

# General Purpose Clutches

## FS/FSO/HPI

### 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 128.

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.

### Specifications

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

#### Notes:

\* FSO-1027 C/T Sprags are not Formchromed.

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.

Shaft keys are provided with the clutches on sizes 750 and up.

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

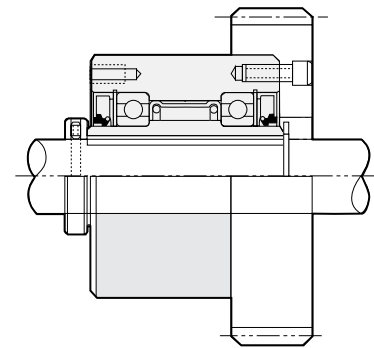
FSO-750 through 1027 clutches are shipped from the factory packed with Fiske Brothers Aero-Lubriplate grease.

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

OSHA cover kits are available for Models FS, FSO & HPI-750 through 1027, see page 125 for details.

For further information, see *Installation and Maintenance* bulletin No. 2219, P-222-10 for FS and FSO series, and No. 2213, P-222-6 bulletin for the HPI series.

### Typical Mounting Arrangement

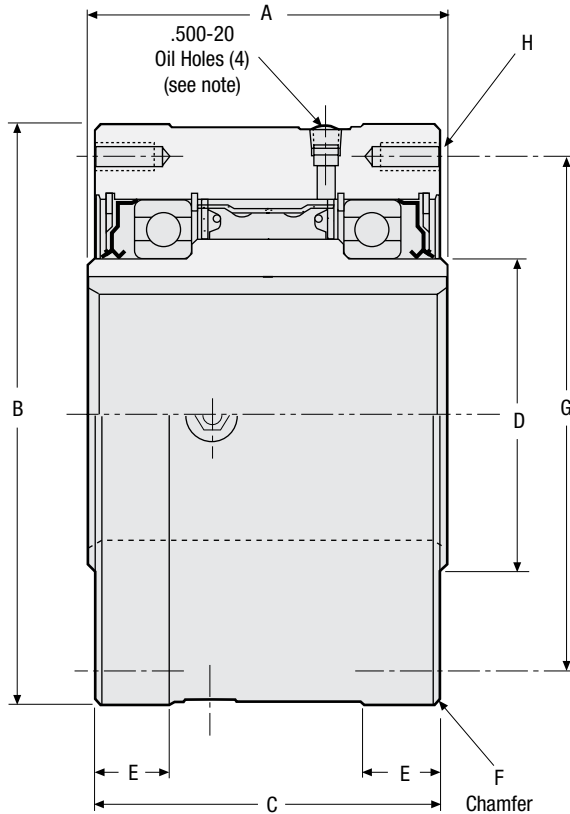


The Model FSO clutches must be axially restrained, see accessories page 122 for set collars, restraint keys and OSHA covers, etc. All fasteners are recommended to be grade 8 bolts.

### Bore sizes and keyseats\*\*†

inches (mm)

Size	Bore Size	Keyseat	Bore Range				
			Min.	Max..			
750	2.437 (61.90)	5/8 x 5/16 (15.87 x 7.94)	2.250 (57.15)	3.437 (87.30)			
	2.500 (63.50)	5/8 x 5/16 (15.87 x 7.94)					
	65mm	18 x 4.4mm***					
	2.750 (69.85)	5/8 x 5/16 (15.87 x 7.94)					
	70mm	20 x 4.9mm***					
	2.937 (74.60)	3/4 x 3/8 (19.05 x 9.52)					
	75mm	20 x 4.9mm***					
	3.000 (76.20)	3/4 x 3/8 (19.05 x 9.52)					
	80mm	22 x 5.4mm***					
	3.250 (82.55)	3/4 x 1/4 (19.05 x 6.35)					
	3.437 (87.30)	3/4 x 3/16 (19.05 x 4.75)					
	800	3.000 (76.20)			3/4 x 3/8 (19.05 x 9.52)	2.625 (66.67)	4.437 (112.70)
		80mm			22 x 5.4mm***		
		3.250 (82.55)			3/4 x 3/8 (19.05 x 9.52)		
85mm		22 x 5.4mm***					
3.437 (87.30)		7/8 x 7/16 (22.23 x 11.11)					
3.500 (88.90)		7/8 x 7/16 (22.23 x 11.11)					
90mm		25 x 5.4mm***					
3.750 (95.25)		7/8 x 7/16 (22.23 x 11.11)					
100mm		28 x 6.4mm***					
3.937 (100.00)		1 x 1/2 (25.40 x 12.70)					
4.000 (101.60)		1 x 1/2 (25.40 x 12.70)					
4.250 (107.95)		1 x 3/8 (25.40 x 9.52)					
110mm		28 x 6.4mm***					
4.437 (112.70)		1 x 1/4 (25.40 x 6.35)					
900	100mm	28 x 6.4mm***	3.625 (92.07)	5.437 (138.10)			
	4.000 (101.60)	1 x 1/2 (25.40 x 12.70)					
	4.250 (107.95)	1 x 1/2 (25.40 x 12.70)					
	110mm	28 x 6.4mm***					
	4.437 (112.70)	1 x 1/2 (25.40 x 12.70)					
	4.500 (114.30)	1 x 1/2 (25.40 x 12.70)					
	120mm	32 x 7.4mm***					
	4.750 (120.65)	1 x 1/2 (25.40 x 12.70)					
	4.937 (125.40)	1 x 3/8 (25.40 x 9.52)					
	5.000 (127.00)	1 x 3/8 (25.40 x 9.52)					
	130mm	32 x 7.4mm***					
	5.250 (133.35)	1 x 1/4 (25.40 x 6.35)					
	5.437 (138.10)	1 x 1/4 (25.40 x 6.35)					
	1027	4.937 (125.40)			1 1/4 x 5/8 (31.75 x 15.87)	4.937 (125.40)	7.000 (177.80)
130mm		36 x 8.4mm***					
150mm		45 x 10.4mm***					
6.000 (152.40)		1 1/4 x 5/8 (31.75 x 15.87)					
6.250 (158.75)		1 1/2 x 1/2 (38.10 x 12.70)					
6.625 (168.27)		1 1/2 x 1/2 (38.10 x 12.70)					
6.750 (171.45)		1 1/2 x 1/2 (38.10 x 12.70)					
6.875 (174.62)		1 1/2 x 1/2 (38.10 x 12.70)					
175mm		45 x 10.4mm***					
7.000 (177.80)		1 1/2 x 7/16 (38.10 x 11.10)					



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

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

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

† For Bore Sizes/Shaft Tolerances, see page 128.