

# 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.

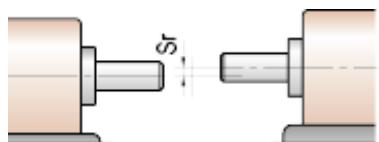


## Selection

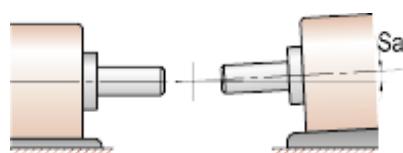
Coupling selection must be a compromise between factors, such as cost, available installation space, the required duration and transmission performance, which must satisfy requirements, such as:

## Absorption of shaft misalignment and loads

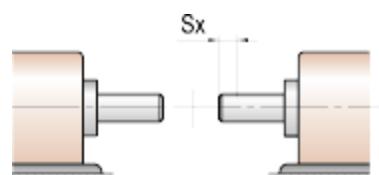
Due to dimensional errors inherent in all mechanical installations, the shafts to be installed will maintain certain positional differences or "misalignment" between the two and this will hinder the transmission of movement. This misalignment may be axial, radial or angular.



Radial misalignment



Angular misalignment



Axial misalignment

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 flaws on the shafts. Moreover, they can loosen due to vibration, but this can be avoided by using a semi-permanent adhesive.

# COUPLING ALU-FLEX

## ALUMINIUM GROOVED FLEXIBLE COUPLINGS

- 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.

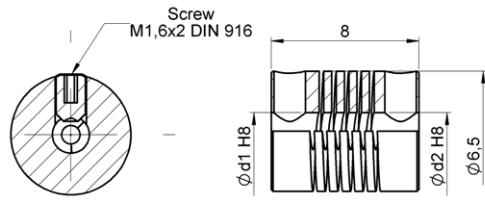
## TECHNICAL SPECIFICATIONS

| Type            | Torque | Clamping torque | Max.speed | Admissible max.misalignment |          |           | Torsion spring stiffness Ncm/rad | Radial spring stiffness N/mm | Weight gr | Inertia gcm <sup>2</sup> |
|-----------------|--------|-----------------|-----------|-----------------------------|----------|-----------|----------------------------------|------------------------------|-----------|--------------------------|
|                 | Ncm    | Ncm             | r.p.m.    | Angular degree              | Axial mm | Radial 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     | 50              | 8.000     | ±3                          | ±0,3     | ±0,2      | 5                                | 34                           | 9,5       | 3,2                      |
| <b>AFP 1922</b> | 60     | 50              | 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     | 80              | 6.000     | ±4                          | ±0,4     | ±0,25     | 8                                | 36                           | 16        | 8,7                      |
| <b>AFA 2532</b> | 120    | 100             | 6.000     | ±4                          | ±0,5     | ±0,35     | 16                               | 45                           | 34        | 29                       |
| <b>AFA 3038</b> | 150    | 100             | 6.000     | ±0,4                        | ±0,5     | ±0,35     | 19                               | 60                           | 58        | 76                       |



TYPE AFP 6508

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01/02  
02/02

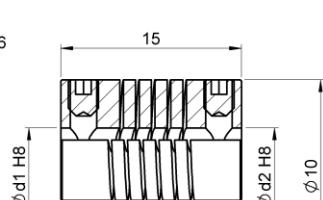


Ordering code example: AFP 6508 02/02



TYPE AFP 1015

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02/03  
02/04  
02/05  
03/03  
03/05

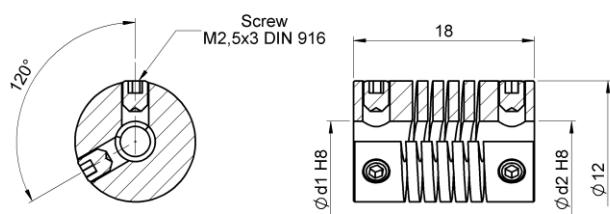


Ordering code example: AFP 1015 02/02



TYPE AFP 1218

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03/04  
04/04

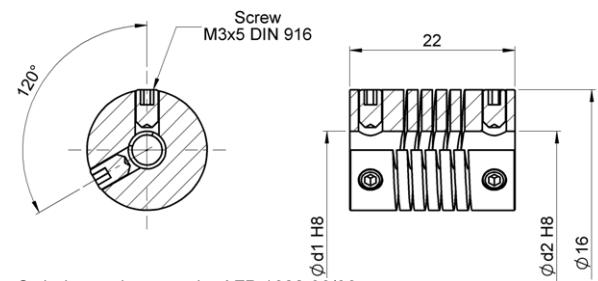


Ordering code example: AFP 1218 04/04



TYPE AFP 1622

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

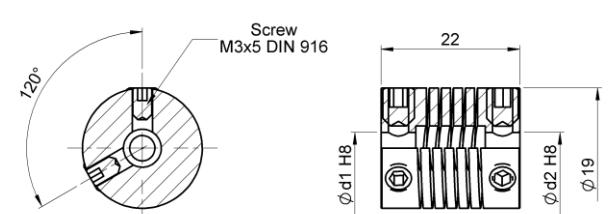


Ordering code example: AFP 1622 06/06



TYPE AFP 1922

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05/05  
06/06

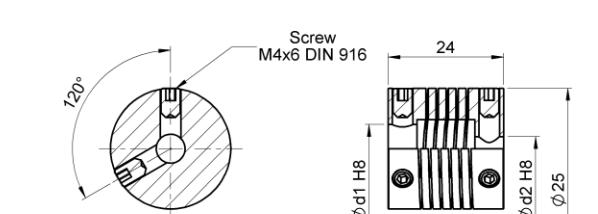


Ordering code example: AFP 1922 06/06



TYPE AFP 2524

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

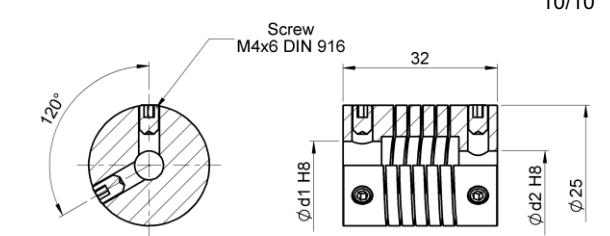


Ordering code example: AFP 2524 06/06



TYPE AFP 2532

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

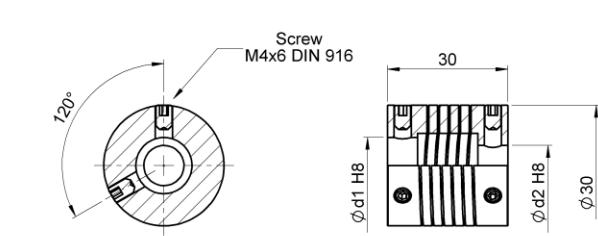


Ordering code example: AFP 2532 10/10



TYPE AFP 3030

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10/12  
10/14

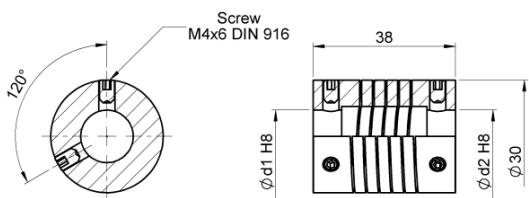


Ordering code example: AFP 3030 10/10



TYPE AFP 3038

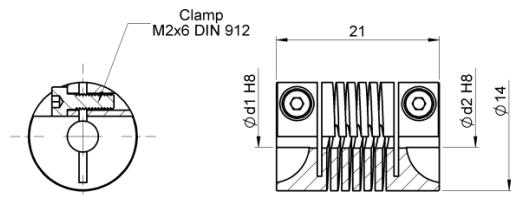
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12/12  
14/14



Ordering code example: AFP 3038 12/12

TYPE AFA 1421

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02/03  
03/03  
03/04  
04/04

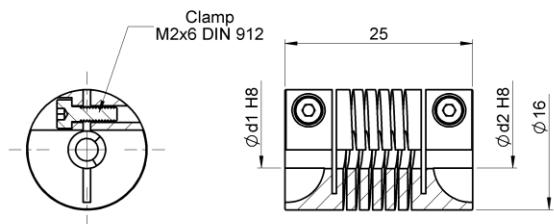


Ordering code example: AFA 1421 04/04



TYPE AFA 1625

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03/05  
04/04  
05/05

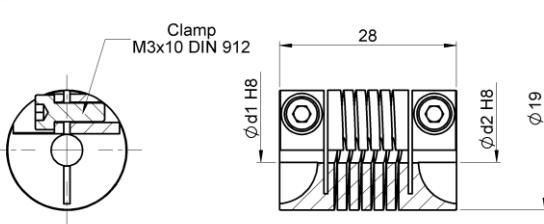


Ordering code example: AFA 1625 05/05



TYPE AFA 1928

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

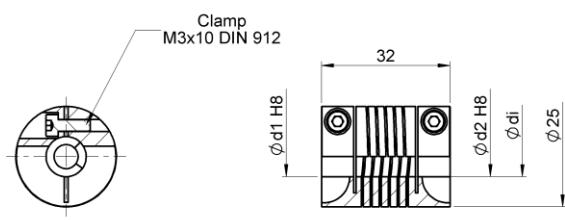


Ordering code example: AFA 1928 06/06



TYPE AFA 2532

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

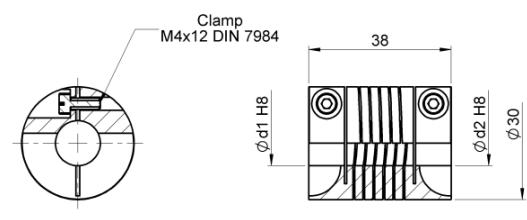


Ordering code example: AFA 2532 10/10



TYPE AFA 3038

$\emptyset$  int. d1/d2  
10/10  
12/12  
14/14



Ordering code example: AFA 3038 12/12

# COUPLING **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**

| Type            | Torque | Clamping | Max. speed | Admissible max.misalignment |          |           | Torsion spring stiffness Ncm/rad | Radial spring stiffness N/mm | Weight gr | Inertia gcm² |
|-----------------|--------|----------|------------|-----------------------------|----------|-----------|----------------------------------|------------------------------|-----------|--------------|
|                 | Ncm    | Ncm      |            | Angular degree              | Axial mm | Radial mm |                                  |                              |           |              |
| <b>PFP 1520</b> | 20     | 70       | 12.000     | ±2,5                        | ±0,2     | ±0,3      | 12                               | 45                           | 6         | 2            |
| <b>PFP 2224</b> | 80     | 150      | 10.000     | ±3                          | ±0,2     | ±0,3      | 38                               | 115                          | 10        | 7            |

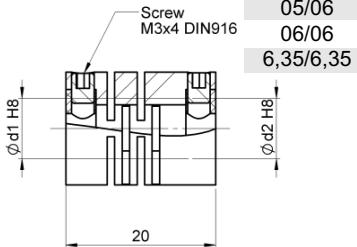
**TYPE PFP 1520**



**Ø int. d1/d2**

|           |
|-----------|
| 03/03     |
| 03/05     |
| 03/06     |
| 04/04     |
| 04/05     |
| 04/06     |
| 05/05     |
| 05/06     |
| 06/06     |
| 6,35/6,35 |

Screw M3x4 DIN916



Ordering code example: PFP 1520 06/06

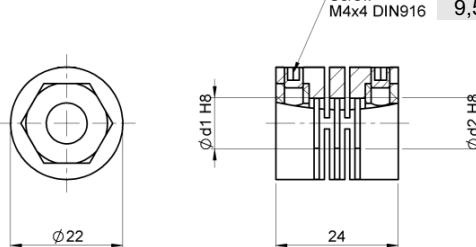
**TYPE PFP 2224**



**Ø int. d1/d2**

|           |
|-----------|
| 04/04     |
| 06/06     |
| 06/08     |
| 06/10     |
| 6,35/6,35 |
| 08/10     |
| 10/10     |
| 9,52/9,52 |

Screw M4x4 DIN916



Ordering code example: PFP 2224 08/08

# COUPLING SPRING-FLEX

## FLEXIBLE COUPLING SPRINGS

- Absorption of significant misalignment
- Elimination of loads due to shaft 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 direc-

tions 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

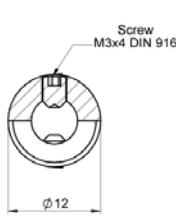
| Type     | Torque | Clamping | Max. speed | Admissible max.misalignment |          |           | Torsion spring stiffness Ncm/rad | Radial spring stiffness N/mm | Weight gr | Inertia gcm <sup>2</sup> |
|----------|--------|----------|------------|-----------------------------|----------|-----------|----------------------------------|------------------------------|-----------|--------------------------|
|          | Ncm    | Ncm      |            | Angular degree              | Axial mm | Radial mm |                                  |                              |           |                          |
| SFP 1225 | 30     | 70       | 8.000      | ±5                          | ±0,5     | ±0,5      | 40                               | 60                           | 14        | 2,8                      |
| SFP 1635 | 100    | 150      | 3.000      | ±5                          | ±1       | ±1        | 50                               | 70                           | 28        | 10                       |
| SFP 2650 | 300    | 300      | 3.000      | ±5                          | ±1       | ±1,5      | 40                               | 60                           | 100       | 95                       |



TYPE SFP 1225

Ø int. d1/d2

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

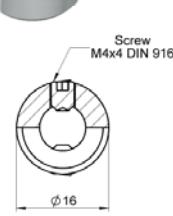


Ordering code example: SFP 1225 06/06

TYPE SFP 1635

Ø int. d1/d2

- 04/04
- 04/05
- 04/06
- 05/05
- 05/06
- 06/06
- 06/08
- 08/08



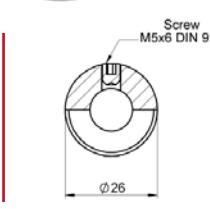
Ordering code example: SFP 1635 08/08



TYPE SFP 2650

Ø int. d1/d2

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



Ordering code example: SFP 2650 10/12

# COUPLING 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 BELLOW-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.

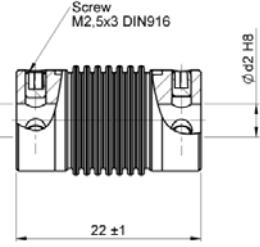
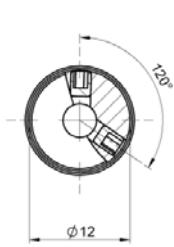
## TECHNICAL SPECIFICATIONS

| Type            | Torque | Clamping torque | Max.speed | Admissible max.misalignment |          |           | Torsion spring stiffness Ncm/rad | Radial spring stiffness N/mm | Weight gr | Inertia gcm <sup>2</sup> |
|-----------------|--------|-----------------|-----------|-----------------------------|----------|-----------|----------------------------------|------------------------------|-----------|--------------------------|
|                 | Ncm    | Ncm             | r.p.m.    | Angular degree              | Axial mm | Radial mm |                                  |                              |           |                          |
| <b>BFP 1222</b> | 15     | 50              | 10.000    | ±2,5                        | ±0,4     | ±0,2      | 45                               | 30                           | 8         | 1,8                      |
| <b>BFP 1520</b> | 15     | 15              | 10.000    | ±3                          | ±0,4     | ±0,2      | 90                               | 40                           | 6         | 2                        |
| <b>BFP 1525</b> | 40     | 40              | 10.000    | ±4                          | ±0,5     | ±0,3      | 70                               | 15                           | 7         | 2,3                      |
| <b>BFP 2029</b> | 80     | 150             | 10.000    | ±4                          | ±0,4     | ±0,25     | 150                              | 25                           | 15        | 8                        |
| <b>BFP 2035</b> | 80     | 150             | 10.000    | ±4                          | ±0,5     | ±0,3      | 140                              | 10                           | 16        | 9                        |
| <b>BFA 1622</b> | 40     | 50              | 10.000    | ±3                          | ±0,4     | ±0,2      | 90                               | 40                           | 6         | 2,1                      |
| <b>BFA 1627</b> | 40     | 50              | 10.000    | ±4                          | ±0,5     | ±0,3      | 70                               | 15                           | 7         | 2,6                      |
| <b>BFA 2129</b> | 80     | 100             | 10.000    | ±4                          | ±0,4     | ±0,25     | 150                              | 25                           | 15        | 9                        |
| <b>BFA 2135</b> | 80     | 100             | 10.000    | ±4                          | ±0,5     | ±0,3      | 140                              | 10                           | 16        | 9,5                      |
| <b>BFA 2435</b> | 80     | 100             | 10.000    | ±4                          | ±0,5     | ±0,3      | 140                              | 10                           | 18        | 10,8                     |
| <b>BFP 1223</b> | 13     | 79              | 10.000    | ±15                         | ±2,29    | ±0,54     | 28                               | 4,2                          | 10        | 1,85                     |
| <b>BFP 1730</b> | 39     | 132             | 10.000    | ±14                         | ±3,09    | ±0,72     | 80                               | 5,8                          | 10        | 3,81                     |
| <b>BFP 2533</b> | 328    | 132             | 10.000    | ±8                          | ±2,77    | ±0,46     | 462                              | 38,1                         | 19,5      | 16,1                     |
| <b>BFA 1733</b> | 39     | 35              | 10.000    | ±14                         | ±3,09    | ±0,72     | 80                               | 5,8                          | 11,5      | 4,89                     |
| <b>BFA 2537</b> | 328    | 66              | 10.000    | ±8                          | ±2,77    | ±0,46     | 462                              | 38,1                         | 28,5      | 25,4                     |



TYPE BFP 1222

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

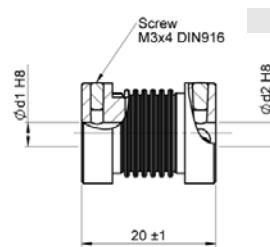
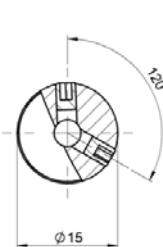


Ordering code example: BFP 1222 06/06



TYPE BFP 1520

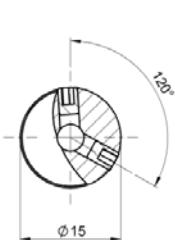
Ø int. d1/d2  
03/03  
03/05  
03/06  
04/04  
04/05  
04/06  
05/05  
06/06



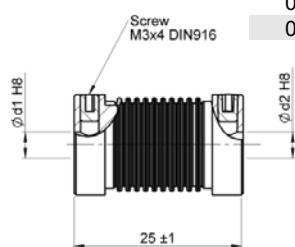
Ordering code example: BFP 1520 04/04



TYPE BFP 1525

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

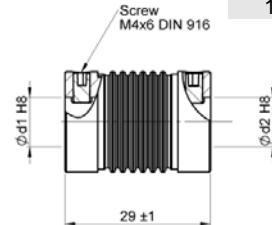
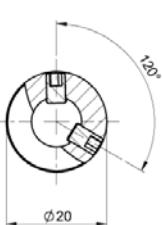


Ordering code example: BFP 1525 03/03

TYPE BFP 2029

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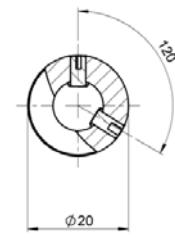
- 04/04
- 04/06
- 06/06
- 06/10
- 08/08
- 10/10
- 10/12
- 12/12



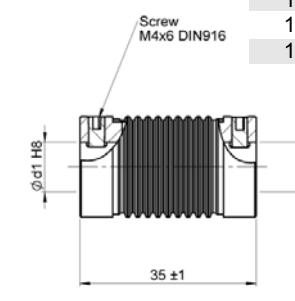
Ordering code example: BFP 2029 06/06



TYPE BFP 2035

 $\varnothing$  int. d1/d2

- 04/04
- 04/06
- 06/06
- 06/10
- 08/08
- 10/10
- 10/12
- 12/12



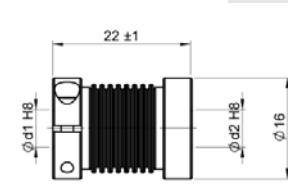
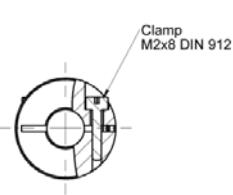
Ordering code example: BFP 2035 10/12



TYPE BFA 1622

 $\varnothing$  int. d1/d2

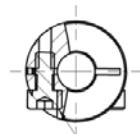
- 03/03
- 03/05
- 03/06
- 04/04
- 04/05
- 04/06
- 05/05
- 06/06



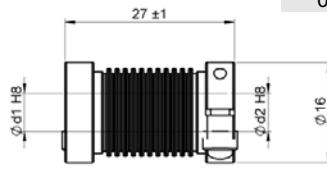
Ordering code example: BFA 1622 06/06



TYPE BFA 1627

 $\varnothing$  int. d1/d2

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



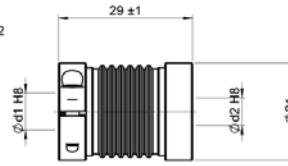
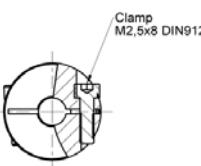
Ordering code example: BFA 1627 06/06



TYPE BFA 2129

 $\varnothing$  int. d1/d2

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

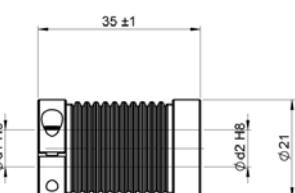
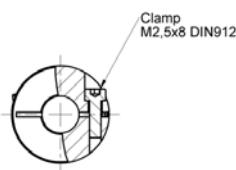


Ordering code example: BFA 2129 10/10



TYPE BFA 2135

$\emptyset$  int. d1/d2  
06/06  
06/10  
08/08  
10/10

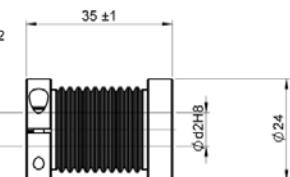
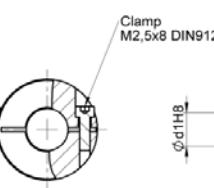


Ordering code example: BFA 2135 12/12



TYPE BFA 2435

$\emptyset$  int. d1/d2  
06/12  
10/12  
12/12

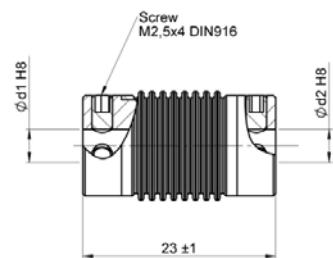
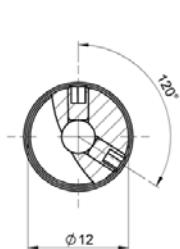


Ordering code example: BFA 2435 12/12



TYPE BFP 1223

$\emptyset$  int. d1/d2  
02/02  
02/03  
03/03  
04/04  
04/06  
06/06

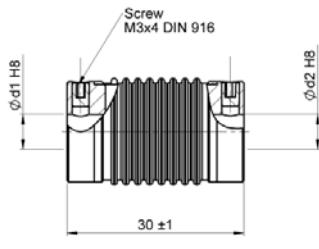
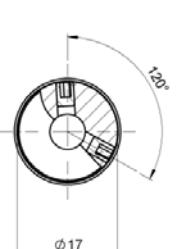


Ordering code example: BFP 1223 04/06



TYPE BFP 1730

$\emptyset$  int. d1/d2  
04/04  
04/06  
06/06  
06/10  
08/08  
10/10

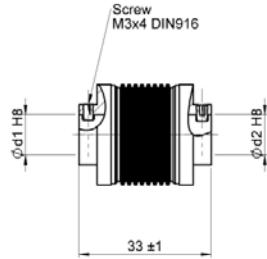
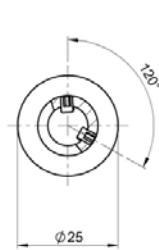


Ordering code example: BFP 1730 06/10



TYPE BFP 2533

$\emptyset$  int. d1/d2  
06/06  
06/10  
06/12  
08/08  
10/10  
12/12

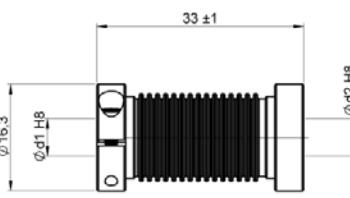
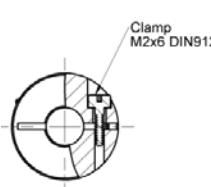


Ordering code example: BFA 2533 10/10



TYPE BFA 1733

$\emptyset$  int. d1/d2  
03/03  
04/04  
04/06  
06/06



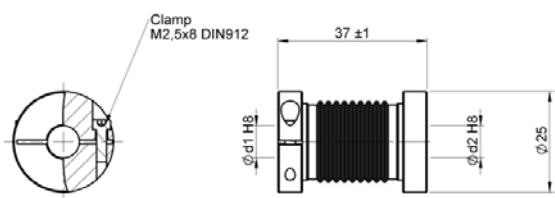
Ordering code example: BFA 1733 04/06



TYPE BFA 2537

**Ø int. d1/d2**

|       |
|-------|
| 06/06 |
| 06/10 |
| 08/08 |
| 10/10 |
| 12/12 |



Ejemplo de referencia: BFA 2537 08/08

# COUPLING 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 pre-

cision movement.

They are suitable for high rotation speeds, such as robots, machine-tools, turbines, dynamometers ...

## TECHNICAL SPECIFICATIONS

| Type     | Torque | Clamping torque | Max.speed | Admissible max.misalignment |          |           | Torsion spring stiffness | Radial spring stiffness | Weight | Inertia          |
|----------|--------|-----------------|-----------|-----------------------------|----------|-----------|--------------------------|-------------------------|--------|------------------|
|          | Ncm    | Ncm             | r.p.m.    | Angular degree              | Axial mm | Radial mm | Ncm/rad                  | N/mm                    | gr     | gcm <sup>2</sup> |
| LFP 2014 | 50     | 60              | 10.000    | ±2,5                        | ±0,3     | -         | 100                      | -                       | 5      | 2,6              |
| LFP 2016 | 50     | 60              | 10.000    | ±3                          | ±0,4     | ±0,2      | 45                       | 125                     | 6      | 2,8              |
| LFA 2213 | 20     | 20              | 10.000    | ±2                          | ±0,3     | ±0,3      | 14                       | 3                       | 9,5    | 3,2              |
| LFA 3019 | 80     | 80              | 12.000    | ±3                          | ±0,4     | ±0,4      | 150                      | 6                       | 16     | 19               |
| LFA 2519 | 40     | 65              | 12.000    | ±2,5                        | ±0,4     | ±0,25     | 22                       | 60                      | 16     | 13,5             |
| LFA 2525 | 40     | 65              | 12.000    | ±2,5                        | ±0,4     | ±0,25     | 22                       | 60                      | 18     | 15               |
| LFA 3022 | 60     | 80              | 12.000    | ±2,5                        | ±0,4     | ±0,3      | 30                       | 40                      | 30     | 35               |
| LFA 3027 | 60     | 80              | 12.000    | ±2,5                        | ±0,4     | ±0,3      | 30                       | 40                      | 32     | 37               |
| LFA 3850 | 200    | 60              | 8.000     | ±2,5                        | ±0,8     | ±0,8      | 250                      | -                       | 60     | 135              |
| LFA 3832 | 200    | 60              | 8.000     | ±2,5                        | ±0,8     | ±0,3      | 250                      | -                       | 70     | 112              |



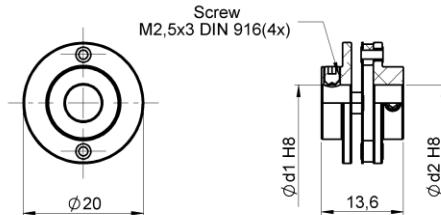
TYPE LFP 2014

Ø int. d1/d2  
02/02  
02/04  
04/04  
06/06

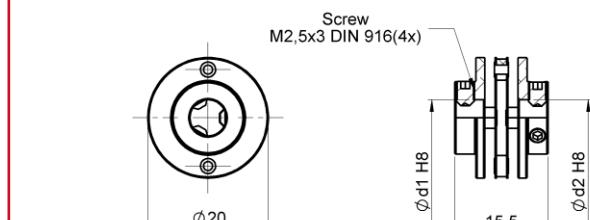


TYPE LFP 2016

Ø int. d1/d2  
02/02  
02/04  
04/04  
06/06



Ordering code example: LFP 2014 04/04

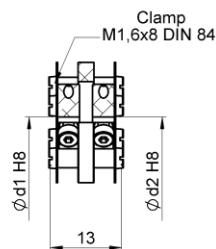
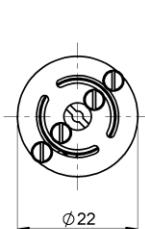


Ordering code example: LFP 2016 02/04



TYPE LFA 2213

| $\emptyset$ int. d1/d2 |
|------------------------|
| 02/02                  |
| 02/04                  |
| 04/04                  |
| 06/06                  |

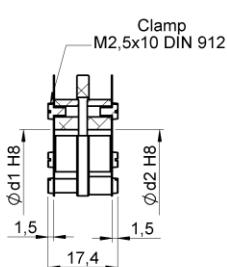


Ordering code example: LFA 2213 04/04



TYPE LFA 3019

| $\emptyset$ int. d1/d2 |
|------------------------|
| 03/03                  |
| 04/04                  |
| 05/06                  |
| 06/06                  |
| 06/08                  |

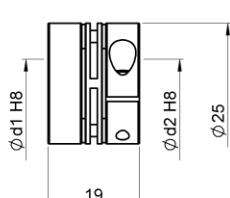
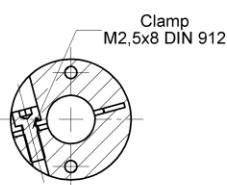


Ordering code example: LFA 3019 06/08



TYPE LFA 2519

| $\emptyset$ int. d1/d2 |
|------------------------|
| 06/06                  |
| 06/10                  |
| 08/08                  |
| 10/10                  |

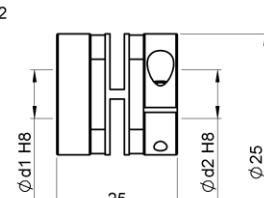
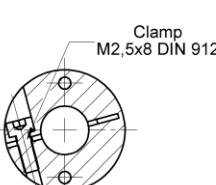


Ordering code example: LFA 2519 06/06



TYPE LFA 2525

| $\emptyset$ int. d1/d2 |
|------------------------|
| 06/06                  |
| 06/10                  |
| 08/08                  |
| 10/10                  |
| 10/12                  |
| 12/12                  |

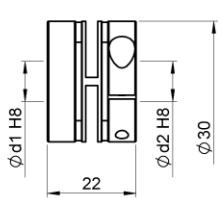
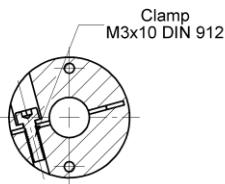


Ordering code example: LFA 2525 06/06



TYPE LFA 3022

| $\emptyset$ int. d1/d2 |
|------------------------|
| 06/06                  |
| 06/10                  |
| 10/10                  |
| 10/12                  |
| 12/12                  |
| 14/14                  |
| 16/16                  |

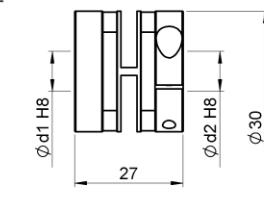
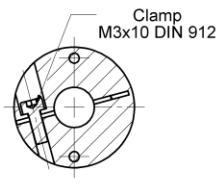


Ordering code example: LFA 3022 10/10



TYPE LFA 3027

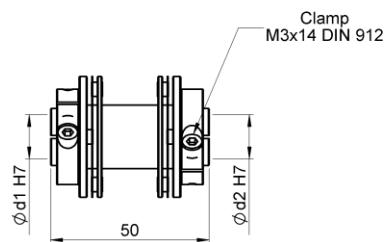
| $\emptyset$ int. d1/d2 |
|------------------------|
| 06/06                  |
| 06/10                  |
| 10/10                  |
| 10/12                  |
| 12/12                  |
| 14/14                  |
| 16/16                  |



Ordering code example: LFA 3027 12/12



MODELO LFA 3850

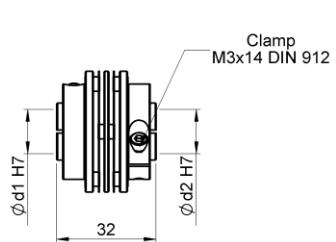


Ordering code example: LFA 3850 06/06

| $\varnothing$ int. d1/d2 |
|--------------------------|
| 06/06                    |
| 10/10                    |
| 10/12                    |
| 10/14                    |
| 12/12                    |
| 14/14                    |



MODELO LFA 3832



Ordering code example: LFA 3832 06/06

| $\varnothing$ int. d1/d2 |
|--------------------------|
| 06/06                    |
| 06/10                    |
| 10/10                    |
| 10/12                    |
| 12/12                    |
| 14/14                    |

# COUPLING 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 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.

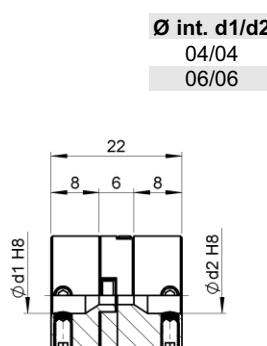
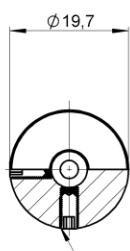
Radial misalignment does not produce any appreciable kinematic errors in transmission. However, angular misalignment can lead to small errors in a similar fashion to "Cardan" types of universal joints. They are suitable for positioning shaft slow drives, spindles and valves, etc. They must never be employed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

## TECHNICAL SPECIFICATIONS

| Type     | Torque | Clamping torque | Max.speed | Admissible max.misalignment |          |           | Torsion spring stiffness | Weight | Inertia          |
|----------|--------|-----------------|-----------|-----------------------------|----------|-----------|--------------------------|--------|------------------|
|          | Ncm    | Ncm             | r.p.m.    | Angular degree              | Axial mm | Radial mm | Ncm/rad                  | gr     | gcm <sup>2</sup> |
| OPF 1922 | 160    | 130             | 2.500     | ±2                          | ±0,2     | ±2        | 11                       | 15     | 68               |
| OPF 2530 | 340    | 310             | 2.500     | ±2                          | ±0,2     | ±2,8      | 23                       | 30     | 254              |
| OPF 3349 | 800    | 570             | 2.500     | ±2                          | ±0,3     | ±3,5      | 32                       | 90     | 1283             |



TYPE OPF 1922



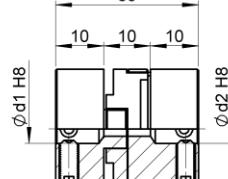
Ø int. d1/d2  
04/04  
06/06

Ordering code example: OPF 1922 06/06



TYPE OPF 2530

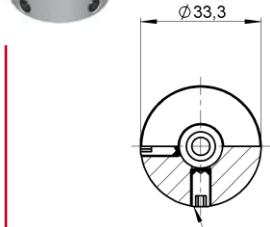
Ø int. d1/d2  
06/06  
06/10  
10/10



Ordering code example: OPF 2530 10/10

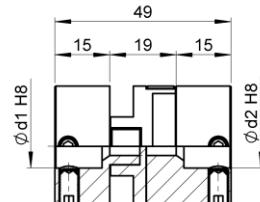


TYPE OPF 3349



Ordering code example: OPF 3349 12/12

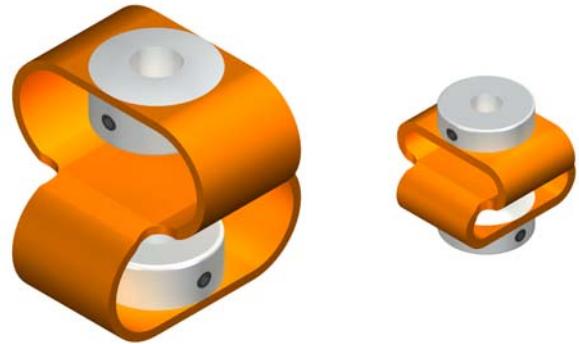
Ø int. d1/d2  
10/10  
12/12



# COUPLING PAGU-FLEX

## FLEXIBLE ISOLATING COUPLING

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



Adjentes 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.

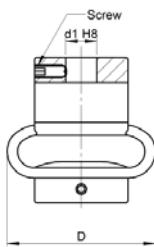
## TECHNICAL SPECIFICATIONS

| Type   | Torque<br>Ncm | Clamping<br>torque<br>Ncm | Max.speed<br>r.p.m. | Admissible<br>max.misalignment |             |              | Torsion<br>spring<br>stiffness<br>Ncm/rad | Radial<br>spring<br>stiffness<br>N/mm | Weight<br>gr | Inertia<br>gcm <sup>2</sup> |
|--------|---------------|---------------------------|---------------------|--------------------------------|-------------|--------------|---|---------------------------------------|--------------|-----------------------------|
|        |               |                           |                     | Angular<br>degree              | Axial<br>mm | Radial<br>mm |   |                                       |              |                             |
| GFP 10 | 50            | 50                        | 10.000              | 10                             | 9           | 2,6          | 320                                       | 11                                    | 24           | 0,1                         |
| GFP 20 | 180           | 120                       | 10.000              | 15                             | 15          | 3,2          | 780                                       | 405                                   | 77           | 0,91                        |
| GFP 30 | 500           |                           | 10.000              | 15                             | 17          | 3,2          | 2100                                      | 7,7                                   | 119          | 1,87                        |
| GFP 40 | 1000          |                           | 10.000              | 15                             | 22          | 3,2          | 2300                                      | 21                                    | 128          | 1,65                        |



TYPE GFP 10 06/06

Ø int. d1/d2  
06/06

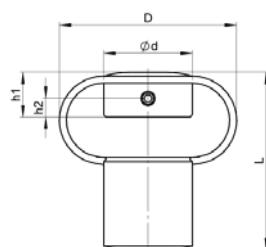


Ordering code example: GFP 10 06/06



TYPE GFP 20 10/10  
TYPE GFP 30 12/12  
TYPE GFP 40 14/14

Ø int. d1/d2  
10/10  
12/12  
14/14



Ordering code example: GFP 20 10/10

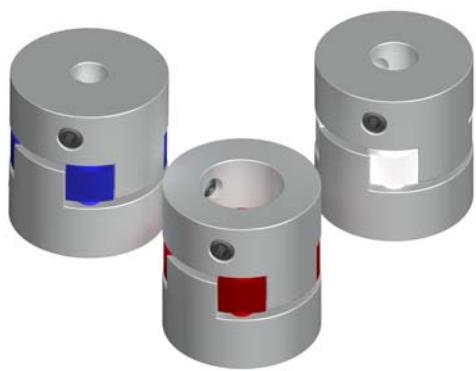
Dimensions in mm

|  | Symbol | 10   | 20   | 30   | 40   |
|--|--------|------|------|------|------|
| Rotation diameter                                    | D      | 26.0 | 48.0 | 54.0 | 54.0 |
| Lenght in the idle mode                              | L      | 28.0 | 48.0 | 58.0 | 61.0 |
| Diameter of the head                                 | d      | 18.0 | 25.0 | 28.0 | 28.0 |
| Height of the head                                   | h1     | 7.9  | 12.7 | 15.9 | 15.9 |
| Height of the thread screw                           | h2     | 5.5  | 7.9  | 10.4 | 11.2 |
| Diameter of the standard drill hole                  | d1     | 6.0  | 10.0 | 12.0 | 14.0 |
| Maximum permitted diameter of the standar drill hole | d1     | 8.0  | 12.0 | 16.0 | 16.0 |
| Hexagonal screw DIN 916                              | M3     | M4   | M5   | M6   |      |

# COUPLING CROSS-FLEX

## SPIDER COUPLING

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



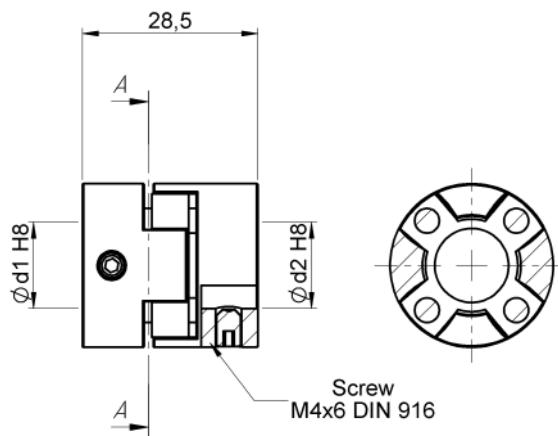
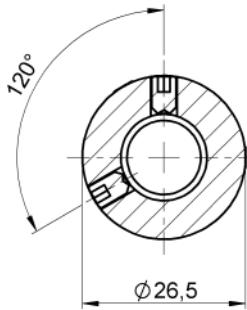
The CROSS-FLEX couplings are based on the use of a central disc. They are recommended for applications with some of the torque transmissions and with little misalignments. With the use of the CROSS-FLEX couplings, the angular misalignments may lead to small errors.

Radial misalignment does not produce any appreciable kinematic errors in transmission.  
Wear is minimum.

## TECHNICAL SPECIFICATIONS

| Type   | Torque | Clamping | Max.speed | Admissible max.misalignment |          |           | Hardness                 | Maxi torsion torque degree | Weight gr | Inertia gcm <sup>2</sup> |
|--------|--------|----------|-----------|-----------------------------|----------|-----------|--------------------------|----------------------------|-----------|--------------------------|
|        | Ncm    | Ncm      |           | Angular degree              | Axial mm | Radial mm |                          |                            |           |                          |
| CFP 80 | 800    | 300      | 19.000    | ±1,3                        | ±1       | ±0,22     | shore hardness 80 (azul) | 10                         | 34        | 30                       |
| CFP 92 | 1500   | 300      | 19.000    | ±1,3                        | ±1       | ±0,22     | 92 (blanco)              | 10                         | 34        | 30                       |
| CFP 98 | 2500   | 300      | 19.000    | ±1,3                        | ±1       | ±0,22     | 98 (rojo)                | 10                         | 34        | 30                       |

TYPE CFP 80  
TYPE CFP 92  
TYPE CFP 98



Ø int. d1/d2  
04/04  
06/06  
08/08  
10/10  
12/12  
14/14

Ordering code example: CFP 98 06/06

# COUPLING 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.

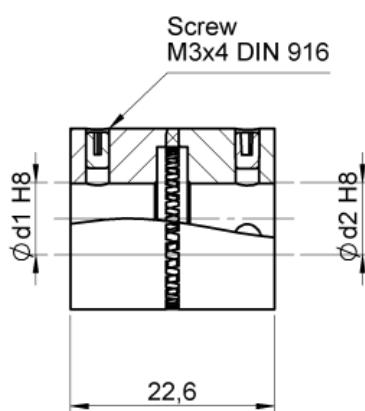
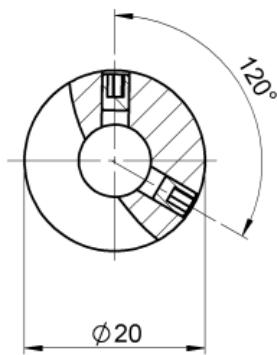
In the case of these couplings, the angular misalignments may lead to small errors.

They are suitable for positioning shaft slow drives.

## TECHNICAL SPECIFICATIONS

| Type            | Torque | Clamping | Max.speed | Admissible max.misalignment |          |           | Module | Radial spring stiffness N/mm | Weight gr | Inertia gcm <sup>2</sup> |
|-----------------|--------|----------|-----------|-----------------------------|----------|-----------|--------|------------------------------|-----------|--------------------------|
|                 | Ncm    | Ncm      | r.p.m.    | Angular degree              | Axial mm | Radial mm |        |                              |           |                          |
| <b>UFP 2022</b> | 200    | 80       | 8.000     | ±0,5                        | -        | -         | 0,7    | -                            | 34        | 30                       |

TYPE UFP 2022



| Ø int. d1/d2 |
|--------------|
| 06/06        |
| 06/08        |
| 06/10        |
| 08/08        |
| 10/10        |

Ordering code example: UFP 2022 06/06

