



## Body Repairs Amarok 2011 ➤

Edition 10.2010





## 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.



## Contents

<b>00 - Technical data</b>	<b>1</b>
<b>1 Key vehicle data</b>	<b>1</b>
1.1 Vehicle identification number	1
1.2 Identification plate	3
1.3 Vehicle data sticker	3
<b>2 Safety instructions</b>	<b>4</b>
<b>3 Moulded foam elements</b>	<b>5</b>
<b>4 Galvanized body parts</b>	<b>7</b>
<b>5 Body panel gaps/shut lines</b>	<b>8</b>
5.1 Body - front	8
5.2 Body - centre, vehicles with double cab	9
5.3 Body - centre, vehicles with single cab	10
5.4 Body - rear, vehicles with double cab	11
5.5 Body - rear, vehicles with single cab	12
5.6 Body add-on parts	13
<b>6 Body dimensions</b>	<b>15</b>
6.1 Double cab frame dimensions	15
6.2 Single cab frame dimensions	21
6.3 Double cab box dimensions	23
6.4 Single cab box dimensions	28
6.5 Double cab load surface dimensions	31
6.6 Single cab load surface dimensions	34
<b>7 Alignment jig</b>	<b>36</b>
7.1 Tools	36
7.2 Alignment bracket fixture overview of complete vehicle	36
7.3 Alignment bracket fixture overview of vehicle chassis	37
7.4 Alignment bracket fixture overview of vehicle cab	38
7.5 Alignment bracket fixture overview of vehicle cab	39
<b>50 - Body - front</b>	<b>41</b>
<b>1 Renewing cross member</b>	<b>41</b>
1.1 Removing	42
1.2 Installing	43
<b>2 Renewing deformation element</b>	<b>46</b>
2.1 Tools	46
2.2 Removing	46
2.3 Installing	47
<b>3 Renewing headlight mounting</b>	<b>50</b>
3.1 Tools	50
3.2 Removing	50
3.3 Installing	53
<b>4 Renewing wing connecting plate</b>	<b>57</b>
4.1 Tools	57
4.2 Removing	58
4.3 Installing	59
<b>5 Renewing connection piece</b>	<b>62</b>
5.1 Tools	62
5.2 Removing	62
5.3 Installing	64
<b>6 Renewing upper wheel housing longitudinal member</b>	<b>66</b>
6.1 Tools	66



6.2	Removing	66
6.3	Installing	68
<b>7</b>	<b>Renewing front wheel housing</b>	<b>71</b>
7.1	Removing	71
7.2	Installing	72
<b>8</b>	<b>Renewing front part of longitudinal member - part section 1-</b>	<b>75</b>
8.1	Removing	75
8.2	Installing	77
<b>9</b>	<b>Renewing longitudinal member - part section 2-</b>	<b>81</b>
9.1	Removing	81
9.2	Installing	83
<b>10</b>	<b>Renewing longitudinal member complete</b>	<b>89</b>
10.1	Removing	90
10.2	Installing	97
<b>51 - Body - centre</b>		<b>110</b>
<b>1</b>	<b>Renewing roof</b>	<b>110</b>
1.1	Tools	110
1.2	Removing	112
1.3	Installing	113
<b>2</b>	<b>Renewing front cross member for roof</b>	<b>117</b>
2.1	Removing	117
2.2	Installing	118
<b>3</b>	<b>Renewing roof reinforcement</b>	<b>121</b>
3.1	Removing	121
3.2	Installing	122
<b>4</b>	<b>Renewing rear roof cross member</b>	<b>125</b>
4.1	Removing	125
4.2	Installing	126
<b>5</b>	<b>Renewing rear window frame</b>	<b>129</b>
5.1	Removing	130
5.2	Installing	131
<b>6</b>	<b>Renewing cross member</b>	<b>135</b>
6.1	Removing	135
6.2	Installing	136
<b>7</b>	<b>Renewing hinge pillar (A-pillar)</b>	<b>139</b>
7.1	Tools	140
7.2	Removing	141
7.3	Installing	142
<b>8</b>	<b>Renewing hinge pillar (A-pillar) reinforcement</b>	<b>148</b>
8.1	Tools	149
8.2	Removing	149
8.3	Installing	150
<b>9</b>	<b>Renewing centre pillar (B-pillar)</b>	<b>154</b>
9.1	Tools	155
9.2	Removing	155
9.3	Installing	157
<b>10</b>	<b>Renewing centre pillar (B-pillar) reinforcement</b>	<b>160</b>
10.1	Tools	161
10.2	Removing	161
10.3	Installing	163
<b>11</b>	<b>Renewing lock pillar (C-pillar)</b>	<b>166</b>
11.1	Tools	167



11.2	Removing	167
11.3	Installing	170
<b>12</b>	<b>Renewing mounting bracket for front seat</b>	<b>174</b>
12.1	Removing	174
12.2	Installing	175
<b>53 - Body - rear</b>		<b>178</b>
<b>1</b>	<b>Renewing rear cross panel</b>	<b>178</b>
1.1	Removing	179
1.2	Installing	180
<b>2</b>	<b>Renewing rear longitudinal member - part section</b>	<b>184</b>
2.1	Removing	184
2.2	Installing	186
<b>3</b>	<b>Renewing rear side panel</b>	<b>190</b>
3.1	Removing	191
3.2	Installing	194







## 00 – Technical data

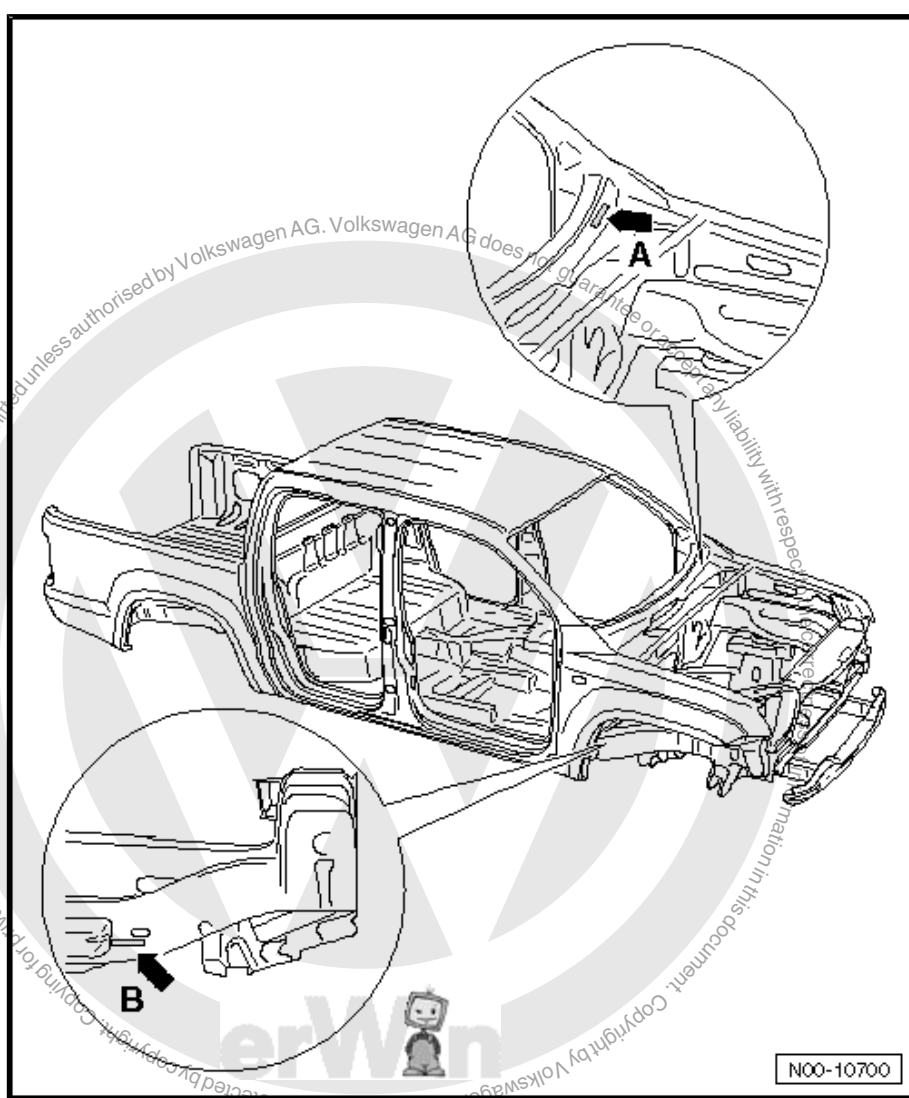
### 1 Key vehicle data

#### 1.1 Vehicle identification number



##### Note

*If components into which the vehicle ID number (chassis number) is stamped are renewed in the event of damage, a surveyor must be involved prior to repair.*



##### Vehicle identification number (chassis number) on the body:

The vehicle identification number (chassis number) is visibly stamped into the lower left windscreen flange -arrow A-.



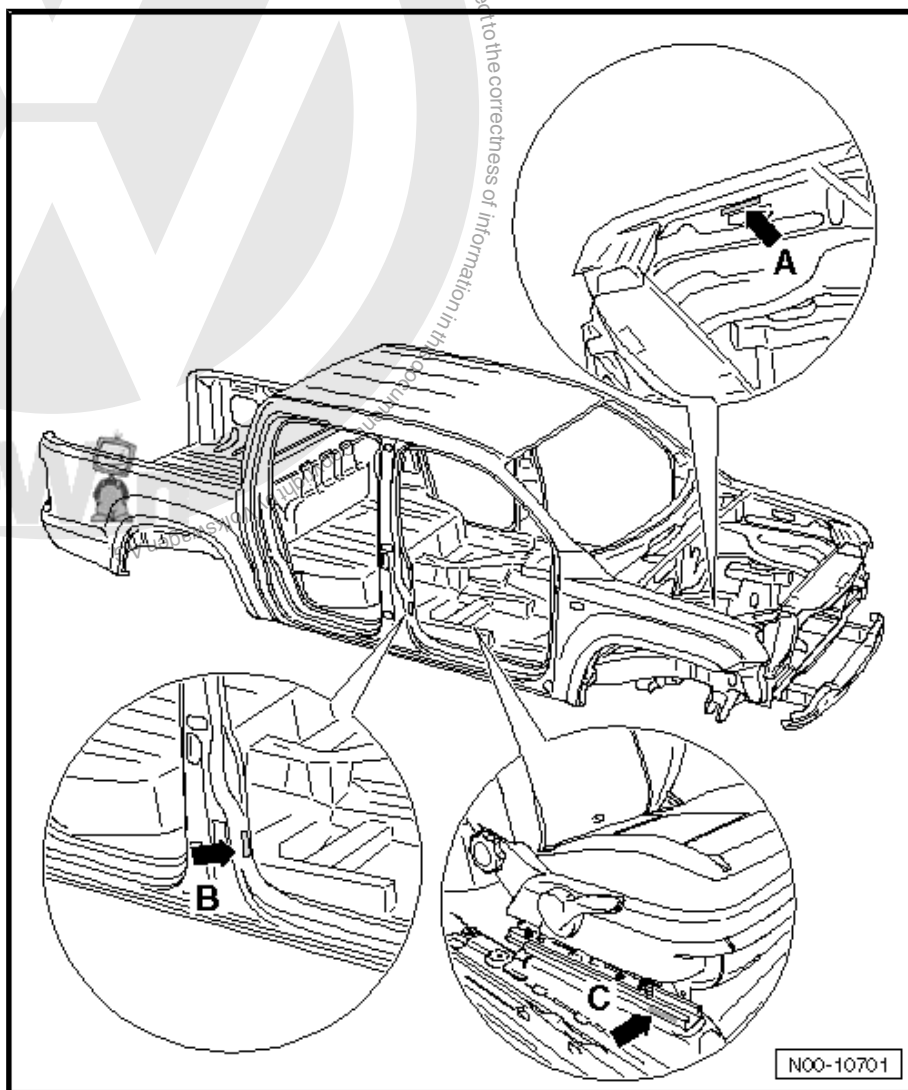
### Vehicle identification number (chassis number) on the vehicle frame:

The vehicle identification number (chassis number) is visibly stamped into the right vehicle frame longitudinal member -arrow B-.



#### Note

- ◆ According to the legislation in Brazil, Argentina and Mexico, a "shortened vehicle ID number (chassis number)" is located at 3 further points within the vehicle.
- ◆ The additional identification consists of an identification plate which cannot be removed without destroying it.



### Additional, shortened vehicle identification number (chassis number) for Brazil, Argentina and Mexico:

- ◆ The vehicle identification number (chassis number) is stuck on to the right wheel housing in the engine compartment -arrow A-.
- ◆ The vehicle identification number (chassis number) is stuck on to the right front passenger seat -arrow C-.

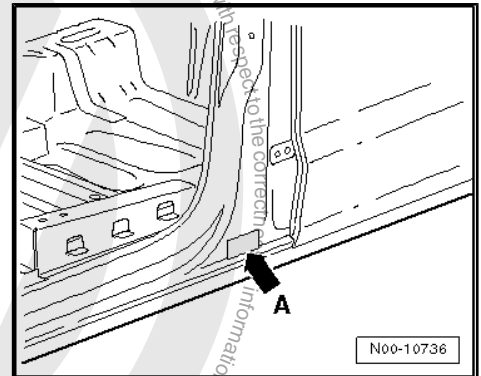




- ◆ The vehicle identification number (chassis number) is stuck on to the right B-pillar -arrow B-.

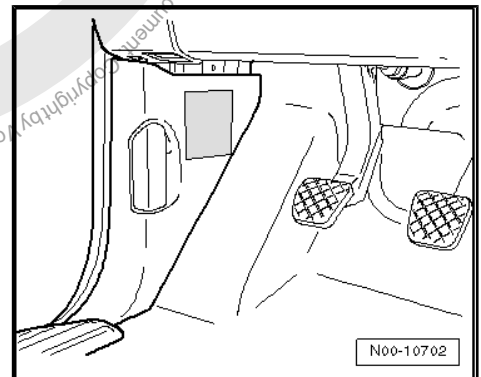
## 1.2 Identification plate

The identification plate -arrow- is stuck on the left B-pillar.



## 1.3 Vehicle data sticker

- The vehicle data sticker -arrow- is located in the footwell on the driver's side.





## 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.*





### 3 Moulded foam elements



#### Note

- ◆ Various body cavities in the Amarok 2010 ► have been fitted with moulded foam elements.
- ◆ The moulded foam elements reduce the amount of driving noise that is transmitted into the interior.
- ◆ The moulded elements are fitted during body shell construction and increase their volume in the paint shop drying oven at approx. 180°C, after priming.
- ◆ The exact locations of these moulded foam elements are additionally shown at the beginning of the respective repair descriptions.

#### 1 - Upper A-pillar

- ☐ Moulded foam element between A-pillar outer skin and A-pillar reinforcement.
- ☐ Moulded foam element between A-pillar reinforcement and inner panel.

#### 2 - Lower C-pillar

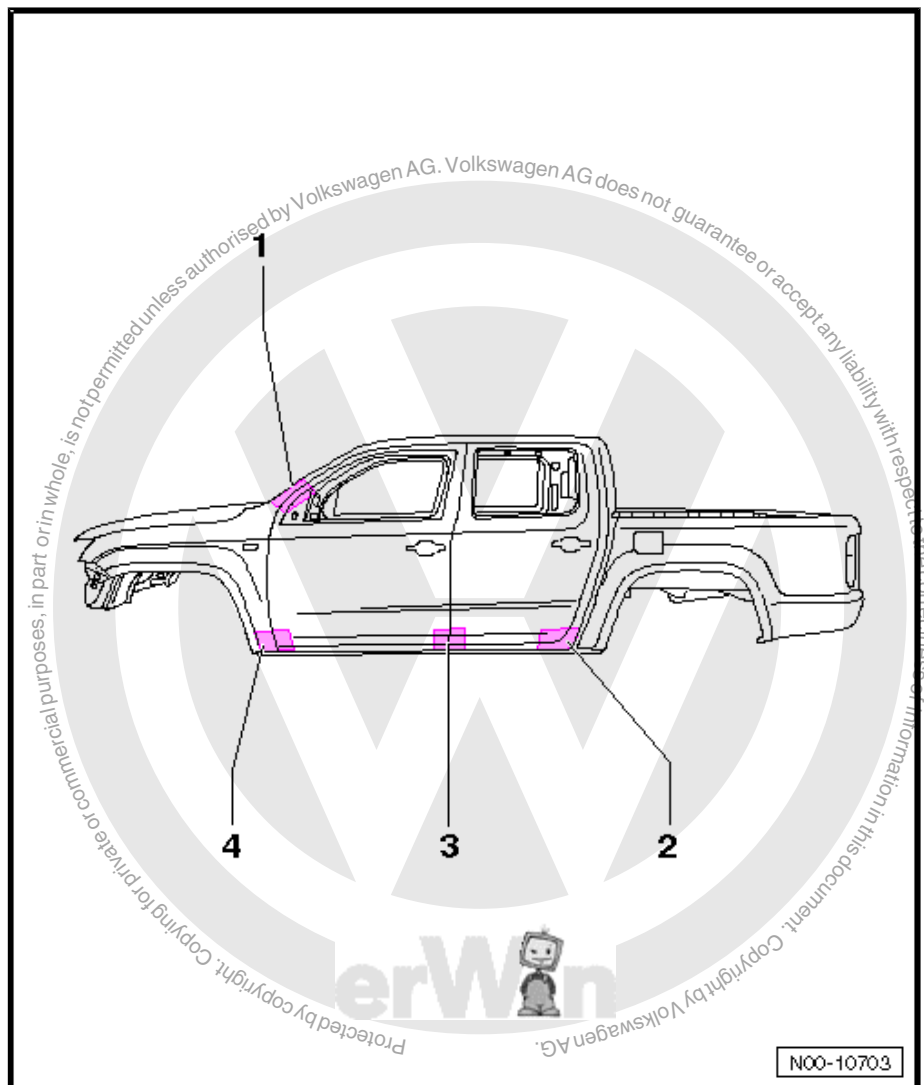
- ☐ Moulded foam element between C-pillar outer skin and C-pillar reinforcement.
- ☐ Moulded foam element between C-pillar reinforcement and inner panel.

#### 3 - Lower B-pillar

- ☐ Moulded foam element between B-pillar outer skin and B-pillar reinforcement.
- ☐ Moulded foam element between B-pillar reinforcement and inner panel.

#### 4 - Lower A-pillar

- ☐ Moulded foam element between A-pillar outer skin and A-pillar reinforcement.
- ☐ Moulded foam element between A-pillar reinforcement and inner panel.



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

- Remove foam material remains on vehicle.



- Restore the paint work structure. If necessary, apply two coats (wet in wet) of glass/paint primer -D 009 200 02- (apply the second coat in the opposite direction) - flash-off time of about 10 minutes.

#### Prerequisites

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

#### Renewing moulded foam element

- Wrap moulded foam element with sealing cord -AKD 497 010 04 R10- all round.
- Fix moulded foam element to vehicle.
- Secure new part (e.g. A-pillar) in position. Apply gentle pressure to contact new part in area of moulded foam element and weld in.
- Do not do perform shielded arc welding within 15 mm on either side of moulded foam element.
- Carry out cavity preservation on repair area after painting vehicle.



## 4 Galvanized body parts

**The vehicle consists partly of body panels galvanized on one or both sides!**

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



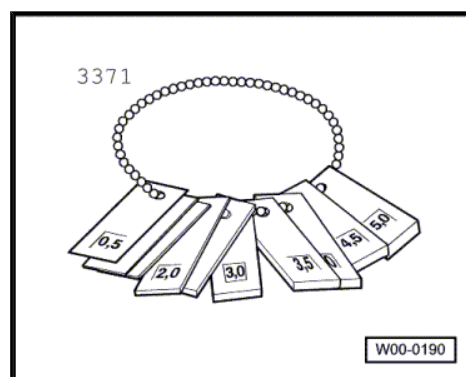


## 5 Body panel gaps/shut lines



### Note

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



### 5.1 Body - front

A - 2.5 mm + 1.5 mm

B - 3.0 mm + 0.5 mm

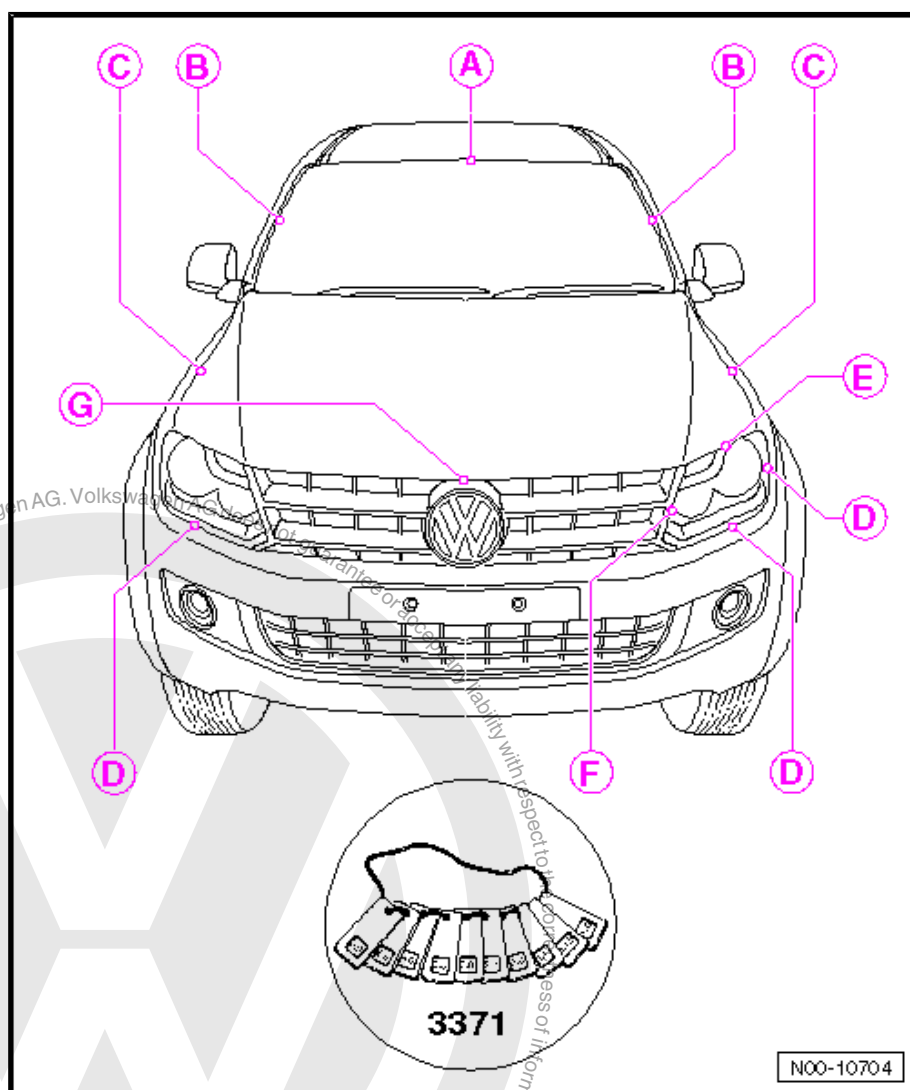
C - 5.0 mm ± 0.5 mm

D - 2.0 mm ± 1.0 mm

E - 10.5 mm + 1.0 mm

F - 4.0 mm + 1.0 mm

G - 8.7 mm + 2.0 mm





## 5.2 Body - centre, vehicles with double cab

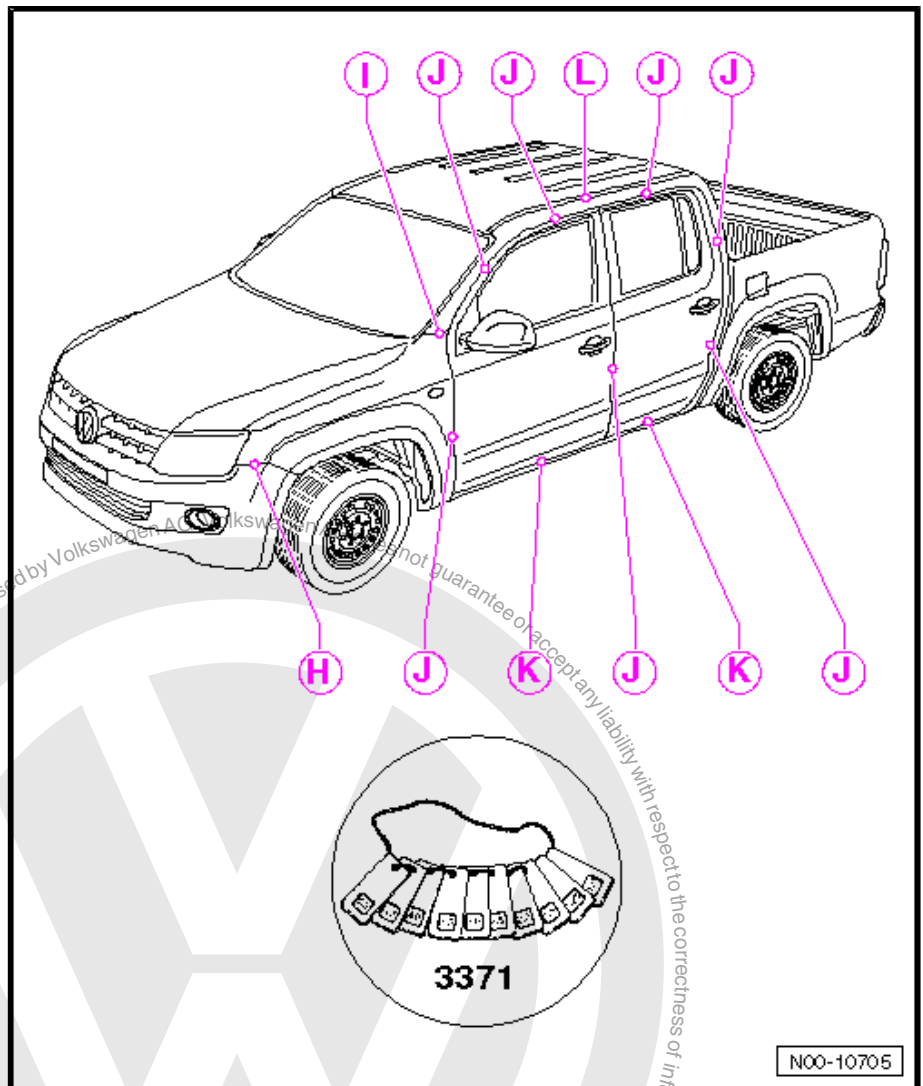
H - 0.5 mm  $\pm$  0.3 mm

I - 4.2 mm  $\pm$  0.5 mm

J - 5.0 mm  $\pm$  0.75 mm

K - 7.0 mm  $\pm$  1.0 mm

L - 34.5 mm  $\pm$  1.5 mm





### 5.3 Body - centre, vehicles with single cab

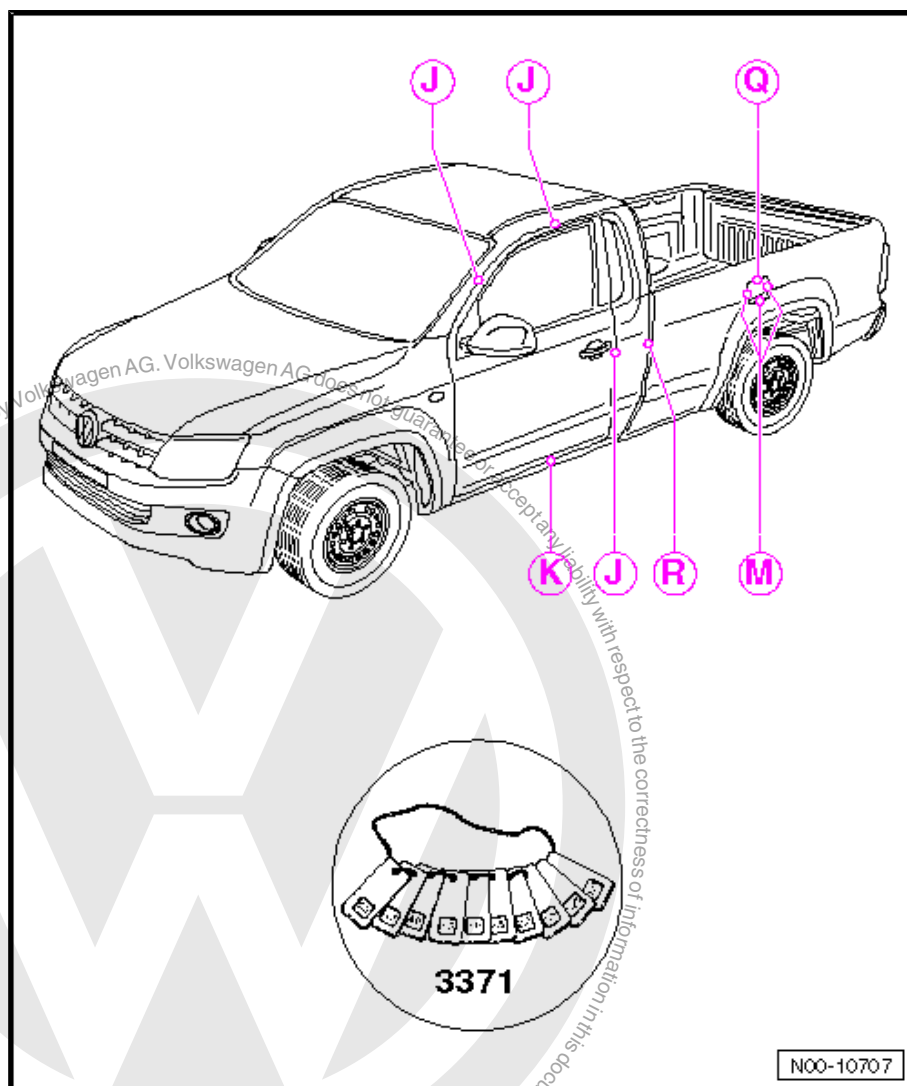
J - 5.0 mm  $\pm$  0.75 mm

K - 7.0 mm  $\pm$  1.0 mm

M - 2.5 mm  $\pm$  0.3 mm

Q - 3.0 mm  $\pm$  0.3 mm

R - 35.0 mm  $\pm$  5.0 mm

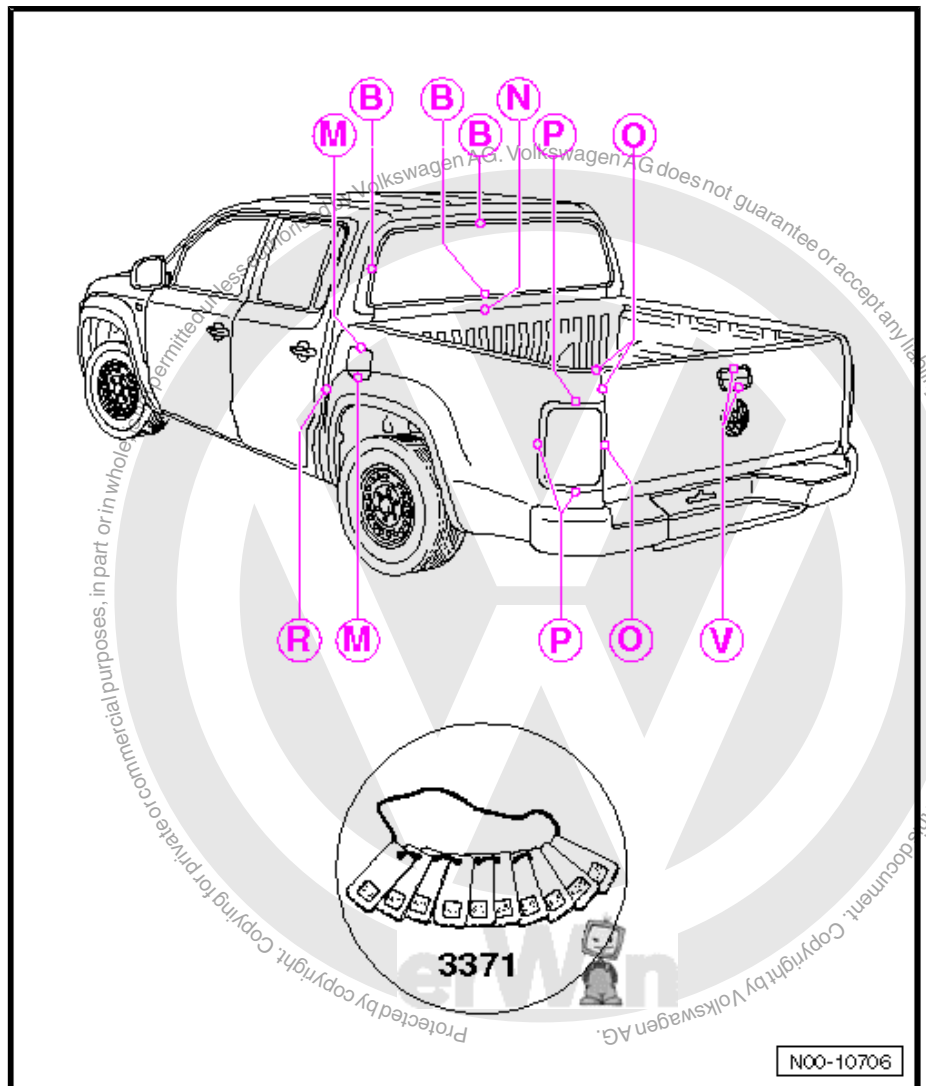






## 5.4 Body - rear, vehicles with double cab

- B - 3.0 mm + 0.5 mm
- M - 2.5 mm ± 0.3 mm
- N - 20.0 mm ± 5.0 mm
- O - 6.0 mm ± 1.0 mm
- P - 2.0 mm ± 0.5 mm
- R - 35.0 mm ± 5.0 mm
- V - 1.0 mm ± 0.3 mm



N00-10706

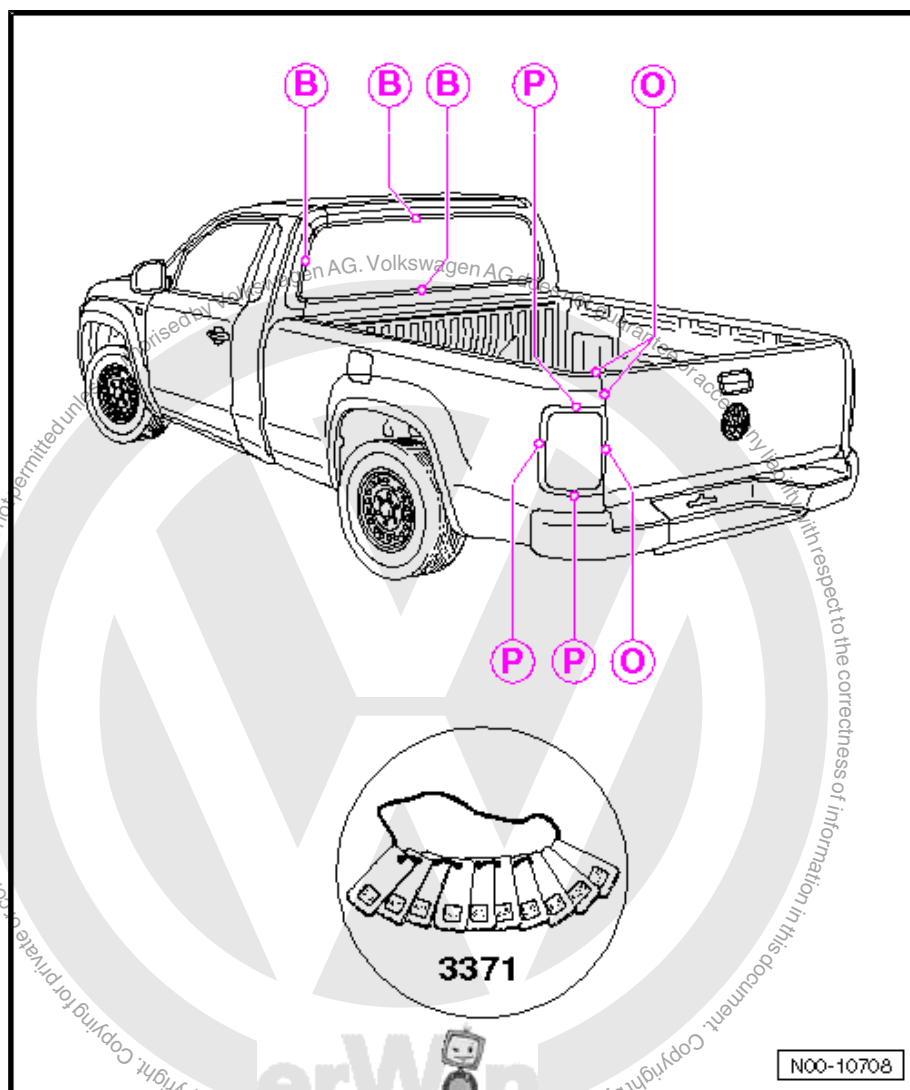


## 5.5 Body - rear, vehicles with single cab

B - 3.0 mm + 0.5 mm

O - 6.0 mm ± 1.0 mm

P - 2.0 mm ± 0.5 mm



N00-10708



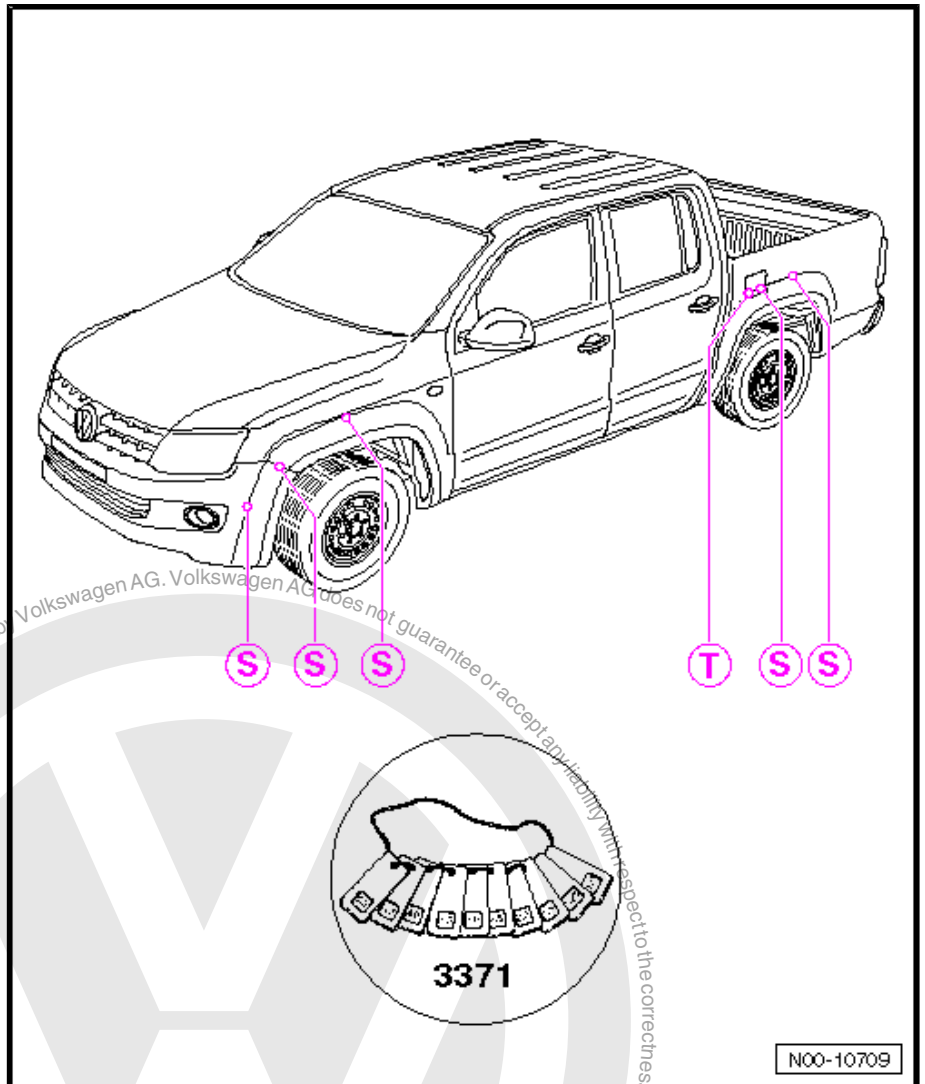
## 5.6 Body add-on parts

**S** - 1.0 mm + 0.5 mm / - 1.0 mm

- ❑ Shut line between wheel cover and body part.

**T** - 3.0 mm ± 1.0 mm

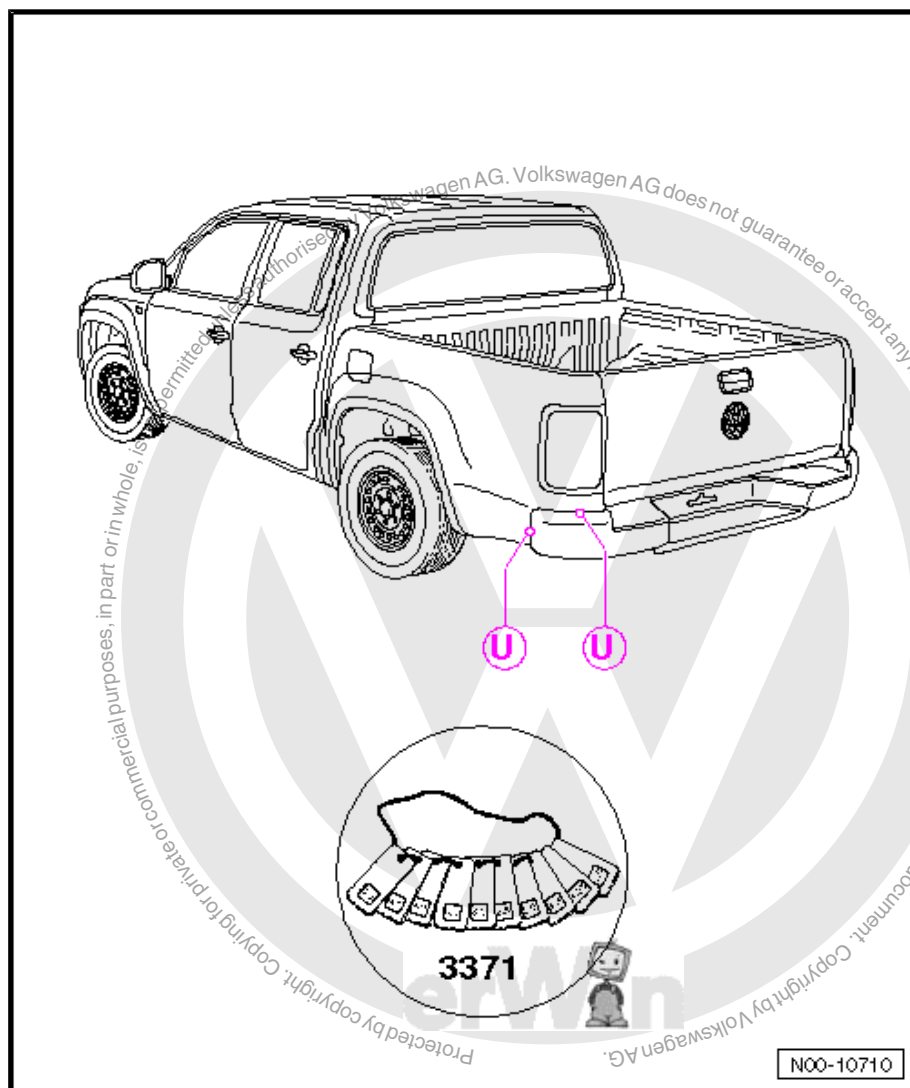
- ❑ Height difference between wheel cover and drop sides.





**U - 10.5 mm ± 3.0 mm**

- ❑ Shut line between rear bumper and drop sides.





## 6 Body dimensions



### Note

- ◆ Dimensions only given for checking purposes. The alignment bracket set is definitive. 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.

### 6.1 Double cab frame dimensions

#### 6.1.1 Front frame dimensions

Frame dimensions between front frame longitudinal members

**Maß a - 1,320 mm ± 4.0 mm**

- ☐ Dimension between cab mounting 2

**Maß b - 1,015 mm ± 3.0 mm**

- ☐ Dimension between suspension strut mountings

**Maß c - 660 mm ± 3.0 mm**

- ☐ Dimension diagonally between assembly mountings

**Maß d - 645 mm ± 3.0 mm**

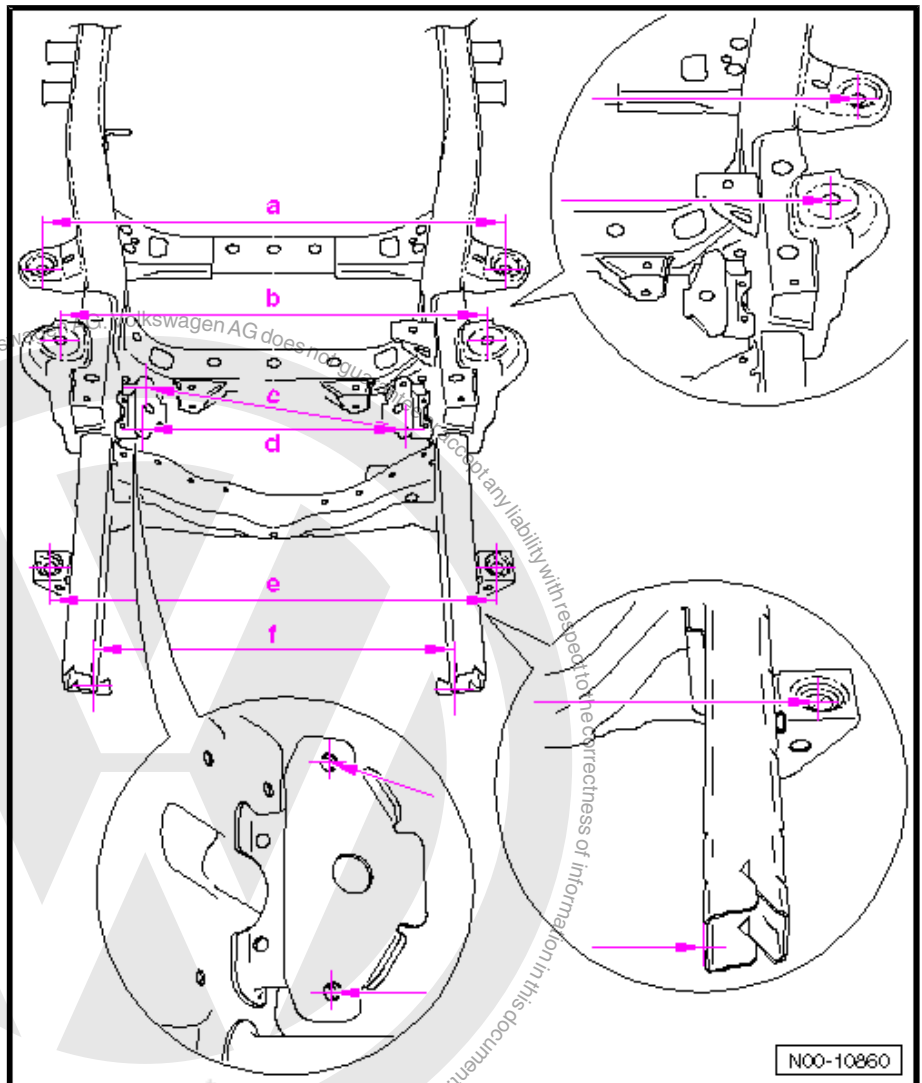
- ☐ Dimension between assembly mountings

**Maß e - 1,040 mm ± 4.0 mm**

- ☐ Dimension between cab mounting 1

**Maß f - 800 mm ± 3.0 mm**

- ☐ Inner dimension between frame longitudinal members



Front lower frame dimensions



**Maß a - 800 mm ± 3.0 mm**

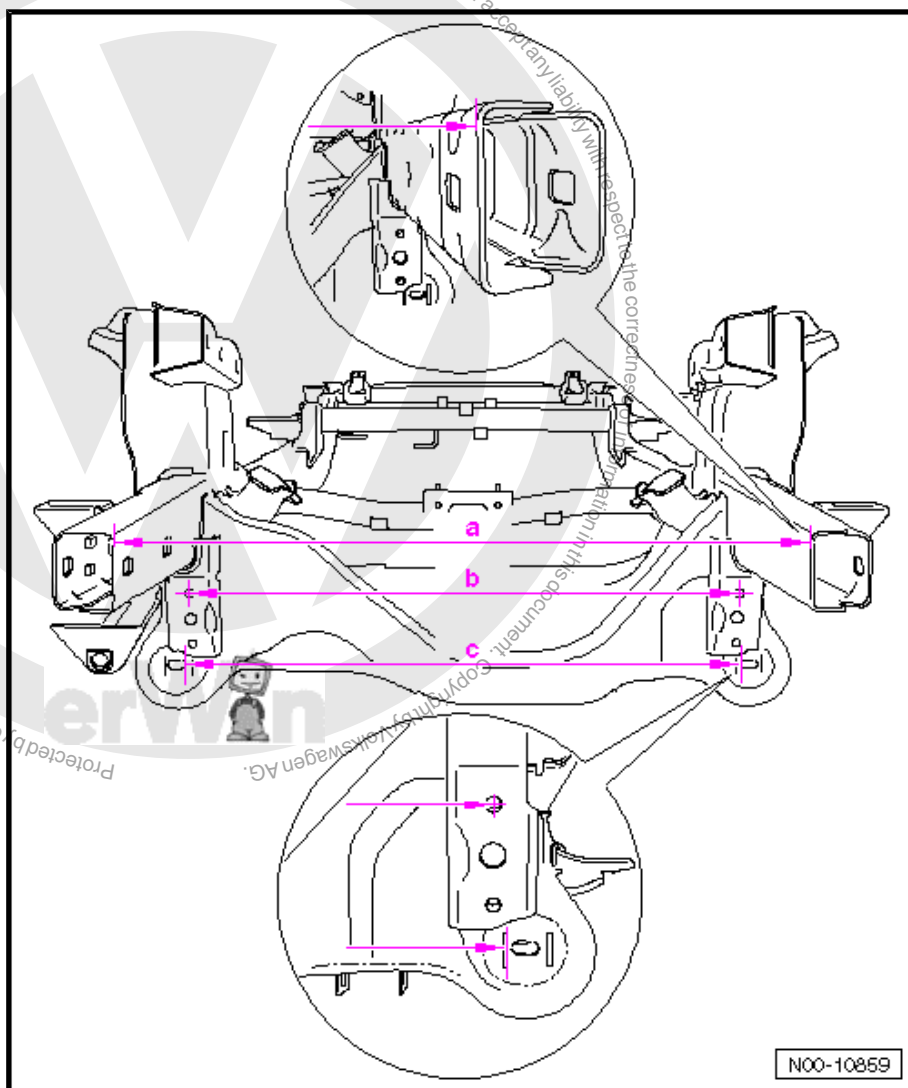
- ❑ Inner dimension between frame longitudinal members

**Maß b - 815 mm ± 2.0 mm**

- ❑ Dimension between anti-roll bar bolting points

**Maß c - 840 mm ± 2.0 mm**

- ❑ Dimension between front axle mountings





## 6.1.2 Centre frame dimensions

### Lower centre frame dimensions

**Maß a - 780 mm  $\pm$  2.0 mm**

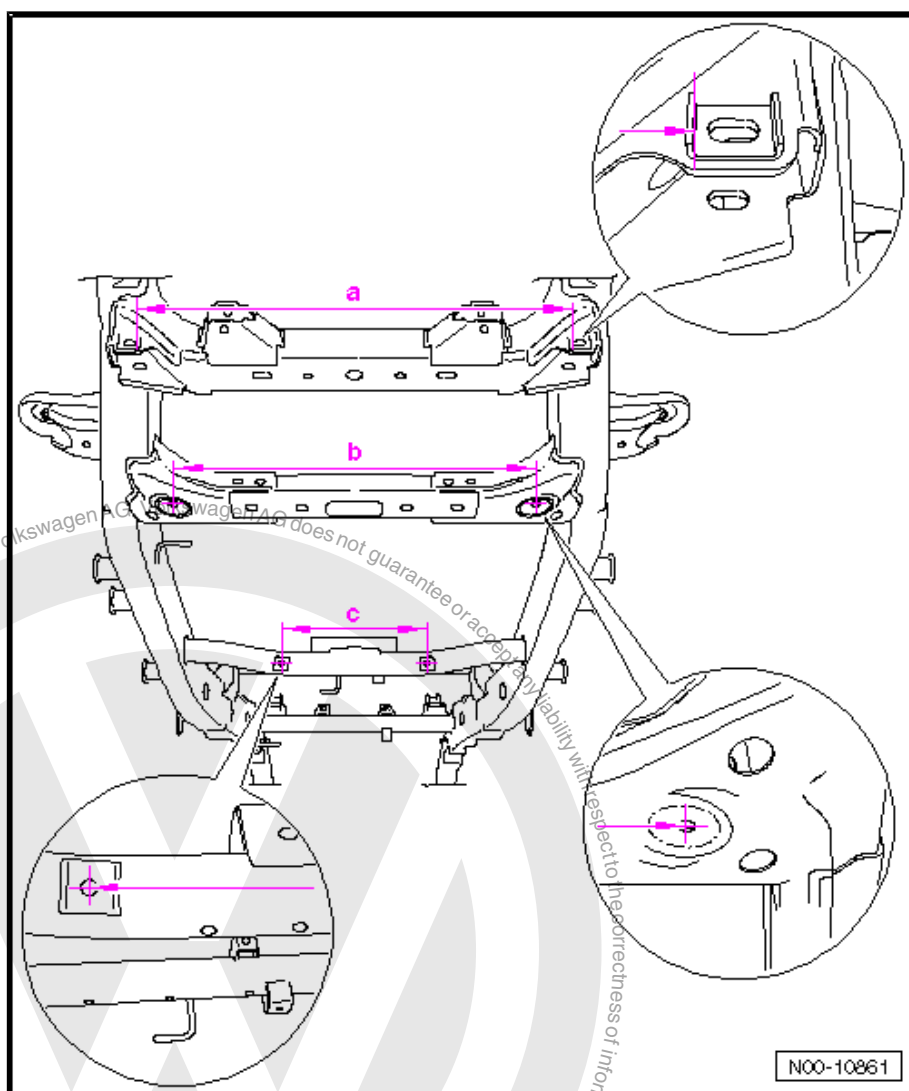
- Dimension between front axle rear mountings

**Maß b - 810 mm  $\pm$  3.0 mm**

- Dimension between gearbox mountings

**Maß c - 490 mm  $\pm$  2.5 mm**

- Dimension between rebound strap bolting points



### Upper centre frame dimensions



**Maß a - 1,340 mm ± 4.0 mm**

- ❑ Dimension between cab mounting 3

**Maß b - 1,100 mm ± 4.0 mm**

- ❑ Dimension between load surface bolting point 1

**Maß c - 1,100 mm ± 4.0 mm**

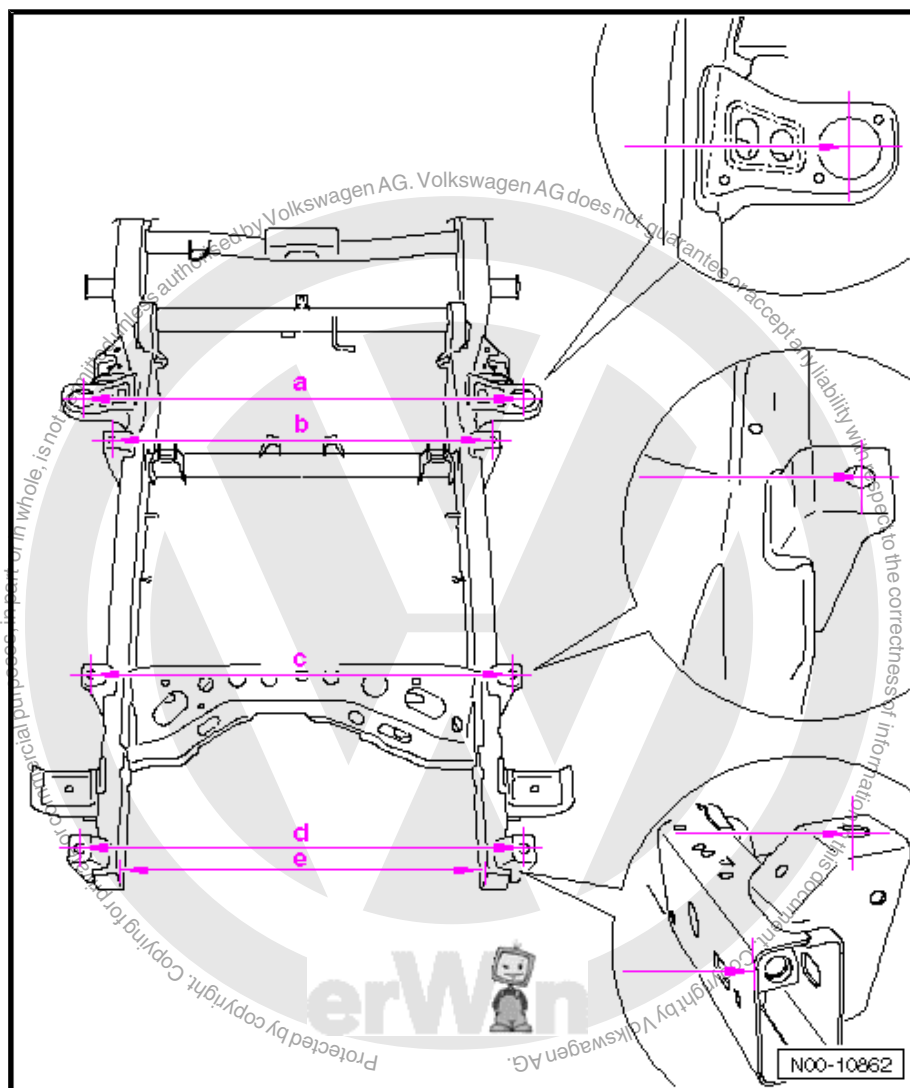
- ❑ Dimension between load surface bolting point 2

**Maß d - 1,100 mm ± 4.0 mm**

- ❑ Dimension between load surface bolting point 3

**Maß e - 910 mm ± 3.0 mm**

- ❑ Inner dimension between frame rear longitudinal members







## 6.1.3 Rear frame dimensions

### Upper centre frame dimensions

**Maß a** - 1,340 mm  $\pm$  4.0 mm

- ☐ Dimension between cab mounting 3

**Maß b** - 1,100 mm  $\pm$  4.0 mm

- ☐ Dimension between load surface bolting point 1

**Maß c** - 1,100 mm  $\pm$  4.0 mm

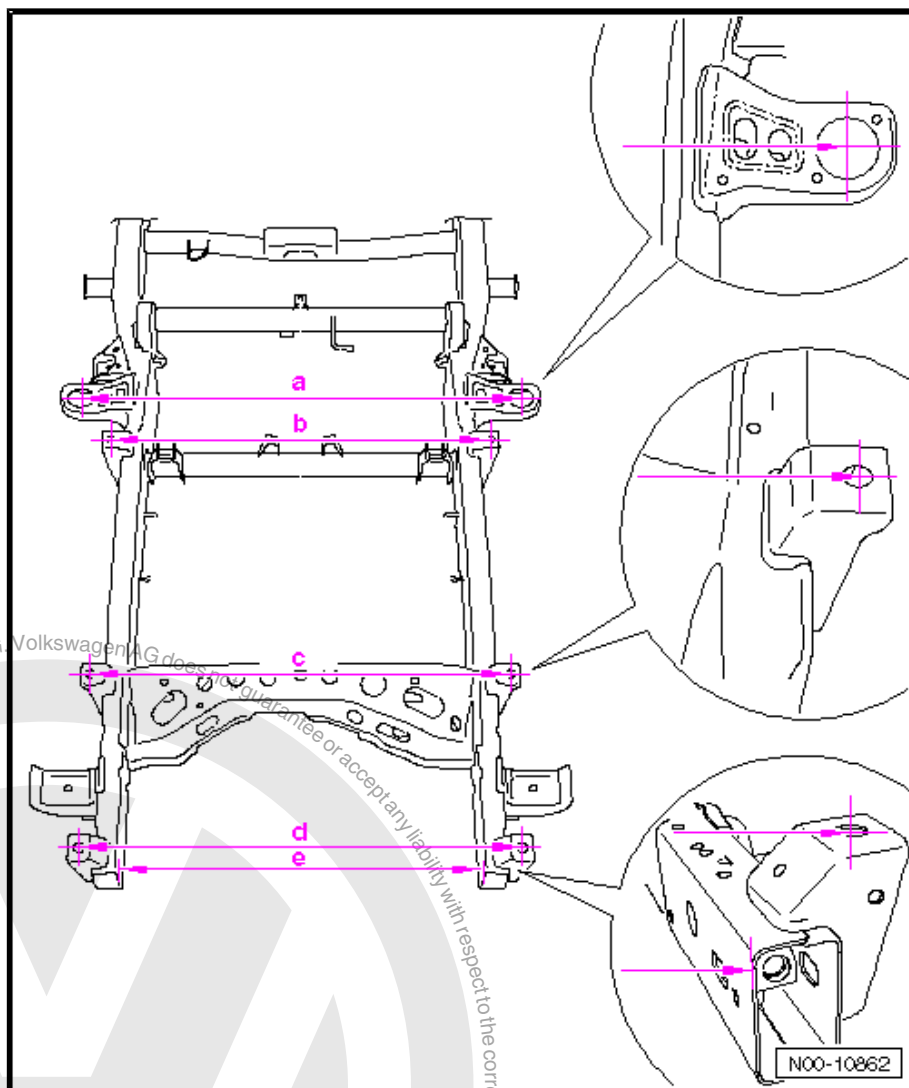
- ☐ Dimension between load surface bolting point 2

**Maß d** - 1,100 mm  $\pm$  4.0 mm

- ☐ Dimension between load surface bolting point 3

**Maß e** - 910 mm  $\pm$  3.0 mm

- ☐ Inner dimension between frame rear longitudinal members



### Rear diagonal frame dimensions



**Maß a - 1,345 mm ± 4.0 mm**

- Dimension diagonally between load surface bolting point 1 on left and load surface bolting point 2 on right

**Maß b - 1,658 mm ± 4.0 mm**

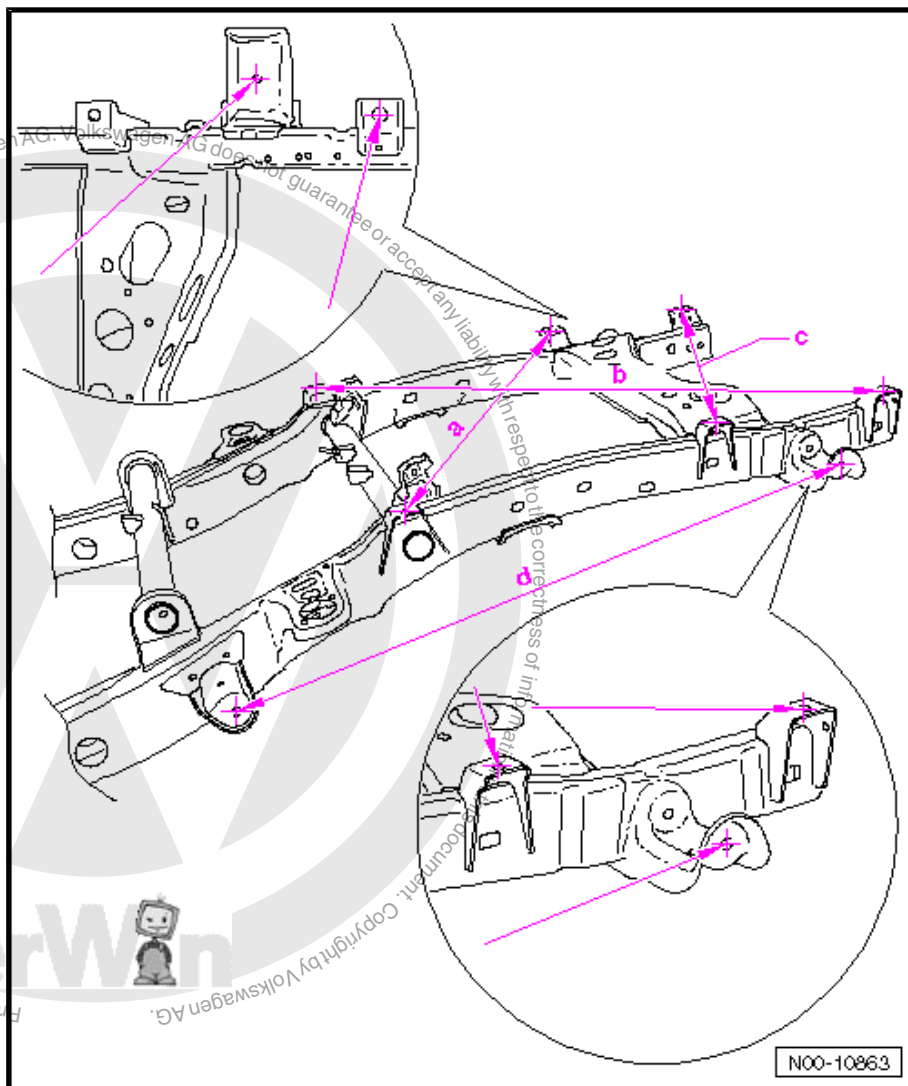
- Dimension diagonally between load surface bolting point 1 on right and load surface bolting point 3 on left

**Maß c - 1,195 mm ± 4.0 mm**

- Dimension diagonally between load surface bolting point 2 on left and load surface bolting point 3 on right

**Maß d - 1,488 mm ± 2.5 mm**

- Dimension between front leaf spring mounting and rear leaf spring mounting





## 6.2 Single cab frame dimensions

### 6.2.1 Front frame dimensions

Frame dimensions between front frame longitudinal members

**Maß a - 1,320 mm ± 4.0 mm**

- Dimension between cab mounting 2

**Maß b - 1,015 mm ± 3.0 mm**

- Dimension between suspension strut mountings

**Maß c - 660 mm ± 3.0 mm**

- Dimension diagonally between assembly mountings

**Maß d - 645 mm ± 3.0 mm**

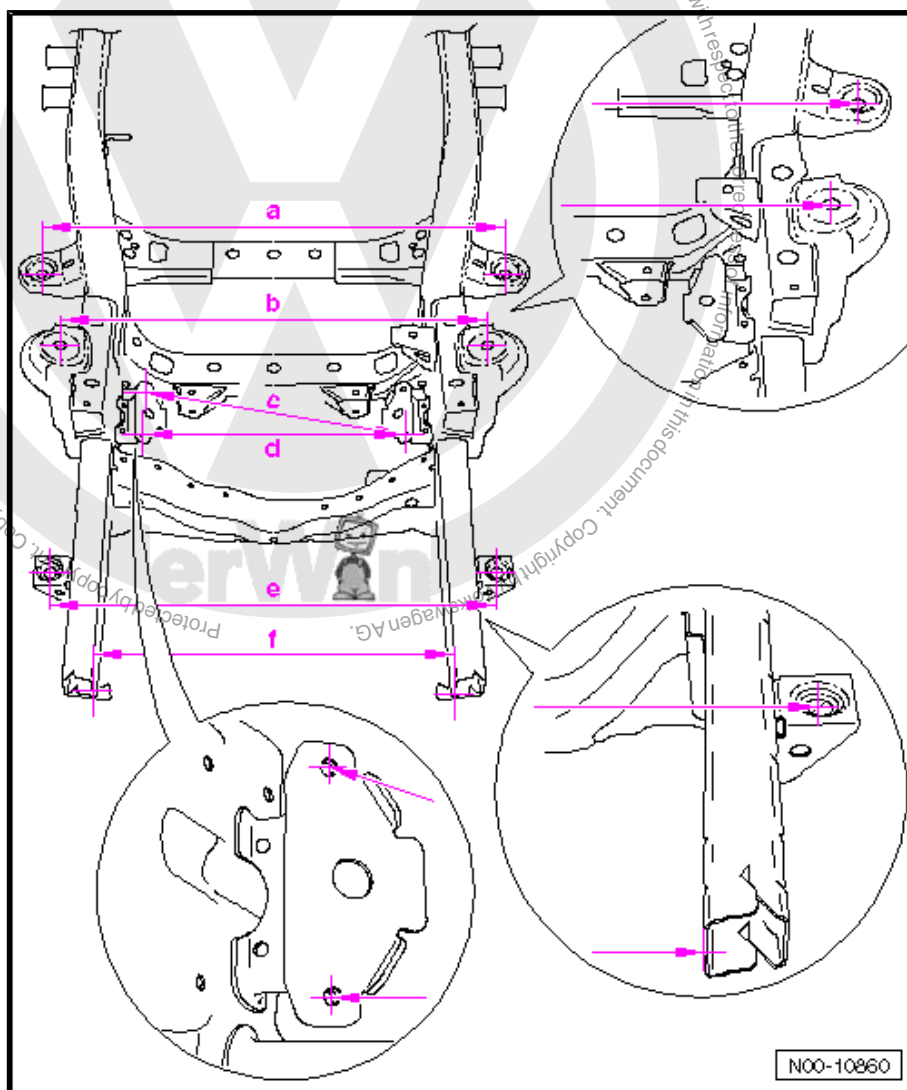
- Dimension between assembly mountings

**Maß e - 1,040 mm ± 4.0 mm**

- Dimension between cab mounting 1

**Maß f - 800 mm ± 3.0 mm**

- Inner dimension between frame longitudinal members



Front lower frame dimensions



**Maß a - 800 mm ± 3.0 mm**

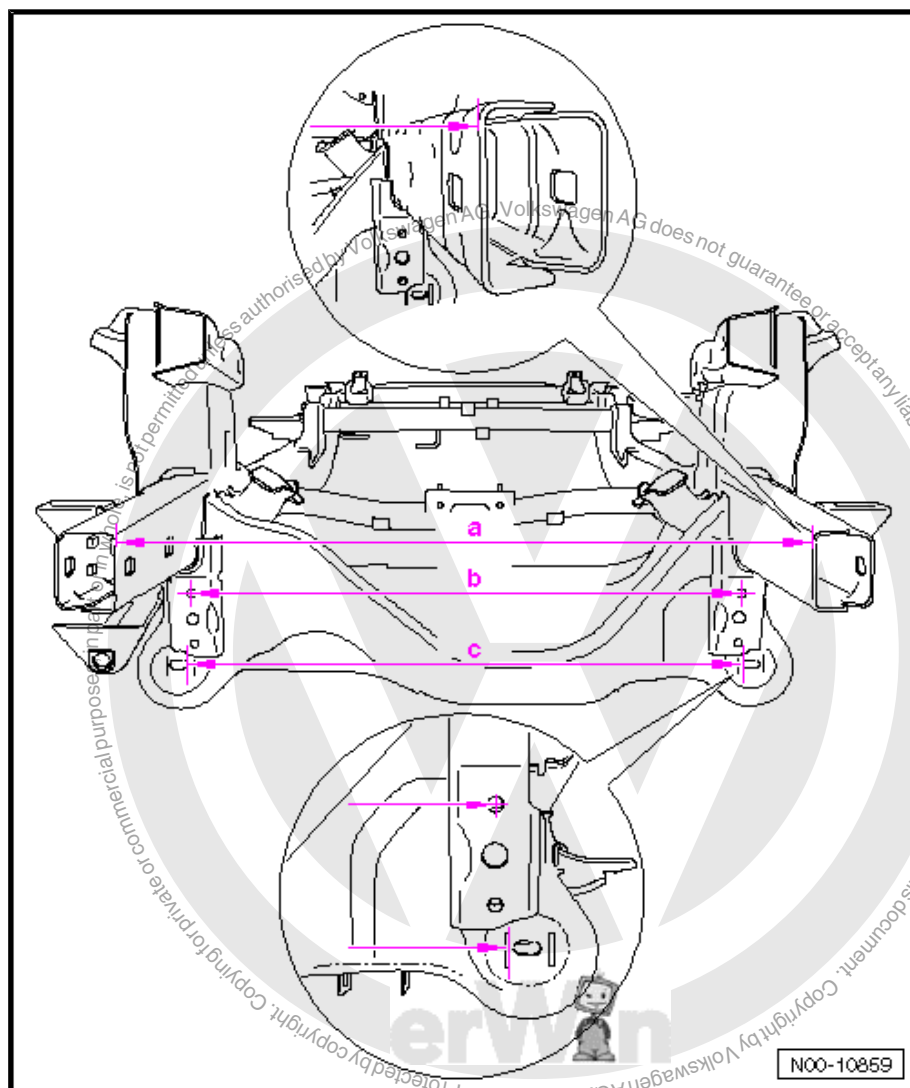
- ❑ Inner dimension between frame longitudinal members

**Maß b - 815 mm ± 2.0 mm**

- ❑ Dimension between anti-roll bar bolting points

**Maß c - 840 mm ± 2.0 mm**

- ❑ Dimension between front axle mountings



## 6.2.2 Centre frame dimensions



**Note**

*Centre frame dimensions were not yet available at time of going to print!*

## 6.2.3 Rear frame dimensions



**Note**

*Rear frame dimensions were not yet available at time of going to print!*



## 6.3 Double cab box dimensions

### 6.3.1 Front box dimensions

#### Front engine compartment box dimensions

**Maß - 956 mm  $\pm$  1.0 mm**

- ☐ Dimension between lock carrier bolting points

**Maß - 1,412 mm  $\pm$  2.0 mm**

- ☐ Dimension between lamp carriers

**Maß - 982 mm  $\pm$  2.0 mm**

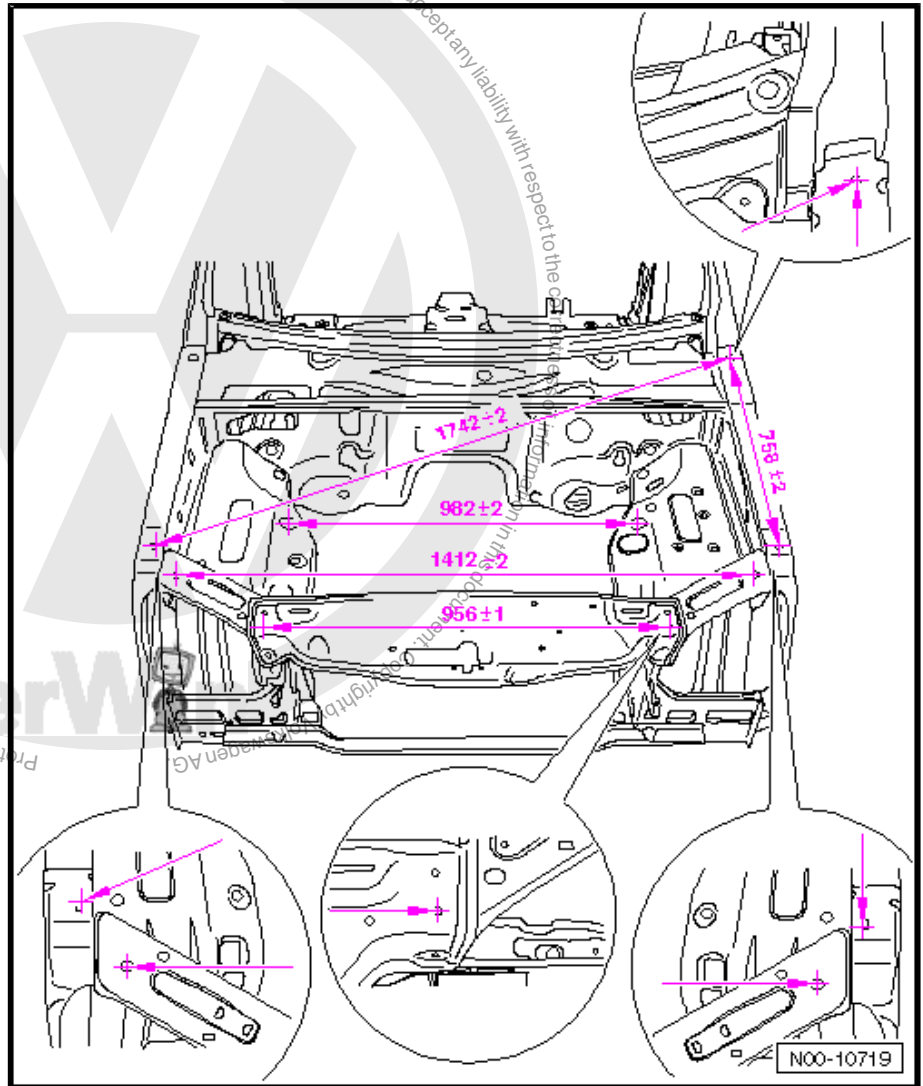
- ☐ Dimension between wheel housings

**Maß - 758 mm  $\pm$  2.0 mm**

- ☐ Dimension wing mounting flange

**Maß - 1,742 mm  $\pm$  2.0 mm**

- ☐ Dimension diagonally between left wing mounting flange at rear and right wing mounting flange at front



#### Front box dimensions



**Maß - 1,500 mm  $\pm$  2.0 mm**

- ❑ Dimension between lower part of front lamp carriers

**Maß - 943 mm  $\pm$  2.0 mm**

- ❑ Dimension between middle of lamp carriers

**Maß - 935 mm  $\pm$  1.0 mm**

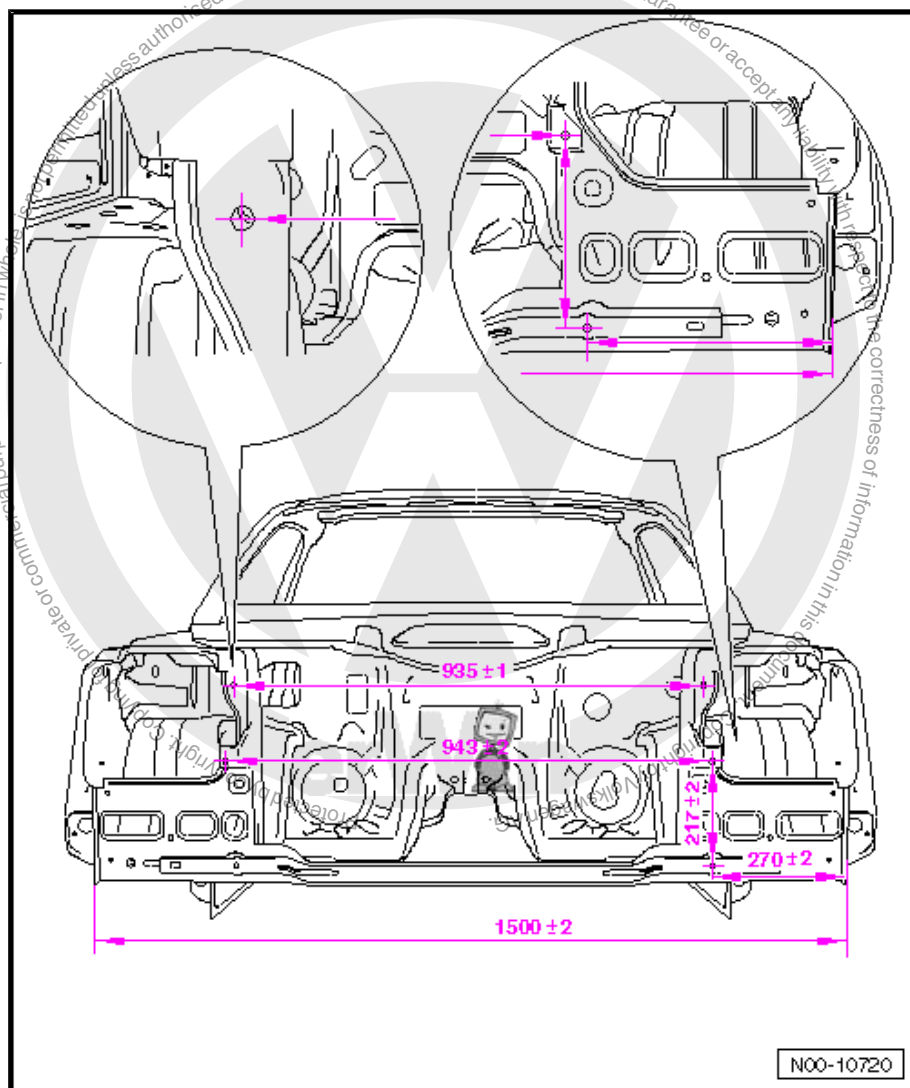
- ❑ Dimension between upper part of lamp carriers

**Maß - 217 mm  $\pm$  2.0 mm**

- ❑ Dimension cross member to lamp carrier

**Maß - 270 mm  $\pm$  2.0 mm**

- ❑ Dimension cross member to lamp carrier



Front end box dimensions

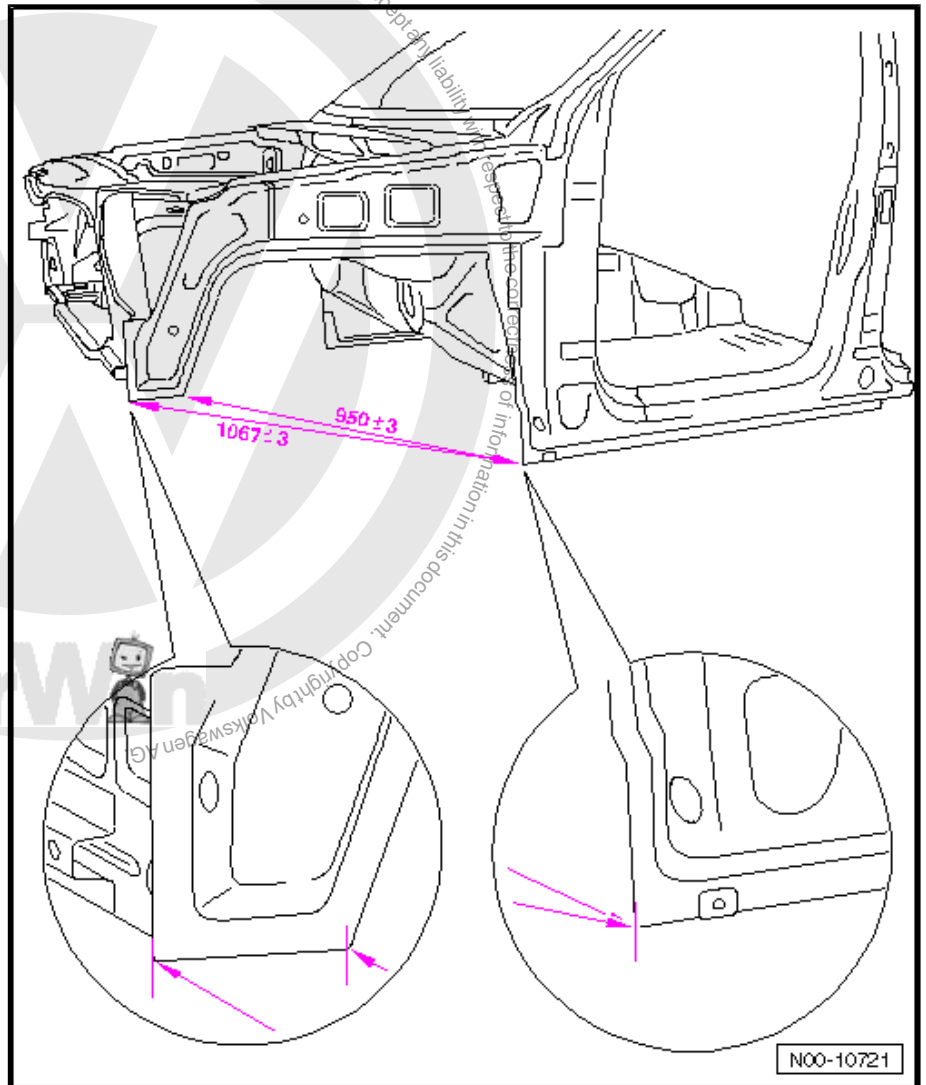


**Maß - 950 mm ± 3.0 mm**

- Dimension between A-pillar and front end

**Maß - 1,067 mm ± 2.0 mm**

- Dimension between A-pillar and front end





## 6.3.2 Centre box dimensions

### Centre box dimensions

Maß - 1,870 mm  $\pm$  3.0 mm

- Dimension between A-pillars

Maß - 1,870 mm  $\pm$  3.0 mm

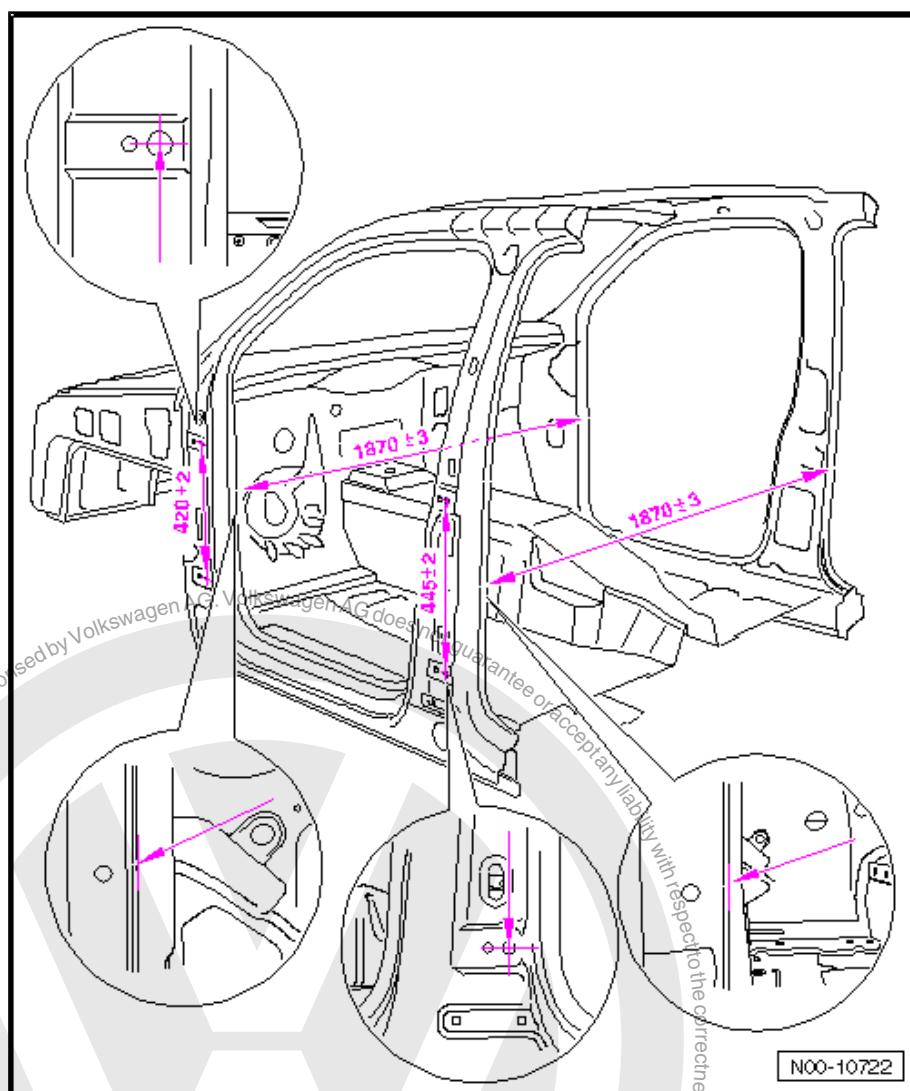
- Dimension between B-pillars

Maß - 420 mm  $\pm$  2.0 mm: Dimension

- Upper door hinge to lower door hinge on A-pillar

Maß - 445 mm  $\pm$  2.0 mm

- Upper door hinge to lower door hinge on B-pillar







### 6.3.3 Rear box dimensions

#### Rear box dimensions

Maß - 1,195 mm  $\pm$  2.0 mm

- Dimension between roof side members

Maß - 1,465 mm  $\pm$  2.0 mm

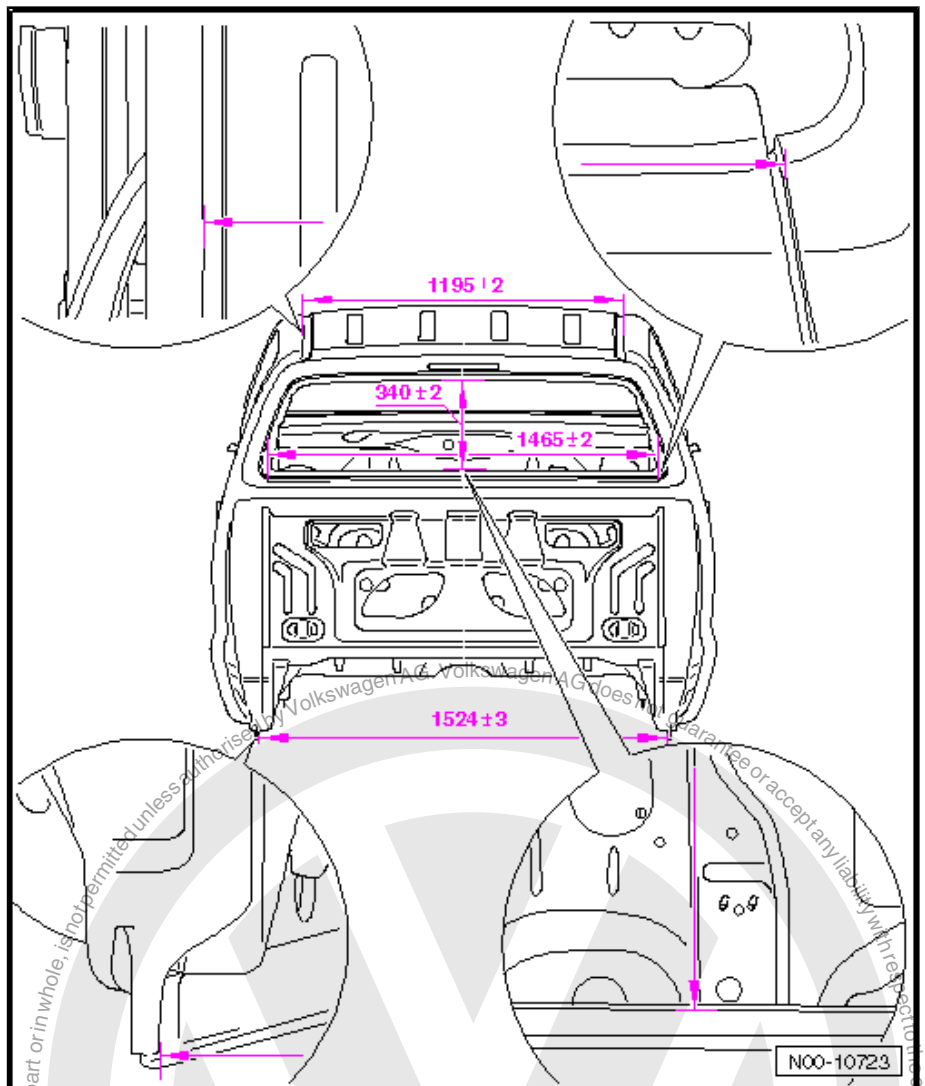
- Dimension rear panel aperture

Maß - 340 mm  $\pm$  2.0 mm

- Dimension rear window aperture

Maß - 1,524 mm  $\pm$  3.0 mm

- Dimension between side members





## 6.4 Single cab box dimensions

### 6.4.1 Front box dimensions

#### Front engine compartment box dimensions

**Maß - 956 mm ± 1.0 mm**

- ❑ Dimension between lock carrier bolting points

**Maß - 1,412 mm ± 2.0 mm**

- ❑ Dimension between lamp carriers

**Maß - 982 mm ± 2.0 mm**

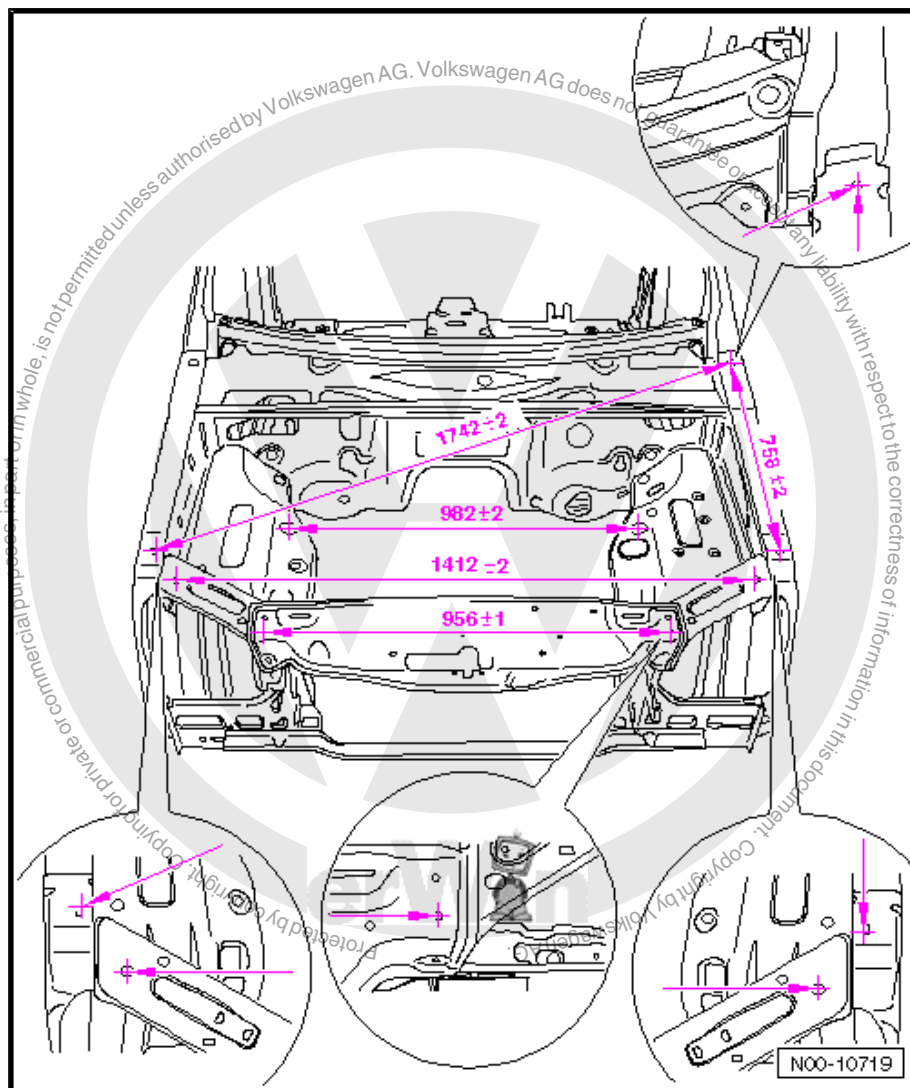
- ❑ Dimension between wheel housings

**Maß - 758 mm ± 2.0 mm**

- ❑ Dimension wing mounting flange

**Maß - 1,742 mm ± 2.0 mm**

- ❑ Dimension diagonally between left wing mounting flange at rear and right wing mounting flange at front



#### Front box dimensions



**Maß - 1,500 mm ± 2.0 mm**

- ❑ Dimension between lower part of front lamp carriers

**Maß - 943 mm ± 2.0 mm**

- ❑ Dimension between middle of lamp carriers

**Maß - 935 mm ± 1.0 mm**

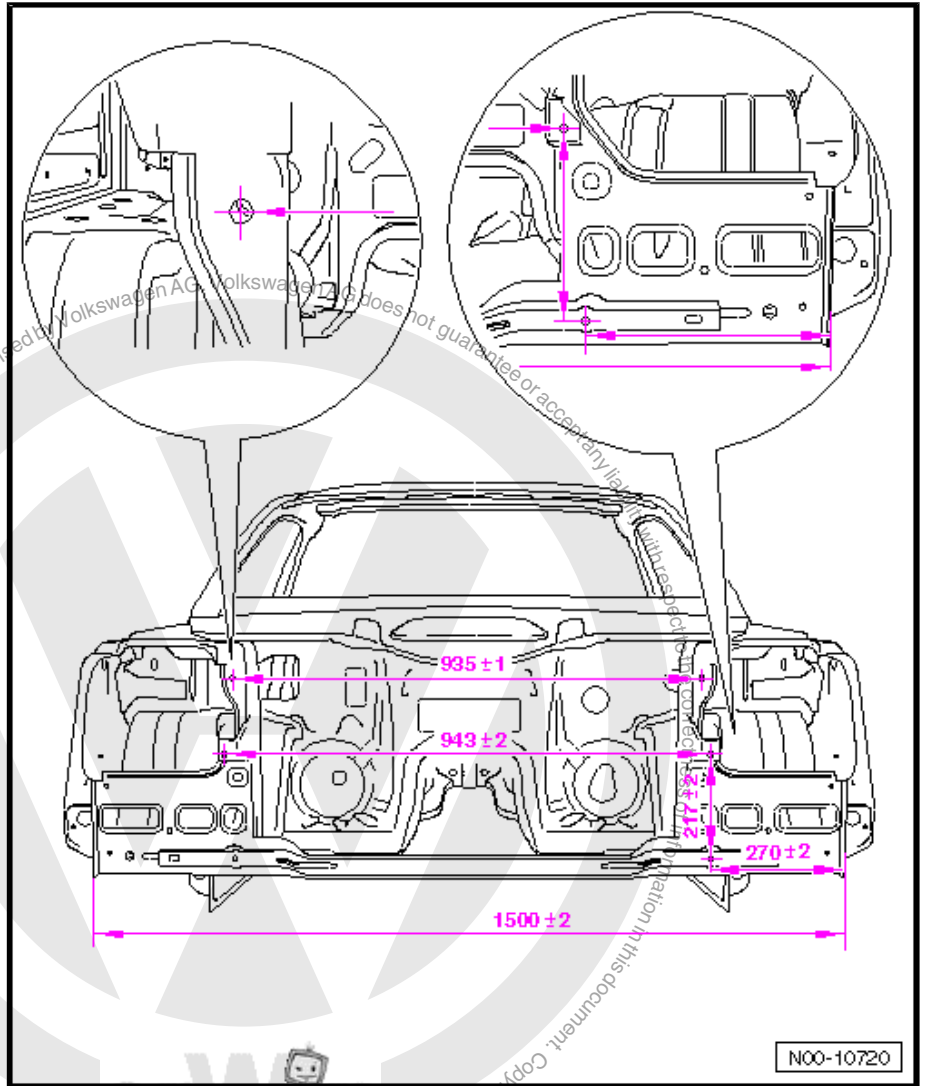
- ❑ Dimension between upper part of lamp carriers

**Maß - 217 mm ± 2.0 mm**

- ❑ Dimension cross member to lamp carrier

**Maß - 270 mm ± 2.0 mm**

- ❑ Dimension cross member to lamp carrier



Front end box dimensions

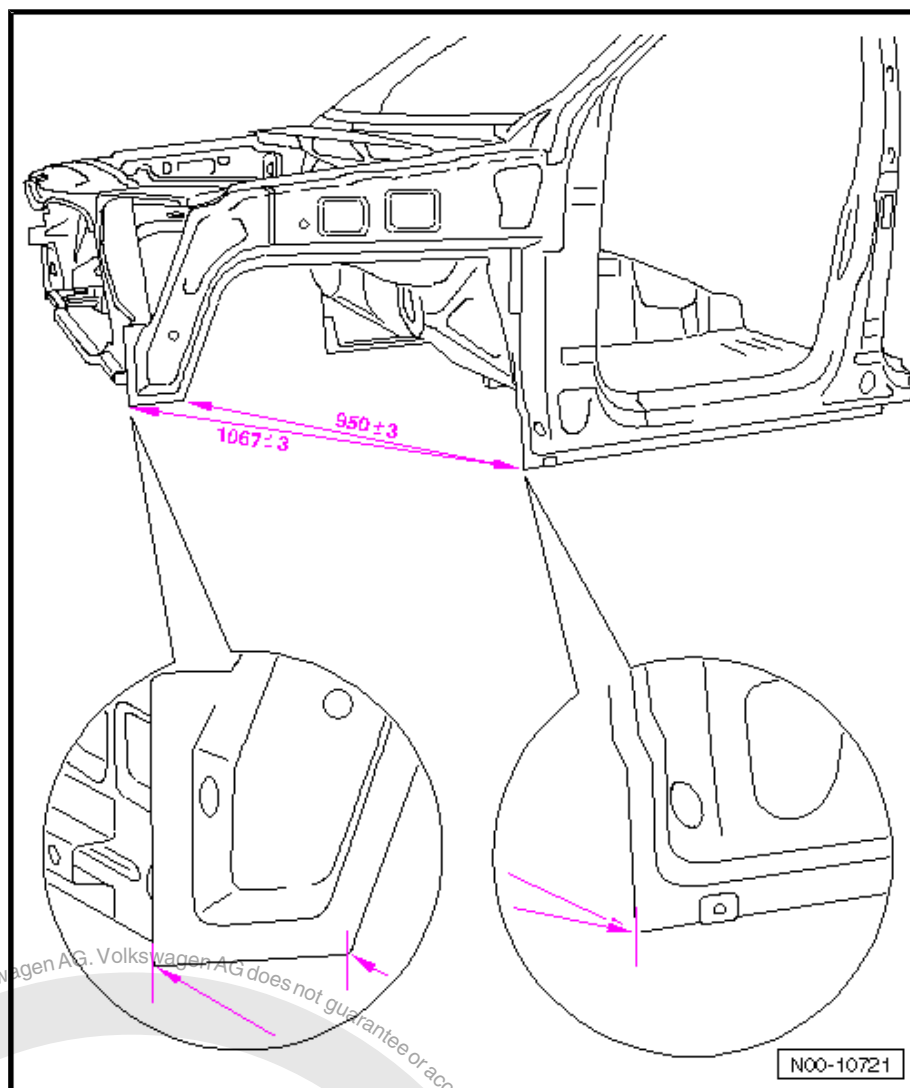


Maß - 950 mm  $\pm$  3.0 mm

- Dimension between A-pillar and front end

Maß - 1,067 mm  $\pm$  2.0 mm

- Dimension between A-pillar and front end



## 6.4.2 Centre box dimensions



Note

Centre box dimensions were not yet available at time of going to print!

## 6.4.3 Rear box dimensions



Note

Rear box dimensions were not yet available at time of going to print!

## 6.5 Double cab load surface dimensions

### 6.5.1 Upper load surface dimensions

#### Outer/inner load surface dimensions

**Maß - 1,547 mm ± 2.0 mm**

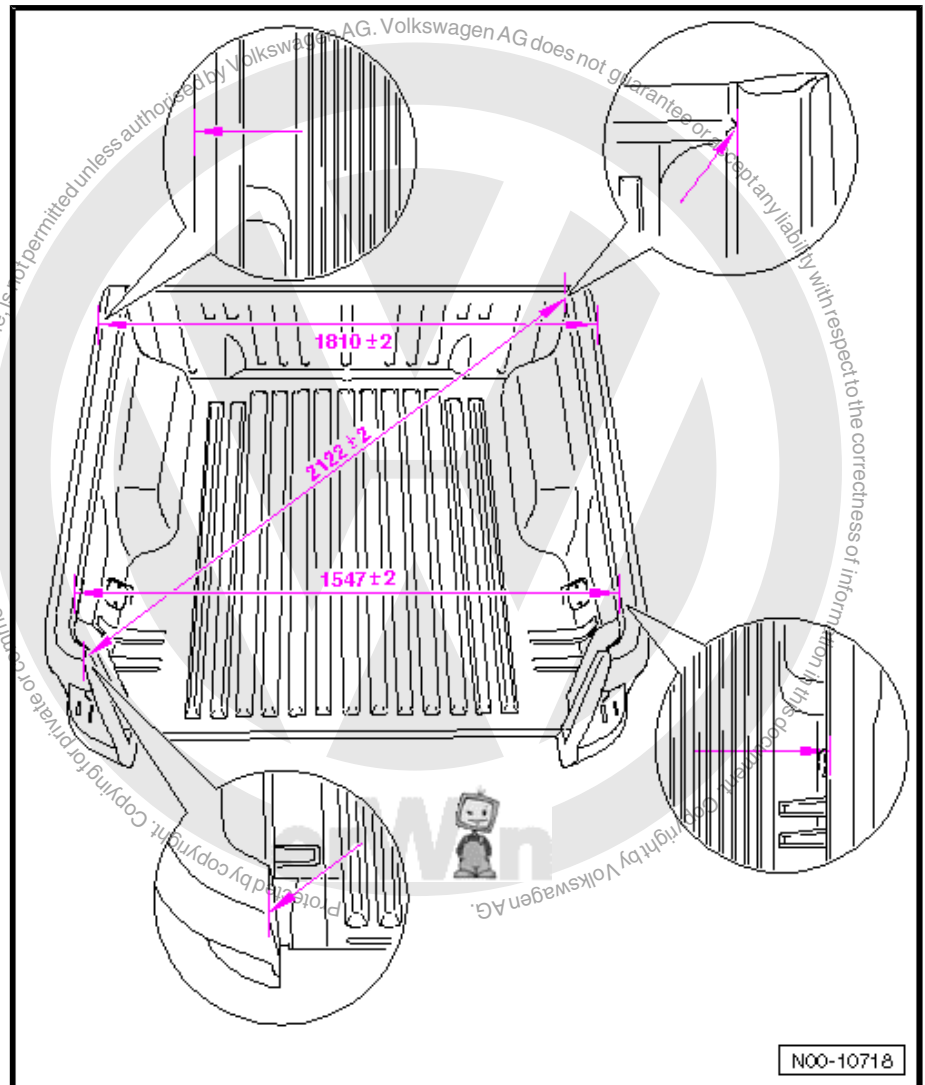
- ☐ Dimension inner side of load area side panel

**Maß - 1,810 mm ± 2.0 mm**

- ☐ Dimension outer side of load area side panel

**Maß - 2,122 mm ± 2.0 mm**

- ☐ Diagonal dimension for load surface



#### Lashing eye deviations

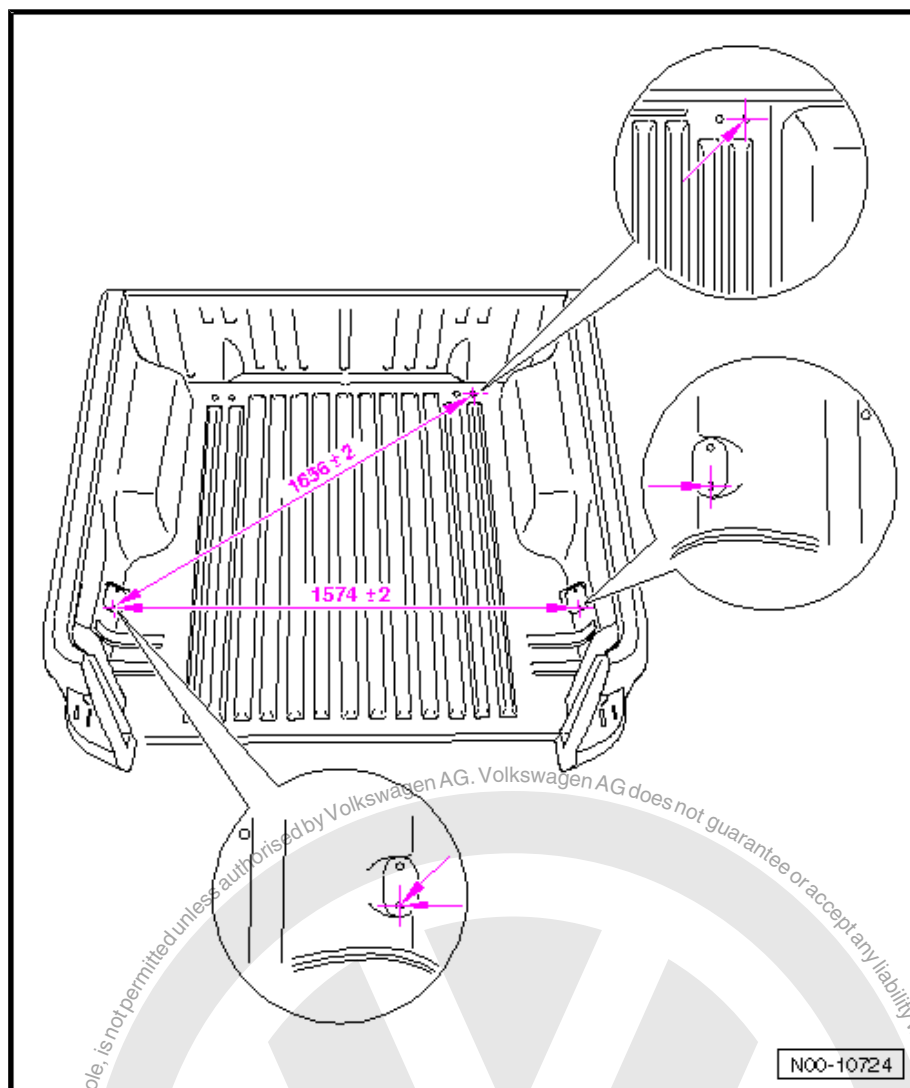


Maß - 1,574 mm  $\pm$  2.0 mm

- Dimension between lashing eyes

Maß - 1,656 mm  $\pm$  2.0 mm

- Diagonal dimension between lashing eyes





## 6.5.2 Lower load surface dimensions

### Lower load surface deviations

Maß - 1,663 mm  $\pm$  2.0 mm

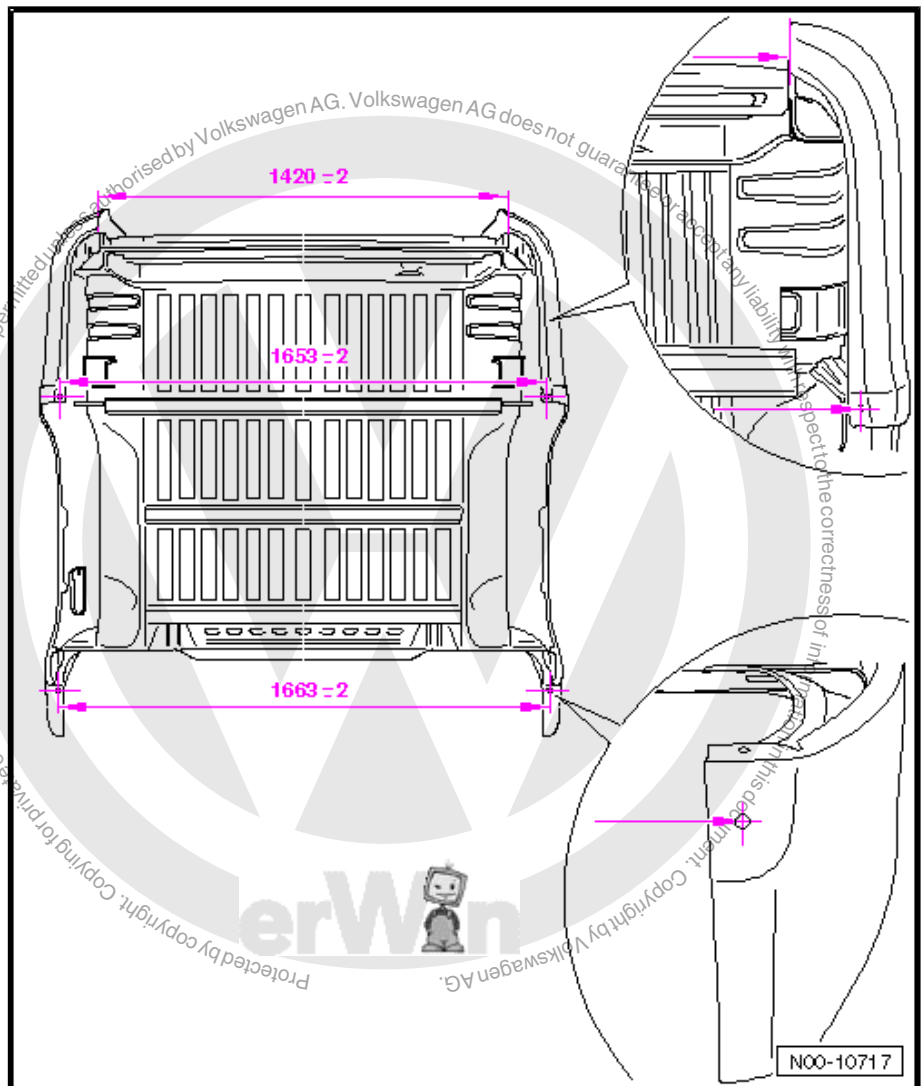
- Dimension between front part of wheel housings

Maß - 1,653 mm  $\pm$  2.0 mm

- Dimension between rear part of wheel housings

Maß - 1,420 mm  $\pm$  2.0 mm

- Dimension lower part of tailboard aperture





### 6.5.3 Rear load surface dimensions

#### Rear load surface deviations

Maß - 1,421 mm  $\pm$  2.0 mm

- Dimension lower part of tailboard aperture

Maß - 1,362 mm  $\pm$  2.0 mm

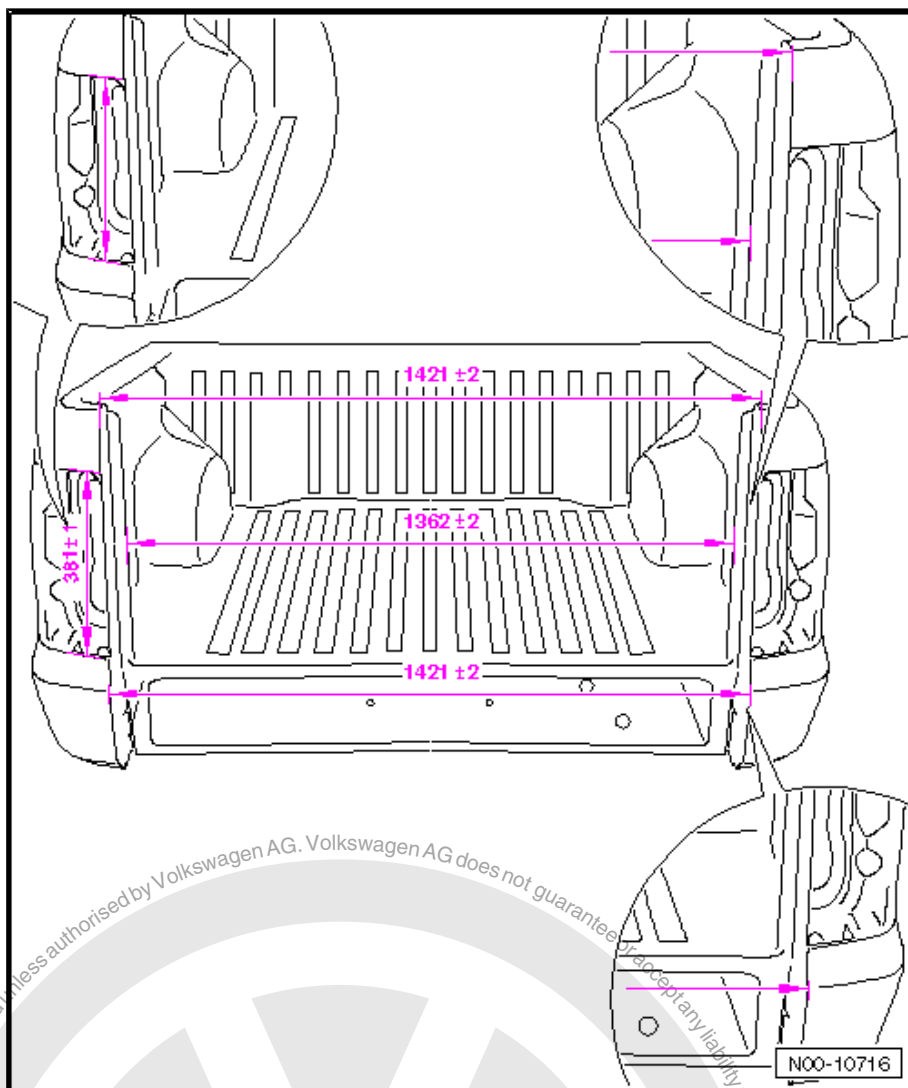
- Dimension between D-pillars

Maß - 1,421 mm  $\pm$  2.0 mm

- Dimension upper part of tailboard aperture

Maß - 381mm  $\pm$  1.0 mm

- Dimension tail light aperture



### 6.6 Single cab load surface dimensions

#### 6.6.1 Upper load surface dimensions



Note

*Upper load surface dimensions were not yet available at time of going to print!*

#### 6.6.2 Lower load surface dimensions



Note

*Lower load surface dimensions were not yet available at time of going to print!*





### 6.6.3 Rear load surface dimensions

#### Rear load surface deviations

Maß -  $1,421 \text{ mm} \pm 2.0 \text{ mm}$

- ❑ Dimension lower part of tailboard aperture

Maß -  $1,362 \text{ mm} \pm 2.0 \text{ mm}$

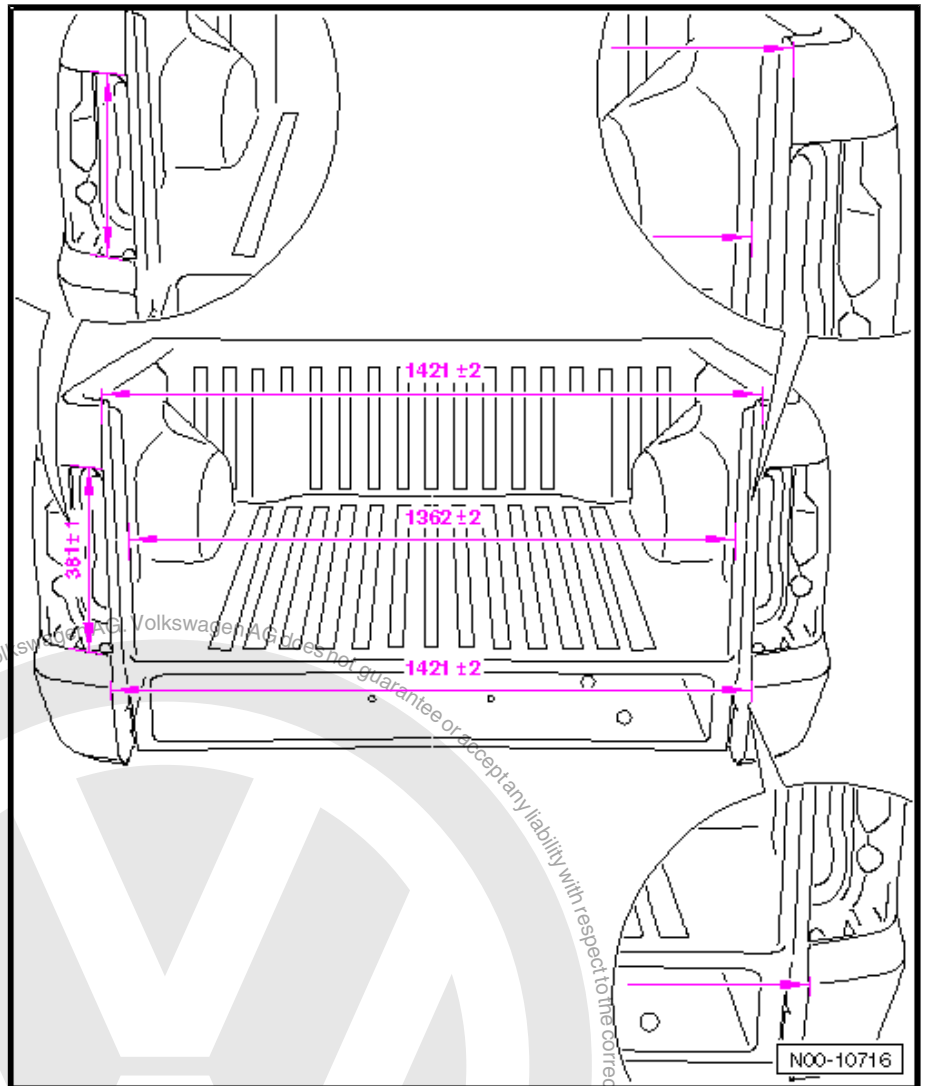
- ❑ Dimension between D-pillars

Maß -  $1,421 \text{ mm} \pm 2.0 \text{ mm}$

- ❑ Dimension upper part of tailboard aperture

Maß -  $381 \text{ mm} \pm 1.0 \text{ mm}$

- ❑ Dimension tail light aperture





## 7 Alignment jig

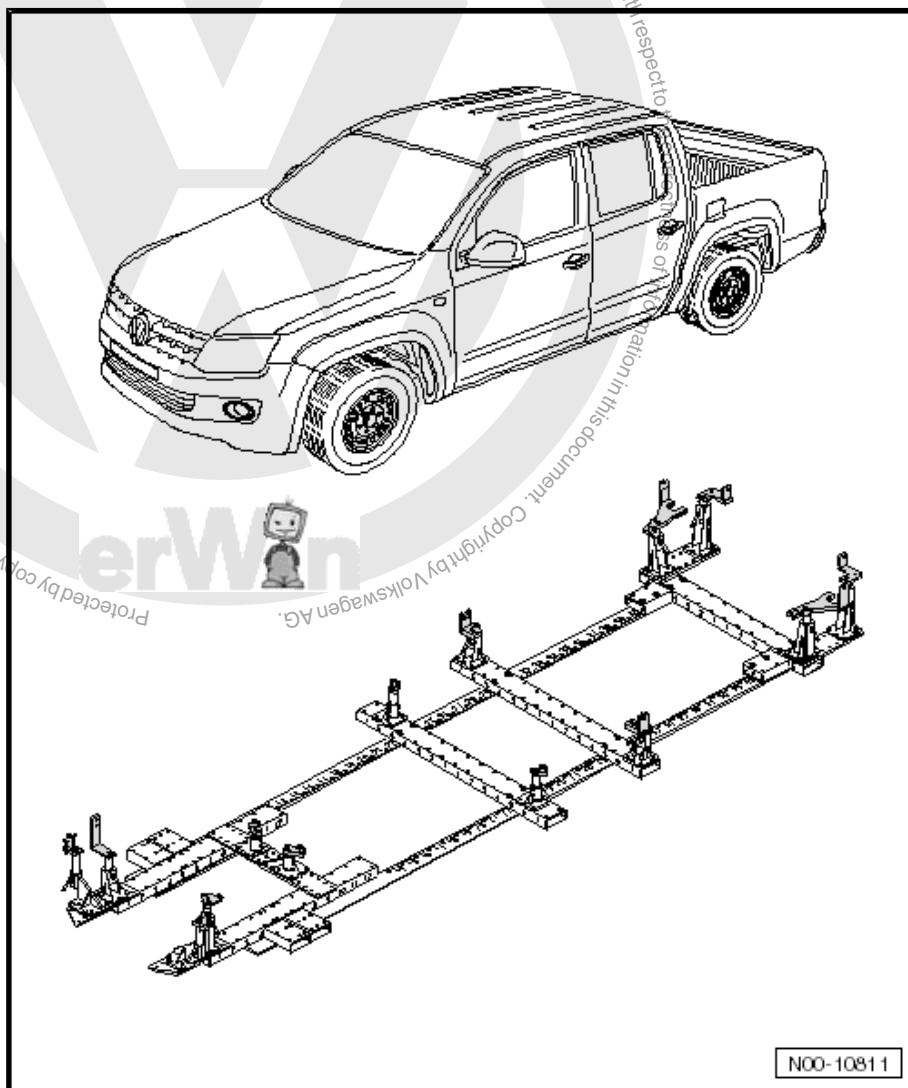
### 7.1 Tools

#### Special tools and workshop equipment required

- ◆ Alignment jig -V.A.G 1920/1-
- ◆ Measurement and alignment system -VAS 6526-Basis-
- ◆ Measurement and alignment system -VAS 6527-Profi-
- ◆ Measurement and alignment system -VAS 6527-Profi-Plus-
- ◆ Alignment bracket set Amarok -VAS 6637-
- ◆ Portal gauge supplement, Amarok -VAS 5007/48-

### 7.2 Alignment bracket fixture overview of complete vehicle

Alignment bracket fixture overview of complete vehicle with alignment bracket set Amarok -VAS 6637-



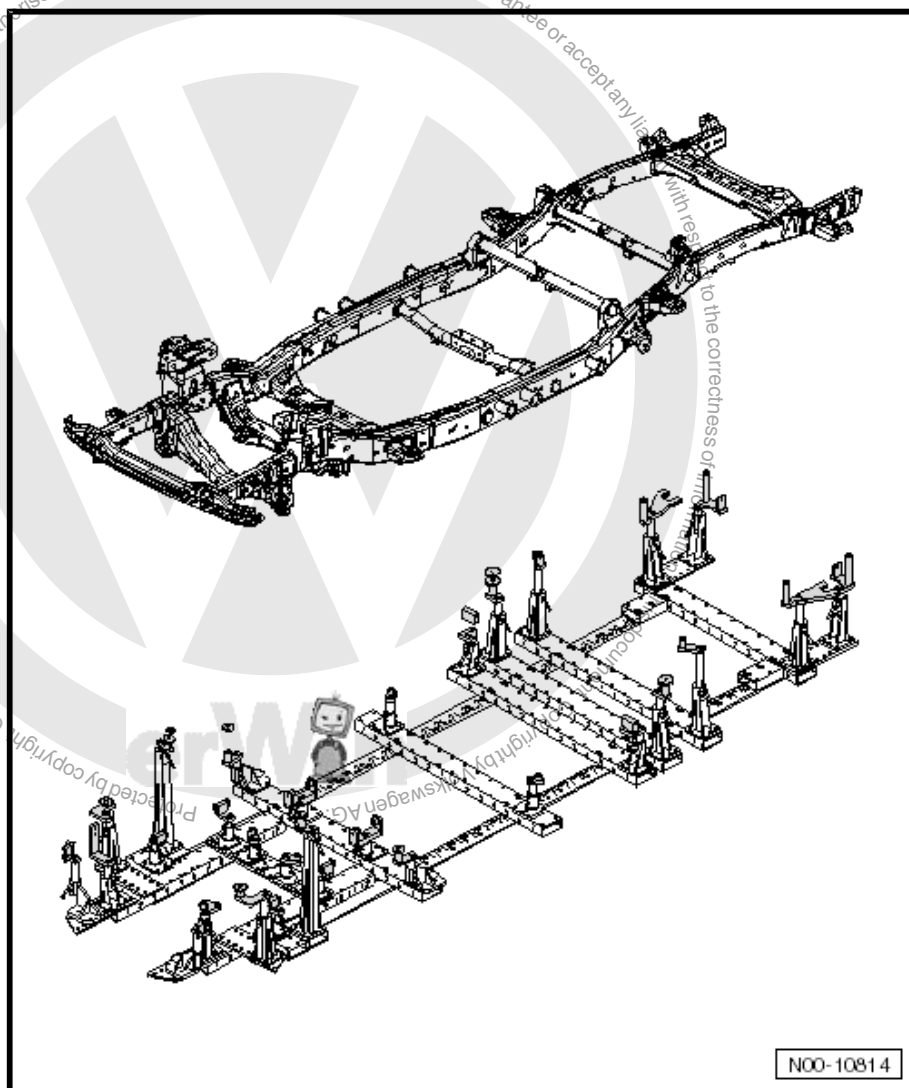


#### Note

*Detailed information on setting up the alignment bracket set can be found in the installation plans enclosed with the alignment bracket set.*

### 7.3 Alignment bracket fixture overview of vehicle chassis

**Alignment bracket fixture overview of vehicle chassis with alignment bracket set Amarok -VAS 6637-**



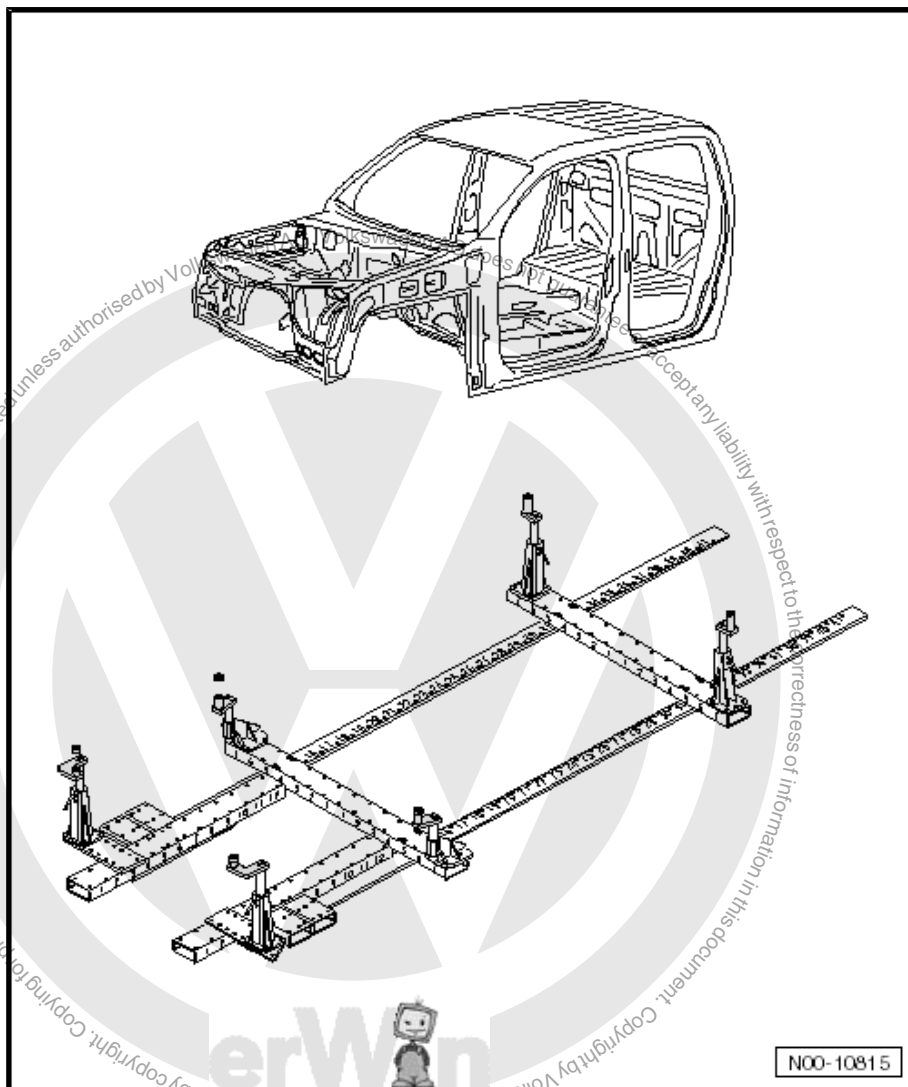
#### Note

*Detailed information on setting up the alignment bracket set can be found in the installation plans enclosed with the alignment bracket set.*



## 7.4 Alignment bracket fixture overview of vehicle cab

Alignment bracket fixture overview of vehicle cab with alignment bracket set Amarok -VAS 6637-



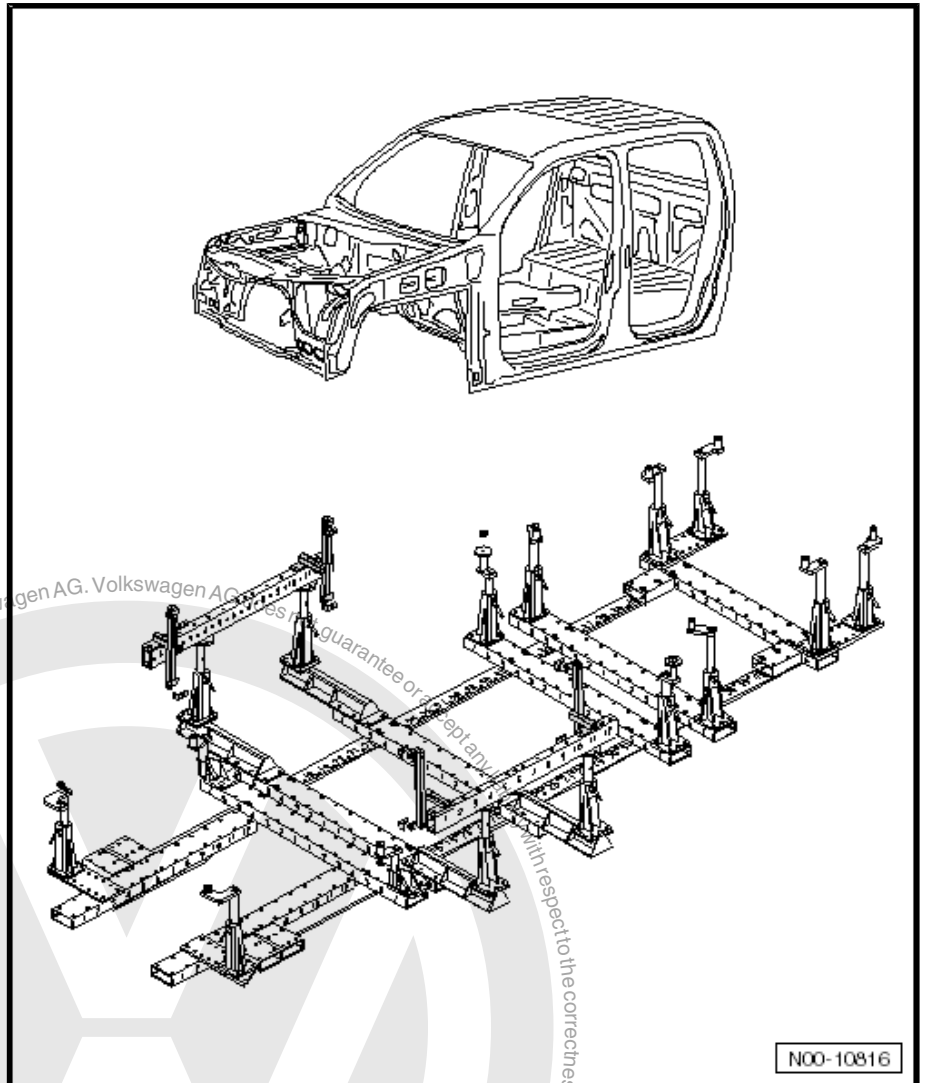
### Note

Detailed information on setting up the alignment bracket set can be found in the installation plans enclosed with the alignment bracket set.

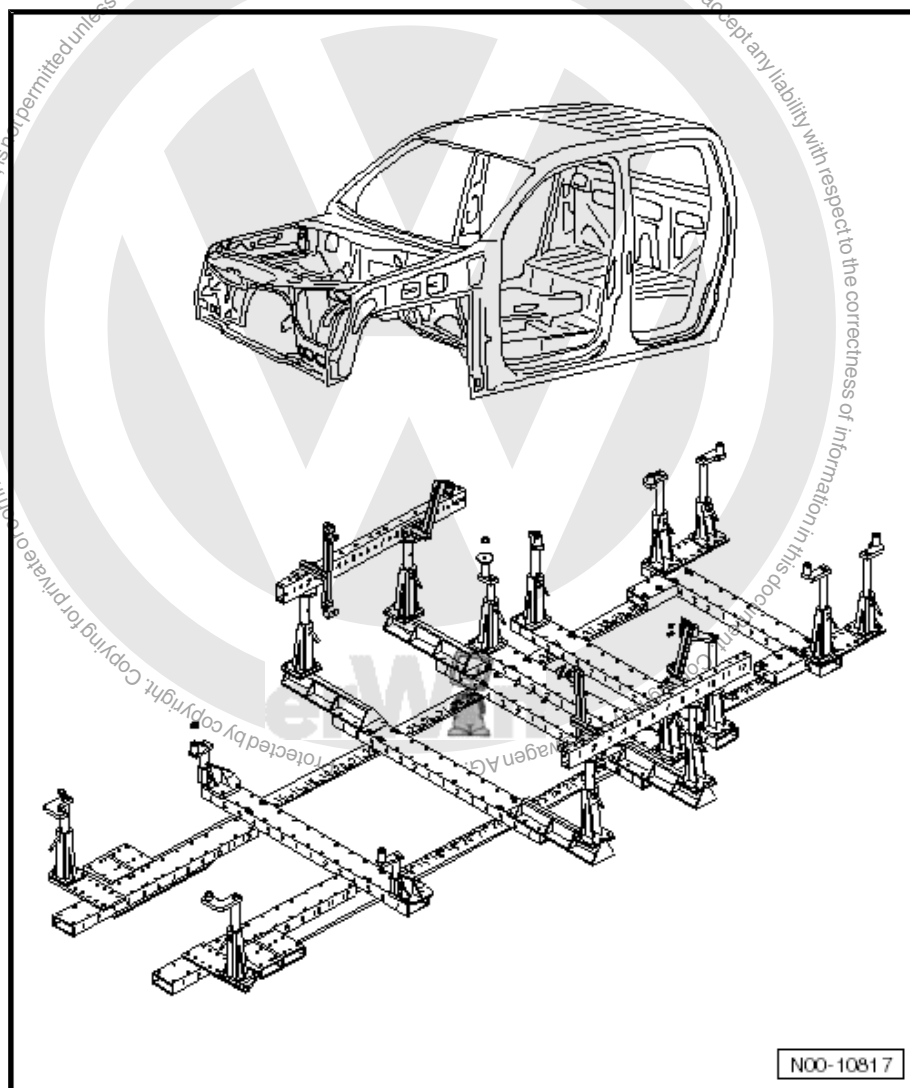


## 7.5 Alignment bracket fixture overview of vehicle cab

Alignment bracket fixture overview of front of vehicle cab with  
alignment bracket set Amarok -VAS 5007/48-



Alignment bracket fixture overview of rear of vehicle cab with  
alignment bracket set Amarok -VAS 5007/48-



**Note**

*Detailed information on setting up the portal gauge supplementary set can be found in the installation plans enclosed with the portal gauge set.*



## 50 – Body - front

RO: 50 34 55 00

### 1 Renewing cross member



**WARNING**

*Observe safety notes!*

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





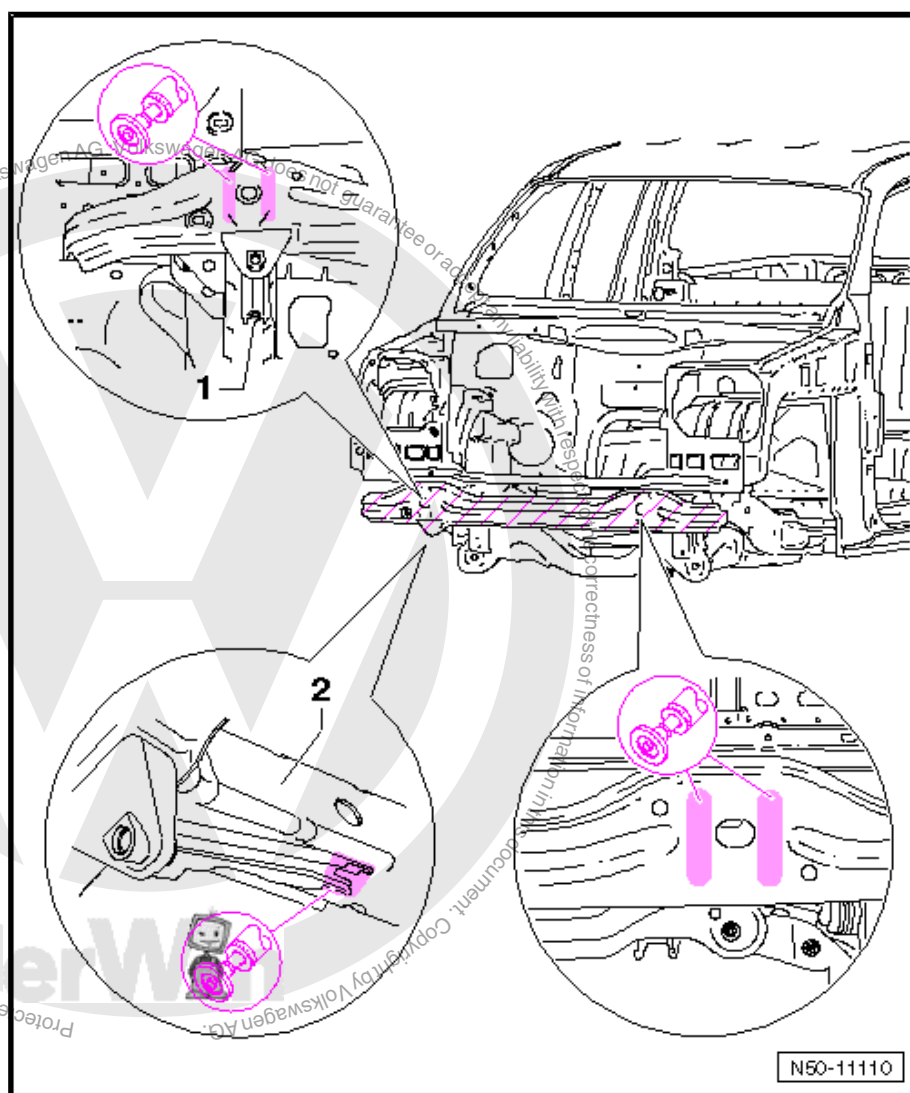
## 1.1 Removing

Carry out the following work:



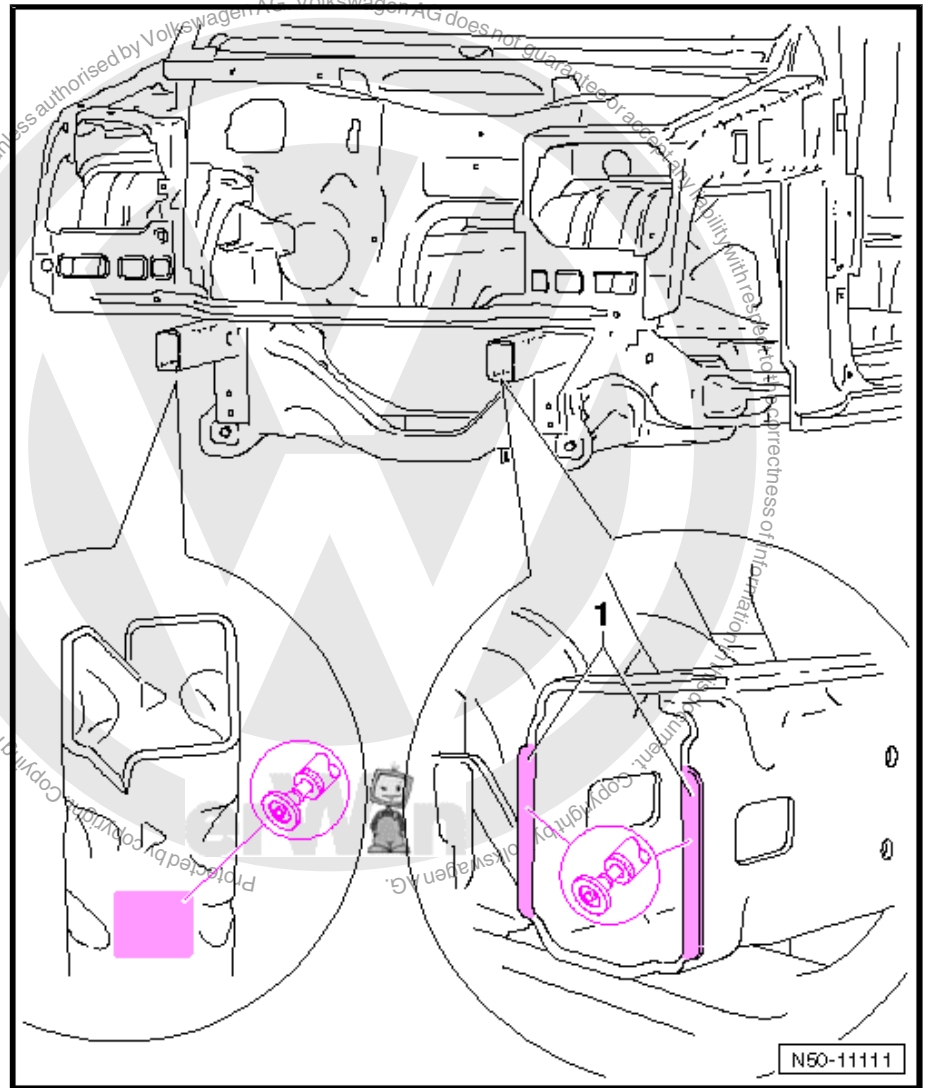
### Note

- ◆ The bolt for the cross member support -1- was discontinued in production as of July 2010 ►. Instead the front cross member support was welded to the frame longitudinal member -2- in production.
- ◆ If a cross member with bolted support requires replacement, the support must be welded to the new cross member when installing the cross member. The bolting point in the frame longitudinal member must be closed with weld and the support is then welded in position.



- Models ◀July 2010; undo bolt -1- of cross member support.
- Models July 2010 ►: separate original joint of cross member support.
- Separate original joint of cross member from front.
- Remove cross member from frame.





- Remove remaining material -1- on frame longitudinal members.
- Grind welding surfaces and welding edges down to bare metal.

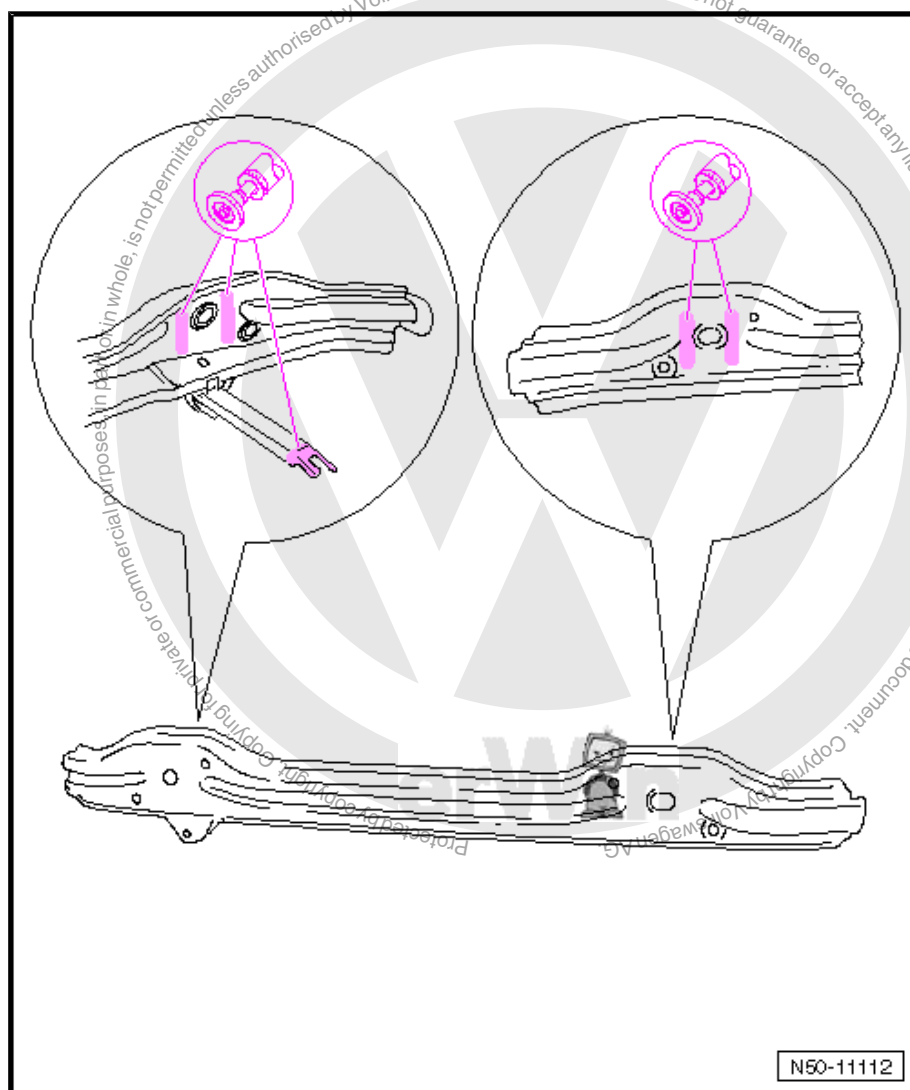
## 1.2 Installing

### 1.2.1 Preparing new part

#### Replacement part

- ◆ Cross member

Carry out the following work:



- Grind welding edges back to bare metal from inside.
- Grind support down to bare metal.



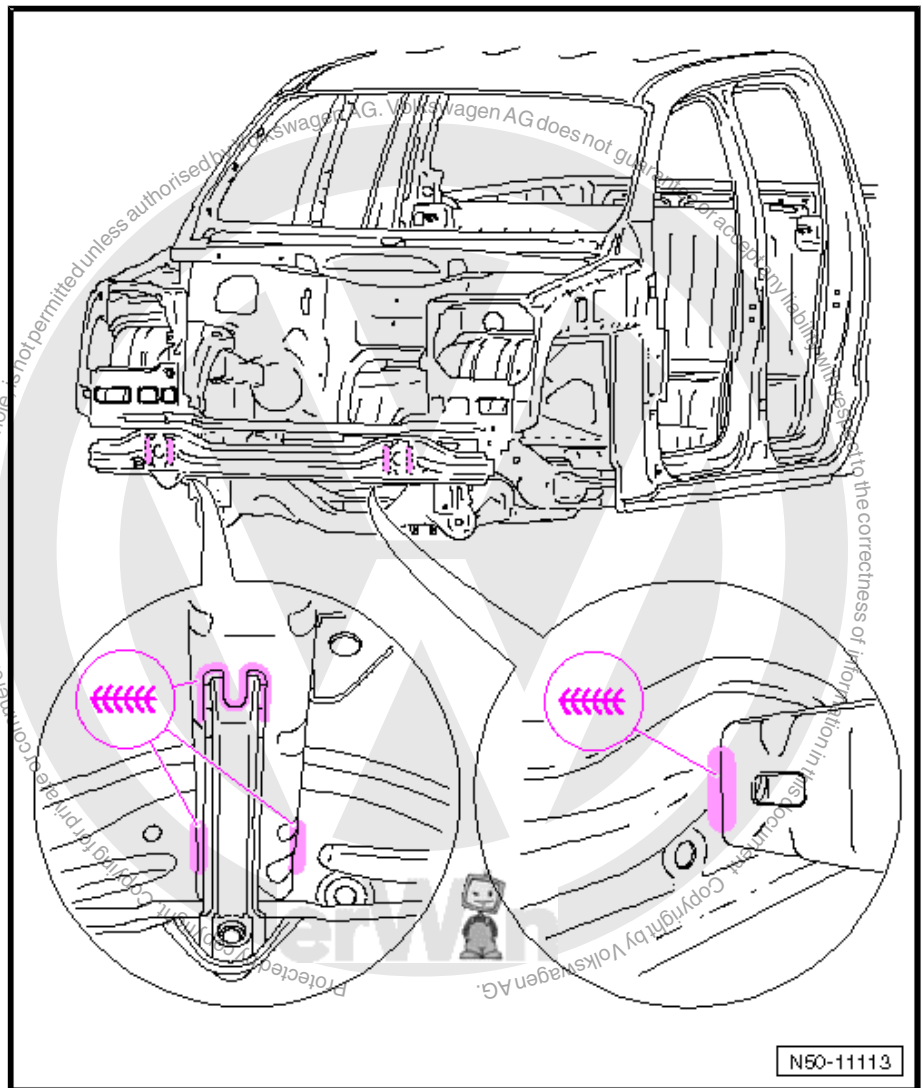
## 1.2.2 Welding in

Carry out the following work:



### Note

- ◆ It is no longer permissible to bolt the cross member support to the frame longitudinal member.
- ◆ If a cross member with bolted support was installed in the vehicle, the threaded connection in the frame longitudinal member must be closed with weld before installing the new cross member.
- ◆ Then the support must be welded to the frame longitudinal member, SG continuous weld seam.



- Adapt new part using alignment bracket set and fix in place.
- Weld in cross member, SG continuous weld seam.
- Weld in support, SG continuous weld seam.



RO: 50 34 55 10

## 2 Renewing deformation element



### WARNING

*Observe safety notes!*

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

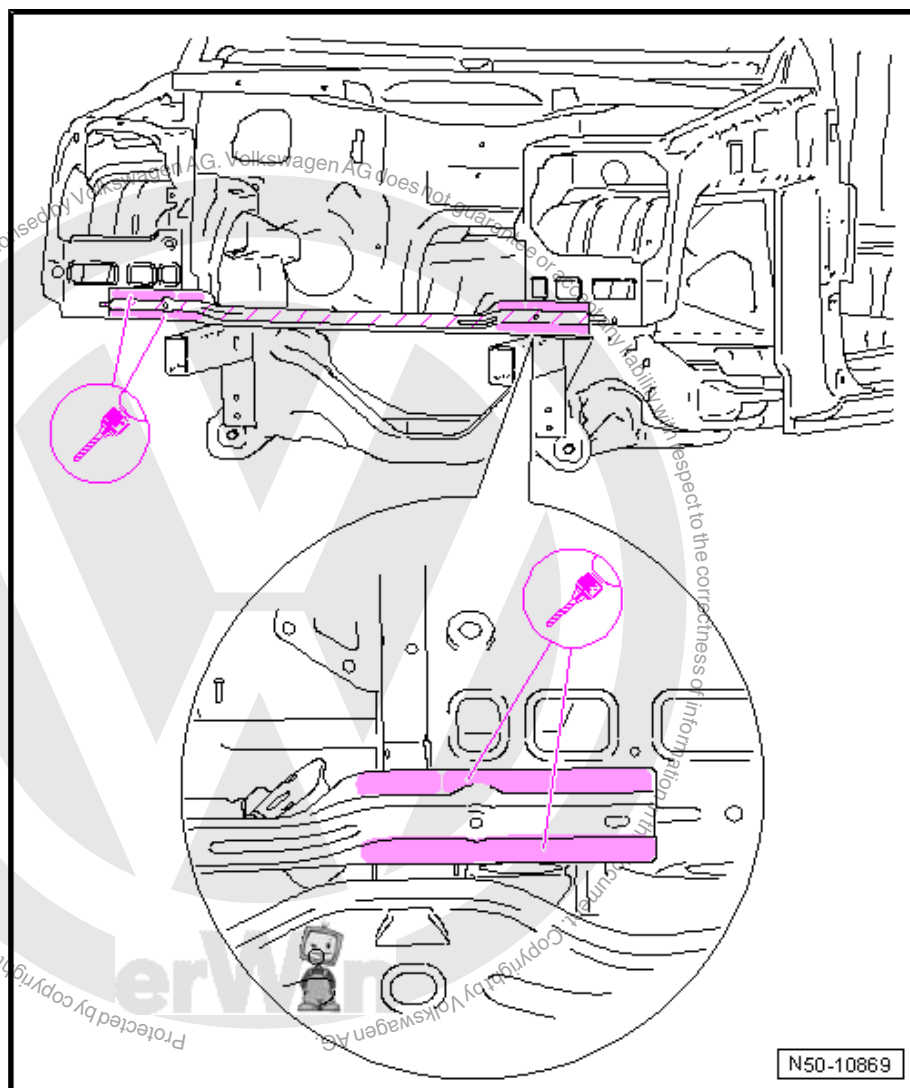
### 2.1 Tools

#### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Accessory pack -VAS 6535 /1-

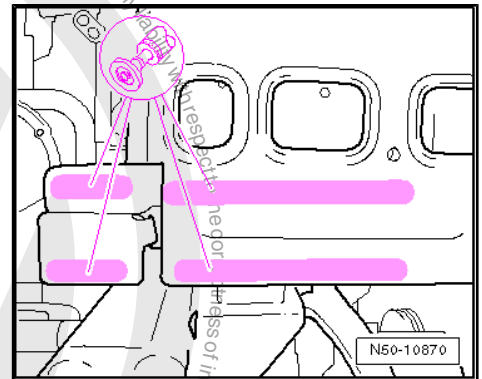
### 2.2 Removing

Carry out the following work:





- Separate original joint.
- Remove deformation element from body.
- Remove remaining material.
- Grind welding edges back to bare metal.



## 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 ⇒ „2.1 Tools“, page 46.*

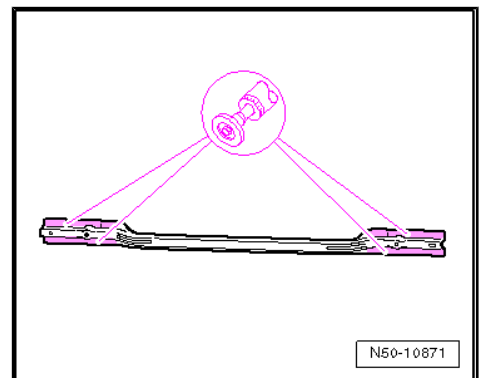
### 2.3.1 Preparing replacement part

#### Replacement part

- ◆ Deformation element

#### Carry out the following work:

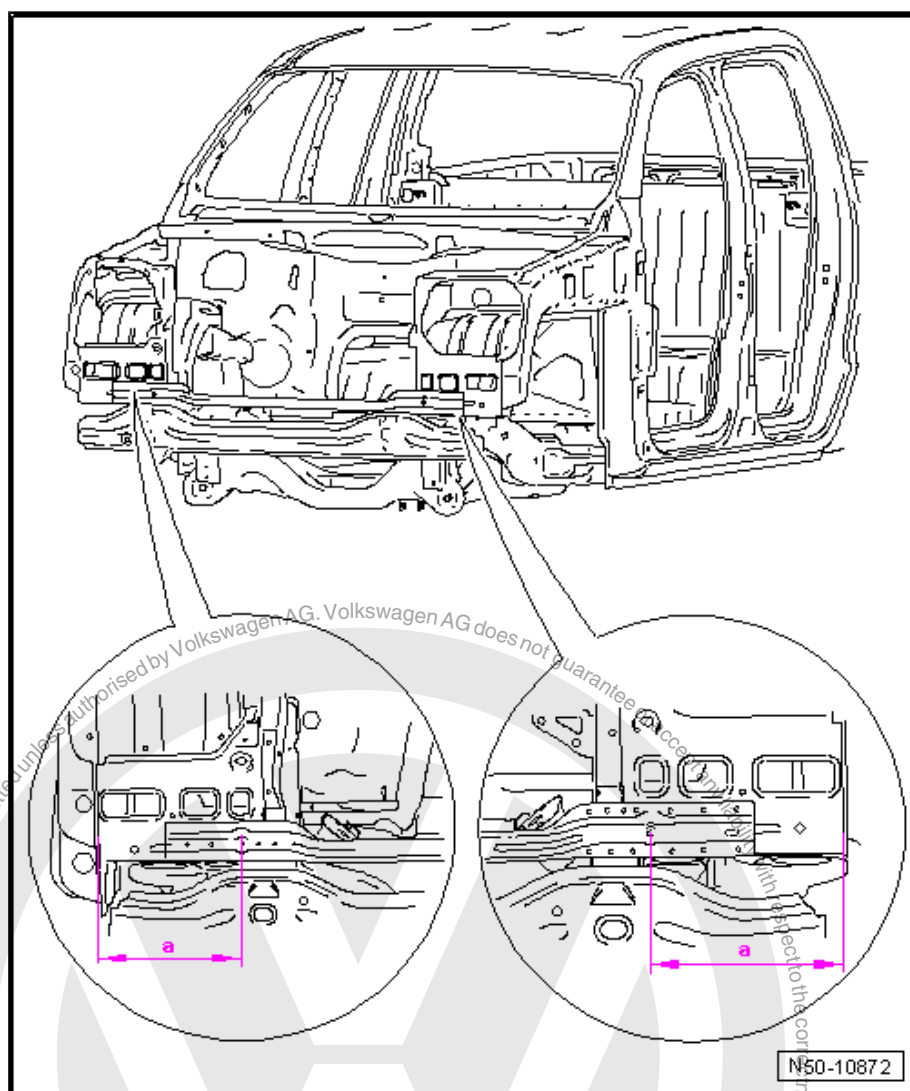
- Grind welding surfaces on both sides back to bare metal.





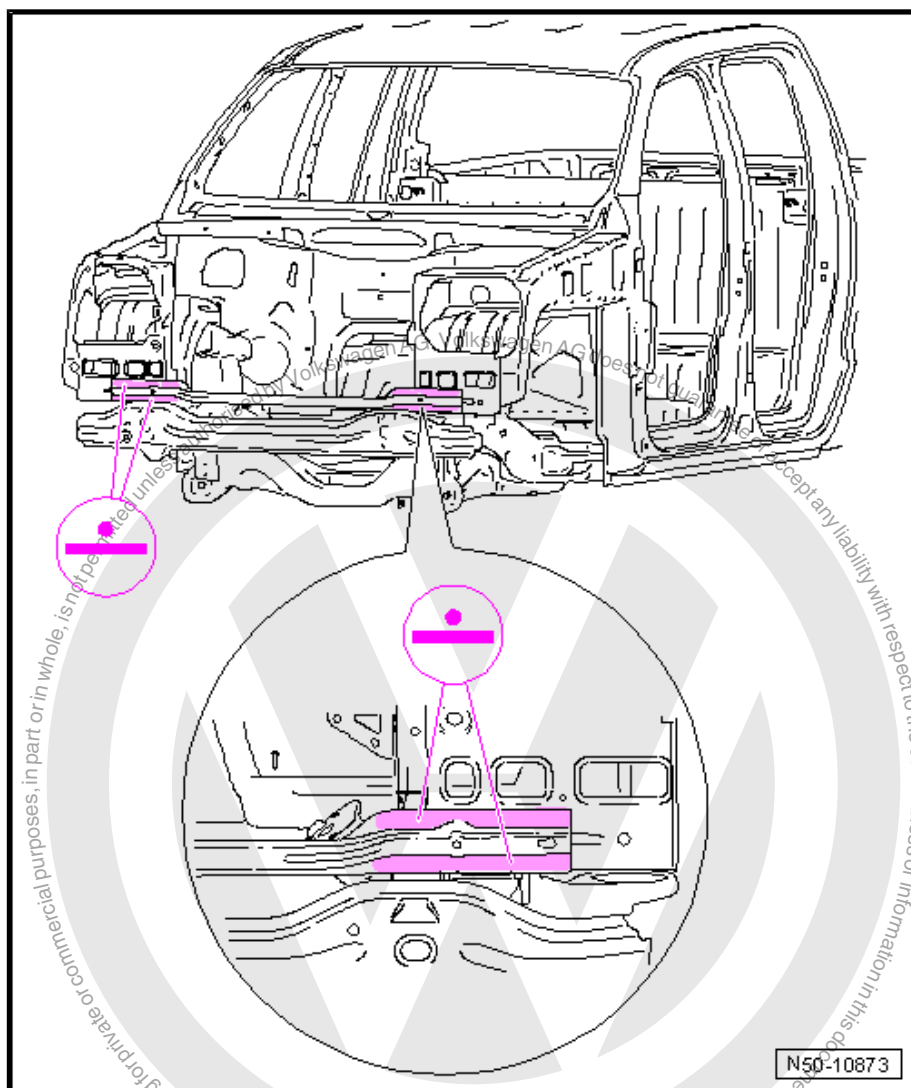
## 2.3.2 Welding in

Carry out the following work:



- Adapt new part on both sides according to -dimension a- and fix in place.

**Dimension a = 270 mm**



- Weld in deformation element, RP spot weld seam



RO: 50 60 55 00

### 3 Renewing headlight mounting



#### WARNING

*Observe safety notes!*

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

#### 3.1 Tools

##### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Accessory pack -VAS 6535 /1-

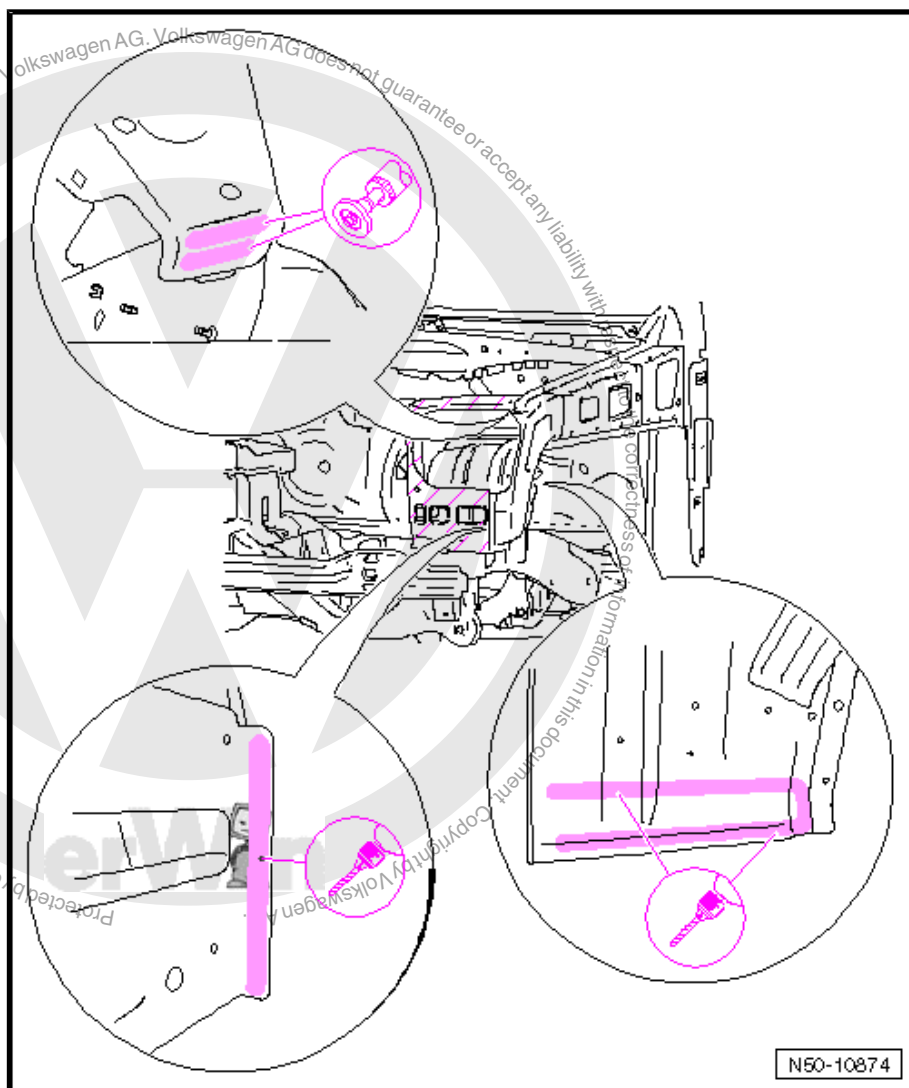
#### 3.2 Removing

- Deformation element already removed  
⇒ „2 Renewing deformation element“, page 46 .

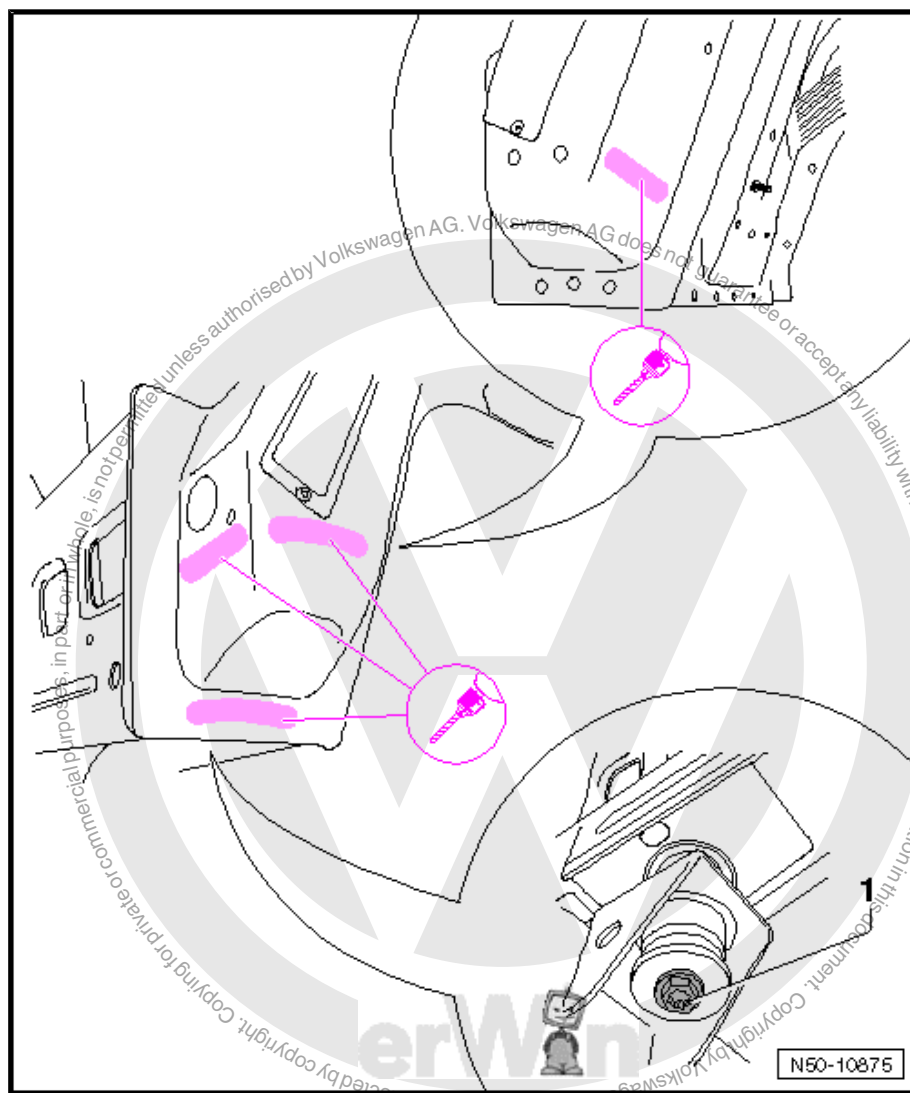
Carry out the following work:



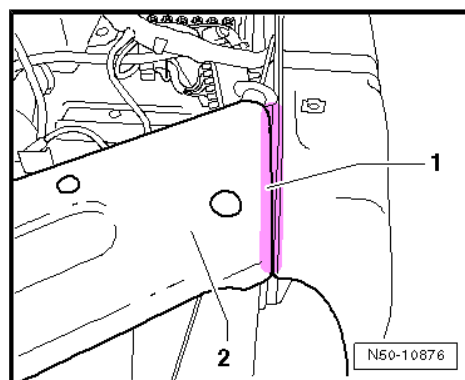


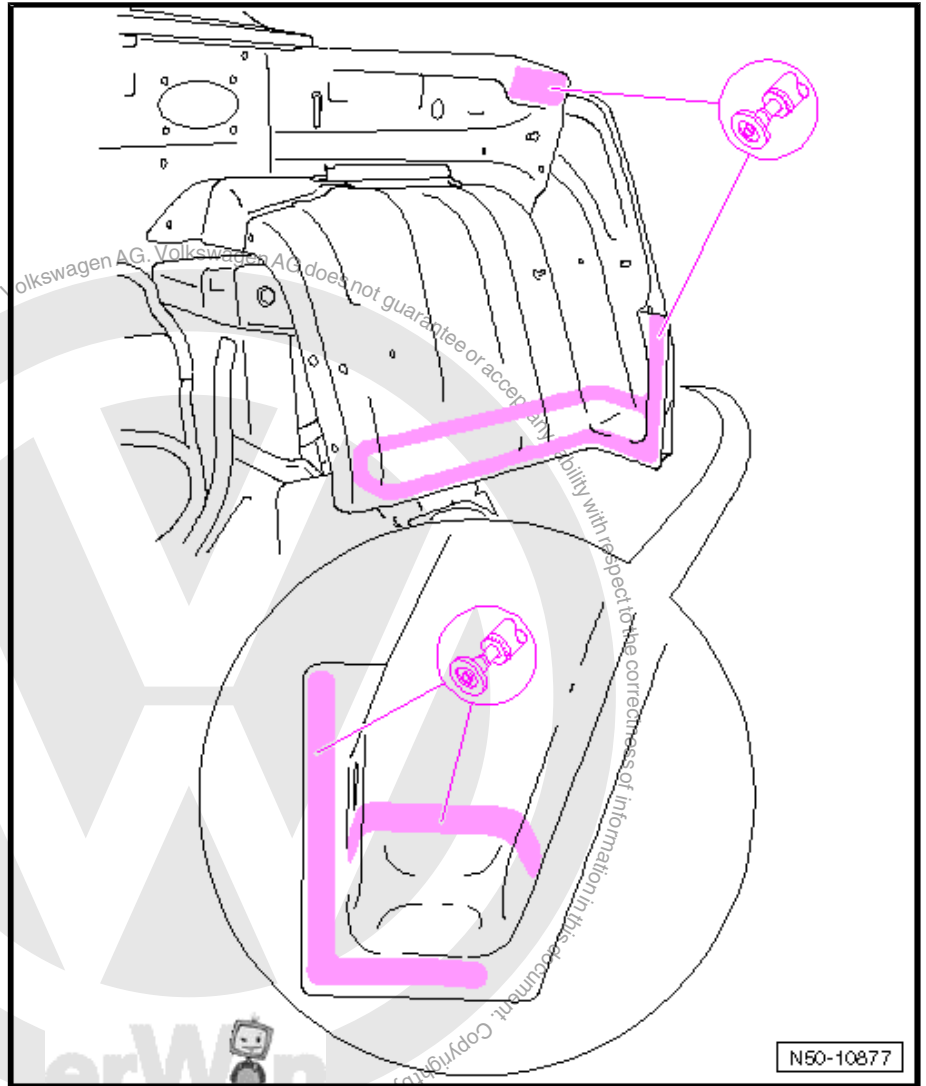


- Separate original joint.



- Unscrew bolt -1- for cab mounting.
- Separate original joint.
- Heat bonding surface -1- with hot air blower -V.A.G 1416- .
- Remove headlight mounting -2- from body.





- Remove remaining material.
- Grind bonding surface and welding surfaces on both sides back to bare metal.

### 3.3 Installing



#### Note

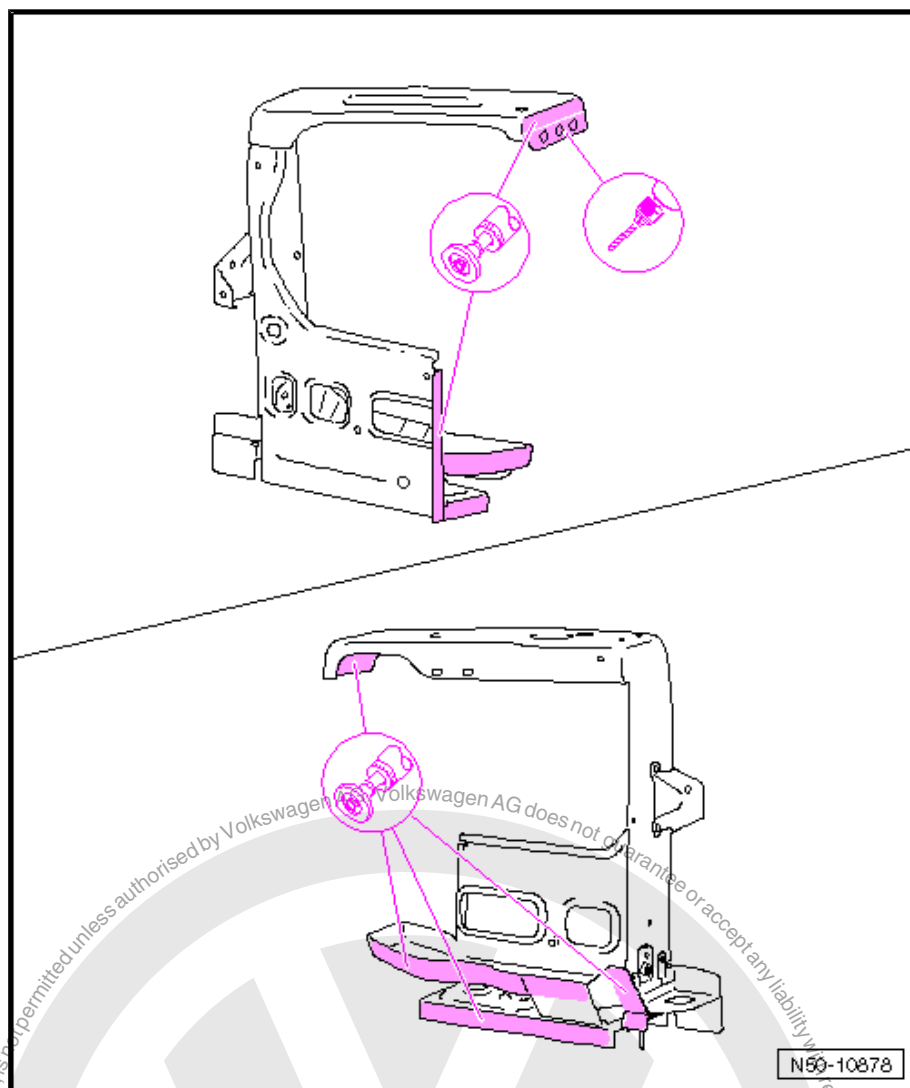
*The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ „3.1 Tools“, page 50.*

#### 3.3.1 Preparing replacement part

##### Replacement parts

- ◆ Headlight mounting
- ◆ Body adhesive 2K adhesive -D 180 KD3 A2-

Carry out the following work:



- Drill specified holes in new part,  $\varnothing$  7.0 mm.
- Grind welding surfaces on both sides back to bare metal.



### 3.3.2 Welding in

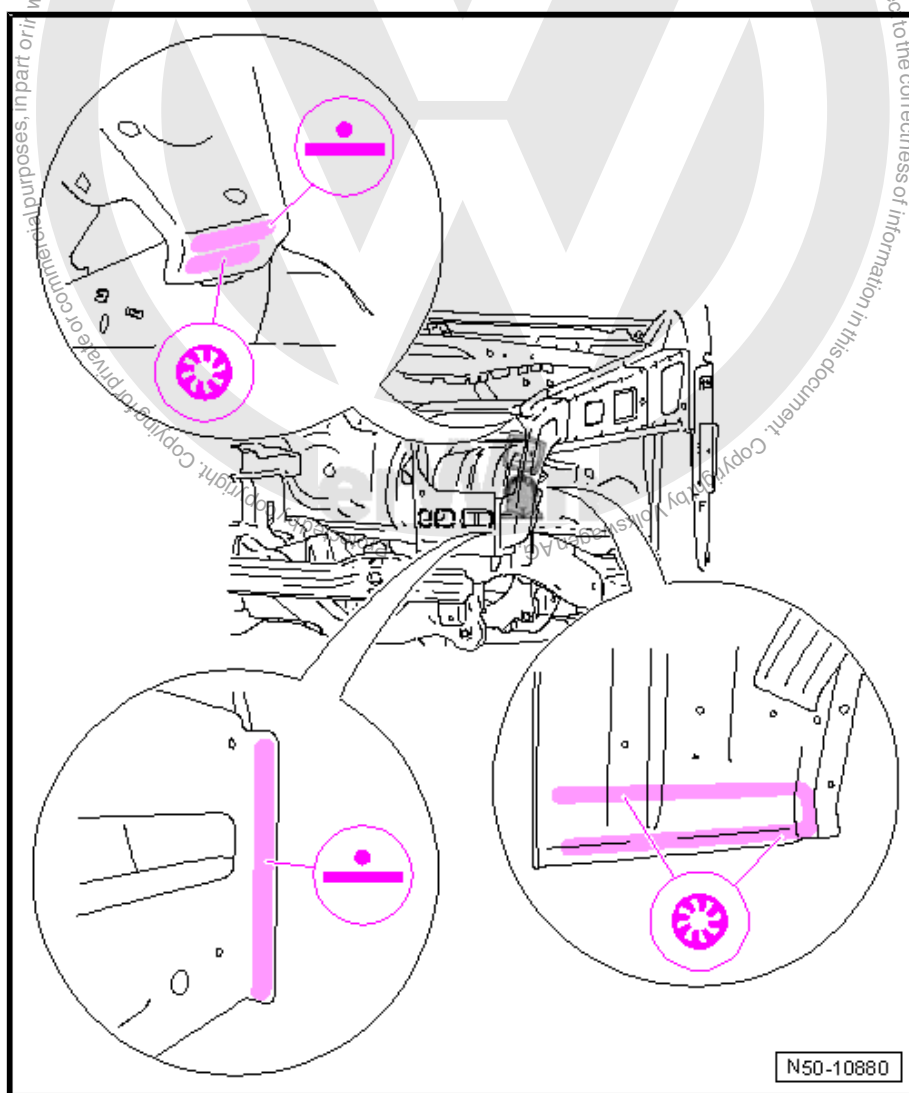
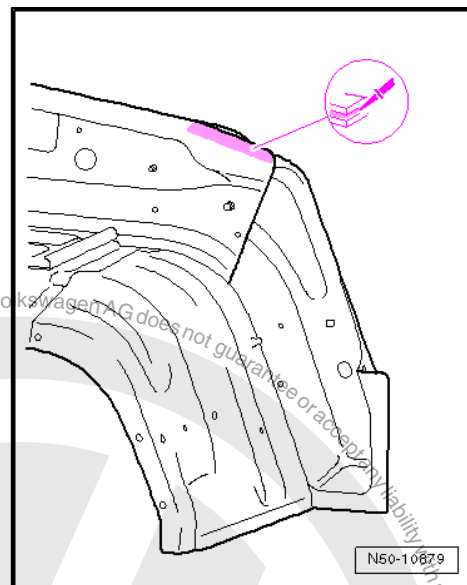
Carry out the following work:

- Apply body adhesive 2K adhesive -D 180 KD3 A2- to bonding surface.



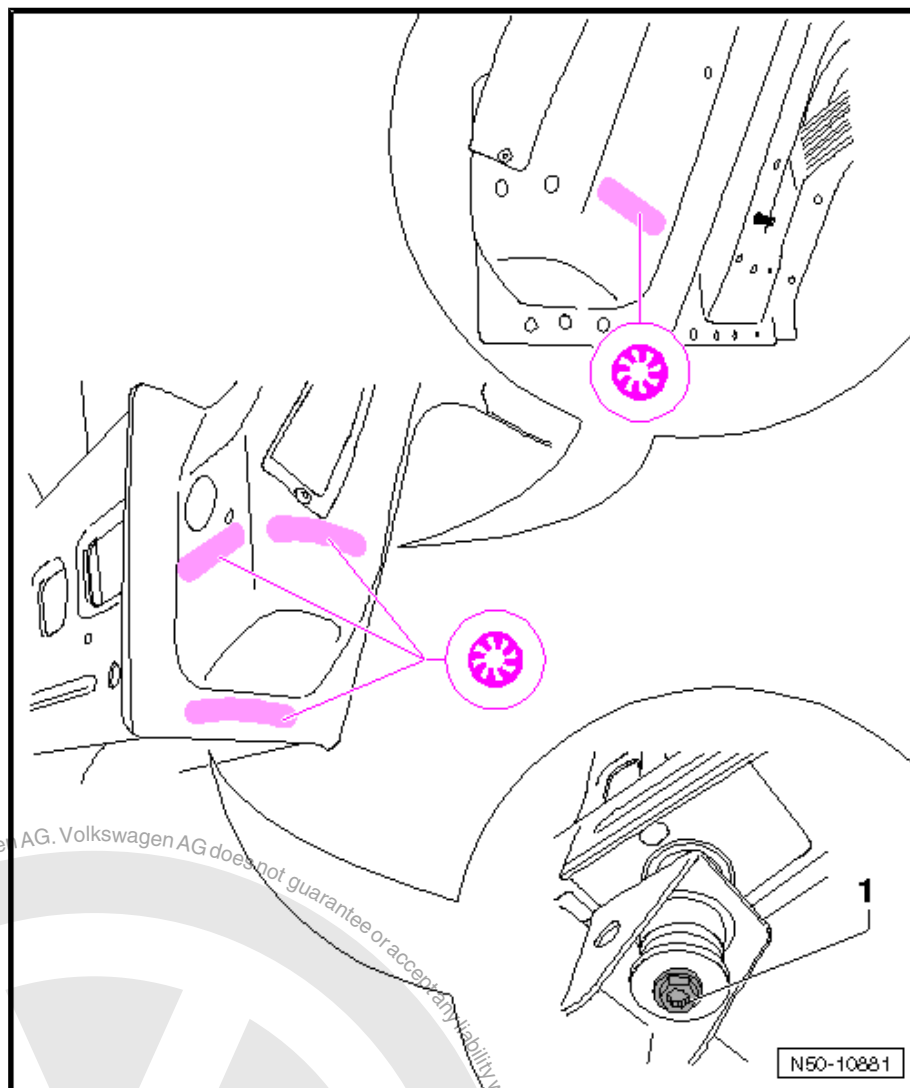
#### Note

- ◆ Apply adhesive bead sufficiently thickly so that optimal bonding with the body is guaranteed.
- ◆ New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.





- Adapt new part with vehicle standing on its wheels or on alignment bracket set and hold in position.
- Check fit with all add-on parts.
- Weld in headlight mounting, RP spot weld seam and SG plug weld seam.



- Install bolt -1- for cab mounting.
- Weld in headlight mounting, SG plug weld seam.
- Install deformation element ⇒ [„2.3 Installing“, page 47](#) .



RO: 50 53 55 00

## 4 Renewing wing connecting plate



### WARNING

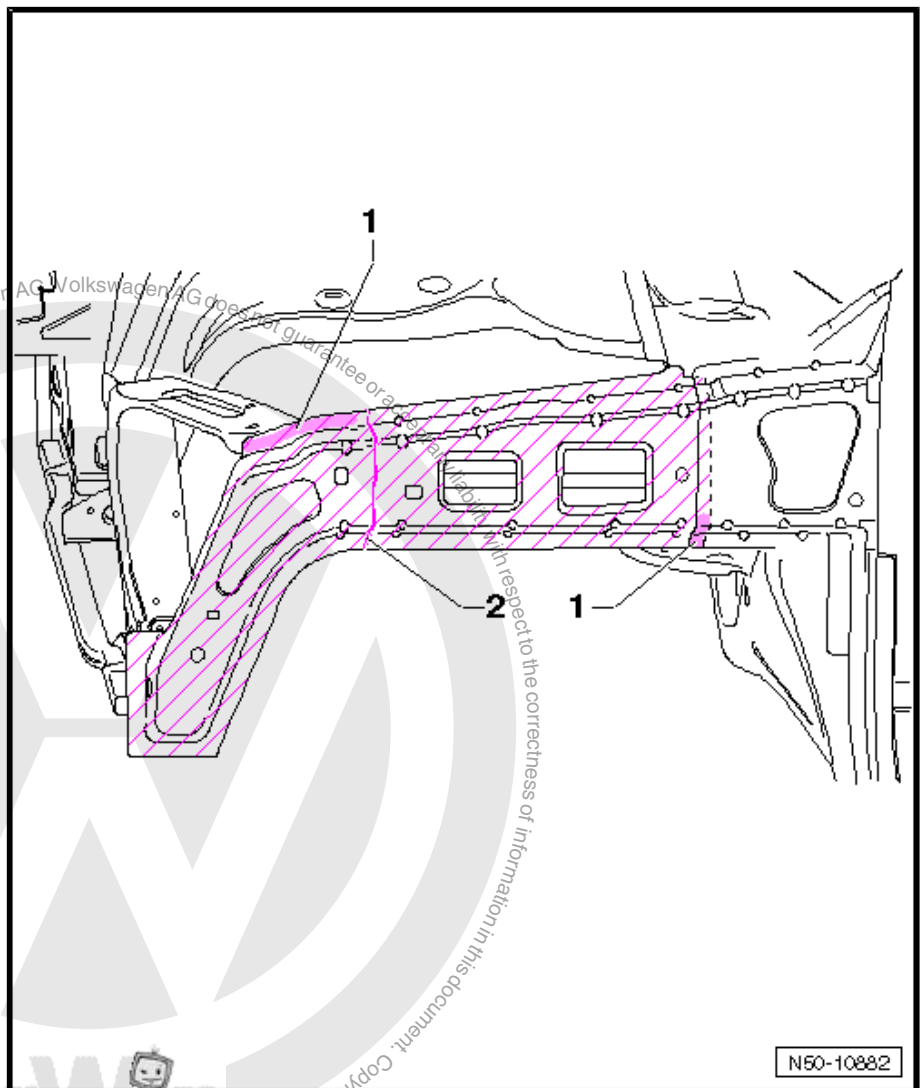
*Observe safety notes!*

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

#### 1 - Bonded areas

#### 2 - Cutting point

- ☐ The parting cut is permitted for other forms of damage.



### 4.1 Tools

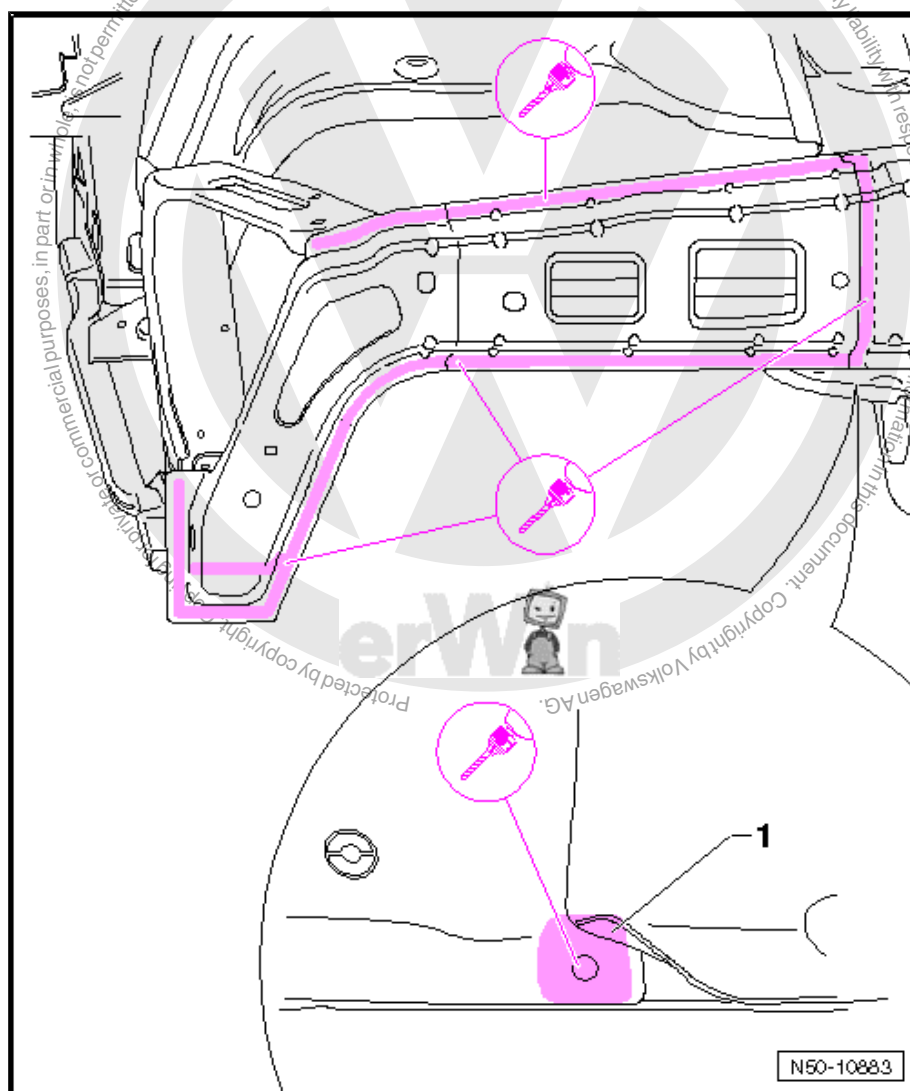
#### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Accessory pack -VAS 6535 /1-



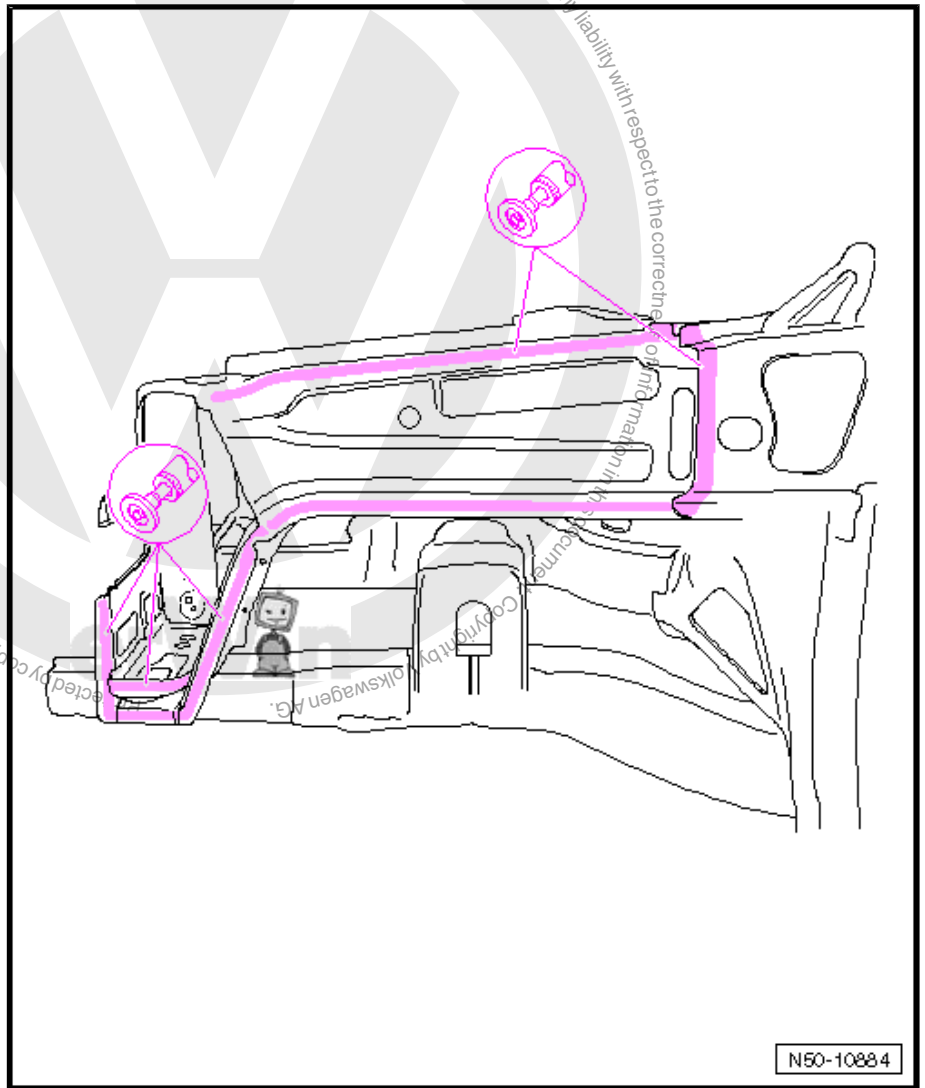
## 4.2 Removing

Carry out the following work:



- Bend up metal tab -1-.
- Separate original joint.
- Heat bonded areas with hot air blower -V.A.G 1416- .
- Remove wing connecting plate from body.





- Remove remaining material.
- Grind bonding surfaces and welding surfaces on both sides back to bare metal.

## 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 ⇒ „4.1 Tools“, page 57.*

### 4.3.1 Preparing replacement part

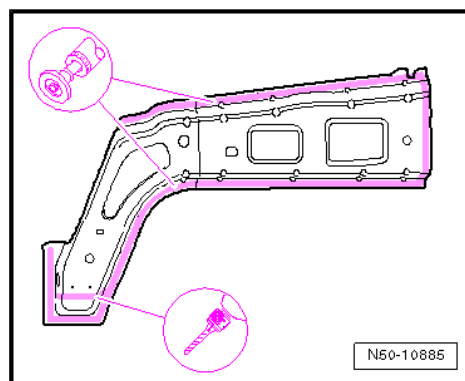
#### Replacement parts

- ◆ Wing connecting plate
- ◆ Body adhesive 2K adhesive -D 180 KD3 A2-



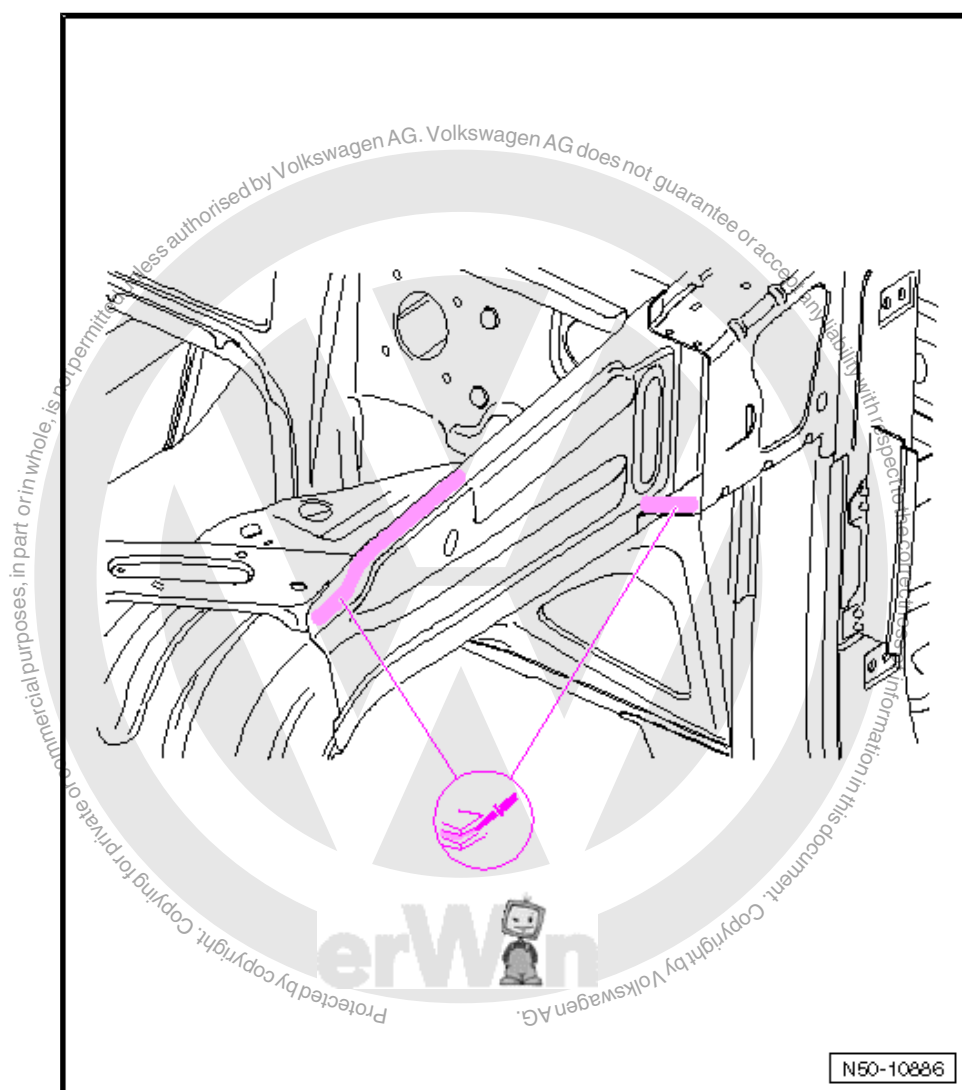
**Carry out the following work:**

- Drill specified holes in new part,  $\varnothing$  7.0 mm.
- Grind welding surfaces on both sides back to bare metal.



### 4.3.2 Welding in

**Carry out the following work:**

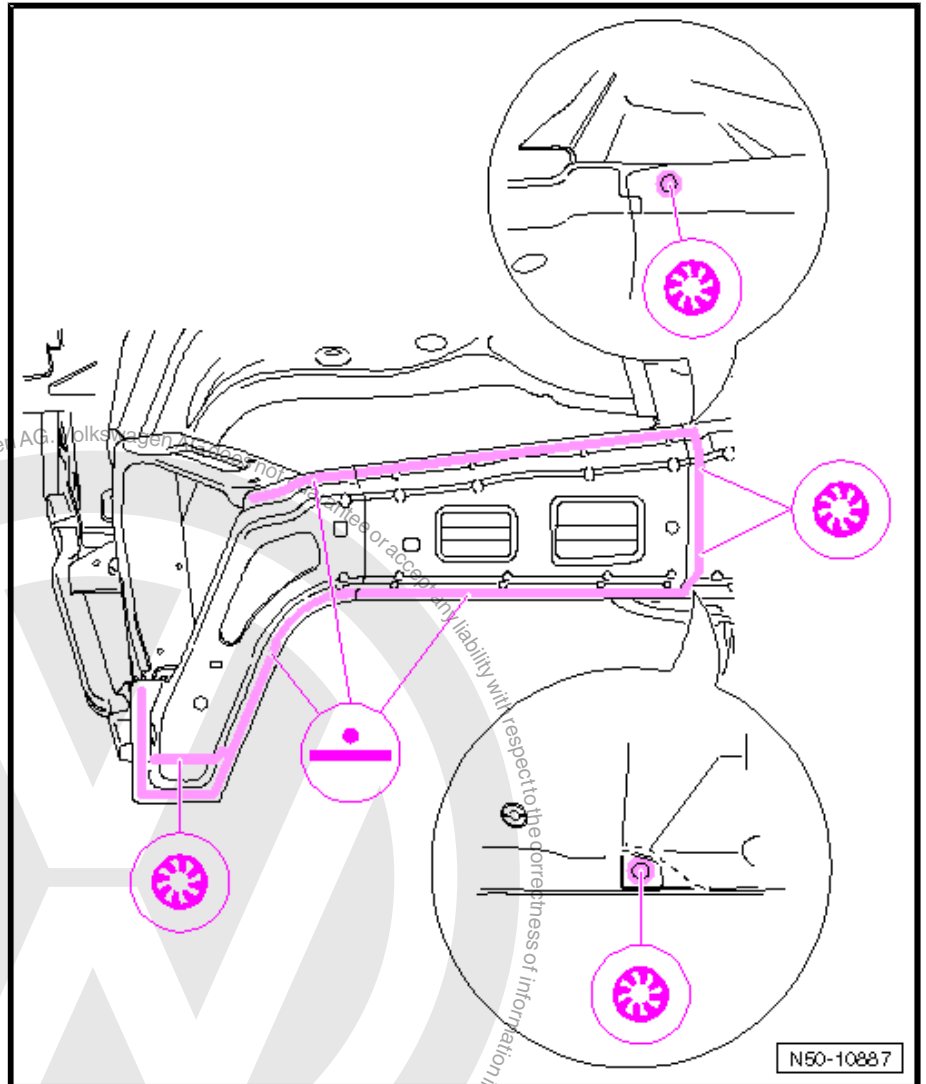


- Apply body adhesive 2K adhesive -D 180 KD3 A2- to bonding surface.



#### Note

- ◆ Apply adhesive bead sufficiently thickly so that optimal bonding with the body is guaranteed.
- ◆ New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.



- Adapt new part with vehicle standing on its wheels or on alignment bracket set and fix in position.
- Check fit with all add-on parts.
- Weld in wing connecting plate, RP spot weld seam and SG plug weld seam.
- Bend metal tab -1- back.



RO: 50 53 55 10

## 5 Renewing connection piece



### WARNING

**Observe safety notes!**

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

### 5.1 Tools

#### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Accessory pack -VAS 6535 /1-

### 5.2 Removing



#### Note

*Make parting cuts with pneumatic jig-saw -V.A.G 1523- only. Do not damage inner reinforcements.*

Amarok 2011 ▶  
 Body Repairs - Edition 10.2010

1

N50-10888

- 
- N50-10889



## 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 ⇒ „5.1 Tools“, page 62.*

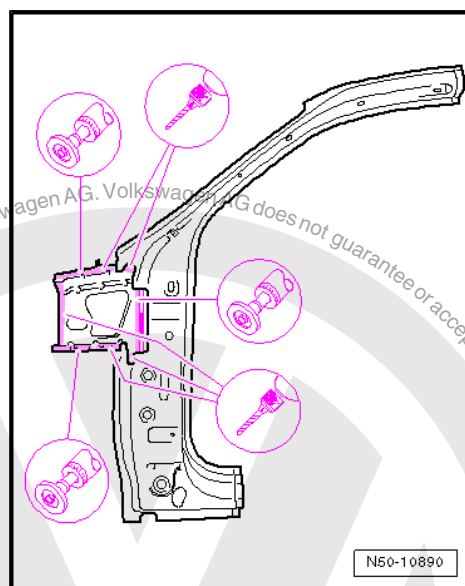
### 5.3.1 Preparing replacement part

#### Replacement parts

- ◆ A-pillar reinforcement
- ◆ Body adhesive 2K adhesive -D 180 KD3 A2-

#### Carry out the following work:

- Transfer dimension for parting cut from body and carry out.
- Drill out connection piece from A-pillar reinforcement.
- Punch specified holes in new part, Ø 7.0 mm.
- Grind bonding surface back to bare metal.
- Grind welding surfaces on both sides back to bare metal.



### 5.3.2 Welding in

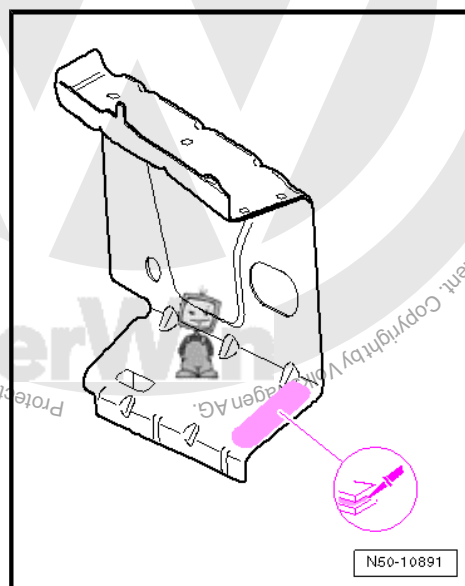
#### Carry out the following work:

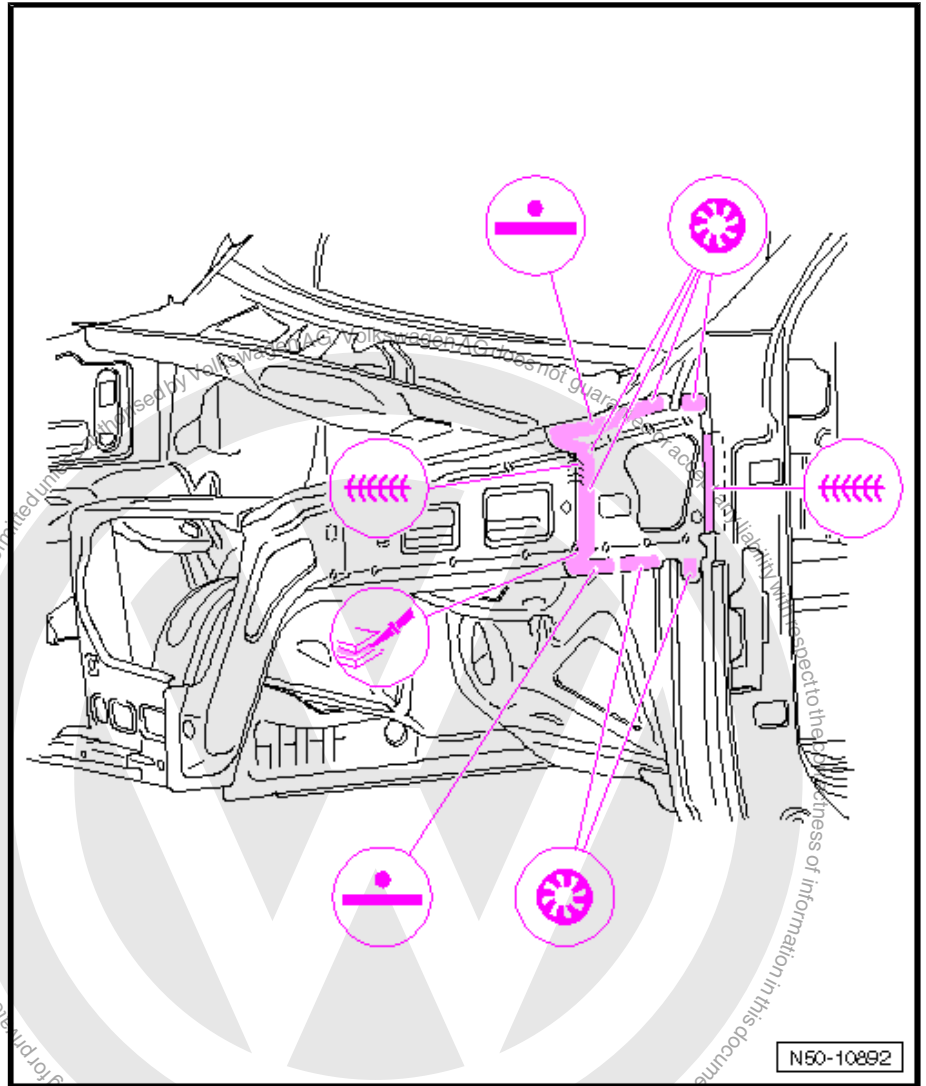
- Apply body adhesive 2K adhesive -D 180 KD3 A2- to bonding surface.



### Note

- ◆ *Apply adhesive bead sufficiently thickly so that optimal bonding with the body is guaranteed.*
- ◆ *New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.*





- Adapt new part with vehicle standing on its wheels or on alignment bracket set and fix in position.
- Check fit with bolt-on parts.
- Weld in connection piece, RP spot weld seam, SG plug weld seam and SG continuous weld seam.
- Seal cavity after welding work.



RO: 50 72 55 70

## 6 Renewing upper wheel housing longitudinal member



### WARNING

*Observe safety notes!*

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

### 6.1 Tools

#### Special tools and workshop equipment required

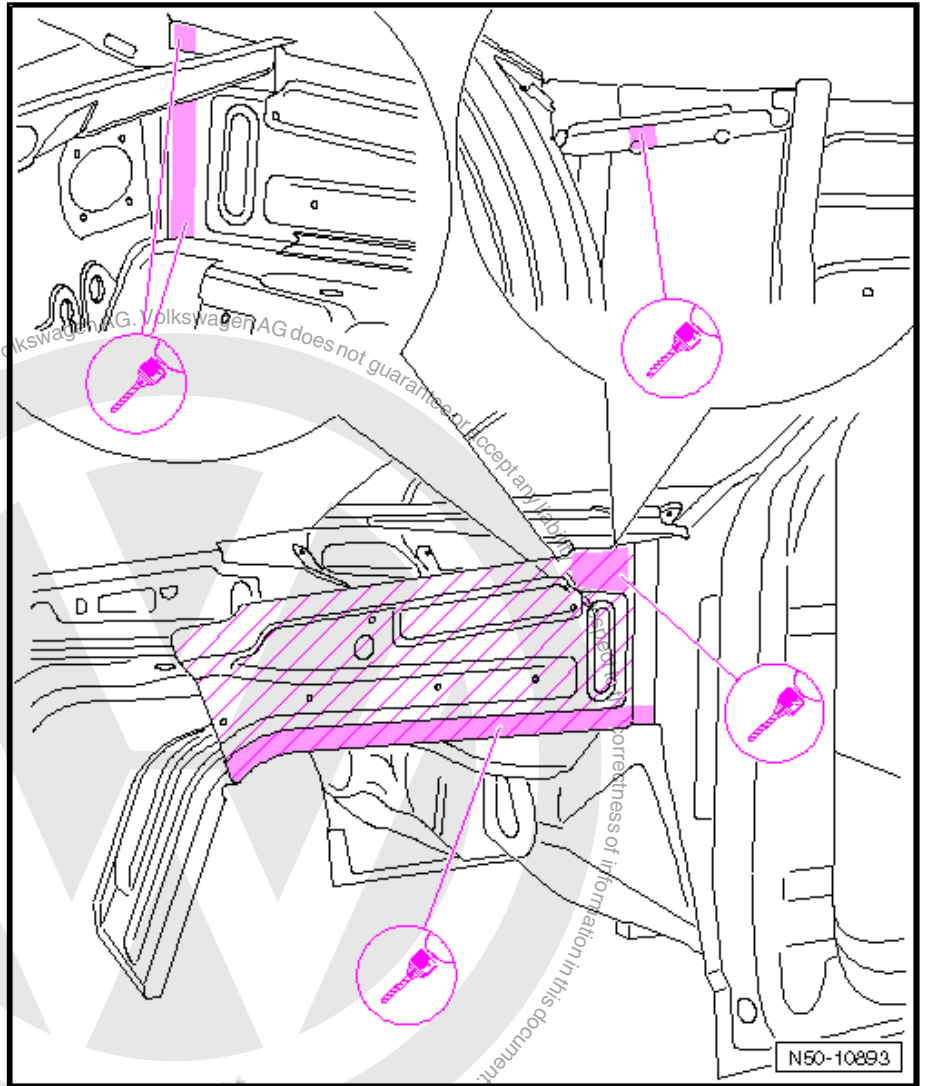
- ◆ Resistance spot welder -VAS 6239 A
- ◆ Resistance spot welder -VAS 6535-
- ◆ Accessory pack -VAS 6535 /1-

### 6.2 Removing

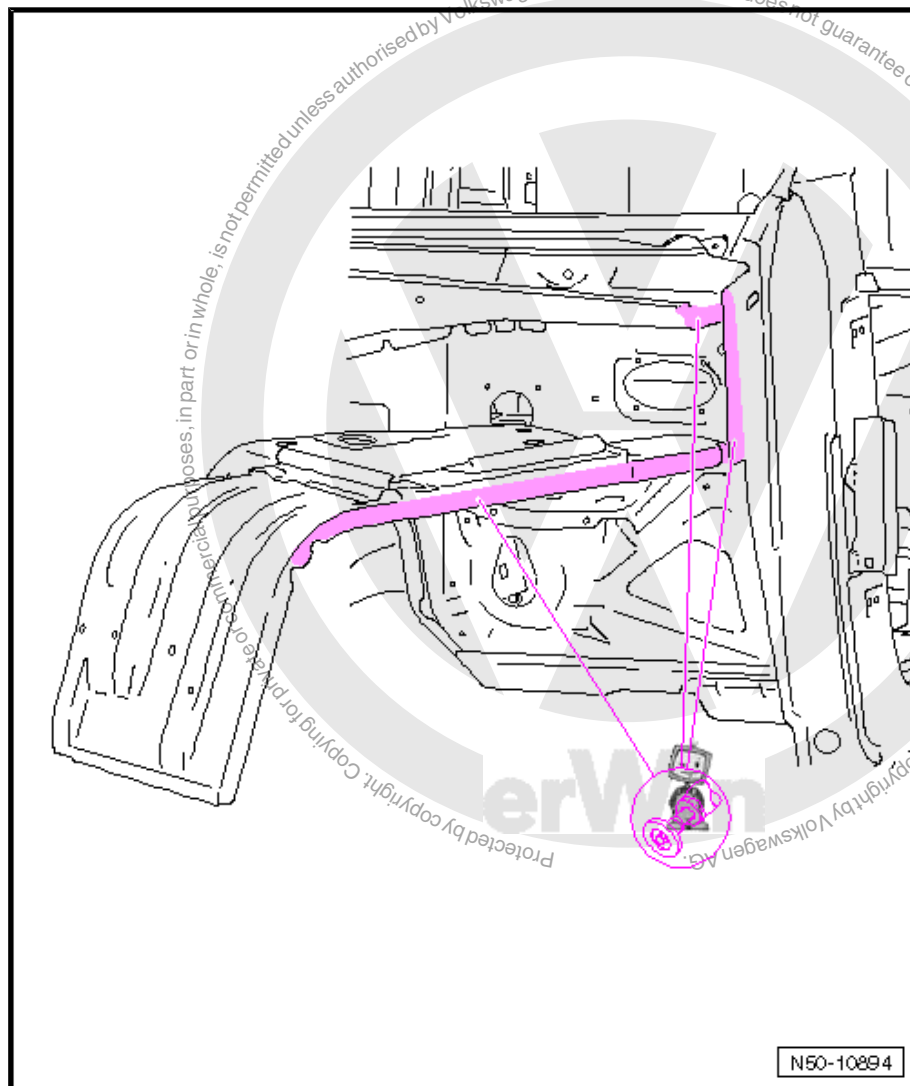
- Deformation element already removed  
⇒ [„2 Renewing deformation element“, page 46](#)
- Headlight mounting already removed  
⇒ [„3 Renewing headlight mounting“, page 50](#)
- Wing connecting plate already removed  
⇒ [„4 Renewing wing connecting plate“, page 57](#)
- Connection piece already removed  
⇒ [„5 Renewing connection piece“, page 62](#)

Carry out the following work:





- Separate original joint.
- Remove upper longitudinal member for wheel housing from body.



- Remove remaining material.
- Grind welding surfaces on both sides 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 ⇒ „6.1 Tools“, page 66 .*

### 6.3.1 Preparing replacement part

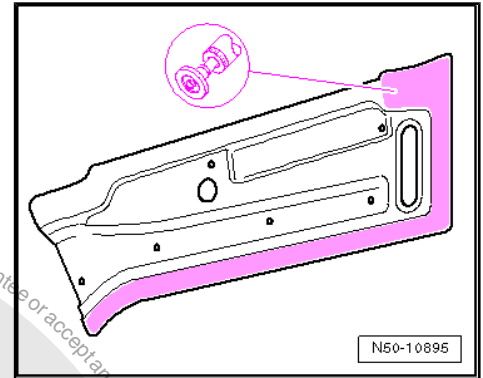
#### Replacement part

- ◆ Upper longitudinal member for wheel housing



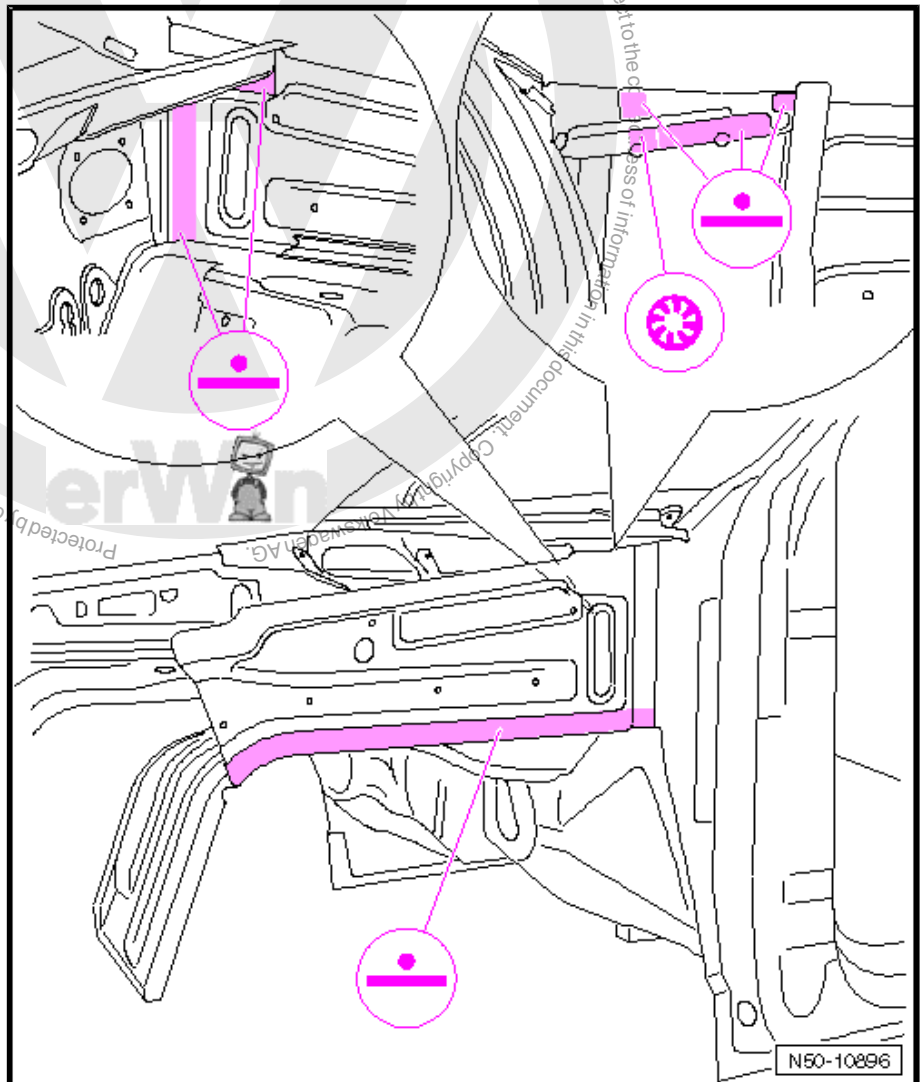
**Carry out the following work:**

- Grind welding surfaces on both sides back to bare metal.



### 6.3.2 Welding in

**Carry out the following work:**



- 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 upper longitudinal member for wheel housing, RP spot weld seam and SG plug weld seam.



- Install wing connecting plate ⇒ [„4.3 Installing“, page 59](#) .
- Install connection piece ⇒ [„5.3 Installing“, page 64](#) .
- Install headlight mounting ⇒ [„3.3 Installing“, page 53](#) .
- Install deformation element ⇒ [„2.3 Installing“, page 47](#) .





RQ: 50 74 55 00

## 7 Renewing front wheel housing



### WARNING

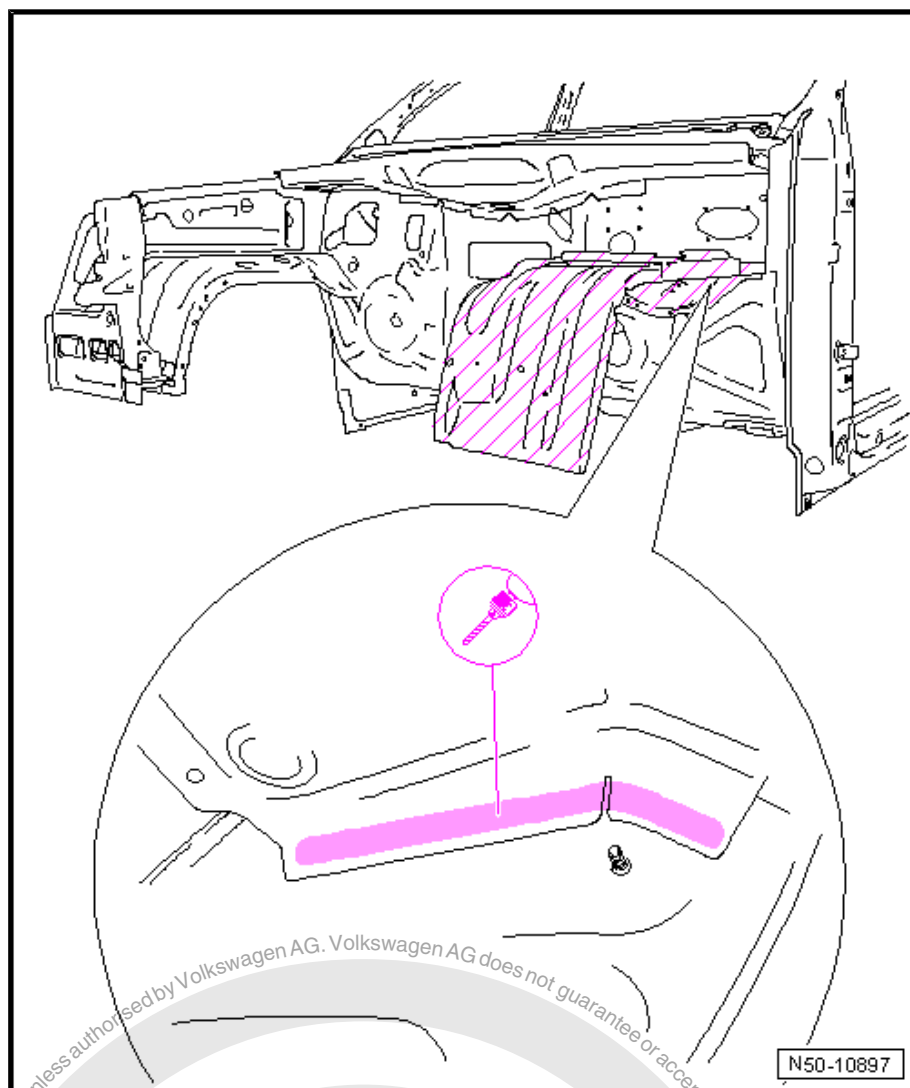
*Observe safety notes!*

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

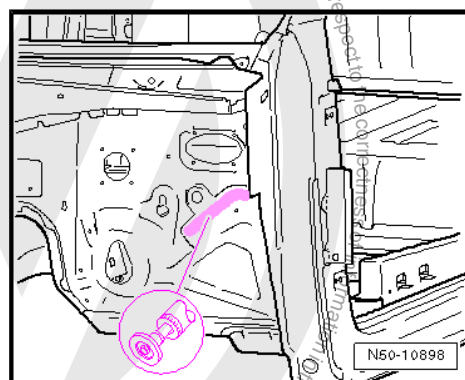
### 7.1 Removing

- Deformation element already removed  
⇒ „2 Renewing deformation element“, page 46
- Headlight mounting already removed  
⇒ „3 Renewing headlight mounting“, page 50
- Wing connecting plate already removed  
⇒ „4 Renewing wing connecting plate“, page 57
- Connection piece already removed  
⇒ „5 Renewing connection piece“, page 62
- Upper longitudinal member for wheel housing already removed  
⇒ „6 Renewing upper wheel housing longitudinal member“, page 66 .

Carry out the following work:



- Separate original joint.
- Remove front wheel housing from body.
- Remove remaining material.
- Grind welding surface on both sides back to bare metal.



## 7.2 Installing

### 7.2.1 Preparing replacement part

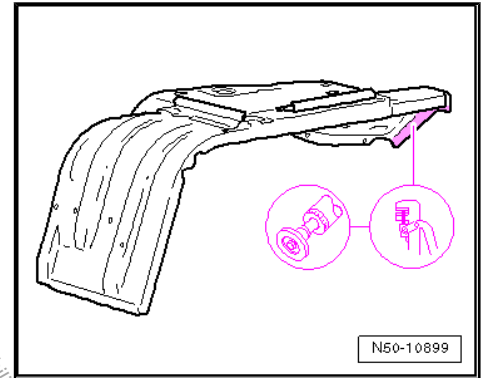
#### Replacement part

- ◆ Front wheel housing



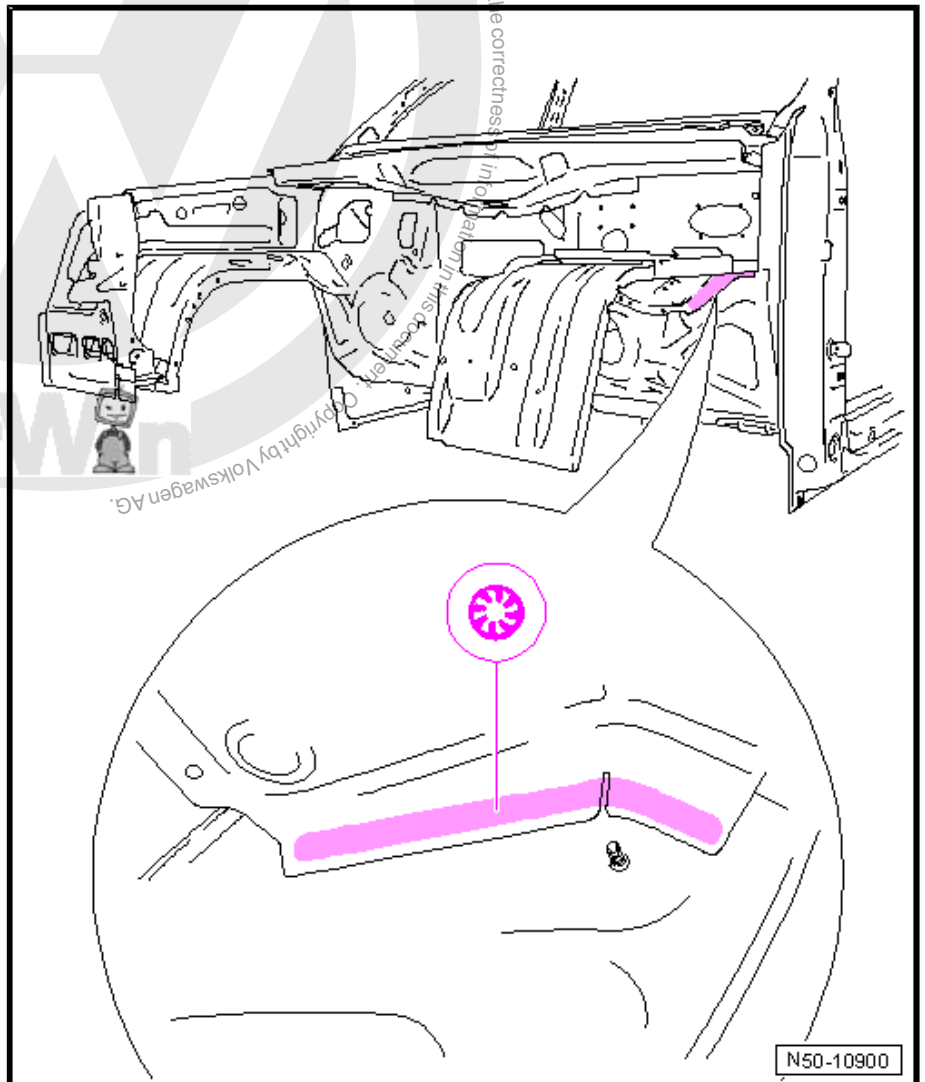
**Carry out the following work:**

- Punch holes in new part,  $\varnothing$  7.0 mm.
- Grind welding surface on both sides back to bare metal.



## 7.2.2 Welding in

**Carry out the following work:**



- 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 front wheel housing, SG plug weld seam.



- Install upper longitudinal member for wheel housing  
⇒ „6.3 Installing“, page 68 .
- Install wing connecting plate ⇒ „4.3 Installing“, page 59 .
- Install connection piece ⇒ „5.3 Installing“, page 64 .
- Install headlight mounting ⇒ „3.3 Installing“, page 53 .
- Install deformation element ⇒ „2.3 Installing“, page 47 .







RO: 50 80 55 00

## 8 Renewing front part of longitudinal member - part section 1-



### WARNING

*Observe safety notes!*

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

### 8.1 Removing

- Cross member already removed  
⇒ „1 Renewing cross member“, page 41 .

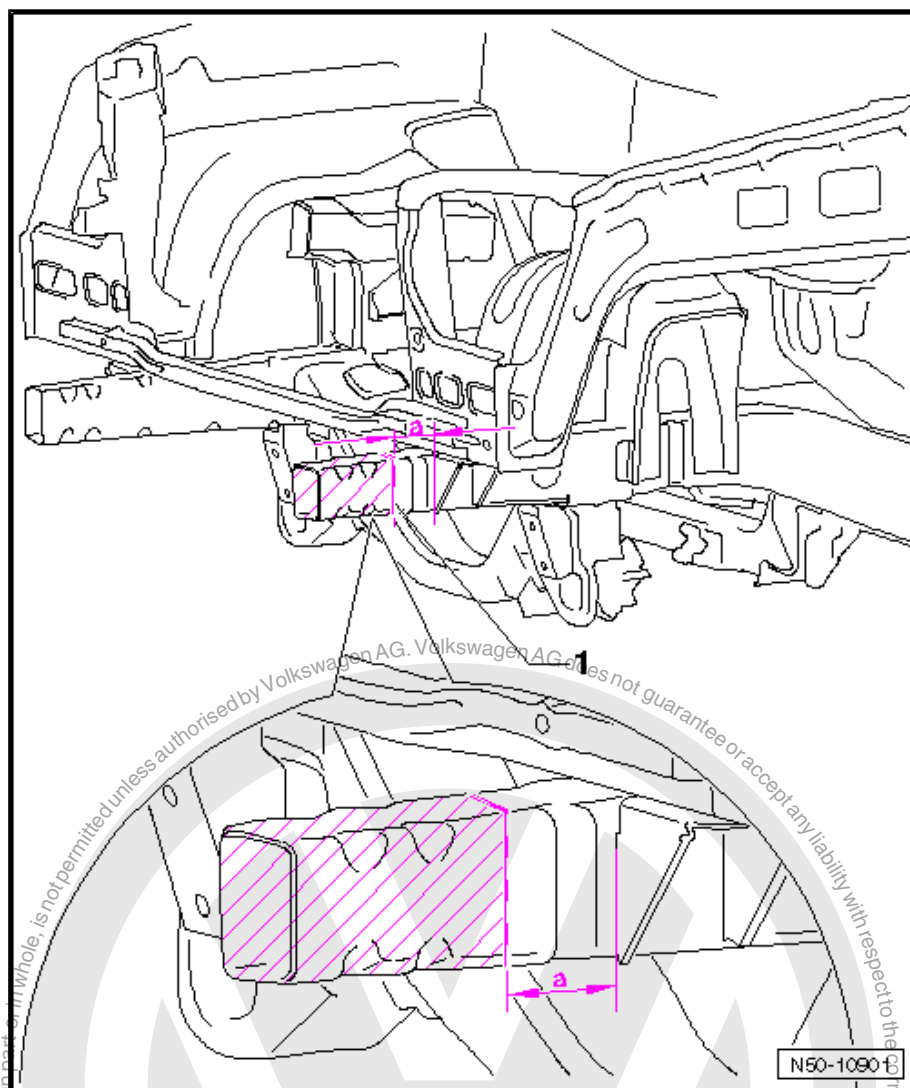


### Note

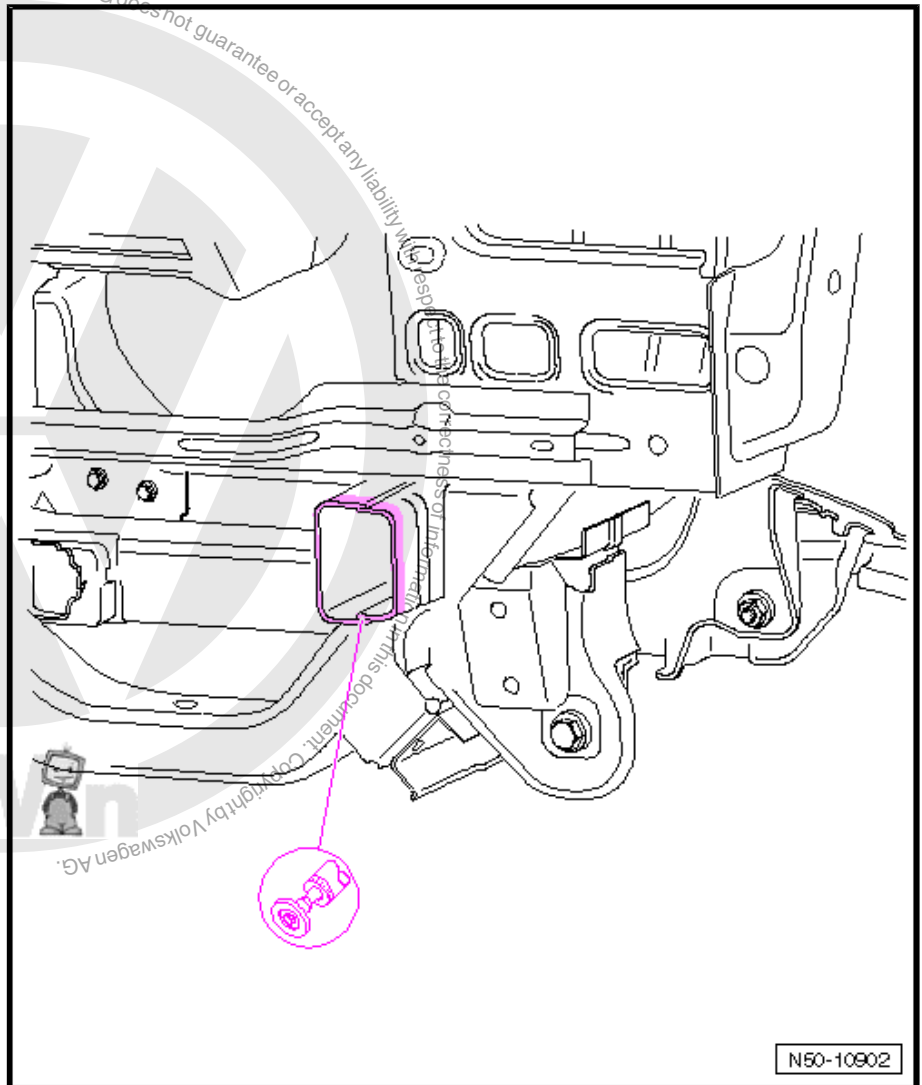
*Parting cut must be straight.*

Carry out the following work:





- Carry out parting cut -1- as per -dimension a-.
- Dimension a = 60 mm from mounting bracket**
- Remove front section of longitudinal member.



- Remove remaining material.
- Grind welding surface back to bare metal.

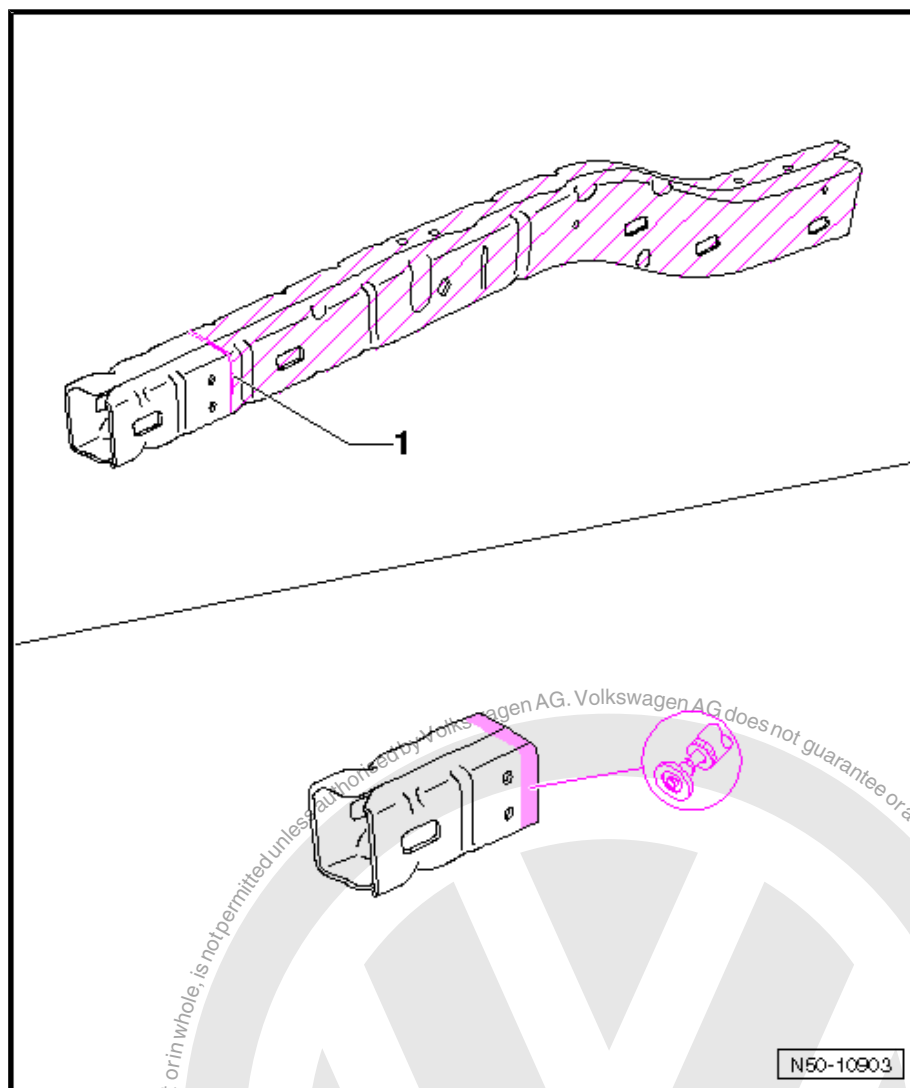
## 8.2 Installing

### 8.2.1 Preparing replacement part

#### Replacement part

- ◆ Front longitudinal member complete

Carry out the following work:

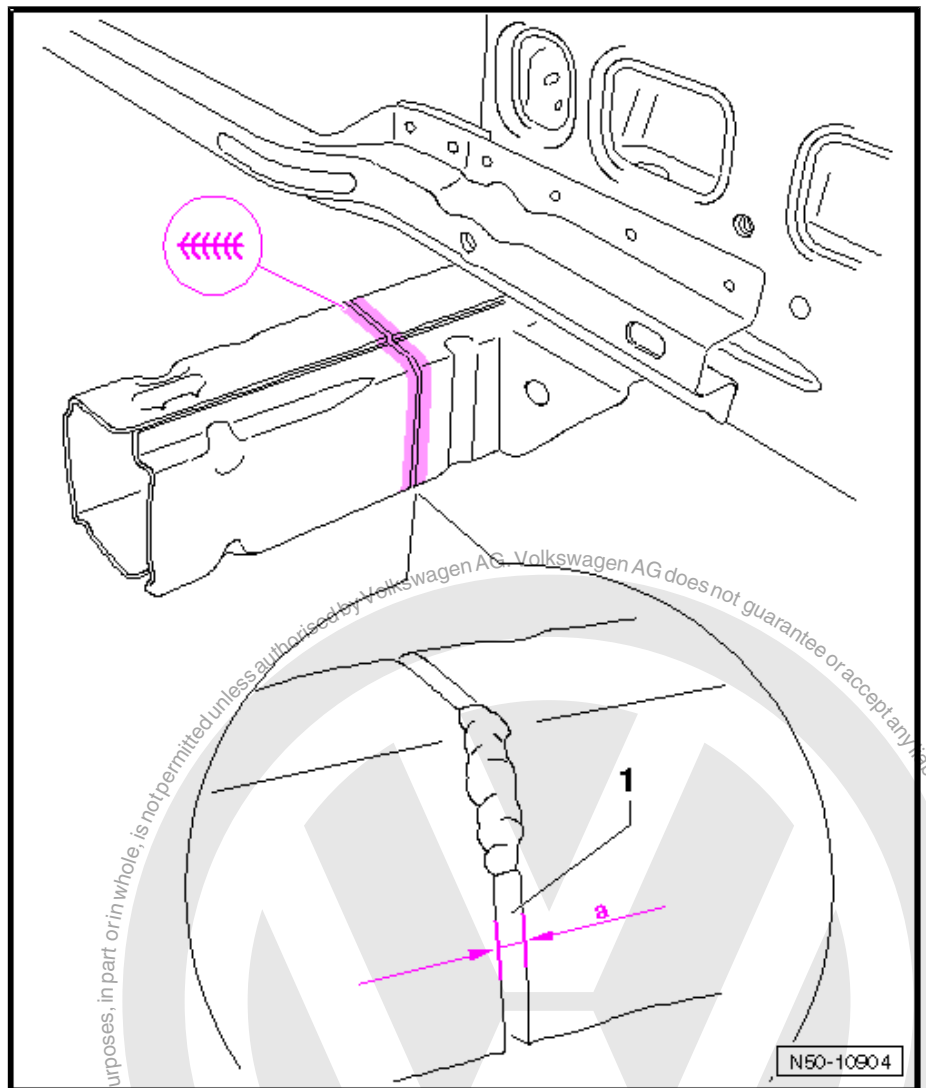


- Transfer parting cut -1- from body to new part.
- Make parting cut -1-.
- Grind welding surface back to bare metal.



## 8.2.2 Welding in

Carry out the following work:



- Adapt new part to vehicle standing on alignment bracket set and fix in place.
- Check fit with adjacent parts.
- Weld parting cut all round in front section of longitudinal member -1- adhering to -air gap dimension a-, SG continuous weld seam.

Dimension a = 3.5 mm + 0.5 mm



### Note

- ◆ Adherence to -air gap dimension a- is vital to guarantee proper through-welding.
- ◆ Before welding longitudinal member, check welder settings; weld several „test seams“ and check roots of „test weld seams“ (correct welding parameters if necessary).
- ◆ SG continuous weld seam must not be reworked (ground or smoothed)!
- Carry out cavity preservation on front longitudinal member.



- Install front cross member ⇒ [„1.2 Installing“, page 43](#) .





RO: 50 79 55 02

## 9 Renewing longitudinal member - part section 2-



### WARNING

*Observe safety notes!*

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

### 9.1 Removing

- Cross member already removed  
⇒ „1 Renewing cross member“, page 41 .

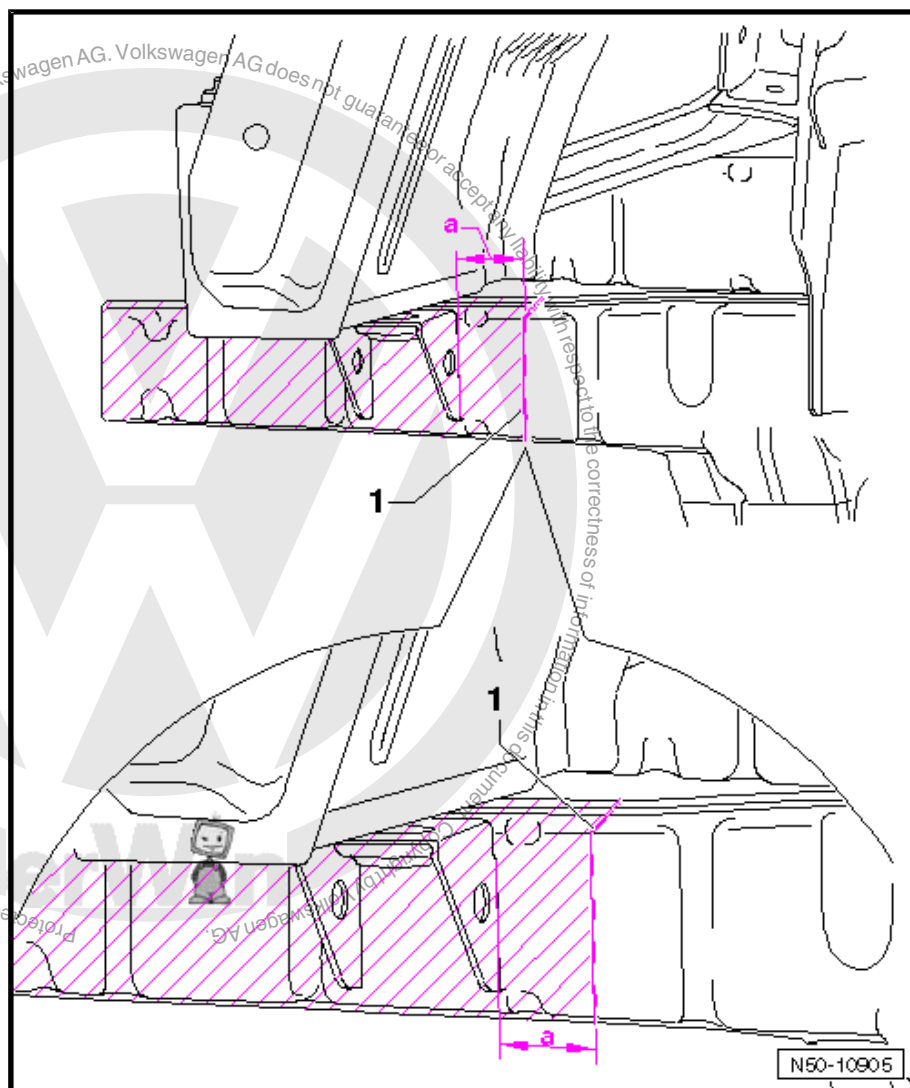


### Note

*Parting cut must be straight.*

Carry out the following work:



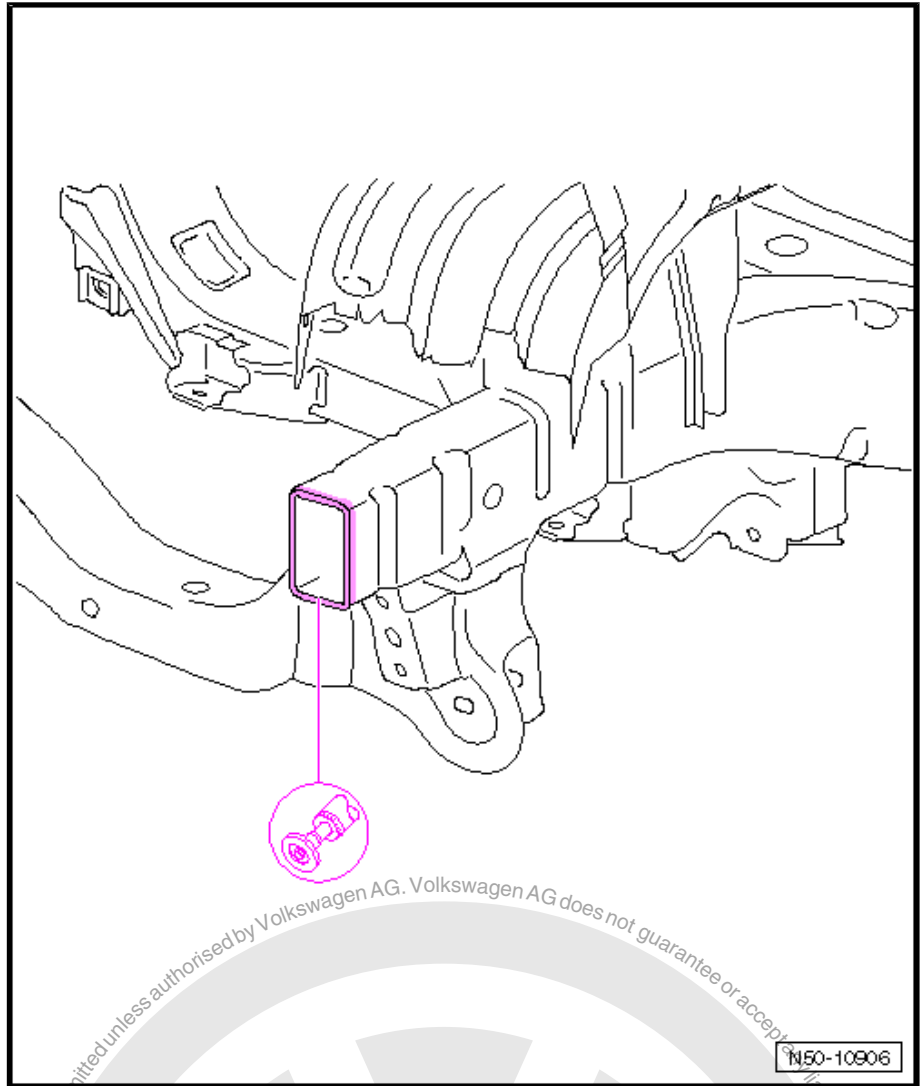


- Carry out parting cut -1- as per -dimension a-.

**Dimension a = 60 mm from mounting bracket**

- Remove longitudinal member.





- Remove remaining material.
- Grind welding surface back to bare metal.

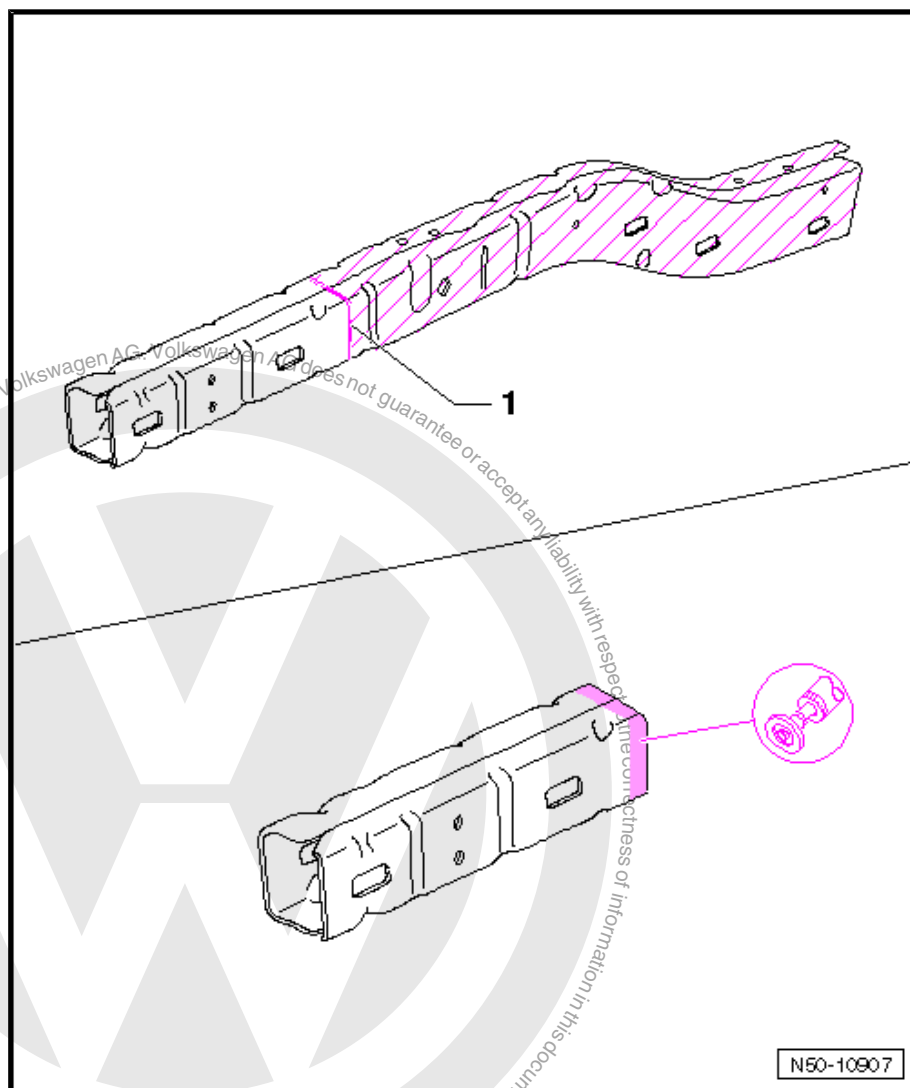
## 9.2 Installing

### 9.2.1 Preparing replacement part

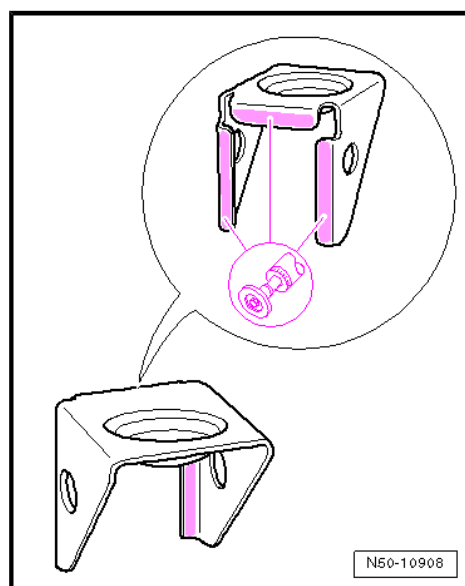
#### Replacement parts

- ◆ Front longitudinal member complete
- ◆ Mounting bracket for front for cab mounting

Carry out the following work:



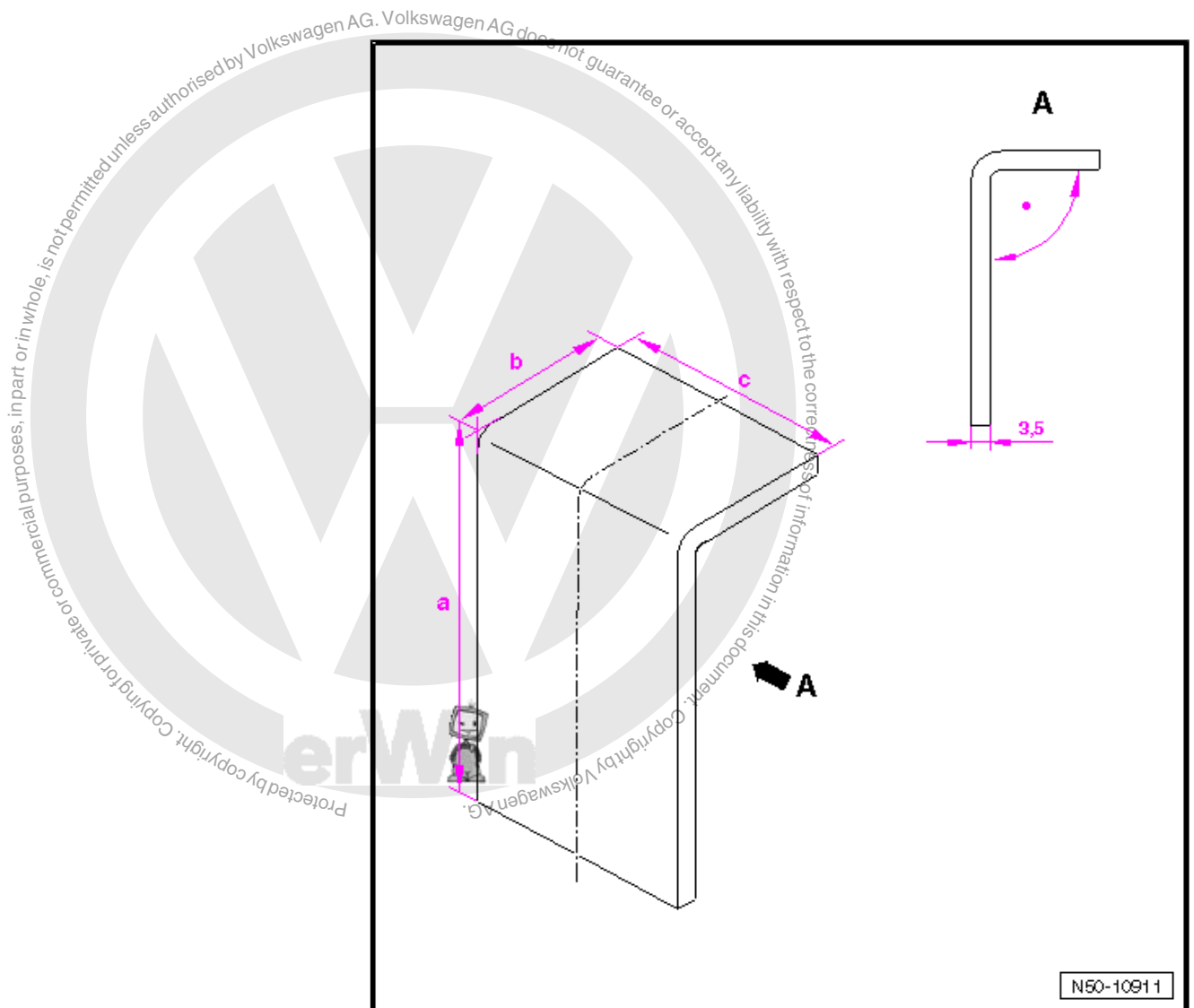
- Transfer parting cut -1- from body to new part.
- Make parting cut -1-.
- Grind welding surface back to bare metal.
- Grind welding edges of mounting bracket back to bare metal.





## 9.2.2 Producing longitudinal member reinforcement

Carry out the following work:



- Using in-house material, produce longitudinal member reinforcement according to deviations -a-, -b- and -c-.

**Dimension a = 90 mm**

**Dimension b = 40 mm**

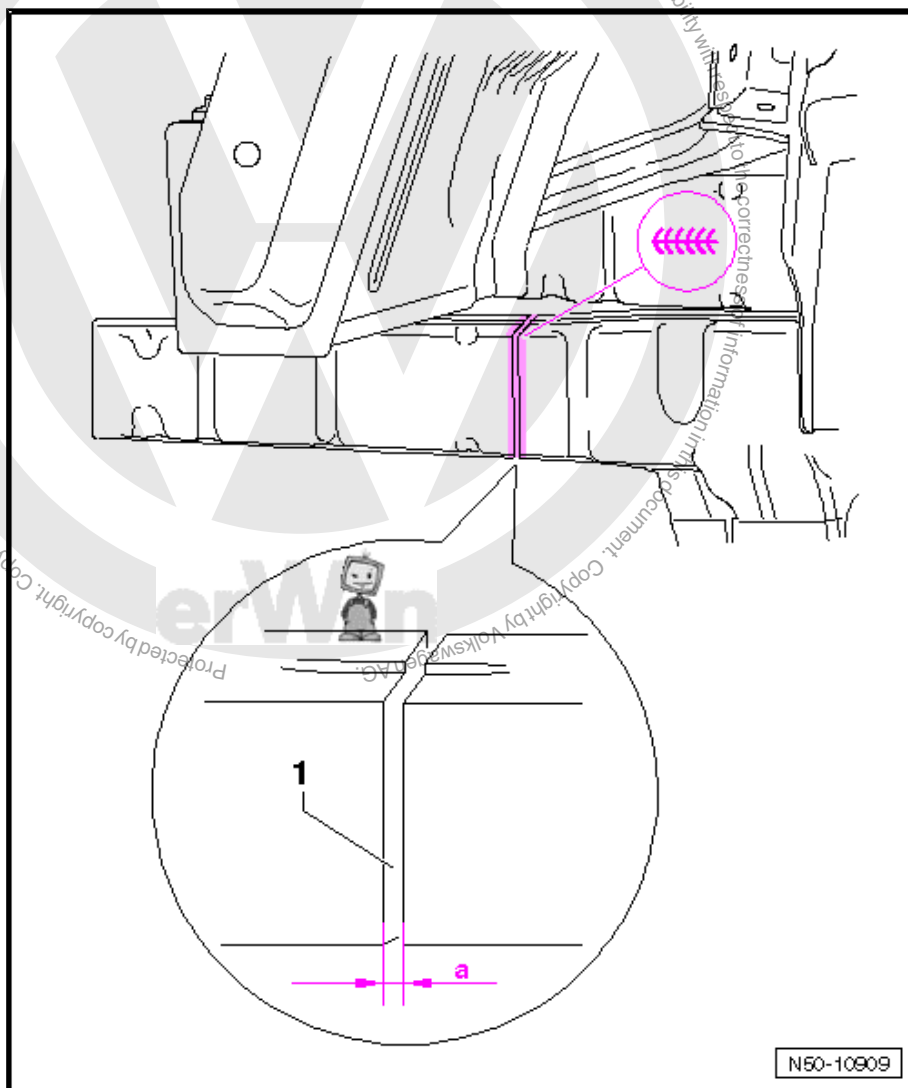
**Dimension c = 60 mm**

- Grind welding edges of longitudinal member reinforcement back to bare metal.



### 9.2.3 Welding in

Carry out the following work:



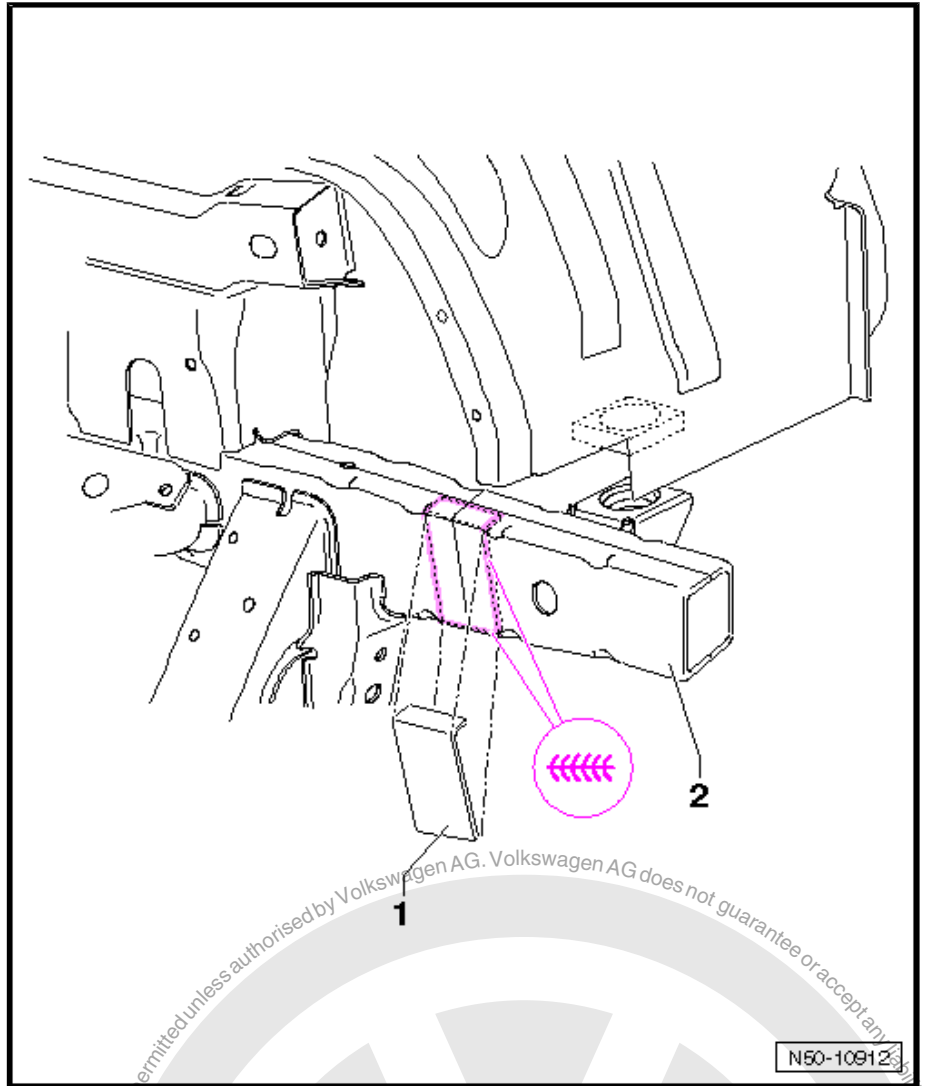
- Adapt new part to vehicle standing on alignment bracket set and fix in place.
- Check fit with adjacent parts.
- Weld parting cut all round in longitudinal member -1- adhering to -air gap dimension a-, SG continuous weld seam.

Dimension a = 3.5 mm + 0.5 mm

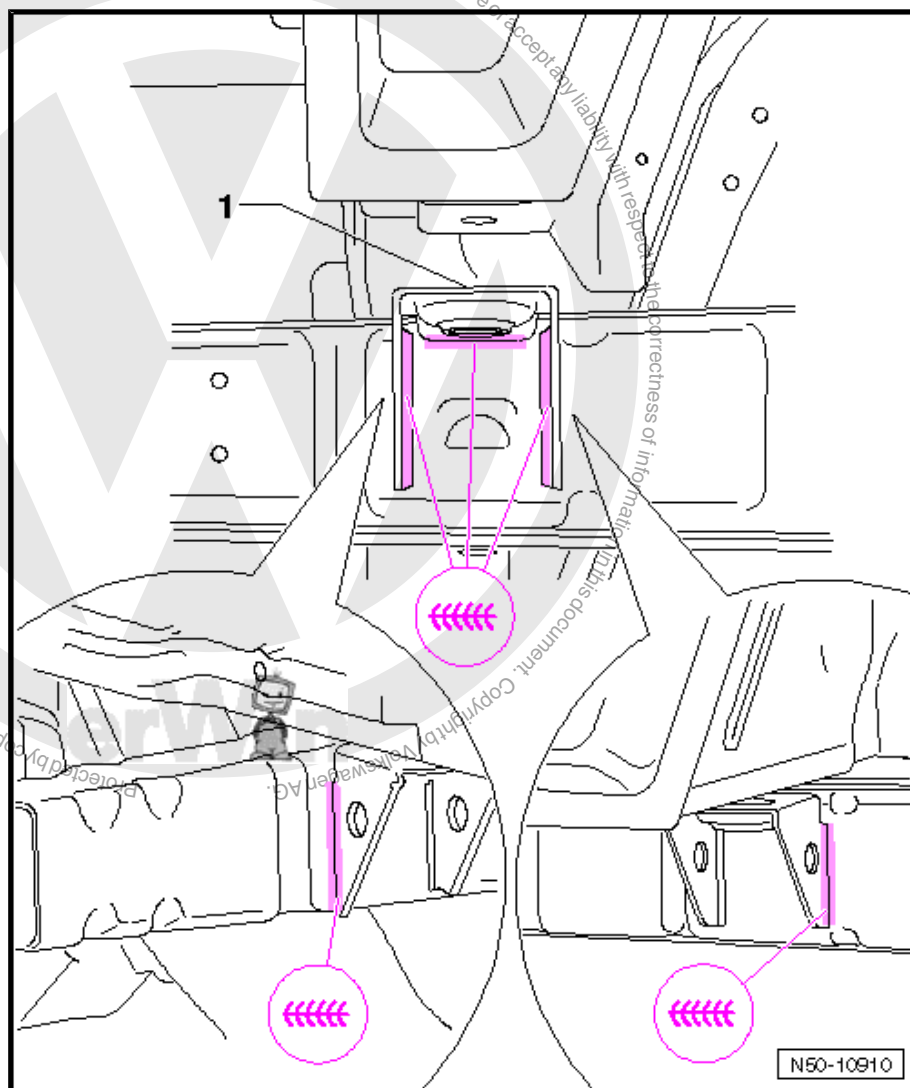


#### Note

- ◆ Adherence to -air gap dimension a- is vital to guarantee proper through-welding.
- ◆ Before welding longitudinal member, check welder settings; weld several „test seams“ and check roots of „test weld seams“ (correct welding parameters if necessary).
- ◆ SG continuous weld seam must not be reworked (ground or smoothed)!



- Adapt longitudinal member reinforcement -1- to longitudinal member -2- and fix in position.
- Weld in longitudinal member reinforcement -1- all round, SG continuous weld seam.



- Adapt mounting bracket -1- to fit and fix in position.
- Weld in mounting bracket, SG continuous weld seam.
- Carry out cavity preservation on front longitudinal member.
- Install front cross member [⇒ „1.2 Installing“, page 43](#) .



RO: 50 79 55 00

## 10 Renewing longitudinal member complete



### WARNING

*Observe safety notes!*

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

#### 1 - Longitudinal member complete

- ☐ Slid into middle part of frame and welded.

#### 2 - Cab mounting

- ☐ Welded to longitudinal member.
- ☐ Replaced during repairs as well.

#### 3 - Suspension strut mounting

- ☐ Welded to longitudinal member.
- ☐ Replaced during repairs as well.

#### 4 - Mounting bracket

- ☐ Welded to longitudinal member.
- ☐ Replaced during repairs as well.

#### 5 - Anti-roll bar mounting

- ☐ Welded to longitudinal member.
- ☐ Replaced during repairs as well.

#### 6 - Brake line mounting

- ☐ Welded to longitudinal member.
- ☐ Replaced during repairs as well.

#### 7 - Reinforcement

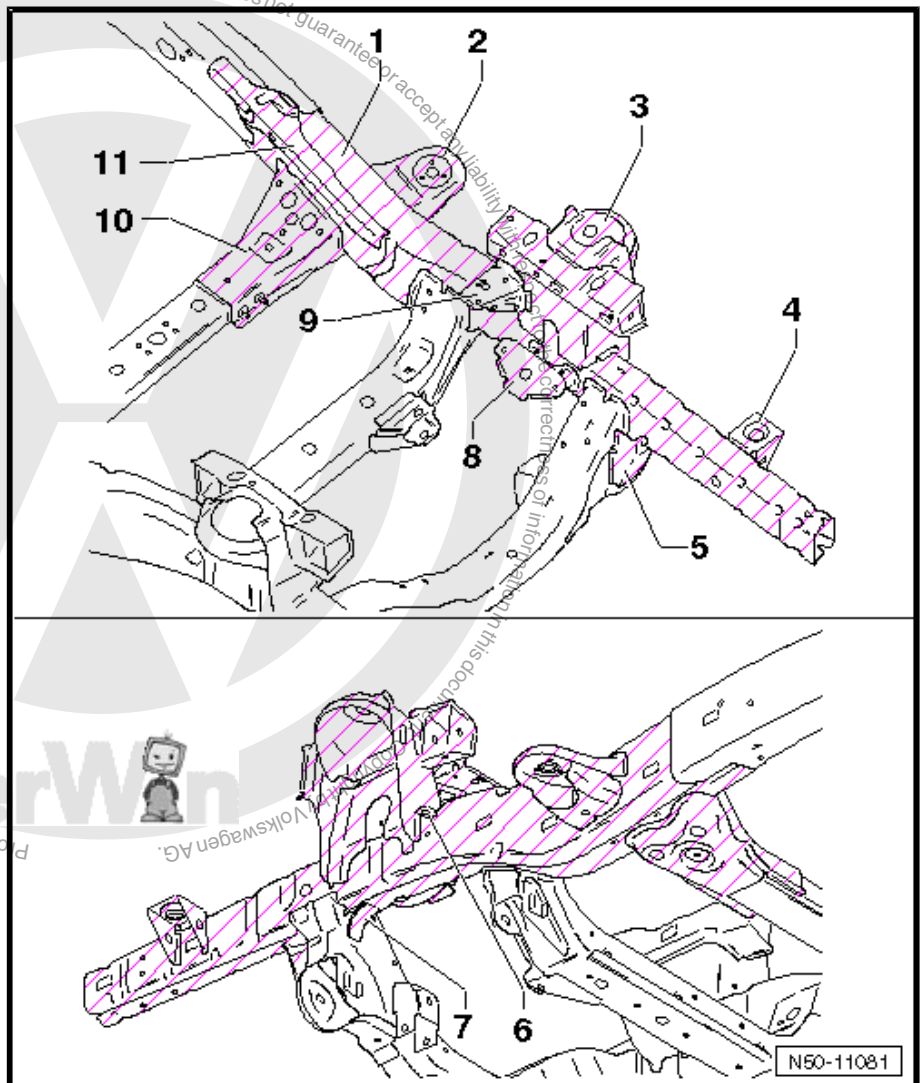
- ☐ Welded to longitudinal member.
- ☐ Replaced during repairs as well.

#### 8 - Mounting for engine mounting

- ☐ Welded to longitudinal member.
- ☐ Replaced during repairs as well.

#### 9 - Bracket

- ☐ Welded to suspension strut.
- ☐ For ABS hydraulic unit -N55- and ABS control unit -J104- .
- ☐ Replaced during repairs as well.





## 10 - Mounting for cross member for gearbox mounting

- ☐ Welded to longitudinal member.
- ☐ Replaced during repairs as well.

## 11 - Reinforcing plate

- ☐ Welded to longitudinal member and frame.
- ☐ Replaced during repairs as well.

## 10.1 Removing



### Caution

***The frame of the Amarok and the parts fitted on it are welded using SG continuous weld seams.***

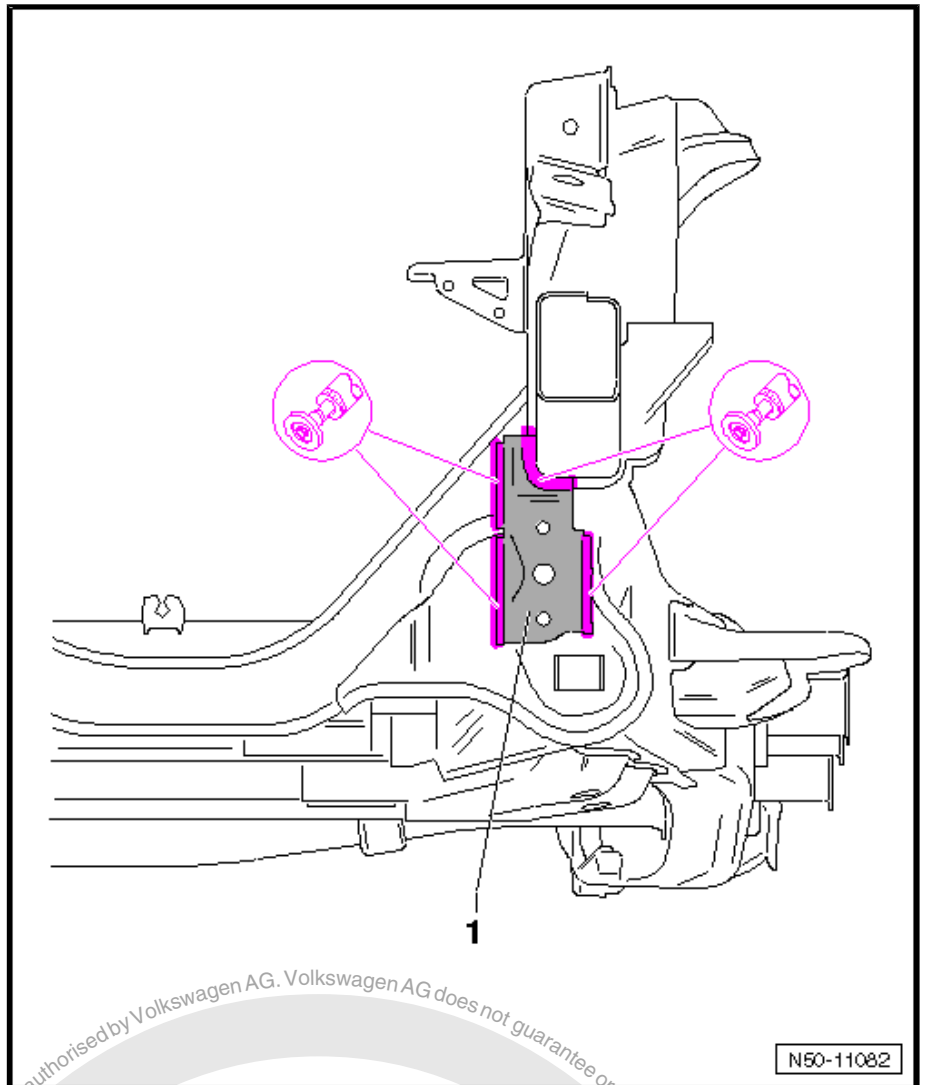
***When separating individual welded seams, ensure that the weld edges of adjacent parts are not damaged.***

***If the weld edges of separated parts do not lie on the frame when rewelding, then replace these parts.***

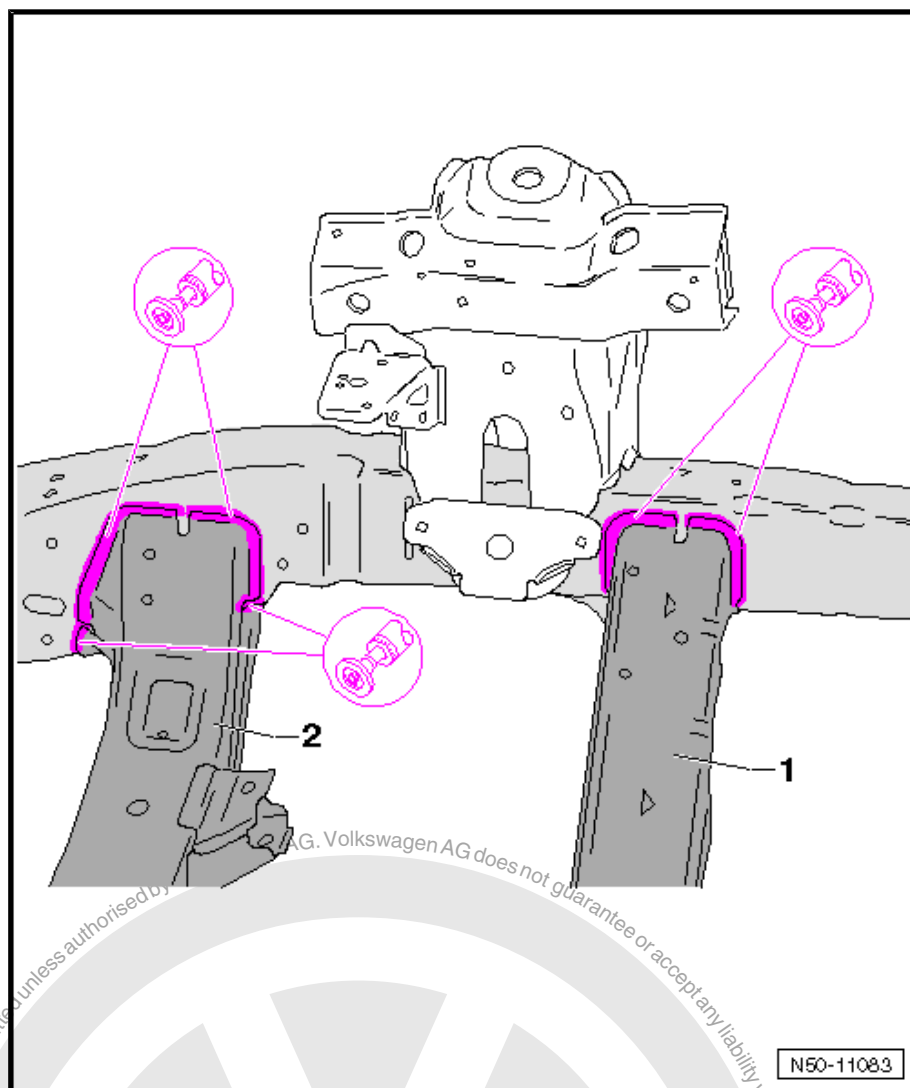
- The cab must be separated from the frame for this repair. Removing cab ⇒ General body repairs, exterior; Rep. gr. 55 ; Cab .
- Cross member already removed  
⇒ „1 Renewing cross member“, page 41 .

Carry out the following work:





- Separate original joint of anti-roll bar mounting -1-.
- Remove anti-roll bar mounting -1- from longitudinal member and cross member.
- Remove material remains on cross member.
- Grind welding surfaces on cross member down to bare metal.

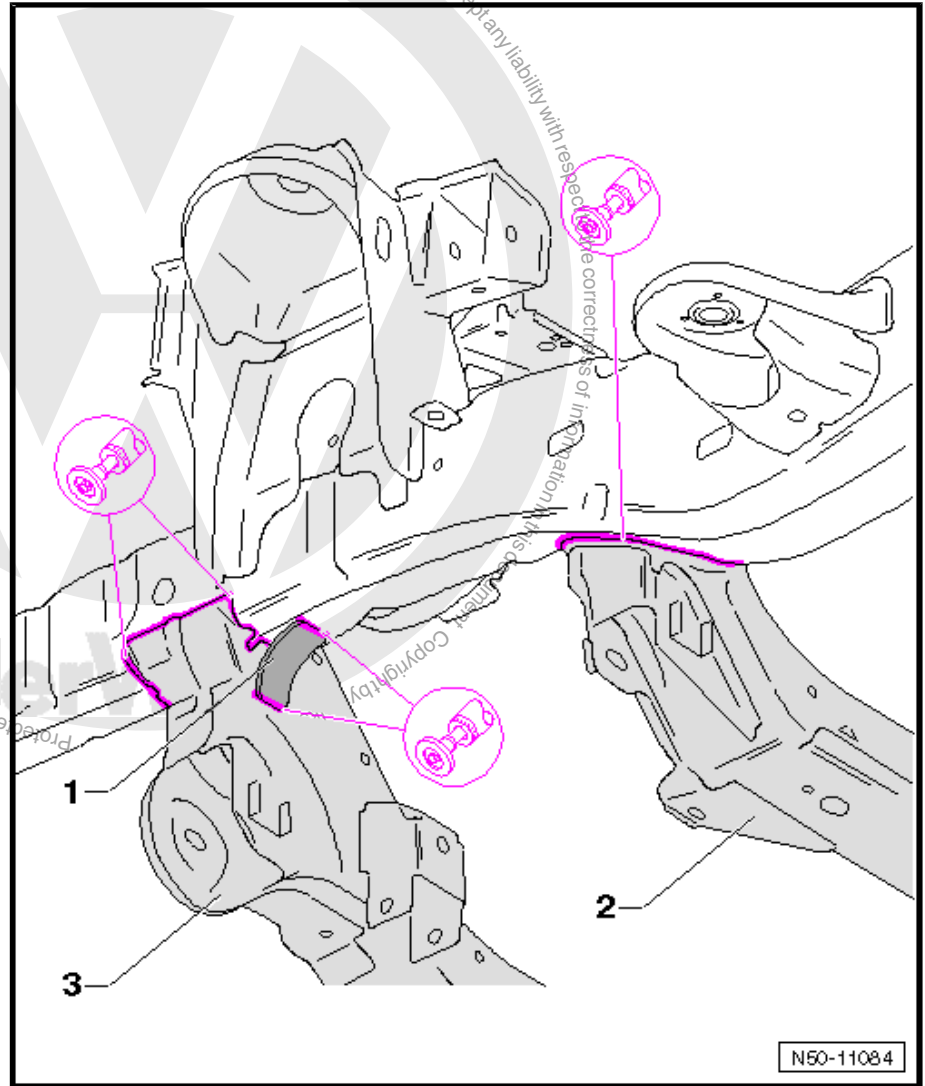


- Separate original joints of cross members -1- and -2-.



#### Note

- ◆ *Ensure the weld edges of the cross member are not damaged when separating the SG continuous weld seams.*
- ◆ *If the weld edges of the separated cross member do not lie on the longitudinal member when rewelding, then replace this part.*

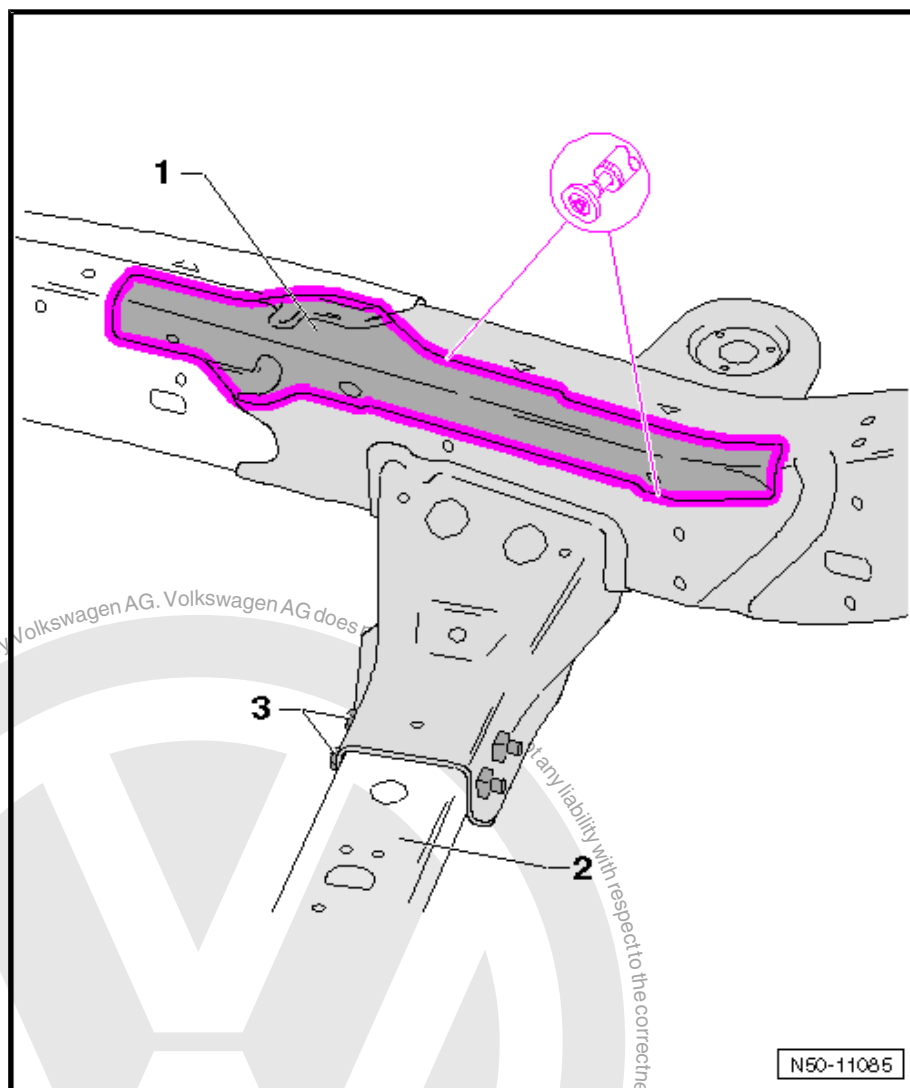


- Separate original joints of reinforcement -1- and remove from frame.
- Separate original joints of cross members -2- and -3- from below.

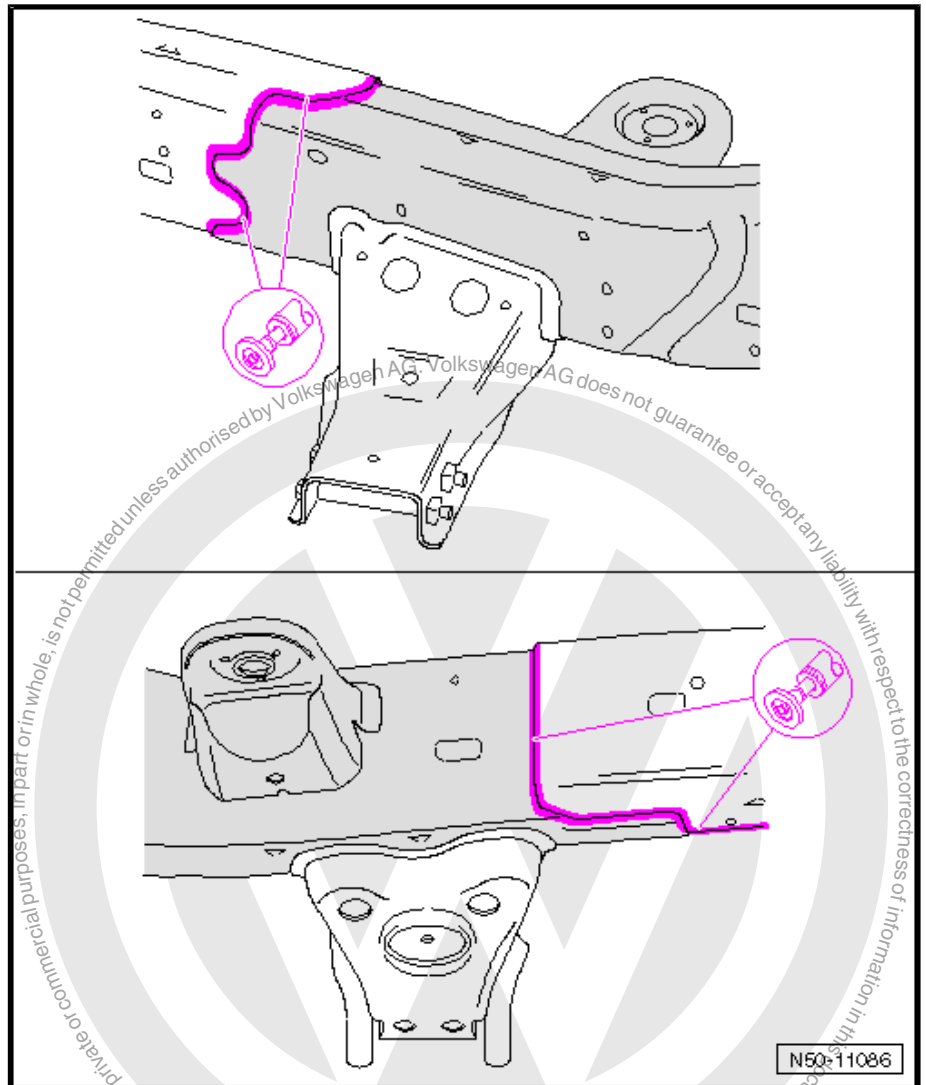


#### Note

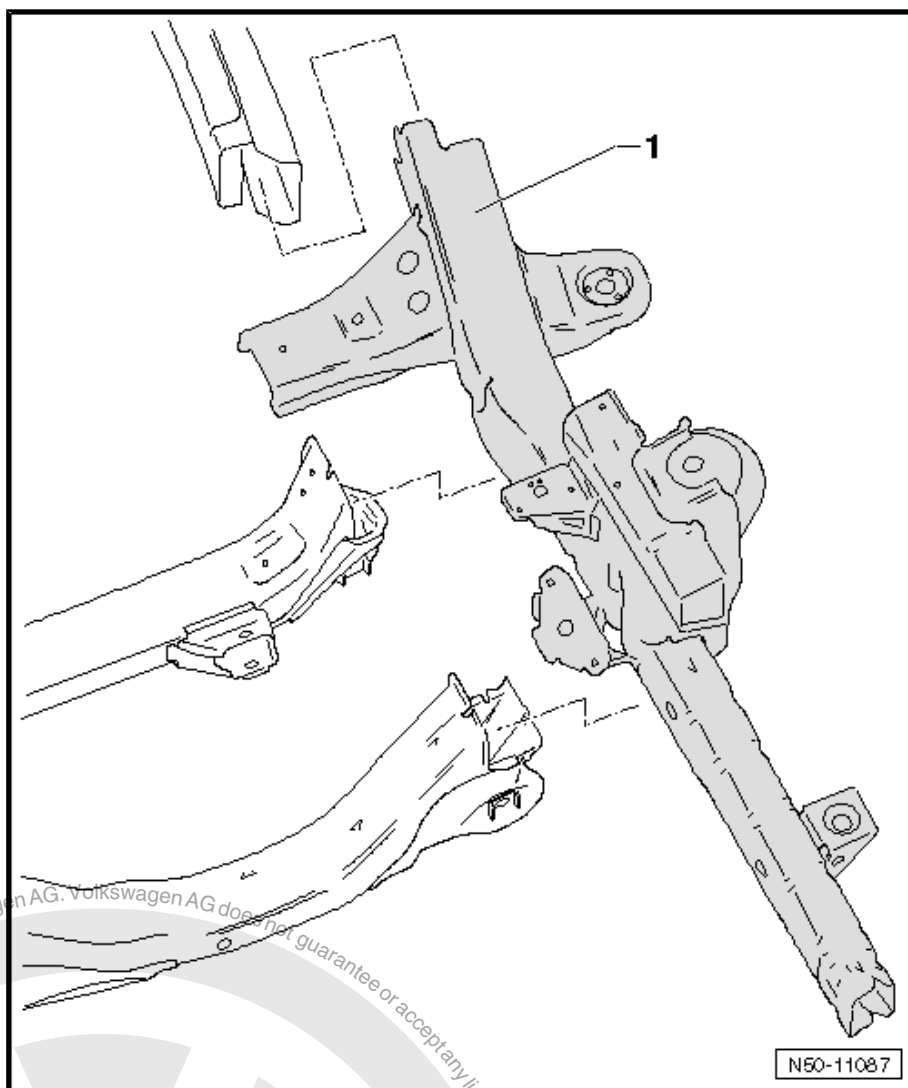
- ◆ *Ensure the weld edges of the cross member are not damaged when separating the SG continuous weld seams.*
- ◆ *If the weld edges of the separated cross members do not lie on the longitudinal member when rewelding, then replace these parts.*



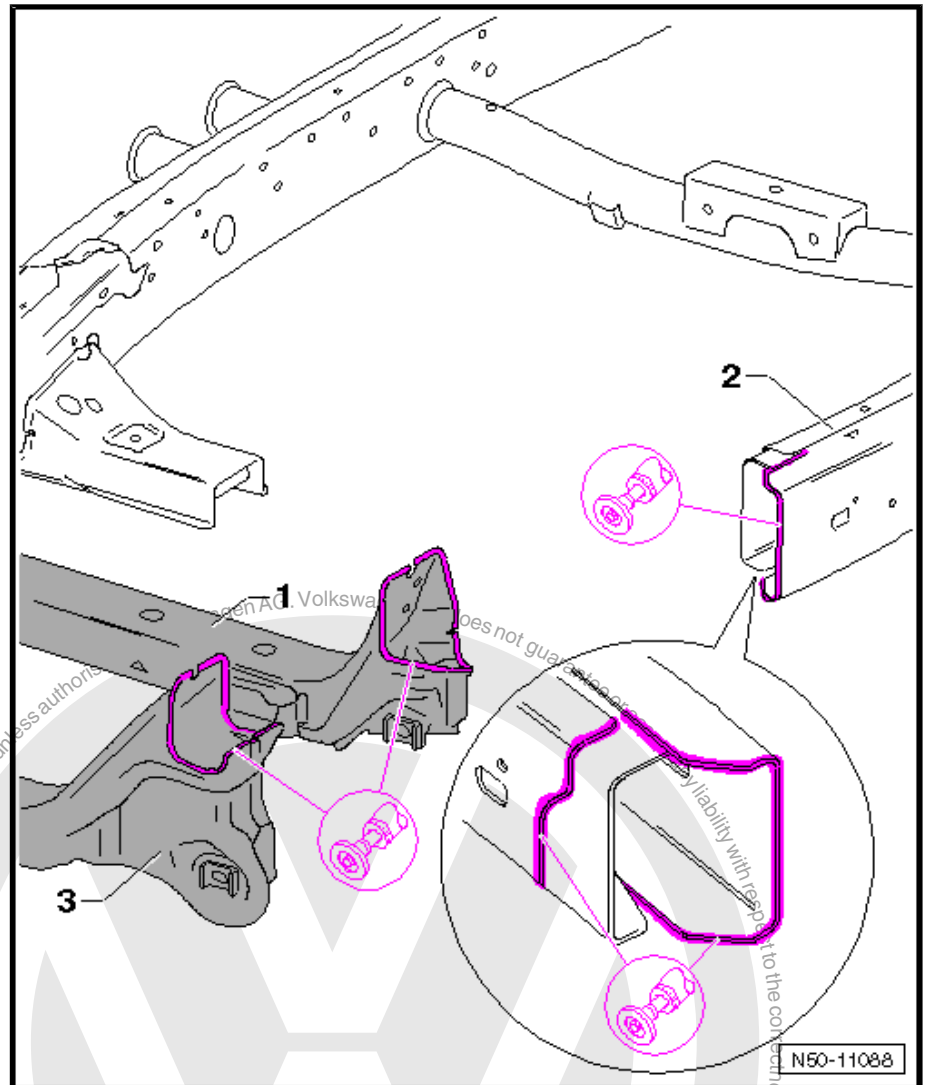
- Separate original joint of reinforcement -1- and remove from frame.
- Undo bolts -3- on both sides and remove middle part -2- of cross member.



- Separate original joint of longitudinal member to middle part of frame all round.



- Separate longitudinal member -1- from frame and pull out of middle part of frame.



- Remove material remains from cross members -1- and -2- and from middle part of frame -3-.
- Grind welding surfaces back to bare metal.

## 10.2 Installing

### 10.2.1 Preparing new part

#### Replacement parts

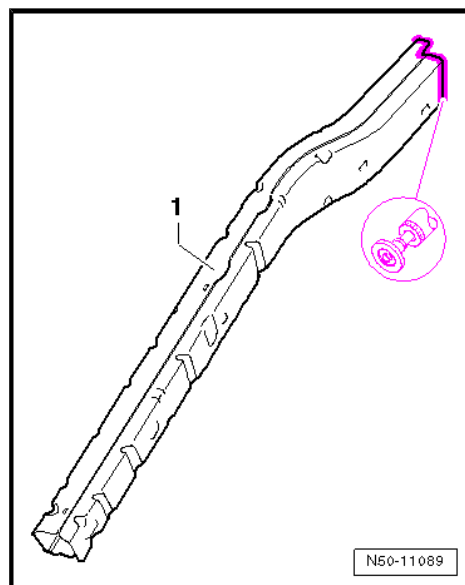
- ◆ Front longitudinal member complete
- ◆ Front mounting bracket
- ◆ Anti-roll bar mounting
- ◆ Reinforcement
- ◆ Brake line mounting
- ◆ Suspension strut mounting
- ◆ Cab mounting
- ◆ Mounting for cross member for gearbox mounting
- ◆ Mounting for engine mounting



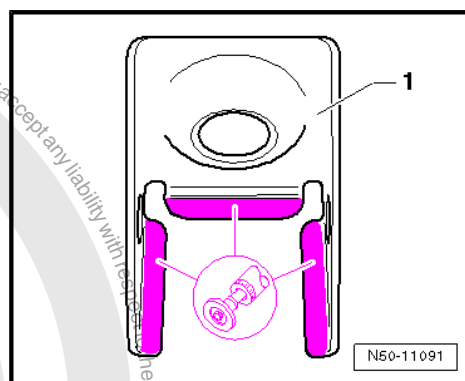
- ◆ Bracket for hydraulic unit
- ◆ Reinforcing plate

**Carry out the following work:**

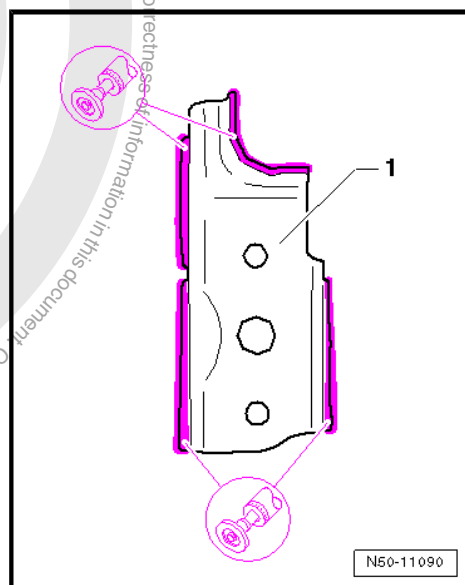
- Grind weld surfaces on front longitudinal member -1- down to bare metal.



- Grind welding edges of mounting bracket -1- down to bare metal.



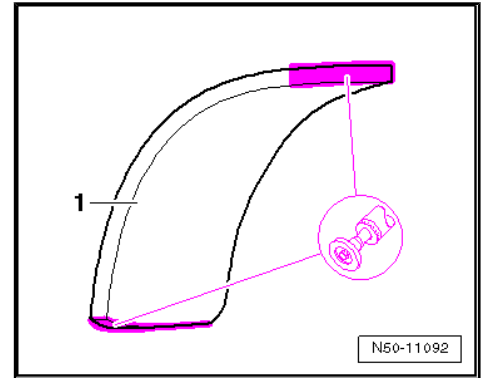
- Grind welding edges of anti-roll bar mounting -1- down to bare metal.



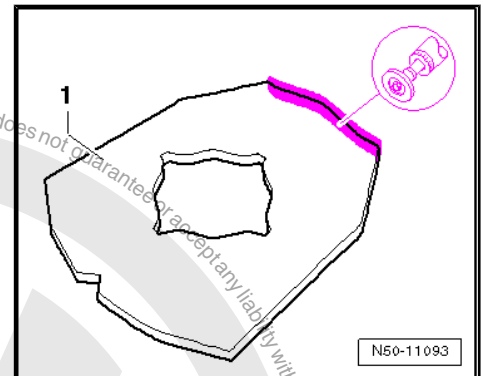




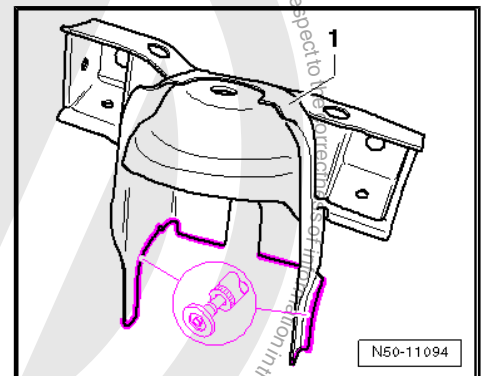
- Grind welding edges of reinforcing -1- down to bare metal.



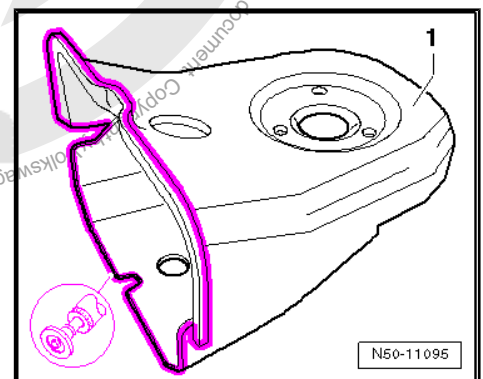
- Grind welding edges of brake line mounting -1- down to bare metal.



- Grind welding edges of suspension strut mounting -1- down to bare metal.

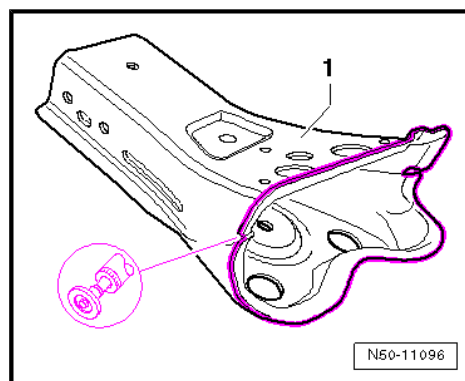


- Grind welding edges of cab mounting -1- down to bare metal.

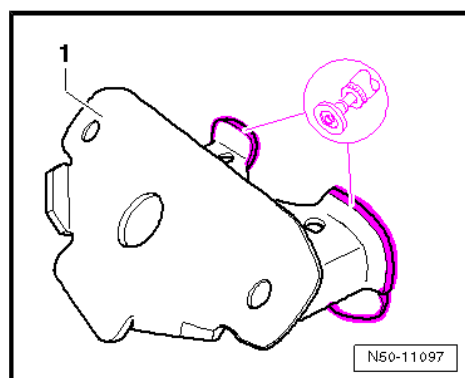




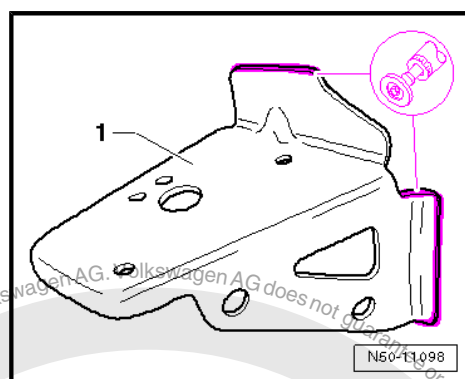
- Grind welding edges of mounting for cross member for gear-box mounting -1- down to bare metal.



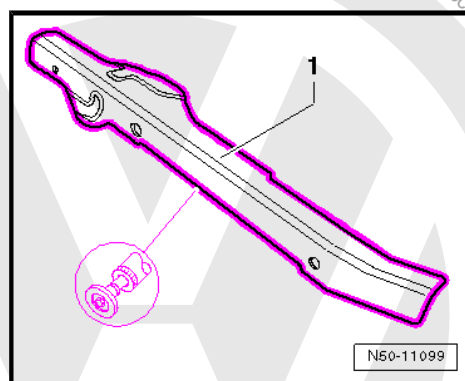
- Grind welding edges of mounting for engine mounting -1- down to bare metal.



- Grind welding edges of hydraulic unit bracket -1- down to bare metal.



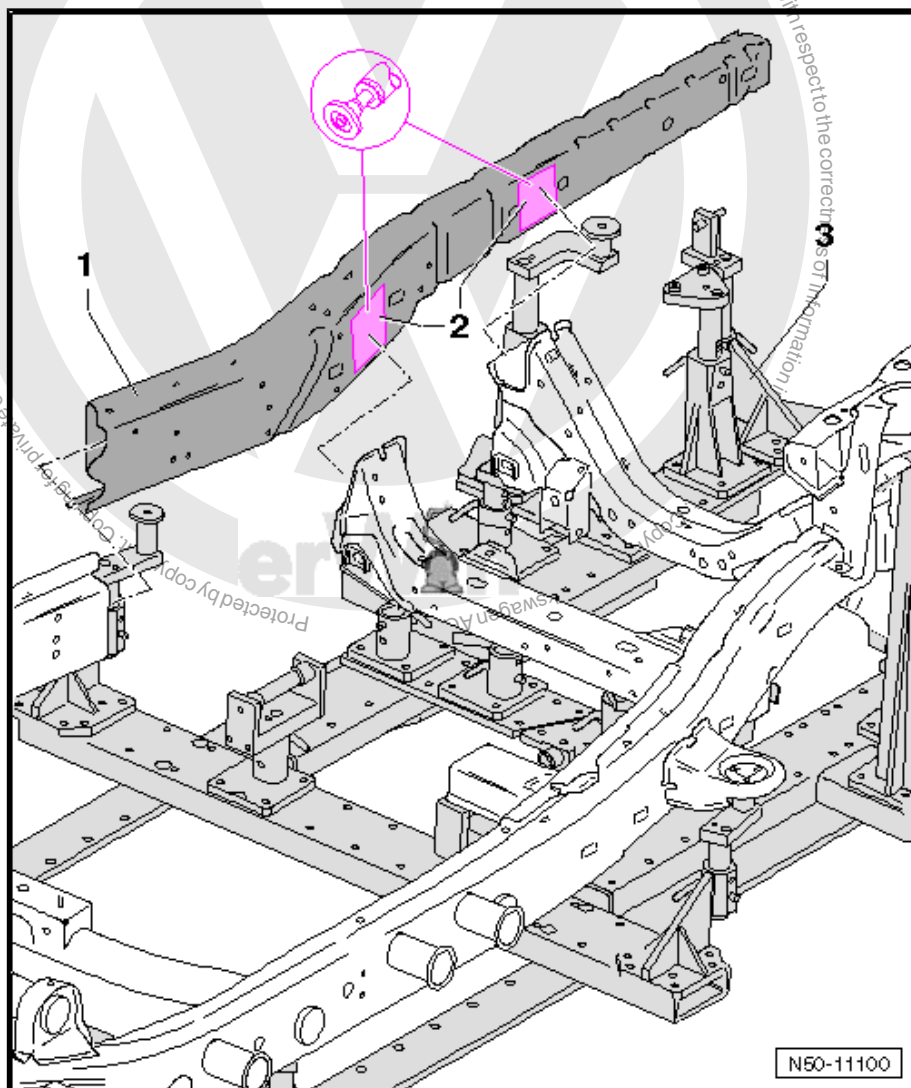
- Grind welding edges of reinforcing panel -1- down to bare metal.





## 10.2.2 Welding in

Carry out the following work:

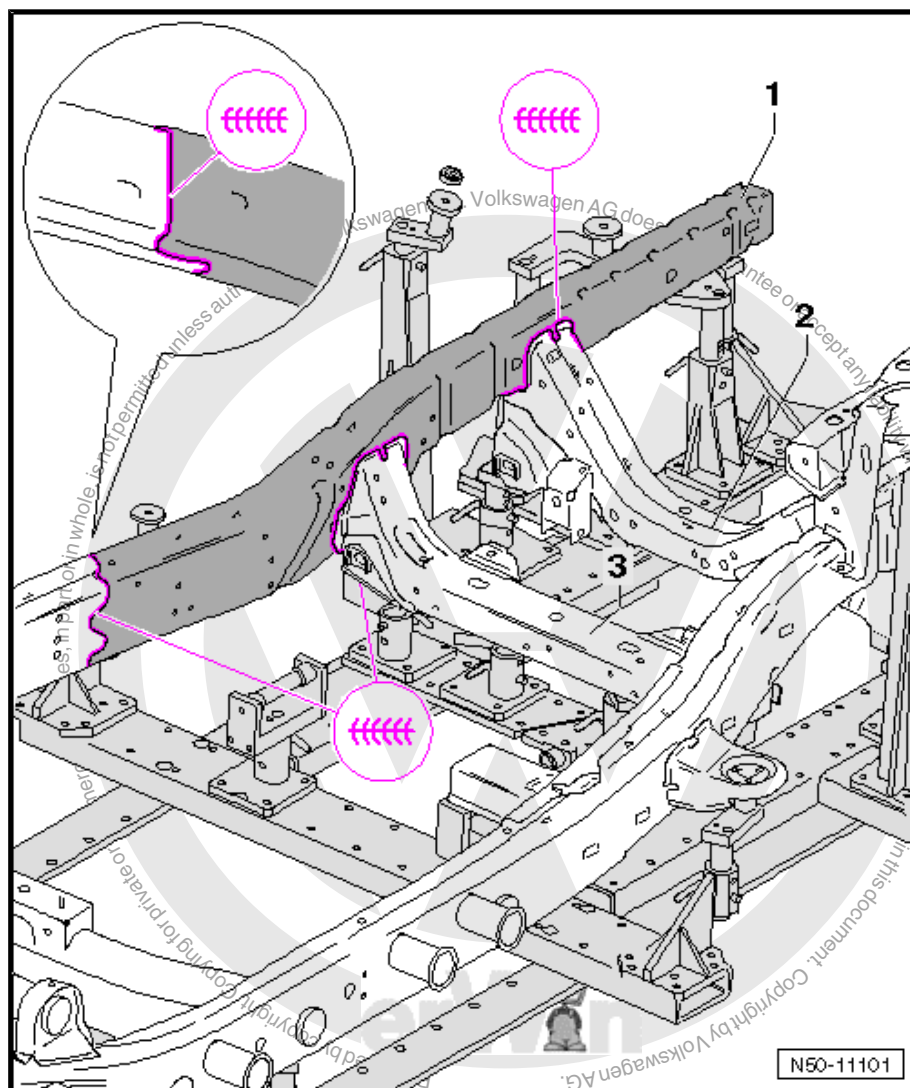


- Grind welding surfaces -2- on new part down to bare metal.
- Adapt longitudinal member -1- to frame positioned on alignment bracket set -3- and fix in place.



### Note

- ◆ *Before welding longitudinal member, check welder settings; weld several „test seams“ and check roots of „test weld seams“ (correct welding parameters if necessary).*
- ◆ *SG continuous weld seam must not be reworked (ground or smoothed)!*

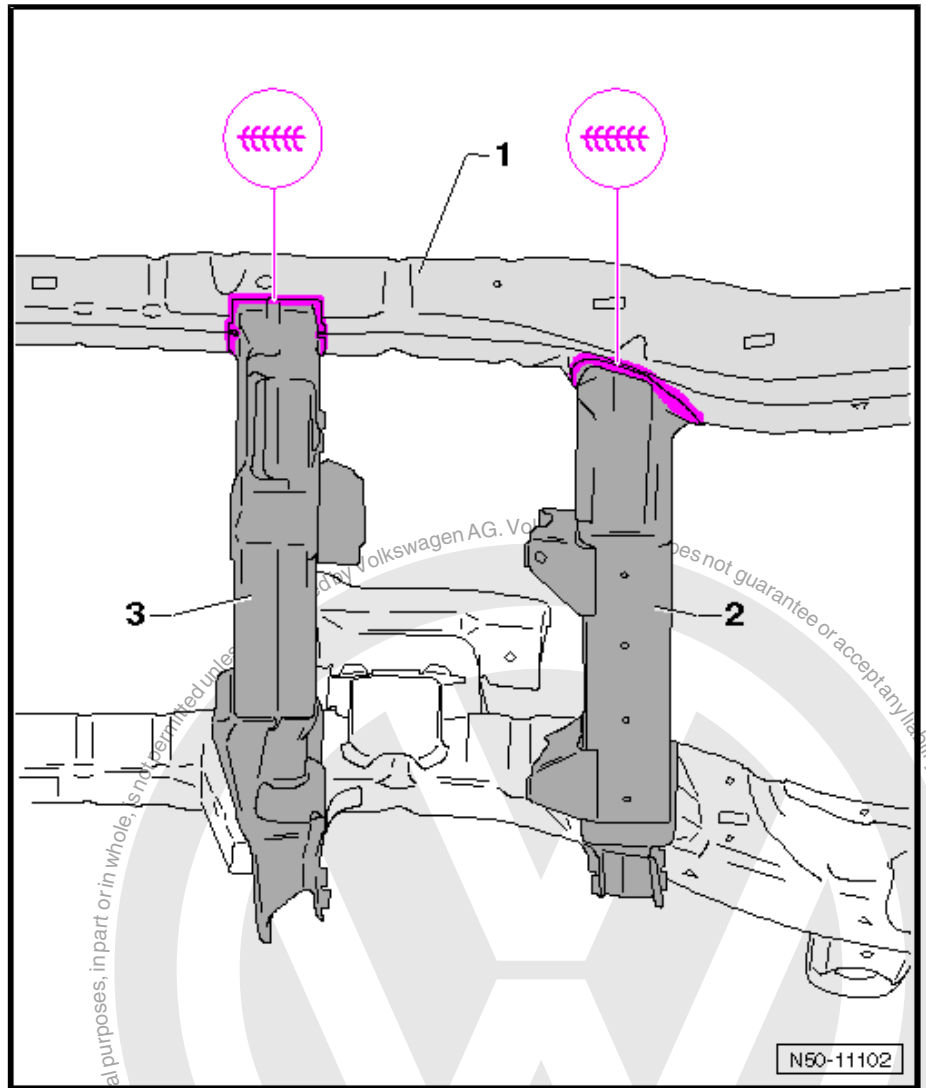


- Weld longitudinal member -1- to middle part of frame -4- all round, SG continuous weld seam.
- Weld cross member -3- to front longitudinal member -1-, SG continuous weld seam.
- Weld cross member -2- to front longitudinal member -1-, SG continuous weld seam.

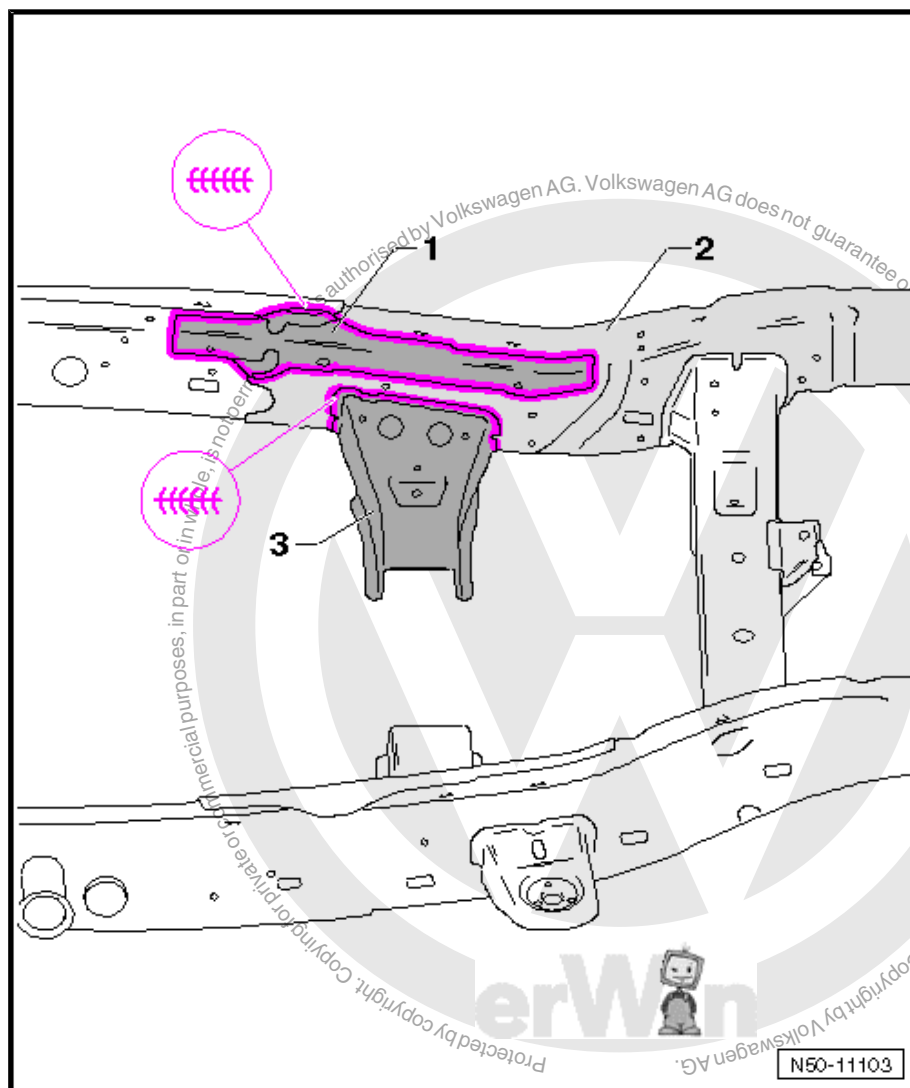


**Note**

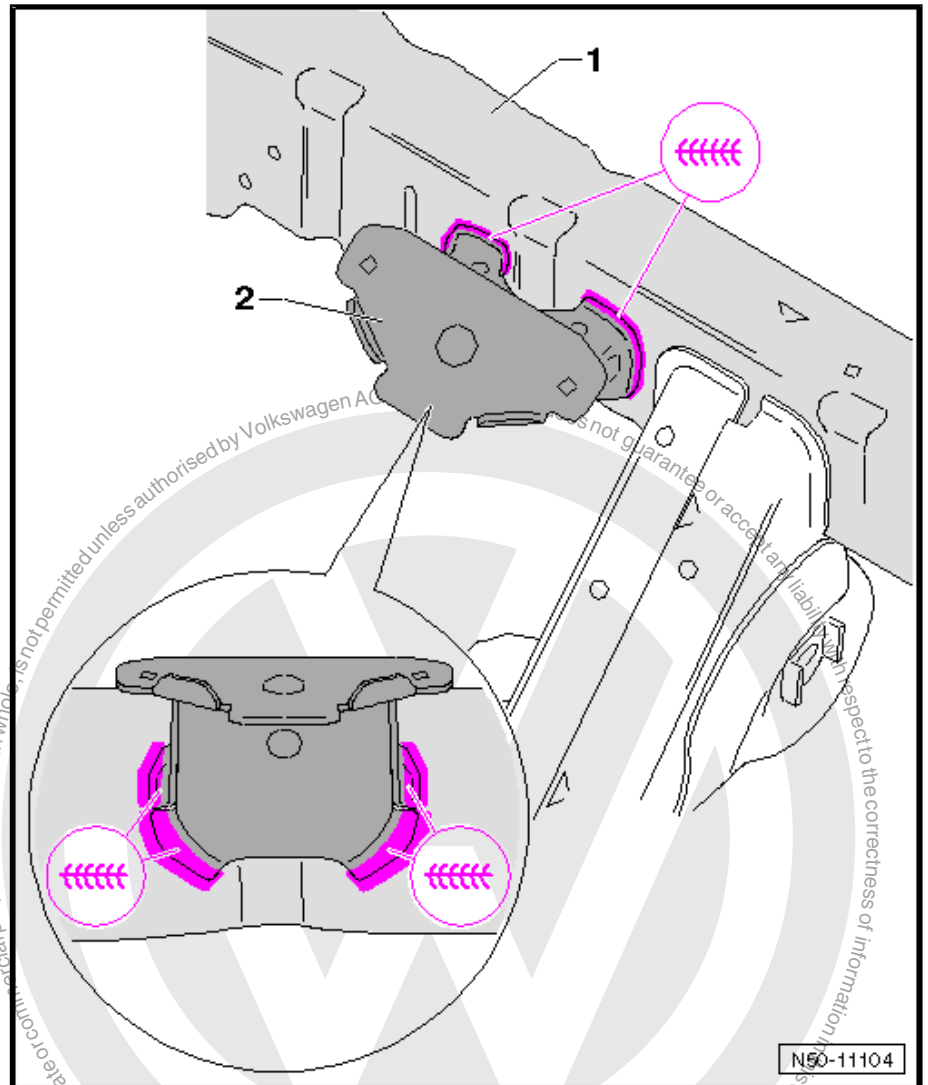
*For clarity, the alignment jig with alignment bracket set is not shown in the following figures.*



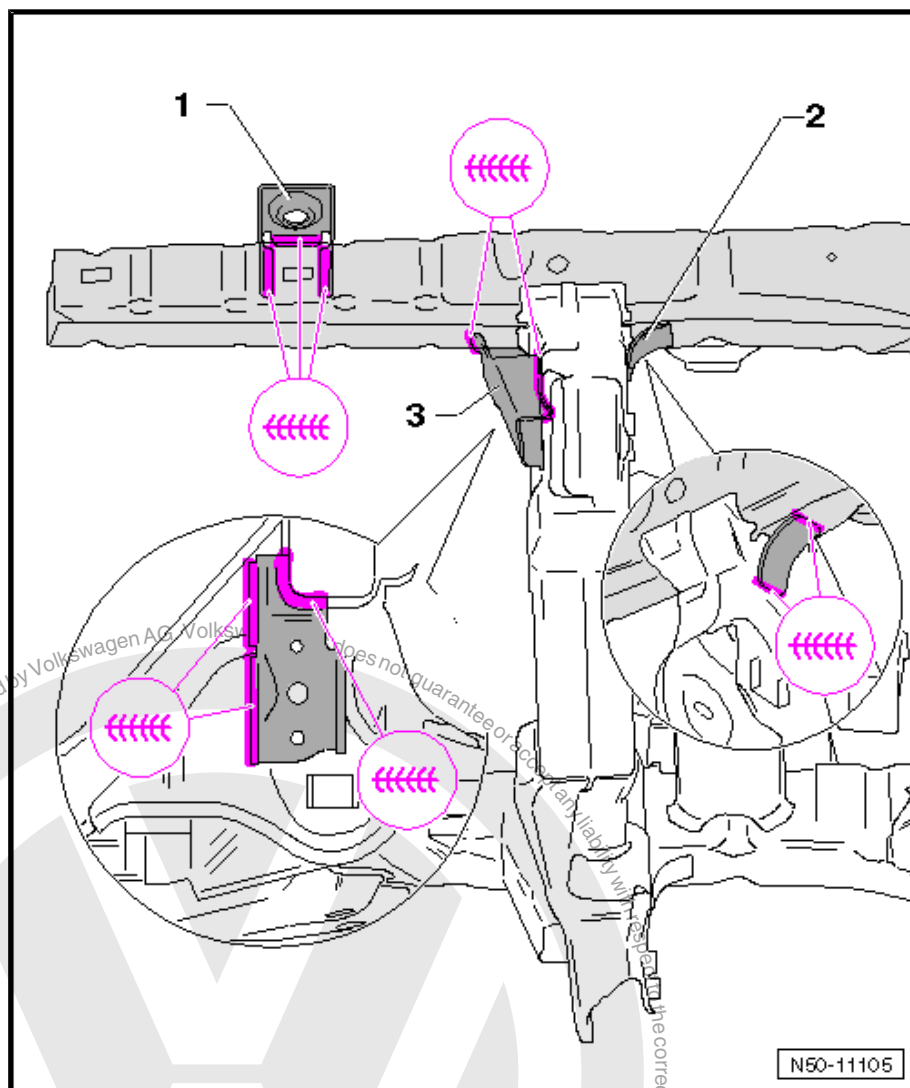
- Weld cross member -2- to front longitudinal member -1- from below, SG continuous weld seam.
- Weld cross member -3- to front longitudinal member -1- from below, SG continuous weld seam.



- Position reinforcing panel -1- on longitudinal member -2- and weld in all round, SG continuous weld seam.
- Adapt mounting for cross member for gearbox mounting -3- using alignment bracket set and fix in place.
- Weld in mounting for cross member for gearbox mounting -3- all round, SG continuous weld seam.

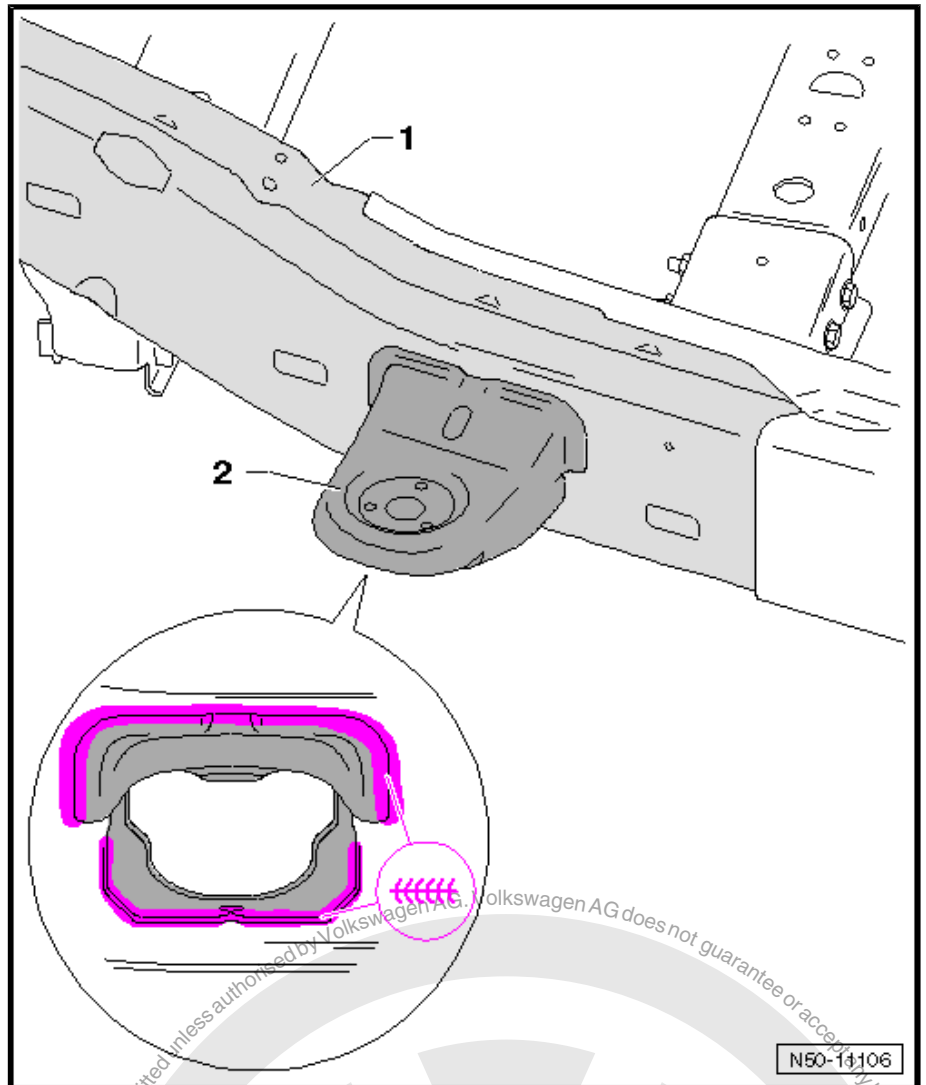


- Adapt mounting for engine mounting 2- using alignment bracket set and fix new part -1- in place.
- Weld in mounting for engine mounting -2- all round, SG continuous weld seam.

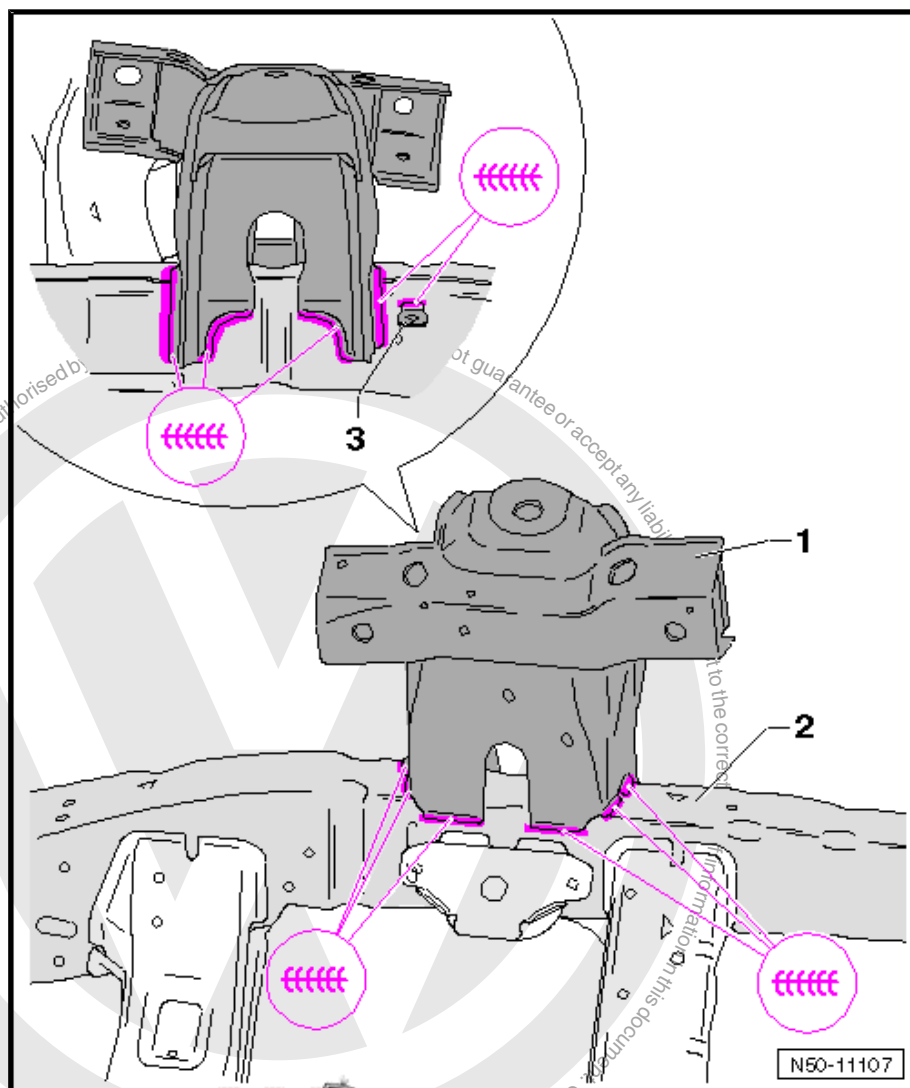


- Adapt mounting bracket -1- and anti-roll bar mounting -3- using alignment bracket set and fix in place.
- Adapt reinforcing -2- to fit and fix in position.
- Weld in new parts -1-, -2- and -3-, SG continuous weld seam.

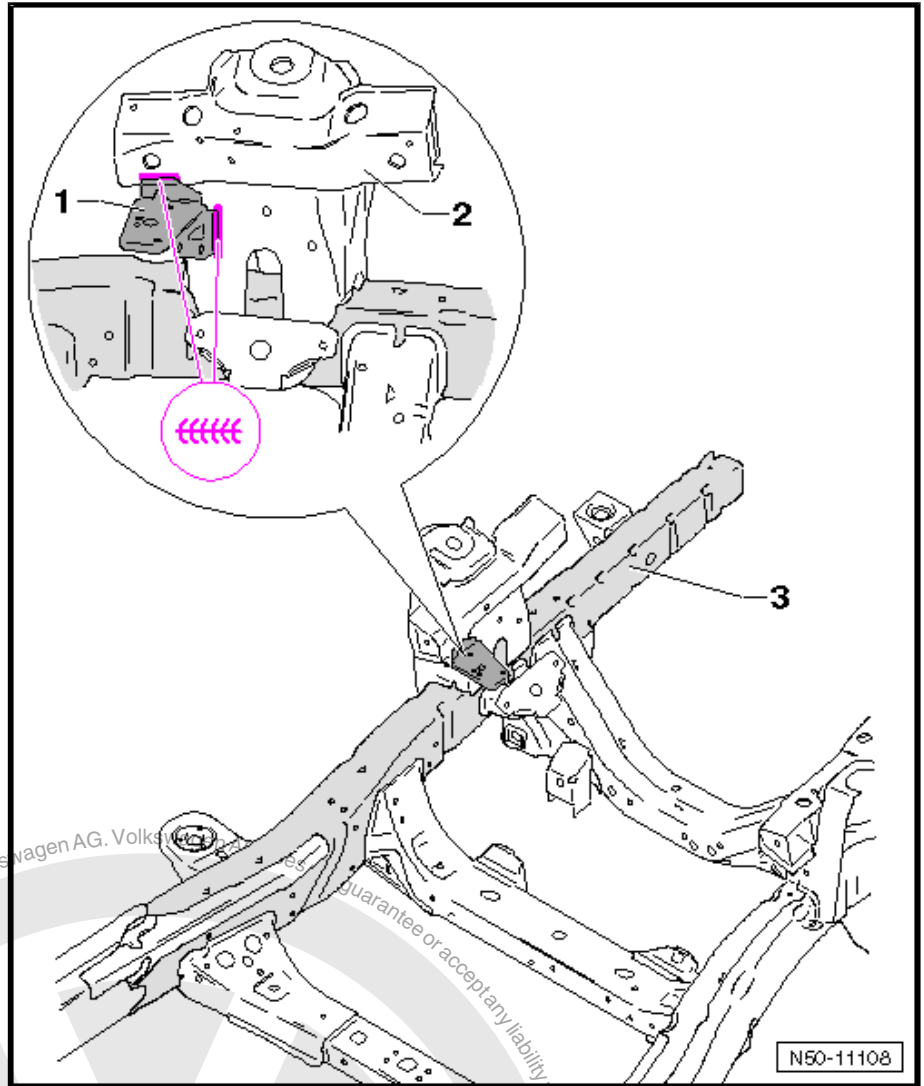




- Adapt cab mounting -2- using alignment bracket set on front longitudinal member -1- and fix in place.
- Weld in cab mounting -2-, SG continuous weld seam.



- Adapt suspension strut mounting -1- using alignment bracket set on front longitudinal member -2- and fix in place.
- Adapt brake line mounting -3- and fix in place, using dimensions of „old part“ as an aid.
- Weld in suspension strut mounting -1- and brake line mounting -3-, SG continuous weld seam.



- Adapt hydraulic unit bracket -1- to suspension strut mounting -2- and fix in place, using dimensions of „old part“ as an aid.
- Weld in hydraulic unit bracket -1-, SG continuous weld seam.
- Carry out cavity preservation on front longitudinal member -3-
- Install front cross member ⇒ „1.2 Installing“, page 43 .



## 51 – Body - centre

RO: 51 03 55 00, 51 03 55 20

### 1 Renewing roof



#### WARNING

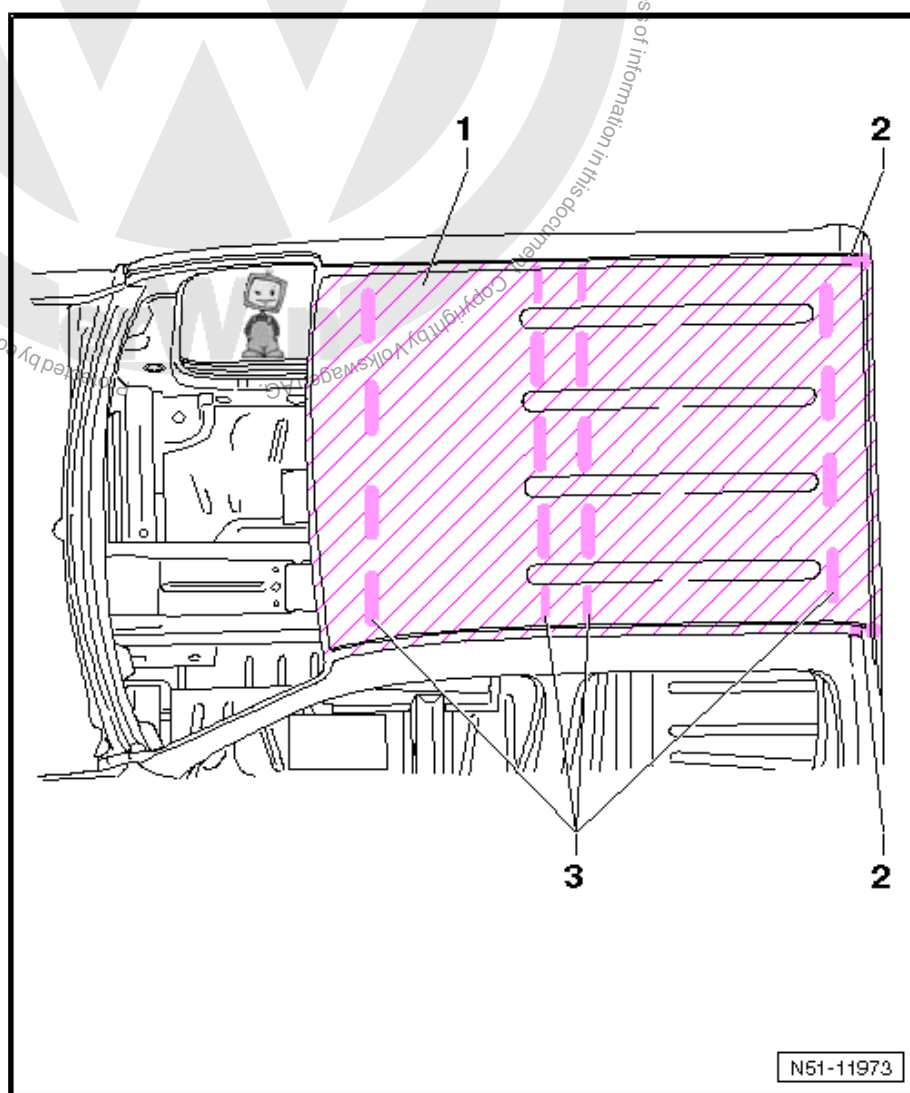
*Observe safety notes!*

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

1 - Roof

2 - Bonded areas of C-pillar

3 - Bonded areas of roof cross members



### 1.1 Tools

#### Special tools and workshop equipment required

- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Accessory pack -VAS 6535 /1-



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

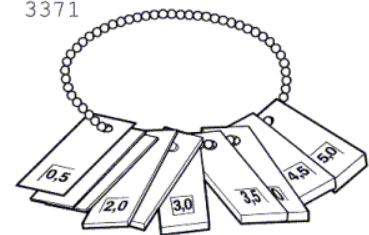
V.A.G 1761/1



W00-1032

◆ Setting gauge -3371-

3371

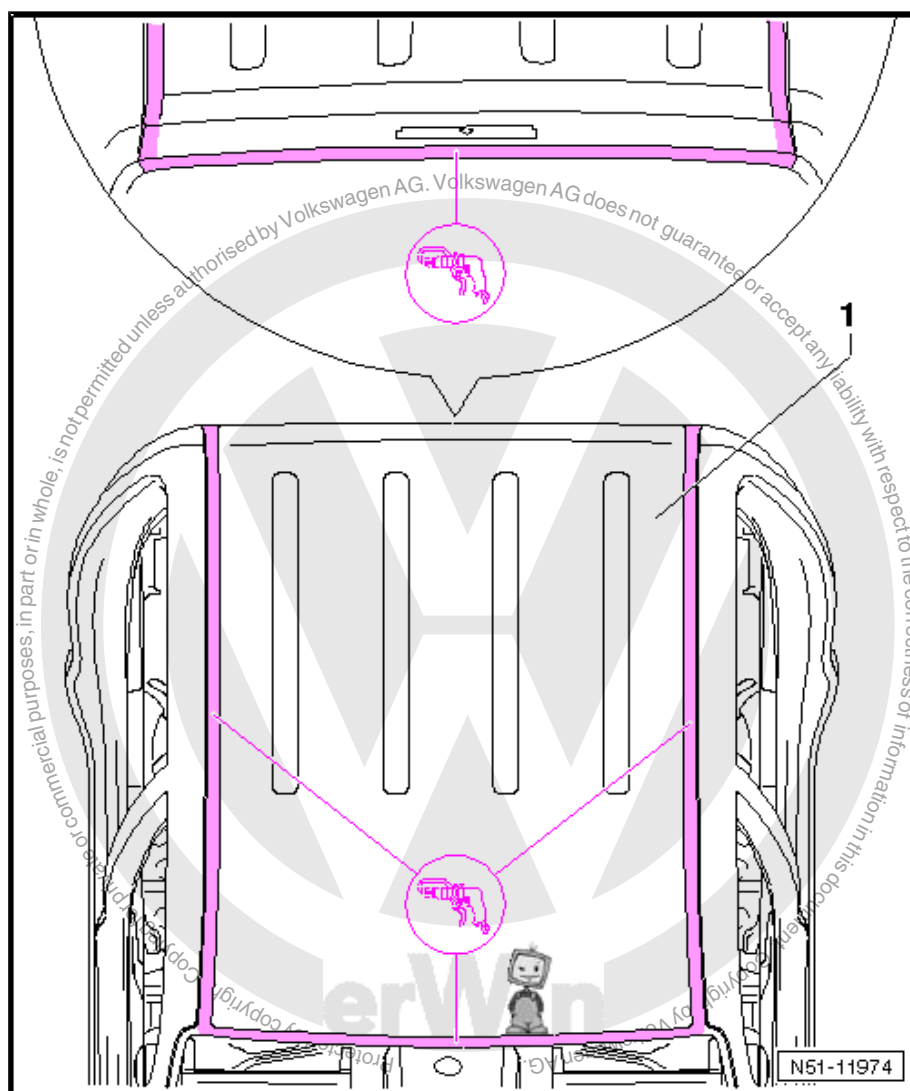


W00-0190

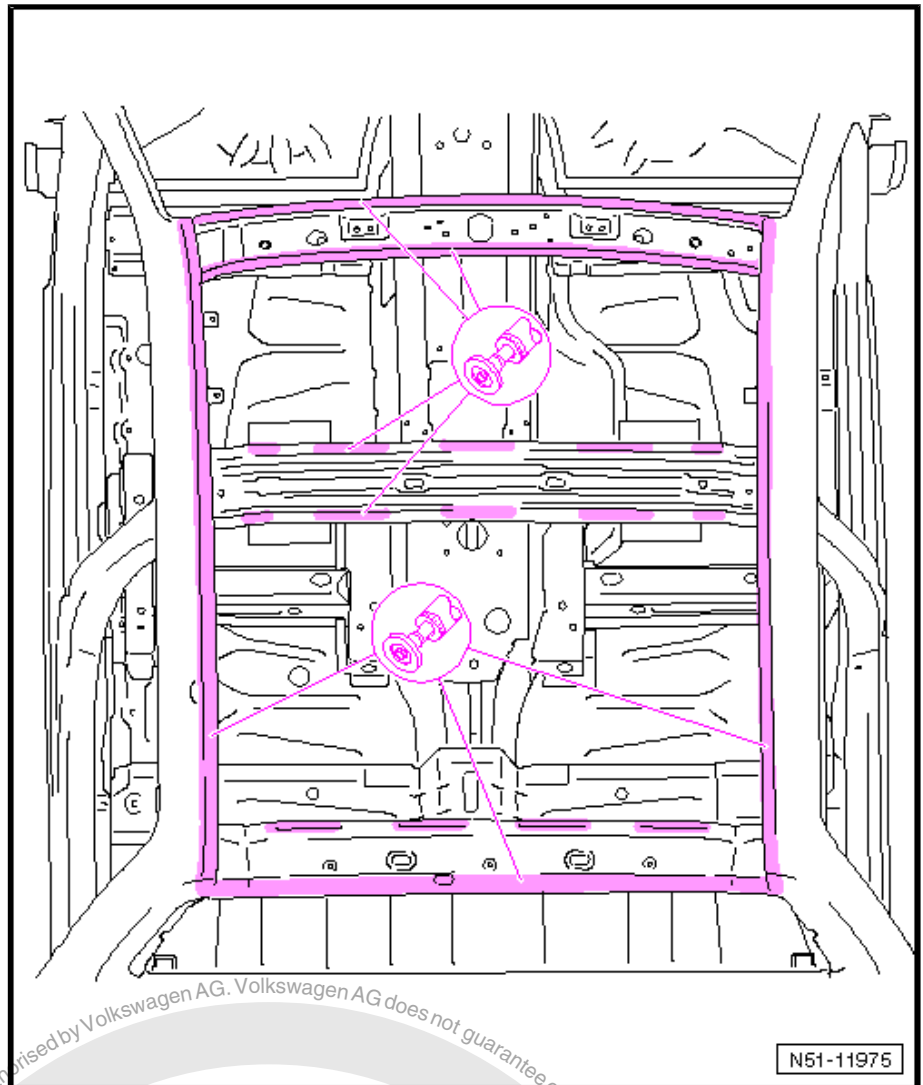


## 1.2 Removing

**Carry out the following work:**



- Separate original joint.
- Release bonded joints of C-pillars ⇒ Item 2 (page 110) and to front and rear roof cross members ⇒ Item 3 (page 110). To release, heat bonded surfaces with hot air blower -V.A.G 1416-.
- Remove roof -1- from body.



- Remove remaining material.
- Remove adhesive residues and grind bonding surfaces back to bare metal.
- Grind welding surfaces on both sides back to bare metal.

### 1.3 Installing



#### Note

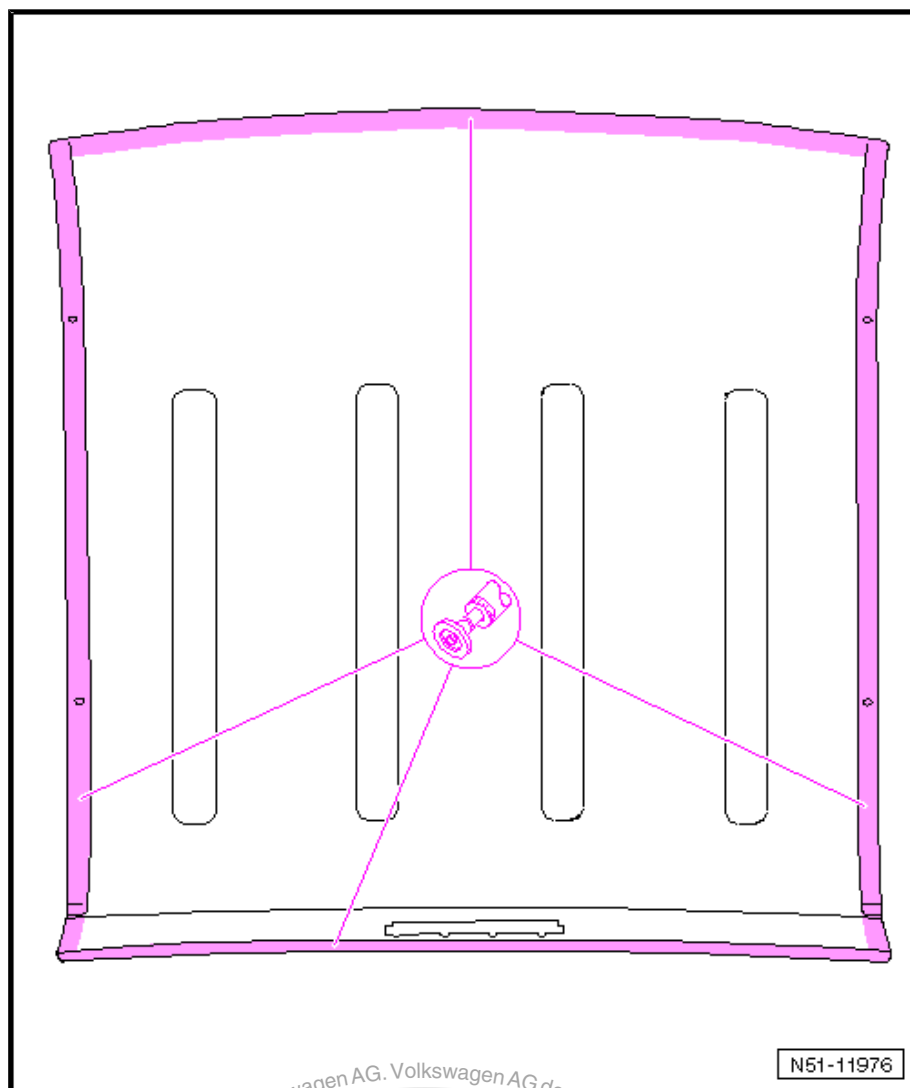
*The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ „1.1 Tools“, page 110.*

#### 1.3.1 Preparing replacement part

##### Replacement parts

- ◆ Roof
- ◆ 1K assembly adhesive -D 190 MKD A3-
- ◆ 2K body adhesive -D 180 KD3 A2-

Carry out the following work:



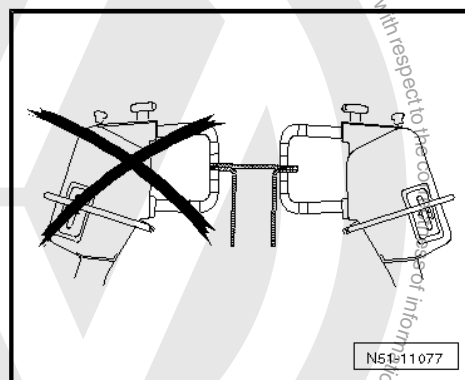
- Grind bonding surfaces down to bare metal on one side (from inside).
- Grind welding surfaces on both sides back to bare metal.

### 1.3.2 Welding in



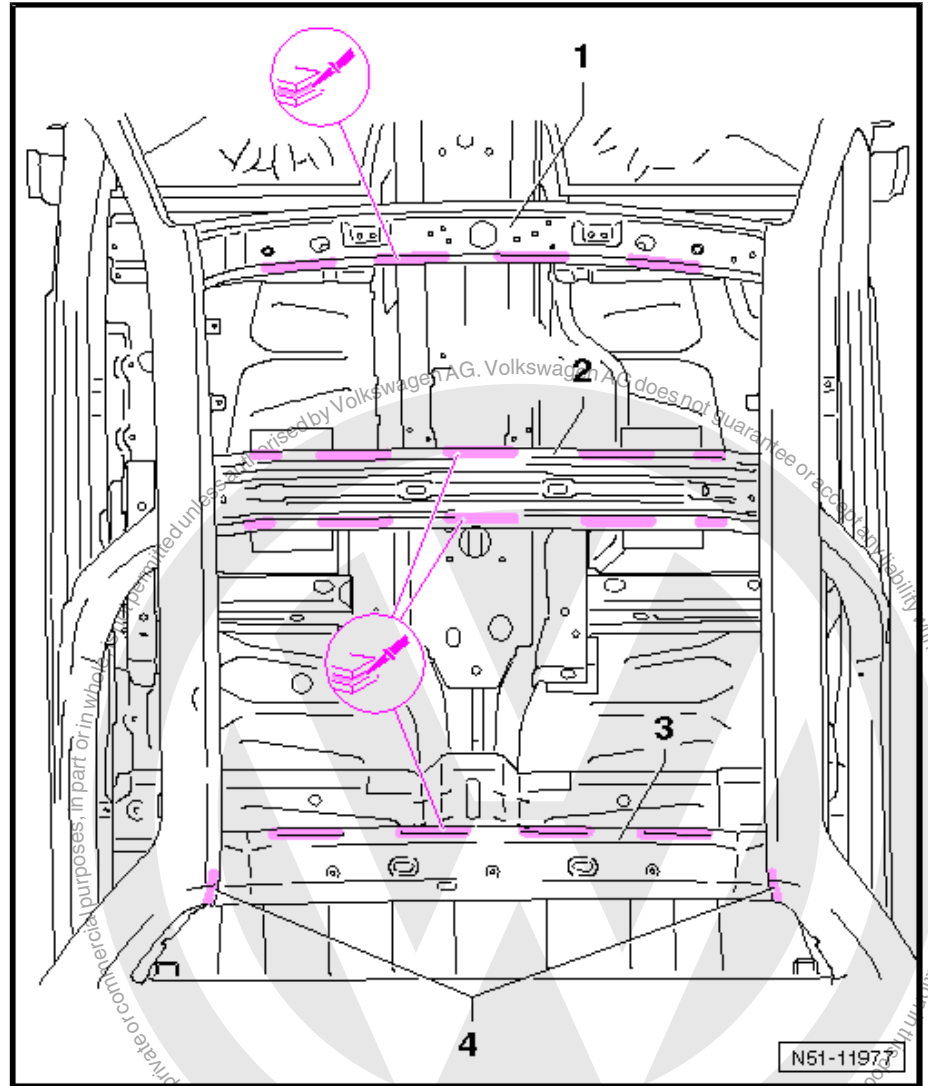
#### Note

*To ensure sufficient sturdiness, the RP weld points must be set as far as possible from the outer edge of the welding flange.*



Carry out the following work:



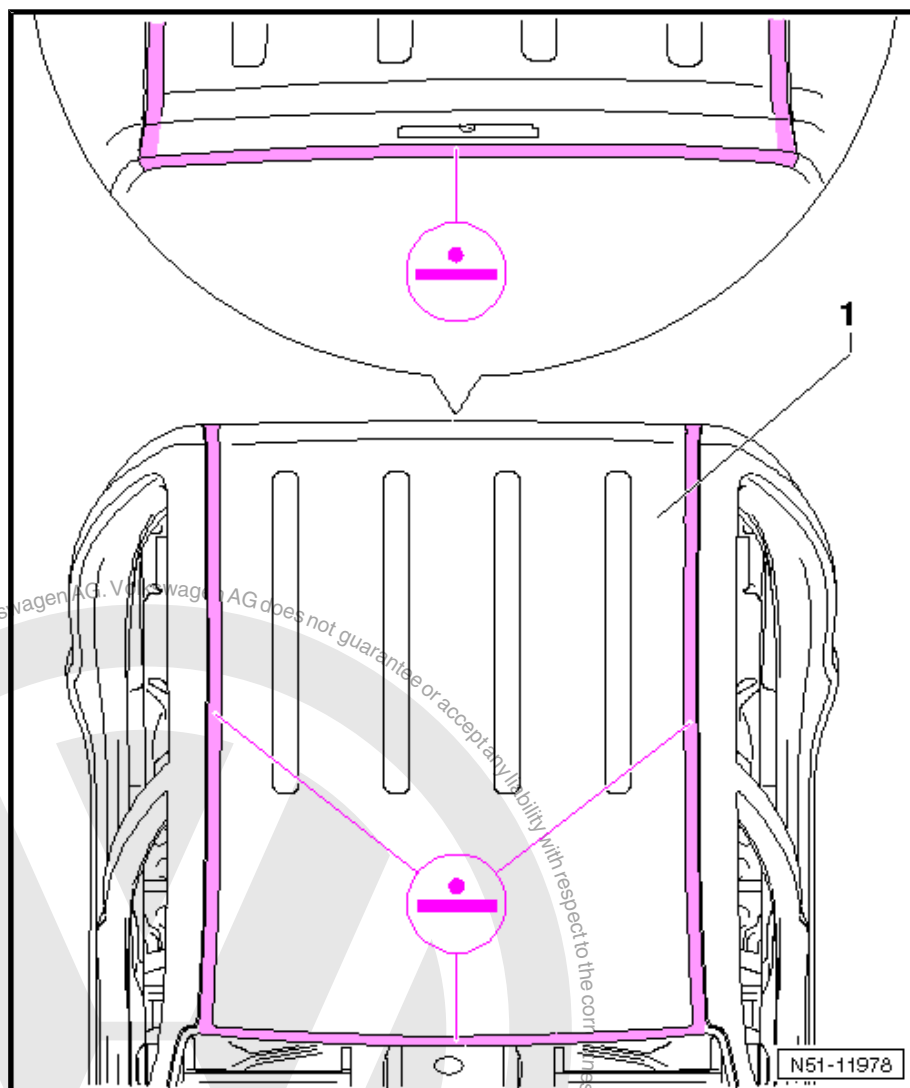


- Apply 1K assembly adhesive -D 190 MKD A3- to bonding surfaces -1-, -2- and -3-.
- Apply 2K body adhesive -D 180 KD3 A2- to bonding surfaces -4-.



**Note**

- ◆ *Apply adhesive beads sufficiently thickly so that optimal bonding with the body is guaranteed.*
- ◆ *New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.*



- Adapt new part with vehicle standing on its wheels or on alignment bracket set and fix in position.
- Set roof joint gap ⇒ [Item L \(page 9\)](#) on both sides with setting gauge -3371- .
- Check fit with all add-on parts.
- Weld in roof, RP spot weld seam.



RO: 51 07 55 70

## 2 Renewing front cross member for roof



### WARNING

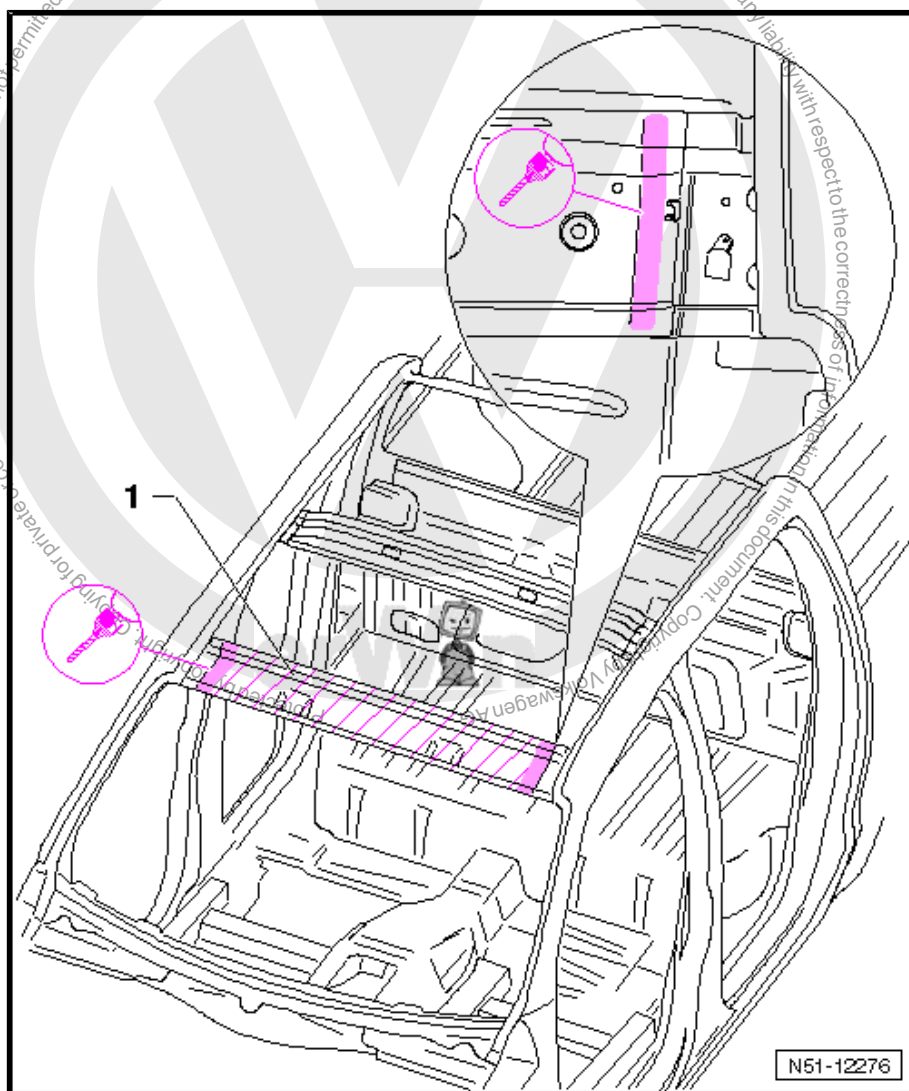
*Observe safety notes!*

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

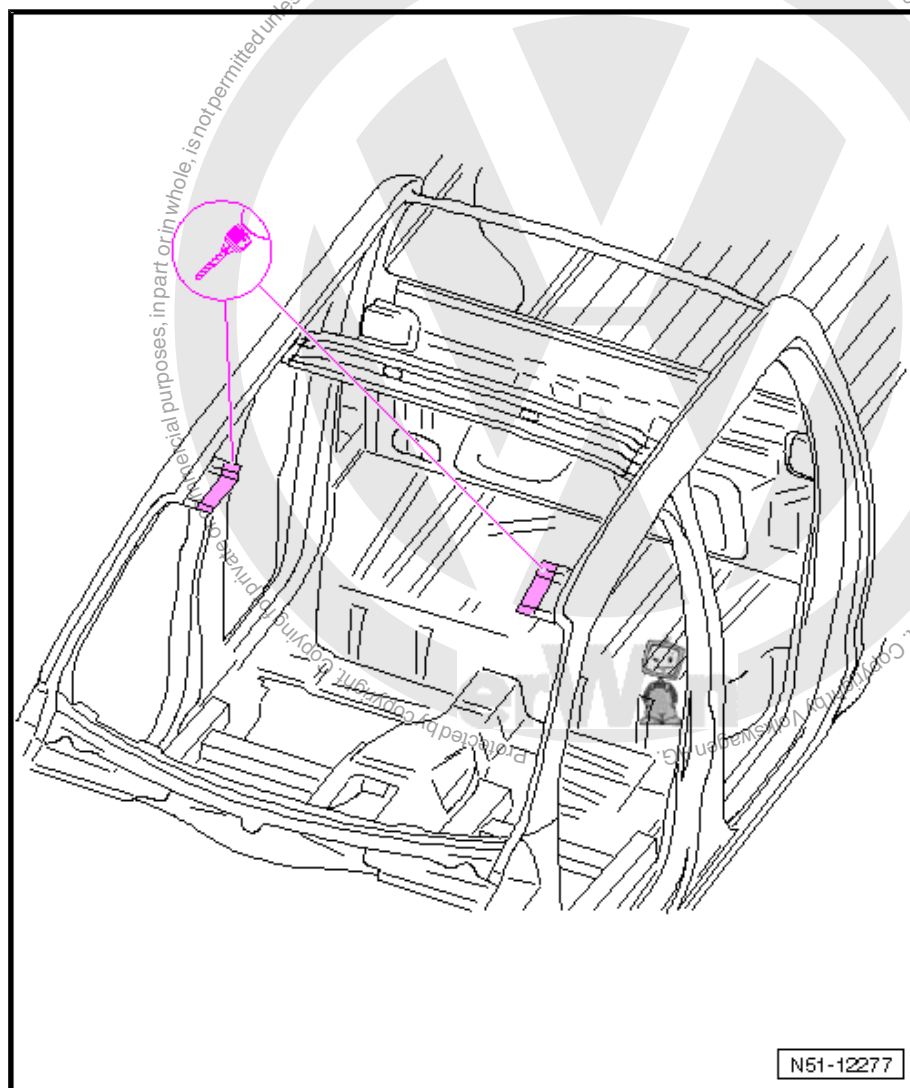
### 2.1 Removing

- Roof already removed ⇒ „1 Renewing roof“, page 110 .

Carry out the following work:



- Separate original joint.
- Remove front cross member -1- from body.



- Remove remaining material.
- Grind welding surfaces on both sides back to bare metal.

## 2.2 Installing

### 2.2.1 Preparing new part

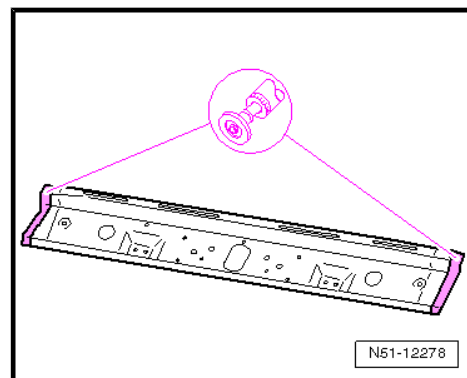
#### Replacement parts

- ◆ Front roof cross member



**Carry out the following work:**

- Grind welding surfaces on both sides down to bare metal.

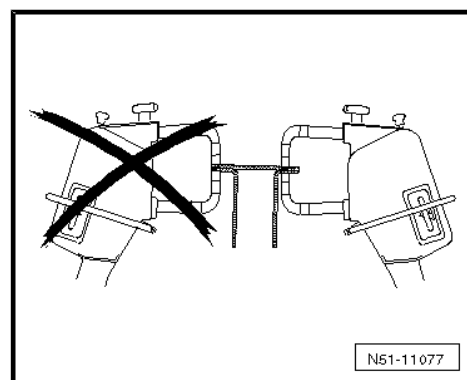


## 2.2.2 Welding in



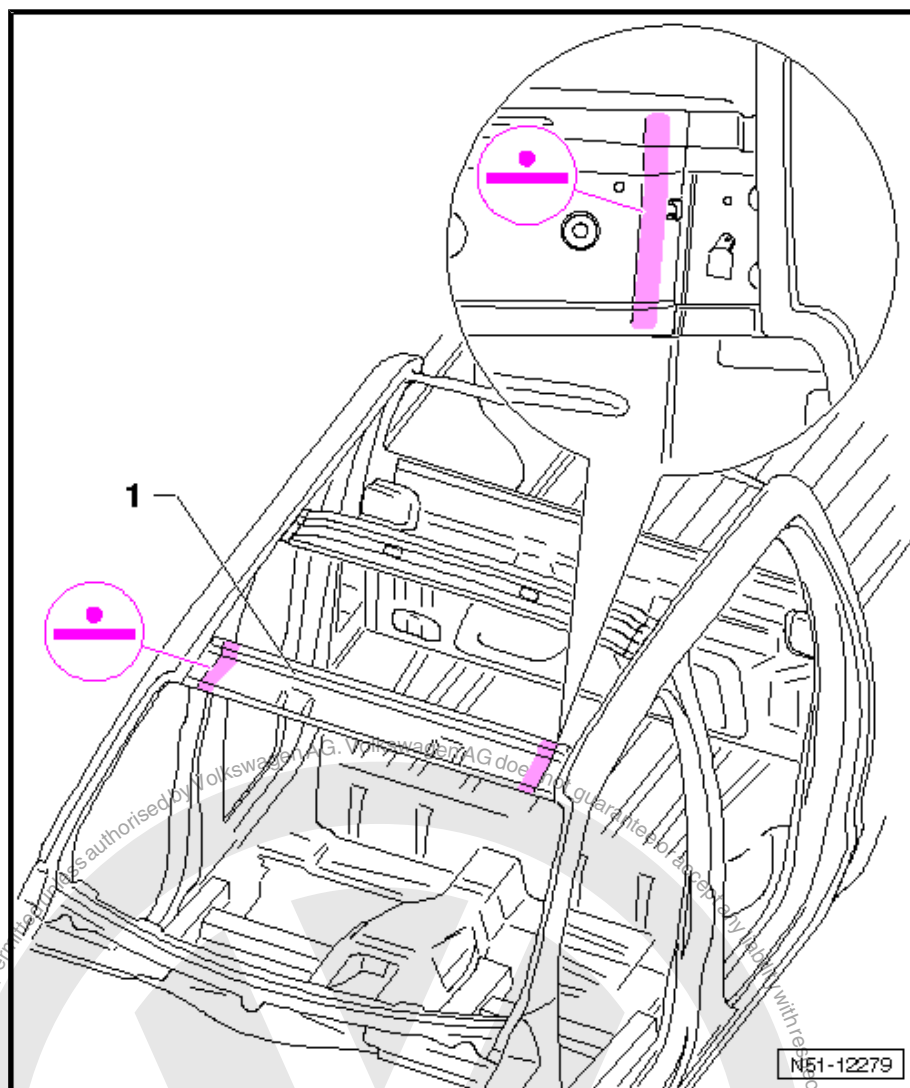
**Note**

*To ensure sufficient sturdiness, the RP weld points must be set as far as possible from the outer edge of the welding flange.*



**Carry out the following work:**





- Adapt front cross member -1- with vehicle standing on its wheels or on alignment bracket set and fix in position.
- Weld in front roof cross member, RP spot weld seam.
- Install roof ⇒ [„1.3 Installing“, page 113](#) .



RO: 51 08 55 70

### 3 Renewing roof reinforcement



#### WARNING

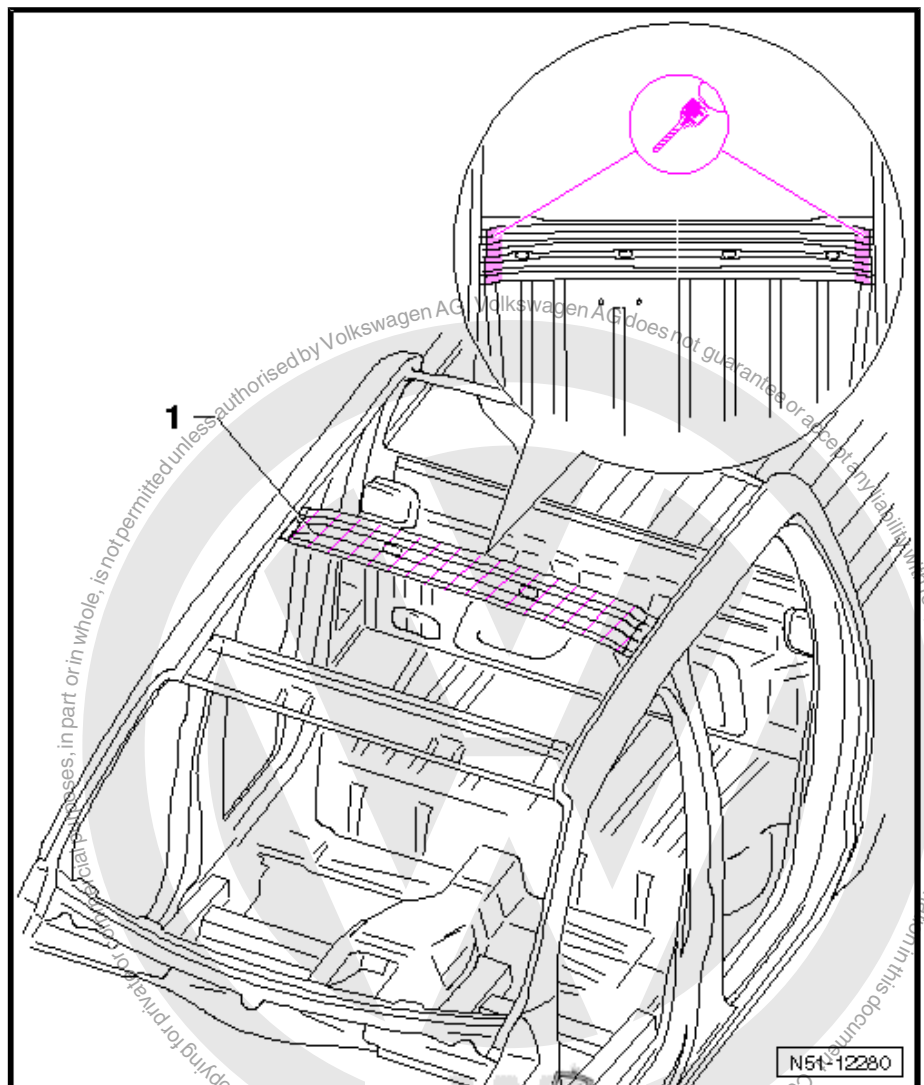
*Observe safety notes!*

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

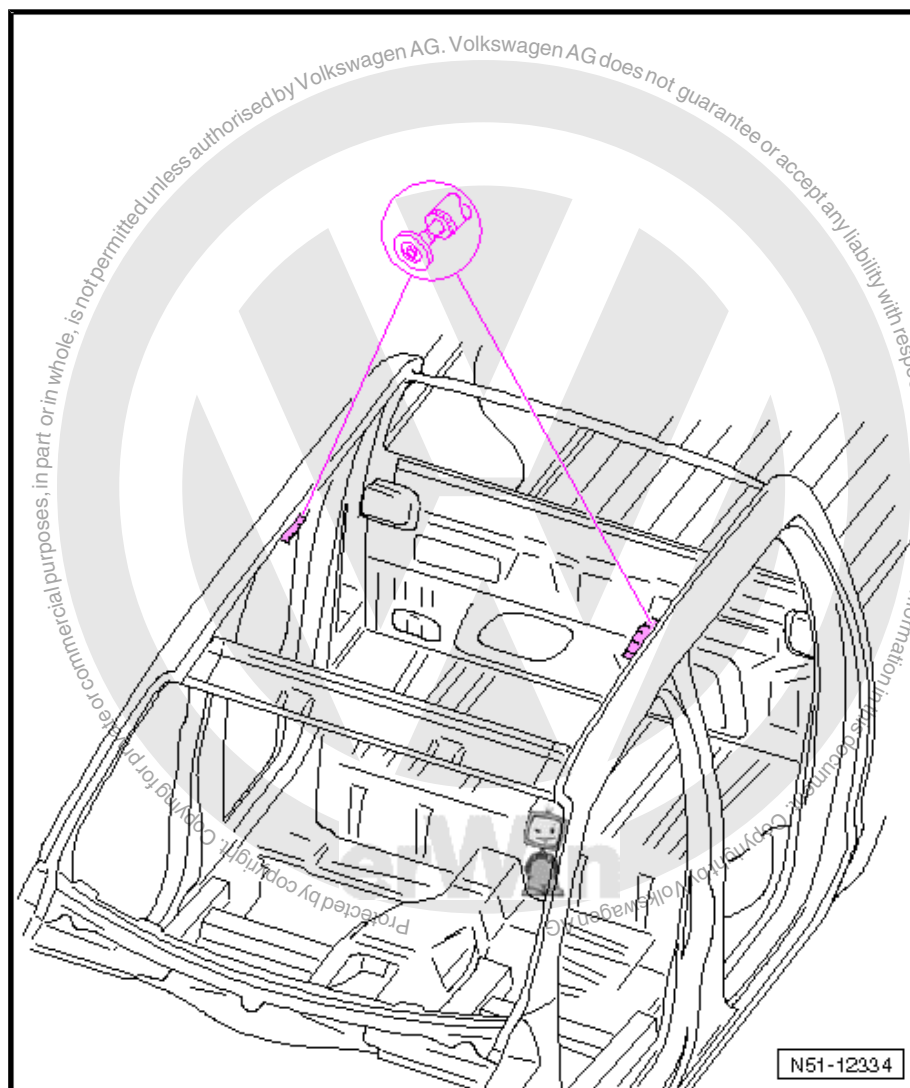
#### 3.1 Removing

- Roof already removed ⇒ „1 Renewing roof“, page 110 .

Carry out the following work:



- Separate original joint.
- Remove roof reinforcing -1- from body.



- Remove remaining material.
- Grind welding surfaces on both sides down to bare metal.

## 3.2 Installing

### 3.2.1 Preparing new part

#### Replacement parts

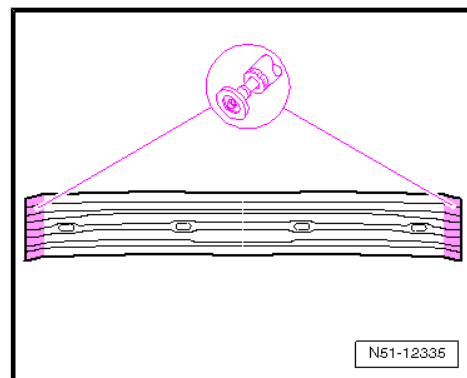
- ◆ Roof reinforcement





### Carry out the following work:

- Grind welding surfaces on both sides down to bare metal.

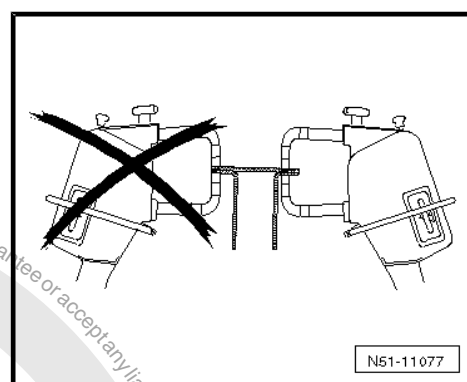


### 3.2.2 Welding in

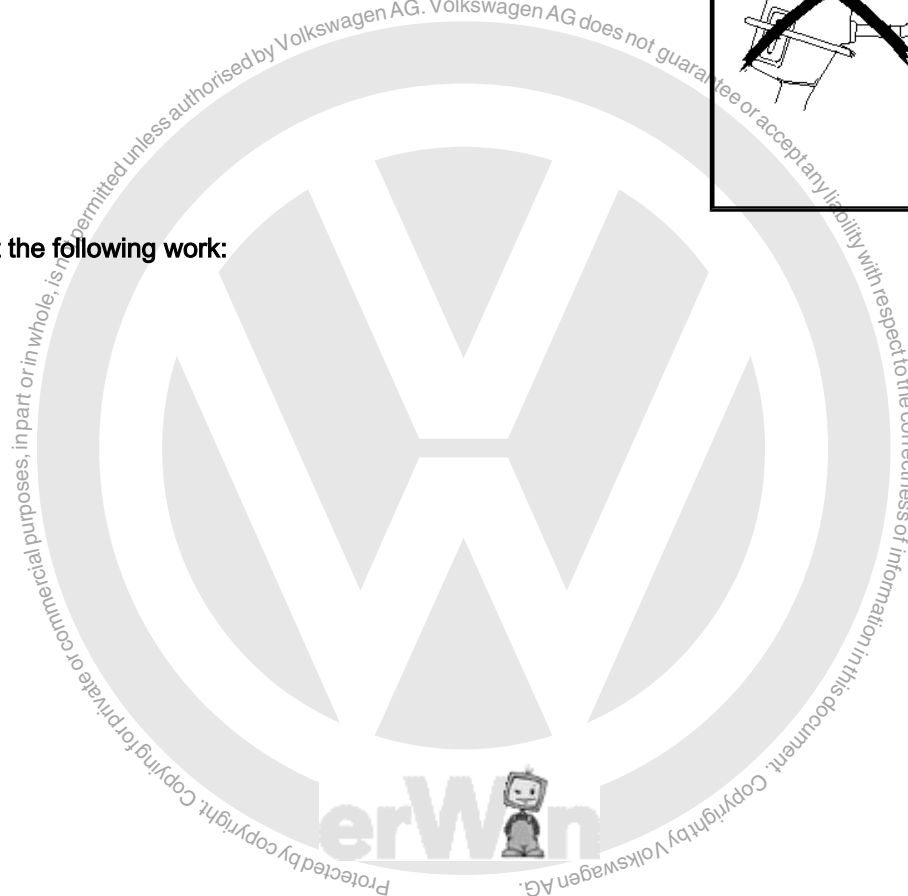


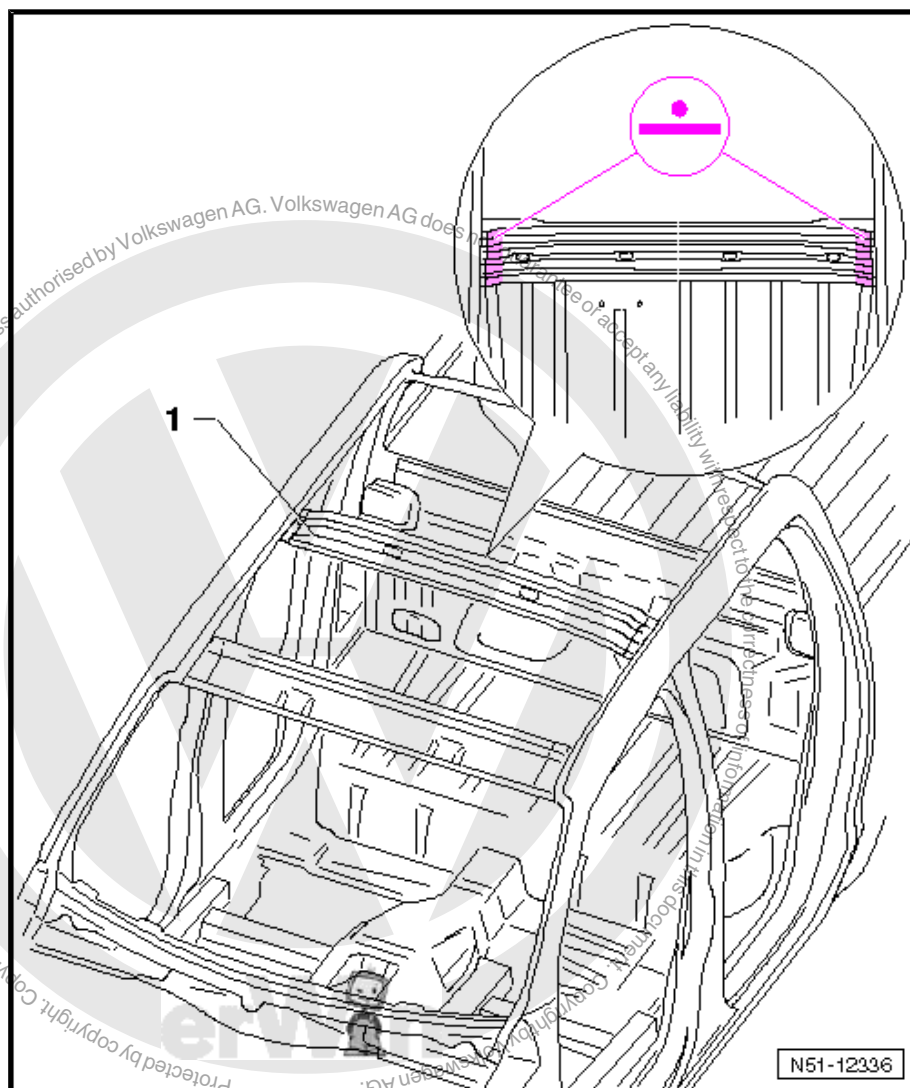
#### Note

*To ensure sufficient sturdiness, the RP weld points must be set as far as possible from the outer edge of the welding flange.*



### Carry out the following work:





- Adapt roof reinforcing -1- with vehicle standing on its wheels or on alignment bracket set and fix in position.
- Weld in roof reinforcement, RP spot weld seam.
- Install roof ⇒ [„1.3 Installing“, page 113](#) .



RO: 51 09 55 70

## 4 Renewing rear roof cross member



### WARNING

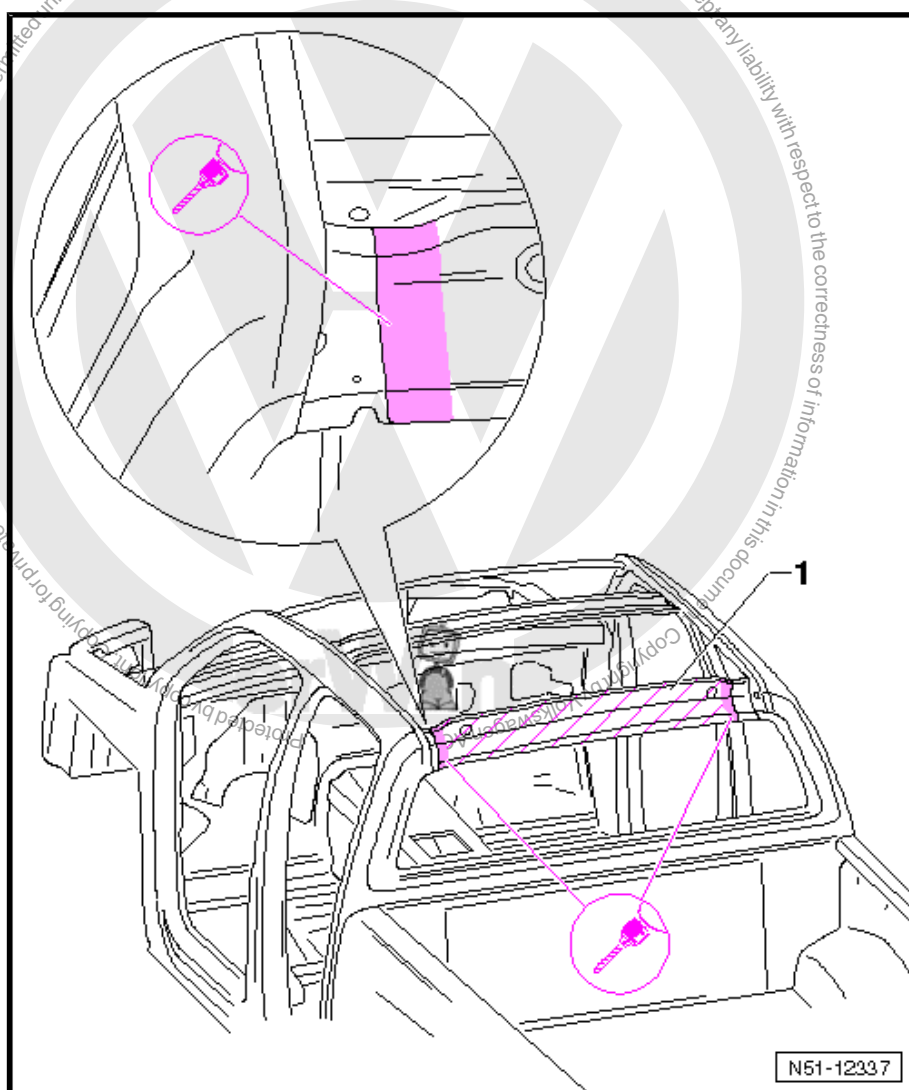
*Observe safety notes!*

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

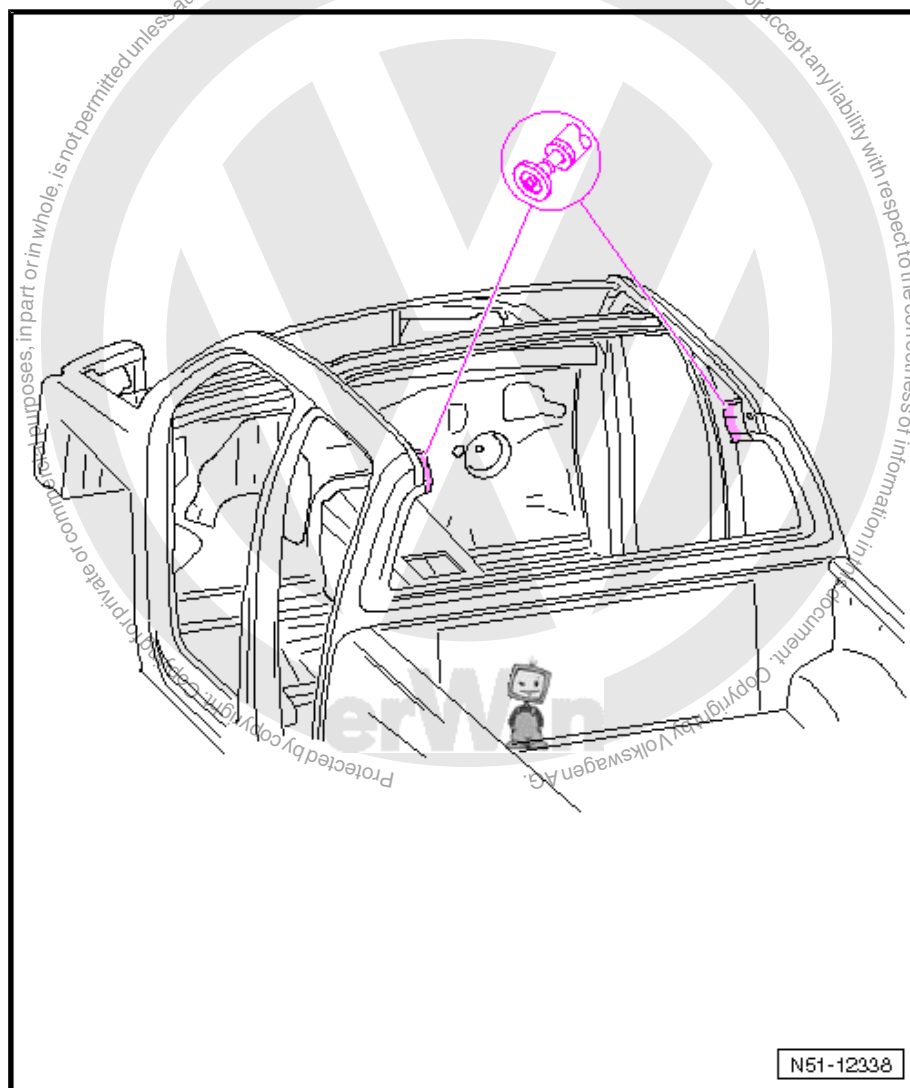
### 4.1 Removing

- Roof already removed ⇒ „1 Renewing roof“ page 110 .

Carry out the following work:



- Separate original joint.
- Remove rear cross member -1- from body.



- Remove remaining material.
- Grind welding surfaces on both sides down to bare metal.

## 4.2 Installing

### 4.2.1 Preparing new part

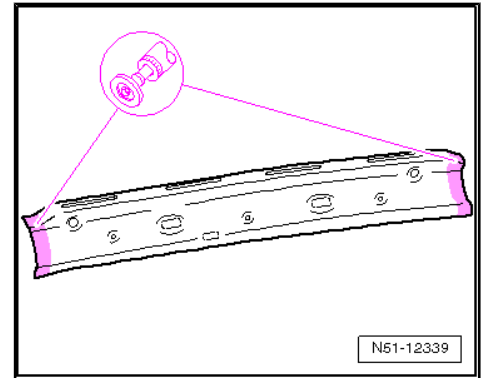
#### Replacement parts

- ◆ Rear roof cross member



Carry out the following work:

- Grind welding surfaces on both sides down to bare metal.

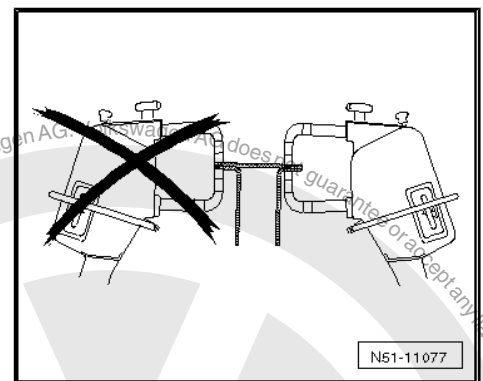


#### 4.2.2 Welding in

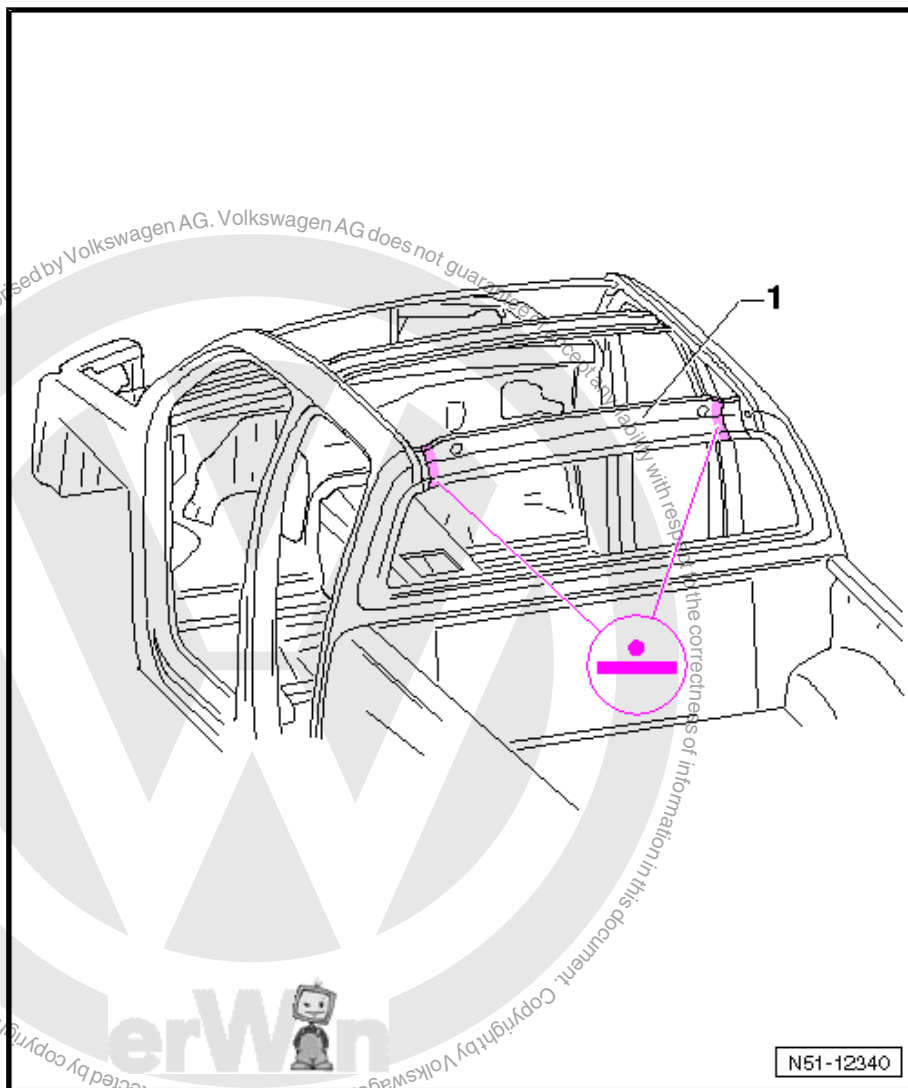


Note

*To ensure sufficient sturdiness, the RP weld points must be set as far as possible from the outer edge of the welding flange.*



Carry out the following work:



- Adapt rear cross member -1- with vehicle standing on its wheels or on alignment bracket set and fix in position.
- Weld in rear cross member for roof, RP spot weld seam.
- Install roof ⇒ [„1.3 Installing“, page 113](#) .



RO: 51 13 55 00, 51 13 55 20

## 5 Renewing rear window frame



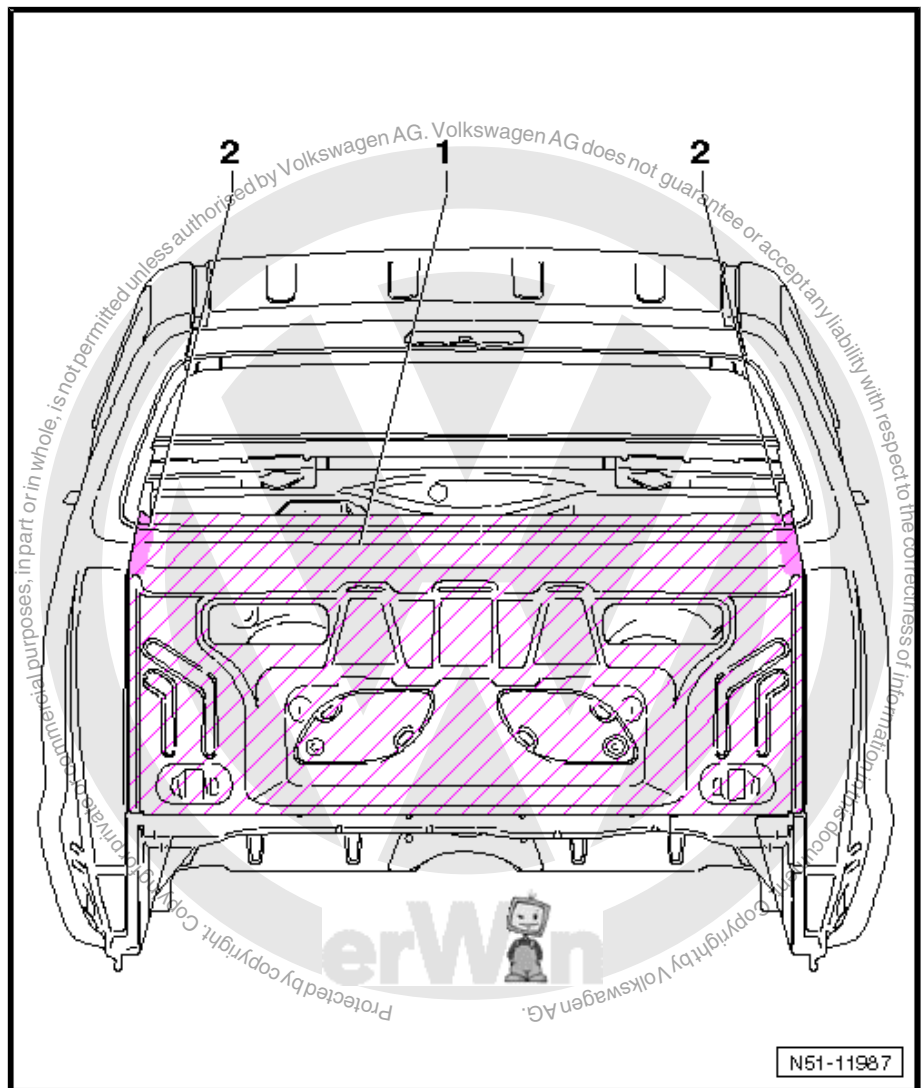
**WARNING**

*Observe safety notes!*

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

1 - Rear window frame

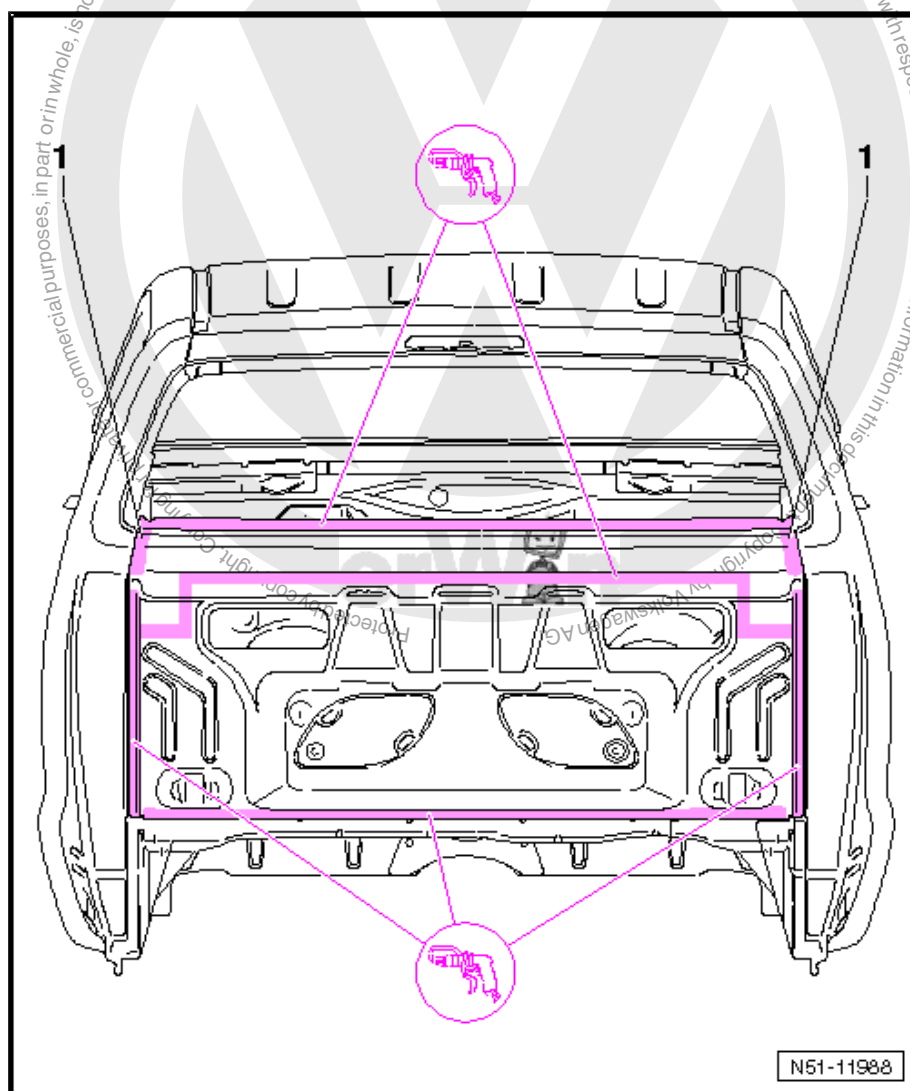
2 - Bonded areas





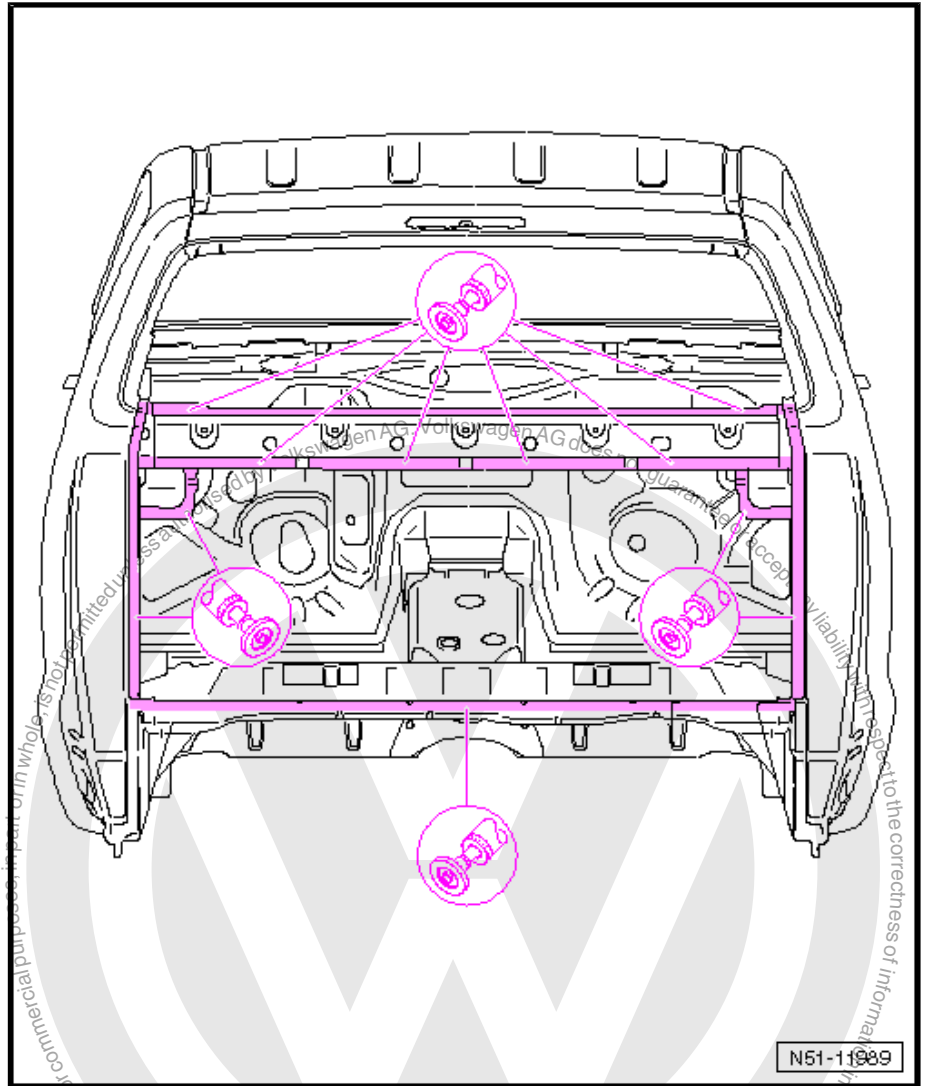
## 5.1 Removing

Carry out the following work:



- Separate original joint.
- Release bonded joints -1-. To release, heat bonded surfaces with hot air blower -V.A.G 1416- .
- Remove rear window frame from body.





- Remove remaining material.
- Remove adhesive residues and grind bonding surfaces down to bare metal.
- Grind welding surfaces on both sides back to bare metal.

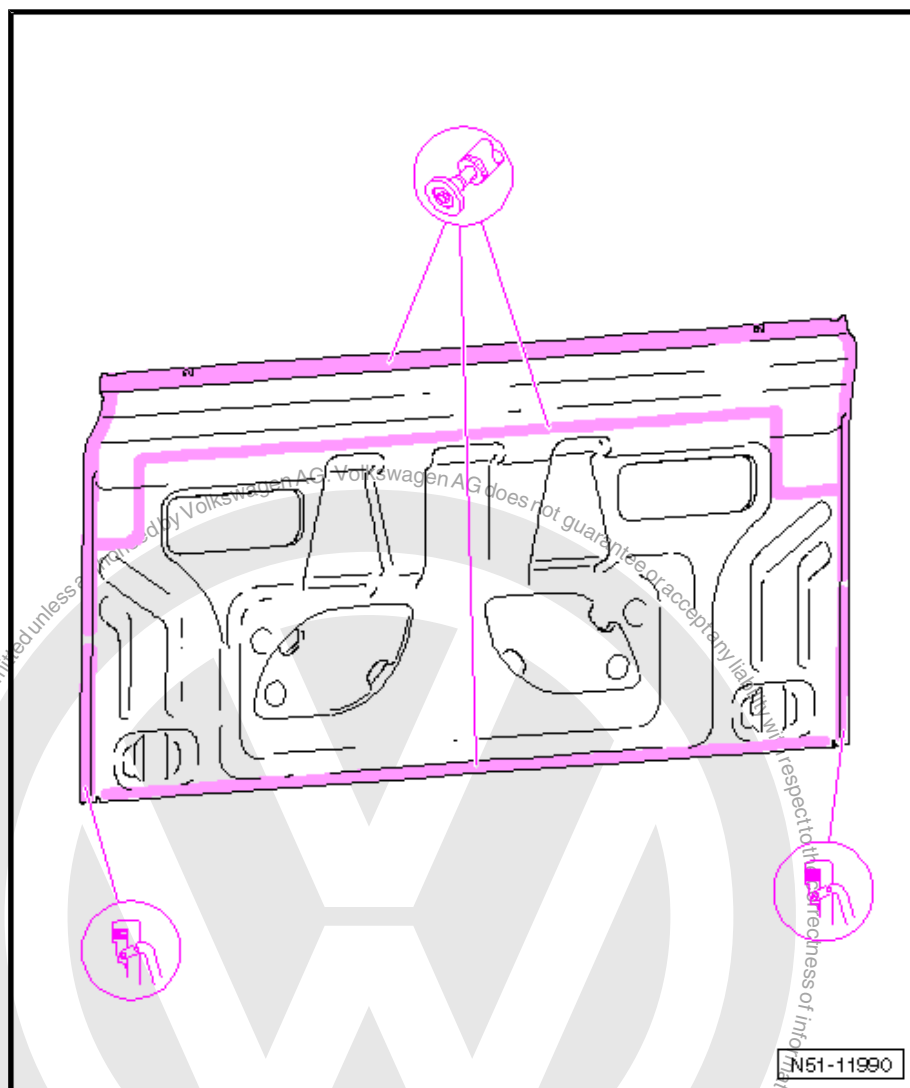
## 5.2 Installing

### 5.2.1 Preparing replacement part

#### Replacement parts

- ◆ Rear window frame
- ◆ 2K body adhesive -D 180 KD3 A2-

Carry out the following work:

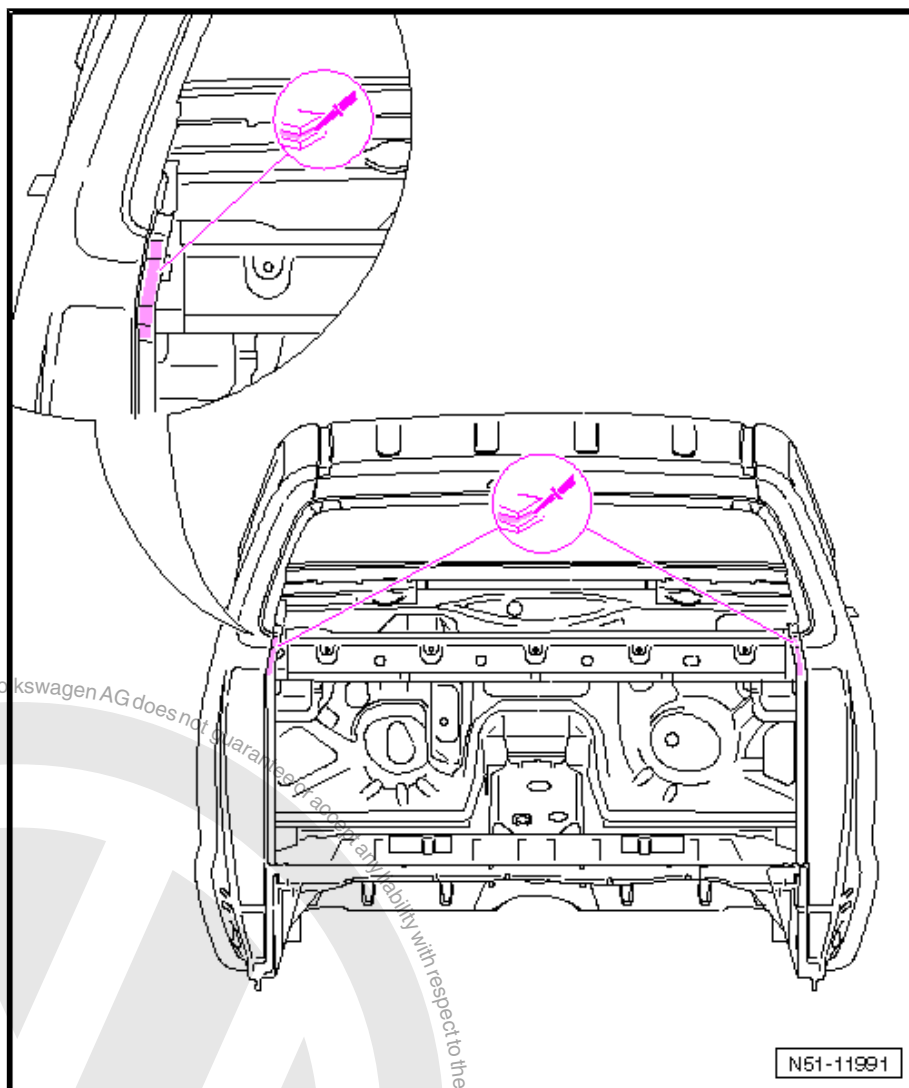


- Punch specified holes in new part,  $\varnothing$  7.0 mm.
- Grind bonding surfaces down to bare metal on one side (from inside).
- Grind welding surfaces on both sides back to bare metal.



## 5.2.2 Welding in

Carry out the following work:

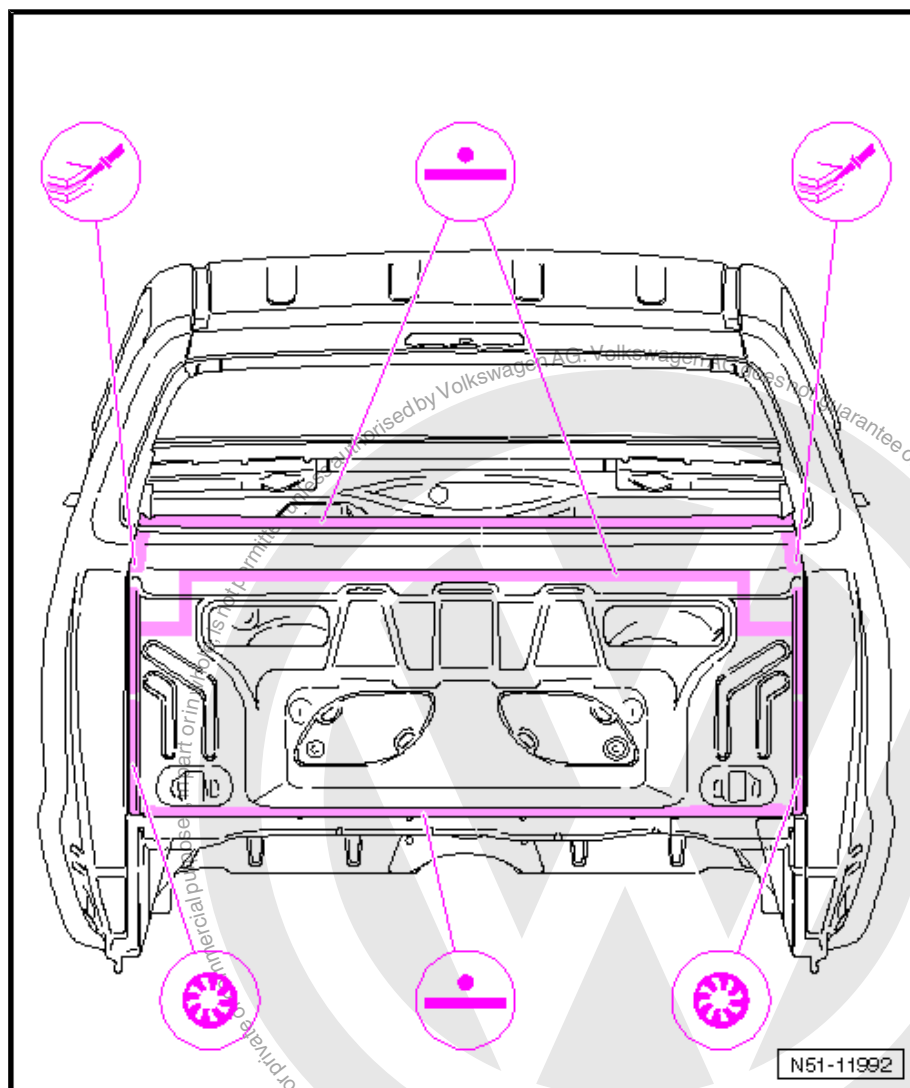


- Apply 2K body adhesive -D 180 KD3 A2- to bonding surfaces.



### Note

- ◆ Apply adhesive beads sufficiently thickly so that optimal bonding with the body is guaranteed.
- ◆ New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.



- Adapt new part with vehicle standing on its wheels or on alignment bracket set and fix in position.
- Check fit with rear-view window.
- Weld in rear window frame, RP spot weld seam and SG plug weld seam.



RO: 51 14 55 70

## 6 Renewing cross member



### WARNING

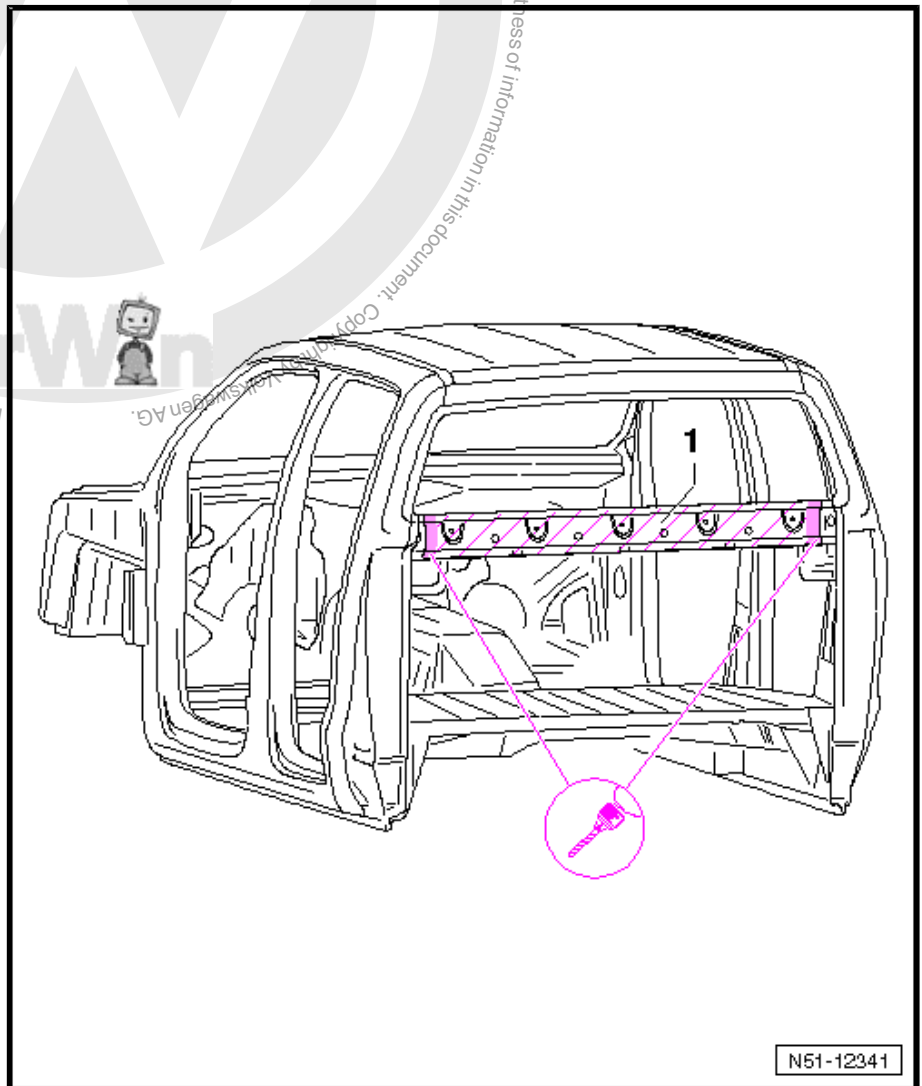
**Observe safety notes!**

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

### 6.1 Removing

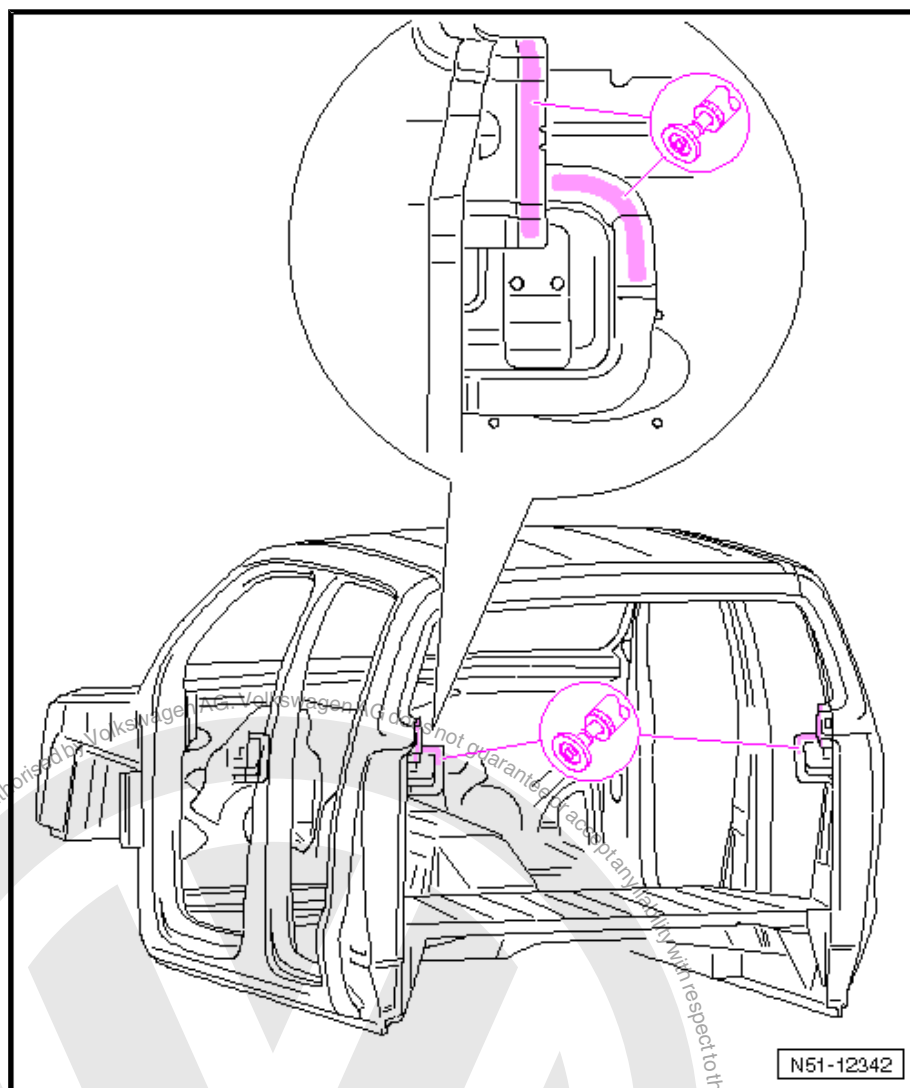
Rear window frame already removed  
⇒ „5 Renewing rear window frame“, page 129 .

Carry out the following work:



N51-12341

- Separate original joint.
- Remove cross member -1- from body.



- Remove remaining material.
- Grind welding surfaces on both sides down to bare metal.

## 6.2 Installing

### 6.2.1 Preparing new part

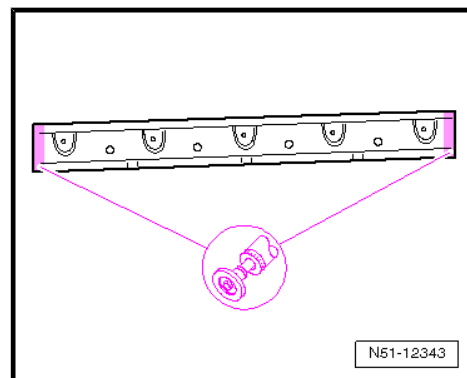
#### Replacement parts

- ◆ Cross member



Carry out the following work:

- Grind welding surfaces on both sides down to bare metal.

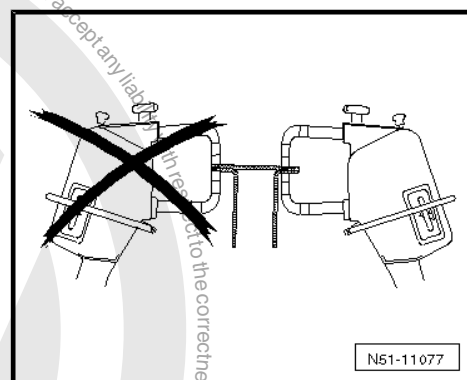


## 6.2.2 Welding in

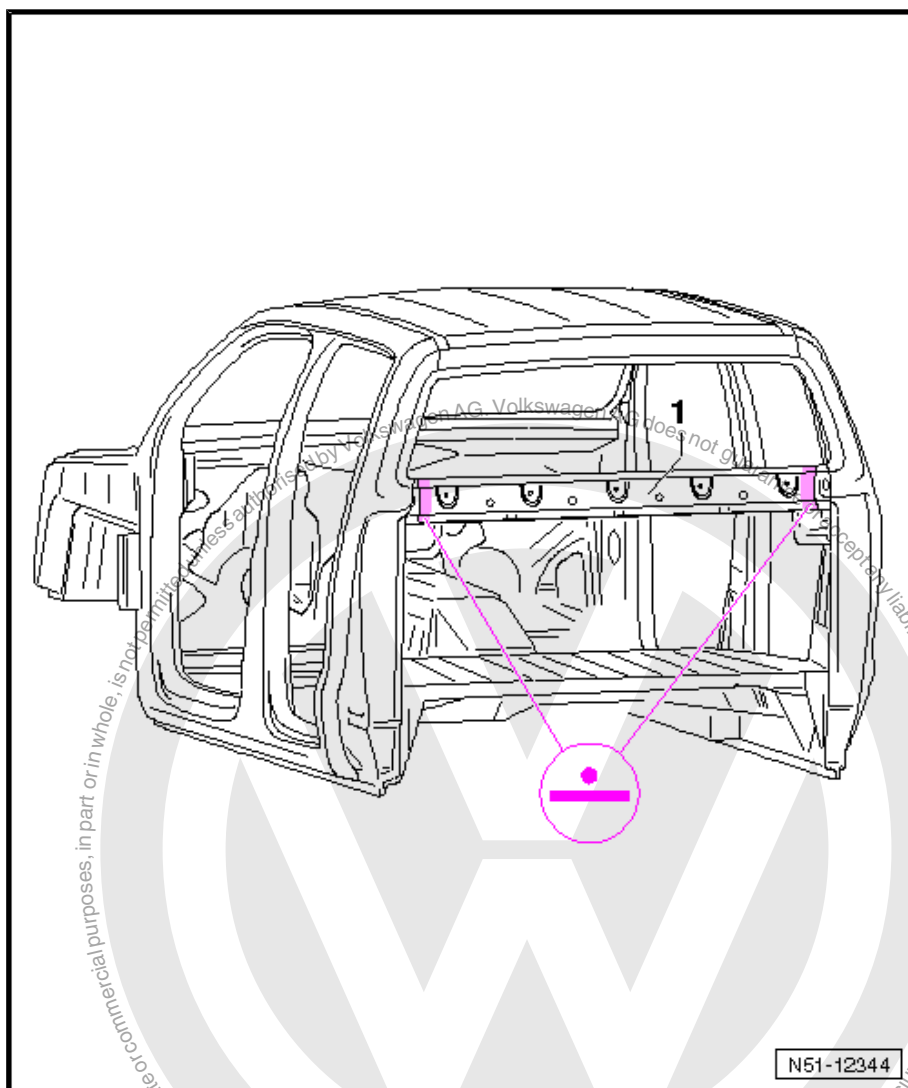


Note

*To ensure sufficient sturdiness, the RP weld points must be set as far as possible from the outer edge of the welding flange.*



Carry out the following work:



- Adapt cross member -1- with vehicle standing on its wheels or on alignment bracket set and fix in position.
- Weld in cross member, RP spot weld seam.
- Install rear window frame ⇒ ["5.2 Installing", page 131](#) .





RO: 51 37 55 00, 51 37 55 02

## 7 Renewing hinge pillar (A-pillar)



### WARNING

*Observe safety notes!*

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

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



### Note

- ◆ Specified parting cuts -1- to -5- can be combined for other forms of damage.
- ◆ Description for other forms of damage must be derived from this accordingly.

### Assembly overview for vehicles with double cab

#### 1 - Upper parting cut

- ☐ Carry out as per dimension -a-.

Dimension a = 400 mm

#### 2 - Parting cut for partial renewal

- ☐ The parting cut is permitted for other forms of damage

#### 3 - Parting cut for partial renewal

- ☐ The parting cut is permitted for other forms of damage

#### 4 - Parting cut for side member

- ☐ Carry out as per dimension -b-.

Dimension b = 250 mm

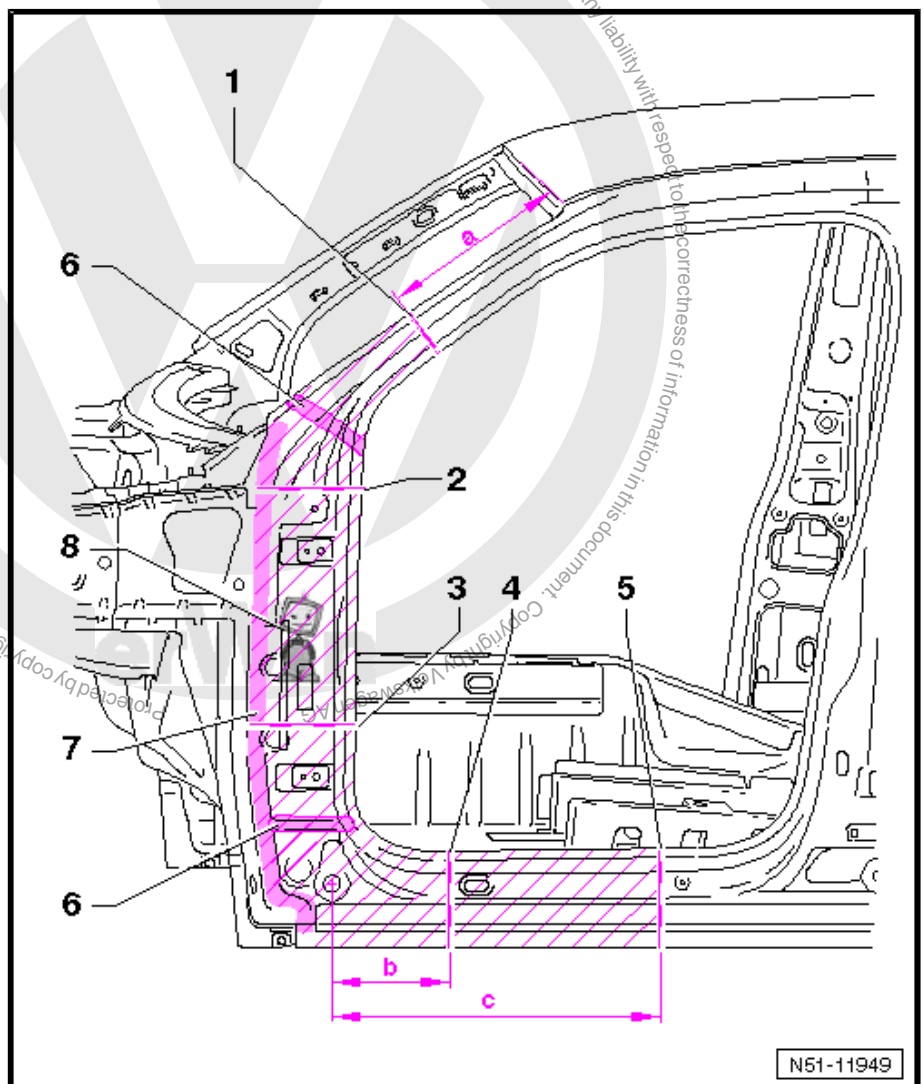
#### 5 - Parting cut for side member

- ☐ Carry out as per dimension -c-.

Dimension c = 750 mm

#### 6 - Moulded foam element

- ☐ Reduces the amount of driving noise transmitted into the interior.
- ☐ Moulded foam elements must be inserted again and must not be left out  
⇒ page 5 .





## 7 - Bonded area

- ☐ Cannot be restored in event of repair.

## 8 - Wing retainer

- ☐ Renewing wing retainer ⇒ [page 146](#).

### Assembly overview for vehicles with single cab

#### 1 - Upper parting cut

- ☐ Carry out as per dimension -a-.

Dimension a = 400 mm

#### 2 - Parting cut for partial renewal

- ☐ The parting cut is permitted for other forms of damage

#### 3 - Parting cut for partial renewal

- ☐ The parting cut is permitted for other forms of damage

#### 4 - Parting cut for side member

- ☐ Carry out as per dimension -b-.

Dimension b = 250 mm

#### 5 - Parting cut for side member

- ☐ Carry out as per dimension -c-.

Dimension c = 750 mm

#### 6 - Moulded foam element

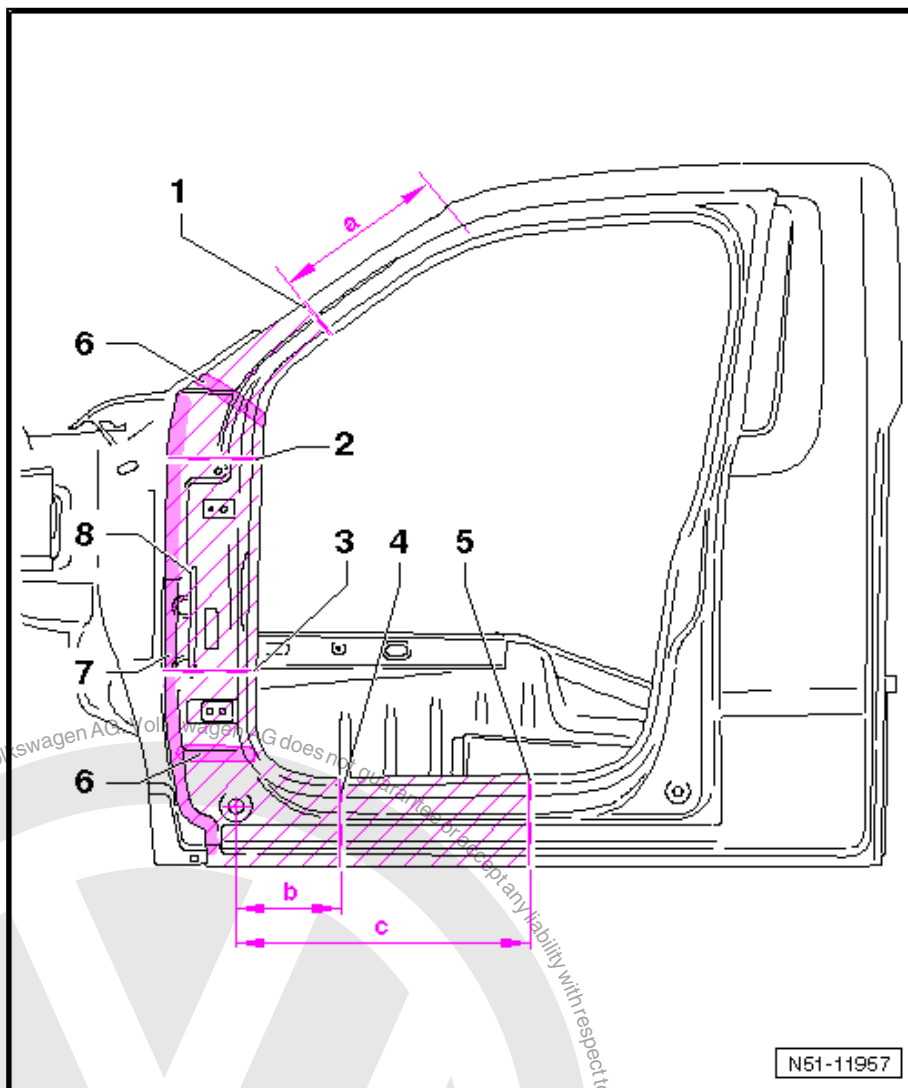
- ☐ Reduces the amount of driving noise transmitted into the interior.
- ☐ Moulded foam elements must be inserted again and must not be left out ⇒ [page 5](#).

## 7 - Bonded area

- ☐ Cannot be restored in event of repair.

## 8 - Wing retainer

- ☐ Renewing wing retainer ⇒ [page 146](#).



## 7.1 Tools

### Special tools and workshop equipment required

- ◆ Pneumatic sabre saw -V.A.G 1523B-
- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Accessory pack -VAS 6535 /1-



- ◆ MIG brazing and welding system -VAS 6382-

## 7.2 Removing

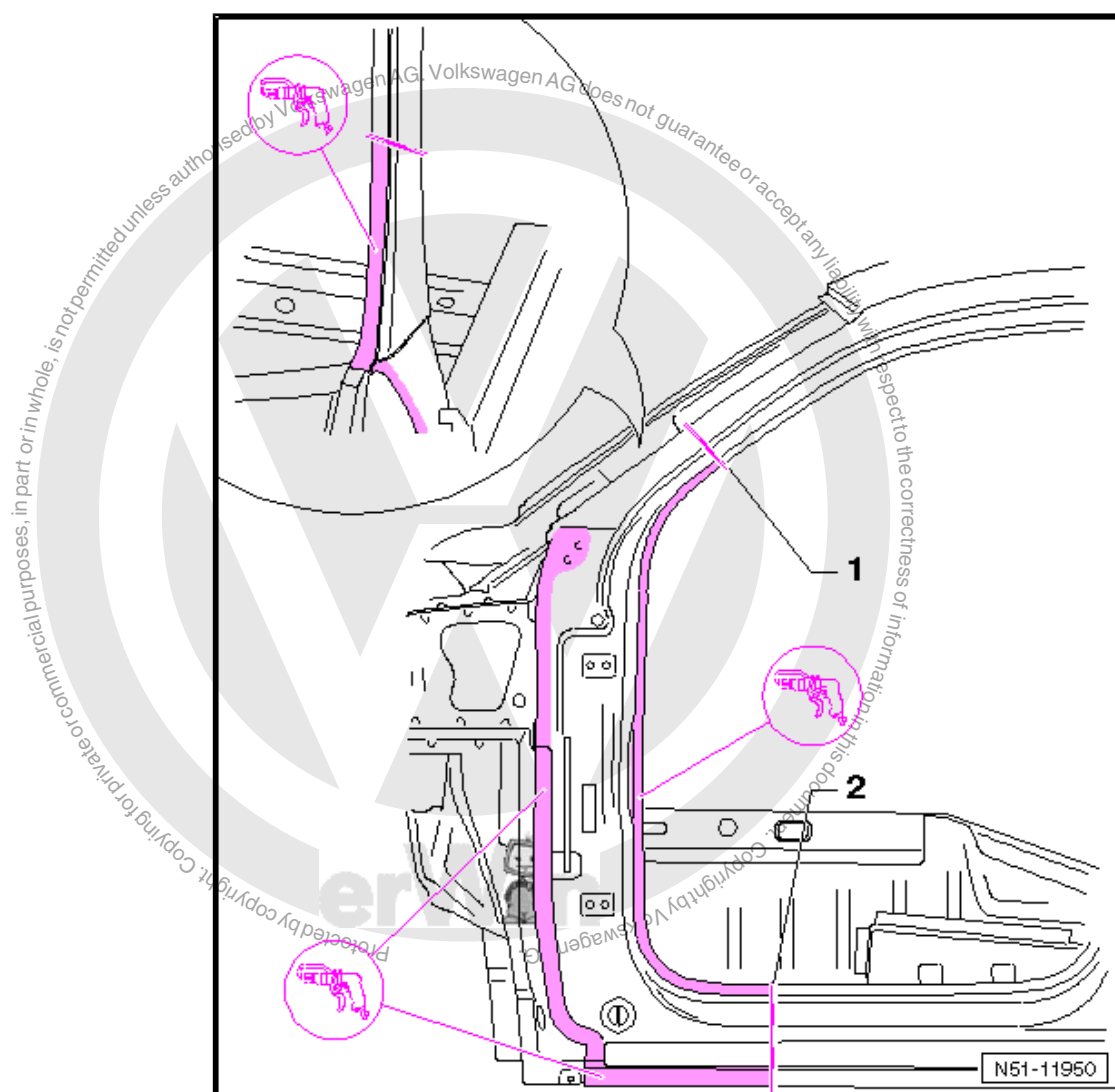
For vehicles with single and double cab



### Note

- ◆ Make parting cuts with pneumatic jig-saw -V.A.G 1523B- only.
- ◆ Parting cuts must be straight.
- ◆ Do not damage inner reinforcements when carrying out parting cuts.

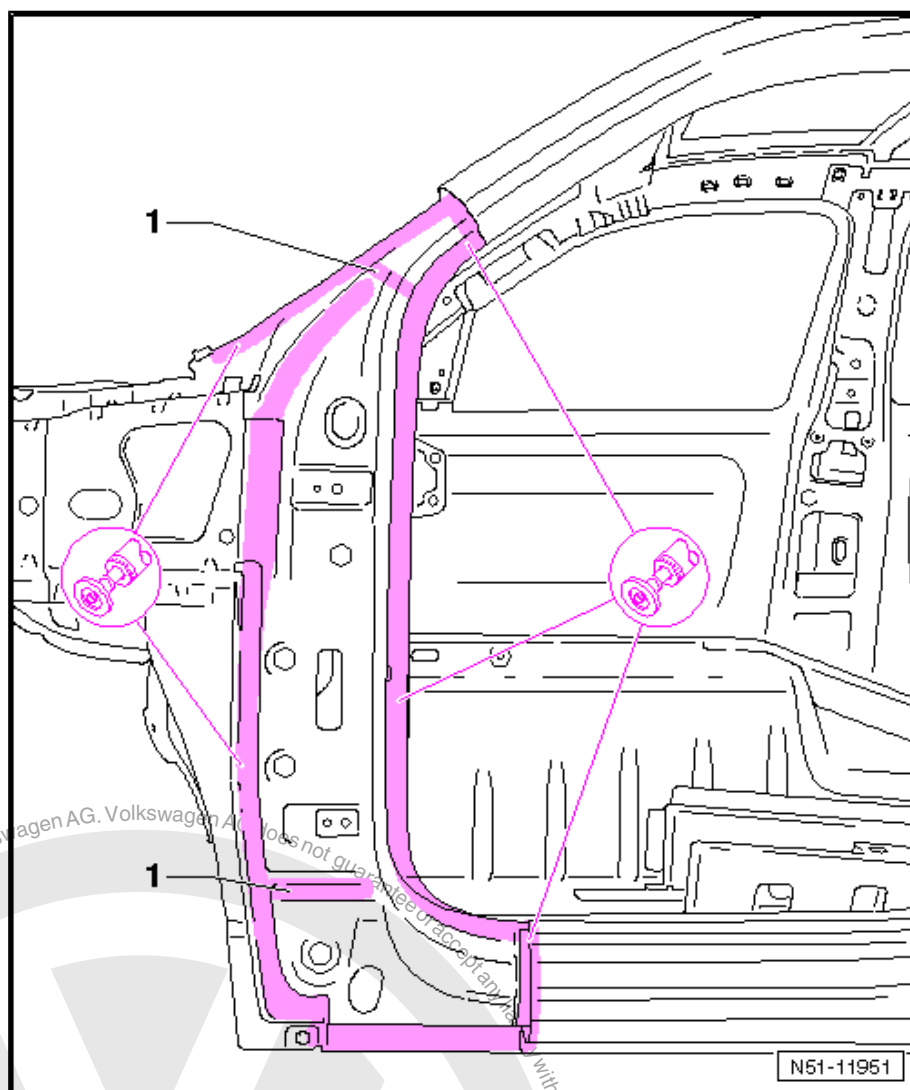
Carry out the following work:



- Mark parting cut -1- as per ⇒ [Item 1 \(page 139\)](#) (400 mm from top edge of windscreen aperture) and cut.
- Mark parting cut -2- as per ⇒ [Item 4 \(page 139\)](#) (250 mm from centre of hole) and cut.
- Separate original joint.



- Release bonded joint ⇒ [Item 7 \(page 139\)](#) . To release, heat bonded surface with hot air blower -V.A.G 1416- .
- Remove hinge pillar (A-pillar) from body.



- Remove remaining material.
- Remove adhesive residues and grind bonding surfaces down to bare metal.
- Grind welding surfaces on both sides down to bare metal.
- Prepare moulded foam elements -1- for installation ⇒ [page 5](#) .

### 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 ⇒ „7.1 Tools“, [page 140](#).

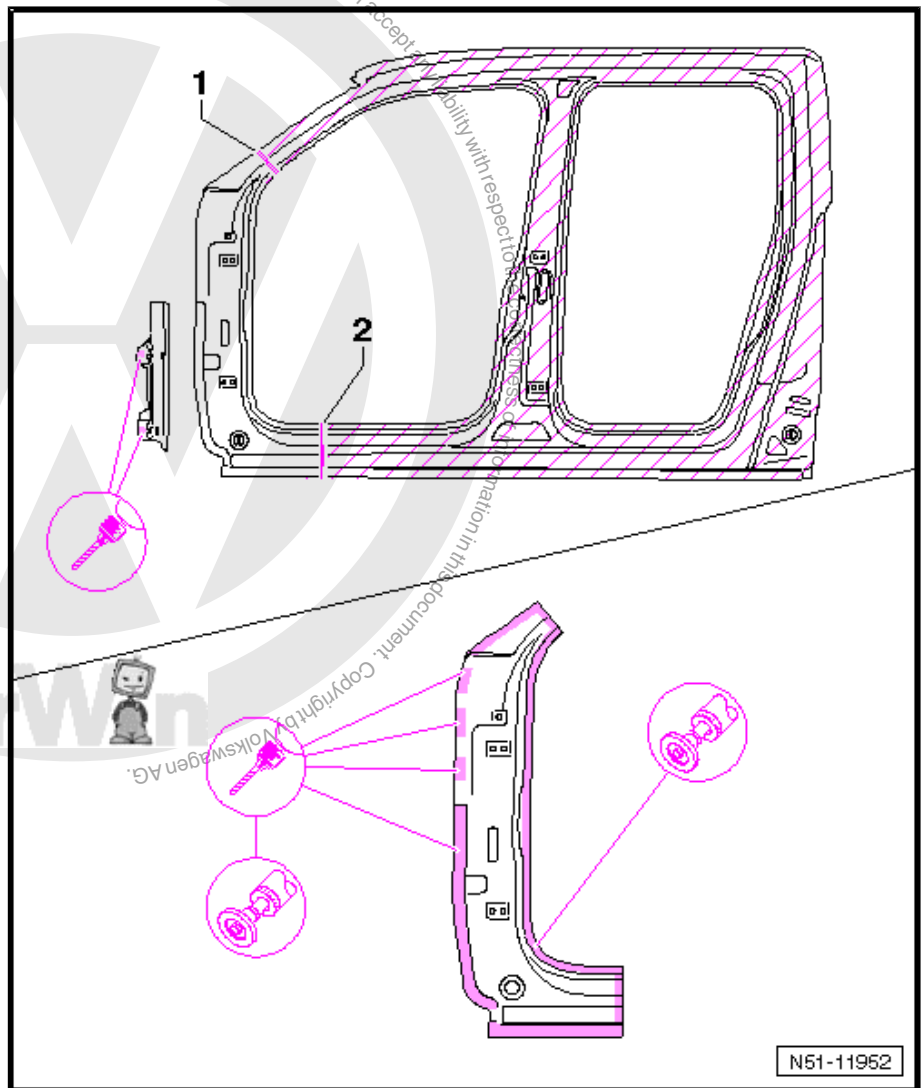


### 7.3.1 Preparing new part, vehicles with double cab

#### Replacement parts

- ◆ Side panel
- ◆ Wing retainer

Carry out the following work:



- Transfer parting cuts -1- and -2- from body to new part.
- Make parting cuts and remove shaded area.
- Drill specified holes in new part, Ø 7.0 mm.
- Prepare wing retainer, drill holes, Ø 7.0 mm.
- Grind welding surfaces on both sides back to bare metal.

### 7.3.2 Preparing new part, vehicles with single cab

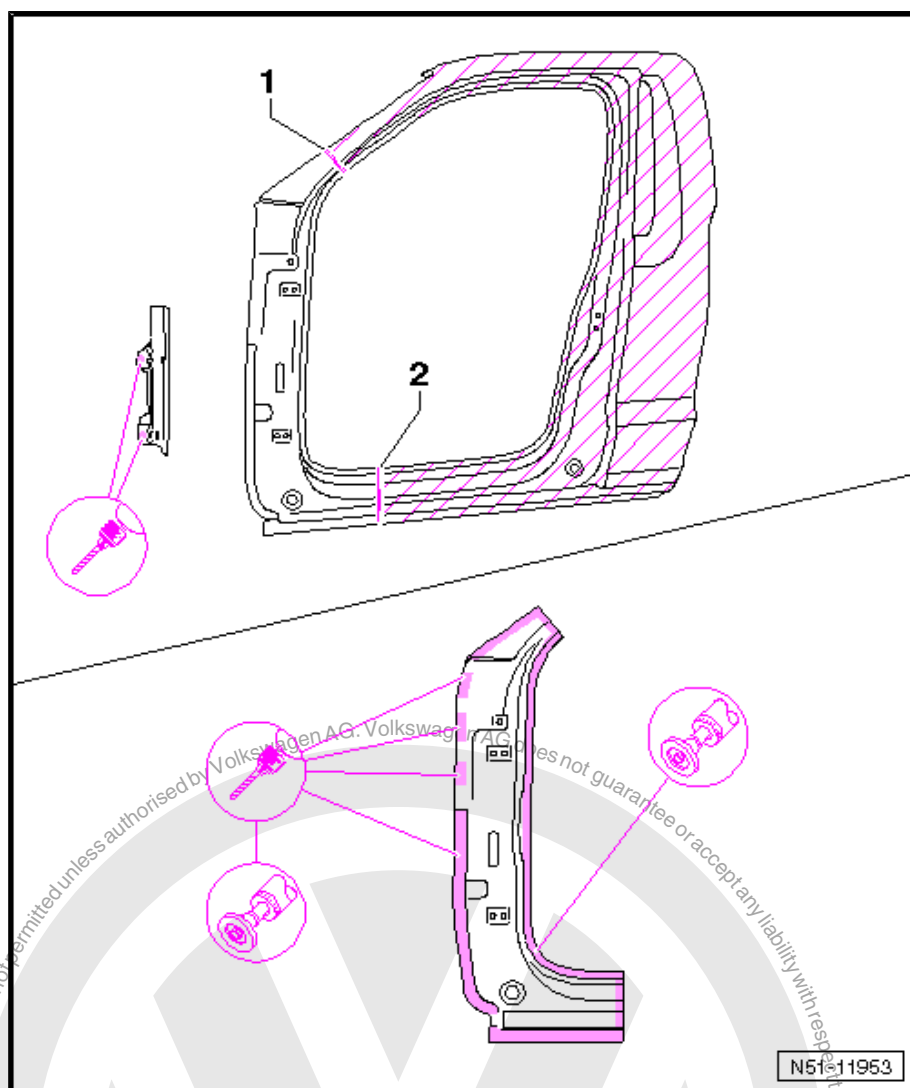
#### Replacement parts

- ◆ Side panel



◆ Wing retainer

Carry out the following work:



- Transfer parting cuts -1- and -2- from body to new part.
- Make parting cuts and remove shaded area.
- Drill specified holes in new part,  $\varnothing$  7.0 mm.
- Prepare wing retainer, drill holes,  $\varnothing$  7.0 mm.
- Grind welding surfaces on both sides back to bare metal.



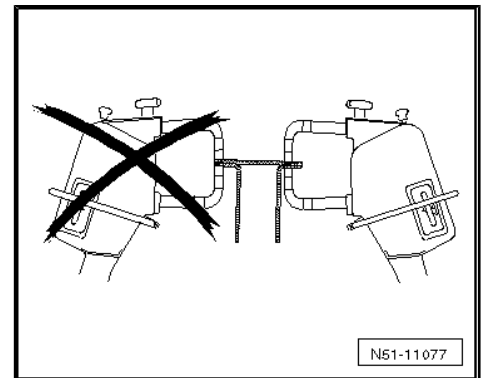
### 7.3.3 Welding in

For vehicles with single and double cab

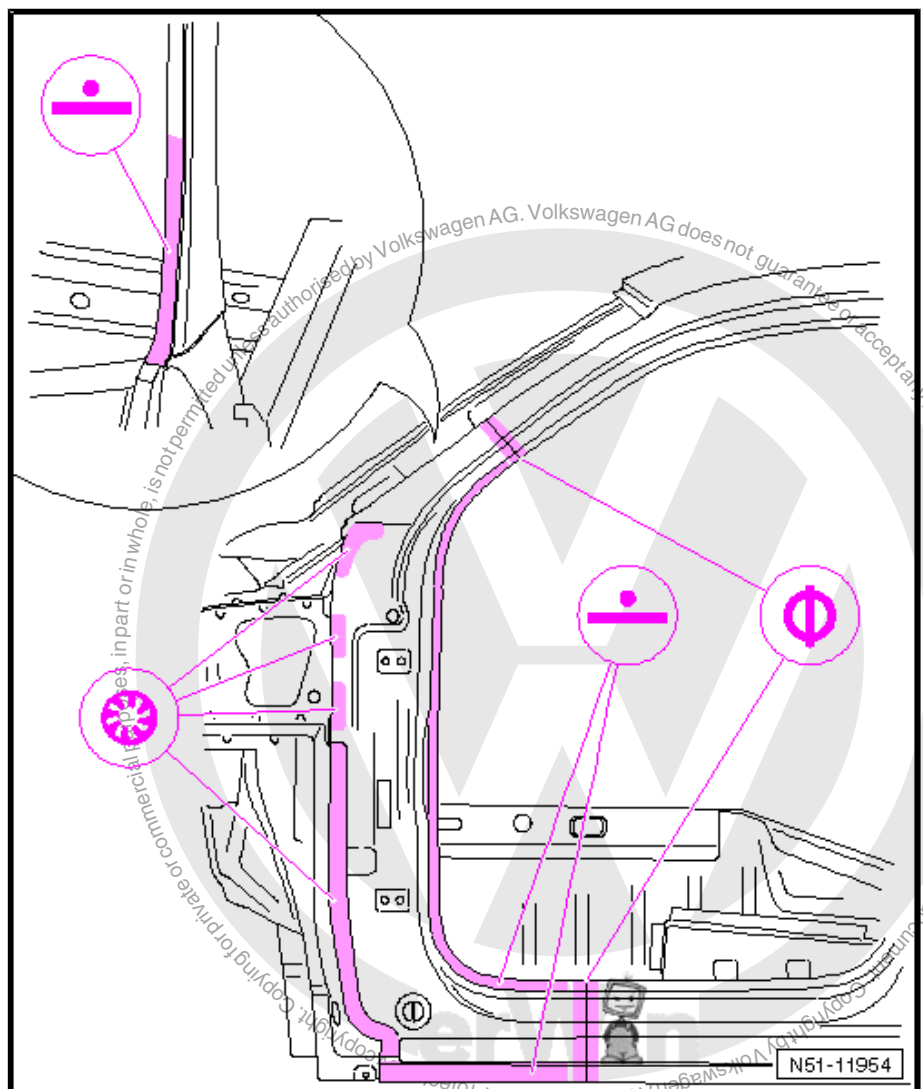


#### Note

- ◆ To ensure sufficient sturdiness, the RP weld points must be set as far as possible from the outer edge of the welding flange.
- ◆ MIG brazed seams are permitted at the parting cuts shown in the illustration.



Carry out the following work:



- Adapt new part with vehicle standing on its wheels or on alignment bracket set and fix in position.
- Check fit with all add-on parts.
- Weld in hinge pillar (A-pillar), RP spot weld seam, SG plug weld seam and SG stitch weld seam.

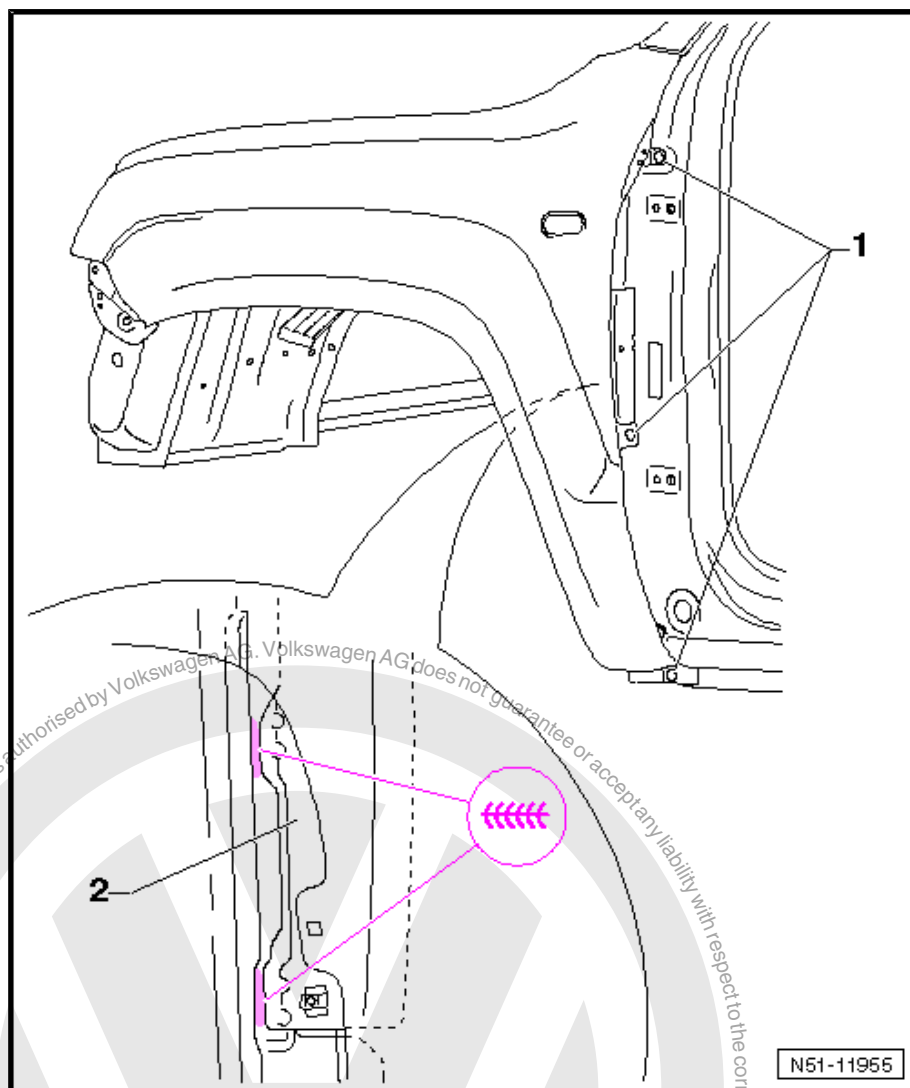




- Optically process visible weld joints.
- Use 2K filler to smooth out rough spots.

### 7.3.4 Renewing wing retainer

Carry out the following work:

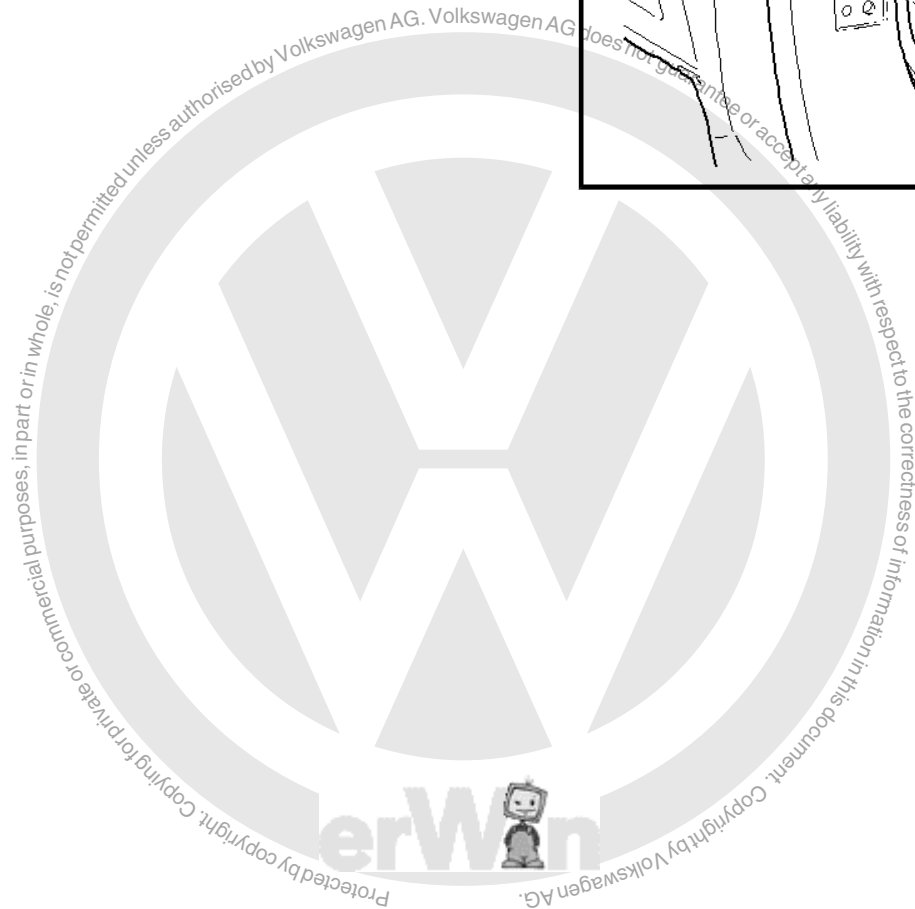
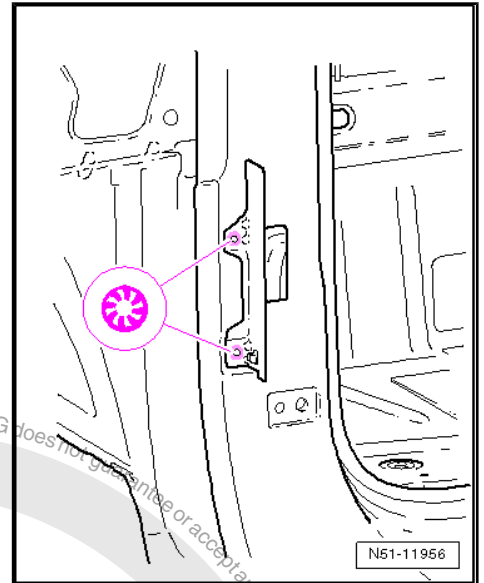


- Position wing with wing retainer on body -1-.
- Adapt wing to vehicle (door in position on vehicle).
- Remove door.
- Tack weld wing retainer from wheel housing -2-.





- Remove wing.
- Weld in wing retainer, SG plug weld seam.





RO: 51 38 55 70

## 8 Renewing hinge pillar (A-pillar) reinforcement



### WARNING

*Observe safety notes!*

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

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

- Hinge pillar (A-pillar) already removed  
⇒ „7 Renewing hinge pillar (A-pillar)“, page 139

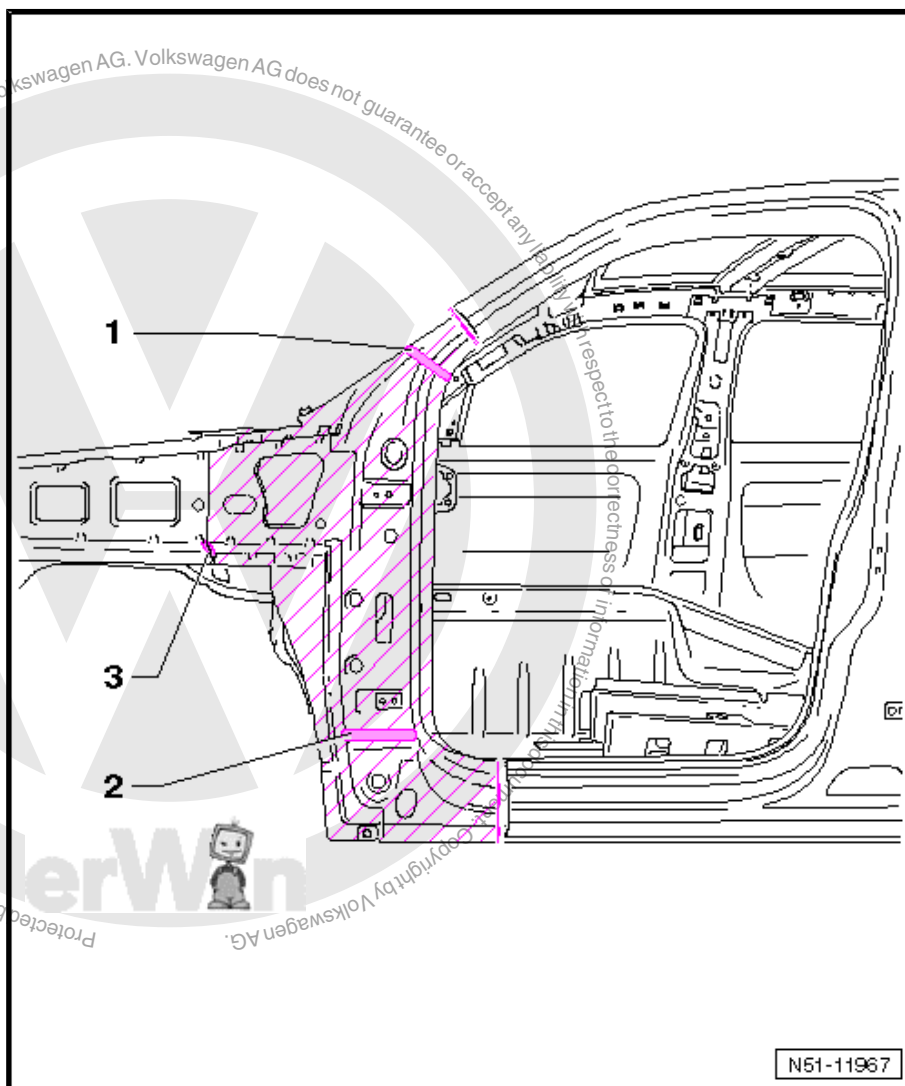
### 1 - Upper moulded foam element

- ❑ Reduces the amount of driving noise transmitted into the interior.
- ❑ Moulded foam elements must be inserted again and must not be left out  
⇒ [page 5](#).

### 2 - Lower moulded foam element

- ❑ Reduces the amount of driving noise transmitted into the interior.
- ❑ Moulded foam elements must be inserted again and must not be left out  
⇒ [page 5](#).

### 3 - Bonded area



N51-11967



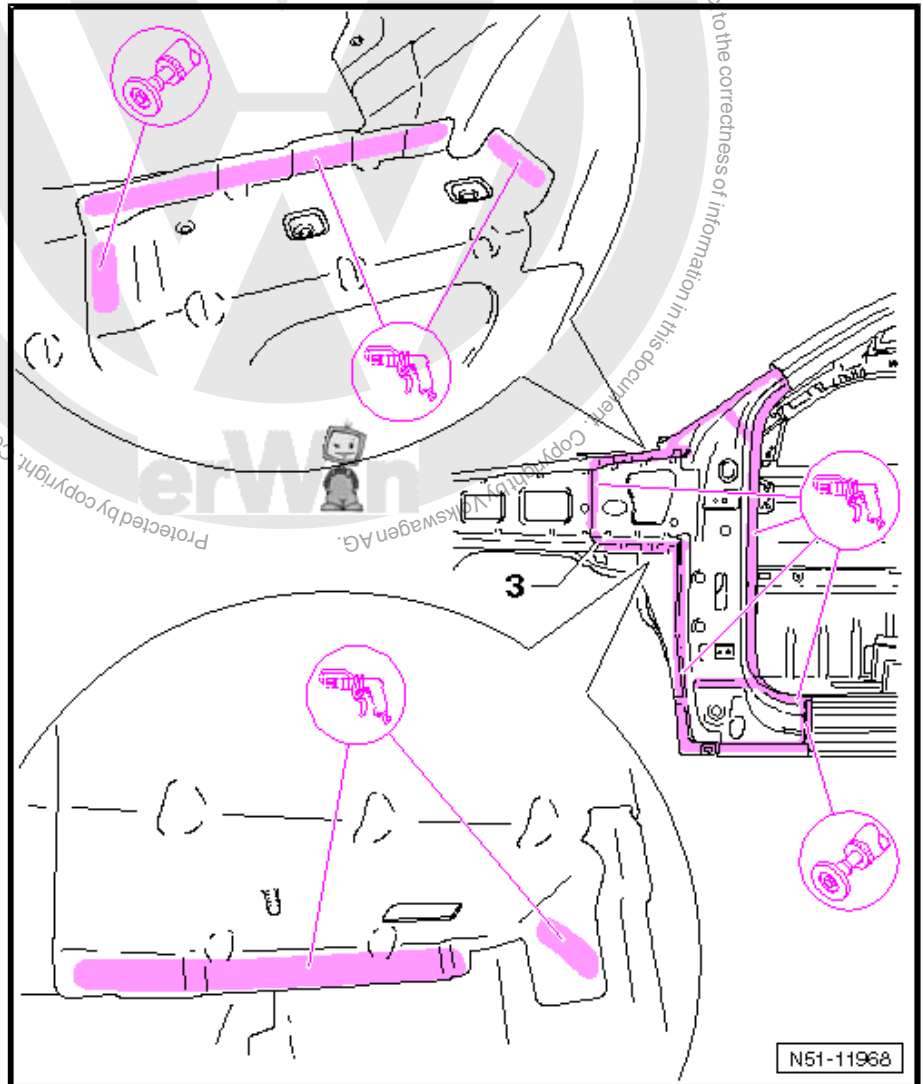
## 8.1 Tools

### Special tools and workshop equipment required

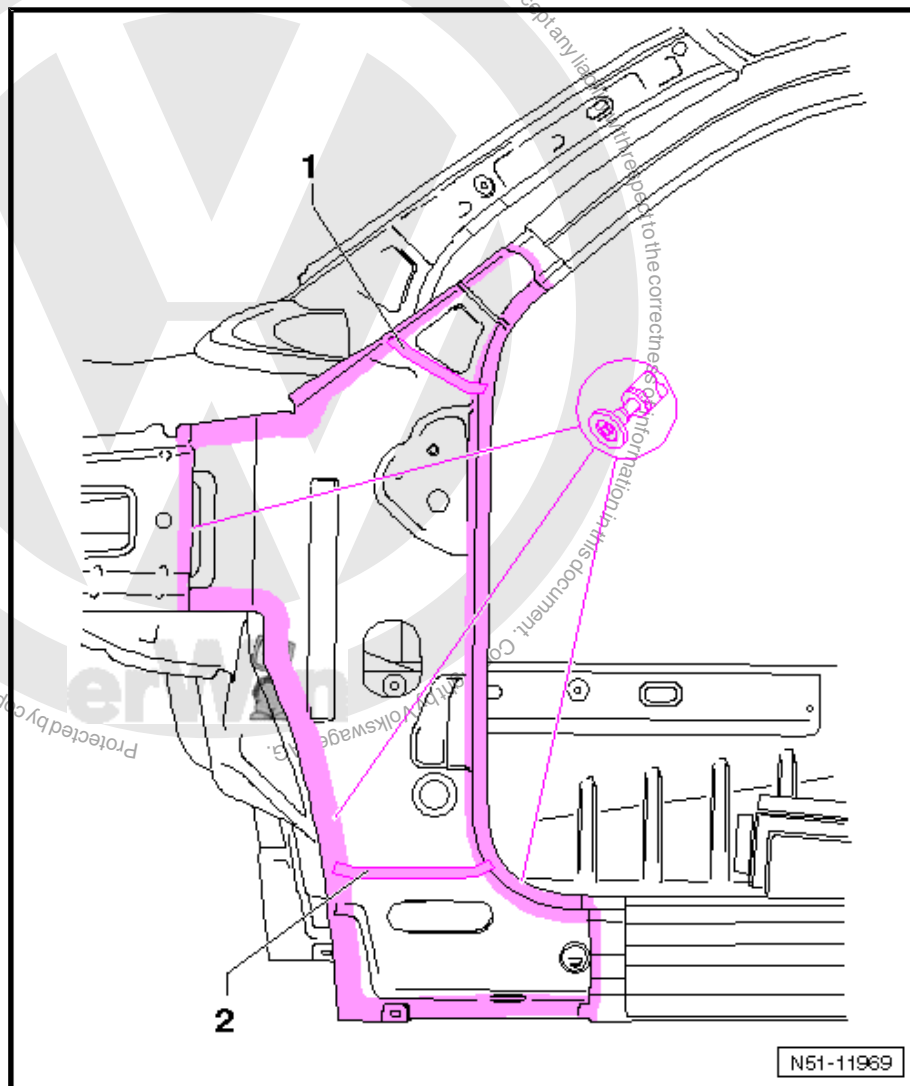
- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Accessory pack -VAS 6535 /1-

## 8.2 Removing

Carry out the following work:



- Separate original joint.
- Release bonded joint -1-. To release, heat bonded surface with hot air blower -V.A.G 1416- .
- Remove hinge pillar (A-pillar) reinforcement from body.



- Remove remaining material.
- Remove adhesive residues and grind bonding surface back to bare metal.
- Grind welding surfaces on both sides down to bare metal.
- Prepare moulded foam elements -1- and -2- for installation  
⇒ [page 5](#).

## 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 ⇒ „8.1 Tools“, page 149.*

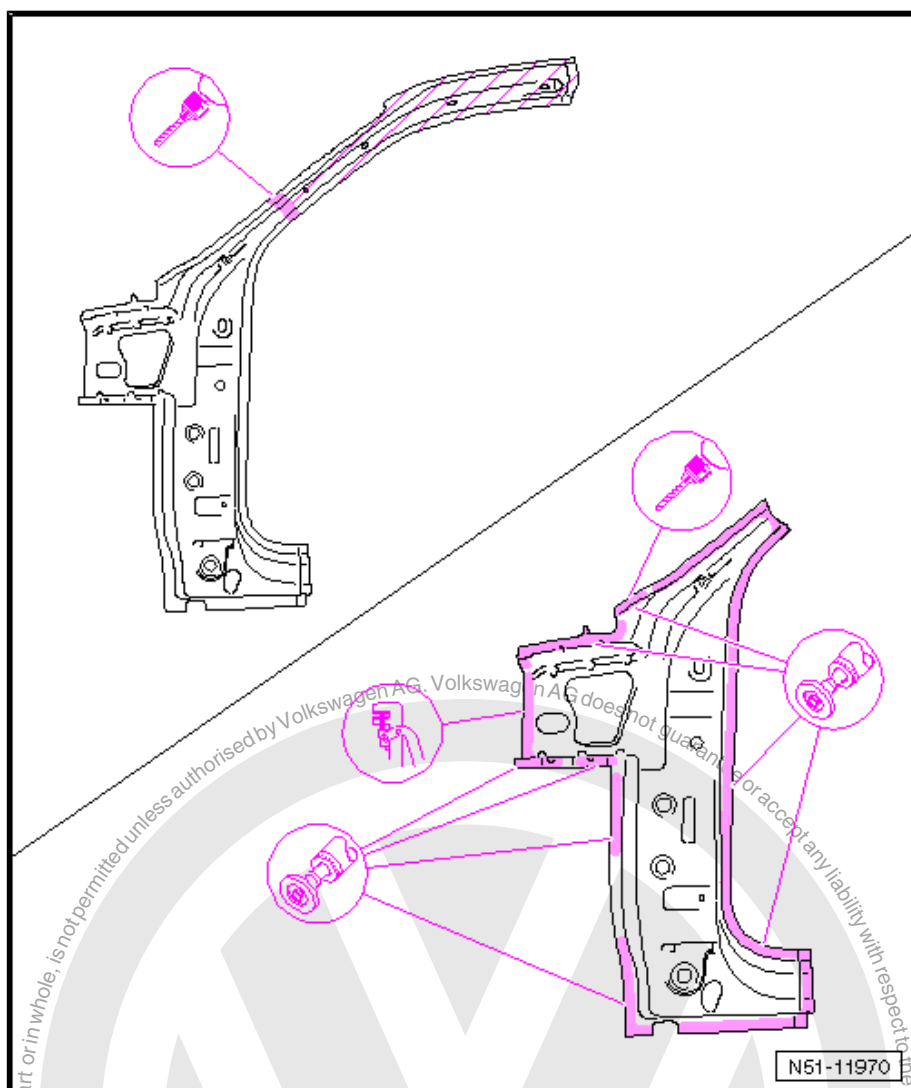
### 8.3.1 Preparing replacement part

#### Replacement parts

- ◆ Hinge pillar (A-pillar) reinforcement
- ◆ 2K body adhesive -D 180 KD3 A2-



Carry out the following work:



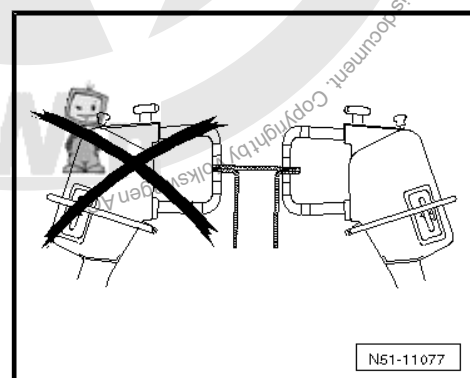
- Drill out hinge pillar (A-pillar) reinforcement upper part and remove shaded area.
- Punch and drill specified holes in new part,  $\varnothing$  7.0 mm.
- Grind welding surfaces on both sides back to bare metal.

### 8.3.2 Welding in



Note

*To ensure sufficient sturdiness, the RP weld points must be set as far as possible from the outer edge of the welding flange.*



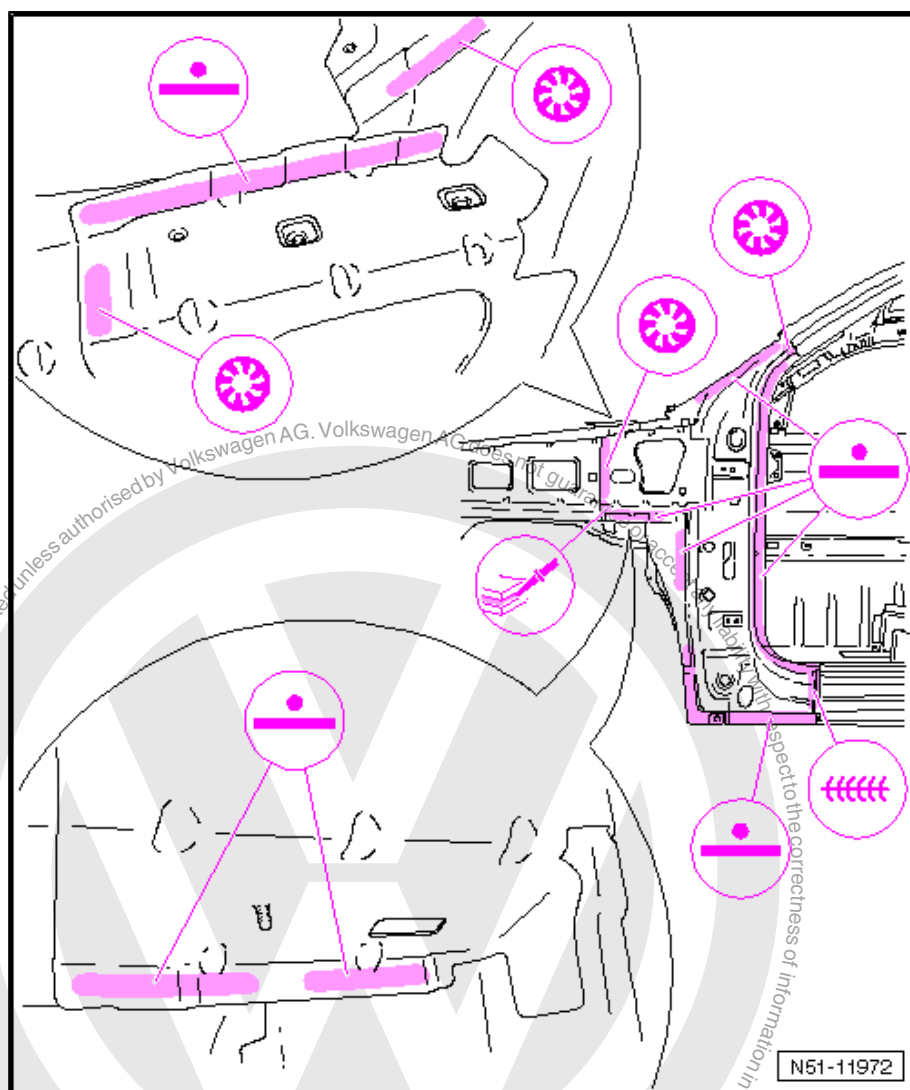
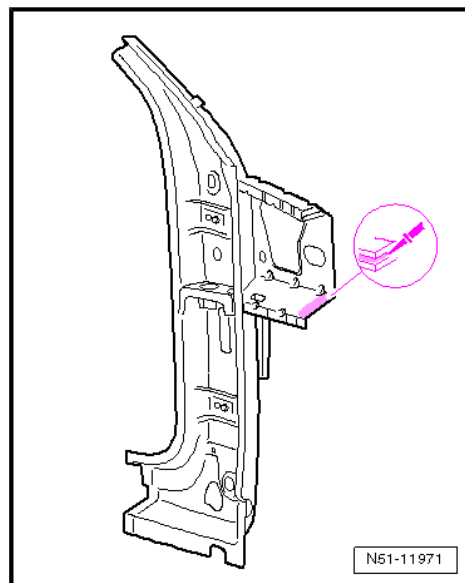
**Carry out the following work:**

- Apply 2K body adhesive -D 180 KD3 A2- to bonding surfaces.



### Note

- ◆ *Apply adhesive beads sufficiently thickly so that optimal bonding with the body is guaranteed.*
- ◆ *New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.*



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



- Check fit with all add-on parts.
- Weld in hinge pillar (A-pillar) reinforcement, RP spot weld seam, SG plug weld seam and SG continuous weld seam.
- Hinge pillar (A-pillar) ⇒ [„7.3 Installing“, page 142](#)



RO: 51 41 55 00

## 9 Renewing centre pillar (B-pillar)



### WARNING

*Observe safety notes!*

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

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



### Note

- ◆ Specified parting cuts -1- to -5- and -7- can be combined for other forms of damage.
- ◆ Description for other forms of damage must be derived from this accordingly.

#### 1 - Upper parting cut

- ☐ Carry out as per dimension -a-.

Dimension a = 150 mm

#### 2 - Parting cut for side member

- ☐ Carry out as per dimension -d-.

Dimension d = 250 mm

- ☐ The parting cut is permitted for other forms of damage

#### 3 - Parting cut for side member

- ☐ Carry out as per dimension -e-.

Dimension e = 520 mm

#### 4 - Parting cut for side member

- ☐ Carry out as per dimension -c-.

Dimension c = 680 mm

- ☐ The parting cut is permitted for other forms of damage

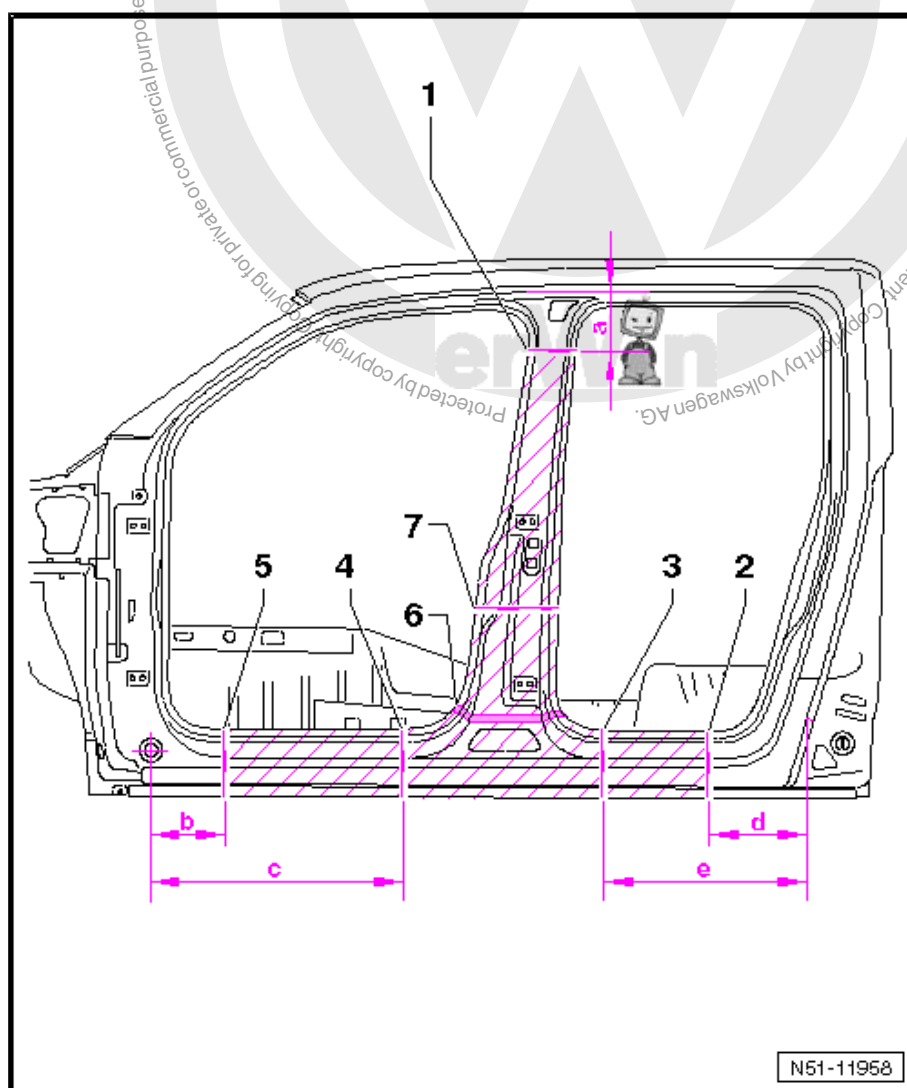
#### 5 - Parting cut for side member

- ☐ Carry out as per dimension -b-.

Dimension b = 160 mm

#### 6 - Moulded foam element

- ☐ Reduces the amount of driving noise transmitted into the interior.



N51-11958





- ☐ Moulded foam elements must be inserted again and must not be left out ⇒ [page 5](#) .

## 7 - Centre parting cut

- ☐ The parting cut is permitted for other forms of damage

## 9.1 Tools

### Special tools and workshop equipment required

- ◆ Pneumatic sabre saw -V.A.G 1523B-
- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Accessory pack -VAS 6535 /1-
- ◆ MIG brazing and welding system -VAS 6382-

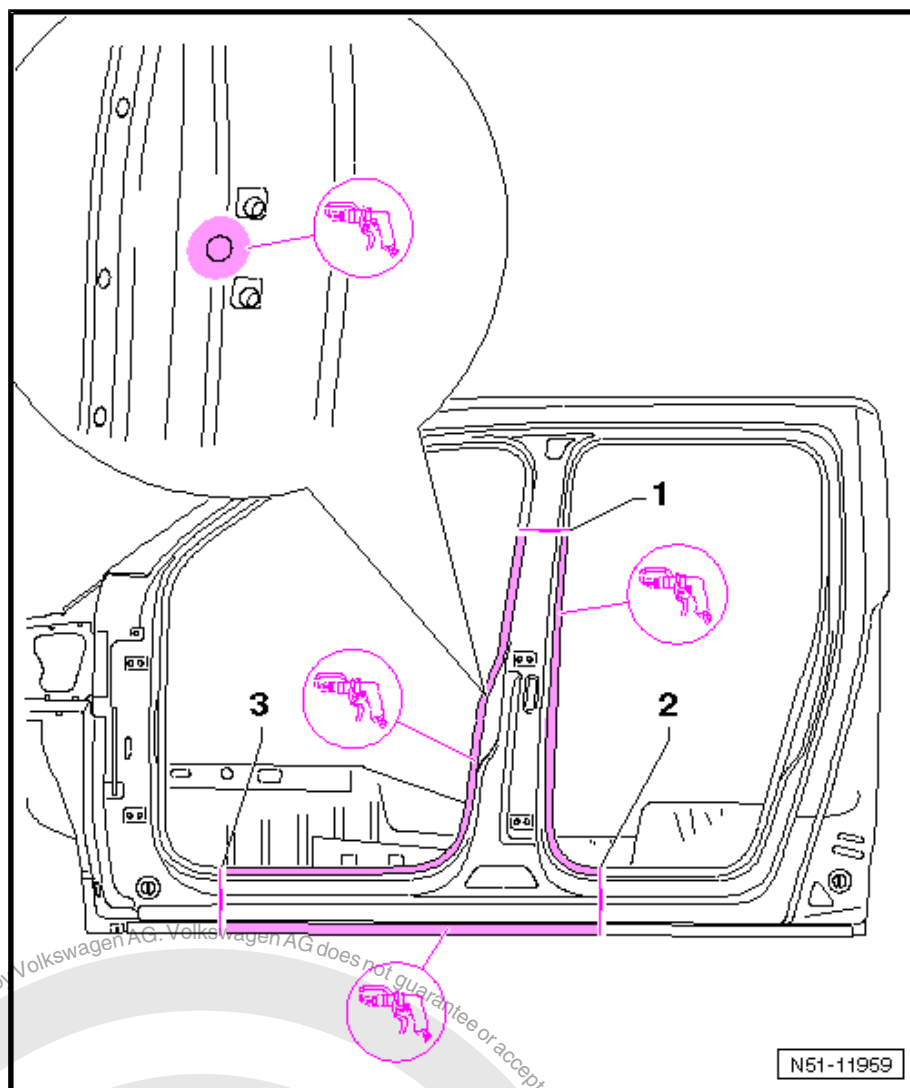
## 9.2 Removing



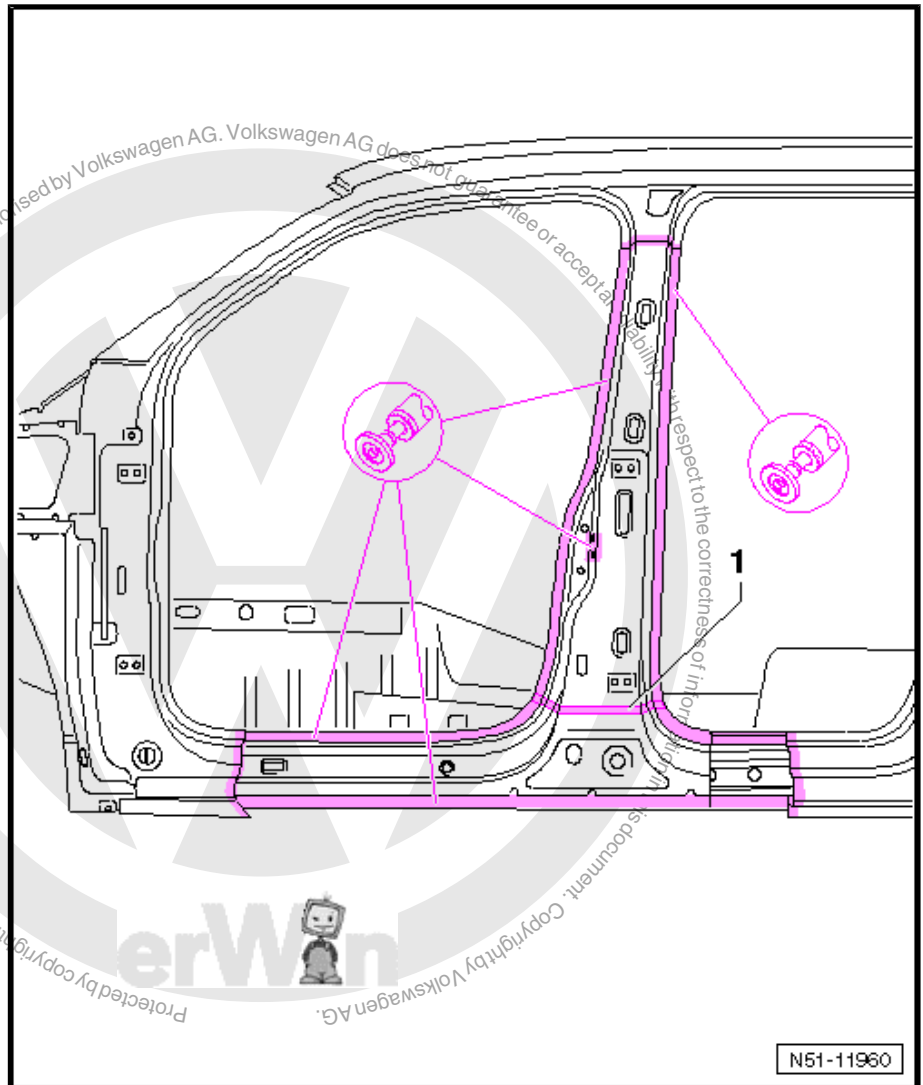
### Note

- ◆ *Make parting cuts with pneumatic jig-saw -V.A.G 1523B- only.*
- ◆ *Parting cuts must be straight.*
- ◆ *Do not damage inner reinforcements when carrying out parting cuts.*

Carry out the following work:



- Mark parting cut -1- as per [Item 1 \(page 154\)](#) (150 mm from top edge of roof side member) and cut.
- Mark parting cut -2- as per [Item 3 \(page 154\)](#) (520 mm from reference edge) and cut.
- Mark parting cut -3- as per [Item 5 \(page 154\)](#) (160 mm from centre of hole) and cut.
- Separate original joint.
- Remove centre pillar (B-pillar) from body.



- Remove remaining material.
- Grind welding surfaces on both sides down to bare metal.
- Prepare moulded foam element -1- for installation ⇒ [page 5](#) .

## 9.3 Installing



### Note

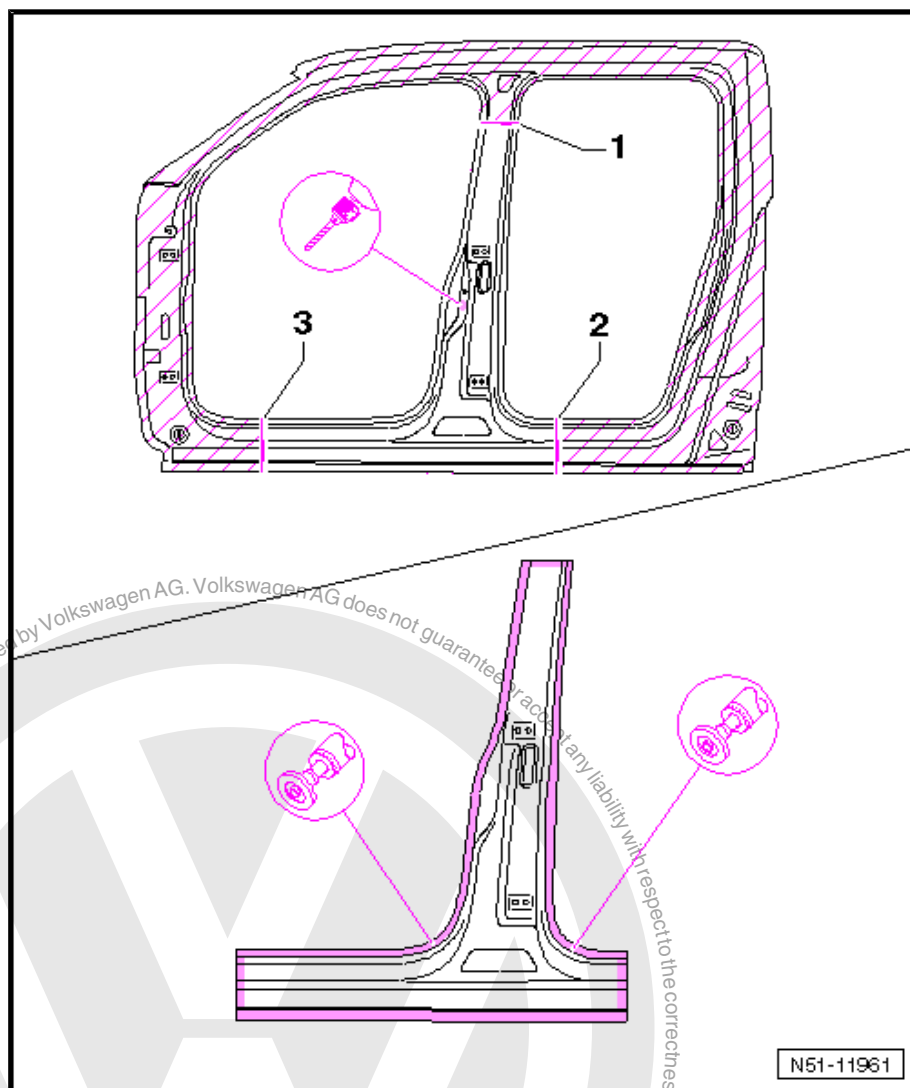
*The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ „9.1 Tools“, page 155 .*

### 9.3.1 Preparing replacement part

#### Replacement parts

- ◆ Side panel

Carry out the following work:



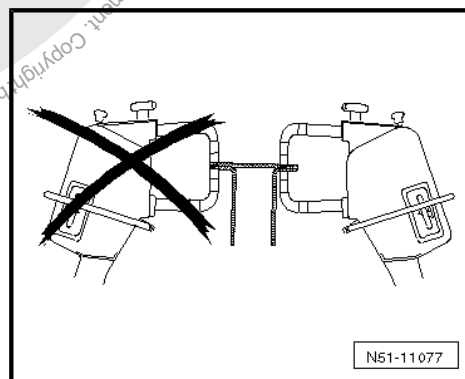
- Transfer parting cuts -1-, -2- and -3- from body to new part.
- Make parting cuts and remove shaded area.
- Drill specified holes in new part,  $\varnothing$  7.0 mm.
- Grind welding surfaces on both sides back to bare metal.

### 9.3.2 Welding in

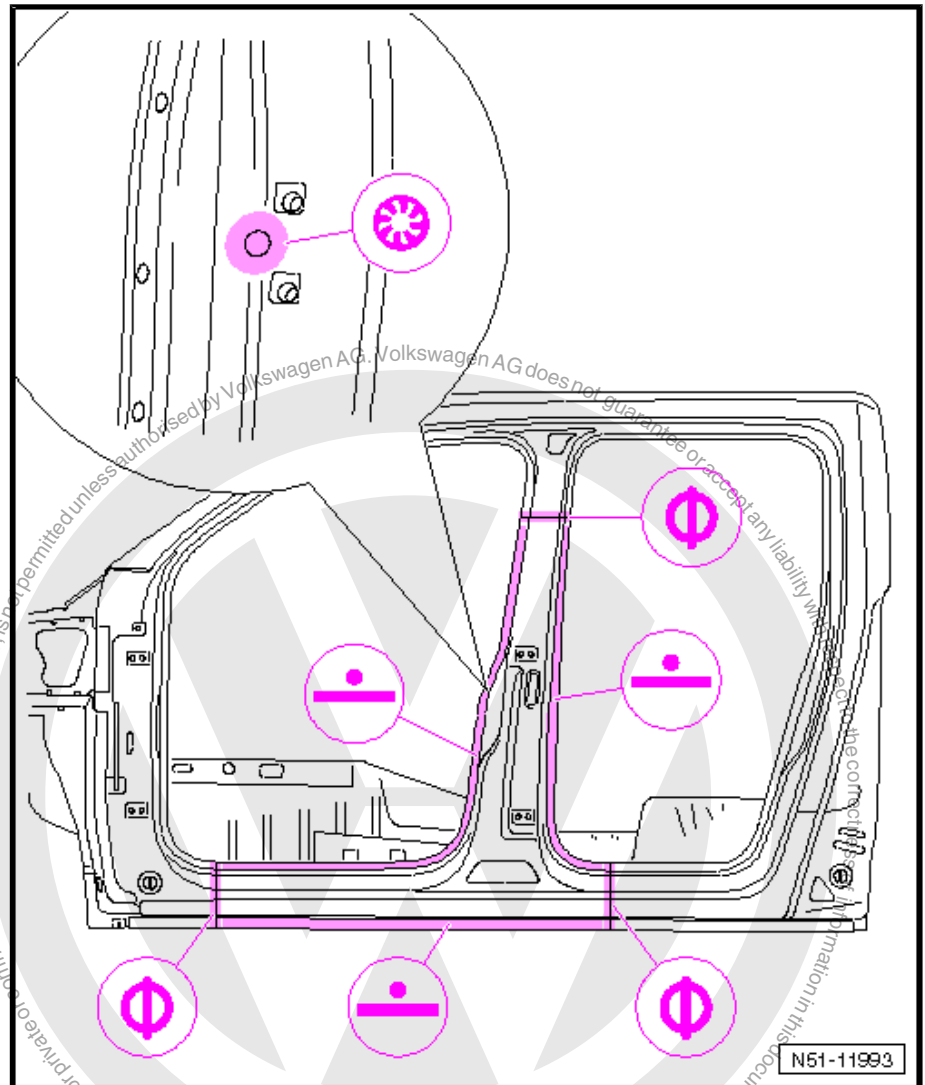


#### Note

- ◆ To ensure sufficient sturdiness, the RP weld points must be set as far as possible from the outer edge of the welding flange.
- ◆ MIG brazed seams are permitted at the parting cuts shown in the illustration.



Carry out the following work:



- Adapt new part with vehicle standing on its wheels or on alignment bracket set and fix in position.
- Check fit with all add-on parts.
- Weld in centre pillar (B-pillar), RP spot weld seam, SG plug weld seam and SG stitch weld seam.
- Optically process visible weld joints.
- Use 2K filler to smooth out rough spots.



RO: 51 42 55 70

## 10 Renewing centre pillar (B-pillar) reinforcement



### WARNING

*Observe safety notes!*

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

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

- Centre pillar (B-pillar) already removed  
⇒ „9 Renewing centre pillar (B-pillar)“, page 154



### Note

- ◆ Specified parting cut -1- and cutting points -3- and -4- can be combined for other forms of damage.
- ◆ Description for other forms of damage must be derived from this accordingly.



### 1 - Upper parting cut

- ☐ Carry out as per dimension -a-.

Dimension a = 200 mm

### 2 - Middle pillar (B-pillar) reinforcement

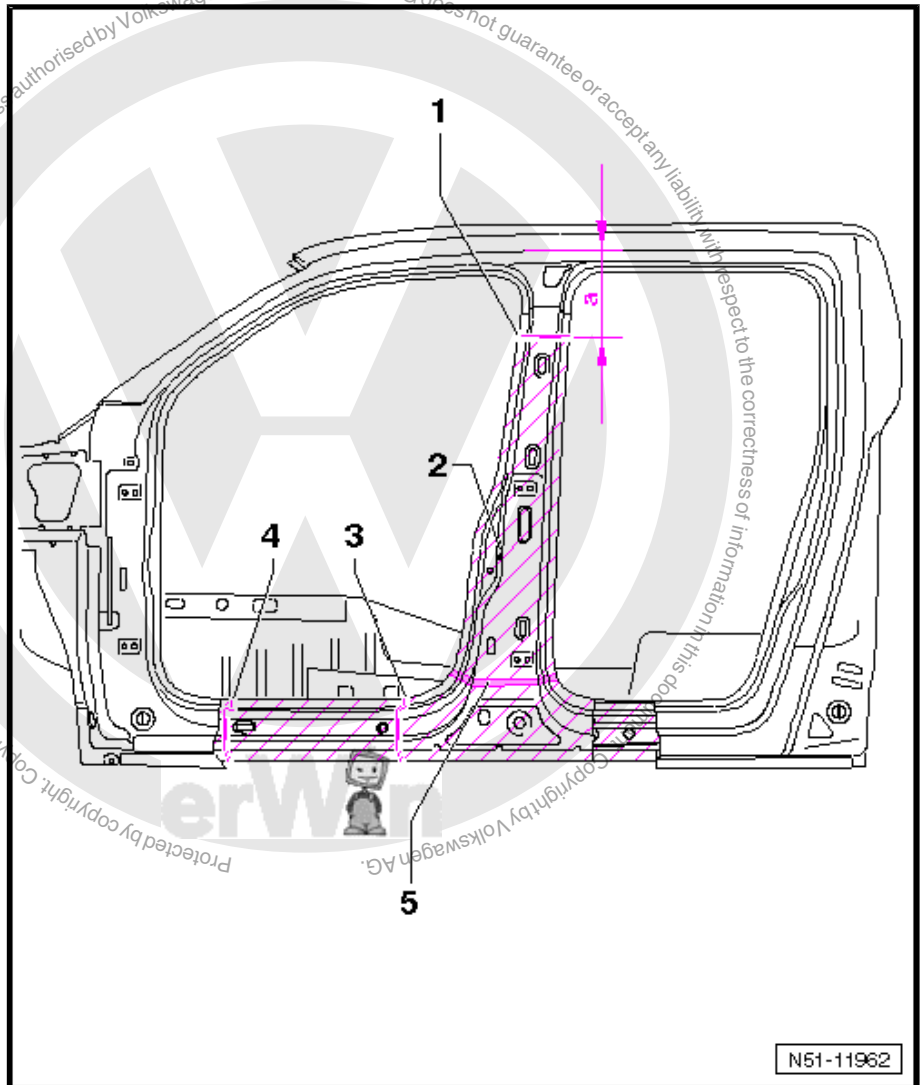
### 3 - Parting cut for side member

- ☐ Parting at this point is permitted for other forms of damage.

### 4 - Parting cut for side member

### 5 - Moulded foam element

- ☐ Reduces the amount of driving noise transmitted into the interior.
- ☐ Moulded foam elements must be inserted again and must not be left out  
⇒ [page 5](#).



## 10.1 Tools

### Special tools and workshop equipment required

- ◆ Pneumatic sabre saw -V.A.G 1523B-
- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Accessory pack -VAS 6535 /1-

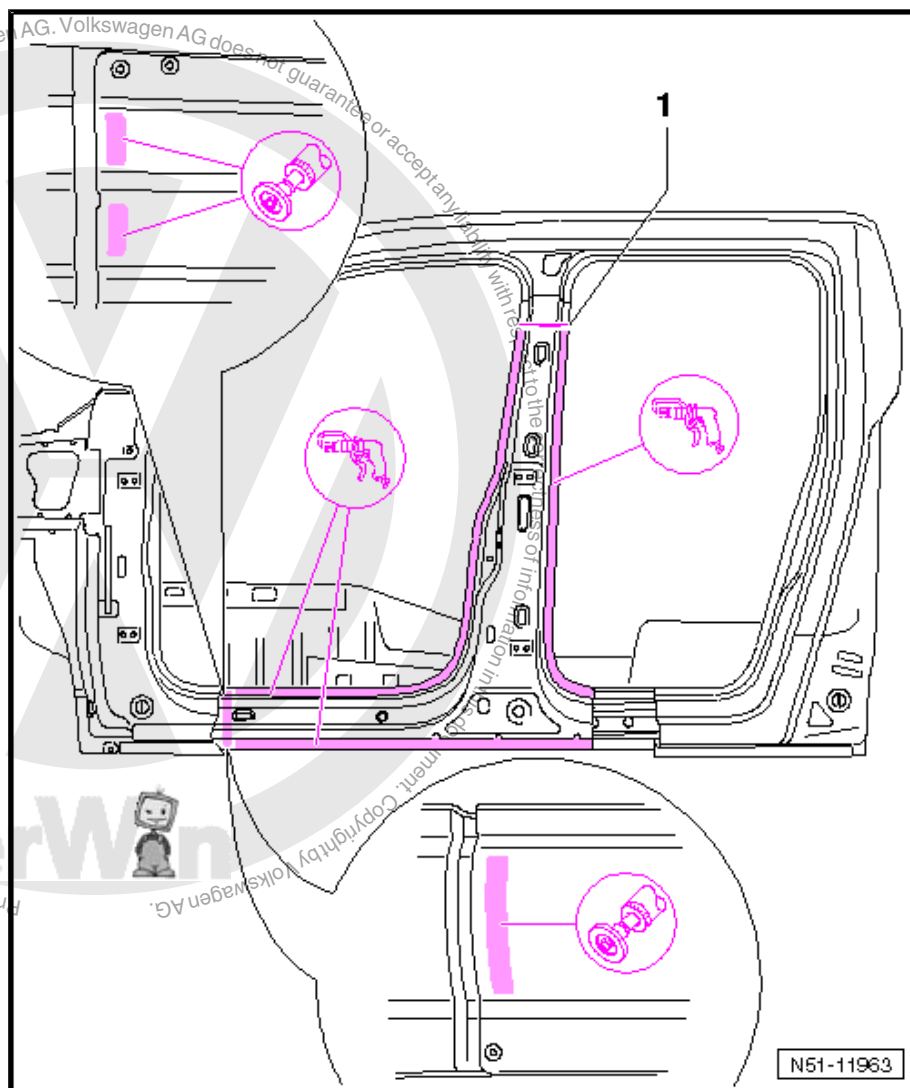
## 10.2 Removing



### Note

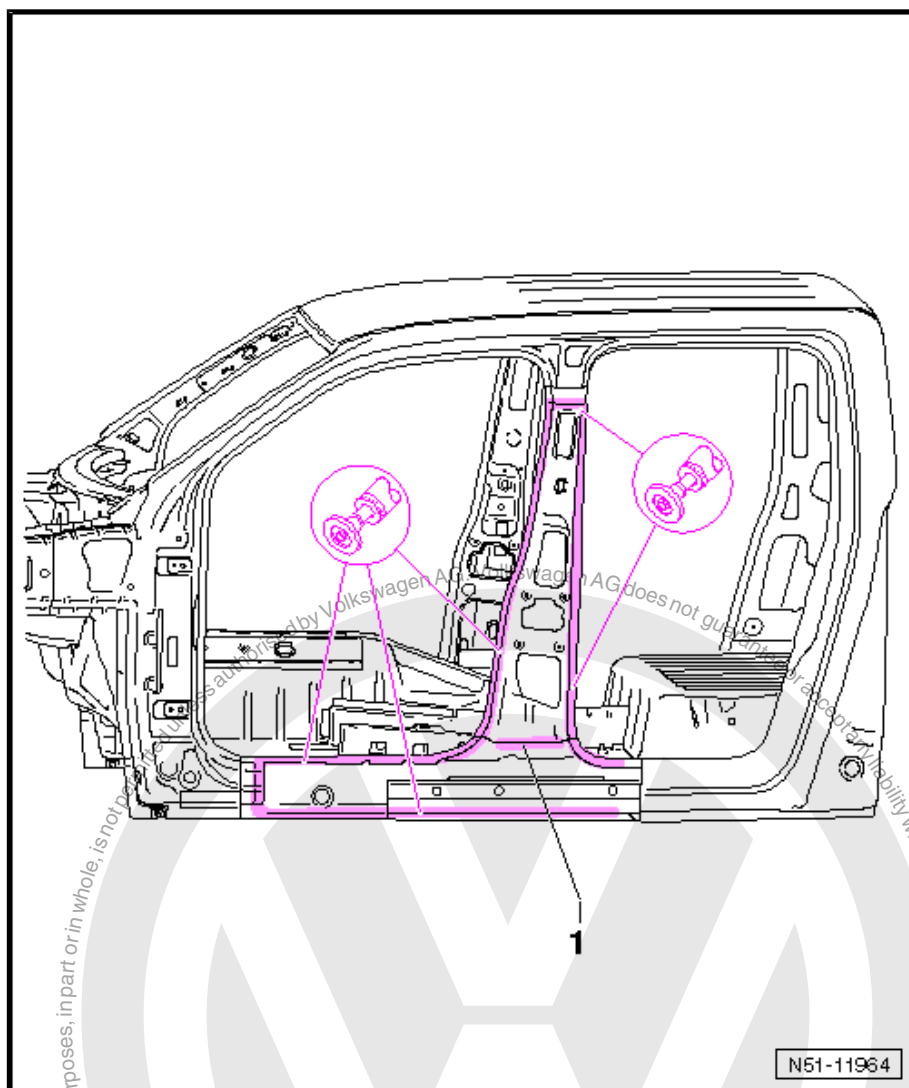
- ◆ Make parting cut using body saw -V.A.G 1523B- only!
- ◆ Parting cut must be straight.

Carry out the following work:



- Mark parting cut -1- as per [Item 1 \(page 161\)](#) (200 mm from top edge of roof side member) and cut.
- Separate original joint.
- Remove centre pillar (B-pillar) reinforcement from body.





- Remove remaining material.
- Grind welding surfaces on both sides down to bare metal.
- Prepare moulded foam element -1- for installation ⇒ [page 5](#).

## 10.3 Installing



### Note

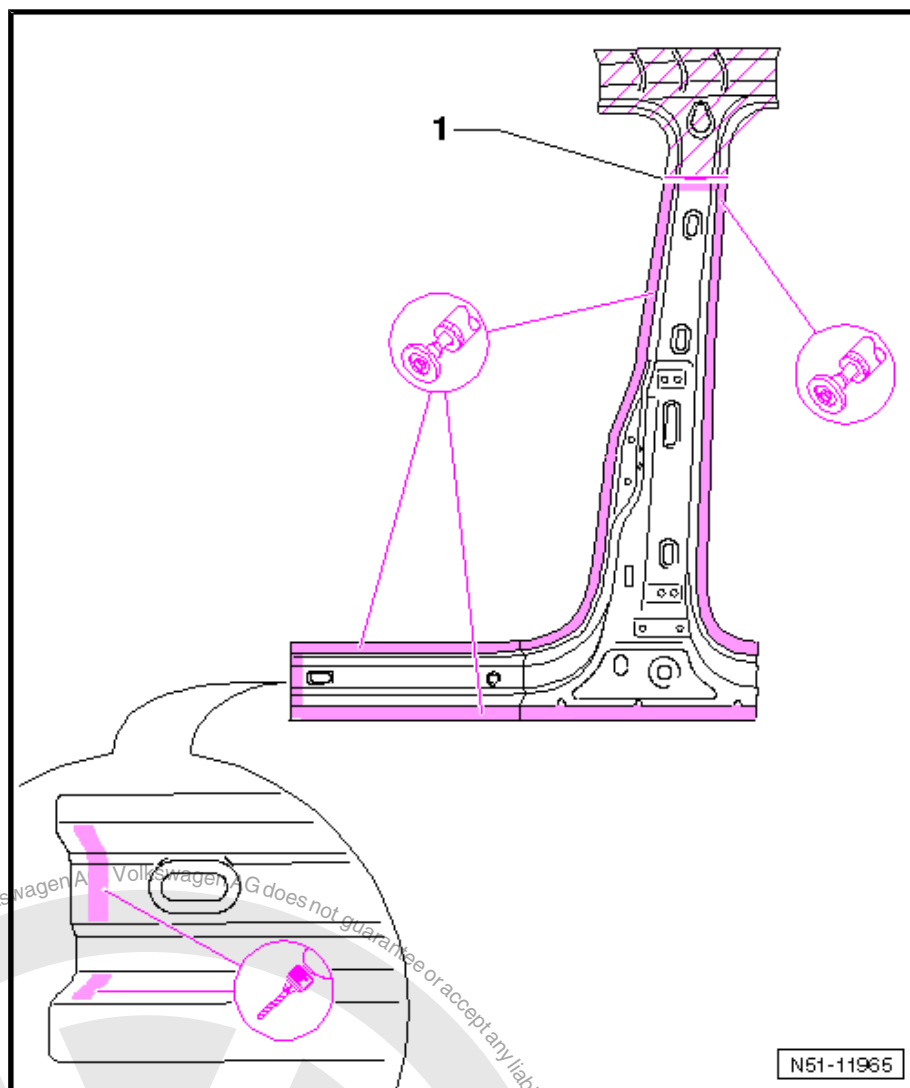
*The use of different types and different thicknesses of steel requires that one of the welding units (inverter) listed under Tools must be used for proper spot welding ⇒ „10.1 Tools“, page 161.*

### 10.3.1 Preparing replacement part

#### Replacement parts

- ◆ Middle pillar (B-pillar) reinforcement

Carry out the following work:



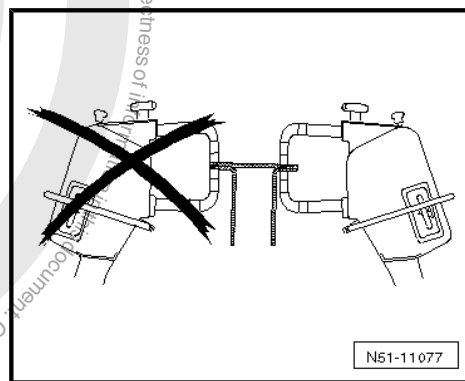
- Transfer parting cut -1- from body to new part.
- Make parting cut and remove shaded area.
- Drill specified holes in new part,  $\varnothing$  7.0 mm.
- Grind welding surfaces on both sides back to bare metal.

### 10.32 Welding in

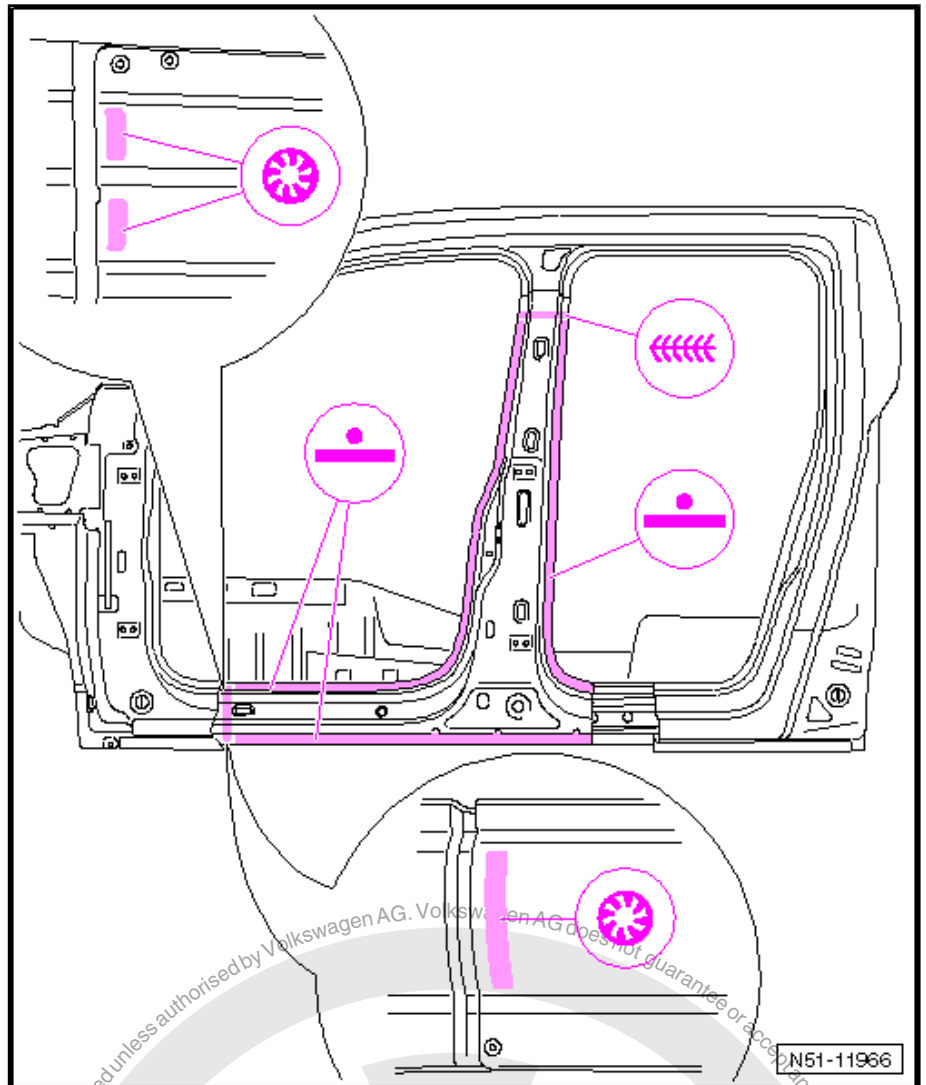


#### Note

*To ensure sufficient sturdiness, the RP weld points must be set as far as possible from the outer edge of the welding flange.*



Carry out the following work:



- Adapt new part with vehicle standing on its wheels or on alignment bracket set and fix in position.
- Check fit with all add-on parts.
- Weld in centre pillar (B-pillar) reinforcement, RP spot weld seam, SG plug weld seam and SG continuous weld seam.
- Centre pillar (B-pillar) ⇒ [„9.3 Installing“, page 157](#)



RO: 51 39 55 20

## 11 Renewing lock pillar (C-pillar)



### WARNING

**Observe safety notes!**

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

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



### Note

- ◆ Specified parting cuts -1- and -4- to -6- can be combined for other forms of damage.
- ◆ Description for other forms of damage must be derived from this accordingly.

#### 1 - Upper parting cut

- ☐ Can be positioned in this area depending on damage.

#### 2 - Bonded area

- ☐ Cannot be restored in event of repair.

#### 3 - Moulded foam element

- ☐ Reduces the amount of driving noise transmitted into the interior.
- ☐ Moulded foam elements must be inserted again and must not be left out ⇒ [page 5](#).

#### 4 - Lower parting cut

- ☐ Parting cut is permitted for other forms of damage.

#### 5 - Parting cut for side member

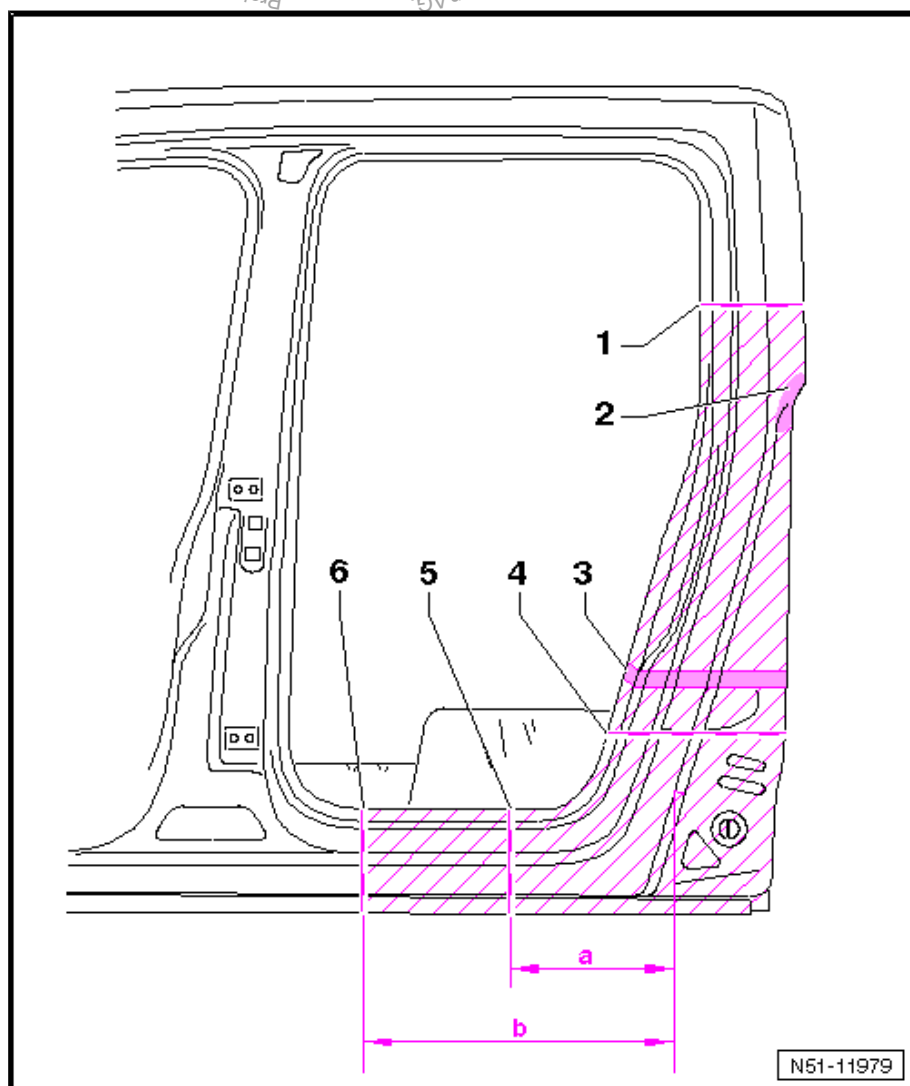
- ☐ Carry out as per dimension -a-.

Dimension a = 250 mm

#### 6 - Parting cut for side member

- ☐ Parting cut is permitted for other forms of damage.
- ☐ Carry out as per dimension -b-.

Dimension b = 520 mm





## 11.1 Tools

### Special tools and workshop equipment required

- ◆ Pneumatic sabre saw -V.A.G 1523B-
- ◆ Resistance spot welder -VAS 6239 A-
- ◆ Resistance spot welder -VAS 6535-
- ◆ Accessory pack -VAS 6535/1-
- ◆ MIG brazing and welding system -VAS 6382-

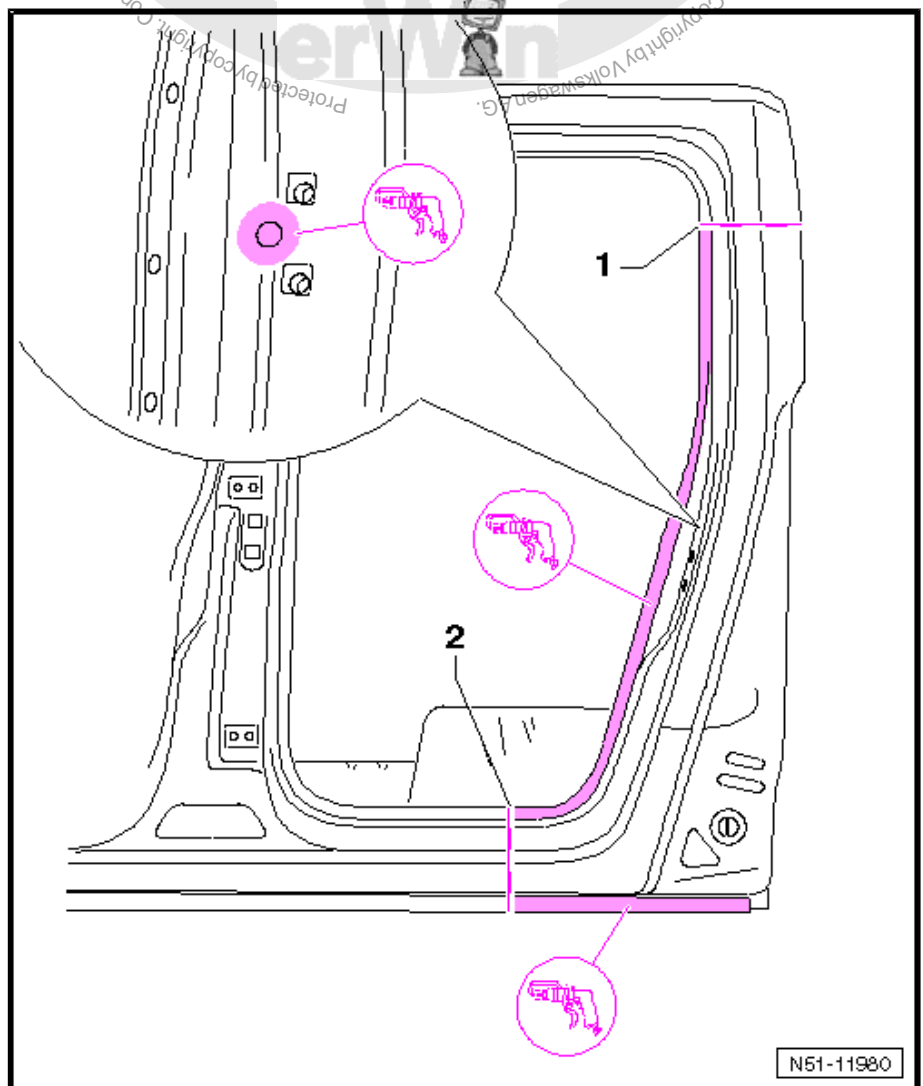
## 11.2 Removing



### Note

- ◆ *Make parting cuts with pneumatic jig-saw -V.A.G 1523B- only.*
- ◆ *Parting cuts must be straight.*
- ◆ *Do not damage inner reinforcements when carrying out parting cuts.*

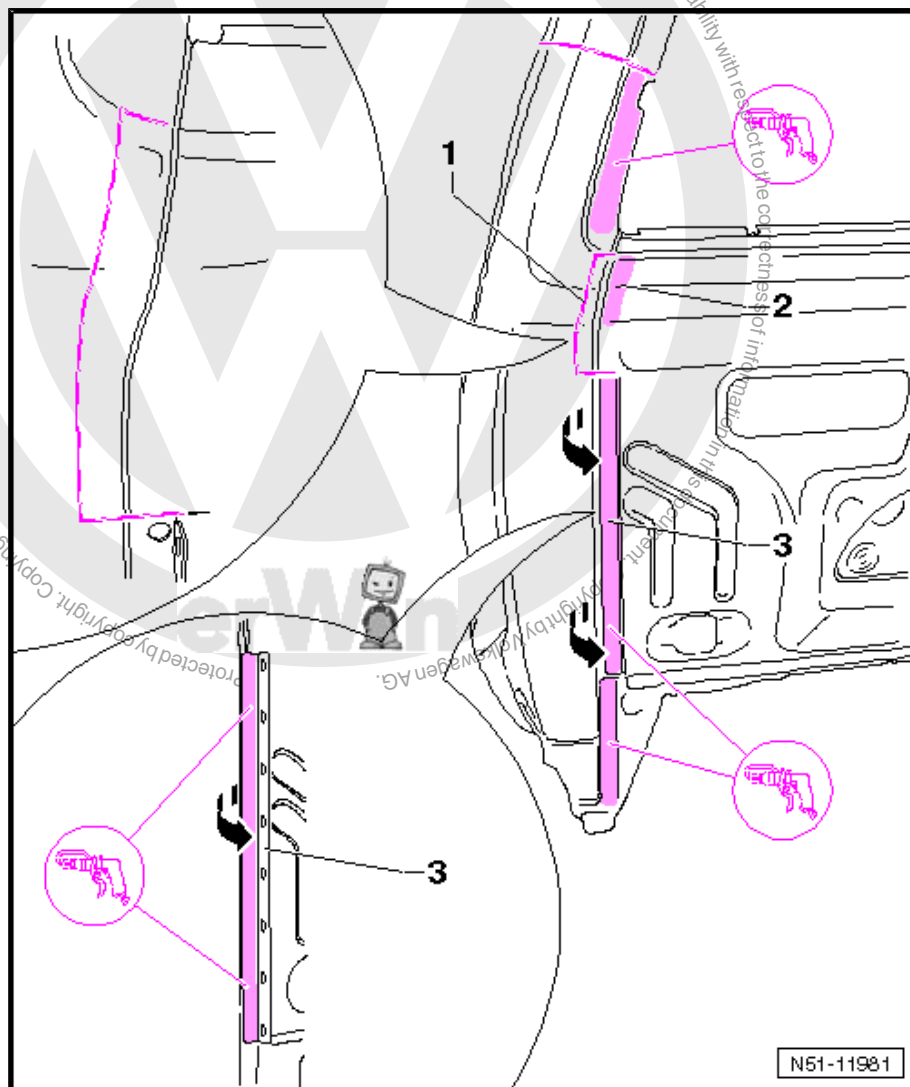
Carry out the following work:



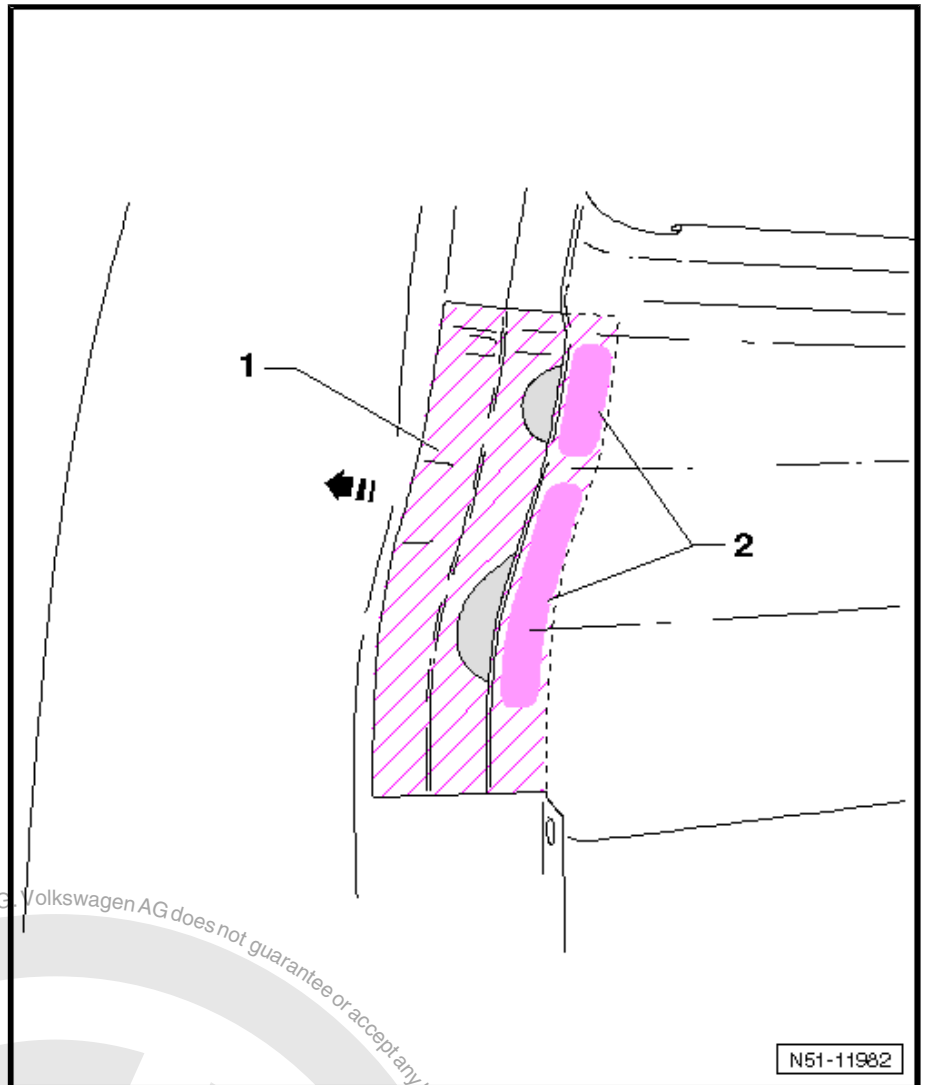
N51-11980



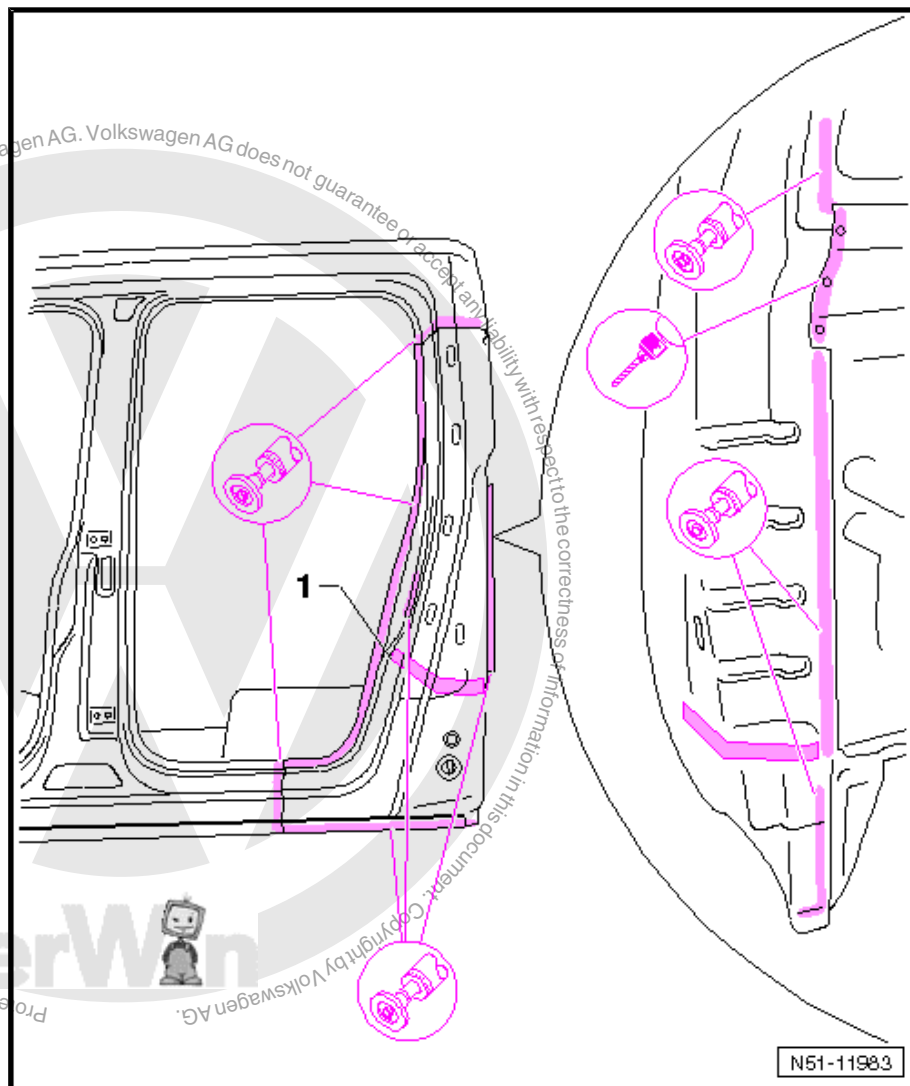
- Mark parting cut -1- and carry out.
- Parting cut -2- as per [Item 5 \(page 166\)](#). Mark (250 mm from reference edge) and cut.
- Separate original joint.



- Mark parting cut -1- and carry out.
- Separate original joint along metal edge of rear window frame -3-.
- Bend metal edge of rear window frame -3- upwards in -direction of arrow-.
- Release underlying, original joint of lock pillar (C-pillar).
- Release remaining original joint.
- Remove lock pillar (C-pillar) from body.



- Release bonded joint -2-. To release, heat bonded surface with hot air blower -V.A.G 1416- .
- Remove remaining section of lock pillar (C-pillar) -1-.



- Remove remaining material.
- Drill holes for installation in rear window frame,  $\varnothing$  5.0 mm.
- Grind welding surfaces on both sides down to bare metal.
- Prepare moulded foam element -1- for installation ⇒ [page 5](#).

## 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 ⇒ „11.1 Tools“, page 167.*

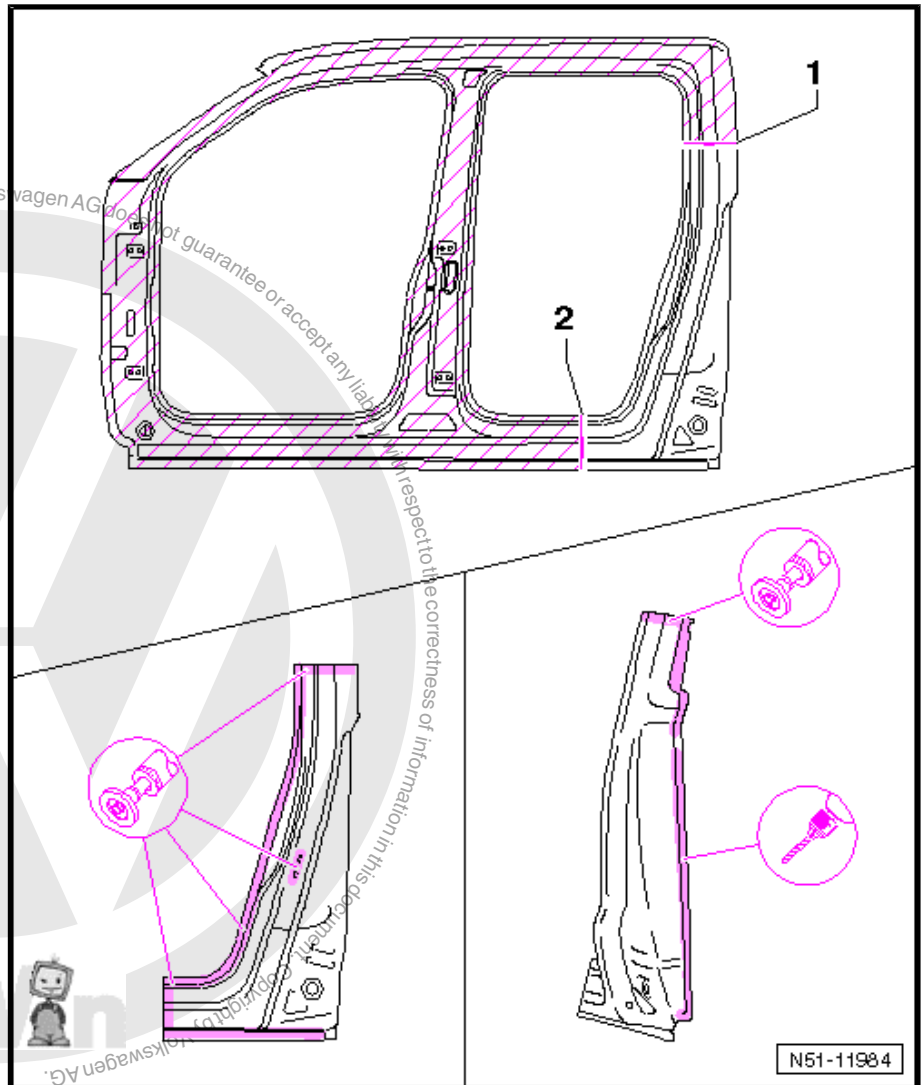
### 11.3.1 Preparing replacement part

#### Replacement parts

- ◆ Side panel

Carry out the following work:





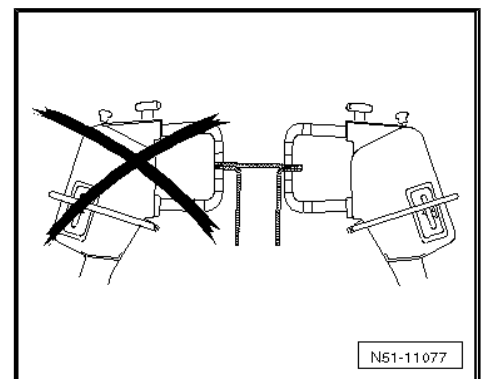
- Transfer parting cuts -1- and -2- from body to new part.
- Make parting cuts and remove shaded area.
- Drill specified holes in new part,  $\varnothing$  7.0 mm.
- Grind welding surfaces on both sides back to bare metal.

### 11.3.2 Welding in

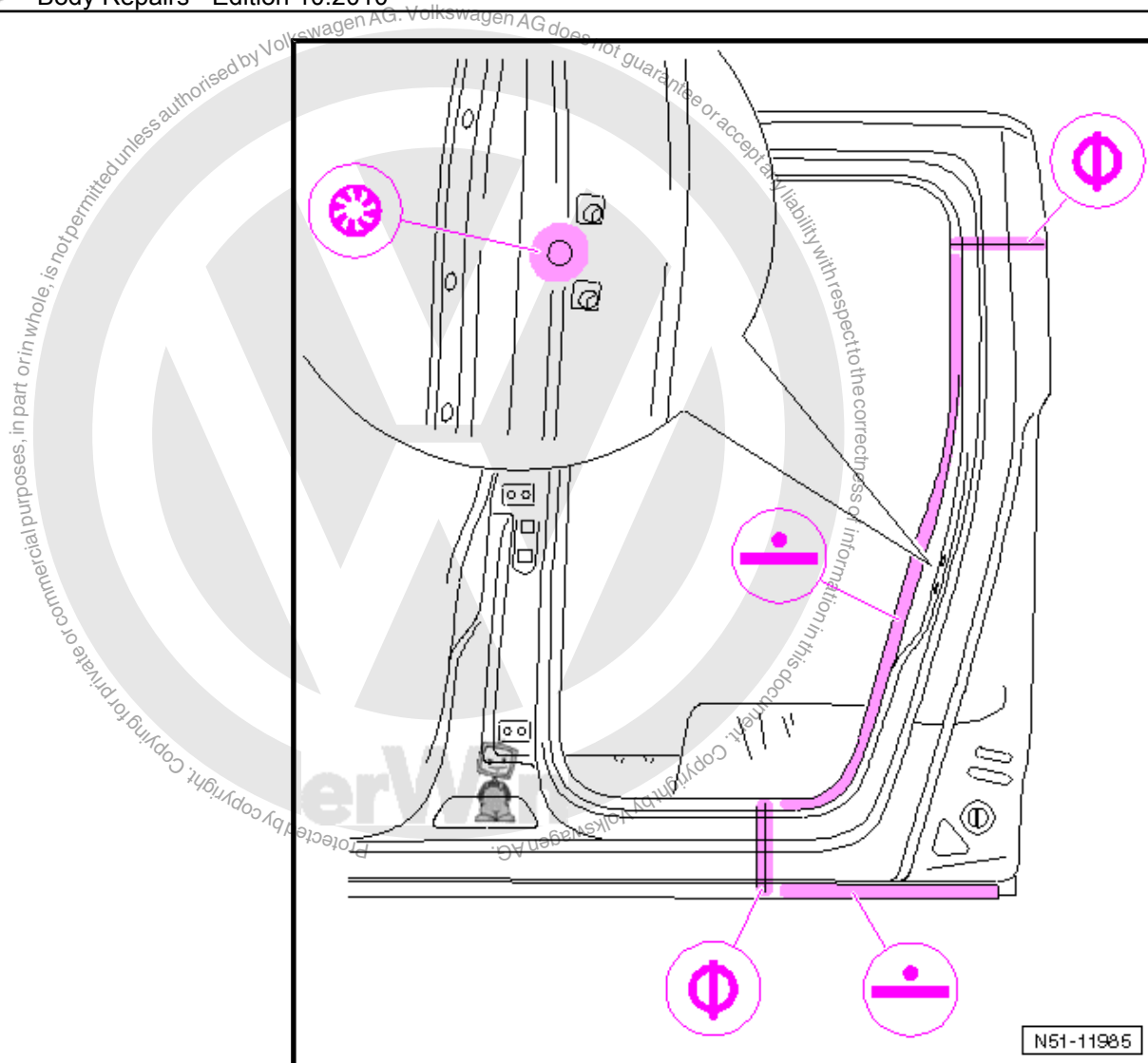


#### Note

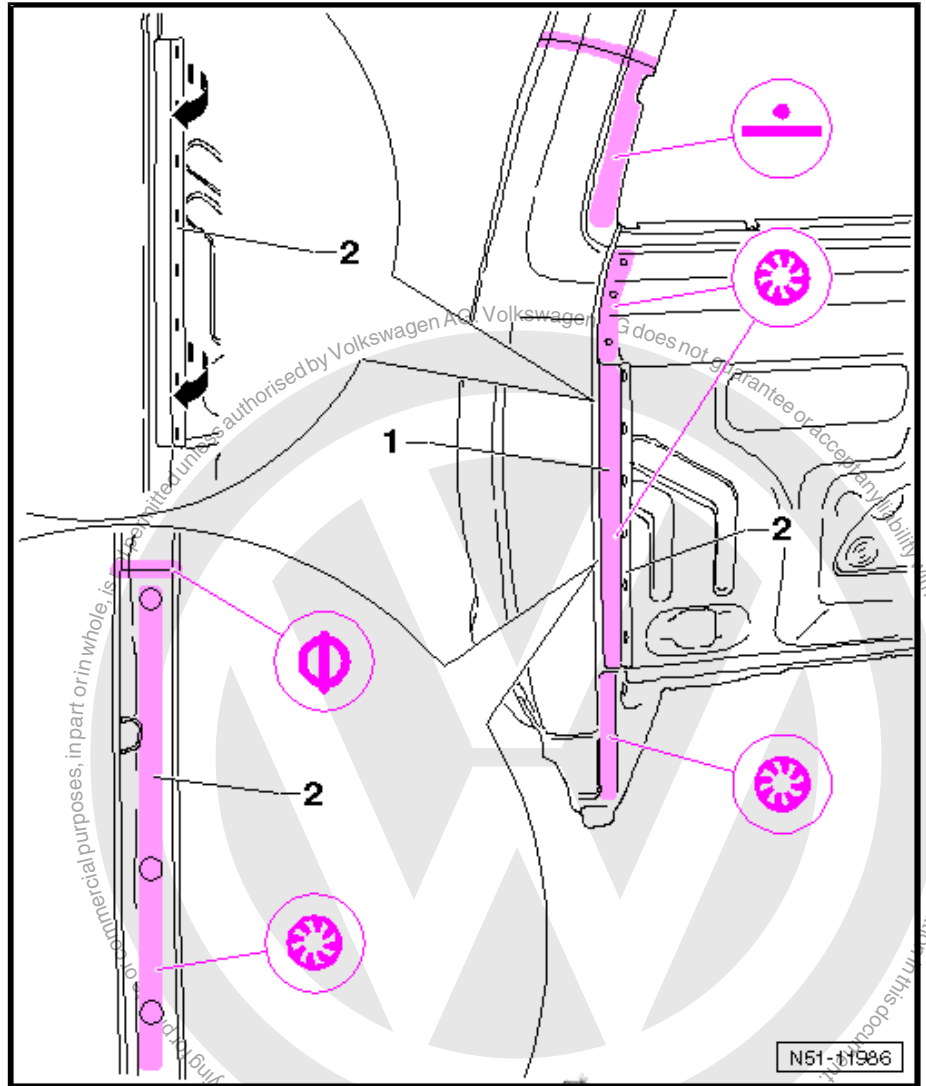
- ◆ To ensure sufficient sturdiness, the RP weld points must be set as far as possible from the outer edge of the welding flange.
- ◆ MIG brazed seams are permitted at the parting cuts shown in the illustration.



Carry out the following work:



- Adapt new part with vehicle standing on its wheels or on alignment bracket set and fix in position.
- Check fit with all add-on parts.
- Weld in lock pillar (C-pillar), RP spot weld seam, SG plug weld seam and SG stitch weld seam.



- Weld in lock pillar (C-pillar), RP spot weld seam, SG plug weld seam and SG stitch weld seam.
- After welding in lock pillar (C-pillar), smooth SG plug weld seams in area -1-.
- Bend metal edge of rear window frame -2- back in -direction of arrow-.
- Weld metal edge of rear window frame -2-, SG plug weld seam.
- Optically process visible weld joints.
- Use 2K filler to smooth out rough spots.



RO: 51 70 55 20

## 12 Renewing mounting bracket for front seat



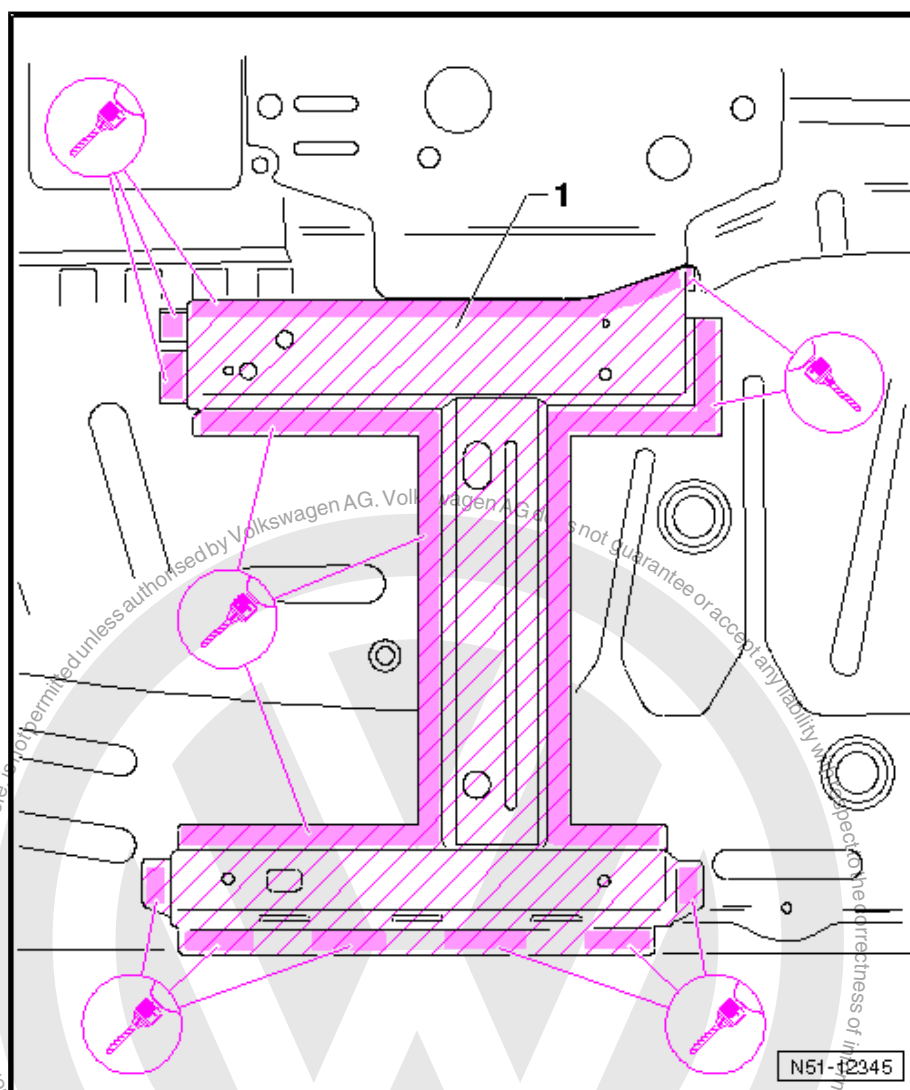
### WARNING

*Observe safety notes!*

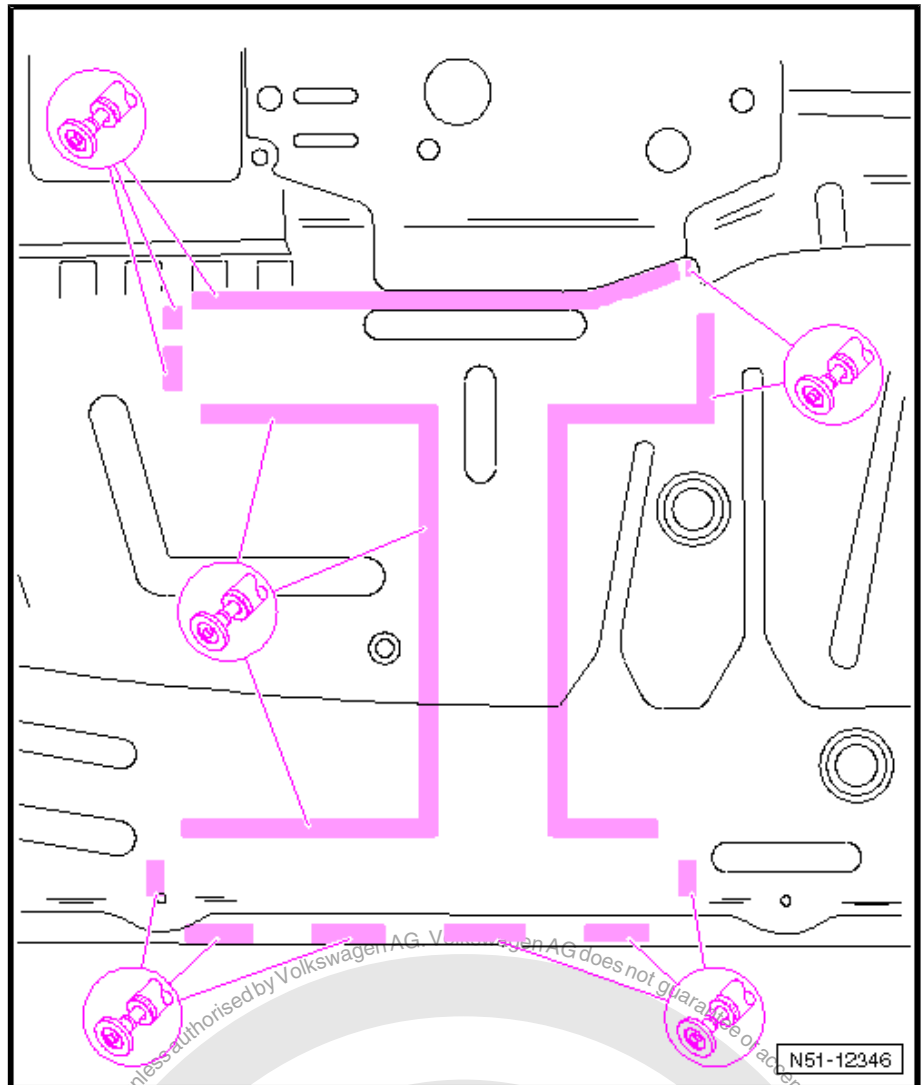
Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes

### 12.1 Removing

Carry out the following work:



- Separate original joint.
- Remove mounting bracket for front seat -1- from body.



- Remove remaining material.
- Grind welding surfaces down to bare metal.

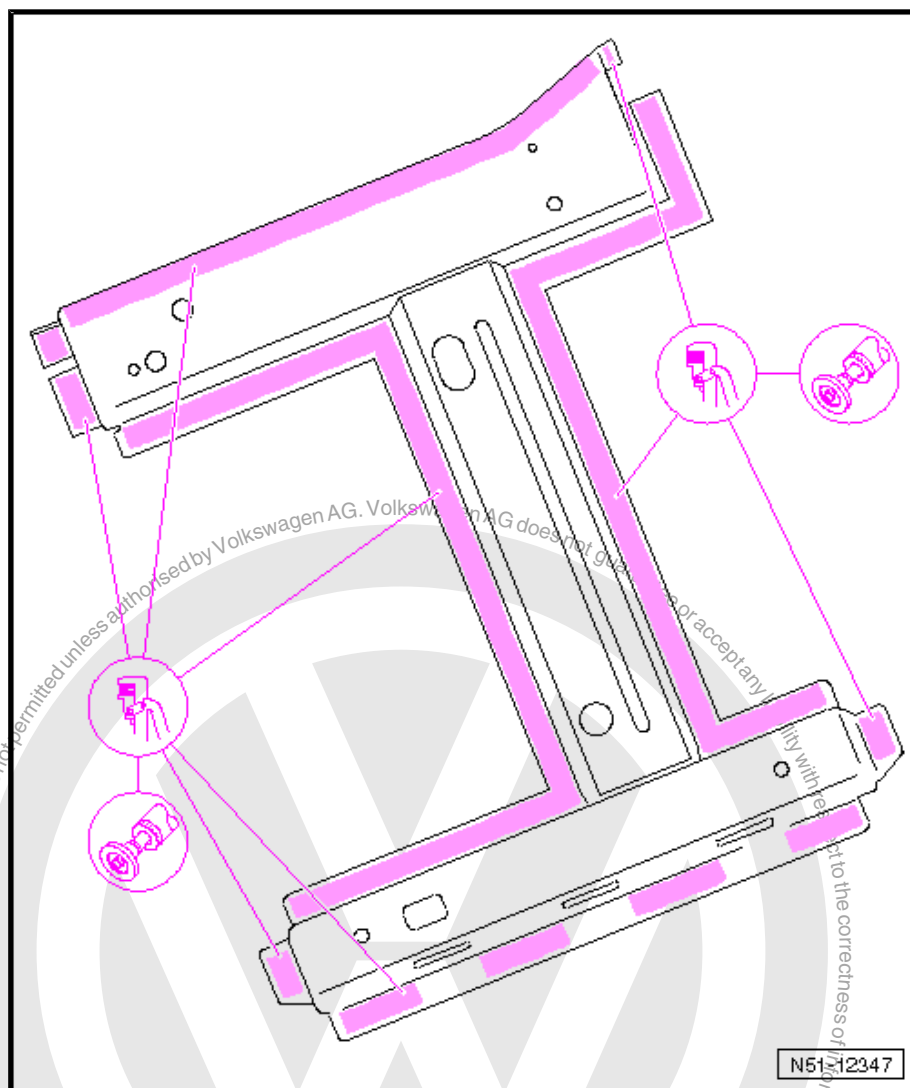
## 12.2 Installing

### 12.2.1 Preparing new part

#### Replacement parts

- ◆ Mounting bracket for front seat

Carry out the following work:

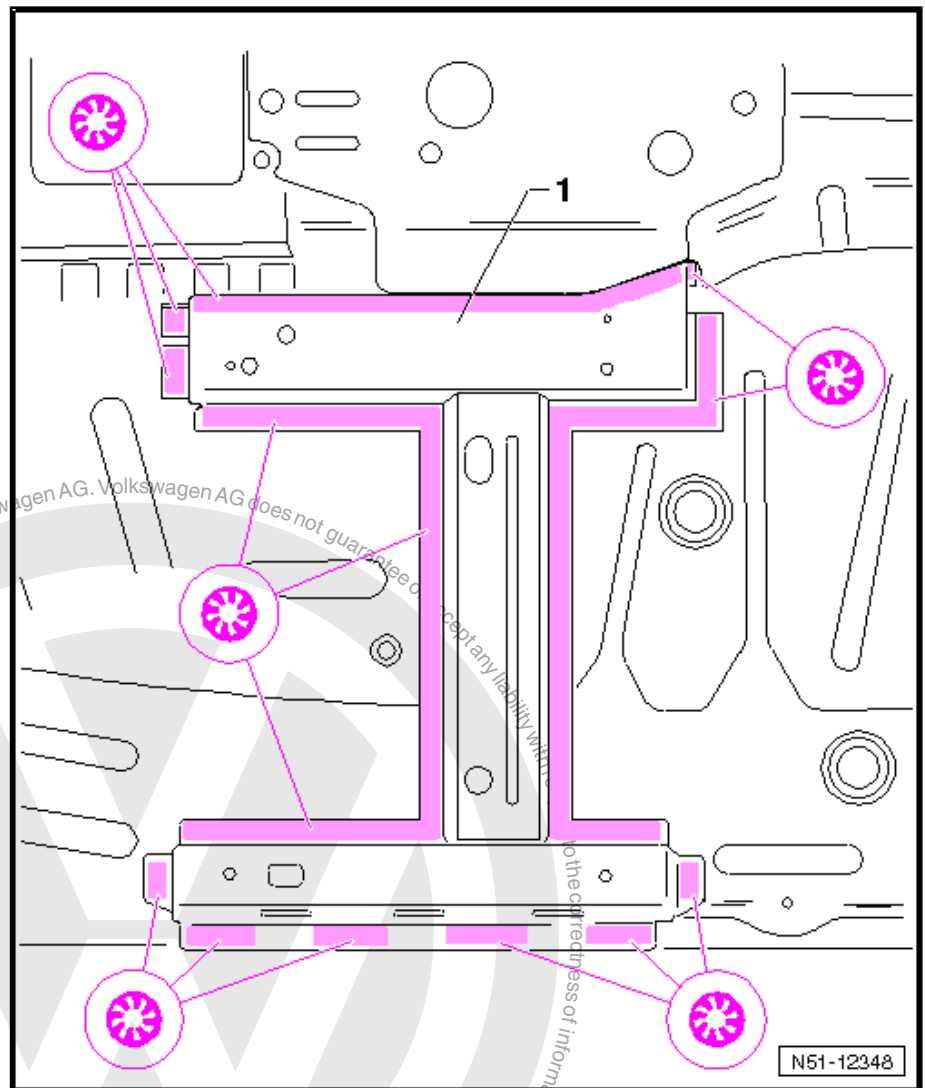


- Punch specified holes in new part,  $\varnothing$  7.0 mm.
- Grind welding surfaces on both sides down to bare metal.



## 12.2.2 Welding in

Carry out the following work:



- Adapt mounting bracket for front seat -1- to fit and fix in position.
- Weld in mounting bracket for front seat, SG plug weld seam.



## 53 – Body - rear

RO: 53 05 55 00

### 1 Renewing rear cross panel



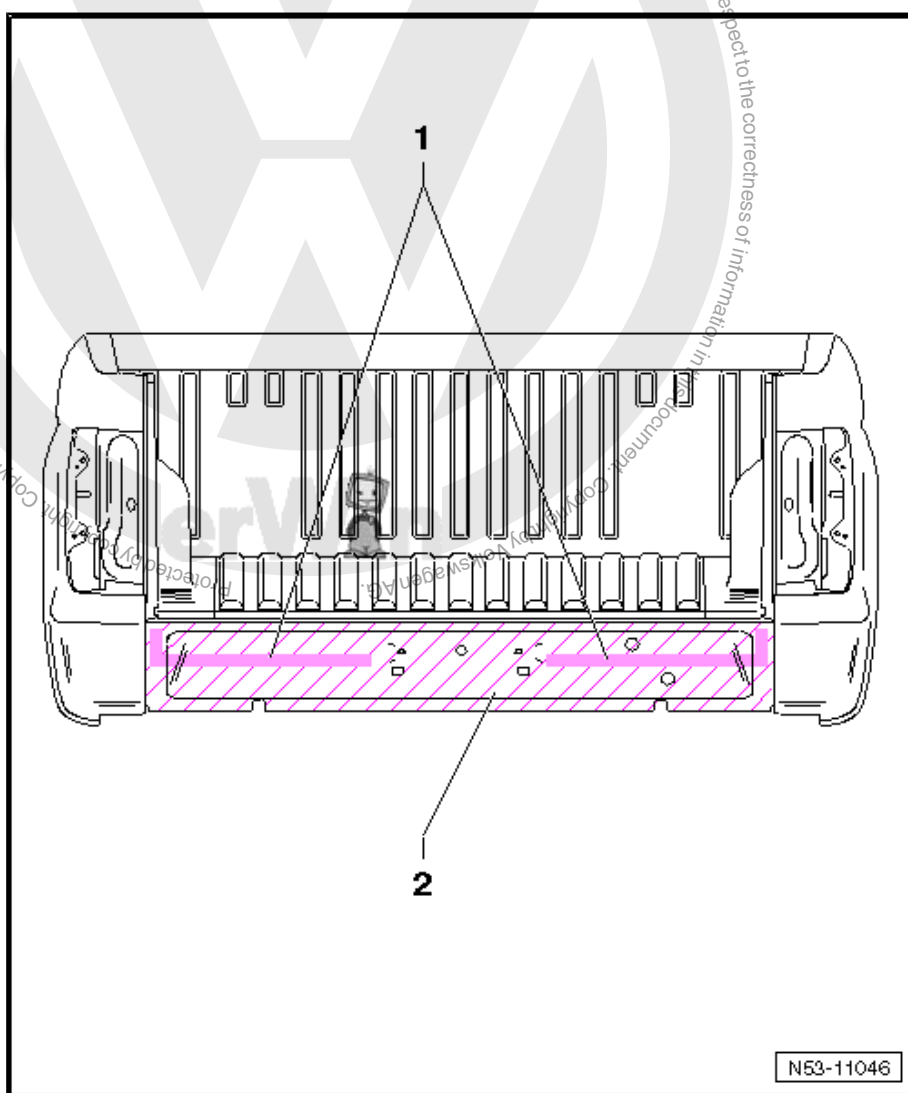
#### WARNING

*Observe safety notes!*

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

1 - Bonded areas

2 - Rear cross panel

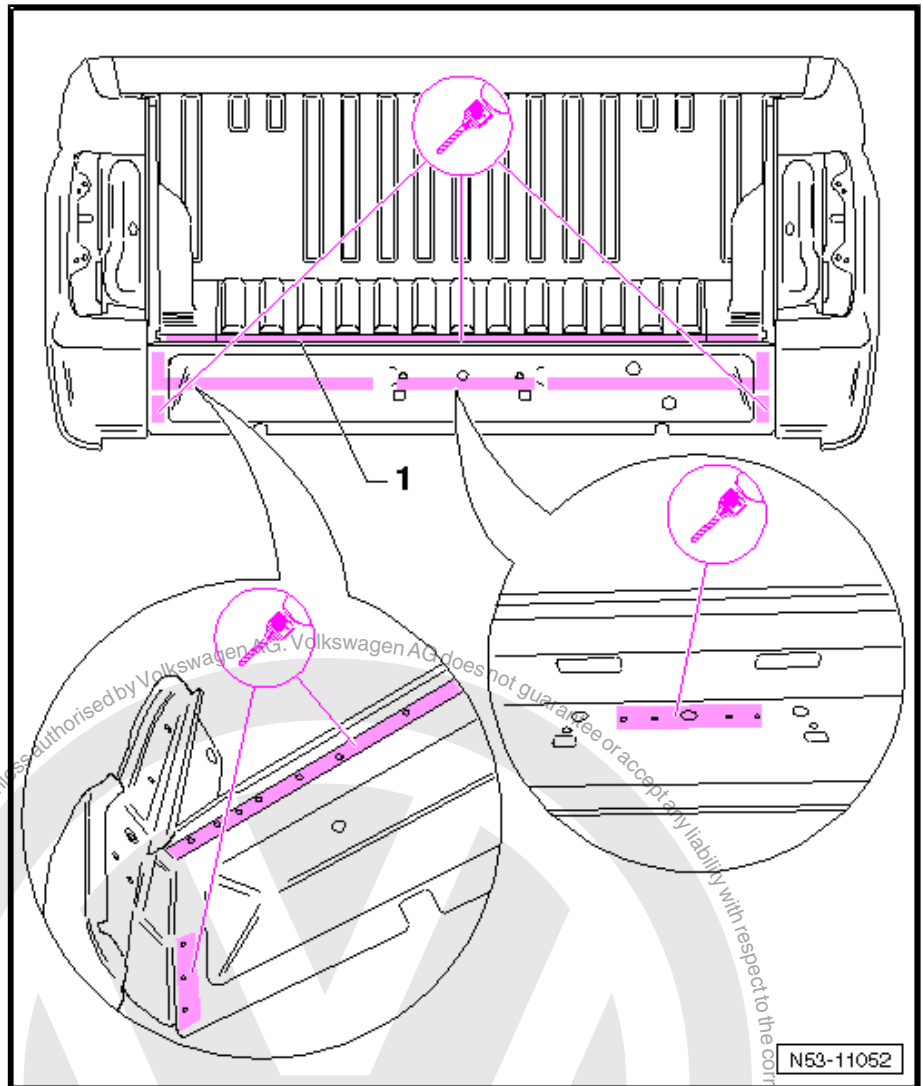




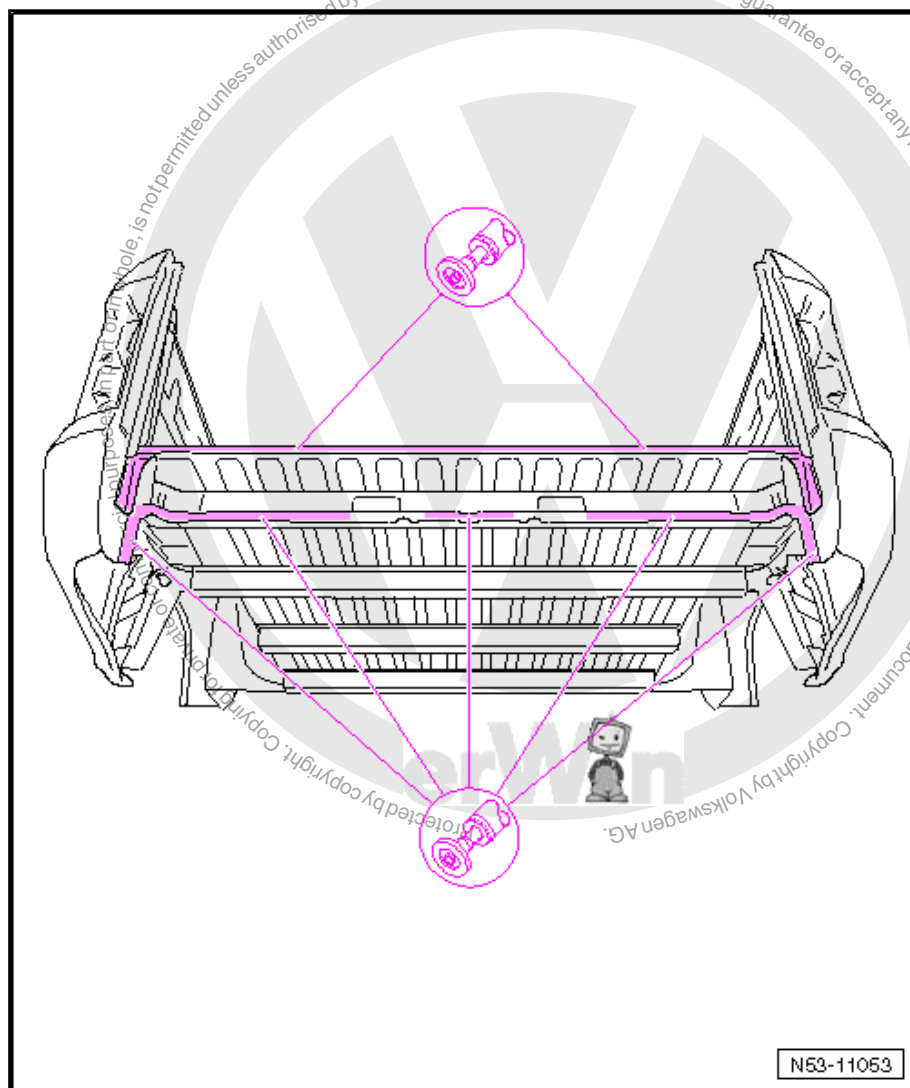


## 1.1 Removing

Carry out the following work:



- Separate original joint.
- Release bonded joints -1-. To release, heat bonded surfaces with hot air blower -V.A.G 1416- .
- Remove rear cross panel from load surface.



- Remove remaining material.
- Remove adhesive residues and grind bonding surfaces down to bare metal.
- Grind welding surfaces on both sides back to bare metal.

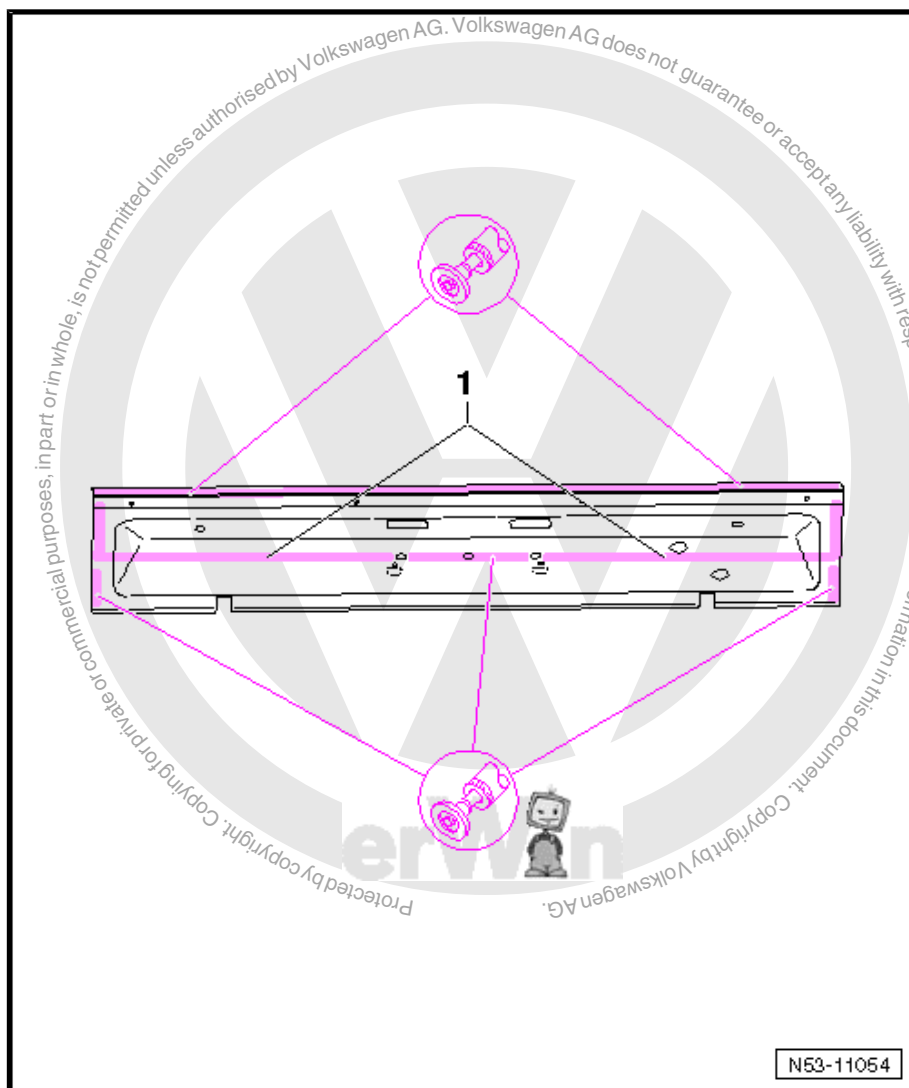
## 1.2 Installing

### 1.2.1 Preparing replacement part

#### Replacement parts

- ◆ Rear cross panel
- ◆ 2K body adhesive -D 180 KD3 A2-

Carry out the following work:

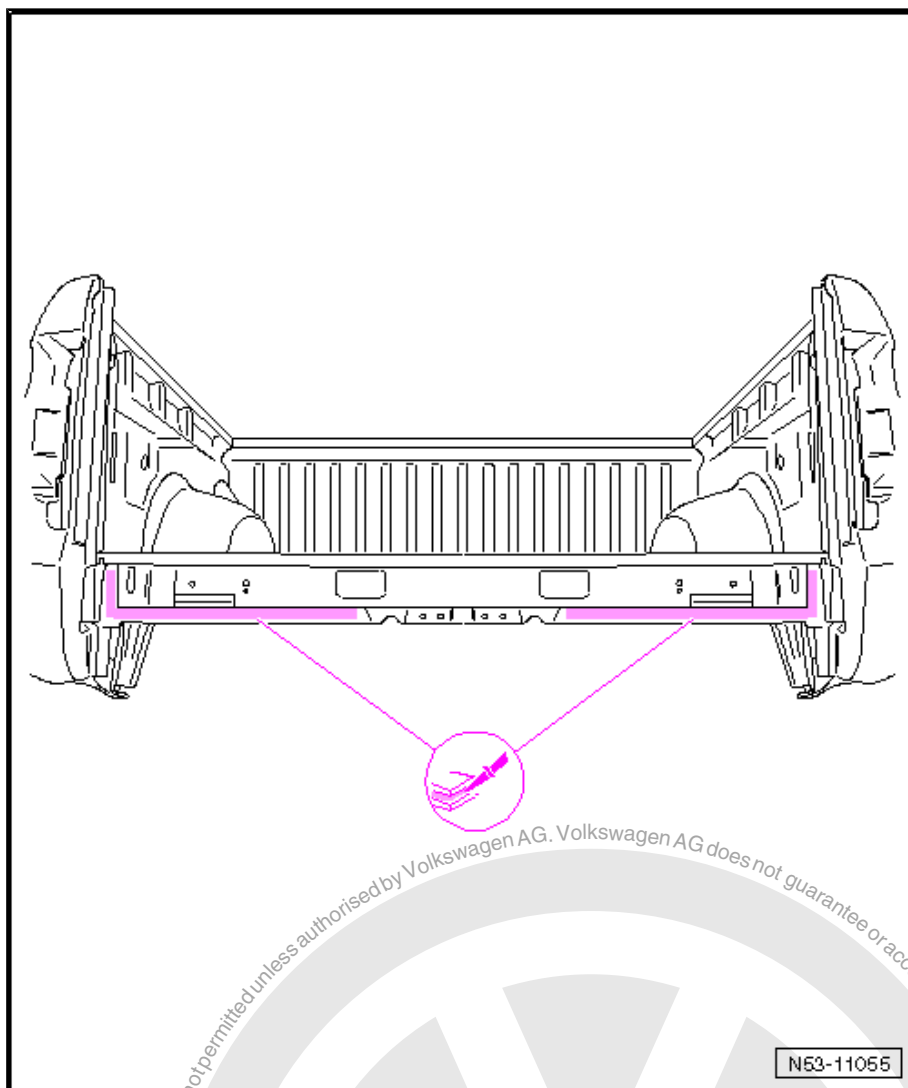


- Grind bonding surfaces down to bare metal on one side (from inside).
- Grind welding surfaces on both sides back to bare metal.



## 1.2.2 Welding in

Carry out the following work:

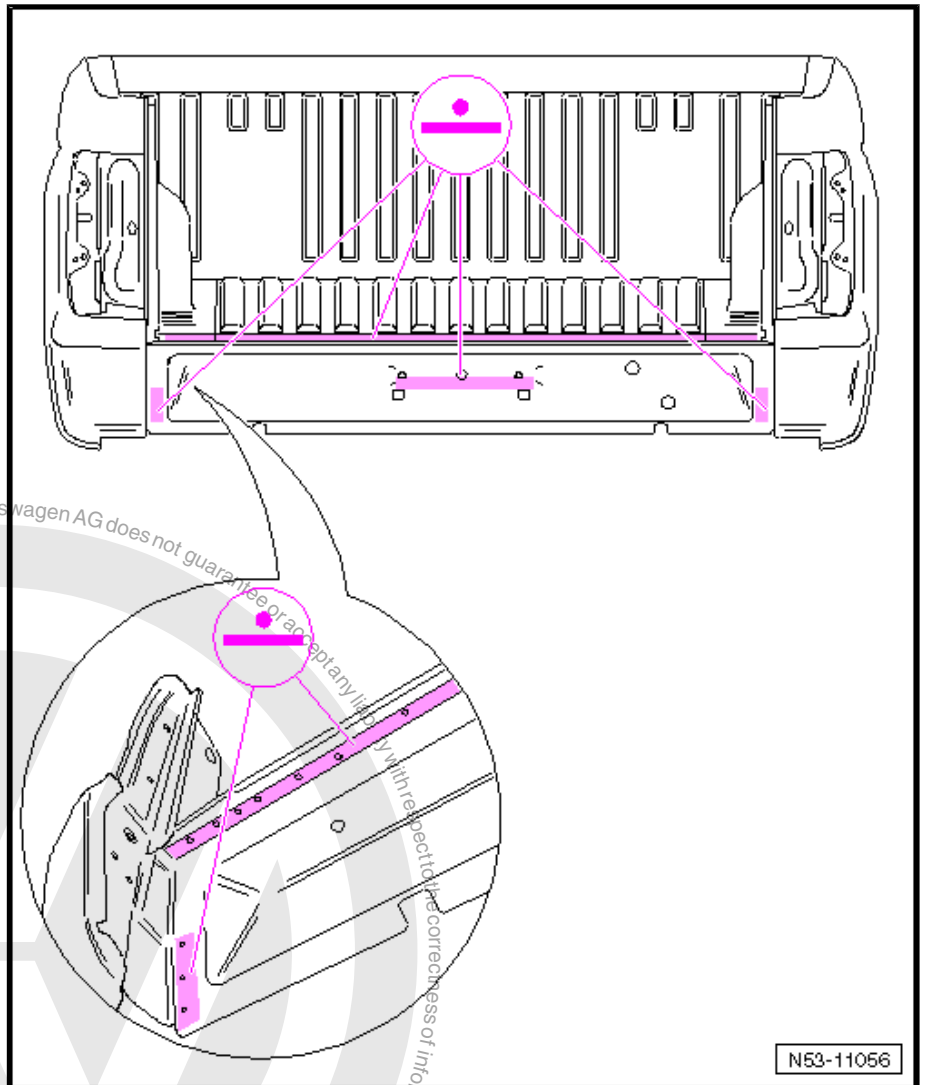


- Apply 2K body adhesive -D 180 KD3 A2- to bonding surfaces.



### Note

- ◆ Apply adhesive beads sufficiently thickly so that optimal bonding with the body is guaranteed.
- ◆ New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.



- Adapt new part to fit and fix in position.  
Weld in rear cross panel, RP spot weld seam.



RO: 53 48 55 70

## 2 Renewing rear longitudinal member - part section



### WARNING

*Observe safety notes!*

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

### 2.1 Removing

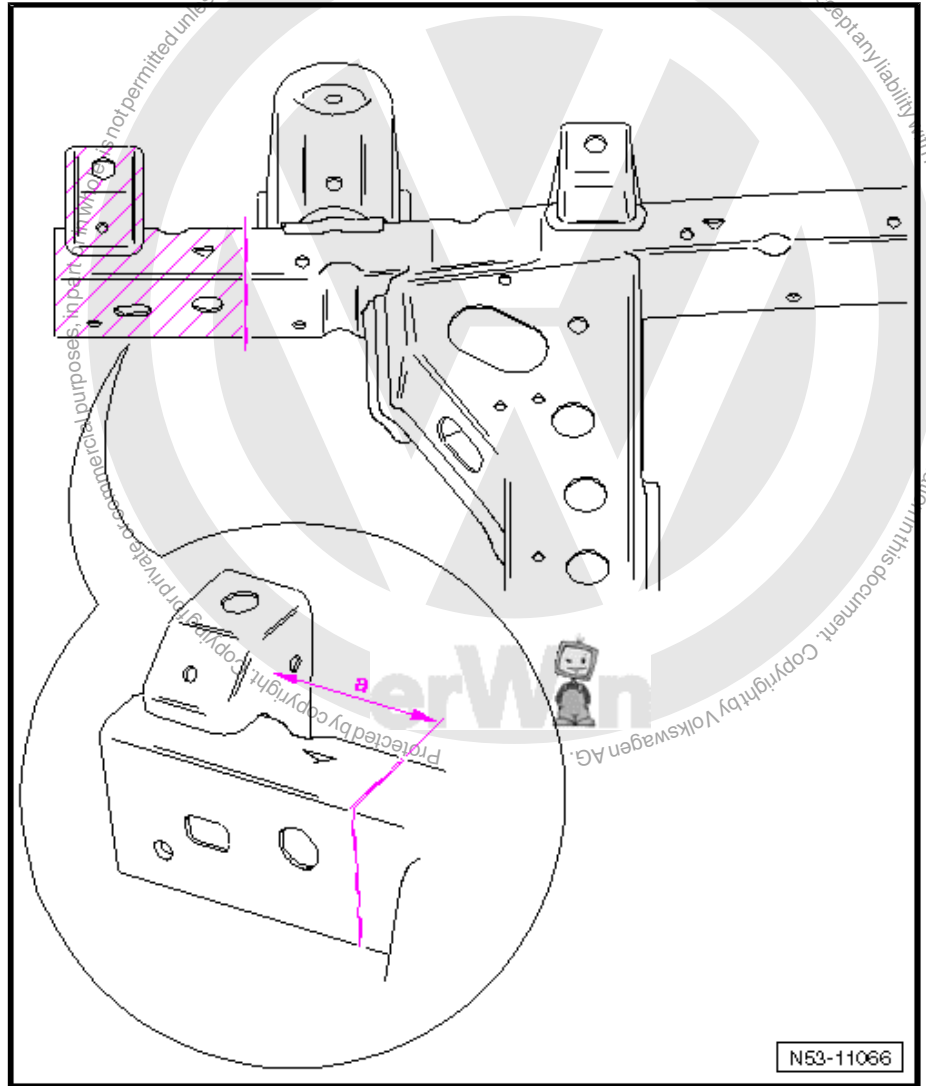
- Load surface already removed ⇒ General body repairs, exterior; Rep. gr. 55 ; Load surface .



### Note

*Parting cut must be straight.*

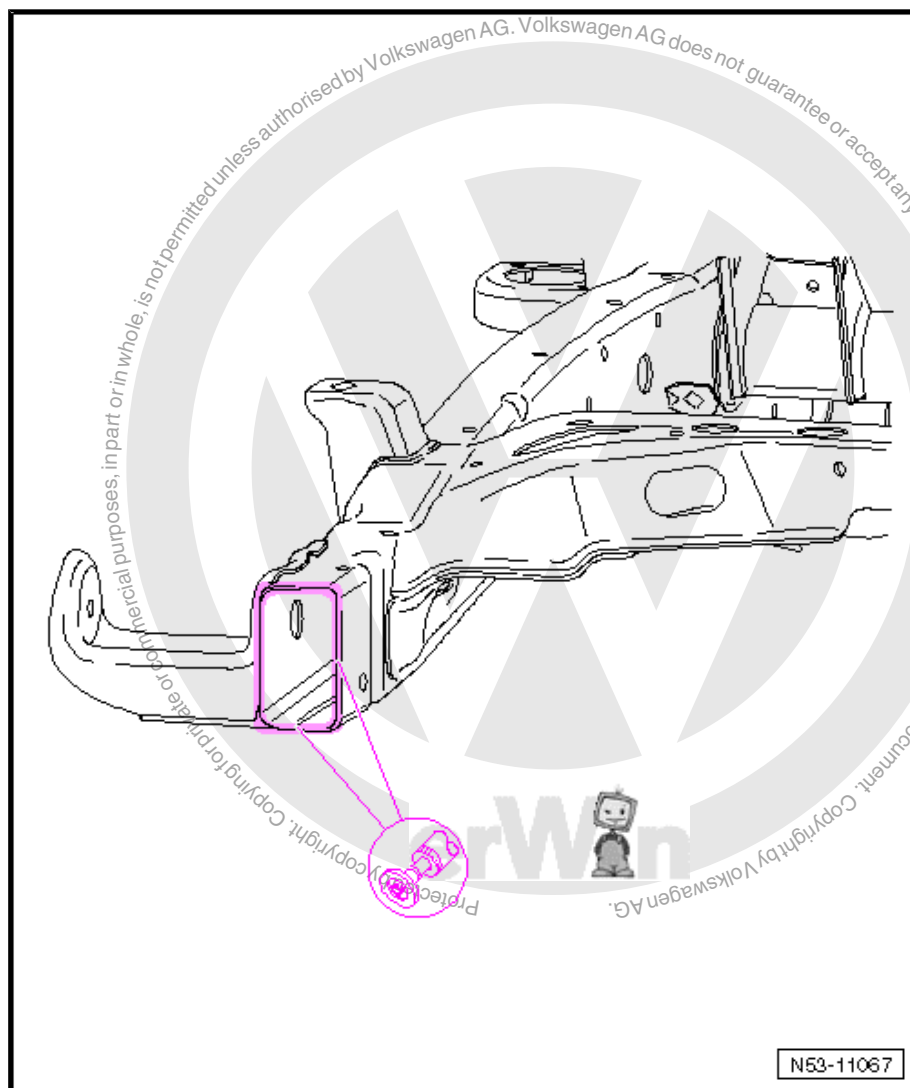
**Carry out the following work:**



- Mark parting cut as per -dimension a- and cut.

**Dimension a = 90 mm from mounting bracket**

- Remove longitudinal member.



- Remove remaining material.
- Grind welding surface back to bare metal.

## 2.2 Installing

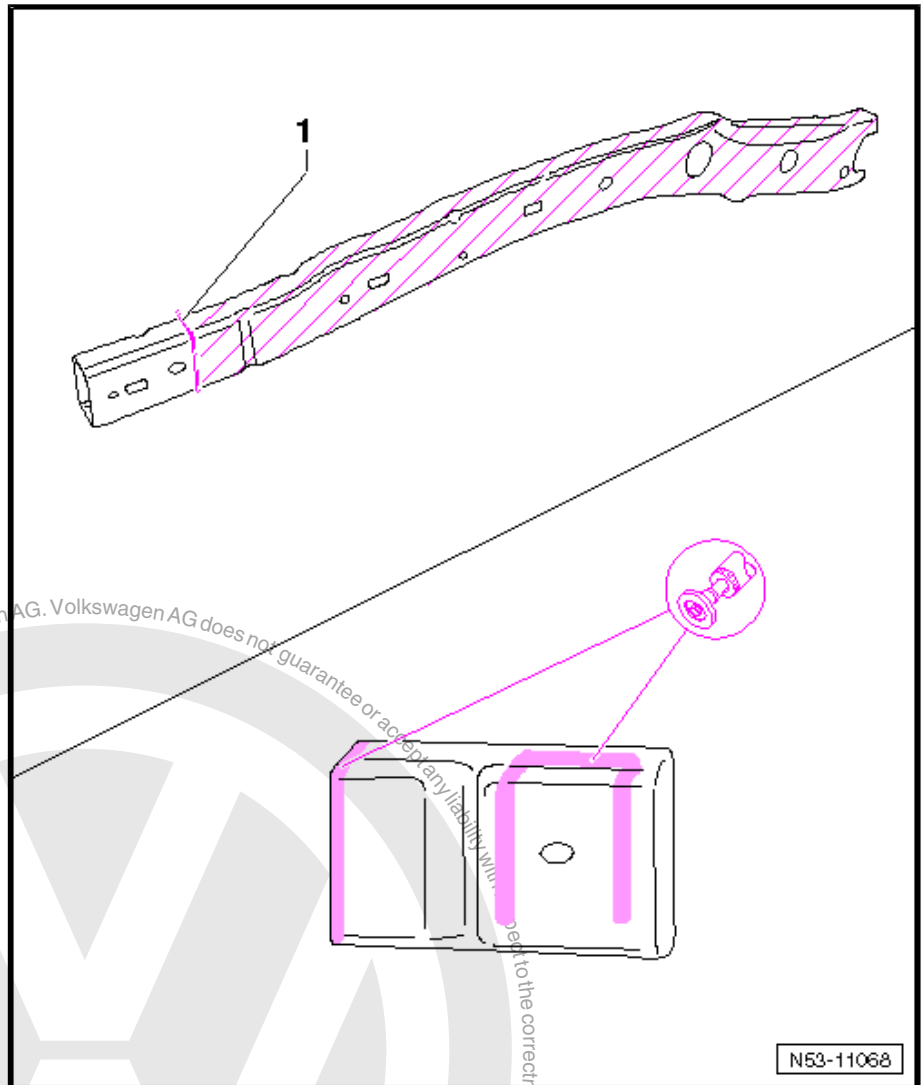
### 2.2.1 Preparing replacement part

#### Replacement part

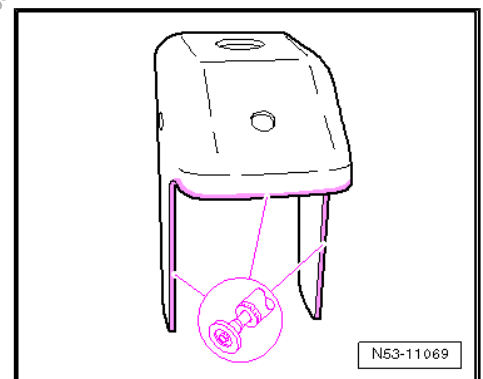
- ◆ Rear longitudinal member complete
- ◆ Mounting bracket

Carry out the following work:





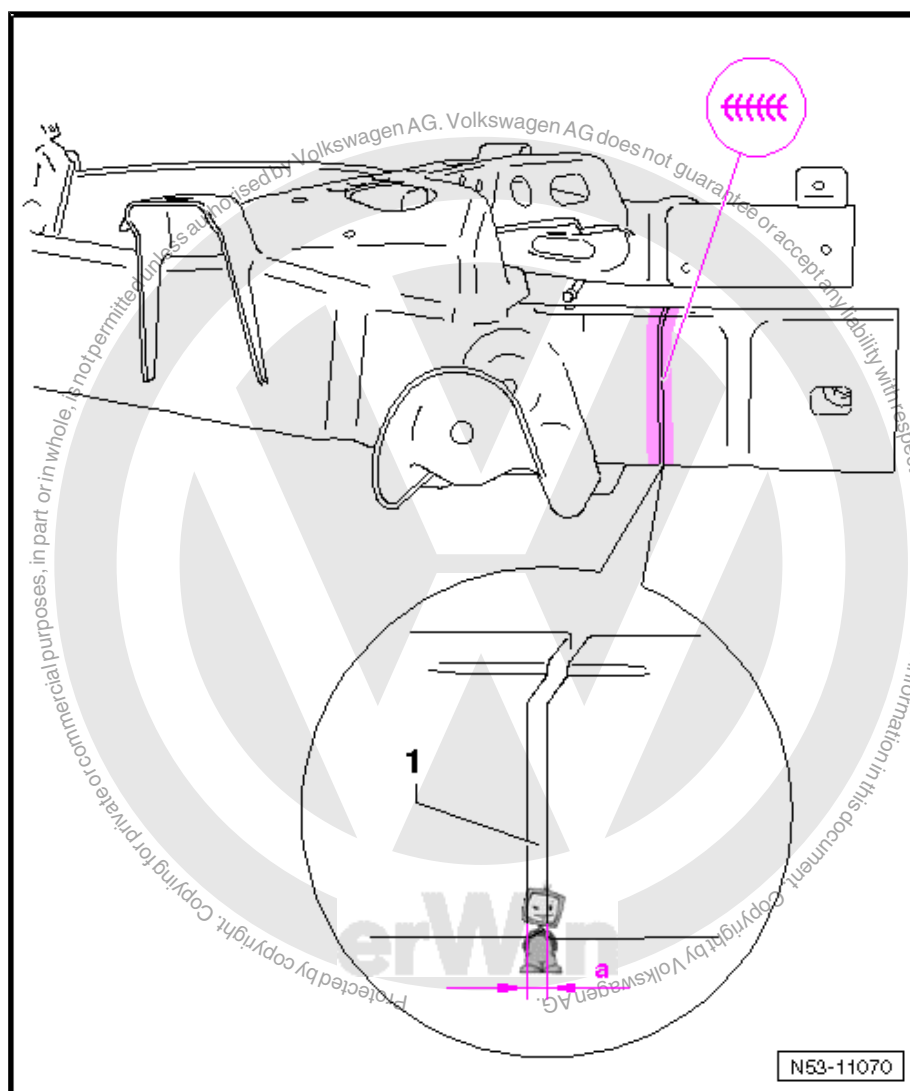
- Transfer parting cut -1- from body to new part.
- Make parting cut -1-.
- Remove shaded area.
- Grind welding surfaces down to bare metal.
- Grind welding surfaces of mounting bracket back to bare metal.





## 2.2.2 Welding in

Carry out the following work:



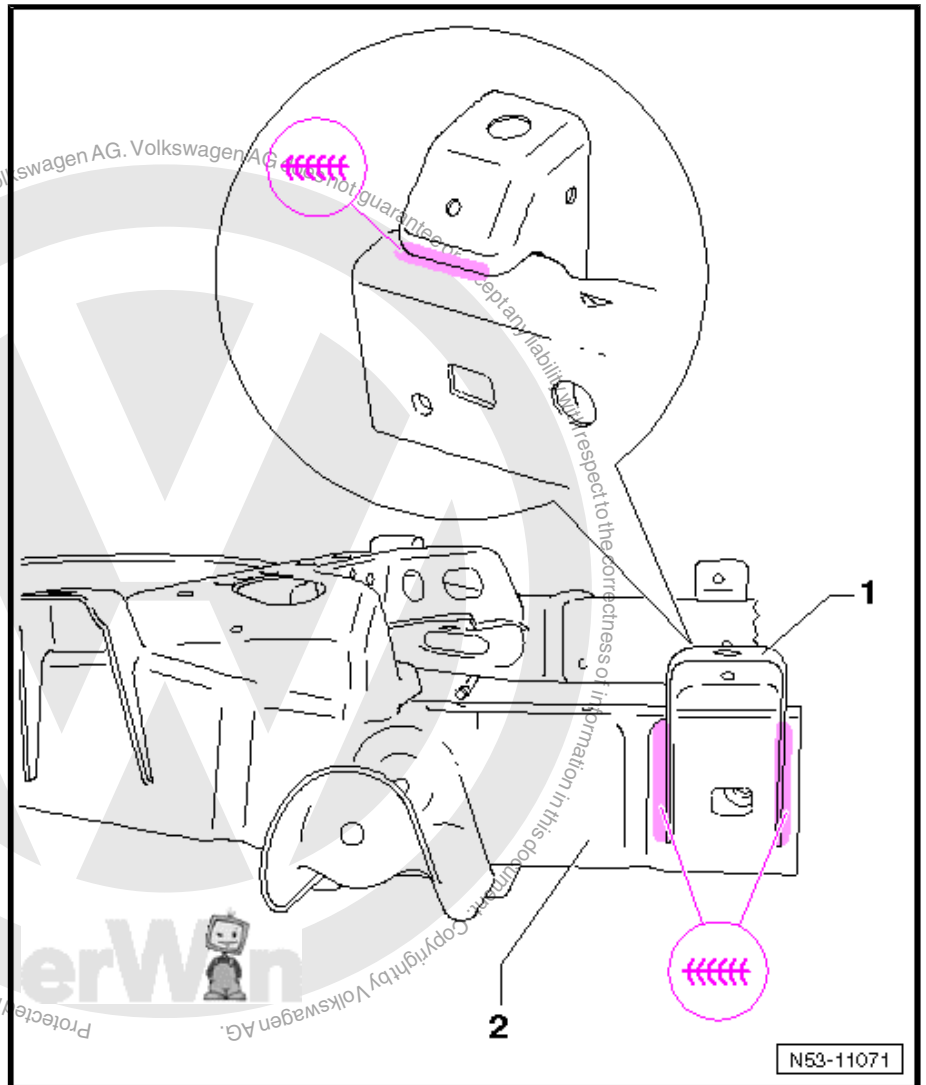
- Adapt new part to vehicle standing on alignment bracket set and fix in place.
- Check fit with adjacent parts.
- Weld parting cut all round in rear longitudinal member -1- adhering to -air gap dimension a-, SG continuous weld seam.

Dimension a = 3.5 mm + 0.5 mm



### Note

- ◆ Adherence to -air gap dimension a- is vital to guarantee proper through-welding.
- ◆ Before welding longitudinal member, check welder settings; weld several „test seams“ and check roots of „test weld seams“ (correct welding parameters if necessary).
- ◆ SG continuous weld seam must not be reworked (ground or smoothed)!



- Adapt rear mounting bracket for load surface -1- to fit and fix in position ⇒ [page 19](#) .
- Weld in rear mounting bracket with longitudinal member -2-, SG continuous weld seam.
- Carry out cavity preservation on rear longitudinal member.



RO: 53 55 55 20

### 3 Renewing rear side panel



#### WARNING

*Observe safety notes!*

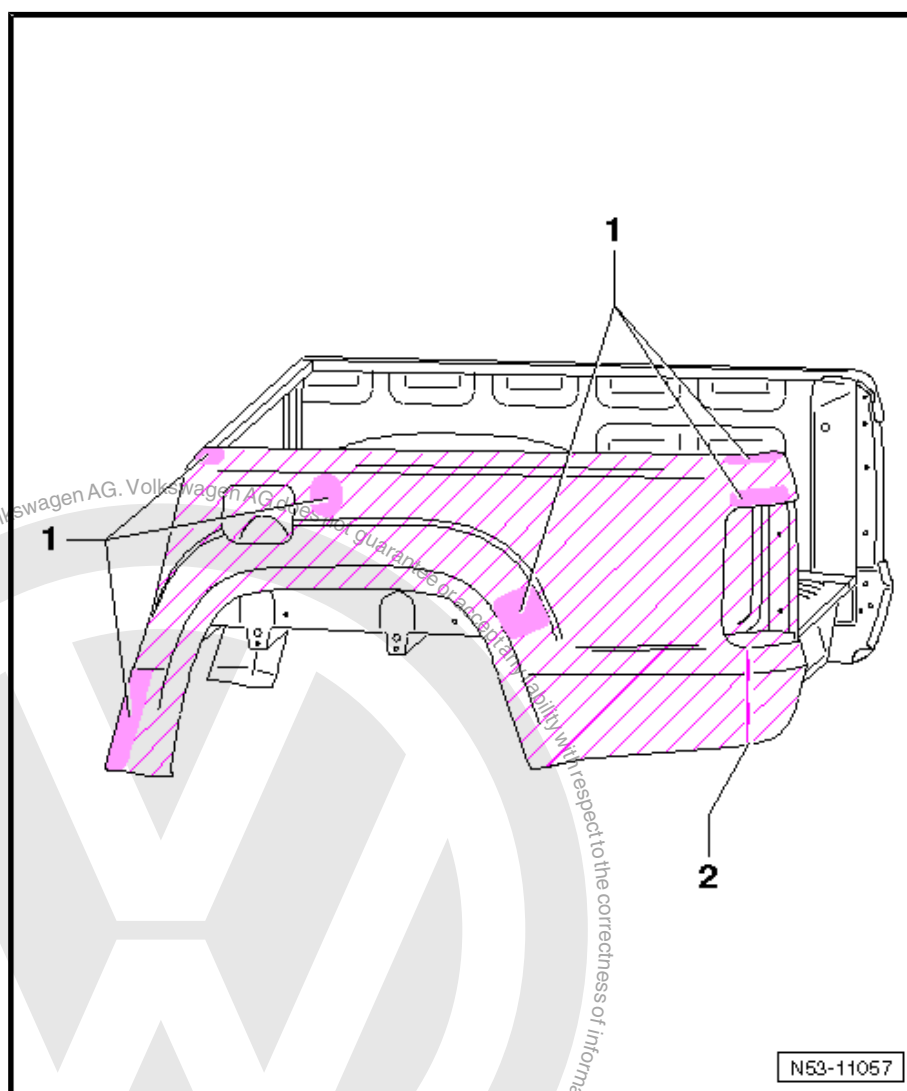
Safety notes ⇒ General Information; Body Repairs, General Body Repairs ; Safety notes

- Load surface already removed ⇒ General body repairs, exterior; Rep. gr. 55 ; Load surface .

#### 1 - Bonded areas

#### 2 - Parting cut for partial renewal

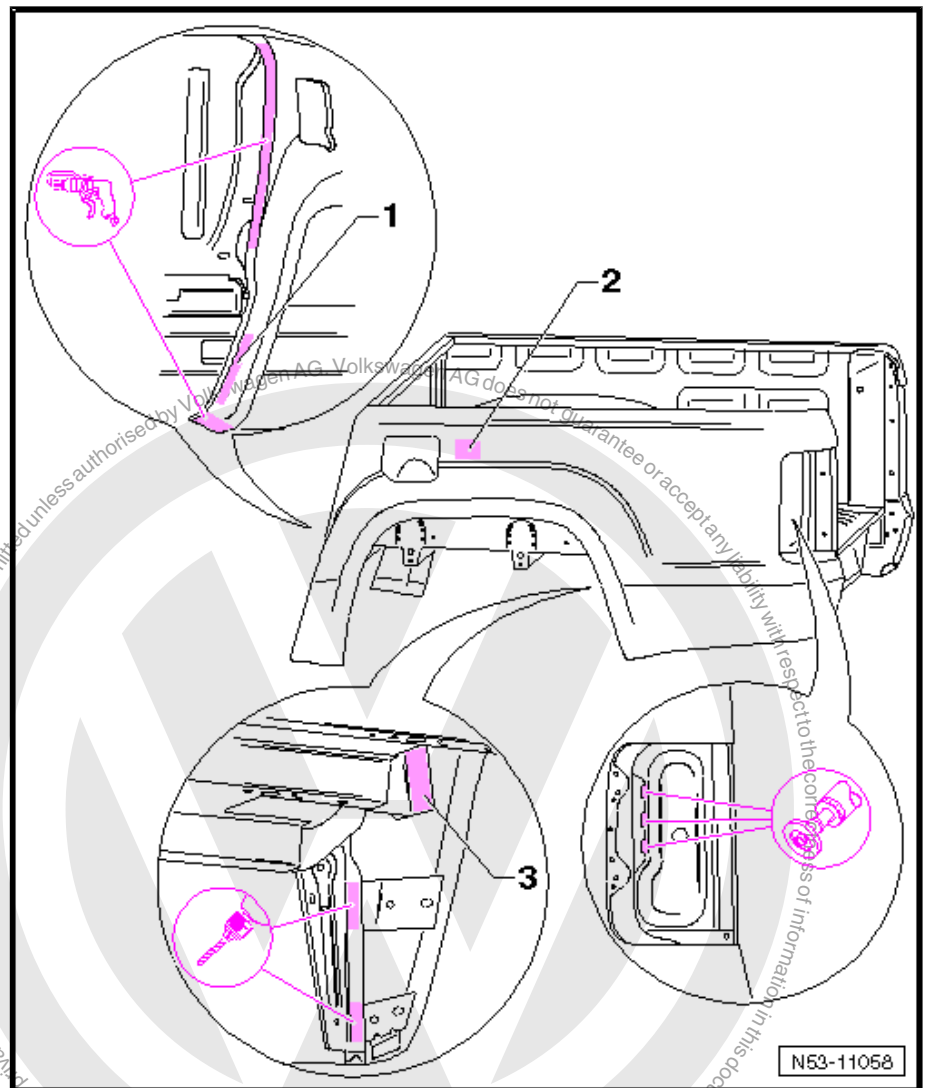
- ☐ Parting cut is permitted for other forms of damage.



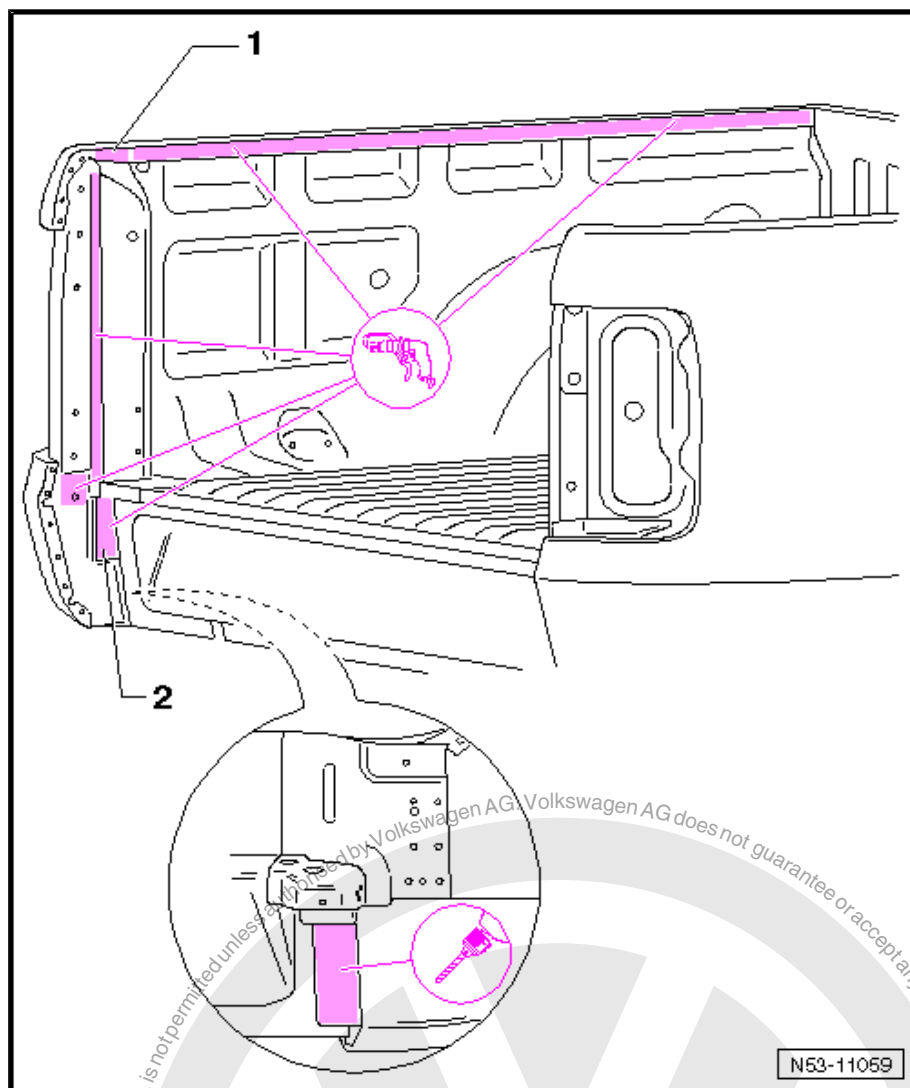


### 3.1 Removing

Carry out the following work:



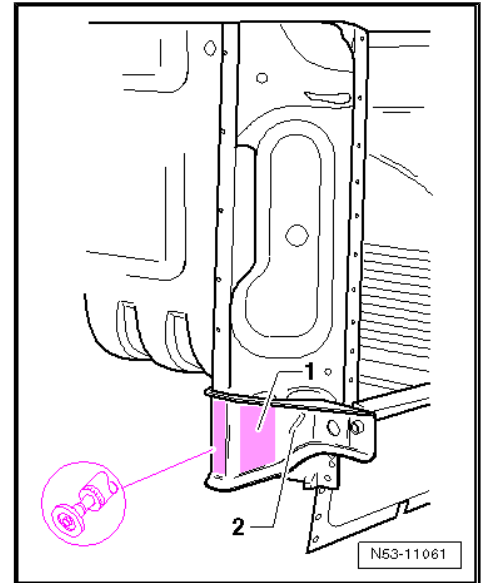
- Separate original joint.
- Release bonded joints -1-, -2- and -3-. To release, heat bonded surfaces with hot air blower -V.A.G 1416-



- Separate original joint.
- Drill open original joint -2- through 2 material thicknesses.
- Release bonded joint -1-. To release, heat bonded surface with hot air blower -V.A.G 1416- .
- Remove rear side panel from load surface.
- Release original joint from bracket -2-.
- Release bonded joint -1-. To release, heat bonded surface with hot air blower -V.A.G 1416- .

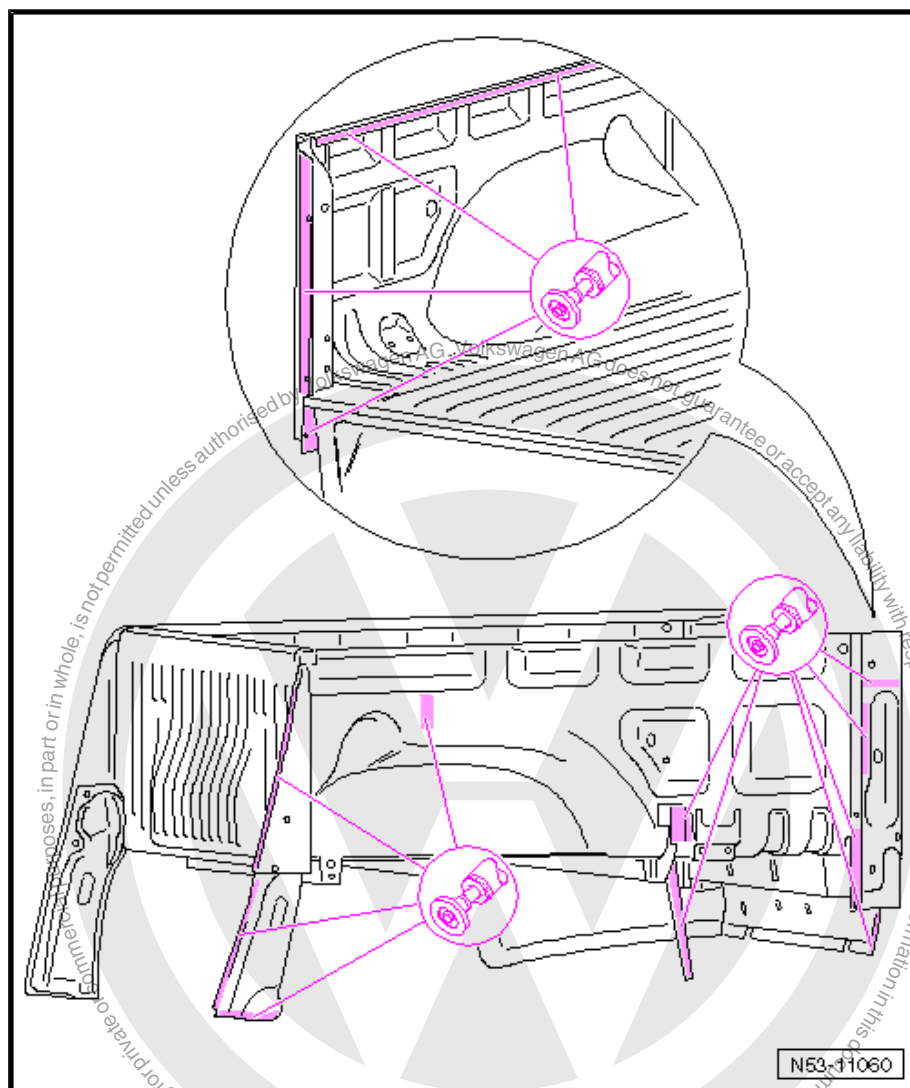


- Remove bracket -2- from load surface.



- Remove remaining material.
- Remove adhesive residues and grind bonding surfaces down to bare metal.
- Grind welding surfaces on both sides back to bare metal.





## 3.2 Installing

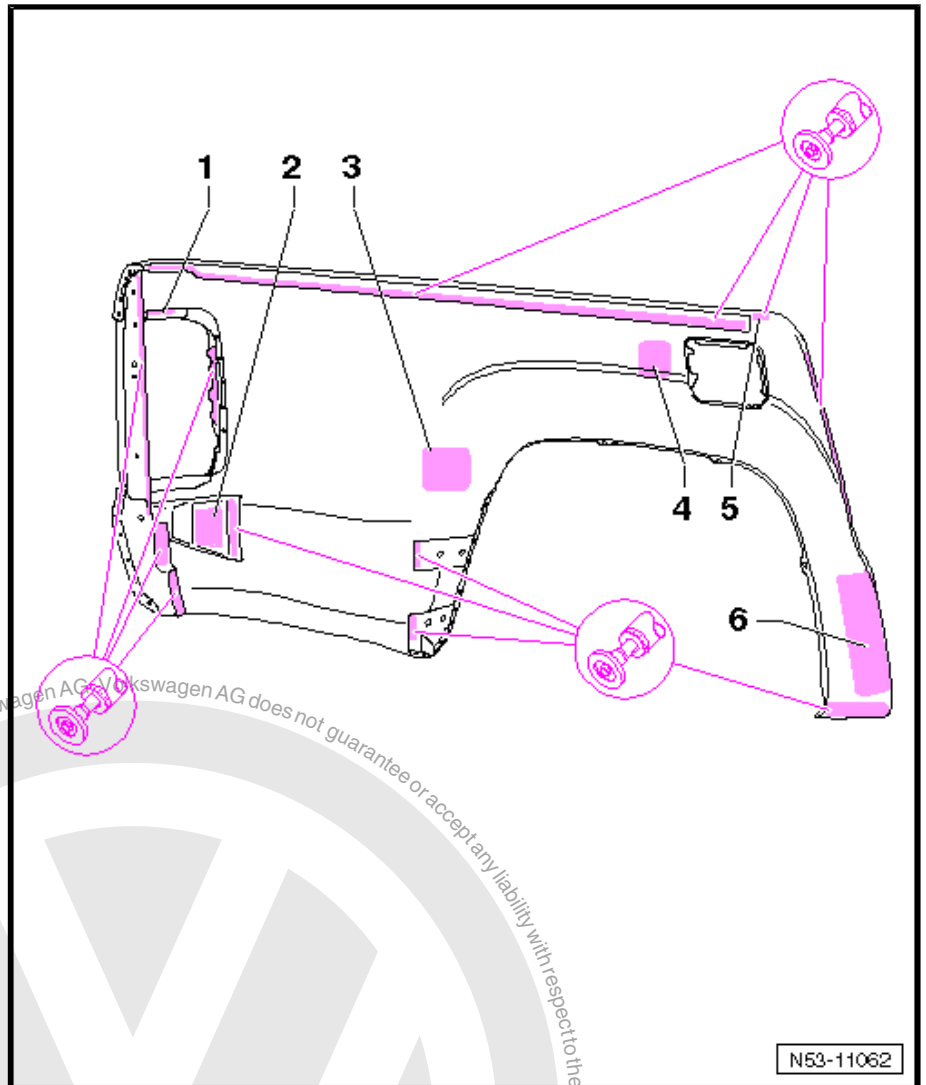
### 3.2.1 Preparing replacement part

#### Replacement parts

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

Carry out the following work:



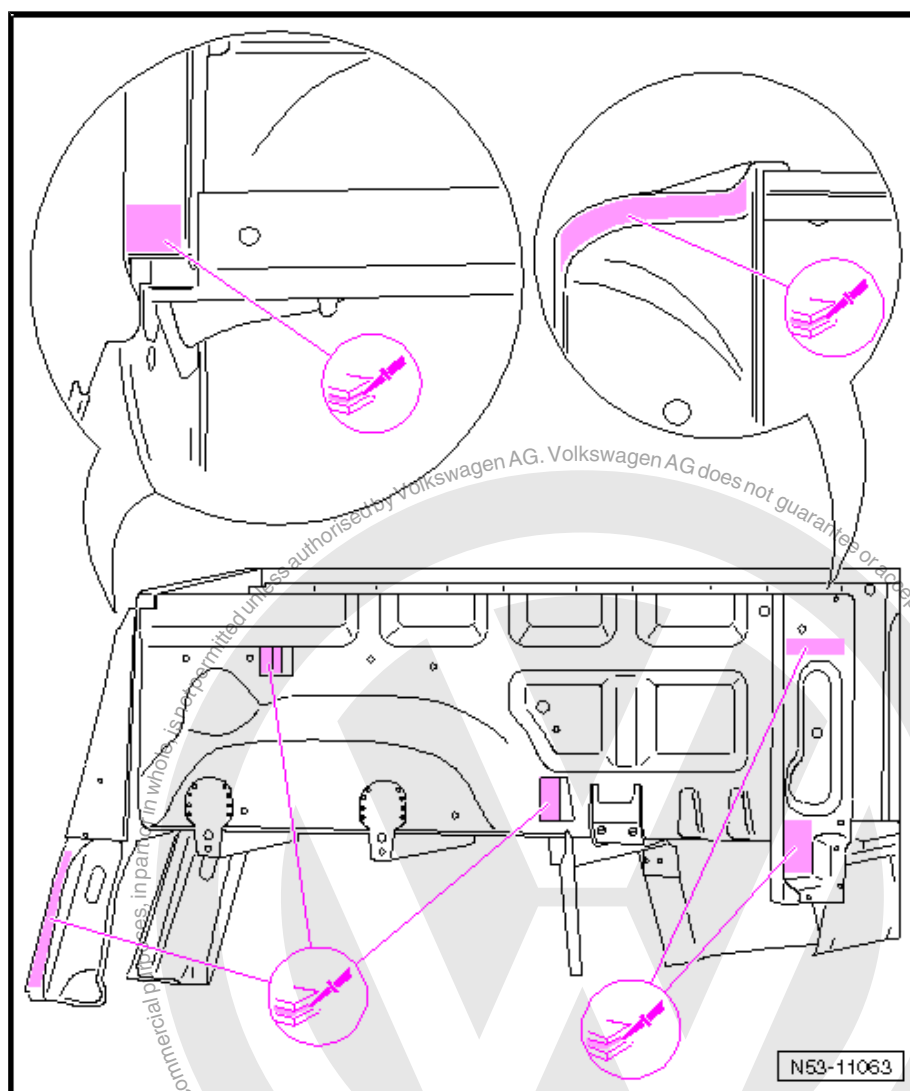


- Grind bonding surfaces -1- to -6- down to bare metal on one side (from inside).
- Grind welding surfaces on both sides back to bare metal.



### 3.2.2 Welding in

Carry out the following work:

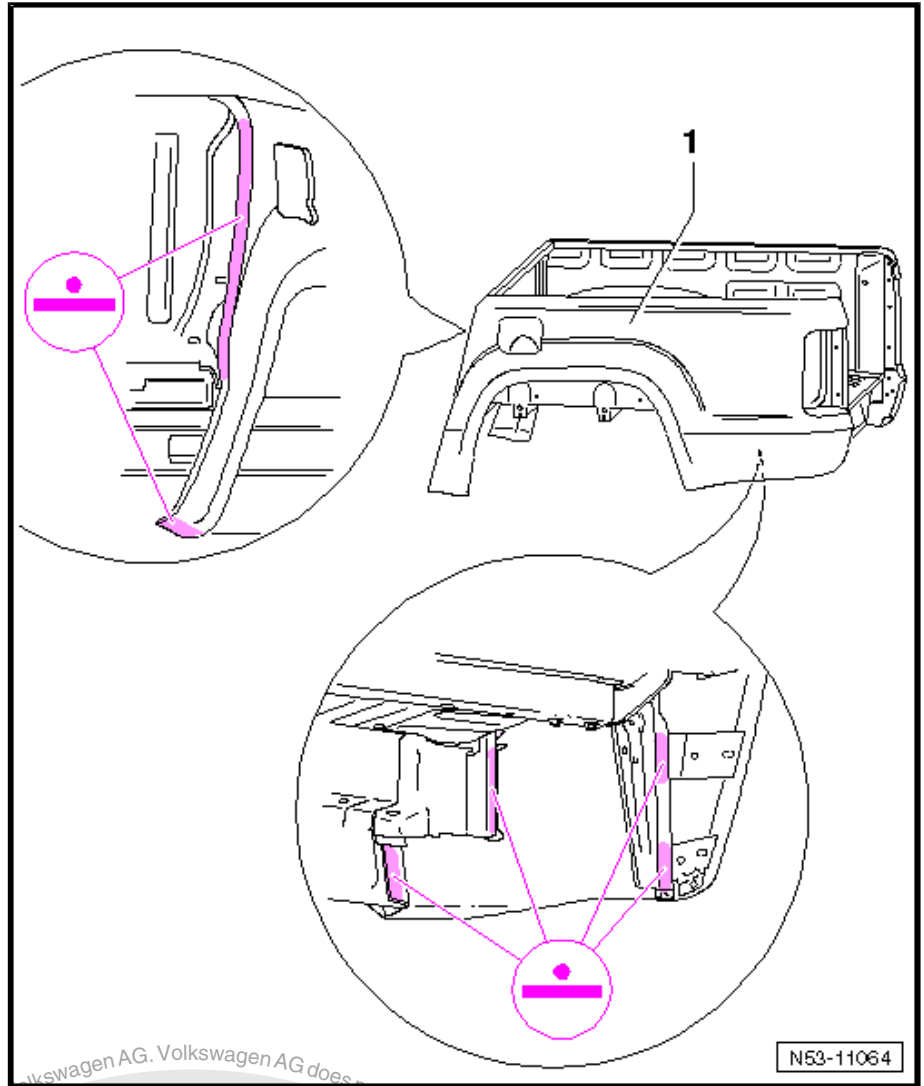


- Apply 2K body adhesive -D 180 KD3 A2- to bonding surfaces.

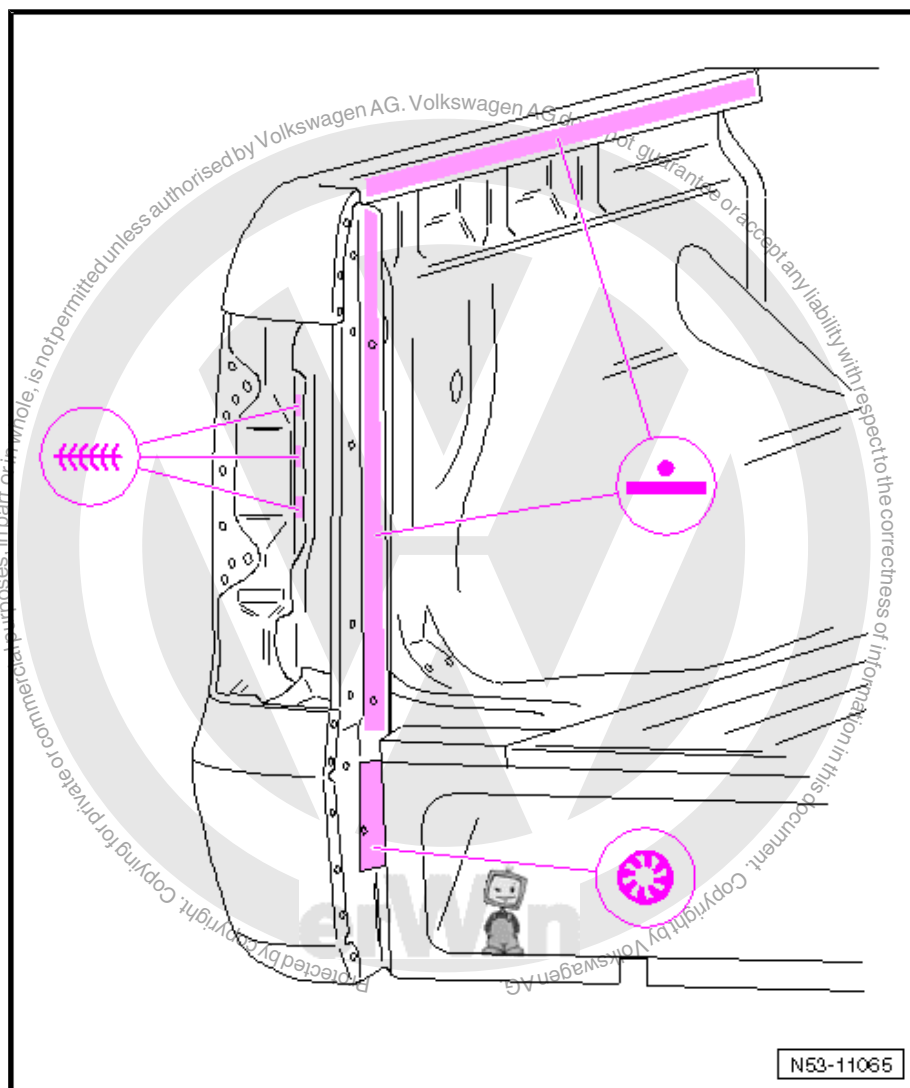


#### Note

- ◆ Apply adhesive beads sufficiently thickly so that optimal bonding with the body is guaranteed.
- ◆ New part must be welded in within 90 minutes or adhesion of adhesive will be impaired.



- Adapt rear side panel -1- to fit and fix in position.
- Check fit with adjacent parts.
- Weld in rear of side panel, RP spot weld seam.



- Weld in rear side panel, RP spot weld seam, SG plug weld seam and SG continuous weld seam.
- Optically process visible weld joints.
- Use 2K filler to smooth out rough spots.