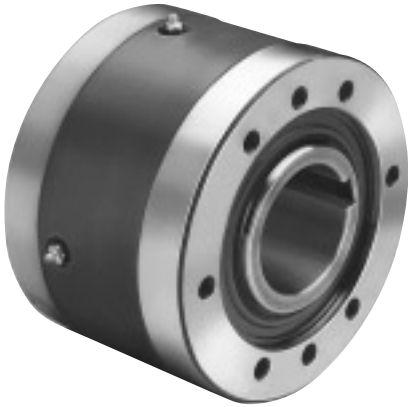




## Overrunning, Indexing, Backstopping Ball Bearing Supported, Sprag Clutches



All models contain Formchrome® sprags and Formsprag “Free-action” retainers. These clutches mount on a through-shaft, with the inner race driven by a key. *Standard keys are supplied by Formsprag at no additional charge.* The ground O.D. of the outer race is designed as a pilot or mounting surface for attaching parts and is concentric with the bore. Tapped holes are provided in each end of the outer race for securing these parts to the clutch. Refer to Bore Sizes/Shaft Tolerance chart for mounting data, page 120.

For vertical mounting, contact Application Engineering.

### Model FSO

Allows higher inner race overrunning speeds than FS series. They are also suitable for general overrunning and light-to medium-duty indexing applications.

They are grease lubricated and equipped with grease seals.

### Model HPI

Are especially designed for medium to heavy-duty indexing applications, or applications in excess of 150 strokes/ min. to provide the maximum in dependable, uniform, long life performance. They are oil lubricated and equipped with lip type seals. Grease is available.

### Model FS

Suitable for general overrunning, backstopping and light- to medium-duty indexing applications. They are oil lubricated and equipped with lip-type seals.

### C/T Sprag Models (FS Only)

Ideal for applications with high speed outer race overrunning and low speed driving. Available with oil lubrication only.

### Oil Lubricated Clutch

FS-750 through 1027 clutches are shipped from the factory with Mobil DTE Heavy Medium oil.

HPI-750 through 1027 clutches are shipped from the factory with Mobil DTE Light oil.

### Grease Lubricated Clutch

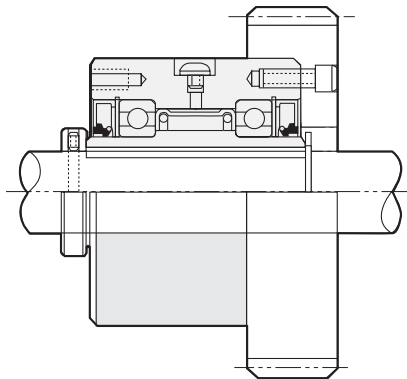
FSO-750 through 1027 clutches are shipped from the factory packed with Fiske Brothers Aero-Lubriplate grease.

HPI-750 through 1027 clutches are shipped from the factory with Mobil DTE Light.

OSHA cover kits are available for Models FS, FSO & HPI-750 through 1027, see page 117 for details.

For further information, write for Installation and Maintenance bulletin No. 2219 for FS and FSO series, and No. 2213 bulletin for the HPI series.

### Typical Mounting Arrangement



The Model FSO clutches must be secured to the shaft by customer supplied snap ring, set collar, spacer, etc.

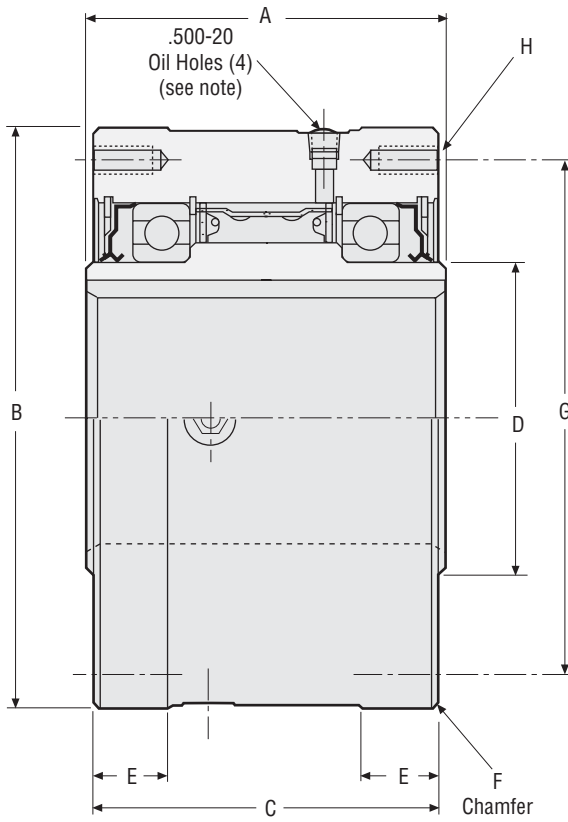
### Specifications

| Size | Torque Capacity<br>lb.ft.<br>(Nm) | Maximum RPM          |               |                  |               |                   |               |               |               | Resistance after run-in<br>lb.ft.<br>(Nm) | Lubrication   |                   |                   | Shipping Weight<br>lb.<br>(kg) |
|------|-----------------------------------|----------------------|---------------|------------------|---------------|-------------------|---------------|---------------|---------------|---|---------------|-------------------|-------------------|--------------------------------|
|      |                                   | Standard Models      |               |                  |               | C/T Sprag Models  |               |               |               |   | Grease        | Oil               |                   |                                |
|      |                                   | Overrunning Speed    |               |                  |               | Overrunning Speed |               |               |               |   |               | FSO<br>oz<br>(ml) | HPI<br>oz<br>(ml) |                                |
|      |                                   | Lip Seal<br>FS & FSO |               | Labyrinth<br>FSO |               | Inner<br>Race     | Outer<br>Race | Inner<br>Race | Outer<br>Race |   | Max.<br>drive |                   |                   |                                |
|      |                                   | Inner<br>Race        | Outer<br>Race | Inner<br>Race    | Outer<br>Race |                   |               |               |               |   |               |                   |                   |                                |
| 750  | 7,000<br>(9520)                   | 1,000                | 650           | 1,800            | 650           | 1,000             | 1,800         | 650           | 800           | 3.75<br>(5.08)                            | 7.5<br>(222)  | 13<br>(384)       | 7<br>(207)        | 83<br>(38)                     |
| 800  | 13,000<br>(17,680)                | 850                  | 525           | 1,500            | 525           | 850               | 1,500         | 525           | 675           | 5.25<br>(7.12)                            | 7.5<br>(222)  | 15<br>(444)       | 8.5<br>(251)      | 102<br>(46)                    |
| 900  | 18,000<br>(24,480)                | 700                  | 500           | 1,350            | 500           | 700               | 1,350         | 500           | 650           | 6.25<br>(8.47)                            | 18<br>(532)   | 16<br>(473)       | 11.5<br>(340)     | 156<br>(71)                    |
| 1027 | 27,000<br>(36,720)                | 500                  | 375           | 700              | 375           | 500               | 1,100         | 375           | 475           | 10.00<br>(13.56)                          | 22<br>(651)   | 32<br>(946)       | 16<br>(473)       | 250<br>(113)                   |

**Notes:**

Check key and shaft stress before making final clutch selection since this may determine the maximum allowable drive torque capacity.

FSO-750 only, shipped with labyrinth seals.



**Notes:**

Angle — oil hole to mounting bolt hole

- Model 750 = 0° or 30°
- 900 = 0° or 18°
- 800 = 0° or 45°
- 1027 = 15°

**Dimensions inches (mm)**

| Size | A               | B                                | C                | D                | E               | F                         | G                 | H        |         |                 |
|------|-----------------|----------------------------------|------------------|------------------|-----------------|---------------------------|-------------------|----------|---------|-----------------|
|      |                 |                                  |                  |                  |                 |                           |                   | Number   | Thread  | Depth           |
| 750  | 6.00<br>(152.4) | 8.750/8.748<br>(222.25/222.20)   | 5.88<br>(149.22) | 4.25<br>(107.95) | 1.25<br>(31.75) | .06 x 45°<br>(1.58 x 45°) | 7.00<br>(177.80)  | 8*       | .500-20 | 1.00<br>(25.40) |
| 800  | 6.00<br>(152.4) | 10.000/9.998<br>(254.00/253.95)  | 5.88<br>(149.22) | 5.50<br>(139.70) | 1.25<br>(31.75) | .06 x 45°<br>(1.58 x 45°) | 8.94<br>(227.01)  | 8 @ 45°  | .500-20 | 1.00<br>(25.40) |
| 900  | 6.38<br>(161.9) | 12.000/11.997<br>(304.80/304.72) | 6.25<br>(158.75) | 6.38<br>(161.92) | 1.38<br>(34.92) | .06 x 45°<br>(1.58 x 45°) | 9.75<br>(247.65)  | 10 @ 36° | .625-18 | 1.25<br>(31.75) |
| 1027 | 6.63<br>(168.3) | 15.000/14.997<br>(381.00/380.92) | 6.50<br>(165.10) | 9.00<br>(228.60) | 1.38<br>(34.92) | .13 x 45°<br>(3.17 x 45°) | 11.75<br>(298.45) | 12 @ 30° | .625-18 | 1.00<br>(25.40) |

\* Six holes equally spaced at 60° plus two extra holes at 180°. Six hardened mounting screws are adequate for torque loads up to 5100 lb.ft. (6915 Nm). Use eight hardened mounting screws for torque loads above these values.

**Bore sizes and keyseats\*\* inches (mm)**

| Bore Size         | Keyseat                         | Bore Range        |                   |
|-------------------|---------------------------------|-------------------|-------------------|
|                   |                                 | Min.              | Max..             |
| 2.437<br>(61.90)  | 5/8 x 5/16<br>(15.87 x 7.94)    |                   |                   |
| 2.500<br>(63.50)  | 5/8 x 5/16<br>(15.87 x 7.94)    |                   |                   |
| 65mm              | 18 x 4.4mm***                   |                   |                   |
| 2.750<br>(69.85)  | 5/8 x 5/16<br>(15.87 x 7.94)    |                   |                   |
| 70mm              | 20 x 4.9mm***                   |                   |                   |
| 2.937<br>(74.60)  | 3/4 x 3/8<br>(19.05 x 9.52)     | 2.250<br>(57.15)  | 3.437<br>(87.30)  |
| 75mm              | 20 x 4.9mm***                   |                   |                   |
| 3.000<br>(76.20)  | 3/4 x 3/8<br>(19.05 x 9.52)     |                   |                   |
| 80mm              | 22 x 5.4mm***                   |                   |                   |
| 3.250<br>(82.55)  | 3/4 x 1/4<br>(19.05 x 6.35)     |                   |                   |
| 3.437<br>(87.30)  | 3/4 x 3/16<br>(19.05 x 4.75)    |                   |                   |
| 3.000<br>(76.20)  | 3/4 x 3/8<br>(19.05 x 9.52)     |                   |                   |
| 80mm              | 22 x 5.4mm***                   |                   |                   |
| 3.250<br>(82.55)  | 3/4 x 3/8<br>(19.05 x 9.52)     |                   |                   |
| 85mm              | 22 x 5.4mmv***                  |                   |                   |
| 3.437<br>(87.30)  | 7/8 x 7/16<br>(22.23 x 11.11)   |                   |                   |
| 3.500<br>(88.90)  | 7/8 x 7/16<br>(22.23 x 11.11)   |                   |                   |
| 90mm              | 25 x 5.4mm***                   |                   |                   |
| 3.750<br>(95.25)  | 7/8 x 7/16<br>(22.23 x 11.11)   | 2.625<br>(66.67)  | 4.437<br>(112.70) |
| 100mm             | 28 x 6.4mm***                   |                   |                   |
| 3.937<br>(100.00) | 1 x 1/2<br>(25.40 x 12.70)      |                   |                   |
| 4.000<br>(101.60) | 1 x 1/2<br>(25.40 x 12.70)      |                   |                   |
| 4.250<br>(107.95) | 1 x 3/8<br>(25.40 x 9.52)       |                   |                   |
| 4.437<br>(112.70) | 1 x 1/4<br>(25.40 x 6.35)       |                   |                   |
| 100mm             | 28 x 6.4mm***                   |                   |                   |
| 4.000<br>(101.60) | 1 x 1/2<br>(25.40 x 12.70)      |                   |                   |
| 4.250<br>(107.95) | 1 x 1/2<br>(25.40 x 12.70)      |                   |                   |
| 110mm             | 28 x 6.4mm***                   |                   |                   |
| 4.437<br>(112.70) | 1 x 1/2<br>(25.40 x 12.70)      |                   |                   |
| 4.500<br>(114.30) | 1 x 1/2<br>(25.40 x 12.70)      |                   |                   |
| 120mm             | 32 x 7.4mm***                   | 3.625<br>(92.07)  | 5.437<br>(138.10) |
| 4.750<br>(120.65) | 1 x 1/2<br>(25.40 x 12.70)      |                   |                   |
| 4.937<br>(125.40) | 1 x 3/8<br>(25.40 x 9.52)       |                   |                   |
| 5.000<br>(127.00) | 1 x 3/8<br>(25.40 x 9.52)       |                   |                   |
| 130mm             | 32 x 7.4mm***                   |                   |                   |
| 5.250<br>(133.35) | 1 x 1/4<br>(25.40 x 6.35)       |                   |                   |
| 5.437<br>(138.10) | 1 x 1/4<br>(25.40 x 6.35)       |                   |                   |
| 4.937<br>(125.40) | 1 1/4 x 5/8<br>(31.75 x 15.87)  |                   |                   |
| 130mm             | 36 x 8.4mm***                   |                   |                   |
| 150mm             | 45 x 10.4mm***                  |                   |                   |
| 6.000<br>(152.40) | 1 1/4 x 5/8<br>(31.75 x 15.87)  |                   |                   |
| 6.250<br>(158.75) | 1 1/2 x 1/2<br>(38.10 x 12.70)  | 4.937<br>(125.40) | 7.000<br>(177.80) |
| 6.625<br>(168.27) | 1 1/2 x 1/2<br>(38.10 x 12.70)  |                   |                   |
| 6.750<br>(171.45) | 1 1/2 x 1/2<br>(38.10 x 12.70)  |                   |                   |
| 6.875<br>(174.62) | 1 1/2 x 1/2<br>(38.10 x 12.70)  |                   |                   |
| 175mm             | 45 x 10.4mm***                  |                   |                   |
| 7.000<br>(177.80) | 1 1/2 x 7/16<br>(38.10 x 11.10) |                   |                   |

\*\* For finished dimensions of keys supplied with the clutch, contact Formsprag.

\*\*\* Contact Formsprag for keyseat information.