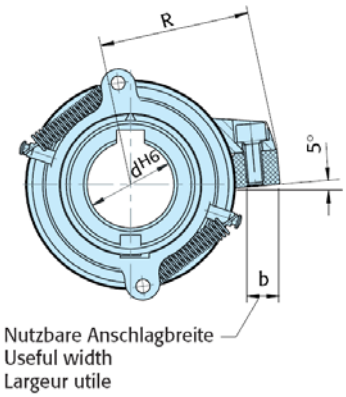
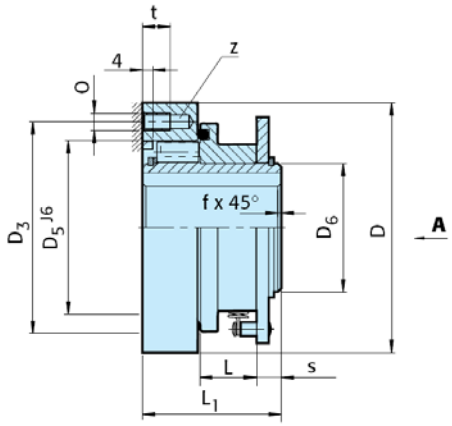
Installation and Maintenance Instructions Freewheel Type BAT

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!





Bauart Type Modèle	Größe Size Taille		Drehzahl Speed Vitesse														Gewicht Weight Masse
	d^{H6} [mm]	T_{KN} 1) [Nm]	n_{max} [min^{-1}]	D [mm]	L_1 [mm]	D_5^{J6} [mm]	D_6 [mm]	D_3 [mm]	z –	O –	t [mm]	L [mm]	s [mm]	R [mm]	b [mm]	f [mm]	[kg]
BAT	12	24	750	56	32	37	22	45	3	M 5	7	12	7	33	5	0,5	0,6
	20	75	650	72	40	50	32	61	4	M 5	8	16	8	43	7	0,8	1,1
	25	66	620	72	40	50	37	61	4	M 5	8	16	8	43	7	1	1,1
	30	300	560	108	60	75	50	95	6	M 5	10	26	10	64	11	1	4
	40	463	410	126	70	90	60	108	6	M 8	12	32	11	73	11	1,5	6
	50	875	400	152	80	110	75	132	8	M 8	12	38	11	90	16,5	1,5	10
	60	3450	210	195	120	155	–	175	12	M10	15	25	22	110	12	2	31
	70	3450	210	195	120	155	–	175	12	M10	15	25	22	110	12	2,5	30
	80	8750	200	250	140	200	–	225	12	M12	15	45	22	150	22	2,5	72
	90	8750	200	250	140	200	–	225	12	M12	15	45	22	150	22	3	70
	100	14380	170	315	160	255	–	285	12	M16	20	55	16	190	33	3	124
	120	14380	170	315	160	255	–	285	12	M16	20	55	16	190	33	4	120

Description:

BAT units are designed to provide an indexing function without cumulative error.

The main components are: outer race, inner race, drive rollers and a roller cage.
The cage is spring loaded, and provides the engaging / disengaging function of the clutch.

BAT units have felt seals up to size 50, and lip seals from size 60 on.
For design reasons there is no seal between the outer race and the inner race at the inboard end of the unit.

The outer race must be supported by bearings external to the unit.

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Prior to Installation:

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

The driving direction should be checked prior to installation. The driving direction cannot be changed without replacing components.

Remove the corrosion inhibitor using flushing oil.

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

The concentricity and angular alignment of the shaft relative to the outer race should be within the limits specified in the table below.

Permissible concentricity and alignment errors:

Bore Ø [mm]	Concentricity [mm]	Parallelism [mm]
12 - 20	0,02	0,02
25 - 40	0,035	0,03
50 - 80	0,05	0,04
90 - 120	0,06	0,05

We recommend ball bearings with normal bearings clearance are installed adjacent to the clutch.

A proper seal between the face of the outer race and the mounting surface has to be provided by the customer.

Installation:

Ideally BAT units should be installed as an assembly.
If this is not possible, first disconnect the engagement springs, then remove the outer race whilst slightly rotating in the freewheeling direction.

Install the outer race. Install the inner race, cage and rollers. (To simplify this procedure hold the rollers in position by means of an O-Ring)

Re-engage the drive springs. Install a key to DIN 6885 sheet 1. The key should be the full length of the hub.

Drive torque is transmitted via the outer race face and bolts of 10.9 quality or better.

We recommend the following torque figures for the outer race mounting bolts.

Bolt Size	Tightening Torque [Nm]
M4	4,1
M5	8,3
M8	34
M10	66
M12	115
M16	280

During installation, apply axial load to the inner race only.

After installation:

After installation, ensure the unit rotates smoothly in direction of free-wheeling.

Prior to use, 1/3 of the free space within the unit should be filled with oil of the recommended grade via the oil filler plug(s) in the outer race.

Ensure that the actuating latch does not foul against the outer race or the spring mounting plate.

Dismantling:

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

Lubrication and Maintenance:

BAT units are not sealed perfectly. It is essential that BAT units up to size 50 are re-lubricated daily, and larger sizes once a week.

Relubrication volume depends on the clutch size and oil loss - normally 10% of initial volume.

The oil should be changed after 1000 hours operation or every 6 months.

Oil lubrication should be used rather than grease lubrication.

Initial oil fill volume:

Type	Initial Oil Volume [ml]
BAT 12	1,5
BAT 20	2
BAT 25	2
BAT 30	6
BAT40	7,5
BAT 50	12

If grease lubrication is used, 30 to 40% of the free space in the freewheel should be grease filled. Excessive grease may lead to malfunction of the clutch.

Depending on environmental conditions, grease lubricated freewheels should be cleaned and re-greased every 2 to 6 months.

Slip additives such as Molykote and Graphite may inhibit operation of the unit and should not be used.

Recommended Lubricants

	Ambient temperature				
	-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				Grease
ISO - VG DIN 51519	10	22	46	100	
ARAL	SUMOROL CM10	SUMOROL CM22	MOTANOL HK46	DEGOL CL100T	ARALUB HL2
BP	ENERGOL CS10	ENERGOL CS22	ENERGOL CS46	ENERGOL RC100	ENERGREASE LS2
DEA	ASTRON HL10	ASTRON HL22	ASTRON HL46	ASTRON HL100	GLISSANDO 20
ESSO	NUTO H10 SPINESSO 10	NUTO H22 SPINESSO 22	NUTO H46 TERESSO 46	NUTO H100	BEACON 2
FUCHS	RENOLIN MR3	RENOLIN DTA22	RENOLIN DTA46	RENOLIN MR30	RENOLIT LZR2
KLÜBER	CRUCOLAN 10	CRUCOLAN 22	CRUCOLAN 46	CRUCOLAN 100	POLYLUB WH2
MOBIL	VELOCITE No6	VELOCITE No10	VACTRA MEDIUM VG46	VACTRA HEAVY VG100	MOBILUX 2
SHELL	MORLINA 10	MORLINA 22	MORLINA 46	MORLINA 100	ALVANIA G2
TOTAL	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 should only be used as a guide. The operating temperature should be used to select the oil viscosity required.

Corrosion inhibitor: Rivolta KSP

Time of protection: 6 to 12 months