

KWO® MultiTex® Tape – Glass-lined Flanges



1. Selection of size

1.1 Gasket width

Choose the gasket width that ensures full coverage of the enamelled surface and the tape protrudes approx. 3 mm inward and outward beyond the sealing face. If the calculated gasket width does not correspond to a standard dimension, select the gasket width that is closest (e.g. calculated gasket width = 62 mm, a gasket with 60 mm should be chosen).

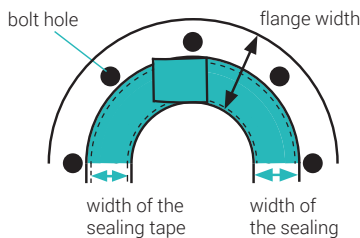


Figure 1

Tape selection – nominal size (main and cover flanges)

DN	Dimension
508	40 x 6 mm
600	40 x 6 mm
700	55 x 9 mm
800	55 x 9 mm
1000	55 x 9 mm
1200	65 x 9 mm
1400	65 x 9 mm
1600	65 x 9 mm
1800	65 x 9 mm
2000	65 x 9 mm

1.2 Gasket Thickness

For flanges \varnothing 800 mm use KWO® MultiTex® tape with a thickness of 6 mm, for flanges $\geq \varnothing 800$ mm use a tape with 9 mm thickness. If the surface has deviations of more than 1 mm, a tape with a thickness of 9 mm should always be used, regardless of the flange diameter.

1.3 Shimming

For flanges with deviations (d) shimming material should be used to ensure effective sealing (refer to 2.b & 2.f).

DN	Measured deviation (d)	Tape thickness
< 800 mm	$d < 1$ mm	6 mm
	$1 \text{ mm} \leq d < 2$ mm	9 mm
≥ 800 mm	$d < 1$ mm	9 mm
	$1 \text{ mm} \leq d < 2$ mm	9 mm + 1 x 3 mm
	$2 \text{ mm} \leq d < 3$ mm	9 mm + 2 x 3 mm
	$3 \text{ mm} \leq d < 4$ mm	9 mm + 3 x 3 mm

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. Measure flange irregularities

- Place a separator between the enamelled surfaces of the flanges. This could be a fiber sheet or a plywood board.
- Close the flanges and measure the deviations by a thickness gauge.
- Mark all irregularities and their position on the flange for later flange alignment.
- For the shimming process, please refer to 2.e.

c. 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).

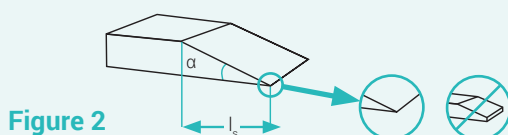


Figure 2

d. Applying the sealing tape (in case of deviations – applying the main seal)

- 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 (in case of deviations position at a bolt hole where no shimming is needed; figure 3).



Figure 3

e. Closing skive cut

- 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).

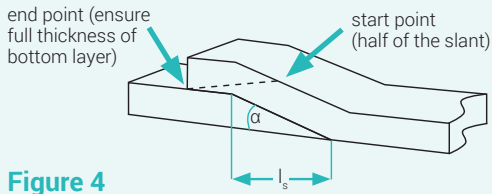


Figure 4

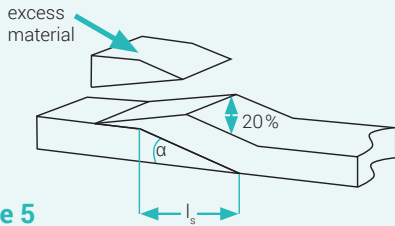


Figure 5

f. Shim flange deviations

- Measure the length of the irregularity and cut the sealing tape approx. 5 cm longer than the measurement.
- Cut both ends of the sealing tape using the skiving technique described in step 2.c.
- Place the sealing tape shim on the previous layer where a deviation has to be compensated (the adhesive strip keeps the seal in position).

- Repeat this procedure until a corresponding compensation has been created. For every millimetre more deviation (d), a layer of 3 mm KWO® MultiTex® tape should be used for shimming (figure 6). Make sure that always the same seal width is used as for the main seal.

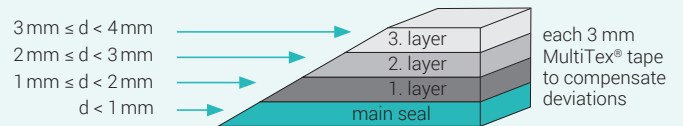


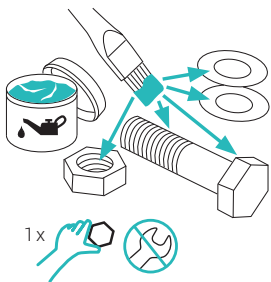
Figure 6

g. Closing the flange connection

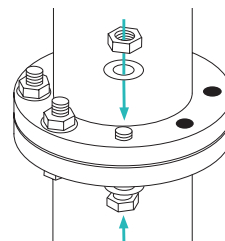
- Using the marking noted in step 2.b. align the flange faces accordingly and join them together to form a contact. If many shim layers are causing uneven contact, precompress the shimmed layers by slightly tightening the clamps directly near the thick gasket spot.

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°

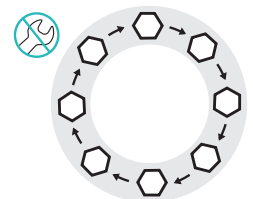
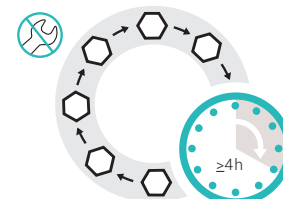
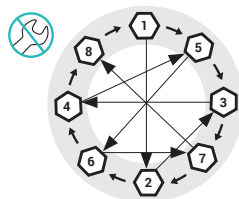
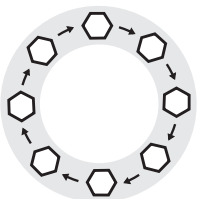
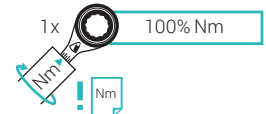
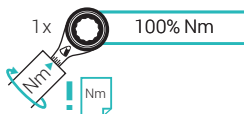
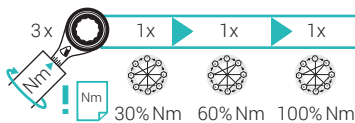
3. Torquing



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 **only with a calibrated torque** in three phases.

- 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: When choosing the tightening torque, follow the recommendation of the enameller. The bolt force must be checked after the first temperature cycle. If necessary, tighten the screws with the initial torque at room temperature.



All technical information and advice given here is based on our previous experiences and/or test results. We give this information to the best of our knowledge, but assume no legal responsibility. Customers are asked to check the suitability and usability in the specific application, since the performance of the product can only be judged when all necessary operating data are available. Specifications are subject to change without notice. KWO's terms and conditions of sale apply to the purchase and sale of the product.