

Part 5.2: Short installation instructions

Art.-Group 20	WOLF[®] Sealing elements / valve Duct inner Ø 40 - 150 mm
TELECOMMUNICATION CABLES	

For retro-sealing empty ducts or ducts occupied by telecommunication cables. The seal lies between the cable duct and cables or between two ducts, and ensures tightness against gas diffusion and 5 m water column.

Features of the coating material

Sealing element type	Material	Note	Reuseable (reassembly)
„ZK“	Cellular rubber sealing strip	Installation possible in standing or running water	The strip must not be damaged. The sealing element can be installed as soon as the deformed cellular rubber has regained its original shape.
„Q“	Non-woven waterproofing sealing strip (PP-fleece with water swelling polymer)	Installation not possible in standing or running water	The sealing element can be installed as soon as the sealing strip has completely dried out
„SQ“	SQB-V-sealing strip (PES/CO with water swelling SAP)		The strip must not be damaged. The sealing element can be installed as soon as the sealing strip has completely dried out

NOTES ON USE

In order to ensure reliable retro-sealing of empty or occupied ducts, the following information is needed:

1. Inner Ø of the outer protective pipe
2. Number and Ø of multiple cable entries in the pipe
3. Distribution of the cable entries
4. Number and outer Ø of cables and/or ducts

**Caution!**

Take care to comply with our safety instructions for handling sealing elements made of aluminium-plastic laminate.

REQUIREMENTS FOR THE INFLATION TOOL

- Filling capacity \leq 20 litres/min
- Automatic pressure shut-off or pressure gauge for 0 - 4 bar
- The filling-pressure display must be accurate in the range from 0.5 to 3.5 bar (with a tolerance of \pm 0.1 bar) at +20 °C

PRESSURE FILLING IN RELATION TO INSTALLATION CONDITIONS

Pressure filling in relation to the ambient temperature Example: Product label (reference value for \pm 20°C). during installation.

See specifications in **MA 05_2.1** Table 2

WOOLF GmbH
Charge-no. 166/23

ZKAD/V L- 100

Rohr Innen-Ø / Duct inner Ø: 105 mm (4.1 inch)
Belegung / Config.: 0 <70 mm (0 - <2.8 inch)
Fülldruck / Filling pressure: 2.6 bar (37.7 psi)

MA0 5_2.1 Table 2	Filling pressure [bar psi] at installation/ambient temperature [n °C \pm Δ 5 °C] / [n °F \pm Δ 9 °F]						
	-4 °F	14 °F	32 °F	68 °F	86 °F	104 °F	158 °F
L 40	2.4 bar 34.8 psi	2.5 bar 36.3 psi	2.6 bar 37.7 psi	2.8 bar 40.6 psi	2.9 bar 42.1 psi	3.0 bar 43.5 psi	3.3 bar 47.9 psi
L 45							
L 50							
L 60							
L 80	2.2 bar 31.9 psi	2.3 bar 33.4 psi	2.4 bar 34.8 psi	2.6 bar 37.7 psi	2.7 bar 39.2 psi	2.8 bar 40.6 psi	3.1 bar 45.0 psi
L 90							
L 100							
L 115	1.7 bar 24.7 psi	1.8 bar 26.1 psi	1.9 bar 27.6 psi	2.1 bar 30.5 psi	2.2 bar 31.9 psi	2.3 bar 33.4 psi	2.6 bar 37.7 psi
L 125							
L 150	1.4 bar 20.3 psi	1.5 bar 21.8 psi	1.6 bar 23.2 psi	1.8 bar 26.1 psi	1.9 bar 27.6 psi	2.0 bar 29.0 psi	2.3 bar 33.4 psi

INSTALLATION ACCESSORIES

Multi-configurations: Wolf® cable separator (QV, SQ) or Wolf ® sealing strip are necessary.

Minimum sealing area: The specified "minimum sealing area per configuration" (see Table 1, MA 05 Part 3.1) must always be complied with, otherwise a dummy tube plug must be used.

Additional sealing in the direction of the protective pipe or channel The outer surface of the sealing cushion must be completely coated with f.ex. self-adhesive cellular rubber in the case of:

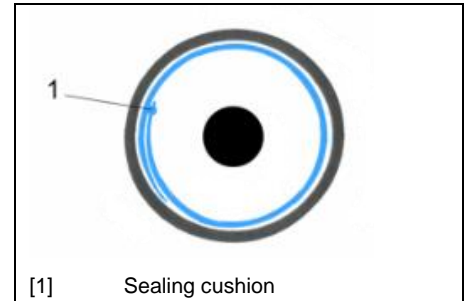
- rough surrounding surfaces e.g. wall openings
- debris in the channel (e.g. lumps of concrete in wall openings)
- cavities, objects (such as hose clamps for pipe couplings) or ridges > 3 mm in the sealing area
- corrugated ducts with a corrugation of > 8 mm

INSTALLATION

Preparation: Use a knife to scrape off and clear uneven surfaces in the cable channel.
 Select a sealing cushion and accessories from **MA 05 Part 3.1**.

Application **A1** **Duct either empty, or occupied by 1 cable or duct** Duct inner $\varnothing \leq 125 \text{ mm} \mid \leq 5 \text{ in.}$

- Position the sealing cushion (valve) round the respective cable, duct or dummy tube plug, with the valve facing inwards.
- Insert the cushion into the channel and loosen it, so that it lies against the channel wall.
- For ZKADE/V sealing cushions (only): Spray the ZKADE/V sealing cushion with lubricant or washing-up liquid before inserting the cushion into the duct.
- Inflate it to the pressure stated in **MA 05 Part 2.1**, table 2



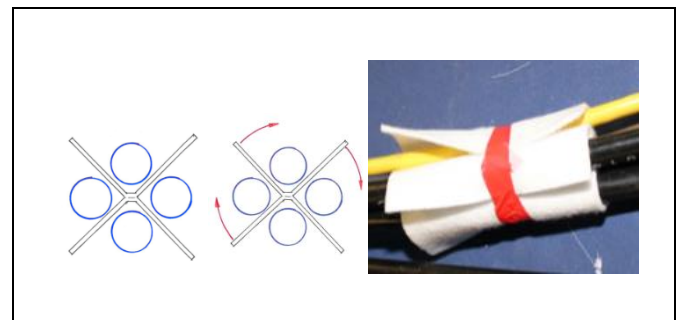
Application **A2** **Duct with multi-configuration** Duct inner \varnothing **40 - 250 mm** | **1.6 - 10 in.**

Accessories: **Wolf® Cable separator (QV, SQ..) with 4 spaces**

Position the sealing cushion round the cables with the valve facing the cables and loosen it so that it lies against the channel wall.

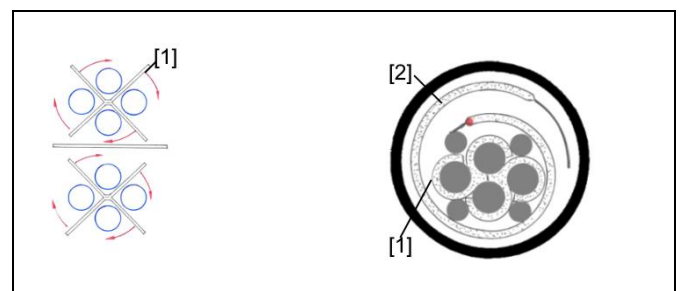
Case 1: 2 - 4 cables or ducts

- Push apart the cables or microducts
- Lay cables Nos. 1-4 in the spaces of cable separator
- Wrap the arms of the cable separator round the cables and fix them loosely in position with adhesive tape.
- Push the cable separator to about 3 cm under the sealing cushion.



Case 2: 5 - 8 cables or ducts

- For more than 4 cables, lay the cables at 180° to one another between (1) and (2) as shown in the diagram, or use a second cable separator



ALTERNATIVE GAP-SEALING WOLF® Swelling sealing strips (QV, SQ)

- For each cable, cut a piece of sealing strip to a length of 4 x cable \varnothing and wrap it loosely round the cable with an overlap of $\geq 1 \text{ cm}$
- Fix in position with adhesive tape as shown in the diagram and push to about 1 cm under the sealing cushion.

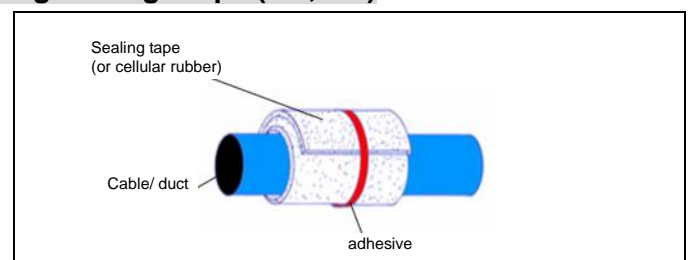
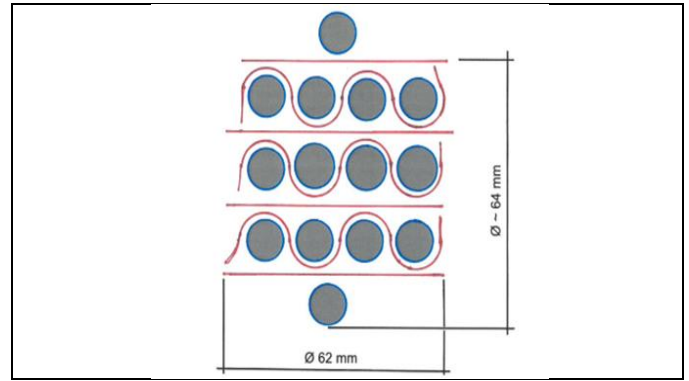


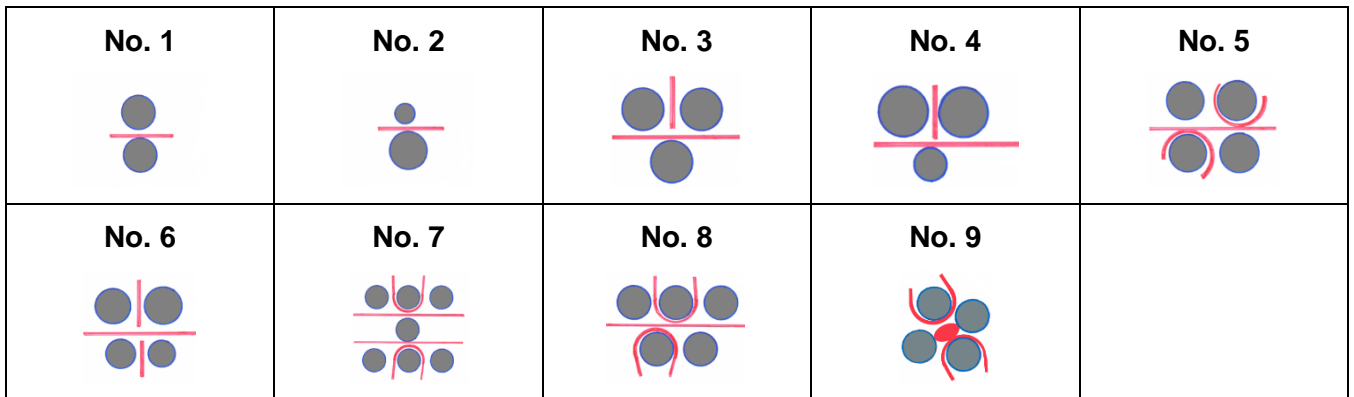
Diagram: example with 14 cables.

- Join both ends of the sealing tape to form a ring and, with the help of a flat object, push it to about 2 cm under the sealing cushion. [See the following sketches Nos. 1 to 9]



For cable/duct outer diameter ≥ 30 mm

- Any big spaces between individual cables have to be filled. To do this, an appropriate length of sealing tape is cut, rolled it into a ball and positioned in the gap. [See the following sketches Nos. 1 to 9]



Application If the "minimum sealing area" is not reached

Accessories: **Dummy-tube plug**

Art. No. 32.01 DRS-ZK

For a single dummy tube plug

- Position the dummy tube plug [8] in the centre of the cable configuration as shown in sketch 1.
- For a 3-cable configuration, see sketch 4.

For more than one dummy tube plug

- Place one of the dummy tube plugs in the centre and a second dummy tube plug [8] on the opposite side to an occupied cable duct (Sketch 2).
- For a 3-cable configuration, see sketch 3.

