

# Муфты FCPL

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# FCPL COUPLINGS

**Dynapar™ brand**

## Flexible Shaft Couplings

### Key Features

- Provides Electrical Isolation and Maximum Mechanical Protection of Encoder Shaft Connections
- Clamp Attachment - No Set Screws to Scour or Pit Shafts
- Three-Beam Helical Design Restricts Torque "Windup"
- Full Range of Models with Shaft Adapters Provide Integration Flexibility for Wide Range of Encoders



## SPECIFICATIONS

### STANDARD CHARACTERISTICS:

**Material:** 7075-T651 Aluminum with Bright Finish

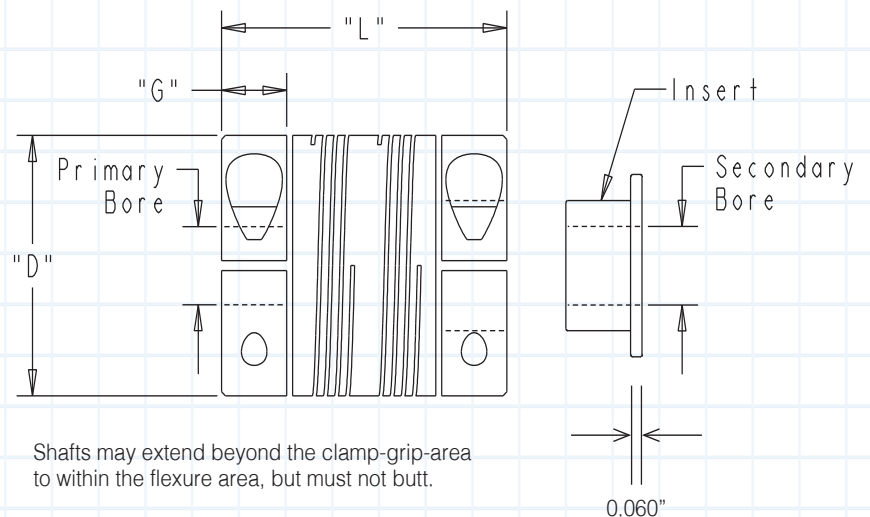
**Insert/insulator:** G10 glass filled phenolic. Sizes provided per *Models table, Secondary Bore*.

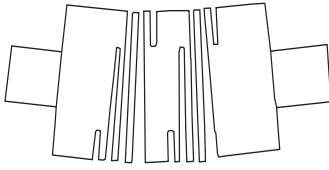
**Clamps:** Integral at each end with hex socket cap screws.

**Peak Torque:** Per *Models table, Peak Torque*. Safety factor should be determined considering acceleration and deceleration loads, etc.

### DIMENSIONS

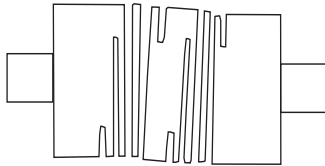
Refer to Models Table for dimensions of specific models.





### Angular Misalignment

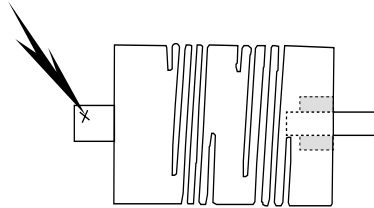
When the center lines of the shafts extend and form an obtuse angle. The intersection of this obtuse angle should be at the center of the flexible beam area.



### Parallel Misalignment

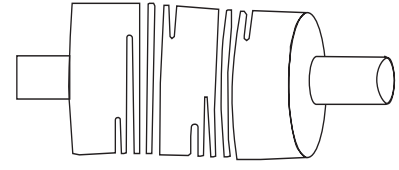
The shaft's center lines are parallel but offset. When the coupling is installed there should be two equal obtuse angles within the coupling.

**Proper shaft coupling protects precision encoders from all of these common hazards. Use of a well engineered coupling can save many times its cost by eliminating failures due to excessive shaft loading, electrical leakage, and thermal stress.**



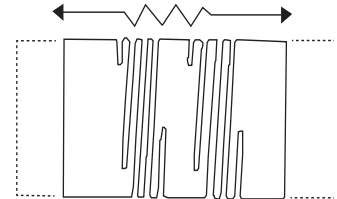
### Electrical and Thermal Stress

The supplied insulator insert blocks transfer of static charges, leakage currents, and heat to the encoder. These stresses have been proven to be contributory to bearing damage as well as electrical failures.



### Skewed Misalignment

The shafts are not in the same plane. Center line extension is not parallel or intersecting. There can be two obtuse angles of varying degrees. These angles should be centered within the coupling.



### Axial Motion

Motion in the direction of the center lines of the shafts, such as motor shaft "thrust". Usually created by loose bearings or other elements that do not restrain the motion.

## Ordering Information

Most applications will use the Primary Bore as the encoder end, but it is permissible to reverse the coupling to accommodate specific shaft combinations. Each coupling is supplied with Secondary Bore insulator inserts as listed.

| Model Number  | Primary Bore | Secondary Bore | Dimensions (in.) |            |          | Maximum Misalignment |          |       | Peak Torque (lb-in.) |                       |                   | Clamp Screw           |
|---------------|--------------|----------------|------------------|------------|----------|----------------------|----------|-------|----------------------|-----------------------|-------------------|-----------------------|
|               |              |                | D = Diameter     | L = Length | G = Grip | Angular              | Parallel | Axial | Static               | Dynamic Non-Reversing | Dynamic Reversing | Socket Head Cap Screw |
| FCPL00750125  | 1/8"         | 1/8, 3/16"     | 0.750            | 0.900      | 0.230    | 3°                   | 0.008    | 0.005 | 16                   | 8                     | 4.5               | M2.5                  |
| FCPL00750250  | 1/4"         | 1/8, 1/4"      | 0.750            | 0.900      | 0.230    | 3°                   | 0.008    | 0.005 | 16                   | 8                     | 4.5               | M2.5                  |
| FCPL01000250  | 1/4"         | 1/4, 3/8"      | 1.000            | 1.250      | 0.325    | 3°                   | 0.015    | 0.010 | 36                   | 18                    | 9                 | M4                    |
| FCPL01000375  | 3/8"         | 3/16, 3/8"     | 1.000            | 1.250      | 0.325    | 3°                   | 0.015    | 0.010 | 36                   | 18                    | 9                 | M4                    |
| FCPL01250250  | 1/4"         | 1/4, 3/8"      | 1.250            | 1.500      | 0.343    | 3°                   | 0.015    | 0.010 | 52                   | 26                    | 13                | M4                    |
| FCPL01250375  | 3/8"         | 3/8, 1/2"      | 1.250            | 1.500      | 0.343    | 3°                   | 0.015    | 0.010 | 52                   | 26                    | 13                | M4                    |
| FCPL01250500  | 1/2"         | 1/4, 1/2"      | 1.250            | 1.500      | 0.343    | 3°                   | 0.015    | 0.010 | 52                   | 26                    | 13                | M4                    |
| FCPL01500375  | 3/8"         | 3/8, 1/2"      | 1.500            | 2.250      | 0.500    | 3°                   | 0.030    | 0.015 | 80                   | 40                    | 20                | M5 <sup>4</sup>       |
| FCPL01500500  | 1/2"         | 1/2, 5/8"      | 1.500            | 2.250      | 0.500    | 3°                   | 0.030    | 0.015 | 80                   | 40                    | 20                | M5 <sup>4</sup>       |
| FCPL01500625  | 5/8"         | 3/8, 5/8"      | 1.500            | 2.250      | 0.500    | 3°                   | 0.030    | 0.015 | 80                   | 40                    | 20                | M5 <sup>4</sup>       |
| FCPL02000875  | 7/8"         | 3/8, 5/8"      | 2.000            | 2.000      | 0.450    | 3°                   | 0.040    | 0.060 | 300                  | 150                   | 75                | M5                    |
| FCPL02001000  | 1"           | 3/8, 5/8"      | 2.000            | 2.000      | 0.450    | 3°                   | 0.040    | 0.060 | 300                  | 150                   | 75                | M5                    |
| FCPL02001125  | 1-1/8"       | 3/8, 5/8"      | 2.000            | 2.000      | 0.450    | 3°                   | 0.040    | 0.060 | 300                  | 150                   | 75                | M5                    |
| FCPLM1000250  | 1/4"         | 4, 5, 6 mm     | 1.000            | 1.250      | 0.325    | 3°                   | 0.015    | 0.010 | 36                   | 18                    | 9                 | M4                    |
| FCPLM1250375  | 3/8"         | 6, 8, 10 mm    | 1.250            | 1.500      | 0.343    | 3°                   | 0.015    | 0.010 | 52                   | 26                    | 13                | M4                    |
| FCPLM1500500  | 1/2"         | 6, 8, 10 mm    | 1.500            | 2.250      | 0.500    | 3°                   | 0.030    | 0.015 | 80                   | 40                    | 20                | M5 <sup>4</sup>       |
| FCPLM12506MM  | 6 mm         | 4, 5, 6 mm     | 1.250            | 1.500      | 0.343    | 3°                   | 0.015    | 0.010 | 34                   | 17                    | 8.5               | M4                    |
| FCPLM100010MM | 10 mm        | 6, 8, 10 mm    | 1.000            | 1.000      | 0.250    | 3°                   | 0.015    | 0.010 | 36                   | 18                    | 9                 | M2.5                  |

### NOTE:

- For extremely high acceleration rates, consider using the next larger coupling size.
- When coupling an encoder to a shaft which is stepped down from a larger size, always use a larger heavier duty coupling.
- For maximum life, encoders must be installed and aligned such that the encoder shaft to driving shaft alignment is within the 0.003" TIR NEMA standard despite the maximum misalignment specified.
- These specific models have thread locking clamp screws. Tightening of screw for these will require more torque versus non-thread locking screw models.

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