Body Repairs
Golf 2004 ➤
Edition 06.2010

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.

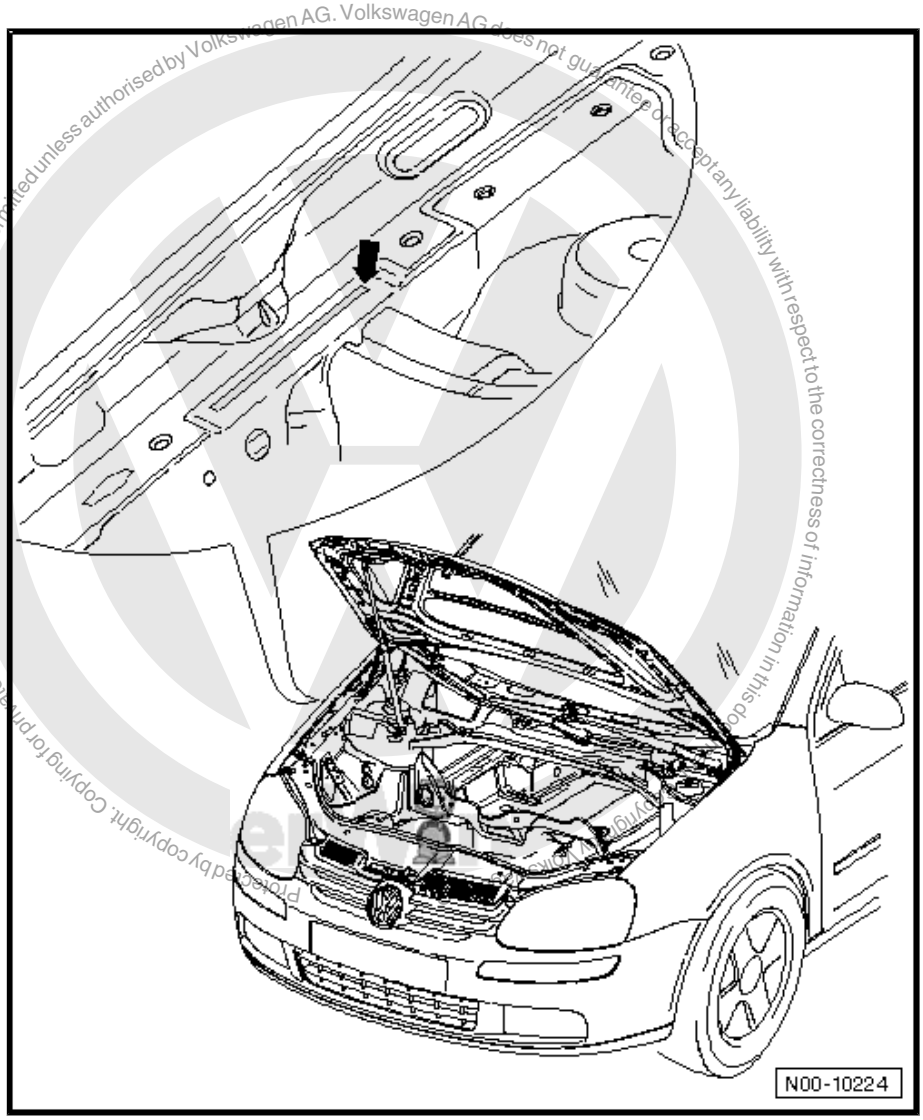
K0058990920

Contents

00 – Technical data

1 Vehicle identification data

1.1 Vehicle identification number

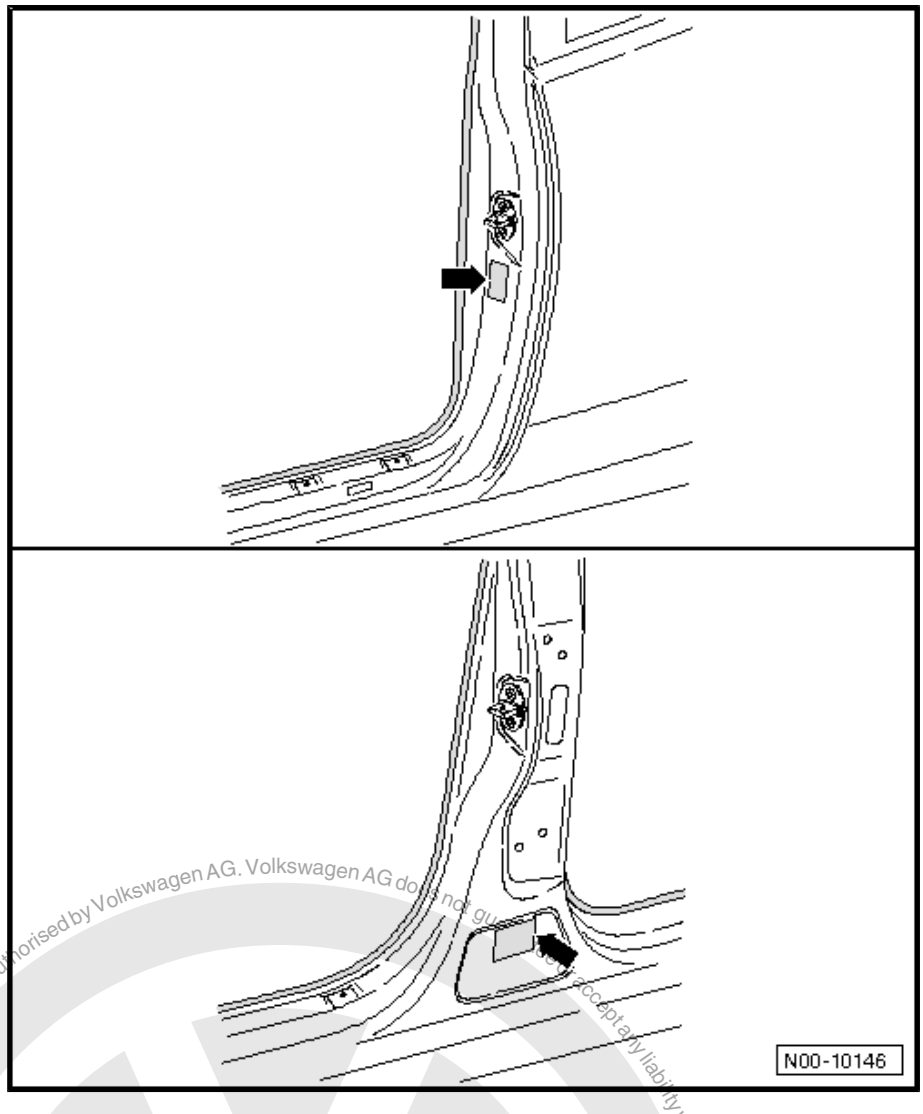


The vehicle identification number (chassis number) -arrow- is located on the right in the area of the wing mounting (upper longitudinal member for wheel housing).

Note

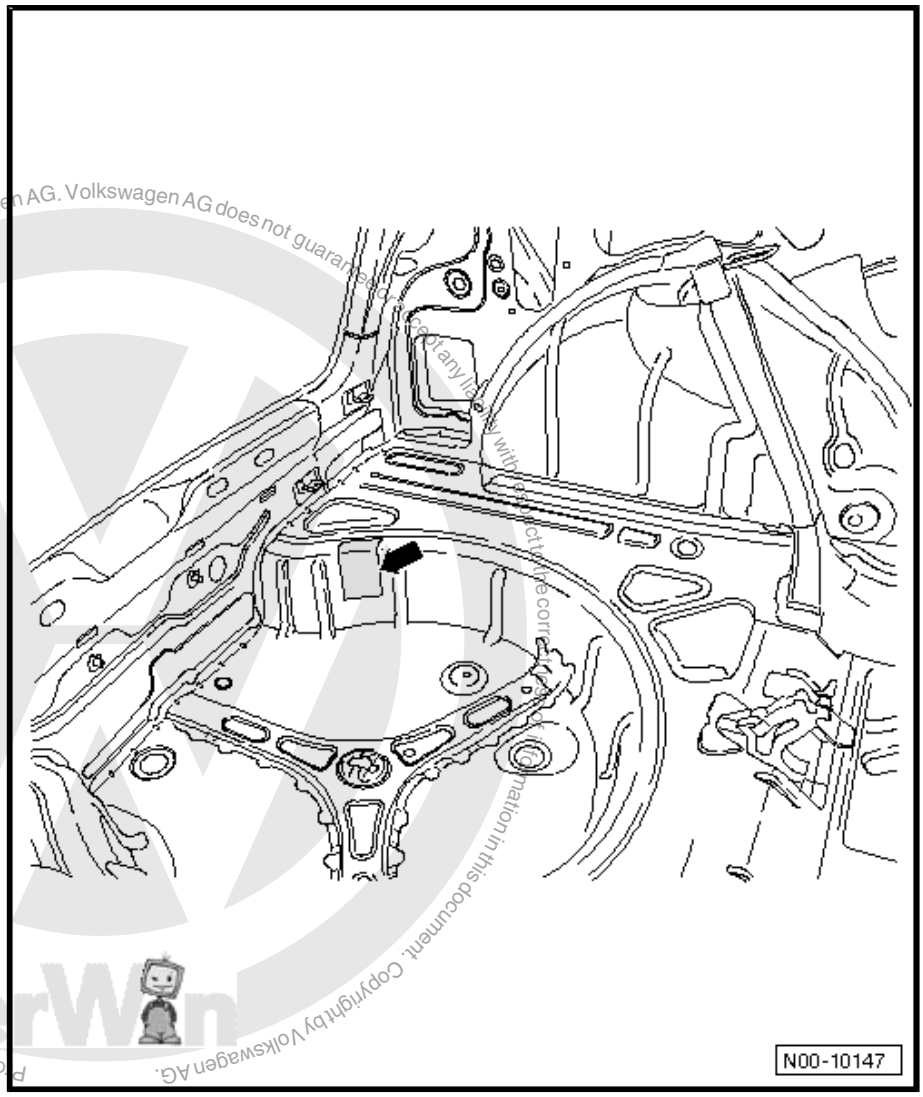
If this component (upper longitudinal member for wheel housing) has to be replaced during accident damage repair, an impartial expert is to be consulted (reference chassis number) prior to the work being carried out.

1.2 Identification plate



The identification plate -arrow- on 2-door and 4-door vehicles is located on the left B-pillar, as viewed from driver's perspective, and is visible on opening the door

1.3 Vehicle data sticker



The vehicle data sticker -arrow- is stuck in the spare wheel wheel on the left, as viewed when sat behind the steering wheel looking forwards.

2 Safety instructions

WARNING

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

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

3 Moulded foam elements

On this vehicle, various bodywork cavities are fitted with moulded foam elements. The moulded foam elements reduce the amount of driving noise that is transmitted into the interior.

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

4 Galvanized body parts

Note

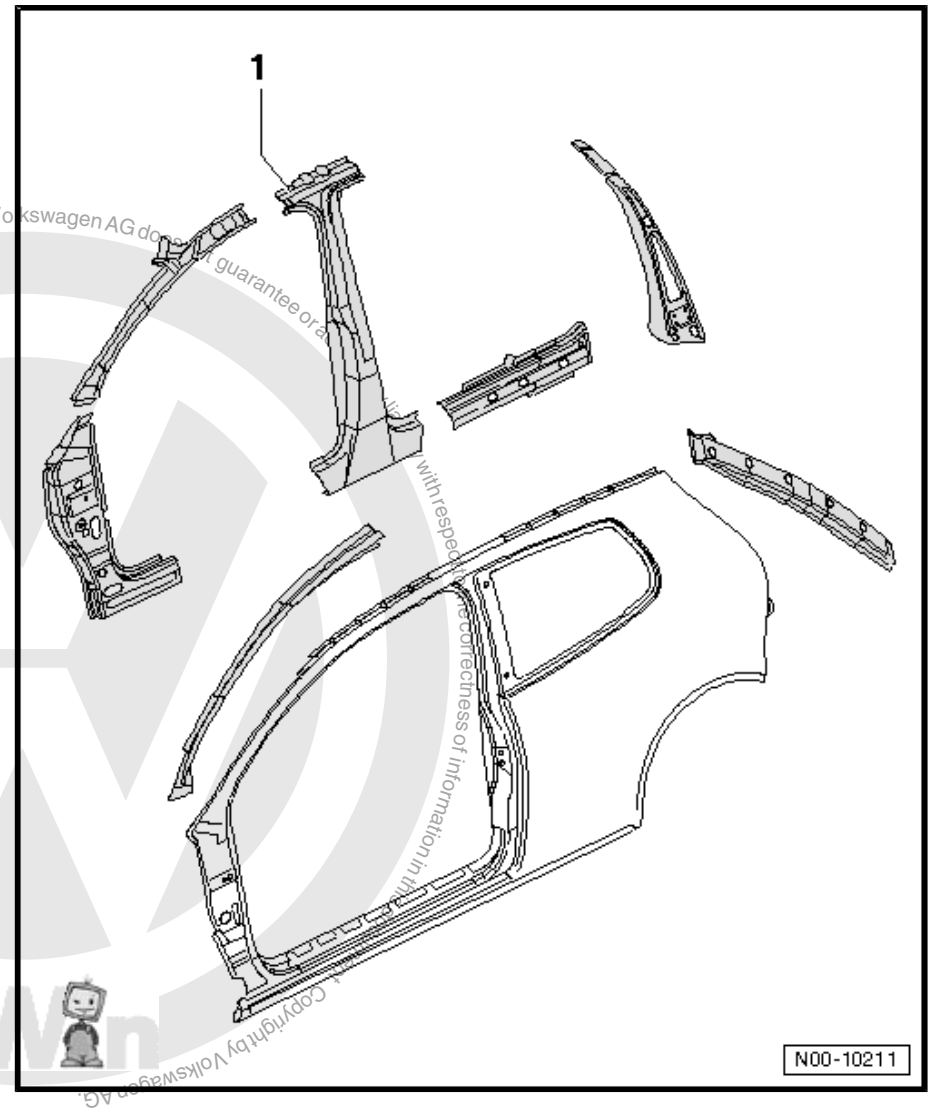
Before carrying out body repairs, refer to the following information: ⇒ General notes; Body repairs, General body repairs; Work procedures; Galvanized body parts.

The body of the VW Golf 2004 ► consists of body panels galvanized on both sides.

5 High strength body parts

Note

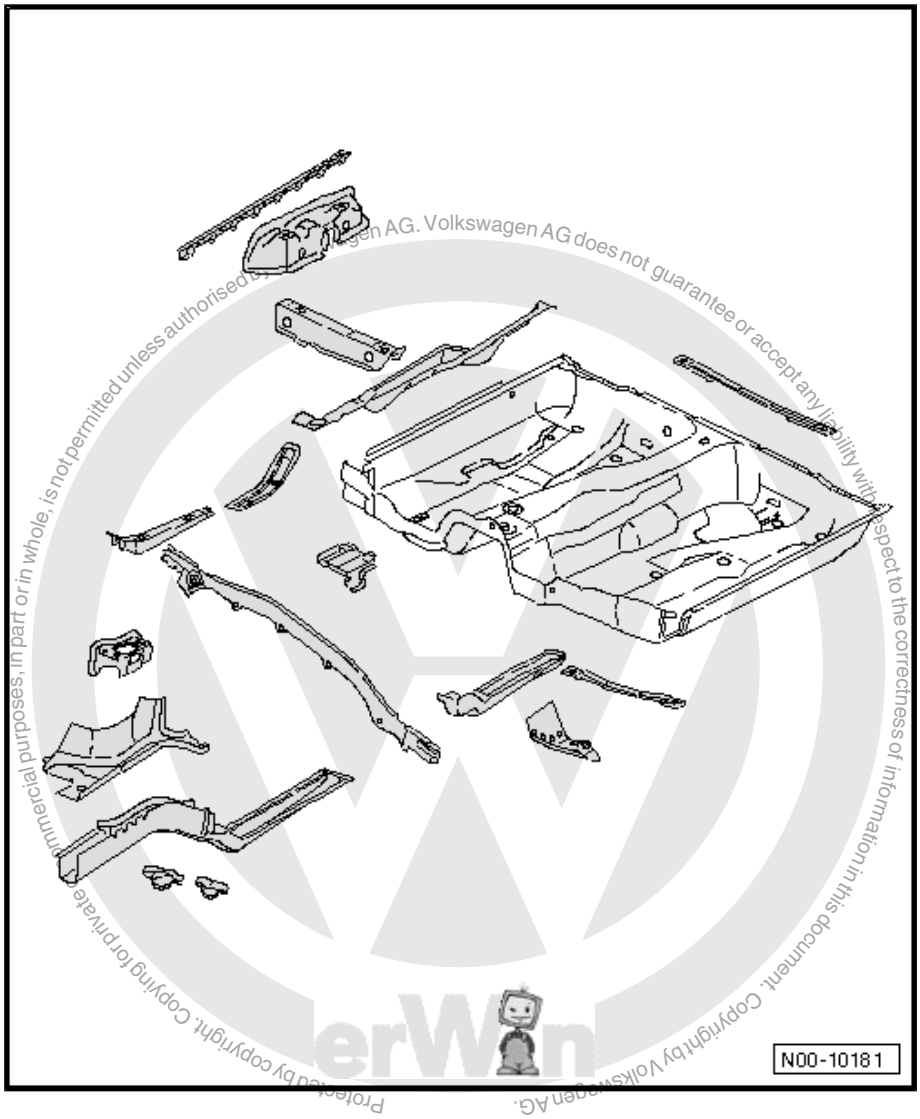
Before carrying out body repairs observe the following information ⇒ General Information; Body Repairs, General Body Repairs .



The shaded body panels are manufactured of high strength or very high strength body panels.

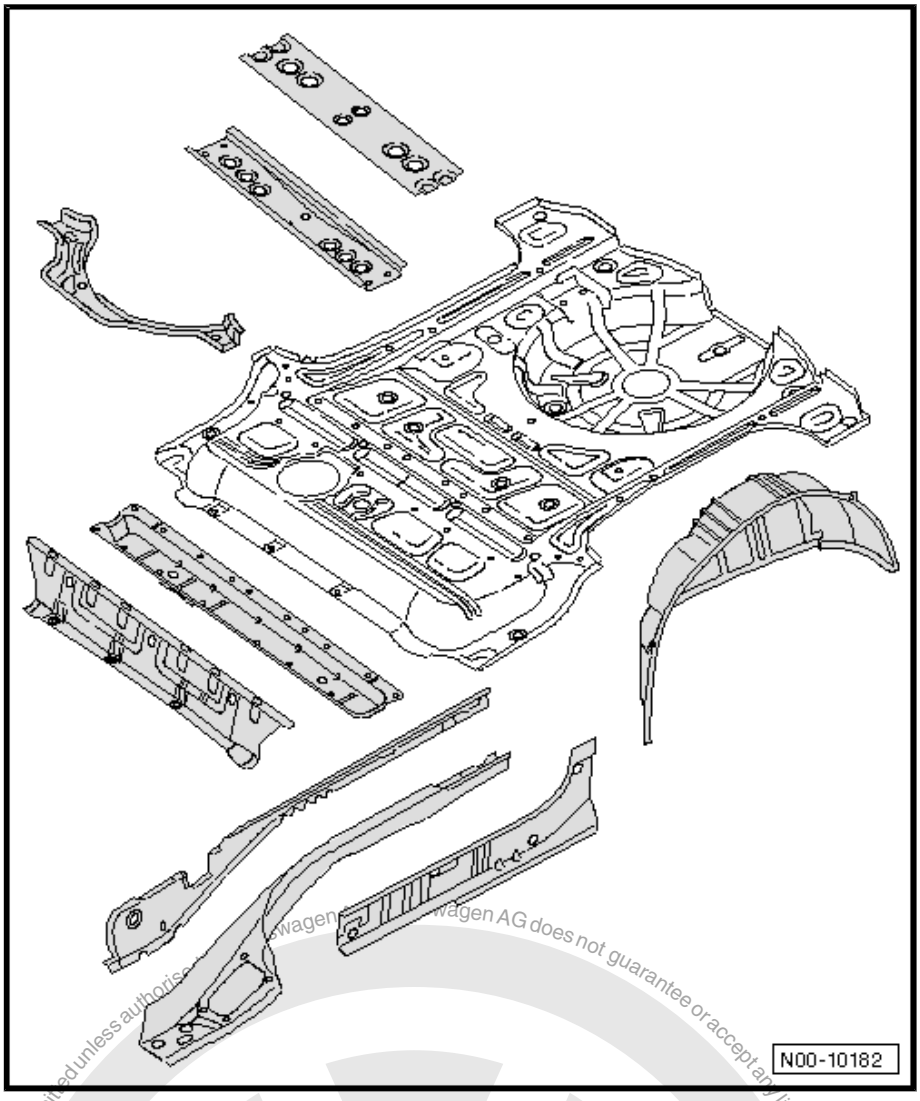
The B-pillar reinforcement -1- is manufactured of »special quality steel«. The processing is described in ⇒ Body Repairs; Rep. gr. 51 .

The side panel is manufactured of normal body panel and is only shown for orientation purposes.



The shaded body panels are manufactured of high strength or very high strength body panels.

The floor panel is manufactured of strengthened body panel and is only shown for orientation purposes.



The shaded body panels are manufactured of high strength or very high strength body panels.

The floor panel is manufactured of strengthened body panel and is only shown for orientation purposes.

6 Laser welding

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

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

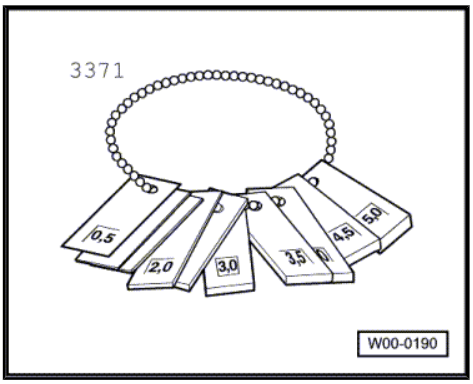
During the welding process, the upper panel is melted onto the partially molten lower panel, creating a welded joint without the need of additional material.

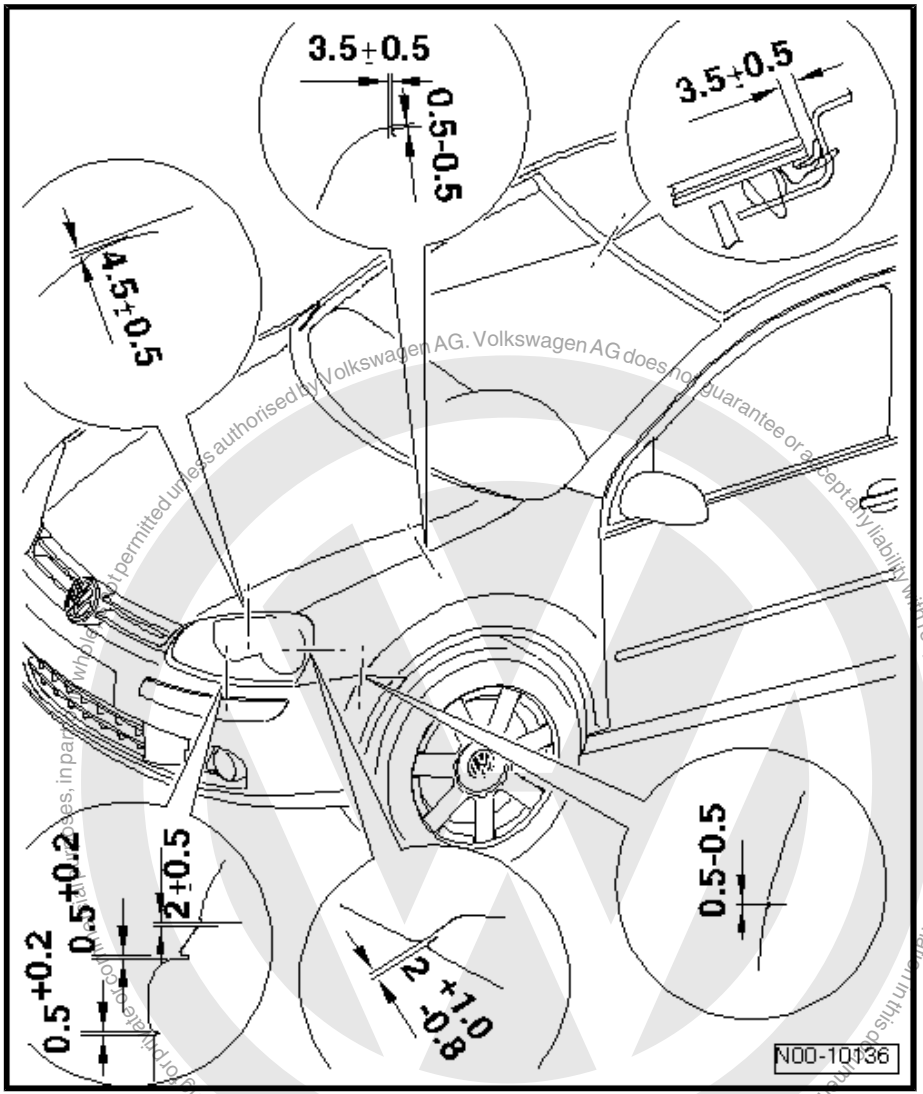
For repairs the laser weld seam is replaced by a SG plug weld seam or RP spot weld seam, except for roof repairs.

7 Body panel gaps/shut lines

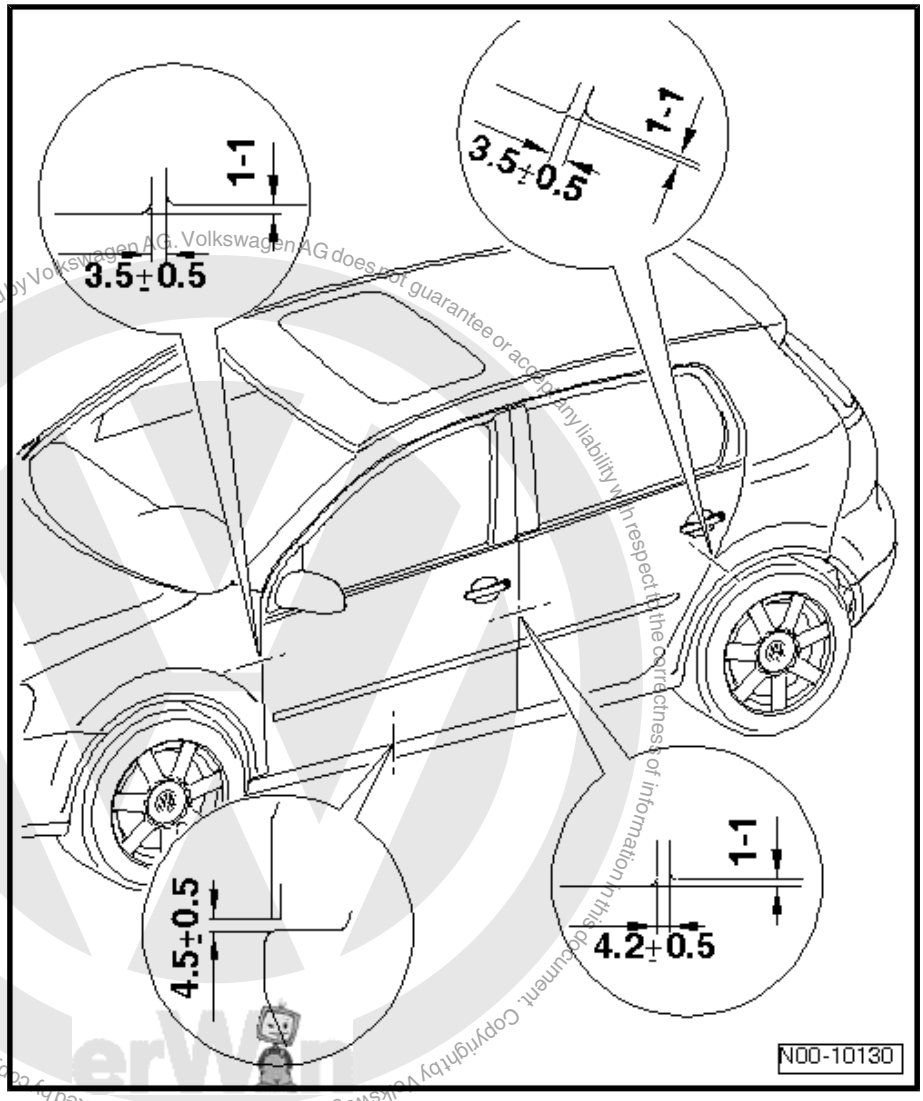
Note

- *To adjust or check gaps, use special tool setting gauge -3371- .*
- *Gaps are always given in millimetres.*



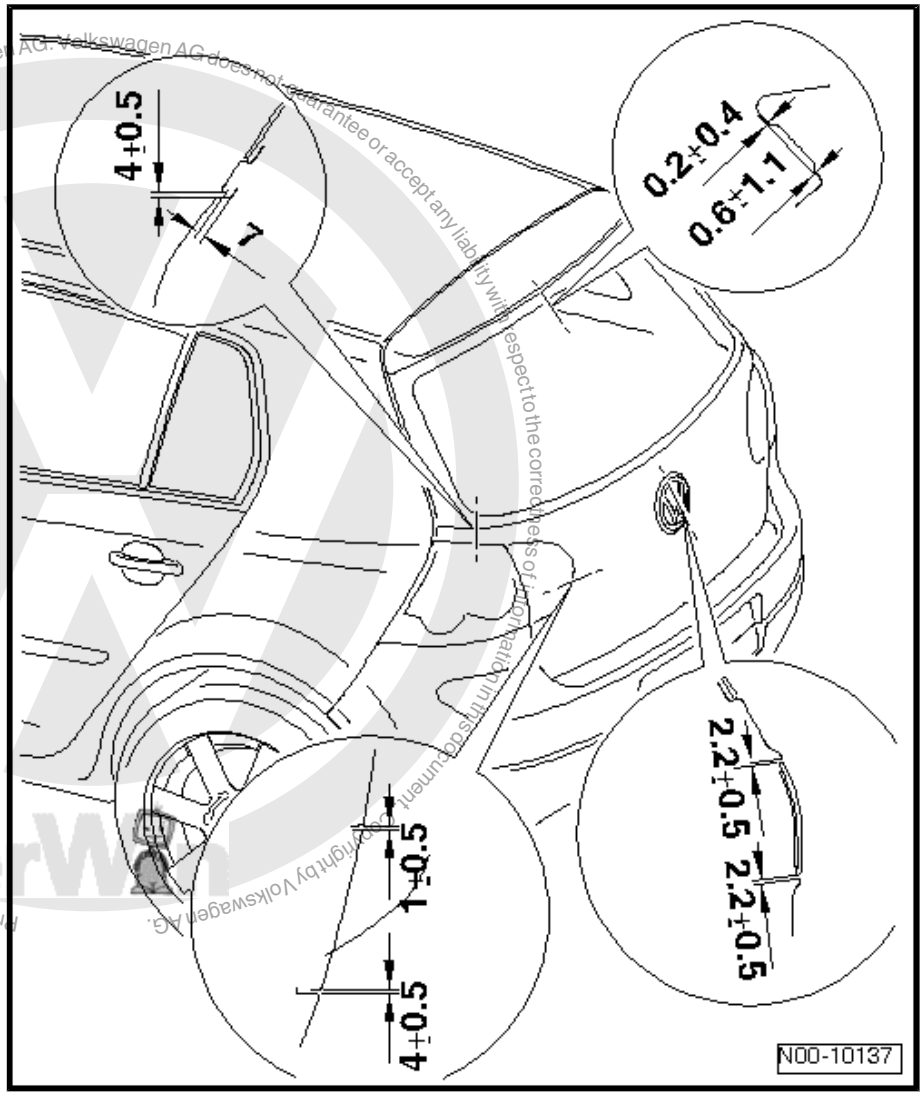


Body - front



Body - centre

2-door model gaps/shut lines - door to side panel is 3.5 +- 0.5



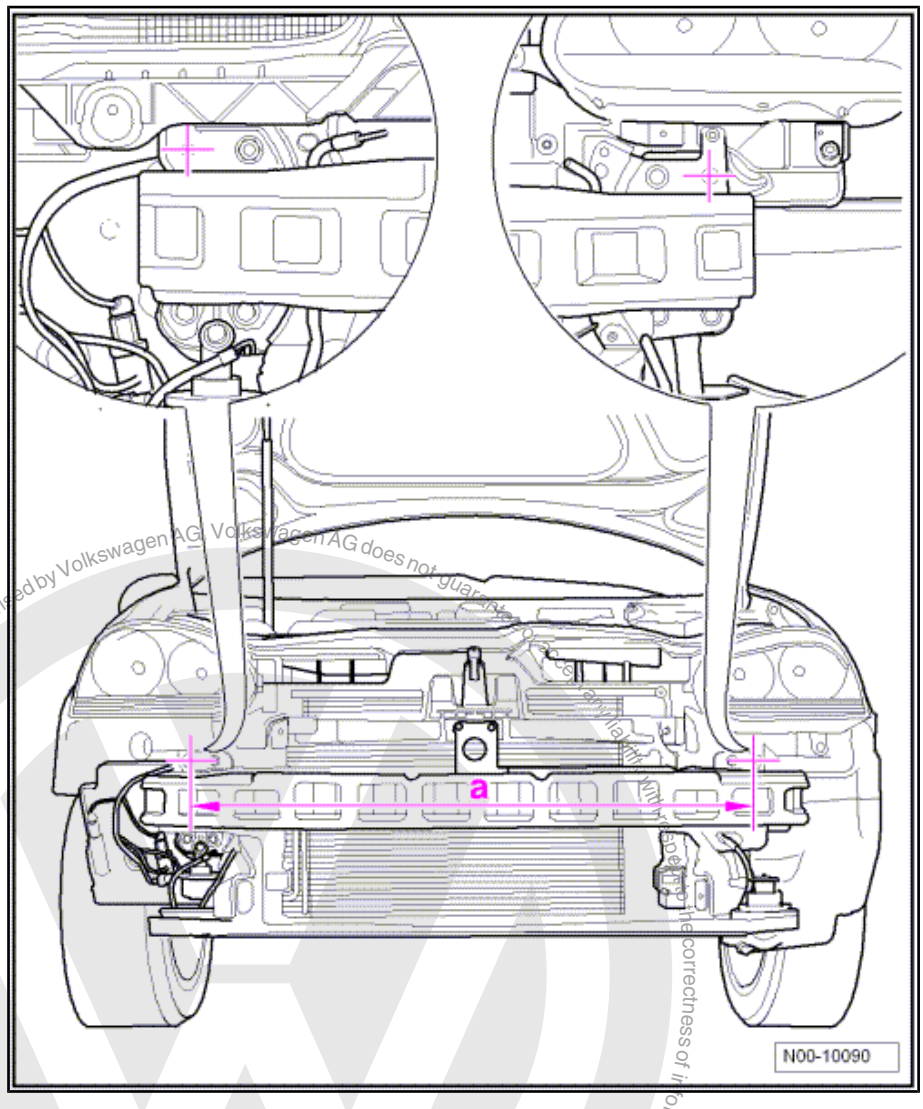
Body - rear

8 Body dimensions

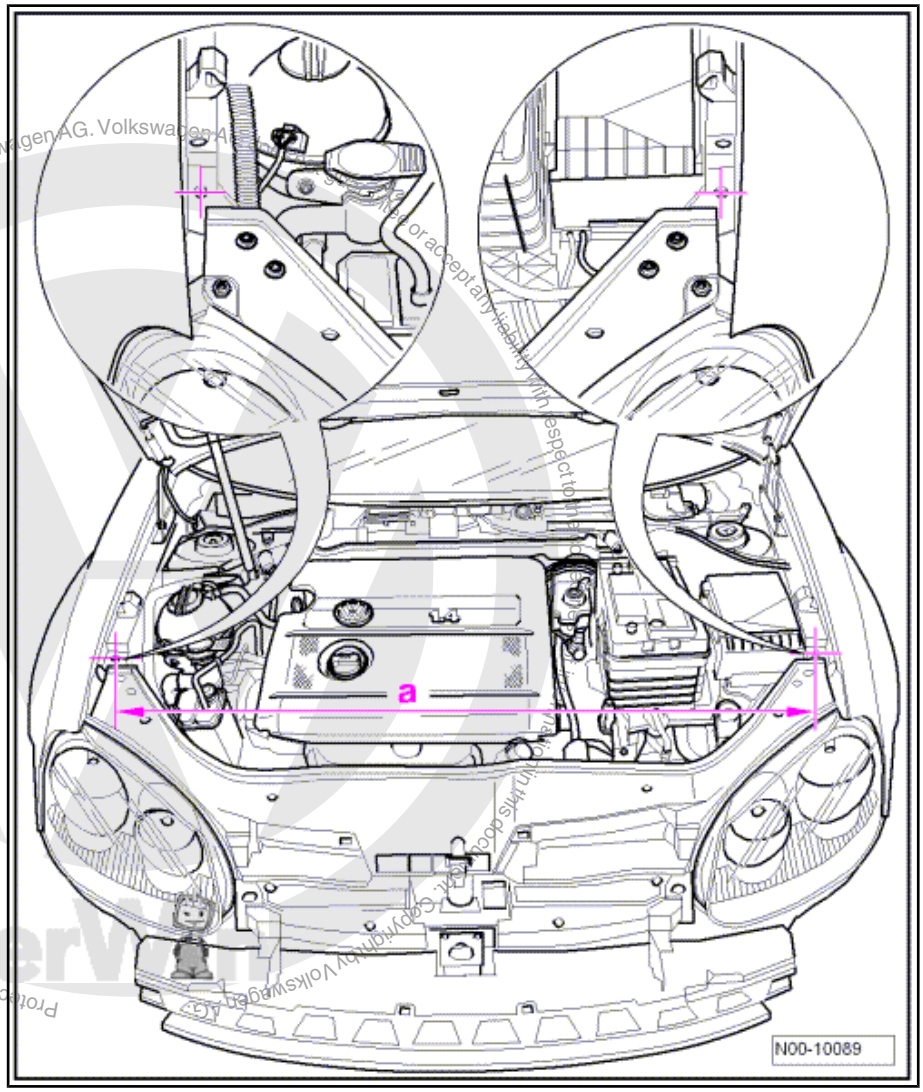
Note

- *Dimensions only given for checking purposes. The alignment bracket set -VAS 6240- 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.*

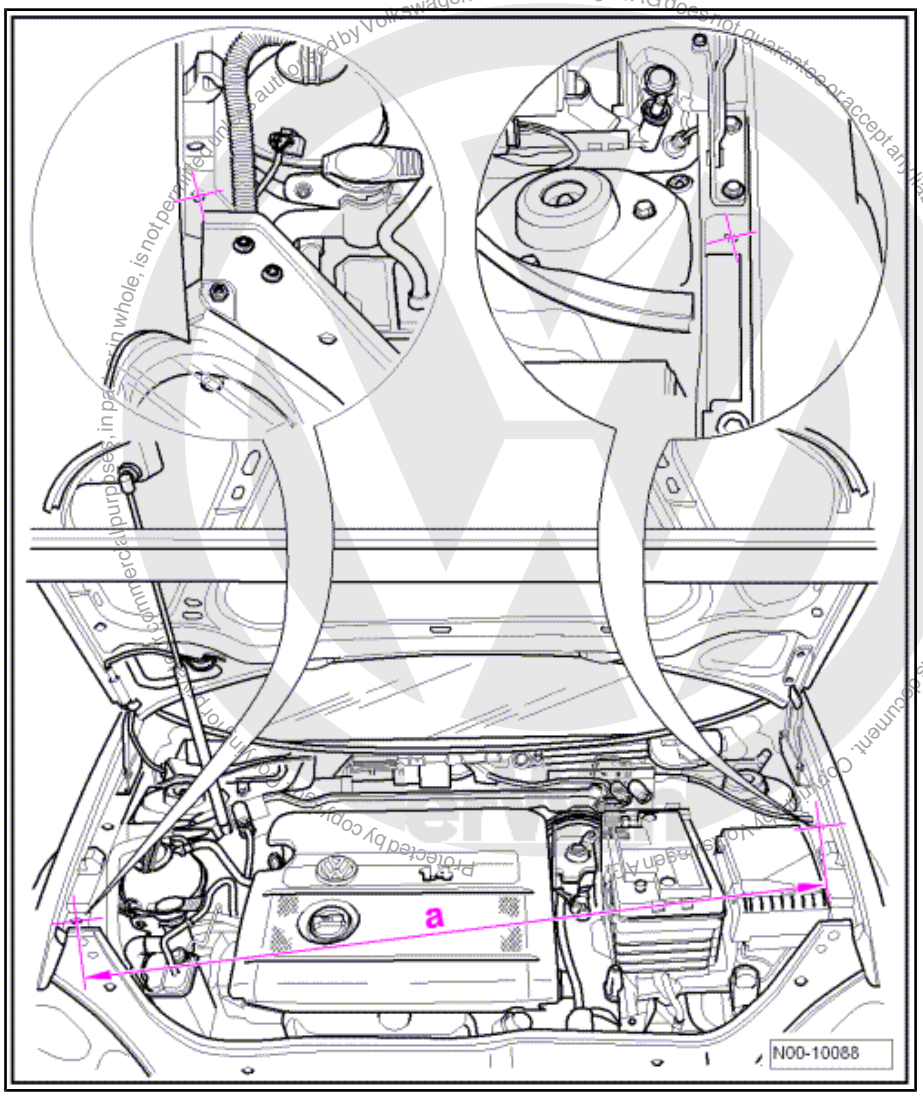
8.1 Body - front



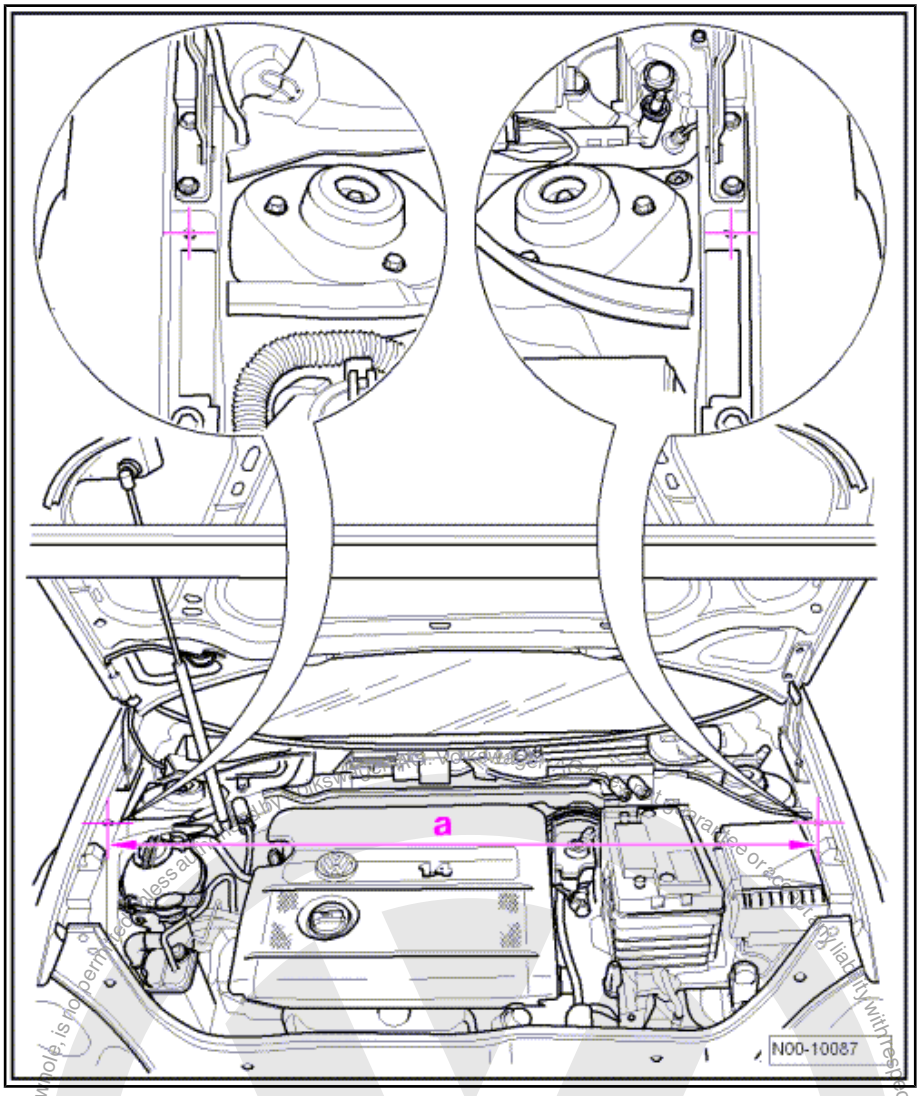
Dimension -a- = 1,046 mm



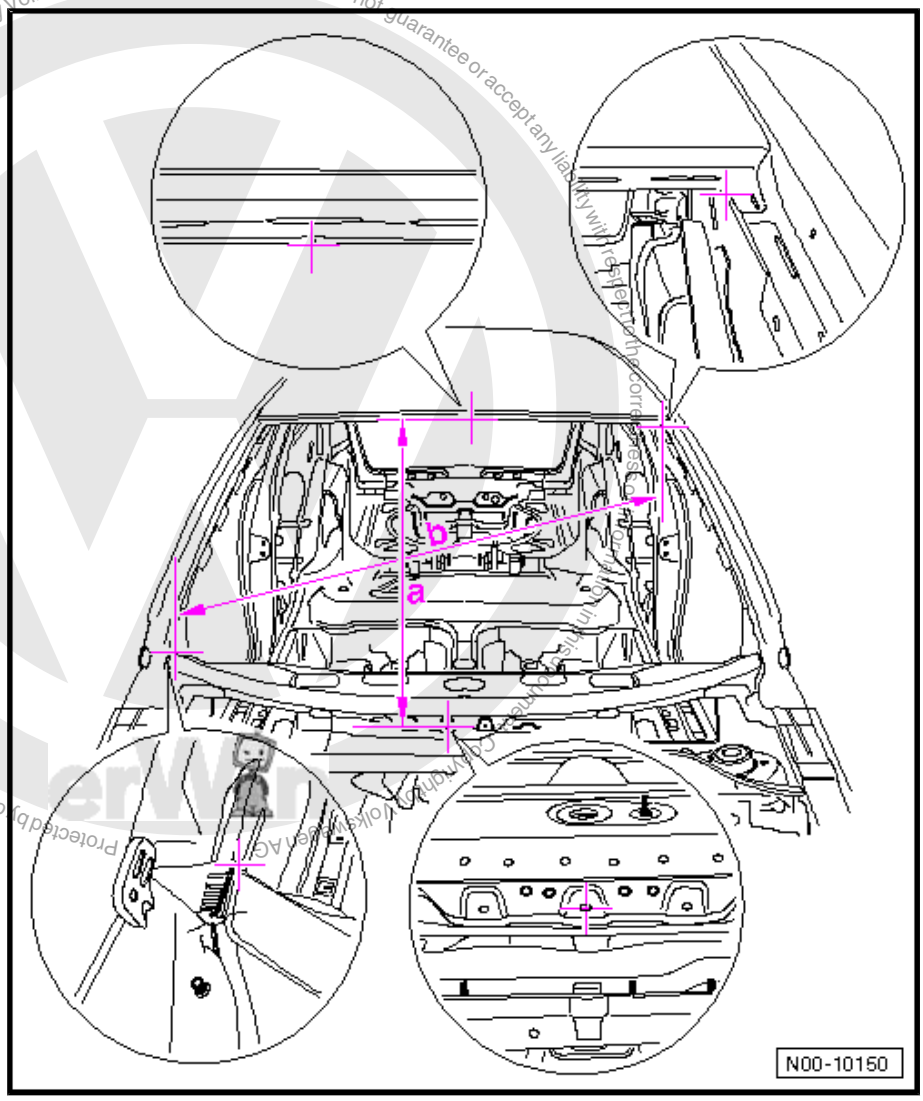
Dimension -a- = 1,343 mm



Dimension -a- = 1,406 mm



Dimension -a- = 1,384 mm



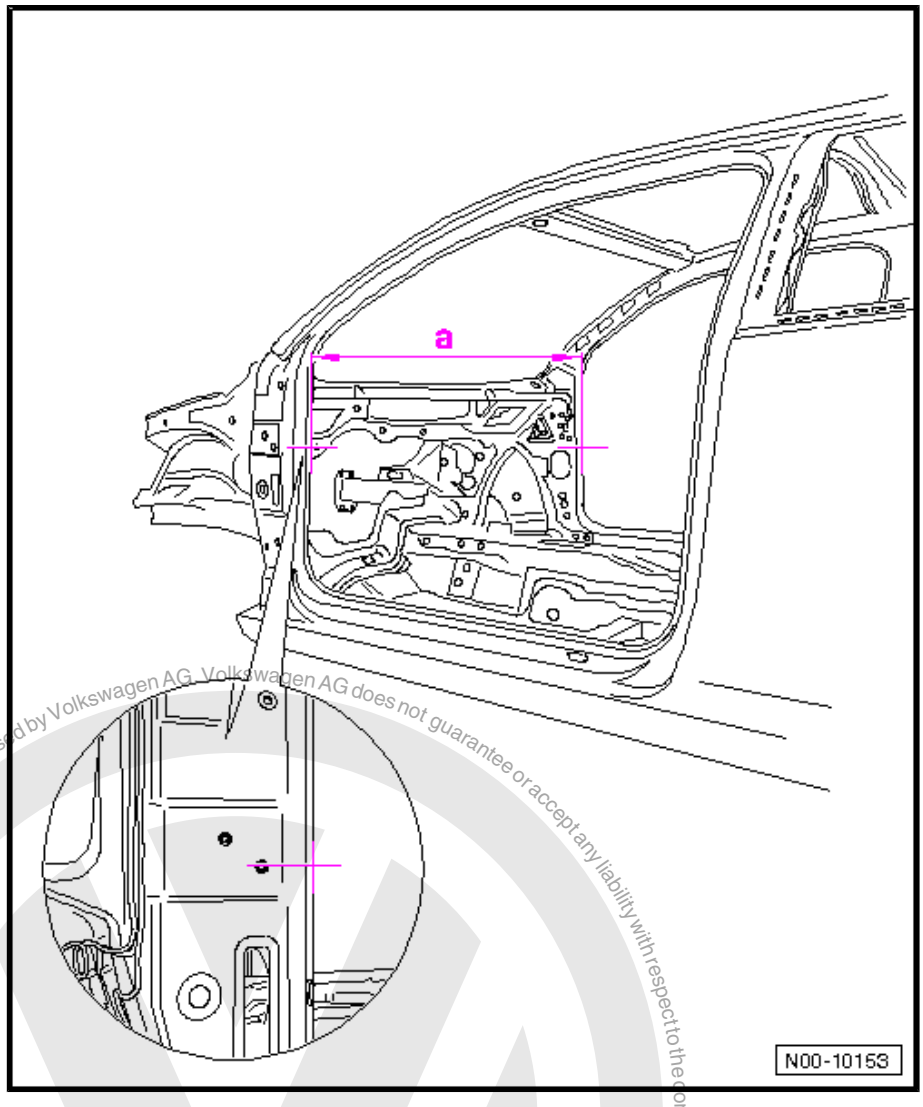
Dimension -a- = 937 mm

Dimension -b- = 1,448 mm

8.2 Body - centre

8.2.1 2-door vehicle

Dimension between A-pillars

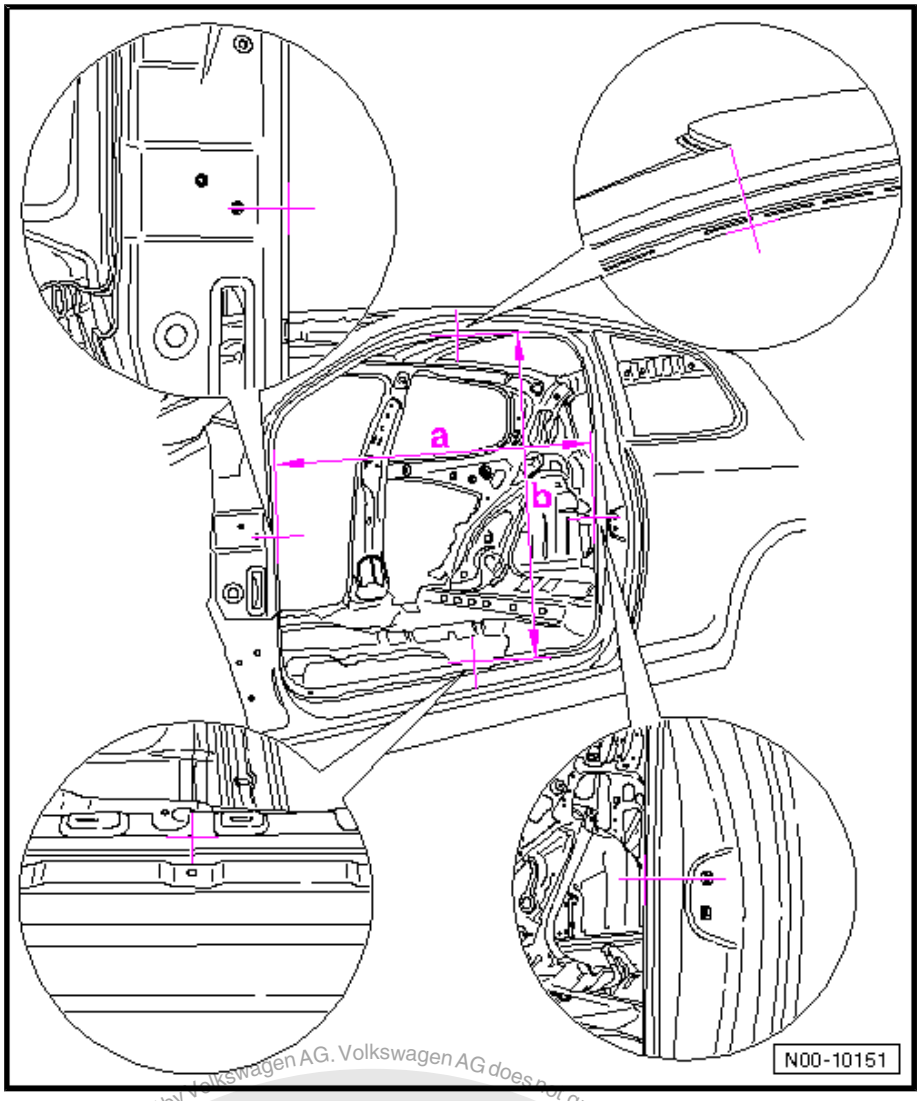


Note

These dimensions are the same for 2-door and 4-door vehicles.

Dimension -a- = 1,424 mm

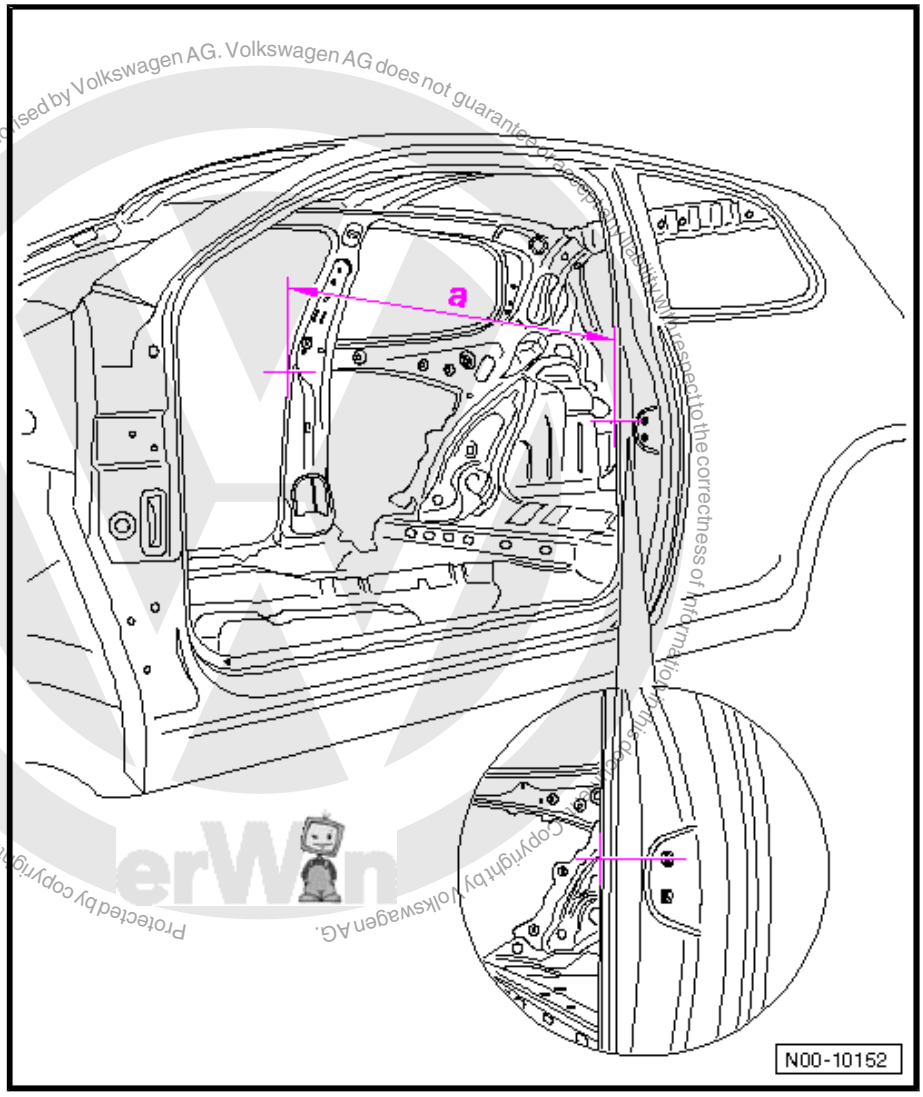
Door aperture



Dimension -a- = 1,096 mm

Dimension -b- = 913 mm

Dimension between B-pillars

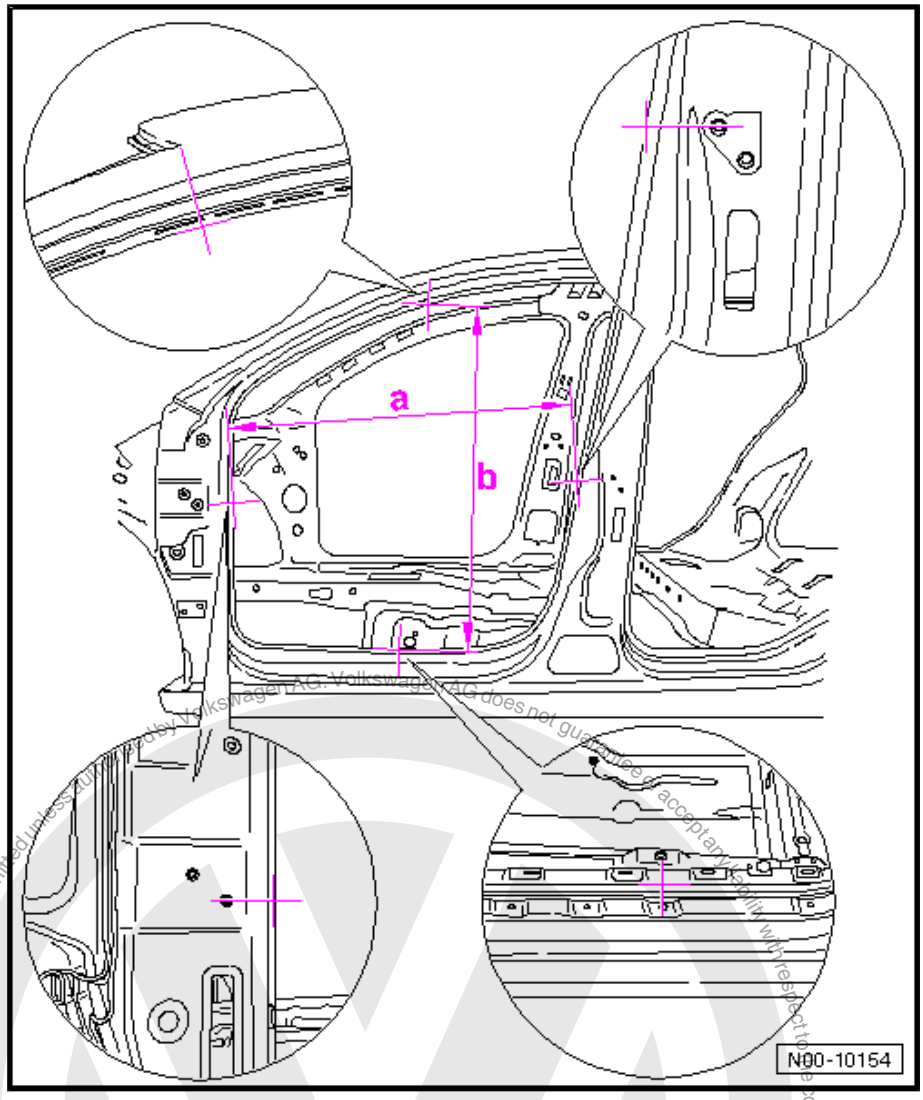


Dimension -a- = 1,418 mm

8.2.2 4-door vehicle

Dimension between A-pillars ⇒ page 19

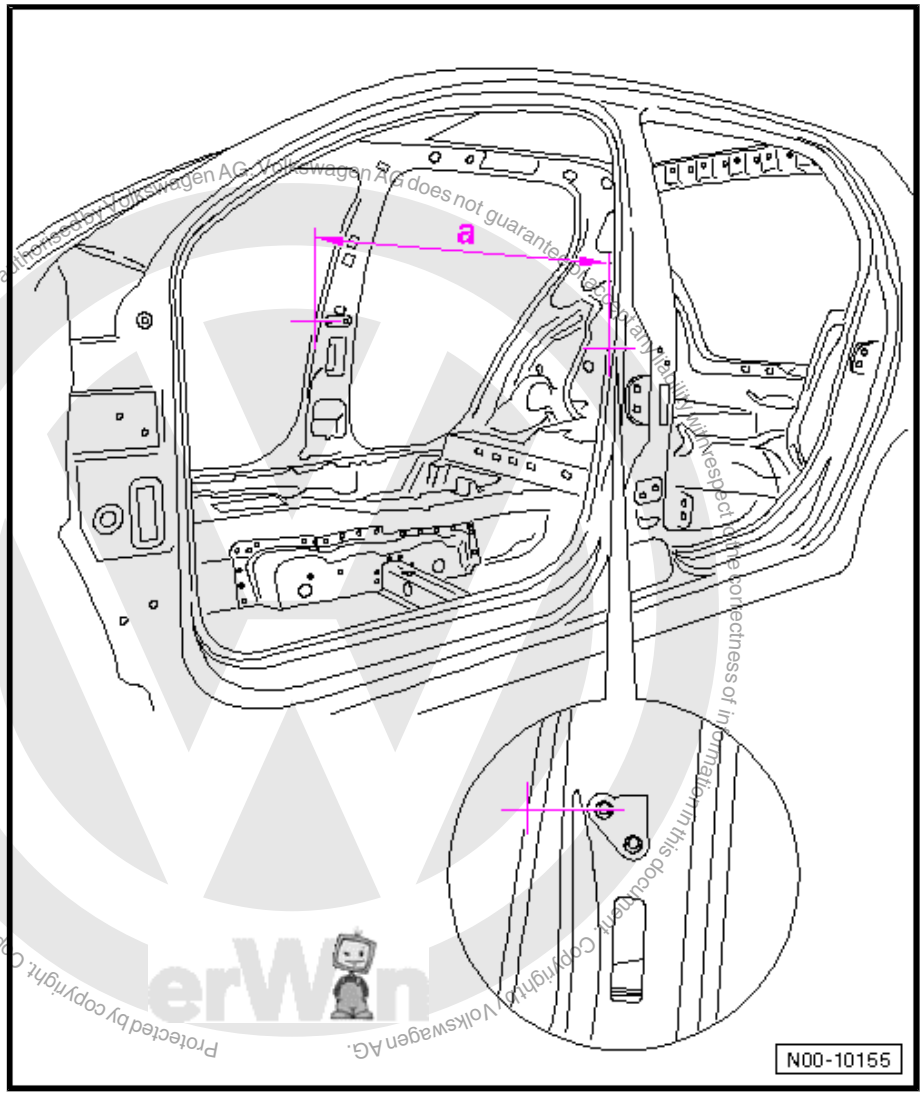
Front door aperture



Dimension -a- = 885 mm

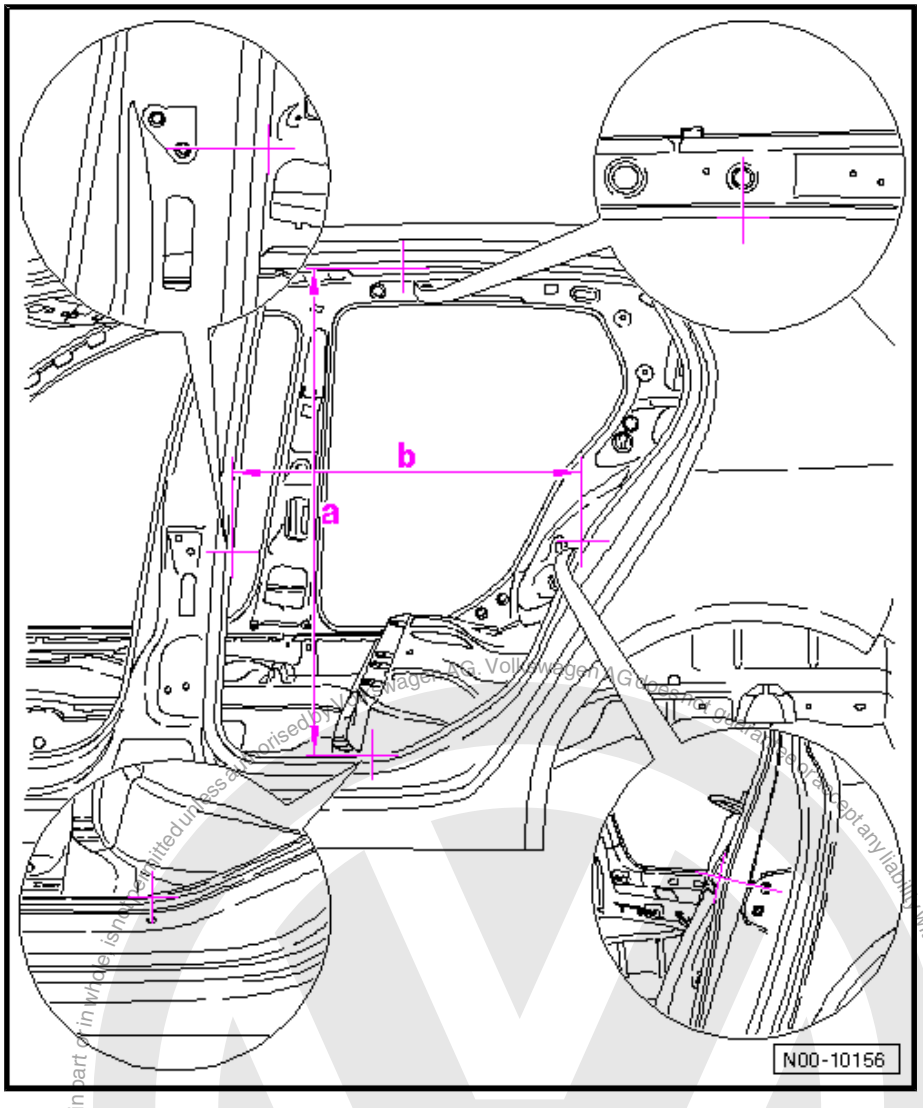
Dimension -b- = 913 mm

Dimension between B-pillars



Dimension -a- = 1,430 mm

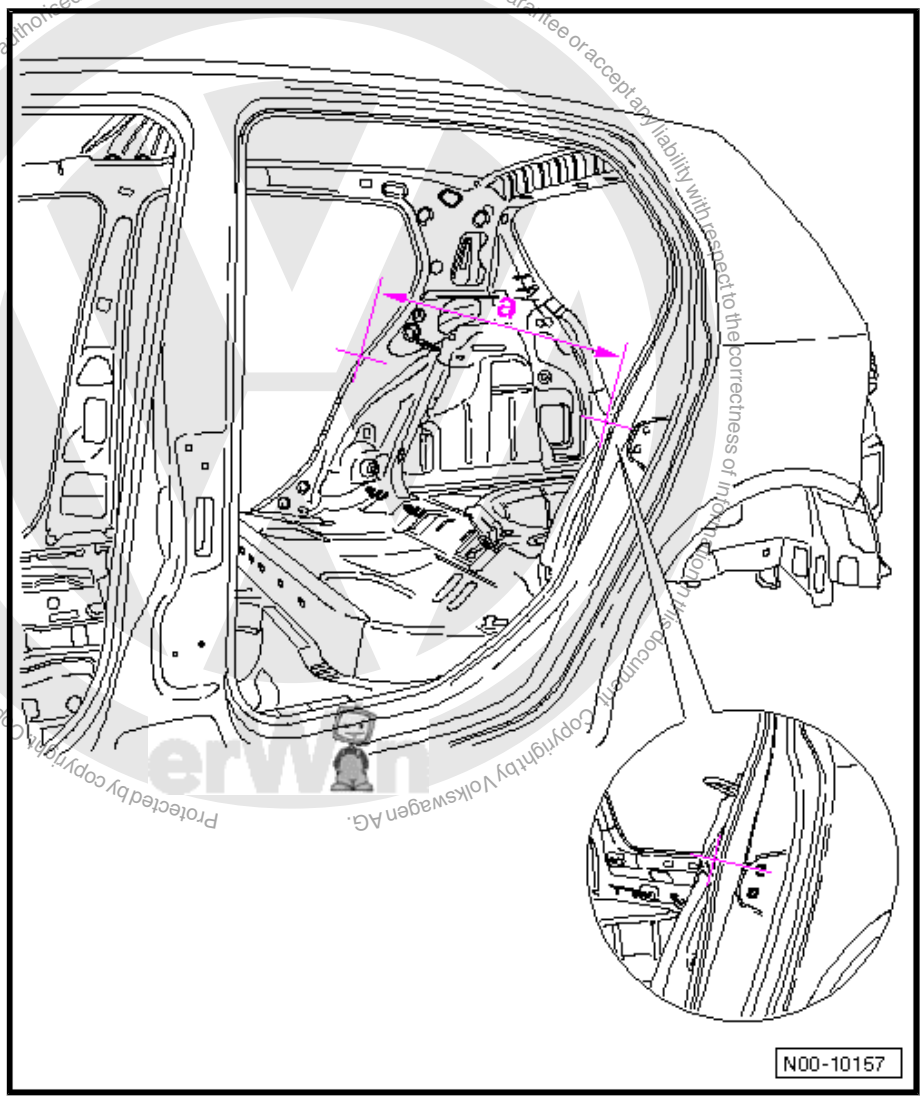
Rear door aperture



Dimension -a- = 995 mm

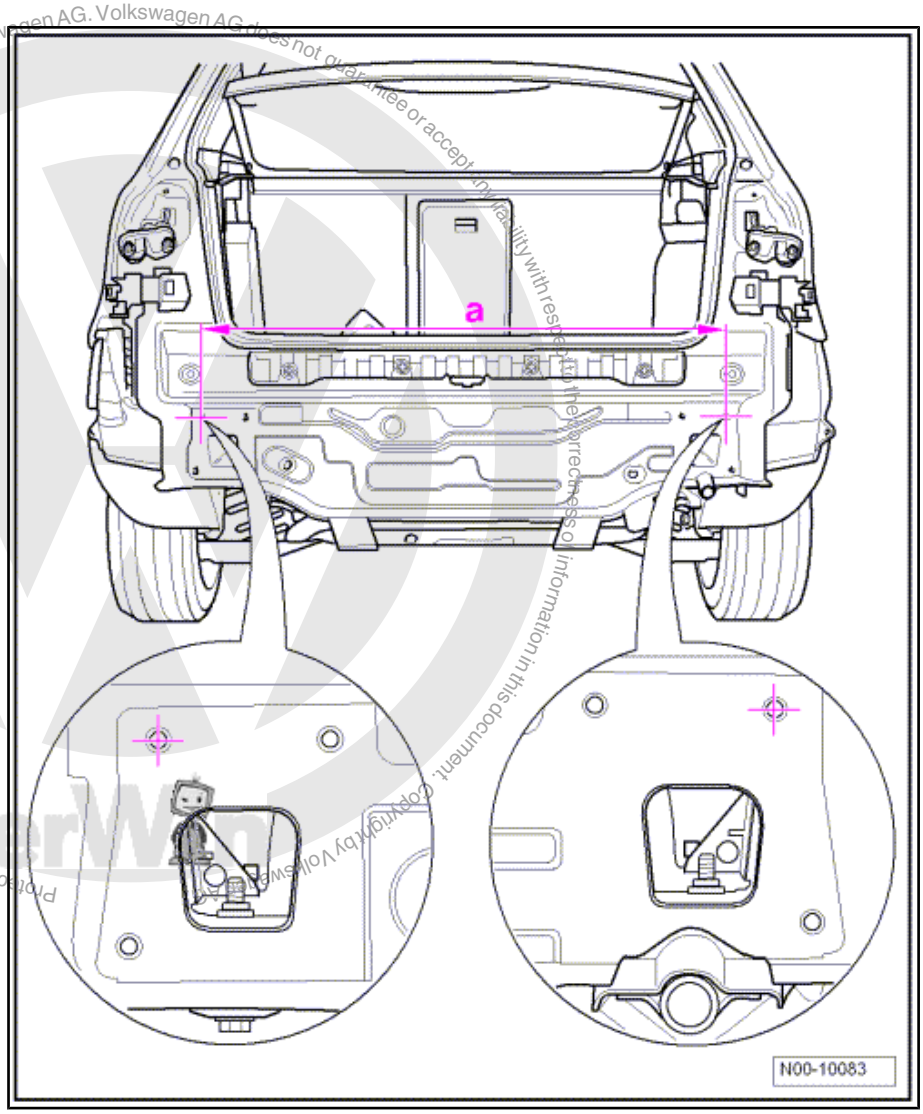
Dimension -b- = 695 mm

Dimension between C-pillars

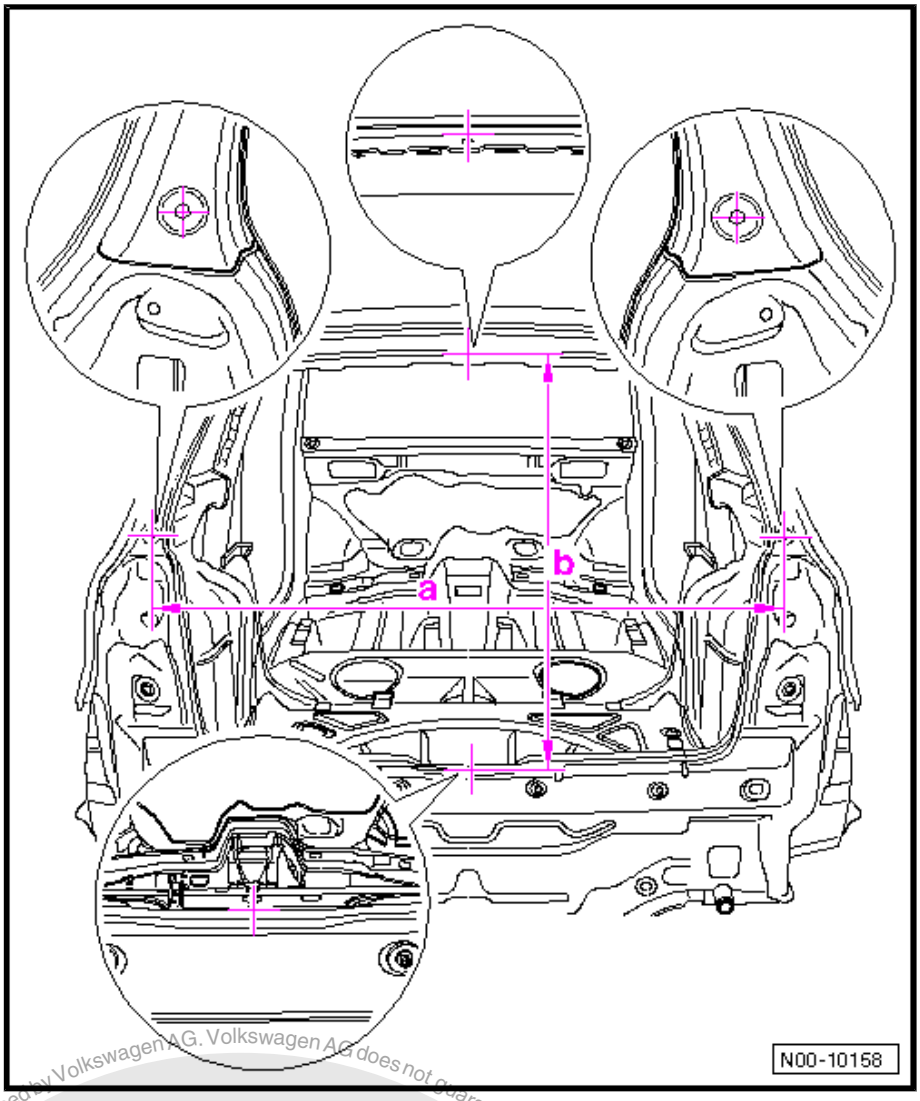


Dimension -a- = 1,397 mm

8.3 Body - rear



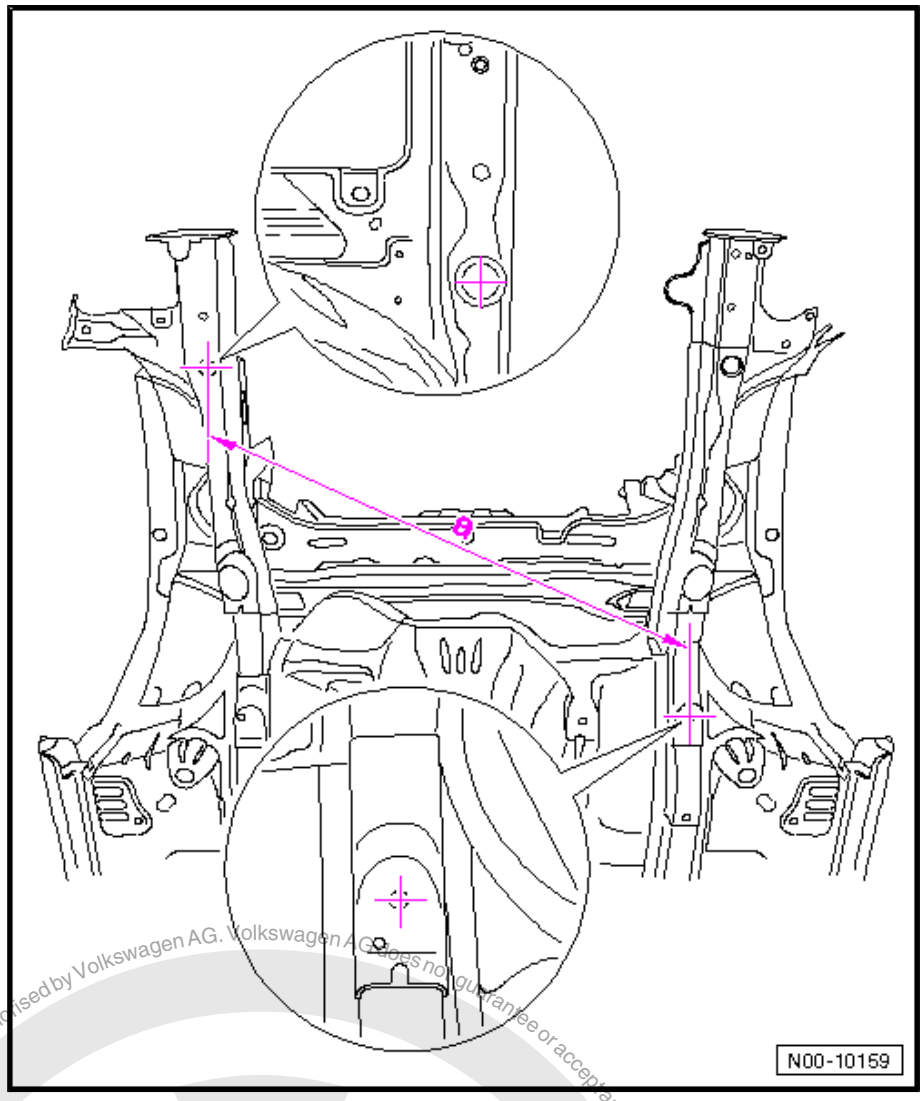
Dimension -a- = 1,070 mm



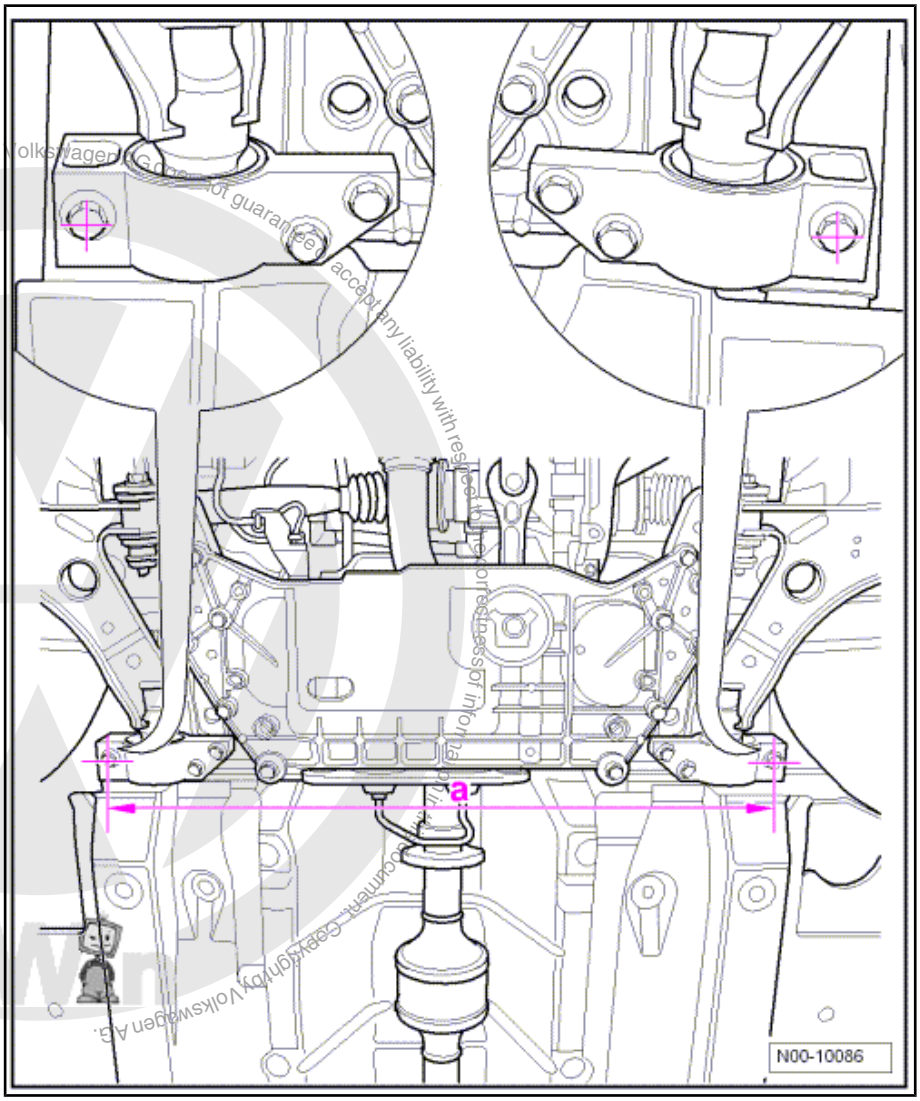
Dimension -a- = 1,236 mm

Dimension -b- = 816 mm

8.4 Floor group - front

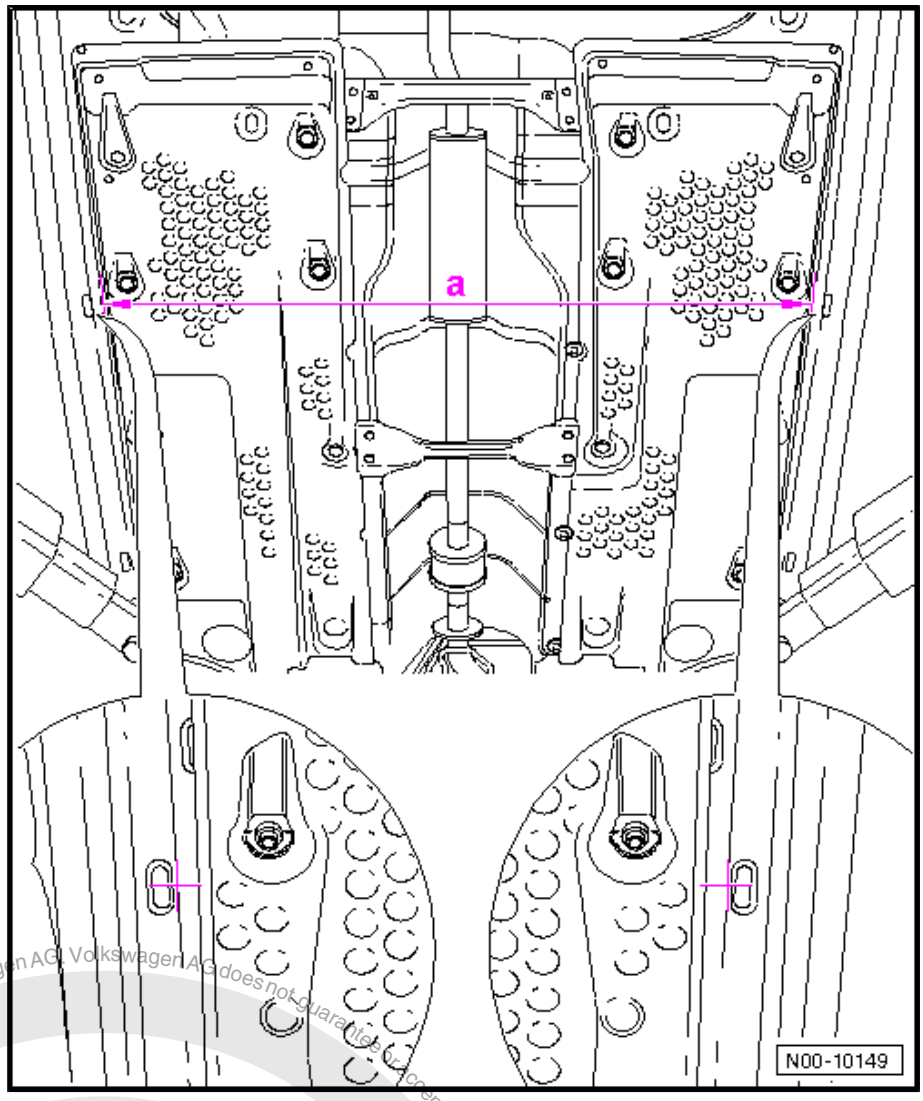


Dimension -a- = 1,097 mm



Dimension -a- = 828 mm

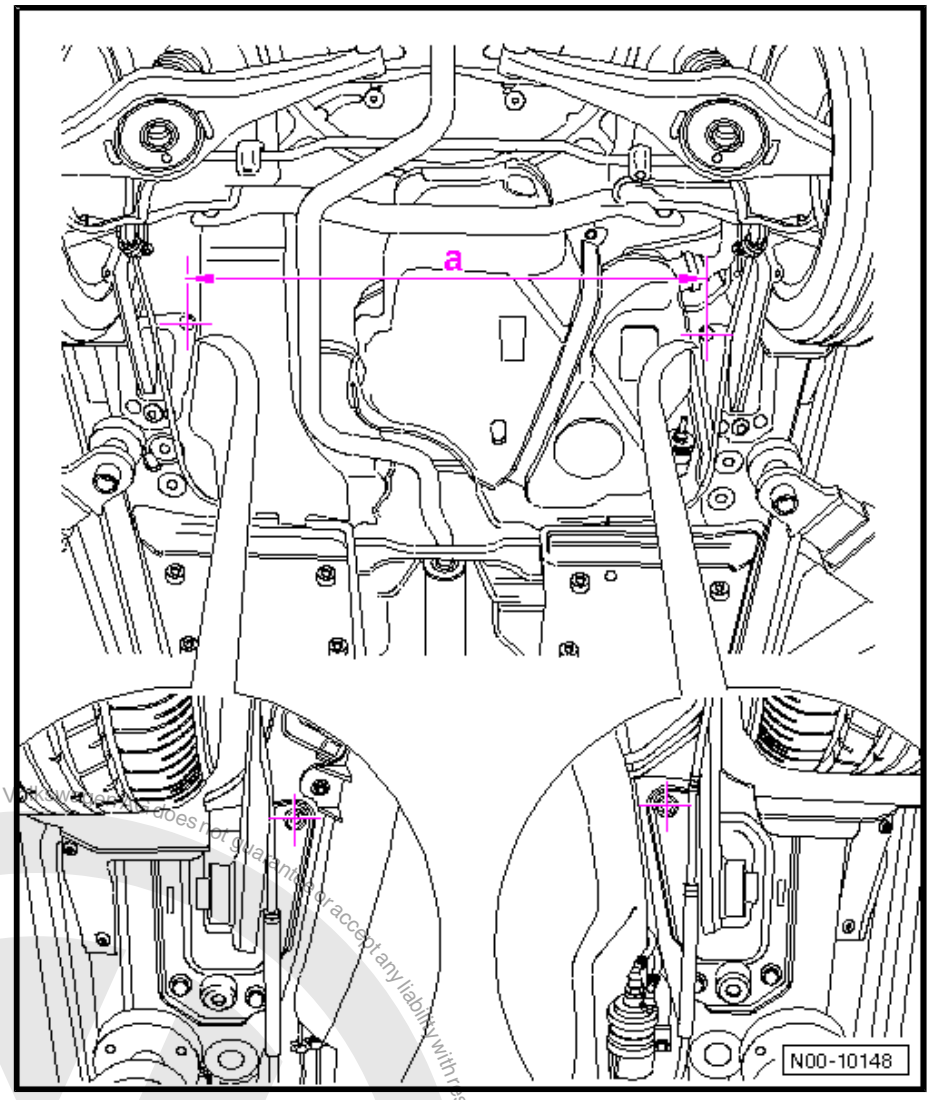
8.5 Floor group - centre



Dimension -a- = 1,455 mm

This dimension is measured on the inside of the sill flange.

8.6 Floor group - rear



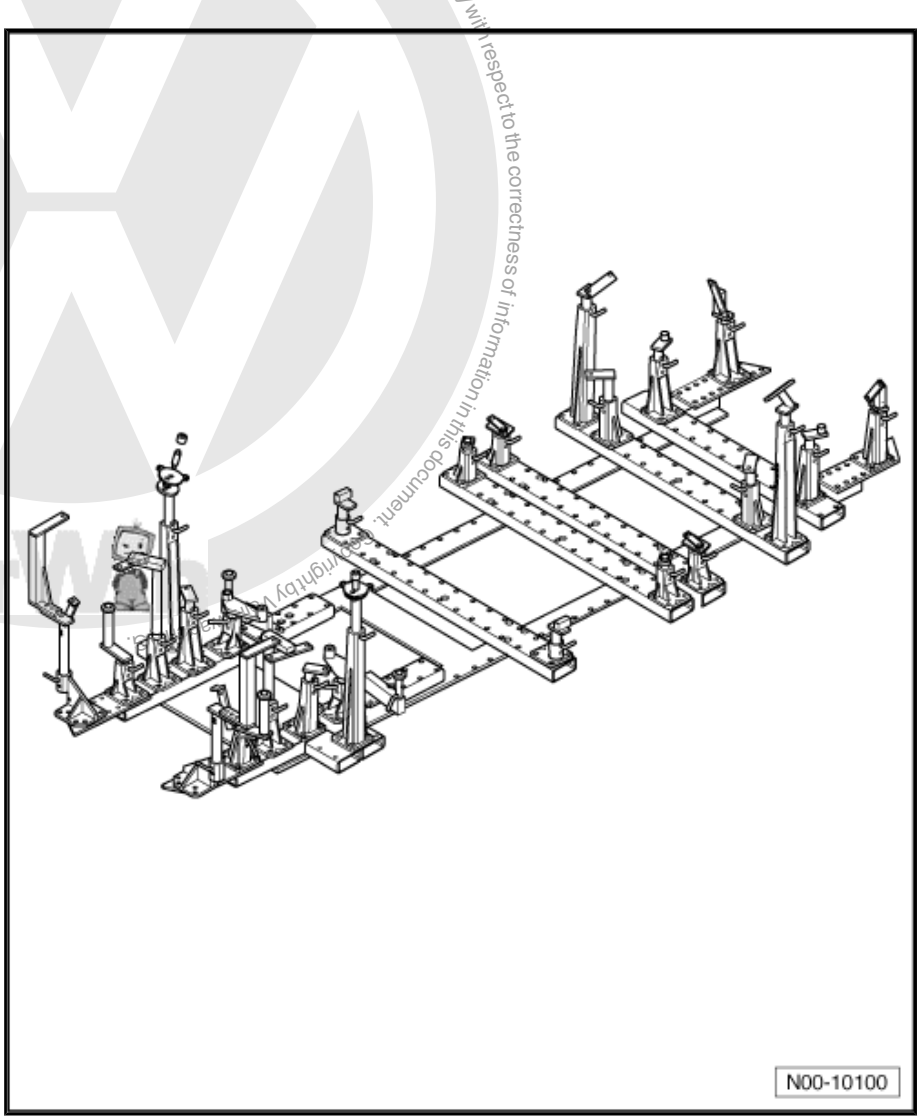
Dimension -a- = 1,076 mm

9 Alignment bracket set

9.1 Overview

Special tools and workshop equipment required

- Alignment bracket set for Touran -VAS 6240-
- Alignment bracket supplementary set Golf MY 2004 -VAS 6240/2-



Set up of complete alignment bracket set for Touran -VAS 6240- and alignment bracket supplementary set Golf MY 2004 -VAS 6240/2- .

Note

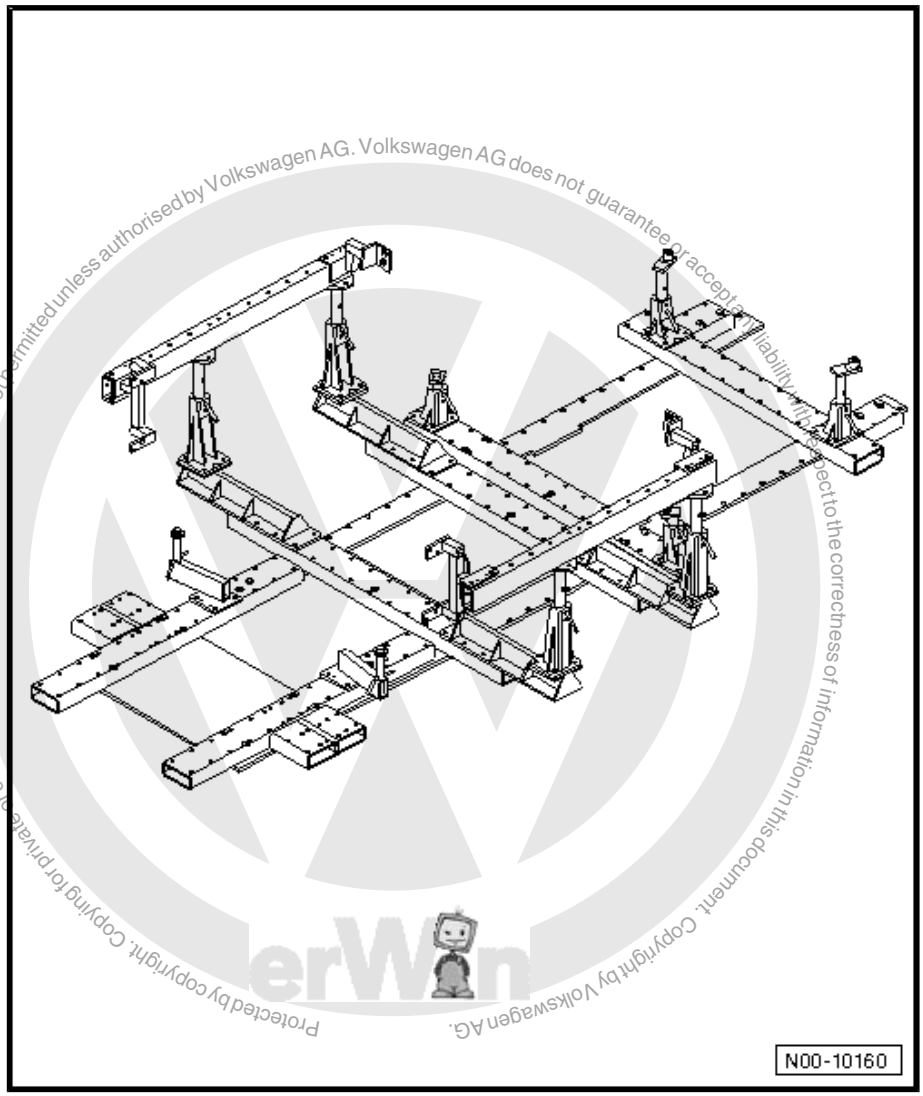
Detailed information on setting up the alignment bracket set can be found with the equipment.

10 Portal gauge

Special tools and workshop equipment required

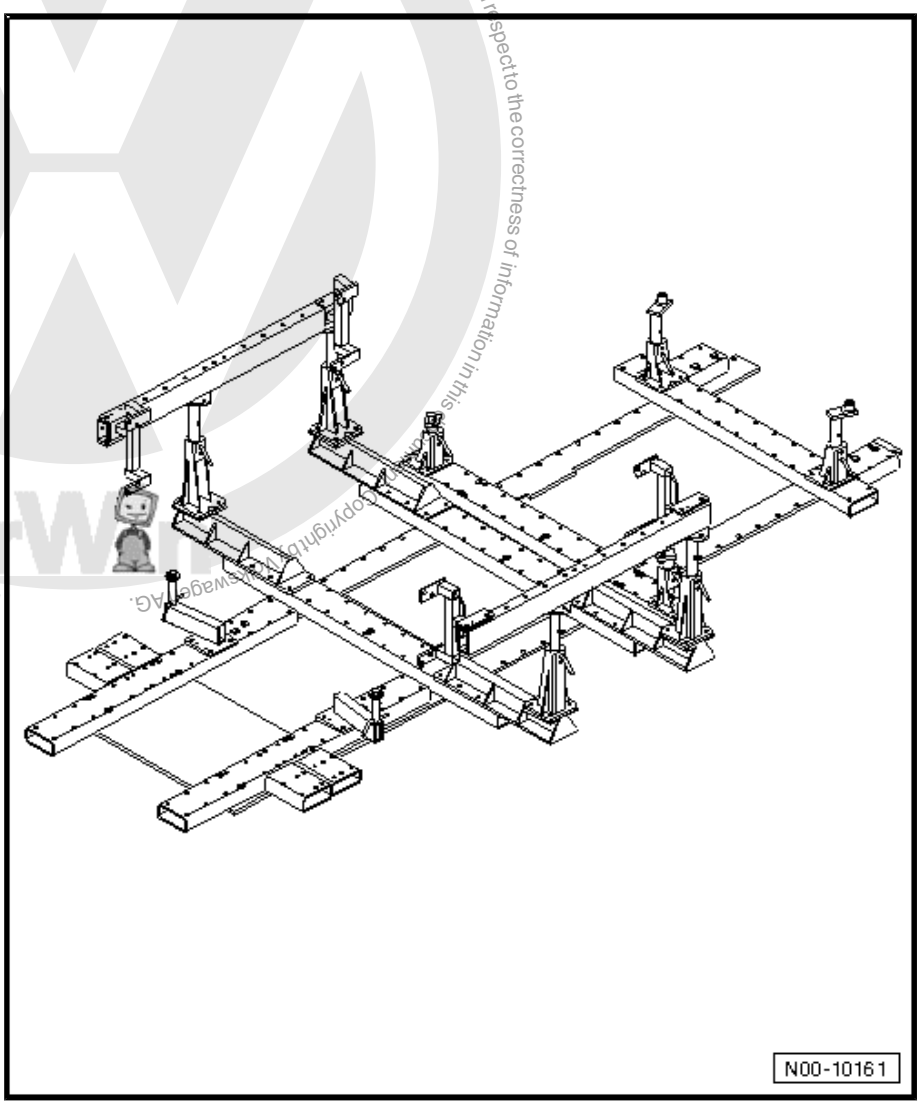
- Portal gauge -VAS 5007-
- Portal gauge supplementary set Golf MY 2004 -VAS 5007/18-

10.1 2-door vehicle

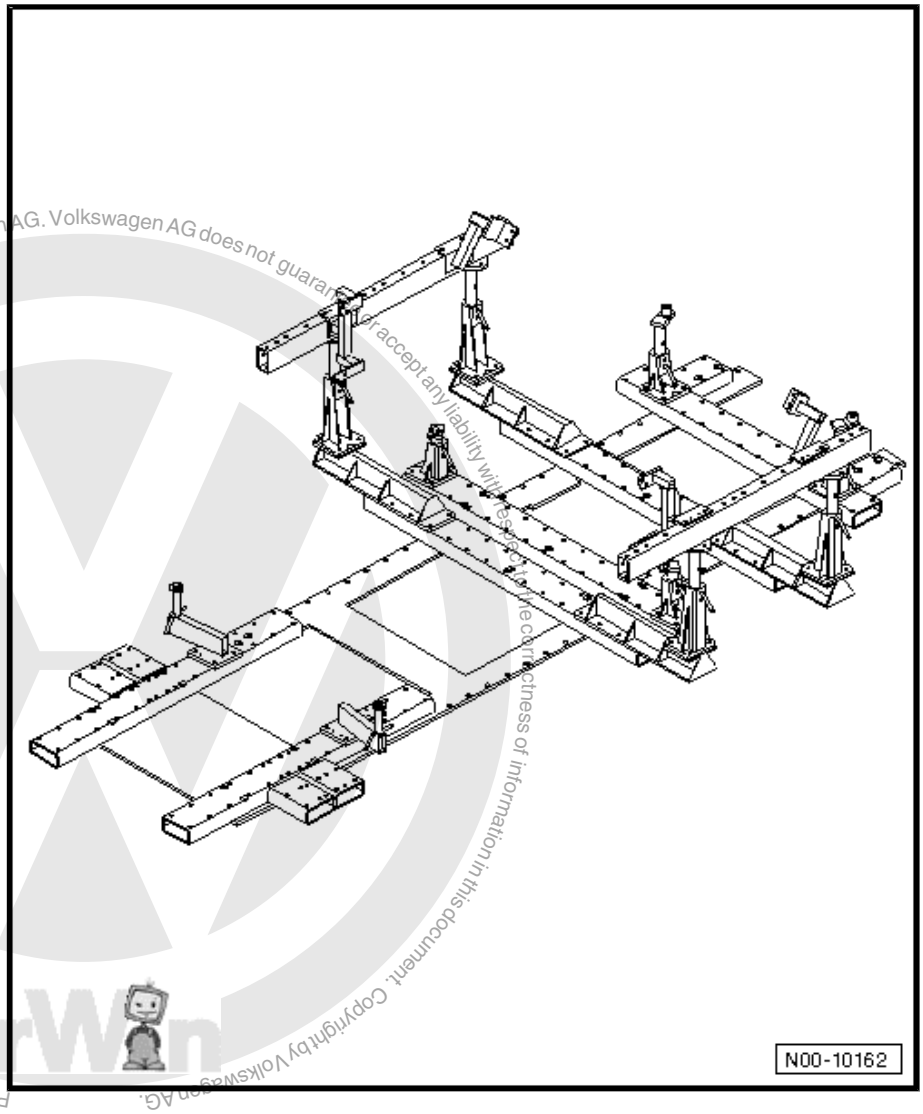


10.2 4-door vehicle

Front doors



Rear doors



50 – Body - front

RO: 50 40 55 50

1 Renewing right console

WARNING

Observe safety notes!

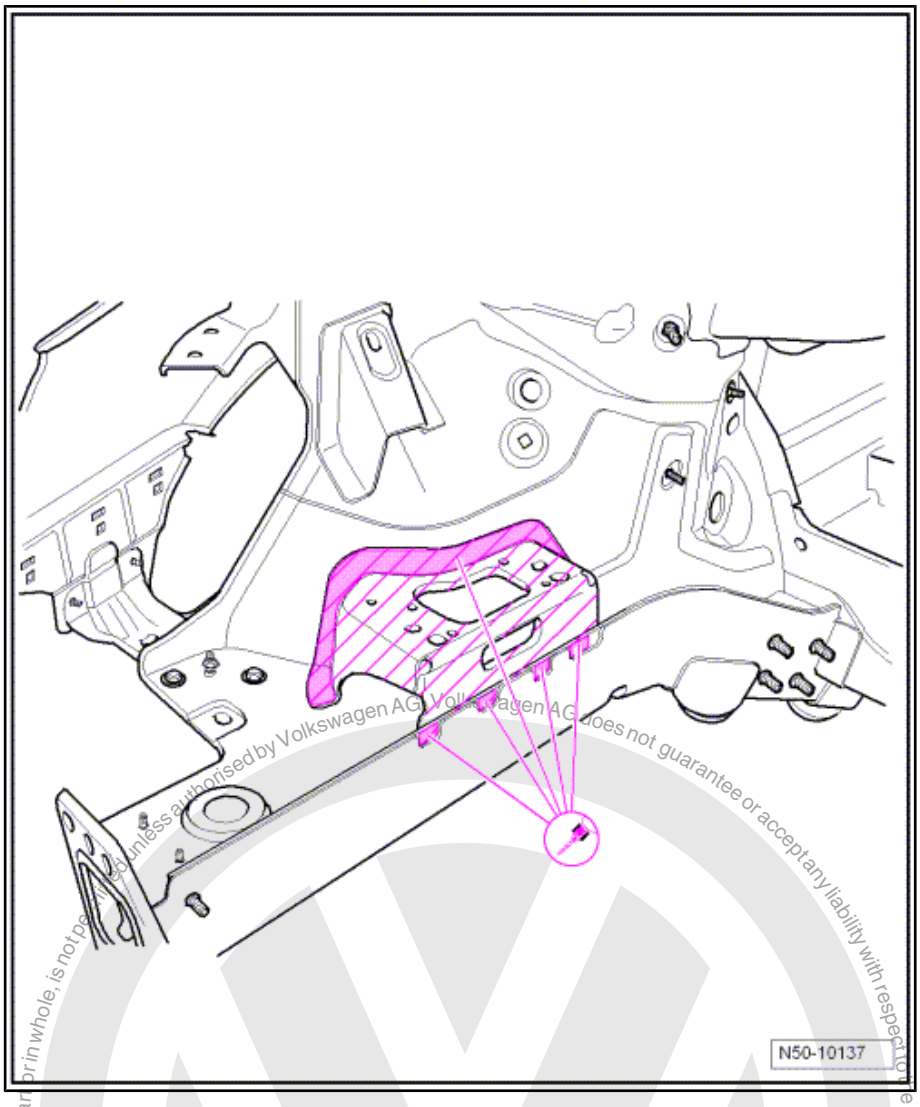
Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes

1.1 Tools

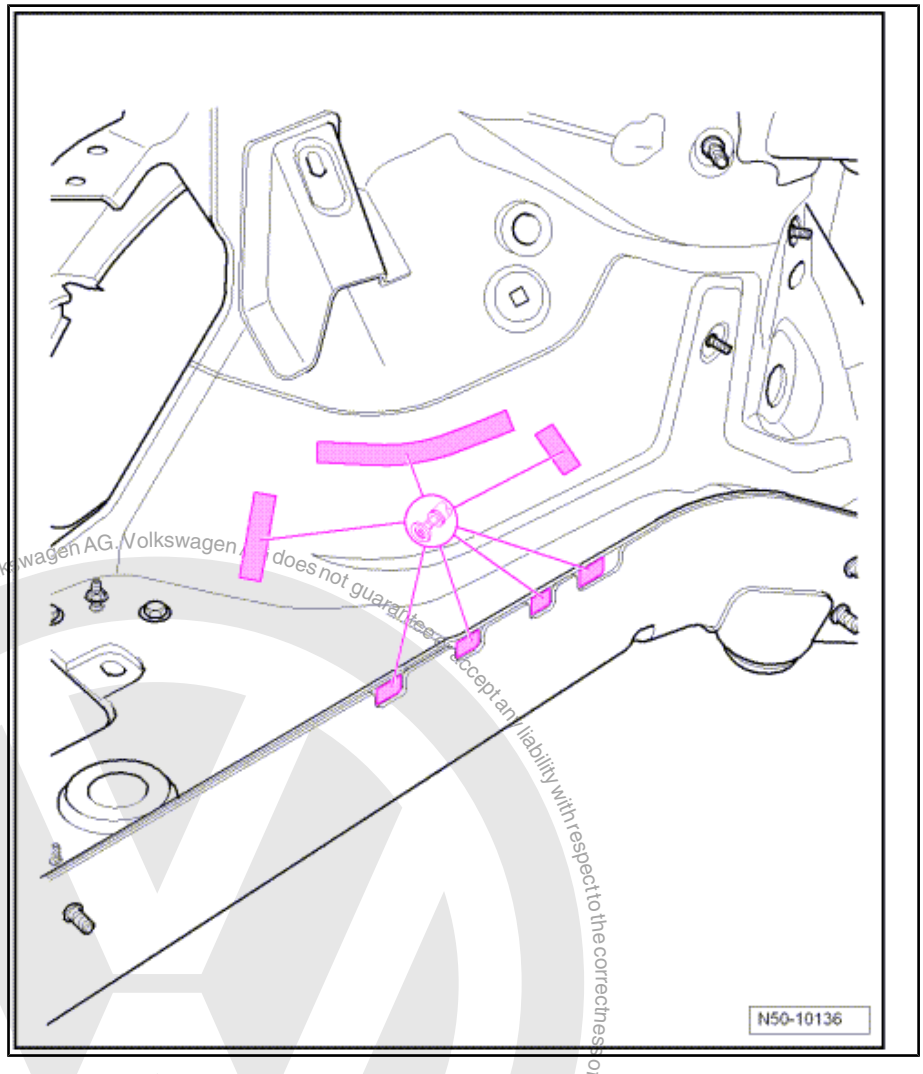
Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

1.2 Removing



– Separate original joint.



– Remove remaining material.

1.3 Installing

Note

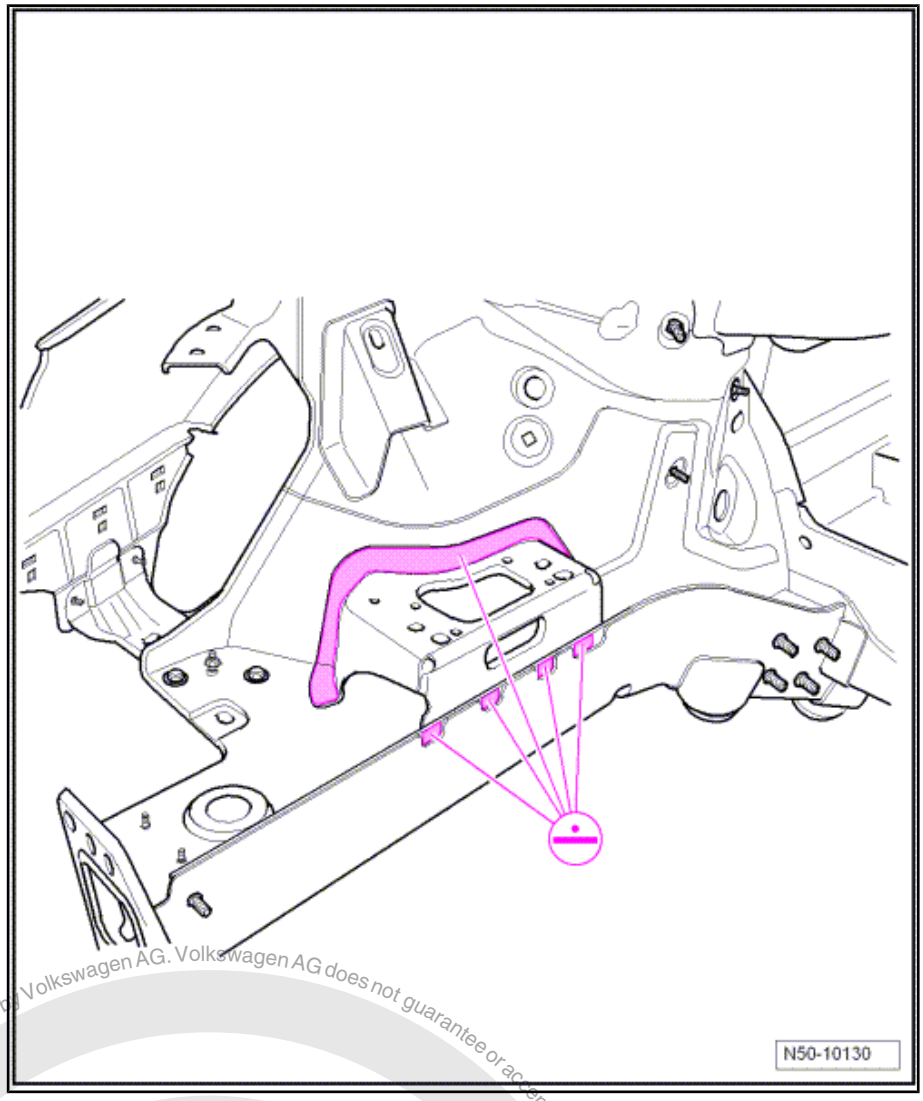
The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 36.

1.3.1 Welding in

Replacement part

♦ Right engine console

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



– Weld in console, RP spot weld seam.

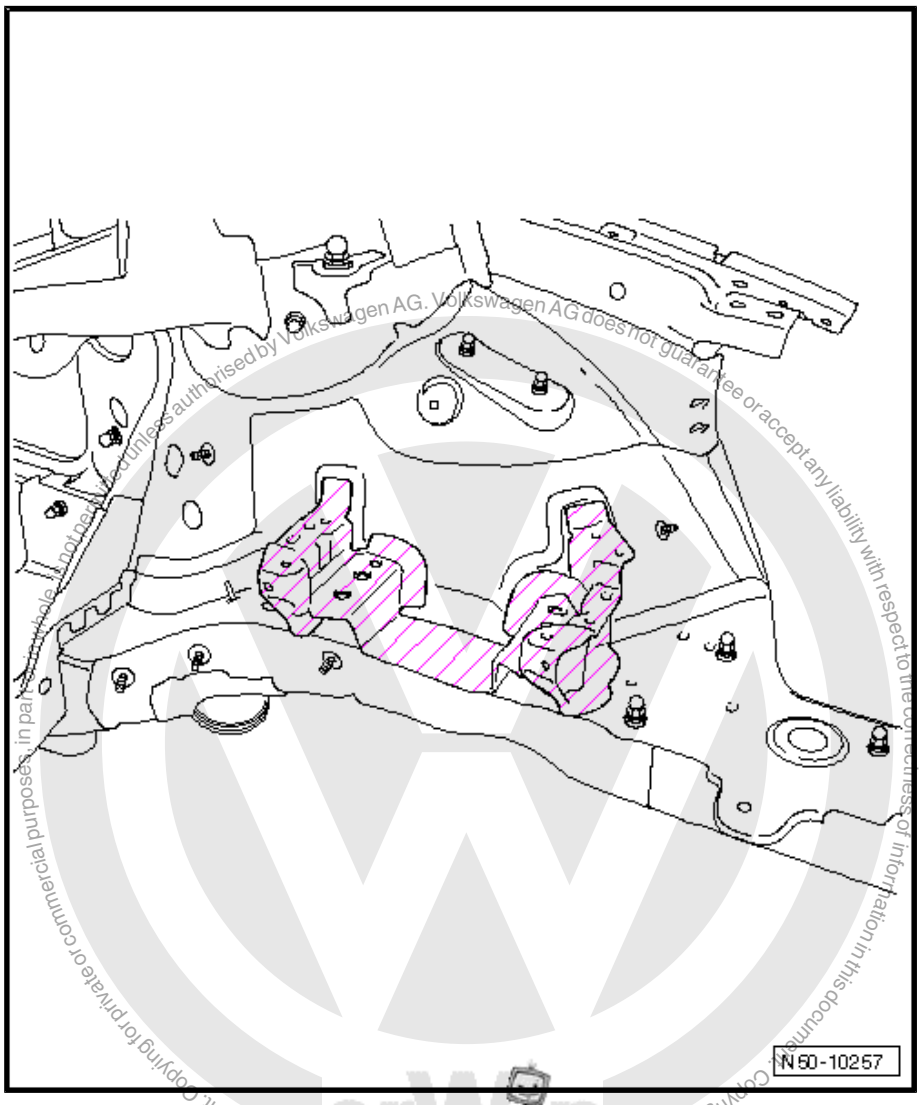
RO: 50 40 55 52

2 Renewing left console

WARNING

Observe safety notes!

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



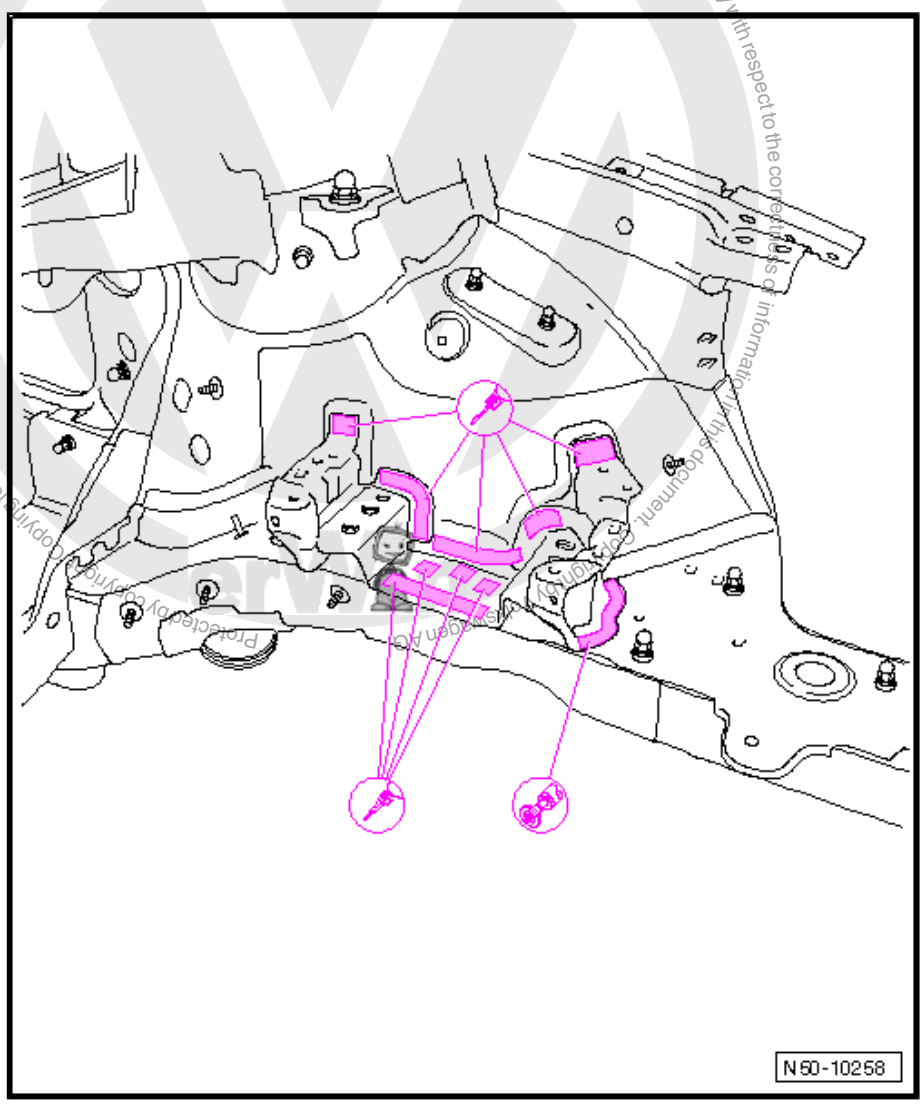
2.1 Tools

Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-

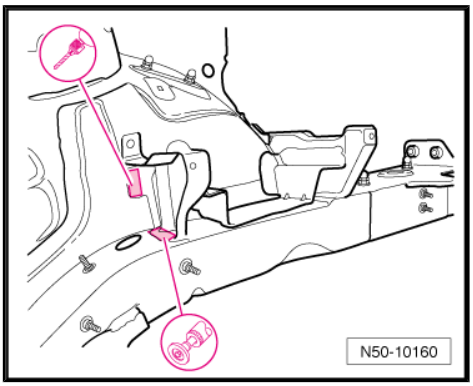
♦ Welding unit (inverter) -VAS 6249-

2.2 Removing

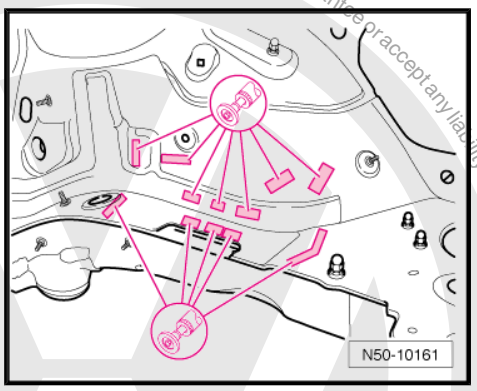


– Separate original joint.

– Separate original joint.



– Remove remaining material.



2.3 Installing

Note

The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 40 .

2.3.1 Preparing new part

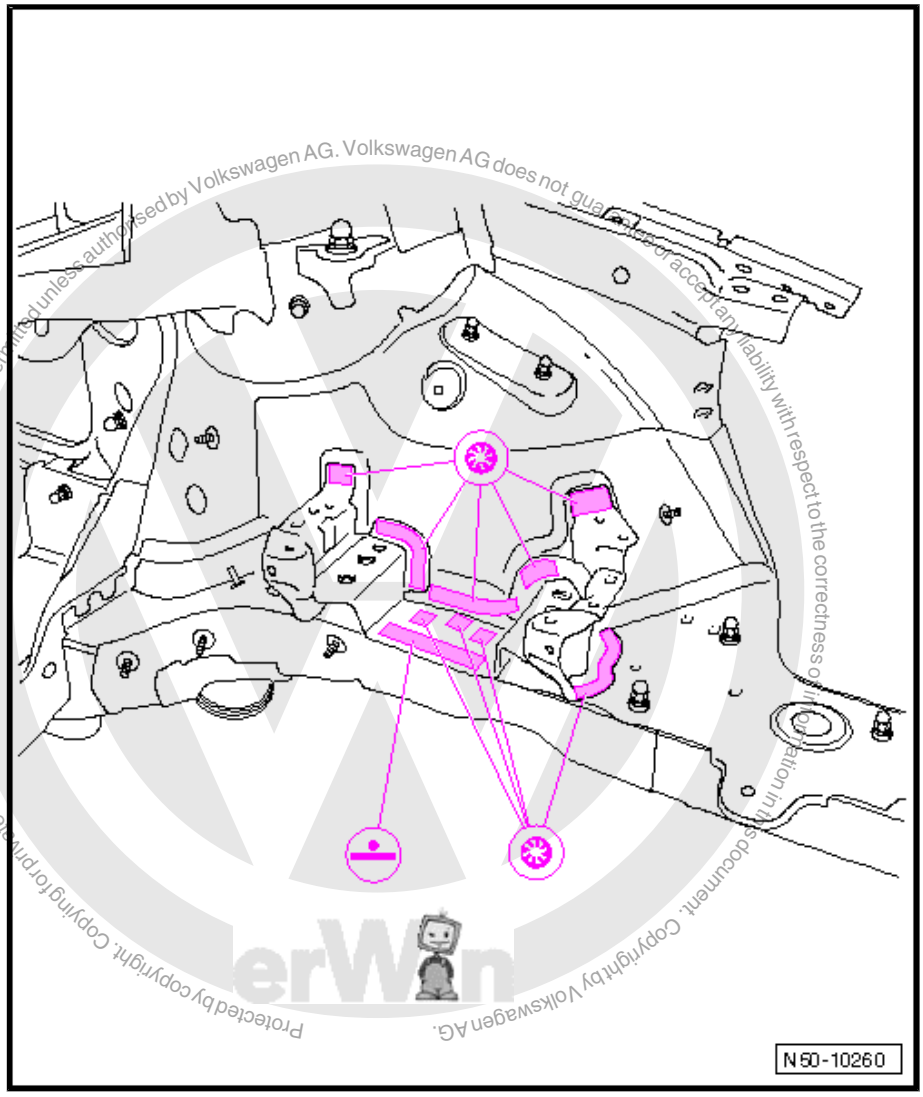
Replacement part

♦ Left engine console

– Drill 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 engine console, SG plug weld seam and RP spot weld seam.

RO: 50 43 55 00

3 Renewing retaining bracket (for sub-frame)

WARNING

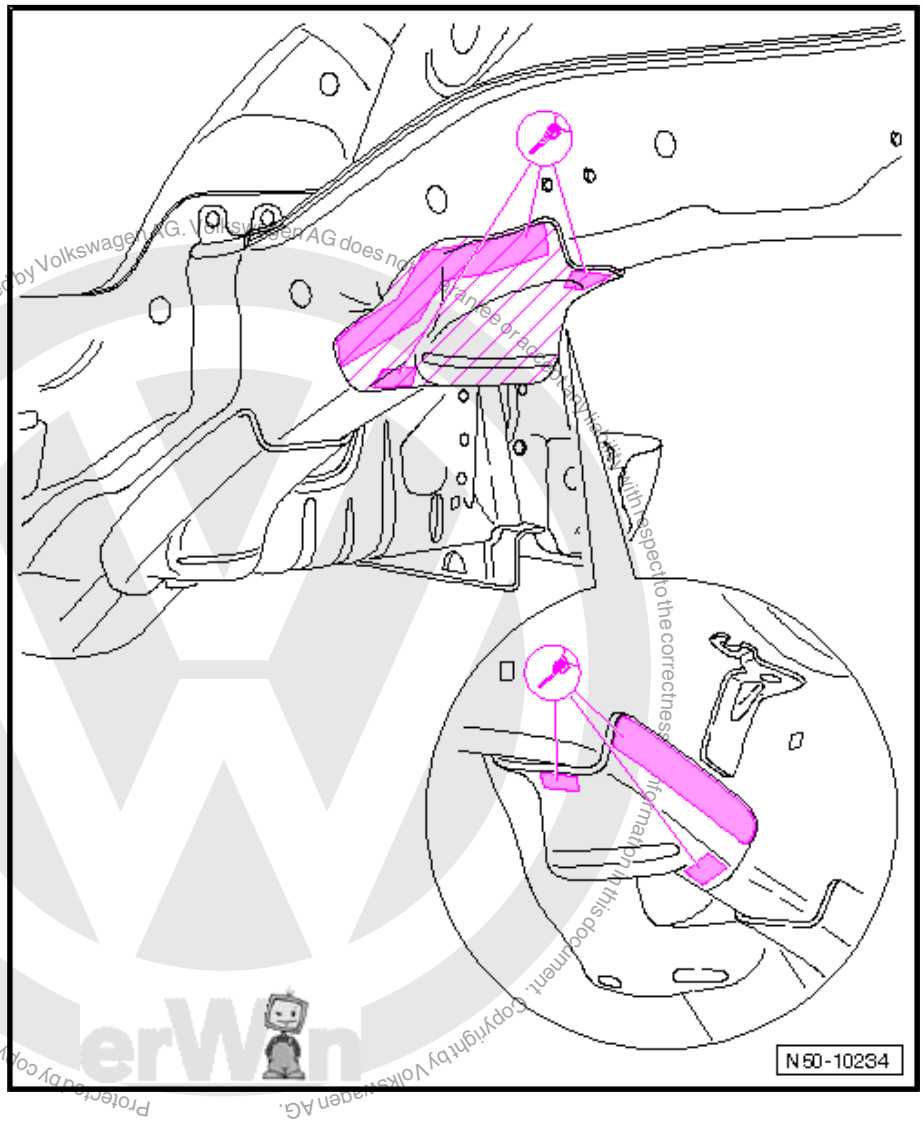
Observe safety notes!

⇒ General Information; Body Repairs, General Body Repairs

Note

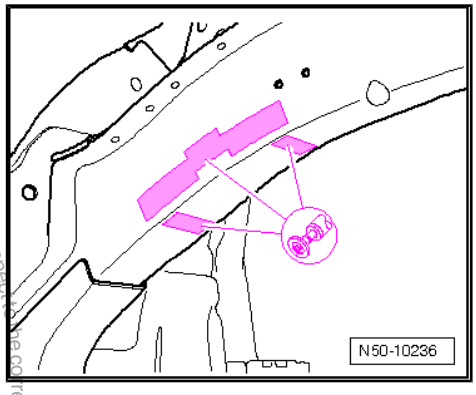
The renewal of the front left retaining bracket is described on this vehicle, as an example. The procedure, as appropriate, should be used for the other 3 retaining brackets.

3.1 Removing



– Separate original joint.

– Remove remaining material.



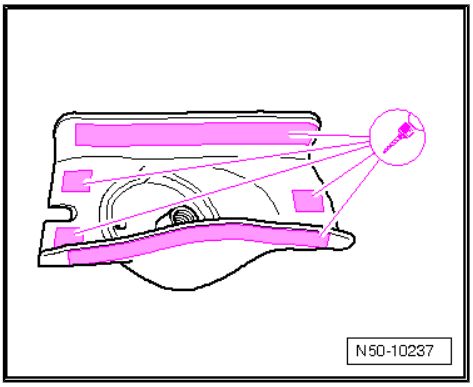
3.2 Installing

3.2.1 Preparing new part

Replacement part

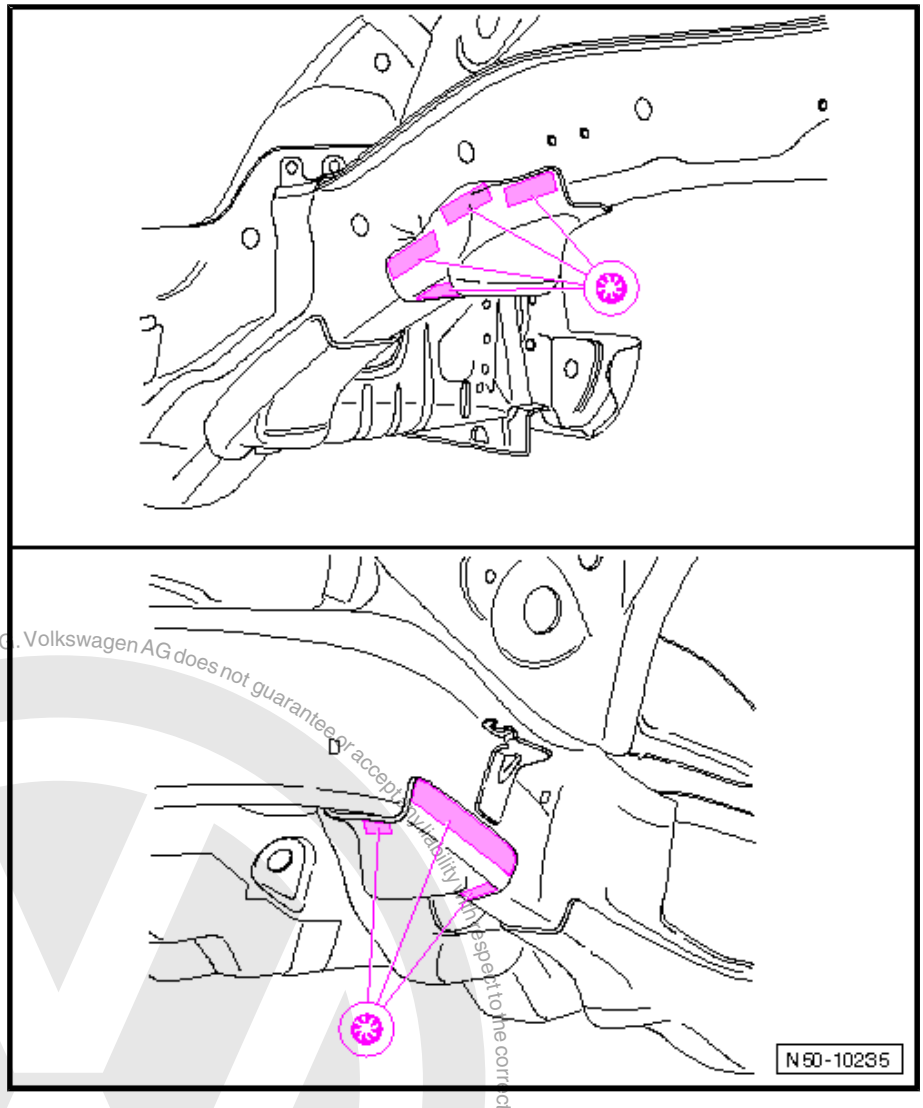
♦ Front retaining bracket for subframe (parts designation: subframe retaining bracket)

– Drill holes for SG plug weld seam.



3.2.2 Welding in

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



– Weld in new part, SG plug weld seam.

RO: 50 65 55 00

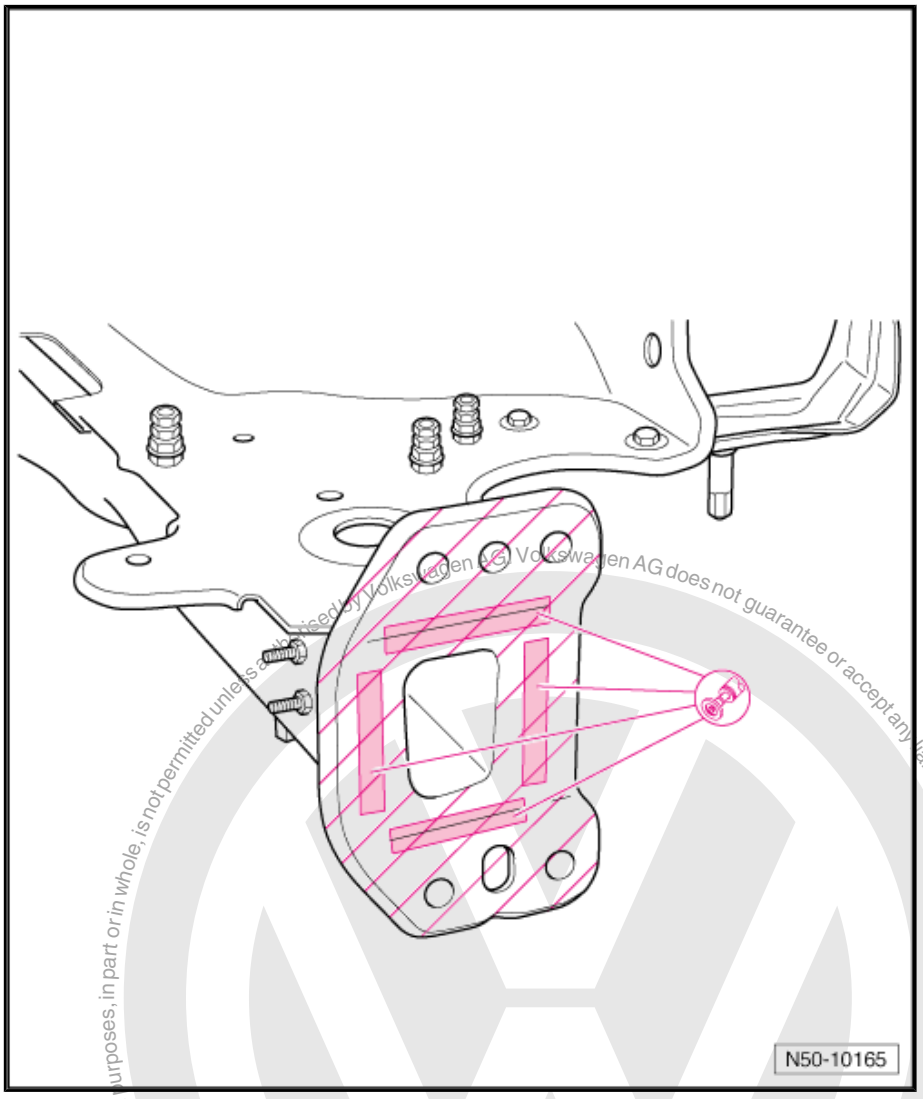
4 Renewing front bumper bracket

WARNING

Observe safety notes!

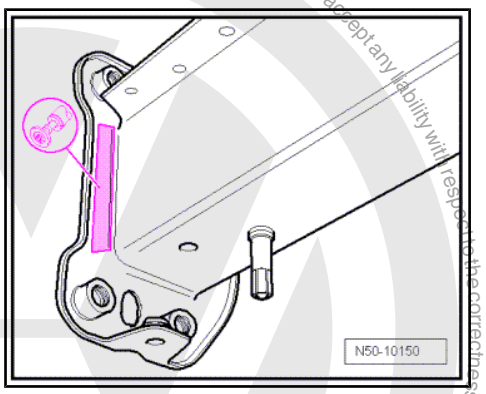
⇒ General Information; Body Repairs, General Body Repairs

4.1 Removing

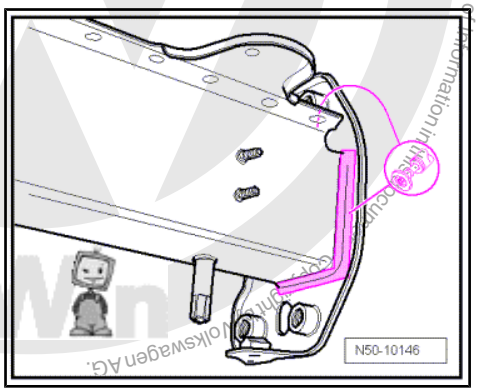


– Separate original joint.

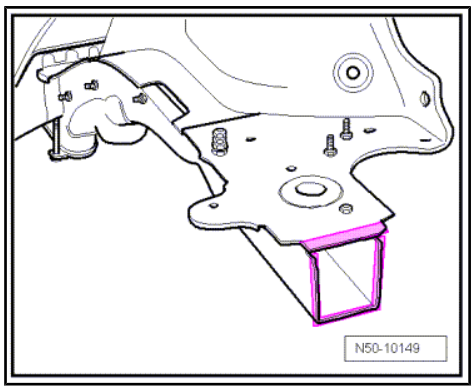
– Separate original joint.



– Separate original joint.



– Remove remaining material.



4.2 Installing

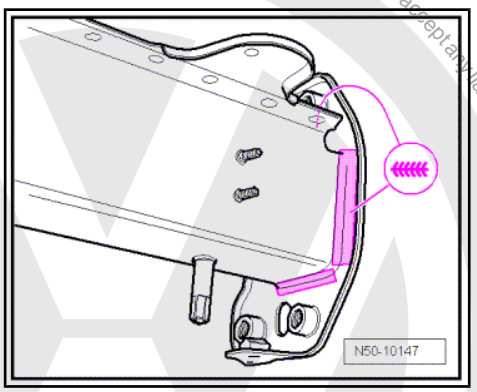
4.2.1 Welding in

Replacement part

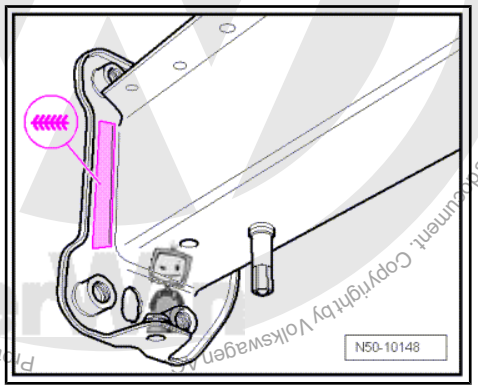
♦ Front bumper bracket

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

– Weld in bumper bracket, SG continuous weld seam.



– Weld in bumper bracket, SG continuous weld seam.



RO: 50 72 55 00

5 Renewing upper wheel housing longitudinal member

WARNING

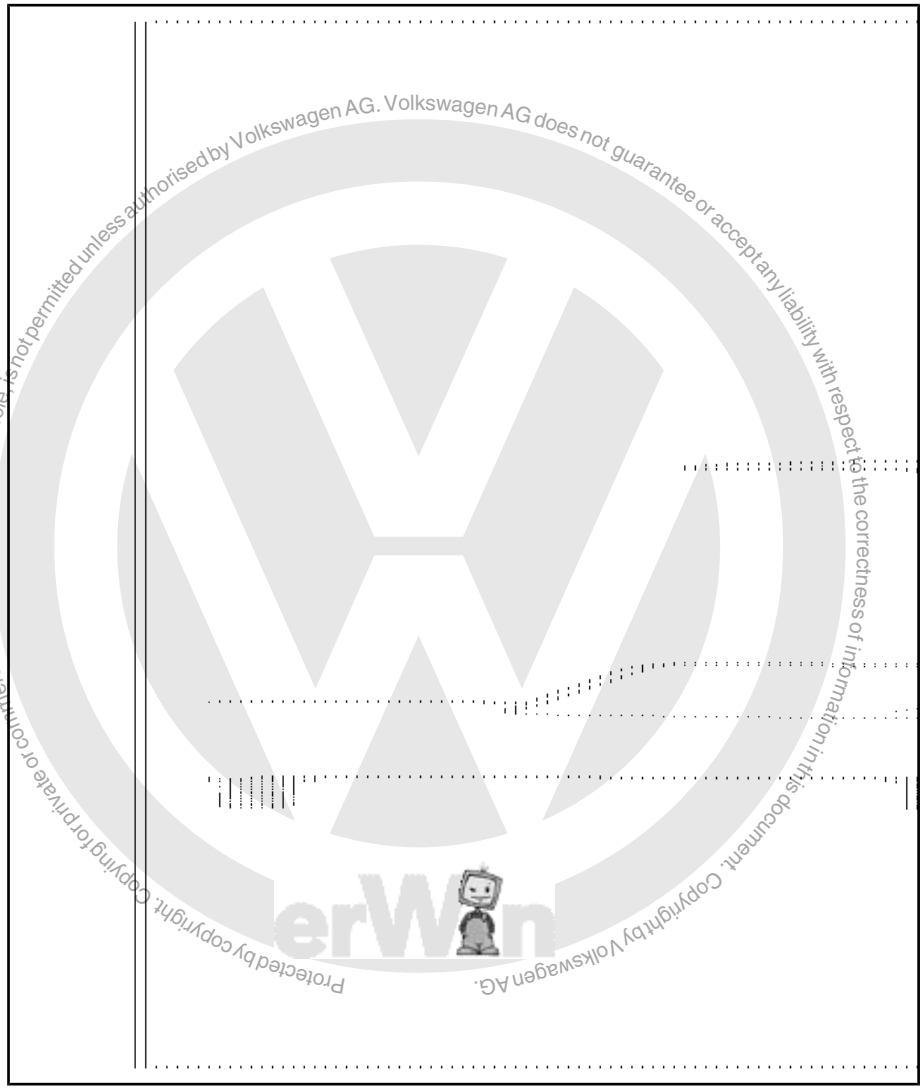
Observe safety notes!

⇒ General Information; Body Repairs, General Body Repairs

1 - Longitudinal member for upper wheel housing

2 - Wheel housing

3 - Longitudinal member



5.1 Tools

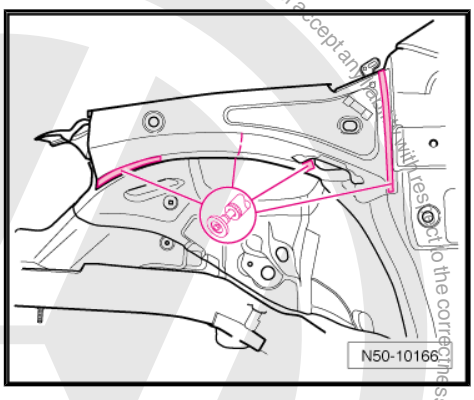
Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-

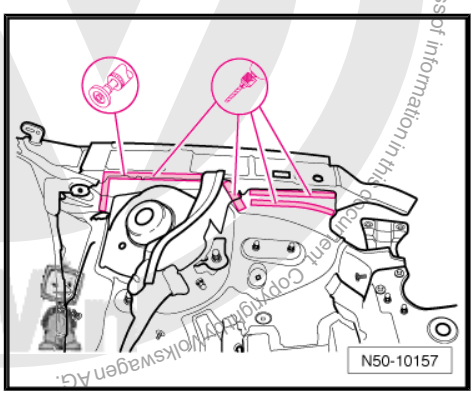
♦ Welding unit (inverter) -VAS 6249-

5.2 Removing

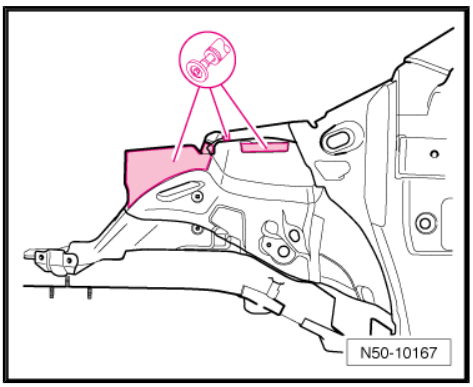
– Separate original joint.



– Separate original joint.



– Removing remaining material.



5.3 Installing

Note

The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 50 *.*

5.3.1 Preparing new part

Replacement part

♦ Upper inner wheel housing longitudinal member

♦ Upper outer wheel housing longitudinal member

♦ 2K body adhesive -D 180 KD3 A2-

– Drill holes for SG plug weld seam.

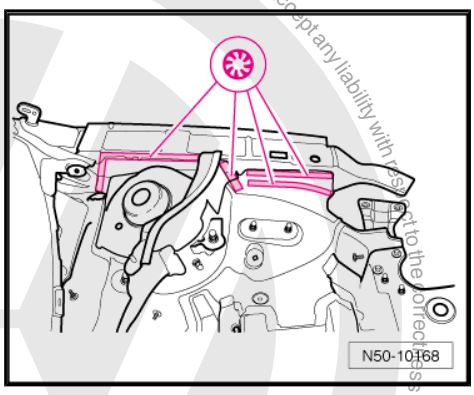
5.3.2 Welding in

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

– Check fit with bolt-on parts.

– Weld in upper inner longitudinal member for wheel housing, SG plug weld seam.

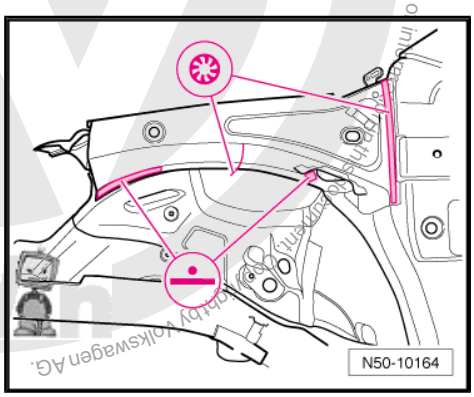
– Apply 2K body adhesive -D 180 KD3 A2- to area of factory applied bonded joint.



Note

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

– Weld in upper outer wheel housing longitudinal member, SG plug weld seam and RP spot weld seam.



RO: 50 72 55 02

6 Renewing upper wheel housing longitudinal member - partial renewal

WARNING

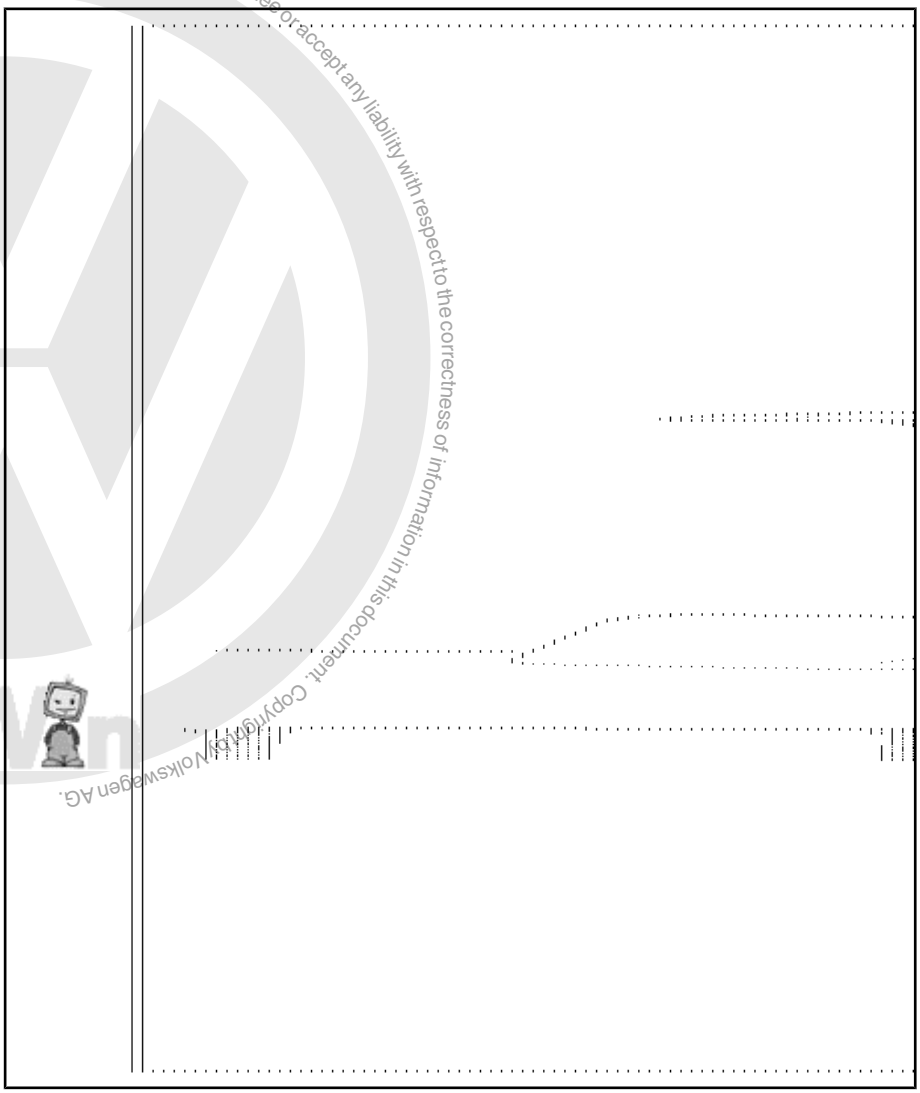
Observe safety notes!

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

1 - Longitudinal member for upper wheel housing

2 - Wheel housing

3 - Longitudinal member



6.1 Tools

Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-

- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

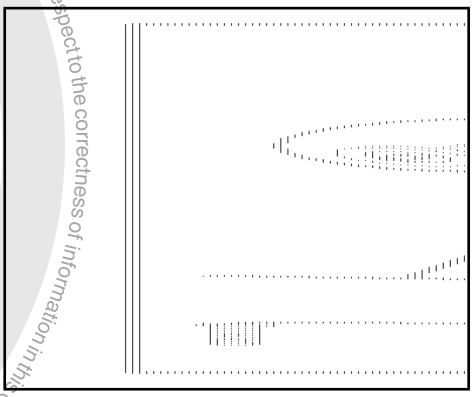
6.2 Removing

– Make parting cut on outer longitudinal member as shown.

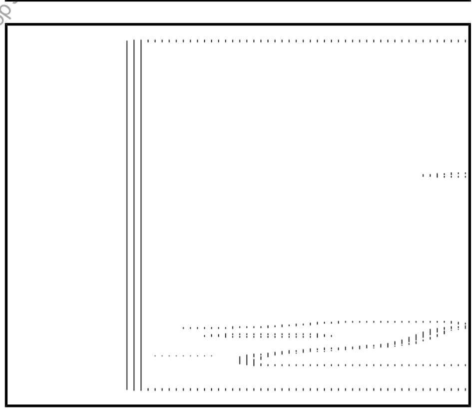
Dimension -a- = 170 mm

– Separate original joint.

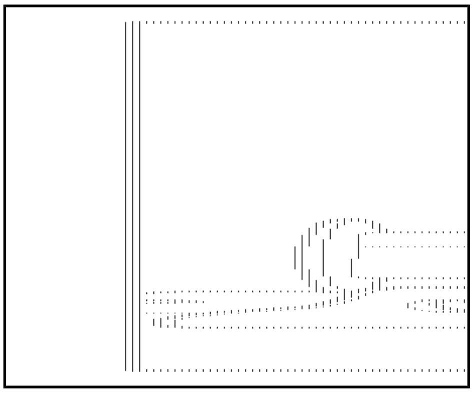
– Make parting cut on inner longitudinal member.



– Separate original joint.



– Remove remaining material.



6.3 Installing

Note

The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 53 .

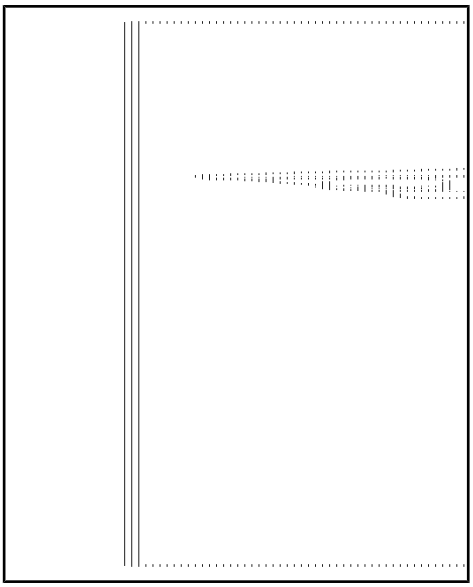
6.3.1 Preparing new part

Replacement part

- Upper inner wheel housing longitudinal member

- ♦ Upper outer wheel housing longitudinal member
- ♦ 2K body adhesive -D 180 KD3 A2-

– Transfer parting cuts to new parts and cut out.



6.3.2 Welding in

– Adapt upper inner longitudinal member for wheel housing with vehicle positioned on alignment bracket set and fix in place.

– Check fit with bolt-on parts.

– Weld in upper inner longitudinal member for wheel housing, RP plug weld seam.

– Weld parting cut, SG stepped weld seam.

– Apply 2K body adhesive -D 180 KD3 A2- to area of factory applied bonded joint.

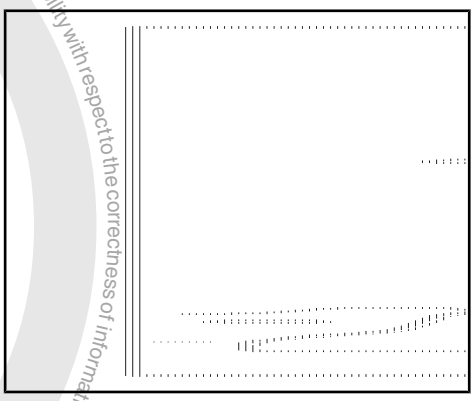
Note

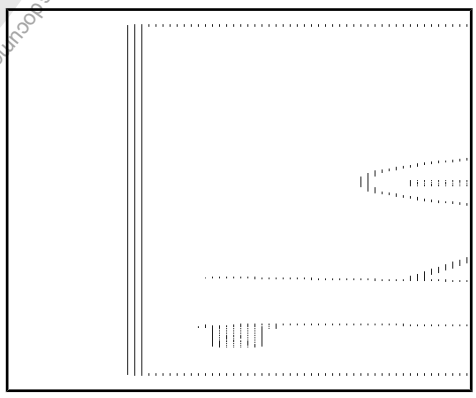
New part must be welded-in within 90 minutes or adhesion properties of adhesive will be impaired.

– Removing and installing upper outer longitudinal member for wheel housing

– Weld in upper outer longitudinal member for wheel housing, RP plug weld seam.

– Weld parting cut, SG stepped weld seam.





RO: 50 75 55 50

7 Renewing front wheel housing

WARNING

Observe safety notes!

⇒ General Information; Body Repairs, General Body Repairs

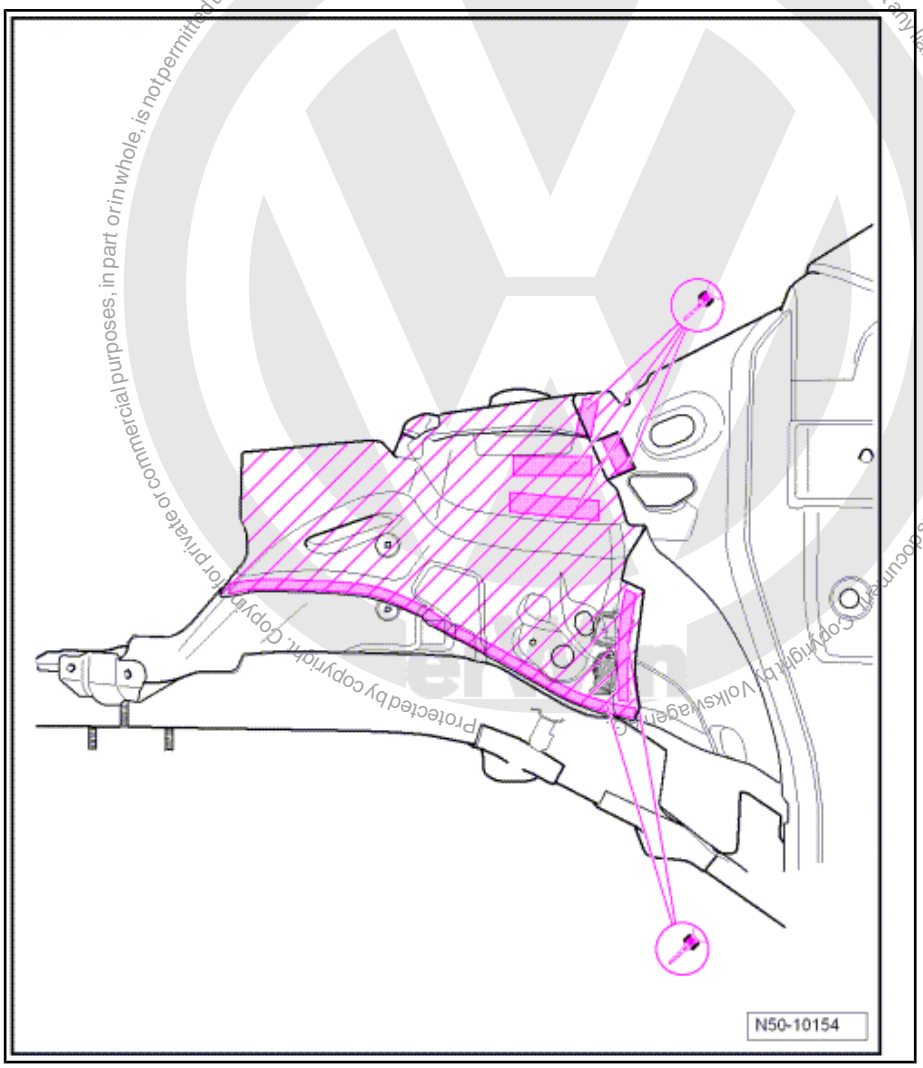
7.1 Tools

Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

7.2 Removing

- Upper longitudinal member for wheel housing already removed ⇒ page 51 .



– Separate original joint.

– Remove remaining material.

7.3 Installing

Note

The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 56 .

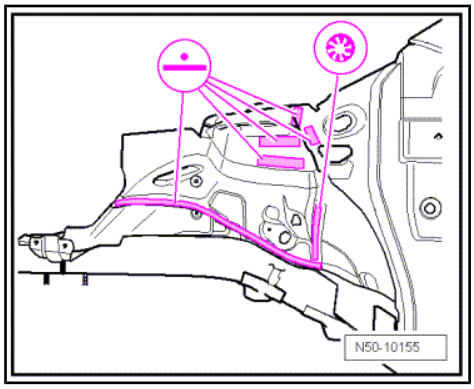
7.3.1 Welding in

Replacement part

♦ Wheel housing

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

– Check fit to other parts.
– Weld in wheel housing, SG plug weld seam.
– Weld in wheel housing, RP spot weld seam.
– Install upper longitudinal member for wheel housing ⇒ page 51 .



RO: 50 79 49 50

8 Repairing threads for securing subframe (suspension subframe)

WARNING

Observe safety notes!

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

Note

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

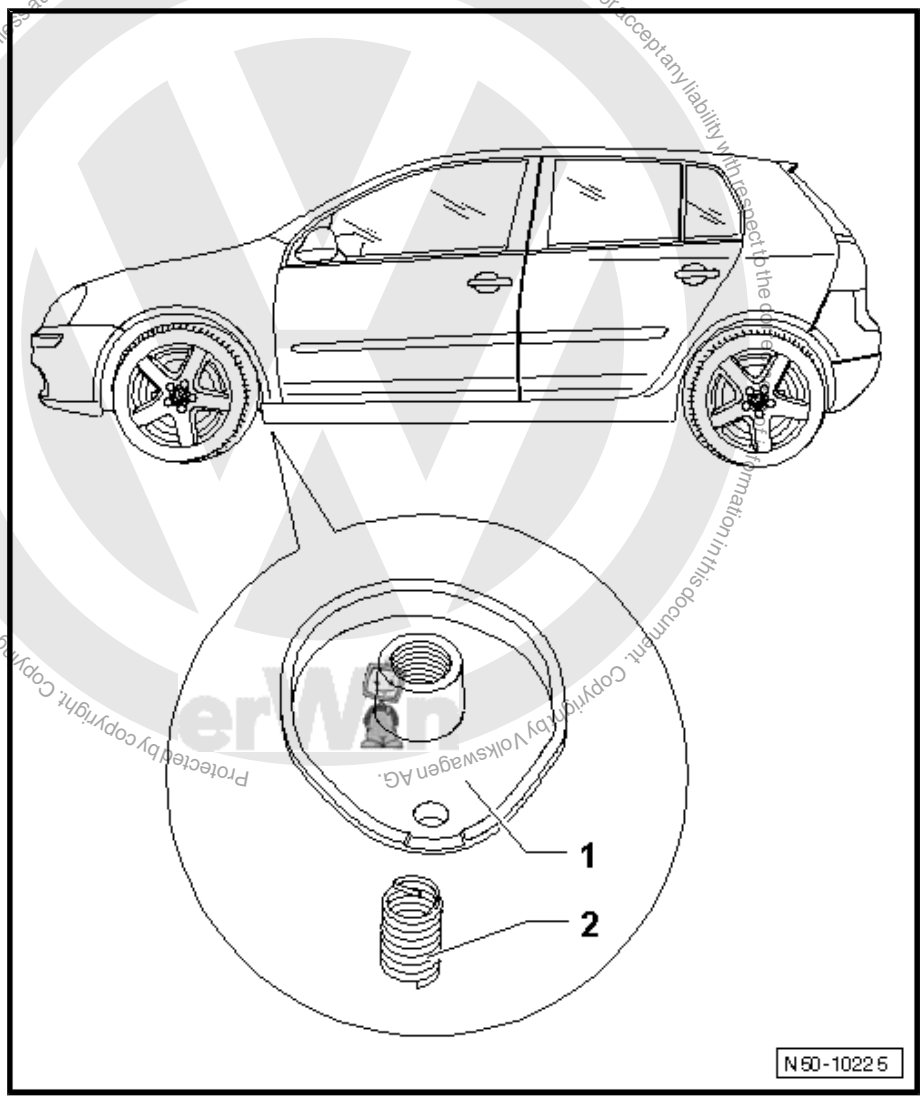
Special tools and workshop equipment required

- Thread repair kit M12x1.5 -VAS 6058-
- Drill -VAS 6267-

1 - Threaded plate (welded to subframe retaining bracket)

Note

2 - Helicoil thread insert



8.1 Contents of thread repair kit

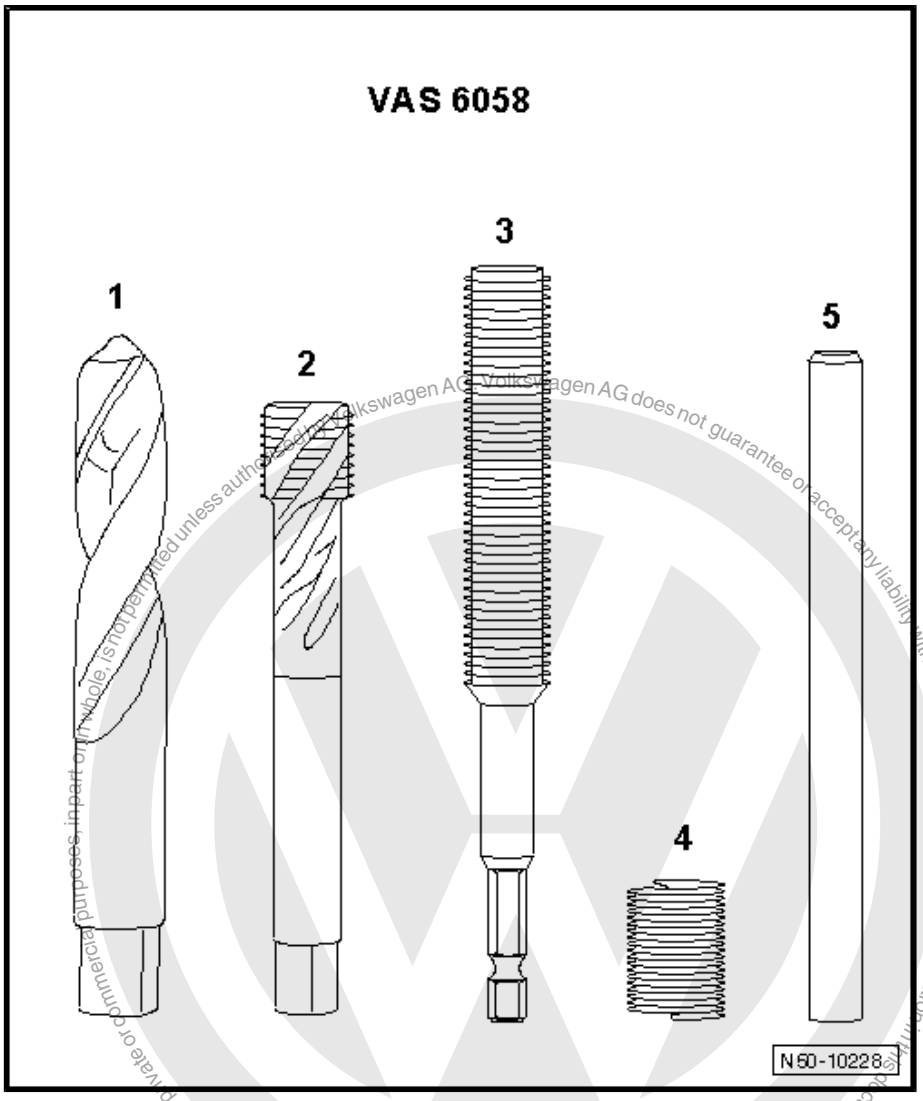
1 - Twist drill ∅ 12.5 mm

2 - Thread-cutting tap M12 x 1.5

3 - Fitting spindle

4 - Thread insert M12 x 1.5 x 24 (-VAS 6058/1-)

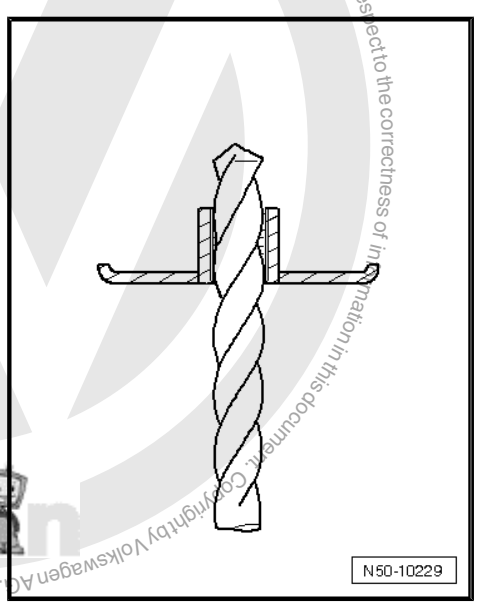
5 - Pin breaker with magnetic end



8.2 Repairing thread

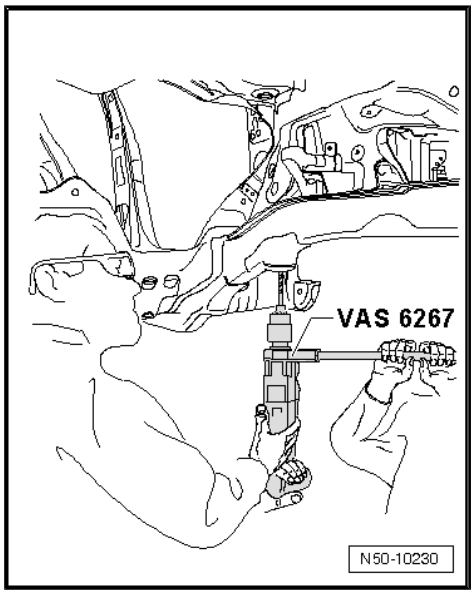
8.2.1 Drilling thread

– Drill out thread using twist drill.



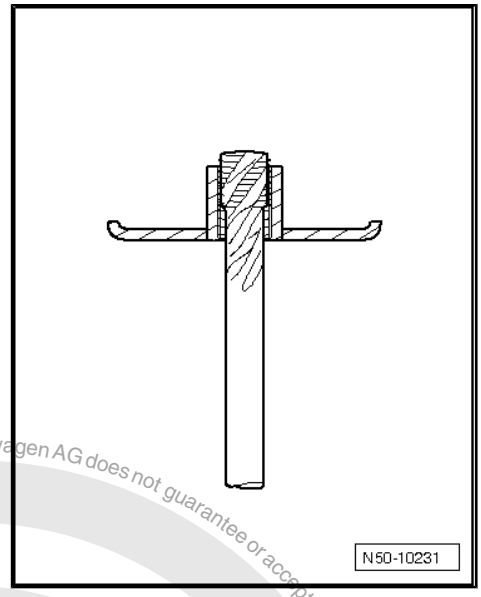
Note

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



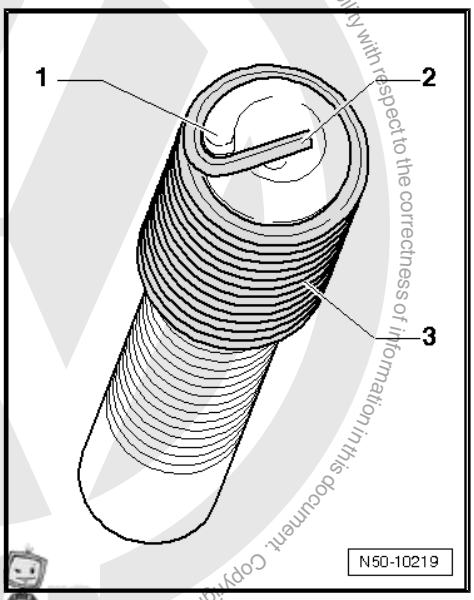
8.2.2 Cutting the thread

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

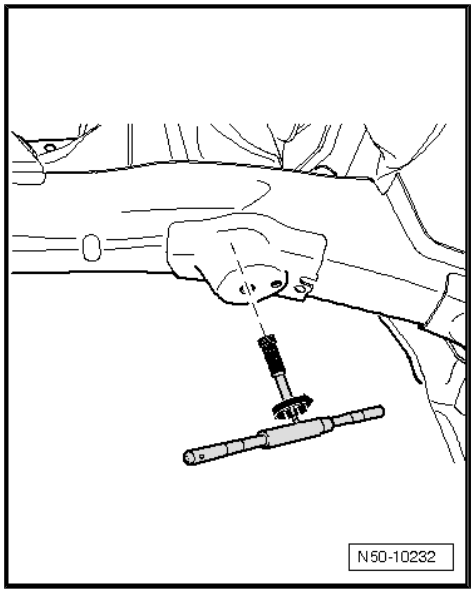


8.2.3 Inserting thread insert

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



– 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 the thread insert inwards a $^1/_4$ turn.

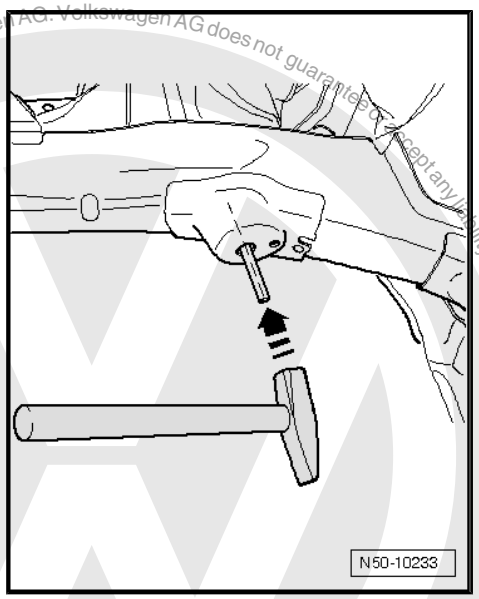


Note

The thread insert must screw in easily.

– Remove fitting spindle.

– Break off drive pin of thread insert using pin breaker.
– Install subframe (suspension subframe) (torque settings) ⇒ Suspension, axles, steering; Rep. gr. 40 ; Removing and installing subframe, Torque settings.



RO: 50 79 55 03

9 Renewing front longitudinal member

WARNING

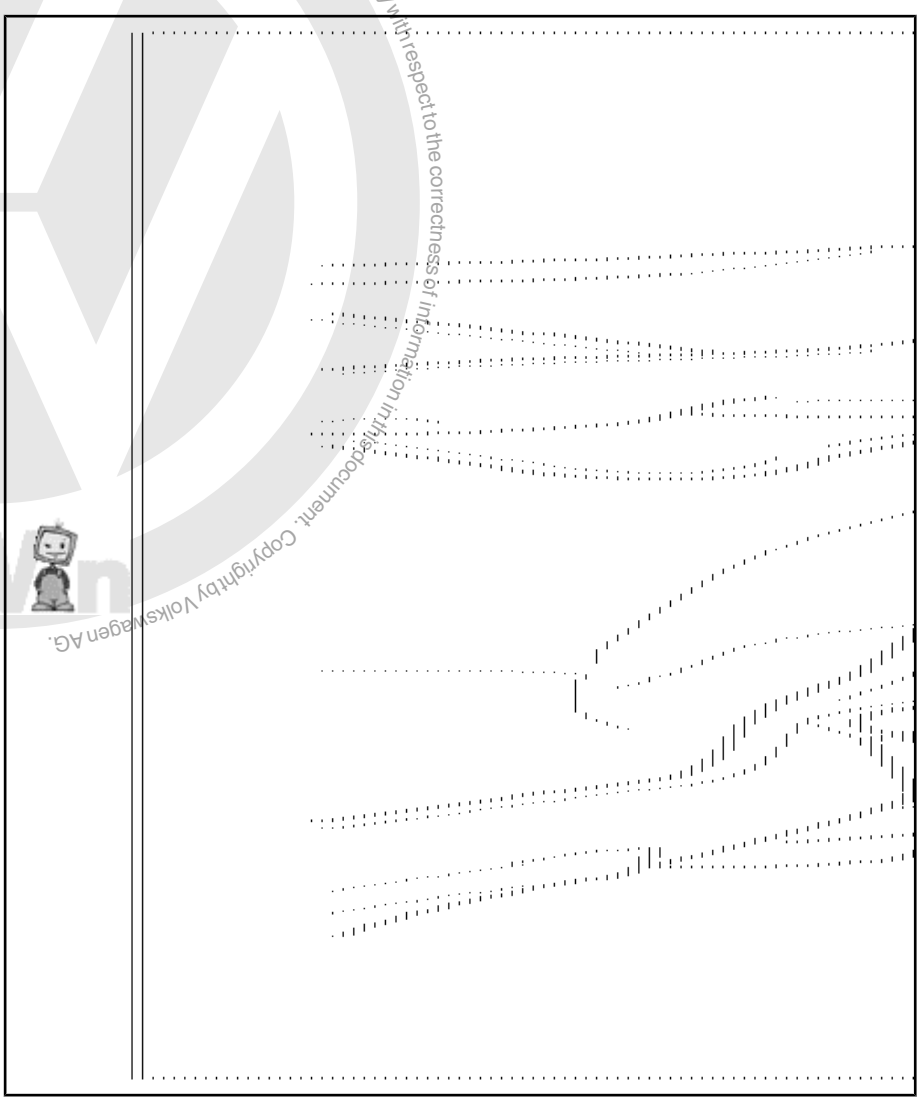
Observe safety notes!

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

1 - Wheel housing

2 - Longitudinal member

3 - Make parting cut on longitudinal member and cover plate.



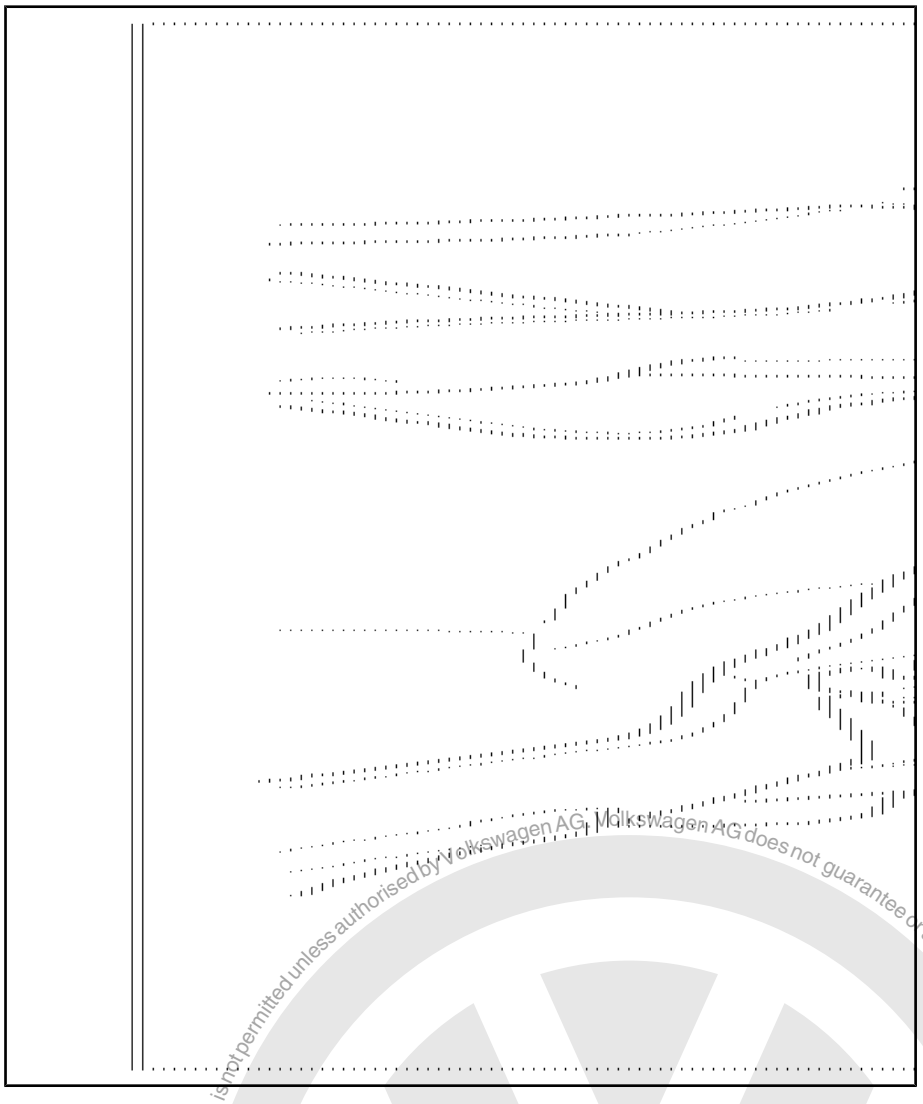
9.1 Tools

Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-

♦ Welding unit (inverter) -VAS 6249-

9.2 Removing



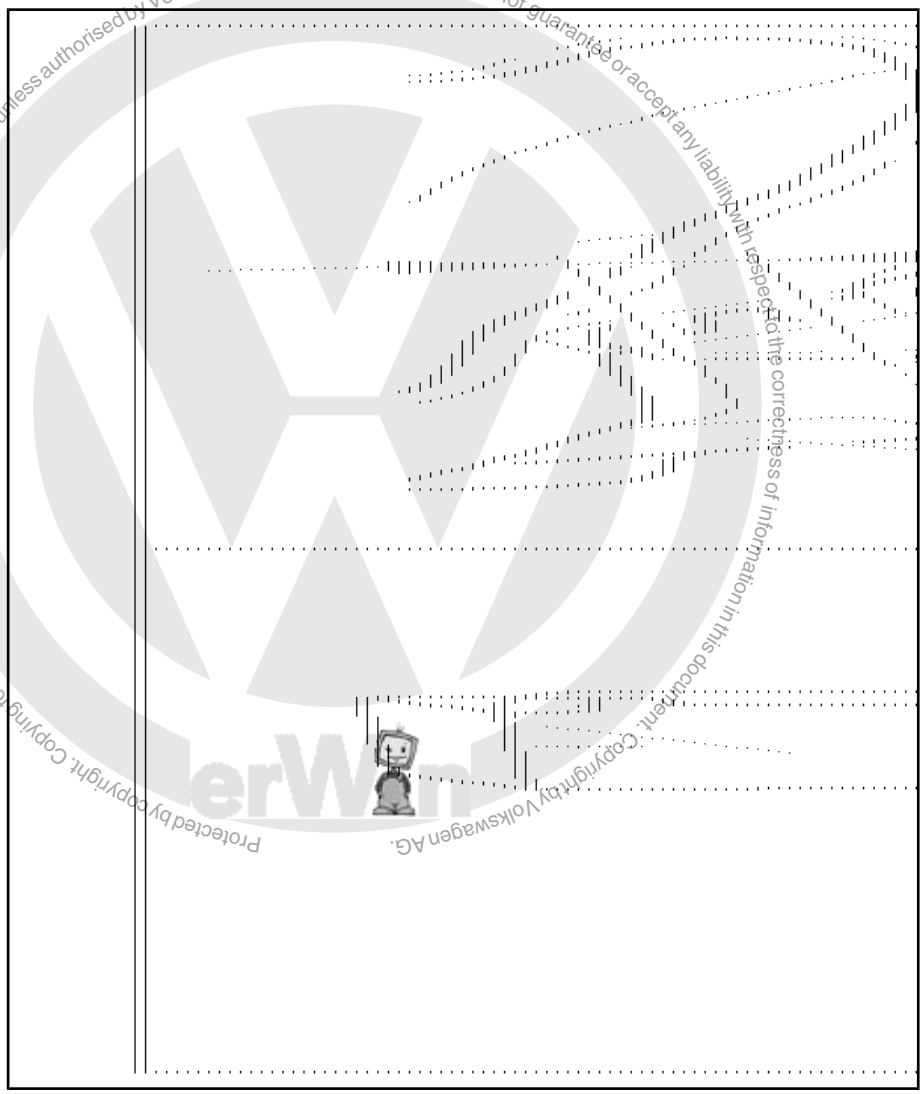
– Separate original joint to wheel housing.

1 - Subframe mounting

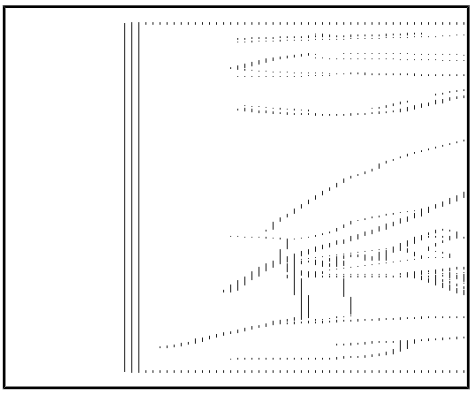
– Separate as shown.

Dimension -a- = 50 mm

Note



– Remove remaining material.



9.3 Installing

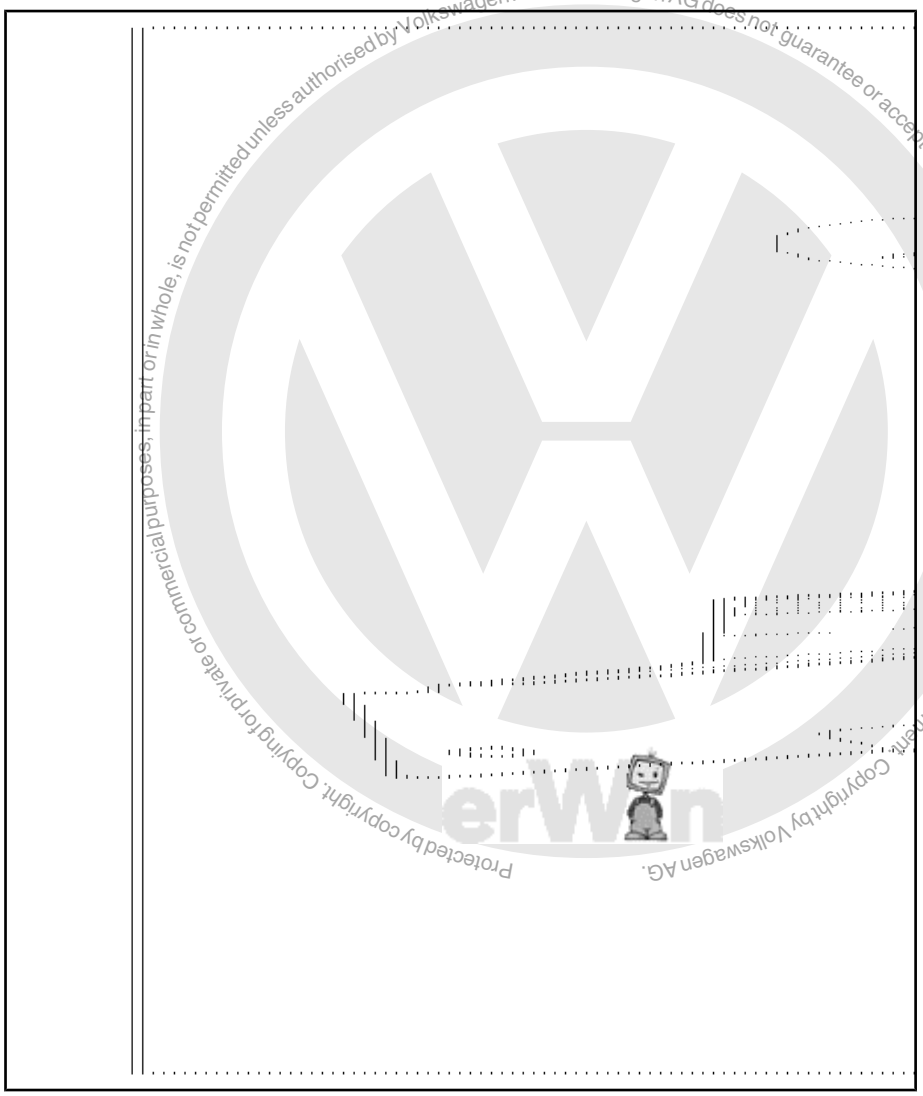
Note

The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 65 .

9.3.1 Preparing new part

Replacement part

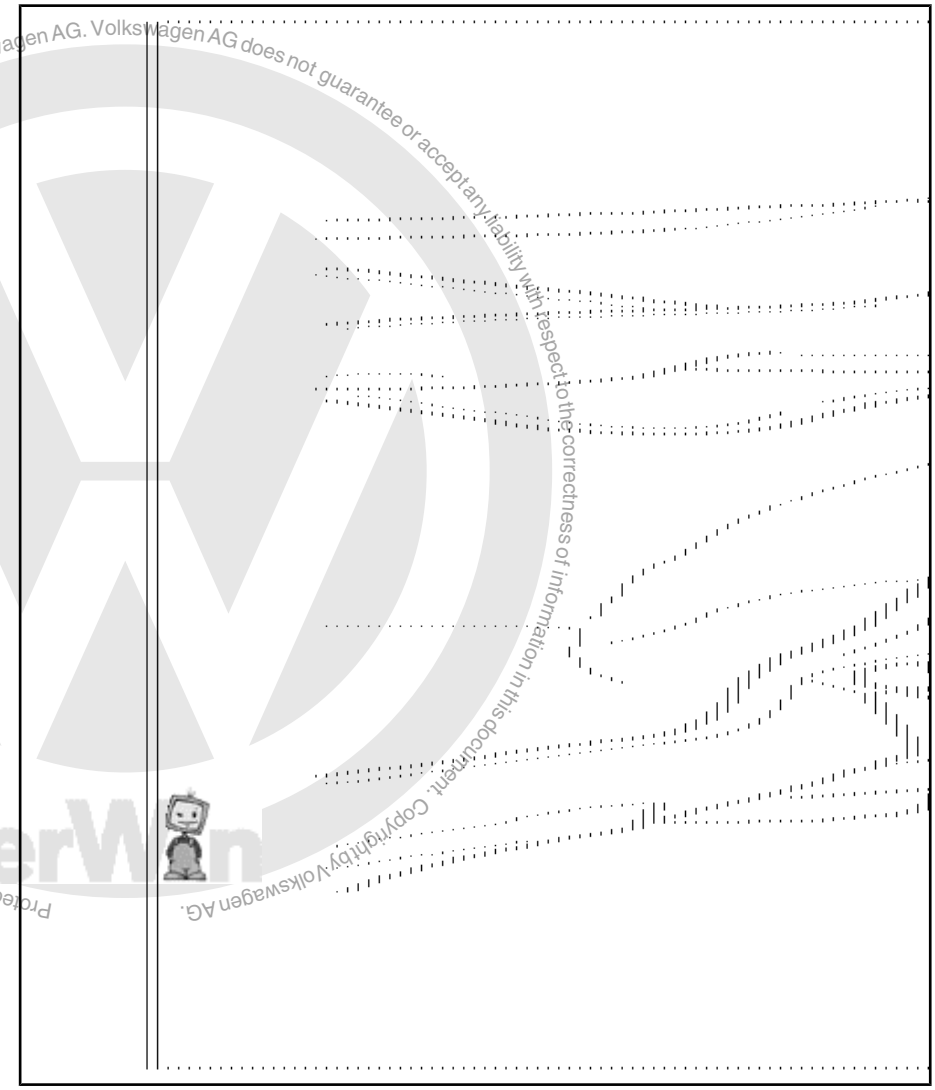
- Longitudinal member



– Transfer parting cut to new part and cut out.
– Drill 7 mm ∅ holes for SG plug weld seam.

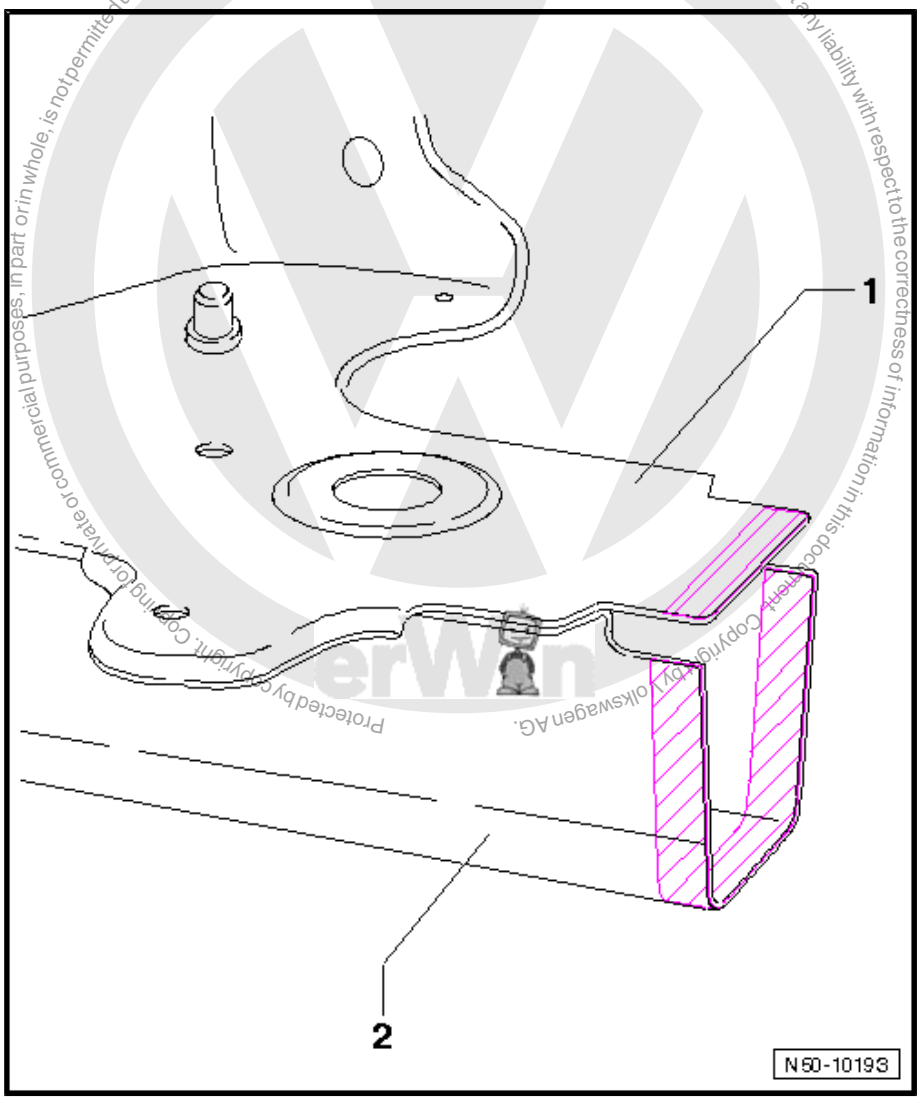
9.3.2 Welding in

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



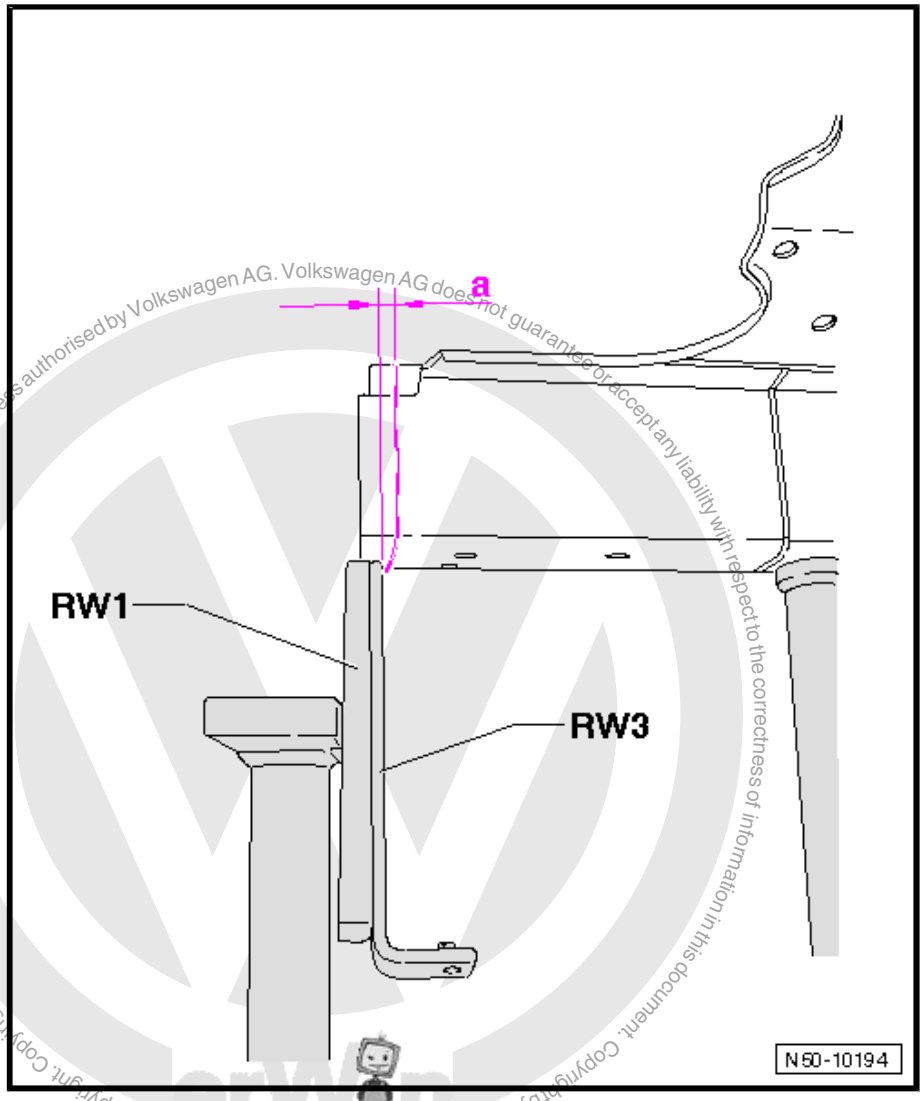
– Weld all-around parting cut on longitudinal member and cover plate, SG continuous weld seam.
– Recreate remaining joint, SG plug weld seam and RP spot weld seam.

9.3.3 Shortening new part longitudinal member with cover plate



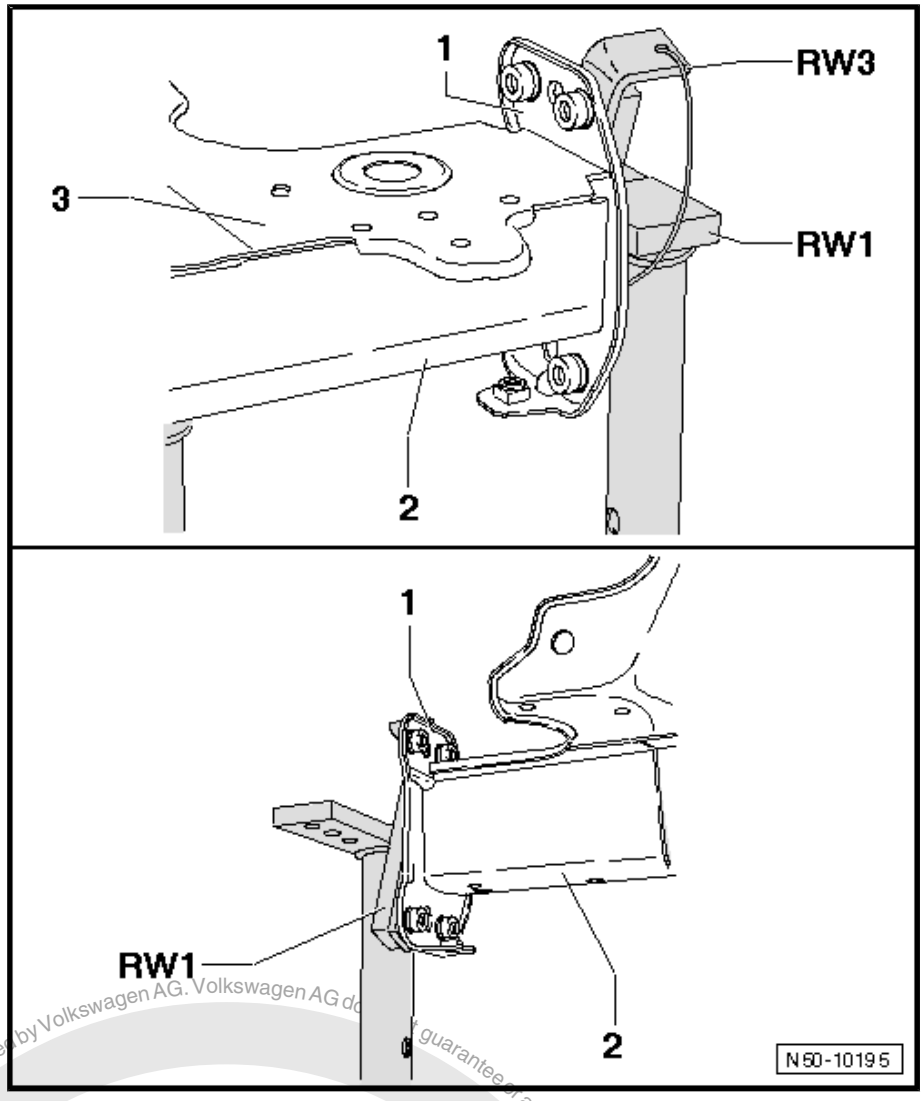
Note

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



– Assemble straightening bracket mounting -RW 1- with spacer -RW 3- for front longitudinal member as shown and hold against the longitudinal member from below.

– Transfer dimensions (plus an additional 2 mm) -a- to longitudinal member and cover plate and remove excessive material.



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

Note

A gap of 1-2 mm must exist between longitudinal member -2- with cover plate -3- and bumper bracket -1-.

– Install front bumper bracket ⇒ „4.2 Installing“, page 48 .

RO: 50 79 55 06

10 Renewing front longitudinal member - partial renewal

WARNING

Observe safety notes!

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

10.1 Tools

Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

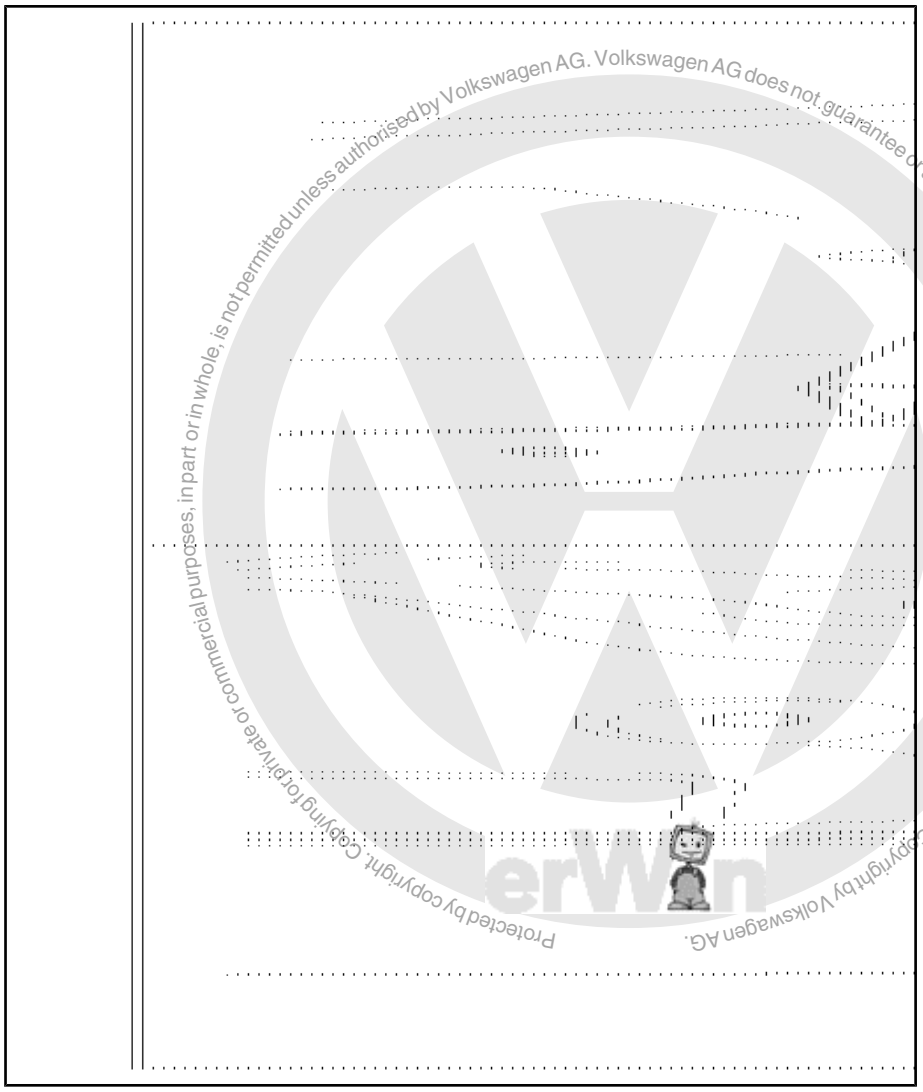
10.2 Removing

1 - Cover plate

2 - Longitudinal member

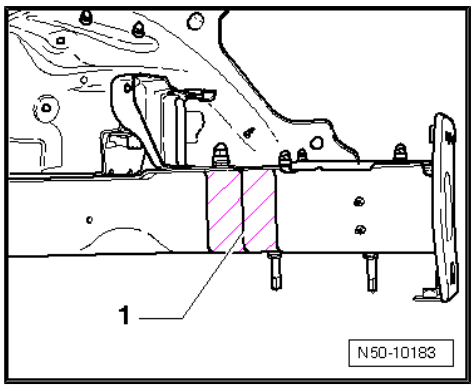
Note

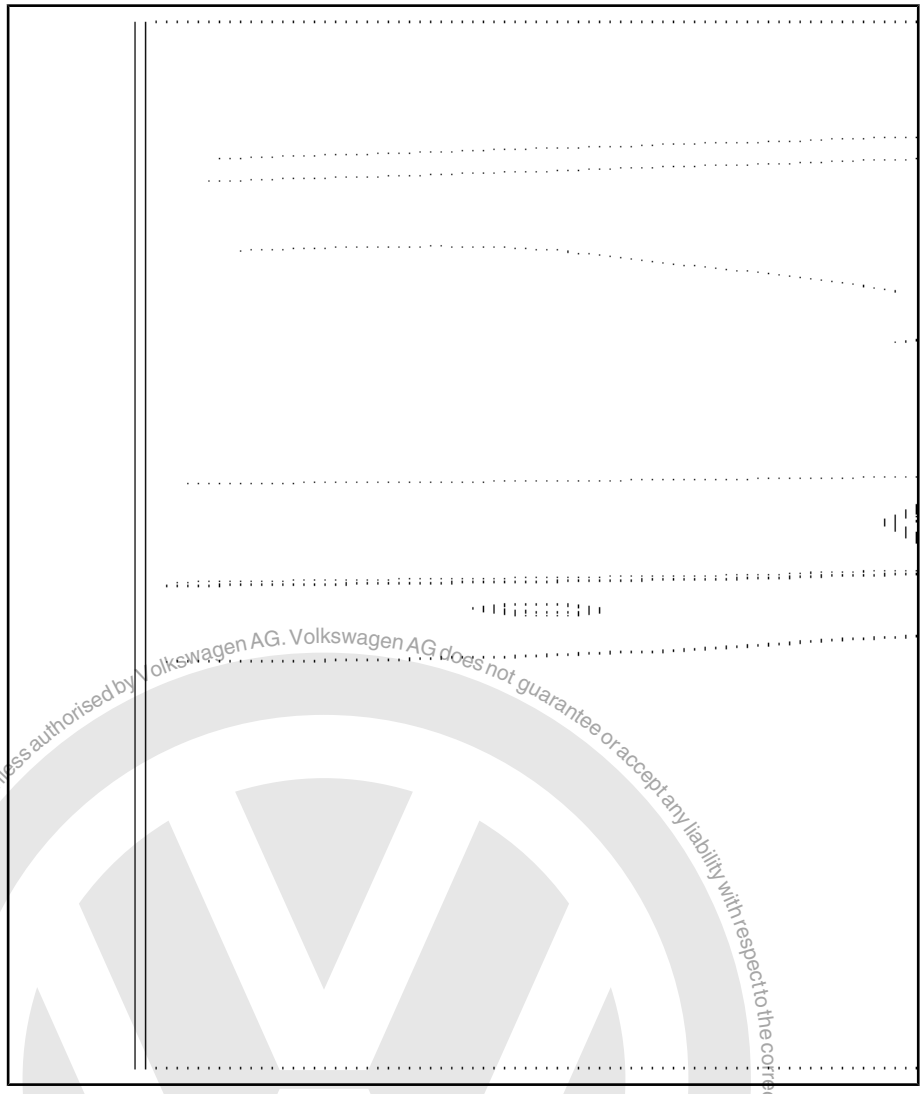
Dimension -a- = 50 mm



Note

Do not cut or weld 50 mm before or after the laser weld seam -1- (shaded area).



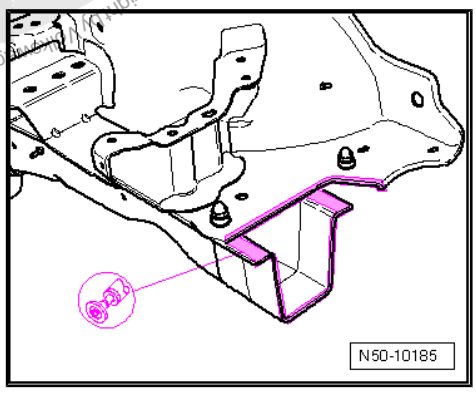


– Position and make parting cuts as shown.

Caution

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

– Separate original joint.
– Remove remaining material.



10.3 Installing

Note

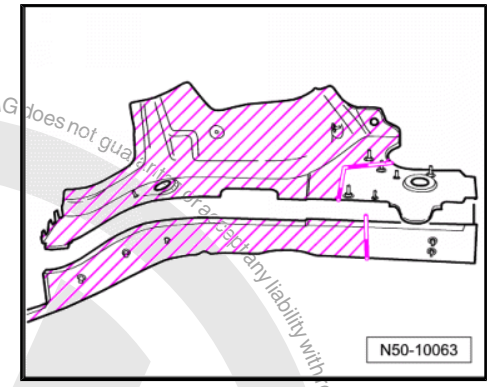
The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 73 .

10.3.1 Preparing new part

Replacement part

- Longitudinal member (subpart)
- Cover plate for longitudinal member

– Transfer parting cuts to new parts and cut out.

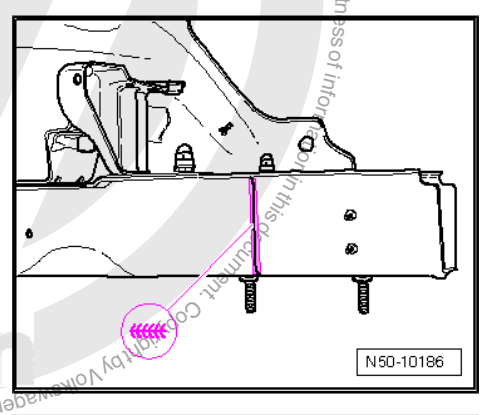


10.3.2 Welding in

– 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.

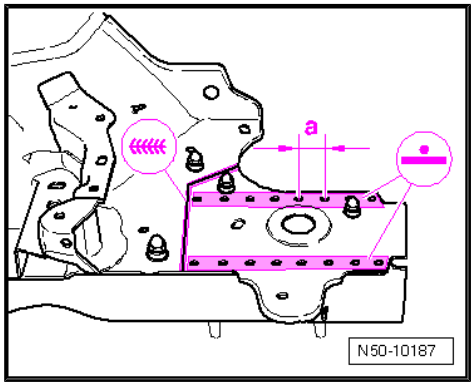


– Reinstate original joint, RP spot weld seam.

Note

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

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



10.3.3 Shortening new part longitudinal member with cover plate

– Shortening longitudinal member with cover plate
⇒ „9.3.3 Shortening new part longitudinal member with cover plate“, page 70 .

– Welding in front bumper bracket ⇒ „4.2 Installing“, page 48 .

51 – Body - centre

RO: 51 03 55 00

1 Renewing roof

DANGER!

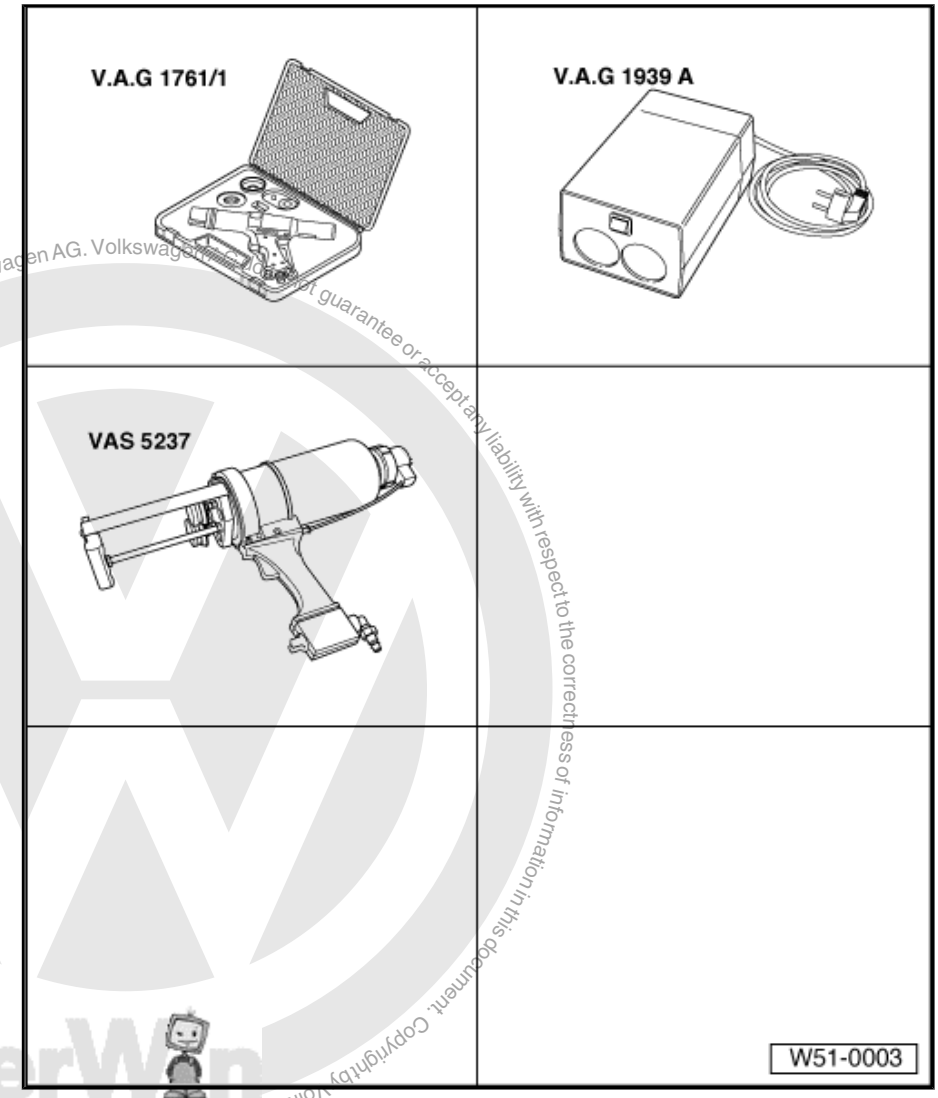
Observe safety notes!

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

1.1 Tools

Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-



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

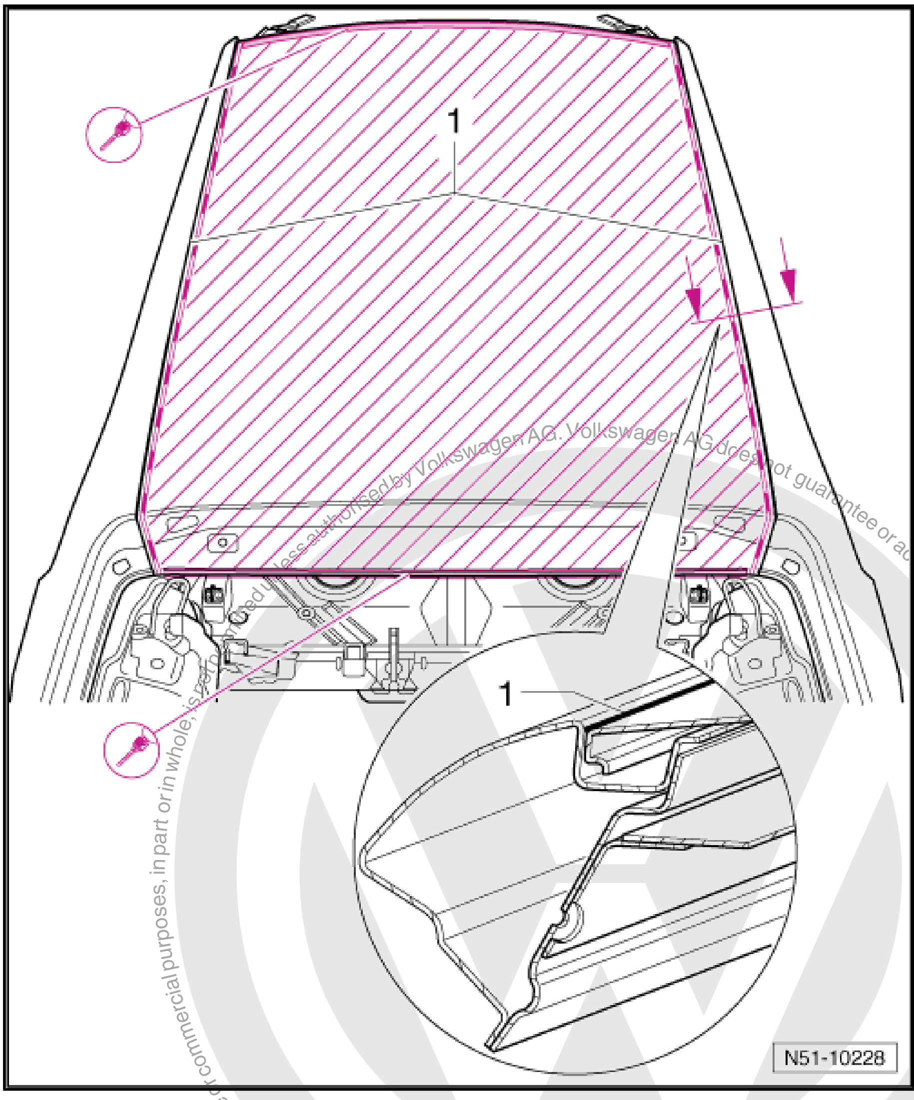
Cartridge heater -V.A.G 1939 A-

Double-cartridge gun -VAS 5237-

1.2 Removing

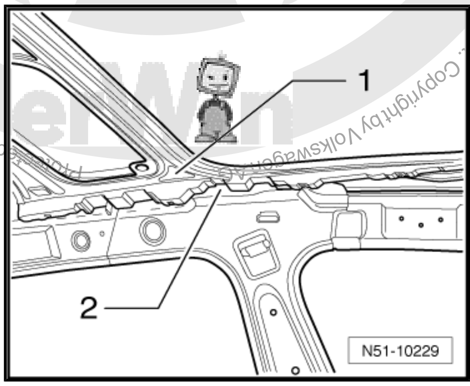
1 - Laser weld seam

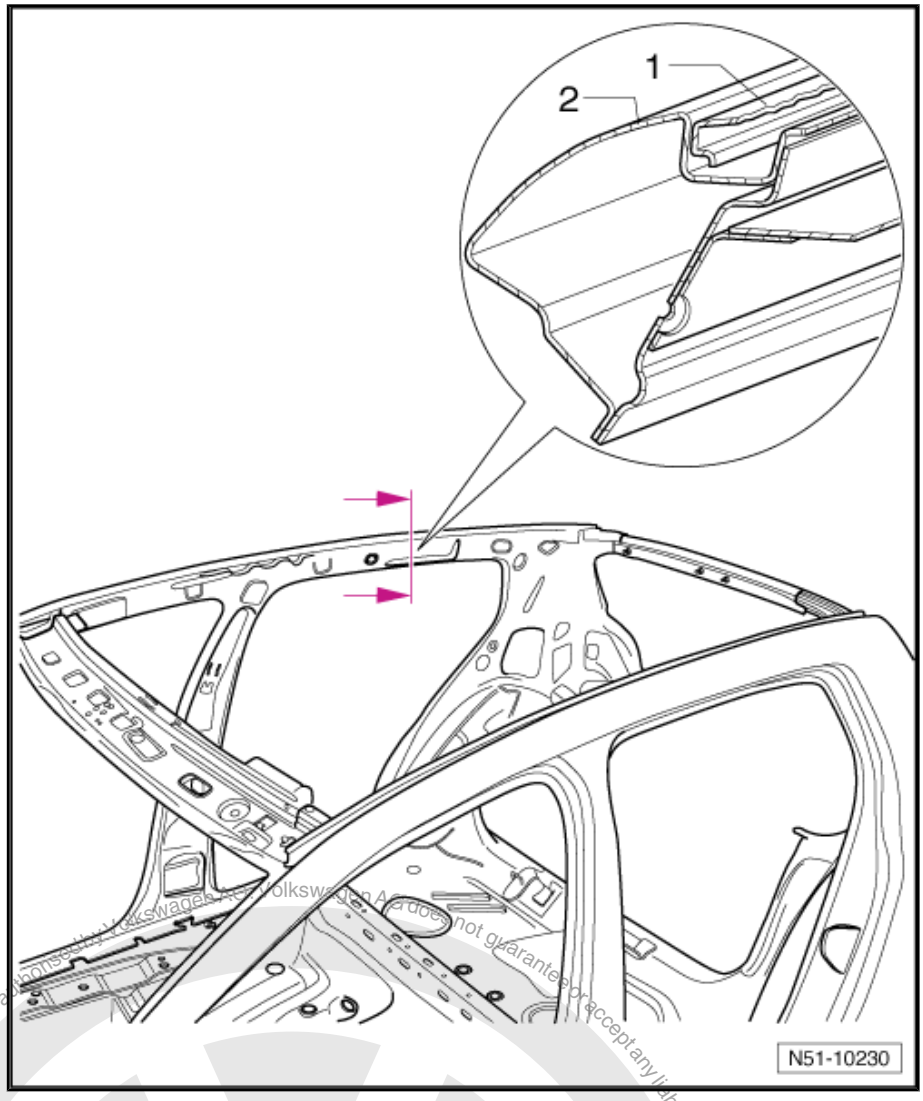
– Roughly cut out roof.



Note

- *Vehicles with sliding/tilting sunroof: sunroof reinforcement -1- must be separated from roof frame -2- before cutting out roof, and must be welded in again after welding in roof.*
- *In vehicles without sliding/tilting roof, reinforcement (roof reinforcement) is not cut out.*





– Removing remaining material.

Note

- *When removing the remaining material -1- of the roof, ensure that the side elements -2- (side panels and/or side panel frames) are not damaged.*
- *Use flap discs only, do not use cutting disks or rough grinding disks.*

– Remove all adhesive residue and remaining sealing compound from the front and rear roof cross members and, in vehicles without sliding/tilting roof, the roof reinforcement.

– Restore paint structure.

1.3 Installing

Note

The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 78 .

1.3.1 Preparing new part

Replacement part

- Roof
- 1K adhesive -D 190 MKD A3- (3 cartridges)
- 2K body adhesive -D 180 KD3 A2- (2 cartridge sets)
- Adhesive sealant -AKD 476 KD5 05-
- Felt -533 867 910 B-
- Primer -ALN 002 003 04-

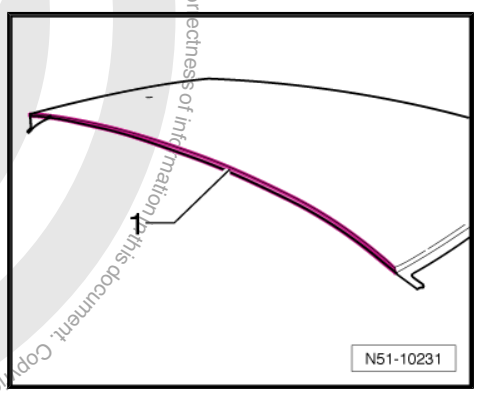
Note

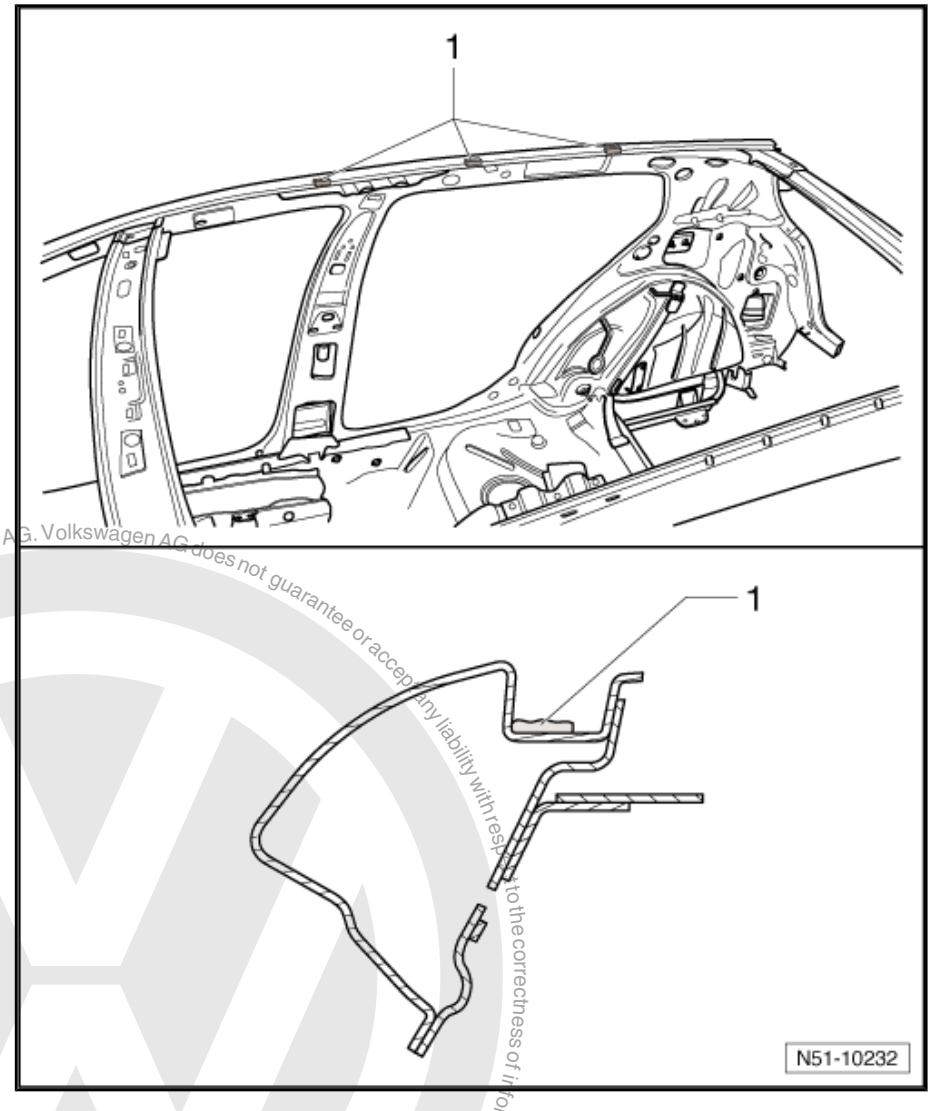
- *The following working sequence must be adhered to in order to ensure correct and long-lasting roof repairs.*
- *No filler should be applied to the bonding areas before the roof is bonded in position.*
- *When applying 2K body adhesive, ensure all areas ground down to bare metal are moistened with adhesive to prevent subsequent corrosion and blistering.*
- *For this repair, it is absolutely necessary to work with great care to prevent faults during processing.*

– Roughen bonding area on vehicle using fine abrasive paper (360 grade).

– Sand bonding area -1- on left and right of roof down to bare metal.

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





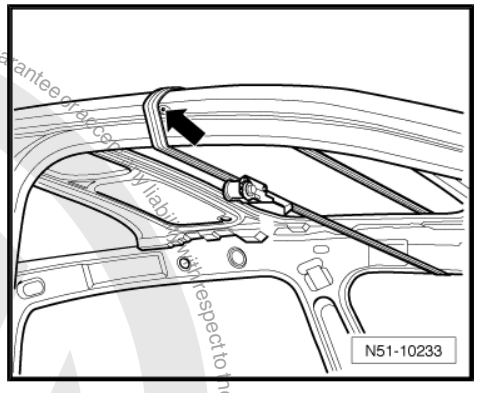
– As required, place approx. 6-10 felt pads -1- on roof frame on left and right-hand side.
– Place roof on roof frame and check the position of roof relative to side panels and side panel frames is correct (visual inspection).

Note

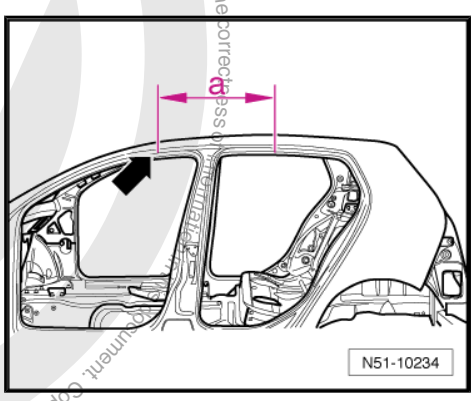
Check that the roof is aligned correctly with the rear lid and windscreen.

– Tension two securing belts (commercially available) across roof.

– Align front belt with marking -arrow- in front door openings used for fitting front roof-top carrier system bars (Figure shows a vehicle with sliding/tilting roof).



– On both sides of vehicle, measure dimension -a- from marking -arrow- used for fitting front roof-top carrier system bars towards rear and then mark this point on vehicle.



Dimension -a- (2-door vehicle) = 685 mm

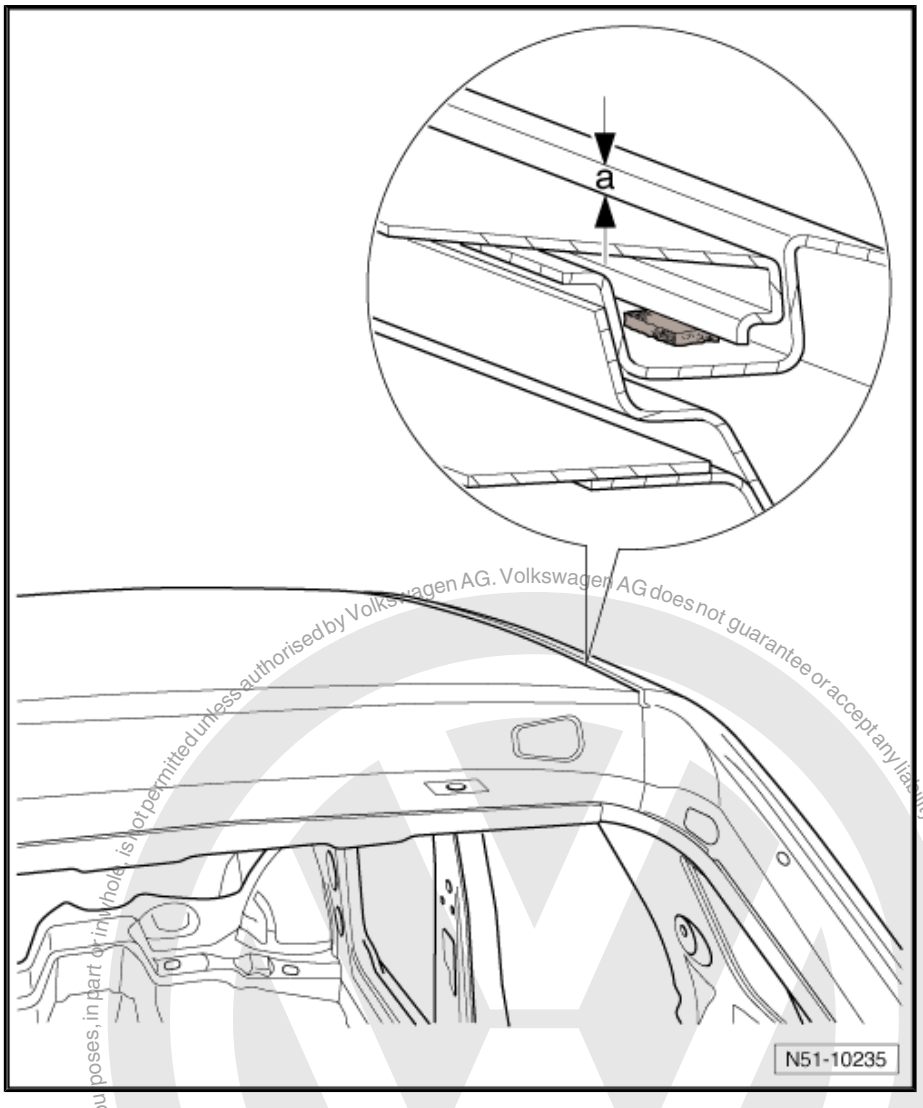
Dimension -a- (4-door vehicle) = 691 mm

– Tighten rear belt at these markings.

Note

In the case of two-door vehicles with fitted side windows, the rear belt must be fitted around the whole vehicle.

1.3.2 Adjusting roof depth

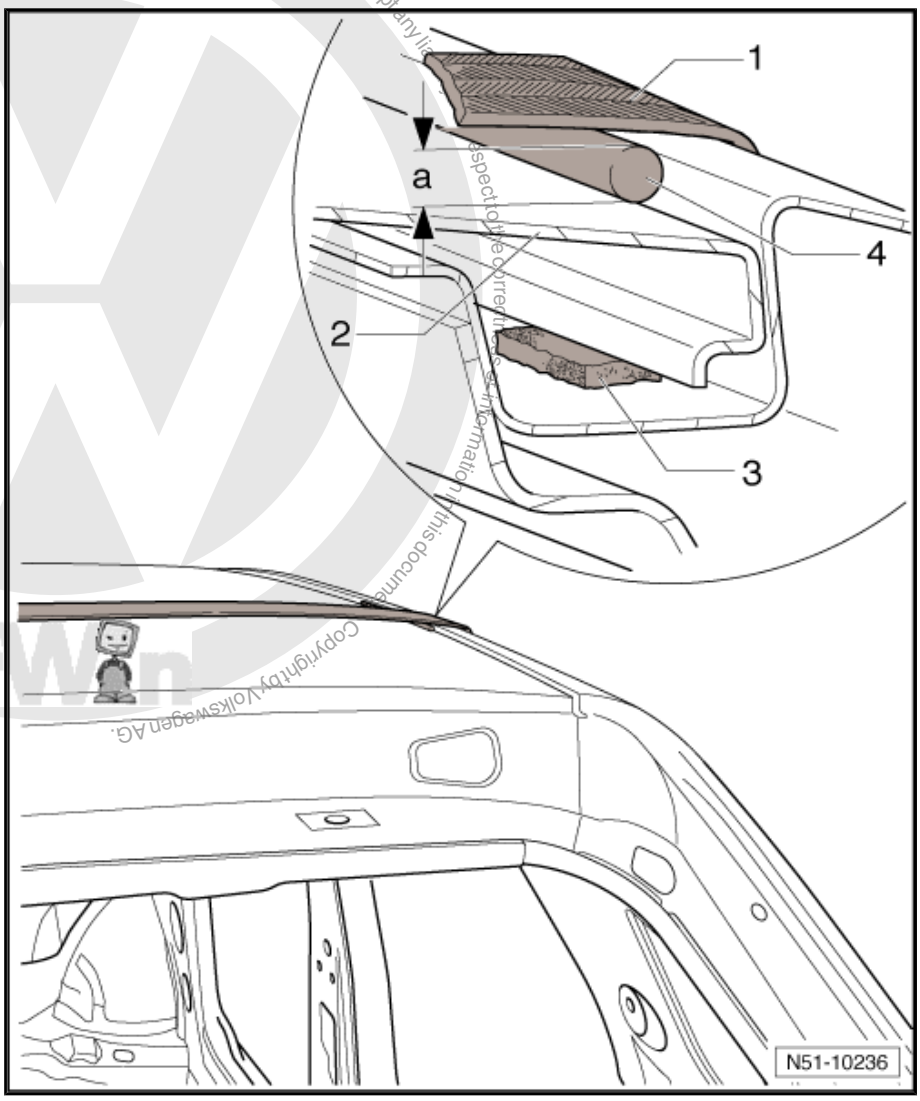


– By tightening and loosening the securing belts, you can determine dimension -a- to position roof deeper relative to side panel frames.

Dimension -a- = 3.5 + 0.5 mm

Note

The securing belts should not be tightened too much, otherwise the roof and side panel frames could be damaged.



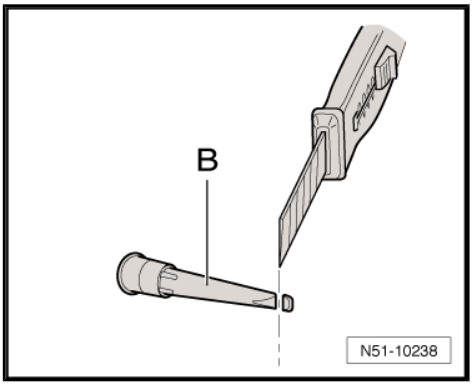
– Use a drill bit (∅ 3.5 mm) to check dimension -a- (drill bit -4- must be able to slide between roof -2- and securing belt -1- without much resistance).
– If necessary, change felt pads -3- to adjust and improve roof alignment.
– Remove roof again.
– Clean bonding areas on roof and vehicle with silicone remover -LSE 020 100 A3- .

1.3.3 Bonding roof

Note

- *The adhesive materials must be applied very quickly.*
- *Always observe the application time (pot life).*
- *Use pneumatic or electric cartridge guns to apply the adhesive materials.*

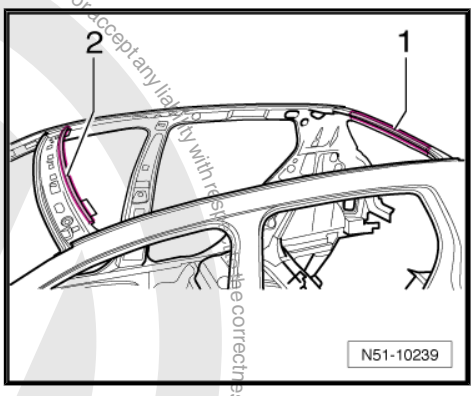
– Cut approx. 2 mm off nozzle -B- to provide appropriate bead shape.



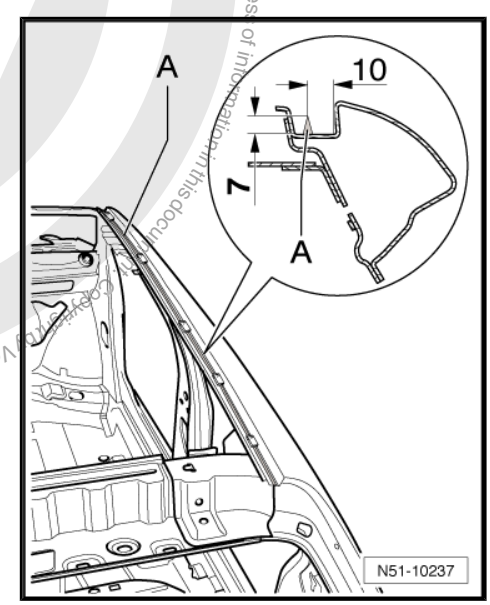
Note

- *Following repair sequence must be adhered to in order to ensure correct and long-lasting roof repairs.*
- *No filler should be applied to the bonding areas before the roof is bonded in position.*
- *When applying 2K body adhesive, ensure all areas ground down to bare metal are moistened with adhesive to prevent subsequent corrosion and blistering.*
- *For this repair, it is absolutely necessary to work with great care to prevent faults during processing.*

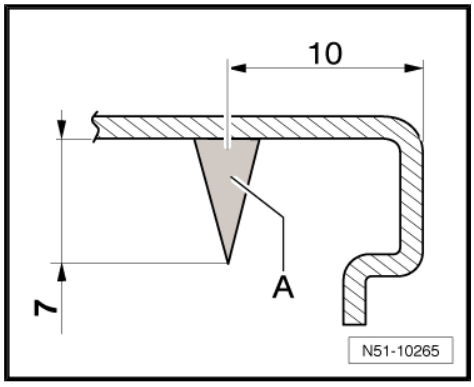
– First apply 1K adhesive -D 190 MKD A3- , using the pneumatic gun -V.A.G 1761/1- , onto the front roof cross member -2- and the rear roof cross member -1- (also the roof reinforcement in vehicles without a sliding/tilting roof) in the area of the factory-fitted bond.



– In area of roof frame, apply 1K assembly adhesive - D 190 MKD A3- -A- using pneumatic cartridge gun - V.A.G 1761/1- .



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



Note

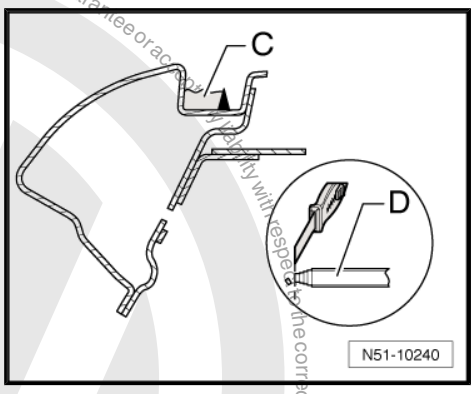
- *The application time (pot life) of the 2K body adhesive - D 180 KD3 A2- is approx. 90 min.*
- *Following repair sequence must be adhered to in order to ensure correct and long-lasting roof repairs.*
- *No filler should be applied to the bonding areas before the roof is bonded in position.*
- *When applying 2K body adhesive, ensure all areas ground down to bare metal are moistened with adhesive to prevent subsequent corrosion and blistering.*
- *For this repair, it is absolutely necessary to work with great care to prevent faults during processing.*

– Cut the first step of the static mixer -D- off to achieve the corresponding bead cross-section.

– Carefully operate the double cartridge gun -VAS 5237- without static mixer until the adhesive is discharged uniformly from both chambers of the cartridge connecter.

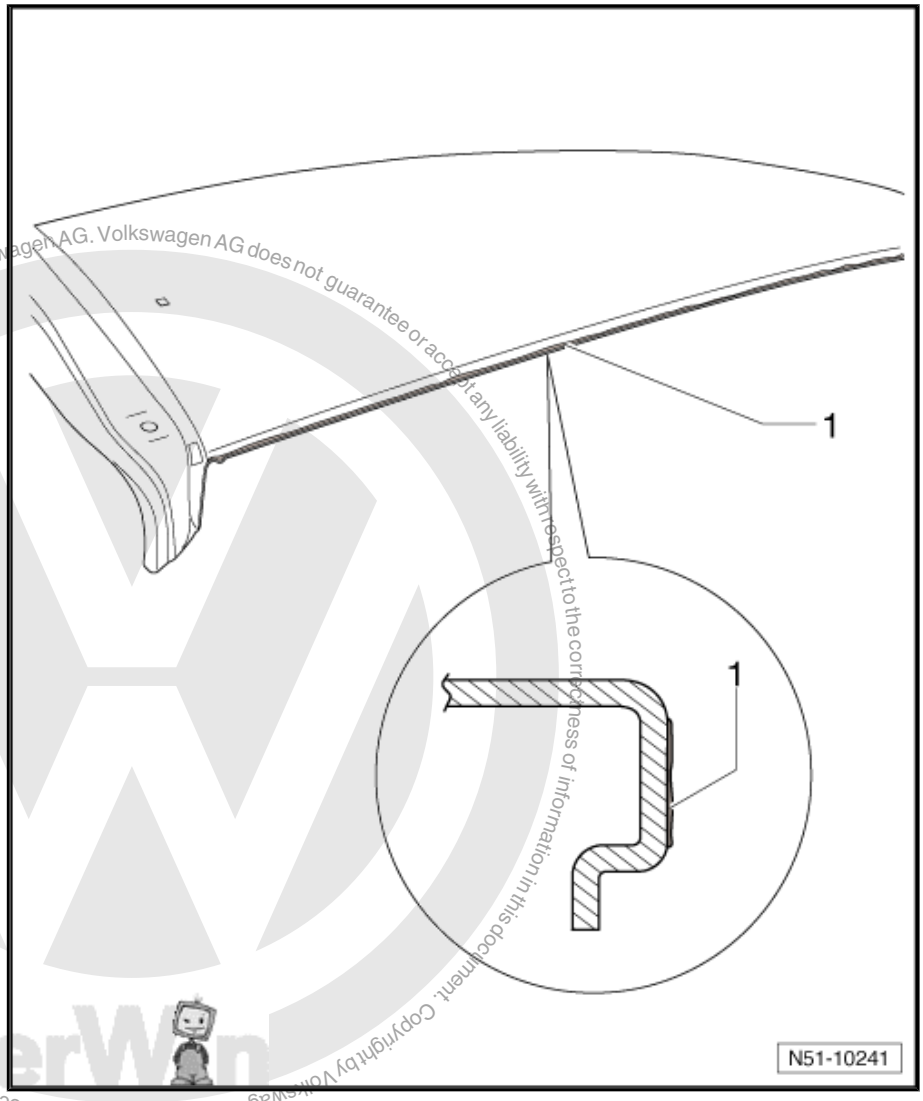
– Then screw the static mixer onto the cartridge connector.

– Apply the first 100 mm of adhesive to a piece of cardboard and only then begin to apply the adhesive to the vehicle.



A second person is required for the work procedures described below.

– Now fill area -C- with 2K body adhesive -D 180 KD3 A2- using double-cartridge gun -VAS 5237- .



Note

- *Following repair sequence must be adhered to in order to ensure correct and long-lasting roof repairs.*
- *No filler should be applied to the bonding areas before the roof is bonded in position.*
- *When applying 2K body adhesive, ensure all areas ground down to bare metal are moistened with adhesive to prevent subsequent corrosion and blistering.*
- *For this repair, it is absolutely necessary to work with great care to prevent faults during processing.*

– Lightly coat the roof flanges -1- with 2K body adhesive - D 180 KD3 A2- .

– Place the roof in position immediately and align.

– Secure roof to windscreen aperture and rear lid aperture using mole grips, and to centre section using securing belts.

– Remove excessive adhesive at side of roof immediately using a cloth soaked in silicone remover -LSE 020 100 A3- .

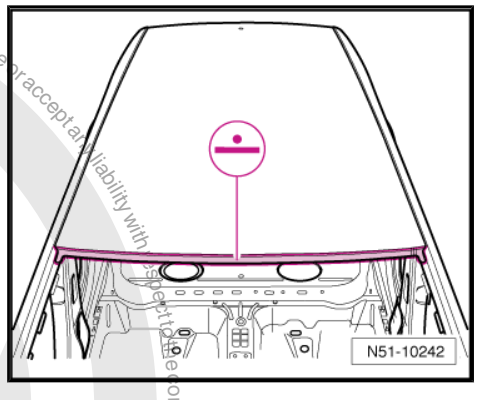
– Check roof depth dimension -a- ⇒ page 85 .

Note

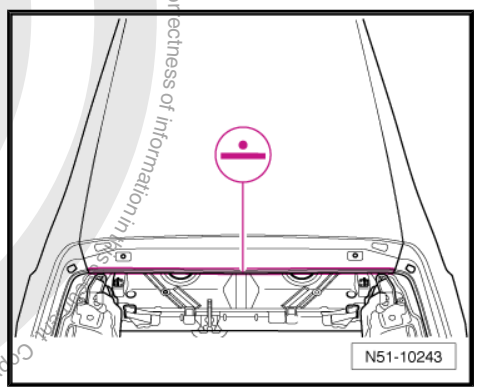
- *After bonding, the vehicle must stand on a level surface for 8...10 hours at room temperature (at least 15° C) so that the bonding components are able to harden (hardening time).*
- *No further work should be performed on the vehicle until the „hardening time“ has expired.*

1.3.4 Welding in

– Weld roof to windscreen aperture, RP spot weld seam.



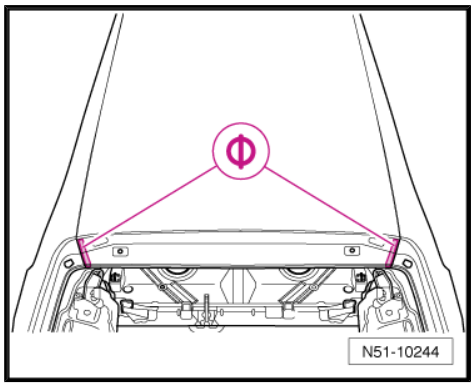
– Weld roof to rear lid aperture, RP spot weld seam.



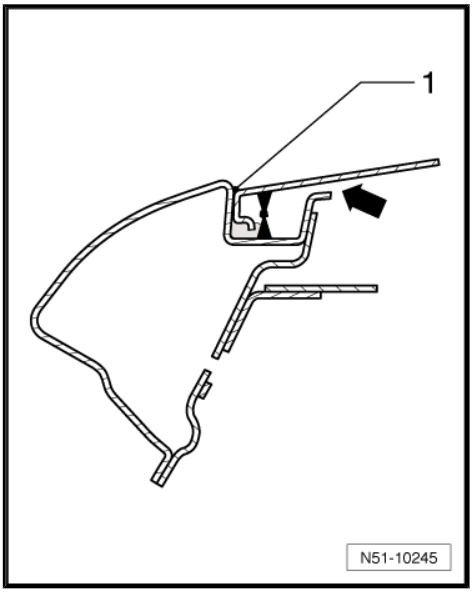
– Recreate remaining joint, SG stepped seam.

– Prime left and right-hand roof frame from inside with primer -ALN 002 003 04- .

– Apply adhesive sealant -AKD 476 KD5 05- from above to fully seal off bonding seam -1-.



– After painting, treat roof cavities -arrow- with cavity sealant - AKR 321 M15 4- .



RO: 51 05 55 60

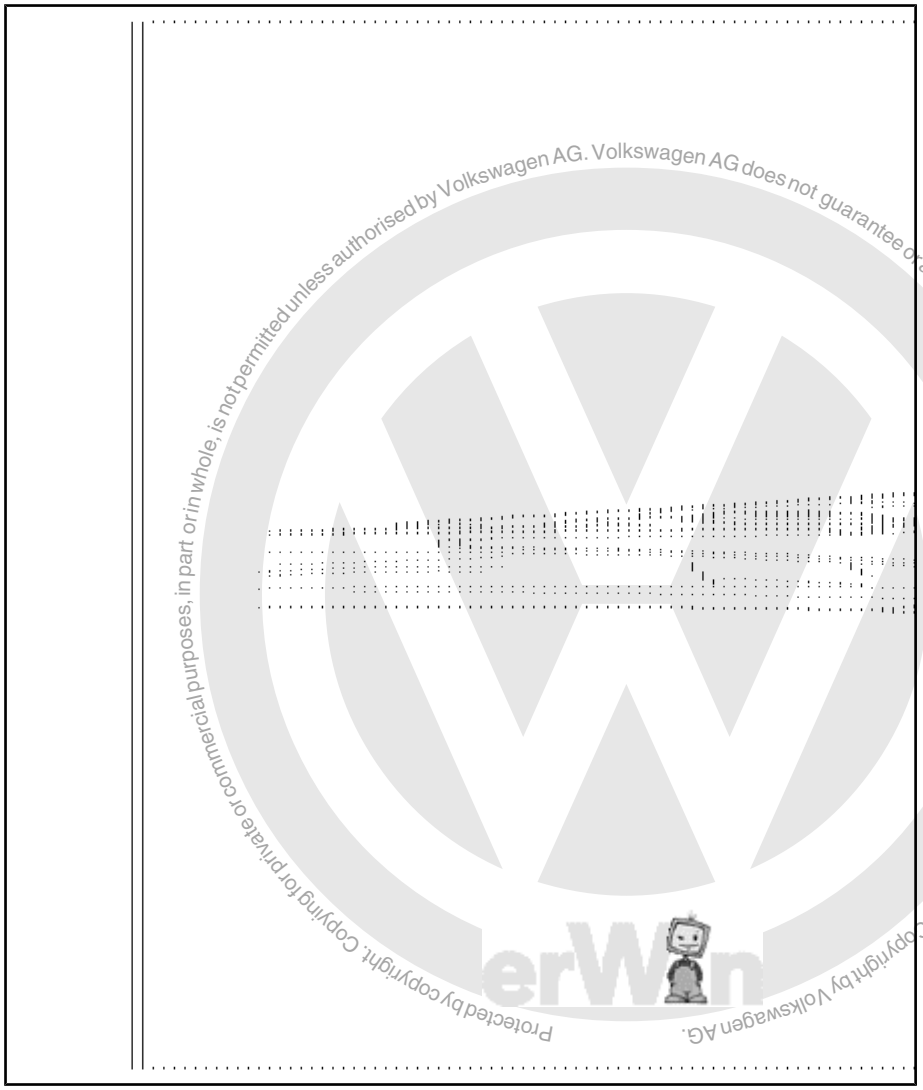
2 Renewing roof side member (4-door)

WARNING

Observe safety notes!

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

1 - Structural foam



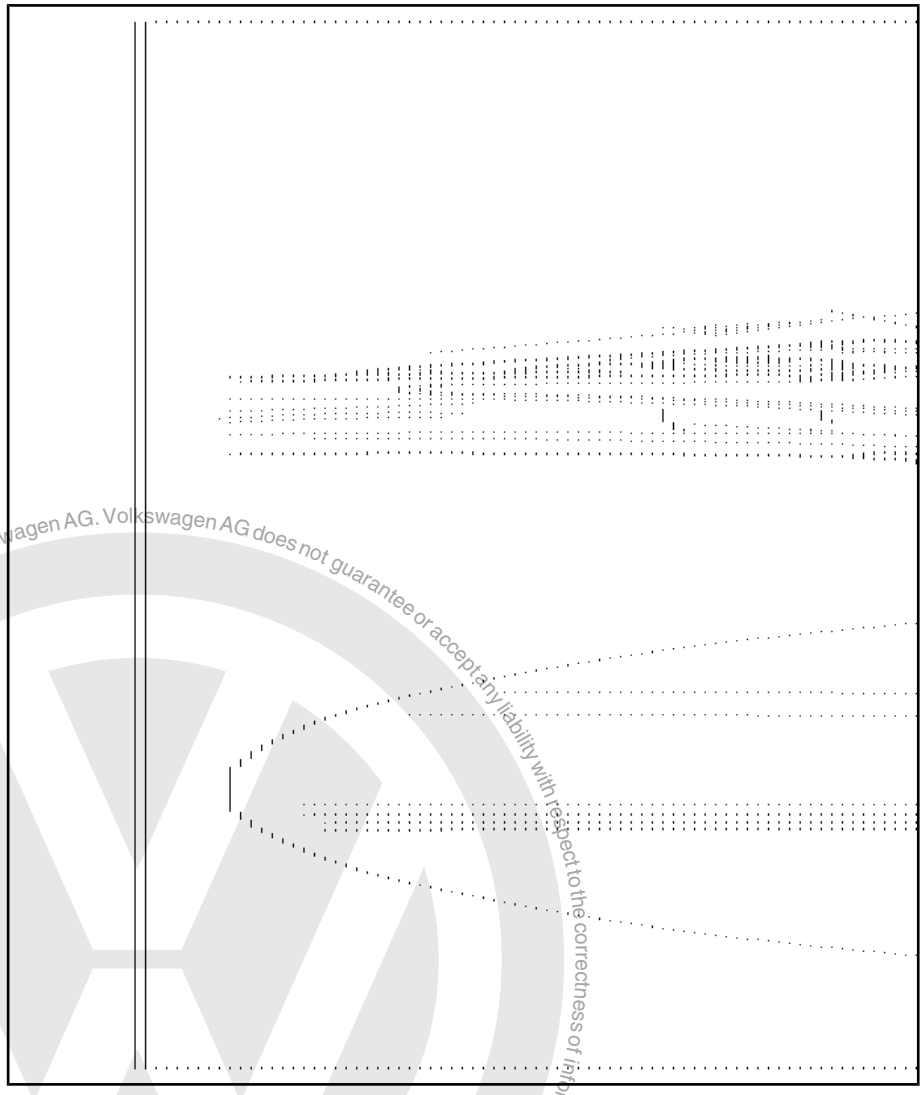
2.1 Tools

Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-

- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

2.2 Removing



Dimension -a- = 300 mm

Dimension -b- = 100 mm

Dimension -a- = 45 mm

Dimension -d- = 100 mm

– Make cuts as shown.

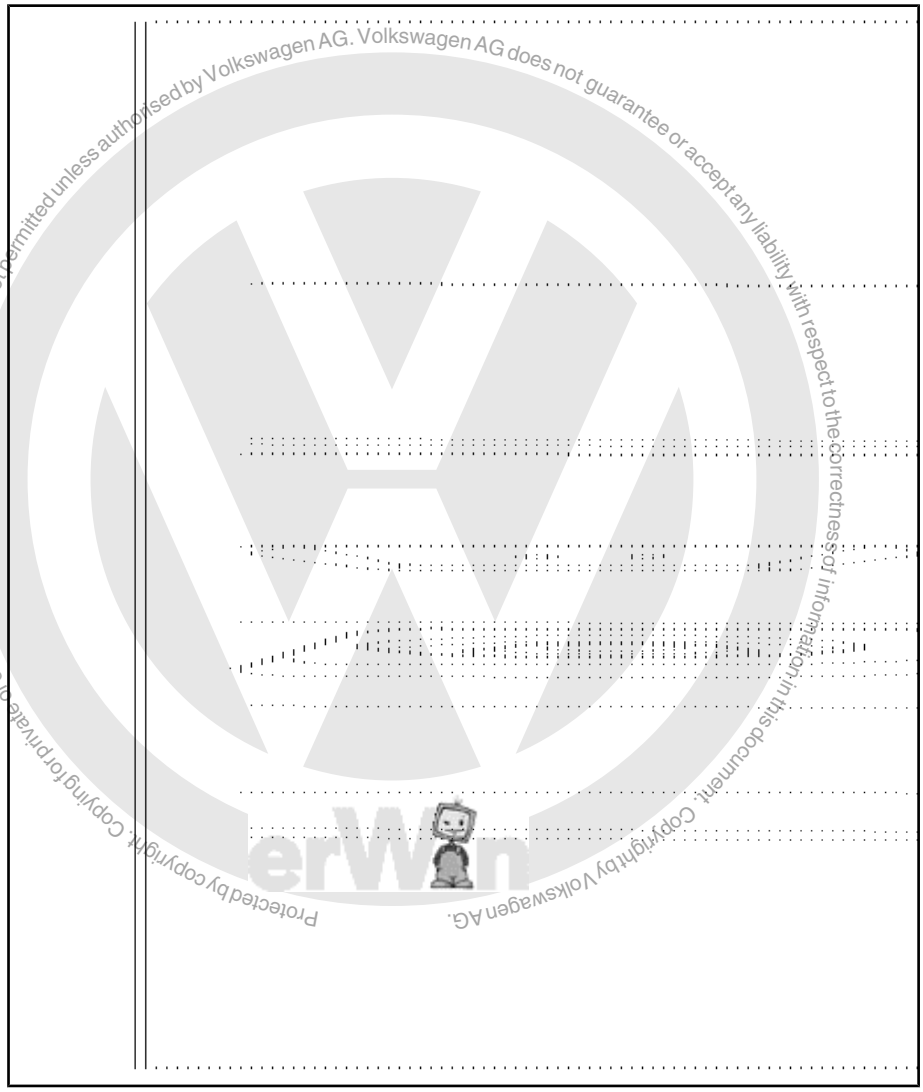
Partial renewal

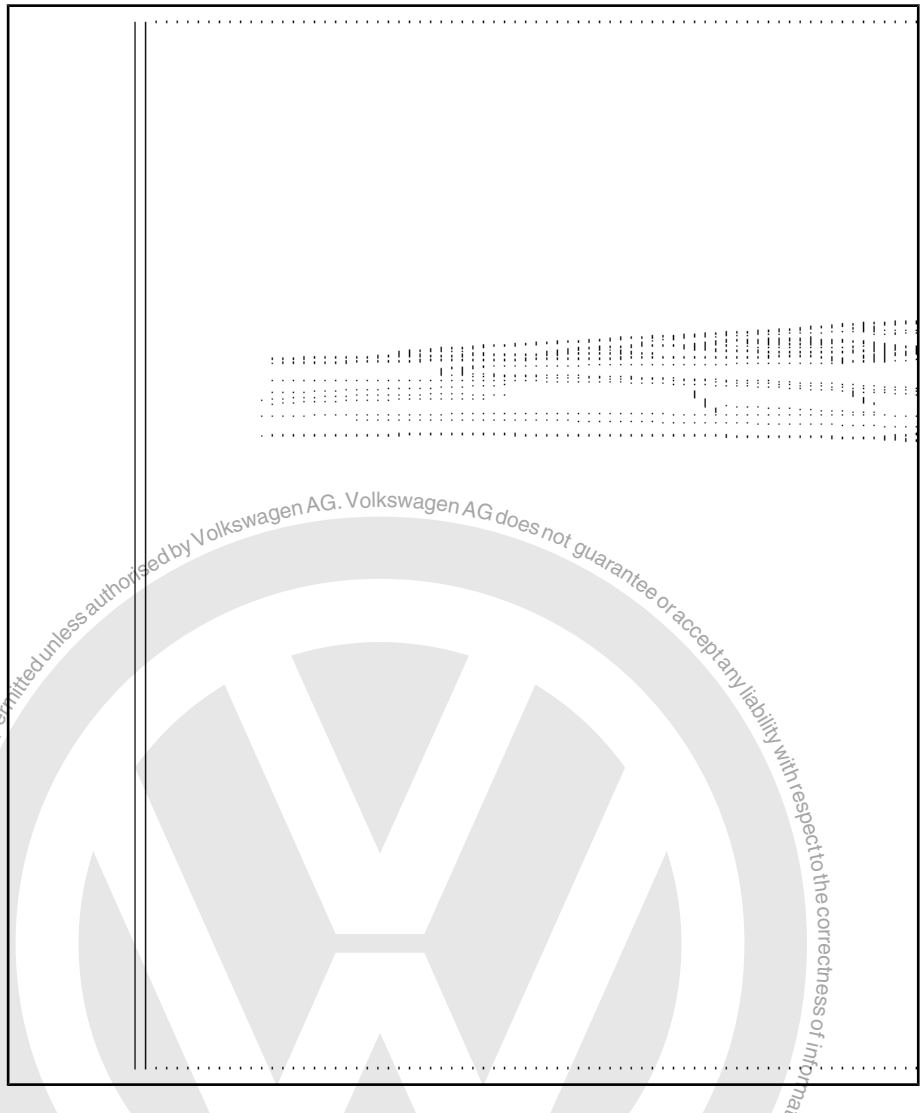
A partial renewal, depending on damage, is possible using the parting cuts -1- and -2-.

1 - Parting cut parallel to roof

Dimension -a- = 15 mm

- Make cuts as shown.
- Separate original joint in windscreen aperture and to rear sealing channel.



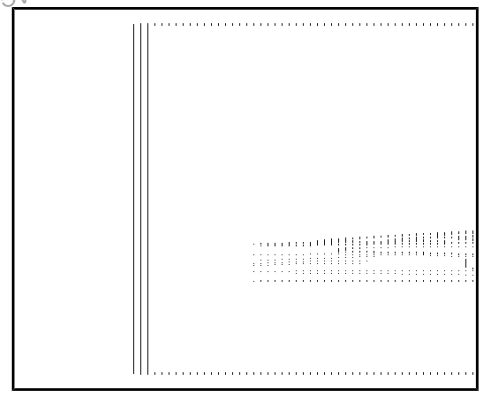


– Separate original joint in door apertures.
– Separate weld seam to support plate -enlargement- -1-.

Note

For a clearer illustration, the roof side member outer panel is already removed.

– Remove remaining material.



2.3 Installing

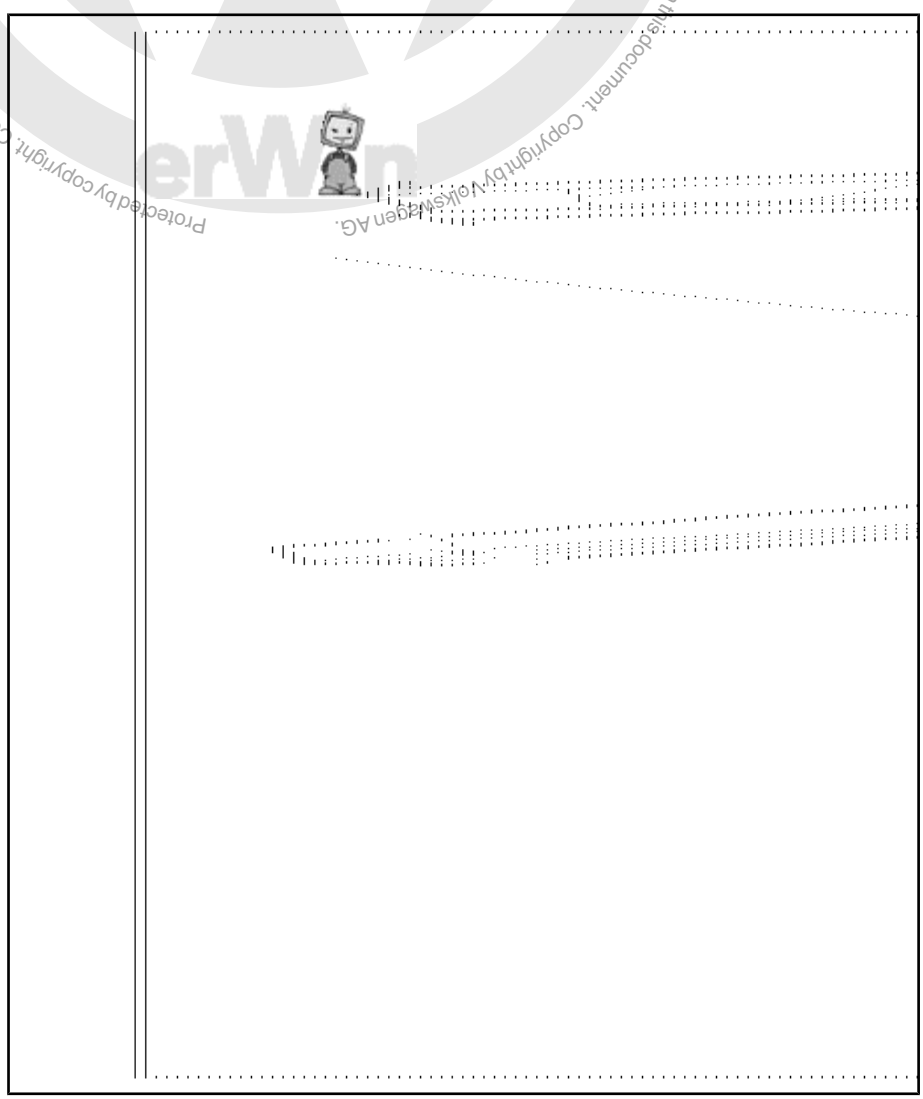
Note

The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 92 .

2.3.1 Preparing new part

Replacement part

- Side panel
- Repair kit for treating roof side member with foam (one kit for each front and rear section).
- Blind rivet nut
- Adhesive sealant -AKD 476 KD5 05-



– Transfer parting cut to new part and cut out. Observe material overlap of 10 mm in areas for roof.

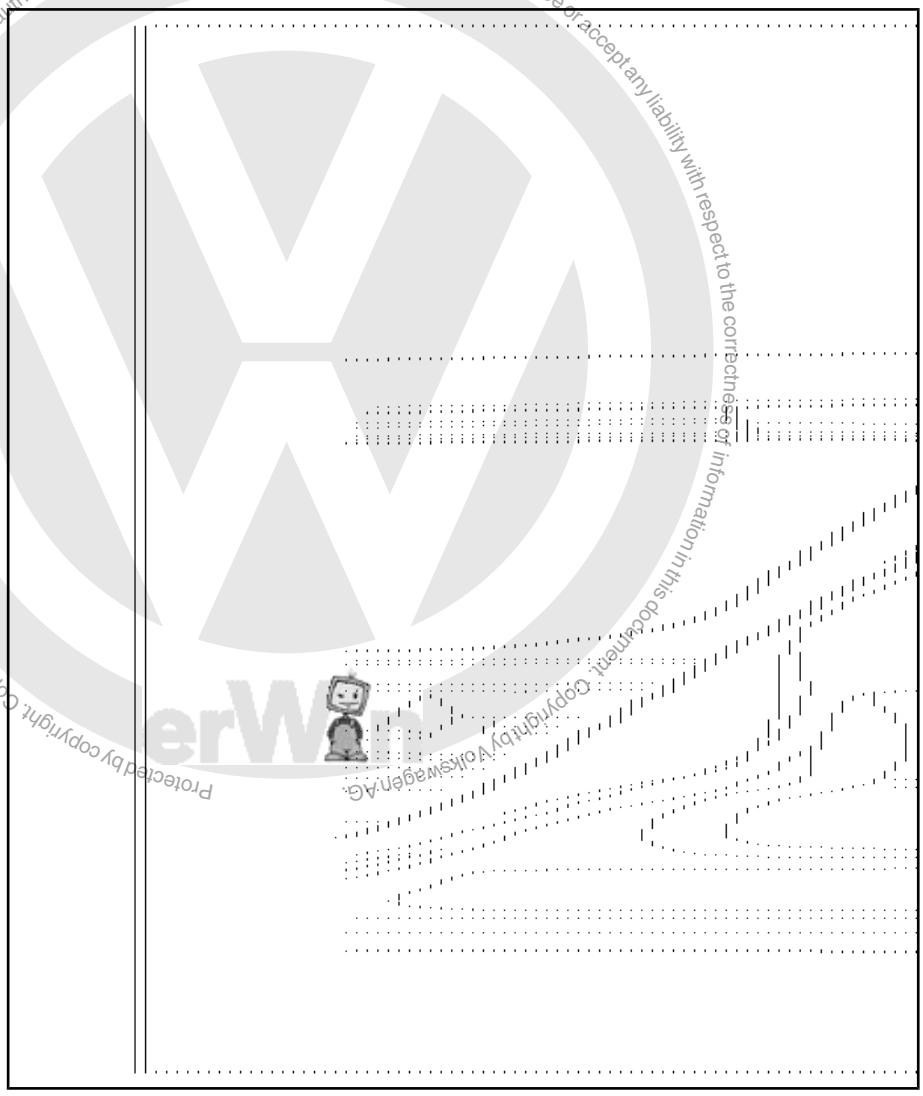
– Make a joddle joint in area for roof on new part.

– In area for foam treatment, apply textile tape generously to -hatched areas in enlargement- ⇒ Item 4 (page 100) .
– Drill holes -arrow- for SG plug weld seam in rear area for foam treatment.

Note

- *The structural foam must not contact the outer panel of the roof side member. The expansion of the structural foam can cause the roof side member to buckle.*
- *The textile tape ⇒ Item 4 (page 100) is a component part of the roof side member repair kit.*

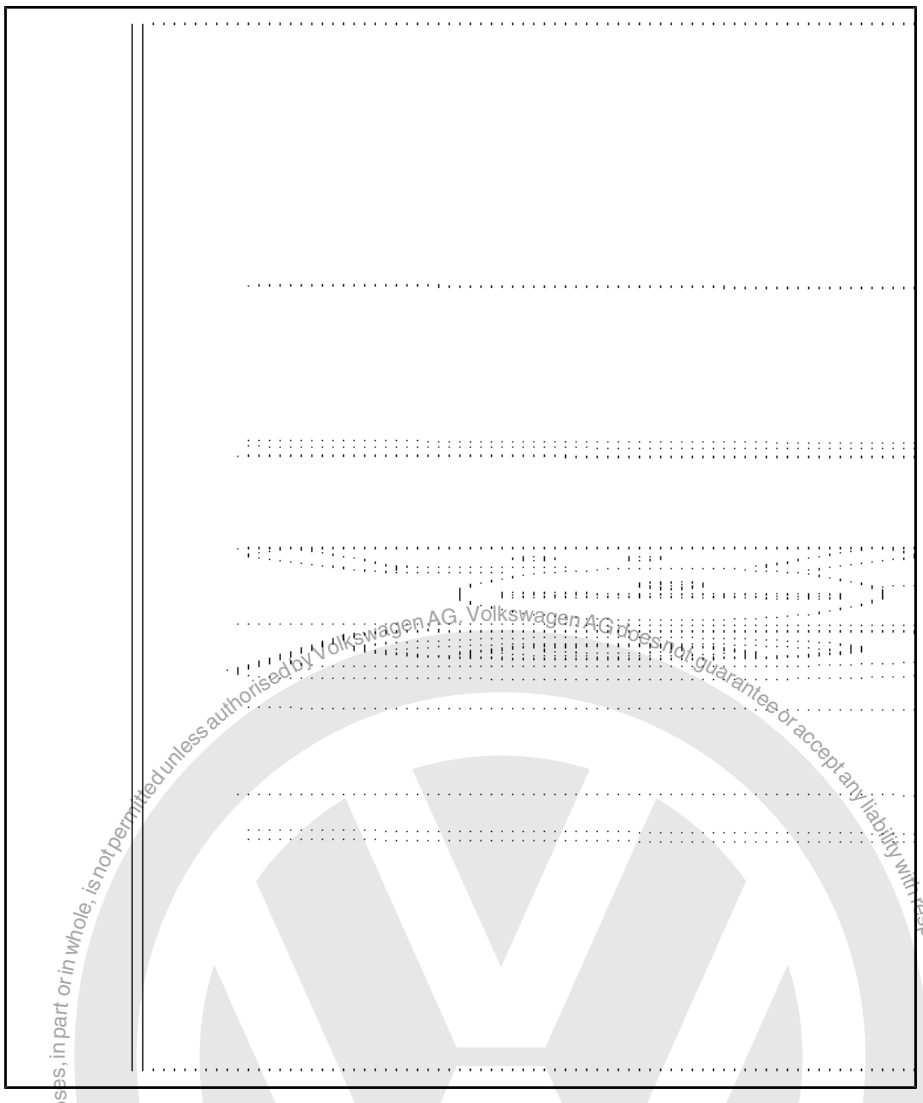
2.3.2 Welding in



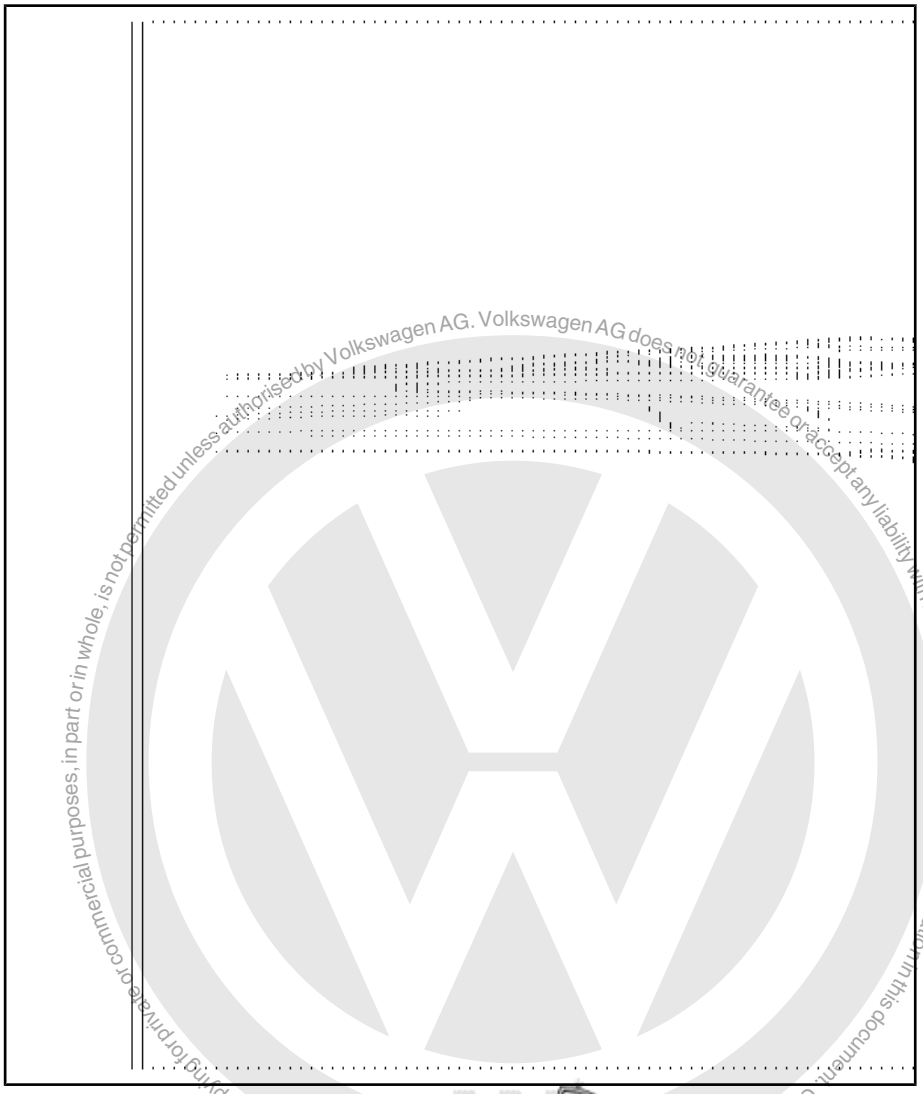
– Drill 12 mm ∅ holes in support plate for foam treatment.
– Drill 7 mm ∅ holes in sealing channel for SG plug weld seam.
– Adapt roof side member to fit and fix in position.
– Check fit with bolt-on parts.

Note

Use a »heat stop« to prevent damage to the paintwork of the roof when welding the roof side member.



– Weld in roof side member, RP spot weld seam and SG plug weld seam.
– Weld parting cuts, SG stepped weld seam.



- Weld roof side member to door apertures, RP spot weld seam.
- Weld parting cuts, SG stepped weld seam.
- Weld in connection to support plate -enlargement-, SG plug weld seam.

Note

The optic of the original soldered seam to the sealing channel, damaged during the repairs, must be recreated using adhesive sealing compound -AKD 476 KD5 05- .

2.4 Foam treating roof side member

2.4.1 Injecting structural foam in front area

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

1 - 2K structural foam cartridge

– Open cap

2 - Static mixer

– Cut of the front section of the cone only.

3 - Extension hose

4 - Textile adhesive tape

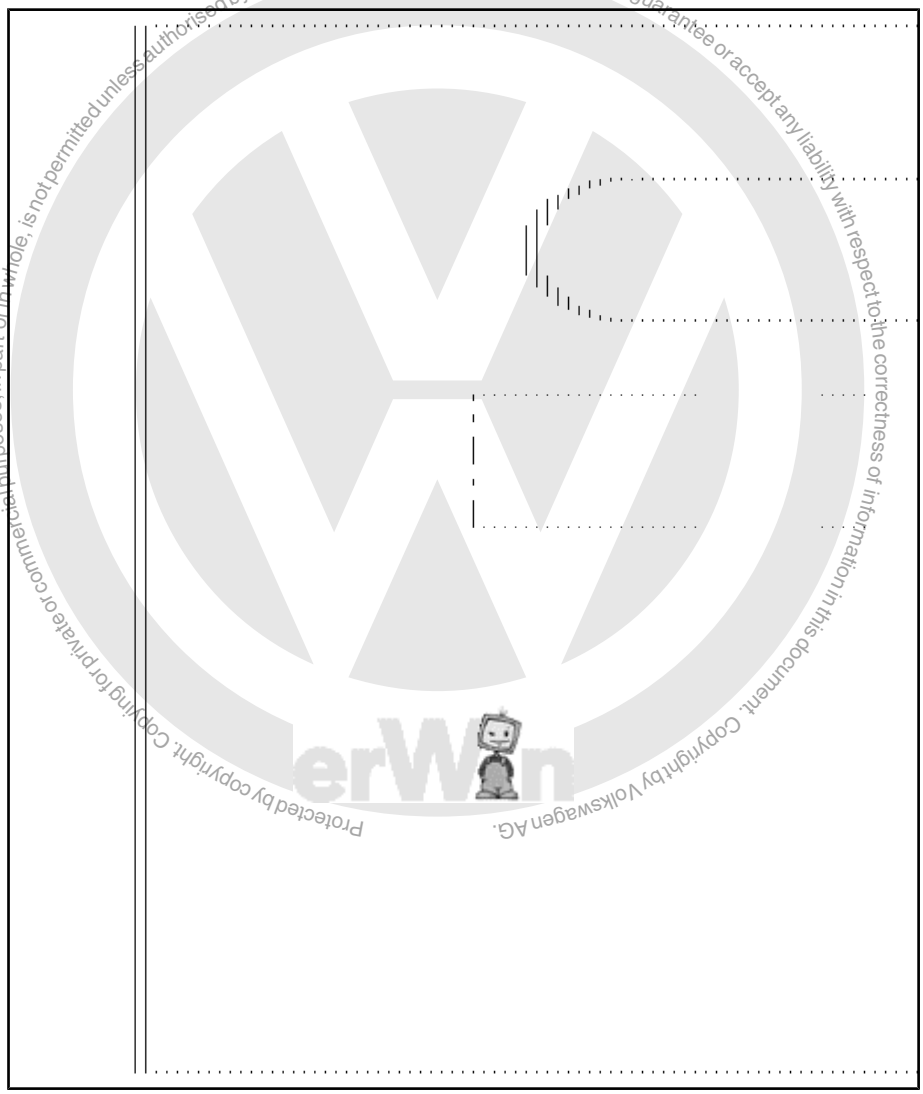
Note

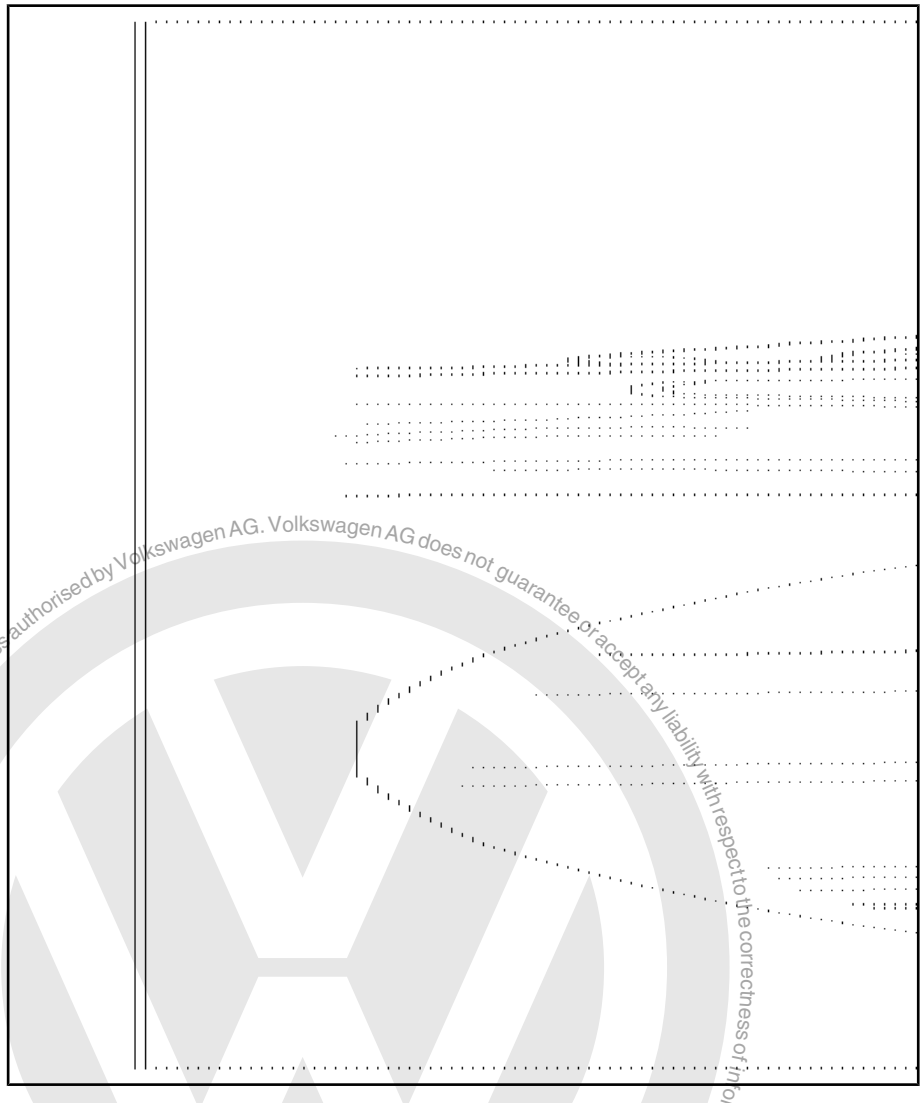
5 - Adapter

Note

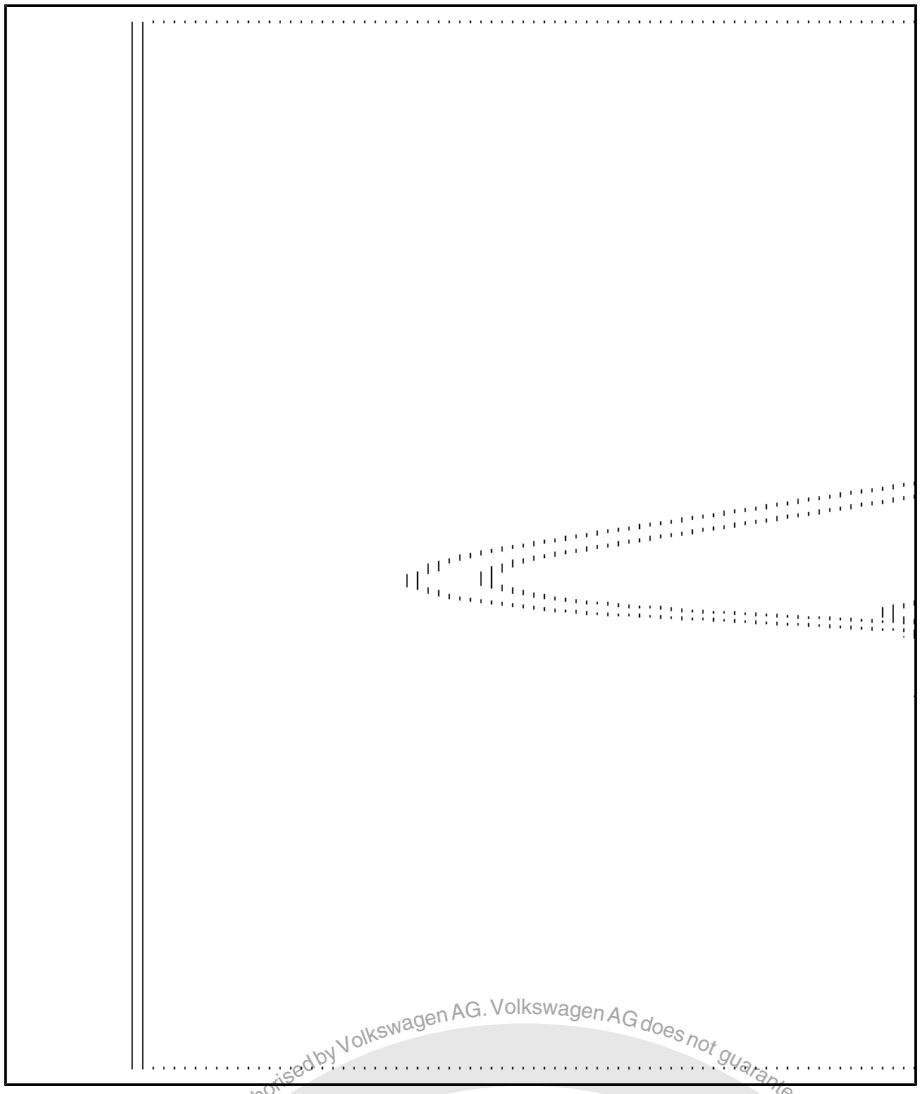
6 - Union nut

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





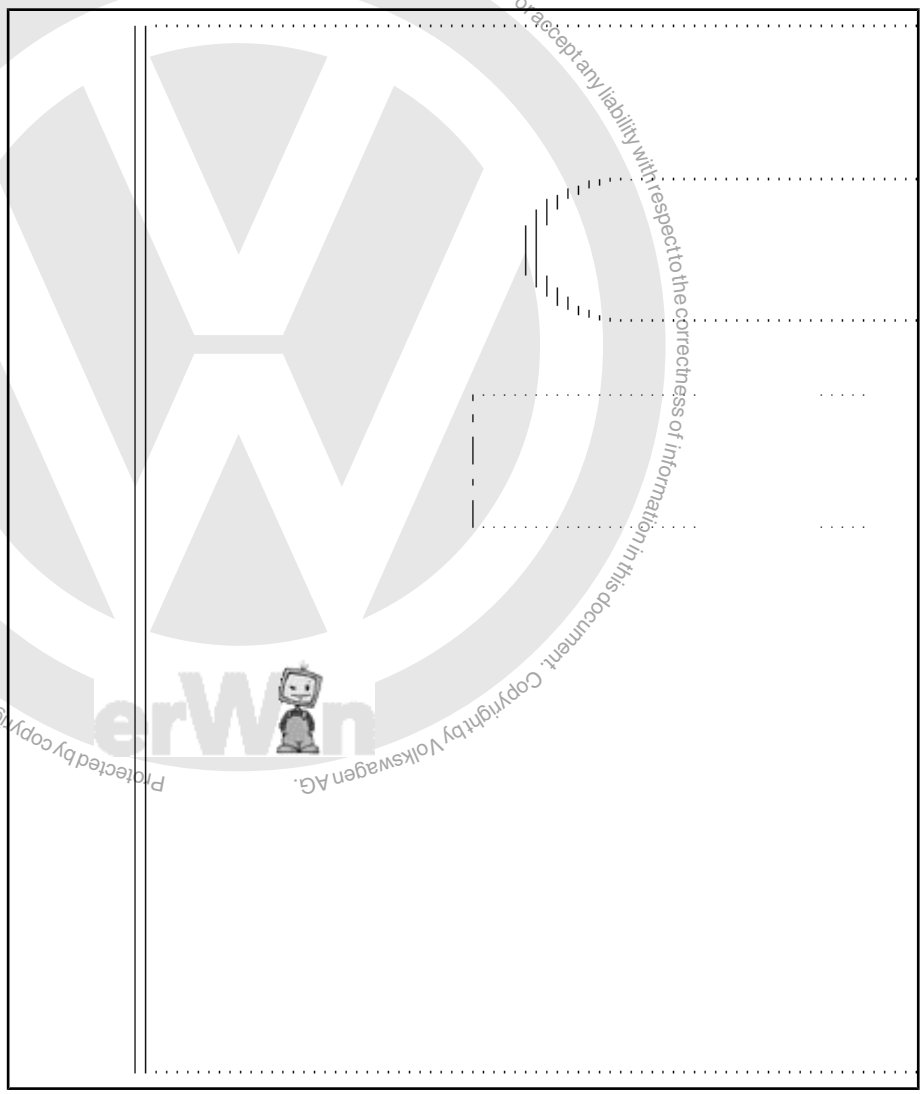
– Inject structural foam through opening for blind rivet nut to secure roof-top carrier system -arrow- using compressed air gun -V.A.G 1761/1- .



– Seal opening with a blind rivet nut -arrow-.

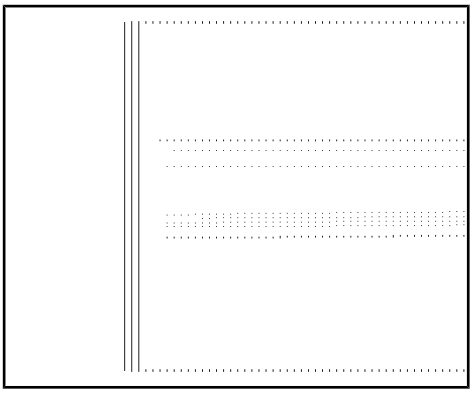
2.4.2 Injecting structural foam in rear area

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



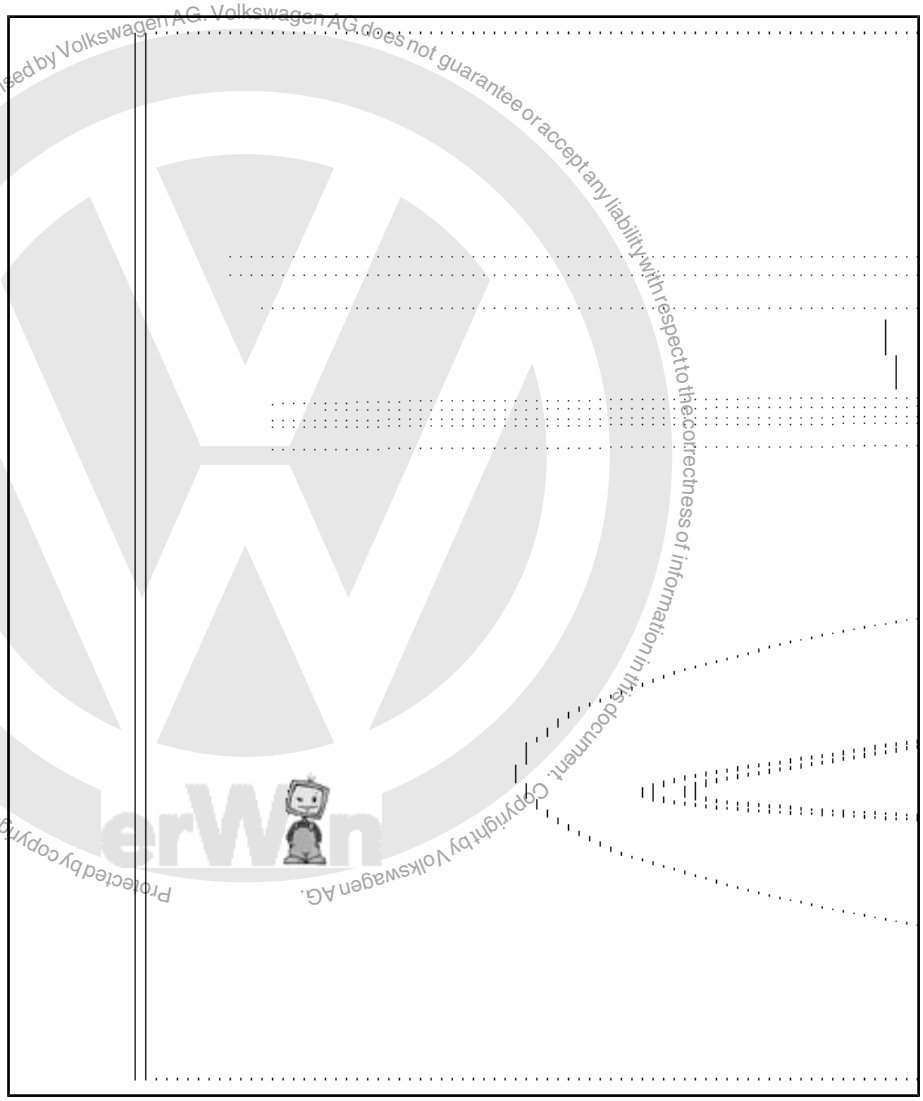
– Open 2-component structural foam cartridge -1-.
– Cut-off end -hatched area- of static mixer -2-.
– Assemble adapter -5- and extension hose -3-.
– Connect static mixer -2- to 2-component structural foam cartridge -1- using union nut.
– Screw extension hose -3- with adapter -5- into static mixer.
– Drill 20 mm ∅ hole in roof side member, from the interior, for foam treatment.

Dimension -a- = 100 mm



Note

The holes in the support plate must be drilled before welding the roof side member *⇒ page 97* *.*



– Inject structural foam through holes in roof side member -1- and support plate -arrow- using compressed air gun -V.A.G 1761/1- , static mixer and extension hose,

Note

Check extension hose is positioned correctly via adjacent hole in roof side member.

RO: 51 07 55 50

3 Renewing front roof cross member

DANGER!

Observe safety notes!

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

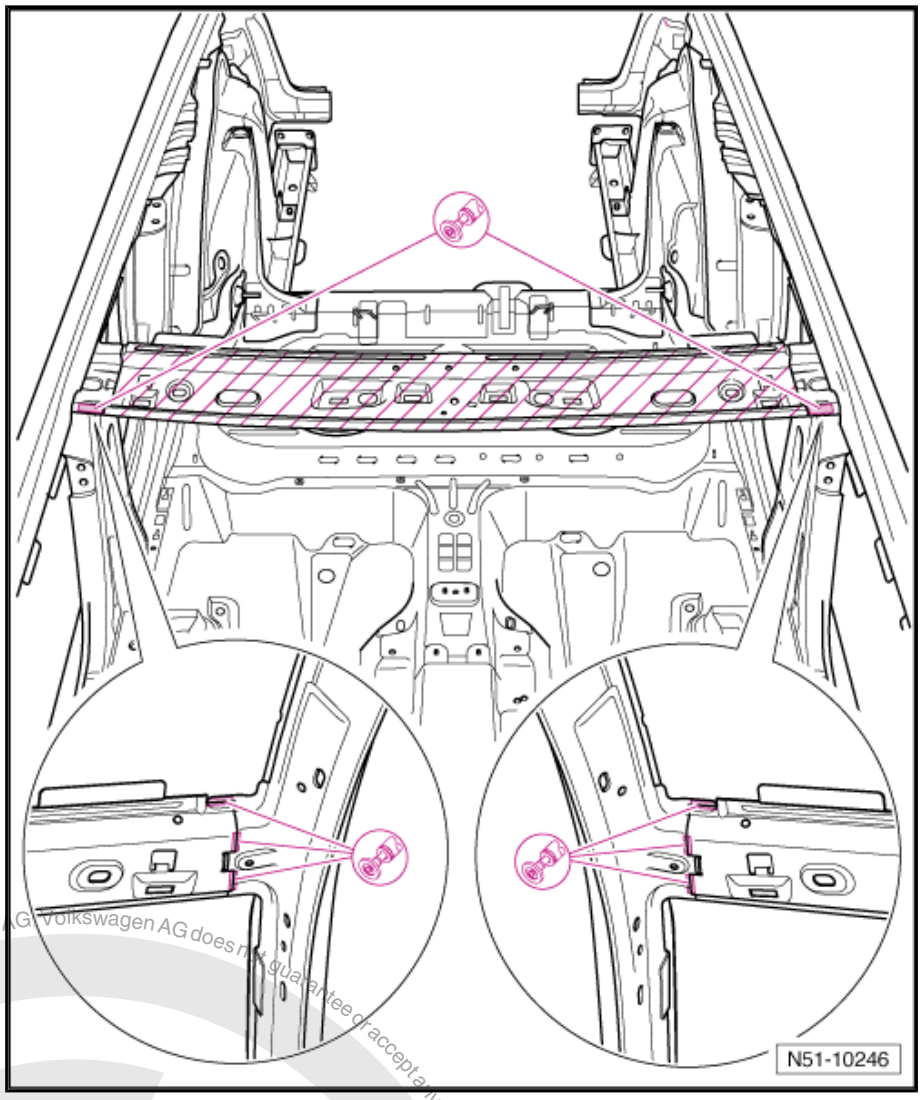
3.1 Tools

Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

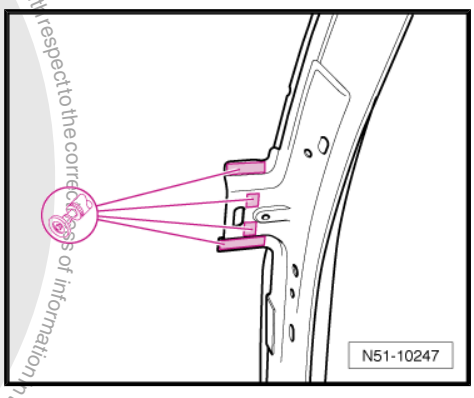
3.2 Removing

- Roof already removed ⇒ „1 Renewing roof“, page 78 .



– Separate original joint.

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



3.3 Installing

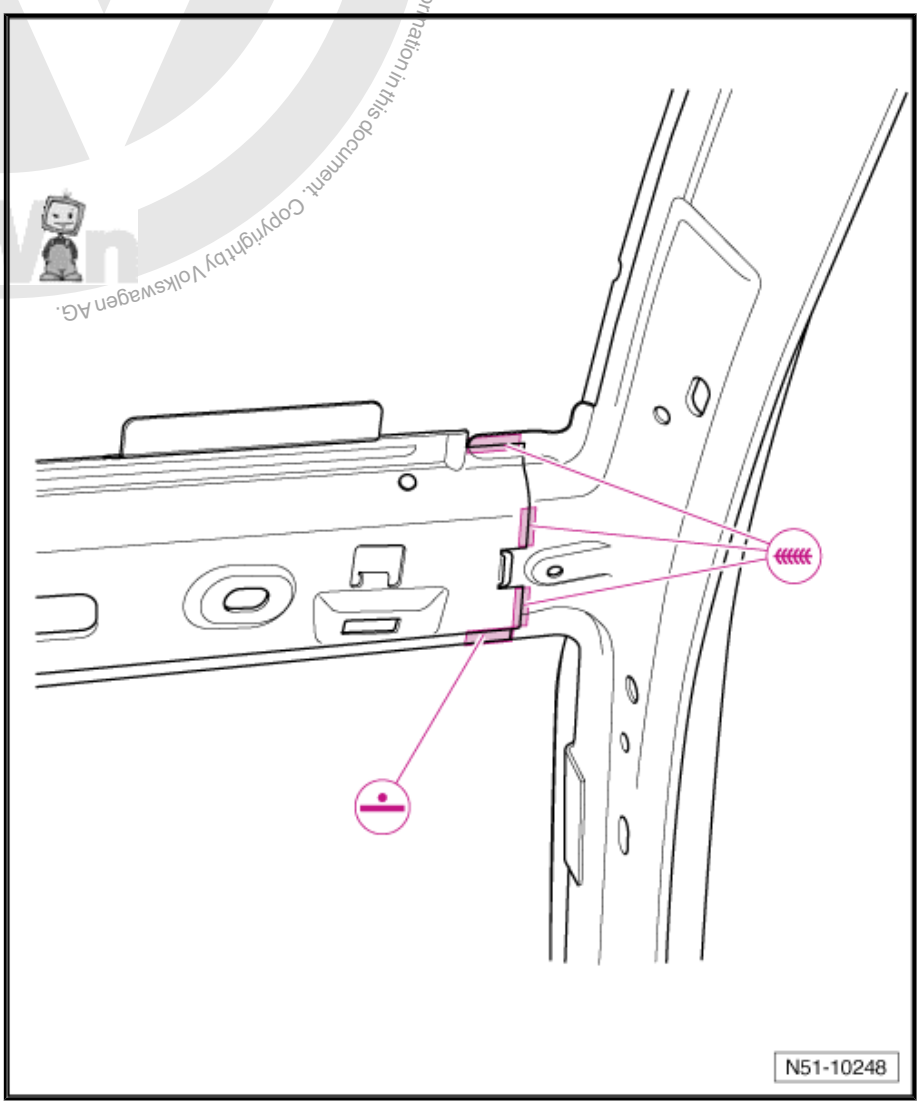
Note

The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 105 .

3.3.1 Welding in

Replacement part

- ♦ Front roof cross member
- – Adapt new part to fit and fix in position.
- – Check gaps to roof and windscreen.



- – Weld in front roof cross member, SG continuous weld seam and RP spot weld seam.
- – Install roof ⇒ „1.3 Installing“, page 81 .

RO: 51 08 55 50

4 Renewing roof reinforcement - vehicles with no sliding/tilting sunroof

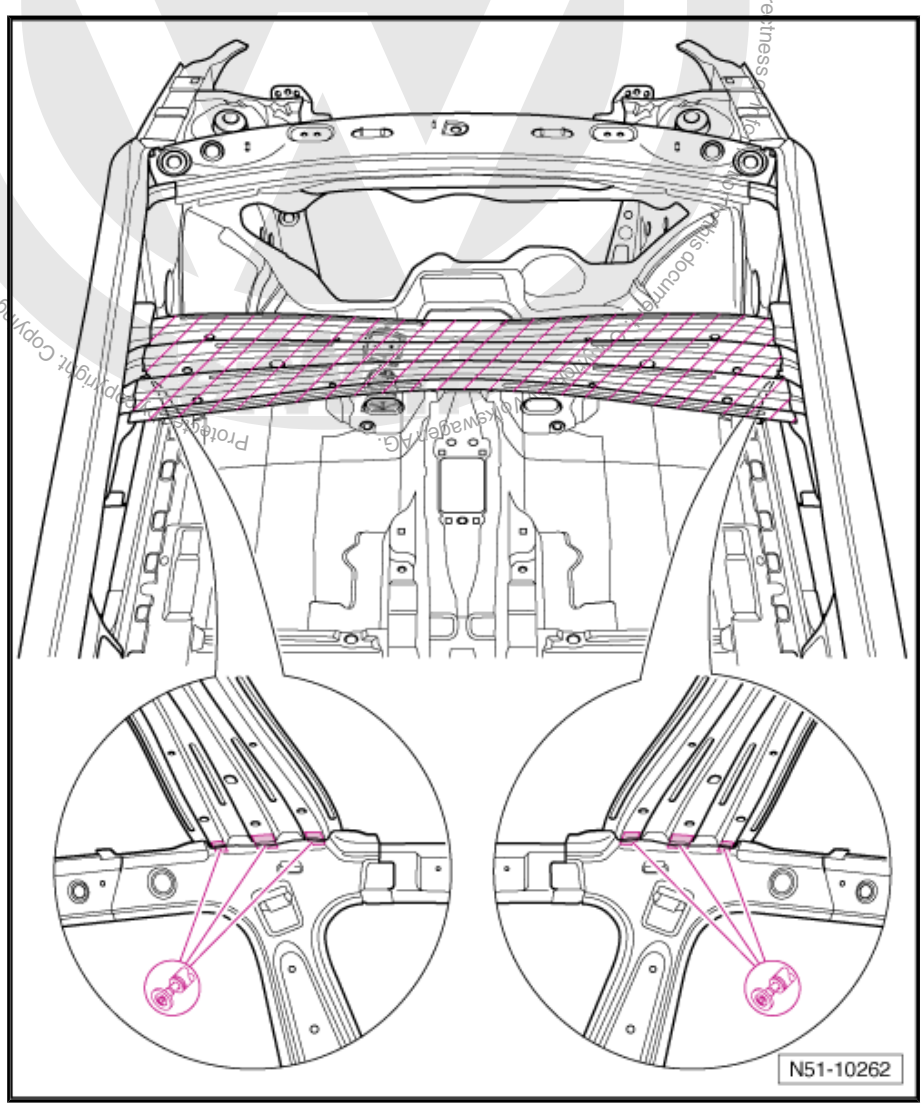
DANGER!

Observe safety notes!

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

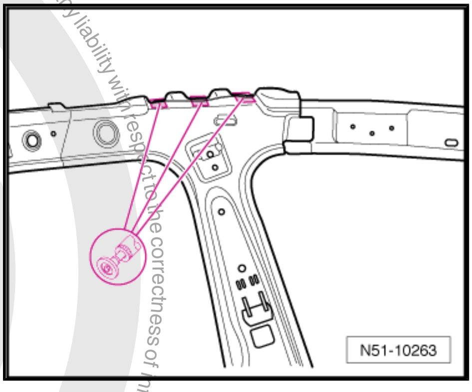
4.1 Removing

- Roof already removed ⇒ „1 Renewing roof“, page 78 .



– Separate original joint.

– Remove residues from left and right roof frame.



4.2 Installing

4.2.1 Welding in

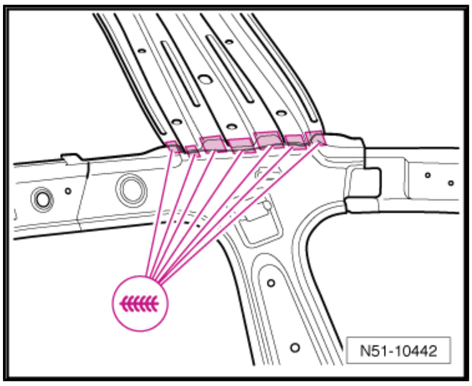
Replacement part

- ♦ Roof reinforcement

– Adapt roof reinforcement to fit and hold in position.

– Check fit to roof.

– Weld roof reinforcement to left and right roof frame, SG continuous weld seam



– Install roof ⇒ „1.3 Installing“, page 81 .

RO: 51 09 55 50

5 Renewing rear roof cross member

DANGER!

Observe safety notes!

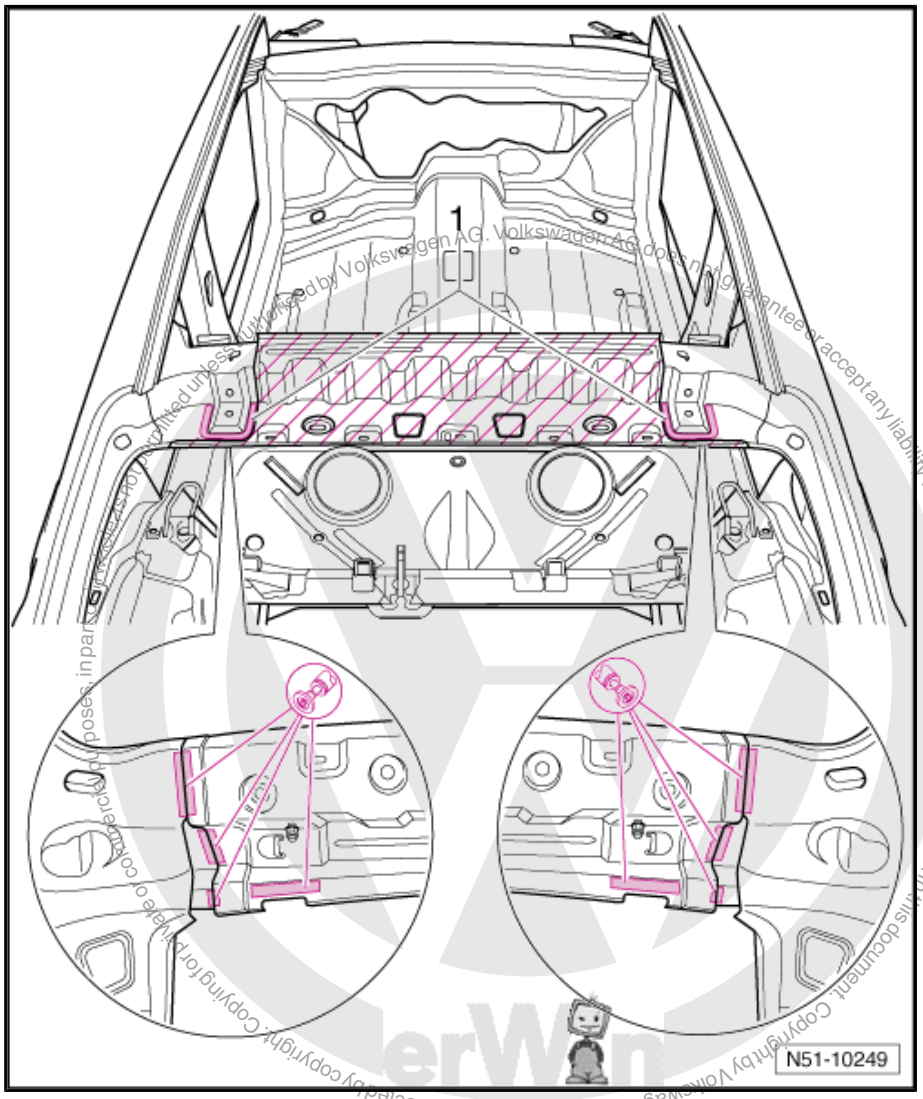
⇒ General Information; Body Repairs, General Body Repairs ; Safety instructions

5.1 Removing

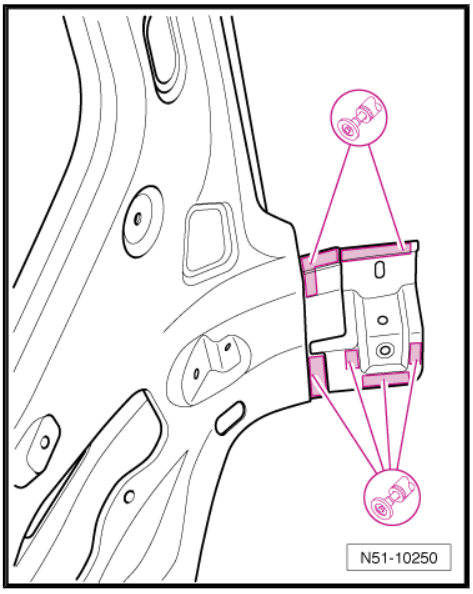
- Roof already removed ⇒ „1 Renewing roof“, page 78 .

1 - Bonded section

– Separate original joint from inside.



– Remove residues at transition to left and right roof frame.
– Remove adhesive remains completely and grind adhesive surface back to bare metal.



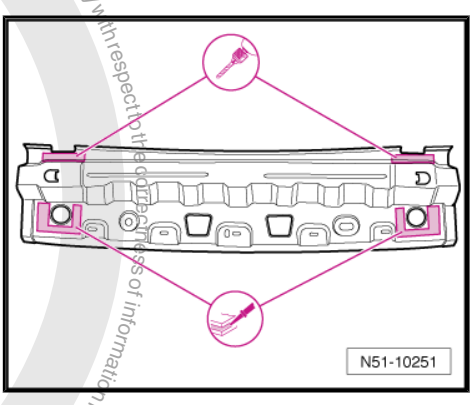
5.2 Installing

5.2.1 Preparing new part

Replacement part

- ♦ Rear roof cross member
- ♦ Adhesive sealant -D 511 500 A2-

– Drill 7 mm ∅ holes for SG plug weld seam.
– Apply adhesive sealant -D 511 500 A2- in bonding areas.



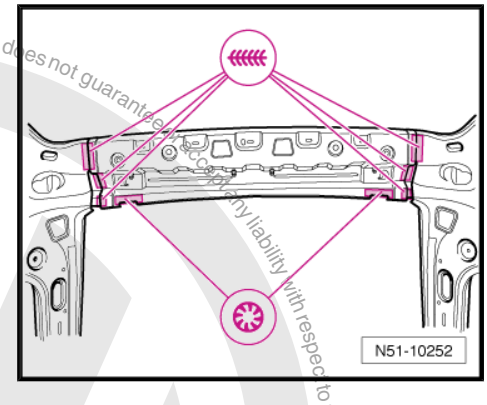
Note

New part must be welded-in within 20 minutes or adhesion of adhesive will be impaired.

5.2.2 Welding in

– Adapt new part to fit and fix in position.
– Check gaps to roof and rear lid.

– Weld in new part, SG continuous weld seam and SG plug weld seam.
– Install roof ⇒ „1.3 Installing“, page 81.



RO: 51 37 55 00

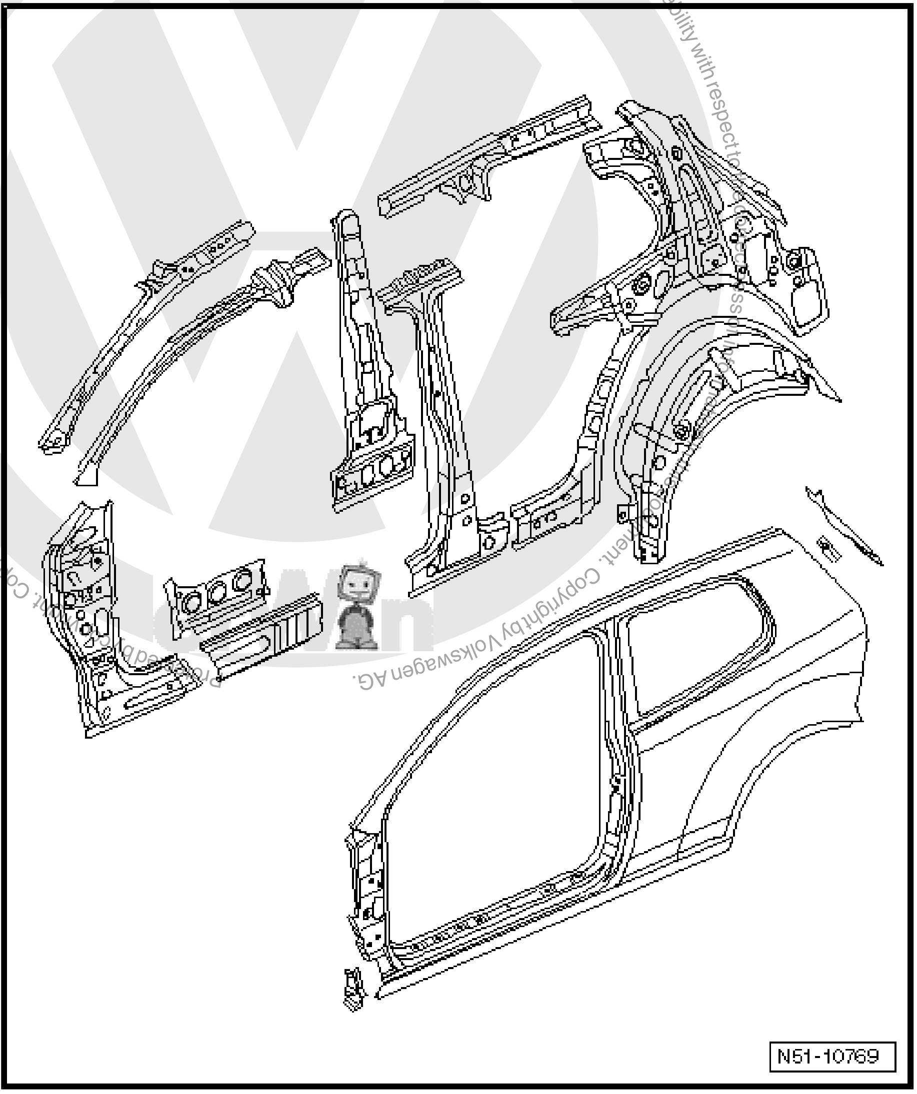
6 Renewing A-pillar - partial renewal

WARNING

Observe safety notes!

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

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



1 - Upper parting cut

2 - Moulded foam element

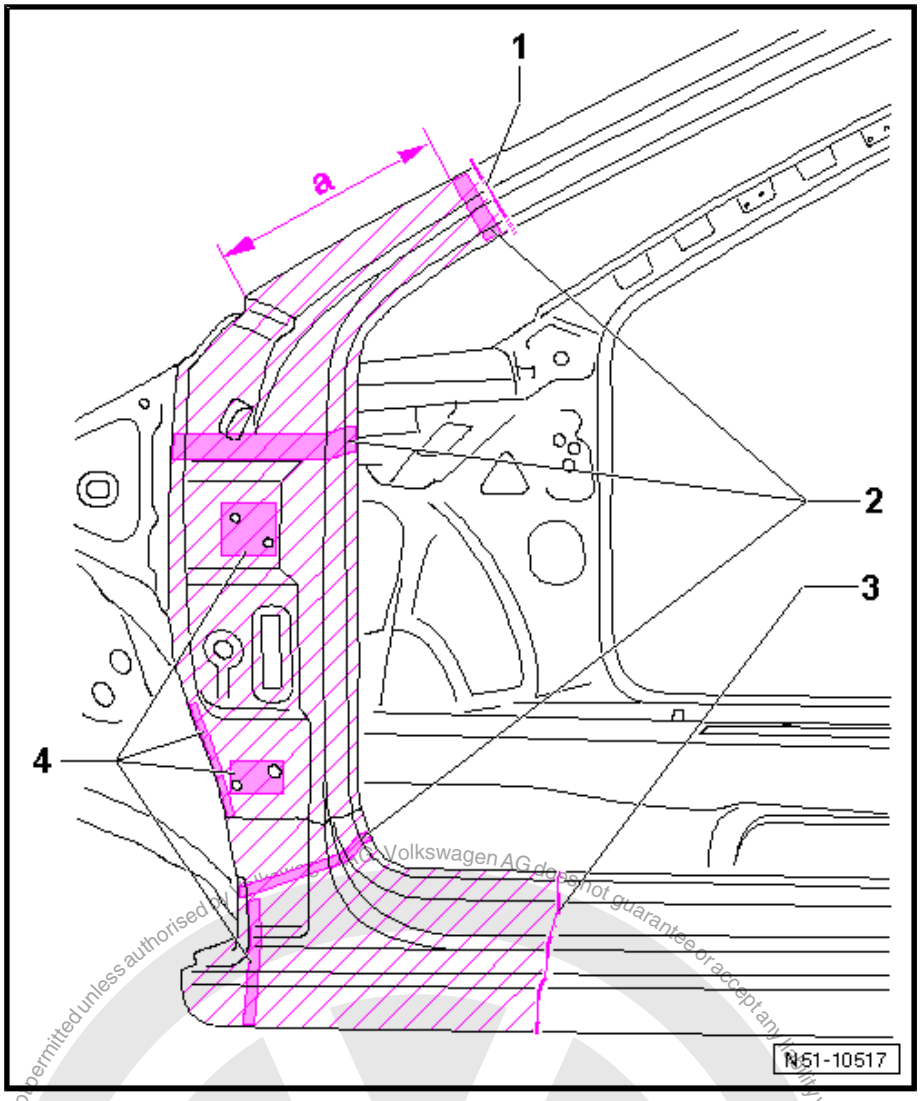
Dimension -a- = 195 mm

Note

3 - Parting cut for side member

Note

4 - Bonded section



6.1 Tools

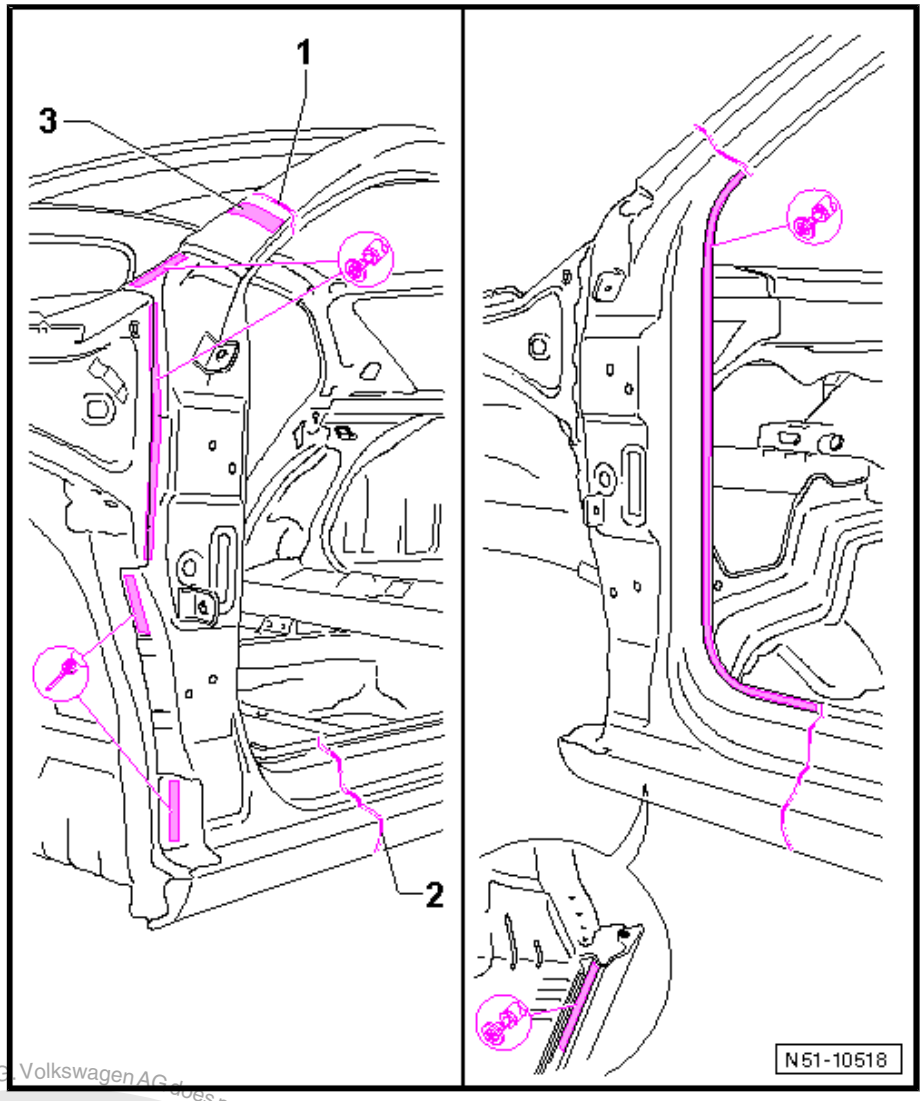
Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

6.2 Removing

Note

Make parting cuts with pneumatic jig-saw -V.A.G 1523- only.

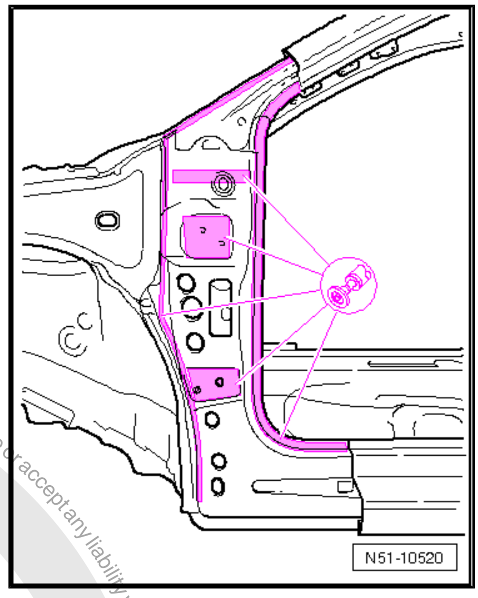


– Locate parting cuts -1- and -2- according to degree of damage.

Note

- *Observe position of moulded foam part -3-*
- *No welding work may be carried out 20 mm before and behind a moulded foam part.*

– Separate original joint.



– Remove remaining material.

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

6.3 Installing

Note

The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding *⇒ page 114* *.*

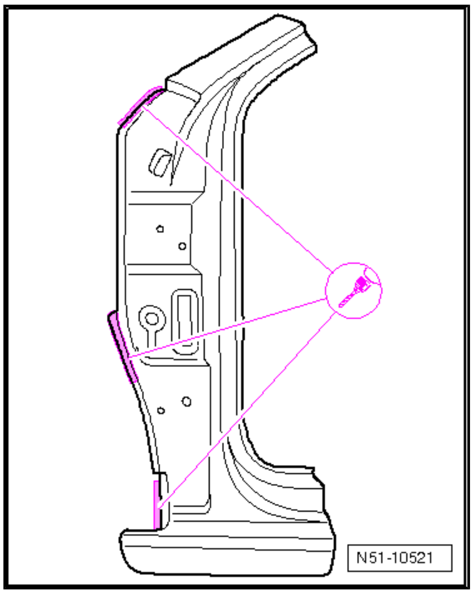
6.3.1 Preparing new part

Replacement part

- A-pillar subpart with side member sealing plate
- Moulded foam element
- 2K body adhesive -D 180 KD3 A2-

– Transfer parting cut to new part and cut out.

– Drill 7 mm ∅ holes for SG plug weld seam.



6.3.2 Moulded foam elements

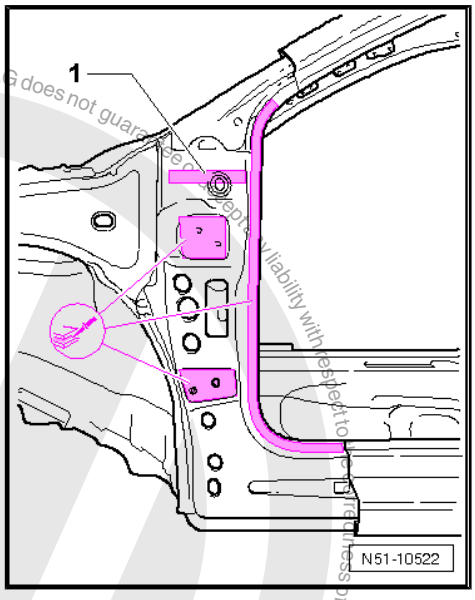
Follow repair instructions.

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

6.3.3 Welding in

– Apply 2K body adhesive -D 180 KD3 A2- to area of factory applied adhesive and to area of door aperture.

– Apply sealing cord -AKD 497 010 04 R10- to area above upper hinge -1-.

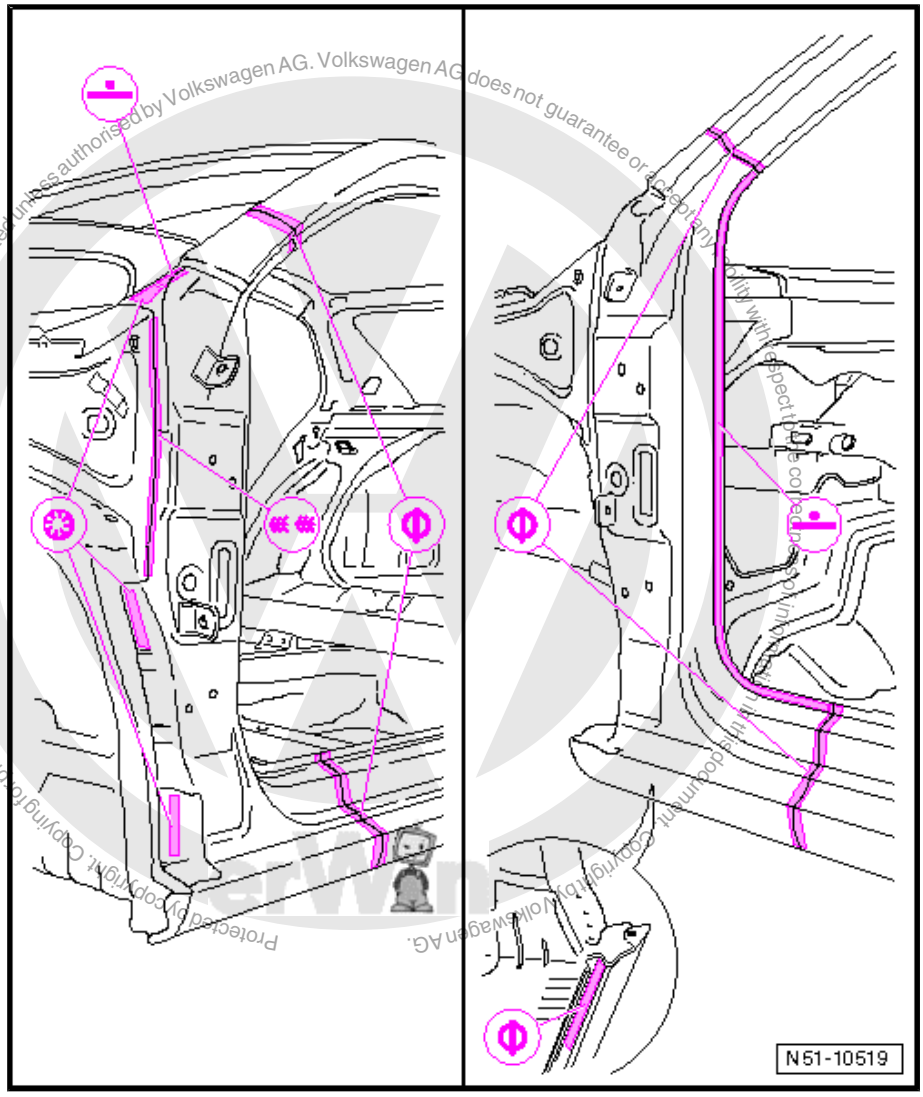


Note

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

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

– Check fit with bolt-on parts.



– Weld parting and transition areas to side member lower reinforcement, SG stepped weld seam.
– Reinstate original joint in area of windscreen aperture and door aperture, RP spot weld seam.
– Weld in seam for A-pillar reinforcement, SG plug weld seam and staggered SG continuous weld seam.

RO: 51 38 55 50

7 Renewing A-pillar reinforcement

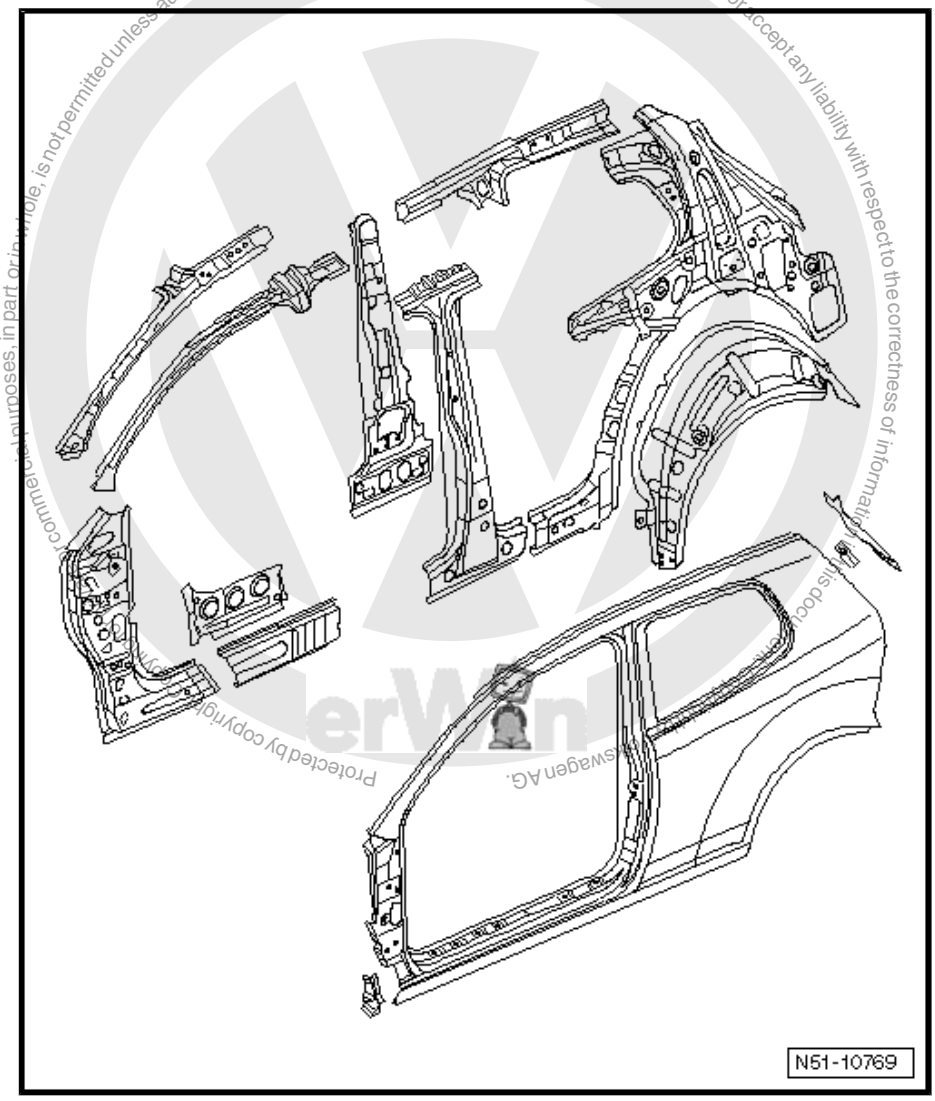
WARNING

Observe safety notes!

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

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

- Upper longitudinal member cover plate for wheel housing already removed ⇒ page 51 .
- A-pillar already removed
⇒ „6 Renewing A-pillar - partial renewal“, page 113



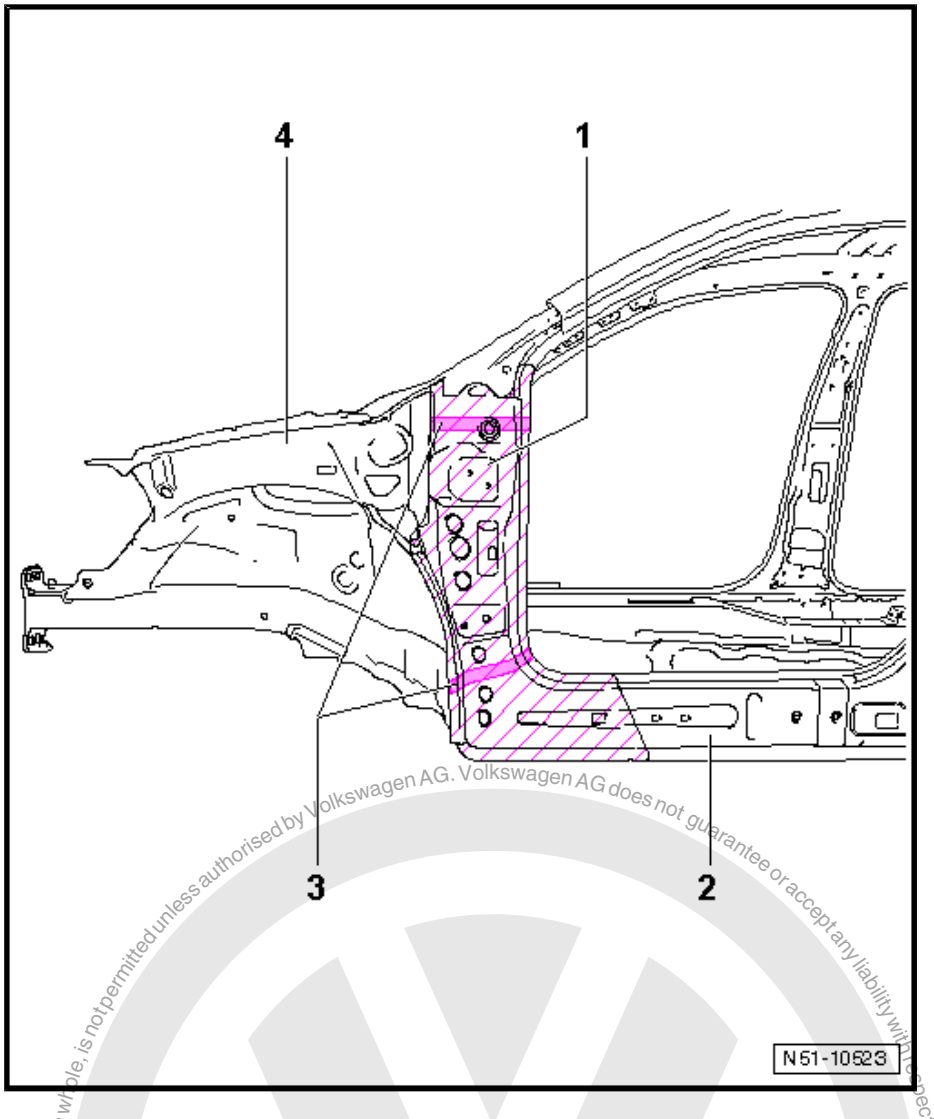
1 - A-pillar reinforcement

2 - Front side member reinforcement

3 - Moulded foam element

Note

4 - Upper longitudinal member cover plate for wheel housing

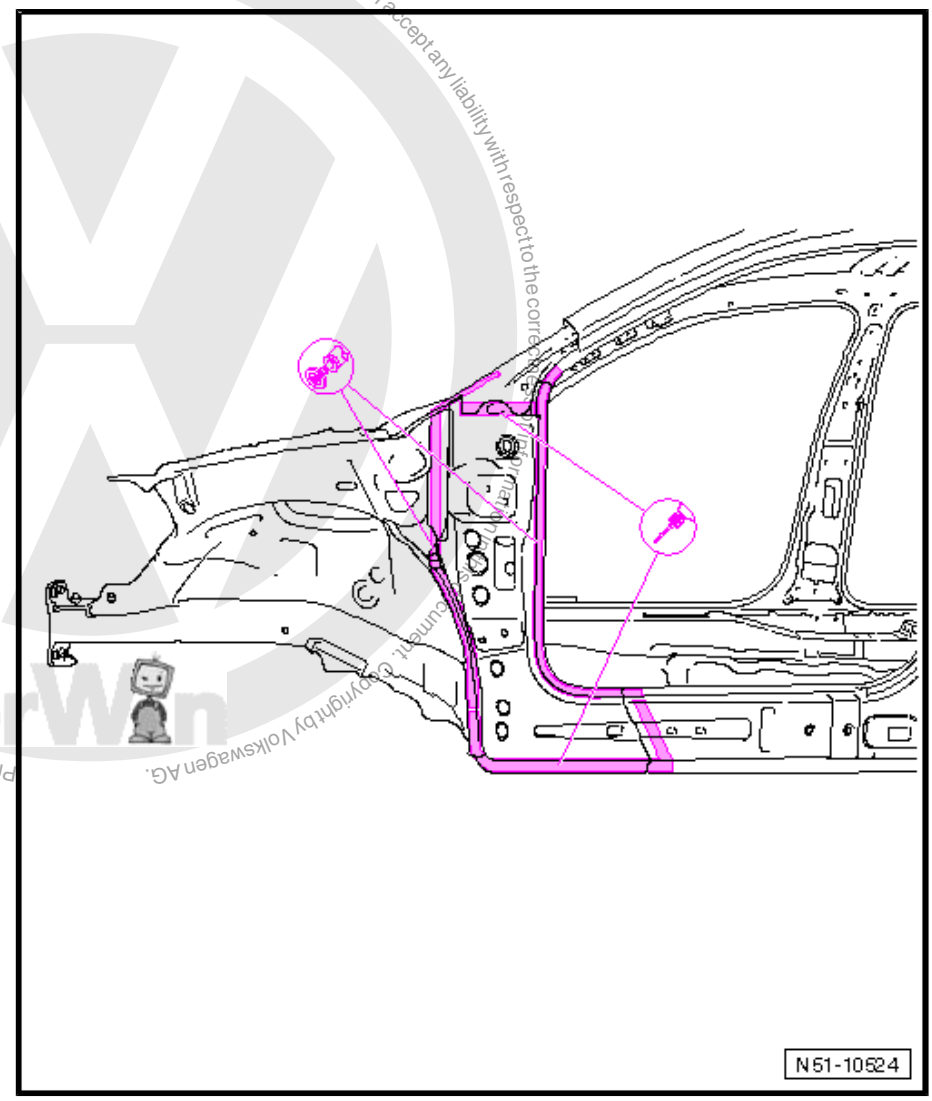


7.1 Tools

Special tools and workshop equipment required

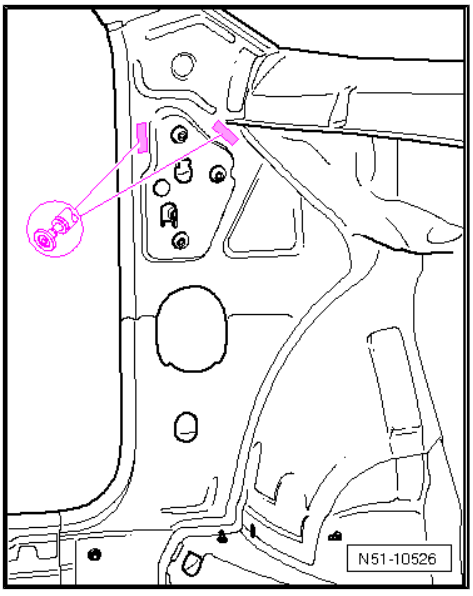
- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

7.2 Removing

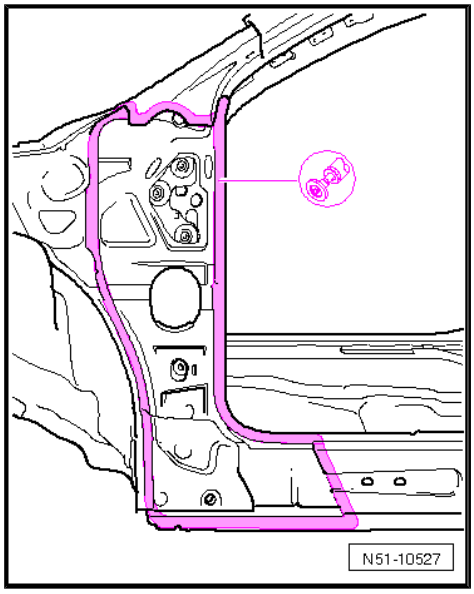


– Separate A-pillar reinforcement original joint.

– Separate weld seam of upper hinge reinforcement, from vehicle interior.



– Remove remaining material.



7.3 Installing

Note

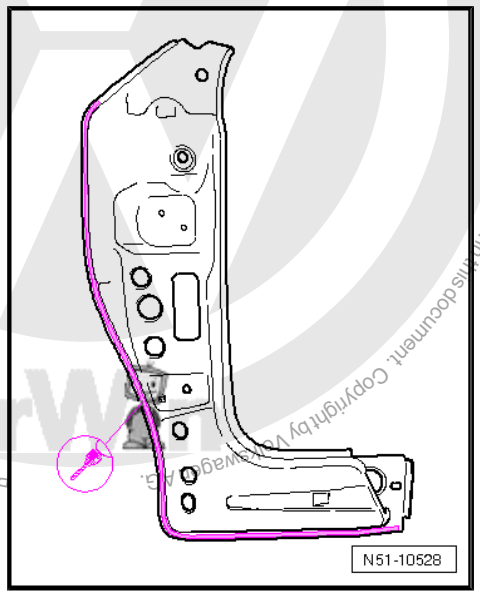
The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 120.

7.3.1 Preparing new part

Replacement part

- A-pillar reinforcement with web plate for side member
- Moulded foam element
- 2K body adhesive -D 180 KD3 A2-

– Drill 7 mm ∅ holes for SG plug weld seam.



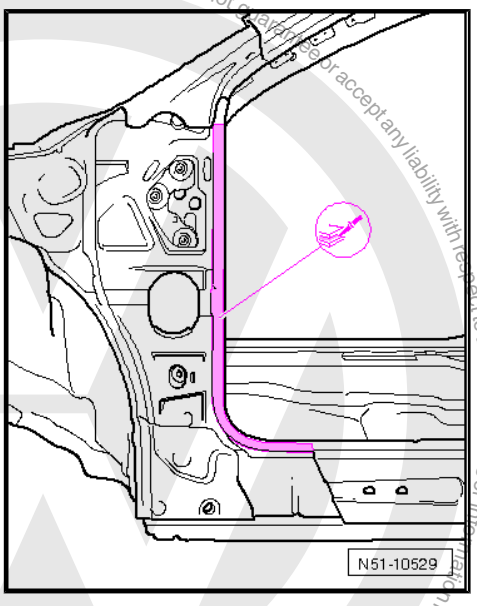
7.3.2 Moulded foam elements

Follow repair instructions.

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

7.3.3 Welding in

– Apply 2K body adhesive -D 180 KD3 A2- to area of door aperture.

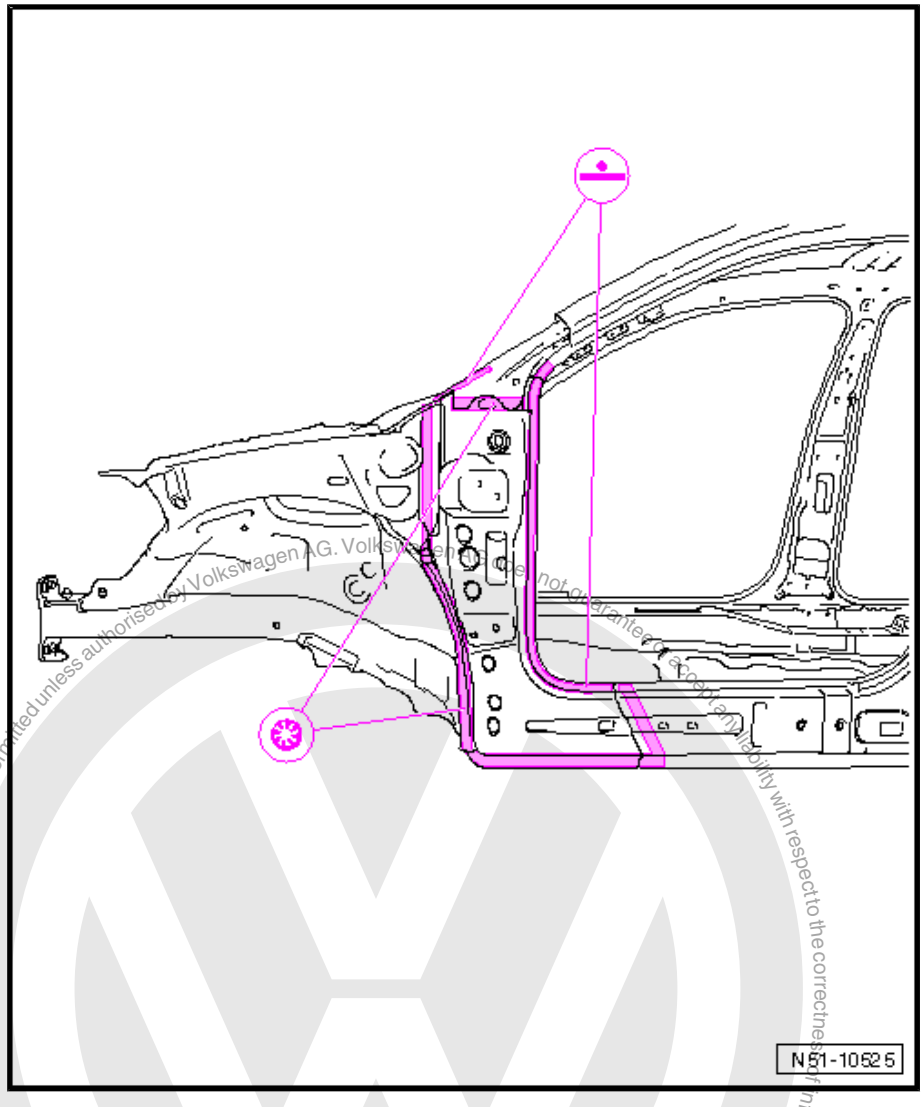


Note

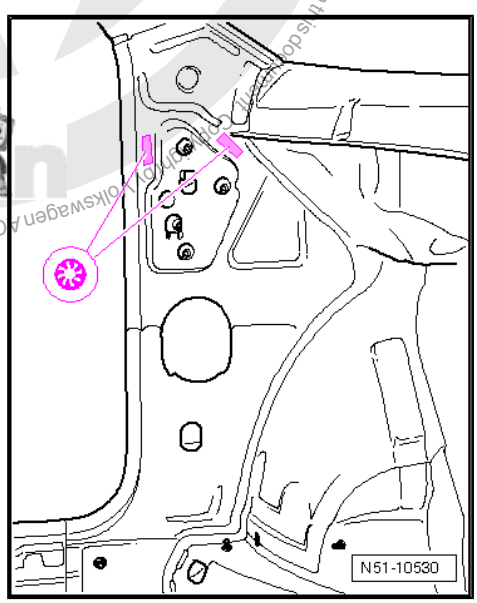
New part must be welded-in within 90 minutes or adhesion properties of adhesive will be impaired.

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

– Check fit to A-pillar.



- Weld in A-pillar reinforcement, SG plug weld seam and RP spot weld seam.
- Weld in A-pillar reinforcement, from vehicle interior, SG plug weld seam.
- Install A-pillar ⇒ „6.3 Installing“, page 116 .
- Install upper longitudinal member cover plate for wheel housing ⇒ page 51 .



RO: 51 41 55 10

8 Renewing B-pillar

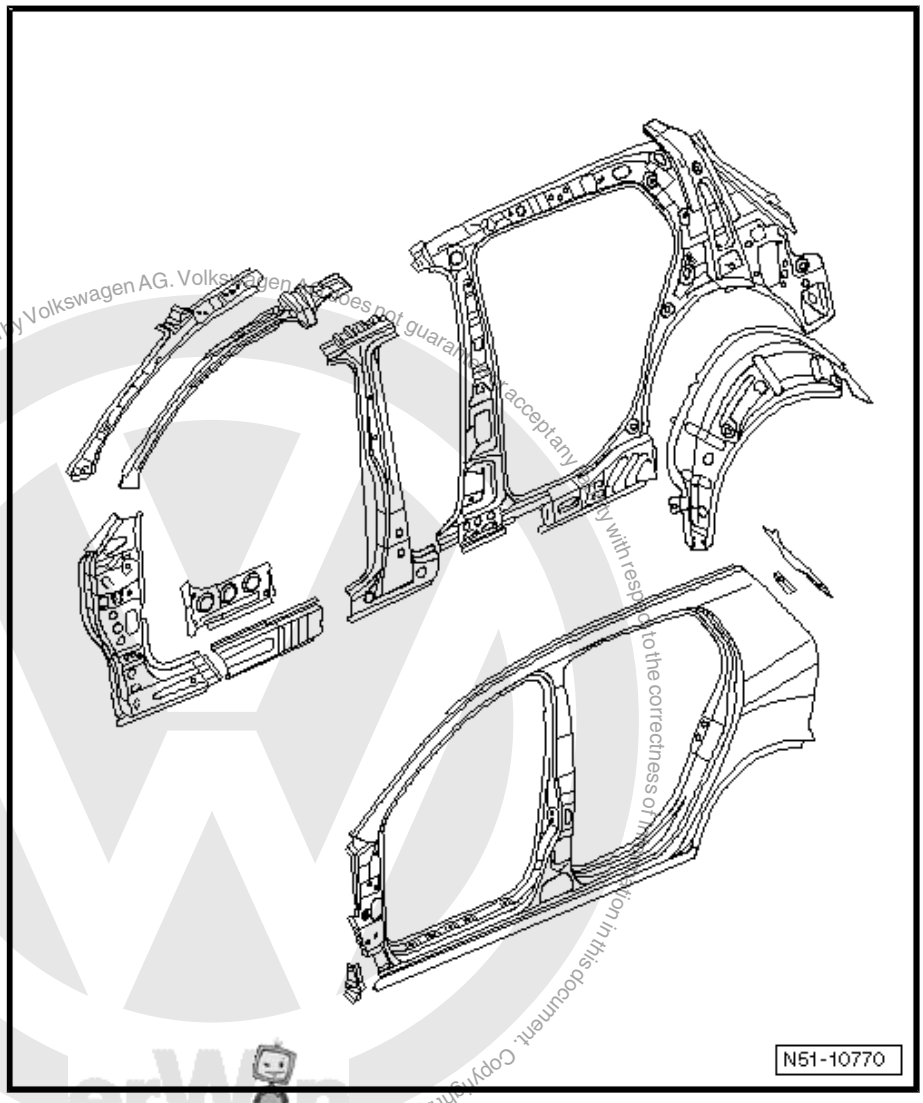
(4-door)

DANGER!

Observe safety notes!

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

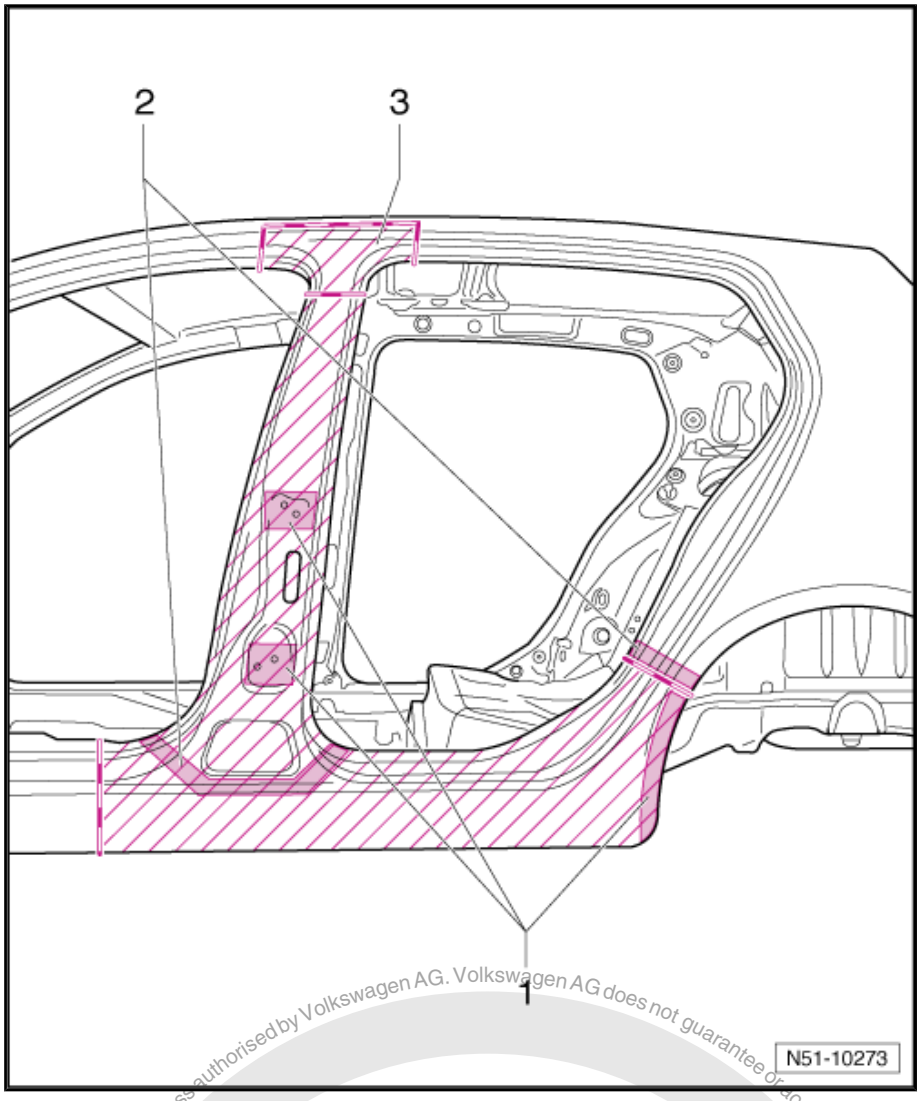
⇒ General Information; Body Repairs, General Body Repairs ; Safety instructions



1 - Bonded section

2 - Moulded foam element

Note

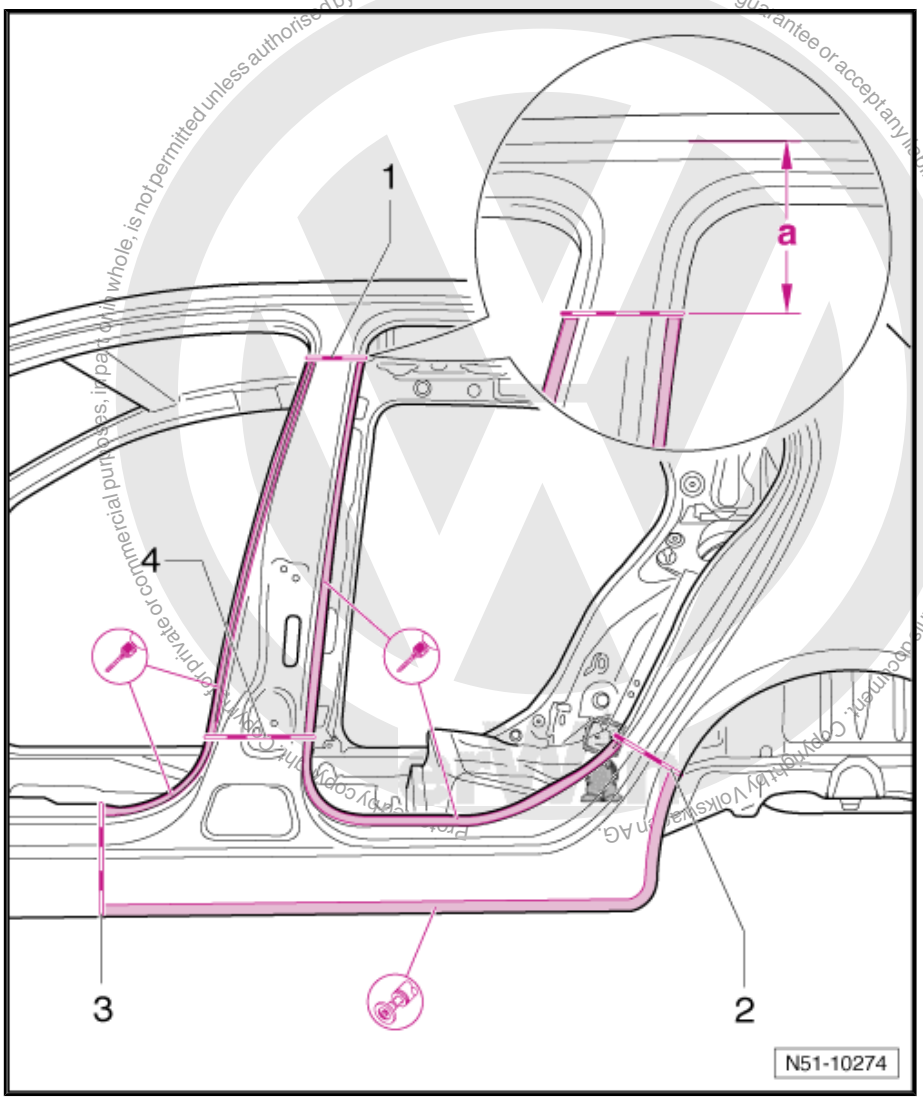


8.1 Tools

Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

8.2 Removing



Note

- *Make parting cuts with pneumatic jig-saw -V.A.G 1523- only.*
- *When making parting cut -2- keep cutting/overlap of replacement part in mind.*

– Make parting cuts -1- as shown; do not damage the inner reinforcements.

Dimension -a- = 100 mm

– Set parting cut -3- at the side member, depending on the damage.

– Make parting cut -2-.

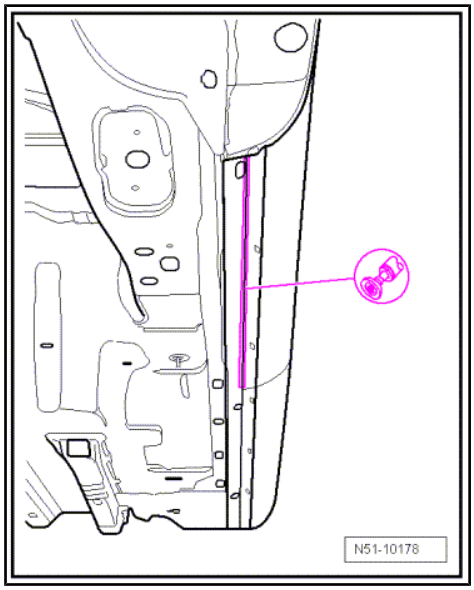
– Grind through outer edge of wheel arch.

– Separate original joint.

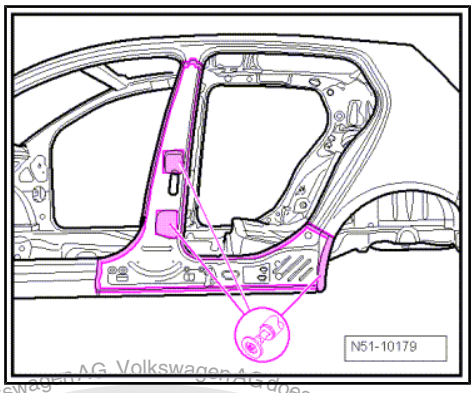
Partial renewal

A part renewal of the B-pillar without damage to the side member is possible with the parting cut -4-.

– Separate original joint to the side member reinforcement.



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



8.3 Installing

Note

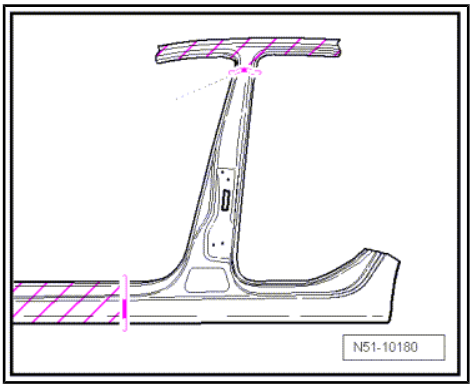
The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 126 .

8.3.1 Preparing new part

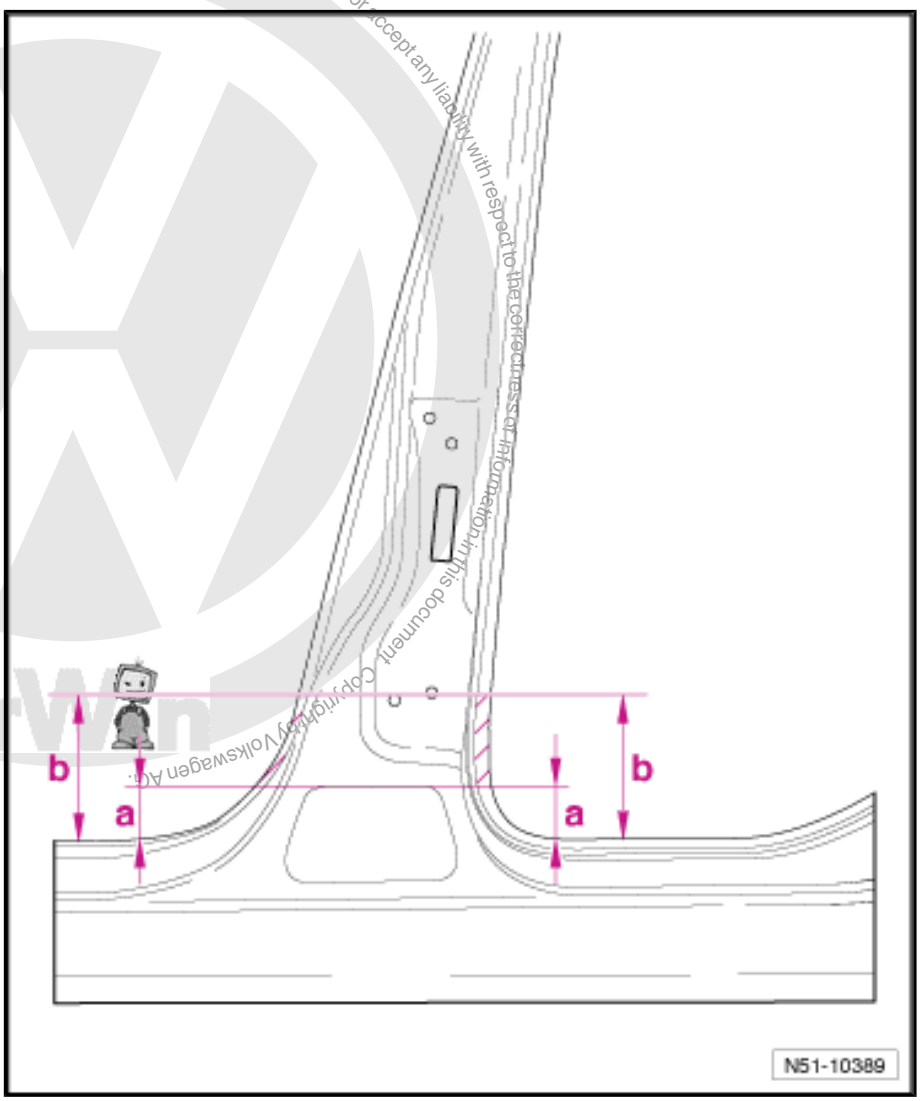
Replacement part

- B-pillar (parts designation: subpart A-pillar with side member).
- Moulded foam element
- 2K body adhesive -D 180 KD3 A2-

– Transfer parting cut to new part and cut out.



8.3.2 Marking area where no welding work may be carried out



Note

The measurements given must be adhered to for »crash safety« reasons.

– Mark areas on outer B-pillar in which no welding may be carried out.

- Dimension -a- = 45 mm
- Dimension -b- = 145 mm

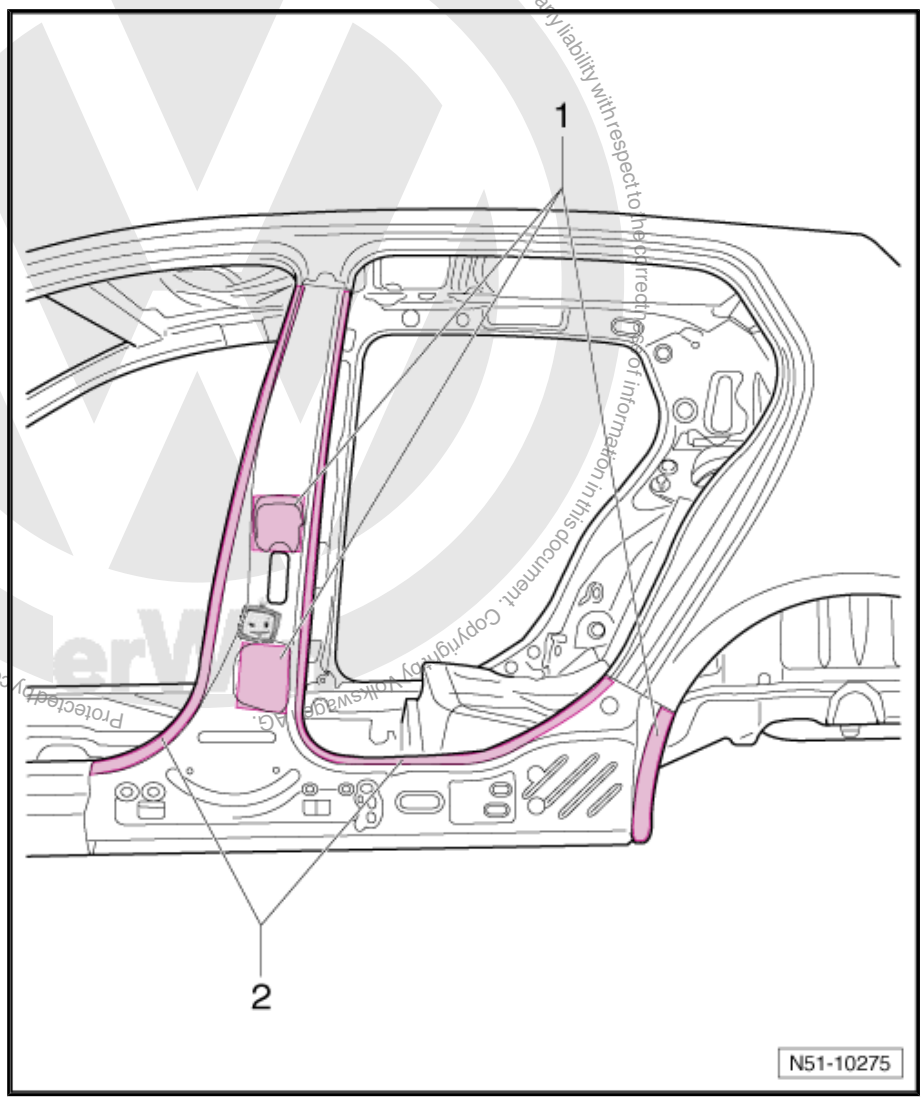
8.3.3 Moulded foam elements

Follow repair instructions.

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

8.3.4 Welding in

– Place backing material behind parting cuts.



– Apply 2K body adhesive -D 180 KD3 A2- to area -1- (2 x 3.5 mm ∅ beads).

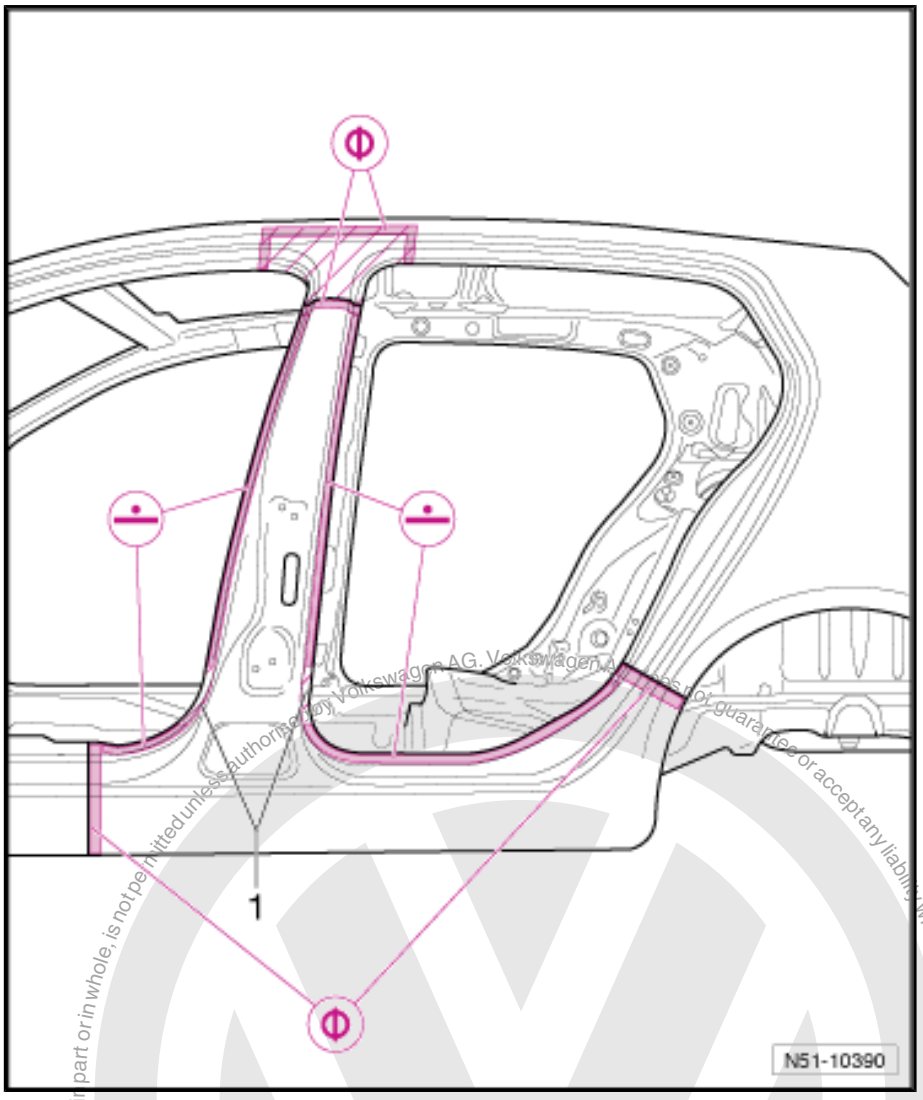
– Apply 2K body adhesive -D 180 KD3 A2- to area -2- (1 x 3.5 mm ∅ bead).

Note

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

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

– Check fit with bolt-on parts.

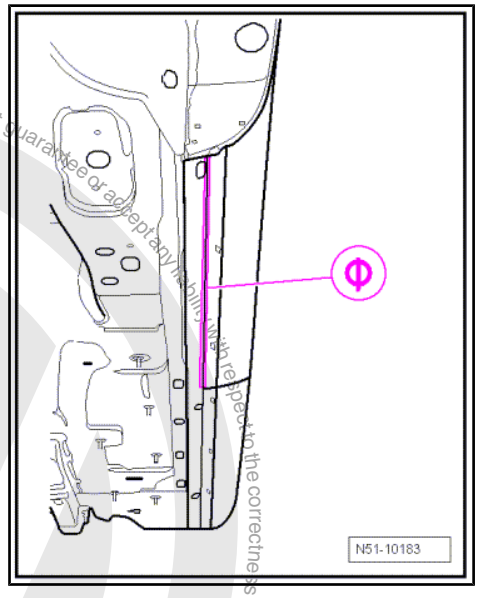


Note

Note that no welding work may be carried out in areas -1-.

– Weld in B-pillar, SG stepped weld seam and RP spot weld seam.

– Create remaining joint side member reinforcement, SG stepped weld seam.
– Reform wheel housing flange.
– Wipe away excess adhesive and seal wheel arch.



RO: 51 42 55 50

9 Renewing B-pillar reinforcement

(2-door)

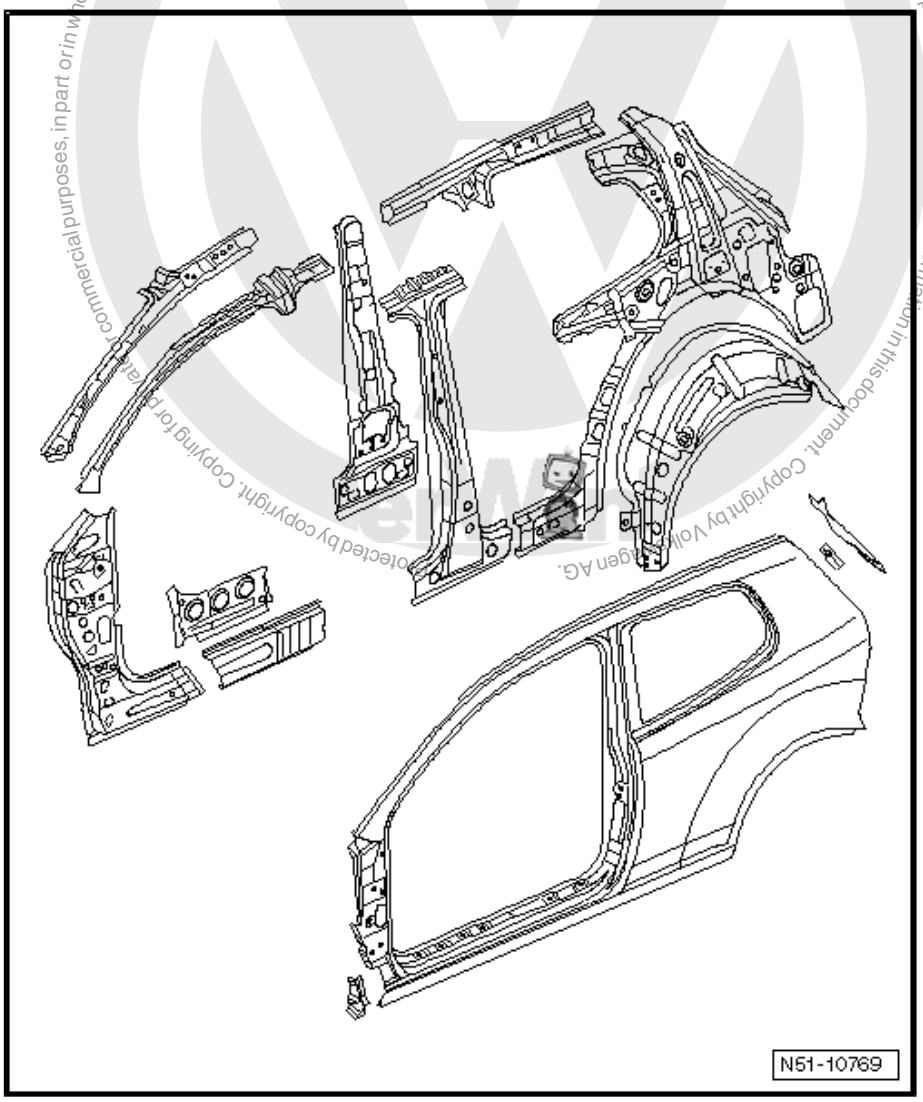
DANGER!

Observe safety notes!

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

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

- Side panel already removed
  ⇒ „7 Renewing side panel - partial renewal“, page 219



1 - Roof member

2 - Inner side panel

3 - Side member rear reinforcement

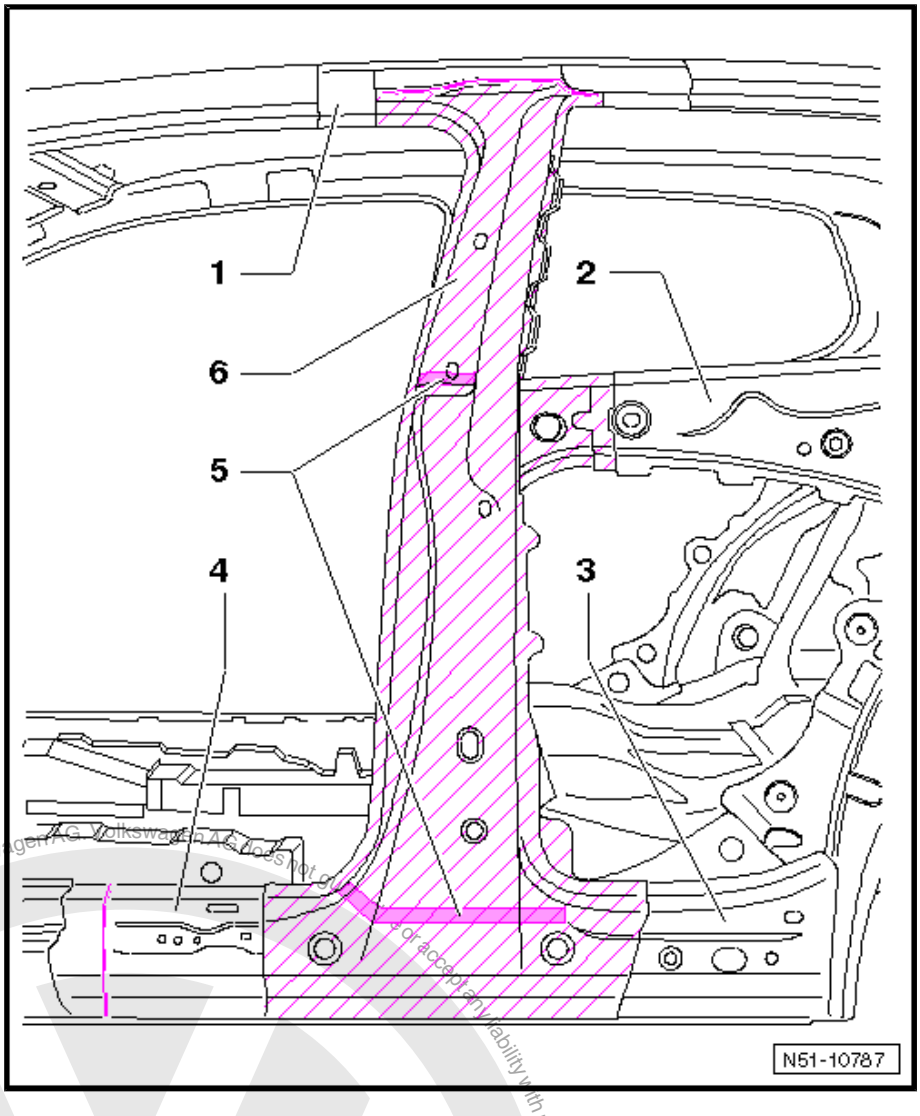
4 - Front side member reinforcement

5 - Moulded foam element

Note

6 - B-pillar reinforcement

Note



9.1 Tools

Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

9.2 Removing

1 - Parting cut on roof member

Note

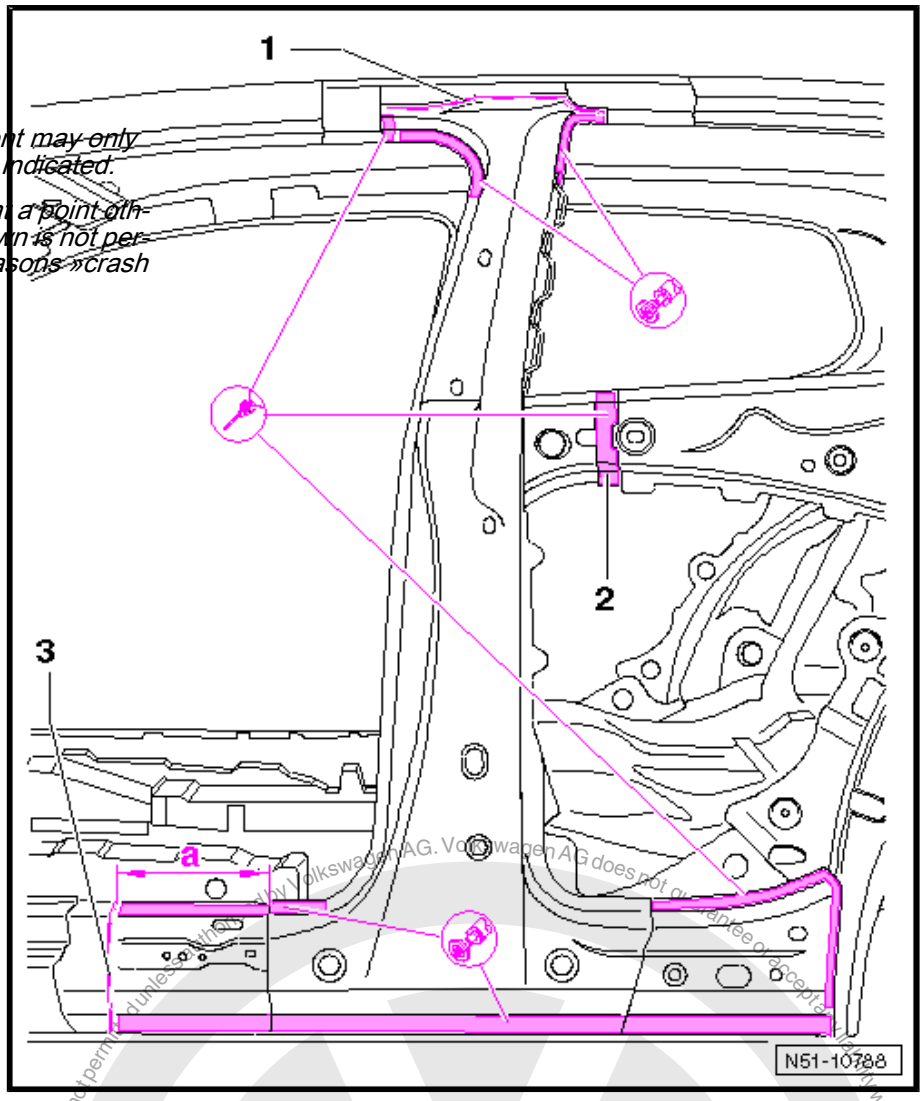
- *B-pillar reinforcement may only be cut at the points indicated.*
- *Cutting or welding at a point other than the one shown is not permitted for safety reasons »crash safety«.*

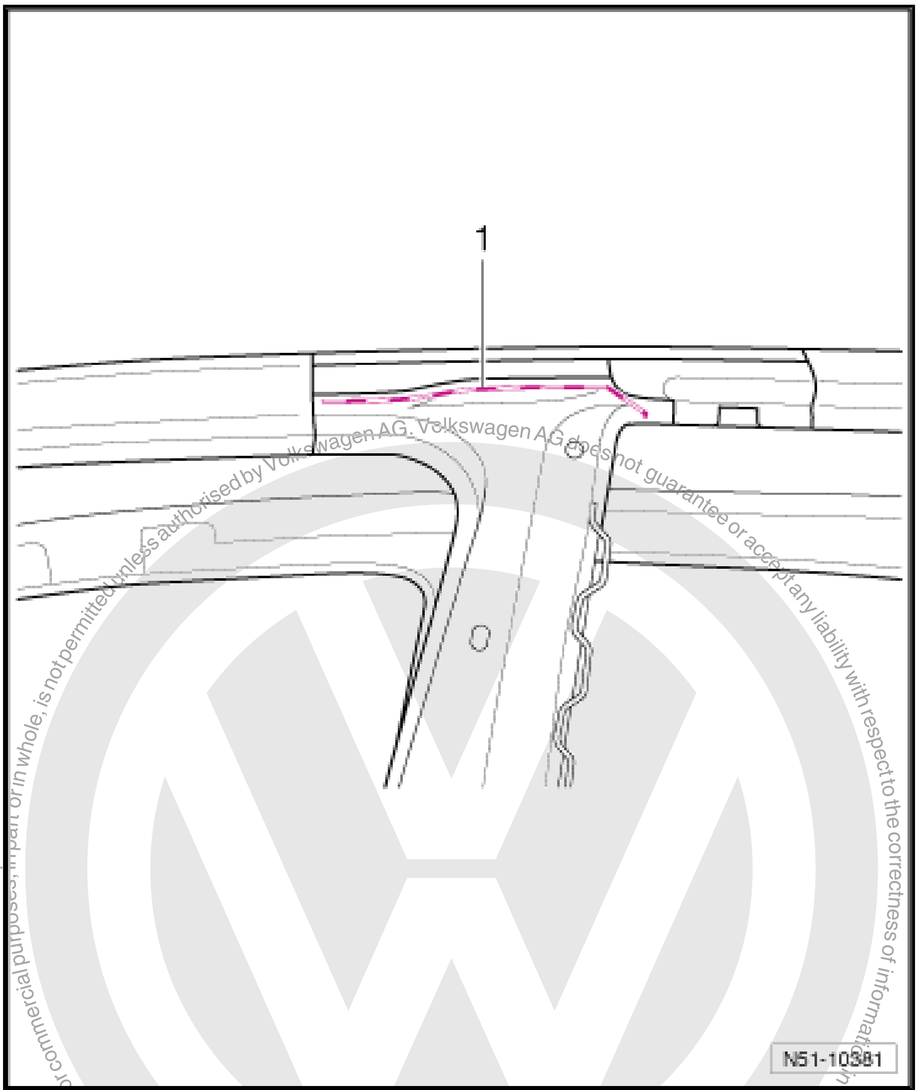
– Separate original joint -2- between B-pillar reinforcement and inner side panel.

– Make parting cut -3- as shown.

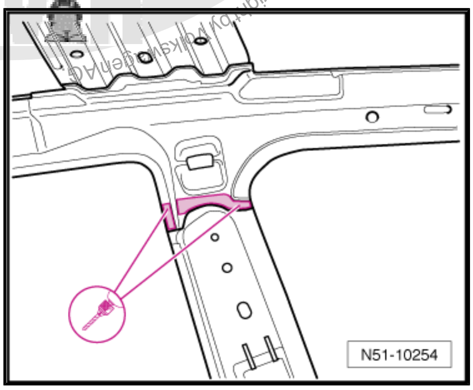
Dimension -a- = 250 mm

– Separate original joint from outside.

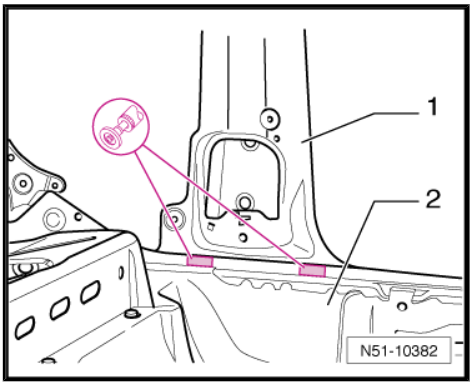




– Make parting cut -1- as shown. To do this, part of the outer roof frame must also be cut out as shown when the side panel is cut out.
– Separate original joint to roof frame from inside.
– Separate remaining joint between inner B-pillar -1- and inner side member -2-.



– Remove remaining material.



9.3 Installing

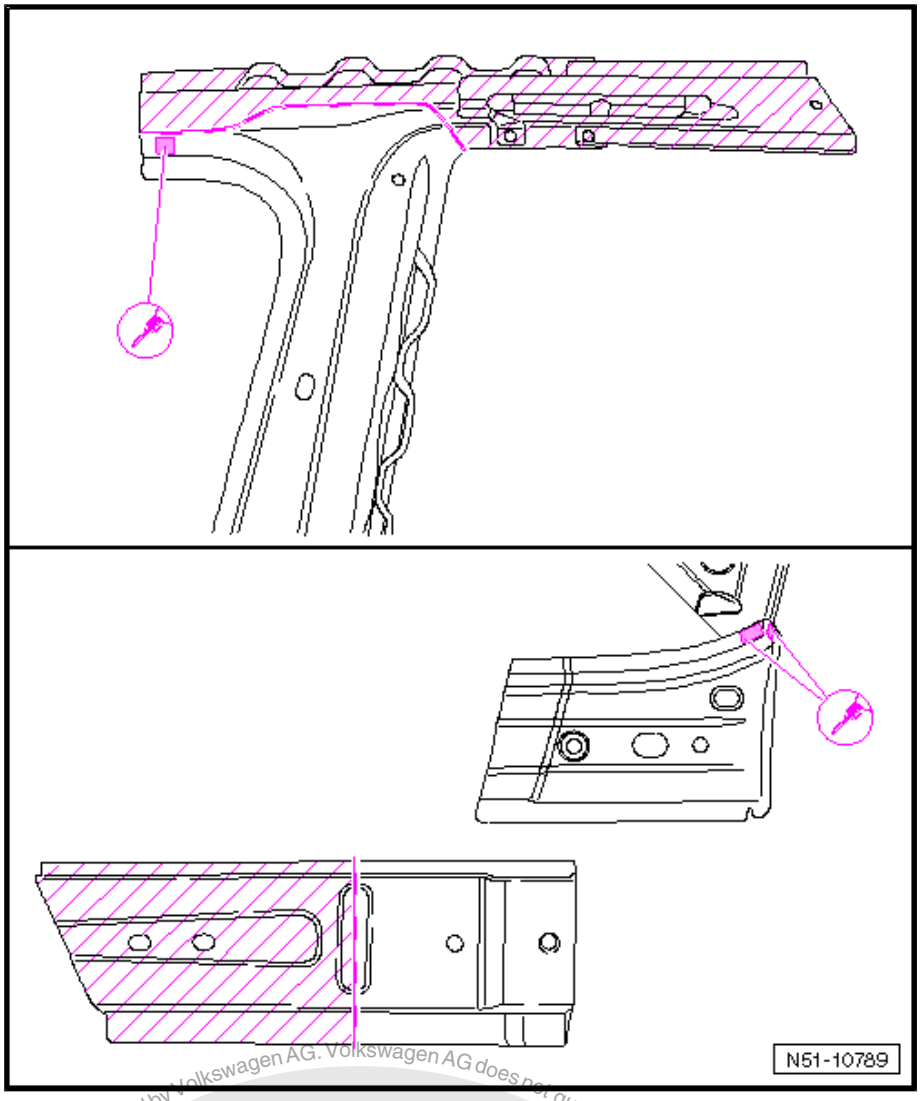
Note

The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 134 .

9.3.1 Preparing new part

Replacement part

- B-pillar reinforcement
- Inner B-pillar
- Side member front reinforcement (parts designation: web plate for side member)
- Side member rear reinforcement (parts designation: inner side panel)
- Moulded foam element
- 2K body adhesive -D 180 KD3 A2-

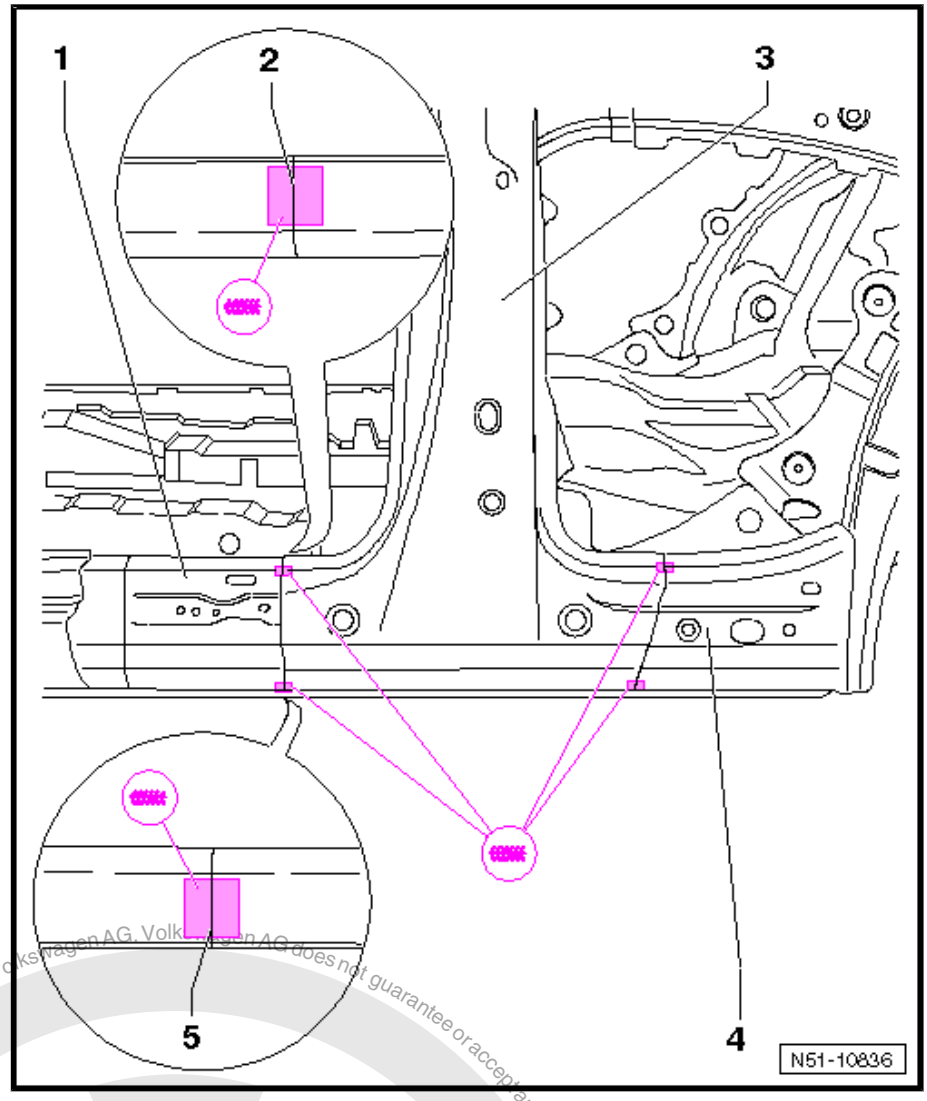


– Transfer parting cut to new part and cut out.

Note

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

– Drill holes for SG plug weld seam.



Note

- *The side member reinforcement and the B-pillar reinforcement may only be joined 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.*
- *The enlargements show the weld points for the side member front reinforcement -1- and the B-pillar reinforcement -3-. The weld points in the illustrations should also be used for the B-pillar reinforcement -3-and side member rear reinforcement -4-.*

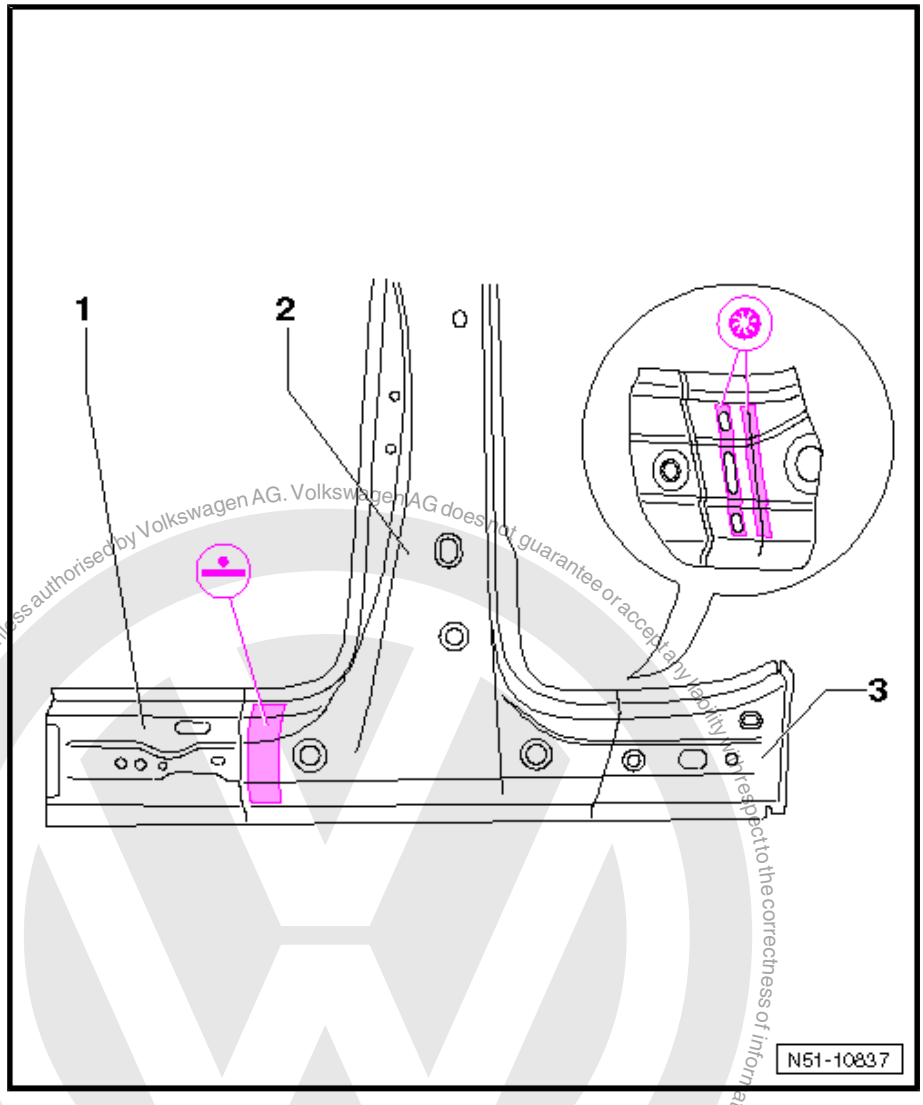
– Adapt new parts with vehicle standing on its wheels or on alignment bracket set and fix in position.

– Check fit with side panel.

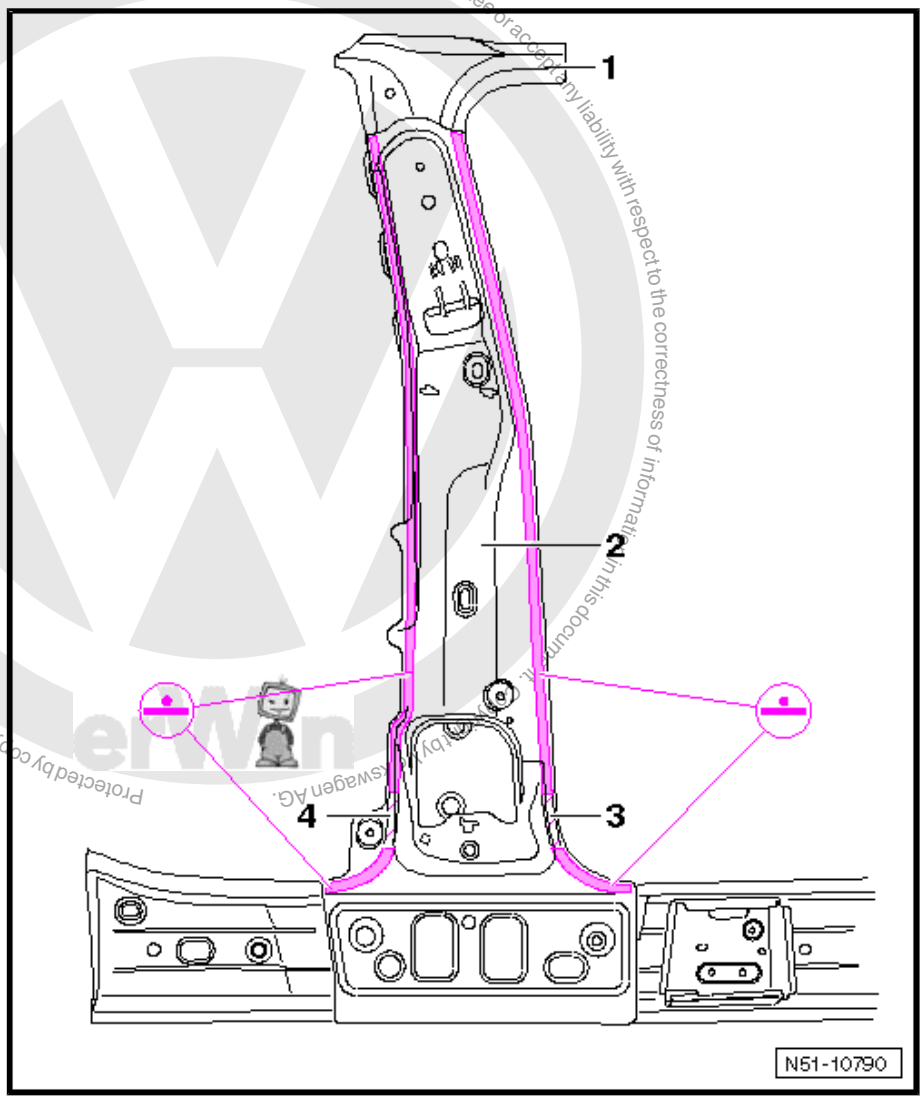
– Tack-weld side member front reinforcement -1- to B-pillar reinforcement -3- from above -2- and below -5-, SG continuous weld (2 x tack welds each a max length of 10 mm).

– Tack-weld side member front reinforcement -4- to B-pillar reinforcement -3- from above -2- and below -5-, SG continuous weld (2 x tack welds each a max length of 10 mm).

– Remove new part from vehicle.



– Tack-weld side member front reinforcement -1- to B-pillar reinforcement -2-, RP spot welds (2 x welds on each upper and lower sides and 4 x welds on outer side).
– Weld side member rear reinforcement -3- to B-pillar reinforcement -2- from interior, SG plug weld seam.



– Mark areas on B-pillar reinforcement in which, for safety reasons »crash safety«, no welding work may be carried out ⇒ „9.3.2 Marking areas where no welding work may be carried out“, page 142 .

– Apply 2K body adhesive -D 180 KD3 A2- to the entire contact area between B-pillar reinforcement -1- and inner B-pillar -2-.

– Adapt inner B-pillar -2- to B-pillar reinforcement -1- and secure.

Note

♦ *B-pillar reinforcement -1- and inner B-pillar -2- must be welded in within 90 minutes or adhesion properties of adhesive will be impaired.*

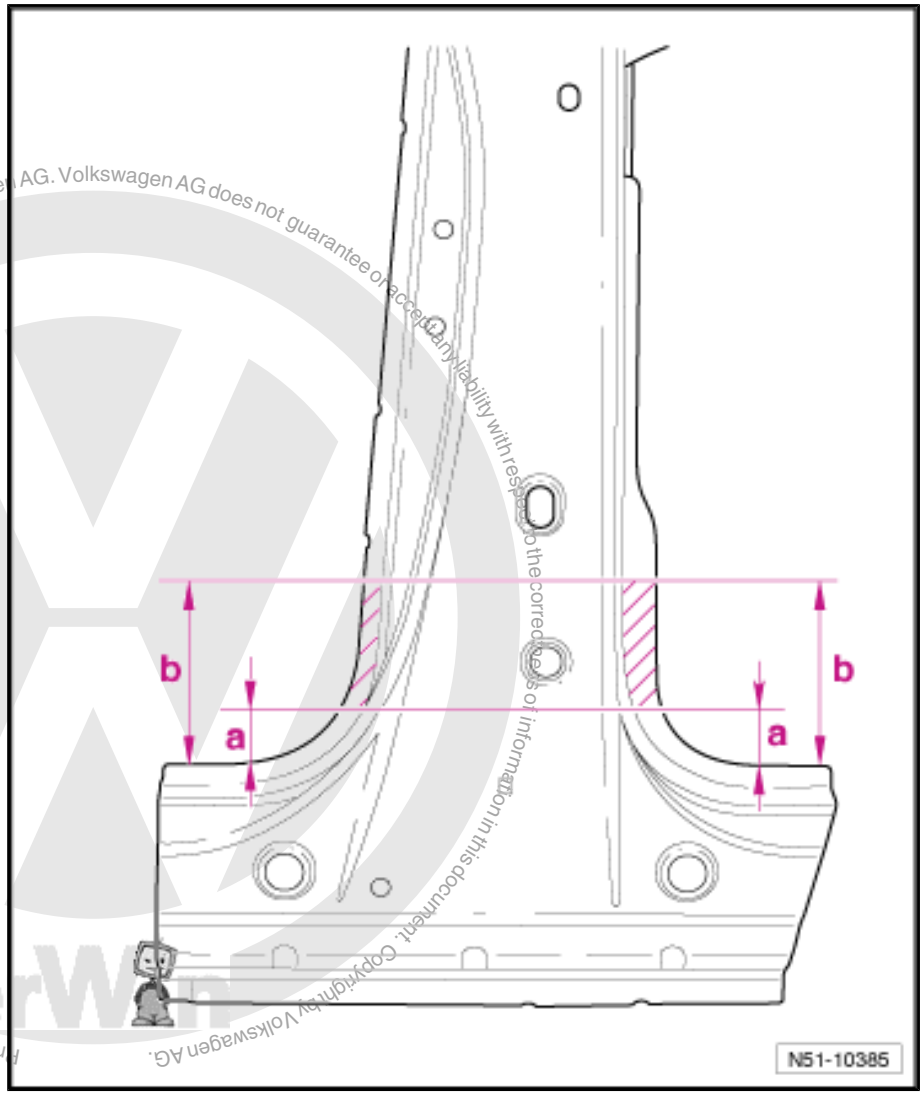
♦ *Please note that no welding work may be carried out in areas -3- and -4-.*

– Weld B-pillar reinforcement -1- to inner B-pillar -2-, RP spot weld seam.

9.3.2 Marking areas where no welding work may be carried out

Note

- *Welding work must not be carried out in areas marked on following illustration due to safety reasons »crash safety« when welding in B-pillar reinforcement.*
- *The measurements given must be adhered to.*
- *Transfer dimensions to inner B-pillar before welding B-pillar reinforcement and inner B-pillar.*
- *Transfer dimensions to side panel before welding side panel.*



- Dimension -a- = 45 mm
- Dimension -b- = 145 mm

9.3.3 Moulded foam elements

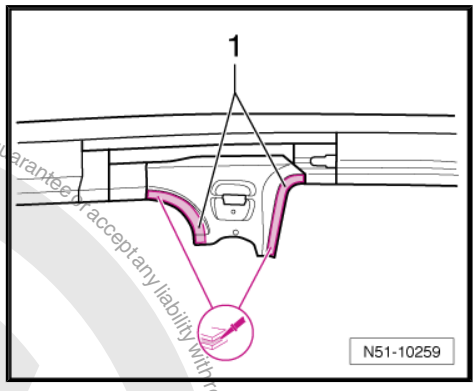
Follow repair instructions.

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

9.3.4 Welding in

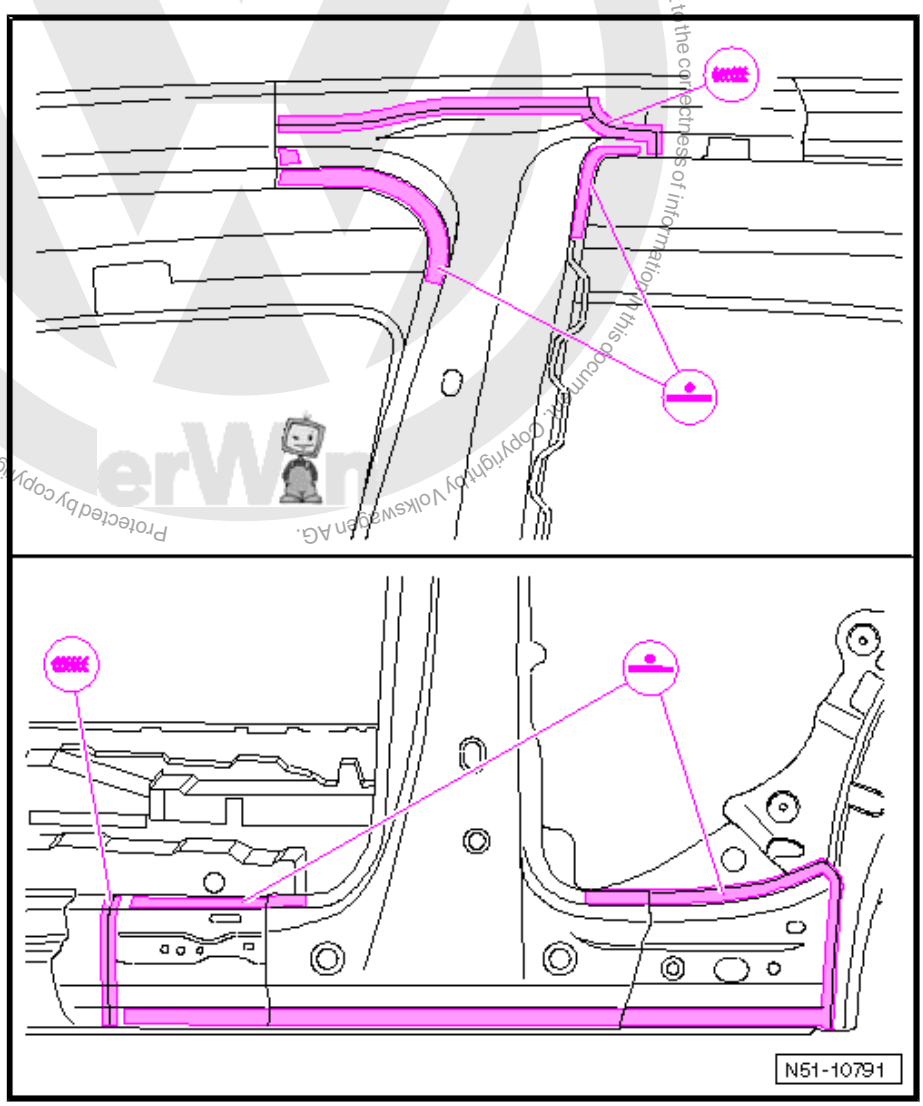
– Apply 2K body adhesive -D 180 KD3 A2- to area of joints to roof -1- (1 x 3.5 mm ∅ bead).

– Adapt B-pillar to inner B-pillar and side panel with vehicle standing on its wheels or on alignment bracket set and fix in position.



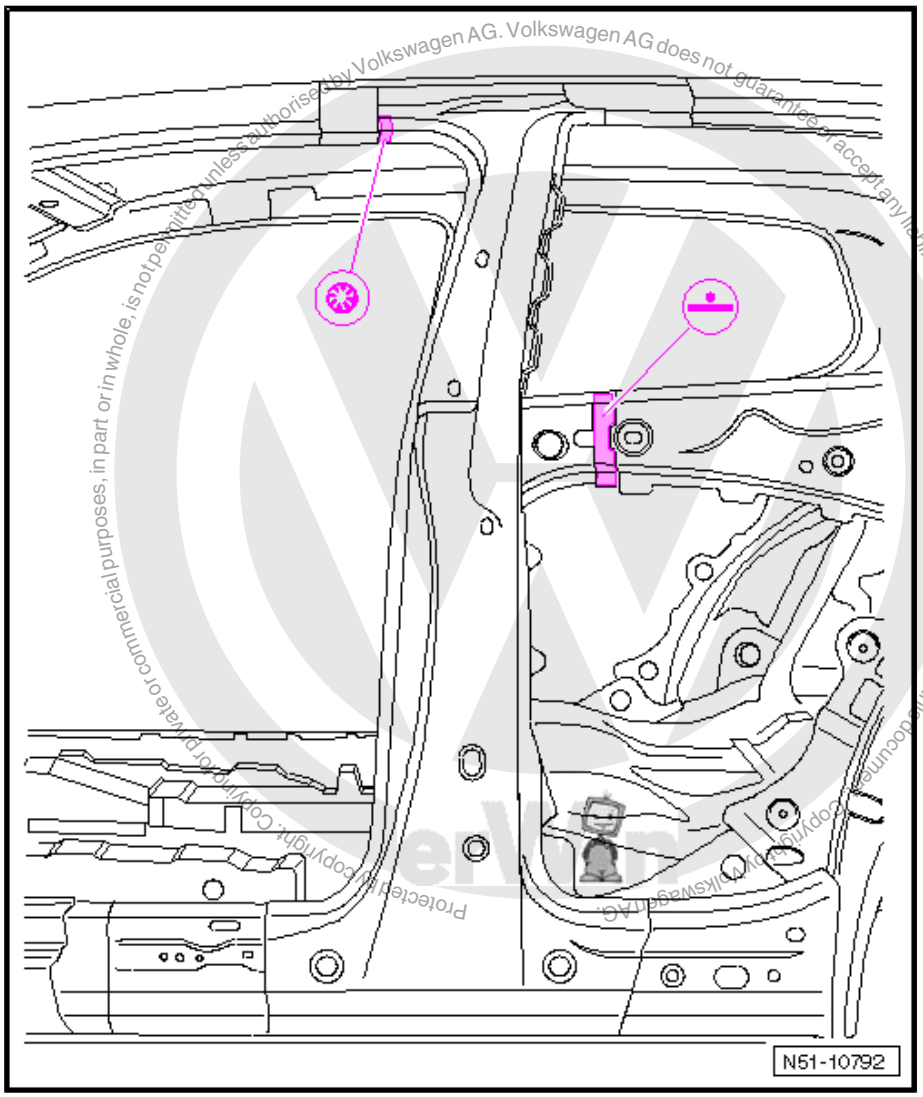
Note

- *New part must be welded-in within 90 minutes or adhesion properties of adhesive will be impaired.*
- *Please note areas where no welding work may be carried out.*

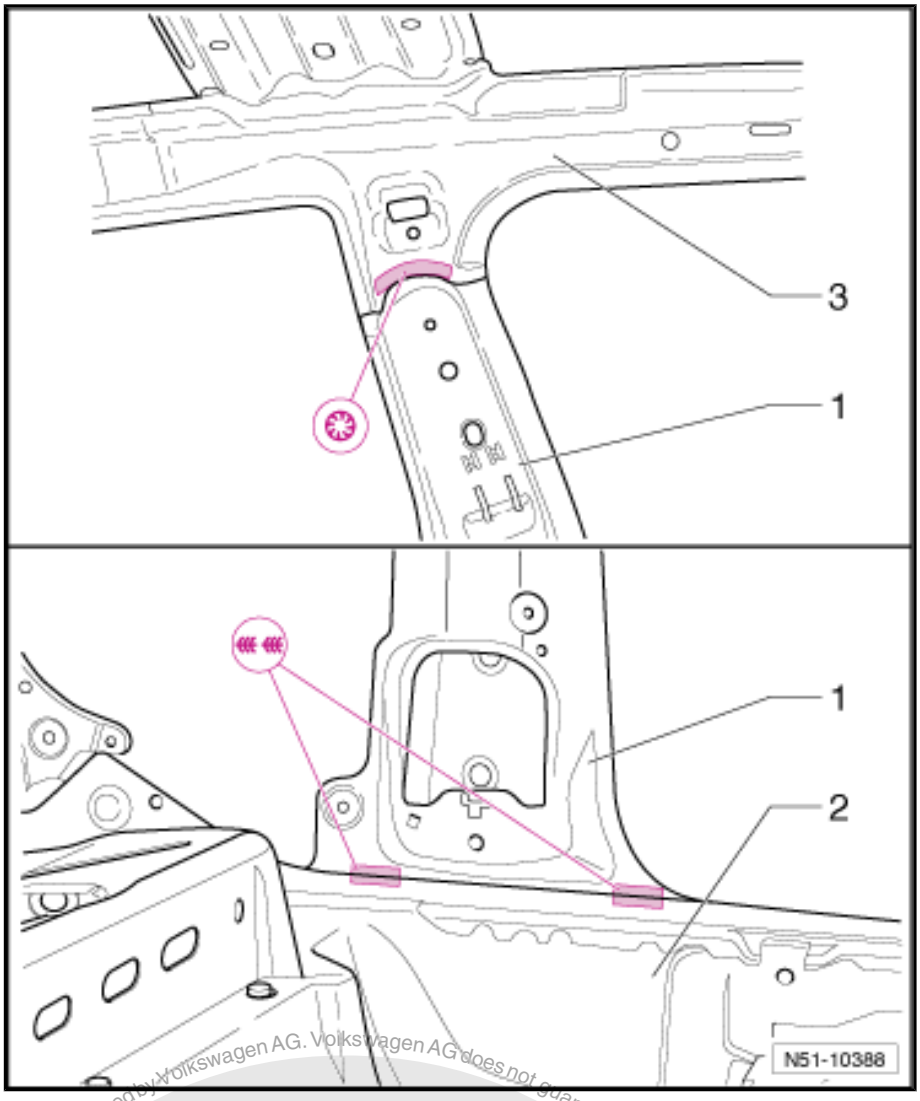


– Weld parting cuts, SG continuous weld seam.

– Weld in B-pillar reinforcement, RP spot weld seam.



– Weld in remaining joints from outside, SG plug weld seam and RP spot weld seam.



– Weld inner B-pillar -1- to inner roof connection -3-, SG plug weld seam.
– Weld remaining joint between inner B-pillar -1- and inner side member -2-, staggered SG continuous weld seam.
– Install side panel ⇒ „7.3 Installing“, page 223 .

RO: 51 42 55 60

10 Renewing B-pillar reinforcement (4-door)

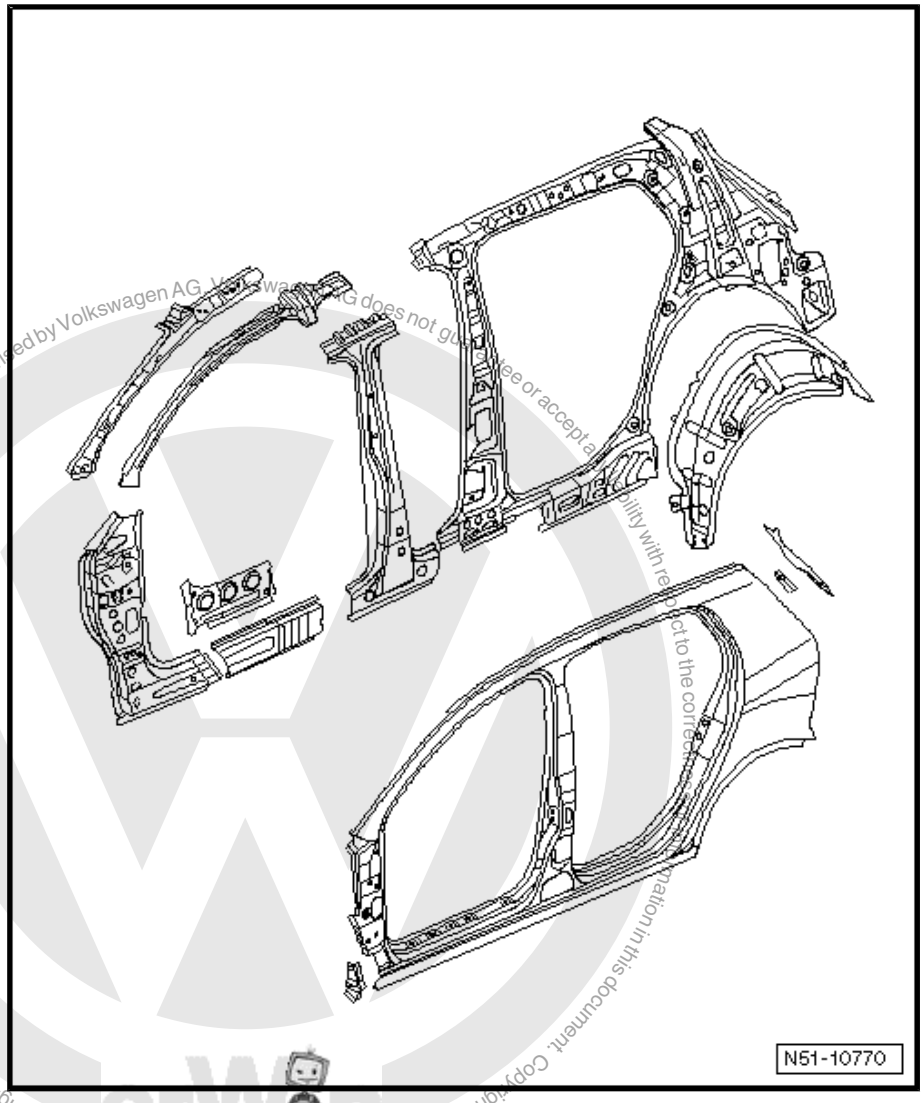
DANGER!

Observe safety notes!

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

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

- Outer B-pillar already removed
- Side member already removed



1 - Upper parting cut

Note

2 - Bonded section

3 - Moulded foam element

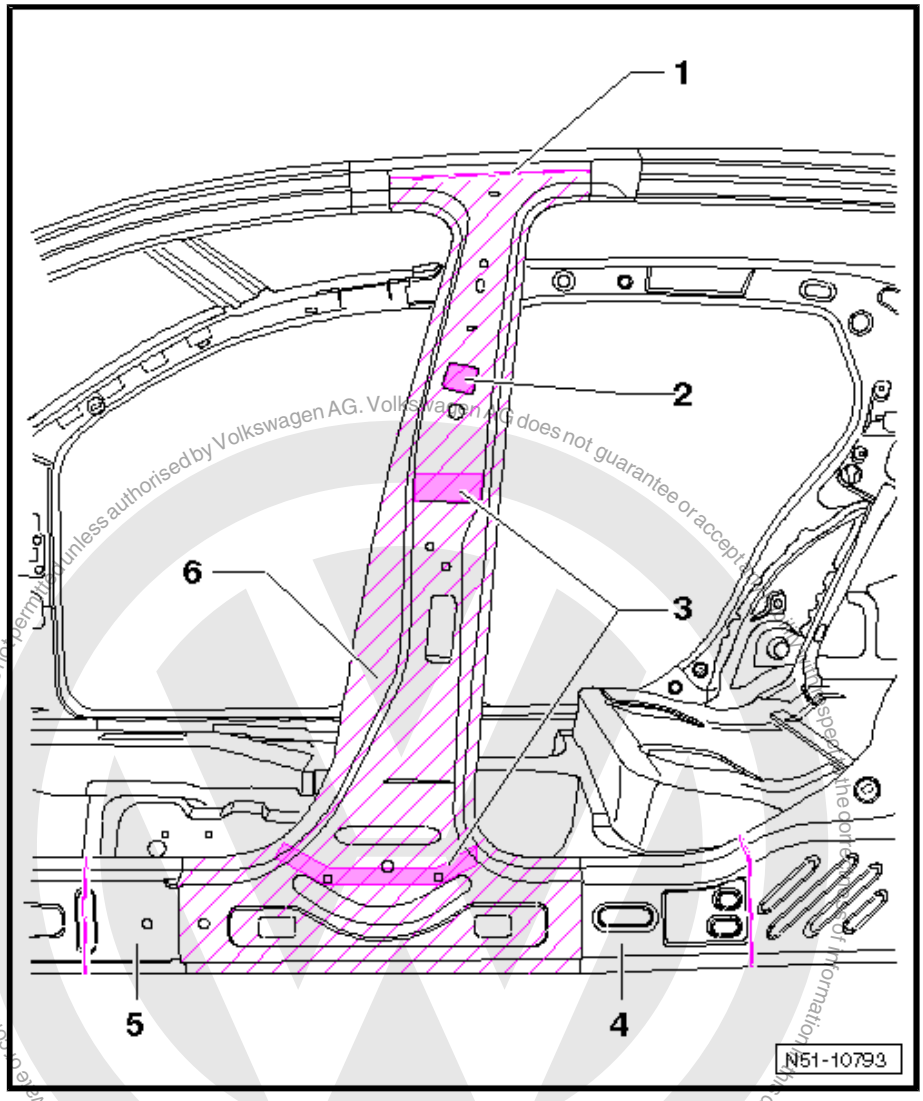
Note

4 - Side member rear reinforcement (belongs to inner side panel)

5 - Front side member reinforcement

6 - B-pillar reinforcement

Note

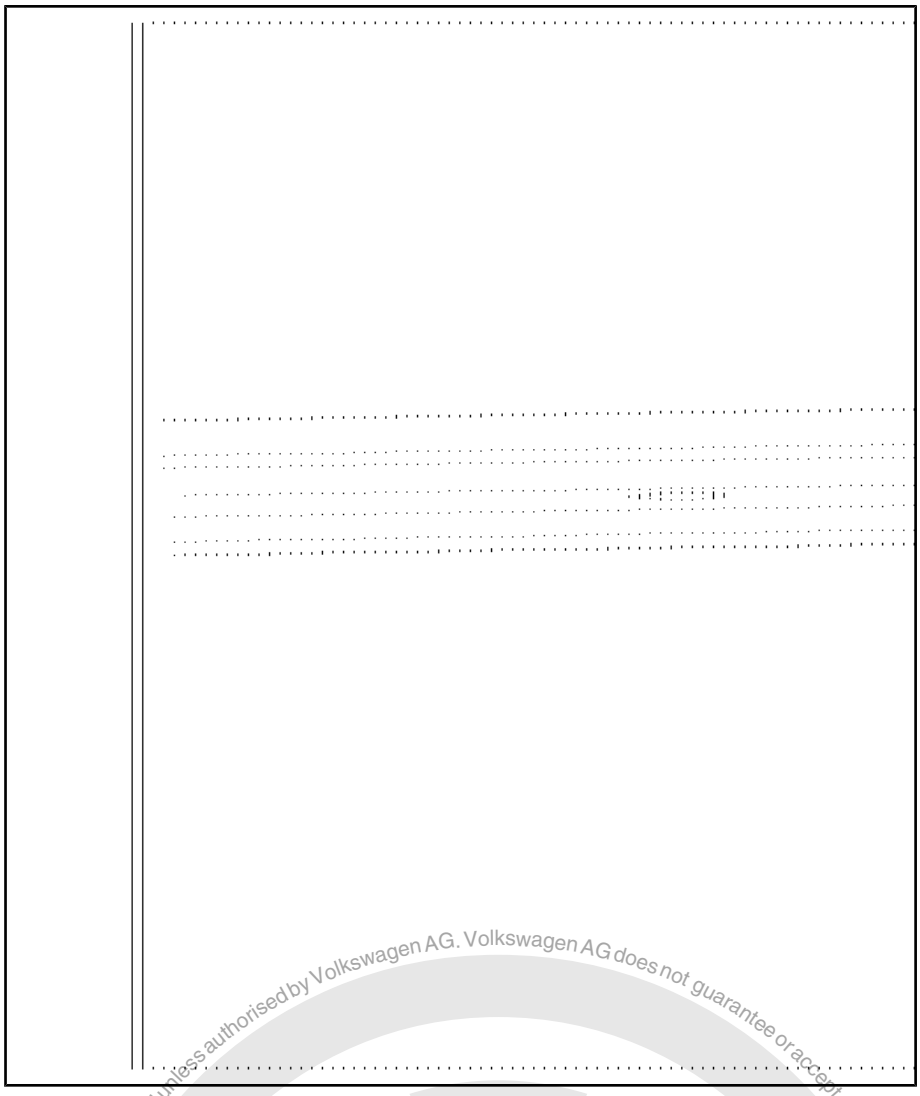


10.1 Tools

Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

10.2 Removing

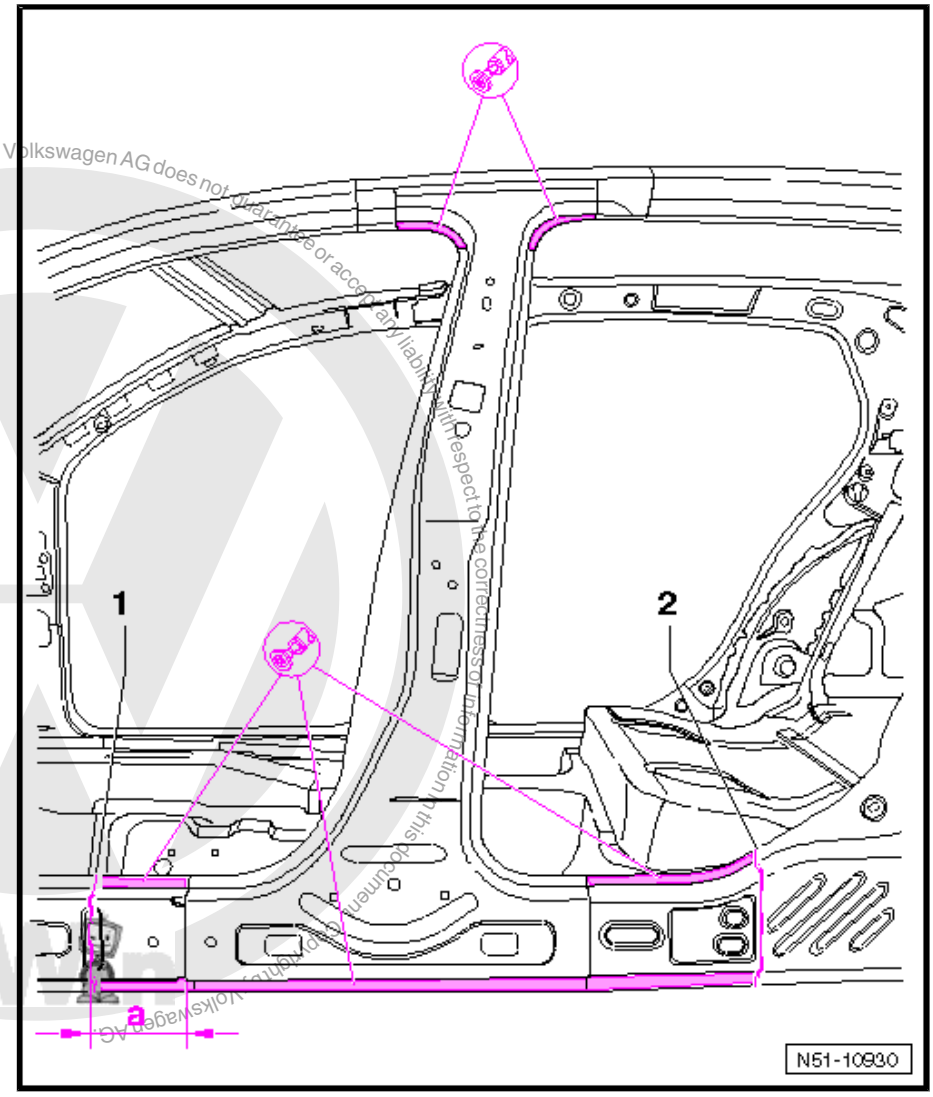


Note

When making parting cut -1- ensure that the inner lying roof member reinforcement are not damaged.

– Make parting cut -1- in roof joint as shown. First a part of the outer roof frame must be cut out when the outer B-pillar is cut out, as shown, and replaced.

– Drill out weld points as shown.



Note

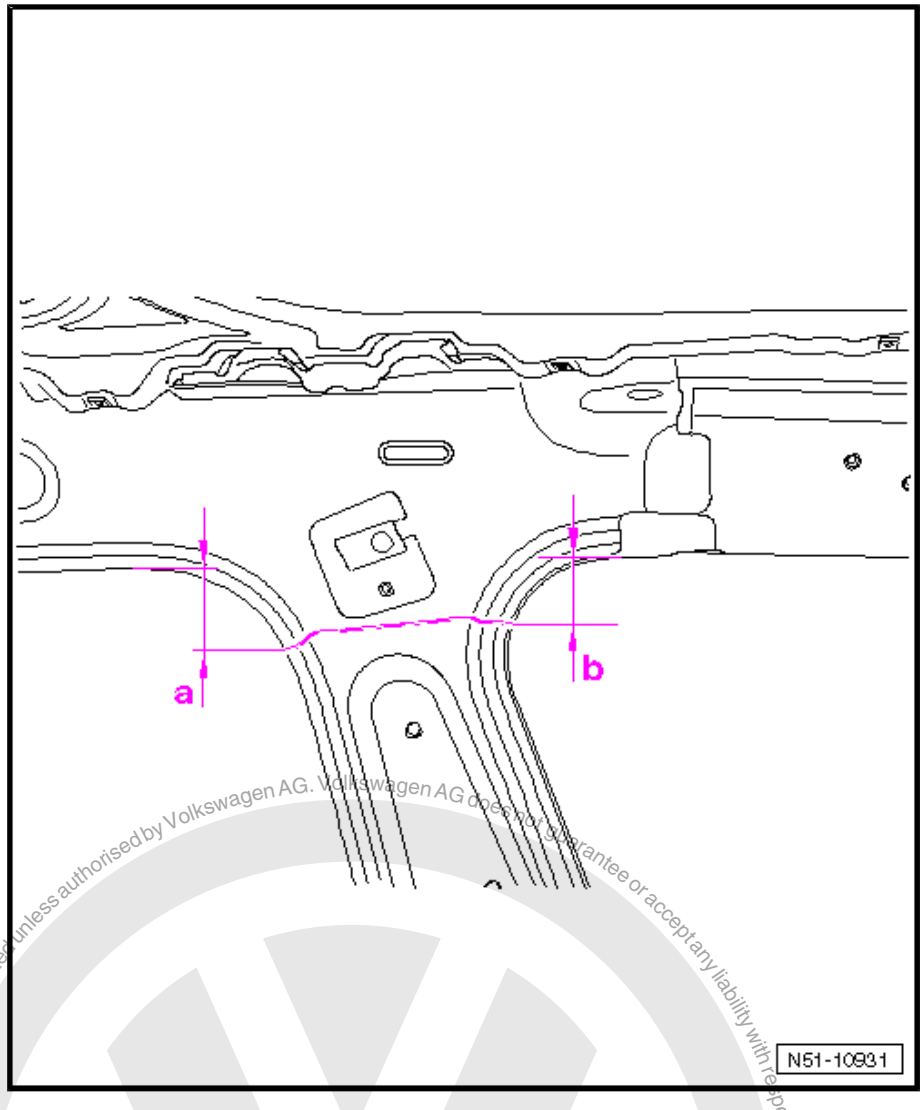
- *The mechanical door tensioners -V.A.G 1438- must be fitted in the front and rear door apertures before the following procedure is started. This prevents the position of the roof changing.*
- *When making parting cuts -1- and -2- ensure that the underlying flange area is not separated.*
- *Use laser weld bead grinder -VAS 6319- to release weld seams.*

– Make parting cuts -1- (before the internal separation plate) and -2- (behind the internal separation plate).

Dimension -a- = 160 mm

– Separate original joint to inner side member.

– Separate remaining joint in door apertures.



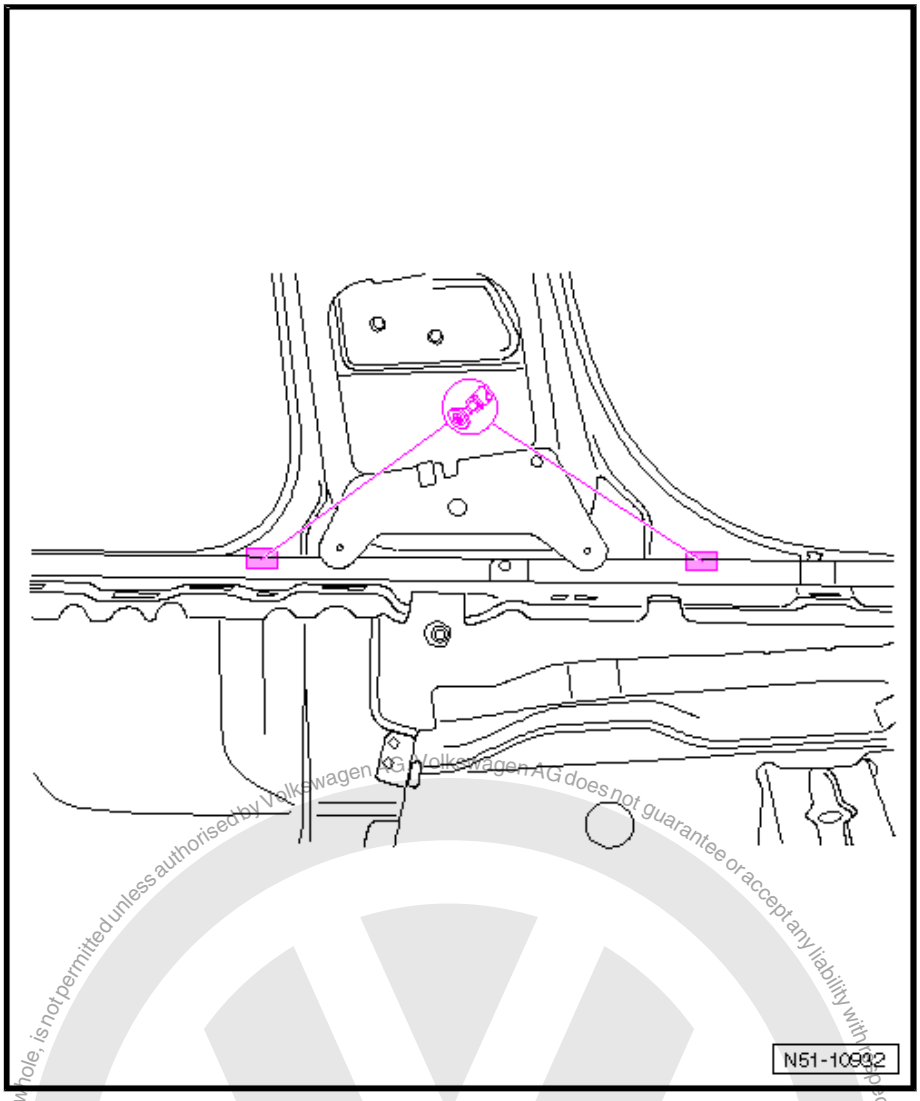
Note

Perform parting cut with body saw -V.A.G 1523- or compact angle grinder -VAS 5167- .

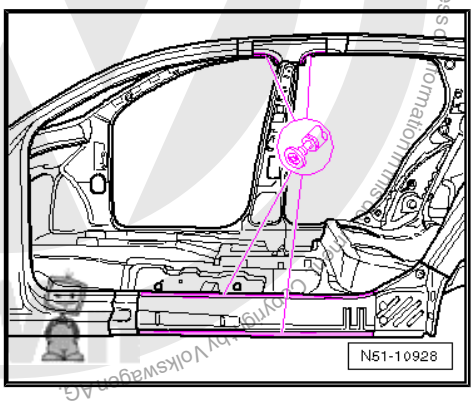
– Separate inner B-pillar in upper area as shown.

Dimension -a- = 40 mm

Dimension -b- = 32 mm



– Separate SG continuous weld seam on B-pillar to side member.
– Remove remaining material.
– Remove remaining adhesive completely and grind bonded surface back to bare metal.



10.3 Installing

Note

The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 147 .

10.3.1 Preparing new part

Replacement part

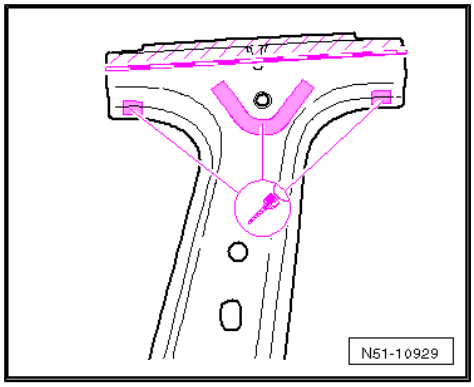
- B-pillar reinforcement
- Side member front reinforcement (parts designation: web plate for side member)
- Inner side panel (includes: inner B-pillar and rear side member reinforcement)
- Moulded foam element
- 2K body adhesive -D 180 KD3 A2-

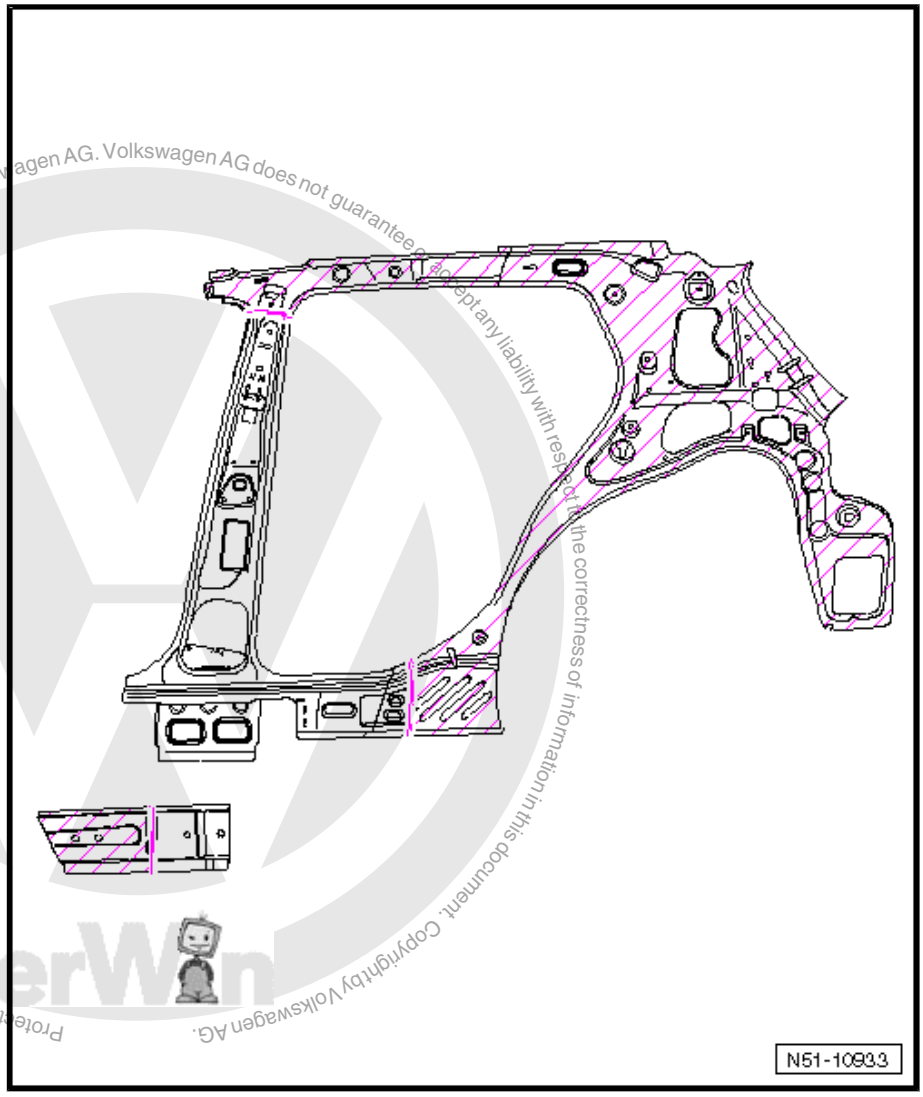
Note

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

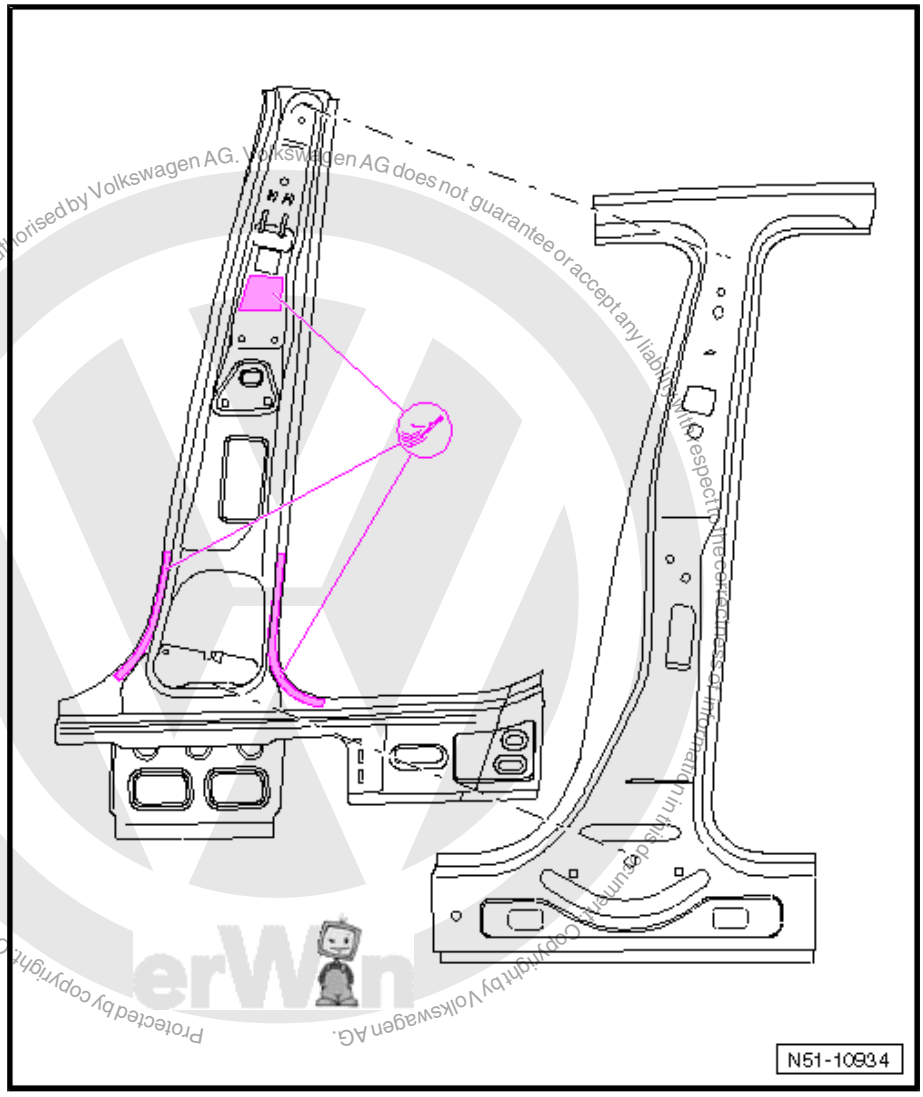
– Drill holes for SG plug weld seam.

– Transfer parting cut to B-pillar reinforcement and cut out.





– Transfer separating cut to front and inner side panel reinforcements and cut out.



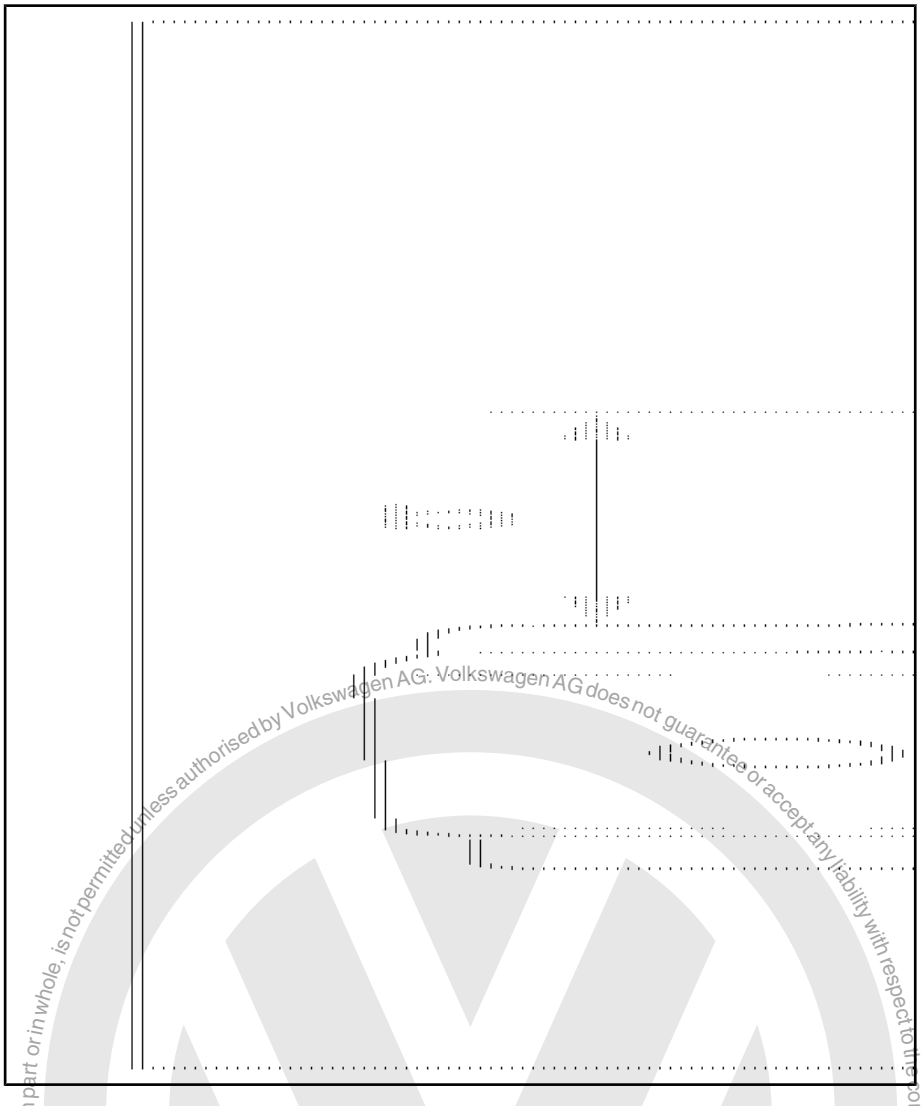
– Mark areas on B-pillar reinforcement and inner B-pillar in which no welding may be carried out ⇒ page 154 .

Note

The pot life of the 2K body adhesive -D 180 KD3 A2- is approx. 90 min. New part must be welded-in within this period or adhesion of adhesive will be impaired.

– Apply 2K body adhesive -D 180 KD3 A2- to inner B-pillar -areas as marked- in contact areas to B-pillar reinforcement.
– Join inner B-pillar to B-pillar reinforcement and fix before installing in vehicle.
– Clamp bonded areas of panel together until 2K body adhesive -D 180 KD3 A2- has cured.

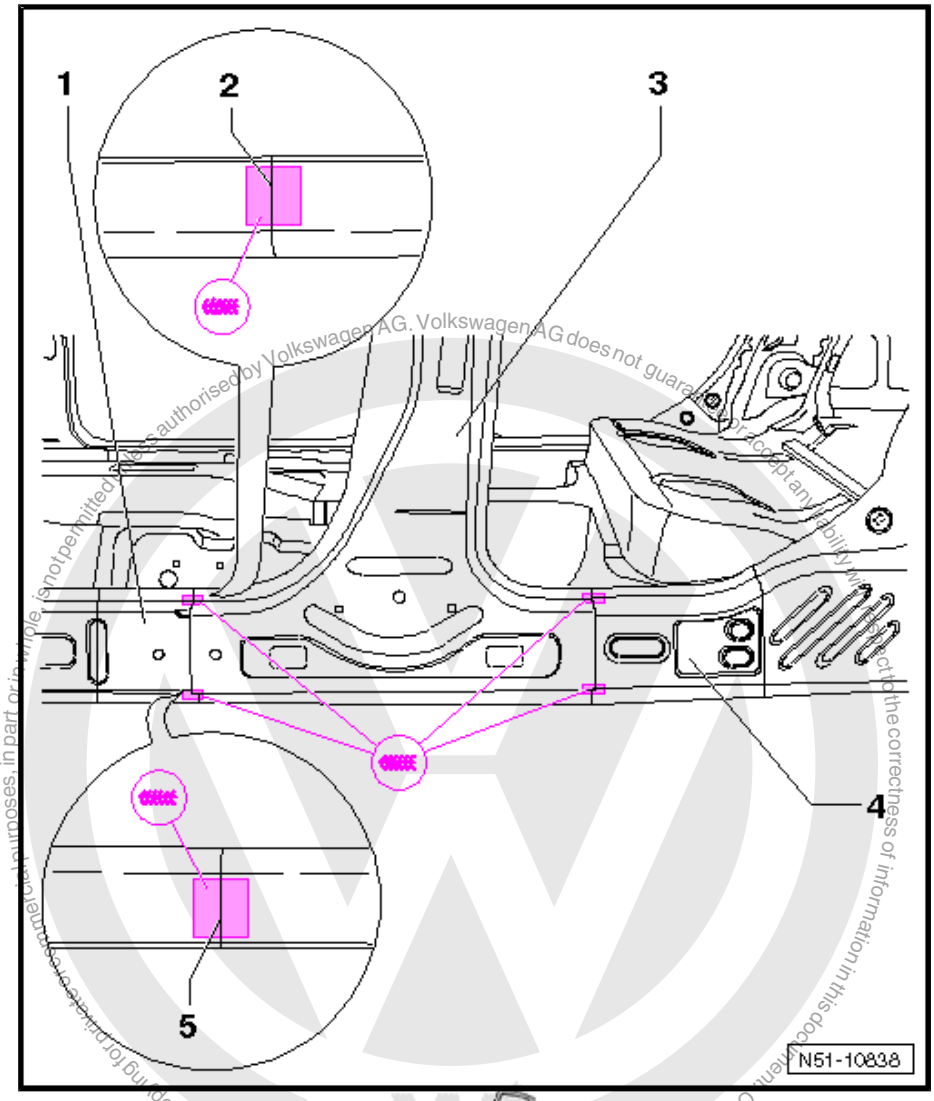
Marking areas where no welding work may be carried out



Note

- *Welding work must not be carried out in areas marked on previous illustrations due to safety reasons »crash safety« when welding in B-pillar reinforcement.*
- *The measurements given must be adhered to.*
- *Transfer dimensions to outer B-pillar before welding in outer B-pillar.*

- Dimension -a- = 45 mm
- Dimension -b- = 145 mm



Note

- *The side member reinforcement and the B-pillar reinforcement may only be joined 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.*
- *The enlargements show the weld points for the side member front reinforcement -1- and the B-pillar reinforcement -3-. The weld points in the illustrations should also be used for the B-pillar reinforcement -3-and side member rear reinforcement -4-.*

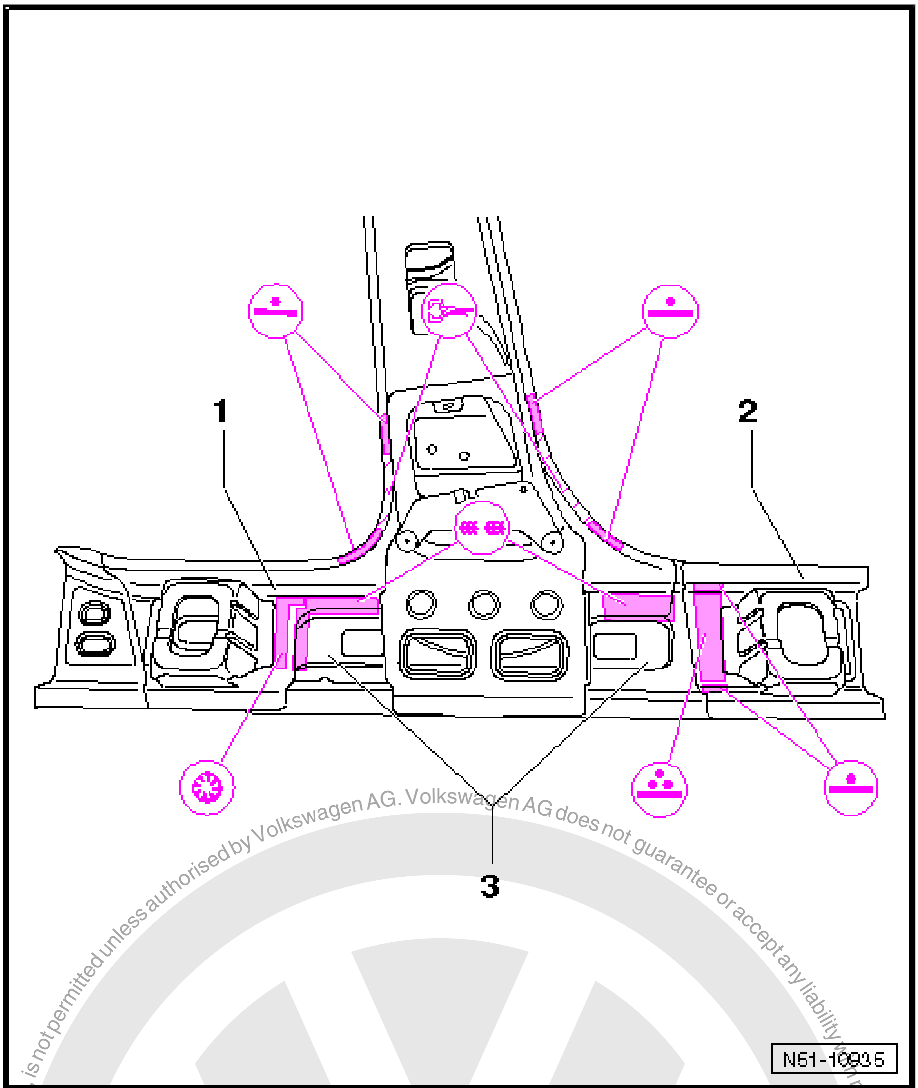
– Adapt new part with vehicle positioned on alignment bracket set and fix in place.

– Check fit to B-pillar.

– Tack weld side member front reinforcement -1- to B-pillar reinforcement -3- from above -2- and below -5-, SG continuous weld (2 x tack welds, max length of 10 mm).

– Tack weld side member rear reinforcement -4- to B-pillar reinforcement -3- from above -2- and below -5-, SG continuous weld (2 x tack welds, max length of 10 mm).

– Remove new part from vehicle.



Note

Note that no welding work may be carried out in -shaded- areas .

– In the areas as marked -shaded- clamp panels together until 2K body adhesive -D 180 KD3 A2- has cured.

– Position one RP spot weld above and below each of the areas where no welding work may be carried out.

– Weld side member front reinforcement -2- to B-pillar reinforcement -3-, RP spot welds (2 x spot welds on each upper and lower sides and 8 x spot welds in two rows on outer side).

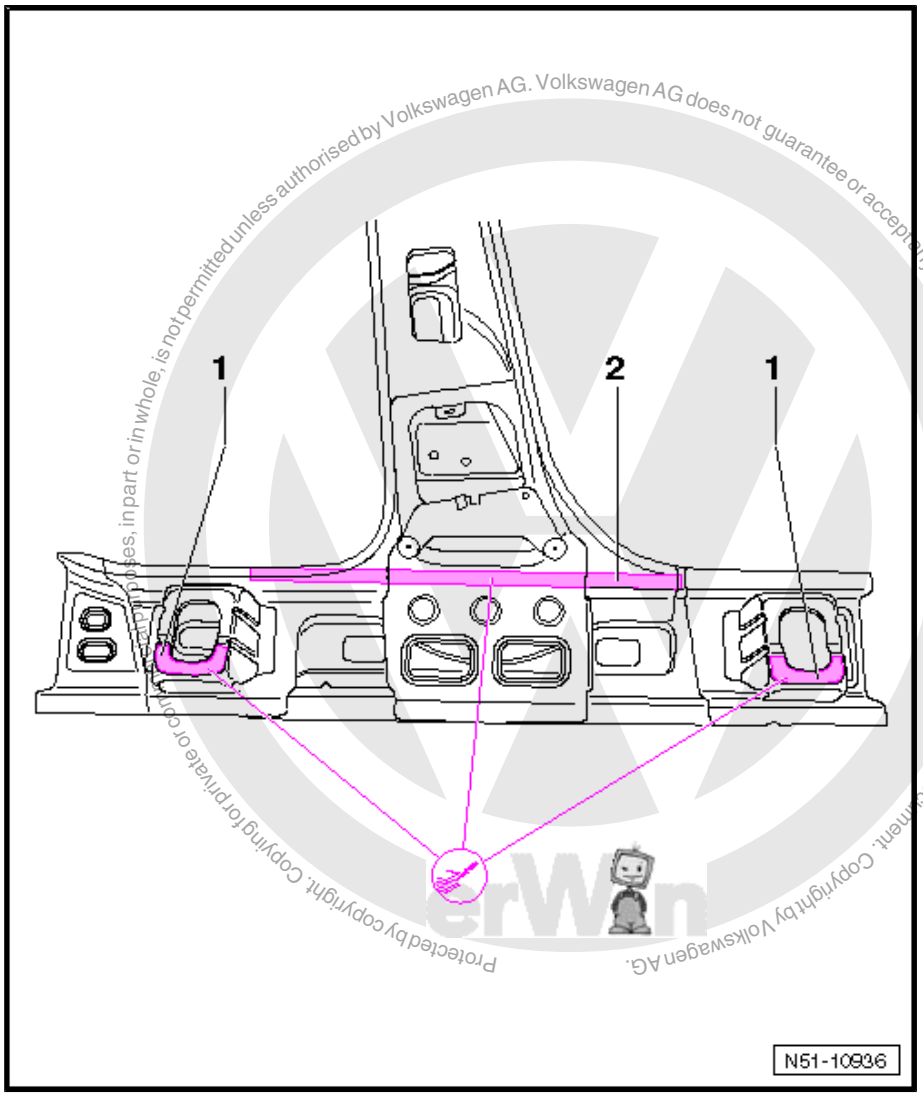
– Weld side member rear reinforcement -1- to B-pillar reinforcement -3- from interior, SG plug weld seam and staggered SG continuous weld seam (see separated pillar).

10.3.2 Moulded foam elements

Follow repair instructions.

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

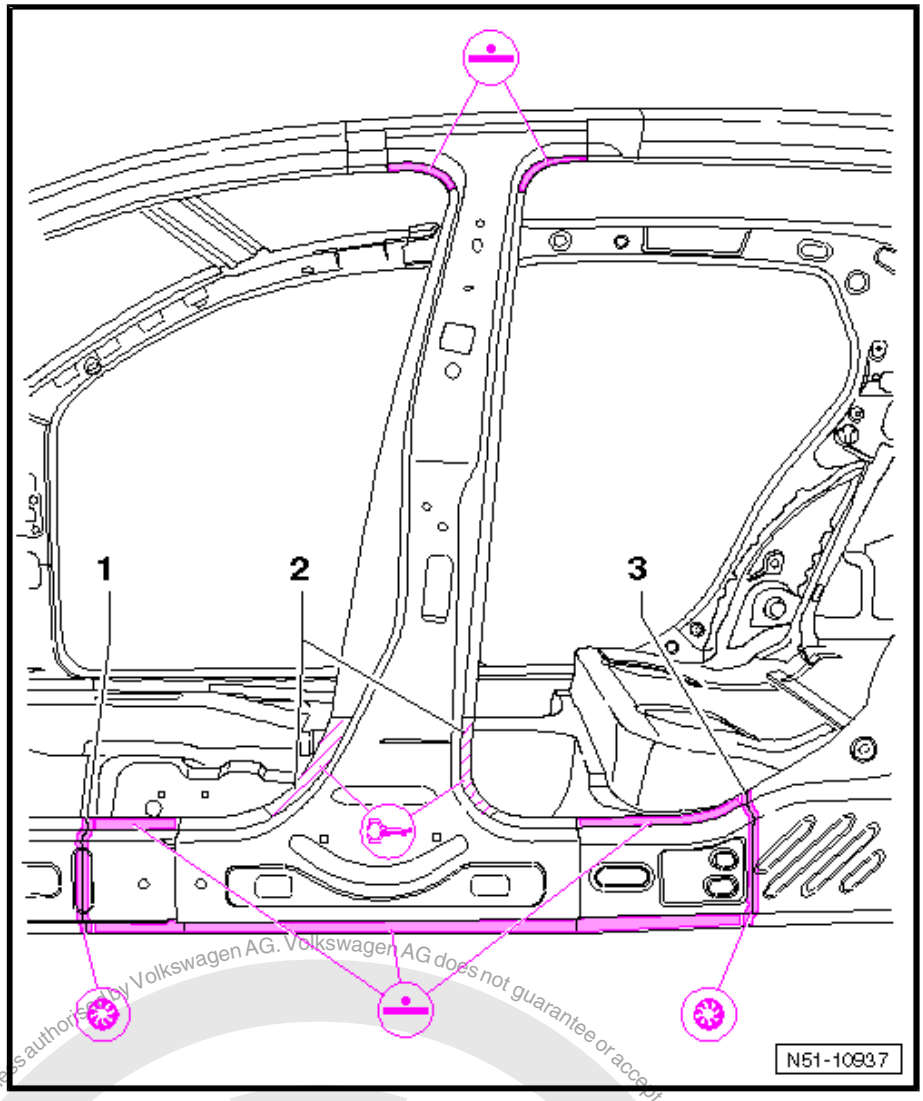
10.3.3 Welding in



Note

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

– Apply 2K body adhesive -D 180 KD3 A2- to areas -1- and -2- (1 x 3.5 mm ∅ bead).
– Adapt B-pillar with vehicle positioned on alignment bracket set and fix in place.
– Check fit with adjacent parts.

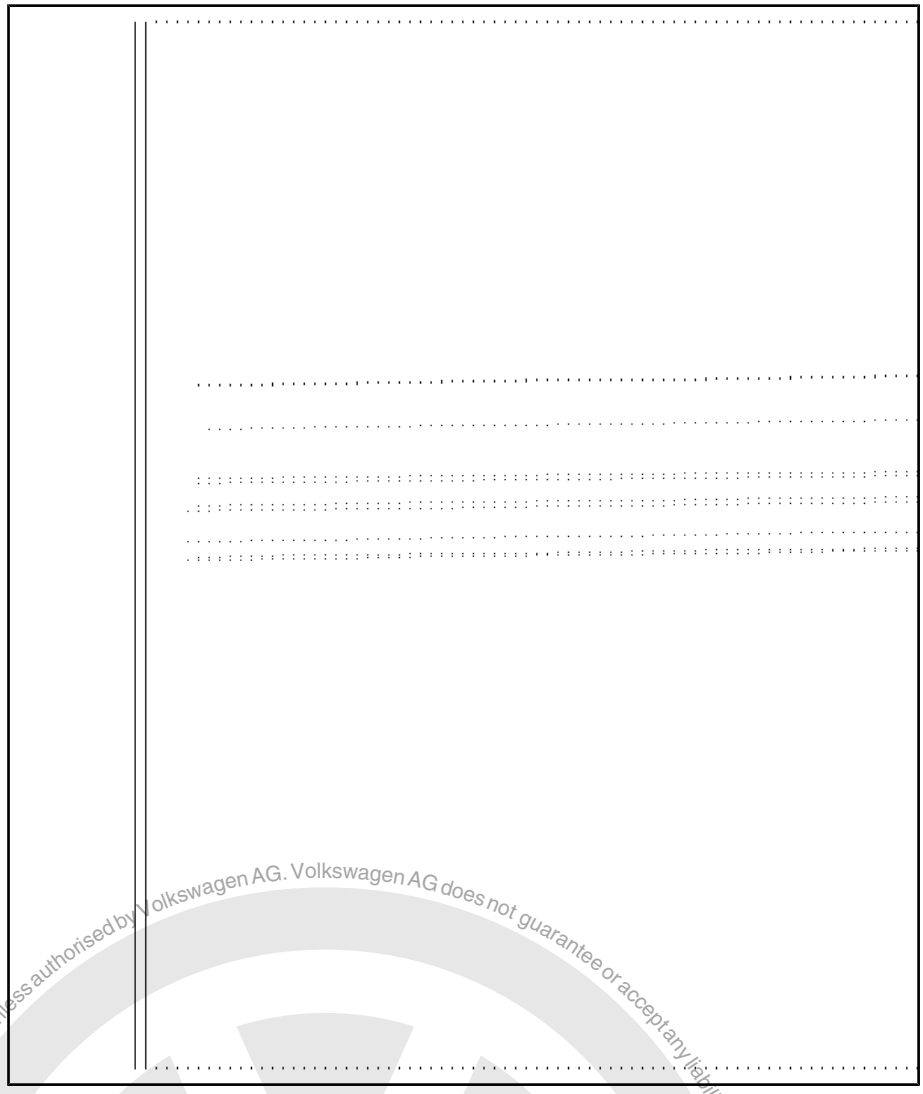


Note

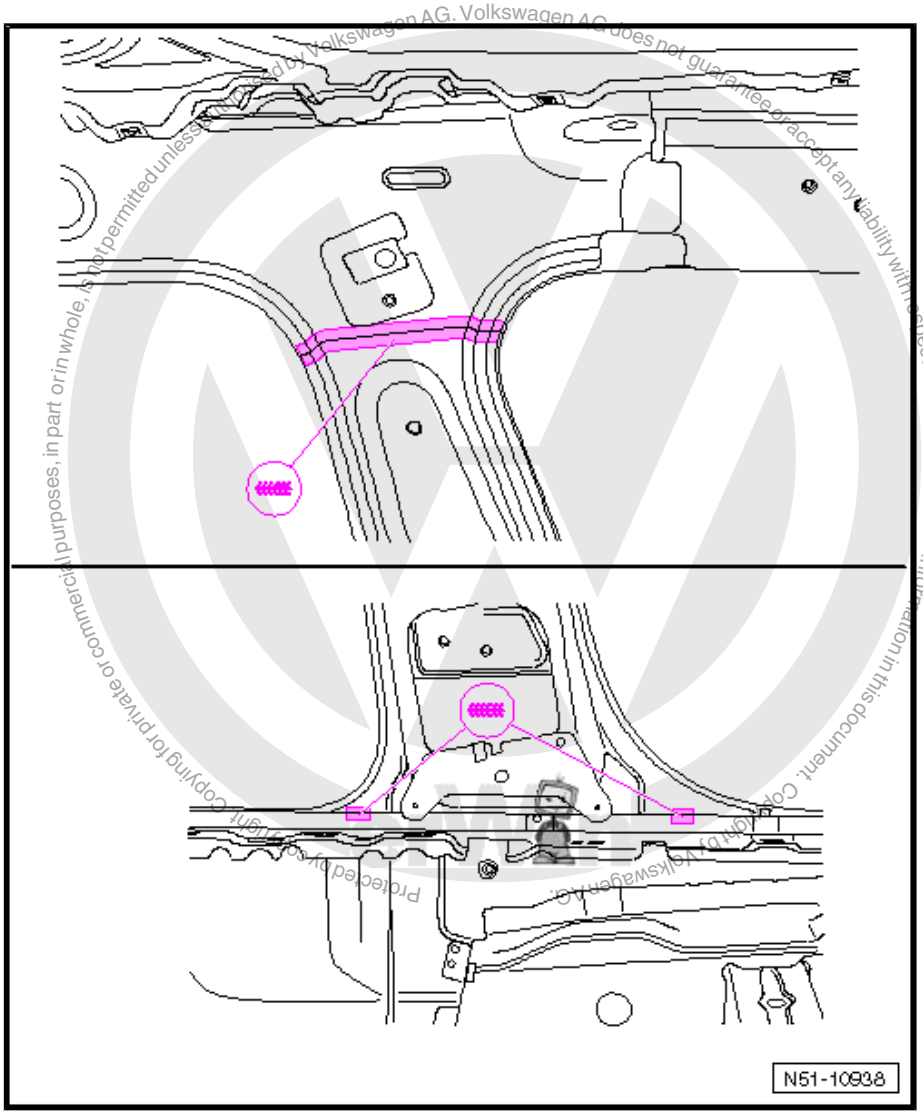
- *Note that no welding work may be carried out in areas -2-.*
- *The fitted clamps in areas -2- must remain in position on B-pillar reinforcement until 2K body adhesive - D 180 KD3 A2- cures.*

– Weld B-pillar reinforcement to side member front reinforcement -1- and side member rear reinforcement -3-, SG continuous weld seam.

– Recreate original joints to side member and roof member, RP spot weld seam.



– Weld in parting cut for B-pillar reinforcement, SG continuous weld seam.
– Weld in B-pillar reinforcement, SG plug weld seam.



– Weld in parting cut for upper area of inner B-pillar, SG continuous weld seam.
– Weld inner B-pillar joints to side member, SG continuous weld seam.
– Weld in outer B-pillar.
– Weld in side member.

RO: 51 45 55 00

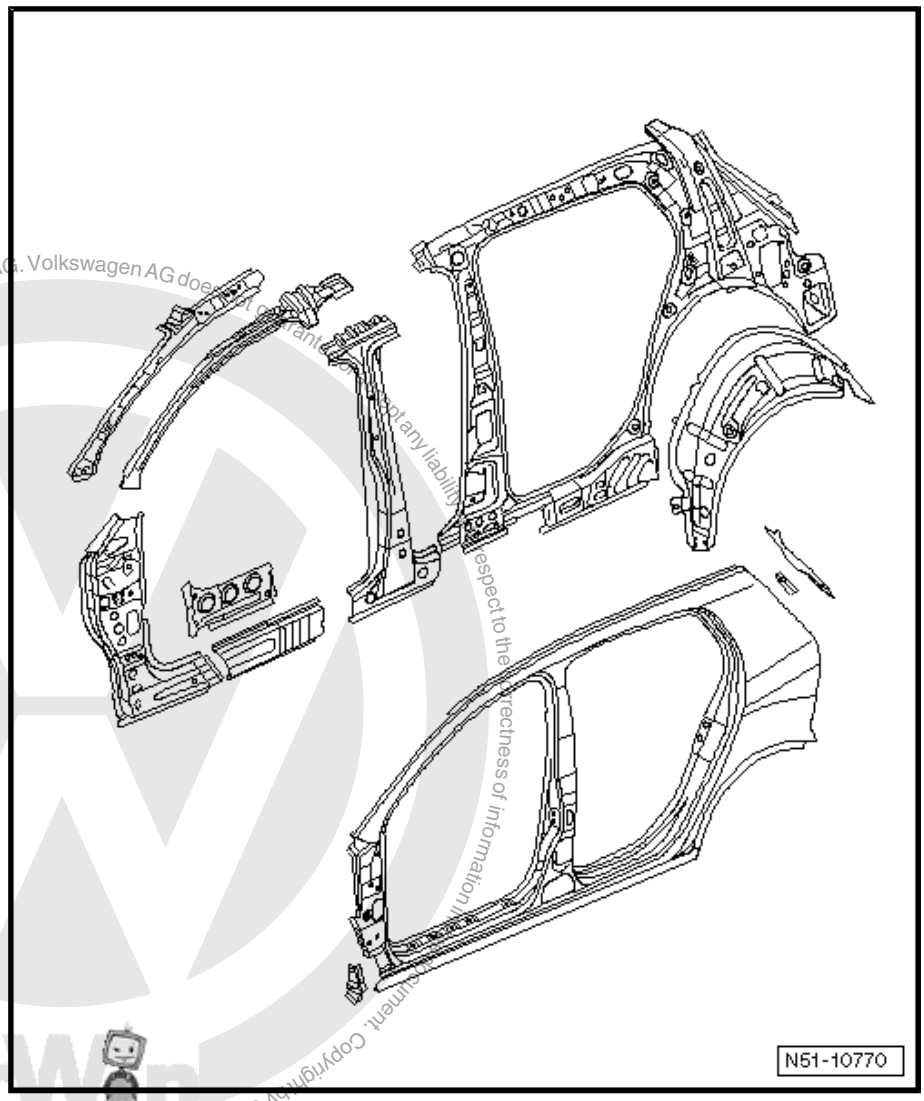
11 Renewing side member

WARNING

Observe safety notes!

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

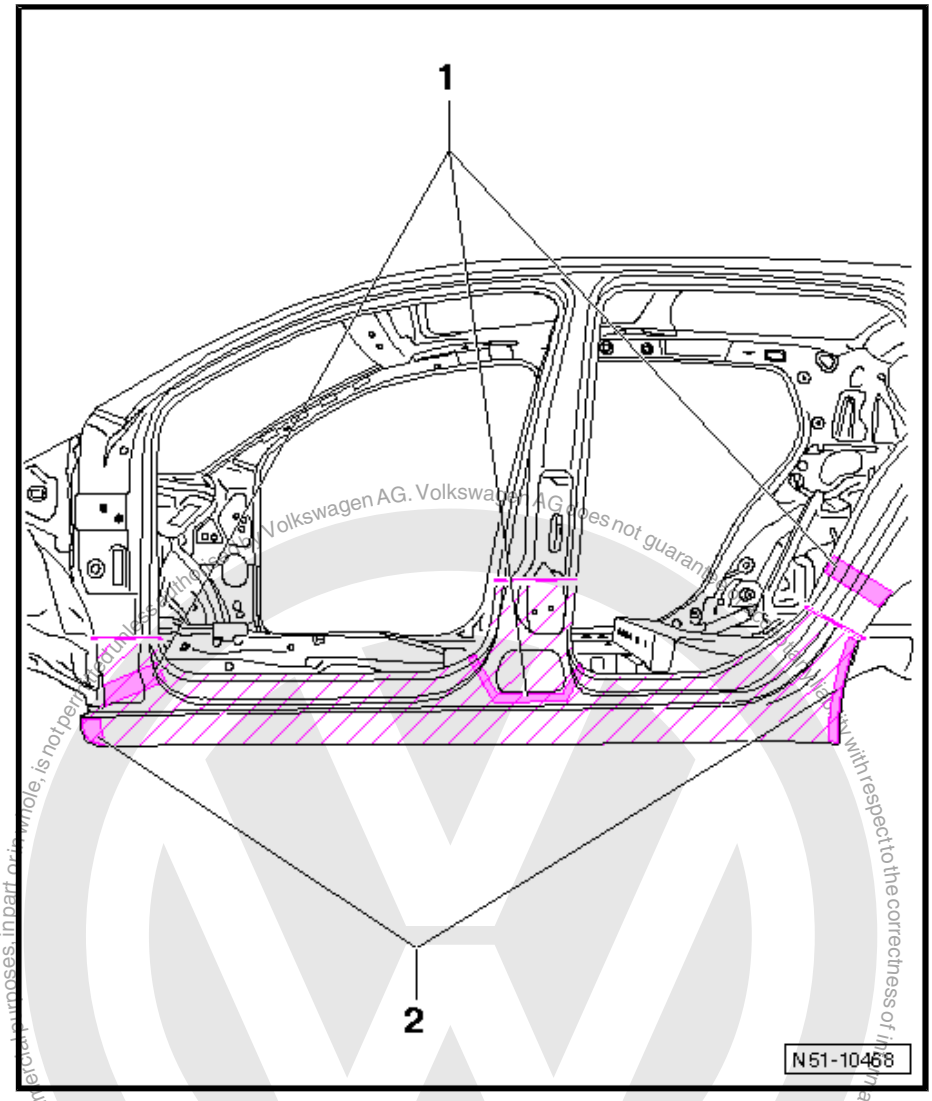
⇒ General Information; Body Repairs, General Body Repairs ; Safety instructions



1 - Moulded foam element

Note

2 - Bonded section



11.1 Tools

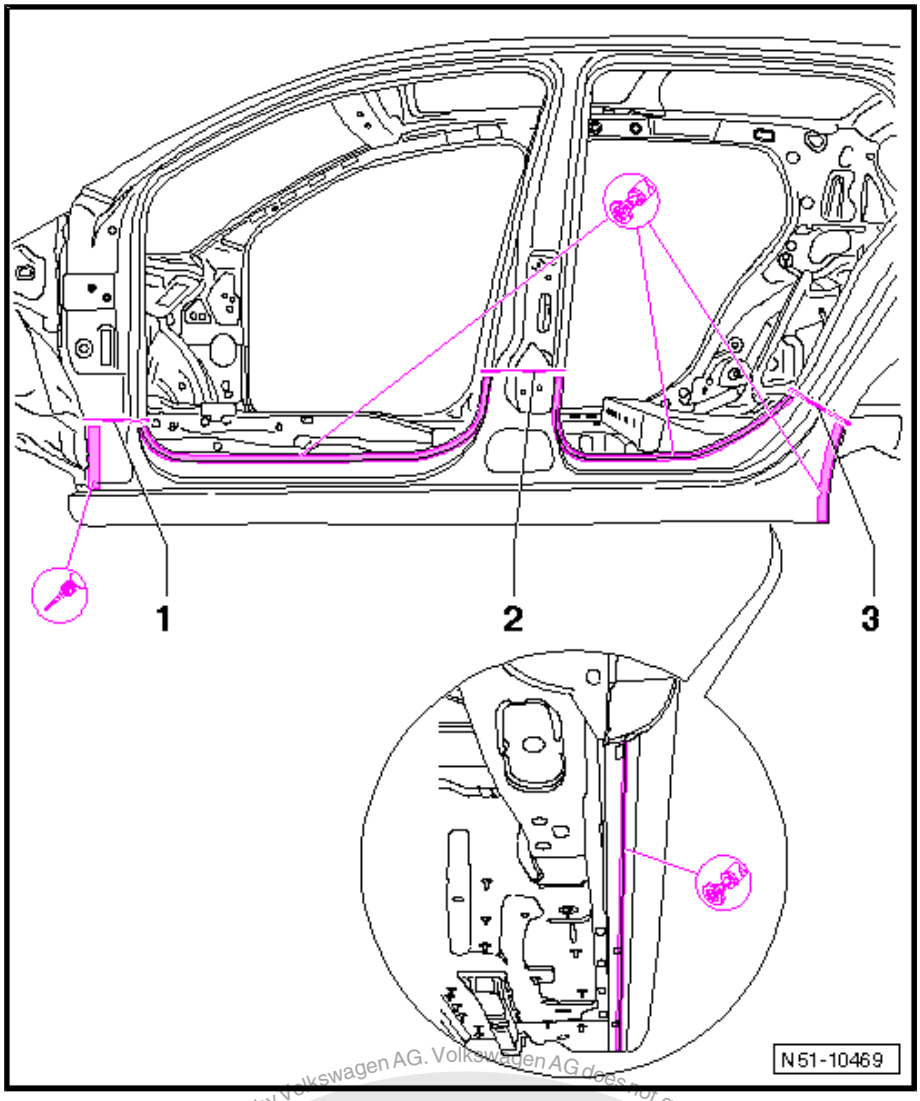
Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

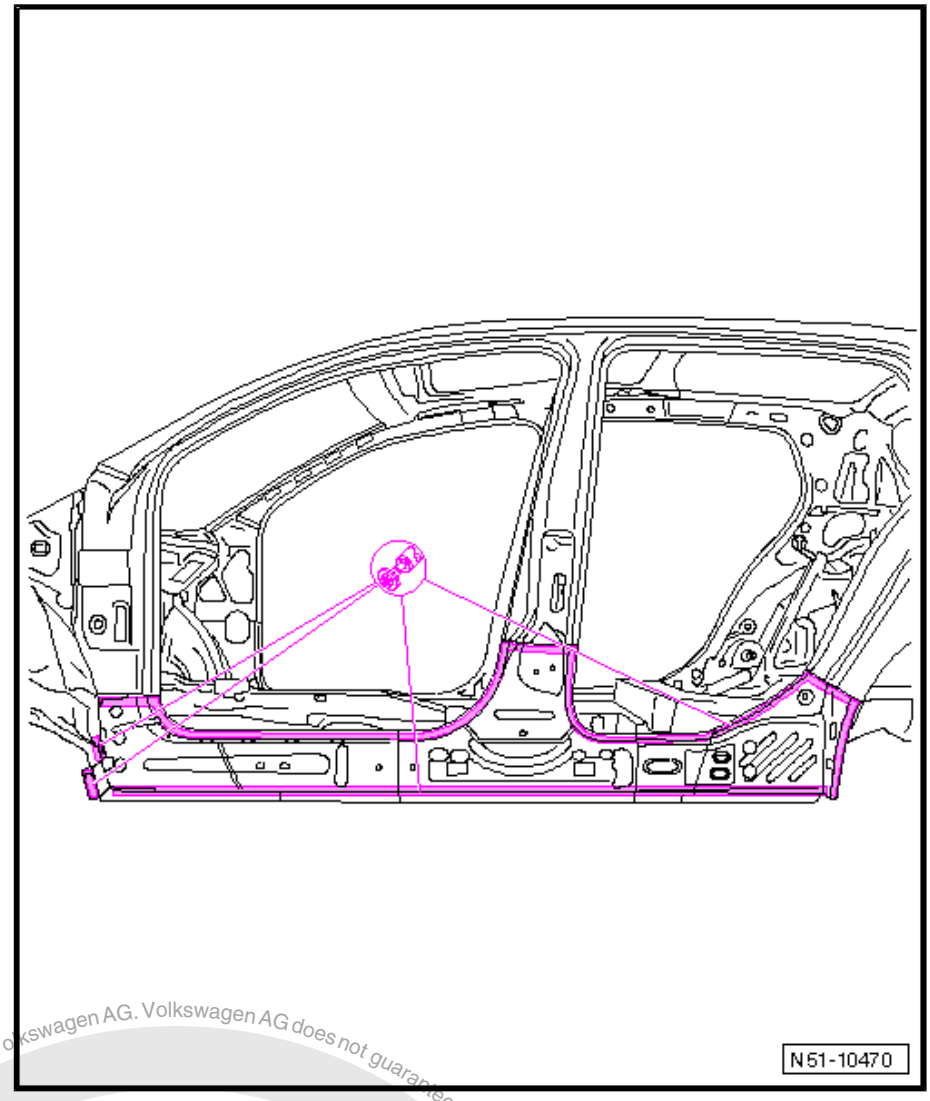
11.2 Removing

Note

Make parting cuts with pneumatic jig-saw -V.A.G 1523- only.



– Set parting cut -1- at the side member, depending on the damage.
– Position parting cut -2- above lower door hinge mounting of rear door.
– When making parting cut -3-, keep cutting/overlap of replacement part in mind.
– Grind through outer edge of wheel arch.
– Separate original joint.



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

11.3 Installing

Note

The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 163 .

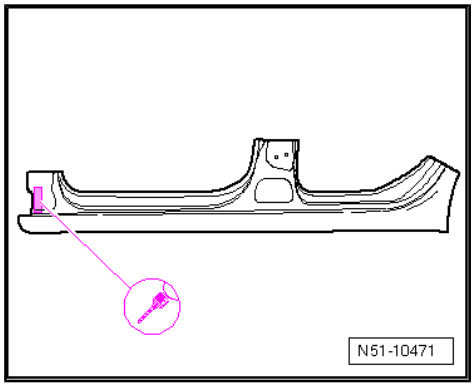
11.3.1 Preparing new part

Replacement part

- Side member (subpart)
- Moulded foam element
- 2K body adhesive -D 180 KD3 A2-

– Transfer parting cut to new part and cut out.

– Drill 7 mm ∅ holes for SG plug weld seam.

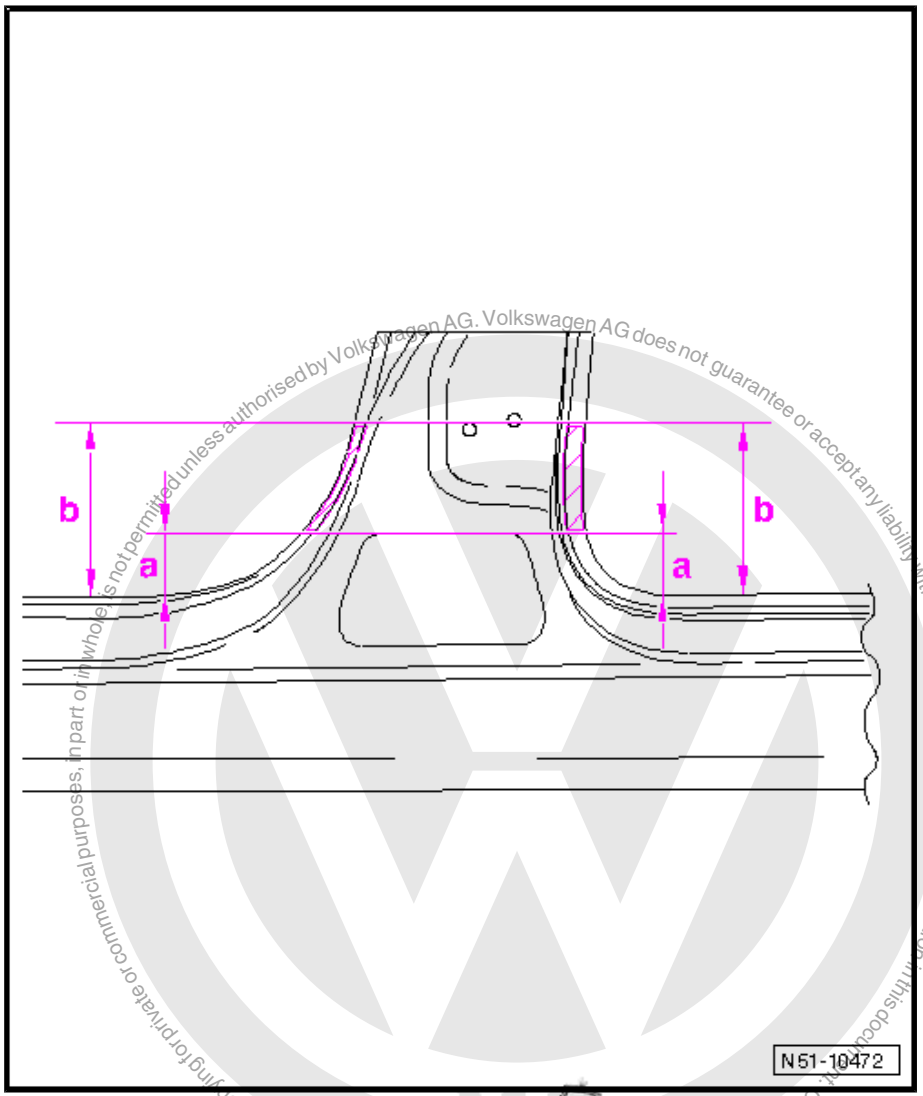


11.3.2 Moulded foam elements

Follow repair instructions.

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

11.3.3 Marking the area where no welding work may be carried out

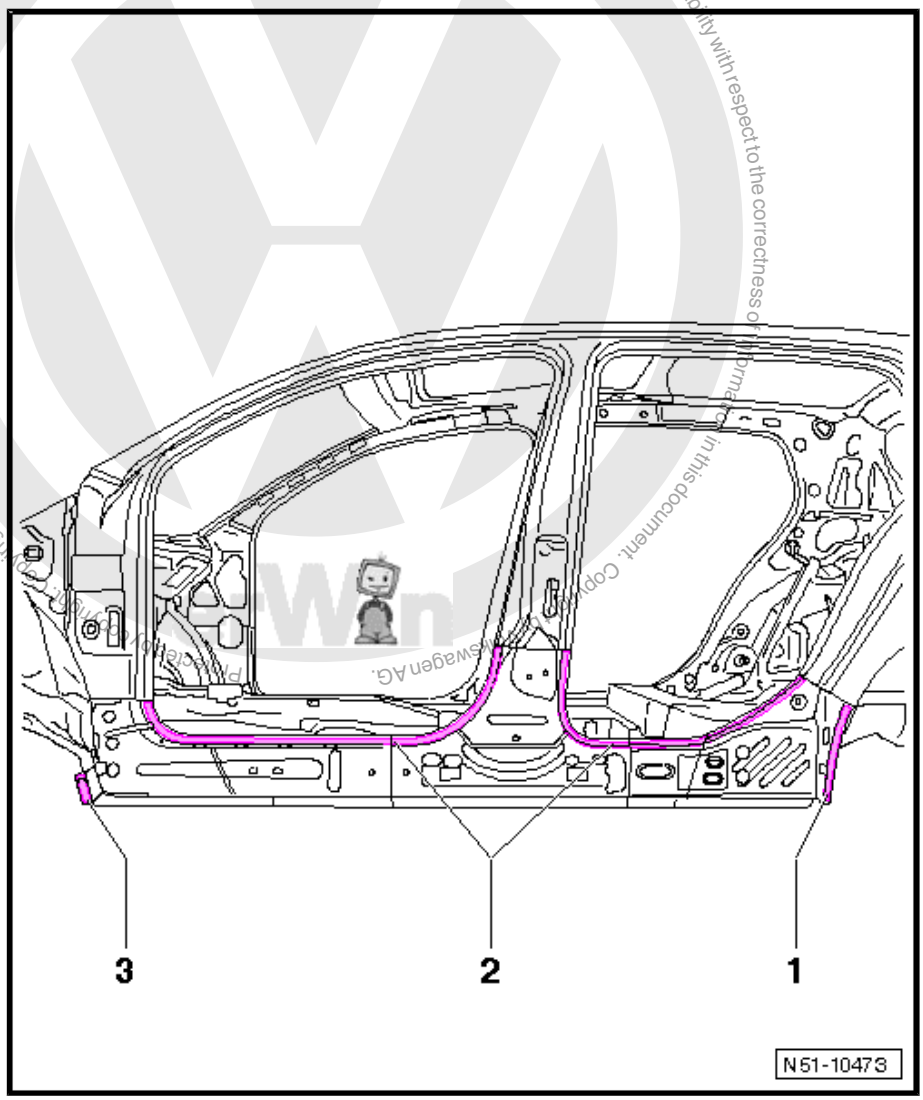


Note

- *Mark on the side member the area in which, for safety reasons »crash safety«, no welding work may be carried out.*
- *The measurements given must be adhered to.*

- Dimension -a- = 45 mm
- Dimension -b- = 145 mm

11.3.4 Welding in



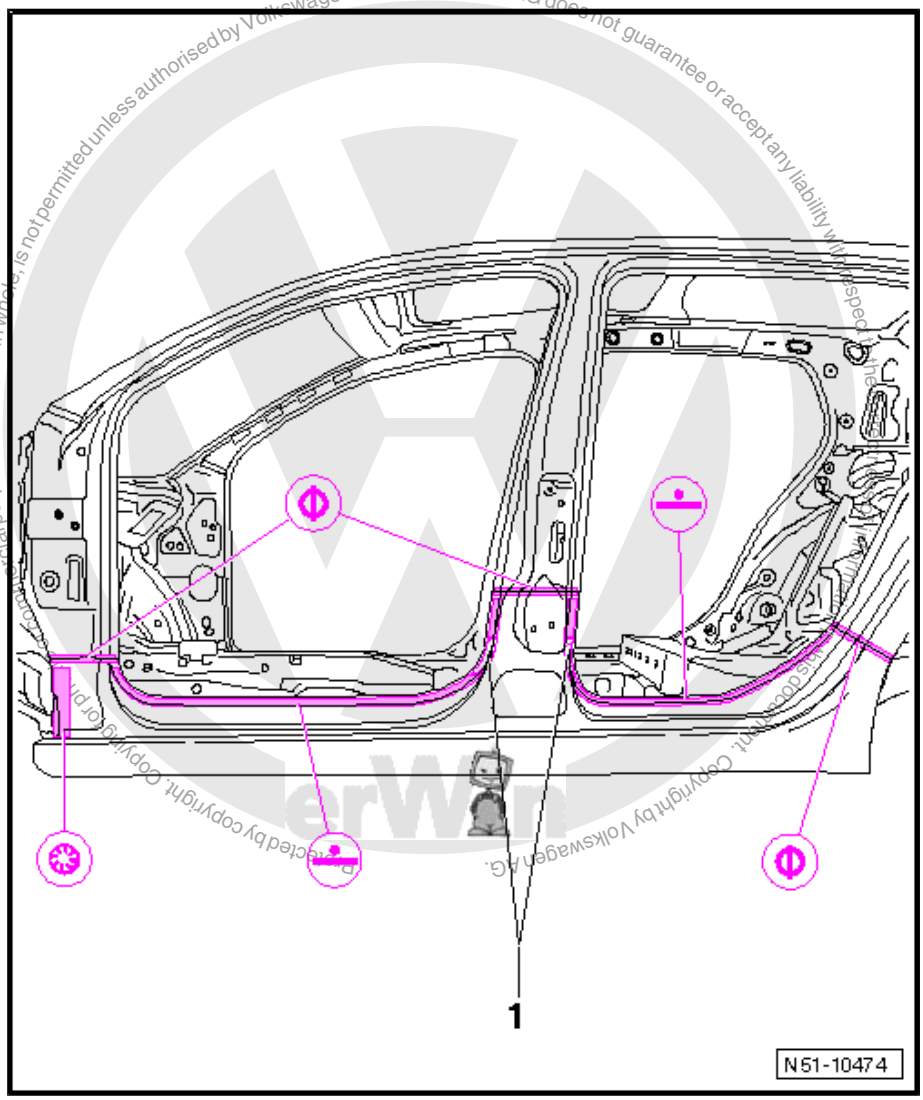
– Apply 2K body adhesive -D 180 KD3 A2- to areas -1- (2 x 3.5 mm ∅ beads), -2- and -3- (1 x 3.5 mm ∅ bead)

– Apply 2K body adhesive -D 180 KD3 A2- around the holes on the front and rear sill panel reinforcements for the sill panel trim (1 x 3.5 mm ∅ bead).

Note

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

– Place backing material behind parting cut on the side member.
– Adapt new part with vehicle standing on its wheels or on alignment bracket set and fix in position.
– Check fit with bolt-on parts.

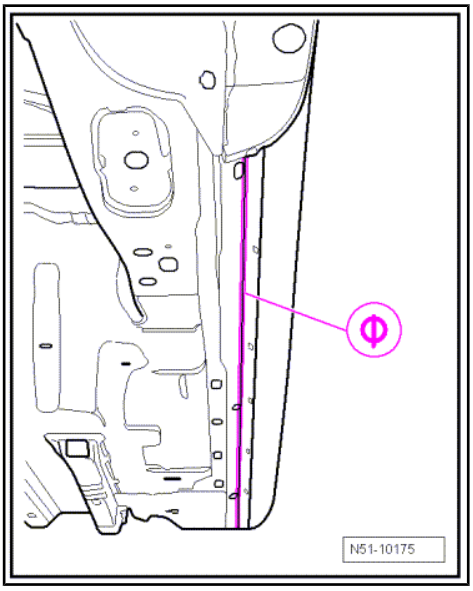


– Butt weld parting cut of A-pillar and B-pillar, SG stepped weld seam.
– Weld side member parting cut to side panel, SG stepped weld seam.

Note

Note that no welding work may be carried out in areas -1-.

– Recreate original joint, RP spot weld seam and SG plug weld seam.
– Recreate remaining joint side member reinforcement, SG stepped seam.
– Reform wheel housing flange.
– Wipe away excess adhesive and seal wheel arch.



RO: 51 46 55 00

12 Renewing seat cross member mounting plate

(outer)

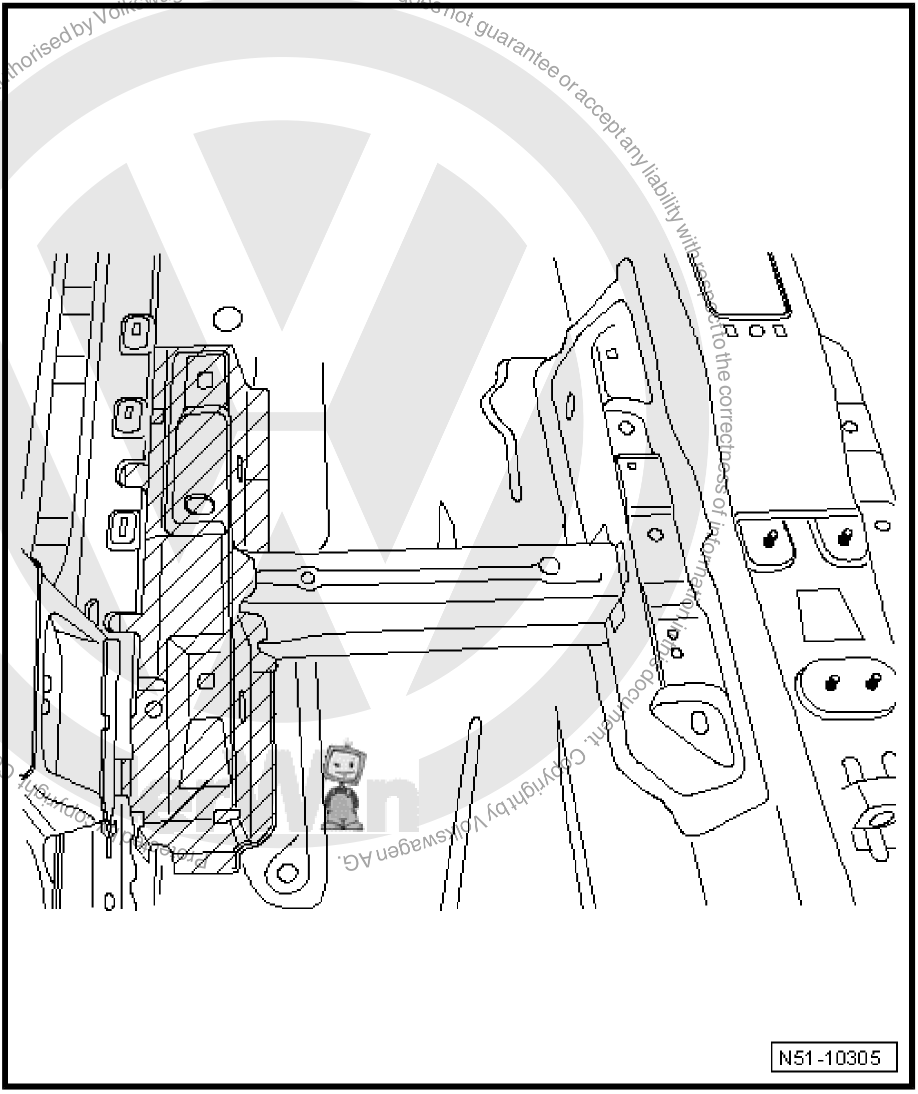
WARNING

Observe safety notes!

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

Note

- *If a thread in the seat cross member mounting plate is damaged, the component must be replaced.*
- *The vehicle identification number is stamped on the right side of the vehicle. If this member has to be replaced during accident damage repair, an impartial expert is to be consulted (reference chassis number) prior to the work being carried out.*



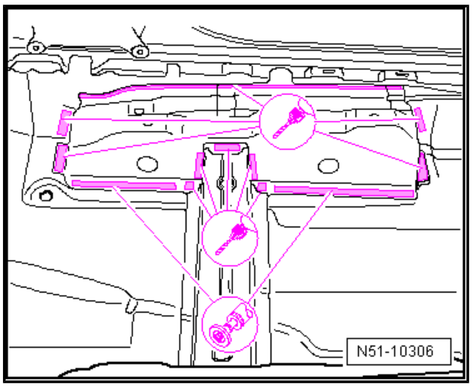
12.1 Removing

Note

When separating laser welded seams, ensure that the underlying panels are not damaged.

– Separate original joint.

– Remove remaining material.



12.2 Installing

12.2.1 Preparing new part

Replacement part

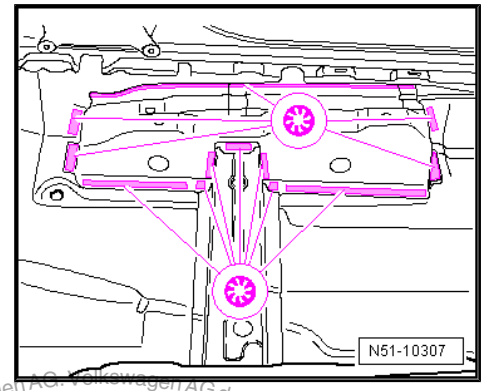
- ♦ Seat cross member mounting plate

– Drill 7 mm ∅ holes for SG plug weld seam.

– Adapt new part to fit and fix in position.

12.2.2 Welding in

– Weld in seat cross member mounting plate, SG plug weld seam.



RO: 51 46 55 50

13 Renewing seat cross member mounting plate

(on Tunnel)

⚠ WARNING

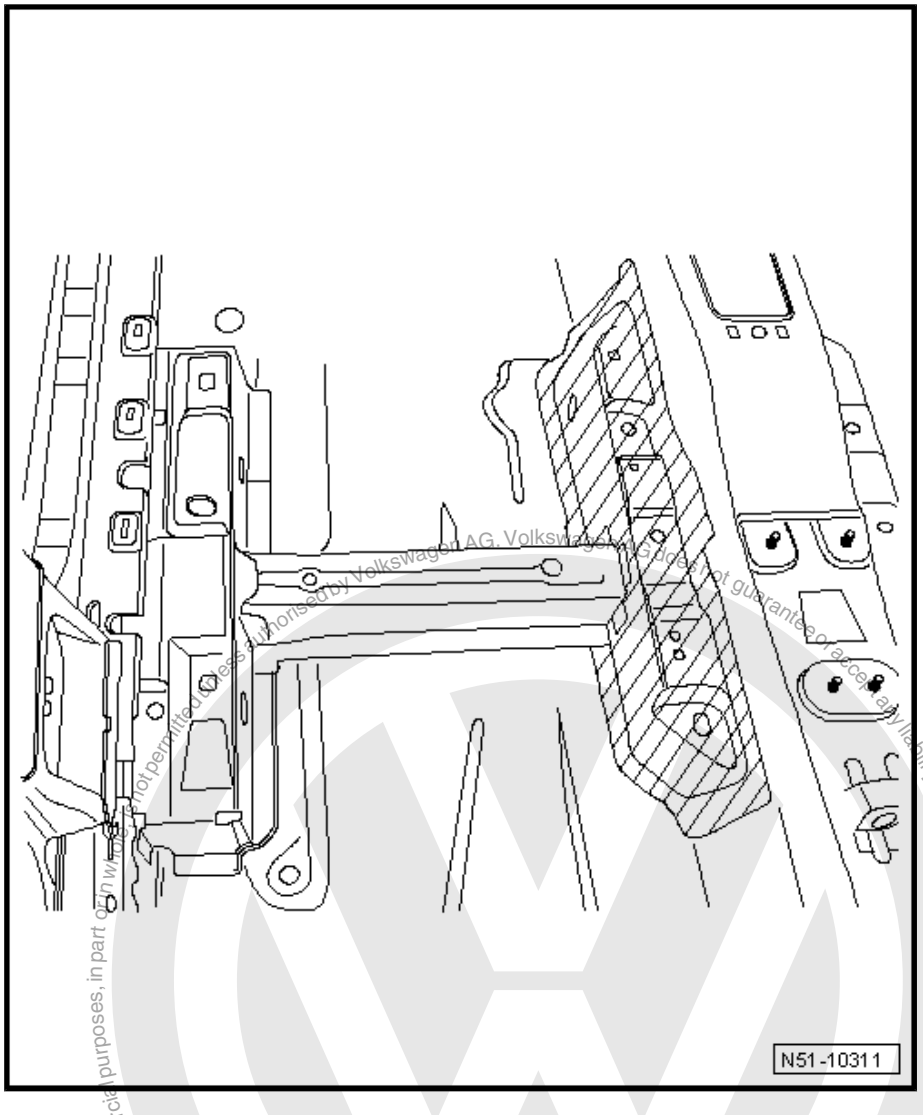
Observe safety notes!

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

Note

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

- Rear seat cross member already removed ⇒ „12 Renewing seat cross member mounting plate“, page 170
- Seat middle cross member already removed ⇒ „17 Renewing seat cross member“, page 191

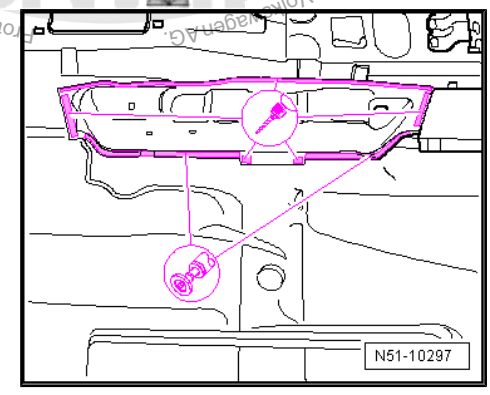


13.1 Removing

Note

When separating laser welded seams, ensure that the underlying panels are not damaged.

– Separate original joint.
– Remove remaining material.



13.2 Installing

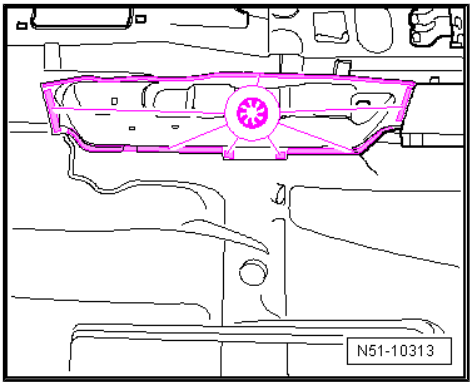
13.2.1 Preparing new part

Replacement part

- ♦ Seat cross member mounting
- – Drill 7 mm ∅ holes for SG plug weld seam.
- – Adapt new part to fit and fix in position.

13.2.2 Welding in

- – Weld in seat cross member mounting plate, SG plug weld seam.
- – Install seat middle cross member
  ⇒ „17.2 Installing“, page 192 .
- – Install outer cross member for seat
  ⇒ „12.2 Installing“, page 172 .



RO: 51 49 55 52

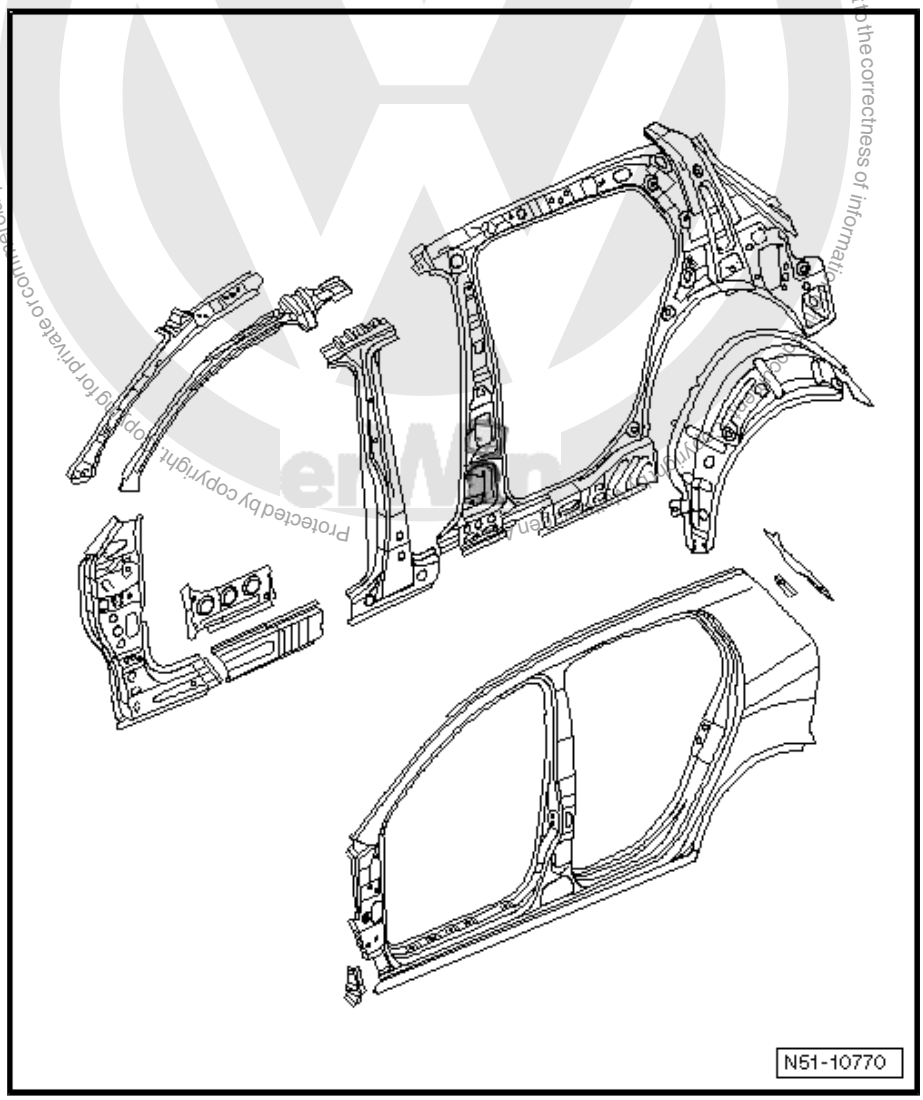
14 Renewing front side member reinforcement

WARNING

Observe safety notes!

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

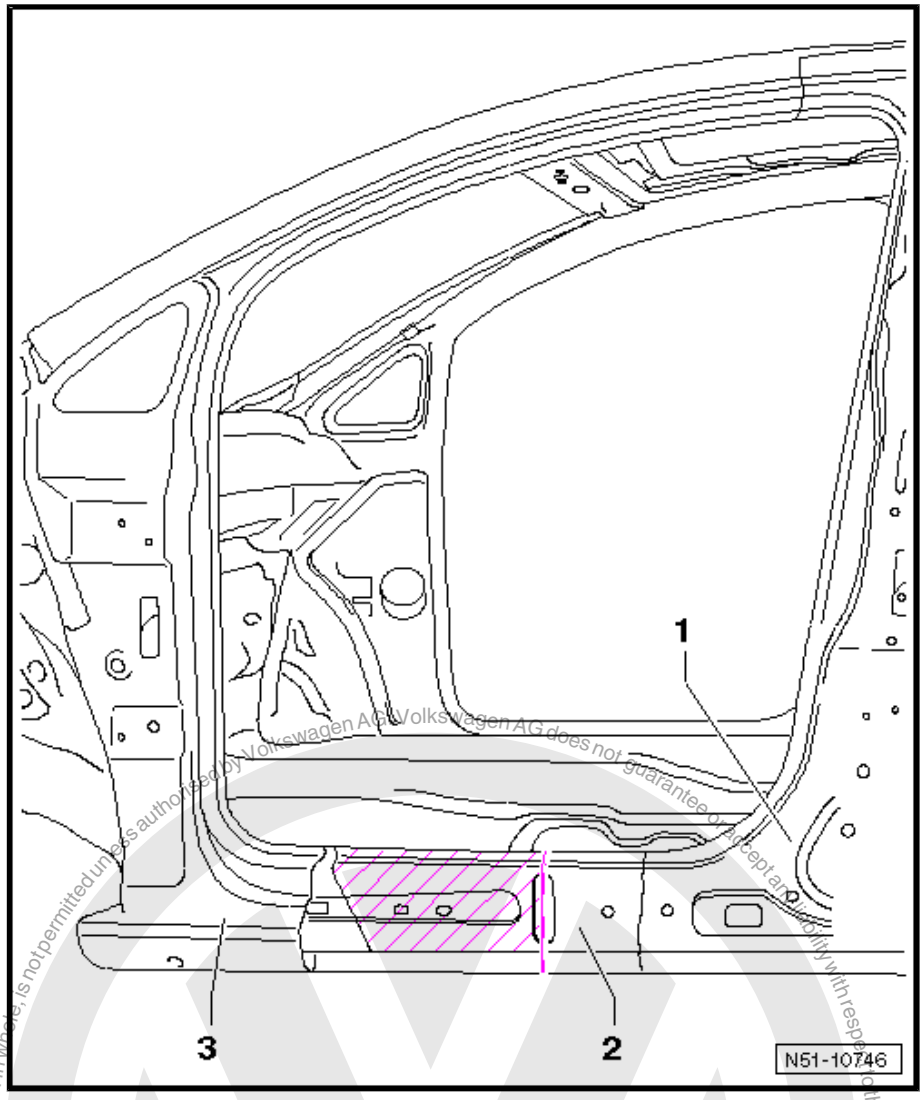
- Side member already removed
  ⇒ „11 Renewing side member“, page 162



1 - B-pillar reinforcement

2 - Side member reinforcement

3 - A-pillar

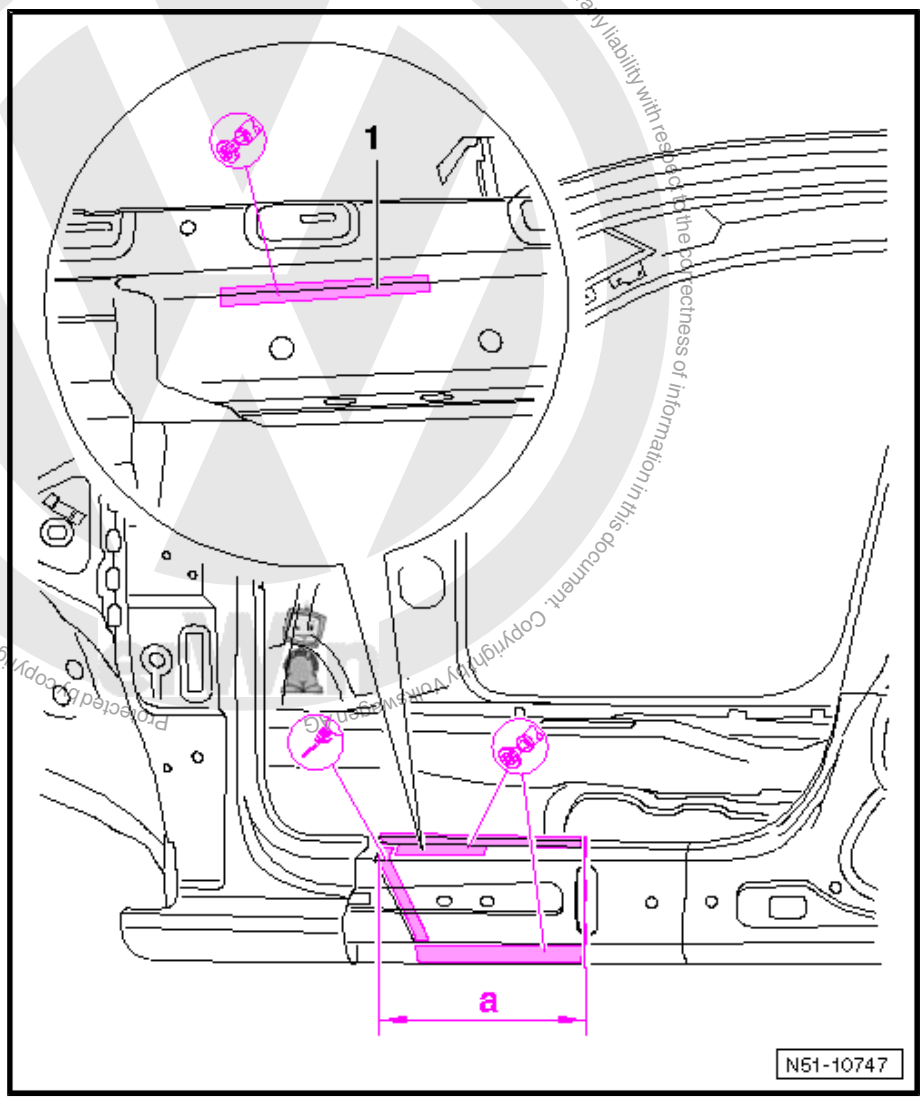


14.1 Tools

Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

14.2 Removing

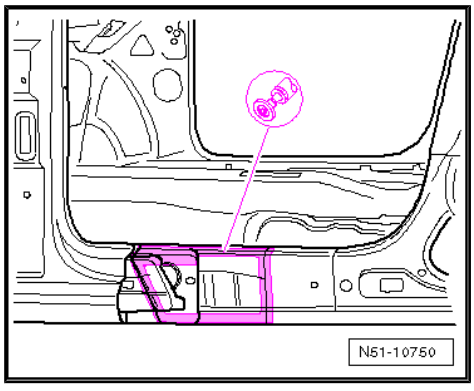


– Make parting cut (before internal baffle/sealing plate) as shown.

Dimension -a- = 300 mm

– Separate original joint.

– Remove remaining material.



14.3 Installing

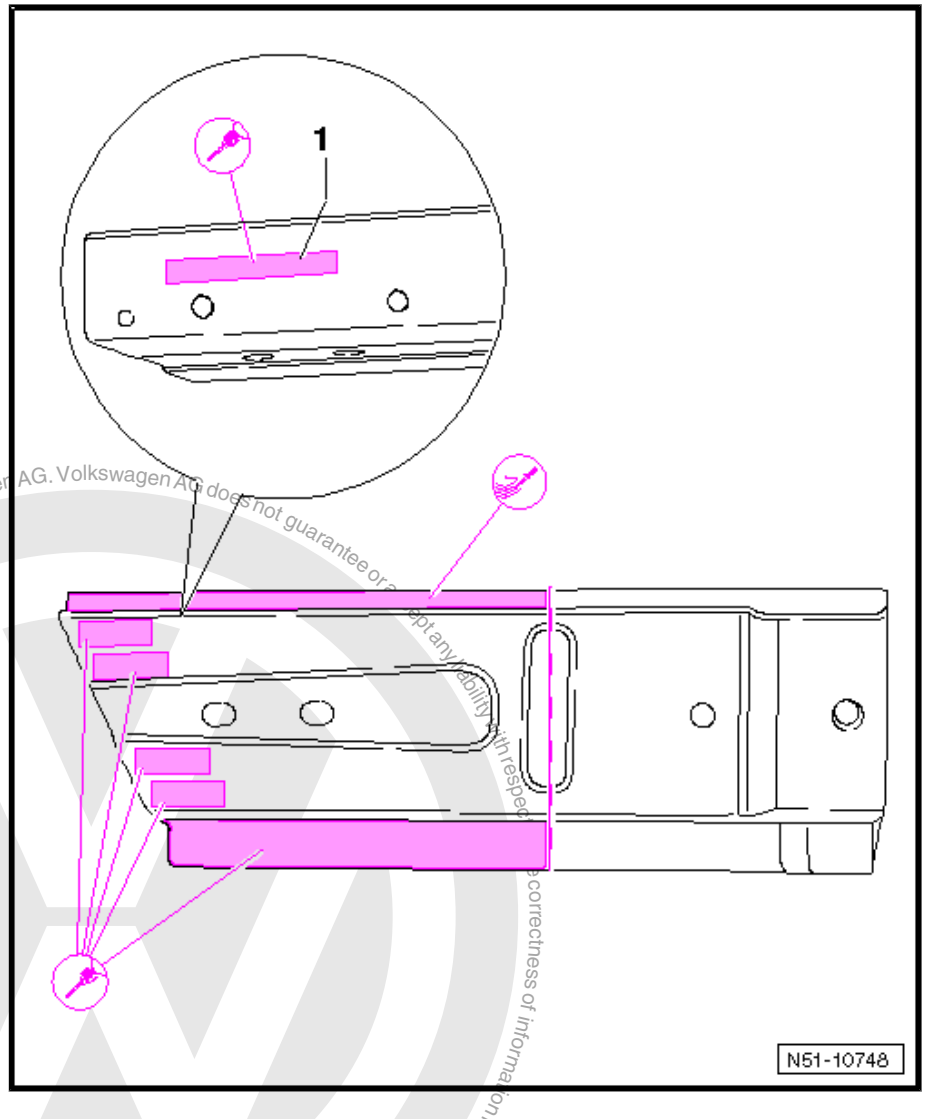
Note

The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 177 .

14.3.1 Preparing new part

Replacement part

- Side member front reinforcement (parts designation: front web plate for side member)



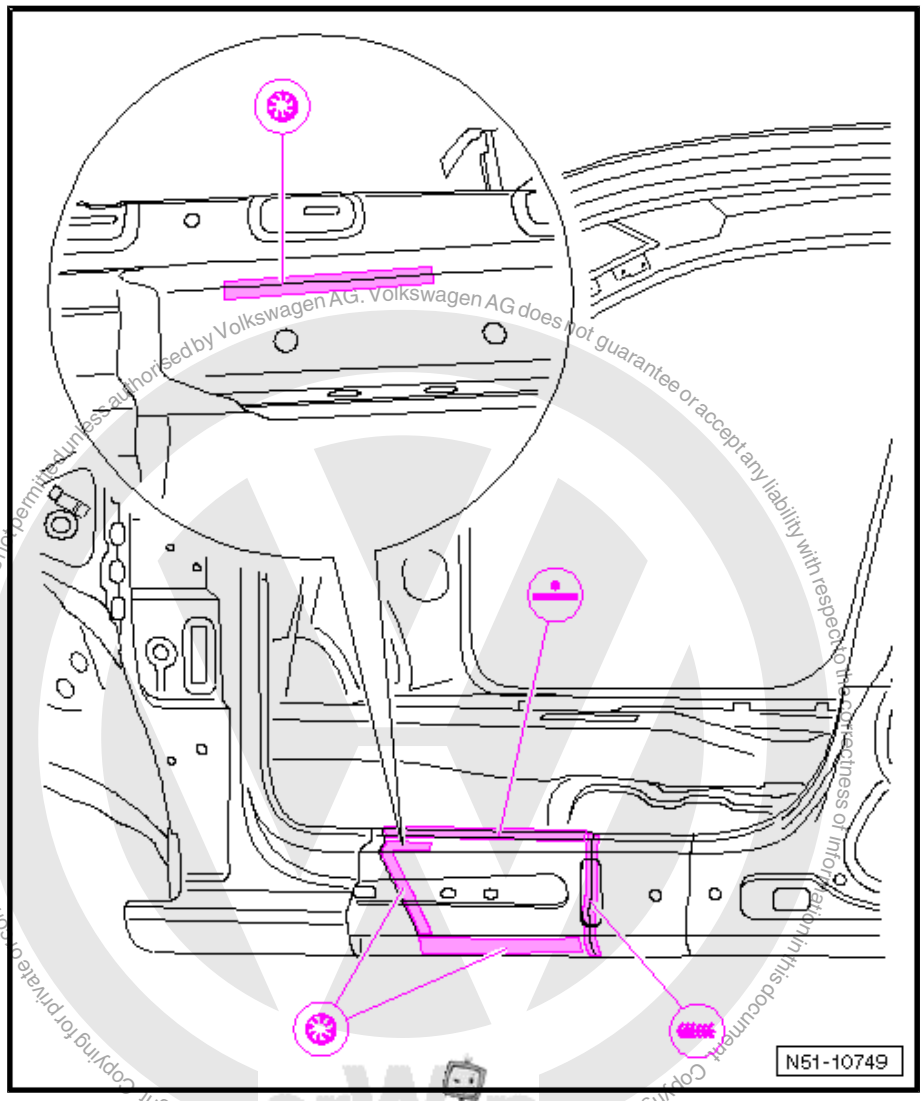
– Transfer parting cut to new part and cut out.

– Drill 10 mm ∅ holes as shown for SG plug weld seam.

14.3.2 Welding in

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

– Check fit with adjacent parts.



– Weld in original joint, SG plug weld seam and RP spot weld seam.
– Weld in joint to fillet plate, SG plug weld seam.
– Weld parting cut, SG continuous weld seam.
– Install side member ⇒ „11.3 Installing“, page 165 .

RO: 51 49 55 50

15 Renewing rear side member reinforcement

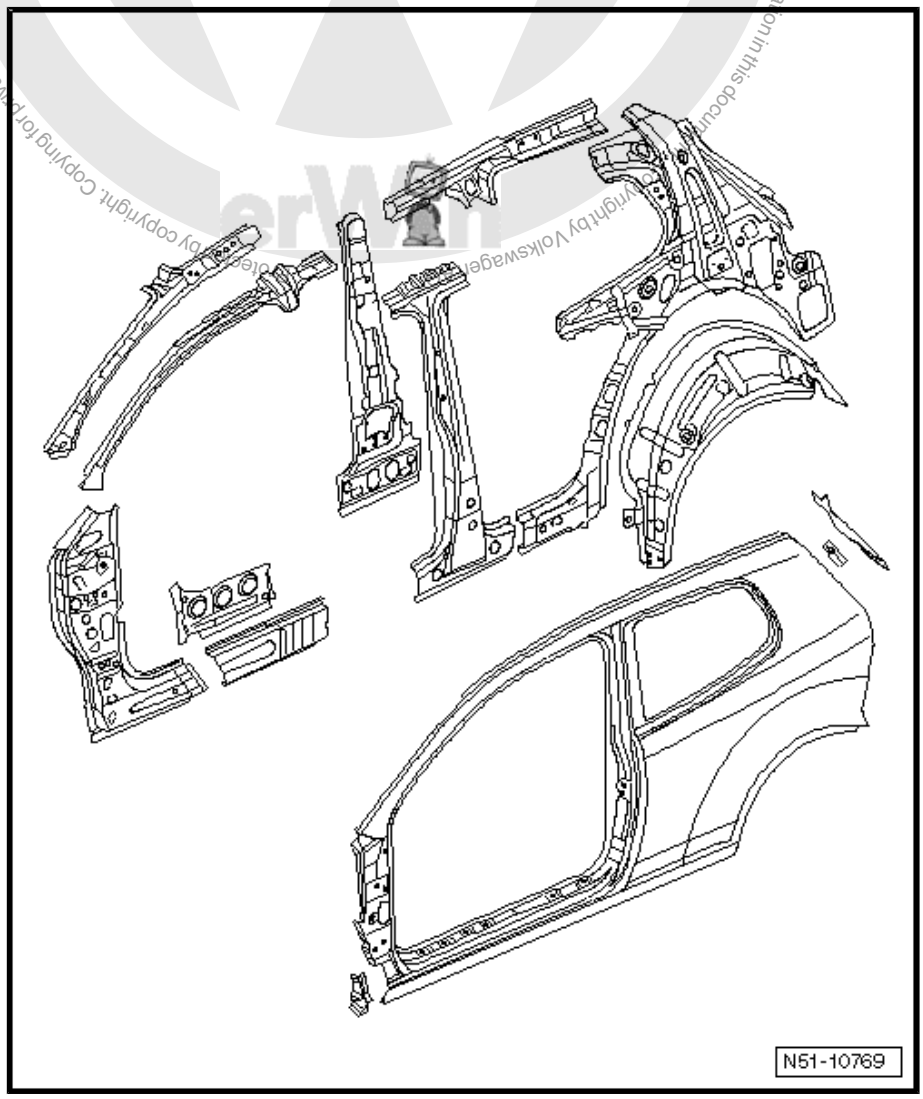
(2-door)

WARNING

Observe safety notes!

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

- Side panel already removed
  ⇒ „7 Renewing side panel - partial renewal“, page 219



1 - Side member

2 - B-pillar reinforcement

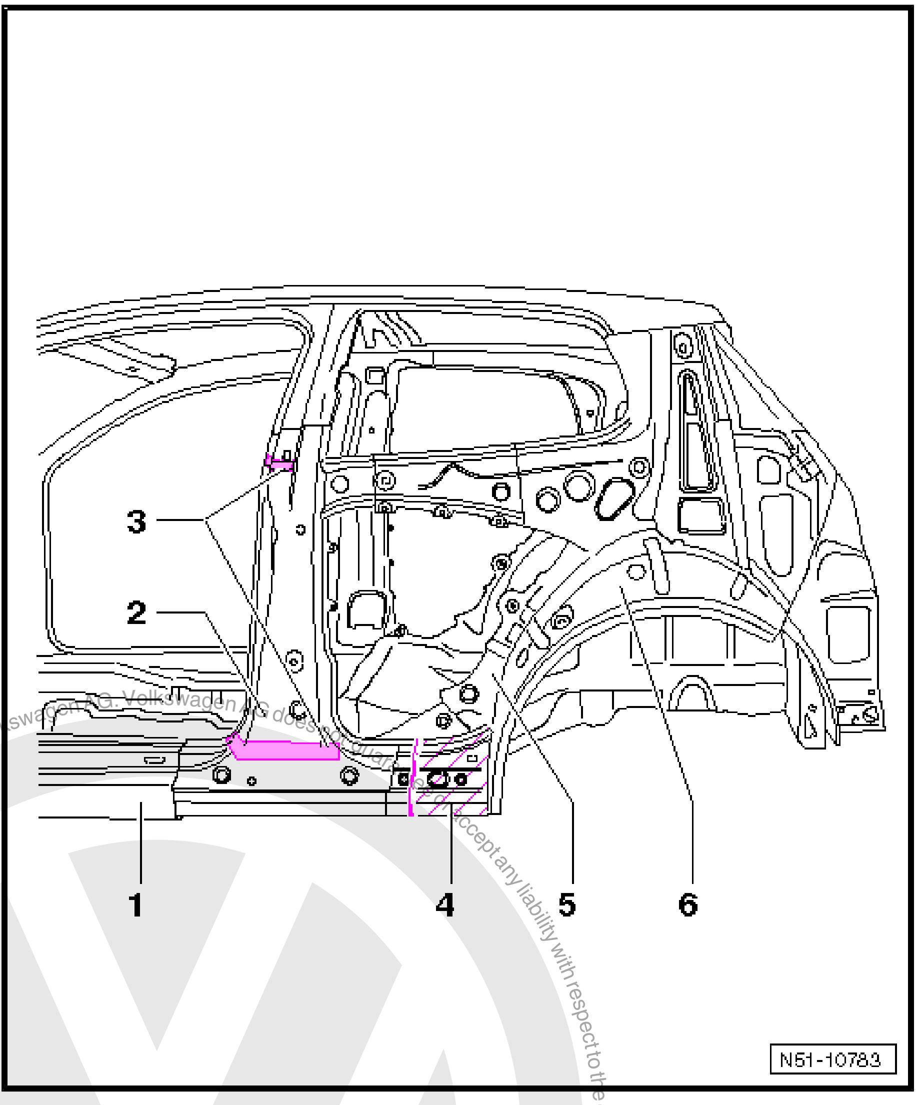
3 - Moulded foam element

Note

4 - Side member rear reinforcement

5 - Inner side panel

6 - Wheel housing liner

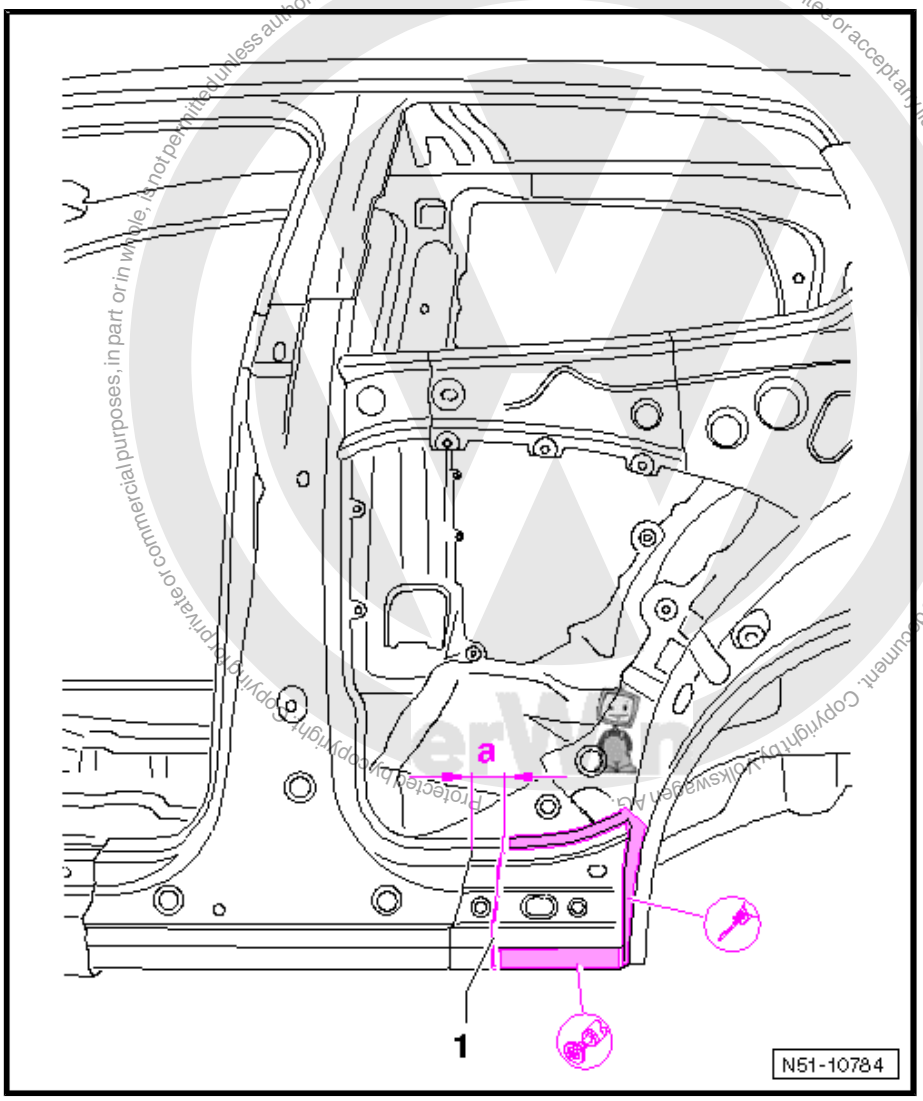


15.1 Tools

Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

15.2 Removing

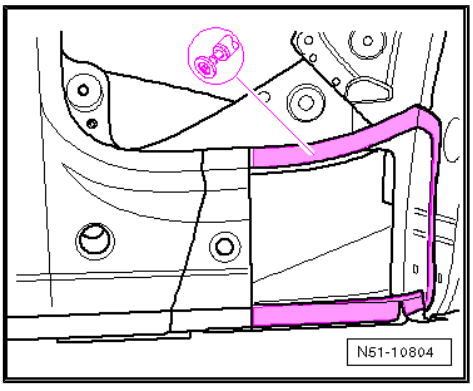


– Make parting cut -1- as shown.

Dimension -a- = 45 mm

– Separate original joint to inner side member, to inner side panel and to wheel housing liner.

– Remove remaining material.



15.3 Installing

Note

The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 182 .

15.3.1 Preparing new part

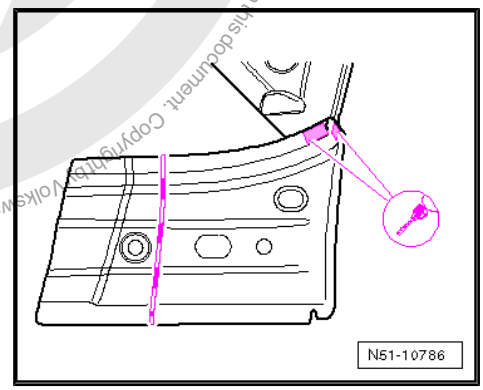
Replacement part

- Side member rear reinforcement (parts designation: inner side panel)

Note

Drill through from inner side panel in order not to damage side member reinforcement.

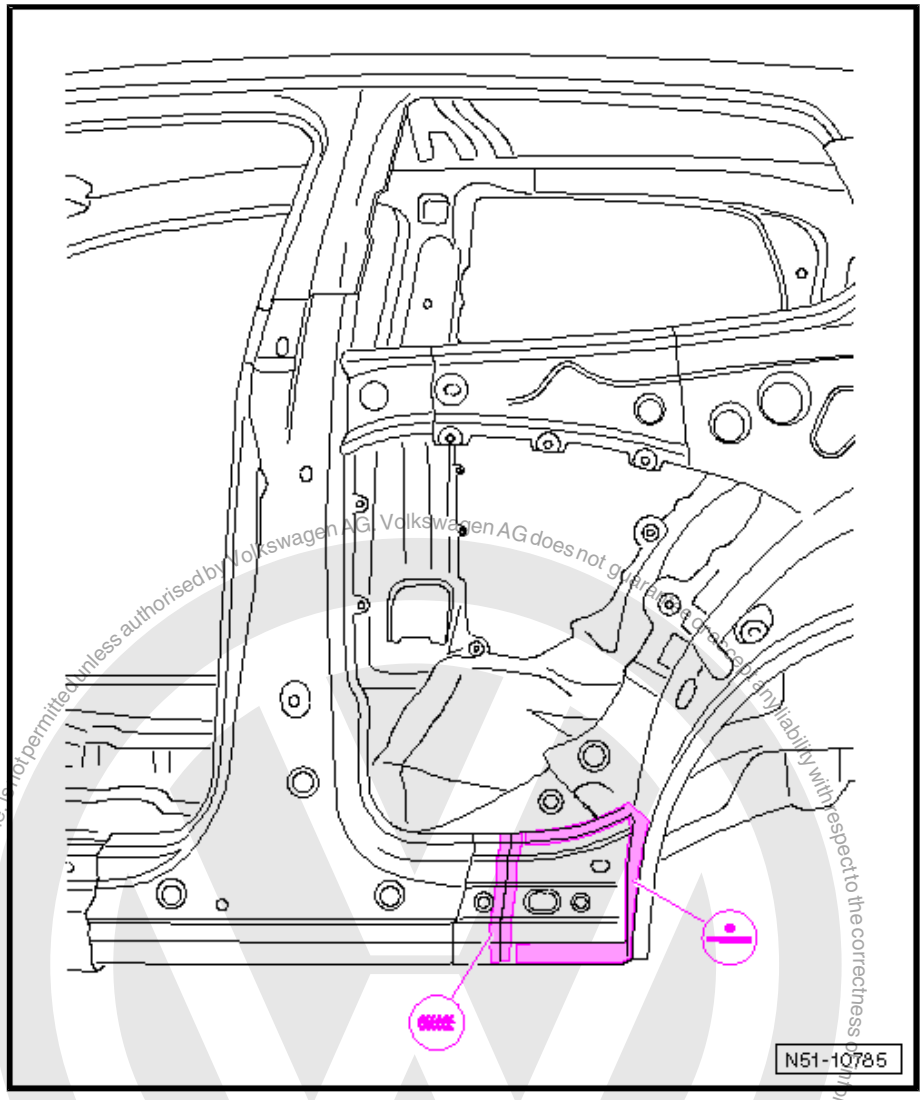
– Separate side member reinforcement from inner side panel.



15.3.2 Welding in

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

– Check fit with adjacent parts.



– Weld parting cut, SG continuous weld seam.
– Recreate original joint, RP spot weld seam.
– Install side panel ⇒ „7.3 Installing“, page 223 .

RO: 51 49 55 60

16 Renewing rear side member reinforcement

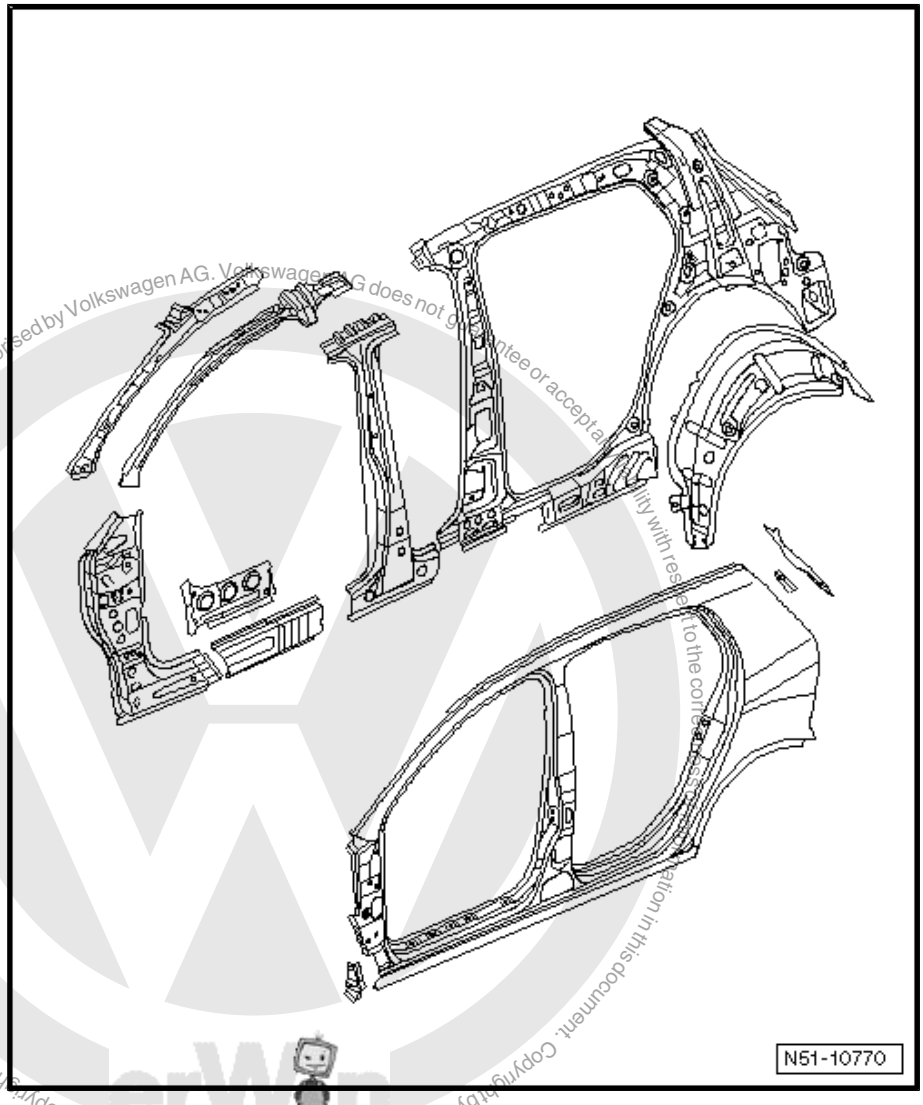
(4-door)

WARNING

Observe safety notes!

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

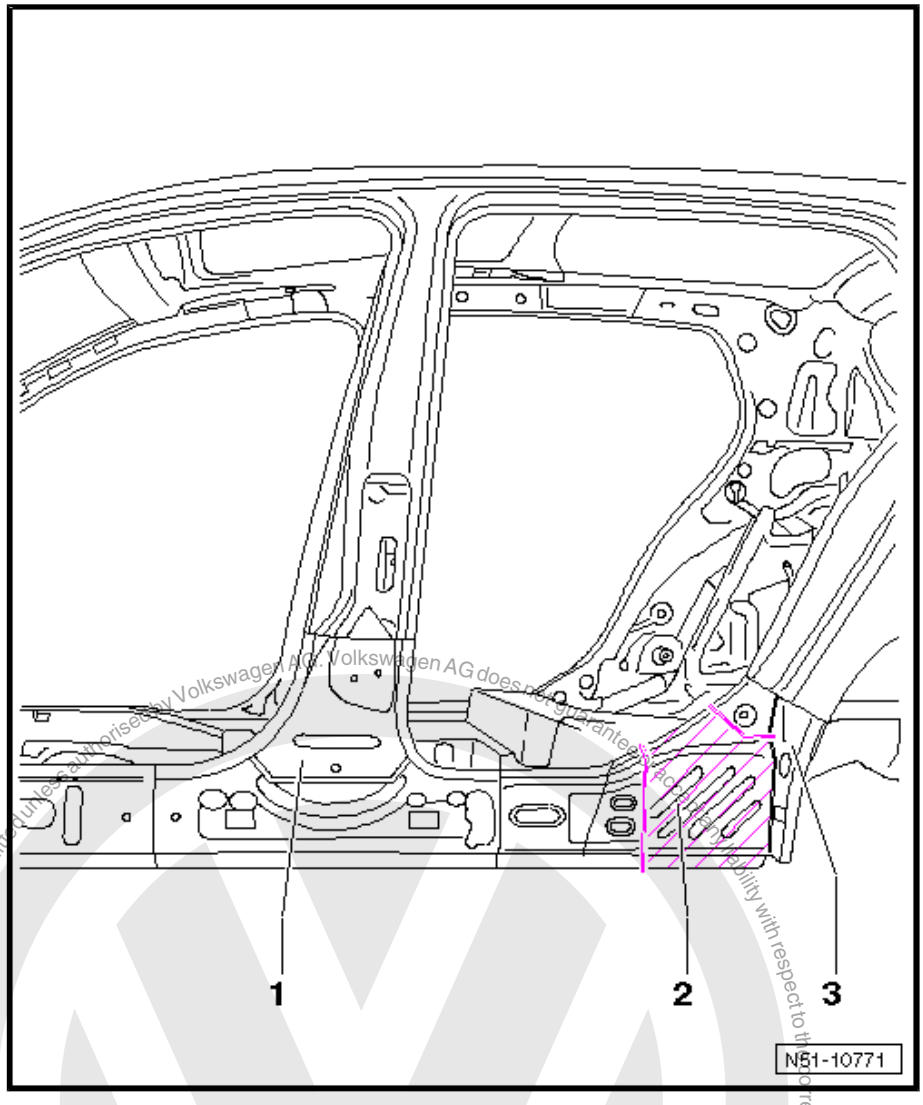
- Side member already removed
  ⇒ „11 Renewing side member“, page 162



1 - B-pillar reinforcement

2 - Side member rear reinforcement

3 - Outer wheel housing liner

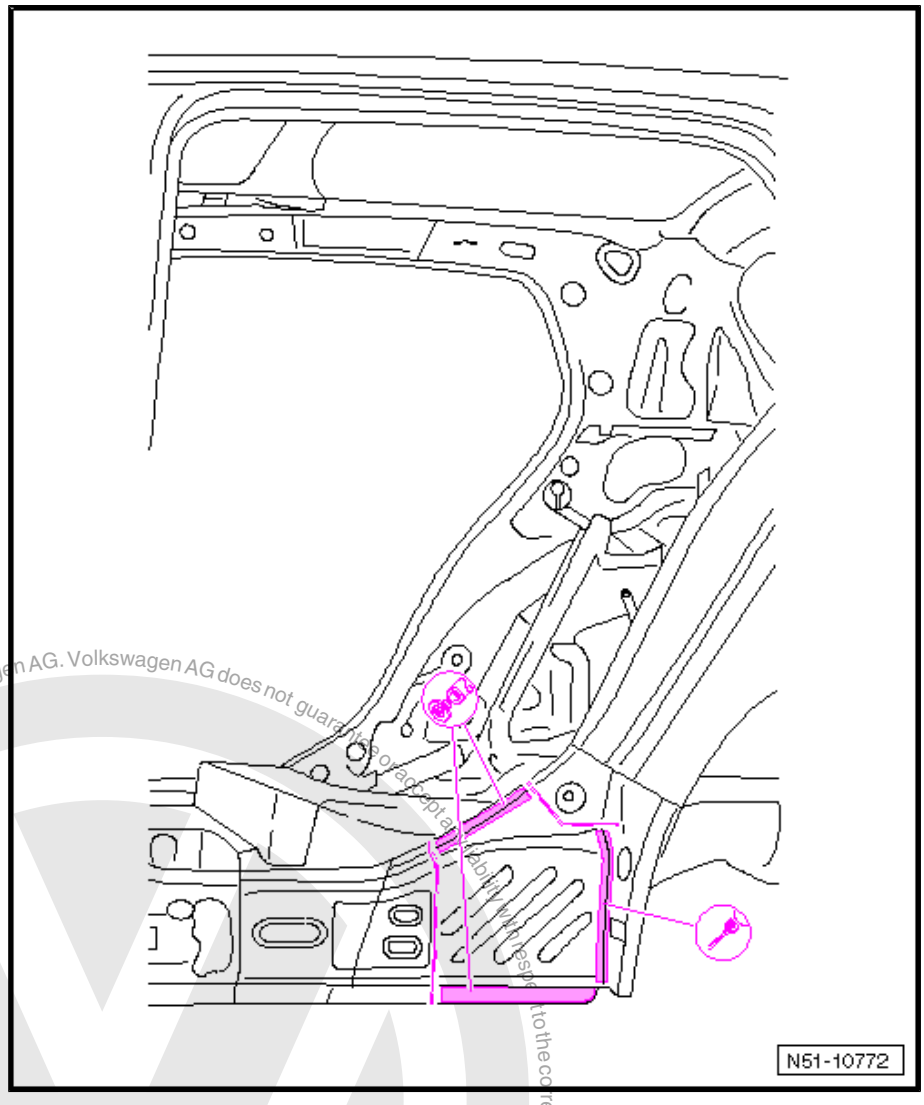


16.1 Tools

Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

16.2 Removing



– Make cuts as shown.
– Separate original joint to inner side member and to wheel housing liner.
– Remove remaining material.

16.3 Installing

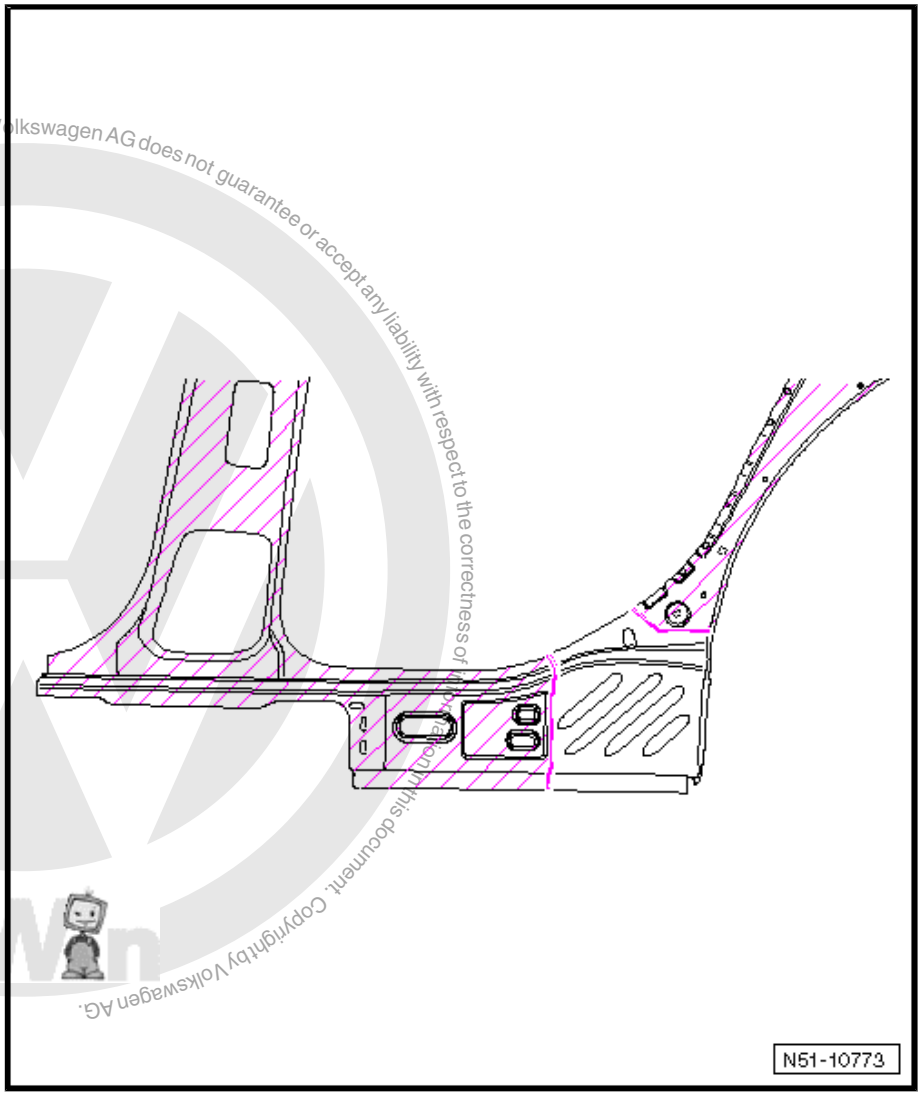
Note

The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding *⇒ page 187**.*

16.3.1 Preparing new part

Replacement part

- Side member rear reinforcement (parts designation: inner side panel)

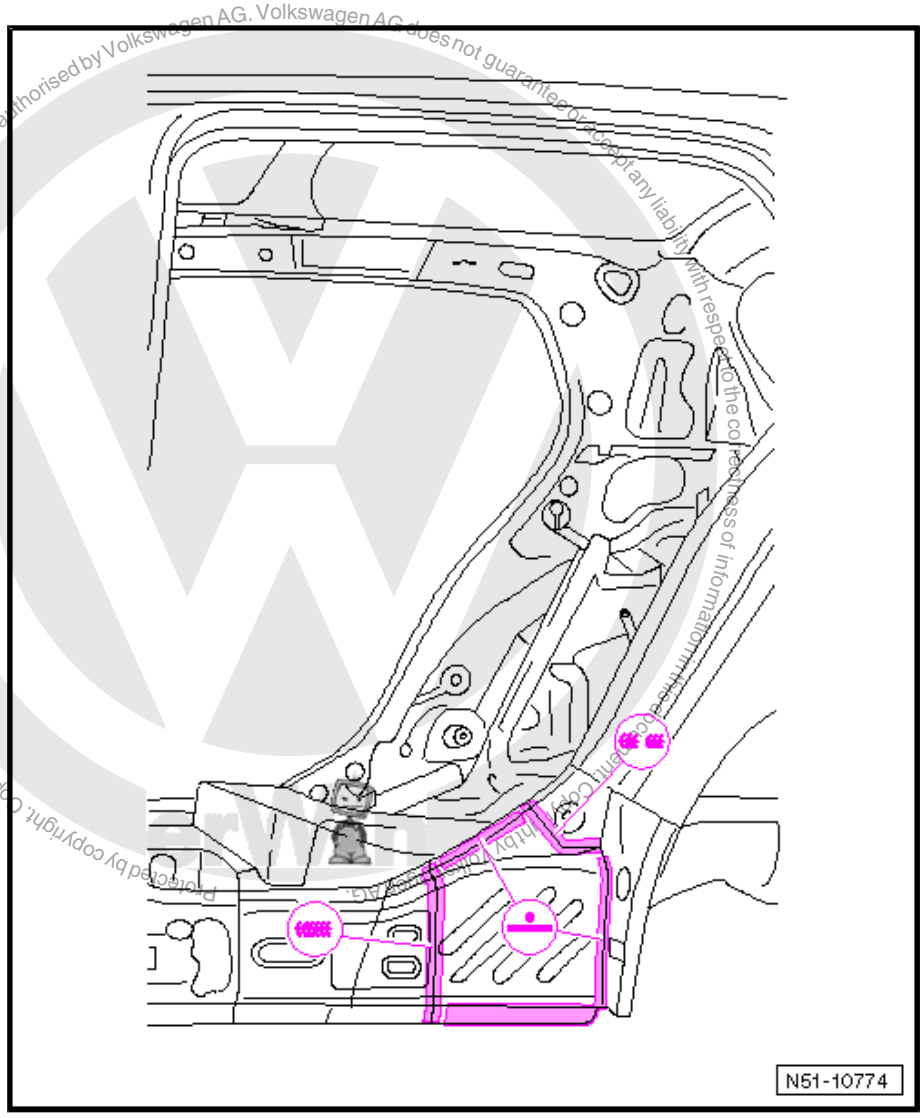


– Transfer parting cut to new part and cut out.

16.3.2 Welding in

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

– Check fit with adjacent parts.



– Recreate original joint, RP spot weld seam.
– Weld in parting cut, SG continuous weld seam and staggered SG continuous weld seam.
– Install side member ⇒ „11.3 Installing“, page 165 .

RO: 51 87 55 56

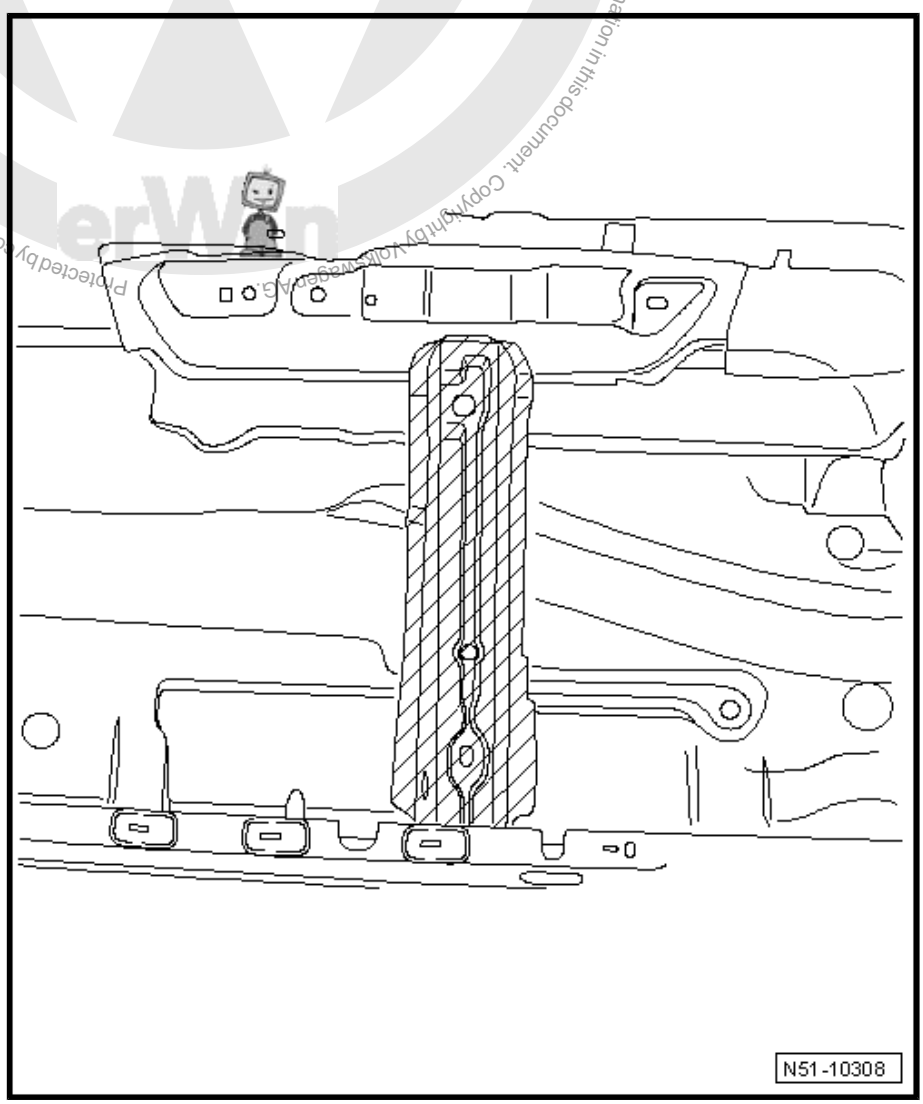
17 Renewing seat cross member (middle)

WARNING

Observe safety notes!

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

- Rear seat cross member already removed
  ⇒ „12 Renewing seat cross member mounting plate“, page 170

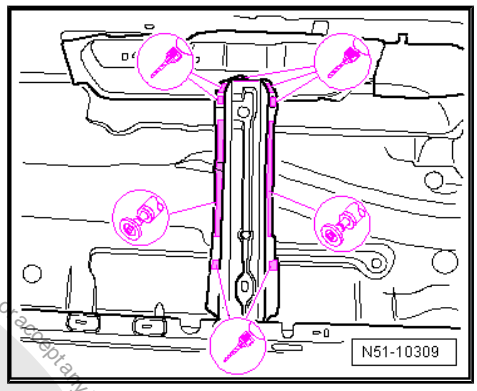


17.1 Removing

Note

When separating laser welded seams, ensure that the underlying panels are not damaged.

– Separate original joint.
– Remove remaining material.



17.2 Installing

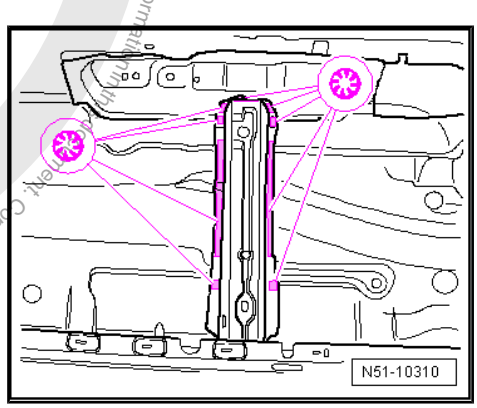
17.2.1 Preparing new part

Replacement part

♦ Seat cross member
– Drill 7 mm ∅ holes for SG plug weld seam.
– Adapt new part to fit and fix in position.

17.2.2 Welding in

– Weld in seat cross member, SG plug weld seam.
– Install outer cross member for seat
⇒ „12.2 Installing“, page 172 .



53 – Body - rear

RO: 53 05 55 50

1 Renewing cross panel

WARNING

Observe safety notes!

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

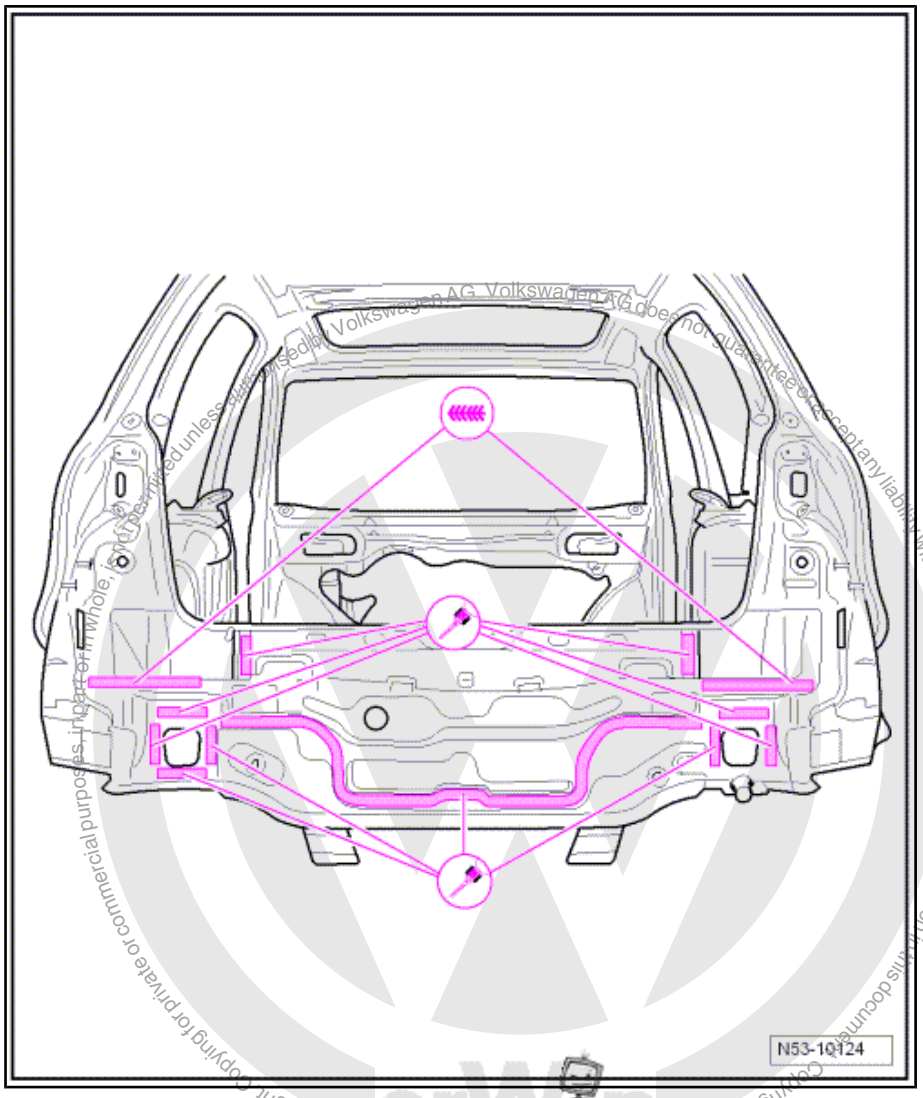
- Cross panel member already removed
  ⇒ „4 Renewing cross panel member“, page 205

1.1 Tools

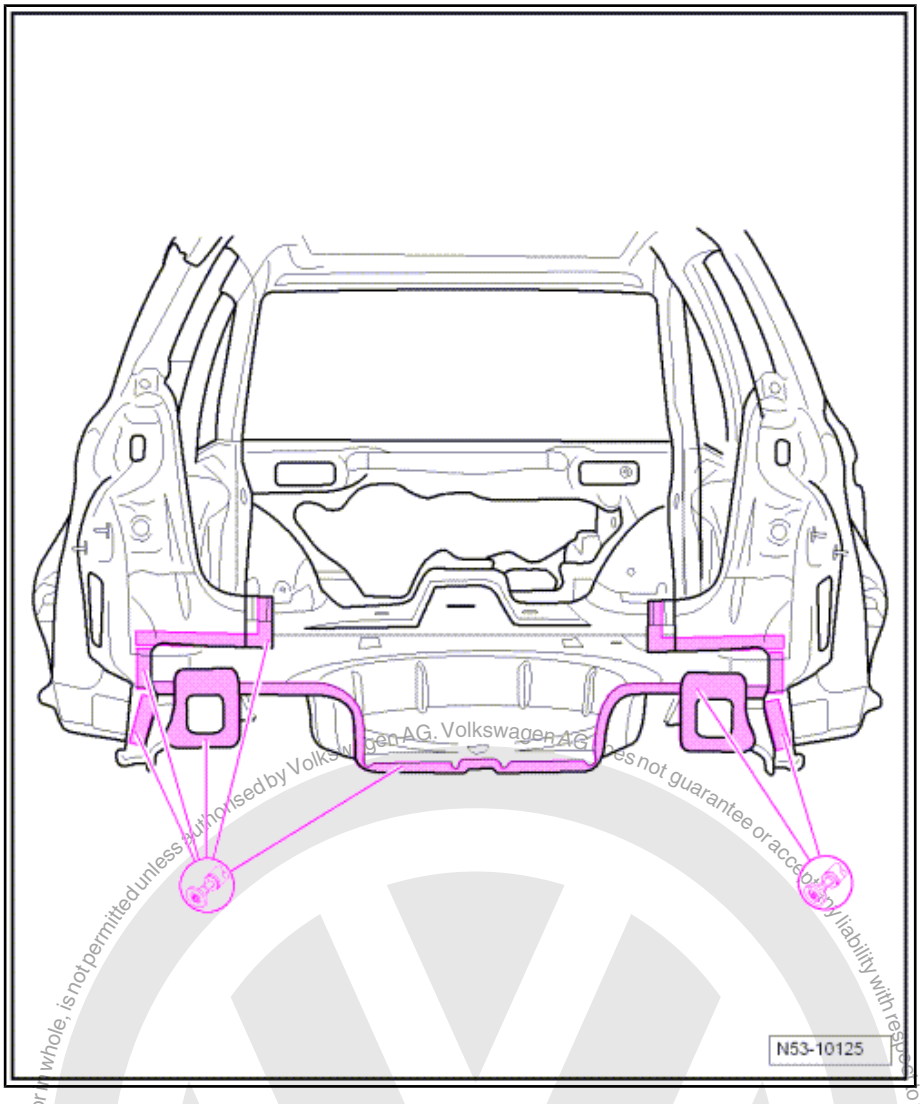
Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

1.2 Removing



– Separate original joint.



– Remove remaining material.

1.3 Installing

Note

The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 193 .

1.3.1 Welding in

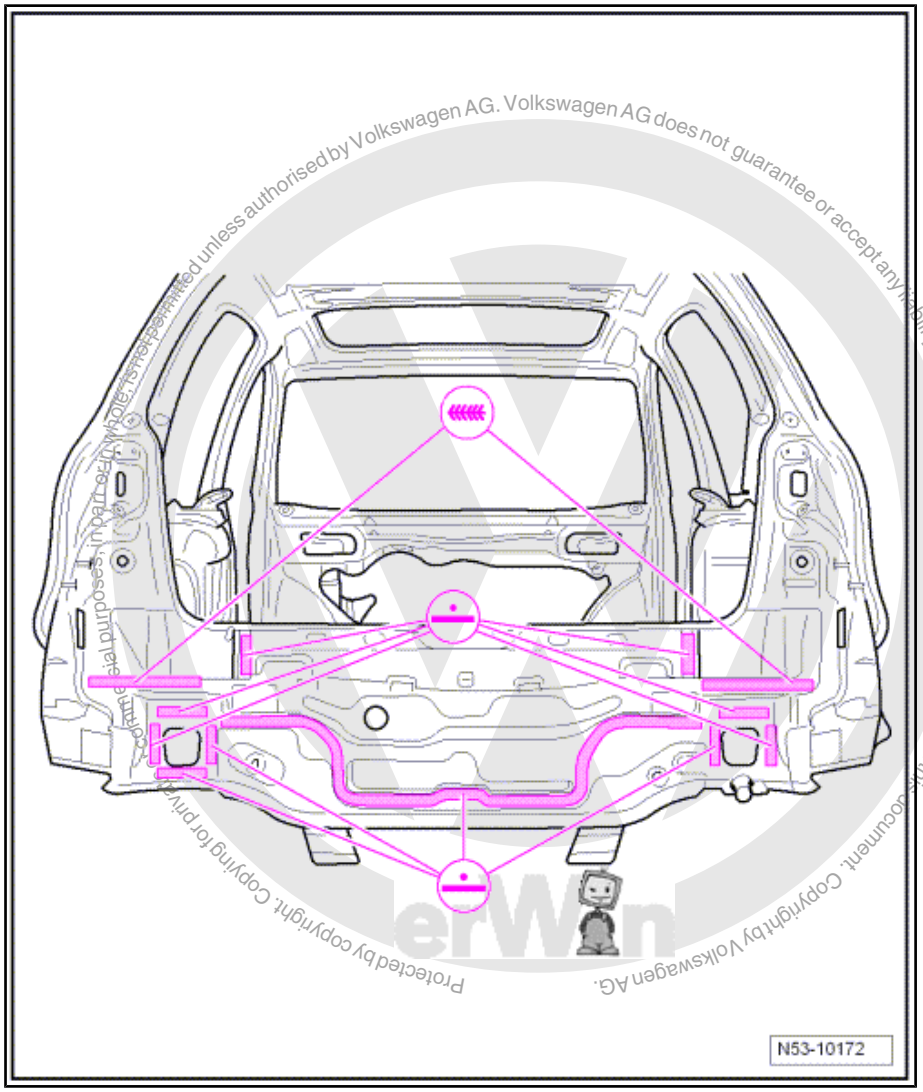
Replacement part

♦ Cross panel

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

– Check fit with bolt-on parts.

– Check closing function of rear lid.



– Weld in cross panel, RP spot weld seam and SG continuous weld seam.
– Install cross panel member ⇒ „4.3 Installing“, page 205 .

RO: 53 10 55 50

2 Renewing tail light mounting

DANGER!

Observe safety notes!

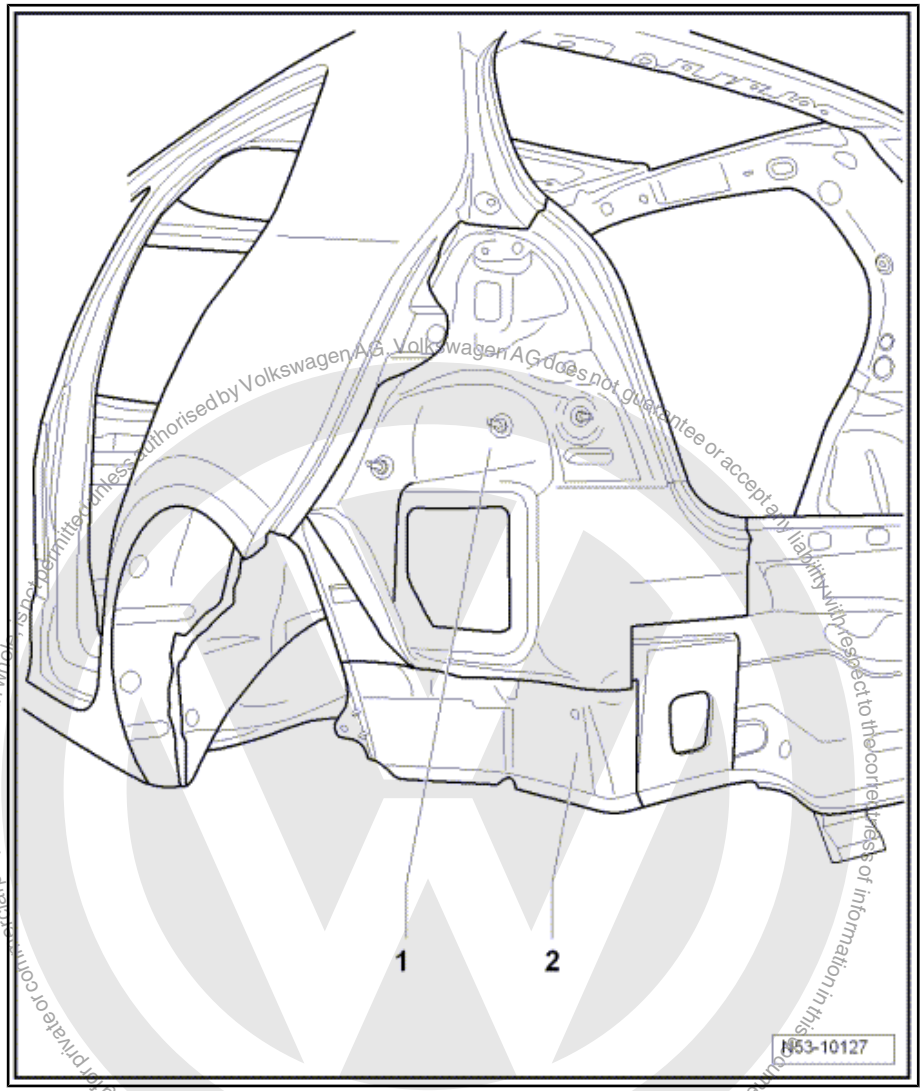
⇒ General Information; Body Repairs, General Body Repairs ; Safety instructions

- Cross panel member already removed
  ⇒ „4 Renewing cross panel member“, page 205

1 - Tail light cluster mounting

2 - Securing bracket

Note



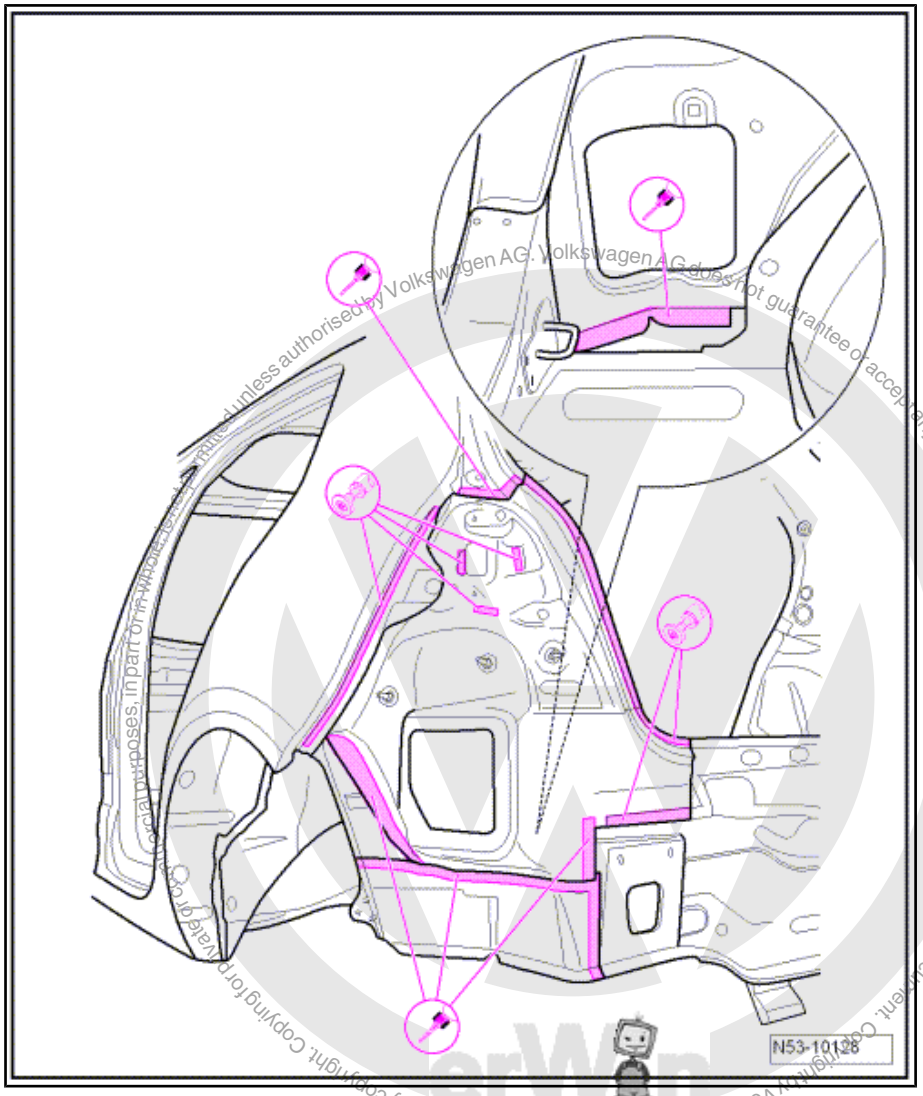
2.1 Tools

Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-

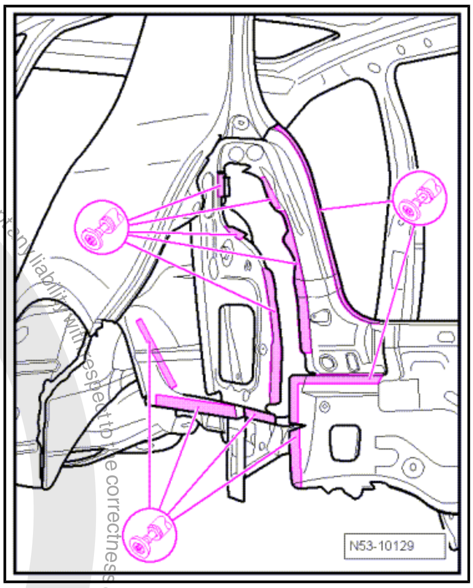
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

2.2 Removing



– Separate original joint.
– Drill out connection between tail light cluster mounting and C-pillar reinforcement from the inside -enlargement-.

– Remove remaining material.



2.3 Installing

Note

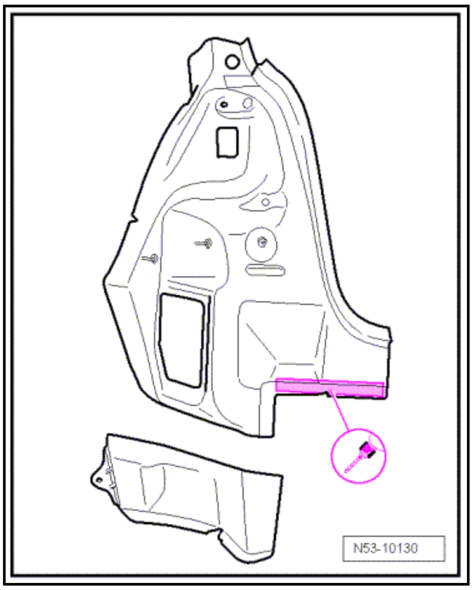
The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 197 .

2.3.1 Preparing new part

Replacement part

- ♦ Tail light cluster mounting
- ♦ Securing bracket

– Drill 7 mm ∅ holes for SG plug weld seam.

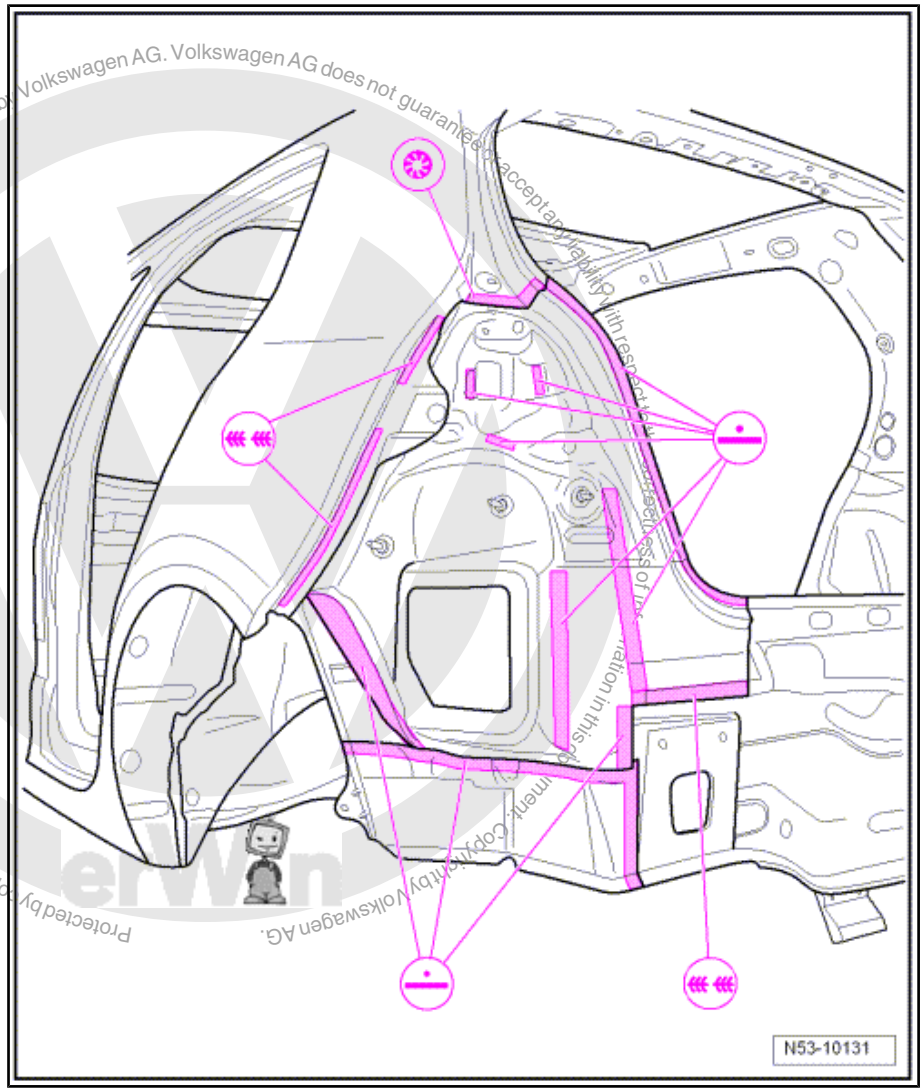


2.3.2 Welding in

– Adapt new part to fit and fix in position.

– Check fit with bolt-on parts.

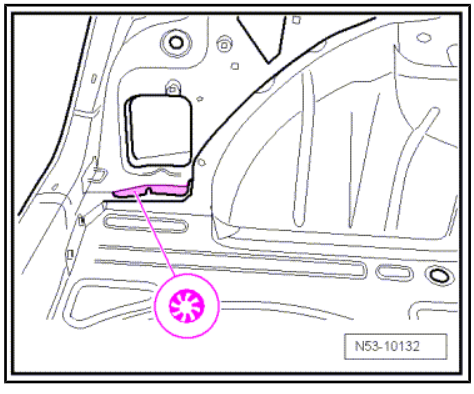
– Check closing function of rear lid.



Note

To prevent damage to the paintwork of the side panel when welding the tail light cluster mounting, use a »heat stop«.

- Weld in tail light cluster mounting with securing bracket, SG plug weld seam and RP spot weld seam.
- Weld tail light cluster mounting to side panel, staggered SG continuous weld seam.
- Weld in remaining joint between tail light cluster mounting and C-pillar reinforcement from the inside, SG plug weld seam.
- Install cross panel member ⇒ „4.3 Installing“, page 205 .



RO: 53 10 55 60

3 Renewing reinforcing for tail light mounting plate

WARNING

Observe safety notes!

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

- Cross panel member already removed
  ⇒ „4 Renewing cross panel member“, page 205
- Mounting plate for tail light already removed
  ⇒ „2 Renewing tail light mounting“, page 197

3.1 Tools

Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

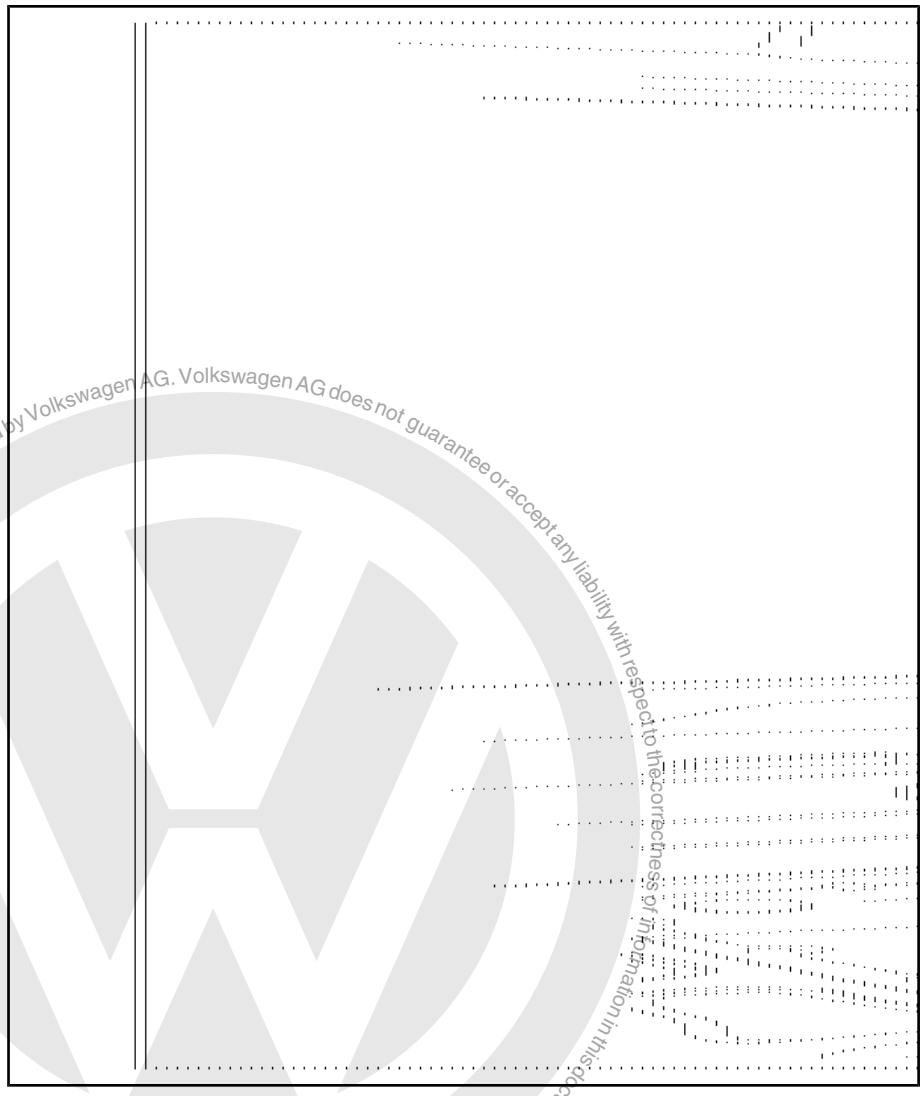
3.2 Removing

1 - Inner side panel

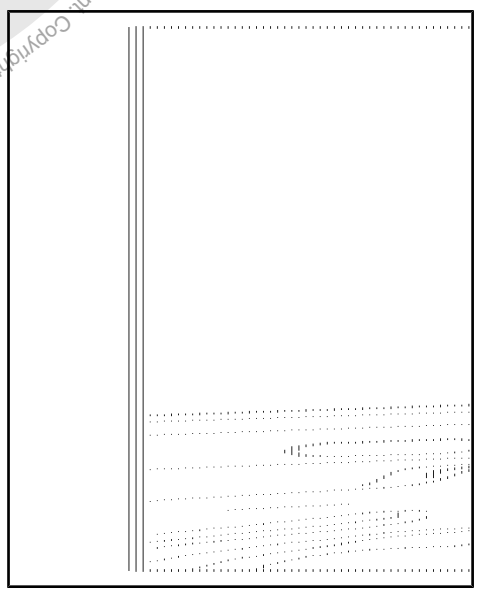
2 - Reinforcing for tail light mounting plate

3 - Cross panel

– Separate original joint.



– Remove remaining material.



3.3 Installing

Note

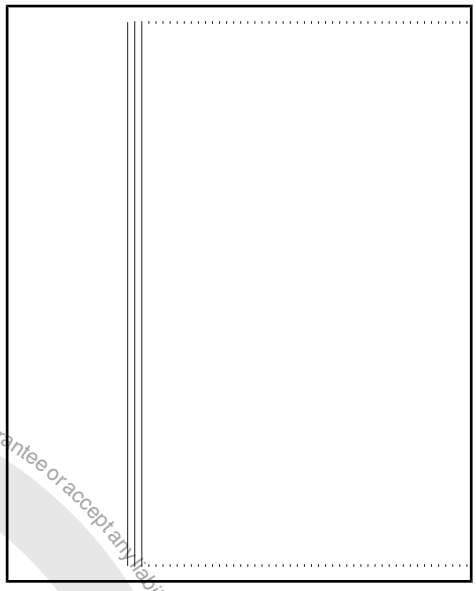
The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 201 .

3.3.1 Preparing new part

Replacement part

- ♦ Reinforcement

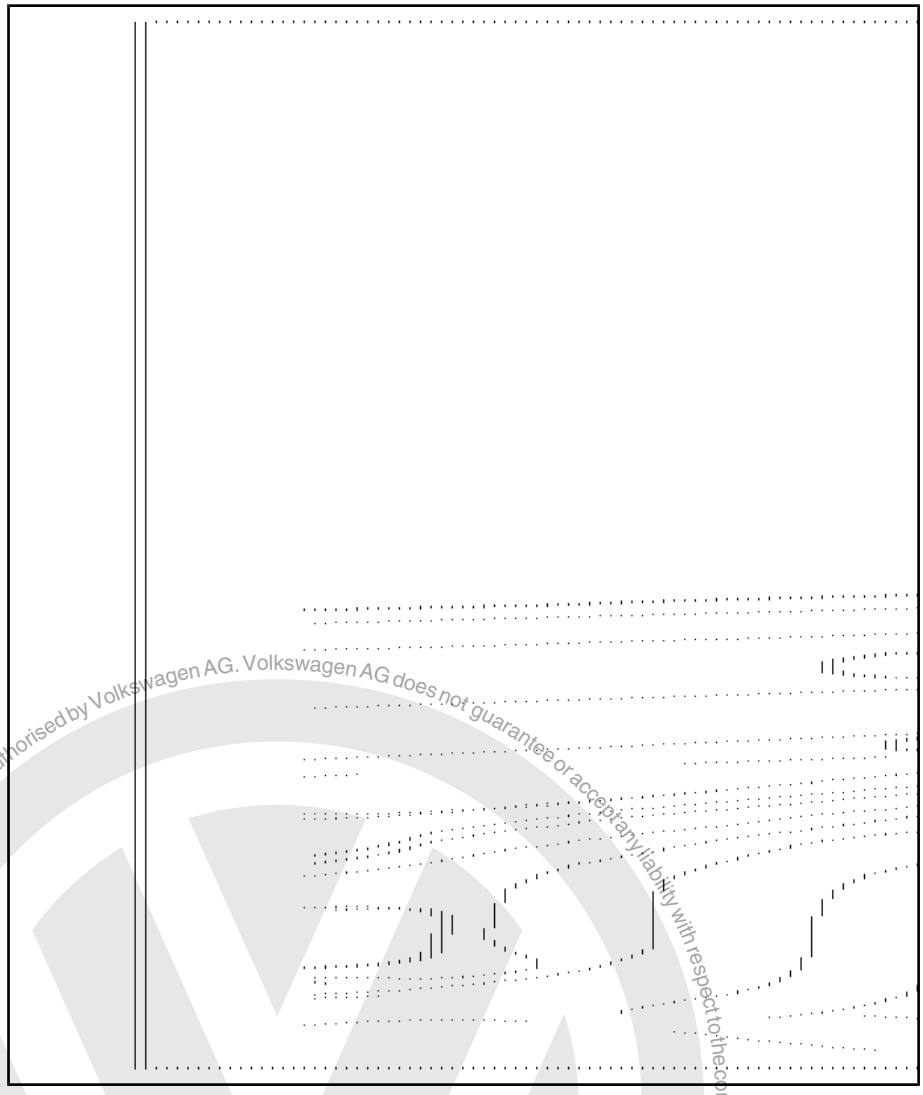
– Drill 7 mm ∅ holes for SG plug weld seam.



3.3.2 Welding in

– Adapt new part to fit and fix in position.

– Check fit with adjacent parts.



– Weld in reinforcing, RP spot weld seam and SG plug weld seam.
– Install tail light mounting plate ⇒ „2.3 Installing“, page 199 .
– Install cross panel member ⇒ „4.3 Installing“, page 205 .

RO: 53 16 55 00

4 Renewing cross panel member

DANGER!

Observe safety notes!

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

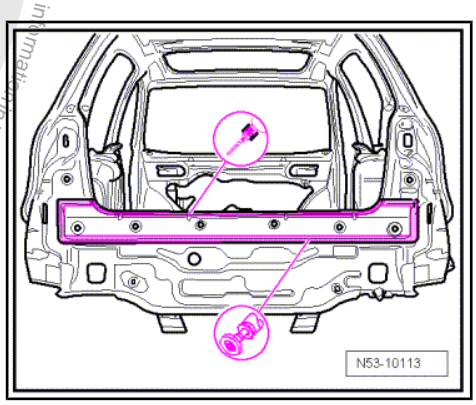
4.1 Tools

Special tools and workshop equipment required

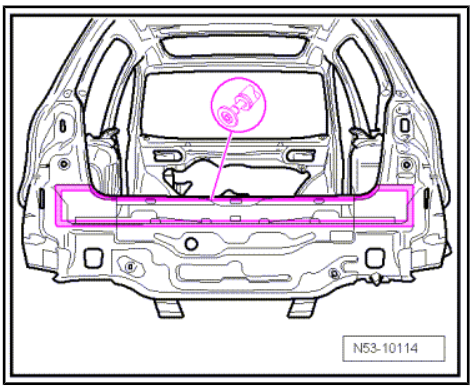
- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

4.2 Removing

– Separate original joint.



– Remove remaining material.



4.3 Installing

Note

The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 205 .

4.3.1 Preparing new part

Replacement part

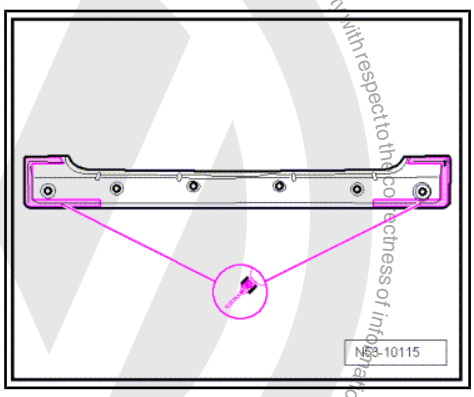
♦ Rear cross member

– Drill 7 mm ∅ holes for SG plug weld seam.

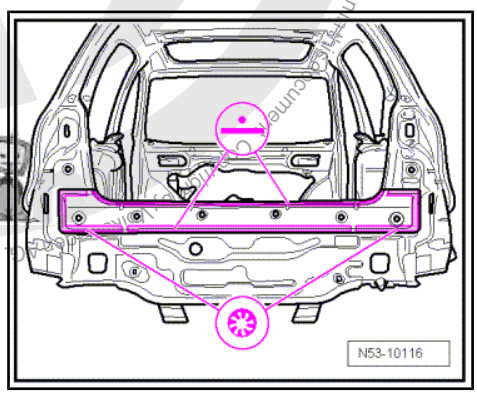
– Adapt new part to fit and fix in position.

– Check fit with bolt-on parts.

– Check closing function of rear lid.



– Weld in new part, SG plug weld seam and RP spot weld seam.



RO: 53 29 55 50

5 Renewing C-pillar reinforcement

WARNING

Observe safety notes!

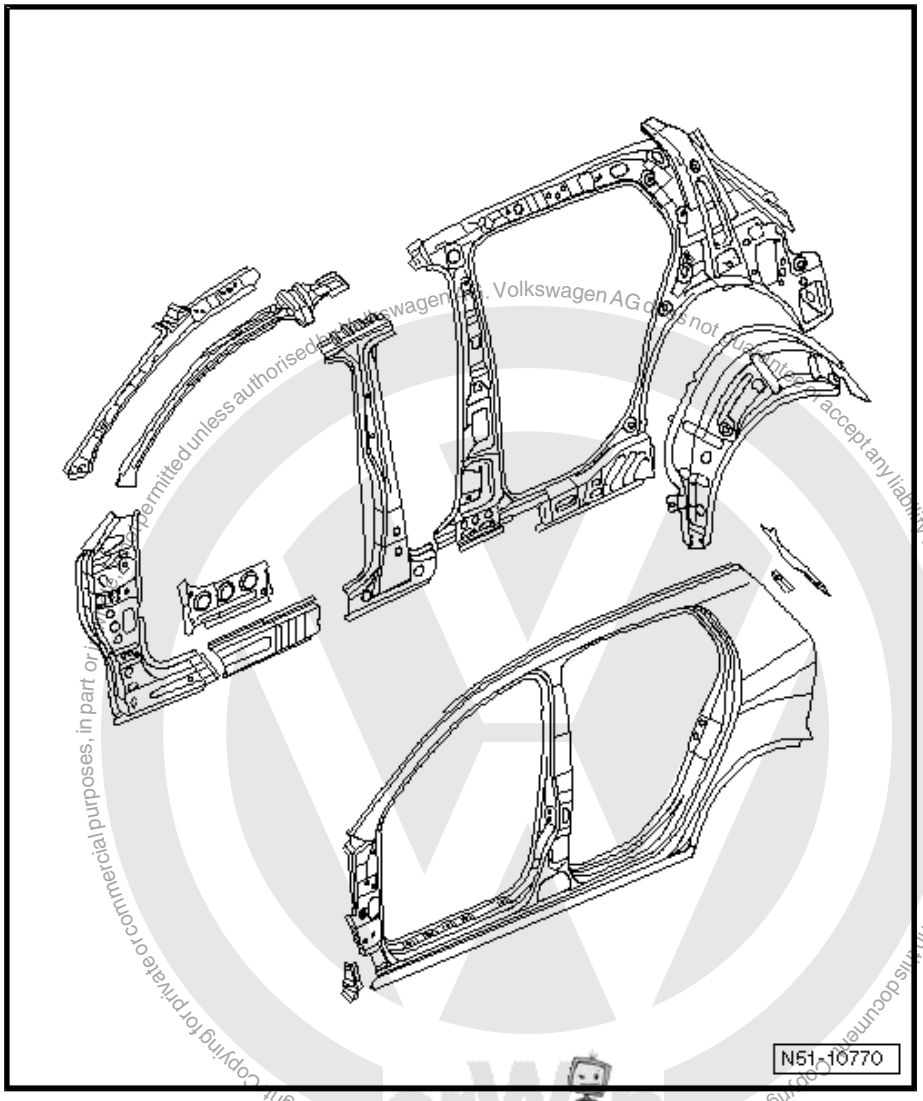
Welding, parting using spark generating machines/tools or tinning in foam treated areas creates gases which are hazardous to health and environment. Therefore, refrain from using these processes.

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

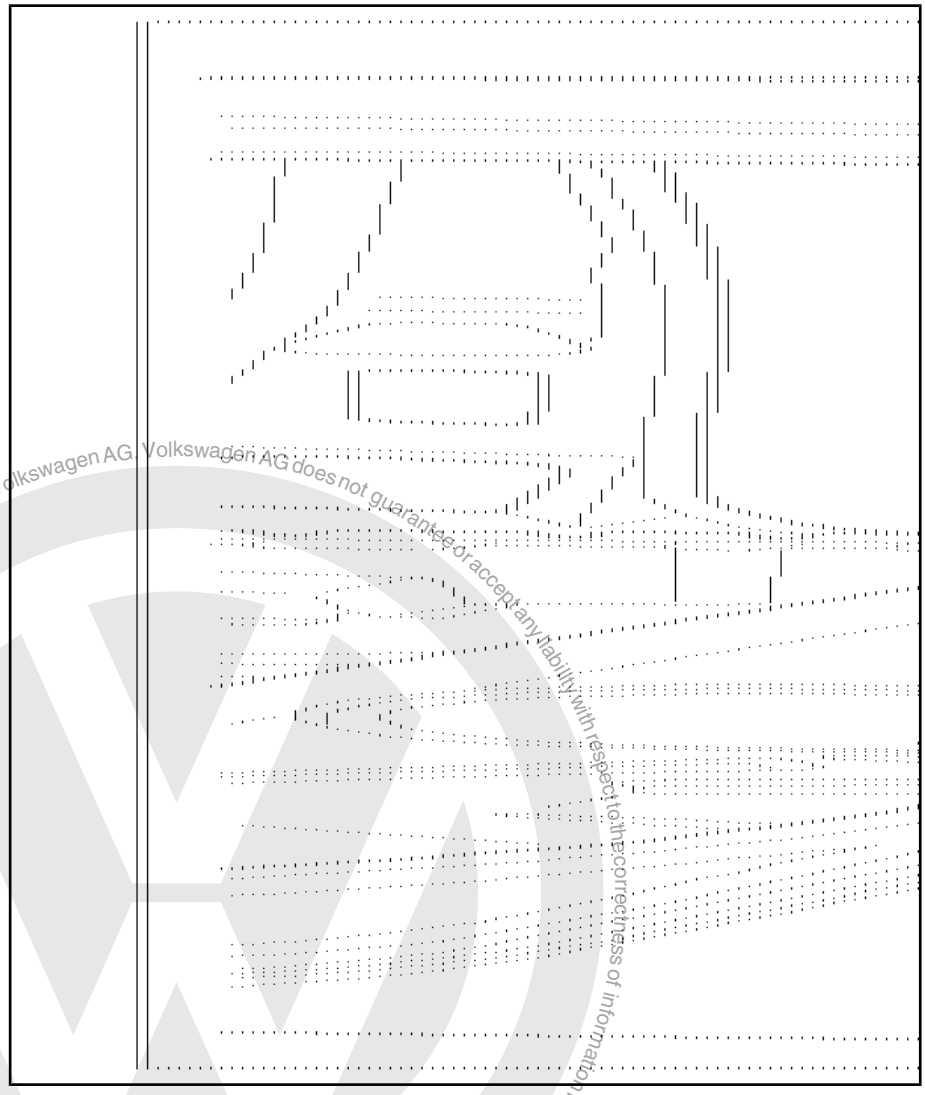
Note

Removal and installation of the C-pillar reinforcement in the Golf 2004 ➢ (2-door) differs only marginally from removal and installation of the C-pillar reinforcement in the Golf 2004 ➢ (4-door).

- Side panel already removed (2-door vehicle)
  ⇒ „7 Renewing side panel - partial renewal“, page 219
- Side panel already removed (4-door vehicle)
  ⇒ „8 Renewing side panel - partial renewal“, page 229

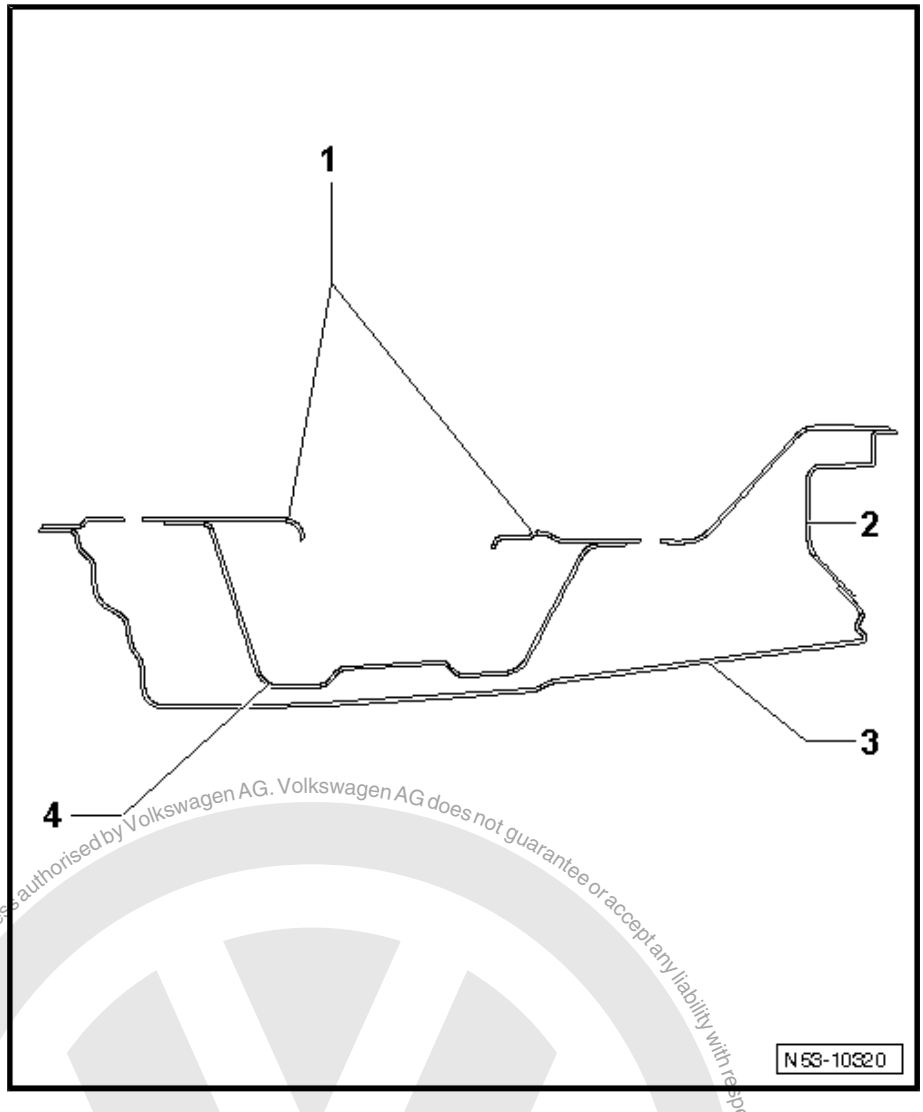


1 - Outer side panel
2 - Inner side panel
3 - Outer wheel housing liner
4 - C-pillar reinforcement



C-pillar cut lines

1 - Inner side panel
2 - Sealing channel
3 - Outer side panel
4 - C-pillar reinforcement



5.1 Tools

Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

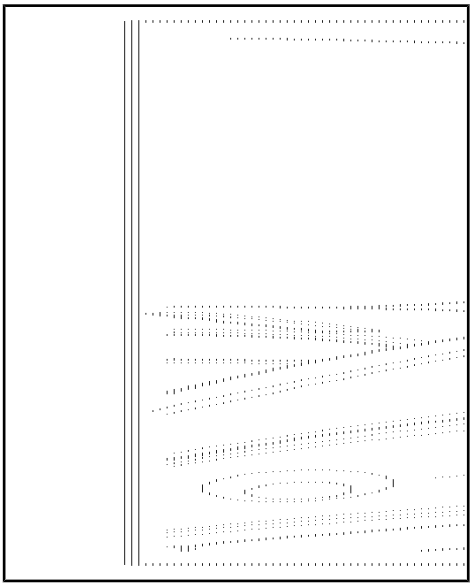
5.2 Removing

Note

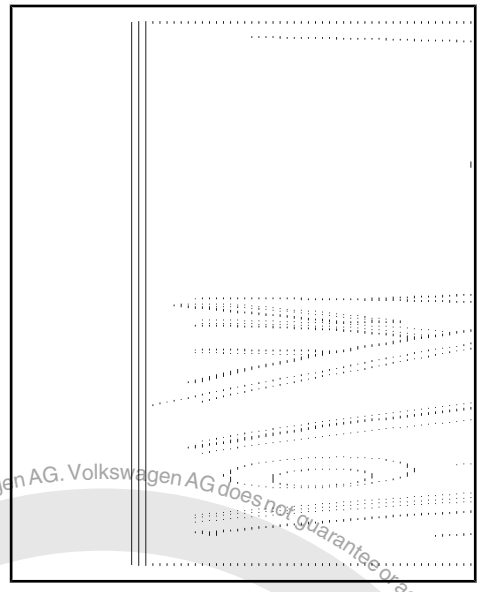
- *Make parting cuts with pneumatic jig-saw -V.A.G 1523- only.*
- *Do not damage underlying inner side panel.*
- *Note cut line figure ⇒ page 209 .*

– Make parting cut -1- as shown.

– Separate original joint.
– Remove remaining material.



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



5.3 Installing

Note

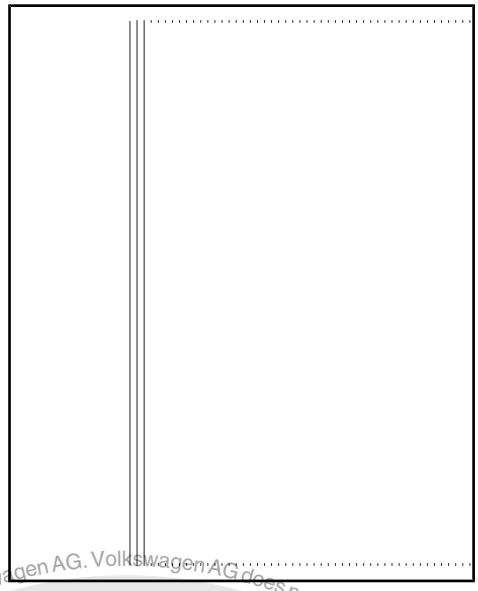
The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 210 .

5.3.1 Preparing new part

Replacement part

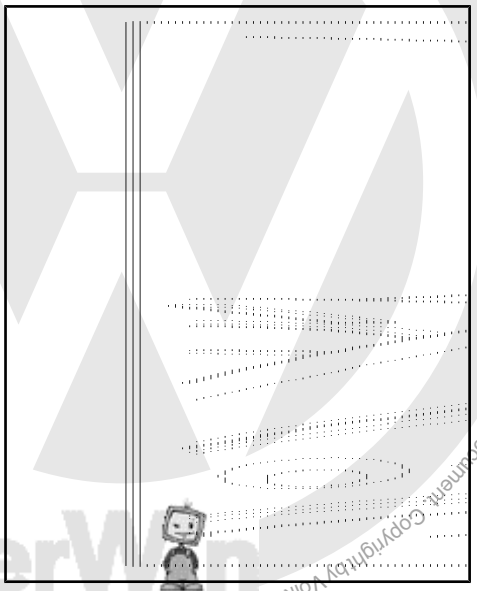
- C-pillar reinforcement
- 2K body adhesive -D 180 KD3 A2-

– Transfer parting cut to new part and cut out.



5.3.2 Welding in

– Apply 2K body adhesive -D 180 KD3 A2- to area of factory applied bonded joint.
– Adapt new part to fit and fix in position.
– Weld parting cut, SG stepped weld seam.
– Weld original joint, RP spot weld seam.
– Install side panel (2-door vehicle) ⇒ „7.3 Installing“, page 223 .
– Install side panel (4-door vehicle) ⇒ „8.3 Installing“, page 233 .



RO: 53 47 55 50

6 Renewing rear longitudinal member - partial renewal

DANGER!

Observe safety notes!

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

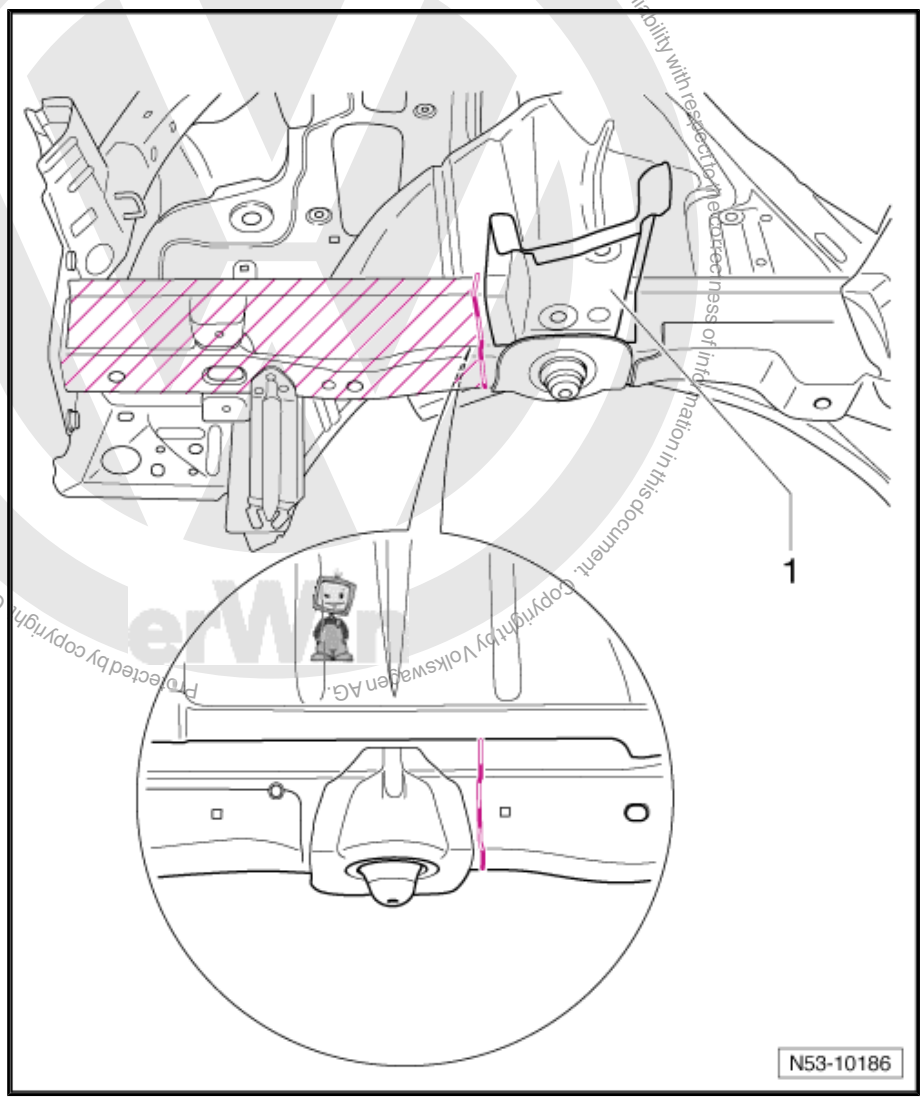
- Cross panel member already removed
  ⇒ „4 Renewing cross panel member“, page 205
- Cross panel already removed
  ⇒ „1 Renewing cross panel“, page 193
- Spare wheel well already removed
  ⇒ „11 Renewing spare wheel well“, page 252 or for 4Motion
  ⇒ „13 Renewing spare wheel well“, page 261

6.1 Tools

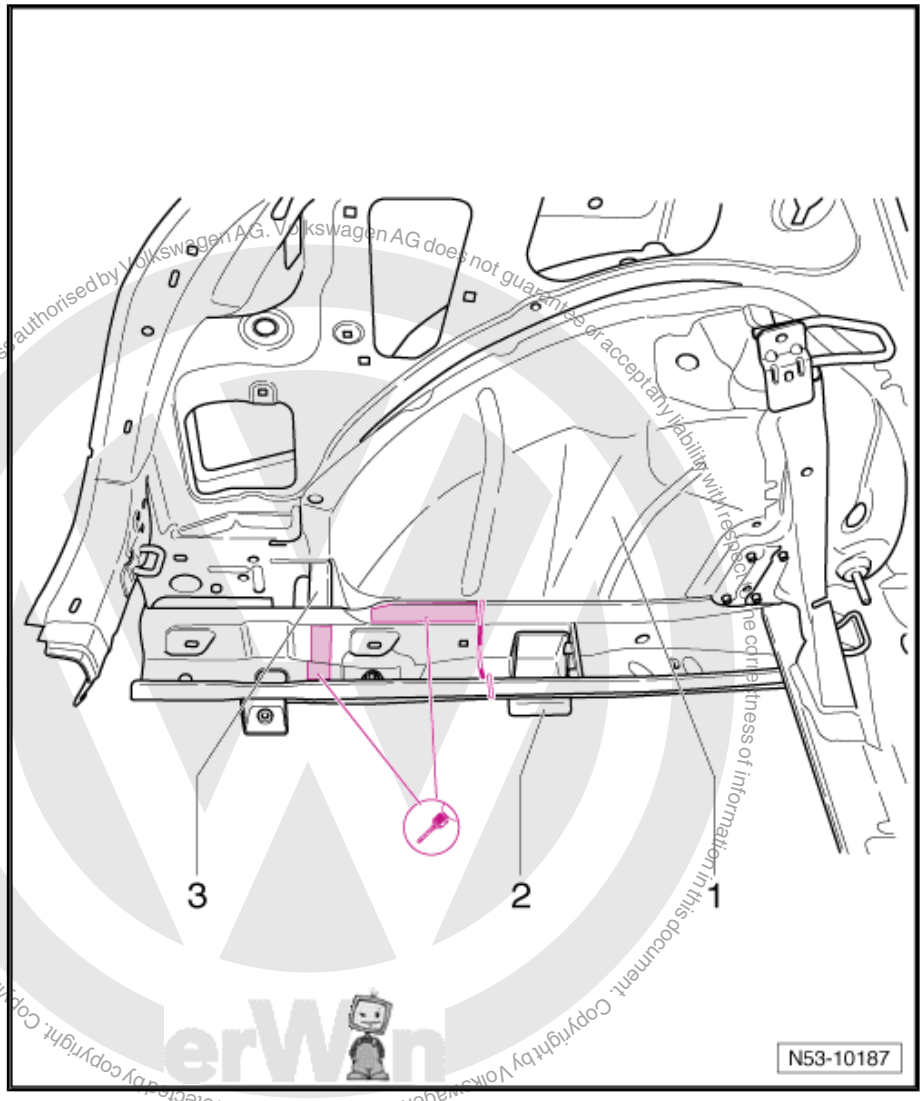
Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

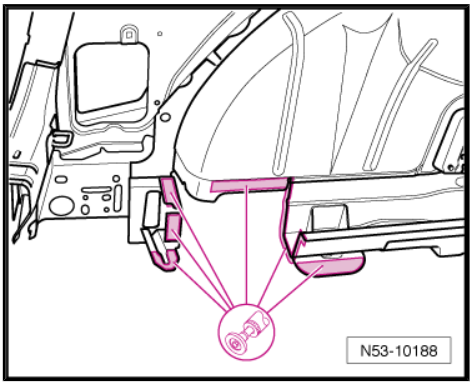
6.2 Removing



– Separate as shown. Remove spare wheel well reinforcement -1- and reuse if possible.



– Separate, do not damage spring mounting -2-.
– Separate original joint between inner wheel housing -1- and inner side panel reinforcement -3-.
– Remove remaining material.



6.3 Installing

Note

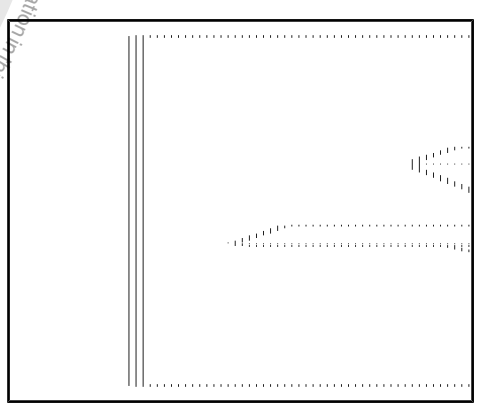
The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 213 .

6.3.1 Preparing new parts

Replacement part

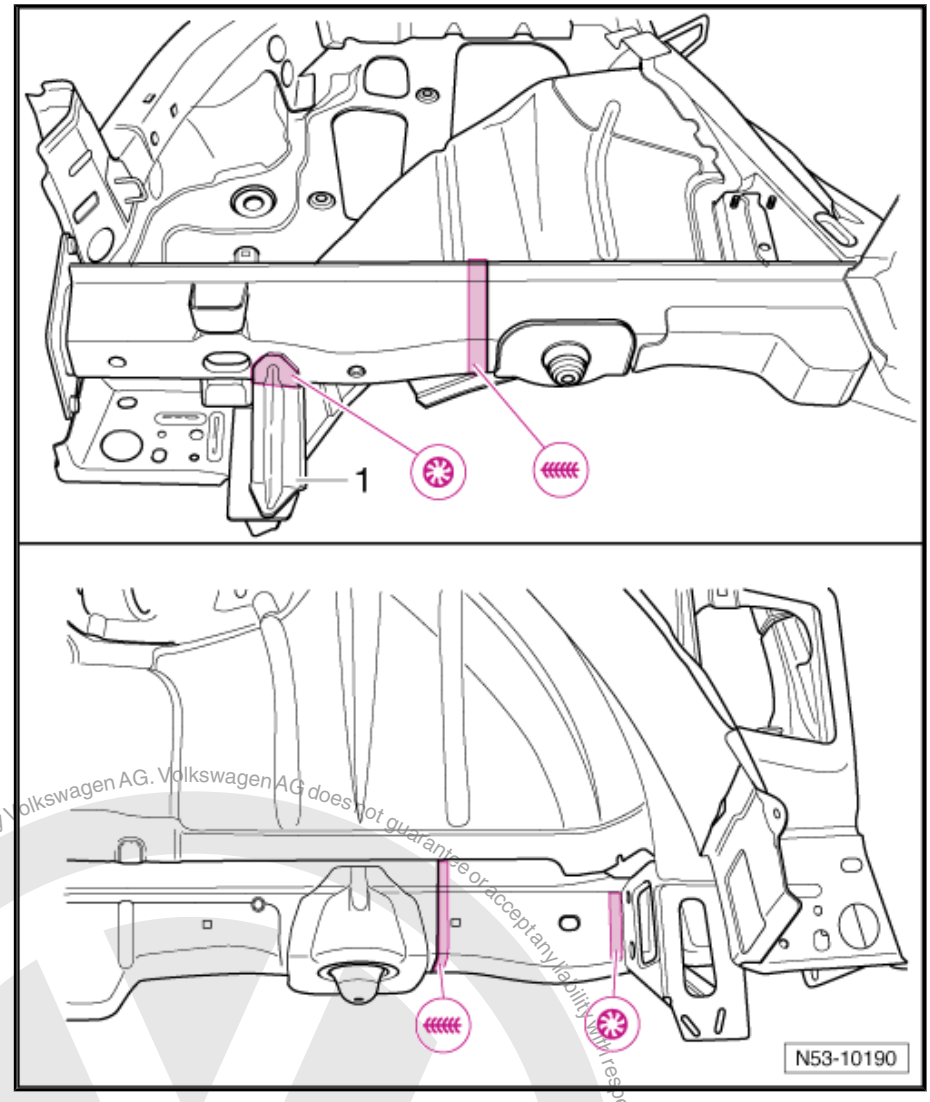
- Rear longitudinal member (partial renewal)
- Possible spare wheel well reinforcement

– Transfer parting cut to new part and cut out.

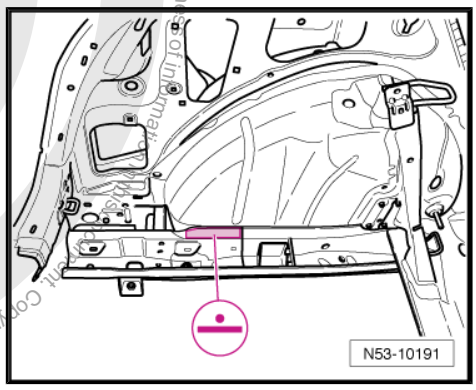


6.3.2 Welding in

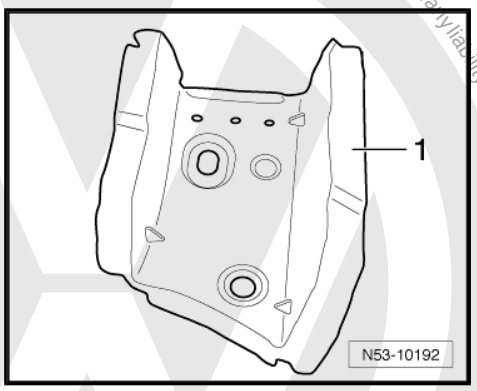
– Adapt new part with vehicle standing on its wheels or on alignment bracket set using cross panel and spare wheel well to align and fix in position.



– Butt weld all-round parting cut, SG continuous weld seam.
– Weld new part to inner side panel reinforcement -1-, SG plug weld seam.
– Recreate remaining joint to inner wheel housing, RP spot weld seam.



Spare wheel well reinforcement -1- can be welded in together with spare wheel well



– Install spare wheel well ⇒ „11.3.2 Welding in“, page 255 .
– Install rear cross panel ⇒ „1.3.1 Welding in“, page 195 .
– Install cross panel member ⇒ „4.3 Installing“, page 205 .

RO: 53 55 55 00

7 Renewing side panel - partial renewal

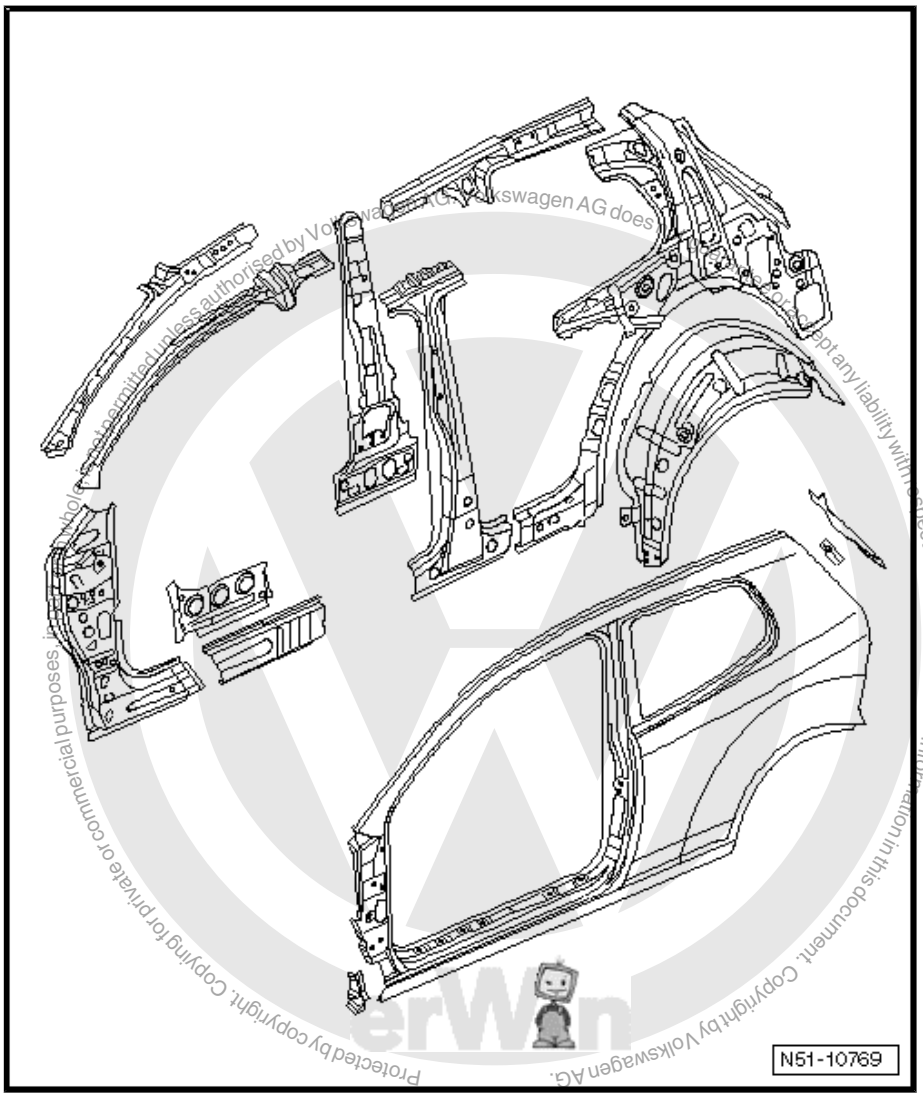
(2-door)

WARNING

Observe safety notes!

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

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



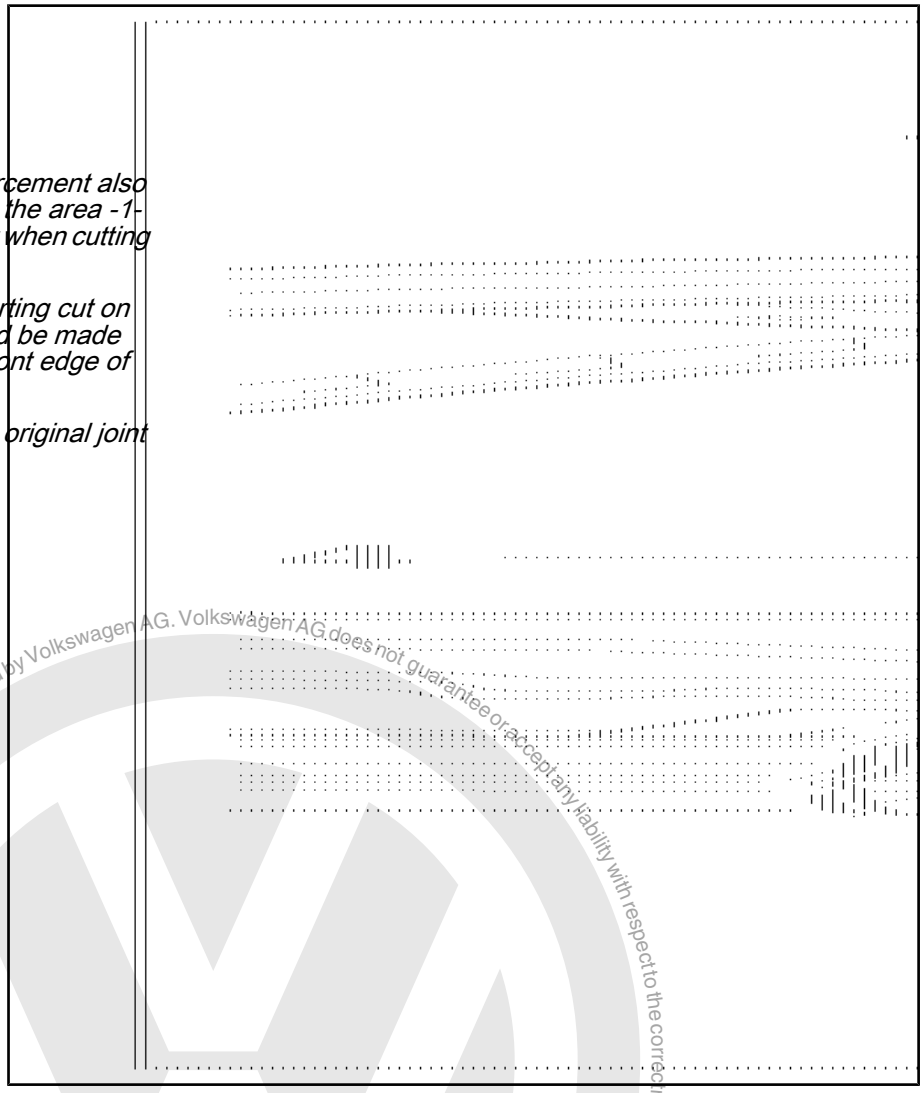
3 - Moulded foam element

4 - Bonded section

Note

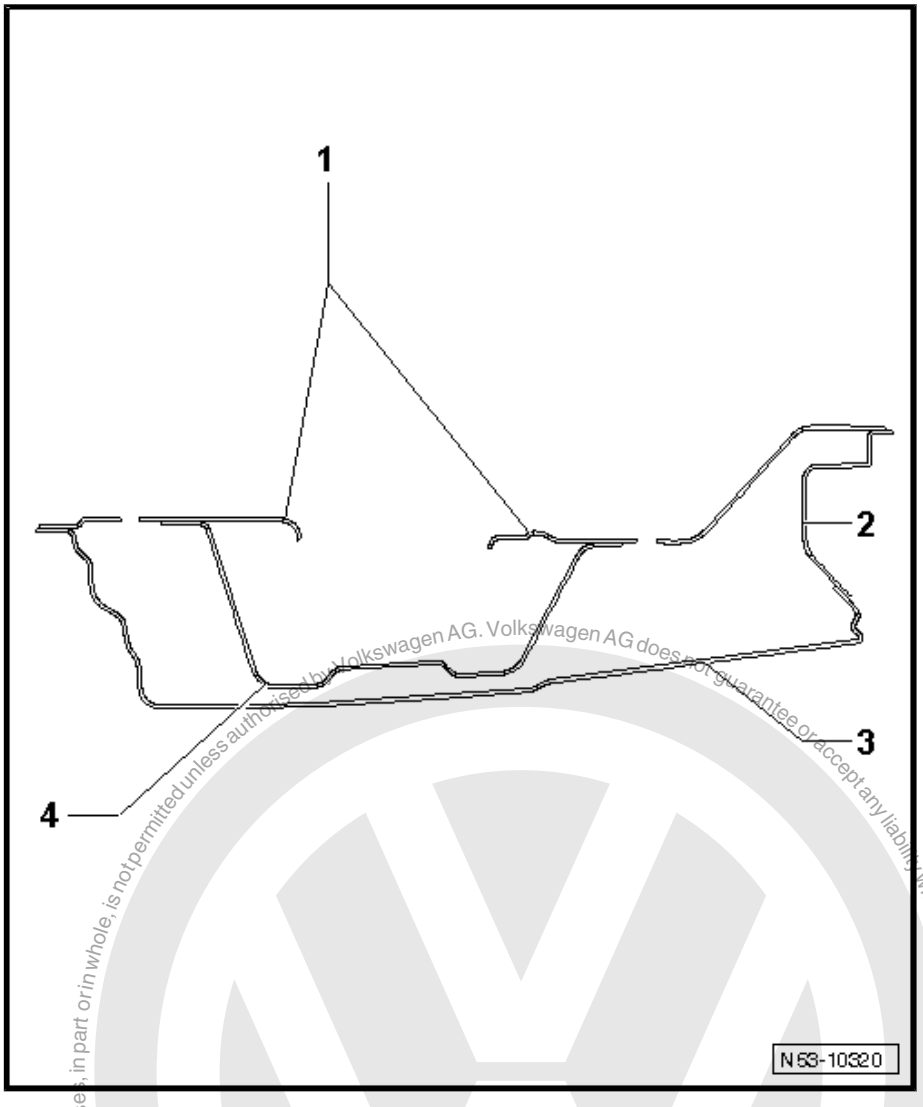
- *If the B-pillar reinforcement also has to be replaced, the area -1- must also be cut out when cutting out the side panel.*
- *Furthermore the parting cut on side member should be made 800 mm from the front edge of the side member*
- *Do not damage the original joint to roof.*

Partial renewal
A partial replacement can also be made with the specified parting cut -2-.



C-pillar cross section in area of parting cut

1 - Inner side panel
2 - Sealing channel
3 - Outer side panel
4 - C-pillar reinforcement

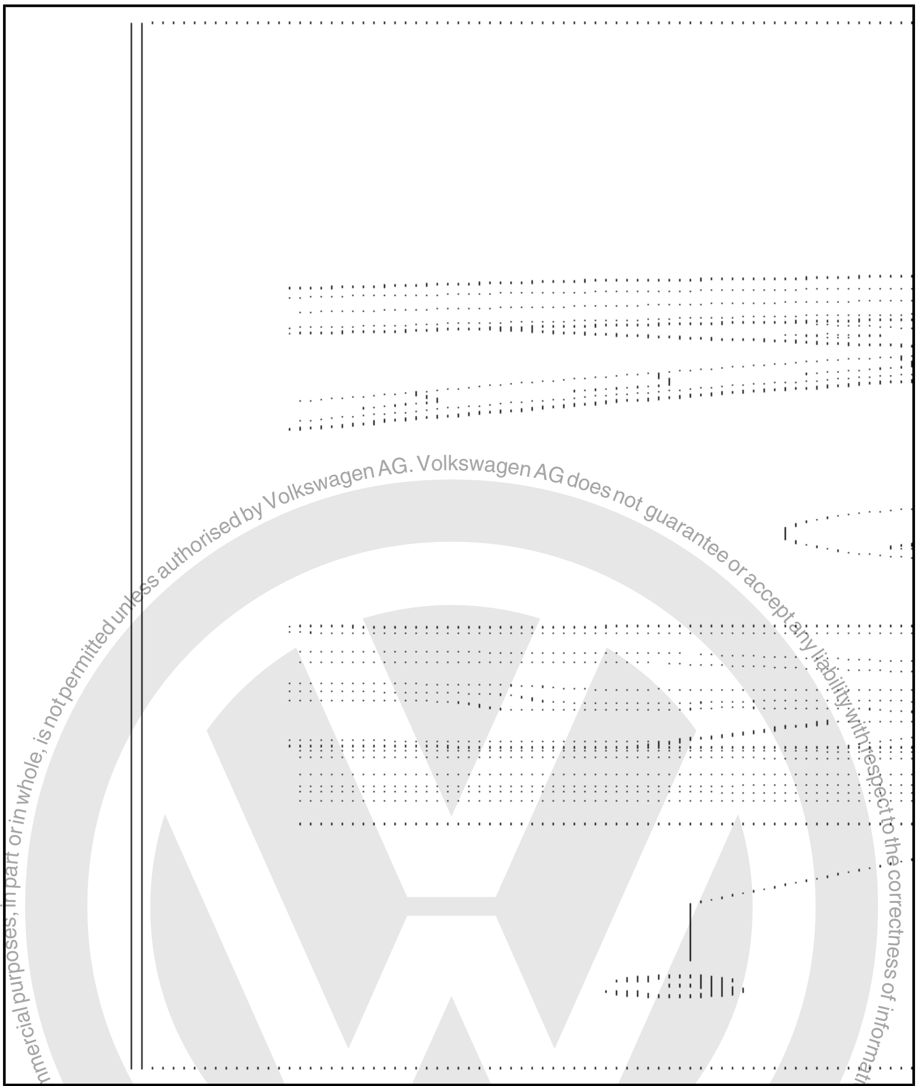


7.1 Tools

Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

7.2 Removing



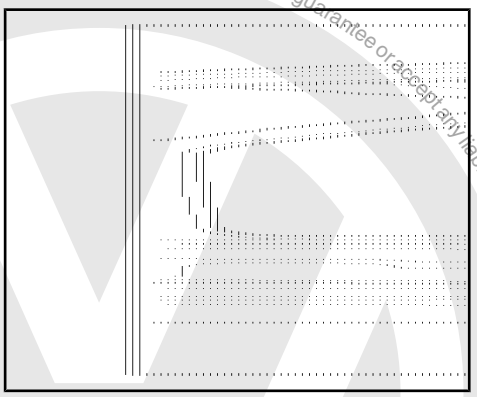
Note

- *Make parting cuts with pneumatic jig-saw -V.A.G 1523- only.*
- *Note cut line figure* *⇒ page 220* *.*
- *When making parting cut -3- keep cutting/overlap of replacement part in mind.*

– Make parting cuts -1-, -2- and -3- as shown.

– Separate original joint.

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



7.3 Installing

Note

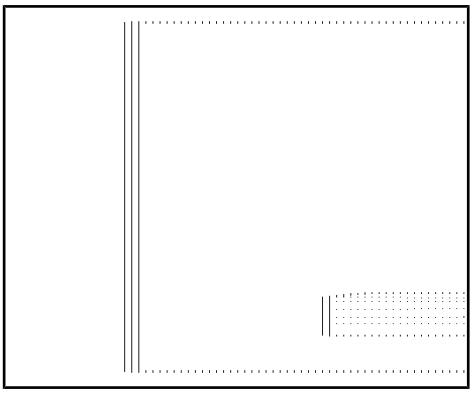
The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 221 .

7.3.1 Preparing new part

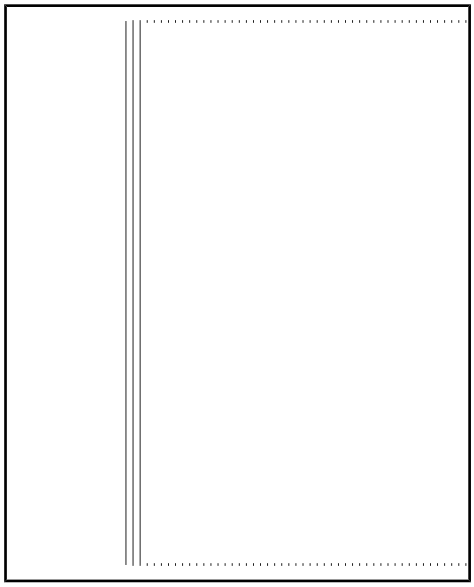
Replacement part

- Side panel frame (subpart)
- Sealing channel
- Reinforcement for gas-filled strut
- Moulded foam element
- 2K body adhesive -D 180 KD3 A2-
- 1K assembly adhesive -D 190 MKD A3-

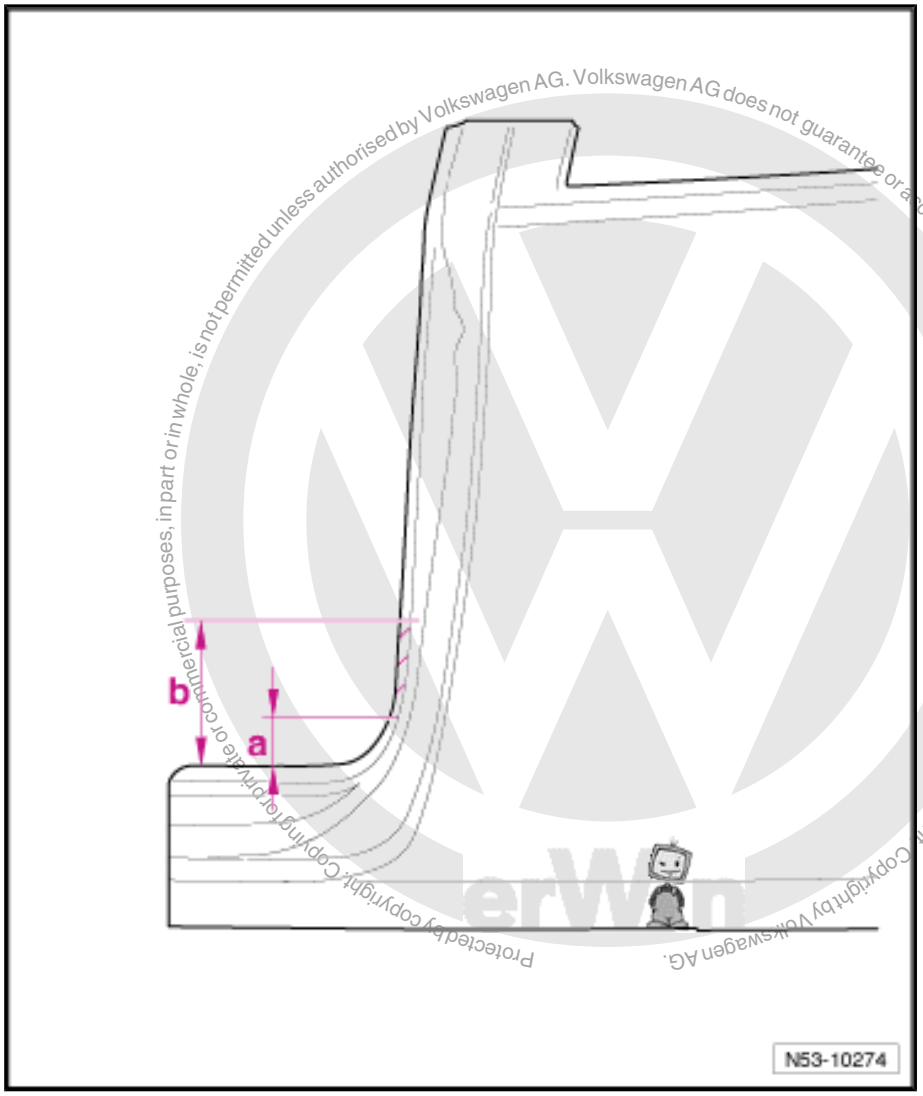
– Transfer parting cuts to new parts and cut out.
– Drill 7 mm ∅ holes in side panel for SG plug weld seam.



– Drill 7 mm ∅ holes on sealing channel for SG plug weld seam.



7.3.2 Marking the area where no welding work may be carried out



– On the side panel mark the area in which, for safety reasons »crash safety«, no welding work may be carried out.

Dimension -a- = 45 mm

Dimension -b- = 145 mm

Note

The measurements given must be adhered to.

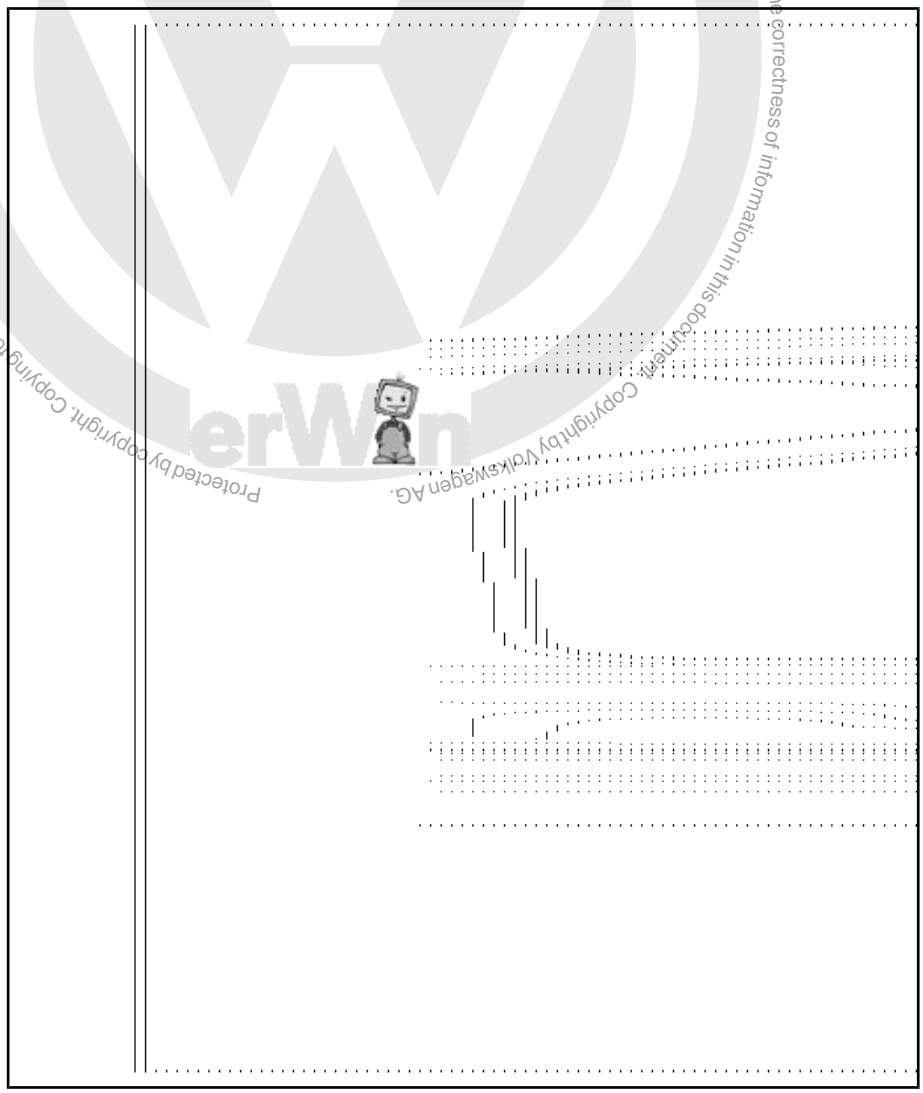
7.3.3 Moulded foam elements

Follow repair instructions.

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

7.3.4 Welding in

– Place backing material behind parting cuts.



– Apply 1K assembly adhesive -D 190 MKD A3- (12 mm high triangular shaped bead) in bonding area -1- and apply 2K body

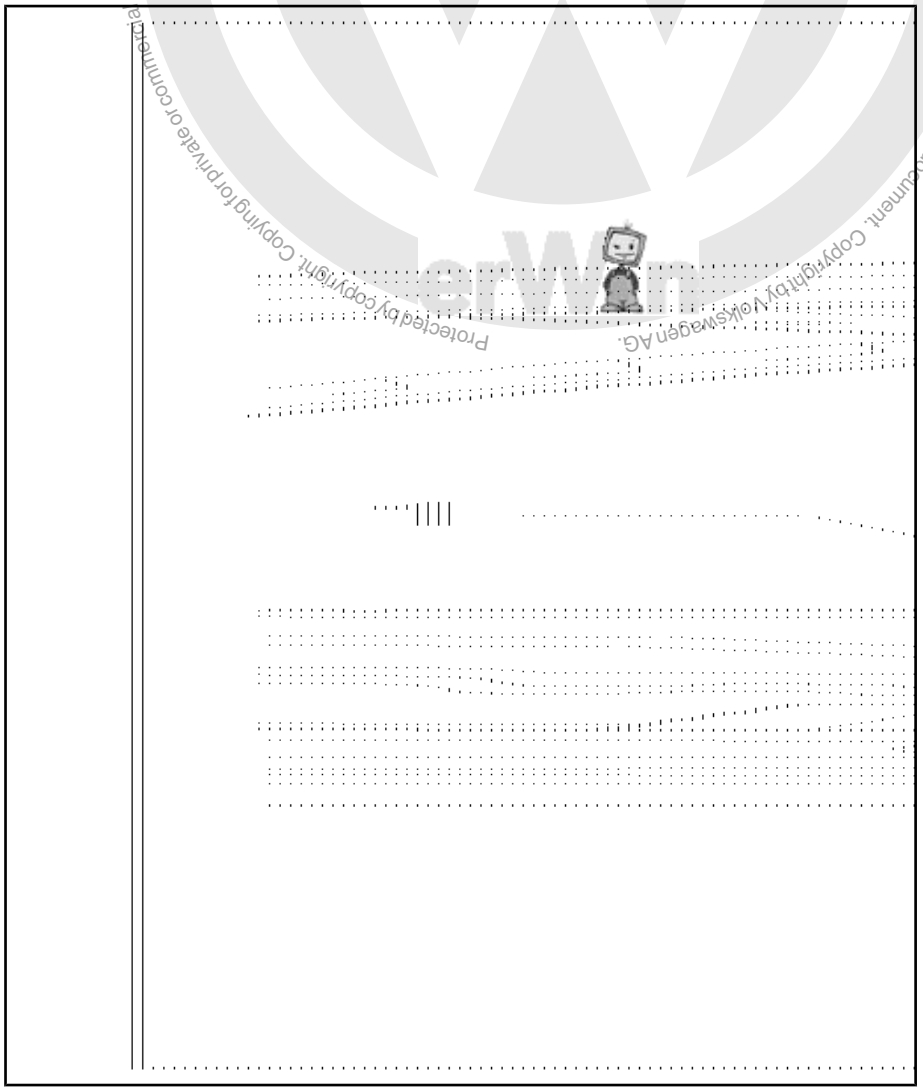
adhesive -D 180 KD3 A2- in bonding area -2- (2 x 3.5 mm ∅ beads).

Note

- *New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.*
- *Before starting welding on the right-hand side panel, apply butyl sealing cord in the area of the fuel filler neck.*

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

– Check fit with bolt-on parts.

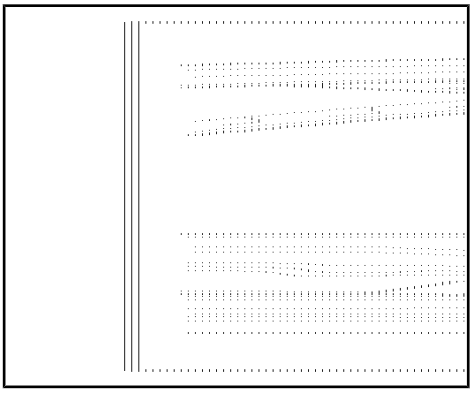


Note

Note that no welding work may be carried out in area -1-.

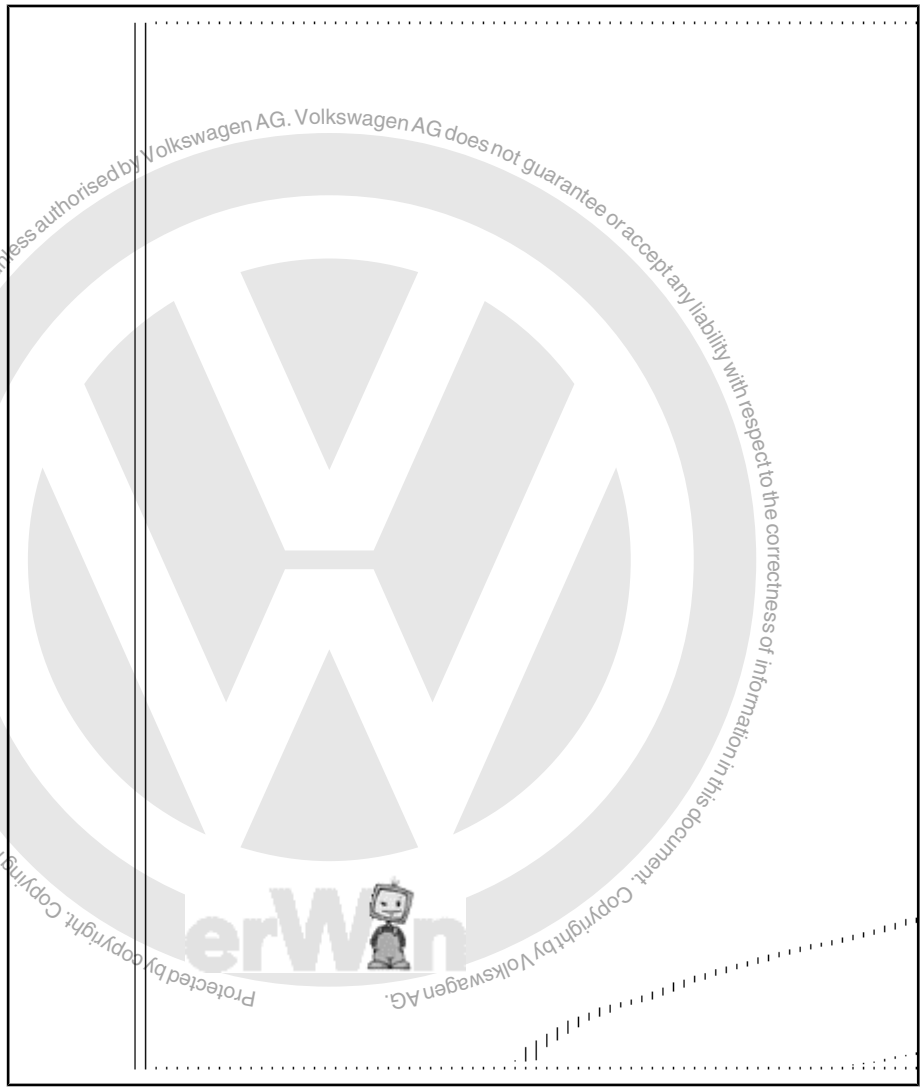
– Weld in side panel, RP spot weld seam and SG plug weld seam.

– Weld transition to side member reinforcement, staggered SG continuous weld seam.
– Weld in parting cuts, SG stepped weld seam.
– Reform wheel housing flange.
– Wipe away excess adhesive and seal wheel arch.



7.3.5 Adapting sealing channel to fit and welding in - partial renewal

– Adapt sealing channel to fit and hold in position.



– Weld in sealing channel, SG plug weld and SG stepped weld seam.

– Reinstate original joint, RP spot weld seam.

Note

The optic of the original soldered seam must be recreated using adhesive sealing compound -AKD 476 KD5 05- .

RO: 53 55 10

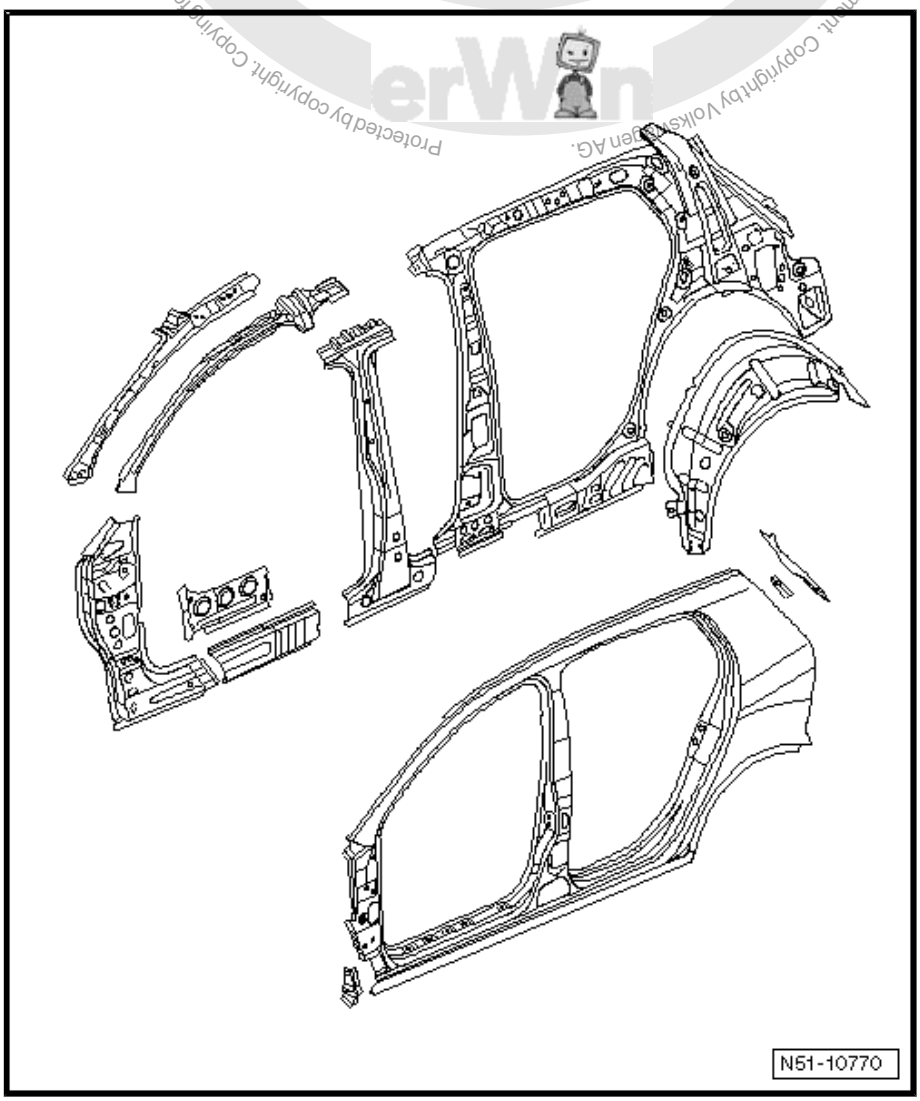
8 Renewing side panel - partial renewal (4-door)

WARNING

Observe safety notes!

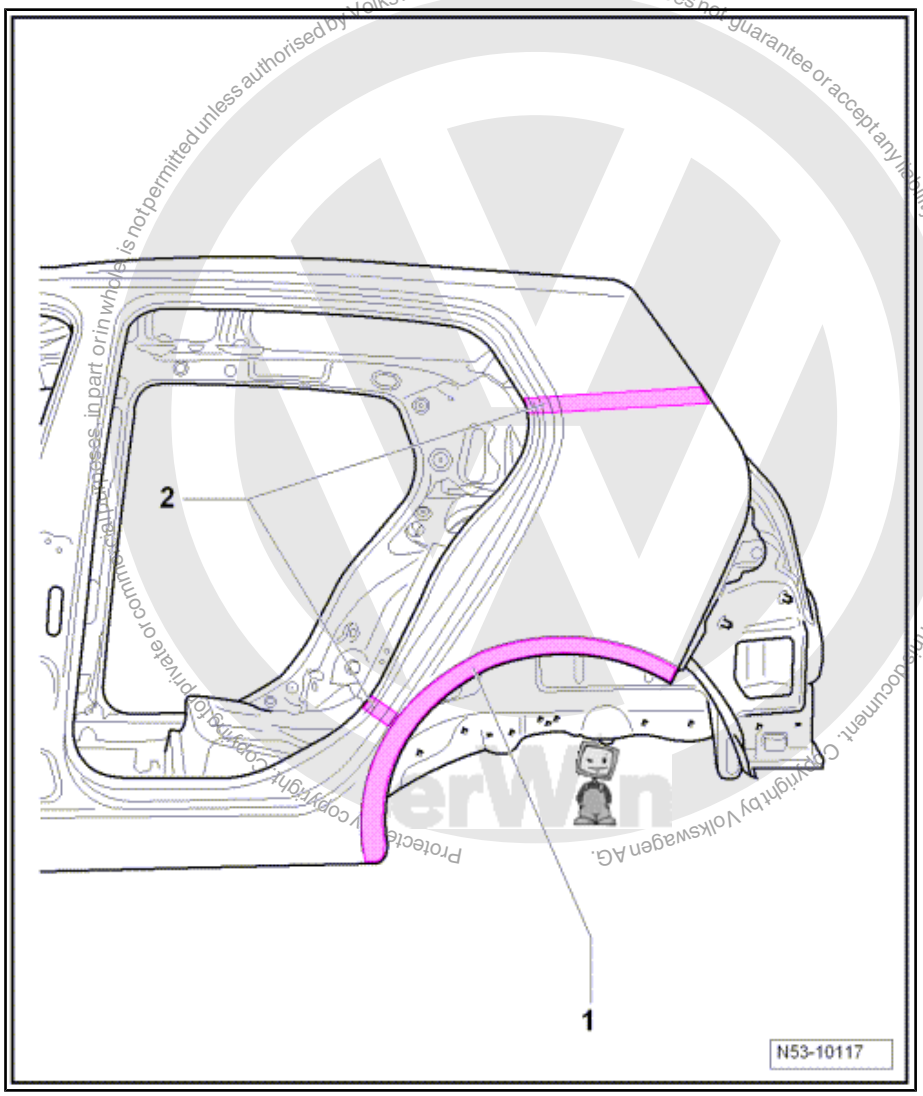
Welding, parting using spark generating machines/tools or tinning in foam treated areas creates gases which are hazardous to health and environment. Therefore, refrain from using these processes.

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



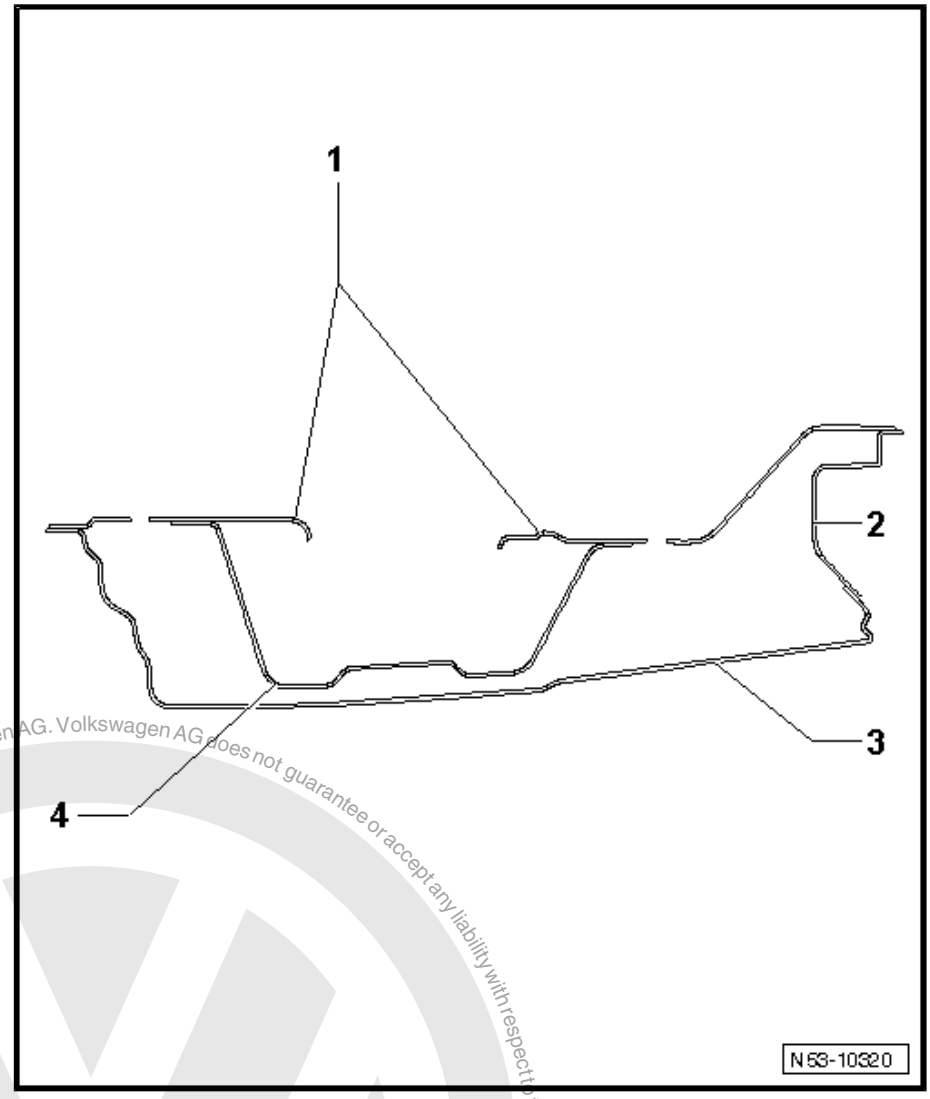
1 - Bonded section

2 - Moulded foam element



C-pillar cross section in area of parting cut

1 - Inner side panel
2 - Sealing channel
3 - Outer side panel
4 - C-pillar reinforcement

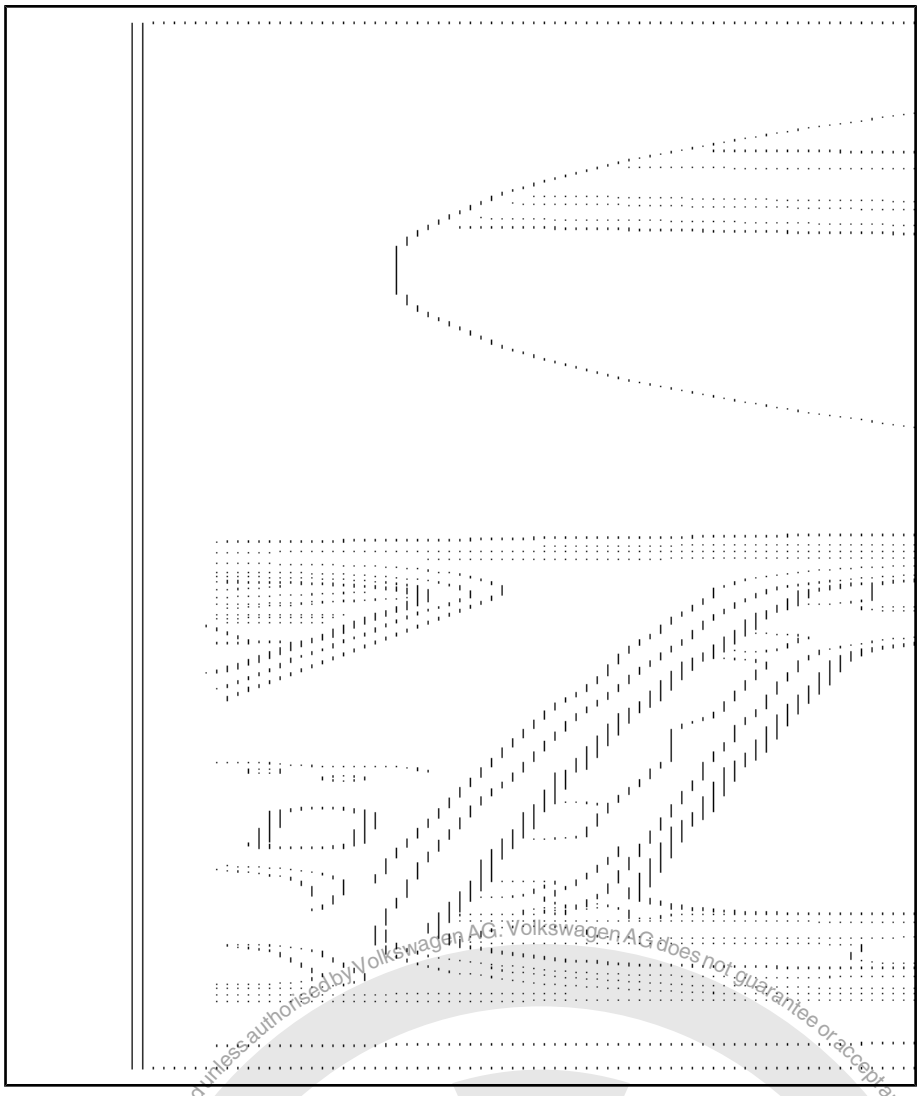


8.1 Tools

Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

8.2 Removing



Note

- *Make parting cuts with pneumatic jig-saw -V.A.G 1523- only.*
- *Note cut line figure ⇒ page 230 .*

– Make parting cut -1- only on outer panel; do not damage internal reinforcements.

Dimension -a- = 45 mm

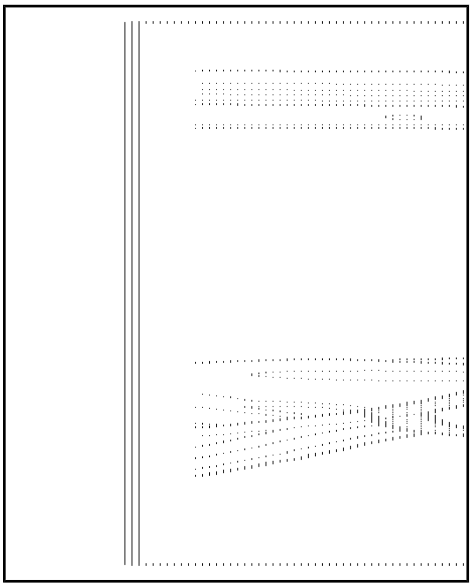
Dimension -b- = 100 mm

– Make parting cut -2- as shown; remember cut for replacement.

– Grind through outer edge of wheel arch.

– Separate original joint.

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



8.3 Installing

Note

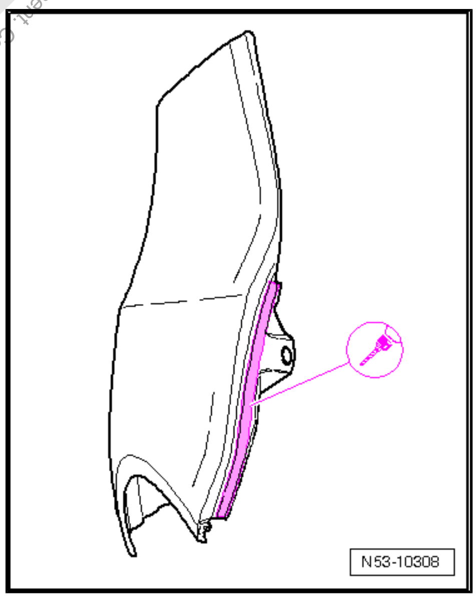
The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding *⇒ page 231* *.*

8.3.1 Preparing new part

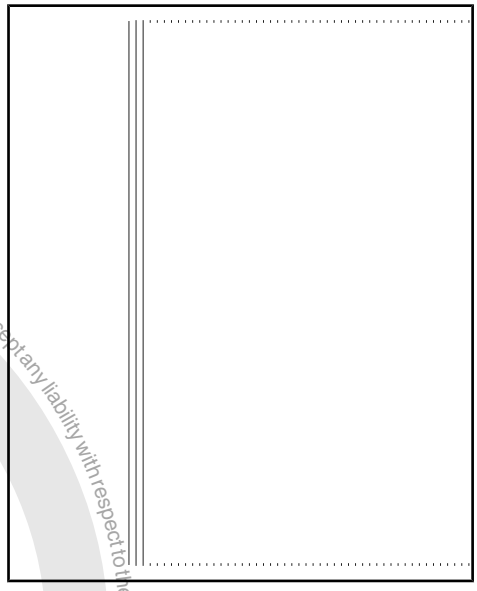
Replacement part

- Side panel frame (subpart)
- Sealing channel
- Moulded foam element
- 2K body adhesive -D 180 KD3 A2-
- 1K assembly adhesive -D 190 MKD A3-

– Transfer parting cuts to new parts and cut out.
– Drill 7 mm ∅ holes in side panel for SG plug weld seam.



– Drill 7 mm ∅ holes on sealing channel for SG plug weld seam.



8.3.2 Moulded foam elements

Follow repair instructions.

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

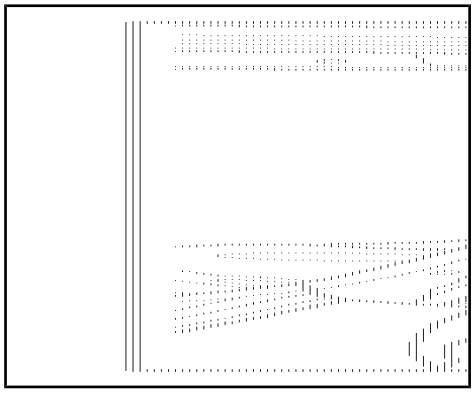
8.3.3 Welding in

Note

Before starting welding on the right-hand side panel, apply butyl sealing cord in the area of the fuel filler neck.

– Place backing material behind parting cuts.

– Apply 1K assembly adhesive -D 190 MKD A3- (12 mm high triangular shaped bead) in bonding area -1- and apply 2K body adhesive -D 180 KD3 A2- in bonding area -2- (2 x 3.5 mm ∅ beads).

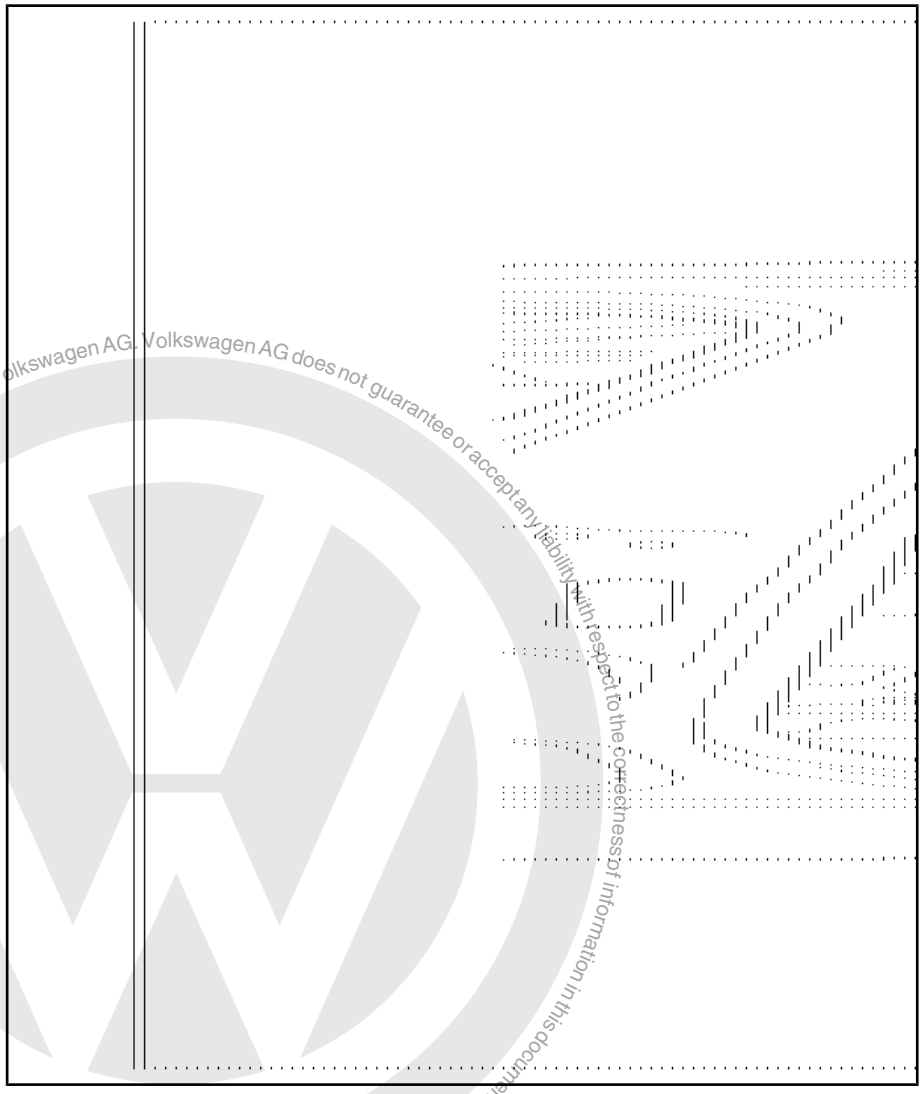


Note

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

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

– Check fit with bolt-on parts.



– Weld in side panel, RP spot weld seam and SG plug weld seam.
– Weld in parting cuts, SG stepped weld seam.
– Reform wheel housing flange.
– Wipe away excess adhesive and seal wheel arch.

8.3.4 Adapting sealing channel to fit and welding in - partial renewal

– Adapting sealing channel to fit and welding in ⇒ „7.3.5 Adapting sealing channel to fit and welding in - partial renewal“, page 227 .

RO: 53 61 55 50

9 Renewing inner side panel

(4-door)

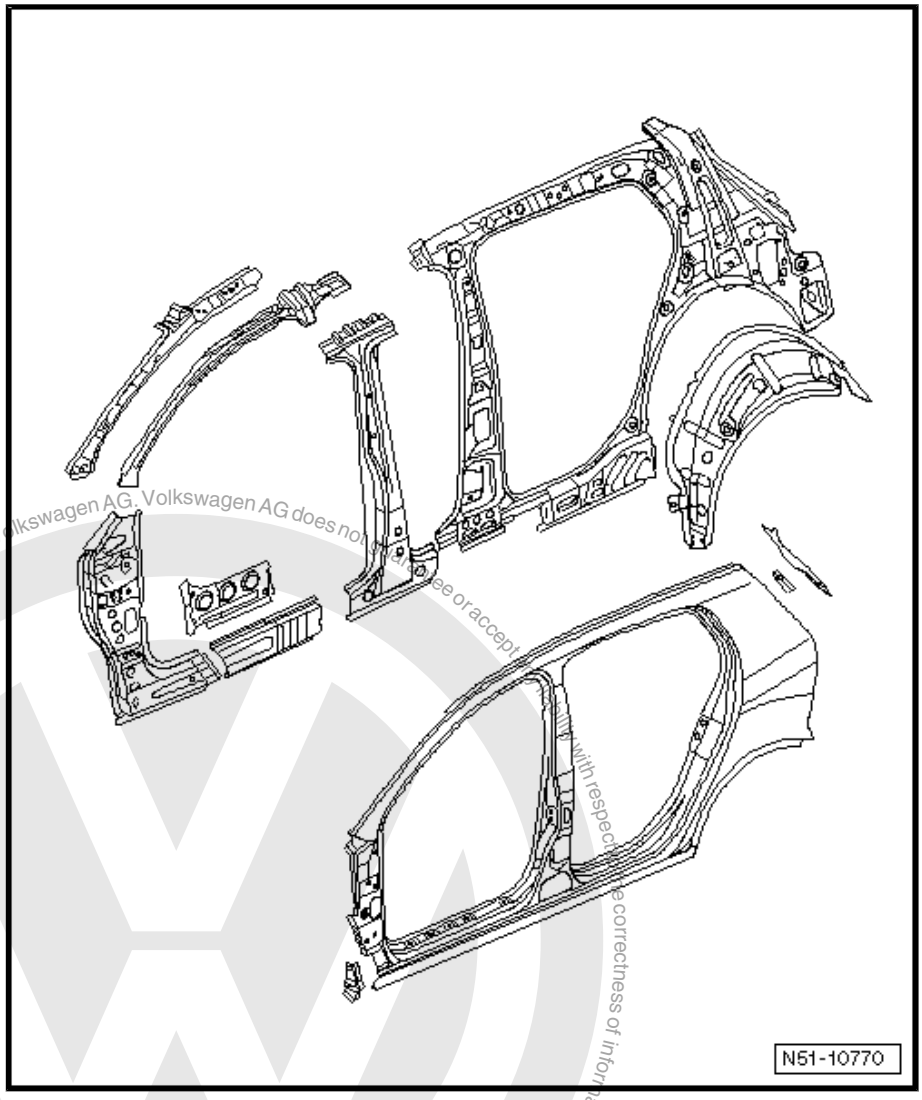
WARNING

Observe safety notes!

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

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

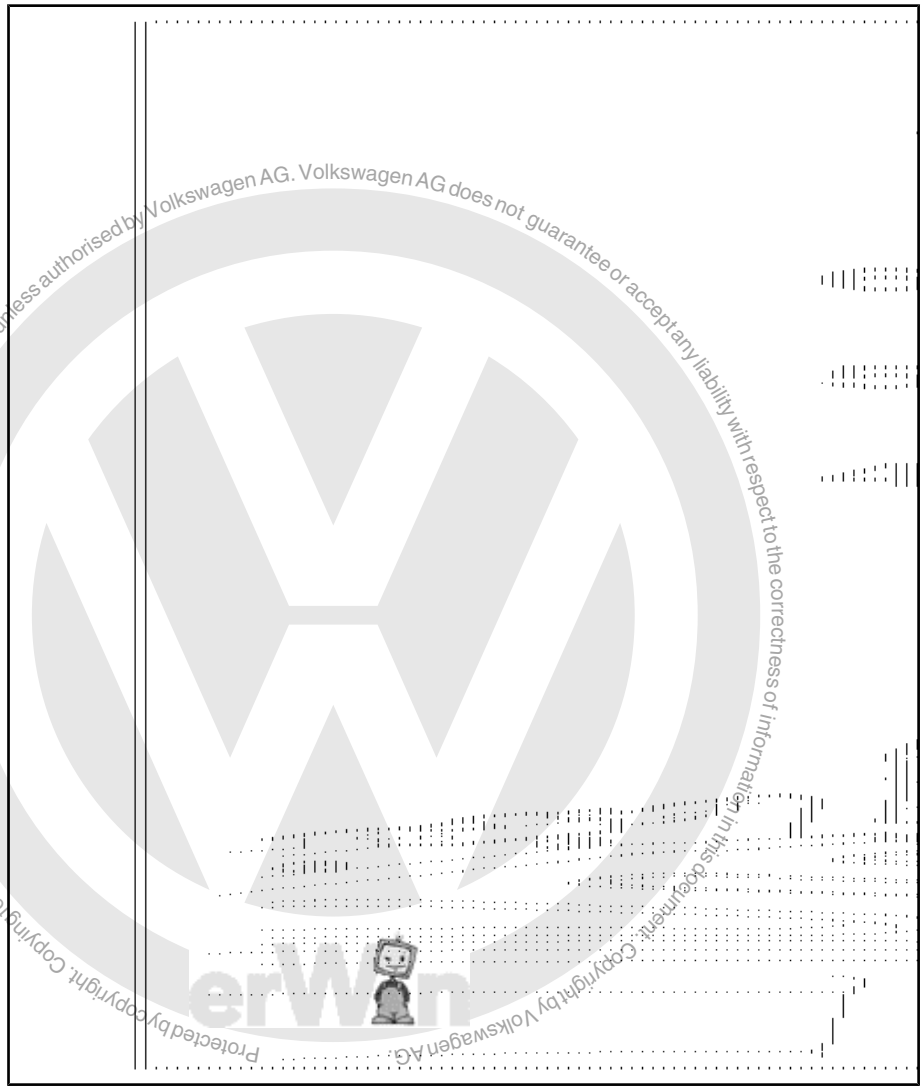
- Outer side panel already removed
  ⇒ „8 Renewing side panel - partial renewal“, page 229 .
- Cross panel member already removed
  ⇒ „4 Renewing cross panel member“, page 205
- Mounting plate for tail light already removed
  ⇒ „2 Renewing tail light mounting“, page 197
- Tail light mounting reinforcement already removed
  ⇒ „3 Renewing reinforcing for tail light mounting plate“, page 201



1 - Inner roof frame
2 - C-pillar reinforcement
3 - Rear wheel housing
4 - Inner side panel
5 - Moulded foam element

Note

6 - Rear roof cross member

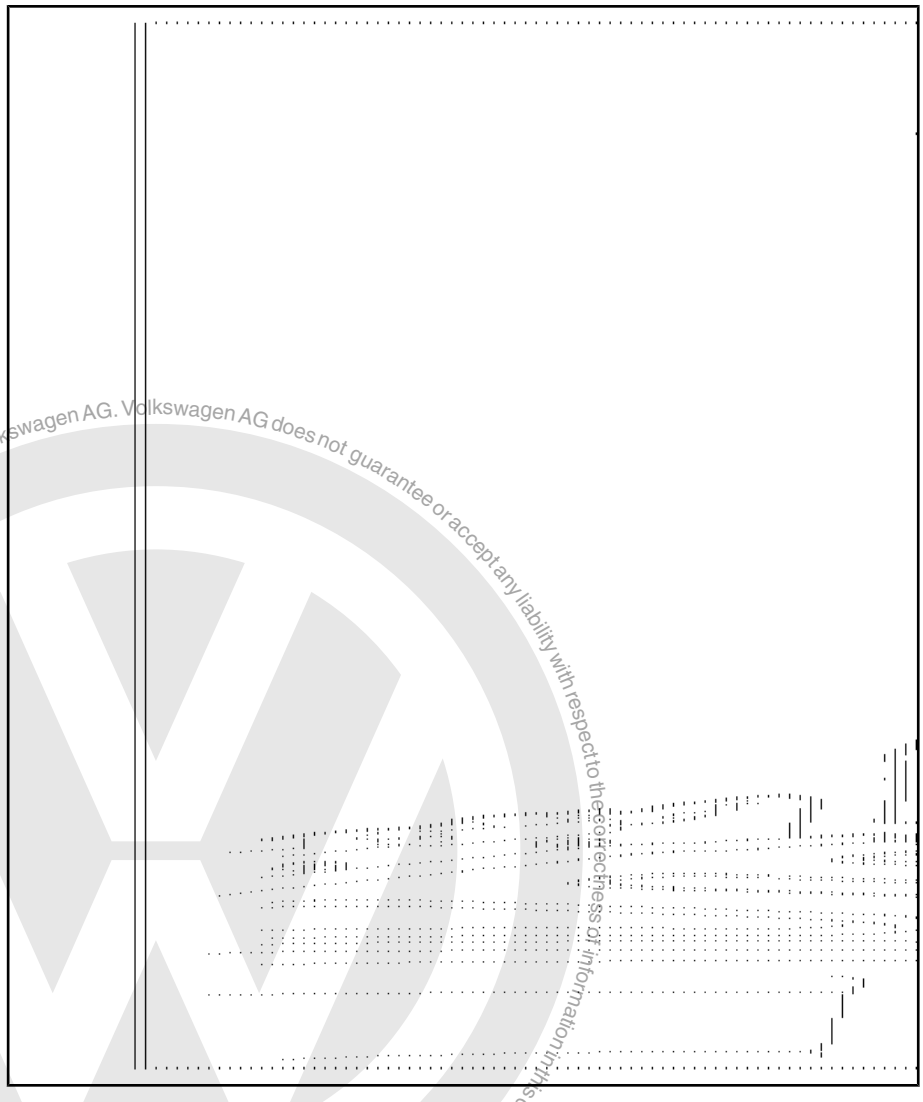


9.1 Tools

Special tools and workshop equipment required

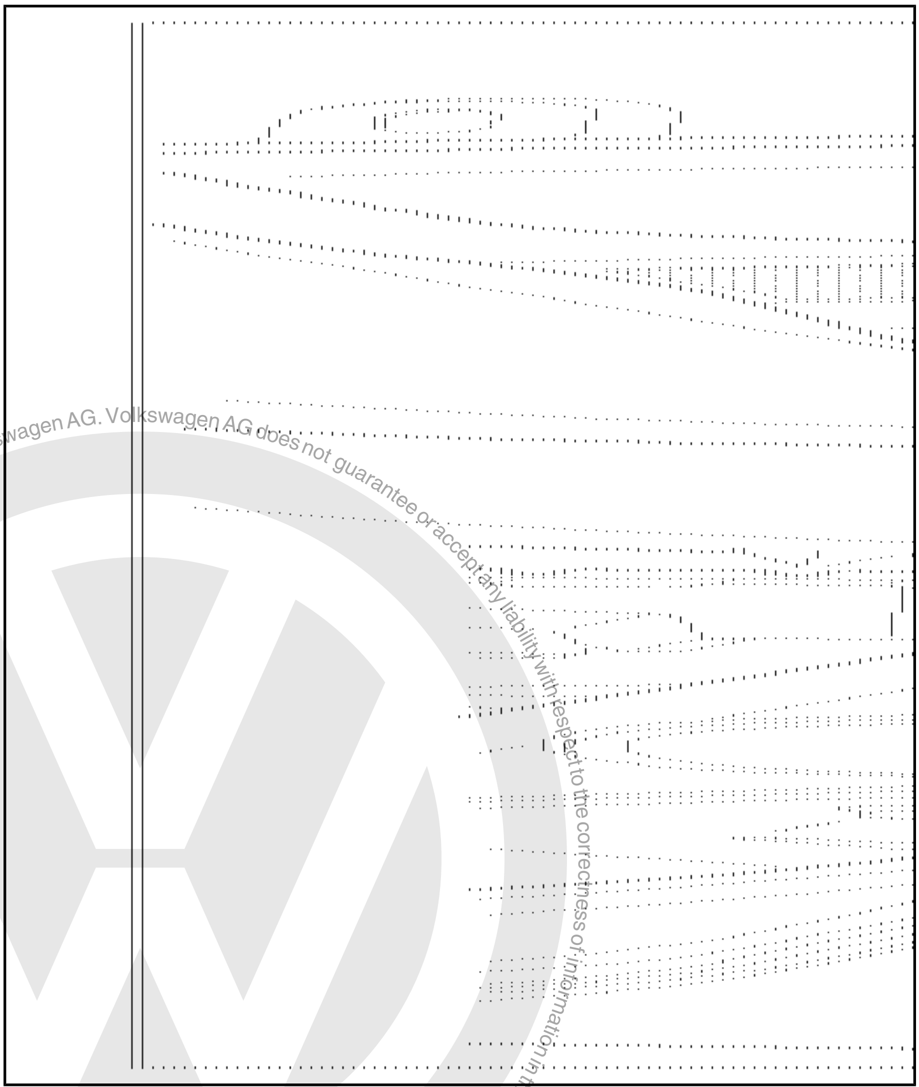
- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

9.2 Removing



– Separate original joints to roof frame, to door aperture -1-, to C-pillar reinforcement -3- and to rear roof cross member -4-, from interior.

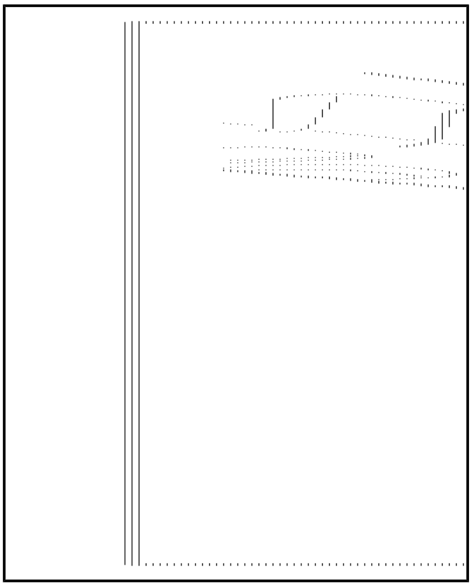
– Make parting cuts -2- as shown.

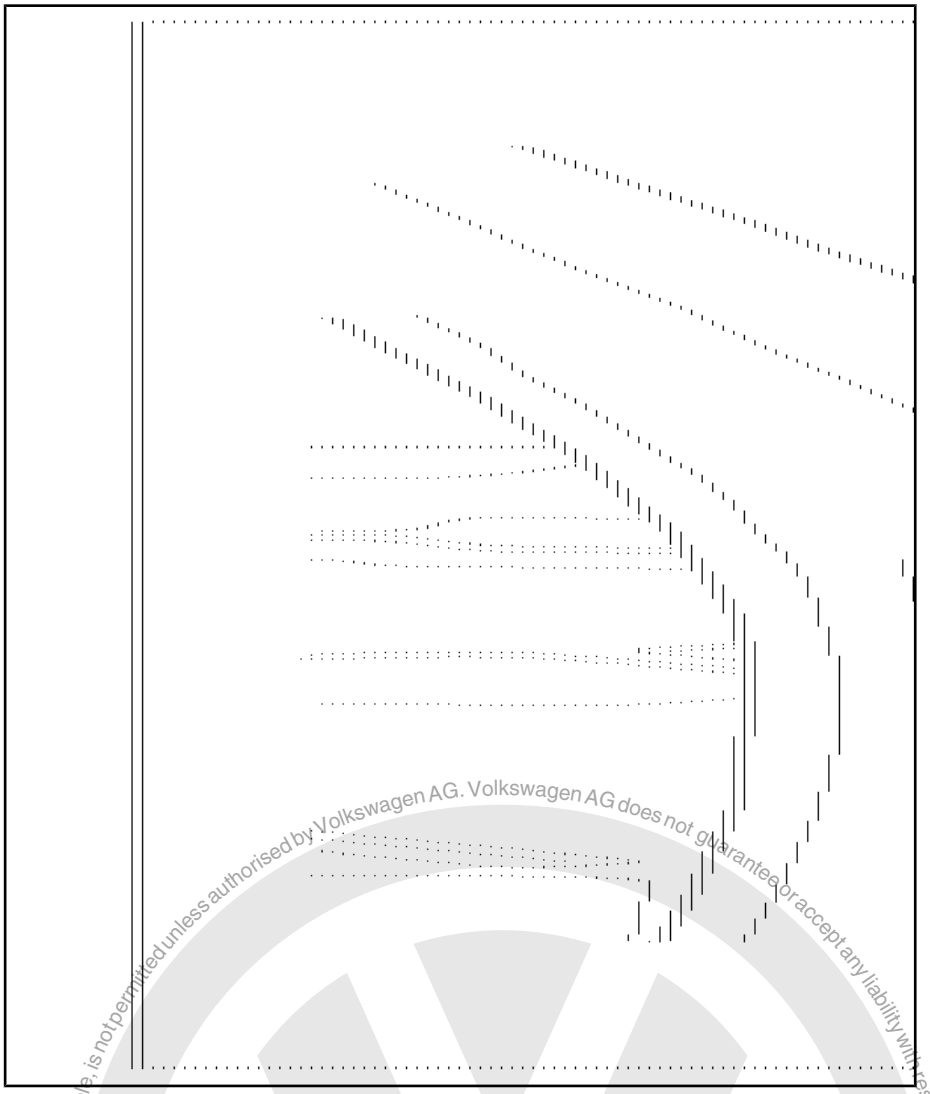


– Separate remaining joint to outer wheel housing liner.

– After separating inner side panel, remove joint remains in area of C-pillar reinforcement -enlargement-.

– Remove material remains on inside.





– Remove material remains on outside.

9.3 Installing

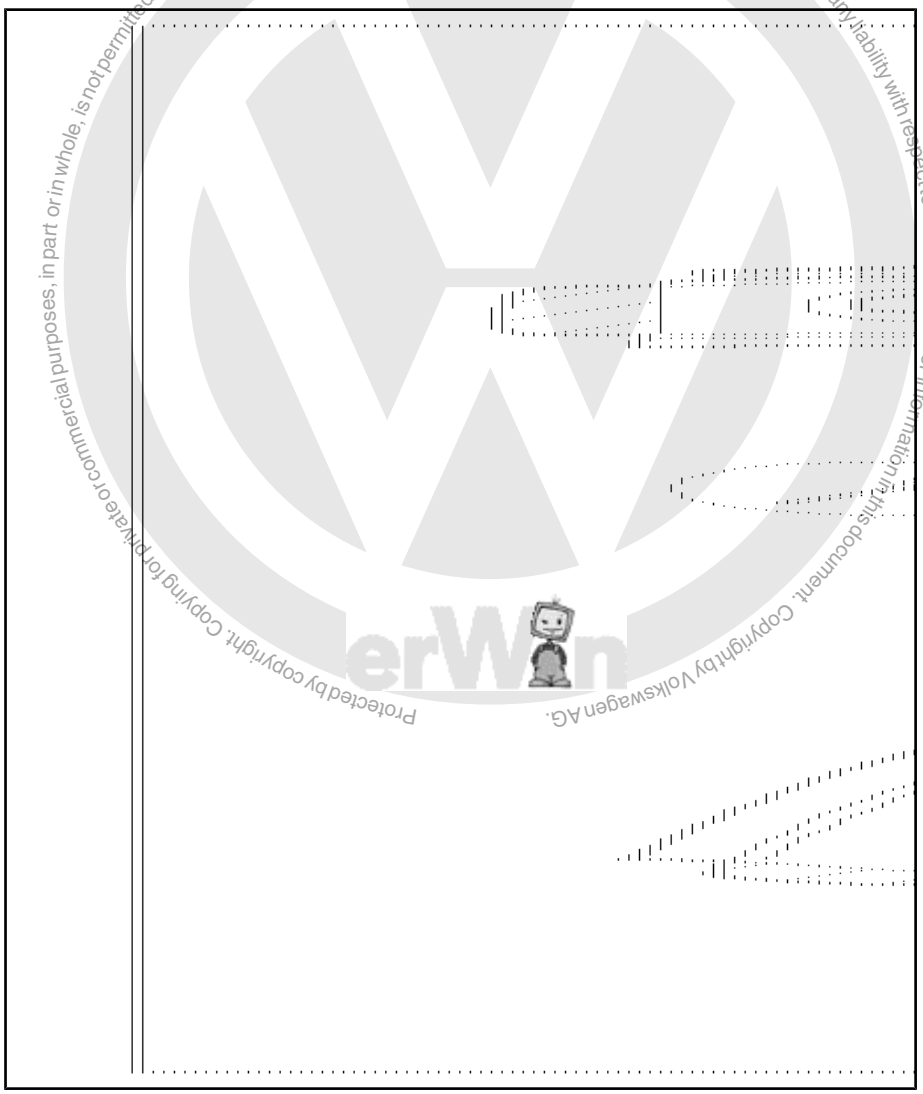
Note

The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 238 .

9.3.1 Preparing new part

Replacement part

- Inner side panel
- Moulded foam element
- 2K body adhesive -D 180 KD3 A2-



– Transfer cut to new part, taking 10 mm additional material -shaded area- for overlap into consideration.
– Drill 7 mm ∅ holes for SG plug weld seam.

9.3.2 Moulded foam elements

Follow repair instructions.

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

9.3.3 Welding in

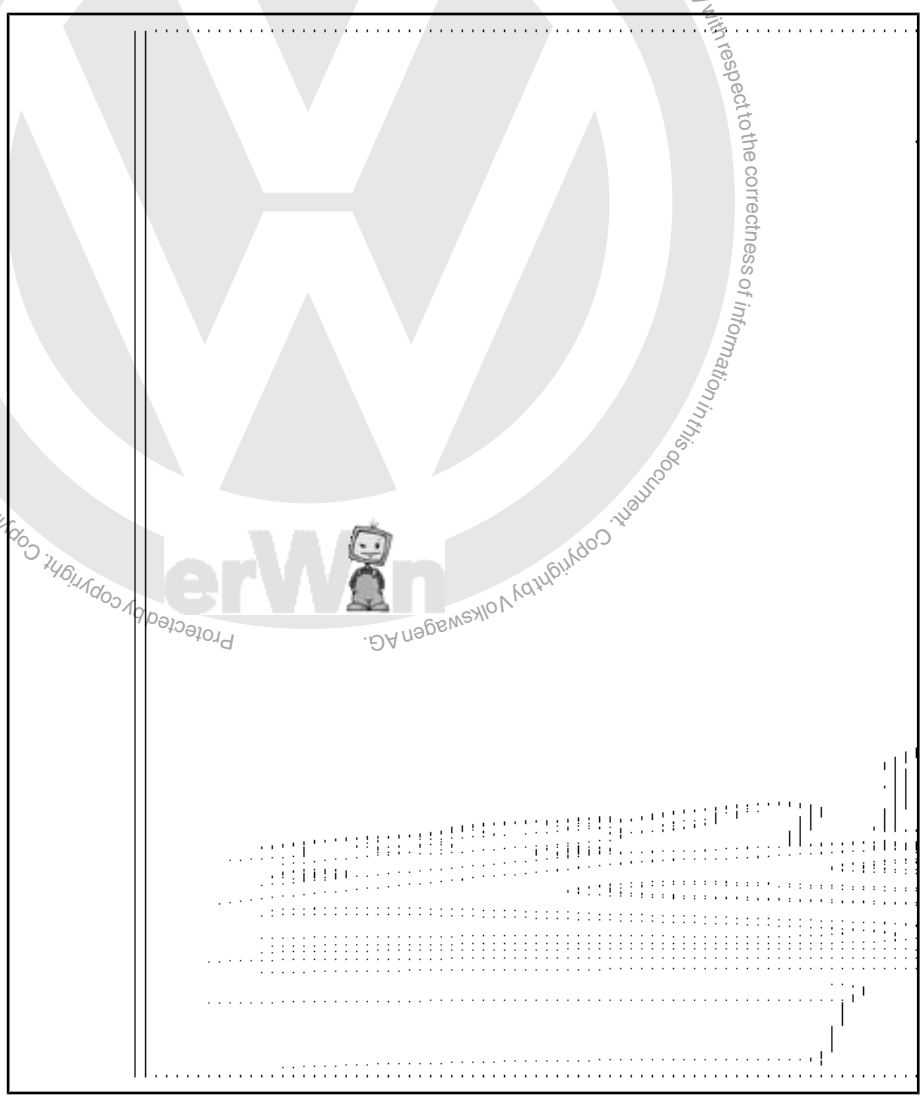
– Apply 2K body adhesive -D 180 KD3 A2- to area of factory applied bonded joint.

Note

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

– Adapt new part to fit and fix in position.
– Check fit with adjacent parts.

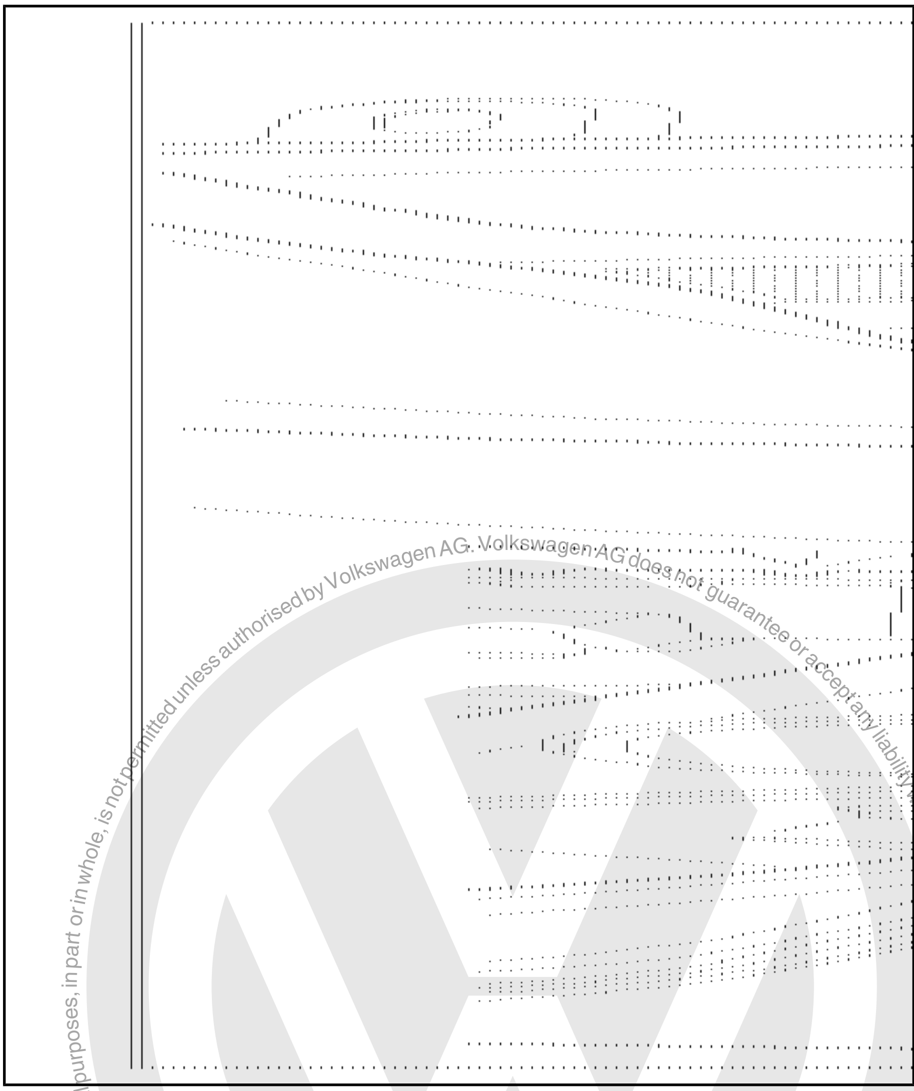
– Check rear lid closes correctly.



– Weld in inner side panel from interior, SG plug weld seam and RP spot weld seam.
– Weld in connecting points on rear roof cross member, SG continuous weld seam.
– Weld parting cuts, SG stepped weld seam.

Note

The remaining joints in the door aperture will be welded in when welding the outer side panel.



- Recreate original joints from exterior, RP spot weld seam.
- Weld in remaining joint in area of inner B-pillar reinforcement -enlargement-, SG plug weld seam.
- Install outer side panel ⇒ „8.3 Installing“, page 233 .
- Install reinforcing for tail light mounting ⇒ „3.3 Installing“, page 203 .
- Install tail light mounting plate ⇒ „2.3 Installing“, page 199 .
- Install cross panel member ⇒ „4.3 Installing“, page 205 .

RO: 53 68 55 50

10 Renewing outer wheel housing liner

DANGER!

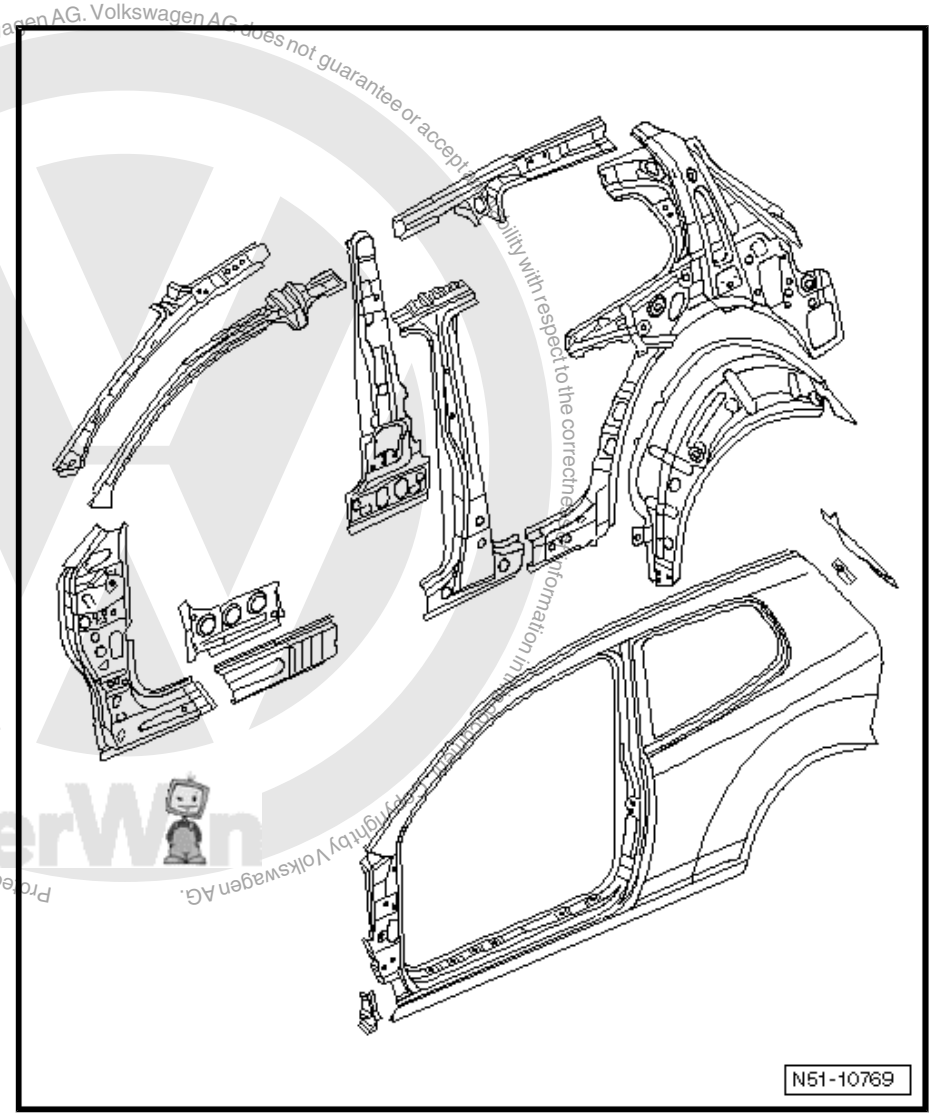
Observe safety notes!

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

Note

Outer wheel housing liner removal and installation in the Golf 2004 ⇒ (2-door) differs only marginally from outer wheel housing liner removal and installation in the Golf 2004 ⇒ (4-door).

- Side panel for 2-door vehicle already removed
  ⇒ „7 Renewing side panel - partial renewal“, page 219 .
- Side panel for 4-door vehicle already removed
  ⇒ „8 Renewing side panel - partial renewal“, page 229 .

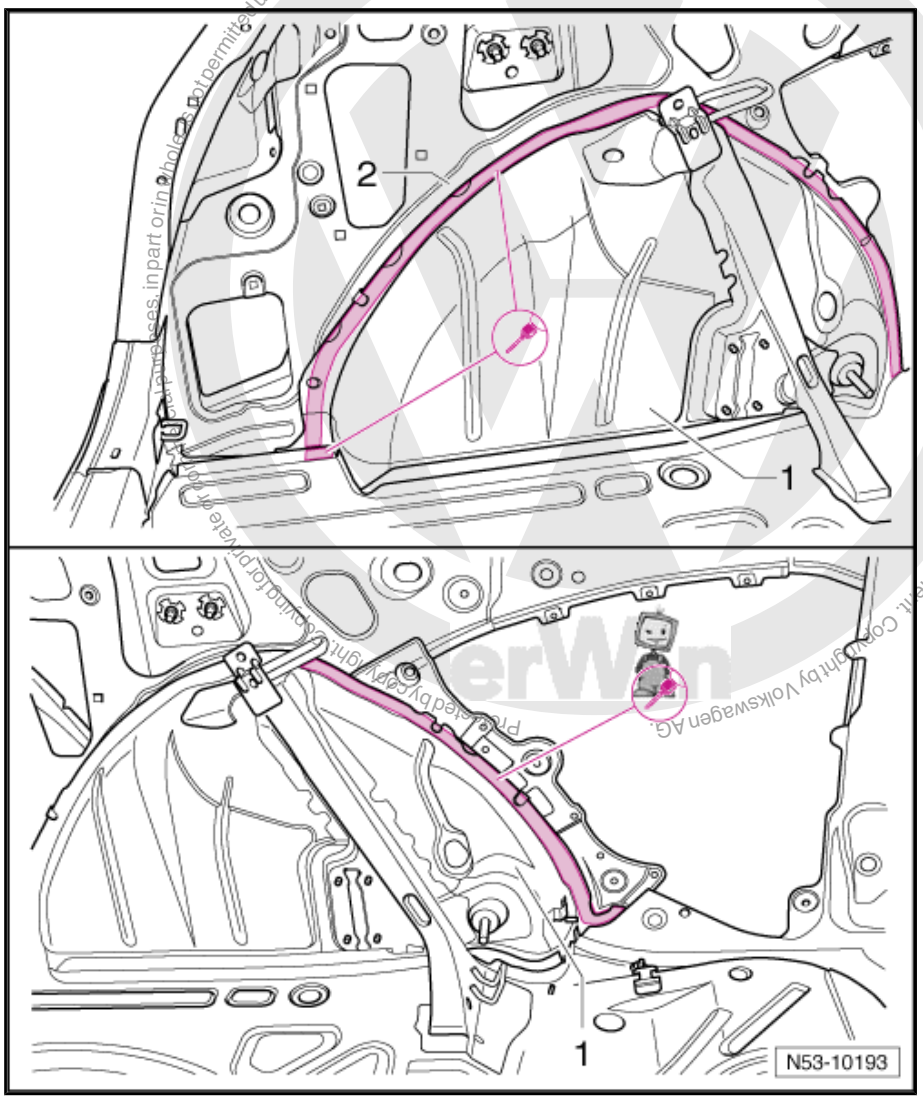


10.1 Tools

Special tools and workshop equipment required

- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

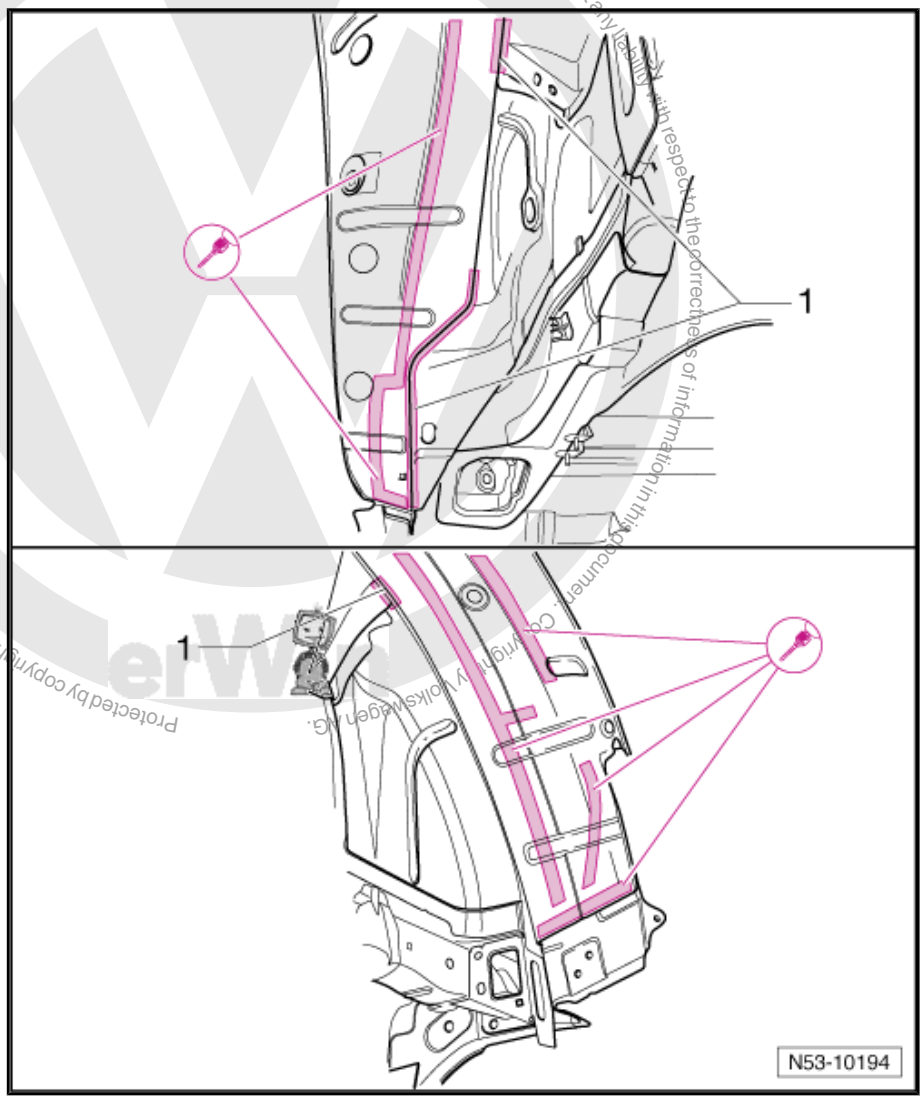
10.2 Removing

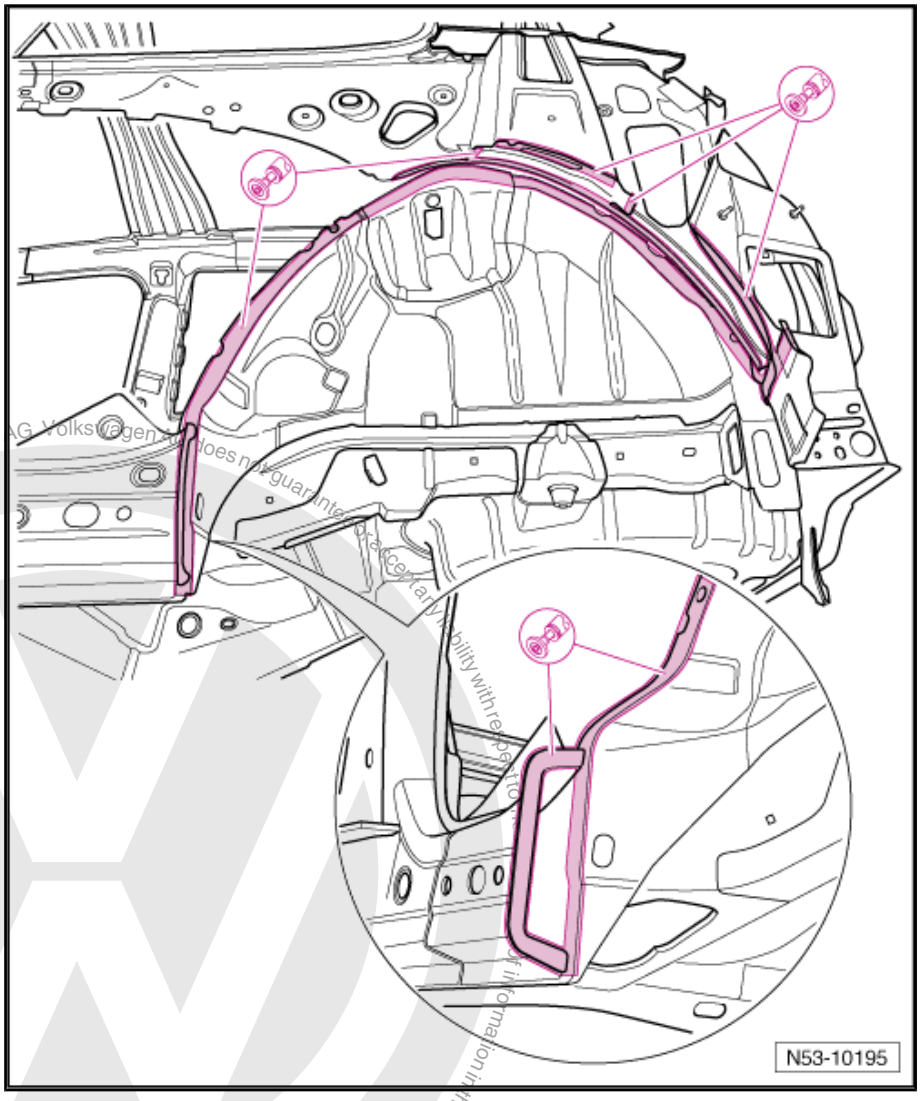


– Separate original joint between inner wheel housing liner -1- and outer wheel housing liner -2- from inside.

1 - Bonded section

– Separate original joint between outer wheel housing liner and inner side panel, C-pillar reinforcement and tail light cluster fastening bracket from below.





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

10.3 Installing

Note

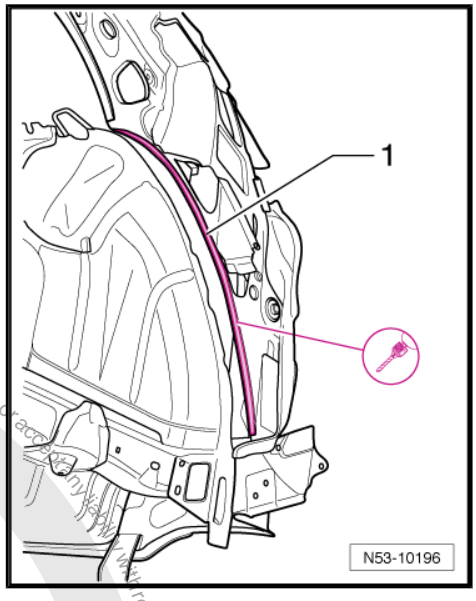
The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 246 .

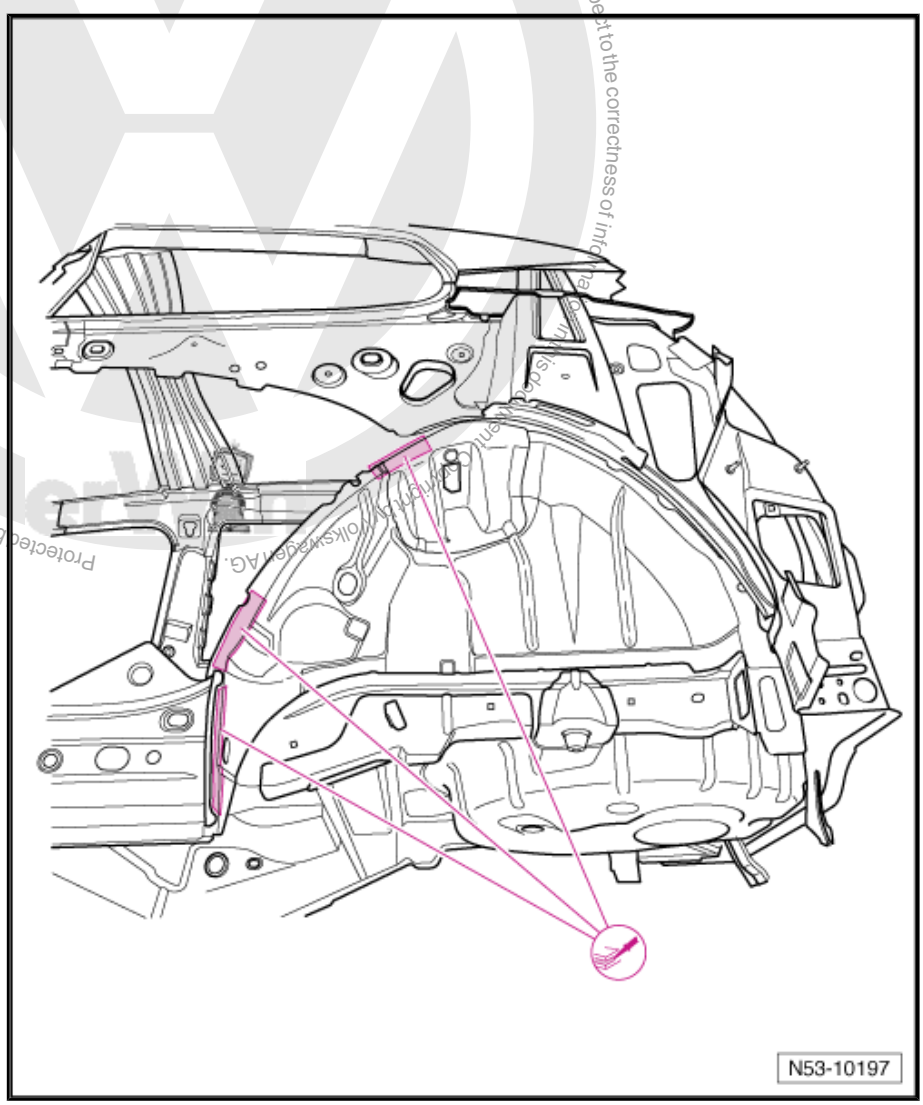
10.3.1 Welding in

Replacement part

- Outer wheel housing liner
- Adhesive sealant -D 511 500 A2-

– On vehicle, drill holes for SG plug weld seam (∅ 7 mm) as shown in inner side panel contact area -1-.





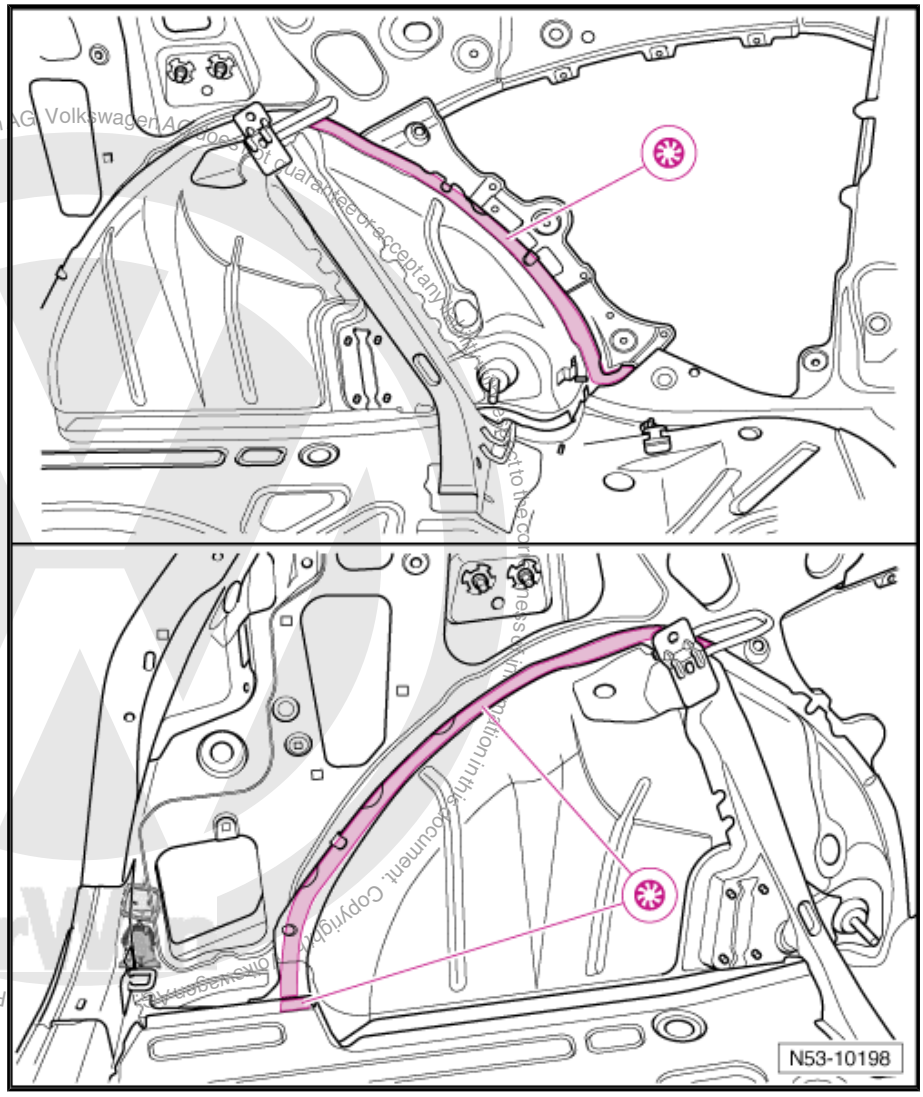
– Apply sealant -D 511 500 A2- to bonding areas (2 x 3.5 mm ∅ beads).

Note

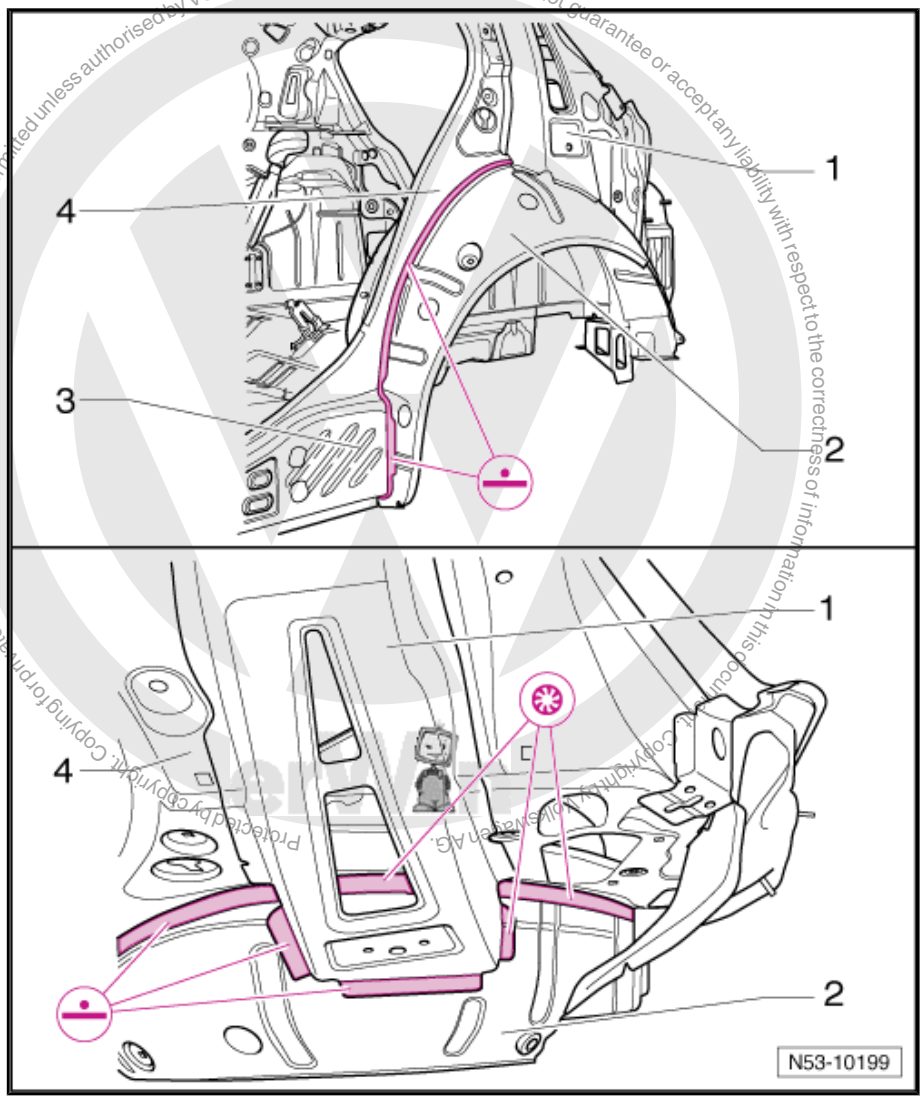
New part must be welded-in within 20 minutes or adhesion of adhesive will be impaired.

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

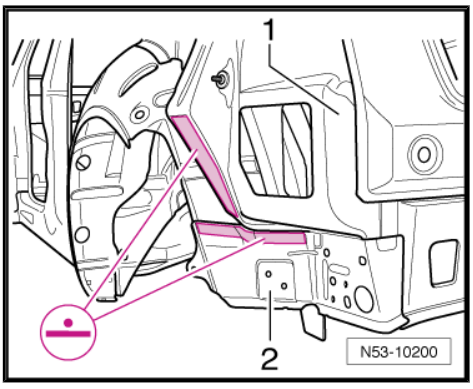
– Check fit with side panel.



– Weld outer wheel housing liner to inner wheel housing liner from inside, SG plug weld seam.



– Weld outer wheel housing liner -2- to side member reinforcement -3-, inner side panel -4- and C-pillar reinforcement -1-, RP spot weld seam and SG plug weld seam.
– Recreate original joint to tail light cluster mounting -1- and tail light cluster fastening bracket -2-, RP spot weld seam.
– Install side panel (4-door) ⇒ „8.3 Installing“, page 233 .
– Install side panel (2-door) ⇒ „7.3 Installing“, page 223 .



RO: 53 80 55 50

11 Renewing spare wheel well

DANGER!

Observe safety notes!

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

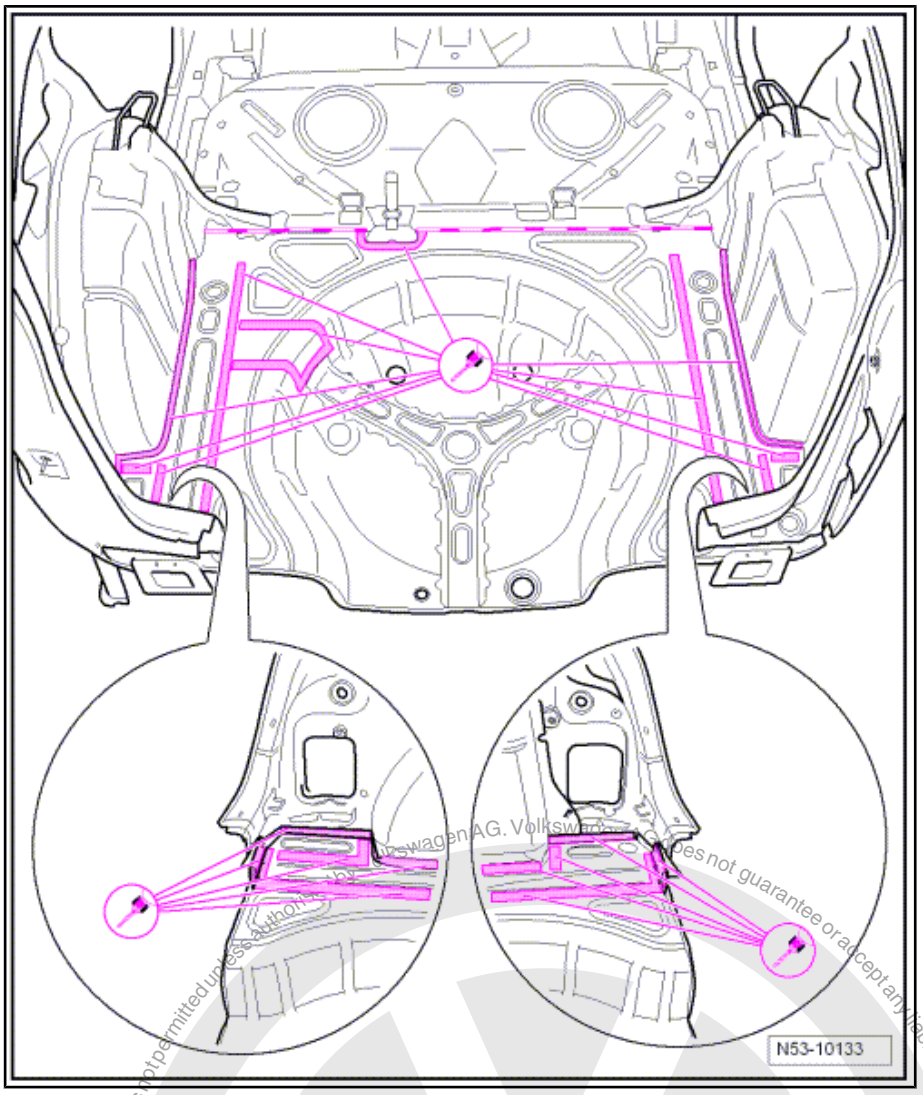
- Cross panel member already removed
  ⇒ „4 Renewing cross panel member“, page 205
- Cross panel already removed
  ⇒ „1 Renewing cross panel“, page 193

11.1 Tools

Special tools and workshop equipment required

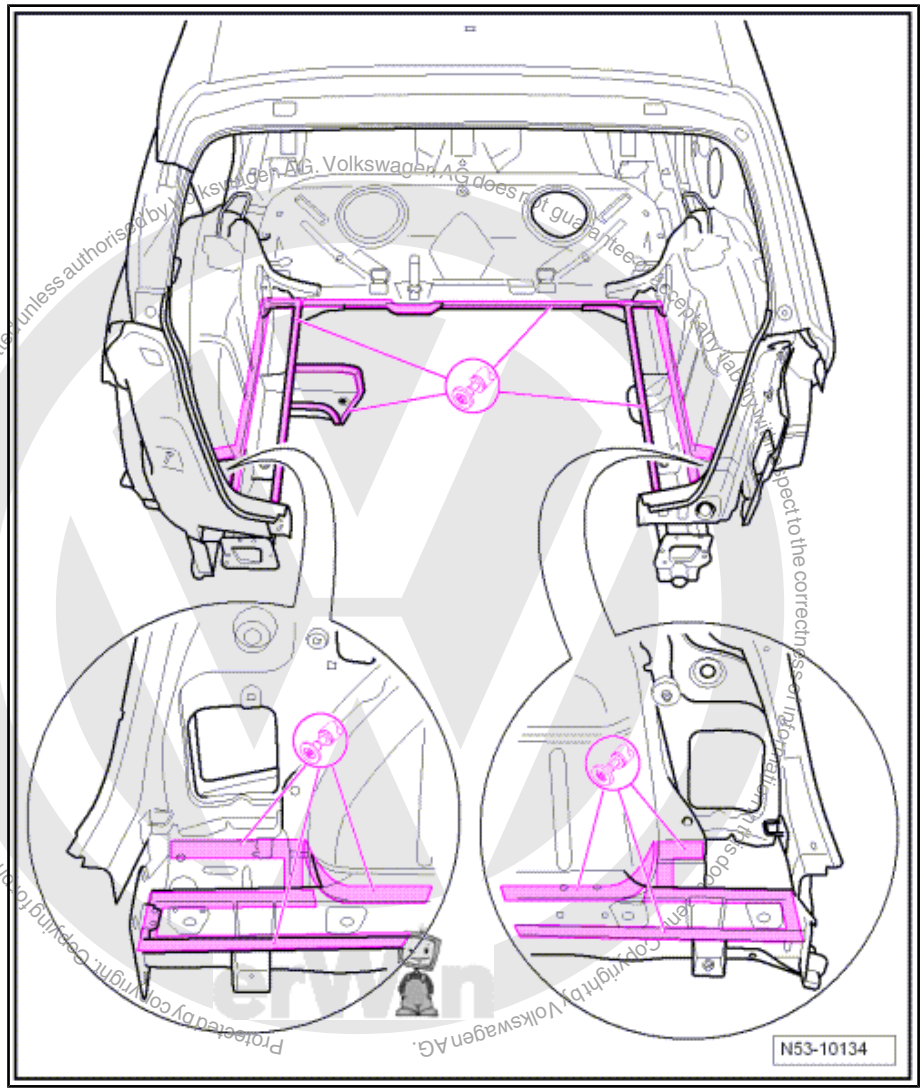
- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

11.2 Removing



– Make parting cut along forward edge to floor panel as shown, making sure not to damage the cross member below.

– Separate original joint to longitudinal members and wheel housings.



– Remove remaining material.

11.3 Installing

Note

The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 252 .

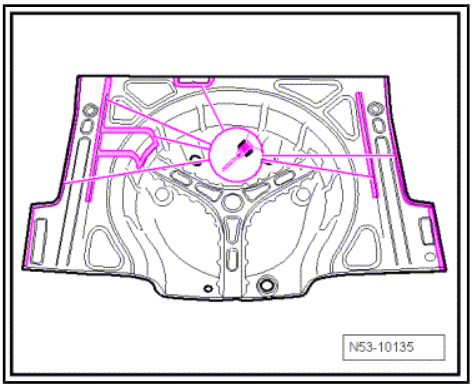
11.3.1 Preparing new part

Replacement part

♦ Spare wheel well, parts designation: rear floor panel

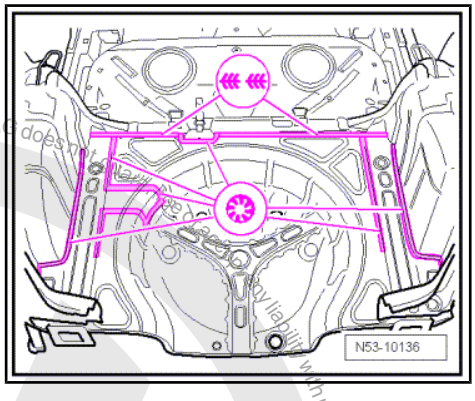
– Transfer parting cut to new part and cut out. Add approx. 5 to 10 mm material for overlap.

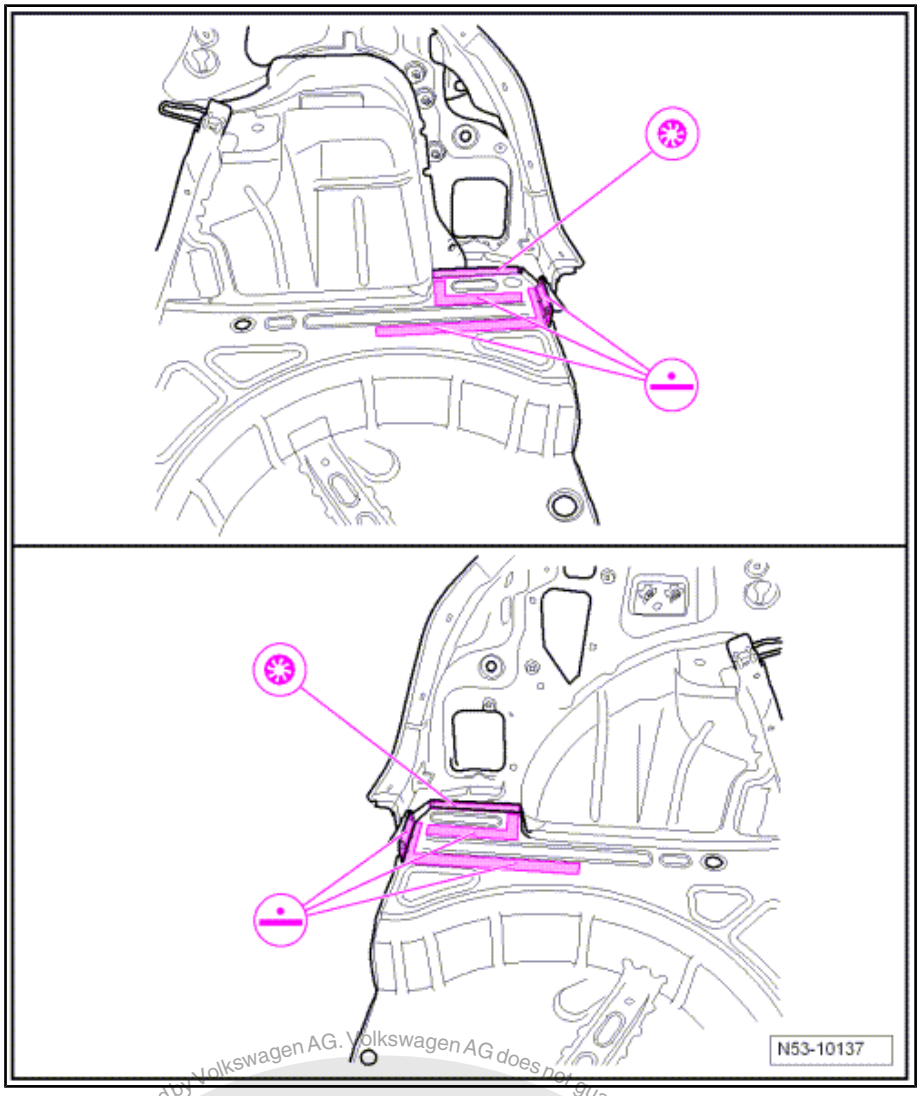
– Drill 7 mm ∅ holes for SG plug weld seam.



11.3.2 Welding in

– Adapt new parts with vehicle standing on its wheels or on alignment bracket set and fix in position.
– Weld in new part, SG plug weld seam.
– Weld in new part at transition to floor panel, staggered SG continuous weld seam (from above and from below).





– Weld in remaining joint to inner left and right C-pillars, RP spot weld seam and SG plug weld seam.
– Install cross panel ⇒ „1.3 Installing“, page 195 .
– Install cross panel member ⇒ „4.3 Installing“, page 205 .

RO: 53 80 55 52

12 Renewing spare wheel well - partial renewal

DANGER!

Observe safety notes!

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

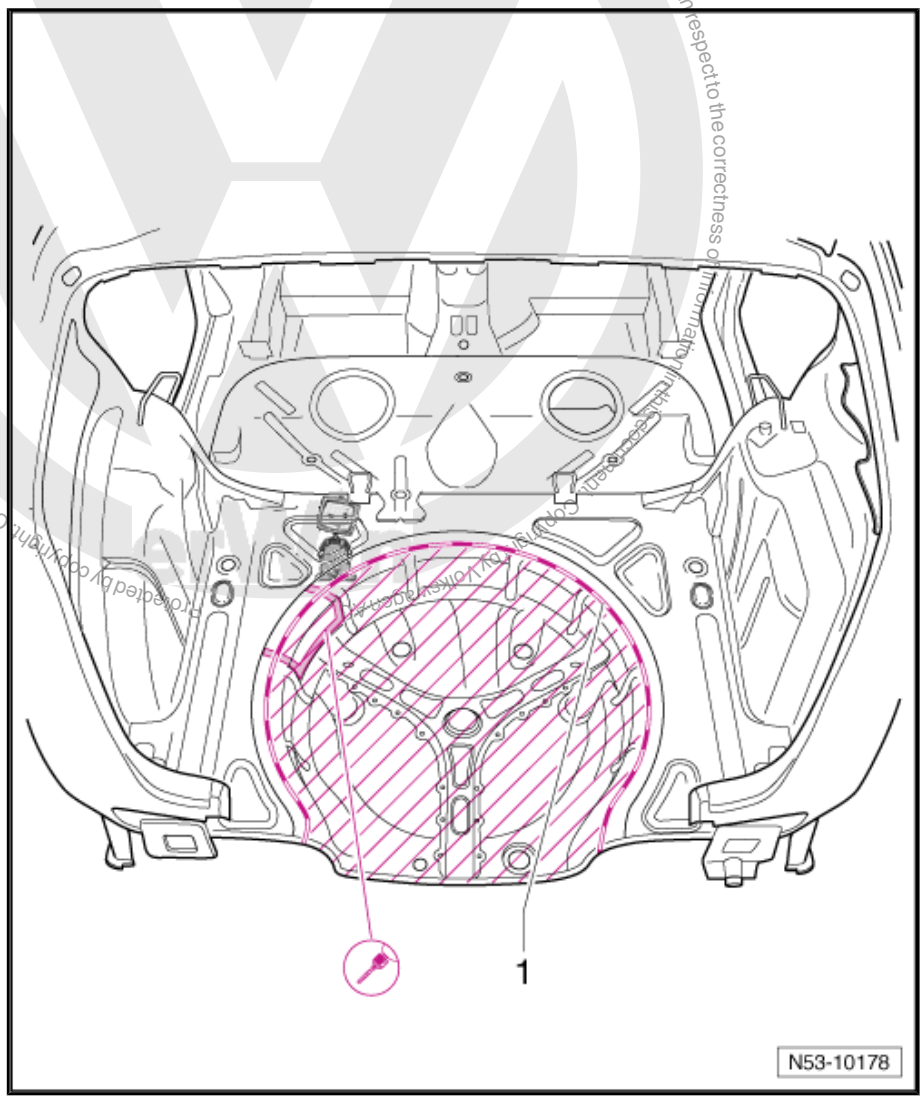
- Cross panel member already removed
  ⇒ „4 Renewing cross panel member“, page 205
- Cross panel already removed
  ⇒ „1 Renewing cross panel“, page 193

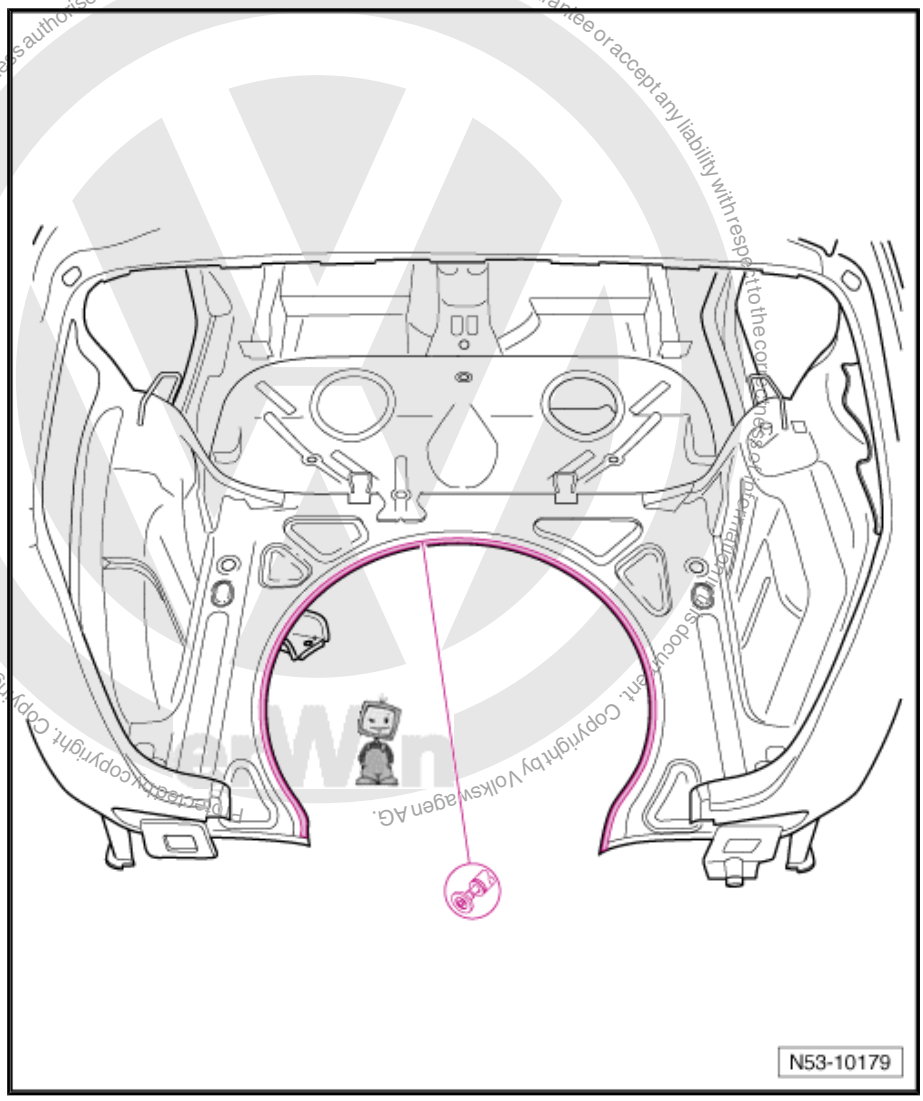
12.1 Removing

1 - Parting cut (partial renewal)

– Separate original joint.

– Separate as shown and cut out shaded area.





– Remove remaining material.
– Make Joddle joint on body side.

12.2 Installing

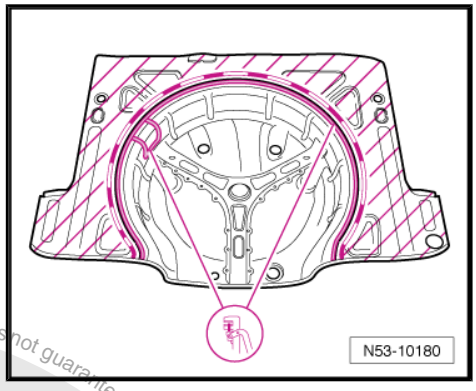
12.2.1 Preparing new part

Replacement part

♦ Spare wheel well, parts designation: rear floor panel

– Transfer cut to new part and cut off shaded area, taking 10 mm additional material for overlap into consideration.

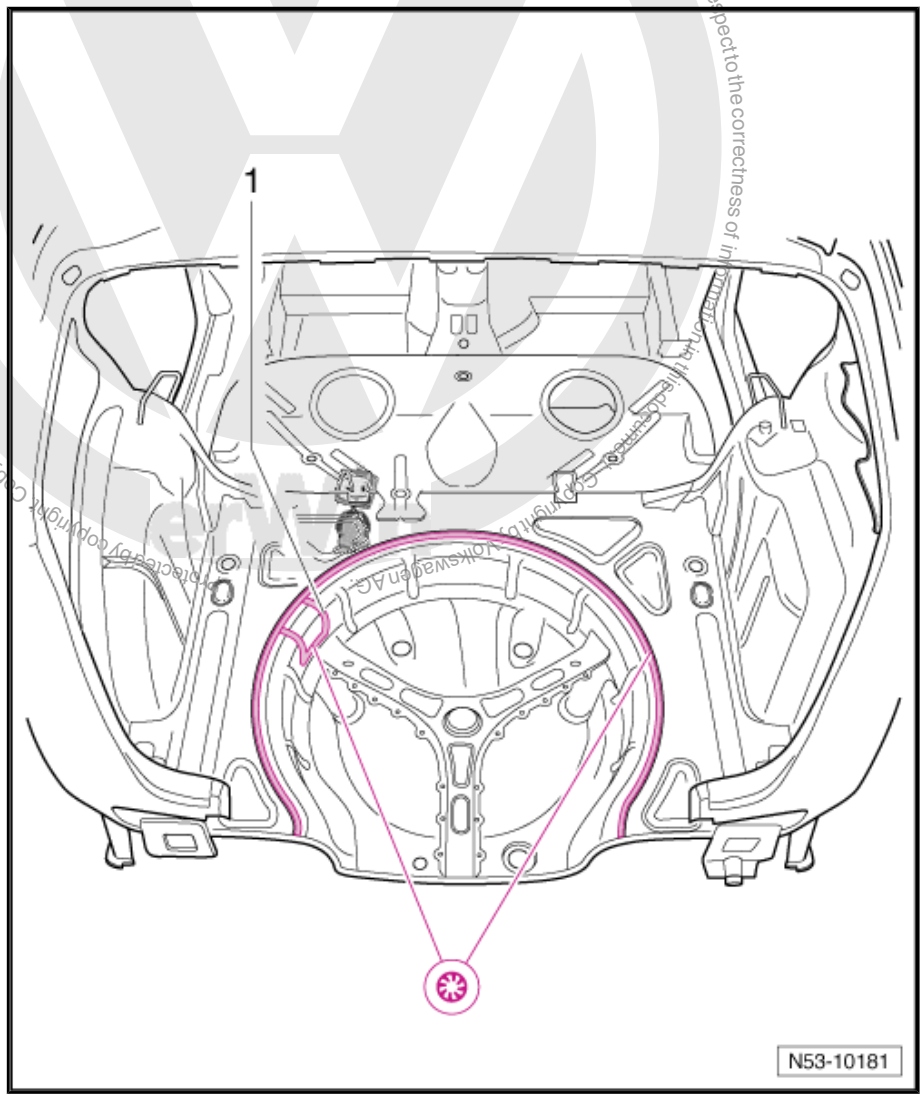
– Punch holes in new part along area of joint, gap between holes approx. 20 mm.



12.2.2 Welding in

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

– Check fit with rear cross panel.



– Weld in spare wheel well (part section), SG plug weld seam.

– Weld remaining joint to rear right longitudinal member connection -1-, SG plug weld seam.

– Install cross panel ⇒ „1.3 Installing“, page 195 .
– Install cross panel member ⇒ „4.3 Installing“, page 205 .

RO: 53 80 55 54

13 Renewing spare wheel well (4Motion)

WARNING

Observe safety notes!

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

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

- Cross panel member already removed
  ⇒ „4 Renewing cross panel member“, page 205
- Cross panel already removed
  ⇒ „1 Renewing cross panel“, page 193

1 - Moulded foam element

Note

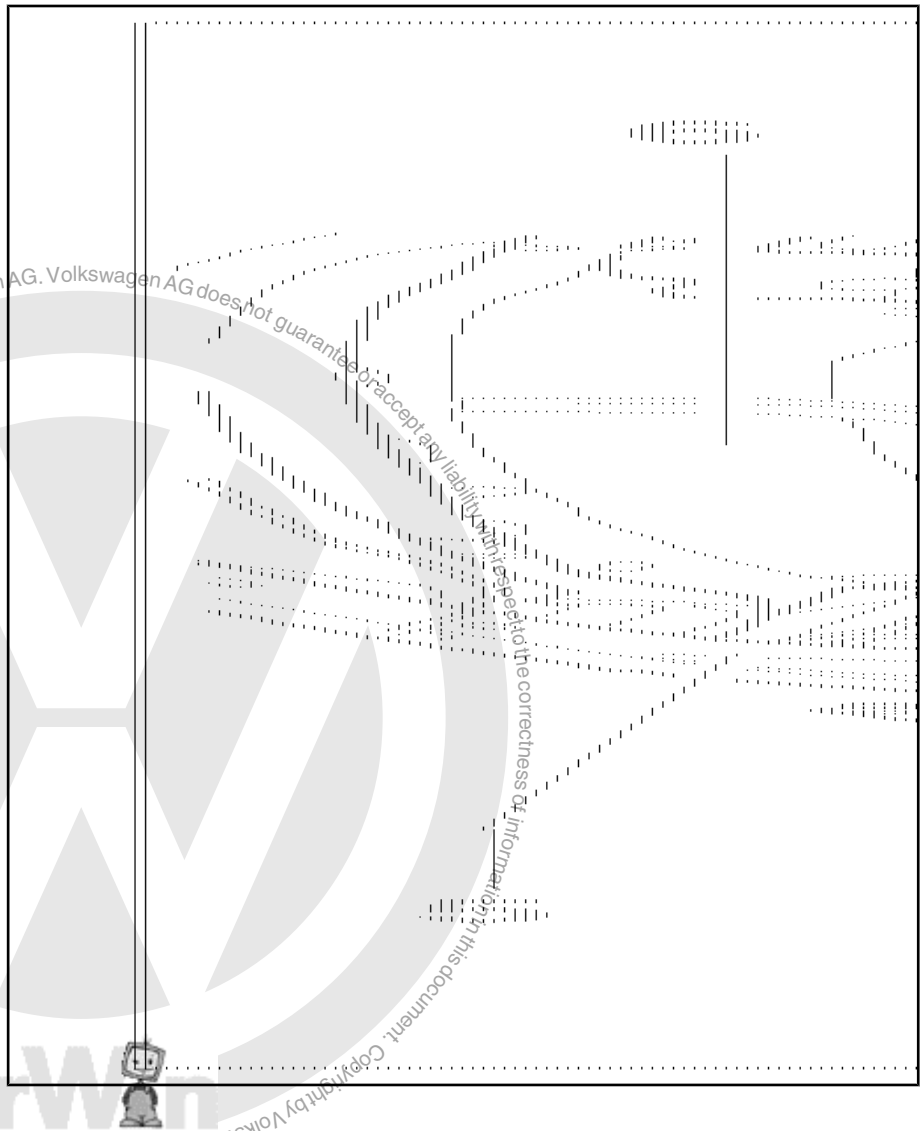
2 - Right inner wheel housing

3 - Reinforcing for right tail light mounting

4 - Luggage compartment floor

5 - Reinforcing for left tail light mounting

6 - Left inner wheel housing

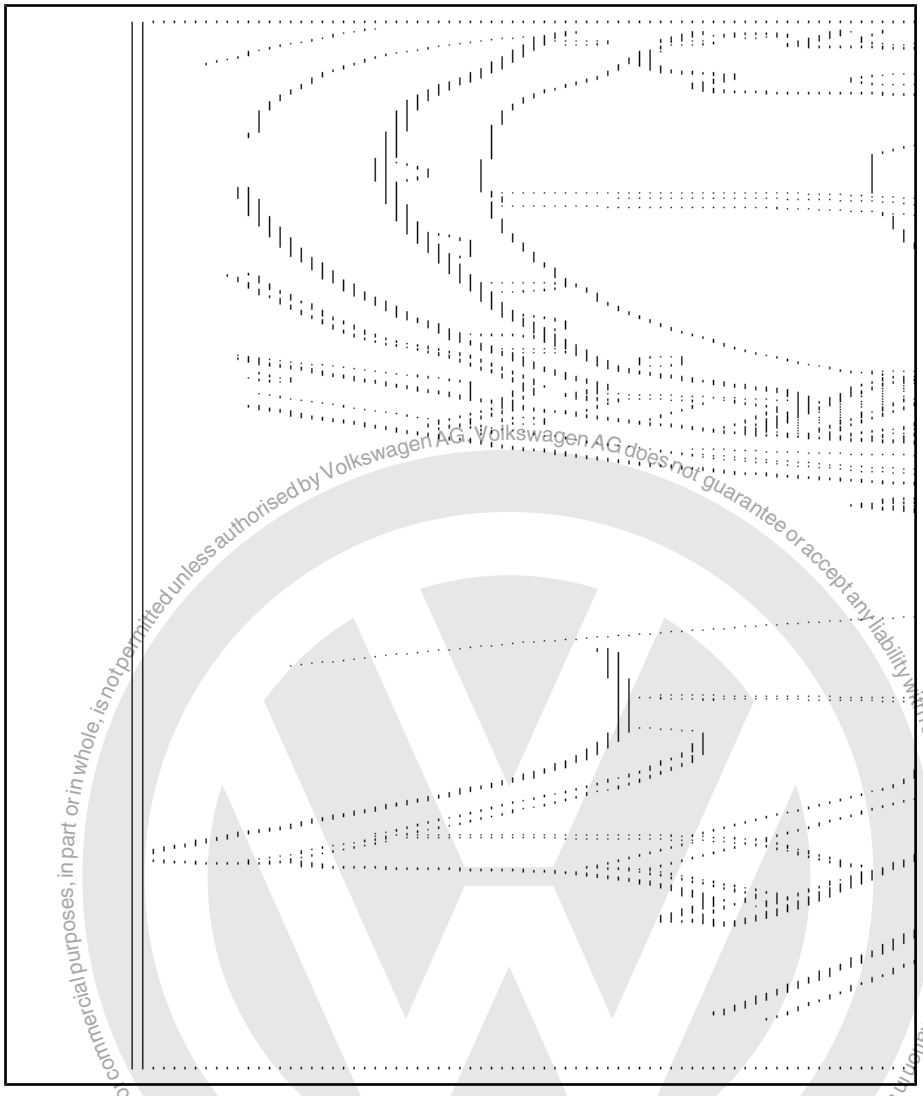


13.1 Tools

Special tools and workshop equipment required

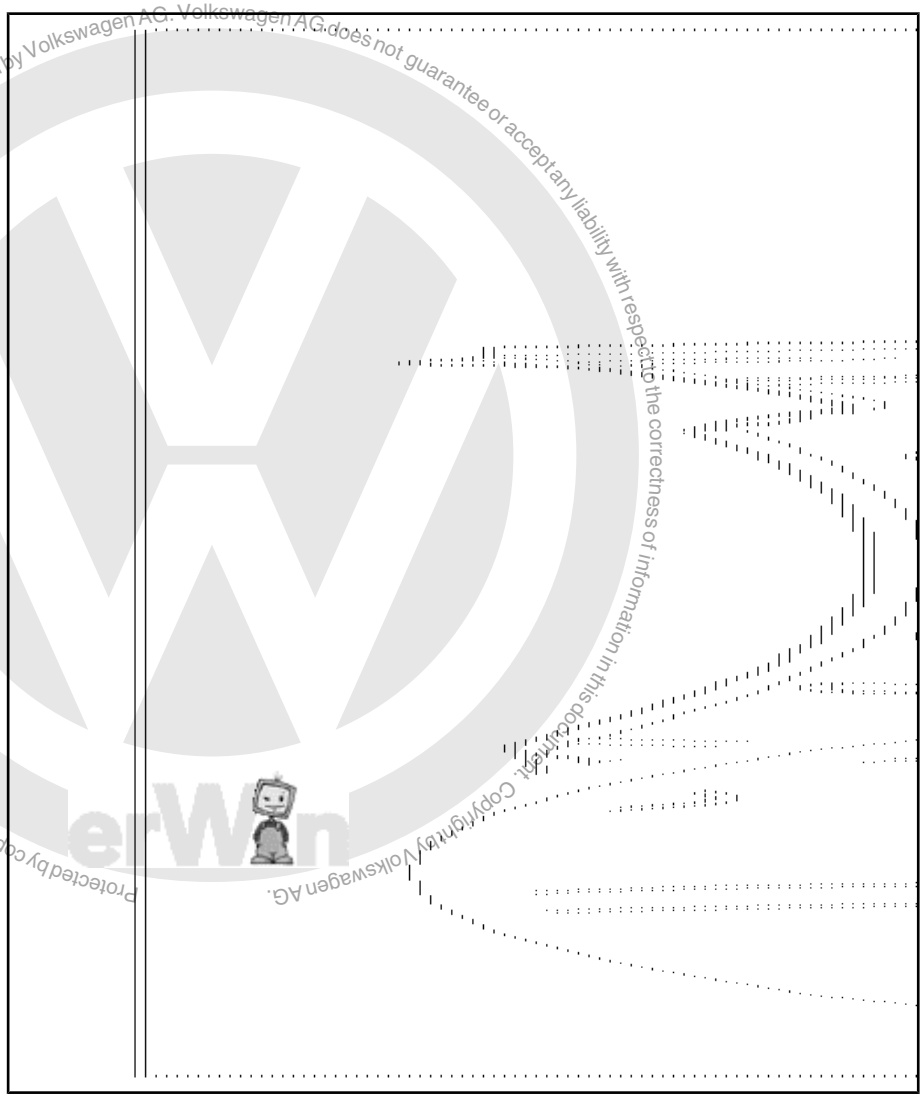
- Welding unit (inverter) -VAS 6237-
- Welding unit (inverter) -VAS 6237 L-
- Welding unit (inverter) -VAS 6238-
- Welding unit (inverter) accessory package -VAS 6238/1-
- Welding unit (inverter) -VAS 6239-
- Welding unit (inverter) -VAS 6249-

13.2 Removing

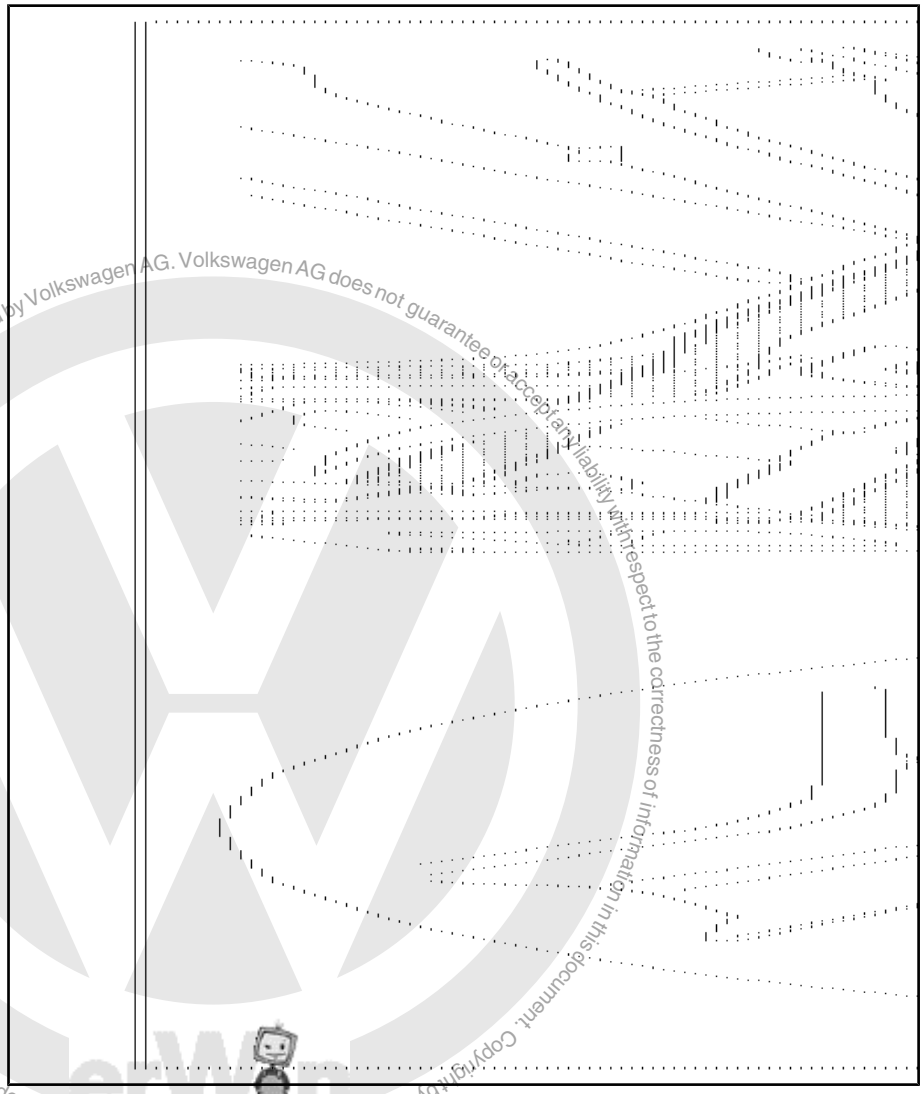


– Make front floor panel parting cut -arrow- as shown. Do not damage underlying cross member.

– Separate original joint to longitudinal members and wheel housings.



– Separate original joints of connecting points to cross member and to battery box reinforcement.



– Remove remaining material.

13.3 Installing

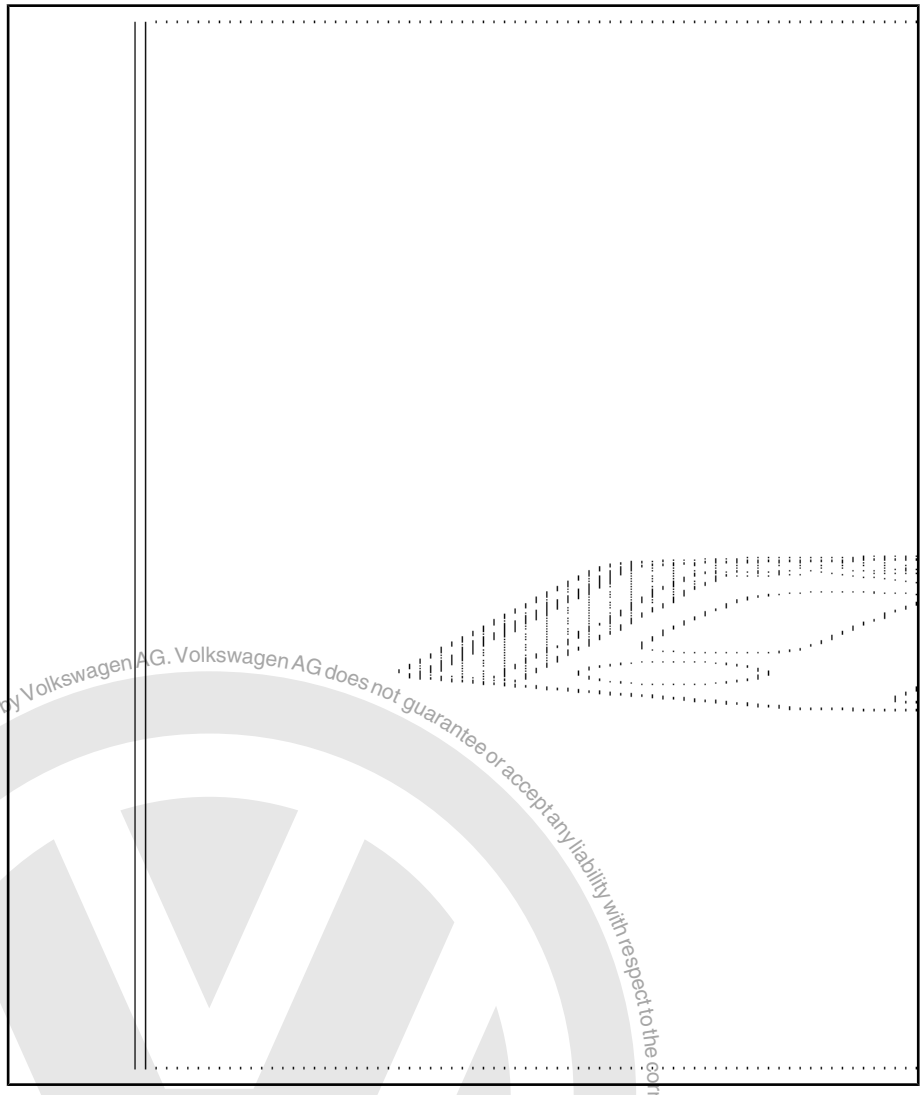
Note

The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ page 262 .

13.3.1 Preparing new part

Replacement part

- Spare wheel well, parts designation: rear floor panel
- Spare wheel well cross member
- Battery securing point mounting
- Angled piece
- Moulded foam element



– Transfer parting cut to new part and cut out.
– Drill 7 mm ∅ holes for SG plug weld seam.

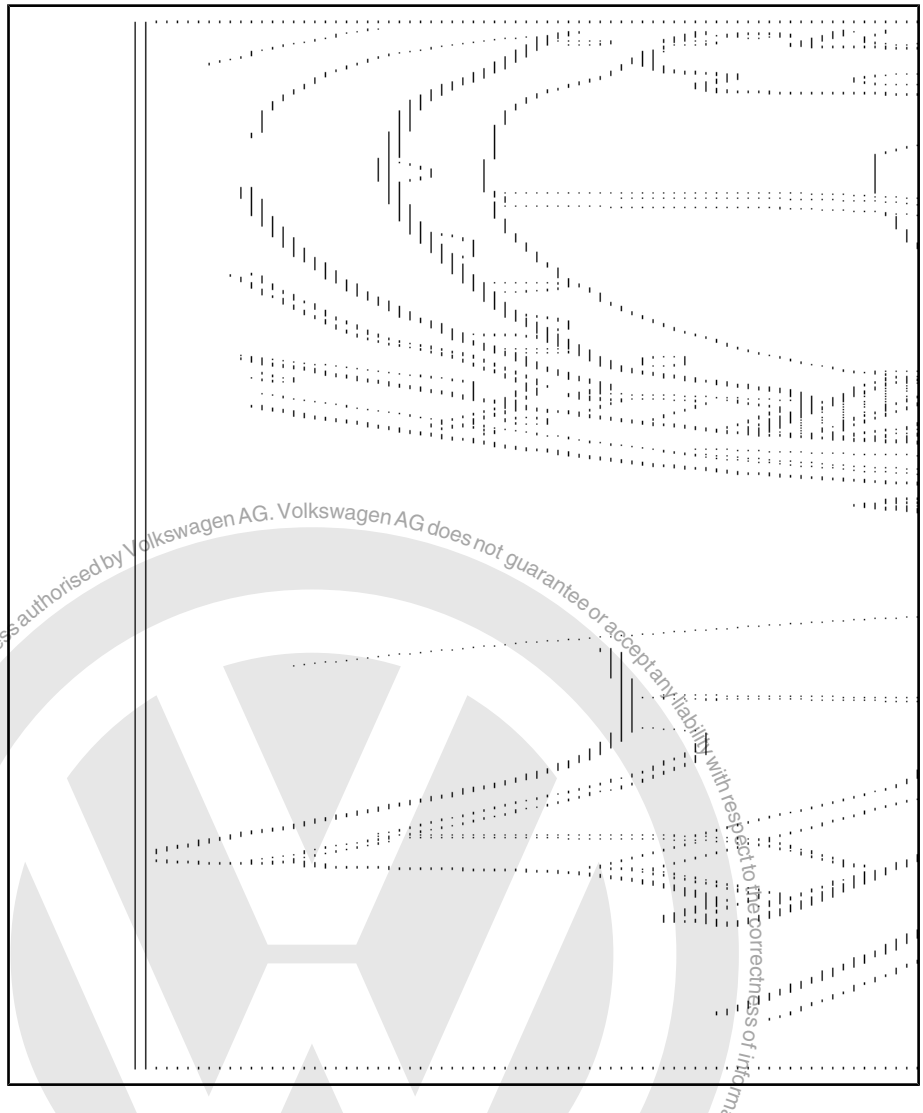
13.3.2 Moulded foam elements

Follow repair instructions.

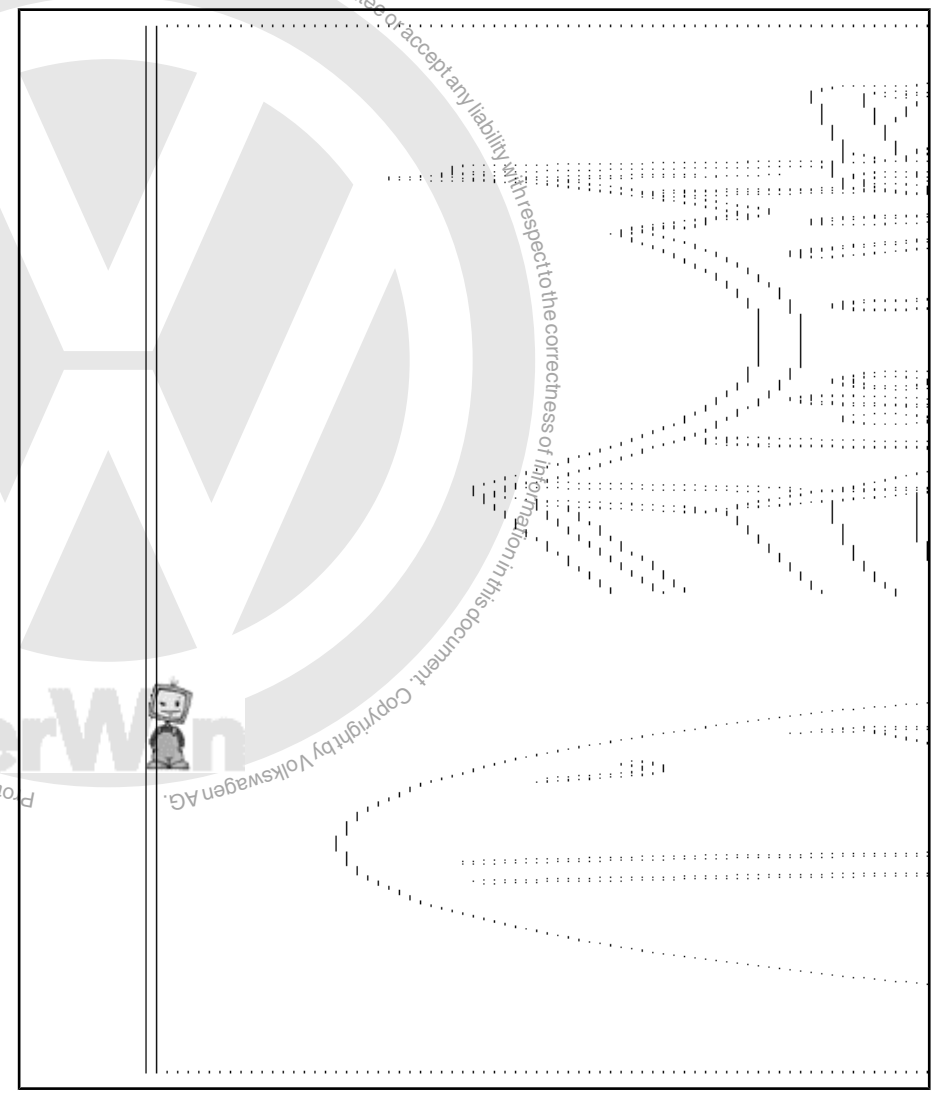
Moulded foam element ⇒ General Information; Body Repairs, General Body Repairs ; General Notes; Moulded foam elements

13.3.3 Welding in

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



- Weld in spare wheel well, SG plug weld seam and RP spot weld seam.
- Weld in new part at transition to front floor panel, staggered SG continuous weld seam (from above and from below).



– Weld in cross member for spare wheel well, battery securing point mounting and angled piece, RP spot weld seam and SG plug weld seam.
– Install cross panel ⇒ „1.3 Installing“, page 195 .
– Install cross panel member ⇒ „4.3 Installing“, page 205 .