SERVICE INFORMATION

# KS PERMAGLIDE® plain bearings

## Plain bearing mounting: Press-in force and joint pressure

**Press-in force and joint pressure are interdependent. The joint pressure occurs between the housing bore and the surface of the bush jacket. It can be understood as a measure of how securely the bush fits in the housing. Together with other factors, the joint pressure influences the amount of press-in force.**

### Calculating the press-in force

The press-in force depends upon many factors, which are extremely difficult to measure accurately, for example:

- Actual press-fit
- Coefficient of friction
- Scoring
- Press-in speed

Motorservice offers the calculation of the press-in force as a service. In most cases, the estimate of press-in force as per Fig. 1 is sufficient.

### Determining the bush press-in force

Figure 1 below shows the maximum required press-in force per mm of bush width. The curves represent the bush outside diameter $D_0$ and the bush wall thickness $s_3$ to DIN ISO 3547.

This calculation assumes a steel housing with a diameter of $D_G$ that has been adapted to the bush outside diameter $D_0$. The selected ratio is $D_G$: $D_0 \approx 1.5...2$.

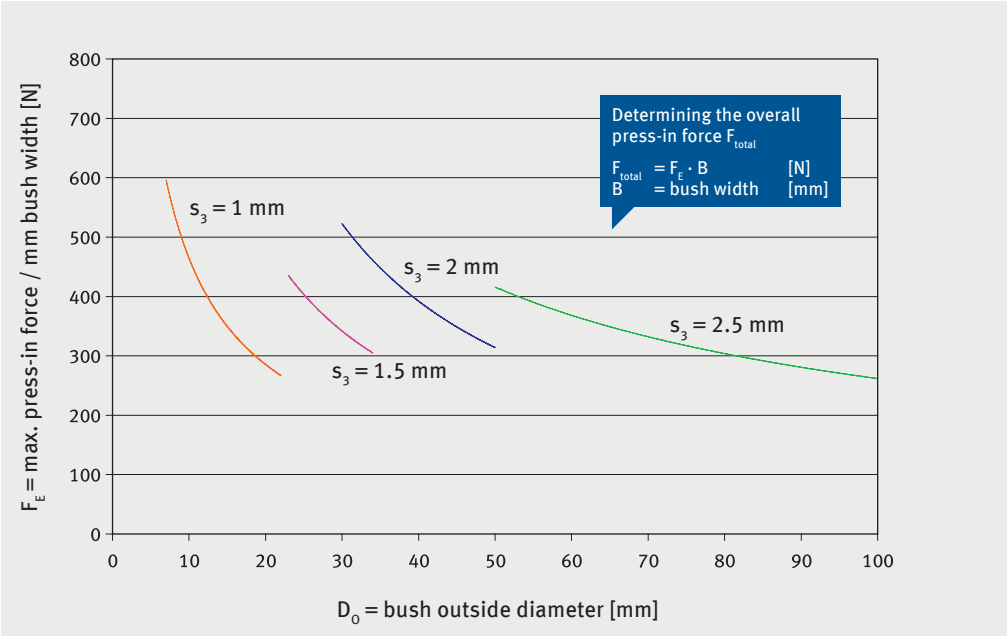


*Fig. 1: Press-in force FE*

**Example of estimate of press-in force $F_{total}$**

| | | | |
|---|---|---|---|
| Given: | Bush | PAP 4030 P14 | |
| | Bush outside diameter | $D_0$ = | 44 mm |
| | Bush width | B = | 30 mm |
| | Bush wall thickness | $s_3$ = | 2 mm |

| | | | |
|---|---|---|---|
| [ 14 ] | $F_{total} = F_E - B$ | = 340 N/mm – 30 mm | = 10200 N |

$F_E$ = 340 N/mm (from Fig. 55, $D_0$ = 44 mm, $s_3$ = 2 mm)



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