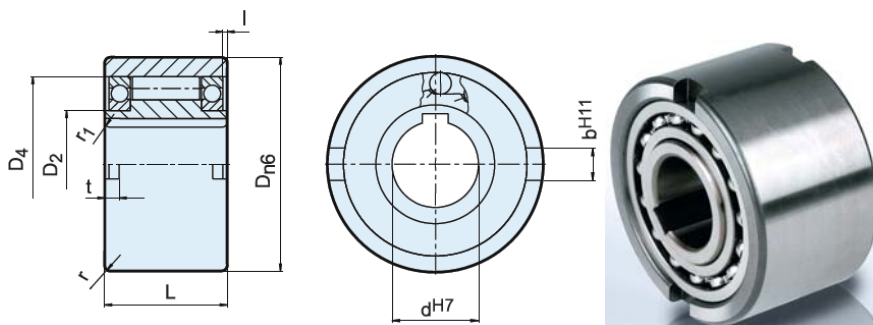


## Installation and Maintenance Instructions Freewheel Type NFR

To avoid premature failure of the freewheel or possible machine malfunction, installation of the freewheel should be carried out by suitably qualified personnel and according to the following instructions.

**STIEBER will not accept liability in cases of non-compliance with these instructions!**



Type	Size	Overrunning speeds				Bearing	Dimensions								Weight
		$T_{KN}^{(1)}$ [Nm]	$n_{max}^{(2)}$ [min <sup>-1</sup> ]	$n_{max}^{(3)}$ [min <sup>-1</sup> ]			$D_{H6}$ [mm]	$D_2$ [mm]	$D_4$ [mm]	L [mm]	l [mm]	t [mm]	$b^{H11}$ [mm]	r [mm]	
NFR (ANR-ANG)	8	20	1000	1000	*	37	20	30	20		3	6	1	1.5	0.1
	12	20	1000	1000	*	37	20	30	20		3	6	1	1.5	0.1
	15	78	850	850	*	47	26	37	30		3.5	7	1.5	1.5	0.3
	20	188	650	650	*	62	37	52	36		3.5	8	2	2	0.6
	25	250	2100	3600	16008**	80	40	68	40	0.2	4	9	2.5	2	1.2
	30	500	1700	3200	16009**	90	45	75	48	0.2	5	12	2.5	2	1.8
	35	663	1550	3000	16010**	100	50	80	53	1.2	6	13	2.5	2.5	2.4
	40	1100	1150	2600	16011**	110	55	90	63	2.2	7	15	3	2.5	3.3
	45	1500	1000	2400	16012**	120	60	95	63	2.2	7	16	3	2.5	4.0
	50	2375	800	2150	16014**	130	70	110	80	2.7	8.5	17	3.5	3	5.7
	55	2550	750	2000	16015**	140	75	115	80	4.2	9	18	3.5	3	6.5
	60	4250	650	1900	16016**	150	80	125	95	3.2	9	18	3.5	3.5	8.9
	70	5875	550	1750	16018**	170	90	140	110	1.1	9	20	3.5	3.5	13.5
	80	10000	500	1600	16021**	190	105	160	125	0	9	20	4	3.5	19.0
	90	17250	450	1450	16024**	215	120	180	140	0.6	11.5	24	4	4	27.2
100	19625	350	1250	16028**	260	140	210	150	2.6	14.5	28	4	4	44.5	
130	34750	250	1000	16032**	300	160	240	180	2	17.5	32	5	5	68.0	

### Prior to Installation:

The freewheels should be unpacked and installed in a clean dry working environment.

Remove the corrosion inhibitor using flushing oil. The freewheeling direction should be checked prior to installation.

Reverse unit on shaft to change freewheeling direction.

The inner race should be fitted to a shaft of h6 or j6 tolerance.

The outer housing should be to H7 tolerance.

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**Permissible axial clearance:**

Bore Ø [mm]	Axial clearance S [mm]
8-12	0,25
15-20	0,3
25	0,5
30-60	0,6
70-90	0,8
100	0,7
130	0,9

**Installation:**

Use a key to DIN 6885 sheet 1. The key should be the length of the freewheel hub.

The torque is transmitted at the outer race via a pressfit (H7/n6), and the slots in the outer race.

During installation an evenly distributed axial load should be applied simultaneously to both the inner and outer races.

Avoid localised axial loading on either the inner or outer race.

**After Installation:**

After installation, ensure the unit rotates smoothly in the direction of freewheeling.

Prior to use 1/3 to 1/2 of the free space within the unit should be filled with oil of the recommended grade.

**Lubrication and Maintenance:**

- The lubricating oil should be changed after approximately 10 hours operation. Further oil changes should be made after every 2000 hours.  
In arduous applications change oil every 1000 operating hours.
- With ambient temperatures above 80°C, check lubrication regularly.
- For operating temperatures below -20°C and above 100°C contact the technical department of your lubricant suppliers.
- For indexing applications, oil types with a kinematic viscosity of about 10mm<sup>2</sup>/s at the normal operating temperature are recommended.
- If grease lubrication is to be used please consult your STIEBER stockist. Excessive grease may lead to malfunction of the freewheel.
- Only 30 to 40% of the free space between the races should be grease filled.

**Lubricants with slip additives such as graphite, Molykote or similar agents should be avoided**

## Recommended Lubricants

	Ambient temperature				Grease
	-40°C to -15°C	-15°C to +15°C	+15°C to +30°C	+30°C to +50°C	
	Operating temperature				
	-20°C to +20°C	+10°C to +50°C	+40°C to +70°C	+50°C to +85°C	
	Oil				
<b>ISO - VG DIN 51519</b>	10	22	46	100	
<b>ARAL</b>	SUMOROL CM10	SUMOROL CM22	MOTANOL HK46	DEGOL CL100T	ARALUB HL2
<b>BP</b>	ENERGOL CS10	ENERGOL CS22	ENERGOL CS46	ENERGOL RC100	ENERGREASE LS2
<b>DEA</b>	ASTRON HL10	ASTRON HL22	ASTRON HL46	ASTRON HL100	GLISSANDO 20
<b>ESSO</b>	NUTO H10 SPINESSO 10	NUTO H22 SPINESSO 22	NUTO H46 TERESSO 46	NUTO H100	BEACON 2
<b>FUCHS</b>	RENOLIN MR3	RENOLIN DTA22	RENOLIN DTA46	RENOLIN MR30	RENOLIT LZR2
<b>KLÜBER</b>	CRUCOLAN 10	CRUCOLAN 22	CRUCOLAN 46	CRUCOLAN 100	POLYLUB WH2
<b>MOBIL</b>	VELOCITE No6	VELOCITE No10	VACTRA MEDIUM VG46	VACTRA HEAVY VG100	MOBILUX 2
<b>SHELL</b>	MORLINA 10	MORLINA 22	MORLINA 46	MORLINA 100	ALVANIA G2
<b>TOTAL</b>	AZZOLA ZS10	AZZOLA ZS22	AZZOLA ZS46	AZZOLA ZS100	MULTIS 2

Alternatively we strongly recommend the use of multigrade oils SAE 10W-40 at working temperature between 0° and +80 ° C.

The ambient temperature is to be taken as a guide line. The operating temperature is determinant for the choice of the viscosity.

Corrosion inhibitor: Rivolta KSP

Time of protection: 6 to 12 months

Recommendation: Prior to use, remove corrosion inhibitor using flushing oil.

**The maximum overrunning speeds given in our literature apply to oil lubricated units. For grease lubrication the quoted speeds must be halved. Please refer to the 'Lubrication & Maintenance' section in our main catalogue.**