

KOP-FLEX® How to Select A Coupling

GEAR

Advantage: High torque, rugged, good misalignment capability, slide capability & medium relative cost. Interchangeable by half coupling with competition (FALK*, AMERIDRIVES*, TB WOODS*).

- FAST'S®: (Preferred selection), Unique and superior design with metal labyrinth seal.
- Series H and WALDRON® selected if cost or bore sizes are an issue. WALDRON® has a better seal.

Disadvantage: Maintenance (lubrication) required, wearing parts & assembly backlash.

GRID

Advantage: Shock loading, medium torque capacity, interchangeable by part with competition (FALK* and DODGE*), & low relative cost.

Disadvantage: Maintenance (lubrication) required, wearing parts, lower torque capacity than gear couplings and can't be balanced.

NON-LUBRICATED COUPLINGS:

DISC

Advantage: High torque capacity, long life, minimal maintenance (no lubrication), excellent balance, user-friendly design & zero backlash.

Disadvantage: Higher cost, limited misalignment capacity.

ELASTOMERIC™

Advantage: Can remove rubber elements without moving equipment, some shock absorption, low maintenance, rubber elements drive in compression, easy element replacement & low to medium relative cost.

Disadvantage: Limited torque capacity - less than jaw, speed limitation.

JAW

Advantage: Low cost, no lubrication, interchangeable with competition (LOVEJOY*).

Disadvantage: Must move equipment to change out element, low misalignment capability & small applications only.

MAX-C ®'K2'

Advantage: Shock absorption, low maintenance, urethane elements drive in compression.

Disadvantage: Large coupling, medium torque capacity & high cost. Not for severe, reversing applications.

MORFLEX®

Advantage: High misalignment capacity (up to 10 degrees), no lubrication, simple assembly, resilient.

Disadvantage: Limited torque (13,300 lb-in) and bore capacity (3.50").

SIMPLE FIVE STEPS TO SELECT A COUPLING:

- Step 1:** Determine type of application and select appropriate service factor from page 132.
- Step 2:** Calculate "selection torque" (SF x Application Torque).
- Step 3:** Verify the coupling selected has a torque rating greater than or equal to the selection torque.
- Step 4:** Verify the coupling selected has bore capacity greater than or equal to the required bore or shaft size.
- Step 5:** Check dynamic balance chart for gear coupling on page 133 and page 23 for disc coupling to see if the coupling needs to be dynamically balanced or can be used as manufactured.

Example: Motor to Centrifugal pump application in a Water treatment plant with 500 HP motor at 700 rpm, with motor shaft 4.25" and pump shaft 4.50", close coupled, premium gear and an alternate disc coupling.

Step 1: Service Factor will be 1.0 for smooth motor driven centrifugal pump – see page 132.

Step 2: Torque = $(500 \times 1 \times 63025) / 700 = 45,000$ lb-in.

Step 3: Selected #4.5 FAST'S® (p/n 4 ½ F EB FF) gear coupling with 318,000 lb-in torque rating and 4.75" bore capacity. Alternate #404 KD10 (close coupled) disc coupling (p/n 404 KD10 SS) with 215,000 lb-in. torque rating and 4.75" bore capacity. Adequate torque capacity.

Step 4: Bore capacity as noted above is greater than shaft diameter. Adequate bore capacity.

Step 5: At 700 rpm no balance required as shown in the two charts.

For any assistance call Customer Service or Engineering at 410-768-2000 or email coupling specialists at coupling-engineering@emerson-ept.com

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HIGH PERFORMANCE COUPLINGS

KOP-FLEX®

HIGH PERFORMANCE DISC COUPLINGS...

Available In Four Standard Styles...

Designed And Manufactured To Meet API 671 As Standard

These couplings are engineered to accommodate a broad range of demanding operating conditions: boiler feed pumps, centrifugal and axial compressors, generator sets, test stands, gas and steam turbines, marine drives, etc.

The HP disc coupling is the preferred choice for demanding turbomachinery applications. Superior quality, and a wide variety of standard and custom designs backed by unsurpassed engineering expertise make KOP-FLEX the industry leader.

- Inherent fail-safe designs
- KOPLON* coated flexible disc elements for maximum life
- Factory assembled
- Greatest reduced moment available
- Dynamically balanced

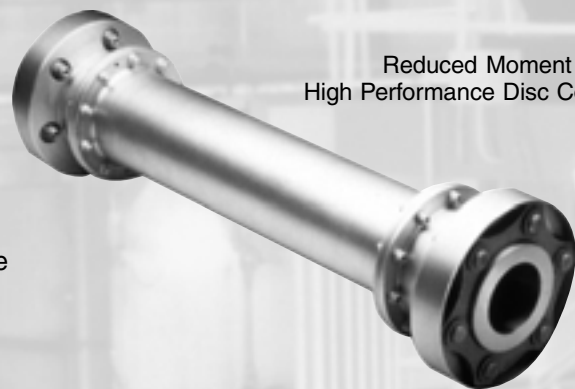
High Performance Flexible Diaphragm Couplings

The patented Flexible Diaphragm Coupling from KOP-FLEX® brand couplings transmits torque from the driving shaft via a rigid hub, then through a flexible diaphragm to a spacer. The diaphragm deforms while transmitting this torque to accommodate misalignment. The spacer in turn drives matching components attached to the driven equipment. Outstanding design features include:

- Field-replaceable stockable diaphragms
- Specially-contoured one-piece diaphragm design
- Patented diaphragm shape
- Piloted fits
- Diaphragms are 15.5 PH shot-peened stainless steel
- Inherently low windage design
- Conforms to API 671 specifications

High Performance Gear Couplings

- Thousands in service
- Choose from straight or crowned nitrided gear teeth, depending on your application
- Precision lapped teeth, if required
- Heat-treated alloy components



Reduced Moment
High Performance Disc Coupling



Size #5.5 MDM-J
Diaphragm Coupling



Size #6 Gear Coupling
G.E. MS5001 Gas Turbine Driven
Compressor Train

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