

Internal Freewheels TSS and TFS

These sprag freewheels without own bearing support in premium quality can be used as indexing freewheels, backstops or overrunning clutches. They allow a compact design and are installed in housings provided by the customer. The user must ensure proper bearings, lubrication and sealing during installation. Radial forces are not permitted.

Design TSS: The nominal dimensions $d \times D \times B$ correspond to the dimensions of ball bearing series 62. With keyway on the inner ring.

Design TFS: The nominal dimensions $d \times D$ correspond to the dimensions of ball bearing series 63, except for TFS 12. With keyway on the inner ring and two radial, face-side grooves on the outer ring on both sides.

Keyway: The keyway is up to diameter $d=12\text{mm}$ according to DIN 6885-1. Above that according to DIN 6885-3.

Mounting: For the bearing and the freewheel, the same installation tolerances must be provided. Recommended housing tolerance H7. For the shaft h7. If the tolerance of the housing inner diameter for the freewheel TFS is K6, no feather keys are required on the end face grooves of the freewheel. During installation, care must be taken to ensure the correct direction of rotation. The direction of rotation is indicated by a marking arrow on the freewheel.

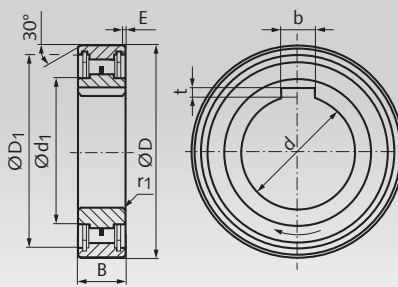
Lubrication: Oil lubrication according to table on page 490 below. Oils or other lubricants containing EP additives must not be used.

Temperature range: approx. -10°C to $+50^\circ\text{C}$.

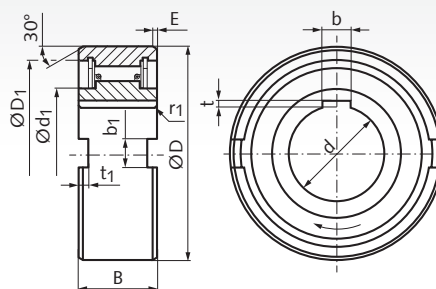
Other versions on request.

Ordering Details: e.g. Product No., quantity

Design TSS



Design TFS



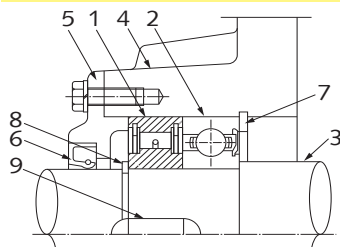
Internal Freewheels TSS

Product No. TSS	d^{H7} mm	D mm	B mm	d_1 mm	D_1 mm	E mm	r_1 mm	b mm	t mm	Torque Nm	Drag Torque Nm	max. Overrunning		Weight approx. g
												Inner race min^{-1}	Outer race min^{-1}	
TSS8	8	24	8	11,4	22,2	0,6	0,6	2	1,0	6,7	0,005	6000	3000	14
TSS10	10	30	9	15,6	27	0,6	0,6	3	1,4	12	0,007	4500	2300	27
TSS12	12	32	10	18	29,5	0,6	0,6	4	1,8	17	0,009	4000	2000	31
TSS15	15	35	11	20,6	32	0,6	0,6	5	1,2	22	0,01	3500	1800	39
TSS20	20	47	14	26,7	40	0,8	0,8	6	1,6	41	0,01	2600	1300	115
TSS25	25	52	15	32	45	0,8	0,8	8	2,0	56	0,02	2200	1100	140
TSS30	30	62	16	40	55	0,8	1,0	8	2,0	105	0,03	1800	900	215
TSS35	35	72	17	45	63	0,8	1,0	10	2,4	136	0,03	1600	800	300
TSS40	40	80	18	50	72	0,8	1,0	12	2,2	296	0,18	1400	700	425
TSS45	45	85	19	57	75,5	1,2	1,0	14	2,1	347	0,21	1300	650	495
TSS50	50	90	20	62	82	1,2	1,0	14	2,1	403	0,22	1200	600	545
TSS60	60	110	22	80	100	1,2	1,5	18	2,3	649	0,33	910	460	950

Internal Freewheels TFS

Product No. TFS	d^{H7} mm	D mm	B mm	d_1 mm	D_1 mm	E mm	r_1 mm	b mm	t mm	b_1 mm	t_1 mm	Torque Nm	Drag Torque Nm	max. Overrunning		Weight approx. g
														Inner race min^{-1}	Outer race min^{-1}	
TFS12	12	35	13	18	30	0,6	0,3	4	1,8	4	1,4	18	0,04	4500	2300	68
TFS15	15	42	18	22	36	0,8	0,3	5	1,2	5	1,8	28	0,06	3500	1800	120
TFS17	17	47	19	22	38	1,2	0,8	5	1,2	5	2,3	50	0,11	3200	1600	150
TFS20	20	52	21	27	45	1,2	0,8	6	1,6	6	2,3	84	0,18	2500	1300	220
TFS25	25	62	24	35	52	1,2	0,8	8	2,0	8	2,8	128	0,19	2000	1000	360
TFS30	30	72	27	40	62	1,8	1,0	8	2,0	10	2,5	200	0,21	1600	800	530
TFS35	35	80	31	48	70	1,8	1,0	10	2,4	12	3,5	475	0,42	1400	700	790
TFS40	40	90	33	54,5	78	1,8	1,0	12	2,2	12	4,1	607	0,46	1300	650	1050
TFS45	45	100	36	59	85,3	1,8	1,0	14	2,1	14	4,6	756	0,56	1100	550	1370
TFS50	50	110	40	65	92	1,8	1,0	14	2,1	14	5,6	1124	0,60	1000	500	1900
TFS60	60	130	46	84	110	2,6	1,5	18	2,3	18	5,5	1975	0,87	840	420	3110

Mounting Example



1. TSS Freewheel
2. Bearing
3. Shaft
4. Housing
5. Cover
6. Oil seal
7. Spring ring bore
8. Spring ring shaft
9. Groove

Note

The Internal Freewheels are designed for press fits. Make sure that the outer ring of the freewheel is pressed into a stable housing. Use suitable tools for installation.

The Internal Freewheels TSS and TFS are interchangeable with other fabricates of the same size.