



Body Repairs

e-up! 2014 ➤ , e-up! 2017 ➤ ,
e-up! 2020 ➤ , up! 2012 ➤ , up! 2017 ➤ ,
up! 2020 ➤

Edition 10.2019



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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13.3 Installing 365







00 – Technical data

1 Basic instructions

(VKI000464; Edition 10.2019)

Only selected labour operations are described in this workshop manual. For labour operations that are not described, remove original part and install replacement part to restore original condition. Repairs that deviate from standard repair methods are described.

If part sections are supplied, adapt these to fit (unless otherwise instructed), butt these up and weld in with SG continuous weld seam.



2 Vehicle identification data

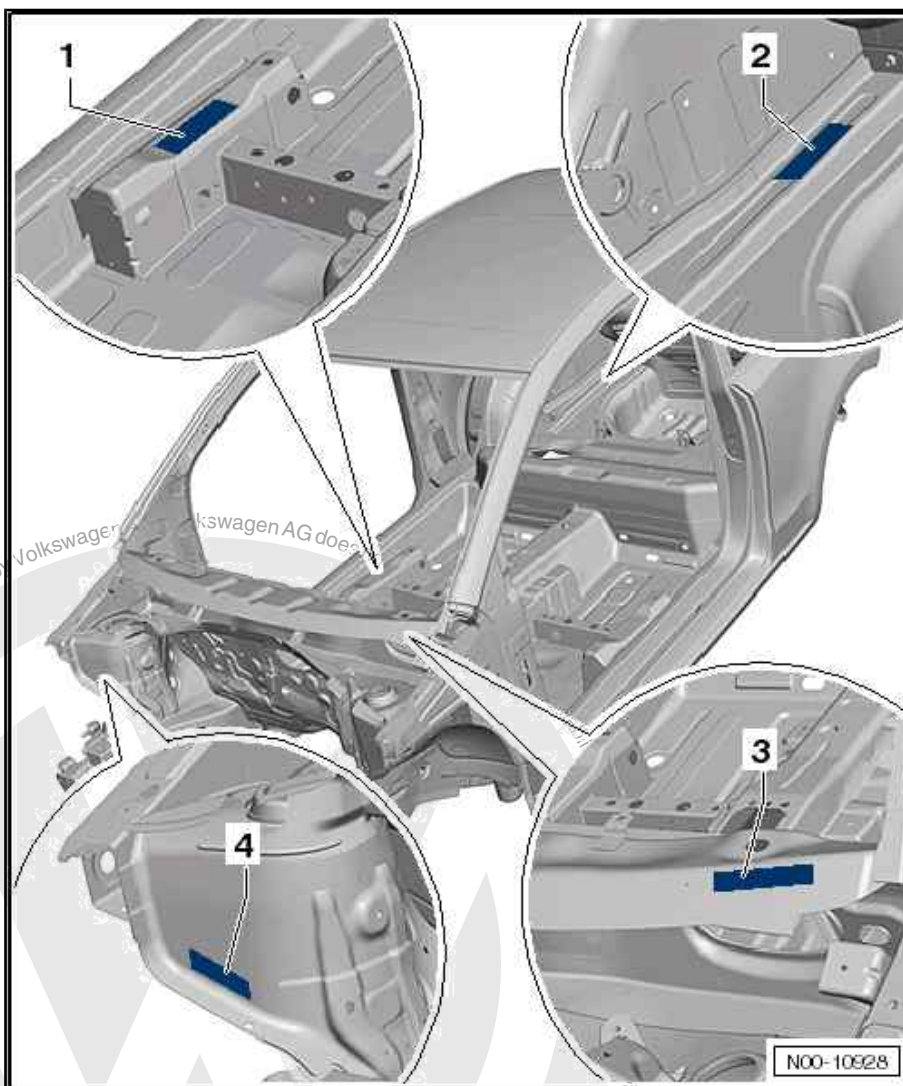
2.1 Vehicle identification number

1 - Vehicle identification number on right of seat cross member mounting.

2 - Vehicle identification number on rear right longitudinal member.

3 - Vehicle identification number on bottom left-hand side of windscreen frame

4 - Vehicle identification number on right wheel housing.



Note

If a part of the body with the vehicle identification number has to be renewed in the event of damage, the repair must be documented according to the market-specific legislation.



2.2 Identification plate



The identification plate -arrow- is located on left of B-pillar.



2.3 Vehicle data sticker



The vehicle data sticker -arrow- is located on right of luggage compartment floor.



3 Vehicle identification data

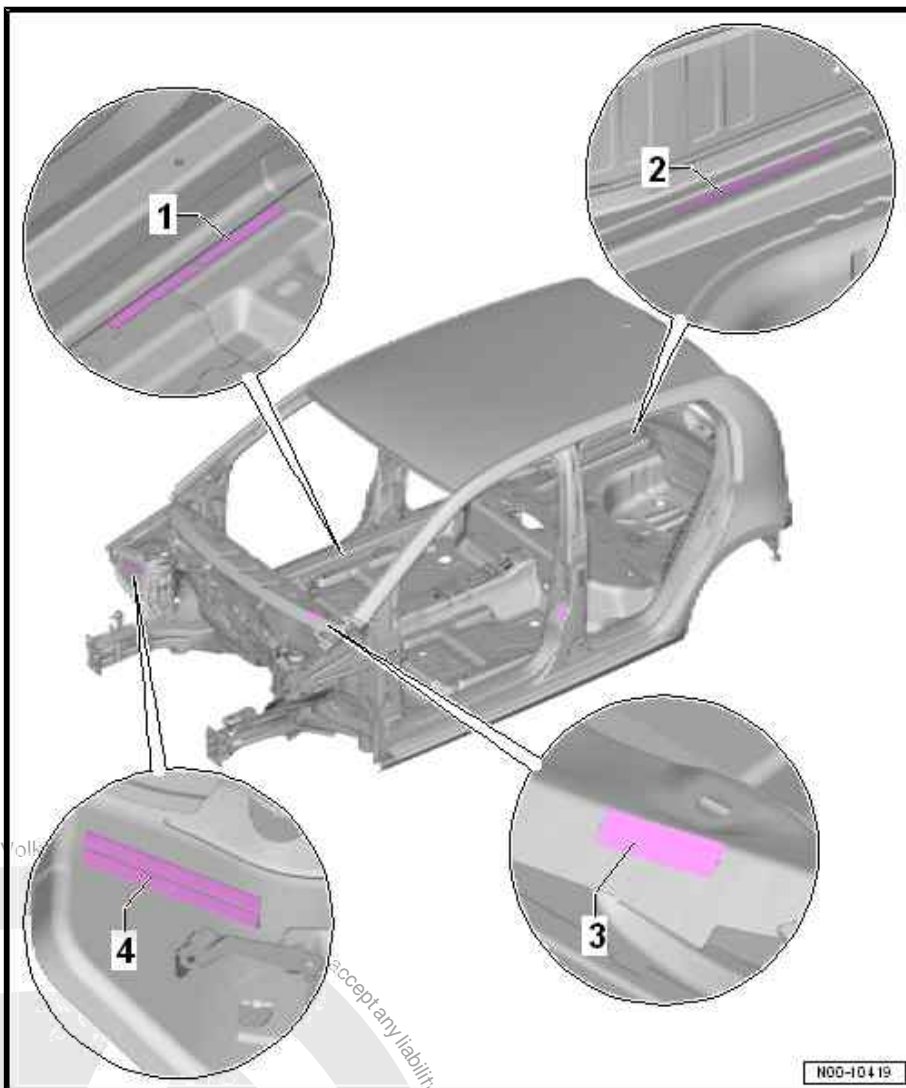
3.1 Vehicle identification number

1 - Vehicle identification number on right of seat cross member mounting.

2 - Vehicle identification number on rear right longitudinal member.

3 - Vehicle identification number on bottom left-hand side of windscreen frame

4 - Vehicle identification number on right wheel housing.



Note

If a part of the body with the vehicle identification number has to be renewed in the event of damage, the repair must be documented according to the market-specific legislation.



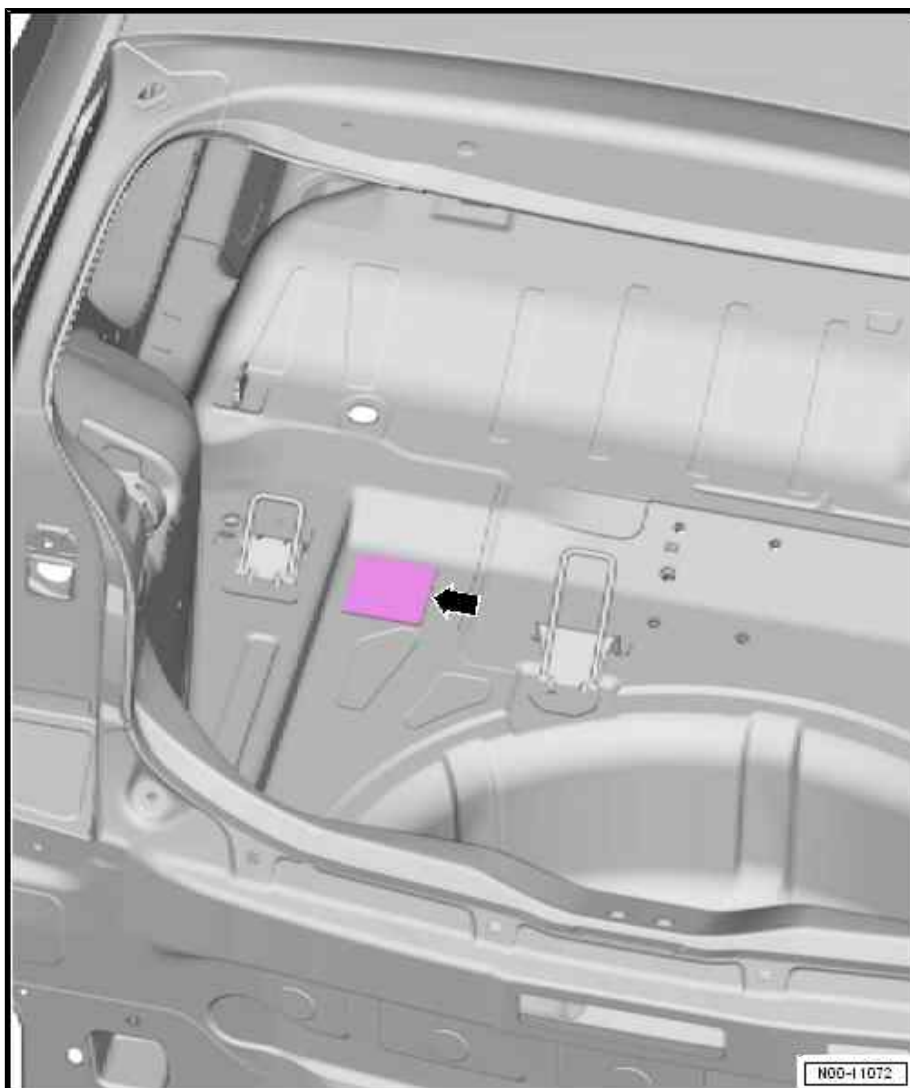
3.2 Identification plate



The identification plate -arrow- is located on left of B-pillar.



3.3 Vehicle data sticker



The vehicle data sticker -arrow- is located on left of luggage compartment floor



4 Safety information



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

Furthermore the respective country specific accident prevention and work safety legislation must be adhered to.





5 Moulded foam inserts

There are no moulded foam elements installed on this vehicle.





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

6.1 Vehicle body



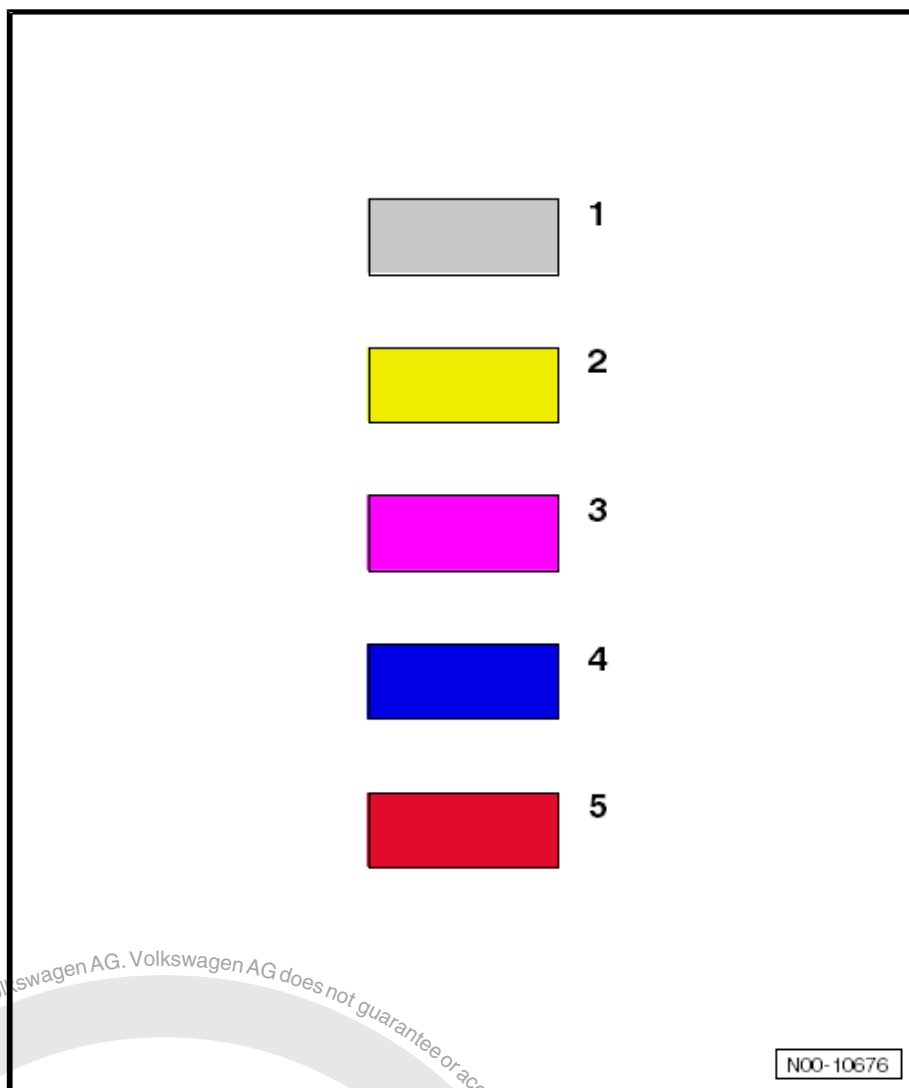
Note

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.

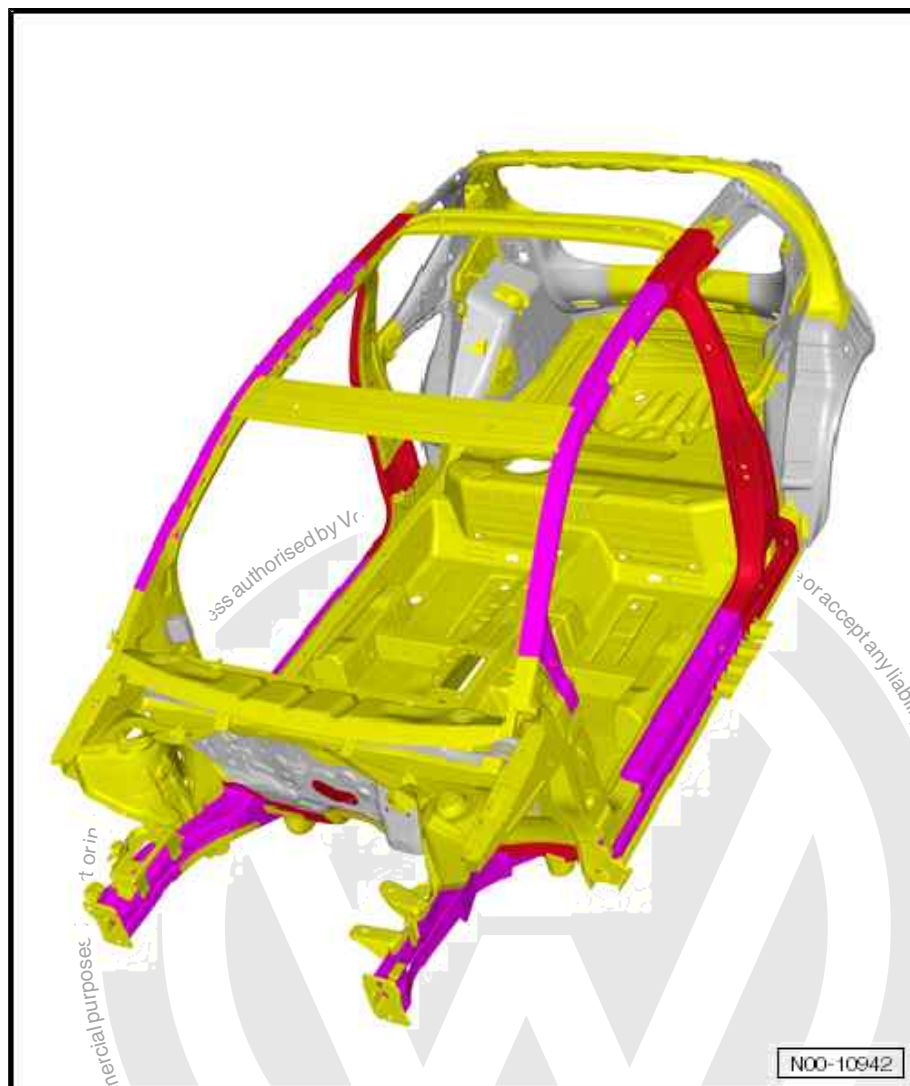
Additionally the coloured steel panels in the following illustrations show the high-strength through to hot-formed panels (see table).



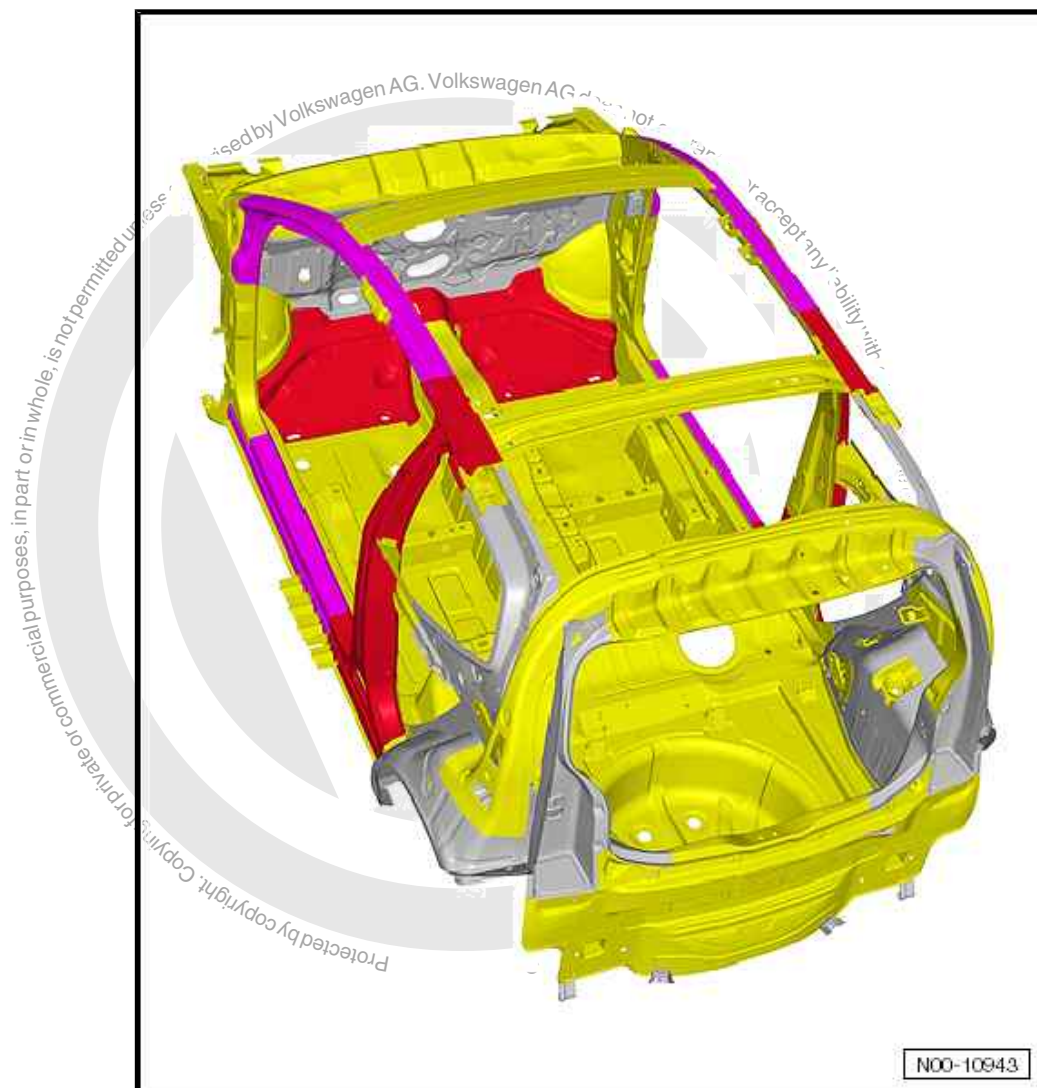
	Colour	Type of steel	Tensile strength in MPa
1	grey	soft	< 350
2	yellow	high strength	300 – 590
3	magenta	modern high strength	500 – 980
4	blue	ultra-high strength	980 – 1150
5	red	ultra-high strength (hot-formed)	> 1400



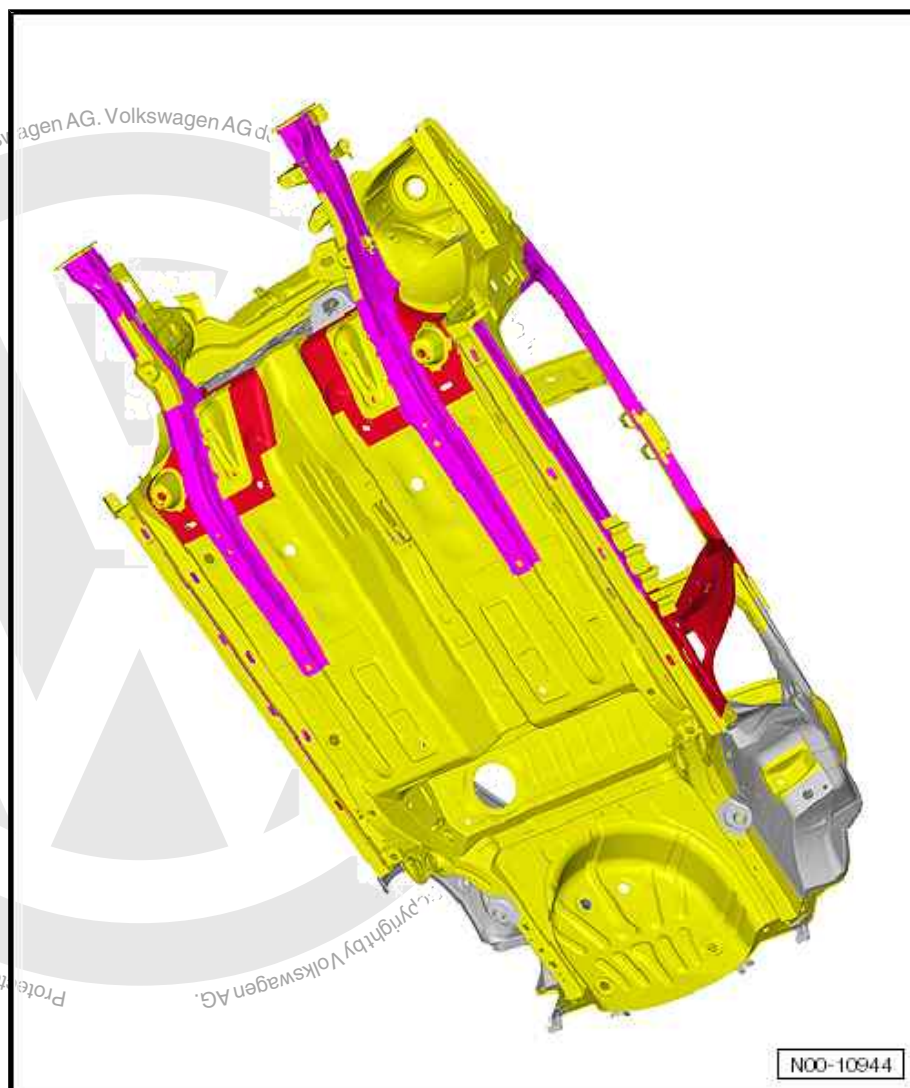
6.2 Overview



To show the body better, the complete outer side panel and the roof are not illustrated.



To show the body better, the complete outer side panel and the roof are not illustrated.



To show the body better, the complete outer side panel and the roof are not illustrated.



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

7.1 Vehicle 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, as passenger protection will otherwise not be optimal after repair. 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

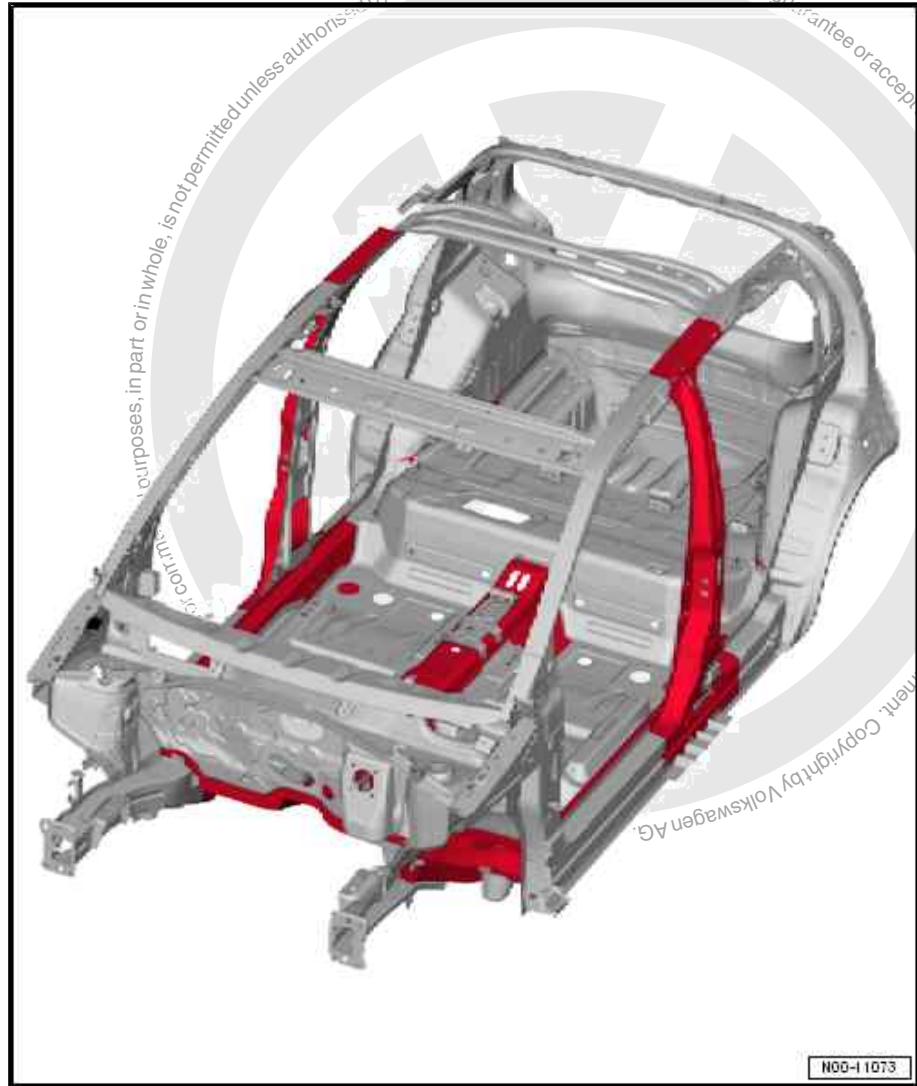
The body of the vehicle is predominantly manufactured from galvanised steel panels.

Additionally the hot-formed panels are shown as coloured components in the illustrations below.

7.2 Overview

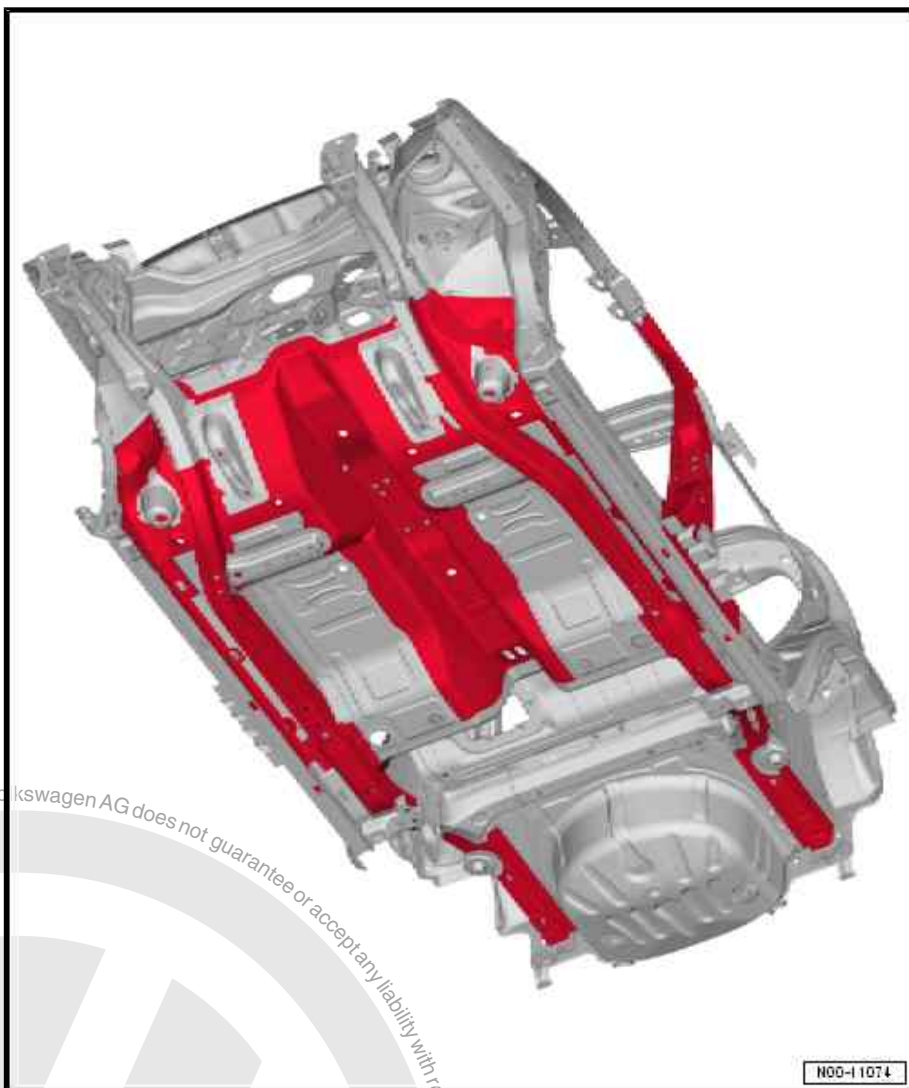
Front view





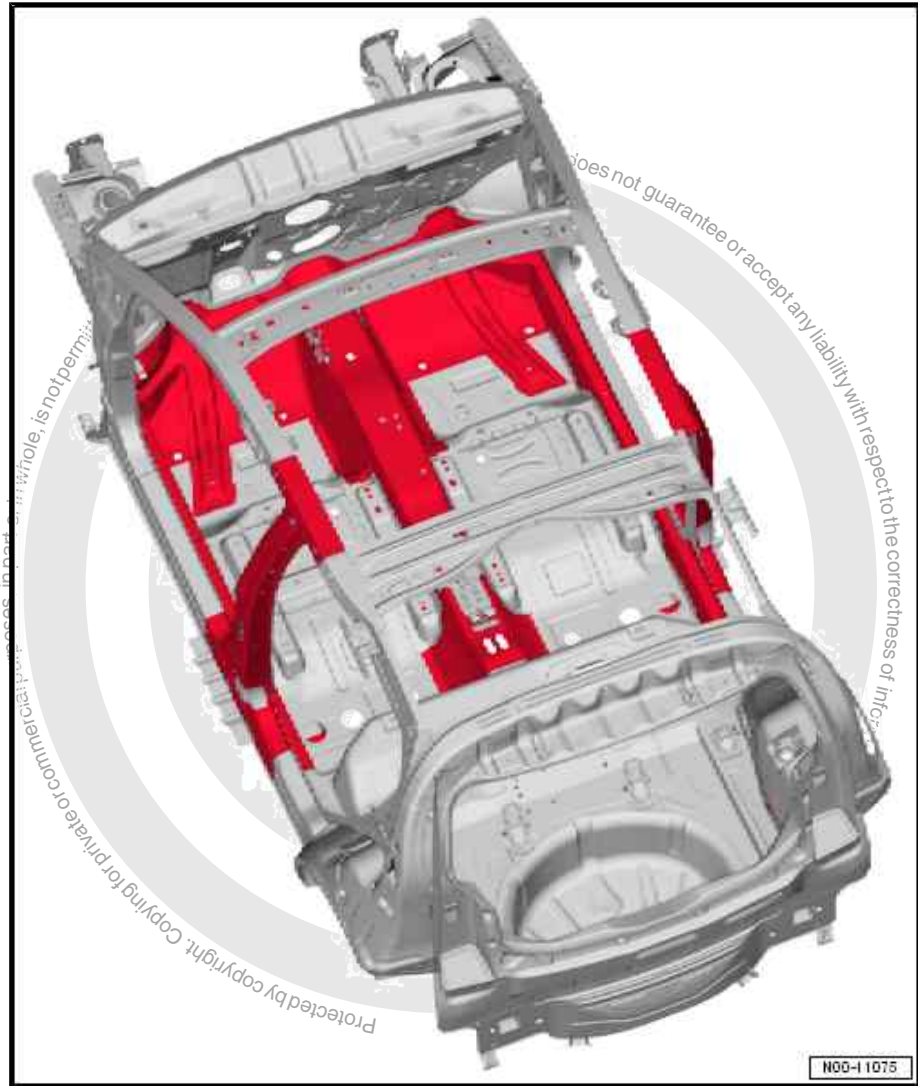
To show the body better, the complete outer side panel and the roof are not illustrated.

Bottom view



To show the body better, the complete outer side panel and the roof are not illustrated.

Top view



To show the body better, the complete outer side panel and the roof are not illustrated.

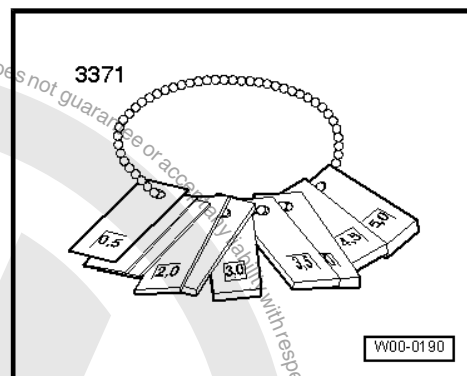


8 Gaps/shut lines



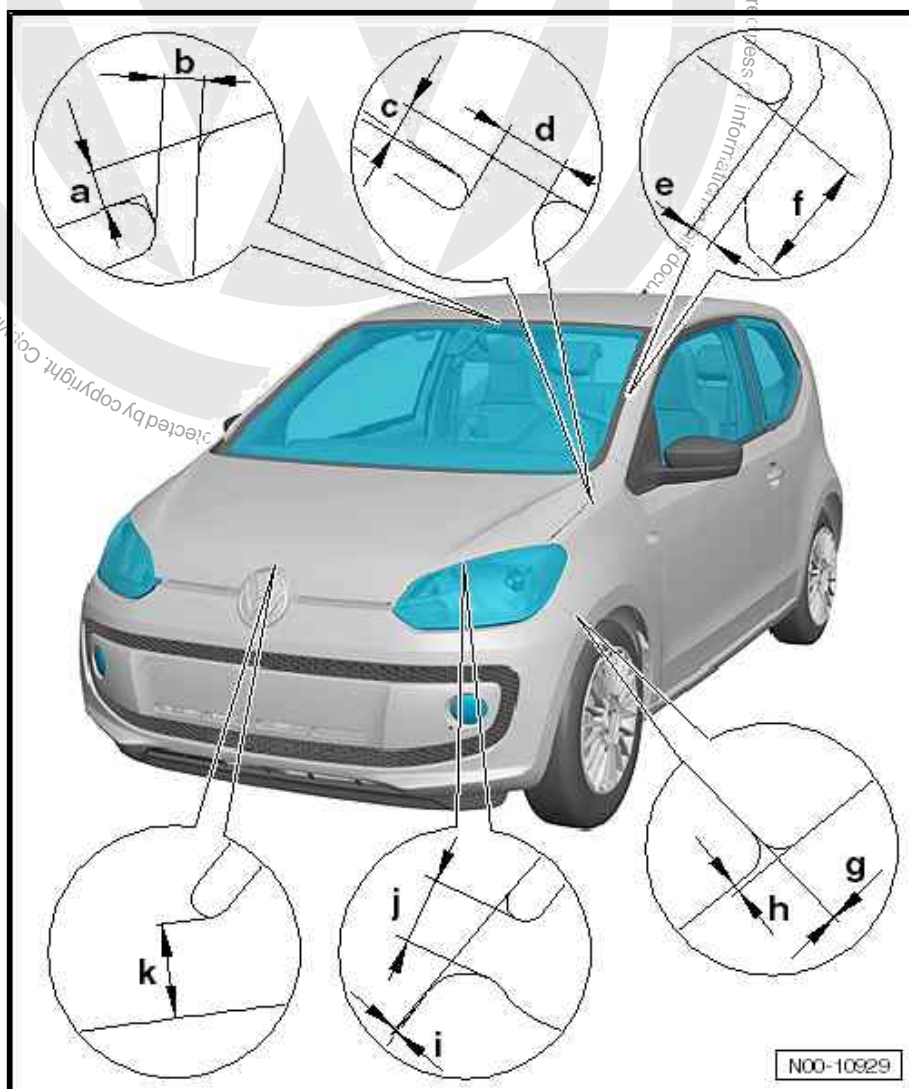
Note

- ◆ Use setting gauge - 3371- for checking or adjusting.
- ◆ Gaps are always given in millimetres.



8.1 Body - front

- a - $3.0 \text{ mm} \pm 0.5 \text{ mm}$
- b - $3.0 \text{ mm} \pm 0.5 \text{ mm}$
- c - $2.0 \text{ mm} \pm 0.5 \text{ mm}$
- d - $4.0 \text{ mm} \pm 0.5 \text{ mm}$
- e - $2.5 \text{ mm} \pm 1.0 \text{ mm}$
- f - $13.0 \text{ mm} \pm 0.5 \text{ mm}$
- g - $0.0 \text{ mm} - 0.5 \text{ mm}$
- h - $0.5 \text{ mm} \pm 0.5 \text{ mm}$
- i - $0.0 \text{ mm} \pm 0.5 \text{ mm}$
- j - $3.5 \text{ mm} \pm 0.5 \text{ mm}$
- k - $5.0 \text{ mm} \pm 0.5 \text{ mm}$





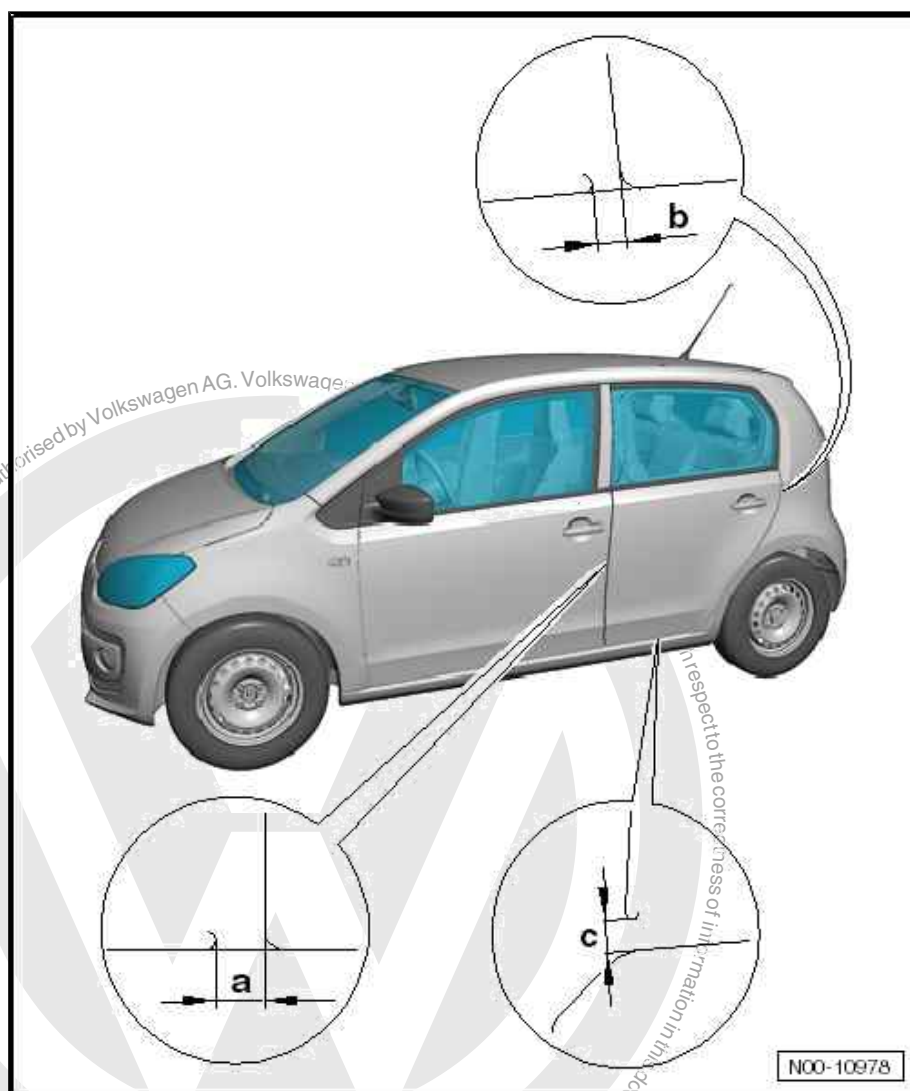
8.2 Body, centre

4-door

a - $4.0 \text{ mm} \pm 0.5 \text{ mm}$

b - $3.5 \text{ mm} \pm 0.5 \text{ mm}$

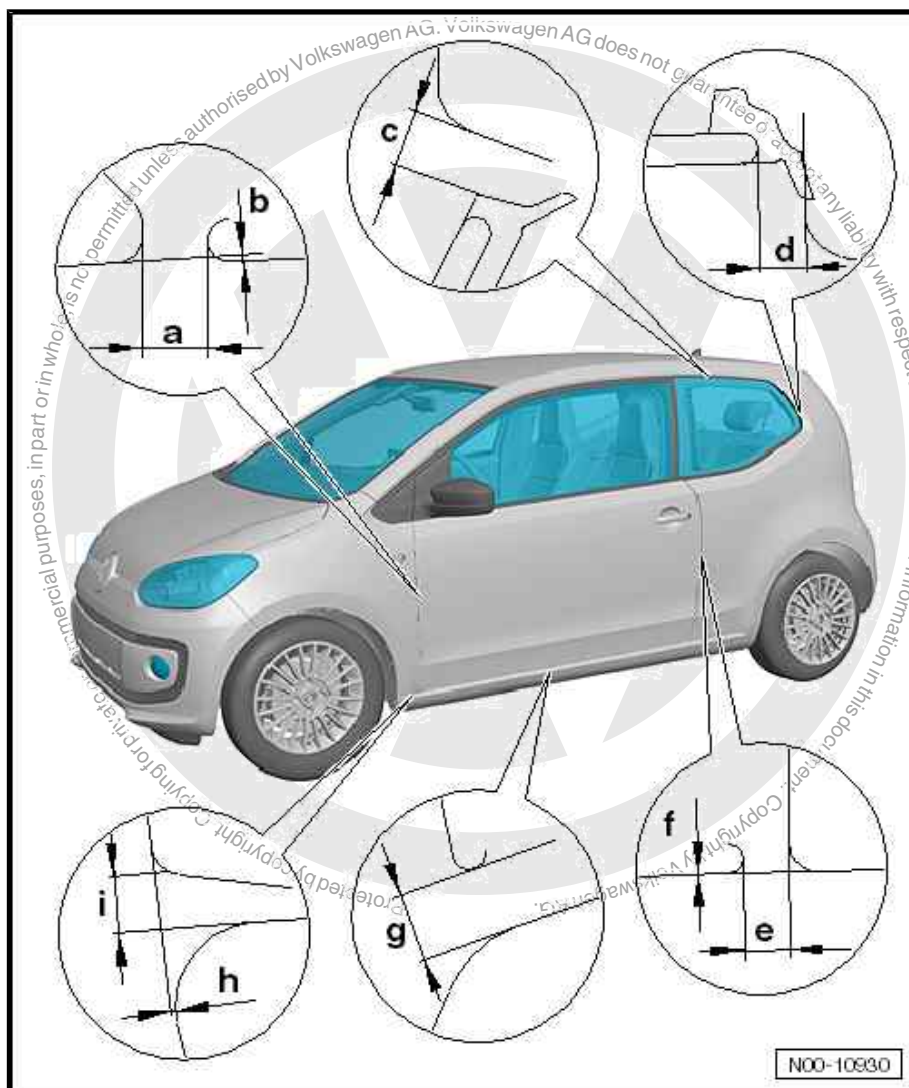
c - $4.5 \text{ mm} \pm 1.0 \text{ mm}$



2-door



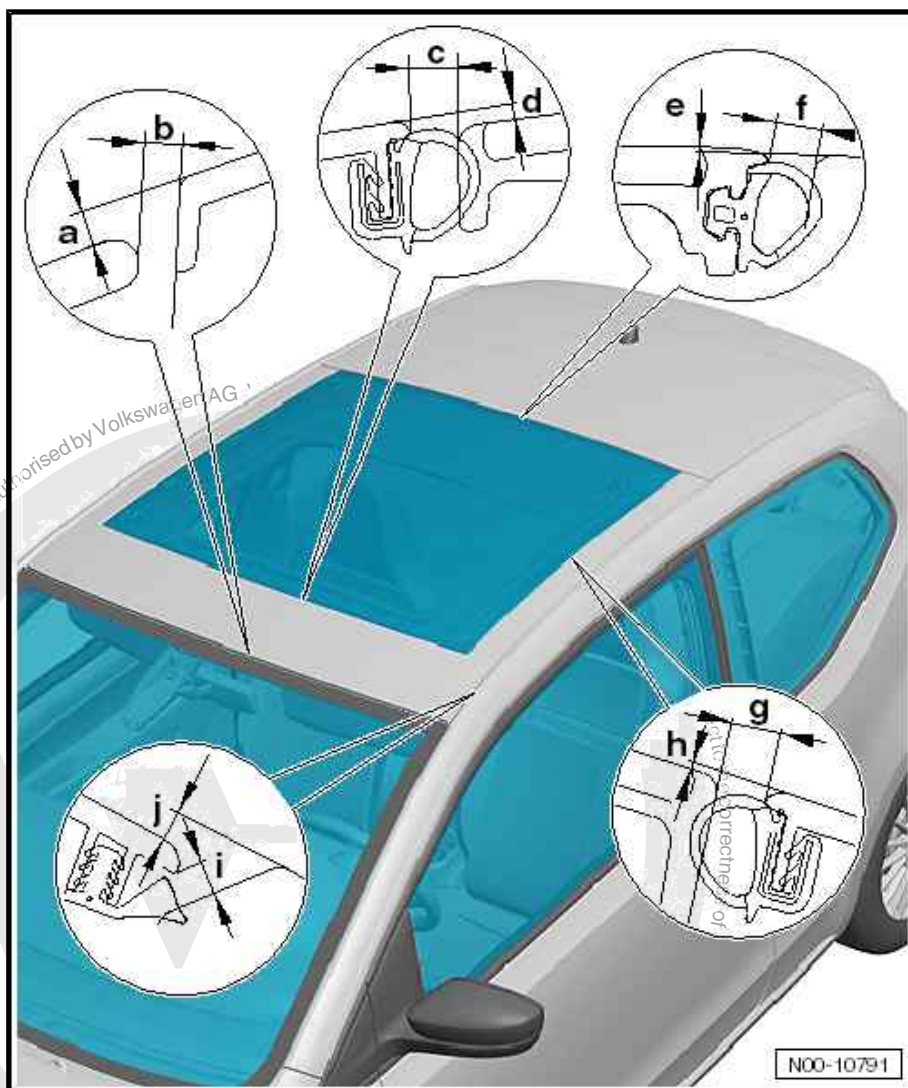
- a - $3.5 \text{ mm} \pm 0.5 \text{ mm}$
- b - $0.0 \text{ mm} - 1.0 \text{ mm}$
- c - $5.5 \text{ mm} \pm 0.5 \text{ mm}$
- d - $5.0 \text{ mm} \pm 0.5 \text{ mm}$
- e - $3.5 \text{ mm} \pm 0.5 \text{ mm}$
- f - $0.0 \text{ mm} - 1.0 \text{ mm}$
- g - $4.5 \text{ mm} \pm 0.5 \text{ mm}$
- h - $0.5 \text{ mm} \pm 1.0 \text{ mm}$
- i - $4.0 \text{ mm} \pm 0.5 \text{ mm}$



Vehicles with panorama glass sliding/tilting sunroof



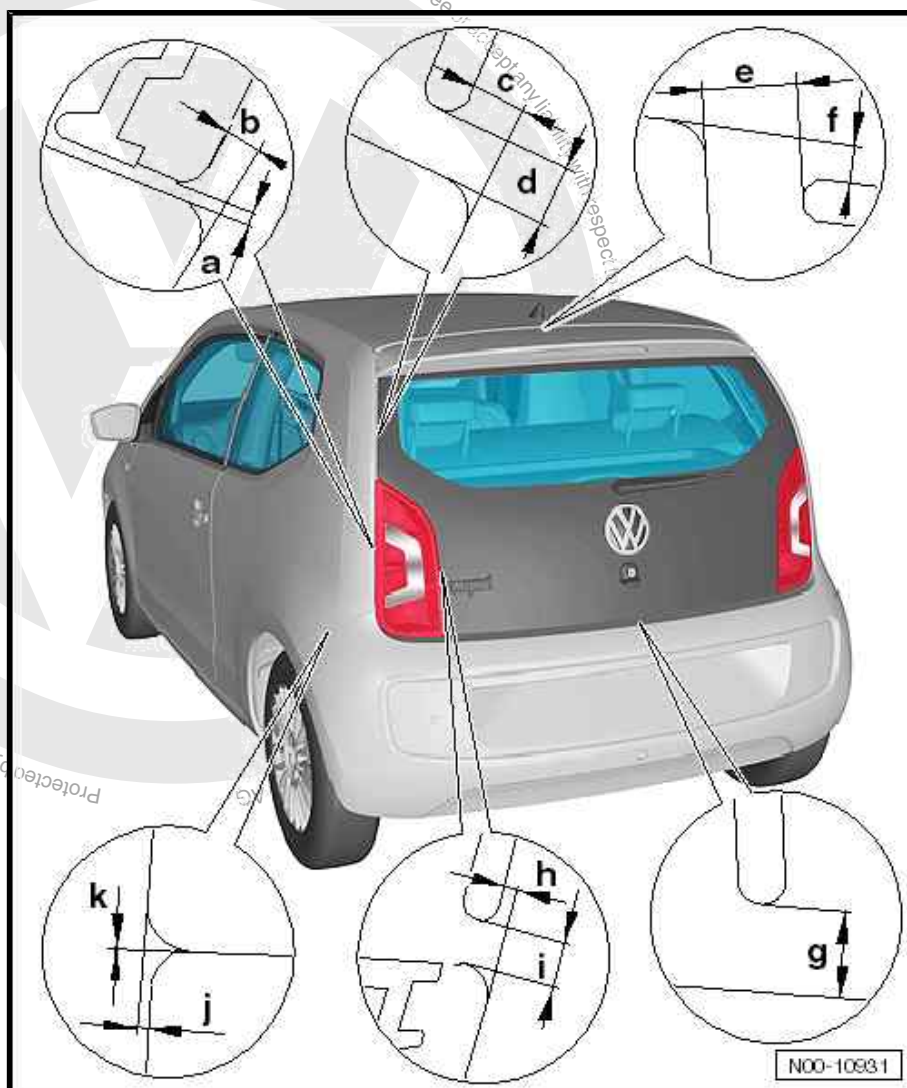
- a - $3.0 \text{ mm} \pm 0.5 \text{ mm}$
- b - $3.0 \text{ mm} \pm 0.5 \text{ mm}$
- c - $5.0 \text{ mm} \pm 1.5 \text{ mm}$
- d - $1.5 \text{ mm} \pm 1.5 \text{ mm}$
- e - $1.5 \text{ mm} \pm 1.5 \text{ mm}$
- f - $4.5 \text{ mm} \pm 1.5 \text{ mm}$
- g - $5.0 \text{ mm} \pm 1.5 \text{ mm}$
- h - $0.5 \text{ mm} \pm 0.5 \text{ mm}$
- i - $4.0 \text{ mm} \pm 1.5 \text{ mm}$
- j - $4.5 \text{ mm} \pm 0.5 \text{ mm}$





8.3 Body - rear

- a - 1.0 mm ± 0.5 mm
- b - 2.5 mm ± 0.5 mm
- c - 3.5 mm ± 0.5 mm
- d - 4.0 mm ± 0.5 mm
- e - 5.0 mm ± 0.5 mm
- f - 2.0 mm - 1.5 mm
- g - 5.0 mm ± 0.5 mm
- h - 1.0 mm ± 0.5 mm
- i - 4.0 mm ± 0.5 mm
- j - 0.5 mm ± 0.5 mm
- k - 0.0 mm - 0.5 mm



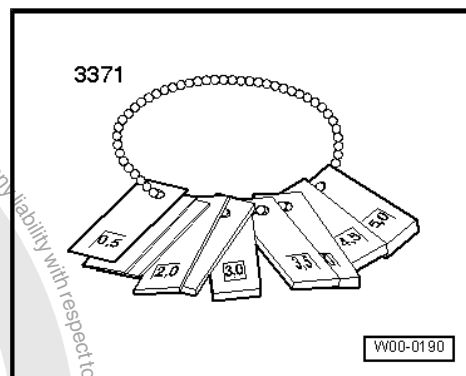


9 Gaps/shut lines



Note

- ♦ Use setting gauge - 3371- for checking or adjusting.
- ♦ Gaps are always given in millimetres.



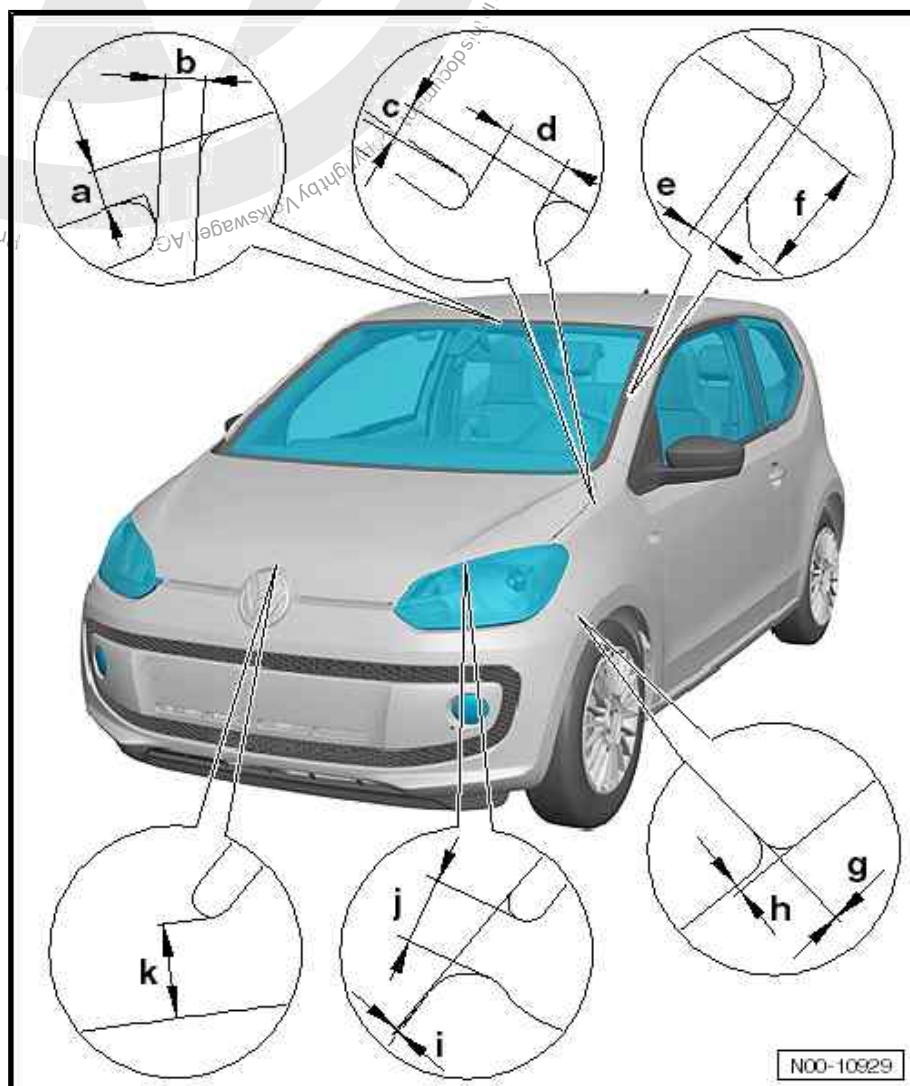
9.1 Body - front



Note

In the illustration a 2-door model is shown. On 4-door models the gaps/shut lines of the front body are identical.

- a - 3.0 mm \pm 0.5 mm
- b - 3.0 mm \pm 0.5 mm
- c - 2.0 mm \pm 0.5 mm
- d - 4.0 mm \pm 0.5 mm
- e - 2.5 mm \pm 1.0 mm
- f - 13.0 mm \pm 0.5 mm
- g - 0.0 mm - 0.5 mm
- h - 0.5 mm \pm 0.5 mm
- i - 0.0 mm \pm 0.5 mm
- j - 3.5 mm \pm 0.5 mm
- k - 5.0 mm \pm 0.5 mm



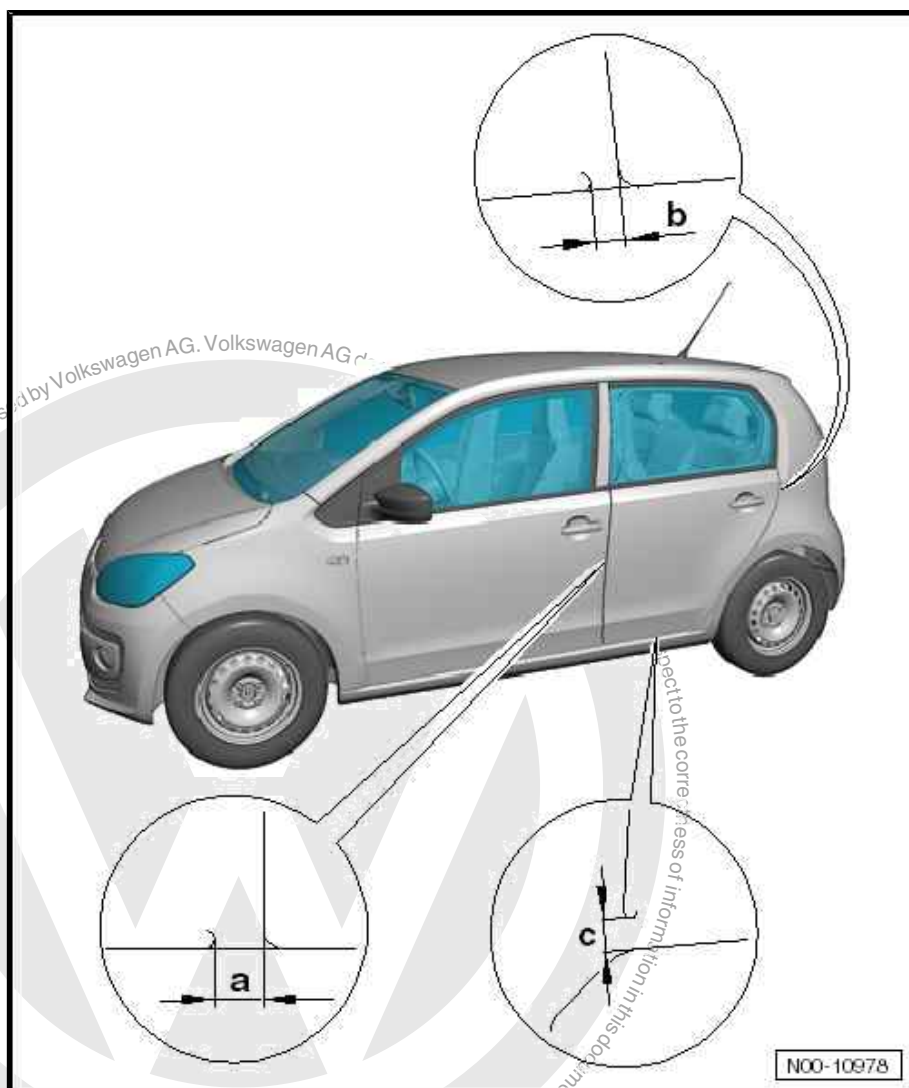


9.2 Body, centre

a - 4.0 mm ± 0.5 mm

b - 3.5 mm ± 0.5 mm

c - 4.5 mm ± 1.0 mm



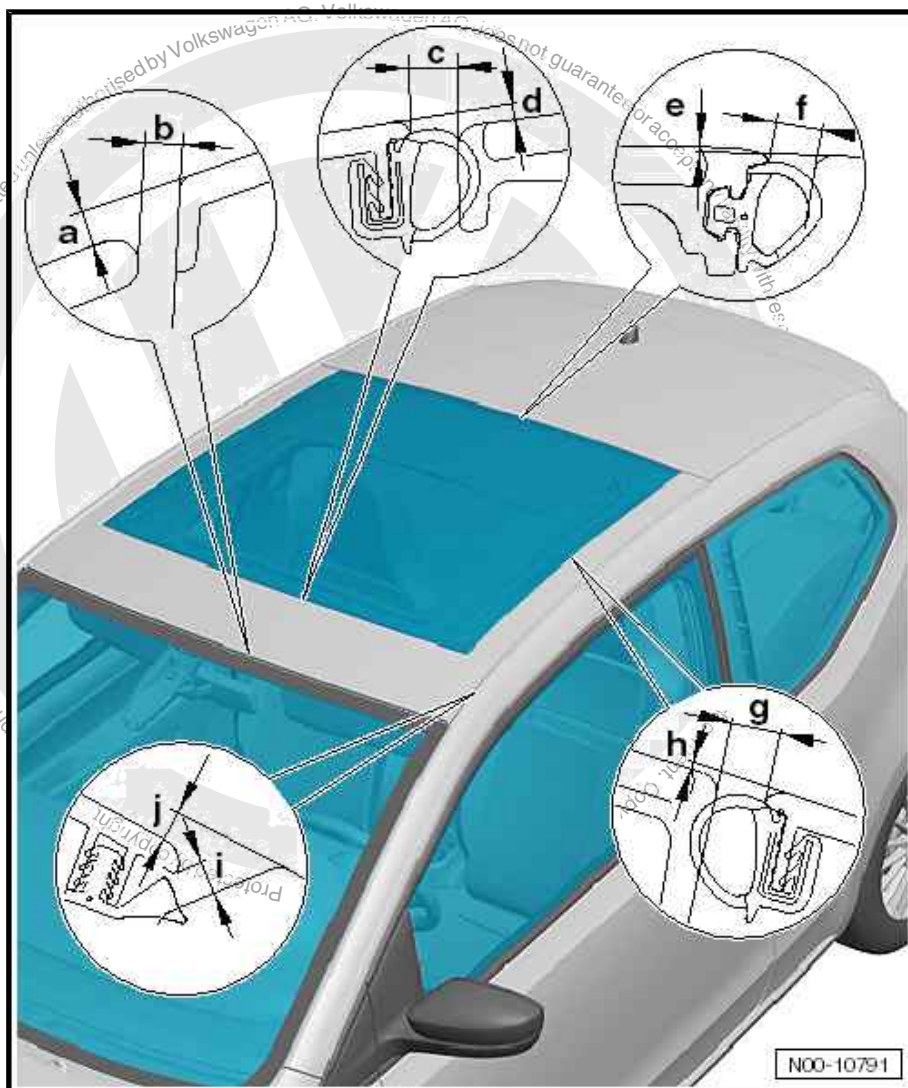
Note

In the illustration a 2-door model is shown. On 4-door models the gaps/shut lines of the panorama glass sliding/tilting sunroof are identical.

Vehicles with panorama glass sliding/tilting sunroof



- a - $3.0 \text{ mm} \pm 0.5 \text{ mm}$
- b - $3.0 \text{ mm} \pm 0.5 \text{ mm}$
- c - $5.0 \text{ mm} \pm 1.5 \text{ mm}$
- d - $1.5 \text{ mm} \pm 1.5 \text{ mm}$
- e - $1.5 \text{ mm} \pm 1.5 \text{ mm}$
- f - $4.5 \text{ mm} \pm 1.5 \text{ mm}$
- g - $5.0 \text{ mm} \pm 1.5 \text{ mm}$
- h - $0.5 \text{ mm} \pm 0.5 \text{ mm}$
- i - $4.0 \text{ mm} \pm 1.5 \text{ mm}$
- j - $4.5 \text{ mm} \pm 0.5 \text{ mm}$





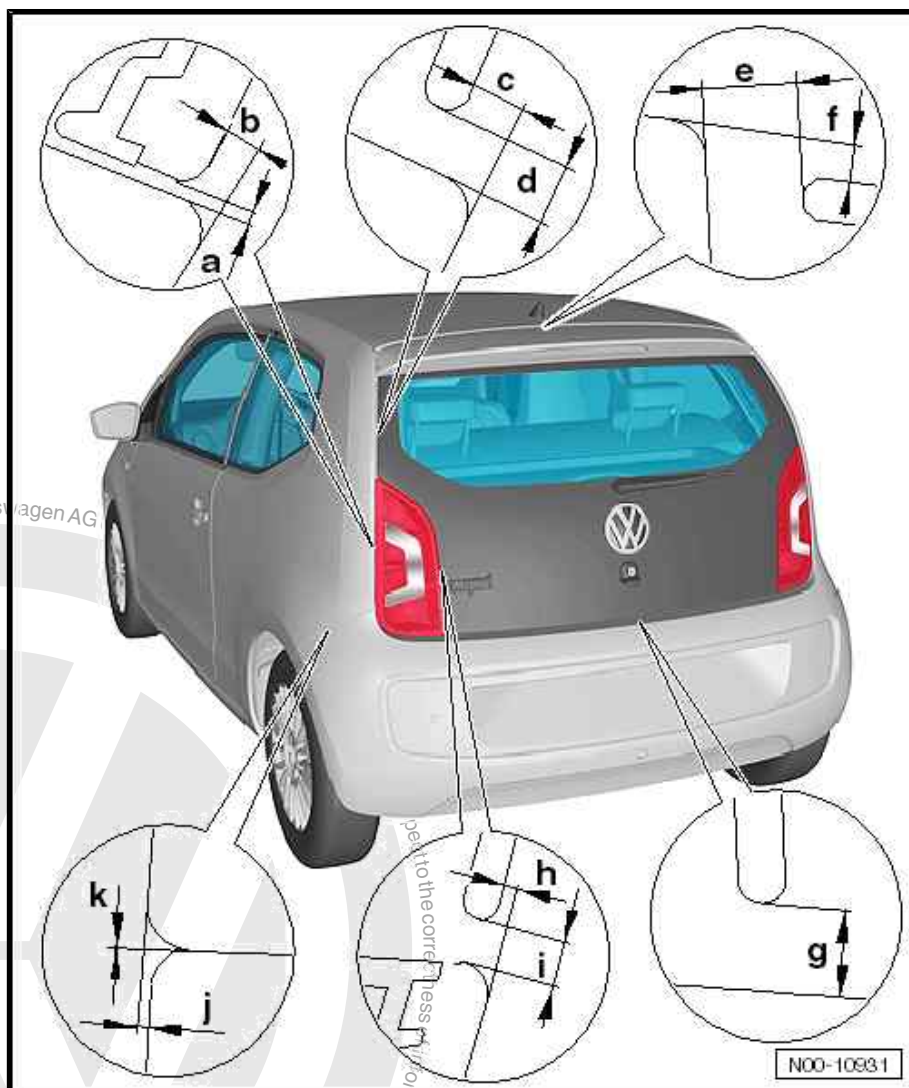
9.3 Body - rear



Note

In the illustration a 2-door model is shown. On 4-door models the gaps/shut lines of the rear body are identical.

- a - 1.0 mm ± 0.5 mm
- b - 2.5 mm ± 0.5 mm
- c - 3.5 mm ± 0.5 mm
- d - 4.0 mm ± 0.5 mm
- e - 5.0 mm ± 0.5 mm
- f - 2.0 mm – 1.5 mm
- g - 5.0 mm ± 0.5 mm
- h - 1.0 mm ± 0.5 mm
- i - 4.0 mm ± 0.5 mm
- j - 0.5 mm ± 0.5 mm
- k - 0.0 mm – 0.5 mm



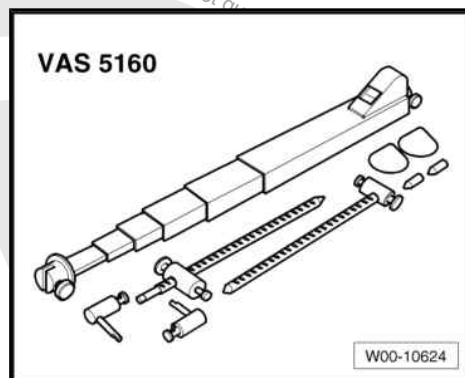


10 Body dimensions



Note

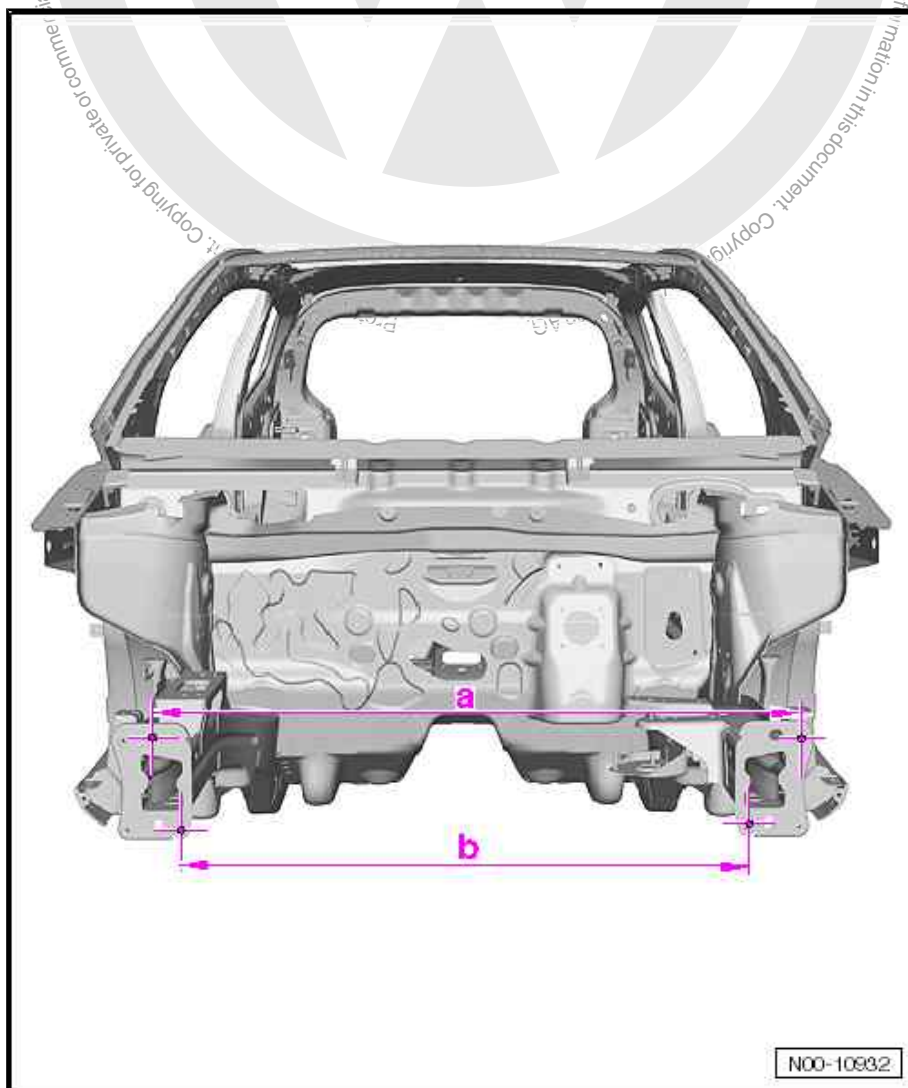
- ◆ Dimensions only given for checking purposes. The alignment bracket set is the final authority.
- ◆ Bolts, screws, plugs, trim and attached components must be removed before starting the measuring process.
- ◆ Use telescopic gauge - VAS 5159- or telescopic gauge - VAS 5160- to determine body dimensions.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



10.1 Body - front

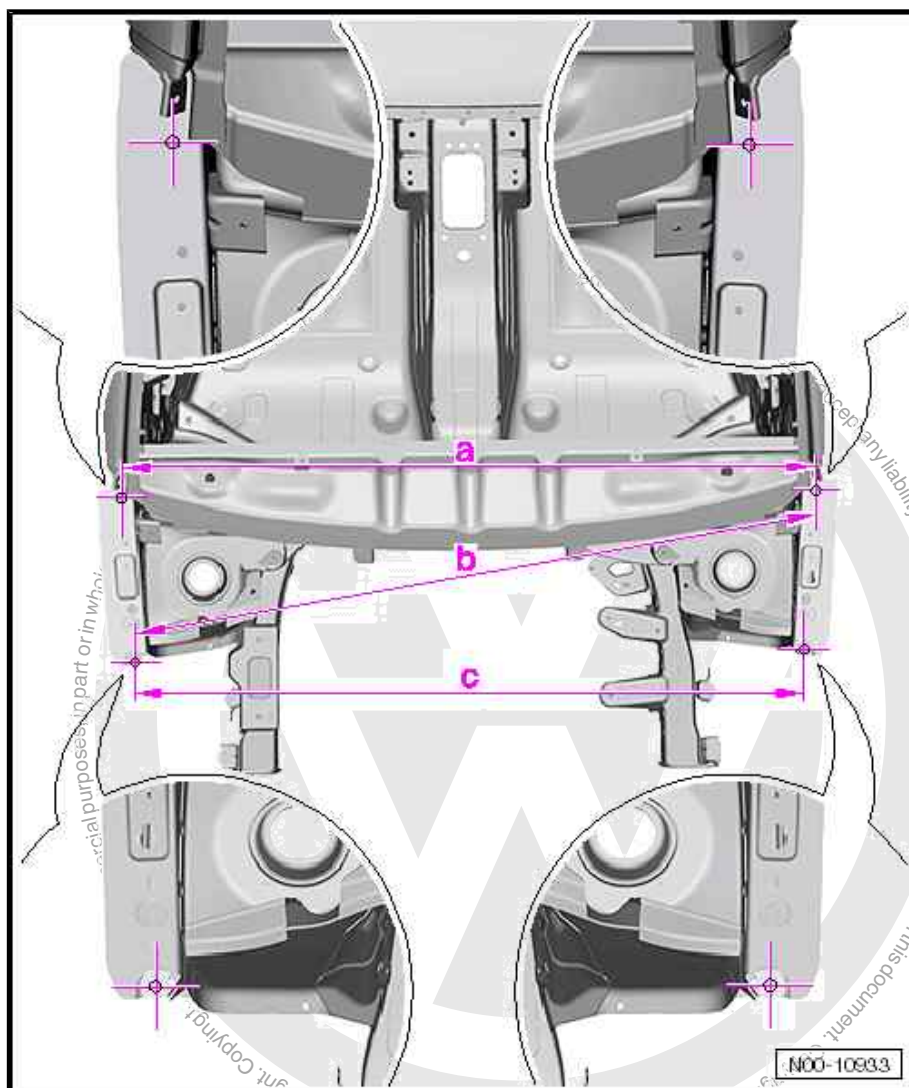
a - 974 mm \pm 2.0 mm

b - 853 mm \pm 2.0 mm





- a - 1375 mm \pm 2.0 mm
- b - 1394 mm \pm 2.0 mm
- c - 1336 mm \pm 2.0 mm



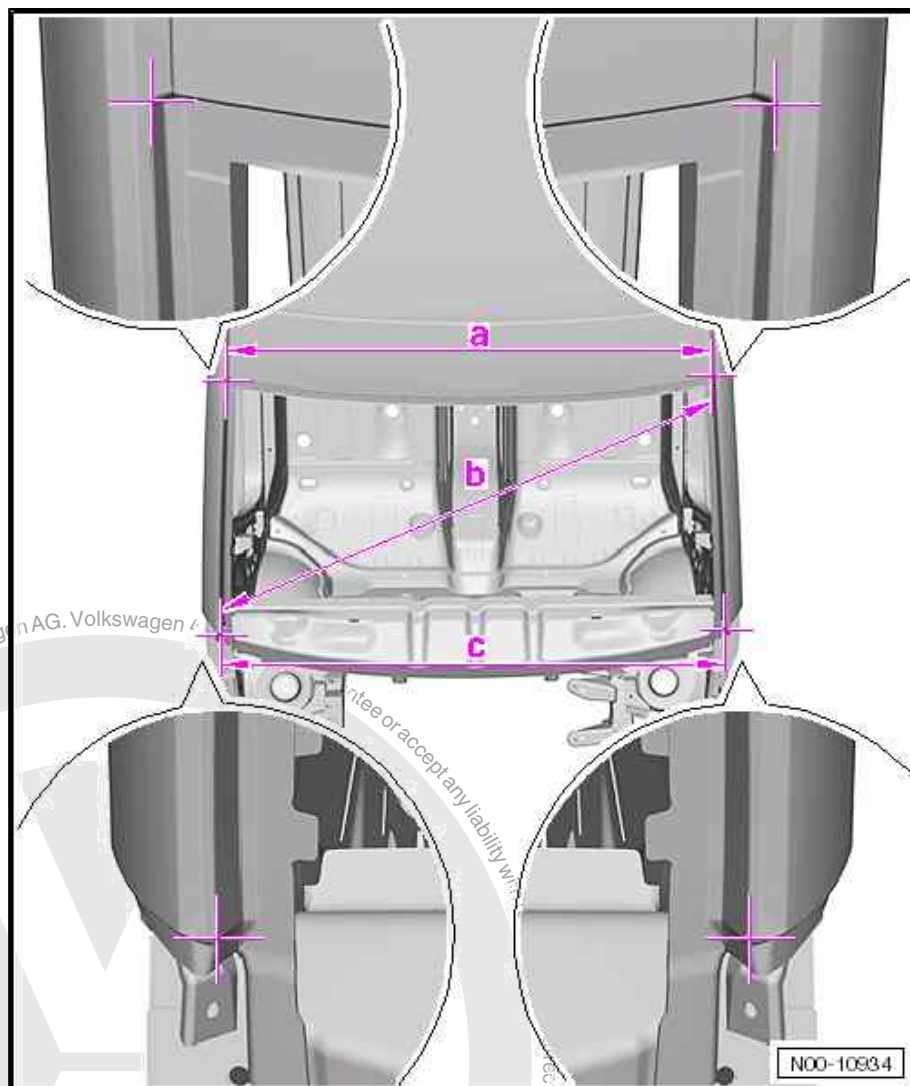


10.2 Body, centre

a - 1133 mm \pm 2.0 mm

b - 1441 mm \pm 2.0 mm

c - 1330 mm \pm 2.0 mm

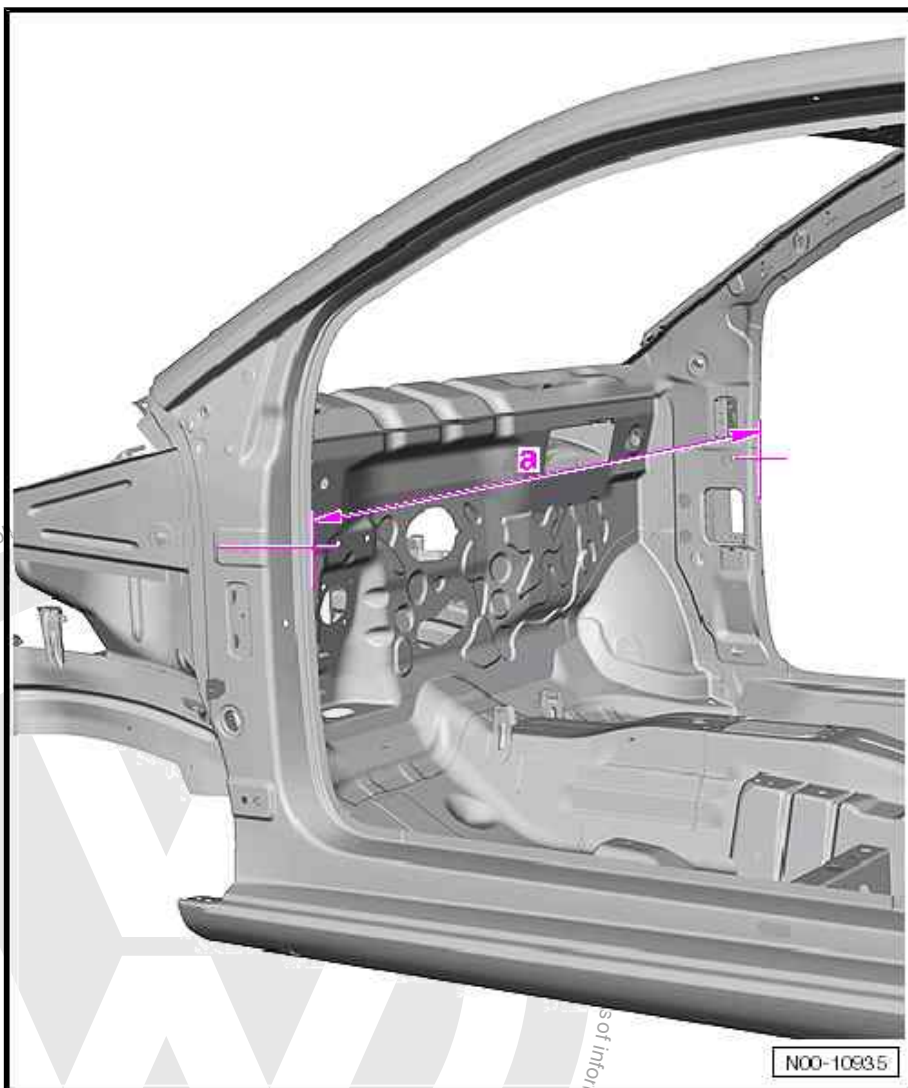


Note

Measurement made on inner side of body flange.



a - 1306 mm ± 2.0 mm

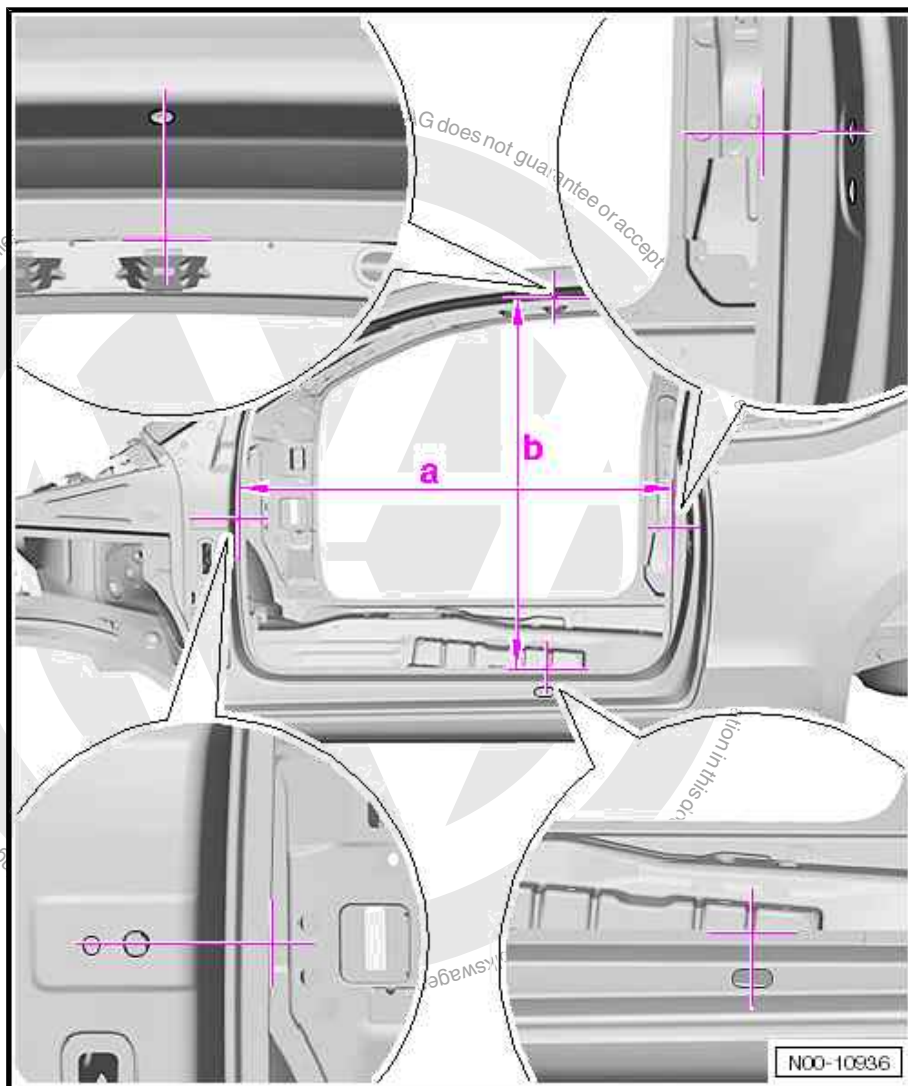


2-door



a - 1108 mm ± 2.0 mm

b - 958 mm ± 2.0 mm

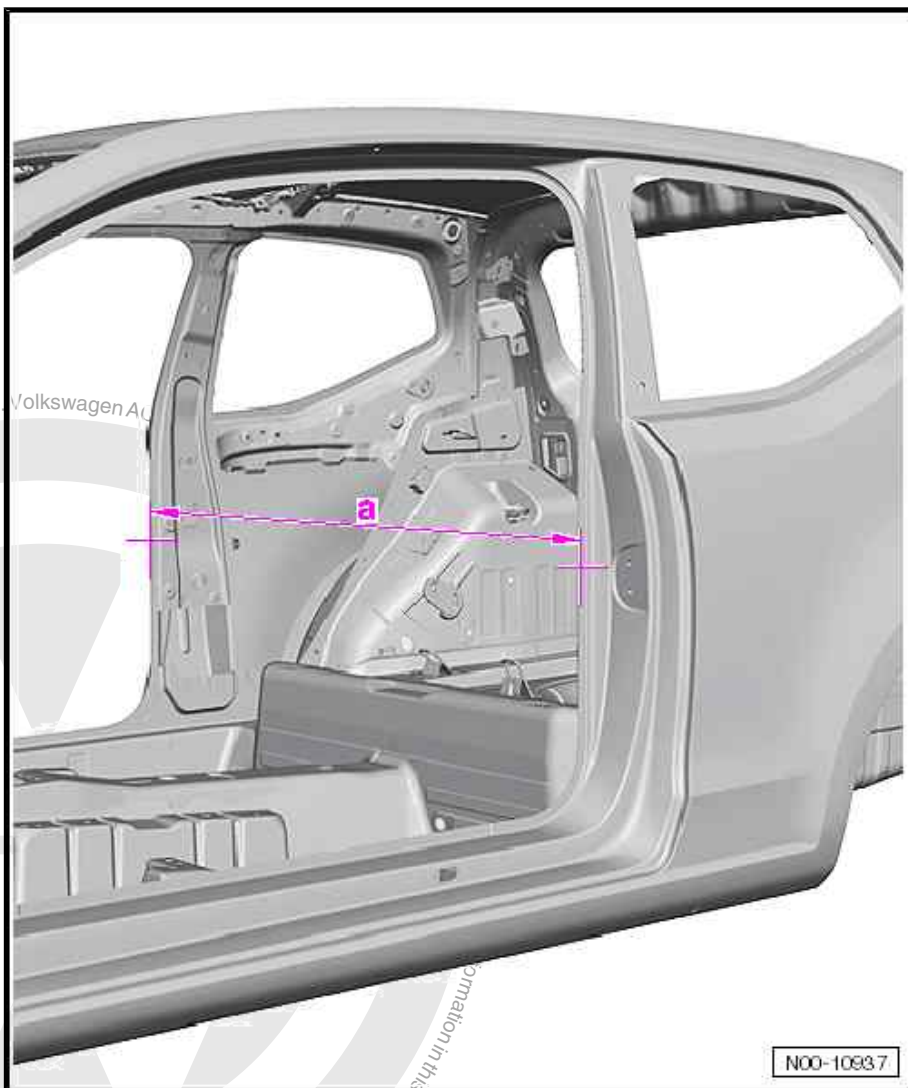


Note

Measurement made on inner side of body flange.



a - 1309 mm ± 2.0 mm



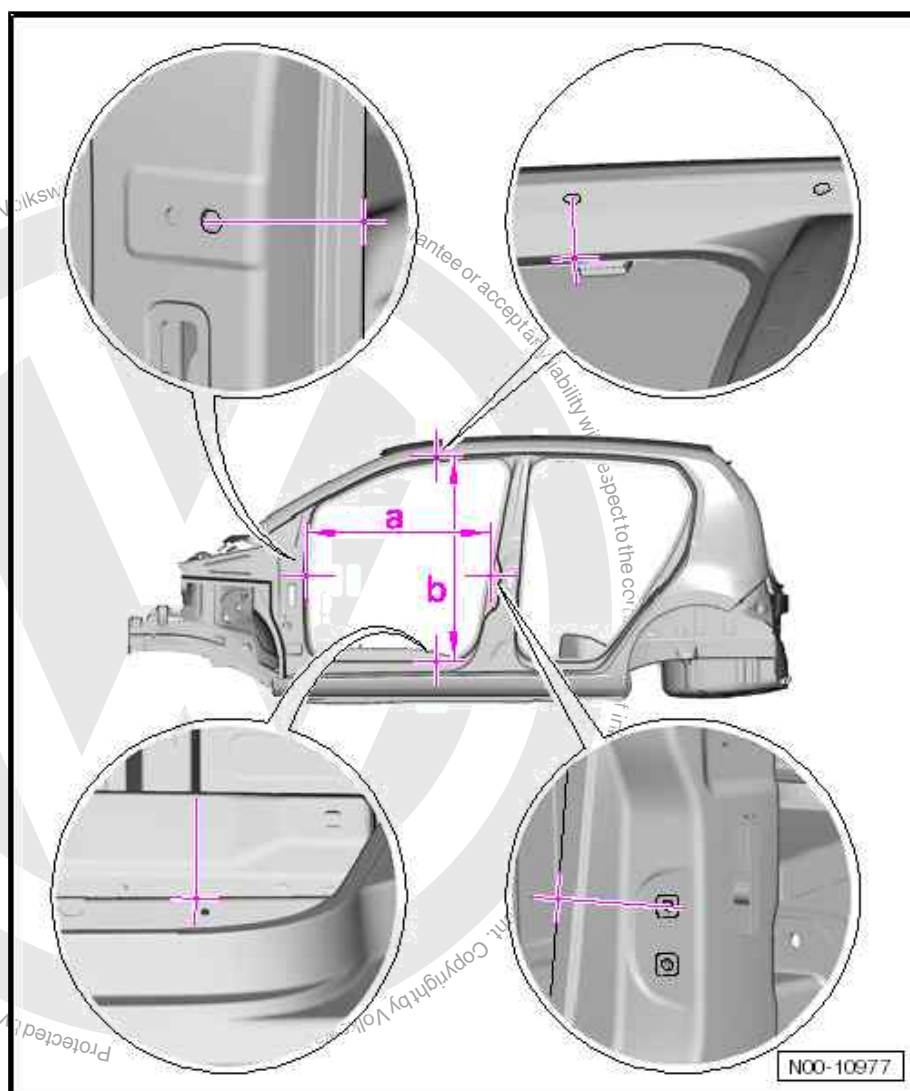


10.2.1 4-door vehicle

Front door aperture

a - 859 mm ± 2.0 mm

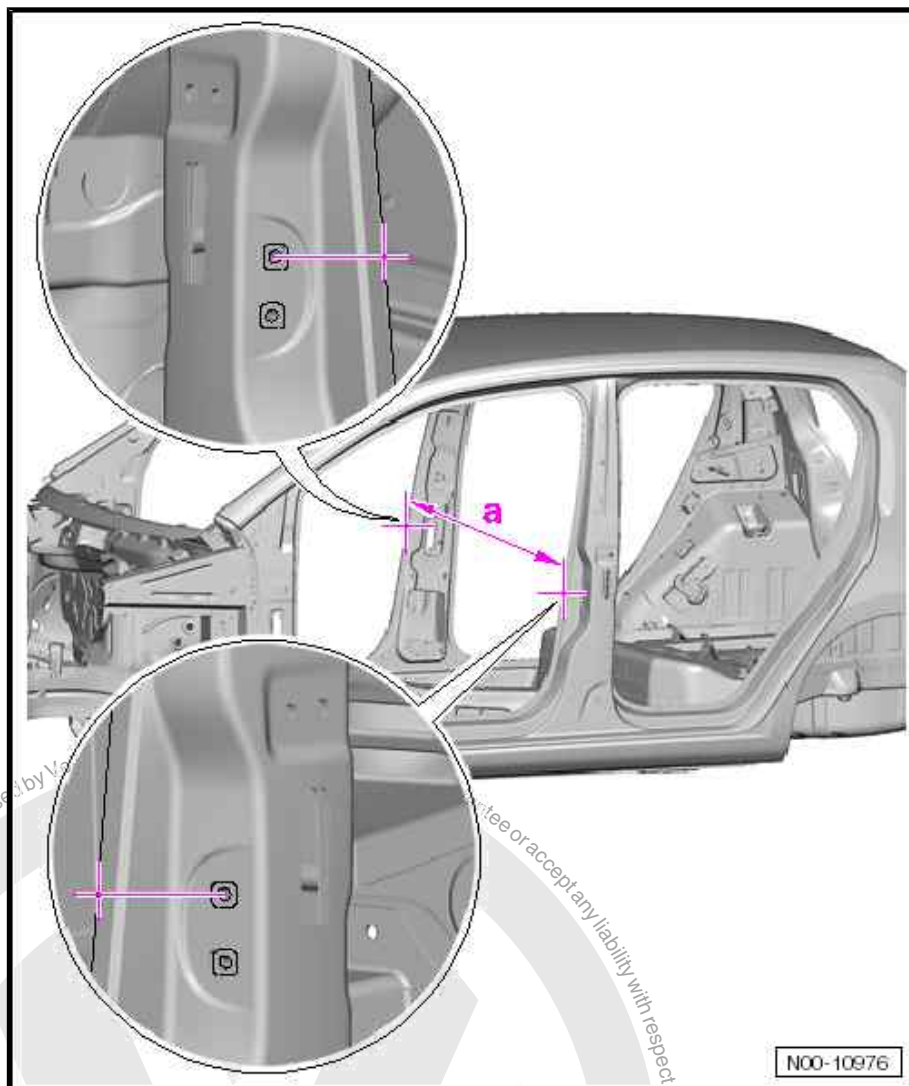
b - 945 mm ± 2.0 mm



Dimension between B-pillars



a - 1310 mm ± 2.0 mm

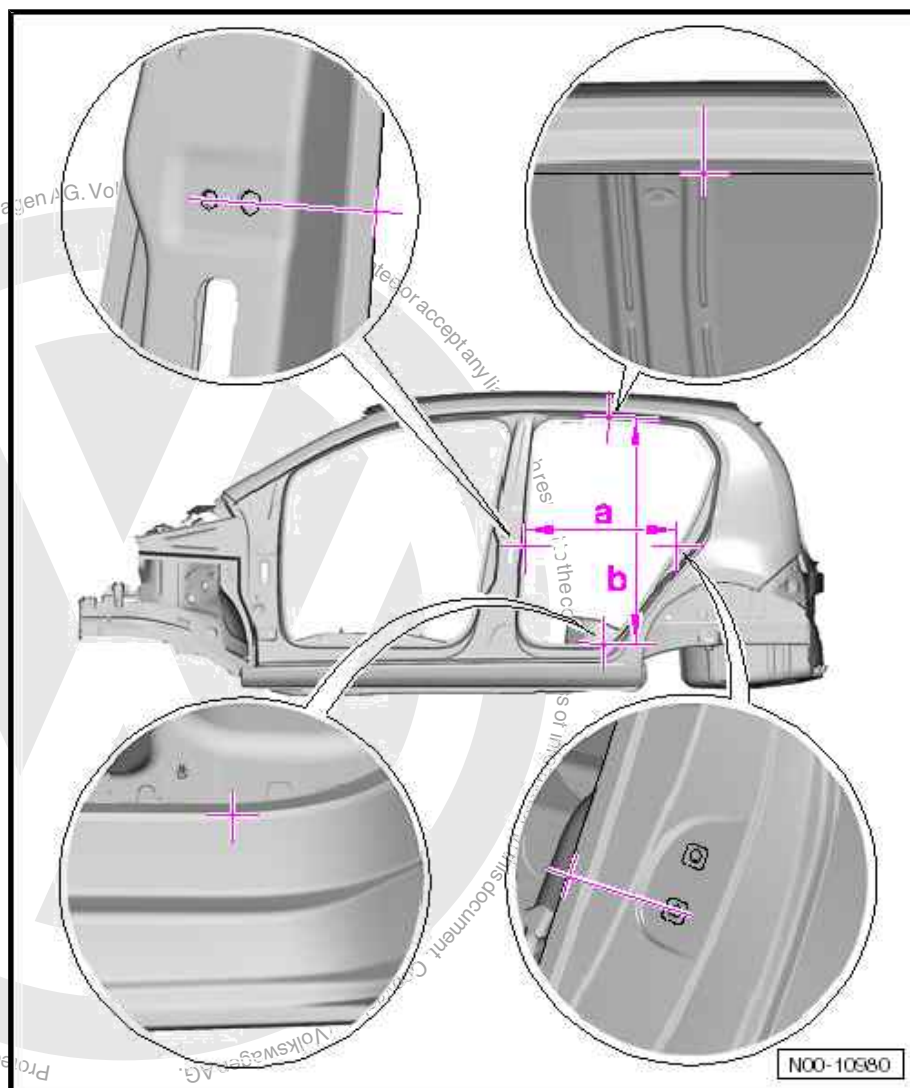


Rear door aperture



a - 632 mm ± 2.0 mm

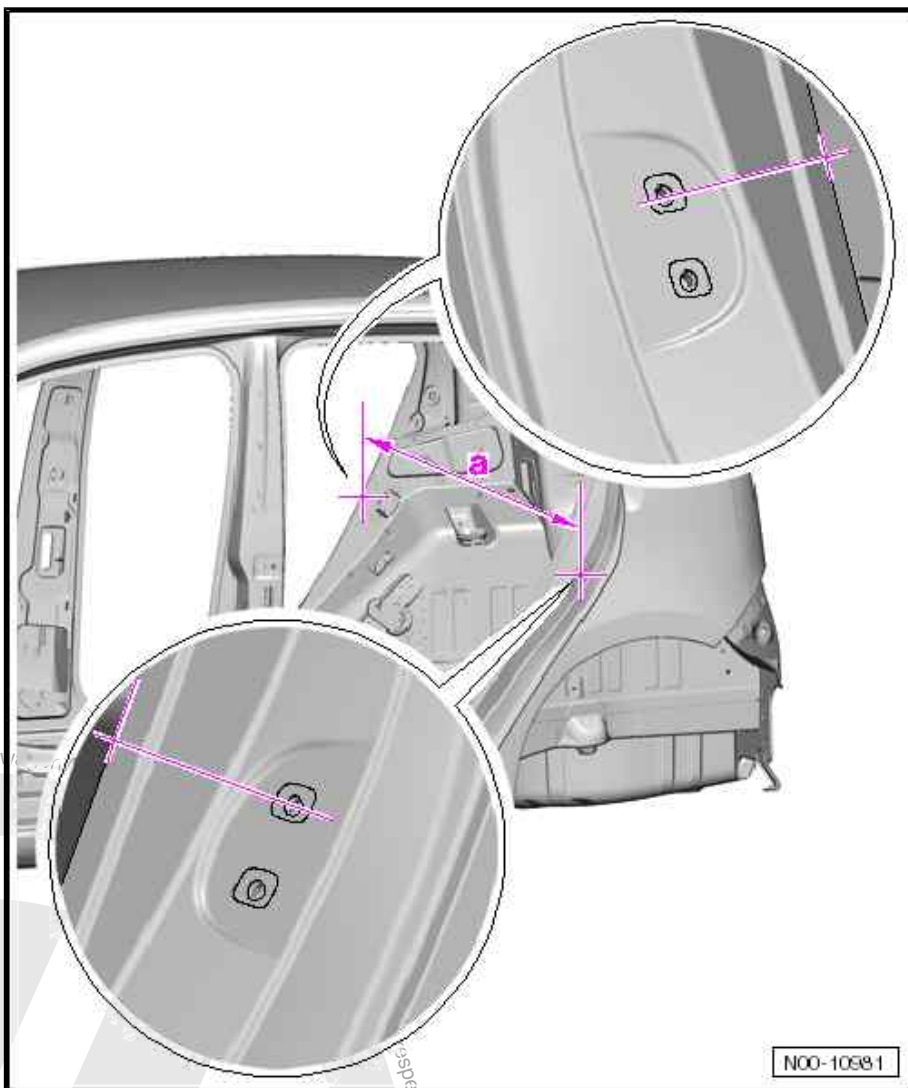
b - 967 mm ± 2.0 mm



Dimension between C-pillars



a - 1300 mm ± 2.0 mm



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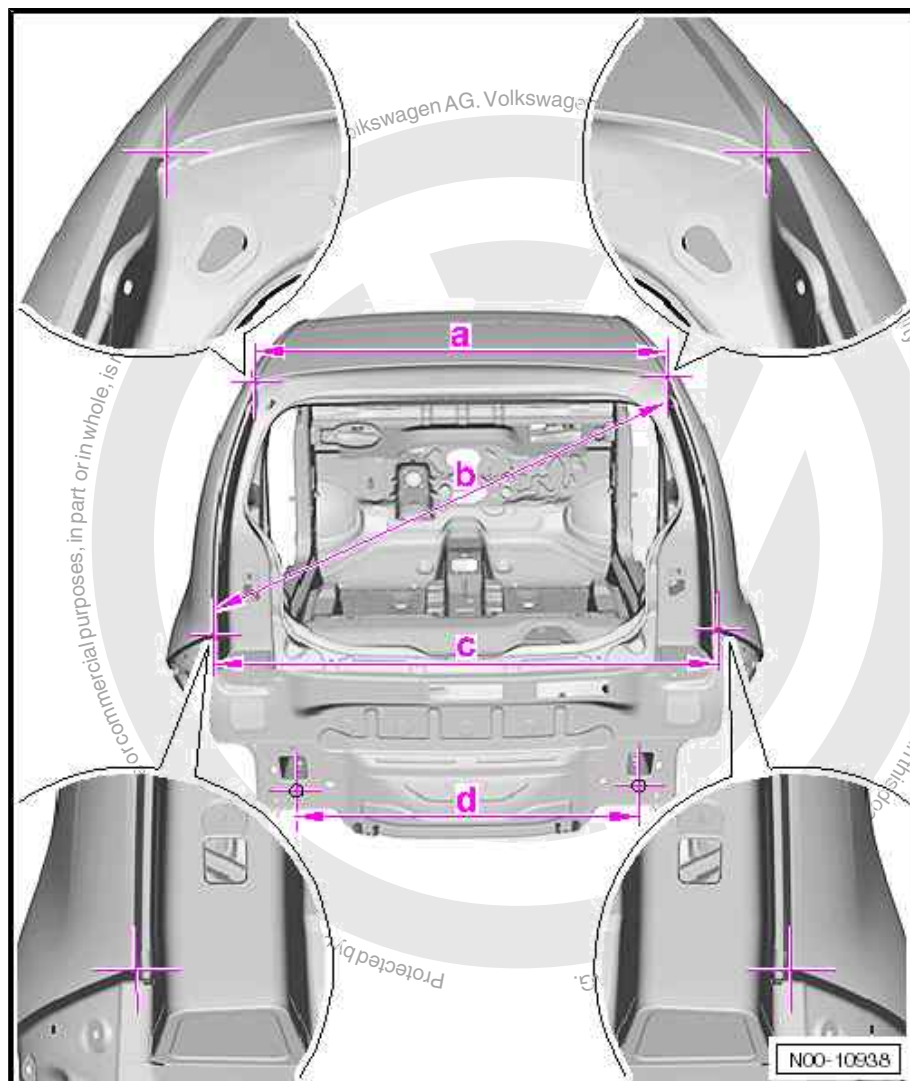
10.3 Body - rear

a - 1067 mm \pm 2.0 mm

b - 1351 mm \pm 2.0 mm

c - 1287 mm \pm 2.0 mm

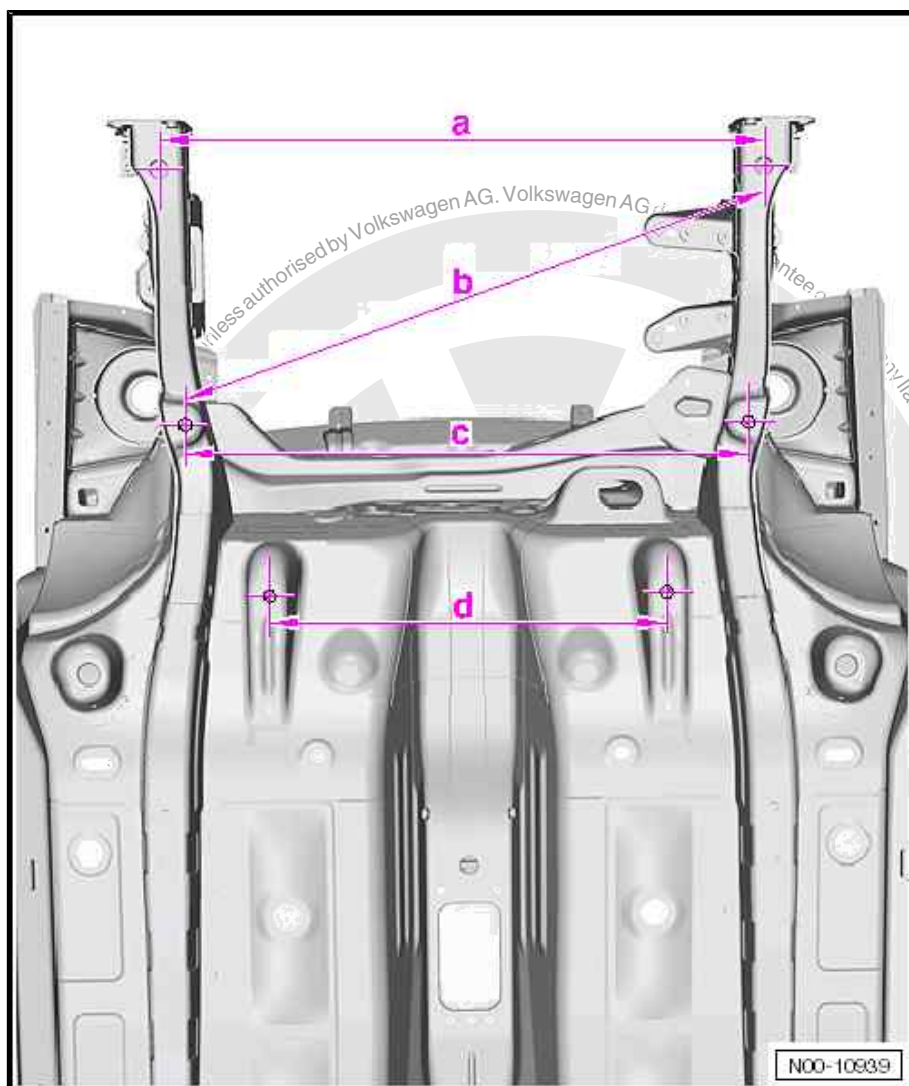
d - 895 mm \pm 2.0 mm





10.4 Floor panel - front

- a - 902 ± 2.0 mm
- b - 948 ± 2.0 mm
- c - $830 \text{ mm} \pm 2.0$ mm
- d - $576 \text{ mm} \pm 2.0$ mm





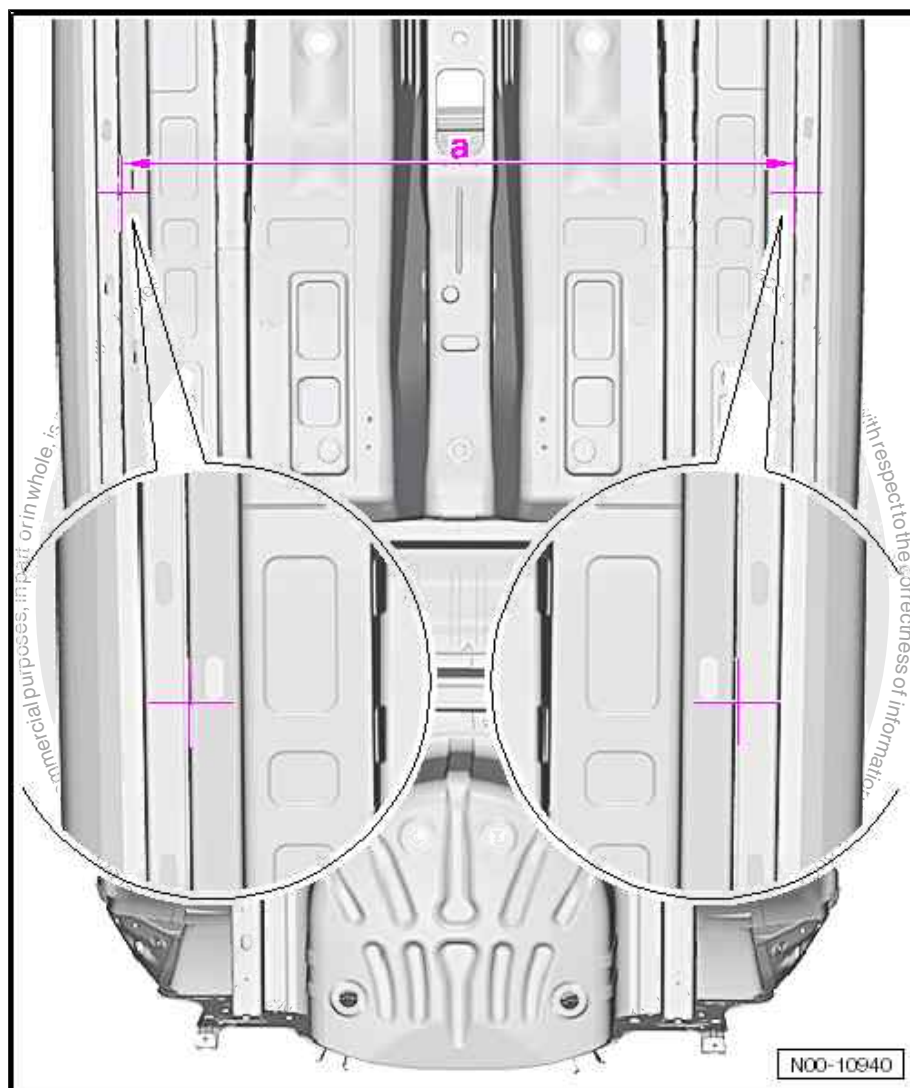
10.5 Floor panel - centre



Note

- ◆ *Dimension -a- is measured on underbody, in door centre area.*
- ◆ *Measurement made on inner side of body flange.*

a - 1314 mm ± 2.0 mm



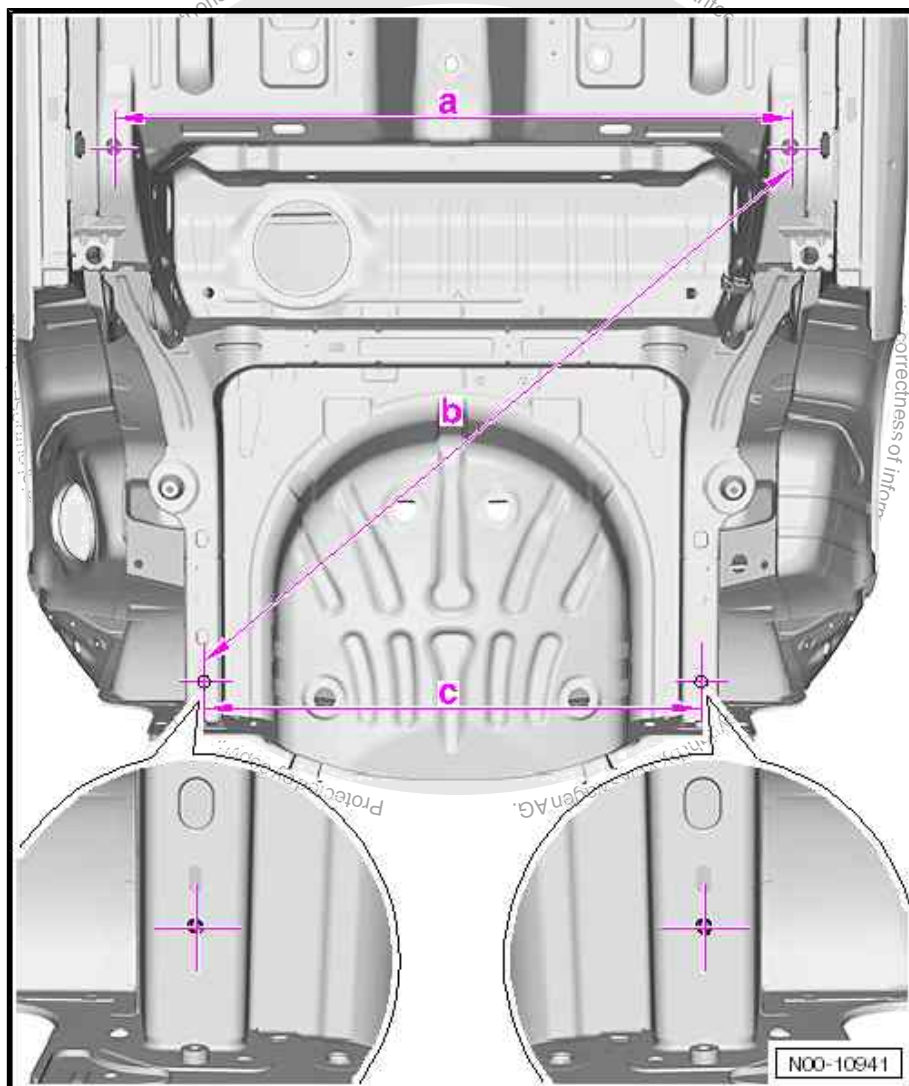


10.6 Floor panel - rear

a - 1148 mm \pm 2.0 mm

b - 1426 mm \pm 2.0 mm

c - 898 mm \pm 2.0 mm



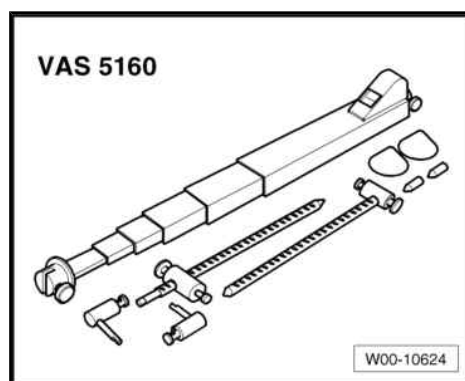


11 Body dimensions



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.



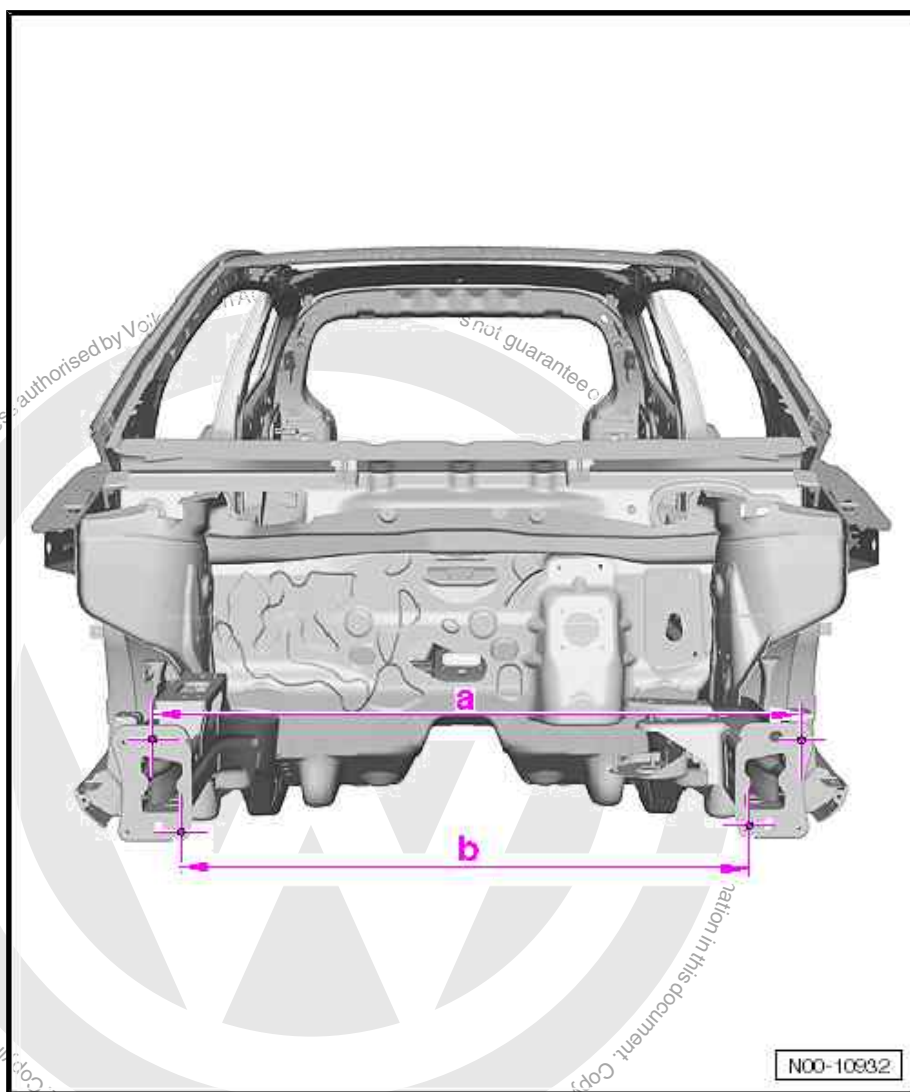
11.1 Body - front



Note

The illustration shows the body of the "up!". The body dimensions shown in the illustration are identical for the body of the "e-up!".

a - 974 mm \pm 2.0 mm





b - 853 mm ± 2.0 mm



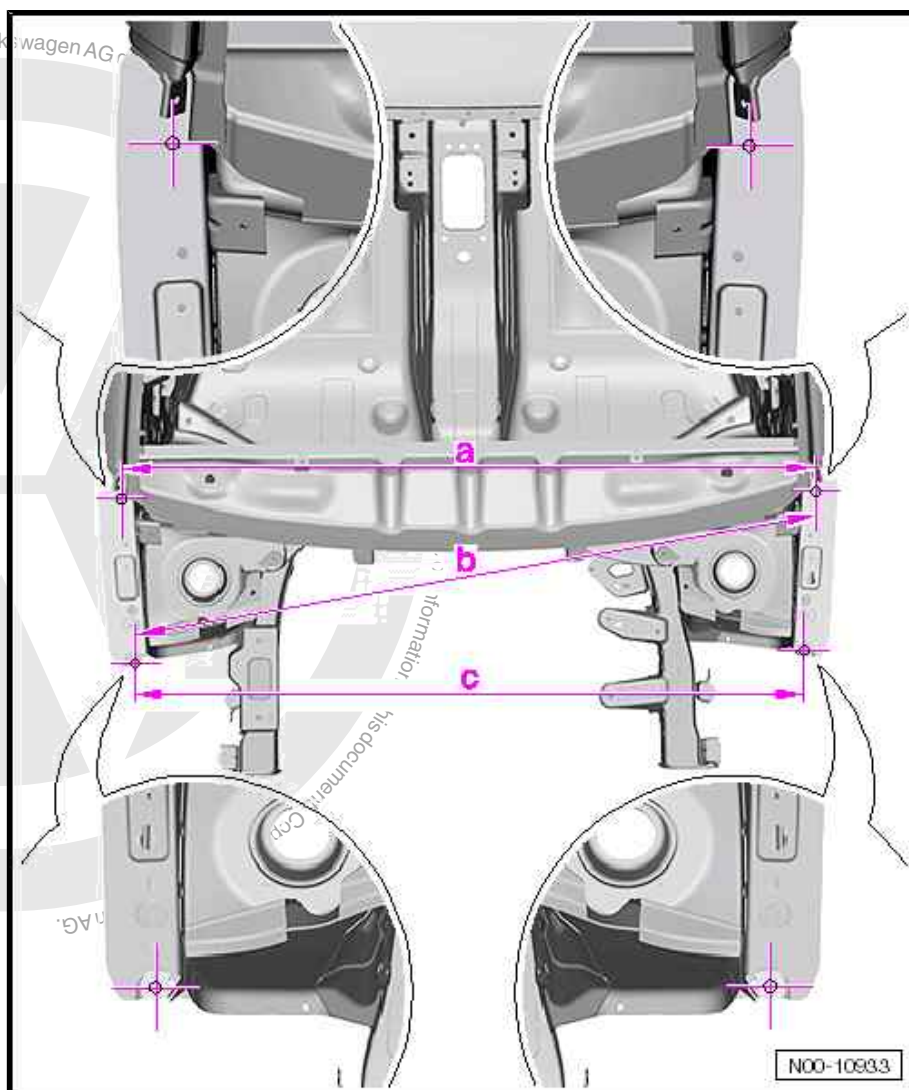
Note

The illustration shows the body of the "up!". The body dimensions shown in the illustration are identical for the body of the "e-up!".

a - 1375 mm ± 2.0 mm

b - 1394 mm ± 2.0 mm

c - 1336 mm ± 2.0 mm



11.2 Body, centre



Note

The illustration shows the body of the "up!". The body dimensions shown in the illustration are identical for the body of the "e-up!".

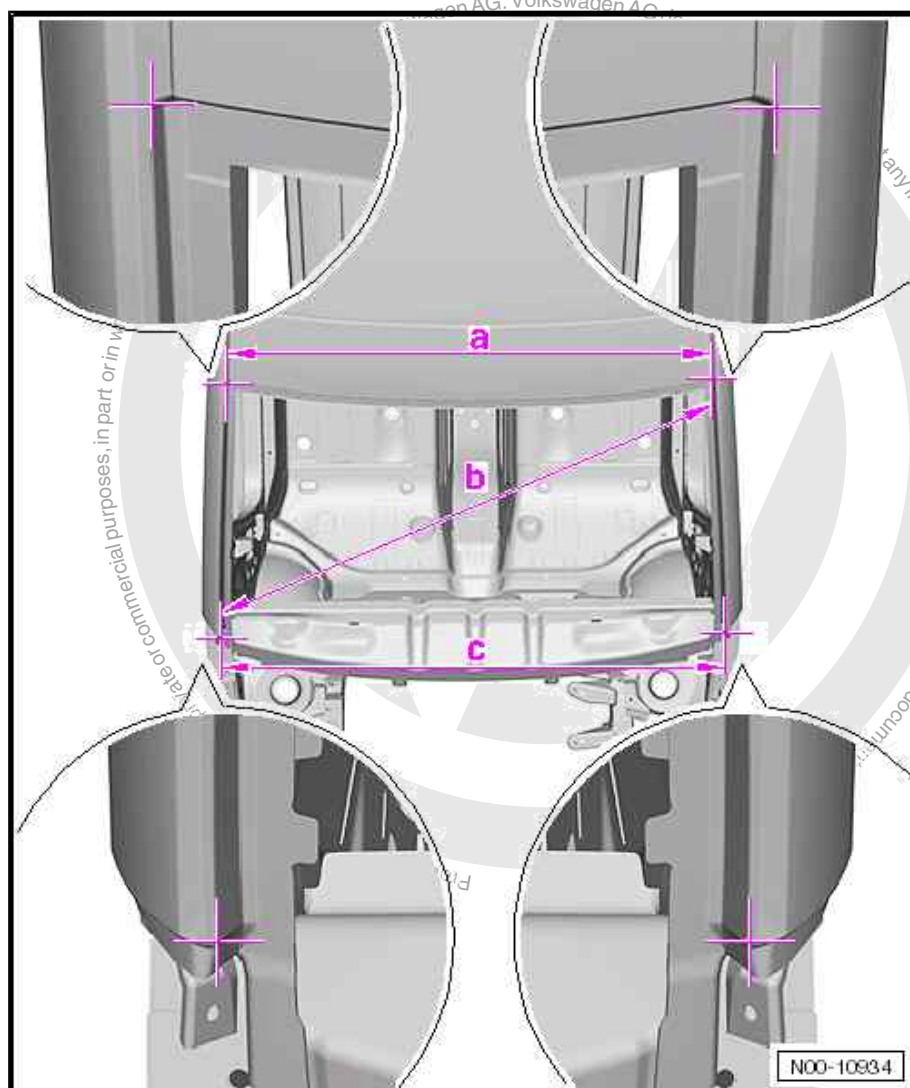


Windscreen aperture

a - 1133 mm \pm 2.0 mm

b - 1441 mm \pm 2.0 mm

c - 1330 mm \pm 2.0 mm



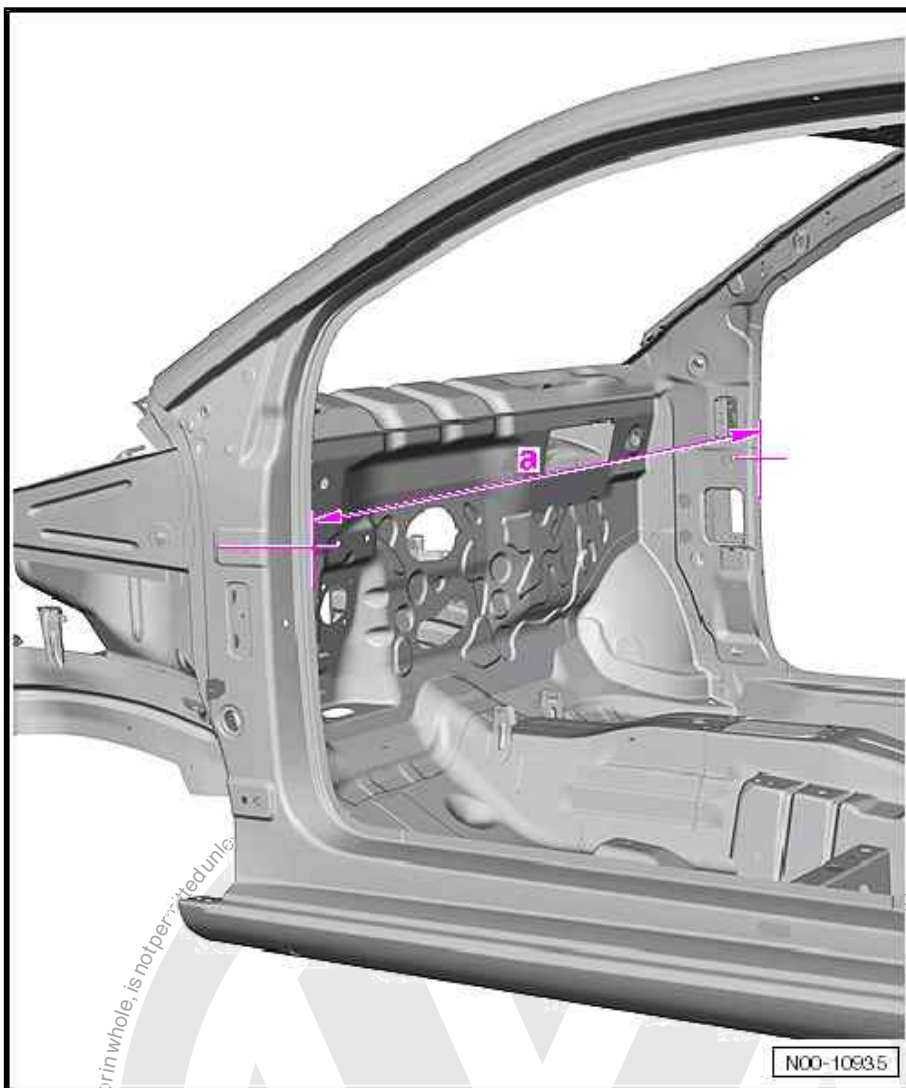
Note

- ◆ The illustration shows the body of the "up!". The body dimensions shown in the illustration are identical for the body of the "e-up!".
- ◆ Measurement made on inner side of body flange.

Dimension between A-pillars



a - 1306 mm ± 2.0 mm

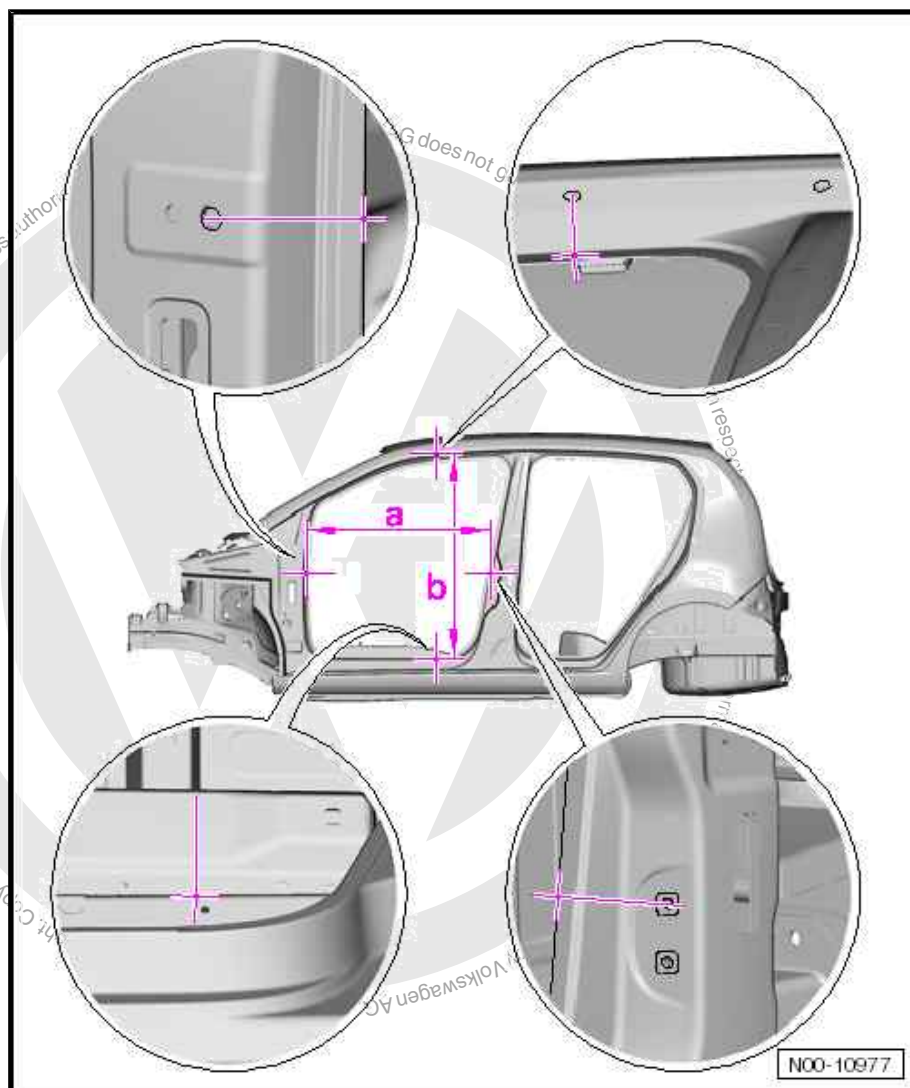


Front door aperture



a - 859 mm ± 2.0 mm

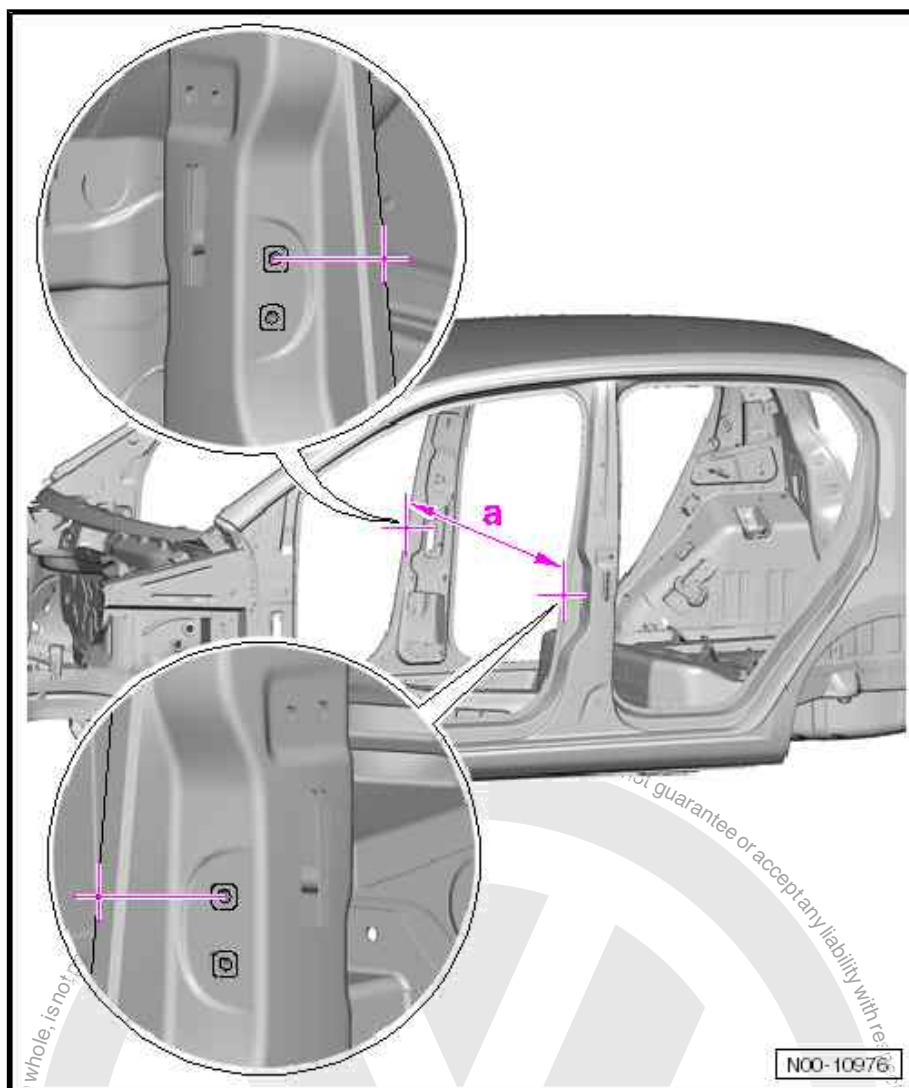
b - 945 mm ± 2.0 mm



Dimension between B-pillars



a - 1310 mm ± 2.0 mm

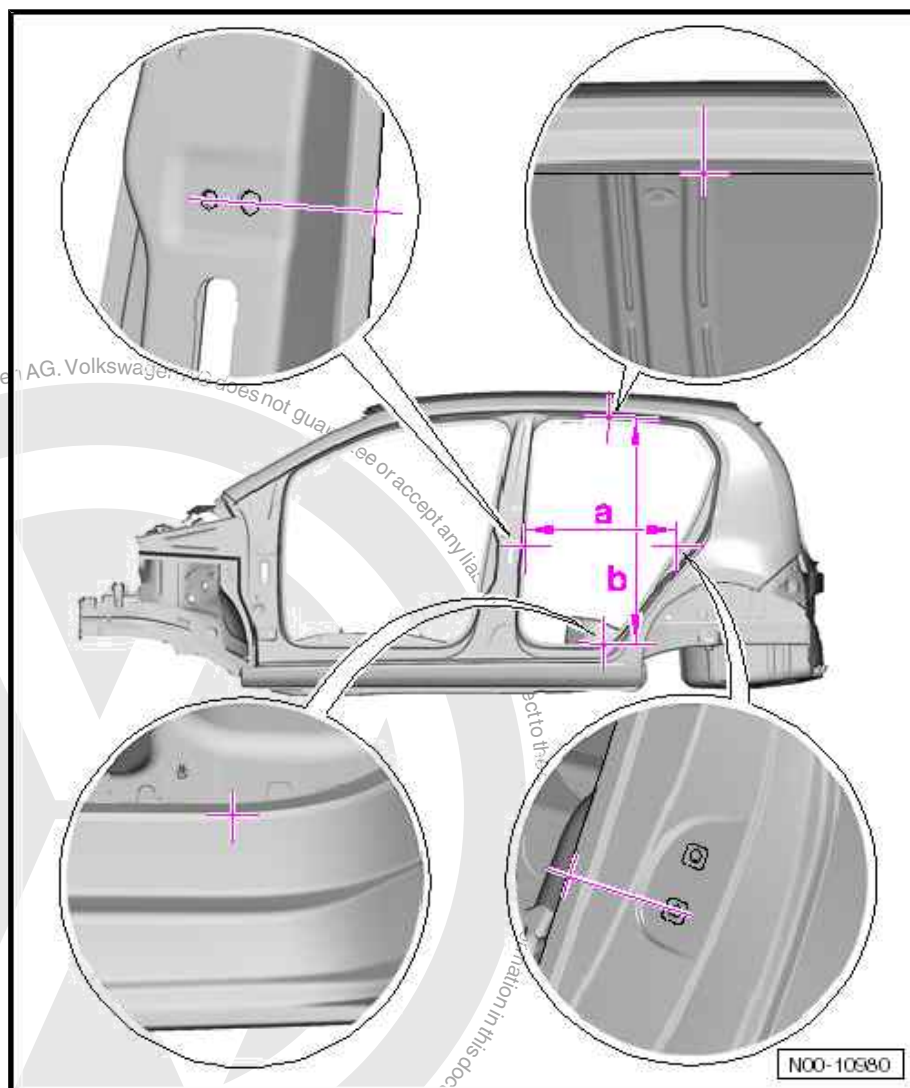


Rear door aperture



a - 632 mm ± 2.0 mm

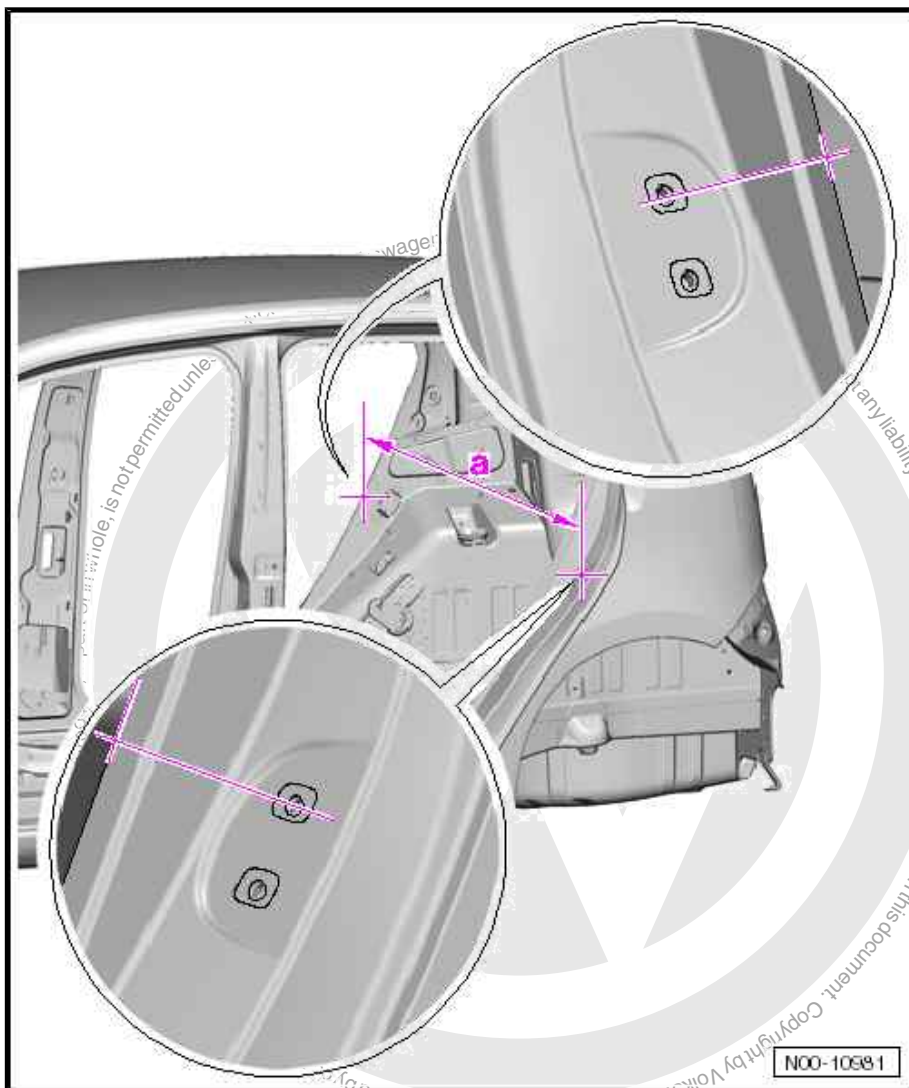
b - 967 mm ± 2.0 mm



Dimension between C-pillars



a - 1300 mm ± 2.0 mm





11.3 Body - rear



Note

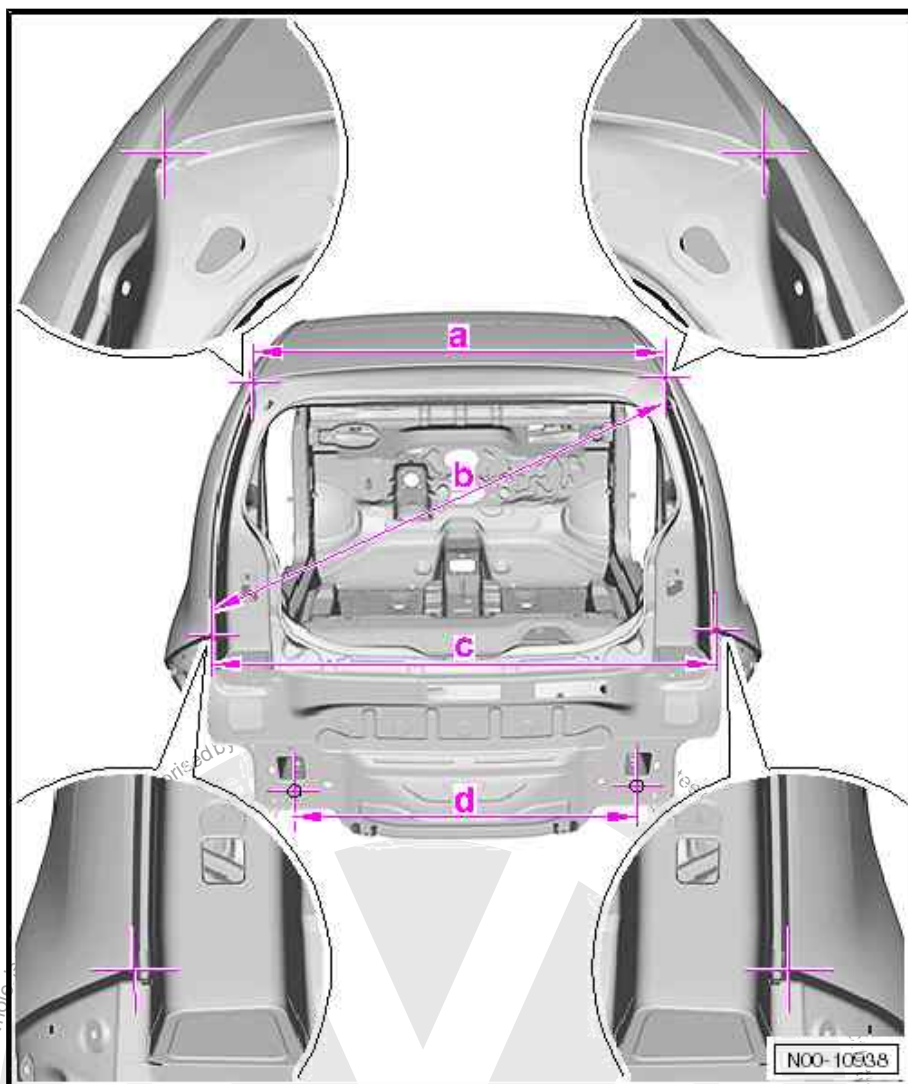
The illustration shows the body of the "up!". The body dimensions shown in the illustration are identical for the body of the "e-up!".

a - 1067 mm \pm 2.0 mm

b - 1351 mm \pm 2.0 mm

c - 1287 mm \pm 2.0 mm

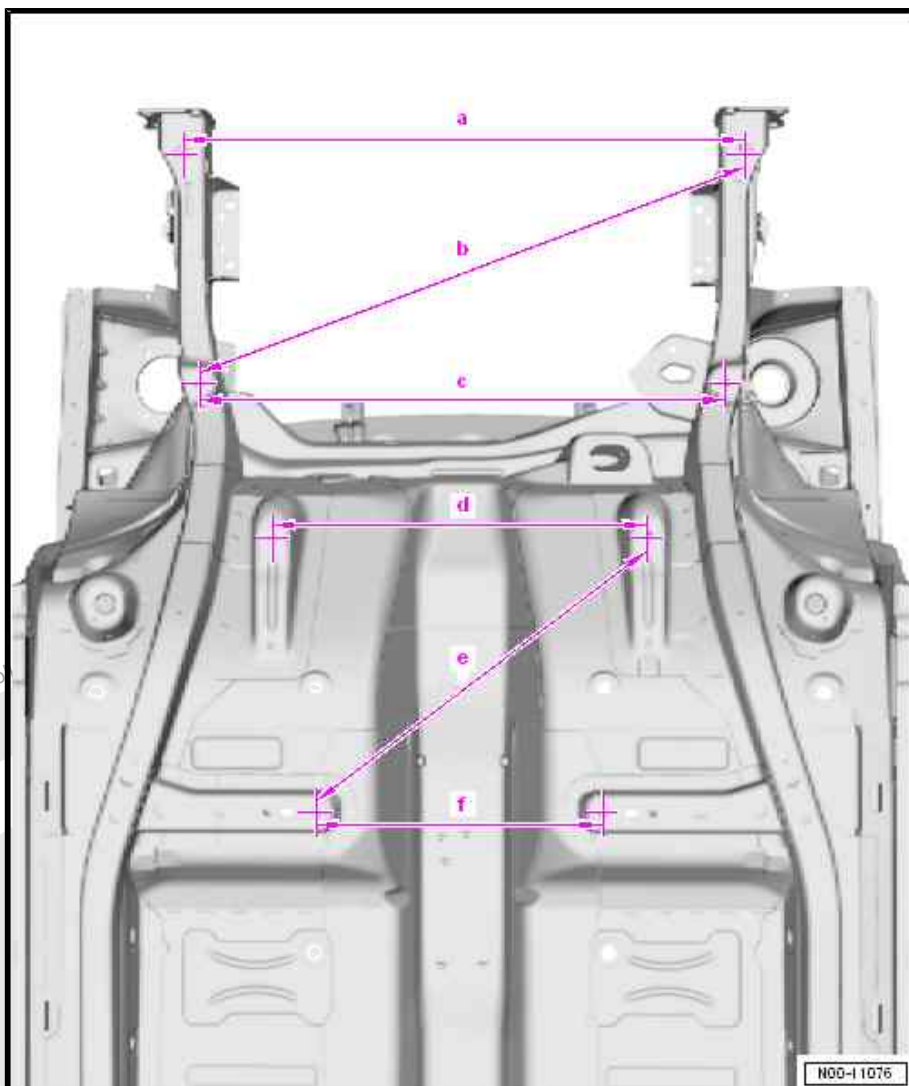
d - 895 mm \pm 2.0 mm





11.4 Floor panel - front

- a - 902 mm \pm 2.0 mm
- b - 948 mm \pm 2.0 mm
- c - 830 mm \pm 2.0 mm
- d - 576 mm \pm 2.0 mm
- e - 659 mm \pm 2.0 mm
- f - 433 mm \pm 2.0 mm



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11.5 Floor panel - centre



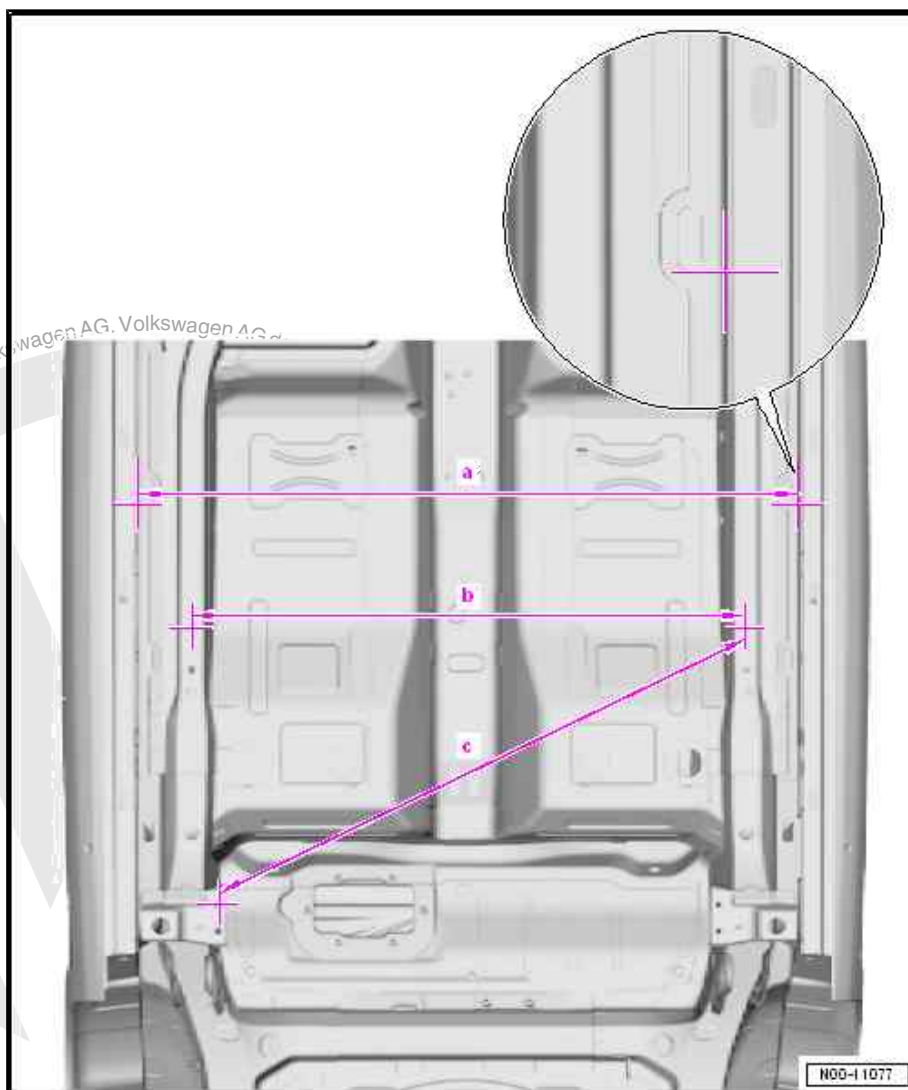
Note

- ◆ Dimension -a- is measured on underbody, in door centre area.
- ◆ Measurement made on inner side of body flange.

a - 1314 mm ± 2.0 mm

b - 1100 mm ± 2.0 mm

c - 1182 mm ± 2.0 mm





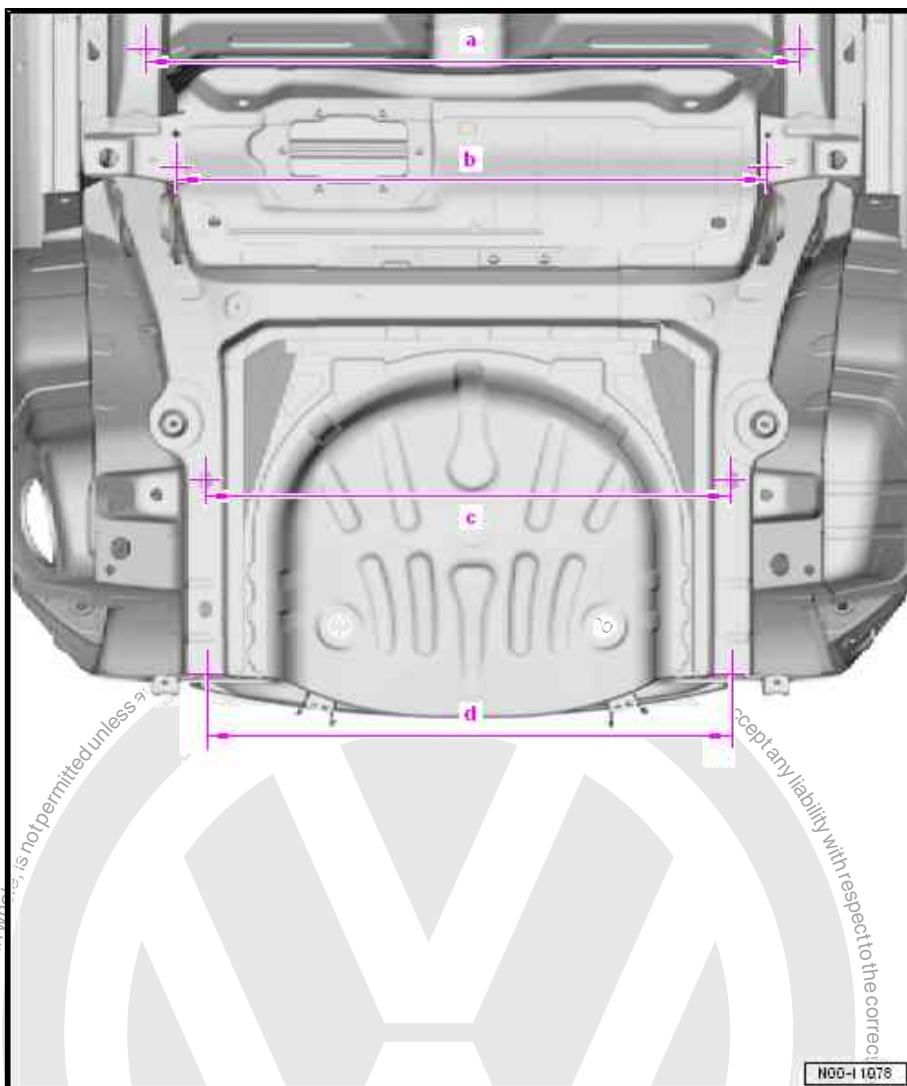
11.6 Floor panel - rear

a - 1100 mm \pm 2.0 mm

b - 994 mm \pm 2.0 mm

c - 898 mm \pm 2.0 mm

d - 895 mm \pm 2.0 mm





12 Alignment jig

- If body structural damage or deviation from dimensions given in the repair manual is suspected and/or damage is visible to structural components, the vehicle must be placed on a Volkswagen AG approved alignment jig system and measured.

Explanation of structural damage to body

A damaged (dented, cracked, buckled) component and/or the position of the structural component on the body has changed.

A structural component includes all components of the body, except outer body panels and components which are bolted on.

If dimensions deviate, the vehicle must be repaired according to respective repair manual.



Note

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

12.1 Overview

Special tools and workshop equipment required

- ◆ Measurement and alignment system, basic - VAS 6526- or
- ◆ Measuring and alignment system, professional - VAS 6527- or
- ◆ Measuring and alignment system, professional plus - VAS 6528- or
- ◆ Alignment system package - V.A.G 1920- with
- ◆ Alignment bracket set up! - VAS 6697- and
- ◆ Alignment bracket system MZ Plus - VAS 6630-
- ◆



Note

- ◆ *The alignment bracket set up! - VAS 6697- can only be used in conjunction with the MZ Plus alignment system - VAS 6630-.*
- ◆ *Detailed information on setting up the alignment bracket set can be found with the equipment.*

12.2 Overview

Special tools and workshop equipment required

- ◆ Measurement and alignment system, basic - VAS 6526- or
- ◆ Measuring and alignment system, professional - VAS 6527- or
- ◆ Measuring and alignment system, professional plus - VAS 6528- or
- ◆ Alignment system package - V.A.G 1920- with
- ◆ Alignment bracket set up! - VAS 6697- with
- ◆ Alignment bracket set e-up! - VAS 6697/2- and



- ◆ Alignment bracket system MZ Plus - VAS 6630-



Note

- ◆ *The alignment bracket set up! - VAS 6697- and the alignment bracket set e-up! - VAS 6697/2- can only be used in conjunction with the alignment bracket system MZ Plus - VAS 6630- .*
- ◆ *Detailed information on setting up the alignment bracket set can be found with the equipment.*

12.3 Portal gauge

Special tools and workshop equipment required

- ◆ Portal gauge - VAS 5007-
- ◆ Portal gauge supplement for up! - VAS 5007/63-





50 – Body - front

RO: 50 40 55 50

1 Renewing right bracket



WARNING

Observe safety notes!

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

1.1 Tools

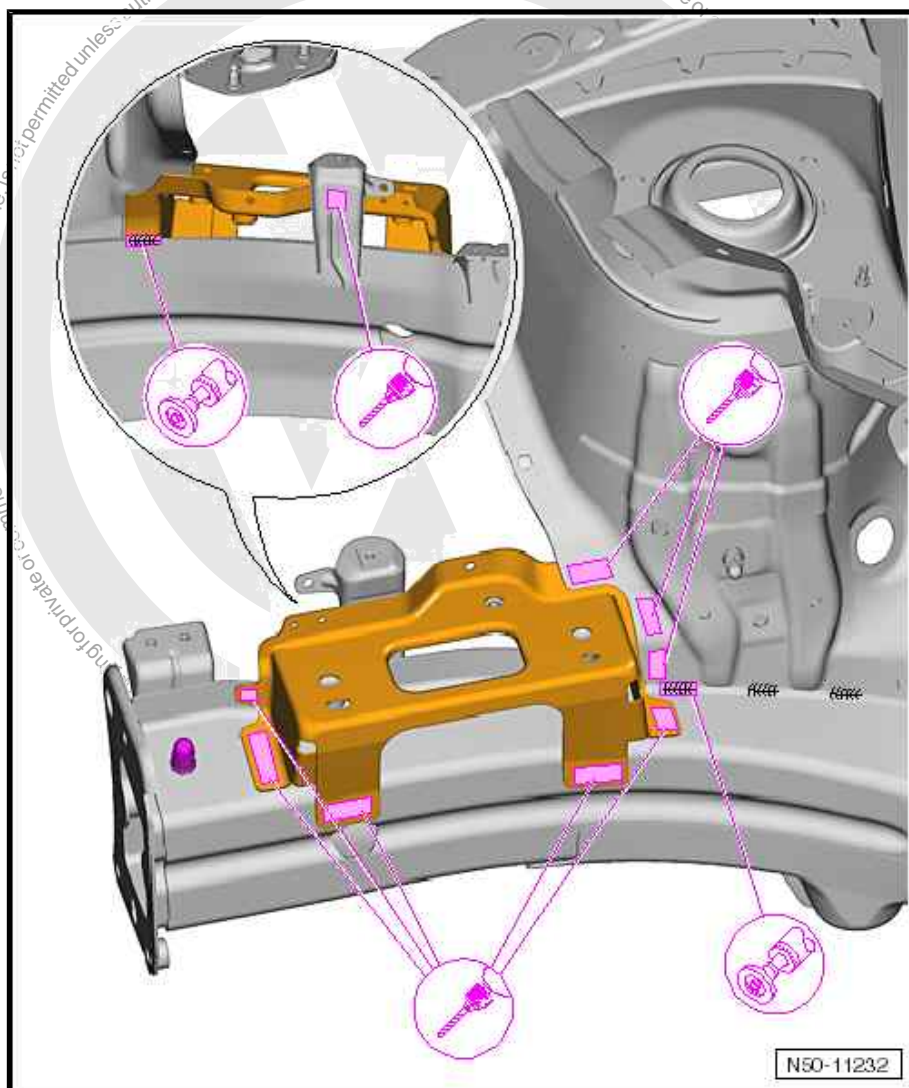


Note

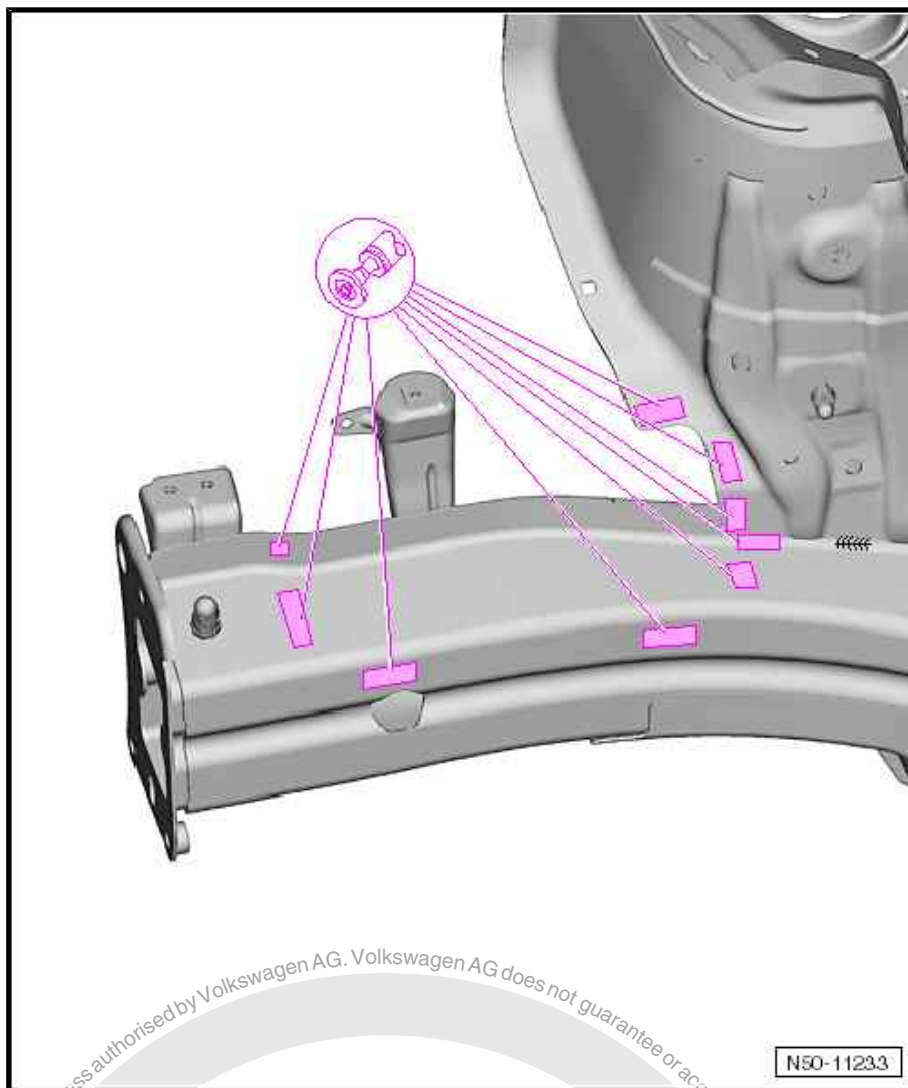
- ◆ *Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment,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

1.2 Removing





- Separate original joint.



- Remove remaining material

1.3 Installing



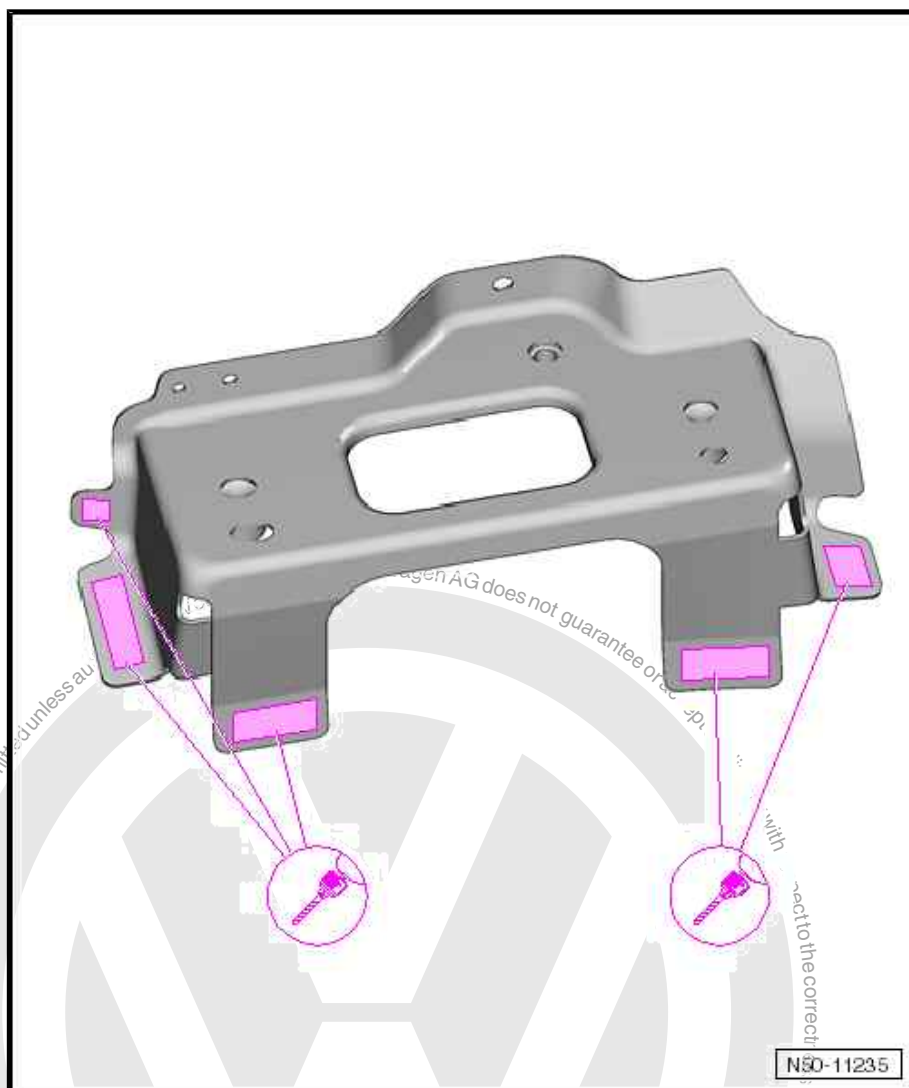
Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 56](#).*

1.3.1 Preparing new part

Replacement part

- ◆ Right bracket (parts designation according to ETKA ⇒ engine mounting bracket)

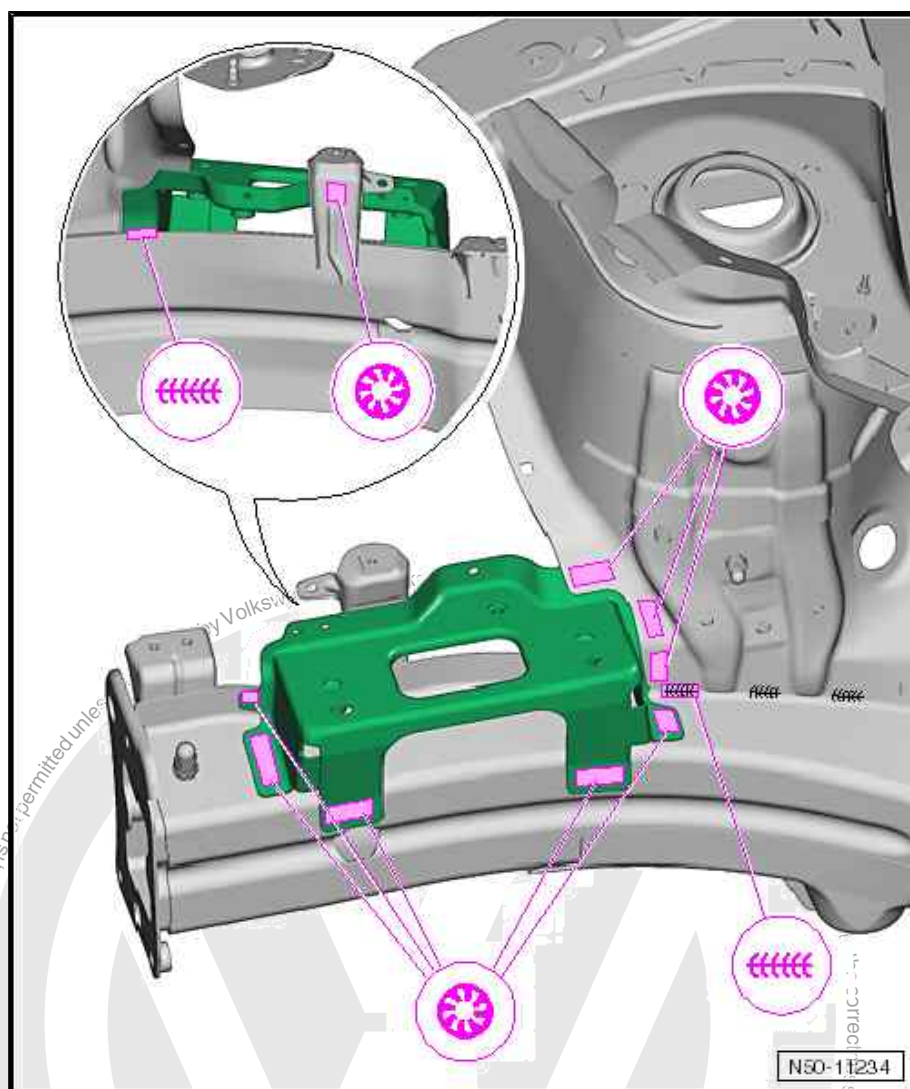


- Drill 8 mm Ø holes for SG plug weld seam.



1.3.2 Welding in

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



- Weld in bracket on wheel housing, SG plug weld seam.
- Weld in remaining joint, SG continuous weld seam.



RO: 50 40 55 50, 50 40 55 56

2 Renewing right bracket



WARNING

Observe safety notes!

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



Note

Removal and installation is described for the right bracket. The removal and installation of the left bracket is similar.

2.1 Tools

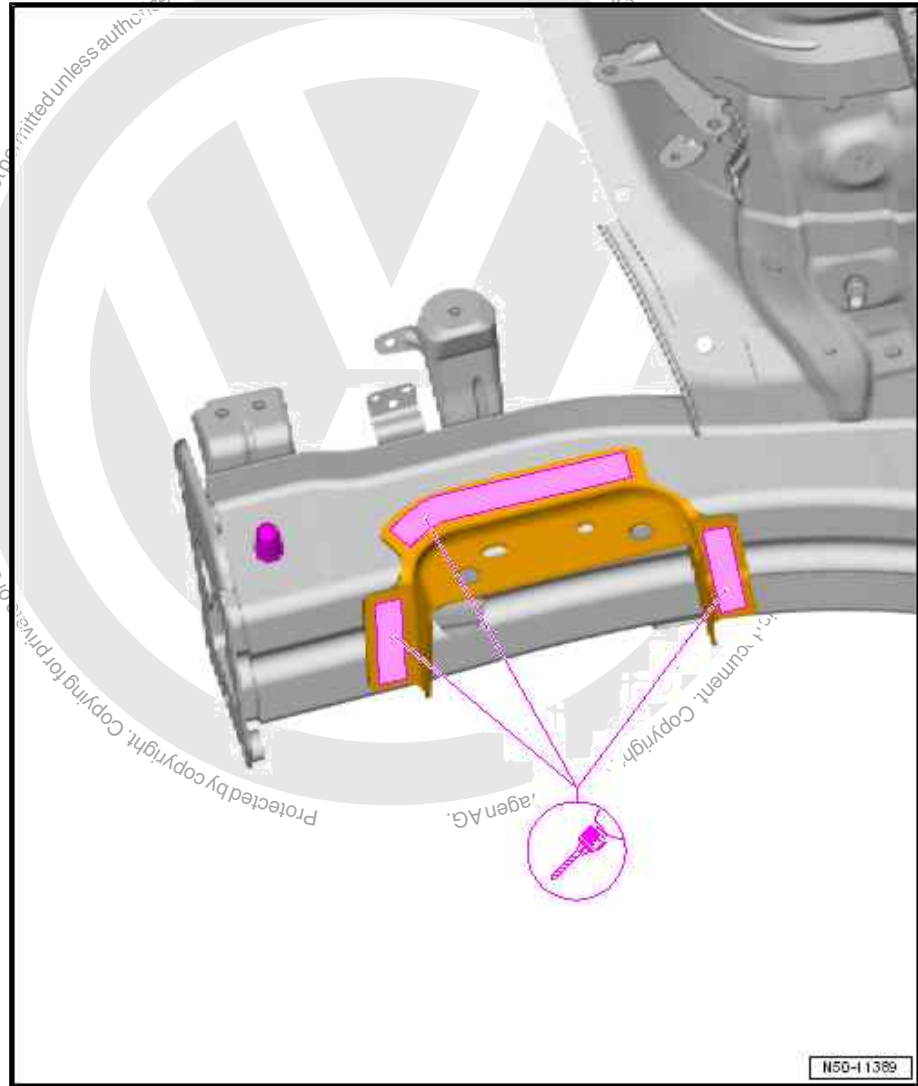


Note

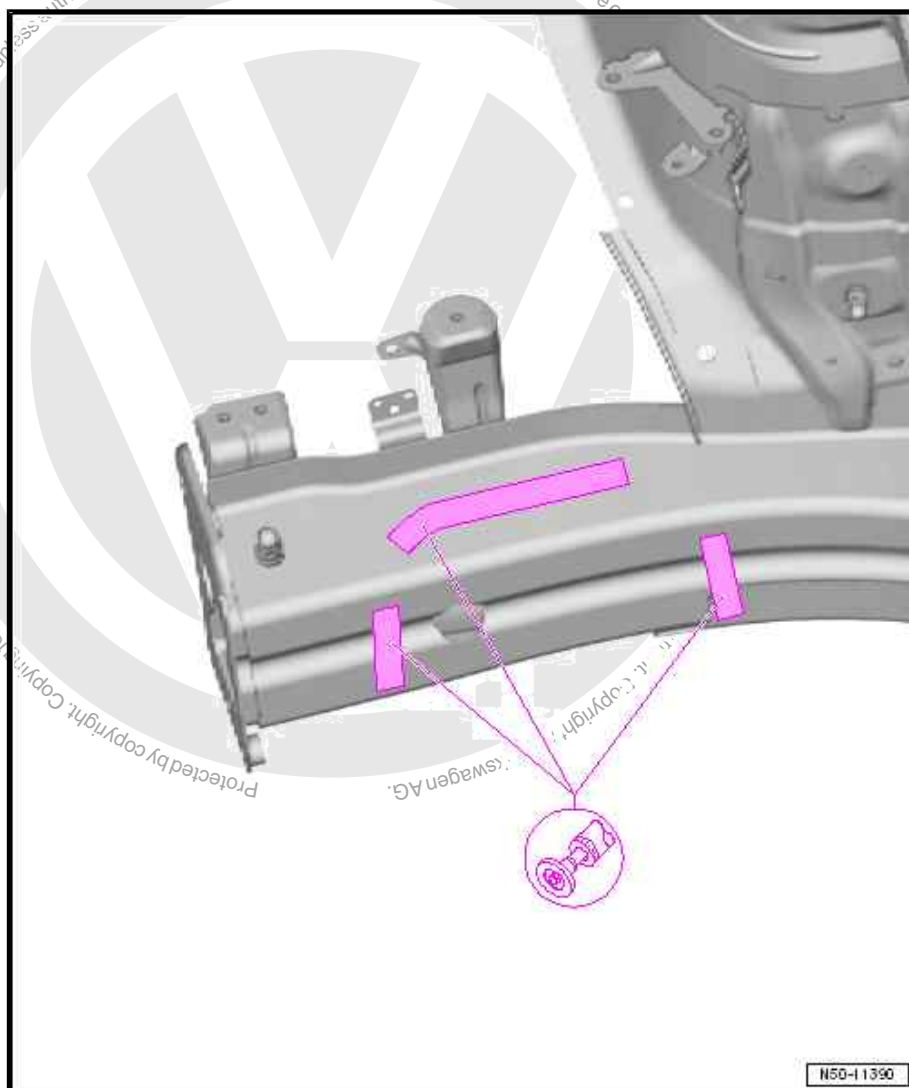
- ◆ *Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment,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

2.2 Removing





- Separate original joint.
- Remove bracket from body.



- Remove remaining material.

2.3 Installing



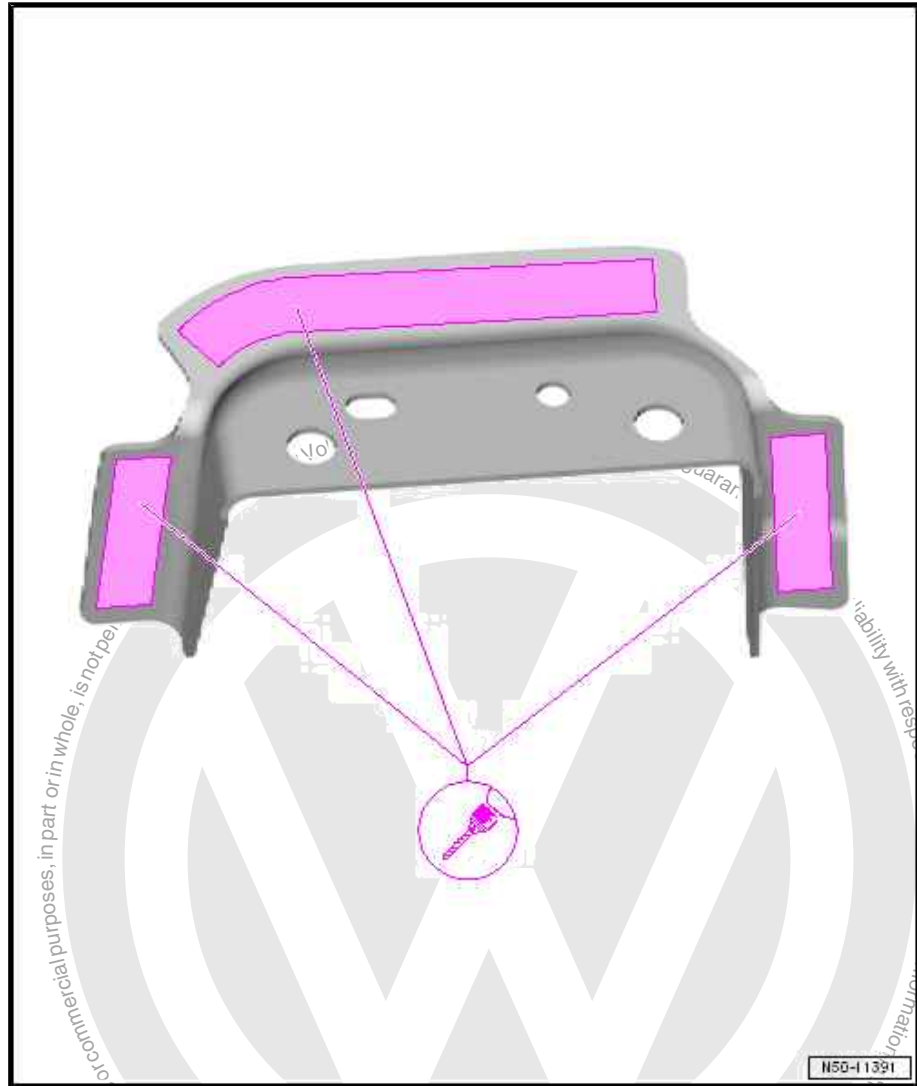
Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 61](#).*

2.3.1 Preparing new part

Replacement part

- ◆ Right bracket (parts designation according to ETKA ⇒ engine mounting bracket)

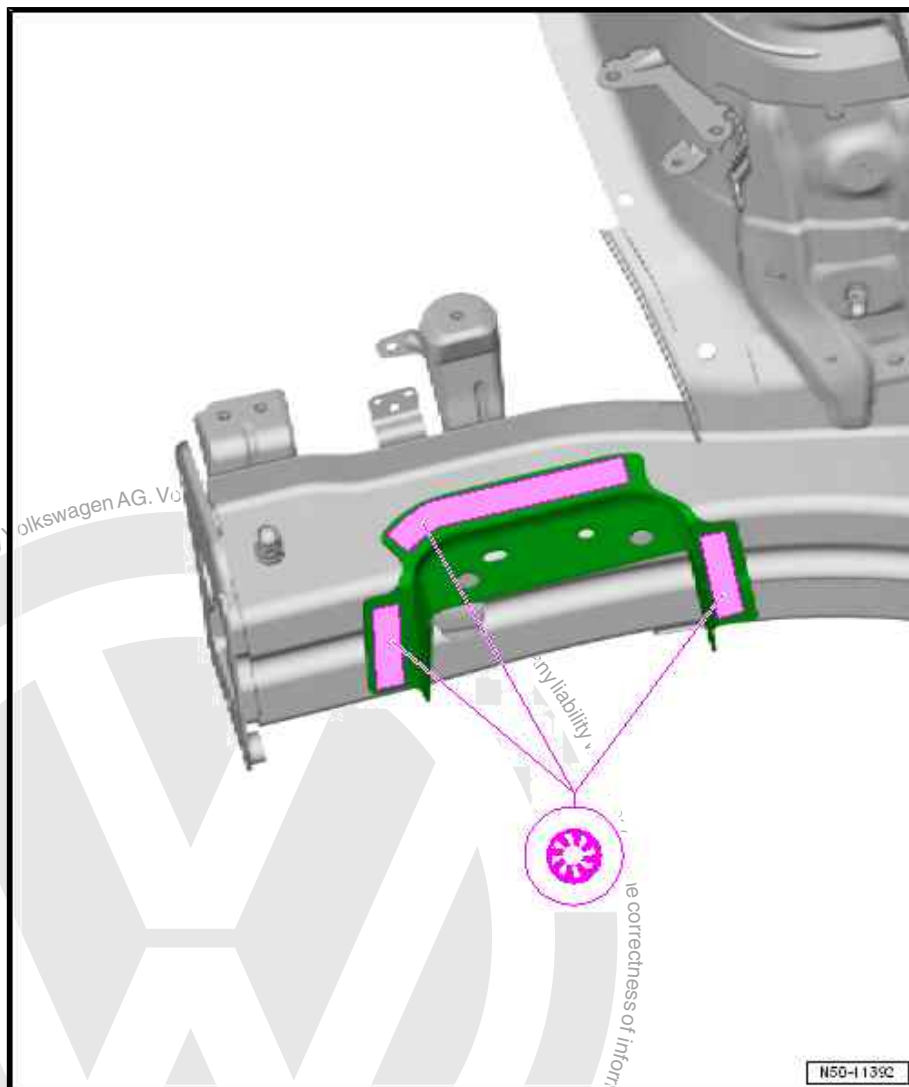


- Drill 8 mm \varnothing holes for SG plug weld seam.



2.3.2 Welding in

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



- Weld in bracket, SG plug weld seam.



RO: 50 40 55 56

3 Renewing left bracket



WARNING

Observe safety notes!

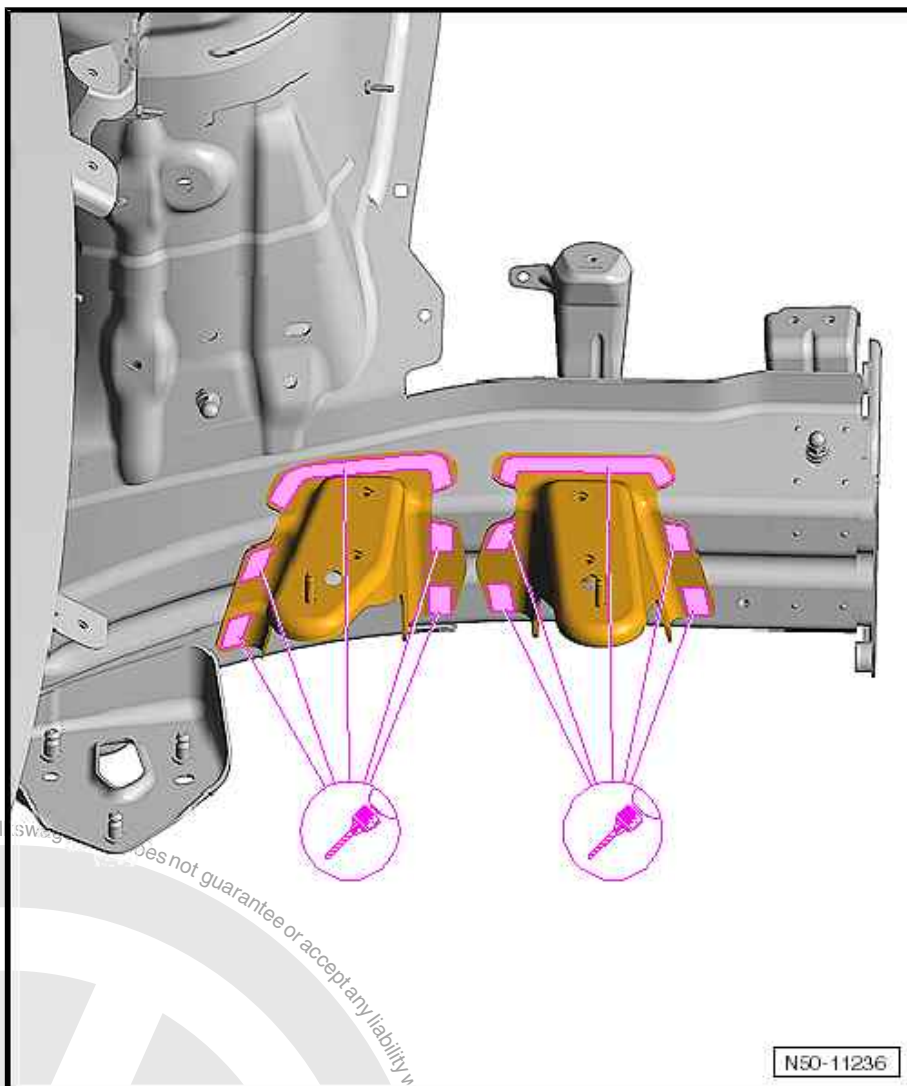
3.1 Tools



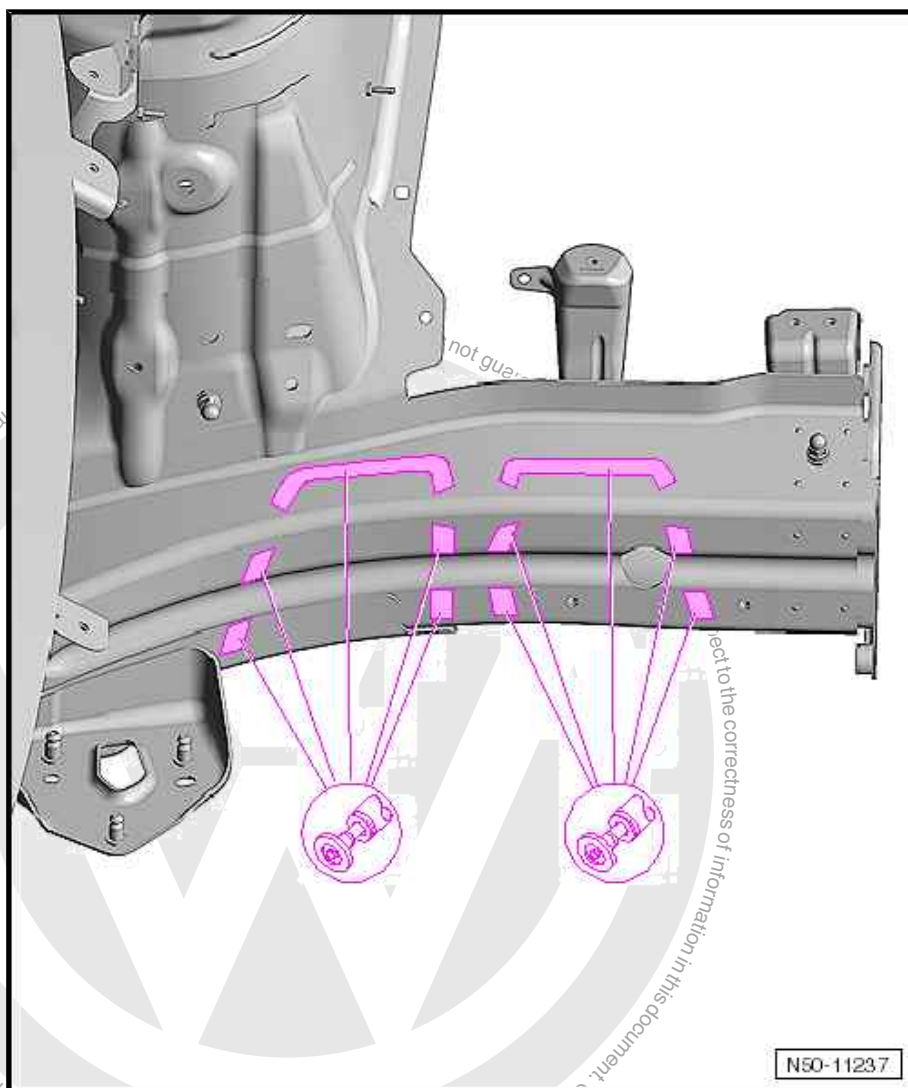
Note

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

3.2 Removing



- Separate original joint.



- Remove remaining material.

3.3 Installing



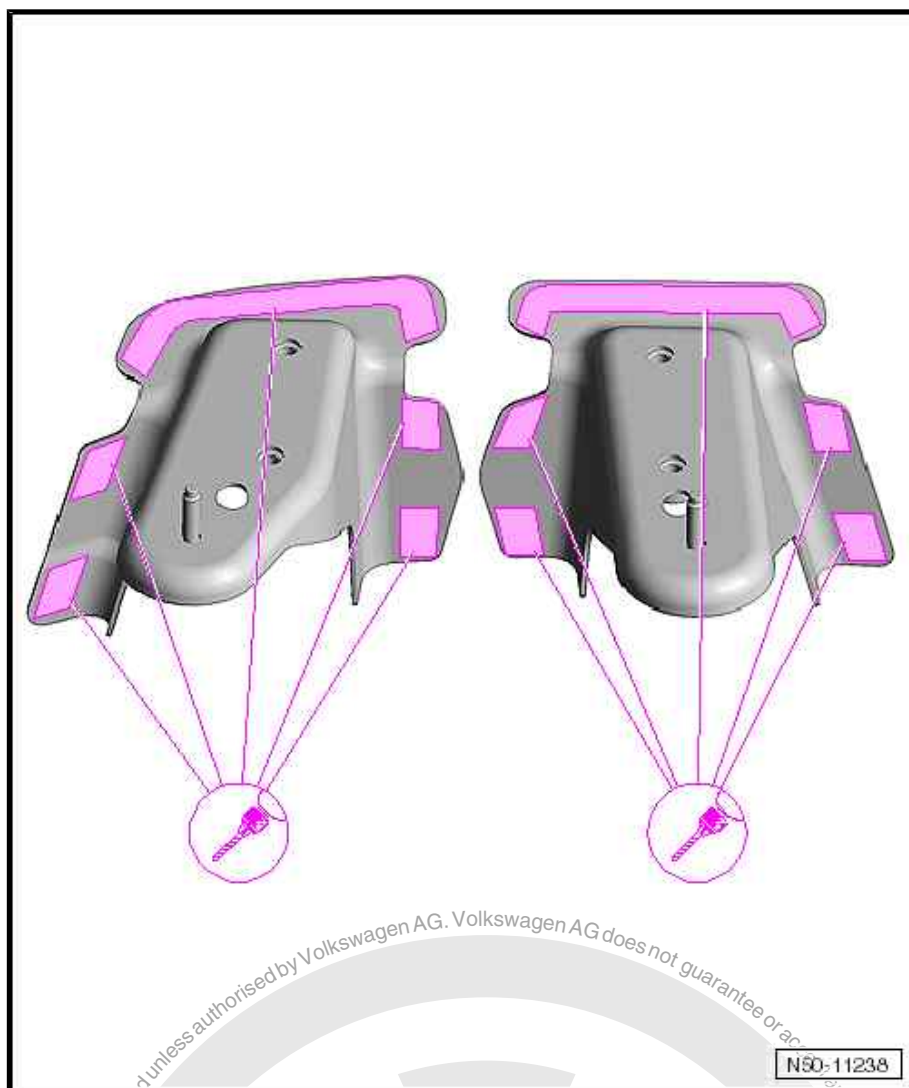
Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 66](#).*

3.3.1 Preparing new part

Replacement part

- ◆ Left bracket for engine mounting (parts designation according to ETKA ⇒ mounting bracket for gearbox)

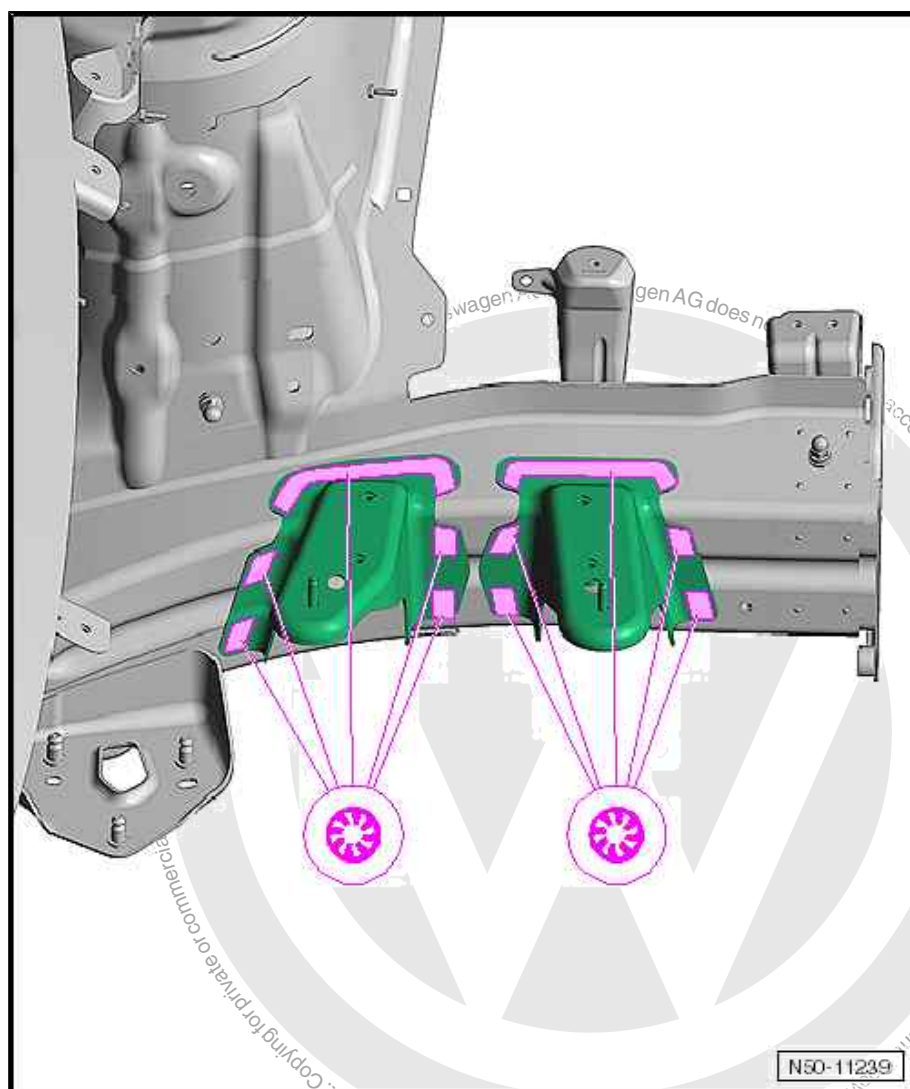


- Drill 8 mm Ø holes for SG plug weld seam.



3.3.2 Welding in

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



- Weld in bracket, SG plug weld seam.



RO: 50 43 55 60

4 Renewing mounting bracket for sub-frame



WARNING

Observe safety notes!

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



Note

Removal and installation is described for the left mounting bracket. The removal and installation of the remaining 3 mounting brackets is similar.

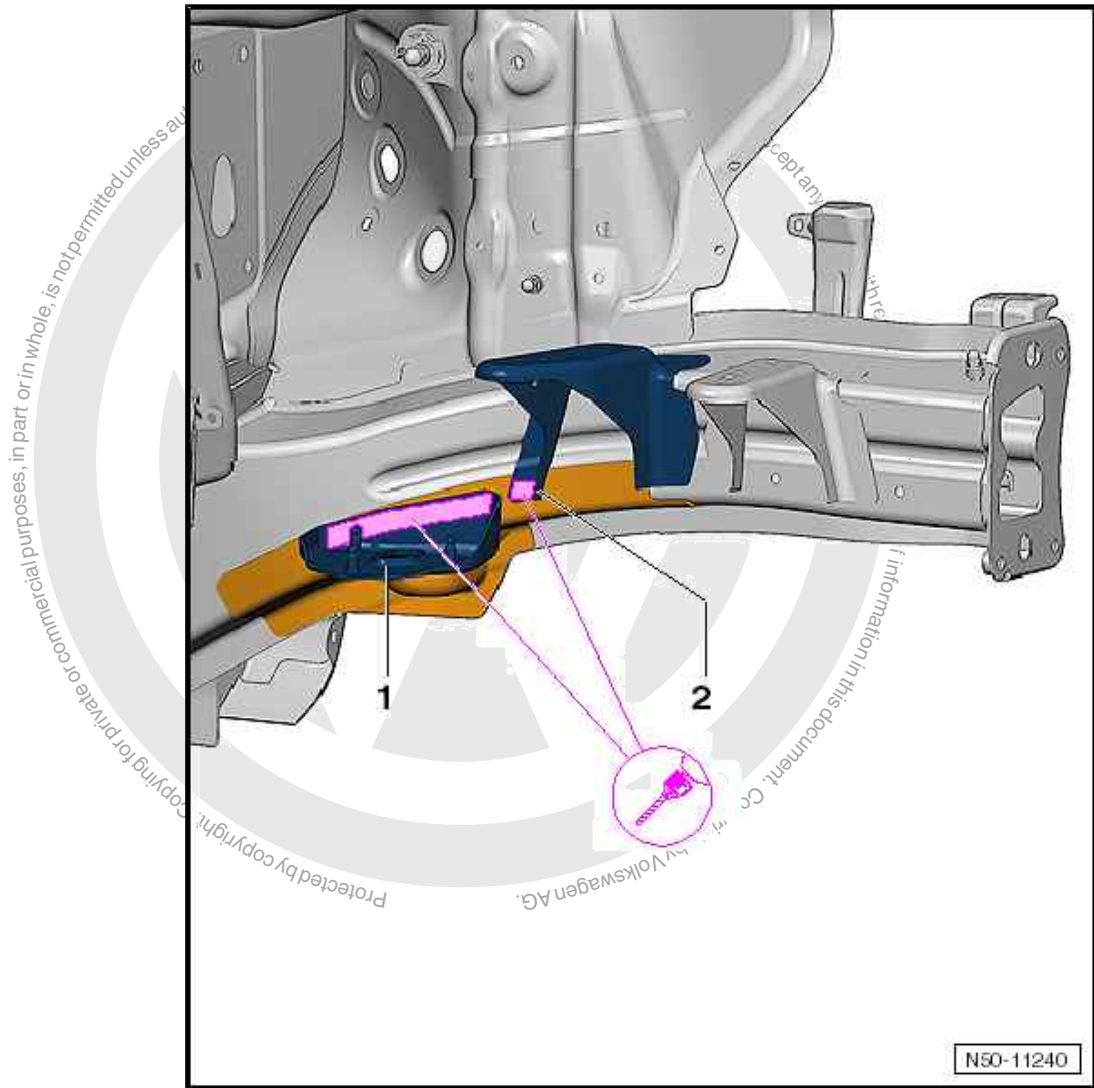
4.1 Tools



Note

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

4.2 Removing

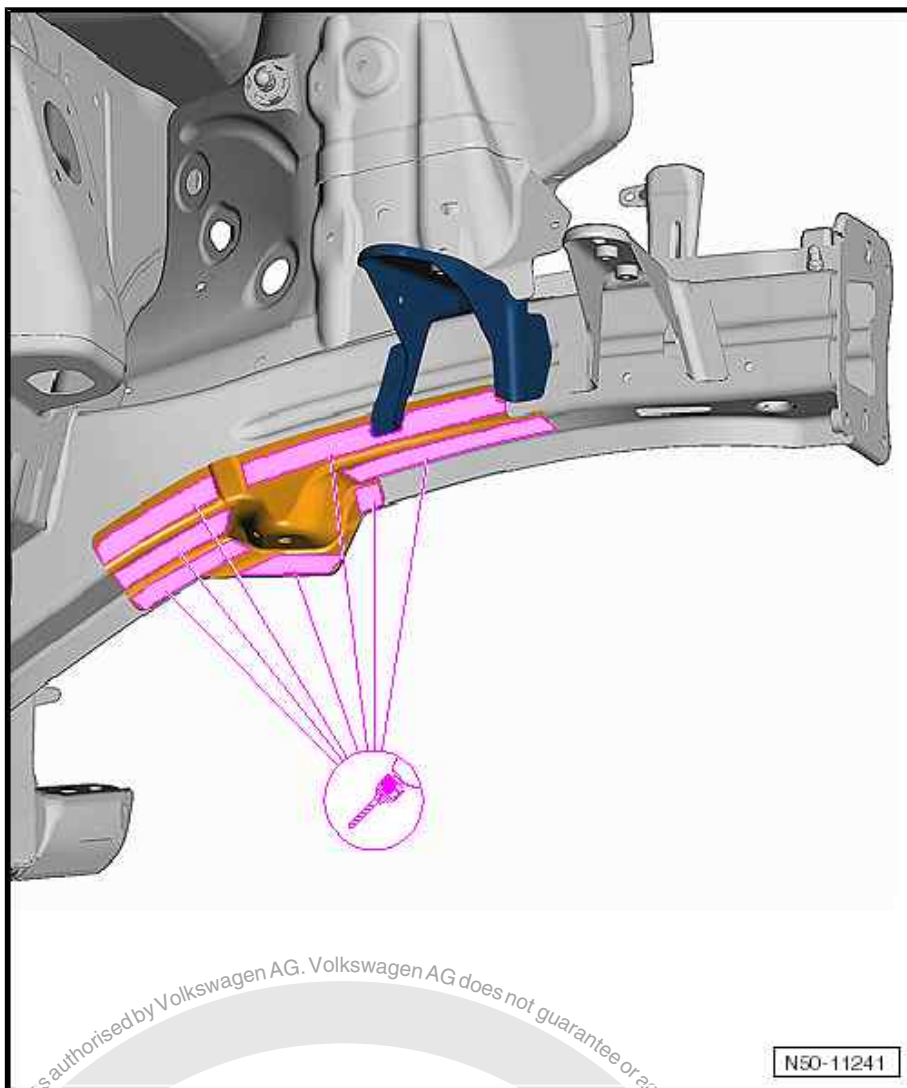


- Separate original joint of ABS mounting bracket -1- and bracket -2-.
- Drill through both panels when drilling bracket -2-. Then bend open bracket slightly.

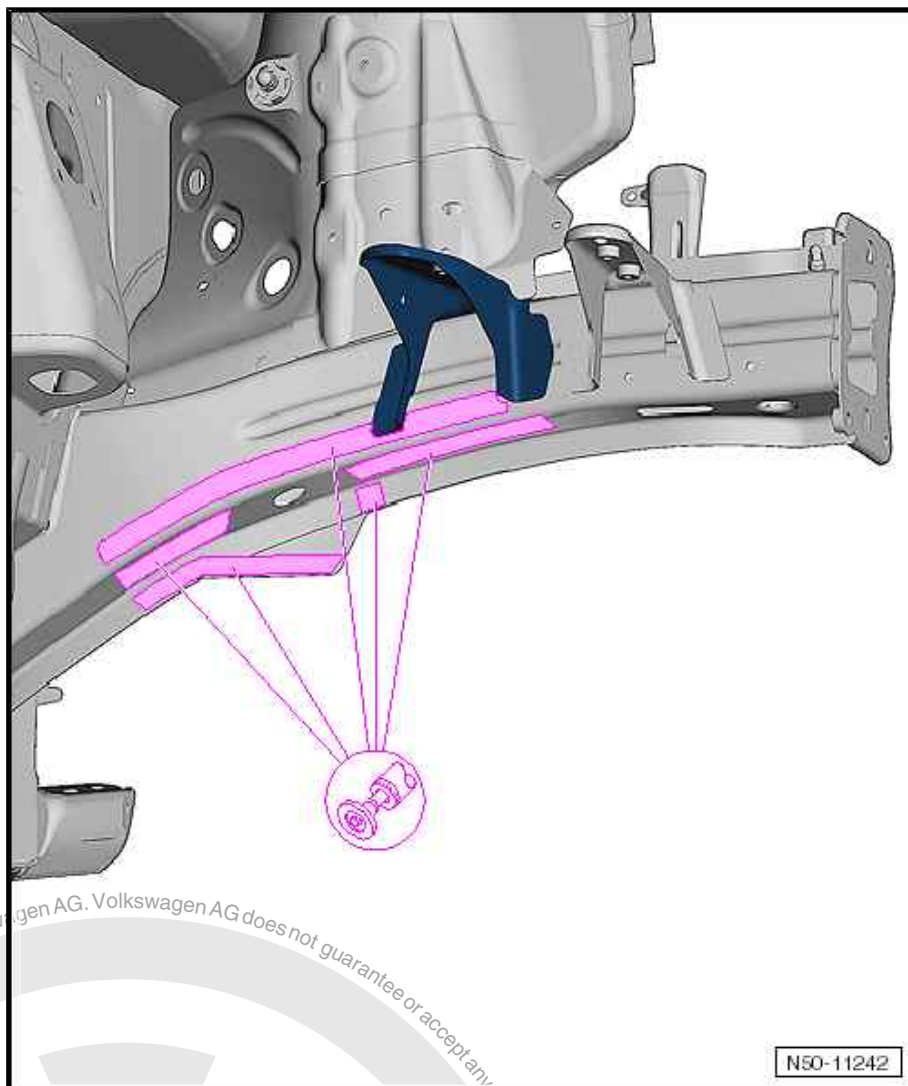


Note

The original joint of the ABS mounting bracket -1- must be separated in such a way that the mounting bracket can be reused when installing.



- Separate original joint.



- Remove remaining material.

4.3 Installing



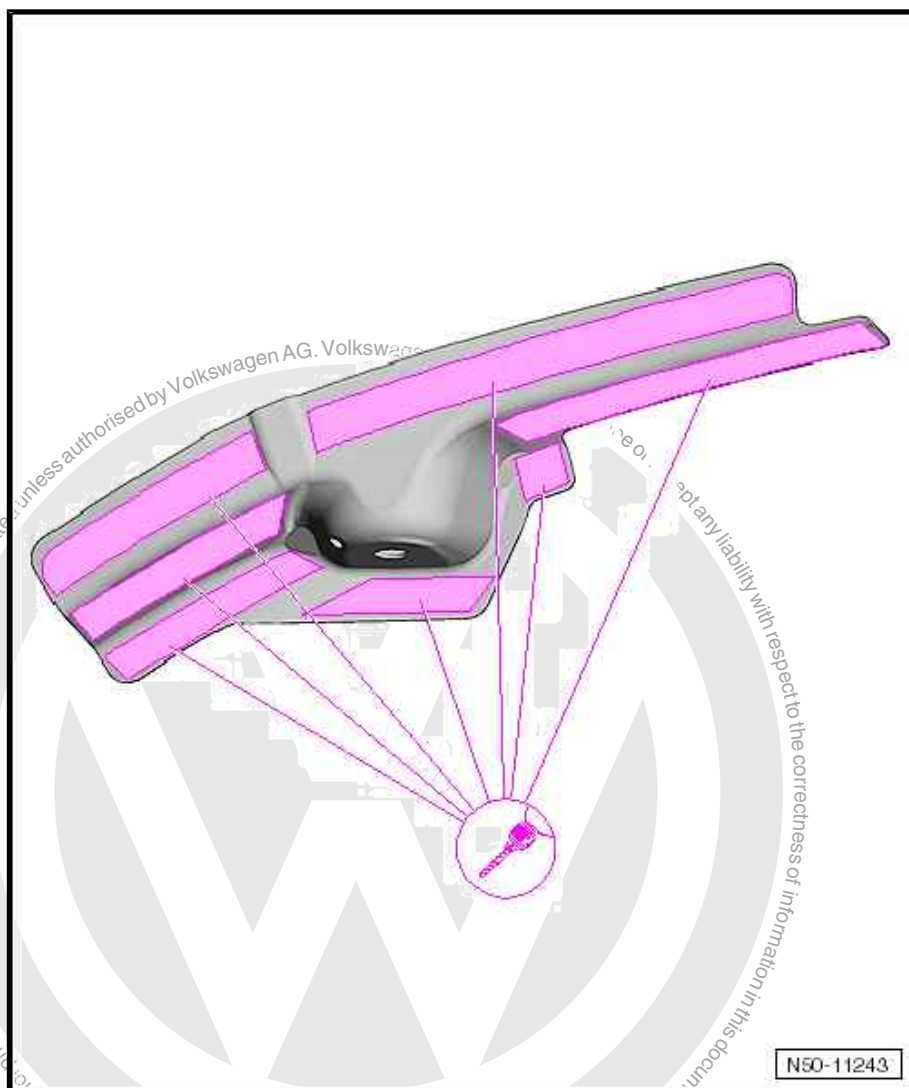
Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 71](#).*

4.3.1 Preparing new part

Replacement part

- ◆ Front mounting bracket for subframe (parts designation according to ETKA ⇒ retainer for subframe)

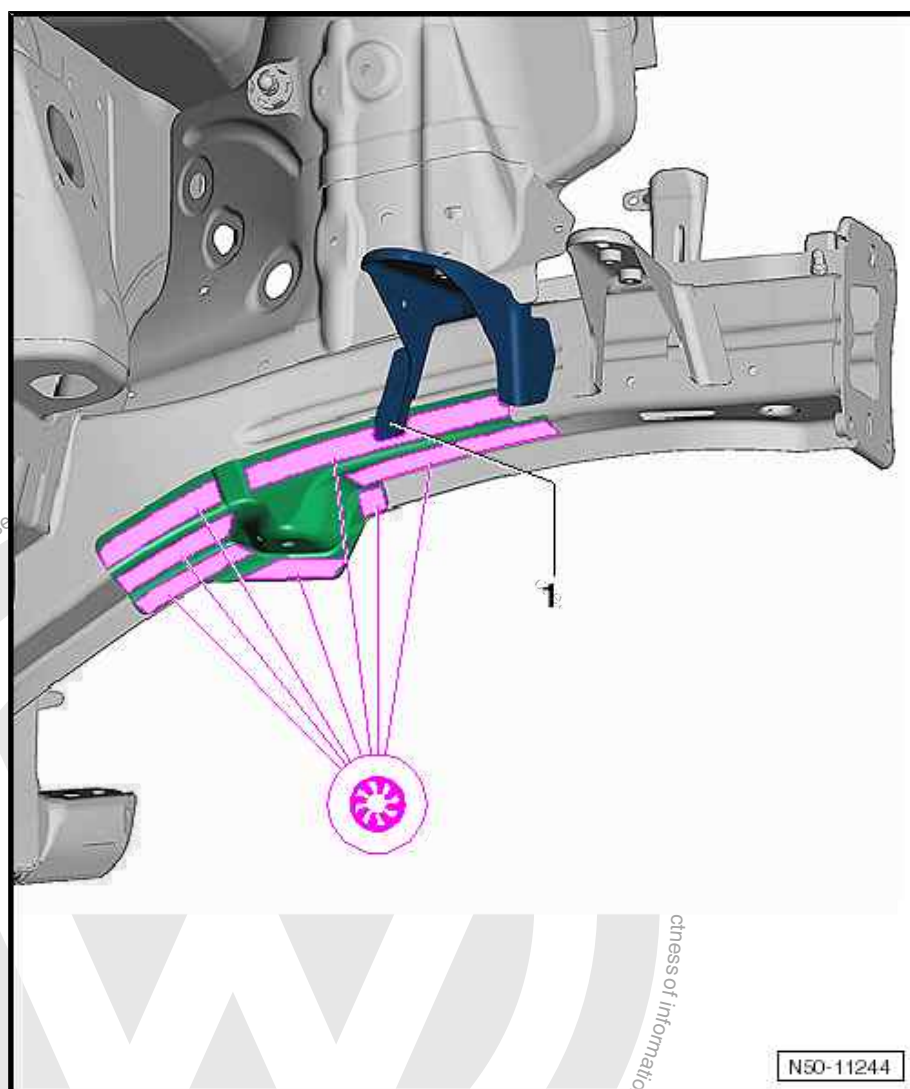


- Drill 8 mm Ø holes for SG plug weld seam.

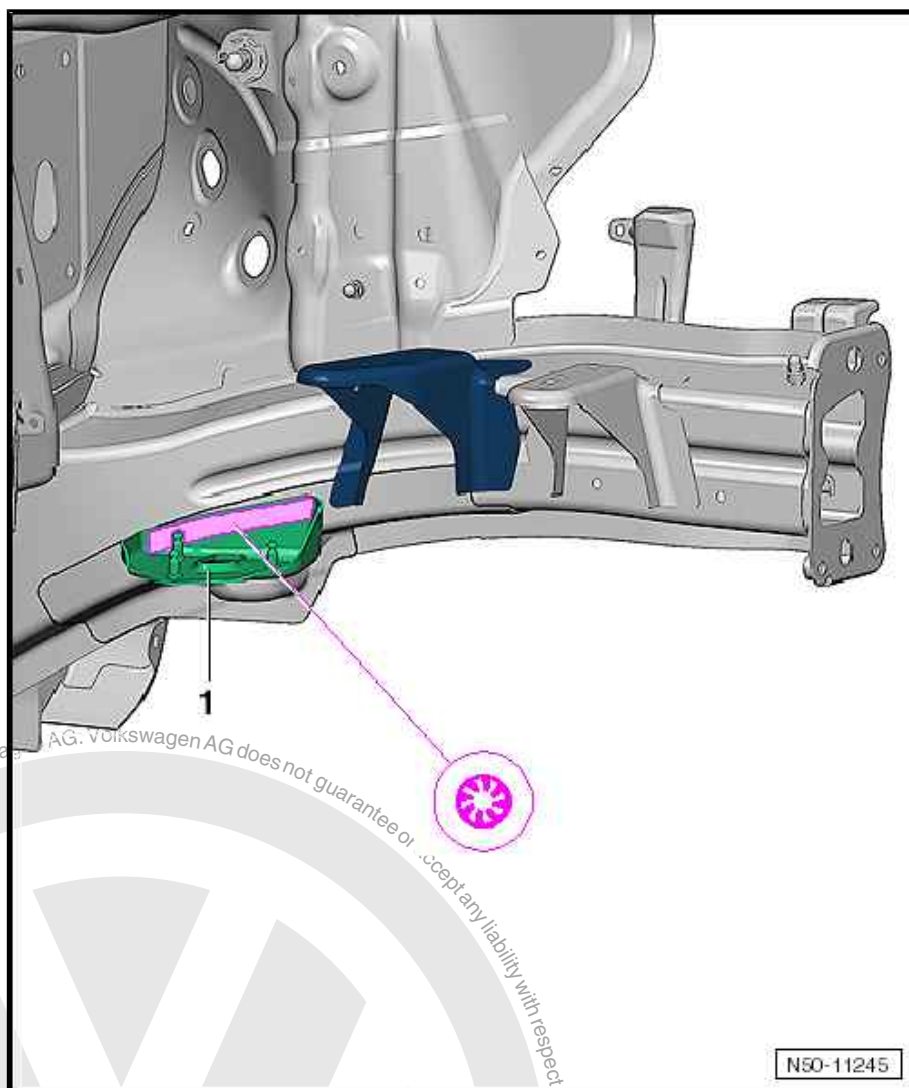


4.3.2 Welding in

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



- Weld in new part. SG plug weld seam.
- Bend bracket -1- back to original position and weld it in with SG plug weld seam.



- Weld in new part, SG plug weld seam.



RO: 50 43 55 60

5 Renewing mounting bracket for sub-frame



WARNING

Observe safety notes!

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



Note

Removal and installation is described for the left mounting bracket. The removal and installation of the remaining 3 mounting brackets is similar.

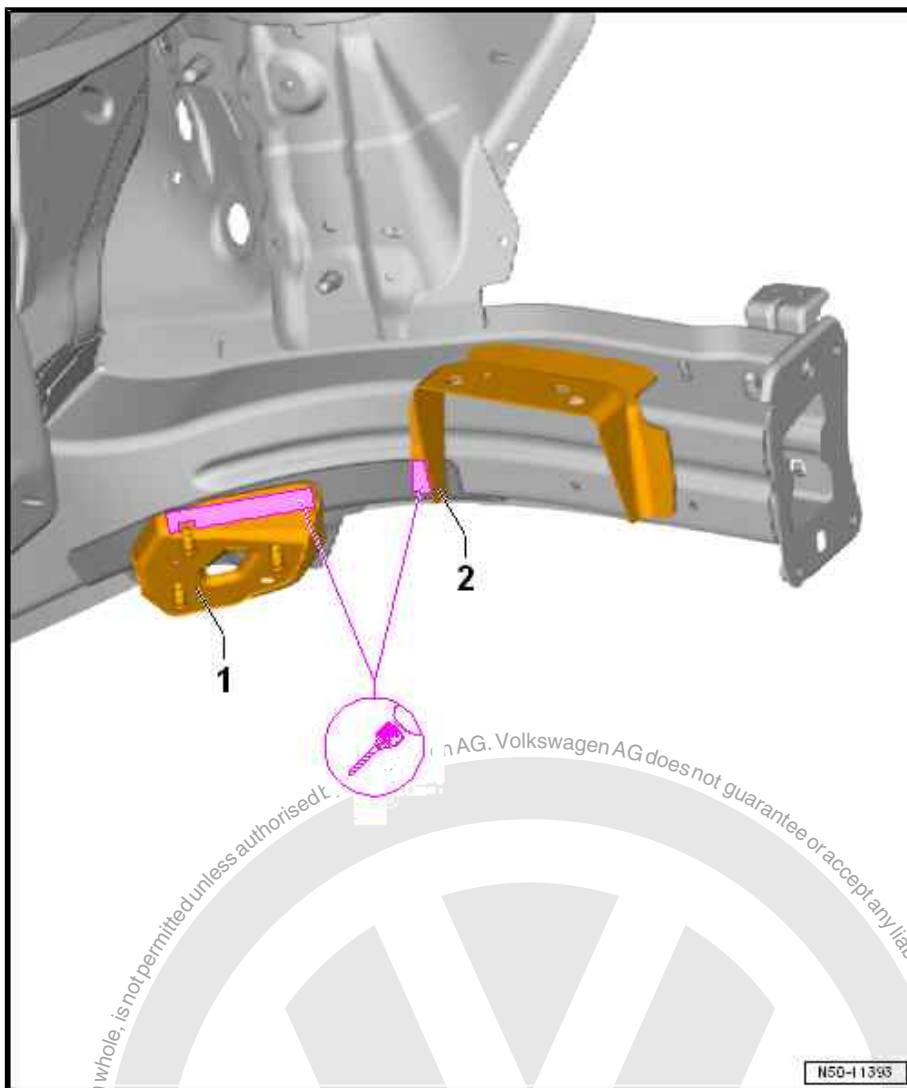
5.1 Tools



Note

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

5.2 Removing

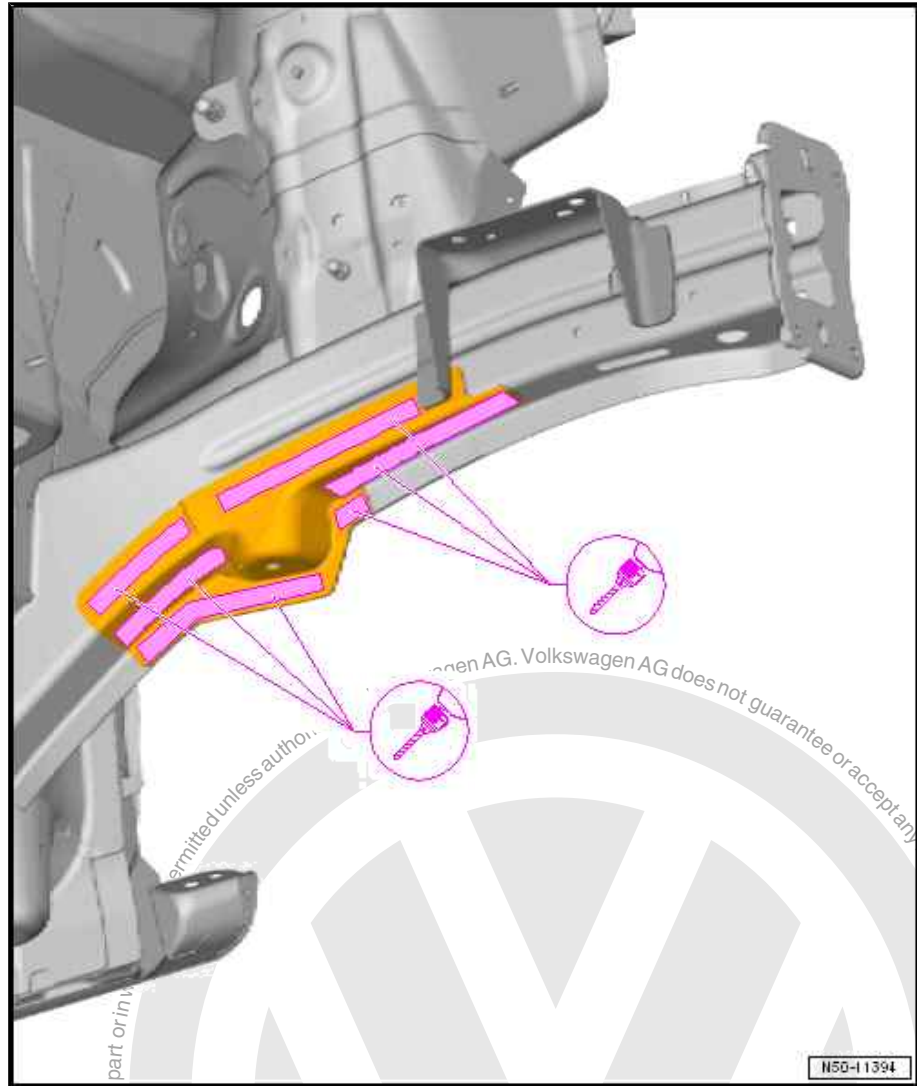


- Separate original joint of ABS mounting bracket -1- and bracket -2-.
- Drill through both panels when drilling bracket -2-. Then bend open bracket slightly.

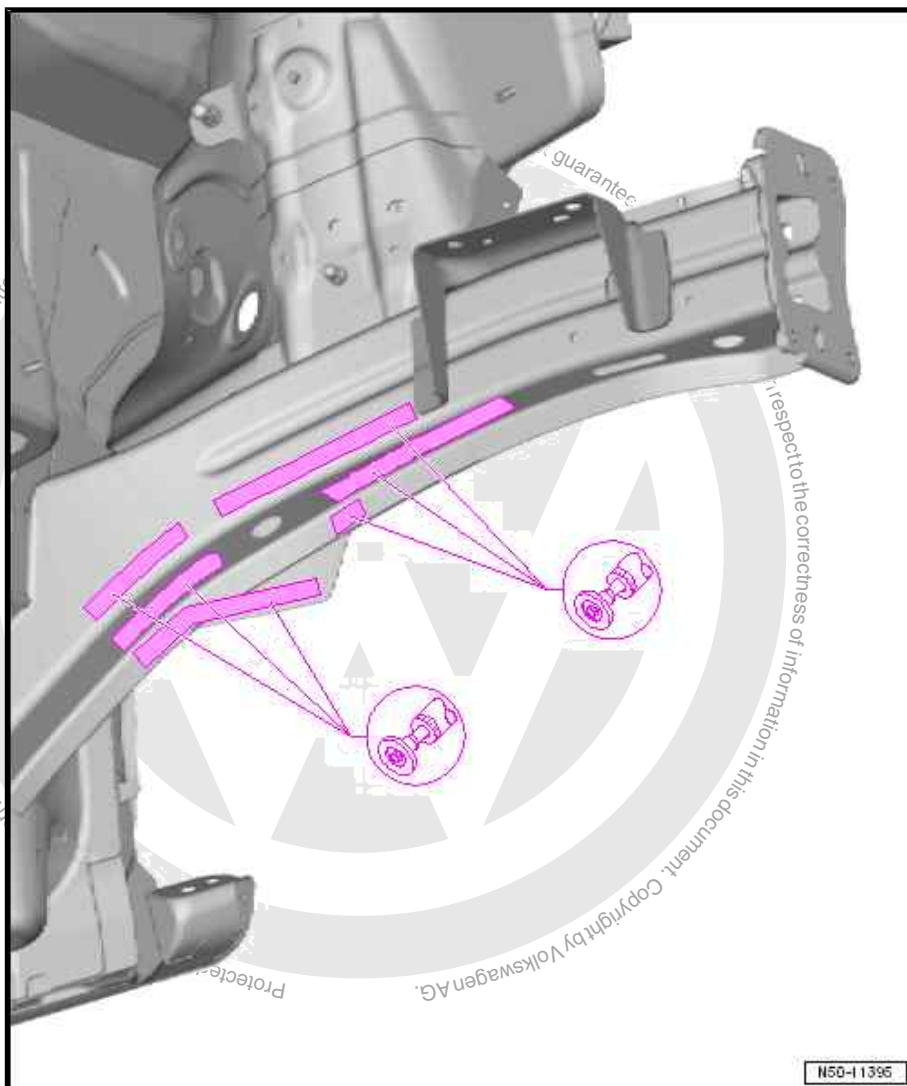


Note

The original joint of the ABS mounting bracket -1- must be separated in such a way that the mounting bracket can be reused when installing.



- Separate original joint.



- Remove remaining material.

5.3 Installing



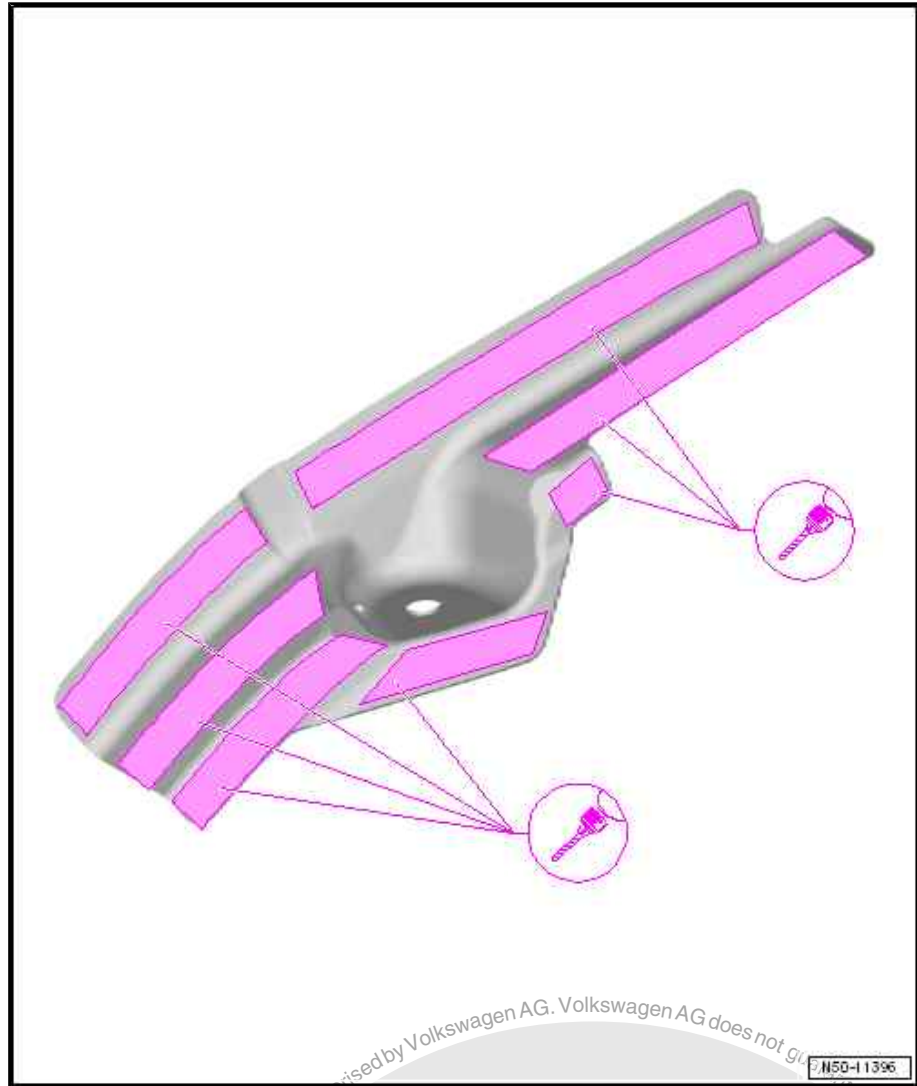
Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 78](#).*

5.3.1 Preparing new part

Replacement part

- ◆ Front mounting bracket for subframe (parts designation according to ETKA ⇒ retainer for subframe)

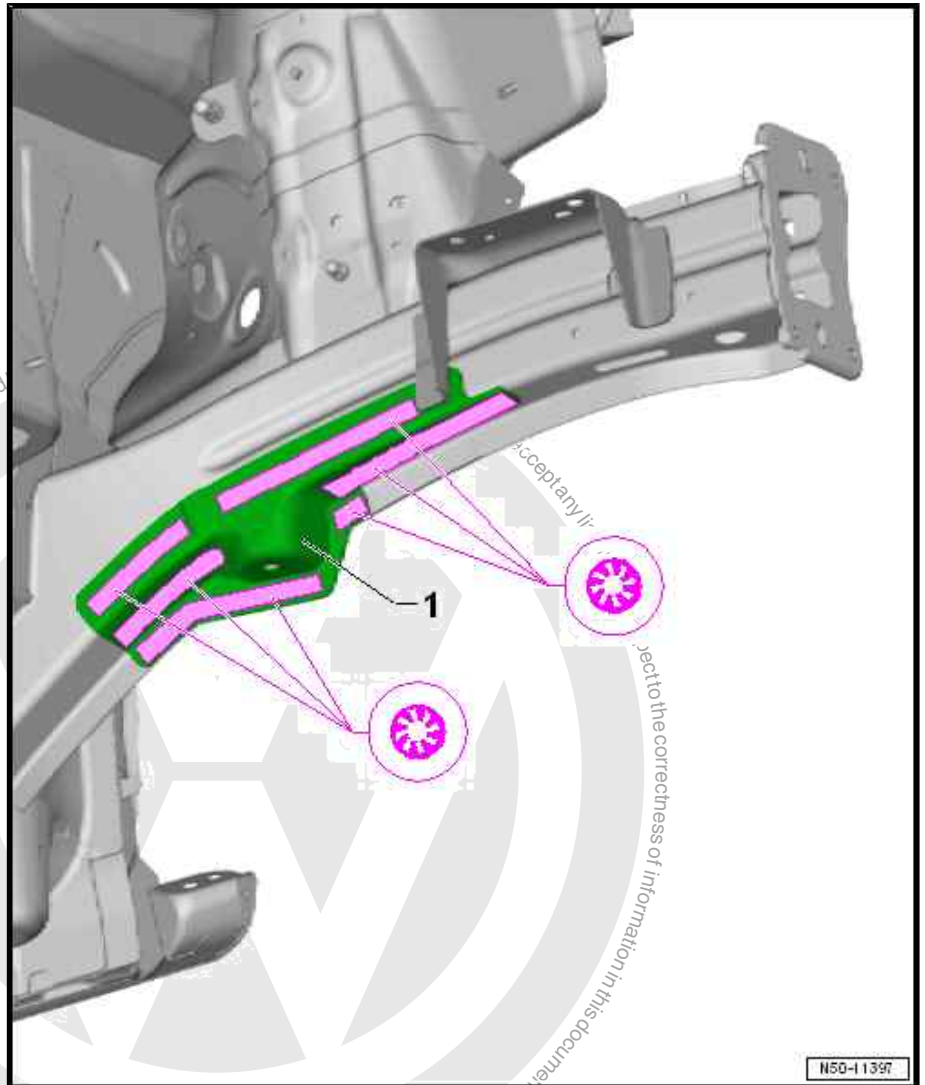


- Drill 8 mm Ø holes for SG plug weld seam.

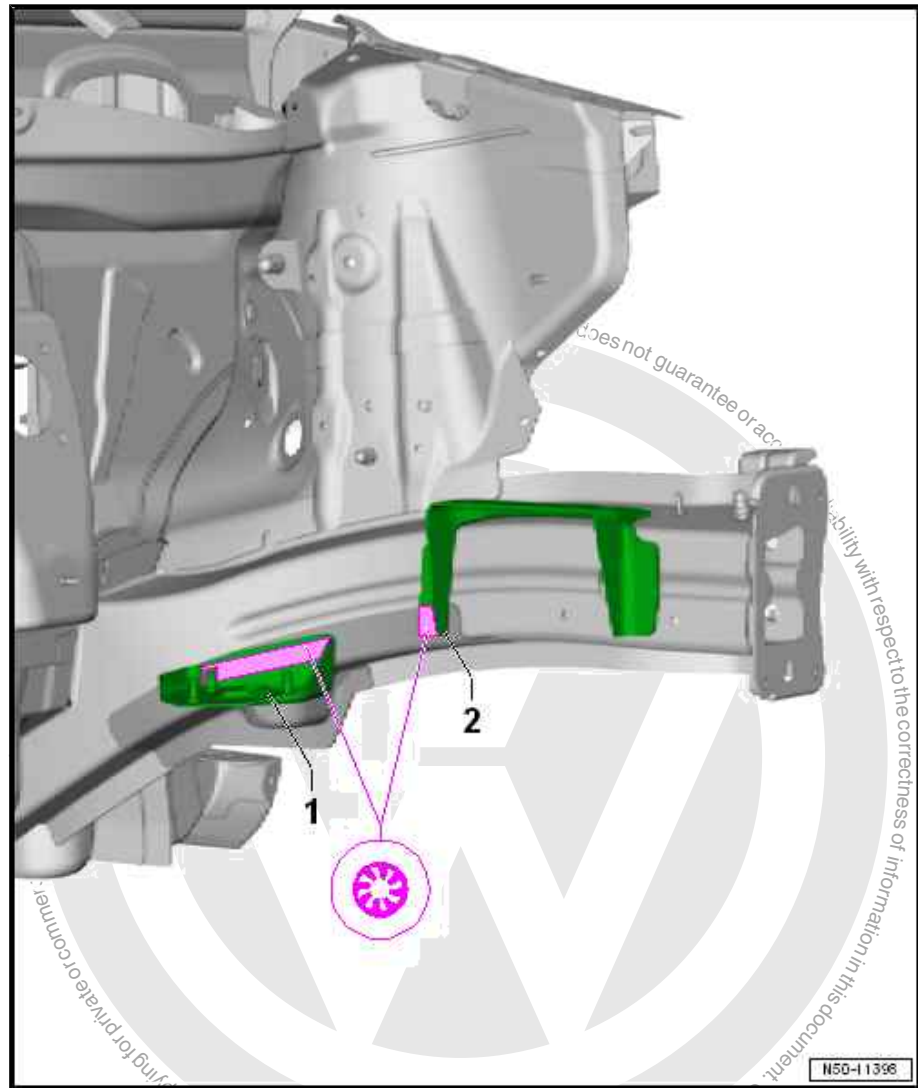


5.3.2 Welding in

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



- Weld in front mounting bracket for subframe -1-, SG plug weld seam.



- Weld in ABS mounting bracket -1-, SG plug weld seam.
- Bend bracket -2- back to original position, and weld it in with SG plug weld seam.



RO: 50 65 55 50

6 Renewing bumper bracket



WARNING

Observe safety notes!

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

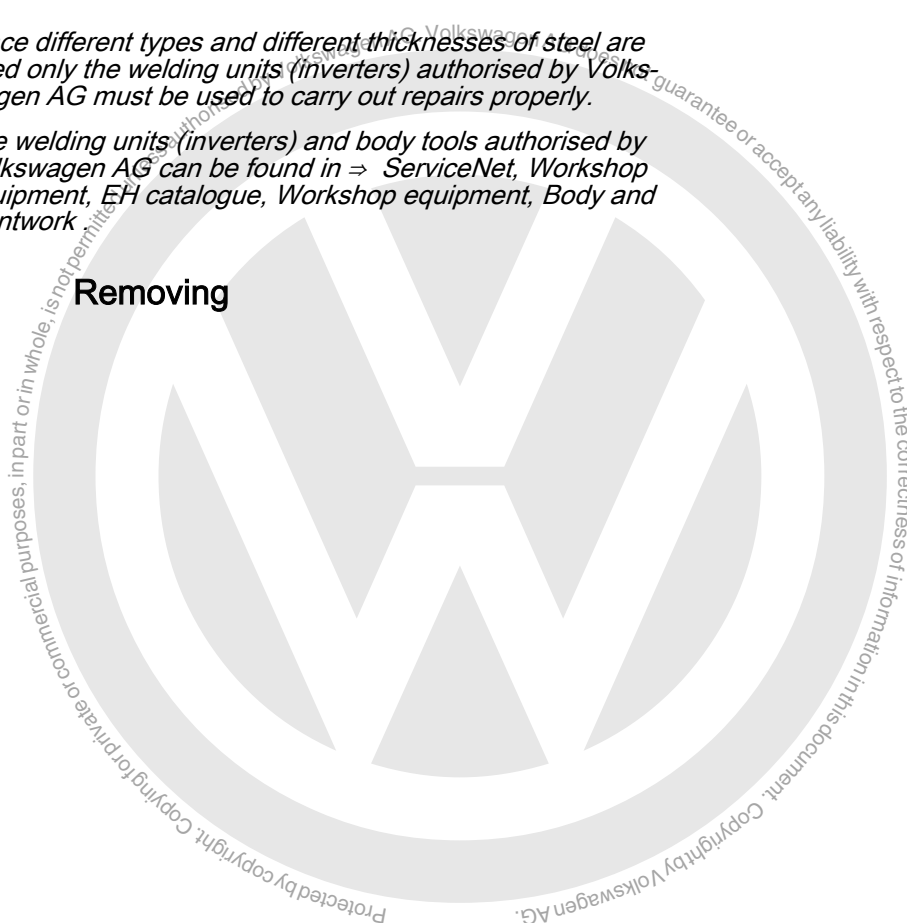
6.1 Tools

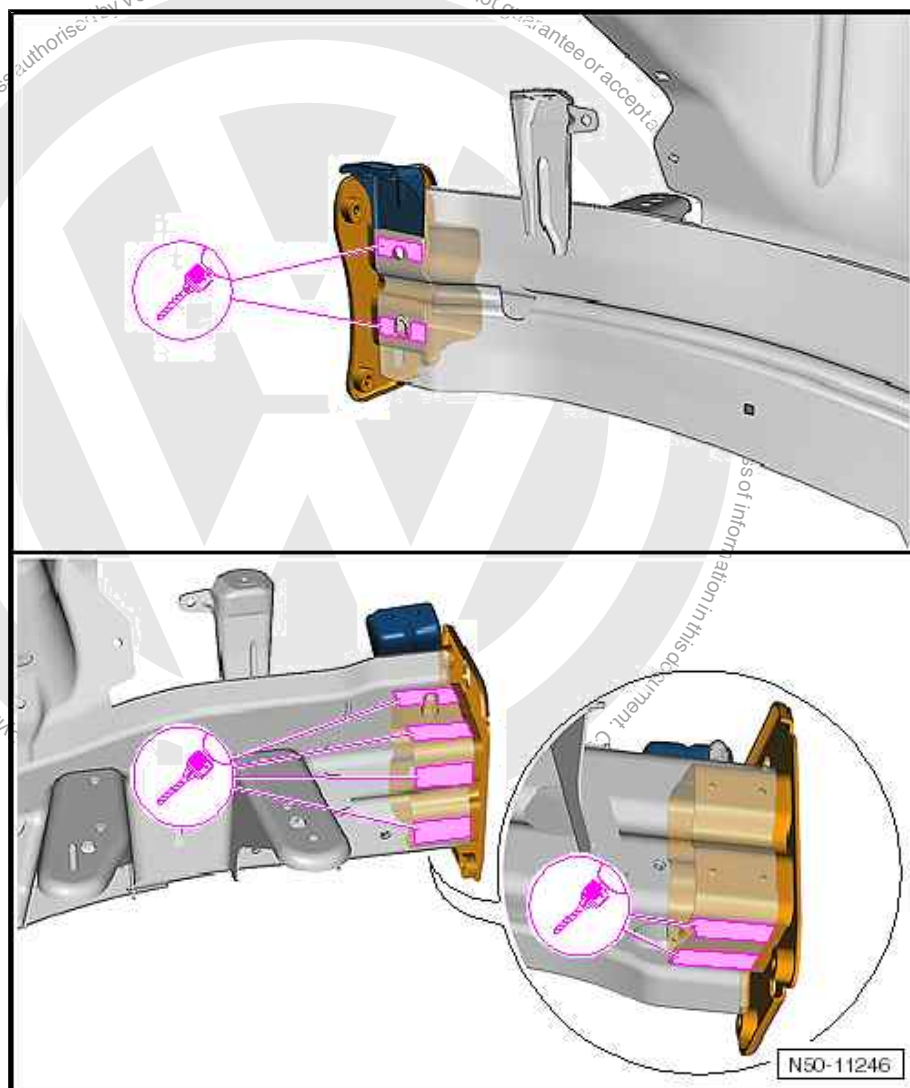


Note

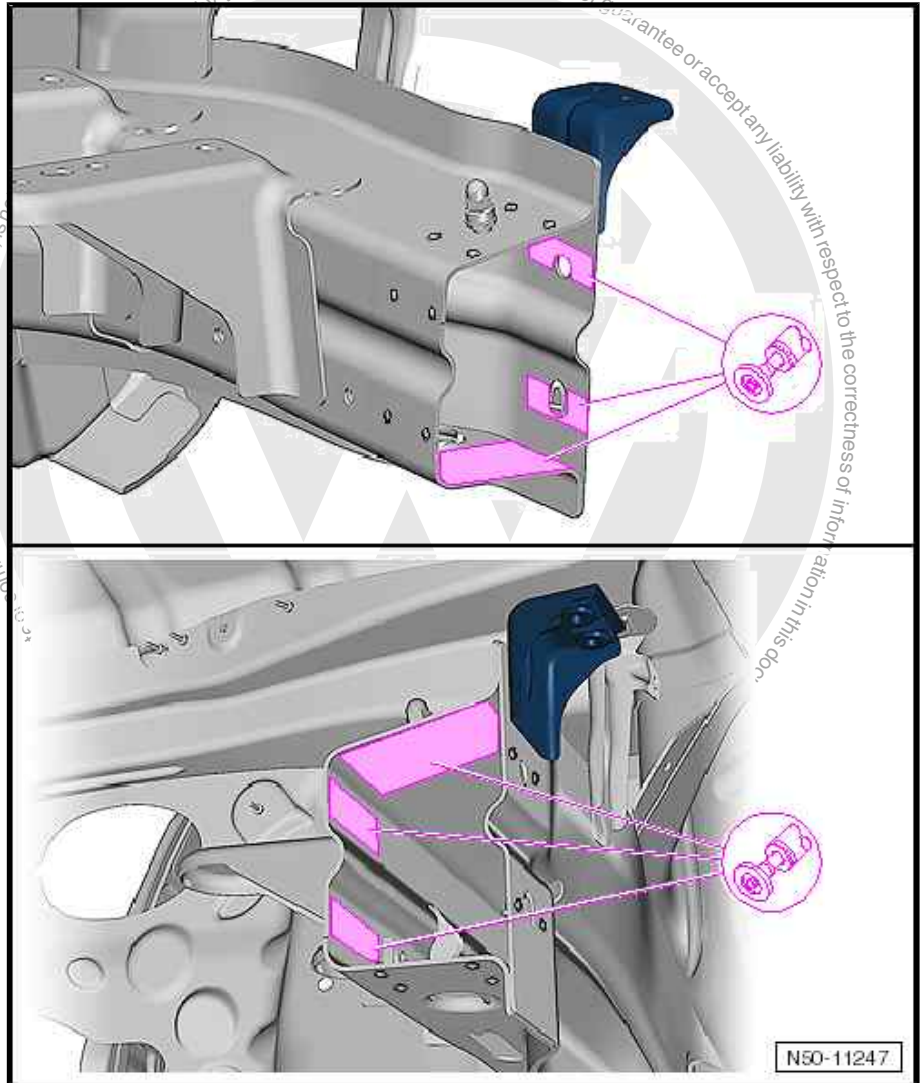
- ◆ *Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment,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

6.2 Removing





- Separate original joint.



- Remove remaining material.

6.3 Installing



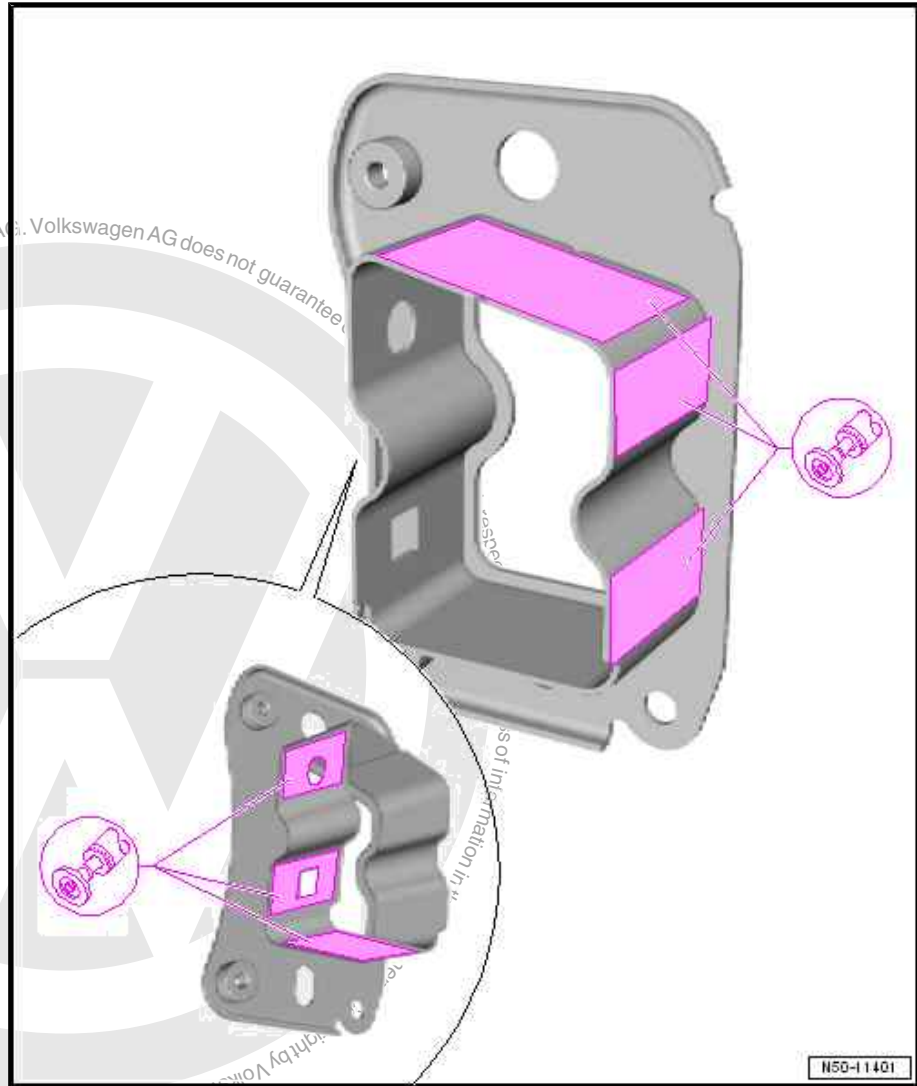
Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 85](#).*

6.3.1 Preparing new part

Replacement part

- ◆ Front bumper bracket (parts designation according to ETKA ⇒ cover plate)

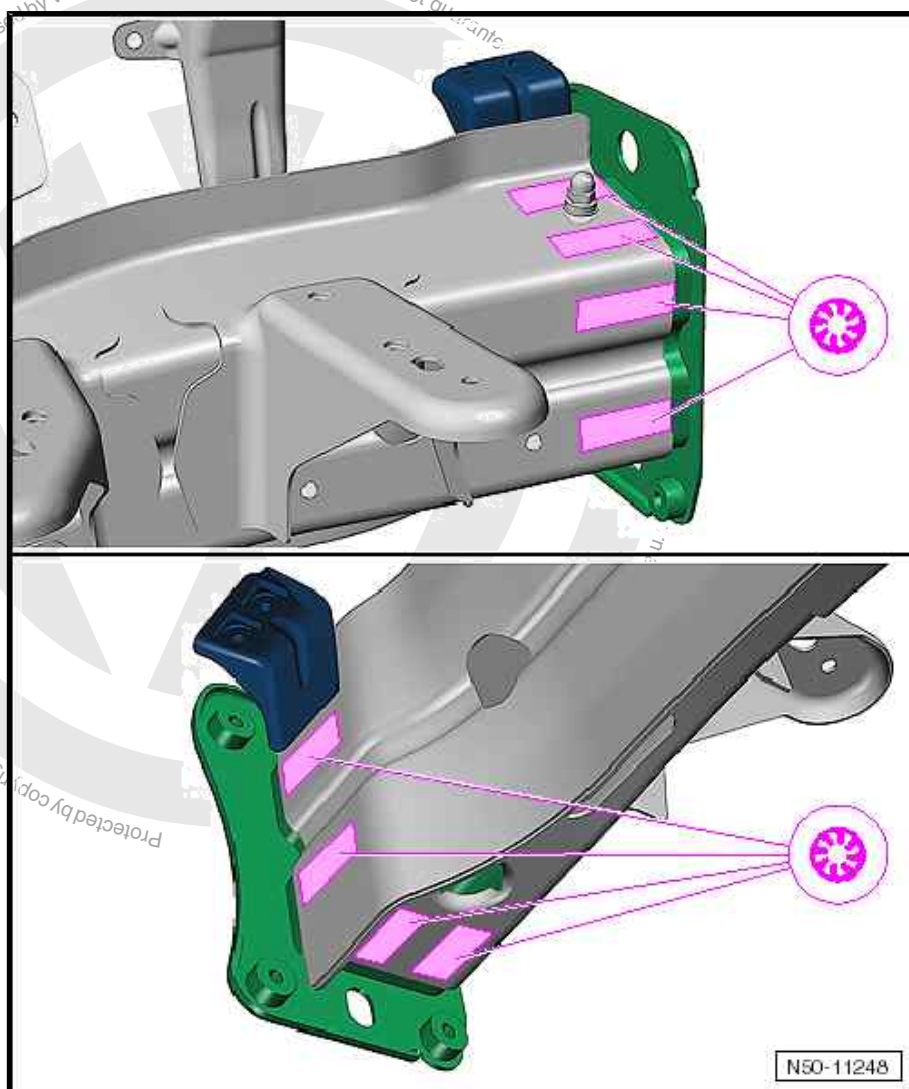


- Sand welding surfaces down to bare metal.



6.3.2 Welding in

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



- Weld in bumper bracket, SG plug weld seam.



RO: 50 65 55 50

7 Renewing bumper bracket



WARNING

Observe safety notes!

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

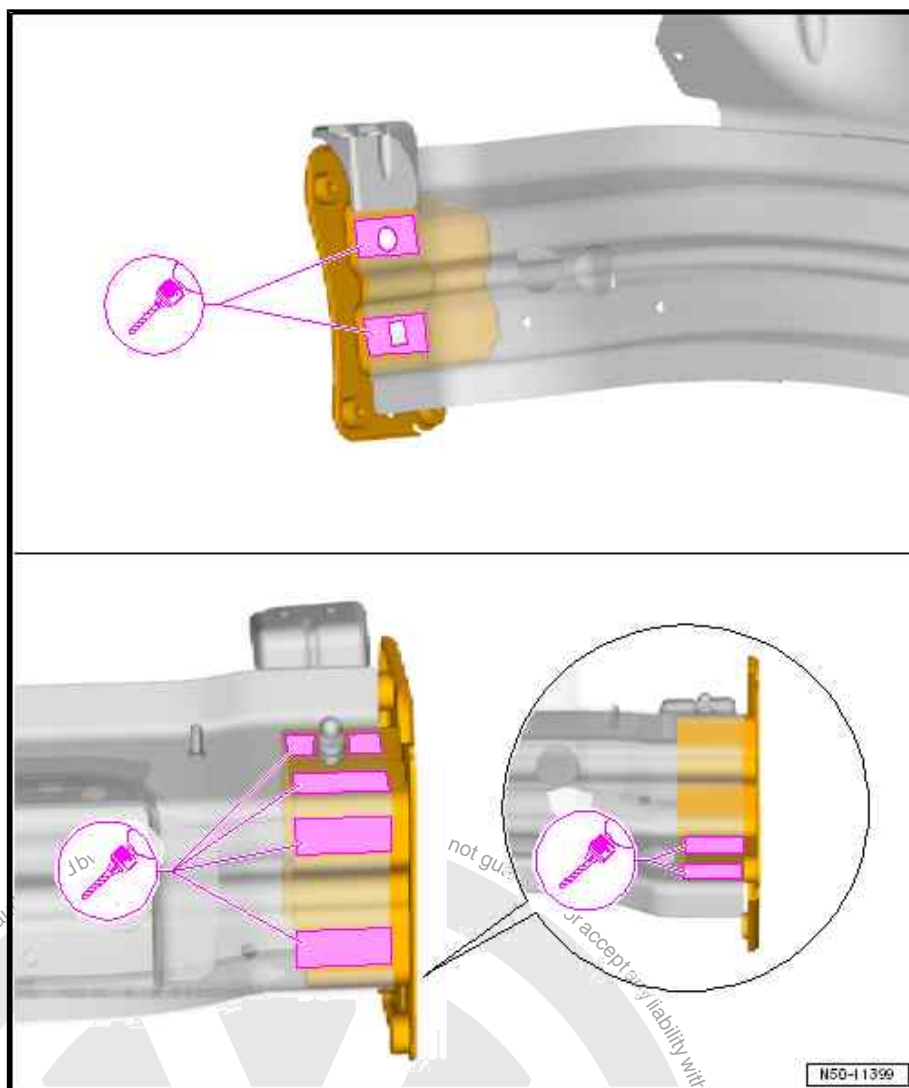
7.1 Tools



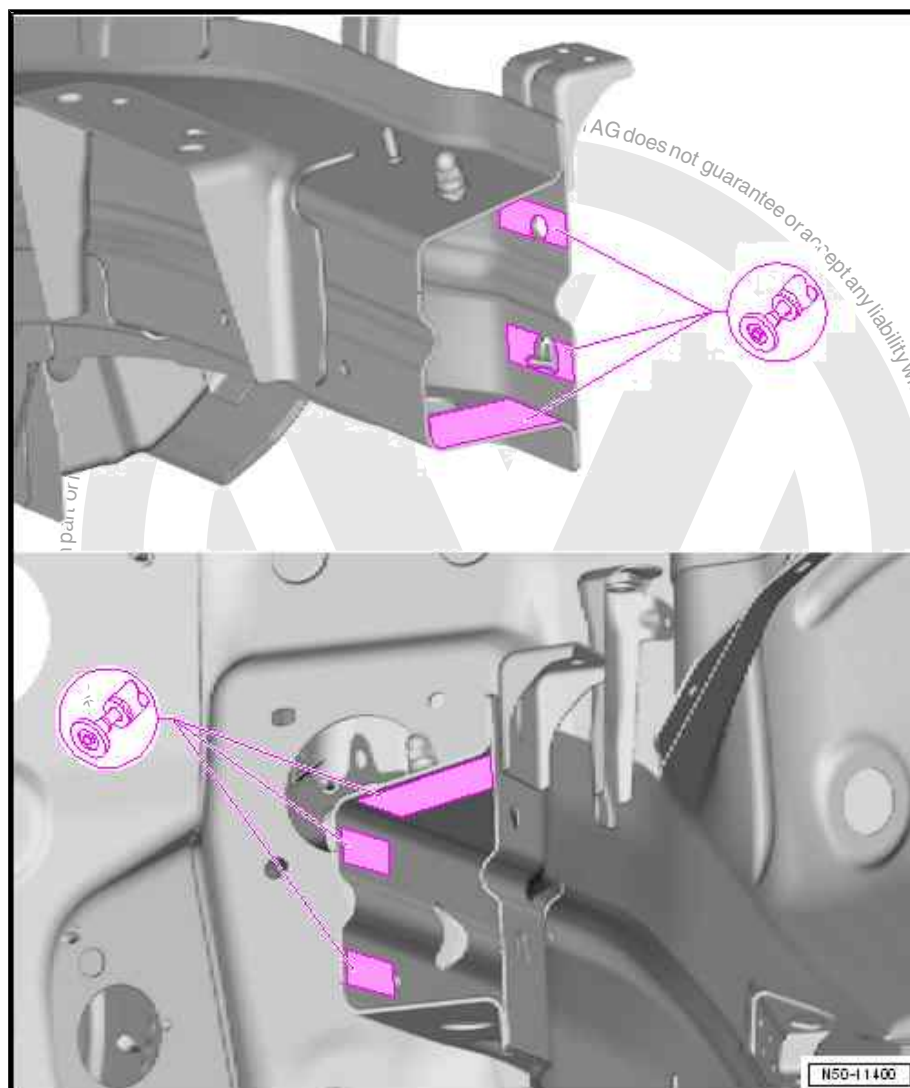
Note

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

7.2 Removing



- Separate original joint.



- Remove remaining material.

7.3 Installing



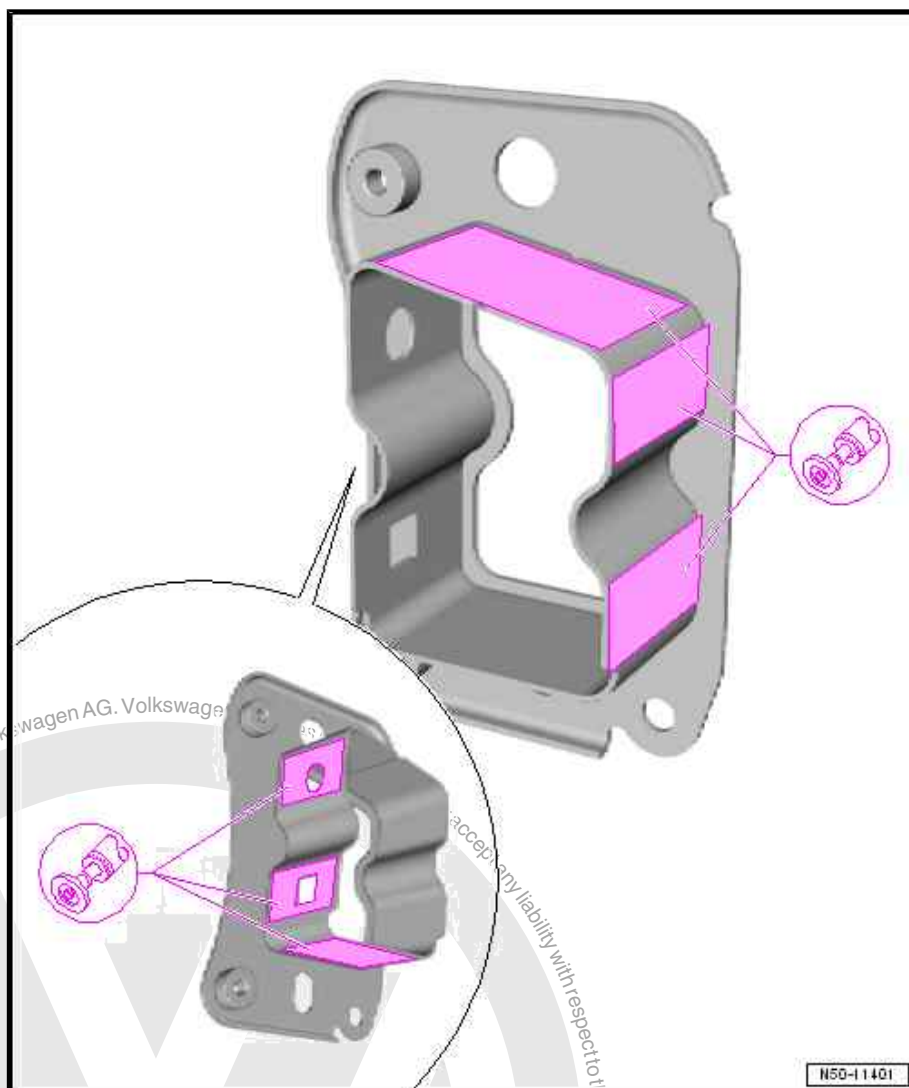
Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 90](#).*

7.3.1 Preparing new part

Replacement part

- ◆ Front bumper bracket (parts designation according to ETKA ⇒ cover plate)

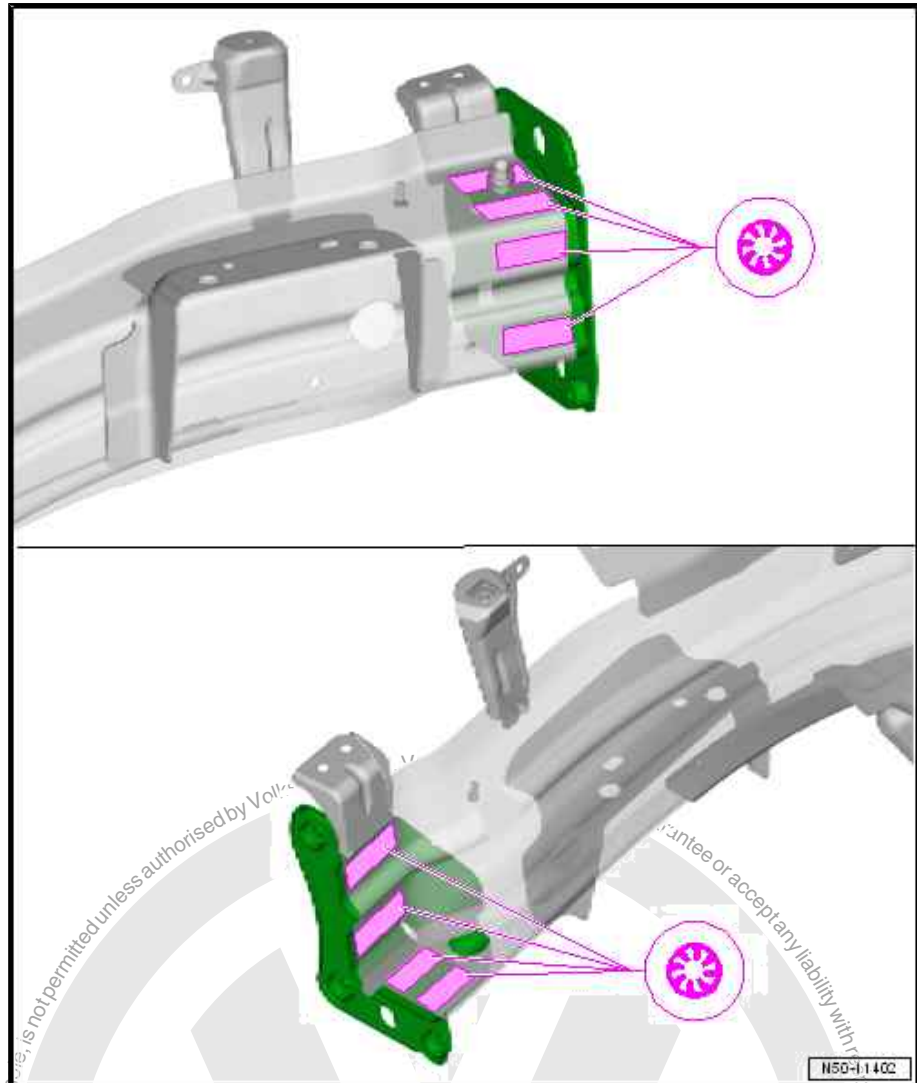


- Sand welding surfaces down to bare metal.



7.3.2 Welding in

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



- Weld in bumper bracket, SG plug weld seam.



RO: 50 72 55 50

8 Renewing upper wheel housing longitudinal member



WARNING

Observe safety notes!

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



Note

- ◆ The illustration shows the body of the "up!". The items shown in the illustration are identical for the body of the "e-up!".
- ◆ The removal and installation of the upper wheel housing longitudinal member for the "e-up!" is similar.

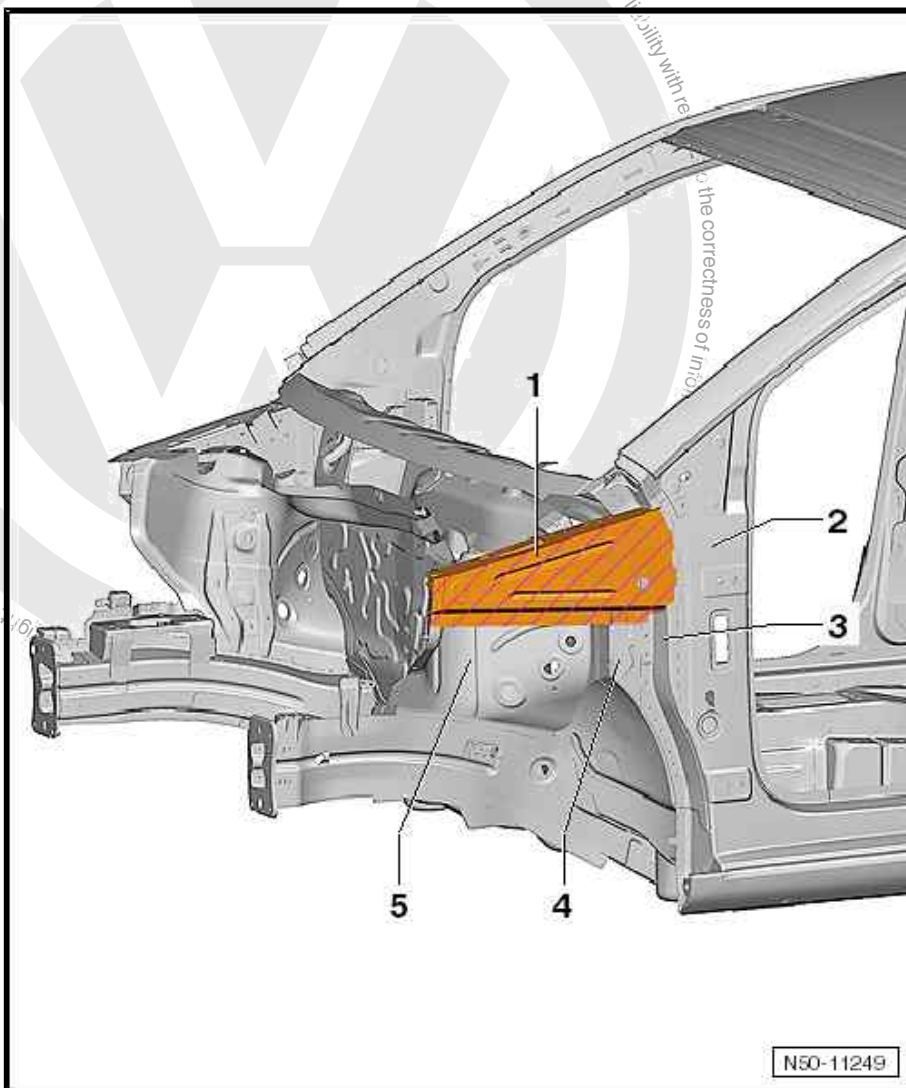
1 - Upper longitudinal member for wheel housing

2 - A-pillar

3 - A-pillar reinforcement

4 - Lower inner A-pillar

5 - Wheel housing





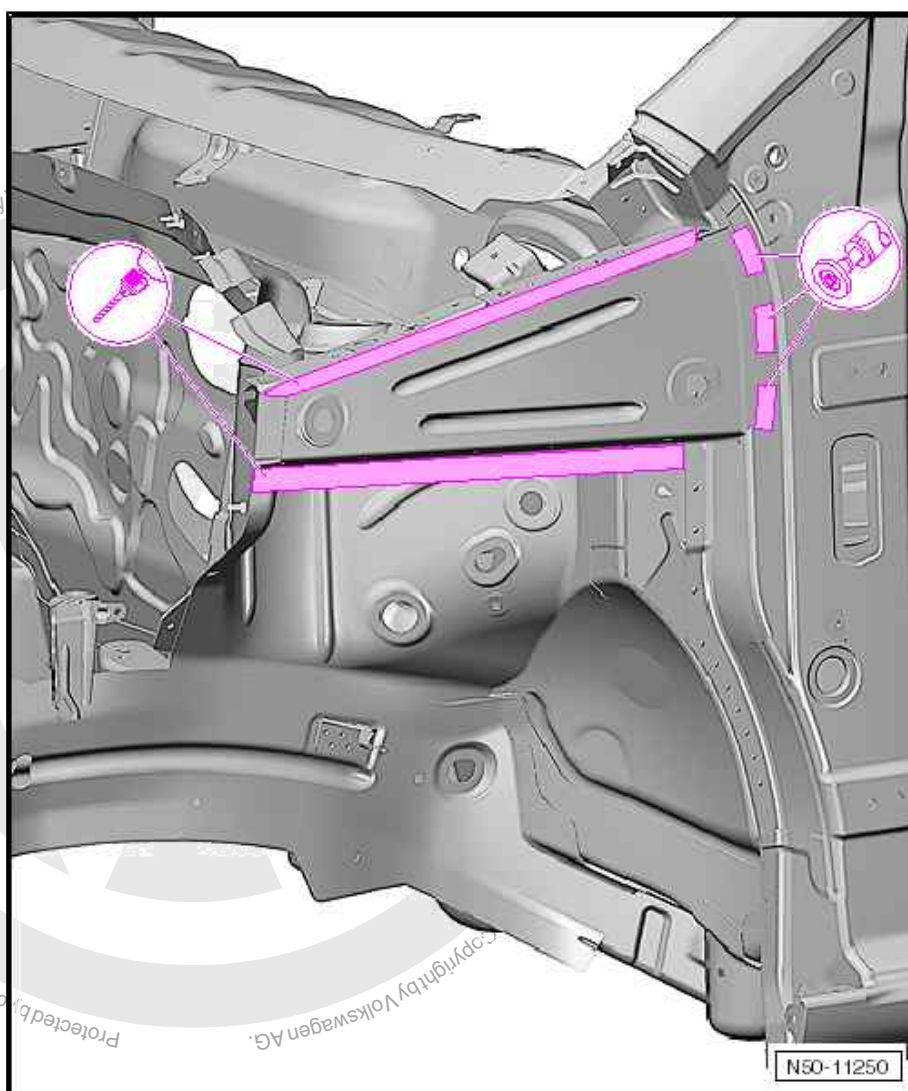
8.1 Tools



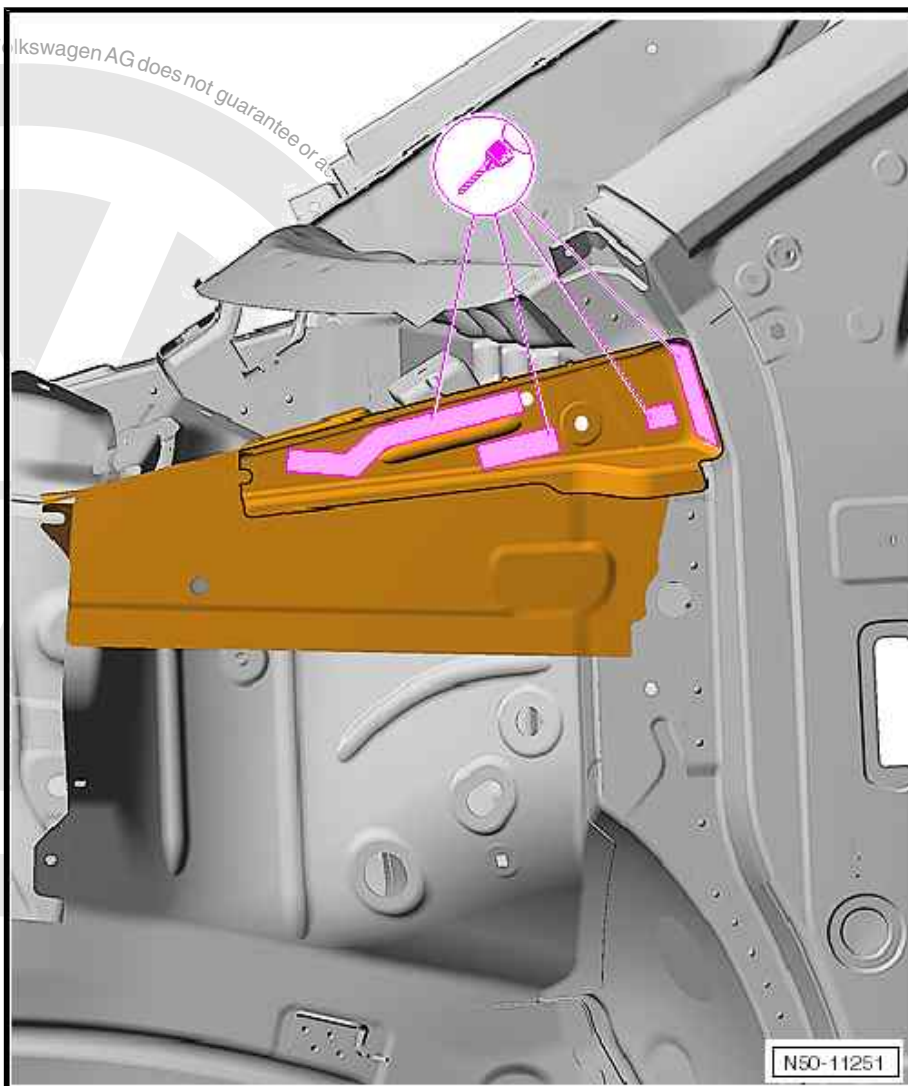
Note

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

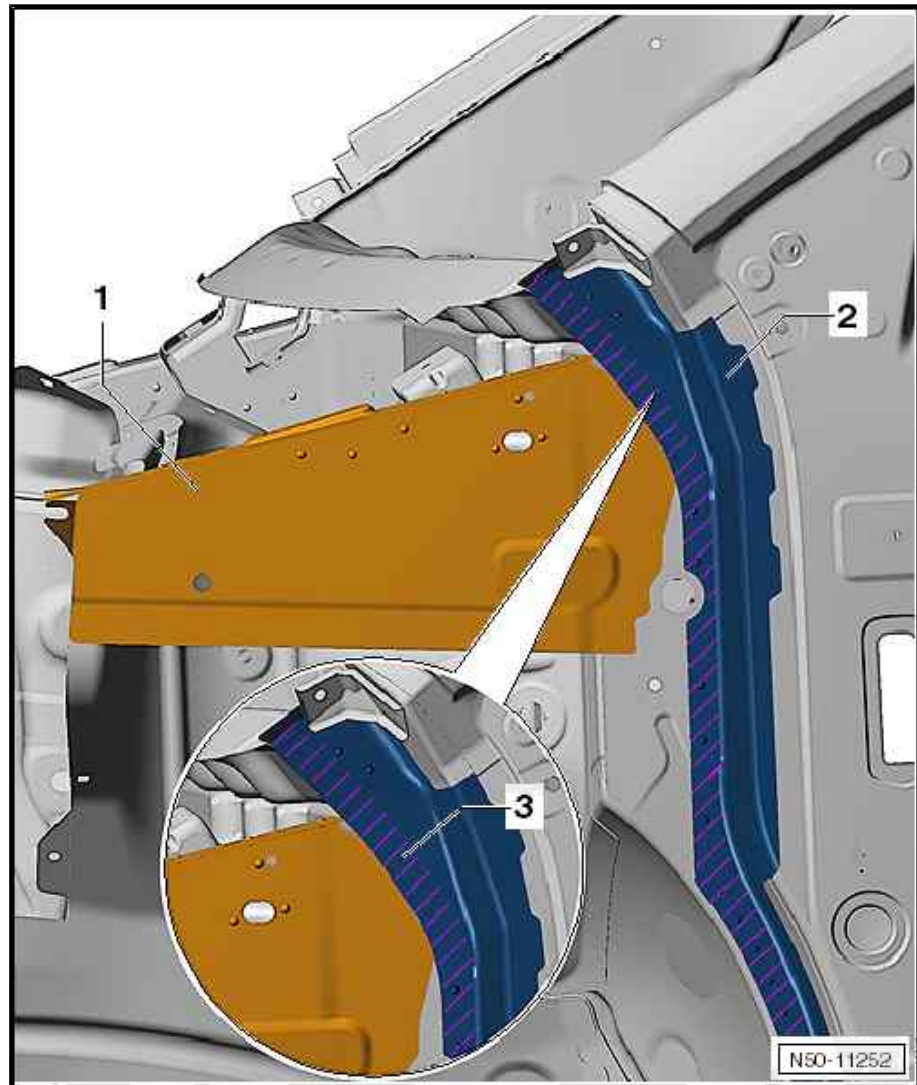
8.2 Removing



- Separate original joint between upper outer longitudinal member and upper inner longitudinal member as well as to A-pillar.

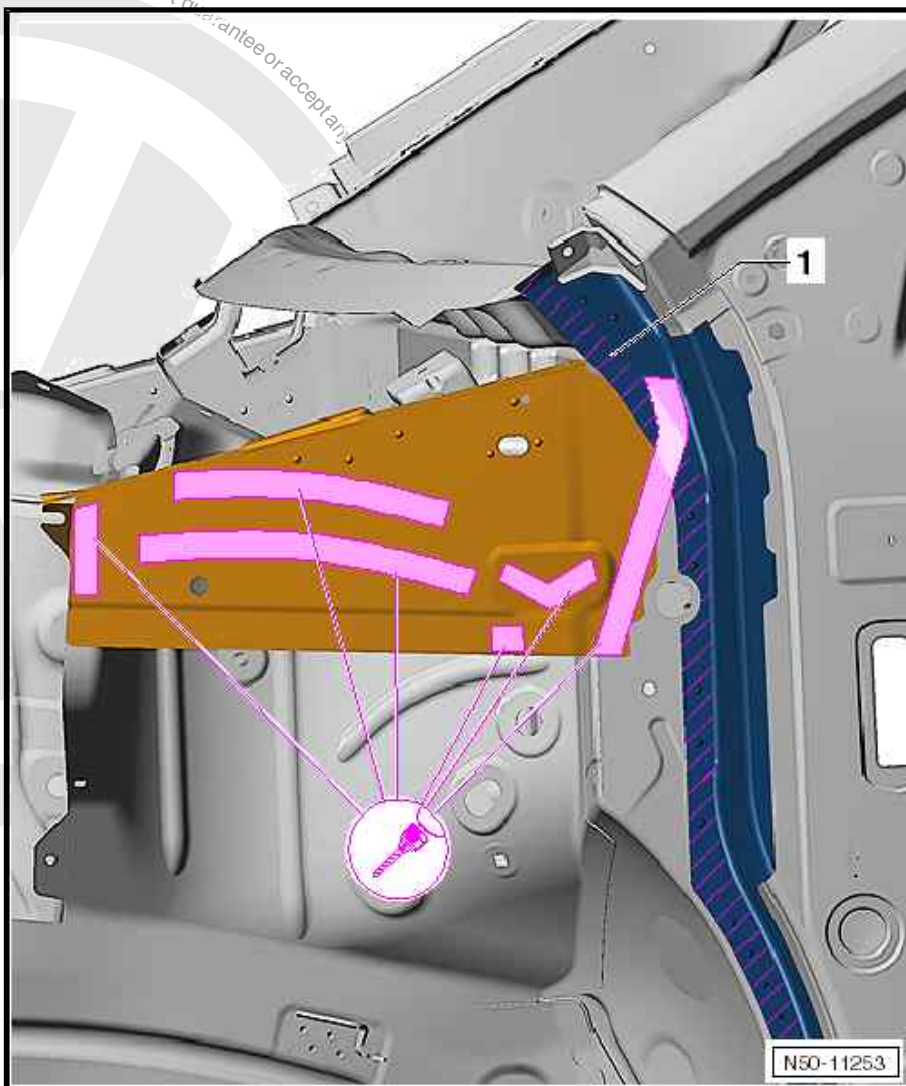


- Separate original joint.

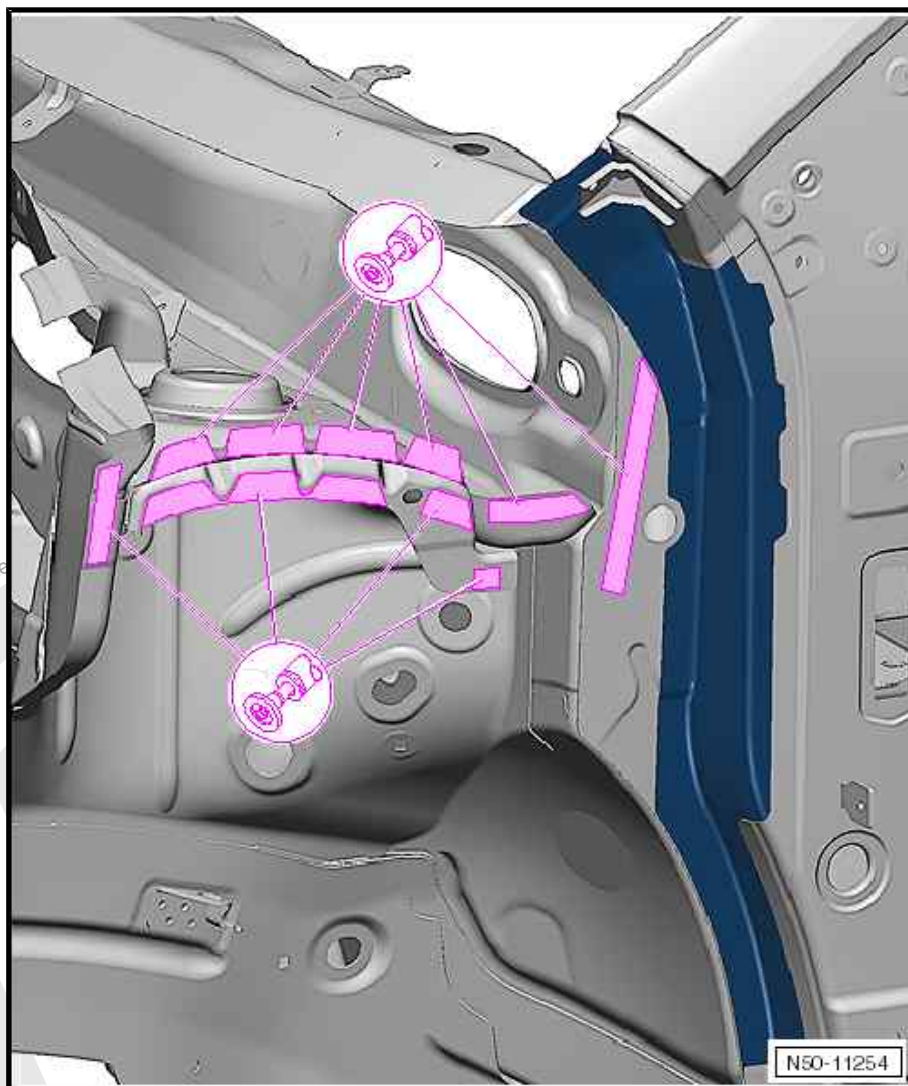


The upper inner longitudinal member -1- is bonded and welded to lower inner A-pillar.

The entire contact surface of A-pillar reinforcement -2- is bonded to lower inner A-pillar.



- Separate original joint between upper inner longitudinal member, wheel housing and plenum chamber.
- In the upper part of A-pillar reinforcement, spot welds need to be drilled out up to lower inner A-pillar.
- Bend open A-pillar reinforcement -1-.



- Remove remaining material.
- Completely remove remaining adhesive.
- Apply corrosion protection measures according to paintwork manual ➔ Body; General information, paint; Technical data; General notes; Notes on repairing add-on parts and welded parts .

8.3 Installing



Note

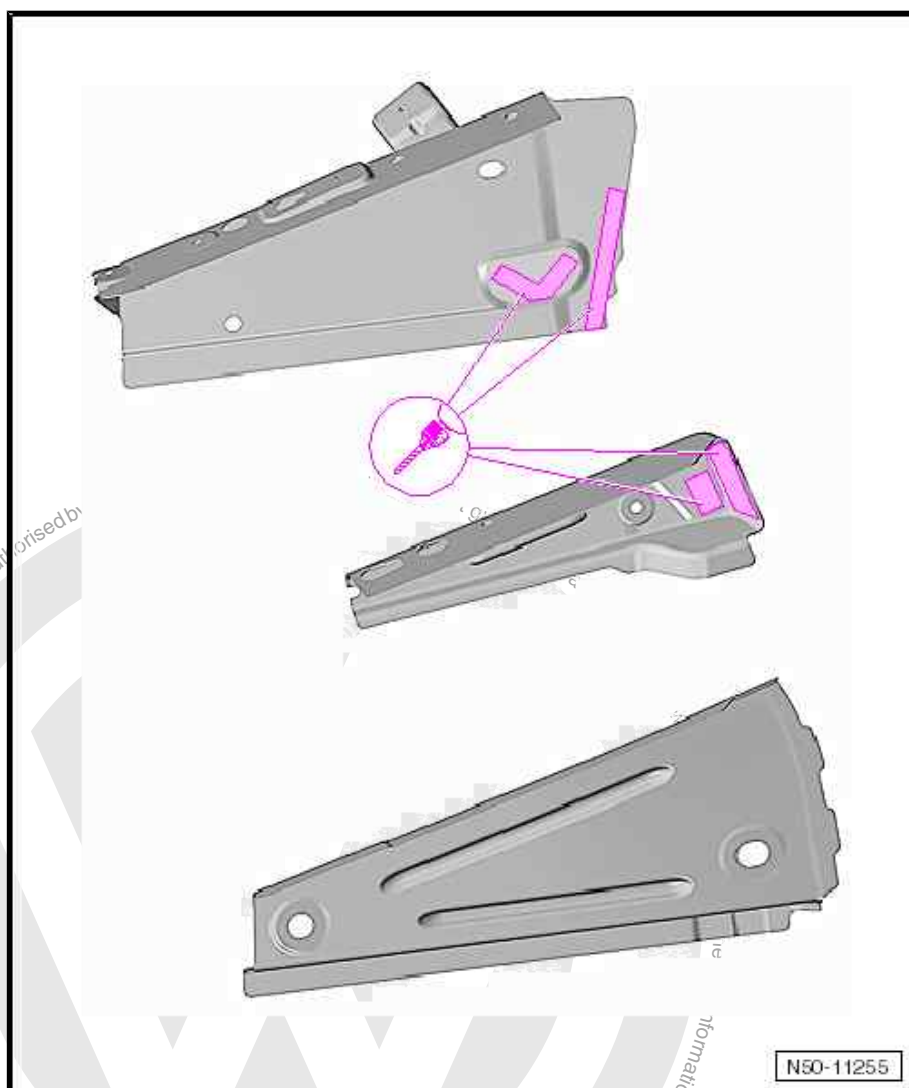
Only welding units authorised by Volkswagen AG may be used
⇒ [page 96](#) .

8.3.1 Preparing new part

Replacement parts

- ◆ Upper inner wheel housing longitudinal member
- ◆ Upper outer wheel housing longitudinal member
- ◆ Bonnet hinge reinforcement

- ◆ 2-pack body adhesive - D 180 003 M2-



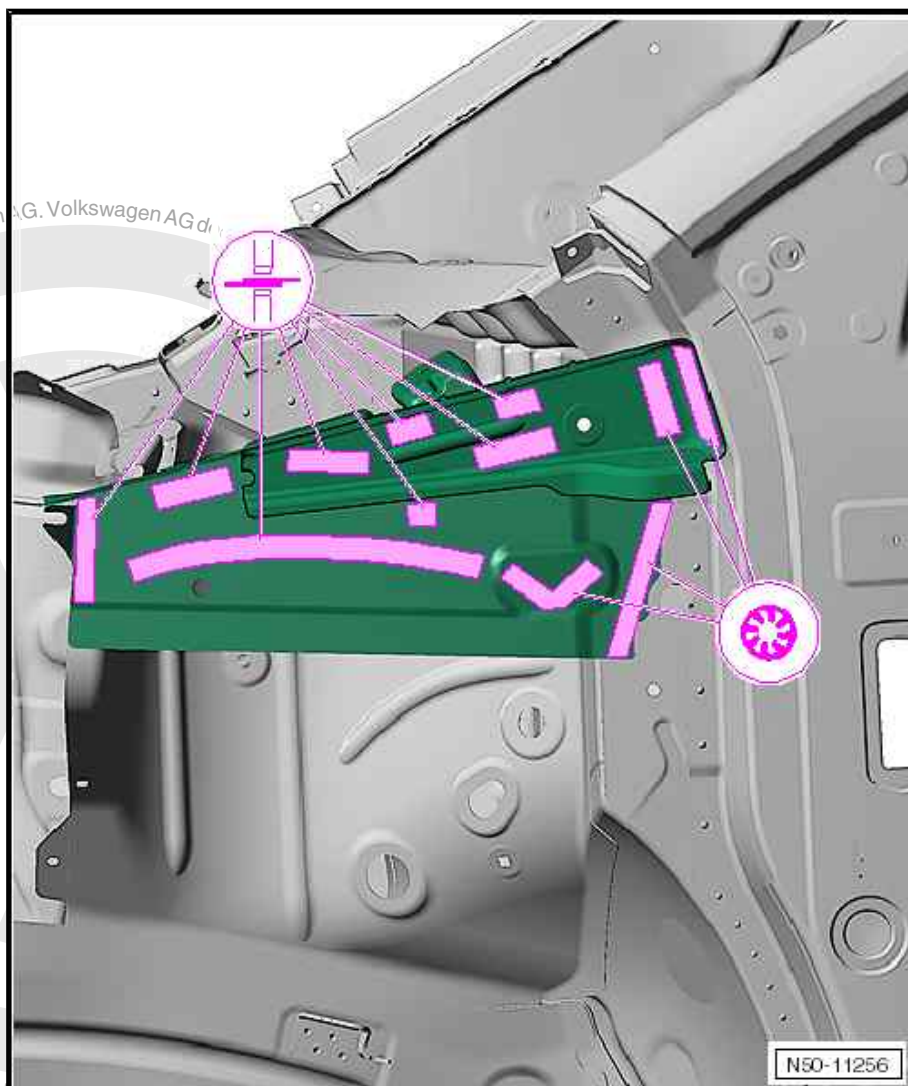
- Drill 8 mm Ø holes for SG plug weld seam.

8.3.2 Welding in

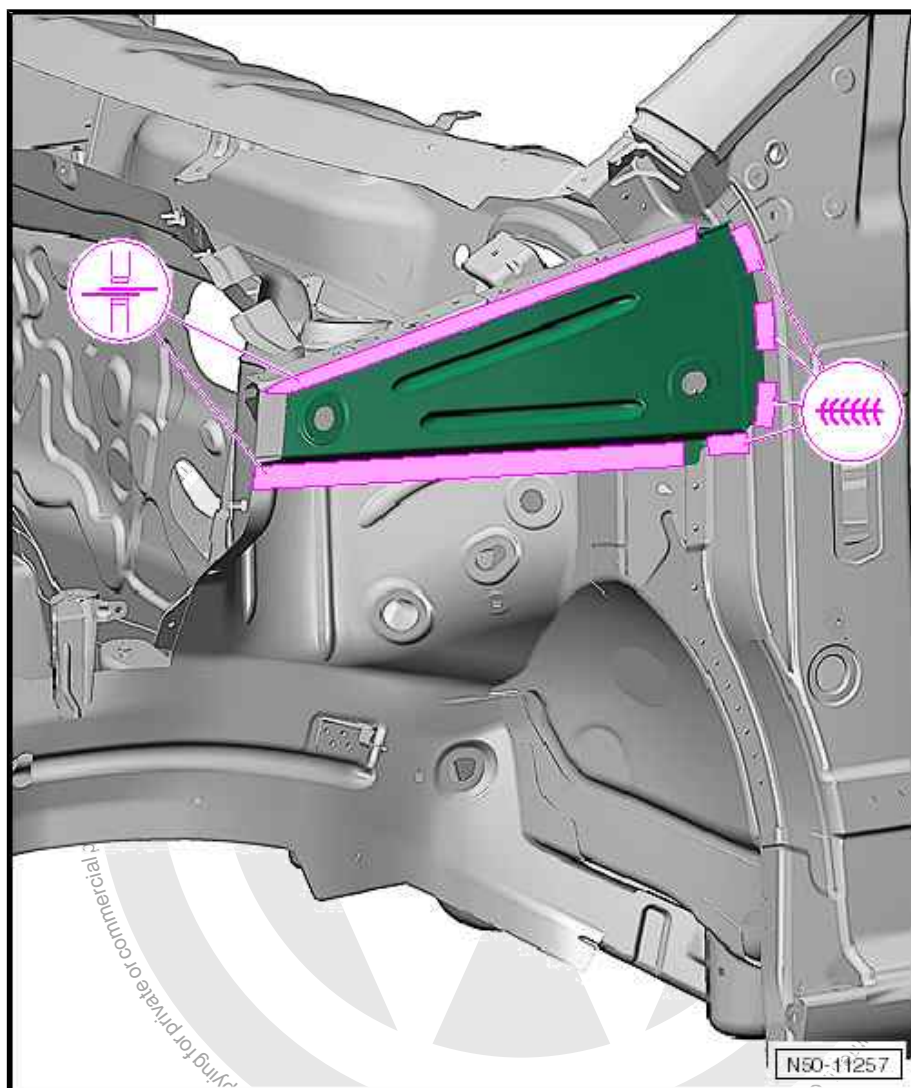
- Adapt all 3 new parts with vehicle positioned on alignment bracket set , and fix them in place.



- Check fit with add-on parts.



- Attach upper longitudinal member for wheel housing to suspension turret using several spot weld points.
- Remove upper outer wheel housing longitudinal member and bonnet hinge reinforcement.
- Weld upper inner wheel housing longitudinal member to wheel housing, RP spot weld seam and SG plug weld seam.



- Weld in upper outer wheel housing longitudinal member, RP spot weld seam, SG stepped seam.



RO: 50 74 55 50

9 Renewing front wheel housing



WARNING

Observe safety notes!

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

- Longitudinal member for upper wheel housing already removed ⇒ [page 95](#) .



Note

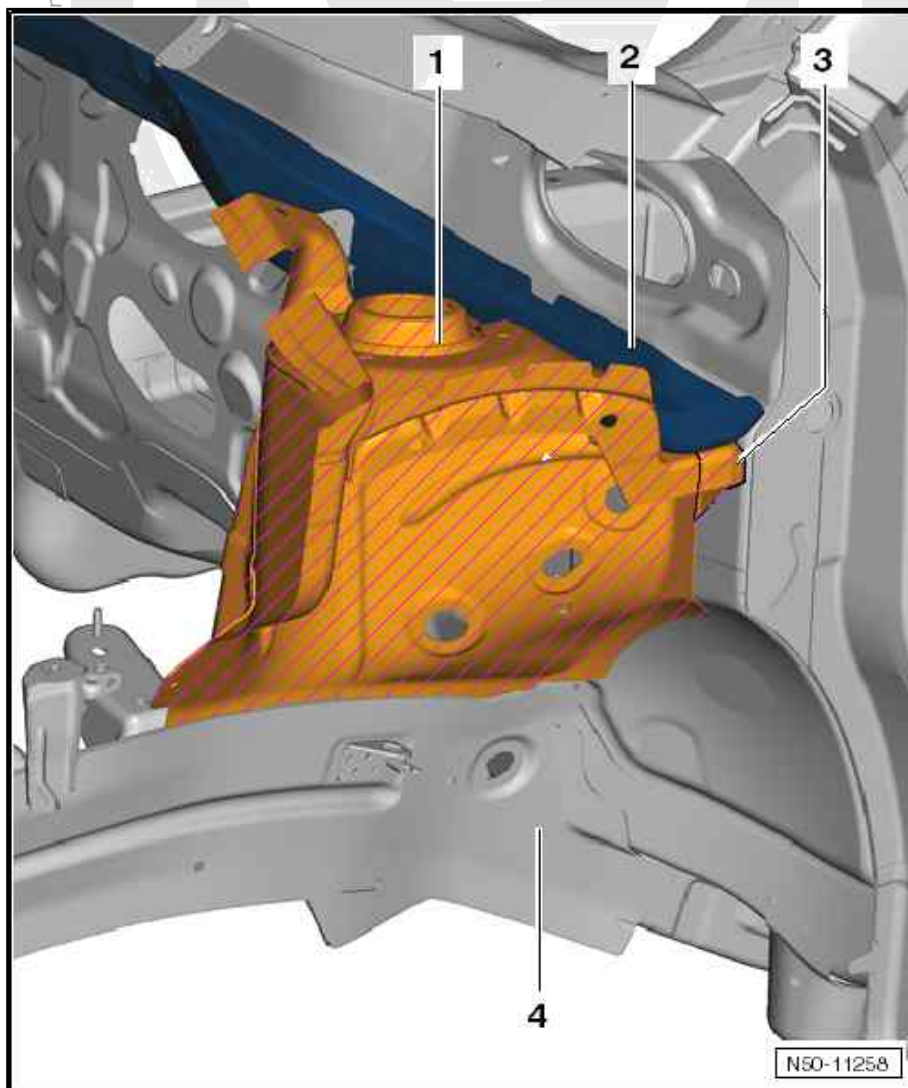
- ◆ *The illustration shows the body of the "up!". The items shown in the illustration are identical for the body of the "e-up!".*
- ◆ *The removal and installation of the front wheel housing for the "e-up!" is similar.*

1 - Suspension turret

2 - Plenum chamber lower section

3 - Plenum chamber lower section reinforcement

4 - Front longitudinal member





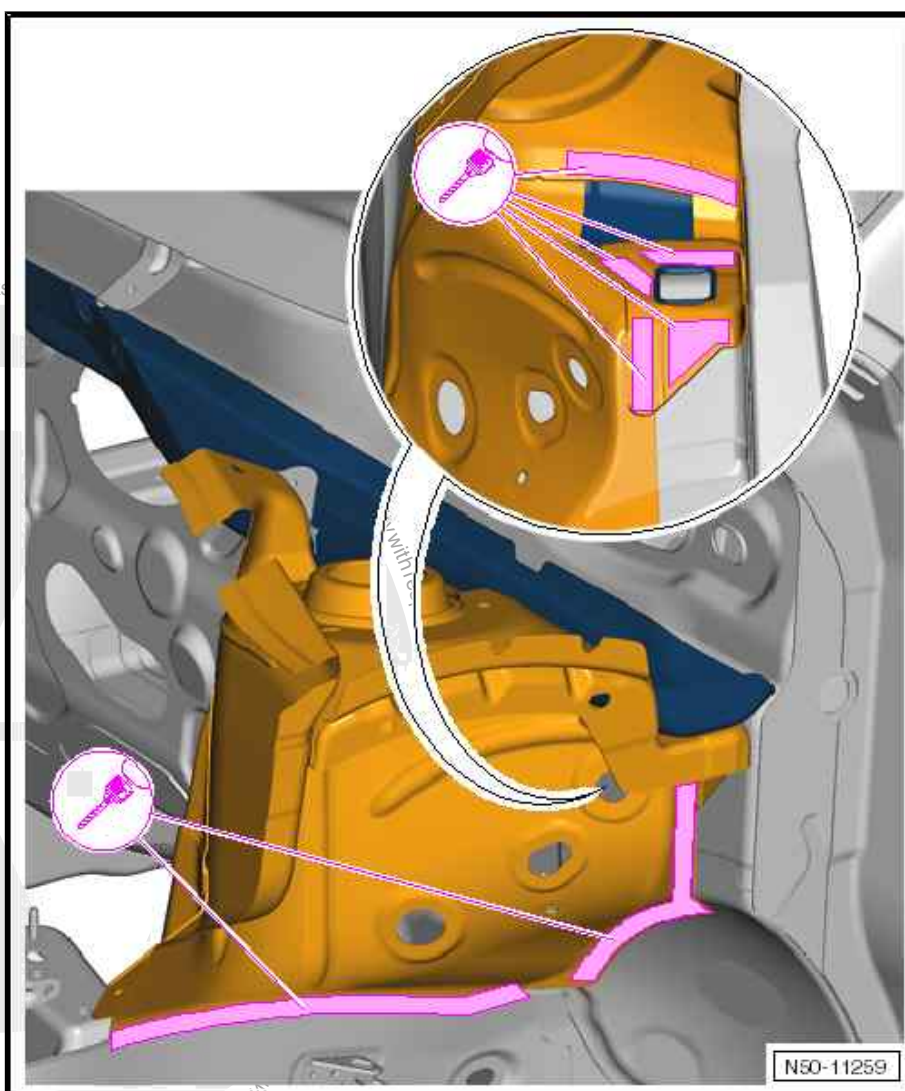
9.1 Tools



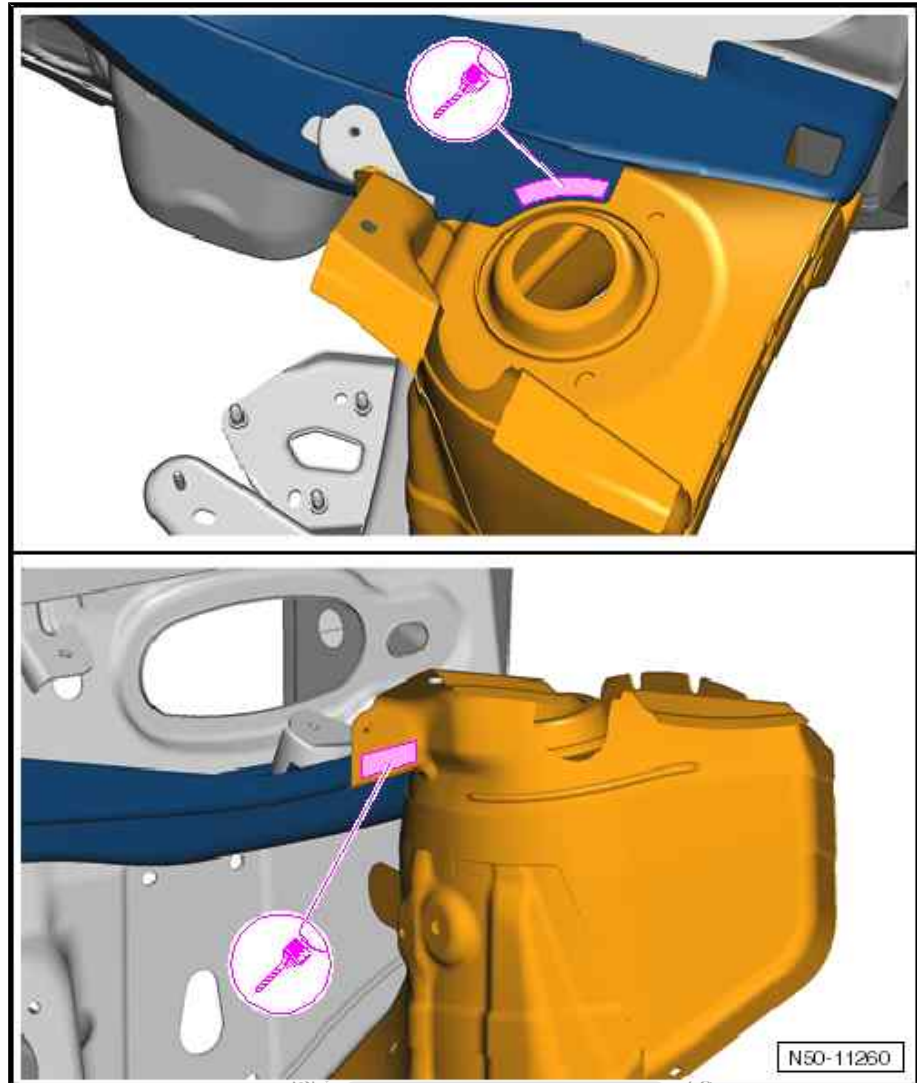
Note

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- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork .

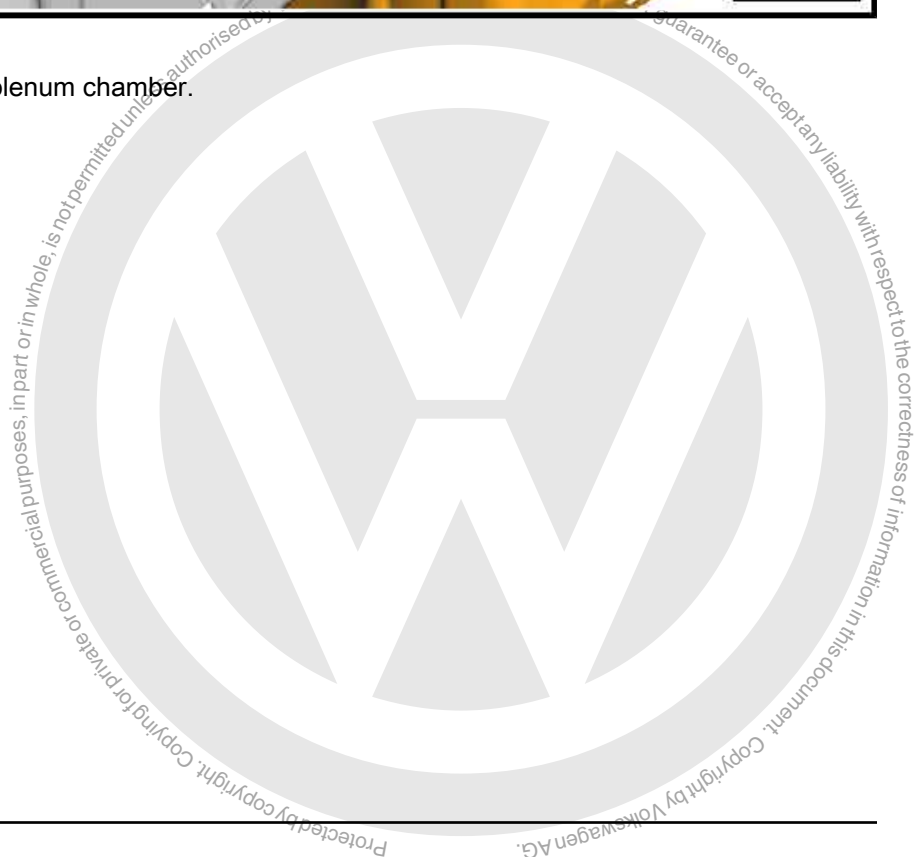
9.2 Removing

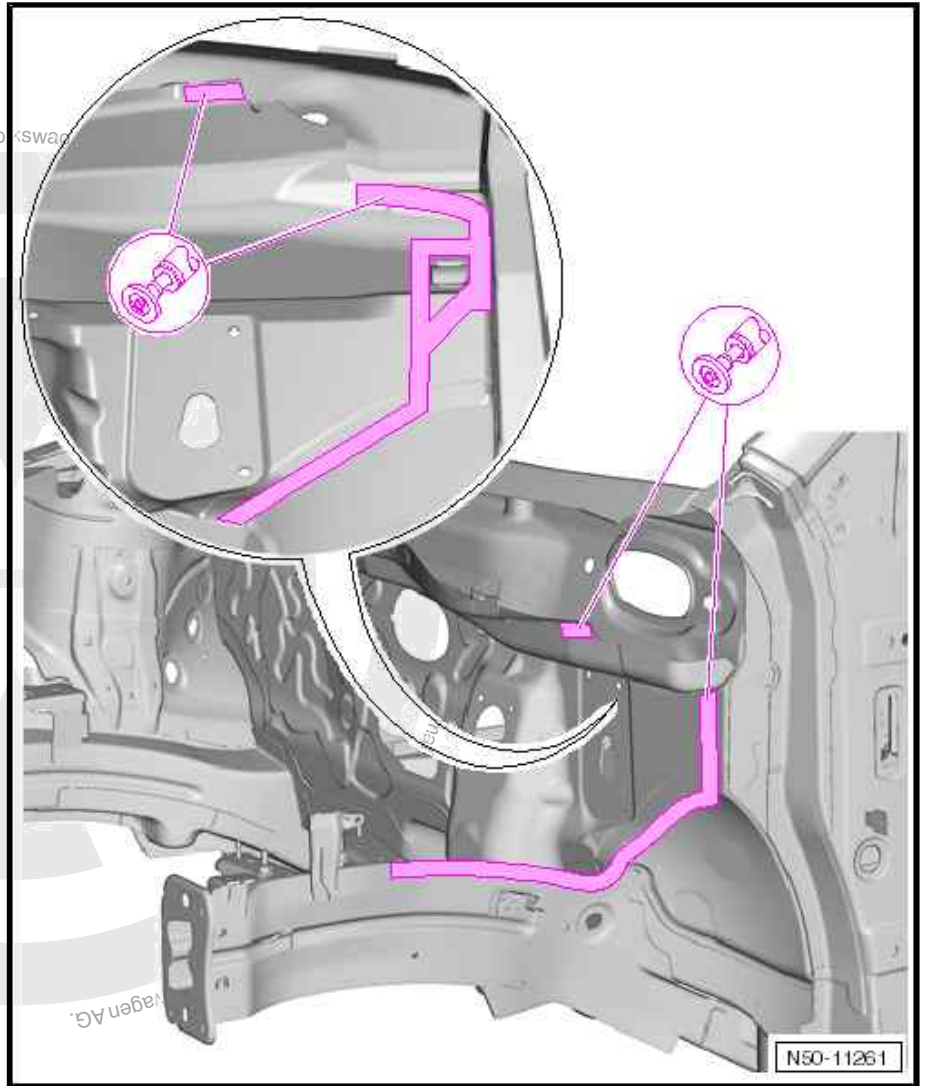


- Separate original joint to front longitudinal member cover plate, to interior and to plenum chamber from wheel housing side.



- Separate remainder of joint to plenum chamber.





- Remove remaining material.

9.3 Installing



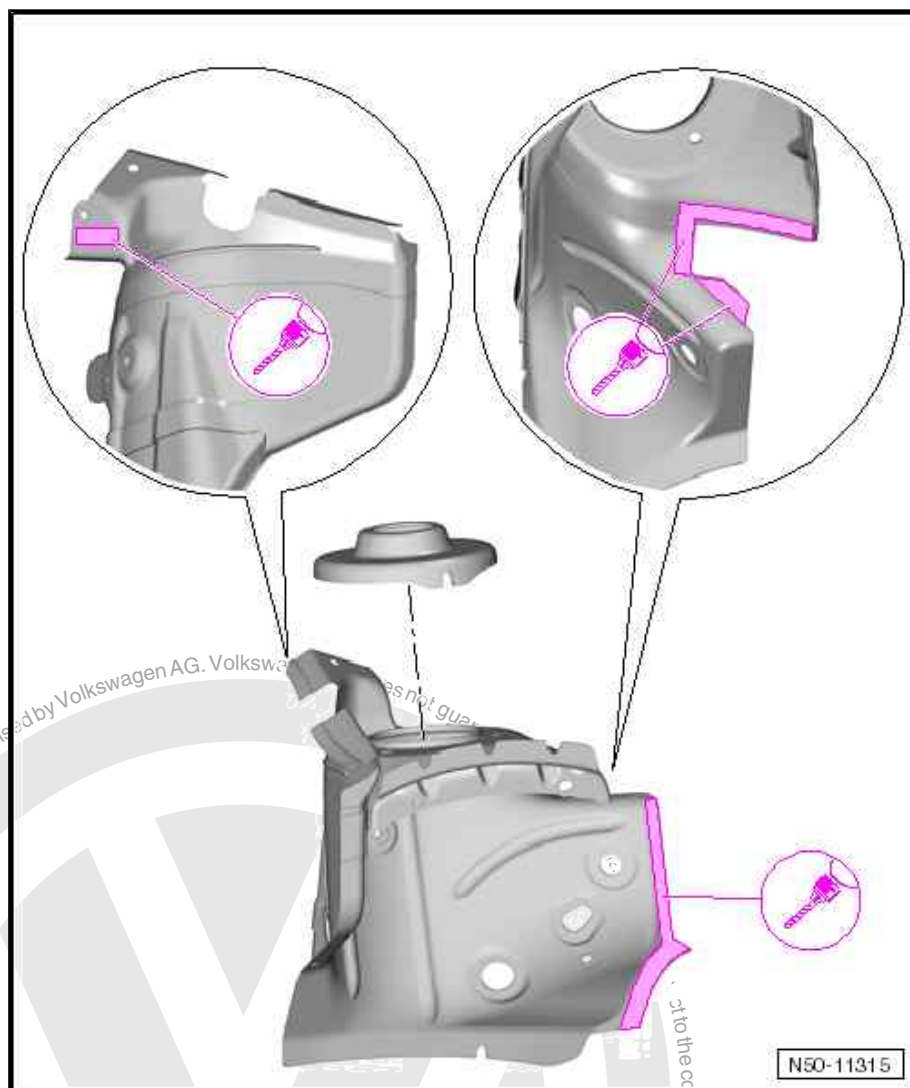
Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 105](#).*

9.3.1 Preparing new part

Replacement parts

- ◆ Wheel housing
- ◆ Mounting bracket for suspension turret



- Drill 8 mm \varnothing holes for SG plug weld seam.

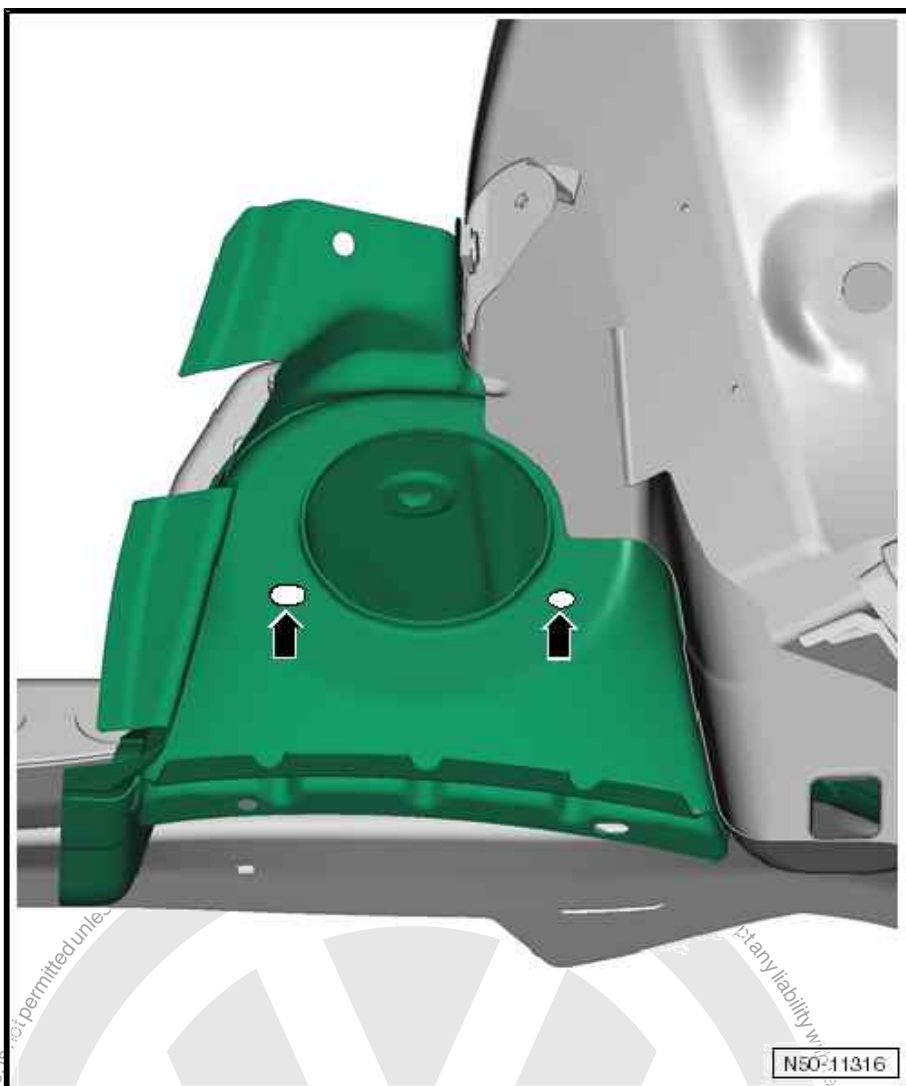


Note

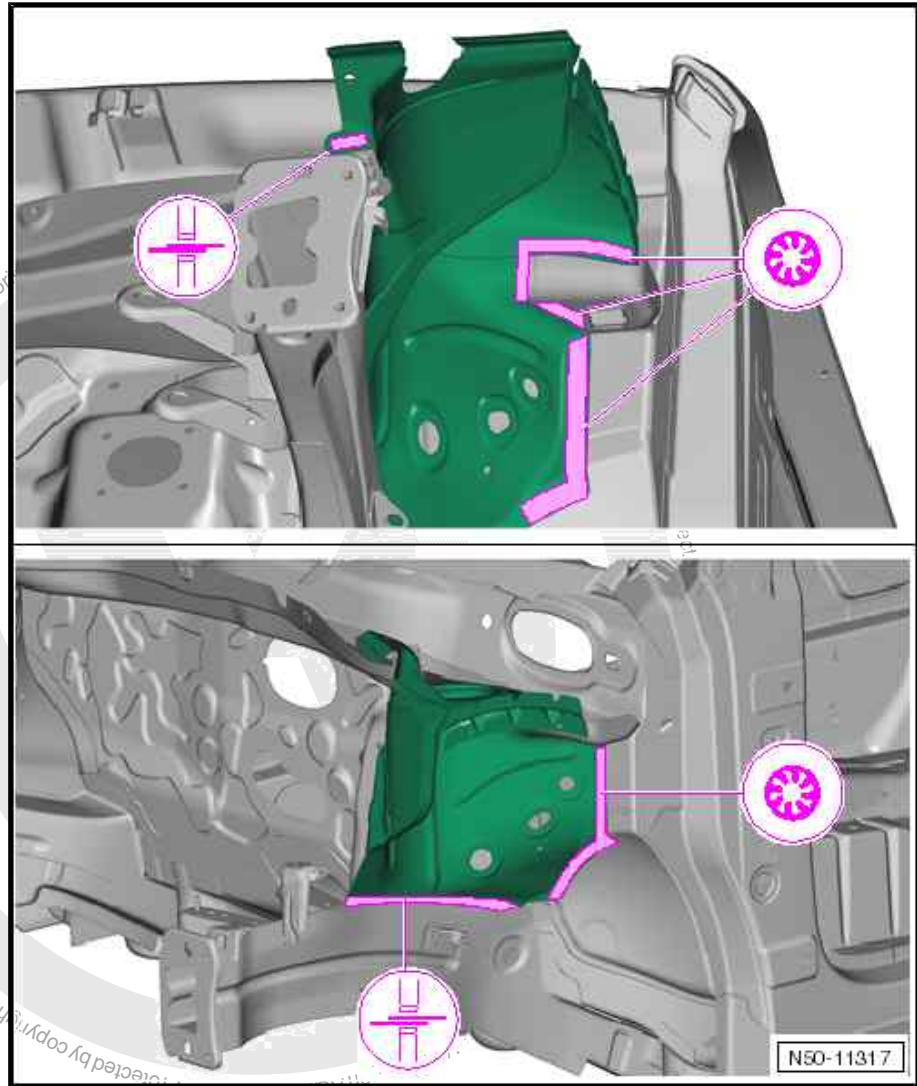
Distance between holes: approx. 25 - 30 mm.



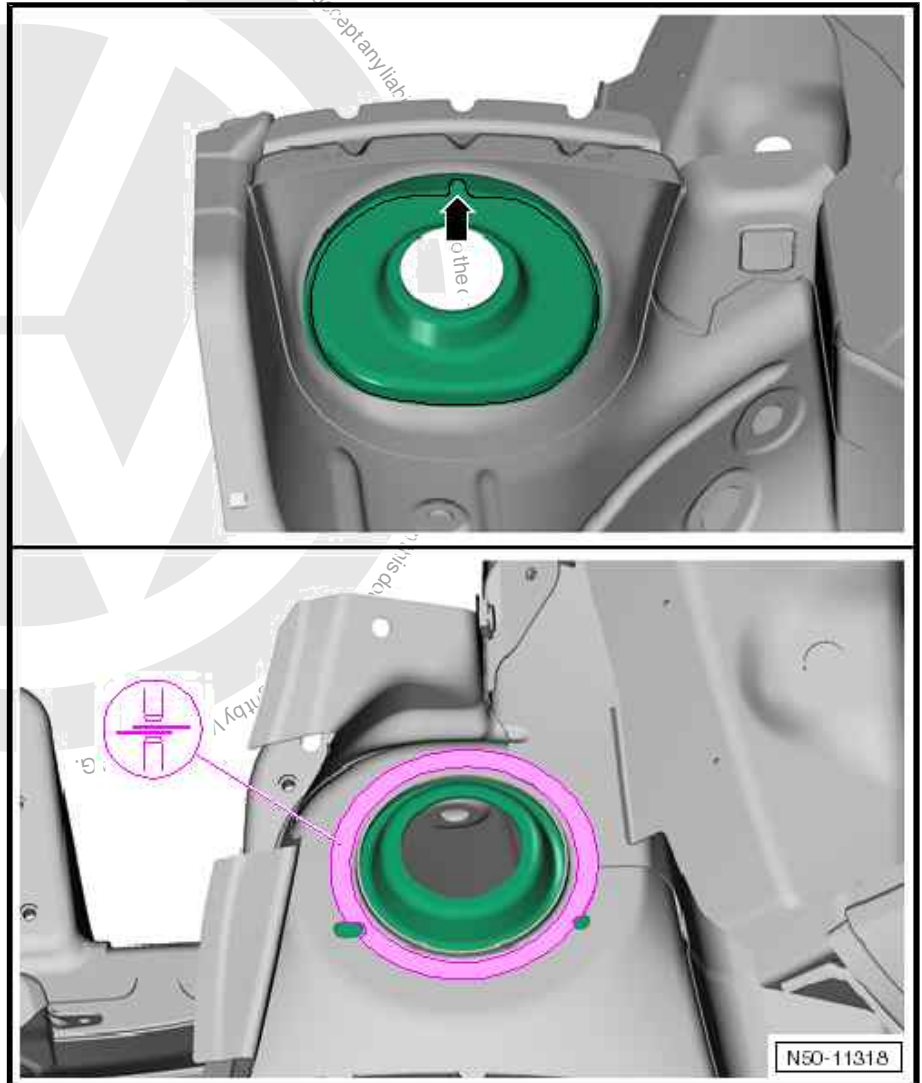
9.3.2 Welding in



- With vehicle standing on alignment bracket set , position wheel housing using the two drillings -arrows- and fix in position.



- Recreate joint between wheel housing and plenum chamber;
SG plug weld seam, RP spot weld seam (inverter).



- With vehicle standing in alignment bracket set , position mounting bracket for suspension turret, and fix it in place so that the lug of the mounting bracket -arrow- faces outwards.
- Create joint to wheel housing, RP spot weld seam (inverter).
- Install upper wheel housing longitudinal member
⇒ [page 100](#) .



RO: 50 79 55 03

10 Renewing front longitudinal member



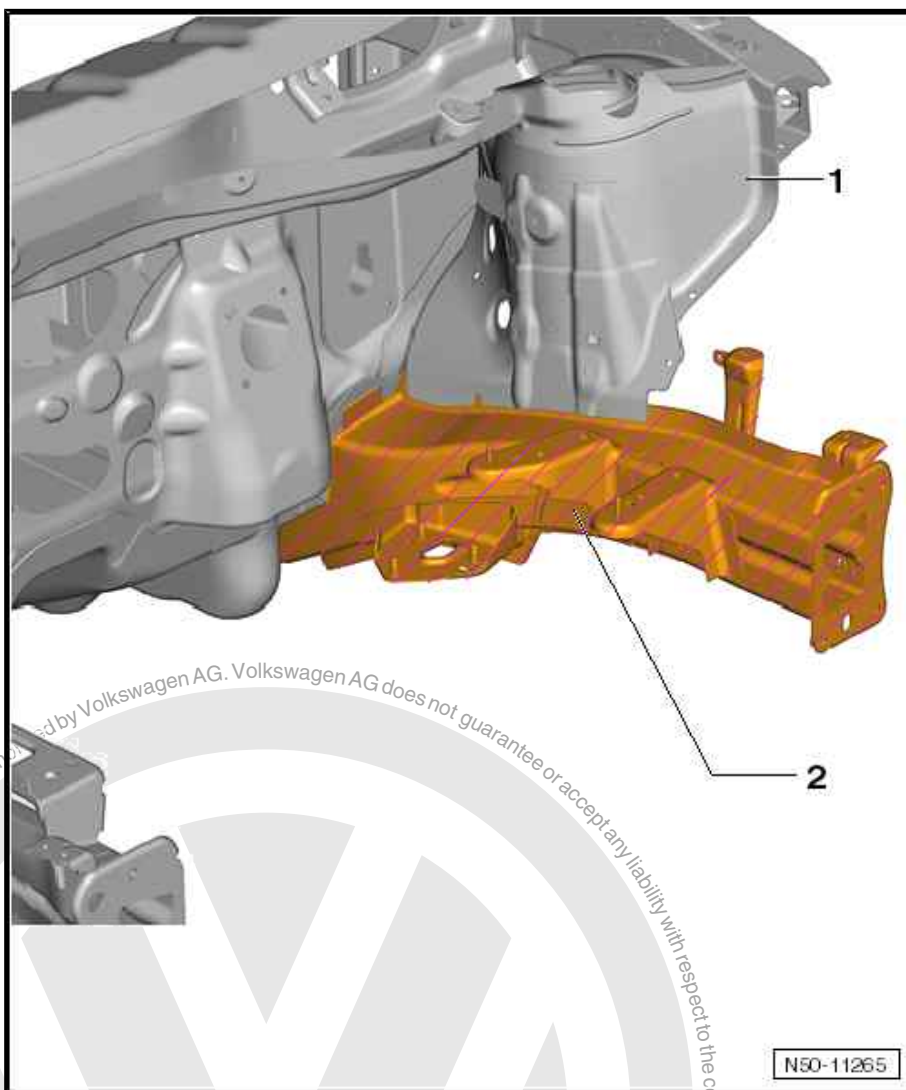
WARNING

Observe safety notes!

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

1 - Wheel housing

2 - Longitudinal member





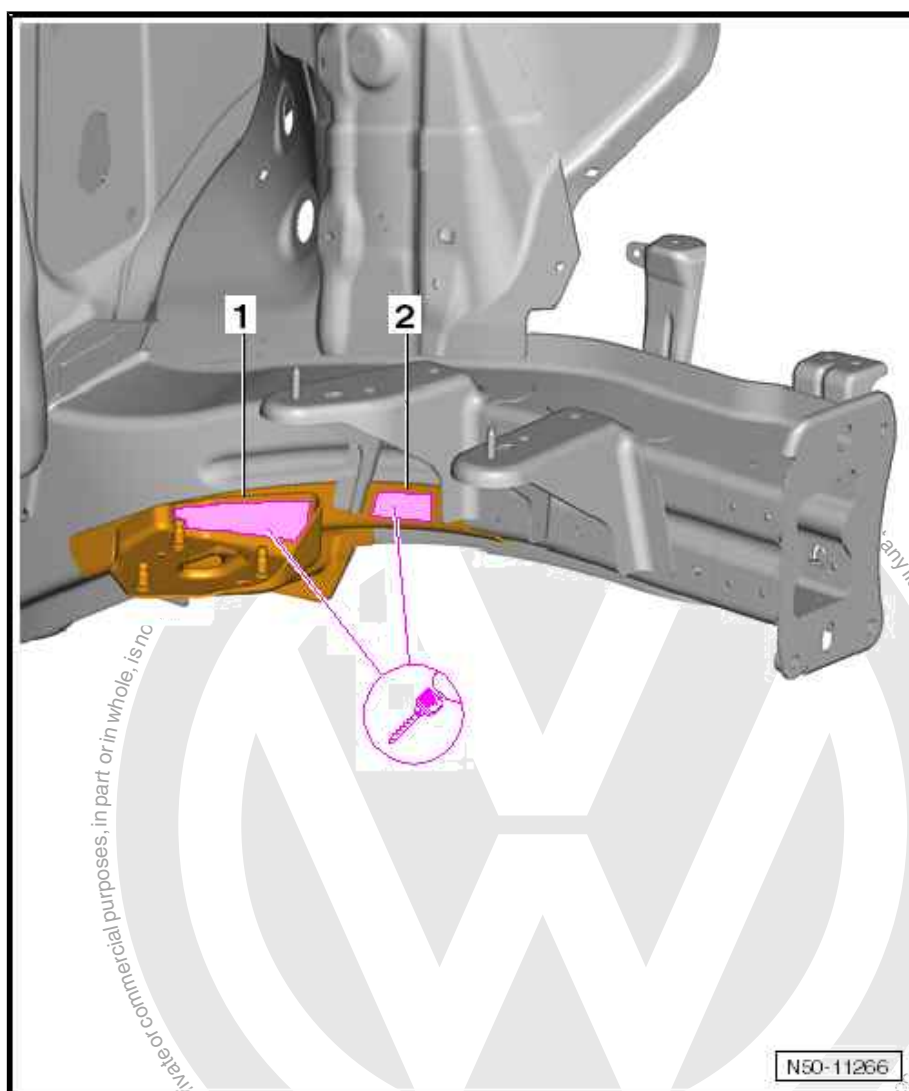
10.1 Tools



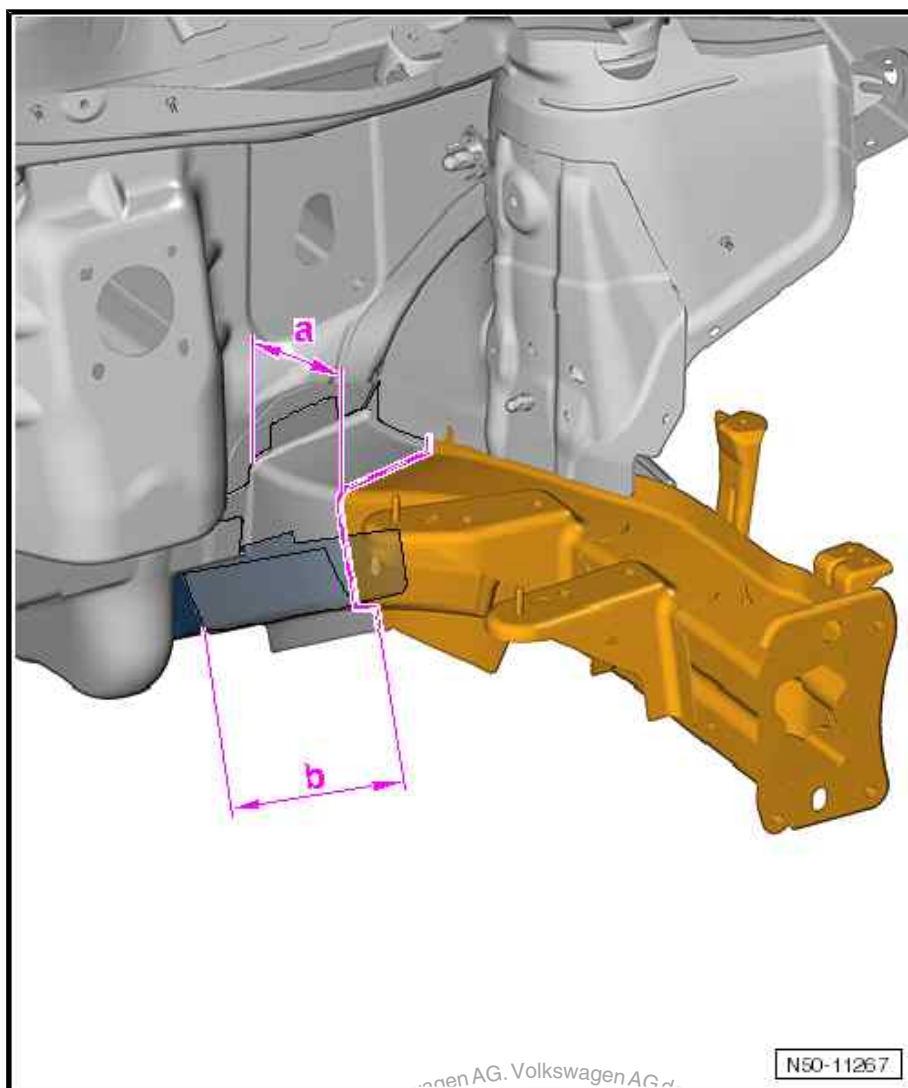
Note

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- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork.

10.2 Removing



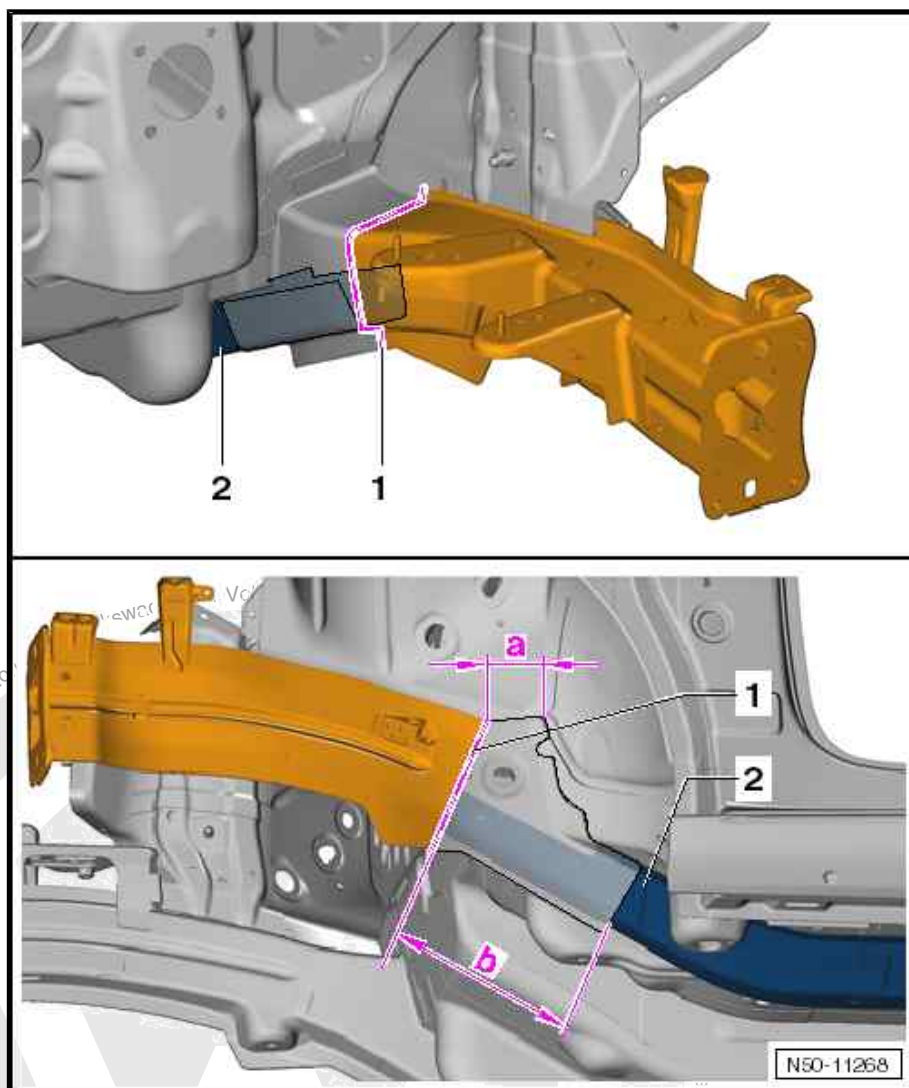
- Separate original joint of ABS mounting bracket -1- and mounting bracket for subframe -2- to longitudinal member.



- Mark and make parting cut on front longitudinal member according to dimensions -a- and -b-.

Dimension -a- - 110 mm

Dimension -b- = 250 mm

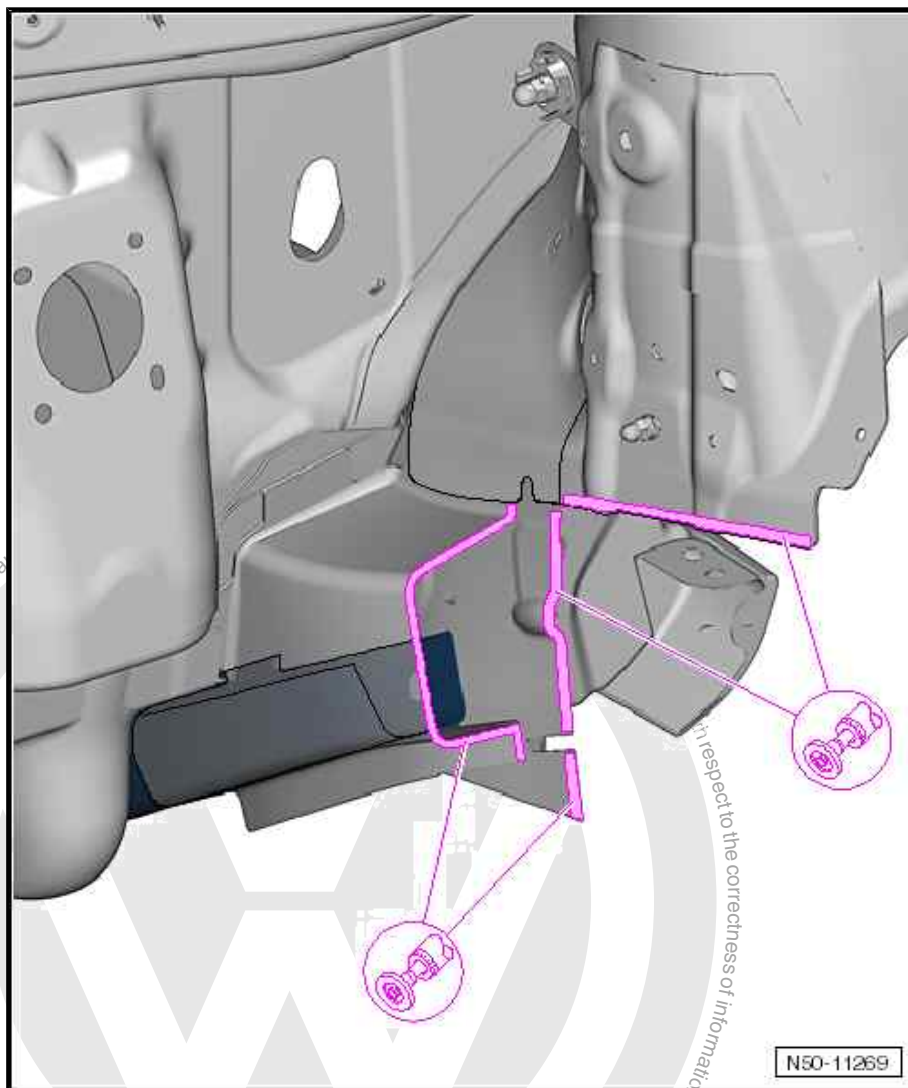


This parting cut position -1- ensures that the middle part of the longitudinal member -2- is not damaged.

- Mark and make parting cut on front longitudinal member according to dimensions -a- and -b-.

Dimension -a- = 100 mm

Dimension -b- = 210 mm



- Remove remaining material.

10.3 Installing



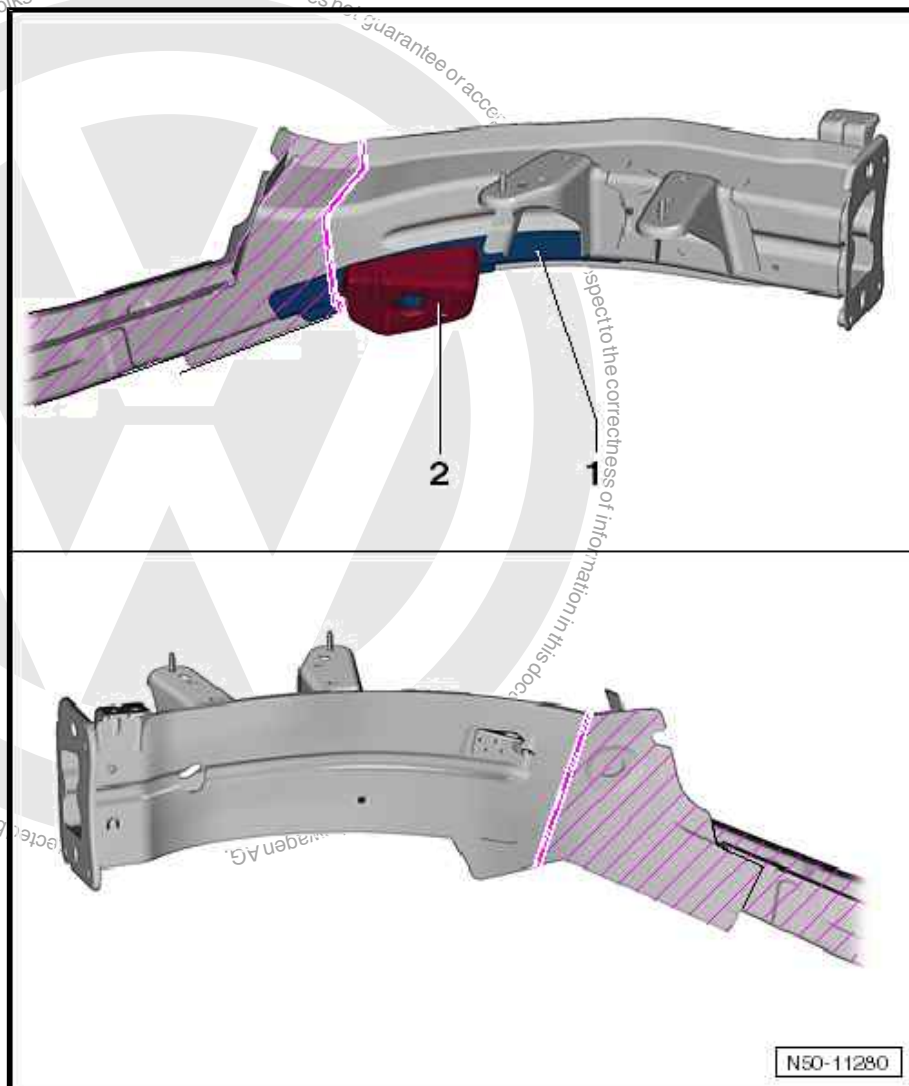
Note

Only welding units authorised by Volkswagen AG may be used
⇒ [page 113](#).

10.3.1 Preparing new part

Replacement part

- ♦ Front longitudinal member (parts designation according to ET-KA⇒ side member with reinforcements and welded nuts)



- Separate original joint of ABS mounting bracket -1- and mounting bracket for subframe -2- to longitudinal member.
- Transfer parting cut to new part and cut out.



Note

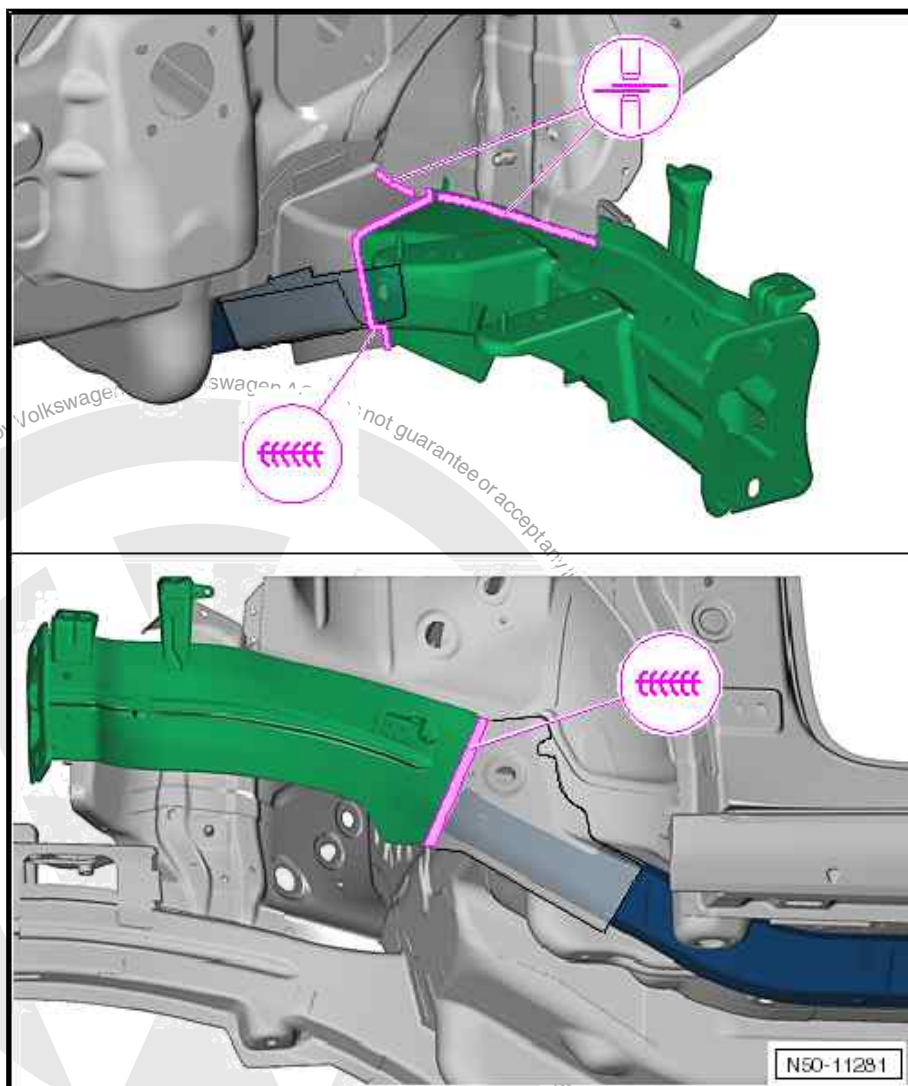
The original joints of the ABS mounting bracket -1- and the mounting bracket for subframe -2- must be separated in such a way that the mounting brackets can be reused when installing.

10.3.2 Welding in

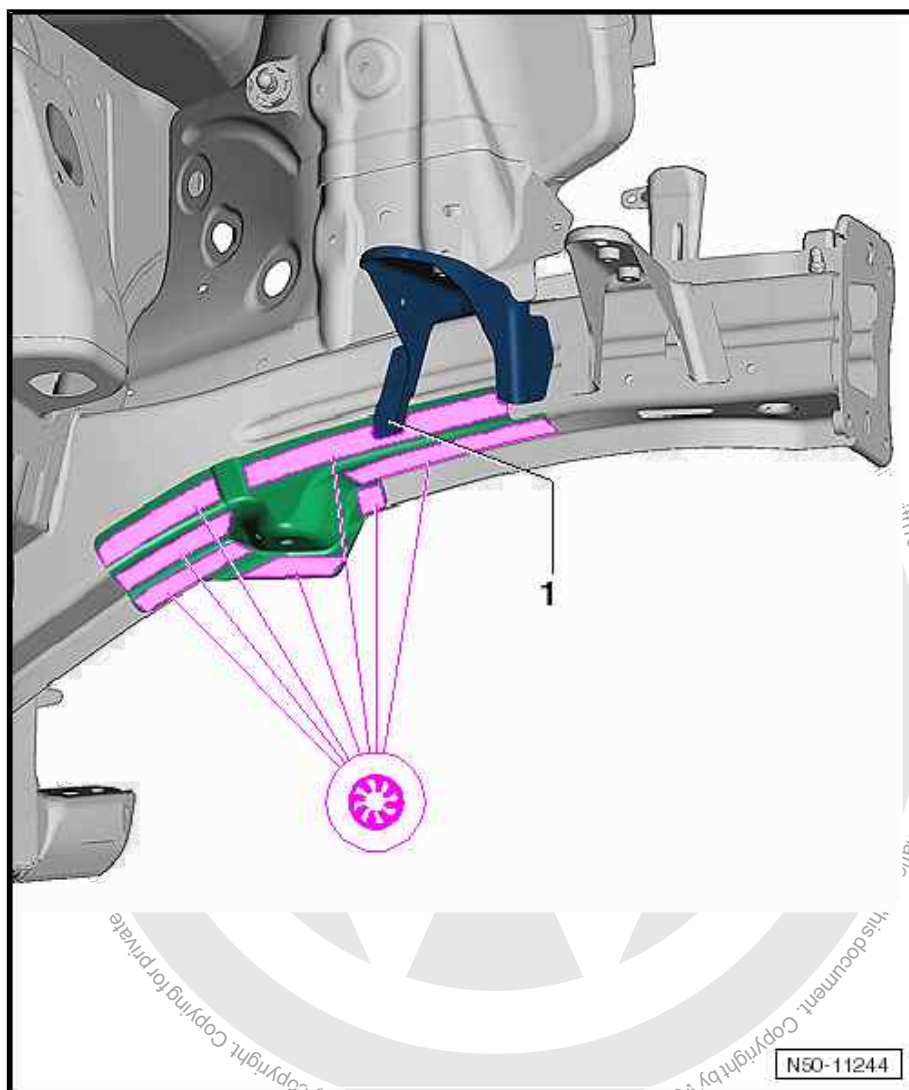
- Adapt new part with vehicle positioned on alignment bracket set and fix in place.



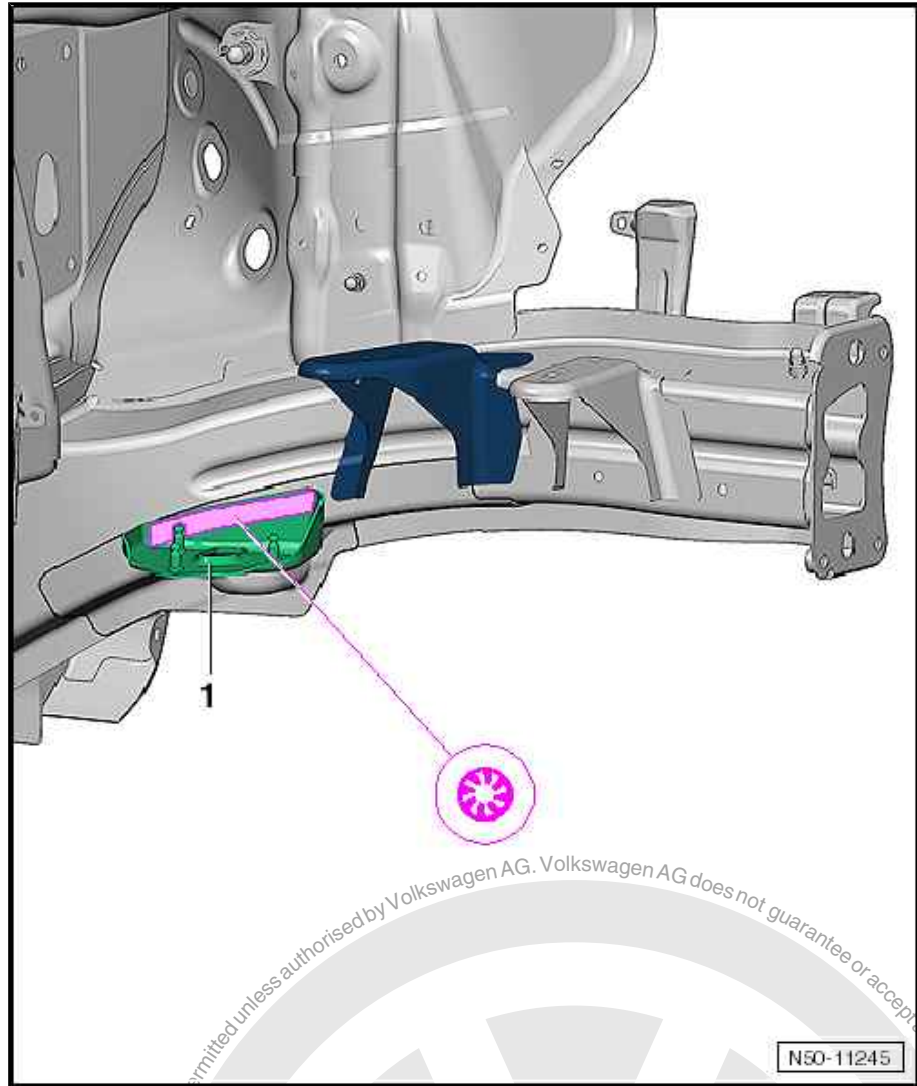
- Check fit with adjacent parts.



- Weld in longitudinal member parting cut (all round), SG continuous weld seam.
- Create joint to wheel housing, RP spot weld seam (inverter).



- Weld in new part, SG plug weld seam.
- Bend bracket -1- back to original position and weld in with SG plug weld seam.



- Weld in new part -1- (SG plug weld seam).



RO: 50 79 55 03

11 Renewing front longitudinal member

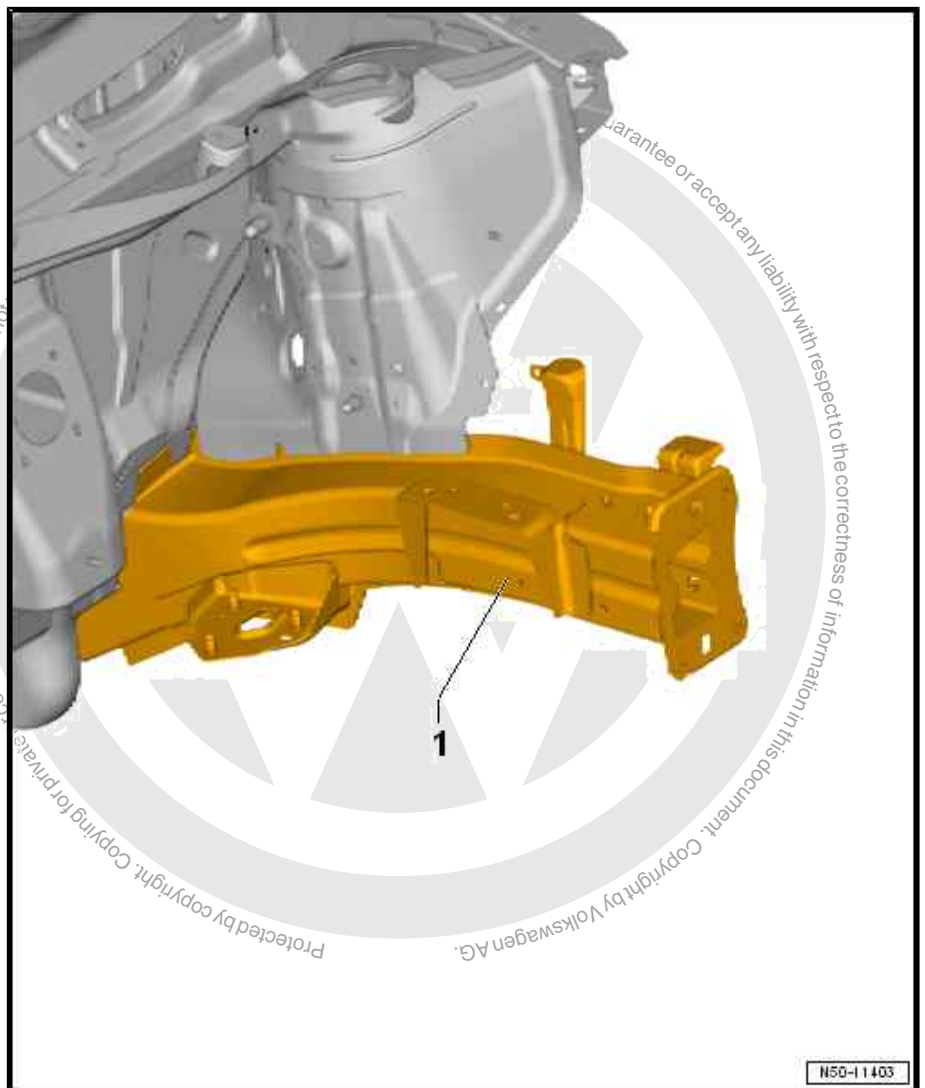


WARNING

Observe safety notes!

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

1 - Front longitudinal member





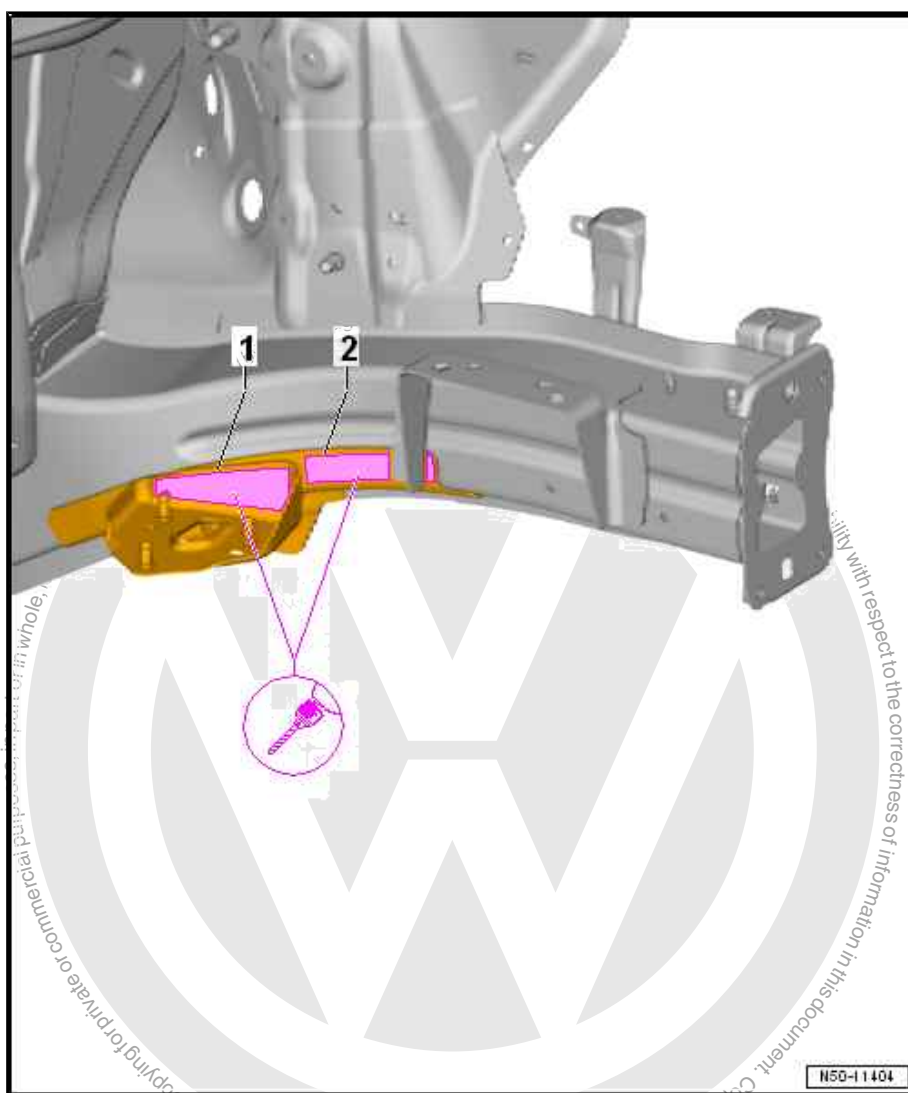
11.1 Tools



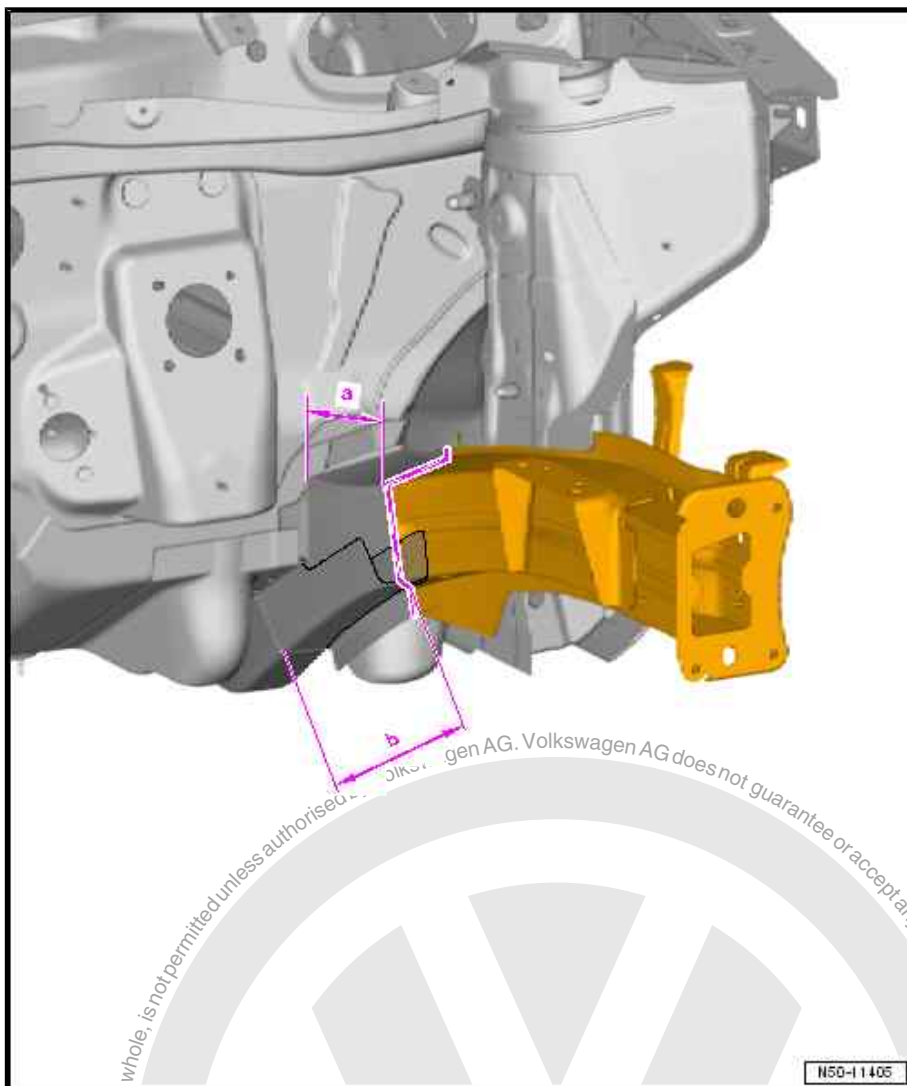
Note

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

11.2 Removing



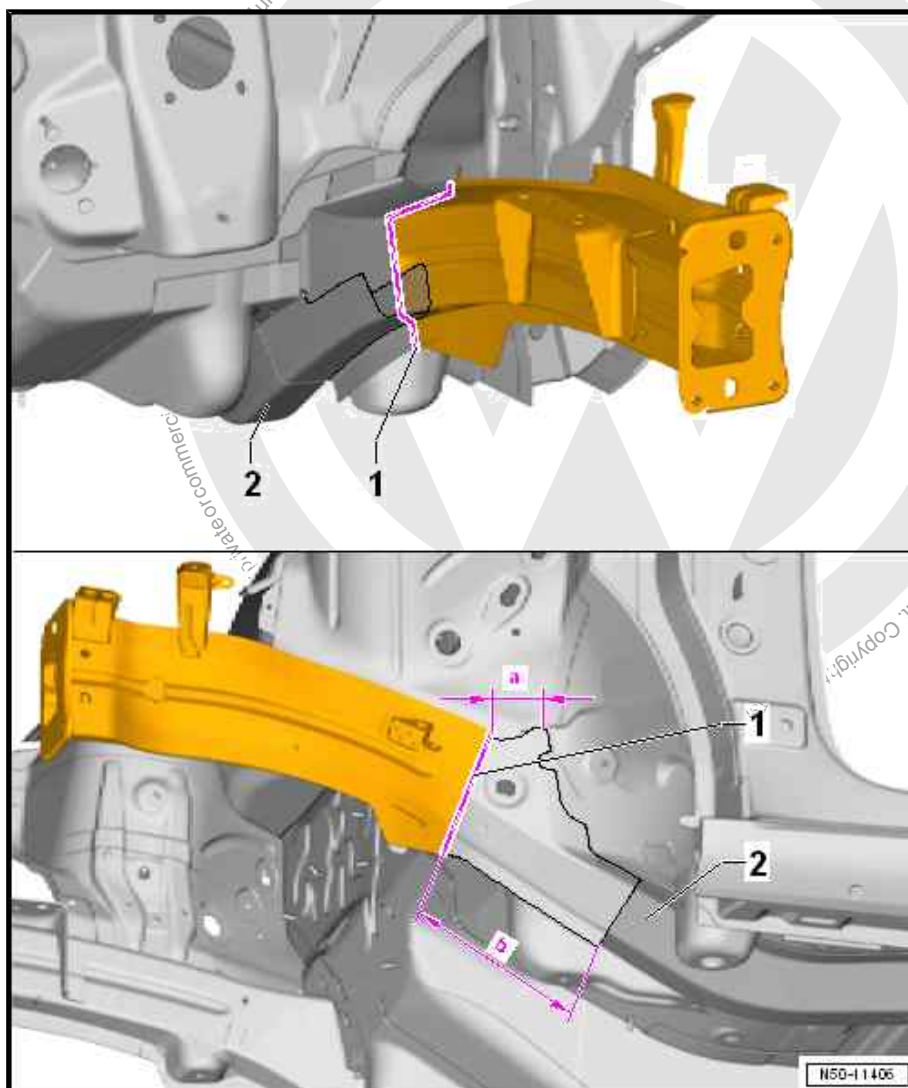
- Separate original joint of ABS mounting bracket -1- and mounting bracket for subframe -2- to front longitudinal member.



- Mark and make parting cut on front longitudinal member according to dimensions -a- and -b-.

Dimension -a- - 110 mm

Dimension -b- = 250 mm

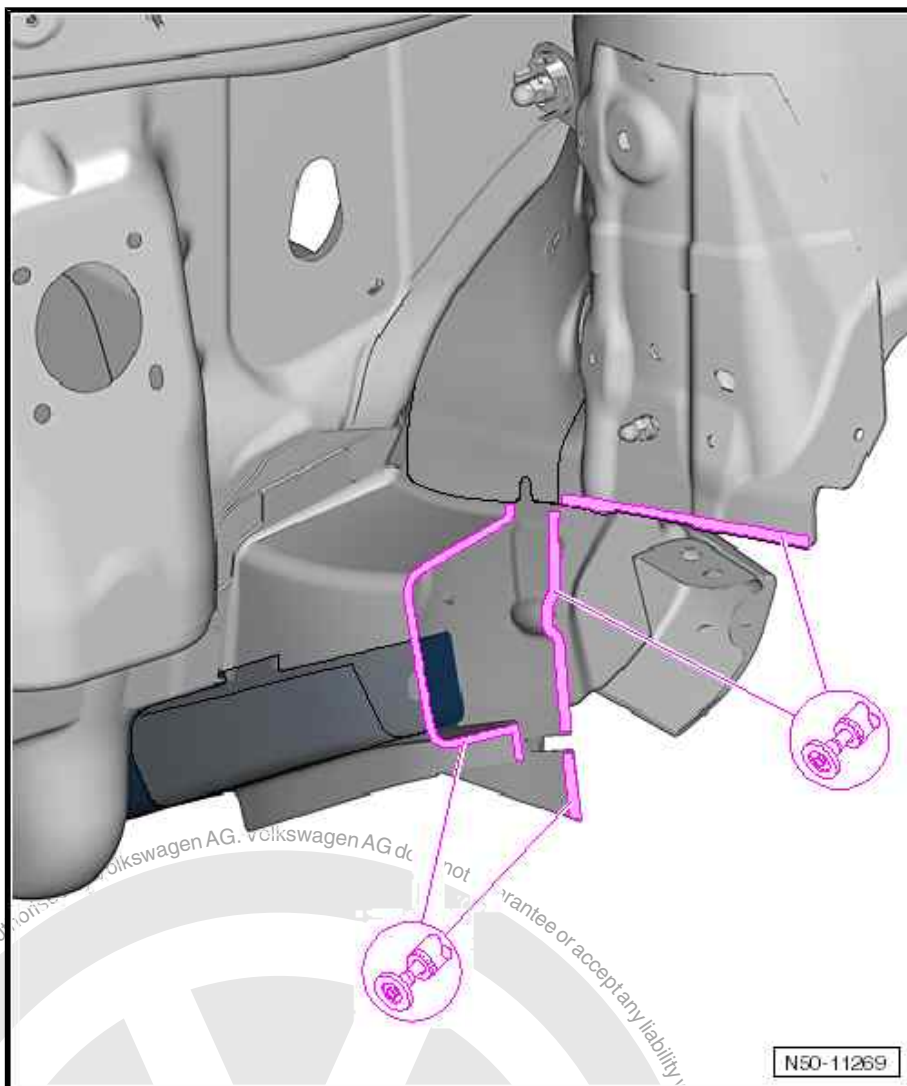


This parting cut position -1- ensures that the middle part of the longitudinal member -2- is not damaged.

- Mark and make parting cut on front longitudinal member according to dimensions -a- and -b-.

Dimension -a- = 100 mm

Dimension -b- = 210 mm



- Remove remaining material.

11.3 Installing



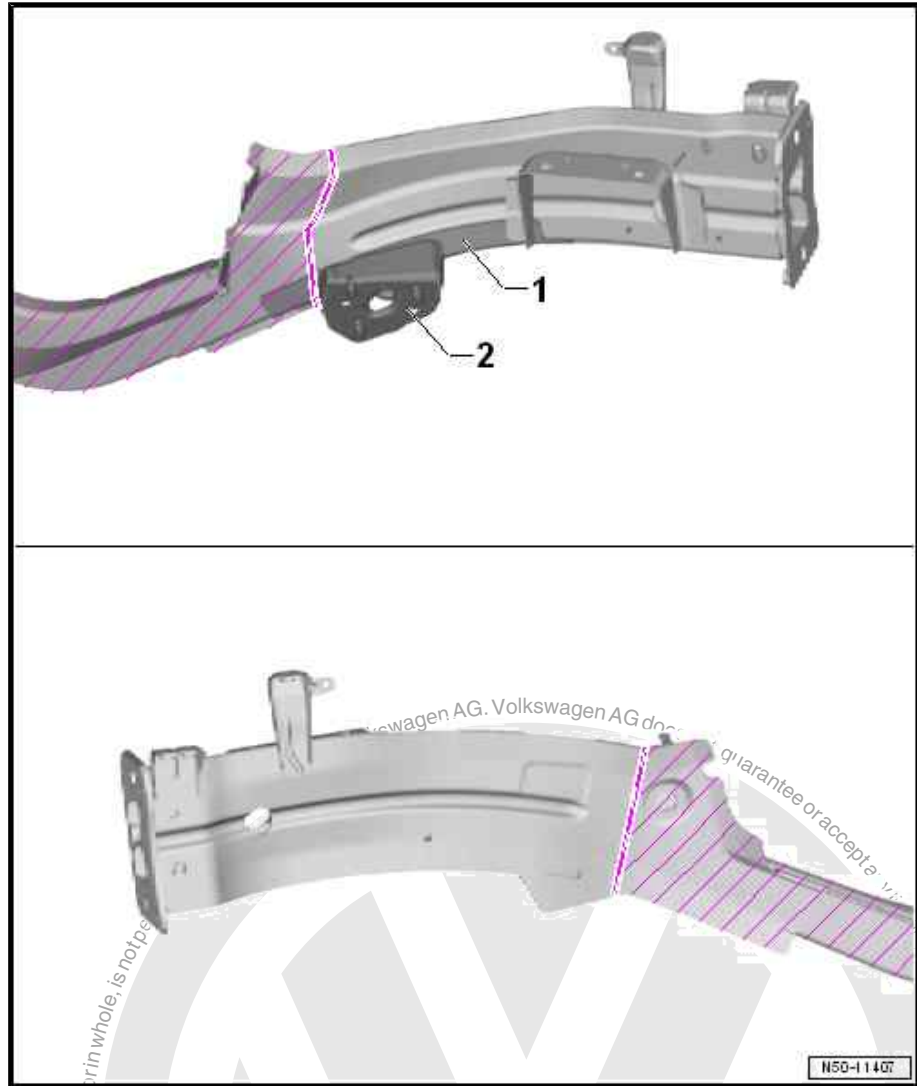
Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 122](#).*

11.3.1 Preparing new part

Replacement part

- ◆ Front longitudinal member (parts designation according to ET-KA⇒ side member with reinforcements and welded nuts)



- Separate original joint of ABS mounting bracket -1- and mounting bracket for subframe -2- to longitudinal member.
- Transfer parting cut to new part and cut out.



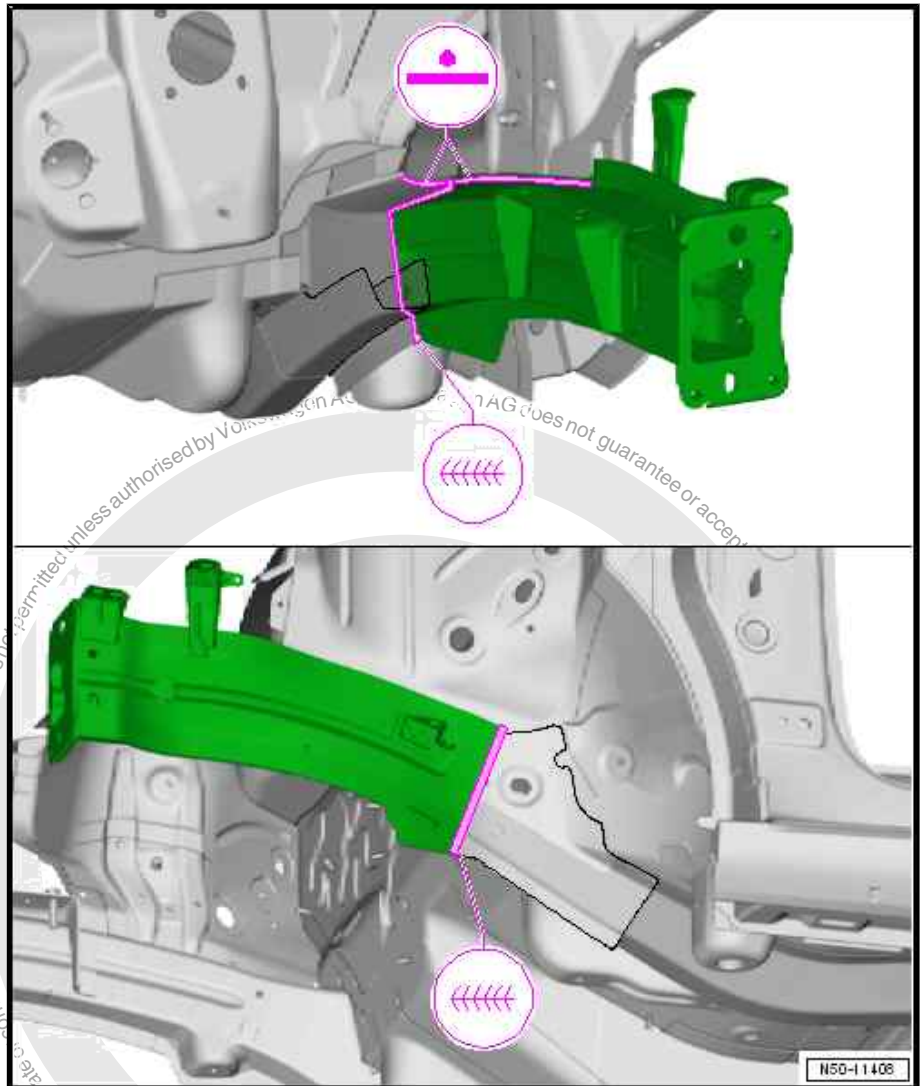
Note

The original joints of the ABS mounting bracket -1- and the mounting bracket for subframe -2- must be separated in such a way that the mounting brackets can be reused when installing.

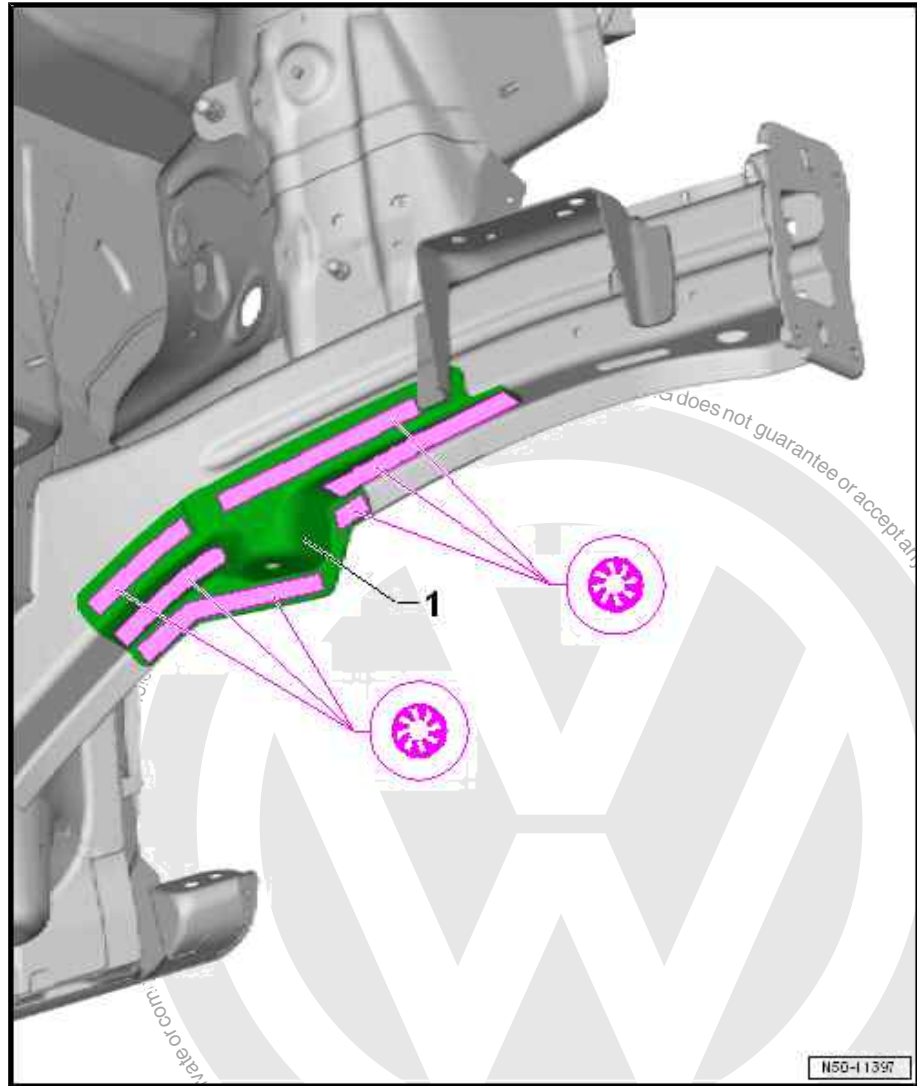
11.3.2 Welding in

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

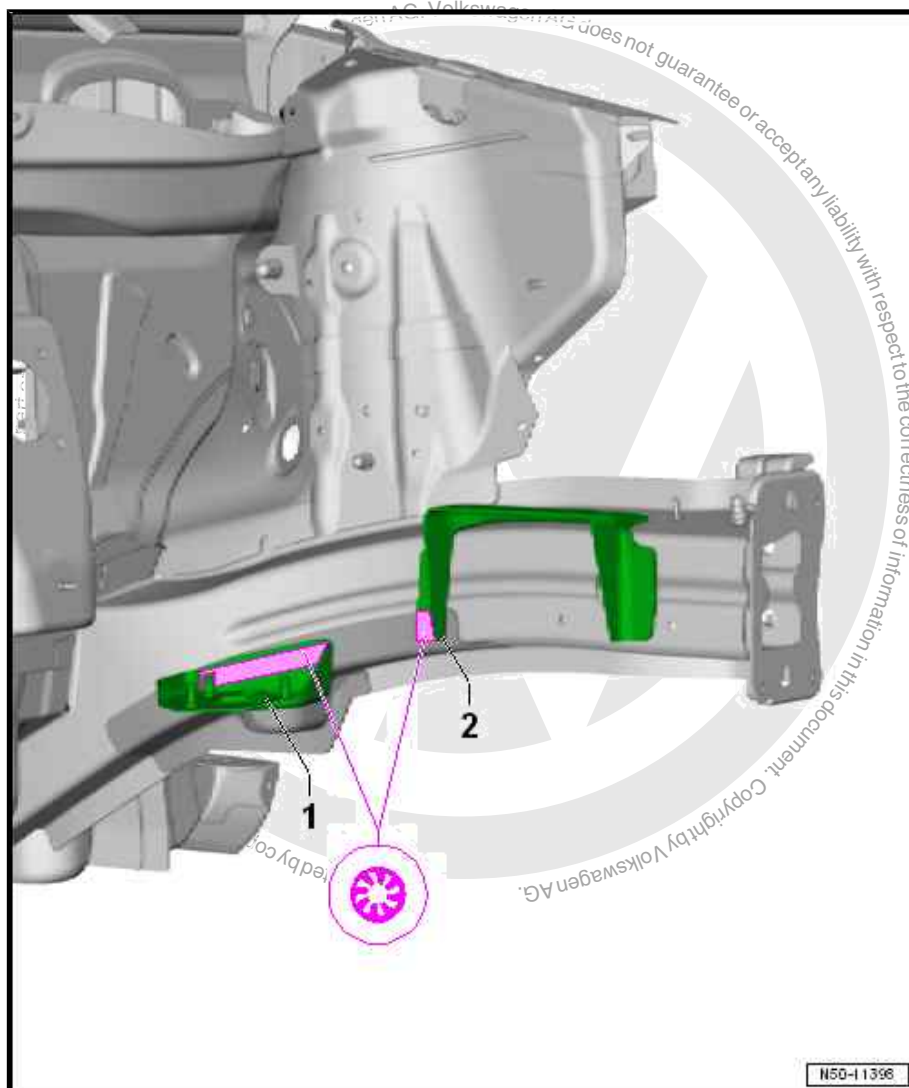
- Check fit with adjacent parts.



- Weld longitudinal member parting cut (all round), SG continuous weld seam.
- Create joint to wheel housing, RP spot weld seam (inverter).



- Weld in front mounting bracket for subframe -1-, SG plug weld seam.



- Weld in ABS mounting bracket -1-, SG plug weld seam.
- Bend bracket -2- back to original position and, weld it in with SG plug weld seam.



RO: 50 79 49 50

12 Repairing threads for securing sub-frame



WARNING

Observe safety notes!

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

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



Note

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

Special tools and workshop equipment required

- ◆ Thread repair kit M12x1.5 - VAS 6058-
- ◆ Hand drill - VAS 6267-





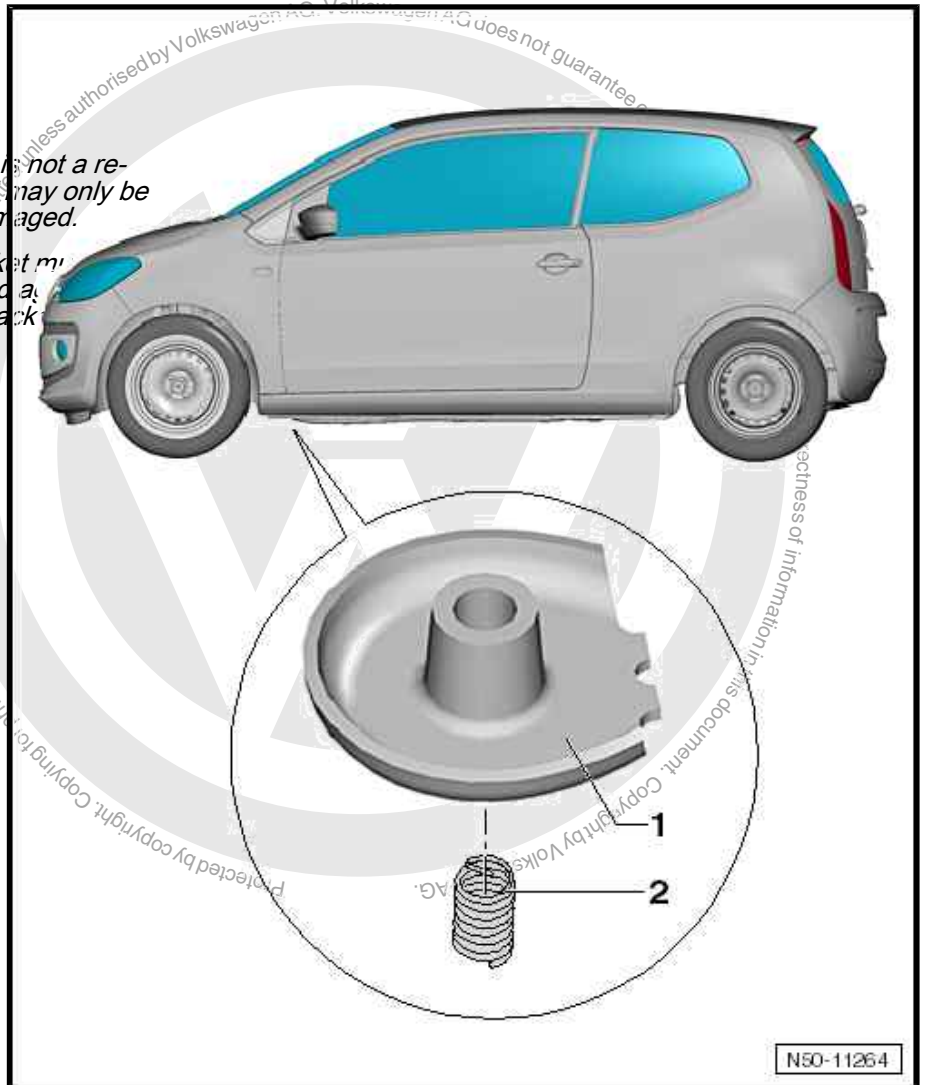
1 - Threaded plate (welded to subframe retaining bracket)



Note

- ◆ The threaded plate is not a replacement part and may only be repaired once if damaged.
- ◆ The mounting bracket must be renewed if damaged after renewing retaining bracket
⇒ [page 71](#).

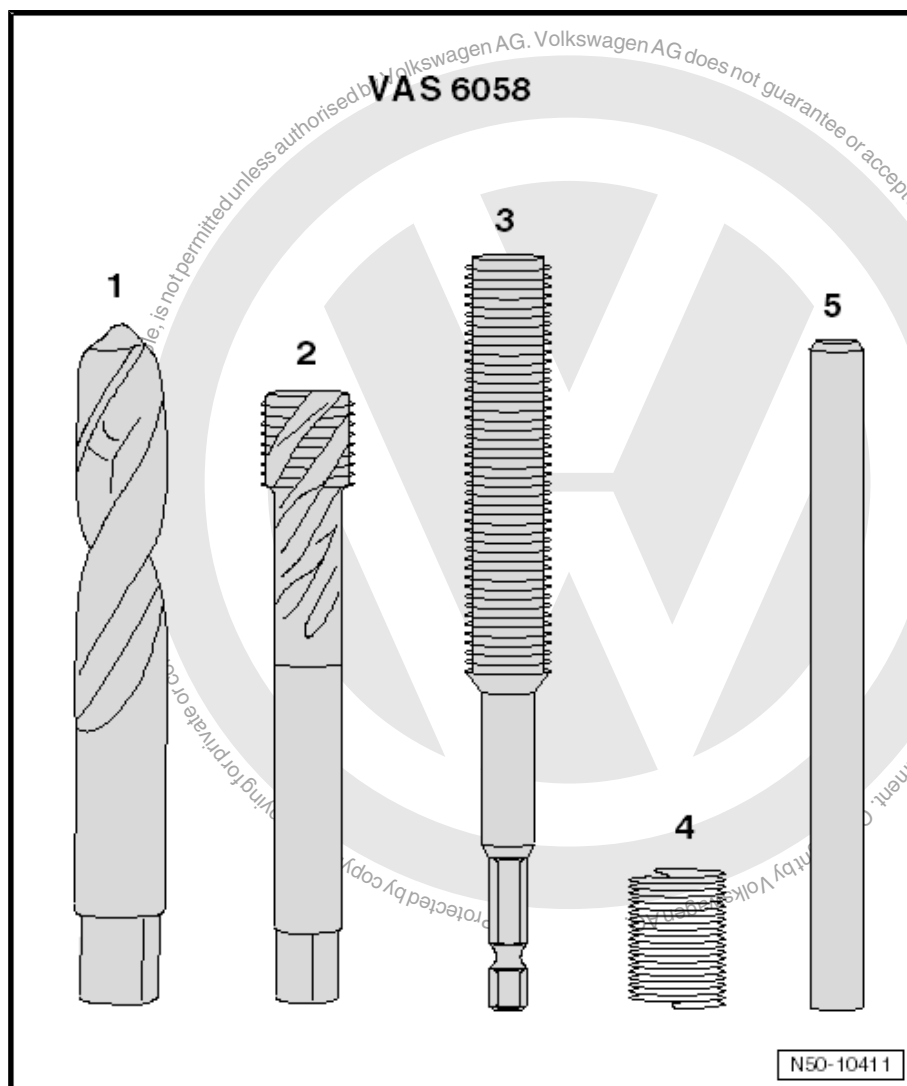
2 - Heli-Coil thread insert





12.1 Contents of thread repair kit

- 1 - Drill bit Ø 12.5 mm
- 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



12.2 Repairing threads

12.2.1 Drilling threads

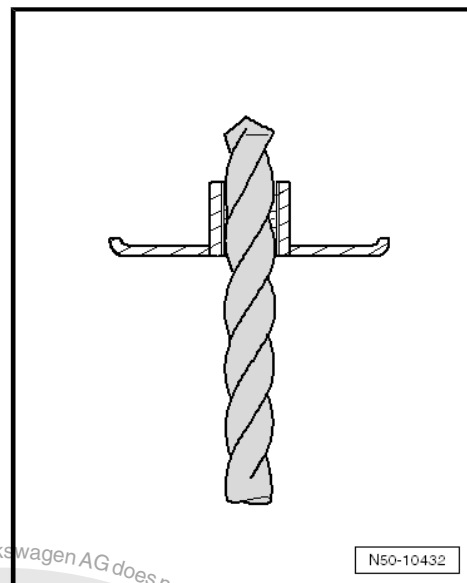


Caution

Wear eye protection when drilling thread.

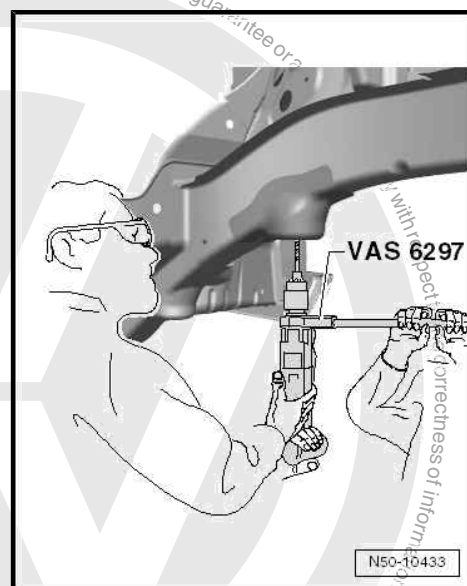


- Drill out thread using twist drill.



Note

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



12.2.2 Cutting thread

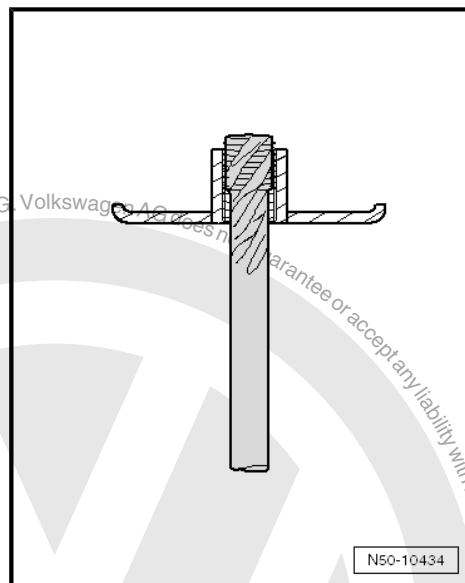


Caution

Wear eye protection when drilling thread and when blowing out threaded sleeve.



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



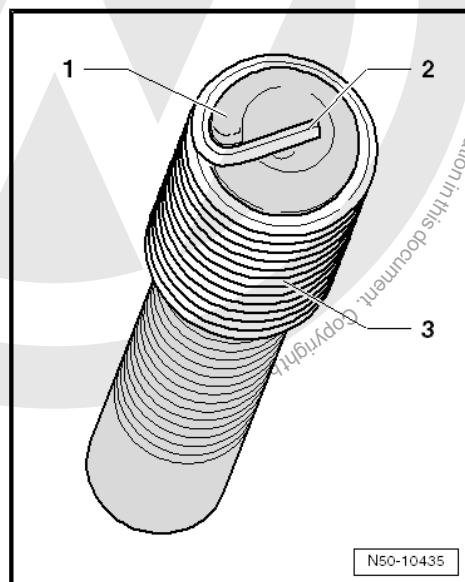
12.2.3 Inserting thread insert

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

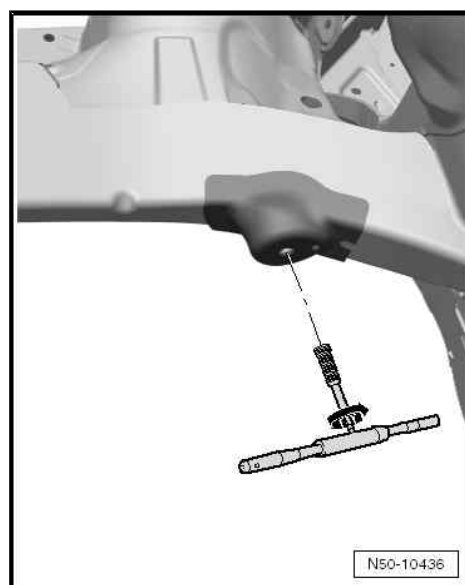


Note

Thread insert must screw in easily.

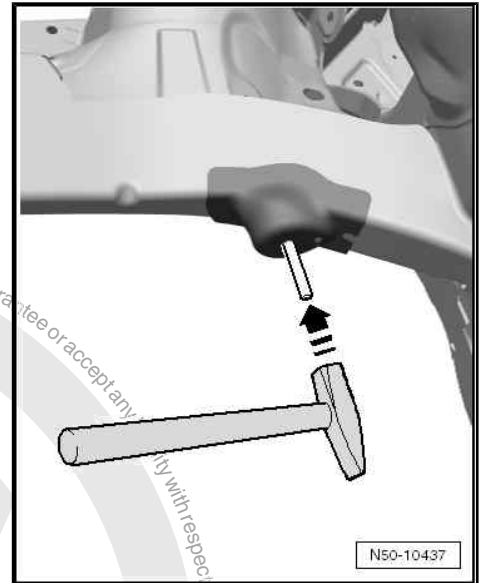


- Screw thread insert into the threaded plate until the top of the thread insert is flush with the outer edge of the threaded plate (visual check).
- Then screw thread insert further inwards a $\frac{1}{4}$ turn.
- Remove fitting spindle.





- Break off fitting pin of thread insert using pin breaker.
- Install subframe (specified torques) ⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe, anti-roll bar, suspension link .



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51 – Body - centre

RO: 51 03 55 00

1 Renewing roof - vehicles without panorama tilting sunroof



DANGER!

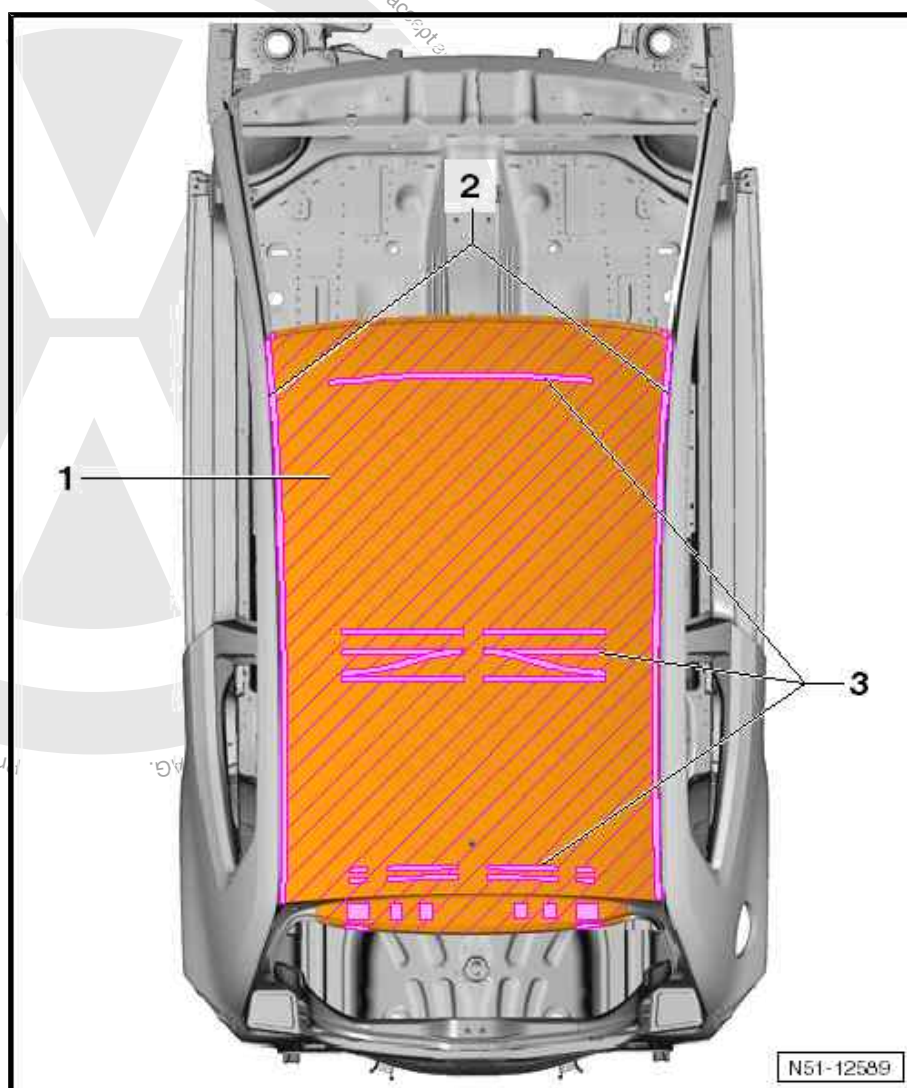
Observe safety notes!

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

1 - Roof

2 - Laser solder seam

3 - Bonded area





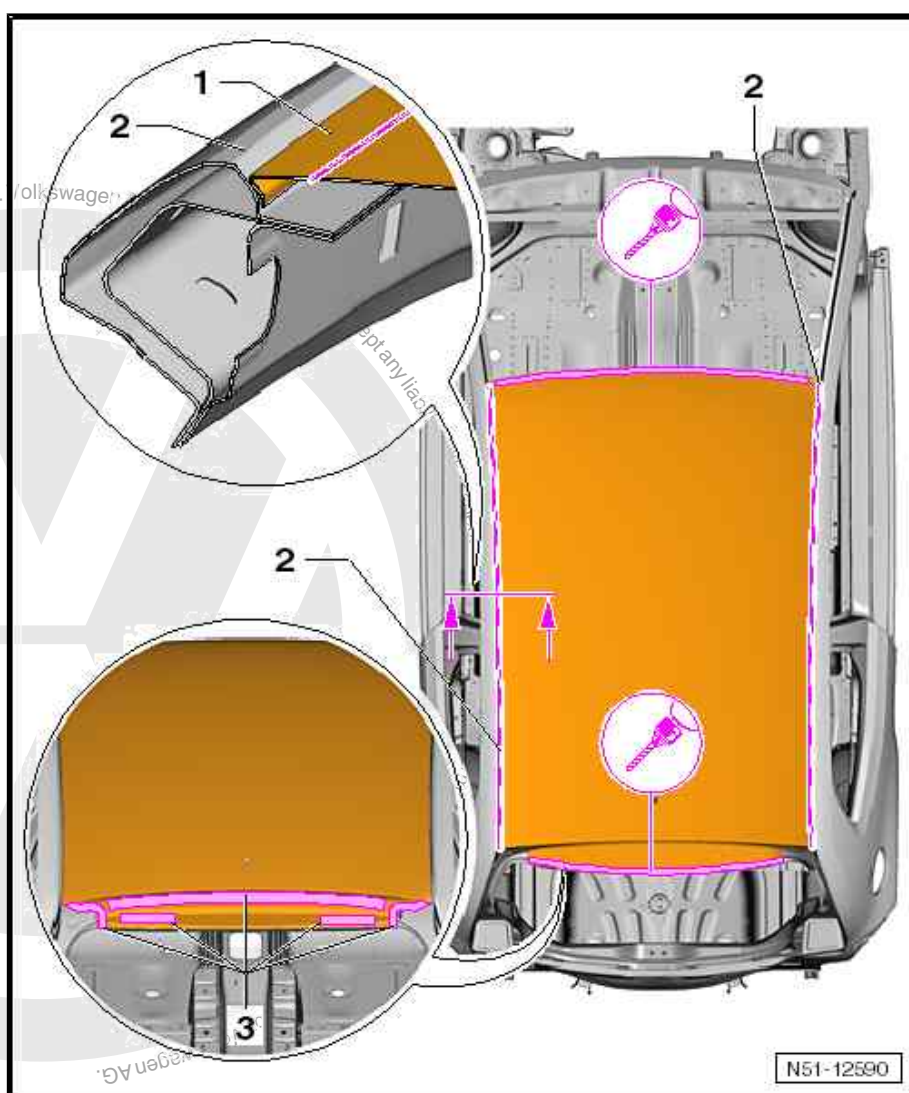
1.1 Tools



Note

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- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork .

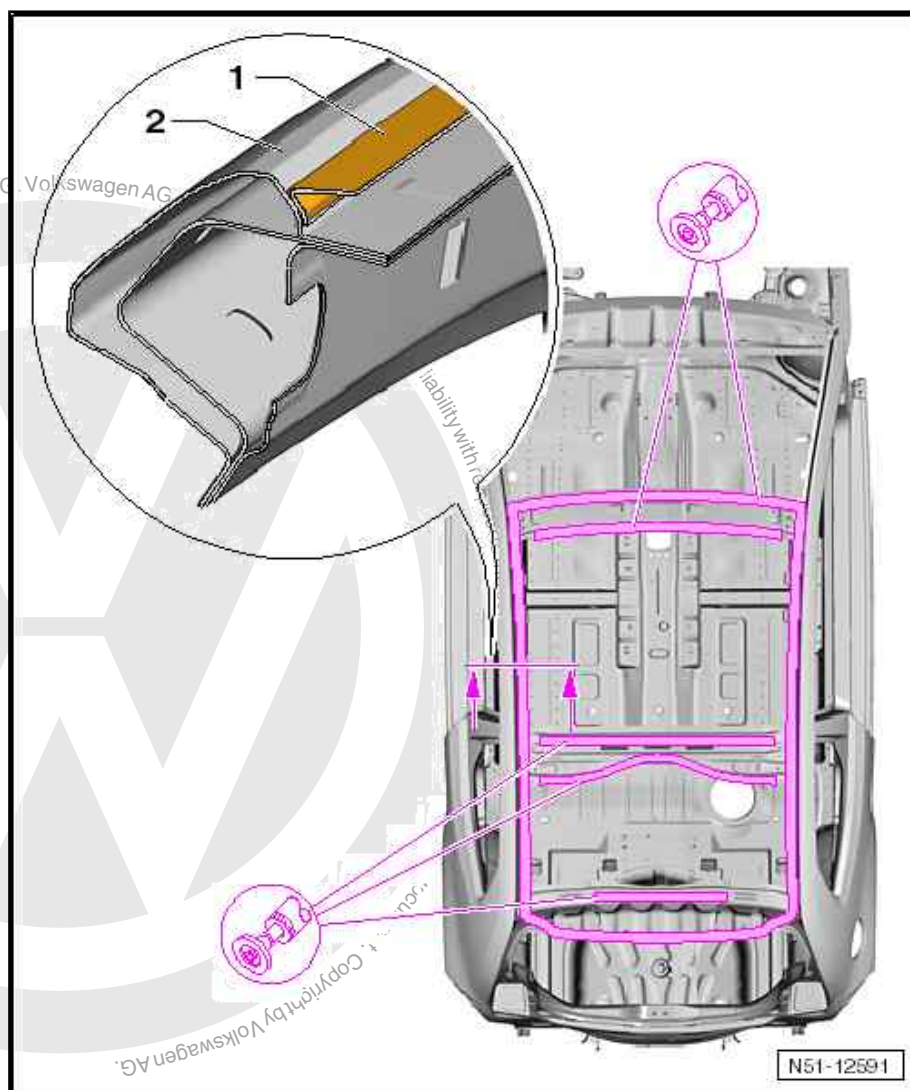
1.2 Removing





Note

- ◆ *Apply textile adhesive tape on left and right roof members parallel to laser solder seams. The tape reduces danger of damage and contamination during repairs.*
- ◆ *When separating, ensure a distance of approx. 15 mm to roof member -1- is kept, to assure it is not damaged during repairs.*
- ◆ *Roof reinforcement is not removed.*
- Separate original joint to front roof cross member.
- Separate original joint in rear lid aperture.
- Separate bonded joints to front and rear roof cross members -3- as well as the roof reinforcing from the inertia.
- Roughly cut roof out parallel to laser solder seams -2-.





Note

- ◆ *Side panel -2- must not be damaged when removing residual material of roof -1-.*
- ◆ *Do not use cutting disks or rough grinding disks.*
- Remove remaining material.
- Remove any adhesive residue and remaining sealing compound from the front and rear roof cross members and the roof reinforcement.
- 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 137](#).*

1.3.1 Preparing new part

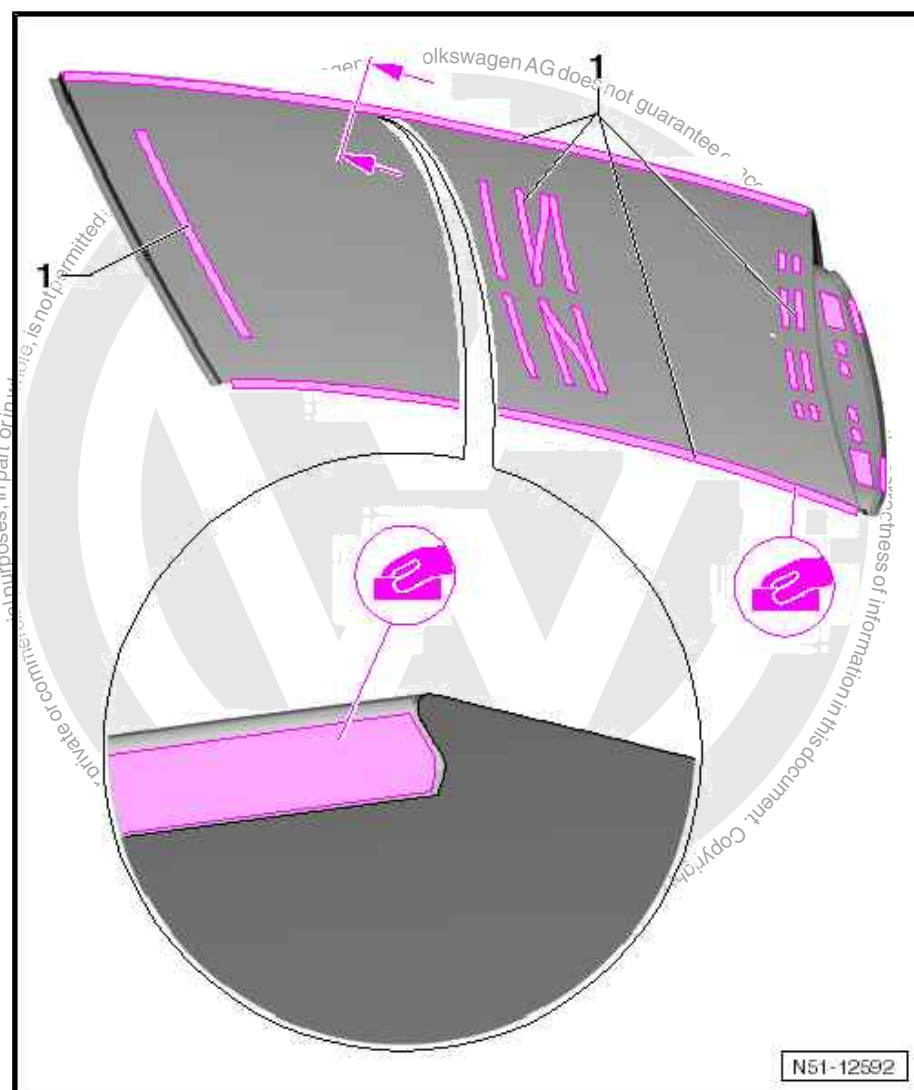
Replacement parts

- ◆ Roof
- ◆ 1-component assembly adhesive - D 190 MKD A3- (3 cartridges)
- ◆ 2-pack body adhesive - D 180 003 M2- (2 cartridge sets)
- ◆ Primer - ALN 002 003 04-
- ◆ Adhesive sealant - AKD 476 KD5 05-
- ◆ Felt - 533 867 910 B-
- ◆ Cavity sealant - AKR 321 M15 4-



Note

- ◆ *Following repair 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.*



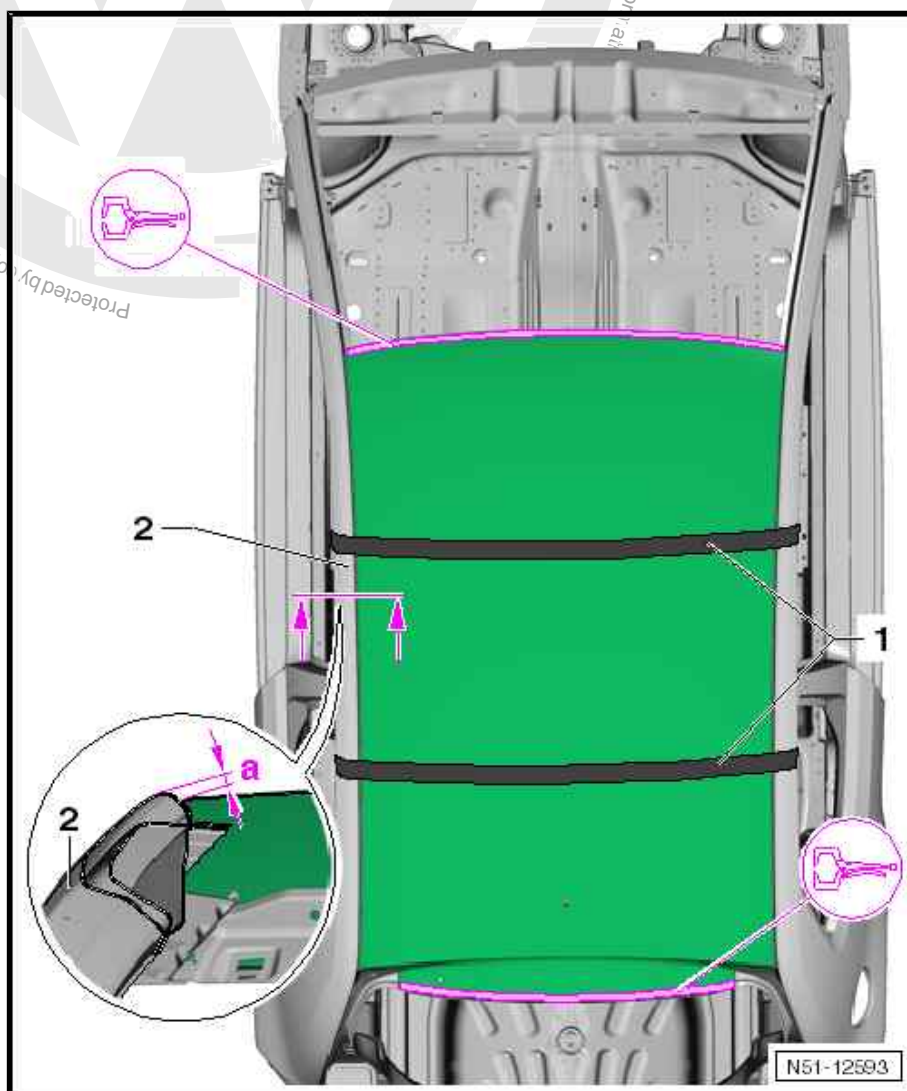
- Lightly sand down bonding areas on left and right of roof.
This ensures that the 2-component body adhesive - D 180 003 M2- bonds well with bonding surfaces.
- Attach 4 suction lifters - V.A.G 1344- to the exterior of the roof
- Position roof on roof frame.
- Check roof fit with rear lid and windscreen.

1.3.2 Adjusting roof depth



Note

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



- In areas shown, tension tensioning straps - 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 -2-.
- ◆ 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 ⇒ Body, General information, Paint, Technical data, General notes; Pre-treatment of bonded surfaces using 2-component epoxy filler when replacing laser-welded roofs .
- Clean adhesive surfaces on roof and vehicle with silicone remover - LVM 020 000 A5- .



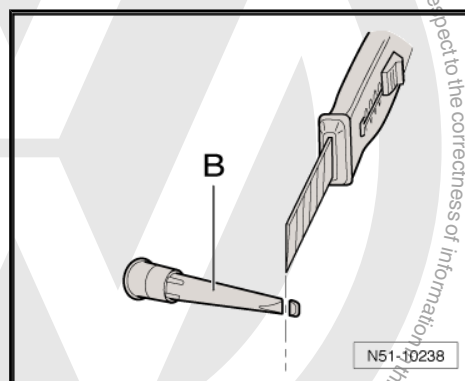
Note

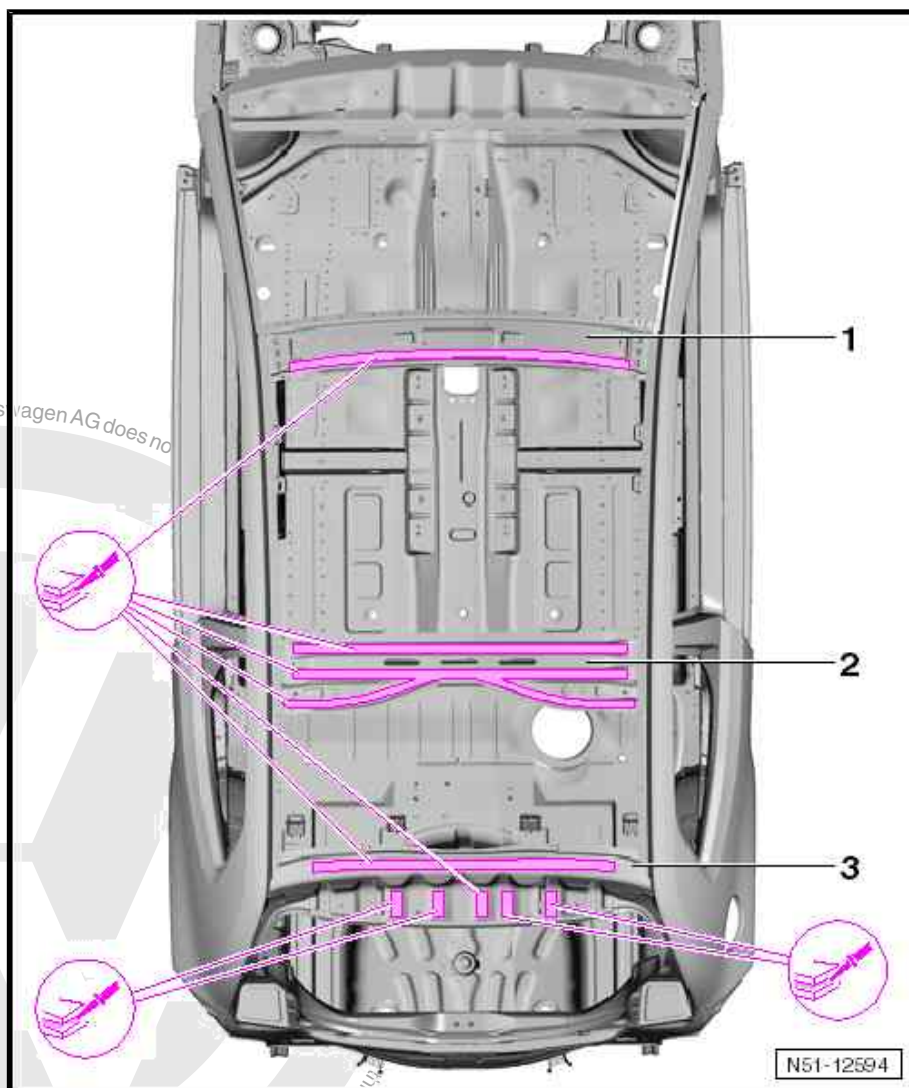
- ◆ *The adhesive must be applied very quickly.*
- ◆ *Always observe the application time (pot life).*
- ◆ *Use pneumatic or electric cartridge guns to apply adhesive.*
- Cut approx. 2 mm off nozzle -B- to provide appropriate bead geometry.



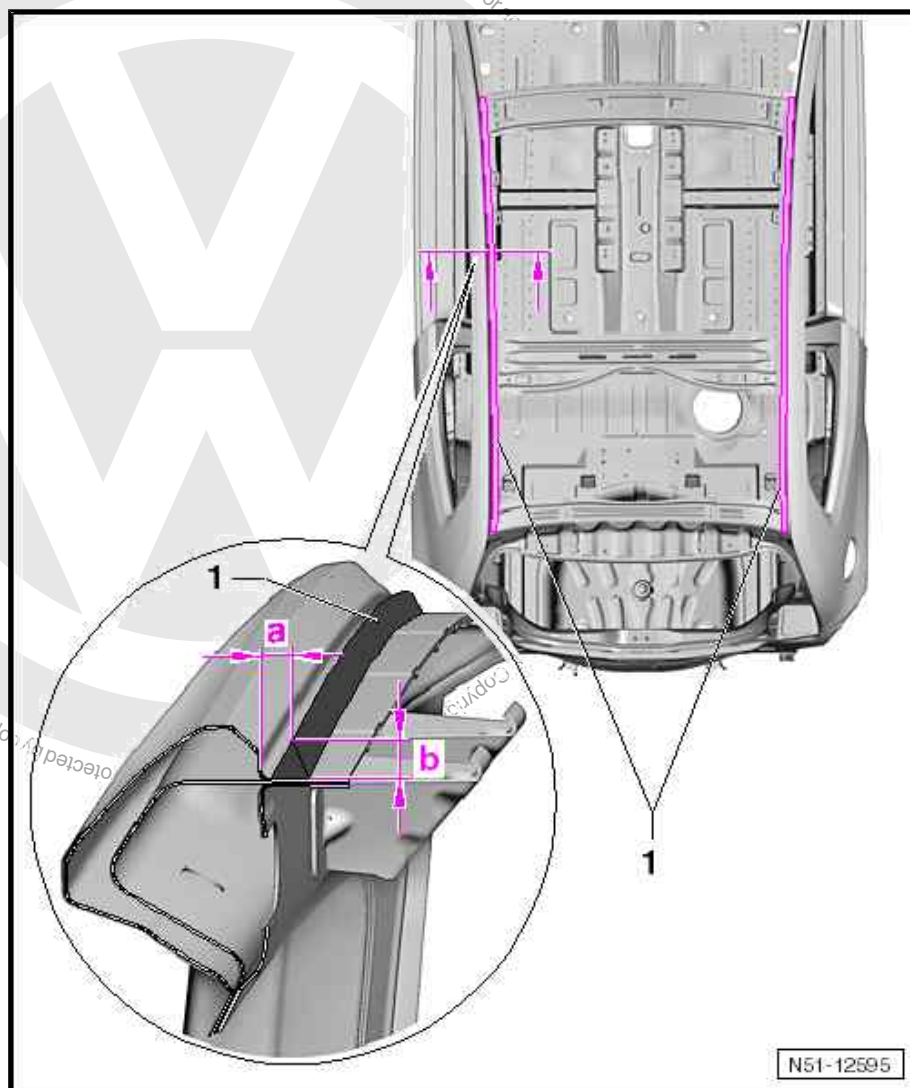
Note

- ◆ *Following repair 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.*





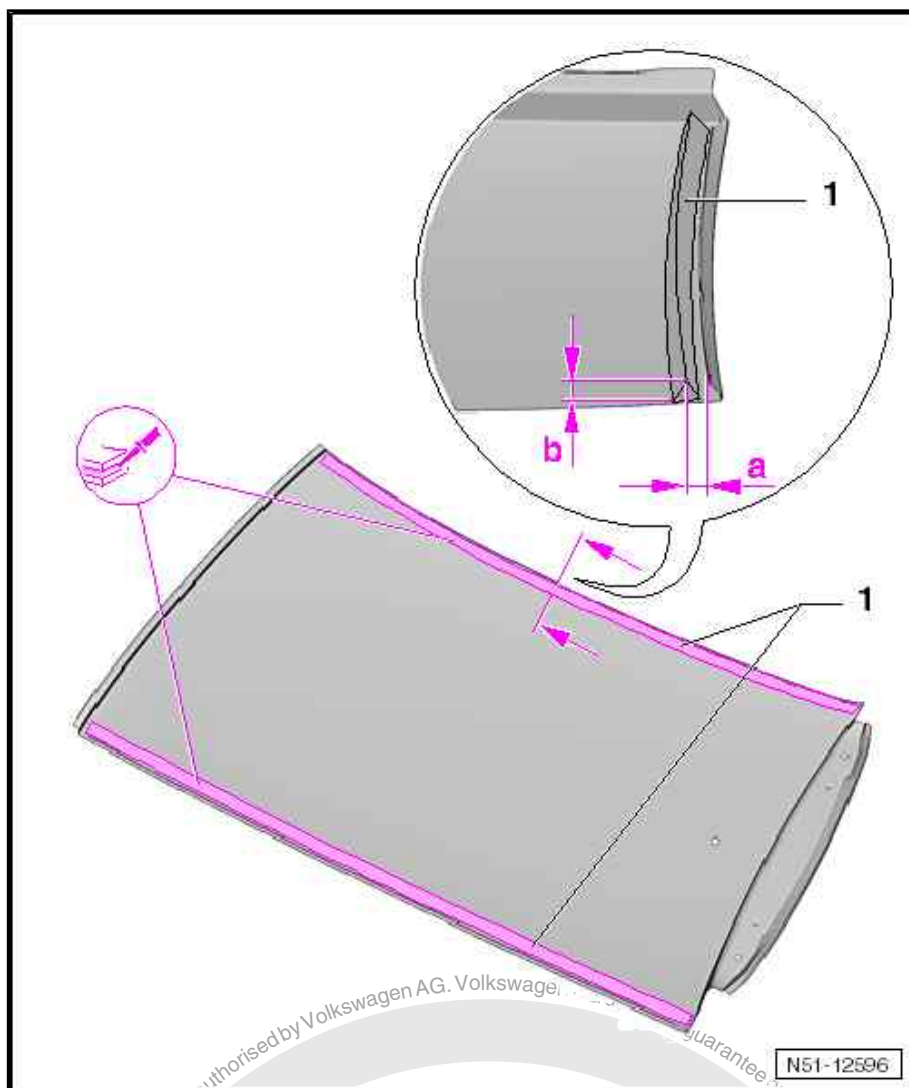
- Apply 1-component assembly adhesive - D 190 MKD A3- to roof cross members -1, 2, 3- in area of factory bonds using compressed air gun - V.A.G 1761/1- .



- In area of roof member, apply 1-pack assembly adhesive -
D190 MKD A3- -1- using pneumatic cartridge gun -
V.A.G 1761/1- .

Dimension -a- = 12 mm

Dimension -b- = approx. 9 mm



- Apply 1-pack assembly adhesive - D190 MKD A3- -1- on inner side of roof parallel to left and right roof flange with pneumatic cartridge gun - V.A.G 1761/1- .

Dimension -a- = 6 mm

Dimension -b- = approx. 14 mm

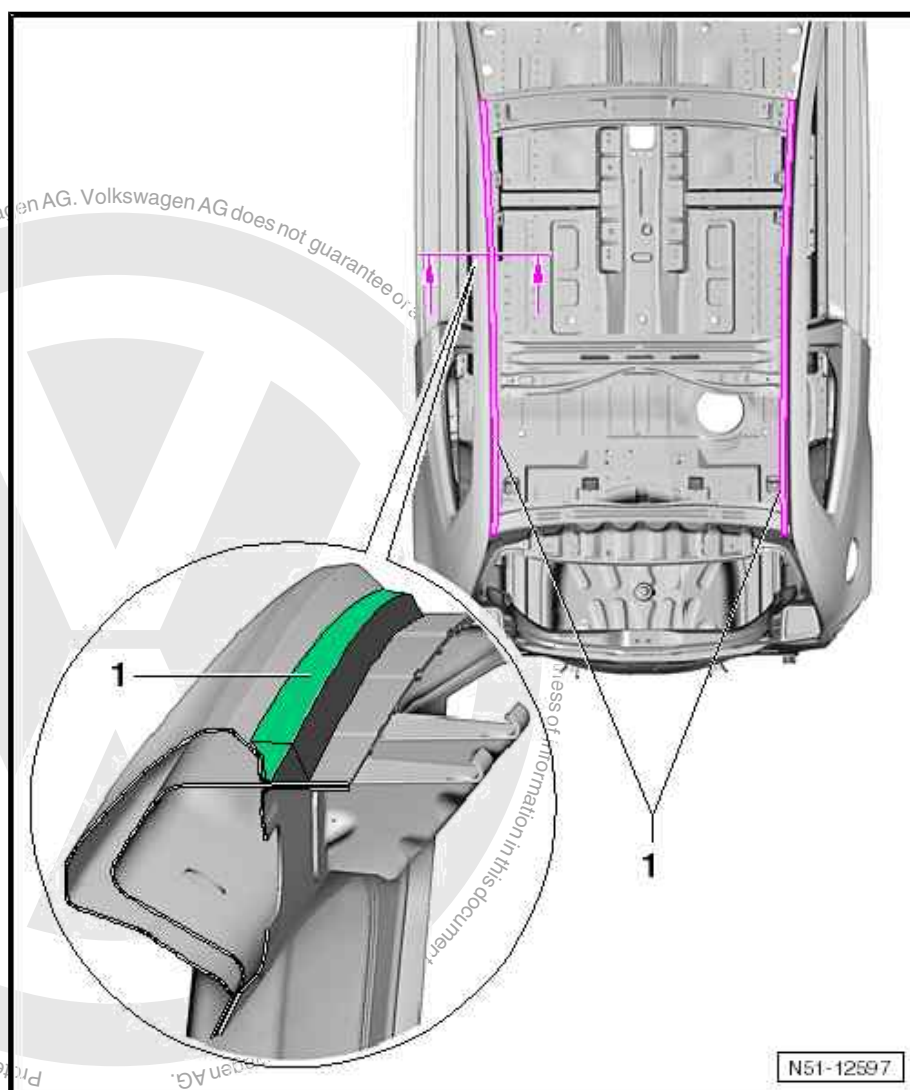
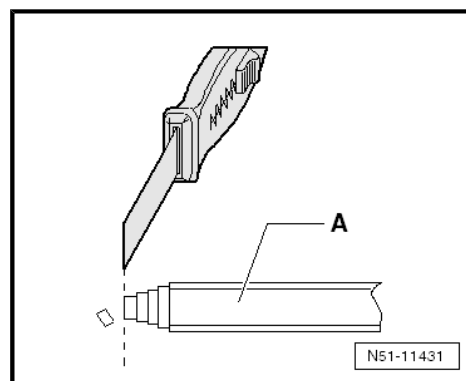


Note

- ◆ The application time (pot life) of the 2-component body adhesive - D 180 003 M2- is approx. 90 min.
- ◆ An assistant is required for the following work.
- ◆ Remove excess 2-component body adhesive - D 180 003 M2- from bonding areas immediately. Once cured, 2-component body adhesive - D 180 003 M2- can be removed only with mechanical means.



- Cut first step of static mixer -A- 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.



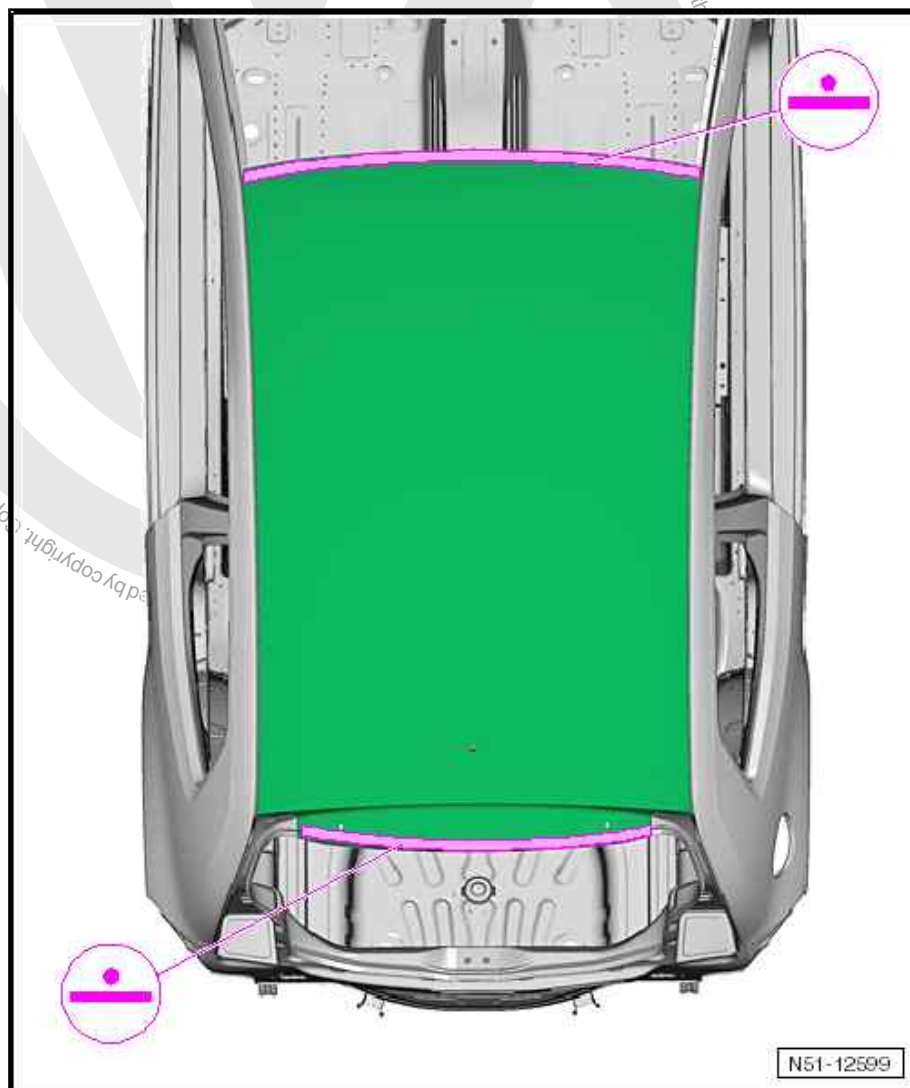
- Fill area -1- with 2-component body adhesive - D 180 003 M2- using double cartridge gun - VAS 5237- .
- Apply 2-component body adhesive - D 180 003 M2- to areas of roof rear cross member bonded in factory.



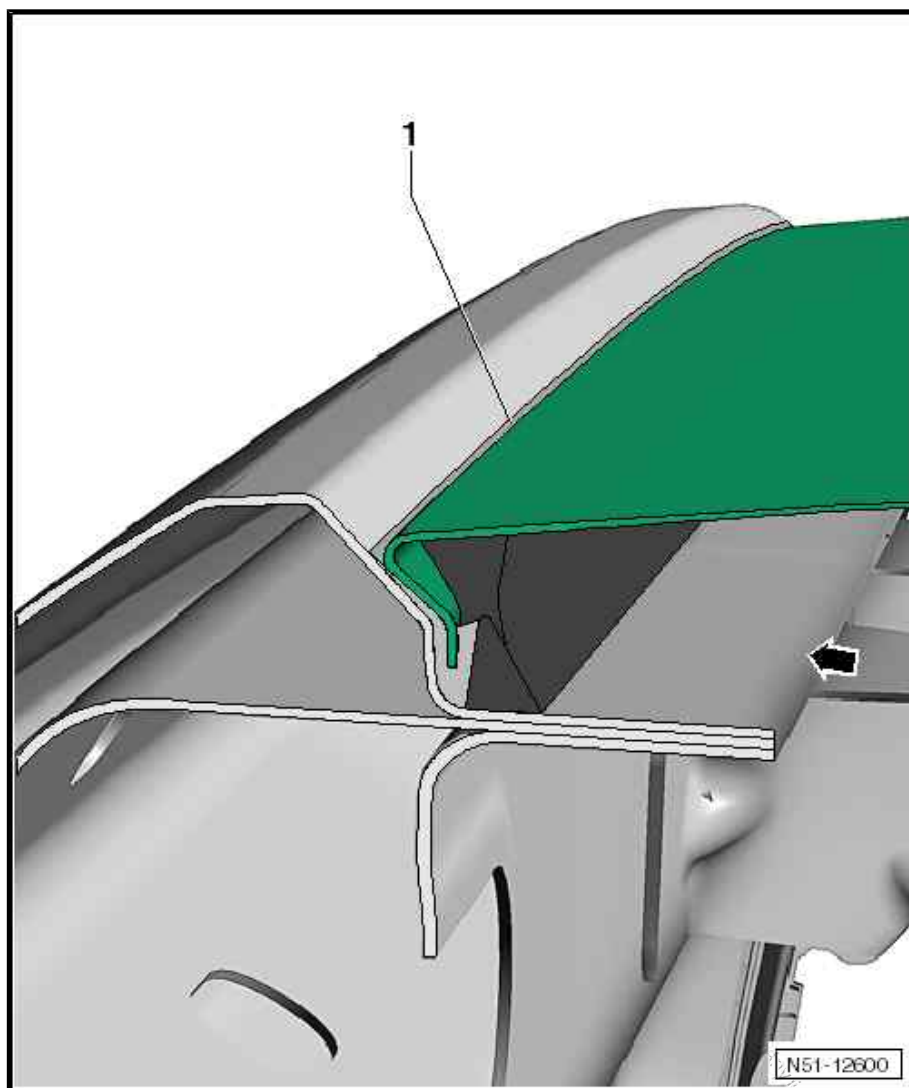
Note

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

1.3.4 Welding in



- Weld in roof in area of windscreen and rear lid aperture, 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 cavity sealant - AKR 321 M15 4- .



RO: 51 03 55 03

2 Renewing roof - vehicles with panorama tilting sunroof



WARNING

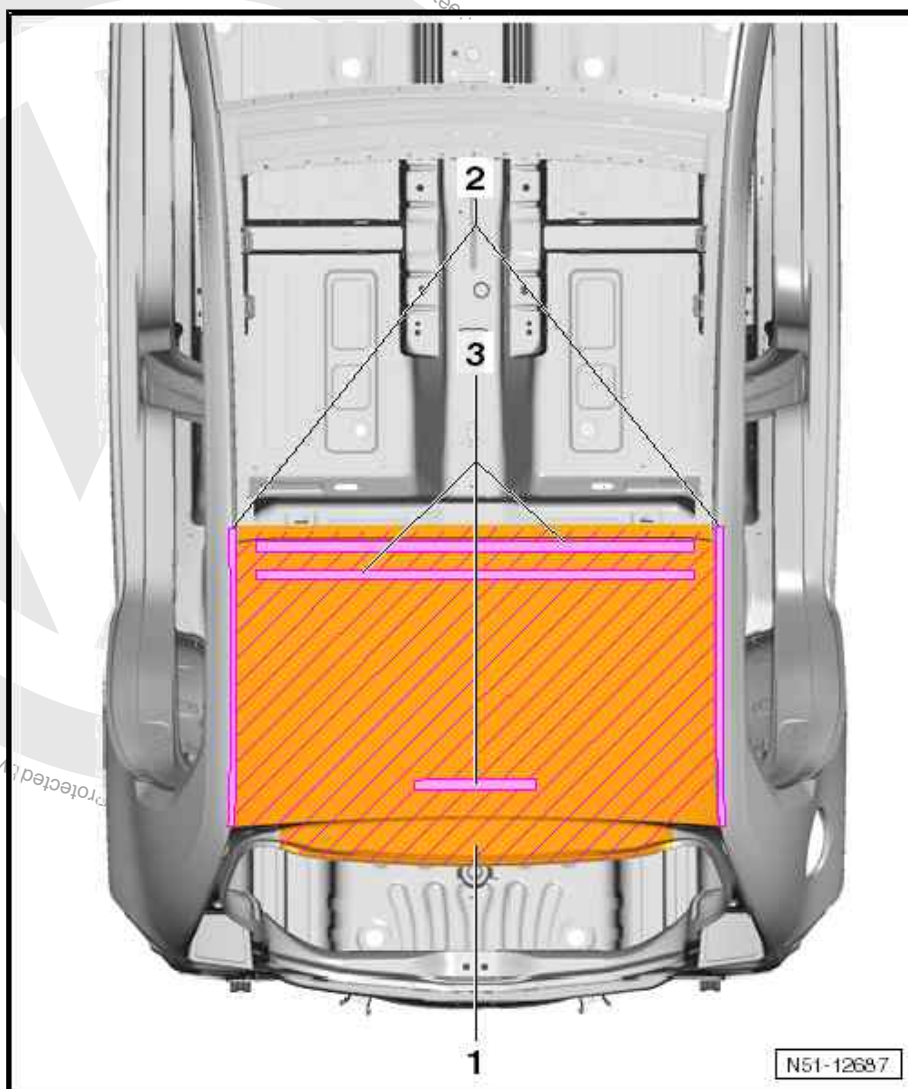
Observe safety notes!

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

1 - Roof

2 - Laser solder seam

3 - Bonded area





2.1 Tools



Note

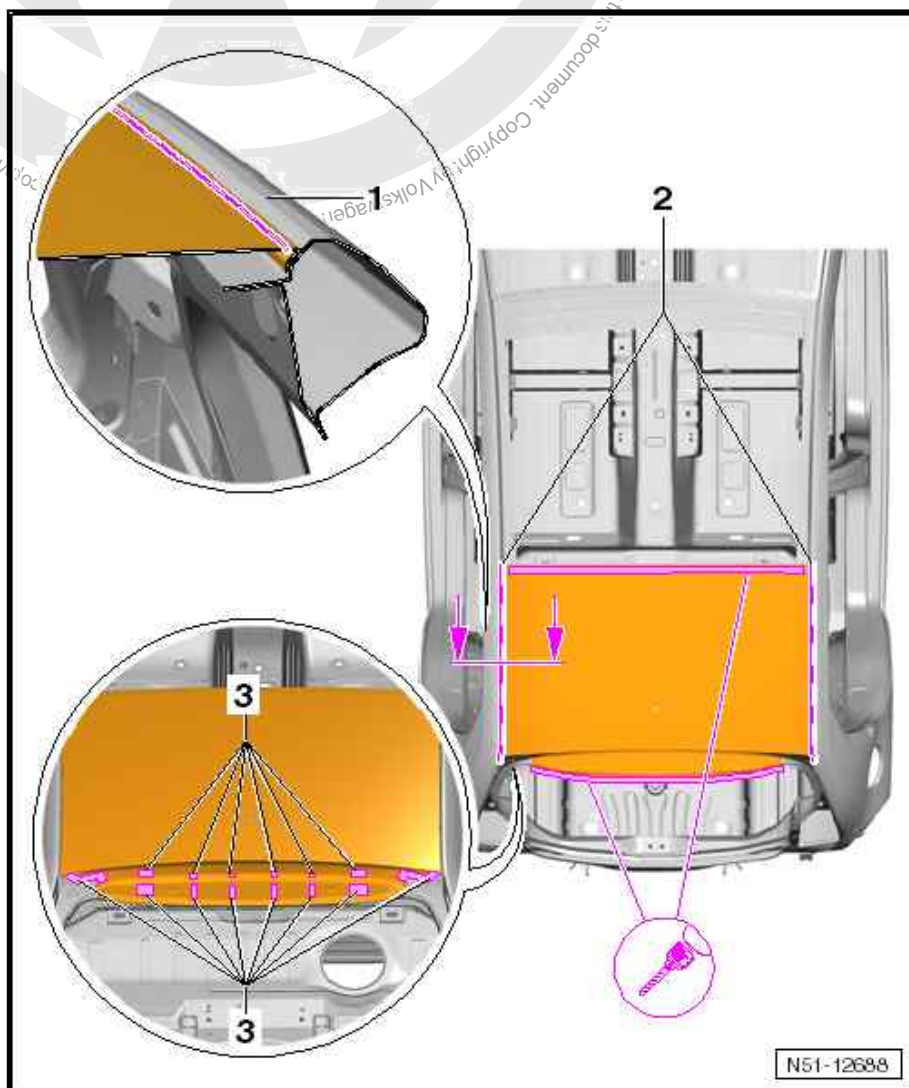
- ◆ Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.
- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork.

2.2 Removing



Note

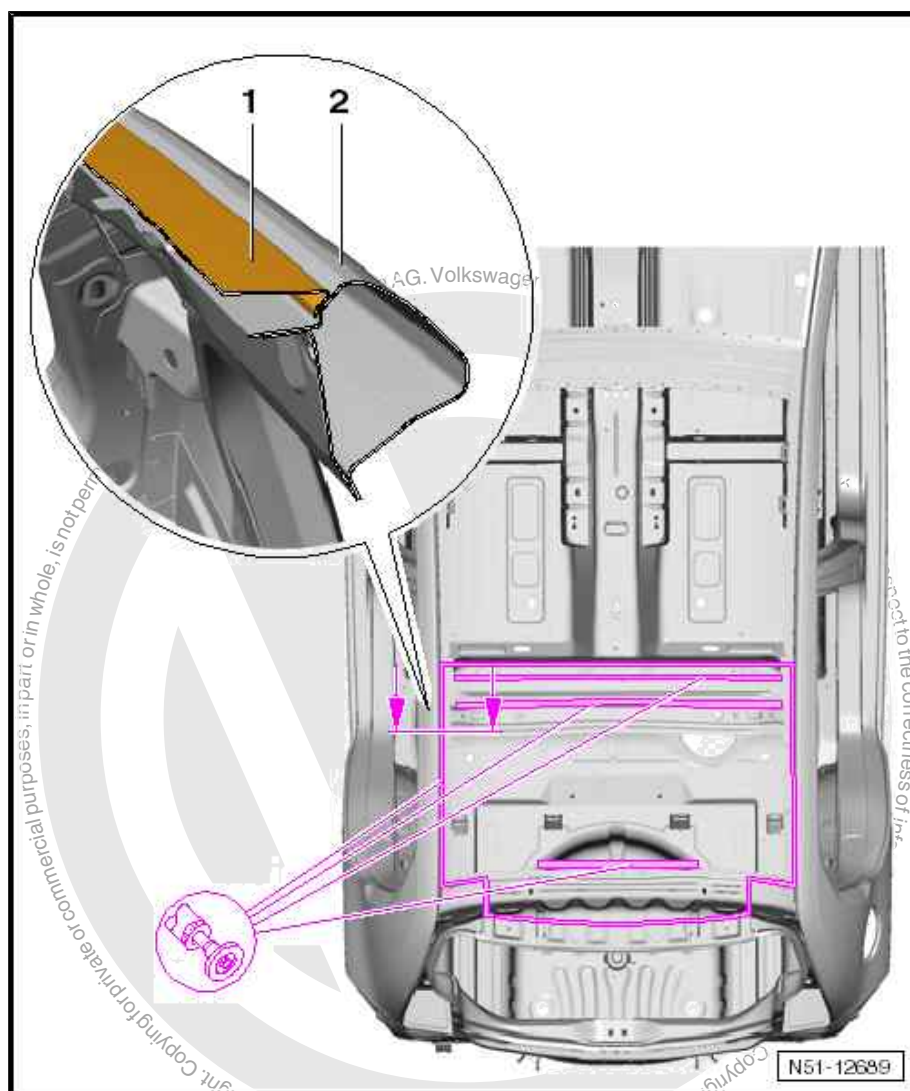
When separating, ensure that the angled contact surfaces of roof and roof side member -1- are not damaged.



- Separate original joint to centre roof cross member.



- Separate original joint in rear lid aperture.
- From interior, separate bonded joints to centre and rear roof cross members.
- Release bonded joints to rear roof cross member -3- in rear lid aperture.
- Roughly cut roof out parallel to roof side member -2-.



Note

- ◆ *Side panel -2- must not be damaged when removing residual material of roof -1-.*
- ◆ *Do not use cutting disks or rough grinding disks.*
- Remove remaining material.
- Remove all adhesive and sealant residues from centre and rear roof cross members.
- Remove all adhesive residues from left and right roof side members.
- Touch up paint damage in accordance with painting guidelines.



2.3 Installing



Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 151](#).*

2.3.1 Preparing new part

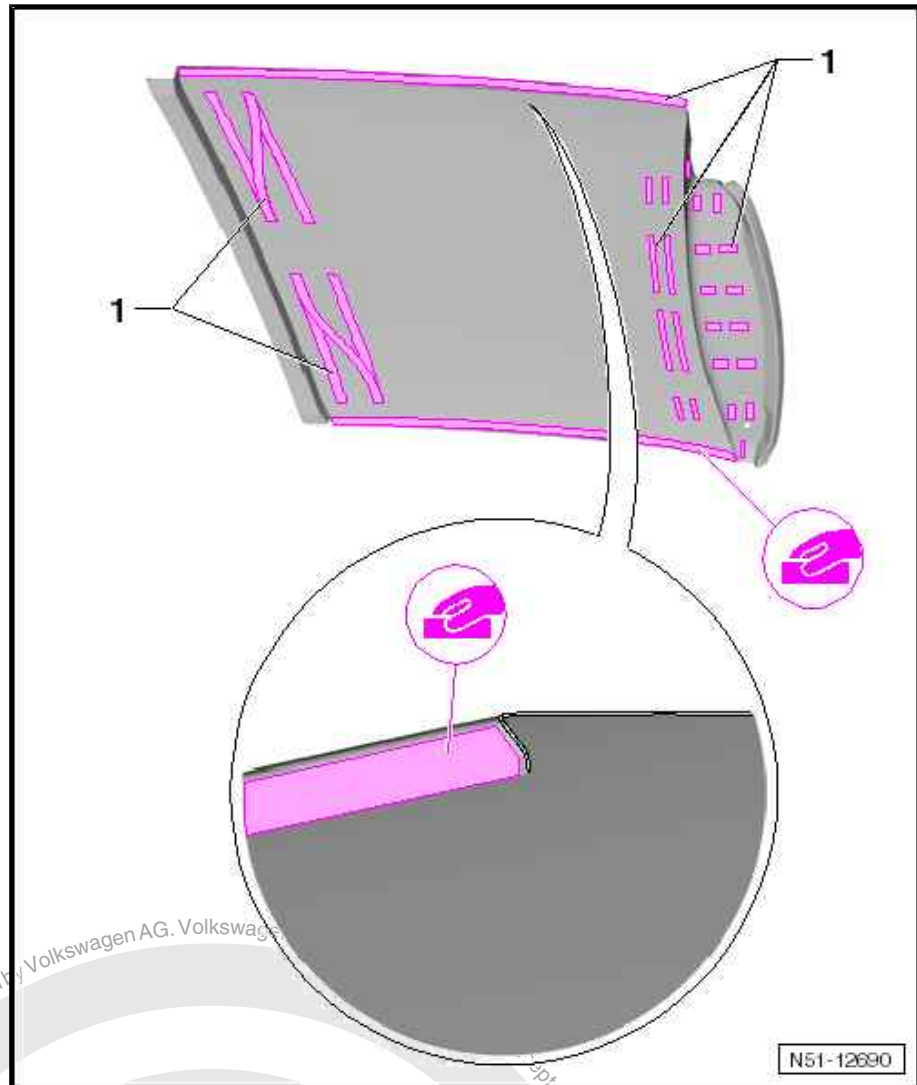
Replacement parts

- ◆ Roof
- ◆ 1-pack assembly adhesive - D 190 MKD A3- (3 cartridges)
- ◆ 2-pack body adhesive - D 180 003 M2- (2 cartridge sets)
- ◆ Adhesive sealant - AKD 476 KD5 05-
- ◆ Cavity sealant - AKR 321 M15 4-



Note

- ◆ *Following repair 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 2-component body adhesive - D 180 003 M2- bonds well with bonding surfaces.
- Position roof on roof frame.
- Check fit of roof and rear lid.

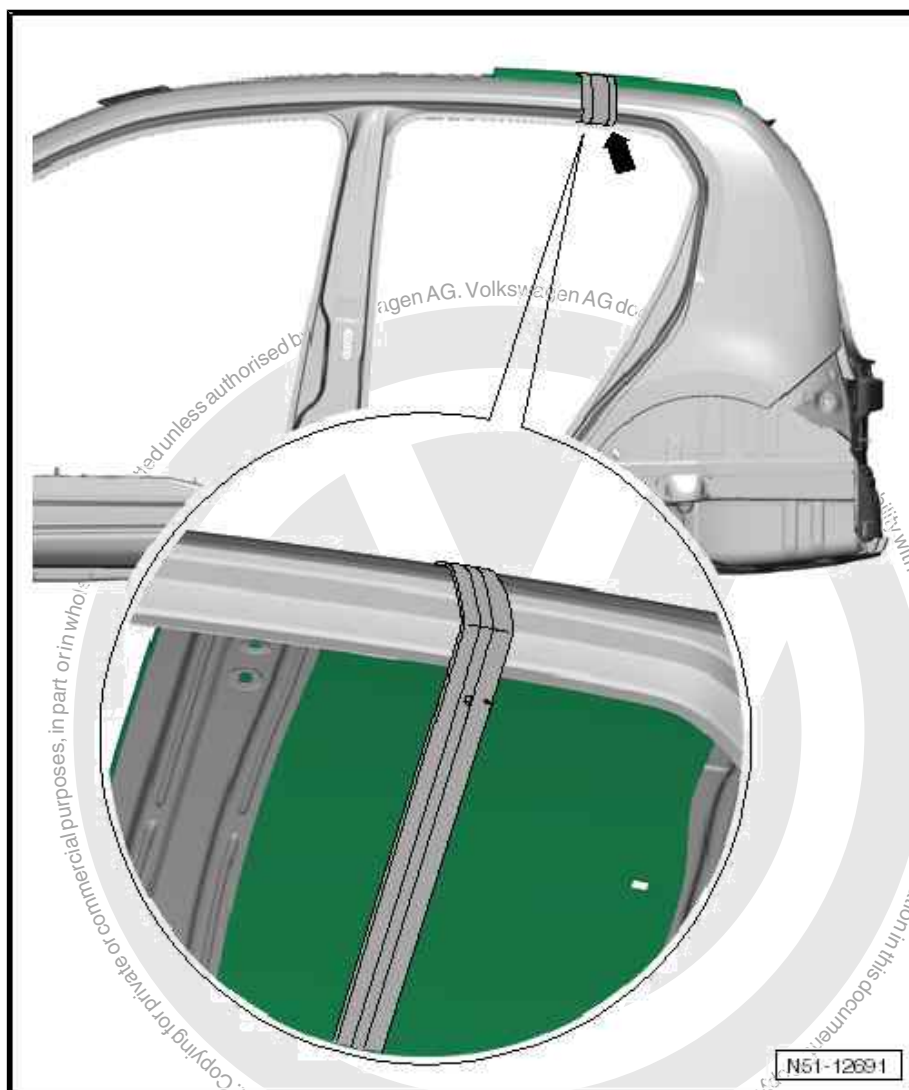


2.3.2 Adjusting roof depth

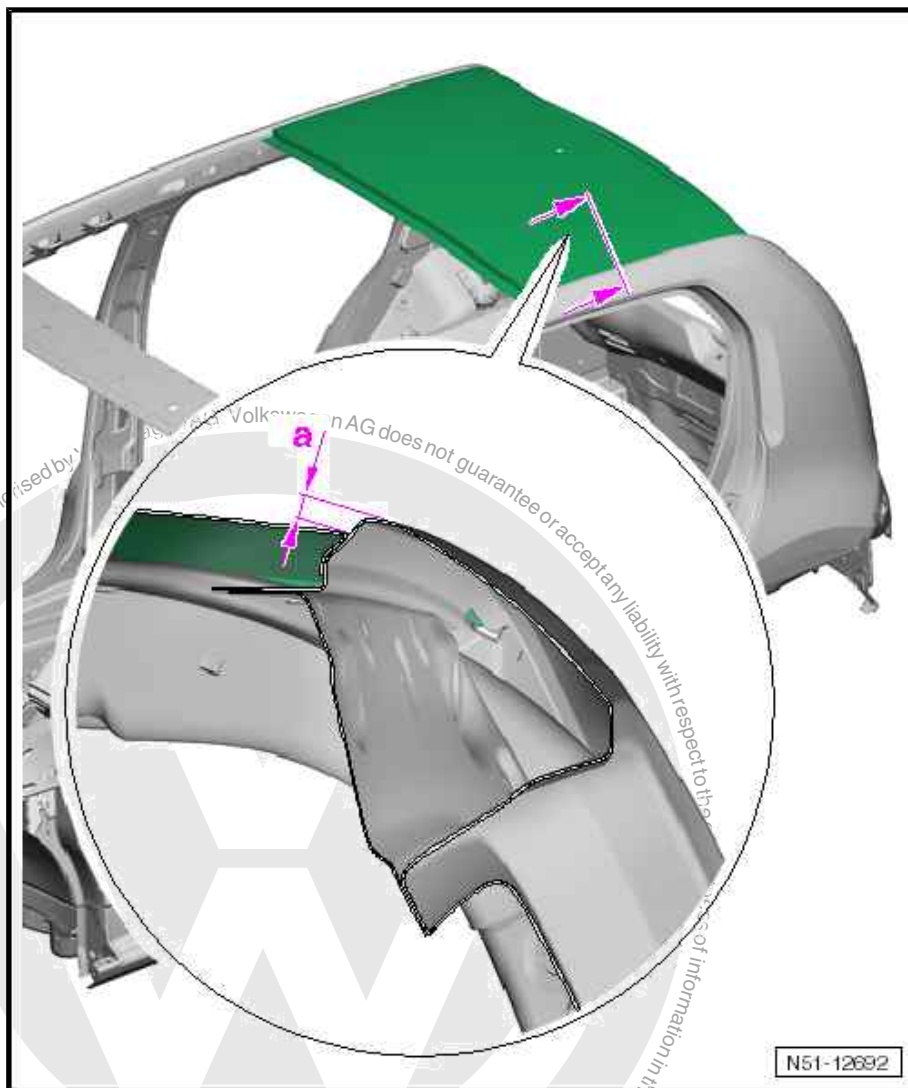


Note

- ◆ The tensioning straps prevent the roof lifting off the roof frame or shifting during the adhesion process.
- ◆ Tensioning straps must not be tightened too tightly in order to avoid damage.
- ◆ When side windows remain fitted, the tensioning strap must be fitted around the whole vehicle.



- To adjust height of roof, position tensioning strap (commercial type) through side window apertures -arrow- across roof and tension.



- Check line of roof relative to side panels.

Dimension -a- = 4 mm ± 1 mm



Note

- ♦ *Dimension -a- can be set by tightening and loosening tensioning straps, to adjust position roof relative to side parts/panels.*
- ♦ *Use setting gauge - 3371- to check dimension -a-.*
- ♦ *If dimension -a- cannot be set at rear, rear roof cross member may have to be released, rebonded and rewelded ⇒ [page 195](#).*

2.3.3 Bonding roof

- Remove roof again.
- Apply corrosion protection measures ⇒ Body, General information, Paint, Technical data, General notes; Pre-treatment of bonded surfaces using 2-component epoxy filler when replacing laser-welded roofs.
- Clean adhesive surfaces on roof and vehicle with silicone remover - LVM 020 000 A5-.

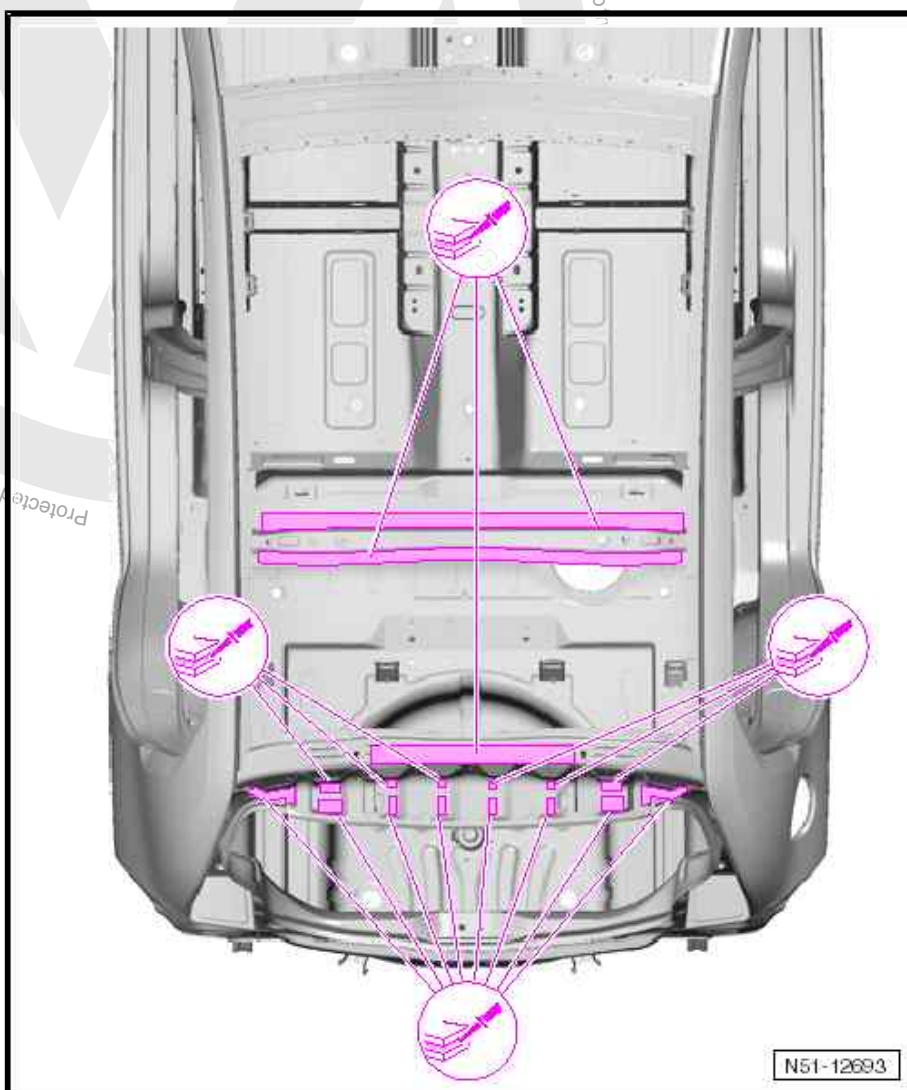
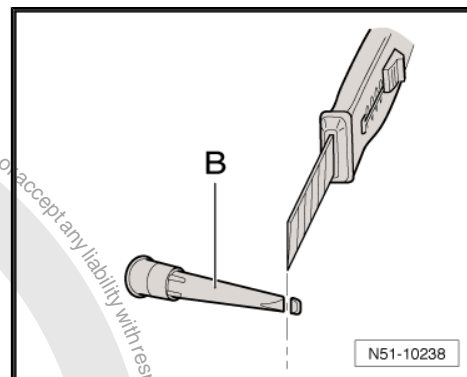


i Note

- ◆ *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.

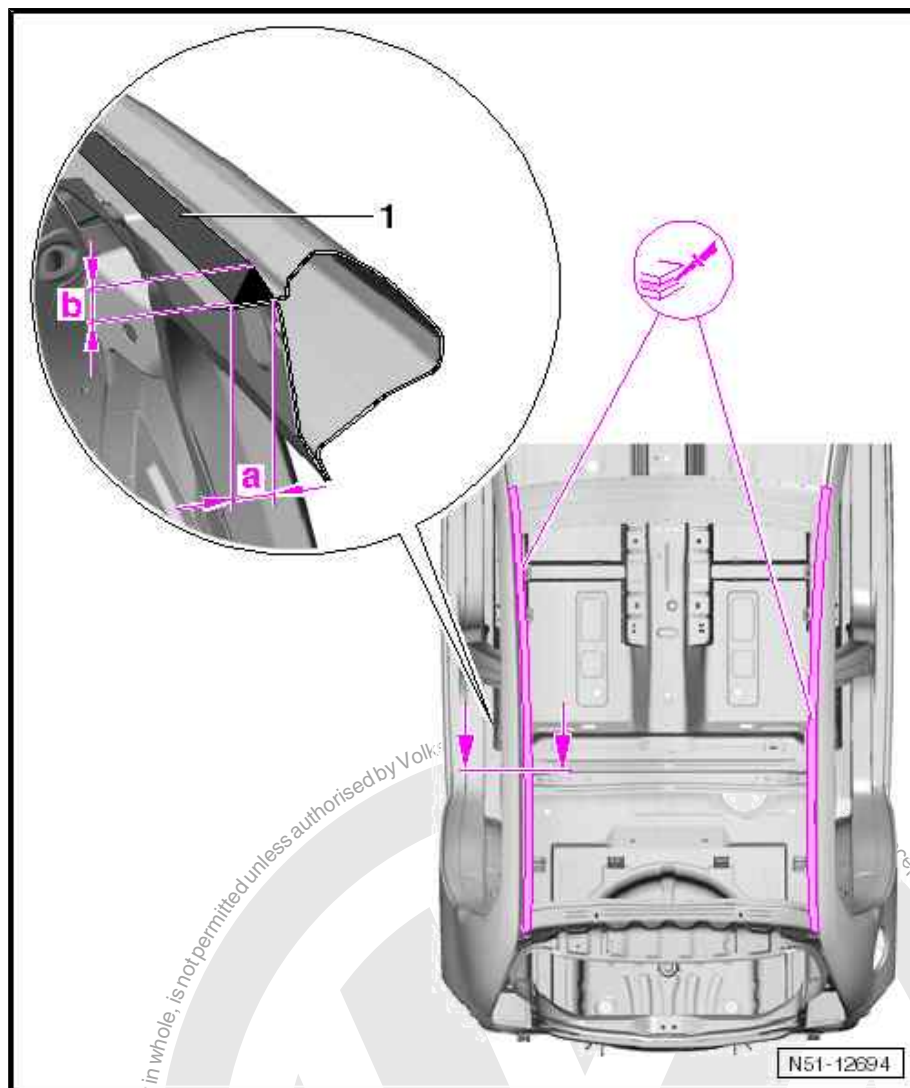
i Note

- ◆ *Following repair 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.*





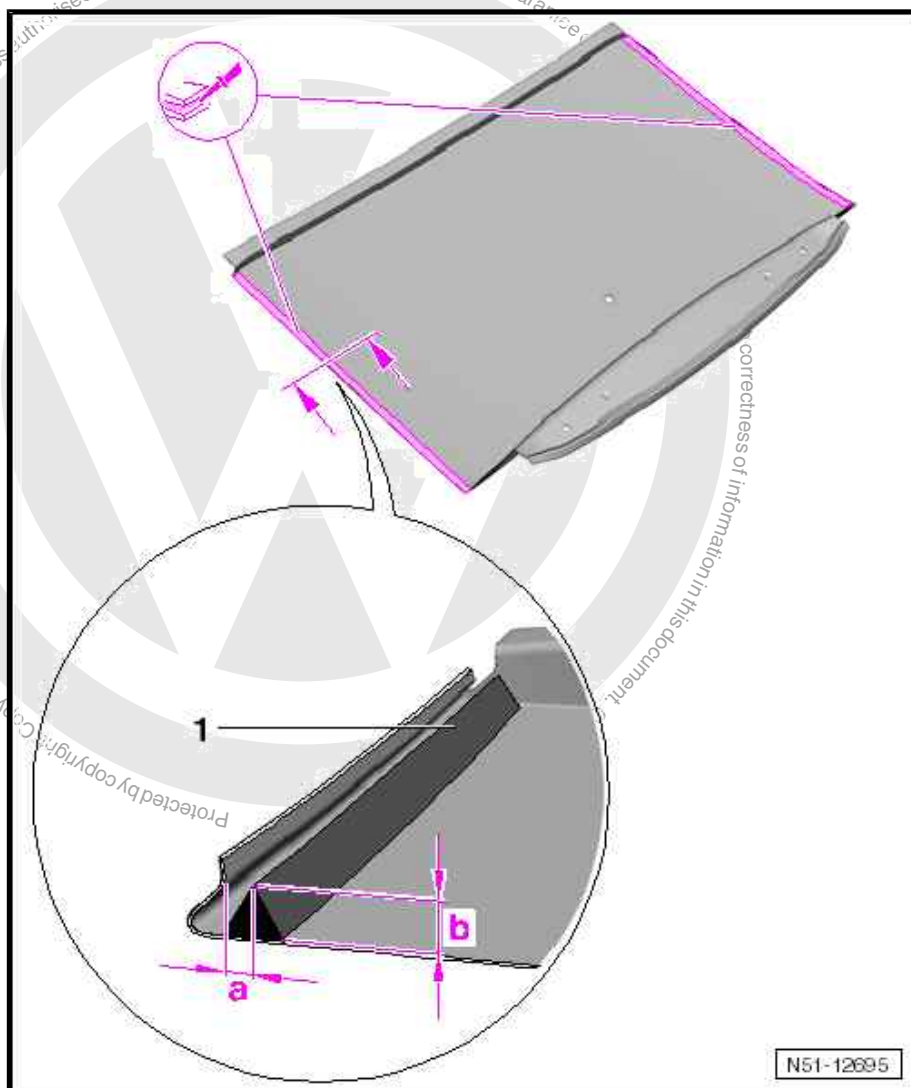
- Apply 1K assembly adhesive - D190 MKD A3- to centre roof cross member and rear roof cross member in area of factory-fitted bond using pneumatic cartridge gun - V.A.G 1761/1- .



- In the area of roof side member -2-, apply 1K assembly adhesive - D190 MKD A3- -1- using pneumatic cartridge gun - V.A.G 1761/1- .

Dimension -a- - 14 mm

Dimension -b- = 12 mm



- Apply 1K assembly adhesive - D190 MKD A3- -1- on inner side of roof parallel to left and right roof flange with pneumatic cartridge gun - V.A.G 1761/1- .

Dimension -a- - 6 mm

Dimension -b- = 14 mm

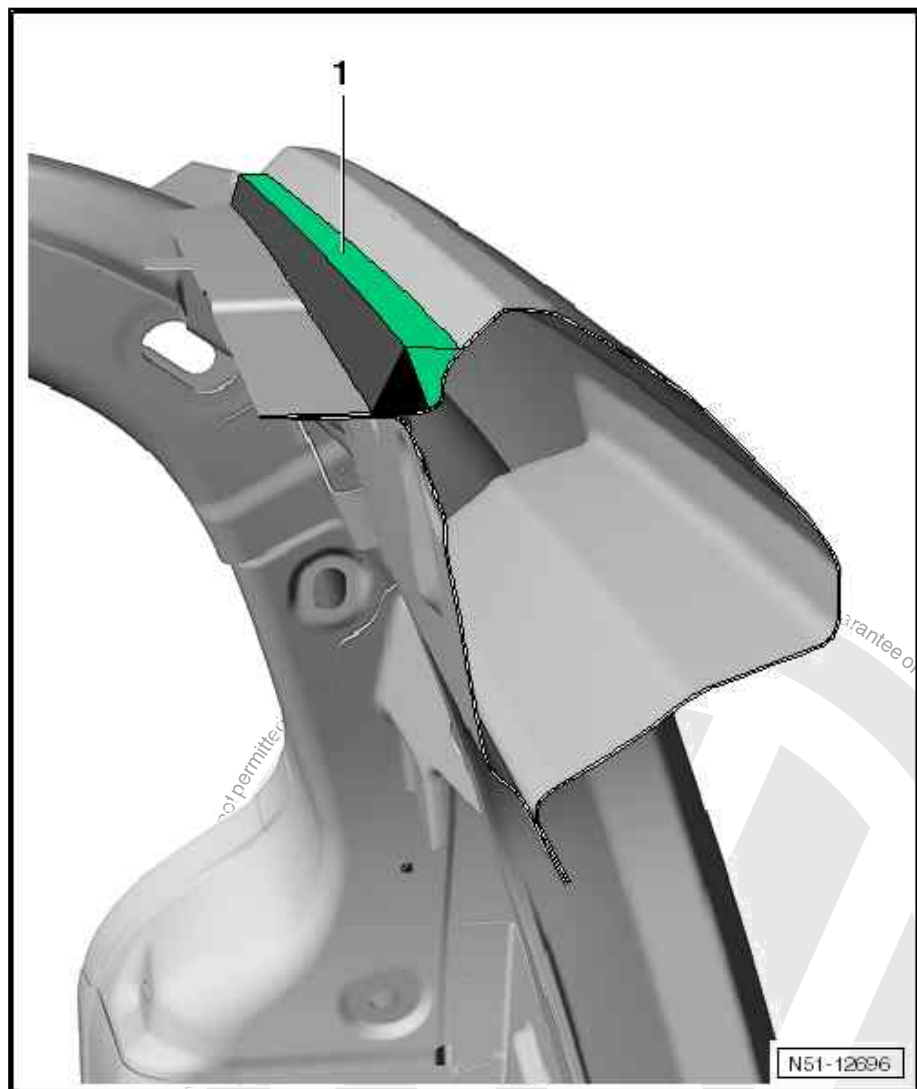
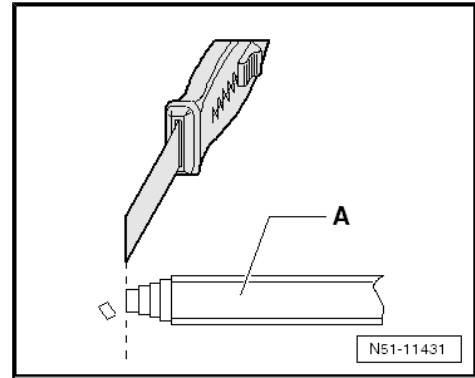


Note

- ◆ The application time (pot life) of the 2-component body adhesive - D 180 003 M2- is approx. 90 min.
- ◆ An assistant is required for the following work.
- ◆ Remove excess 2-component body adhesive - D 180 003 M2- from bonding areas immediately. Once cured, 2-component body adhesive - D 180 003 M2- can be removed only with mechanical means.



- Cut the first step of the static mixer -A- off to achieve the 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.

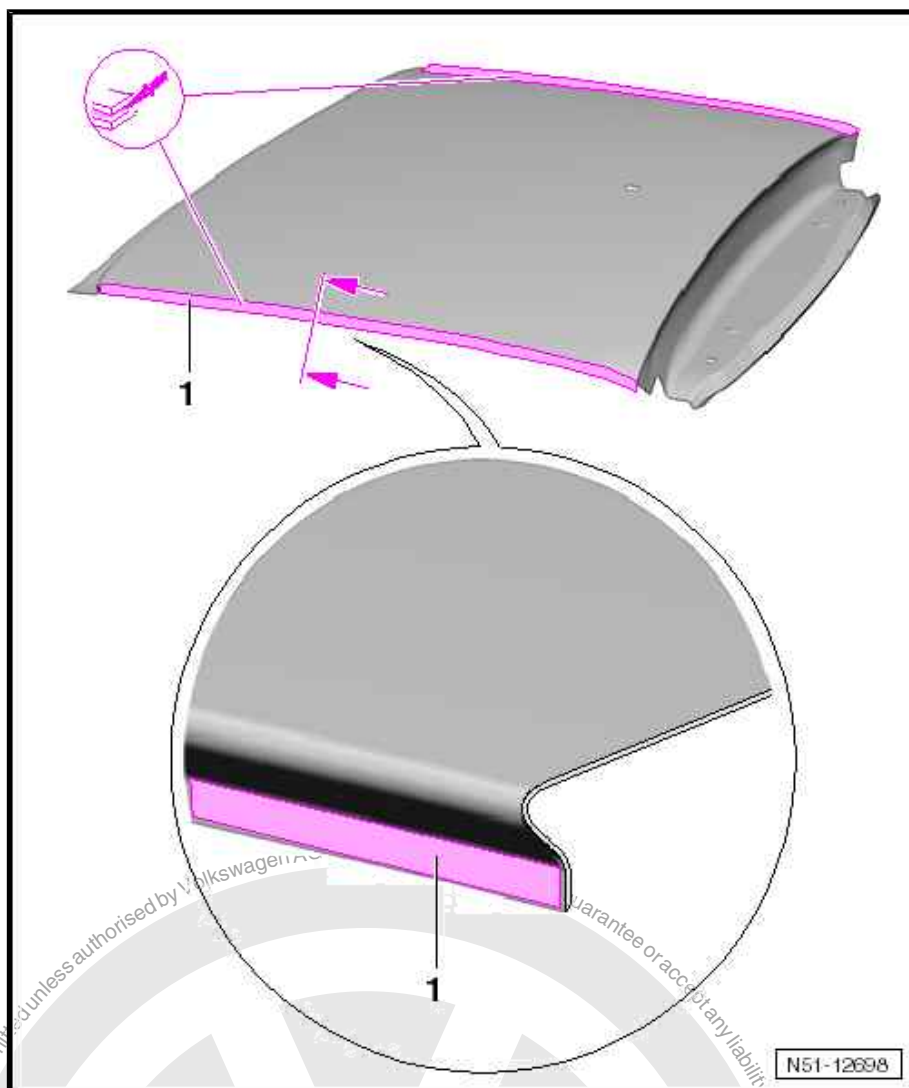


- Fill area -1- with 2-component body adhesive - D 180 003 M2- using double cartridge gun - VAS 5237- .



Note

- ♦ Following repair 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.



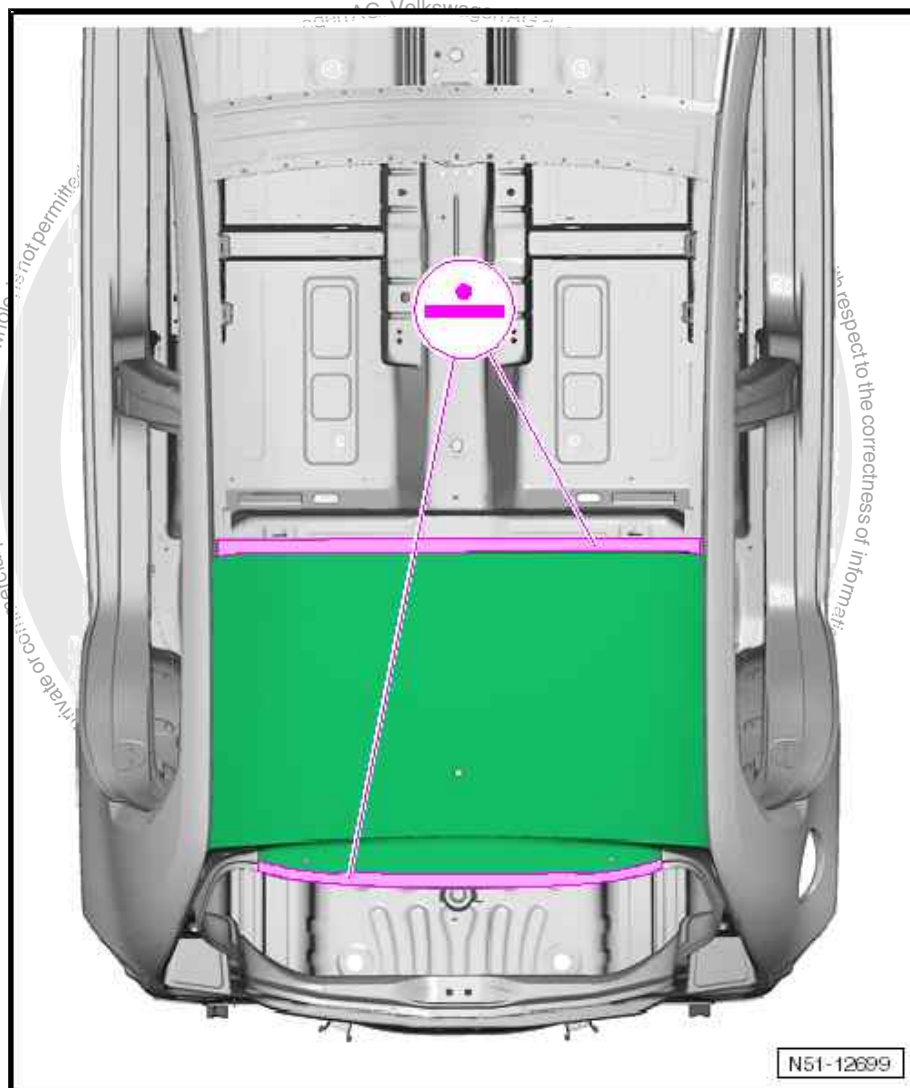
- Coat roof flanges with 2-component body adhesive - D 180 003 M2- -1-.
- Immediately position and align roof.
- Secure roof in area of centre roof cross member and rear lid aperture using vice-grip pliers and secure centre of roof using tensioning straps.
- Check roof depth dimension and adjust if necessary
⇒ ["2.3.2 Adjusting roof depth", page 155](#).
- Remove excessive 2-component body adhesive - D 180 003 M2- along edge of roof immediately using a cloth soaked in silicone remover - LVM 020 000 A5- .
- Remove excess 2-component body adhesive - D 180 003 M2- from hinge holes in rear lid aperture.



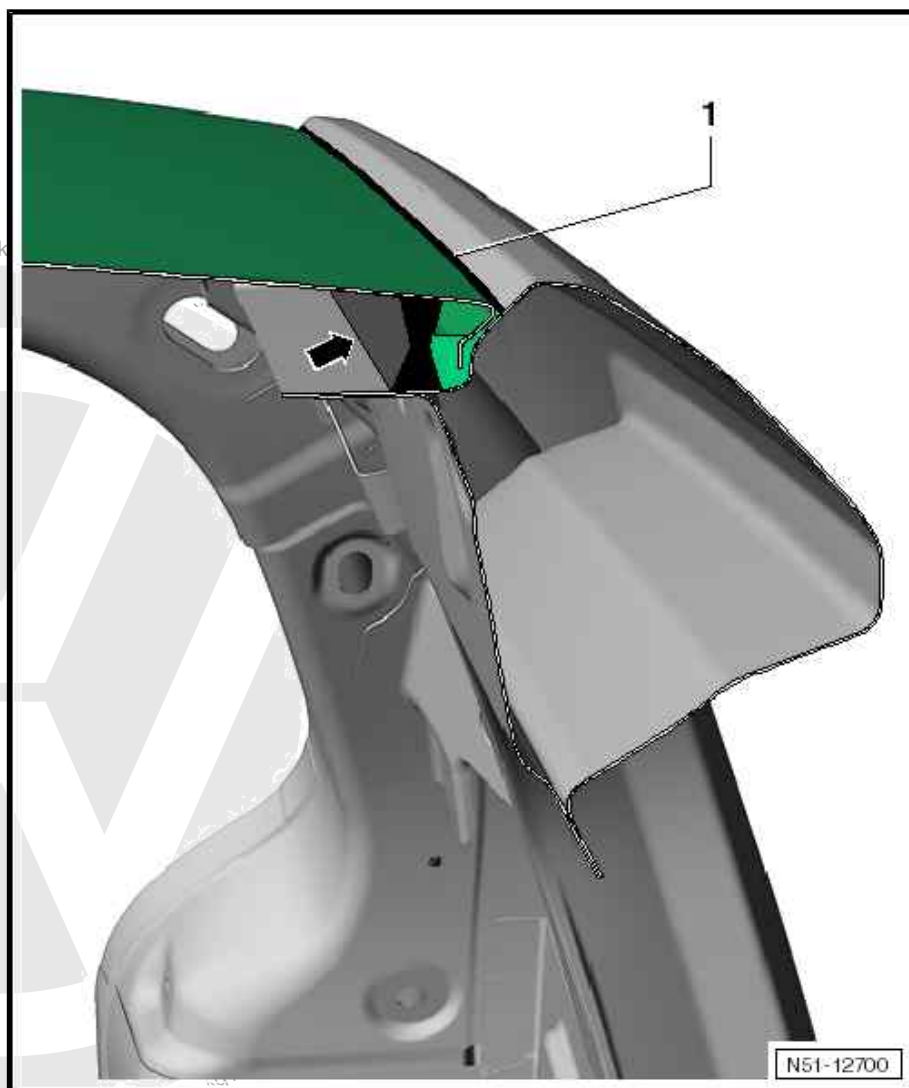
Note

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

2.3.4 Welding in



- Weld roof to centre roof cross member and rear lid aperture, 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 cavity sealant - AKR 321 M15 4- .



RO: 51 05 55 50

3 Renewing roof side member, 2-door models

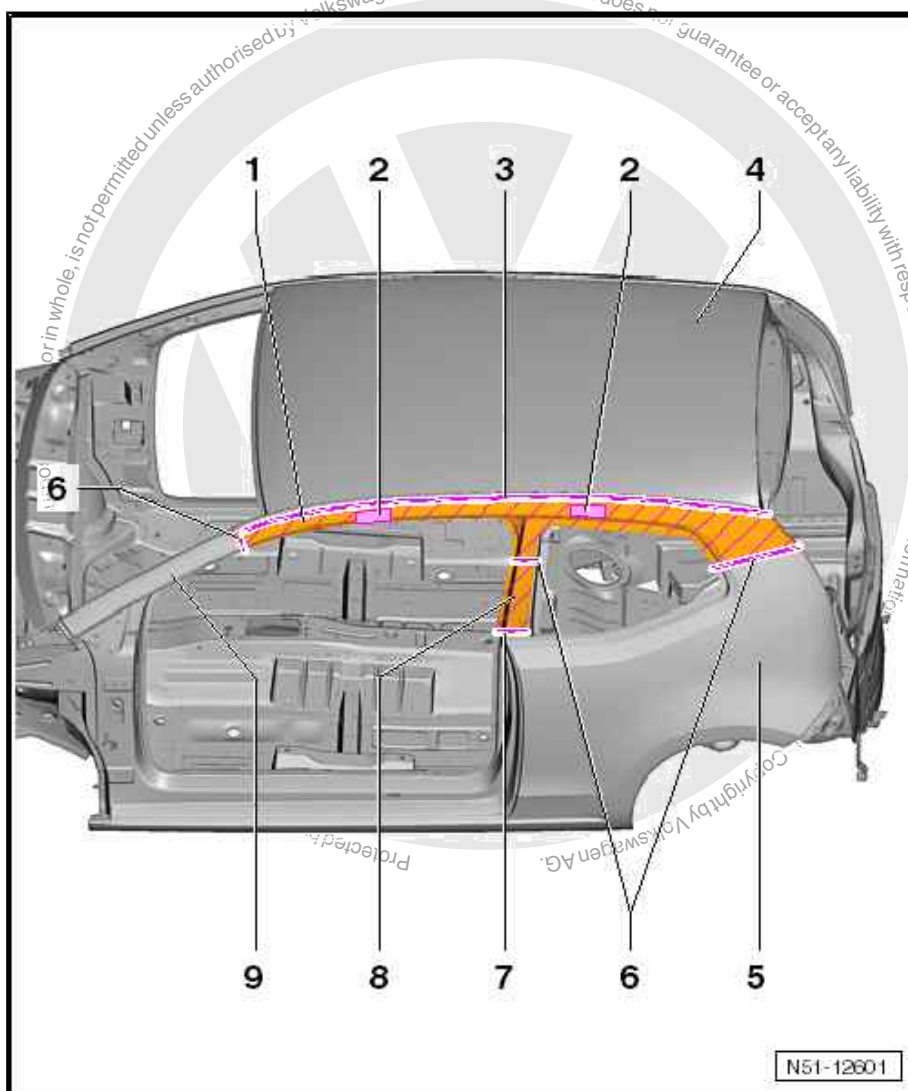


WARNING

Observe safety notes!

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

- 1 - Roof member
 - 2 - Bonded areas
 - 3 - Parting cut on roof
 - 4 - Roof
 - 5 - Side panel
 - 6 - Parting cuts for A-, B- and C-pillars
 - 7 - Lower B-pillar parting cut
 - 8 - Bonded section
- Parting cuts can be selected according to the extent of damage. Note though, that separation is not possible between parting cuts -7- and -6-. The side panel is bonded in this area to the B-pillar reinforcement.
- 9 - A-pillar



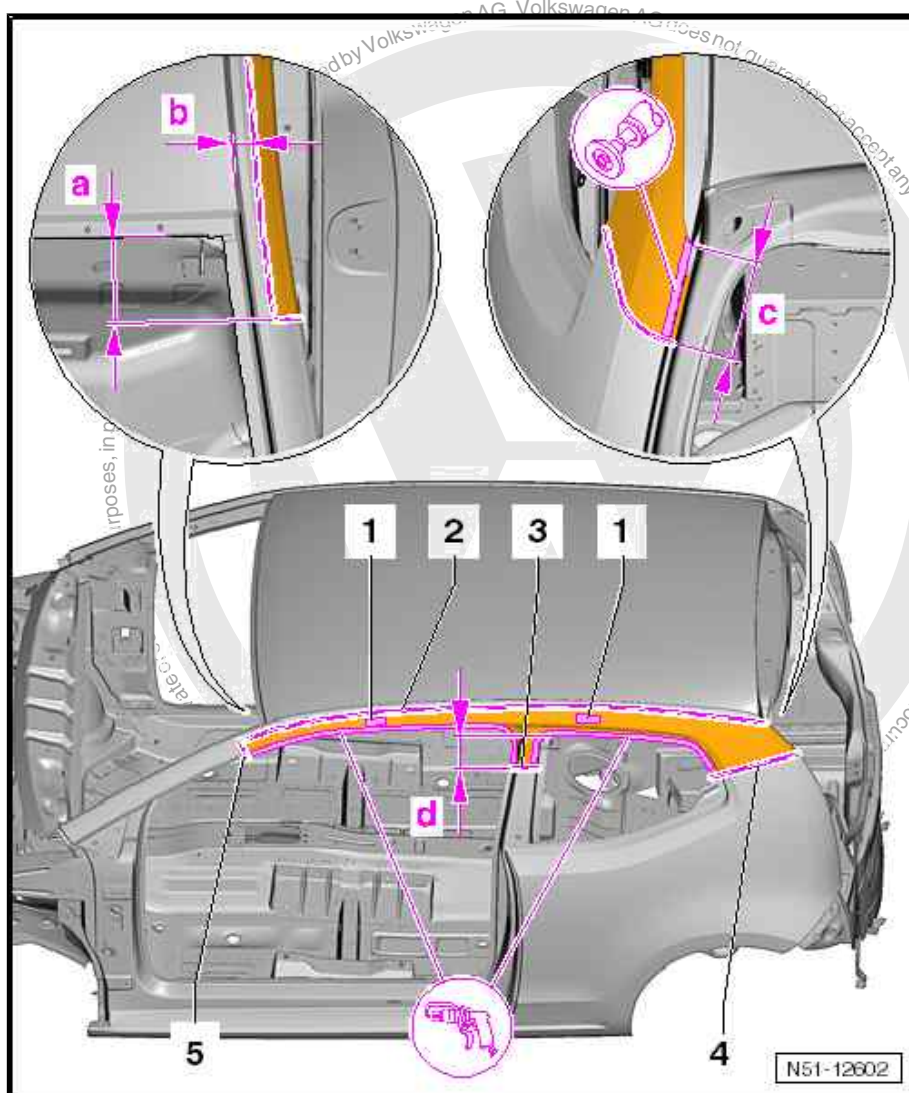
3.1 Tools



Note

- ◆ Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.
- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork.

3.2 Removing



Note

When making parting cuts, ensure that the panels lying behind are not damaged.

- Carry out parting cut -5- according to damage, but at least as per dimension -a-.



- Carry out parting cut -2- parallel to roof as per dimension -b-.
- Carry out parting cut -3- as per dimension -d-.
- Carry out parting cut -4- as per dimension -c-.
- Separate original joint in front door and side window apertures.
- Release adhesive joint -1- in area of reinforcing for roof rack.

Dimension -a- = 50 mm

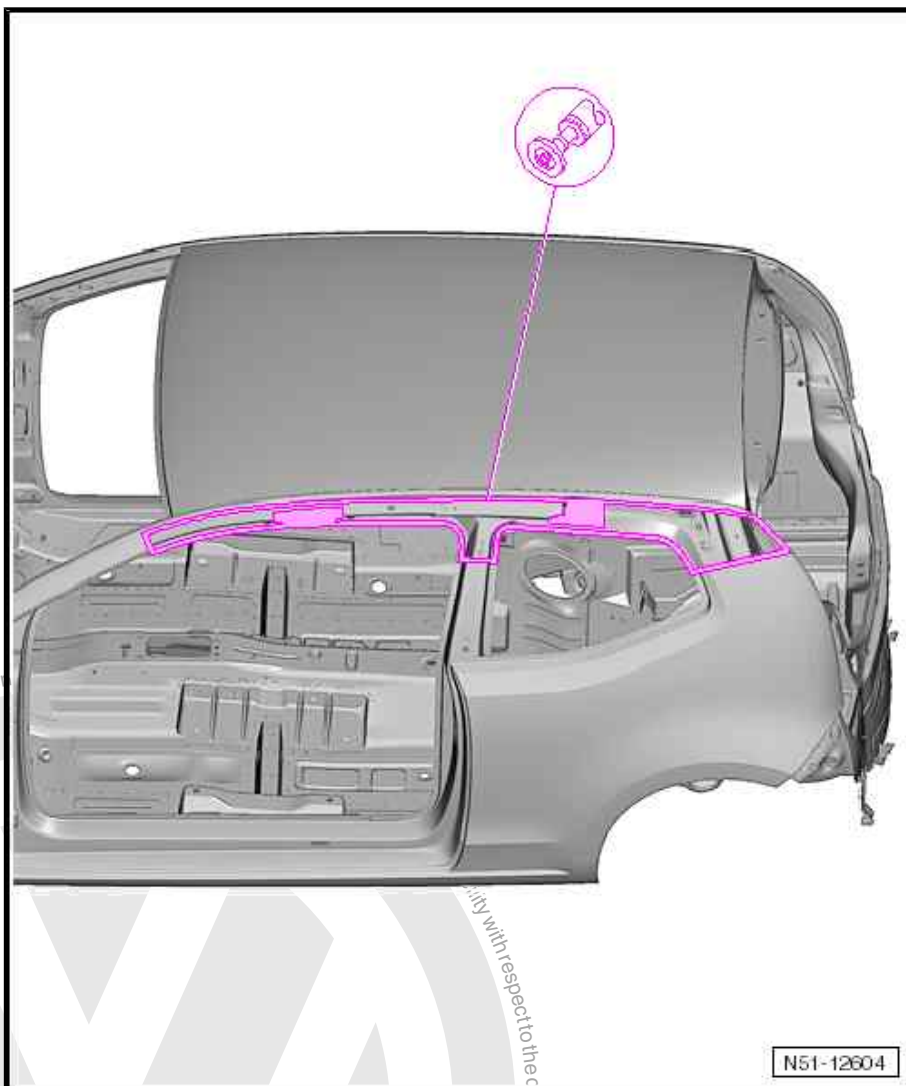
Dimension -b- = 15 mm

Dimension -c- = 100 mm

Dimension -d- = 100 mm



- At marked areas, roughly cut out roof side member.
- Chisel off reinforcements underneath.



- Remove remaining material.
- Completely remove remaining adhesive.
- Apply corrosion protection measures according to paintwork manual ➔ Body; General information, paint; Technical data; General notes; Notes on repairing add-on parts and welded parts.

3.3 Installing



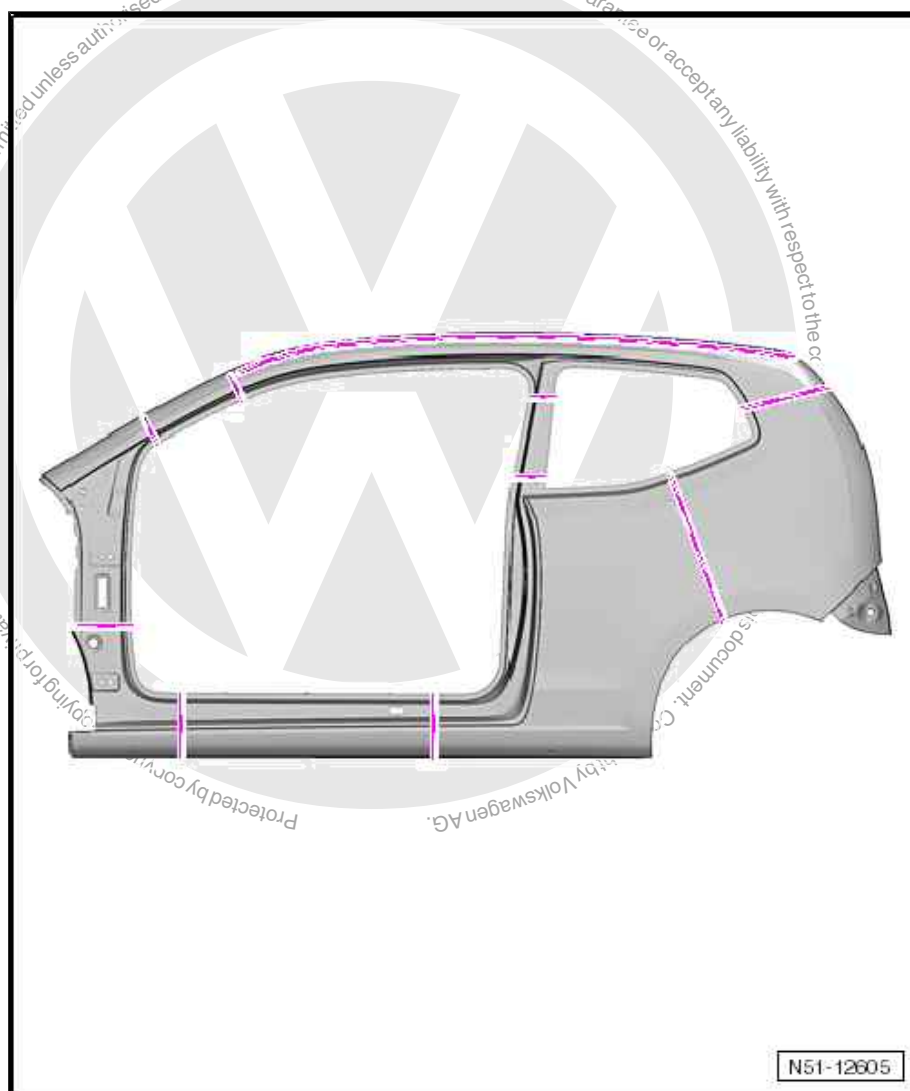
Note

Only welding units authorised by Volkswagen AG may be used
⇒ [page 165](#).



3.3.1 Authorised parting cuts on complete side panel

View, 2-door models



Note

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

3.3.2 Preparing new part

Replacement parts

- ◆ Side panel
- ◆ 2-pack body adhesive - D 180 003 M2-



- Transfer parting cut to new part and cut out.

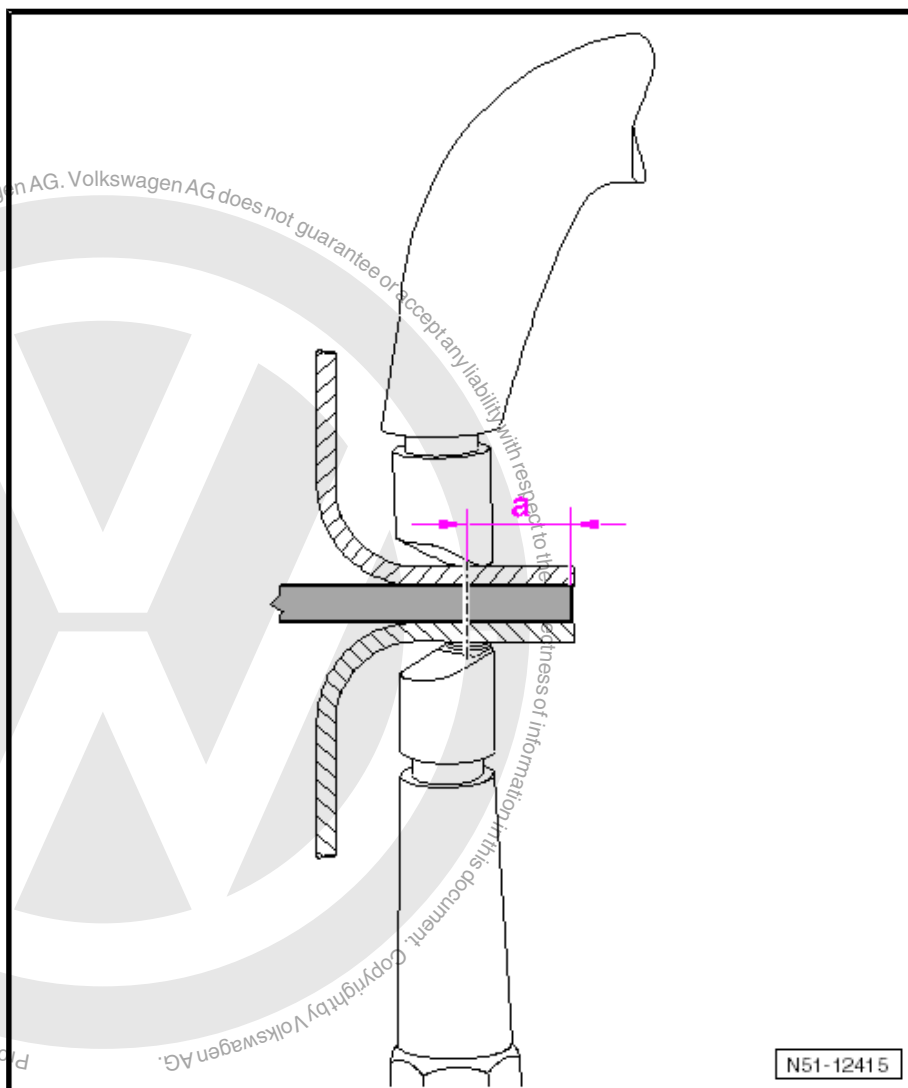


3.3.3 Welding in



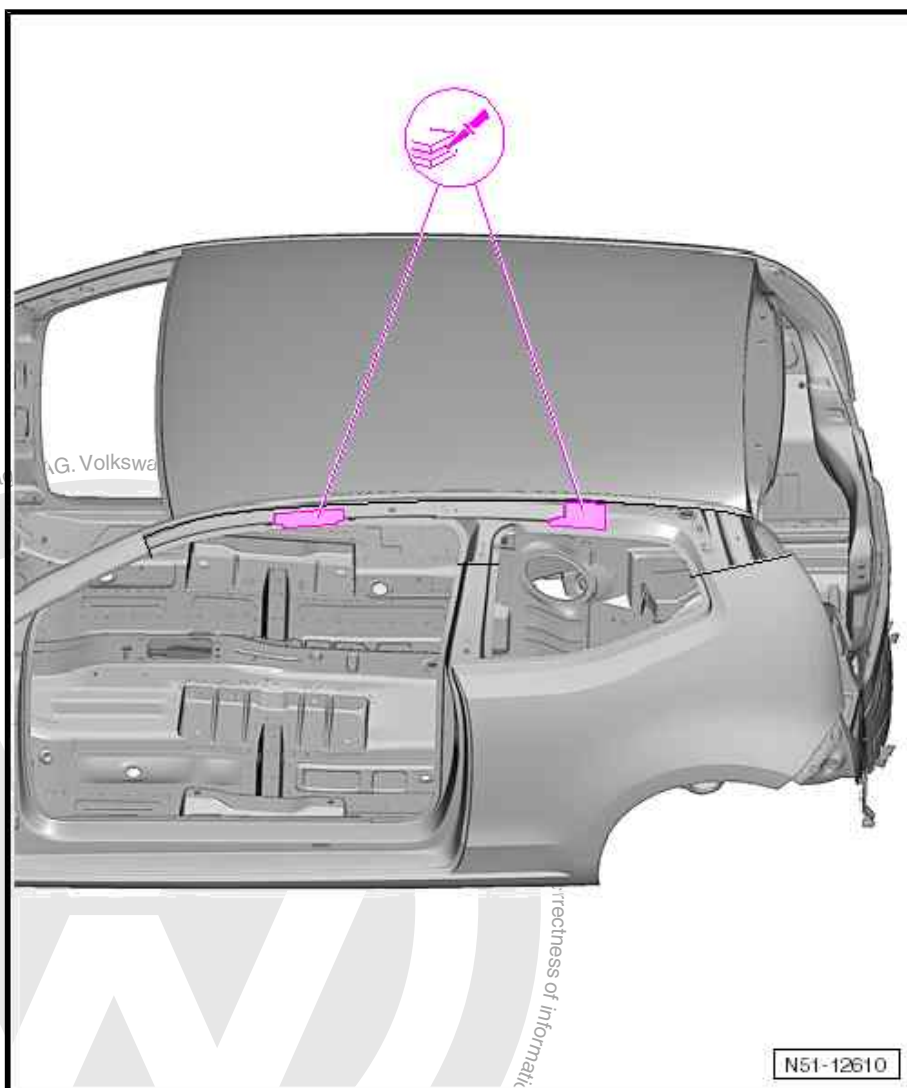
Note

- ◆ 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 13 mm wide.
- ◆ If spot welds are located at the edge of thermally shaped panels, the high temperature will cause the bond between the panels to change in such a way that crash safety will be impaired.



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

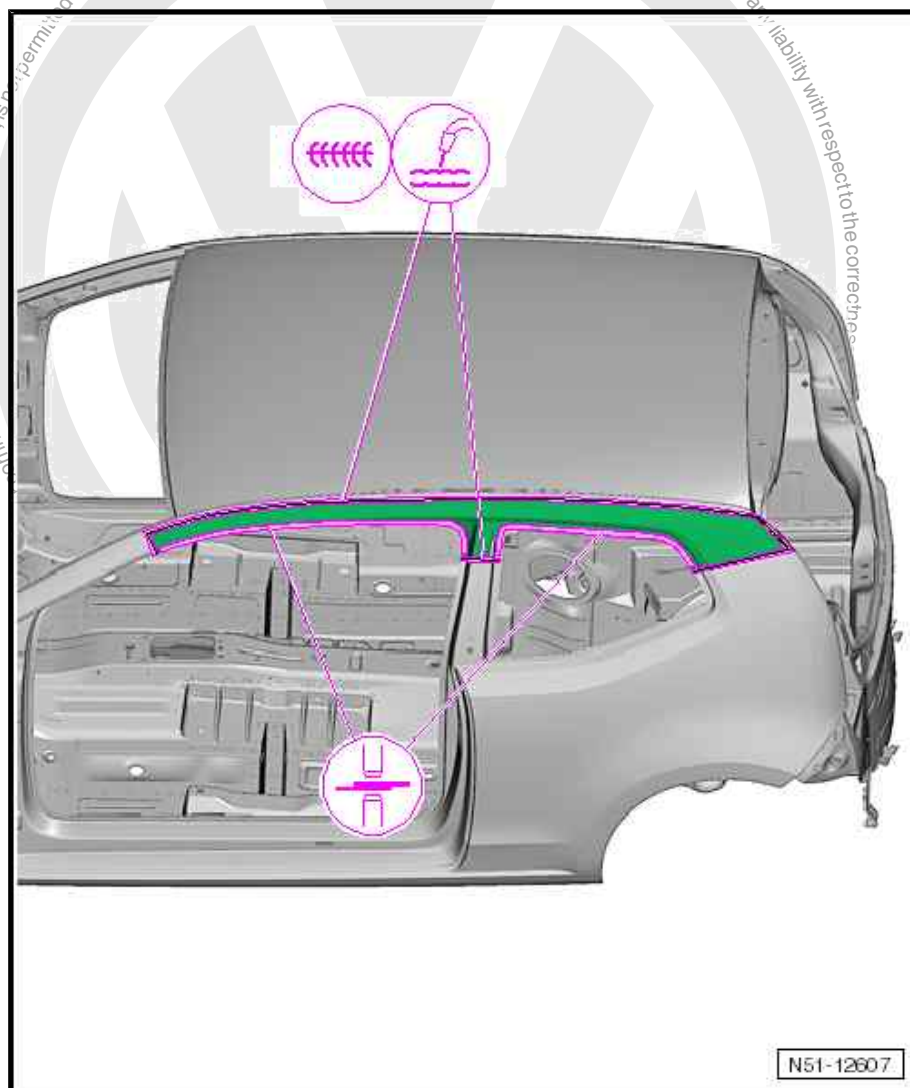
- Dimension -a- of 8 mm can be achieved using angled welding tips.



Note

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

- Apply bead of 2-component body adhesive - D.180 003 M2- , approx 4 mm Ø to front door aperture and to side window aperture.
- Adapt roof side member to fit and fix in position.
- Check fit with add-on parts.
- Adapt roof side member to fit and fix in position.
- Check fit with add-on parts.



- Weld parting cuts, MIG-L stepped seam or SG continuous weld seam are permitted.
- Weld door apertures and side window aperture, RP spot weld seam (inverter).



RO: 51 05 55 60

4 Renewing roof side member, 4-door

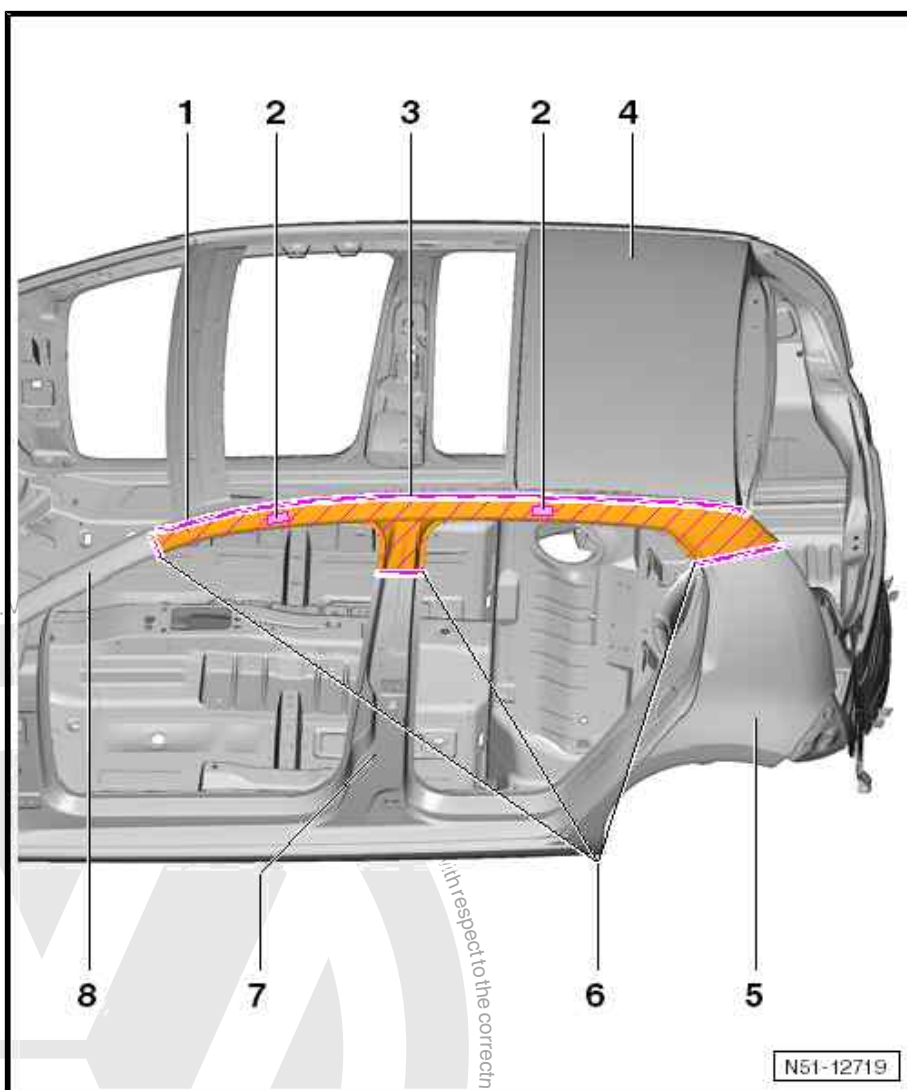


WARNING

Observe safety notes!

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

- 1 - Roof member
- 2 - Bonded areas
- 3 - Parting cut on roof member
- 4 - Roof
- 5 - Side panel
- 6 - Parting cuts for A-, B- and C-pillars
- 7 - B-pillar
- 8 - A-pillar





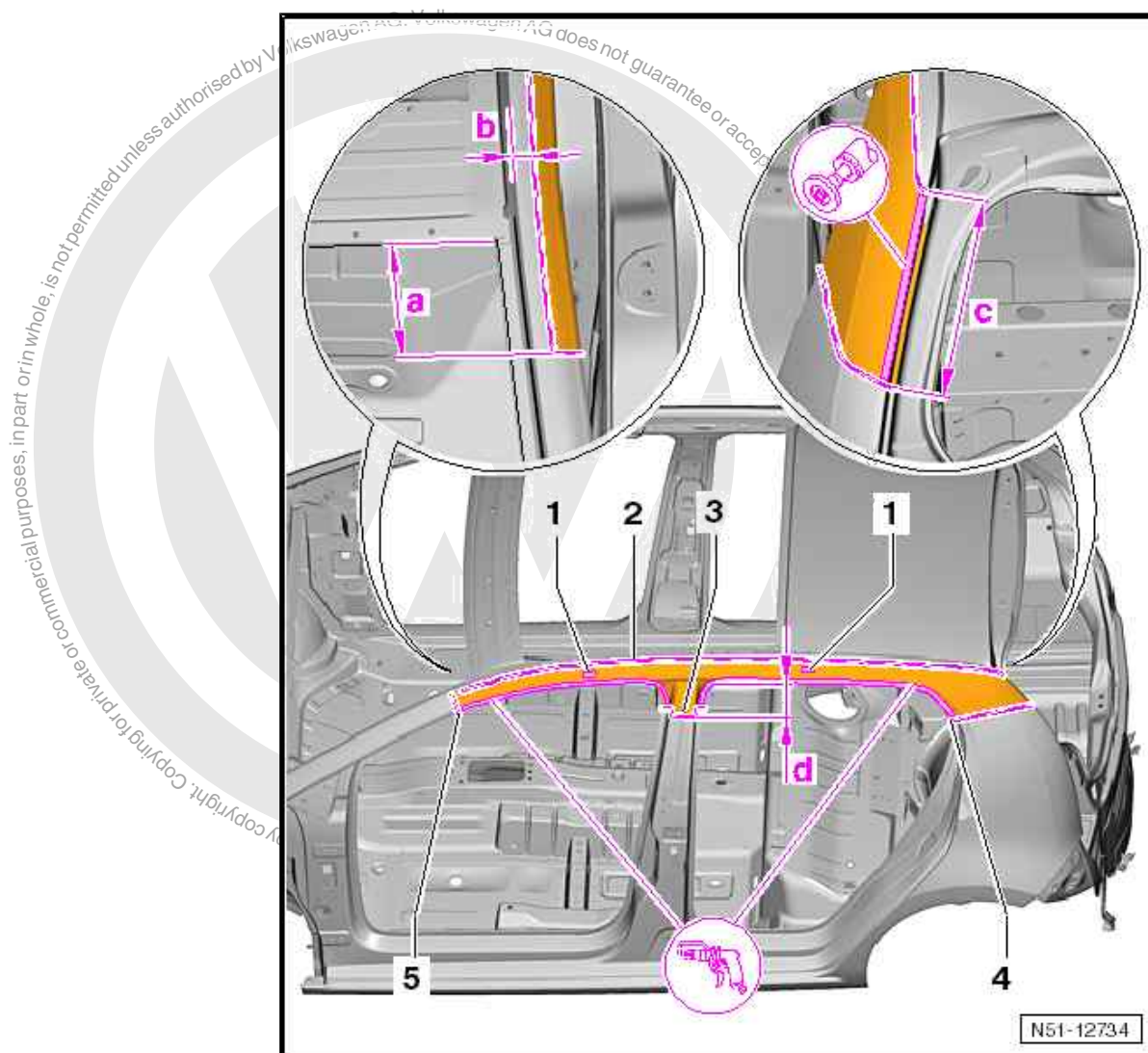
4.1 Tools



Note

- ◆ Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.
- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork .

4.2 Removing



Note

When making parting cuts, ensure that the panels lying behind are not damaged.

- Carry out parting cut -5- according to damage, but at least as per dimension -a-.



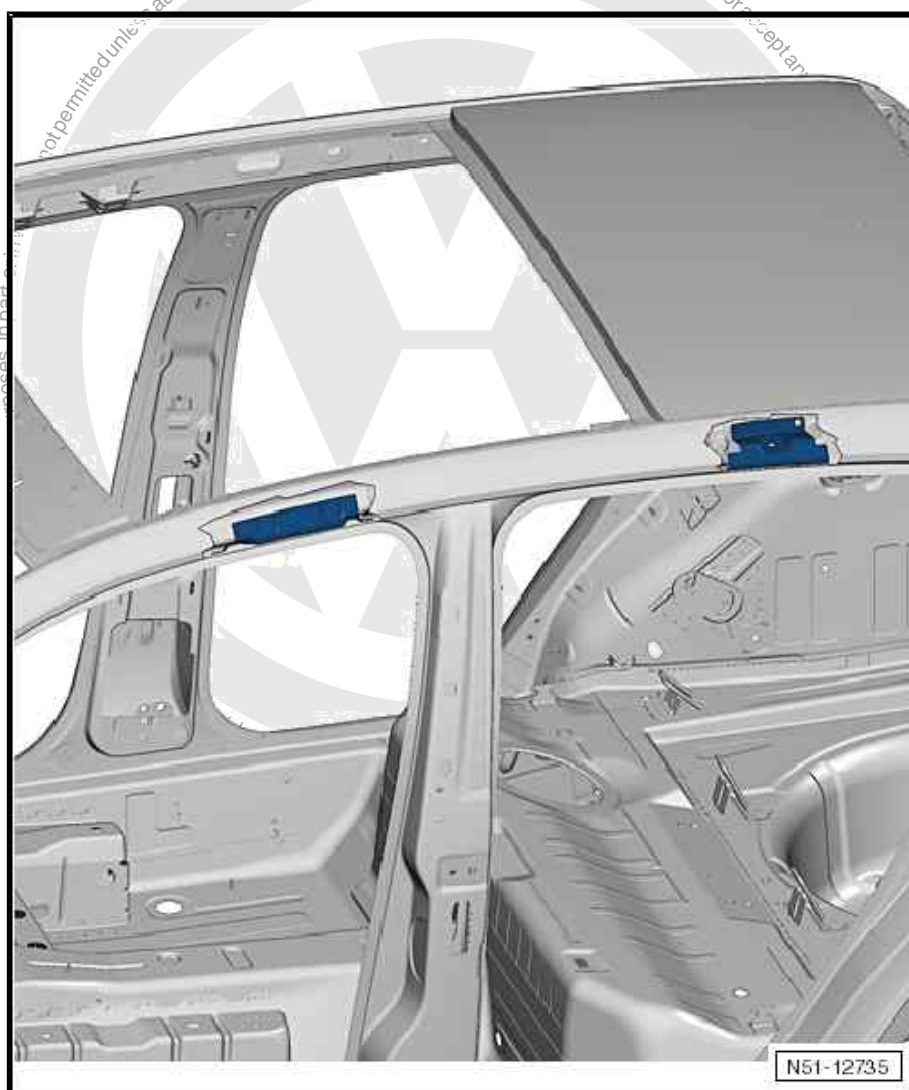
- Carry out parting cut -2- parallel to roof as per dimension -b-.
- Carry out parting cut -3- as per dimension -d-.
- Carry out parting cut -4- as per dimension -c-.
- Separate original joint in front door and side window apertures.
- Release adhesive joint -1- in area of reinforcing for roof rack.

Dimension -a- = 50 mm

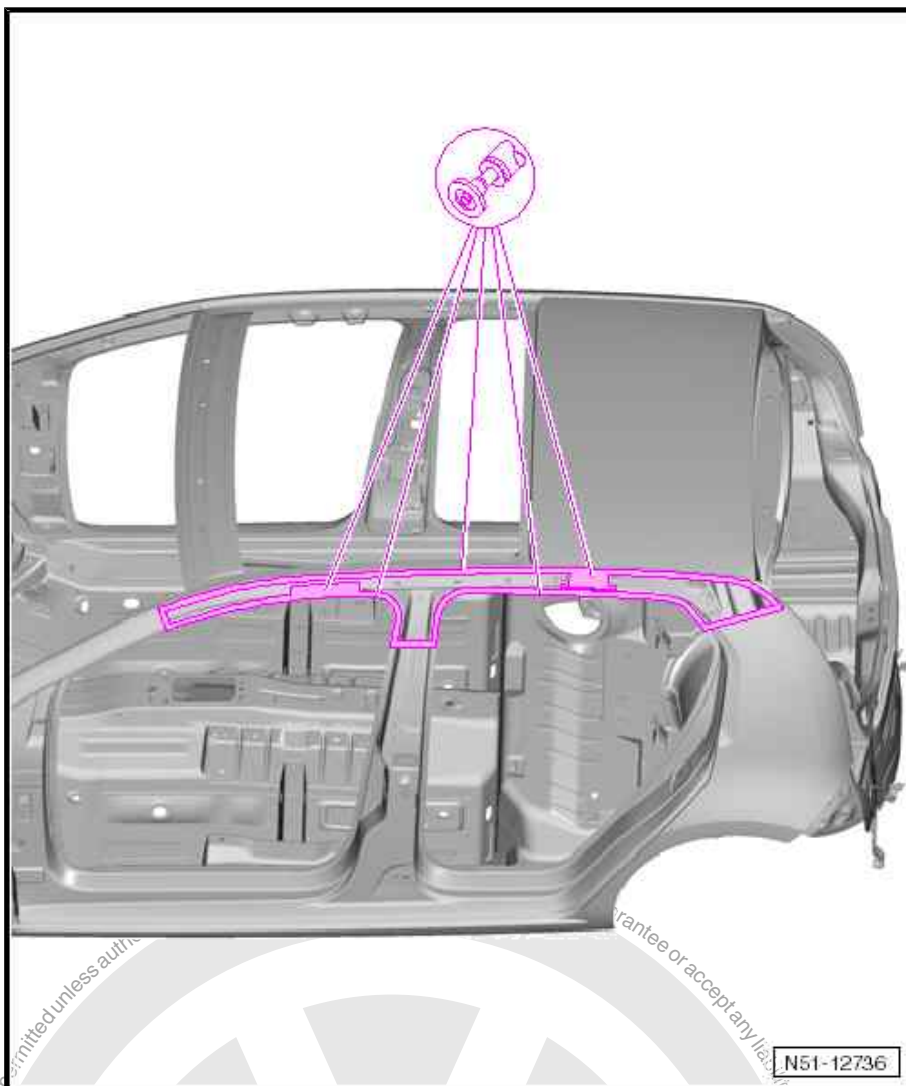
Dimension -b- = 15 mm

Dimension -c- = 100 mm

Dimension -d- = 100 mm



- At marked areas, roughly cut out roof side member.
- Chisel off reinforcements underneath.



- Remove remaining material.
- Completely remove remaining adhesive.
- Apply corrosion protection measures according to paintwork manual ➔ Body; General information, paint; Technical data; General notes; Notes on repairing add-on parts and welded parts .

4.3 Installing

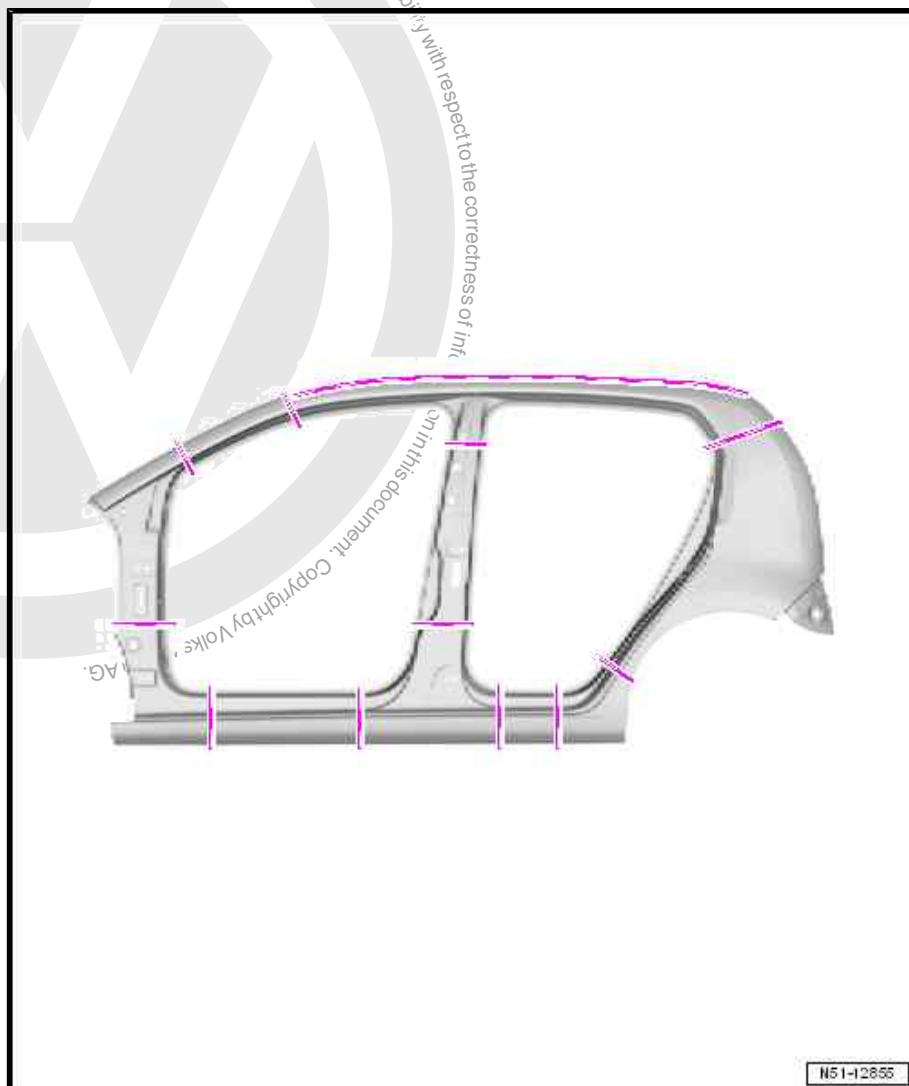


Note

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



4.3.1 Authorised parting cuts on complete side panel



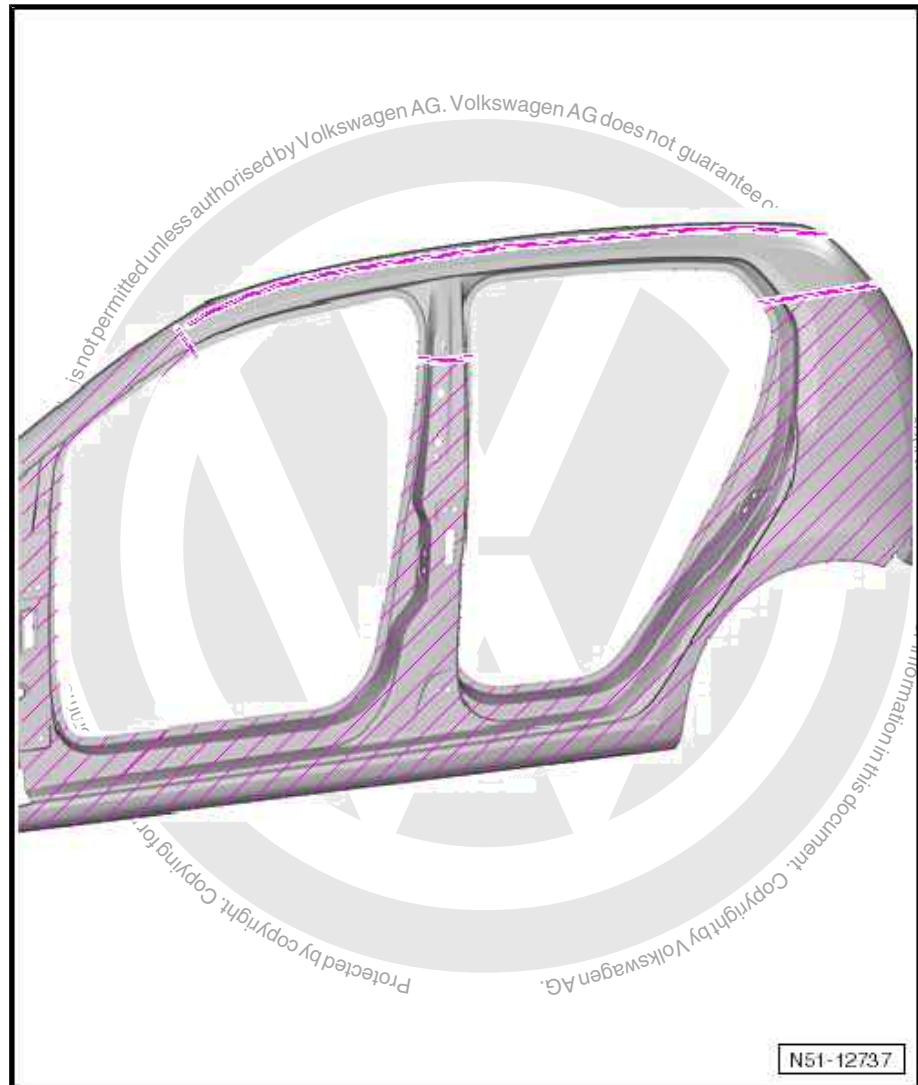
Note

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

4.3.2 Preparing new part

Replacement parts

- ◆ Side panel
- ◆ 2-component body adhesive - D180 003 M2-



- Transfer parting cut to new part and cut out.

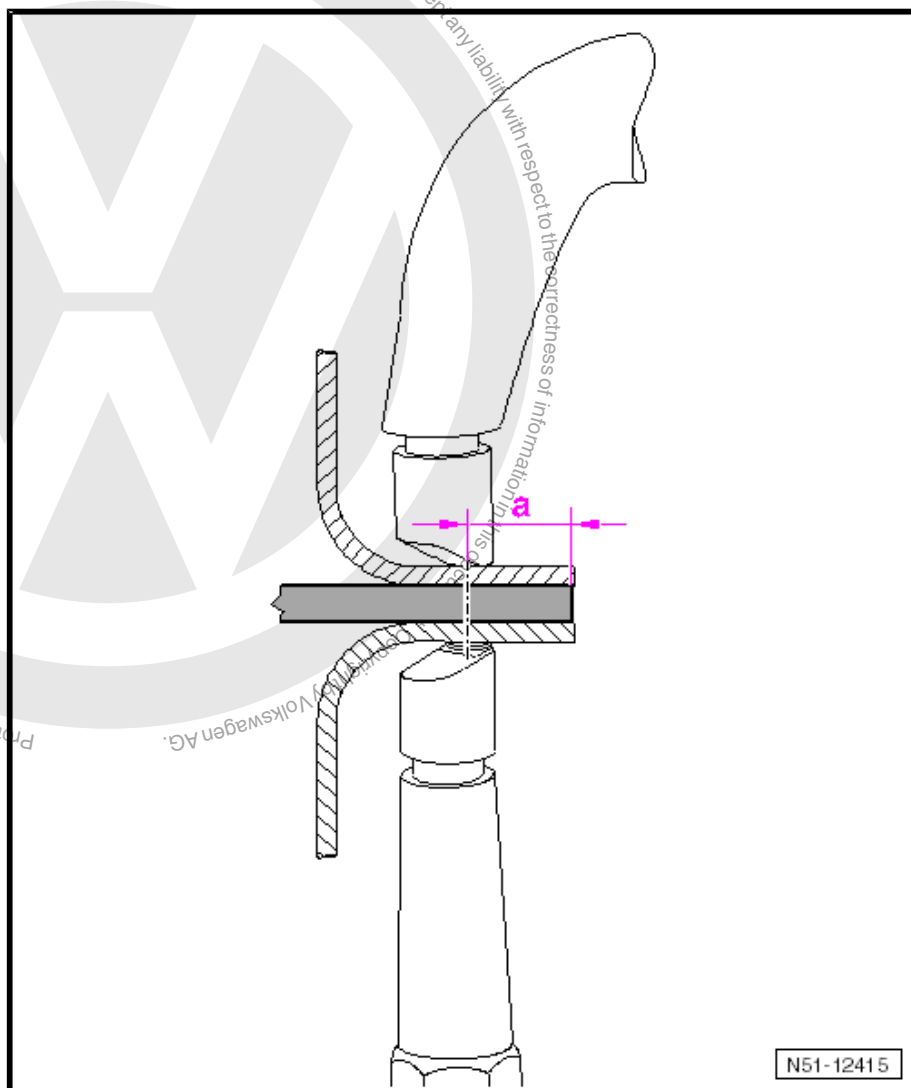


4.3.3 Welding in



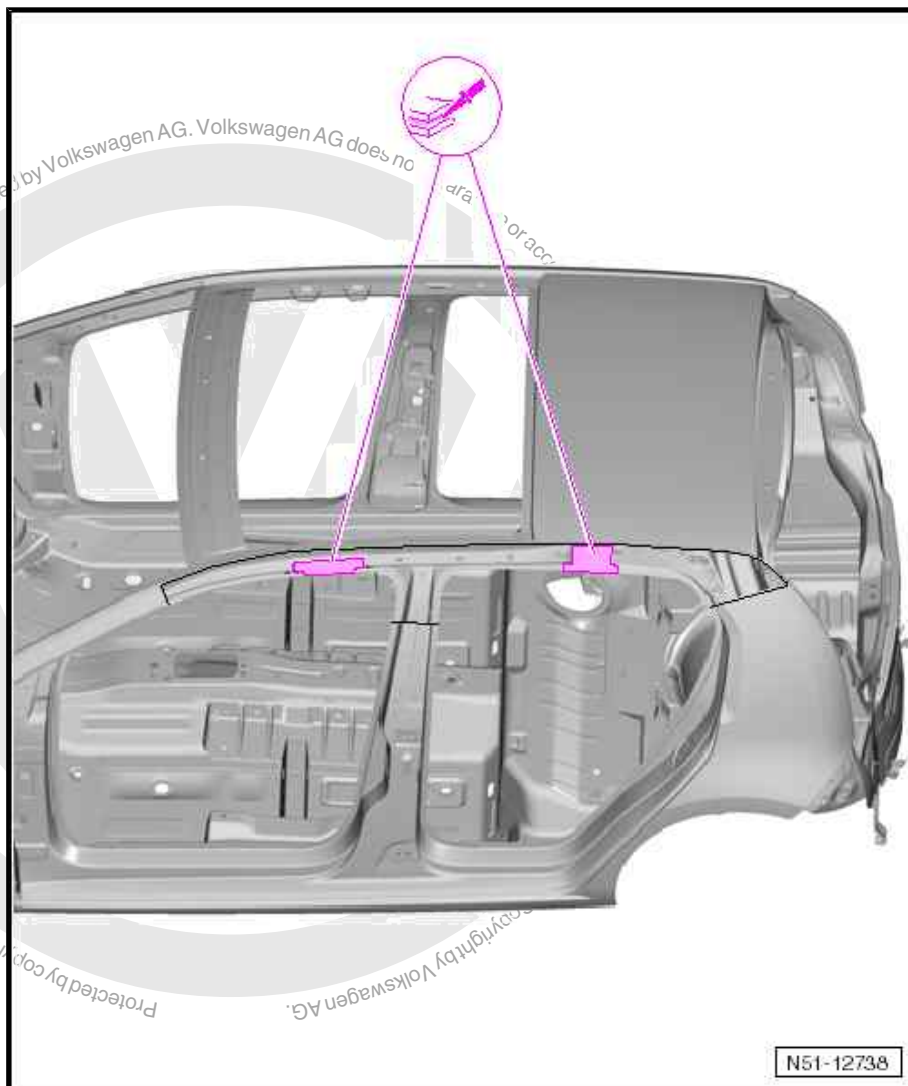
Note

- ◆ 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 13 mm wide.
- ◆ If spot welds are located at the edge of thermally shaped panels, the high temperature will cause the bond between the panels to change in such a way that crash safety will be impaired.



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

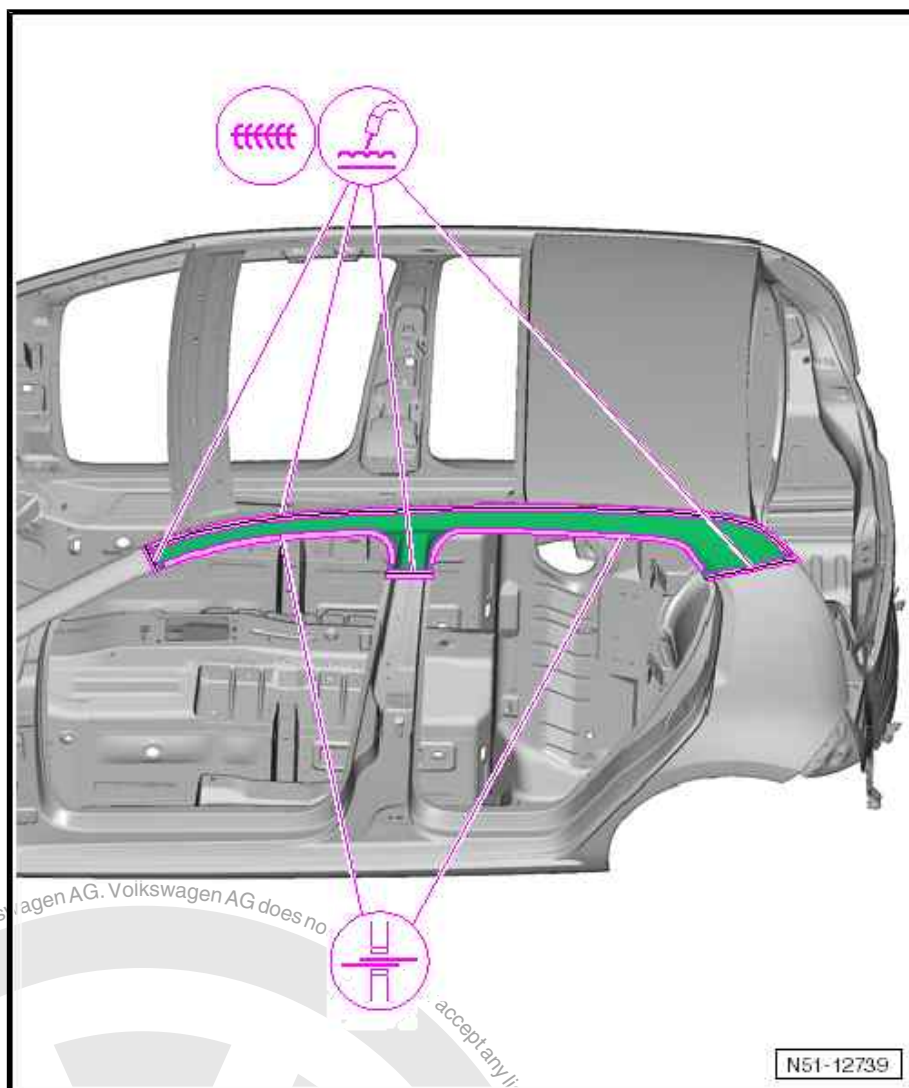
- Dimension -a- of 8 mm can be achieved using angled welding tips.



Note

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

- Apply bead of 2-component body adhesive - D180 003 M2- , approx. 4 mm Ø, to front door aperture and to side window aperture for 2-door vehicle or rear door aperture for 4-door vehicle.
- Adapt roof side member to fit and fix in position.
- Check fit with add-on parts.



- Weld parting cuts, MIG-L stepped seam or SG continuous weld seam are permitted.
- Weld door apertures and side window aperture, RP spot weld seam (inverter).



RO: 51 07 55 50

5 Renewing front cross member for roof



WARNING

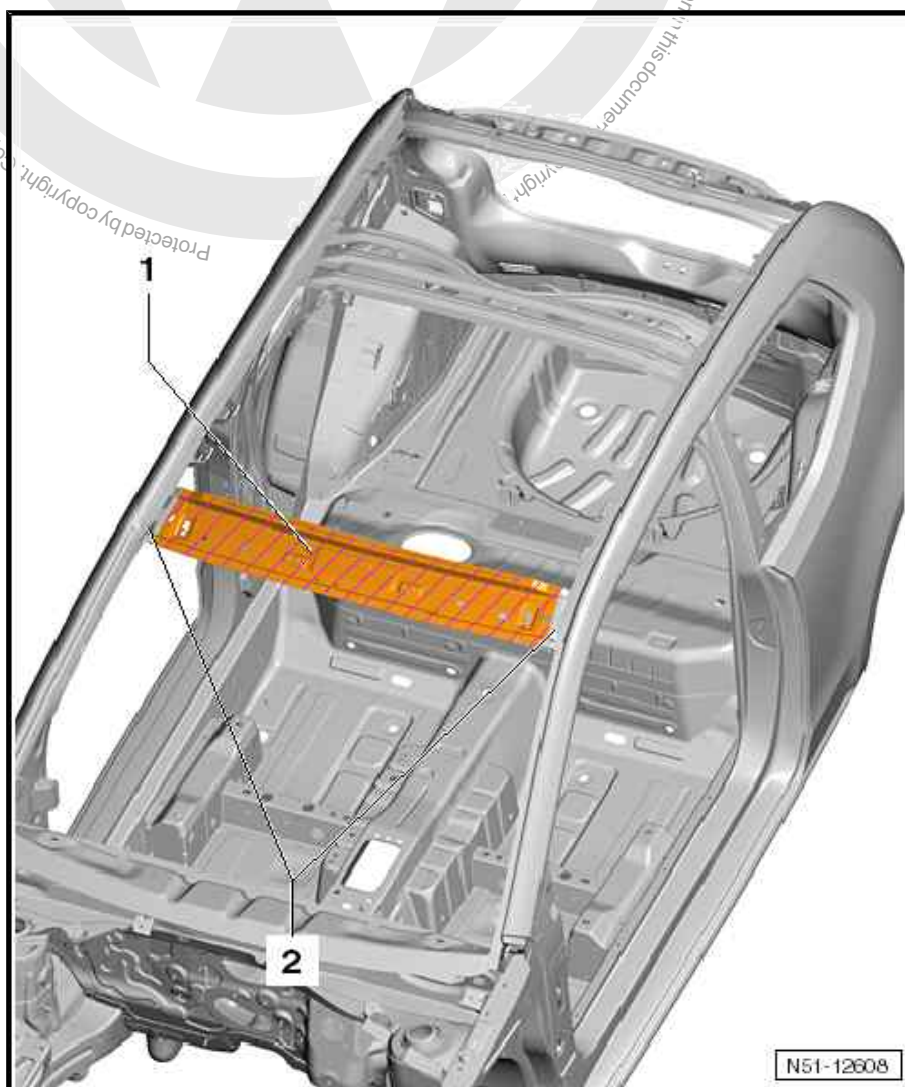
Observe safety notes!

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

- Roof already removed
⇒ ["1 Renewing roof - vehicles without panorama tilting sun-roof", page 136](#)

1 - Front roof cross member

2 - Left and right front roof cross member brackets



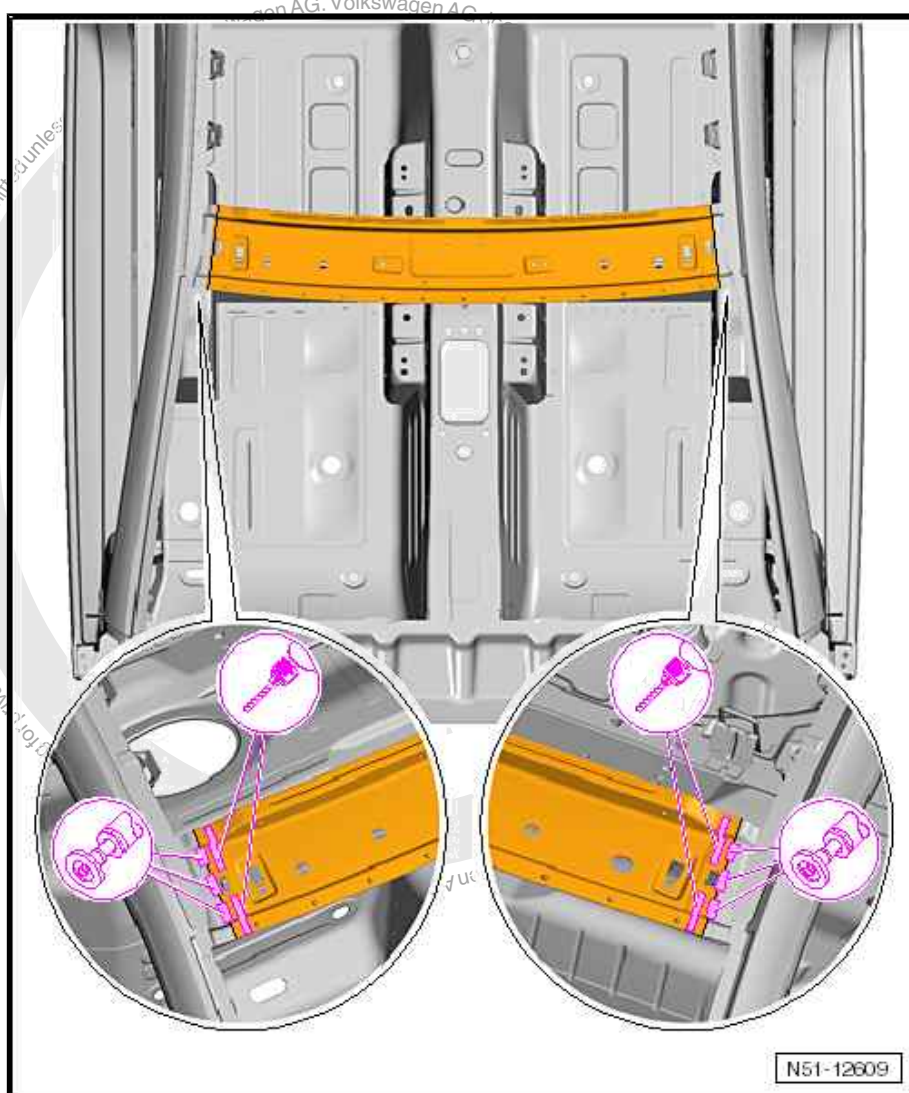
5.1 Tools



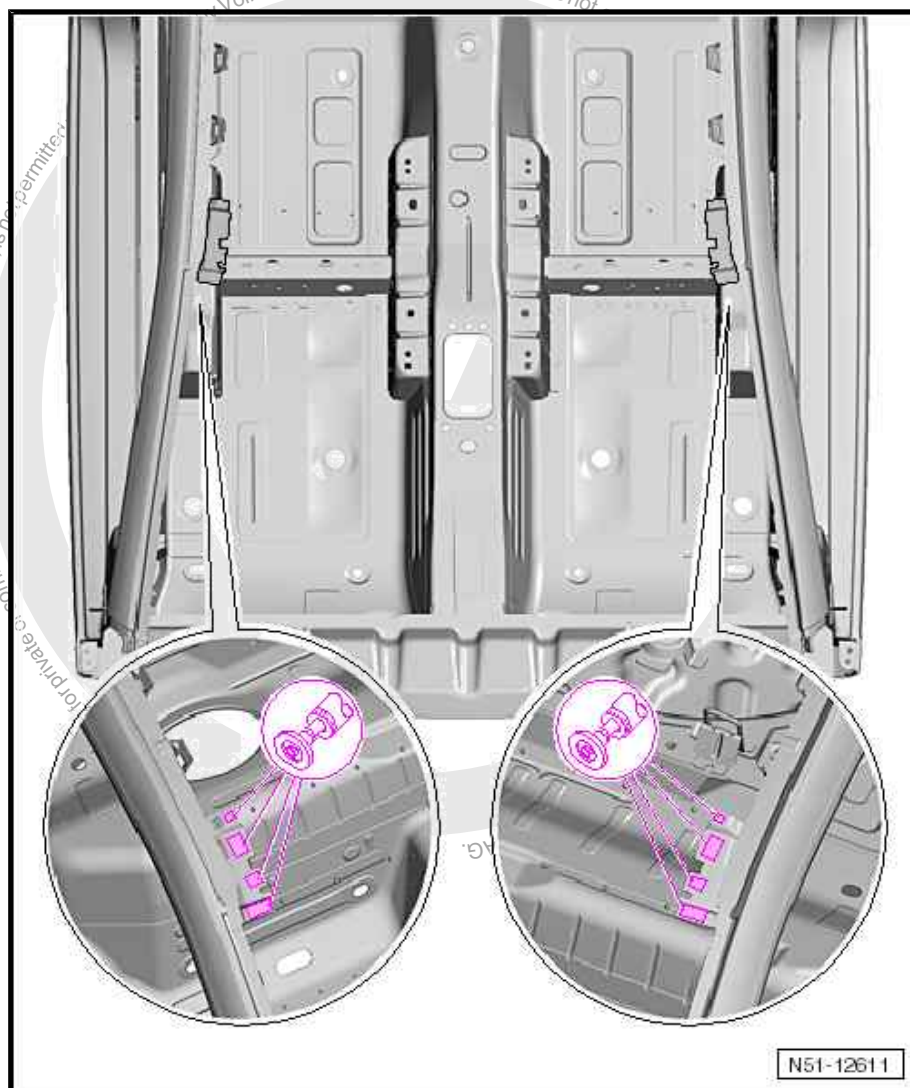
Note

- ◆ Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.
- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork.

5.2 Removing



- Separate original joint.



- Remove residual sections at transition to left and right front roof cross member brackets.

5.3 Installing



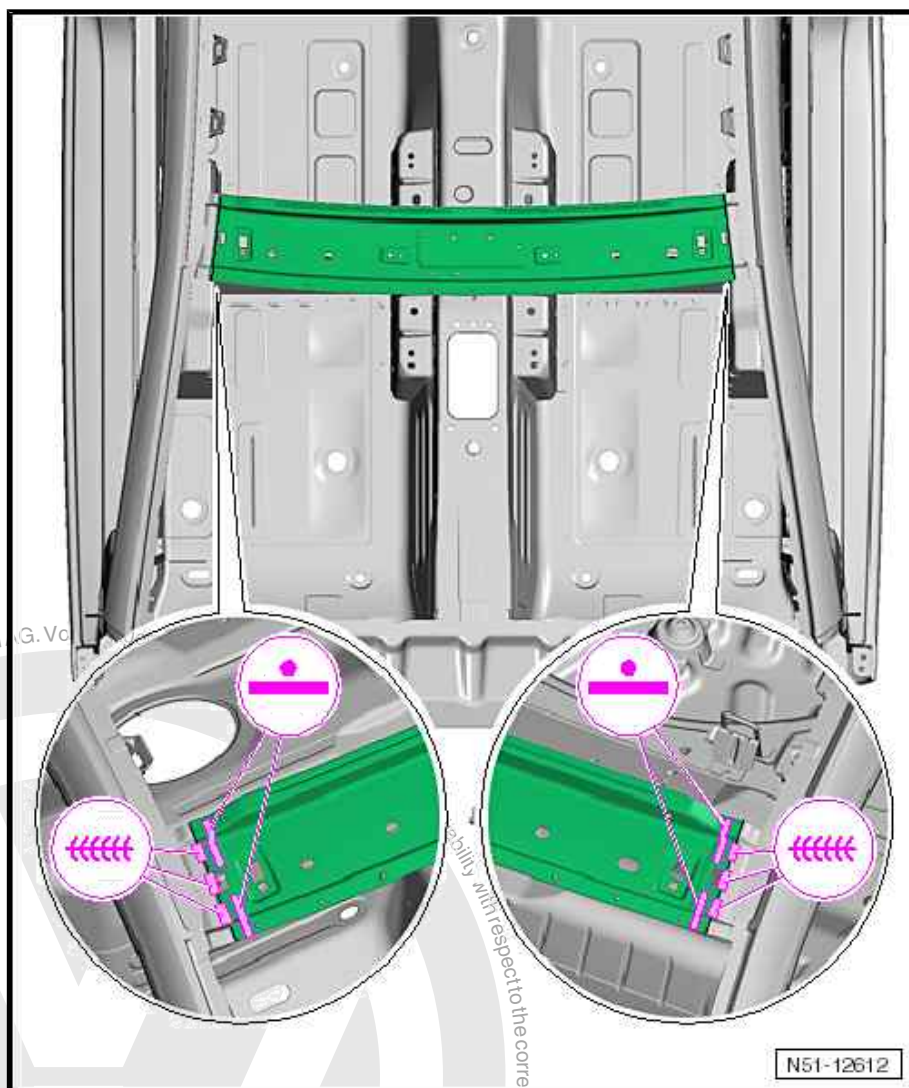
Note

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

5.3.1 Welding in

Replacement part

- ◆ Front roof cross member
- Adapt new part to fit and fix in position.
- Check fit to roof.



- Weld in front roof cross member, RP spot weld seam and SG continuous weld seam.
- Install roof (models with no panorama tilting sunroof)
➤ [“1.3 Installing”, page 139](#).



RO: 51 07 55 53

6 Renewing front roof cross member - vehicles with panorama tilting sun- roof



WARNING

Observe safety notes!

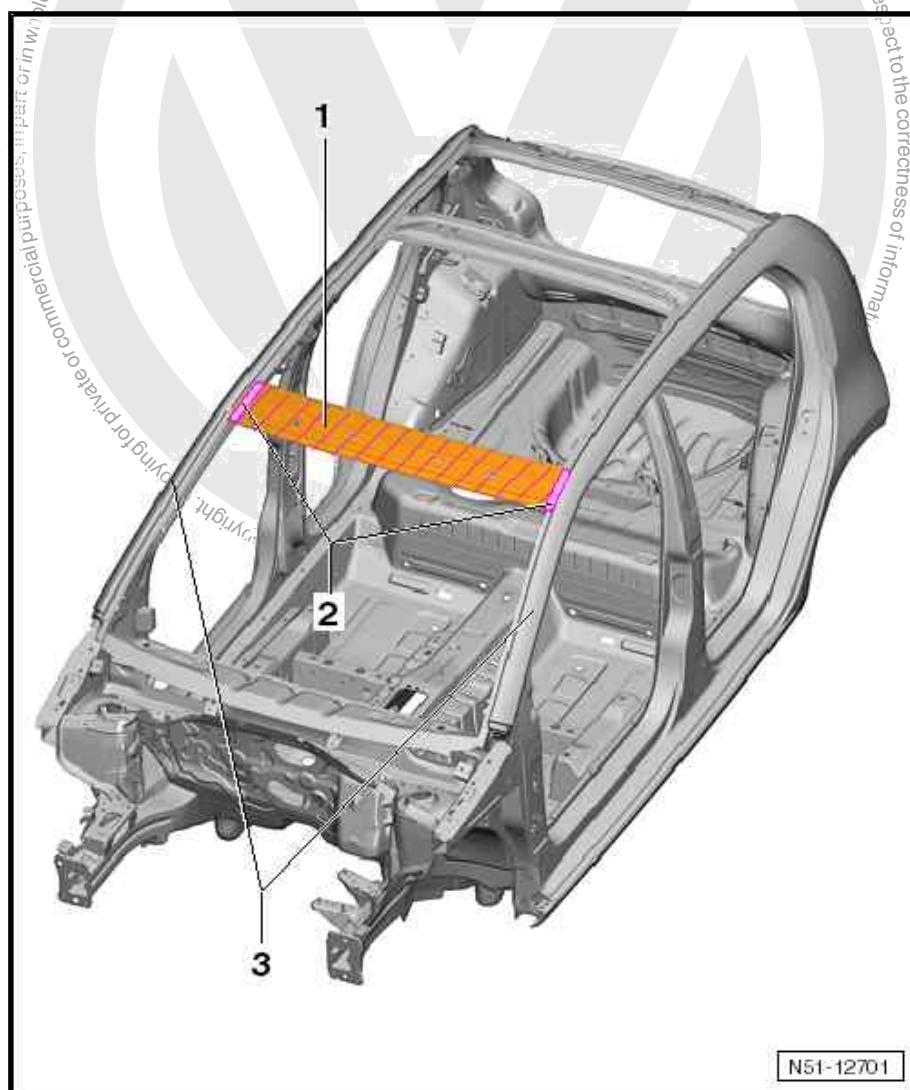
Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes

- Panorama tilting sunroof already removed ⇒ General body repairs, exterior; Rep. gr. 60 ; Sunroof .

1 - Front roof cross member

2 - Bonded area

3 - Left and right roof side members





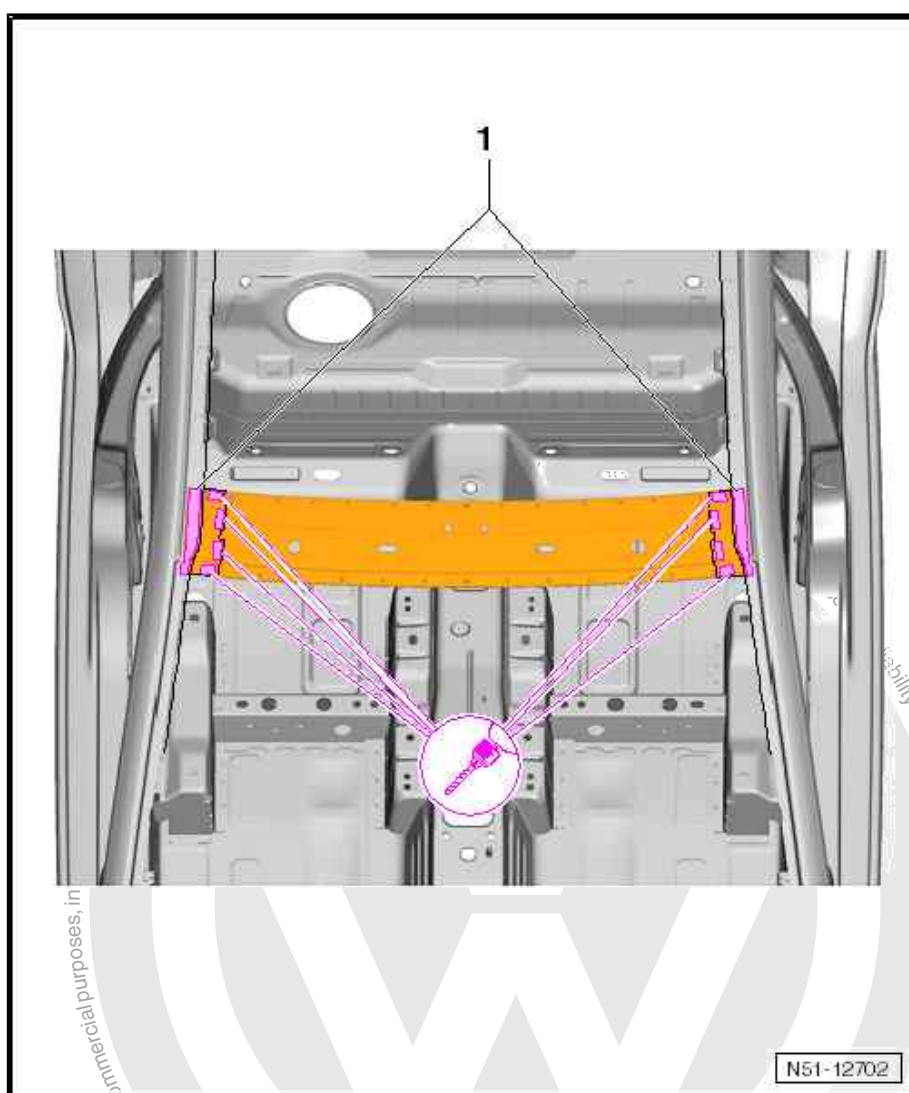
6.1 Tools



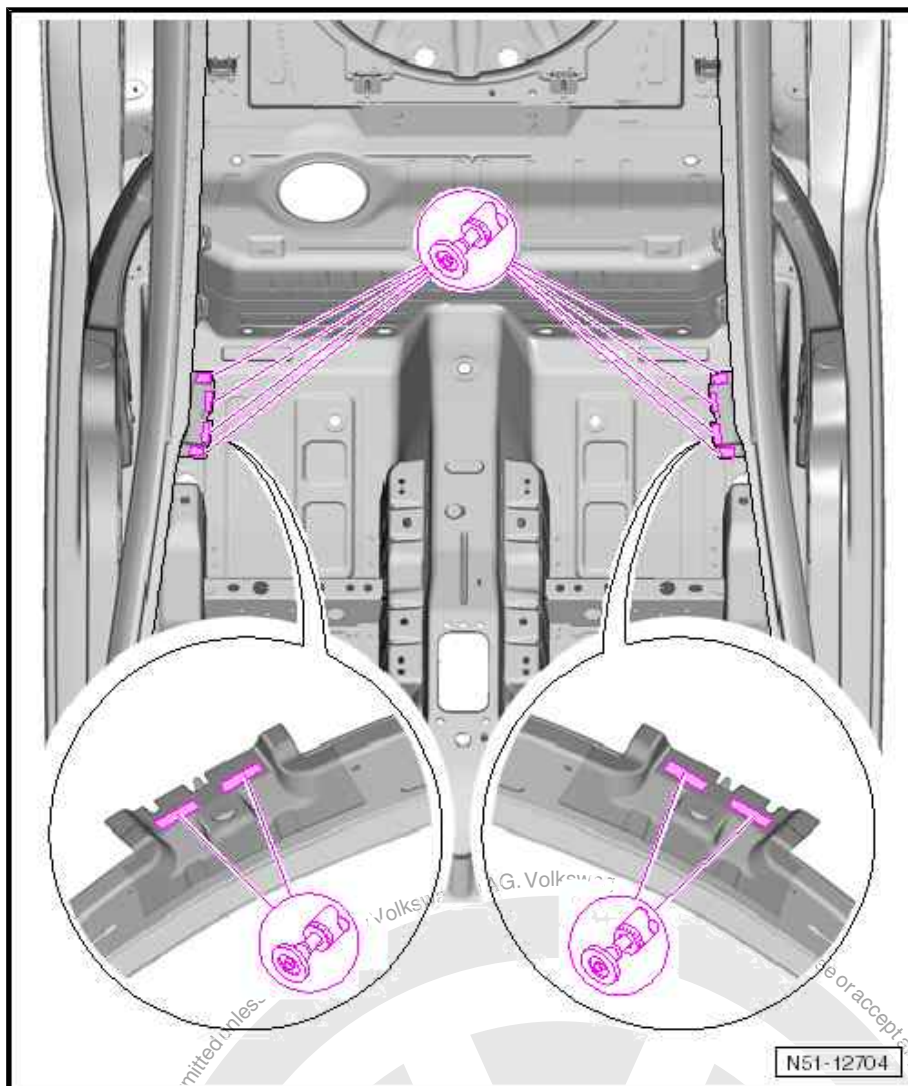
Note

- ◆ Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.
- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork .

6.2 Removing



- Separate roof cross member from above.
- Separate bonded areas -1-.
- Separate roof cross member from below.



- Remove residues at transition to left and right roof members.
- Completely remove remaining adhesive.
- Apply corrosion protection measures on bonding surfaces where no welding is to be performed. Body; General information, Paint; Technical data; General notes; Notes on repairing add-on parts and welded parts.
- Then lightly roughen bonding surfaces.

6.3 Installing



Note

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

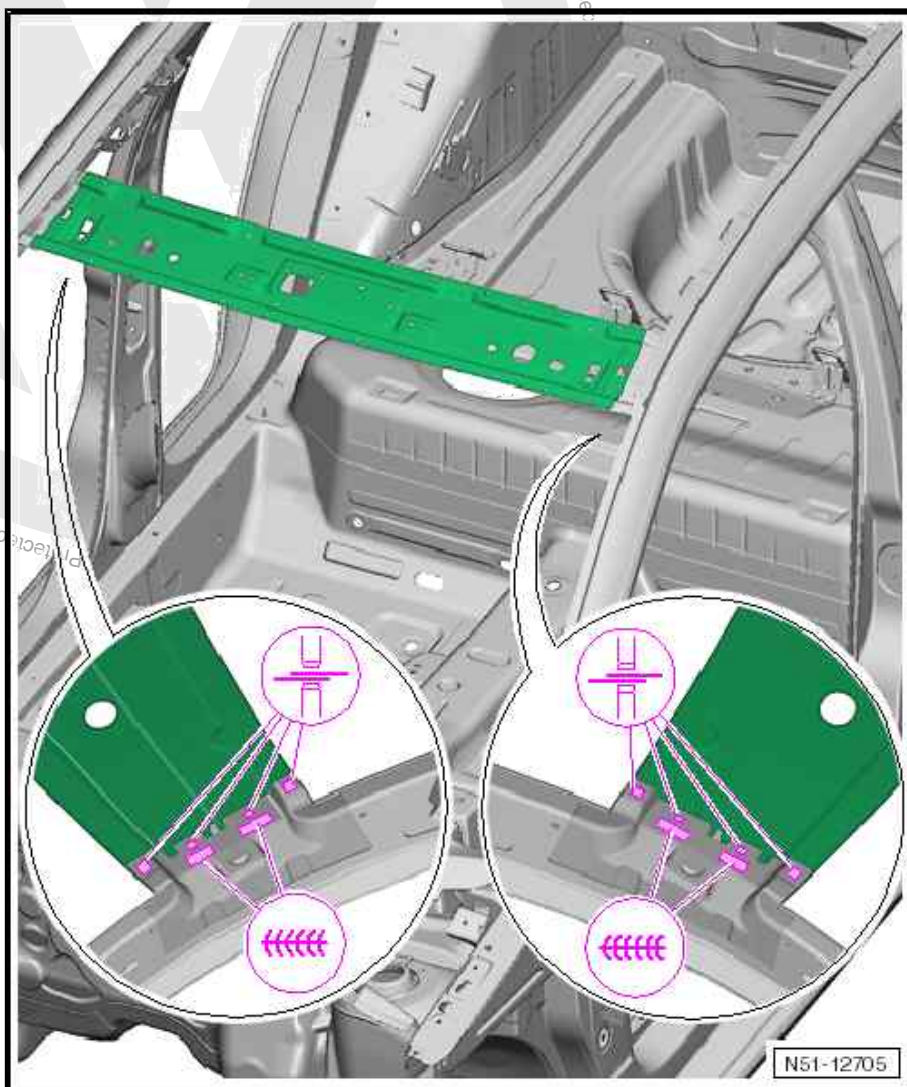
6.3.1 Welding in

Replacement parts

- ◆ Front roof cross member
- ◆ Roof cross member cover



- ◆ 2-component body adhesive - D 180 003 M2-
- Adapt new part and fix in position.
- Check gaps to windscreen and panorama tilting sunroof.



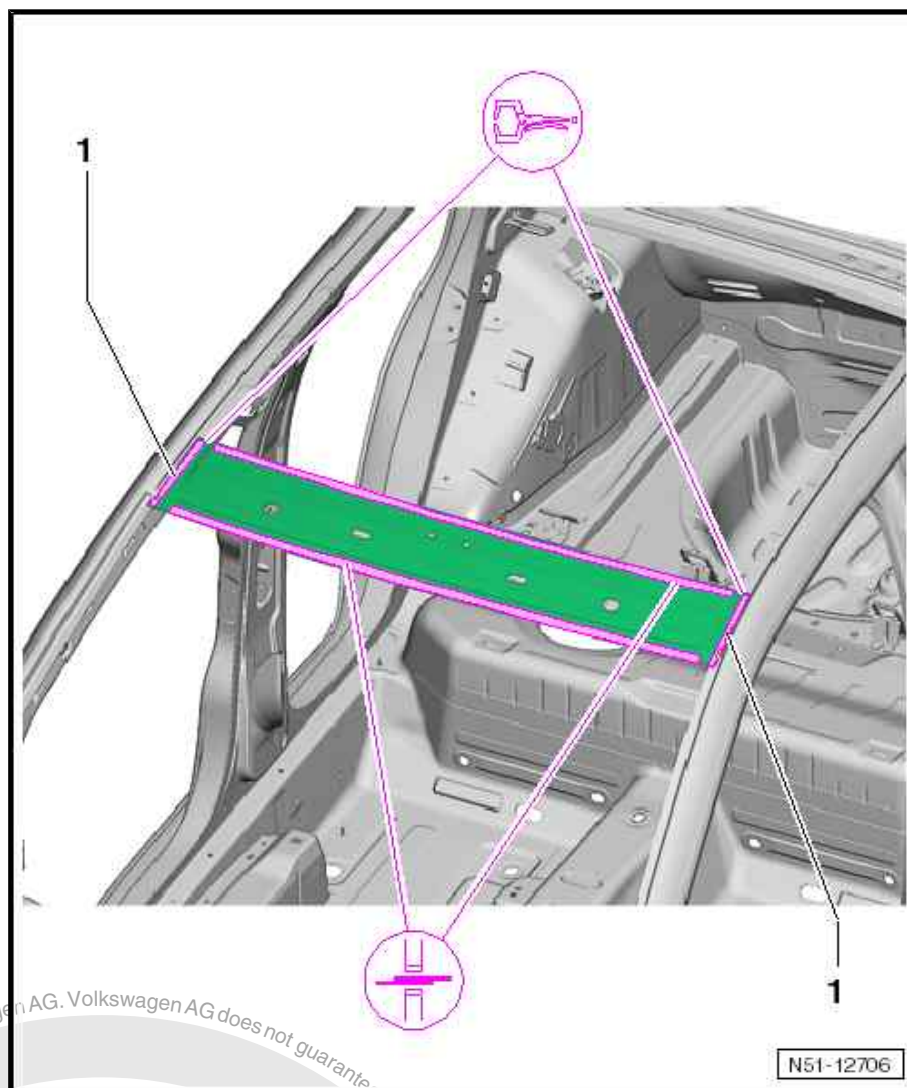
- Weld in front roof cross member, RP spot weld seam and SG continuous weld seam.



Note

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

- Apply bead of 2-component body adhesive - D 180 003 M2- , approx 4 mm Ø, to transitions to left and right roof members in areas bonded in factory.



- Weld in front roof cross member cover, RP spot weld seam.
- Secure front cross member cover with vice-grip pliers in area -1- until the 2-component body adhesive - D 180 003 M2- has hardened.
- Install panorama tilting sunroof ⇒ General body repairs, exterior; Rep. gr. 60 ; Sunroof .



RO: 51 08 55 50

7

Renewing roof reinforcement - models without panorama tilting sunroof



DANGER!

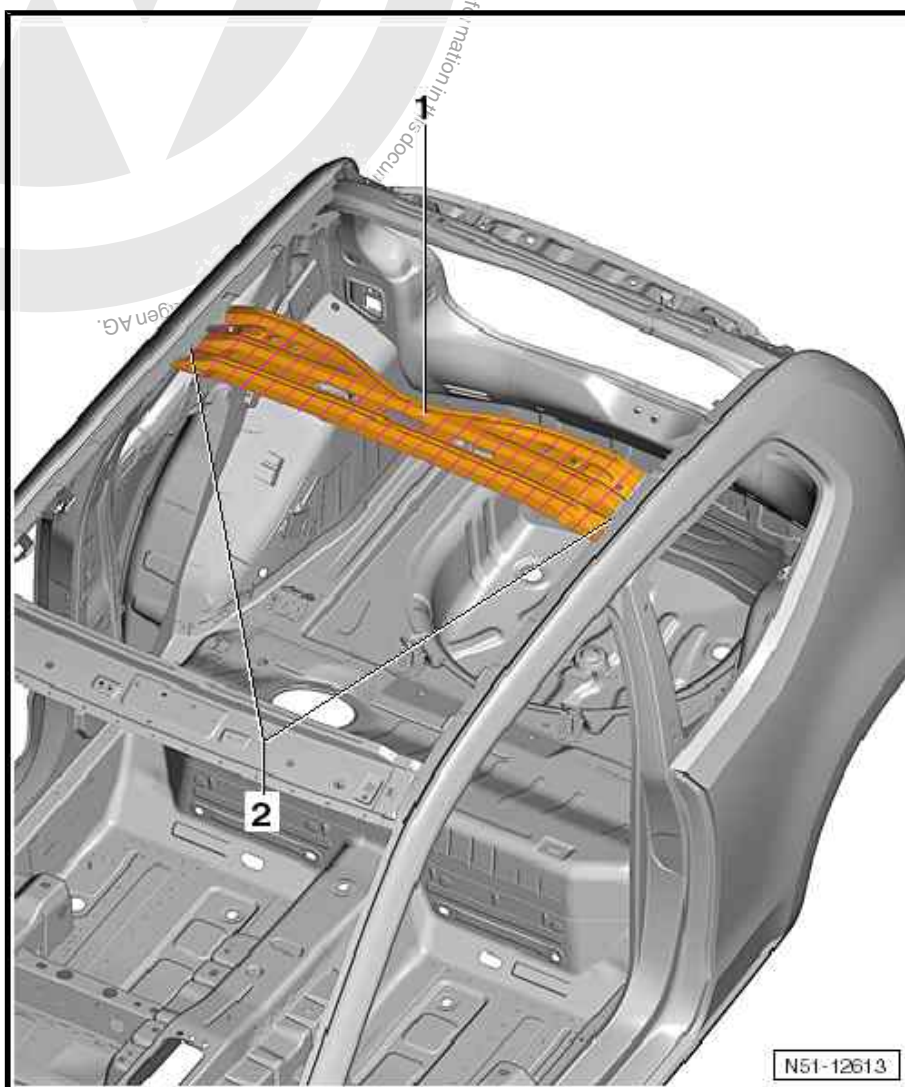
Observe safety notes!

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

- Roof already removed
⇒ ["1 Renewing roof - vehicles without panorama tilting sunroof", page 136](#) .

1 - Roof reinforcement

2 - Left and right roof side members





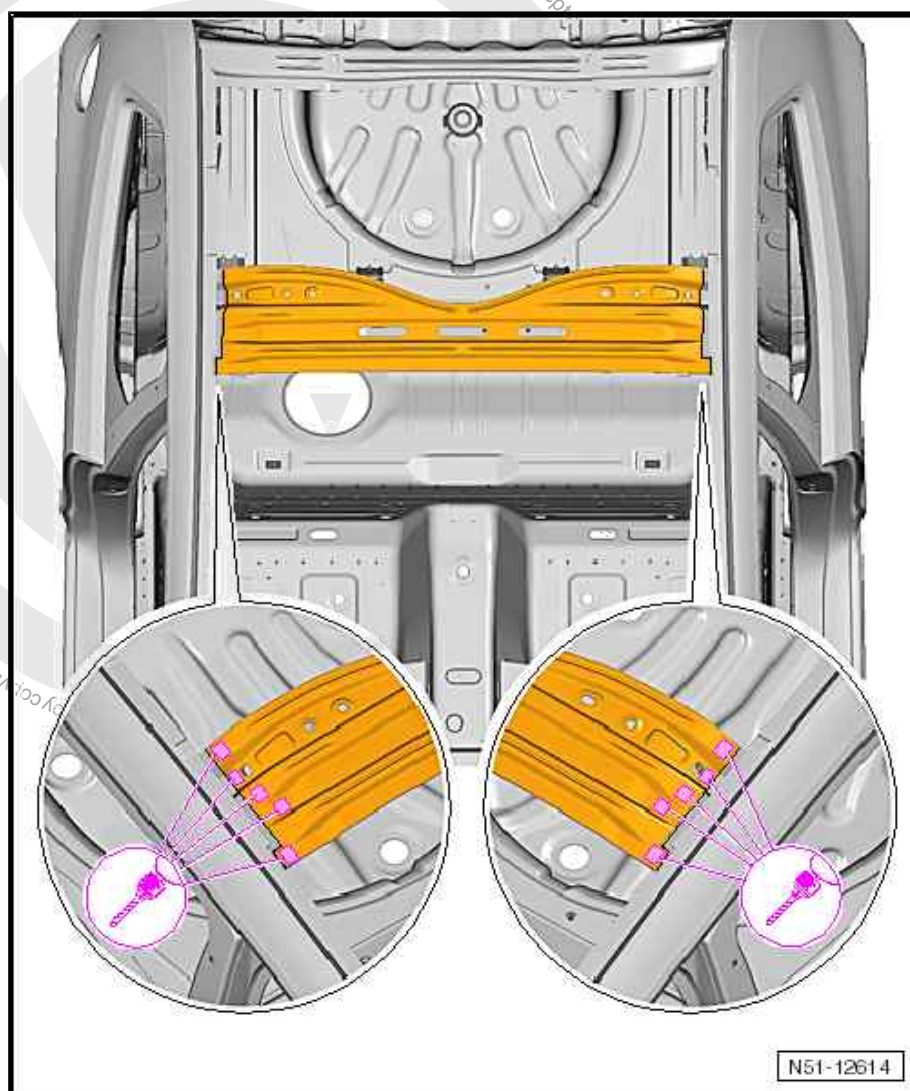
7.1 Tools



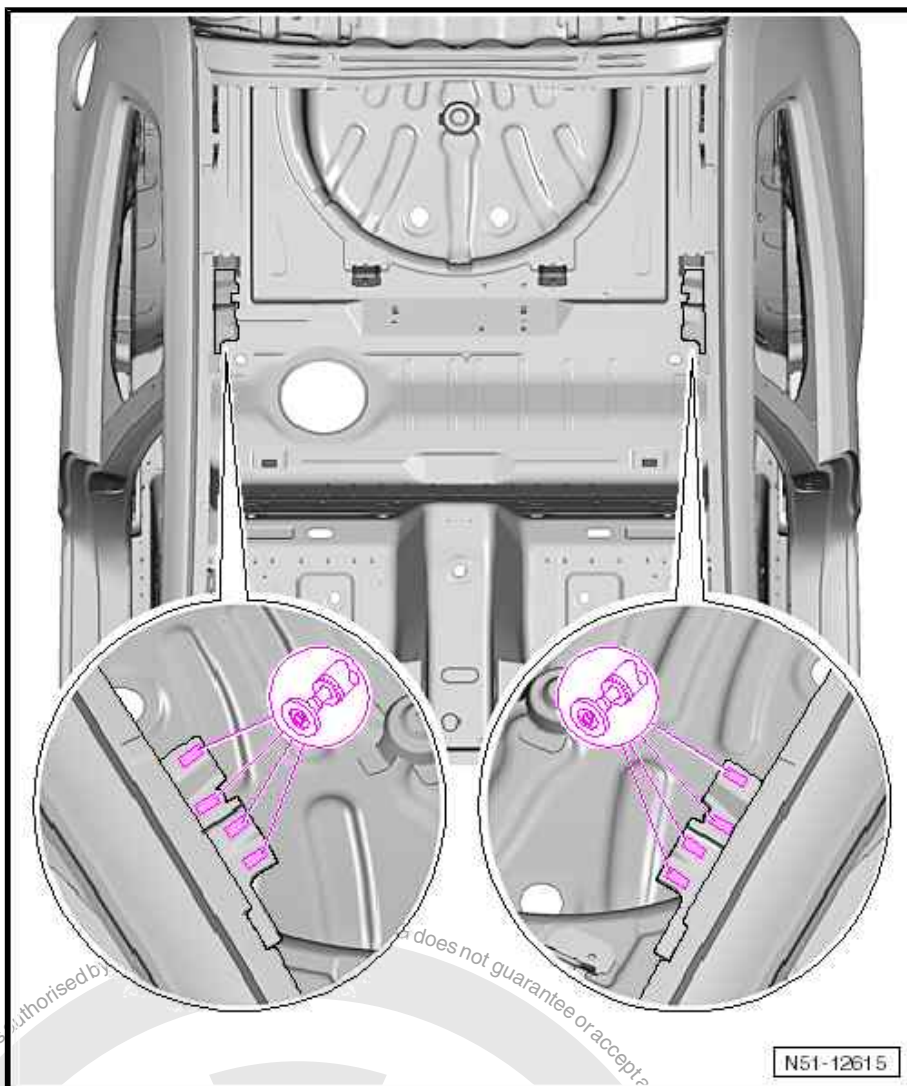
Note

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

7.2 Removing



- Separate original joint.



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

7.3 Installing



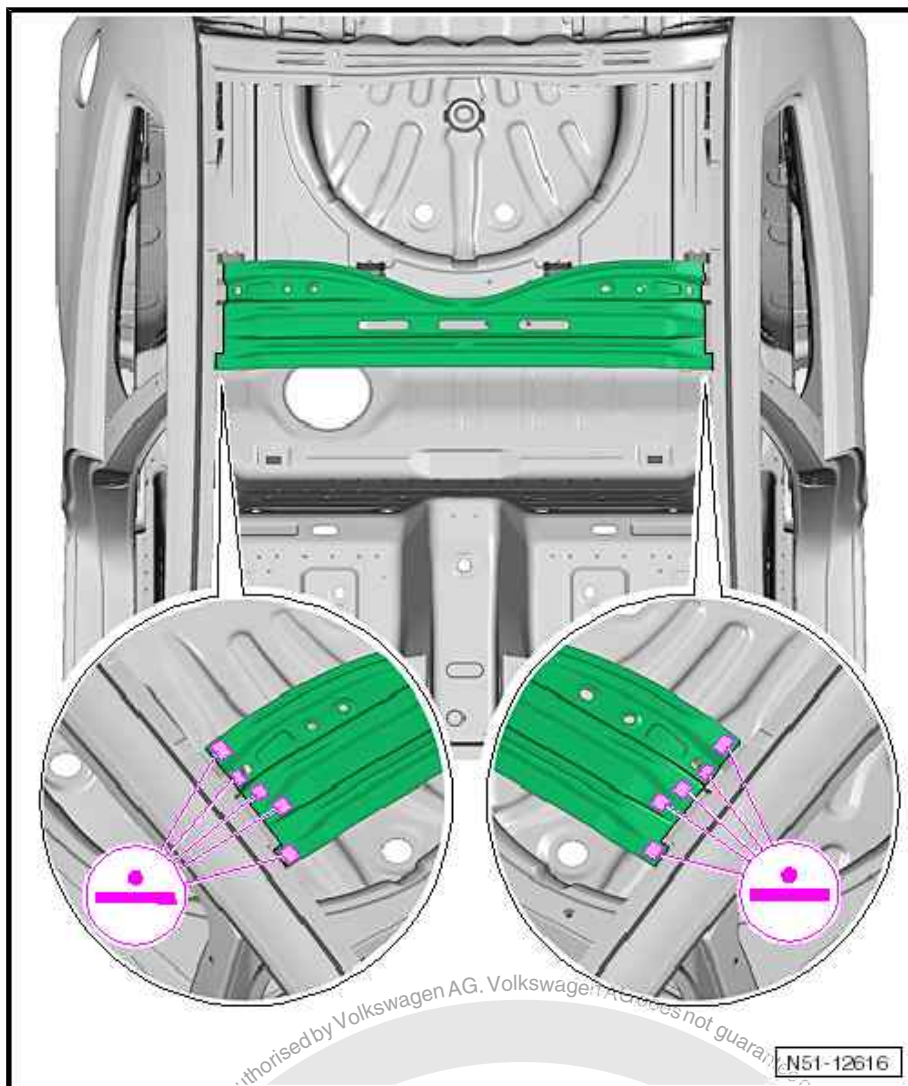
Note

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

7.3.1 Welding in

Replacement part

- ◆ Roof reinforcement
- Adapt new part to fit and fix in position.
- Check fit to roof.



- Weld roof reinforcement, RP spot weld seam.
- Install roof (models with no panorama tilting sunroof)
⇒ [“1.3 Installing”, page 139](#) .



RO: 51 09 55 50

8 Renewing rear roof cross member



WARNING

Observe safety notes!

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

- Roof already removed
⇒ ["1 Renewing roof - vehicles without panorama tilting sunroof", page 136](#) .
- Roof already removed
⇒ ["2 Renewing roof - vehicles with panorama tilting sunroof", page 150](#) .

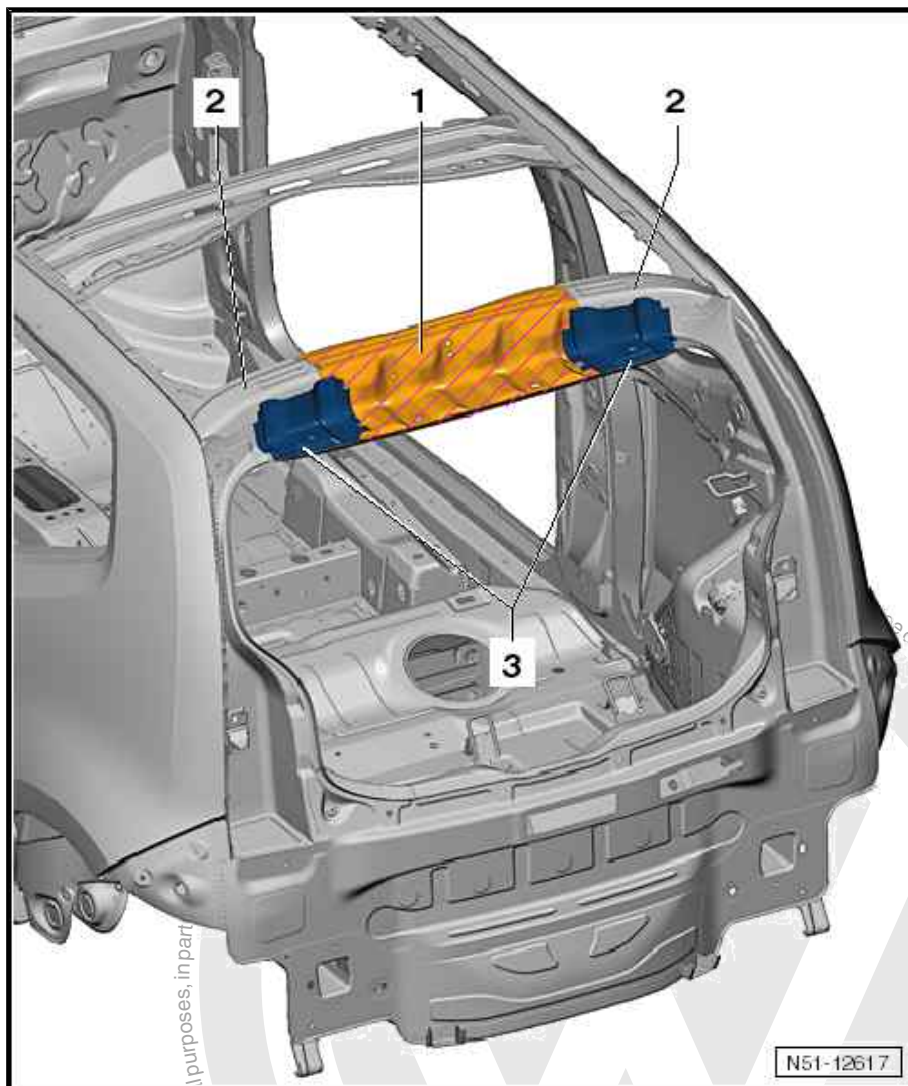


Note

In the illustrations below a 2-door model is shown. On 4-door models the removal and installation of the rear roof cross member are identical.



- 1 - Rear roof cross member
- 2 - Gusset of left and right C-pillars
- 3 - Left and right hinge reinforcement



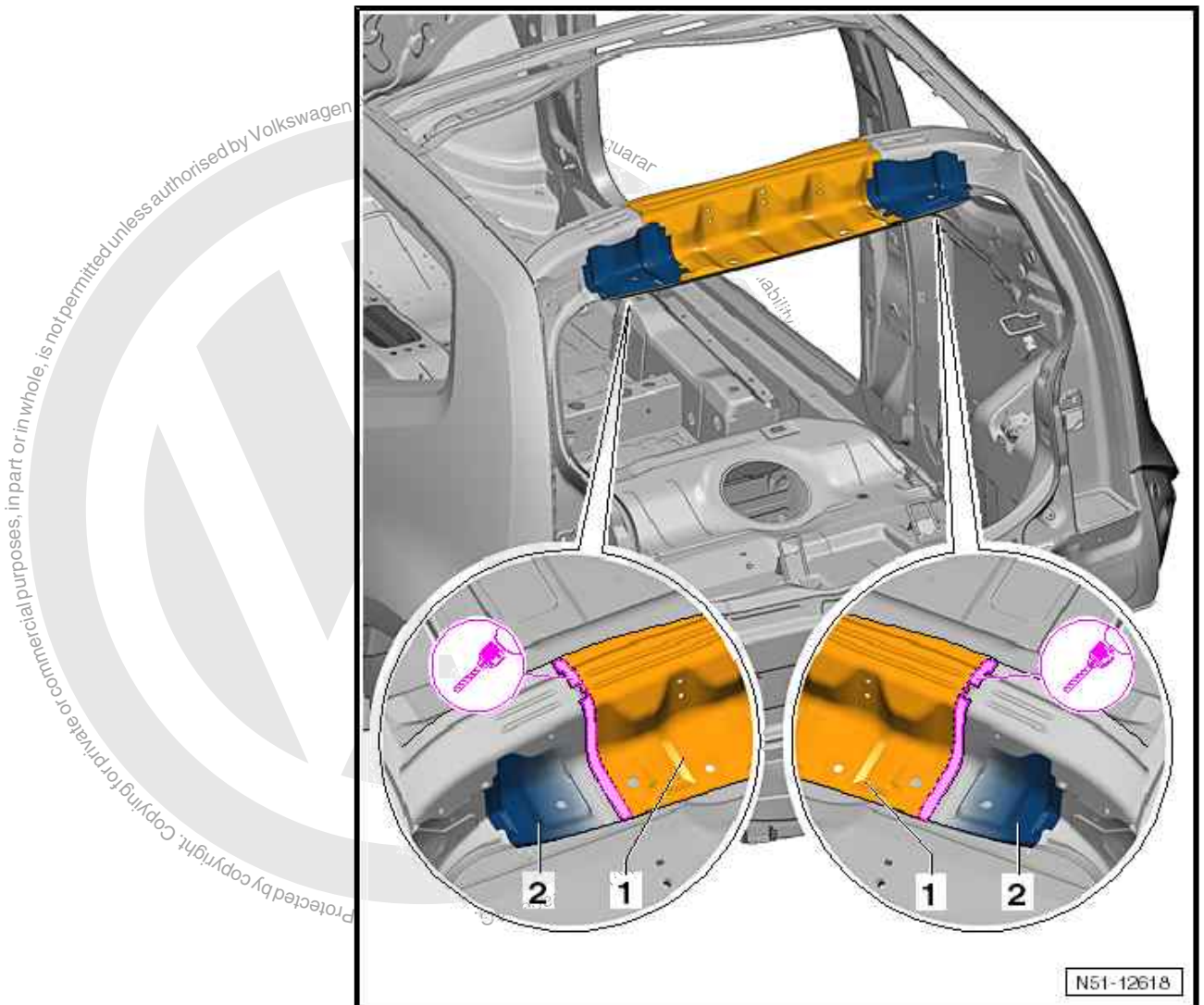
8.1 Tools



Note

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

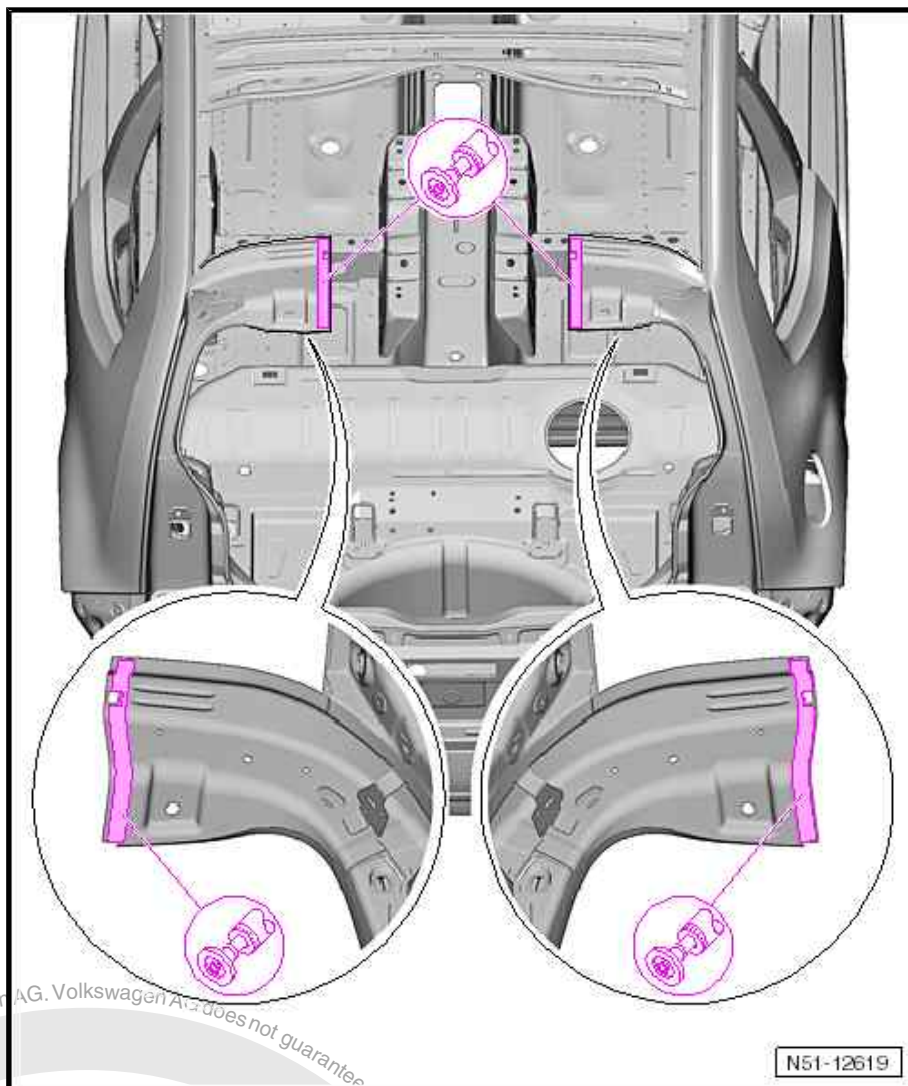
8.2 Removing



Note

In order to remove roof cross member -1-, the hinge reinforcement -2- must be removed on one side.

- Separate original joint.
- The hinge reinforcement -2- on the other side of roof cross member -1- only needs to be bent open, since the roof cross member is inserted at this location.



- Remove residual sections at transition to gusset of left and right C-pillars.

8.3 Installing



Note

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

8.3.1 Welding in

Replacement parts

- ◆ Rear roof cross member
- ◆ 2-component body adhesive - D 180 003 M2-



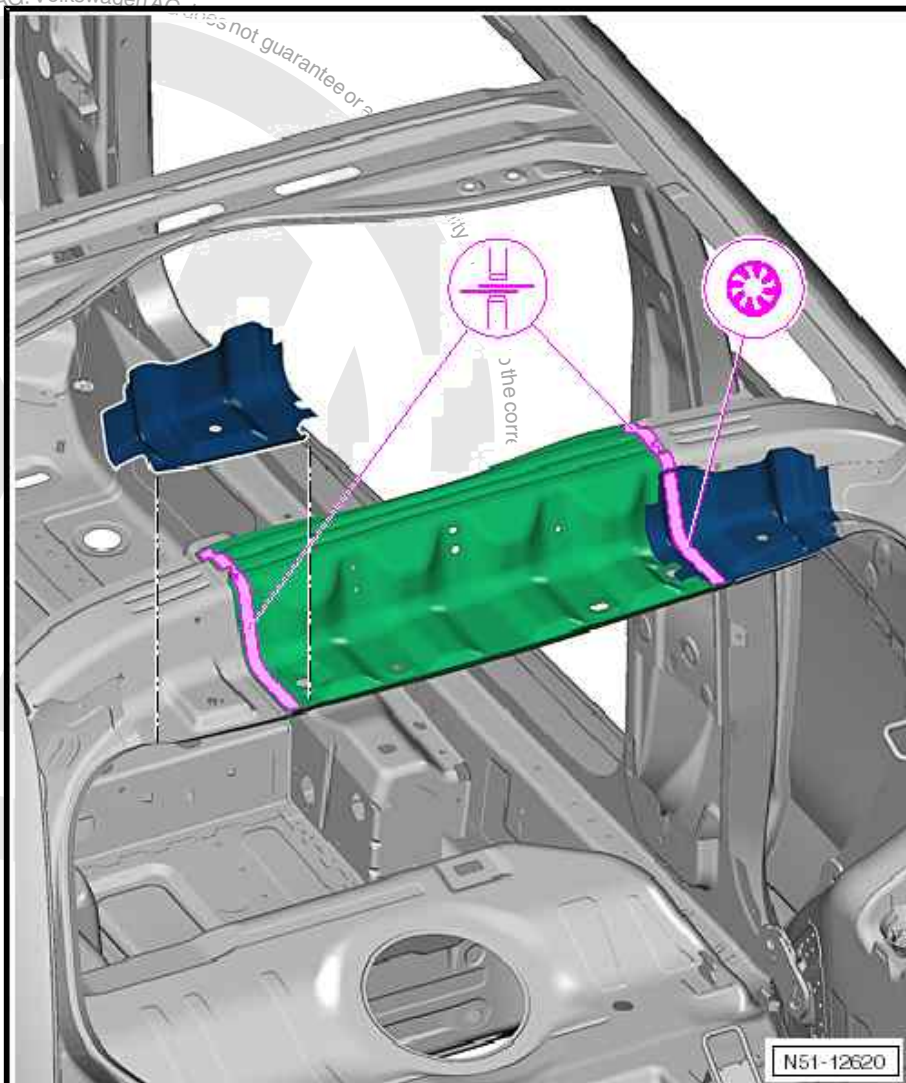
Note

Check body dimensions before installing rear roof cross member.

- Adapt new part to fit and fix in position.



- Check fit to roof.



- Weld in new part, RP spot weld seam and SG plug weld seam.
- After installation of roof cross member, the hinge reinforcement must be welded in, SG plug weld seam and RP spot weld seam.
- Install roof (models with no panorama tilting sunroof)
⇒ ["1.3 Installing", page 139](#).
- Install roof (models without panorama tilting sunroof)
⇒ ["2.3 Installing", page 153](#).



RO: 51 37 55 00

9 Renewing A-pillar



WARNING

Observe safety notes!

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



Note

In the illustrations below a 2-door model is shown. On 4-door models the removal and installation of the A-pillar are identical.

1 - A-pillar

2 - Upper parting cut

3 - Parting cut for partial replacement

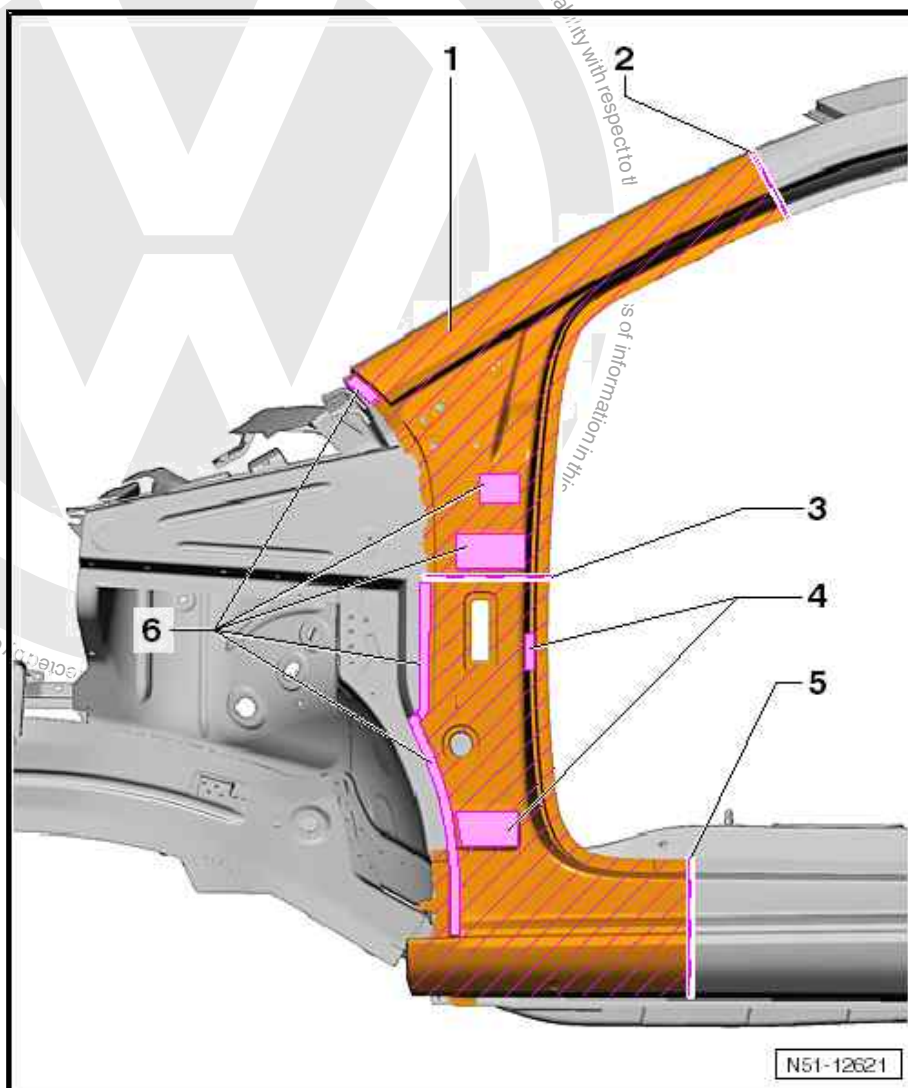
Partial renewal
Part section repair of A-pillar is possible using this parting cut.

4 - Bonded area

5 - Parting cut for side member

Position parting cut according to damage. When also renewing A-pillar reinforcement, parting cut needs to be carried out 290 mm from front edge of A-pillar.

6 - Bonded area





9.1 Tools



Note

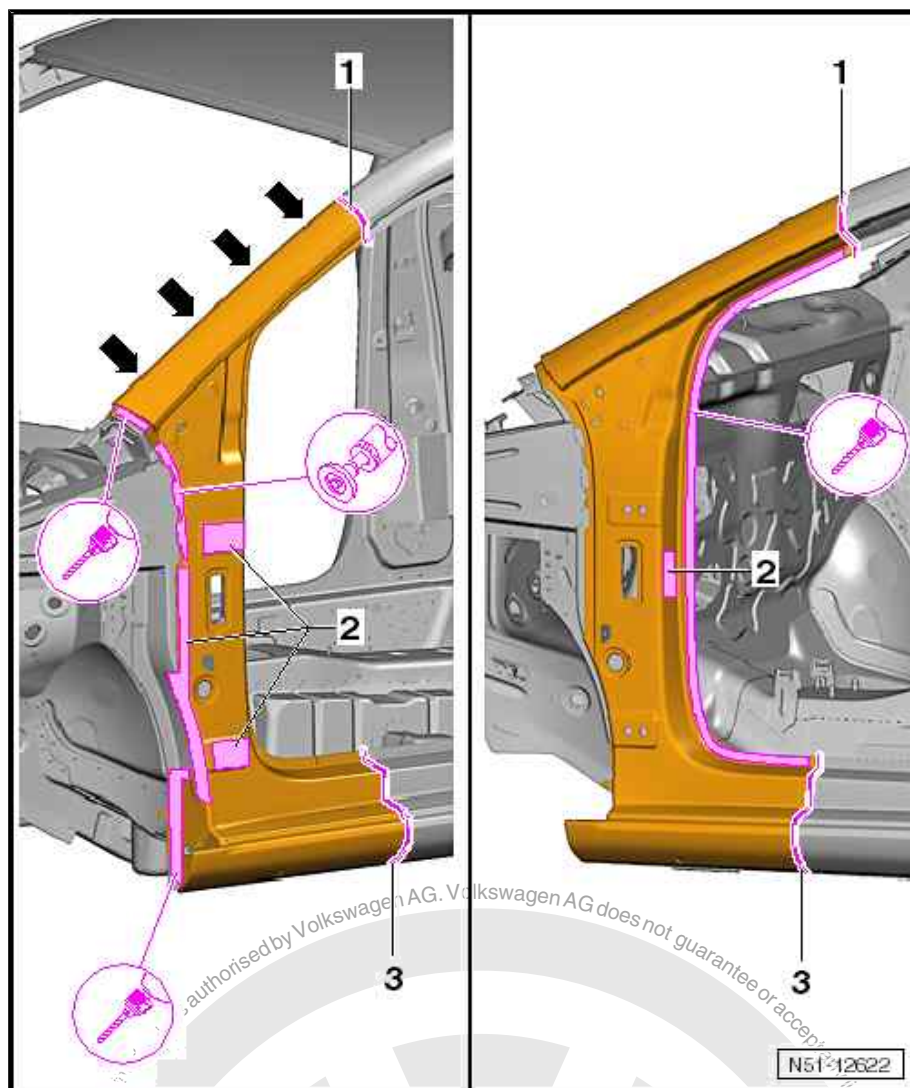
- ◆ *Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment,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

9.2 Removing



Note

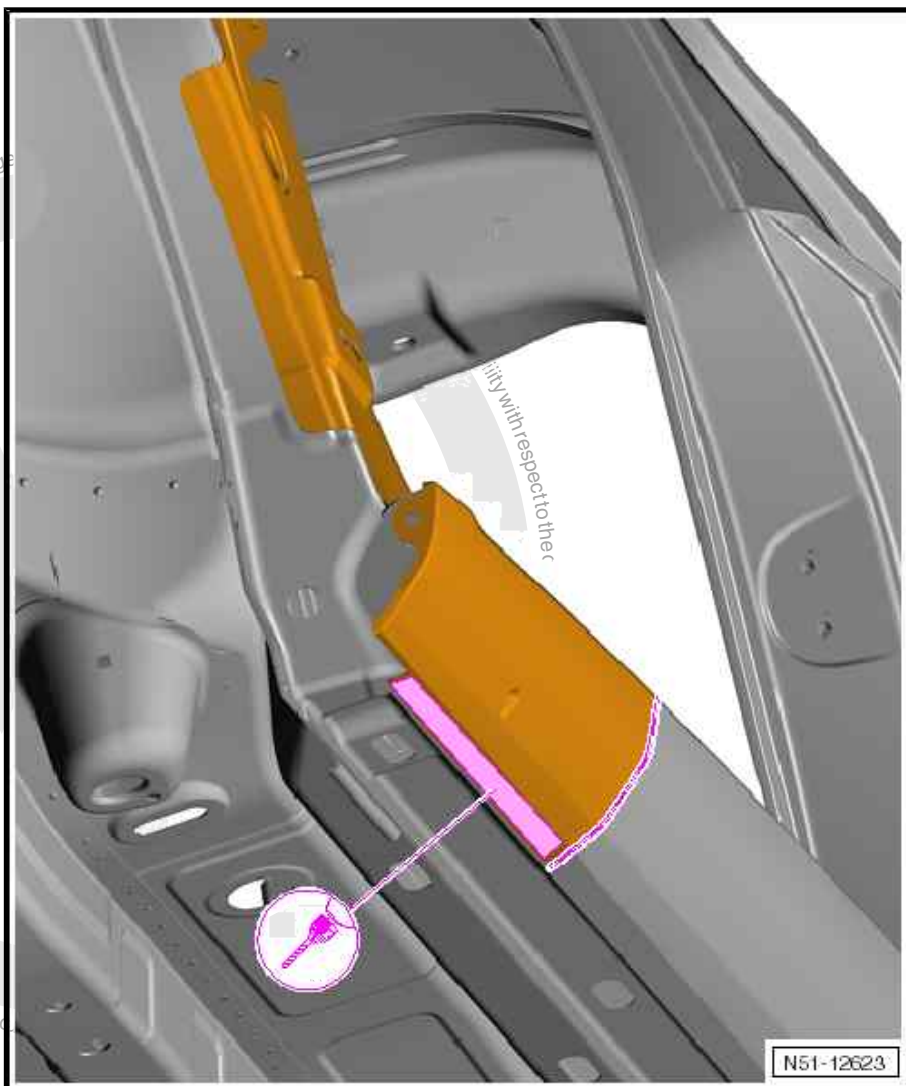
- ◆ *Make parting cuts with pneumatic jig-saw - V.A.G 1523 B- only.*
- ◆ *Do not damage underlying panels when cutting out.*
- ◆ *If the A-pillar reinforcement is damaged, it must always be renewed.*
- ◆ *Rewelding A-pillar reinforcement is not permitted due to safety reasons »crash safety«.*



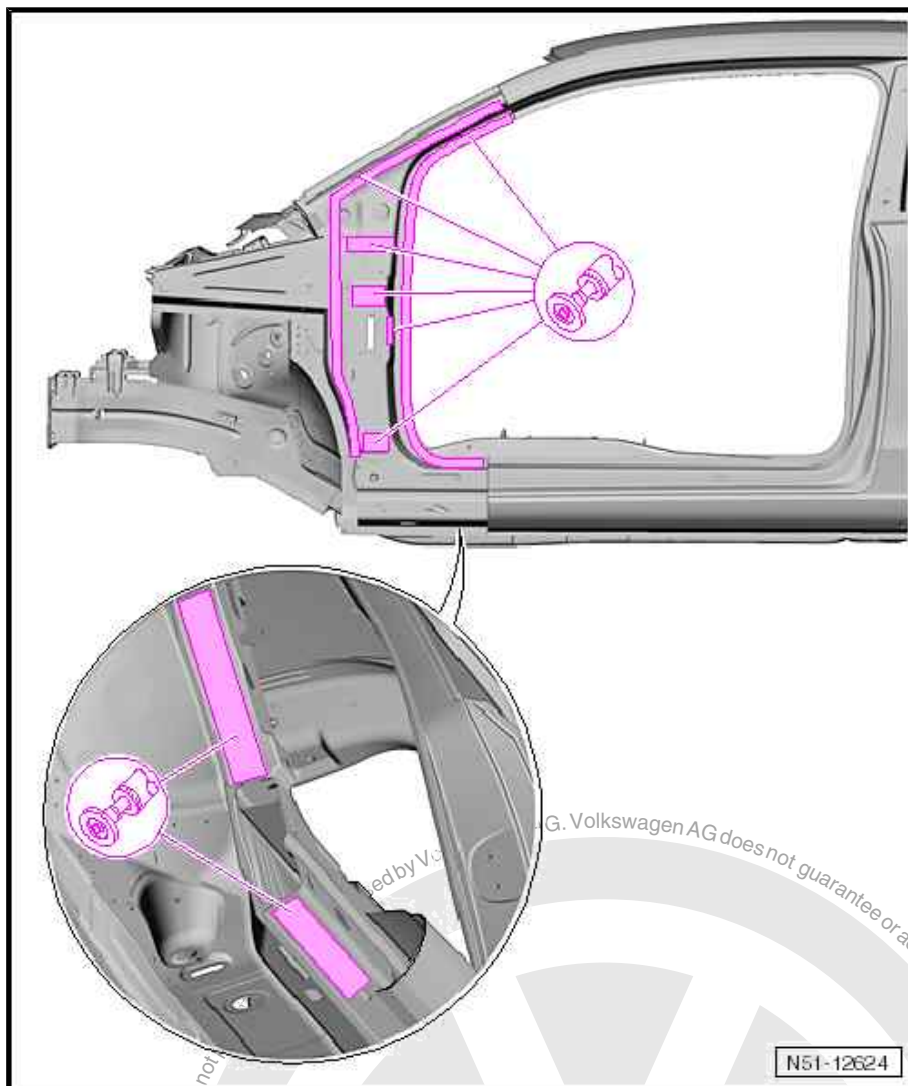
Note

When also renewing A-pillar reinforcement, parting cut -2- needs to be carried out 290 mm from front edge of A-pillar.

- Position parting cut -1- according to extent of damage and cut out.
- Position parting cut -3- according to extent of damage and cut out.
- Separate original joint.



- Continue parting cut on underside of side member.
- Release joint to side member reinforcement.



- Remove remaining material.
- Remove remaining adhesive completely, and sand bonding surfaces down to bare metal.

9.3 Installing



Note

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

9.3.1 Preparing new part

Replacement parts

- ◆ Side panel
- ◆ Side member cover plate
- ◆ 2-component body adhesive - D 180 003 M2-



A technical drawing of a car door frame, showing the internal structure and the door panel. The drawing is overlaid with a large, semi-transparent watermark of the Volkswagen logo. The watermark is a large 'V' with a 'W' inside, and the text 'Volkswagen AG' is written across it. The drawing is a side view of the door frame, showing the door panel, the window frame, and the door handle. The door panel is shown in a light gray color, and the window frame is shown in a darker gray color. The door handle is shown in a light gray color. The drawing is a technical drawing, and it is used to illustrate the design of the car door frame.

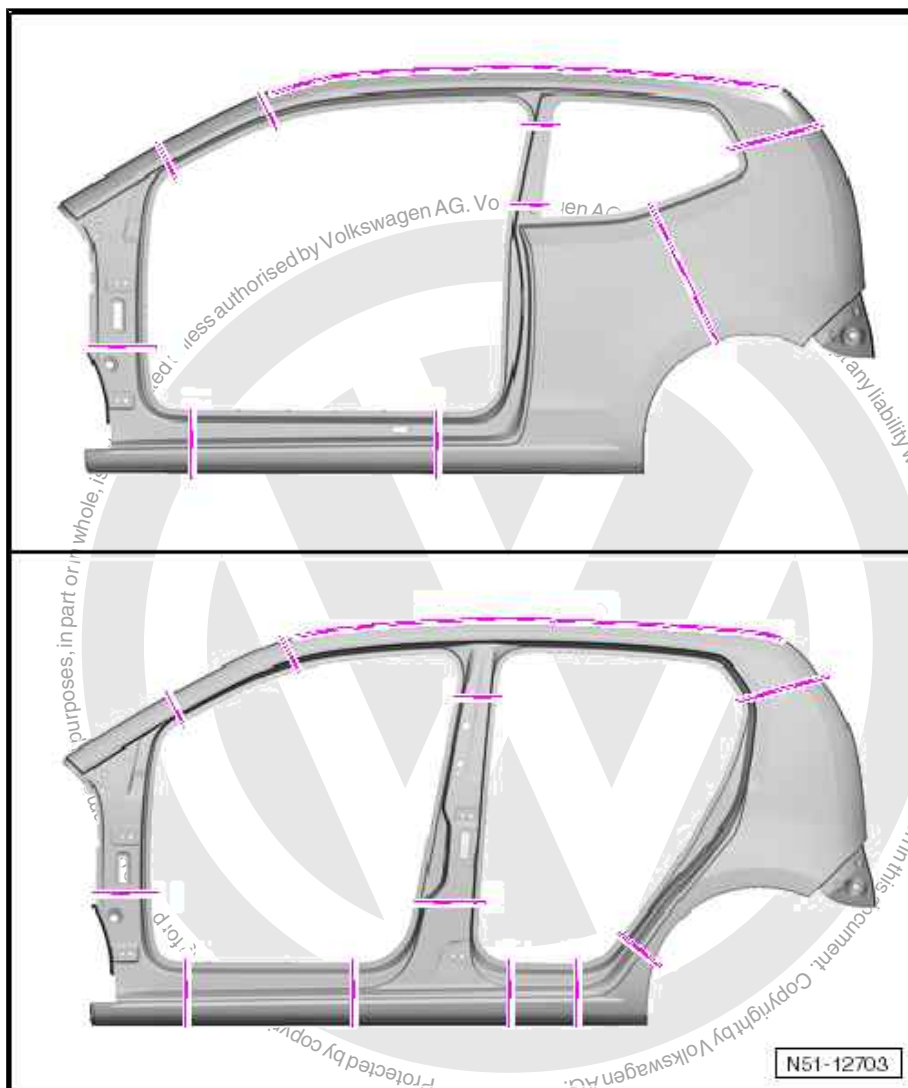
N51-12625

9. Renewing A-pillar 205



9.3.2 Authorised parting cuts on complete side panel

View, 2-door and 4-door models

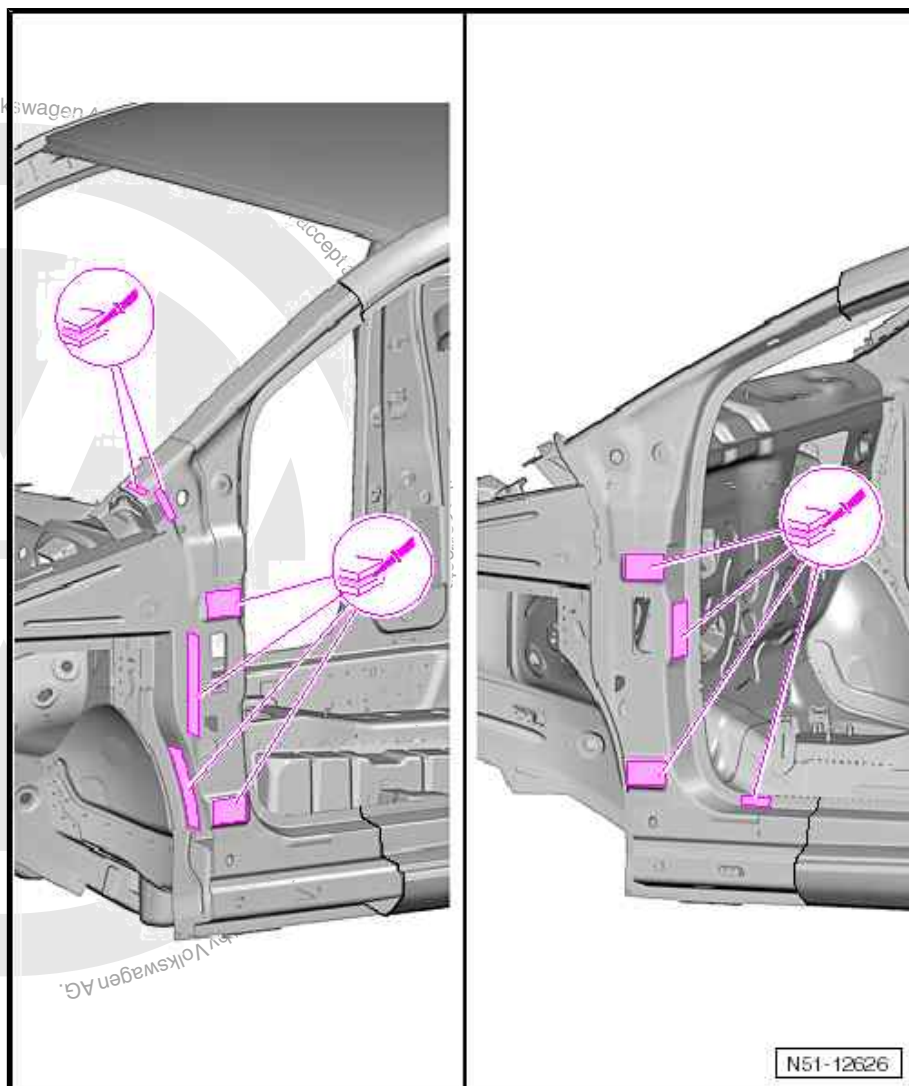


Note

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



9.3.3 Welding in



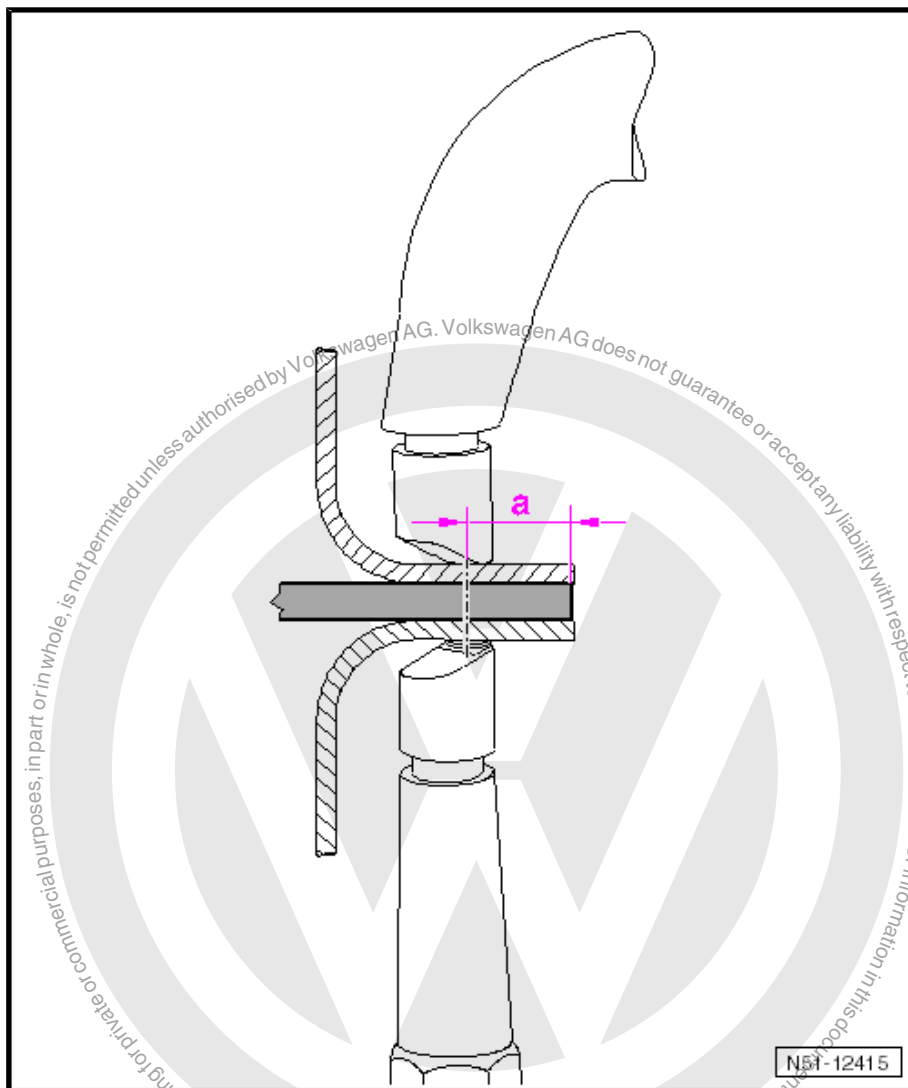
Note

- ◆ 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 bead of 2-component body adhesive - D 180 003 M2- , approx 4 mm Ø, in marked areas.



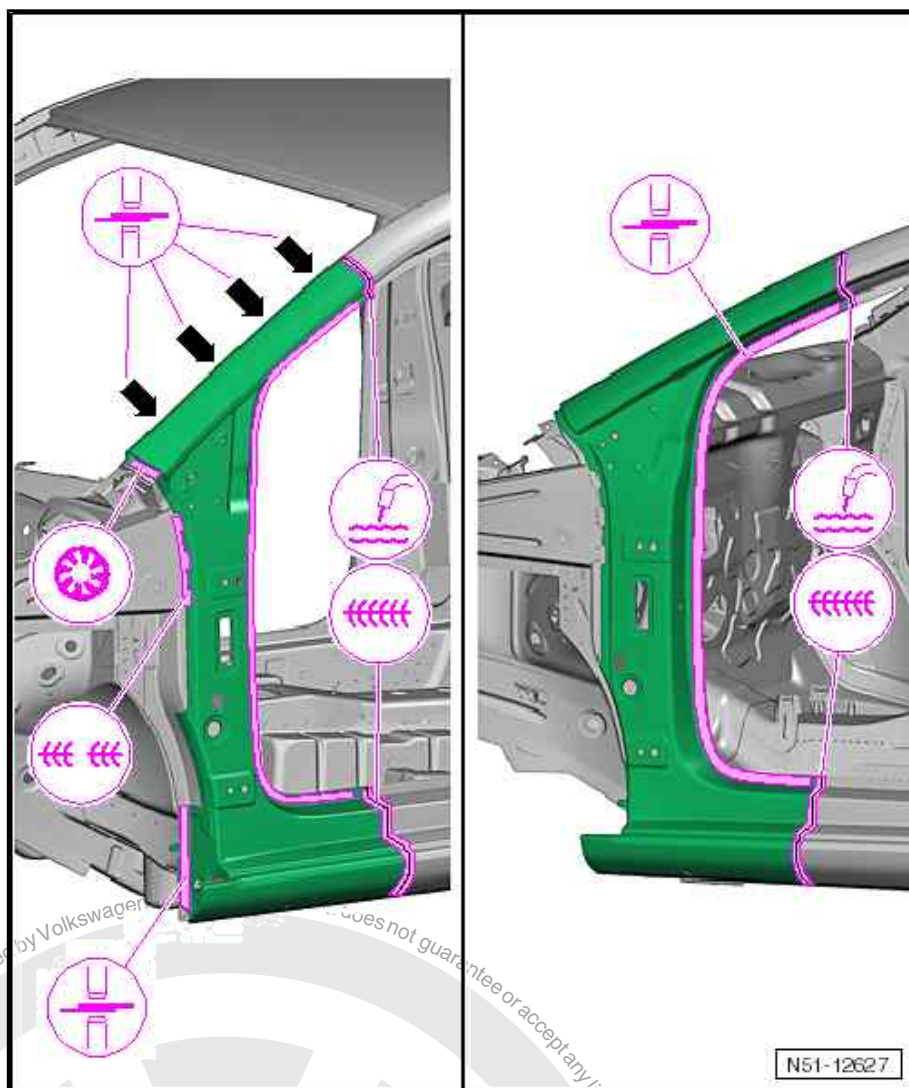
Note

- ◆ 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 13 mm wide.
- ◆ If spot welds are located at the edge of thermally shaped panels, the high temperature will cause the bond between the panels to change in such a way that crash safety will be impaired.



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

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



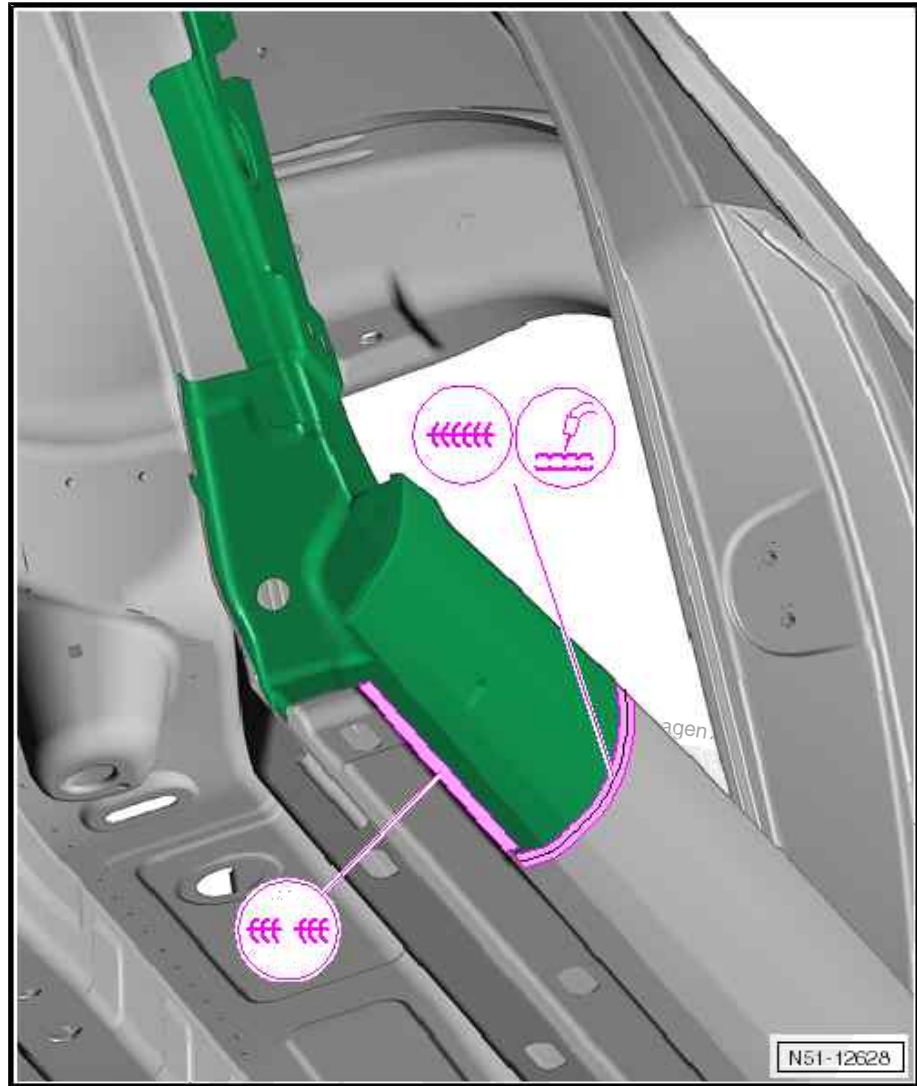
- Weld parting cuts, MIG-L stepped seam or SG continuous weld seam are permitted.



Note

Both weld symbols are shown in the figure.

- Weld in parting cut to windscreen aperture and side member cover plate, RP spot weld seam.
- Weld A-pillar to A-pillar reinforcement, SG plug weld seam.



- Weld parting cuts, MIG-L stepped seam or SG continuous weld seam are permitted.



Note

Both weld symbols are shown in the figure.

- Weld joint to side member reinforcement, staggered SG continuous weld seam.



RO: 51 38 55 53

10 Renewing A-pillar reinforcement - part section



WARNING

Observe safety notes!

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

- A-pillar part section already removed ⇒ [page 200](#) .



Note

In the illustrations below a 2-door model is shown. On 4-door models the removal and installation of the A-pillar reinforcement are identical.

1 - A-pillar reinforcement

2 - Upper hinge reinforcement

Not removed in process.

3 - Parting cut

For this parting cut a separate repair procedure will be provided.

4 - Parting cut

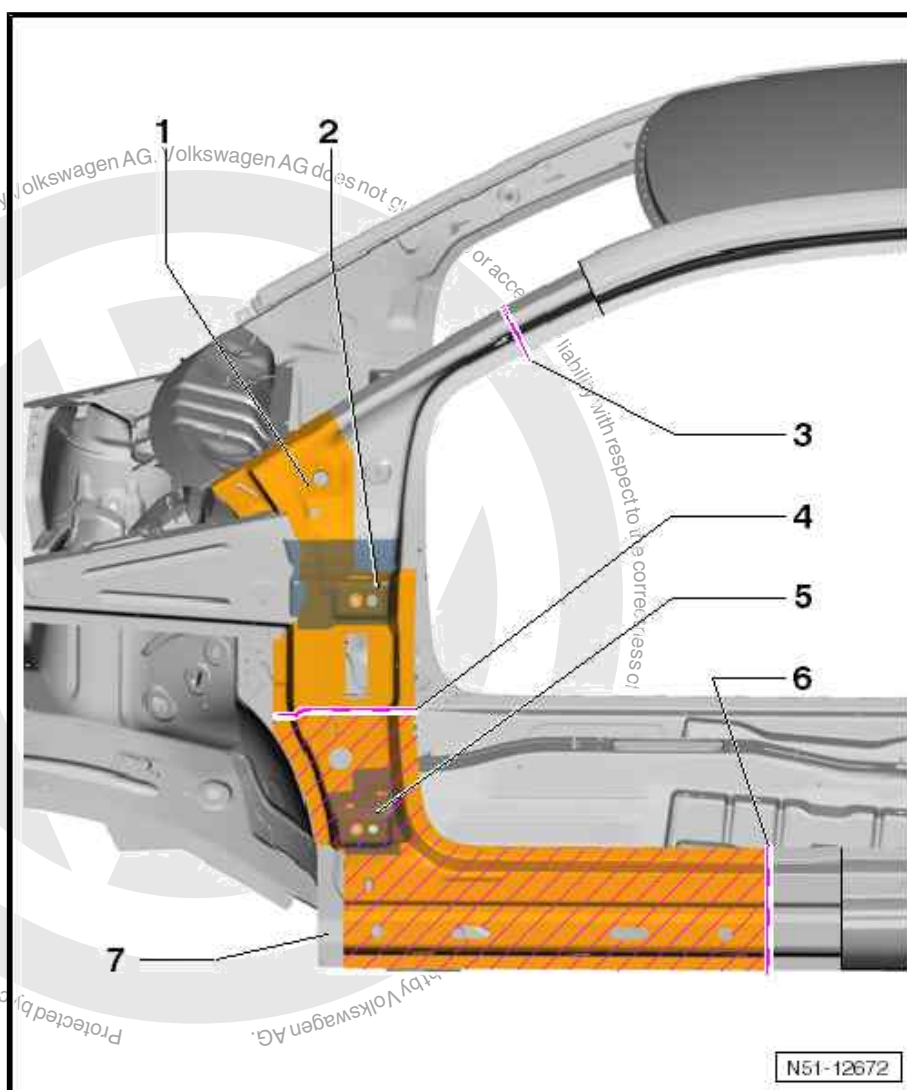
5 - Lower hinge reinforcement

Removed in process.

6 - Parting cut for side member

When carrying out this parting cut, a repair plate must be inserted.

7 - Lower inner A-pillar





10.1 Tools



Note

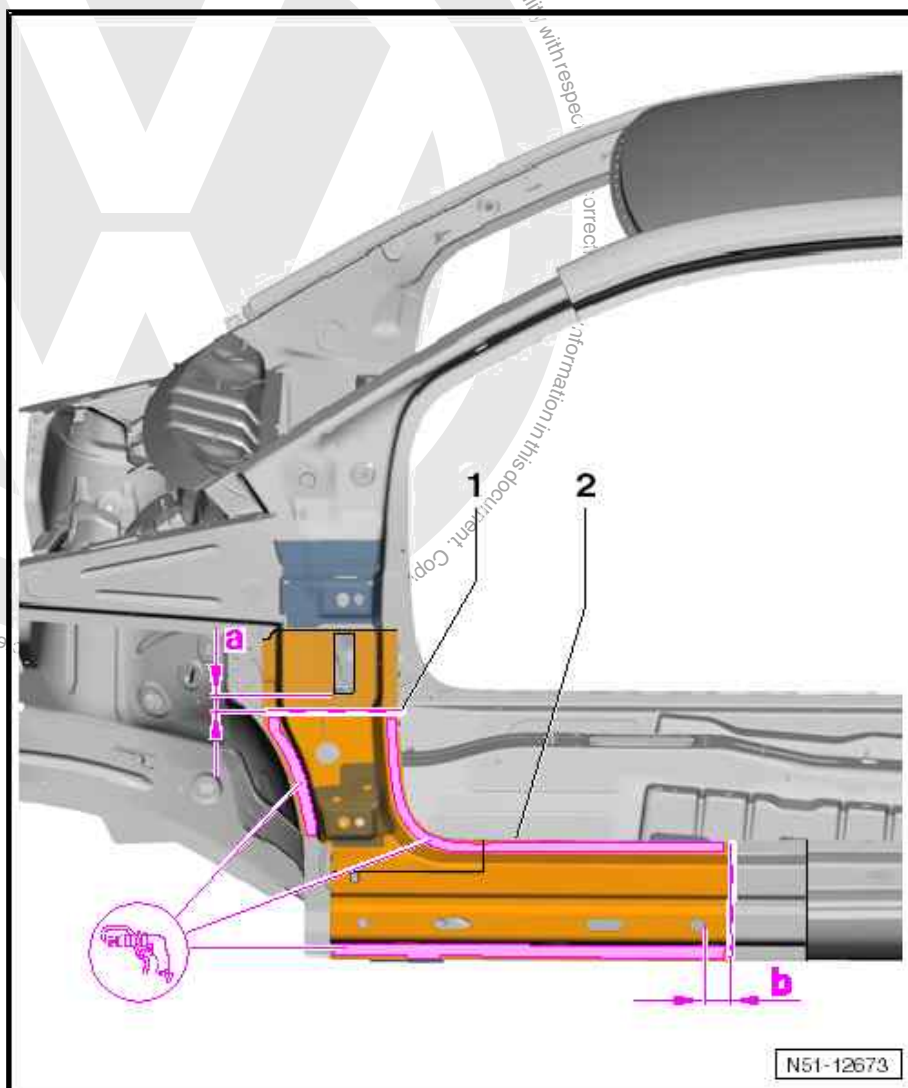
- ◆ Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.
- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork .

10.2 Removing



Note

Do not damage underlying panels when cutting out.



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

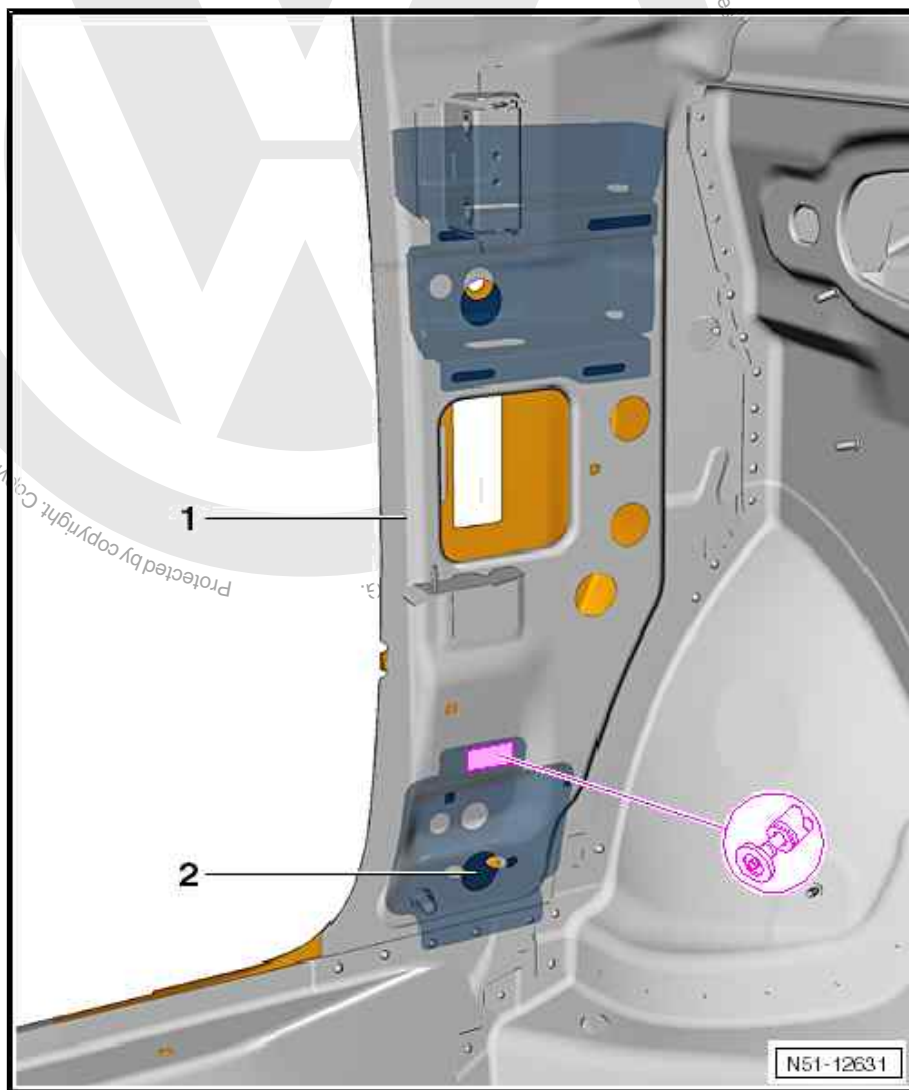


Dimension -a- = 20 mm

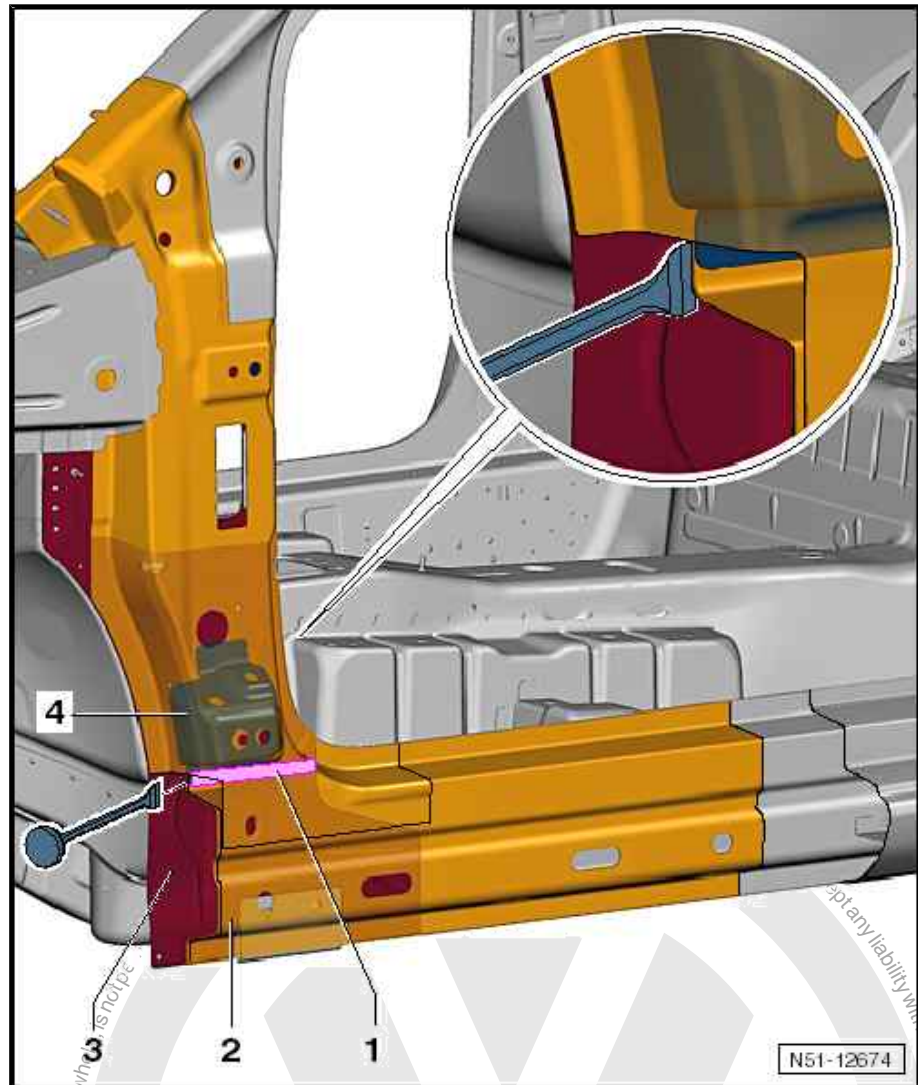
- Mark parting cut -2- for side member reinforcement as shown, and carry out parting cut.

Dimension -b- = 40 mm

- Separate original joint.

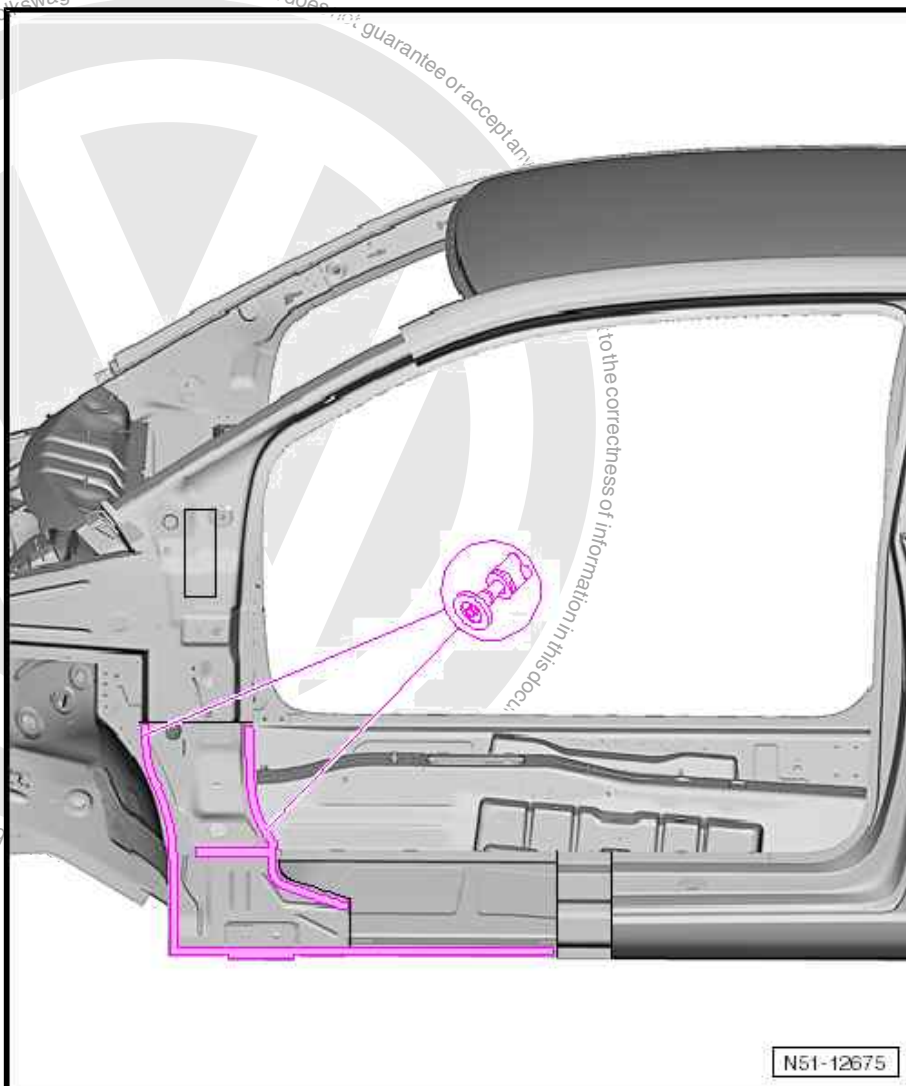


- Separate original joint of hinge reinforcement -2- for A-pillar on inside -1-.



In series production side member reinforcement -2- and hinge reinforcement -4- are welded to each other before they are fitted to underbody.

- Use a chisel to separate bonded joint -1- between hinge reinforcement and lower inner A-pillar -3-.



- Remove remaining material.

10.3 Installing



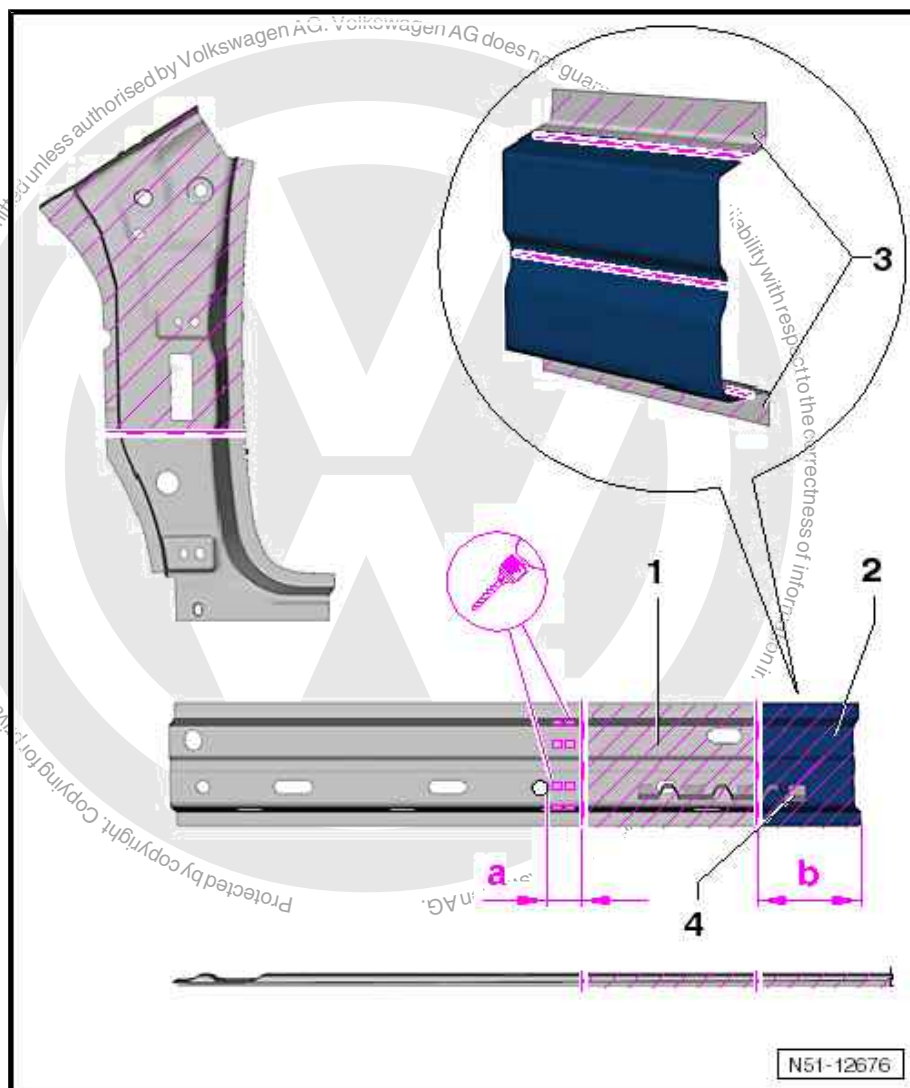
Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 212](#).*

10.3.1 Preparing new part

Replacement parts

- ◆ A-pillar reinforcement
- ◆ Side member reinforcement
- ◆ Lower A-pillar reinforcement
- ◆ 2-pack body adhesive - D 180 003 M2-



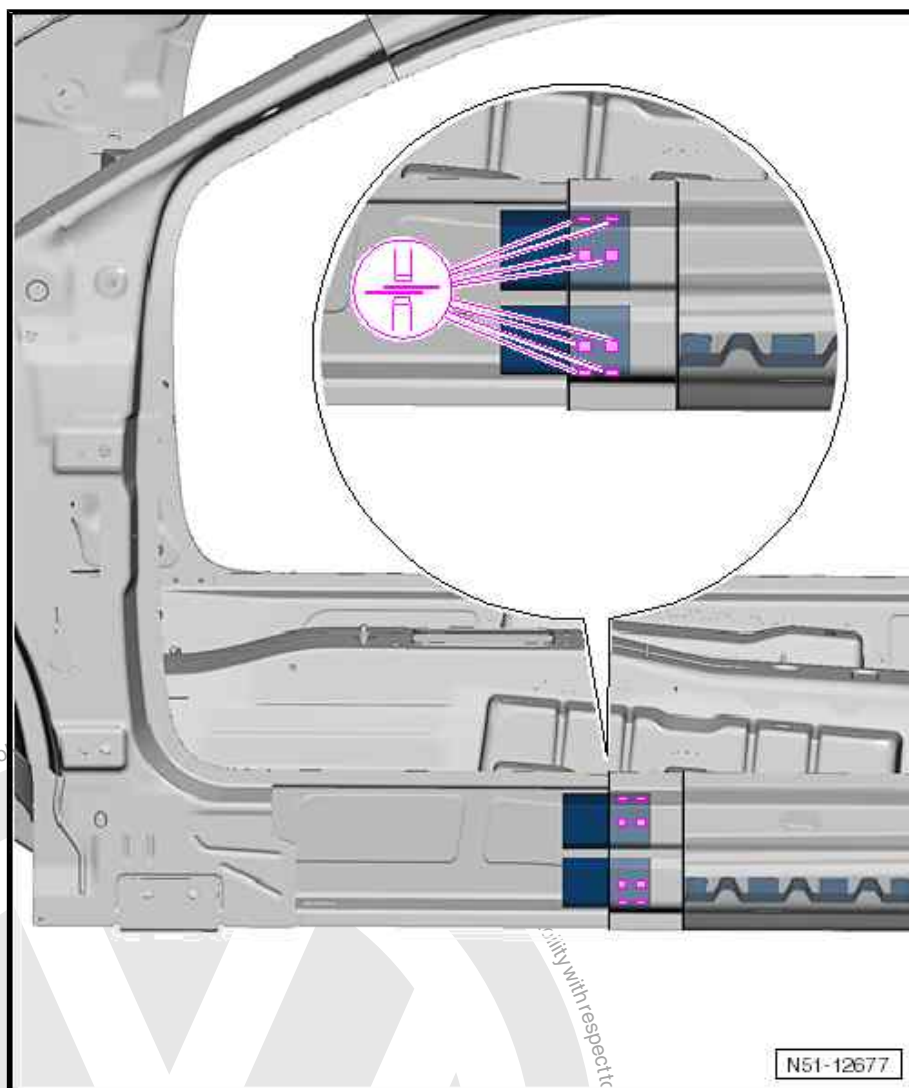
- Transfer parting cut to new part and cut out.

Dimension -a- = 40 mm

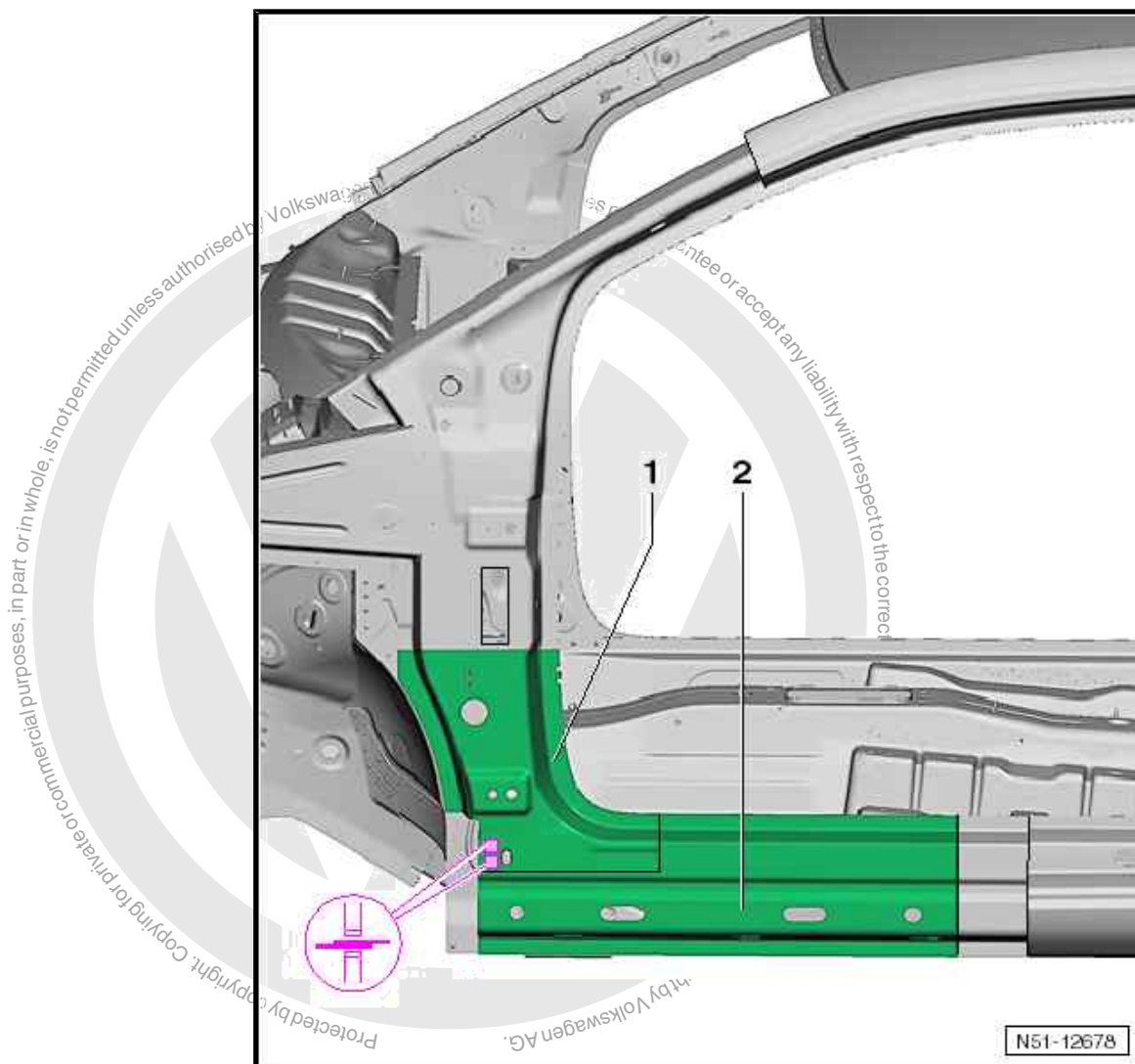
- Separate 120 mm repair plate -2- from rear part of side member reinforcement -1-.

Dimension -b- = 120 mm

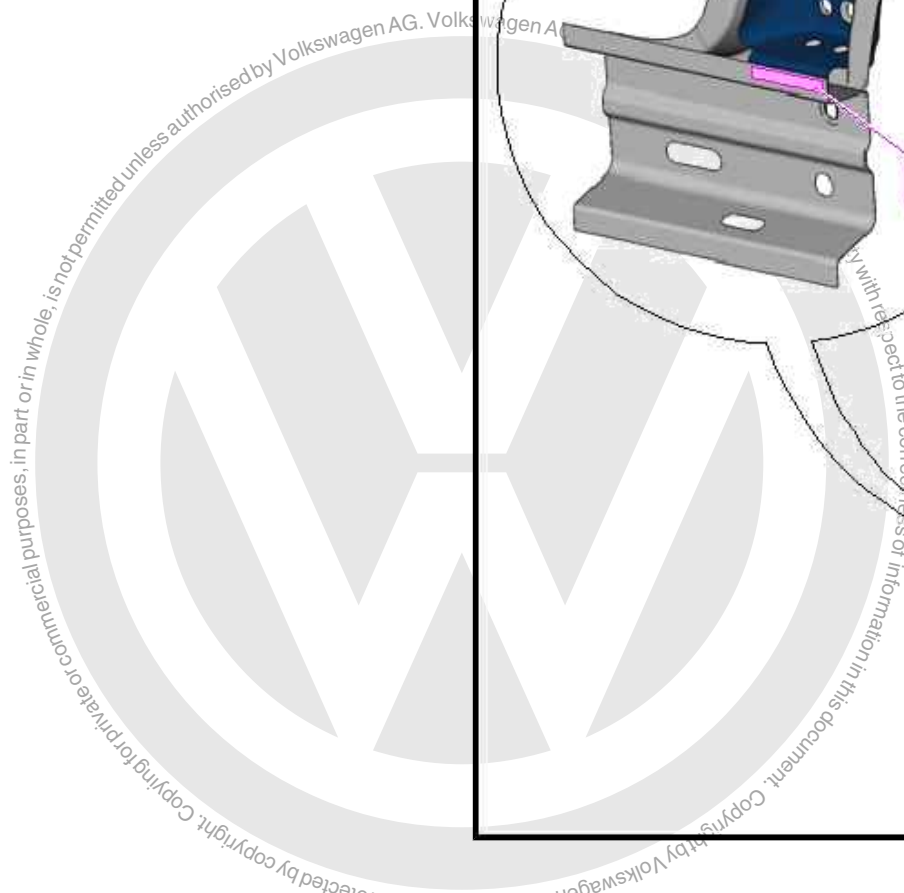
- Separate flange -3- from repair plate. Then cut through repair plate in the middle.
- Drill 8 holes for plug weld seam into side member reinforcement -1-.
- Drill out reinforcement -4-.



- Weld repair plate into side member reinforcement, RP spot weld seam (inverter).



- Adapt new parts with vehicle positioned on alignment bracket set and fix in place.
- Attach A-pillar reinforcement -1- to side member reinforcement -2- by means of two spot welds.
- Remove new parts from vehicle.



- Weld A-pillar reinforcement to side member reinforcement, RP spot weld seam (inverter).

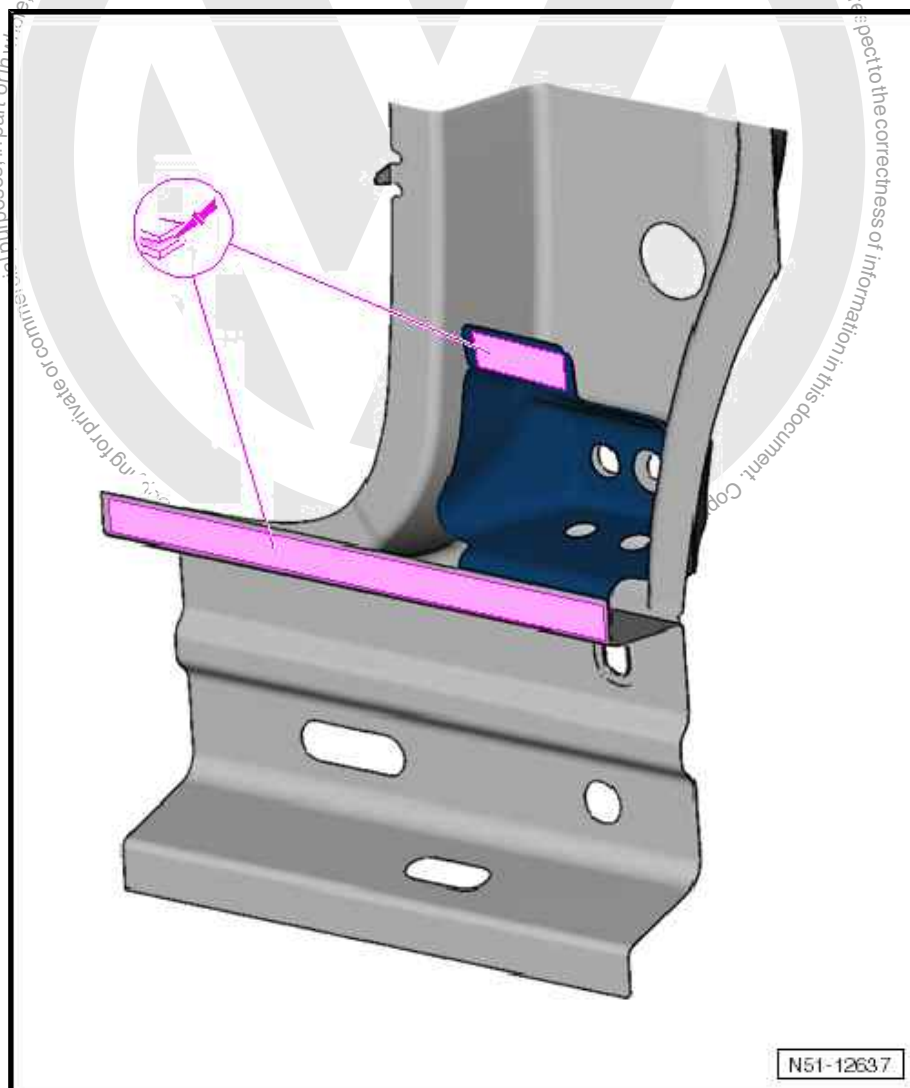


10.3.2 Welding in



Note

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

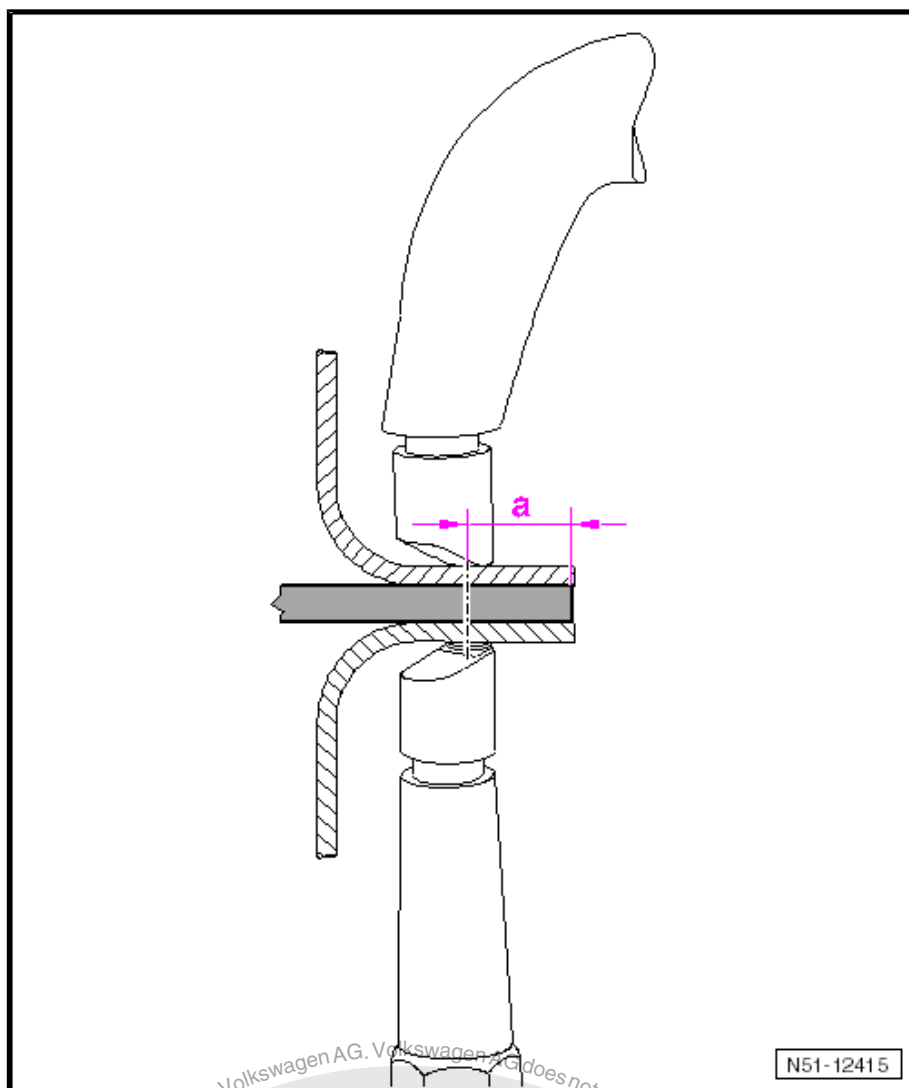


- Apply 2-component body adhesive - D 180 003 M2- to areas indicated.



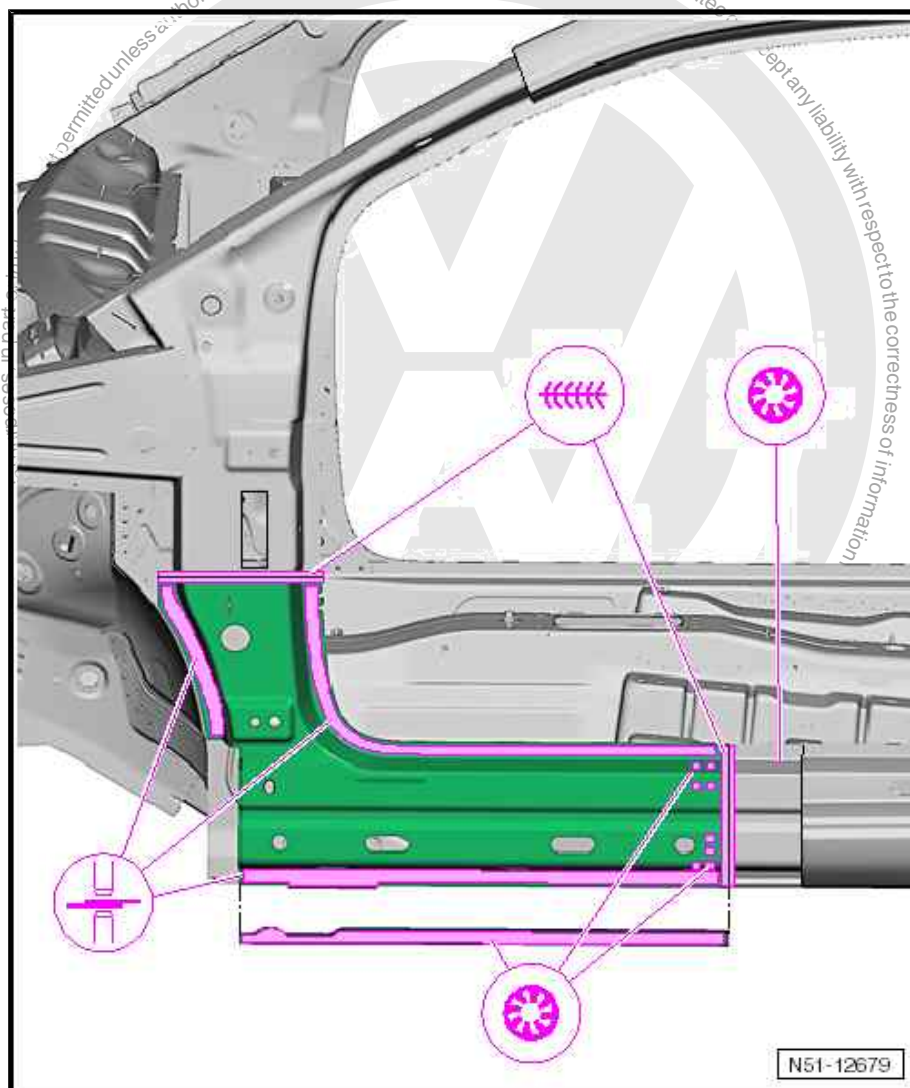
Note

- ♦ *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 13 mm wide.*
- ♦ *If spot welds are located at the edge of thermally shaped panels, the high temperature will cause the bond between the panels to change in such a way that crash safety will be impaired.*



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

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



- Weld A-pillar reinforcement to side member reinforcement, RP spot weld seam (inverter).
- Weld parting cut, SG continuous weld seam.
- Recreate original joint to A-pillar, SG continuous weld seam.
- Weld repair plate to side member reinforcement, SG plug weld seam.
- Install A-pillar ➤ [page 204](#) .



RO: 51 41 55 10

11 Renewing B-pillar - 4-door



WARNING

Observe safety notes!

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

1 - B-pillar

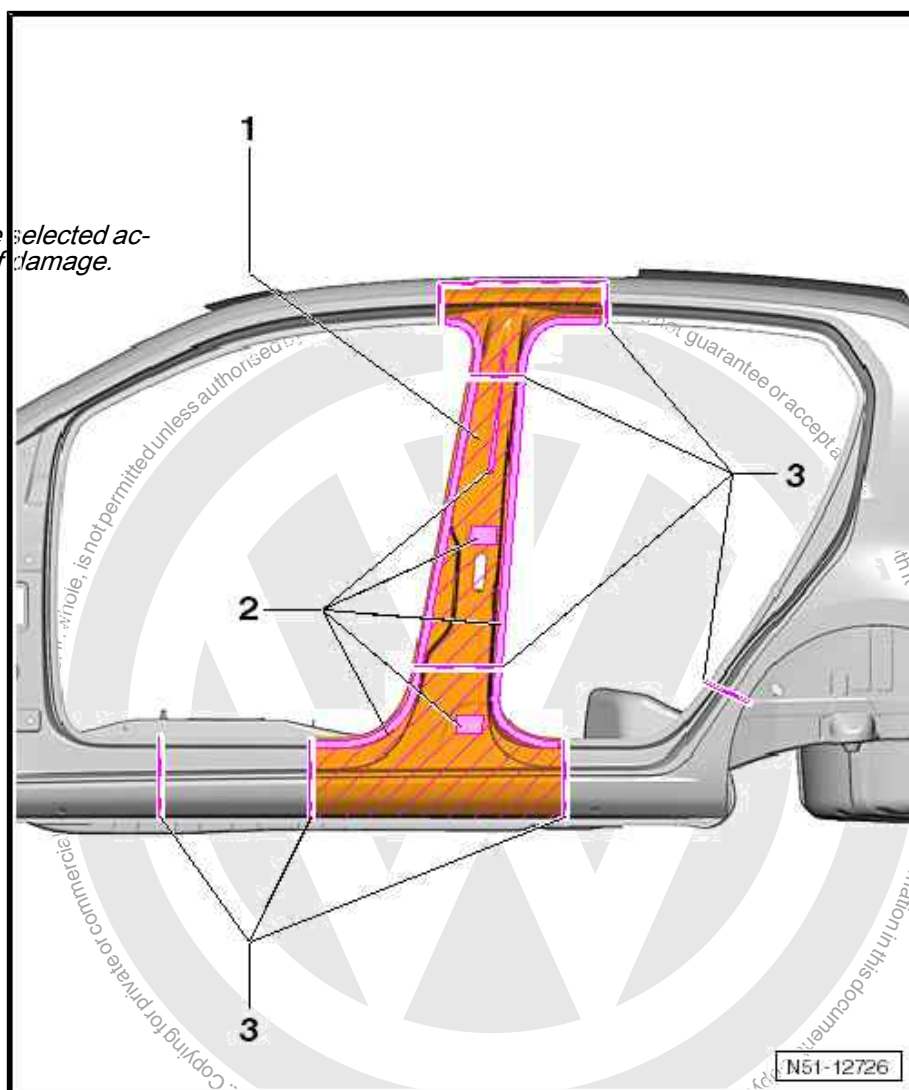
2 - Bonded areas

3 - B-pillar parting cut



Note

The parting cuts can be selected according to the extent of damage.



N51-12726



11.1 Tools



Note

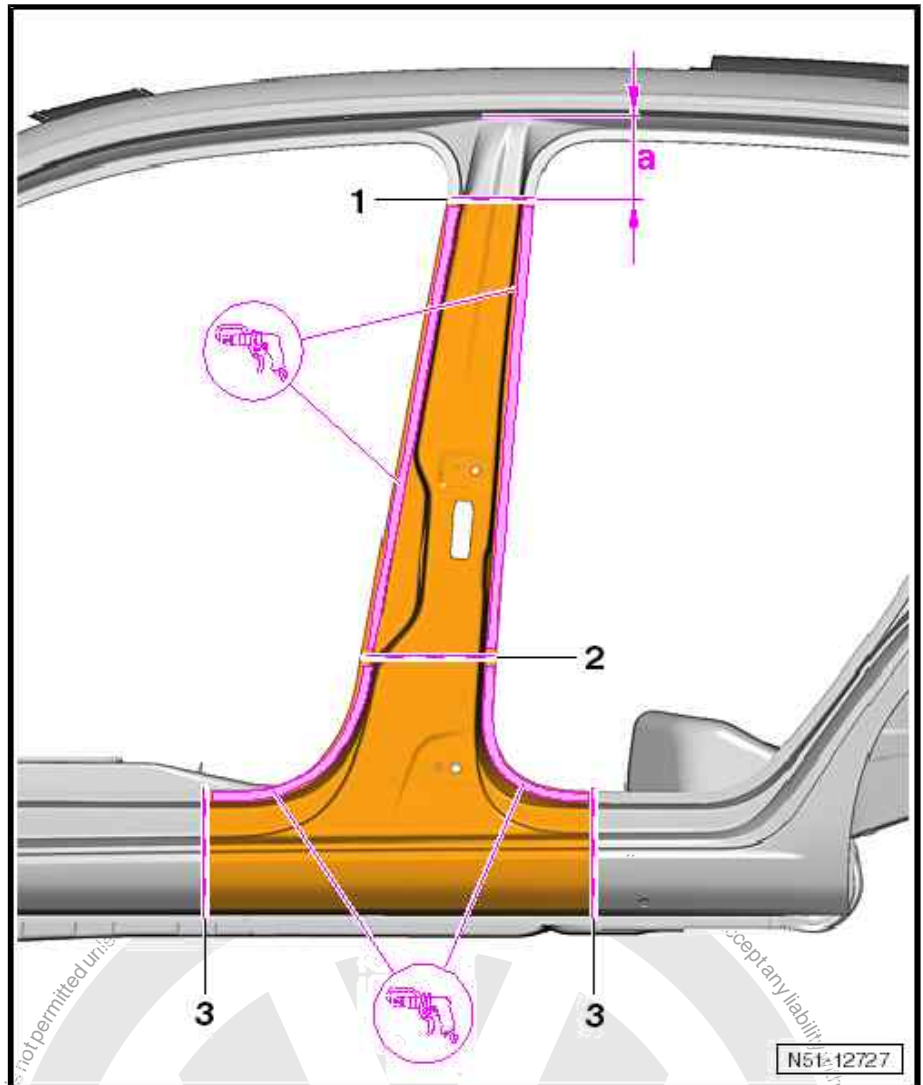
- ◆ *Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment,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

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.*
- ◆ *Remember cut required for replacement part when making parting cut.*



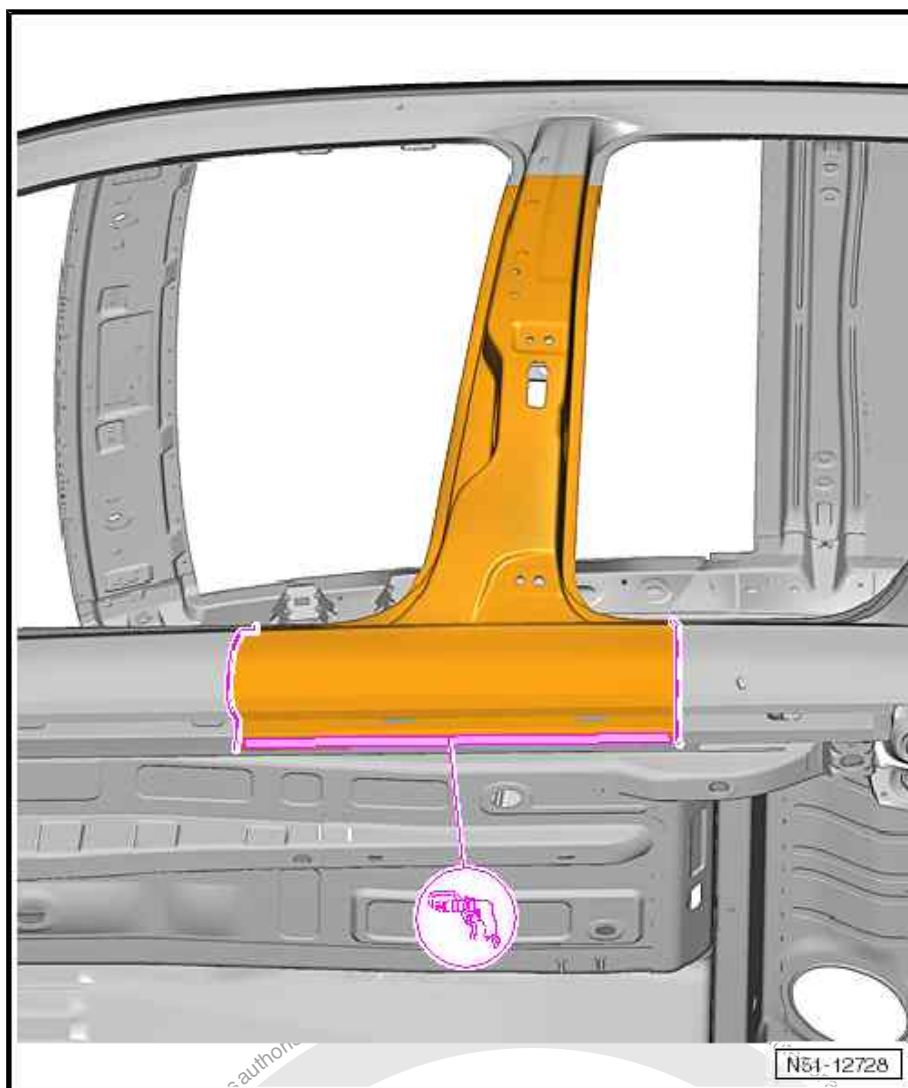
- Position parting cut -1- as shown.

Dimension -a- = 100 mm

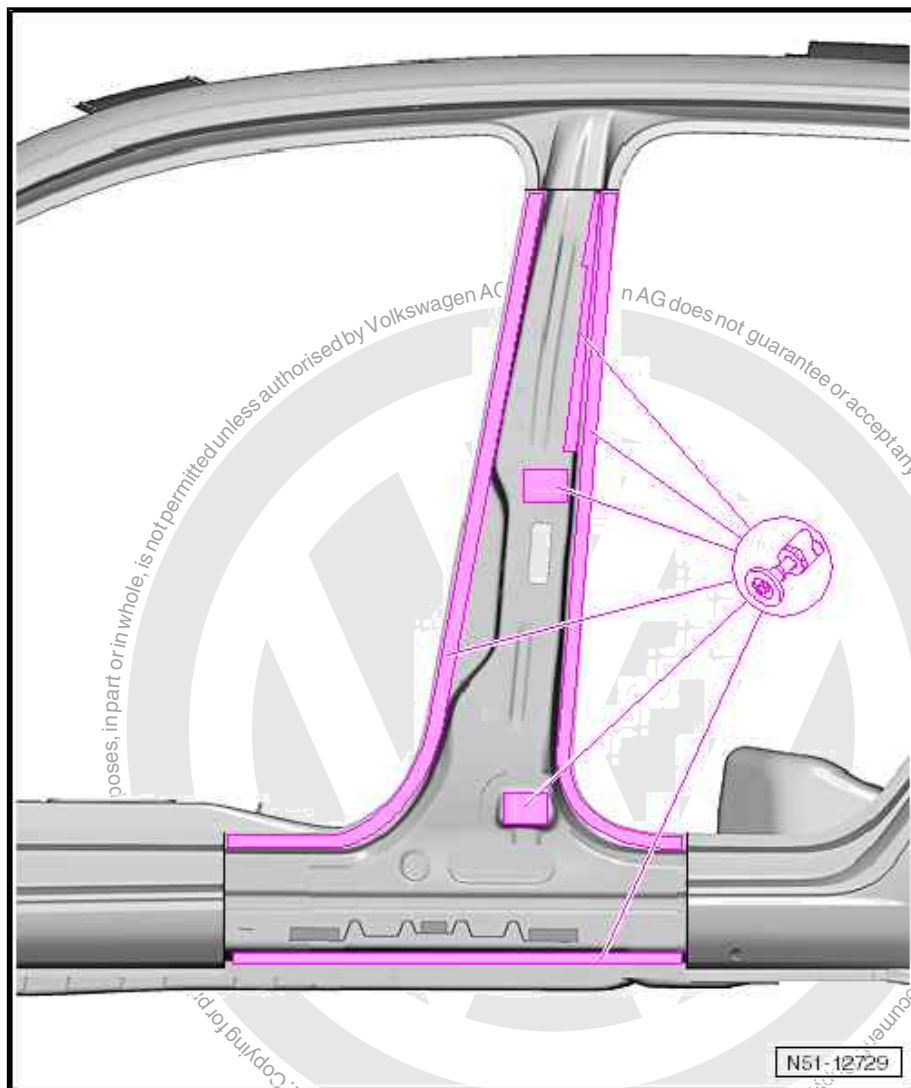
Partial renewal

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

- Make parting cuts -3- according to degree of damage.
- Separate original joint in door apertures.



- Separate original joint on side member.



- Remove remaining material.
- Remove remaining adhesive completely, and sand bonding surfaces down to bare metal.
- Apply corrosion protection measures on bonding surfaces where no welding is to be performed ⇒ Body; General information, Paint; Technical data; General notes; Notes on repairing add-on parts and welded parts .
- Then lightly roughen bonding surfaces.

11.3 Installing

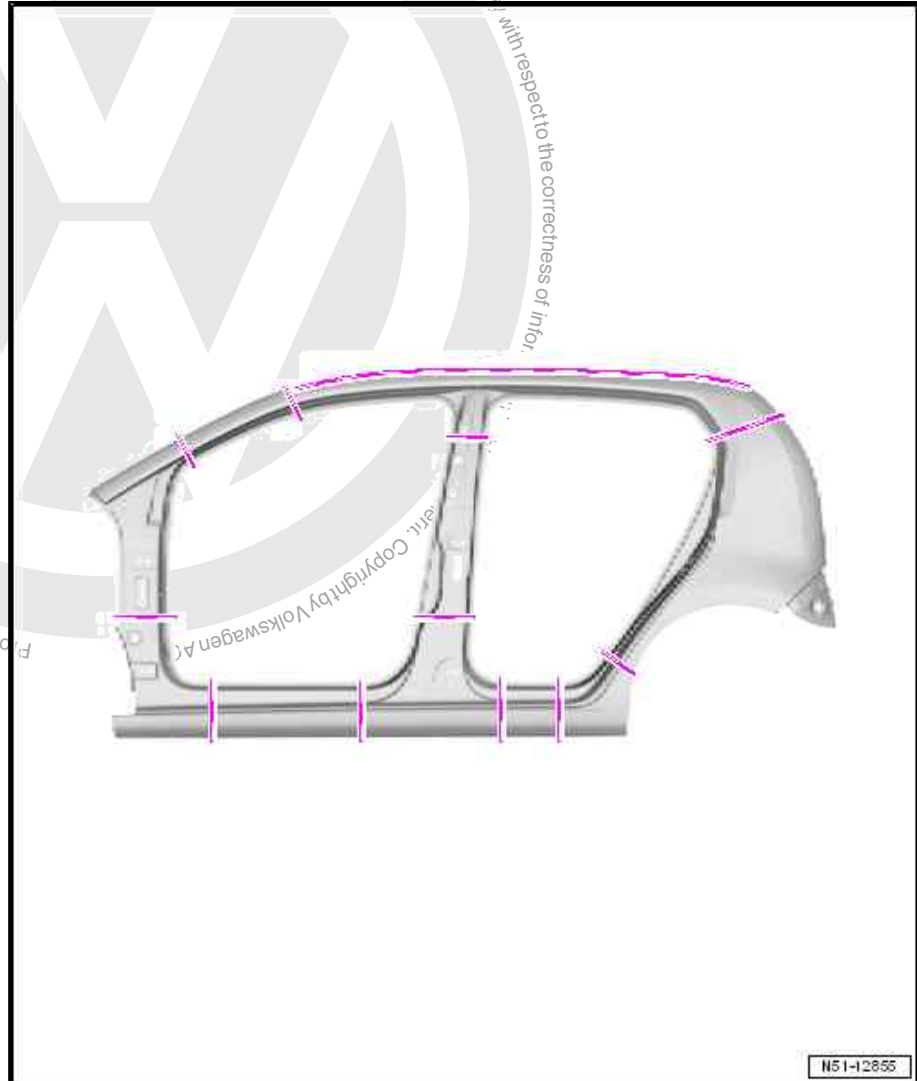


Note

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



11.3.1 Authorised parting cuts on complete side panel



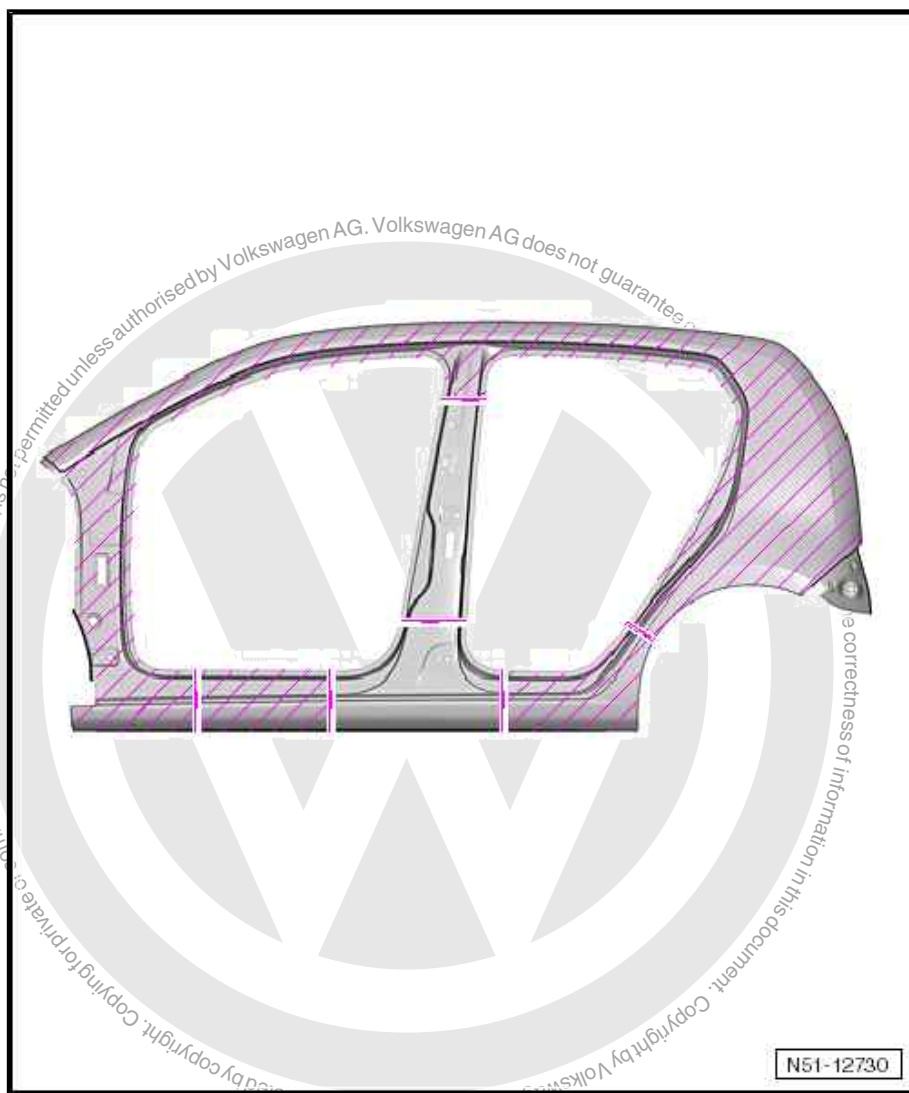
Note

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

11.3.2 Preparing new part

Replacement parts

- ◆ Side panel
- ◆ 2-pack body adhesive - D 180 003 M2-



- Transfer parting cut to new part and cut out.

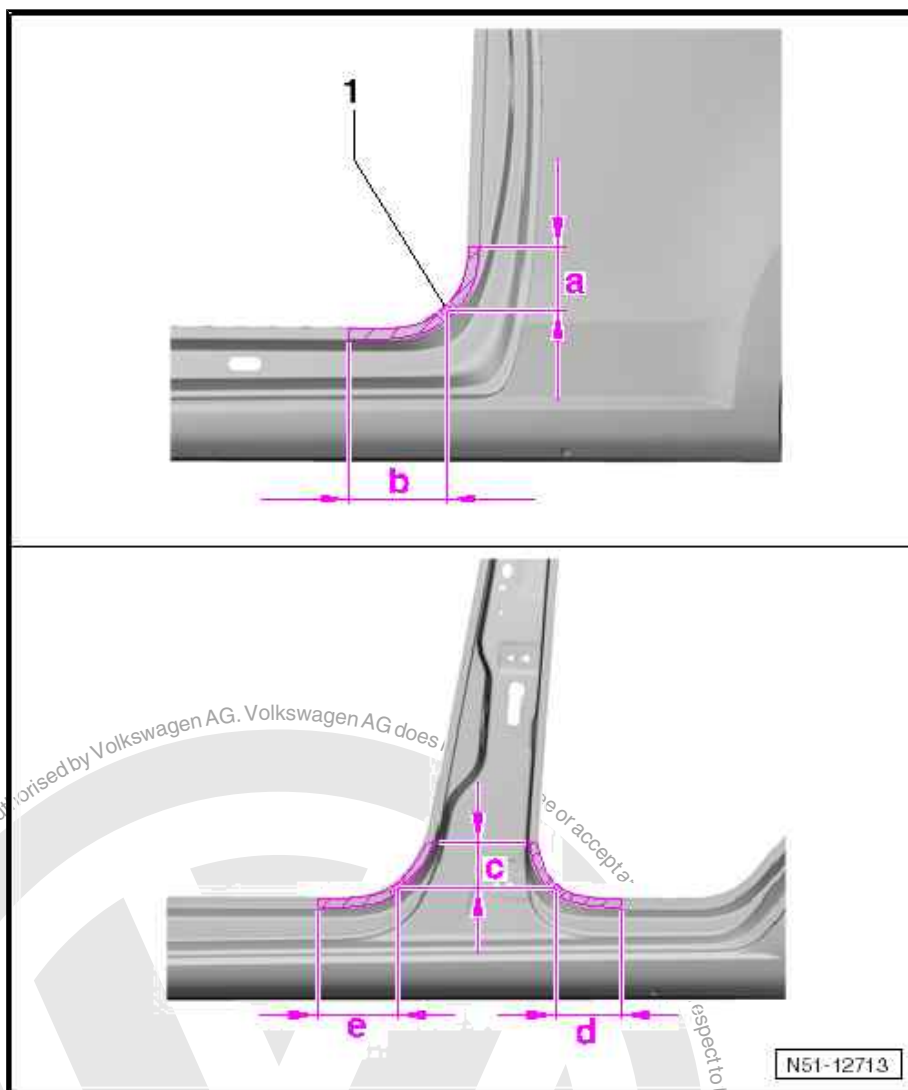


11.3.3 Marking area in which welding work is prohibited



Note

- ◆ When installing side panel, welding is not permitted in marked areas due to safety reasons »crash safety«.
- ◆ The measurements given must be adhered to.



- Adapt new part and mark position of spot weld to be set within radius range of old spot weld -1-.
- From this point, mark areas where welding is not permitted on the new part, according to dimensions -a and b-.



Dimension -a- = 120 mm

Dimension -b- = 130 mm

Dimension -c- = 100 mm

Dimension -d- = 100 mm

Dimension -e- = 120 mm



Note

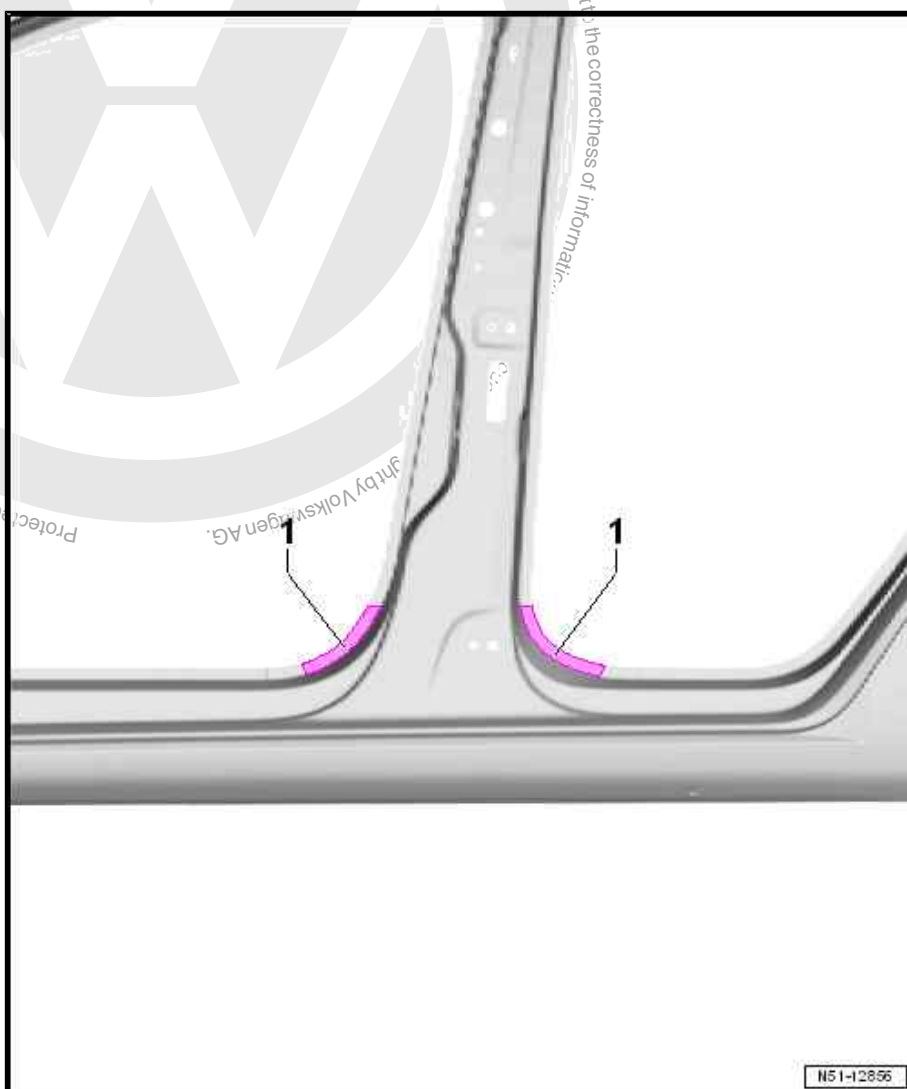
New part will be rewelded at area pointed by -1-.

11.3.4 Marking area in which welding work is permissible



Note

- ◆ *Only the marked areas -1- may be welded when installing the B-pillar.*
- ◆ *Refer to the old part or the B-pillar reinforcement in order to determine the exact number and positions of spot welds.*





- Adapt new part, and mark positions of spot welds to be set within radius range of old spot welds -1-.



Note

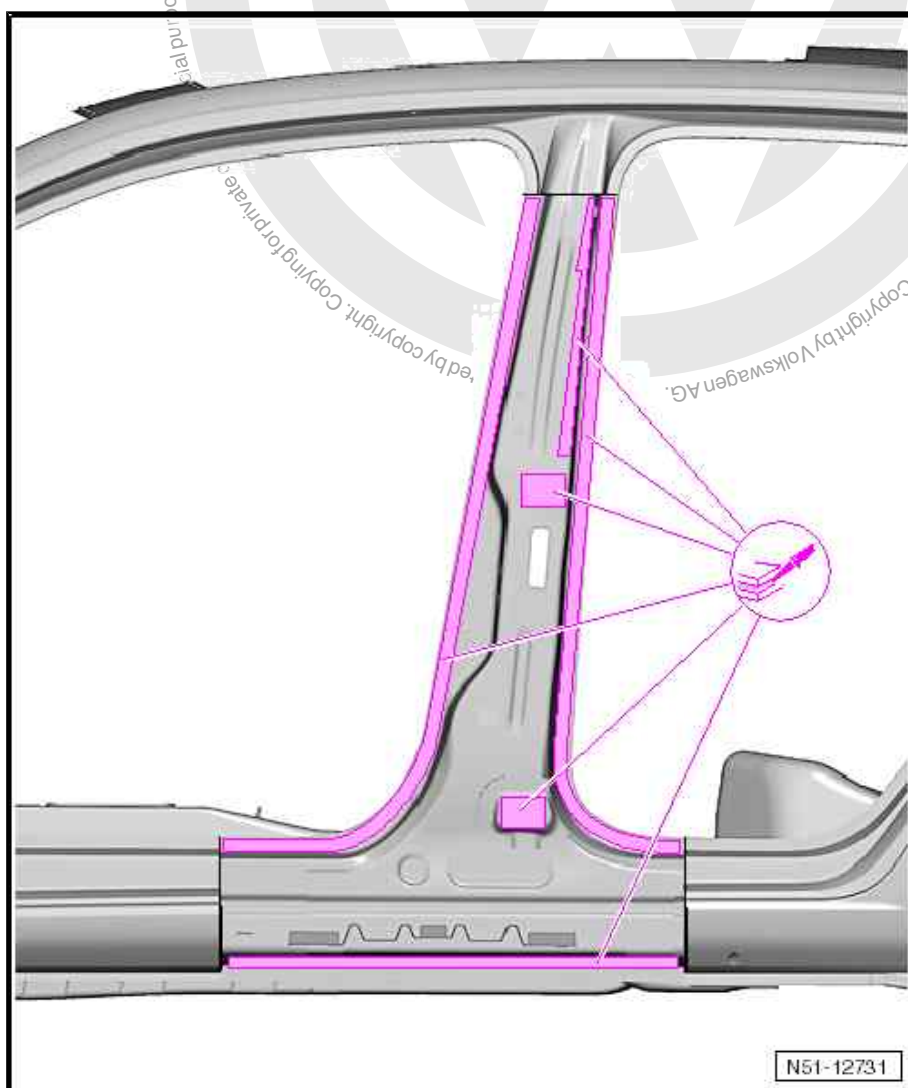
New part will be rewelded at area pointed by -1-.

11.3.5 Welding in



Note

- ♦ *New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.*
- ♦ *Threaded holes in area of hinge mounting must be free of adhesive.*

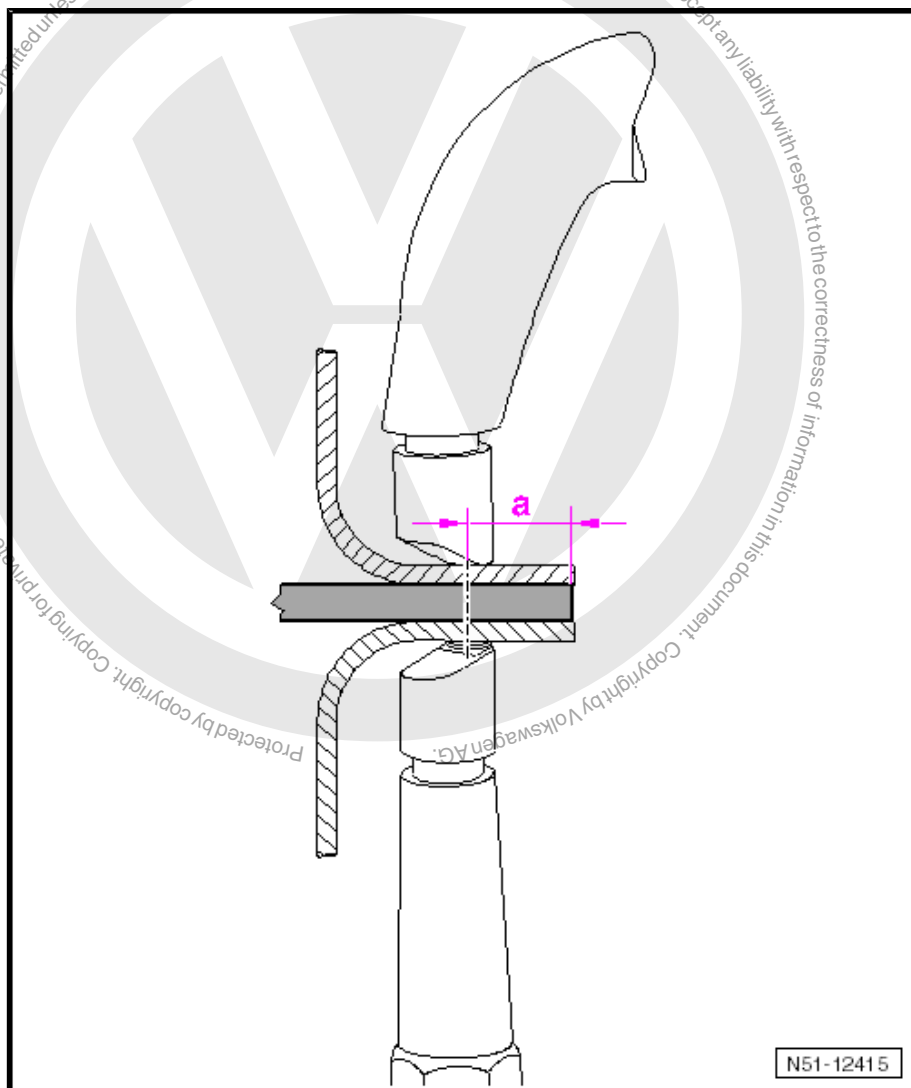


- Apply 2-component body adhesive - D 180 003 M2- to areas indicated.



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 13 mm wide.
- ◆ If spot welds are located at the edge of thermally shaped panels, the high temperature will cause the bond between the panels to change in such a way that crash safety will be impaired.

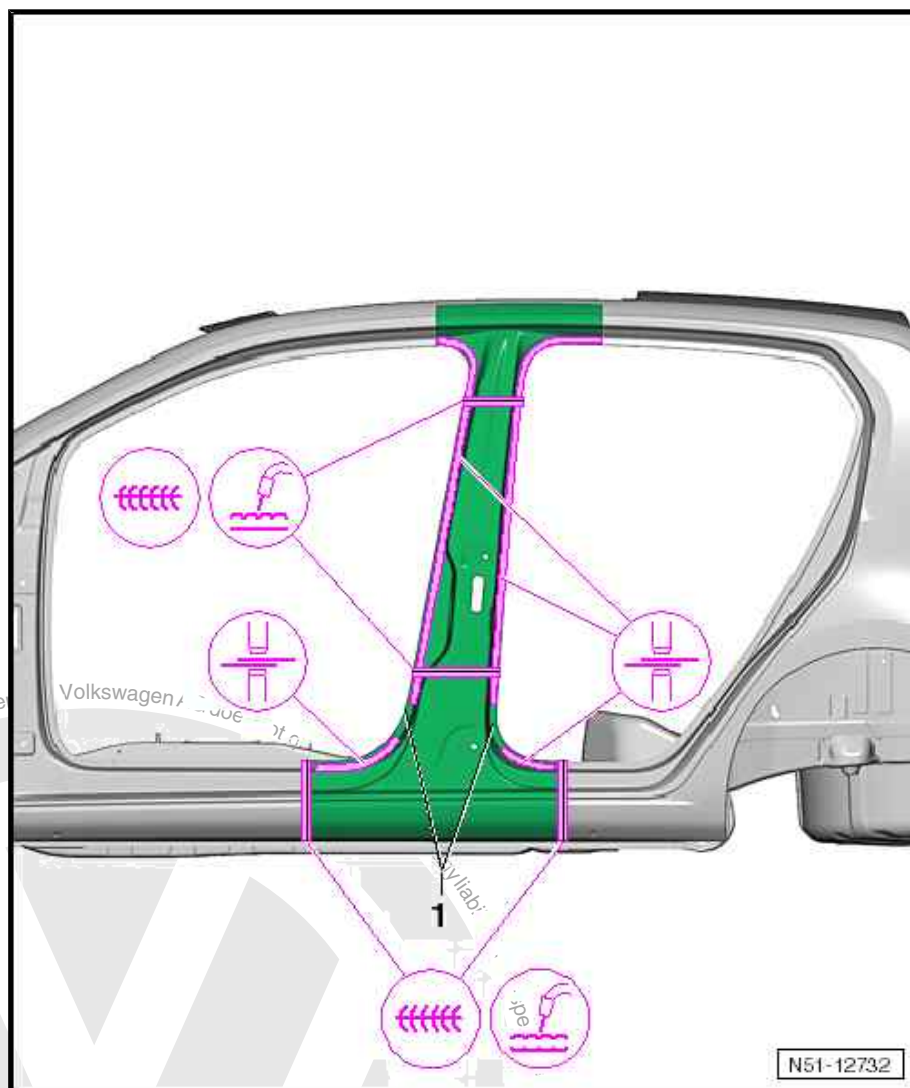


Therefore, locate spot welds as close to the centre as possible.

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

i Note

Note areas -1- in which welding is prohibited.



- Weld parting cuts, MIG-L stepped seam or SG continuous weld seam are permitted.
- Weld B-pillar to door apertures, RP spot weld seam (inverter).



- N51-12733

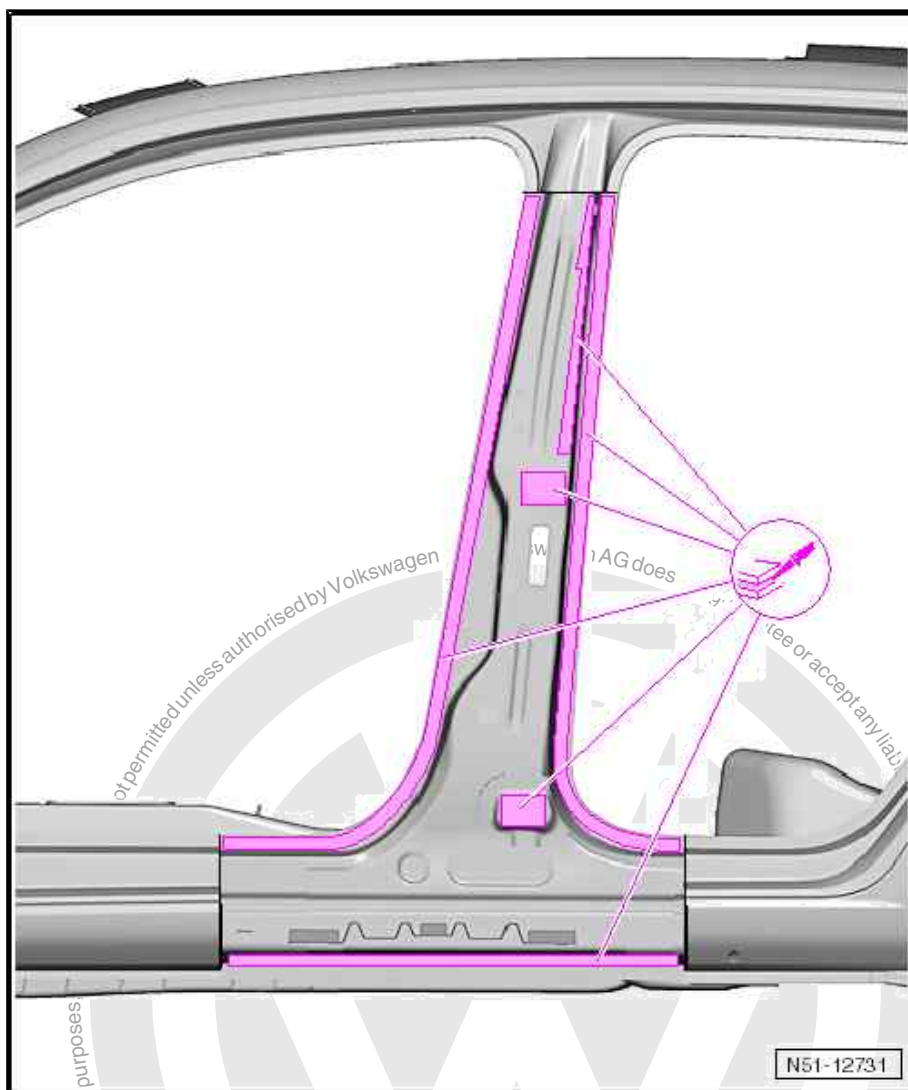


11.3.6 Welding in



Note

- ◆ *New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.*
- ◆ *Threaded holes in area of hinge mounting must be free of adhesive.*

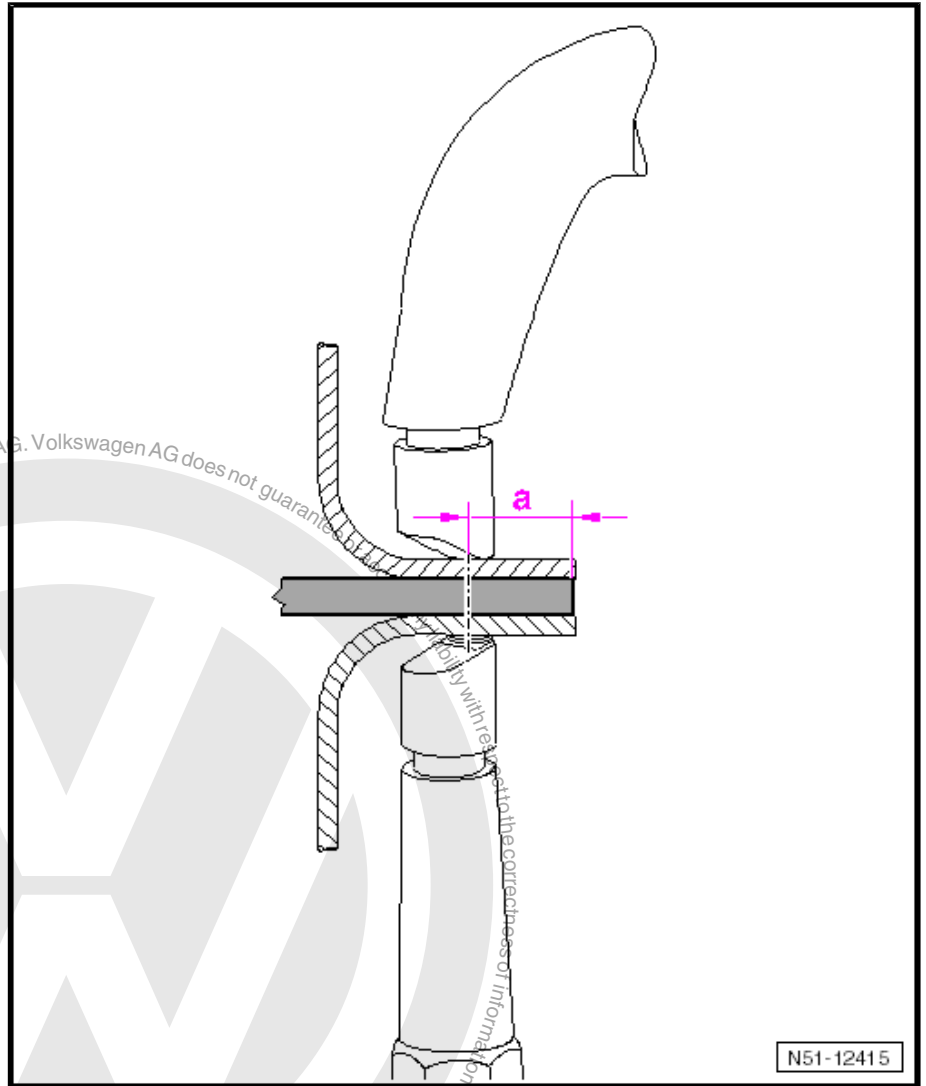


- Apply 2-component body adhesive - D 180 003 M2- to areas indicated.



Note

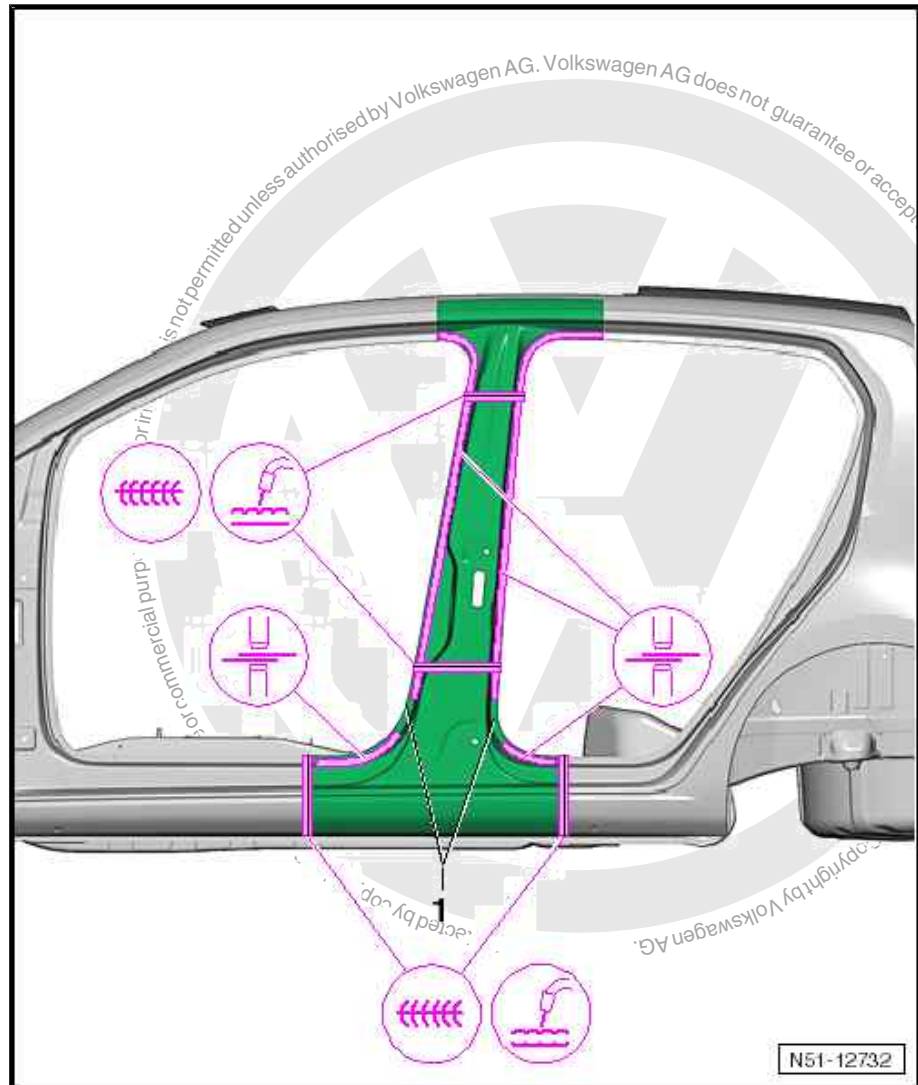
- ◆ *In the area of the A, B and C-pillars, high tensile, highest tensile and hot formed steels are used. The weld flanges in these areas are about 13 mm wide.*
- ◆ *If spot welds are located at the edge of thermally shaped panels, the high temperature will cause the bond between the panels to change in such a way that crash safety will be impaired.*



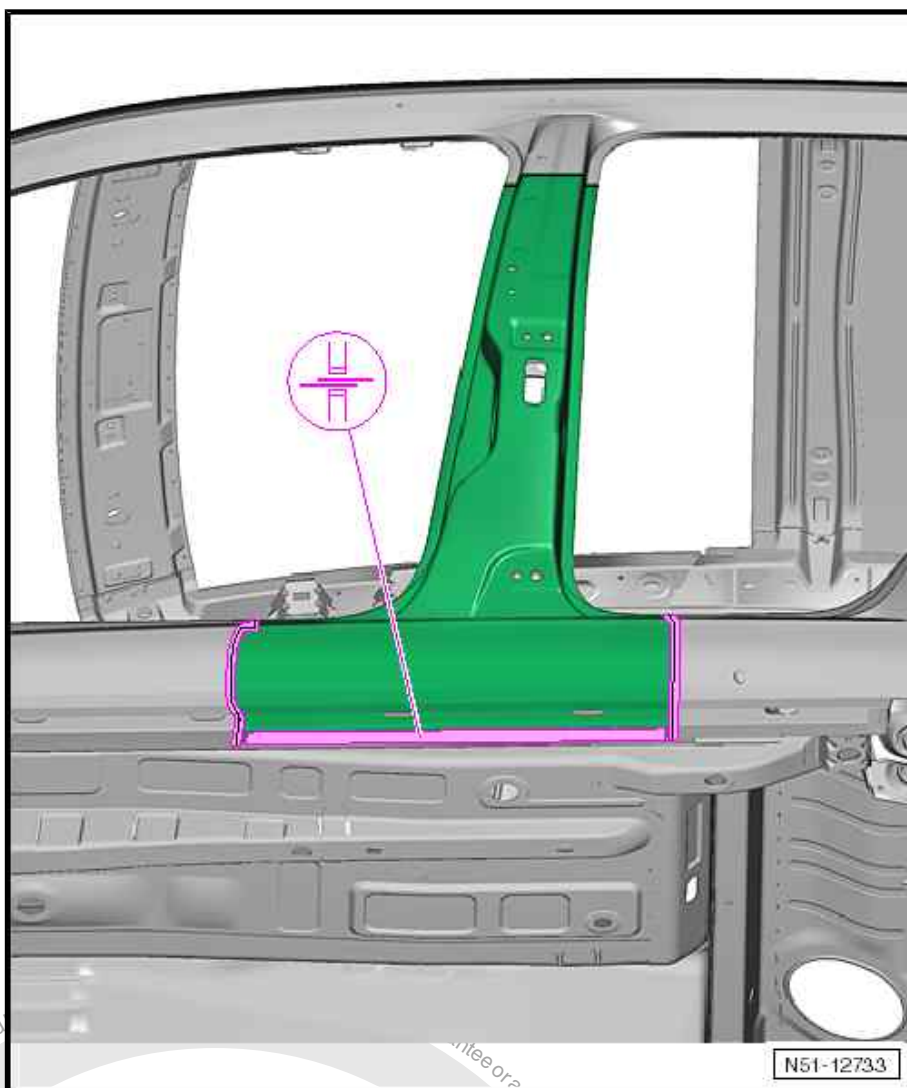
N51-12415

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

- Dimension -a- of 8 mm can be achieved using angled welding tips.
- Adapt new part -1- with vehicle positioned on alignment bracket set, and fix it in place.
- Check fit with add-on parts.



- Weld parting cuts, MIG-L stepped seam or SG continuous weld seam are permitted.
- Weld B-pillar to door apertures, RP spot weld seam (inverter).



- Weld B-pillar to side member, RP spot weld seam (inverter).



RO: 51 42 55 50

12 Renewing B-pillar reinforcement (2-door models)

Includes: rear side member reinforcement



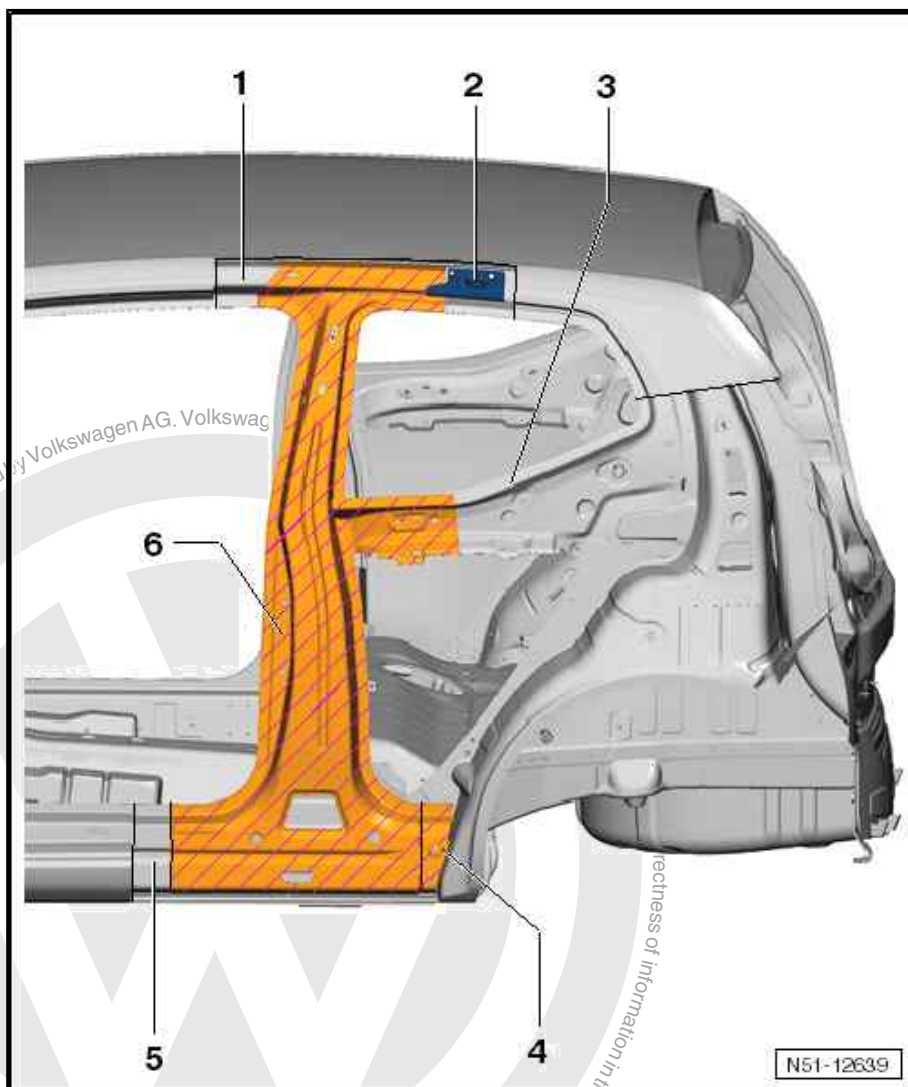
WARNING

Observe safety notes!

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

- Side panel already removed
⇒ ["11 Renewing side panel - 2-door", page 343](#)

- 1 - Upper inner side panel
- 2 - Rear roof reinforcement
- 3 - Rear inner side panel
- 4 - Rear side member reinforcement
- 5 - Front side member reinforcement
- 6 - B-pillar reinforcement





12.1 Tools



Note

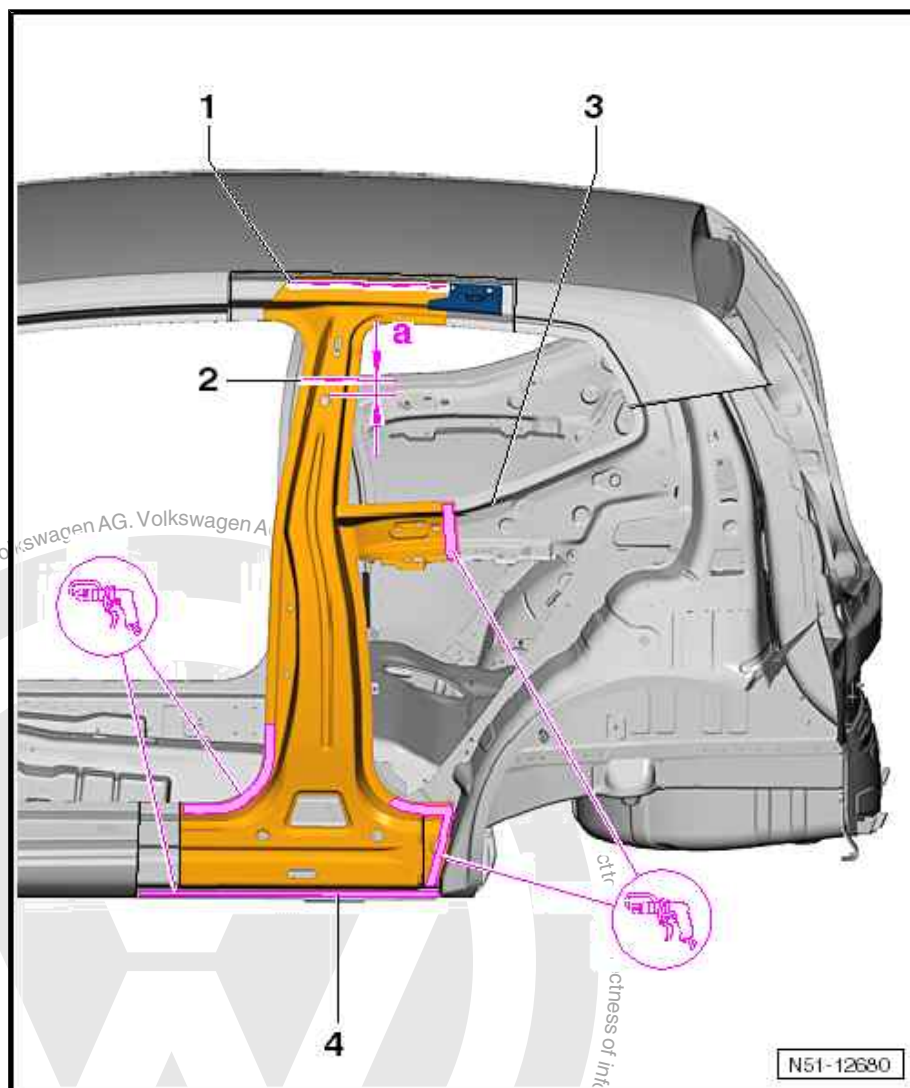
- ◆ *Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment,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

12.2 Removing



Note

- ◆ *Before cutting out B-pillar reinforcement, install a mechanical door tensioner - V.A.G 1438- . This prevents roof from moving.*
- ◆ *B-pillar reinforcement must only be cut at indicated points -1- and -2-.*
- ◆ *Cutting or welding at points other than the ones shown is impermissible due to safety reasons »crash safety«.*
- ◆ *Roof side member reinforcement must not be damaged. Rewelding roof side member reinforcement is not permitted due to safety reasons »crash safety«.*
- ◆ *Do not damage panels lying behind when cutting out.*



- Make parting cut -2- as shown.

Dimension -a- = 20 mm



Note

The parting cut can be made through entire pillar, since inner B-pillar also needs to be renewed.

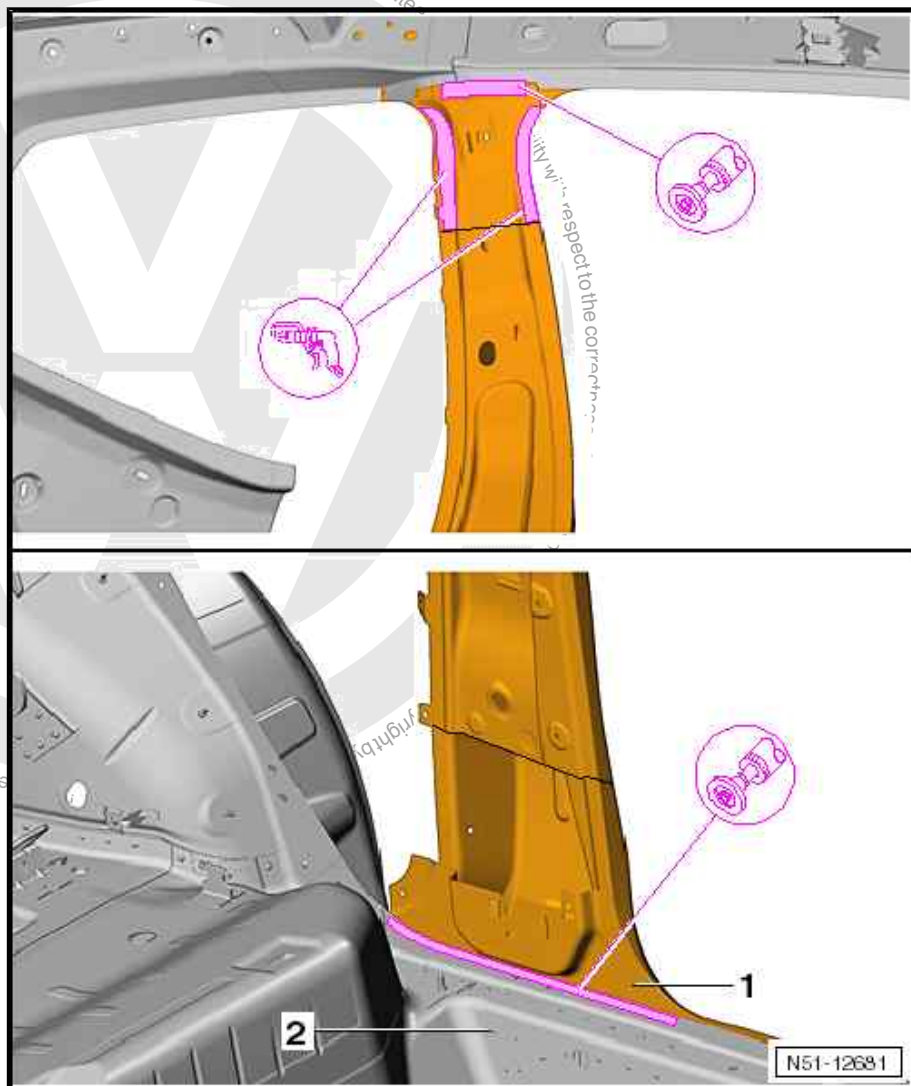
- Separate joint between B-pillar reinforcement and inner side panel -3-.



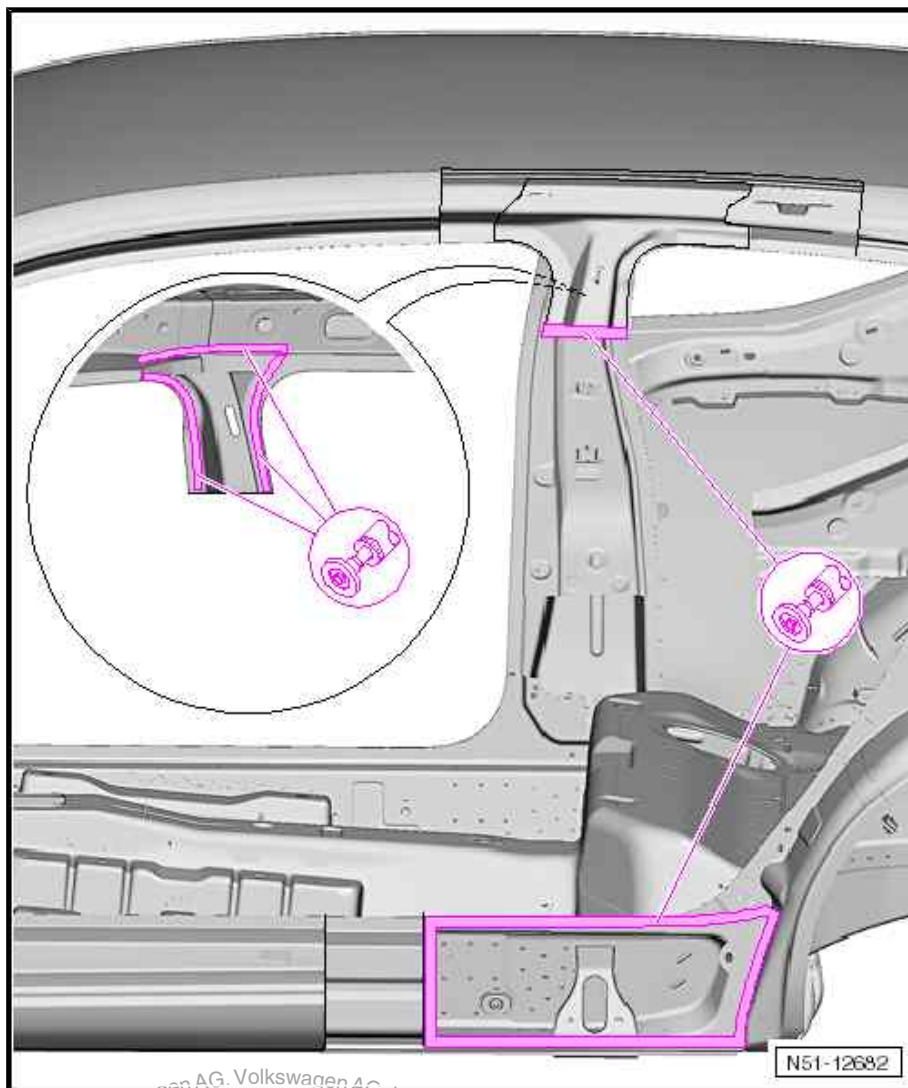
Note

In area of mounting for vehicle jack, drill out up to mounting for vehicle jack.

- Separate original joint.
- Drill out replacement part -4- up to parting cut on side member.



- Separate original joint to roof frame from inside.
- Separate remaining joint between inner B-pillar -1- and inner side member -2-.



- Remove remaining material

12.3 Installing



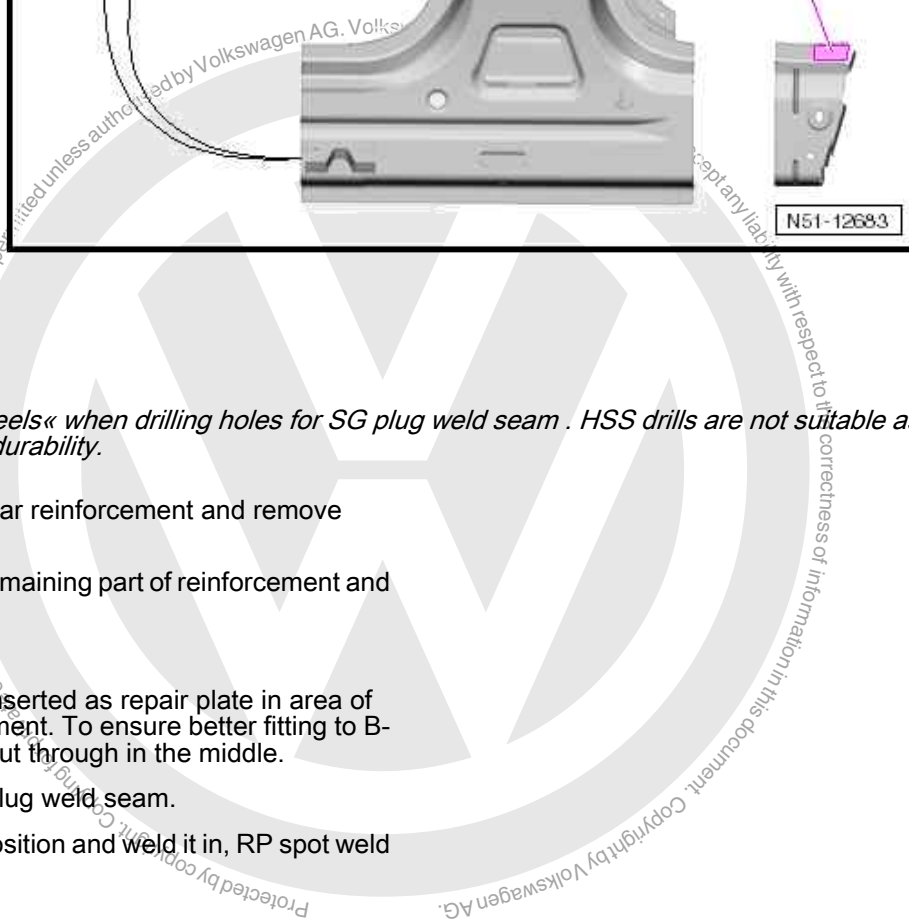
Note

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

12.3.1 Preparing new part

Replacement parts

- ◆ B-pillar reinforcement
- ◆ Inner B-pillar
- ◆ Rear side member reinforcement (parts designation: inner side panel)



Use plug weld drill for »BTR steels« when drilling holes for SG plug weld seam . HSS drills are not suitable as they do not have the required durability.

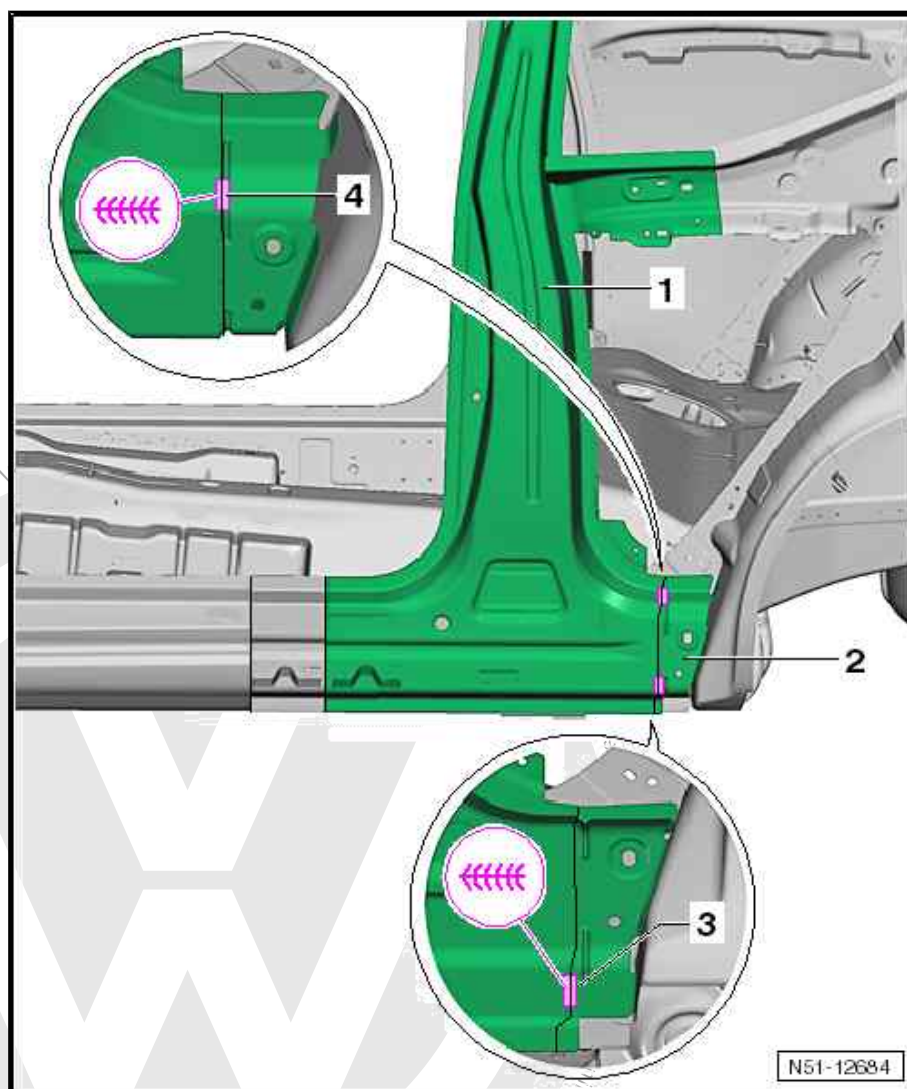
- Dimension -a- = 120 mm**

- Drill 8 mm \varnothing holes for SG plug weld seam.
- Bring reinforcement -2- in position and weld it in, RP spot weld seam (inverter).

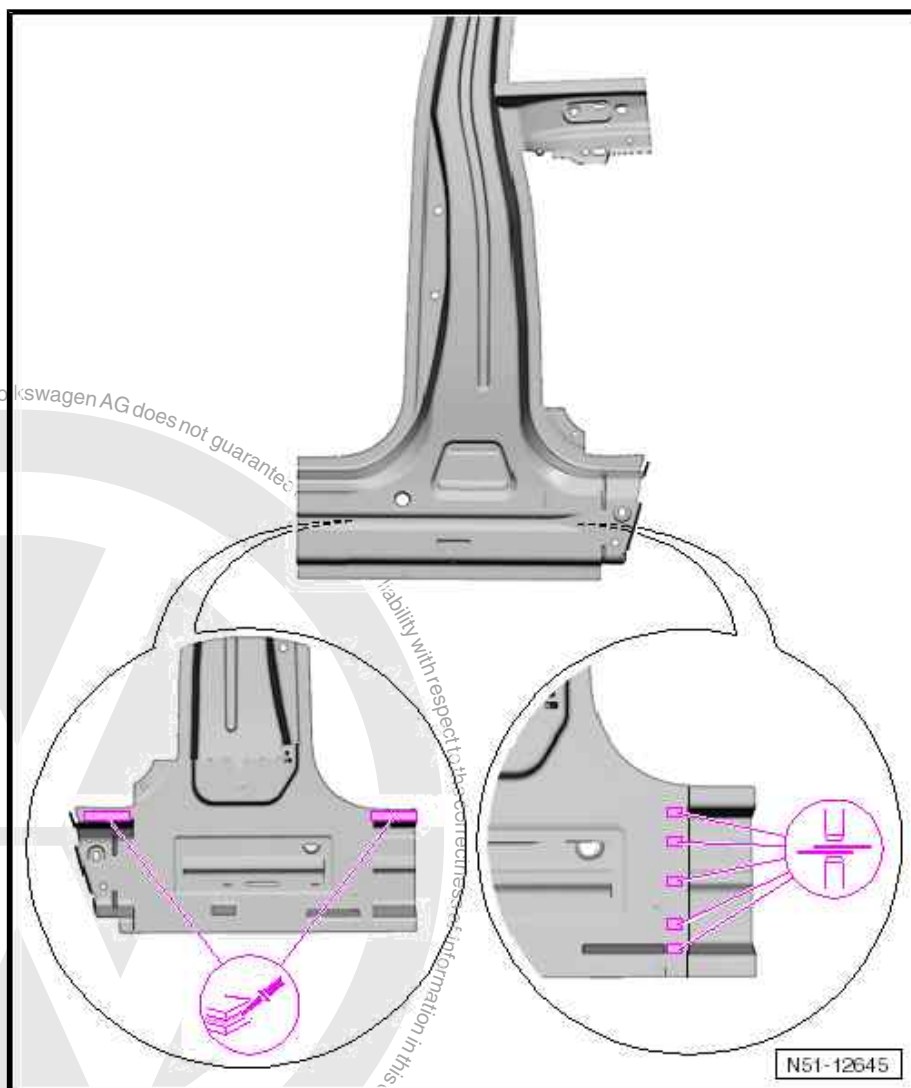


Note

The side member reinforcement and the B-pillar reinforcement may only be tack welded from above and below as shown in the -enlargements-, otherwise the strength of the B-pillar will be adversely affected. Welding the outer curvatures also weakens the construction.



- Adapt new parts with vehicle positioned on alignment bracket set, and fix them in place.
- Check fit with side panel.
- Tack weld rear side member reinforcement -2- to B-pillar reinforcement -1- from above -4- and below -3-, SG continuous weld seam (1 x weld point on each side).
- Remove new part from vehicle.



- Weld rear side member reinforcement to B-pillar reinforcement: RP spot weld, inverter (1 x RP spot weld on upper side, 2 x RP spot welds on lower side and 3 PR spot welds on outer sides).
- Apply a single bead of 2-component body adhesive - D 180 003 M2- , approx 4 mm Ø, to marked area.
- Adapt B-pillar reinforcement and fix in place.

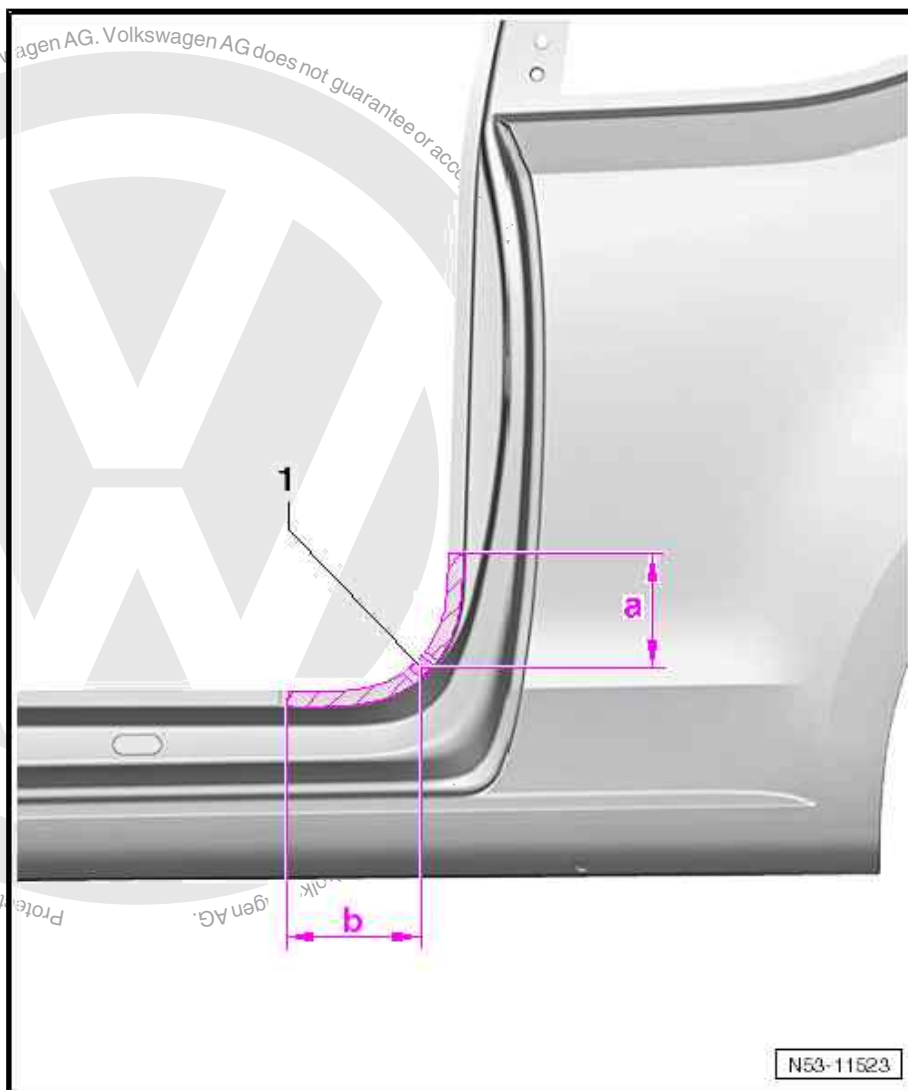
12.3.2 Marking areas where no welding work may be carried out

The illustration shows the side panel. Nevertheless, the dimensions for welding the B-pillar reinforcement must be transferred over. This means, that the reinforcement is only welded to the centre of the reinforcement -1- and to the area outside of the bonding area.



Note

- ◆ When installing side panel, welding is not permitted in marked areas due to safety reasons »crash safety«.
- ◆ The measurements given must be adhered to.



- Adapt new part and mark position of spot weld to be set within radius range of old spot weld -1-.
- From this point, mark areas where welding is not permitted on the new part, according to dimensions -a and b-.

Dimension -a- = 120 mm

Dimension -b- = 130 mm



Note

New part will be rewelded at area pointed by -1-.

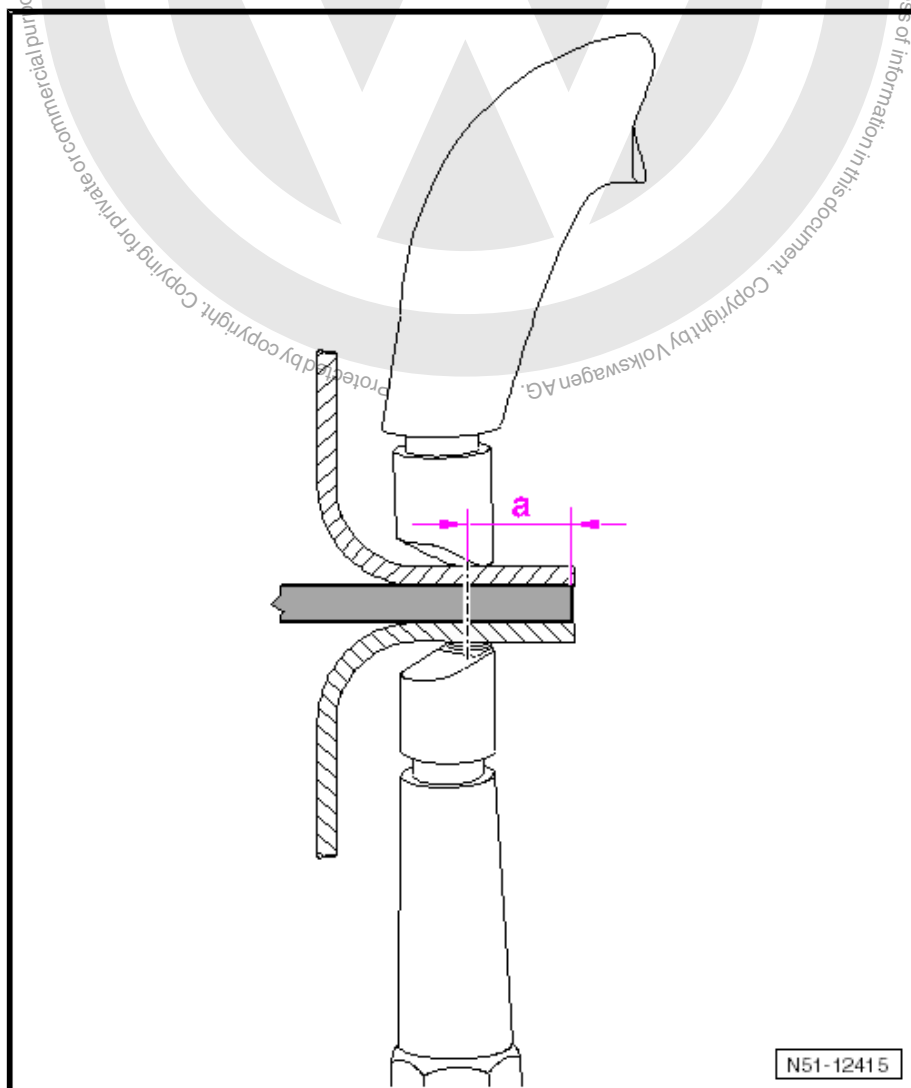


12.3.3 Welding in



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 13 mm wide.*
- ◆ *If spot welds are located at the edge of thermally shaped panels, the high temperature will cause the bond between the panels to change in such a way that crash safety will be impaired.*



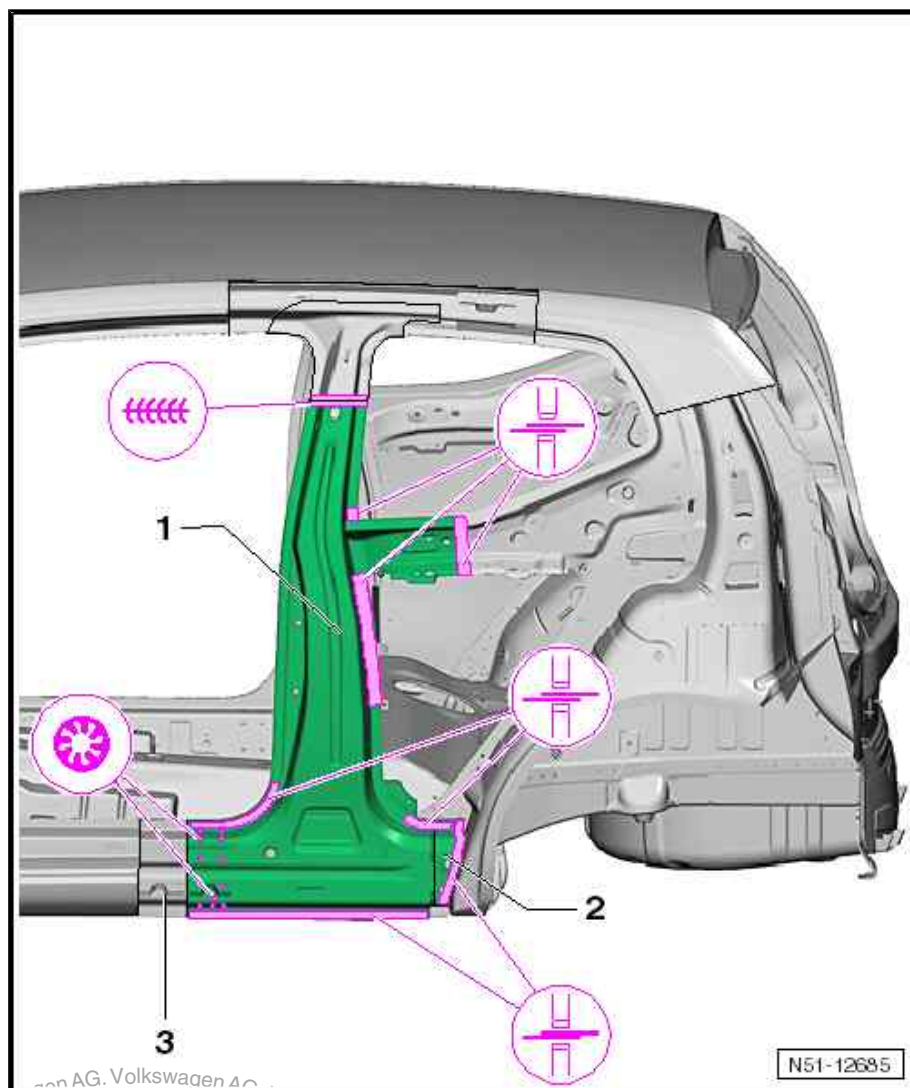
Therefore, locate spot welds as close to the centre as possible.

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



Note

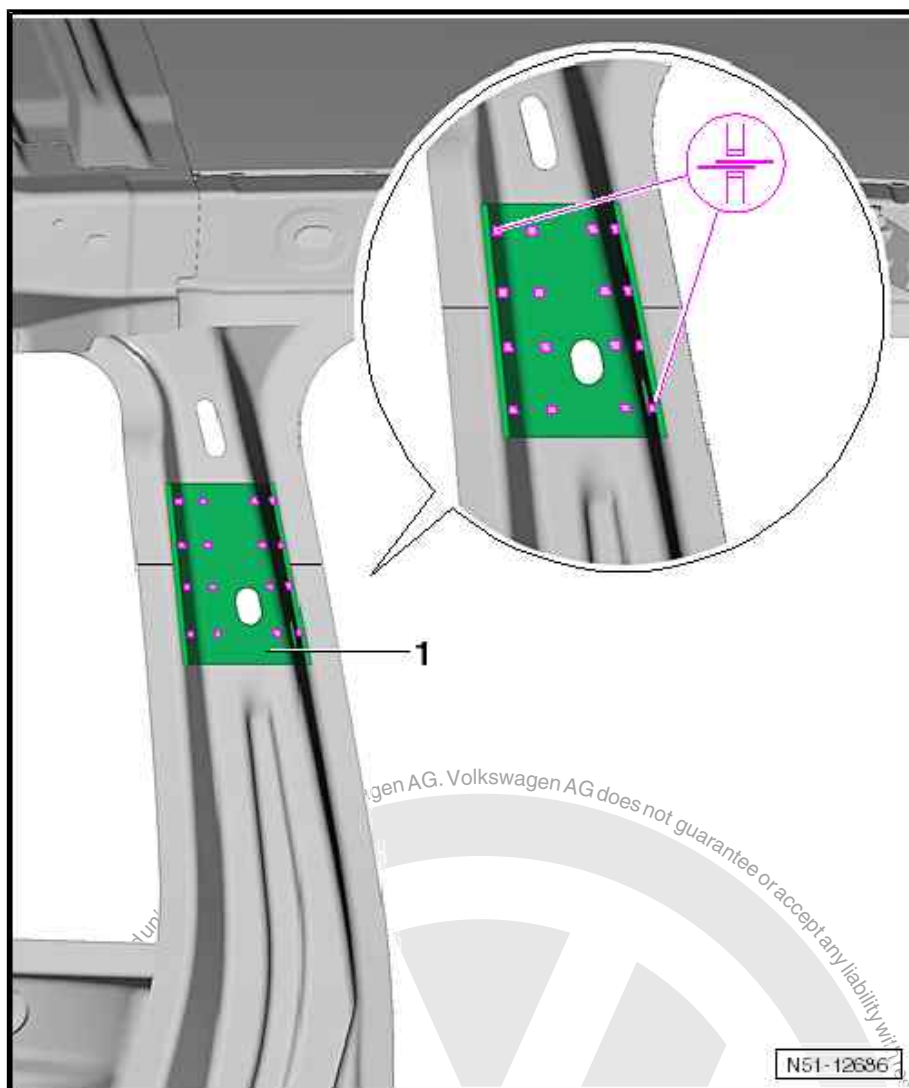
New part must be welded in within 90 minutes or adhesion properties of adhesive will be impaired.



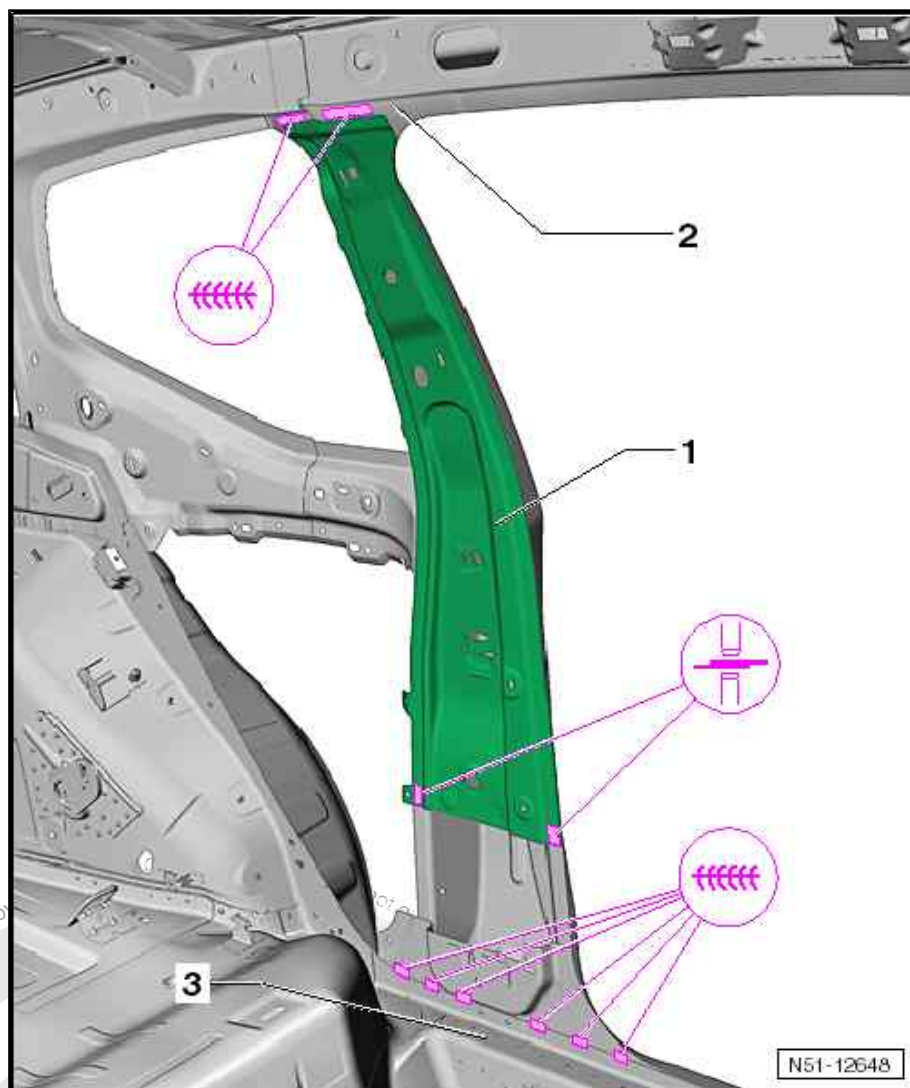
- Adapt new parts with vehicle positioned on alignment bracket set and fix in place.
- Check fit with add-on parts.

Note areas where welding is not permitted.

- Weld B-pillar reinforcement -1- to side member reinforcement -3- and rear outer attachment -2-, RP spot weld (inverter), SG plug weld seam.
- Weld parting cut, SG continuous weld seam.



- Insert previously cut-to-size repair plate -1- centrally over weld seam of B-pillar reinforcement, and set RP spot welds (inverter), as shown in illustration.



- Weld inner B-pillar -1- to inner roof connection -2-, SG continuous weld seam.
- Weld inner B-pillar -1- to inner side member -3-, SG continuous weld seam.
- Tack weld the joint of B-pillar reinforcement and inner B-pillar with two spot welds, RP spot weld seam (inverter).



Note

Remaining spot welds -1- will be set when installing side panel.

- Install side panel ➤ [page 346](#) .
- Install side member ➤ [page 270](#) .



RO: 51 42 55 50

13 Renewing B-pillar reinforcement (4-door models)



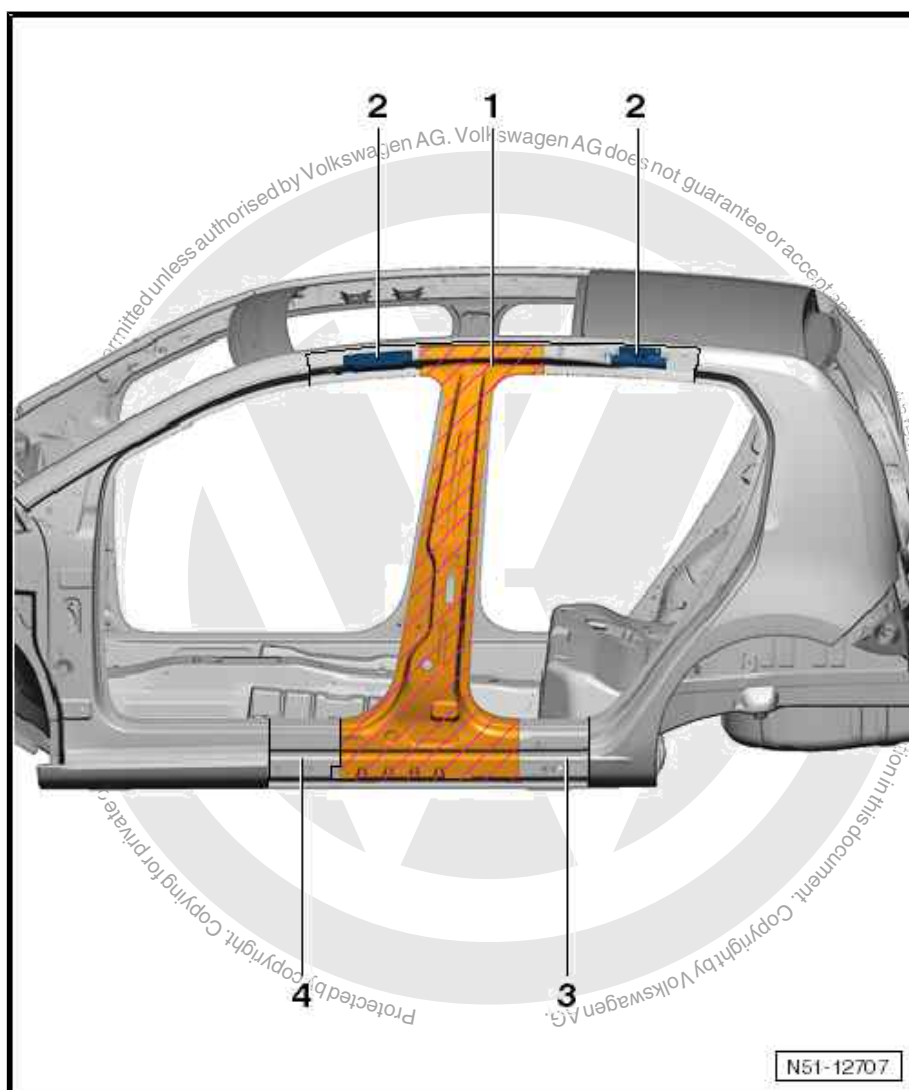
WARNING

Observe safety notes!

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

- B-pillar (4-door models) already removed
⇒ ["11 Renewing B-pillar - 4-door", page 223](#) .

- 1 - B-pillar reinforcement
- 2 - Roof rack reinforcement
- 3 - Rear side member reinforcement
- 4 - Front side member reinforcement





13.1 Tools



Note

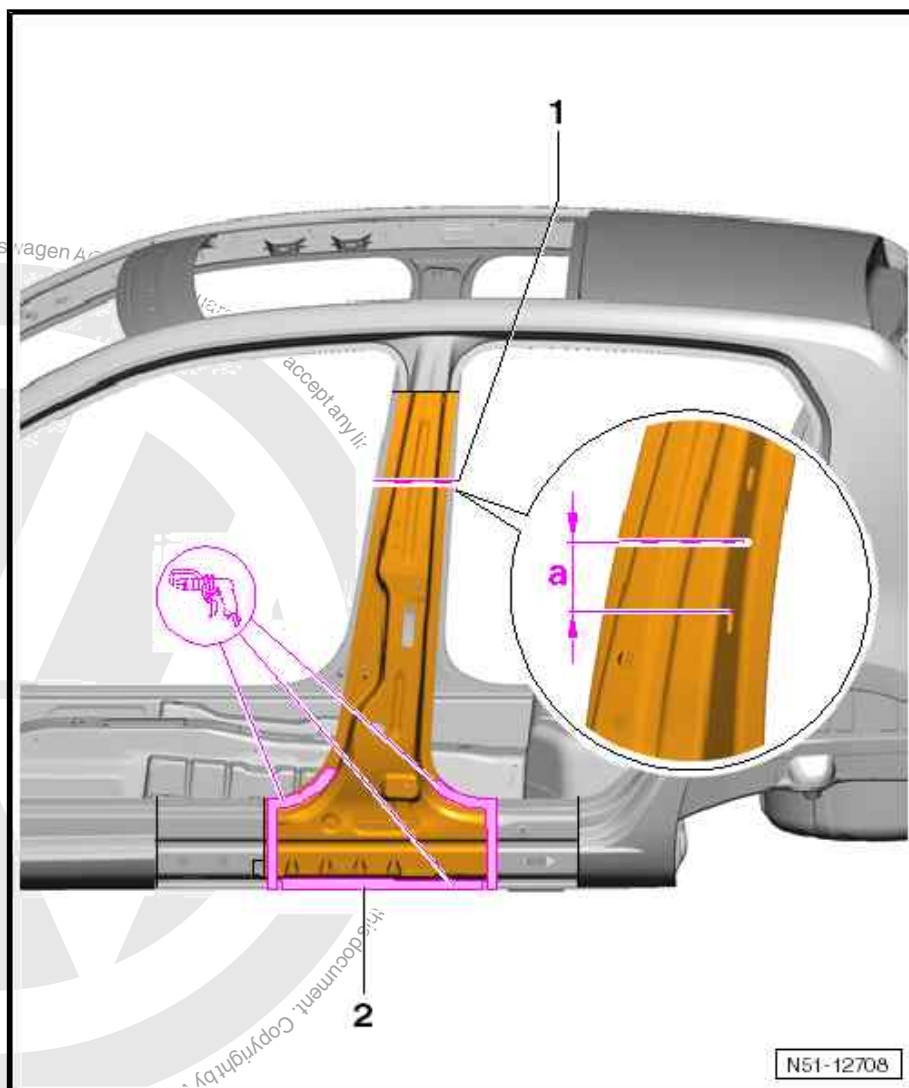
- ◆ *Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment,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

13.2 Removing



Note

- ◆ *Before cutting out B-pillar reinforcement, install a mechanical door tensioner - V.A.G 1438- . This prevents roof from moving.*
- ◆ *B-pillar reinforcement must only be cut at indicated points -1- and -2-.*
- ◆ *Cutting or welding at points other than the ones shown is impermissible due to safety reasons »crash safety«.*
- ◆ *Roof side member reinforcement must not be damaged. Re-welding roof side member reinforcement is not permitted due to safety reasons »crash safety«.*
- ◆ *Do not damage panels lying behind when cutting out.*



- Make parting cut -2- as shown.

Dimension -a- = 50 mm



Note

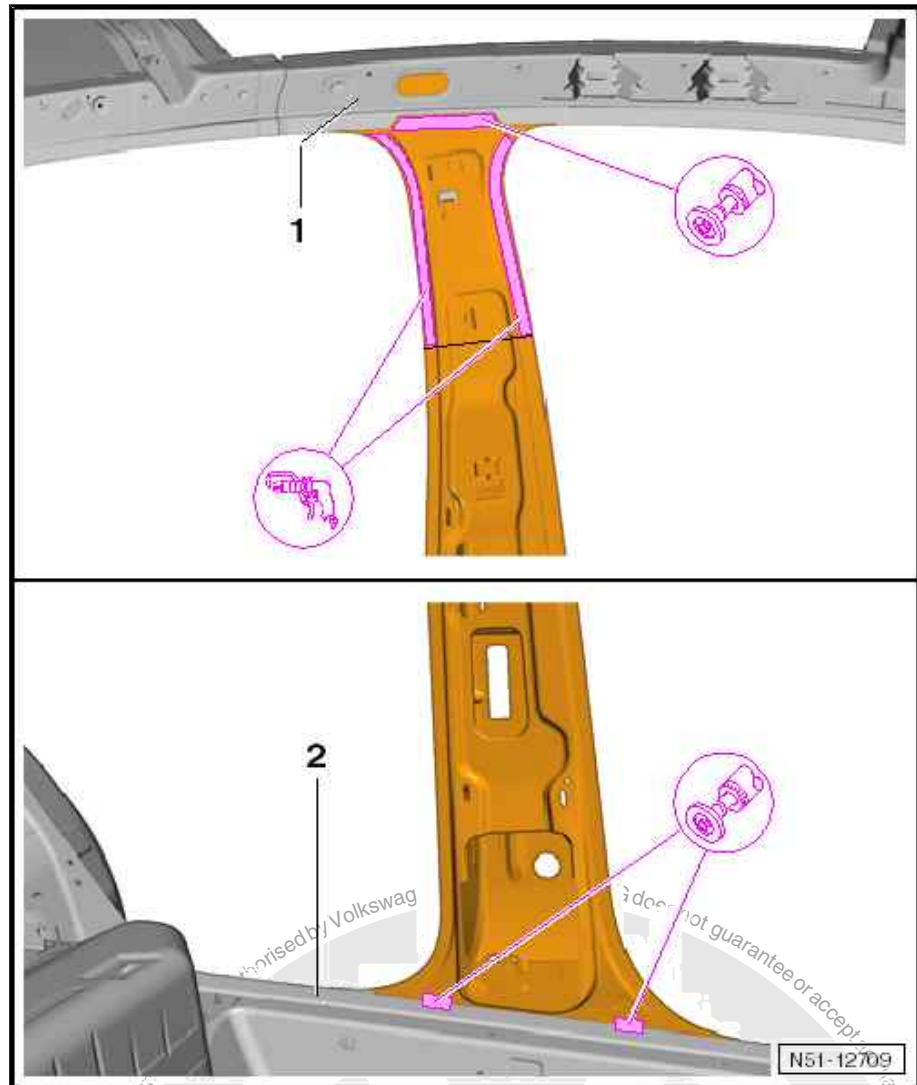
The parting cut can be made through entire pillar, since inner B-pillar also needs to be renewed.



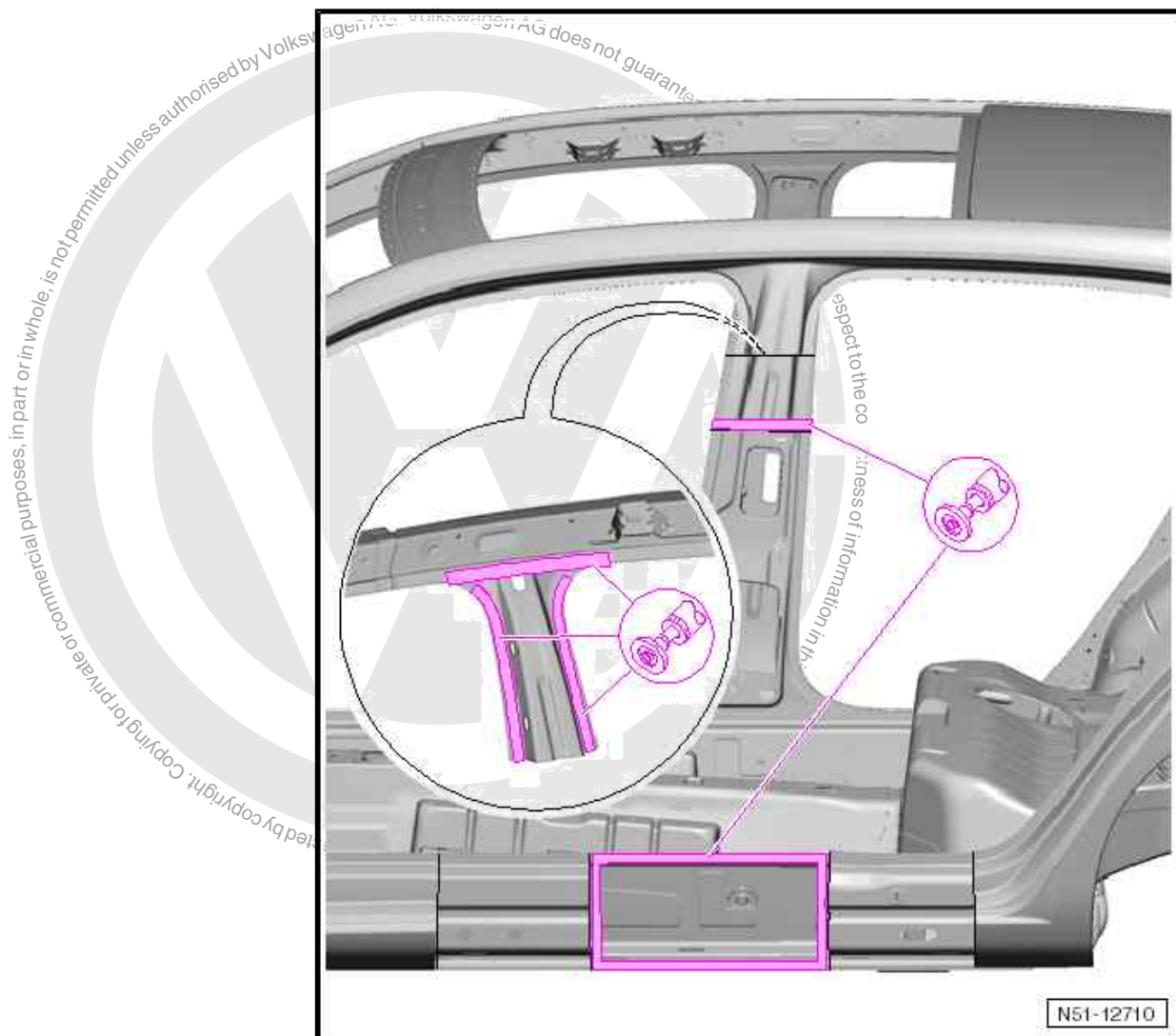
Note

In area of mounting for vehicle jack, drill out up to mounting for vehicle jack.

- Separate original joint.
- Drill out replacement part -2- up to parting cut on side member.



- Separate original joint to roof frame from inside.
- Separate remaining joint between inner B-pillar -1- and inner side member -2-.



- Remove remaining material.
- Drill 8 mm Ø holes for SG plug weld seam.

13.3 Installing



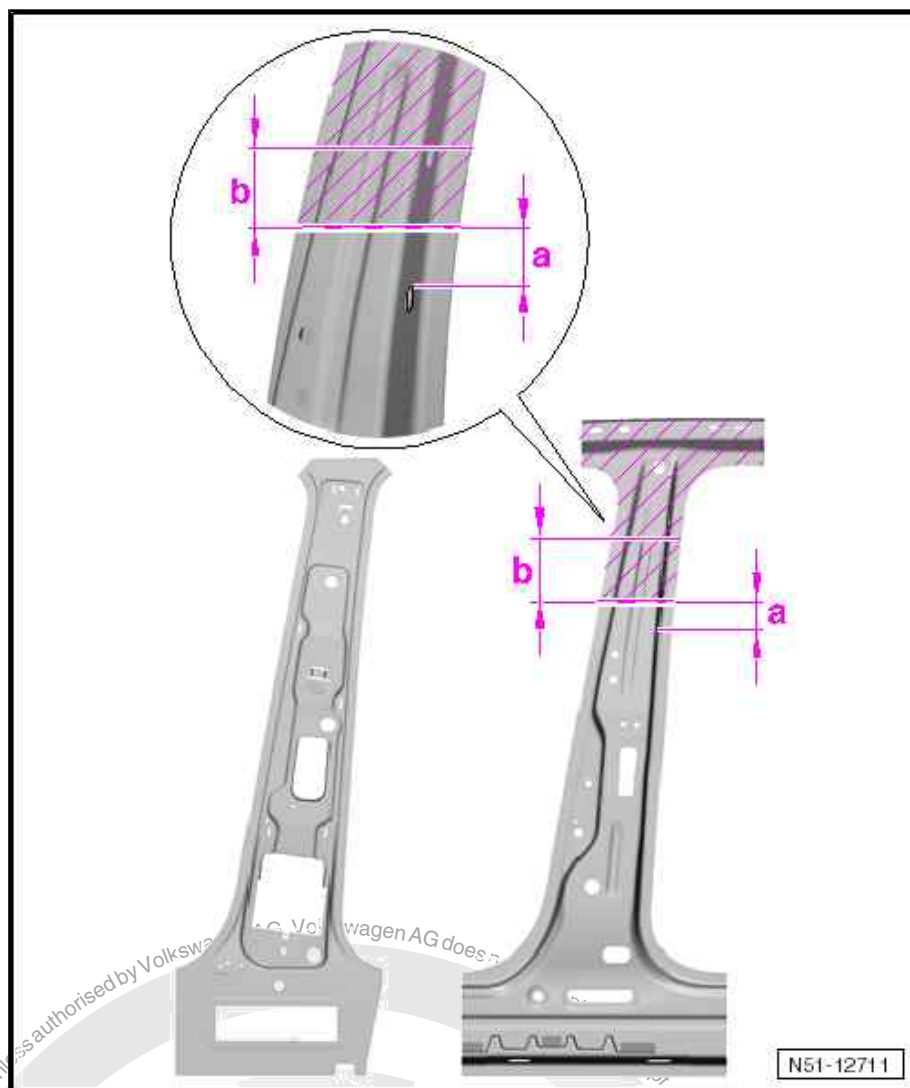
Note

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

13.3.1 Preparing new part

Replacement parts

- ◆ B-pillar reinforcement
- ◆ Inner B-pillar



Note

Use plug weld drill for «BTR steels» when drilling holes for SG plug weld seam. HSS drills are not suitable as they do not have the required durability.

- Transfer parting cut to B-pillar reinforcement according to dimension -a-, and remove -shaded area-.

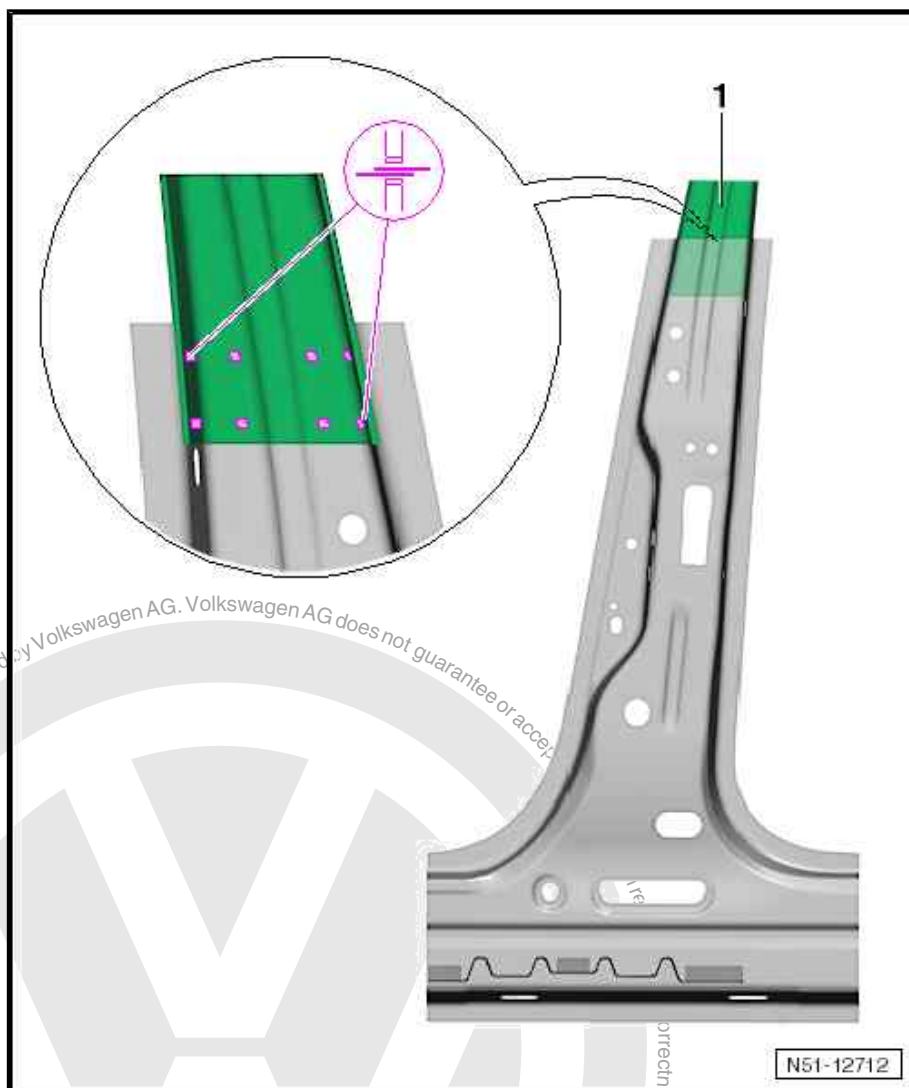
Dimension -a- = 50 mm

- Transfer parting cut to remaining part of reinforcement according to dimension -b-, and remove -shaded areas-.

Dimension -b- = 120 mm

This subpart will be inserted as a repair plate in the area of the parting cut of the B-pillar reinforcement. To ensure better fitting to B-pillar, the repair plate may be cut through in the middle.

- Drill 8 mm Ø holes for SG plug weld seam.
- Position reinforcement, and weld it in, RP spot weld seam (inverter).



- Insert previously cut-to-size repair plate -1- centrally over weld seam of B-pillar reinforcement, and set RP spot welds (inverter), as shown in illustration.
- Adapt new parts with vehicle positioned on alignment bracket set and fix in place.
- Check fit with side panel.
- Apply a single bead of 2-component body adhesive - D 180 003 M2- , approx 4 mm Ø, to marked area.

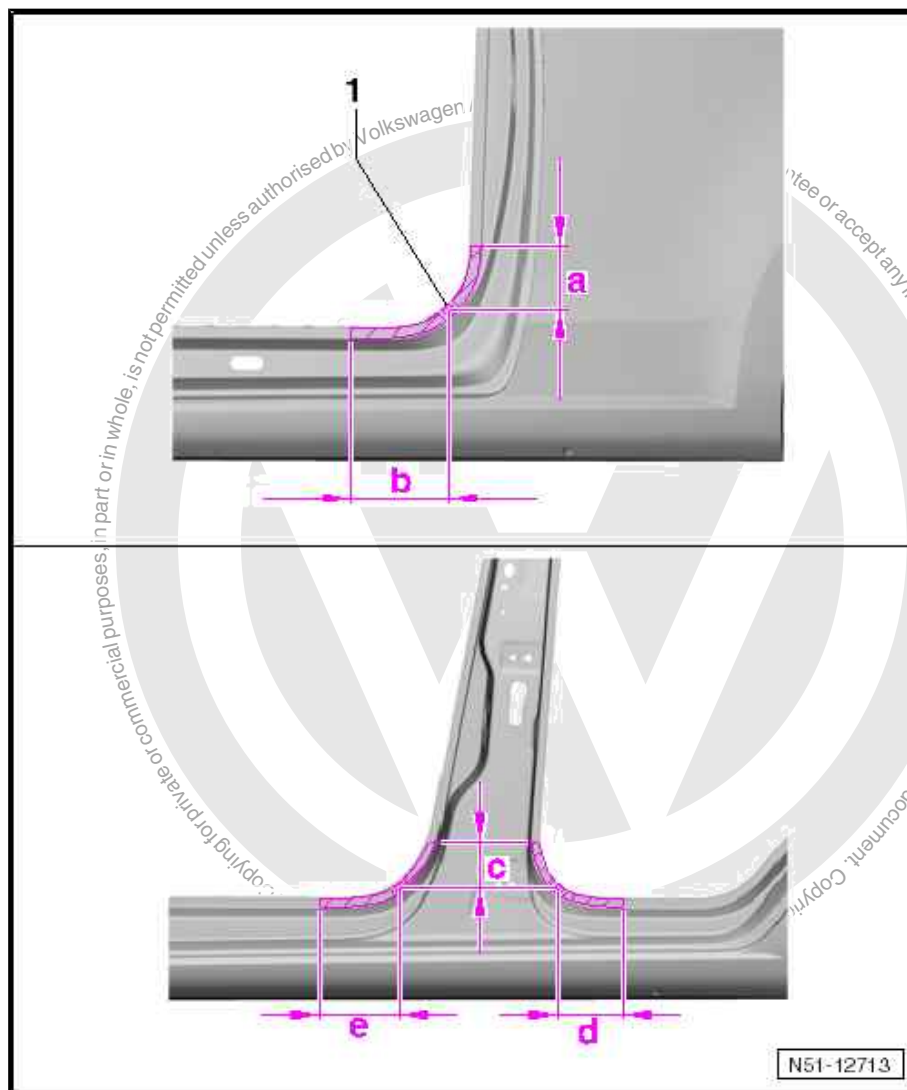
13.3.2 Marking areas where no welding work may be carried out

The illustration shows the side panel. Nevertheless, the dimensions for welding the B-pillar reinforcement must be transferred over. This means, that the reinforcement is only welded to the centre of the reinforcement -1- and to the area outside of the bonding area.



Note

- ◆ When installing side panel, welding is not permitted in marked areas due to safety reasons »crash safety«.
- ◆ The measurements given must be adhered to.



- Adapt new part and mark position of spot weld to be set within radius range of old spot weld -1-.
- From this point, mark areas where welding is not permitted on the new part, according to dimensions -a and b-.



Dimension -a- = 120 mm

Dimension -b- = 130 mm

Dimension -c- = 100 mm

Dimension -d- = 100 mm

Dimension -e- = 120 mm



Note

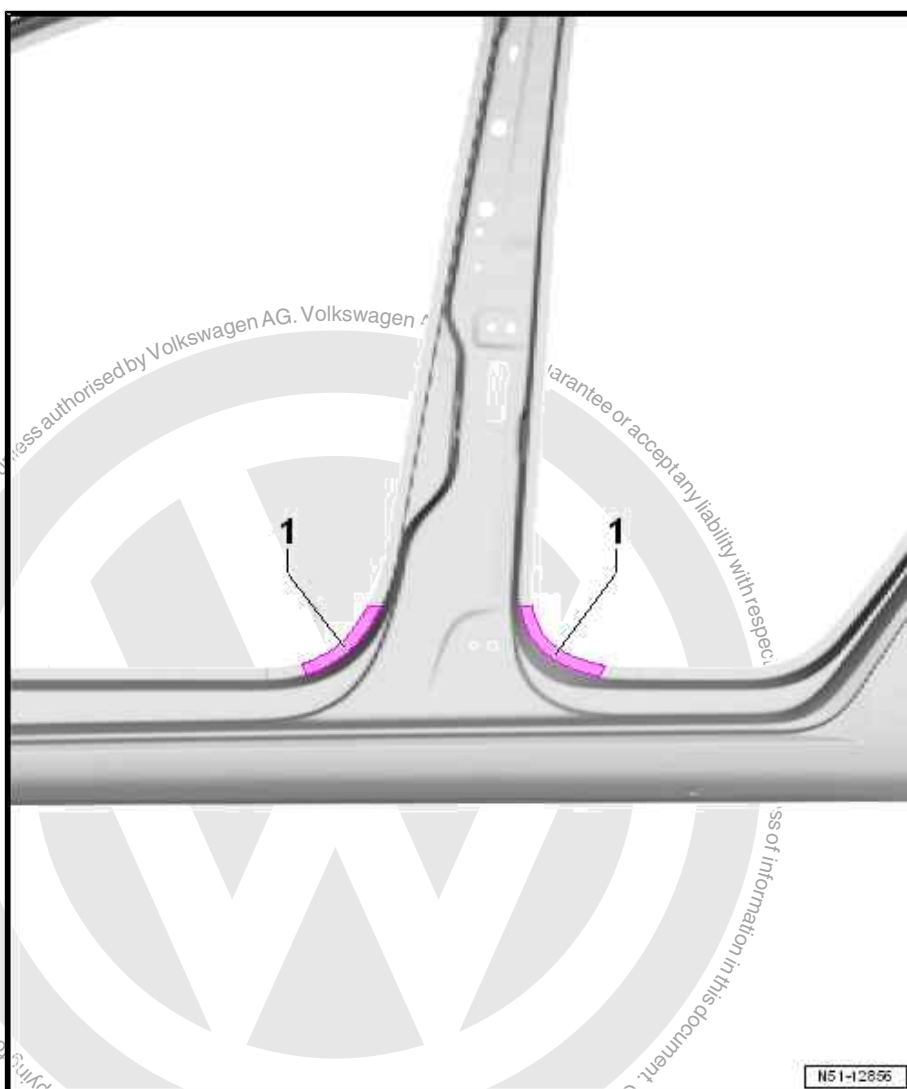
New part will be rewelded at area pointed by -1-.

13.3.3 Marking area in which welding work is permissible



Note

- ◆ *Only the marked areas -1- may be welded when installing the B-pillar.*
- ◆ *Refer to the old part or the B-pillar reinforcement in order to determine the exact number and positions of spot welds.*





- Adapt new part, and mark positions of spot welds to be set within radius range of old spot welds -1-.



Note

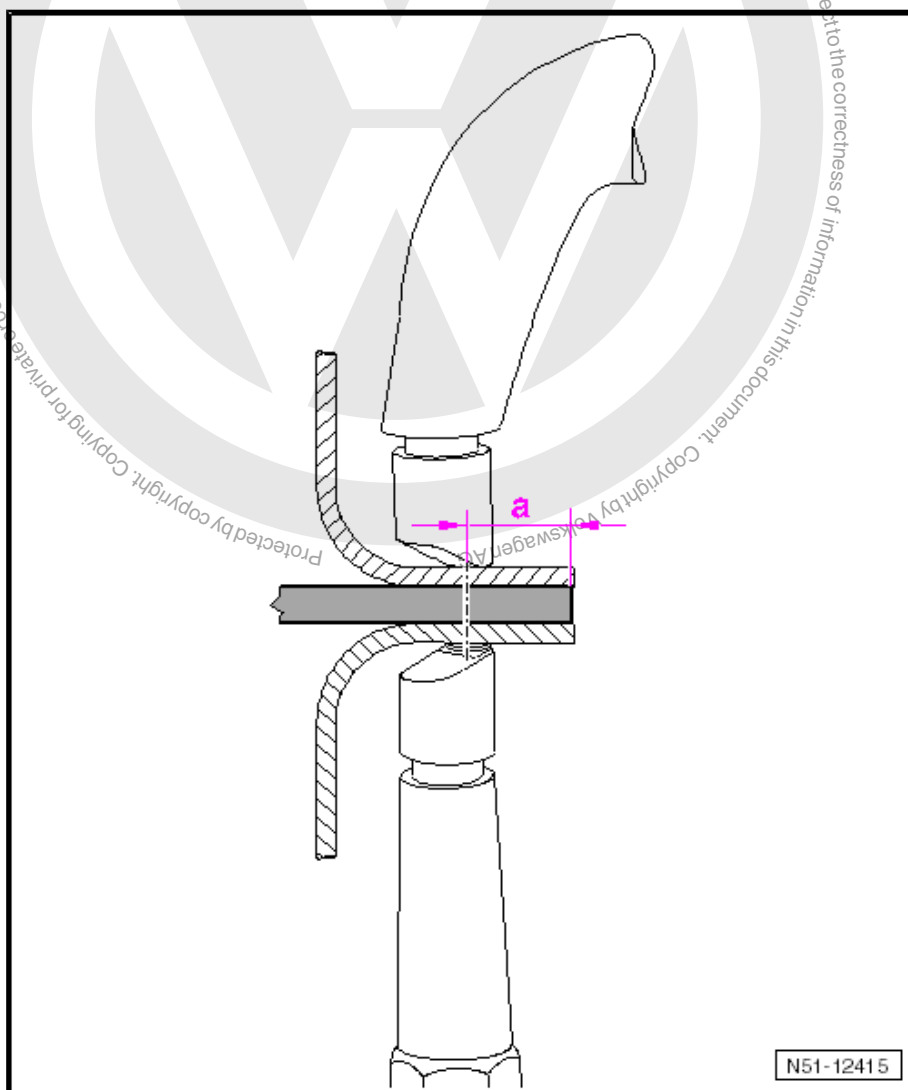
New part will be rewelded at area pointed by -1-.

13.3.4 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 13 mm wide.*
- ♦ *If spot welds are located at the edge of thermally shaped panels, the high temperature will cause the bond between the panels to change in such a way that crash safety will be impaired.*



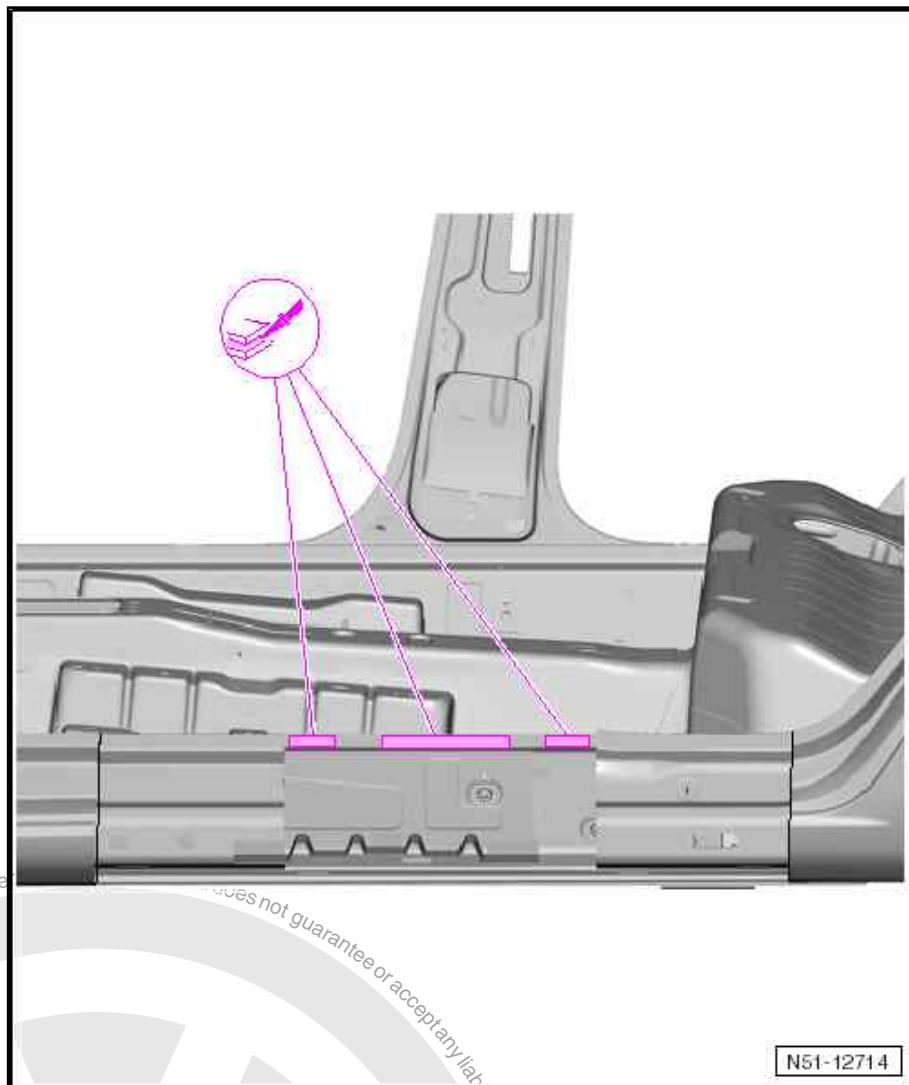
Therefore, locate spot welds as close to the centre as possible.

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

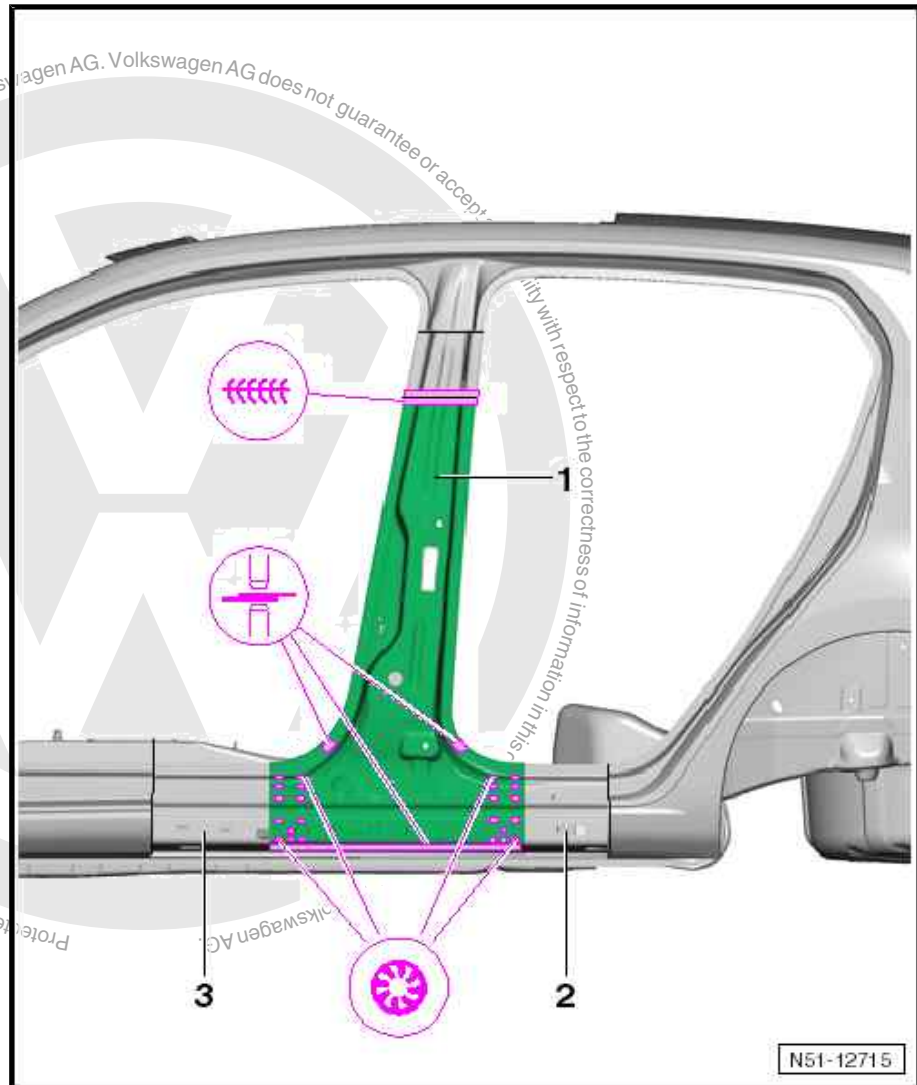


Note

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



- Apply single bead of 2-component body adhesive - D 180 003 M2- , approx 4 mm Ø, to marked areas.

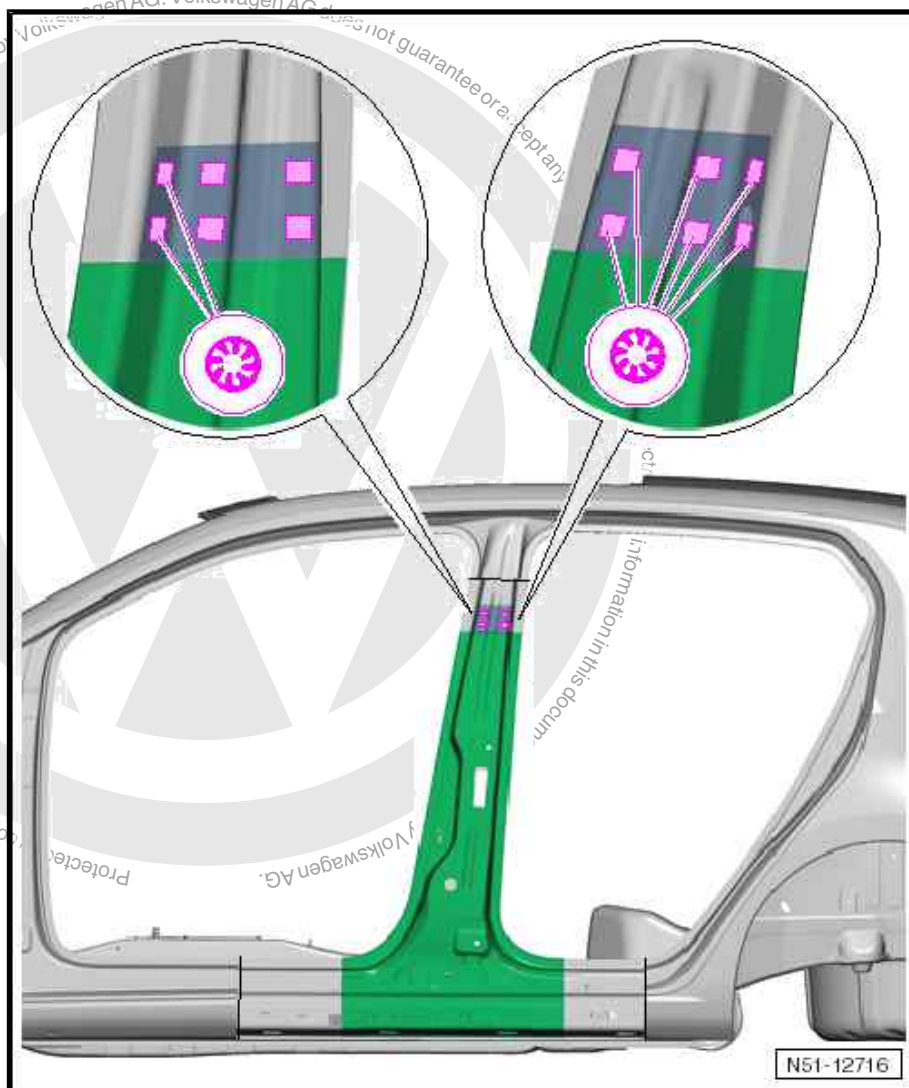


- Adapt B-pillar reinforcement and inner B-pillar to fit and secure in position when vehicle is positioned on an alignment bracket set.

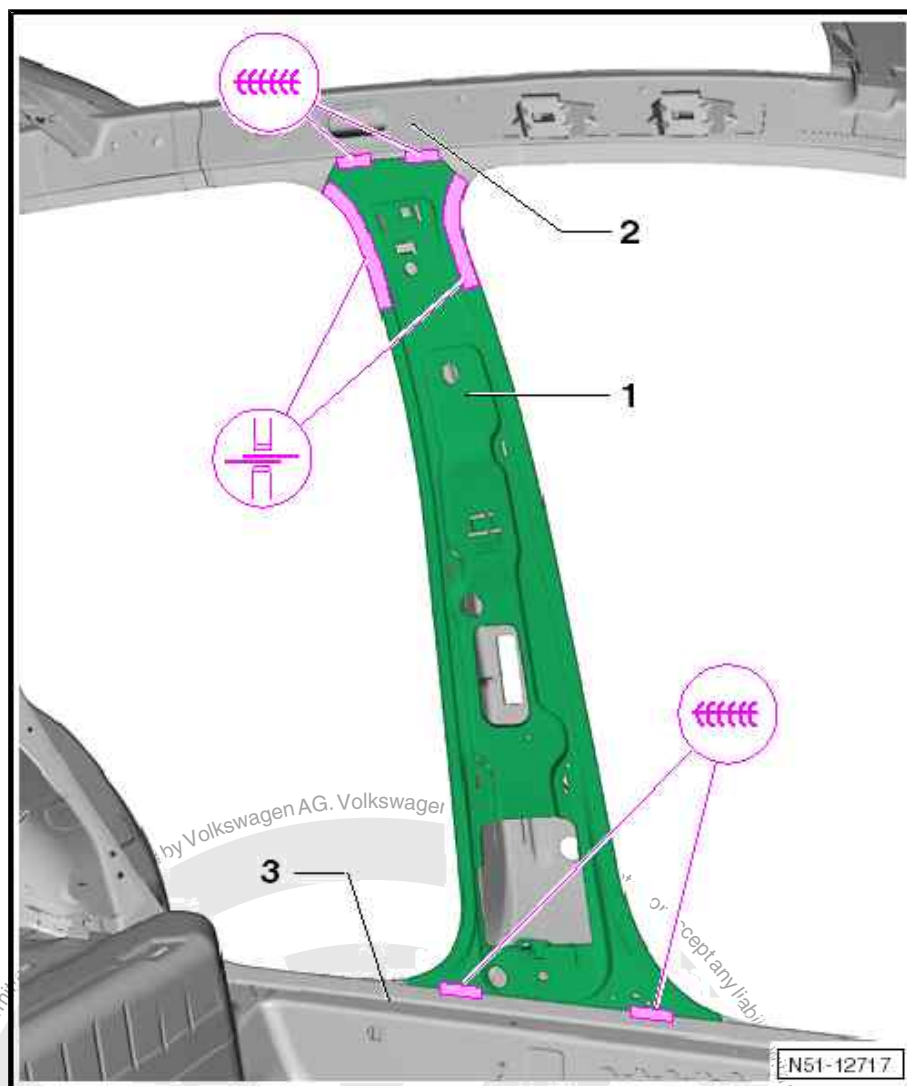
- Check fit with add-on parts.

Note areas where welding is not permitted.

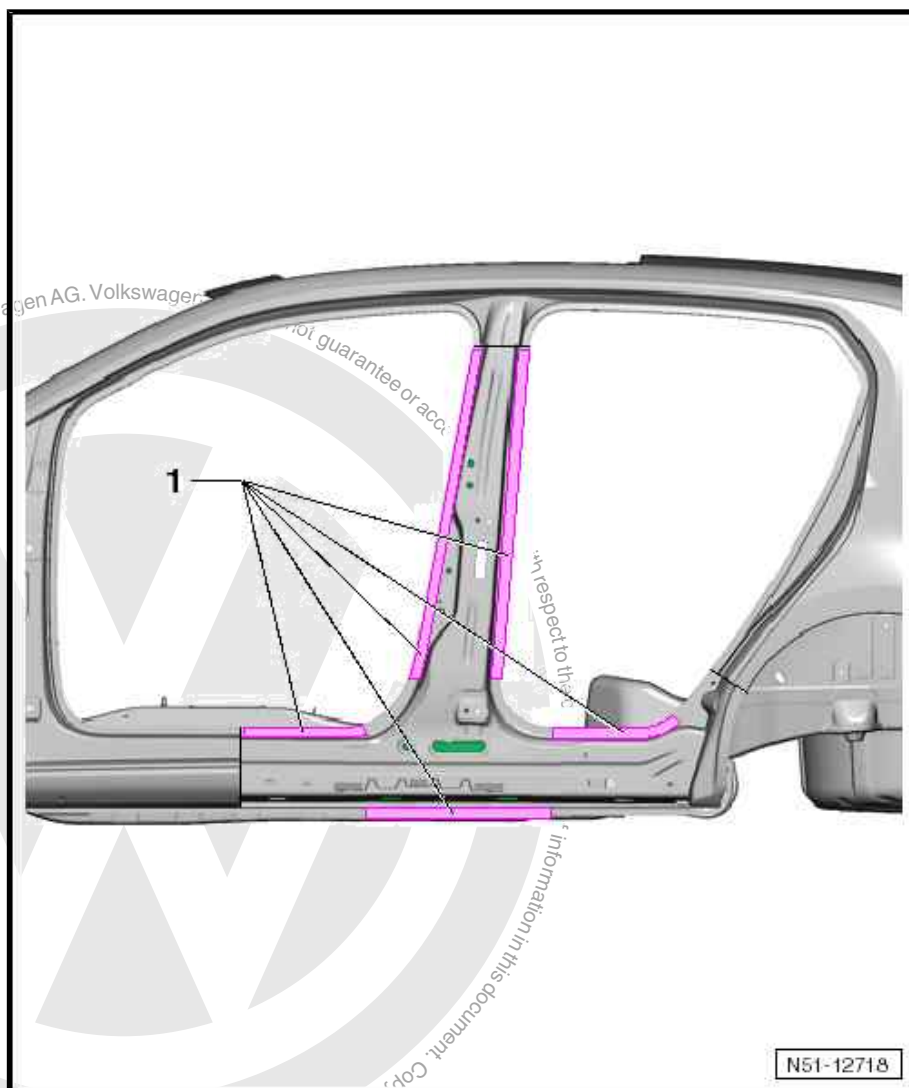
- Weld B-pillar reinforcement -1- to side member reinforcement -3- and rear outer attachment -2-, RP spot weld (inverter), SG plug weld seam.
- Weld parting cut, SG continuous weld seam.



- Weld in B-pillar reinforcement, SG plug weld seam.



- Weld inner B-pillar -1- to inner roof connection -2-, SG continuous weld seam.
- Weld inner B-pillar -1- to inner side member -3-, SG continuous weld seam.
- Tack weld joint of B-pillar reinforcement and inner B-pillar only in upper area to parting cut of side panel, RP spot weld seam (inverter).



Note

Remaining spot welds -1- will be set when installing side panel.

- Install side panel, 2-door ➤ [page 346](#) .
- Install side panel, 4-door ➤ [page 356](#) .
- Install side member ➤ [page 270](#) .



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14 Renewing outer side member - 2-door



WARNING

Observe safety notes!

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

- 1 - Side member
- 2 - Bonded area
- 3 - Side panel
- 4 - Parting cut for rear side member

Dimension -a- = 80 mm



Note

Locate parting cut according to degree of damage. Try to avoid the area of the curve, since it is b

- 5 - Parting cut for front side member

Dimension -b- = 300 mm



Note

Locate parting cut according to degree of damage.

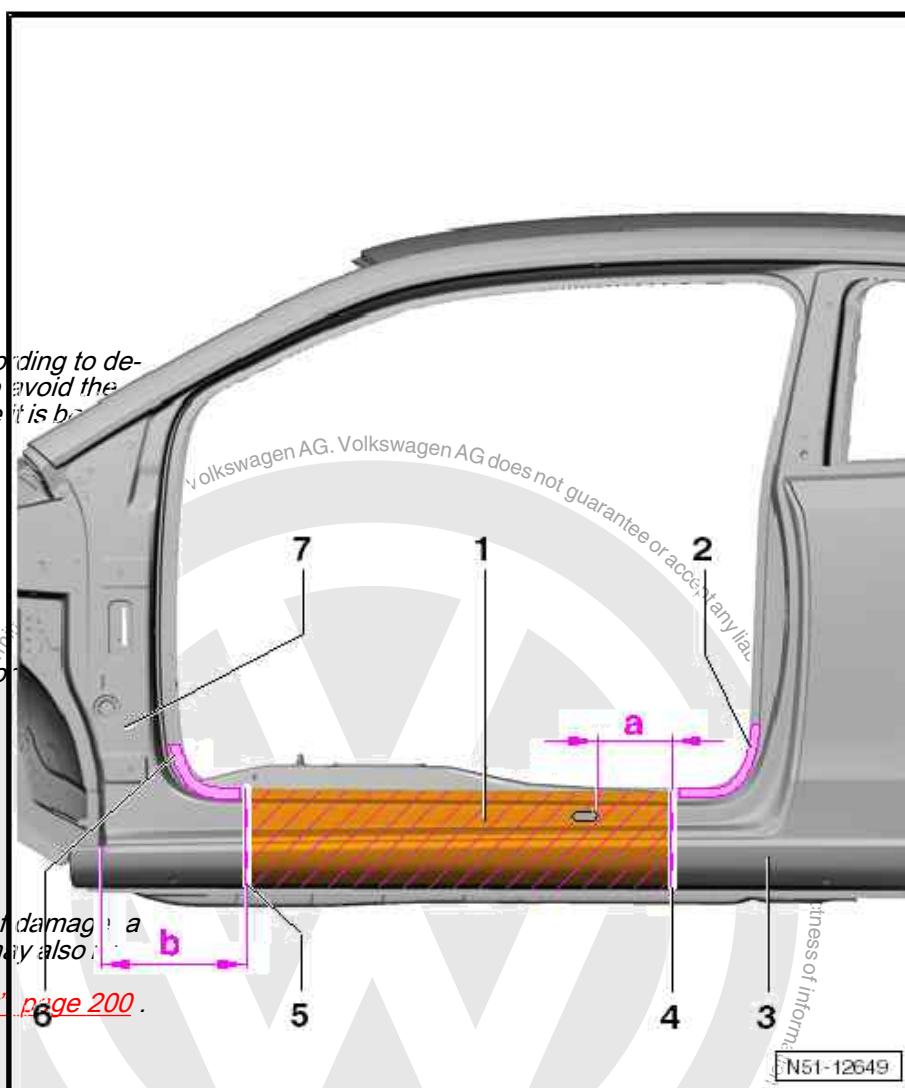
- 6 - Bonded area

- 7 - A-pillar



Note

*Depending on extent of damage, a section of the A-pillar may also to be renewed
⇒ "9 Renewing A-pillar" page 200.*





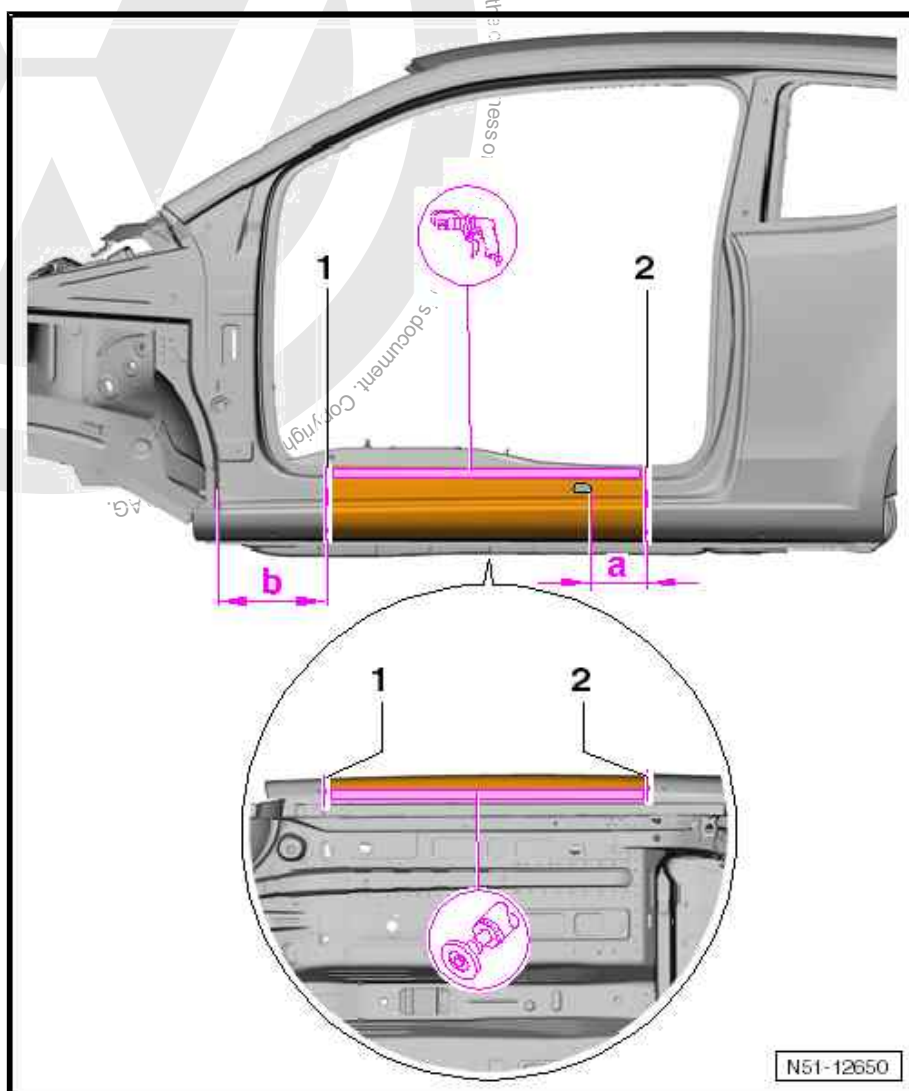
14.1 Tools



Note

- ◆ Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.
- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork.

14.2 Removing



Note

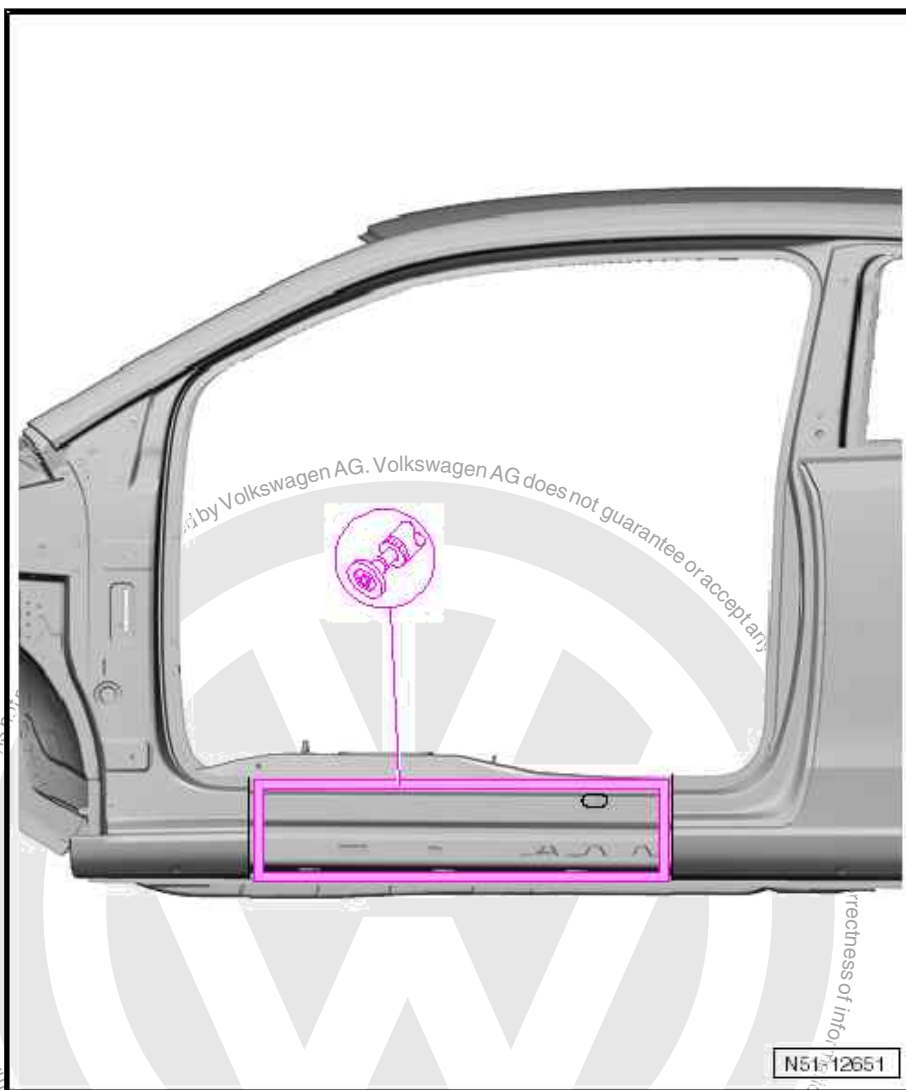
- ◆ Make parting cuts with pneumatic jig-saw - V.A.G 1523 B- only.
- ◆ Remember cut required for replacement part when making parting cut -2-.



- Separate original joint.
- Position parting cuts -1- and -2- according to degree of damage/given measurements, and cut out.

Dimension -a- = 80 mm

Dimension -b- = 300 mm



- Remove remaining material.
- Remove remaining adhesive completely, and sand bonding surfaces down to bare metal.

14.3 Installing



Note

Only welding units authorised by Volkswagen AG may be used
⇒ [page 269](#) .



14.3.1 Preparing new part

Replacement parts

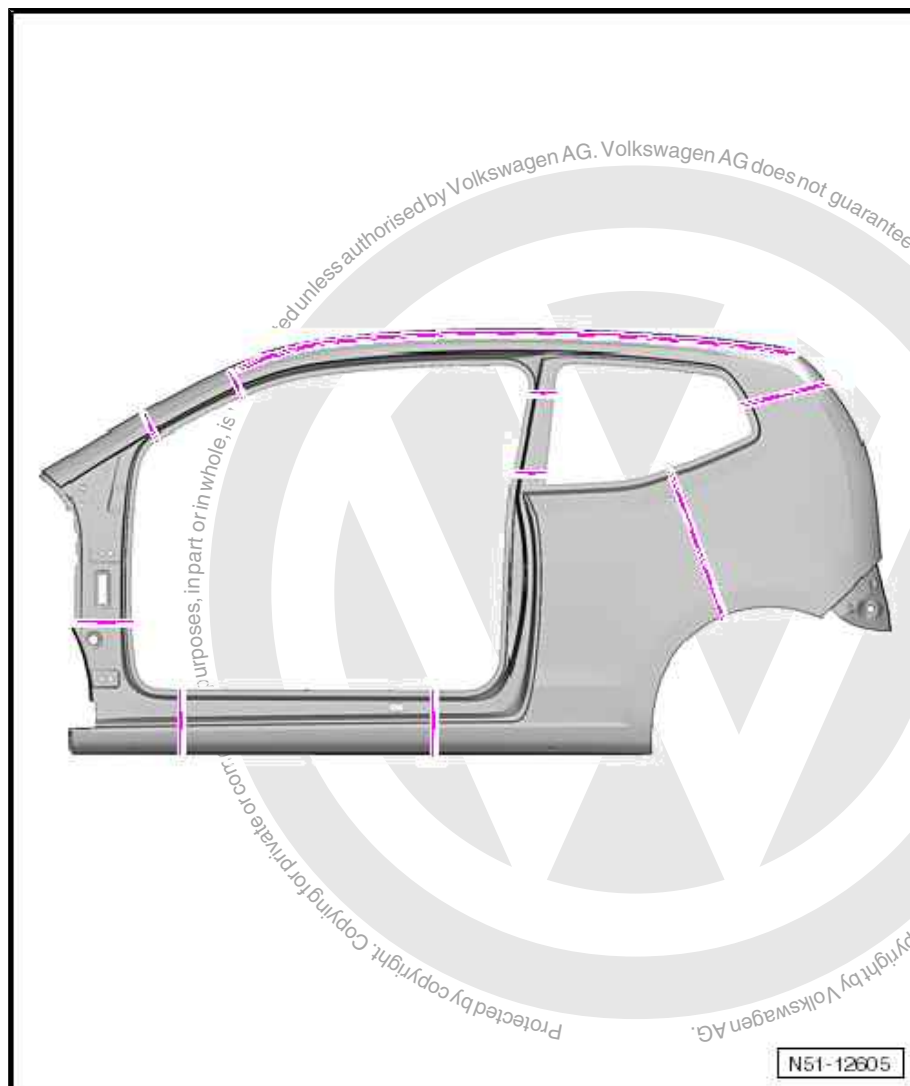
- ◆ Side panel
- ◆ 2-component body adhesive - D 180 003 M2-



- Transfer parting cut to new part and cut out.



14.3.2 Authorised parting cuts on complete side panel



Note

- ◆ *This figure shows all possible parting cuts. The parting cuts can be selected according to the extent of damage.*
- ◆ *MIG solder seams or SG continuous weld seams are permitted at the parting cuts shown in illustration.*

14.3.3 Welding in

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

-

- Weld parting cuts -1 and 2-, MIG-L stepped seam or SG continuous weld seam is permitted.
- Weld side member, RP spot weld seam.
- Weld joint to side member replacement part, SG staggered continuous weld seam.



RO: 51 49 53 56

15 Renewing side member reinforcement - centre part section



WARNING

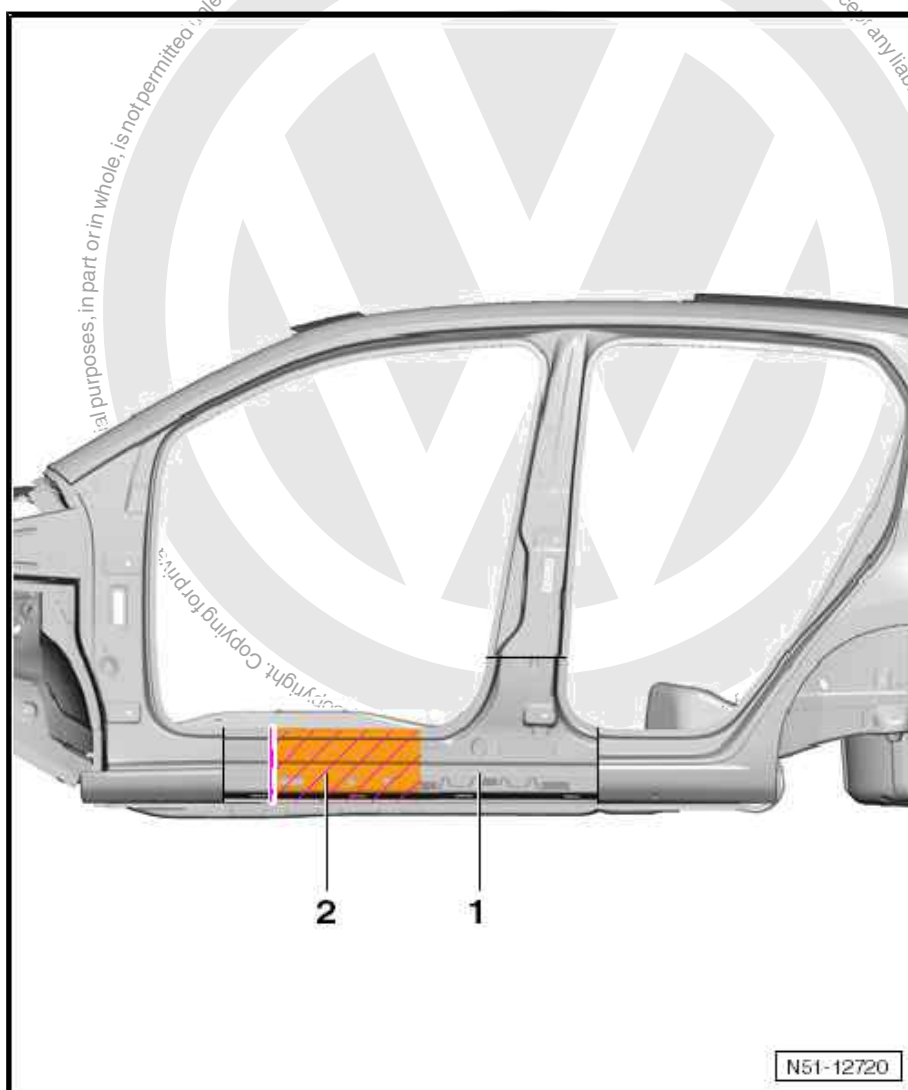
Observe safety notes!

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

- Outer B-pillar already removed
⇒ [“11 Renewing B-pillar - 4-door”, page 223](#) .

1 - Side member reinforcement

2 - Parting cut





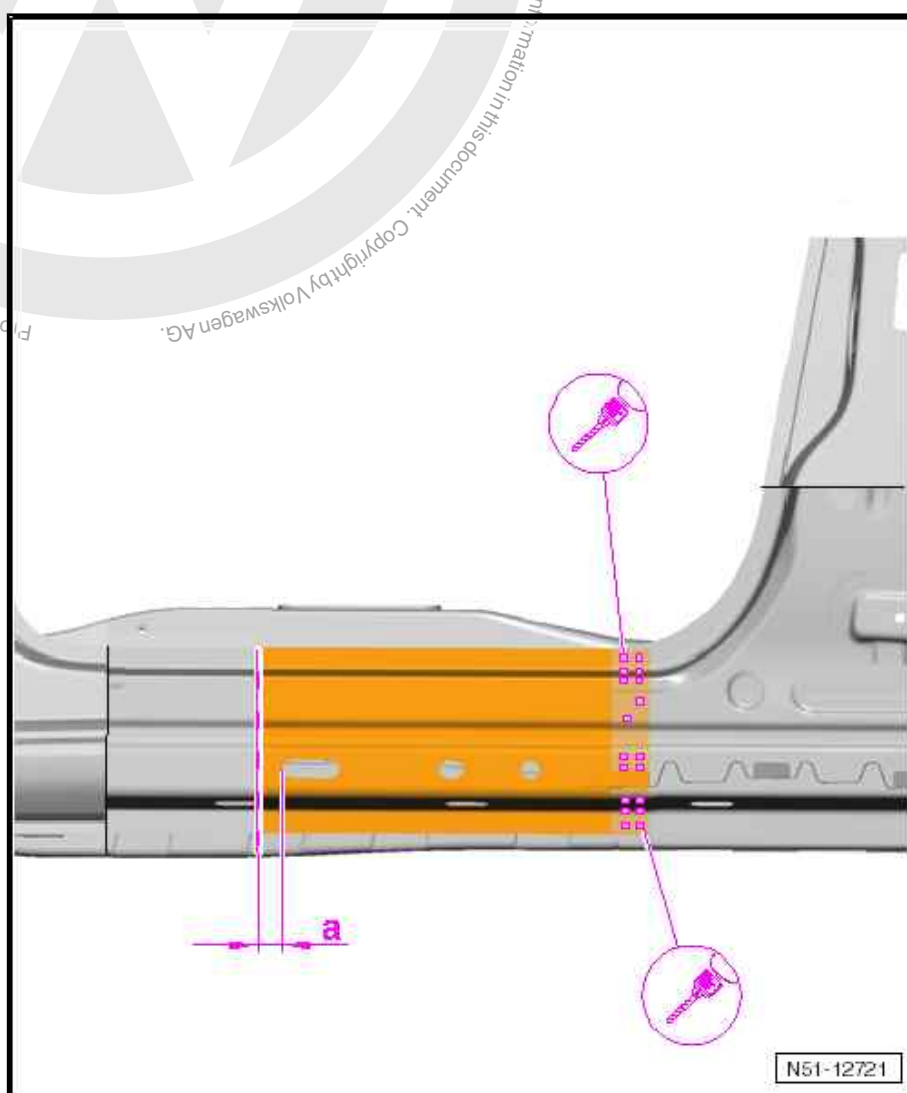
15.1 Tools



Note

- ◆ *Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ➔ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork .*

15.2 Removing



- Separate as shown.

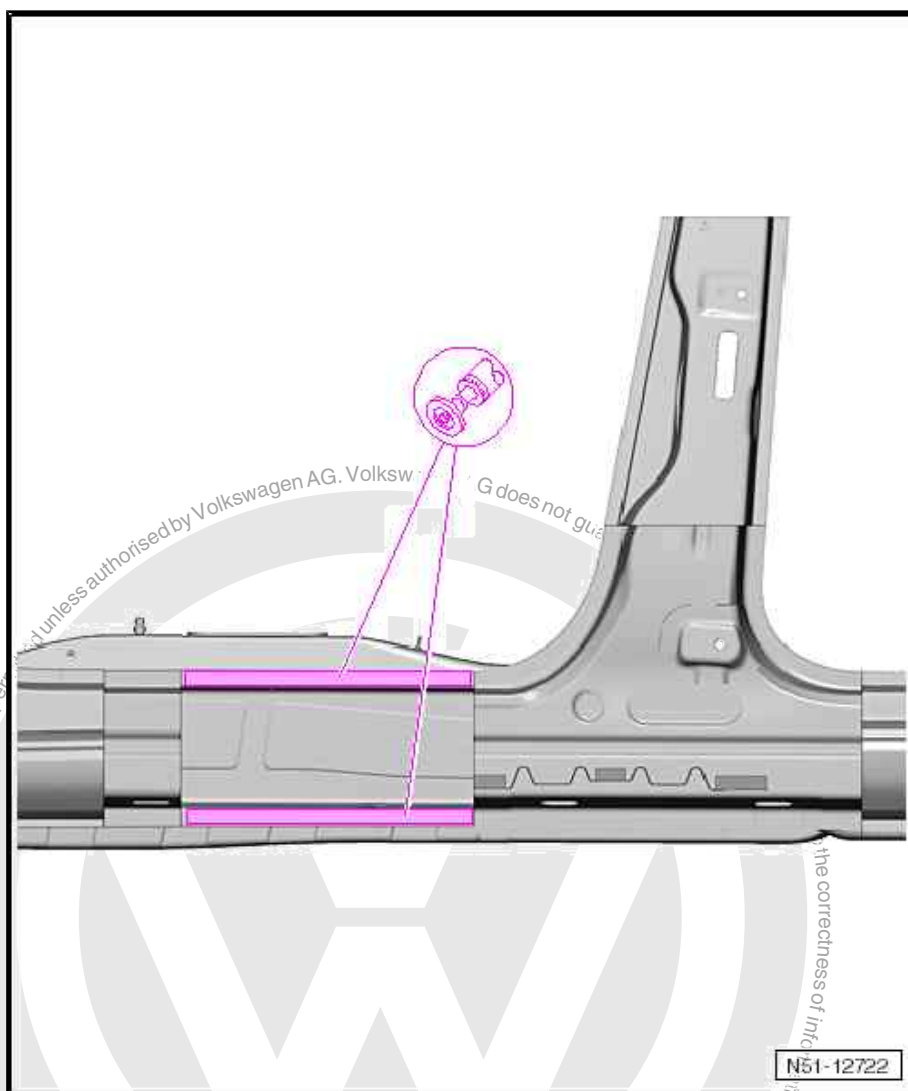


Dimension -a- = 15 mm



Note

- ◆ When making parting cuts, ensure that the flange areas lying behind are not damaged.
- ◆ Use laser weld seam grinder - VAS 6319- to part laser weld seams.
- Separate original joint.



- Remove remaining material.

15.3 Installing



Note

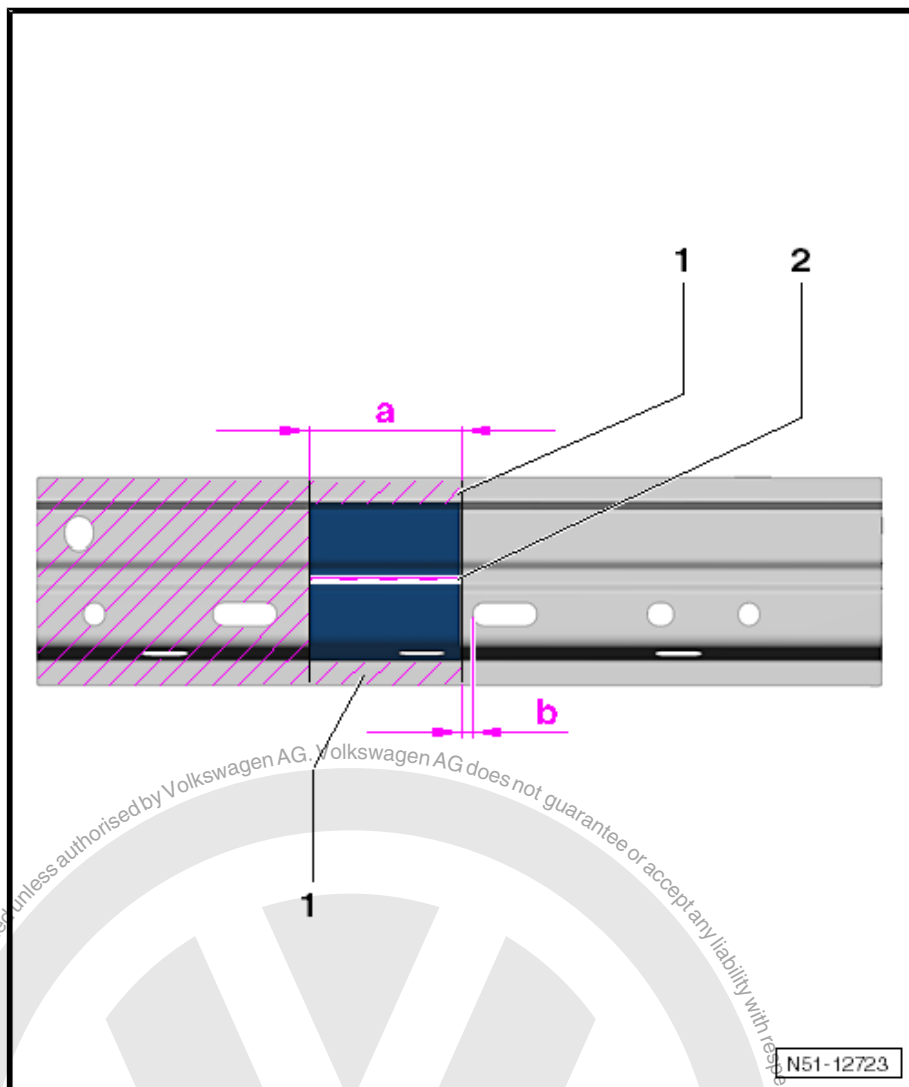
Only welding units authorised by Volkswagen AG may be used
⇒ [page 275](#).



15.3.1 Preparing new part

Replacement part

- ◆ Side member reinforcement



- Transfer parting cut to new part and cut out.

Dimension -b- = 15 mm

- Cut a repair plate out of section of side member reinforcement.

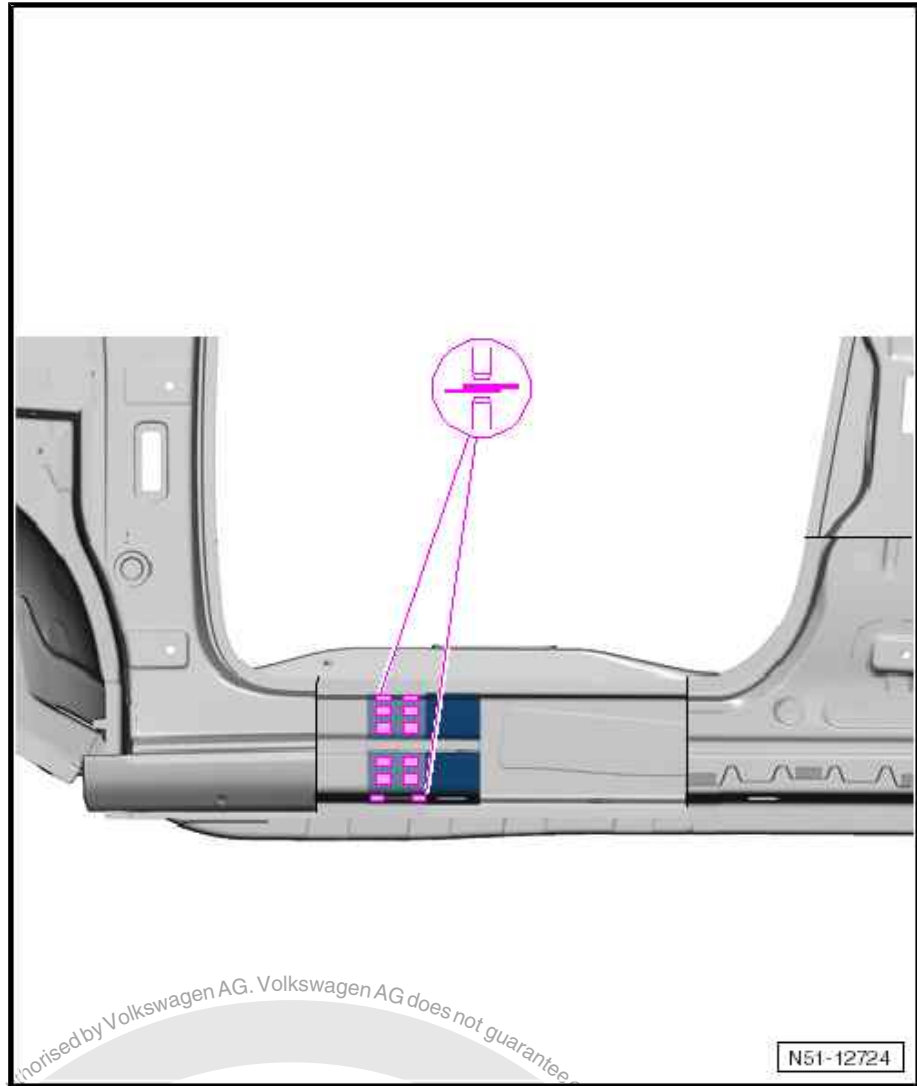
Dimension -a- = 120 mm

- Separate flange -1- from repair plate. Then cut through repair plate in the middle -2-.



Note

If parting cut is insufficient, grind down repair plates accordingly.



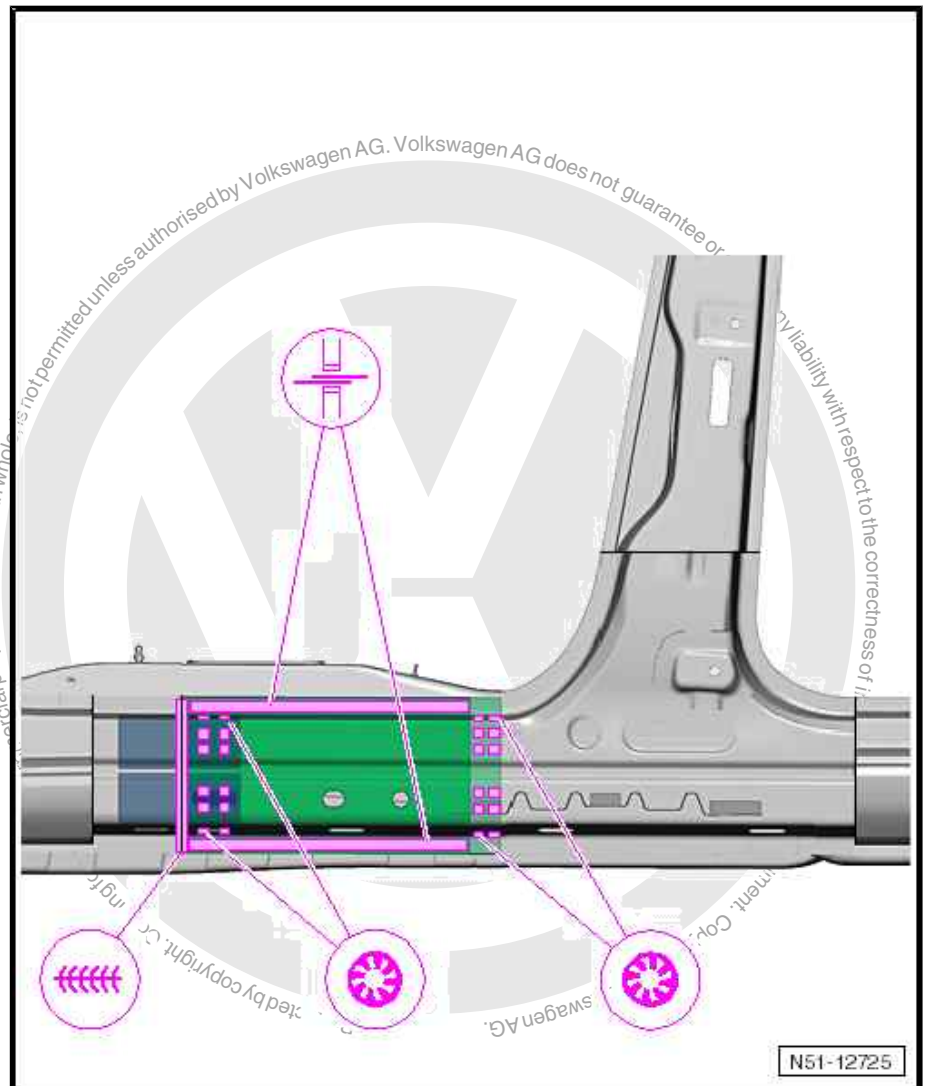
- Weld prepared repair plates to side member reinforcement with 12 spot welds, RP spot weld (inverter).

15.3.2 Welding in

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



- Check fit with other parts.



- Weld parting cut, SG continuous weld seam.
- Weld in original joint using several spot welds, the remaining weld points will be reinstated when the outer side member is installed, RP spot weld seam (inverter).
- Weld in original joint to side member reinforcement and B-pillar, SG plug weld seam.
- Install outer B-pillar ➤ [page 227](#) .



RO: 51 49 55 50

16 Renewing rear side member reinforcement (2-door)



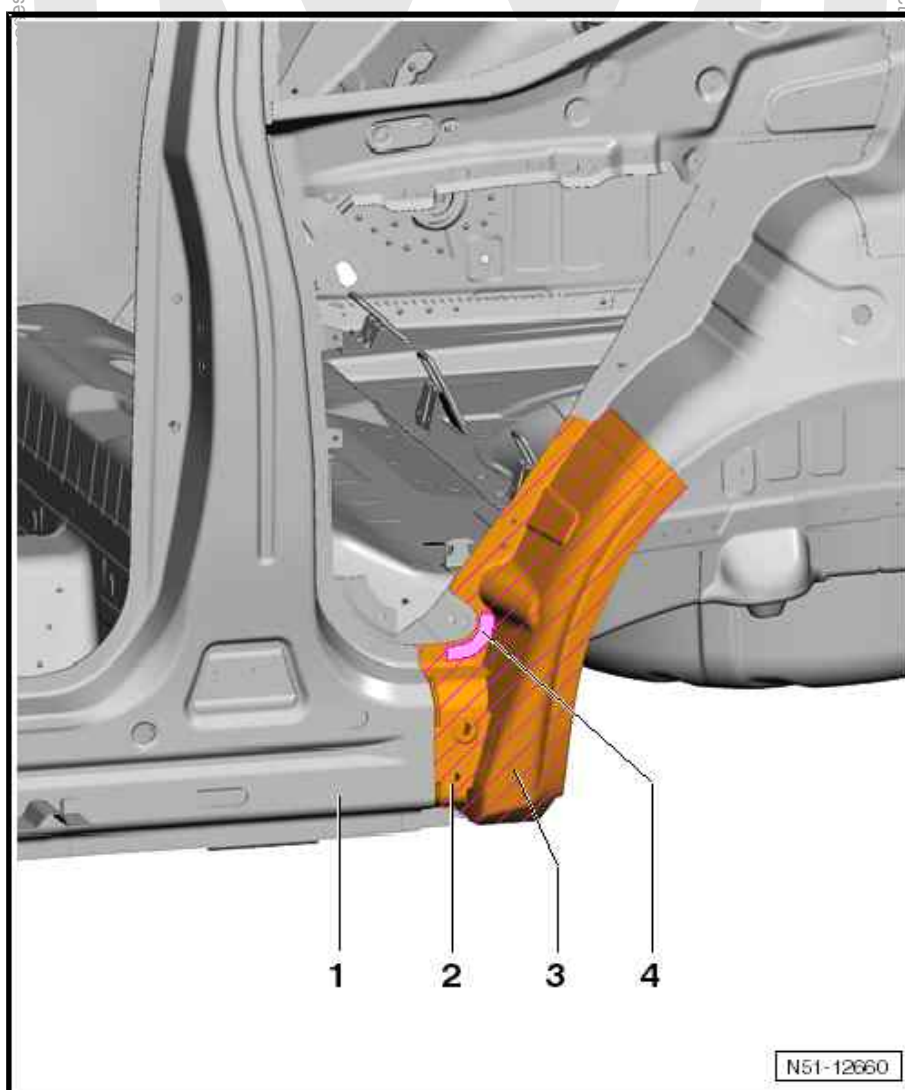
WARNING

Observe safety notes!

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

- Side panel already removed
⇒ [“11 Renewing side panel - 2-door”, page 343](#)

- 1 - B-pillar reinforcement
- 2 - Rear side member reinforcement
- 3 - Wheel housing attachment
- 4 - Bonded area



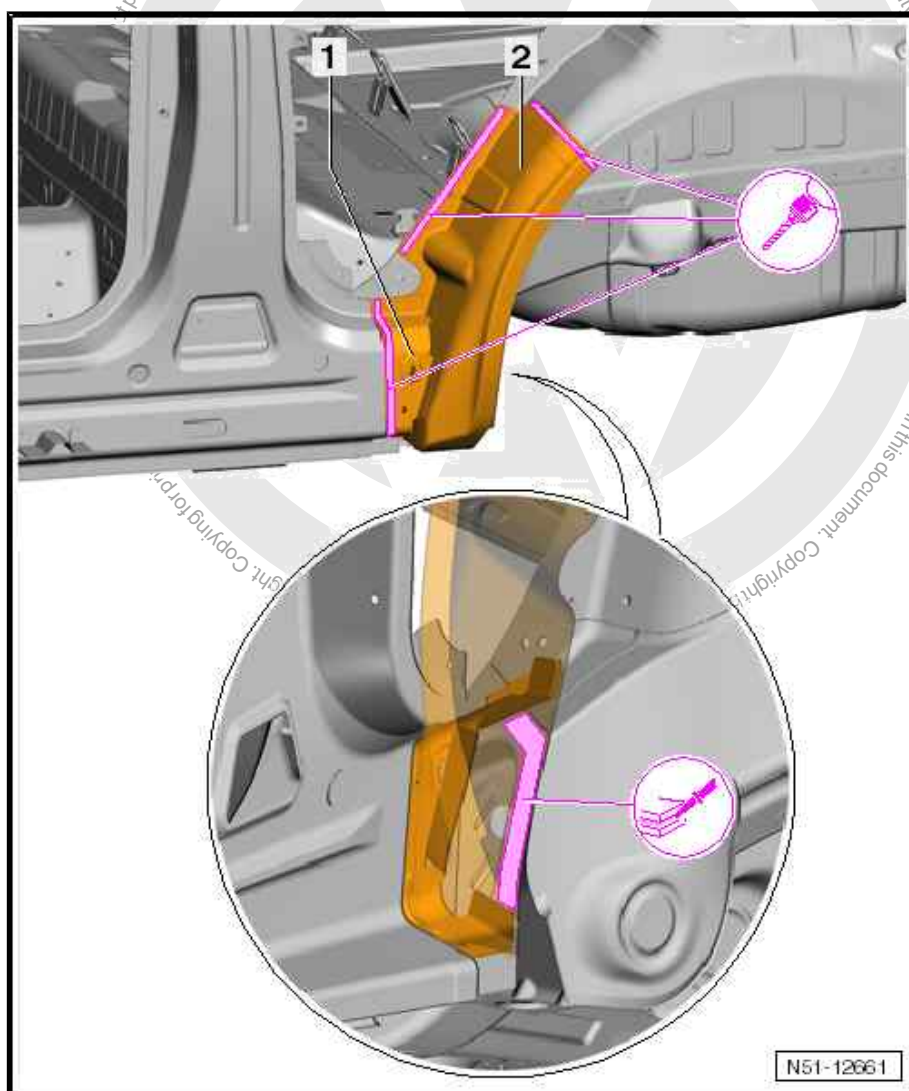
16.1 Tools



Note

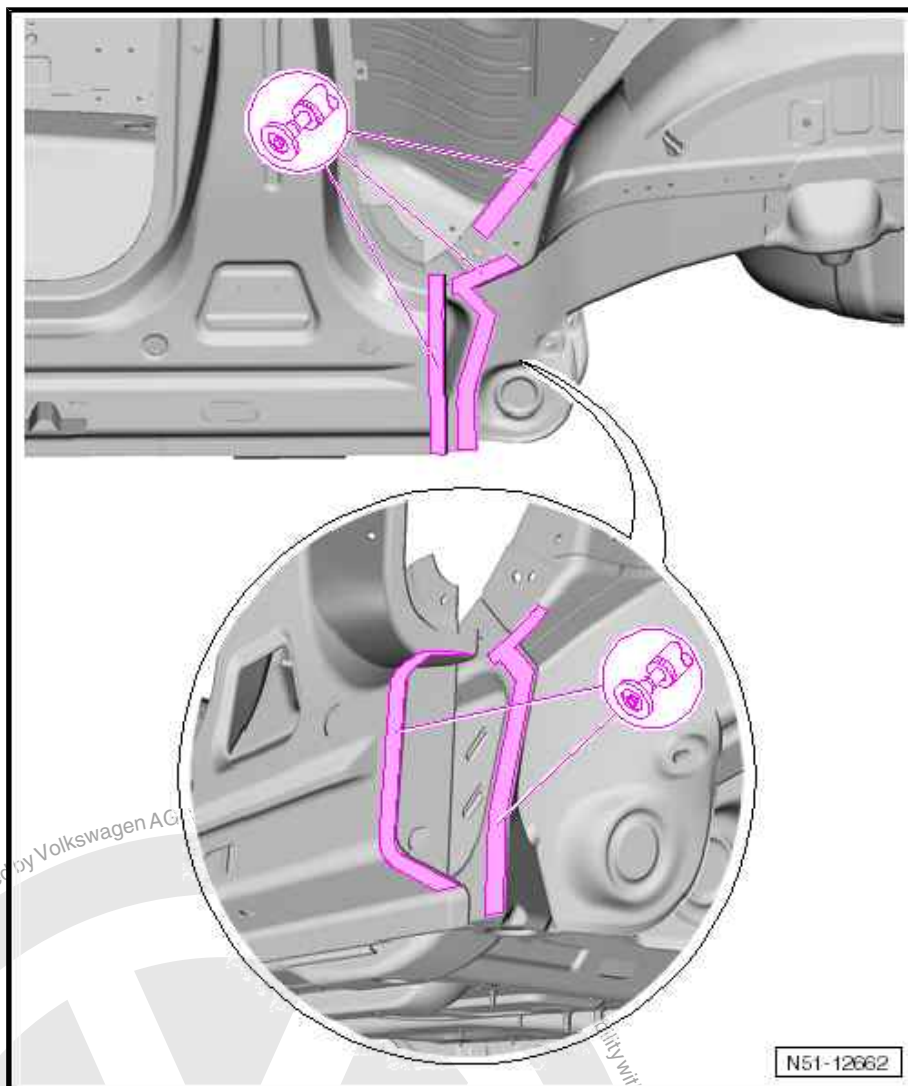
- ◆ Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.
- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork.

16.2 Removing



- Separate original joint to inner side member, B-pillar reinforcement and inner side panel.

To show bonded joint -2- more clearly, rear side member reinforcement -1- is not shown in the illustration.



- Remove remaining material.
- Completely remove remaining adhesive.
- Apply corrosion protection measures on bonding surfaces where no welding is to be performed ⇒ Body; General information, Paint; Technical data; General notes; Notes on repairing add-on parts and welded parts .
- Then lightly roughen bonding surfaces.

16.3 Installing



Note

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

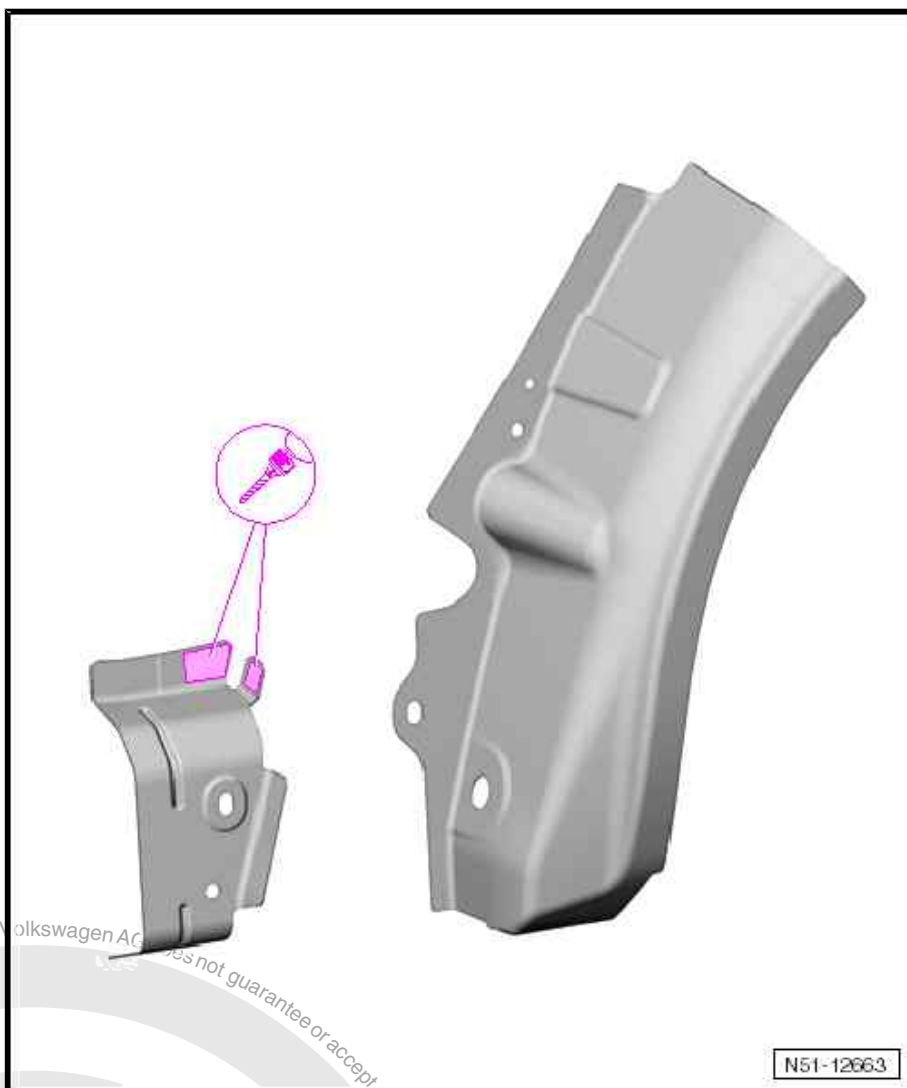
16.3.1 Preparing new part

Replacement parts

- ◆ Side member rear reinforcement (parts designation: extension for side panel)



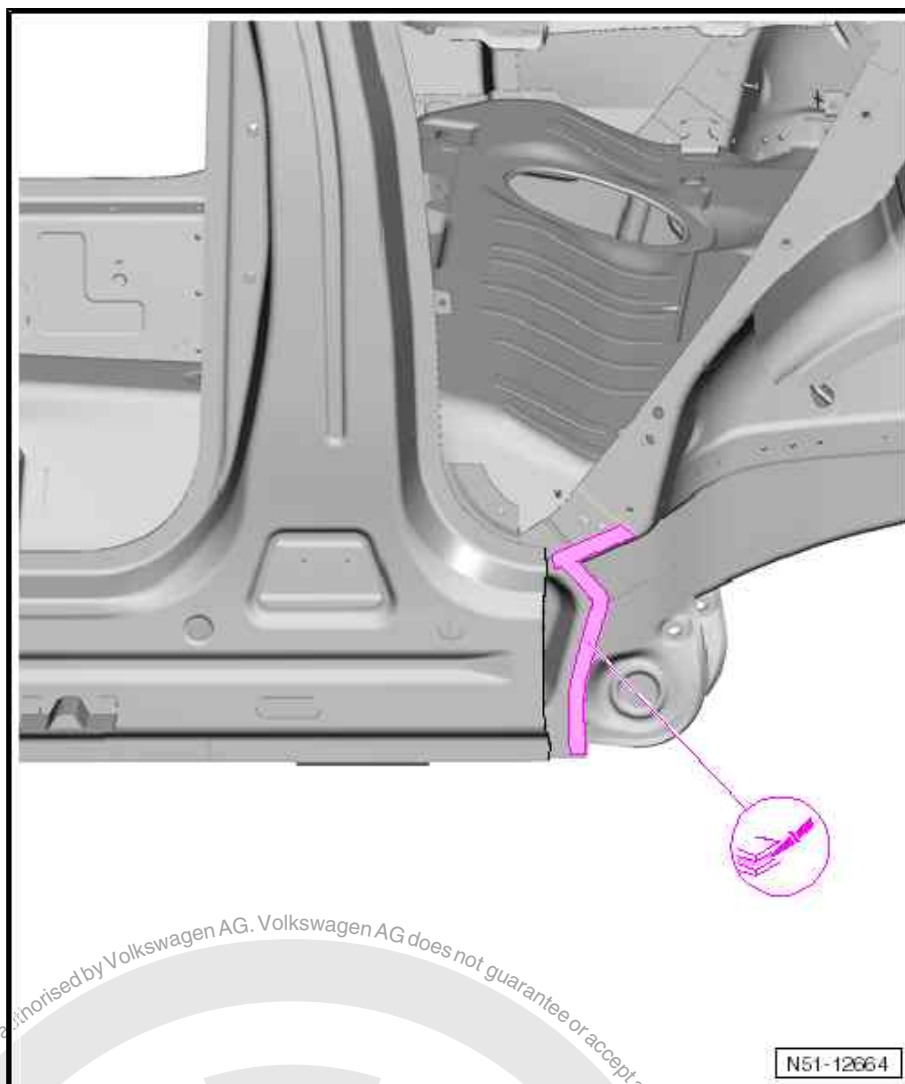
- ◆ Wheel housing attachment (replacement part designation: reinforcement for side member)
- ◆ 2-pack body adhesive - D 180 003 M2-



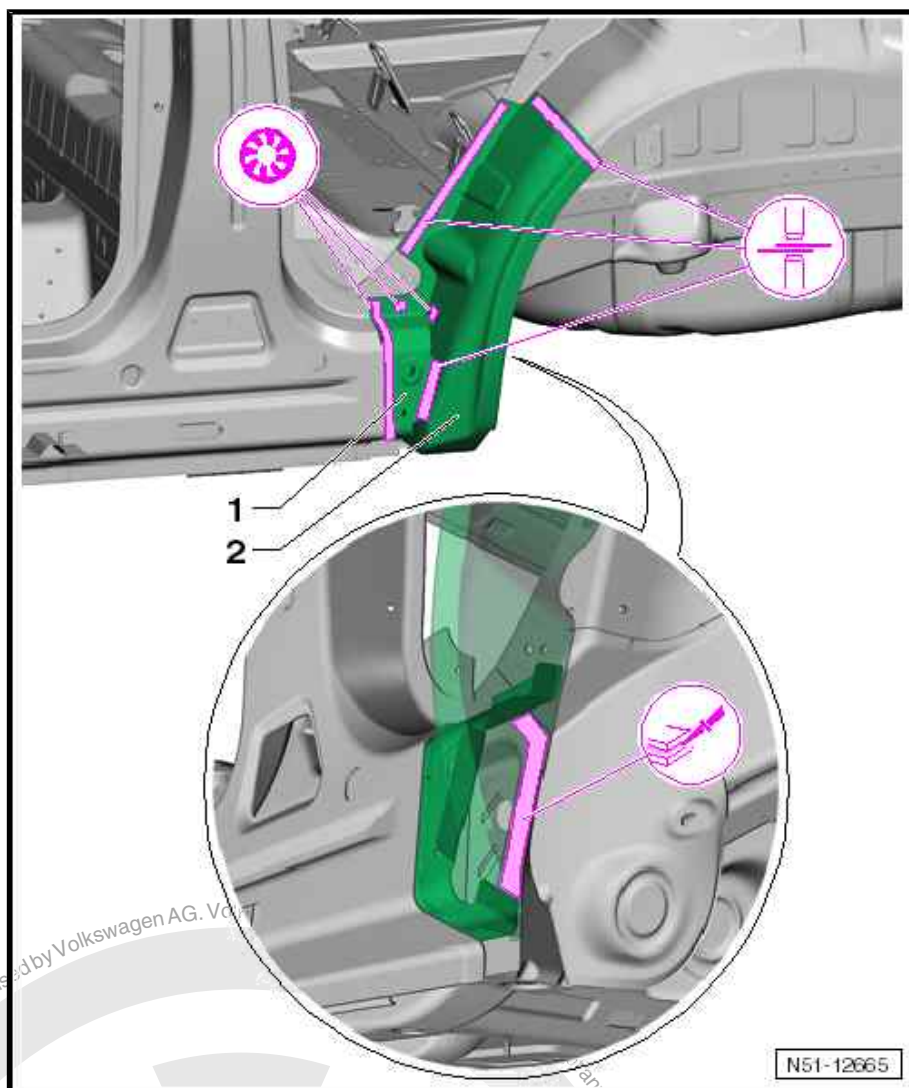
Drill 3 x 8 mm Ø holes for SG plug weld seam.



16.3.2 Welding in



- Apply 2-component body adhesive - D 180 003 M2- to areas bonded in factory.
- Adapt new parts -1- and -2- with vehicle standing on its wheels or on alignment bracket set , and fix them in position.
- Check fit with adjacent parts.



- Recreate original joint, SG plug weld seam and RP spot weld seam (inverter).
- Install side panel ➤ [page 346](#).



53 – Body - rear

RO: 53 05 55 00

1 Renewing cross panel



WARNING

Observe safety notes!

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

1 - Bonded area

2 - Bumper brackets

Need to be removed during process and are already welded to replacement part cross panel.

3 - Cross panel





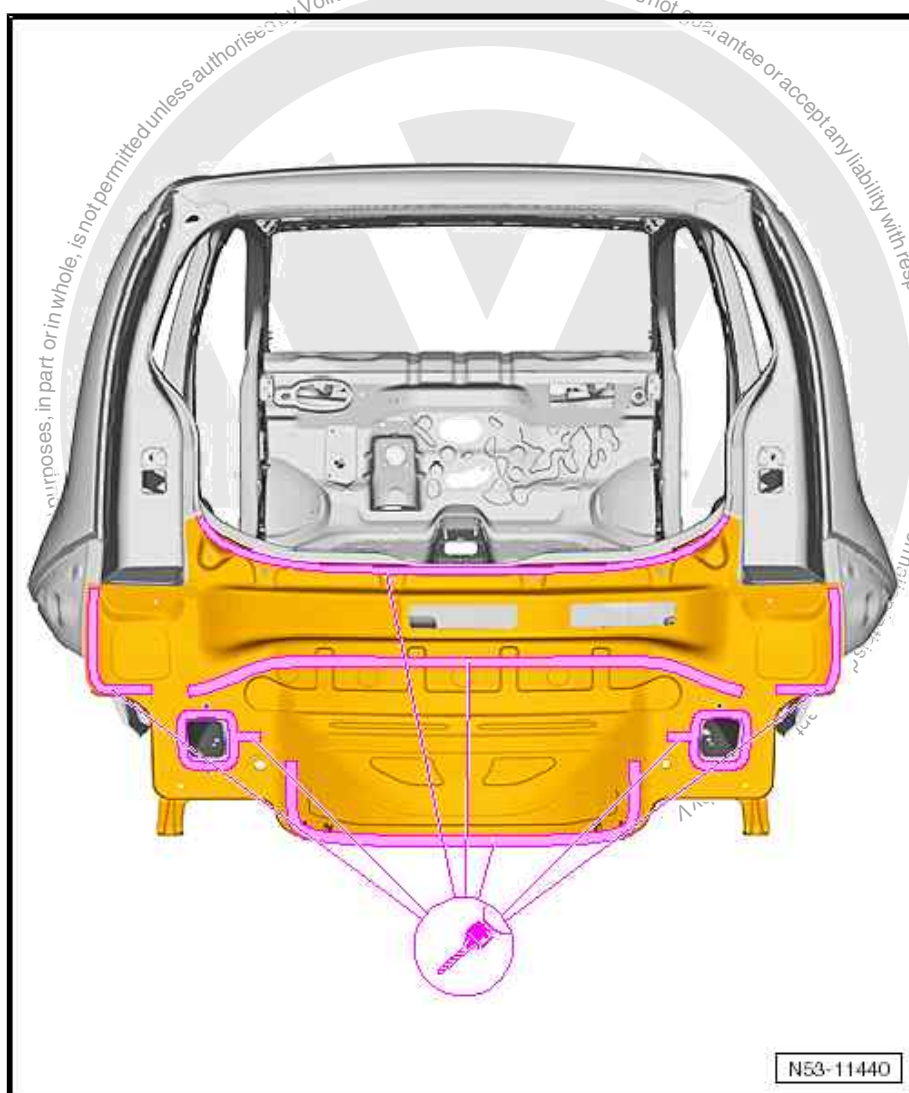
1.1 Tools



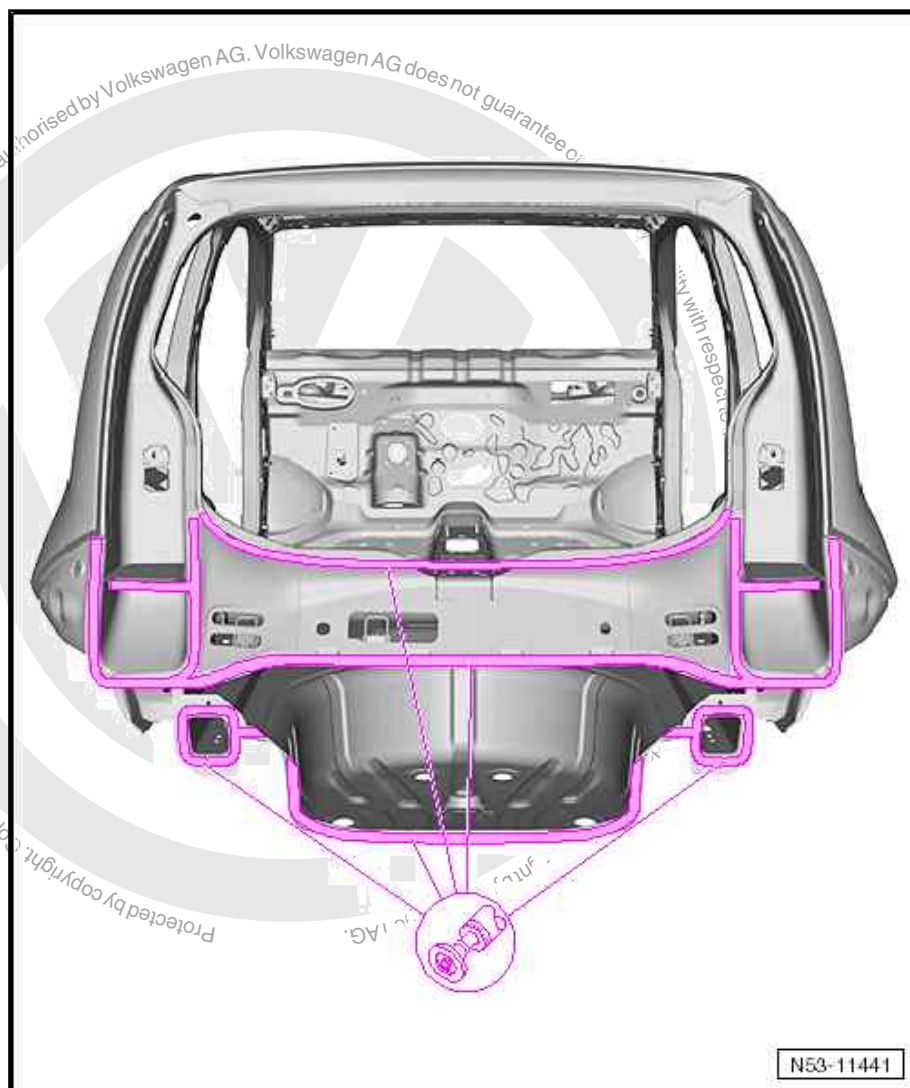
Note

- ◆ Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.
- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork.

1.2 Removing



- Separate original joint and bonded areas.



- Remove remaining material.
- Remove remaining adhesive completely, and sand bonding surfaces down to bare metal.
- Apply corrosion protection measures on bonding surfaces where no welding is to be performed ⇒ Body; General information, Paint; Technical data; General notes; Notes on repairing add-on parts and welded parts .
- Then lightly roughen bonding surfaces.

1.3 Installing



Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 287](#) .*

1.3.1 Welding in

Replacement parts

- ◆ Cross panel
- ◆ 2-pack body adhesive - D 180 003 M2-

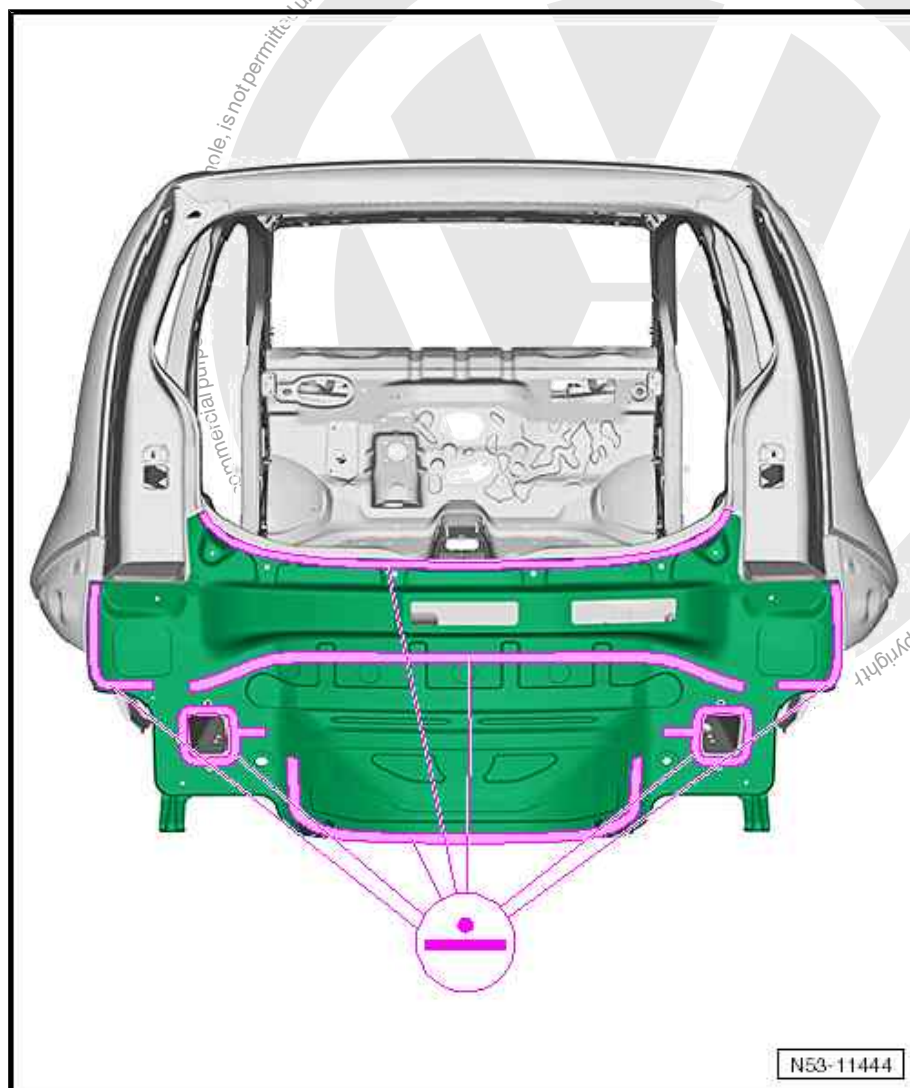


Note

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



- Apply 2-component body adhesive - D 180 003 M2- to areas bonded in factory.
- Adapt new part with vehicle standing on its wheels or alignment bracket set and fix in position.
- Check fit with add-on parts.



- Spot weld cross panel in, RP spot weld seam.



RO: 53 06 55 50

2 Renewing sealing channel reinforcement



WARNING

Observe safety notes!

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

- Cross panel already removed ⇒ [page 286](#) .
- Lock carrier already removed ⇒ [page 298](#) .
- Tail light mounting already removed ⇒ [page 302](#) .

1 - C-pillar reinforcement

2 - Sealing channel reinforcement

3 - End plate

Not removed in process.





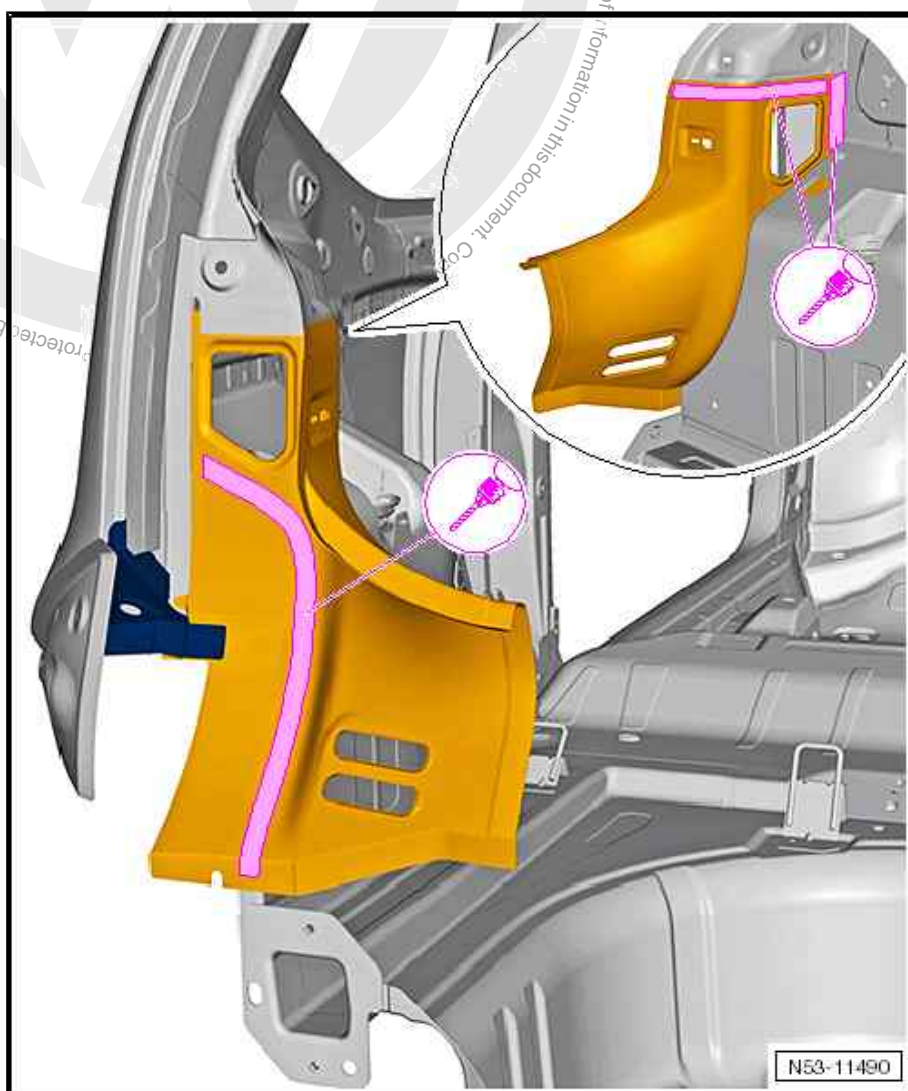
2.1 Tools



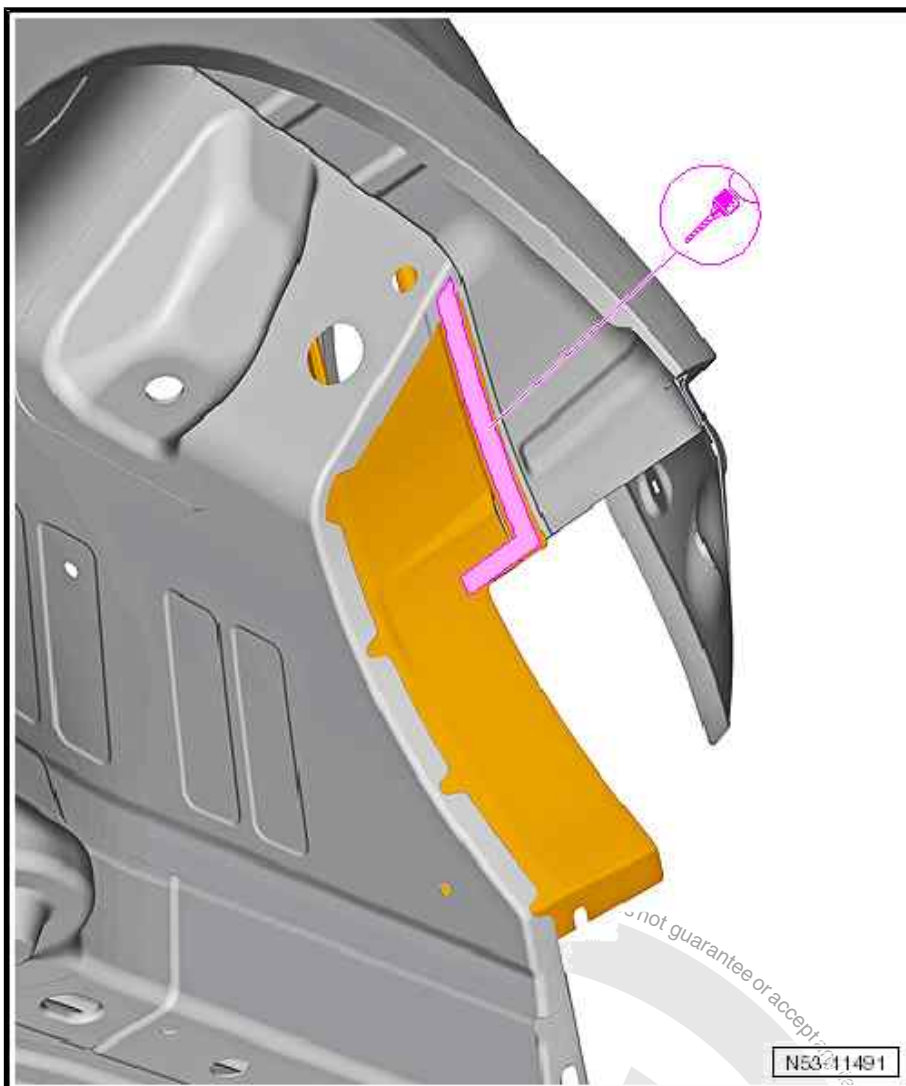
Note

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

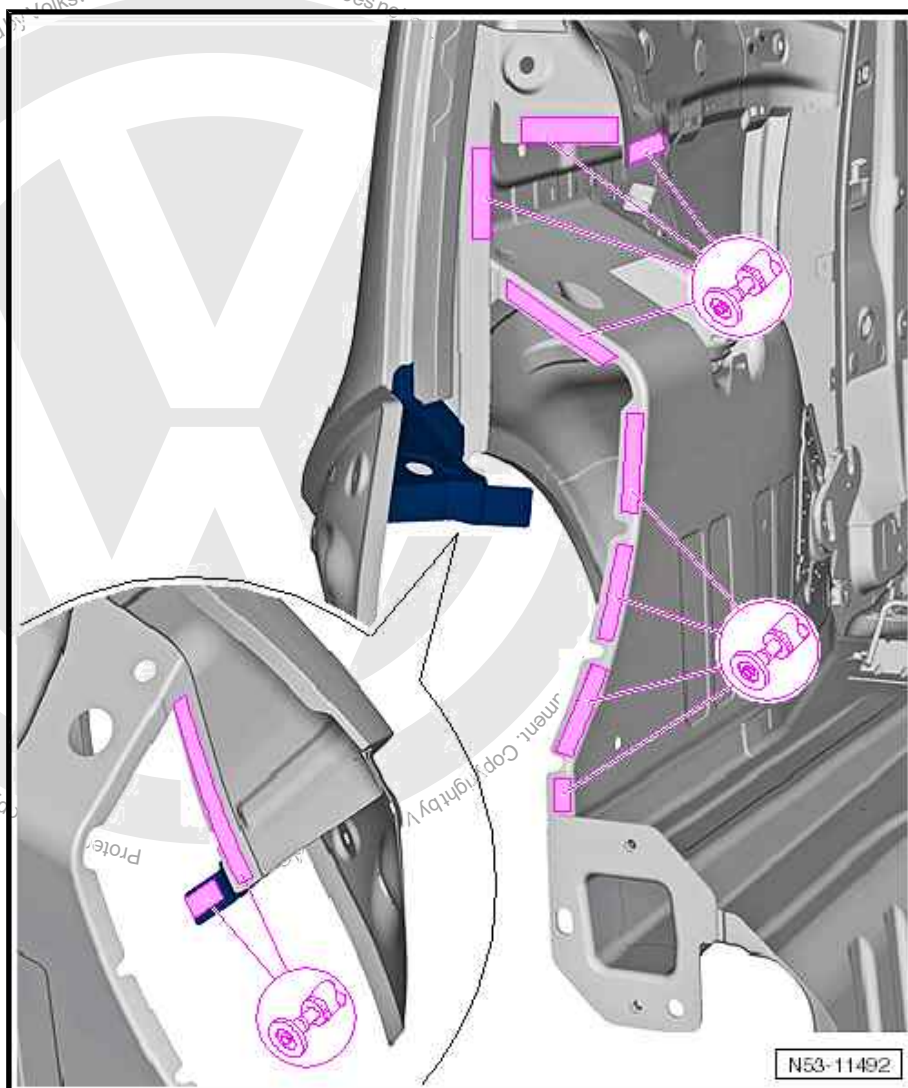
2.2 Removing



- Separate original joint.



- Separate original joint.



- Remove remaining material.

2.3 Installing



Note

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

2.3.1 Preparing new part

Replacement part

- ◆ Sealing channel reinforcement



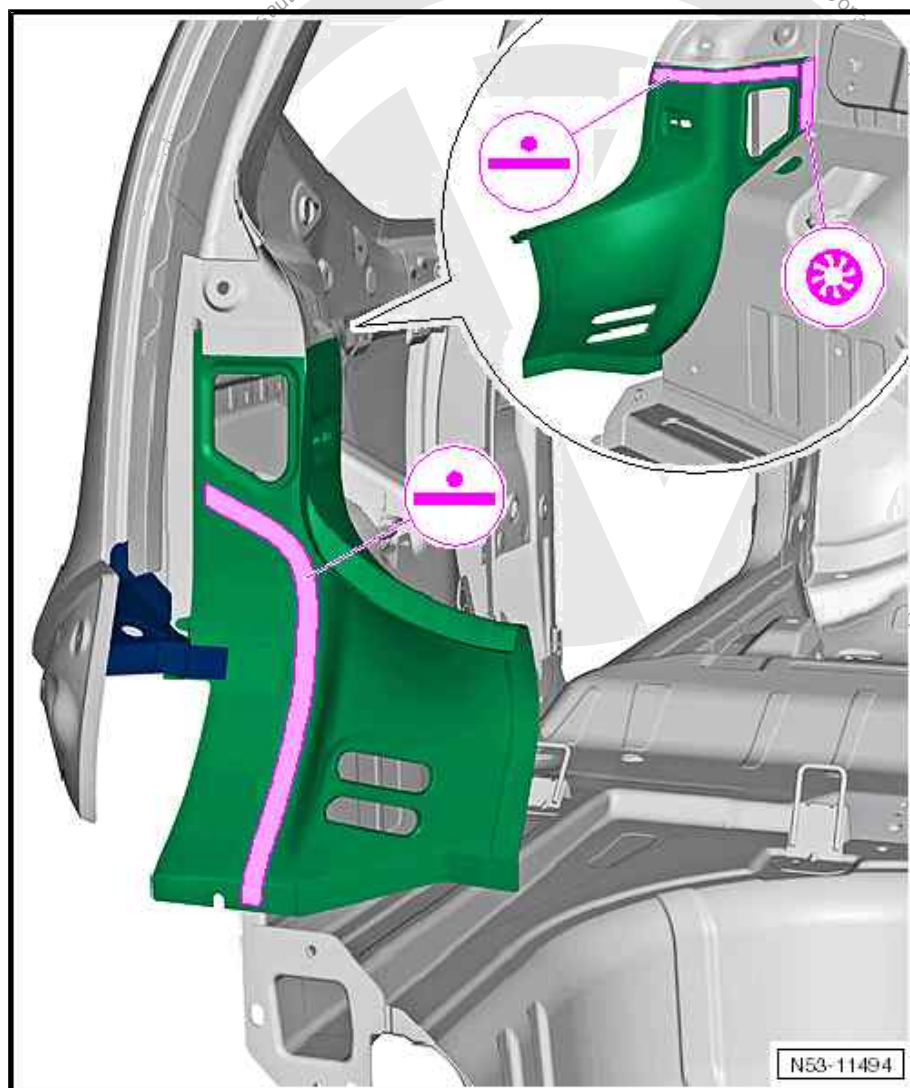
- Drill 8 mm Ø holes for SG plug weld seam.



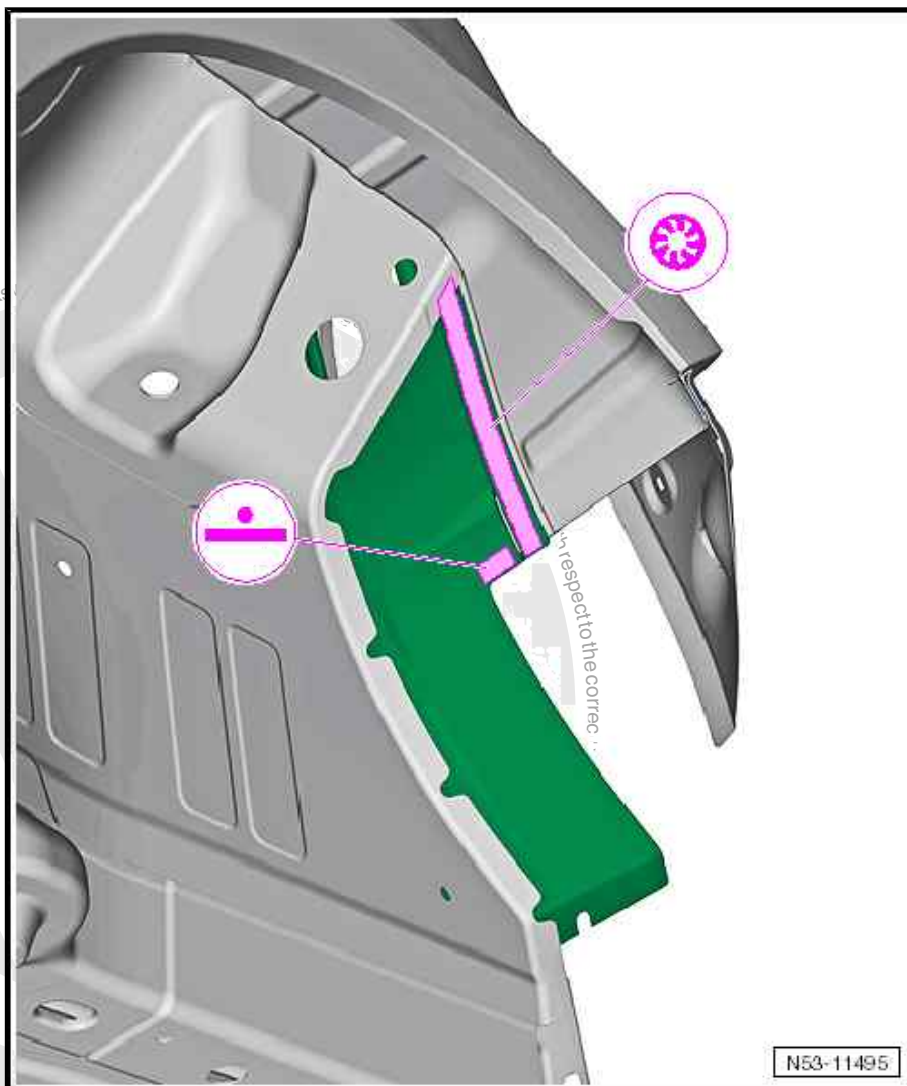
2.3.2 Welding in

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





- Weld in sealing channel reinforcement, RP spot weld seam and SG plug weld seam.



- Weld in remaining joint, RP spot weld seam and SG plug weld seam.
- Install tail light mounting ➤ [page 304](#) .
- Installing lock carrier ➤ [page 300](#) .
- Install cross panel ➤ [page 288](#) .



RO: 53 09 55 50

3 Renewing lock carrier

Includes: lock reinforcement



WARNING

Observe safety notes!

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

- Cross panel already removed ⇒ [page 286](#) .

1 - Lock carrier

2 - Lock reinforcement

3 - Sealing channel reinforcement





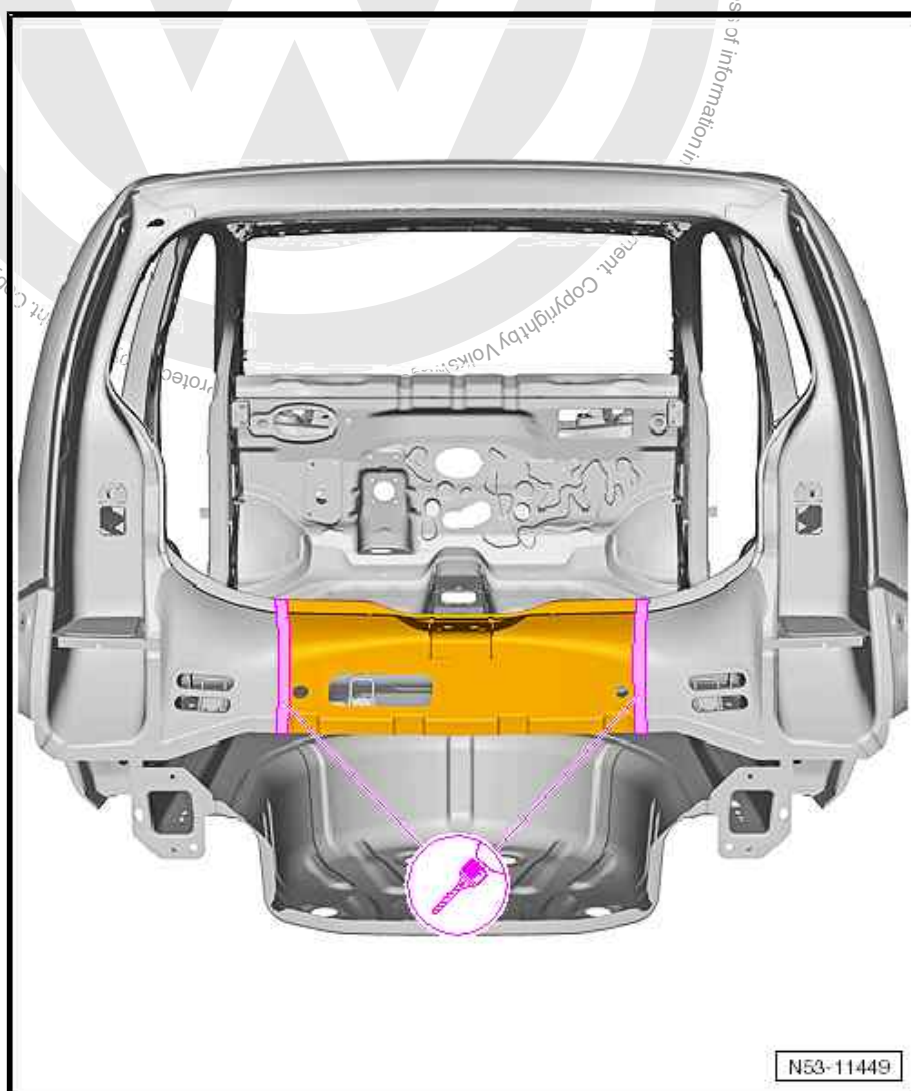
3.1 Tools



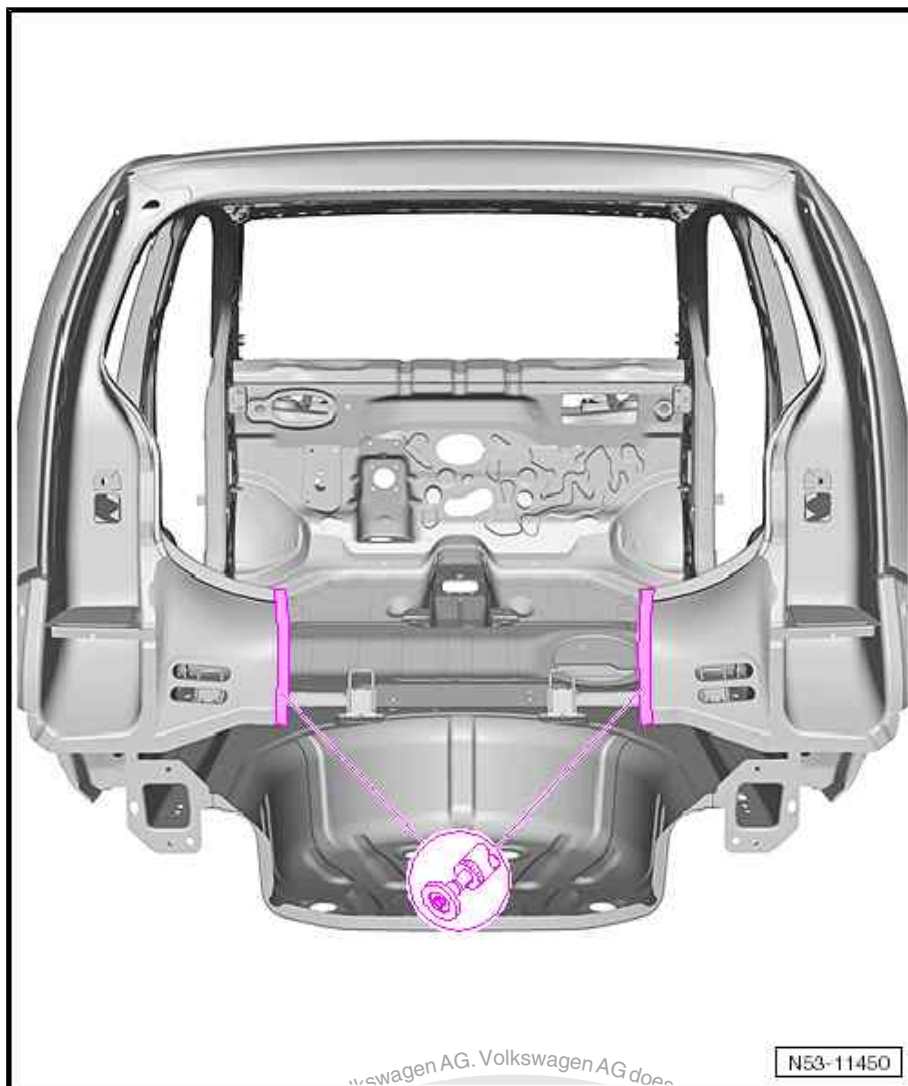
Note

- ◆ *Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.*
- ◆ *The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ➔ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork .*

3.2 Removing



- Separate original joint.



- Remove remaining material.

3.3 Installing



Note

Only welding units authorised by Volkswagen AG may be used
⇒ [page 299](#).

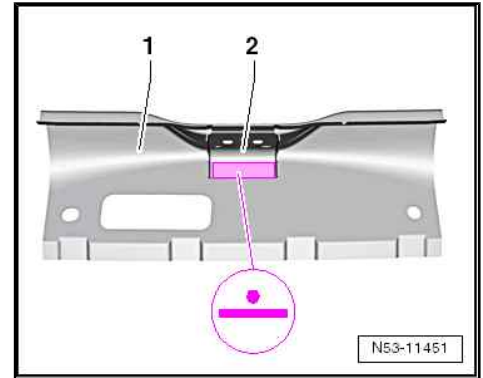
3.3.1 Preparing new part

Replacement parts

- ◆ Lock carrier
- ◆ Lock reinforcement



- Adapt lock reinforcement -2- to lock carrier -1- and fix in position.
- Spot weld lock reinforcement in, RP spot weld seam.



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



- Weld in new part, RP spot weld 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

- Cross panel already removed ➔ [page 286](#) .

1 - Sealing channel

2 - Parting cut

Parting cut is possible even if side panel does not need to be removed.

3 - Tail light mounting

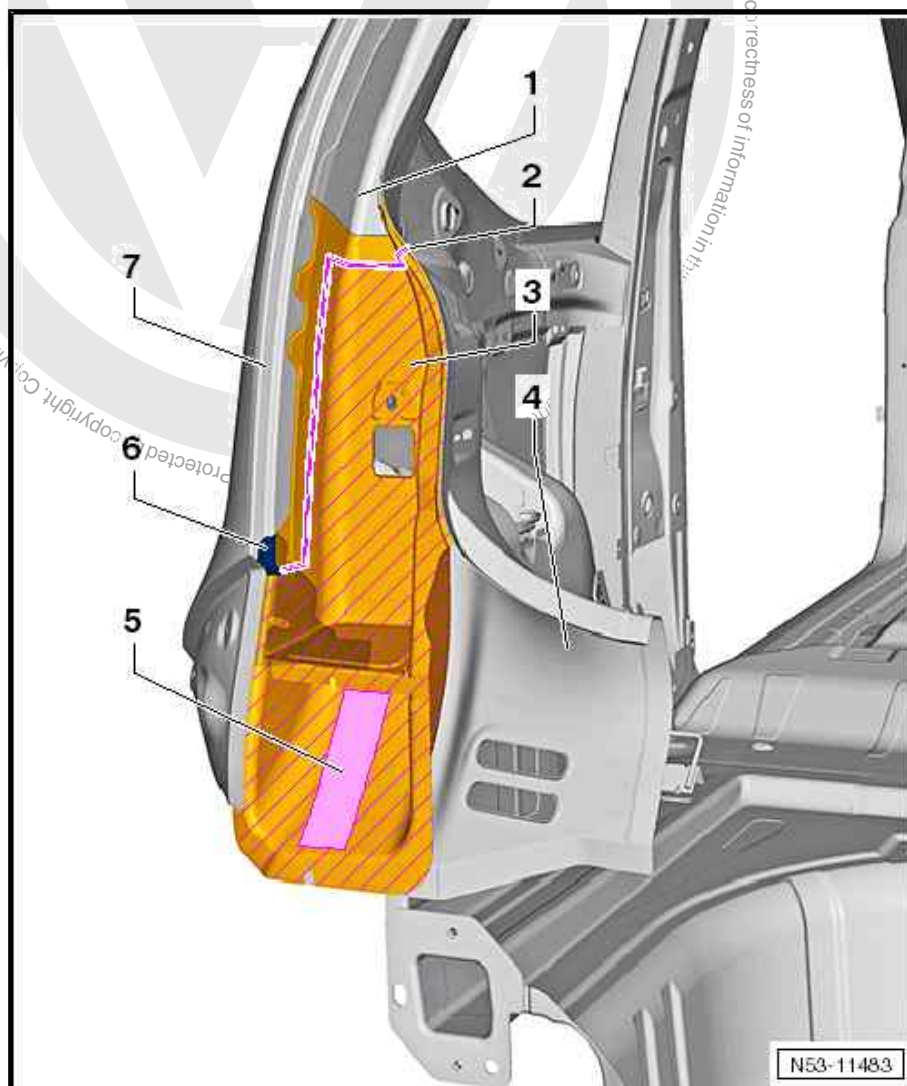
4 - Sealing channel reinforcement

5 - Bonded area

6 - End plate

Not removed in process.

7 - Side panel





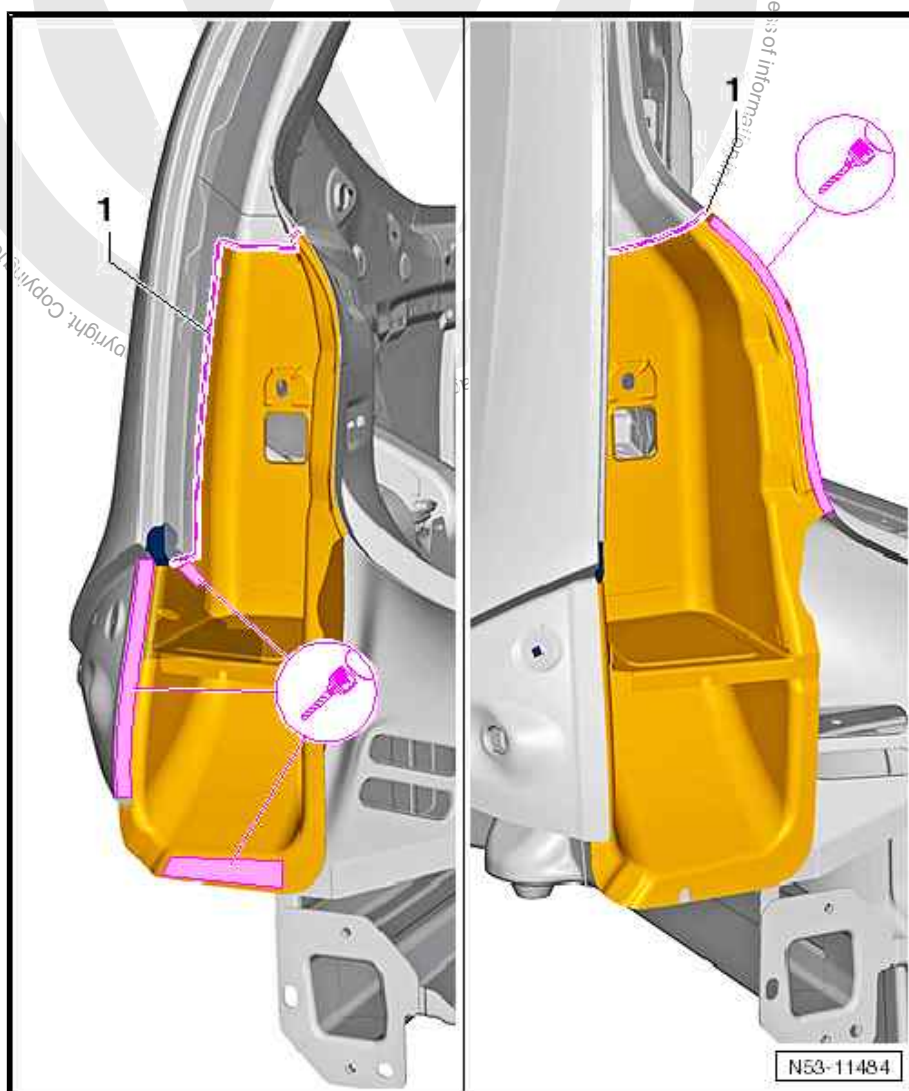
4.1 Tools



Note

- ◆ Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.
- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ➔ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork.

4.2 Removing



- Separate original joint.

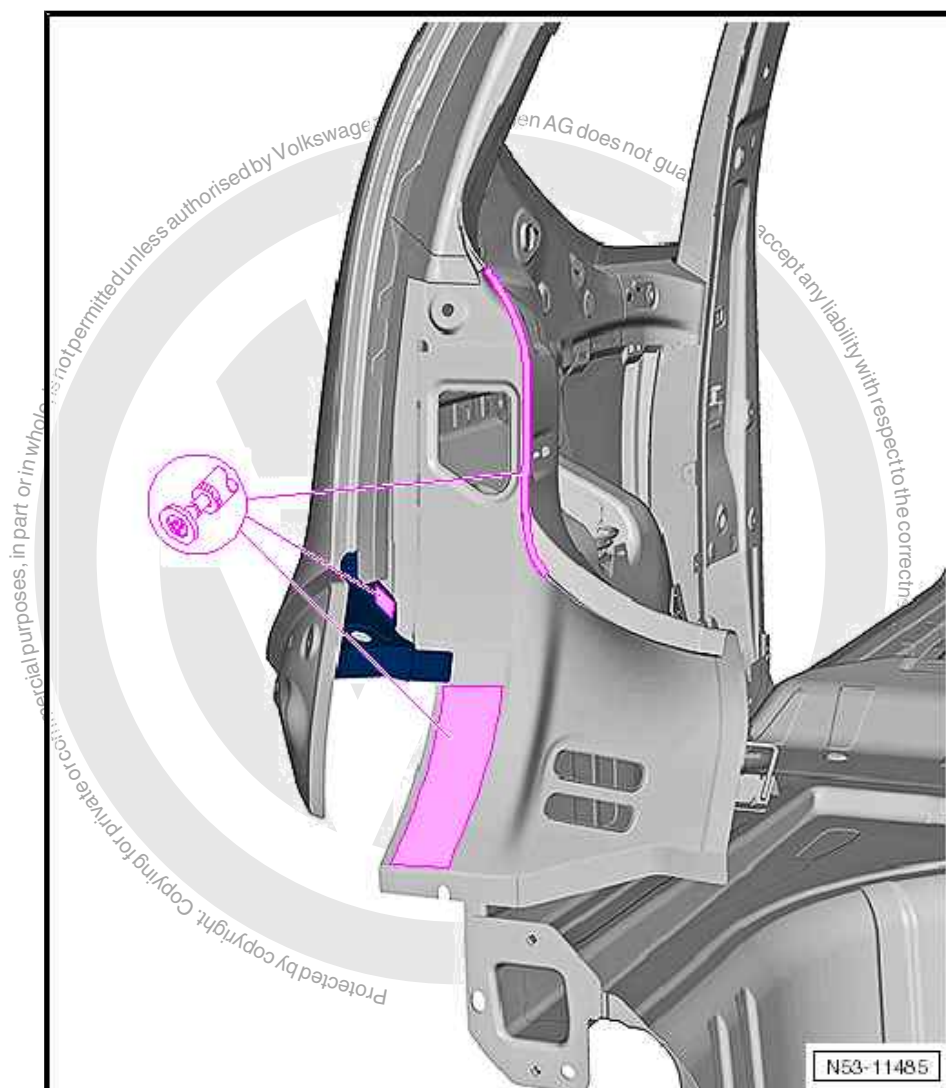


Note

Parting cut -1- is possible even if side panel does not need to be removed.



- Position parting cut on tail light mounting as shown.



- Remove remaining material.
- Remove remaining adhesive completely, and sand bonding surfaces down to bare metal.
- Apply corrosion protection measures on bonding surfaces where no welding is to be performed ⇒ Body; General information, Paint; Technical data; General notes; Notes on repairing add-on parts and welded parts .
- Then lightly roughen bonding surfaces.

4.3 Installing



Note

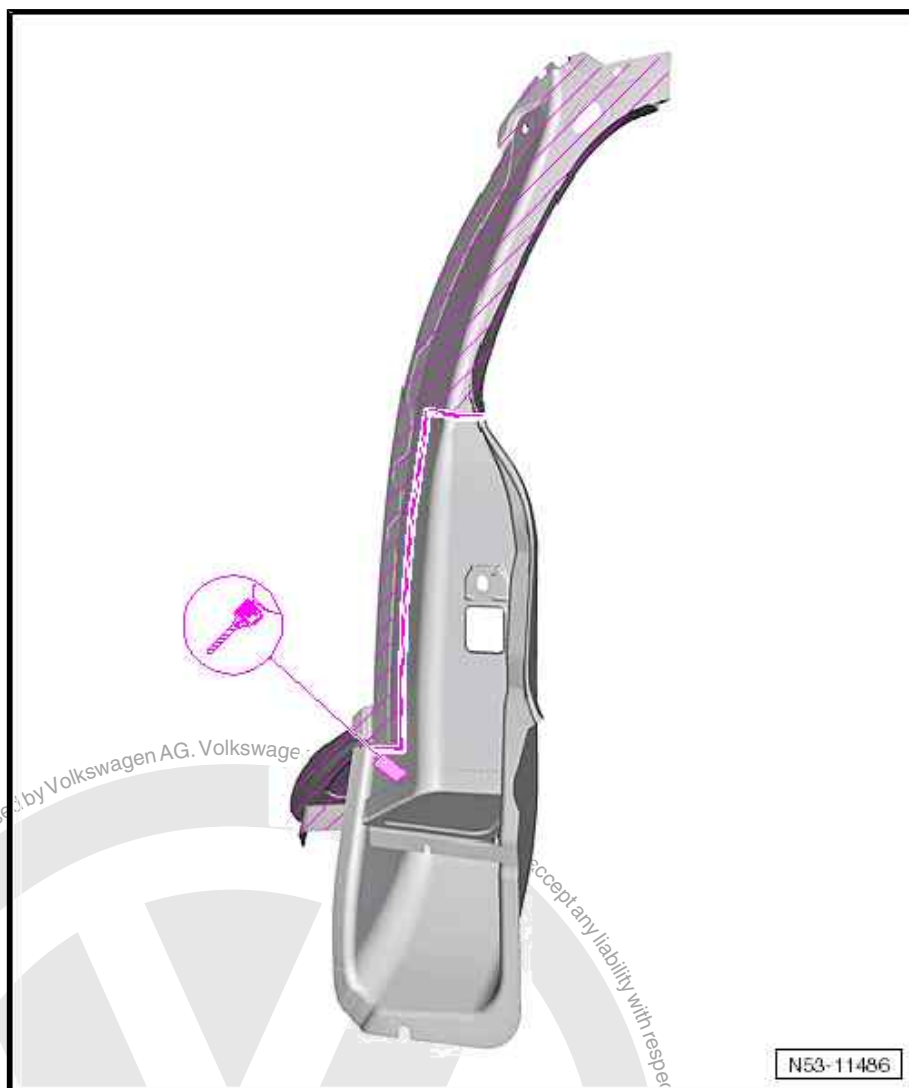
*Only welding units authorised by Volkswagen AG may be used
⇒ [page 303](#) .*



4.3.1 Preparing new part

Replacement parts

- ◆ Tail light mounting
- ◆ 2-pack body adhesive - D 180 003 M2-



- Transfer parting cut to new part and add approx. 5 mm for overlapping.
- Cut new part to size.
- Drill 8 mm \varnothing holes for SG plug weld seam.

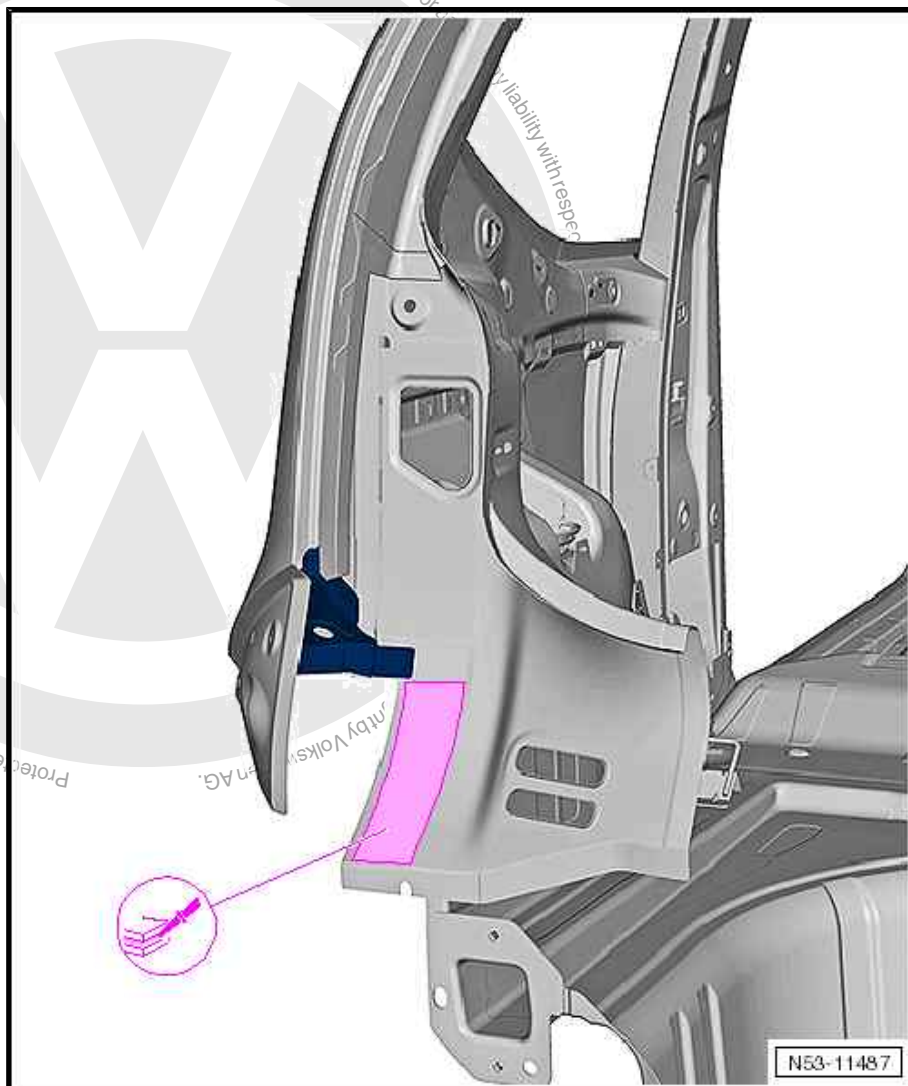


4.3.2 Welding in

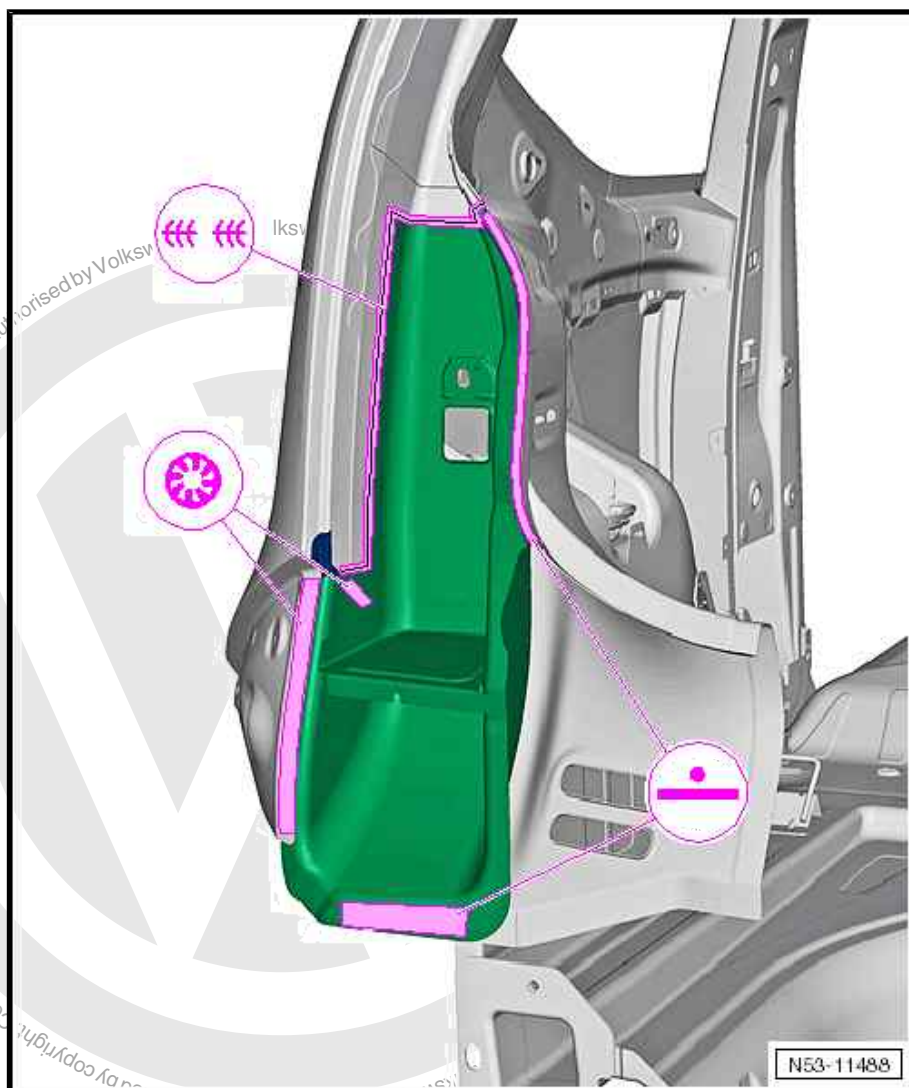


Note

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



- Apply 2-component body adhesive - D 180 003 M2- to areas bonded in factory.
- Adapt new part with vehicle standing on its wheels or alignment bracket set and fix in position.
- Check fit with add-on parts.



- Weld tail light mounting, SG plug weld seam and RP spot weld seam.
- Weld in overlapping at parting cut, SG staggered continuous weld seam.
- Grind smooth and seal weld seam.
- Install cross panel ➔ [page 288](#) .



RO: 53 24 55 50

5 Renewing luggage compartment floor

Includes: Isofix bracket



WARNING

Observe safety notes!

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

- Cross panel already removed ⇒ [page 286](#) .
- Lock carrier already removed ⇒ [page 298](#) .

1 - Right longitudinal member

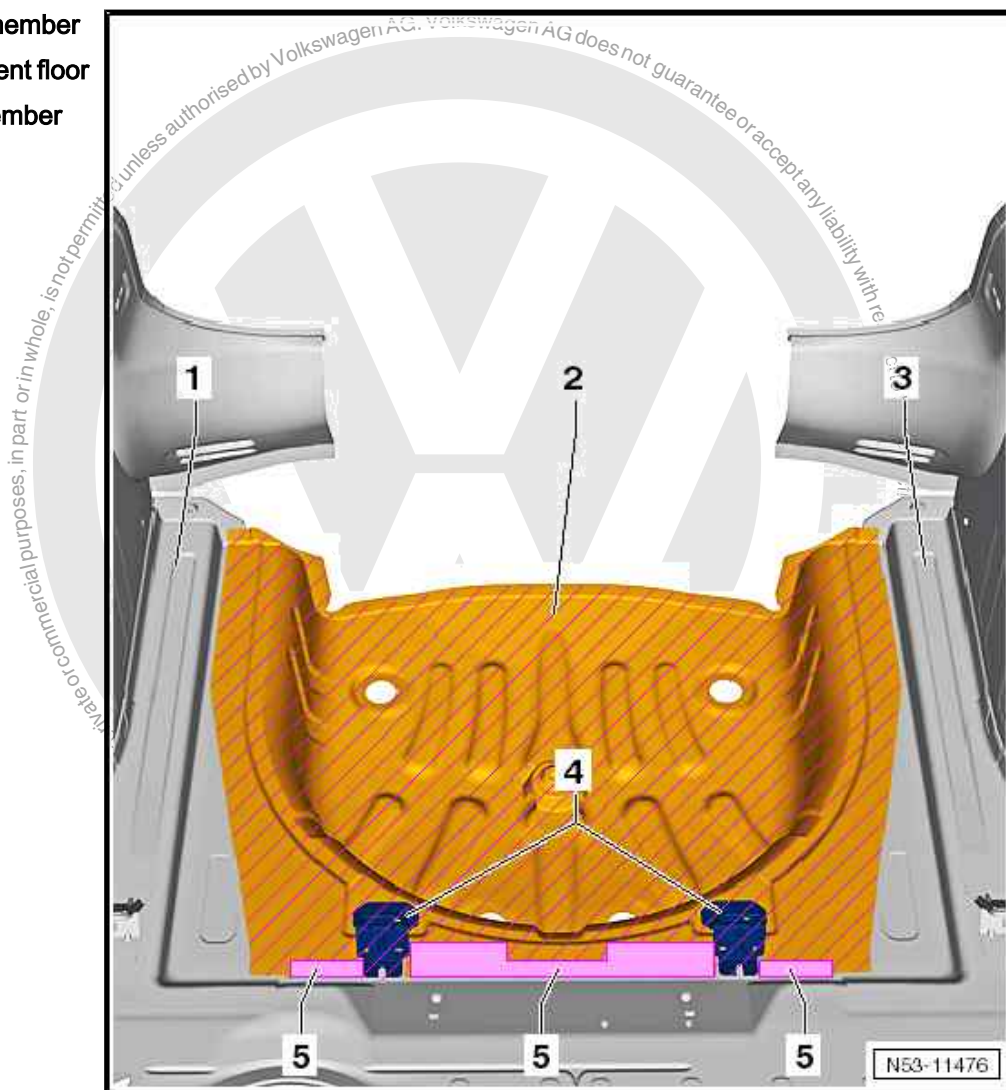
2 - Luggage compartment floor

3 - Left longitudinal member

4 - Isofix bracket

Removed in process.

5 - Bonded areas





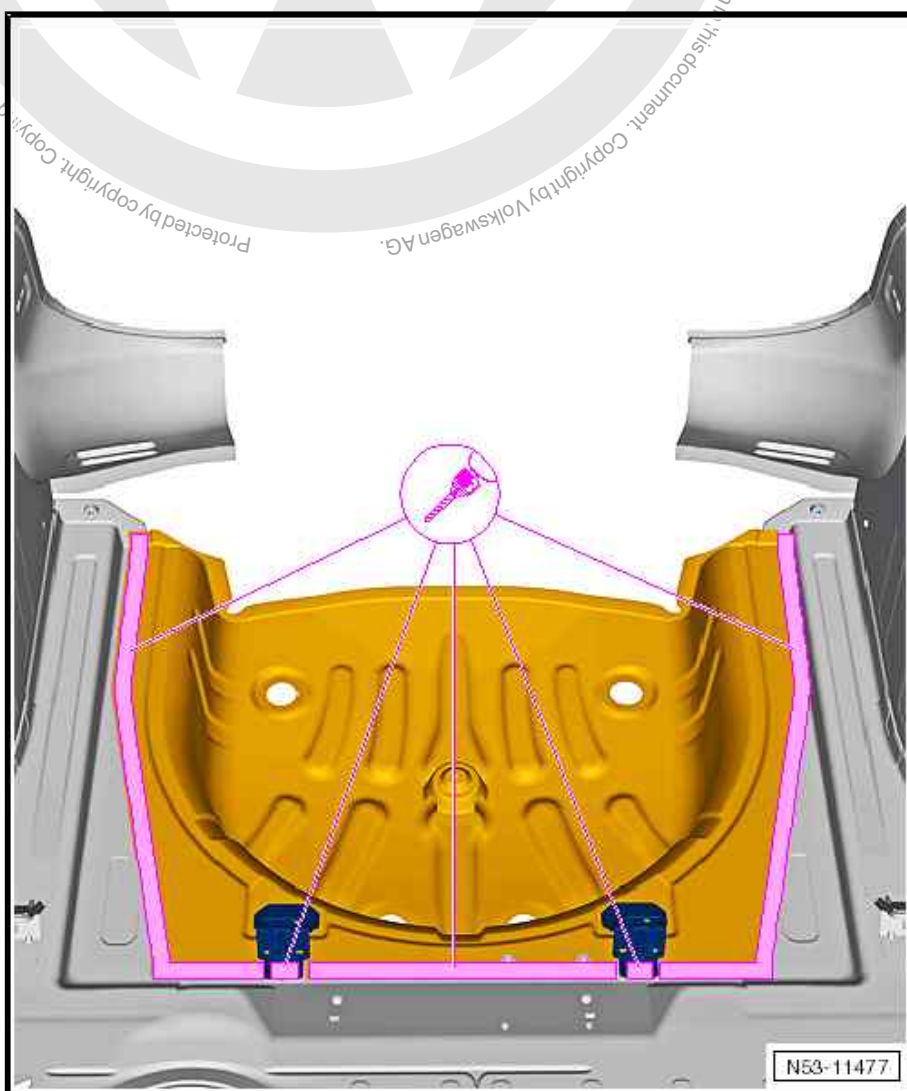
5.1 Tools



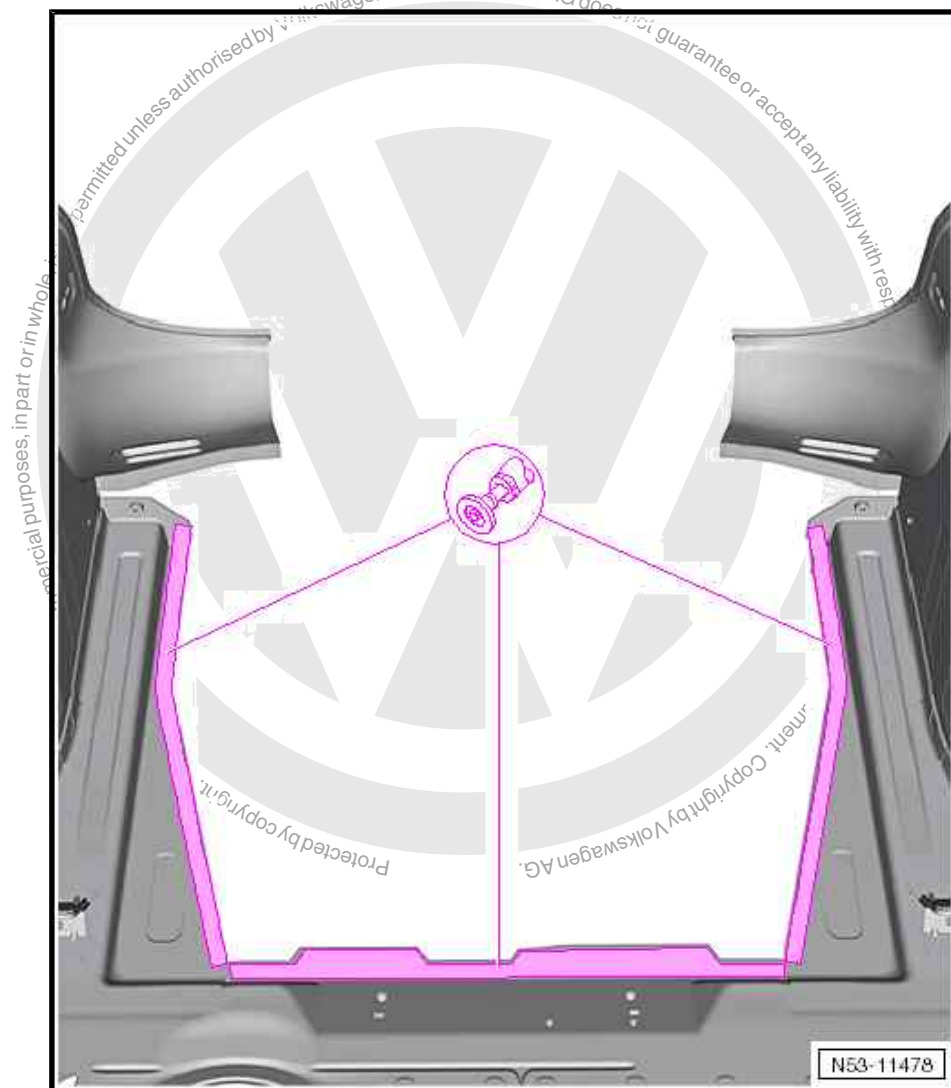
Note

- ◆ Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.
- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ➔ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork .

5.2 Removing



- Separate original joint.



- Remove remaining material.
- Remove remaining adhesive completely, and sand bonding surfaces down to bare metal.
- Apply corrosion protection measures on bonding surfaces where no welding is to be performed ⇒ Body; General information, Paint; Technical data; General notes; Notes on repairing add-on parts and welded parts .
- Then lightly roughen bonding surfaces.

5.3 Installing




Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 309](#) .*

5.3.1 Preparing new part

Replacement parts

- ♦ Luggage compartment floor (part designation according to ETKA ⇒ spare wheel well)

- ◆ Isofix bracket
 - ◆ 2-pack body adhesive - D 180 003 M2-
- 
- The technical drawing shows a side view of a car seat base. A red rectangular area highlights the Isofix bracket, which is a metal component with a circular hole. A yellow rectangular area highlights the adhesive application area, which is a recessed channel in the base of the seat. The drawing is a line drawing with a 3D effect, showing the contours of the seat base and the bracket.



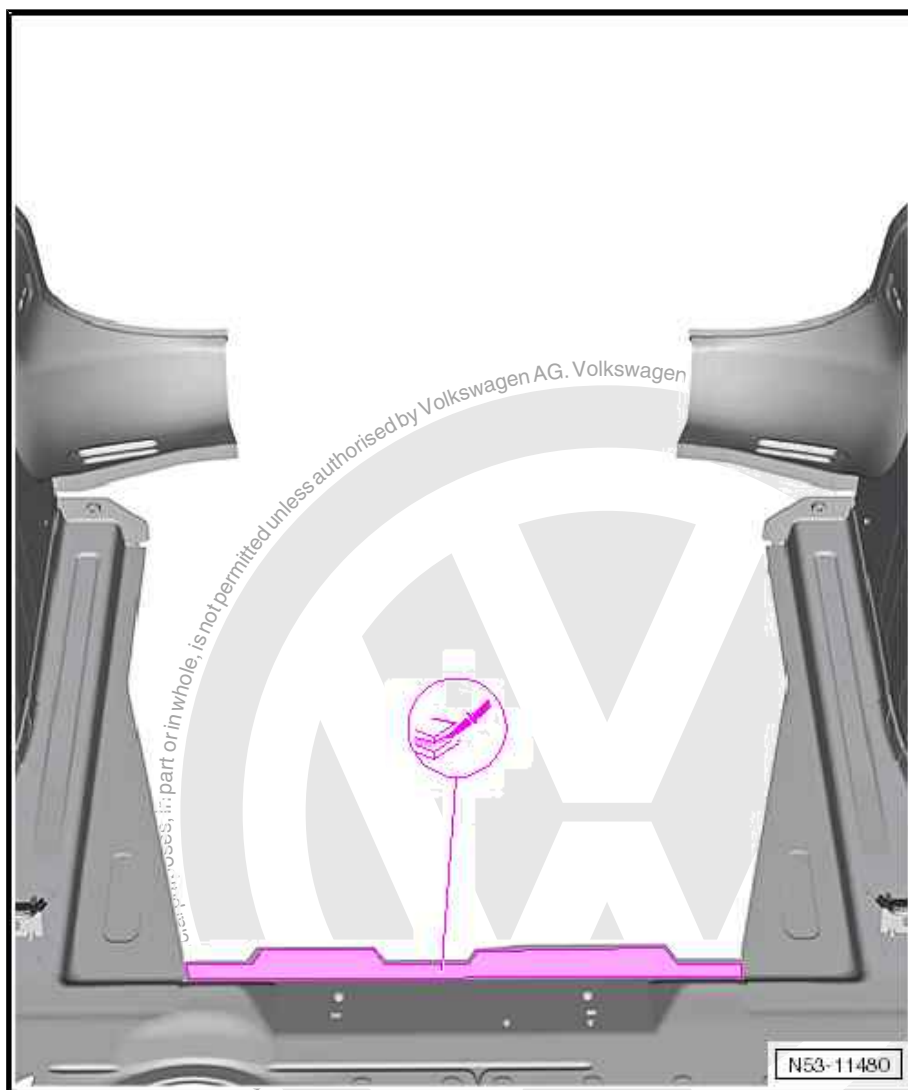
- N53-11479

5.3.2 Welding in

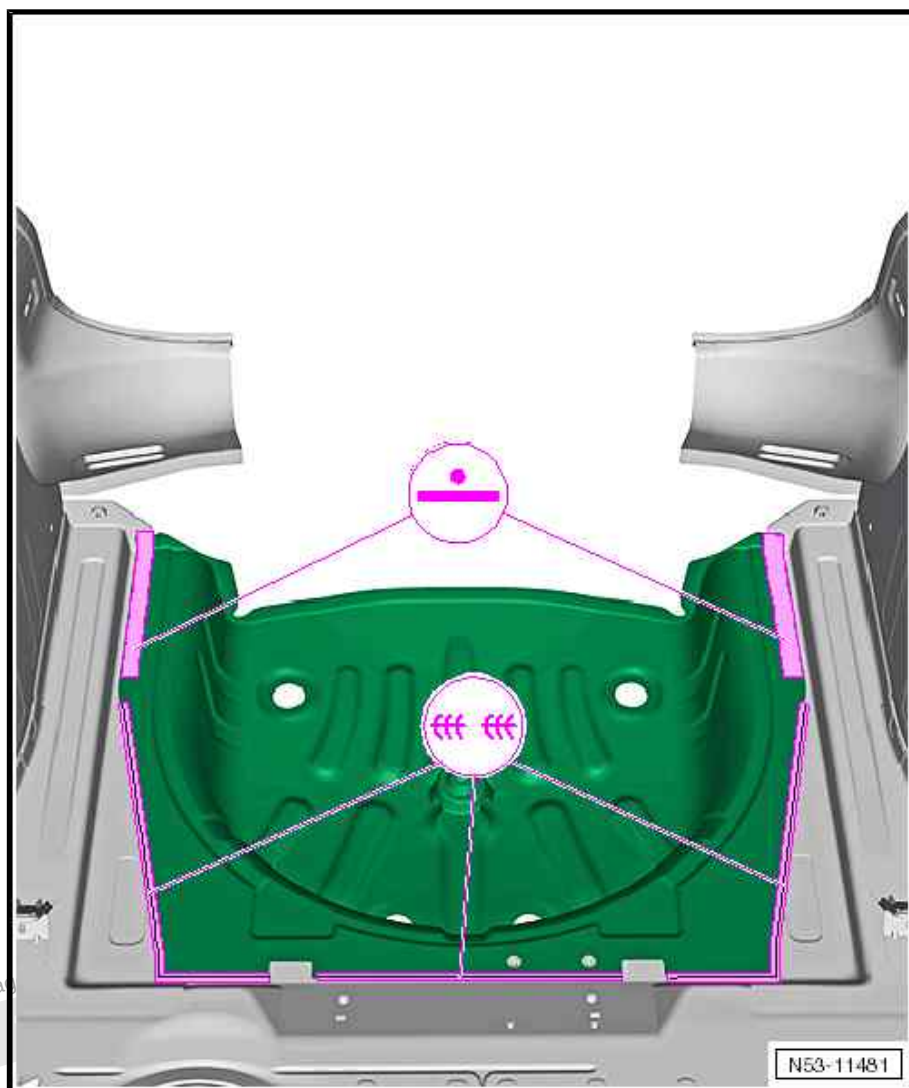


Note

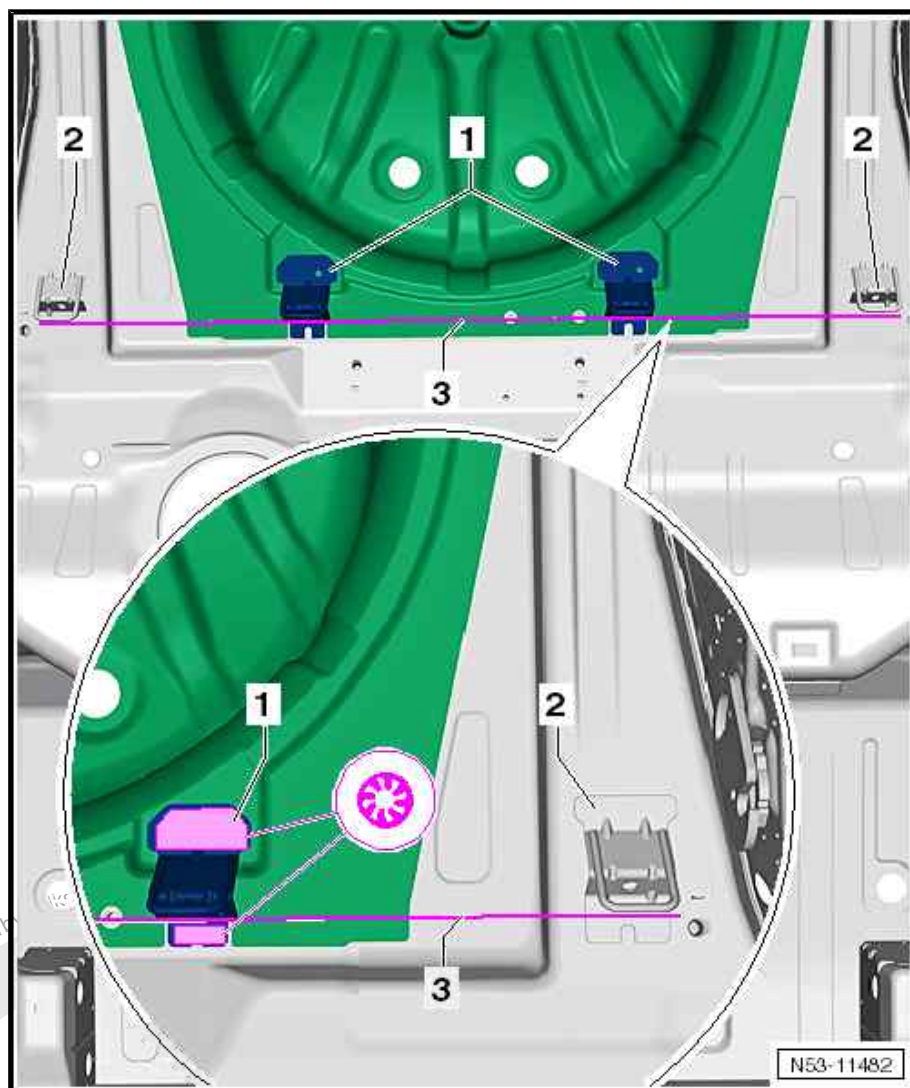
- ◆ *New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.*
- ◆ *Adhesive must be cleaned from holes for fastening backrest after bonding in.*
- ◆ *When applying adhesive, leave enough clearance to edge of luggage compartment floor in order to allow for welding.*



- Apply 2-component body adhesive - D 180 003 M2- to areas indicated.
- Adapt new parts with vehicle standing on its wheels or on alignment bracket set and fix in position.



- Weld in rear of luggage compartment floor, RP spot weld seam.
- Weld in front of luggage compartment floor, SG staggered continuous weld seam.
- Weld between factory-fitted spot welds, weld seam length 20 mm.



- Align inner Isofix bracket -1- in a flush line -3- with outer Isofix bracket -2-.
- Weld Isofix brackets, SG plug weld seam.
- Install cross panel ➔ [page 288](#) .



RO: 53 29 55 50

6 Renewing C-pillar reinforcement - part section



WARNING

Observe safety notes!

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

- Side panel already removed
⇒ ["11 Renewing side panel - 2-door", page 343](#) .
- Side panel already removed
⇒ ["12 Renewing side panel - 4-door", page 353](#) .



Note

In the illustrations below a 2-door model is shown. On 4-door models the removal and installation of the C-pillar reinforcement are identical.





1 - Side panel cut out.

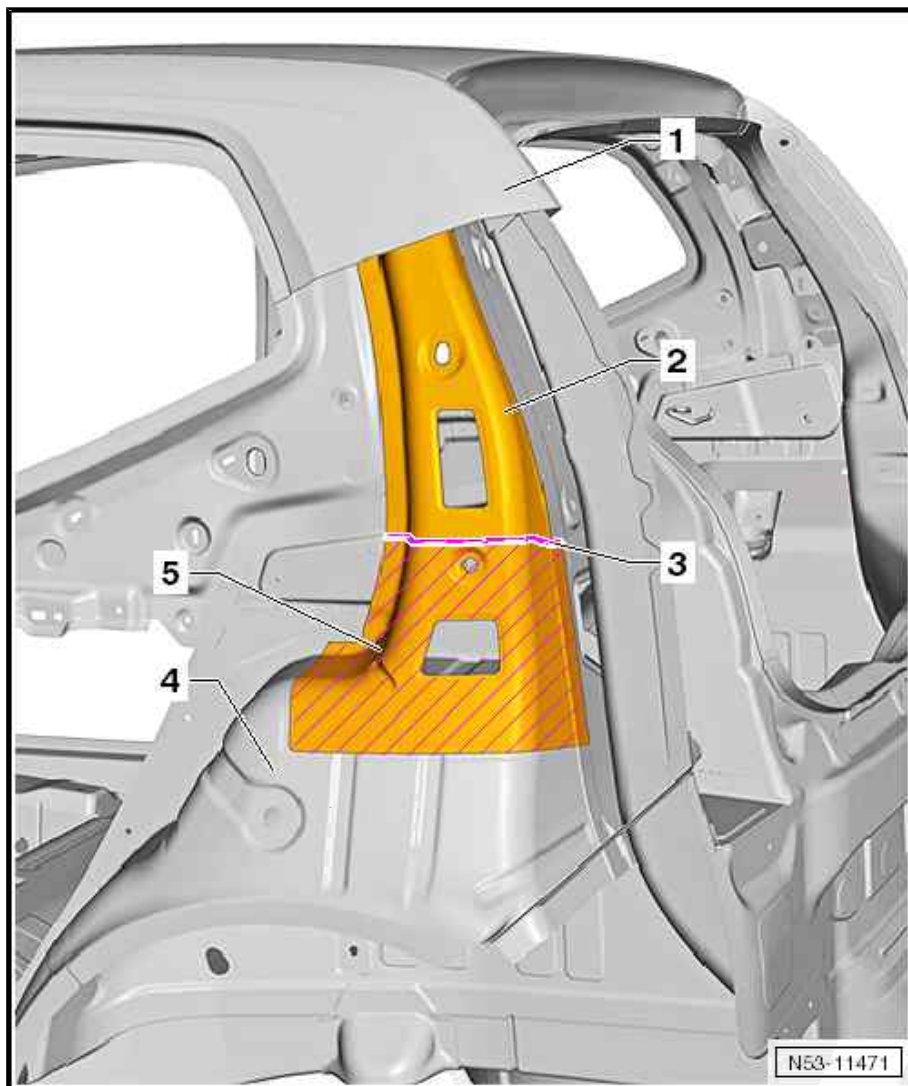
2 - C-pillar reinforcement - upper part

Not removed in process.

3 - Parting cut

4 - Wheel housing liner

5 - C-pillar reinforcement - part section



6.1 Tools

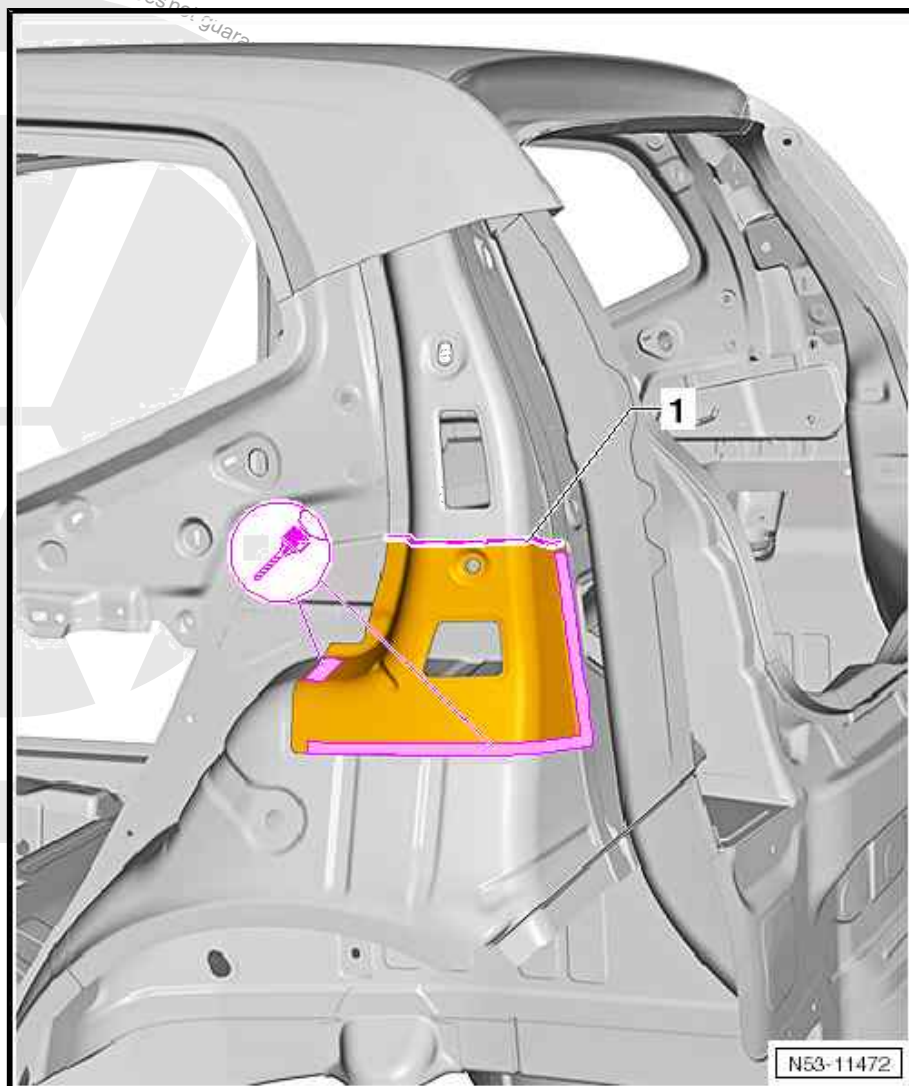


Note

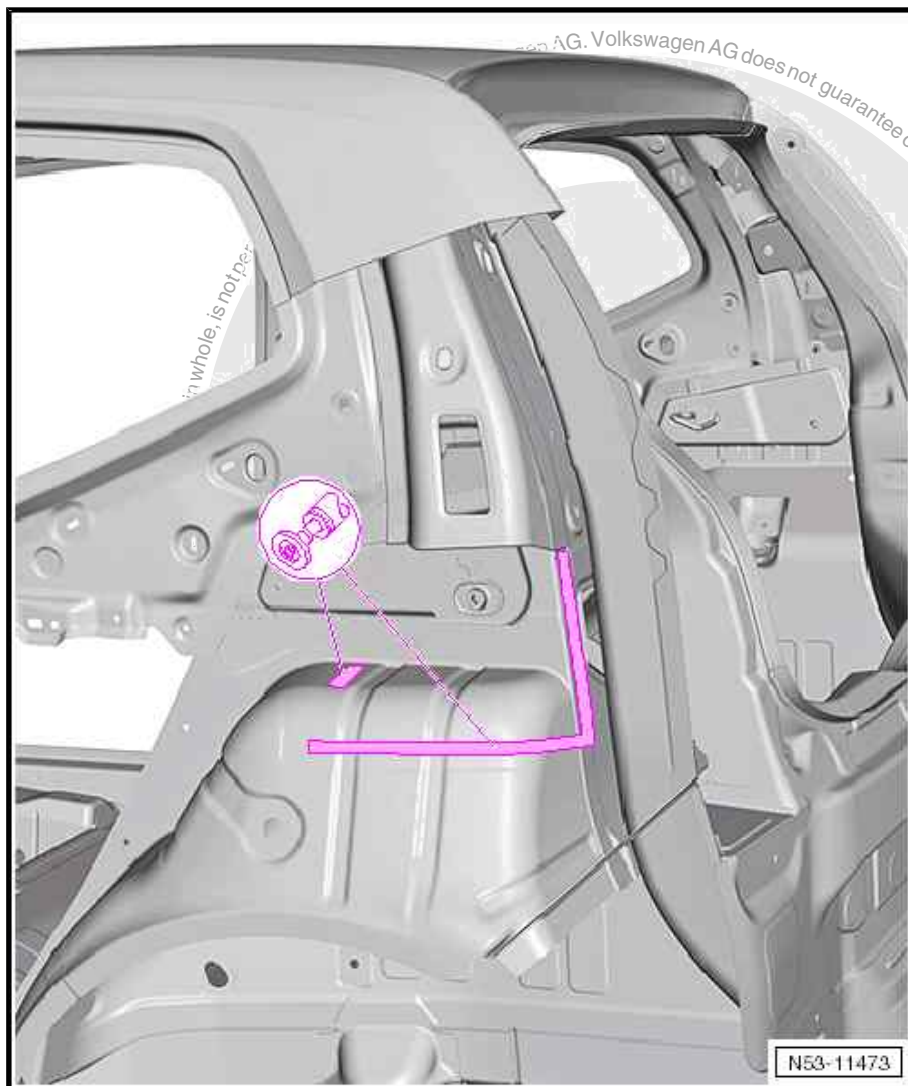
- ◆ Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.
- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork .



6.2 Removing



- Make parting cut -1- as shown.
- Separate original joint to wheel housing.



- Remove remaining material.

6.3 Installing



Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 339](#).*

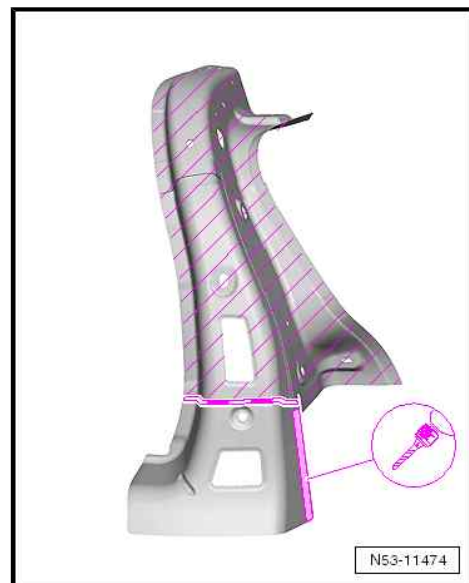
6.3.1 Preparing new parts

Replacement part

- ◆ C-pillar reinforcement (parts designation ⇒ side panel, inner)



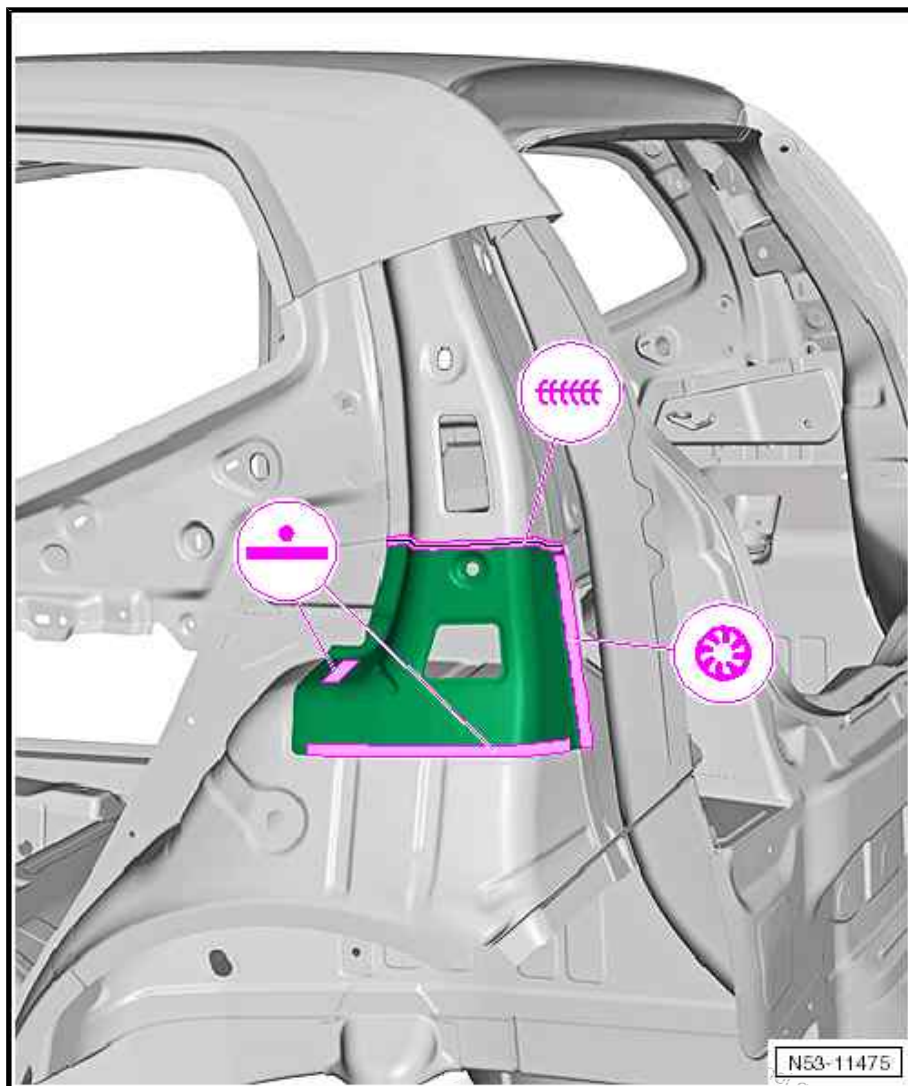
- Transfer parting cut to new part and cut out.
- Drill 8 mm Ø holes for SG plug weld seam.



6.3.2 Welding in

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





- Weld parting cut, SG continuous weld seam.
- Recreate original joint to wheel housing, RP spot weld seam.
- Weld in remaining joint, SG plug weld seam.



RO: 53 36 55 50

7 Renewing cover plate for rear longitudinal member



WARNING

Observe safety notes!

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

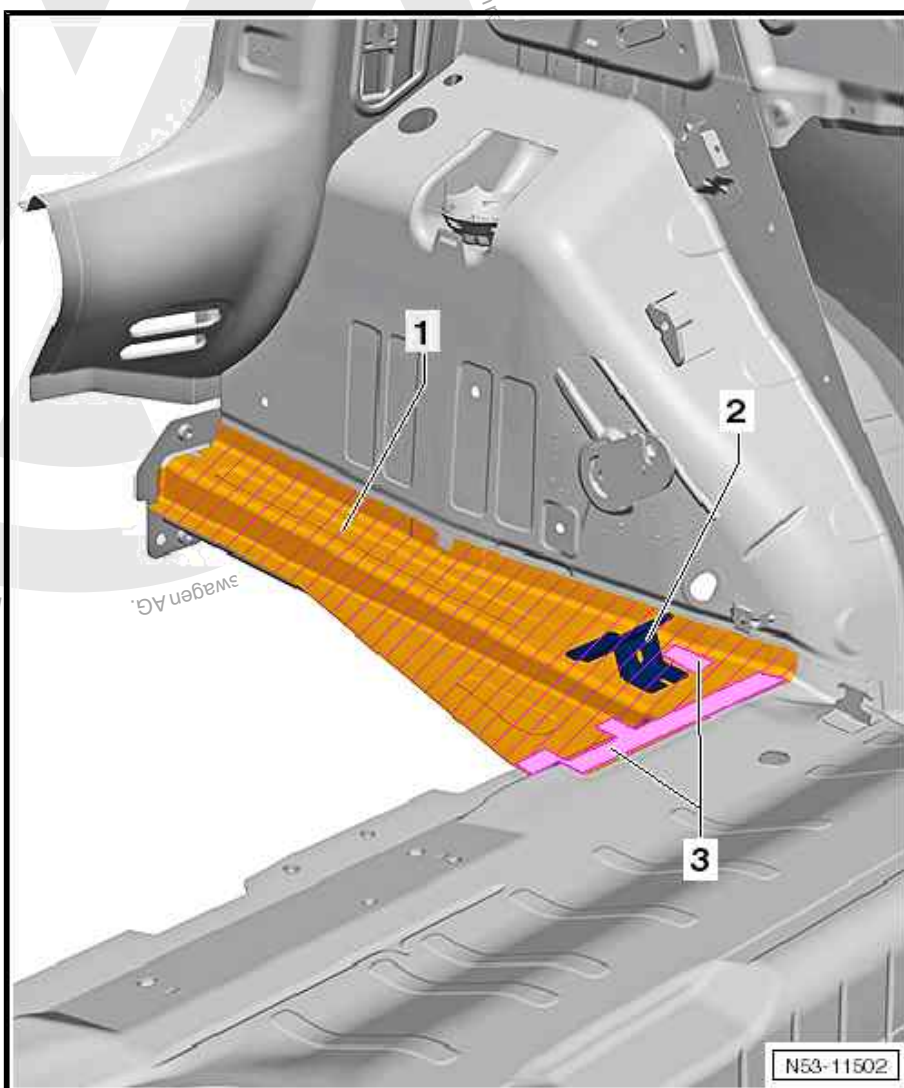
- Cross panel already removed ➤ [page 286](#) .
- Luggage compartment floor already removed ➤ [page 308](#) .

1 - Cover plate for rear longitudinal member

2 - Isofix bracket

Removed in process.

3 - Bonded areas





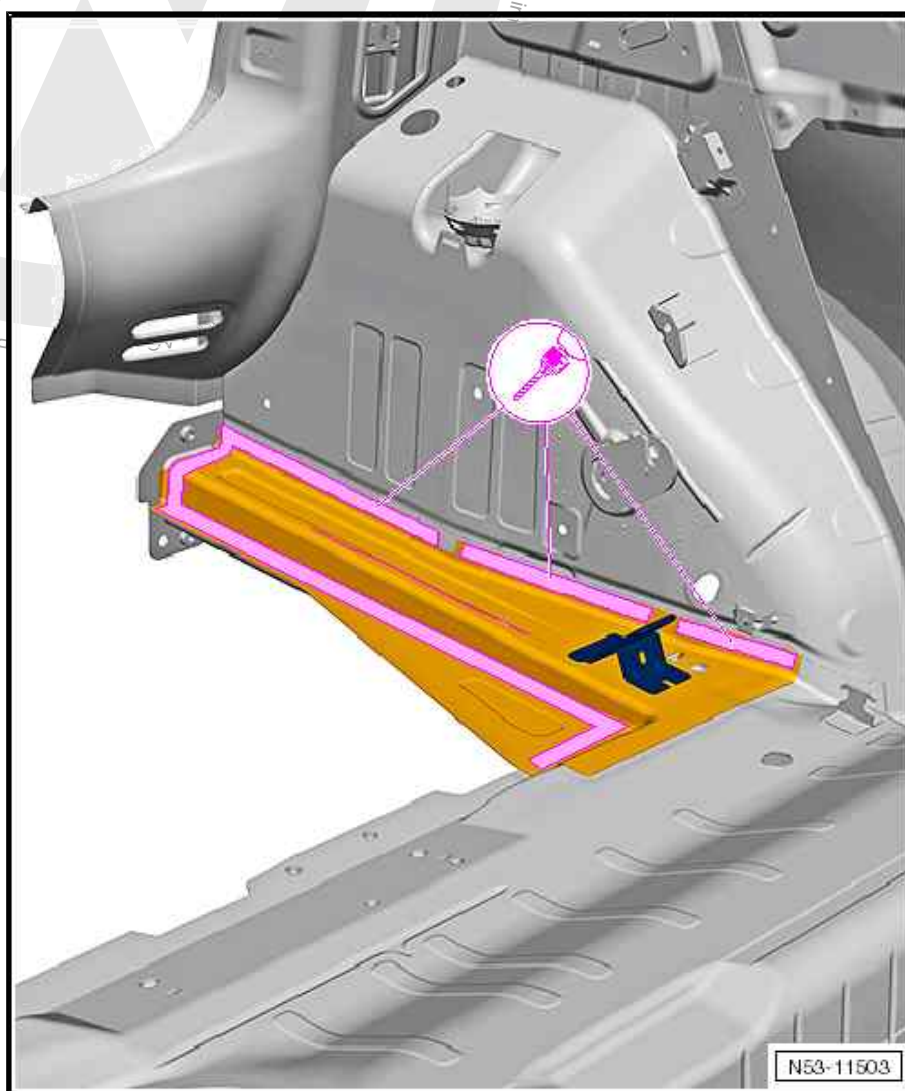
7.1 Tools



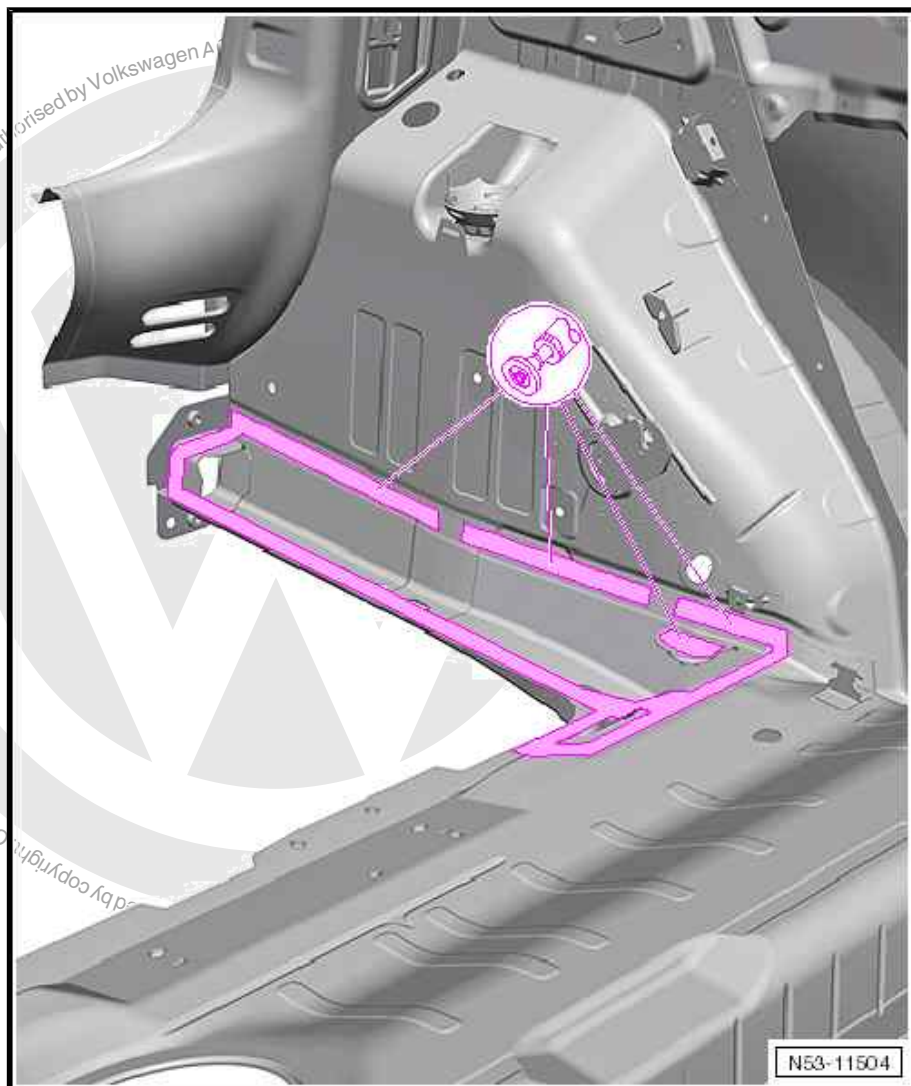
Note

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

7.2 Removing



- Separate original joint.



- Remove remaining material.
- Remove remaining adhesive completely, and sand bonding surfaces down to bare metal.
- Apply corrosion protection measures on bonding surfaces where no welding is to be performed ⇒ Body; General information, Paint; Technical data; General notes; Notes on repairing add-on parts and welded parts .
- Then lightly roughen bonding surfaces.

7.3 Installing



Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 322](#).*

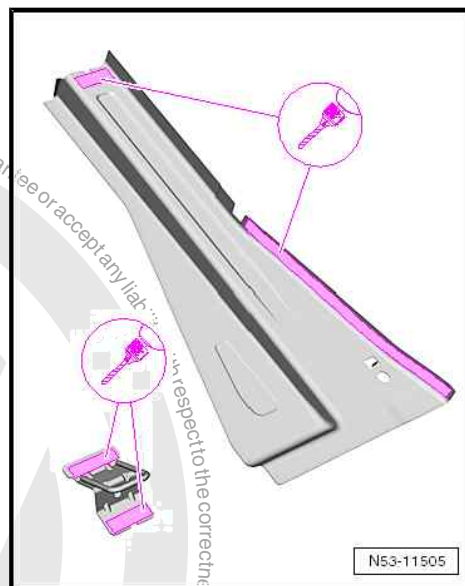
7.3.1 Preparing new parts

Replacement parts

- ◆ Cover plate for rear longitudinal member
- ◆ Isofix bracket



- ◆ 2-pack body adhesive - D 180 003 M2-
- Drill 8 mm Ø holes for SG plug weld seam.

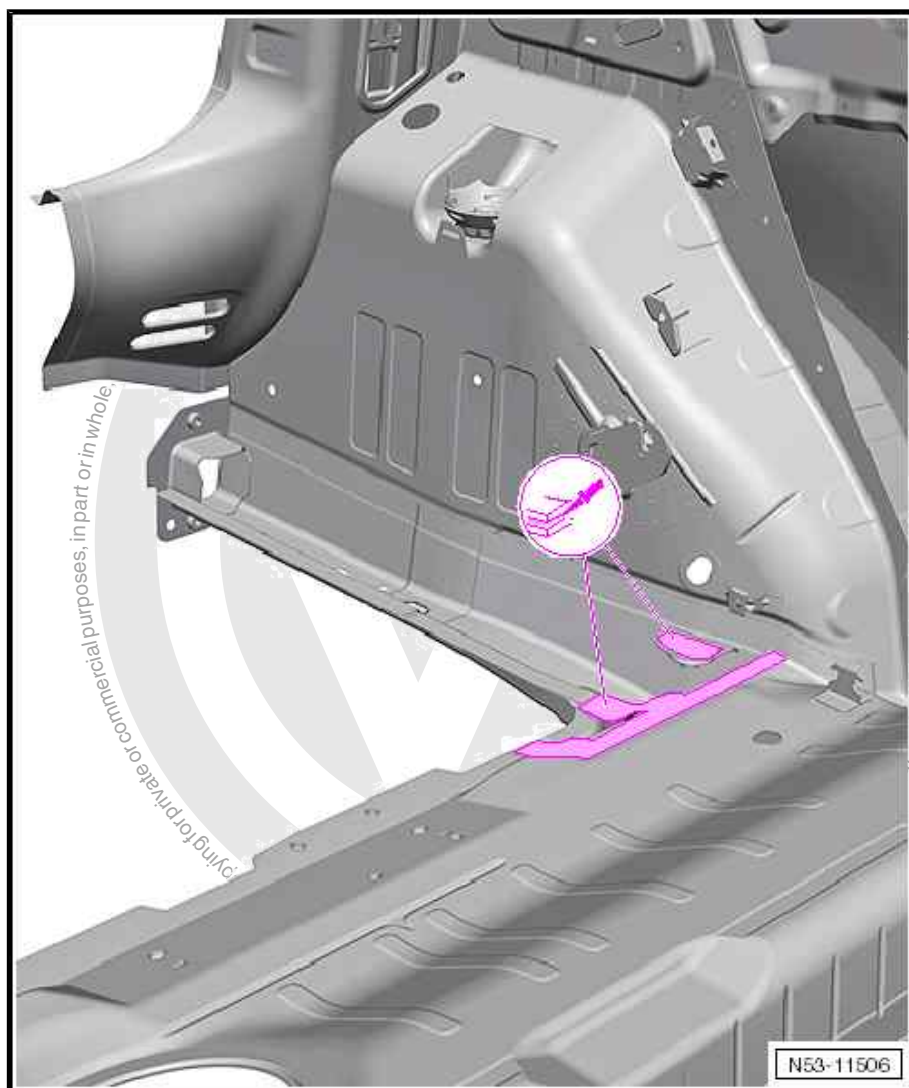


7.3.2 Welding in

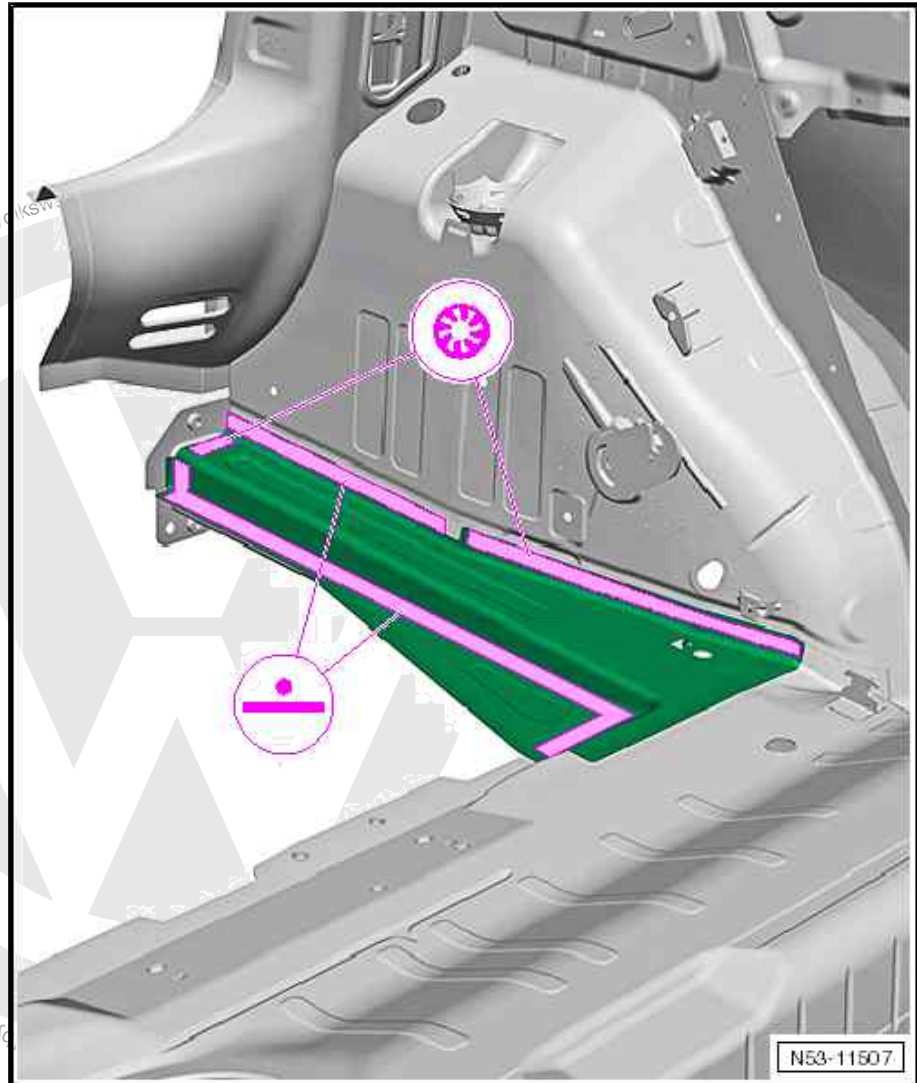


Note

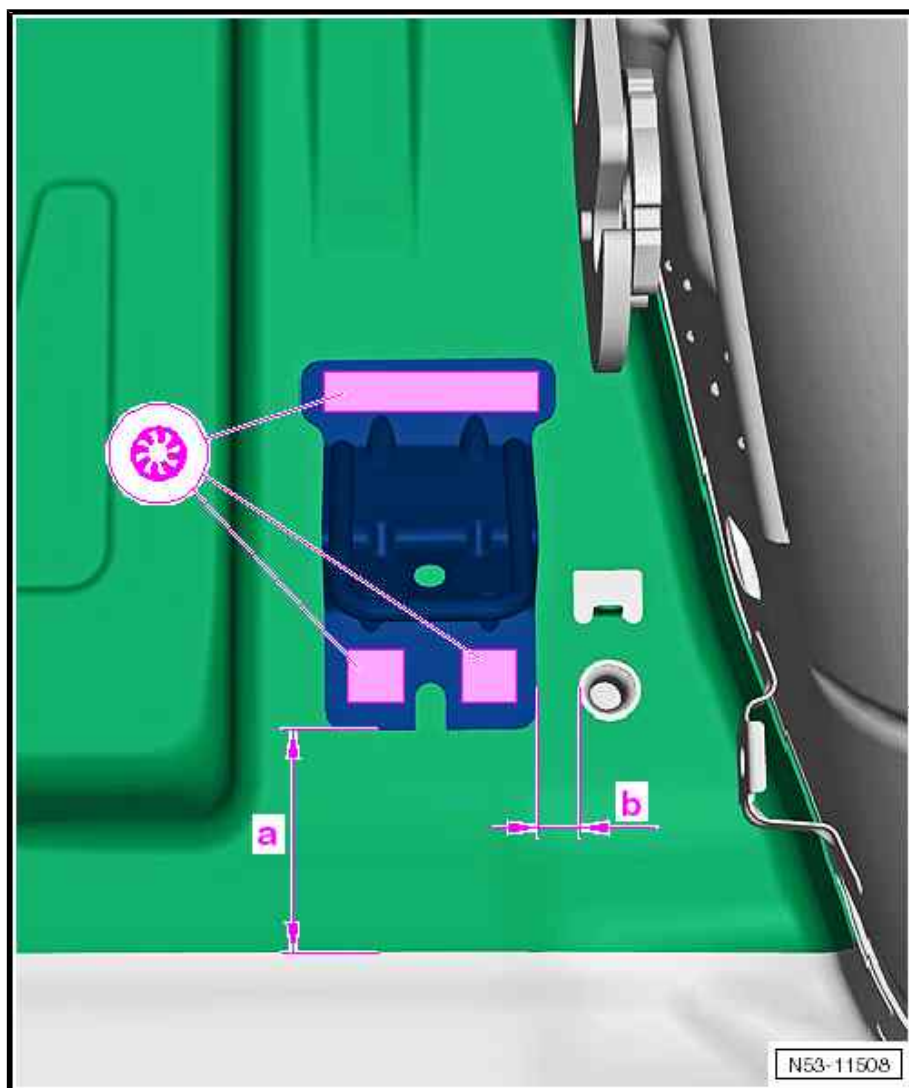
New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.



- Apply 2-component body adhesive - D 180 003 M2- to areas bonded in factory.
- Adapt new part with vehicle positioned on alignment bracket set and fix in place.
- Check fit with add-on parts.



- Weld in cover plate for rear longitudinal member, RP spot weld seam and SG plug weld seam.



- Align Isofix bracket according to dimensions indicated and fix it in place.

Dimension -a- = 56 mm

Dimension -b- = 11 mm

- Weld Isofix brackets, SG plug weld seam.
- Install luggage compartment floor ➔ [page 312](#) .
- Install rear cross panel ➔ [page 288](#) .



RO: 53 42 55 50

8 Renewing rear axle mounting bracket



WARNING

Observe safety notes!

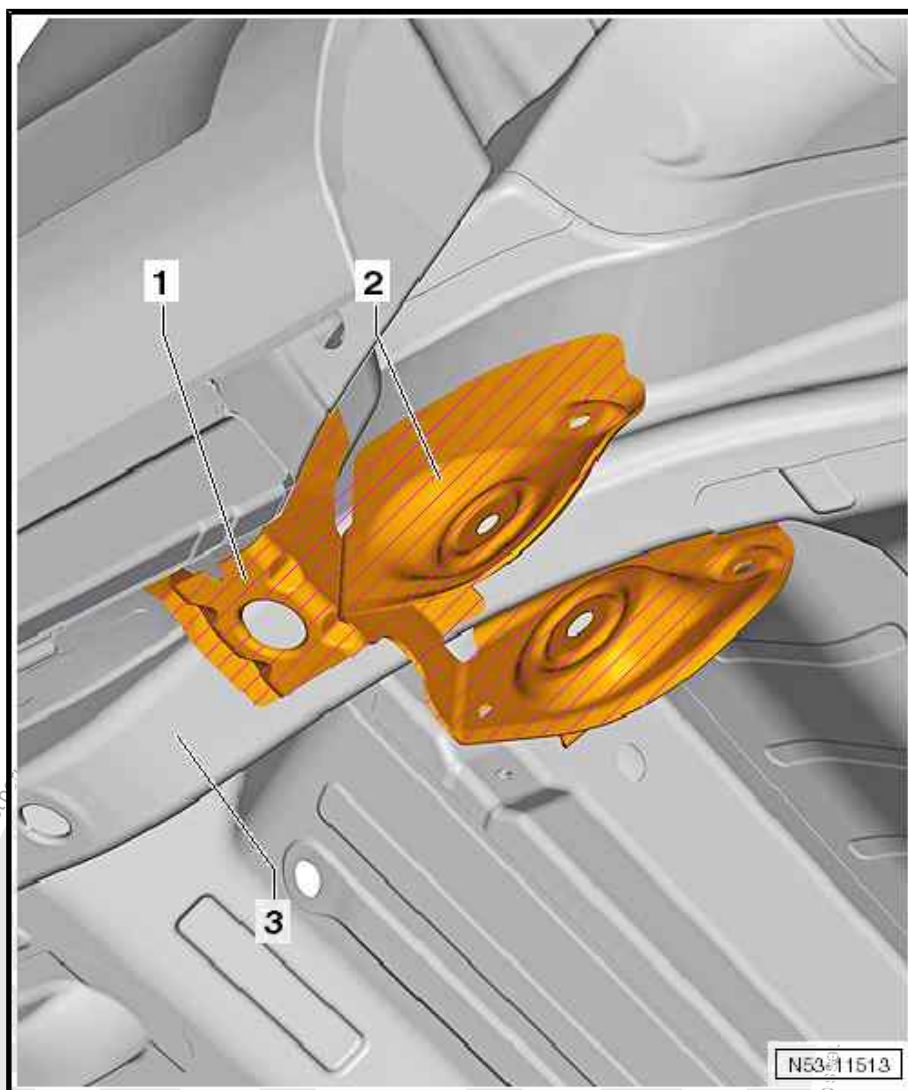
Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes

1 - Production mounting

Removed in process.

2 - Mounting bracket

3 - Rear longitudinal members





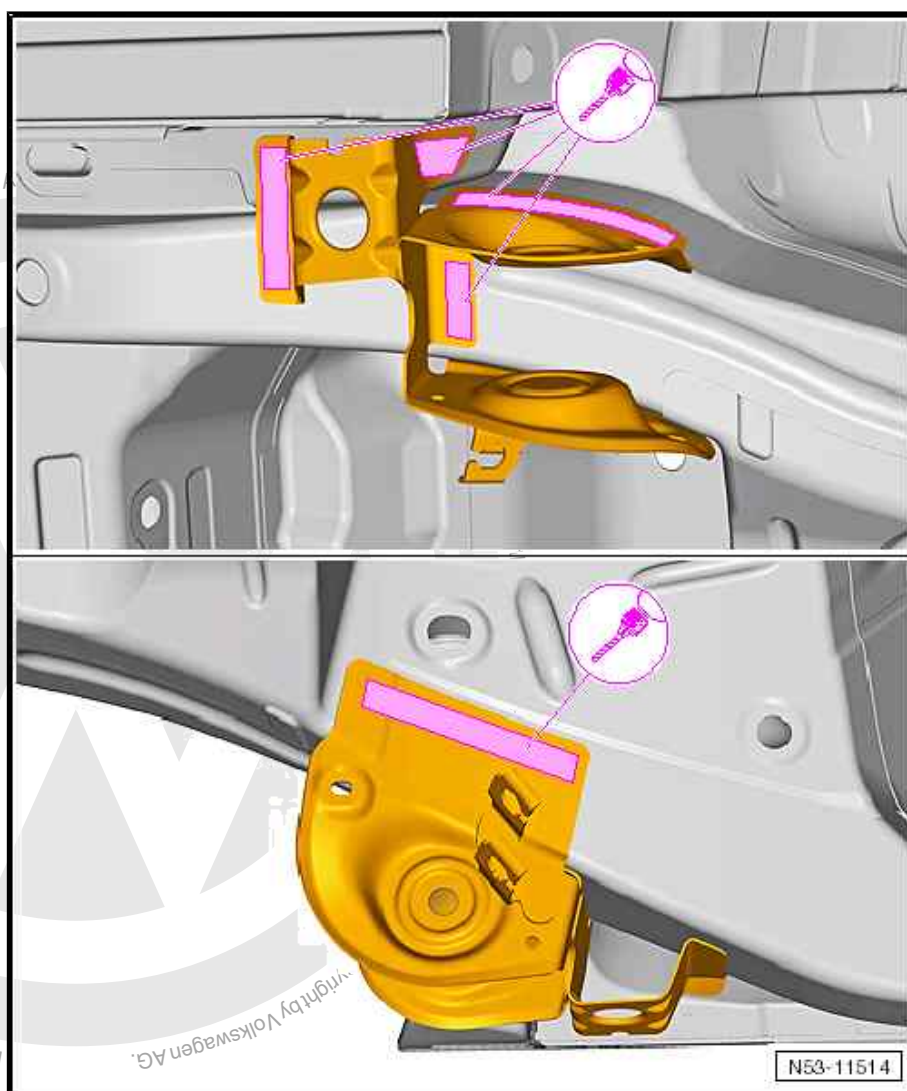
8.1 Tools



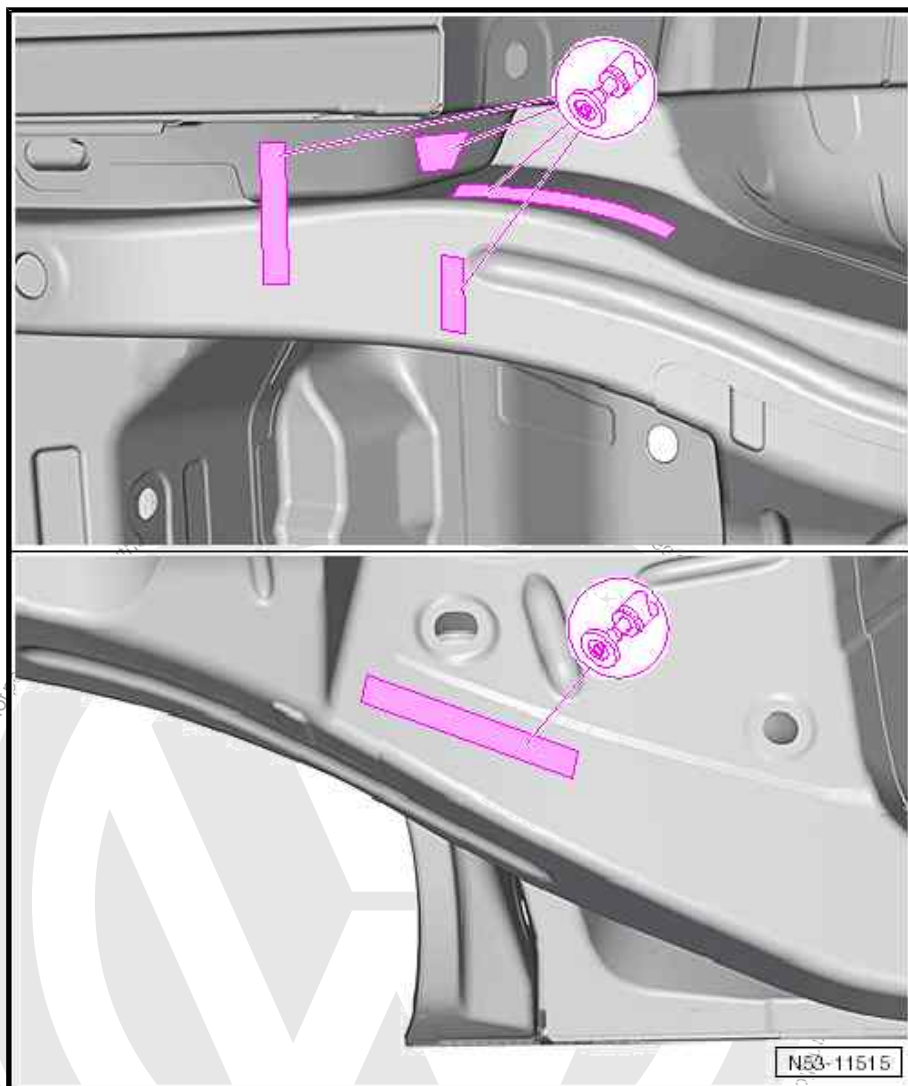
Note

- ◆ Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.
- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork .

8.2 Removing



- Separate original joint of mounting bracket and production mounting.



- Remove remaining material.

8.3 Installing



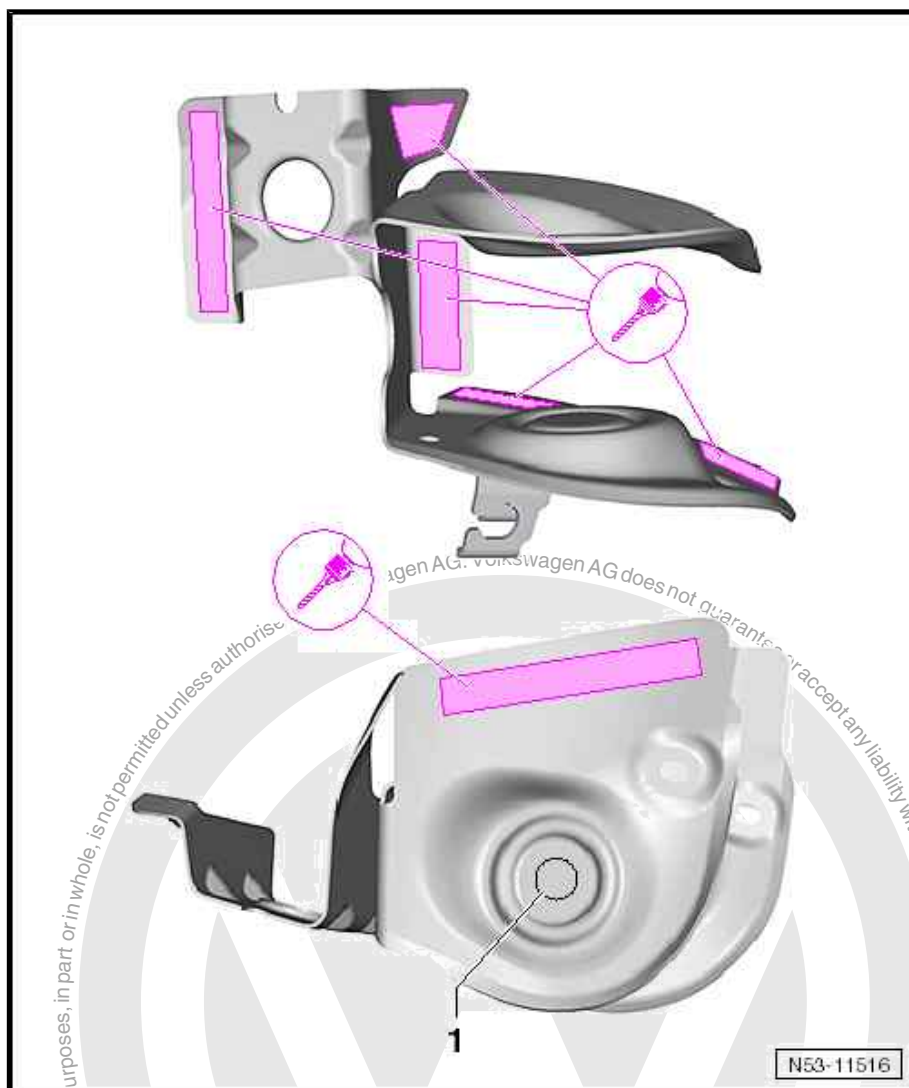
Note

Only welding units authorised by Volkswagen AG may be used
⇒ [page 329](#).

8.3.1 Preparing new part

Replacement part

- ◆ Rear axle mounting bracket



Note

The new part is not yet provided with a hole for the rear axle securing bolt -1-. Adapt new part with alignment bracket set and transfer positions of holes.

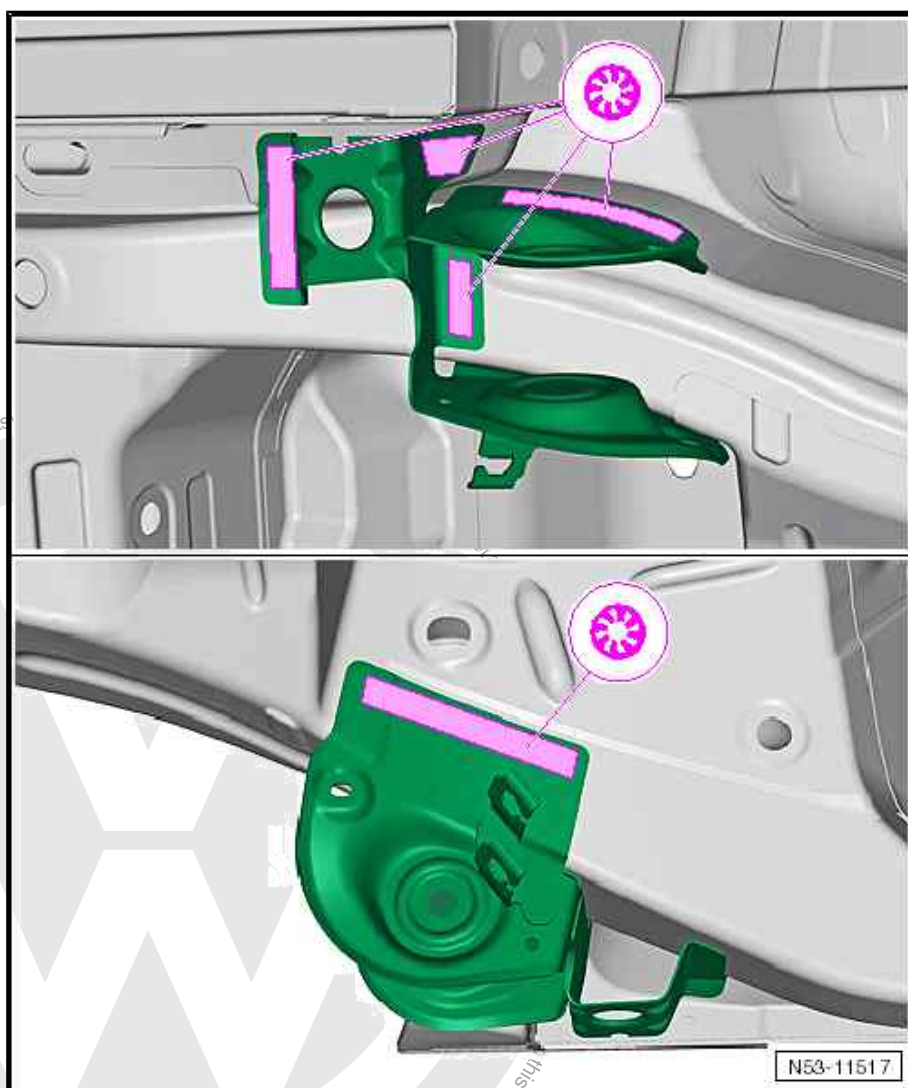
- Drill holes for rear axle securing bolt -1- (10.5 mm Ø).
- Drill 8 mm Ø holes for SG plug weld seam.

8.3.2 Welding in

- Adapt new part using alignment bracket set and fix in place.



- Check fit with add-on parts.



- Weld in rear axle mounting bracket, SG plug weld seam.



RO: 53 42 55 50

9 Renewing rear axle mounting bracket



WARNING

Observe safety notes!

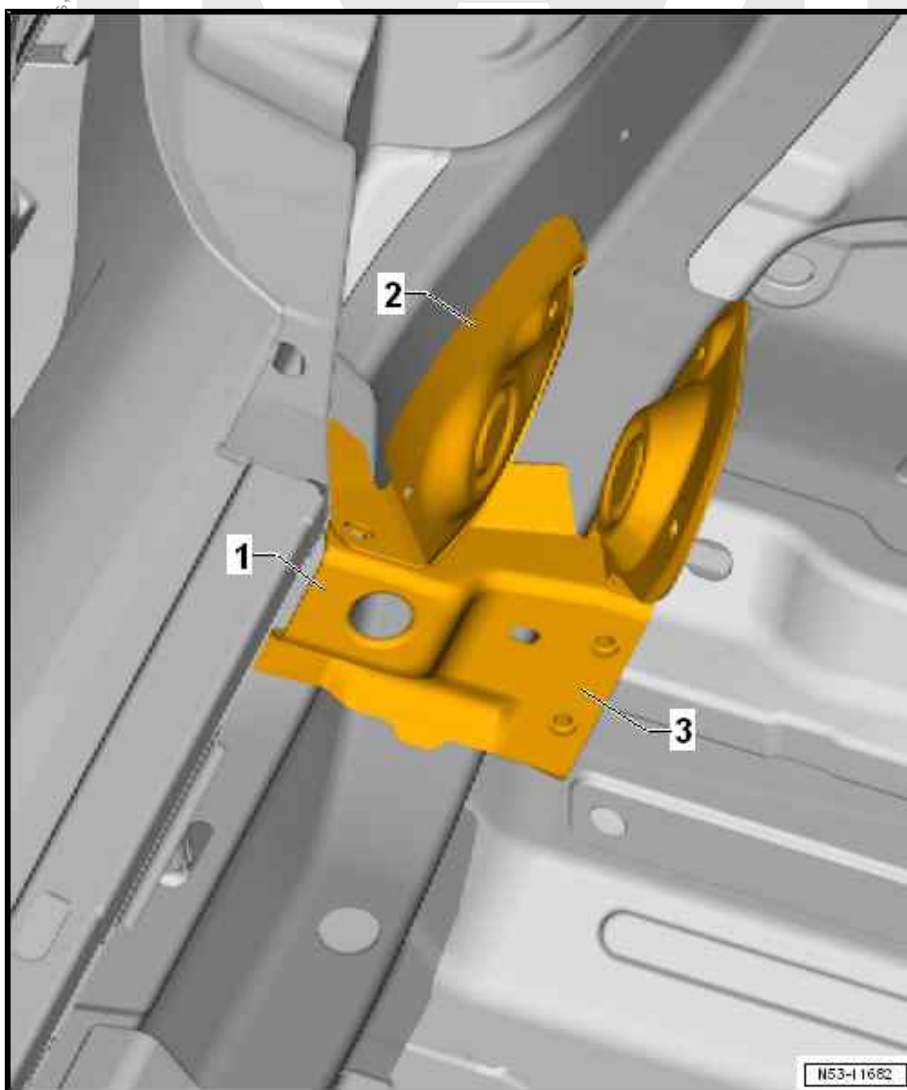
Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes

1 - Production mounting

Removed in process.

2 - Mounting bracket

3 - Rear longitudinal members





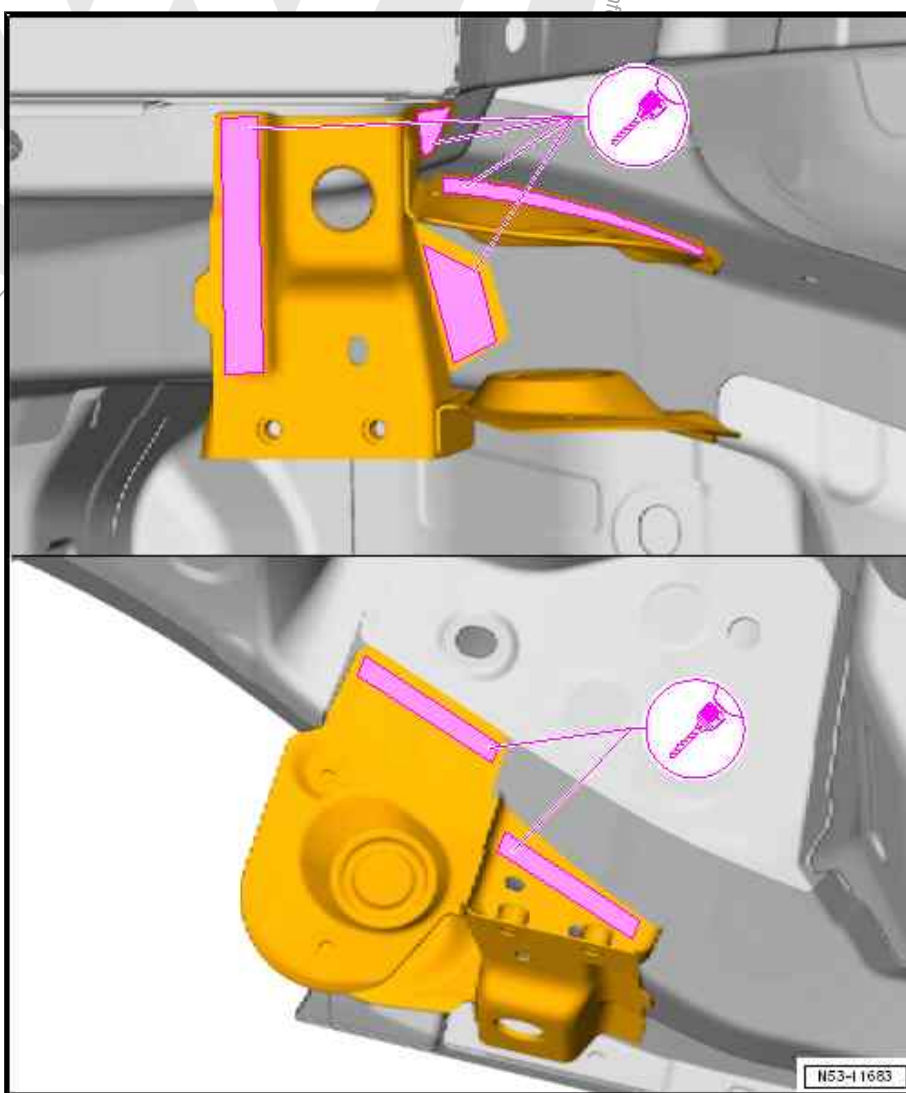
9.1 Tools



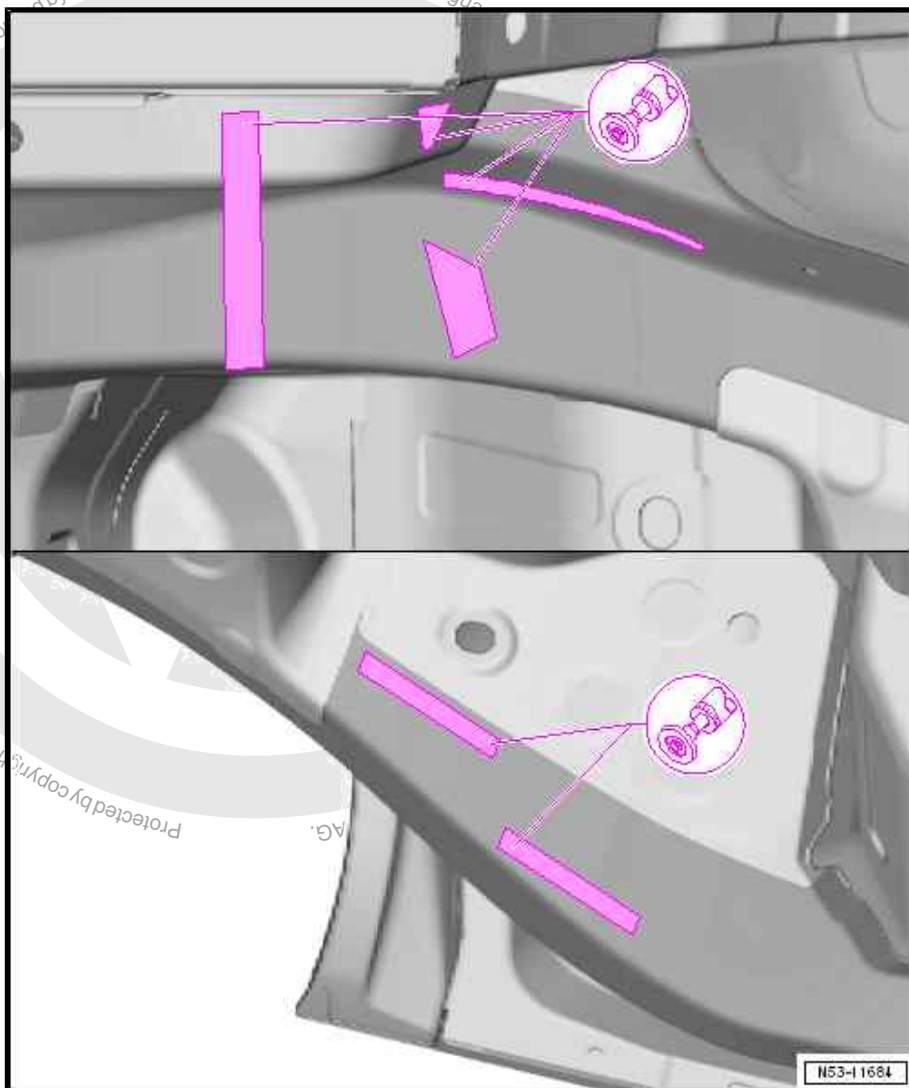
Note

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

9.2 Removing



- Separate original joint of mounting bracket and production mounting.



- Remove remaining material.

9.3 Installing



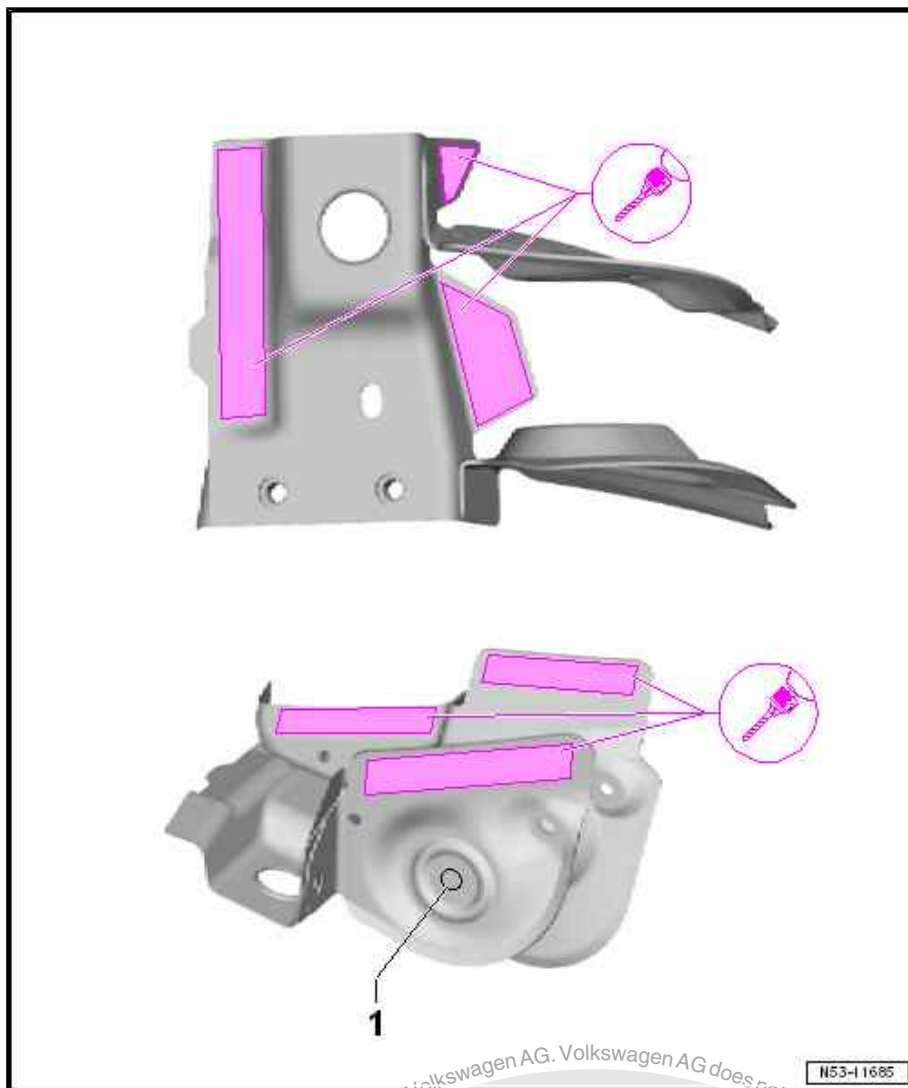
Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 334](#).*

9.3.1 Preparing new part

Replacement part

- ◆ Rear axle mounting bracket



Note

The new part is not yet provided with a hole for the rear axle securing bolt -1-. Adapt new part with alignment bracket set and transfer positions of holes.

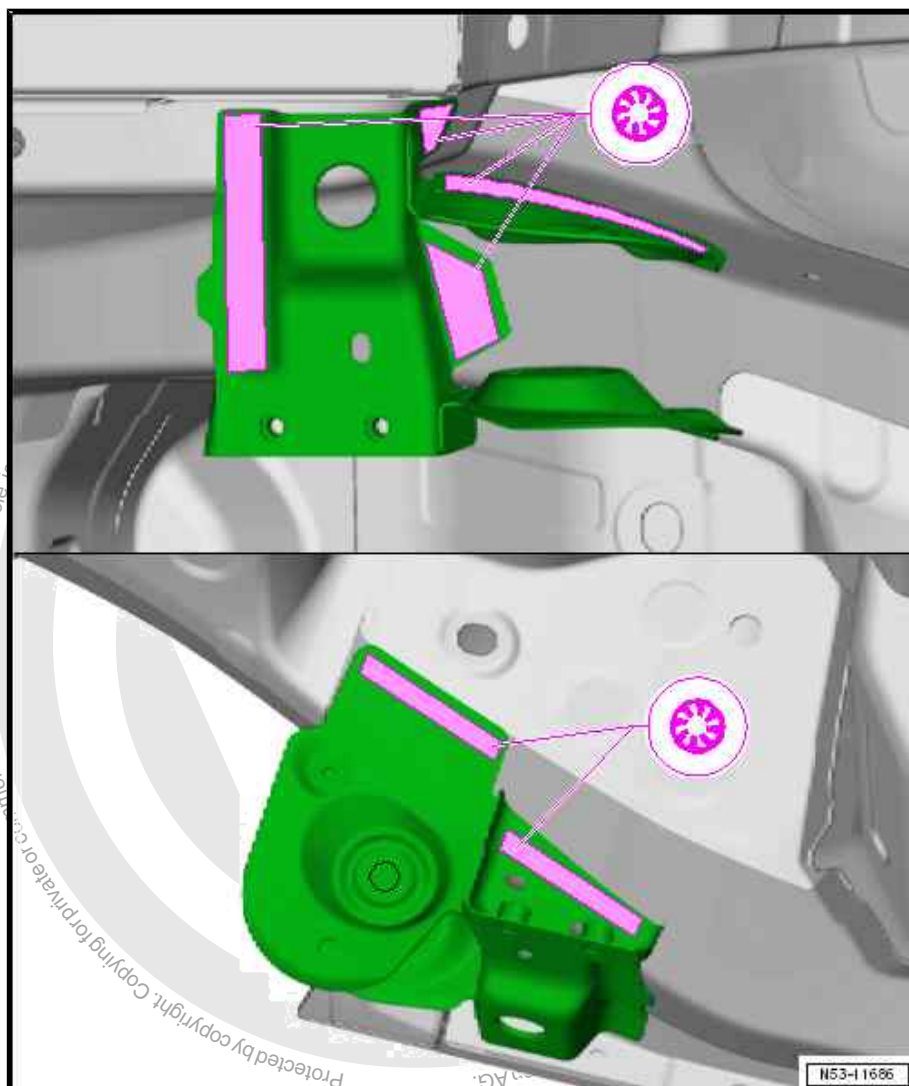
- Drill holes for rear axle securing bolt -1- (10.5 mm Ø).
- Drill 8 mm Ø holes for SG plug weld seam.

9.3.2 Welding in

- Adapt new part using alignment bracket set and fix in place.



- Check fit with add-on parts.



- Weld in rear axle mounting bracket, SG plug weld seam.



RO: 53 48 55 50

10 Renewing rear longitudinal member - part section

Includes: rear bumper mounting



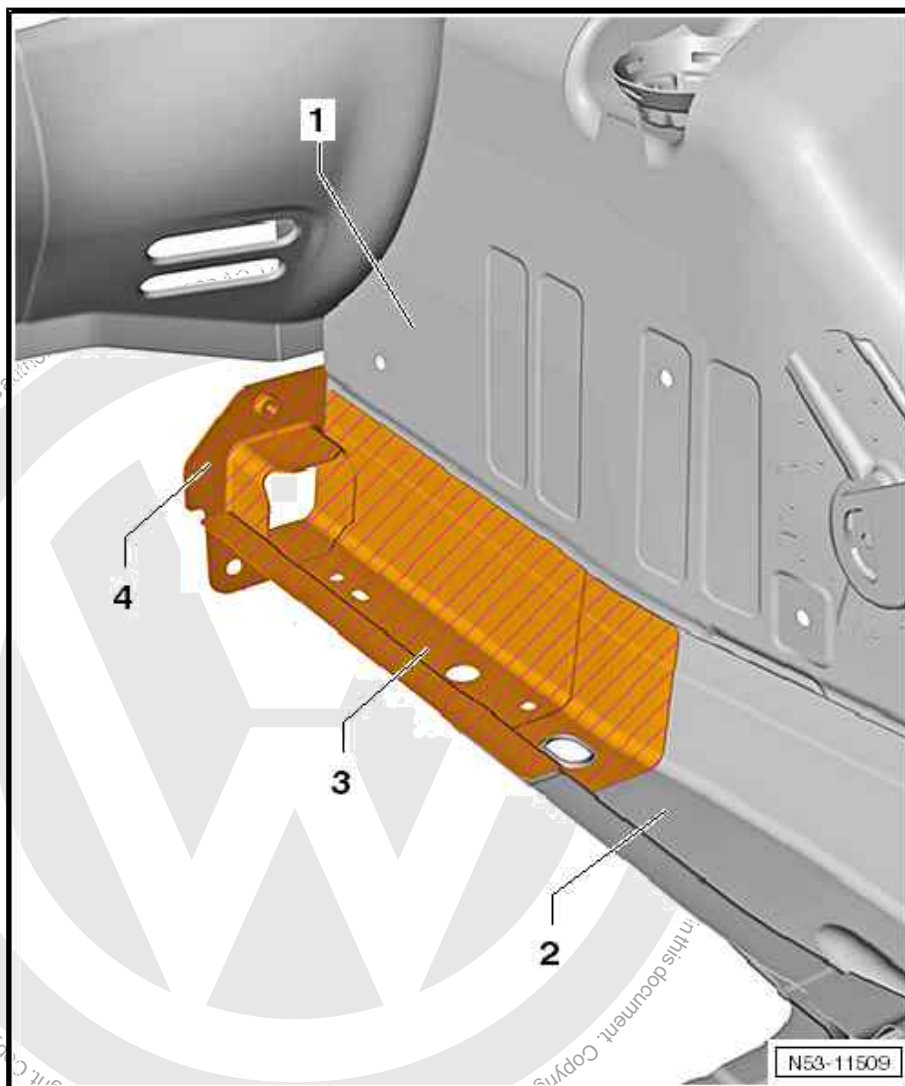
WARNING

Observe safety notes!

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

- Cross panel already removed ⇒ [page 286](#) .
- Luggage compartment floor already removed ⇒ [page 308](#) .
- Upper part of rear longitudinal member already removed ⇒ [page 321](#) .

- 1 - Inner rear wheel housing
- 2 - Rear longitudinal members
- 3 - Rear longitudinal member - part section
- 4 - Rear bumper mounting





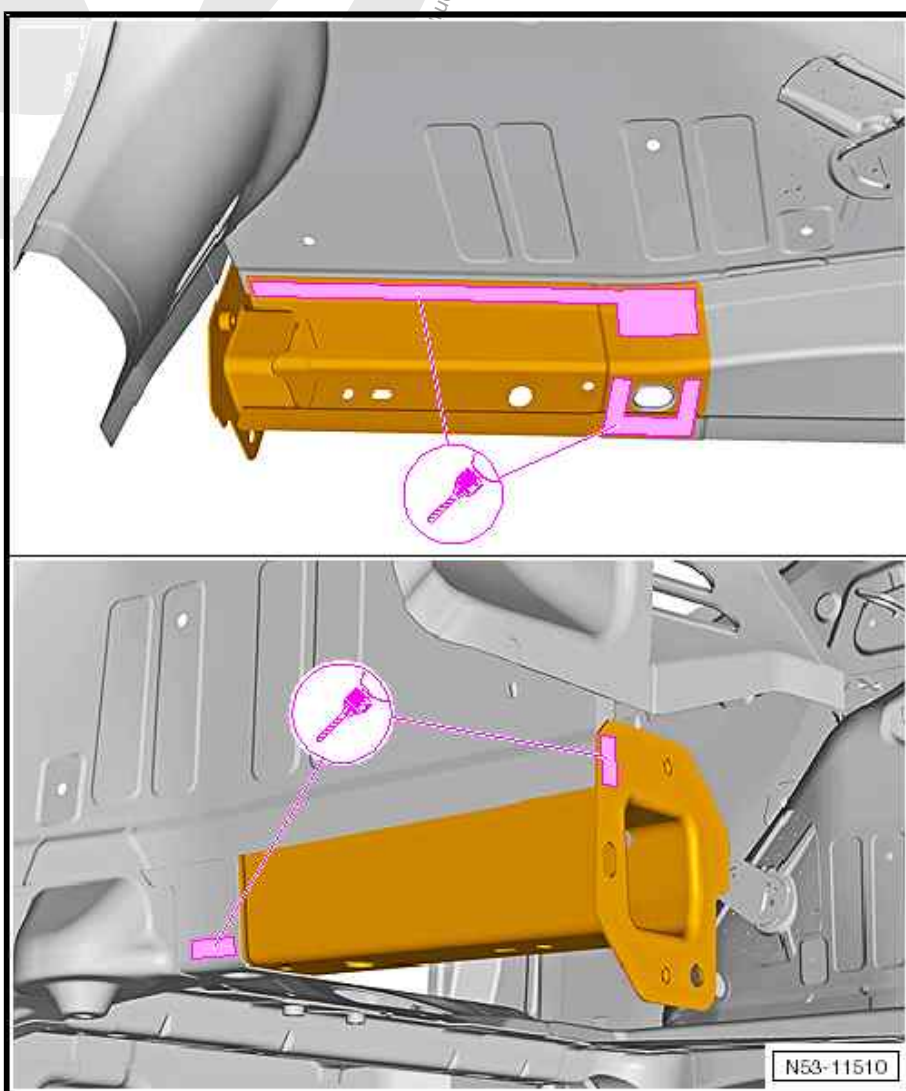
10.1 Tools



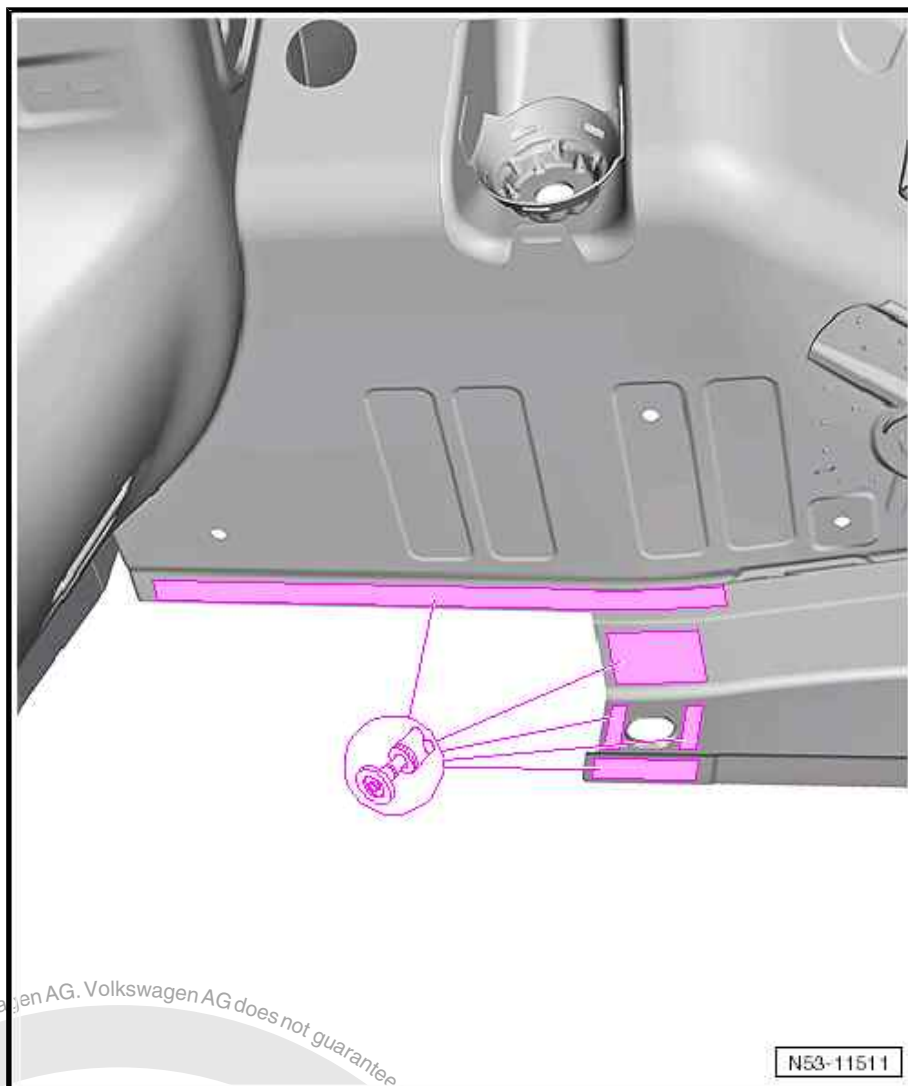
Note

- ◆ Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.
- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ➔ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork.

10.2 Removing



- Separate original joint to wheel housing and to rear longitudinal member.



- Remove remaining material.

10.3 Installing



Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 339](#).*

10.3.1 Welding in

Replacement parts

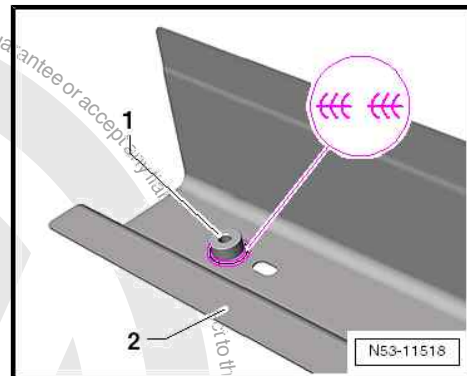
- ◆ Rear longitudinal member - part section (parts designation according to ETKA⇒ longitudinal member with reinforcements and welded nuts)
- ◆ Rear bumper mounting
- ◆ Welded nut M8 (for exhaust gas system bracket - only on left longitudinal member)



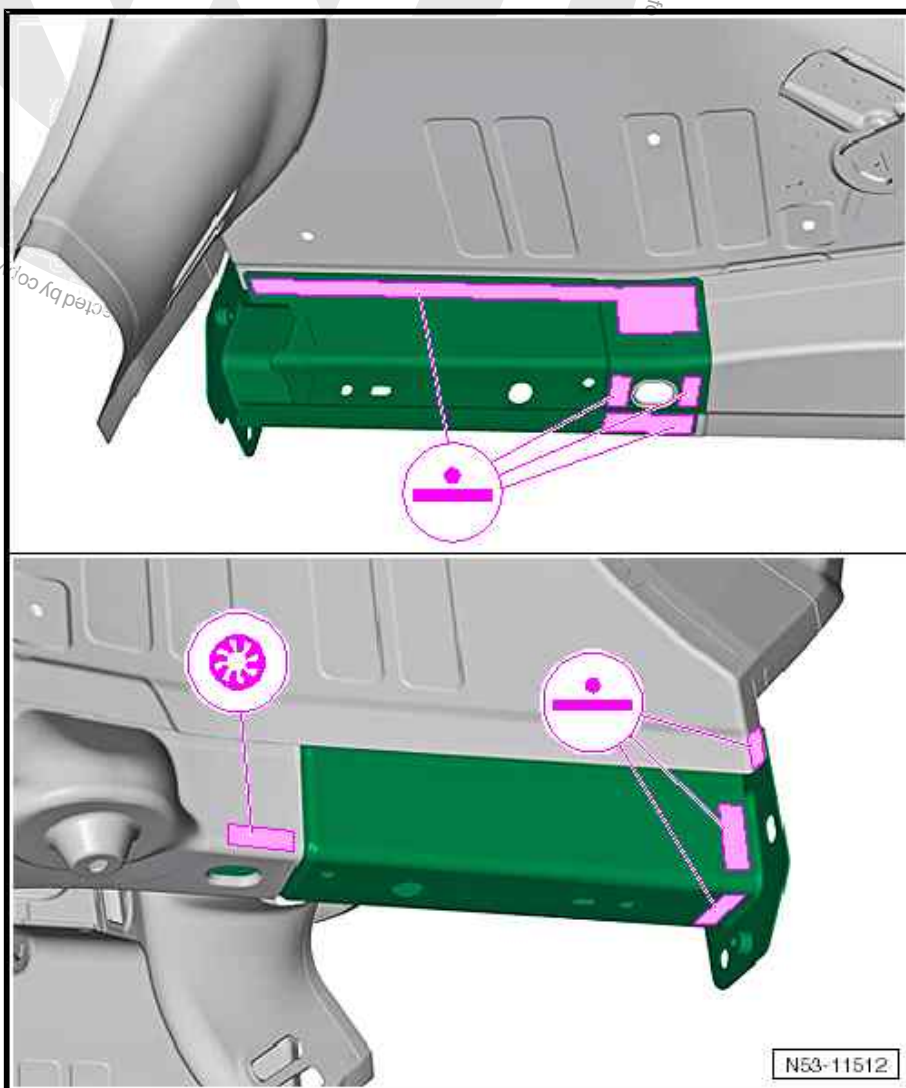
i Note

The welded nut M8 for the exhaust gas system bracket must be welded to the left longitudinal member.

- Weld nut -1- to longitudinal member (new part) -2-, SG staggered continuous weld seam.



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





- Recreate original joint to wheel housing, RP spot weld seam.
- Weld in rear longitudinal member (new part), RP spot weld seam and SG plug weld seam.
- Weld in bumper bracket, RP spot weld seam.
- Install cover plate for rear longitudinal member ➤ [page 323](#) .
- Install luggage compartment floor ➤ [page 312](#) .
- Install rear cross panel ➤ [page 288](#) .





RO: 53 55 55 00

11 Renewing side panel - 2-door

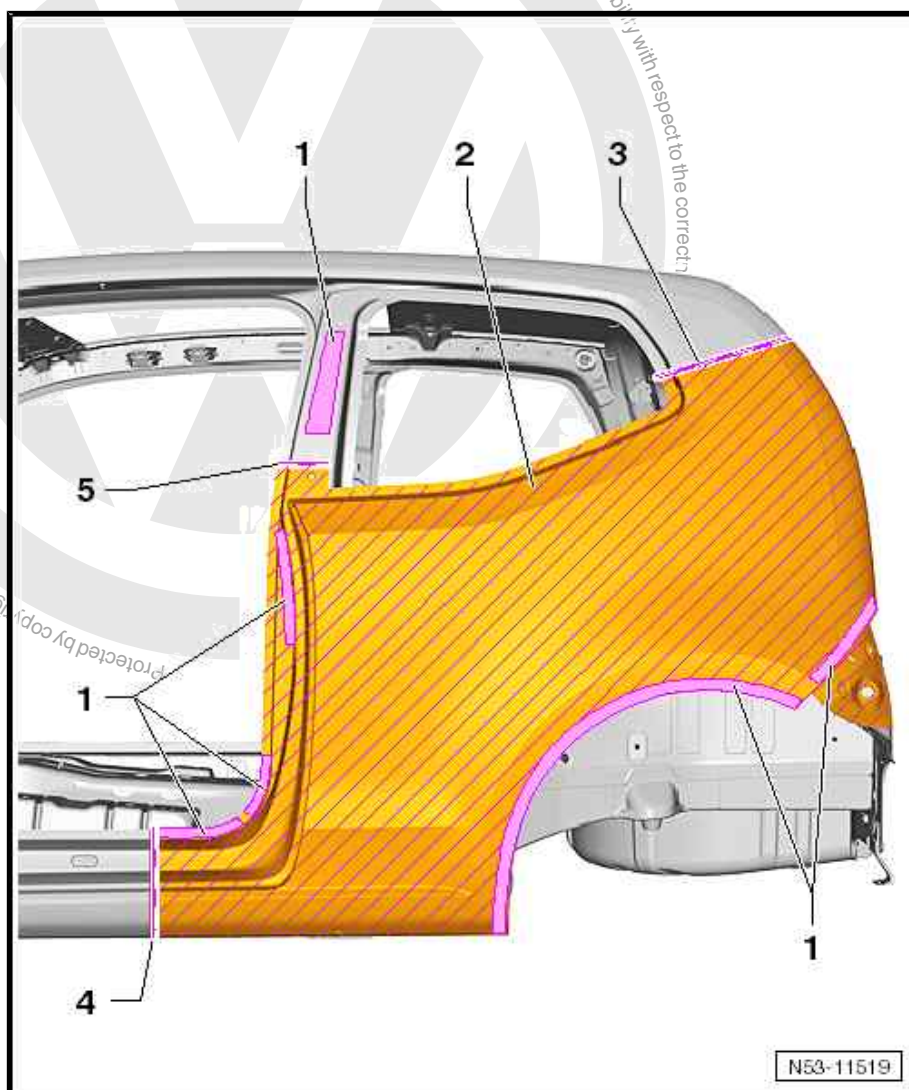


WARNING

Observe safety notes!

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

- 1 - Bonded areas
- 2 - Side panel
- 3 - Parting cut for C-pillar
- 4 - Parting cut for side member
- 5 - B-pillar parting cut





11.1 Tools



Note

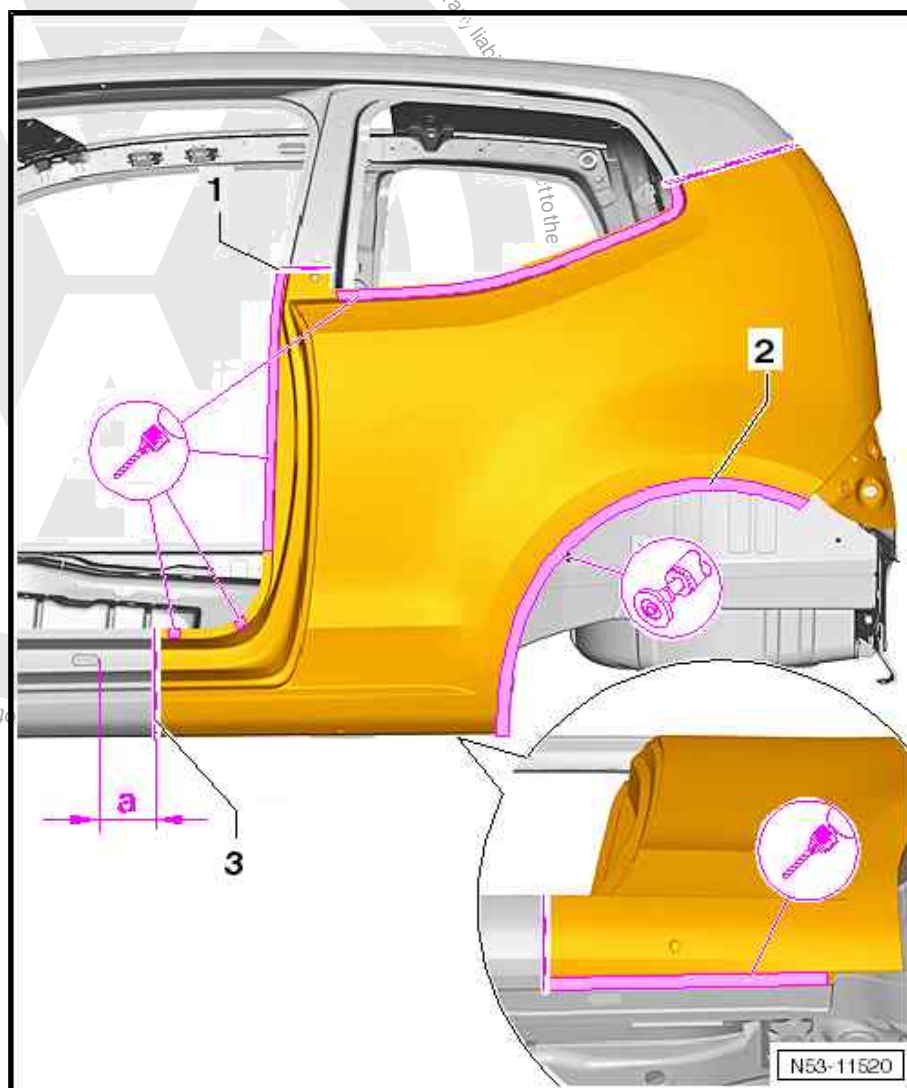
- ◆ Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.
- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork .

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.

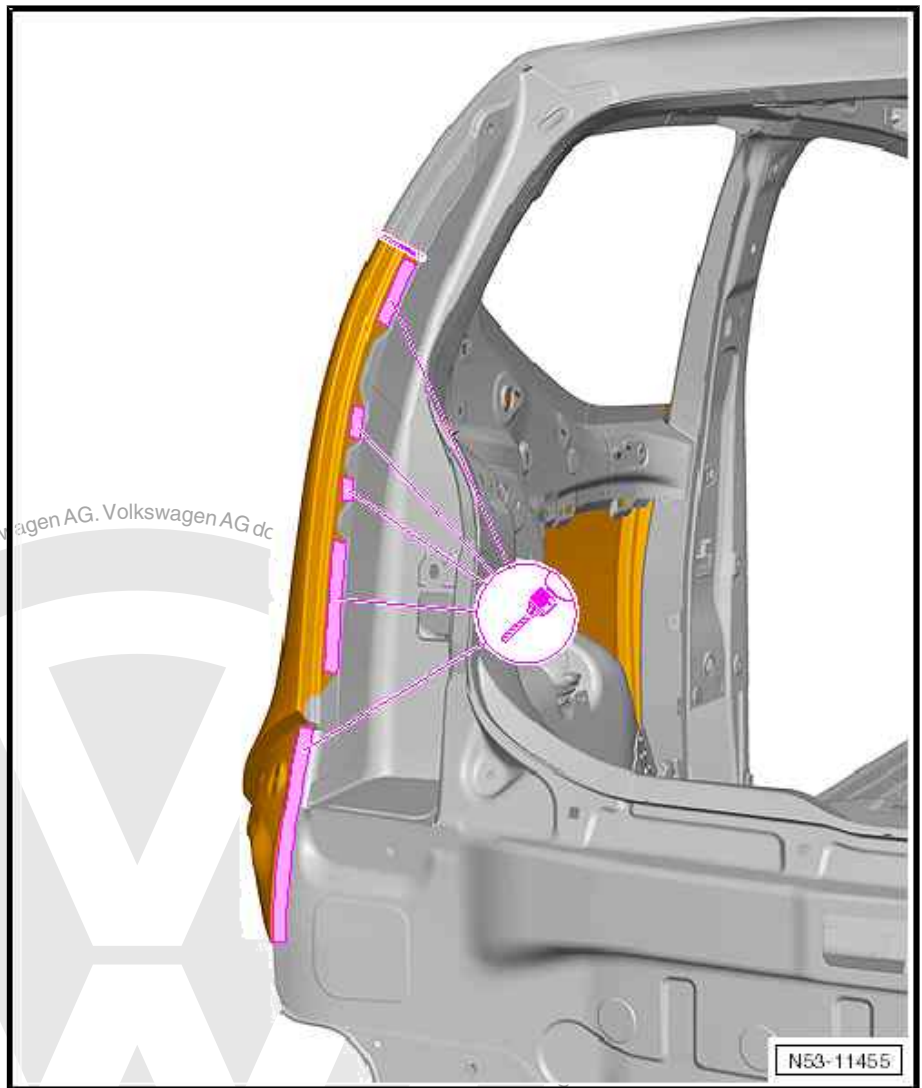




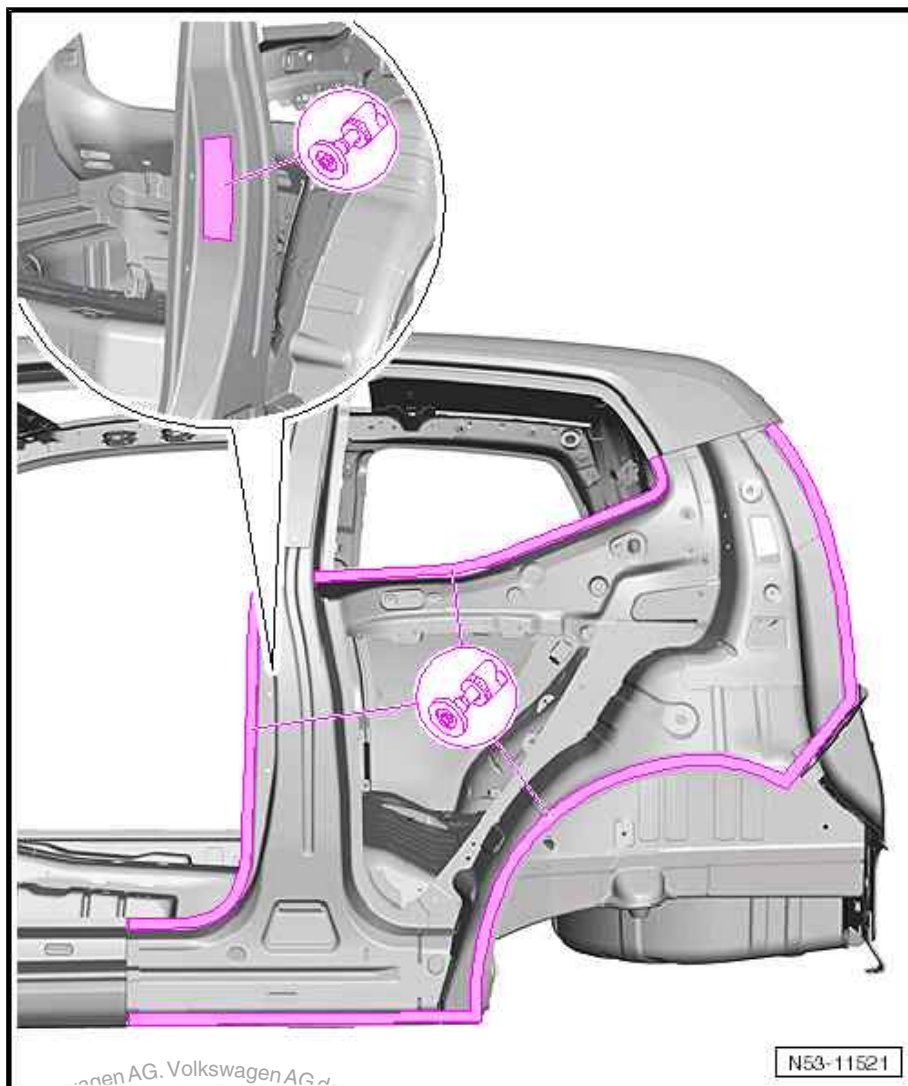
- Make parting cut -1- as shown.
- Make parting cuts on C-pillar according to degree of damage.
- Make parting cut on side member -3- as per -dimension a-.

Dimension -a- = 80 mm

- Separate original joint.
- Grind wheel arch -2- and separate bonded joint.



- Separate original joint in rear lid aperture.



- Remove remaining material.
- Remove remaining adhesive completely, and sand bonding surfaces down to bare metal.
- Apply corrosion protection measures on bonding surfaces where no welding is to be performed ⇒ Body; General information, Paint; Technical data; General notes; Notes on repairing add-on parts and welded parts .
- Then lightly roughen bonding surfaces.

11.3 Installing



Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 344](#)*

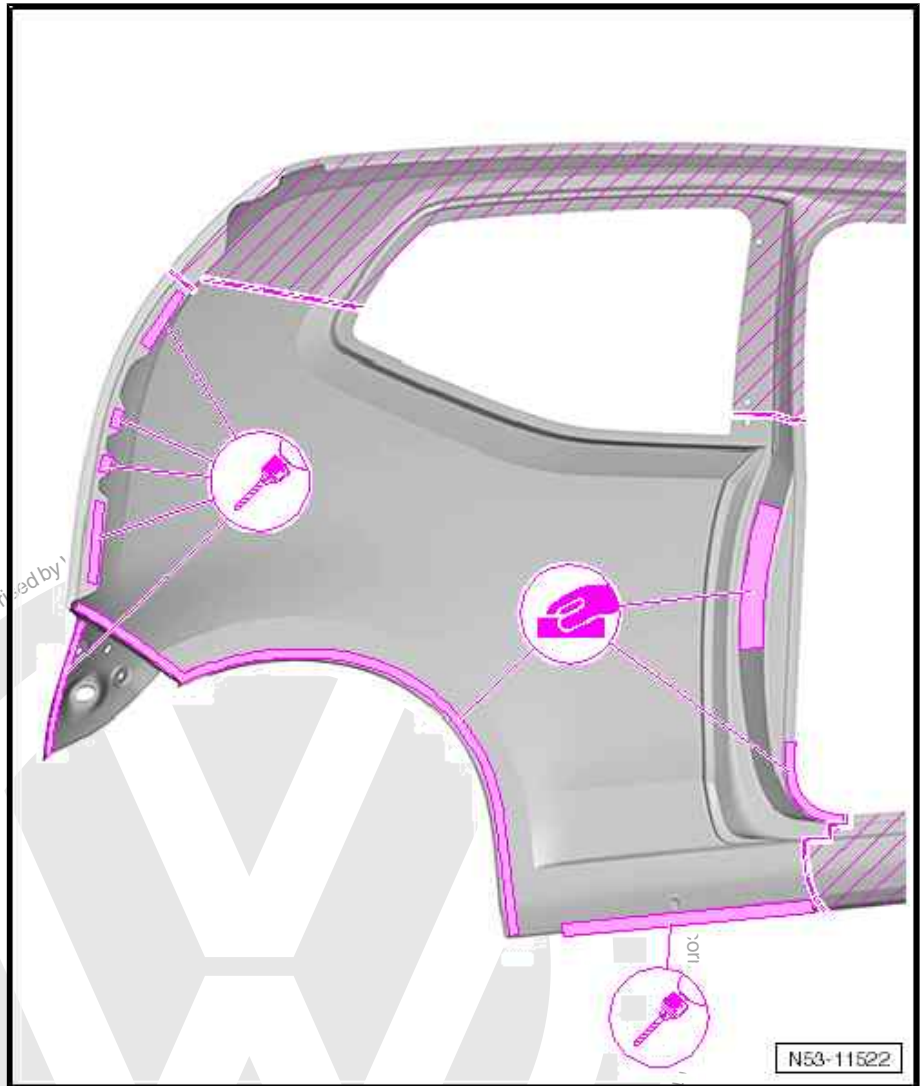
11.3.1 Preparing new part

Replacement part

- ◆ Side panel
- ◆ 2-pack body adhesive - D 180 003 M2-



- ◆ 2-component polyurethane adhesive - D 180 KD2 A1- (for right side panel)



- Transfer parting cut to new part and cut out.
- Drill 7 mm Ø holes for SG plug weld seam.
- Roughen bonding areas where no welding is performed only lightly.

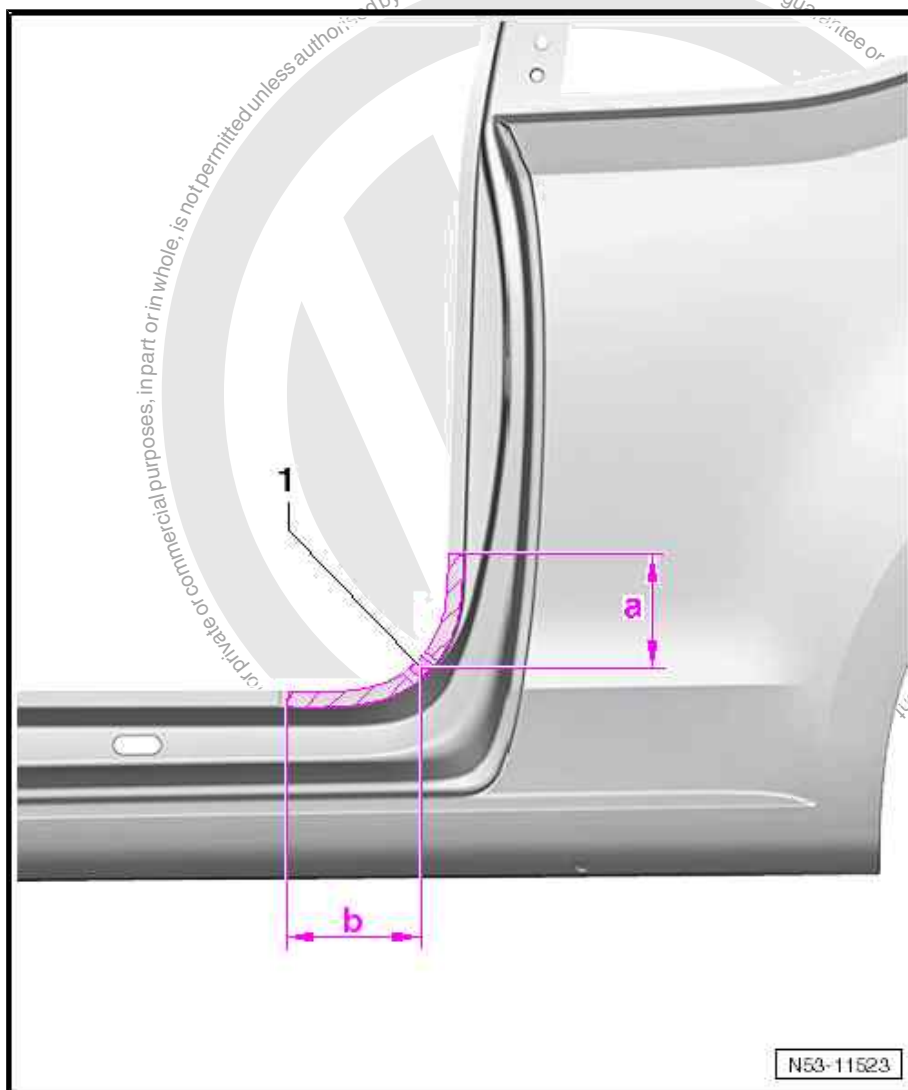


11.3.2 Marking areas where no welding work may be carried out



Note

- ◆ When installing side panel, welding is not permitted in marked areas due to safety reasons »crash safety«.
- ◆ The measurements given must be adhered to.



- Adapt new part and mark position of spot weld to be set within radius range of old spot weld -1-.
- From this point, mark areas where welding is not permitted on the new part, according to dimensions -a and b-.

Dimension -a- = 120 mm

Dimension -b- = 130 mm



Note

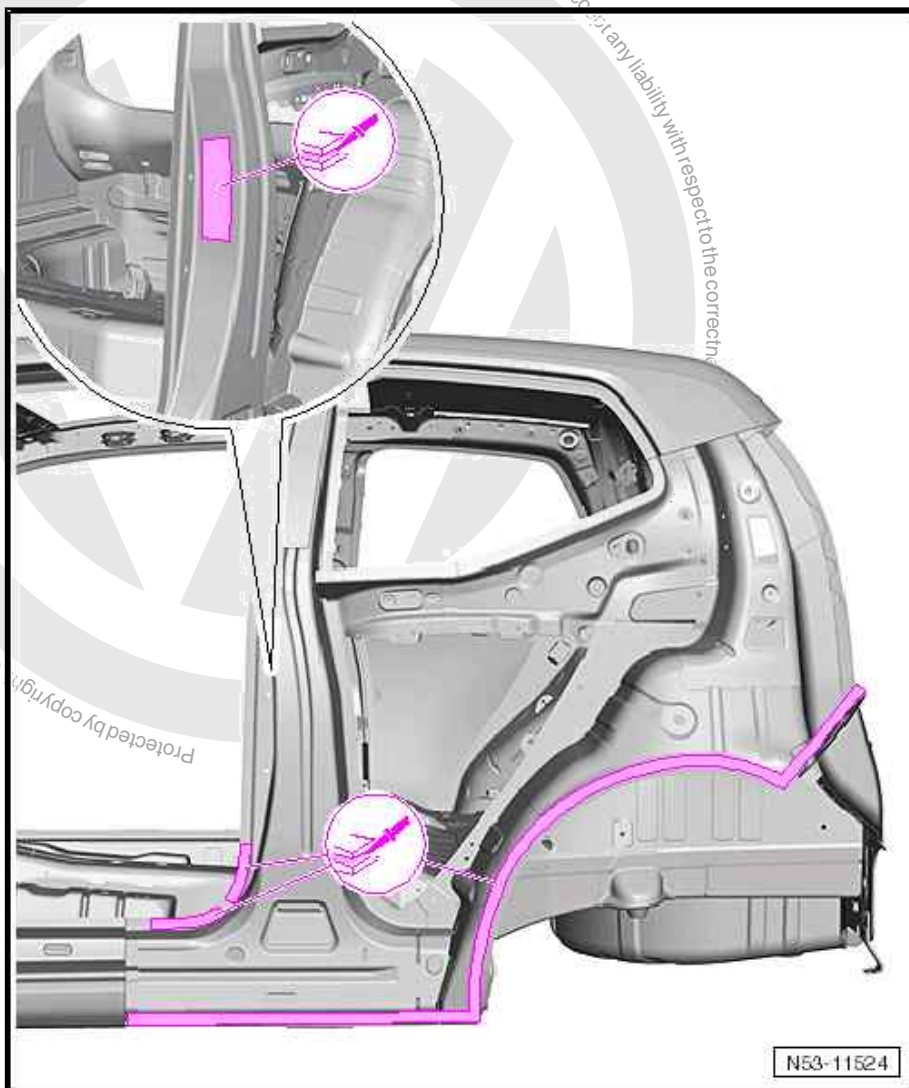
New part will be rewelded at area pointed by -1-.

11.3.3 Welding in



Note

- ◆ *New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.*
- ◆ *Adhesive must be cleaned from threads for fastening striker after bonding in.*
- ◆ *Before starting welding on right-hand side panel, apply 2-component polyurethane adhesive - D 180 KD2 A1- in area of fuel filler neck.*

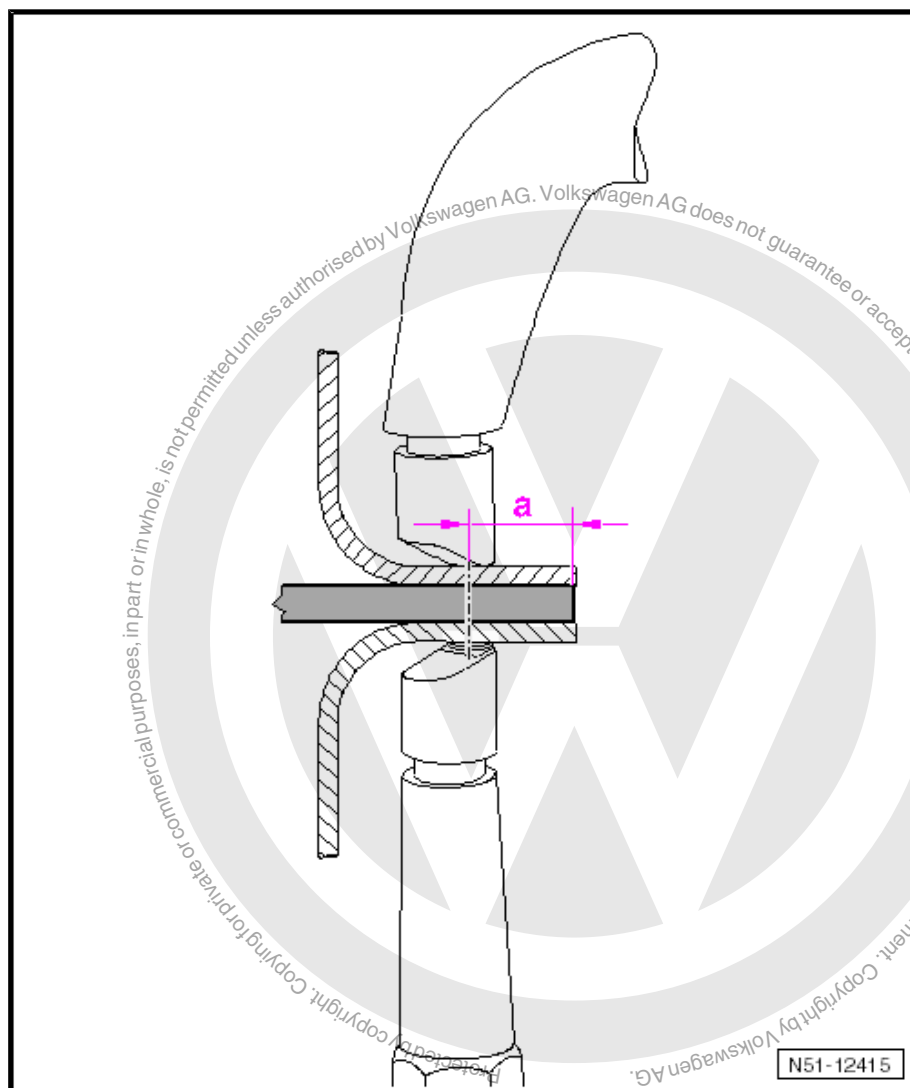


- Apply 2-component body adhesive - D 180 003 M2- to areas indicated.



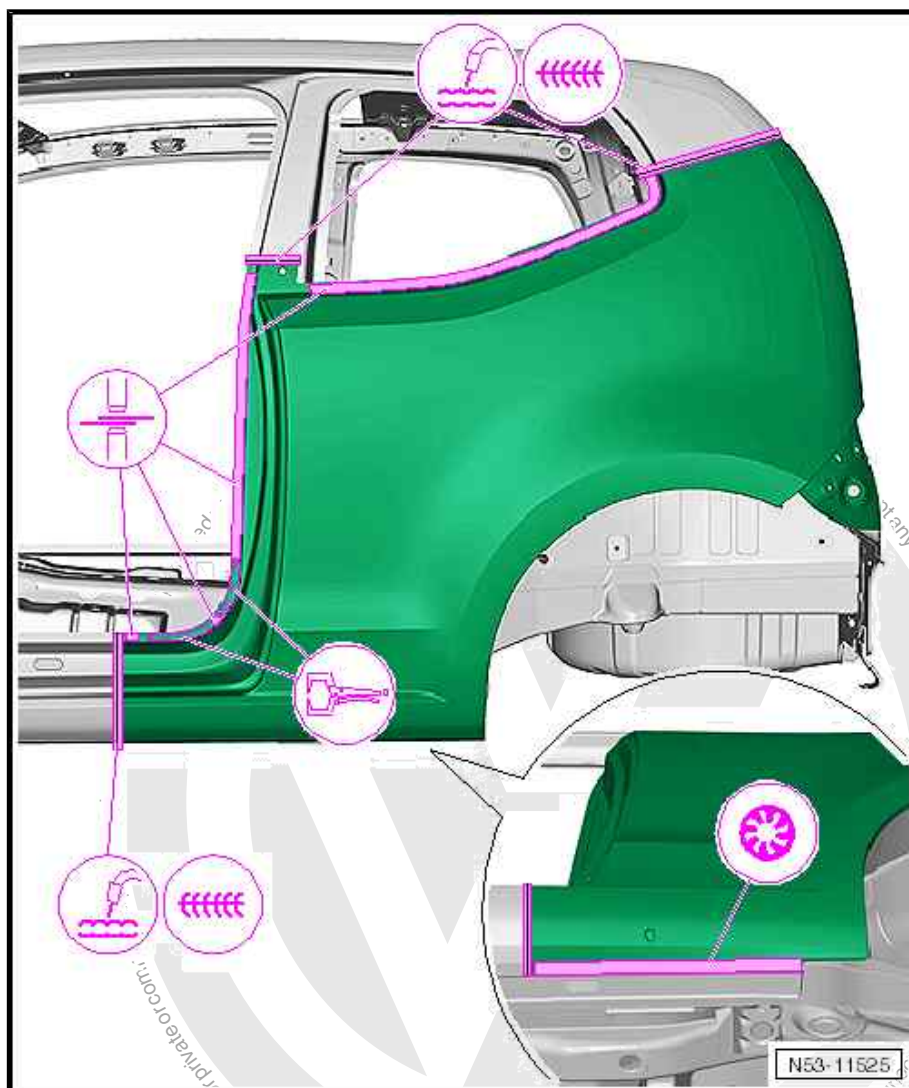
Note

- ◆ *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 16 mm wide.*
- ◆ *If spot welds are located at the edge of thermally shaped panels, the high temperature will cause the bond between the panels to change in such a way that crash safety will be impaired.*



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

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



i Note

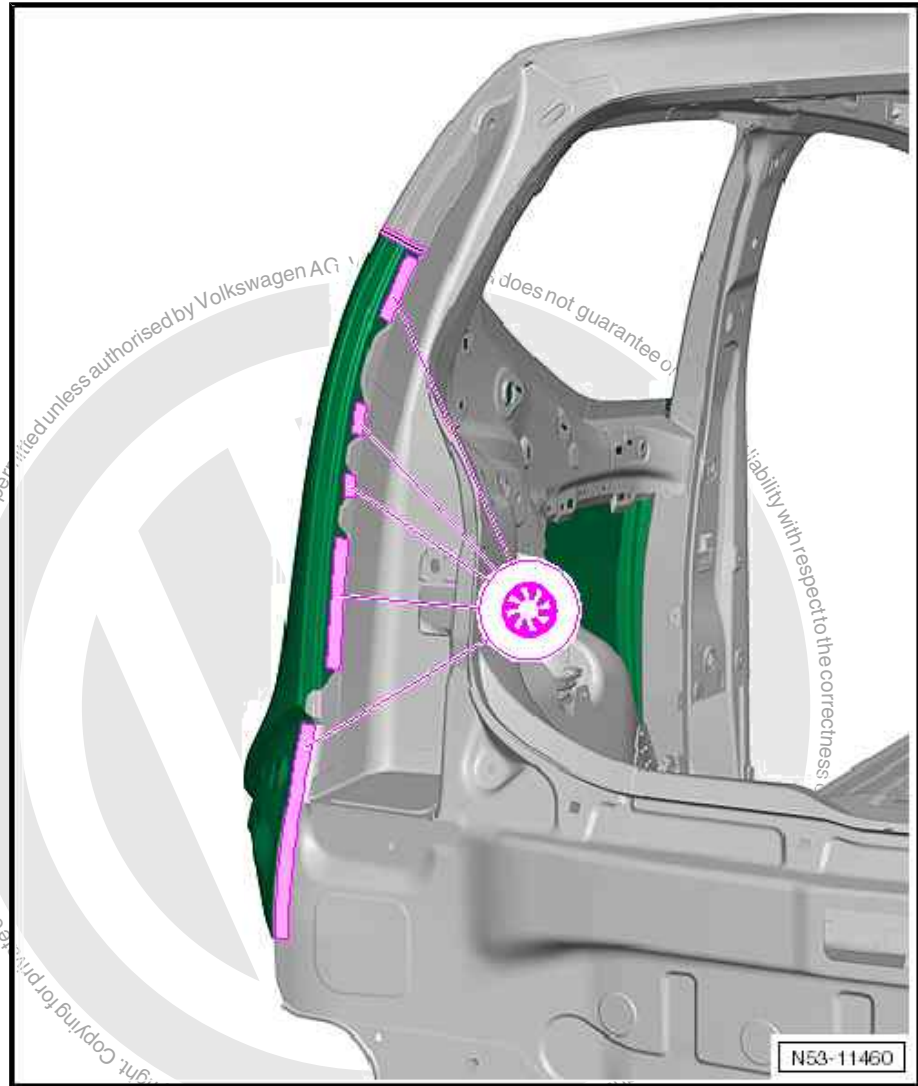
Secure areas where welding is not permitted with vice-grips until adhesive has cured.

- Weld in side panel, RP spot weld seam (inverter).
- Weld parting cuts, MIG-L stepped seam or SG continuous weld seam are permitted.

i Note

Both weld symbols are shown in the figure.

- Weld in joint to side member, SG plug weld seam.
- Reform wheel housing flange.
- Wipe away excess adhesive and seal wheel arch.



- Weld in side panel at rear lid aperture, SG plug weld seam.



RO: 53 55 55 10

12 Renewing side panel - 4-door



WARNING

Observe safety notes!

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

1 - Side panel

- ⇒ ["12.3.1 Authorised parting cuts on complete side panel", page 357](#)

2 - Parting cut for C-pillar

3 - Bonded areas

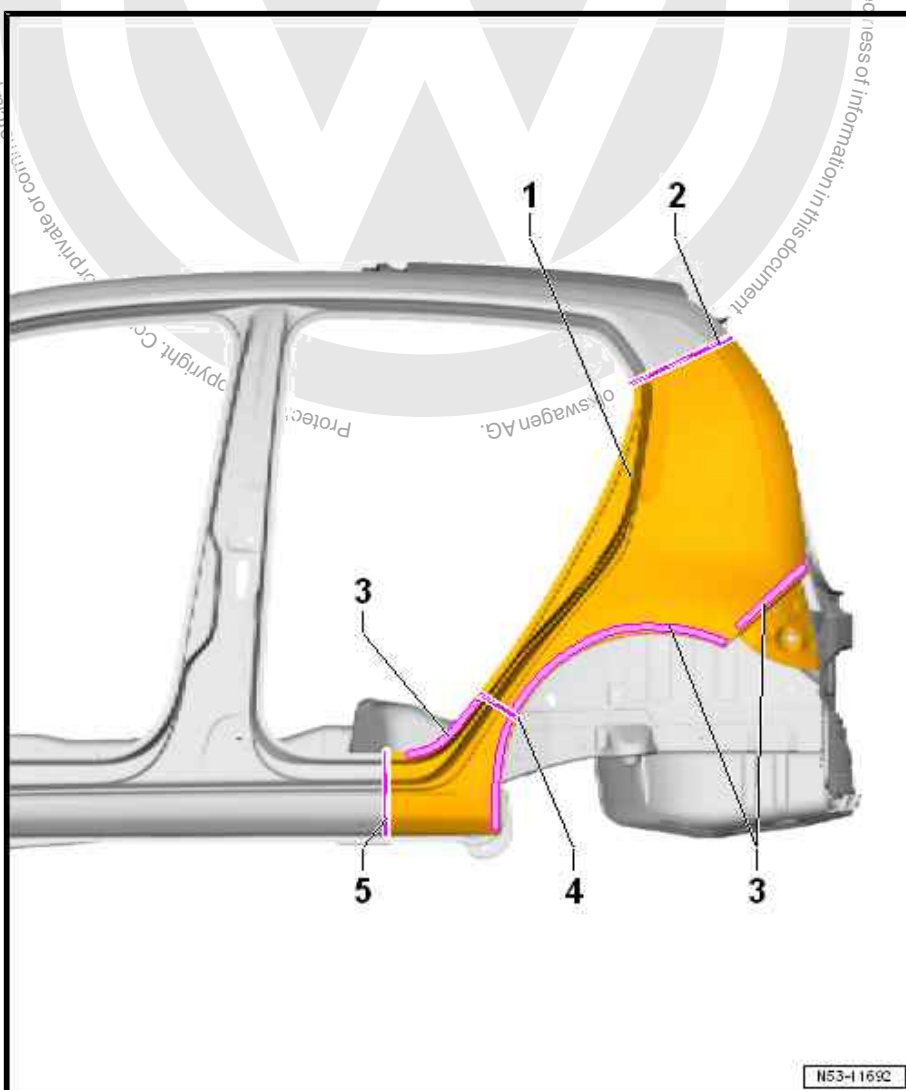
4 - Wheel arch parting cut

Partial renewal

Parting cut is permissible for part section repair.

Parting cut can be combined with others in cases where extent of damage requires multiple cuts.

5 - Parting cut for side member





12.1 Tools



Note

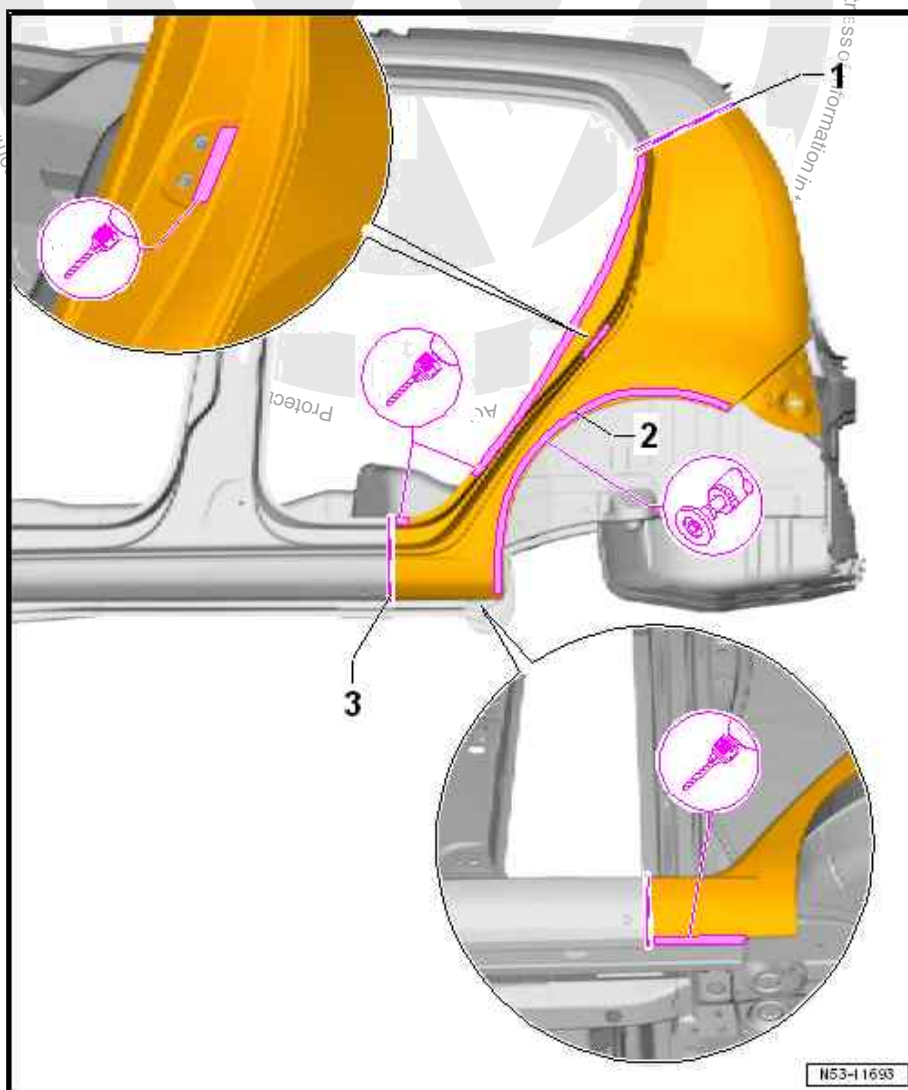
- ◆ Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.
- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork .

12.2 Removing



Note

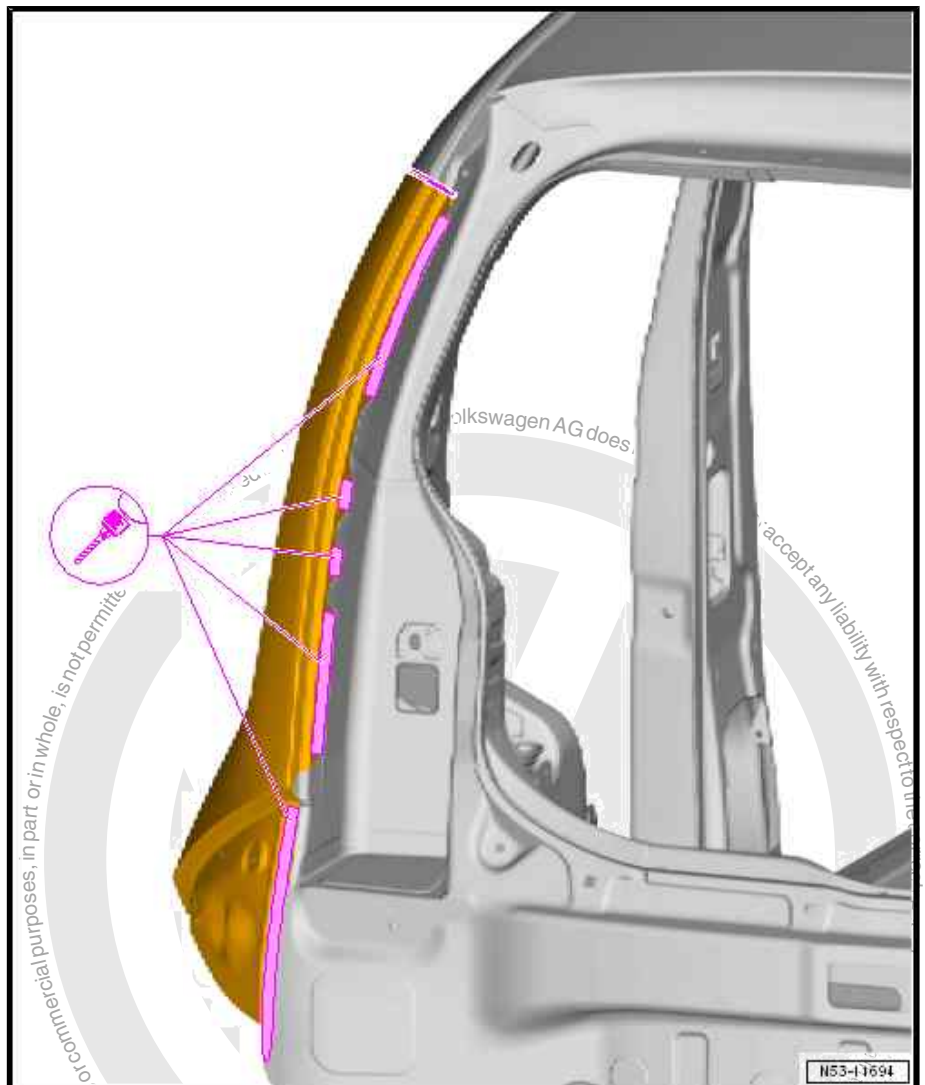
Do not damage inner reinforcements when carrying out parting cuts.



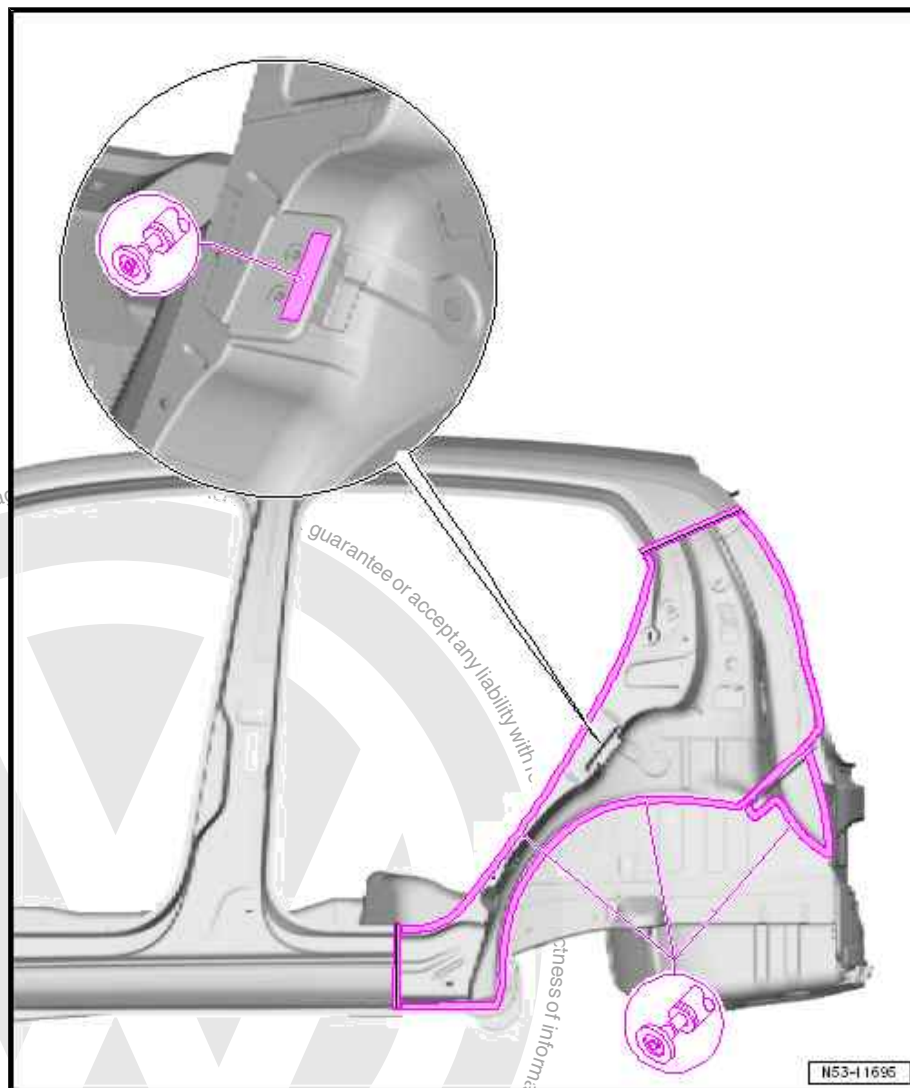
- Make parting cuts -1- and -3- as shown in illustration.



- Separate original joint.
- Grind wheel arch -2- and separate bonded joint.



- Separate original joint in rear lid aperture.
- Remove side panel from body.



- Remove remaining material.
- Sand welding surfaces down to bare metal.
- Remove remaining adhesive completely, and sand bonding surfaces down to bare metal.
- Clean any dust and grease off flange area on wheel arch.
- Apply corrosion protection measures on bonding surfaces where no welding is to be performed ⇒ Body; General information, Paint; Technical data; General notes; Notes on repairing add-on parts and welded parts .
- Then lightly roughen bonding surfaces.

12.3 Installing

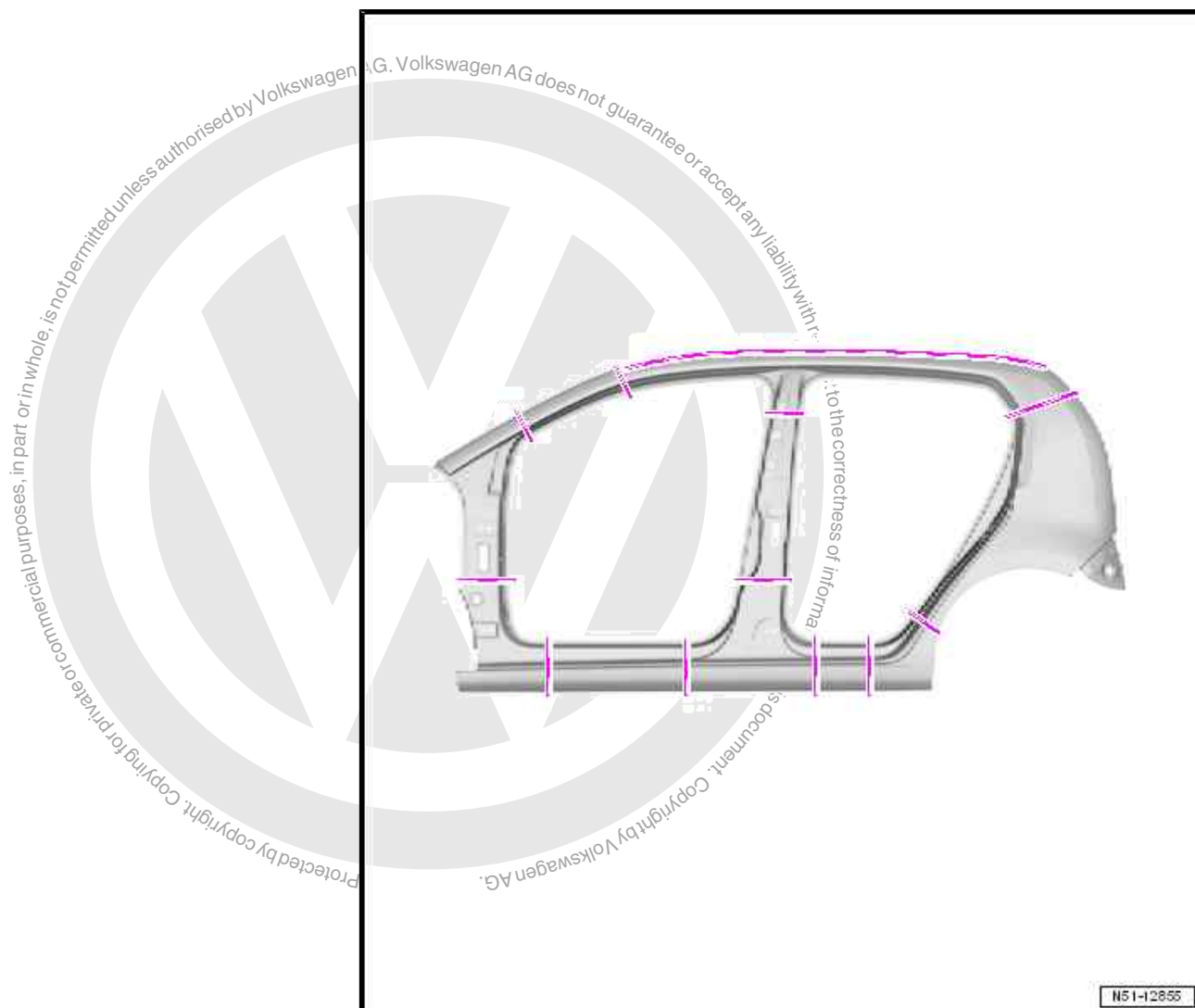


Note

*Only welding units authorised by Volkswagen AG may be used
⇒ [page 354](#) .*



12.3.1 Authorised parting cuts on complete side panel



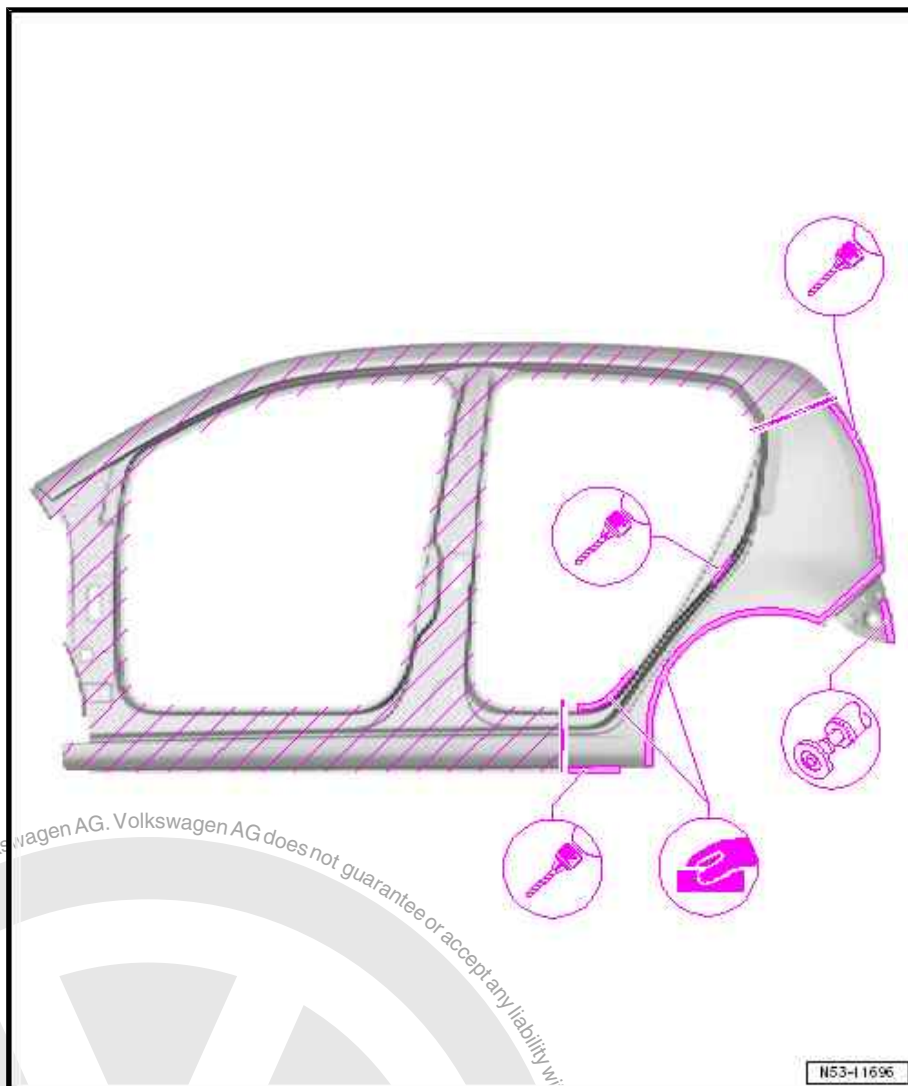
Note

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

12.3.2 Preparing new part

Replacement parts

- ◆ Side panel
- ◆ 2-pack body adhesive - D 180 003 M2-
- ◆ 2-component polyurethane adhesive - D 180 KD2 A1- (for right side panel)



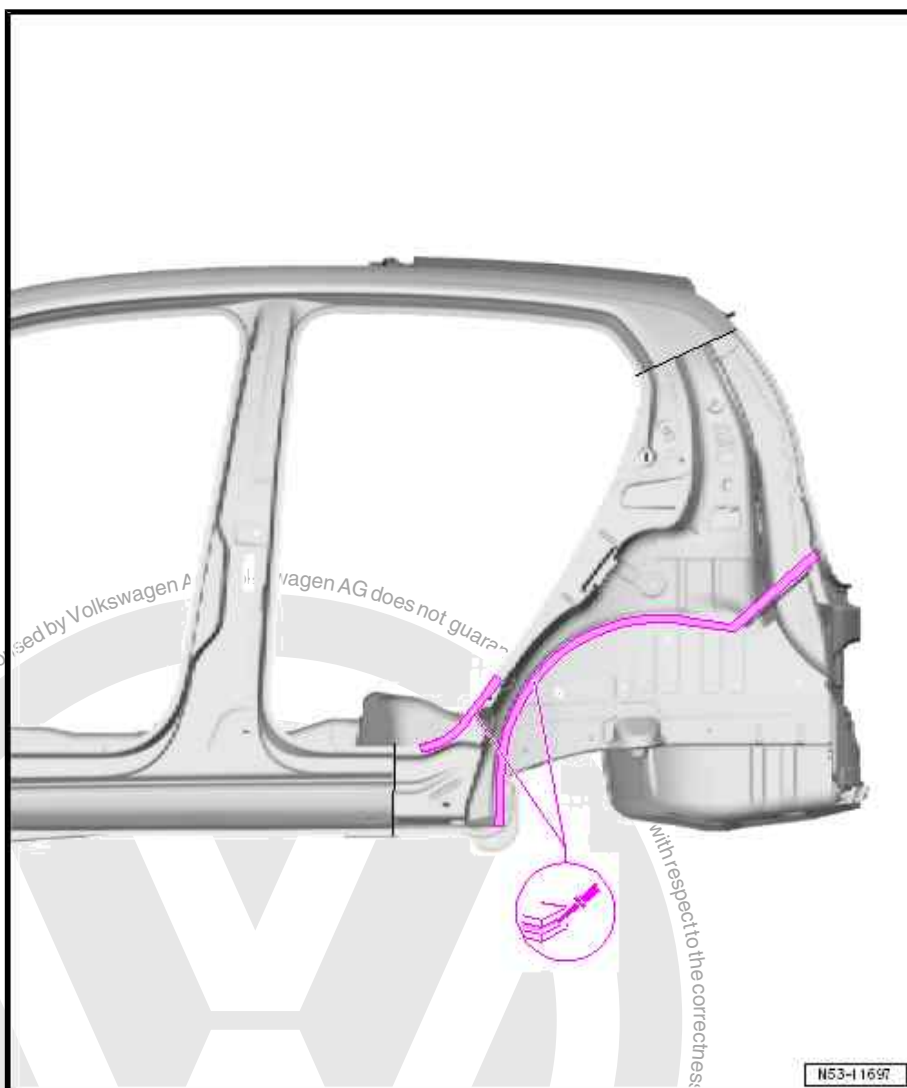
- Transfer parting cut to new part and remove shaded area.
- Drill 7 mm Ø holes for SG plug weld seam.
- Roughen bonding areas where no welding is performed only lightly.

12.3.3 Welding in

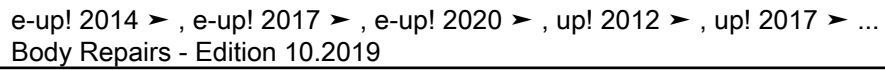


Note

- ◆ *New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.*
- ◆ *Before starting welding on right-hand side panel, apply 2-component polyurethane adhesive - D 180 KD2 A1- in area of fuel filler neck.*



- Apply 2-component body adhesive - D 180 003 M2- to areas indicated.
- Adapt new part -1- with vehicle standing on its wheels or alignment bracket set and fix in position.
- Check fit with add-on parts.



- Note**

360 Rep. gr.53 - Body - rear



- Weld in side panel at rear lid aperture, SG plug weld seam.



RO: 53 68 55 50

13 Renewing outer wheel housing liner



WARNING

Observe safety notes!

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

- Side panel already removed
⇒ ["11 Renewing side panel - 2-door", page 343](#) .
- Side panel already removed
⇒ ["12 Renewing side panel - 4-door", page 353](#) .
- C-pillar reinforcement already removed
⇒ ["6 Renewing C-pillar reinforcement - part section", page 315](#) .

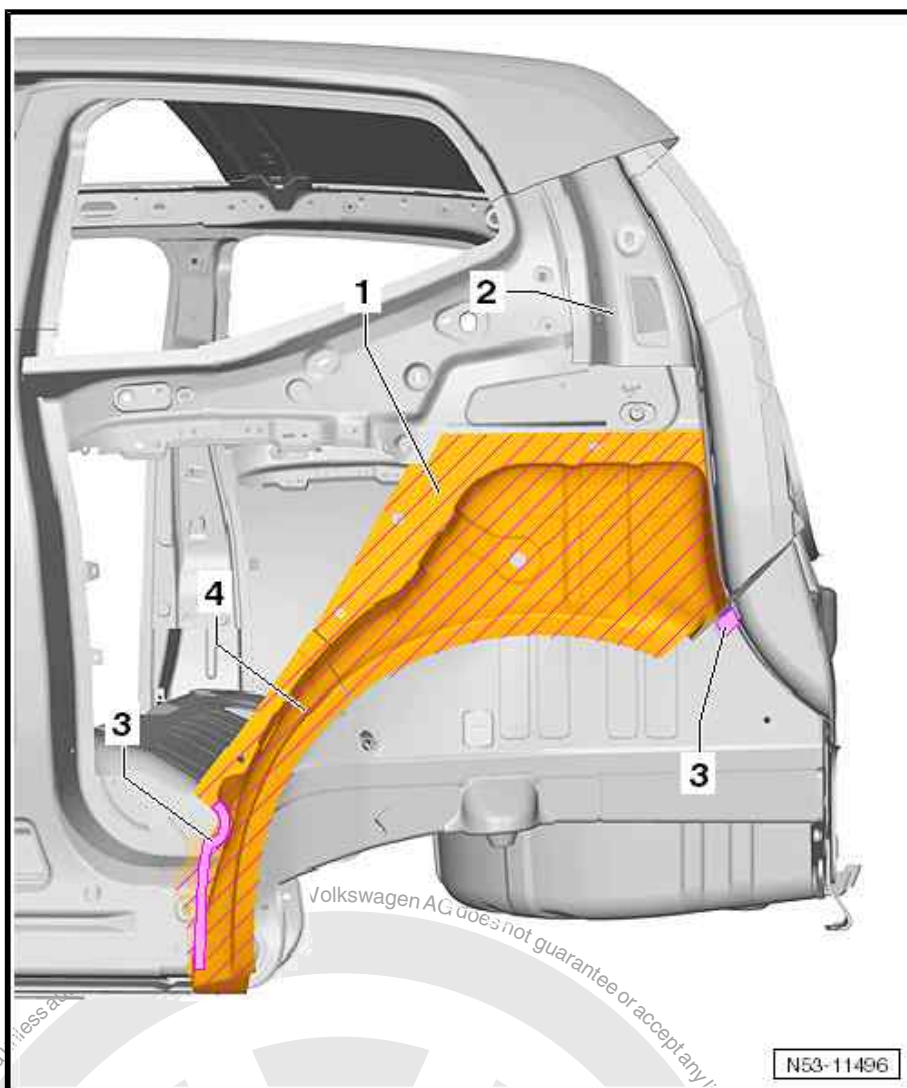


Note

In the illustrations below a 2-door model is shown. On 4-door models the removal and installation of the outer wheel housing liner are identical.



- 1 - Outer wheel housing
- 2 - C-pillar reinforcement
- Part section already removed.
- 3 - Bonded areas
- 4 - Wheel housing attachment



13.1 Tools

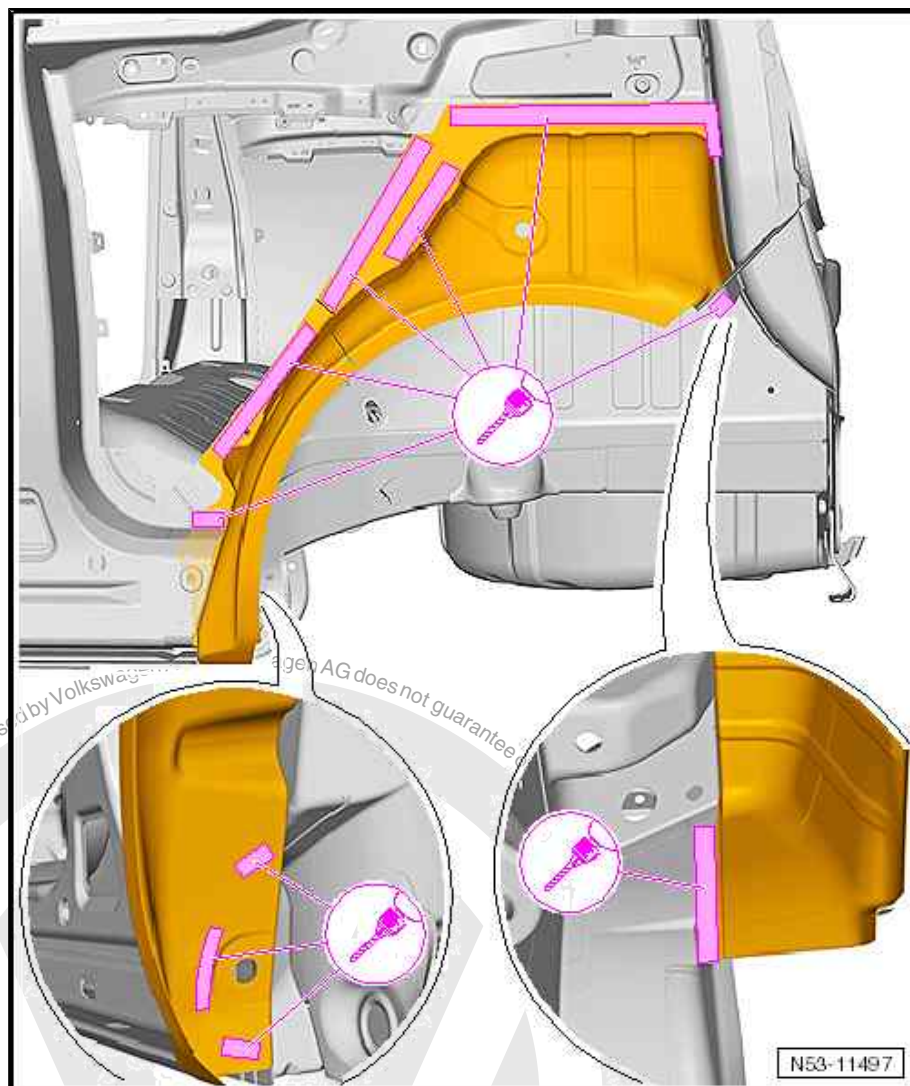


Note

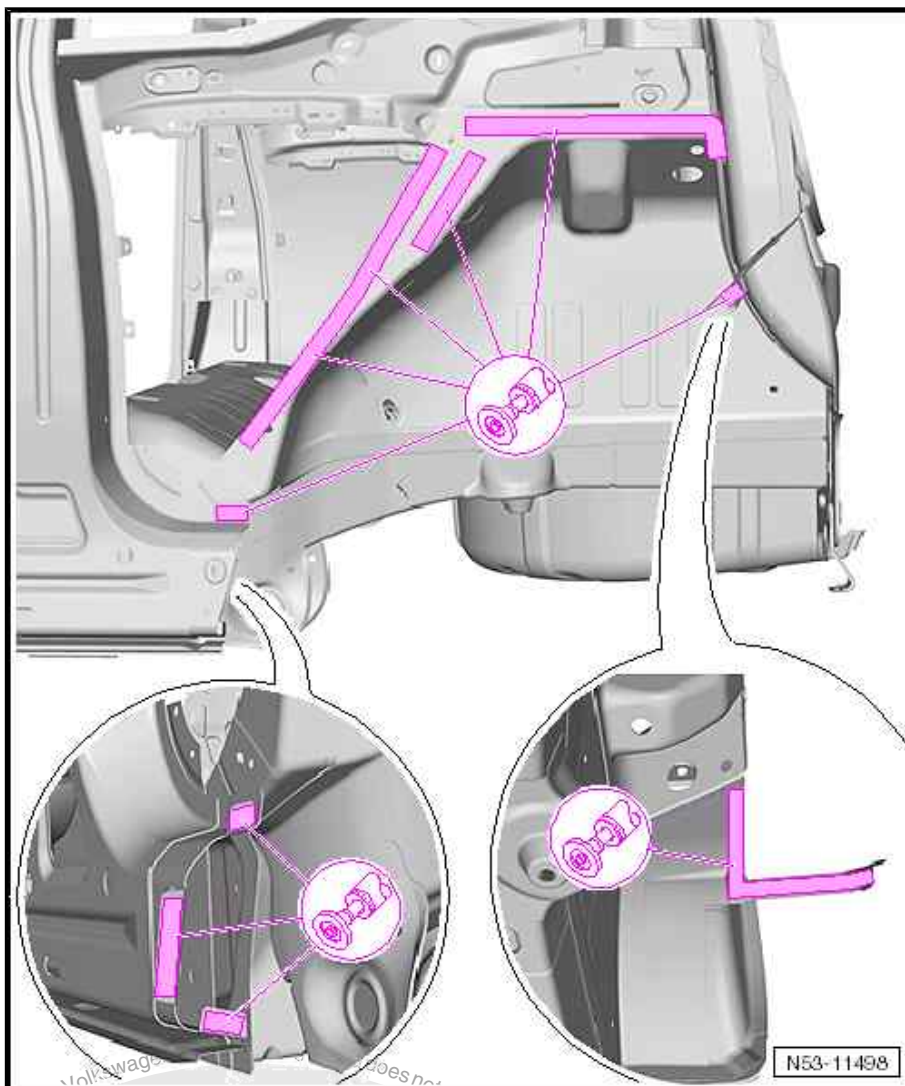
- ◆ Since different types and different thicknesses of steel are used only the welding units (inverters) authorised by Volkswagen AG must be used to carry out repairs properly.
- ◆ The welding units (inverters) and body tools authorised by Volkswagen AG can be found in ⇒ ServiceNet, Workshop equipment, EH catalogue, Workshop equipment, Body and paintwork .



13.2 Removing



- Separate original joint.



- Remove remaining material.
- Remove remaining adhesive completely, and sand bonding surfaces down to bare metal.
- Apply corrosion protection measures on bonding surfaces where no welding is to be performed ⇒ Body; General information, Paint; Technical data; General notes; Notes on repairing add-on parts and welded parts .
- Then lightly roughen bonding surfaces.

13.3 Installing



Note

Only welding units authorised by Volkswagen AG may be used
⇒ [page 363](#).

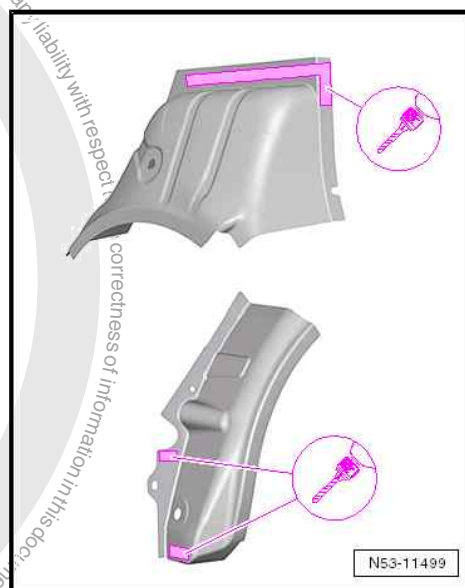
13.3.1 Preparing new part

Replacement parts

- ◆ Outer wheel housing liner
- ◆ Extension for side panel



- ◆ 2-pack body adhesive - D 180 003 M2-
- Drill 8 mm Ø holes for SG plug weld seam.

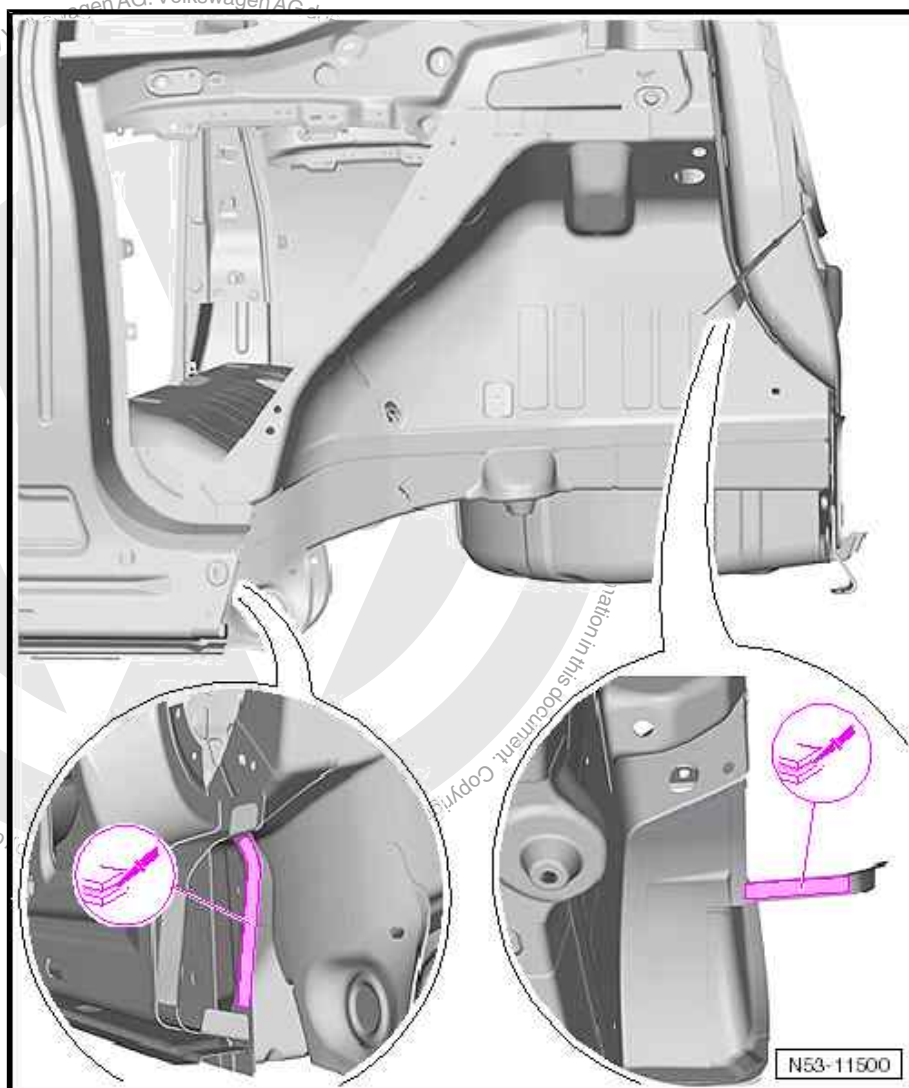


13.3.2 Welding in

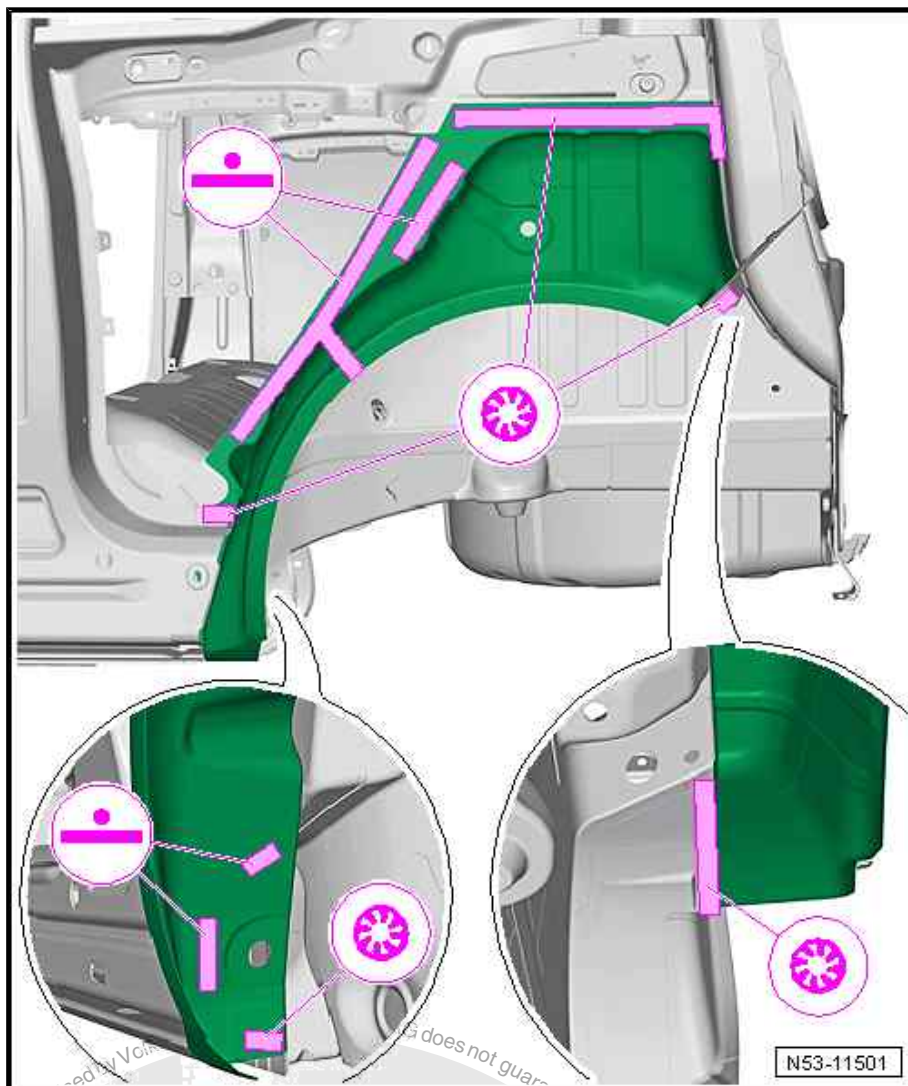


Note

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



- Apply 2-component body adhesive - D 180 003 M2- to areas bonded in factory.
- Adapt new part with vehicle standing on its wheels or on alignment bracket set , and fix it in position.
- Check fit with side panel.



- Weld in outer wheel housing liner and extension for side panel, SG plug weld seam and RP spot weld seam.
- Install C-pillar reinforcement ➤ [“6.3 Installing”, page 318](#) .
- Install side panel, 2-door ➤ [“11.3 Installing”, page 346](#) .
- Install side panel, 4-door ➤ [“12.3 Installing”, page 356](#) .