



# SIZES FROM 10 - 25,000 Nm

## LINE SHAFT COUPLINGS

### GENERAL INFORMATION R+W LINE SHAFT COUPLINGS:



#### SERVICE LIFE

R+W line shaft couplings are wear and maintenance 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

After selecting overall length A, contact R+W for maximum speed.

#### 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, R+W line shaft couplings have been authorized under directive 94/9/EG and is available with certification.

# BACKLASH FREE, TORSIONALLY STIFF LINE SHAFT COUPLINGS

## SIZES FROM 10 - 4,000 Nm

### MODEL

### FEATURES

ZA



**with clamping hub  
from 10 - 800 Nm**

Page 116

- ▶ installation and removal possible without disturbing other machine components
- ▶ standard lengths up to 6 meters
- ▶ no intermediate support bearings required

ZA



**with conical clamping system  
from 1,500 - 4,000 Nm**

Page 117

- ▶ installation and removal possible without disturbing other machine components
- ▶ standard lengths up to 6 meters
- ▶ no intermediate support bearings required

ZAE



**with fully split clamping hub  
from 10 - 800 Nm**

Page 118

- ▶ complete coupling system mounts laterally for very easy installation and removal
- ▶ standard lengths up to 6 meters
- ▶ no intermediate support bearings required

ZAL



**with fully split clamping hub  
from 10 - 800 Nm**

Page 119

- ▶ complete coupling system mounts laterally for very easy installation and removal
- ▶ standard lengths up to 6 meters, with CFK tube
- ▶ no intermediate support bearings required

## BACKLASH FREE LINE SHAFT COUPLINGS

### SIZES FROM 12.5 - 25,000 Nm

## MODEL

## FEATURES

## EZ2



**with fully split clamping hub  
from 12.5 - 25,000 Nm**

Pages 120-121

- ▶ standard lengths up to 4 meters
- ▶ no intermediate support bearings required
- ▶ complete coupling system mounts laterally for very easy installation and removal

## EZV



**with fully split clamping hub,  
adjustable length  
from 12.5 - 1,200 Nm**

Pages 122-123

- ▶ adjustable length ranges up to 4 meters
- ▶ no intermediate support bearings required
- ▶ complete coupling system mounts laterally for very easy installation and removal

# ZA

## WITH CLAMPING HUB

### 10 - 800 Nm



### ABOUT

#### FEATURES

- ▶ for spanning larger distances between shaft ends
- ▶ standard lengths up to 6 meters
- ▶ no intermediate support bearings required
- ▶ extremely straight and laterally stiff intermediate tube

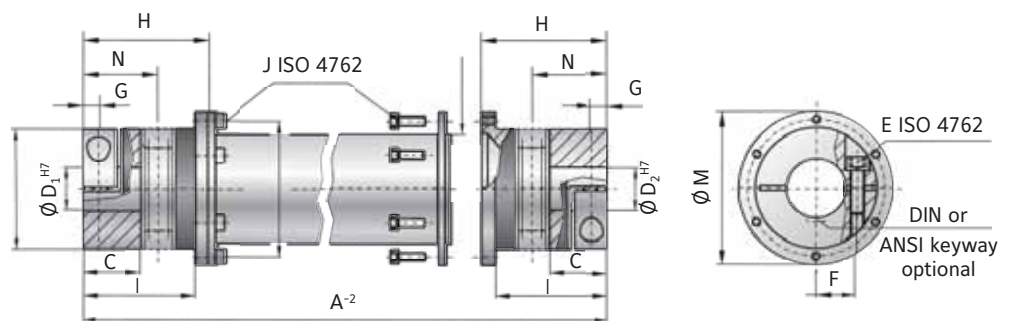
#### MATERIAL

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

- ▶ **Intermediate tube:** up to size 150 aluminum, size 300 and up steel, optional CFK
- ▶ **Hubs:** up to size 60 aluminum, size 150 and up steel

#### DESIGN

Two clamping hubs with a single clamping screw in each. A special support system carries the weight of the tube on the hubs. Operable temperature range from -30 to +100 °C.



## MODEL ZA

| SIZE                                |                  | 10         | 30         | 60         | 150        | 200        | 300        | 500        | 800        |
|-------------------------------------|------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Rated torque (Nm)                   | T <sub>KN</sub>  | 10         | 30         | 60         | 150        | 200        | 300        | 500        | 800        |
| Overall length min. to max. (mm)    | A <sup>-2</sup>  | 110 - 6000 | 140 - 6000 | 170 - 6000 | 190 - 6000 | 210 - 6000 | 250 - 6000 | 260 - 6000 | 260 - 6000 |
| Outside diameter clamping hub (mm)  | B                | 40         | 55         | 66         | 81         | 90         | 110        | 123        | 134        |
| Fit length (mm)                     | C                | 16         | 27         | 31         | 35.5       | 40.5       | 43         | 50         | 48         |
| Inside diameter from Ø to Ø H7 (mm) | D <sub>1/2</sub> | 5 - 20     | 10 - 28    | 12 - 32    | 19 - 42    | 22 - 45    | 30 - 60    | 35 - 60    | 40 - 72    |
| With keyway max. Ø H7 (mm)          | D <sub>1/2</sub> | 17         | 23         | 29         | 36         | 45         | 60         | 60         | 66         |
| ISO 4762 clamping screw             | E                | M4         | M6         | M8         | M10        | M12        | M12        | M16        | 2x M16     |
| Tightening torque (Nm)              |                  | 5          | 15         | 40         | 70         | 110        | 130        | 200        | 250        |
| Distance between centers (mm)       | F                | 15         | 19         | 23         | 27         | 31         | 39         | 41         | 48         |
| Distance (mm)                       | G                | 5          | 7.5        | 9.5        | 11         | 12.5       | 13         | 17         | 18         |
| Length bellows body (mm)            | H                | 44.5       | 57.5       | 71         | 78         | 86         | 94         | 110        | 101        |
| Distance (mm)                       | I                | 38.5       | 51         | 61         | 69         | 75.5       | 81         | 96         | 89         |
| ISO 4762 clamping screw             | J                | 4x M4      | 6x M4      | 6x M5      | 8x M6      | 8x M6      | 8x M8      | 8x M8      | 10x M8     |
| Tightening torque (Nm)              |                  | 3          | 4          | 7          | 10         | 12         | 30         | 30         | 40         |
| Outside diameter tube section (mm)  | K                | 35         | 50         | 60         | 76         | 90         | 100        | 110        | 120        |
| Bolt hole circle Ø (mm)             | L                | 45         | 62.5       | 71.5       | 88         | 100        | 120        | 132        | 138        |
| Outside diameter flange (mm)        | M                | 52         | 70         | 80         | 98         | 110        | 135        | 148        | 153        |
| Shaft average value (mm)            | N                | 25         | 34         | 41         | 47         | 52         | 56         | 66         | 64         |

For maximum misalignment values see page 16.

| ORDERING EXAMPLE                                                                                                                                        | ZA | 10 | 1551 | 18 | 19.05 | 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. ZA/10/1551/18/19.05/XX; XX=anodized aluminum) |    |    |      |    |       |                                                            |

# ZA

## WITH CONICAL CLAMPING SYSTEM

1,500 - 4,000 Nm

### ABOUT

#### FEATURES

- ▶ for spanning larger distances between shaft ends
- ▶ standard lengths up to 6 meters
- ▶ no intermediate support bearings required
- ▶ extremely straight and laterally stiff intermediate tube

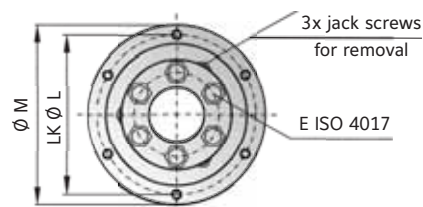
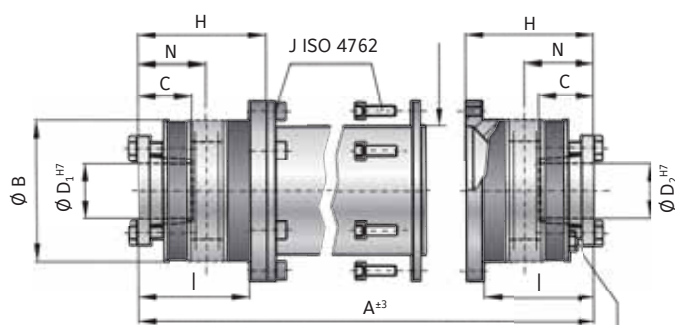
#### MATERIAL

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

- ▶ **Intermediate tube:** steel, optional CFK
- ▶ **Hubs:** steel

#### DESIGN

Two conical clamping bushings with separate screws for mounting and dismounting. A special support system carries the weight of the tube on the hubs. Operable temperature range from -30 to +100 °C.



## MODEL ZA

| SIZE                           |      |                  | 1500       | 4000       |
|--------------------------------|------|------------------|------------|------------|
| Rated torque                   | (Nm) | T <sub>KN</sub>  | 1500       | 4000       |
| Overall length min. to max.    | (mm) | A±3              | 280 - 6000 | 280 - 6000 |
| Outside diameter               | (mm) | B                | 157        | 200        |
| Fit length                     | (mm) | C                | 61         | 80.5       |
| Inside diameter from Ø to Ø H7 | (mm) | D <sub>1/2</sub> | 35 - 70    | 40 - 100   |
| ISO 4017 clamping screws       |      | E                | 6 x M12    | 6 x M16    |
| Tightening torque              | (Nm) |                  | 70         | 120        |
| Length bellows body            | (mm) | H                | 98         | 103.5      |
| Distance                       | (mm) | I                | 82         | 84         |
| ISO 4762 clamping screws       |      | J                | 10x M10    | 12x M12    |
| Tightening torque              | (Nm) |                  | 70         | 120        |
| Outside diameter tube section  | (mm) | K                | 150        | 160        |
| Bolt hole circle Ø             | (mm) | L                | 168        | 193        |
| Outside diameter flange        | (mm) | M                | 184        | 213        |
| Shaft average value            | (mm) | N                | 56         | 61         |

For maximum misalignment values see page 16.

| ORDERING EXAMPLE                                                                                                                                       | ZA | 1500 | 2551 | 50.8 | 70 | 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. ZA/1500/2551/50.8/70/XX; XX=stainless steel) |    |      |      |      |    |    |

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

## WITH FULLY SPLIT CLAMPING HUB

### 10 - 800 Nm



#### ABOUT

##### FEATURES

- ▶ for spanning larger distances between shaft ends
- ▶ standard lengths up to 6 meters
- ▶ no intermediate support bearings required
- ▶ extremely straight and laterally stiff intermediate tube

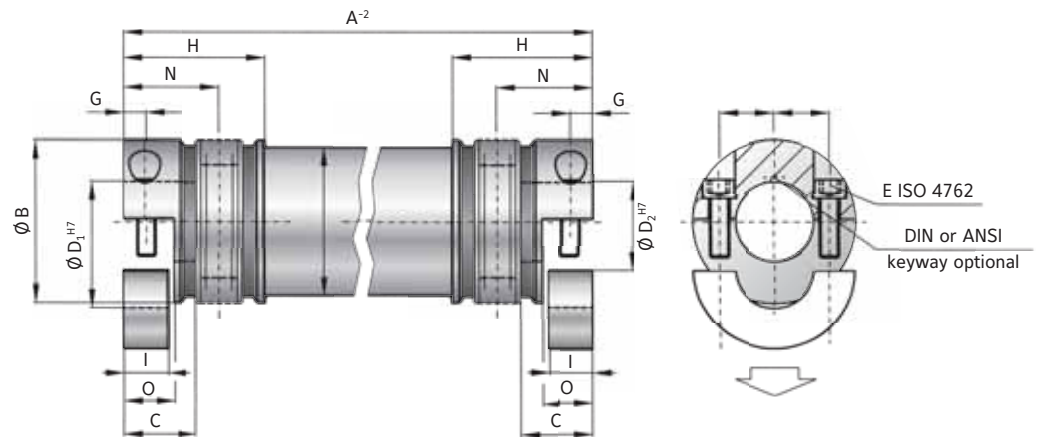
- ▶ **Intermediate tube:** up to size 150 aluminum, size 300 and up steel
- ▶ **Hubs:** up to size 60 aluminum, size 150 and up steel

##### DESIGN

Two clamping hubs with two clamping screws in each. A special support system carries the weight of the tube on the hubs. Operable temperature range from -30 to +100 °C.

##### MATERIAL

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



## MODEL ZAE

| SIZE                                   |           |  | 10         | 30         | 60         | 150        | 300        | 500        | 800        |
|----------------------------------------|-----------|--|------------|------------|------------|------------|------------|------------|------------|
| Rated torque (Nm)                      | $T_{KN}$  |  | 10         | 30         | 60         | 150        | 300        | 500        | 800        |
| Overall length min. to max. (mm)       | $A^{-2}$  |  | 100 - 6000 | 130 - 6000 | 160 - 6000 | 180 - 6000 | 240 - 6000 | 250 - 6000 | 250 - 6000 |
| Outside diameter clamping hub (mm)     | B         |  | 40         | 55         | 66         | 81         | 110        | 123        | 133        |
| Fit length (mm)                        | C         |  | 16         | 27         | 31         | 34.5       | 42         | 50         | 47         |
| Inside diameter from Ø to Ø H7 (mm)    | $D_{1/2}$ |  | 5 - 20     | 10 - 28    | 12 - 32    | 19 - 42    | 30 - 60    | 35 - 60    | 40 - 72    |
| Max. inside diameter clamping hub (mm) | $D_{max}$ |  | 24         | 30         | 32         | 42         | 60         | 60         | 75         |
| With keyway - max Ø H7 (mm)            | $D_{1/2}$ |  | 17         | 23         | 29         | 36         | 60         | 60         | 66         |
| ISO 4762 clamping screws               | E         |  | M4         | M6         | M8         | M10        | M12        | M16        | M16        |
| Tightening torque (Nm)                 |           |  | 5          | 15         | 40         | 70         | 130        | 200        | 250        |
| Distance between centers (mm)          | F         |  | 15         | 19         | 23         | 27         | 39         | 41         | 48         |
| Distance (mm)                          | G         |  | 5          | 7.5        | 9.5        | 12         | 14         | 17         | 19         |
| Length bellows body (mm)               | H         |  | 39.5       | 52         | 64         | 72         | 83         | 96         | 95         |
| Clamping length (mm)                   | I         |  | 10         | 15         | 19         | 22         | 28         | 33.5       | 37.5       |
| Outside diameter tube section (mm)     | K         |  | 35         | 50         | 60         | 76         | 100        | 110        | 120        |
| Length (mm)                            | O         |  | 11.5       | 17         | 21         | 24         | 30         | 35         | 40         |
| Shaft average value (mm)               | N         |  | 25         | 34         | 41         | 47         | 56         | 66         | 65         |

For maximum misalignment values see page 16.

| ORDERING EXAMPLE                                                                                                                                         | ZAE | 10 | 1551 | 18 | 19.05 | 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. ZAE/10/1551/18/19.05/XX; XX=anodized aluminum) |     |    |      |    |       |    |

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

# WITH FULLY SPLIT CLAMPING HUB AND CFK INTERMEDIATE TUBE, 10 - 800 Nm

## ABOUT



### FEATURES

- ▶ low moment of inertia
- ▶ for spanning larger distances between shaft ends
- ▶ standard lengths up to 6 meters
- ▶ no intermediate support bearings required
- ▶ good for higher speeds

### MATERIAL

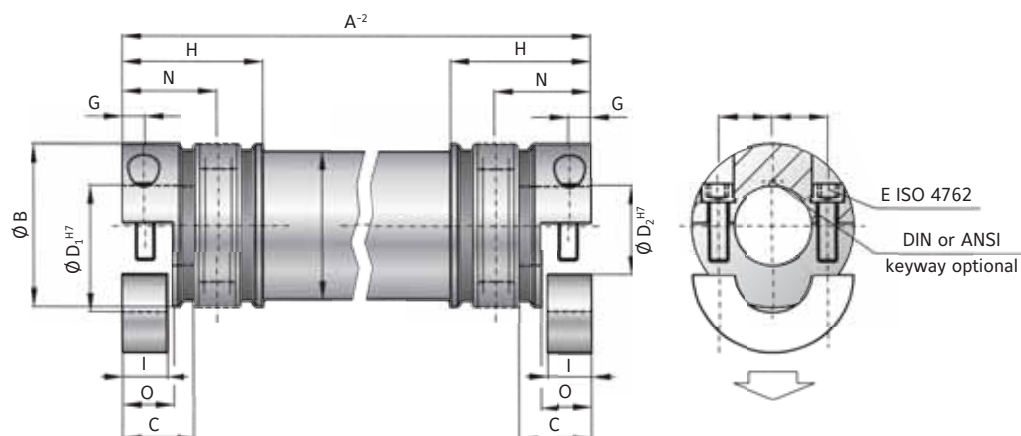
- ▶ **Bellows:** high grade stainless steel

- ▶ **Intermediate tube:** CFK

- ▶ **Hubs:** up to size 60 aluminum, size 150 and up steel

### DESIGN

Two clamping hubs with two clamping screws in each. A special support system carries the weight of the tube on the hubs. Operable temperature range from -30 to +100 °C.



## MODEL ZAL

| SIZE                              |      |           | 10         | 30         | 60         | 150        | 300        | 500        | 800        |
|-----------------------------------|------|-----------|------------|------------|------------|------------|------------|------------|------------|
| Rated torque                      | (Nm) | $T_{KN}$  | 10         | 30         | 60         | 150        | 300        | 500        | 800        |
| Overall length min. to max.       | (mm) | $A^{-2}$  | 100 - 6000 | 130 - 6000 | 160 - 6000 | 180 - 6000 | 240 - 6000 | 250 - 6000 | 250 - 6000 |
| Outside diameter clamping hub     | (mm) | B         | 40         | 55         | 66         | 81         | 110        | 123        | 133        |
| Fit length                        | (mm) | C         | 16         | 27         | 31         | 34.5       | 42         | 50         | 47         |
| Inside diameter from Ø to Ø H7    | (mm) | $D_{1/2}$ | 5 - 20     | 10 - 28    | 12 - 32    | 19 - 42    | 30 - 60    | 35 - 60    | 40 - 72    |
| Max. inside diameter clamping hub | (mm) | $D_{max}$ | 24         | 30         | 32         | 42         | 60         | 60         | 75         |
| With keyway - max Ø H7            | (mm) | $D_{1/2}$ | 17         | 23         | 29         | 36         | 60         | 60         | 66         |
| ISO 4762 clamping screws          |      | E         | M4         | M6         | M8         | M10        | M12        | M16        | M16        |
| Tightening torque                 | (Nm) |           | 5          | 15         | 40         | 70         | 130        | 200        | 250        |
| Distance between centers          | (mm) | F         | 15         | 19         | 23         | 27         | 39         | 41         | 48         |
| Distance                          | (mm) | G         | 5          | 7.5        | 9.5        | 12         | 14         | 17         | 19         |
| Length bellows body               | (mm) | H         | 39.5       | 52         | 64         | 72         | 83         | 96         | 95         |
| Clamping length                   | (mm) | I         | 10         | 15         | 19         | 22         | 28         | 33.5       | 37.5       |
| Outside diameter tube section     | (mm) | K         | 35         | 50         | 60         | 76         | 100        | 110        | 120        |
| Length                            | (mm) | O         | 11.5       | 17         | 21         | 24         | 30         | 35         | 40         |
| Shaft average value               | (mm) | N         | 25         | 34         | 41         | 47         | 56         | 66         | 65         |

For maximum misalignment values see page 16.

| ORDERING EXAMPLE                                                                                                                                              | ZAL | 10 | 1551 | 18 | 19.05 | 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. ZAL/10/1551/18/19.05/XX; XX=anodized aluminum hubs) |     |    |      |    |       |    |

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

**WITH FULLY SPLIT CLAMPING HUB**  
12.5 - 25,000 Nm



## ABOUT

## FEATURES

- ▶ easy installation and removal
- ▶ standard lengths up to 4 meters
- ▶ no intermediate support bearings required

## MATERIAL

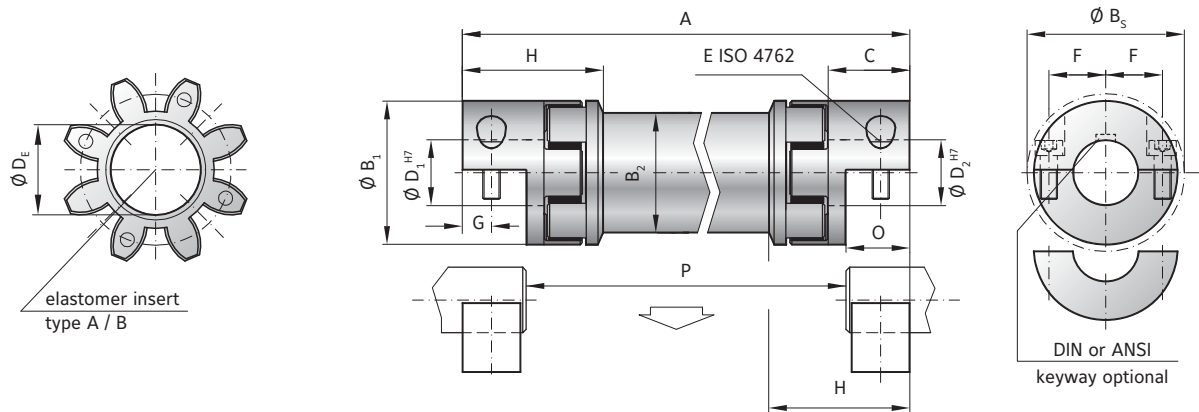
- ▶ **Hubs:** up to size 450 high strength aluminum, size 800 steel, size 2500 and up GGG40
- ▶ **Intermediate tube:** up to size 450 high strength aluminum, size 800 and up steel, optional CFK tube on request

- **Elastomer insert:** wear resistant, thermally stable TPU

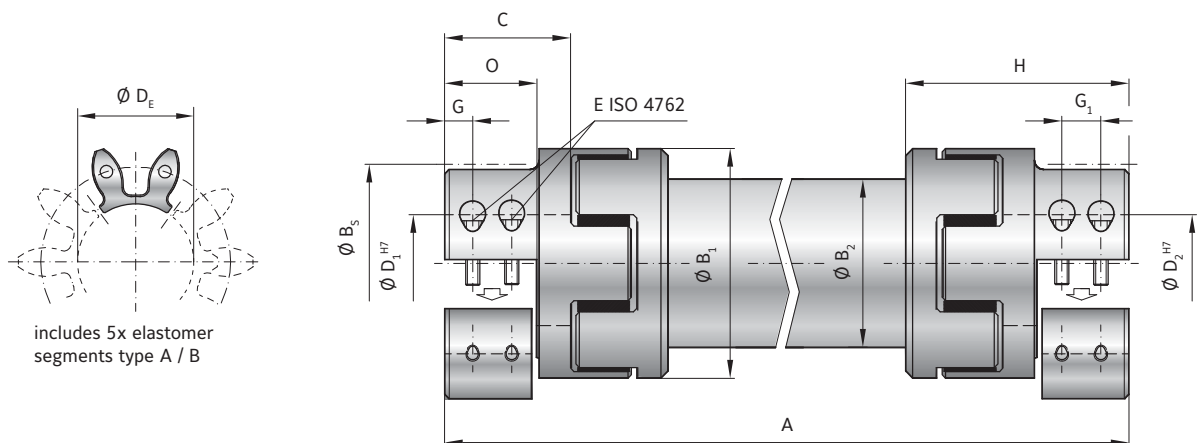
## DESIGN

Two fully split clamping hubs, with two clamping screws in each, and concave driving jaws. Backlash free, vibration damping, electrically isolating elastomer inserts press fit into the hubs. Precision intermediate tube with a high level of straightness and lateral stiffness.

DESIGN | SIZE 10 - 800



DESIGN | SIZE 2,500 - 9,500



For details on the elastomer inserts see pages 66-67.

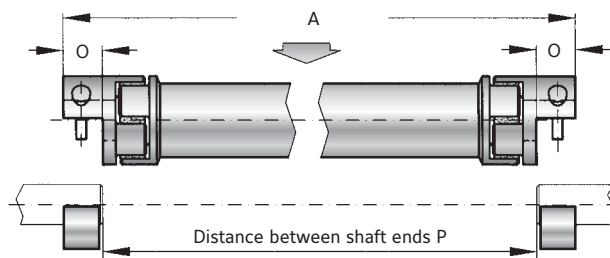
# MODEL EZ2

| SIZE                                                           |                                | 10         |     | 20          |       | 60          |       | 150         |        | 300         |        | 450         |        | 800         |        | 2500        |         | 4500        |         | 9500        |         |
|----------------------------------------------------------------|--------------------------------|------------|-----|-------------|-------|-------------|-------|-------------|--------|-------------|--------|-------------|--------|-------------|--------|-------------|---------|-------------|---------|-------------|---------|
| Type (Elastomer insert)                                        |                                | A          | B   | A           | B     | A           | B     | A           | B      | A           | B      | A           | B      | A           | B      | A           | B       | A           | B       | A           | B       |
| Rated torque (Nm)                                              | T <sub>KN</sub>                | 12.5       | 16  | 17          | 21    | 60          | 75    | 160         | 200    | 325         | 405    | 530         | 660    | 950         | 1,100  | 1,950       | 2,450   | 5,000       | 6,200   | 10,000      | 12,500  |
| Max. torque* (Nm)                                              | T <sub>Kmax</sub>              | 25         | 32  | 34          | 42    | 120         | 150   | 320         | 400    | 650         | 810    | 1060        | 1350   | 1,900       | 2,150  | 3,900       | 4,900   | 10,000      | 12,400  | 20,000      | 25,000  |
| Overall length (mm)                                            | A                              | 95 - 4,000 |     | 130 - 4,000 |       | 175 - 4,000 |       | 200 - 4,000 |        | 245 - 4,000 |        | 280 - 4,000 |        | 320 - 4,000 |        | 460 - 4,000 |         | 580 - 4,000 |         | 710 - 4,000 |         |
| Outside diameter hub (mm)                                      | B <sub>1</sub>                 | 32         |     | 42          |       | 56          |       | 66.5        |        | 82          |        | 102         |        | 136.5       |        | 160         |         | 225         |         | 290         |         |
| Outside diameter tube (mm)                                     | B <sub>2</sub>                 | 28         |     | 35          |       | 50          |       | 60          |        | 76          |        | 90          |        | 120         |        | 150         |         | 175         |         | 220         |         |
| Outside diameter with screwhead (mm)                           | B <sub>S</sub>                 | 32         |     | 44.5        |       | 57          |       | 68          |        | 85          |        | 105         |        | 139         |        | 155         |         | 190         |         | 243         |         |
| Fit length (mm)                                                | C                              | 20         |     | 25          |       | 40          |       | 47          |        | 55          |        | 65          |        | 79          |        | 85          |         | 110         |         | 140         |         |
| Inside diameter range from Ø to Ø H7 (mm)                      | D <sub>1/2</sub>               | 5 - 16     |     | 8 - 25      |       | 14 - 32     |       | 19 - 36     |        | 19 - 45     |        | 24 - 60     |        | 35 - 80     |        | 35 - 90     |         | 40 - 120    |         | 50 - 140    |         |
| Max. inside diameter (Elastomer insert) (mm)                   | D <sub>E</sub>                 | 14.2       |     | 19.2        |       | 26.2        |       | 29.2        |        | 36.2        |        | 46.2        |        | 60.5        |        | 80          |         | 111         |         | 145         |         |
| Mounting screw ISO 4762                                        | E                              | 4 x M4     |     | 4 x M5      |       | 4 x M6      |       | 4 x M8      |        | 4 x M10     |        | 4 x M12     |        | 4 x M16     |        | 4 x M16     |         | 8 x M16     |         | 8 x M24     |         |
| Tightening torque (Nm)                                         |                                | 4          |     | 8           |       | 15          |       | 35          |        | 70          |        | 120         |        | 290         |        | 300         |         | 300         |         | 980         |         |
| Distance between centers (mm)                                  | F                              | 10.5       |     | 15.5        |       | 21          |       | 24          |        | 29          |        | 38          |        | 50.5        |        | 57          |         | 72.5        |         | 90          |         |
| Distance (mm)                                                  | G/G <sub>1</sub>               | 7.5        |     | 8.5         |       | 15          |       | 17.5        |        | 20          |        | 25          |        | 30          |        | 36          |         | 24 / 34     |         | 30 / 48     |         |
| Coupling length (mm)                                           | H                              | 34         |     | 46          |       | 63          |       | 73          |        | 86          |        | 99          |        | 125         |        | 142         |         | 181         |         | 229         |         |
| Moment of inertia per hub (10 <sup>-3</sup> kgm <sup>2</sup> ) | J <sub>1</sub> /J <sub>2</sub> | 0.01       |     | 0.02        |       | 0.15        |       | 0.21        |        | 1.02        |        | 2.3         |        | 17          |        | 30          |         | 140         |         | 450         |         |
| Inertia of tube per meter (10 <sup>-3</sup> kgm <sup>2</sup> ) | J <sub>3</sub>                 | 0.075      |     | 0.183       |       | 0.66        |       | 1.18        |        | 2.48        |        | 10.6        |        | 38          |        | 360         |         | 750         |         | 1,800       |         |
| Combined dynamic torsional stiffness of the inserts (Nm/rad)   | C <sub>Tdyn</sub> <sup>E</sup> | 270        | 825 | 1,270       | 2,220 | 3,970       | 5,950 | 6,700       | 14,650 | 11,850      | 20,200 | 27,700      | 40,600 | 41,300      | 90,000 | 87,500      | 108,000 | 168,500     | 371,500 | 590,000     | 670,000 |
| Torsional stiffness of tube per meter (Nm/rad)                 | C <sub>T</sub> <sup>ZWR</sup>  | 321        |     | 1,530       |       | 6,632       |       | 11,810      |        | 20,230      |        | 65,340      |        | 392,800     |        | 1,000,000   |         | 2,500,000   |         | 5,000,000   |         |
| Shaft average value (mm)                                       | N                              | 26         |     | 33          |       | 49          |       | 57          |        | 67          |        | 78          |        | 94          |        | 108         |         | 137         |         | 171         |         |
| Length (mm)                                                    | O                              | 16.6       |     | 18.6        |       | 32          |       | 37          |        | 42          |        | 52          |        | 62          |        | 67          |         | 85          |         | 105         |         |

\* Maximum transmittable torque of the clamping hub depends on the bore diameter (see pages 70-71).

## INSTALLATION

The overall length A is best determined as the distance between shaft ends P plus 2x dimension O.



| ORDERING EXAMPLE                                                                                                                                           | EZ2 | 20 | 1200 | A | 24 | 19.05 | XX                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|------|---|----|-------|---------------------------------------------------------|
| Model                                                                                                                                                      | ●   |    |      |   |    |       | Special designation only (e.g. special bore tolerance). |
| Size                                                                                                                                                       |     | ●  |      |   |    |       |                                                         |
| Overall length mm                                                                                                                                          |     |    | ●    |   |    |       |                                                         |
| Elastomer insert type                                                                                                                                      |     |    |      | ● |    |       |                                                         |
| 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. EZ2/20/1200/A/24/19.05/XX; XX=anodized aluminum) |     |    |      |   |    |       |                                                         |

# ADJUSTABLE LENGTH WITH FULLY SPLIT CLAMPING HUB 12.5 - 1,200 Nm

## ABOUT



### FEATURES

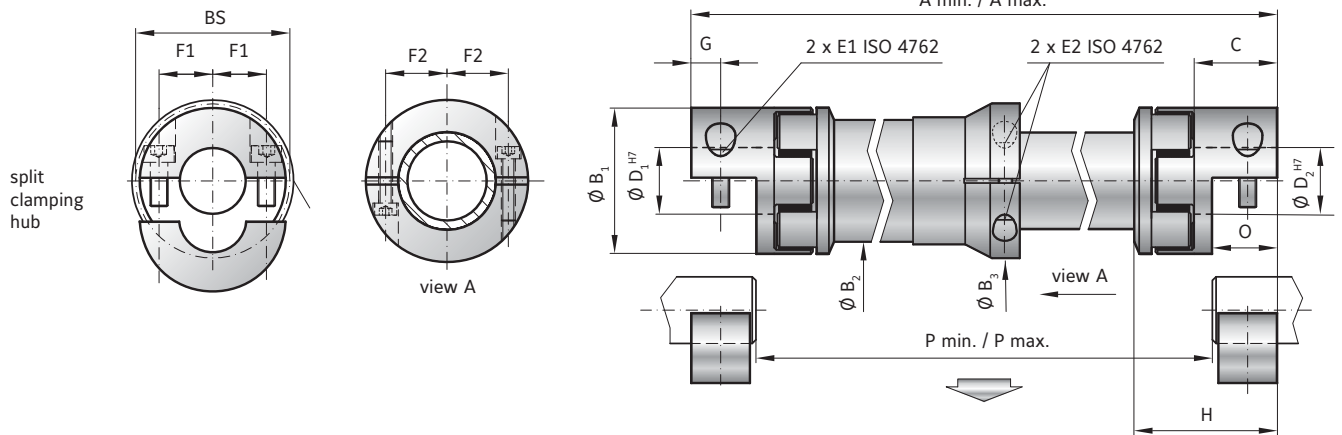
- ▶ telescoping for adjustable length and rotational orientation
- ▶ very easy to install and remove
- ▶ no intermediate support bearings required
- ▶ length ranges up to 4 meters

### MATERIAL

- ▶ **Hubs:** high strength aluminum
- ▶ **Intermediate tube:** highly straight and concentric aluminum tubing
- ▶ **Elastomer insert:** wear resistant, thermally stable TPU

### DESIGN

Two fully split clamping hubs, with two clamping screws in each, and concave driving jaws. Backlash free, vibration damping, electrically isolating elastomer inserts press fit into the hubs. Precision intermediate tube with a high level of straightness and lateral stiffness. Outer tube clamps over inner tube to fix the overall length.



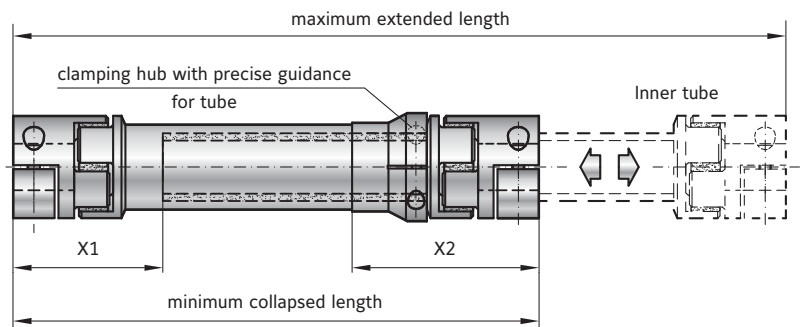
For details on the elastomer inserts see pages 66-67.

## FUNCTIONAL DESCRIPTION

The maximum extended length relates to the minimum collapsed length. The formulas to the right can be used to determine the corresponding values.

Information on sizing, torsional stiffness, misalignment ratings, etc. can be found on pages 16-18.

$$\text{Maximum extended length} = (\text{collapsed length} \times 2) - \text{measurement (X1 + X2)}$$



$$\text{Minimum collapsed length} = \frac{\text{maximum extended length} + \text{dimension (X1 + X2)}}{2}$$

# MODEL EZV

| SIZE                                                           |               |  | 10          |     | 20          |       |       | 60          |        | 150         |        | 300         |        | 450         |      |
|----------------------------------------------------------------|---------------|--|-------------|-----|-------------|-------|-------|-------------|--------|-------------|--------|-------------|--------|-------------|------|
| Type (Elastomer insert)                                        |               |  | A           | B   | A           | B     |       | A           | B      | A           | B      | A           | B      | A           | B    |
| Rated torque (Nm)                                              | $T_{10N}$     |  | 12.5        | 16  | 17          | 21    |       | 60          | 75     | 160         | 200    | 325         | 405    | 530         | 660  |
| Max. torque* (Nm)                                              | $T_{Kmax}$    |  | 25          | 32  | 34          | 42    |       | 120         | 150    | 320         | 400    | 650         | 810    | 1060        | 1200 |
| Inserted min. length from - to (mm)                            | $A_{min}$     |  | 150 - 2,055 |     | 200 - 2,075 |       |       | 250 - 2,095 |        | 300 - 2,115 |        | 350 - 2,130 |        | 400 - 2,150 |      |
| Extended over all length from - to (mm)                        | $A_{max}$     |  | 190 - 4,000 |     | 250 - 4,000 |       |       | 310 - 4,000 |        | 370 - 4,000 |        | 440 - 4,000 |        | 500 - 4,000 |      |
| Measurement (mm)                                               | X1+X2         |  | 115         |     | 156         |       |       | 197         |        | 240         |        | 280         |        | 312         |      |
| Outside diameter clamping hub (mm)                             | $B_1$         |  | 32          |     | 42          |       |       | 56          |        | 66.5        |        | 82          |        | 102         |      |
| Outside diameter tube (mm)                                     | $B_2$         |  | 28          |     | 35          |       |       | 50          |        | 60          |        | 80          |        | 90          |      |
| Outside diameter center hub (mm)                               | $B_3$         |  | 41.5        |     | 47          |       |       | 67          |        | 77          |        | 102         |        | 115         |      |
| Outside diameter with screwhead (mm)                           | $B_s$         |  | 32          |     | 44.5        |       |       | 57          |        | 68          |        | 85          |        | 105         |      |
| Fit length (mm)                                                | C             |  | 20          |     | 25          |       |       | 40          |        | 47          |        | 55          |        | 65          |      |
| Inside diameter from $\phi$ to $\phi$ H7 (mm)                  | $D_{1/2}$     |  | 5 - 16      |     | 8 - 25      |       |       | 14 - 32     |        | 19 - 35     |        | 19 - 45     |        | 24 - 60     |      |
| Screw ISO 4762                                                 | $E_1$         |  | M4          |     | M5          |       |       | M6          |        | M8          |        | M10         |        | M12         |      |
| Tightening torque (Nm)                                         |               |  | 4           |     | 8           |       |       | 15          |        | 35          |        | 70          |        | 120         |      |
| Screw ISO 4762                                                 | $E_2$         |  | M4          |     | M4          |       |       | M5          |        | M6          |        | M8          |        | M10         |      |
| Tightening torque (Nm)                                         |               |  | 4           |     | 4.5         |       |       | 8           |        | 18          |        | 35          |        | 70          |      |
| Distance between centers (mm)                                  | $F_{10.5}$    |  | 10.5        |     | 15.5        |       |       | 21          |        | 24          |        | 29          |        | 38          |      |
| Distance between centers (mm)                                  | $F_2$         |  | 15          |     | 18          |       |       | 26          |        | 31          |        | 41          |        | 45          |      |
| Distance (mm)                                                  | G             |  | 7.5         |     | 8.5         |       |       | 15          |        | 17.5        |        | 20          |        | 25          |      |
| Coupling length (mm)                                           | H             |  | 34          |     | 46          |       |       | 63          |        | 73          |        | 86          |        | 99          |      |
| Shaft average value (mm)                                       | N             |  | 26          |     | 33          |       |       | 49          |        | 57          |        | 67          |        | 78          |      |
| Length (mm)                                                    | O             |  | 16.6        |     | 18.6        |       |       | 32          |        | 37          |        | 42          |        | 52          |      |
| Moment of inertia coupling half ( $10^{-3}$ kgm <sup>2</sup> ) | $J_1/J_2$     |  | 0.01        |     | 0.02        |       |       | 0.15        |        | 0.21        |        | 1.02        |        | 2.3         |      |
| Inertia of tube per meter ( $10^{-3}$ kgm <sup>2</sup> )       | $J_3$         |  | 0.075       |     | 0.183       |       |       | 0.66        |        | 1.18        |        | 2.48        |        | 10.6        |      |
| Combined dynamic torsional stiffness of the inserts (Nm/rad)   | $C_{Tdyn}^E$  |  | 270         | 825 | 1,270       | 2,220 | 3,970 | 5,950       | 6,700  | 14,650      | 11,850 | 20,200      | 27,700 | 40,600      |      |
| Torsional stiffness of tube per meter (Nm/rad)                 | $C_{T}^{ZWR}$ |  | 321         |     | 1,530       |       | 6,632 |             | 11,810 |             | 20,230 |             | 65,340 |             |      |

\*Maximum transmittable torque of the clamping hub depends on the bore diameter (see pages 70-71).

| ORDERING EXAMPLE                                                                                                                                           | EZV | 20 | 1200 | A | 24 | 19.05 | XX                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|------|---|----|-------|------------------------------------------------------------|
| Model                                                                                                                                                      | ●   |    |      |   |    |       | Special designation only<br>(e.g. special bore tolerance). |
| Size                                                                                                                                                       |     | ●  |      |   |    |       |                                                            |
| Collapsed length                                                                                                                                           |     |    | ●    |   |    |       |                                                            |
| Elastomer insert type                                                                                                                                      |     |    |      | ● |    |       |                                                            |
| 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. EZV/20/1200/A/24/19.05/XX; XX=anodized aluminum) |     |    |      |   |    |       |                                                            |

