



# SIZES FROM 2 - 10,000 Nm

## BACKLASH FREE, TORSIONALLY STIFF

## METAL BELLOWS COUPLINGS

### GENERAL INFORMATION ABOUT R+W BELLOWS COUPLINGS:



#### SERVICE LIFE

R+W bellows couplings are fatigue resistant and wear free for an infinite service life, as long as the technical limits are not exceeded.

#### FIT CLEARANCE

Overall shaft / hub clearance of 0.01 - 0.05 mm

#### ROTATIONAL SPEED

Standard up to 10,000 rpm.  
Over 10,000 rpm in finely balanced version; up to grade ISO G=2.5 is available.

#### TEMPERATURE RANGE

-30 to +100° C

#### SPECIAL SOLUTIONS

Various materials, tolerances, dimensions and performance ratings available for custom applications on request.

#### ATEX (Optional)

For use in hazardous zones 1/21 and 2/22, the metal bellows has been authorized under directive 94/9/EG and is available with certification.

## TORSIONALLY STIFF BELLOWS COUPLINGS

### SIZES FROM 2 - 10,000 Nm

| MODEL      | FEATURES                                                                            |                                                                                                                                                                                                                              |         |
|------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <b>BK2</b> |    | <b>with clamping hub<br/>from 15 - 10,000 Nm</b> <ul style="list-style-type: none"> <li>▶ easy to mount</li> <li>▶ available in multiple lengths</li> <li>▶ low moment of inertia</li> </ul>                                 | Page 34 |
| <b>BKH</b> |   | <b>with fully split clamping hub<br/>from 15 - 4,000 Nm</b> <ul style="list-style-type: none"> <li>▶ radial mounting possible</li> <li>▶ easy to install onto pre-aligned shafts</li> <li>▶ low moment of inertia</li> </ul> | Page 35 |
| <b>BKL</b> |  | <b>economy class with clamping hub<br/>from 2 - 500 Nm</b> <ul style="list-style-type: none"> <li>▶ economy design</li> <li>▶ optional self-opening clamp system</li> <li>▶ low moment of inertia</li> </ul>                 | Page 36 |
| <b>BKS</b> |  | <b>with clamping hub<br/>from 15 - 500 Nm</b> <ul style="list-style-type: none"> <li>▶ all stainless steel construction</li> <li>▶ temperatures up to 300°C</li> <li>▶ easy to mount</li> </ul>                              | Page 37 |

## MODEL

## FEATURES

**BKC**



**economy class with clamping hub  
from 15 - 500 Nm**

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- ▶ low moment of inertia
- ▶ compact design
- ▶ optional self-opening clamp system

**BKM**



**with clamping hub  
from 20 - 1,000 Nm**

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- ▶ high torque density
- ▶ ultra compact
- ▶ lowest moment of inertia of all clamping hub designs

**BK3**



**with conical clamping hub  
from 15 - 10,000 Nm**

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- ▶ high clamping pressure
- ▶ modern design for removal system
- ▶ highly reliable

**BK4**



**for tapered shafts  
from 15 - 150 Nm**

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- ▶ standard 1:10 taper with feather keyway
- ▶ special designs on request

## TORSIONALLY STIFF BELLOWS COUPLINGS SIZES FROM 2 - 10,000 Nm

### MODEL

### FEATURES

**BK5**



**with clamping hub and  
blind mate connection  
from 15 - 1,500 Nm**

- ▶ backlash free with two piece design
- ▶ easy installation and removal
- ▶ available as separate components

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**BK6**



**with conical clamping ring and  
blind mate connection  
from 15 - 1,500 Nm**

- ▶ eliminates need for screw access holes
- ▶ self centering hubs for highly concentric mounting
- ▶ easy installation and removal

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**BK7**



**with expanding shaft  
from 15 - 300 Nm**

- ▶ for hollow shaft mounting
- ▶ save space and cost
- ▶ solution for mismatched shaft/bore diameters

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**BK8**



**with ISO flange mounting  
from 50 - 2,600 Nm**

- ▶ for flange output gearboxes
- ▶ allows for continuous hollow through axis with some right angle gearbox designs
- ▶ compact layout

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## MODEL

## FEATURES

**BK1**



**with simple flange mounting  
from 15 - 10,000 Nm**

- ▶ for adapting the metal bellows to custom drive components
- ▶ custom flange patterns available

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**BK2**

# WITH CLAMPING HUB

15 - 10,000 Nm

## ABOUT

### FEATURES

- easy to mount
- Optional: bolt tensioning system in size 800 and up
- light weight and low moment of inertia

### MATERIAL

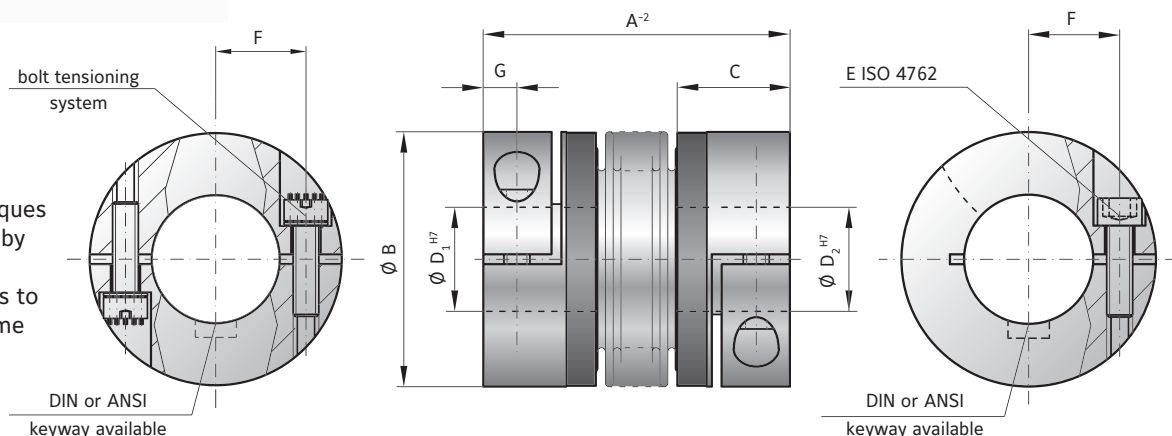
- **Bellows:** high grade stainless steel
- **Hubs:** see table

### DESIGN

Two clamping hubs concentrically mounted to flexible bellows.  
Brief overloads of up to 1.5x the rated torque are acceptable.

**NEW**

**Advantage:**  
reduce screw tightening torques by up to 90% by using multiple smaller screws to create the same tension.



## MODEL BK2

| SIZE                                         |        |                                | 15                |      |      | 30                |      |      | 60                |      |     | 80                |      |     | 150               |      |     | 200               |     |     | 300               |      |      | 500               |      |      | 800     |      |      | 1500    |      |       | 4000    |  |  | 6000    |  |  | 10000   |  |  |
|----------------------------------------------|--------|--------------------------------|-------------------|------|------|-------------------|------|------|-------------------|------|-----|-------------------|------|-----|-------------------|------|-----|-------------------|-----|-----|-------------------|------|------|-------------------|------|------|---------|------|------|---------|------|-------|---------|--|--|---------|--|--|---------|--|--|
| Rated torque                                 | (Nm)   | T <sub>KN</sub>                | 15                |      |      | 30                |      |      | 60                |      |     | 80                |      |     | 150               |      |     | 200               |     |     | 300               |      |      | 500               |      |      | 800     |      |      | 1500    |      |       | 4000    |  |  | 6000    |  |  | 10000   |  |  |
| Overall length                               | (mm)   | A <sup>2</sup>                 | 59                | 66   | 99   | 69                | 77   | 113  | 83                | 93   | 130 | 94                | 106  | 143 | 95                | 107  | 144 | 105               | 117 | 163 | 111               | 125  | 200  | 133               | 146  | 169  | 140     | 179  | 166  | 230     | 225  | 252   | 288     |  |  |         |  |  |         |  |  |
| Outside diameter                             | (mm)   | B                              | 49                |      |      | 55                |      |      | 66                |      |     | 81                |      |     | 81                |      |     | 90                |     |     | 110               |      |      | 124               |      |      | 134     |      |      | 157     |      |       | 200     |  |  | 253     |  |  | 303     |  |  |
| Fit length                                   | (mm)   | C                              | 22                |      |      | 27                |      |      | 31                |      |     | 36                |      |     | 36                |      |     | 41                |     |     | 43                |      |      | 51                |      |      | 45      |      |      | 55      |      |       | 85      |  |  | 107     |  |  | 129     |  |  |
| Inside diameter possible from Ø to Ø H7      | (mm)   | D <sub>1</sub> /D <sub>2</sub> | 8-28              |      |      | 10-30             |      |      | 12-35             |      |     | 14-42             |      |     | 19-42             |      |     | 22-45             |     |     | 24-60             |      |      | 35-60             |      |      | 40-75   |      |      | 50-80   |      |       | 50-90   |  |  | 60-140  |  |  | 70-180  |  |  |
| Fastening screw ISO 4762                     |        | E                              | M5                |      |      | M6                |      |      | M8                |      |     | M10               |      |     | M10               |      |     | M12               |     |     | M12               |      |      | M16               |      |      | 2x M16* |      |      | 2x M20* |      |       | 2x M24* |  |  | 2x M24* |  |  | 2x M30* |  |  |
| Tightening torque of the fastening screw     | (Nm)   |                                | 8                 |      |      | 15                |      |      | 40                |      |     | 50                |      |     | 70                |      |     | 120               |     |     | 130               |      |      | 200               |      |      | 250     |      |      | 470     |      |       | 1200    |  |  | 1200    |  |  | 2400    |  |  |
| Distance between centerlines                 | (mm)   | F                              | 17                |      |      | 19                |      |      | 23                |      |     | 27                |      |     | 27                |      |     | 31                |     |     | 39                |      |      | 41                |      |      | 2x48    |      |      | 2x55    |      |       | 2x65    |  |  | 2x90    |  |  | 2x117   |  |  |
| Distance                                     | (mm)   | G                              | 6.5               |      |      | 7.5               |      |      | 9.5               |      |     | 11                |      |     | 11                |      |     | 12.5              |     |     | 13                |      |      | 16.5              |      |      | 18      |      |      | 22.5    |      |       | 28      |  |  | 35      |  |  | 42      |  |  |
| Moment of inertia (10 <sup>-3</sup> kgm²)    |        | J <sub>ges</sub>               | 0.06              | 0.07 | 0.08 | 0.12              | 0.13 | 0.14 | 0.32              | 0.35 | 0.4 | 0.8               | 0.85 | 0.9 | 1.9               | 2    | 2.1 | 3.2               | 3.4 | 3.6 | 7.6               | 7.9  | 8.3  | 14.3              | 14.6 | 14.8 | 16.2    | 17   | 43   | 45      | 165  | 495   | 1214    |  |  |         |  |  |         |  |  |
| Hub material                                 |        |                                | Al optional steel |      |      | Al optional steel |      |      | Al optional steel |      |     | Al optional steel |      |     | steel optional AL |      |     | steel optional AL |     |     | steel optional AL |      |      | steel optional AL |      |      | steel   |      |      | steel   |      |       | steel   |  |  | steel   |  |  | steel   |  |  |
| Approximate weight                           | (kg)   |                                | 0.16              |      |      | 0.26              |      |      | 0.48              |      |     | 0.8               |      |     | 1.85              |      |     | 2.65              |     |     | 4                 |      |      | 6.3               |      |      | 5.7     |      |      | 11.5    |      |       | 28.8    |  |  | 49.4    |  |  | 80.9    |  |  |
| Torsional stiffness (10 <sup>3</sup> Nm/rad) |        | C <sub>T</sub>                 | 20                | 15   | 14   | 39                | 28   | 27   | 76                | 55   | 54  | 129               | 85   | 84  | 175               | 110  | 97  | 191               | 140 | 135 | 450               | 350  | 340  | 510               | 500  | 400  | 780     | 711  | 1304 | 1180    | 3400 | 5700  | 10950   |  |  |         |  |  |         |  |  |
| Axial ± (mm)                                 |        | Max. values                    | 1                 | 2    | 3    | 1                 | 2    | 3    | 1.5               | 2    | 3   | 2                 | 3    | 4   | 2                 | 3    | 4   | 2                 | 3   | 4   | 2.5               | 3.5  | 4.5  | 2.5               | 3.5  | 4.5  | 3.5     | 4.5  | 3.5  | 4.5     | 3.5  | 3     | 3       |  |  |         |  |  |         |  |  |
| Lateral ± (mm)                               |        |                                | 0.15              | 0.2  | 1    | 0.2               | 0.25 | 1    | 0.2               | 0.25 | 1   | 0.2               | 0.25 | 1   | 0.2               | 0.25 | 1   | 0.25              | 0.3 | 1   | 0.25              | 0.3  | 1    | 0.3               | 0.35 | 1    | 0.35    | 1    | 0.35 | 1       | 0.4  | 0.4   | 0.4     |  |  |         |  |  |         |  |  |
| Angular ± (degree)                           |        |                                | 1                 | 1.5  | 2    | 1                 | 1.5  | 2    | 1                 | 1.5  | 2   | 1                 | 1.5  | 2   | 1                 | 1.5  | 2   | 1                 | 1.5 | 2   | 1                 | 1.5  | 2    | 1                 | 1.5  | 2    | 1.5     | 2    | 1.5  | 2       | 1.5  | 1.5   | 1.5     |  |  |         |  |  |         |  |  |
| Axial spring stiffness                       | (N/mm) | C <sub>a</sub>                 | 25                | 15   | 84   | 50                | 30   | 118  | 72                | 48   | 165 | 48                | 32   | 144 | 82                | 52   | 130 | 90                | 60  | 280 | 105               | 71   | 605  | 70                | 48   | 85   | 100     | 285  | 320  | 440     | 565  | 1030  | 985     |  |  |         |  |  |         |  |  |
| Lateral spring stiffness                     | (N/mm) | C <sub>r</sub>                 | 475               | 137  | 140  | 900               | 270  | 224  | 1200              | 420  | 337 | 920               | 290  | 401 | 1550              | 435  | 500 | 2040              | 610 | 750 | 3750              | 1050 | 1200 | 2500              | 840  | 614  | 2000    | 1490 | 3600 | 1700    | 6070 | 19200 | 21800   |  |  |         |  |  |         |  |  |

\* 180° opposed in each clamping hub.

# WITH FULLY SPLIT CLAMPING HUB

## 15 – 4,000 Nm

### ABOUT

#### FEATURES

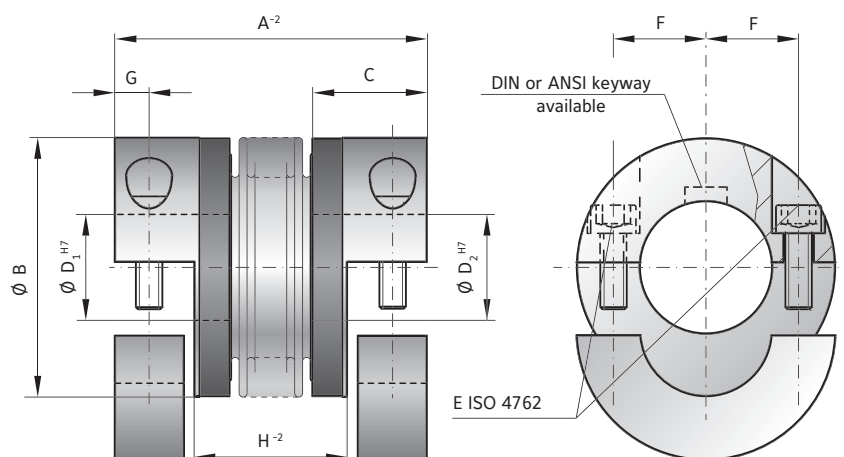
- ▶ radial mounting possible
- ▶ easy installation onto pre-aligned shafts
- ▶ low moment of inertia

#### DESIGN

Two split clamping hubs with two screws in each. Brief overloads of up to 1.5x the rated torque are acceptable.

#### MATERIAL

- ▶ **Bellows:** high grade stainless steel
- ▶ **Hubs:** see table



## MODEL BKH

| SIZE                                                   |                                | 15                |      | 30                |      | 60                |      | 80                |      | 150               |      | 200               |      | 300               |      | 500               |      | 800   |      | 1500  |      | 4000  |     |
|--------------------------------------------------------|--------------------------------|-------------------|------|-------------------|------|-------------------|------|-------------------|------|-------------------|------|-------------------|------|-------------------|------|-------------------|------|-------|------|-------|------|-------|-----|
| Rated torque (Nm)                                      | T <sub>KN</sub>                | 15                |      | 30                |      | 60                |      | 80                |      | 150               |      | 200               |      | 300               |      | 500               |      | 800   |      | 1500  |      | 4000  |     |
| Overall length (mm)                                    | A <sup>-2</sup>                | 59                | 66   | 69                | 77   | 83                | 93   | 94                | 106  | 95                | 107  | 105               | 117  | 111               | 125  | 133               | 146  | 140   | 166  | 225   |      |       |     |
| Outside diameter (mm)                                  | B                              | 49                |      | 55                |      | 66                |      | 81                |      | 81                |      | 90                |      | 110               |      | 124               |      | 134   |      | 157   |      | 200   |     |
| Fit length (mm)                                        | C                              | 22                |      | 27                |      | 31                |      | 36                |      | 36                |      | 41                |      | 43                |      | 51                |      | 45    |      | 55    |      | 85    |     |
| Inside diameter possible from Ø to Ø H7 (mm)           | D <sub>1</sub> /D <sub>2</sub> | 8-28              |      | 10-30             |      | 12-35             |      | 14-42             |      | 19-42             |      | 22-45             |      | 24-60             |      | 35-60             |      | 40-75 |      | 50-80 |      | 50-90 |     |
| Fastening screw ISO 4762                               | E                              | M5                |      | M6                |      | M8                |      | M10               |      | M10               |      | M12               |      | M12               |      | M16               |      | M16   |      | M20   |      | M24   |     |
| Tightening torque of the fastening screw (Nm)          |                                | 8                 |      | 15                |      | 40                |      | 50                |      | 70                |      | 120               |      | 130               |      | 200               |      | 250   |      | 470   |      | 1200  |     |
| Distance between centerlines (mm)                      | F                              | 17                |      | 19                |      | 23                |      | 27                |      | 27                |      | 31                |      | 39                |      | 41                |      | 48    |      | 55    |      | 65    |     |
| Distance (mm)                                          | G                              | 6.5               |      | 7.5               |      | 9.5               |      | 11                |      | 11                |      | 12.5              |      | 13                |      | 16.5              |      | 18    |      | 22.5  |      | 28    |     |
| Distance (mm)                                          | H <sup>-2</sup>                | 29                | 36   | 35                | 43   | 41                | 51   | 47                | 59   | 48                | 60   | 51                | 63   | 55                | 69   | 62                | 75   | 65.5  | 71   | 107   |      |       |     |
| Moment of inertia (10 <sup>-3</sup> kgm <sup>2</sup> ) | J <sub>ges</sub>               | 0.07              | 0.08 | 0.14              | 0.15 | 0.23              | 0.26 | 0.65              | 0.67 | 2.5               | 3.2  | 4.5               | 5.4  | 8.5               | 10.5 | 17.3              | 19.6 | 24.3  | 49.2 | 165   |      |       |     |
| Hub material                                           |                                | Al optional steel |      | Al optional steel |      | Al optional steel |      | Al optional steel |      | steel optional AL |      | steel optional AL |      | steel optional AL |      | steel optional AL |      | steel |      | steel |      | steel |     |
| Approximate weight (kg)                                |                                | 0.15              |      | 0.3               |      | 0.4               |      | 0.8               |      | 1.7               |      | 2.5               |      | 4                 |      | 7.5               |      | 7     |      | 12    |      | 28    |     |
| Torsional stiffness (10 <sup>3</sup> Nm/rad)           | C <sub>T</sub>                 | 20                | 15   | 39                | 28   | 76                | 55   | 129               | 85   | 175               | 110  | 191               | 140  | 450               | 350  | 510               | 500  | 780   | 1304 | 3400  |      |       |     |
| Axial ± (mm)                                           | Max. values                    | 1                 | 2    | 1                 | 2    | 1.5               | 2    | 2                 | 3    | 2                 | 3    | 2                 | 3    | 2.5               | 3.5  | 2.5               | 3.5  | 3.5   | 3.5  | 3.5   | 3.5  | 3.5   | 3.5 |
| Lateral ± (mm)                                         |                                | 0.15              | 0.2  | 0.2               | 0.25 | 0.2               | 0.25 | 0.2               | 0.25 | 0.2               | 0.25 | 0.3               | 0.25 | 0.3               | 0.25 | 0.3               | 0.35 | 0.35  | 0.35 | 0.35  | 0.35 | 0.4   | 0.4 |
| Angular ± (degree)                                     |                                | 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   | 1.5  | 1.5   | 1.5  | 1.5   | 1.5 |
| Axial spring stiffness (N/mm)                          | C <sub>a</sub>                 | 25                | 15   | 50                | 30   | 72                | 48   | 48                | 32   | 82                | 52   | 90                | 60   | 105               | 71   | 70                | 48   | 100   | 320  | 565   |      |       |     |
| Lateral spring stiffness (N/mm)                        | C <sub>r</sub>                 | 475               | 137  | 900               | 270  | 1200              | 420  | 920               | 290  | 1550              | 435  | 2040              | 610  | 3750              | 1050 | 2500              | 840  | 2000  | 3600 | 6070  |      |       |     |

| ORDERING EXAMPLE                                                                                                                                                              | BK2 / BKH | 80 | 94 | 20 | 22.23 | XX                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----|----|----|-------|---------------------------------------------------|
| Model                                                                                                                                                                         | ●         |    |    |    |       | Special designation only<br>(e.g. anodized hubs). |
| Size                                                                                                                                                                          |           | ●  |    |    |       |                                                   |
| Overall length mm                                                                                                                                                             |           |    | ●  |    |       |                                                   |
| Bore D1 H7                                                                                                                                                                    |           |    |    | ●  |       |                                                   |
| Bore D2 H7                                                                                                                                                                    |           |    |    |    | ●     |                                                   |
| For custom features place an XX at the end of the part number and describe the special requirements (e.g. BKH / 80 / 94 / 20 / 22.23 / XX; XX=finely balanced for 25,000 rpm) |           |    |    |    |       |                                                   |

**BKL**

# WITH CLAMPING HUB

## 2 - 500 Nm



### ABOUT

#### FEATURES

- easy to mount
- light weight and low moment of inertia
- economical design

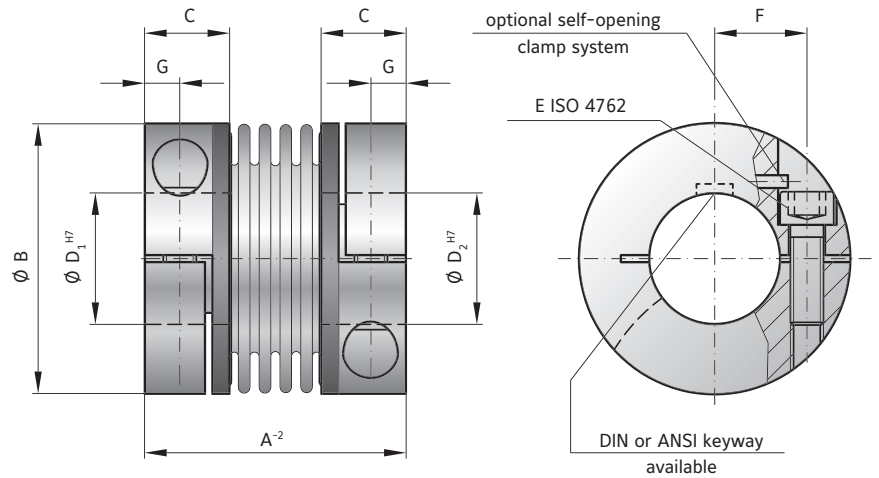
#### MATERIAL

- **Bellows:** high grade stainless steel
- **Hubs:** see table

#### DESIGN

Two clamping hubs concentrically mounted to flexible bellows. Brief overloads of up to 1.5x the rated torque are acceptable.

**Optional:** self-opening clamp system to open the bore during installation and removal by backing out the clamping screw.



## MODEL BKL

| SIZE                                                             |             | 2                    | 4.5                  | 10                   | 15                   | 30                   | 60                   | 80                   | 150                  | 300                  | 500                  |
|------------------------------------------------------------------|-------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Rated torque (Nm)                                                | $T_{KN}$    | 2                    | 4.5                  | 10                   | 15                   | 30                   | 60                   | 80                   | 150                  | 300                  | 500                  |
| Overall length (mm)                                              | $A^{-2}$    | 30                   | 40                   | 44                   | 58                   | 68                   | 79                   | 92                   | 92                   | 109                  | 114                  |
| Outside diameter (mm)                                            | B           | 25                   | 32                   | 40                   | 49                   | 56                   | 66                   | 82                   | 82                   | 110                  | 123                  |
| Fit length (mm)                                                  | C           | 10.5                 | 13                   | 13                   | 21.5                 | 26                   | 28                   | 32.5                 | 32.5                 | 41                   | 42.5                 |
| Inside diameter possible from $\emptyset$ to $\emptyset$ H7 (mm) | $D_{1/2}$   | 4-12.7               | 6-16                 | 6-24                 | 8-28                 | 10-32                | 14-35                | 16-42                | 19-42                | 24-60                | 35-62                |
| Fastening screw ISO 4762                                         | E           | M3                   | M4                   | M4                   | M5                   | M6                   | M8                   | M10                  | M10                  | M12                  | M16                  |
| Tightening torque of the fastening screw (Nm)                    |             | 2.3                  | 4                    | 4.5                  | 8                    | 15                   | 40                   | 70                   | 85                   | 120                  | 200                  |
| Distance between centerlines (mm)                                | F           | 8                    | 11                   | 14                   | 17                   | 20                   | 23                   | 27                   | 27                   | 39                   | 41                   |
| Distance (mm)                                                    | G           | 4                    | 5                    | 5                    | 6.5                  | 7.5                  | 9.5                  | 11                   | 11                   | 13                   | 17                   |
| Moment of inertia ( $10^{-3} \text{ kgm}^2$ )                    | $J_{ges}$   | 0.002                | 0.007                | 0.016                | 0.065                | 0.12                 | 0.3                  | 0.75                 | 1.8   0.8            | 7.5   3.1            | 11.7   4.9           |
| Hub material                                                     |             | AL<br>optional steel | AL<br>optional steel | AL<br>optional steel | AL<br>optional steel | AL<br>optional steel | AL<br>optional steel | AL<br>optional steel | steel<br>optional AL | steel<br>optional AL | steel<br>optional AL |
| Approximate weight (kg)                                          |             | 0.02                 | 0.05                 | 0.06                 | 0.16                 | 0.25                 | 0.4                  | 0.7                  | 1.7   0.75           | 3.8   1.6            | 4.9   2.1            |
| Torsional stiffness ( $10^3 \text{ Nm/rad}$ )                    | $C_T$       | 1.5                  | 7                    | 9                    | 23                   | 31                   | 72                   | 80                   | 141                  | 157                  | 290                  |
| Axial $\pm$ (mm)                                                 | Max. values | 0.5                  | 1                    | 1                    | 1                    | 1                    | 1.5                  | 2                    | 2                    | 2                    | 2.5                  |
| Lateral $\pm$ (mm)                                               |             | 0.2                  | 0.2                  | 0.2                  | 0.2                  | 0.2                  | 0.2                  | 0.2                  | 0.2                  | 0.2                  | 0.2                  |
| Angular $\pm$ (degree)                                           |             | 1                    | 1                    | 1                    | 1                    | 1                    | 1                    | 1                    | 1                    | 1                    | 1                    |
| Axial spring stiffness (N/mm)                                    | $C_a$       | 8                    | 35                   | 30                   | 30                   | 50                   | 67                   | 44                   | 77                   | 112                  | 72                   |
| Lateral spring stiffness (N/mm)                                  | $C_r$       | 50                   | 350                  | 320                  | 315                  | 366                  | 679                  | 590                  | 960                  | 2940                 | 1450                 |

| ORDERING EXAMPLE                                                                                                                                                         | BKL | 80 | 26 | 22.23 | XX                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|----|-------|---------------------------------------------------|
| Model                                                                                                                                                                    | ●   |    |    |       | Special designation only<br>(e.g. anodized hubs). |
| Size                                                                                                                                                                     |     | ●  |    |       |                                                   |
| Bore D1 H7                                                                                                                                                               |     |    | ●  |       |                                                   |
| Bore D2 H7                                                                                                                                                               |     |    |    | ●     |                                                   |
| For custom features place an XX at the end of the part number and describe the special requirements (e.g. BKL / 80 / 26 / 22.23 / XX; XX=finely balanced for 25,000 rpm) |     |    |    |       |                                                   |



## ABOUT

## FEATURES

- for high temperatures and aggressive media
- compact design
- easy to mount

## MATERIAL

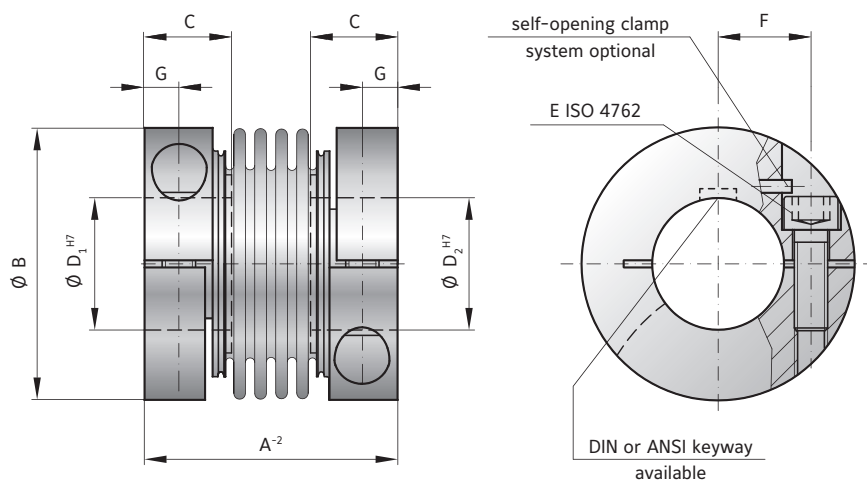
- **Bellows:** high grade stainless steel
- **Hubs:** high grade stainless steel

- **Screws:** Grade 12.9 Geomet coated (alternate materials on request)

## DESIGN

Two clamping hubs concentrically mounted to flexible bellows.  
Brief overloads of up to 1.5x the rated torque are acceptable.  
From -40° to +300°C operating temperature.

**Optional:**  
self-opening clamp system to open the bore during installation and removal by backing out the clamping screw.



## MODEL BKS

| SIZE                                                                  |             |  | 15     | 30     | 60     | 150    | 300    | 500    |
|-----------------------------------------------------------------------|-------------|--|--------|--------|--------|--------|--------|--------|
| Rated torque (Nm)                                                     | $T_{KN}$    |  | 15     | 30     | 60     | 150    | 300    | 500    |
| Overall length (mm)                                                   | $A^{-2}$    |  | 45     | 52     | 66     | 76     | 89     | 95     |
| Outside diameter (mm)                                                 | B           |  | 49     | 56     | 66     | 82     | 110    | 123    |
| Fit length (mm)                                                       | C           |  | 17     | 20     | 24     | 30     | 34     | 35     |
| Inside diameter* possible from $\varnothing$ to $\varnothing H7$ (mm) | $D_1/D_2$   |  | 12-28  | 14-32  | 16-35  | 19-42  | 24-60  | 32-75  |
| Fastening screw ISO 4762                                              | E           |  | M5     | M6     | M8     | M10    | M12    | M12    |
| Tightening torque of the fastening screw (Nm)                         |             |  | 8      | 15     | 40     | 75     | 120    | 125    |
| Distance between centerlines (mm)                                     | F           |  | 17.5   | 20     | 23     | 27     | 39     | 45     |
| Distance (mm)                                                         | G           |  | 6      | 7.5    | 9.5    | 11     | 13     | 13     |
| Moment of inertia ( $10^{-3} \text{ kgm}^2$ )                         | $J_{ges.}$  |  | 0.1    | 0.2    | 0.53   | 1.5    | 5.5    | 8.1    |
| Approximate weight (kg)                                               |             |  | 0.27   | 0.42   | 0.78   | 1.5    | 2.9    | 3.5    |
| Torsional stiffness ( $10^3 \text{ Nm/rad}$ )                         | $C_T$       |  | 23     | 31     | 72     | 141    | 157    | 290    |
| Axial $\pm$ (mm)                                                      | Max. values |  | 1      | 1      | 1.5    | 2      | 2      | 2.5    |
| Lateral $\pm$ (mm)                                                    |             |  | 0.2    | 0.2    | 0.2    | 0.2    | 0.2    | 0.2    |
| Angular $\pm$ (degree)                                                |             |  | 1      | 1      | 1      | 1      | 1      | 1      |
| Axial spring stiffness (N/mm)                                         | $C_s$       |  | 30     | 50     | 67     | 77     | 112    | 72     |
| Lateral spring stiffness (N/mm)                                       | $C_r$       |  | 315    | 366    | 679    | 960    | 2940   | 2200   |
| Speed max. with $G = 2.5$ balancing ( $\text{min}^{-1}$ )             |             |  | 60,000 | 50,500 | 50,000 | 40,500 | 40,000 | 30,000 |

\* Smaller bore diameter available at reduced torque capacity

| ORDERING EXAMPLE                                                                                                                                                         | BKS | 15 | 20 | 19.05 | XX |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|----|-------|----|
| Model                                                                                                                                                                    | ●   |    |    |       |    |
| Size                                                                                                                                                                     |     | ●  |    |       |    |
| Bore D1 H7                                                                                                                                                               |     |    | ●  |       |    |
| Bore D2 H7                                                                                                                                                               |     |    |    | ●     |    |
| For custom features place an XX at the end of the part number and describe the special requirements (e.g. BKS / 15 / 20 / 19.05 / XX; XX=finely balanced for 25,000 rpm) |     |    |    |       |    |

Special designation only  
(e.g. special bore tolerance).

#### ABOUT

##### FEATURES

- ▶ for space restricted installations
- ▶ light weight and low moment of inertia
- ▶ easy to mount

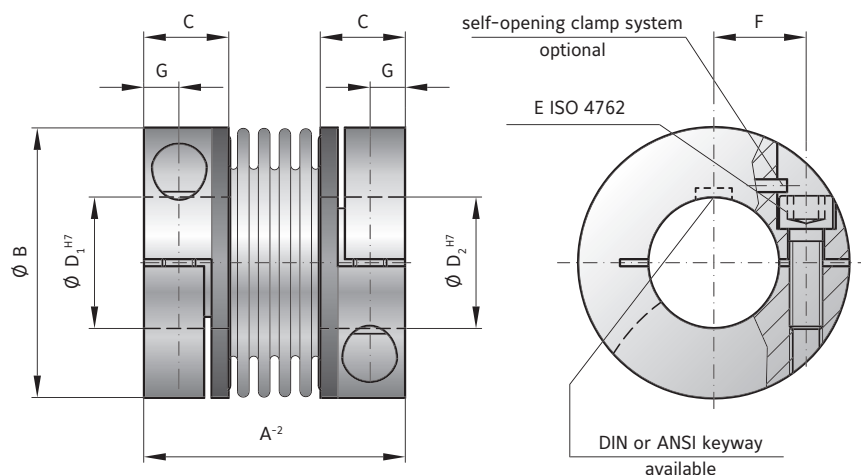
##### MATERIAL

- ▶ **Bellows:** high grade stainless steel
- ▶ **Hubs:** see table

##### DESIGN

Two clamping hubs concentrically mounted to flexible bellows. Brief overloads of up to 1.5x the rated torque are acceptable.

**Optional:** self-opening clamp system to open the bore during installation and removal by backing out the clamping screw.



#### MODEL BKC

| SIZE                                                                 |             |  | 15     | 30     | 60     | 150    | 300    | 500    |
|----------------------------------------------------------------------|-------------|--|--------|--------|--------|--------|--------|--------|
| Rated torque (Nm)                                                    | $T_{KN}$    |  | 15     | 30     | 60     | 150    | 300    | 500    |
| Overall length (mm)                                                  | $A^{-2}$    |  | 48     | 58     | 67     | 78     | 94     | 100    |
| Outside diameter (mm)                                                | B           |  | 49     | 56     | 66     | 82     | 110    | 123    |
| Fit length (mm)                                                      | C           |  | 16.5   | 21     | 23     | 27.5   | 34     | 34     |
| Inside diameter possible from $\varnothing$ to $\varnothing$ H7 (mm) | $D_1/D_2$   |  | 8-28   | 12-32  | 14-35  | 19-42  | 24-60  | 32-75  |
| Fastening screw ISO 4762                                             | E           |  | M5     | M6     | M8     | M10    | M12    | M12    |
| Tightening torque of the fastening screw (Nm)                        |             |  | 8      | 15     | 40     | 75     | 120    | 125    |
| Distance between centerlines (mm)                                    | F           |  | 17.5   | 20     | 23     | 27     | 39     | 45     |
| Distance (mm)                                                        | G           |  | 6.5    | 7.5    | 9.5    | 11     | 13     | 13     |
| Moment of inertia ( $10^{-3}$ kgm <sup>2</sup> )                     | $J_{ges.}$  |  | 0.05   | 0.1    | 0.26   | 0.65   | 6.3    | 9      |
| Hub material                                                         |             |  | AL     | AL     | AL     | AL     | steel  | steel  |
| Approximate weight (kg)                                              |             |  | 0.13   | 0.21   | 0.37   | 0.72   | 3.26   | 3.52   |
| Torsional stiffness ( $10^3$ Nm/rad)                                 | $C_T$       |  | 23     | 31     | 72     | 141    | 157    | 290    |
| Axial $\pm$ (mm)                                                     | Max. values |  | 1      | 1      | 1.5    | 2      | 2      | 2.5    |
| Lateral $\pm$ (mm)                                                   |             |  | 0.2    | 0.2    | 0.2    | 0.2    | 0.2    | 0.2    |
| Angular $\pm$ (degree)                                               |             |  | 1      | 1      | 1      | 1      | 1      | 1      |
| Axial spring stiffness (N/mm)                                        | $C_a$       |  | 30     | 50     | 67     | 77     | 112    | 72     |
| Lateral spring stiffness (N/mm)                                      | $C_r$       |  | 315    | 366    | 679    | 960    | 2940   | 2200   |
| Speed max. with G = 2.5 balancing (min <sup>-1</sup> )               |             |  | 80,000 | 70,000 | 60,000 | 50,000 | 40,000 | 30,000 |

| ORDERING EXAMPLE                                                                                                                                                         | BKC | 60 | 26 | 22.23 | XX                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|----|-------|------------------------------------------------------------|
| Model                                                                                                                                                                    | ●   |    |    |       | Special designation only<br>(e.g. special bore tolerance). |
| Size                                                                                                                                                                     |     | ●  |    |       |                                                            |
| Bore D1 H7                                                                                                                                                               |     |    | ●  |       |                                                            |
| Bore D2 H7                                                                                                                                                               |     |    |    | ●     |                                                            |
| For custom features place an XX at the end of the part number and describe the special requirements (e.g. BKC / 60 / 26 / 22.23 / XX; XX=finely balanced for 25,000 rpm) |     |    |    |       |                                                            |

# ULTRA COMPACT AND STIFF WITH CLAMPING HUB 20 - 1,000 Nm

## ABOUT

### FEATURES

- ▶ extremely compact
- ▶ high torque density
- ▶ low mass and moment of inertia

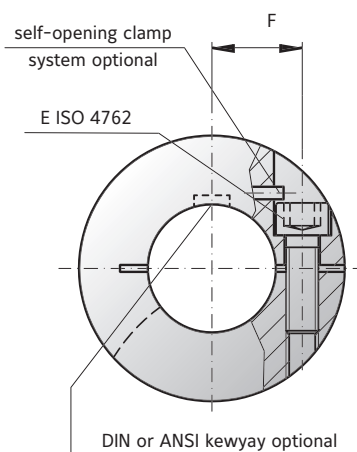
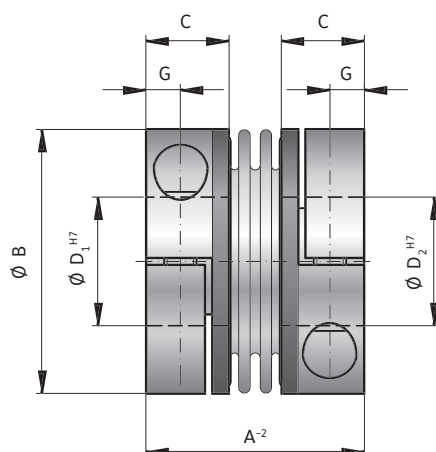
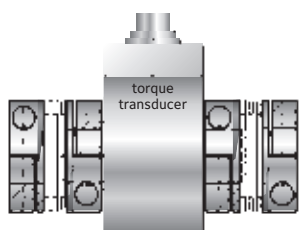
### MATERIAL

- ▶ **Bellows:** high grade stainless steel
- ▶ **Hubs:** see table

### DESIGN

Two clamping hubs concentrically mounted to flexible bellows. Brief overloads of up to 1.5x the rated torque are acceptable.

**Key application:**  
For mounting on a torque transducer.



## MODEL BKM

| SIZE                                                             |            |  | 20     | 200    | 400    | 1000   |
|------------------------------------------------------------------|------------|--|--------|--------|--------|--------|
| Rated torque (Nm)                                                | $T_{KN}$   |  | 20     | 200    | 400    | 1000   |
| Overall length (mm)                                              | $A^{-2}$   |  | 40     | 59     | 75     | 89     |
| Outside diameter (mm)                                            | B          |  | 49     | 66     | 82     | 110    |
| Fit length (mm)                                                  | C          |  | 16.5   | 23     | 27.5   | 34     |
| Inside diameter possible from $\emptyset$ to $\emptyset$ H7 (mm) | $D_{1/2}$  |  | 15-28  | 24-35  | 32-42  | 40-60  |
| Fastening screw ISO 4762                                         |            |  | M5     | M8     | M10    | M12    |
| Tightening torque of the fastening screw (Nm)                    | E          |  | 8      | 40     | 60     | 130    |
| Distance between centerlines (mm)                                | F          |  | 17     | 23     | 27     | 39     |
| Distance (mm)                                                    | G          |  | 6      | 9.5    | 11     | 13     |
| Moment of inertia ( $10^{-3}$ kgm <sup>2</sup> )                 | $J_{ges.}$ |  | 0.05   | 0.18   | 0.62   | 7.2    |
| Hub material                                                     |            |  | AL     | AL     | AL     | steel  |
| Approximate weight (kg)                                          |            |  | 0.13   | 0.4    | 0.7    | 3.5    |
| Torsional stiffness ( $10^3$ Nm/rad)                             | $C_T$      |  | 41.9   | 138    | 170    | 570    |
| Axial $\pm$ (mm)                                                 |            |  | 1      | 1.5    | 1      | 2      |
| Lateral $\pm$ (mm)                                               |            |  | 0.06   | 0.08   | 0.1    | 0.1    |
| Angular $\pm$ (degree)                                           |            |  | 0.5    | 0.5    | 0.5    | 0.5    |
| Axial spring stiffness (N/mm)                                    | $C_a$      |  | 55.8   | 153    | 114    | 148    |
| Lateral spring stiffness (N/mm)                                  | $C_r$      |  | 3,710  | 11,000 | 6,058  | 9,010  |
| Speed max. with $G = 2.5$ balancing $\text{min}^{-1}$            |            |  | 80,000 | 60,000 | 50,000 | 40,000 |

| ORDERING EXAMPLE                                                                                                                                                         | BKM | 20 | 20 | 19.05 | XX |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|----|-------|----|
| Model                                                                                                                                                                    | ●   |    |    |       |    |
| Size                                                                                                                                                                     |     | ●  |    |       |    |
| Bore D1 H7                                                                                                                                                               |     |    | ●  |       |    |
| Bore D2 H7                                                                                                                                                               |     |    |    | ●     |    |
| For custom features place an XX at the end of the part number and describe the special requirements (e.g. BKM / 20 / 20 / 19.05 / XX; XX=finely balanced for 25,000 rpm) |     |    |    |       |    |

**BK3**

# WITH CONICAL CLAMPING SYSTEM

15 – 10,000 Nm



## ABOUT

### FEATURES

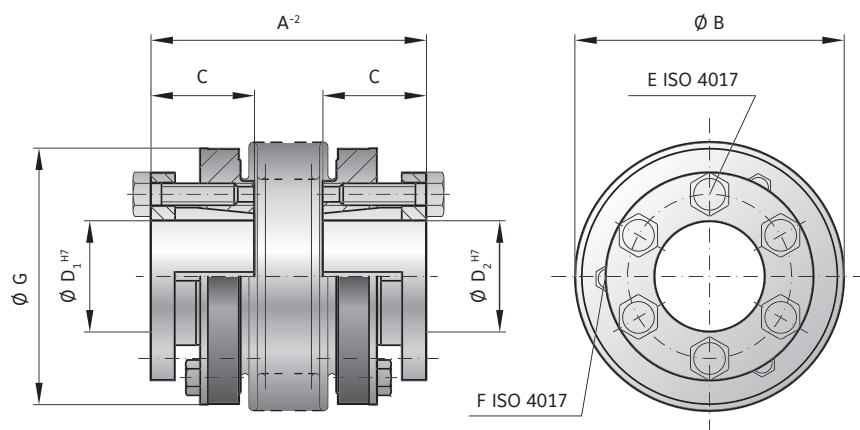
- high clamping pressure
- high torque version
- modern design for removal system

### MATERIAL

- **Bellows:** high grade stainless steel
- **Hubs:** steel

### DESIGN

Two conical clamping hubs concentrically mounted to flexible bellows. Brief overloads of up to 1.5x the rated torque are acceptable.



## MODEL BK3

| SIZE                                                             |             | 15        | 30        | 60        | 150      | 200      | 300       | 500      | 800     | 1500    | 4000    | 6000    | 10000   |
|------------------------------------------------------------------|-------------|-----------|-----------|-----------|----------|----------|-----------|----------|---------|---------|---------|---------|---------|
| Rated torque (Nm)                                                | $T_{KN}$    | 15        | 30        | 60        | 150      | 200      | 300       | 500      | 800     | 1500    | 4000    | 6000    | 10000   |
| Overall length (mm)                                              | $A^{-2}$    | 48 55     | 57 65     | 66 76     | 75 87    | 78 90    | 89 103    | 97 110   | 114     | 141     | 195     | 210     | 217     |
| Outside diameter (mm)                                            | B           | 49        | 55        | 66        | 81       | 90       | 110       | 124      | 133     | 157     | 200     | 253     | 303     |
| Fit length (mm)                                                  | C           | 19        | 22        | 27        | 32       | 32       | 41        | 41       | 50      | 61      | 80      | 85      | 92      |
| Inside diameter possible from $\emptyset$ to $\emptyset$ H7 (mm) | $D_{1/2}$   | 10-22     | 12-23     | 12-29     | 15-38    | 15-44    | 24-56     | 24-60    | 30-60   | 35-70   | 50-100  | 60-140  | 70-180  |
| Fastening screw ISO 4017                                         | E           | 6 x M4    | 6 x M5    | 6 x M5    | 6 x M6   | 6 x M6   | 6 x M8    | 6 x M8   | 6 x M10 | 6 x M12 | 6 x M16 | 6 x M16 | 8 x M16 |
| Tightening torque of the fastening screw (Nm)                    |             | 4         | 6         | 8         | 12       | 14       | 18        | 25       | 40      | 70      | 120     | 150     | 160     |
| Jack screw ISO 4017                                              | F           | 3 x M4    | 3 x M4    | 3 x M5    | 3 x M5   | 3 x M6   | 3 x M6    | 3 x M6   | 3 x M8  | 6 x M8  | 6 x M10 | 6 x M10 | 8 x M10 |
| Outside diameter of hub (mm)                                     | G           | 49        | 55        | 66        | 81       | 90       | 110       | 122      | 116     | 135     | 180     | 246     | 295     |
| Moment of inertia ( $10^{-3} \text{ kgm}^2$ )                    | $J_{ges}$   | 0.07 0.08 | 0.15 0.16 | 0.39 0.41 | 1.2 1.6  | 1.7 2.5  | 5.1 5.9   | 9.1 9.9  | 13.2    | 34.9    | 85.5    | 254     | 629     |
| Approximate weight (kg)                                          |             | 0.25      | 0.4       | 0.7       | 1.2      | 1.8      | 3         | 4.2      | 5.6     | 8.2     | 23      | 32.6    | 45.5    |
| Torsional stiffness ( $10^3 \text{ Nm/rad}$ )                    | $C_T$       | 20 15     | 39 28     | 76 55     | 175 110  | 191 140  | 450 350   | 510 500  | 780     | 1304    | 3400    | 5700    | 10950   |
| Axial $\pm$ (mm)                                                 | Max. values | 1 2       | 1 2       | 1.5 2     | 2 2      | 3 2      | 2.5 3.5   | 2.5 3.5  | 3.5     | 3.5     | 3.5     | 3       | 3       |
| Lateral $\pm$ (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     |
| Angular $\pm$ (degree)                                           |             | 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     |
| Axial spring stiffness (N/mm)                                    | $C_a$       | 25 15     | 50 30     | 72 48     | 82 52    | 90 60    | 105 71    | 70 48    | 100     | 320     | 565     | 1030    | 985     |
| Lateral spring stiffness (N/mm)                                  | $C_l$       | 475 137   | 900 270   | 1200 420  | 1500 435 | 2040 610 | 3750 1050 | 2500 840 | 2000    | 3600    | 6070    | 19200   | 21800   |

| ORDERING EXAMPLE                                                                                                                                                       | BK3 | 60 | 76 | 20 | 22.23 | XX                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|----|----|-------|----------------------------------------------------------------|
| Model                                                                                                                                                                  | ●   |    |    |    |       | Special designation only<br>(e.g. non-standard bore tolerance) |
| Size                                                                                                                                                                   |     | ●  |    |    |       |                                                                |
| Overall length mm                                                                                                                                                      |     |    | ●  |    |       |                                                                |
| Bore D1 H7                                                                                                                                                             |     |    |    | ●  |       |                                                                |
| Bore D2 H7                                                                                                                                                             |     |    |    |    | ●     |                                                                |
| For custom features place an XX at the end of the part number and describe the special requirements (e.g. BK3 / 60 / 76 / 20 / 22.23 / XX; XX=K6 bore tolerance on D1) |     |    |    |    |       |                                                                |

**BK4**

# FOR TAPERED SHAFTS

## 15 – 150 Nm



### ABOUT

#### FEATURES

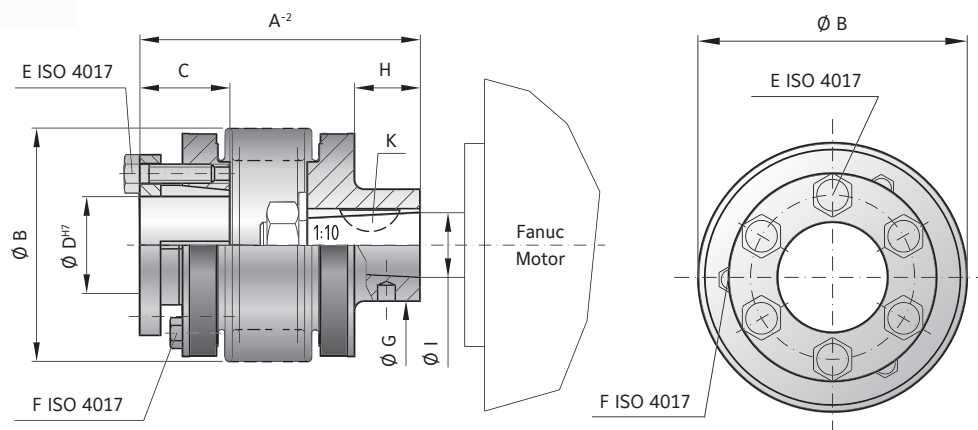
- for tapered shafts
- easy to mount and dismount
- high installed concentricity

#### MATERIAL

- **Bellows:** high grade stainless steel
- **Hubs:** steel

#### DESIGN

Conical clamping system opposite 1:10 tapered bore with feather keyway. Brief overloads of up to 1.5x the rated torque acceptable.



## MODEL BK4

| SIZE                                     |                                |             | 15     |      | 30     |      | 60     |      | 150    |      |
|------------------------------------------|--------------------------------|-------------|--------|------|--------|------|--------|------|--------|------|
| Rated torque                             | (Nm)                           | $T_{KN}$    | 15     |      | 30     |      | 60     |      | 150    |      |
| Overall length                           | (mm)                           | $A^{-2}$    | 47     | 54   | 68     | 76   | 72     | 82   | 82     | 94   |
| Outside diameter                         | (mm)                           | B           | 49     |      | 55     |      | 66     |      | 81     |      |
| Fit length                               | (mm)                           | C           | 19     |      | 22     |      | 27     |      | 32     |      |
| Inside diameter possible from Ø to Ø H7  | (mm)                           | D           | 10-22  |      | 12-23  |      | 12-29  |      | 15-37  |      |
| Fastening screw ISO 4017                 |                                | E           | 6 x M4 |      | 6 x M5 |      | 6 x M5 |      | 6 x M6 |      |
| Tightening torque of the fastening screw | (Nm)                           |             | 4      |      | 6      |      | 8      |      | 12     |      |
| Jack screw ISO 4017                      |                                | F           | 3 x M4 |      | 3 x M4 |      | 3 x M5 |      | 3 x M5 |      |
| Outside diameter of hub                  | (mm)                           | G           | 20     |      | 27     |      | 30     |      | 30     |      |
| Hub length                               | (mm)                           | H           | 8.5    |      | 22     |      | 18     |      | 20     |      |
| Moment of inertia                        | ( $10^{-3}$ kgm <sup>2</sup> ) | $J_{ges}$   | 0.10   | 0.12 | 0.22   | 0.27 | 0.58   | 0.61 | 1.1    | 1.4  |
| Approximate weight                       | (kg)                           |             | 0.25   |      | 0.4    |      | 0.8    |      | 1.35   |      |
| Torsional stiffness                      | ( $10^3$ Nm/rad)               | $C_T$       | 20     | 15   | 39     | 28   | 76     | 55   | 175    | 110  |
| Axial                                    | ± (mm)                         | Max. values | 1      | 2    | 1      | 2    | 1.5    | 2    | 2      | 3    |
| Lateral                                  | ± (mm)                         |             | 0.15   | 0.2  | 0.2    | 0.25 | 0.2    | 0.25 | 0.2    | 0.25 |
| Angular                                  | ± (degree)                     |             | 1      | 1.5  | 1      | 1.5  | 1      | 1.5  | 1      | 1.5  |
| Axial spring stiffness                   | (N/mm)                         | $C_a$       | 25     | 15   | 50     | 30   | 72     | 48   | 82     | 52   |
| Lateral spring stiffness                 | (N/mm)                         | $C_r$       | 475    | 137  | 900    | 270  | 1200   | 420  | 1500   | 435  |
| Cone Ø (Fanuc-Motor)                     | (mm)                           | I           | 11     |      | 16     |      | 16     |      | 16     |      |
| Key width                                | (mm)                           | K           | 4      |      | 5      |      | 5      |      | 5      |      |

| ORDERING EXAMPLE                                                                                                                                                       | BK4 | 150 | 82 | 20 | XX                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|----|----|----------------------------------------------------------------|
| Model                                                                                                                                                                  | ●   |     |    |    | Special designation only<br>(e.g. non-standard bore tolerance) |
| Size                                                                                                                                                                   |     | ●   |    |    |                                                                |
| Overall length mm                                                                                                                                                      |     |     | ●  |    |                                                                |
| Bore D1 H7                                                                                                                                                             |     |     |    | ●  |                                                                |
| For custom features place an XX at the end of the part number and describe the special requirements (e.g. BK4 / 150 / 82 / 20 / XX; XX=finely balanced for 25,000 rpm) |     |     |    |    |                                                                |

**BK5**

# BLIND MATE WITH CLAMPING HUB

## 15 - 1,500 Nm

### ABOUT

#### FEATURES

- ▶ easy installation and removal
- ▶ electrically and thermally isolating
- ▶ absolutely backlash free assembly

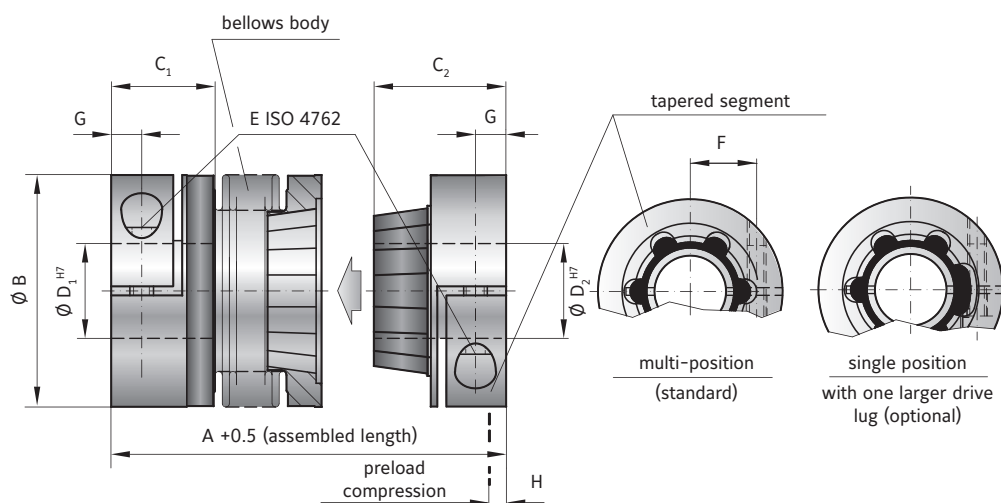
#### MATERIAL

- ▶ **Bellows:** high grade stainless steel
- ▶ **Hubs:** up through size 80 Aluminum, size 150 and up steel

- ▶ **Tapered male segment:** high strength plastic

#### DESIGN

Two clamping hubs, one of which has a tapered male projection for blind mate connection. Brief overloads of up to 1.5x the rated torque are acceptable.



## MODEL BK5

| SIZE                                              |             |  | 15        | 30        | 60        | 80        | 150       | 300       | 500       | 800       | 1500      |
|---------------------------------------------------|-------------|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Rated torque (Nm)                                 | $T_{KN}$    |  | 15        | 30        | 60        | 80        | 150       | 300       | 500       | 800       | 1500      |
| Overall length (inserted) (mm)                    | $A^{+0.5}$  |  | 60 67     | 71 79     | 85 95     | 94 106    | 95 107    | 114 128   | 136 149   | 150       | 172       |
| Outside diameter (mm)                             | B           |  | 49        | 55        | 66        | 81        | 81        | 110       | 124       | 133       | 157       |
| Fit length (mm)                                   | $C_1$       |  | 22        | 27        | 32        | 36        | 36        | 43        | 51        | 45        | 55        |
| Fit length (mm)                                   | $C_2$       |  | 28        | 33        | 39        | 43        | 43        | 52        | 61        | 74        | 94        |
| Inside diameter possible from Ø to Ø H7 (mm)      | $D_1$       |  | 8-28      | 10-30     | 12-32     | 14-42     | 14-42     | 24-60     | 35-60     | 40-75     | 50-80     |
| Inside diameter possible from Ø to Ø H7 (mm)      | $D_2$       |  | 8-22      | 10-25     | 12-32     | 14-38     | 14-38     | 24-58     | 35-60     | 40-62     | 50-75     |
| Fastening screw ISO 4762                          | E           |  | M5        | M6        | M8        | M10       | M10       | M12       | M16       | 2 x M16** | 2 x M20** |
| Tightening torque of the fastening screw (Nm)     |             |  | 8         | 15        | 40        | 50        | 70        | 130       | 200       | 250       | 470       |
| Distance between centerlines (mm)                 | F           |  | 17        | 19        | 23        | 27        | 27        | 39        | 41        | 2 x 48**  | 2 x 55**  |
| Distance (mm)                                     | G           |  | 6.5       | 7.5       | 9.5       | 11        | 11        | 13        | 16.5      | 18        | 22.5      |
| Preload compression (mm)                          | H           |  | 0.2 - 1.0 | 0.5 - 1.0 | 0.5 - 1.5 | 0.5 - 1.5 | 0.5 - 1.5 | 0.5 - 1.5 | 1.0 - 2.0 | 1.0 - 2.5 | 0.5 - 1.5 |
| Axial recovery force at maximum pretensioning (N) |             |  | 20 12     | 50 30     | 70 45     | 48 32     | 82 52     | 157 106   | 140 96    | 200       | 650       |
| Moment of inertia ( $10^{-3} \text{ kgm}^2$ )     | $J_{ges}$   |  | 0.07 0.08 | 0.14 0.15 | 0.23 0.26 | 0.65 0.67 | 2.2 2.4   | 7.4 7.9   | 13.7 14.4 | 21.5      | 51.4      |
| Approximate weight (kg)                           |             |  | 0.1 0.1   | 0.3 0.3   | 0.4 0.4   | 0.9 0.9   | 1.8 1.8   | 4 4       | 6.5 6.7   | 9         | 15.3      |
| Torsional stiffness ( $10^3 \text{ Nm/rad}$ )     | $C_T$       |  | 10 8      | 20 14     | 38 28     | 65 43     | 88 55     | 225 175   | 255 245   | 400       | 650       |
| Axial* ± (mm)                                     | Max. values |  | 0.5 1     | 0.5 1     | 0.5 1     | 1 1       | 2 1       | 2 1.5     | 2 2.5     | 3 3.5     | 2         |
| Lateral ± (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  | 0.3 0.35  | 0.35      | 0.35      |
| Angular ± (degree)                                |             |  | 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       |
| Lateral spring stiffness (N/mm)                   | $C_r$       |  | 475 137   | 900 270   | 1200 420  | 920 290   | 1550 435  | 3750 1050 | 2500 840  | 2000      | 3600      |

\*in addition to maximum allowable pretension \*\*180° opposed in each clamping hub.

| ORDERING EXAMPLE                                                                                                                                                           | BK5 | 30 | 71 | 18 | 19 | XX                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|----|----|----|------------------------------------------------------------|
| Model                                                                                                                                                                      | ●   |    |    |    |    | Special designation only<br>(e.g. special bore tolerance). |
| Size                                                                                                                                                                       |     | ●  |    |    |    |                                                            |
| Overall length mm                                                                                                                                                          |     |    | ●  |    |    |                                                            |
| Bore D1 H7                                                                                                                                                                 |     |    |    | ●  |    |                                                            |
| Bore D2 H7                                                                                                                                                                 |     |    |    |    | ●  |                                                            |
| For custom features place an XX at the end of the part number and describe the special requirements (e.g. BK5 / 30 / 71 / 18 / 19 / XX; XX=finely balanced for 25,000 rpm) |     |    |    |    |    |                                                            |

**BK6**

# BLIND MATE WITH CONICAL CLAMPING RING

## 15 - 1,500 Nm

### ABOUT

#### FEATURES

- axial mounting possible
- easy installation and removal
- naturally very well balanced due to self centering clamping ring system
- absolutely backlash free assembly

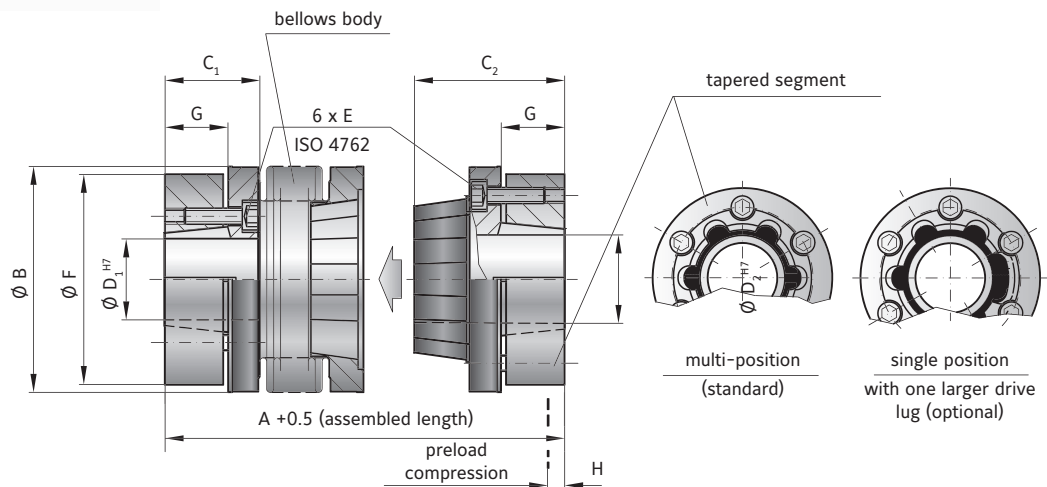
#### MATERIAL

- **Bellows:** high grade stainless steel
- **Hubs:** steel

- **Tapered male segment:** high strength plastic

#### DESIGN

Two conical clamping ring hubs, one of which has a tapered male projection for blind mate connection. Brief overloads of up to 1.5x the rated torque are acceptable.



## MODEL BK6

| SIZE                                              |             |  | 15         | 30         | 60          | 150        | 300         | 500        | 800       | 1500      |
|---------------------------------------------------|-------------|--|------------|------------|-------------|------------|-------------|------------|-----------|-----------|
| Rated torque (Nm)                                 | $T_{KN}$    |  | 15         | 30         | 60          | 150        | 300         | 500        | 800       | 1500      |
| Overall length (gesteckt) (mm)                    | $A^{+0.5}$  |  | 58   65    | 68   76    | 79   89     | 97   109   | 113   127   | 132   145  | 140       | 158       |
| Outside diameter (mm)                             | B           |  | 49         | 55         | 66          | 81         | 110         | 124        | 133       | 157       |
| Fit length (mm)                                   | $C_1$       |  | 13.5       | 21.5       | 18          | 23.5       | 27          | 32         | 42        | 53        |
| Fit length (mm)                                   | $C_2$       |  | 29         | 34         | 39          | 49.5       | 59          | 68         | 74        | 90.5      |
| Inside diameter possible from Ø to Ø H7 (mm)      | $D_1$       |  | 10-22      | 12-24      | 12-32       | 15-40      | 24-56       | 30-60      | 40-62     | 50-75     |
| Inside diameter possible from Ø to Ø H7 (mm)      | $D_2$       |  | 10-22      | 12-24      | 12-32       | 15-40      | 24-56       | 30-60      | 40-62     | 50-75     |
| Fastening screw ISO 4762                          |             |  | M4         | M5         | M5          | M6         | M8          | M8         | M10       | M12       |
| Tightening torque of the fastening screw (Nm)     | E           |  | 3.5        | 6.5        | 8           | 12         | 30          | 32         | 55        | 110       |
| Diameter of clamping ring (mm)                    | F           |  | 46.5       | 51         | 60          | 74         | 102         | 114        | 126       | 146       |
| Clamping ring length (mm)                         | G           |  | 9.5        | 10.5       | 11.5        | 17.5       | 20          | 23         | 27        | 32        |
| Preload compression (mm)                          |             |  | 0.2 - 1.0  | 0.5 - 1.0  | 0.5 - 1.5   | 0.5 - 1.5  | 0.5 - 1.5   | 1.0 - 2.0  | 1.0 - 2.0 | 0.5 - 1.5 |
| Axial recovery force at maximum pretensioning (N) | H           |  | 20   12    | 50   30    | 70   45     | 82   52    | 157   106   | 140   96   | 400       | 650       |
| Moment of inertia ( $10^{-3} \text{ kgm}^2$ )     | $J_{GKS}$   |  | 0.1   0.12 | 0.2   0.25 | 0.4   0.45  | 2.0   2.5  | 5.4   6.1   | 8.4   9.1  | 17.5      | 44        |
| Approximate weight (kg)                           |             |  | 0.3   0.32 | 0.5   0.52 | 0.82   0.84 | 1.6   1.7  | 4.1   4.2   | 6.0   6.3  | 8.1       | 16.2      |
| Torsional stiffness ( $10^3 \text{ Nm/rad}$ )     | $C_r$       |  | 10   8     | 20   14    | 38   28     | 88   55    | 225   175   | 255   245  | 400       | 660       |
| Axial* ± (mm)                                     |             |  | 0.5   1    | 0.5   1    | 0.5   1     | 1   2      | 1.5   2     | 2.5   3.5  | 3         | 2         |
| Lateral ± (mm)                                    | Max. values |  | 0.15   0.2 | 0.2   0.25 | 0.2   0.25  | 0.2   0.25 | 0.25   0.3  | 0.3   0.35 | 0.35      | 0.35      |
| Angular ± (degree)                                |             |  | 1   1.5    | 1   1.5    | 1   1.5     | 1   1.5    | 1   1.5     | 1   1.5    | 1.5       | 1.5       |
| Lateral spring stiffness (N/mm)                   | $C_r$       |  | 475   137  | 900   270  | 1200   420  | 1550   435 | 3750   1050 | 2500   840 | 2000      | 3600      |

\* in addition to maximum allowable pretension

Higher torques upon request

| ORDERING EXAMPLE                                                                                                                                                           | BK6 | 30 | 76 | 18 | 19 | XX |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|----|----|----|----|
| Model                                                                                                                                                                      | ●   |    |    |    |    |    |
| Size                                                                                                                                                                       |     | ●  |    |    |    |    |
| Overall length mm                                                                                                                                                          |     |    | ●  |    |    |    |
| Bore D1 H7                                                                                                                                                                 |     |    |    | ●  |    |    |
| Bore D2 H7                                                                                                                                                                 |     |    |    |    | ●  |    |
| For custom features place an XX at the end of the part number and describe the special requirements (e.g. BK6 / 30 / 76 / 18 / 19 / XX; XX=finely balanced for 25,000 rpm) |     |    |    |    |    |    |

Special designation only  
(e.g. special bore tolerance).



**BK7**

# WITH EXPANDING SHAFT

15 – 300 Nm



## ABOUT

### FEATURES

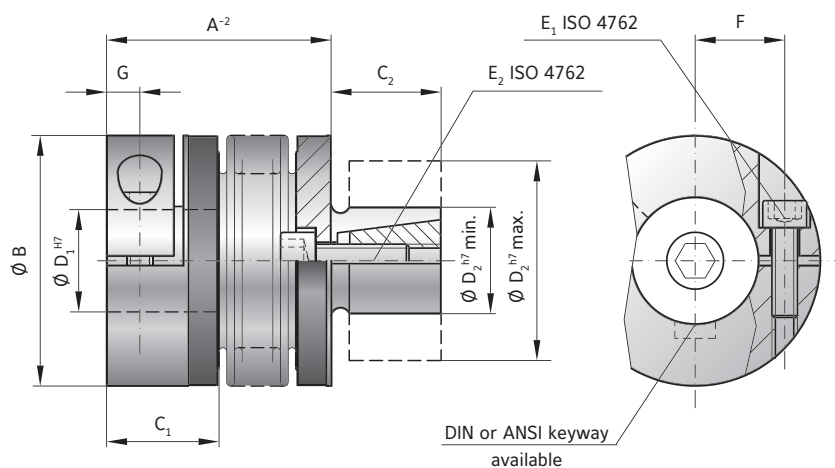
- ▶ for hollow shaft mounting
- ▶ short design saves installation space
- ▶ solution for mismatched shaft / bore

### MATERIAL

- ▶ **Bellows:** high grade stainless steel
- ▶ **Hubs:** see table
- ▶ **Expanding mandrel system:** steel

### DESIGN

One clamping hub on one end with an expanding shaft on the other end.  
Brief overloads of up to 1.5x the rated torque are acceptable.



## MODEL BK7

| SIZE                                                        |                |             | 15    |      | 30    |      | 60    |      | 150   |      | 300   |      |
|-------------------------------------------------------------|----------------|-------------|-------|------|-------|------|-------|------|-------|------|-------|------|
| Rated torque                                                | (Nm)           | $T_{KN}$    | 15    |      | 30    |      | 60    |      | 150   |      | 300   |      |
| Overall length                                              | (mm)           | $A^{-2}$    | 45    | 52   | 53    | 61   | 62    | 72   | 71    | 83   | 84    | 98   |
| Outside diameter                                            | (mm)           | B           | 49    |      | 55    |      | 66    |      | 81    |      | 110   |      |
| Fit length                                                  | (mm)           | $C_1$       | 22    |      | 27    |      | 32    |      | 36    |      | 43    |      |
| Fit length                                                  | (mm)           | $C_2$       | 20    |      | 25    |      | 27    |      | 32    |      | 45    |      |
| Inside diameter possible from $\emptyset$ to $\emptyset$ H7 | (mm)           | $D_1$       | 8-28  |      | 10-30 |      | 12-35 |      | 19-42 |      | 30-60 |      |
| Shaft diameter from $\emptyset$ to $\emptyset$ h7           | (mm)           | $D_2$       | 13-25 |      | 14-30 |      | 23-38 |      | 26-42 |      | 38-60 |      |
| Fastening screw ISO 4762                                    |                | $E_{1/2}$   | M5    |      | M6    |      | M8    |      | M10   |      | M12   |      |
| Tightening torque of the fastening screw                    | (Nm)           | $E_{1/2}$   | 8     |      | 14    |      | 38    |      | 65    |      | 120   |      |
| Distance between centerlines                                | (mm)           | F           | 17    |      | 19    |      | 23    |      | 27    |      | 39    |      |
| Distance                                                    | (mm)           | G           | 6.5   |      | 7.5   |      | 9.5   |      | 11    |      | 13    |      |
| Moment of inertia ( $10^{-3}$ kgm <sup>2</sup> )            |                | $J_{ges}$   | 0.07  | 0.08 | 0.14  | 0.15 | 0.23  | 0.26 | 2.2   | 2.4  | 6.5   | 8.9  |
| Hub material                                                |                |             | Al    |      | Al    |      | Al    |      | steel |      | steel |      |
| Approximate weight                                          | (kg)           |             | 0.15  |      | 0.3   |      | 0.4   |      | 1.7   |      | 4     |      |
| Torsional stiffness ( $10^3$ Nm/rad)                        |                | $C_T$       | 20    | 15   | 39    | 28   | 76    | 55   | 175   | 110  | 450   | 350  |
| Axial                                                       | $\pm$ (mm)     | Max. values | 1     | 2    | 1     | 2    | 1.5   | 2    | 2     | 3    | 2.5   | 3.5  |
| Lateral                                                     | $\pm$ (mm)     |             | 0.15  | 0.2  | 0.2   | 0.25 | 0.2   | 0.25 | 0.2   | 0.25 | 0.25  | 0.3  |
| Angular                                                     | $\pm$ (degree) |             | 1     | 1.5  | 1     | 1.5  | 1     | 1.5  | 1     | 1.5  | 1     | 1.5  |
| Axial spring stiffness                                      | (N/mm)         | $C_a$       | 20    | 12   | 50    | 30   | 72    | 48   | 82    | 52   | 105   | 71   |
| Lateral spring stiffness                                    | (N/mm)         | $C_r$       | 315   | 108  | 730   | 230  | 1200  | 380  | 1550  | 435  | 3750  | 1050 |

| ORDERING EXAMPLE  | BK7 | 150 | 71 | 32 | 22.23 | XX                                                      |
|-------------------|-----|-----|----|----|-------|---------------------------------------------------------|
| Model             | ●   |     |    |    |       | Special designation only (e.g. special bore tolerance). |
| Size              |     | ●   |    |    |       |                                                         |
| Overall length mm |     |     | ●  |    |       |                                                         |
| Bore D1 H7        |     |     |    | ●  |       |                                                         |
| Shaft D2 f7       |     |     |    |    | ●     |                                                         |

For custom features place an XX at the end of the part number and describe the special requirements (e.g. BK7 / 150 / 71 / 32 / 22.23 / XX; XX=finely balanced for 25,000 rpm)



**BK8**

# WITH ISO FLANGE CONNECTION

## 50 – 2,600 Nm

### ABOUT

#### FEATURES

- ▶ for ISO flange output gearboxes
- ▶ allows for continuous hollow through axis with some right angle gearbox designs
- ▶ compact design

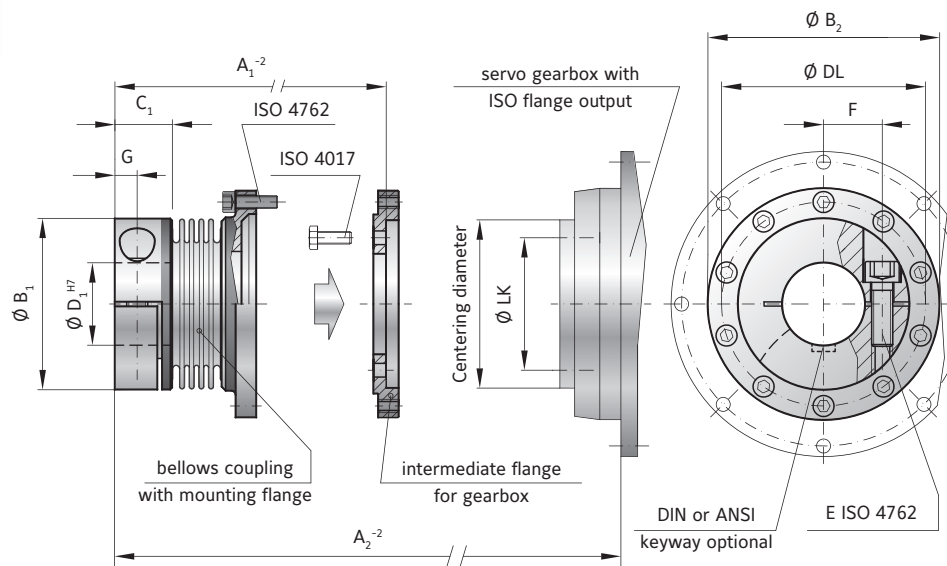
#### MATERIAL

- ▶ **Bellows:** high grade stainless steel

- ▶ **Hubs:** up through size 300 aluminum, size 1500 and up steel
- ▶ **Adapter flange:** steel

#### DESIGN

One clamping hub on one end with an integral flange and adapter flange on the other end. Maximum transmittable torque depends on the bore diameter.



## MODEL BK8

| SIZE                                     |                                      |                  | 15            | 60          | 150          | 300          | 1500           |
|------------------------------------------|--------------------------------------|------------------|---------------|-------------|--------------|--------------|----------------|
| Flange centering diameter                | (mm)                                 |                  | 40 h7         | 63 h7       | 80 h7        | 100 h7       | 160 h7         |
| Flange bolt circle / thread Ø            | (mm)                                 |                  | 31.5 / 8 x M5 | 50 / 8 x M6 | 63 / 12 x M6 | 80 / 12 x M8 | 125 / 12 x M10 |
| Maximum torque*                          | (Nm)                                 |                  | 50            | 210         | 380          | 750          | 2600           |
| Length -2                                | (mm)                                 | A <sub>1</sub>   | 48.5          | 67          | 72           | 90           | 140            |
| Length -2                                | (mm)                                 | A <sub>2</sub>   | 68            | 97          | 101          | 128          | 190            |
| Outside diameter of hub                  | (mm)                                 | B <sub>1</sub>   | 49            | 66          | 82           | 110          | 157            |
| Flange diameter                          | (mm)                                 | B <sub>2</sub>   | 63.5          | 86          | 108          | 132          | 188            |
| Fit length                               | (mm)                                 | C <sub>1</sub>   | 16.5          | 23          | 27.5         | 34           | 55             |
| Inside diameter possible from Ø to Ø H7  | (mm)                                 | D <sub>1</sub>   | 12-28         | 14-35       | 19-42        | 24-60        | 50-80          |
| Hub bolt circle                          | (mm)                                 | DL               | 56.5          | 76          | 97           | 120          | 170            |
| Fastening threads                        | (mm)                                 |                  | 10 x M4       | 10 x M5     | 10 x M6      | 12 x M6      | 18 x M8        |
| Fastening screws ISO 4762                |                                      |                  | 1 x M5        | 1 x M8      | 1 x M10      | 1 x M12      | 2 x M20        |
| Tightening torque of the fastening screw | (Nm)                                 | E <sub>1</sub>   | 8             | 45          | 80           | 120          | 470            |
| Distance between centerlines             | (mm)                                 | F                | 1 x 17.5      | 1 x 23      | 1 x 27       | 1 x 39       | 2 x 55         |
| Distance                                 | (mm)                                 | G                | 6.5           | 9.5         | 11           | 13           | 22.5           |
| Approximate weight                       | (kg)                                 |                  | 0.3           | 0.7         | 1            | 2.8          | 10             |
| Moment of inertia                        | (10 <sup>-3</sup> kgm <sup>2</sup> ) | J <sub>ges</sub> | 0.15          | 0.65        | 1.3          | 5.5          | 45             |
| Lateral                                  | ± (mm)                               |                  | 0.25          | 0.25        | 0.25         | 0.25         | 0.25           |
| Angular                                  | ± (degree)                           | Max. values      | 1             | 1           | 1            | 1            | 1              |
| Axial                                    | ± (mm)                               |                  | 1             | 1.5         | 2            | 2.5          | 3              |

\* maximum torque transmittable only for brief periods and requires maximum bore for clamping strength

| ORDERING EXAMPLE                                                                                                                                        | BK8 | 60 | 22.23 | 67 | XX                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|-------|----|------------------------------------------------------------|
| Model                                                                                                                                                   | ●   |    |       |    | Special designation only<br>(e.g. special bore tolerance). |
| Size                                                                                                                                                    |     | ●  |       |    |                                                            |
| Bore D1 H7                                                                                                                                              |     |    | ●     |    |                                                            |
| Overall length mm                                                                                                                                       |     |    |       | ●  |                                                            |
| For custom features place an XX at the end of the part number and describe the special requirements (e.g. BK8 / 60 / 22.23 / 67 / XX; XX=anodized hubs) |     |    |       |    |                                                            |

**BK1**

# WITH FLANGE MOUNTING

## 15 - 10,000 Nm



### ABOUT

#### FEATURES

- For simple flange mounting to special drive components
- custom flange patterns available

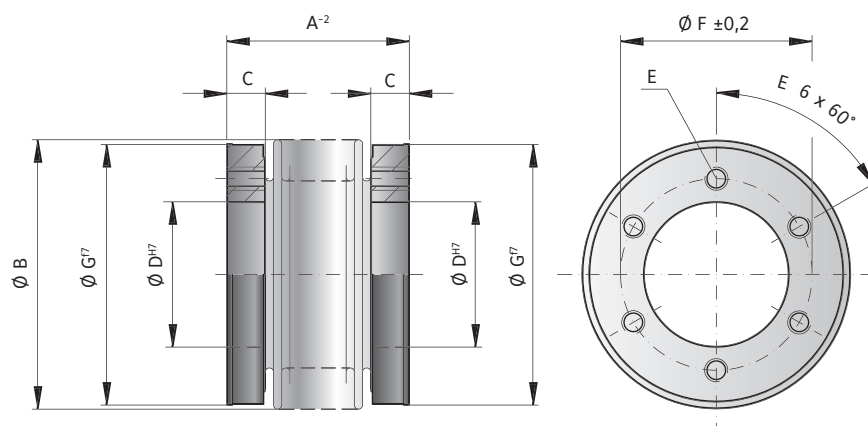
#### MATERIAL

- **Bellows:** high grade stainless steel

- **Hubs:** steel

#### DESIGN

Two mounting flanges concentrically assembled to the flexible bellows. Brief overloads of up to 1.5x the rated torque are acceptable.



## MODEL BK1

| SIZE                                          |           | 15        | 30        | 60        | 150       | 200       | 300       | 500      | 800     | 1500    | 4000    | 6000    | 10000   |
|-----------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|---------|---------|---------|---------|---------|
| Rated torque (Nm)                             | $T_{KN}$  | 15        | 30        | 60        | 150       | 200       | 300       | 500      | 800     | 1500    | 4000    | 6000    | 10000   |
| Overall length (mm)                           | $A^{-2}$  | 30 37     | 36 44     | 43 53     | 50 62     | 53 65     | 56 70     | 64 77    | 81      | 100     | 145     | 138     | 150     |
| Outside diameter of bellows (mm)              | B         | 49        | 55        | 66        | 81        | 90        | 110       | 124      | 133     | 157     | 200     | 253     | 303     |
| Fit length/thread depth (mm)                  | C         | 7.5       | 10        | 11        | 13        | 14.5      | 15        | 16       | 18      | 22      | 30      | 30      | 36      |
| Inside diameter H7 (mm)                       | D         | 25        | 28        | 38        | 50        | 58        | 65        | 70       | 75      | 85      | 100     | 145     | 190     |
| Fastening threads                             | E         | 6 x M5    | 6 x M5    | 6 x M6    | 6 x M6    | 6 x M6    | 6 x M8    | 6 x M8   | 6 x M10 | 6 x M16 | 6 x M20 | 8 x M20 | 8 x M24 |
| Bolt circle diameter $\pm 0.2$ (mm)           | F         | 35        | 37        | 46        | 62        | 70        | 80        | 94       | 90      | 110     | 140     | 190     | 234     |
| Outside diameter f7 (mm)                      | G         | 49        | 55        | 66        | 81        | 90        | 110       | 122      | 116     | 140     | 182     | 235     | 295     |
| Moment of inertia ( $10^{-3} \text{ kgm}^2$ ) | $J_{ges}$ | 0.07 0.08 | 0.14 0.15 | 0.30 0.32 | 0.90 0.95 | 1.30 1.40 | 1.95 2.10 | 3.0 3.4  | 4.3     | 10.6    | 46      | 132     | 350     |
| Approximate weight (kg)                       |           | 0.15      | 0.2       | 0.3       | 0.6       | 0.8       | 1.35      | 1.8      | 1.9     | 3.3     | 8.9     | 13.9    | 23.7    |
| Torsional stiffness ( $10^3 \text{ Nm/rad}$ ) | $C_T$     | 20 15     | 39 28     | 76 55     | 175 110   | 191 140   | 450 350   | 510 500  | 780     | 1304    | 3400    | 5700    | 10950   |
| Axial $\pm$ (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       |
| Lateral $\pm$ (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    | 0.35    | 0.4     | 0.4     |
| Angular $\pm$ (degree)                        |           | 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     |
| Axial spring stiffness (N/mm)                 | $C_s$     | 25 15     | 50 30     | 72 48     | 82 52     | 90 60     | 105 71    | 70 48    | 100     | 320     | 565     | 1030    | 985     |
| Lateral spring stiffness (N/mm)               | $C_r$     | 475 137   | 900 270   | 1200 420  | 1550 435  | 2040 610  | 3750 1050 | 2500 840 | 2000    | 3600    | 6070    | 19200   | 21800   |

| ORDERING EXAMPLE                                                                                                                                                  | BK1 | 150 | 62 | XX |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|----|----|
| Model                                                                                                                                                             | ●   |     |    |    |
| Size                                                                                                                                                              |     | ●   |    |    |
| Overall length mm                                                                                                                                                 |     |     | ●  |    |
| For custom features place an XX at the end of the part number and describe the special requirements (e.g. BK1 / 150 / 62 / XX; XX=finely balanced for 25,000 rpm) |     |     |    |    |



## SPECIAL SOLUTIONS

2 - 10,000 Nm

### CUSTOMER SPECIFIC FEATURES

---

Including:

- ▶ Special materials and treatments
- ▶ Custom bellows
- ▶ Specific overall length
- ▶ Internal catches for in case of bellows rupture
- ▶ Many more

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