

INSTALLATION INSTRUCTIONS FOR SERIES MB

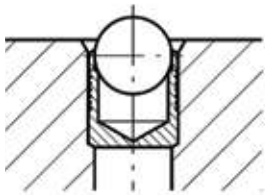


Fig. 1

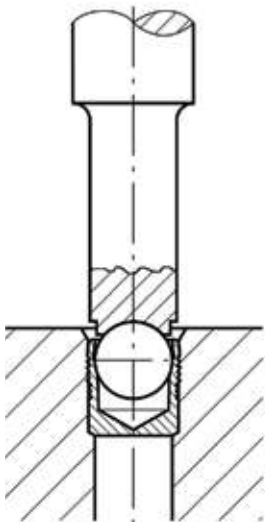


Fig. 2

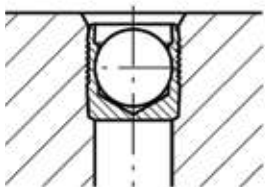


Fig. 3

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 $R_z = 10-30 \mu\text{m}$ 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

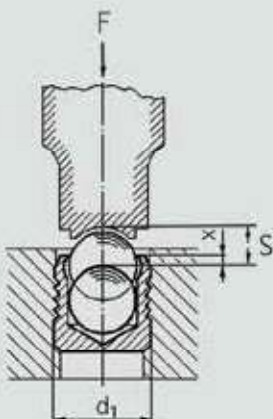
- With the ball facing out the KOENIG EXPANDER® is inserted in the counterbored hole. The top sleeve should not be above the surface of the base material (Fig. 1).
- With only a slight or no counterbore, the base of the sleeve must be adequately supported during installation.
- The ball can now be pressed 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]	Position of Top of Ball Relative to Top of Sleeve $\pm 0,2$	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]		.093	.125	.156	.187	.218	.250	.281
S [in]	Stroke (approx. values)	.031	.047	.059	.079	.094	.109	.118
X [in]	Position of Top of Ball Relative to Top of Sleeve	Flush to .012 Below the Sleeve						

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PLUG REMOVAL

With KOENIG EXPANDER® MB 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 ~200	High Speed Steel Drill
MB 600-093 A	Ball HRC ~55	Carbide Tipped Drill
MB 600-125 A to 281 A	Ball HB ~200	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

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.