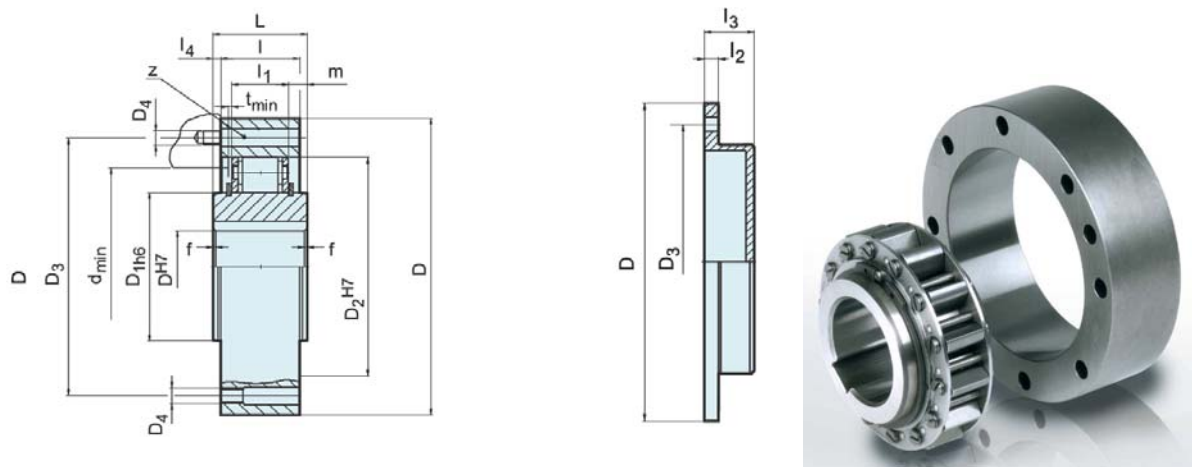


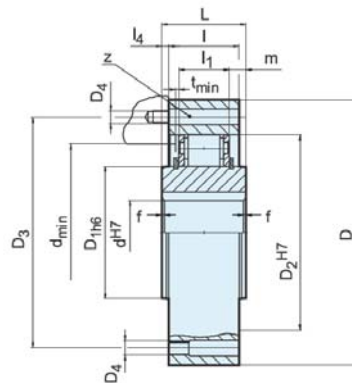
Installation and Maintenance Instructions Freewheel Type RSCI

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	Speeds					Number										Weight						
	d ^{H7} [mm]	T _{KN} ¹⁾ [Nm]	n _{max} ²⁾ [min ⁻¹]	n _{min} ³⁾ [min ⁻¹]	n _{max} ⁴⁾ [min ⁻¹]	D ⁵⁾ [mm]	D _{1H6} [mm]	D ₂ ^{H7} [mm]	D ₃ [mm]	D ₄ [mm]	z	L [mm]	l [mm]	l ₁ [mm]	l ₂ [mm]	f × 45° [mm]	d _{min} [mm]	m [mm]	t _{min} [mm]	l ₂ [mm]	l ₃ [mm]	RSCI	F8 [kg]
RSCI	20	212	315	750	14500	90	36	66	78	M6	6	35	35	25	0	0.8	52	5	1	8	16	1.5	0.3
	25	319	300	725	14300	95	40	70	82	M6	6	35	35	25	0	1.0	56	5	1	8	16	1.6	0.4
	30	375	290	700	11400	100	45	75	87	M6	6	35	35	25	0	1.5	62	5	1	8	16	1.8	0.4
	35	550	280	670	10500	110	50	80	96	M6	8	35	35	25	0	1.5	66	5	1	8	16	2.1	0.5
	40	800	260	630	7600	125	60	90	108	M8	8	35	35	25	0	1.5	76	5	1	10	21	2.7	0.7
	45	912	255	610	6600	130	65	95	112	M8	8	35	35	25	0	1.5	82	5	1	10	21	2.9	0.9
	50	1400	235	560	6100	150	80	110	132	M8	8	40	40	25	0	1.5	100	7.5	1	10	21	4.3	1
	60	2350	210	510	5300	175	85	125	155	M10	8	60	50	36	5	2.0	110	12	2	12	35	6.5	1.8
	70	3050	195	470	4100	190	100	140	165	M10	12	60	50	36	5	2.0	120	12	2	12	35	8.6	1.9
	80	4500	180	440	3600	210	120	160	185	M10	12	70	60	36	5	2.0	140	17	3	12	35	12.5	2.6
	80M	5800	155	375	4000	210	120	160	185	M10	12	70	60	46	5	2.0	140	12	2	12	35	13.1	2.6
	90	5600	170	410	2700	230	140	180	206	M12	12	80	70	36	5	2.5	165	22	3	12	35	17.4	3.0
	90M	8700	145	350	3000	245	140	180	206	M12	12	80	70	46	5	2.5	160	17	2	12	35	18.3	3.0
	100	10500	145	355	2700	290	140	210	258	M16	12	90	80	52.6	5	2.5	180	18.6	3	15	37	28	5.0
	100M	16000	140	340	2400	290	170	210	258	M16	12	90	80	63	5	2.5	200	13.5	2	12	35	30	5.0
130	15750	135	330	2400	322	170	240	278	M16	12	90	80	52.6	5	3.0	210	18.6	3	15	37	35	6.0	



Size	Torque	Speeds			Number										Weight				
d^{H7} [mm]	$T_{KN}^{(1)}$ [Nm]	$n_{max}^{(2)}$ [min ⁻¹]	$n_{min}^{(3)}$ [min ⁻¹]	$n_{imax}^{(4)}$ [min ⁻¹]	$D^{(5)}$ [mm]	D_{1H6} [mm]	D_2^{H7} [mm]	D_3 [mm]	D_4 [mm]	z	L [mm]	l [mm]	l_1 [mm]	l_4 [mm]	$f \times 45^\circ$ [mm]	d_{min} [mm]	m [mm]	t_{min} [mm]	[kg]
180	31500	115	285	1300	412	240	310	360	M20	12	90	80	53	5	3.5	280	18.6	3	59
180 M	50000	90	220	1300	422	240	310	370	M20	18	120	120	83	0	4	280	18.5	2	92
180 II	63000	115	285	1300	412	240	310	360	M20	24	160	160	118	0	3.5	280	21	3	116
180 II-M	100000	90	220	1300	425	240	310	370	M24	24	240	240	176	0	4	280	32	3	190
220	42500	110	265	1100	470	290	360	410	M20	16	105	80	60	12.5	4	330	19.5	3	90
220 M	68000	85	205	1100	480	290	360	410	M24	16	120	120	83	0	4	330	18.5	2	109
220 II	85000	110	265	1100	480	290	360	430	M24	18	160	160	130	0	4	330	15	3	159
220 II-M	136000	85	205	1100	490	290	360	425	M30	20	240	240	176	0	4	330	32	2	249
240	52000	105	250	1100	500	320	390	440	M20	16	105	90	60	7.5	4	360	15	2	95
240 M	83000	80	195	1100	520	320	390	440	M24	16	120	120	83	0	4	360	18.5	2	137
240 II	104000	105	250	1100	505	320	390	440	M24	24	180	180	132	0	4	360	24	2	191
240 II-M	166000	80	195	1100	530	320	390	455	M30	24	240	240	181	0	4	360	32	2	250
260	65000	100	240	1000	550	360	430	500	M24	16	105	105	60	0	4	400	22.5	2	130
260 M	100000	75	185	1000	580	360	430	500	M24	24	125	125	83	0	4	400	21	2	183
260 II	130000	100	240	1000	550	360	430	500	M24	24	210	210	132	0	4	400	39	2	262
260 II-M	200000	75	185	1000	580	360	430	500	M30	24	250	250	176	0	4	400	37	2	369
300	78000	90	225	1000	630	410	480	560	M24	24	105	105	60	0	4	460	22.5	3	174
300 M	125000	70	175	1000	630	410	480	560	M24	24	125	125	83	0	4	460	21	3	210
300 II	156000	90	225	1000	630	410	480	560	M24	24	210	210	134	0	4	460	38	3	351

Description:

The main components of RSCI backstops are: Outer race, inner race, and cage assembly with sprags which centrifugally disengage at normal running speed. RSCI backstops must be installed so that the inner race overruns.

The maximum permissible overrunning speed quoted in the table must not be exceeded.

To ensure that the sprags are fully disengaged during overrunning, the overrunning speed must not fall below the minimum quoted in the table.

Please refer to STIEBER if this may occur.

All limits quoted in the table should be met to ensure trouble free operation.

Prior to Installation:

Ensure that the specified concentricity between inner and outer race is maintained.

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The inner race should be fitted to a shaft of h6 or j6 tolerance.
The mounting register for the outer race should be to h7 or g7 tolerance.

The freewheeling direction should be checked prior to installation.
If reversal of the freewheeling direction is required, simply reverse unit on shaft. (See removal of cage.)

When installing the outer race, use bolts of 8.8 quality or better, and tighten to the torque level specified in the table below.

Caution: Risk of Injury!

When the transport safety device is removed, the backstop should always be held so that the bore is horizontal, otherwise the outer race may slip from the cage.

Installation:

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

Ensure no debris enters the unit during installation.

Installation as a complete assembly: (Preferred)

- Fit the inner race on to the shaft, ensuring alignment of the keyways.
- Any axial loading used should be applied only to the inner race.
- The inner race must be retained axially on the shaft - circlips are suitable.
- Fit the outer race to its register using the specified bolts.

Inner and Outer race installed separately: (Due to size of unit)

- First install the inner race and cage onto the shaft as described above.
- Position the outer race over the inner assembly whilst slightly rotating the inner race in the freewheeling direction.
This procedure is simplified if the sprags are rotated to their disengaging position and held there by means of an O-Ring.
- Fit the outer race to its register using the specified bolts.

Size	Thread In Outer Race	Tightening Torque [Nm]	Removal Thread Cage
20	M6	9,9	M3
25	M6	9,9	M3
30	M6	9,9	M3
35	M6	9,9	M3
40	M8	24	M3
45	M8	24	M3
50	M8	24	M3
60	M10	47	M4
70	M10	47	M4
80	M10	47	M4
80M	M10	47	M4
90	M12	82	M4
90M	M12	82	M4
100	M16	200	M5
100M	M16	200	M5
130	M16	200	M5
180	M20	390	M5
180 M	M20	390	M5
180-II	M20	390	M5
180-II M	M24	670	M5
220	M20	390	M5
220 M	M24	670	M5
220-II	M24	670	M5
220-II M	M30	1350	M5
240	M20	390	M5
240 M	M24	670	M5
240-II	M24	670	M5
240-II M	M30	1350	M5
260	M24	670	M5
260 M	M24	670	M5
260-II	M24	670	M5
260-II M	M30	1350	M5
300	M24	670	M5
300 M	M24	670	M5
300-II	M24	670	M5
300-II M	M24	670	M5
300 -M - HL	M24	670	M5

After installation:

After installation, ensure that the backstop can be rotated in the required direction.

The drag torque produced when freewheeling, is about 1/1000 of the torque capacity of the backstop.

Removal of cage assembly from inner race / Installation:

Because of maintenance, or reversal of freewheeling direction on units with non-standard asymmetric inner races, it may be necessary to remove the sprag cage from the inner race.

Removal:

- Remove circlip from inner race.
- Screw suitable bolts into the removal holes in of the cage disk. Do not use bolts which are long enough to contact sprags!
- Using the removal bolts pull the cage from the inner race, whilst slightly rotating the cage in the freewheeling direction.

Installation:

- Slide the cage assembly on to the inner race, slightly rotating the cage in the freewheeling direction.
- Ensure that the driver pin on the face of the cage disk locates in the gap formed by the ends of the circlip.
The cage can be installed without removal of the outer race if the inner race, shaft and cage can be rotated whilst the cage is slid along the inner race.
- Reinstall second circlip, ensuring the gap formed by its ends accommodates the driver pin on the face of the cage disk.

Dismantling:

Dismantling / removal is achieved by following the installation procedure in reverse sequence.

Lubrication and Maintenance (When overrunning speed exceeds the specified minimum):

Below 100mm bore size no additional lubrication is required if the acceleration and deceleration time is less than 20 seconds.

Above 100mm bore size, or if acceleration and deceleration time exceeds 20 seconds, oil or grease lubrication should be provided.

All gear and hydraulic oils with a minimum viscosity of at least 32mm²/s are suitable.

In general, where the shaft is horizontal, an oil level which immerses the outer diameter of the sprag cage to a depth of 2mm is sufficient.

If the shaft is not horizontal please contact STIEBER.

If grease lubrication is used, greases of consistency class II, or softer are recommended.

The grease should be replaced after a maximum period of two years whether or not in operation.

For grease replacement the freewheel must be removed, cleaned, inspected, greased and reinstalled.

Backstops which do not require lubrication need to be protected against corrosion.

All common corrosion inhibitors provide sufficient lubrication.

RSCI Technical data:

Size	max. Torque [Nm]	Overrunning Speed [rpm]		max. Driving Speed [rpm]	max. Concentricity Error [mm]	Grease [ml]
		min.	max.			
20	424	750	14500	315	0,3	10
25	638	725	14300	300	0,3	11
30	750	700	11400	290	0,3	11
35	1100	670	10500	280	0,3	12
40	1600	630	7600	260	0,3	14
45	1824	610	6600	255	0,3	15
50	2800	560	6100	235	0,3	17
60	4700	510	5300	210	0,4	28
70	6100	470	4100	195	0,4	31
80	9000	440	3600	180	0,4	36
80M	11600	375	4000	155	0,4	46
90	11200	410	2700	170	0,4	40
90M	17400	350	3000	145	0,4	51
100	21000	355	2700	145	0,6	69
100M	32000	340	2400	140	0,6	82
130	31500	330	2400	135	0,6	79
180	63000	285	1300	115	0,6	103
180 M	100000	220	1300	90	0,6	161
180-II	126000	285	1300	115	0,6	228
180-II M	200000	220	1300	90	0,6	340
220	85000	265	1100	110	0,6	135
220 M	136000	205	1100	85	0,6	187
220-II	170000	265	1100	110	0,6	292
220-II M	272000	205	1100	85	0,6	396
240	104000	250	1100	105	0,6	146
240 M	166000	195	1100	80	0,6	202
240-II	208000	250	1100	105	0,6	322
240-II M	332000	195	1100	80	0,6	429
260	130000	240	1000	100	0,6	161
260 M	200000	185	1000	75	0,6	223
260-II	260000	240	1000	100	0,6	355
260-II M	400000	185	1000	75	0,6	473
300	156000	225	1000	90	0,6	180
300 M	250000	175	1000	70	0,6	249
300-II	312000	225	1000	90	0,6	402
300-II M	624000	175	1000	70	0,6	528
300 -M - HL	250000	175	2000	70	0,6	249