



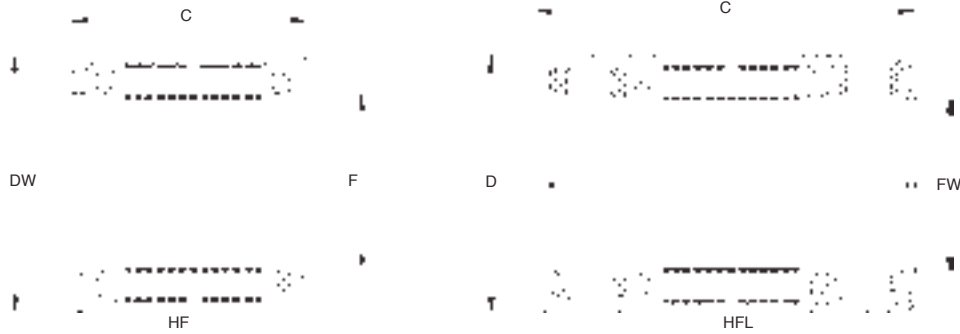
# 02

## DRAWN CUP NEEDLE ROLLER CLUTCH, DRAWN CUP NEEDLE ROLLER CLUTCH ASSEMBLY

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**T**he drawn cup needle roller clutch is the overriding clutch (one-way clutch), composed of the outer ring punched with the high-quality steel sheet, plastic retainer, spring and needles, used for transferring one-way torque.

The drawn cup needle roller clutch has not the load carrying feature by itself. However it can play the action in combination with Model HK and BK drawn cup needle roller bearing. The drawn cup needle roller clutch is the block bearing either withstanding the radial load or transferring torque.

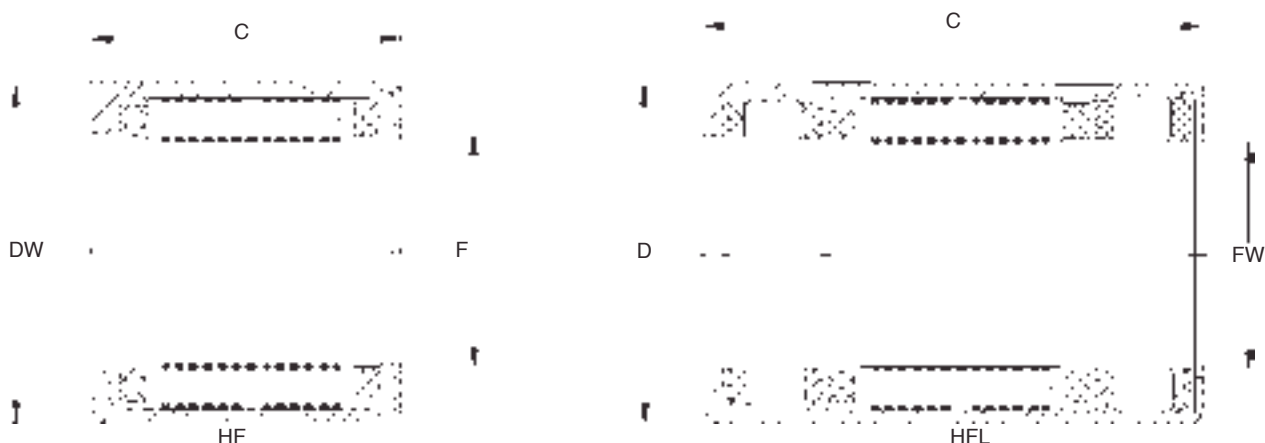


| Shaft Diameter | Bearing Designation | Weight | Boundary Dimensions |    |    | Basic Load Rating |        | Limiting Speed |       | Transmission torque N.m |
|----------------|---------------------|--------|---------------------|----|----|-------------------|--------|----------------|-------|-------------------------|
|                |                     |        | Fw                  | D  | C  | Dynamic           | Static | Grease         | Oil   |                         |
| mm             |                     | g      | mm                  |    |    | N                 |        | Rpm            |       |                         |
| 4              | HF0406              | 1      | 4                   | 8  | 6  |                   |        | 34000          | 14000 | 0.34                    |
| 6              | HF0612              | 3      | 6                   | 10 | 12 |                   |        | 23000          | 13000 | 1.76                    |
| 8              | HF0812              | 3.5    | 8                   | 12 | 12 |                   |        | 17000          | 12000 | 3.15                    |
| 10             | HF1012              | 4      | 10                  | 14 | 12 |                   |        | 14000          | 11000 | 5.3                     |
| 12             | HF1216              | 11.6   | 12                  | 18 | 16 |                   |        | 11000          | 8000  | 12.2                    |
| 14             | HF1416              | 13     | 14                  | 20 | 16 |                   |        | 9500           | 8000  | 17.3                    |
| 16             | HF1616              | 14     | 16                  | 22 | 16 |                   |        | 8500           | 7500  | 20.5                    |
| 18             | HF1816              | 15.5   | 18                  | 24 | 16 |                   |        | 7500           | 7500  | 24.1                    |
| 20             | HF2016              | 17     | 20                  | 26 | 16 |                   |        | 7000           | 6500  | 28.1                    |
| 25             | HF2520              | 30.9   | 25                  | 32 | 20 |                   |        | 5500           | 5500  | 66                      |
| 30             | HF3020              | 36     | 30                  | 37 | 20 |                   |        | 4500           | 4500  | 90                      |
| 35             | HF3520              | 40     | 35                  | 42 | 20 |                   |        | 3900           | 3900  | 121                     |
|                |                     |        |                     |    |    |                   |        |                |       |                         |
| 4              | HFL0408             | 1.6    | 4                   | 8  | 8  |                   |        | 34000          | 14000 | 0.34                    |
| 6              | HFL0615             | 4      | 6                   | 10 | 15 | 4050              | 4650   | 23000          | 13000 | 1.76                    |
| 8              | HFL0822             | 6.3    | 8                   | 12 | 22 | 4300              | 4650   | 17000          | 12000 | 3.15                    |
| 10             | HFL1022             | 7.4    | 10                  | 14 | 22 | 6300              | 6500   | 14000          | 11000 | 5.3                     |
| 12             | HFL1226             | 18     | 12                  | 18 | 26 | 7100              | 7700   | 11000          | 8000  | 12.2                    |
| 14             | HFL1426             | 20.3   | 14                  | 20 | 26 | 7300              | 8400   | 9500           | 8000  | 17.3                    |
| 16             | HFL1626             | 22     | 16                  | 22 | 26 | 8300              | 10300  | 8500           | 7500  | 17.3                    |
| 18             | HFL1826             | 24.4   | 18                  | 24 | 26 | 8200              | 10400  | 7500           | 7500  | 20.5                    |
| 20             | HFL2026             | 27     | 20                  | 26 | 26 | 10900             | 14100  | 7000           | 6500  | 28.5                    |
| 25             | HFL2530             | 44     | 25                  | 32 | 30 | 12600             | 17600  | 5500           | 5500  | 66                      |
| 30             | HFL3030             | 51     | 30                  | 37 | 30 | 13000             | 19300  | 4500           | 4500  | 90                      |
| 35             | HFL3530             | 58     | 35                  | 42 | 30 |                   |        | 3900           | 3900  | 121                     |



# DRAWN CUP NEEDLE ROLLER BEARINGS (INCH SERIES)

**HF**  
**HFL**



| Bearing Designation |           | Mass | Boundary Dimensions |       |                 |       |       |       | Limiting Speed | Transmission torque |
|---------------------|-----------|------|---------------------|-------|-----------------|-------|-------|-------|----------------|---------------------|
|                     |           |      | Approx              | Fw    |                 | D     |       | C     |                |                     |
|                     |           | g    | inch                | mm    | inch            | mm    | inch  | mm    | rpm            | N.m                 |
| —                   | R2-02     | 2    | $\frac{1}{8}$       | 3.18  | $\frac{9}{32}$  | 7.14  | 0.250 | 6.35  | 50000          | 2.86                |
| —                   | FC-4      | 1    | 0.16                | 4     | 0.31            | 8     | 0.236 | 6     | 50000          | 2.78                |
| FCS-6               | —         | 3.5  | 0.24                | 6     | 0.39            | 10    | 0.472 | 12    | 39300          | 18.6                |
| —                   | RC-040708 | 3.5  | $\frac{1}{4}$       | 6.35  | $\frac{7}{16}$  | 11.11 | 0.500 | 12.70 | 38000          | 17.2                |
| FCL-8-K             | —         | 4.7  | 0.31                | 8     | 0.47            | 12    | 0.472 | 12    | 28700          | 28.7                |
| FC-8                | —         | 4    | 0.31                | 8     | 0.55            | 14    | 0.472 | 12    | 30500          | 35.8                |
| RC-061008-FS*       | RC-061008 | 4.7  | $\frac{3}{8}$       | 9.52  | $\frac{5}{8}$   | 15.88 | 0.500 | 12.70 | 25300          | 45.4                |
| FCL-10-K            | —         | 4    | 0.39                | 10    | 0.55            | 14    | 0.472 | 12    | 22700          | 39.1                |
| FC-10               | —         | 4.8  | 0.39                | 10    | 0.63            | 16    | 0.472 | 12    | 23700          | 50.4                |
| FC-12               | —         | 11   | 0.47                | 12    | 0.71            | 18    | 0.630 | 16    | 19300          | 118                 |
| RC-081208-FS*       | RC-081208 | 9.2  | $\frac{1}{2}$       | 12.70 | $\frac{3}{4}$   | 19.05 | 0.500 | 12.70 | 18700          | 73.6                |
| RC-101410-FS*       | RC-101410 | 14.5 | $\frac{5}{8}$       | 15.88 | $\frac{7}{8}$   | 22.22 | 0.625 | 15.88 | 14700          | 143                 |
| FC-16               | —         | 14   | 0.63                | 16    | 0.87            | 22    | 0.630 | 16    | 14000          | 182                 |
| RS-121610-FS*       | —         | 17   | $\frac{3}{4}$       | 19.05 | 1               | 25.40 | 0.625 | 15.88 | 11300          | 196                 |
| FC-20               | RC-162110 | 17   | 0.79                | 20    | 1.02            | 26    | 0.630 | 16    | 10700          | 274                 |
| FC-25               | —         | 30   | 0.98                | 25    | 1.26            | 32    | 0.787 | 20    | 8570           | 605                 |
| RC-162110-FS*       | —         | 25.4 | 1                   | 25.40 | $1\frac{5}{16}$ | 33.34 | 0.625 | 15.88 | 8670           | 412                 |
| FC-30               | —         | 36   | 1.18                | 30    | 1.46            | 37    | 0.787 | 20    | 7330           | 845                 |
| FCS-35              | —         | 40   | 1.38                | 35    | 1.65            | 42    | 0.787 | 20    | 6130           | 913                 |



| Bearing Designation |            | Mass | Boundary Dimensions |       |                 |       |       |       | Basic Load Rating(N) |         | Limiting Speed | Transmission torque |
|---------------------|------------|------|---------------------|-------|-----------------|-------|-------|-------|----------------------|---------|----------------|---------------------|
|                     |            |      | Approx              | Fw    |                 | D     |       | C     |                      | Dynamic |                |                     |
|                     |            | g    | Inch                | mm    | Inch            | mm    | Inch  | mm    |                      |         |                | rpm                 |
| FCBL-8-K            | —          |      | 0.31                | 8     | 0.47            | 12    | 0.866 | 22    | 532                  |         | 28700          | 29.0                |
| FCB-8               | —          | 10   | 0.31                | 8     | 0.55            | 14    | 0.787 | 20    | 541                  |         | 30500          | 35.8                |
| RCB-061014-FS*      | RCB-061014 | 12   | $\frac{3}{8}$       | 9.52  | $\frac{5}{8}$   | 15.88 | 0.875 | 22.22 | 848                  |         | 25300          | 45.4                |
| FCB-10              | —          | 15   | 0.39                | 10    | 0.63            | 16    | 0.787 | 20    | 628                  |         | 23700          | 50.4                |
| FCB-12              | —          | 18   | 0.47                | 12    | 0.71            | 18    | 1.024 | 26    | 882                  |         | 19300          | 118                 |
| RCB-081214-FS*      | RCB-081214 | 16   | $\frac{1}{2}$       | 12.7  | $\frac{3}{4}$   | 19.05 | 0.875 | 22.22 | 1020                 |         | 18700          | 73.6                |
| RCB-101416-FS*      | RCB-101416 | 21.3 | $\frac{5}{8}$       | 15.88 | $\frac{7}{8}$   | 22.22 | 1.000 | 25.40 | 1140                 |         | 14700          | 143                 |
| FCB-16              | —          | 22   | 0.63                | 16    | 0.87            | 22    | 1.024 | 26    | 951                  |         | 14000          | 182                 |
| RCB-121616-FS*      | RCB-11616  | 26.5 | $\frac{3}{4}$       | 19.05 | 1               | 25.40 | 1.000 | 25.4  | 1270                 |         | 11300          | 196                 |
| FCB-20              | —          | 27   | 0.79                | 20    | 1.02            | 26    | 1.024 | 26    | 1180                 |         | 10700          | 274                 |
| FCB-25              | —          | 44   | 0.99                | 25    | 1.26            | 32    | 1.181 | 30    | 1580                 |         | 8670           | 605                 |
| RCB-162117-FS*      | RCB-162117 | 44.8 | 1                   | 25.40 | $\frac{15}{16}$ | 33.34 | 1.063 | 27    | 2240                 |         | 8670           | 412                 |
| FCB-30              | —          | 51   | 1.18                | 30    | 1.46            | 37    | 1.181 | 30    | 1620                 |         | 7300           | 845                 |