

Accessories – smart additions for efficiency and intelligent performance



Metal bellows couplings

Perfectionists you can count on

Metal bellows couplings are designed for the highest requirements in servo drive technology. The compact design ensures that installation space is kept to a minimum. High torsional rigidity enables precise results and dynamics.

- Compensation for shaft misalignment
- Completely backlash free
- Compact and easy to mount
- Maintenance-free and fatigue durable
- Corrosion resistant version available as an option (BC2, BC3, BCT)

Elastomer couplings

Harmonious endurance runners

Elastomer couplings ensure precisely manufactured hubs and attachable intermediate elements for maximum true-running accuracy in the drive train. In addition, torque peaks and vibrations are damped to ensure superior smooth running.

- Compensation for shaft misalignment
- Completely backlash free
- Choice of torsional rigidity/damping
- Compact design
- Extremely simple installation (plug-in)
- Maintenance-free and fatigue durable
- Ideal for connection to spindle drives, toothed belt drives, and linear modules

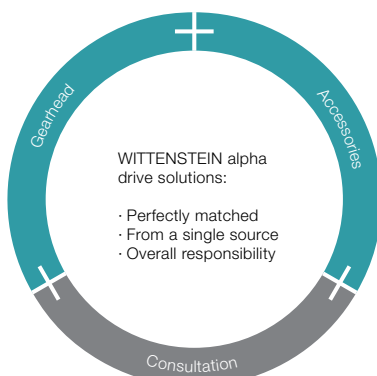
Torque limiters

Intelligent monitors

Torque limiters with integrated mechanical switching mechanism combine dynamic and precise transmission with TÜV-certified torque limitation. They therefore protect the drive and machine from overload.

- Machine downtimes are avoided
- High availability and productivity
- Precise, preset overload protection (switch-off in 1–3 ms)
- Precise repeat accuracy
- Compact and completely backlash free
- Just one protection element per axle

Gearheads, accessories and consulting from a single source



Flexibility without limits

Broad range of precision gearheads with perfectly matched accessories.

Surely an ideal solution for you!

WITTENSTEIN alpha accessories give you even greater design freedom and options.

In the fast lane with WITTENSTEIN alpha!

Gearheads and accessories

- Perfectly adapted
- One complete delivery
- One contact

Every detail is important for your success!



Shrink disks
Compact athletes

With our hollow shaft or mounted shaft gearheads for mounting directly on load shafts, machines can be designed to take up a minimal installation space.

- Reliable torque transmission
- Simple mounting and removal
- Quick selection, easy and convenient
- Optional: Corrosion resistant version

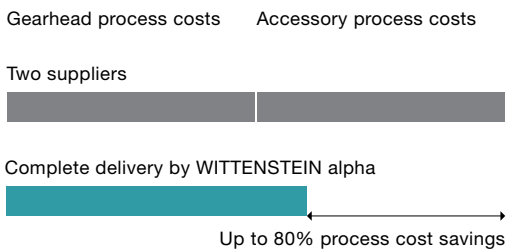


Flange shafts
Flexible design

Our flange shafts provide you with output options that are especially adapted for work with TP+, TPK+ and TK+ flange gearheads.

- Flexible shaft diameter
- Can be adapted to your output components
- Customized options available

Reduce costs



→ The savings in installation and process costs more than offsets the value of the accessories

Optimization of your added value chain

Use the combination of gearhead and accessories in a complete package to streamline your internal processes:

- One** consultation service
- One** complete delivery
- One** internal process

- Minimize your internal effort
 - Maximize your time and cost savings
- Your long-term advantage with complete delivery!

Accessories

Couplings

Shrink disc

Couplings – securing – transmitting – equalizing



Your customized coupling completes the drive train:

- Flexible in design
- Fine-tuning your drive
- Maximum performance

Selection and calculation made easy:

Info- & CAD-Finder

cymex®



For further information, please visit www.wittenstein-alpha.de/en/

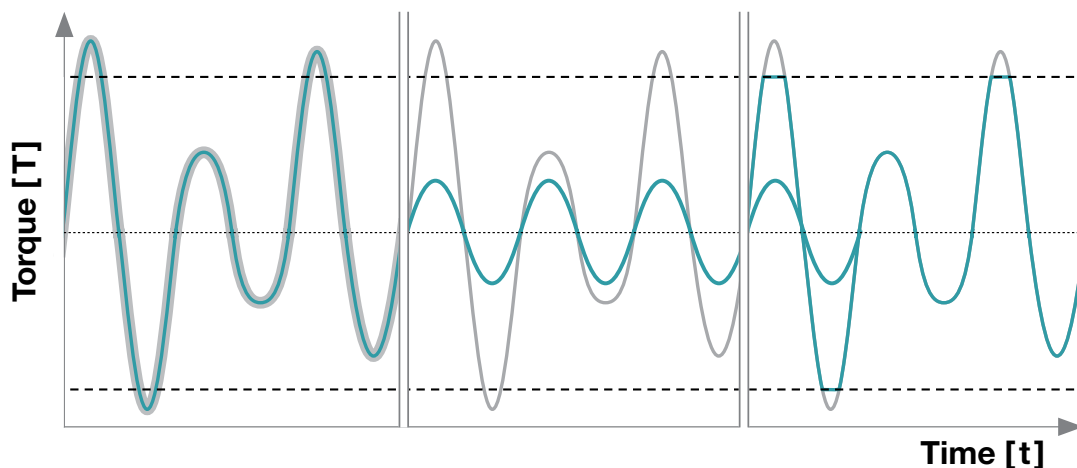
Quick coupling selection

| Feature | Application | Metal bellows coupling | | | | | Elastomer coupling | | Torque limiter | | |
|------------------------------|--|------------------------|-----|-----|-----|-----|--------------------|-----|----------------|-----|-----|
| | | BCT | BCH | BC2 | BC3 | EC2 | EL6 | ELC | TL1 | TL2 | TL3 |
| Transmission characteristics | High torsional rigidity | • | • | • | • | • | | | • | • | • |
| | Damping of torque peaks and vibration | | | | | | • | • | | | |
| Compensation characteristics | Compensation of shaft misalignments (axial, angular, lateral) | • | • | • | • | • | • | • | | • | • |
| Protection characteristics | Switching protection element for the protection of components in the event of overload | | | | | | | | • | • | • |
| Mounting | Standard clamping hub (radial) | • | • | • | | • | | • | • | • | • |
| | Conical clamping hub (axial) | • | | | • | | • | | • | | • |
| | Plug-in connection | | | | | | • | • | | | |
| Drive interfaces | Shaft | | • | • | • | • | • | • | • | • | • |
| | Flange | • | | | | | | | | | |
| Output interfaces | Shaft | • | • | • | • | • | • | • | | • | • |
| | Indirect (belt pulley, sprocket wheel) | | | | | | | | • | | |

Versions and Applications

By combining gearheads and accessories, your application receives an individual drive concept with optimized overall performance.

- Maximum service life of all drive components
- Integrated safety functions
- Harmonious drive characteristics



Precise, torsionally rigid transmission
→ Metal bellows coupling



Damping of peaks/vibrations
→ Elastomer coupling

Safe torque limitation
→ Torque limiter




Compare

| Features | Metal bellows coupling | | | | Elastomer coupling | | Torque limiter | | | |
|---|--------------------------|-----------|-----------|------------|--------------------|----------|----------------|------------|------------|----------|
| | BCT | BCH | BC2 | BC3 | EC2 | EL6 | ELC | TL1 | TL2 | TL3 |
| Max. acceleration torque $T_B / T_{BE} / T_{Dis}$ [Nm] | 50 – 8500 | 15 – 1500 | 15 – 6000 | 15 – 10000 | 2 – 500 | 6 – 2150 | 1 – 2150 | 0,1 – 2800 | 0,1 – 1800 | 5 – 2800 |
| Torsional backlash | Completely backlash free | | | | | | | | | |
| Geometry | | | | | | | | | | |
| Selectable bore diameter D_1 / D_2 [mm] | 12 – 100 | 8 – 80 | 8 – 140 | 10 – 180 | 4 – 62 | 6 – 80 | 3 – 80 | 4 – 100 | 3 – 80 | 10 – 100 |
| Bore D_1 / D_2 smooth | • | • | • | • | • | • | • | • | • | • |
| Bore D_1 / D_2 key | • | • | • | • | • | • | • | • | • | • |
| Selectable coupling length (A, B) | | • | • | • | | | | | • | • |
| Options | | | | | | | | | | |
| Corrosion resistant (stainless steel hubs, welded) | • | | • | • | | | | | | |
| Including self-opening clamp system | | | | | • | | | | | |
| Selectable disengagement mechanism | | | | | | | | • | • | • |
| Torque adjusting wrench and switch | | | | | | | | • | • | • |
| Selectable intermediate element (elastomer insert) | | | | | | • | • | | | |

Accessories

 Couplings
  Shrink disc

BCT – bellows coupling with flange connection

| Technical data | | | Standard series | | | | | HIGH TORQUE series | | |
|--|--|---------------------------------------|---------------------------------|---------------|---------------|----------------|----------------------|--------------------|-----------------|--|
| | | | 15 | 60 | 150 | 300 | 1500 | 1500 | 4000 | |
| Gearhead output | TP ⁺ , TPK ⁺ , TK ⁺ , VDT ⁺ , TPM, TPC | | 004 MF | 010 MF | 025 MF | 050 MF | 110 MF | 110 MA | 300 MA | |
| Max. acceleration torque ^{a)} (max. 1000 cycles per hour) | T _B | Nm | 50 | 210 | 380 | 750 | 2600 | 6000 | 8500 | |
| | | in.lb | 443 | 1859 | 3363 | 6638 | 23010 | 53104 | 75231 | |
| Max. speed | n _{Max} | rpm | 10000 | | | | | | | |
| Axial misalignment  | Max. values | mm | 1 | 1.5 | 2 | 2.5 | 3 | 1.5 | 3 | |
| Angular misalignment  | Max. values | ° | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| Lateral misalignment  | Max. values | mm | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.2 | 0.4 | |
| Axial spring stiffness | C _a | N/mm | 28.6 | 76.9 | 86.9 | 112 | 322 | 1024 | 1154 | |
| Lateral spring stiffness | C _l | N/mm | 475 | 1410 | 1620 | 3860 | 5890 | 21000 | 7750 | |
| Torsional rigidity | C _T | Nm/arcmin | 6.7 | 21.0 | 41.0 | 156 | 379 | 437 | 1455 | |
| | | in.lb/arcmin | 59.3 | 185.9 | 362.9 | 1381 | 3354 | 3867 | 12877 | |
| Moment of inertia | J | kgcm ² | 1.5 | 6.5 | 13.0 | 55 | 450 | 470 | 1850 | |
| | | 10 ⁻³ in.lb.s ² | 1.3 | 5.8 | 11.5 | 49 | 398 | 416 | 1637 | |
| Hub material | | | Al | Al | Al | Al | Steel | Steel | Steel | |
| Bellows material | | | highly flexible stainless steel | | | | | | | |
| Adapter flange material | | | Steel | | | | | | | |
| Approx. weight | m | kg | 0.3 | 0.7 | 1 | 2.8 | 10 | 10.5 | 27.4 | |
| | | lb | 0.67 | 1.5 | 2.21 | 6.18 | 22.5 | 23 | 60.3 | |
| Max. permitted temperature | | °C | -30 to +100 (bonded) | | | | -30 to +300 (welded) | | | |
| | | F | -22 to +212 (bonded) | | | | -22 to +XXX (welded) | | | |
| Dimensions | | | | | | | | | | |
| Overall length including adapter flange (without L ₃) | L ₁ | mm | 51.5 | 73.5 | 77.5 | 96.5 | 148 | 136.5 | 207 | |
| Fit length ^{b)} | L ₂ | mm | 16.5 | 23 | 27.5 | 34 | 55 | 61 | 80 | |
| Distance | L ₃ | mm | 6.5 | 9.5 | 11 | 13 | 22.5 | - | - | |
| Distance between centers | L ₄ | mm | 1 x 17.5 | 1 x 23 | 1 x 27 | 1 x 39 | 2 x 55 | - | - | |
| Length installation space (without L ₃) | L ₇ | mm | 48.5 | 67 | 72 | 90 | 140 | 128.5 | 195 | |
| Screw head length | L ₈ | mm | - | - | - | - | - | 7.5 | 10 | |
| Bore diameter from Ø to Ø H7 | D ₁ | mm | 12 - 28 | 14 - 35 | 19 - 42 | 24 - 60 | 50 - 80 | 35 - 70 | 50 - 100 | |
| TP flange hole circle diameter ^{c)} | D ₂ | mm | 31.5 8 x M5 | 50 8 x M6 | 63 12 x M6 | 80 12 x M8 | 125 12 x M10 | 125 12 x M12 | 145 12 x M20 | |
| Outer diameter (flange) | D ₃ | mm | 63.5 | 86 | 108 | 132 | 188 | 190 | 244 | |
| Outer diameter of hub/bellows | D ₅ | mm | 49 | 66 | 82 | 110 | 157 | 157 | 200 | |
| Adapter flange hole circle diameter ^{c)} | D ₆ | mm | 56.5 10 x M4 | 76 10 x M5 | 97 10 x M6 | 120 12 x M6 | 170 16 x M8 | 172 16 x M8 | 221 20 x M12 | |

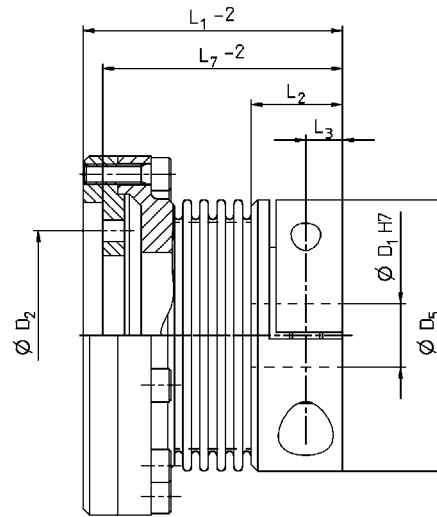
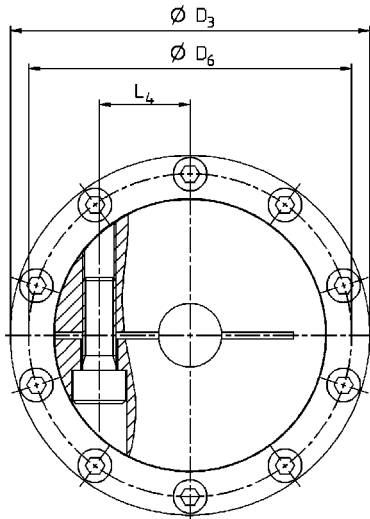
^{a)} valid for maximum bore diameter (see D₁)

^{b)} Tolerance for shaft/hub connection 0.01-0.05 mm.

^{c)} Adapter flange and screws included in scope of delivery

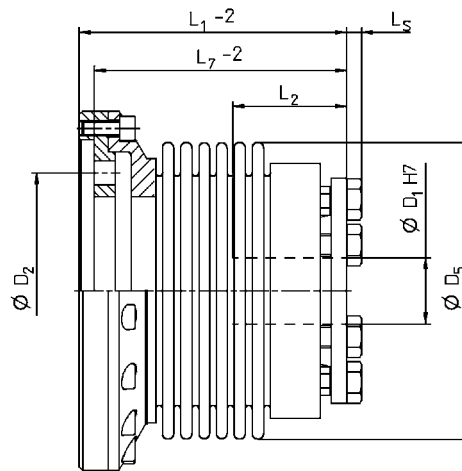
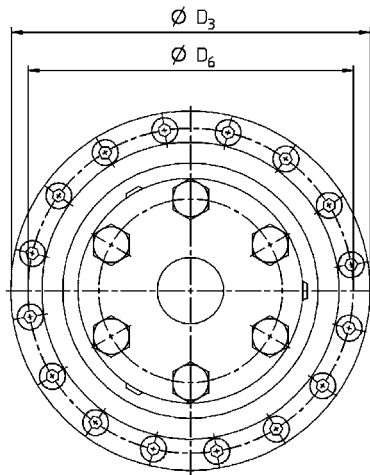
BCT Standard

with Standard clamping hub



BCT HIGH TORQUE

with conical clamping hub






Your benefits:

- Completely backlash free
- High torsional rigidity
- Small installation place and compactness
- Fatigue endurable and maintenance free
- Perfectly matched technically and geometrically to flange gearhead

Optional:

- Bores with key / involute
- Corrosion resistant version
- Other designs, geometry

BCH – bellows coupling with split clamping hub

| Technical data | | | Series | | | | | | | | | | | | | | | | | | |
|--|---------------------|---------------------------------------|---------------------------------|-----|---------|------|---------|------|---------|------|---------|------|---------|-----|---------|------|---------|------|----------------------|-------|---------|
| | | | 15 | | 30 | | 60 | | 80 | | 150 | | 200 | | 300 | | 500 | | 800 | 1500 | |
| Length options (see ordering code) | | | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | A | |
| Max. acceleration torque (max. 1000 cycles per hour) | T_B | Nm | 15 | | 30 | | 60 | | 80 | | 150 | | 200 | | 300 | | 500 | | 800 | 1500 | |
| | | in.lb | 133 | | 266 | | 531 | | 708 | | 1328 | | 1770 | | 2655 | | 4425 | | 7080 | 13275 | |
| EMERGENCY STOP torque (briefly permissible) | T_{Emer} | Nm | 22.5 | | 45 | | 90 | | 120 | | 225 | | 300 | | 450 | | 750 | | 1200 | 2250 | |
| | | in.lb | 199 | | 398 | | 797 | | 1062 | | 1991 | | 2655 | | 3983 | | 6638 | | 10620 | 19913 | |
| Max. speed | n_{Max} | rpm | 10000 | | | | | | | | | | | | | | | | | | |
| Axial misalignment  | Max. values | mm | 1.0 | 2.0 | 1.0 | 2.0 | 1.5 | 2.0 | 2.0 | 3.0 | 2.0 | 3.0 | 2.0 | 3.0 | 2.5 | 3.5 | 2.5 | 3.5 | 3.5 | 3.5 | |
| Angular misalignment  | Max. values | ° | 1.0 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 1.0 | 1.5 | 1.5 | 1.5 | |
| Lateral misalignment  | Max. values | mm | 0.15 | 0.2 | 0.2 | 0.25 | 0.2 | 0.25 | 0.2 | 0.25 | 0.2 | 0.25 | 0.25 | 0.3 | 0.25 | 0.30 | 0.30 | 0.35 | 0.35 | 0.4 | |
| Axial spring stiffness | C_a | N/mm | 25 | 15 | 50 | 30 | 72 | 48 | 48 | 32 | 82 | 52 | 90 | 60 | 105 | 71 | 70 | 48 | 100 | 320 | |
| Lateral spring stiffness | C_l | N/mm | 475 | 137 | 900 | 270 | 1200 | 420 | 920 | 290 | 1550 | 435 | 2040 | 610 | 3750 | 1050 | 2500 | 840 | 2000 | 3600 | |
| Torsional rigidity | C_T | Nm/arcmin | 5.8 | 4.4 | 11 | 8.1 | 22 | 16 | 38 | 25 | 51 | 32 | 56 | 41 | 131 | 102 | 148 | 146 | 227 | 379 | |
| | | in.lb/arcmin | 52 | 39 | 100 | 72 | 196 | 142 | 332 | 219 | 451 | 283 | 492 | 361 | 1159 | 901 | 1313 | 1288 | 2009 | 3359 | |
| Moment of inertia | J | kgcm ² | 0.7 | 0.8 | 1.4 | 1.5 | 2.3 | 2.6 | 6.5 | 6.7 | 25 | 32 | 45 | 54 | 85 | 105 | 173 | 196 | 243 | 492 | |
| | | 10 ⁻³ in.lb.s ² | 0.6 | 0.7 | 1.2 | 1.3 | 2.0 | 2.2 | 5.5 | 5.7 | 21 | 27 | 38 | 46 | 72 | 89 | 147 | 167 | 207 | 418 | |
| Hub material | | | Al | | Al | | Al | | Al | | Steel | | Steel | | Steel | | Steel | | Steel | Steel | |
| Bellows material | | | highly flexible stainless steel | | | | | | | | | | | | | | | | | | |
| Approx. weight | m | kg | 0.15 | | 0.30 | | 0.40 | | 0.80 | | 1.7 | | 2.5 | | 4.0 | | 7.5 | | 7.0 | | 12 |
| | | lb | 0.33 | | 0.66 | | 0.88 | | 1.8 | | 3.8 | | 5.5 | | 8.8 | | 17 | | 15 | | 27 |
| Max. permitted temperature | | °C | -30 to +100 (bonded) | | | | | | | | | | | | | | | | -30 to +300 (welded) | | |
| | | F | -22 to +212 (bonded) | | | | | | | | | | | | | | | | -22 to +572 (welded) | | |
| Dimensions | | | | | | | | | | | | | | | | | | | | | |
| Overall length | L_1 | mm | 59 | 66 | 69 | 77 | 83 | 93 | 94 | 106 | 95 | 107 | 105 | 117 | 111 | 125 | 133 | 146 | 140 | 166 | |
| Fit length ^{a)} | L_2 | mm | 22 | | 27 | | 31 | | 36 | | 36 | | 41 | | 43 | | 51 | | 45 | | 55 |
| Distance | L_3 | mm | 6.5 | | 7.5 | | 9.5 | | 11 | | 11 | | 12.5 | | 13 | | 16.5 | | 18 | | 22.5 |
| Distance between centers | L_4 | mm | 17 | | 19 | | 23 | | 27 | | 27 | | 31 | | 39 | | 41 | | 48 | | 55 |
| Insertion length | L_7 ⁻² | mm | 29 | 36 | 35 | 43 | 41 | 51 | 47 | 59 | 48 | 60 | 51 | 63 | 55 | 69 | 62 | 75 | 65.5 | 71 | |
| Bore diameter from \emptyset to \emptyset H7 | $D_{1/2}$ | mm | 8 - 28 | | 10 - 30 | | 12 - 35 | | 14 - 42 | | 19 - 42 | | 22 - 45 | | 24 - 60 | | 35 - 60 | | 40 - 75 | | 50 - 80 |
| Outer diameter | D_3 | mm | 49 | | 55 | | 66 | | 81 | | 81 | | 90 | | 110 | | 124 | | 134 | | 157 |

^{a)} Tolerance for shaft/hub connection 0.01-0.05 mm.

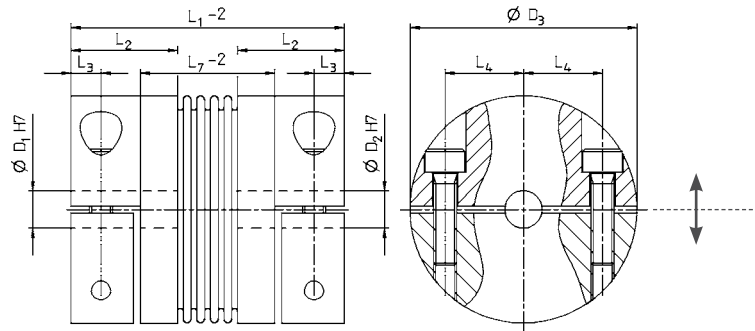
^{b)} per clamping hub, 180° apart

Your benefits:




- Mounting time is greatly reduced through clamping hubs in half-shell design
- Precise preliminary alignment of shafts possible
- Completely backlash free
- High torsional rigidity
- High dynamics through low mass moment
- Fatigue enduring and maintenance free

Optional:

- Bores with key / involute
- Other hub materials
- Other designs, geometry



BC2 – bellows coupling with clamping hub

| Technical data | | | Series | | | | | | | | | | | | | | | | | | | | | |
|--|-------------|---------------------------------------|---------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | 15 | | 30 | | 60 | | 80 | | 150 | | 200 | | 300 | | 500 | | 800 | | 1500 | | 4000 | |
| Length options (see ordering code) | | | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | A |
| Max. acceleration torque (max. 1000 cycles per hour) | T_B | Nm | 15 | 30 | 60 | 80 | 150 | 200 | 300 | 500 | 800 | 1500 | 4000 | 6000 | | | | | | | | | | |
| | | in.lb | 133 | 266 | 531 | 708 | 1328 | 1770 | 2655 | 4425 | 7080 | 13275 | 35400 | 53100 | | | | | | | | | | |
| EMERGENCY STOP torque (briefly permissible) | T_{Emer} | Nm | 22.5 | 45 | 90 | 120 | 225 | 300 | 450 | 750 | 1200 | 2250 | 6000 | 9000 | | | | | | | | | | |
| | | in.lb | 199 | 398 | 797 | 1062 | 1991 | 2655 | 3983 | 6638 | 10620 | 19913 | 53100 | 79650 | | | | | | | | | | |
| Max. speed | n_{Max} | rpm | 10000 | | | | | | | | | | | | | | | | | | | | | |
| Axial misalignment  | Max. values | mm | 1 | 2 | 1 | 2 | 1.5 | 2 | 2 | 3 | 2 | 3 | 2 | 3 | 2.5 | 3.5 | 2.5 | 3.5 | 3.5 | 4.5 | 3.5 | 4.5 | 3.5 | 3 |
| Angular misalignment  | Max. values | ° | 1 | 1.5 | 1 | 1.5 | 1 | 1.5 | 1 | 1.5 | 1 | 1.5 | 1 | 1.5 | 1 | 1.5 | 1 | 1.5 | 1.5 | 2 | 1.5 | 2 | 1.5 | 1.5 |
| Lateral misalignment  | Max. values | mm | 0.15 | 0.2 | 0.2 | 0.25 | 0.2 | 0.25 | 0.2 | 0.25 | 0.2 | 0.25 | 0.2 | 0.3 | 0.25 | 0.3 | 0.3 | 0.35 | 0.35 | 1 | 0.35 | 1 | 0.4 | 0.4 |
| Axial spring stiffness | C_a | N/mm | 25 | 15 | 50 | 30 | 72 | 48 | 48 | 32 | 82 | 52 | 90 | 60 | 105 | 71 | 70 | 48 | 100 | 285 | 320 | 440 | 565 | 1030 |
| Lateral spring stiffness | C_l | N/mm | 475 | 137 | 900 | 270 | 1200 | 420 | 920 | 290 | 1550 | 435 | 2040 | 610 | 3750 | 1050 | 2500 | 840 | 2000 | 1490 | 3600 | 1700 | 6070 | 19200 |
| Torsional rigidity | C_T | Nm/arcmin | 5.8 | 4.4 | 11.3 | 8.1 | 22.1 | 16.0 | 37.5 | 24.7 | 50.9 | 32.0 | 55.6 | 40.7 | 131 | 102 | 148 | 145 | 227 | 207 | 379 | 343 | 989 | 1658 |
| | | in.lb/arcmin | 51.5 | 38.6 | 100.4 | 72.1 | 195.7 | 141.6 | 332.1 | 218.8 | 450.5 | 283.2 | 491.7 | 360.4 | 1158 | 901 | 1313 | 1287 | 2008 | 1830 | 3357 | 3038 | 8753 | 14674 |
| Moment of inertia | J | kgcm ² | 0.6 | 0.7 | 1.2 | 1.3 | 3.2 | 3.5 | 8.0 | 8.5 | 19.0 | 20.0 | 32.0 | 34.0 | 76 | 79 | 143 | 146 | 162 | 170 | 435 | 450 | 1650 | 4950 |
| | | 10 ⁻³ in.lb.s ² | 0.5 | 0.6 | 1.1 | 1.2 | 2.8 | 3.1 | 7.1 | 7.5 | 16.8 | 17.7 | 28.3 | 30.1 | 67 | 70 | 127 | 129 | 143 | 150 | 385 | 398 | 1460 | 4381 |
| Hub material | | | Al | Al | Al | Al | Al | Steel | Steel | Steel | Steel | Steel | Steel | Steel | Steel | Steel | Steel | Steel | Steel | Steel | Steel | Steel | Steel | |
| Bellows material | | | highly flexible stainless steel | | | | | | | | | | | | | | | | | | | | | |
| Approx. weight | m | kg | 0.16 | 0.26 | 0.48 | 0.8 | 1.85 | 2.65 | 4.0 | 6.3 | 5.7 | 11.5 | 28.8 | 49.4 | | | | | | | | | | |
| | | lb | 0.35 | 0.57 | 1.06 | 1.77 | 4.09 | 5.86 | 8.84 | 13.9 | 12.6 | 25.4 | 63.6 | 109 | | | | | | | | | | |
| Max. permitted temperature | | °C | -30 to +100 (bonded) | | | | | | | | | | -30 to +300 (welded) | | | | | | | | | | | |
| | | F | -22 to +212 (bonded) | | | | | | | | | | -22 to +572 (welded) | | | | | | | | | | | |
| Dimensions | | | | | | | | | | | | | | | | | | | | | | | | |
| Overall length | L_1 | mm | 59 | 66 | 69 | 77 | 83 | 93 | 94 | 106 | 95 | 107 | 105 | 117 | 111 | 125 | 133 | 146 | 140 | 179 | 166 | 230 | 225 | 252 |
| Fit length ^{a)} | L_2 | mm | 22 | 27 | 31 | 36 | 36 | 41 | 43 | 51 | 45 | 55 | 85 | 107 | | | | | | | | | | |
| Distance | L_3 | mm | 6.5 | 7.5 | 9.5 | 11 | 11 | 12.5 | 13 | 16.5 | 18 | 22.5 | 28 | 35 | | | | | | | | | | |
| Distance between centers | L_4 | mm | 17 | 19 | 23 | 27 | 27 | 31 | 39 | 41 | 2 x 48 | 2 x 55 | 2 x 65 | 2 x 90 | | | | | | | | | | |
| Bore diameter from \emptyset to \emptyset H7 | $D_{1/2}$ | mm | 8 - 28 | 10 - 30 | 12 - 35 | 14 - 42 | 19 - 42 | 22 - 45 | 24 - 60 | 35 - 60 | 40 - 75 | 50 - 80 | 50 - 90 | 60 - 140 | | | | | | | | | | |
| Outer diameter | D_3 | mm | 49 | 55 | 66 | 81 | 81 | 90 | 110 | 124 | 134 | 157 | 200 | 253 | | | | | | | | | | |

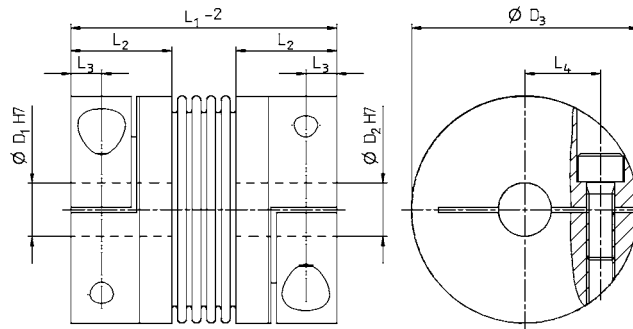
^{a)} Tolerance for shaft/hub connection 0.01-0.05 mm.

Your benefits:




- Completely backlash free
- Fatigue endurable and maintenance free
- High power density through compact design
- High dynamics through low mass moment
- Simple mounting thanks to clamping screw

Optional:

- Bores with key / involute
- Corrosion resistant version
- Other designs, geometry



BC3 – bellows coupling with conical clamping hub

| Technical data | | | Series | | | | | | | | | | | | | | | | | | | |
|--|---------------------------------|---------------------------------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------------------|----------|------|------|-------|------|------|-------|-------|--|
| | | | 15 | | 30 | | 60 | | 150 | | 200 | | 300 | | 500 | | 800 | 1500 | 4000 | 6000 | 10000 | |
| Length options (see order codes) | | | A | B | A | B | A | B | A | B | A | B | A | B | A | A | A | A | A | A | | |
| Max. acceleration torque (max. 1000 cycles per hour) | T_B | Nm | 15 | 30 | 60 | 150 | 200 | 300 | 500 | 800 | 1500 | 4000 | 6000 | 10000 | | | | | | | | |
| | | in.lb | 133 | 266 | 531 | 1328 | 1770 | 2655 | 4425 | 7080 | 13275 | 35400 | 53100 | 88500 | | | | | | | | |
| EMERGENCY STOP torque (briefly permissible) | T_{Emer} | Nm | 22.5 | 45 | 90 | 225 | 300 | 450 | 750 | 1200 | 2250 | 6000 | 9000 | 15000 | | | | | | | | |
| | | in.lb | 199 | 398 | 797 | 1991 | 2655 | 3983 | 6638 | 10620 | 19913 | 53100 | 79650 | 132750 | | | | | | | | |
| Max. speed | n_{Max} | rpm | 10000 | | | | | | | | | | | | | | | | | | | |
| Axial misalignment  | Max. values | mm | 1 | 2 | 1 | 2 | 1.5 | 2 | 2 | 3 | 2 | 3 | 2.5 | 3.5 | 2.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3 | 3 | |
| Angular misalignment  | Max. values | ° | 1 | 1.5 | 1 | 1.5 | 1 | 1.5 | 1 | 1.5 | 1 | 1.5 | 1 | 1.5 | 1 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | |
| Lateral misalignment  | Max. values | mm | 0.15 | 0.2 | 0.2 | 0.25 | 0.2 | 0.25 | 0.2 | 0.25 | 0.25 | 0.3 | 0.25 | 0.3 | 0.3 | 0.35 | 0.35 | 0.35 | 0.4 | 0.4 | 0.4 | |
| Axial spring stiffness | C_a | N/mm | 25 | 15 | 50 | 30 | 72 | 48 | 82 | 52 | 90 | 60 | 105 | 71 | 70 | 48 | 100 | 320 | 565 | 1030 | 985 | |
| Lateral spring stiffness | C_l | N/mm | 475 | 137 | 900 | 270 | 1200 | 420 | 1500 | 435 | 2040 | 610 | 3750 | 1050 | 2500 | 840 | 2000 | 3600 | 6070 | 19200 | 21800 | |
| Torsional rigidity | C_T | Nm/arcmin | 5.8 | 4.4 | 11.3 | 8.1 | 22.1 | 16.0 | 50.9 | 32.0 | 55.6 | 40.7 | 130.9 | 101.8 | 148 | 145 | 227 | 379 | 989 | 1658 | 3185 | |
| | | in.lb/arcmin | 51.5 | 38.6 | 100.4 | 72.1 | 195.7 | 141.6 | 450.5 | 283.2 | 491.7 | 360.4 | 1158.5 | 901.0 | 1313 | 1287 | 2008 | 3357 | 8753 | 14674 | 28189 | |
| Moment of inertia | J | kgcm ² | 0.7 | 0.8 | 1.5 | 1.6 | 3.9 | 4.1 | 12.0 | 16.0 | 17.0 | 25.0 | 51.0 | 59.0 | 91 | 99 | 132 | 349 | 855 | 2540 | 6290 | |
| | | 10 ⁻³ in.lb.s ² | 0.6 | 0.7 | 1.3 | 1.4 | 3.5 | 3.6 | 10.6 | 14.2 | 15.0 | 22.1 | 45.1 | 52.2 | 81 | 88 | 117 | 309 | 757 | 2248 | 5567 | |
| Hub material | Steel | | | | | | | | | | | | | | | | | | | | | |
| Bellows material | highly flexible stainless steel | | | | | | | | | | | | | | | | | | | | | |
| Approx. weight | m | kg | 0.26 | 0.27 | 0.42 | 0.44 | 0.71 | 0.74 | 1.2 | 1.8 | 3 | 4.2 | 5.6 | 8.2 | 23 | 32.6 | 45.5 | | | | | |
| | | lb | 0.57 | 0.60 | 0.93 | 0.97 | 1.57 | 1.63 | 2.65 | 3.97 | 6.61 | 9.33 | 12.3 | 18.1 | 50.7 | 71.9 | 100.3 | | | | | |
| Max. permitted temperature | | °C | -30 to +100 (bonded) | | | | | | | | | | -30 to +300 (welded) | | | | | | | | | |
| | | F | -22 to +212 (bonded) | | | | | | | | | | -22 to +572 (welded) | | | | | | | | | |
| Dimensions | | | | | | | | | | | | | | | | | | | | | | |
| Overall length (without L_s) | L_1 | mm | 48 | 55 | 57 | 65 | 66 | 76 | 75 | 87 | 78 | 90 | 89 | 103 | 97 | 110 | 114 | 141 | 195 | 210 | 217 | |
| Fit length ^{a)} | L_2 | mm | 19 | 22 | 27 | 32 | 32 | 41 | 41 | 50 | 61 | 80 | 85 | 92 | | | | | | | | |
| Screw head length | L_s | mm | 2.8 | 3.5 | 3.5 | 4 | 4 | 5.3 | 5.3 | 6.4 | 7.5 | 10 | 10 | 10 | | | | | | | | |
| Bore diameter from \emptyset to \emptyset H7 | $D_{1/2}$ | mm | 10 - 22 | 12 - 23 | 12 - 29 | 15 - 38 | 15 - 44 | 24 - 56 | 24 - 56 | 30 - 60 | 35 - 70 | 50 - 100 | 60 - 140 | 70 - 180 | | | | | | | | |
| Outer diameter | D_3 | mm | 49 | 55 | 66 | 81 | 90 | 110 | 124 | 133 | 157 | 200 | 253 | 303 | | | | | | | | |
| Outer diameter of hub | D_5 | mm | 49 | 55 | 66 | 81 | 90 | 110 | 122 | 116 | 135 | 180 | 246 | 295 | | | | | | | | |

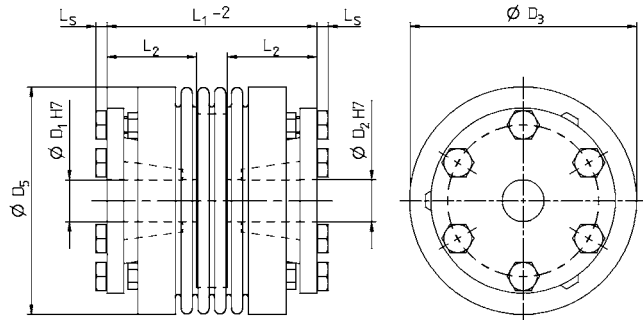
^{a)} Tolerance for shaft/hub connection 0.01-0.05 mm.

Your benefits:




- Completely backlash free
- Fatigue endurance and maintenance free
- High torques owing to conical clamping hub
- High dynamics through higher clamping forces
- Axial mounting via conical clamping hub

Optional:

- Bore with key / involute
- Corrosion resistant version
- Other designs



EC2 – bellows coupling Economy with clamping hub

| Technical data | | | Series | | | | | | | | | |
|--|-------------|---------------------------------------|---------------------------------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| | | | 2 | 4.5 | 10 | 15 | 30 | 60 | 80 | 150 | 300 | 500 |
| Max. acceleration torque (max. 1000 cycles per hour) | T_B | Nm | 2 | 4.5 | 10 | 15 | 30 | 60 | 80 | 150 | 300 | 500 |
| | | in.lb | 18 | 40 | 89 | 133 | 266 | 531 | 708 | 1328 | 2655 | 4425 |
| EMERGENCY STOP torque (briefly permissible) | T_{Emer} | Nm | 3 | 6.75 | 15 | 22.5 | 45 | 90 | 120 | 225 | 450 | 750 |
| | | in.lb | 27 | 60 | 133 | 199 | 398 | 797 | 1062 | 1991 | 3983 | 6638 |
| Max. speed | n_{Max} | rpm | 10000 | | | | | | | | | |
| Axial misalignment  | Max. values | mm | 0.5 | 1 | 1 | 1 | 1 | 1.5 | 2 | 2 | 2 | 2.5 |
| Angular misalignment  | Max. values | ° | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Lateral misalignment  | Max. values | mm | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Axial spring stiffness | C_a | N/mm | 8 | 35 | 30 | 30 | 50 | 67 | 44 | 77 | 112 | 72 |
| Lateral spring stiffness | C_l | N/mm | 50 | 350 | 320 | 315 | 366 | 679 | 590 | 960 | 2940 | 1450 |
| Torsional rigidity | C_T | Nm/arcmin | 0.44 | 2.0 | 2.6 | 6.7 | 9 | 21 | 23 | 41 | 46 | 84 |
| | | in.lb/arcmin | 3.9 | 18 | 23 | 59 | 80 | 186 | 204 | 363 | 407 | 743 |
| Moment of inertia | J | kgcm ² | 0.02 | 0.07 | 0.16 | 0.65 | 1.2 | 3 | 7.5 | 18 | 75 | 117 |
| | | 10 ⁻³ in.lb.s ² | 0.02 | 0.06 | 0.14 | 0.58 | 1.1 | 2.7 | 6.6 | 16 | 66 | 104 |
| Hub material | | | Al | Al | Al | Al | Al | Al | Al | Steel | Steel | Steel |
| Bellows material | | | highly flexible stainless steel | | | | | | | | | |
| Approx. weight | m | kg | 0.02 | 0.05 | 0.06 | 0.16 | 0.25 | 0.4 | 0.7 | 1.7 | 3.8 | 4.9 |
| | | lb | 0.044 | 0.110 | 0.132 | 0.353 | 0.551 | 0.882 | 1.54 | 3.75 | 8.38 | 10.8 |
| Max. permitted temperature | | °C | -30 to +100 (bonded) | | | | | | | | | |
| | | F | -22 to +212 (bonded) | | | | | | | | | |
| Dimensions | | | | | | | | | | | | |
| Overall length | L_1 | mm | 30 | 40 | 44 | 58 | 68 | 79 | 92 | 92 | 109 | 114 |
| Fit length ^{a)} | L_2 | mm | 10.5 | 13 | 13 | 21.5 | 26 | 28 | 32.5 | 32.5 | 41 | 42.5 |
| Distance | L_3 | mm | 4 | 5 | 5 | 6.5 | 7.5 | 9.5 | 11 | 11 | 13 | 17 |
| Distance between centers | L_4 | mm | 8 | 11 | 14 | 17 | 20 | 23 | 27 | 27 | 39 | 41 |
| Clamping hub from \varnothing to \varnothing H7 | $D_{1/2}$ | mm | 4 - 12.7 | 6 - 16 | 6 - 24 | 8 - 28 | 10 - 32 | 14 - 35 | 16 - 42 | 19 - 42 | 24 - 60 | 35 - 62 |
| Outer diameter | D_3 | mm | 25 | 32 | 40 | 49 | 56 | 66 | 82 | 82 | 110 | 123 |

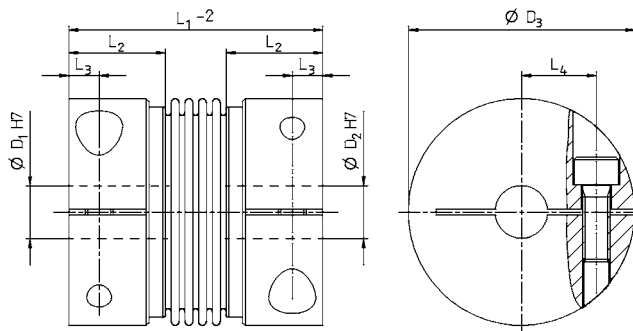
^{a)} Tolerance for shaft/hub connection 0.01-0.05 mm.

Your benefits:

- Completely backlash free
- Fatigue enduring and maintenance free
- Low-cost version
- High dynamics through very low mass moment
- Simple mounting thanks to clamping screw

Optional:

- Bores with key / involute
- Optional mounting / self-opening clamp system
- Different hub material (aluminum, steel)



EL – Elastomer couplings

Elastomer couplings ensure precisely manufactured hubs and attachable intermediate elements for maximum true-running accuracy in the drive train. In addition, torque peaks and vibrations are damped to ensure superior smooth running.



Your benefits:

- Compensation for shaft misalignment
- Completely backlash free
- Selectable torsional rigidity/damping
- Compact design
- Extremely simple installation (plug-in)
- Maintenance-free and fatigue endurable
- Ideal for connection to spindle drives, toothed belt drives and linear modules

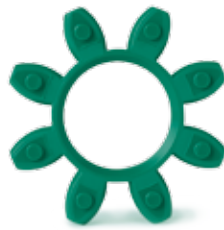
Fields of application:

- Machine tools
- Packaging machines
- Automation and handling technology
- Printing presses
- Particularly linear drives (spindle drives, toothed belt axes)
- Applications in continuous operation

The elastomer insert you select largely determines the characteristics of the entire drive train. Select between 3 versions and thereby determine the damping characteristics and torsional rigidity you require.



Version A
Shore hardness 98 Sh A



Version B
Shore hardness 64 Sh D






Version C
Shore hardness 80 Sh A

Description of elastomer inserts

| Version | Features | Relative damping (ψ) | Shore hardness | Material | Temperature range | Color |
|---------|-------------------------|-----------------------------|----------------|----------|-------------------|--------|
| A | Good damping | 0.4-0.5 | 98 Sh A | TPU | -30°C to +100°C | Red |
| B | High torsional rigidity | 0.3-0.45 | 64 Sh D | TPU | -30°C to +120°C | Green |
| C | Very good damping | 0.3-0.4 | 80 Sh A | TPU | -30°C to +100°C | Yellow |

The values for proportional damping and the full torque load of the respective elastomer inserts were determined at 10 Hz and +20°C

EL6 – elastomer coupling with conical clamping ring

| Technical data | | | Series | | | | | | | | | | | | | | | | | | | | |
|--|------------------|---------------------------------------|---------|------|-------|--------|------|------|---------|------|------|---------|------|------|---------|------|------|---------|-------|------|---------|-------|------|
| | | | 10 | | | 20 | | | 60 | | | 150 | | | 300 | | | 450 | | | 800 | | |
| Elastomer insert version (see order code) | | | A | B | C | A | B | C | A | B | C | A | B | C | A | B | C | A | B | C | A | B | C |
| Max. rated torque | T _{NE} | Nm | 12.6 | 16 | 4.0 | 17 | 21 | 6.0 | 60 | 75 | 20 | 160 | 200 | 42 | 325 | 405 | 84 | 530 | 660 | 95 | 950 | 1100 | 240 |
| | | in.lb | 112 | 142 | 35 | 150 | 186 | 53 | 531 | 664 | 177 | 1416 | 1770 | 372 | 2876 | 3584 | 743 | 4691 | 5841 | 841 | 8408 | 9735 | 2124 |
| Max. acceleration torque (max. 1000 cycles per hour) | T _{BE} | Nm | 25 | 32 | 6 | 34 | 42 | 12 | 120 | 150 | 35 | 320 | 400 | 85 | 650 | 810 | 170 | 1060 | 1350 | 190 | 1900 | 2150 | 400 |
| | | in.lb | 221 | 283 | 53 | 301 | 372 | 106 | 1062 | 1328 | 310 | 2832 | 3540 | 752 | 5753 | 7169 | 1505 | 9381 | 11948 | 1682 | 16815 | 19028 | 3540 |
| Max. speed | n _{Max} | rpm | 20000 | | | 19000 | | | 14000 | | | 13000 | | | 10000 | | | 9000 | | | 4000 | | |
| Axial misalignment  | Max. values | mm | ±1 | | | ±2 | | | ±2 | | | ±2 | | | ±2 | | | ±2 | | | ±2 | | |
| Angular misalignment  | Max. values | ° | 1 | 0.8 | 1.2 | 1 | 0.8 | 1.2 | 1 | 0.8 | 1.2 | 1 | 0.8 | 1.2 | 1 | 0.8 | 1.2 | 1 | 0.8 | 1.2 | 1 | 0.8 | 1.2 |
| Lateral misalignment  | Max. values | mm | 0.1 | 0.08 | 0.22 | 0.1 | 0.08 | 0.25 | 0.12 | 0.1 | 0.25 | 0.15 | 0.12 | 0.3 | 0.18 | 0.14 | 0.35 | 0.2 | 0.18 | 0.35 | 0.25 | 0.2 | 0.4 |
| Static torsional rigidity (at 50% T _{BE}) | C _T | Nm/arcmin | 0.076 | 0.17 | 0.026 | 0.33 | 0.73 | 0.15 | 0.96 | 2.8 | 0.41 | 1.4 | 3.1 | 0.33 | 3.6 | 5.2 | 0.37 | 4.4 | 7.9 | 1.2 | 12 | 19 | 3.0 |
| | | in.lb/arcmin | 0.67 | 1.5 | 0.23 | 2.9 | 6.5 | 1.3 | 8.5 | 24.8 | 3.6 | 12.4 | 27.4 | 2.9 | 31.9 | 46 | 3.3 | 38.9 | 69.9 | 10.6 | 106 | 168 | 26.6 |
| Dynamic torsional rigidity (at T _{BE}) | C _{Tdy} | Nm/arcmin | 0.16 | 0.48 | 0.065 | 0.74 | 1.3 | 0.25 | 2.3 | 3.5 | 0.39 | 3.9 | 8.5 | 1 | 6.9 | 12 | 1.8 | 16 | 24 | 3.4 | 24 | 52 | 8.3 |
| | | in.lb/arcmin | 1.4 | 4.2 | 0.58 | 6.6 | 11.5 | 2.2 | 20.4 | 31.0 | 3.5 | 34.5 | 75.2 | 8.9 | 61.1 | 106 | 15.9 | 142 | 212 | 30.1 | 212 | 460 | 73.5 |
| Moment of inertia | J | kgcm ² | 0.08 | | | 0.30 | | | 1.0 | | | 2.0 | | | 6.0 | | | 17 | | | 184 | | |
| | | 10 ⁻³ in.lb.s ² | 0.07 | | | 0.27 | | | 0.89 | | | 1.8 | | | 5.3 | | | 15 | | | 163 | | |
| Hub material | | | Al | | | Al | | | Al | | | Al | | | Al | | | Al | | | Steel | | |
| Elastomer material | | | Polymer | | | | | | | | | | | | | | | | | | | | |
| Approx. weight | m | kg | 0.08 | | | 0.12 | | | 0.3 | | | 0.5 | | | 0.9 | | | 1.5 | | | 9.6 | | |
| | | lb | 0.18 | | | 0.27 | | | 0.66 | | | 1.1 | | | 2.0 | | | 3.3 | | | 21 | | |
| Dimensions | | | | | | | | | | | | | | | | | | | | | | | |
| Overall length | L ₁ | mm | 42 | | | 56 | | | 64 | | | 76 | | | 96 | | | 110 | | | 138 | | |
| Fit length ^{a)} | L ₂ | mm | 15 | | | 20 | | | 23 | | | 28 | | | 36 | | | 42 | | | 53 | | |
| Bore diameter from Ø to Ø H7 | D _{1/2} | mm | 6 - 16 | | | 8 - 24 | | | 12 - 32 | | | 19 - 35 | | | 20 - 45 | | | 28 - 55 | | | 32 - 80 | | |
| Outer diameter | D ₃ | mm | 32 | | | 43 | | | 56 | | | 66.5 | | | 82 | | | 102 | | | 136.5 | | |
| Maximum internal diameter (elastomer insert) | D ₇ | mm | 14.2 | | | 19.2 | | | 26.2 | | | 29.2 | | | 36.2 | | | 46.2 | | | 60.5 | | |
| Fastening screws (ISO 4762(12.9)) | | | 3x M3 | | | 6x M4 | | | 4x M5 | | | 8x M5 | | | 8x M6 | | | 8x M8 | | | 8x M10 | | |

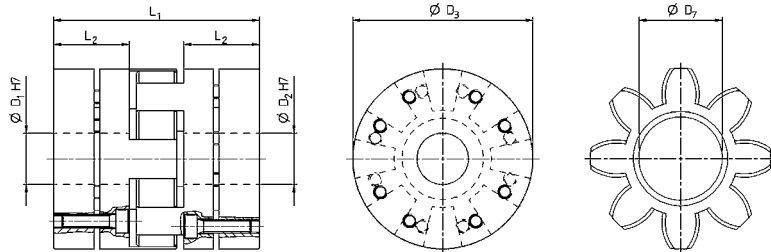
^{a)} Tolerance for shaft/hub connection 0.01-0.05 mm.

Your benefits:

- Extremely simple axial mounting (plug-in)
- Selectable damping characteristics/torsional rigidity (see elastomer options)
- Completely backlash free
- Damping of vibration and torque peaks
- Ideal for connecting linear modules
- High true-running accuracy and smooth running




Optional:

- Bores with key / involute
- Other designs



ELC - elastomer coupling

Compact version with clamping hub

| Technical data | | | Series | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------|---------------------------------------|---------|------|------|----------|------|------|--------|------|------|--------|------|------|---------|------|------|---------|------|------|---------|------|------|---------|-------|------|---------|-------|------|
| | | | 2 | | | 5 | | | 10 | | | 20 | | | 60 | | | 150 | | | 300 | | | 450 | | | 800 | | |
| Elastomer insert version (see order code) | | | A | B | C | A | B | C | A | B | C | A | B | C | A | B | C | A | B | C | A | B | C | A | B | C | A | B | C |
| Max. rated torque for elastomer insert ^{a)} | T _{NE} | Nm | 2 | 2.4 | 0.5 | 9 | 12 | 2 | 12.5 | 16 | 4 | 17 | 21 | 6 | 60 | 75 | 20 | 160 | 200 | 42 | 325 | 405 | 84 | 530 | 660 | 95 | 950 | 1100 | 240 |
| | | in.lb | 18 | 21 | 4.4 | 80 | 106 | 18 | 111 | 142 | 35 | 150 | 186 | 53 | 531 | 664 | 177 | 1416 | 1770 | 372 | 2876 | 3584 | 743 | 4691 | 5841 | 841 | 8408 | 9735 | 2124 |
| Max. acceleration torque of elastomer insert (max. 1000 cycles per hour) ^{a)} | T _{BE} | Nm | 4 | 4.8 | 1.0 | 18 | 24 | 4 | 25 | 32 | 6 | 34 | 42 | 12 | 120 | 150 | 35 | 320 | 400 | 85 | 650 | 810 | 170 | 1060 | 1350 | 190 | 1900 | 2150 | 400 |
| | | in.lb | 35 | 42 | 8.9 | 159 | 212 | 35 | 221 | 283 | 53 | 301 | 372 | 106 | 1062 | 1328 | 310 | 2832 | 3540 | 752 | 5753 | 7169 | 1505 | 9381 | 11948 | 1682 | 16815 | 19028 | 3540 |
| Max. speed | n _{Max} | rpm | 15000 | | | 15000 | | | 13000 | | | 12500 | | | 11000 | | | 10000 | | | 9000 | | | 8000 | | | 4000 | | |
| Axial misalignment  | Max. values | mm | ±1 | | | ±1 | | | ±1 | | | ±2 | | | ±2 | | | ±2 | | | ±2 | | | ±2 | | | ±2 | | |
| Angular misalignment  | Max. values | ° | 1 | 0.8 | 1.2 | 1 | 0.8 | 1.2 | 1 | 0.8 | 1.2 | 1 | 0.8 | 1.2 | 1 | 0.8 | 1.2 | 1 | 0.8 | 1.2 | 1 | 0.8 | 1.2 | 1 | 0.8 | 1.2 | 1 | 0.8 | 1.2 |
| Lateral misalignment  | Max. values | mm | 0.08 | 0.06 | 0.2 | 0.08 | 0.06 | 0.2 | 0.1 | 0.08 | 0.22 | 0.1 | 0.08 | 0.25 | 0.12 | 0.1 | 0.25 | 0.15 | 0.12 | 0.3 | 0.18 | 0.14 | 0.35 | 0.2 | 0.18 | 0.35 | 0.25 | 0.2 | 0.4 |
| Static torsional rigidity at (50% T _{BE}) | C _T | Nm/arcmin | 0.02 | 0.03 | 0.01 | 0.04 | 0.10 | 0.02 | 0.08 | 0.17 | 0.03 | 0.33 | 0.73 | 0.15 | 0.96 | 2.8 | 0.41 | 1.4 | 3.1 | 0.33 | 3.6 | 5.2 | 0.37 | 4.4 | 7.9 | 1.2 | 12 | 19 | 3.0 |
| | | in.lb/arcmin | 0.13 | 0.29 | 0.04 | 0.39 | 0.89 | 0.13 | 0.67 | 1.5 | 0.23 | 2.9 | 6.5 | 1.33 | 8.5 | 25 | 3.6 | 12 | 27 | 2.9 | 32 | 46 | 3.3 | 39 | 70 | 11 | 106 | 168 | 27 |
| Dynamic torsional rigidity at (T _{BE}) | C _{Tdy} | Nm/arcmin | 0.03 | 0.07 | 0.01 | 0.09 | 0.2 | 0.03 | 0.16 | 0.48 | 0.07 | 0.74 | 1.3 | 0.25 | 2.3 | 3.5 | 0.39 | 3.9 | 8.5 | 1.0 | 6.9 | 12 | 1.8 | 16 | 24 | 3.4 | 24 | 52 | 8.3 |
| | | in.lb/arcmin | 0.26 | 0.59 | 0.09 | 0.77 | 1.8 | 0.27 | 1.4 | 4.2 | 0.58 | 6.5 | 12 | 2.2 | 20 | 30.9 | 3.5 | 35 | 75 | 8.9 | 61 | 106 | 16 | 142 | 212 | 30 | 212 | 460 | 73 |
| Moment of inertia | J | kgcm ² | 0.01 | | | 0.04 | | | 0.06 | | | 0.20 | | | 0.80 | | | 1.60 | | | 6.00 | | | 13.2 | | | 160 | | |
| | | 10 ⁻³ in.lb.s ² | 0.01 | | | 0.04 | | | 0.05 | | | 0.18 | | | 0.71 | | | 1.42 | | | 5.31 | | | 11.7 | | | 142 | | |
| Hub material | | | Al | | | Al | | | Al | | | Al | | | Al | | | Al | | | Al | | | Steel | | | | | |
| Elastomer material | | | Polymer | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Approx. weight | m | kg | 0.008 | | | 0.02 | | | 0.05 | | | 0.12 | | | 0.30 | | | 0.50 | | | 0.90 | | | 1.5 | | | 8.5 | | |
| | | lb | 0.018 | | | 0.044 | | | 0.11 | | | 0.27 | | | 0.66 | | | 1.1 | | | 2.0 | | | 3.3 | | | 18.8 | | |
| Dimensions | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Overall length | L ₁ | mm | 20 | | | 26 | | | 32 | | | 50 | | | 58 | | | 62 | | | 86 | | | 94 | | | 123 | | |
| Fit length ^{b)} | L ₂ | mm | 6 | | | 8 | | | 10.3 | | | 17 | | | 20 | | | 21 | | | 31 | | | 34 | | | 46 | | |
| Distance | L ₃ | mm | 3 | | | 4 | | | 5 | | | 8.5 | | | 10 | | | 11 | | | 15 | | | 17.5 | | | 23 | | |
| Distance between centers | L ₄ | mm | 5.5 | | | 8 | | | 10.5 | | | 15.5 | | | 21 | | | 24 | | | 29 | | | 38 | | | 50.5 | | |
| Hub length | L ₅ | mm | 12 | | | 16.7 | | | 20.7 | | | 31 | | | 36 | | | 39 | | | 52 | | | 57 | | | 74 | | |
| Bore diameter from Ø to Ø H7 | D _{1/2} | mm | 3 - 8 | | | 4 - 12.7 | | | 4 - 16 | | | 8 - 25 | | | 12 - 32 | | | 19 - 36 | | | 20 - 45 | | | 28 - 60 | | | 35 - 80 | | |
| Outer diameter | D ₃ | mm | 16 | | | 25 | | | 32 | | | 42 | | | 56 | | | 66.5 | | | 82 | | | 102 | | | 136.5 | | |
| Outer diameter with screw head | D _{3S} | mm | 17 | | | 25 | | | 32 | | | 44.5 | | | 57 | | | 68 | | | 85 | | | 105 | | | 139 | | |
| Maximum internal diameter (elastomer insert) | D ₇ | mm | 6.2 | | | 10.2 | | | 14.2 | | | 19.2 | | | 26.2 | | | 29.2 | | | 36.2 | | | 46.2 | | | 60.5 | | |

^{a)} Max. torque additionally dependent on minimum selected bore diameter on drive or output side (D_{1/2}).

This only applies to ELC couplings. Please check using "Maximum transmittable torque" table.

^{b)} Tolerance for shaft/hub connection 0.01-0.05 mm.

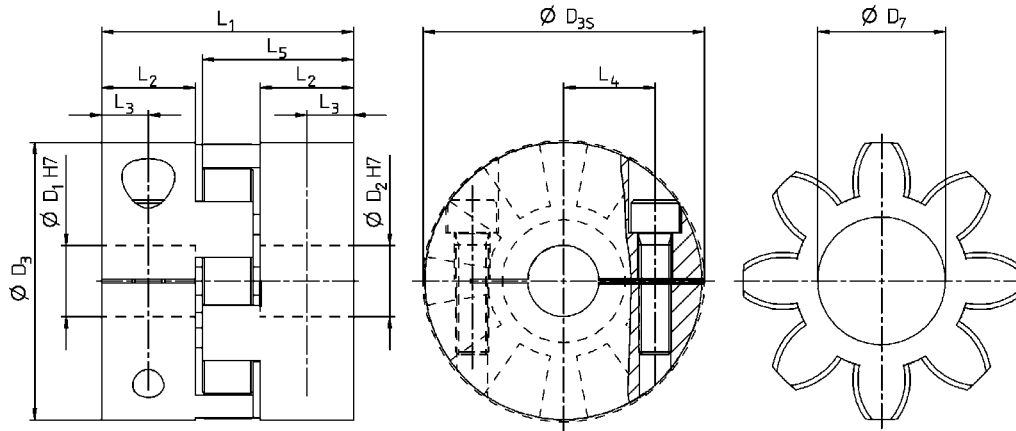
Maximum transmittable torque [Nm]

| Series | $D_{1/2}$ | | | | | | | | | | | | | | | | | |
|--------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | $\emptyset 3$ | $\emptyset 4$ | $\emptyset 5$ | $\emptyset 8$ | $\emptyset 16$ | $\emptyset 19$ | $\emptyset 25$ | $\emptyset 30$ | $\emptyset 32$ | $\emptyset 35$ | $\emptyset 45$ | $\emptyset 50$ | $\emptyset 55$ | $\emptyset 60$ | $\emptyset 65$ | $\emptyset 70$ | $\emptyset 75$ | $\emptyset 80$ |
| 2 | 0,2 | 0,8 | 1,5 | 2,5 | | | | | | | | | | | | | | |
| 5 | | 1,5 | 2 | 8 | | | | | | | | | | | | | | |
| 10 | | | 4 | 12 | 32 | | | | | | | | | | | | | |
| 20 | | | | 20 | 35 | 45 | 60 | | | | | | | | | | | |
| 60 | | | | | 50 | 80 | 100 | 110 | 120 | | | | | | | | | |
| 150 | | | | | | 120 | 160 | 180 | 200 | 220 | | | | | | | | |
| 300 | | | | | | 200 | 230 | 300 | 350 | 380 | 420 | | | | | | | |
| 450 | | | | | | | | 420 | 480 | 510 | 600 | 660 | 750 | 850 | | | | |
| 800 | | | | | | | | | | 700 | 750 | 800 | 835 | 865 | 900 | 925 | 950 | 1000 |

Maximum transmittable torque according to minimum selected bore diameter ($D_{1/2}$) and ELC series

If intermediate value, please perform linear interpolation

Higher torques possible by means of additional keys.



Your benefits:

- Extremely simple radial mounting (plug-in)
- Selectable damping characteristics/torsional rigidity (see elastomer options)
- Completely backlash free
- Damping of vibration and torque peaks
- Ideal for connecting linear modules
- High true-running accuracy and smooth running

Optional:

- Bores with key / involute
- intermediate cardan piece (higher lateral misalignment)
- Other designs

TL – torque limiters

Torque limiters with integrated mechanical switching mechanism combine dynamic and precise transmission with TÜV-certified torque limitation. They therefore protect the drive and machine from overload.



Your benefits:

- Machine downtimes are avoided
- High availability and productivity
- Precise, preset overload protection (switch-off in 1 – 3 ms)
- Precise repeat accuracy
- Compact and completely backlash free
- Just one protection element per axle

Your benefits:

- Extremely high machine availability
- Extremely high machine dynamics
- Minimal maintenance requirements
- Extremely high service life of machine and components
- TÜV certification

Selectable function systems – re-engagement after overload has been rectified

Single position re-engagement (W) (Standard)



- Re-engagement after exactly 360°
- Guaranteed synchronism
- Switch signal in the event of overload*

Applications:

- Packaging machines
- Machine tools
- Automation systems

Multi-position (D)



- Re-engagement after exactly 60° (Standard)
- Optionally after 30, 45, 60, 90, 120°
- System is immediately available again
- Switch signal in the event of overload*

Applications:

- Packaging machines
- Machine tools
- Automation systems

Full disengagement (F)



- Permanent separation of drive and output
- Free deceleration of centrifugal masses
- Manual re-engagement (every 60°)
- Switch signal in the event of overload*

Applications:

- Applications with extremely high speeds
- and kinetic energy

Load holding version (G)



- None, or limited Separation of drive and output
- Only slow rotation possible during overload
- Re-engagement after torque drop
- Guaranteed load safety
- Switch signal in the event of overload*

Applications:

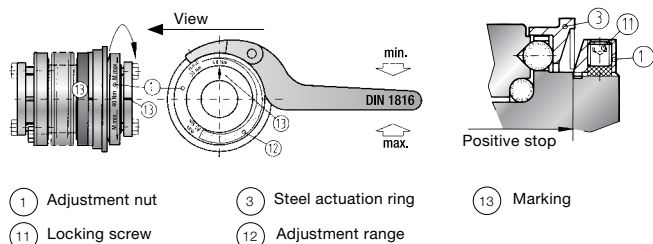
- Particularly for vertical axes such as presses, load-lifting equipment

*(For suitable switches, see Page 409)

Accessories for TL – torque limiters

Alpha torque limiters are factory adjusted to the specified disengagement torque, which is marked on the coupling. Thanks to the installed disc springs with special degressive spring characteristics it is also possible to adjust the preset disengagement torque within the adjustment range. Adjustment of the disengagement torque can be carried out using a torque adjusting wrench.

Torque adjusting wrench for DIN 1816 nuts



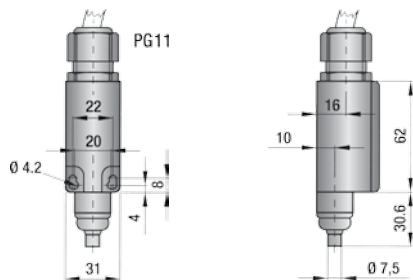
Smaller coupling sizes do not require a torque adjusting wrench. The adjusting nut for the 1.5/2/4.5/10 series can be adjusted with a bolt or pin.

| Torque adjusting wrench | | | |
|-------------------------|-------------|-------------------------------------|----------|
| Series | Designation | AC according to the function system | |
| | | W, D, G* | F* |
| 15 | GHS TL 15 | 20047730 | 20047730 |
| 30 | GHS TL 30 | 20047731 | 20047731 |
| 60 | GHS TL 60 | 20047732 | 20047749 |
| 80 | GHS TL 80 | 20047733 | 20047733 |
| 150 | GHS TL 150 | 20047733 | 20047733 |
| 200 | GHS TL 200 | 20047734 | 20047750 |
| 300 | GHS TL 300 | 20047735 | 20047735 |
| 500 | GHS TL 500 | 20047736 | 20047736 |
| 800 | GHS TL 800 | 20047737 | 20047751 |
| 1500 | GHS TL 1500 | 20047738 | 20047738 |
| 2500 | GHS TL 2500 | 20047739 | 20047752 |

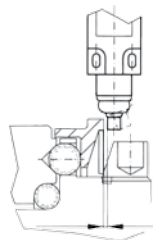
*Function systems: single position (W), multi-position (D), load holding (G), full disengagement (F)

Mechanical limit switch (emergency cut-off)

Dimension drawings



Important:
The switch function must always be checked 100 % after mounting.



The actuation tappet should be positioned as close as possible to the actuation ring of the torque limiter (approx. 0.1–0.2 mm).

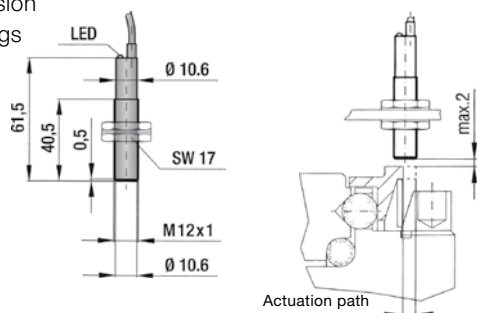
Distance approx. 0.1–0.2 mm

| Technical data | ME TL AC: 20022999 |
|------------------------|-------------------------------|
| Max. voltage: | 500 V AC |
| Max. constant current: | 10 A |
| Degree of protection: | IP 65 |
| Contact type: | NC contact (positive opening) |
| Ambient temperature: | -30 °C to +80 °C |
| Actuation: | Tappet (metal) |
| Circuit symbol: | |

The mechanical limit switch is suitable for size 30 and above.

Proximity switch (emergency cut-off)

Dimension drawings



Important:
The switch function must always be checked 100 % after mounting.

| Technical data | NAS TL AC: 20022998 |
|---------------------------|------------------------|
| Voltage range: | 10 to 30 V DC |
| Max. output current: | 200 mA |
| Max. switching frequency: | 800 Hz |
| Temperature range: | -25 °C to +70 °C |
| Degree of protection: | IP 67 |
| Switch type: | PNP NC contact |
| Detection gap: | max. 2 mm |
| Circuit symbol: | |

TL1 – Torque limiter for indirect drives

Technical data

| Series | | | Miniature version (Standard clamping hub) | | | | | Standard version (Conical clamping hub) | | | | | | | | | |
|--|---|--|--|---------|---------|---------|--------|--|---------|----------|----------|-----------|-----------|-----------|-----------|------------|-------------|
| | | | 1.5 | 2 | 4.5 | 10 | 15 | 30 | 60 | 150 | 200 | 300 | 500 | 800 | 1500 | 2500 | |
| Adjustment range from min. to max. disengagement torque T_{Dis} (approx. values) Function systems: single position (W), multi-position (D) and load holding (G) | T_{Dis} | Nm | A | 0.1-0.6 | 0.2-1.5 | 1-3 | 2-6 | 5-15 | 5-20 | 10-30 | 20-70 | 30-90 | 100-200 | 80-200 | 400-650 | 600-800 | 1500-2000 |
| | | | | in.lb | 1-6 | 2-14 | 9-27 | 18-54 | 45-133 | 45-177 | 89-266 | 177-620 | 266-797 | 885-1770 | 708-1770 | 3540-5753 | 5310-7080 |
| | | Nm | B | 0.4-1 | 0.5-2.2 | 2-4.5 | 4-12 | 12-25 | 10-30 | 25-80 | 45-150 | 60-160 | 150-240 | 200-350 | 500-800 | 700-1200 | 2000-2500 |
| | | | | in.lb | 4-9 | 5-20 | 18-40 | 36-107 | 107-222 | 89-266 | 222-708 | 399-1328 | 531-1416 | 1328-2124 | 1770-3098 | 4425-7080 | 6195-10620 |
| | Nm | C | 0.8-2 | 1.5-3.5 | 3-7 | 7-18 | 20-40 | 20-60 | 50-115 | 80-225 | 140-280 | 220-440 | 320-650 | 650-950 | 1000-1800 | 2300-2800 | |
| | | | in.lb | 8-18 | 14-31 | 27-62 | 62-160 | 177-354 | 177-531 | 443-1018 | 708-1992 | 1239-2478 | 1947-3894 | 2832-5753 | 5753-8408 | 8850-15930 | 20355-24780 |
| | Nm | D | - | - | - | - | 35-70 | 50-100 | - | - | 250-400 | - | - | - | - | - | |
| | | | in.lb | - | - | - | - | 310-620 | 443-885 | - | - | 222-3540 | - | - | - | - | - |
| Adjustment range from min. to max. disengagement torque T_{Dis} (approx. values) Function system: Full disengagement (F) | T_{Dis} | Nm | A | 0.3-0.8 | 0.2-1 | 2.5-4.5 | 2-5 | 7-15 | 8-20 | 10-30 | 20-60 | 80-140 | 120-180 | 50-150 | 200-400 | 1000-1250 | 1400-2200 |
| | | | | in.lb | 3-8 | 2-9 | 23-40 | 18-45 | 62-133 | 71-177 | 89-266 | 177-531 | 708-1239 | 1062-1593 | 443-1328 | 1770-3540 | 8850-11063 |
| | | Nm | B | 0.6-1.3 | 0.7-2 | - | 4-10 | - | 16-30 | 20-40 | 40-80 | 130-200 | 160-300 | 100-300 | 450-850 | 1250-1500 | 1800-2700 |
| | | | | in.lb | 6-12 | 7-18 | - | 36-89 | - | 142-266 | 177-354 | 354-708 | 1151-1770 | 1416-2655 | 885-2655 | 3983-7523 | 11063-13275 |
| | Nm | C | - | - | - | 8-15 | - | - | 30-60 | 80-150 | - | 300-450 | 250-500 | - | - | - | |
| | | | in.lb | - | - | - | 71-133 | - | - | 266-531 | 708-1328 | - | 2655-3983 | 2213-4425 | - | - | - |
| | Max. radial force (radial load capacity) within the permitted distance range $S^a)$ | F_R | N | 50 | 100 | 200 | 500 | 1400 | 1800 | 2300 | 3000 | 3500 | 4500 | 5600 | 8000 | 12000 | 20000 |
| | | | S | mm | 3 - 6 | 5 - 8 | 5 - 11 | 6 - 14 | 7 - 17 | 10 - 24 | 10 - 24 | 12 - 24 | 12 - 26 | 12 - 28 | 16 - 38 | 16 - 42 | 20 - 50 |
| Moment of inertia | J | kgcm ² | 0.1 | 0.2 | 0.5 | 0.7 | 1.5 | 2.5 | 5.0 | 16 | 27 | 52 | 86 | 200 | 315 | 2100 | |
| | | in.lb.s ² .10 ⁻³ | 0.1 | 0.2 | 0.4 | 0.6 | 1.3 | 2.2 | 4.4 | 14 | 24 | 46 | 76 | 177 | 279 | 1859 | |
| Max. speed ^{b)} | n_{Max} | rpm | 3000 | | | | | 2000 | | | | | 1000 | | | | |
| Material | Hardened steel | | | | | | | | | | | | | | | | |
| Approx. weight | m | kg | 0.03 | 0.065 | 0.12 | 0.22 | 0.4 | 0.7 | 1.0 | 1.3 | 2.0 | 3.0 | 4.0 | 5.5 | 10 | 28 | |
| | | lb | 0.07 | 0.14 | 0.27 | 0.49 | 0.9 | 1.5 | 2.2 | 2.9 | 4.4 | 6.6 | 8.8 | 12 | 22 | 61 | |
| Max. permitted temperature | F | °C | -30 to +120 | | | | | | | | | | | | | | |
| | | F | -22 to +572 | | | | | | | | | | | | | | |

^{a)} If different, additional bearing required (see illustration 1)

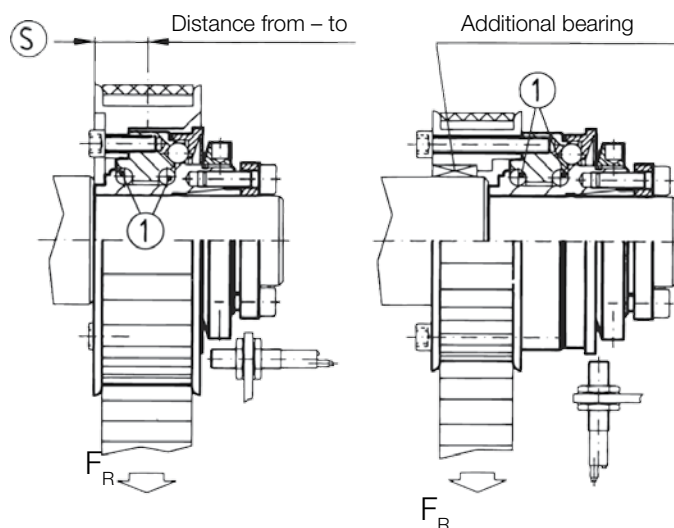
^{b)} If you have more stringent requirements, please contact WITTENSTEIN alpha

Your benefits:

- Ideal for connecting toothed belt pulleys and sprocket wheels
- Integrated bearing for indirect drives
- Certified disengagement mechanism in the event of overload
- Pre-set disengagement torque
- Completely backlash free
- Fatigue durable and maintenance free
- High compactness
- High dynamics through low mass moment

Optional:

- Bores with key
- Other designs



1: Integrated bearings

F_R : Permitted radial force (radial load capacity)

S: permitted distance range



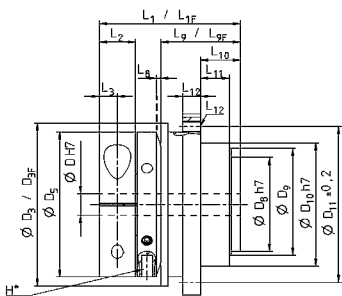
Dimensions

| | | | Miniature version (Standard clamping hub) | | | | Standard version (Conical clamping hub) | | | | | | | | | |
|--|----------|----|--|--------|--------|------|--|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Series | | | 1.5 | 2 | 4.5 | 10 | 15 | 30 | 60 | 150 | 200 | 300 | 500 | 800 | 1500 | 2500 |
| Overall length (without L_2) | L_1 | mm | 23 | 28 | 32 | 39 | 40 | 50 | 54 | 58 | 63 | 70 | 84 | 95 | 109 | 146 |
| Overall length F (without L_2) | L_{1F} | mm | 23 | 28 | 32 | 39 | 40 | 50 | 54 | 58 | 66 | 73 | 88 | 95 | 117 | 152 |
| Fit length ^{b)} | L_2 | mm | 7 | 8 | 11 | 11 | 19 | 22 | 27.5 | 32 | 32 | 41 | 41 | 49 | 61 | 80 |
| Distance | L_3 | mm | 3.5 | 4 | 5 | 5 | - | - | - | - | - | - | - | - | - | - |
| Distance between centers | L_4 | mm | 6.5 | 8 | 10 | 15 | - | - | - | - | - | - | - | - | - | - |
| Actuation path | L_6 | mm | 0.7 | 0.8 | 0.8 | 1.2 | 1.5 | 1.7 | 1.7 | 1.9 | 2.2 | 2.2 | 2.2 | 2.2 | 3.0 | 3.0 |
| Distance | L_9 | mm | 11 | 15 | 17 | 22 | 27 | 35 | 37 | 39 | 44 | 47 | 59 | 67 | 82 | 112 |
| Distance F | L_{9F} | mm | 11.5 | 16 | 18 | 24 | 27 | 37 | 39 | 41.5 | 47 | 51.5 | 62 | 75 | 94 | 120 |
| Distance | L_{10} | mm | 5 | 6 | 8 | 11 | 8 | 11 | 11 | 12 | 12 | 15 | 21 | 19 | 25 | 34 |
| Centering length -0.2 | L_{11} | mm | 2.5 | 3.5 | 5 | 8 | 3 | 5 | 5 | 5 | 5 | 6 | 9 | 10 | 13.5 | 20 |
| Thread | | | 4xM2 | 4xM2.5 | 6xM2.5 | 6xM3 | 6xM4 | 6xM5 | 6xM5 | 6xM6 | 6xM6 | 6xM8 | 6xM8 | 6xM10 | 6xM12 | 6xM16 |
| Thread length | L_{12} | mm | 3 | 4 | 4 | 5 | 6 | 8 | 9 | 10 | 10 | 10 | 12 | 15 | 16 | 24 |
| Distance | L_{13} | mm | 1 | 1.3 | 1.5 | 1.5 | 2.5 | 2.5 | 2.5 | 2.5 | 3 | 3 | 4 | 4 | 4.5 | 6 |
| Screw head length | L_8 | mm | - | - | - | - | 4 | 5 | 5 | 6 | 6 | 8 | 8 | 10 | 12 | 16 |
| Bore diameter from \varnothing to \varnothing H7 | D | mm | 4-8 | 4-12 | 5-14 | 6-16 | 8-22 | 12-22 | 12-29 | 15-37 | 20-44 | 25-56 | 25-56 | 30-60 | 35-70 | 50-100 |
| Outer diameter of actuation ring | D_3 | mm | 23 | 29 | 35 | 45 | 55 | 65 | 73 | 92 | 99 | 120 | 135 | 152 | 174 | 242 |
| Outer diameter of actuation ring F | D_{3F} | mm | 24 | 32 | 42 | 51.5 | 62 | 70 | 83 | 98 | 117 | 132 | 155 | 177 | 187 | 258 |
| Flange diameter -0.2 | D_4 | mm | 26 | 32 | 40 | 50 | 53 | 63 | 72 | 87 | 98 | 112 | 128 | 140 | 165 | 240 |
| Outer diameter of hub | D_5 | mm | 20 | 25 | 32 | 40 | - | - | - | - | - | - | - | - | - | - |
| Diameter h7 | D_8 | mm | 11 | 14 | 17 | 24 | 27 | 32 | 39 | 50 | 55 | 65 | 72 | 75 | 92 | 128 |
| Diameter | D_9 | mm | 13 | 18 | 21 | 30 | 35 | 42 | 49 | 62 | 67 | 75 | 84 | 91 | 112 | 154 |
| Centering diameter h7 | D_{10} | mm | 14 | 22 | 25 | 34 | 40 | 47 | 55 | 68 | 75 | 82 | 90 | 100 | 125 | 168 |
| Hole circle diameter ± 0.2 | D_{11} | mm | 22 | 28 | 35 | 43 | 47 | 54 | 63 | 78 | 85 | 98 | 110 | 120 | 148 | 202 |

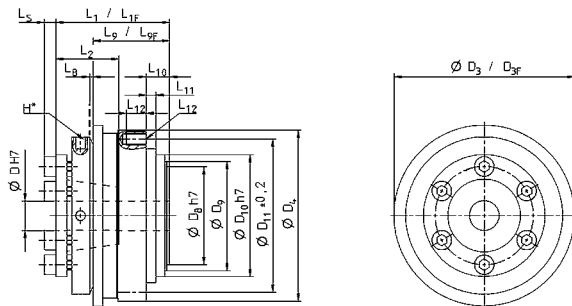
^{b)} Tolerance for shaft/hub connection 0.01-0.05 mm.

L_{1F} , L_{9F} , D_{3F} = Full disengagement version (F)

TL 1 miniature version (1.5-10 series)
with Standard clamping hub






TL 1 Standard version (15-2500 series)
with conical clamping hub



* Bore for torque adjusting wrench, see Page 409

TL2 – Torque limiter

Technical data

| Series | | | 1.5 | 2 | | 4.5 | | 10 | | 15 | | 30 | | 60 | | 80 | | 150 | | 200 | | 300 | | 500 | | 800 | | 1500 | | | |
|--|-------------|--|---------------------------------|---------|------|---------|------|---------|------|--------|------|--------|------|---------|------|---------|------|---------|-------|----------|-------|-----------|-------|-----------|-------|-----------|----------------------|-----------|-------|-------------|--|
| Length options (see order codes) | | | A | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | A | | |
| Adjustment range from min. to max. disengagement torque T_{Dis} (approx. values) Function systems: single position (W), multi-position (D) and load holding (G) | T_{Dis} | Nm in.lb | A | 0.1-0.6 | | 0.2-1.5 | | 1-3 | | 2-6 | | 5-10 | | 10-25 | | 10-30 | | 20-70 | | 20-70 | | 30-90 | | 100-200 | | 80-200 | | 400-650 | | 650-800 | |
| | | | | 1-6 | | 2-14 | | 9-27 | | 18-54 | | 45-89 | | 89-222 | | 89-266 | | 177-620 | | 177-620 | | 266-797 | | 266-797 | | 885-1770 | | 885-1770 | | 3540-5753 | |
| | | Nm in.lb | B | 0.4-1 | | 0.5-2 | | 3-6 | | 4-12 | | 8-20 | | 20-40 | | 25-80 | | 30-90 | | 45-150 | | 60-160 | | 150-240 | | 200-350 | | 500-800 | | 700-1200 | |
| | | | | 4-9 | | 5-18 | | 27-54 | | 36-107 | | 71-177 | | 177-354 | | 221-708 | | 266-797 | | 399-1328 | | 531-1416 | | 1328-2124 | | 1770-3098 | | 4425-2080 | | 6195-10620 | |
| | | Nm in.lb | C | 0.8-1.5 | | - | | - | | - | | - | | - | | - | | - | | 80-180 | | 120-240 | | 200-320 | | 300-500 | | 650-850 | | 1000-1800 | |
| | | | | 8-14 | | | | | | | | | | | | | | | | 708-1593 | | 1062-2124 | | 1770-2832 | | 2655-4425 | | 5753-7523 | | 8850-15930 | |
| Adjustment range from min. to max. disengagement torque T_{Dis} (approx. values) Function system: Full disengagement (F) | T_{Dis} | Nm in.lb | A | 0.3-0.8 | | 0.2-1 | | 2.5-4.5 | | 2-5 | | 7-15 | | 8-20 | | 20-40 | | 20-60 | | 20-60 | | 80-140 | | 120-180 | | 60-150 | | 200-400 | | 1000-1250 | |
| | | | | 3-8 | | 2-9 | | 22-40 | | 18-45 | | 62-133 | | 71-177 | | 177-354 | | 177-531 | | 177-531 | | 708-1239 | | 1062-1592 | | 531-1328 | | 1770-3540 | | 8850-11063 | |
| | | Nm in.lb | B | 0.6-1.3 | | 0.7-2 | | - | | 5-10 | | - | | 16-30 | | 30-60 | | 40-80 | | 40-80 | | 130-200 | | 160-300 | | 100-300 | | 450-800 | | 1250-1500 | |
| | | | | 6-12 | | 7-18 | | | | 45-89 | | | | 142-266 | | 268-531 | | 354-708 | | 354-708 | | 1151-1770 | | 1416-2655 | | 885-2655 | | 3983-7080 | | 11063-13275 | |
| | | Nm in.lb | C | - | | - | | - | | - | | - | | - | | - | | - | | 80-150 | | - | | - | | 250-500 | | - | | - | |
| | | | | | | | | | | | | | | | | | | | | 708-1328 | | | | | | 2213-4425 | | | | | |
| Axial misalignment  | Max. values | mm | 0.5 | 0.5 | 0.6 | 0.7 | 1 | 1 | 1.2 | 1 | 2 | 1 | 2 | 1.5 | 2 | 2 | 3 | 2 | 3 | 2 | 3 | 2 | 3 | 2.5 | 3.5 | 2.5 | 3.5 | 3.5 | 3.5 | | |
| Angular misalignment  | Max. values | ° | 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 | 1.5 | 2 | 2 | 2.5 | 2.5 | 2.5 | 2.5 | | | |
| Lateral misalignment  | Max. values | mm | 0.15 | 0.15 | 0.20 | 0.20 | 0.25 | 0.20 | 0.30 | 0.15 | 0.2 | 0.20 | 0.25 | 0.20 | 0.25 | 0.20 | 0.25 | 0.20 | 0.25 | 0.25 | 0.30 | 0.25 | 0.30 | 0.3 | 0.30 | 0.35 | 0.35 | 0.35 | | | |
| Axial spring stiffness | C_a | N/mm | 16 | 11 | 20 | 25 | 29 | 36 | 48 | 25 | 15 | 50 | 30 | 72 | 48 | 48 | 32 | 82 | 52 | 90 | 60 | 105 | 71 | 70 | 48 | 100 | 320 | | | | |
| Lateral spring stiffness | C_l | N/mm | 70 | 40 | 30 | 290 | 45 | 280 | 145 | 475 | 137 | 900 | 270 | 1200 | 420 | 920 | 255 | 1550 | 435 | 2040 | 610 | 3750 | 1050 | 2500 | 840 | 2000 | 3600 | | | | |
| Torsional rigidity | C_T | Nm/arcmin | 0.20 | 0.35 | 0.38 | 2.0 | 1.5 | 2.6 | 2.3 | 5.8 | 4.4 | 11 | 8 | 22 | 16 | 38 | 25 | 51 | 32 | 56 | 41 | 122 | 102 | 148 | 145 | 227 | 379 | | | | |
| | | in.lb/arcmin | 1.8 | 3.1 | 3.3 | 18 | 13 | 23 | 21 | 51 | 39 | 100 | 72 | 196 | 142 | 332 | 219 | 451 | 283 | 492 | 360 | 1081 | 901 | 1313 | 1287 | 2008 | 3357 | | | | |
| Moment of inertia | J | kgcm ² | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.6 | 0.7 | 1 | 1.5 | 2.7 | 3.2 | 7.5 | 8 | 18 | 19 | 25 | 28 | 51 | 53 | 115 | 118 | 228 | 230 | 420 | 830 | | | | |
| | | in.lb.s ² .10 ⁻³ | 0.09 | 0.09 | 0.09 | 0.18 | 0.18 | 0.53 | 0.62 | 0.89 | 1.33 | 2.39 | 2.83 | 6.64 | 7.1 | 16 | 17 | 22 | 25 | 45 | 47 | 102 | 104 | 202 | 204 | 372 | 735 | | | | |
| Hub material | | | Al | Al | Al | Al | Al | Al | Al | Al | Al | Al | Al | Al | Al | Al | Al | Steel | Steel | Steel | Steel | Steel | Steel | Steel | Steel | Steel | Steel | Steel | Steel | | |
| Max. speed ^{b)} | n_{Max} | rpm | 3000 | | | | | | | | | | | | 2000 | | | | | | 1000 | | | | | | | | | | |
| Bellows material | | | highly flexible stainless steel | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Protection element material | | | Hardened steel | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Approx. weight | m | kg | 0.035 | 0.07 | 0.2 | 0.3 | 0.4 | 0.6 | 1.0 | 2.0 | 2.4 | 4.0 | 5.9 | 9.6 | 14 | 21 | | | | | | | | | | | | | | | |
| | | lb | 0.08 | 0.15 | 0.44 | 0.66 | 0.88 | 1.32 | 2.21 | 4.41 | 5.30 | 8.82 | 13.1 | 21.2 | 30.9 | 46.3 | | | | | | | | | | | | | | | |
| Max. permitted temperature | | °C | -30 to +100 (bonded) | | | | | | | | | | | | | | | | | | | | | | | | -30 to +300 (welded) | | | | |
| | | F | -22 to +212 (bonded) | | | | | | | | | | | | | | | | | | | | | | | | -22 to +572 (welded) | | | | |

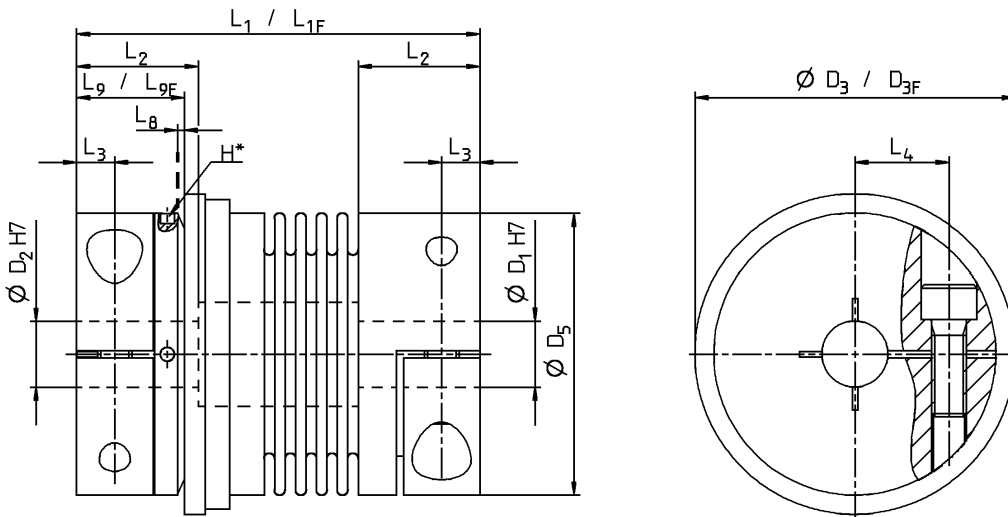
^{b)} If you have more stringent requirements, please contact WITTENSTEIN alpha

Dimensions

| Series | | | 1.5 | 2 | | 4.5 | | 10 | | 15 | | 30 | | 60 | | 80 | | 150 | | 200 | | 300 | | 500 | | 800 | 1500 |
|--|-----------|----|-------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Length options (see order codes) | | | A | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | A |
| Overall length | L_1 | mm | 42 | 46 | 51 | 57 | 65 | 65 | 74 | 75 | 82 | 87 | 95 | 102 | 112 | 115 | 127 | 116 | 128 | 128 | 140 | 139 | 153 | 163 | 177 | 190 | 223 |
| Overall length F | L_{1F} | mm | 42 | 46 | 51 | 57 | 65 | 65 | 74 | 75 | 82 | 87 | 95 | 102 | 112 | 117 | 129 | 118 | 130 | 131 | 143 | 142 | 156 | 167 | 181 | 201 | 232 |
| Fit length ^{a)} | L_2 | mm | 11 | 13 | 16 | 16 | 22 | 27 | 31 | 35 | 35 | 40 | 42 | 51 | 48 | 67 | | | | | | | | | | | |
| Distance | L_3 | mm | 3.5 | 4 | 5 | 5 | 6.5 | 7.5 | 9.5 | 11 | 11 | 12.5 | 13 | 17 | 18 | 22.5 | | | | | | | | | | | |
| Distance between centers | L_4 | mm | 6 | 8 | 10 | 15 | 17 | 19 | 23 | 27 | 27 | 31 | 39 | 41 | 2x48 | 2x55 | | | | | | | | | | | |
| Actuation path | L_8 | 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 | 2.2 | 3.0 | | | | | | | | | | | |
| Distance | L_9 | mm | 12 | 13 | 15 | 17 | 19 | 24 | 28 | 31 | 31 | 35 | 35 | 45 | 50 | 63 | | | | | | | | | | | |
| Distance (F) | L_{9F} | mm | 11.5 | 12 | 14 | 16 | 19 | 22 | 29 | 31 | 30 | 33 | 35 | 43 | 54 | 61 | | | | | | | | | | | |
| Bore diameter from \emptyset to \emptyset H7 | $D_{1/2}$ | mm | 3 - 8 | 4-12 | 5-14 | 6-16 | 10-26 | 12-30 | 15-32 | 19-42 | 19-42 | 24-45 | 30-60 | 35-60 | 40-75 | 50-80 | | | | | | | | | | | |
| Outer diameter of actuation ring | D_3 | mm | 23 | 29 | 35 | 45 | 55 | 65 | 73 | 92 | 92 | 99 | 120 | 135 | 152 | 174 | | | | | | | | | | | |
| Outer diameter of actuation ring F | D_{3F} | mm | 24 | 32 | 42 | 51.5 | 62 | 70 | 83 | 98 | 98 | 117 | 132 | 155 | 177 | 187 | | | | | | | | | | | |
| Outer diameter of hub | D_5 | mm | 19 | 25 | 32 | 40 | 49 | 55 | 66 | 81 | 81 | 90 | 110 | 123 | 134 | 157 | | | | | | | | | | | |
| Max. internal diameter | D_7 | mm | 9.1 | 12.1 | 14.1 | 20.1 | 21.1 | 24.1 | 32.1 | 36.1 | 36.1 | 42.1 | 58.1 | 60.1 | 60.1 | 68.1 | | | | | | | | | | | |

^{a)} Tolerance for shaft/hub connection 0.01-0.05 mm.

L_{1F} , L_{9F} , D_{3F} = Full disengagement version (F)



* Bore for torque adjusting wrench, see Page 409

Your benefits:

- Certified disengagement mechanism in the event of overload
- Pre-set disengagement torque
- Completely backlash free
- Fatigue durable and maintenance free
- Compensation of shaft misalignments
- Small installation space despite protection element
- Radial mounting via clamping screw




Optional:

- Bores with key / involute
- Other designs



TL3 – Torque limiter

Technical data

| Series | | | 15 | | 30 | | 60 | | 150 | | 200 | | 300 | | 500 | | 800 | 1500 | 2500 | |
|--|-------------|--|---------------------------------|--------|------|---------|------|---------|------|----------|------|-----------|------|-----------|------|-----------|----------------------|-----------|-------------|-------------|
| Length options (see order codes) | | | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | A | A | |
| Adjustment range from min. to max. disengagement torque T_{Dis} (approx. values) Function systems: single position (W), multi-position (D) and load holding (G) | T_{Dis} | Nm in.lb | A | 5-10 | | 10-25 | | 10-30 | | 20-70 | | 30-90 | | 100-200 | | 80-200 | | 400-650 | 650-850 | 1500-2000 |
| | | | | 45-89 | | 89-222 | | 89-266 | | 177-620 | | 266-797 | | 885-1770 | | 708-1770 | | 3540-5753 | 5753-7523 | 13275-17700 |
| | | Nm in.lb | B | 8-20 | | 20-40 | | 25-80 | | 45-150 | | 60-160 | | 150-240 | | 200-350 | | 500-800 | 700-1200 | 2000-2500 |
| | | | | 71-177 | | 177-354 | | 222-708 | | 399-1328 | | 531-1416 | | 1328-2124 | | 1770-3098 | | 4425-7080 | 6195-10620 | 17700-22125 |
| | | Nm in.lb | C | - | | - | | - | | 80-200 | | 140-280 | | 220-400 | | 300-500 | | 600-900 | 1000-1800 | 2300-2800 |
| | | | | | | | | | | 708-1770 | | 1239-2478 | | 1947-3540 | | 2655-4425 | | 5310-7965 | 8850-15930 | 20355-24780 |
| Adjustment range from min. to max. disengagement torque T_{Dis} (approx. values) Function system: Full disengagement (F) | T_{Dis} | Nm in.lb | A | 7-15 | | 8-20 | | 20-40 | | 20-60 | | 80-140 | | 120-180 | | 60-150 | | 200-400 | 1000-1250 | 1400-2200 |
| | | | | 62-133 | | 71-177 | | 177-354 | | 177-531 | | 708-1239 | | 1062-1593 | | 531-1328 | | 1770-3540 | 8850-11063 | 12390-19470 |
| | | Nm in.lb | B | - | | 16-30 | | 30-60 | | 40-80 | | 130-200 | | 160-300 | | 100-300 | | 450-800 | 1250-1500 | 1800-2700 |
| | | | | | | 142-266 | | 266-531 | | 354-706 | | 1151-1770 | | 1416-2655 | | 885-2855 | | 3982-7080 | 11063-13275 | 15930-23895 |
| | | Nm in.lb | C | - | | - | | - | | 80-150 | | - | | - | | 250-500 | | - | - | - |
| | | | | | | | | | | 708-1328 | | | | | | 2213-4425 | | | | |
| Axial misalignment  | Max. values | mm | 1 | 2 | 1 | 2 | 1.5 | 2 | 2 | 3 | 2 | 3 | 2.5 | 3.5 | 2.5 | 3.5 | 3.5 | 3.5 | 3.5 | |
| Angular misalignment  | Max. values | ° | 1 | 1.5 | 1 | 1.5 | 1 | 1.5 | 1 | 1.5 | 1.5 | 2 | 1.5 | 2 | 2 | 2.5 | 2.5 | 2.5 | 2.5 | |
| Lateral misalignment  | Max. values | mm | 0.15 | 0.20 | 0.20 | 0.25 | 0.20 | 0.25 | 0.20 | 0.25 | 0.25 | 0.30 | 0.25 | 0.30 | 0.30 | 0.35 | 0.35 | 0.35 | 0.35 | |
| Axial spring stiffness | C_a | N/mm | 25 | 15 | 50 | 30 | 72 | 48 | 82 | 52 | 90 | 60 | 105 | 71 | 70 | 48 | 100 | 320 | 1150 | |
| Lateral spring stiffness | C_l | N/mm | 475 | 137 | 900 | 270 | 1200 | 380 | 1550 | 435 | 2040 | 610 | 3750 | 1050 | 2500 | 840 | 2000 | 3600 | 6070 | |
| Torsional rigidity | C_T | Nm/arcmin | 5.8 | 4.4 | 11 | 8.1 | 22 | 16 | 51 | 32 | 56 | 41 | 122 | 102 | 148 | 145 | 227 | 379 | 989 | |
| | | in.lb/arcmin | 51 | 39 | 100 | 72 | 196 | 142 | 451 | 283 | 492 | 360 | 1081 | 901 | 1313 | 1287 | 2008 | 3357 | 8753 | |
| Moment of inertia | J | kgcm ² | 1.0 | 1.5 | 2.8 | 3.0 | 7.5 | 8.0 | 19 | 20 | 28 | 30 | 55 | 60 | 110 | 128 | 200 | 420 | 2570 | |
| | | in.lb.s ² .10 ⁻³ | 0.85 | 1.3 | 2.4 | 2.6 | 6.4 | 6.8 | 16 | 17 | 24 | 26 | 47 | 51 | 94 | 109 | 170 | 357 | 2185 | |
| Max. speed ^{b)} | n_{Max} | rpm | 3000 | | | | | | 2000 | | | | | | 1000 | | | | | |
| Hub material | | | Steel | | | | | | | | | | | | | | | | | |
| Bellows material | | | highly flexible stainless steel | | | | | | | | | | | | | | | | | |
| Protection element material | | | Hardened steel | | | | | | | | | | | | | | | | | |
| Approx. weight | m | kg | 0.3 | | 0.4 | | 1.2 | | 2.3 | | 3.0 | | 5.0 | | 6.5 | | 9.0 | 16.3 | 35 | |
| | | lb | 0.66 | | 0.88 | | 2.65 | | 5.07 | | 6.61 | | 11.0 | | 14.3 | | 19.8 | 35.9 | 77.2 | |
| Max. permitted temperature | | °C | -30 to +100 (bonded) | | | | | | | | | | | | | | -30 to +300 (welded) | | | |
| | | F | -22 to +212 (bonded) | | | | | | | | | | | | | | -22 to +572 (welded) | | | |

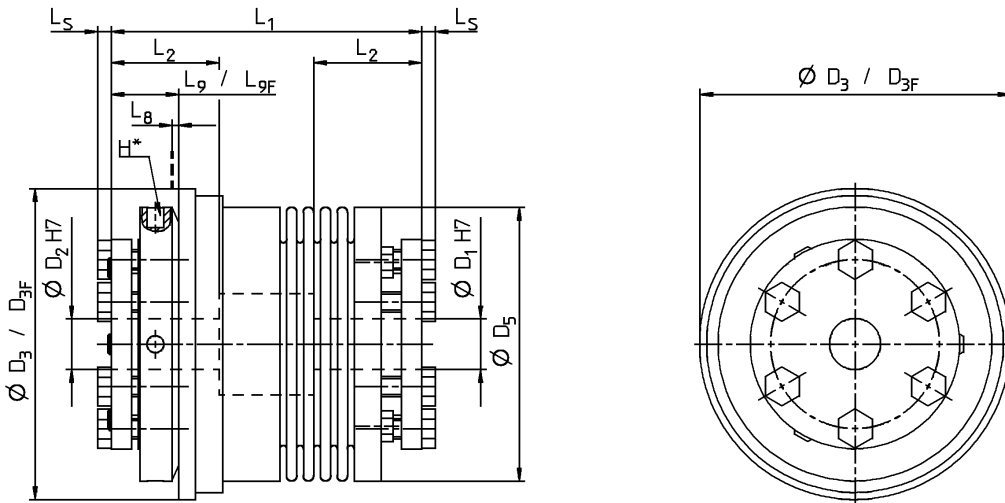
^{b)} If you have more stringent requirements, please contact WITTENSTEIN alpha

Dimensions

| Series | | 15 | | 30 | | 60 | | 150 | | 200 | | 300 | | 500 | | 800 | 1500 | 2500 | |
|---|-----------|----|-------|----|-------|----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-------|--------|
| Length options (see order codes) | | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | A | A | |
| Overall length (without L_3) | L_1 | mm | 62 | 69 | 72 | 80 | 84 | 94 | 93 | 105 | 99 | 111 | 114 | 128 | 123 | 136 | 151 | 175 | 246 |
| Overall length F | L_{1F} | mm | 62 | 69 | 72 | 80 | 84 | 94 | 93 | 105 | 102 | 114 | 117 | 131 | 127 | 140 | 151 | 184 | 252 |
| Fit length ^{a)} | L_2 | mm | 19 | | 22 | | 27 | | 32 | | 32 | | 41 | | 41 | | 49 | 61 | 80 |
| Actuation path | L_9 | mm | 1.5 | | 1.5 | | 1.7 | | 1.9 | | 2.2 | | 2.2 | | 2.2 | | 2.2 | 3 | 3 |
| Distance | L_3 | mm | 13 | | 16 | | 18 | | 19 | | 19 | | 23 | | 25 | | 31 | 30 | 34 |
| Distance F | L_{3F} | mm | 13 | | 14 | | 17 | | 18 | | 17 | | 20 | | 22 | | 20 | 26 | 31 |
| Screw head length | L_8 | mm | 2.8 | | 3.5 | | 3.5 | | 4 | | 4 | | 5.3 | | 5.3 | | 6.4 | 7.5 | 10 |
| Bore diameter from \varnothing to \varnothing H7 | $D_{1/2}$ | mm | 10-22 | | 12-23 | | 12-29 | | 15-37 | | 20-44 | | 25-56 | | 25-60 | | 30-60 | 35-70 | 50-100 |
| Outer diameter of actuation ring | D_3 | mm | 55 | | 65 | | 73 | | 92 | | 99 | | 120 | | 135 | | 152 | 174 | 243 |
| Outer diameter of actuation ring F | D_{3F} | mm | 62 | | 70 | | 83 | | 98 | | 117 | | 132 | | 155 | | 177 | 187 | 258 |
| Outer diameter of hub | D_5 | mm | 49 | | 55 | | 66 | | 81 | | 90 | | 110 | | 123 | | 133 | 157 | 200 |

^{a)} Tolerance for shaft/hub connection 0.01-0.05 mm.

L_{1F} , L_{3F} , D_{3F} = Full disengagement version F



* Bore for torque adjusting wrench, see Page 409

Your benefits:

- Certified disengagement mechanism in the event of overload
- Pre-set disengagement torque
- Completely backlash free
- Fatigue endurable and maintenance free
- Compensation of shaft misalignments
- Small installation space despite protection element
- Axial mounting via conical clamping hub

Optional:

- Bores with key / involute
- Other designs

