

Interchange Freewheels

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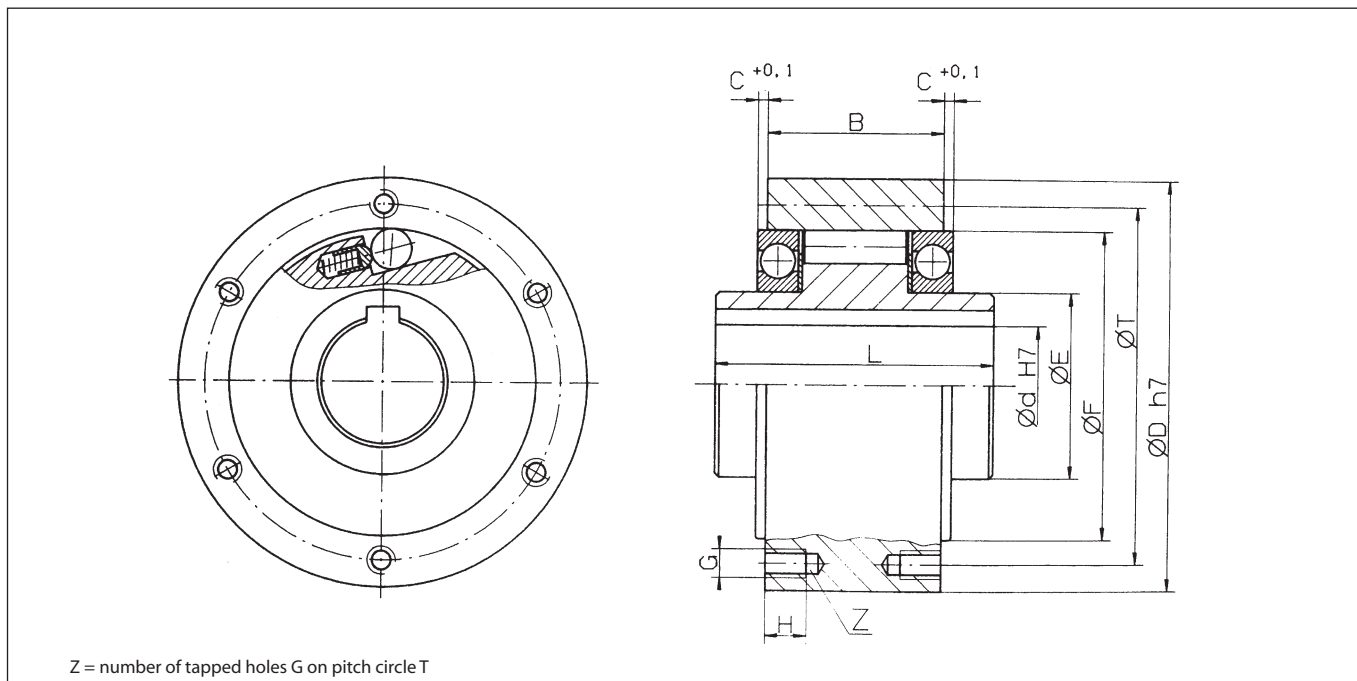
Interchangeability Table of current Freewheels

Stieber		Baß	VP Technik	RINGSPANN	Page
GFR	AL	GFRS	GL	Basic Freewheels	3
GFRN	ALP	GFRS-N	GLP	FGR	4
				FGRN	
GFRN F5-F6	ALP F7-D7	GFRS-N D5-D6	GLP F7-D7	Complete Freewheels	
GFR F1-F2 / GFR F2-F7	AL F2-D2 / AL D2-F1	GFRS D1-D7	GL F2-F4	FGRN A5-A6	
GFREL-F2 / GFRES-F2	AL KEED-D2 / AL KMS-D2	GFRS VP	GLKS-D2	FGR A1-A2 / FGR A2-A7	7
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NFR	ANG	BNFR	GF	Build-in Freewheels	10
NF	AE	BNF	UF	FNR	11
				FN	
NFS	ASNU	BFS	USNU	Freewheels in roller bearing dimensions	12
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				ZZ	

These freewheels are comparable in their main connecting dimensions.

Issue 09/03 - We reserve the right for technical modifications.

Basic-Freewheels FGR without covers



d	Nominal torque	B	C	D	E	F	G	H	L	T	Z
mm	Nm	mm	mm	mm	mm	mm		mm	mm	mm	
12	55	20	3,5	62	20	42	M5	–	42	51	3
15	130	28	2,0	68	25	47	M5	8	52	56	3
20	180	34	2,4	75	30	55	M5	8	57	64	4
25	290	35	2,4	90	40	68	M6	10	60	78	4
30	500	43	2,4	100	45	75	M6	10	68	87	6
35	730	45	2,9	110	50	80	M6	12	74	96	6
40	1 000	53	2,9	125	55	90	M8	14	86	108	6
45	1 150	53	2,9	130	60	95	M8	14	86	112	8
50	2 100	64	3,9	150	70	110	M8	14	94	132	8
55	2 600	66	2,9	160	75	115	M10	16	104	138	8
60	3 500	78	5,4	170	80	125	M10	16	114	150	10
70	6 000	95	6,4	190	90	140	M10	16	134	165	10
80	6 800	100	3,9	210	105	160	M10	16	144	185	10
90	11 000	115	4,9	230	120	180	M12	20	158	206	10
100	20 000	120	5,4	270	140	210	M16	24	182	240	10
130	31 000	152	7,9	310	160	240	M16	24	212	278	12
150	68 000	180	6,9	400	200	310	M20	32	246	360	12

Keyway as per DIN 6885, p. 1. Tolerance of keyway width JS10. Torques listed in the table are nominal torques containing a safety factor of 2.

Torques

Maximum transmissible torques are 2 x nominal torque.

Peak torques must always be lower than the respective maximum torque.

Mounting instructions

Ensure that the parts to be connected have the correct centering diameters F and centering depths C.

Dimension B includes bilaterally arranged seals. The seals are included with delivery.

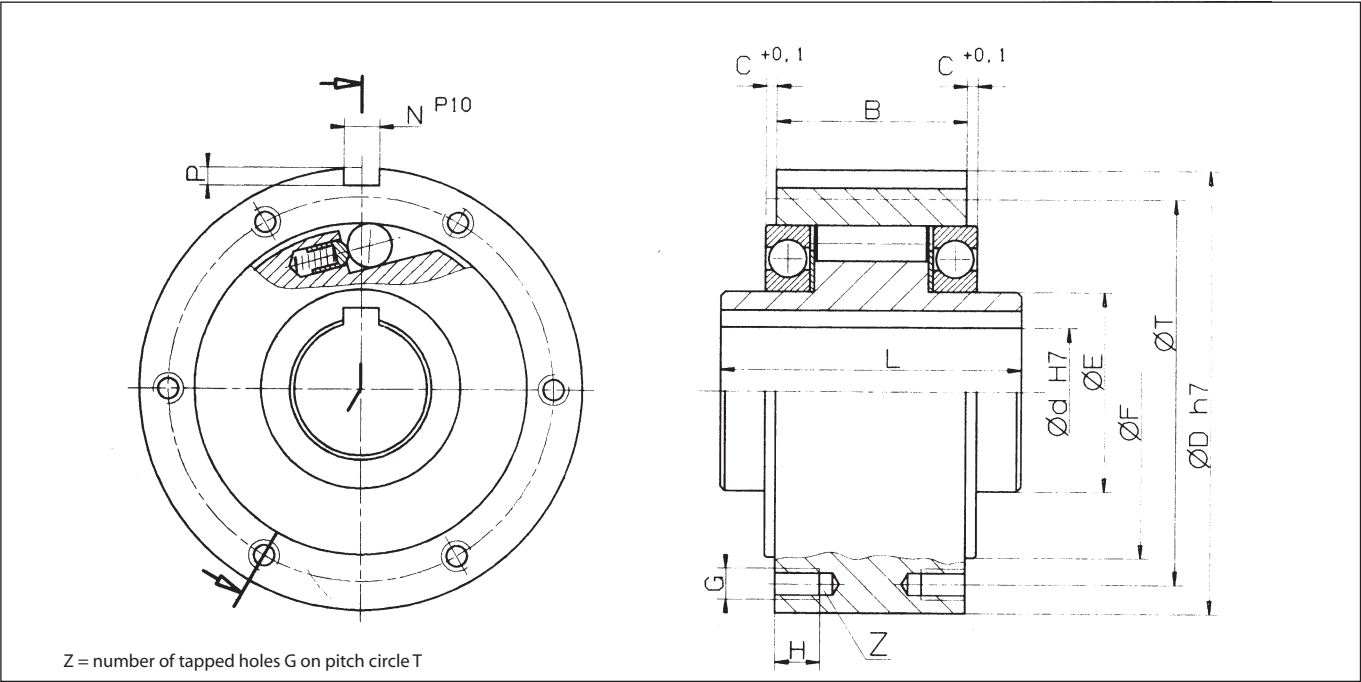
Example for ordering

FGR with bore d = 50 mm:

FGR 50

Basic Freewheels FGRN

without covers and with keyway on outer ring



d	Nominal torque	B	C	D	E	F	G	H	L	N	P	T	Z
mm	Nm	mm	mm	mm	mm	mm		mm	mm	mm	mm	mm	
12	55	20	3,5	62	20	42	M5	–	42	4	2,5	51	3
15	130	28	2,0	68	25	47	M5	8	52	5	3,0	56	3
20	180	34	2,4	75	30	55	M5	8	57	6	3,5	64	4
25	290	35	2,4	90	40	68	M6	10	60	8	4,0	78	4
30	500	43	2,4	100	45	75	M6	10	68	8	4,0	87	6
35	730	45	2,9	110	50	80	M6	12	74	10	5,0	96	6
40	1000	53	2,9	125	55	90	M8	14	86	12	5,0	108	6
45	1150	53	2,9	130	60	95	M8	14	86	14	5,5	112	8
50	2100	64	3,9	150	70	110	M8	14	94	14	5,5	132	8
55	2600	66	2,9	160	75	115	M10	16	104	16	6,0	138	8
60	3500	78	5,4	170	80	125	M10	16	114	18	7,0	150	10
70	6000	95	6,4	190	90	140	M10	16	134	20	7,5	165	10
80	6800	100	3,9	210	105	160	M10	16	144	22	9,0	185	10

Keyway as per DIN 6885, p. 1. Tolerance of keyway width JS10. Torques listed in the table are nominal torques containing a safety factor of 2.

Torques

Maximum transmissible torques are 2 x nominal torque.

Peak torques must always be lower than the respective maximum torque.

Mounting instructions

Ensure that the parts to be connected have the correct centering diameters F and centering depths C.

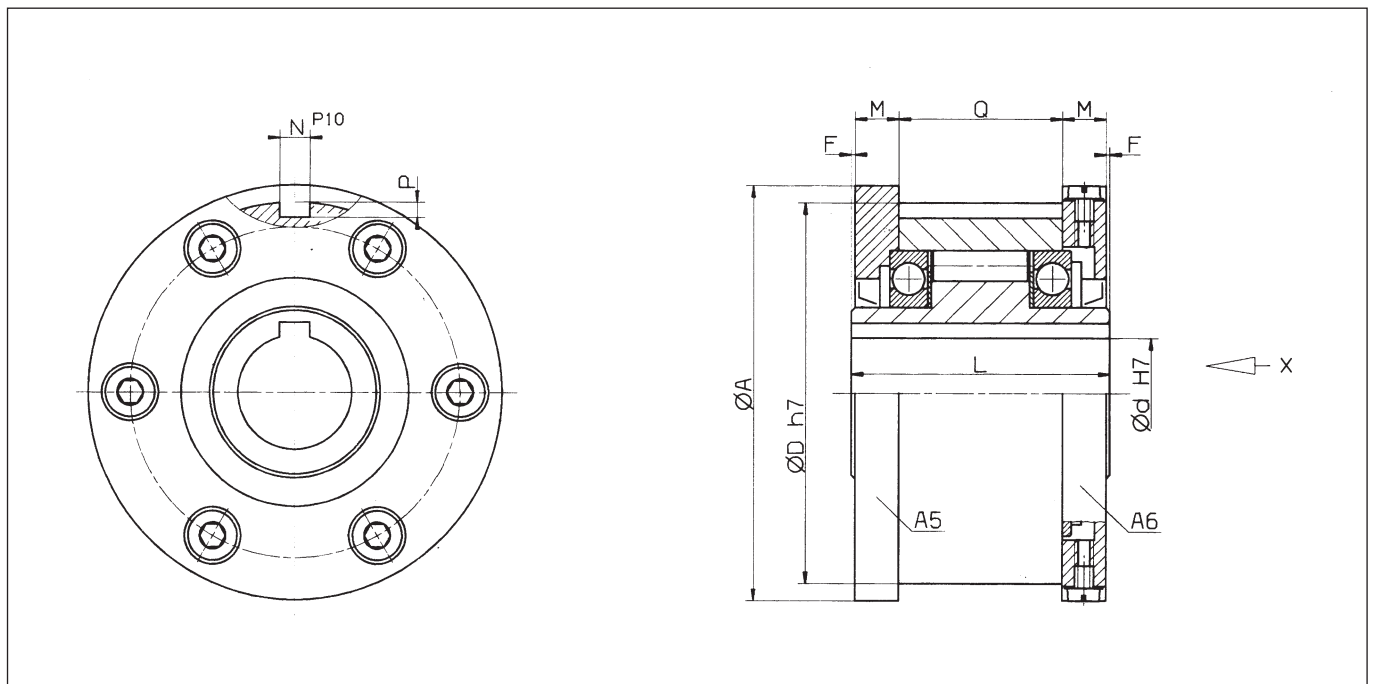
Dimension B includes bilaterally arranged seals. The seals are included with delivery.

Example for ordering

FGRN with bore d = 50 mm:

FGRN 50

Complete Freewheels FGRN A5-A6 with keyway on outer ring



d	Nominal	A	D	F	L	M	N	P	Q
mm	Nm	mm	mm	mm	mm	mm	mm	mm	mm
12	55	70	62	1	42	10,0	4	2,5	20
15	130	76	68	1	52	11,0	5	3,0	28
20	180	84	75	1	57	10,5	6	3,5	34
25	290	99	90	1	60	11,5	8	4,0	35
30	500	109	100	1	68	11,5	8	4,0	43
35	730	119	110	1	74	13,5	10	5,0	45
40	1000	135	125	1	86	15,5	12	5,0	53
45	1150	140	130	1	86	15,5	14	5,5	53
50	2100	160	150	1	94	14,0	14	5,5	64
55	2600	170	160	1	104	18,0	16	6,0	66
60	3500	182	170	1	114	17,0	18	7,0	78
70	6000	202	190	1	134	18,5	20	7,5	95
80	6800	222	210	1	144	21,0	22	9,0	100

Keyway as per DIN 6885, p. 1. Tolerance of keyway width JS10. Torques listed in the table are nominal torques containing a safety factor of 2.

Torques

Maximum transmissible torques are 2 x nominal torque.

Peak torques must always be lower than the respective maximum torque.

Direction of rotation

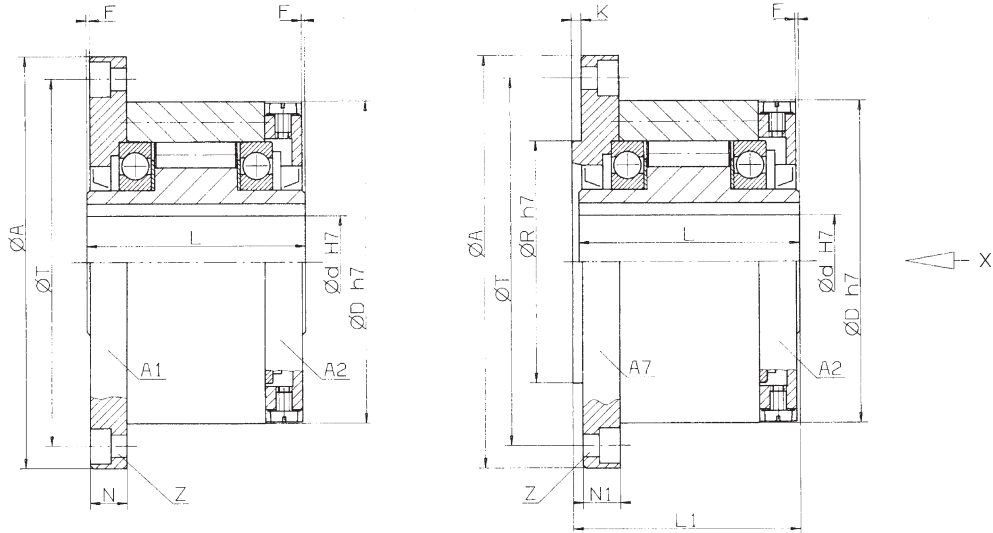
Where orders do not specify direction of rotation, the freewheel inner ring - when viewed in direction X and with the freewheel outer ring being held fast – can be rotated anticlockwise.

Example for ordering

FGRN with cover combination A5-A6 and bore $d = 50$ mm; when viewed in direction X inner ring rotates freely

- anticlockwise:
FGRN 50 A5-A6 L
- clockwise:
FGRN 50 A5-A6 R

Complete Freewheels FGR A1-A2 and FGR A2-A7 with flange cover



Z = number of tapped holes G on pitch circle T

d	Nominal torque	A	D	F	G	K	L	L1	N	N1	R	T	Z
mm	Nm	mm	mm	mm		mm	mm	mm	mm	mm	mm	mm	
12	55	85	62	1	M5	3,0	42	44	10,0	10,0	42	72	3
15	130	92	68	1	M5	3,0	52	54	11,0	11,0	47	78	3
20	180	98	75	1	M5	3,0	57	59	10,5	10,5	55	85	4
25	290	118	90	1	M6	3,0	60	62	11,5	11,5	68	105	4
30	500	128	100	1	M6	3,0	68	70	11,5	11,5	75	115	6
35	730	140	110	1	M6	3,5	74	76	13,5	13,0	80	125	6
40	1000	160	125	1	M8	3,5	86	88	15,5	15,0	90	142	6
45	1150	165	130	1	M8	3,5	86	88	15,5	15,0	95	146	8
50	2100	185	150	1	M8	4,0	94	96	14,0	13,0	110	166	8
55	2600	204	160	1	M10	4,0	104	106	18,0	17,0	115	182	8
60	3500	214	170	1	M10	4,0	114	116	17,0	16,0	125	192	10
70	6000	234	190	1	M10	4,0	134	136	18,5	17,5	140	212	10
80	6800	254	210	1	M10	4,0	144	146	21,0	20,0	160	232	10
90	11000	278	230	1	M12	4,5	158	160	20,5	19,0	180	254	10
100	20000	335	270	1	M16	5,0	182	184	30,0	28,0	210	305	10
130	31000	380	310	1	M16	5,0	212	214	29,0	27,0	240	345	12
150	68000	485	400	1	M20	5,0	246	248	32,0	30,0	310	445	12

Keyway as per DIN 6885, p. 1. Tolerance of keyway width JS10. Torques listed in the table are nominal torques containing a safety factor of 2.

Torques

Maximum transmissible torques are 2 x nominal torque.

Peak torques must always be lower than the respective maximum torque.

Direction of rotation

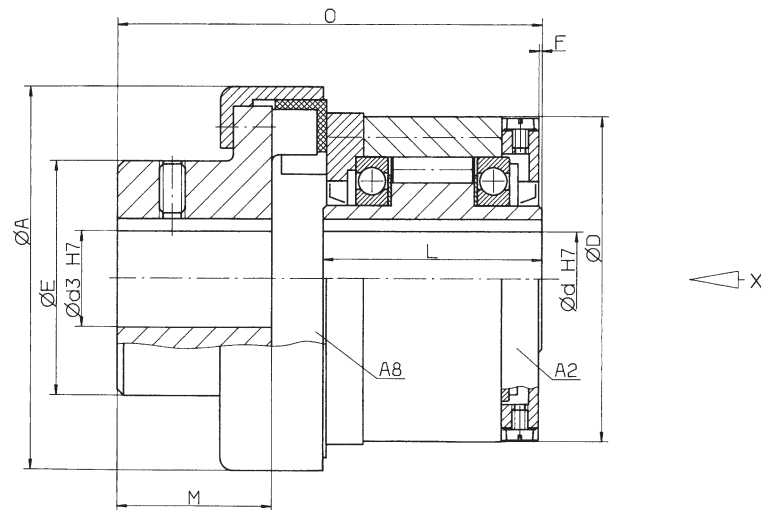
Where orders do not specify direction of rotation, the freewheel inner ring - when viewed in direction X and with the freewheel outer ring being held fast – can be rotated anticlockwise.

Example for ordering

FGR with cover combination A1-A2 and bore d = 50 mm; when viewed in direction X inner ring rotates freely

- anticlockwise:
FGR 50 A1-A2 L
- clockwise:
FGR 50 A1-A2 R

Complete Freewheels FGR A8-A2 with flexible shaft coupling



d	Nominal torque	d3	d3	A	D	E	F	L	M	O
mm	Nm	min. mm	max. mm	mm	mm	mm	mm	mm	mm	mm
12										
15										
20	95	10	35	82	75	65	1	57	45	120,5
25	150	12	38	114	90	72	1	60	48	125,5
30	240	12	42	127	100	78	1	68	52	139,5
35	240	12	48	127	110	78	1	74	52	143,5
40	375	14	52	143	125	88	1	86	57	163,5
45	600	18	55	158	130	96	1	86	61	171,5
50	945	20	65	181	150	110	1	94	67	194,0
55	1500	28	70	202	160	120	1	104	75	216,0
60	1500	28	70	202	170	120	1	114	75	227,0
70	2400	32	75	230	190	130	1	134	82	261,5
80	3750	38	85	257	210	145	1	144	89	285,0
90	6000	45	95	294	230	160	1	158	97	319,5
100	9450	65	115	330	270	200	1	182	116	361,0
130	15000	80	135	378	310	225	1	212	140	417,0
150	24000	90	150	432	400	225	1	246	160	493,0

Keyway as per DIN 6885, p. 1. Tolerance of keyway width JS10. Torques listed in the table are nominal torques containing a safety factor of 2.

Torques

Maximum transmissible torques are 2 x nominal torque.

Peak torques must always be lower than the respective maximum torque.

Direction of rotation

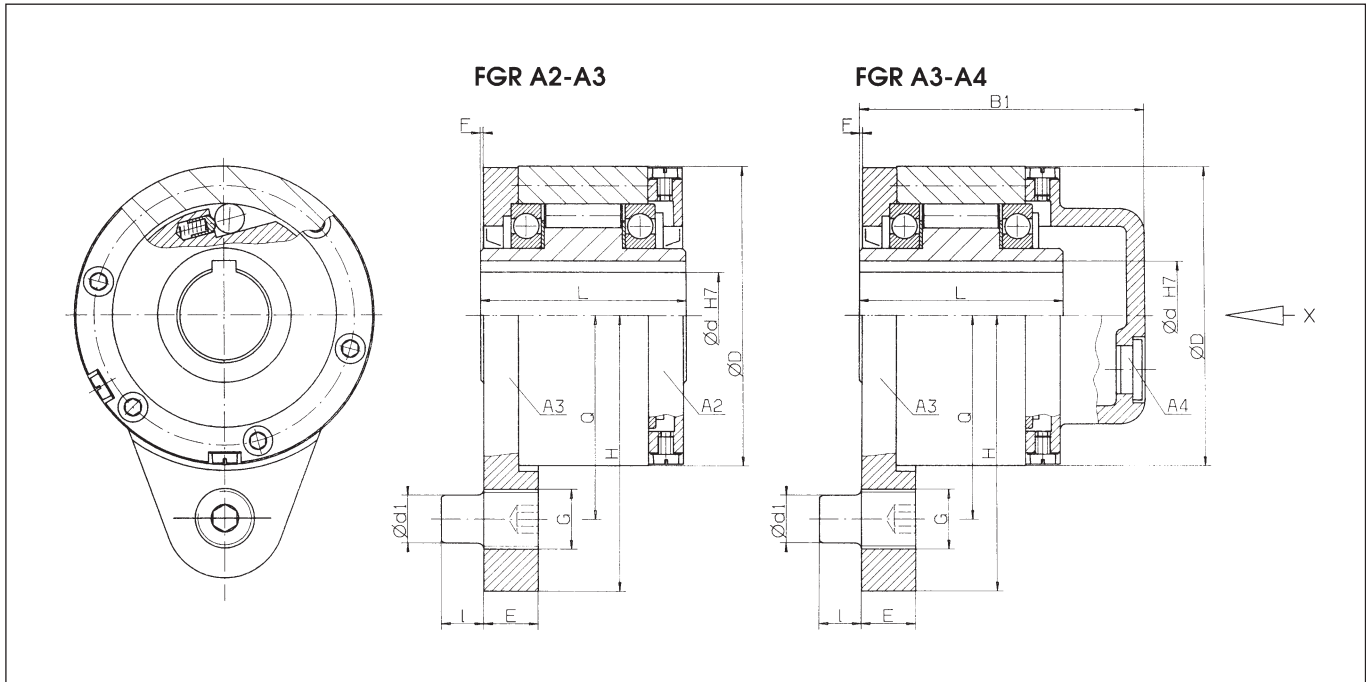
Where orders do not specify direction of rotation, the freewheel inner ring - when viewed in direction X and with the freewheel outer ring being held fast – can be rotated anticlockwise

Example for ordering

FGR with cover combination A8-A2 and bore d = 50 mm; when viewed in direction X inner ring rotates freely

- anticlockwise:
FGR 50 A8-A2 L
- clockwise:
FGR 50 A8-A2 R

Complete Freewheels FGR A2-A3 and FGR A3-A4 with torque arm



d	Nominal torque	B1	d1	D	E	F	G	H	I	L	Q
mm	Nm	mm	mm	mm	mm	mm		mm	mm	mm	mm
12	55	64	10	62	13	1	M14	51	10	42	44
15	130	78	10	68	13	1	M14	62	10	52	47
20	180	82	12	75	15	1	M16	72	11	57	54
25	290	85	16	90	18	1	M20x2	84	14	60	62
30	500	95	16	100	18	1	M20x2	92	14	68	68
35	730	102	20	110	22	1	M24x2	102	18	74	76
40	1000	115	20	125	22	1	M24x2	112	18	86	85
45	1150	115	25	130	26	1	M30x2	120	22	86	90
50	2100	123	25	150	26	1	M30x2	135	22	94	102
55	2600	138	32	160	30	1	M36x2	142	25	104	108
60	3500	147	32	170	30	1	M36x2	145	25	114	112
70	6000	168	38	190	35	1	M42x2	175	30	143	135
80	6800	178	38	210	35	1	M42x2	185	30	144	145
90	11000	192	50	230	45	1	M55x2	205	40	158	155
100	20000	217	50	270	45	1	M55x2	230	40	182	180
130	31000	250	68	310	60	1	M72x2	268	55	212	205
150	68000	286	68	400	60	1	M72x2	325	55	246	255

Keyway as per DIN 6885, p. 1. Tolerance of keyway width JS10. Torques listed in the table are nominal torques containing a safety factor of 2.

Torques

Maximum transmissible torques are 2 x nominal torque.

Peak torques must always be lower than the respective maximum torque.

Direction of rotation

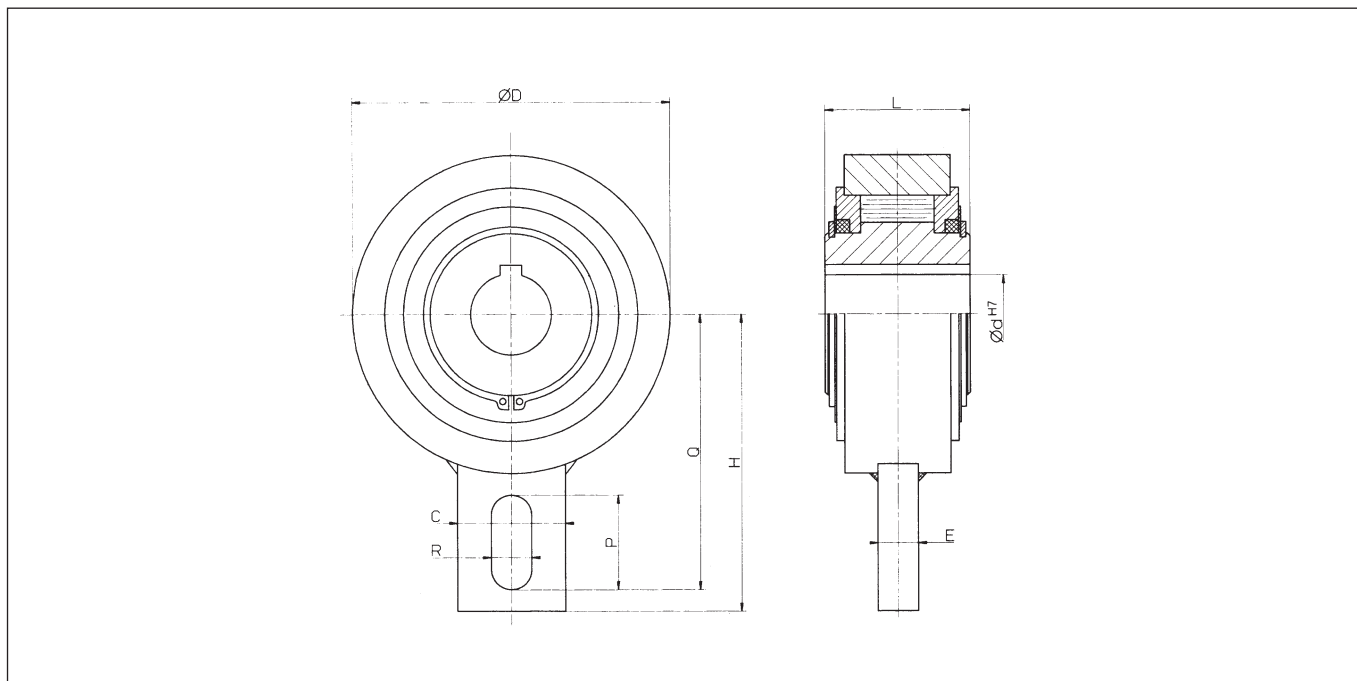
Where orders do not specify direction of rotation, the freewheel inner ring - when viewed in direction X and with the freewheel outer ring being held fast – can be rotated anticlockwise.

Example for ordering

FGR with cover combination A2-A3 and bore $d = 50$ mm; when viewed in direction X inner ring rotates freely

- anticlockwise:
FGR 50 A2-A3 L
- clockwise:
FGR 50 A2-A3 R

Complete Freewheels FAV with torque arm



d	Nominal torque	C	D	E	H	L	P	Q	R
mm	Nm	mm	mm	mm	mm	mm	mm	mm	mm
20	440	40	83	12	90	35	35	85	15
25	440	40	83	12	90	35	35	85	15
30	2050	40	118	15	110	54	35	102	15
35	2050	40	118	15	110	54	35	102	15
40	2050	40	118	15	110	54	35	102	15
45	3200	80	155	20	140	54	35	130	18
50	3200	80	155	20	140	54	35	130	18
55	3200	80	155	20	140	54	35	130	18
60	3200	80	155	20	140	54	35	130	18
70	3200	80	155	20	140	54	35	130	18
80	5000	80	190	20	155	64	40	145	20

Keyway as per DIN 6885, p. 1. Tolerance of keyway width JS10. Torque listed in the table are nominal torques containing a safety factor of 2.

Torques

Maximum transmissible torques are 2 x nominal torque.

Peak torques must always be lower than the respective maximum torque.

Characteristics

The series FAV is normally used as a backstop in applications with low speeds (e.g. conveyor belts).

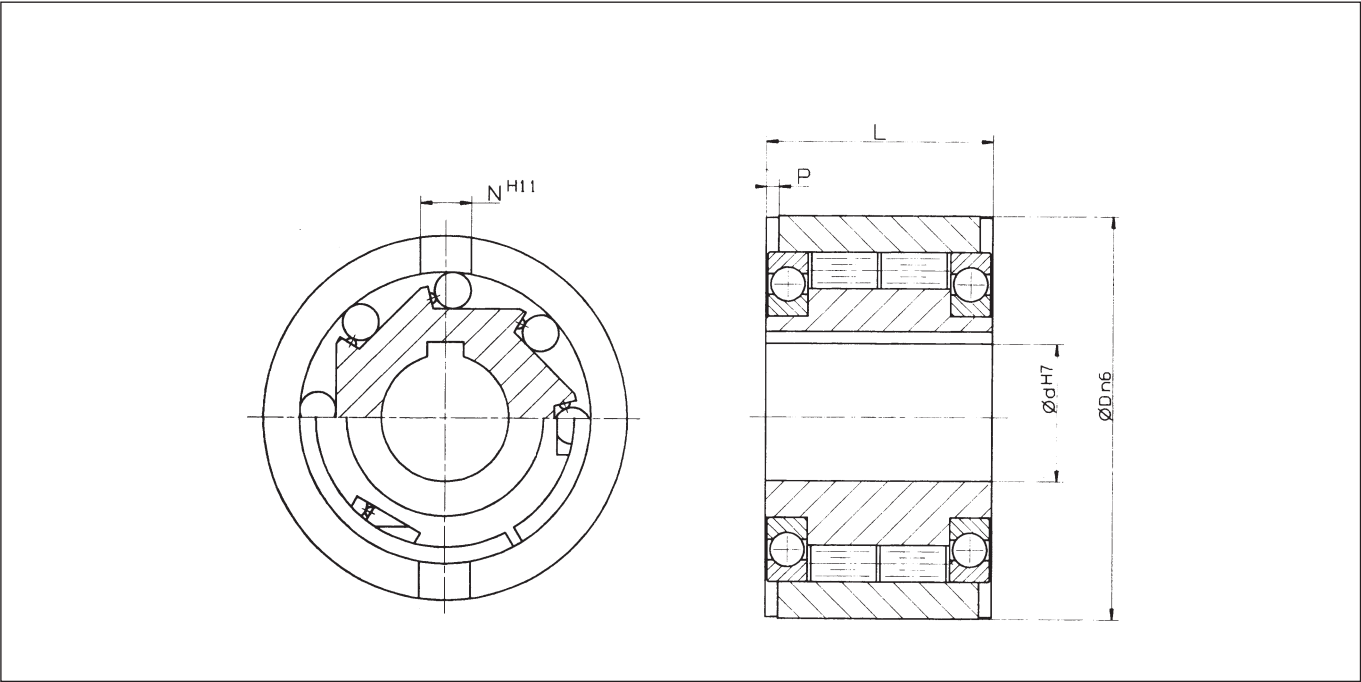
Example for ordering

FAV with bore d = 50 mm:

FAV 50

Build-in Freewheels FNR

with face keyway



d	Nominal torque	D	E	F	L	N	P
mm	Nm	mm	mm	mm	mm	mm	mm
8	18	37	19	30	20	6	3,0
12	18	37	19	30	20	6	3,0
15	50	47	23	37	30	7	3,5
20	112	62	35	50	36	8	6,5
25	220	80	40	68	40	9	4,0
30	410	90	45	75	48	12	5,0
35	500	100	50	80	53	13	6,0
40	750	110	55	90	63	15	7,0
45	1020	120	60	95	63	16	7,0
50	1900	130	70	110	80	17	8,5
55	2000	140	75	115	80	18	9,0
60	3000	150	80	125	95	18	9,0

Keyway as per DIN 6885, p. 1. Tolerance of keyway width JS10. Torque listed in the table are nominal torques containing a safety factor of 2.

Torques

Maximum transmissible torques are 2 x nominal torque.

Peak torques must always be lower than the respective maximum torque.

Mounting instructions

Sizes 8 to 20 of the series FNR have sleeve bearings while sizes 25 to 60 have ball bearings.

Ensure that the parts to be connected have the correct centering diameters F and centering depths C.

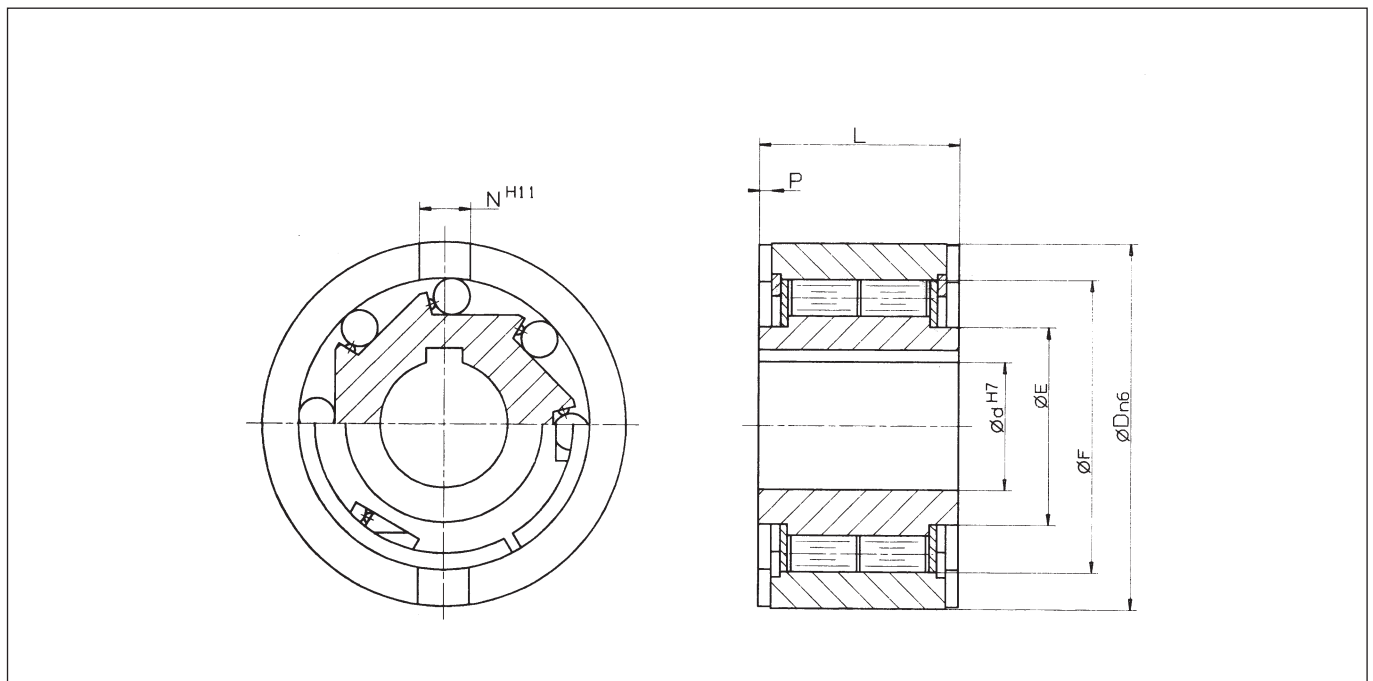
Dimension B includes bilaterally arranged seals. The seals are included with delivery.

Example for ordering

FNR with bore d = 50 mm:

FNR 50

Build-in Freewheels FN with face keyway



d	Nominal torque	D	E	F	L	N	P
mm	Nm	mm	mm	mm	mm	mm	mm
8	18	37	19	30	20	6	3,0
12	18	37	19	30	20	6	3,0
15	50	47	23	37	30	7	3,5
20	112	62	35	50	36	8	6,5
25	220	80	40	68	40	9	4,0
30	410	90	45	75	48	12	5,0
35	500	100	50	80	53	13	6,0
40	750	110	55	90	63	15	7,0
45	1020	120	60	95	63	16	7,0
50	1900	130	70	110	80	17	8,5
55	2000	140	75	115	80	18	9,0
60	3000	150	80	125	95	18	9,0

Keyway as per DIN 6885, p. 1. Tolerance of keyway width JS10. Torque listed in the table are nominal torques containing a safety factor of 2 and only apply to concentric inner and outer rings. Axial forces or tilting forces must be absorbed by adjacent bearings.

Torques

Maximum transmissible torques are 2 x nominal torque.

Peak torques must always be lower than the respective maximum torque

Mounting instructions

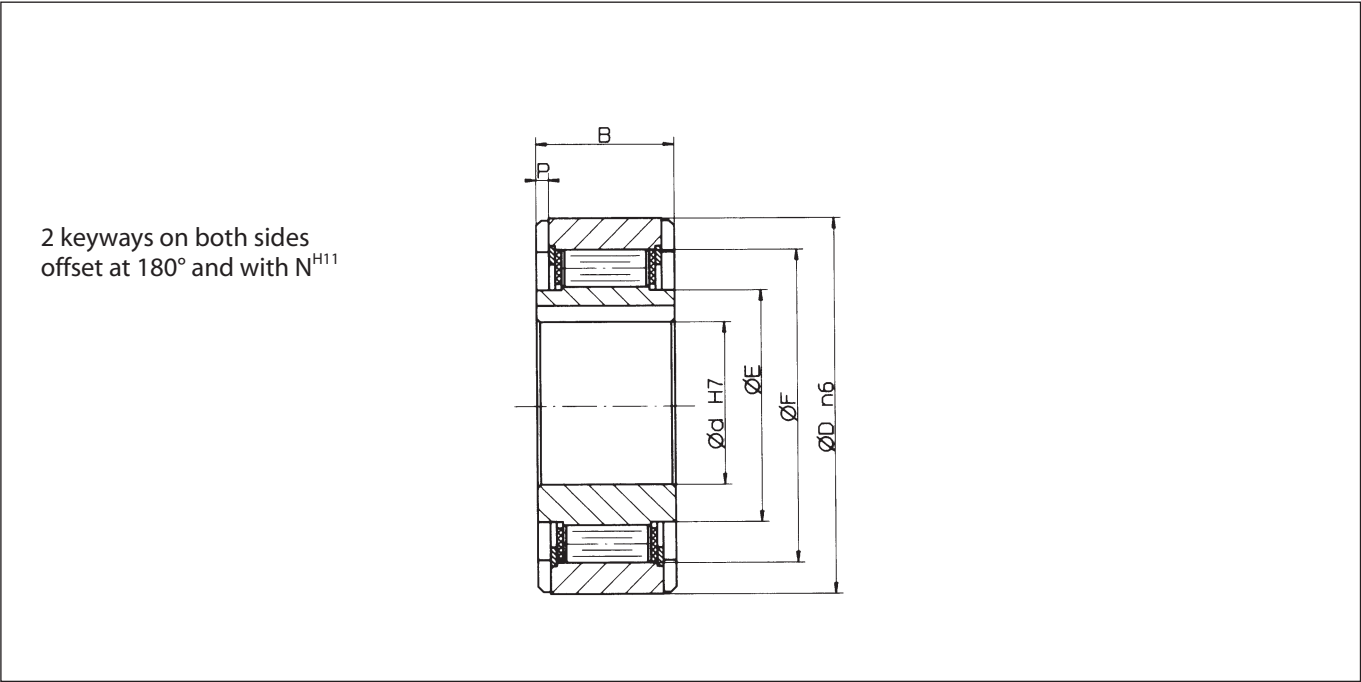
The series FN is without bearings and must therefore be provided with an external bearing which ensures total concentricity between inner and outer ring.

Example for ordering

FN with bore $d = 50$ mm:

FN 50

Freewheels with roller bearing dimensions FSN with face keyway



d	Nominal torque	B	D	E	F	N	P
mm	Nm	mm	mm	mm	mm	mm	mm
8*	11	13	35	18,5	28	4	1,3
12*	11	13	35	18,5	28	4	1,3
15	36	18	42	21,0	36	5	1,7
17	56	19	47	24,0	40	5	2,0
20	90	21	52	29,0	45	6	1,5
25	125	24	62	35,0	52	8	2,0
30	210	28	72	40,0	60	10	2,5
35	306	31	80	47,0	68	12	3,5
40	430	33	90	55,0	78	12	3,5
45	680	36	100	56,0	85	14	3,5
50	910	40	110	60,0	92	14	4,5
60	1 200	46	130	75,0	110	18	5,5
70	2 000	51	150	85,0	125	20	6,5
80	3 000	58	170	95,0	140	20	7,5

Keyway as per DIN 6885, p. 3. Tolerance of keyway width JS10. Torque listed in the table are nominal torques containing a safety factor of 2 and only apply to concentric inner and outer rings. Axial forces or tilting forces must be absorbed by adjacent bearings.

*keyway as per DIN 6885, p. 1

Torques

Maximum transmissible torques are 2 x nominal torque.

Peak torques must always be lower than the respective maximum torque.

Mounting instructions

To facilitate torque transmission the FSN freewheels have face keyways on the outer ring. The housing bore for the outer ring is ISO H7 or G7.

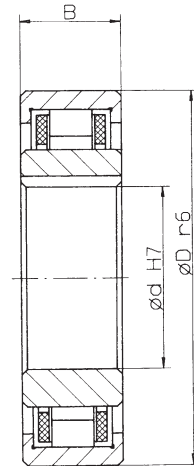
Shaft tolerance should be h6 or j6.

Example for ordering

FSN with bore d = 50 mm:

FSN 50

Freewheels with roller bearing dimensions FCN ... R for press fit



d mm	Nominal torque Nm	B mm	D mm
8*	3,2	8	24
10*	7,3	9	30
12*	11,0	10	32
15	12,0	11	35
20	40,0	14	47
25	50,0	15	52
30	80,0	16	62
35	140,0	17	72
40	170,0	18	80
45	200,0	19	85
50	220,0	20	90
60	420,0	22	110
80	840,0	26	140

Keyway as per DIN 6885, p. 3. Tolerance of keyway width JS10. Torque listed in the table are nominal torques containing a safety factor of 2 and only apply to concentric inner and outer rings. Axial forces or tilting forces must be absorbed by adjacent bearings.

*keyway as per DIN 6885, p.1.

Torques

Maximum transmissible torques are 2 x nominal torque.

Peak torques must always be lower than the respective maximum torque.

Mounting instructions

The tolerance for the housing should be ISO H7 or J7 and for the shaft h6 or j6.

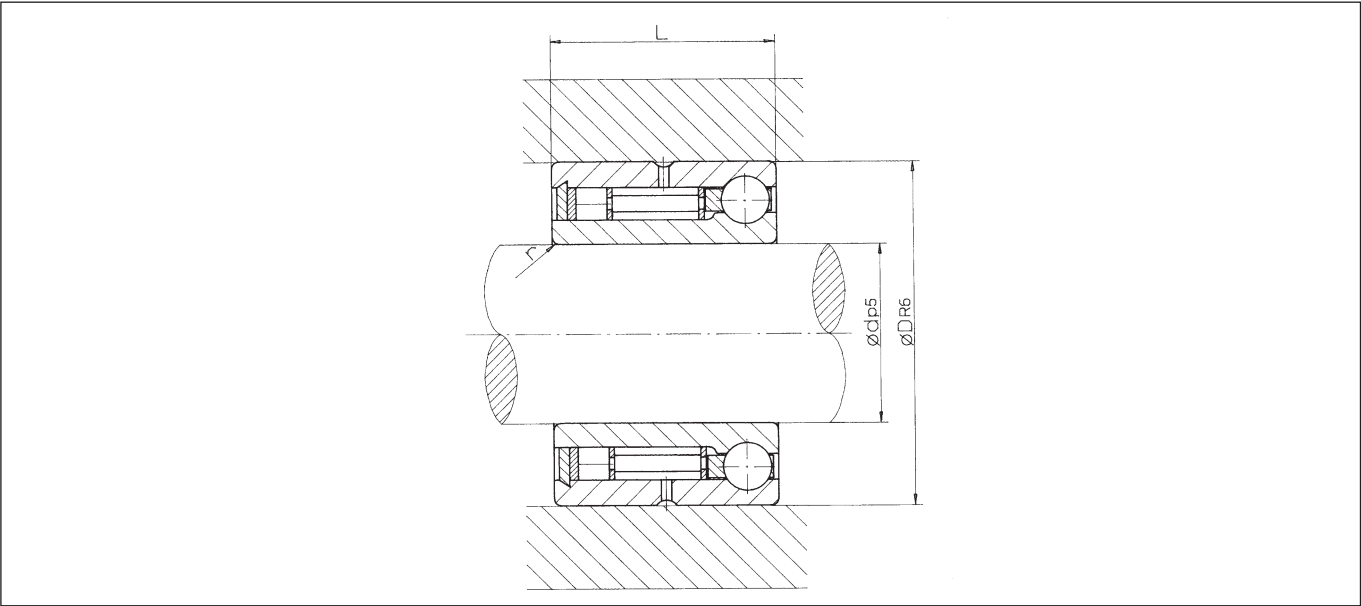
The freewheels with bore diameters 20, 25 and 30 mm have the same characteristics as ball bearings.

Example for ordering

FCN with bore d = 50 mm:

FCN 50 R

Freewheels with roller bearing dimensions FGK for press fit



d	Nominal torque	bearing type	load capacities				D*	L*	r*
			roller	C _{dyn.}	ball	C _{stat.}			
mm	Nm		N		N	N	mm	mm	mm
20	50	5904	5600	4400	2900	2750	37	23	0,5
25	70	5905	6300	5300	3450	3350	42	23	0,5
30	95	5906	7700	5500	4600	3650	47	23	0,5
35	200	5907	8200	8500	5200	5700	55	27	1,0
40	310	5908	8650	8300	5750	5700	62	30	1,0
45	370	5909	9200	9650	6350	7200	68	30	1,0
50	460	5910	9650	10000	6950	7800	72	30	1,0

Keyway as per DIN 6885, p. 1. Tolerance of keyway width JS10. Torque listed in the table are nominal torques containing a safety factor of 2.

Torques

Maximum transmissible torques are 2 x nominal torque.

Peak torques must always be lower than the respective maximum torque.

Mounting instructions

The torque is transmitted on inner and outer ring via interference fit.

The tolerance for the shaft should be p5, and R6 for the housing.

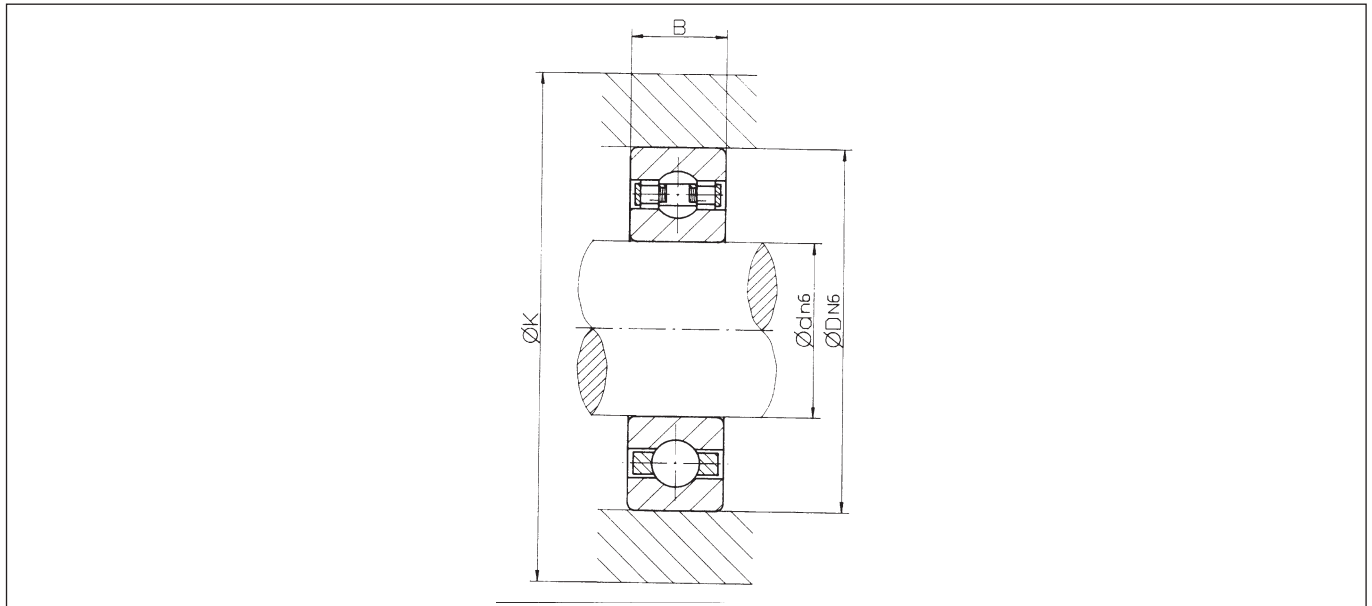
These fits ensure a normal bearing clearance after mounting.

Example for ordering

FGK with bore d = 50 mm:

FGK 50

Freewheels with roller bearing dimensions ZZ for press fit



d mm	Nominal torque Nm	bearing type	load capacities		B mm	D mm	K mm
			$C_{dyn.}$ N	$C_{stat.}$ N			
8	2,5	ZZ 8	3 200	860	9	22	27
12	9,3	ZZ 6201	6 100	2 400	10	32	39
15	13,0	ZZ 6202L	6 000	3 700	11	35	42
15	26,0	ZZ 6202M	6 000	3 700	11	35	42
17	17,0	ZZ 6203L	7 350	4 550	12	40	51
17	34,0	ZZ 6203M	7 350	4 550	12	40	51
20	32,0	ZZ 6204L	10 000	6 300	14	47	58
20	65,0	ZZ 6204M	10 000	6 300	14	47	58
25	40,0	ZZ 6205	11 000	7 000	15	52	63
25	80,0	ZZ 6205M	11 000	7 000	15	52	63
30	110,0	ZZ 6206M	15 000	10 000	16	62	73
30	170,0	ZZ 6206S	15 000	10 000	16	62	73
35	175,0	ZZ 6207	12 500	7 200	17	72	85
40	325,0	ZZ 40	15 500	12 250	22	80	94

Keyway as per DIN 6885, p. 1. Tolerance of keyway width JS10. Torque listed in the table are nominal torques containing a safety fa

Torques

To transmit the table torques the outer ring must be located in a steel housing with outer diameter K. Using other housing materials, smaller outer diameters and mounting onto hollow shafts must be made known to RINGSPANN for further calculation of the transmissible torque.

Characteristics

Freewheels of the type ZZ are identical in their outer dimensions with grooved ball bearings of the series 62 (exceptions: ZZ 8 and ZZ 40) and also have the same characteristics as these.

Mounting instructions

The torque is transmitted on inner and outer ring via press fit. The tolerance for the shaft should be n6 and for the housing N6. The freewheels are

supplied filled with grease for normal operating conditions. They are maintenance free. The freewheels can also be oil lubricated provided by the customer. This is particularly recommended where higher speeds are involved. The permissible operating temperature is -40°C to 80°C.

Example for ordering

ZZ with bore $d = 20$ mm and nominal torque 65 Nm:

ZZ 6204M

Freewheels

Backstops

Automatic protection against reverse running of conveyor belts, elevators, pumps and fans.



Catalogue 88

Indexing Freewheels

For gradual feed of materials.



Catalogue 80

Overrunning Freewheels

Automatic engaging and disengaging of drives.



Catalogue 80

Housing Freewheels

Automatic engaging and disengaging for multi-motor drives for installations with continuous operation.



Catalogue 80.1

Freewheel Elements

Cage Freewheels, Sprag Sets and Freewheel Chains.



Catalogue 89

Brakes

Industrial Disc Brakes

Spring Activated – Pneumatic Release.



Catalogue 46

Industrial Disc Brakes

Spring Activated – Hydraulic Release.



Catalogue 46

Industrial Disc Brakes

Pneumatically Activated.



Catalogue 46

Industrial Disc Brakes

Brake Calipers – Hydraulically Activated.



Catalogue 46

Fail-Safe Clamping Units

For secure and precise positioning of piston rods.



Catalogue 32

Torque and Force Limiters

Torque Limiter with Screw Face

Reliable overload protection for tough operating conditions.



Catalogue 45

Torque Limiter with Rollers

With double or single Roller. Through ratcheting or disengaging, also for 360° synchronous running.



Catalogue 45

Torque Limiter with Spherical Rollers

Reliable overload protection with maximum response accuracy. Also backlash free.



Catalogue 45

Torque Limiter with Friction Linings

RIMOSTAT Torque Limiter for constant torque. Belleville Spring Torque Limiter for simple release.



Catalogue 45

Force Limiter

Reliable axial overload protection in piston rods.



Catalogue 49

Couplings

Flexible Couplings

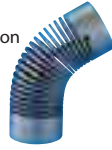
Large, safe radial and angular misalignments. Minimum resiliency.



Catalogue 44

HELICAL-Flexures Shaft Couplings

Special construction on specific application requirements.



Catalogue 43

HELICAL-Flexures with Integrated Connectors

Shaft coupling, space saving connectors integrated.



Catalogue 43

HELICAL-Flexures Spring Elements

Single Spring element with maximum resistance to wear.



Catalogue 43

Clamping Coupling

For the automatic coupling of rolls. Fast, safe and free from slipping connection.



Shaft-Hub-Connection

Cone Clamping Elements

For shaft-hub connections. High torques with small dimensions.



Catalogue 31

Three-part Shrink Discs

External clamping connection for the fastening of hollow shafts on solid shafts



Catalogue 31

Two-part Shrink Discs

External clamping connection. Advantages: Simple, secure mounting even without torque wrench.



Catalogue 31.1

Star Discs

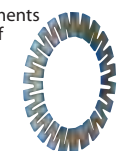
Ideal for shaft-hub-connection for frequent release.



Catalogue 30

Star Spring Washers

Axial spring elements for preloading of ball bearings.

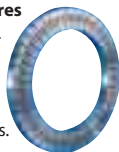


Catalogue 20

Precision Clamping Fixtures

Standard Parts for Clamping Fixtures

The RINGSPANN-System for the manufacture of your own precision clamping fixtures.



Catalogue 14

Standard Clamping Fixtures

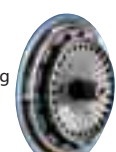
Standard program in high precision, ready manufactured Chucks and Mandrels.



Catalogue 13

Special Clamping Fixtures

Custom made solutions for specific clamping problems.



Glidebush Mandrels

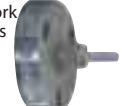
Universal, cost effective standard series. Fast tool change to other clamping diameters.



Catalogue 15

Hydraulic Expanding Clamping Tools

Mandrels and chucks with high concentricity. Clamping several work pieces in one process possible.



Catalogue 16



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