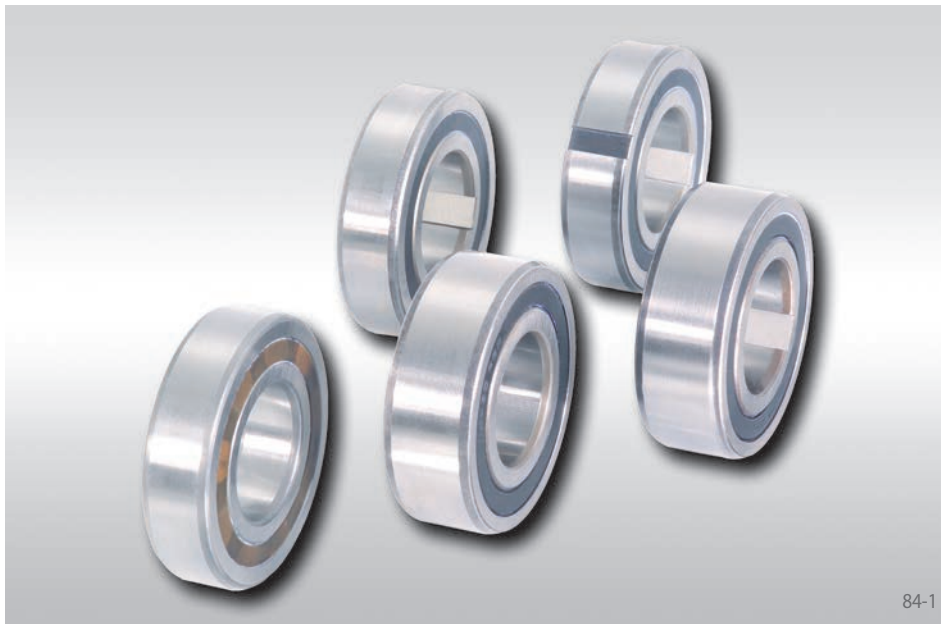


# Internal Freewheels ZZ ...

with ball bearing properties



84-1

## Application as

- ▶ Backstop
- ▶ Overrunning Clutch
- ▶ Indexing Freewheel

## Features

Internal Freewheels ZZ ... are sprag freewheels with bearing support and ball bearing properties. The freewheels are supplied grease-filled for normal operating conditions.

The freewheel is built into the customer housing. This makes compact, space-saving fitting solutions possible.

Nominal torques up to 325 Nm. The torque is transmitted on the inner ring and/or on the outer ring by press fit or keyway connection.

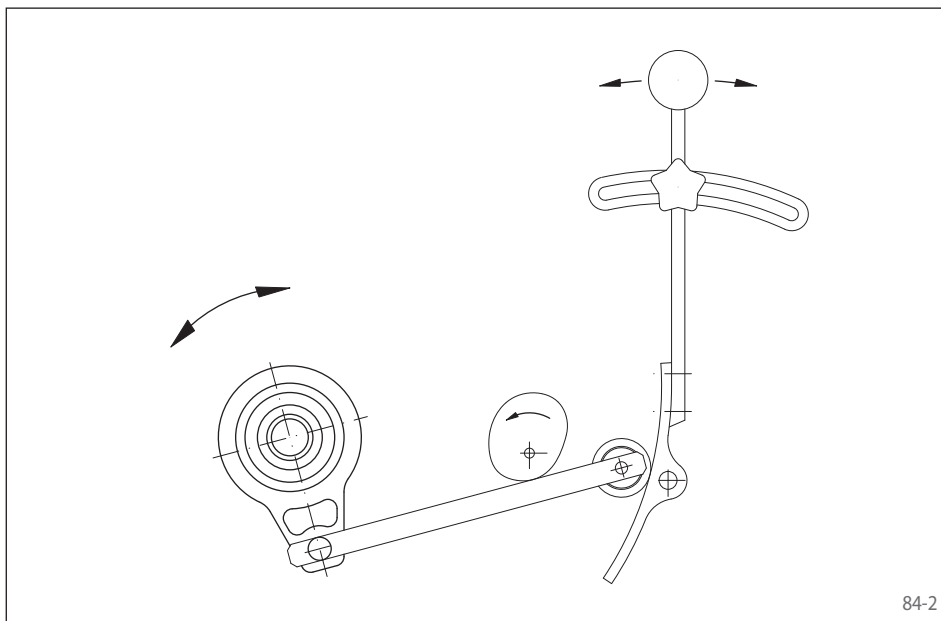
Bores up to 40 mm.

The following series are available:

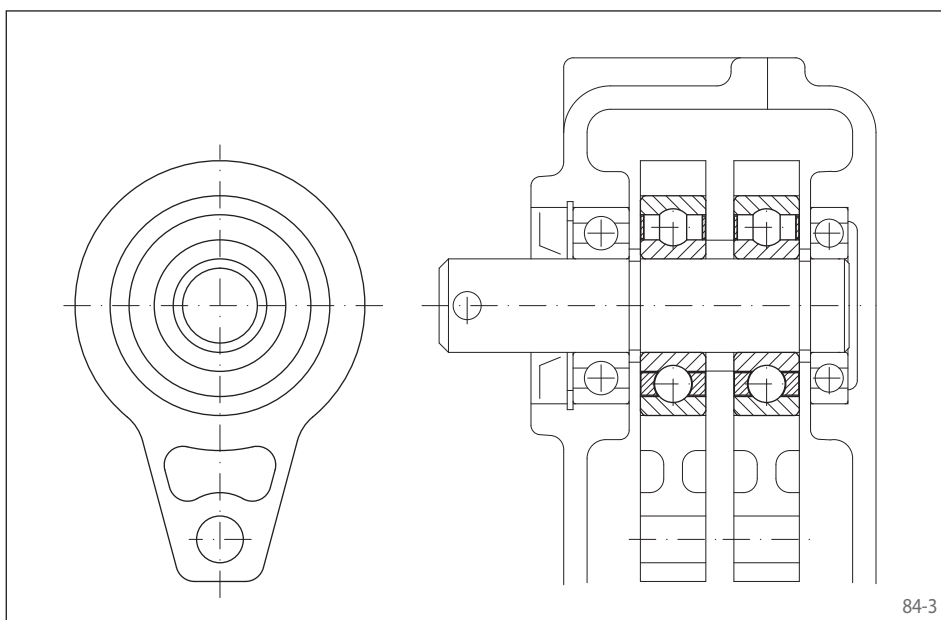
Series	Torque transmission on				2RS-seals	Page
	Outer ring		Inner ring			
	by keyway	by press fit	by keyway	by press fit		
ZZ		●		●		85
ZZ ... 2RS		●		●	●	86
ZZ ... P2RS		●	●		●	87
ZZ ... P		●	●			88
ZZ ... PP	●		●			89

The Internal Freewheels ZZ of the sizes ZZ 6201 to ZZ 6207 have the same dimensions as the respective ball bearings of series 62.

The series ZZ ... 2RS and ZZ ... P2RS have 2RS seals.



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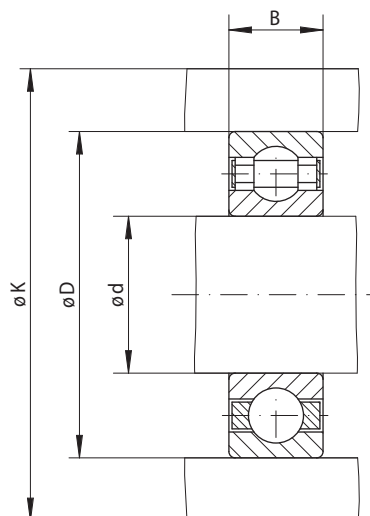


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## Application example

Two Internal Freewheels ZZ 6206 as indexing freewheels in the drive of the metering roller of a seed spreader. The freewheels are built in an infinitely variable oil bath gearbox. Two cam disks that are set off by 180° are arranged on the gearbox shaft. By means of lever arms, these drive the outer rings of the two adjacent Internal Freewheels, which then gradually turn the metering shaft. The infinite speed settings of the gearbox's drive shaft are executed by means of the respective pivoting of the roller support plate, so that the lever arms can execute lifts of differing amounts.

for press fit on the outer ring  
with sprags and bearing support



85-1

Indexing Freewheel Overrunning Clutch Backstop	Standard type For universal use	Dimensions

Freewheel Size	Nominal torque $M_N$ Nm	Maximum speed $\text{min}^{-1}$	Load rating of bearing support		Bore $d$ mm	B mm	D mm	K mm	Weight kg
			dynamic C N	static $C_0$ N					
ZZ 8	2,5	15 000	3 200	860	8	9	22	27	0,02
ZZ 6201	9,3	10 000	6 100	2 700	12	10	32	39	0,04
ZZ 6202	26,0	9 400	6 000	3 700	15	11	35	42	0,06
ZZ 6203	34,0	8 200	7 350	4 550	17	12	40	51	0,08
ZZ 6204	65,0	6 800	10 000	6 300	20	14	47	58	0,12
ZZ 6205	80,0	5 600	11 000	7 000	25	15	52	63	0,15
ZZ 6206	170,0	4 000	15 000	10 000	30	16	62	73	0,25
ZZ 6207	175,0	3 600	12 500	7 200	35	17	72	85	0,30
ZZ 40	325,0	3 000	15 500	12 250	40	22	80	94	0,50

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

The maximum transmissible torque is 2 times the specified nominal torque. See page 14 for determination of selection torque.

## Mounting

The torque is transmitted on the inner and outer ring by press fit. In order to transmit the torques specified in the table, the outer ring must be accommodated in a housing with an external diameter K. The housing is made of steel or grey cast iron in minimum quality GG-20. When using other housing materials or smaller external diameters, we urge you to contact us regarding the transmissible torque.

The tolerance of the housing bore D must be ISO N6 and the tolerance of the shaft must be ISO n6.

The permissible operating temperature of the freewheel is -40°C to 80°C.

## Lubrication

The freewheels are supplied grease-filled for normal operating conditions.

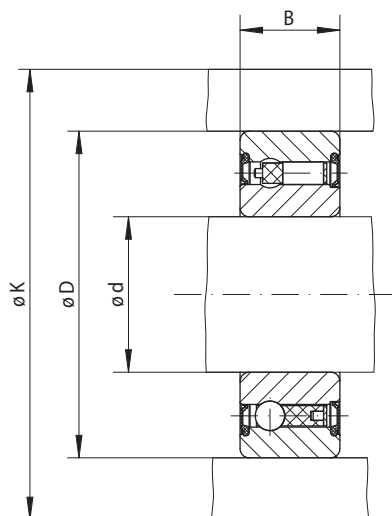
However, the freewheels can also be connected to the customer's oil lubrication system; this is particularly recommended in the case of higher speeds.

## Example for ordering

Freewheel size ZZ 6202, standard type:

- ZZ 6202

for press fit on the outer ring  
with sprags, bearing support and sealing



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Standard type For universal use		Dimensions								
Indexing Freewheel	Standard type For universal use	B	D	K	Weight					
Overrunning Clutch										
Backstop										
Freewheel Size	Nominal torque $M_N$ Nm	Maximum speed $\text{min}^{-1}$	Load rating of bearing support		Bore $d$ mm	B mm	D mm	K mm	Weight kg	
			dynamic C N	static $C_0$ N						
ZZ 8 2RS*	2,5	15 000	3 300	860	8	9	22	27	0,02	
ZZ 12 2RS	9,3	10 000	6 100	2 800	12	14	32	39	0,05	
ZZ 15 2RS	17,0	8 400	7 400	3 400	15	16	35	42	0,07	
ZZ 17 2RS	30,0	7 350	7 900	3 800	17	17	40	51	0,09	
ZZ 20 2RS	50,0	6 000	9 400	4 500	20	19	47	58	0,15	
ZZ 25 2RS	85,0	5 200	10 700	5 500	25	20	52	63	0,18	
ZZ 30 2RS	138,0	4 200	11 700	6 500	30	21	62	73	0,27	
ZZ 35 2RS	175,0	3 600	12 600	7 300	35	22	72	85	0,40	
ZZ 40 2RS	325,0	3 000	15 500	12 300	40	27	80	94	0,60	

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

The maximum transmissible torque is 2 times the specified nominal torque. See page 14 for determination of selection torque.

\* Only one RS seal on the ball bearing side. Locking from this side the freewheeling direction of the innerring is clockwise free.

## Mounting

The torque is transmitted on the inner and outer ring by press fit. In order to transmit the torques specified in the table, the outer ring must be accommodated in a housing with an external diameter K. The housing is made of steel or grey cast iron in minimum quality GG-20. When using other housing materials or smaller external diameters, we urge you to contact us regarding the transmissible torque.

The tolerance of the housing bore D must be ISO N6 and the tolerance of the shaft must be ISO n6.

The permissible operating temperature of the freewheel is +5°C to +60°C. Please contact us if the temperature is different to the given values.

## Lubrication

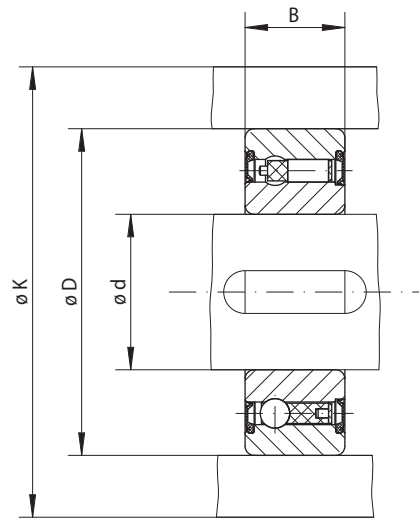
The freewheels are supplied grease-filled and with 2 RS seals.

## Example for ordering

Freewheel size ZZ 17 2RS, standard type:

- ZZ 17 2RS

for press fit on the outer ring  
with sprags, bearing support and sealing



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Indexing Freewheel Overrunning Clutch Backstop	Standard type For universal use	Dimensions

Freewheel Size	Nominal torque $M_N$ Nm	Maximum speed $n$ $\text{min}^{-1}$	Load rating of bearing support		Bore $d$ mm	B mm	D mm	K mm	Weight kg
			dynamic $C$ N	static $C_0$ N					
ZZ 12 P2RS	9,3	10000	6100	2800	12	14	32	39	0,05
ZZ 15 P2RS	17,0	8400	7400	3400	15	16	35	42	0,07
ZZ 17 P2RS	30,0	7400	7900	3800	17	17	40	51	0,09
ZZ 20 P2RS	50,0	6000	9400	4500	20	19	47	58	0,15
ZZ 25 P2RS	85,0	5200	10700	5500	25	20	52	63	0,18
ZZ 30 P2RS	138,0	4200	11700	6500	30	21	62	73	0,30
ZZ 35 P2RS	175,0	3600	12600	7300	35	22	72	85	0,40
ZZ 40 P2RS	325,0	3000	15500	12300	40	27	80	94	0,60

Freewheels with bore diameters highlighted blue in the table are available with short delivery times.  
The maximum transmissible torque is 2 times the specified nominal torque. See page 14 for determination of selection torque.  
Keyway according to DIN 6885, page 3 • Tolerance of keyway width JS10.

## Mounting

The torque is transmitted on the inner ring by keyway connection and on the outer ring by press fit. In order to transmit the torques specified in the table, the outer ring must be accommodated in a housing with an external diameter K. The housing is made of steel or grey cast iron in minimum quality GG-20. When using other housing materials or smaller external diameters, we urge you to contact us regarding the transmissible torque.

The tolerance of the housing bore D must be ISO N6 and the tolerance of the shaft must be ISO k6.

The permissible operating temperature of the freewheel is +5°C to +60°C. Please contact us if the temperature is different to the given values.

## Lubrication

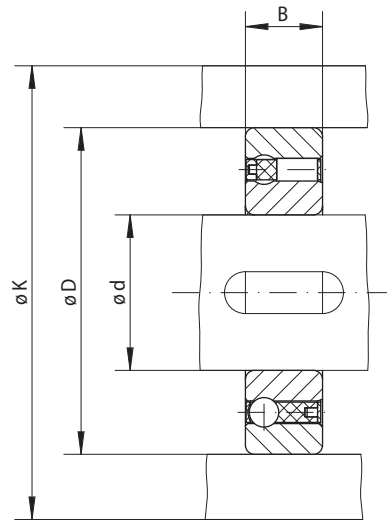
The freewheels are supplied grease-filled and with 2 RS seals.

## Example for ordering

Freewheel size ZZ 25 P2RS, standard type:

- ZZ 25 P2RS

for press fit on the outer ring  
with sprags and bearing support



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Indexing Freewheel Overrunning Clutch Backstop	Standard type For universal use	Dimensions

Freewheel Size	Nominal torque $M_N$ Nm	Maximum speed $\text{min}^{-1}$	Load rating of bearing support		Bore $d$ mm	B mm	D mm	K mm	Weight kg
			dynamic C N	static $C_0$ N					
ZZ 6201 P	9,3	10000	6100	2800	12*	10	32	39	0,04
ZZ 6202 P	17	8400	7400	3400	15*	11	35	42	0,06
ZZ 6203 P	30	7350	7900	3800	17*	12	40	51	0,07
ZZ 6204 P	50	6000	9400	4500	20*	14	47	58	0,11
ZZ 6205 P	85	5200	10700	5500	25*	15	52	63	0,14
ZZ 6206 P	138	4200	11700	6500	30*	16	62	73	0,21
ZZ 6207 P	175	3600	12600	7300	35*	17	72	85	0,30
ZZ 40 P	325	3000	15500	12300	40	22	80	94	0,50

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

The maximum transmissible torque is 2 times the specified nominal torque. See page 14 for determination of selection torque.

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

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

## Mounting

The torque is transmitted on the inner ring by keyway connection and on the outer ring by press fit. In order to transmit the torques specified in the table, the outer ring must be accommodated in a housing with an external diameter K. The housing is made of steel or grey cast iron in minimum quality GG-20. When using other housing materials or smaller external diameters, we urge you to contact us regarding the transmissible torque.

The tolerance of the housing bore D must be ISO N6 and the tolerance of the shaft must be ISO k6.

The permissible operating temperature of the freewheel is +5°C to +60°C. Please contact us if the temperature is different to the given values.

## Lubrication

The freewheels are supplied grease-filled.

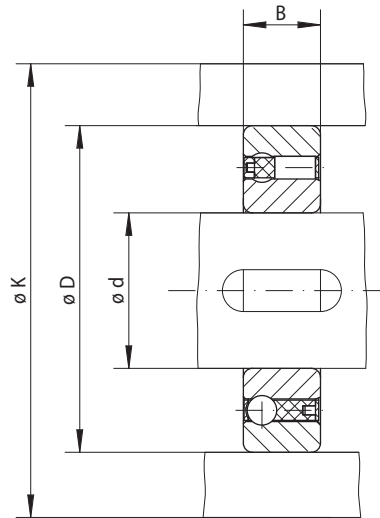
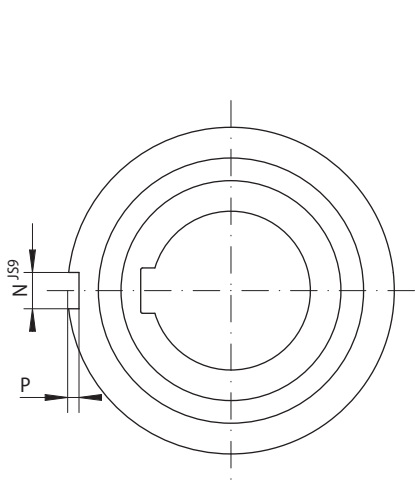
## Example for ordering

Freewheel size ZZ 6203 P, standard type:

- ZZ 6203 P

# Internal Freewheels ZZ ... PP

for keyway connection on the outer ring  
with sprags and bearing support



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89-2

Indexing Freewheel Overrunning Clutch Backstop	Standard type For universal use	Dimensions

Freewheel Size	Nominal torque $M_N$ Nm	Maximum speed $\text{min}^{-1}$	Load rating of bearing support		Bore d mm	B mm	D mm	K mm	N mm	P mm	Weight kg
			dynamic C N	static $C_0$ N							
ZZ 6202 PP	17	8400	7400	3400	15*	11	35	42	2	0,6	0,06
ZZ 6203 PP	30	7350	7900	3800	17*	12	40	51	2	1,0	0,07
ZZ 6204 PP	50	6000	9400	4500	20*	14	47	58	3	1,5	0,11
ZZ 6205 PP	85	5200	10700	5500	25*	15	52	63	6	2,0	0,14
ZZ 6206 PP	138	4200	11700	6500	30*	16	62	73	6	2,0	0,21
ZZ 6207 PP	175	3600	12600	7300	35*	17	72	85	8	2,5	0,30
ZZ 40 PP	325	3000	15500	12300	40	22	80	94	10	3,0	0,50

■ Freewheels with bore diameters highlighted blue in the table are available with short delivery times.  
The maximum transmissible torque is 2 times the specified nominal torque. See page 14 for determination of selection torque.  
Keyway according to DIN 6885, page 1 • Tolerance of keyway width JS10.  
\* Keyway according to DIN 6885, page 3 • Tolerance of keyway width JS10.

## Mounting

The torque is transmitted on the inner and on the outer ring by keyway connection. In order to transmit the torques specified in the table, the outer ring must be accommodated in a housing with an external diameter K. The housing is made of steel or grey cast iron in minimum quality GG-20. When using other housing materials or smaller external diameters, we urge you to contact us regarding the transmissible torque.

The tolerance of the housing bore D must be ISO H6 and the tolerance of the shaft must be ISO h6.

The permissible operating temperature of the freewheel is +5°C to +60°C. Please contact us if the temperature is different to the given values.

## Lubrication

The freewheels are supplied grease-filled.

## Example for ordering

Freewheel size ZZ 6205 PP, standard type:

- ZZ 6205 PP