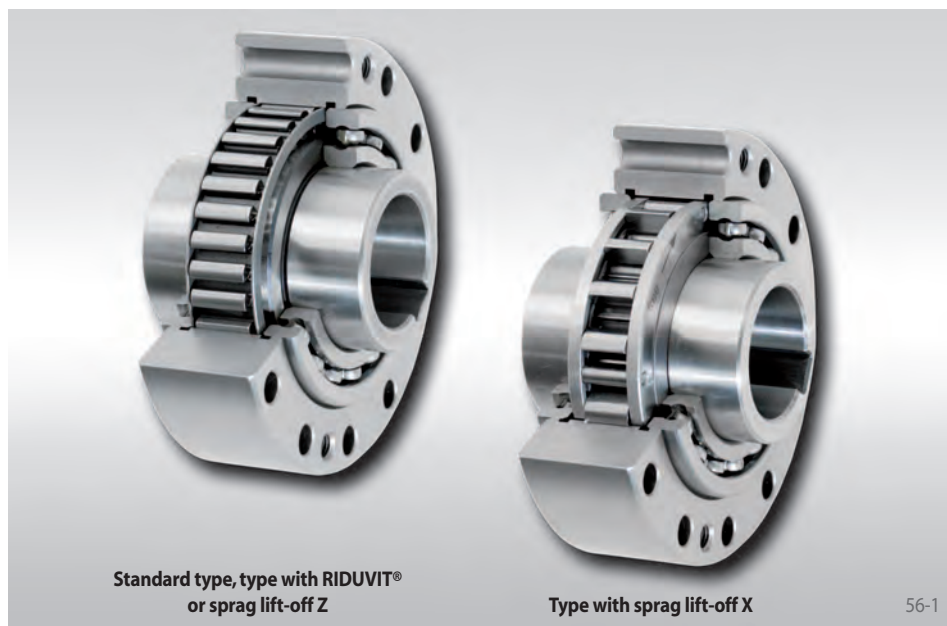


# Basic Freewheels FBO

for assembly with connecting parts  
with sprags, available in four types



## Application as

- ▶ Backstop
- ▶ Overrunning Clutch
- ▶ Indexing Freewheel

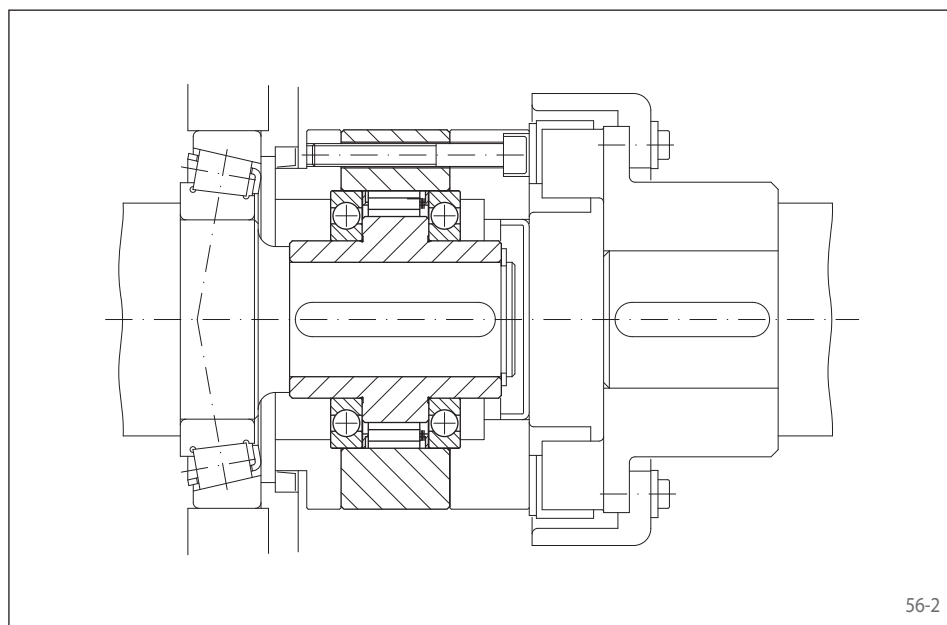
## Features

Basic Freewheels FBO are sprag freewheels with ball bearings to be assembled with customer connecting parts. The freewheels are particularly suitable for installation in housings with oil lubrication and seals.

In addition to the standard type, three other types are available for extended service life.

Nominal torques up to 160 000 Nm.

Bores up to 300 mm. A multitude of standardized bore diameters are available with short delivery times.



## Application example

Basic Freewheel FBO 127 SF as an overrunning clutch between the creep drive and the main drive of a cement mixer. In the case of creep operation, the outer ring is driven by the shaft coupling. The freewheel works in driving operation and drives the unit at a low speed via the main gearbox. In normal operation (freewheeling operation), the inner ring overruns and the creep drive is automatically disengaged. The freewheel is connected to the oil lubrication of the main gearbox and does not require any special maintenance. The arrangement of the seals between the freewheel and the main gearbox is advantageous. In normal operation (freewheeling operation), this is at a standstill and hence generates no additional friction-related temperature rise.

## Mounting

The customer connecting parts are centered on the ball bearing external diameter F and assembled via the outer ring.

The tolerance of the shaft must be ISO h6 or j6 and the tolerance of the pilot diameter F of the connecting part must be ISO H7 or J7. The centering depth C must be observed.

## Lubrication

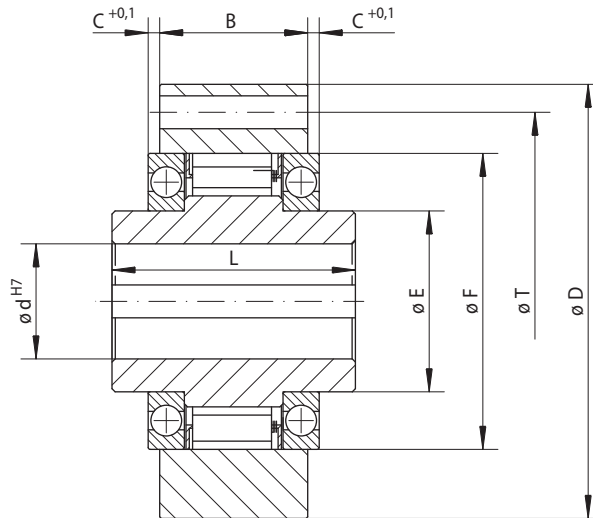
An oil lubrication of the specified quality must be provided.

## Example for ordering

Freewheel size FBO 72, type with sprag lift-off X and 40 mm bore:

- FBO 72 DX, d = 40 mm

for assembly with connecting parts  
with sprags, available in four types



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|                    | Standard type<br>For universal use | Type with RIDUVIT®<br>For extended service life with<br>coated sprags | Type with sprag lift-off X<br>For extended service life using sprag lift-off<br>at high speed rotating inner ring | Type with sprag lift-off Z<br>For extended service life using sprag lift-off<br>at high speed rotating outer ring |
|--------------------|------------------------------------|---|---|---|
| Indexing Freewheel |                                    |   |   |   |
| Overrunning Clutch |                                    |   |   |   |
| Backstop           |                                    |   |   |   |

| Freewheel Size | Type | Nominal torque<br>M <sub>N</sub><br>Nm | Max. speed  |   | Type | Nominal torque<br>M <sub>N</sub><br>Nm | Max. speed  |  | Type | Nominal torque<br>M <sub>N</sub><br>Nm | Sprag lift-off at inner ring speed<br>min <sup>-1</sup> | Max. speed                             |  | Type | Nominal torque<br>M <sub>N</sub><br>Nm | Outer ring freewheels/overruns<br>min <sup>-1</sup> | Außenring läuft frei/überholt<br>min <sup>-1</sup> | Max. speed |  |
|----------------|------|--|---|---|------|--|---|--|------|--|---|--|--|------|--|---|--|------------|--|
|                |      |  | Inner ring freewheels/overruns<br>min <sup>-1</sup> | Outer ring freewheels/overruns<br>min <sup>-1</sup> |      |  | Inner ring freewheels/overruns<br>min <sup>-1</sup> | Outer ring drives<br>min <sup>-1</sup> |      |  |   | Inner ring drives<br>min <sup>-1</sup> | Outer ring drives<br>min <sup>-1</sup> |      |  |   |  |            |  |
| FBO 37         | SF   | 200                                    | 2 500   | 2 600   | SFT  | 200                                    | 2 500   | 2 600                                  |      |  |   |  |  | CZ   | 110                                    | 850   | 3 000  | 340        |  |
| FBO 44         | SF   | 320                                    | 1 900   | 2 200   | SFT  | 320                                    | 1 900   | 2 200                                  | DX   | 130                                    | 860   | 1 900                                  | 344                                    | CZ   | 180                                    | 800   | 2 600  | 320        |  |
| FBO 57         | SF   | 630                                    | 1 400   | 1 750   | SFT  | 630                                    | 1 400   | 1 750                                  | DX   | 460                                    | 750   | 1 400                                  | 300                                    | LZ   | 430                                    | 1 400   | 2 100  | 560        |  |
| FBO 72         | SF   | 1 250                                  | 1 120   | 1 600   | SFT  | 1 250                                  | 1 120   | 1 600                                  | DX   | 720                                    | 700   | 1 150                                  | 280                                    | LZ   | 760                                    | 1 220   | 1 800  | 488        |  |
| FBO 82         | SF   | 1 800                                  | 1 025   | 1 450   | SFT  | 1 800                                  | 1 025   | 1 450                                  | DX   | 1 000                                  | 670   | 1 050                                  | 268                                    | SFZ  | 1 700                                  | 1 450   | 1 600  | 580        |  |
| FBO 107        | SF   | 2 500                                  | 880   | 1 250   | SFT  | 2 500                                  | 880   | 1 250                                  | DX   | 1 500                                  | 610   | 900                                    | 244                                    | SFZ  | 2 500                                  | 1 300   | 1 350  | 520        |  |
| FBO 127        | SF   | 5 000                                  | 800   | 1 150   | SFT  | 5 000                                  | 800   | 1 150                                  | SX   | 3 400                                  | 380   | 800                                    | 152                                    | SFZ  | 5 000                                  | 1 200   | 1 200  | 480        |  |
| FBO 140        | SF   | 10 000                                 | 750   | 1 100   | SFT  | 10 000                                 | 750   | 1 100                                  | SX   | 7 500                                  | 320   | 750                                    | 128                                    | SFZ  | 10 000                                 | 950   | 1 150  | 380        |  |
| FBO 200        | SF   | 20 000                                 | 630   | 900   | SFT  | 20 000                                 | 630   | 900                                    | SX   | 23 000                                 | 240   | 630                                    | 96                                     | SFZ  | 20 000                                 | 680   | 900  | 272        |  |
| FBO 270        | SF   | 40 000                                 | 510   | 750   | SFT  | 40 000                                 | 510   | 750                                    | SX   | 40 000                                 | 210   | 510                                    | 84                                     | SFZ  | 37 500                                 | 600   | 750  | 240        |  |
| FBO 340        | SF   | 80 000                                 | 460   | 630   | SFT  | 80 000                                 | 460   | 630                                    |      |  |   |  |  |      |  |   |  |            |  |
| FBO 440        | SF   | 160 000                                | 400   | 550   | SFT  | 160 000                                | 400   | 550                                    |      |  |   |  |  |      |  |   |  |            |  |

The maximum transmissible torque is 2 times the specified nominal torque. See page 14 for determination of selection torque.  
The specified maximum speeds apply for installation conditions as given with Complete Freewheels. Knowing the actual installation conditions higher speeds can be permitted under some circumstances.

| Freewheel Size | Bore d         |            | B<br>mm | C1***<br>mm | C2***<br>mm | C3***<br>mm | D<br>mm | E<br>mm | F<br>mm | G    | L<br>mm | T<br>mm | Z** | Weight<br>kg |
|----------------|----------------|------------|---------|-------------|-------------|-------------|---------|---------|---------|------|---------|---------|-----|--------------|
|                | Standard<br>mm | max.<br>mm |         |             |             |             |         |         |         |      |         |         |     |              |
| FBO 37         | 20             | 22*        | 25      | 3,7         |             | 4,3         | 85      | 30      | 55      | M 6  | 48      | 70      | 6   | 0,9          |
| FBO 44         | 25*            | 25*        | 25      | 3,7         | 4,7         | 4,4         | 95      | 35      | 62      | M 6  | 50      | 80      | 8   | 1,3          |
| FBO 57         | 30             | 32*        | 30      | 4,2         | 7,7         | 7,4         | 110     | 45      | 75      | M 8  | 65      | 95      | 8   | 1,9          |
| FBO 72         | 40             | 42*        | 38      | 3,7         | 4,9         | 4,4         | 132     | 55      | 90      | M 8  | 74      | 115     | 12  | 3,5          |
| FBO 82         | 50*            | 50*        | 40      | 6,6         | 6,6         | 6,6         | 145     | 65      | 100     | M 10 | 75      | 125     | 12  | 4,0          |
| FBO 107        | 60             | 65*        | 45      | 8,1         | 8,1         | 8,1         | 170     | 80      | 125     | M 10 | 90      | 150     | 12  | 7,7          |
| FBO 127        | 70             | 75*        | 68      | 6,9         | 7,9         | 6,9         | 200     | 95      | 145     | M 12 | 112     | 180     | 12  | 13,3         |
| FBO 140        | 90             | 95*        | 68      | 19,1        | 20,1        | 19,1        | 250     | 120     | 180     | M 16 | 150     | 225     | 12  | 31,5         |
| FBO 200        | 120            | 120        | 85      | 14,1        | 15,1        | 14,1        | 320     | 160     | 240     | M 16 | 160     | 288     | 16  | 46,5         |
| FBO 270        | 140            | 150        | 100     | 22,5        | 22,5        | 22,5        | 420     | 200     | 310     | M 20 | 212     | 370     | 18  | 105,0        |
| FBO 340        | 180            | 240        | 125     | 25,6        |             |             | 497     | 300     | 380     | M 20 | 265     | 450     | 24  | 190,0        |
| FBO 440        | 220            | 300        | 150     | 34,1        |             |             | 627     | 380     | 480     | M 30 | 315     | 560     | 24  | 360,0        |

Freewheels with bore diameters highlighted blue in the table are available with short delivery times.

Keyway according to DIN 6885, page 1 • Tolerance of keyway width JS10.

\* Keyway according to DIN 6885, page 3 • Tolerance of keyway width JS10.

\*\* Z = Number of fastening holes for screws G (DIN EN ISO 4762) on pitch circle T.

\*\*\* C1 = Centering depth of connecting parts for standard type and type with RIDUVIT®.

C2 = Centering depth of connecting parts for type with sprag lift-off X.

C3 = Centering depth of connecting parts for type with sprag lift-off Z.