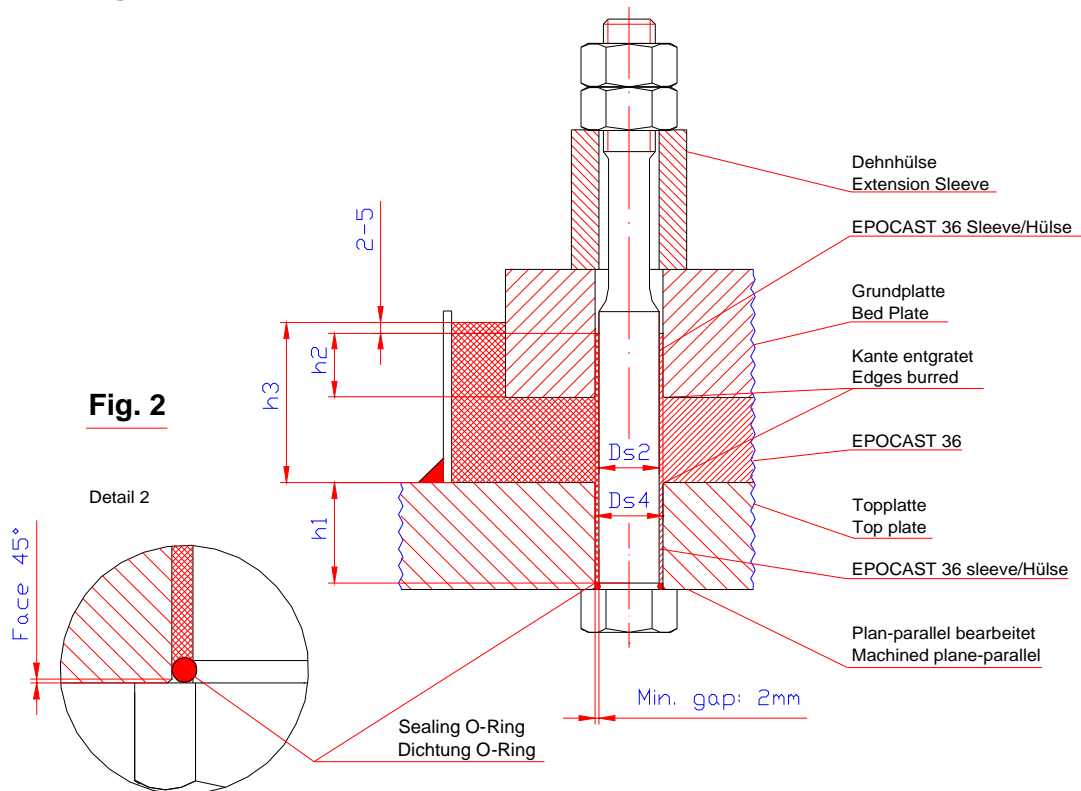
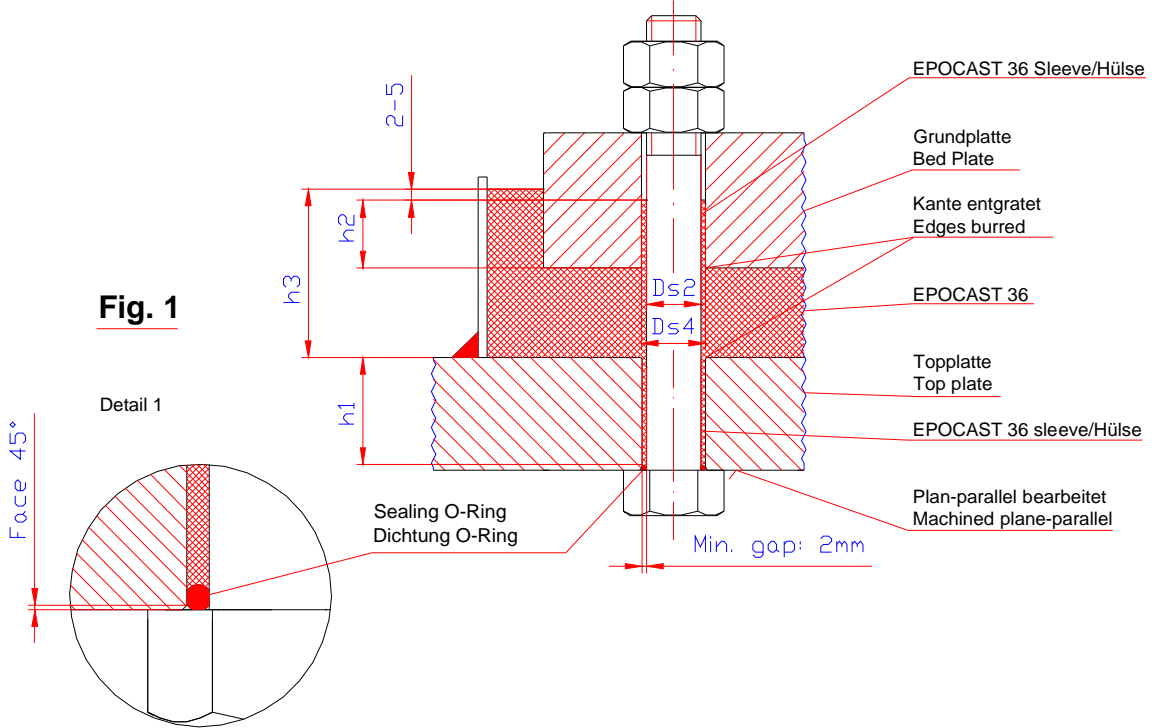


Guidelines for “Fitted Bolts Of Cast-In Resin Type“ with EPOCAST 36®

Introduction

This Guideline is made for Fitted Bolts which are to be installed into oversized holes of engine bed plate and ship’s top plate. They must be provided exclusively for fixing and securing the plant components and must not be taken into account in the transmission of propeller thrust. In the correct way applied this technology saves time and money.



Requirements

- The application must be provided exclusively for fixing and securing the plant components and must not be taken into account in the transmission of propeller thrust.
- Hole diameter for Fitted Bolts must exceed the bolt shaft diameter from 4 to 20 mm.
- Smallest gap between Fitted Bolt shaft and bore of top plate / bed plate is 2 mm.
- Minimum height of Cast Resin Sleeve inside bed plate and top plate must be at least the diameter of bolt shaft (see Fig. 1 and 2: $h_{1,2} \geq D_{s2}$).

Preparation

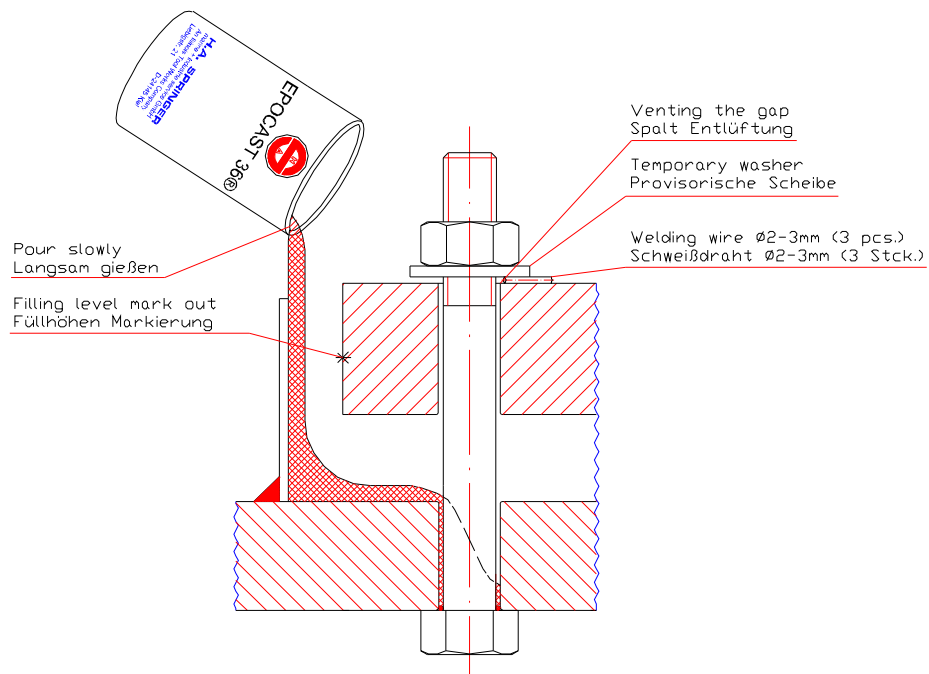
- Provide ambient and plate temperature $T > 15^{\circ}\text{C}$ in a way of chock
- Place the damming work of the chock in accordance with the approved chock arrangement.
- Place the Fitted Bolt and a sealing ring (Rubber Material, outside diameter $\varnothing = D_{s4} + 0,5 \text{ mm}$) underneath bolt head in accordance with Fig. 1 Detail 1 or Fig. 2 Detail 2.
- Put a temporary washer with 3 pieces welding wires (about 2-3 mm thick) under the nut and turn the nut down by hand for venting the gap and ensure that the sealing ring is placed correctly and Fitted Bolt is centring inside top plate and bed plate hole until bolt head is in contact with underside of top plate (see sketch page 3).
- Complete damming work and take attention that the height of pouring opening h_3 (filling level) is higher than the level of Cast Resin Sleeve h_2 .
That means filling level of pouring opening $h_3 = \text{chock height} + \text{shaft diameter of Fitted Bolt } D_{s2} + \text{min. } 2 \text{ mm}$.
- Complete damming work and take attention that the height of pouring opening (metal sheet) is higher than the filling level h_3 .
- Mark out the filling level with a needle or colour pen on bed plate vertical side.
- Smoke the total area only slightly with Release Agent FT36.

Pouring Procedure for “Fitted Bolts Of Cast-In Resin Type” with EPOCAST 36®

- Preheating of the **EPOCAST 36®** resin to approx. 30°C and keep hardener bottle at normal ambient temperature.
- Pour chocks with Fitted Bolts installed in 2 steps:

- Step 1: Pouring of underneath ring gap (marked with h_1)
- Step 2: Pouring of remaining chock with ring gap above (marked with h_2)

To step 1: Pour slowly **EPOCAST 36®** resin and hardener mixture into the ring gap so that the air can escape.



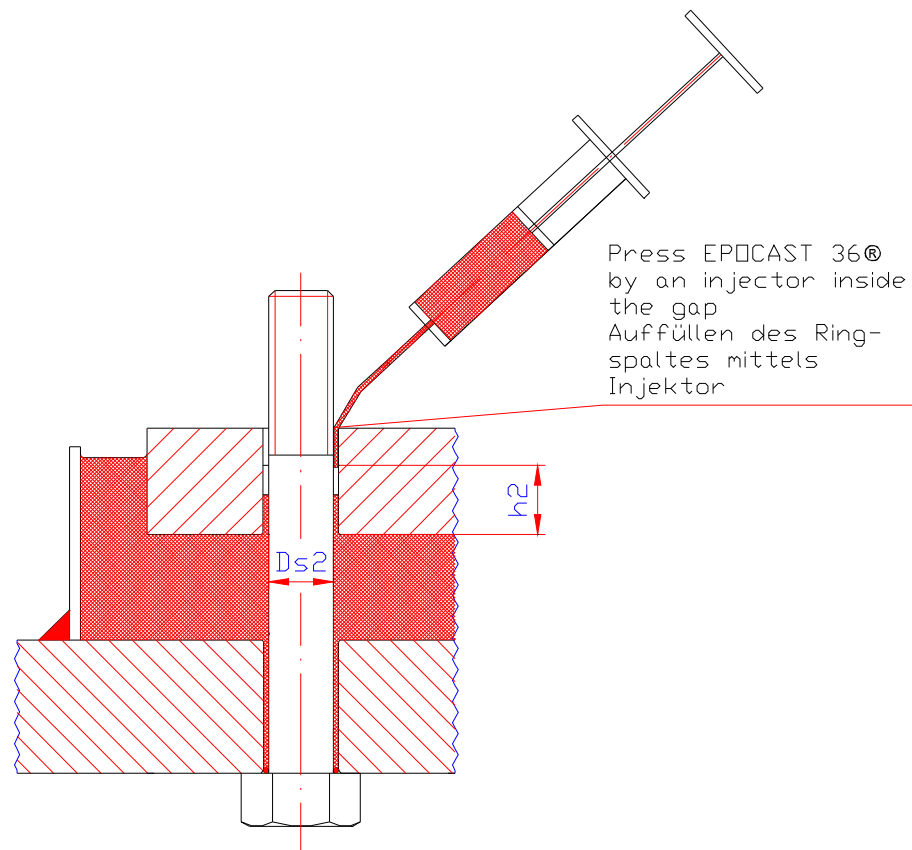
To step 2: After the ring gap is completely filled pour the remaining chock with **EPOCAST 36®** as usual and take attention that the level of **EPOCAST 36®** inside the pouring opening is filled up to marked position during the hardening process.

Inspection

- As soon as the **EPOCAST 36®** has been cured, remove the nut, temporary washer and welding wires and inspect the level of epoxy compound to make sure that the gap is filled up around the bolt as required.

Repair or Improvement

- In case the level of epoxy compound is too low, repair the area of insufficient filled gap with an injector. Using an injector in order to protect bolt thread from contact with **EPOCAST 36®**.



Remark

- In case the **EPOCAST 36®** chock with integrated Cast Resin Sleeve is in bad condition and a repair is not possible, then pull out the bolts, remove the chock and start again so that the gap is filled as required.