

# 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.**

<b>Order code</b>	<b>8.0000</b>	<b>. 1</b>	<b>X</b>	<b>01</b>	<b>. XX</b>	<b>XX</b>
<b>Couplings</b>	Type	<b>a</b>	<b>b</b>	<b>c</b>		

**a** Type of coupling  
 1 = Bellows-type ø 19 mm  
 2 = Bellows-type ø 15 mm  
 3 = Spring washer type, ø 30 mm, one-part  
 4 = Spring washer type, ø 30 mm, three part, plug-in  
 5 = Bellows-type ø 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

**c** Bore diameter d2 (see technical data)

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

Technical data		8.0000.1101.XXXX	8.0000.1201.XXXX	8.0000.1301.XXXX	8.0000.1401.XXXX	8.0000.1501.XXXX
Type						
Max. speed	min <sup>-1</sup>	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 <sup>2</sup>	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	(d1 / d2) mm	12 / 12 12 / 10 10 / 10 6 / 6	8 / 6 6 / 6 6 / 4 4 / 4 10 / 8	6 / 6 6 / 4	12 / 12 12 / 10 10 / 10 10 / 6 6 / 6 3/8" / 10 3/8" / 6 1/4" / 10 1/4" / 6	15 / 12 14 / 12 14 / 10 6 / 14

## 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

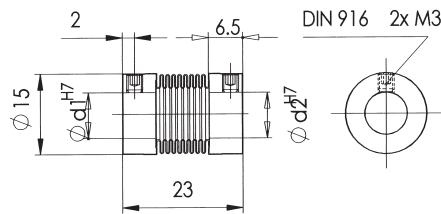
### Bellows and spring washer couplings

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

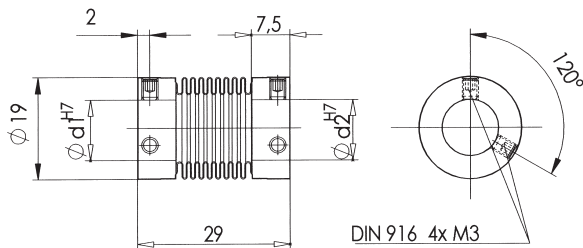
Metal bellows-type couplings are recommended as an inexpensive type of coupling. They are also suitable for compensating larger angle displacements.

#### Dimensions

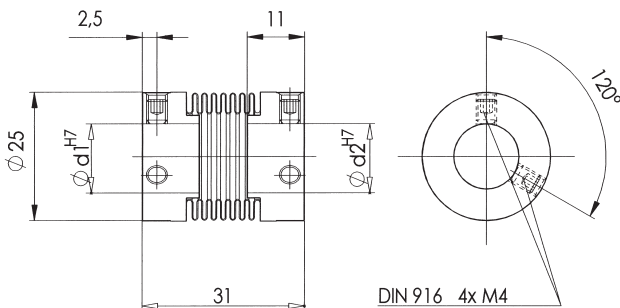
Bellows-type coupling  $\varnothing$  15 mm  
(8.0000.1201.XXXX)



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



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



#### Installation instructions:

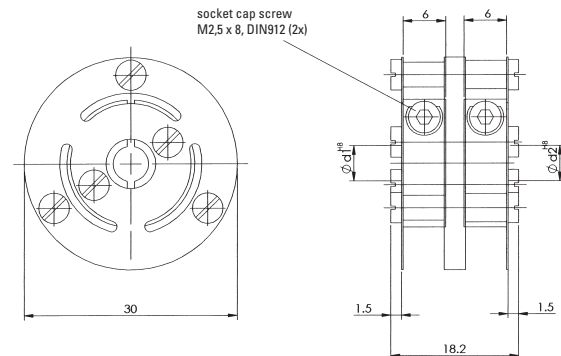
1. Check shaft for displacement; See technical data for details
2. Align and adjust coupling on shafts.
3. Tighten locking screws carefully. Avoid overtightening.
4. During installation protect the coupling from damage and from overbending.

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

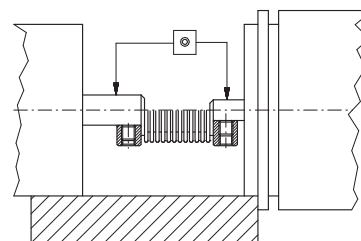
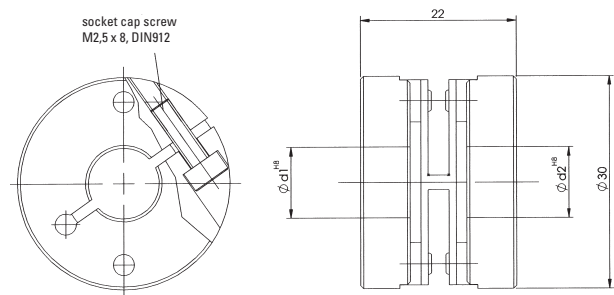
Spring washer-type couplings (.1300 and .1401) are used mainly in those cases where high speeds and smaller angular displacements are involved. For applications where electrical insulation between rotary encoder and drive is required, the electrically insulating spring washer-type coupling should be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

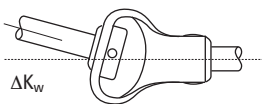
**Order-No. 8.0000.1H01.1010**

### Size 2

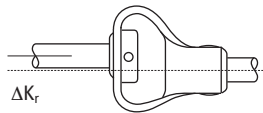
Bore diameter both sides 10 mm

### Functional principle

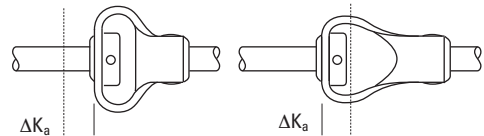
Compensation of an angular misalignment



Compensation of a radial misalignment



Compensation of a axial misalignment

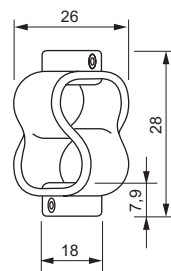


### Technical data

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

### Dimensions

Size 1



Size 2

