INSTALLATION INSTRUCTIONS FOR SERIES MB / CV

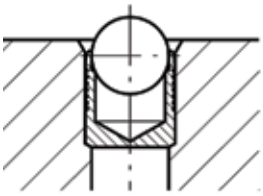


Fig. 1

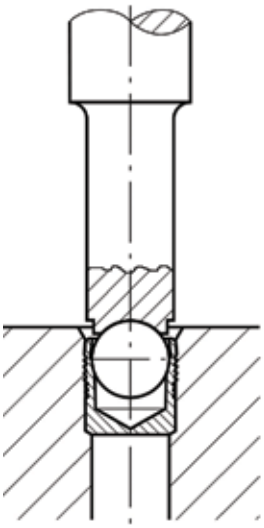


Fig. 2

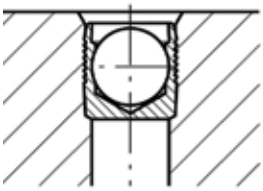


Fig. 3

DRILLED HOLE

- The drilled hole must be within the tolerances shown on the preceding dimensional sheets.
- The counterbored hole (d_2) must be properly sized for the through hole (d_3) according to the dimensional sheets.
- Holes must be round within 0.05 mm.
- With hard materials the bore roughness should be from R_z = 10–30 µm for best results.
- Longitudinal rifles and spiral grooves should be avoided. These influence the sealing effectiveness.
- The bore must be free of oil, grease and chips.

SETTING PROCEDURE

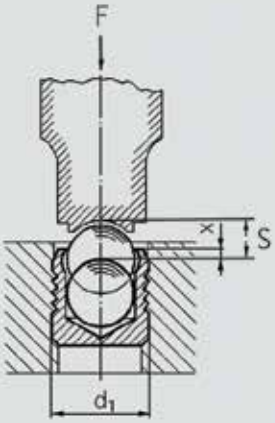
- With the ball facing out the KOENIG EXPANDER® is inserted in the counterbored hole. The top sleeve should not be above the surface of the base material (Fig. 1).
- With only a slight or no counterbore, the base of the sleeve must be adequately supported during installation.
- The ball can now be pressed in until the top of the ball is below the edge of the sleeve (Fig. 2 and 3). Corresponding approximate values for stroke S as well as the dimensions X are from the table below.

Note:

- Use the proper size setting tool for the KOENIG EXPANDER® according to the data sheet.
- Spray cleaning with air drying is the only way to clean/degrease plugs before installation. Do not dip and vacuum dry the plugs.

PRESS

Small quantities or single parts can be installed with a hammer and a setting tool. Installation can also be done with an arbor press. It is preferred to limit stroke travel when using a press because insertion force is difficult to control. KOENIG EXPANDER® plugs are also ideal for automated installation because they are problem free.



INSTALLATION CHART

Series MB 600 / MB 700 / MB 850														
d1 (mm)		3	4	5	6	7	8	9	10	12	14	16	18	20	22
S (mm)	Stroke (approx. values)	1.2	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.5	6.35	7.0	8.0	9.0	10.0
X (mm) ±0.2	Position of Top of Ball Relative to Top of Sleeve	0.4	0.2	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.6	0.6	0.8	0.8

Series MB 600 Inch-Version								
d1 (inch)		0.093	0.125	0.156	0.187	0.218	0.250	0.281
S (in)	Stroke (approx. values)	0.031	0.047	0.059	0.079	0.094	0.109	0.118
X (in) 0/-0.012	Position of Top of Ball Relative to Top of Sleeve	Flush to 0.012 Below the Sleeve						

INSTALLATION INSTRUCTIONS FOR SERIES MB / CV

PLUG REMOVAL

With KOENIG EXPANDER® MB / CV Series removal of the plug is possible. The plug can be drilled out with a carbide tipped drill or with a high speed steel drill.

Plug Removal Drill Bit Recommendation		
MB 600-030 to 140	Ball HB ~250	High Speed Steel Drill
MB 600-093 A	Ball HRC ~55	Carbide Tipped Drill
MB 600-125 A to 281 A	Ball HB ~250	High Speed Steel Drill
MB 700-030 to 220	Ball HRC ~45	Carbide Tipped Drill
MB 850-030 to 220	Ball HRC ~45	Carbide Tipped Drill
CV 173/CV 588 (all sizes)	Ball HRC ~250	High Speed Steel Drill

PROCEDURE:

- For KOENIG EXPANDER® smaller than 6mm or .250 inches in diameter:
  Drill out, in one process, to the **next larger diameter** according to the data sheet.
- For KOENIG EXPANDER® models larger than 6mm or .250 inches in diameter:
  Drill out in several steps with last step to the **next larger diameter** according to the data sheet.
- Clear chips, remnants of the sleeve, and oil and grease from the bore.
- Inspect bore to confirm that it meets all requirements.
- Install a new KOENIG EXPANDER®.

Note:

After plug removal always use the next larger size plug.

Series CV 173 / 588										
d1 (mm)		3	4	5	6	7	8	9	10	12
S (mm)	Stroke (approx. values)	1.0	1.4	1.9	2.3	2.8	3.4	3.7	4.2	5.1
X (mm) ±0.1	Position of Top of Ball Relative to Top of Sleeve	0.02 Below the Sleeve								

Series CV 173 / 588 Inch-Version											
d1 (inch)		0.156	0.187	0.218	0.250	0.281	0.312	0.343	0.375	0.406	0.437
S (in)	Stroke (approx. values)	0.053	0.066	0.078	0.094	0.110	0.129	0.140	0.153	0.162	0.166
X (in) ±0.004	Position of Top of Ball Relative to Top of Sleeve	0.008	0.010 Below the Sleeve								

Series CV 173 / 588 Inch Short										
d1 (Inch)		0.125	0.156	0.187	0.218	0.250	0.281	0.312	0.343	0.406
S (in)	Stroke (approx. values)	0.042	0.040	0.066	0.063	0.083	0.091	0.107	0.118	0.143
X (in) ±0.004	Position of Top of Ball Relative to Top of Sleeve	0.007	0.000	0.010	0.000					-0.010