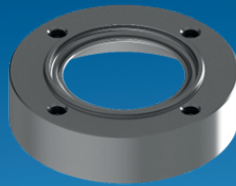


Welding recommendations for Block flanges AWH-Connect DIN 11864-2



Welding recommendation

for block flanges AWH-Connect DIN 11864-2

product: block flange AWH-Connect DIN 11864-2, version nut flange

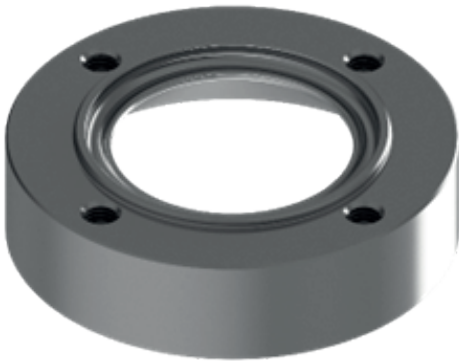


fig. 1: block flange AWH-Connect DIN 11864-2

fig. 2: AWH-Connect DIN 11864-2 in tank wall

Preface

Welding solid flanges without a weld collar into vessel shells or vessel bottoms has proved critical in the past with regard to the flatness of the plane and sealing surfaces.

With weld distortion, the function of the sealing system can be impaired. In general, of course, the heat input during welding should be kept as low as possible to minimize shrinkage.

In the following we would like to give some recommendations on welding sequences and parameters, which we have obtained during a test welding of an AWH- Connect DIN 11864-2- flange DN100.

Preparation

The edge of the container wall or bottom (Pos.1) is to be executed according to Fig.3.

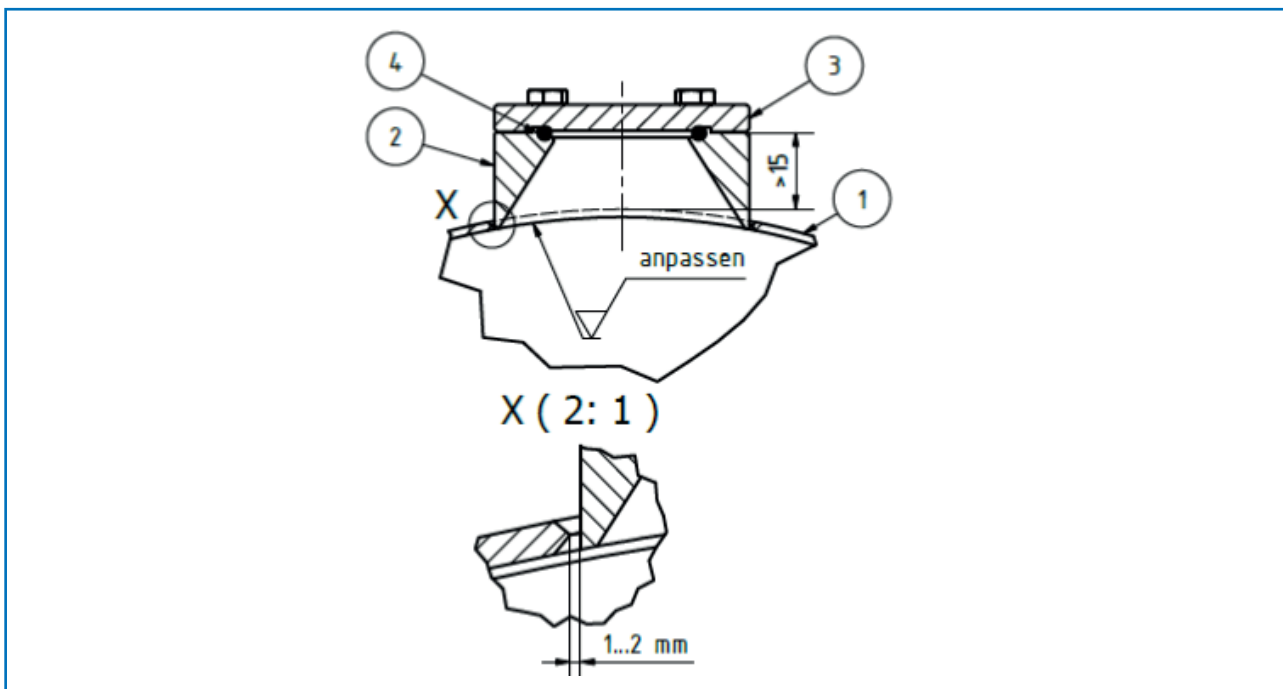


fig. 3: welding preparation

Before welding, machine the contour of the block flange (Pos.2) according to the inner contour of the vessel wall (Pos.1). When selecting the height of the block flange, ensure that the distance between the outer vessel wall and the stepped end face of the machined block flange is not less than 15 mm.

Material: 1.4301/1.4307 / 316L

Vessel wall thickness: 5.5 mm

Welded thickness = vessel wall thickness

Seam preparation according to DIN EN ISO 2553

Full connection with D-HV seam - web height approx.1 mm,

approx. 45° isosceles bevel

Welding gap: approx. 1-2mm

The corresponding blind flange (Pos.3) with O-ring (Pos.4) was screwed onto the block flange (Pos.2). This also serves as a closure when forming the container. The container is filled with forming gas. The blind flange was unscrewed only after the welding process was completed.

The block flange was fixed in the shell with 8 staplers. The staplers are placed evenly around the circumference.

Welding process TIG manual welding

The welding of the flange was carried out in the tub position.

Starting on the outside, one layer was welded with 120A.

The welding speed was approx. 2-3 cm/min.

The tackers were re-melted accordingly.

The ply temperature should be <150°C.

Then one ply was welded from the inside with 115A.

The welding speed was about 2-3 cm/min.

The filler metal was a TIG rod 1.4430 with Ø 2mm.

Result

After welding, the full functionality of the sealing system was determined.

The deviation of the plane parallelism of the sealing surface was determined to be <0.2mm.

Note

When welding 1.4435 with filler metal 1.4519 (BN2 restricted ferrite content), the tack welds should be ground out before overwelding.

When grinding the welds, care should be taken to minimize heat input.

No warranty claims can be made against AWH GmbH as a result of the derivation and application of this welding recommendation by welders who do not belong to AWH GmbH. However, the use of the welding recommendation is optional.



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