

RFDC Series

Rotating Field Multiple Disc Clutches

Nine standard frame sizes available:

- 3.9 to 9.2" diameter ; 1.7 to 3.3" length
- Bore sizes from 0.8 to 2.8"
- Static torque from 12 to 795 lb-ft (wet); 32 to 882 lb-ft (dry)
- 1750 to 4200 RPM
- Operates both dry and in oil
- Modified designs and customized assemblies available



Performance/Mechanical Specifications

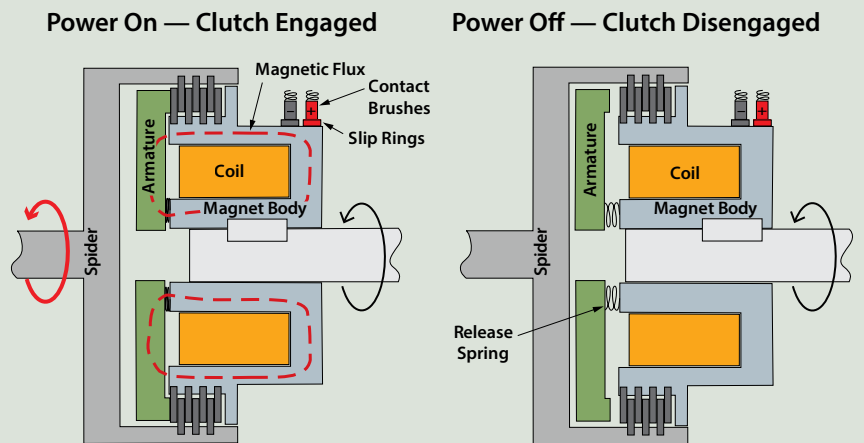
RFDC Series — Model Size

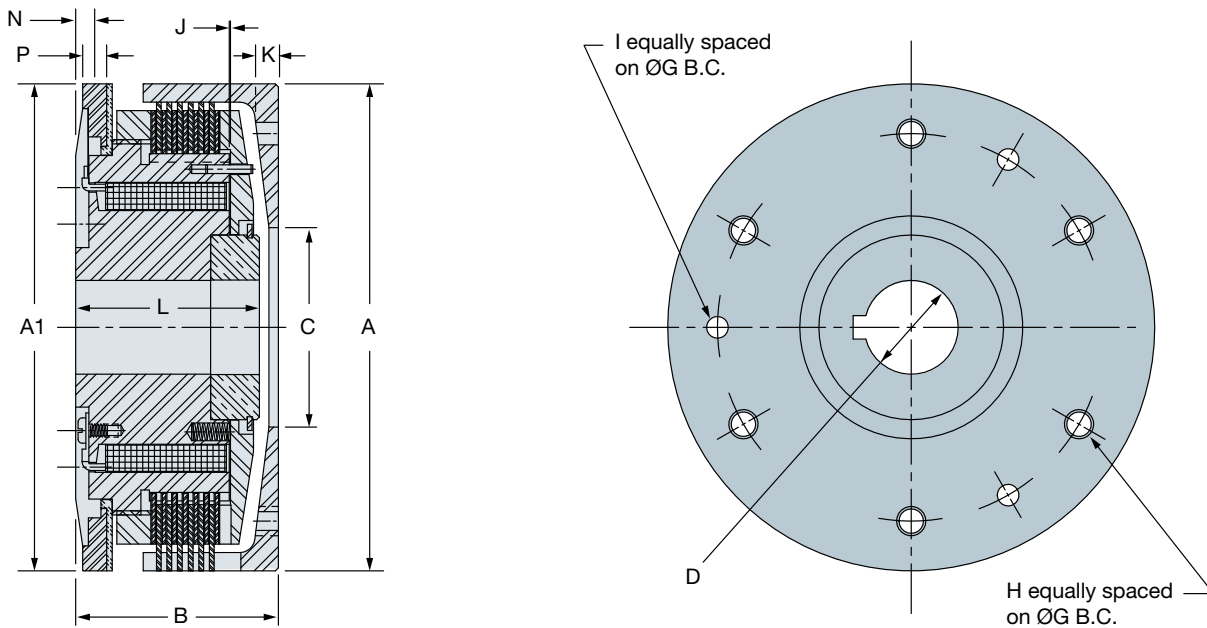
| | | | 395 | 435 | 475 | 520 | 580 | 640 | 720 | 795 | 925 |
|-----------------------|---------|--------|------|------|------|-------|-------|-------|-------|-------|--------|
| Static Torque | Wet | lb-ft | 12 | 23 | 46 | 75 | 117 | 187 | 300 | 505 | 795 |
| | | Nm | 16.2 | 31.2 | 62.4 | 101.7 | 158.6 | 253.5 | 406.7 | 684.7 | 1077.9 |
| | Dry | lb-ft | 13 | 25 | 52 | 84 | 130 | 208 | 332 | 561 | 882 |
| | | Nm | 17.6 | 33.9 | 70.5 | 113.9 | 176.3 | 282.0 | 450.1 | 760.6 | 1195.8 |
| Starting Torque | Wet | lb-ft | 7 | 12 | 25 | 42 | 65 | 107 | 168 | 281 | 449 |
| | | Nm | 9.5 | 16.2 | 33.9 | 56.9 | 88.1 | 145.1 | 227.8 | 381.0 | 608.8 |
| | Dry | lb-ft | 10 | 19 | 39 | 63 | 98 | 161 | 253 | 421 | 673 |
| | | Nm | 12.2 | 23.0 | 47.5 | 77.3 | 120.7 | 197.9 | 431.8 | 519.3 | 829.8 |
| Recommended Max Speed | RPM | 4200 | 4000 | 3500 | 3200 | 3000 | 2500 | 2200 | 2000 | 1750 | |
| Coil Data – 24VDC | Amps | 0.79 | 0.97 | 1.26 | 1.43 | 1.80 | 1.93 | 2.71 | 3.50 | 4.33 | |
| | | 110VDC | 0.25 | 0.31 | 0.36 | 0.46 | 0.47 | 0.50 | 0.62 | 0.76 | 0.95 |
| Thermal Capacity | BTU/min | 10.8 | 13.3 | 15.8 | 18.3 | 22.5 | 28.3 | 36.7 | 50.0 | 70.0 | |
| Approximate Weight | lb | 4.4 | 5.7 | 7.0 | 8.8 | 12 | 17 | 24 | 33 | 46 | |
| | kg | 2.00 | 2.59 | 3.18 | 4.00 | 4.45 | 7.7 | 10.9 | 15.0 | 20.9 | |

RFDC Operation:

When current is applied to the coil in the magnet body, a magnetic field is created which attracts the armature toward the magnet body face. This causes the outer disc to be squeezed between the inner discs, allowing torque to be transmitted from the input (magnet body) to the output (spider).

When current is turned off, the armature is disengaged from the magnet body with release springs to assist.





RFDC Series — Model Size

| Dimensions — Inches (mm) | | 395 | 435 | 475 | 520 | 580 | 640 | 720 | 795 | 925 | |
|--------------------------|-------------------------------|------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Spider Diameter | A | 3.93 (99.82) | 4.33 (109.98) | 4.72 (119.89) | 5.19 (131.83) | 5.78 (146.81) | 6.37 (161.80) | 7.16 (181.86) | 7.95 (201.93) | 9.25 (234.95) | |
| Slip Ring Diameter | A1 | 3.93 (99.82) | 4.33 (109.98) | 4.72 (119.89) | 5.19 (131.83) | 5.70 (144.78) | 6.29 (159.77) | 7.08 (179.83) | 7.87 (199.90) | 9.05 (229.87) | |
| Overall Length (ref) | B | 1.77 (44.96) | 1.88 (47.75) | 2.04 (51.82) | 2.16 (54.86) | 2.28 (57.91) | 2.44 (61.98) | 2.67 (67.82) | 2.99 (75.95) | 3.88 (98.55) | |
| Spider Bore | Min | C | 1.500 (38.100) | 1.750 (44.450) | 2.000 (50.800) | 2.125 (53.975) | 2.375 (60.325) | 2.750 (69.850) | 2.875 (73.025) | 3.375 (85.725) | 4.000 (101.600) |
| | Max | C | 2.750 (69.850) | 2.950 (74.930) | 3.340 (84.836) | 3.540 (89.916) | 4.130 (104.902) | 4.520 (114.808) | 5.310 (134.620) | 5.900 (149.860) | 6.880 (174.752) |
| Magnet Body Bore | Min | D | 0.563 (14.300) | 0.750 (19.050) | 0.750 (19.050) | 1.000 (25.400) | 1.000 (25.400) | 1.188 (30.175) | 1.375 (34.925) | 1.625 (41.275) | 1.750 (44.450) |
| | Max | D | 0.875 (22.225) | 1.125 (28.575) | 1.250 (31.750) | 1.500 (38.100) | 1.687 (42.850) | 1.875 (47.625) | 2.1887 (55.575) | 2.500 (63.500) | 2.875 (73.025) |
| Spider* | Mounting Circle | G | 3.22 (81.79) | 3.54 (89.92) | 3.93 (99.82) | 4.13 (104.90) | 4.80 (121.92) | 5.31 (134.87) | 6.10 (154.94) | 6.69 (169.93) | 7.87 (199.90) |
| | Threaded Mounting Holes (Qty) | H | 1/4-20 (4) | 1/4-20 (4) | 1/4-20 (6) | 5/16-18 (6) | 5/16-18 (6) | 5/16-18 (6) | 3/8-16 (6) | 3/8-16 (6) | 1/2-13 (6) |
| | Dowel Holes (Qty) | I | 1/4 (2) | 1/4 (2) | 1/4 (3) | 1/4 (3) | 5/16 (3) | 5/16 (3) | 3/8 (3) | 3/8 (3) | 1/2 (3) |
| Air Gap | J | 0.011 (0.279) | 0.011 (0.279) | 0.011 (0.279) | 0.013 (0.330) | 0.015 (0.381) | 0.015 (0.381) | 0.017 (0.432) | 0.019 (0.483) | 0.023 (0.584) | |
| Spider Face Depth | K | 0.196 (4.978) | 0.196 (4.978) | 0.236 (5.994) | 0.275 (6.985) | 0.275 (6.985) | 0.275 (6.985) | 0.315 (8.001) | 0.354 (8.992) | 0.393 (9.882) | |
| Bore Length | L | 1.65 (41.91) | 1.77 (44.96) | 1.88 (47.75) | 1.96 (49.78) | 2.08 (52.83) | 2.24 (56.90) | 2.48 (62.99) | 2.75 (69.85) | 3.14 (79.76) | |
| Slip Ring Center | N | 0.206 (5.232) | 0.206 (5.232) | 0.206 (5.232) | 0.206 (5.232) | 0.216 (5.486) | 0.216 (5.486) | 0.236 (5.994) | 0.236 (5.994) | 0.236 (5.994) | |
| Slip Ring Width | N | 0.255 (6.477) | 0.255 (6.477) | 0.255 (6.477) | 0.255 (6.477) | 0.275 (6.985) | 0.275 (6.985) | 0.315 (8.001) | 0.315 (8.001) | 0.315 (8.001) | |

* Recommended bolt pattern; others optional, contact SEPAc