Complete Freewheels FR …

for bolting to the face
in inch dimension with sprags, available in four types

Features

Complete Freewheels FR … are sealed sprag freewheels in inch dimension with ball bearings. They are supplied oil-filled and ready for installation.

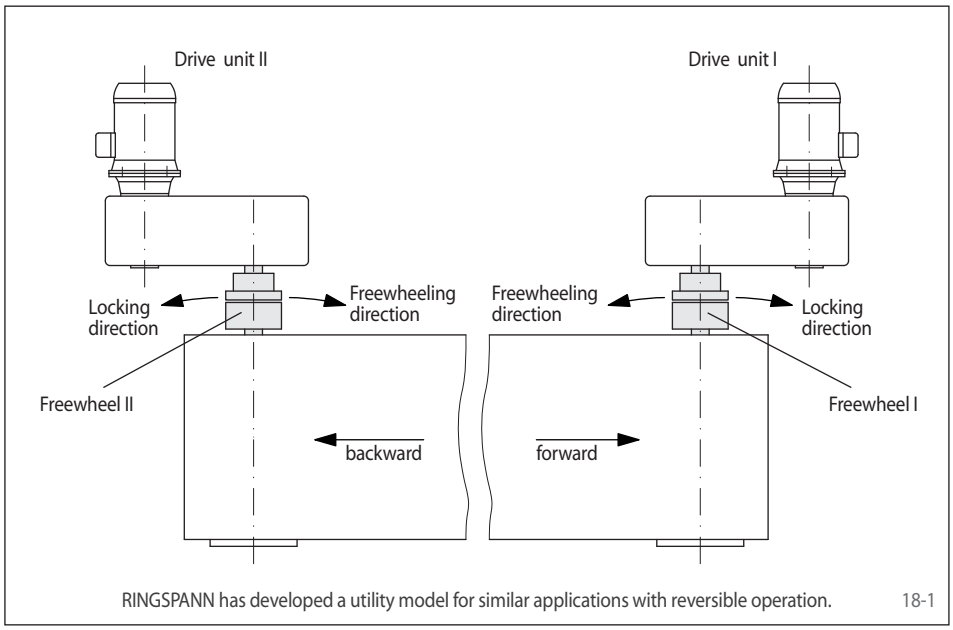
The freewheels FR … are used as:

- Backstops
- Overrunning Clutches
- Indexing Freewheels

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

Nominal torques up to 27 500 ft-lbs.

Bores up to 7 inch. Many standard bores are available.



RINGSPANN has developed a utility model for similar applications with reversible operation. 18-1

Application example

Complete Freewheels FRS 600 in both drive units of a transport system with a conveyor belt that moves both forward and backward (reversible operation). In order to ensure that the conveyor belt is moved under tension, forward movement is driven by drive unit I, reverse movement by drive unit II. The freewheels automatically disengage the respective non working drive, eliminating the need for expensive external clutches or brakes.

For forward movement, drive unit II is started in freewheeling direction of freewheel II; freewheel II is in freewheeling operation and disengages drive unit II from the conveyor belt. Afterwords drive unit I is started in the locking direction of the freewheel I; freewheel I is in driving operation and the conveyor belt is moved forward by drive unit I. The speed of drive unit I is lower than that of drive unit II. Thus freewheel II remains in freewheeling operation and drive unit II is not improperly engaged.

For reverse movement, the drive units are started in reverse order and direction of rotation at the corresponding speeds.

Mounting

The customer attachment part is centered on the external diameter D and then bolted on to the face.

The tolerance of the shaft must be + 0 / - 0,001 inch and the tolerance of the pilot diameter D of the attachment part must be - 0 / + 0,002 inch.

Standard bores and keyway sizes [inch]									
FR … 300	0,500 1/8 x 1/16	0,625 3/16 x 3/32	0,750 3/16 x 3/32						
FR … 400	0,500 1/8 x 1/16	0,625 3/16 x 3/32	0,750 3/16 x 3/32	0,875 3/16 x 3/32	1,000 1/4 x 1/8	1,125 1/4 x 1/8			
FR … 500	0,875 3/16 x 3/32	1,000 1/4 x 1/8	1,125 1/4 x 1/8	1,250 1/4 x 1/8	1,312 1/4 x 3/32				
FR … 550	1,250 1/4 x 1/8	1,312 3/8 x 3/16	1,500 3/8 x 3/16	1,625 3/8 x 1/8					
FR … 600	1,250 1/4 x 1/8	1,375 3/8 x 3/16	1,438 3/8 x 3/16	1,500 3/8 x 3/16	1,625 3/8 x 3/16	1,688 3/8 x 3/16	1,750 3/8 x 3/16	1,938 3/8 x 1/8	2,000 3/8 x 1/8
FR … 650	1,938 1/2 x 1/4	2,000 1/2 x 1/4	2,250 1/2 x 1/4	2,438 5/8 x 1/8	2,500 5/8 x 1/8				
FR … 700	1,938 1/2 x 1/4	2,000 1/2 x 1/4	2,250 1/2 x 1/4	2,438 5/8 x 5/16	2,500 5/8 x 5/16	2,750 5/8 x 7/32	2,938 5/8 x 1/8		
FR … 750	2,438 5/8 x 5/16	2,500 5/8 x 5/16	2,938 3/4 x 3/8	3,000 3/4 x 3/8	3,250 3/4 x 3/16	3,438 3/4 x 1/8			
FR … 775	2,750 5/8 x 5/16	2,938 3/4 x 3/8	3,000 3/4 x 3/8	3,250 3/4 x 3/8	3,438 7/8 x 5/16	3,500 7/8 x 5/16	3,750 7/8 x 1/4		
FR … 800	3,000 3/4 x 3/8	3,250 3/4 x 3/8	3,438 7/8 x 7/16	3,500 7/8 x 7/16	3,750 7/8 x 7/16	3,937 1 x 1/2	4,000 1 x 1/2	4,250 1 x 3/8	4,500 1 x 1/4
FR … 900	4,000 1 x 1/2	4,438 1 x 1/2	4,500 1 x 1/2	4,938 1 1/4 x 5/16	5,000 1 1/4 x 5/16	5,438 1 1/4 x 5/16			
FR …1000	5,750 1 1/2 x 3/4	5,938 1 1/2 x 3/4	6,000 1 1/2 x 3/4	6,750 1 3/4 x 7/16	6,875 1 3/4 x 7/16	7,000 1 3/4 x 7/16			

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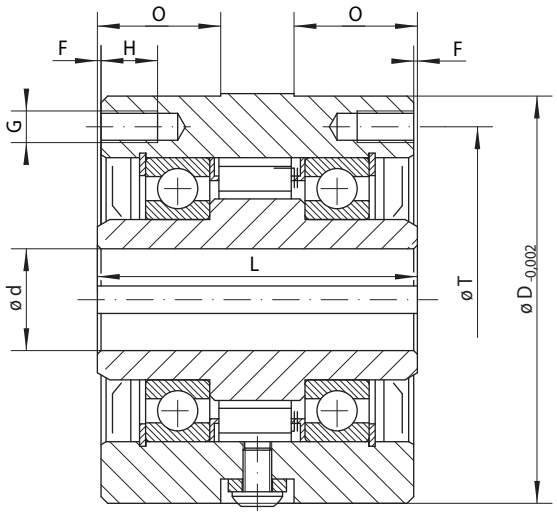

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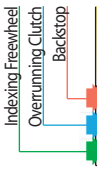

Standard type For universal use	**Standard type - grease lubricated** For universal use	**Type with sprag lift-off X** For extended service life using sprag lift-off at high speed rotating inner ring	**Type with sprag lift-off Z** For extended service life using sprag lift-off at high speed rotating outer ring

Freewheel Size	Nominal torque M_N ft-lbs	Max. speed Inner ring freewheels/ overruns min^{-1}	Max. speed Outer ring freewheels/ overruns min^{-1}	Freewheel Size	Nominal torque M_N ft-lbs	Max. speed Inner ring freewheels/ overruns min^{-1}	Max. speed Outer ring freewheels/ overruns min^{-1}	Freewheel Size	Nominal torque M_N ft-lbs	Sprag lift-off at inner ring speed min^{-1}	Max. speed Inner ring freewheels/ overruns min^{-1}	Max. speed Outer ring drives min^{-1}	Freewheel Size	Nominal torque M_N ft-lbs	Sprag lift-off at outer ring speed min^{-1}	Max. speed Outer ring freewheels/ overruns min^{-1}	Max. speed Inner ring drives min^{-1}
FRS 300	210	2500	2600	FRSG 300	210	3600	3600										
FRS 400	335	1900	2100	FRSG 400	335	3600	3600	FRX 400	125	860	4000	340	FRZ 400	280	800	2600	320
FRS 500	800	1400	1900	FRSG 500	800	3600	3600	FRX 500	425	750	4000	300	FRZ 500	535	1400	2050	560
FRS 550	1525	1175	1600	FRSG 550	1525	3600	3600	FRX 550	750	700	4000	280	FRZ 550	1380	1550	1800	620
FRS 600	1950	1100	1500	FRSG 600	1950	3600	3600	FRX 600	1000	670	4000	265	FRZ 600	1765	1450	1650	580
FRS 650	2700	900	1250	FRSG 650	2700	3600	3600	FRX 650	1750	610	4000	240	FRZ 650	2500	1300	1400	520
FRS 700	5525	790	1150	FRSG 700	5525	1800	1800	FRX 700	4050	350	3600	140	FRZ 700	5250	1160	1200	465
FRS 750	9350	790	1150	FRSG 750	9350	1800	1800	FRX 750	7500	320	2400	125	FRZ 750	8750	1160	1200	465
FRS 775	8500	750	1050	FRSG 775	8500	1800	1800	FRX 775	7400	320	2100	125	FRZ 775	6500	950	1050	380
FRS 800	8200	700	950	FRSG 800	8200	1800	1800	FRX 800	14500	250	1800	100	FRZ 800	6500	880	975	350
FRS 900	16800	700	950	FRSG 900	16800	1200	1200	FRX 900	15000	250	650	100					
FRS 1000	27500	630	800	FRSG 1000	27500	1200	1200										

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

Freewheel Size	Bore d Standard bores inch									max. inch	D inch	F inch	G Thread	L inch	H inch	O inch	T inch	Z*	Weight lbs
FR … 300	0,500	0,650	0,750							0,750	3,000	0,063	0,250-28	2,500	0,375	0,750	2,625	4	3,5
FR … 400	0,500	0,625	0,750	0,875	1,000	1,125				1,125	3,500	0,032	0,312-24	2,750	0,500	0,750	2,875	4	6,0
FR … 500	0,875	1,000	1,125	1,250	1,312					1,312	4,250	0,063	0,312-24	3,500	0,625	1,000	3,625	4	10,0
FR … 550	1,250	1,312	1,500	1,625						1,625	4,750	0,063	0,312-24	3,250	0,540	0,750	4,250	6	12,0
FR … 600	1,250	1,375	1,438	1,500	1,625	1,688	1,750	1,938	2,000	2,000	5,375	0,063	0,312-24	3,750	0,625	1,000	4,750	6	19,0
FR … 650	1,938	2,000	2,250	2,438	2,500					2,500	6,500	0,063	0,375-24	3,500	0,750	1,000	5,750	8	24,0
FR … 700	1,938	2,000	2,250	2,438	2,500	2,750	2,938			2,938	7,125	0,063	0,375-24	5,000	0,750	1,000	6,250	8**	42,0
FR … 750	2,438	2,500	2,938	3,000	3,250	3,438				3,438	8,750	0,063	0,500-20	6,000	0,875	1,250	7,000	8**	83,0
FR … 775	2,750	2,938	3,000	3,250	3,438	3,500	3,750			3,750	9,750	0,063	0,500-20	6,000	0,875	1,250	8,500	8	96,0
FR … 800	3,000	3,250	3,438	3,500	3,750	3,937	4,000	4,250	4,500	4,500	10,000	0,063	0,500-20	6,000	0,875	1,250	8,937	8	102,0
FR … 900	4,000	4,438	4,500	4,938	5,000	5,438				5,438	12,000	0,063	0,625-18	6,375	1,000	1,375	9,750	10	156,0
FR …1000	5,750	5,938	6,000	6,750	6,875	7,000				7,000	15,000	0,063	0,625-18	6,625	1,000	1,375	11,750	12	250,0

* Z = Number of tapped holes G on pitch circle T.
** Six holes are equally spaced 60° apart with two additional holes located 30° from the six equally spaced holes and 180° apart.
Conversion factors: 1 ft-lbs = 1,35 Nm, 1 inch = 25,4 mm, 1 lbs = 0,453 kg.

Example for ordering

Freewheel size FR … 700, type with sprag lift-off
Z and 2 inch bore:

- FRZ 700, d = 2 inch