Welding on the chassis frame

General information

IMPORTANT!

- All welding must be completed professionally by trained personnel.
- Avoid welding on the chassis frame, as all welding increases the risk of crack formation in the area around the weld. This applies especially for areas on the chassis frame with high strength and fatigue resistance requirements.
Welding in the area between the front axle and 350 mm behind the last wheel axle is only permitted in the following cases:

- When the truck has an evenly distributed load, e.g. a box body.
- When the chassis frame needs to be repaired or strengthened.
- When the axle distance needs to be changed.

*More information on changing the axle distance can be found in the document “Changing the axle distance”.

Welding in the area from 350 mm behind the last wheel axle to the rear edge is only permitted on rigid trucks where the rear overhang is not exposed to large stresses. Welding in this area must therefore not be completed on rigid trucks that are fitted with any of the following:

- Rear-mounted crane
- Tail lift
- Trailer coupling
- Other rear-mounted equipment
Risks

Material deterioration

Cracks and brittleness reduce the strength of the chassis frame. The material properties of the chassis frame become much worse if the frame member is heated to more than 650 °C. Check that the temperature does not get too high, for example, when changing the direction of the chassis frame.

⚠️ WARNING!

- All welding, cutting and grinding on the vehicle incurs a high risk of fire, and plastics and other heat-sensitive material can easily ignite and melt.
- Weld splatter and grinding sparks can become red-hot and ignite material long after the work is completed.
IMPORTANT!

- Always check that the welded joint is of good quality and without pores.
- Do not end the welded joint in an area under high tension.
- You must not weld on the chassis frame in order to attach bodywork.
- Do not weld on drawbeams and end plates.
- The anti-corrosive zinc layer must be restored if it gets damaged during welding work:
  - All metal must be corrosion protected.
  - Rust protection oil and underbody sealant must be replenished if damaged.

More information on painting can be found in the document “Overpainting of chassis, axles and rims”.

IMPORTANT!

- Clean around the area where the welding is to be completed of oil spillage and dirt before starting the welding work.
- Guard exposed parts of the chassis with fireproof mats or take other action.
- Guard the spring leaves from weld splatter when welding close by the axle springs.
- Guard the plastic brake lines and cable harnesses.
- Where possible, complete welding work outside the rigid truck’s risk area.
Electric welding

The vehicle’s electrical system is based on CAN (Controller Area Network) technology with a large number of control units, electrical control devices and electrical components. They can be susceptible to electrical influences when welding.

**IMPORTANT!**

- Earth the welding appliance as close to the welding point as possible.
- Remove the cable terminal from the negative battery terminal to guard sensitive electronic equipment against current surges and overvoltage.

Use the following electrodes for DC welding:

- Esab OK 48.00 or equivalent
- Oerlikon Super Cord
- FILARC 35

Use the following electrodes for AC welding:

- Esab OK 48.15
- Oerlikon Spezial or equivalent

For MAG welding:

- Filler metal ESAB OK Autorod 12.51, Ø 1 mm
- Gas AGA-MIX AK 20 (80% Ar +20% CO2) or FOGON 20
- Gas quantity 10 dm³/min
Work description

Welding to fill holes

1. Chamfer the hole.
2. Clamp a copper plate (1), for example with a clamp, on the inside of the side member.
3. Weld up the hole (2).
4. Remove the copper plate and finish welding on the inside of the side member.
5. Grind the weld flat on both sides.
6. Apply anti-corrosion treatment to the area.

For larger holes, a washer can be used as filling when re-welding.

Chamfering weld joints

Chamfer the ends of the frame as shown in the illustration.

A = Metallic arc welding
B = MIG welding