

KWO® MultiTex® Tape – Steel Flanges



1. Size selection

1.1 Gasket width

a. For raised face / flat face flanges

- Standard flanges according to EN or JIS: 30 – 50 % of seating.
- Standard flanges according to ASME: 50 – 75 % of seating.
- Non-standard flanges: select a gasket width that ensures sufficient gasket stress.

b. For tongue and groove flanges

The gasket width has to cover the entire width of the groove. To ensure a sufficient gasket stress the tongue should be slightly taller than the groove depth.

c. For divider bars in heat exchangers

The gasket width should cover the entire width of the divider bar.

1.2 Gasket thickness

- For most applications a 3 mm gasket tape is required.
- For flanges with deviations > 1 mm, a 6 mm gasket tape is recommended.

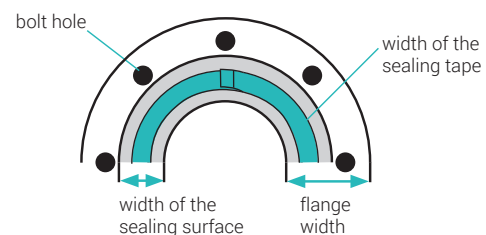


Figure 1

2. Installation

a. Preparing the flange

- Open the flange connection by a minimum of 15 cm.
- Sealing surface should be cleaned of old sealing materials and checked for damage.

b. Skive cut at the beginning

- Unwind around 0.5 m of the sealing tape and cut the end with a sharp knife by using the skive cut technique → length of the skive cut (l_s) = approx. 25 mm, angle $\alpha < 15^\circ$ (figure 2).

c. Applying the sealing tape

- Remove the masking tape a little at a time to prevent the adhesive strip from picking up dirt. A dirty or damaged adhesive surface could cause a misplacement of the sealing tape during assembly.
- Position the skived start of the sealant tape close to a bolt hole (figure 3).

d. Closing the sealing tape

- Complete the installation by placing the sealing tape over the skived end and overlap approx. 14 mm of the sealing tape (figure 4).
- For the second skive cut identify and mark the start and end points (figure 4).
- Cut away excess material with an angle of 15 degrees. The interface should be 20 % thicker than the original sealing tape (figure 5).

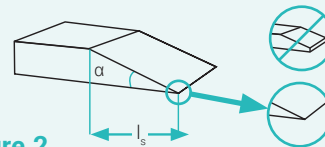


Figure 2

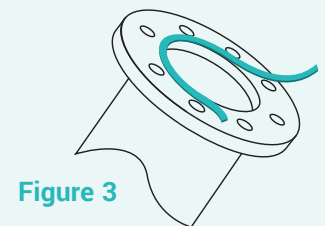


Figure 3

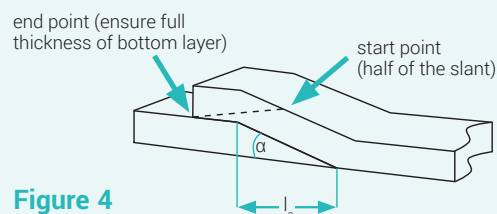


Figure 4

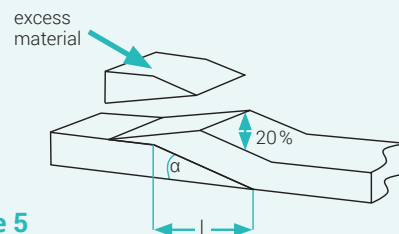


Figure 5

- Note:** For large flanges, you can use multiple skive cut connections.
- You should make sure that this is done at a screw hole and as far distance as possible.
 - 2 connections: distance ~ 180°
 - 3 connections: distance ~ 120°

A. Tongue and groove flanges

Installation on the tongue: Follow steps 2a through 2d.

Installation in the groove

- Follow steps 2a through 2c in the groove.
- To complete the gasket, lay the last 30 cm of the gasket tape in the groove and mark the position of the starting skive cut.
- Perform the second skive cut on a flat surface.
- To close the gasket remove the masking tape and lay the gasket tape in the groove in a way that the skived cuts overlap according to figure 5.

B. Rectangular flanges

- Follow steps 2a through 2c.
- Turn sharp corners: Perform a V-shaped cut (a 80° - 90° notch) at the inner edge of the tape (figure 6) and ensure the outer half of the gasket tape is not affected.
- Bend the gasket tape around the corner. It is held in place by the adhesive backing.
- To close the gasket tape follow step 2d.

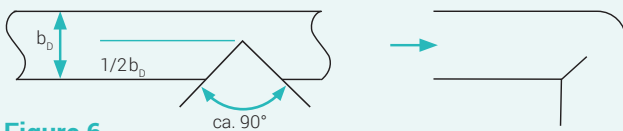


Figure 6

C. Divider bar gaskets in heat exchangers

- To install the outer gasket follow steps 2a through 2d.
- To install the divider bar gasket clean the sealing surface and cut the required length of the gasket tape by a 90° butt cut at both ends. Remove the masking tape and firmly press both ends of the divider bar gasket into the outer gasket (figure 7).

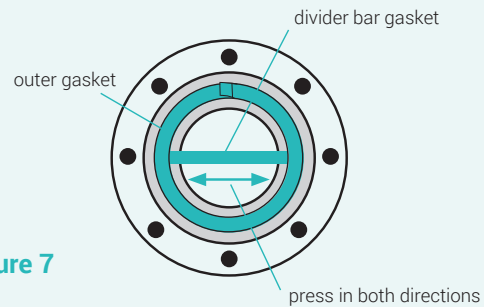


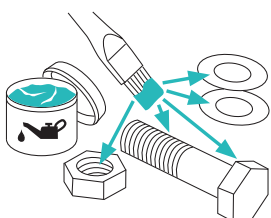
Figure 7

Note: we do not recommend overlapping the divider bar gasket and the outer gasket tape.

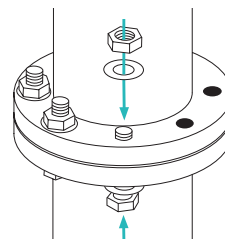
D. Installation at severe flange deviations

If the flange shows deviations ≥ 2 mm, a shimming can be used.

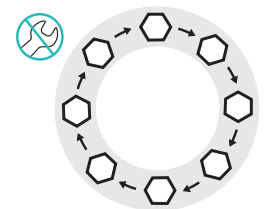
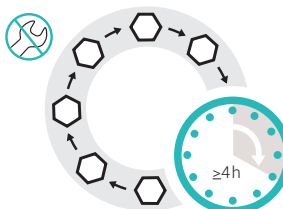
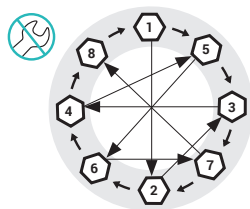
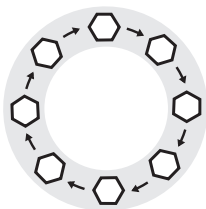
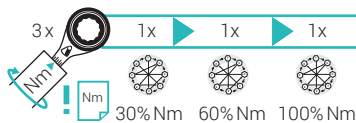
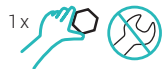
3. Torquing



1. Lubricate all connecting and fastening elements (screws, nuts and washers).



2. Install screws, nuts and washers on the flange.



3. The screws are initially hand tightened in a sequential circular pattern.

4. Tighten the screws crosswise in three phases by using a calibrated torque:

- 1st pass: 30% of target torque
- 2nd pass: 60% of target torque
- 3rd pass: 100% of target torque

5. Tighten the screws crosswise with 100% of the torque and wait for 4 hours.

6. For final installation retighten the screws crosswise until the required torque is reached.

For further details on gasket installation, please refer to the ESA/FSA Guidelines for safe seal usage – Flanges and Gaskets, available from the Fluid Sealing Association and the European Sealing Association.

Note: The bolt force must be checked after the first temperature cycle. If necessary, tighten the screws with the initial torque at room temperature.

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