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Welding steel components

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Important!

Comply with the following topics from "Body, General":

[Safety regulations](#).

Handling [electrical system, electronics, airbags and restraint systems](#).

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1. General information

- The following procedures are used for repairs:
 - MAG welding (**M**etal **A**ctive **G**as welding)
 - Resistance pressure spot welding (referred to in the following and in the repair instructions as spot welding).
- Take the number and position of welding spots and MAG weld seams from the separated part. Replace areas inaccessible to spot-welding tongs with MAG plug weldings at the same distance. Diameter of bore holes for plug weldings 8 mm.
- In the case of emissions extraction, observe a minimum distance of 30 cm for MAG welding during the welding process. Otherwise the inert gas would be drawn off.
- Follow the equipment manufacturer's instructions for use.

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2. Work materials

- MAG welding:
 - Steel welder (see [Workshop Equipment](#)).
 - Steel welding wire - G3SI1 (SG2) or alternatively G4SI1 (SG3)
 - Welding mask

- Gas bottle containing inert gas (82 % argon, 18 % CO₂)
- Resistance pressure spot welding:
 - Spot-welding apparatus (see [Workshop Equipment](#)).
 - Safety goggles

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3. Preparations for MAG and spot-welding

- Remove the paint coating in an area of approx. 30 mm around the weld seam or spot.
 - The zinc layer underneath must be removed during the MAG welding method.
 - It is not necessary to remove the zinc layer underneath during spot-welding.
- Remove the paint coating on the reverse side of the weld seam or spot.
 - Contaminants will otherwise enter the weld pool via the root of the weld seam.
 - An insufficient electron flow prevents an optimum spot-weld joint.
- Coat all metal overlaps and weld spot flanges with welding primer.
- To determine the optimum electrode contact force for spot-welding, carry out spot-weld shear tests on sample sheet metal.
- In order to keep the electron flow short during MAG welding on the body, you must if possible attach the ground terminal directly to the component to be welded.

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4. Welding

- During MAG welding, the weld gap must be kept as small as possible. The larger the weld gap, the lower will be the strength of the joint.
- During spot-welding, the sheet metal flanges to be joined must be placed as close together as possible without gaps.

The larger the gap, the lower will be the strength of the joint.

Minimum distance between welding spots 25 mm.

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5. Subsequent treatment of welded connections:

- When grinding a weld seam, do not grind thin the base material next to the seam.
- After joining, clean all weld seams and spots with a stainless steel wire brush.
- Remove burnt paint with a stainless steel wire brush.
- All welded connections sealed off with body sealing compound in original condition must be primed and sealed off again thoroughly after repairing. Replace damaged or removed anti-drumming layers.