

General Purpose Clutches

RSCI

Overrunning, Backstopping External Bearing Support Required, Centrifugal Throw-out (C/T) Sprag Clutches



Model RSCI is a centrifugal throwout sprag type overrunning clutch with the inner race rotating. Only the inner race is designed for overrunning.

The RSCI is not a self-supported design. Bearings must be provided to ensure concentricity of the inner and outer races and to support axial and radial loads. Concentricity and run-out limits must be observed.

Primarily designed as a backstop, this model can also be used as an overrunning clutch in creep drives, where the overrunning speed is high, but the driving speed is low, and does not exceed the maximum driving speed shown in the table.

When used as a backstop, it must be checked that the overrunning speed will not go below the sprag lift-off speed given in the specifications table.

The model RSCI has a special sprag design that will work with all types of lubricants including those with EP additives. This sprag design feature allows for clutch usage inside gearboxes without separate lubrication.

If lubricants with EP additives are used, the concentricity tolerance should be reduced by one half.

An oil mist is generally sufficient. Grease lubrication may be acceptable if the unit operates mostly in the overrunning condition, as in electric motors.

Centering of the outer race must be based on the inner race bore, not the sprag cage.

Optional F8 cover must be ordered separately.

For bolt tightening torque values, see page 132.

Specifications

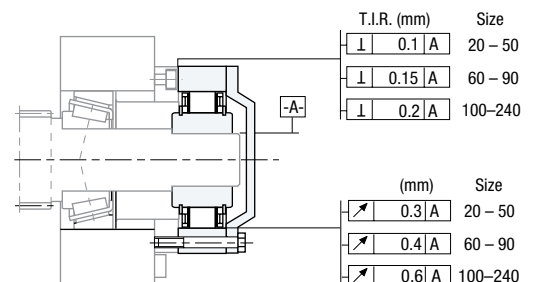
| Size | Torque Capacity lb.ft. (Nm) | Speeds (RPM) | | | Shipping Weight lb. (kg) |
|--------|-----------------------------------|--------------|----------------|-----------------------------|--------------------------------|
| | | Max. Drive | Sprag Lift-Off | Max. Inner Race Overrunning | |
| 20 | 156 (212) | 315 | 750 | 15,000 | 3.31 (1.5) |
| 25 | 235 (319) | 300 | 725 | 14,000 | 3.53 (1.6) |
| 30 | 277 (375) | 290 | 700 | 11,000 | 3.97 (1.8) |
| 35 | 406 (550) | 280 | 670 | 11,000 | 4.63 (2.1) |
| 40 | 590 (800) | 260 | 630 | 8,000 | 5.95 (2.7) |
| 45 | 673 (912) | 255 | 610 | 7,000 | 6.39 (2.9) |
| 50 | 1,033 (1400) | 235 | 560 | 6,000 | 9.48 (4.3) |
| 60 | 1734 (2350) | 210 | 510 | 6,000 | 14.33 (6.5) |
| 70 | 2,250 (3050) | 195 | 470 | 4,000 | 18.96 (8.6) |
| 80 | 3,321 (4500) | 180 | 440 | 4,000 | 27.56 (12.5) |
| 80M | 4,264 (5800) | 155 | 375 | 4,000 | 29 (13.1) |
| 90 | 3,595 (5600) | 170 | 410 | 3,000 | 38.37 (17.4) |
| 90M | 6,420 (8700) | 145 | 350 | 3,000 | 40.3 (18.3) |
| 100 | 7,749 (10500) | 145 | 355 | 3,000 | 62.0 (28) |
| 100M | 11,808 (16000) | 140 | 340 | 2,400 | 66 (30) |
| 130 | 11,623 (15750) | 135 | 330 | 2,400 | 77.18 (35) |
| 180 | 23,247 (31500) | 115 | 285 | 1,300 | 134 (61) |
| 180M | 36,900 (50000) | 90 | 220 | 1,300 | 202 (92) |
| 180-II | 46,494 (63000) | 115 | 285 | 1,300 | 260 (118) |

Notes:

Keyway to DIN 6885.1

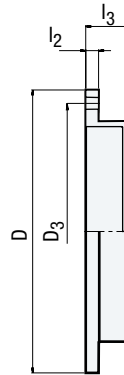
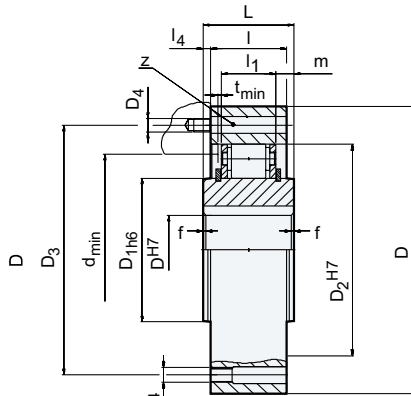
Typical Mounting Arrangement

The Model RSCI must be mounted next to a bearing to provide the inner race to outer race concentricity and support any radial or axial loads. This clutch must be enclosed and coated with a film of grease or oil mist.



RSCI 20-180

F8



Dimensions inches (mm)

| Size | D | D _{1h6} | D _{2H7} | D ₃ | D ₄ | Z # of holes | L | I | I ₁ | I ₄ | f x 45° | d _{min.} | m | t _{min.} | l ₂ | l ₃ |
|--------|----------------|------------------|------------------|----------------|----------------|--------------------|---------------|---------------|----------------|----------------|---------------|-------------------|----------------|-------------------|----------------|----------------|
| 20 | 3.54 (90) | 1.42 (36) | 2.60 (66) | 3.07 (78) | M6 | 6 | 1.38 (35) | 1.38 (35) | 0.98 (25) | 0 | 0.03 (0.8) | 2.05 (52) | 0.20 (5) | 0.04 (1) | 0.31 (8) | 0.63 (16) |
| 25 | 3.74 (95) | 1.57 (40) | 2.76 (70) | 3.23 (82) | M6 | 6 | 1.38 (35) | 1.38 (35) | 0.98 (25) | 0 | 0.04 (1) | 2.20 (56) | 0.20 (5) | 0.04 (1) | 0.31 (8) | 0.63 (16) |
| 30 | 3.94 (100) | 1.77 (45) | 2.95 (75) | 3.43 (87) | M6 | 6 | 1.38 (35) | 1.38 (35) | 0.98 (25) | 0 | 0.06 (1.5) | 2.44 (62) | 0.20 (5) | 0.04 (1) | 0.31 (8) | 0.63 (16) |
| 35 | 4.33 (110) | 1.97 (50) | 3.15 (80) | 3.78 (96) | M6 | 8 | 1.38 (35) | 1.38 (35) | 0.98 (25) | 0 | 0.06 (1.5) | 2.60 (66) | 0.20 (5) | 0.04 (1) | 0.31 (8) | 0.63 (16) |
| 40 | 4.92 (125) | 2.36 (60) | 3.54 (90) | 4.25 (108) | M8 | 8 | 1.38 (35) | 1.38 (35) | 0.98 (25) | 0 | 0.06 (1.5) | 2.99 (76) | 0.20 (5) | 0.04 (1) | 0.39 (10) | 0.83 (21) |
| 45 | 5.12 (130) | 2.56 (65) | 3.74 (95) | 4.41 (112) | M8 | 8 | 1.38 (35) | 1.38 (35) | 0.98 (25) | 0 | 0.06 (1.5) | 3.23 (82) | 0.20 (5) | 0.04 (1) | 0.39 (10) | 0.83 (21) |
| 50 | 5.91 (150) | 3.15 (80) | 4.33 (110) | 5.20 (132) | M8 | 8 | 1.57 (40) | 1.57 (40) | 0.98 (25) | 0 | 0.06 (1.5) | 3.94 (100) | 0.30 (7.5) | 0.04 (1) | 0.39 (10) | 0.83 (21) |
| 60 | 6.89 (175) | 3.35 (85) | 4.92 (125) | 6.10 (155) | M10 | 8 | 2.36 (60) | 1.97 (50) | 1.42 (36) | 0.20 (5) | 0.08 (2) | 4.33 (110) | 0.47 (12) | 0.08 (2) | 0.47 (12) | 1.38 (35) |
| 70 | 7.48 (190) | 3.74 (100) | 5.51 (140) | 6.50 (165) | M10 | 12 | 2.36 (60) | 1.97 (50) | 1.42 (36) | 0.20 (5) | 0.08 (2) | 4.72 (120) | 0.47 (12) | 0.08 (2) | 0.47 (12) | 1.38 (35) |
| 80 | 8.27 (210) | 4.53 (120) | 6.30 (160) | 7.28 (185) | M10 | 12 | 2.76 (70) | 2.36 (60) | 1.42 (36) | 0.20 (5) | 0.08 (2) | 5.51 (140) | 0.67 (17) | 0.12 (3) | 0.47 (12) | 1.38 (35) |
| 80M | 8.27 (210) | 4.72 (120) | 6.30 (160) | 7.28 (185) | M10 | 12 | 2.76 (70) | 2.36 (60) | 1.81 (46) | 0.20 (5) | 0.08 (2) | 5.51 (140) | 0.47 (12) | 0.08 (2) | 0.47 (12) | 1.38 (35) |
| 90 | 9.06 (230) | 5.51 (140) | 7.09 (180) | 8.11 (206) | M12 | 12 | 3.15 (80) | 2.76 (70) | 1.42 (36) | 0.20 (5) | 0.10 (2.5) | 6.30 (160) | 0.87 (22) | 0.12 (3) | 0.47 (12) | 1.38 (35) |
| 90M | 9.65 (245) | 5.51 (140) | 7.09 (180) | 8.11 (206) | M12 | 12 | 3.15 (80) | 2.76 (70) | 1.81 (46) | 0.20 (5) | 0.10 (3) | 6.30 (160) | 0.67 (17) | 0.08 (2) | 0.47 (12) | 1.38 (35) |
| 100 | 11.42 (290) | 5.51 (140) | 8.27 (210) | 10.15 (258) | M16 | 12 | 3.54 (90) | 3.15 (80) | 2.07 (52.6) | 0.20 (5) | 0.10 (2.5) | 7.09 (180) | 0.73 (18.6) | 0.12 (3) | 0.59 (15) | 1.46 (37) |
| 100M | 11.42 (290) | 6.69 (170) | 8.27 (210) | 10.16 (258) | M16 | 12 | 3.54 (90) | 3.15 (80) | 2.48 (63) | 0.20 (5) | 0.10 (3) | 7.87 (200) | 0.53 (14) | 0.08 (2) | 0.47 (12) | 1.38 (35) |
| 130 | 12.68 (322) | 6.69 (170) | 9.45 (240) | 10.94 (278) | M16 | 12 | 3.54 (90) | 3.15 (80) | 2.07 (52.6) | 0.20 (5) | 0.12 (3) | 8.27 (210) | 0.73 (18.6) | 0.12 (3) | 0.59 (15) | 1.46 (37) |
| 180 | 16.22 (412) | — (240) | 12.20 (310) | 14.17 (360) | M20 | 12 | 3.54 (90) | 3.15 (80) | 2.07 (52.6) | 0.20 (5) | 0.14 (3.5) | 11.02 (280) | 0.73 (18.6) | 0.12 (3) | 0.71 (18) | 1.73 (44) |
| 180M | 16.61 (422) | 9.45 (240) | 12.20 (310) | 14.57 (370) | M20 | 18 | 4.72 (120) | 4.72 (120) | 3.27 (83) | 0 (0) | 0.16 (4) | 11.02 (280) | 0.73 (19) | 0.08 (2) | | |
| 180-II | 16.22 (412) | — (240) | 12.20 (310) | 14.17 (360) | M20 | 24 | 6.30 (160) | 3.15 (80) | 4.64 (118) | 0 (0) | 0.14 (3.5) | 11.81 (280) | 0.83 (21) | 0.12 (3) | 0.71 (18) | 1.73 (44) |

Note:

F8 cover must be ordered separately.

* Clearance mounting holes for listed bolt sizes.

** Two extra tapped removal holes @ 180°.

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

| Size | d ^{H7} Bore Size | Keyseat* |
|--------|---------------------------------|------------|
| 20 | 0.79 (20) | (6 X 2.8) |
| 25 | 0.98 (25) | (8 X 3.3) |
| 30 | 1.18 (30) | (8 X 3.3) |
| 35 | 1.38 (35) | (10 X 3.3) |
| 40 | 1.57 (40) | (12 X 3.3) |
| 45 | 1.77 (45) | (14X 3.8) |
| 50 | 1.97 (50) | (14X 3.8) |
| 60 | 2.36 (60) | (18 X 4.4) |
| 70 | 2.76 (70) | (20 X 4.9) |
| 80 | 3.15 (80) | (22 X 5.4) |
| 80M | 3.15 (80) | (22 x 5.4) |
| 90 | 3.54 (90) | (25 X 5.4) |
| 90M | 3.54 (90) | (25 X 5.4) |
| 100 | 3.94 (100) | (28 X 6.4) |
| 100M | 3.94 (100) | (28 X 6.4) |
| 130 | 5.12 (130) | (32 X 7.4) |
| 180 | 7.08 (180) | (1) |
| 180M | 7.08 (180) | (1) |
| 180-II | 7.08 (180) | (1) |

* For keyseat sizes see DIN 6885.1 table on page 127.

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Optional F8 cover must be ordered separately.

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Specifications

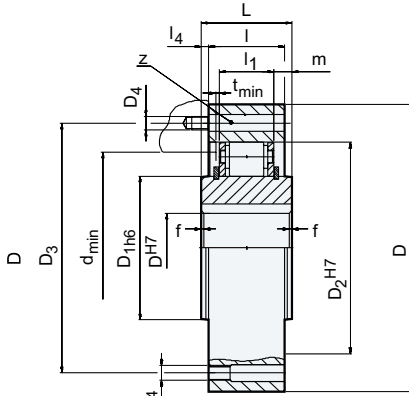
| Size | Torque Capacity lb.ft. (Nm) | Speeds (RPM) | | | Shipping Weight lb. (kg) |
|----------|-----------------------------------|--------------|----------------|-----------------------------|--------------------------------|
| | | Max. Drive | Sprag Lift-off | Max. Inner Race Overrunning | |
| 180 II-M | 73,800 (100000) | 90 | 220 | 1,300 | 418 (190) |
| 220 | 34,133 (42500) | 110 | 265 | 1,100 | 194.04 (88) |
| 220M | 50,184 (68000) | 85 | 205 | 1,100 | 240 (109) |
| 220-II | 70,849 (85000) | 110 | 265 | 1,100 | 350 (159) |
| 220 II-M | 100,368 (136000) | 85 | 205 | 1,100 | 548 (249) |
| 240 | 38,376 (52000) | 105 | 250 | 1,100 | 209 (95) |
| 240M | 61,254 (83000) | 80 | 195 | 1,100 | 301 (137) |
| 240 II | 76,752 (104000) | 105 | 250 | 1,100 | 420 (191) |
| 240 II-M | 122,508 (166000) | 80 | 195 | 1,100 | 551 (250) |
| 260 | 47,970 (65000) | 100 | 240 | 1,000 | 286 (130) |
| 260M | 73,800 (100000) | 75 | 185 | 1,000 | 403 (183) |
| 260 II | 95,940 (130000) | 100 | 240 | 1,000 | 576 (262) |
| 260 II-M | 147,600 (200000) | 75 | 185 | 1,000 | 812 (369) |
| 300 | 57,564 (78000) | 90 | 225 | 1,000 | 383 (174) |
| 300M | 92,250 (125000) | 70 | 175 | 1,000 | 462 (210) |
| 300 II | 115,128 (156000) | 90 | 225 | 1,000 | 772 (351) |
| 300 II-M | 184,500 (250000) | 70 | 175 | 1,000 | 1007 (457) |

Notes:

Keyway to DIN 6885.1

RSCI 180-300

F8



Dimensions inches (mm)

| Size | D | D _{1H6} | D _{2H7} | D ₃ | D ₄ | Z # of holes | L | I | I ₁ | I ₄ | f x 45° | d _{min.} | m | t _{min.} | l ₂ | l ₃ |
|----------|----------------|------------------|------------------|----------------|----------------|--------------------|---------------|---------------|-----------------|----------------|-------------|-------------------|----------------|-------------------|----------------|----------------|
| 180 II-M | 16.73 (425) | 9.45 (240) | 12.20 (310) | 14.57 (370) | M24 | 24 | 9.45 (240) | 9.45 (240) | 6.93 (176) | 0 (0) | 0.16 (4) | 11.02 (280) | 1.26 (32) | 0.12 (3) | | |
| 220 | 18.50 (470) | — (290) | 14.17 (360) | 16.14 (410) | M20 | 16 | 4.13 (105) | 3.15 (80) | 2.31 (58.6) | 0.20 (5) | 0.16 (4) | 12.99 (330) | 0.77 (19.5) | 0.12 (3) | 0.71 (18) | 2.64 (67) |
| 220M | 18.90 (480) | 11.42 (290) | 14.17 (360) | 16.14 (410) | M24 | 16 | 4.72 (120) | 4.72 (120) | 3.27 (83) | 0 (0) | 0.16 (4) | 12.99 (330) | 0.73 (19) | 0.08 (2) | | |
| 220-II | 18.89 (480) | — (290) | 14.17 (360) | 16.14 (410) | M24 | 18 | 6.30 (160) | 6.30 (160) | 5.12 (130) | 0 (0) | 0.16 (4) | 14.17 (330) | 0.59 (15) | 0.12 (3) | 0.71 (18) | 2.64 (67) |
| 220 II-M | 19.29 (490) | 11.42 (290) | 14.17 (360) | 16.73 (425) | M30 | 20 | 9.45 (240) | 9.45 (240) | 6.93 (176) | 0 (0) | 0.16 (4) | 12.99 (330) | 1.26 (32) | 0.08 (2) | | |
| 240 | 19.69 (500) | 12.60 (320) | 15.35 (390) | 17.32 (440) | M20 | 16 | 4.13 (105) | 3.54 (90) | 2.36 (60) | 0.30 (8) | 0.16 (4) | 14.17 (360) | 0.59 (15) | 0.08 (2) | | |
| 240M | 20.47 (520) | 12.60 (320) | 15.35 (390) | 17.32 (440) | M24 | 16 | 4.72 (120) | 4.72 (120) | 3.27 (83) | 0 (0) | 0.16 (4) | 14.17 (360) | 0.73 (19) | 0.08 (2) | | |
| 240 II | 19.88 (505) | 12.60 (320) | 15.35 (390) | 17.32 (440) | M24 | 24 | 7.09 (180) | 7.09 (180) | 5.20 (132) | 0 (0) | 0.16 (4) | 14.17 (360) | 0.94 (24) | 0.08 (2) | | |
| 240 II-M | 20.87 (530) | 12.60 (320) | 15.35 (390) | 17.32 (440) | M30 | 24 | 9.45 (240) | 9.45 (240) | 6.93 (176) | 0 (0) | 0.16 (4) | 14.17 (360) | 1.26 (32) | 0.08 (2) | | |
| 260 | 21.65 (550) | 14.17 (360) | 16.93 (430) | 19.69 (500) | M24 | 16 | 4.13 (105) | 4.13 (105) | 2.36 (60) | 0 (0) | 0.16 (4) | 15.75 (400) | 0.89 (23) | 0.08 (2) | | |
| 260M | 22.83 (580) | 14.17 (360) | 16.93 (430) | 19.69 (500) | M24 | 24 | 4.92 (125) | 4.92 (125) | 3.27 (83) | 0 (0) | 0.16 (4) | 15.75 (400) | 0.83 (21) | 0.08 (2) | | |
| 260 II | 21.65 (550) | 14.17 (360) | 16.93 (430) | 19.69 (500) | M24 | 24 | 8.27 (210) | 8.27 (210) | 5.20 (132) | 0 (0) | 0.16 (4) | 15.75 (400) | 1.54 (39) | 0.08 (2) | | |
| 260 II-M | 22.83 (580) | 14.17 (360) | 16.93 (430) | 19.69 (500) | M30 | 24 | 9.84 (250) | 9.84 (250) | 6.93 (176) | 0 (0) | 0.16 (4) | 15.75 (400) | 1.46 (37) | 0.08 (2) | | |
| 300 | 24.80 (630) | 16.14 (410) | 18.90 (480) | 22.05 (560) | M24 | 24 | 4.13 (105) | 4.13 (105) | 2.36 (60) | 0 (0) | 0.16 (4) | 18.11 (460) | 0.89 (23) | 0.12 (3) | | |
| 300M | 24.80 (630) | 16.14 (410) | 18.90 (480) | 22.05 (560) | M24 | 24 | 4.92 (125) | 4.92 (125) | 3.27 (83) | 0 (0) | 0.16 (4) | 18.11 (460) | 0.83 (21) | 0.12 (3) | | |
| 300 II | 24.80 (630) | 16.14 (410) | 18.90 (480) | 22.05 (560) | M24 | 24 | 8.27 (210) | 8.27 (210) | 5.28 (134) | 0 (0) | 0.16 (4) | 18.11 (460) | 1.50 (38) | 0.12 (3) | | |
| 300 II-M | 24.80 (630) | 16.14 (410) | 18.90 (480) | 22.05 (560) | M30 | 24 | 9.84 (250) | 9.84 (250) | 7.19 (182.6) | 0 (0) | 0.16 (4) | 18.11 (460) | 1.32 (33.7) | 0.12 (3) | | |

Note:

F8 cover must be ordered separately.

* Clearance mounting holes for listed bolt sizes.

** Two extra tapped removal holes @ 180°.

Bore sizes and keyseats
inches (mm)

| Size | d ^{H7} Bore Size | Keyseat* |
|----------|---------------------------------|----------|
| 180 II-M | 7.08 (180) | (1) |
| 220 | 8.66 (220) | (1) |
| 220M | 8.66 (220) | (1) |
| 220 II | 8.66 (220) | (1) |
| 220 II-M | 8.66 (220) | (1) |
| 240 | 9.45 (240) | (1) |
| 240M | 9.45 (240) | (1) |
| 240 II | 9.45 (240) | (1) |
| 240 II-M | 9.45 (240) | (1) |
| 260 | 10.23 (260) | (1) |
| 260M | 10.23 (260) | (1) |
| 260 II | 10.23 (260) | (1) |
| 260 II-M | 10.23 (260) | (1) |
| 300 | 11.81 (300) | (1) |
| 300M | 11.81 (300) | (1) |
| 300 II | 11.81 (300) | (1) |
| 300 II-M | 11.81 (300) | (1) |

* Keyseat information available on request.