# "GIFLEX®" GF COUPLINGS with POLYAMIDE SLEEVE

## DUAL CURVATURE FLEXIBLE TOOTHED COUPLINGS

**PRESENTATION**

The GIFLEX range of flexible toothed couplings are commercial couplings for general applications, which are however manufactured to a high quality standard and offer technical and performance features that are typical of industrial couplings.
The specific application sector refers to power transmissions for the flexible connection of rotating parts, with the possibility of compensating radial and angular misalignments and absorbing axial slippage.
The performance is in line with this class of couplings, rendered more demanding and better suited to the needs of industrial requirements by the design criteria adopted and the precision with which the couplings are machined and systematically tested.

**CONSTRUCTION**

In structural terms, the flexible toothed couplings consist of two symmetrical steel hubs and a synthetic resin sleeve, which ensures the coupling and power transmission between the two hubs.
The two hubs are manufactured from low carbon content steel and have been subjected to anti-corrosion surface treatment and are each fitted with a toothed ring.
The hollow sleeve with internal toothing formed by injection moulding comprises a high molecular weight semi-crystalline technical polymer, guaranteed by certification at origin, thermally conditioned and charged with a solid lubricant that contributes to enhance the self-lubricating features typical of the polymer. The toothing of the two hubs has a progressive dual curvature, produced using a Numerically Controlled machine tool, which ensures the coupling provides optimum performance. This solution enables dynamic type angular and radial misalignments to be compensated ALSO UNDER LOAD CONDITIONS. The specific geometry of the tooth for a given transmitted twisting moment significantly reduces the surface pressure, thereby increasing the coupling's capacity to

transmit the load and fatigue resistance.
The polymer's relative insensitivity to atmospheric humidity and its capacity to withstand temperatures between –20° and + 120° with brief peaks of up to +150° enable the coupling to withstand demanding working conditions also in an aggressive environment.

**CHARACTERISTICS**

The couplings provide the following performance in practical applications:

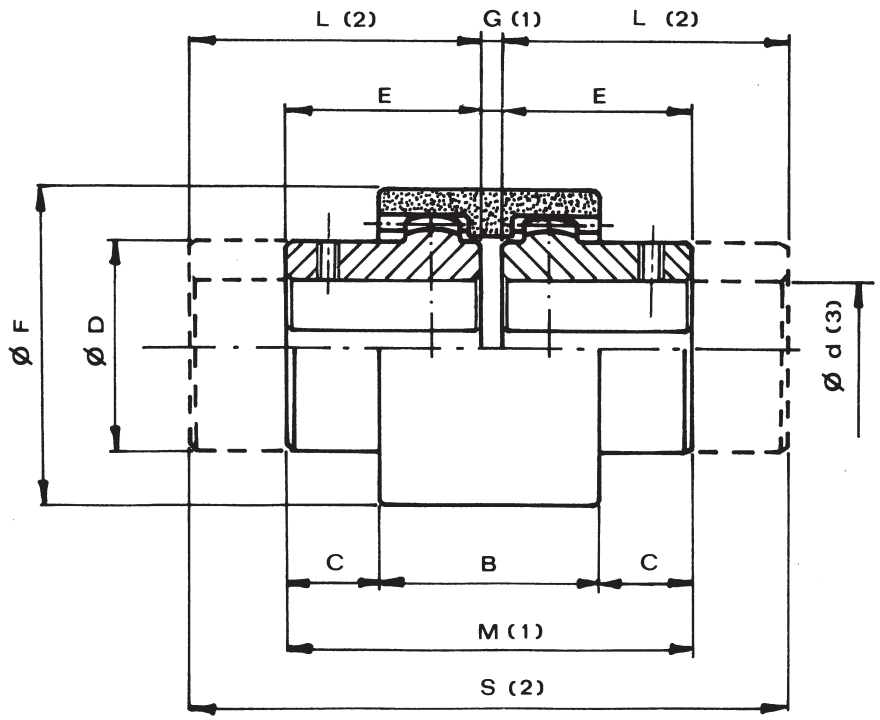
- Reduced overall dimensions, weight and inertia moment;
- Constant velocity behaviour at speed;
- Silent operation and the ability to absorb impacts and vibrations flexibly;
- Withstand the most common aggressive chemical agents and moderate heat, max. temp. 80°;
- Self-lubricating, electrically insulated and maintenance-free;
- Inexpensive, easily assembled and are suited to a variety of applications, also in demanding conditions.

**Code interpretation**

Example:

**GF - 14-NN** = with 2 normal hubs
**GF - 14-NL** = with one normal hub and a long hub
**GF - 14-LL** = with 2 long hubs

## DIMENSIONS



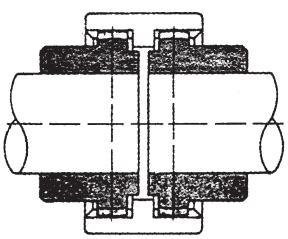

The coupling's characteristic size is defined by the maximum bore diameter.

**MEASUREMENTS - WEIGHTS**

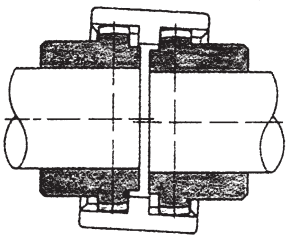
| COUPLING TYPE | WITHOUT BORE | Finished bore d (3) | | Measurements in mm. | | | | | | | | | Mass Kg. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Normal range | | | | | | | Long Range | | Sleeve | Normal Hub | Long Hub |
| | | nom. | max. | B | C | ØD | E | ØF | G (1) | M (1) | L (2) | S (2) | | | |
| GF-14 | - | 6 | 14 | 38 | 6.5 | 25 | 23.5 | 41 | 4 | 51 | 30 | 64 | 0.022 | 0.10 | 0.13 |
| GF-19 | - | 8 | 19 | 38 | 8.5 | 32 | 25.5 | 48 | 4 | 55 | 40 | 84 | 0.028 | 0.18 | 0.28 |
| GF-24 | - | 10 | 24 | 42 | 7.5 | 36 | 26.5 | 52 | 4 | 57 | 50 | 104 | 0.037 | 0.23 | 0.42- |
| GF-28 | - | 10 | 28 | 48 | 19 | 45 | 41 | 68 | 4 | 86 | 60 | 124 | 0.086 | 0.54 | 0.79 |
| GF-32 | - | 12 | 32 | 48 | 18 | 50 | 40 | 75 | 4 | 84 | 60 | 124 | 0.104 | 0.66 | 0.97 |
| GF-38 | - | 14 | 38 | 50 | 17 | 58 | 40 | 85 | 4 | 84 | 80 | 164 | 0.131 | 0.93 | 1.83 |
| GF-42 | - | 20 | 42 | 50 | 19 | 63 | 42 | 95 | 4 | 88 | 110 | 224 | 0.187 | 1.10 | 2.76 |
| GF-48 | - | 20 | 48 | 50 | 27 | 68 | 50 | 100 | 4 | 104 | 110 | 224 | 0.198 | 1.50 | 3.21 |
| GF-55 | - | 25 | 55 | 65 | 29.5 | 82 | 60 | 120 | 4 | 124 | 110 | 224 | 0.357 | 2.63 | 5.12 |
| GF-65 | - | 25 | 65 | 72 | 36 | 95 | 70 | 140 | 4 | 144 | 140 | 284 | 0.595 | 4.02 | 7.92 |

(1) Assembly distances.
(2) Couplings with hub lengths to fully cover normal shafts for the UNEL-MEC range of motors.
(3) **On request:** finished bore in compliance with ISO standards, H7 tolerance, keyway DIN 6885, sheet 1, JS9 tolerance. Dowel bore.

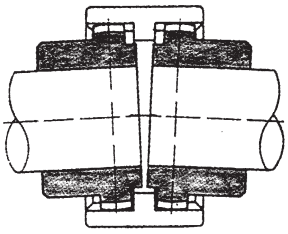
## MISALIGNMENTS



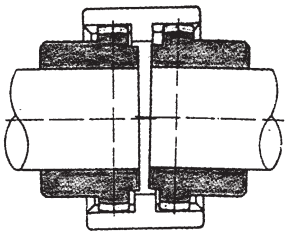
Aligned shafts



Radially displaced shafts



Angularly displaced shafts



Radially and angularly displaced shafts

### COUPLING SELECTION

Torque based selection: the coupling must be selected so that the max motor torque does not exceed the coupling's permitted peak twisting moment.

**TECHNICAL DATA**

| COUPLING TYPE | POWER FACTOR KW r.p.m. | | TORQUE Nm | | POWER TRANSMITTED IN KW AT R.P.M. | | | | | | | | Max. R.P.M. | Mass Kg. (1) | J Kg cm² (1) | Maximum misalignment for each hub | | Axial displacement |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 750 | | 1000 | | 1500 | | 3000 | | | | | | | |
| | norm. | max. | norm. | max. | norm. | max. | norm. | max. | norm. | max. | norm. | max. | | | | Angular α (2) | Radial mm. | mm. |
| GF-14 | 0.0011 | 0.0023 | 11.5 | 23 | 0.8 | 1.5 | 1.1 | 2.0 | 1.6 | 3.0 | 3.3 | 6.0 | 14000 | 0.166 | 0.27 | ±2° | 0.7 | ±1 |
| GF-19 | 0.0019 | 0.0037 | 18.5 | 36.5 | 1.3 | 2.7 | 1.8 | 3.7 | 2.7 | 5.5 | 5.4 | 11.1 | 12000 | 0.276 | 0.64 | ±2° | 0.8 | ±1 |
| GF-24 | 0.0023 | 0.0047 | 23 | 46 | 1.7 | 3.5 | 2.3 | 4.7 | 3.4 | 7.0 | 6.9 | 14.1 | 10000 | 0.312 | 0.92 | ±2° | 0.8 | ±1 |
| GF-28 | 0.0053 | 0.0106 | 51.5 | 103.5 | 3.9 | 7.9 | 5.2 | 10.6 | 7.8 | 15.9 | 15.6 | 31.8 | 8000 | 0.779 | 3.45 | ±2° | 1 | ±1 |
| GF-32 | 0.0071 | 0.0142 | 69 | 138 | 5.2 | 10.5 | 7.0 | 14.1 | 10.5 | 21.1 | 21.0 | 42.3 | 7100 | 0.918 | 5.03 | ±2° | 1 | ±1 |
| GF-38 | 0.0090 | 0.0181 | 88 | 176 | 6.7 | 13.5 | 9.0 | 18.0 | 13.5 | 27.0 | 27.0 | 54.0 | 6300 | 1.278 | 9.59 | ±2° | 0.9 | ±1 |
| GF-42 | 0.0113 | 0.0226 | 110 | 220 | 8.4 | 16.8 | 11.2 | 22.5 | 16.8 | 33.7 | 33.6 | 67.5 | 6000 | 1.473 | 13.06 | ±2° | 0.9 | ±1 |
| GF-48 | 0.0158 | 0.0317 | 154 | 308 | 11.8 | 23.6 | 15.8 | 31.6 | 23.7 | 47.4 | 47.4 | 94.8 | 5600 | 1.777 | 18.15 | ±2° | 0.9 | ±1 |
| GF-55 | 0.029 | 0.058 | 285 | 570 | 21.7 | 43.5 | 29.0 | 58.0 | 43.5 | 87.0 | 87.0 | 174.0 | 4800 | 3.380 | 49.44 | ±2° | 1.2 | ±1 |
| GF-65 | 0.0432 | 0.0865 | 420 | 840 | 32.1 | 64.3 | 42.9 | 85.8 | 64.3 | 128.7 | 128.7 | 257.4 | 4000 | 4.988 | 106.34 | ±2° | 1.3 | ±1 |

(1) Normal coupling reference complete with maximum bore without keyway.
(2) Per hub.

### ASSEMBLY GUIDELINES

a) Position the two semi-couplings on the shafts, taking care that the internal surfaces are in line with the shaft ends.
b) Insert the sleeve on the two semi-couplings adjusting their distance (distance "G"), while the two shafts are aligned at the same time.
c) Clamp the two parts to be coupled together in position.
d) Check that the sleeve is free to move in an axial direction before the coupling is rotated.