

Accessories

Connection of motor and encoder

Couplings

Bellows and spring washer couplings



Bellows couplings provide cost-effective connection of the motor and encoder. They are also able to correct any angular errors between the drive and encoder.

Spring washer couplings are used with high speeds.

Order code Couplings

8.0000 . 1 X 01 . XX XX
Type a b c

a Type of coupling

- 1 = Bellows-type \varnothing 19 mm
- 2 = Bellows-type \varnothing 15 mm
- 3 = Spring washer type, \varnothing 30 mm, one-part
- 4 = Spring washer type, \varnothing 30 mm, three part, plug-in
- 5 = Bellows-type \varnothing 25 mm

b Bore diameter d₁ (see technical data)

Note:
for the bore diameter
d₁ = 3/8" please enter Code A1
d₁ = 1/4" please enter Code A2

Example a) : d₁ = 10 mm and d₂ = 12 mm
Order-No. = 8.0000.1X01.1012

Example b) : d₁ = 3/8" and d₂ = 10 mm
Order-No. = 8.0000.1X01.A110

c Bore diameter d₂ (see technical data)

Technical data

| Type | | 8.0000.1101.XXXX | 8.0000.1201.XXXX | 8.0000.1301.XXXX | 8.0000.1401.XXXX | 8.0000.1501.XXXX |
|---|-------------------|------------------|------------------|-----------------------|------------------|------------------|
| Max. speed | min ⁻¹ | 12000 | 12000 | 12000 | 12000 | 12000 |
| Max. torque | Ncm | 150 | 50 | 80 | 60 | 200 |
| Max. radial displacement | mm | ± 0.2 | ± 0.2 | ± 0.4 | ± 0.3 | ± 0.2 |
| Max. angular displacement | ° | ± 1.5 | ± 1.5 | ± 3 | ± 2.5 | ± 1.5 |
| Max. axial displacement | mm | ± 0.7 | ± 0.5 | ± 0.4 | ± 0.4 | ± 0.6 |
| Torsion spring parameter | Ncm/° | 700 | 210 | 265 | 55 | 1300 |
| Moment of inertia | gcm ² | 5.5 | 1.2 | 19 | 35 | 18 |
| working temperature | °C | -30 ... +120 | -30 ... +120 | -30 ... +120 | -10 ... +80 | -30 ... +120 |
| Weight approx. | g | 14 | 6 | 16 | 30 | 24 |
| Material flange | | Al | Al | Al Cu Mg Pb | zinc diecast | Al |
| Bellow or spring washer/casing | | stainless steel | stainless steel | Cu Sn 6 nickel-plated | PA 6.6 20% gf | stainless steel |
| Diameter d/d1 from ... to | mm | 3...12 | 3...9 | 3...8 | 4...16 | 3...16 |
| Max. tightening torque | Ncm | 150 | 70 | 80 | 80 | 180 |
| Standard bore diameter (d ₁ / d ₂) mm | | 12 / 12 | 8 / 6 | 6 / 6 | 12 / 12 | 15 / 12 |
| | | 12 / 10 | 6 / 6 | 6 / 4 | 12 / 10 | 14 / 12 |
| | | 10 / 10 | 6 / 4 | | 10 / 10 | 14 / 10 |
| | | 6 / 6 | 4 / 4 | | 10 / 6 | 6 / 14 |
| | | | 10 / 8 | | 6 / 6 | |
| | | | | | 3/8" / 10 | |
| | | | | | 3/8" / 6 | |
| | | | | 1/4" / 10 | | |
| | | | | 1/4" / 6 | | |

Description and applications

Manufacturing and installation tolerances as well as the effects of temperature cause alignment errors between shafts in drive engineering which can sometimes lead to extreme overload on the bearings.

This may result in increased wear of the bearings and may lead to premature failure of the encoder. By using couplings, these alignment errors can be compensated, thereby reducing the load on the bearings to a minimum. A distinction should be made between three different kinds of alignment error: radial, angular and axial displacement.

Whilst with torsion-free but flexible shaft couplings, axial shaft displacements produce only static forces in the coupling, radial and angular displacements produce alternating stresses, restoring forces and moments which may have an impact on adjoining components (shaft bearings).

Depending on the type of coupling, particular attention should be paid to radial shaft displacement which should be kept to a minimum.

Accessories

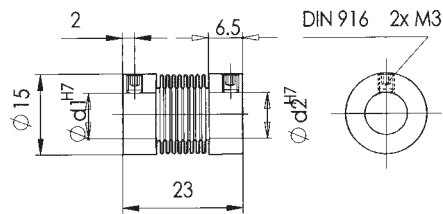
| | | |
|--|------------------|--|
| Connection of motor and encoder | Couplings | Bellows and spring washer couplings |
|--|------------------|--|

Metal bellows-type couplings (.1101, .1201 und .1501)

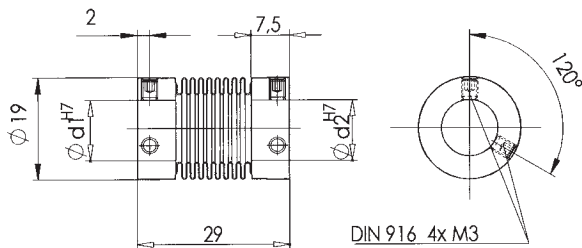
Metal bellows-type couplings are recommended as an inexpensive type of coupling. They are also suitable for compensating larger angle displacements.

Dimensions

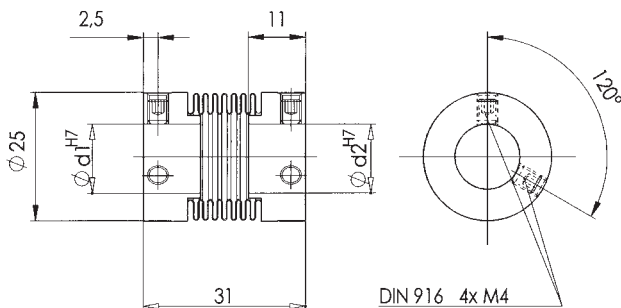
Bellows-type coupling \varnothing 15 mm
(8.0000.1201.XXXX)



Bellows-type coupling \varnothing 19 mm
(8.0000.1101.XXXX)



Bellows-type coupling \varnothing 25 mm
(8.0000.1501.XXXX)



Installation instructions:

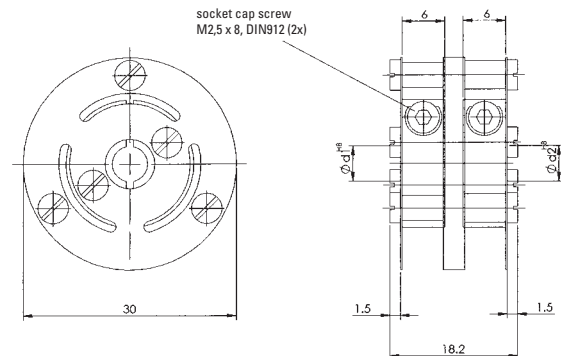
1. Check shaft for displacement; See technical data for details
2. Align and adjust coupling on shafts.
3. Tighten locking screws carefully. Avoid overtightening.
4. During installation protect the coupling from damage and from overbending.

Spring washer-type couplings (.1300 und .1401)

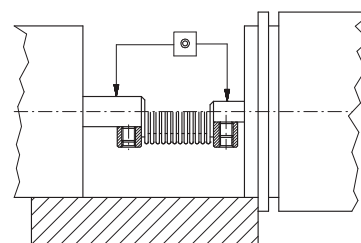
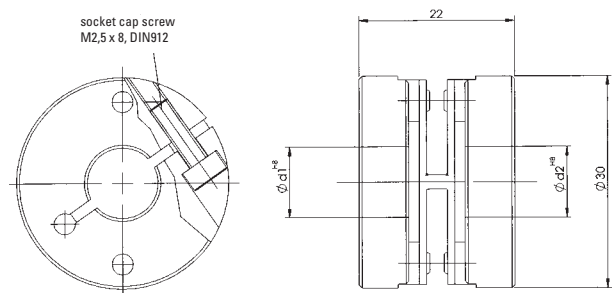
Spring washer-type couplings (.1300 and .1401) are used mainly in those cases where high speeds and smaller angular displacements are involved. For applications where electrical insulation between rotary encoder and drive is required, the electrically insulating spring washer-type coupling should be used.

Dimensions

Spring washer-type coupling, one-part
(8.0000.1301.XXXX)



Spring washer-type coupling, three part, plug-in
(8.0000.1401.XXXX)



Accessories

| | | |
|--|--------------------------------|-----------------|
| Connection of motor and encoder | Flexible shaft coupling | Paguflex |
|--|--------------------------------|-----------------|



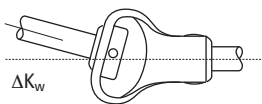
The safe, uncomplicated and economical solution, if drive shafts with angular, radial and/or axial displacement are to be friction-locked together.

| | |
|-------------------------------|-------------------------|
| Order-No. | 8.0000.1G01.0606 |
| Size 1 | |
| Bore diameter both sides 6 mm | |

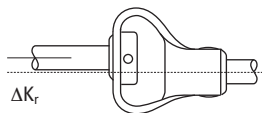
| | |
|--------------------------------|-------------------------|
| Order-No. | 8.0000.1H01.1010 |
| Size 2 | |
| Bore diameter both sides 10 mm | |

Functional principle

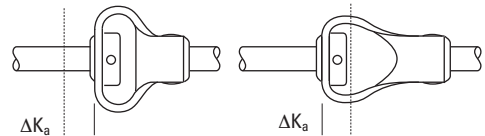
Compensation of an angular misalignment



Compensation of a radial misalignment



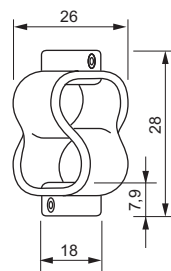
Compensation of a axial misalignment



| Technical data | | | |
|---|---------------------------|------------------|------------------|
| Type | | 8.0000.1G01.0606 | 8.0000.1H01.1010 |
| max. torque with displacement $K_w \leq 1^\circ$, $K_a \leq 2 \text{ mm}$, $K_r \leq 0.5 \text{ mm}$ | T_{Kmax1} [Nm] | 0.8 | 3.0 |
| max. torque with max. angular and radial displacement | T_{Kmax2} [Nm] | 0.5 | 1.8 |
| Compliance | | | |
| Axial misalignment | $2 \cdot \Delta K_a$ [mm] | 9.0 | 15 |
| Radial misalignment | ΔK_r [mm] | 2.6 | 3.2 |
| Angular misalignment | ΔK_w [°] | 10 | 15 |
| Working temperature | [°C] | -40 ... +100 | -40 ... +100 |

Dimensions

Size 1



Size 2

