

# OVERVIEW ACCESSORIES

Flexible couplings



Flanges



Support angles



Measuring wheels



Mounting bells



Antirotation systems



Pre-assembled cables



Connectors



# FLEXIBLE COUPLINGS

## ■ Coupling importance

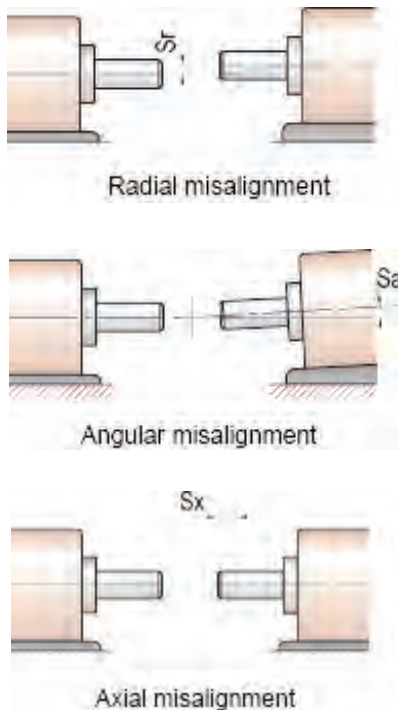
A large number of mechanical installations involve the problem of transmitting movement between the machine shafts. The coupling is the simplest manner of achieving this transmission since it works by joining the two ends of these shafts, thus transmitting rotation from one to the other. Not only does correct equipment operation depend on good resolution of the transmission problem, but also the useful lifetime of the encoders or coupled machines.

## ■ Selection

Coupling selection must be a compromise between factors, such as cost, available installation space, the required duration and transmission performance, which must satisfy requirements, such as:

## ■ Absorption of shaft misalignment and loads

Due to dimensional errors inherent in all mechanical installations, the shafts to be installed will maintain certain positional differences or "misalignment" between the two and this will hinder the transmission of movement. This misalignment may be axial, radial or angular.



In all cases, the employed coupling system must be able to absorb such misalignment and prevent any negative effects of loads on shafts, bearings, supports and frames. Misalignment can also cause fatigue or wear in the coupling and therefore, during selection, the rotation speed must be taken into account, reducing as much as possible the maximum acceptable misalignment figures that are given in the tables for each model.



## ■ For transmission

This is not important for measurement systems. For power drives, it should be verified that the torque to be transmitted is less than the rated torque given in the performance tables, with greater margins in accordance with the expected misalignment.

## ■ Kinematic precision

In measurement systems and high-precision drives, it is important that the coupling does not cause any positional phase differences between the shafts.

All models in the ENCO-FLEX range are free from torsional play and only the OLDHAM may acquire a certain amount of free play after a time working with significant radial misalignment (and this can be corrected by replacing the disc). If the load torque or inertia in the driven shaft is significant, phase differences may be produced due to the torsional elasticity in the coupling. In such cases, the use of models that are not very rigid, such as the SPRING-FLEX or POLY-FLEX, should be avoided.

## ■ Rotation speed

The OLDHAM-FLEX and SPRING-FLEX models are not suitable for high-speed shafts, especially if there is significant misalignment. For the rest of the couplings, it must be taken into account that their useful lifetime depends on fatigue and hence the speed at which they operate.

## ■ Securing to shafts

Couplings can be supplied with fixing setscrews (two at 90°) or with a built-in clamp-flange.

Clamp securing has the advantage of not producing any marks on the shafts, thus they are better able to withstand sharp inversions and vibration. Setscrews are more economic and allow larger diameters to be employed for the same coupling. The inconvenience of setscrews is that they can produce flaw on the shafts. Moreover, they can loosen due to vibration, but this can be avoided by using a semi-permanent adhesive.



# ALU-FLEX

## ALUMINIUM GROOVED FLEXIBLE COUPLINGS OR STAINLESS STEEL

- Without free-plays. They do not produce any speed variations in the transmission
- High torsional rigidity
- Available with setscrews and built-in clamps
- Resistant to oils and chemical products
- Mechanical protection against excessive torque



ALU-FLEX are single flexible couplings in a single piece, machined from hardened aluminium alloy. They are suitable for transmissions that require moderate torque and when shaft misalignment is not very large. They act as mechanical fuses to excessive torques.

These couplings are suitable for measurement and control systems, together with reduced torque drives. They permit transmission of very precise kinematic movement, without free-

play and with low torsional elasticity. They are recommended for auxiliary machines, tachometric generators potentiometers and encoders etc.

The coupling will absorb errors in alignment and shaft installation.

### TECHNICAL SPECIFICATIONS

|                 | Torque | Clamping torque | Max. Speed | Admissible max. misalignment |         |       | Torsion spring stiffness | Radial spring stiffness | Weight | Inertia |        |
|-----------------|--------|-----------------|------------|------------------------------|---------|-------|--------------------------|-------------------------|--------|---------|--------|
|                 | Ncm    | Ncm             |            | rpm                          | Angular | Axial |                          |                         |        |         | Radial |
|                 |        |                 |            |                              | degree  | mm    |                          |                         |        |         | mm     |
| <b>AFP 6508</b> | 2      | 8               | 8.000      | ±2                           | ±0,15   | ±0,1  | 0,55                     | 24                      | 0,5    | 0,02    |        |
| <b>AFP 1015</b> | 15     | 15              | 8.000      | ±2                           | ±0,2    | ±0,15 | 2,2                      | 22                      | 2,4    | 0,34    |        |
| <b>AFP 1218</b> | 25     | 35              | 8.000      | ±2,5                         | ±0,25   | ±0,15 | 2,8                      | 28                      | 4      | 0,83    |        |
| <b>AFP 1622</b> | 40     | 80              | 8.000      | ±3                           | ±0,3    | ±0,2  | 5                        | 34                      | 9,5    | 3,2     |        |
| <b>AFP 1922</b> | 60     | 80              | 8.000      | ±3,5                         | ±0,4    | ±0,25 | 9                        | 40                      | 13     | 6,7     |        |
| <b>AFP 2524</b> | 100    | 120             | 8.000      | ±4                           | ±0,5    | ±0,3  | 20                       | 60                      | 26     | 22,2    |        |
| <b>AFP 2532</b> | 100    | 120             | 8.000      | ±4                           | ±0,5    | ±0,3  | 18                       | 50                      | 35     | 30      |        |
| <b>AFP 3030</b> | 150    | 120             | 8.000      | ±4                           | ±0,5    | ±0,3  | 21                       | 60                      | 45     | 57      |        |
| <b>AFP 3038</b> | 150    | 120             | 8.000      | ±4                           | ±0,5    | ±0,3  | 21                       | 60                      | 60     | 76      |        |
| <b>AFA 1421</b> | 50     | 50              | 6.000      | ±3                           | ±0,25   | ±0,2  | 4,5                      | 22                      | 6,5    | 1,9     |        |
| <b>AFA 1625</b> | 60     | 50              | 6.000      | ±3,5                         | ±0,3    | ±0,2  | 5,5                      | 30                      | 10     | 3,8     |        |
| <b>AFA 1928</b> | 80     | 120             | 6.000      | ±4                           | ±0,4    | ±0,25 | 8                        | 36                      | 16     | 8,7     |        |
| <b>AFA 2532</b> | 100    | 100             | 6.000      | ±4                           | ±0,5    | ±0,35 | 16                       | 45                      | 34     | 29      |        |
| <b>IFA 2532</b> | 200    | 150             | 6.000      | ±4                           | ±0,5    | ±0,35 | 29                       | 150                     | 88     | 84      |        |
| <b>AFA 3038</b> | 150    | 100             | 6.000      | ±4                           | ±0,5    | ±0,35 | 19                       | 60                      | 58     | 76      |        |

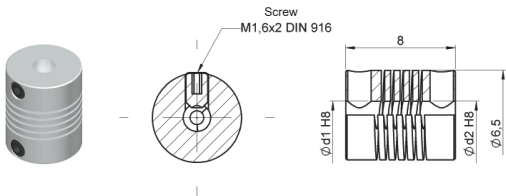
# ALU-FLEX

## ALUMINIUM GROOVED FLEXIBLE COUPLINGS OR STAINLESS STEEL

### AFP 6508 - Aluminium

Ordering code example: AFP 6508 02/02

Ø d1/d2

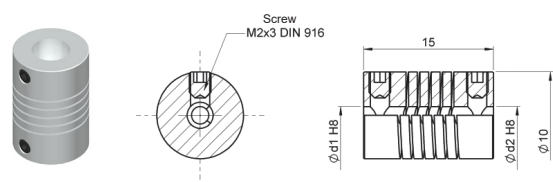


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### AFP 1015 - Aluminium

Ordering code example: AFP 1015 02/02

Ø d1/d2

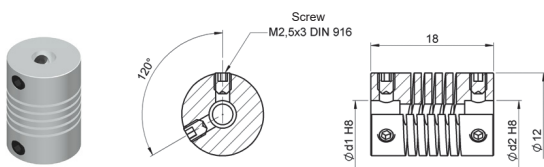


02/02  
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03/05

### AFP 1218 - Aluminium

Ordering code example: AFP 1218 04/04

Ø d1/d2

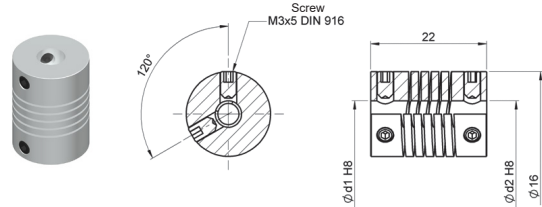


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### AFP 1622 - Aluminium

Ordering code example: AFP 1622 06/06

Ø d1/d2

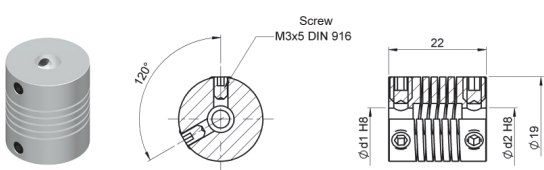


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### AFP 1922 - Aluminium

Ordering code example: AFP 1922 06/06

Ø d1/d2

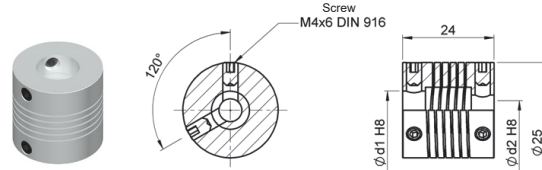


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### AFP 2524 - Aluminium

Ordering code example: AFP 2524 06/06

Ø d1/d2

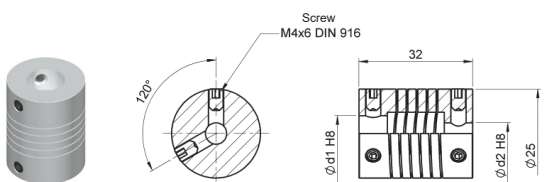


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06/08  
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10/10  
12/12

### AFP 2532 - Aluminium

Ordering code example: AFP 2532 10/10

Ø d1/d2

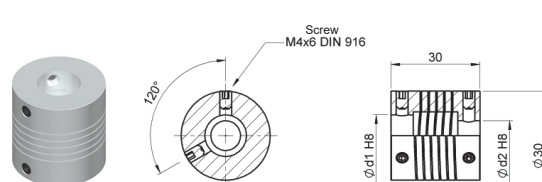


06/06  
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08/08  
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10/10  
10/12

### AFP 3030 - Aluminium

Ordering code example: AFP 3030 10/10

Ø d1/d2

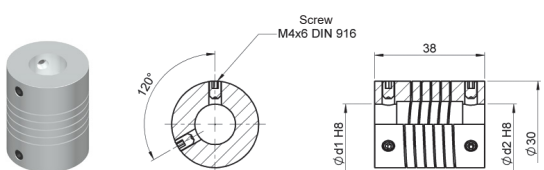


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### AFP 3038 - Aluminium

Ordering code example: AFP 3038 12/12

Ø d1/d2

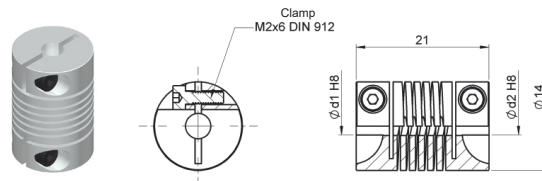


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14/14

### AFA 1421 - Aluminium

Ordering code example: AFA 1421 04/04

Ø d1/d2



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02/03  
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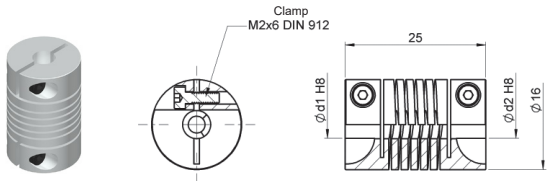
# ALU-FLEX

## ALUMINIUM GROOVED FLEXIBLE COUPLINGS OR STAINLESS STEEL

### AFA 1625 - Aluminium

Ordering code example: AFA 1625 05/05

Ø d1/d2

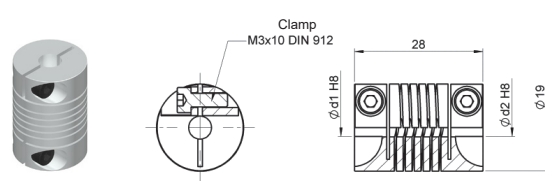


03/03  
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### AFA 1928 - Aluminium

Ordering code example: AFA 1928 06/06

Ø d1/d2

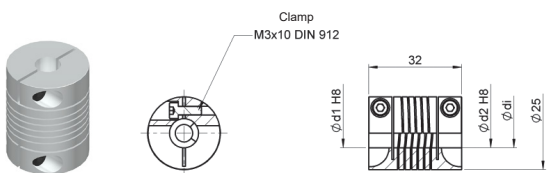


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### AFA 2532 - Aluminium

Ordering code example: AFA 2532 10/10

Ø d1/d2

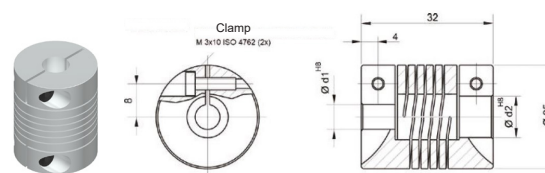


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06/10  
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08/10  
10/10  
10/12

### IFA 2532 - Stainless Steel

Ordering code example: IFA 2532 10/10

Ø d1/d2

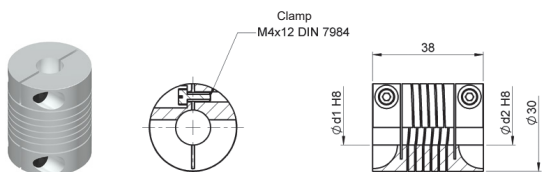


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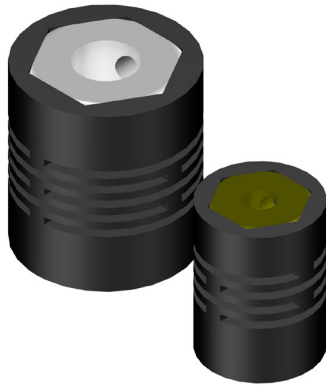
### AFA 3038 - Aluminium

Ordering code example: AFA 3038 12/12

Ø d1/d2



10/10  
12/12  
14/14



# POLY-FLEX

## ACETAL GROOVED FLEXIBLE COUPLINGS

- Absorption of significant angular and radial deviations
- Low inertia
- Free of speed variations in the transmission
- Torsional vibration attenuation
- Electric and thermal insulation between the shafts
- Mechanical protection against excessive torque



POLY-FLEX are flexible couplings manufactured in polyamide and reinforced with fibreglass. Reduced size for applications that do not require high torque and where there is significant shaft misalignment.

The material provides excellent resistance to fatigue, which makes it very suitable for high-speed couplings. It absorbs torsional vibration and insulates the shafts both electrically and thermally, acting, where necessary, as a mechanical fuse.

The tightening of the setscrews has been reinforced by incorporating an aluminium fitting.

These couplings are suitable for measurement systems and machines that do not offer high resistant torque values. They are recommended for tachometric generators potentiometers and encoders, etc. POLY-FLEX couplings can be used in the temperature range of -30° to 85°.

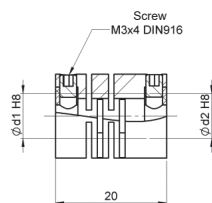
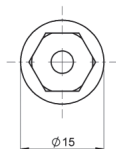
### TECHNICAL SPECIFICATIONS

|                 | Torque<br><i>Ncm</i> | Clamping torque<br><i>Ncm</i> | Max. Speed<br><i>rpm</i> | Admissible max. misalignment |                    |                     | Torsion spring stiffness<br><i>Nm/rad</i> | Radial spring stiffness<br><i>N/mm</i> | Weight<br><i>gr</i> | Inertia<br><i>gcm<sup>2</sup></i> |
|-----------------|----------------------|-------------------------------|--------------------------|------------------------------|--------------------|---------------------|---|--|---------------------|-----------------------------------|
|                 |                      |                               |                          | Angular<br><i>degree</i>     | Axial<br><i>mm</i> | Radial<br><i>mm</i> |   |  |                     |                                   |
| <b>PFP 1520</b> | 30                   | 70                            | 12000                    | ±2,5                         | ±0,2               | ±0,3                | 12  | 45                                     | 6                   | 2                                 |
| <b>PFP 2224</b> | 80                   | 120                           | 10000                    | ±3                           | ±0,2               | ±0,3                | 38  | 115                                    | 10                  | 7                                 |

#### PFP 1520

Ordering code example: PFP 1520 06/06

∅ d1/d2

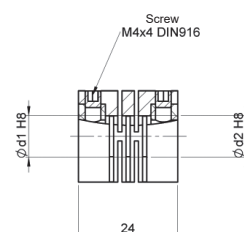
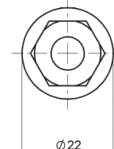


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03/05  
03/06  
**04/04**  
04/05  
04/06  
05/05  
05/06  
**06/06**  
6.35/6.35

#### PFP 2224

Ordering code example: PFP 2224 08/08

∅ d1/d2



04/04  
06/06  
06/6.35  
06/08  
06/10  
6.35/6.35  
**08/08**  
08/10  
**10/10**  
9.52/9.52

Printed in bold = Immediate delivery. Check with us the delivery time for the other options.

Other shaft diameter available, upon request.



# SPRING-FLEX

## FLEXIBLE COUPLING SPRINGS

- Absorption of significant misalignment
- Elimination of loads on the shafts due to misalignment
- Free of wear and fatigue
- Vibration absorption
- High torsional elasticity
- Protection against sudden acceleration in transmission



SPRING-FLEX couplings are based on the use of a helicoid spring as an elastic transmission element. These springs are constructed from stainless steel with a plane section. Spring ends are designed to prevent its rotation.

The result is a highly elastic coupling that enables very misaligned shafts to be coupled without the reactions on the bearings being excessively high. The coupling maintains its properties in both

directions of rotations.

They are suitable for measurement systems and machines that do not offer a very high load torque and where the alignment of the shafts is not too tight or can cause variations (heat expansion, vibration and movements etc).

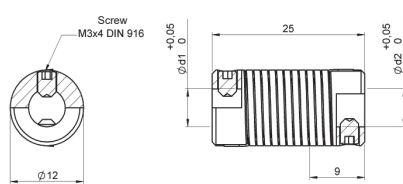
### TECHNICAL SPECIFICATIONS

|                 | Torque<br><i>Ncm</i> | Clamping torque<br><i>Ncm</i> | Max. Speed<br><i>rpm</i> | Admissible max. misalignment |                    |                     | Torsion spring stiffness<br><i>Nm/rad</i> | Radial spring stiffness<br><i>N/mm</i> | Weight<br><i>gr</i> | Inertia<br><i>gcm<sup>2</sup></i> |
|-----------------|----------------------|-------------------------------|--------------------------|------------------------------|--------------------|---------------------|---|--|---------------------|-----------------------------------|
|                 |                      |                               |                          | Angular<br><i>degree</i>     | Axial<br><i>mm</i> | Radial<br><i>mm</i> |   |  |                     |                                   |
| <b>SFP 1225</b> | 15                   | 70                            | 8000                     | ±5                           | ±0,5               | ±0,5                | 40  | 60                                     | 14                  | 2,8                               |
| <b>SFP 1635</b> | 50                   | 150                           | 3000                     | ±5                           | ±1                 | ±1                  | 50  | 70                                     | 28                  | 10                                |
| <b>SFP 2650</b> | 150                  | 300                           | 3000                     | ±5                           | ±1                 | ±1,5                | 40  | 60                                     | 100                 | 95                                |

#### SFP 1225

Ordering code example: SFP 1225 06/06

∅ d1/d2

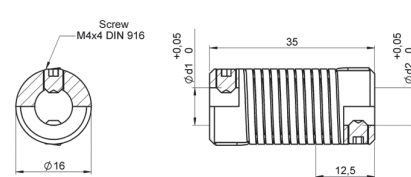


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03/05  
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04/06  
05/05  
**06/06**

#### SFP 1635

Ordering code example: SFP 1635 08/08

∅ d1/d2

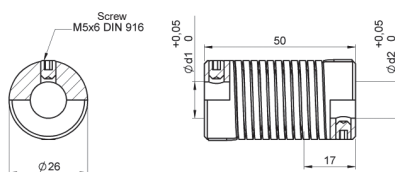


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04/06  
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05/06  
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06/08  
**08/08**

#### SFP 2650

Ordering code example: SFP 2650 10/12

∅ d1/d2



06/06  
06/08  
06/10  
08/08  
08/10  
**10/10**  
10/12  
12/12

Printed in bold = Immediate delivery. Check with us the delivery time for the other options.  
Other shaft diameter available, upon request.



# BELLOW-FLEX

## FLEXIBLE METAL BELLOWS COUPLINGS

- High absorption of misalignments
- Elimination of loads on the shafts due to misalignment
- No wear and tear or fatigue
- No cinematic errors in transmission
- High torsional stiffness



BELLOW-FLEX couplings are based on the use of flexible metal bellows that can transmit the moment of rotation while compensating for errors of alignment without hardly any distortion due to torsional elasticity.

The characteristics of the BELLOWS-FLEX produce speed transmission of great precision, including high torque and speeds, which recommend them for servo-actions, precision

machinery, installation of control and measurement, etc.

The number of convolutions in the bellow has been chosen in the search for a compromise between the transmittable torque and the admissible misalignments.

### TECHNICAL SPECIFICATIONS

|                 | Torque max. | Clamping torque max. | Max. Speed | Admissible max. misalignment |           |           | Torsion spring stiffness | Radial spring stiffness | Weight    | Inertia                |
|-----------------|-------------|----------------------|------------|------------------------------|-----------|-----------|--------------------------|-------------------------|-----------|------------------------|
|                 | <i>Ncm</i>  | <i>Ncm</i>           |            | <i>rpm</i>                   | Angular   | Axial     |                          |                         |           |                        |
|                 |             |                      |            | <i>degree</i>                | <i>mm</i> | <i>mm</i> | <i>Nm/rad</i>            | <i>N/mm</i>             | <i>gr</i> | <i>gcm<sup>2</sup></i> |
| <b>BFP 1222</b> | 15          | 50                   | 10000      | ±2,5                         | ±0,4      | ±0,2      | 45                       | 30                      | 8         | 1,8                    |
| <b>BFP 1520</b> | 40          | 70                   | 10000      | ±3                           | ±0,4      | ±0,2      | 90                       | 40                      | 6         | 2                      |
| <b>BFP 1525</b> | 40          | 70                   | 10000      | ±4                           | ±0,5      | ±0,3      | 70                       | 15                      | 7         | 2,3                    |
| <b>BFP 2029</b> | 120         | 150                  | 10000      | ±4                           | ±0,4      | ±0,25     | 150                      | 25                      | 15        | 8                      |
| <b>BFP 2035</b> | 100         | 150                  | 10000      | ±4                           | ±0,5      | ±0,3      | 150                      | 10                      | 16        | 9                      |
| <b>BFP 2533</b> | 200         | 80                   | 10000      | ±8                           | ±2,77     | ±0,46     | 210                      | 29                      | 19,5      | 16,1                   |
| <b>BFA 1622</b> | 40          | 50                   | 10000      | ±3                           | ±0,4      | ±0,2      | 90                       | 40                      | 6         | 2,1                    |
| <b>BFA 2129</b> | 120         | 100                  | 10000      | ±4                           | ±0,4      | ±0,25     | 150                      | 25                      | 15        | 9                      |
| <b>BFA 2135</b> | 100         | 100                  | 10000      | ±4                           | ±0,5      | ±0,3      | 140                      | 10                      | 16        | 9,5                    |
| <b>BFA 2435</b> | 100         | 100                  | 10000      | ±4                           | ±0,5      | ±0,3      | 140                      | 10                      | 18        | 15,2                   |
| <b>BFA 2537</b> | 200         | 66                   | 10000      | ±8                           | ±2,77     | ±0,46     | 210                      | 29                      | 28,5      | 25,4                   |



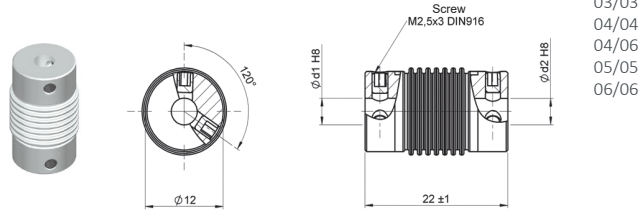
# BELLOW-FLEX

## FLEXIBLE METAL BELLOWS COUPLINGS

### BFP 1222

Ordering code example: BFP 1222 06/06

∅ d1/d2

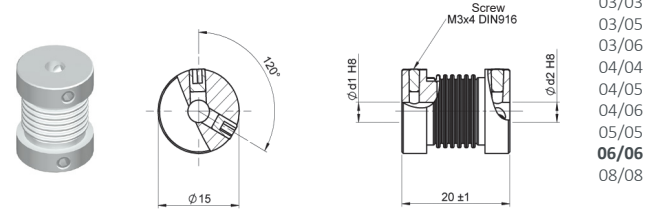


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06/06

### BFP 1520

Ordering code example: BFP 1520 06/06

∅ d1/d2

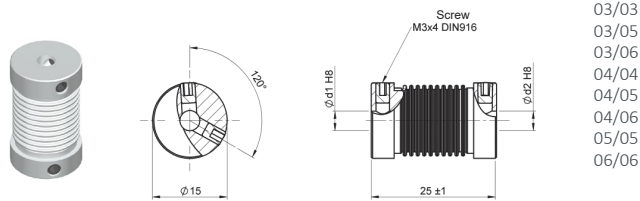


03/03  
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03/06  
04/04  
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**06/06**  
08/08

### BFP 1525

Ordering code example: BFP 1525 03/03

∅ d1/d2

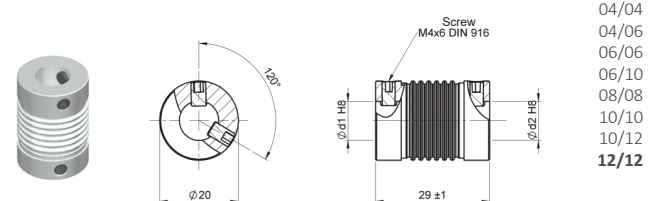


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05/05  
06/06

### BFP 2029

Ordering code example: BFP 2029 12/12

∅ d1/d2

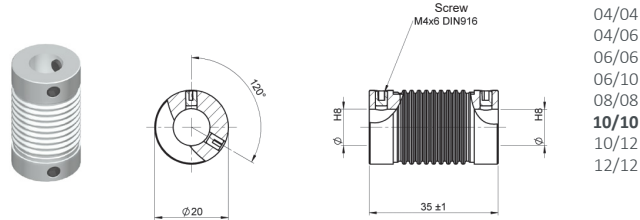


04/04  
04/06  
06/06  
06/10  
08/08  
10/10  
10/12  
**12/12**

### BFP 2035

Ordering code example: BFP 2035 10/10

∅ d1/d2

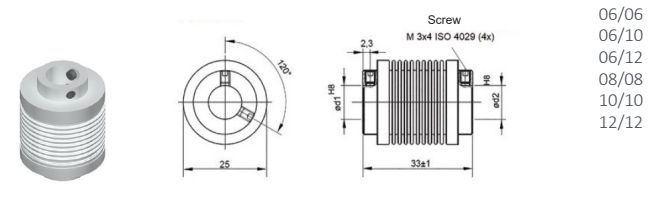


04/04  
04/06  
06/06  
06/10  
08/08  
**10/10**  
10/12  
12/12

### BFP 2533

Ordering code example: BFP 2533 10/10

∅ d1/d2

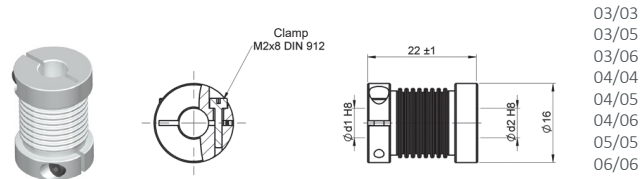


06/06  
06/10  
06/12  
08/08  
10/10  
12/12

### BFA 1622

Ordering code example: BFA 1622 06/06

∅ d1/d2

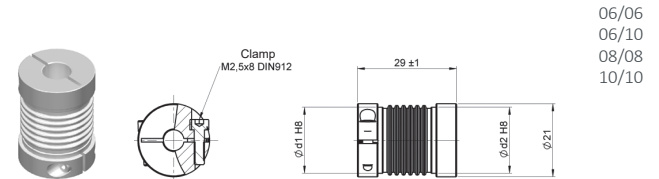


03/03  
03/05  
03/06  
04/04  
04/05  
04/06  
05/05  
06/06

### BFA 2129

Ordering code example: BFA 2129 10/10

∅ d1/d2

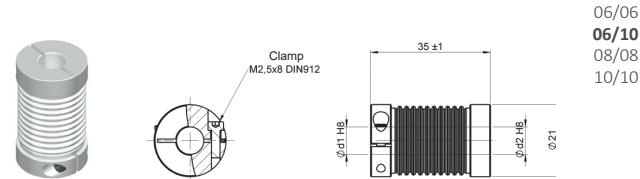


06/06  
06/10  
08/08  
10/10

### BFA 2135

Ordering code example: BFA 2135 06/10

∅ d1/d2

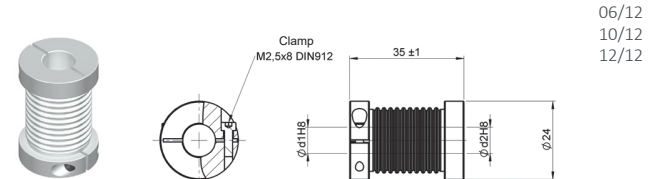


06/06  
**06/10**  
08/08  
10/10

### BFA 2435

Ordering code example: BFA 2435 12/12

∅ d1/d2



06/12  
10/12  
12/12

Printed in bold = Immediate delivery. Check with us the delivery time for the other options.  
Other shaft diameter available, upon request.

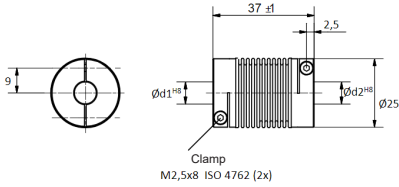
# BELLOW-FLEX

## FLEXIBLE METAL BELLOWS COUPLINGS

### BFA 2537

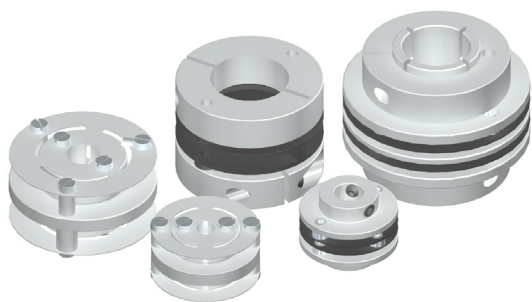
Ordering code example: BFA 2537 08/08

Ø d1/d2



06/06  
06/10  
08/08  
10/10  
12/12

**Printed in bold** = Immediate delivery. Check with us the delivery time for the other options.  
Other shaft diameter available, upon request.



# LAMI-FLEX

## FLEXIBLE SHEET COUPLINGS

- Suitable for high speed
- High flexibility
- No cinematic errors in transmission
- High torsional rigidity



The LAMI-FLEX couplings are based on the use of some flexible steel or plastic membranes that pivot on the coupling, thus proportioning it a very good flexibility. The characteristics of LAMI-FLEX result in a transmission of great precision movement.

They are suitable for high rotation speeds, such as robots, machinetools, turbines, dynamometers ...

### TECHNICAL SPECIFICATIONS

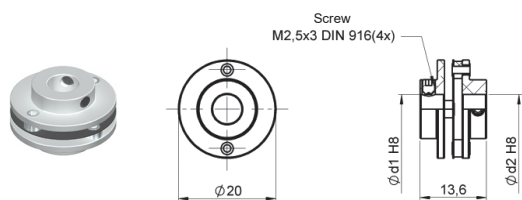
|                 | Torque     | Clamping torque | Max. Speed | Admissible max. misalignment |           |           | Torsion spring stiffness | Radial spring stiffness | Weight    | Inertia                |
|-----------------|------------|-----------------|------------|------------------------------|-----------|-----------|--------------------------|-------------------------|-----------|------------------------|
|                 | <i>Ncm</i> | <i>Ncm</i>      |            | <i>rpm</i>                   | Angular   | Axial     |                          |                         |           |                        |
|                 |            |                 |            | <i>degree</i>                | <i>mm</i> | <i>mm</i> | <i>Nm/rad</i>            | <i>N/mm</i>             | <i>gr</i> | <i>gcm<sup>2</sup></i> |
| <b>LFP 2014</b> | 50         | 60              | 10000      | ±2,5                         | ±0,3      | -         | 100                      | -                       | 5         | 2,6                    |
| <b>LFP 2016</b> | 50         | 60              | 10000      | ±3                           | ±0,4      | ±0,2      | 45                       | 125                     | 6         | 2,8                    |
| <b>LFA 2213</b> | 20         | 20              | 10000      | ±2                           | ±0,3      | ±0,3      | 14                       | 3                       | 9,5       | 3,2                    |
| <b>LFA 2519</b> | 40         | 65              | 12000      | ±2,5                         | ±0,4      | ±0,25     | 22                       | 60                      | 16        | 13,5                   |
| <b>LFA 2525</b> | 40         | 65              | 12000      | ±2,5                         | ±0,4      | ±0,25     | 22                       | 60                      | 18        | 15                     |
| <b>LFA 3019</b> | 80         | 80              | 12000      | ±3                           | ±0,4      | ±0,4      | 150                      | 6                       | 16        | 19                     |
| <b>LFA 3022</b> | 60         | 80              | 12000      | ±2,5                         | ±0,4      | ±0,3      | 30                       | 40                      | 30        | 35                     |
| <b>LFA 3027</b> | 60         | 80              | 12000      | ±2,5                         | ±0,4      | ±0,3      | 30                       | 40                      | 32        | 37                     |
| <b>LFA 3437</b> | 6,3        | 150             | 18000      | 2                            | ±0,5      | 0,2       | 2500                     | 100                     | 75        | 130                    |
| <b>LFA 3832</b> | 400        | 60              | 8000       | ±2,5                         | ±0,3      | ±0,3      | 250                      | 220                     | 53        | 82                     |
| <b>LFA 3850</b> | 400        | 60              | 8000       | ±2,5                         | ±0,8      | ±0,8      | 250                      | 12                      | 63        | 106                    |
| <b>LFA 4447</b> | 15         | 350             | 14000      | 2                            | ±0,6      | 0,25      | 6400                     | 180                     | 156       | 470                    |

#### LFP 2014

Ordering code example: LFP 2014 04/04

Ø d1/d2

02/02  
02/04  
04/04  
06/06

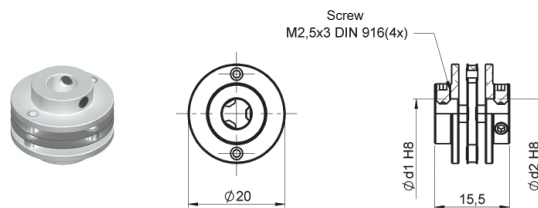


#### LFP 2016

Ordering code example: LFP 2016 02/04

Ø d1/d2

02/02  
02/04  
04/04  
06/06



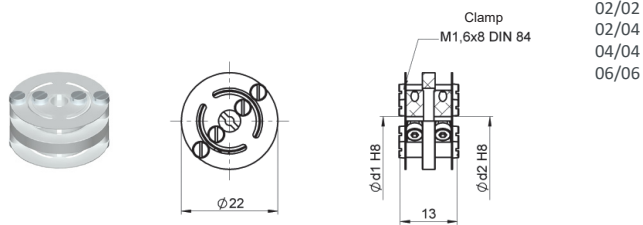
# LAMI-FLEX

## FLEXIBLE SHEET COUPLINGS

### LFA 2213

Ordering code example: LFA 2213 04/04

Ø d1/d2

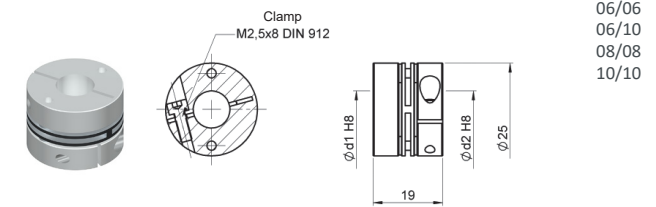


02/02  
02/04  
04/04  
06/06

### LFA 2519

Ordering code example: LFA 2519 06/06

Ø d1/d2

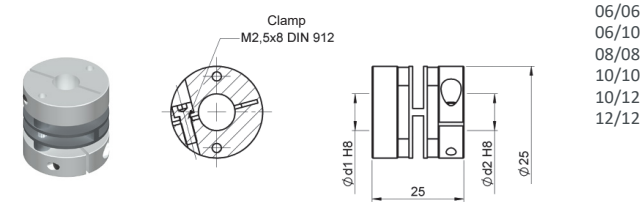


06/06  
06/10  
08/08  
10/10

### LFA 2525

Ordering code example: LFA 2525 06/06

Ø d1/d2

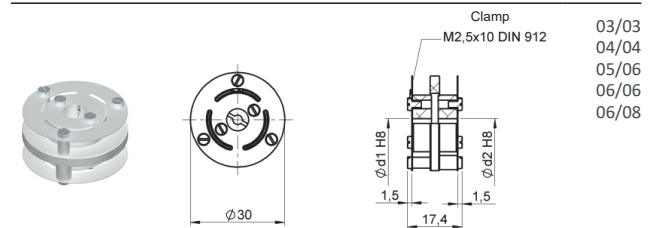


06/06  
06/10  
08/08  
10/10  
10/12  
12/12

### LFA 3019

Ordering code example: LFA 3019 06/08

Ø d1/d2

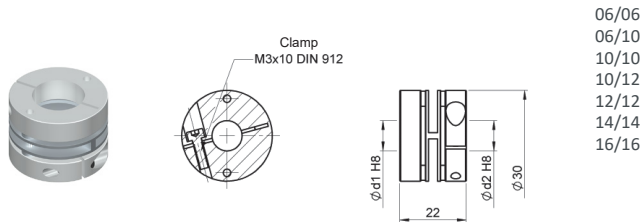


03/03  
04/04  
05/06  
06/06  
06/08

### LFA 3022

Ordering code example: LFA 3022 10/10

Ø d1/d2

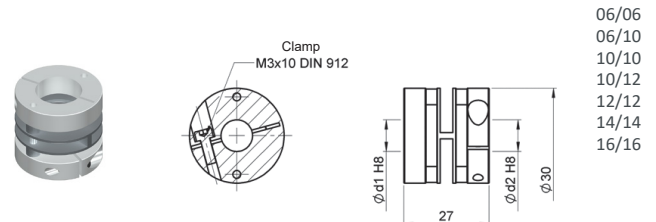


06/06  
06/10  
10/10  
10/12  
12/12  
14/14  
16/16

### LFA 3027

Ordering code example: LFA 3027 12/12

Ø d1/d2

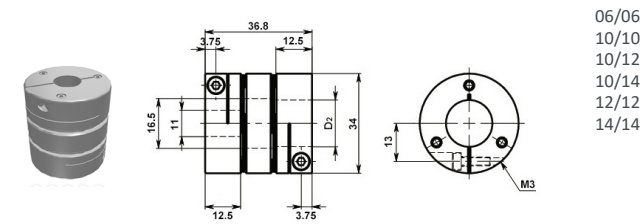


06/06  
06/10  
10/10  
10/12  
12/12  
14/14  
16/16

### LFA 3437

Ordering code example: LFA 3437 11/11

Ø d1/d2

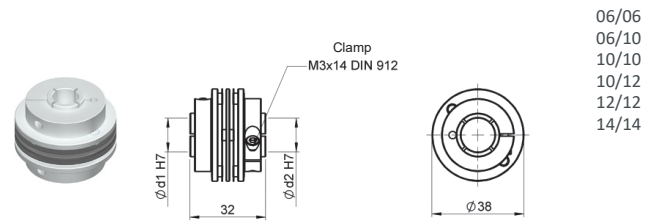


06/06  
10/10  
10/12  
10/14  
12/12  
14/14

### LFA 3832

Ordering code example: LFA 3832 06/06

Ø d1/d2

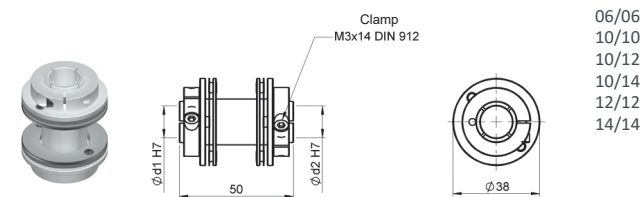


06/06  
06/10  
10/10  
10/12  
12/12  
14/14

### LFA 3850

Ordering code example: LFA 3850 06/06

Ø d1/d2

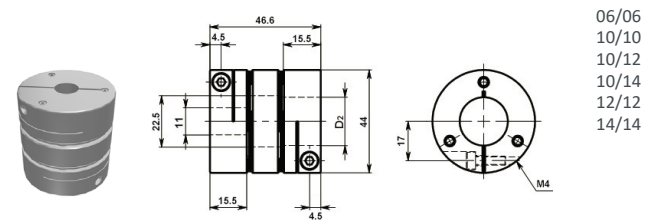


06/06  
10/10  
10/12  
10/14  
12/12  
14/14

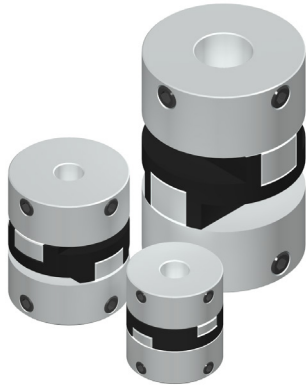
### LFA 4447

Ordering code example: LFA 44470 11/11

Ø d1/d2



06/06  
10/10  
10/12  
10/14  
12/12  
14/14



# OLDHAM-FLEX

## LATERAL SLIPPAGE COUPLINGS

- High absorption capacity of radial misalignment
- They do not produce kinematic errors in transmission
- Elimination of loads on shaft
- Mechanical protection against excessive torque
- Replaceable disc



OLDHAM-FLEX couplings are based on the use of a disc that can move radially with respect to the two shafts, which permits the compensation of large misalignment errors between them. The drums are machined from hardened aluminium alloy. The discs are manufactured from acetal with excellent mechanical properties and low friction coefficient. Due to wear, the coupling may show free-play above 10<sup>7</sup> revolutions under normal misalignment conditions, which can be corrected by replacing the disc. Because the OLDHAM-FLEX couplings are fitted with securing drums with drilled holes, the discs can be installed and replaced without any need to

disassemble the machines in order to separate the shafts. Radial misalignment does not produce any appreciable kinematic errors in transmission. However, angular misalignment can lead to small errors in a similar fashion to “Cardan” types of universal joints. They are suitable for positioning shaft slow drives, spindles and valves, etc. They must never be employed with cantilever or paired shafts.

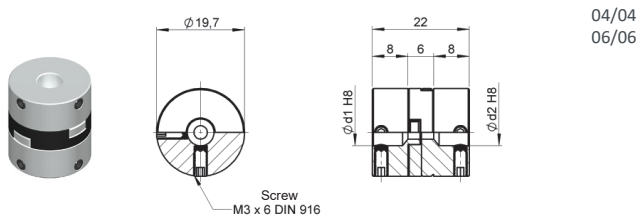
### TECHNICAL SPECIFICATIONS

|                 | Torque max.<br><i>Ncm</i> | Clamping torque max.<br><i>Ncm</i> | Max. Speed<br><i>rpm</i> | Admissible max. misalignment |                    |                     | Torsion spring stiffness<br><i>Nm/rad</i> | Weight<br><i>gr</i> | Inertia<br><i>gcm<sup>2</sup></i> |
|-----------------|---------------------------|------------------------------------|--------------------------|------------------------------|--------------------|---------------------|---|---------------------|-----------------------------------|
|                 |                           |                                    |                          | Angular<br><i>degree</i>     | Axial<br><i>mm</i> | Radial<br><i>mm</i> |   |                     |                                   |
| <b>OFP 1922</b> | 170                       | 94                                 | 3000                     | ±0,5                         | ±0,1               | ±0,2                | 115                                       | 12                  | 67                                |
| <b>OFP 2530</b> | 400                       | 227                                | 3000                     | ±0,5                         | ±0,1               | ±0,2                | 205                                       | 31                  | 252                               |
| <b>OFP 3349</b> | 900                       | 227                                | 3000                     | ±0,5                         | ±0,15              | ±0,2                | 615                                       | 86                  | 1278                              |

#### OFP 1922

Ordering code example: OFP 1922 06/06

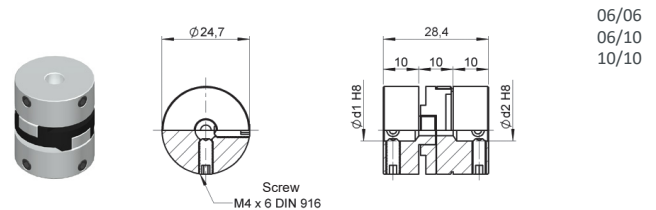
∅ d1/d2



#### OFP 2530

Ordering code example: OFP 2530 10/10

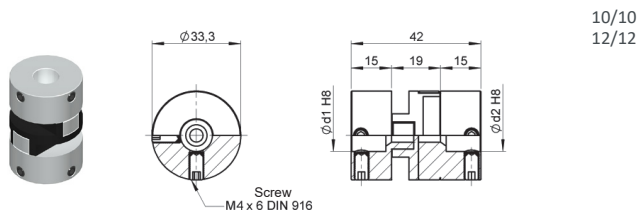
∅ d1/d2



#### OFP 3349

Ordering code example: OFP 3349 12/12

∅ d1/d2





# PAGU-FLEX

## FLEXIBLE ISOLATING COUPLING

- High precision for positioning applications
- Without wear or fatigue
- Vibration absorption
- Good torsional elasticity

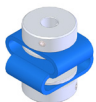


Adjuncts to a great variety of uses, the PAGU-FLEX couplings have been designed flexibly in accordance with the existing agreements for the shaft, as well as with the different requirements of the specific application cases. In the standard versions, each one of the galvanised heads (C15K material) has a cylindrical hole (H7 tolerance) and is fixed to the

shaft through a stay bolt with a hexagonal head DIN 916. The internal heads are very useful in situations with little space or reduced access.

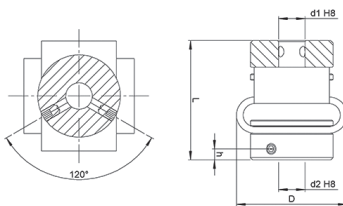
### TECHNICAL SPECIFICATIONS

|               | Torque<br><i>Ncm</i> | Clamping torque<br><i>Ncm</i> | Max. Speed<br><i>rpm</i> | Admissible max. misalignment |                    |                     | Torsion spring stiffness<br><i>Nm/rad</i> | Radial spring stiffness<br><i>N/mm</i> | Weight<br><i>g</i> | Inertia<br><i>gcm<sup>2</sup></i> |
|---------------|----------------------|-------------------------------|--------------------------|------------------------------|--------------------|---------------------|---|--|--------------------|-----------------------------------|
|               |                      |                               |                          | Angular<br><i>degree</i>     | Axial<br><i>mm</i> | Radial<br><i>mm</i> |   |  |                    |                                   |
| <b>GFP 10</b> | 0,5                  | 100                           | 3.000                    | ±10                          | ±2                 | ±2                  | 13  | 13                                     | 33                 | 41                                |
| <b>GFP 20</b> | 1,5                  | 200                           | 3.000                    | ±10                          | ±3                 | ±2,5                | 25  | 15                                     | 48                 | 104                               |
| <b>GFP 30</b> | 5                    | 300                           | 3.000                    | ±15                          | ±5                 | ±5                  | 43  | 9                                      | 140                | 220                               |

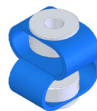


**GFP 10**

Ø d1/d2  
06/06  
08/08

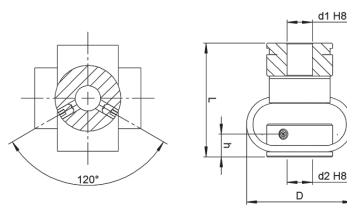


Ordering code example: GFP 10 06/06

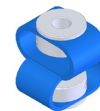


**GFP 20**

Ø d1/d2  
10/10

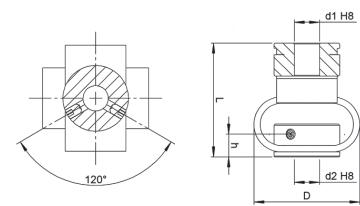


Ordering code example: GFP 20 10/10



**GFP 30**

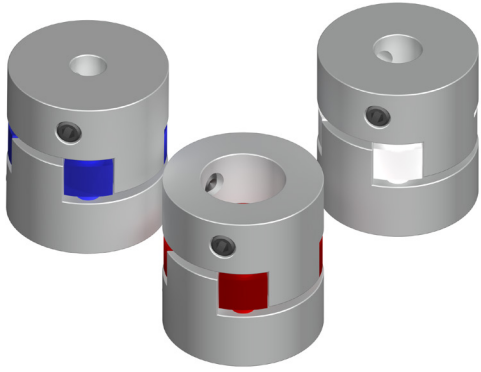
Ø d1/d2  
12/12  
14/14



Ordering code example: GFP 30 12/12

|   | Symbol | 10       | 20     | 30     |
|---|--------|----------|--------|--------|
| Rotation diameter                                     | D      | 29 ± 1   | 48 ± 1 | 58 ± 1 |
| Length in the idle mode                               | L      | 29 ± 1,5 | 46 ± 2 | 52 ± 2 |
| Height of the thread screw                            | h      | 2,5      | 9      | 11     |
| Minimum diameter of the drill hole                    | d1/d2  | 4        | 8      | 10     |
| Maximum permitted diameter of the standard drill hole | d1/d2  | 10       | 14     | 19     |
| Hexagonal screw DIN 916                               |        | M3       | M4     | M5     |

Dimensions in mm



# CROSS-FLEX

## SPIDER COUPLING

- Free of cinematic errors in transmission
- Replaceable disc
- Elevated torque transmission
- Admits few misalignments



The CROSS-FLEX couplings are based on the use of a central disc. They are recommended for applications with some of the torque transmissions and with little misalignments.

misalignments may lead to small errors. Radial misalignment does not produce any appreciable kinematic errors in transmission. Wear is minimum.

With the use of the CROSS-FLEX couplings, the angular

### TECHNICAL SPECIFICATIONS

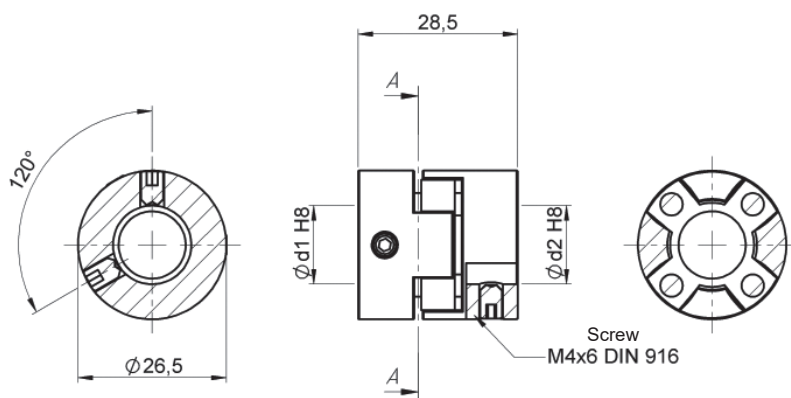
|               | Torque max. | Clamping torque max. | Max. Speed | Admissible max. misalignment |           |           | Hardness              | Max. Torsion torque | Weight    | Inertia                |
|---------------|-------------|----------------------|------------|------------------------------|-----------|-----------|-----------------------|---------------------|-----------|------------------------|
|               | <i>Ncm</i>  | <i>Ncm</i>           |            | <i>rpm</i>                   | Angular   | Axial     |                       |                     |           |                        |
|               |             |                      |            | <i>degree</i>                | <i>mm</i> | <i>mm</i> | <i>shore hardness</i> | <i>degree</i>       | <i>gr</i> | <i>gcm<sup>2</sup></i> |
| <b>CFP 80</b> | 800         | 150                  | 19000      | ±1,3                         | ±1        | ±0,22     | 80 (blue)             | 10                  | 34        | 30                     |
| <b>CFP 92</b> | 1500        | 150                  | 19000      | ±1,3                         | ±1        | ±0,22     | 92 (white)            | 10                  | 34        | 30                     |
| <b>CFP 98</b> | 2500        | 150                  | 19000      | ±1,3                         | ±1        | ±0,22     | 98 (red)              | 10                  | 34        | 30                     |

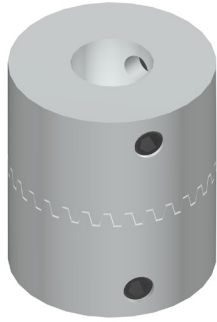
### CFP 80 - CFP 92 - CFP 98

Ordering code example: CFP 98 06/06

∅ d1/d2

04/04  
06/06  
08/08  
10/10  
12/12  
14/14





# UNION

## RIGID COUPLING

- High rigidity
- Free of cinematic errors in transmission
- Very little misalignment absorption
- Easy assembly, disassembly and adjustment



The UNION couplings are simple rigid couplings of two tooled steel pieces. They are apt for transmissions that require elevated torques and where there are no misalignments between the shafts.

In the case of these couplings, the angular misalignments may lead to small errors. They are suitable for positioning shaft slow drives.

### TECHNICAL SPECIFICATIONS

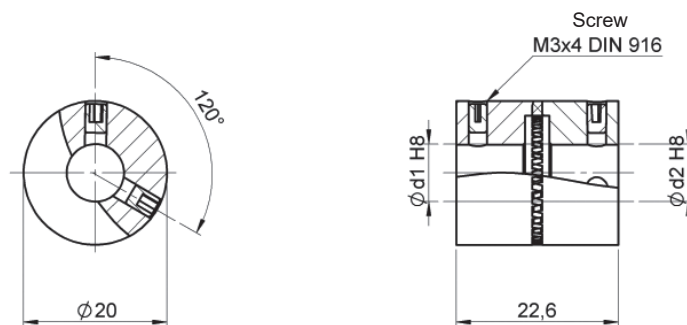
| Torque          | Clamping torque | Max. Speed | Admissible max. misalignment |           |           | Module    | Radial spring stiffness | Weight    | Inertia                |    |
|-----------------|-----------------|------------|------------------------------|-----------|-----------|-----------|-------------------------|-----------|------------------------|----|
|                 |                 |            | Angular                      | Axial     | Radial    |           |                         |           |                        |    |
| <i>Ncm</i>      | <i>Ncm</i>      | <i>rpm</i> | <i>degree</i>                | <i>mm</i> | <i>mm</i> | <i>mm</i> | <i>N/mm</i>             | <i>gr</i> | <i>gcm<sup>2</sup></i> |    |
| <b>UFP 2022</b> | 200             | 80         | 8000                         | ±0,5      | -         | -         | 0,7                     | -         | 42                     | 26 |

### UFP 2022

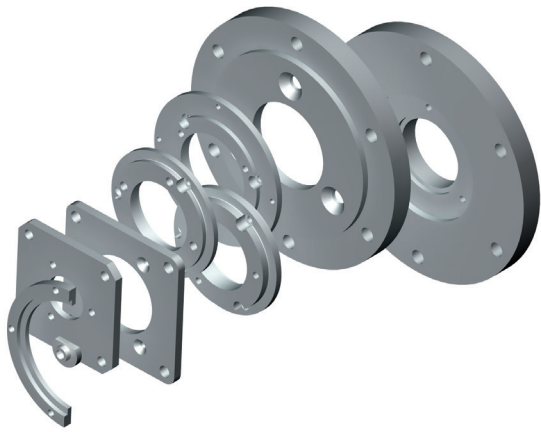
Ordering code example: UFP 2022 06/06

Ø d1/d2

06/06  
06/08  
06/10  
08/08  
10/10







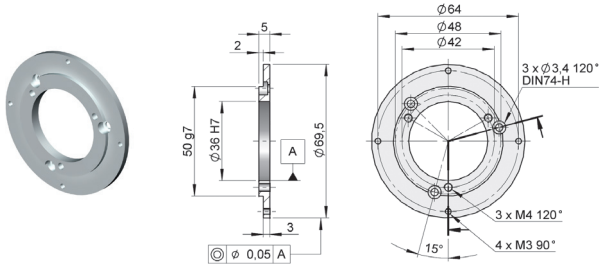
# FLANGES

## STANDARD FLANGES

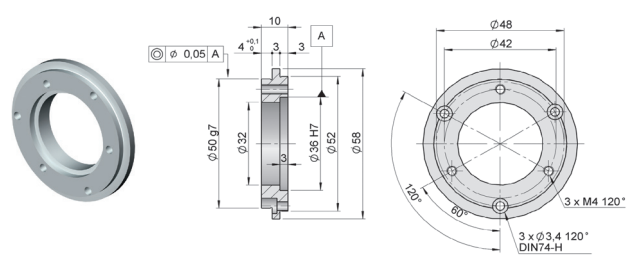


| Code    | Appropriate series     | Suitable securing screws                |
|---------|------------------------|---|
| 90.1002 | 10, 20, 11, CM10, CS10 | 3 M3 x 6 DIN84, DIN85, DIN7985, DIN7984 |
| 90.1003 | 10, 20, CM10, CS10     | 3 M3 x 8 DIN84, DIN85, DIN7985, DIN7984 |
| 90.1004 | 10, 20, CM10, CS10     | 3 M3 x 6 DIN84, DIN85, DIN7985, DIN7984 |
| 90.1005 | 10, 20, 11, CM10, CS10 | 3 M3 x 10 DIN963, DIN965                |
| 90.1006 | 10, 20, CM10, CS10     | 3 M3 x 10 DIN912                        |
| 90.1008 | 30, CS30               | 3 M6 x 10 DIN7991                       |
| 90.1015 | 10                     | 3 M3 x 10 DIN963, DIN965                |
| 90.1057 | 21, 36                 | 3 M3 x 6 DIN963, DIN965                 |
| 90.1103 | 58                     | 1 M4 x 10 DIN912                        |
| 90.1105 | 58, 20                 | 3 M3 x 10 DIN912                        |

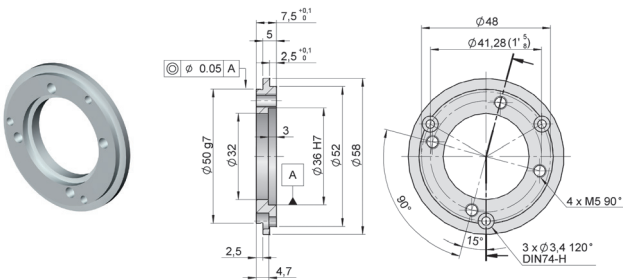
### 90.1002



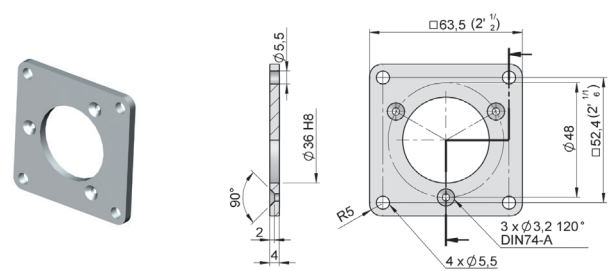
### 90.1003



### 90.1004



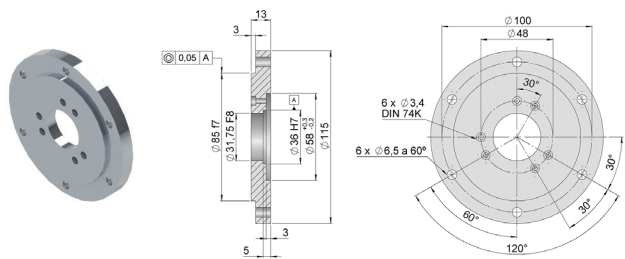
### 90.1005



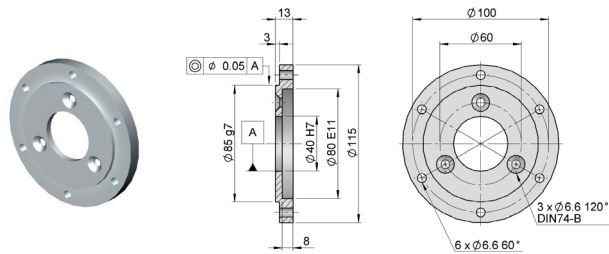
# FLANGES

## STANDARD FLANGES

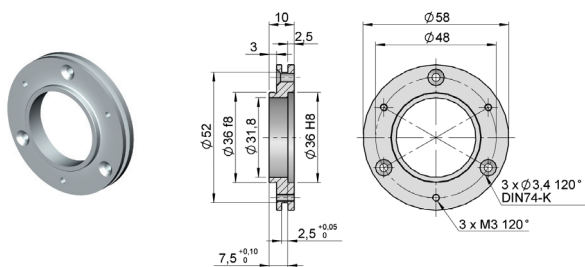
90.1006



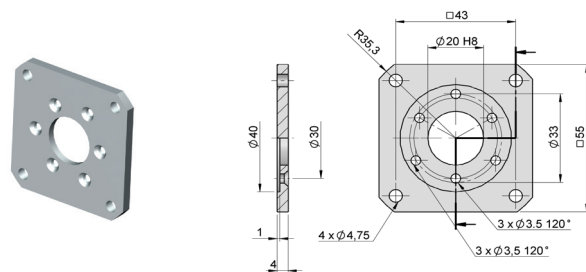
90.1008



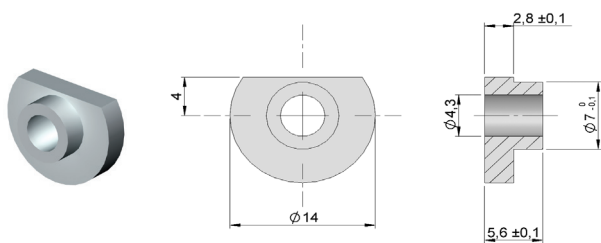
90.1015



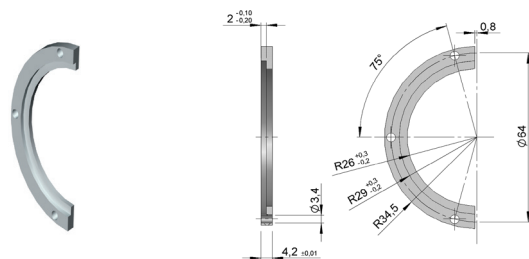
90.1057

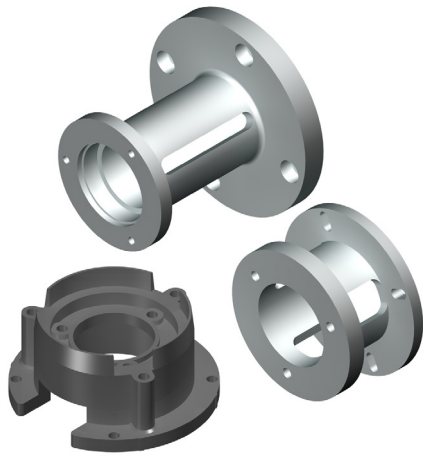


90.1103



90.1105



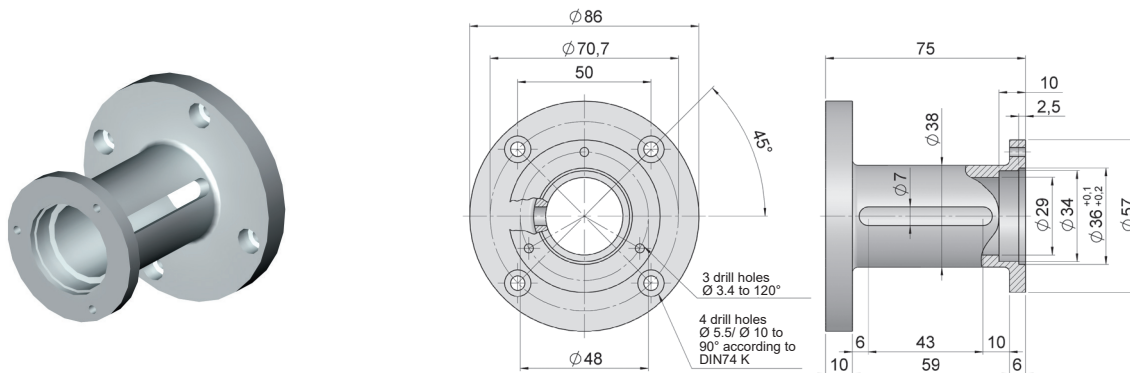


# COUPLING BELLS

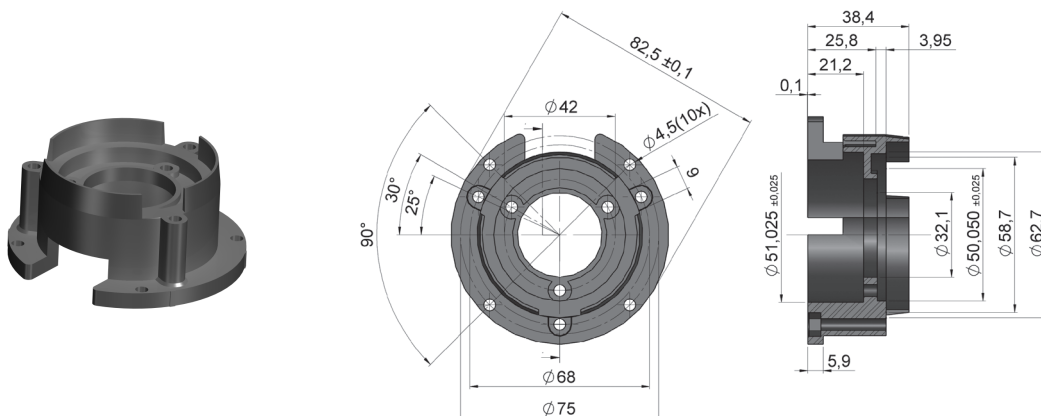


| Code    | Appropriate series     | Suitable securing screws                |
|---------|------------------------|---|
| 90.1600 | 10, 20, 11, CM10, CS10 | 3 M3 x 6 DIN84, DIN85, DIN7985, DIN7984 |
| 90.1608 | 10, 20, 11, CM10, CS10 | 3 M3 x 8 DIN84, DIN85, DIN7985, DIN7984 |
| 90.1609 | 10, 20, 11, CM10, CS10 | 3 M3 x 6 DIN84, DIN85, DIN7985, DIN7984 |

## 90.1600

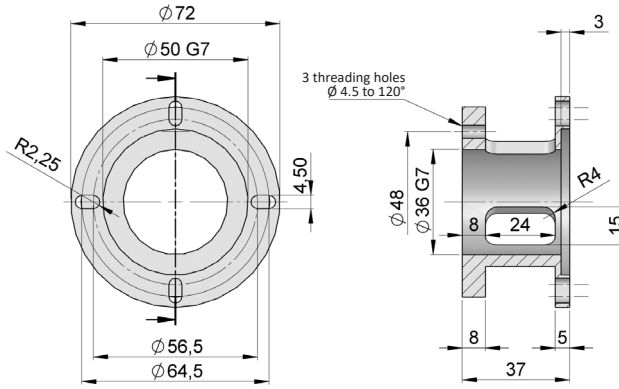
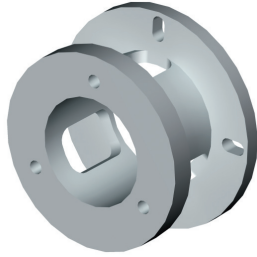


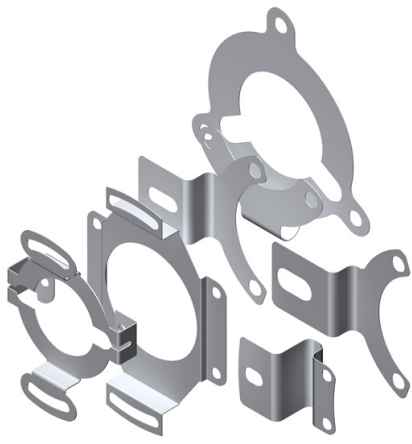
## 90.1608



# COUPLING BELLS

90.1609





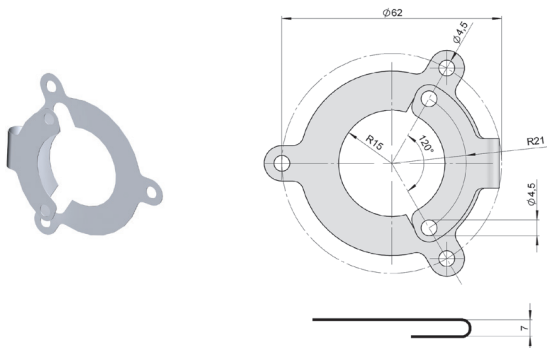
# ANTI-ROTATION SYSTEM

## FLEXIBLE ANTI-ROTATION SYSTEM

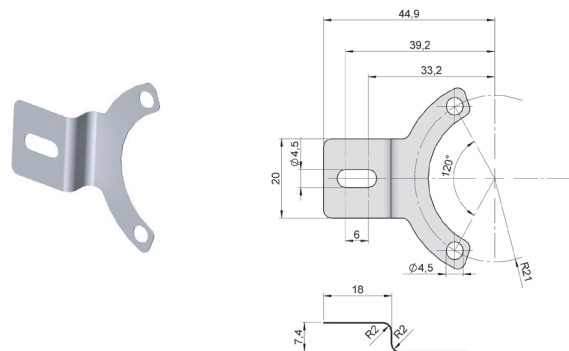


| Code    | Appropriate series | Fixation screws        |
|---------|--------------------|------------------------|
| 90.1014 | 19, 59             | 5 M4 x 6 DIN912, DIN84 |
| 90.1018 | 19, 59             | 3 M4 x 6 DIN912, DIN84 |
| 90.1020 | 19, 59             | 3 M4 x 6 DIN912, DIN84 |
| 90.1024 | 19, 59             | 3 M4 x 6 DIN912, DIN84 |
| 90.1025 | 77, 80             | 5 M4 x 6 DIN912, DIN84 |
| 90.1027 | 19, 59             | 6 M4 x 6 DIN912, DIN84 |

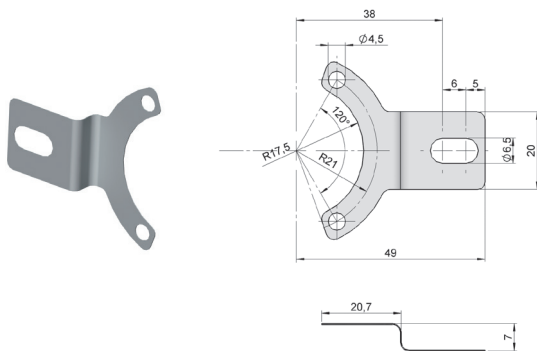
### 90.1014



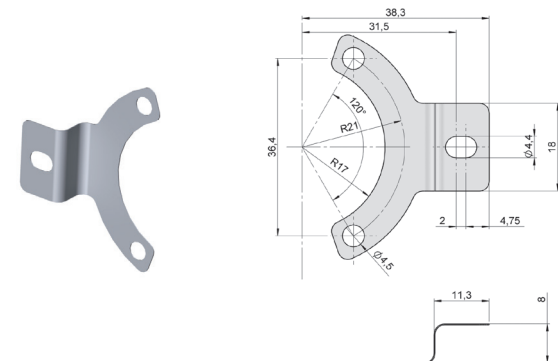
### 90.1018



### 90.1020



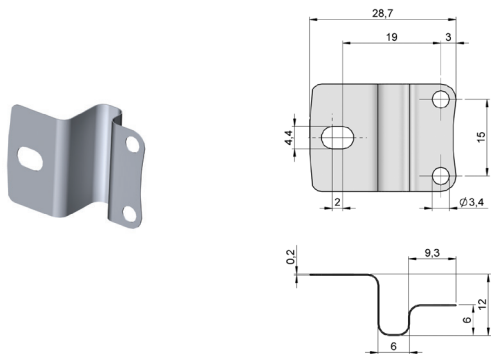
### 90.1024



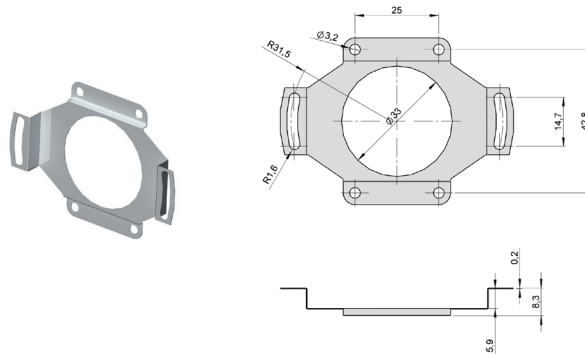
# ANTI-ROTATION SYSTEM

## FLEXIBLE ANTI-ROTATION SYSTEM

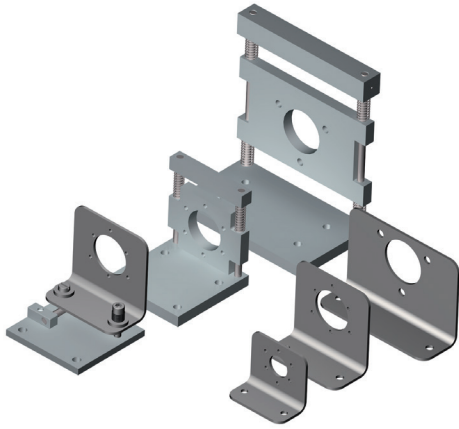
90.1025



90.1027

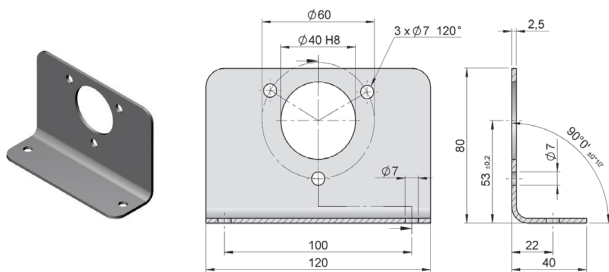


# SUPPORT ANGLES

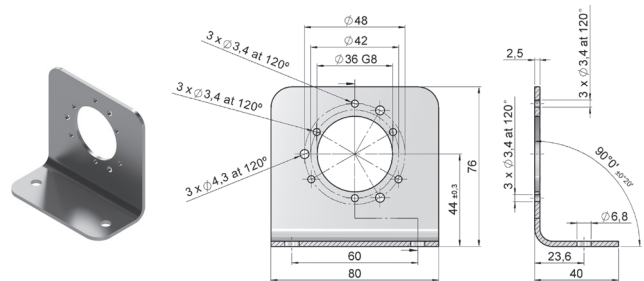


| Reference    | Series   |
|--------------|--|
| RIGID ANGLES |  |
| 90.1201      | 30, CS30, CM30                                 |
| 90.1207      | 10, 10K, 11, 20, 58, PR90, SMRS 10, CS10, CM10 |
| 90.1208      | 21, 36   |

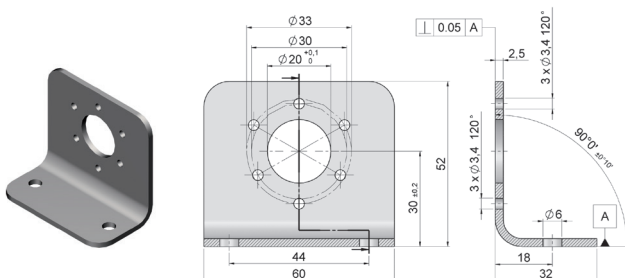
## 90.1201



## 90.1207



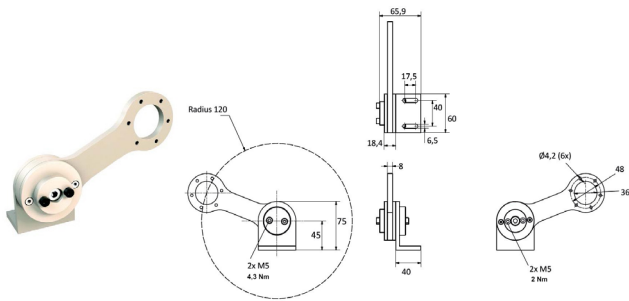
## 90.1208



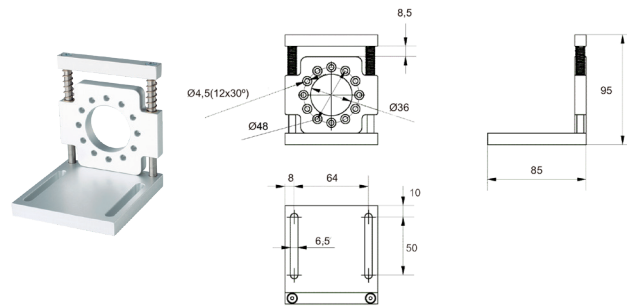
# SUPPORT ANGLES

| Reference       | Series                                |
|-----------------|---------------------------------------|
| FLEXIBLE ANGLES |                                       |
| 90.1202         | 10, 20, 11, PR90, SMRS 10, CS10, CM10 |
| 90.1204         | 10, 20, 11, PR90, SMRS 10, CS10, CM10 |
| 90.1205         | 30, CS30, CM30                        |
| 90.1206         | 10, 20, 11, 58, CS10, CM10            |

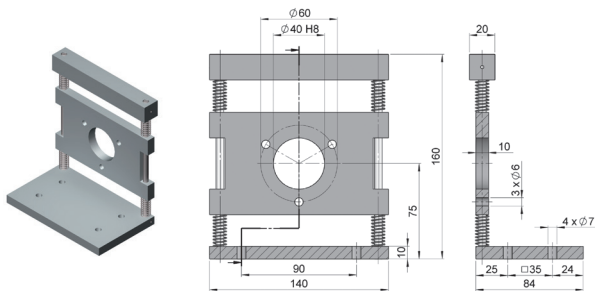
## 90.1202



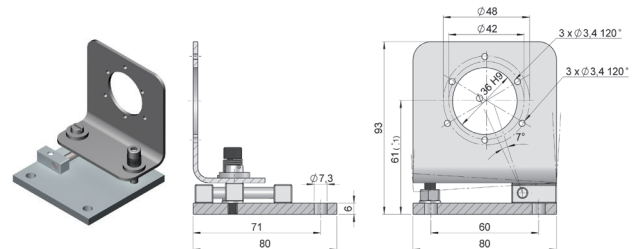
## 90.1204



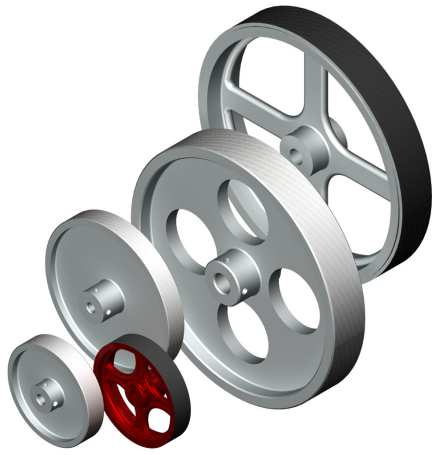
## 90.1205



## 90.1206







# MEASURING WHEELS



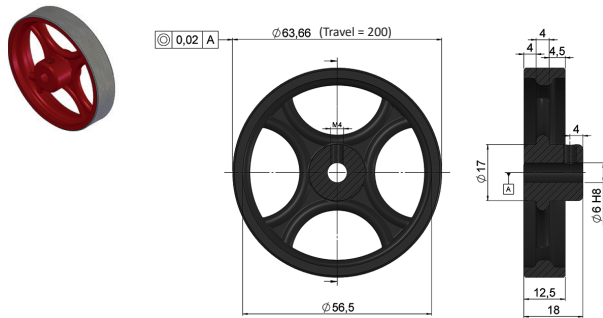
## TECHNICAL SPECIFICATIONS

| Type    | Travel<br><i>mm</i>     | Diameter<br>Ø D<br><i>mm</i> | Shaft*<br>Ø d<br><i>mm</i> | Width<br>B<br><i>mm</i> | M<br>(DIN 916) |        |
|---------|-------------------------|------------------------------|----------------------------|-------------------------|----------------|--------|
| 90.9101 | Knurled aluminium       | 200                          | 63,66                      | 6                       | 12             | M4 x 6 |
| 90.9102 | Knurled aluminium       | 305                          | 97,08                      | 10                      | 12             | M5 x 6 |
| 90.9103 | Knurled aluminium       | 500                          | 159,15                     | 10                      | 25             | M5 x 6 |
| 90.9107 | Smooth polyurethane     | 500                          | 159,15                     | 10                      | 25             | M5     |
| 90.9108 | Smooth polyurethane     | 200                          | 63,66                      | 6                       | 12             | M4 x 6 |
| 90.9110 | Knurled aluminium       | 200                          | 63,66                      | 6                       | 12             | M4 x 6 |
| 90.9111 | Rubber                  | 200                          | 63,66                      | 6                       | 12             | M4 x 6 |
| 90.9112 | Studded polyurethane    | 200                          | 63,66                      | 6                       | 12             | M4 x 6 |
| 90.9113 | Rubber                  | 500                          | 159,15                     | 10                      | 25             | M5 x 6 |
| 90.9114 | Corrugated polyurethane | 500                          | 159,15                     | 10                      | 25             | M5     |
| 90.9115 | Corrugated polyurethane | 200                          | 63,66                      | 6                       | 12             | M4 x 6 |
| 90.9122 | Smooth polyurethane     | 305                          | 97,08                      | 10                      | 12             | M5 x 6 |
| 90.9123 | Studded polyurethane    | 305                          | 97,08                      | 10                      | 12             | M5 x 6 |
| 90.9124 | Corrugated polyurethane | 305                          | 97,08                      | 10                      | 12             | M5 x 6 |
| 90.9150 | Studded polyurethane    | 500                          | 159,15                     | 10                      | 25             | M5     |
| 90.9175 | Knurled aluminium       | 500                          | 159,15                     | 10                      | 25             | M5     |

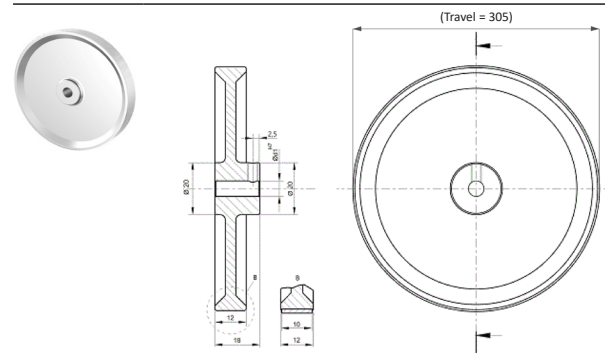
(\* ) Other shaft diameter available. For example code for wheel 90.9113 with 6 mm shaft: 90.9113.6

# MEASURING WHEELS

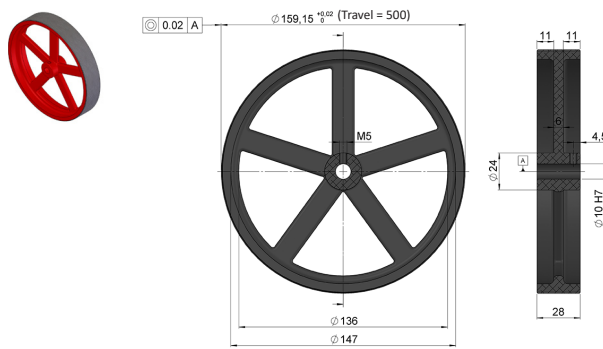
90.9101



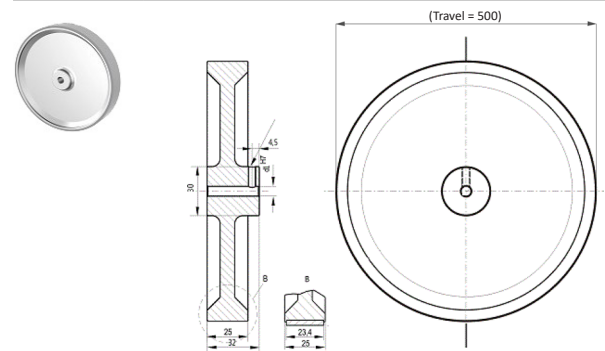
90.9102



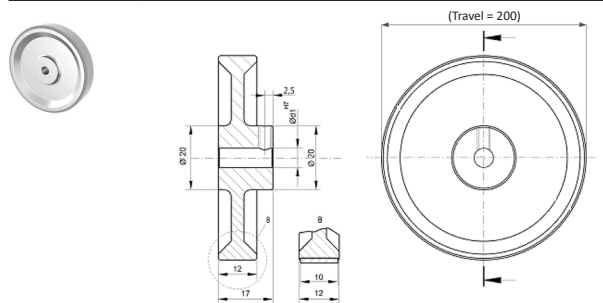
90.9103



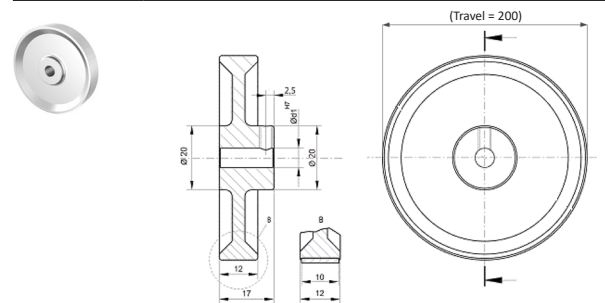
90.9107



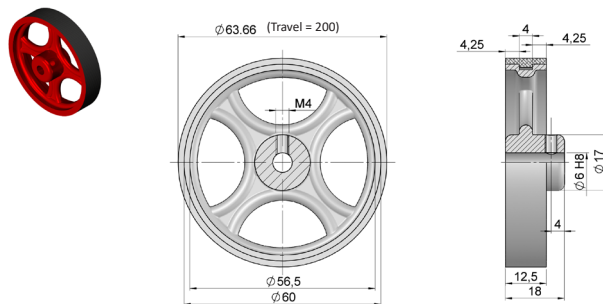
90.9108



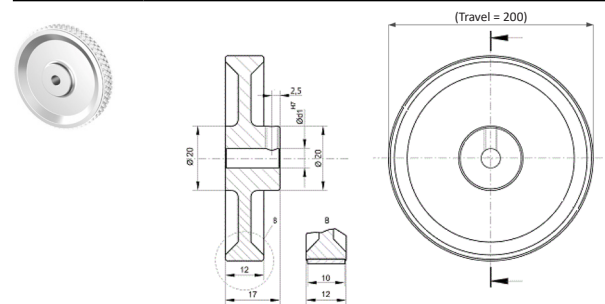
90.9110



90.9111

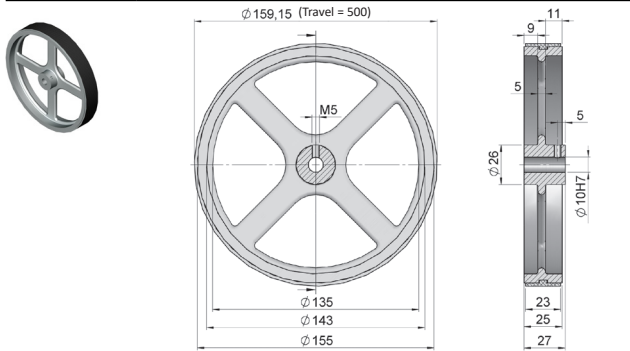


90.9112

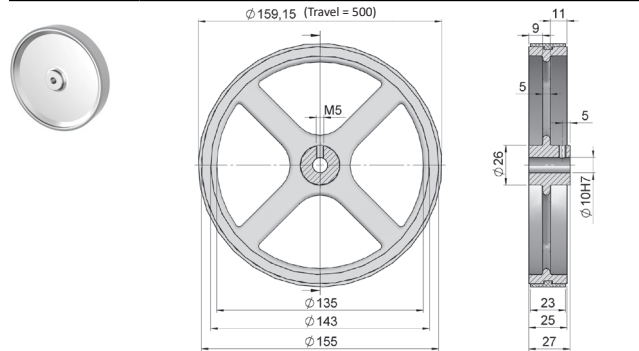


# MEASURING WHEELS

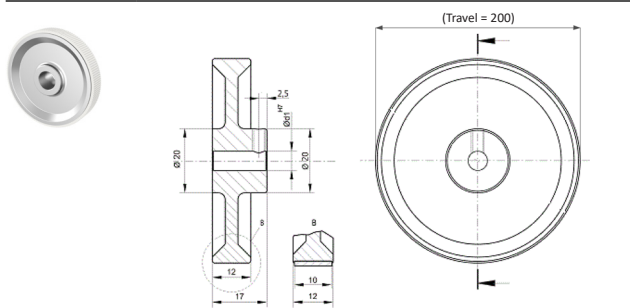
90.9113



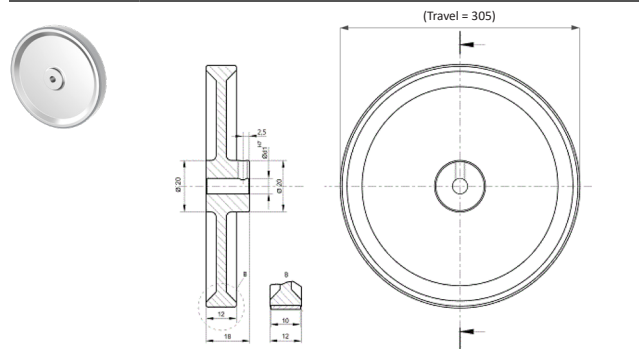
90.9114



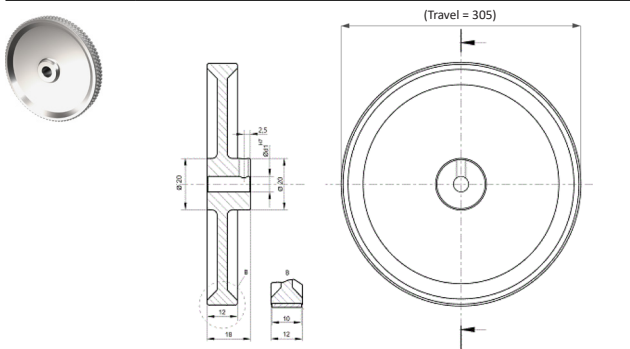
90.9115



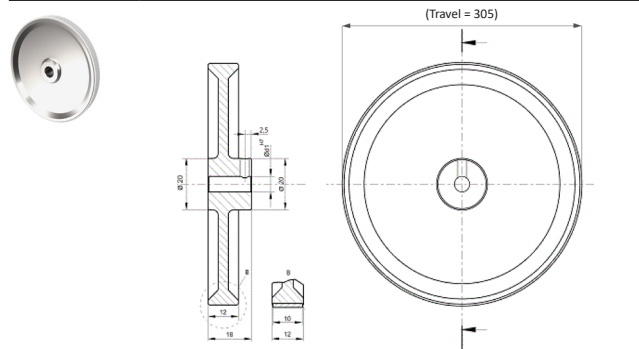
90.9122



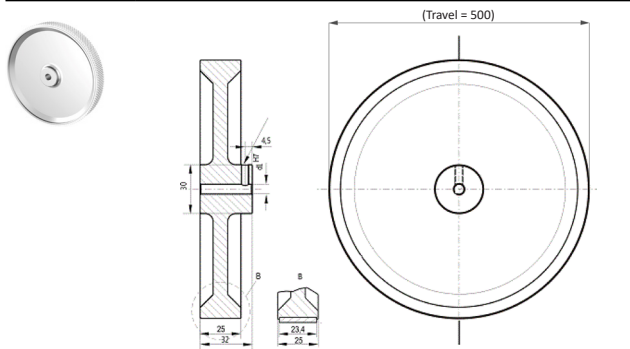
90.9123



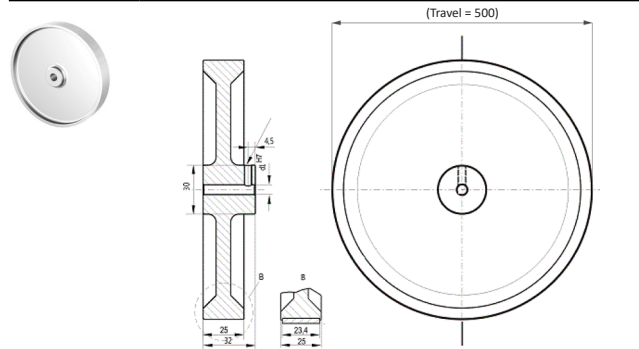
90.9124

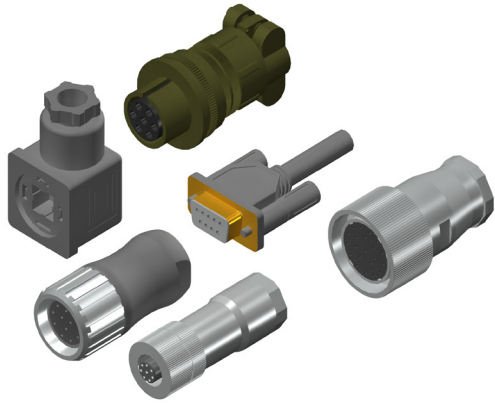


90.9150



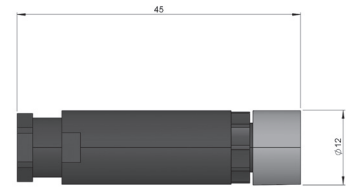
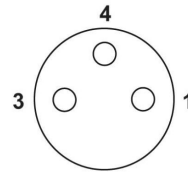
90.9175



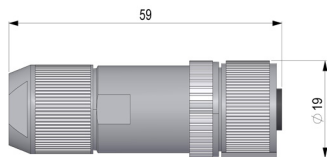
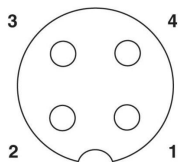


# CONNECTORS

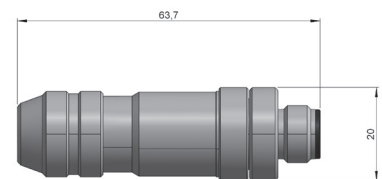
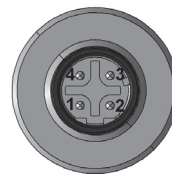
**95.0007179**  
M8 3p



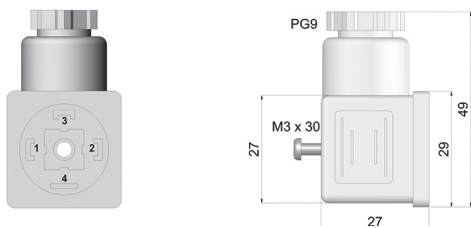
**95.0007076**  
M12 4p CW



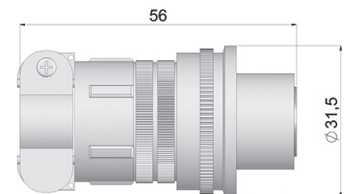
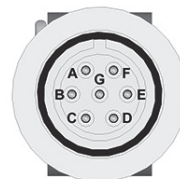
**95.0007077**  
M12 4p CCW



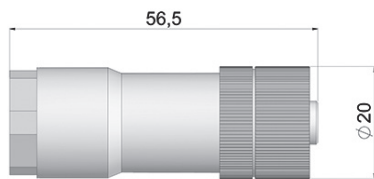
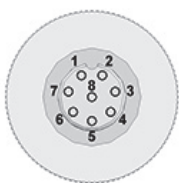
**95.0007011**  
DIN 43650



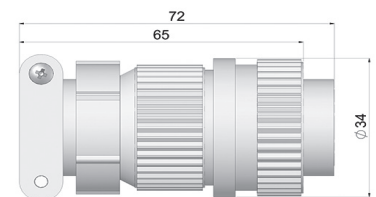
**90.9507H**  
Militar 7p CCW



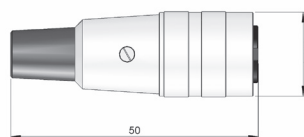
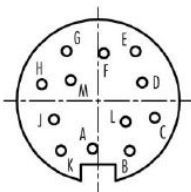
**95.0007152**  
M12 8p CW



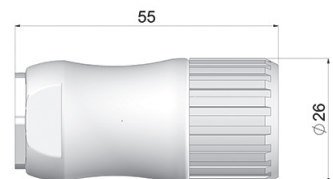
**90.9510H**  
Militar 10p CCW



**95.0007149**  
M16 12p CCW



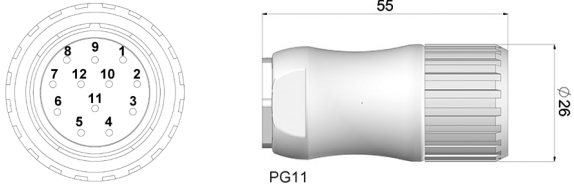
**95.0007131**  
M23 12p CCW



# CONNECTORS

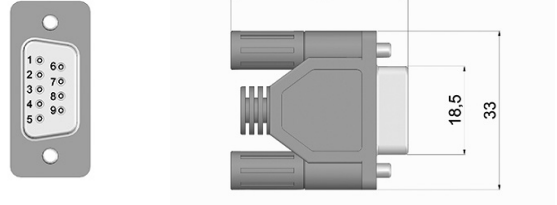
**95.0007137**

M23 12p CW



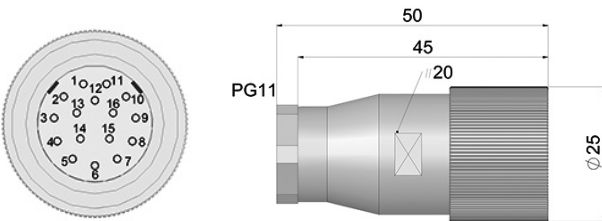
**90.9589H**

D-Sub 9p



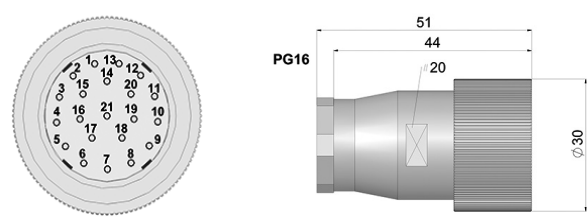
**95.0007006**

M23 16p CCW



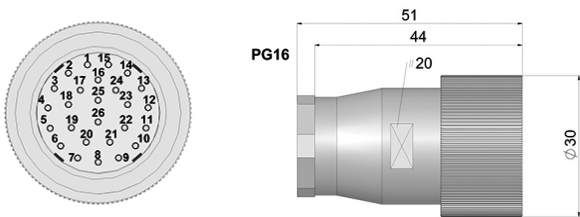
**95.0007062**

21p CCW



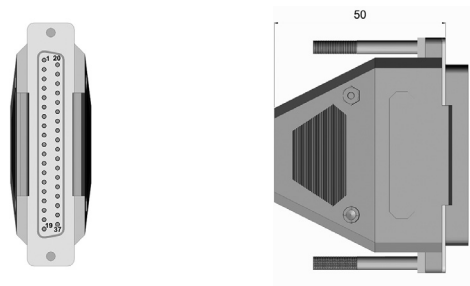
**95.0007063**

26p CCW



**90.9537H**

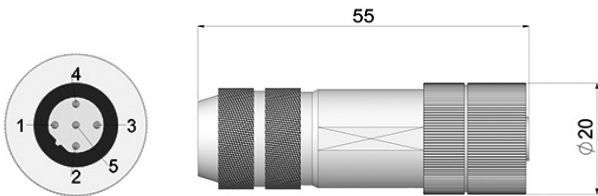
37p



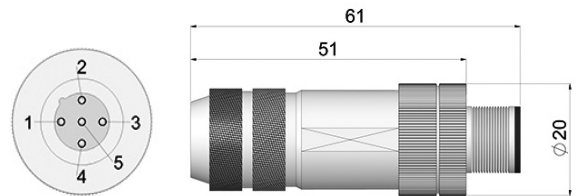
# CONNECTORS

## PROFIBUS CONNECTORS

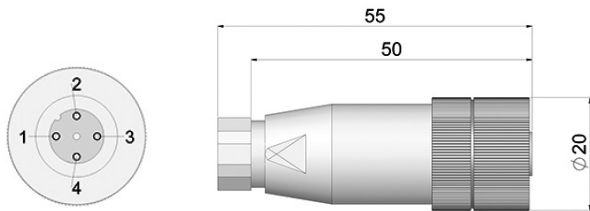
**90.9552**  
M12 5p



**90.9553**  
M12 5p

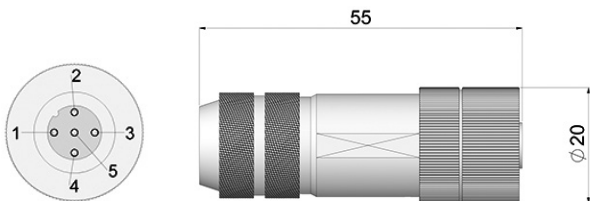


**90.9554**  
M12 4p CW

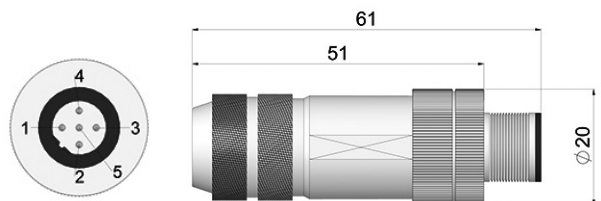


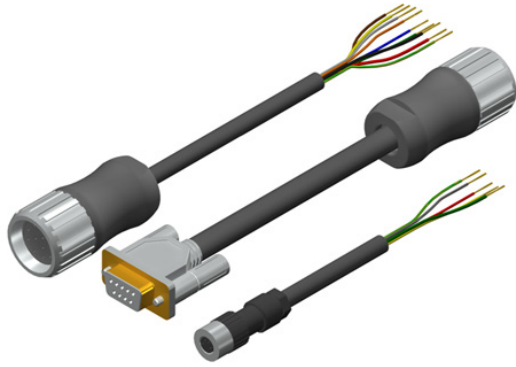
## DEVICENET/CANOPEN CONNECTORS

**90.9550**  
M12 5p



**90.9551**  
M12 5p





# PRE-ASSEMBLED CABLES

- Compatible with Hohner encoders
- Reduces the possibility of wiring errors
- Eliminates risks of short-circuits
- Saves on installation time



## Connector 95.0007011



Composed of:  
Cable 5x0,14  
Female connector type DIN 43650 4p

**REF: 89.001.01.000.XX**  
length

## Connector 95.0007152



Composed of:  
Cable 3x2x0,14+2x0,34  
Female connector M12 8p CW

**REF: 89.003.02.000.XX**  
length

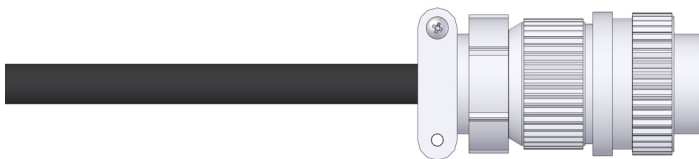
## Connector 90.9507H



Composed of:  
Cable 5x0,14  
Female connector type militar 7p CCW

**REF: 89.002.01.000.XX**  
length

## Connector 90.9510H



Composed of:  
Cable 3x2x0,14+2x0,34  
Female connector type militar 10p CCW

**REF: 89.004.02.000.XX**  
length

## Connector 95.0007131



Composed of:  
Cable 3x2x0,14+2x0,34  
Female connector M23 12p CCW

**REF: 89.005.02.000.XX**  
length

# PRE-ASSEMBLED CABLES

## Connector 95.0007137



Composed of:  
Cable 3x2x0,14+2x0,34  
Female connector M23 12p CW

**REF: 89.010.02.015.XX**  
length

## Connector 95.0007149



Composed of:  
Cable 6x2x0,14  
Female connector M16 12p CCW

**REF: 89.036.010.051.XX**  
length

Cable length available: 2, 4, 6, 8, 10, 20 and 30 meters



Other pre-assembled cables available.  
Special cables available