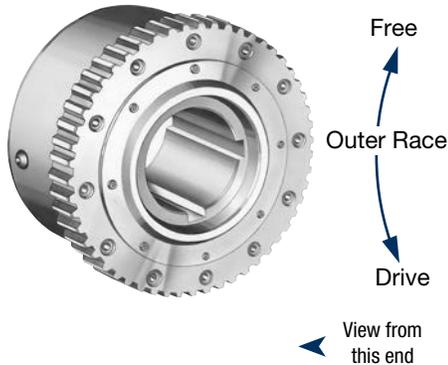


Special Purpose Clutches

FSD/HBG

Overrunning, Backstopping Ball Bearing Supported Sprag, High Torque Drawworks Clutches



Left Hand rotation shown.
(Right Hand opposite.)

Specify direction of rotation when ordering.

Drawworks clutches are designed for use with Hydromatic® brakes on drilling rigs. They are available over a range of torque capacities and provide reliable performance in original equipment or as a replacement for type C2 and type A clutches.

Model FSD-27 Sprag

Use with Hydromatic brakes having 6" or smaller shafts.

- Interchangeable with National Supply Company's model 703250-C2

Model FSD-65 Sprag

Use with Hydromatic brakes having 7.5" shafts.

- Directly interchangeable with other type A clutches

Model FSD-125 Sprag

Use with Hydromatic brakes having 7.5" shafts, can be substituted for type A clutches.

- For use with type A spider and sleeve

Model FSD-300 Sprag

Use with Hydromatic brakes having 9" shafts.

- Provides five times the torque capacity than type A clutches

For further information see for Installation & Maintenance Bulletin No. A-3031, P-222-19.

The Model HBG series are designed for use on Hydro-dynamic Brakes on drilling rigs, using Ramp & Roller Technology which offers better availability.

Model HBG-27MA Ramp & Roller

Use with Hydromatic brakes having 6.5" or smaller straight or tapered shafts.

- Interchangeable with National type C clutches

Model HBG-63MA Ramp & Roller

Use with Hydromatic brakes having 7.5" straight and tapered shafts.

- Interchangeable with National type A clutches

Model HBG-135MA Ramp & Roller

Use with Hydromatic brakes having 7.5" tapered and larger shafts.

- Interchangeable with National Type D-1

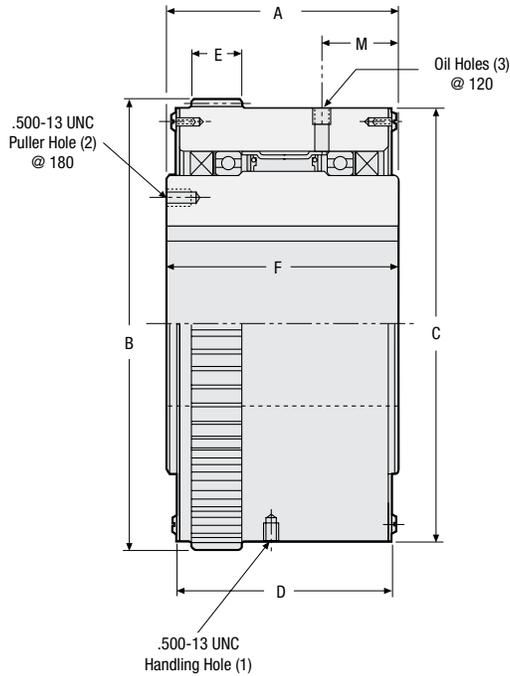
FSD and HBG clutches are shipped from the factory with Automatic Transmission fluid (ATF).

For further information see for Installation & Maintenance Manual P-1346-10.

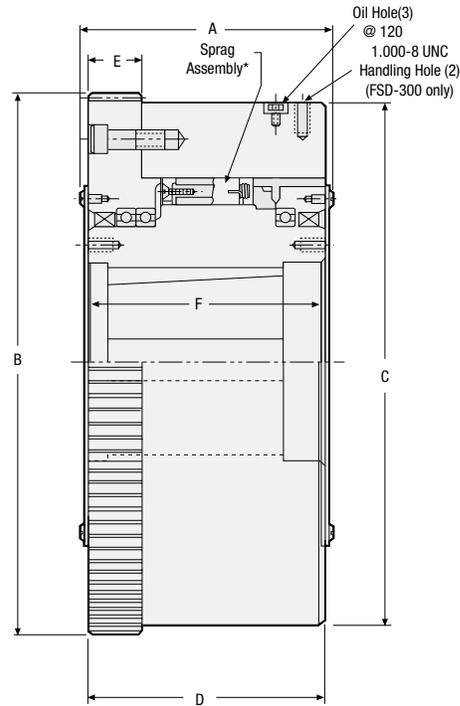
Specifications/spline data

Size	Torque Capacity lb.ft. (Nm)	Resistance after run-in lb.ft. (Nm)	Shipping Weight lb. (kg)	No. of Teeth	Pressure Pitch	Angle	Pitch Diameter in. (mm)	Major Dia. in. (mm)	Minor Dia. in. (mm)
FSD-27	27,000 (36,720)	10 (14)	185 (84)	40	3/6	30°	13.333 (338.66)	13.597/13.592 (345.36/345.23)	12.929 (328.40)
FSD-65	65,000 (88,400)	25 (35)	508 (231)	53	3/6	30°	17.666 (448.72)	17.929/17.915 (455.39/455.04)	17.263 (438.48)
FSD-125	125,000 (170,000)	30 (40)	615 (279.5)	53	3/6	30°	17.666 (448.72)	17.929/17.915 (455.39/455.04)	17.263 (438.48)
FSD-300	300,000 (408,000)	75 (100)	1,650 (750)	110	4/5	20°	27.500 (698.50)	27.900/27.890 (708.66/708.40)	27.000 (685.80)
HBG-27MA	27,000 (36,720)	—	265 (131)	40	3/6	30°	13.333 (338.66)	13.597/13.592 (345.36/345.23)	12.929 (328.40)
HBG-63MA	63,000 (85,680)	—	515 (255)	53	3/6	30°	17.666 (448.72)	17.929/17.915 (455.39/455.04)	17.263 (438.48)
HBG-135 MA	135,000 (183,600)	—	1,100 (544)	68	3/6	30°	22.666 (575.72)	22.929/22.924 (582.40/582.27)	22.217 (564.31)

FSD-27 HBG-27MA



FSD-65, -125, -300 HBG-63MA, -135MA



* FSD-125 has two sprag assemblies.

Standard bore sizes and keyseats* inches (mm)

Size	Bore Diameter	Taper per ft. (per M)	Keyseat
27	6.00 (152.40)	None	1.25 x .83 (31.70 x 21.08)
63, 65	7.473/7.476 (189.81/189.89)	1.250" (3.175)	1.500/1503 x .89 (38.10/38.18 x 22.60)
125, 135	7.473/7.476 (189.81/189.89)	1.250" (3.175)	1.500/1.503 x .89 (38.10/38.18 x 22.60)
300	7.473/7.476 (189.81/189.89) 8.9745/8.9775 (227.95/228.03)	1.250" (3.175)	2.500/2.503 x .84 (63.50/63.57 x 21.34)

* For Bore Sizes/Shaft Tolerances, see page 126.

Dimensions inches (mm)

Size	A	B	C	D	E	F
FSD-27	7.00 (177.80)	13.597/13.592 (345.36/345.23)	12.896/12.866 (327.55/326.79)	6.43 (163.32)	1.50 (38.10)	7.00 (177.80)
FSD-65	10.31 (261.87)	17.929/17.915 (455.39/455.04)	17.230/17.200 (437.64/436.88)	9.81 (249.17)	2.40 (60.96)	9.72 (246.88)
FSD-125	13.13 (333.50)	17.929/17.915 (455.39/455.04)	17.230/17.200 (437.64/436.88)	12.63 (320.80)	2.40 (60.96)	12.49 (317.25)
FSD-300	12.62 (320.54)	27.900/27.890 (708.66/708.40)	26.980/26.960 (685.29/684.78)	12.12 (307.84)	2.69 (68.32)	12.06 (306.32)
HBG-27MA	7.00 (177.80)	13.597/13.592 (345.36/345.23)	13.03 (330.96)	7.00 (177.80)	1.50 (38.10)	7.00 (177.80)
HBG-63MA	8.75 (222.25)	17.929/17.915 (455.39/455.04)	17.34 (440.44)	8.75 (222.25)	1.88 (47.75)	8.75 (222.25)
HBG-135MA	10.00 (254.00)	22.929/22.924 (582.40/582.27)	22.09 (561.09)	10.00 (254.00)	2.50 (63.50)	10.00 (254.00)