# Coupling
# Type SK5

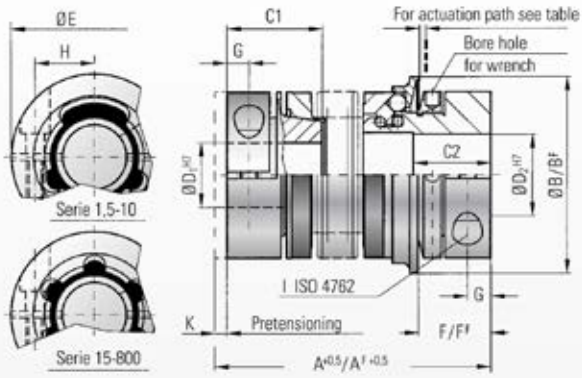
optional stainless steel

single-position
multi-position
load holding
full disengagement

## MODEL **SK5**

**BACKLASH FREE TORQUE LIMITER**

press-fit version, with clamping hub




**Material:** Bellows made of highly elastic stainless steel
Safety section: High strength hardened steel

**Clamping hubs:** up to series 80 aluminium from series 150 steel

**Design:** With a single radial clamping screw per hub

**Temperature range:** -30° C to +120° C

**Backlash:** Absolutely backlash free as a result of the frictional clamp connection and the patented principle

**Service life:** These couplings are maintenance free and have extreme service life as long as the performance limits are not ecxeeded.

**Fit tolerance:** Tolerance between hub and shaft 0.01-0.05 mm

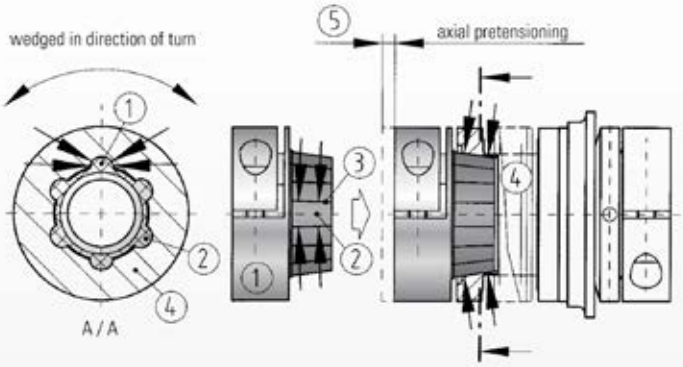
| Model SK 5 | | Series | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1.5 | 2 | 4.5 | 10 | 15 | 30 | 60 | 80 | 150 | 300 | 500 | 800 |
| Adjustment range possible from - to (approx. values) (Nm) | $T_{KN}$ | 0.1-0.6<br>0.4-1<br>0.8-1.5 | 0.2-1.5<br>or<br>0.5-2 | 1-3<br>or<br>3-6 | 2-6<br>or<br>4-12 | 5-20 | 10-25<br>or<br>20-40 | 10-30<br>or<br>25-80 | 20-70<br>or<br>30-90 | 40-160 | 100-200<br>150-240<br>200-320 | 80-200<br>200-350<br>300-500 | 400-650<br>500-800<br>650-850 |
| Adjustment range possible from - to (approx. values) (full disengagement) (Nm) | $T_{KN}$ | 0.3-0.8<br>or<br>0.6-1.3 | 0.5-2 | 2.5-4.5 | 2-5<br>or<br>5-10 | 7-15 | 8-20<br>or<br>16-30 | 20-40<br>or<br>30-60 | 20-60<br>or<br>40-80 | 80-150 | 120-200<br>or<br>160-300 | 60-150<br>100-300<br>250-500 | 200-400<br>or<br>450-800 |
| Overall length +0,5 inserted (mm) | A | 44 | 48 54 | 60 68 | 70 79 | 76 83 | 89 97 | 105 115 | 115 127 | 116 128 | 143 157 | 166 180 | 196 |
| Overall length +0,5 inserted (full disengagement) (mm) | $A^F$ | 44 | 48 54 | 60 68 | 70 79 | 76 83 | 89 97 | 105 115 | 117 129 | 118 130 | 146 160 | 170 184 | 207 |
| Actuation ring Ø (mm) | B | 23 | 29 | 35 | 45 | 55 | 65 | 73 | 92 | 92 | 120 | 135 | 152 |
| Actuation ring Ø (full disengagement) (mm) | $B^F$ | 24 | 32 | 42 | 51.5 | 62 | 70 | 83 | 98 | 98 | 132 | 155 | 176 |
| Fit length $C_1/C_2$ (mm) | $C_1/C_2$ | 14 11 | 16/13 | 19/16 | 21/16 | 28/22 | 33/27 | 39/31 | 43/35 | 43/35 | 52/42 | 61/52 | 74/48 |
| Inner diameter from Ø to Ø H7 (mm) | $D_1$ | 3-8 | 4-12 | 5-16 | 5-20 | 8-22 | 10-25 | 12-32 | 14-38 | 14-38 | 30-56 | 35-60 | 40-75 |
| Outer diameter from Ø to Ø H7 (mm) | $D_2$ | 3-8 | 4-12 | 5-14 | 5-20 | 8-26 | 10-30 | 12-32 | 14-42 | 14-42 | 30-60 | 35-60 | 40-75 |
| Outer diameter of coupling (mm) | E | 19 | 25 | 32 | 40 | 49 | 55 | 66 | 81 | 81 | 110 | 123 | 134 |
| Distance (mm) | F | 12 | 13 | 15 | 17 | 19 | 24 | 30 | 31 | 31 | 35 | 45 | 50 |
| Distance (full disengagement) (mm) | $F^F$ | 11.5 | 12 | 14 | 16 | 19 | 22 | 29 | 31 | 30 | 36 | 43 | 54 |
| Distance (mm) | G | 3.5 | 4 | 5 | 5 | 6.5 | 7.5 | 9.5 | 11 | 11 | 13 | 17 | 18 |
| Distance between centers (mm) | H | 6 | 8 | 10 | 15 | 17 | 19 | 23 | 27 | 27 | 39 | 41 | 2x48 |
| ISO 4762 screws | I | M2.5 | M3 | M4 | M4 | M5 | M6 | M8 | M10 | M10 | M12 | M16 | 2xM16 |
| Tightening torque (Nm) | I | 0.85 | 2 | 4 | 4.5 | 8 | 15 | 40 | 50 | 70 | 130 | 200 | 250 |
| Pretensioning, approx. (N) | K | 0.1 to 0.5 | 0.2 to 0.7 | 0.2 to 0.7 | 0.2 to 1.0 | 0.2 to 1.0 | 0.5 to 1.0 | 0.5 to 1.0 | 0.5 to 1.0 | 0.5 to 1.0 | 0.5 to 1.5 | 0.5 to 2.0 | 0.5 to 2.0 |
| Axial recovery of coupling max. (N) | | 4 | 8 5 | 15 10 | 25 30 | 20 12 | 50 30 | 70 45 | 48 32 | 82 52 | 157 106 | 140 96 | 200 |
| Approx. weight (kg) | | 0.038 | 0.07 | 0.2 | 0.3 | 0.4 | 0.6 | 1.4 | 2 | 2.4 | 5.9 | 9.6 | 15 |
| Moment of inertia ($10^{-3}$ kgm²) | $J_{ges}$ | 0.01 | 0.01 0.01 | 0.02 0.02 | 0.06 0.07 | 0.10 0.15 | 0.27 0.32 | 0.75 0.80 | 1.80 1.90 | 2.50 2.80 | 6.50 7.00 | 13.0 17.0 | 50 |
| Torsional stiffness ($10^3$ Nm/rad) | $C_T$ | 0.7 | 1.2 1.3 | 7 5 | 8 7 | 12 10 | 18 16 | 40 31 | 68 45 | 90 60 | 220 190 | 260 250 | 390 |
| Lateral misalignment max. (mm) | | 0.15 | 0.15 0.20 | 0.20 0.25 | 0.20 0.30 | 0.15 0.20 | 0.20 0.25 | 0.20 0.25 | 0.20 0.25 | 0.20 0.25 | 0.25 0.30 | 0.30 0.35 | 0.35 |
| Angular misalignment max. (degrees) | | 1 | 1 1.5 | 1.5 2 | 1.5 2 | 1 1.5 | 1 1.5 | 1 1.5 | 1 1.5 | 1 1.5 | 1.5 2 | 2 2.5 | 2.5 |
| Lateral spring stiffness (N/mm) | | 70 | 40 30 | 290 45 | 280 145 | 475 137 | 900 270 | 1200 420 | 920 290 | 1550 435 | 3750 1050 | 2500 840 | 2000 |
| Actuation path (mm) | | 0.7 | 0.8 | 0.8 | 1.2 | 1.5 | 1.5 | 1.7 | 1.9 | 1.9 | 2.2 | 2.2 | 2.2 |

**$A^F$, $B^F$, $F^F$ = Full disengagement version**

optional stainless steel

single-position
multi-position
load holding
full disengagement

press-fit version, with clamping hub




## Design details

Six self-centering, tapered drive projections (2) have been formed into the conical element, which has been molded onto an aluminium hub (1).

The six axially arranged projections are configured conically in a longitudinal direction (3). The mating-piece consists of a metal bellow with a female tapered mounting segment (4).

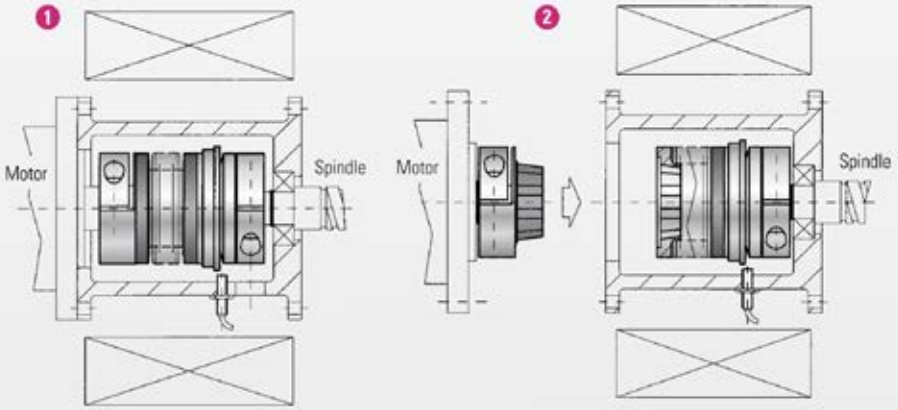
Absolutely backlash-free torque transmission is ensured due to the axial pretensioning (5) of the metal bellows during mounting. This slight pretensioning has no negative influence on the operation of the metal bellows or on the shaft bearing.

## Possible applications for backlash-free, press-fit torque limiter SK 5

❶ Applications with limited accessibility. The dismounting of a single-piece coupling is too labor intensive.

❷ The **press fit design** allows the complete drive unit to be removed by simply pulling it out when servicing is required.

Dismounting the coupling is possible **without loosening** the hub fastening screws. Therefore, clamping screw access holes are not required.




**Ordering specifications**

Required information for models SK 2, SK 3 and SK 5

SK2 /60 /102 / D /16 /19 /25/10-30/XX

- Model
- Series
- Overall length (mm)
- Version
- Bore Ø D1 H7
- Bore Ø D2 H7
- Disengagement torque (Nm)
- Adjustment range (Nm)
- e.g. stainless steel

**Possible versions:**

W = single position
D = multi position
G = Load holding
F = Full disengagement