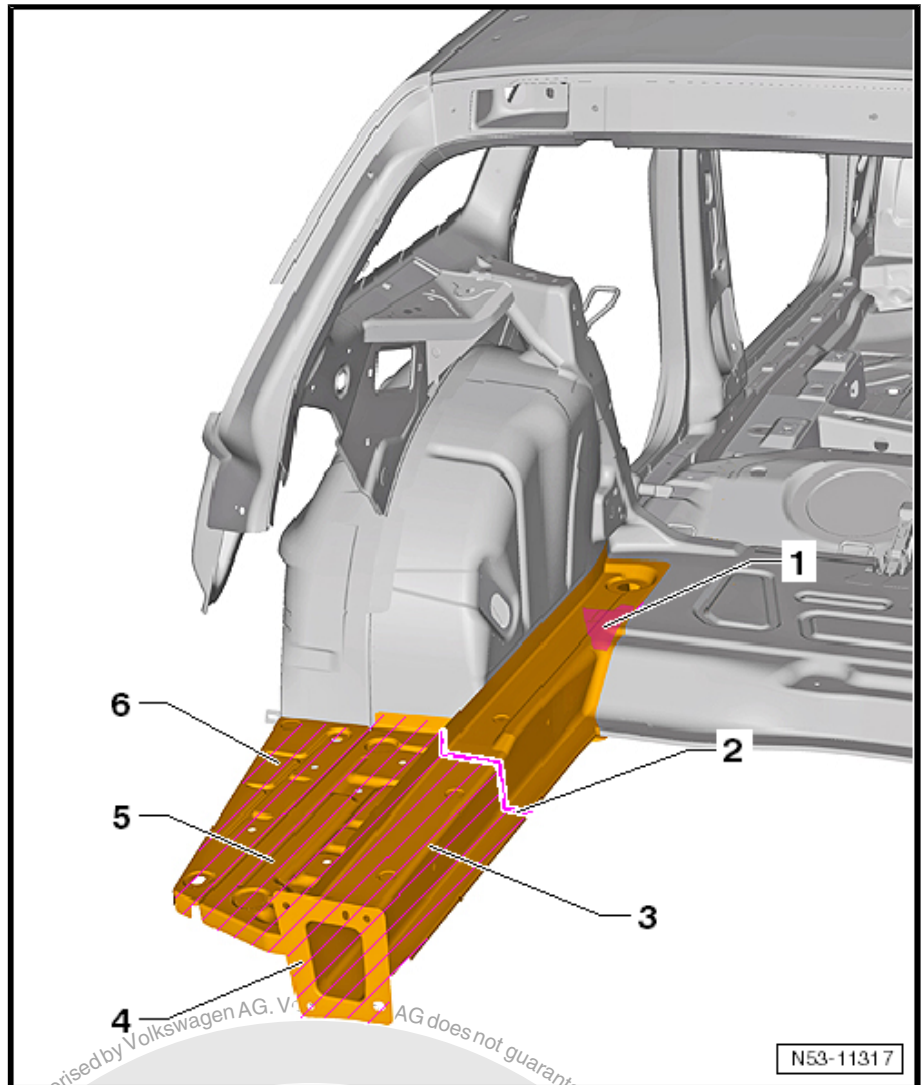




- 1 - Moulded foam element
- 2 - Part section parting cut
- 3 - Rear longitudinal member with cover plate
- 4 - Bumper mounting
- 5 - Floor panel



- 6 - Connecting plate



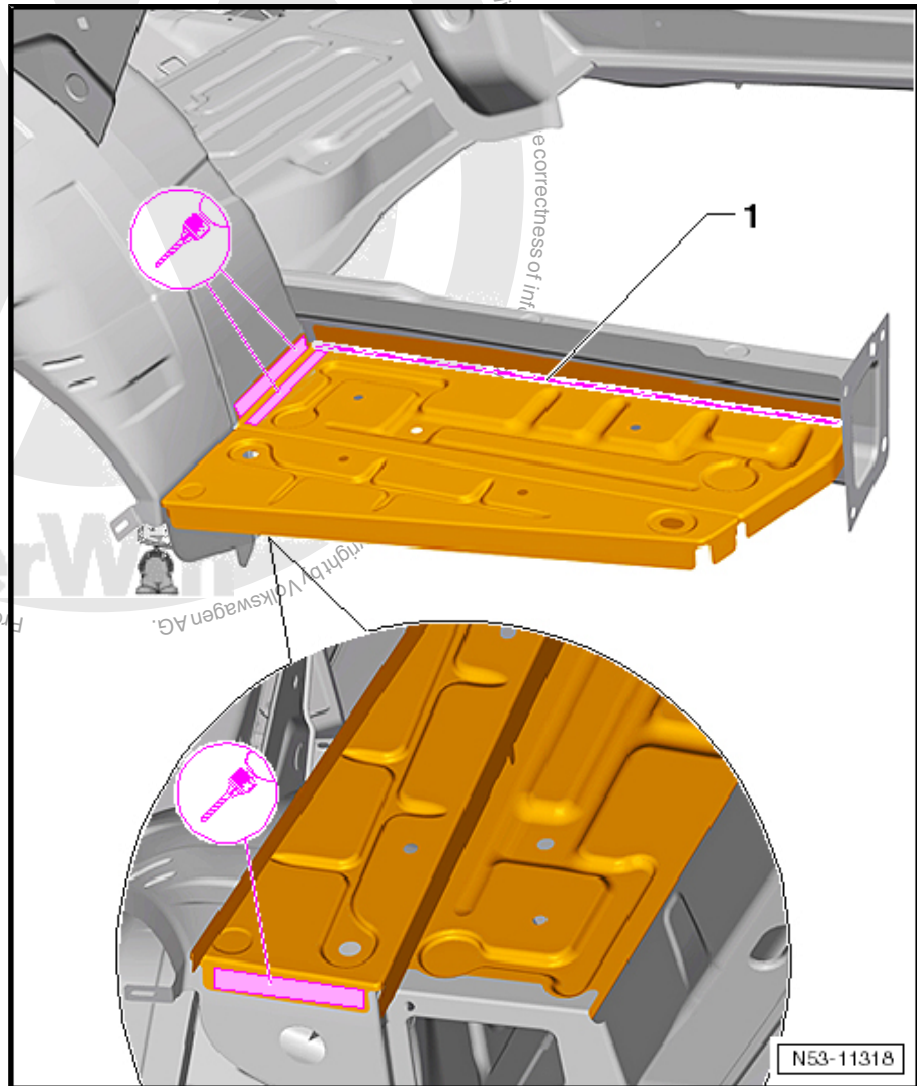
10.1 Tools



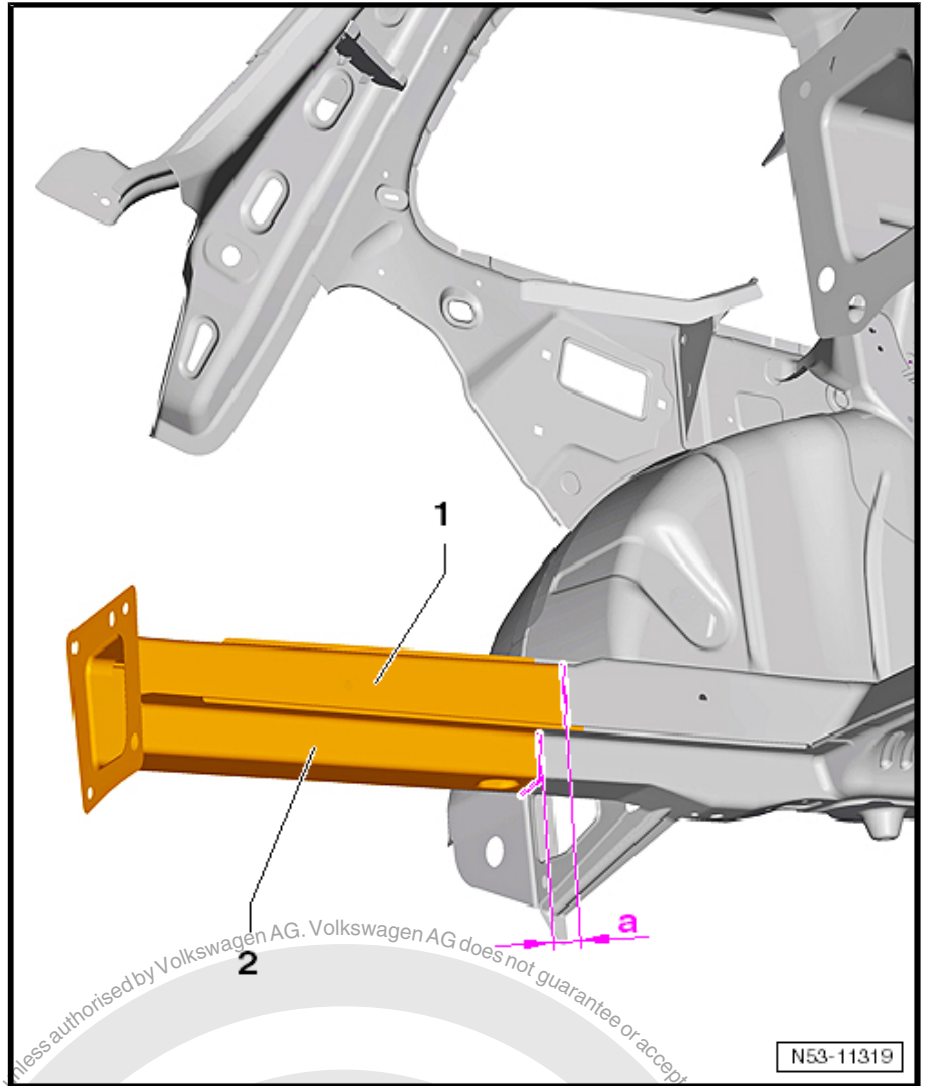
- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paint-work .*



10.2 Removing

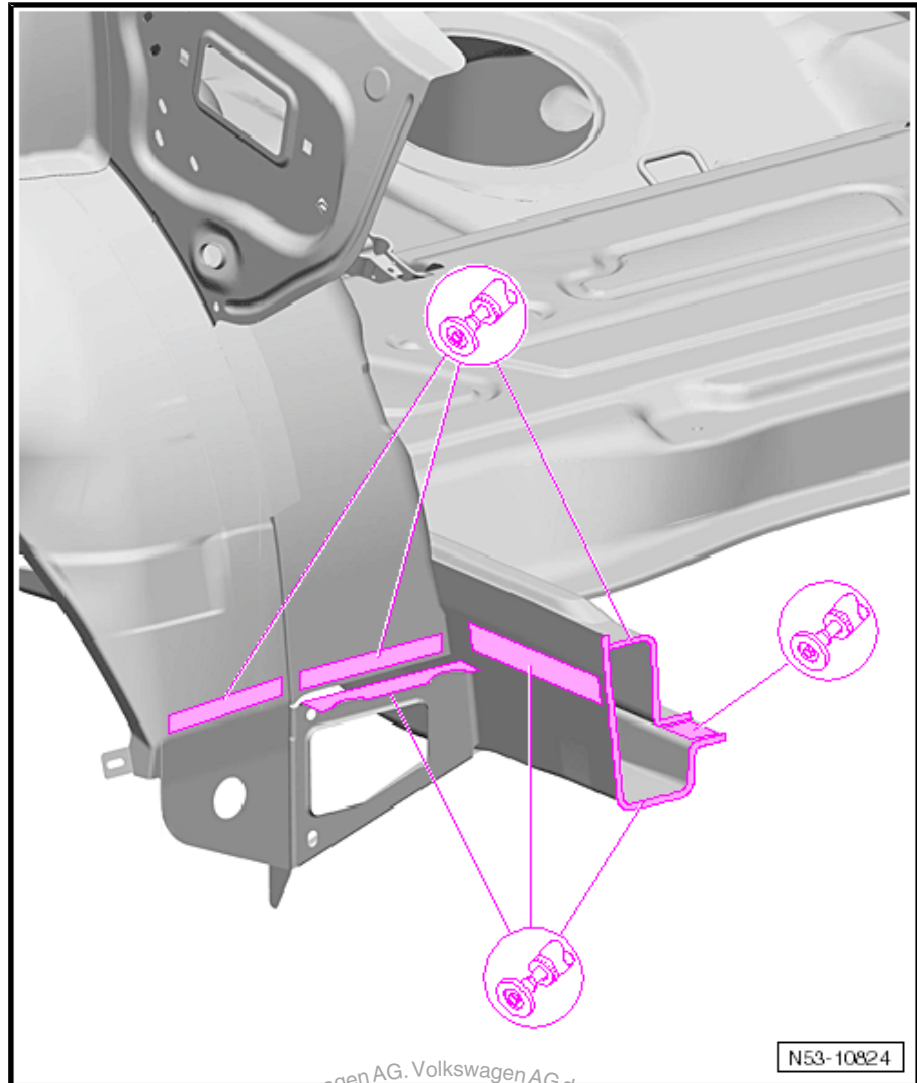


- Release original joint to floor panel and connecting plate.
- Roughly cut floor panel out using parting cut -1-.



- Position offset parting cuts on longitudinal member -2- and on longitudinal member cover part -1- and cut out.

Dimension -a- approx. 50 mm



– Remove remaining material.

10.3 Installing



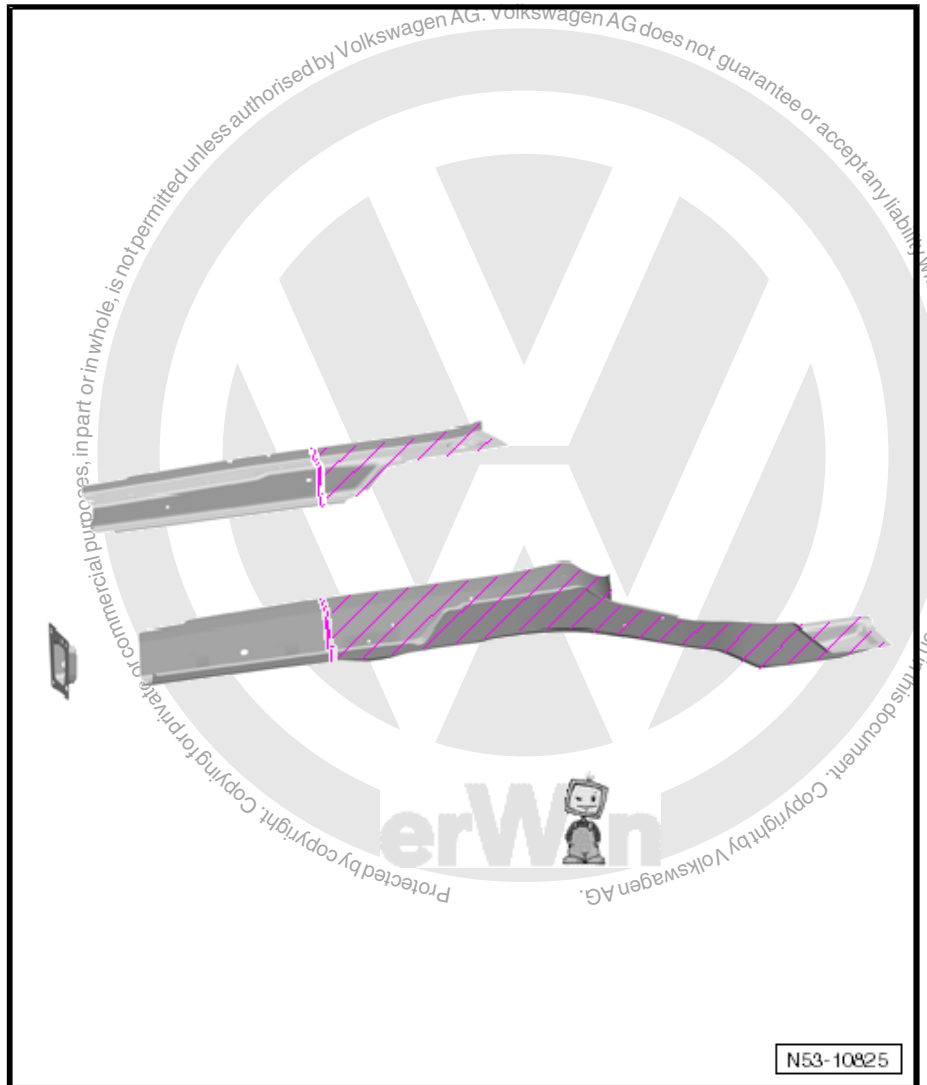
Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 323](#).*

10.3.1 Preparing new part

New part

- ◆ Rear longitudinal member
- ◆ Cover plate for longitudinal member
- ◆ Bumper mounting
- ◆ Floor panel (not illustrated)
- ◆ Connecting plate (not illustrated)



- Transfer parting cuts to new parts and cut out.

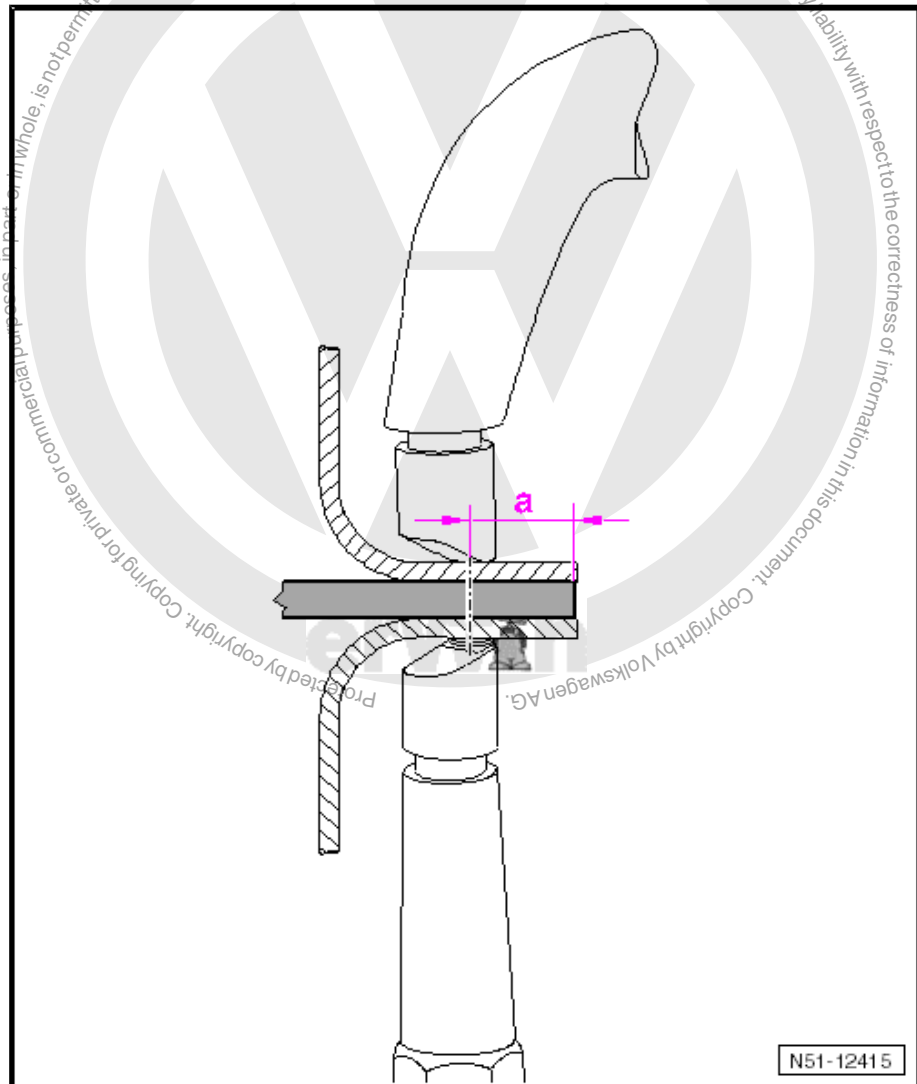


10.3.2 Welding in



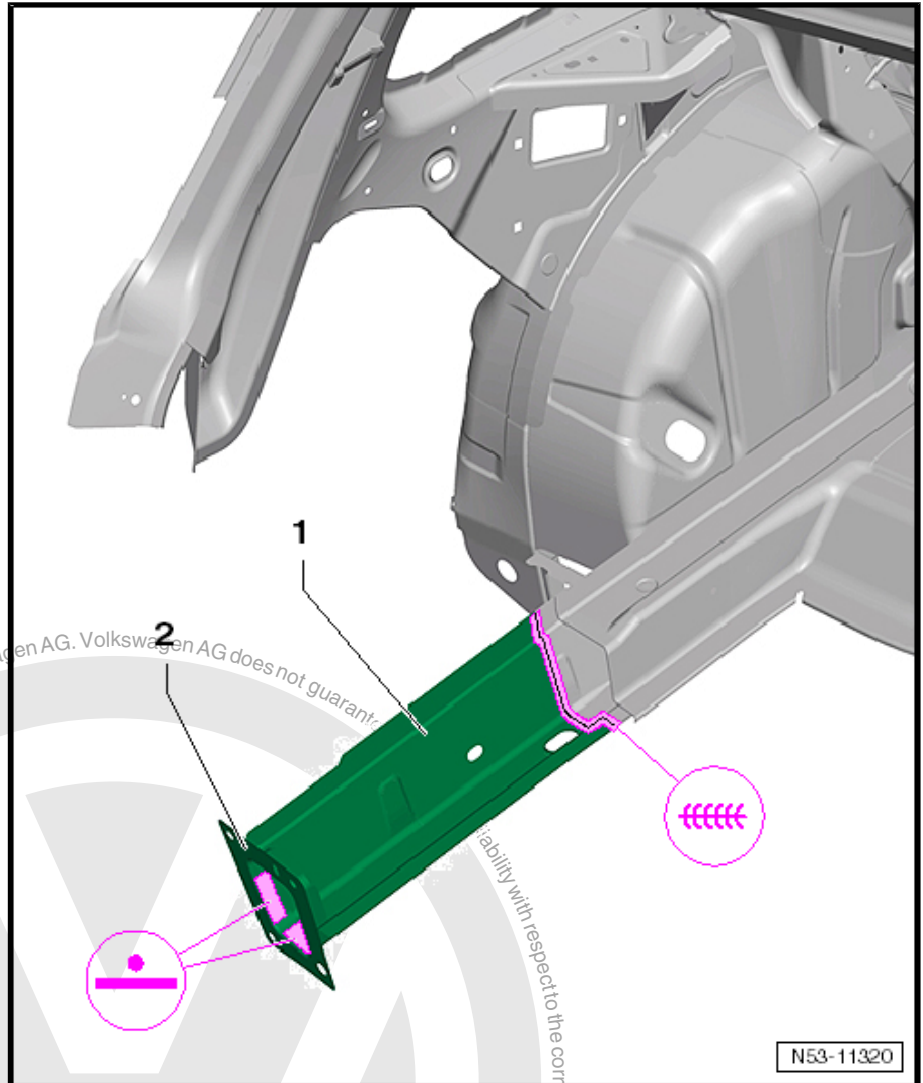
Note

- ◆ *In the area of the A, B and C-pillars, high tensile, highest tensile and hot formed steels are used. The weld flanges in these areas are about 13mm wide.*
- ◆ *If spot welds are located at the edge of hot formed steel panels, the high temperature will cause the bond between the panels to change, which will subsequently have an effect on crash safety.*

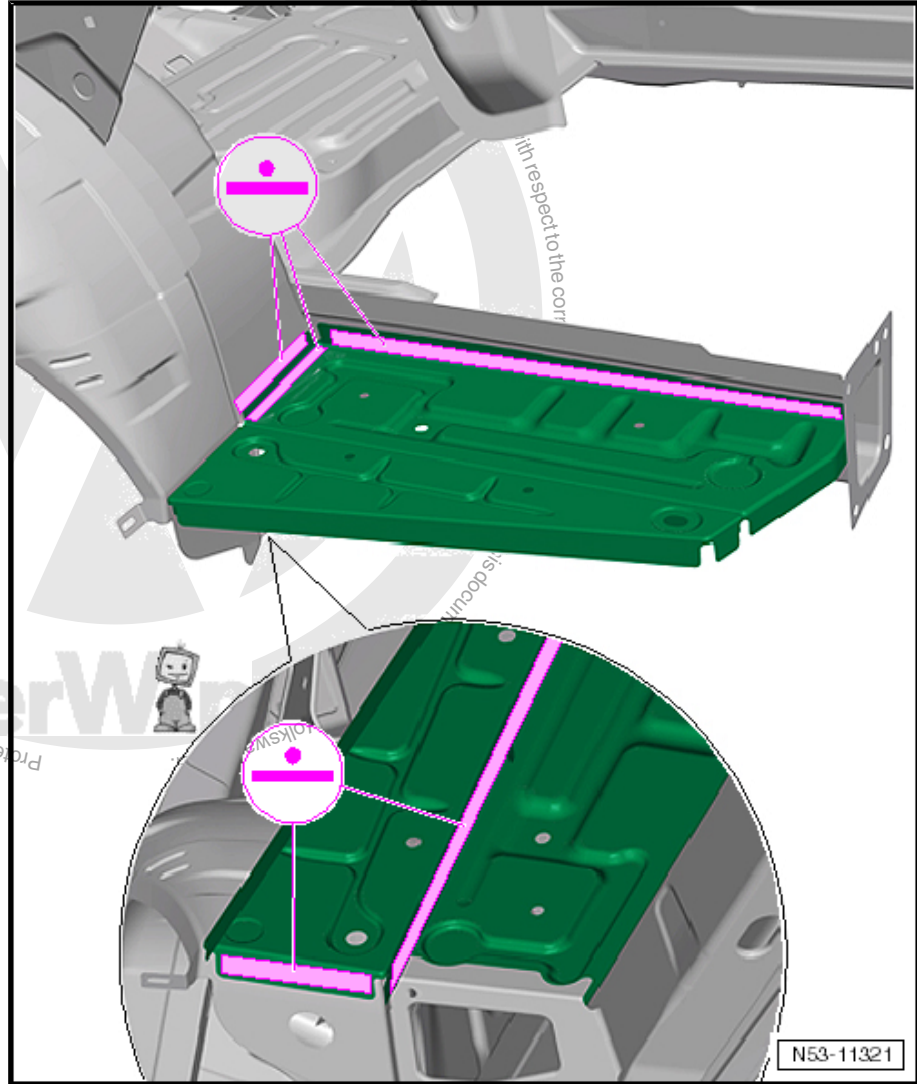


Therefore, locate spot welds as close to the centre as possible.

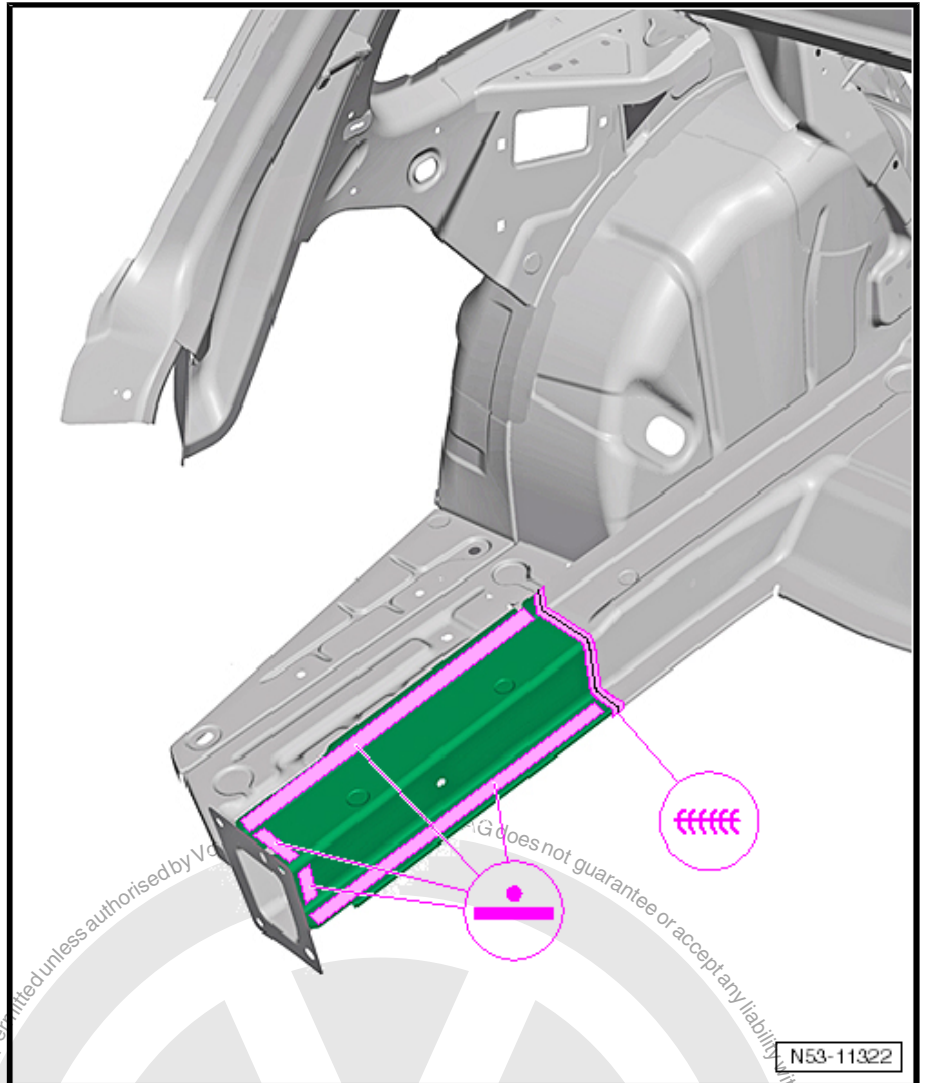
- Dimension -a- of 8mm can be achieved using angled welding tips.
- Adapt new parts with vehicle positioned on alignment bracket set and fix in place.
- Check fit with bolt-on parts.



- Weld in longitudinal member part section -1-, SG continuous weld seam.
- Weld in bumper mounting -2-, RP spot weld seam.



Weld in floor panel and rear cross panel, RP spot weld seam.



Saloon

- Install cross panel ⇒ [page 269](#) .
- Install tail light mounting ⇒ [page 287](#) .
- Install side panel ⇒ [page 335](#) .

Variant

- Install cross panel ⇒ [page 276](#) .
- Install tail light mounting ⇒ [page 293](#) .
- Install side panel ⇒ [page 345](#) .



RO: 53 55 55 50

11 Renewing side panel - part section



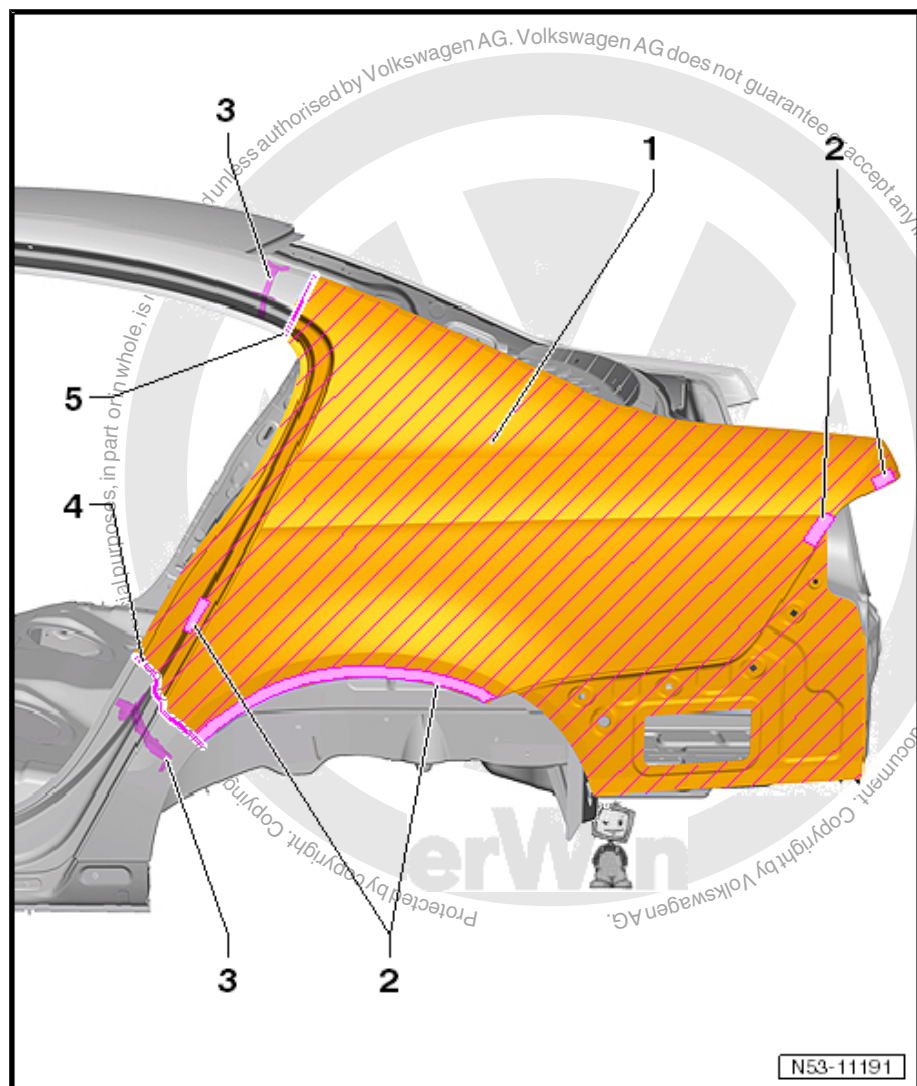
WARNING

Observe safety notes!

Welding, parting using spark generating machines/tools or tinning in foam treated areas creates gases which are hazardous to health and environment. Therefore, refrain from using these processes.

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

- 1 - Side panel
- 2 - Bonded area
- 3 - Moulded foam elements
- 4 - Parting cut to side member
- 5 - Parting cut to roof member





11.1 Tools

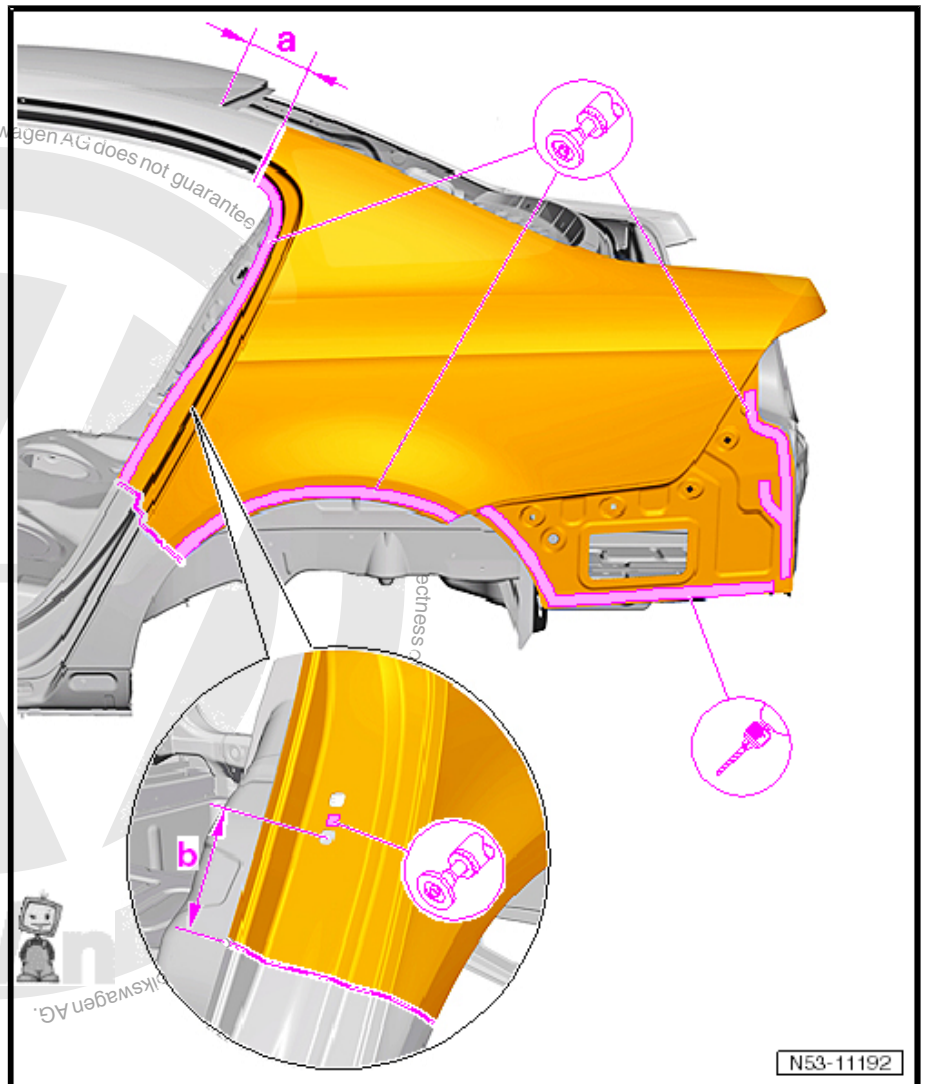
Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paintwork.*

11.2 Removing

Note

Do not damage underlying panels when cutting out.



- Position parting cuts according to degree of damage and cut out.

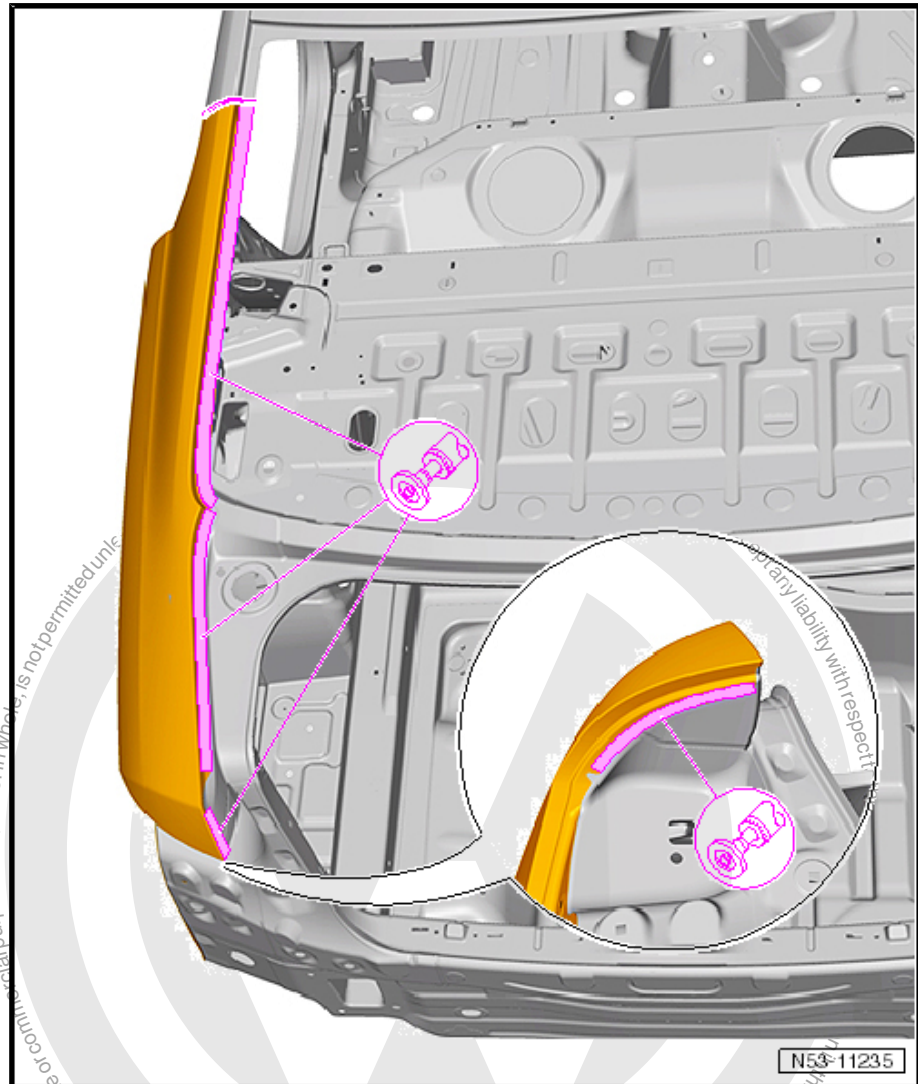


Recommended parting cuts:

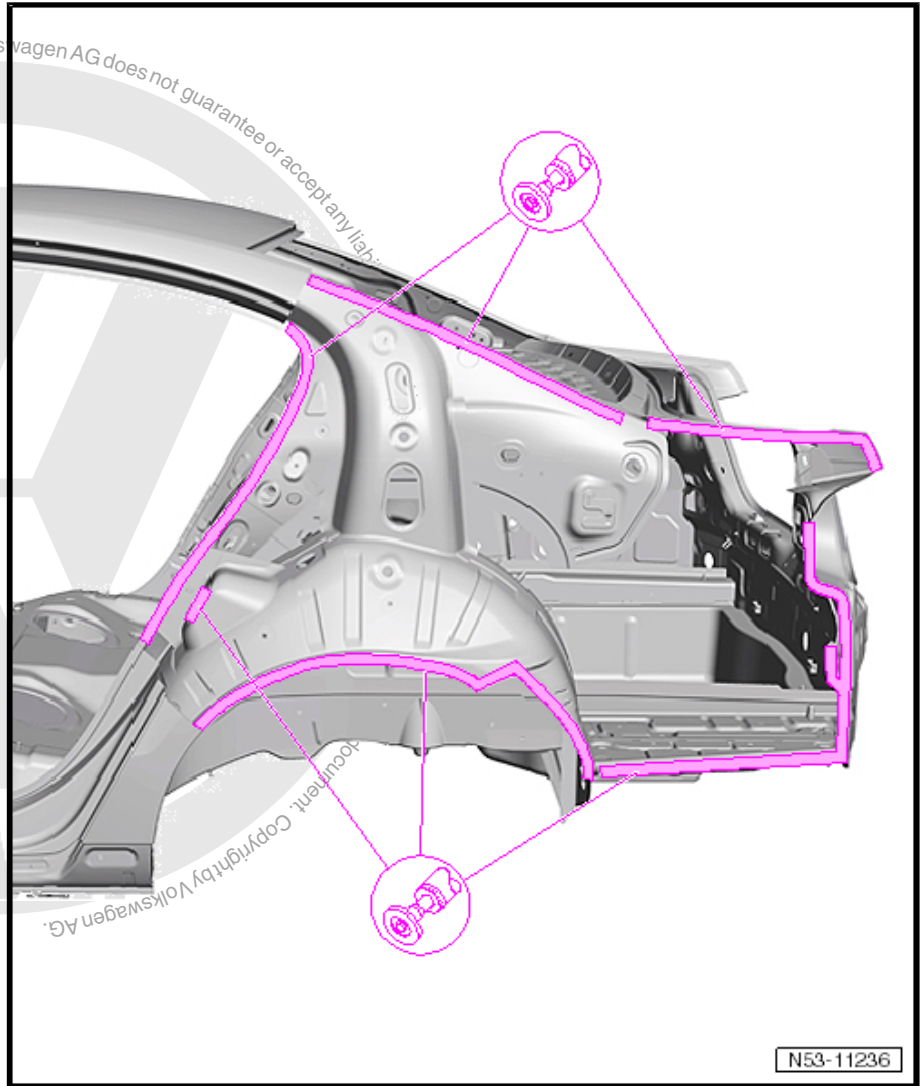
Dimension -a- = 100 mm

Dimension -b- = 130 mm

- Grind through outer edge at wheel arch.
- Separate original joint.



- Separate original joint to sealing channel and to tail light mounting.

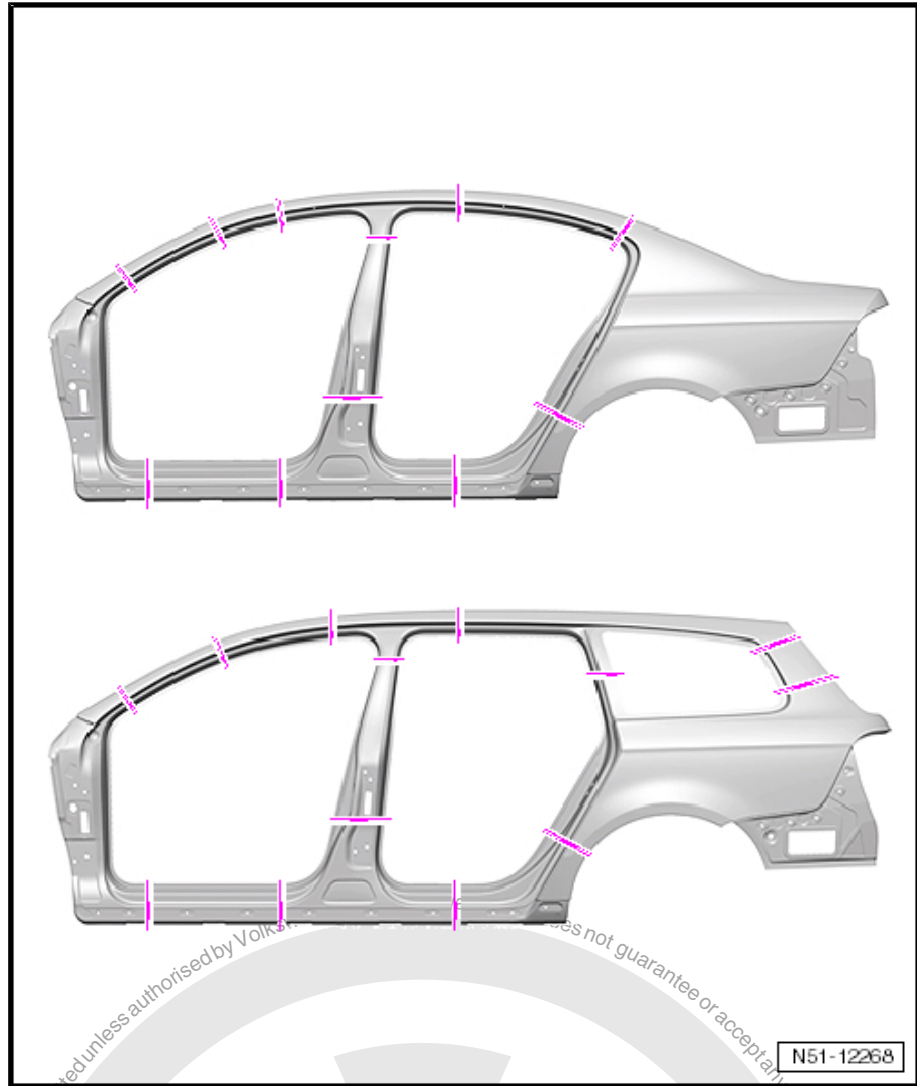


- Remove remaining material.
- Remove remaining adhesive completely and grind bonded surface back to bare metal.
- Clean any dust and grease off flange area on wheel arch.

11.3 Installing

 **Note**

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 333](#).*



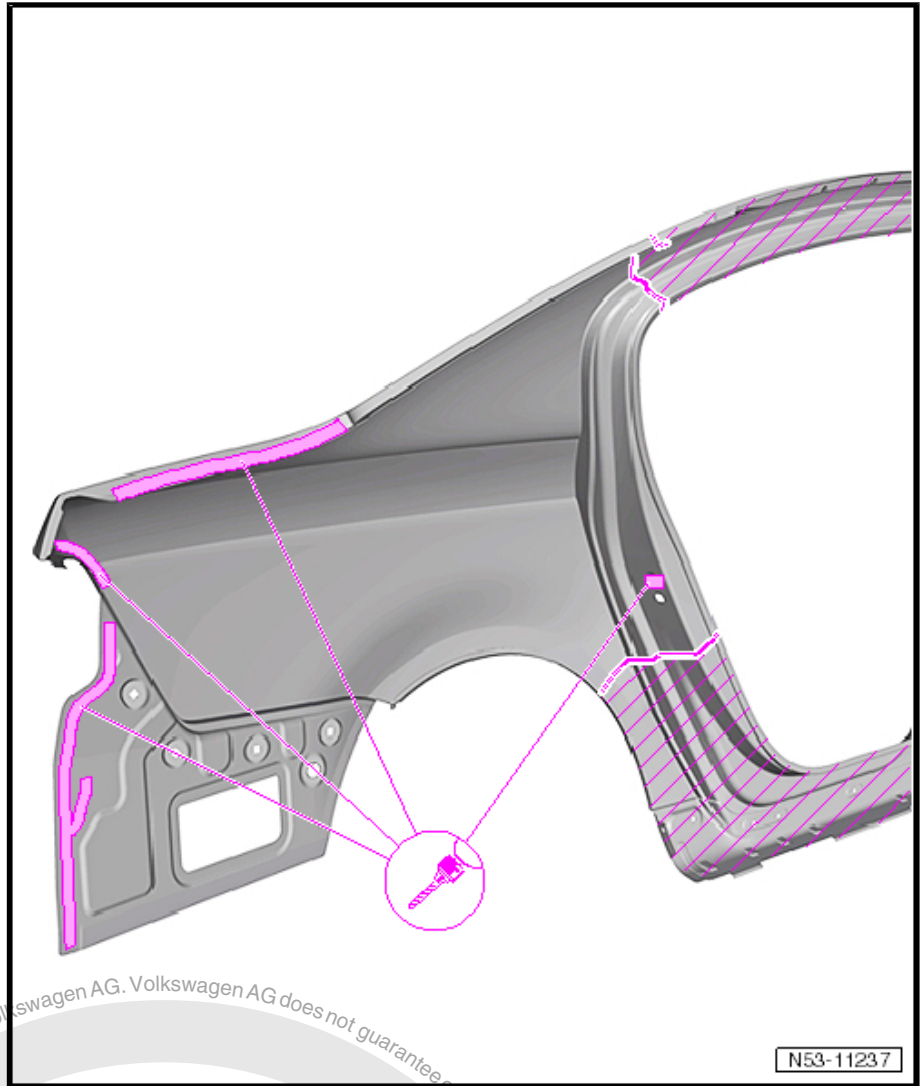
Note

MIG solder seams or SG continuous weld seams are permitted at the parting cuts shown in the illustration.

11.3.1 Preparing new part

New part

- ◆ Side panel subpart
- ◆ Moulded foam element
- ◆ 2K body adhesive -D 180 KD3 A2-
- ◆ 2K polyurethane adhesive -D 180 KD2 A1- (for right side panel)



- Transfer parting cut to new part and cut out.
- Drill holes for SG plug weld seam (8 mm Ø).
- Grind bonding surfaces back to bare metal.

11.3.2 Moulded foam elements

Follow repair instructions.

Moulded foam element ⇒ General Information; Body Repairs,
General Body Repairs ; General Notes; Moulded foam elements

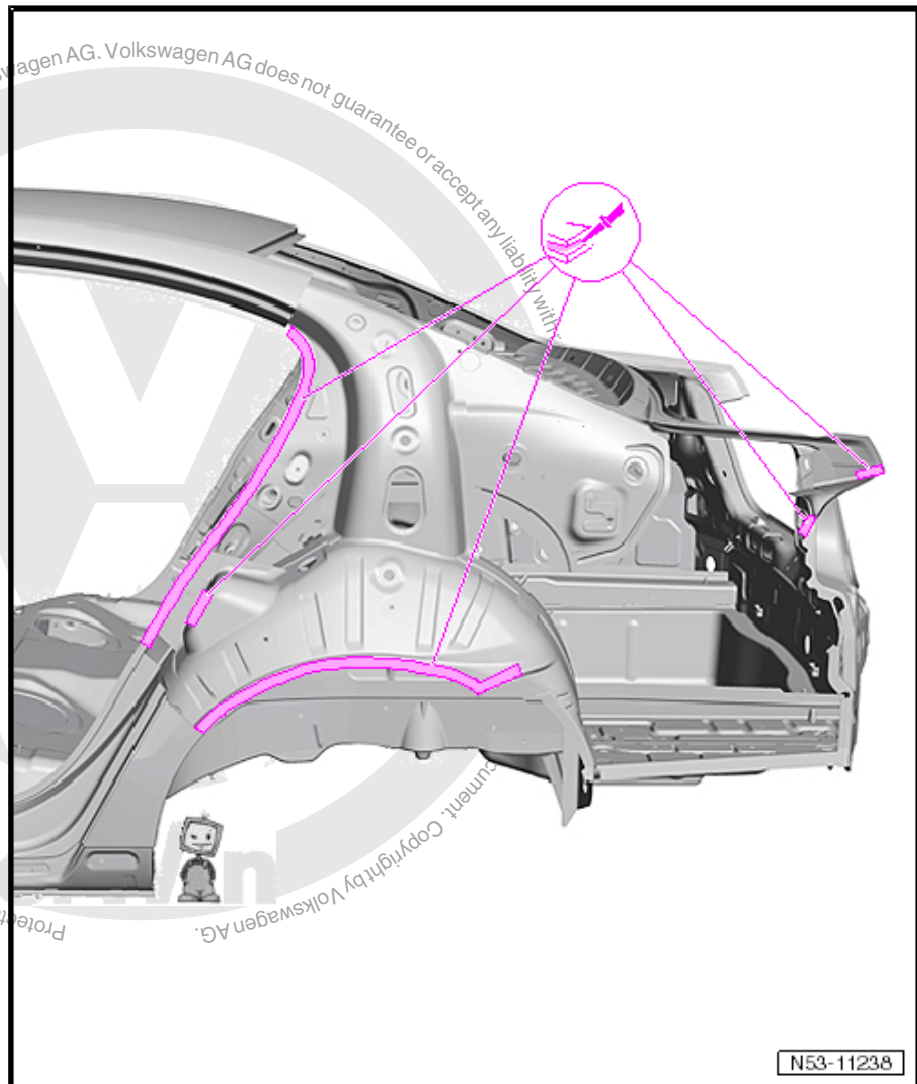


11.3.3 Welding in



Note

- ◆ *New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.*
- ◆ *When applying 2K body adhesive -D 180 KD3 A2-, do not apply in area of SG plug weld seam for lock reinforcement.*
- ◆ *Adhesive must be cleaned from threads for fastening striker after bonding in.*
- ◆ *Before starting welding on right-hand side panel, apply 2K polyurethane adhesive -D 180 KD2 A1- in area of fuel filler neck.*



- Apply 2K body adhesive -D 180 KD3 A2- in the areas indicated.

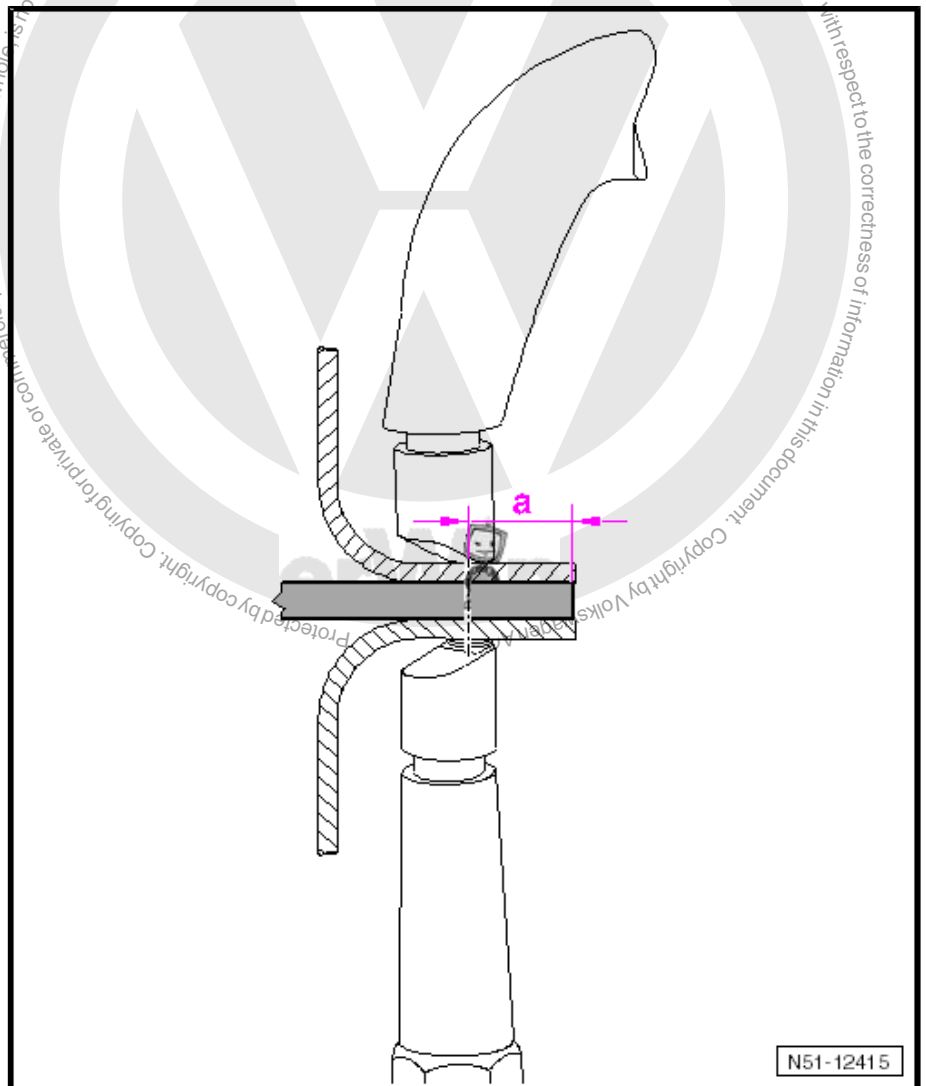


i Note

Before starting welding on right side panel, apply sealing cord -AKD 497 010 04 R10- in area of fuel filler neck.

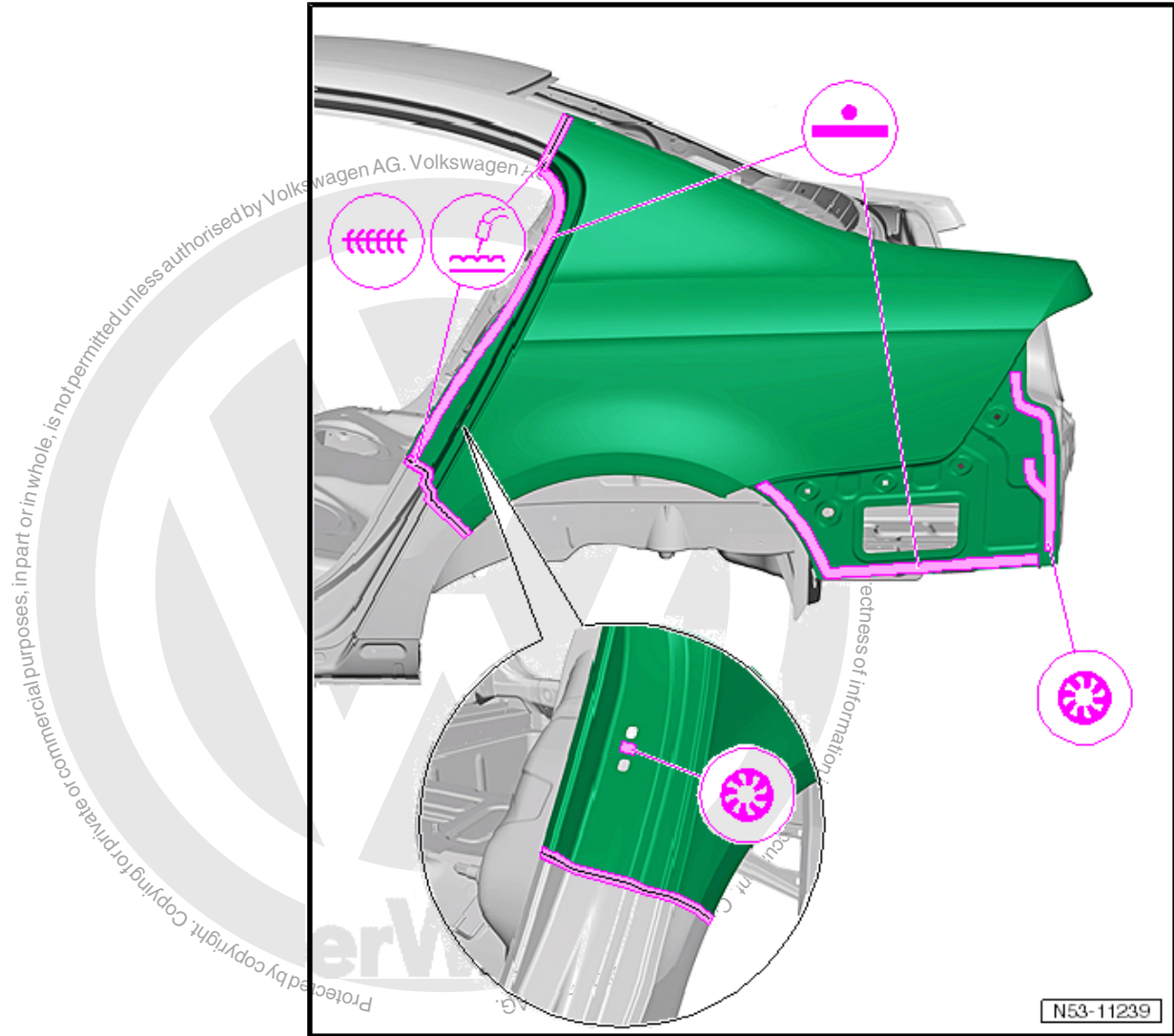
i Note

- ◆ In the area of the A, B and C-pillars, high tensile, highest tensile and hot formed steels are used. The weld flanges in these areas are about 13mm wide.
- ◆ If spot welds are located at the edge of hot formed steel panels, the high temperature will cause the bond between the panels to change, which will subsequently have an effect on crash safety.

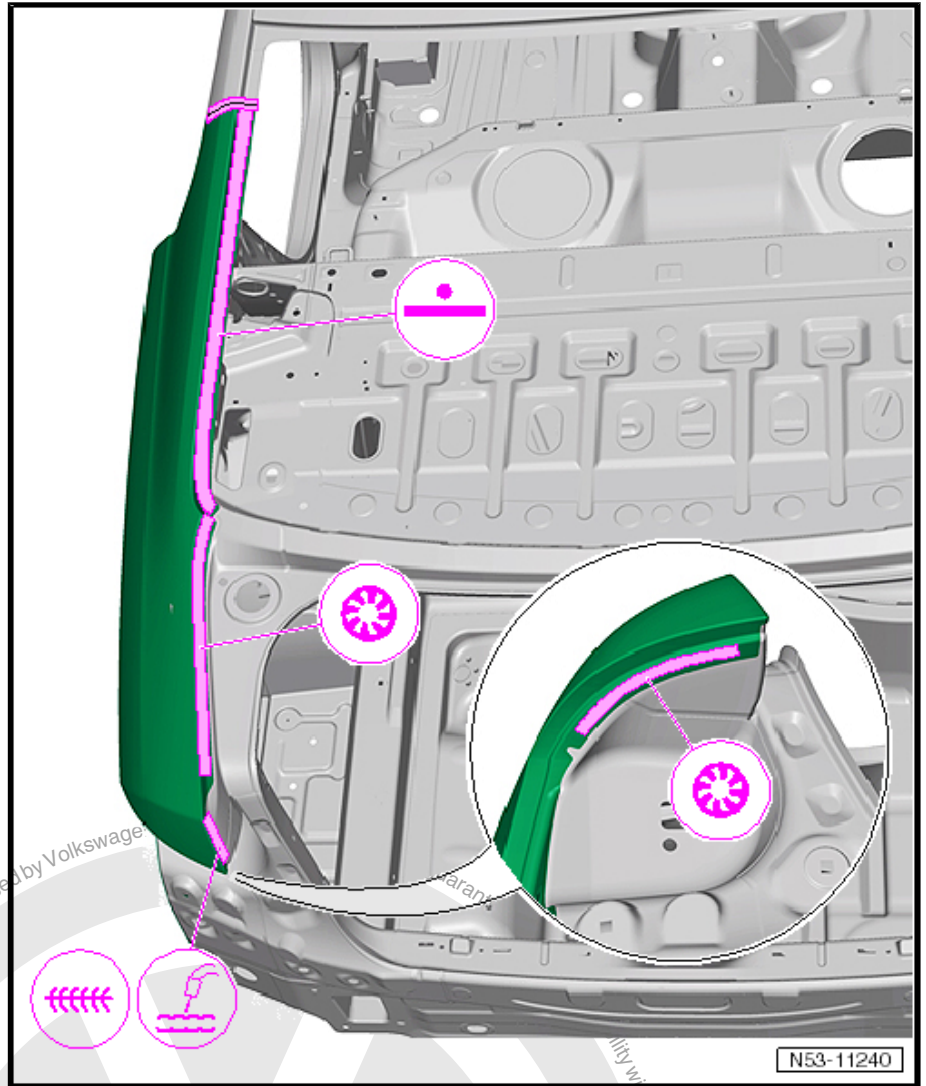


Therefore, locate spot welds as close to the centre as possible.

- Dimension -a- of 8mm can be achieved using angled welding tips.
- Adapt new part with vehicle standing on its wheels or alignment bracket set and fix in position.
- Check fit with bolt-on parts.



- Weld in side panel, RP spot weld seam and SG plug weld seam.
- Weld in parting cuts, MIG solder seam or SG continuous weld seam are permitted.
- Reform wheel housing flange.
- Wipe away excess adhesive and seal wheel arch.



- Weld in original joint of rear window aperture, RP spot weld seam.
- Weld in remaining joint, SG plug weld seam, MIG solder seam or SG continuous weld seam.

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RO: 53 55 55 60

12 Renewing side panel (Variant) - part section



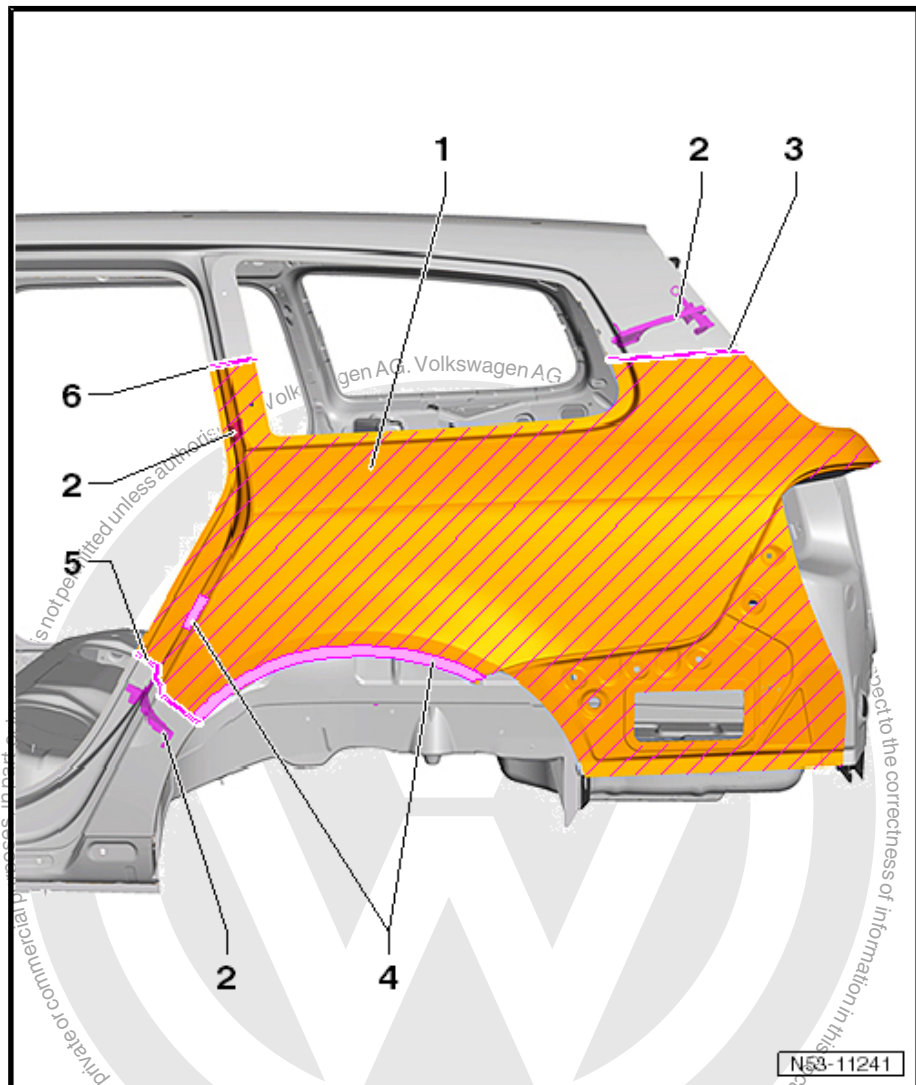
WARNING

Observe safety notes!

Welding, parting using spark generating machines/tools or tinning in foam treated areas creates gases which are hazardous to health and environment. Therefore, refrain from using these processes.

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

- 1 - Side panel
- 2 - Moulded foam elements
- 3 - Parting cut for D-pillar
- 4 - Bonded area
- 5 - Parting cut to side member
- 6 - Parting cut for C-pillar





12.1 Tools

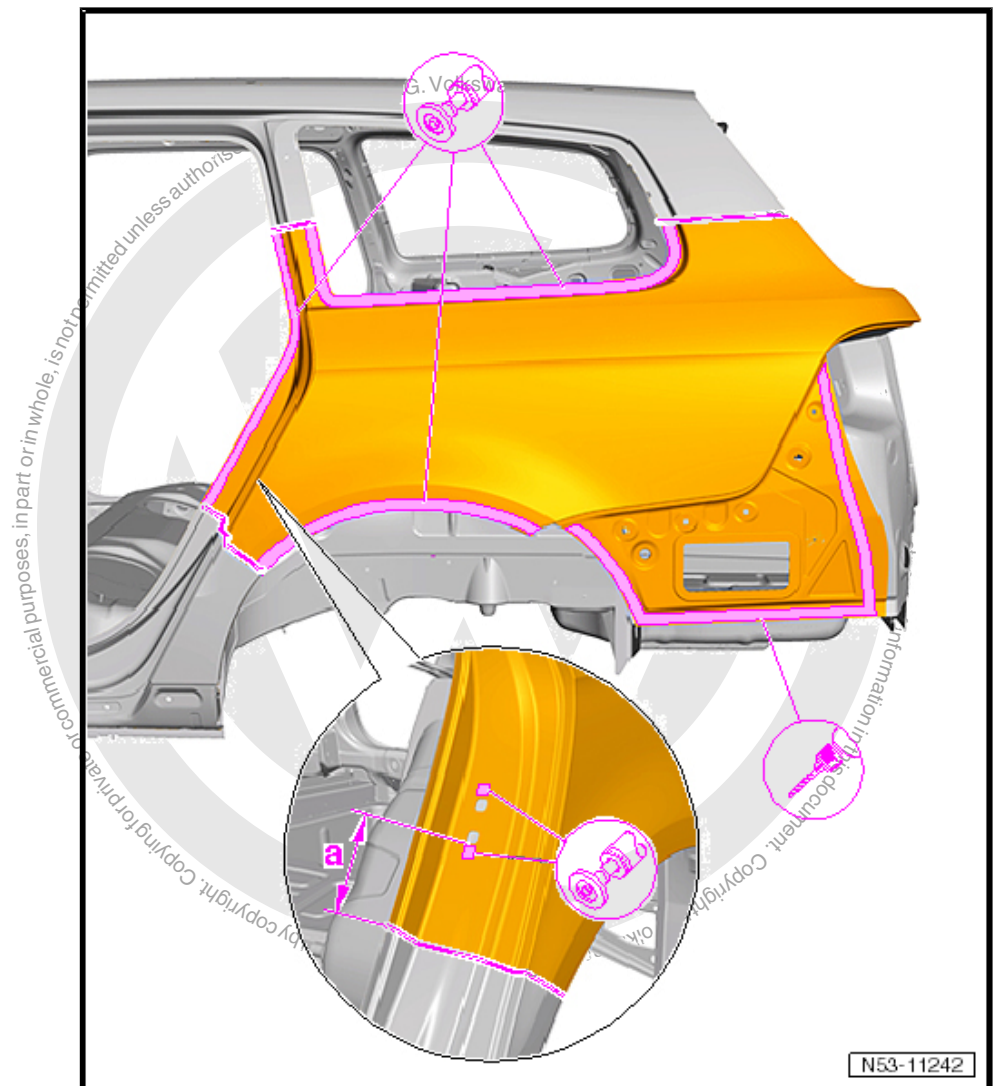
Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paintwork .*

12.2 Removing

Note

Do not damage underlying panels when cutting out.



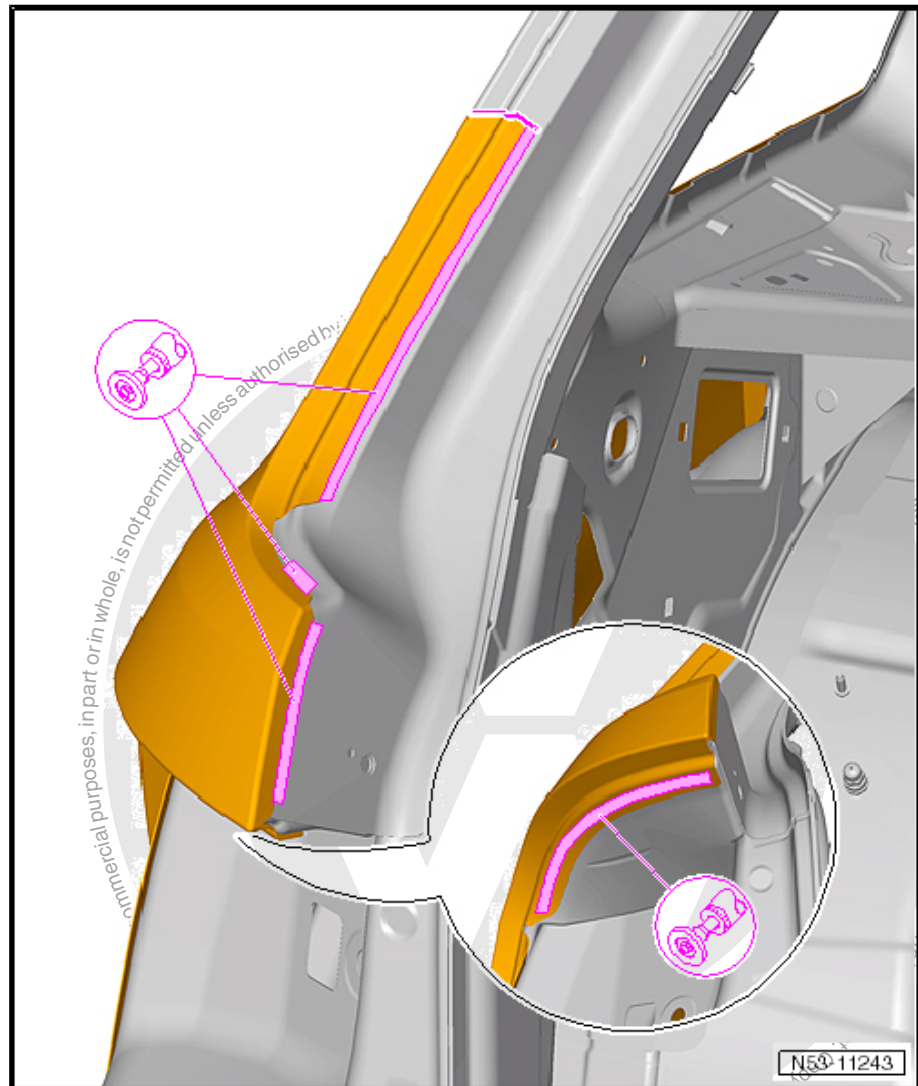
- Position parting cuts according to degree of damage and cut out.



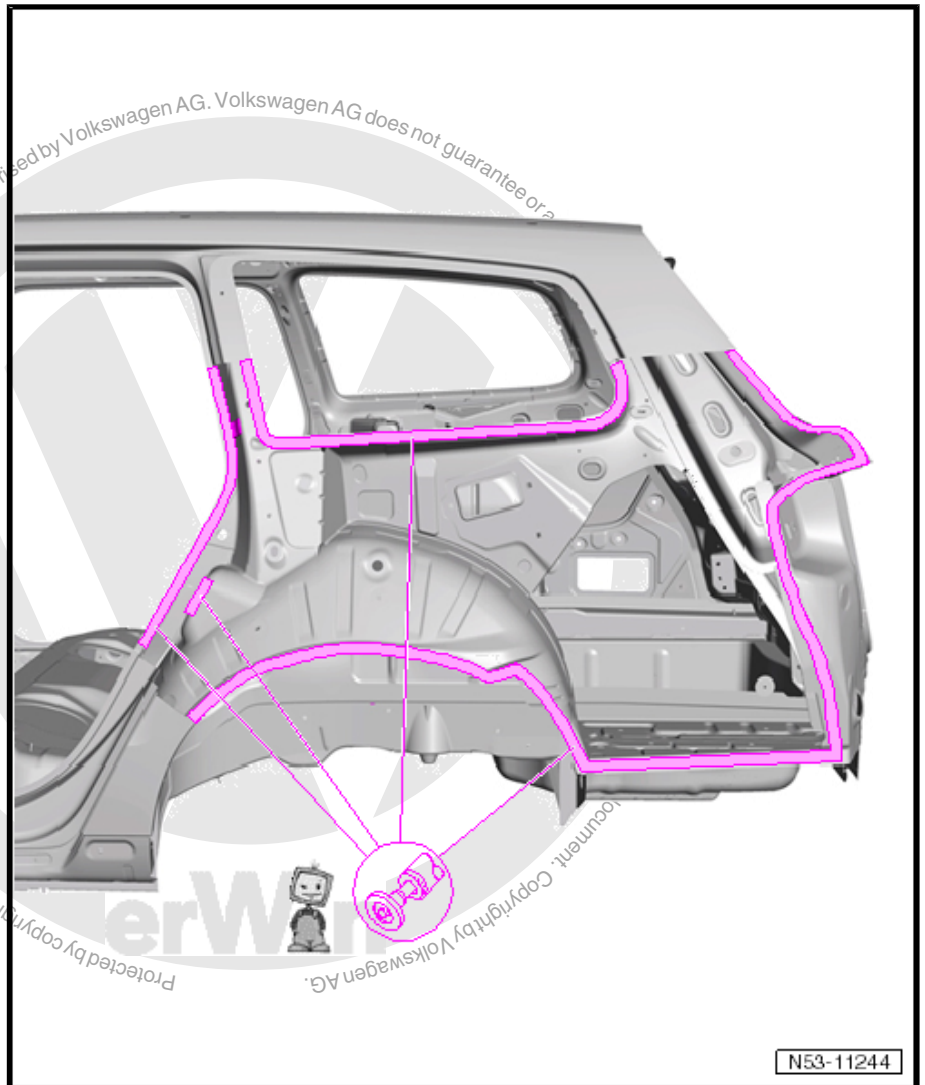
Recommended parting cut on side member:

Dimension -a- = 130 mm

- Grind through outer edge at wheel arch.
- Separate original joint.



- Separate original joint to sealing channel and to tail light mounting.

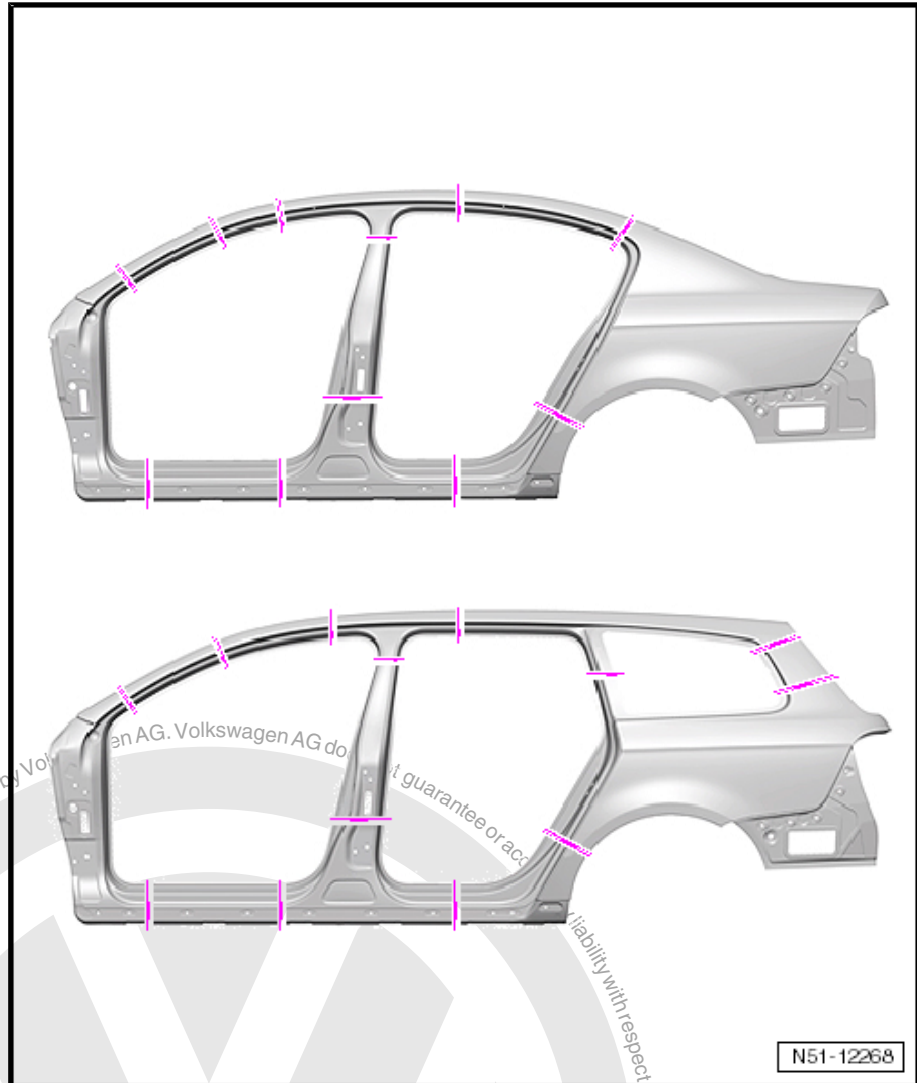


- Remove remaining material.
- Remove remaining adhesive completely and grind bonded surface back to bare metal.
- Clean any dust and grease off flange area on wheel arch.

12.3 Installing

 Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 343](#).*



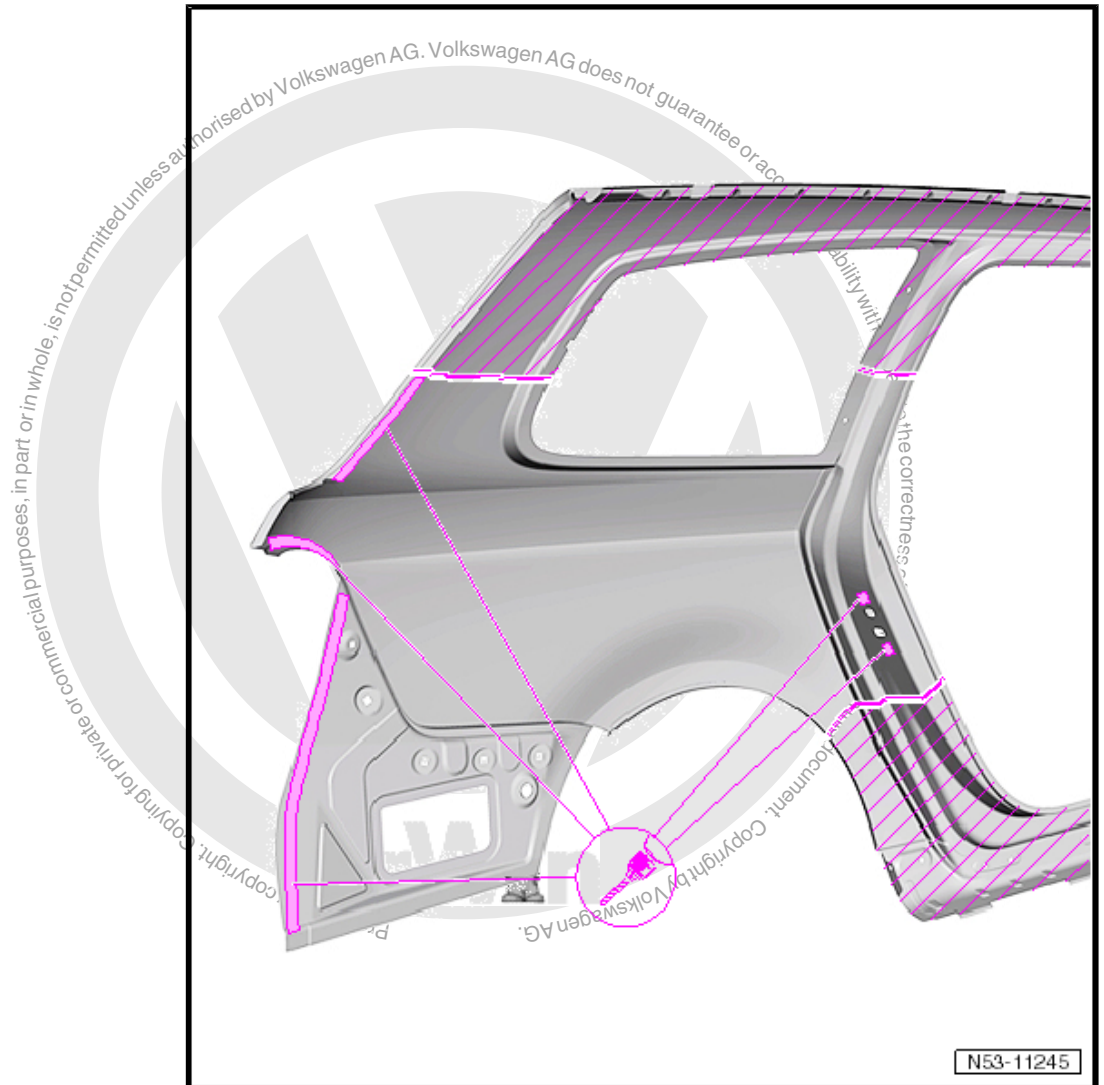
Note

MIG solder seams or SG continuous weld seams are permitted at the parting cuts shown in the illustration.

12.3.1 Preparing new part

New part

- ◆ Side panel subpart for Variant
- ◆ Moulded foam elements
- ◆ 2K body adhesive -D 180 KD3 A2-
- ◆ 2K polyurethane adhesive -D 180 KD2 A1- (for right side panel)



- Transfer parting cut to new part and cut out.
- Drill holes for SG plug weld seam (8 mm Ø).
- Grind bonding surfaces back to bare metal.

12.3.2 Moulded foam elements

Follow repair instructions.

Moulded foam element ⇒ General Information; Body Repairs,
General Body Repairs ; General Notes; Moulded foam elements

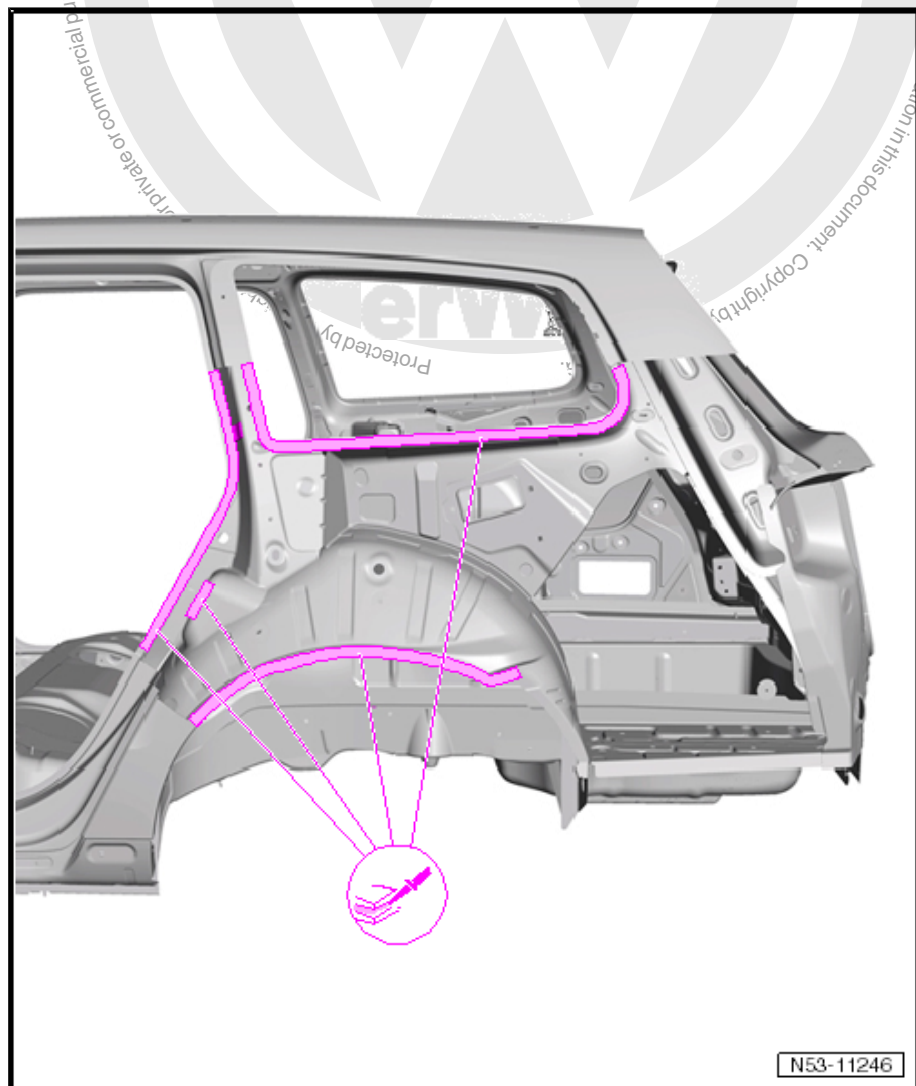


12.3.3 Welding in



Note

- ◆ *New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.*
- ◆ *When applying 2K body adhesive -D 180 KD3 A2-, do not apply in area of SG plug weld seam for lock reinforcement.*
- ◆ *Adhesive must be cleaned from threads for fastening striker after bonding in.*
- ◆ *Before starting welding on right-hand side panel, apply 2K polyurethane adhesive -D 180 KD2 A1- in area of fuel filler neck.*



- Apply 2K body adhesive -D 180 KD3 A2- in the areas indicated.

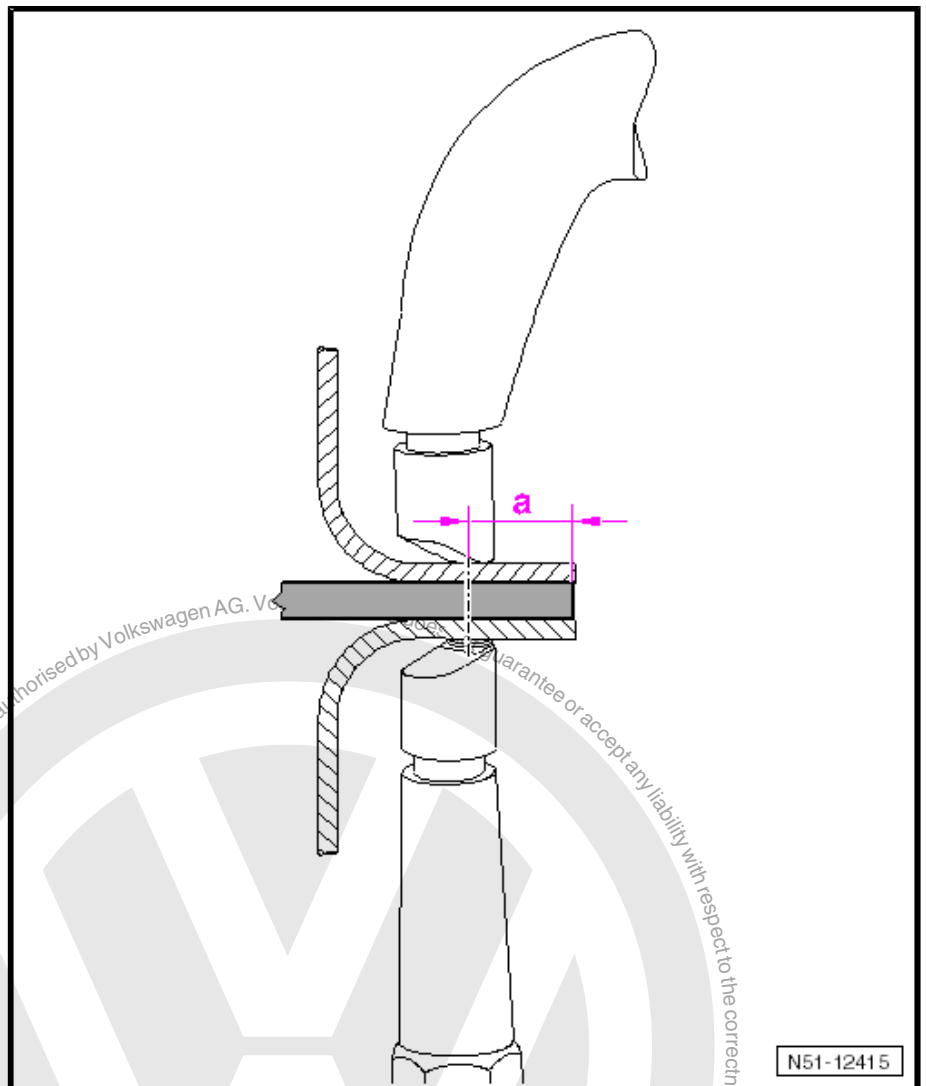


i Note

Before starting welding on right side panel, apply sealing cord -AKD 497 010 04 R10- in area of fuel filler neck.

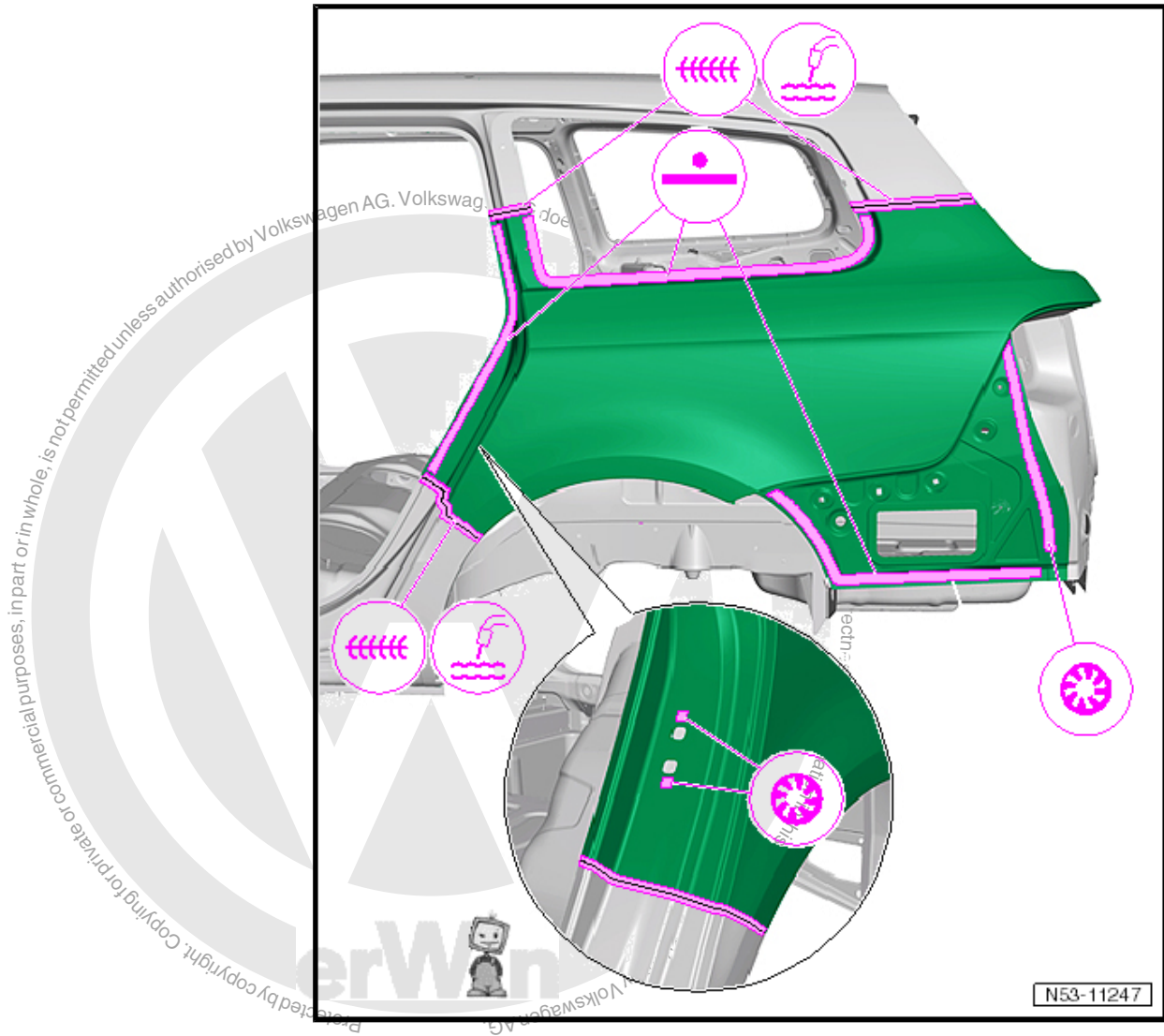
i Note

- ◆ In the area of the A, B and C-pillars, high tensile, highest tensile and hot formed steels are used. The weld flanges in these areas are about 13mm wide.
- ◆ If spot welds are located at the edge of hot formed steel panels, the high temperature will cause the bond between the panels to change, which will subsequently have an effect on crash safety.

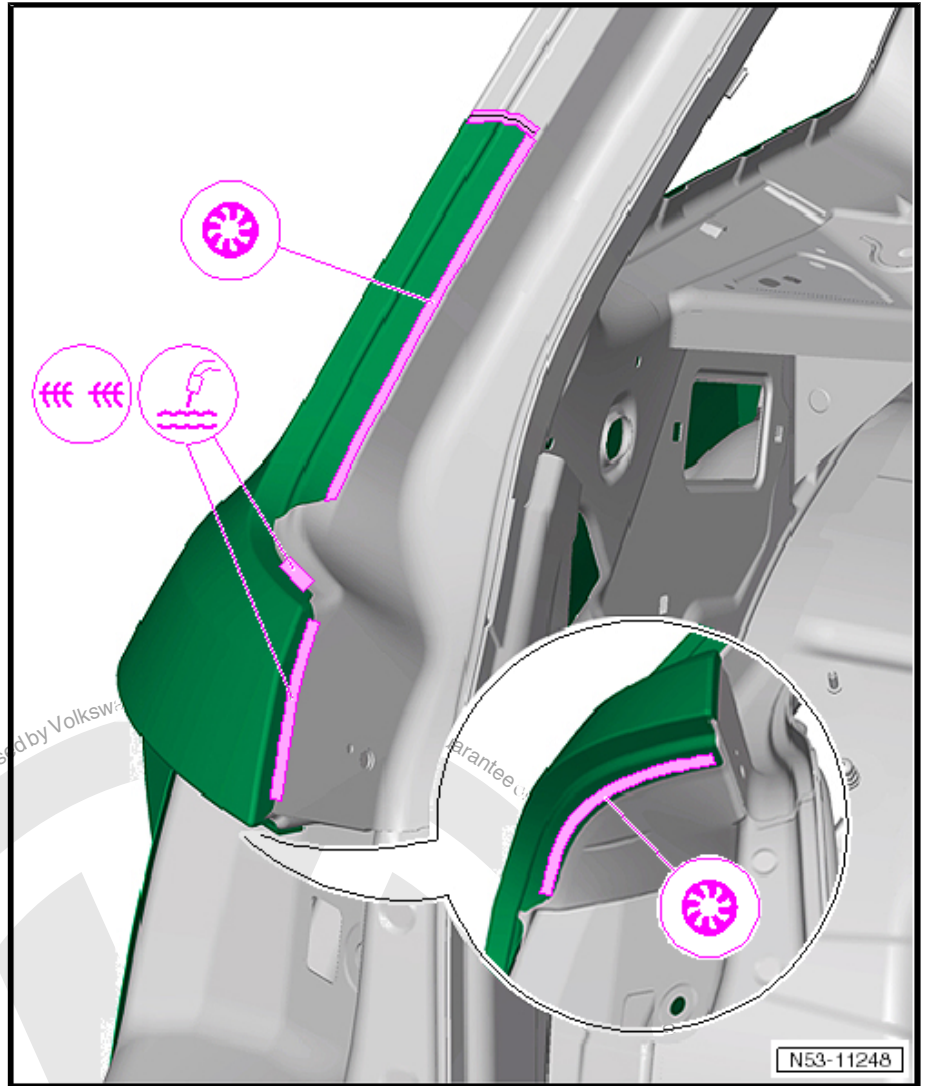


Therefore, locate spot welds as close to the centre as possible.

- Dimension -a- of 8mm can be achieved using angled welding tips.
- Adapt new part with vehicle standing on its wheels or alignment bracket set and fix in position.
- Check fit with bolt-on parts.



- Weld in side panel, RP spot weld seam and SG plug weld seam.
- Weld in parting cuts, MIG solder seam or SG continuous weld seam are permitted.
- Reform wheel housing flange.
- Wipe away excess adhesive and seal wheel arch.



- Weld in remaining joint to sealing channel, SG plug weld seam and MIG staggered continuous seam or SG staggered continuous weld seam.
- Weld in remaining joints to tail light mounting, SG plug weld seam.



RO: 53 68 55 50

13 Renewing outer wheel housing liner



WARNING

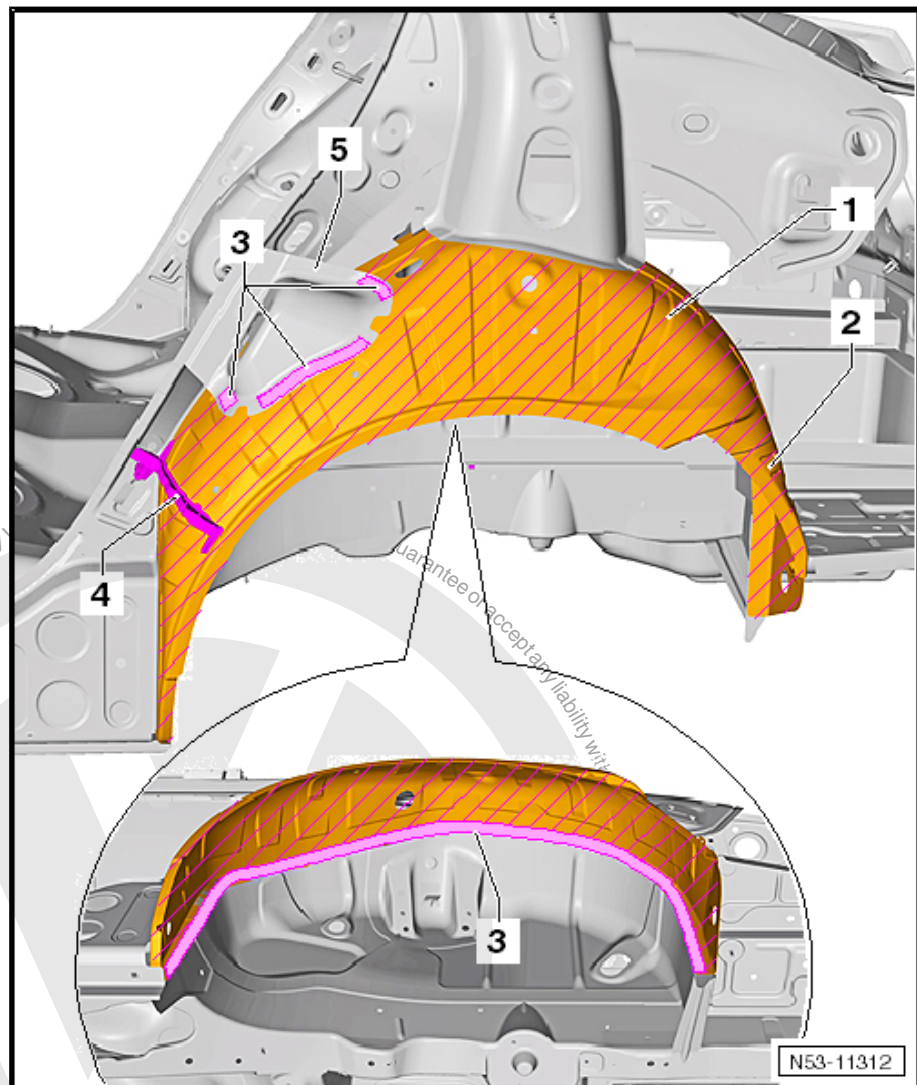
Observe safety notes!

Welding, parting using spark generating machines/tools or tinning in foam treated areas creates gases which are hazardous to health and environment. Therefore, refrain from using these processes.

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

- Side panel already removed ⇒ [page 332](#) .

- 1 - Wheel housing liner
- 2 - Reinforcing plate
- 3 - Bonded areas
- 4 - Moulded foam element
- 5 - Lock reinforcement





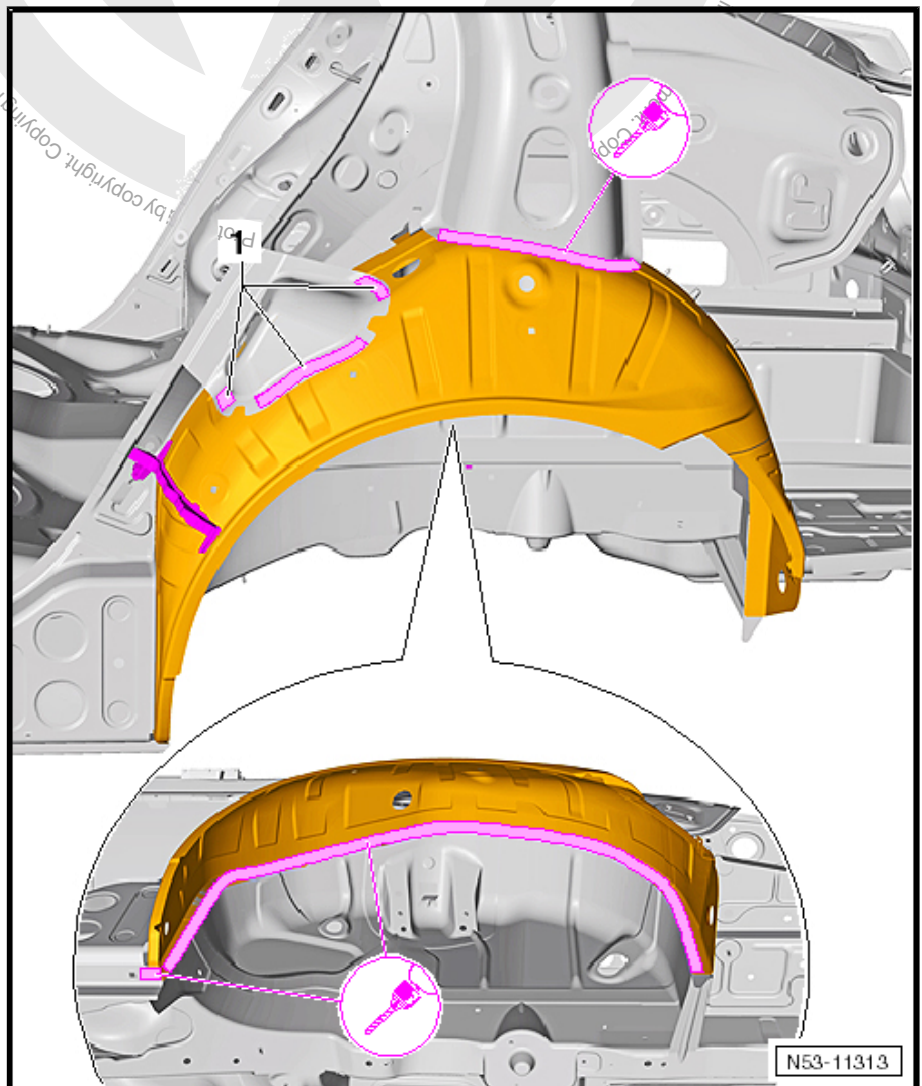
13.1 Tools



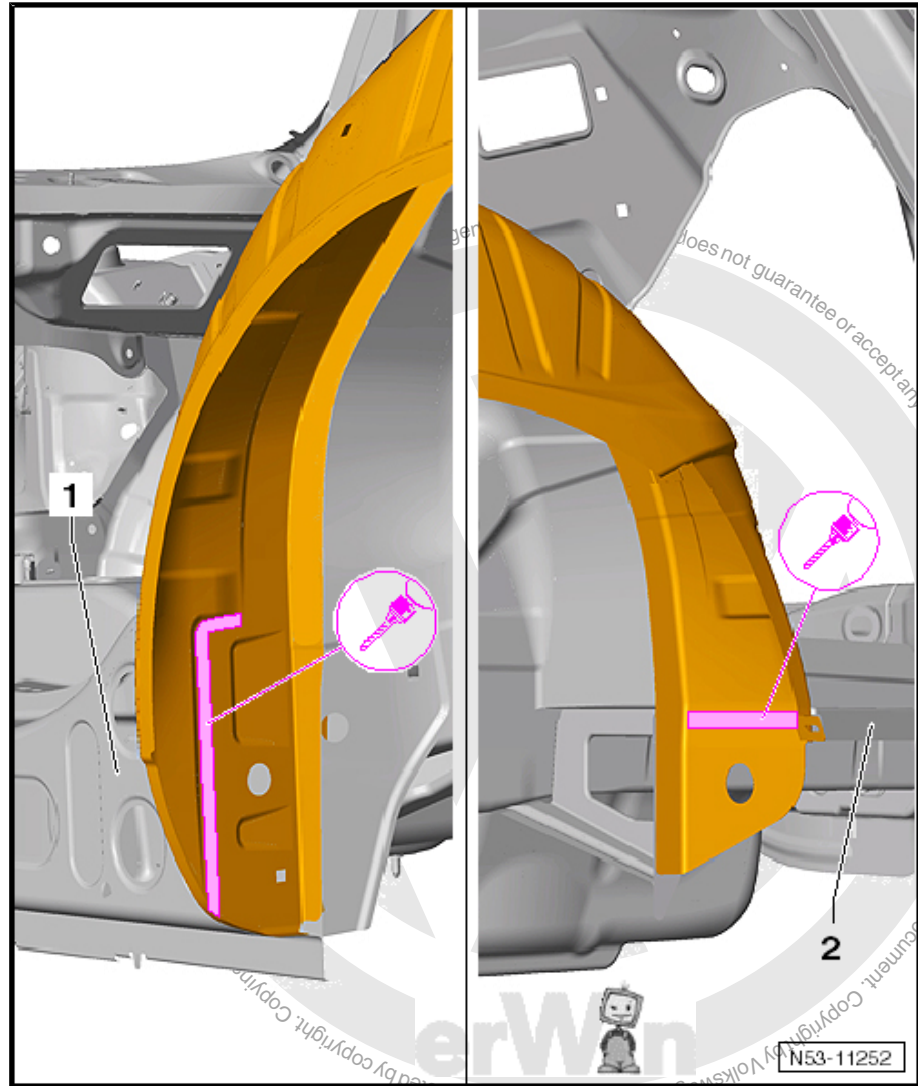
Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in → ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paint-work .*

13.2 Removing



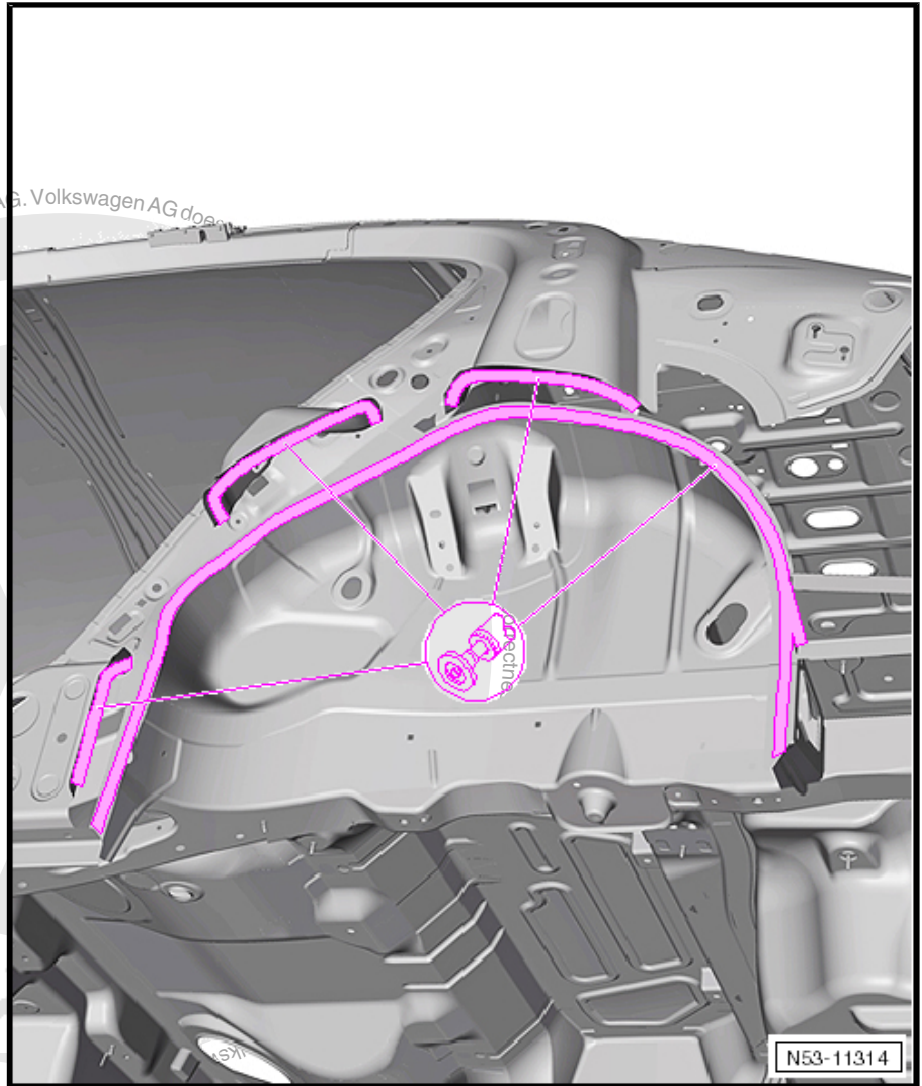
- Separate original joint to C-pillar reinforcing and to inner wheel housing liner.
- Separate bonded areas -1- between lock reinforcing and wheel housing liner.



- Separate remaining joint to rear side member reinforcement -1- and to rear connecting plate -2-.



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- Remove remaining material.
- Remove remaining adhesive completely and grind bonded surface back to bare metal.

13.3 Installing

 Note

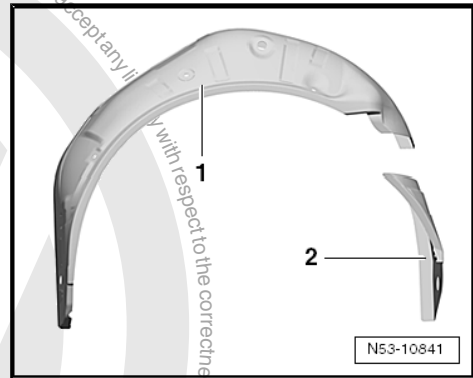
*Only welding units authorised by Volkswagen AG may be used
⇒ [page 353](#).*



13.3.1 Preparing new part

New part

- ◆ Outer wheel housing liner -1-
- ◆ Reinforcing plate -2-
- ◆ 2K body adhesive -D 180 KD3 A2-
- Grind bonding surfaces back to bare metal.

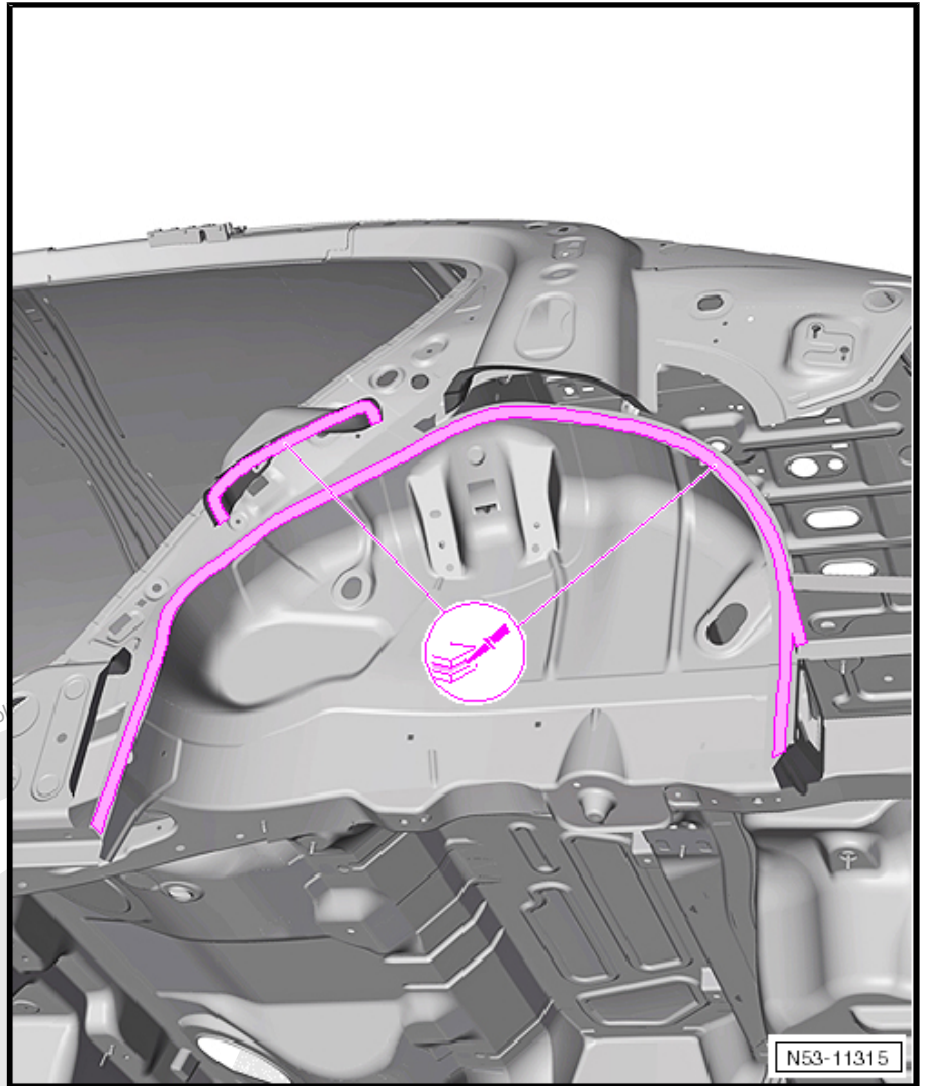


13.3.2 Welding in

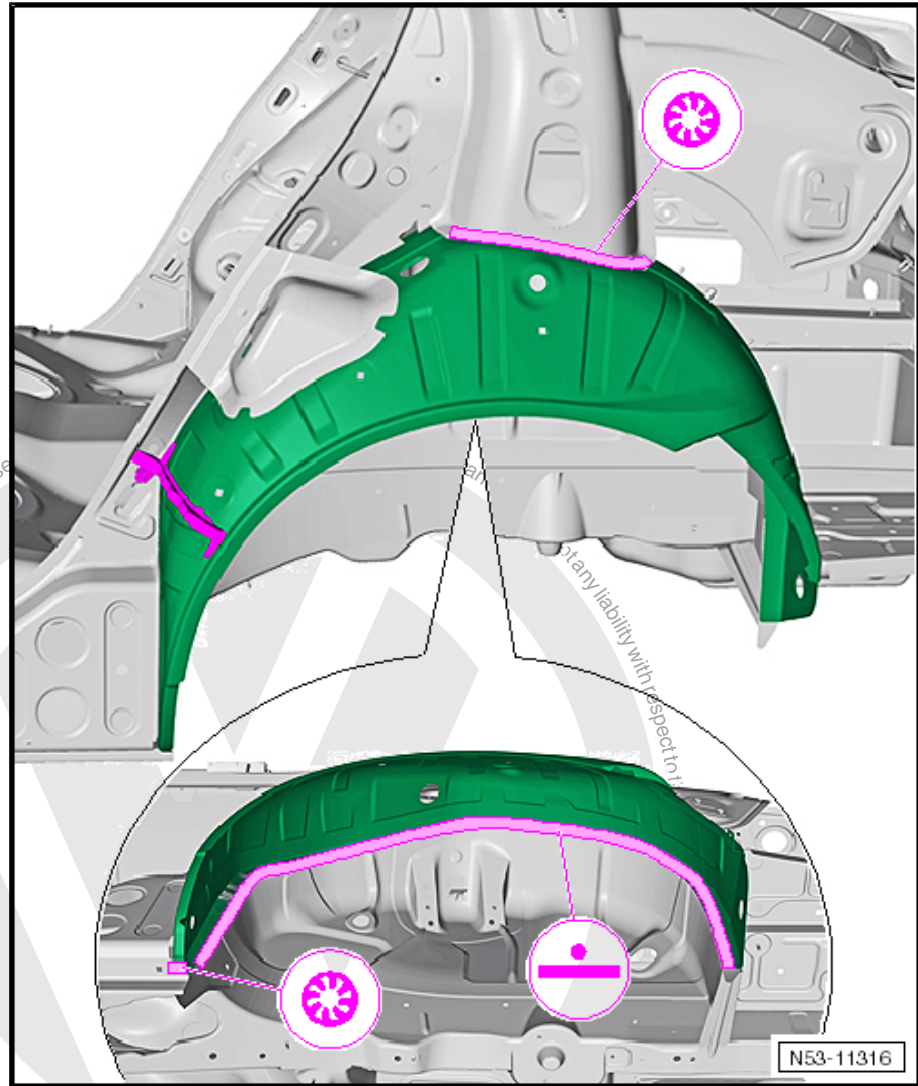


Note

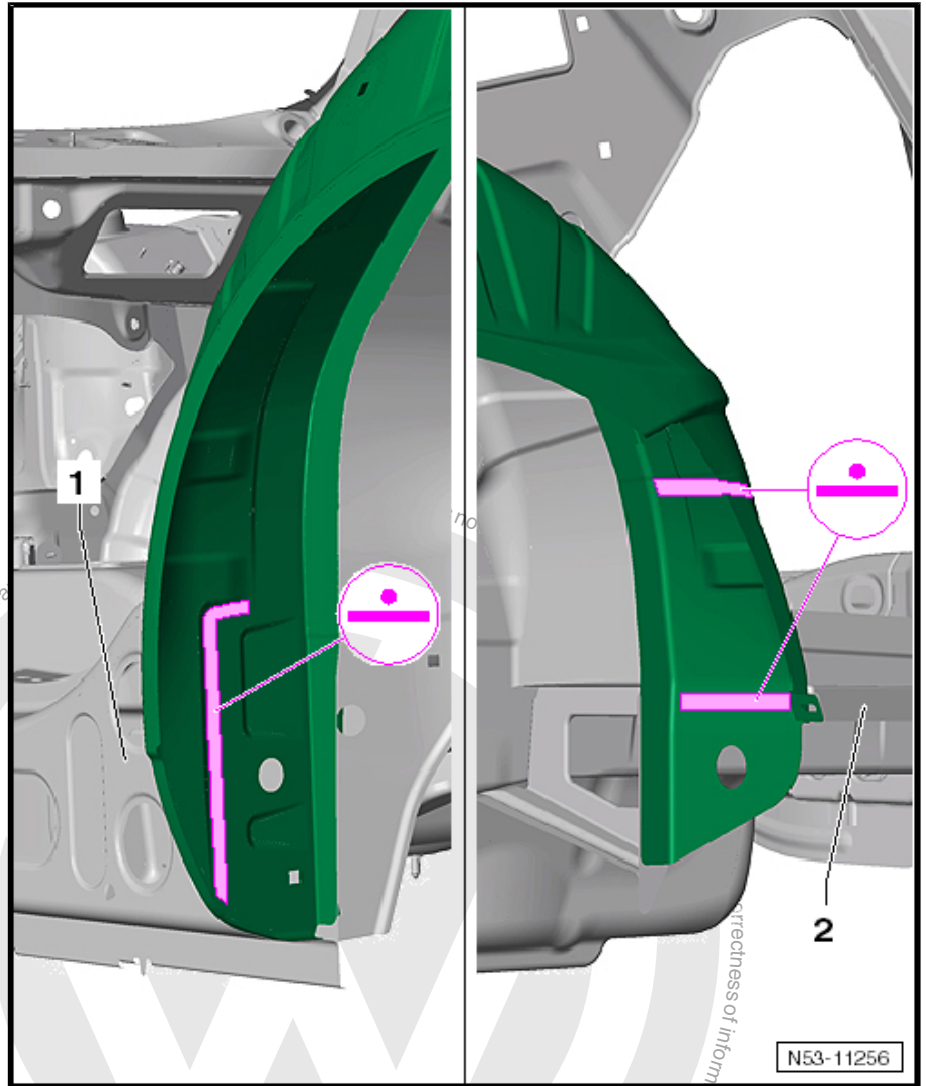
New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.



- Apply 2K body adhesive -D 180 KD3 A2- to areas bonded in the factory.
- Adapt new part with vehicle standing on its wheels or alignment bracket set and fix in position.
- Check fit with side panel.



- Weld outer wheel housing liner to C-pillar reinforcement and inner wheel housing, RP spot weld seam and SG plug weld seam.



- Recreate original joint to side member rear reinforcement -1- and to rear connecting plate -2-, RP spot weld seam.
- Install side panel ⇒ [page 335](#) .



RO: 53 68 55 60

14 Renewing outer wheel housing liner (Variant)

Includes: lock reinforcement



WARNING

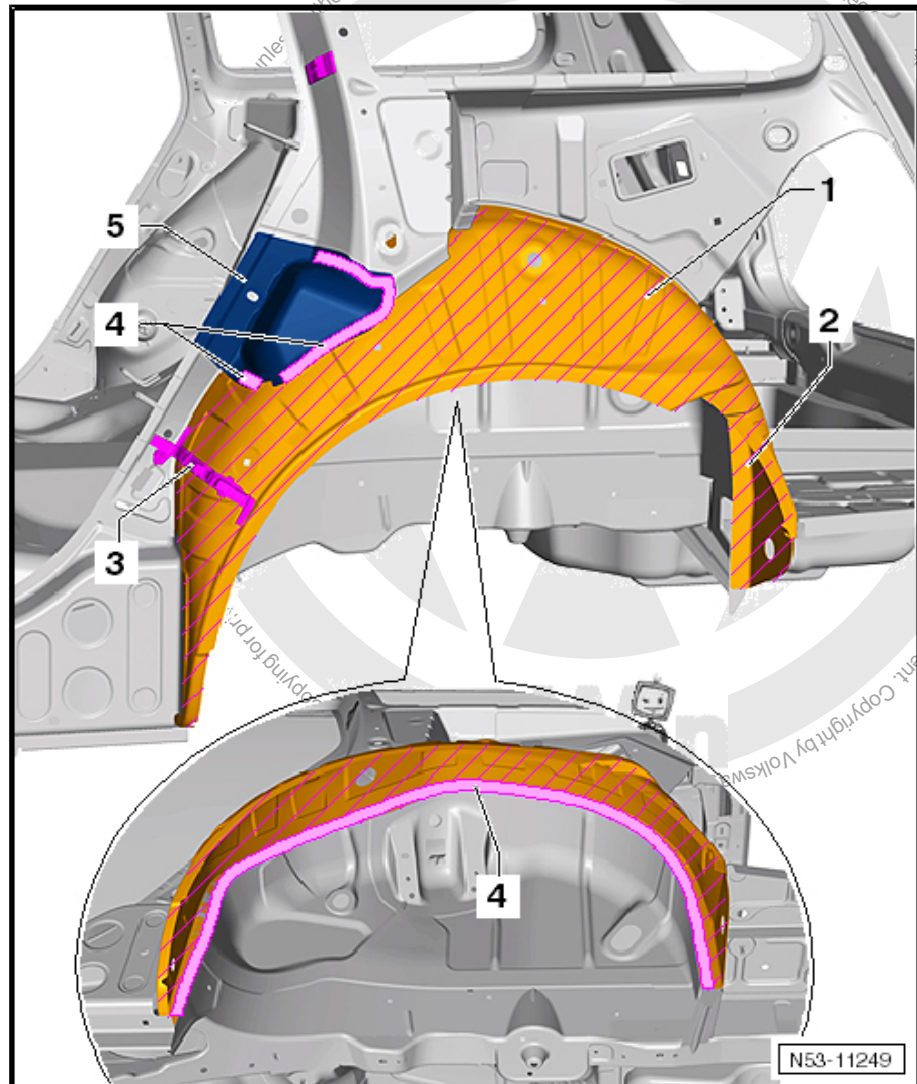
Observe safety notes!

Welding, parting using spark generating machines/tools or tinning in foam treated areas creates gases which are hazardous to health and environment. Therefore, refrain from using these processes.

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

- Side panel already removed ⇒ [page 342](#) .

- 1 - Wheel housing liner
- 2 - Reinforcing plate
- 3 - Moulded foam element
- 4 - Bonded areas
- 5 - Lock reinforcement



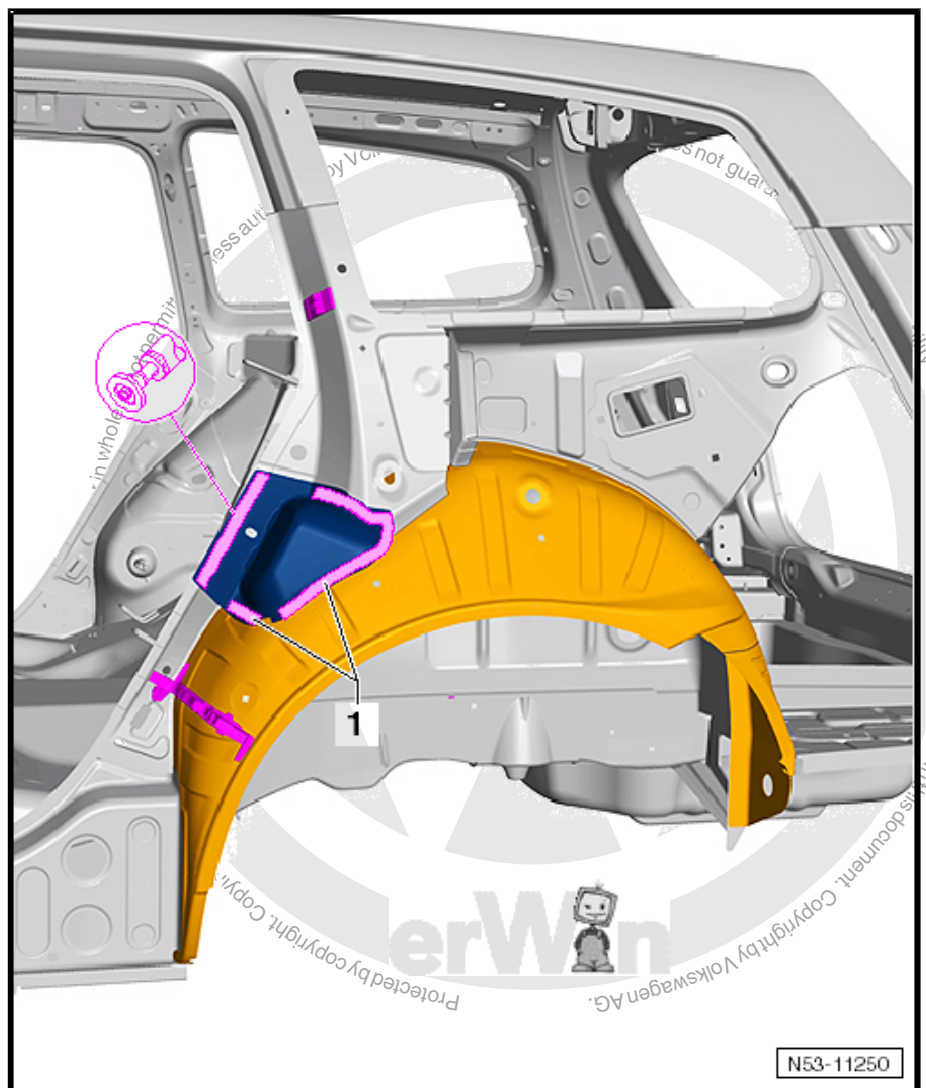


14.1 Tools

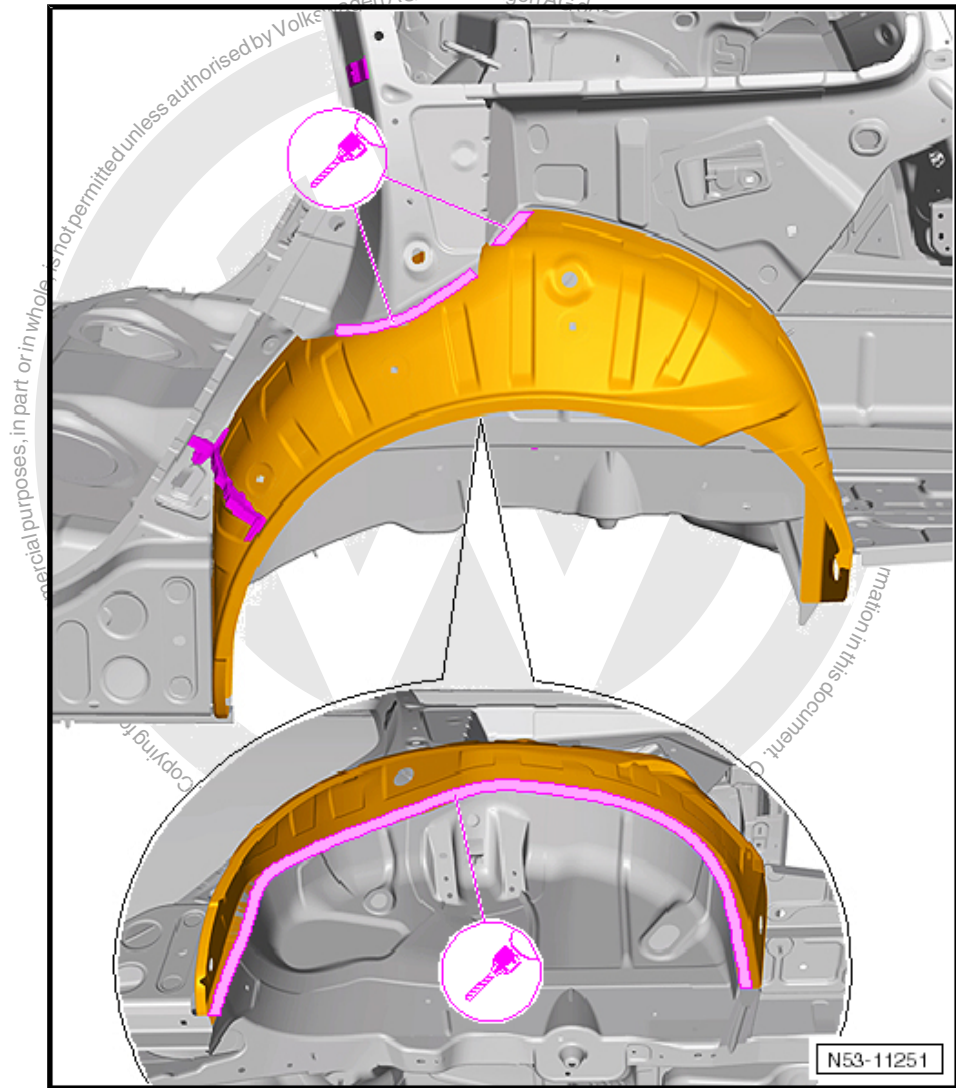
Note

- ◆ *The use of different types and different thicknesses of steel requires that only the welding units (inverters) authorised by Volkswagen AG may be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG are listed in ⇒ ServiceNet, Workshop Equipment, EH catalogue, Workshop equipment, Body and paintwork.*

14.2 Removing



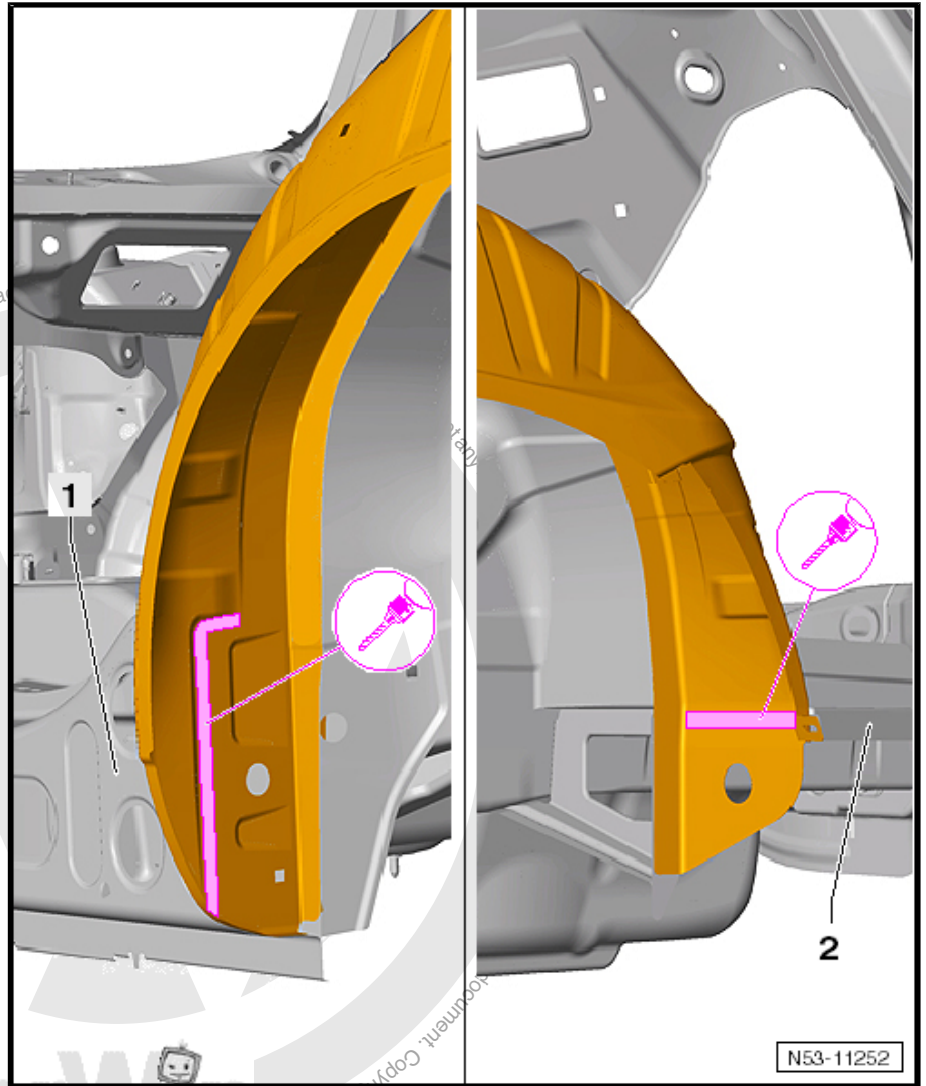
- Separate bonded areas -1- between lock reinforcing and wheel housing liner.
- Separate original joint of lock reinforcing to inner C-pillar.



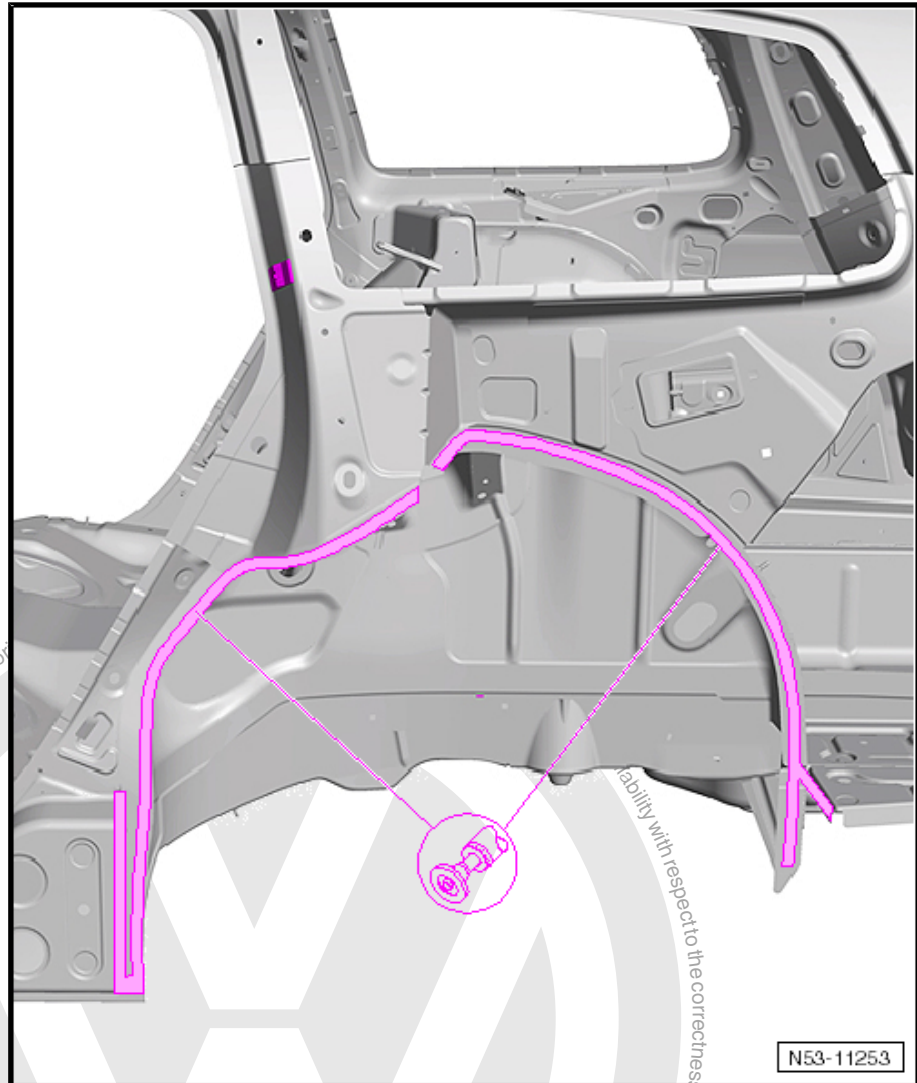
- Separate original joint to C-pillar reinforcing and to inner wheel housing liner.



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- Separate remaining joint to rear side member reinforcement -1- and to rear connecting plate -2-.



- Remove remaining material.
- Remove remaining adhesive completely and grind bonded surface back to bare metal.

14.3 Installing



Note

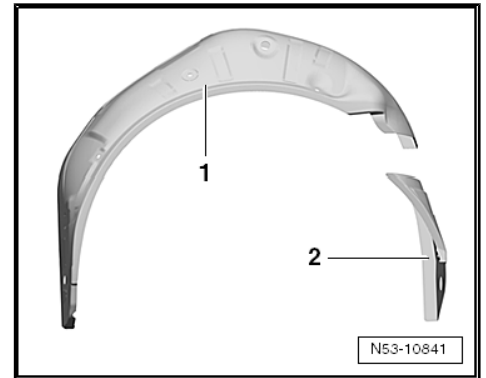
Only welding units authorised by Volkswagen AG may be used
[=> page 361](#).



14.3.1 Preparing new part

New part

- ◆ Outer wheel housing liner -1-
- ◆ Reinforcing plate -2-
- ◆ Lock reinforcement
- ◆ 2K body adhesive -D 180 KD3 A2-
- Grind bonding surfaces back to bare metal.

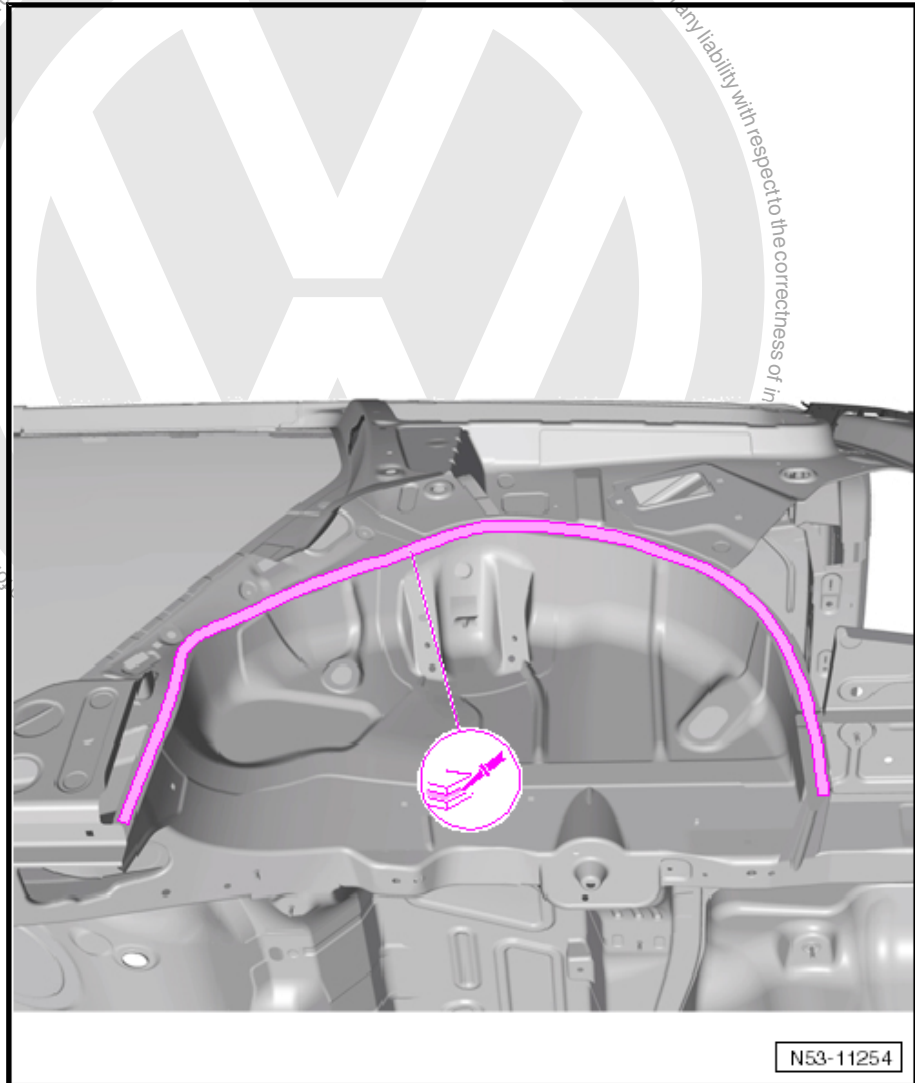


14.3.2 Welding in



Note

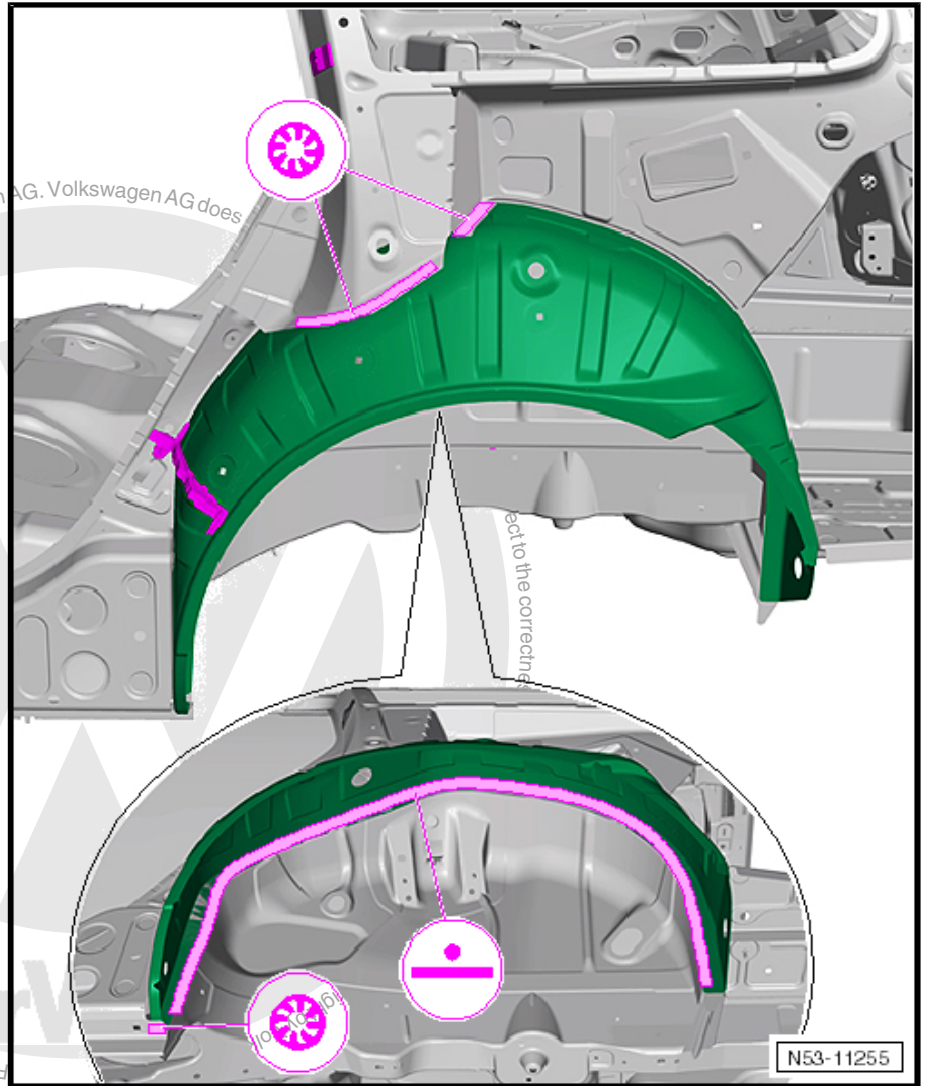
New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.



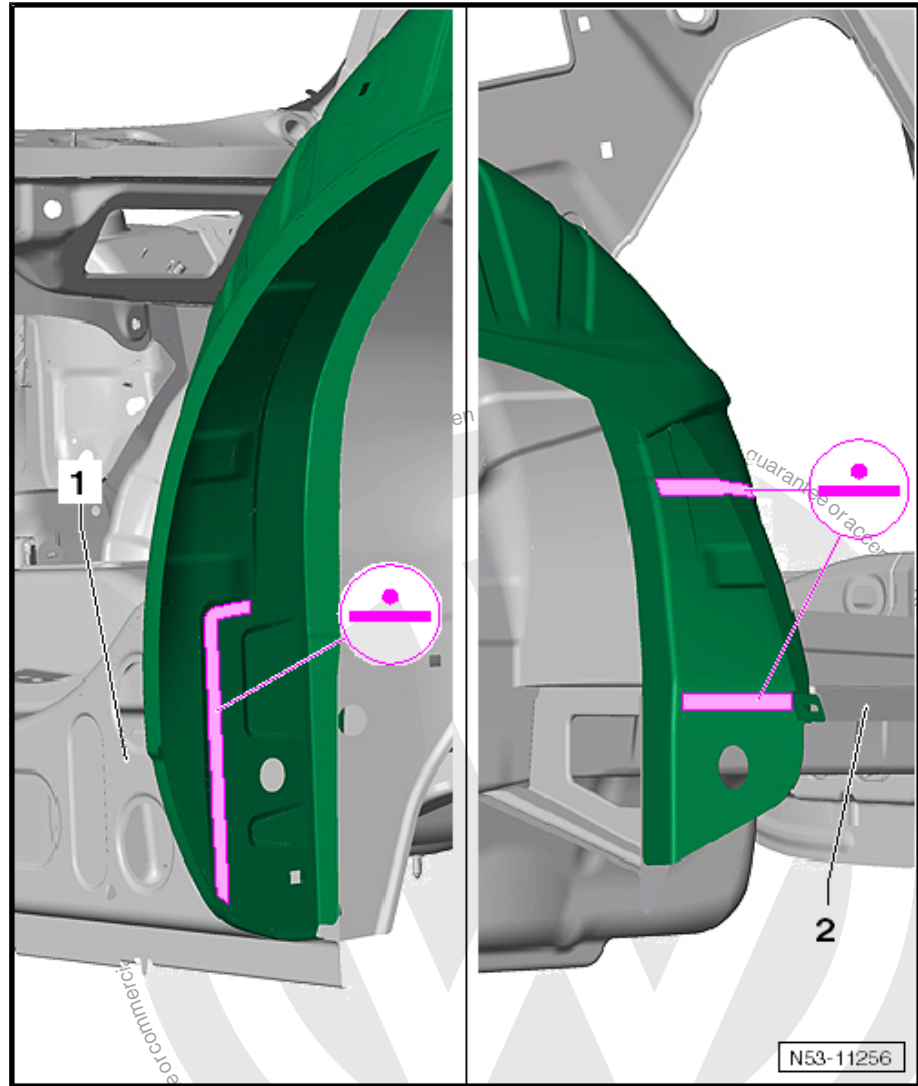
- Apply 2K body adhesive -D 180 KD3 A2- to areas bonded in the factory.
- Adapt new part with vehicle standing on its wheels or alignment bracket set and fix in position.
- Check fit with side panel.



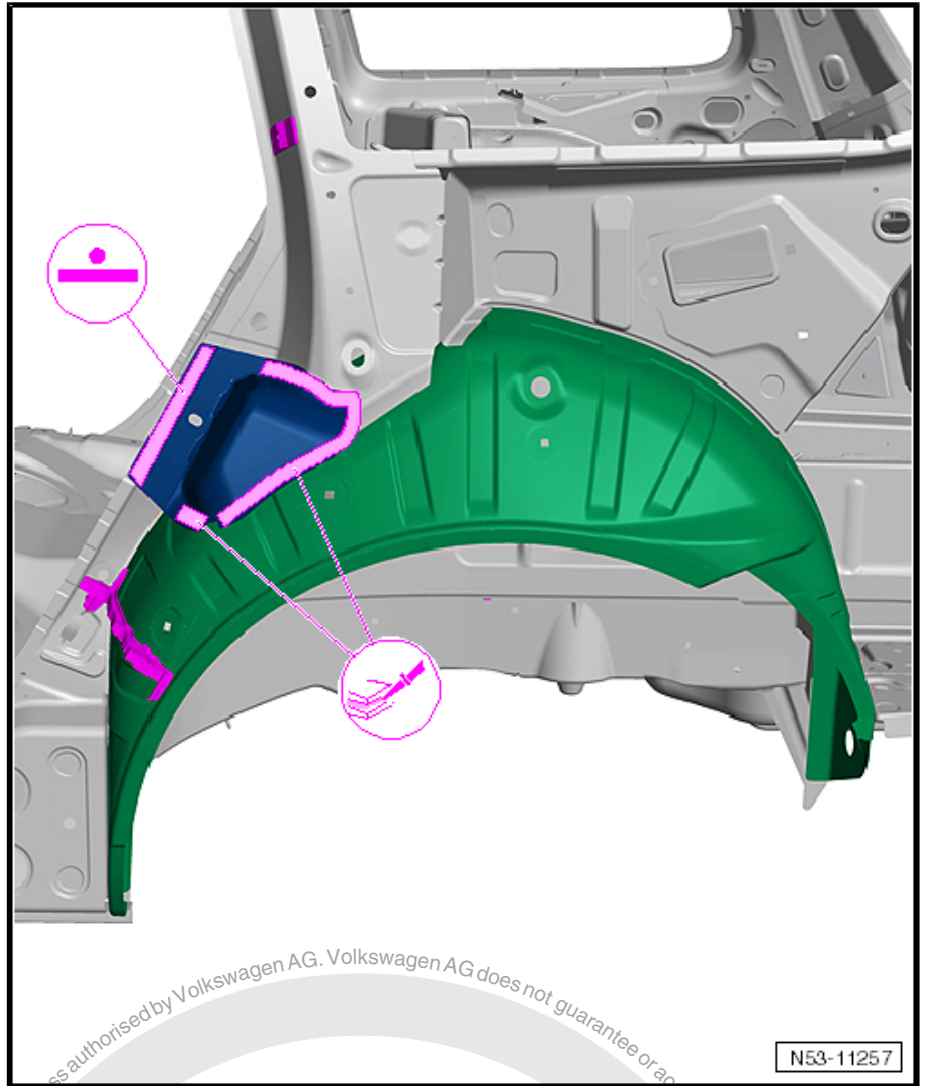
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- Weld outer wheel housing liner to C-pillar reinforcement and inner wheel housing, RP spot weld seam and SG plug weld seam.



- Recreate original joint to side member rear reinforcement -1- and to rear connecting plate -2-, RP spot weld seam.



- Apply 2K body adhesive -D 180 KD3 A2- in areas shown between lock reinforcement and wheel housing liner.
- Check fit with side panel.
- Weld in lock reinforcing, RP spot weld seam.
- Install side panel => [page 345](#) .



RO: 53 80 55 00

15 Renewing spare wheel well

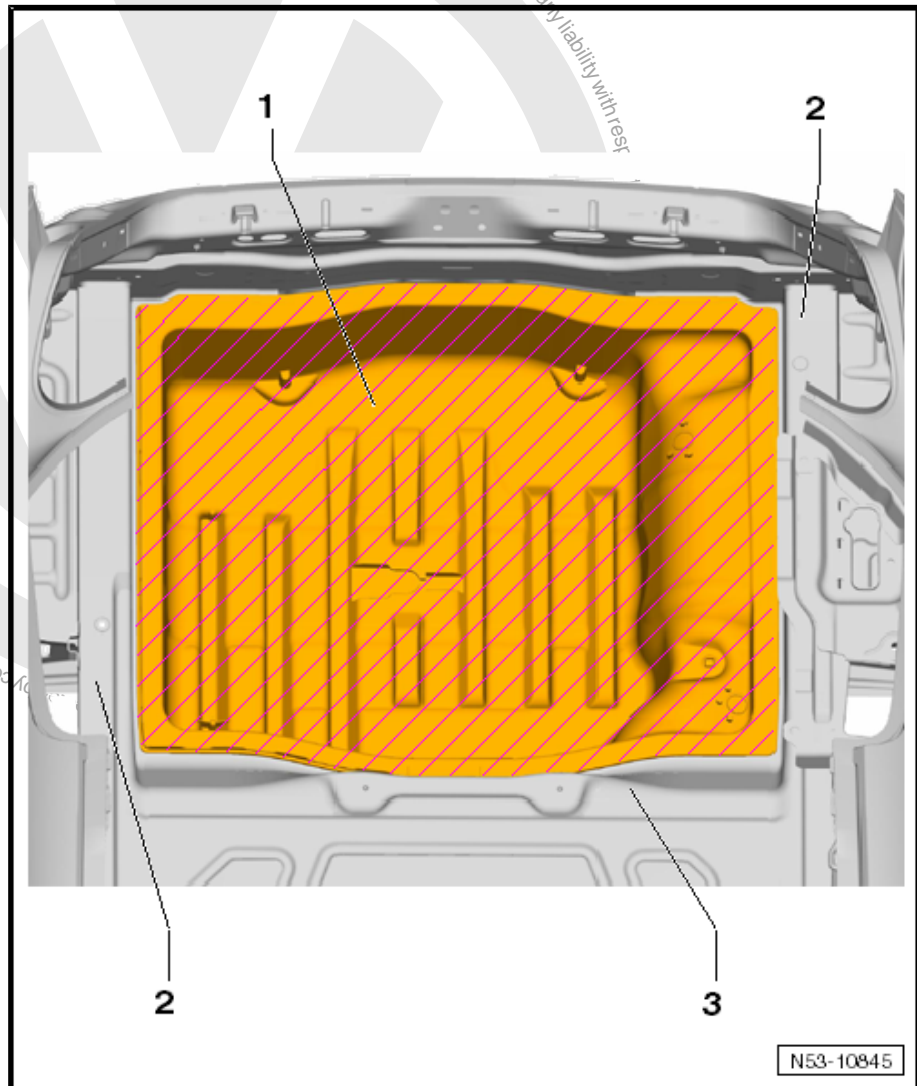


WARNING

Observe safety notes!

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

- 1 - Spare wheel well (bonded)
- 2 - Rear longitudinal member
- 3 - Floor panel

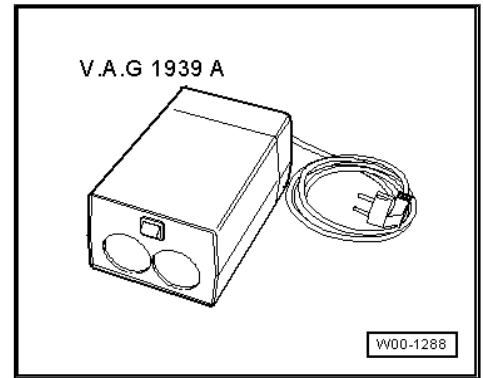


15.1 Tools

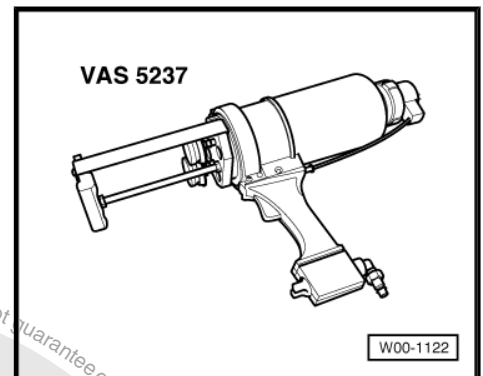
Special tools and workshop equipment required



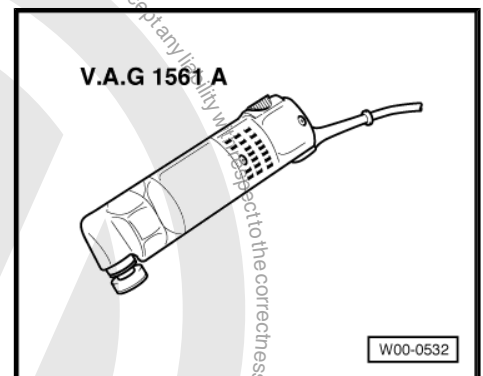
- ◆ Cartridge heater -V.A.G 1939 A-



- ◆ Double-cartridge gun -VAS 5237-



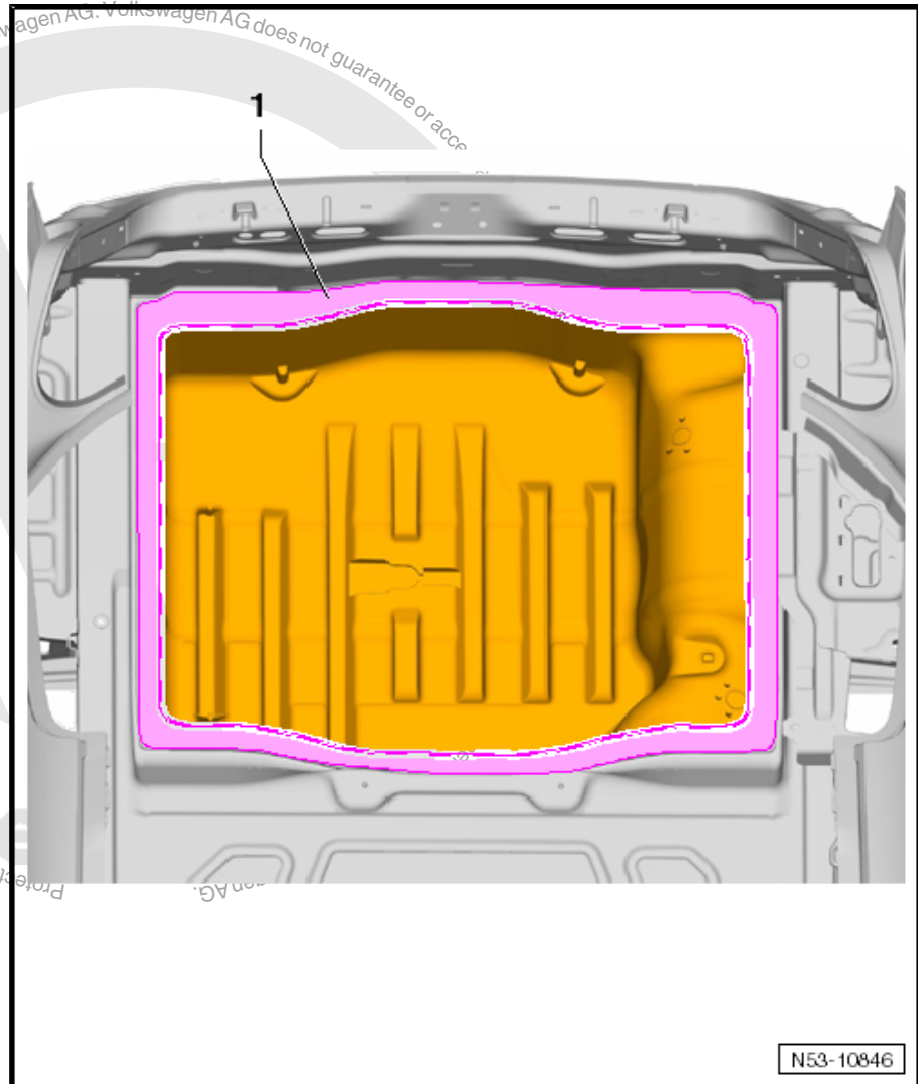
- ◆ Electric cutter -V.A.G 1561/A-



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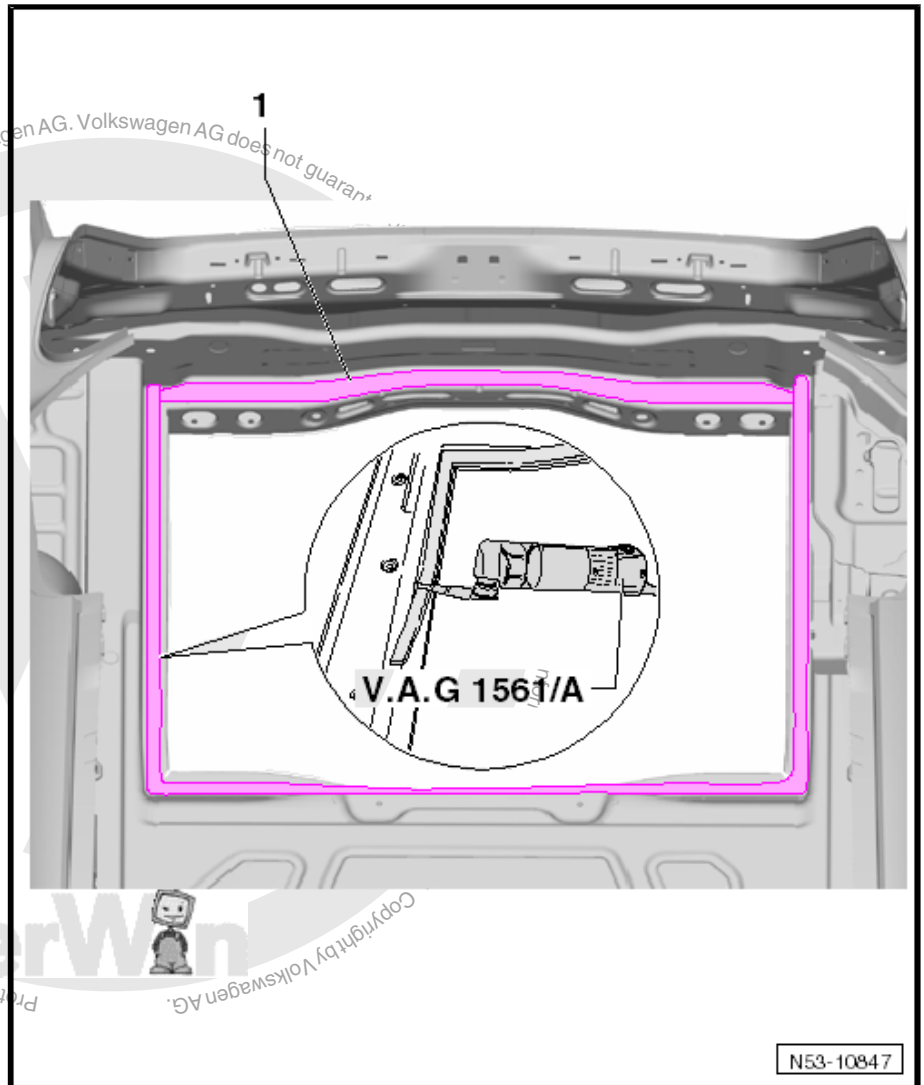
15.2 Removing



- Roughly cut out spare wheel well at edge -parting line- using pneumatic sabre saw -V.A.G 1523/A- .
- Leave bonding flange -1-.



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- Remove residual material of spare wheel well (bonding flange -1-) using electric cutter -V.A.G 1561/A- and a suitable blade, e.g. offset blade (25 mm) -V.A.G 1561/4- or offset blade -V.A.G 1561/10- .



Note

- ◆ Do not remove all adhesive, residual material is used as a base for the new adhesive.
- ◆ Keep adhesive surface clean and free of grease.

15.3 Installing

15.3.1 Preparing new part

New part

- ◆ Spare wheel well (for front or four-wheel drive)
- ◆ 2K window adhesive -DA 004 600 A2-
- ◆ Glass and paint primer -D 009 200 02-
- ◆ Primer applicator -D 009 500 25-

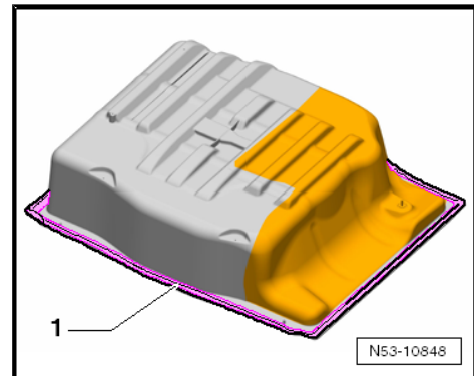


- ◆ Cleaning solution -D 009 401 04-
- ◆ Activator -D 181 801 A1-
- ◆ Adhesive remover -D 002 000 10-
- The circumferential adhesive bead -1- on the new part must be cut back to approx. 1 mm.



Note

For bonding reasons, the adhesive bead on the new part should be cut back only just before it is to be fitted.



15.3.2 Bonding in



Note

For damaged paintwork or new body parts, apply corrosion protection measures according to guidelines in ⇒ Paint workshop manual: Corrosion and corrosion protection, attached and welded parts, materials .

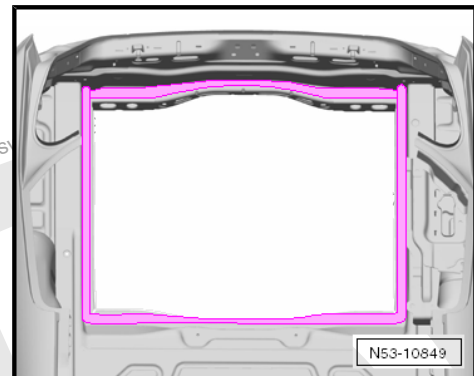
Prepare bonding surface on body for spare wheel well -shaded area-

Areas with new paint work structure:

- Clean respective areas with cleaning solution -D 009 401 04- and then dry with a lint-free cloth.
- Then apply glass/paint primer -D 009 200 02- evenly using primer applicator -D 009 500 25- .
- ◆ Drying time approx. 10 minutes

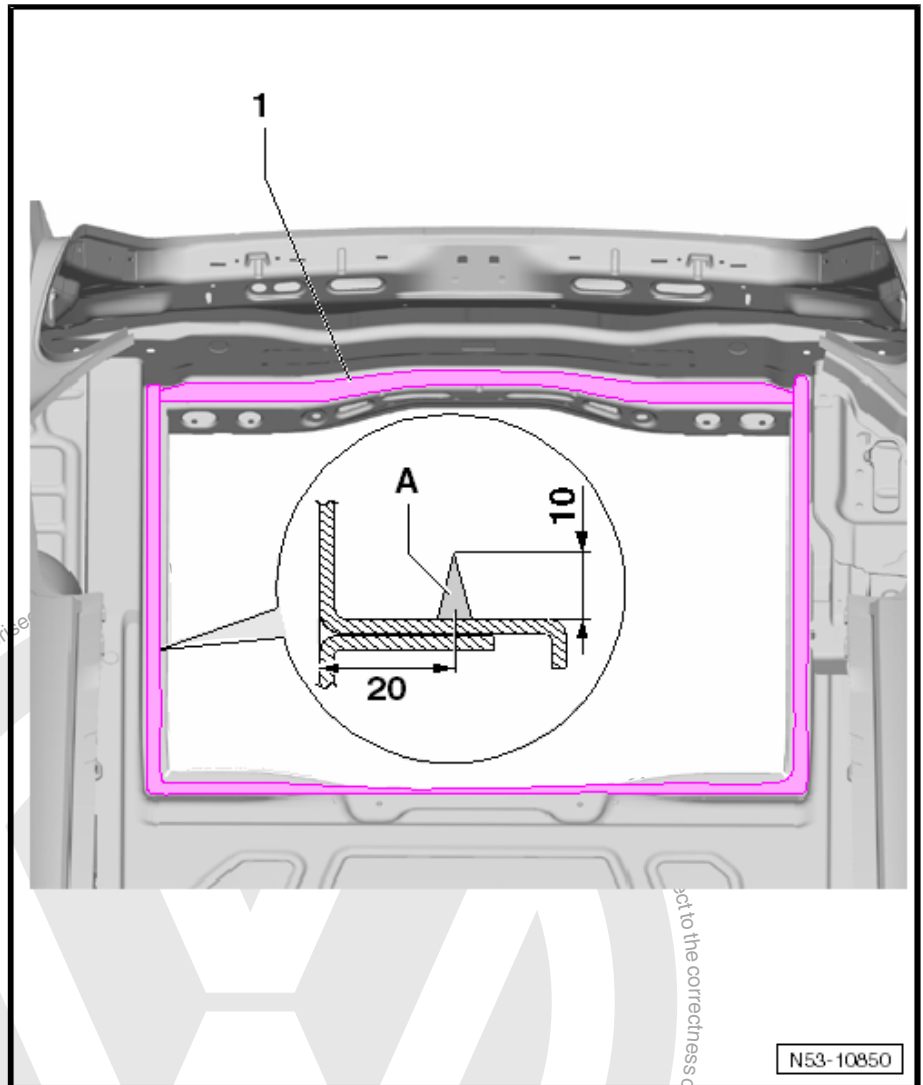
Areas with residual adhesive:

- If bonding is not performed immediately after cutting back, the remaining residual material must be activated with activator -D 181 801 A1- .



WARNING

Activator must not come into contact with the paintwork, otherwise paint surface will be damaged.



WARNING

Spare wheel well must be welded in within 10 minutes or adhesion of glass adhesive will be impaired.

- Apply 2K glass adhesive -DA 004 600 A2- -A- to bonding surface -1-.
- Fit new part and align.
- Fit spare wheel or other suitable weight to press on.
- Remove excess adhesive with a dry cloth.
- Remove residual soiling using adhesive remover -D 002 000 10- .

Safety precautions must be observe for all work procedures.



Note

Minimum curing period for 2K glass adhesive -DA 004 600 A2- is 4 hours.