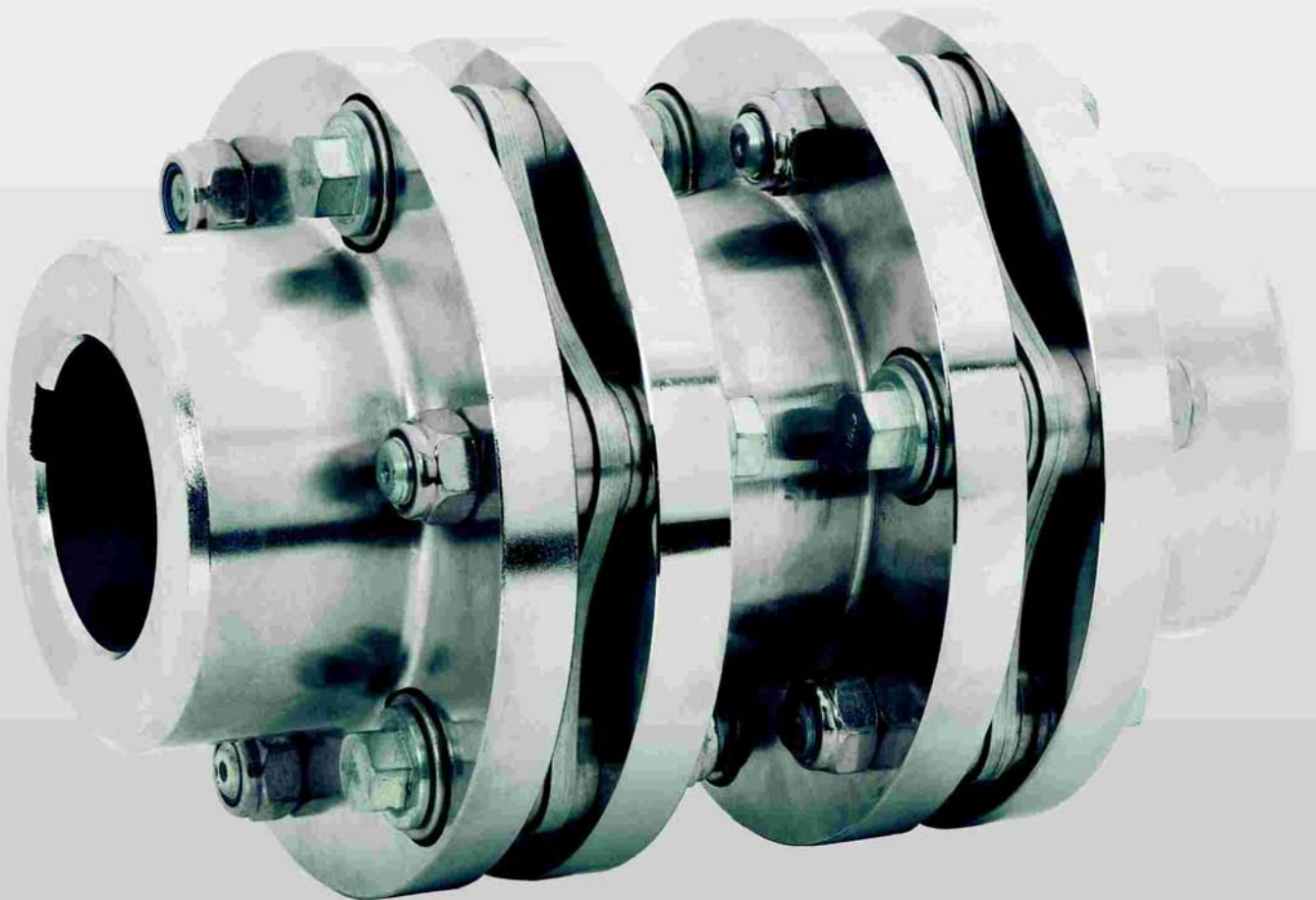


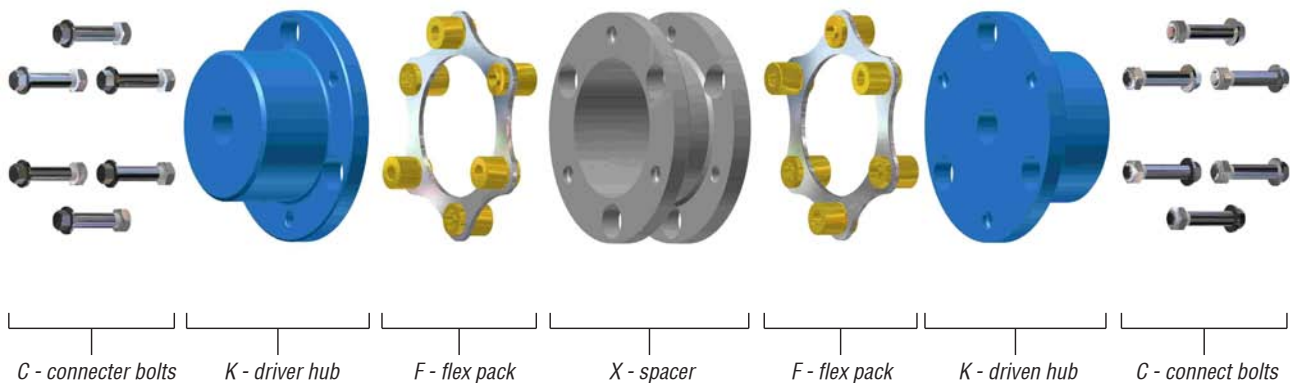
Voith Turbo

VOITH

Voith Disc-Flex MR Coupling



Torsionally rigid and backlash free drive couplings



Exploded view of a MR Coupling.

Product description

Disc-Flex MR is a drive coupling series, normally used to transfer torque from one rotating shaft to another, which uses a Metal Ring modular precision 'flex-pack' (F), made of stainless steel, as the driving elements. Two steel hubs (K) are connected to the Metal Ring 'flex-pack' with precision metric ferrules (F) and high tensile bolts, washers and nuts (C). This design allows for a backlash free and torsionally stiff drive. The construction is 100% steel.

The Disc-Flex MR drive coupling series has been designed using modular components. These can therefore be adapted for a wider range of applications to suit single or double-flex requirements.

The Disc-Flex MR KFK assembly is supplied with a single Metal Ring 'flex-pack' (F), and two hubs (K). These can be used to compensate for axial and angular, but not radial alignment in installation and/or operation. This series provides the highest torsional stiffness. The Disc-Flex MR KXX assembly is supplied with two Metal Ring 'flex-pack' (F), one spacer (X) and two hubs (K). They can be used to compensate for axial, angular and radial alignment.

The Disc-Flex MR KXX assembly can be supplied in several standard versions, which allow for different distances between shaft ends (Kg) or to suit special requirements. Both types, Disc-Flex MR KFK assembly and Disc-Flex MR KXX assembly can be supplied with keyless shaft locking devices (SLD) recommended for drives that need to be completely free of backlash i.e. without movement at keyface.

Key benefits

- No backlash
- Torsional stiffness.
- High temperatures.
- High speeds.
- Low maintenance, long life.
- Modular design.
- Double alignment planes.

No backlash

This fundamental characteristic is for use on synchronous machines, for machines with start, stop and reversing duties and for applications where position control in both directions is essential to guarantee the accuracy of operation. For these applications, we recommend the use of the Disc-Flex MR with shaft locking devices (SLD).

Torsional stiffness

The design of the Metal Ring guarantees high torsional stiffness, an important characteristic for applications on packing machines, servomotors, printing presses, winders, machine tools and other automation requirements.

High temperatures

The Disc-Flex MR coupling is 100% of steel construction and is therefore suitable for use in difficult environments, with temperatures up to 240°C, in applications such as, high temperature liquid pumps.

High speeds

The Disc-Flex MR coupling is manufactured to close tolerances to achieve high concentricity and perpendicularity and is therefore suitable for high speed applications, even in the presence of irregular torque loads, in addition, the angular velocity is accurately transmitted.

Long, maintenance free life

The Metal Ring element produces a perfect force distribution and the close tolerances eliminate all backlash.

This ensures that the Disc-Flex MR coupling provides a long service life, as there is no backlash.

A low maintenance situation is provided for, as it is not necessary to lubricate.

Ask Voith for other options that are not included in this catalogue.

The flexibility of the Metal Ring also reduces the transfer of vibrations through the drive, which safeguards it and reduces wear.

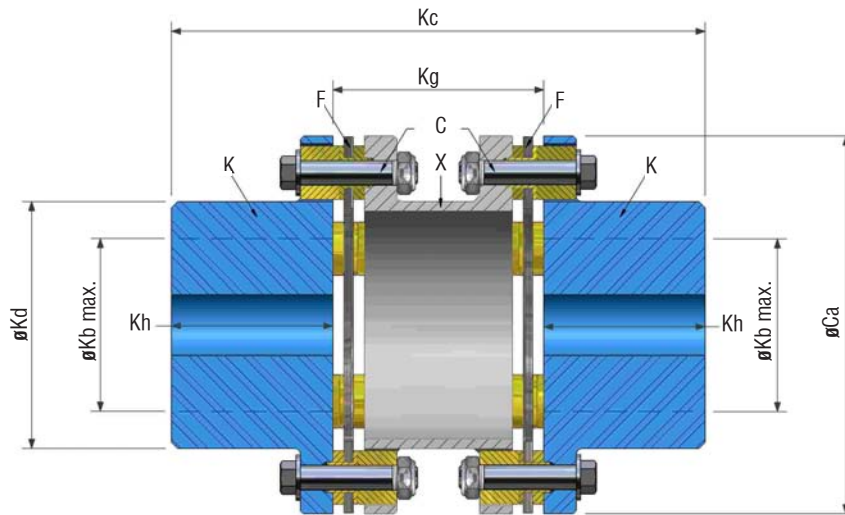
Modular design

This allows flexible drive solutions for a wide selection of applications.

Double alignment planes

Which accommodates alignment without stress on either shaft.

DiscFlex MR KXK Assembly



Technical Detail of MR KXK Assembly

| Size | Dimensions in mm | | | | | | Alignment Detail | | | Maximum Speed | | Rating | | |
|--------|------------------|--------------|---------------|-----------|-------------|-------------|------------------|-------------|---------------|---------------|-------------------|--------|------------|-----------------------|
| | MR | ∅ Ca O. dia. | ∅ Ca Hub dia. | Kc length | Kh l. t. b. | ∅ Kb max. b | Kg d. b. s. e | Axial /pack | Radial offset | Angular swash | Without Balancing | With | kW 1000rpm | Torque in Nm. Nominal |
| MR 024 | 62 | 35.5 | 152 | 26 | 26 | 100 | 0.15 | 0.15 | 0.10 | 12 300 | 56 500 | 2 | 20 | 40 |
| MR 044 | 74 | 41.5 | 160 | 30 | 32 | 100 | 0.18 | 0.15 | 0.13 | 10 300 | 48 300 | 3 | 30 | 60 |
| MR 064 | 97 | 56.5 | 180 | 40 | 42 | 100 | 0.28 | 0.15 | 0.17 | 7 900 | 35 500 | 8 | 80 | 160 |
| MR 084 | 118 | 66.5 | 200 | 50 | 50 | 100 | 0.35 | 0.14 | 0.20 | 6 500 | 30 200 | 20 | 195 | 390 |
| MR 104 | 144 | 87.5 | 220 | 60 | 65 | 100 | 0.43 | 0.14 | 0.25 | 5 300 | 22 900 | 30 | 290 | 580 |
| MR 124 | 175 | 113.5 | 260 | 80 | 85 | 100 | 0.53 | 0.14 | 0.30 | 4 400 | 17 700 | 80 | 765 | 1 530 |
| MR 144 | 204 | 120 | 300 | 80 | 90 | 140 | 0.58 | 0.21 | 0.35 | 3 700 | 16 700 | 170 | 1 625 | 3 250 |
| MR 164 | 228 | 144.5 | 330 | 95 | 110 | 140 | 0.74 | 0.21 | 0.39 | 3 400 | 13 900 | 260 | 2 485 | 4 970 |
| MR 186 | 222 | 141 | 330 | 95 | 105 | 140 | 0.32 | 0.21 | 0.29 | 3 400 | 14 200 | 401 | 3 825 | 7 650 |
| MR 206 | 248 | 162 | 354 | 107 | 120 | 140 | 0.37 | 0.16 | 0.32 | 3 100 | 12 400 | 570 | 5 440 | 10 880 |
| MR 226 | 272 | 180 | 410 | 115 | 135 | 180 | 0.42 | 0.21 | 0.35 | 2 800 | 11 100 | 750 | 7 165 | 14 330 |
| MR 146 | 297 | 197 | 524 | 130 | 150 | 180 | 0.50 | 0.21 | 0.39 | 2 600 | 10 200 | 1 125 | 10 745 | 21 490 |
| MR 258 | 272 | 180 | 410 | 115 | 135 | 180 | 0.25 | 0.14 | 0.23 | 2 800 | 11 100 | 1 400 | 13 370 | 26 740 |
| MR 268 | 292 | 192 | 454 | 137 | 145 | 180 | 0.30 | 0.14 | 0.25 | 2 600 | 10 400 | 1 900 | 18 145 | 32 690 |
| MR 288 | 341 | 229 | 506 | 163 | 170 | 180 | 0.40 | 0.14 | 0.30 | 2 200 | 8 800 | 3 099 | 29 600 | 59 200 |
| MR 308 | 384 | 260 | 552 | 186 | 195 | 180 | 0.44 | 0.14 | 0.33 | 2 000 | 7 700 | 4 200 | 40 110 | 80 220 |
| MR 328 | 429 | 289 | 662 | 206 | 215 | 250 | 0.50 | 0.19 | 0.36 | 1 800 | 6 900 | 6 503 | 62 100 | 129 200 |
| MR 348 | 486 | 336 | 730 | 240 | 255 | 250 | 0.60 | 0.19 | 0.42 | 1 600 | 6 000 | 9 500 | 90 725 | 181 450 |
| MR 368 | 535 | 367 | 774 | 262 | 275 | 250 | 0.68 | 0.19 | 0.46 | 1 400 | 5 500 | 14 000 | 133 700 | 267 400 |
| MR 388 | 571 | 403 | 826 | 288 | 305 | 250 | 0.75 | 0.19 | 0.50 | 1 300 | 5 000 | 16 000 | 152 800 | 305 600 |
| MR 408 | 683 | 486 | 994 | 347 | 365 | 300 | 0.88 | 0.23 | 0.59 | 1 100 | 4 100 | 28 000 | 267 400 | 534 800 |

Selection Procedure

Find the correct service factor - SF and then use the formula: Torque required = (kW x 9550 x SF) / rpm. The torque required must always be less than the nominal torque provided in Technical detail table on page 2.

The service factor - SF takes into account the shaft alignment with Alignment factor - f1, the temperature with Temperature factor - f2, and the type of operating machine with Load factor - f3, so that: SF = f1 x f2 x f3. refer to diagrams below.

Alignment and Alignment factor - f1.

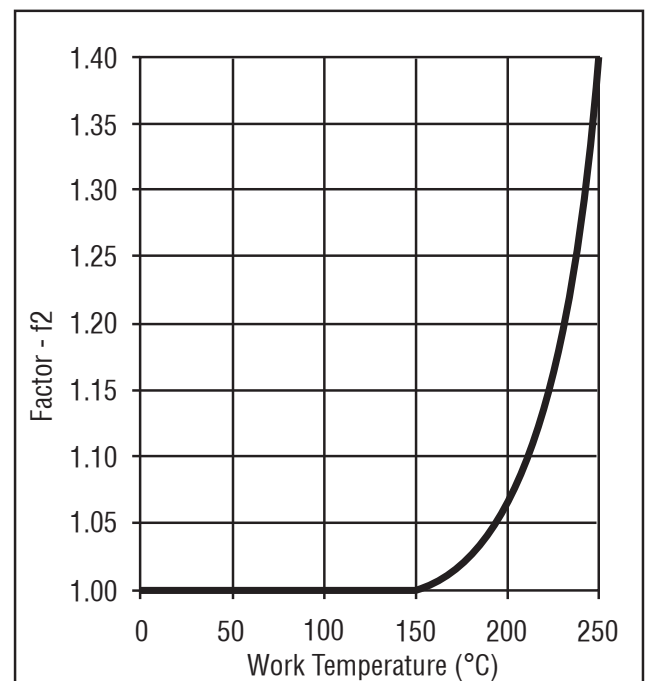
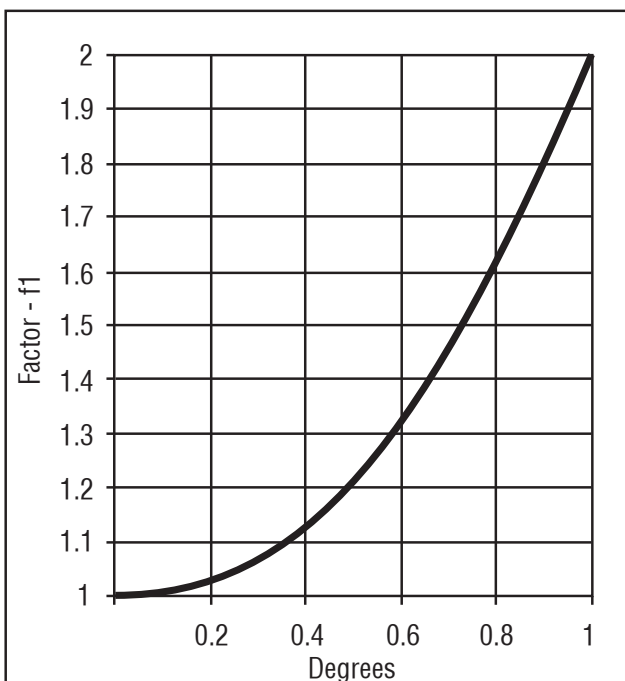
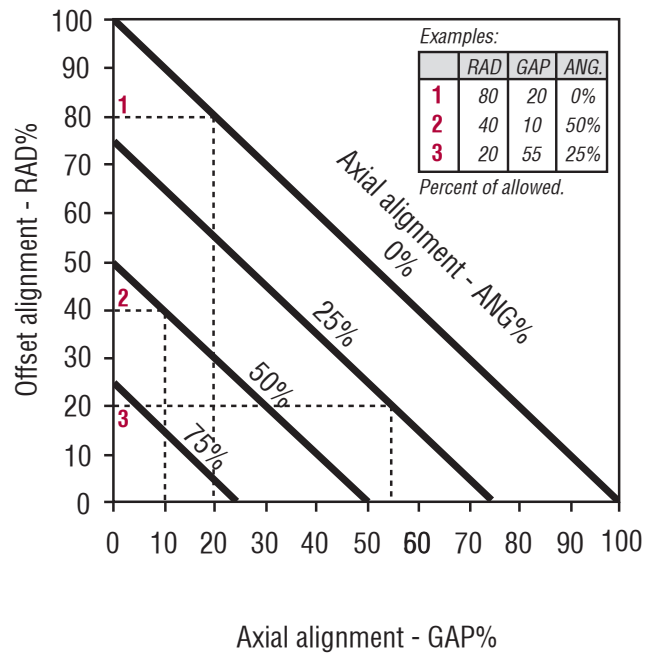
The maximum values given cannot co-exist at the same time. Therefore, by referring to the alignment diagram alongside the conditions can be balanced to the application.

Temperature Factor - f2.

Disc-Flex MR couplings are unaffected by temperatures of up to 160 degrees C. For higher temperatures, take into account the temperature factor - f2 given in table below.

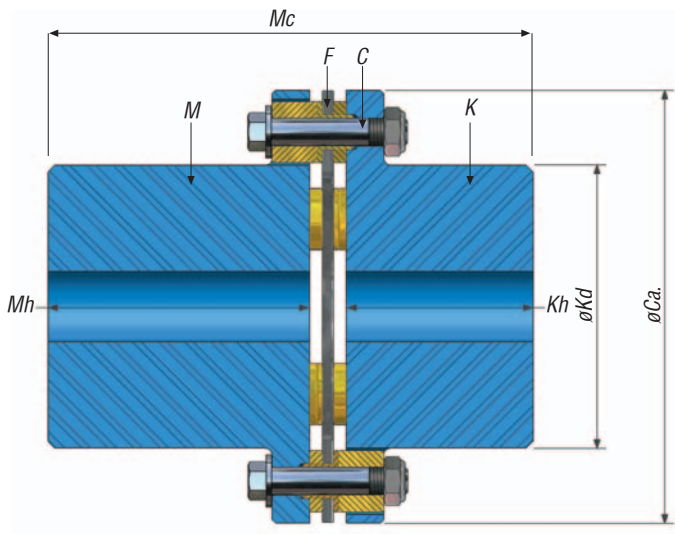
Load Factor - f3

| Duty Type | Driven Machine (Examples) | Electric Motors | Internal Combustion Engines | | |
|------------------|---|-----------------|-----------------------------|--------------|-------------|
| | | + Turbines | 1 Cylinder | 2+3 Cylinder | +4 Cylinder |
| Light duty | Centrifugal pumps, fans, belt conveyors | 1.2 | 2.4 | 2.0 | 1.6 |
| Medium duty | Hammer mill, bucket elevator, scraper conveyors | 1.6 | 2.8 | 2.4 | 2.0 |
| Heavy duty | Crushers, calendar, shaker screens, compressors | 2.0 | 3.2 | 2.8 | 2.4 |
| Extra heavy duty | Reciprocating pumps, compressors (3 cyl. or less) | 2.4 | 3.6 | 3.2 | 2.8 |
| Ultra heavy duty | Steel mill roller tables, heavy reversing drives | >4.0 | 5.2 | 4.8 | 4.4 |

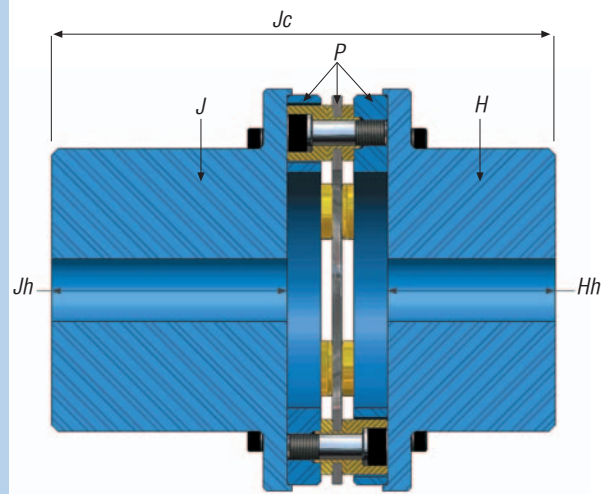


Alignment factor f1 - * Make allowance for any movement such as thermal growth.

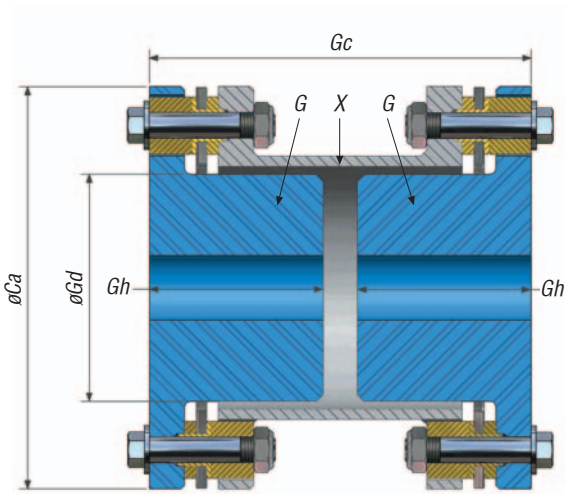
Temperature factor f2



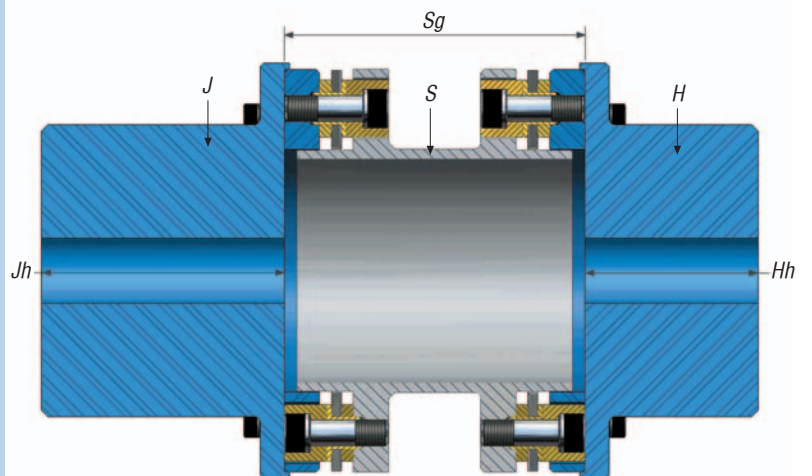
MR Assembly MFK



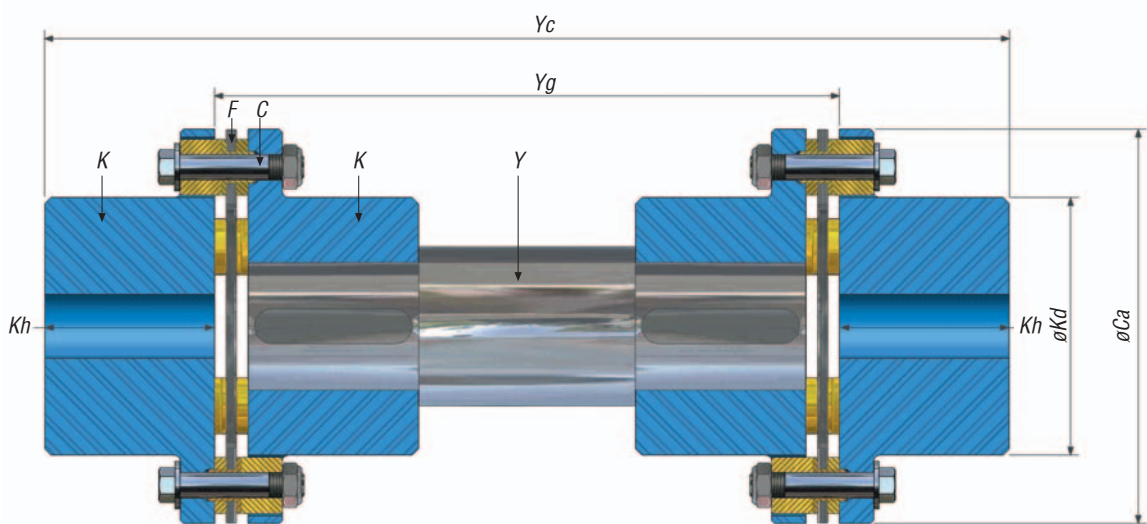
MR Assembly JPH



MR Assembly GXG



MR Assembly JSH



MR Assembly KYK

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