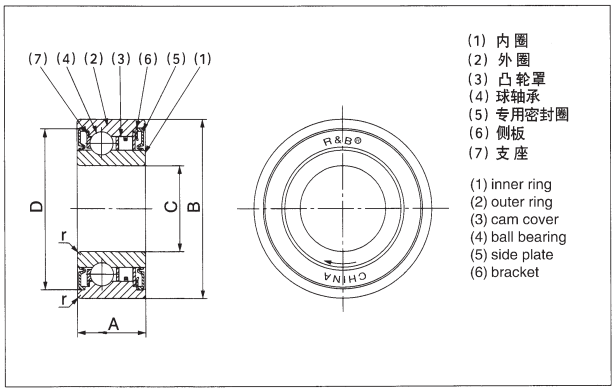
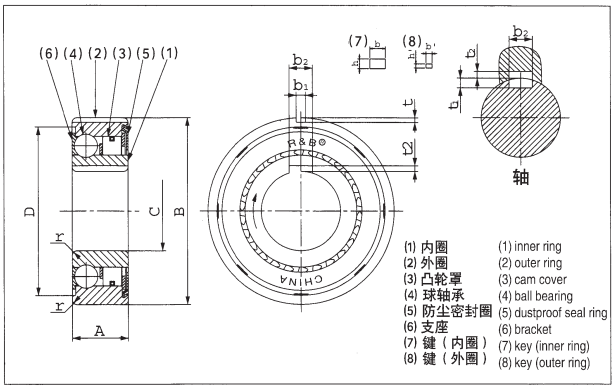
BB系列凸轮离合器

BB series cam clvtches



(1) 内圈
(2) 外圈
(3) 凸轮罩
(4) 球轴承
(5) 专用密封圈
(6) 侧板
(7) 支座

(1) inner ring
(2) outer ring
(3) cam cover
(4) ball bearing
(5) side plate
(6) bracket



(1) 内圈 (1) inner ring
(2) 外圈 (2) outer ring
(3) 凸轮罩 (3) cam cover
(4) 球轴承 (4) ball bearing
(5) 防尘密封圈 (5) dustproof seal ring
(6) 支座 (6) bracket
(7) 键（内圈） (7) key (inner ring)
(8) 键（外圈） (8) key (outer ring)

尺寸和容量

以毫米为单位的尺寸

尺寸	扭矩容量	最大空转速度		空转摩擦扭矩(N·m)		A		B	C	D		r	重量（g）		轴承载荷	
		内圈	外圈	BB BB-1K-K BB-2K-K	BB-2GD BB-2GD 1K-K	BB BB-1K-K BB-2K-K	BB-2GD BB-2GD 1K-K			BB BB-1K-K BB-2K-K	BB-2GD BB-2GD 1K-K		BB BB-1K-K BB-2K-K	BB-2GD BB-2GD 1K-K	C	Co
	N·m	r/min	r/min												N	N
BB15	29	3600	2000	0.010	0.040	11	16	35	15	32.6	32.45	0.6	50	70	5950	3230
BB17	43	3500	1900	0.010	0.050	12	17	40	17	36.1	36.45	0.6	80	100	7000	3700
BB20	61	3000	1600	0.014	0.055	14	19	47	20	41.7	42.35	1.0	120	150	8500	4900
BB25	78	2500	1400	0.017	0.055	15	20	52	25	47.1	47.05	1.0	150	200	10700	6300
BB30	140	2000	1100	0.030	0.058	16	21	62	30	56.6	55.60	1.0	230	280	11900	7900
BB35	173	1800	1000	0.034	0.060	17	22	72	35	64.0	64.60	1.1	320	410	13500	9700
BB40	260	1800	900	0.040	0.080	22	27	80	40	71.0	71.60	1.1	400	600	14500	11700

轴和壳体的公差

以毫米为单位的尺寸

型号		轴的直径	壳体的直径
BB15	BB15-2GD	15 $^{+0.023}_{+0.012}$	35 $^{-0.012}_{-0.028}$
BB17	BB17-2GD	17 $^{+0.023}_{+0.012}$	40 $^{-0.012}_{-0.028}$
BB20	BB20-2GD	20 $^{+0.028}_{+0.015}$	47 $^{-0.012}_{-0.028}$
BB25	BB25-2GD	25 $^{+0.028}_{+0.015}$	52 $^{-0.014}_{-0.033}$
BB30	BB30-2GD	30 $^{+0.028}_{+0.015}$	62 $^{-0.014}_{-0.033}$
BB35	BB35-2GD	35 $^{+0.033}_{+0.017}$	72 $^{-0.014}_{-0.033}$
BB40	BB40-2GD	40 $^{+0.033}_{+0.017}$	80 $^{-0.014}_{-0.033}$

型号		轴的直径	壳体的直径
BB15-1K-K	BB15-2GD 1K-K	15 $^{-0.008}_{-0.028}$	35 $^{-0.012}_{-0.028}$
BB17-1K-K	BB17-2GD 1K-K	17 $^{-0.008}_{-0.028}$	40 $^{-0.012}_{-0.028}$
BB20-1K-K	BB20-2GD 1K-K	20 $^{-0.010}_{-0.031}$	47 $^{-0.012}_{-0.028}$
BB25-1K-K	BB25-2GD 1K-K	25 $^{-0.010}_{-0.031}$	52 $^{-0.014}_{-0.033}$
BB30-1K-K	BB30-2GD 1K-K	30 $^{-0.010}_{-0.031}$	62 $^{-0.014}_{-0.033}$
BB35-1K-K	BB35-2GD 1K-K	35 $^{-0.012}_{-0.037}$	72 $^{-0.014}_{-0.033}$
BB40-1K-K	BB40-2GD 1K-K	40 $^{-0.012}_{-0.037}$	80 $^{-0.014}_{-0.033}$

型号	轴的直径	壳体的直径
BB15-2K-K	15 $^{-0.008}_{-0.028}$	35 $^{-0.002}_{-0.018}$
BB17-2K-K	17 $^{-0.008}_{-0.028}$	40 $^{-0.002}_{-0.018}$
BB20-2K-K	20 $^{-0.010}_{-0.031}$	47 $^{-0.003}_{-0.022}$
BB25-2K-K	25 $^{-0.010}_{-0.031}$	52 $^{-0.003}_{-0.022}$
BB30-2K-K	30 $^{-0.010}_{-0.031}$	62 $^{-0.003}_{-0.022}$
BB35-2K-K	35 $^{-0.012}_{-0.037}$	72 $^{-0.006}_{-0.025}$
BB40-2K-K	40 $^{-0.012}_{-0.037}$	80 $^{-0.006}_{-0.025}$

键槽和键的尺寸

以毫米为单位的尺寸

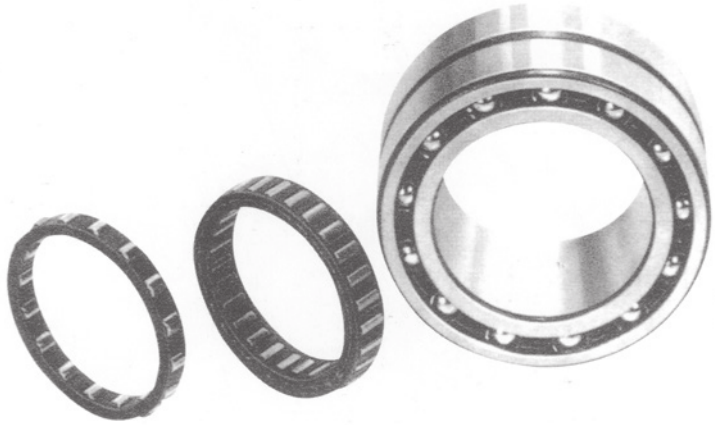
型号		b2js10	t1	t2	b1 js9	t	内圈键 b × h × 长度	外圈键 b′ × h′ × 长度
BB15-1K-K	BB15-2GD 1K-K	5.0	1.9	1.2	—	—	—	—
BB15-2K-K	—				2.0	0.6	5 ×3 ×11	2 ×2 ×11
BB17-1K-K	BB17-2GD 1K-K	5.0	1.9	1.2	—	—	—	—
BB17-2K-K	—				2.0	1.0	5 ×3 ×12	2 ×2 ×12
BB20-1K-K	BB20-2GD 1K-K	6.0	2.5	1.6	—	—	—	—
BB20-2K-K	—				3.0	1.5	6 ×4 ×14	3 ×3 ×14
BB25-1K-K	BB25-2GD 1K-K	8.0	3.6	1.5	—	—	—	—
BB25-2K-K	—				6.0	2.0	8 ×5 ×15	6 ×4 ×15
BB30-1K-K	BB30-2GD 1K-K	8.0	3.1	2.0	—	—	—	—
BB30-2K-K	—				6.0	2.0	8 ×5 ×16	6 ×4 ×16
BB35-1K-K	BB35-2GD 1K-K	10.0	3.7	2.4	—	—	—	—
BB35-2K-K	—				8.0	2.5	10 ×6 ×17	8 ×5 ×17
BB40-1K-K	BB40-2GD 1K-K	12.0	5.0	3.3	—	—	—	—
BB40-2K-K	—				10.0	3.0	12 ×8 ×22	10 ×6 ×22

注意：用于BB25-1K-K、BB25-2K-K 和 BB25-2GD 1K-K 的 t2 尺寸比 DIN 6885. 3 标准浅 0,5 mm。在加工轴上键槽的时候，使它深 0,5 mm，以使用 DIN 标准键。所有其它型号的产品，其尺寸可以与同行业产品互换。

Note: used for BB25-1k-k
The t2 size of BB25-2k-k and BB25-2GD 1k-k will be less 0.5mm than that of DIN 6885.3. When process key slot of shaft, make it 0.5mm deeper in order to use DIN standard key. All other type products, its size may be exchanged by same industry product.

楔块式单向离合器GFK系列

Sprag freewheels GFK series



特性

GFK 型号为楔块式单向离合器，外型尺寸与 59 系列轴承相同。

此型设计特点为在最小外径尺寸获得最大扭力。

内含黄油润滑及轴承支撑。

若要得到较好润滑效果而使用浸入油中的润滑方式，可以使用适当的方法，去除内含黄油，再安装入油池中使用。

不论何种油脂润滑方式，安装时均需外加油封以得较佳的效果，请参考下页安装范例。

以确保扭力之传输问题，必须以紧配方式安装，外圈与机壁为 R6 公差，内圈志工作轴心为 P5 公差。

此重负荷紧配所产生的内缩小尺寸，设计时已考虑在内。

工作温度范围-40℃～+100℃，瞬间高温可达+120℃。

Description

Type GFK is a sprag type freewheel integrated into a 59.. Series ball bearing.

This design provides high torque capacity for minimal outside diameter.

It is bearing supported type, delivered grease lubricated.

Oil bath lubrication is also possible if the original grease is first removed by flushing the freewheel with a suitable solvent.

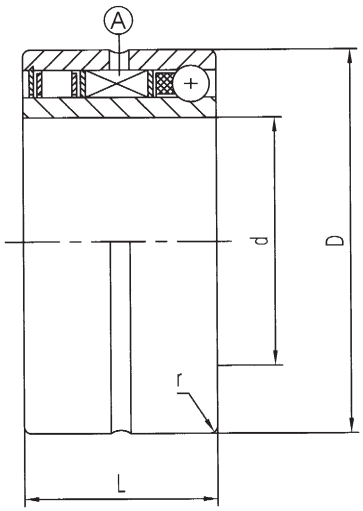
Whatever the lubrication type, seals should be provided, as illustrated on the next page.

Torque transmission must be ensured by a press fit assembly into a rigid outer housing with R6 tolerance and onto a shaft with p5 tolerance.

Initial radial clearance has been provided to take into account this heavy press fit.

Operating temperature range: -40℃ to +100℃. Peaks up to +120℃ are acceptable for short periods. Please contact us for higher temperatures.

单向离合器 One way clutch



型号 Type	尺寸 Size	超运转速度 Overrunning speeds			轴承系列 Bearing series	负荷 loads							重量 Weight
						滚柱 Rollers dyn.	滚珠 Balls dyn.	滚柱 Pollers stat.	滚珠 Balls stat.				
GFK	d [mm]	TKN[1] [Nm]	nmax[2] [min^{-1}]	nmax[3] [min^{-1}]		C [N]	C [N]	Co [N]	Co [N]	D [mm]	L [mm]	r [mm]	[kg]
	20	51	5,500	4,000	5904	5,600	4,400	2,900	2,750	37	23	0.5	0.09
	25	65	5,300	3,800	5905	6,300	5,300	3,450	3,350	42	23	0.5	0.11
	30	95	5,000	3,500	5906	7,700	5,500	4,600	3,650	47	23	0.5	0.13
	35	204	4,600	3,200	5907	8,200	8,500	5,200	5,700	55	27	1	0.20
	40	315	4,200	3,000	5908	8,650	8,300	5,750	5,700	62	30	1	0.30
	45	370	3,800	2,500	5909	9,200	9,650	6,350	7,200	68	30	1	0.34
	50	460	3,400	2,200	5910	9,650	10,000	6,950	7,800	72	30	1	0.36

备注事项

1)C_{max}=2.5 x T_{KN}

2)内圈超运转速度。

3)外圈超运转速度。

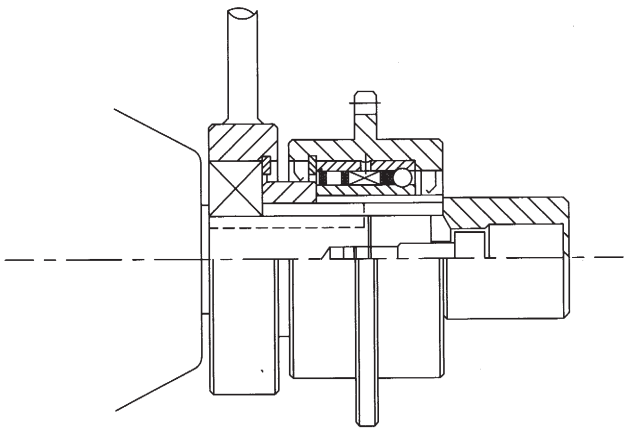
Notes

1) C_{max}=2.5 x T_{KN}

2) Inner race overruns

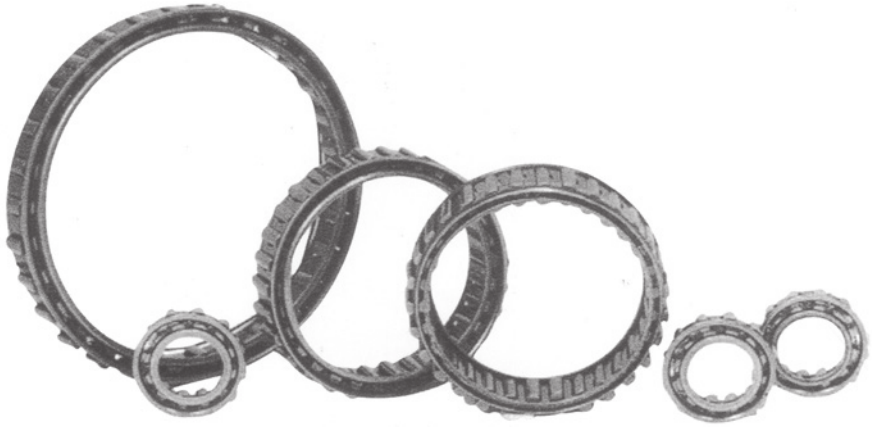
3) Outer race overruns

安装参考范例 Mounting example



楔块式单向离合器DC系列

Sprag freewheels DC series



特性

DC 型号为楔块保持器单向离合器但不含内圈与外圈。

此型号必须配合客户之自行设计的内圈及外圈，轴承支撑轴向及径向的负截，与润滑油脂及油封。

楔块接触面之空间公差必需在范围内。外圈与内圈之接触面的宽度不可小於尺寸"e"，接触面不可有任何沟槽以确保功能正常。

原厂可提供标准型式的内圈与外圈。

若自行制造经硬化处理过的钢制轴心及工件机壁直接套入，请参考以下之表面硬度规格。

研磨加工处理过的接触面硬度为 HRC60～62 硬化深度须大於 0.6 mm。

接触面之内部硬度为 HRC35～45，接触面之表面光滑度须小於 22CLA，接触面可接受之最大歪斜度为 25mm 宽度内 0.007mm 之歪斜度。

Description

Type DC is a sprag type freewheel cage without inner or outer races.

It must be installed in a design providing races, bearing support for axial and radial loads, lubrication and sealing.

The sprag space tolerance must not be exceeded. Inner and outer races must both have a minimum plain width "e", without any recess, to ensure the freewheel functions correctly as shown on following pages.

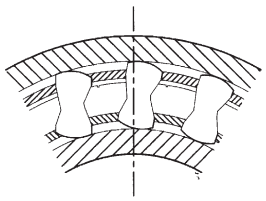
We can offer standard linnet and outer races, as shown on the following pages.

Alternatively, races can be made in case hardened steel shafts, or housings, to the specification below.

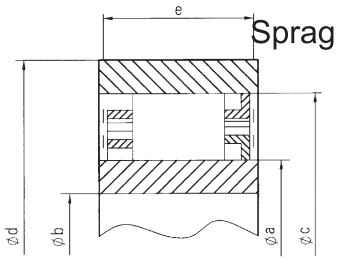
Surface hardness of the finished pargt should be HRC 60 to 62, for a depth of 0,6 mm minimum.

Core hardness to be HRC35 to 45.Surface roughness not to exceed 22CLA.Maximum taper between races: 0.007mm for 25mm width.

DC系列单向离合器



Sprag freewheeis dc series



尺寸 Size		极限速度 Overrunning speeds		模块空间 Sprag space						Number of dips	Number of sprage	重量 Weight
	T_{KN} [Nm]	N_{imax} [min⁻¹]	N_{amax} [min⁻¹]	øa $^{+0.008}_{-0.005}$ [mm]	øc $^{\pm 0.013}$ [mm]	[mm]	e_{min} [mm]	$ød_{min}$ [mm]	$øb_{min}$ [mm]			[kg]
DC2222G-N	63	8600	4300	22,225	38,885	8,33 ± 0.075	10,0	50	15	–	12	0.030
DC2776-N	119	6900	3400	27,762	44,422	8,33 ± 0.075	13,5	58	18	–	14	0.055
DC3034-N	124	6300	3100	30,340	47,000	8,33 ± 0.075	13,5	62	20	–	14	0.060
DC3175(3C)-N	159	6000	3000	31,750	48,410	8,33 ± 0.075	13,5	63	21	3	16	0.060
DC3809A-N	275	5000	2500	38,092	54,752	8,33 ± 0.075	16,0	71	25	–	18	0.085
DC4127(3C)-N	224	4600	2300	41,275	57,935	8,33 ± 0.075	13,5	75	27	3	18	0.090
DC4445A-N	363	4300	2100	44,450	61,110	8,33 ± 0.1	16,0	79	29	–	20	0.095
DC4972(4C)-N	306	3800	1900	49,721	66,381	8,33 ± 0.1	13,5	86	33	4	22	0.100
DC5476A-N	525	3500	1700	54,765	71,425	8,33 ± 0.1	16,0	92	36	–	24	0.110
DC5476A(4C)-N	525	3500	1700	54,765	71,425	8,33 ± 0.1	16,0	92	36	4	24	0.130
DC5476B(4C)-N	769	3500	1700	54,765	71,425	8,33 ± 0.1	21,0	92	36	4	24	0.180
DC5476C(4C)-N	990	3500	1700	54,765	71,425	8,33 ± 0.1	25,4	92	36	4	24	0.200
DC5776A-N	604	3300	1600	57,760	74,420	8,33 ± 0.1	16,0	98	38	–	26	0.110
DC6334B-N	806	3000	1500	63,340	80,000	8,33 ± 0.1	21,0	104	42	–	26	0.175
DC7221(5C)-N	675	2600	1300	72,217	88,877	8,33 ± 0.1	13,5	115	48	5	30	0.140
DC7221B-N	1279	2600	1300	72,217	88,877	8,33 ± 0.1	21,0	115	48	–	30	0.185
DC7221B(5C)-N	1279	2600	1300	72,217	88,877	8,33 ± 0.1	21,0	115	48	5	30	0.210
DC7969C(5C)-N	2038	2400	1200	79,698	96,358	8,33 ± 0.1	25,4	124	53	5	34	0.280
DC8334C-N	2055	2300	1100	83,340	100,000	8,33 ± 0.1	25,4	132	55	–	34	0.270
DC8729A-N	1250	2200	1100	87,290	103,960	8,33 ± 0.1	16,0	134	58	–	34	0.165
DC10323A(5C)*-N	1612	1800	900	103,230**	119,891	8,33 ± 0.1	16,0	155	68	5	40	0.205
DC12334C*-N	4800	1500	750	123,340**	140,000	8,33 ± 0.1	25,4	184	80	–	50	0.400
DC12388C(11C)	4875	1500	750	123,881	142,880	9,50 ± 0.1	25,4	186	80	11	44	0.400

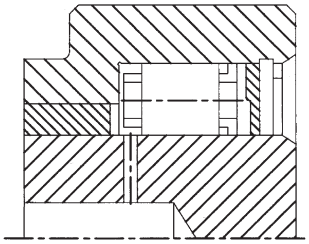
备注事项

1)T_{max}=2.5 x T_{KN}
2)内圈极限转速。
3)外圈极限转速。
**)公差加大为±0.013
可依客户规格定制，欢迎洽询
牵引弹簧和夹子数量可按要求生产

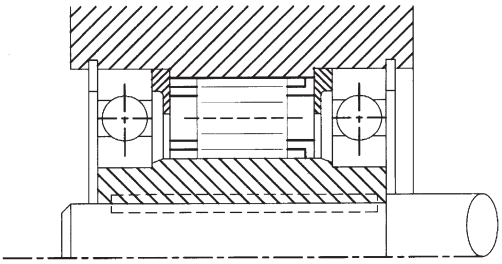
Notes

1) T_{max}=2.5 x T_{KN}
2) Inner race overruns
3) Outer race overruns
**)Extension of tolerance to ±0.013
Permissible
Other dimensions on request
No, of drag strip and clips may be produced on regnest

安装参考范例

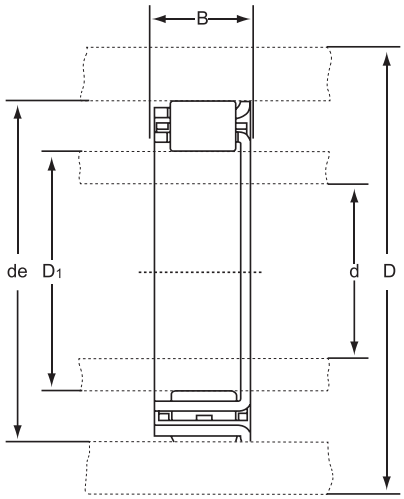


Mounting example



BWC、BW、X系列单向离合器

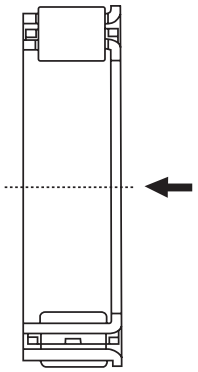
BWC、BW、X series one way clutch



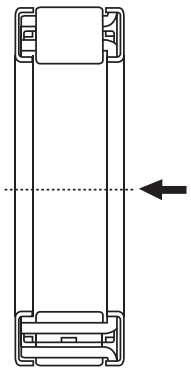
型号	内接圆轴径		外接圆轴径		最大宽度	额定阻距	
	D1	允许公差	de	允许公差	B	N.m	(kgf·m)
X–133818T	20.345	+0.008 –0.005	37.008	+0.008 –0.005	10.0	49	(5.0)
X–134939	22.225	–	38.887	± 0.013	10.0	75	(7.6)
BWC–13219A	27.762	–	44.425	–	13.5	139	(14.2)
BW–13252					19.1	233	(23.8)
X–135052	31.881	–	48.548	–	13.5	154	(15.7)
X–135014	37.317	–	53.980	–	12.0	185	(18.9)
X–133399					15.9	309	(31.5)
BW–13161	38.092	–	54.750	–	13.5	251	(25.6)
BWC–13230					15.9	323	(33.0)
X–135005	38.568	–	55.207	–	20.5	422	(43.0)
X–133400	40.485	–	57.150	–	22.3	534	(54.5)
BW–13244	41.275	–	57.937	–	13.5	212	(21.6)
X–135067					17.4	343	(35.0)
X–135041	44.450	–	61.112	–	13.5	226	(23.0)
X–135349	47.325	–	63.987	–	13.5	343	(35.0)
X–135036	47.408	–	64.075	–	22.3	667	(68.0)
X–134398	49.720	–	66.383	–	19.1	667	(68.0)

BWC、BW、X系列单向离合器

BWC、BW、X series cam one way clutch



图例一

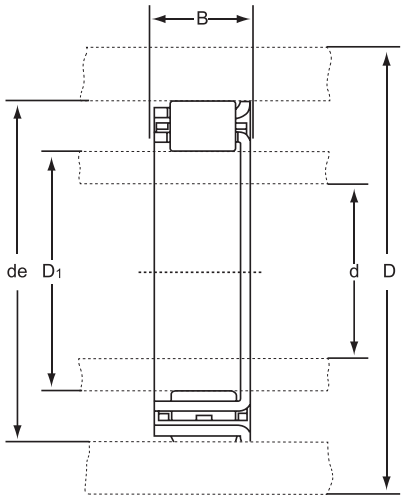


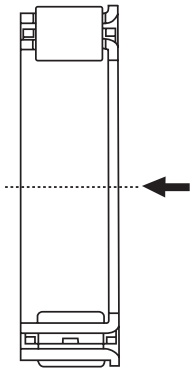
图例二

型号 Type d	内圈最大孔径 D	外圈最小孔径 D	楔块数 Number of sprags		方向	番号	辅助部品	重量 (g)
X–133818T	15.8	47.5	10	D	C	1	T	30
X–134939	17.2	50.1	12	D	C	1	T	35
BWC–13219A	21.5	56.9	14	E	CC	1	T	60
BW–13252				E	C	1	T	90
X–135052	24.6	62.0	16	D	C	1	CL	65
X–135014	28.9	69.1	18	E	C	1	CL	65
X–133399			18	E	C	1		90
BW–13161	29.5	70.1	18	E	C	1		75
BWC–13230				D	CC	1	T.ST	90
X–135005	30.9	70.7	18	D	C	1	CL.ST	110
X–133400	32.4	71.5	18	E	C	1		135
BW–13244	33.0	72.5	14	D	C	1	CL.ST	75
X–135067			18	D	C	1	T	105
X–135041	35.5	76.4	20	E	C	2	EB.CL	100
X–135349	37.9	80.0	22	D	C	1		90
X–135036	37.9	80.1	22	E	C	1	CL.ST	150
X–134398	39.7	83.0	22	D	C	1	CL.ST	135

BWC、BW、X系列单向离合器

BWC、BW、X series cam one way clutch



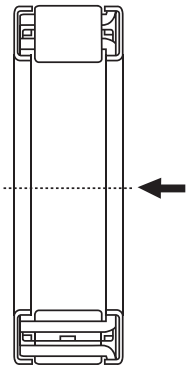


图例一

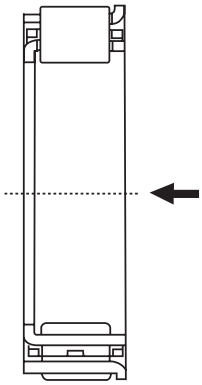
型号 Type	内接圆轴径		外接圆轴径		最大宽度	额定阻距	
	D_1	允许公差	de	允许公差	B	N.m	(kgf·m)
X–135006	54.572	+0.008 –0.005	71.211	± 0.013	20.5	799	(81.5)
BW–13231	54.765	–	71.427	–	13.5	402	(41.0)
BW–13214					15.9	363	(37.0)
BW–13167					15.9	569	(58.0)
BW–13209	57.760	–	74.427	–	13.5	554	(56.5)
BWC–13239B					15.9	711	(72.5)
BW–13238					21.0	1 050	(107)
X–133401	59.538	–	76.200	–	25.4	1 350	(138)
BW–13243	72.217	–	88.882	–	13.5	637	(65.0)
BWC–13168					21.0	1 510	(154)
BWC–13229					21.6	1 325	(135)
BW–13255					26.7	1 920	(196)
X–133614C	83.596	± 0.013	102.555	–	25.4	3 040	(310)
X–133402	85.776	–	104.775	–	25.4	3 090	(315)
BWC–13251	103.231	–	119.944	–	15.4	789	(80.5)
BWC–13261					15.4	1 580	(161)
BWC–13236	117.391	–	136.391	–	16	1 994	(204)
X–133639	103.231	–	122.230	–	25.4	4 410	(450)
X–133403	123.881	–	142.880	–	25.4	5 740	(585)

BWC、BW、X系列单向离合器

BWC、BW、X series cam one way clutch



图例二

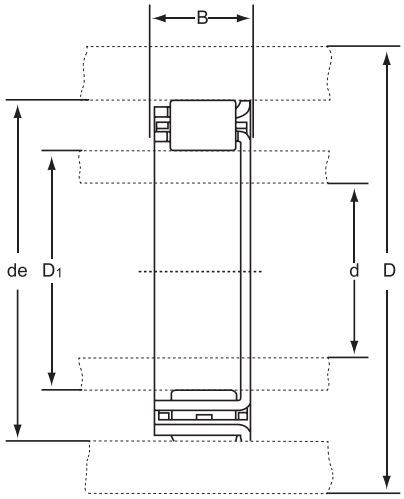


图例三

型号 Type d	内圈最大孔径 D	外圈最小孔径 D	楔块数 Number of sprags		方向	番号	辅助部品	重量 (g)
X–135006	43.6	89.1	24	D	C	1	CL.ST	60
BW–13231	43.8	89.3	20	D	C	1	T.ST	95
BW–13214			14	D	C	1	T.ST	105
BW–13167			22	E	C	1		120
BW–13209	46.2	93.1	26	D	C	1	T.ST	105
BWC–13239B			26	D	CC	1	CL.ST	125
BW–13238			26	E	C	1		175
X–133401	47.6	95.3	26	E	C	1		220
BW–13243	57.7	111	24	D	C	1	CL.ST	120
BWC–13168			30	E	CC	1		210
BWC–13229			30	E	CC	2	EB	190
BW–13255			30	D	C	1	CL.ST	255
X–133614C	66.7	128	34	E	C	1	CL.	350
X–133402	68.6	131	34	E	C	1		350
BWC–13251	82.5	150	18	D	CC	1	CL.ST	180
BWC–13261			36	D	CC	3	CL.ST	200
BWC–13236	91.4	175.3	30	E	C	3	CL.ST	250
X–133639	82.5	153	40	E	C	1	CL.ST	410
X–133403	99.1	179	44	E	C	1		480

BWC、BW、X系列单向离合器

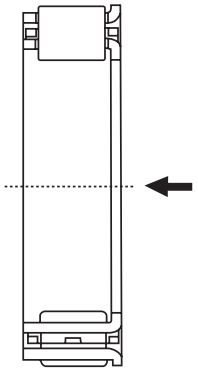
BWC、BW、X series cam one way clutch



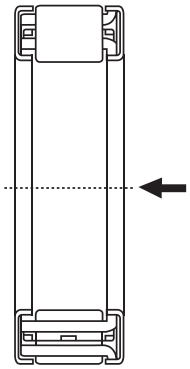
型号 Type	内接圆轴径		外接圆轴径		最大宽度	额定阻距	
	D_1	允许公差	de	允许公差	B	N.m	(kgf·m)
X–134935B	27.762	+0.008 –0.005	44.425	± 0.013	13.5	139	(14.2)
X–133399M	37.317	–	53.980	–	15.9	309	(31.5)
BWC–13230M	38.092	–	54.750	–	15.9	323	(33.0)
X–133400M	40.485	–	57.150	–	22.3	534	(54.5)
X–133401M	59.535	–	76.200	–	25.4	1 350	(138)
X–134908C	72.217	–	88.882	–	21.0	1 430	(146)
X–134944					21.0	1 430	(146)
X–134943					26.7	1 920	(196)
X–133614M	83.596	± 0.013	102.555	–	25.4	3 040	(310)
X–137032					25.4	2 680	(273)
X–133402M	85.776	–	104.775	–	25.4	3 090	(315)
X–134951	103.231	–	122.230	–	25.4	3 970	(405)
X–133639M					25.4	4 410	(450)
X–134954	121.530	–	140.530	–	30.0	5 380	(549)
X–135708	121.570	–	140.53	–	35.0	6 280	(640)
X–133403M	123.881	–	142.880	–	25.4	5 740	(585)
CL 42081	49.470	–	68.520	–	32.0	1 356	(138)
CL 42878	54.780	–	73.750	–	23.0	1 050	(107)
CL 42082	72.230	–	91.220	–	32.0	2 983	(304)
CL 42084	107.660	–	133.180	–	33.0	5 420	(553)

BWC、BW、X系列单向离合器

BWC、BW、X series cam one way clutch



图例一

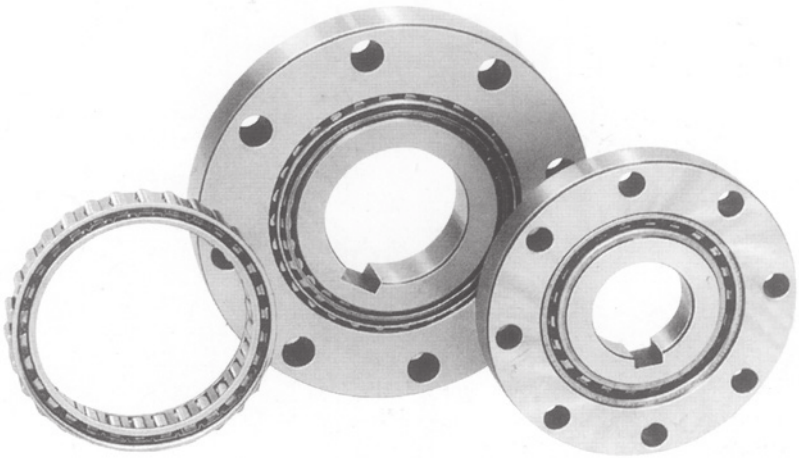


图例二

型号 Type d	内圈最大孔径 D	外圈最小孔径 D	楔块数 Number of sprags		方向	番号	辅助部品	重量 (g)
X–134935B	21.5	56.9	14	E	CC	1	CL.ST	60
X–133399M	28.9	69.1	18	E	C	1		90
BWC–13230M	29.5	70.1	18	D	CC	1	T.ST	90
X–133400M	32.4	71.5	18	E	C	1		135
X–133401M	47.6	95.3	26	E	C	1		220
X–134908C	57.7	111	30	E	CC	1	CL.ST	200
X–134944			30	E	CC	2	CL	260
X–134943			30	E	C	2	CL	330
X–133614M	66.7	128	34	E	C	1	CL	340
X–137032			30	E	C	2	CL	450
X–133402M	68.6	131	34	E	C	1		350
X–134951	82.5	153	36	E	C	2	CL	550
X–133639M			40	E	C	1	CL.ST	410
X–134954	97.2	176	42	E	C	2	CL	730
X–135708	97.2	176	42	E	C	2	CL	852
X–133403M	99.1	179	44	E	C	1		480
CL 42081	33	86	24	–	–	–	–	287.6
CL 42878	43.8	93	26	–	–	–	–	225.4
CL 42082	72.23	91.22	33	–	–	–	–	384.2
CL 42084	107.66	133.18	40	–	–	–	–	754.3

楔块式单向离合器DC,外圈，内圈

Sprag freewheels DC cage and race series



特性

DC 内圈、外圈工厂均有供应，以配合前页之 DC 系列楔块式单向离合器组合使用。

楔块式单向离合器与内外圈组合，构成一个无轴承支撑的单向离合器。

须以轴承支撑轴向与径向的负载。并提供润滑油脂与油封。

须注意如轴承公差及安装公差等所有工件之组合公差，必须维持楔块接触面之空间公差在范围内。

内外圈之间的圆锥度须小於 25mm 宽度内 0.007mm。

为避免安装压入时产生变形，外圈 B.A 二种型号须事先以紧配方式压入工件机壁。

键的最大应力必须核算，若外圈 A 型号与内圈 G 型号组合之单向离合器须传输最大扭力，请与本厂技术部门联络。

Description

DC races are offered for use with the DC freewheel cages shown on the previous pages.

The cage and race assembly, makes a non bearing supported freewheel.

Bearing support for axial and radial loads must be provided, along with lubrication and sealing.

The sprag space tolerance must not be exceeded when all bearing clearances and mounting tolerances are considered. (see table page 53).

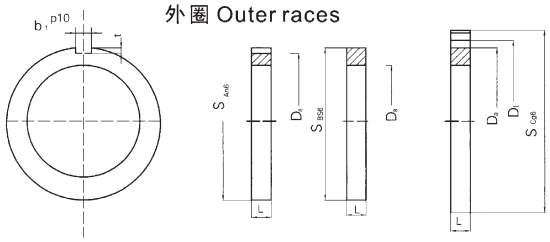
Taper between races should be below 0.007mm for 25mm width.

Outer races type A and B should be pressed into housings that will not deform after assembly.

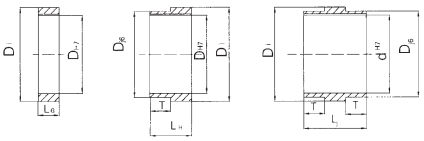
Please contact our technical department if you need to transmit maximum freewheel torque capacity with A and G type.-Key stresses may have to be checked.

单向离合器 One way clutch

外圈 Outer races



内圈 Inner races

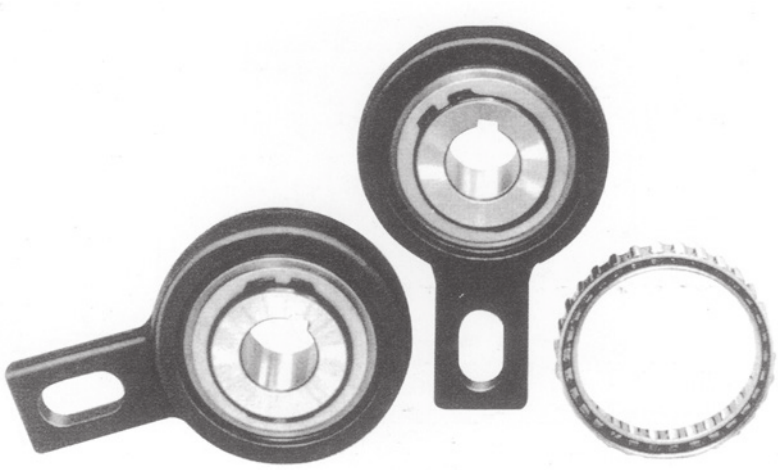


A B C G H J

型号 Type	尺寸 Size																固定螺丝数量 number of bores × ϕ	配合DC型 Corresponding DC type
	d^{H7} [mm]	L_G [mm]	L_H [mm]	L_J [mm]	D_{J6} [mm]	T [mm]	D_i $^{+0.008}_{-0.005}$ [mm]	L [mm]	S_{An6} [mm]	b_1^{p10} [mm]	t [mm]	S_{Bs6} [mm]	S_{Cg6} [mm]	$DL^{\pm 0.1}$		$Da^{\pm 0.013}$ [mm]		
DC 230A								16	72	6	3.5					54,752		DC 3809A
DC 230B								16				72				54,752		
DC 230C								16					95	78	8×7	54,752		
DC 230 G-10	10	16					38,092											
DC 230 G-15	15	16					38,092											
DC 230 G-20	20	16					38,092											
DC 230 H-10	10		33		35	17	38,092											
DC 230 H-15	15		33		35	17	38,092											
DC 230 H-20	20		33		35	17	38,092											
DC 230 J-10	10			50	35	17	38,092											
DC 230 J-15	15			50	35	17	38,092											
DC 230 J-20	20			50	35	17	38,092											
DC 167A								16	90	10	5					71,425		DC 5476A DC 5476(4C)
DC 167B								16				90				71,425		
DC 167C								16					110	95	8×9	71,425		
DC 167 G-25	25	16					54,765											
DC 167 G-30	30	16					54,765											
DC 167 G-35	35	16					54,765											
DC 167 H-25	25		35		50	19	54,765											
DC 167 H-30	30		35		50	19	54,765											
DC 167 H-35	35		35		50	19	54,765											
DC 167 J-25	25			54	50	19	54,765											
DC 167 J-30	30			54	50	19	54,765											
DC 167 J-35	35			54	50	19	54,765											
DC 168A								21	110	14	5.5					88,877		DC7221(5C) DC7221B DC7221B(5C)
DC 168B								21				110				88,877		
DC 168C								21					140	120	8×11	88,877		
DC 168 G-40	40	21					72,217											
DC 168 G-45	45	21					72,217											
DC 168 G-50	50	21					72,217											
DC 168 H-40	40		42		65	21	72,217											
DC 168 H-45	45		42		65	21	72,217											
DC 168 H-50	50		42		65	21	72,217											
DC 168 J-40	40			63	65	21	72,217											
DC 168 J-45	45			63	65	21	72,217											
DC 168 J-50	50			63	65	21	72,217											
DC 235 A								16	150	20	7.5					119,891		DC10323(3C)
DC 235 B								16				150				119,891		
DC 235 C								16					190	170	8×11	119,891		
DC 235 G-55	55	16					103,231											
DC 235 G-60	60	16					103,231											
DC 235 G-70	75	16					103,231											
DC 235 H-55	55		43		100	27	103,231											
DC 235 H-60	60		43		100	27	103,231											
DC 235 H-70	75		43		100	27	103,231											
DC 235 J-55	55			70	100	27	103,231											
DC 235 J-60	60			70	100	27	103,231											

楔块式单向离合器RSBW系列

Sprag freewheels RSBW series



特性

型号 RSBW 为 DC 楔块式单向离合器。内含油封及轴承支撑，使用平面(滑动)轴承支撑并定位，适用于低运转速度，油封使用有框架包覆保护之 O 型环。

出厂时已加注润滑脂，可立刻安装于垂直或水平方向之位置。

主要应用于防止逆转，此型号特点为在最小的空间内提供较大扭力，此型设计可适用于严苛环境需求，例如高度潮湿环境，或有水溅洒之区域。

扭力臂之槽沟用螺丝固定于机壁，以提供力量防止逆转，螺丝与扭力臂沟槽之间隙为沟槽之 1％宽度，扫力臂与轴承安装后绝不可有内应力存在，(安装时螺丝不可将扭力臂轴向的锁住，径向亦留有间隙，即不会有弯曲应力施加于轴承及扭力臂上)。

Description

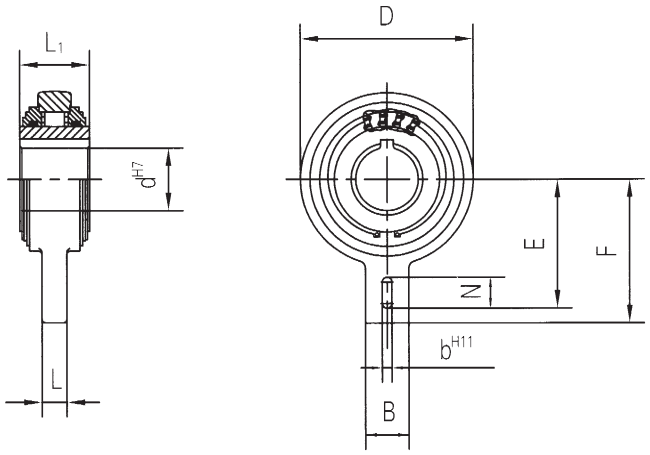
Type RSBW is a DC sprag type freewheel. It is self contained, centered by plain bearings for low rotational speeds and sealed using shield protected O-Rings.

Unit is delivered grease lubricated ready for installation in either a horizontal or vertical position.

Primarily used as a backstop. this type provides a
high torque capacity with a minimum space requirement. The design allows installation in difficult environments such as high humidity or water splash areas.

A bolt, secured to a fixed part of the machine and passing through the slot in the torque arm, provides the rotational stop. Radial clearance on this bolt should be equal to 1％ of the slot width。The torque arm and the bearings must not be prestressed.

单向离合器 One way clutch

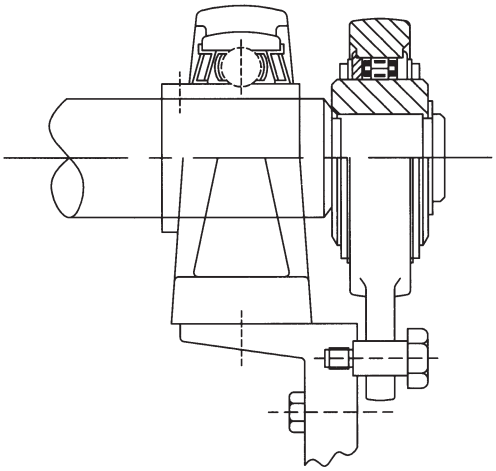


型号 Type	尺寸 Size	超运转速度 Overrunning speed										重量 Weight
	d^{H7} [mm]	TKN[1)] [Nm]	n_{imax} [min^{-1}]	D [mm]	L_1 [mm]	F [mm]	E [mm]	B [mm]	N [mm]	L [mm]	b^{H11} [mm]	[kg]
RSBW	20	300	400	106	35	113	102.5	40	35	15	18	2.0
	25	485	400	106	48	113	102.5	40	35	15	18	2.6
	30	485	400	106	48	113	102.5	40	35	15	18	2.5
	35	300	400	106	35	113	102.5	40	35	15	18	2.0
	35	485	400	106	48	113	102.5	40	35	15	18	2.4
	40	1,035	300	132	52	125	115	60	35	15	18	4.6
	45	1,035	300	132	52	125	115	60	35	15	18	4.5
	50	1,035	300	132	52	125	115	60	35	15	18	4.5
	55	1,035	300	132	52	125	115	60	35	15	18	4.4
	60	2,040	250	161	54	140	130	70	35	15	18	6.5
	70	2,040	250	161	54	140	130	70	35	15	18	6.4
	80	3,900	200	190	70	165	150	70	45	20	25	9.9
	90	3,900	200	190	70	165	150	70	45	20	25	9.8

备注事项
1)$T_{max}=2.5 \times T_{KN}$
键槽规格为 DIN 6885.1

Notes
1) $T_{max}=2.5 \times T_{KN}$
Keyway to DIN 6885.1

安装参考范例 Mounting example



AV系列滚柱式单向离合器

AV series miler overrunning clutch



型号AV为滚柱型单向离合器，内含轴承支撑及油封，使用滑动轴承支撑并定位，适用於低运转速度，油封使用有框架包保护三金属迷宫式密封。

出厂时已加注润滑油脂，可立刻安装於垂直成水平方位置。主要应用于防止逆运转，在最小的空间内提供较大的扭力，此系列设计适用于较严苛之环境需求条件。

扭力臂之槽用螺丝固定于机壁以提供力量防止逆转，螺丝与扭力臂沟槽之间隙为沟槽之1–3%宽度，扭力臂与轴承安装后绝不可有内应力存在。

此滚柱型AV系列为针对轻系列送料装置需求而设计的。

Type AV is a roller type freewheel. It is self–contained, centered by plain bearings for low rotational speeds, and sealed using shield protected metallic labyrinth seals

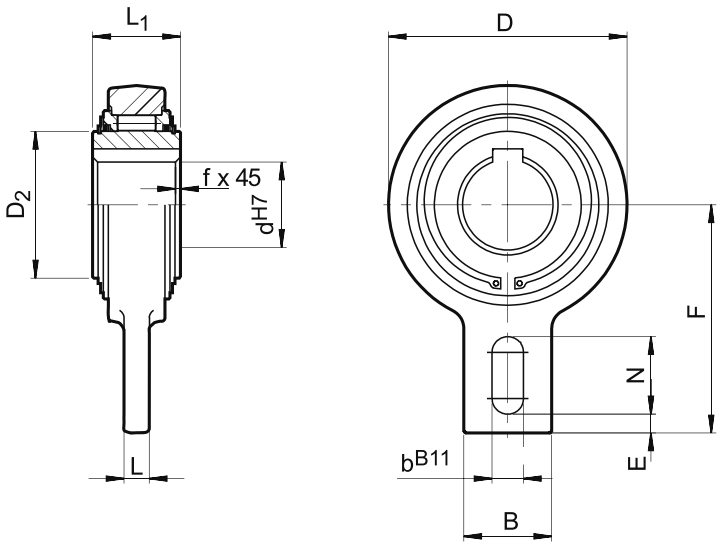
Unit is delivered grease lubricated, ready to install in a horizontal or vertical position. Primarily used as a backstop, the torque capacity is high for a minimum space requirement. This design is suitable for use in difficult environments. A bolt, secured to a fixed part of the machine and passing through the slot in the torque arm, provides the rotational stop. Radial clearance on this bolt should be equal to 1–3 % of the slot width.

The torque arm and the bearings must not be prestressed. The roller design makes the AV type ideal for light indexing applications.

AV系列滚柱式单向离合器

AV series miler overrunning clutch

AV



型号 Type	尺寸 Size		超越速度 Overrunning speed											重量 Weight	空转扭矩 Drag torque
	d^{H7} [mm]	T_{KN} 1) [Nm]	n_{imax} [min⁻¹]	D [mm]	D_2 [mm]	L_1 [mm]	L [mm]	B [mm]	F [mm]	b^{B11} [mm]	N [mm]	E [mm]	f [mm]	[kg]	T_R [Ncm]
AV	20	265	450	83	42	35	12	40	90	15	35	5	0,8	1,3	18
	25	265	450	83	42	35	12	40	90	15	35	5	0,8	1,3	18
	30	1200	320	118	60	54	15	40	110	15	35	8	1	3,5	130
	35	1200	320	118	60	54	15	40	110	15	35	8	1	3,4	130
	40	1200	320	118	60	54	15	40	110	15	35	8	1	3,3	130
	45	2150	280	155	90	54	20	80	140	18	47	10	1	5,5	240
	50	2150	280	155	90	54	20	80	140	18	47	10	1	5,4	240
	55	2150	280	155	90	54	20	80	140	18	47	10	1	5,3	240
	60	2150	280	155	90	54	20	80	140	18	47	10	1	5,2	240
	70	2150	280	155	90	54	20	80	140	18	47	10	1	5,0	240
	80	2900	200	190	110	64	20	80	155	20	40	10	1,5	8,7	360
	90*	7125	150	260	160	90	25	120	220	–	–	–	3	24,5	360
	100*	7125	150	260	160	90	25	120	220	–	–	–	3	23,5	360
	110*	7125	150	260	160	90	25	120	220	–	–	–	3	22,5	360
	120*	11000	130	300	180	110	30	140	260	–	–	–	3	42	600

备注

1）$T_{最大}$ = 2 x T_{KN}　键槽DIN 6885.1

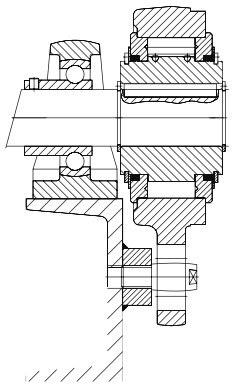
2）为二键槽，夹角为120°

NOTES

1) T_{max} = 2 x T_{KN} Keyway to DIN 6885.1

2)2 Keyways 120°　offset

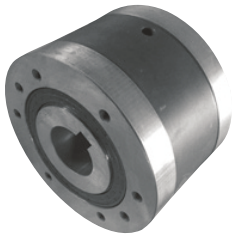
按装参考范例
MOUNTING EXAMPLES

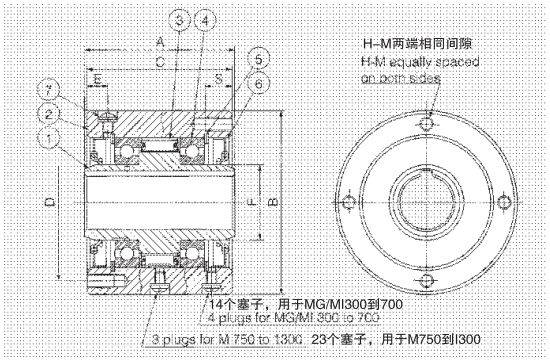


MG，MI系列凸轮离合器　　MG，MI SERIES CAM CLUTCH

■型号MG300到MG1300/M I300到MI1300
■MODELS MG300 TO MG1300/MI300 TO MI1300

用于常规的应用场合
For General Applications





(1)内侧
(2)外圈
(3)凸轮架组件
(4)轴承
(5)止动环
(6)油封
(7)润滑注入塞

①Inner race
②Outer race
③Cam cage assembly
④Bearing
⑤Spirolox
⑥Oil seal
⑦Lubrication filler plug

尺寸和性能

型号	最大扭矩 (N・m)	空转摩擦扭距 (N・m)	最大空转速度 (r/min)		最大分度频率（循环次数 / 分钟）	备用孔的尺寸		A	B (h7)	C	D	E	F	G	锥孔的 H–M 数 × 尺寸 × 节距	润滑注入塞的尺寸 × 节距	油 (cc)	重量 (kg)
			Inner Race	Outer Race		Dia. (H7)	Keyway											
MG 300 MI 300	314	0.225 0.304	2,800 50	900 –	– 300	19	5×2	63	77	60	66	10.4	28.5	13	4×M 6×P1.0	M 6×P1.0	25 50	1.8
MG 400 MI 400	539	0.284 0.372	2,600 50	800 –	– 300	22	5×2	70	88	67	73	10.7	31.7	16	4×M 8×P1.25	M 6×P1.0	30 60	2.7
MG 500 MI 500	1,620	0.510 0.676	2,400 50	800 –	– 300	31.5	7×3	89	108	86	92	12.3	44.4	16	4×M 8×P1.25	M 6×P1.0	50 100	5.0
MG 600 MI 600	3,140	0.843 1.55	2,100 30	700 –	– 300	50	12×3.5	95	136	92	120	12.8	69.8	16	6×M 8×P1.25	M 6×P1.0	80 160	8.6
MG 700 MI 700	5,880	1.70 2.63	1,500 30	500 –	– 300	70	18×6	127	180	124	160	19.8	101.5	20	6×M10×P1.5	M 6×P1.0	135 260	19.5
MG 750 MI 750	9,510	3.43 4.12	1,800 30	600 –	– 300	85	24×6	153	200	150	175	75	110	25	8×M14×P2.0	M 8×P1.25	400 800	37.0
MG 800 MI 800	17,600	5.39 8.33	1,300 20	475 –	– 300	110	28×7	158	250	155	220	77.5	140	25	8×M16×P2.0	M 8×P1.25	500 1000	46.5
MG 900 MI 900	24,500	6.76 9.41	1,200 20	400 –	– 300	135	35×9	165	300	160	265	80	170	32	10×M16×P2.0	M 8×P1.25	620 1240	70.5
MG 1000 MI 1000	33,800	8.13 12.7	1,200 20	325 –	– 300	160	38×10	188	370	180	325	90	200	32	12×M16×P2.0	M 8×P1.25	850 1700	108.5
MG 1100 MI 1100	78,400	5.19 22.1	350 20	– –	– 150	185	45×14	260	470	250	415	125	260	40	12×M20×P2.5	M12×P1.75	2900 5800	250
MG 1200 MI 1200	95,100	17.6 27.5	300 20	– –	– 150	200	45×14	260	500	250	440	125	280	45	12×M24×P3.0	M12×P1.75	3000 6000	280
MG 1300 MI 1300	176,4000.	18.7 28.1	250 20	– –	– 150	250	56×17.5	280	600	260	530	130	340	50	12×M30×P3.5	M12×P1.75	3800 7600	410

安装和使用：

1、MG系列凸轮离合器用于高速内圈超越的应用场合，MI系列凸轮离合器用于分度应用的场合。

2、为了在离合器上安装带轮、齿轮或链轮，请把离合器插入装置的轮毂中，然后，把螺栓拧入（大压力）离合器端的锥孔内。轮毂的公差应当是JIS标准的H6或H7。见第66页上的安装图示。

3、建议采用的轴公差如下：

4、键应当符合JIS B1303–1959标准。然而，对于M750和以上型号产品，键已经附带。

5、只使用平键固定离合器，决不可使用锥键。

6、如果离合器承受冲击载荷，或者它被设计用于在全扭矩容量下使用，则最好使用经过硬化或淬火处理的键和轴。

7、在离合器键槽顶部和键的顶部之间允许有一个间隙，用于MG系列离合器的压力通风离合器内圈键槽上提供有压力通风孔。

8、在把离合器安装到轴上时，请将压力施加到内圈，决不可施加到外面。

9、轴向载荷应当由其它装置承担，而不要由凸轮离合器承担，而不要由凸轮离合器承担。

10、在中高速场合使用MG系列产品的时候，请注意发热情况。如果凸轮离合器外圈的温度升到70℃以上，则会缩短其使用寿命。在此情况下，请使用一个不同型号的产品，或者提供一个油槽，以便进行强制润滑。

11、发货时油没有封装进去。在使用之前，请加入适量的油。

12、在订购MG系列凸轮离合器MG 750型和艰上产品的时候，请告诉椿本公司您使用的超越速度。

型号	间隙
M 300,M 400	+0 到 –0.021
M 500,M 600	+0 到 –0.025
M 700	+0 到 –0.030
M 750,M 800	+0 到 –0.035
M 900,M 1000	+0 到 –0.040
M 1100,M 1200,M 1300	+0 到 –0.046

Installation and Usage

1.MG Series Cam Clutch is used for inner race overrunning applications.MI Series Cam clutch is used for indexing applications.

2.For attaching a pulley.a gear,or sprocket to the clutch,insert the clutch into the hub of the device,and screw the bolts(high tension)into the tapped holes on the clutch end. The tolerance bore of the hub should be H6 or H7 of JIS standard.See the installation illustration on page 70.

3.Recommended shaft tolerances are as follows:

4.The key should be in accordance with JIS B1301–1959.However,for M750 and above models a key is attached.

5.Use only a parallel key to secure the clutch.Never use a tapered key.

6.If the clutch receives shock loads or is designed for use at full torque capacity,it is better to use a hardened key and shaft.

7.Allow for a clearance between the top of the clutch keyway and the top of the key for pressure ventilation of the clutch in the case of MG Series.A pressure ventilation hole is provided on the keyway of the clutch inner race.

8.When mounting the clutch on a shaft,apply pressure to the inner race,but never to the outer race.

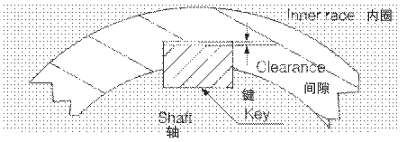
9.Thrust load should be taken up by other devices,not by the Cam Clutch.

10.When using MG Series at medium and high apeeds,pay attertion to heating.Longevity is shortened of the temperature of Cam Clutch outer race rises to over 70℃.In case of continuous over running Please contact Tubaki.In this case,use a different model or provide an oil bath or forced lubrication.

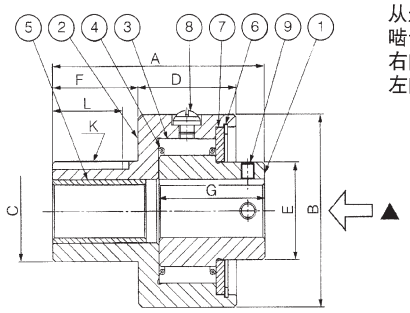
11.Oil is not sealed in at the time of shipment,Supply an appropriate amount of oil before use.

12.When placing an order for MG 750 and above,please inform TSUBAKI of the overrunning speed you use.

13.For vertical mounting.please consult TSUBAKI.

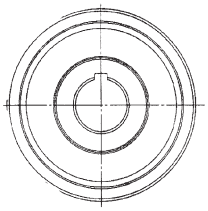


PB系列凸轮离合器　　PB series cam clutches



▲
从这一端看去决定内圈的啮合方向。
右向啮合（RH）
左向啮合（LH）

View from this point, the engaging direction of inner ring. Is decided.
Right direction engaging (RH)
Left direction engaging (LH)



(1) 内圈	(1)inner ring
(2) 外圈	(2)outer ring
(3) 凸轮	(3)cam
(4) 弹簧	(4)spring
(5) 衬套	(5)bush
(6) 止动环	(6)brake hoop
(7) 侧板	(7)side plate
(8) 润滑注入塞	(8)lubricating filling plug
(9) 固定螺丝	(9)fixed screw

尺寸和容量　　以 mm 为单位的尺寸

型号	最大扭矩 (N•m)	空转摩擦扭矩 (N•m)	最大空转速度 (r/min) 内圈	外圈	最大分度频率（循环次数/分钟）	轴孔 直径 (J7)	键槽	A	B	C (h7)	D	E	F	G	外圈键槽 K	L	重量 (kg)	润滑注入塞 尺寸 × 节距
PB 3	29.4	0.196	1,800	900	150	10	4 × 1.5	50	50	23	22	25	21	25.7	4 × 2.5	16	0.23	M6 × P1.0
PB 5	147	0.196	1,800	900	150	16	5 × 2.0	70	60	32	32	35	25	38.8	5 × 3.0	20	0.58	M6 × P1.0
PB 6	382	0.196	1,500	800	150	20	5 × 2.0	82	73	38	38	37	33	41.0	5 × 3.0	27	1.1	M6 × P1.0
PB 8	568	0.294	1,200	650	150	25	7 × 3.0	85	83	45	40	45	33	42.0	7 × 4.0	27	1.6	M6 × P1.0
PB 10	843	0.392	1,000	400	150	31.5	10 × 3.5	92	95	60	41	60	37	44.0	10 × 4.5	28	2.5	M6 × P1.0
PB 12	1530	0.392	800	300	150	40	10 × 3.5	100	113	65	50	66	37	52.6	10 × 4.5	29	3.6	M6 × P1.0
PB 14	2110	0.588	700	300	150	45	12 × 3.5	112	133	75	54	76	41	57.3	12 × 4.5	30	6.0	M6 × P1.0

安装和使用

1. 内圈和外圈的同心度由安装在外圈和轴之间的滑动轴承来保持。作用在外圈上的径向载荷也由该滑动轴承支撑。因此，轴必须延长到经过离合器的外圈一端。
2. 推荐使用的轴公差如下:

型号	公差（mm）
PB 3, PB 4,PB 6, PB 8	+0 to −0.013
PB 10, PB 12, PB 14	+0 to −0.016

3. 不要使用PB系列凸轮离合器作为联轴器。 在连接两根轴的时候,与一个弹性联轴器一起使用。
4. 规定从上图中箭头标记方向看上去,是右向(RH) 还是左向(LH)内圈啮合驱动。在试车之前,检查离合器的旋转是否正确。
5. 对于分度应用的场合,建议采用油润滑。
6. 要使用的键应当符合JIS B1301-1959标准。
7. 轴向载荷应当由其它装置来支撑，而不是由凸轮离合器来支撑。
8. 从动件孔，如离合器外圈上的链轮,应当满足JIS标准的H6或H7。

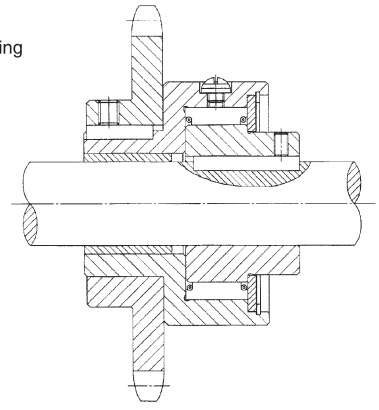
Installation and use:

1.The concentricity between inner and outer ring should be kept by sliding bearing which is installed in the middle of inner and outer ring. The radial load acted at outer ring should also be supported by sliding bearing. Therefore the shaft should be spread to outer ring end where the clutch is passed,
2.The shaft tolerance recommended use will be as follows:

Type	Tolerance
PB3, PB4, PB6, PB8	+0 TO ~0.013
PB10, PB12, PB14	+0 to ~ 0.016

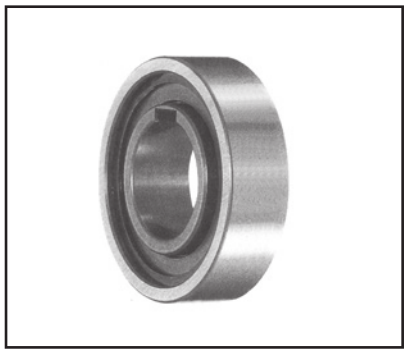
3.Don’t use PB series cam clutch as coupling. When connect two pieces of shaft with elastic coupling together.
4.View in the direction regulated in above Fig, whether it is right direction or left direction inner ring engaging movement, before debugging, check whether the rotary direction of clutch is correct.
5.For the fields of indexing application, it is suggested to use lubricating oil.
6.The key t be used should be in conformity with JIS B 1301–1959.
7.The axial load should be supported by other device and not by cam clutch itself.
8.The hole of follower, e.g. chainwheel at outer ring of clutch, should be in conformity with H6 or H7 in JIS,

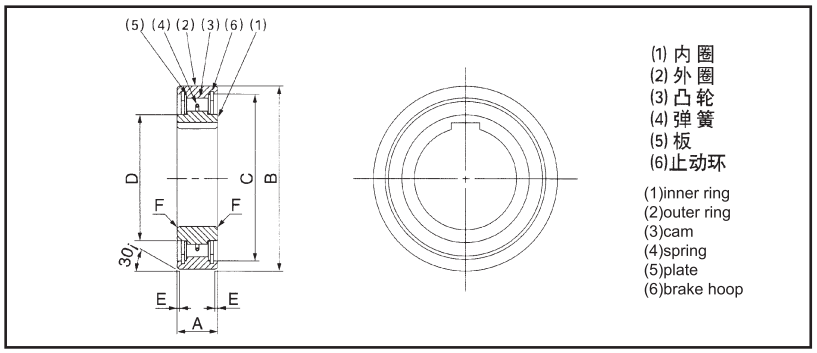
典型安装图
Typical installation drawing



TSS系列凸轮离合器

TSS series cam clutches





尺寸和容量

以 mm 为单位的尺寸

型号	扭矩容量 N•m	最大空转速度 内圈 r/min	最大空转速度 外圈 r/min	空转摩擦扭矩 N m	油孔 H7	键槽	A	B	C	D	E	F	重量 g
TSS 8	6.7	6000	3000	0.005	8	2×1.0	8	24	22.2	11.4	0.6	0.6	14
TSS10	12	4500	2300	0.007	10	3×1.4	9	30	27	15.6	0.6	0.6	27
TSS12	17	4000	2000	0.009	12	4×1.8	10	32	29.5	18	0.6	0.6	31
TSS15	22	3500	1800	0.01	15	5×1.2	11	35	32	20.6	0.6	0.6	39
TSS20	41	2600	1300	0.01	20	6×1.6	14	47	40	26.7	0.8	0.8	115
TSS25	56	2200	1100	0.02	25	8×2.0	15	52	45	32	0.8	0.8	140
TSS30	105	1800	900	0.03	30	8×2.0	16	62	55	40	0.8	1.0	215
TSS35	136	1600	800	0.03	35	10×2.4	17	72	63	45	0.8	1.0	300
TSS40	296	1400	700	0.18	40	12×2.2	18	80	72	50	0.8	1.0	425
TSS45	347	1300	650	0.21	45	14×2.1	19	85	75.5	57	1.2	1.0	495
TSS50	403	1200	600	0.22	50	14×2.1	20	90	82	62	1.2	1.0	545
TSS60	649	910	460	0.33	60	18×2.3	22	110	100	80	1.2	1.5	950

安装和使用

1.TSS系列凸轮离合器是按照压入配合的方式来设计的。必须确保表面尺寸的精确性，以获取最佳的使用效果。托架内表面尺寸应使用H7级公差。在安装时应参照下列第3条说明，并请参考BB系列凸轮离合器的使用方法。
2.请确保托架具有足够的强度以承受安装离合器时所需的压力。
3.当安装离合器时，应使用62型的轴承来装配以避免径向力作用，因为这类离合器内部没有任何轴承。
4.在安装前请先确认旋转方向是否正确。
5.轴的公差推荐使用H7级。
6.应根据贵公司的设计标准来选择合适的键表面压力。

润滑

1.推荐使用液态油润滑的方式。
2.请勿使用混有EP添加剂的润滑脂或润滑油。

Installation and use:

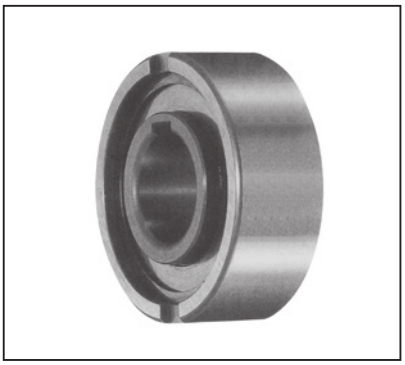
1. The design of TSS series cam clutch is used for press-fit installation. The correct interference size of outer must be held in order to get maximum clutch property. The inner diameter of casing should meet the requirement of H7 tolerance. About information of installation method, please refer to item 3 in installation and use of BB series cam clutch.
2. The casing should possess enough strength in order to bear the needed pressure when clutch is press-fit installation.
3. When install the clutch, use 62 type bearing to install it in order to avoid radial force. This is because there is not any bearing support at the clutch.
4. Confirm rotary direction before installation.
5. The shaft tolerance recommended use will be H7. Moreover the section plane of key should be in conformity with the following standards.
6. Choose suitable surface pressure of key in accordance with design standard of your company.

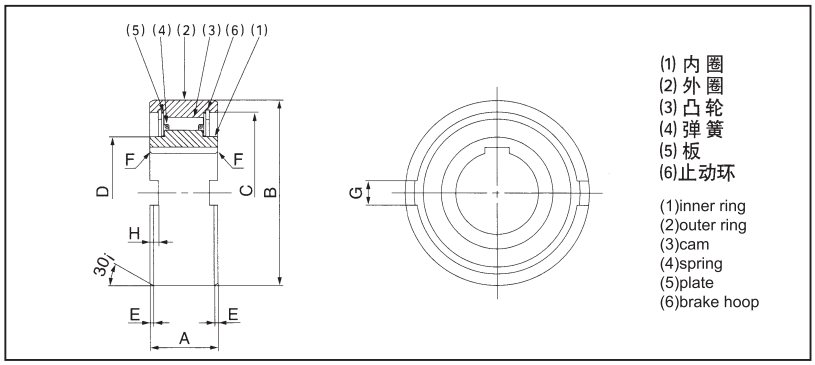
Lubrication:

4.It is suggested to use lubricating oil.
5.Don’t use lubricating grease or lubricating agent in which EP additives is added.

TFS系列凸轮离合器

TFS series cam clutches





尺寸和容量

以 mm 为单位的尺寸

型号	扭矩容量 N•m	最大空转速度 内圈 r/min	最大空转速度 外圈 r/min	空转摩擦扭矩 N·m	轴孔 H7	键槽	A	B	C	D	E	F	G	H	重量 g
TFS12	18	4500	2300	0.04	12	4×1.8	13	35	30	18	0.6	0.3	4	1.4	68
TFS15	28	3500	1800	0.06	15	5×1.2	18	42	36	22	0.8	0.3	5	1.8	120
TFS17	50	3200	1600	0.11	17	5×1.2	19	47	38	22	1.2	0.8	5	2.3	150
TFS20	84	2500	1300	0.18	20	6×1.6	21	52	45	27	1.2	0.8	6	2.3	220
TFS25	128	2000	1000	0.19	25	8×2.0	24	62	52	35	1.2	0.8	8	2.8	360
TFS30	200	1600	800	0.21	30	8×2.0	27	72	62	40	1.8	1.0	10	2.5	530
TFS35	475	1400	700	0.42	35	10×2.4	31	80	70	48	1.8	1.0	12	3.5	790
TFS40	607	1300	650	0.46	40	12×2.2	33	90	78	54.5	1.8	1.0	12	4.1	1050
TFS45	756	1100	550	0.56	45	14×2.1	36	100	85.3	59	1.8	1.0	14	4.6	1370
TFS50	1124	1000	500	0.60	50	14×2.1	40	110	92	65	1.8	1.0	14	5.6	1900
TFS60	1975	840	420	0.87	60	18×2.3	46	130	110	84	2.6	1.5	18	5.5	3110
TFS70	2514	750	380	0.91	70	20×2.7	51	150	125	91	2.6	1.5	20	6.9	4390
TFS80	3924	670	340	1.22	80	22×3.1	58	170	140	100	2.6	1.5	20	7.5	6440

安装和使用

1. TFS系列凸轮离合器的外圈设计用于和壳体进行压配安装。必须保持外圈正确的干涉尺寸，以获得最大的离合器性能。壳体内径应当满足H7公差要求。键槽应当做在离合器的端面上，以便进行正确的安装。 关于安装的方法的信息，请参看BB系列凸轮离合器安装和使用中的第三项 。如果壳体的内径公差为K6，则不要求键槽在离合器的端面上。
2. 一定要是壳体具有足够的强度，以承受离合器压配安装所需要的压力。
3. 在安装离合器的时候，用一个63型轴承安装它，以避免径向力，因为该离合器没有任何轴承支撑。
4. 应当通过是离合器沿离合器板所示箭头方向旋转的方式，把离合器安装到轴上。
5. 推荐使用的轴公差为H7，且键的剖面应当符合如下标准: TSS 12 ……缮DIN 6885.1
   TSS 15~80……缮DIN 6885.3
6. 应当按照您公司的设计标准，选择适当的键表面压力。

Installation and use:

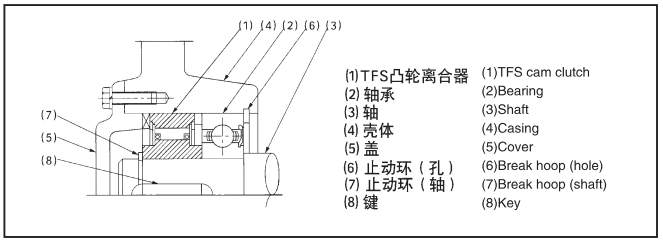
1. The design of outer ring of TFS series cam clutch is used for press-fit installation with casing. The correct interference size of outer must be held in order to get maximum clutch property. The inner diameter of casing should meet the requirement of H7 tolerance. The key slot should be at terminal surface of clutch in order to carry out installation correctly. About information of installation method, please refer to item 3 in installation and use of BB series cam clutch. If the tolerance of inner diameter of casing is k6, the requirement of key slot at terminal surface is not needed.
2. The casing should possess enough strength in order to bear the needed pressure when clutch is press-fit installation.
3. When install the clutch, use 63 type bearing to install it in order to avoid radial force. This is because there is not any bearing support at the clutch.
4. Install clutch onto shaft in accordance with rotary mode indicated by arrow direction of clutch along with clutch plate.
5. The shaft tolerance recommended use will be H7. Moreover the section plane of key should be in conformity with the following standards.
   TSS 12……DIN 6885.1
   TSS 15 ~ 18……DIN 6885.3
6. Choose suitable surface pressure of key in accordance with design standard of your company.

润滑：

1. 建议采用油润滑。
2. 不要使用带EP添加剂的润滑脂或润滑剂。

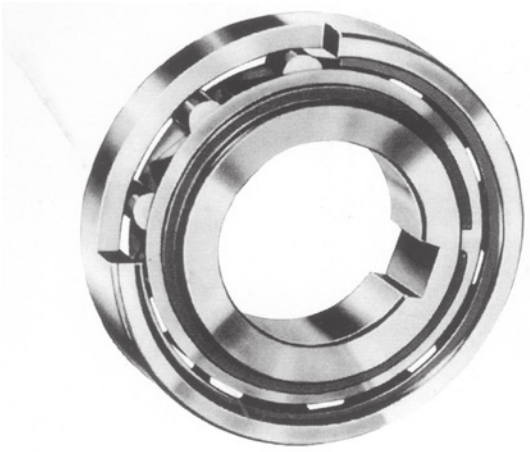
Lubrication:

1.It is suggested to use lubricating oil.
2.Don’t use lubricating grease or lubricating agent in which EP additives is added.



圆柱滚子单向离合器AS系列

Roller type owc AS series





特性

AS 系列是没有轴承支撑的滚柱型单向离合器。

安装时需要有轴承来承受径向及轴向载荷，并且要有润滑及密封。

外部名义尺寸与 62 系列球轴承相同。

这种轴承的典型使用就与一个具有相同定位公差的 62 系列轴承一起安装，如下页图所示。

离合器的内圈是用键固定在轴上(孔径6mm时除外)。

离合器外圈有 r6 等级的正公差，可以压入公差为 H7 的座孔。

外圈座必须有足够的强度，避免装配后变形。

内外的设计允许轴向有±S/2 的偏差。

Description

Type AS is a roller type freewheel non bearing supported.

Bearings are required to support axial and radial loads. Lubrication and sealing must also be provided by the installation.

Nominal outside dimensions are the same as series 62 ball bearings.

A typical arrangement is to install this type alongside a series 62 bearing, within the same location tolerance, as shown on the following page.

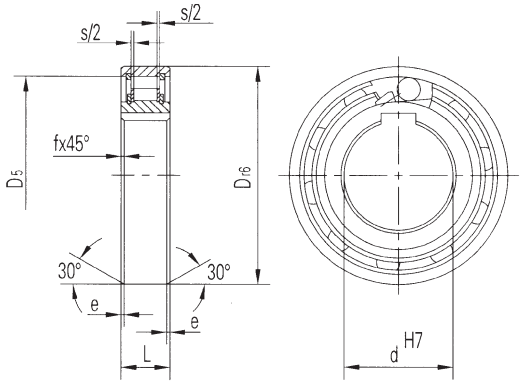
The inner race is keyed to the shaft (except 6 mm bore).

The outer race has a positive r6 tolerance to give a press fit in a H7 housing.

The outer housing must be strong enough to not expand after assembly.

The design can accept an axial mis-alignment of inner and outer race of ±S/2.

单向离合器 One way clutch



型号 Type	尺寸 Size	速度 speed									重量 Weight	摩擦力矩 Resistance torque
	d^{H7} [mm]	TKN[1] [Nm]	n_{imax}[2] [min^{-1}]	n_{amax}[3] [min^{-1}]	D_{r6} [mm]	D_5 [mm]	L [mm]	s [mm]	e [mm]	f [mm]	[kg]	T_R [Ncm]
AS (NSS)	6	1.7	5,000	7,500	19	15.8	6	0.8	0.6	0.3	0.01	0.18
	8	3.0	4,300	6,500	24	20	8	1.3	0.6	0.6	0.02	0.24
	10	5.4	3,500	5,200	30	25.9	9	1.3	0.6	0.6	0.03	0.36
	12	10	3,200	4,800	32	28	10	1.3	0.6	0.6	0.04	0.48
	15	11	2,800	4,300	35	31	11	1.4	0,6	0.6	0.05	0.70
	20	32	2,200	3,300	47	40	14	2.4	0,8	0.8	0.12	1.4
	25	45	1,900	2,900	52	45.9	15	2.4	0,8	0.8	0.14	2.4
	30	72	1,600	2,400	62	55	16	2.4	0,8	1	0.22	7.8
	35	114	1,300	2,000	72	64	17	2.5	0,8	1	0.31	9
	40	148	1,200	1,800	80	72	18	2.5	0,8	1	0.39	10
	45	174	1,000	1,600	85	77	19	2.5	1,2	1	0.44	11
	50	184	950	1,500	90	82	20	2.5	1,2	1	0.49	13
	55	246	800	1,300	100	90	21	2.5	1,2	1	0.66	14
	60	406	700	1,100	110	100	22	2.5	1,2	1.5	0.81	26
	80	850	600	900	140	128	26	2.5	1,2	1.5	1.41	58

备注:
AS6 无键槽.
AS8-12 键槽规格符合 DIN6885.1
其它型号键槽规格符合 DIN6885.3
1) Tmax=2.5×TKN

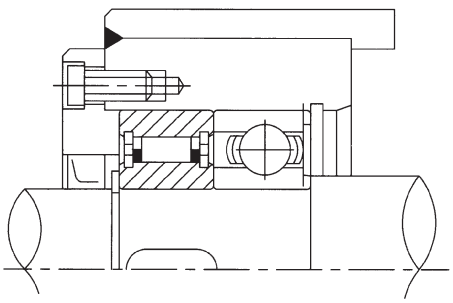
2) 内圈极限运转速度
3) 外圈极限运转速度.
安装尺寸根据 62 系列球轴承确定.

Notes:
AS6 without keyway.
AS8-12 keyway to DIN 6885.1
Other size to DIN 6885.3
1) Tmax=2.5×TKN

2) Inner race overruns
3) Outer race overruns
Mounting dimension are identical to ball bearings series 62.

安装参考范例

Mounting example



圆柱滚子单向离合器ASNU(NFS)系列

Roller type owc ASNU(NFS) series



特性

ASNU 系列是没有轴承支撑的滚柱型单向离合器。使用时需要有轴承来承受径向与轴向载荷，并且要有润滑及密封。

外径名义尺寸与 63 系列球轴承相同。

这种离合器的典型使用就是与一个具有相同定位公差的轴承一起安装,如下页图所示。

离合器的内圈用键固定在轴上，外圈有 n6 等级的正公差，可以压入公差等级为 H7 的座孔，传递正向扭矩时，外圈需要有凹槽。

如果座孔的公差等级是 K6，就不需要键槽，但外圈座必须有足够的强度，避免装配后变形。

内外圈的设计允许轴向有±S/2 的偏差。

Description

Type ASNU is a roller type freewheel non bearing supported. Bearings are required to support axial and radial loads. Lubrication and sealing must also be provided by the installation.

Nominal outside diameter is the same as a series 63 ball bearing.

A typical arrangement is to install this type alongside a bearing within the same location tolerance as shown on the following page.

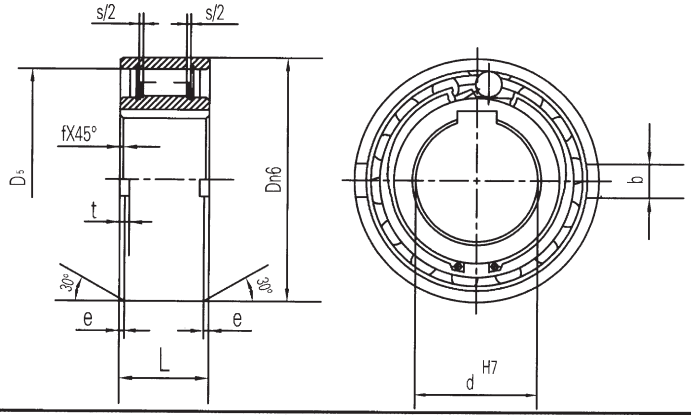
The inner race is keyed to the shaft. The outer race has a positive n6 tolerance, to give a press fit in a H7 housing. Additional side notches in the outer race provide for positive torque transmission.

If the housing is to K6 tolerance, use of the notches is not necessary, but the housing must be strong enough to not expand after assembly.

The design can accept an axial mis-alignment of inner and outer race of ±S/2.

单向离合器

One way clutch



型号 Type	尺寸 Size	极限速度 Overrunning speed												重量 Weight	摩擦力矩 Resistance torque
	d^{H7} [mm]	TKN[1] [Nm]	n_{imax}[2] [min^{-1}]	n_{amax}[3] [min^{-1}]	D_{n6} [mm]	L [mm]	D_5 [mm]	b [mm]	t [mm]	s [mm]	e [mm]	f [mm]		[kg]	T_R [Ncm]
ASNU (NFS)	8	9.2	3,300	5,000	35	13	28	4	1.4	2.4	0.6	0.3		0.07	1.6
	12	9.2	3,300	5,000	35	13	28	4	1.4	2.4	0.6	0.3		0.06	1.6
	15	24	2,400	3,600	42	18	37	5	1.8	2.4	0.8	0.3		0.11	1.9
	17	39	2,300	3,400	47	19	40	5	2.3	2.4	1.2	0.8		0.15	1.9
	20	62	2,100	3,100	52	21	42	6	2.3	2.4	1.2	0.8		0.19	1.9
	25	100	1,700	2,600	62	24	51	8	2.8	2.4	1.2	0.8		0.38	5.6
	30	204	1,400	2,200	72	27	60	10	2.5	2.4	1.8	1		0.54	14
	35	306	1,200	1,900	80	31	70	12	3.5	2.4	1.8	1		0.74	16
	40	430	1,100	1,700	90	33	78	12	4.1	2.5	1.8	1		0.92	38
	45	624	1,000	1,600	100	36	85	14	4.6	2.5	1.8	1		1.31	43
	50	810	850	1,350	110	40	92	14	5.6	2.5	1.8	1		1.74	55
	60	1,460	750	1,050	130	46	110	18	5.5	3.6	2.6	1.5		2.77	110
	70	1,840	600	950	150	51	125	20	6.9	3.6	2.6	1.5		4.16	140
	80	2,620	550	850	170	58	140	20	7.5	3.6	2.6	1.5		6.09	180
	90	4,260	500	750	190	64	160	20	8	3.6	2.6	2		8.2	230
	100	5,800	450	680	215	73	175	24	8.5	3.6	2.6	2		12.6	380
	120	10,800	370	550	260	86	215	28	10	3.6	2.6	2.5		22	650
	150	21,300	300	460	320	108	260	32	12	3.6	3.6	2.5		42	1000
	200	35,600	230	350	420	138	350	45	16	7.6	3.6	3		93	2000

备注:

ANSU8-12, ASNU200 键槽规格符合 DIN 6885.1，其它型号键槽规格符合 DIN 6885.3

1) Tmax=2.5×TKN
2) 内圈极限运转速度。
3) 外圈极限运转速度。

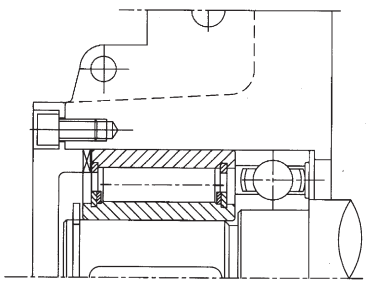
Notes:

ANSU8-12, ASNU200 keyway to DIN 6885.1, other size to DIN 6885.3

1) Tmax=2.5×TKN
2) Inner race overruns
3) Outer race overruns

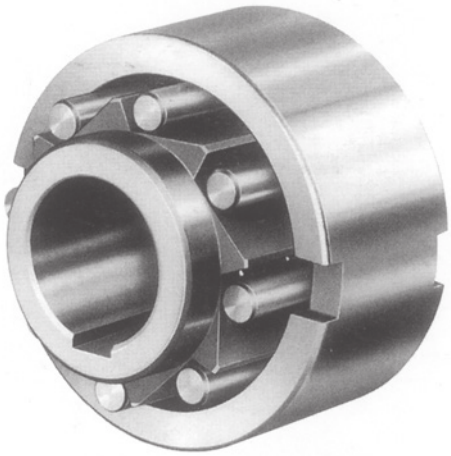
安装参考范例

Mounting example



圆柱滚子单向离合器NF系列

Roller type owc NF series



NF 系列为滚柱式单向离合器，没有轴承支撑。需要安装轴承支撑轴向和径向载荷。安装时需要润滑和密封。标准的润滑方式为油润滑。

外径的名义尺寸是标准球轴承的尺寸。

推荐的安装方法如后页所示：把离合器和相同座孔公差的轴承一起安装。

内圈与轴用键连接。离合器外圈有 r6 等级的正公差，可以压入公差为 H7 的座孔

如果座孔的公差达到 K6 级，就不需要使用凹槽，但座孔必须足够坚固以确保装配后不变形。

Type NF is a roller type freewheel non bearing supported. Bearings are required to support axial and radial loads. Lubrication and sealing must also be provided by the installation. Standard lubrication is oil.

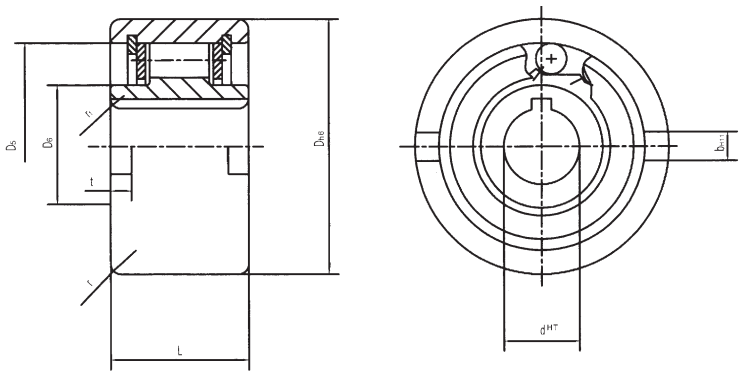
Nominal outside diameter is a standard ball bearing dimension.

A typical arrangement is to install this type alongside a bearing with the same housing tolerances, as shown on the following page.

The inner race is keyed to the shaft. The outer race has a positive n6 tolerance to give a press fit in a H7 housing. Additional side notches provide for positive torque transmission.

If the housing tolerance is to K6, use of the notches is not necessary, but the housing must be strong enough to not expand after assembly.

单向离合器 One way clutch



型号 Type	尺寸 Size	极限速度 Overrunning speed											重量 Weight
	d^{H7} [mm]	TKN[1] [Nm]	n_{max}[2] [min^{-1}]	n_{imin}[3] [min^{-1}]	D_{h6} [mm]	D_5 [mm]	D_6 [mm]	L [mm]	t [mm]	b^{H11} [mm]	r [mm]	r_1 [mm]	[kg]
NF	8	16	5,000	6,000	37	30	20	20	3	6	1.0	1.5	0.1
	12	16	5,000	6,000	37	30	20	20	3	6	1.0	1.5	0.1
	15	62	4,500	5,400	47	37	26	30	3.5	7	1.5	1.5	0.3
	20	150	3,000	3,600	62	52	37	36	3.5	8	2.0	2.0	0.6
	25	200	2,200	2,600	80	68	49	40	4	9	2.5	2.0	1.1
	30	400	1,800	2,100	90	75	52.5	48	5	12	2.5	2.0	1.6
	35	530	1,600	1,950	100	80	58	53	6	13	2.5	2.5	2.3
	40	880	1,250	1,700	110	90	62	63	7	15	3.0	2.5	3.1
	45	1,200	1,100	1,500	120	95	69	63	7	16	3.0	2.5	3.7
	50	1,900	850	1,300	130	110	82	80	8.5	17	3.5	3.0	5.4
	55	2,000	800	1,200	140	115	83	80	9	18	3.5	3.5	6.1
	60	3,400	700	1,100	150	125	93.5	95	9	18	3.5	3.5	8.5
	70	4,700	620	900	170	140	106	110	9	20	3.5	3.5	13.0
	80	8,000	550	800	190	160	122	125	9	20	4.0	3.5	18.0
	90	13,800	480	700	215	180	133	140	11.5	24	4.0	4.0	25.3
	100	15,700	400	600	260	210	157	150	14.5	28	4.0	4.0	42.1
	130	27,800	300	480	300	240	188	180	17	32	5.0	5.0	65.0
	150	35,500	250	400	320	260	205	180	17	32	5.0	5.0	95.0

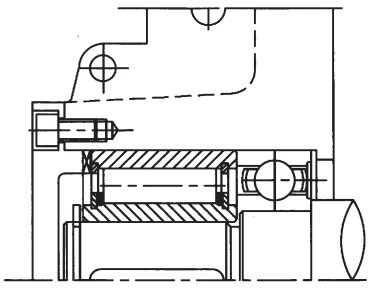
备注:

1) $T_{max}=2.5\times T_{KN}$
2) 内圈极限运转速度。
3) 外圈极限运转速度。
   键槽规格符合 DIN 6885.1

Notes:

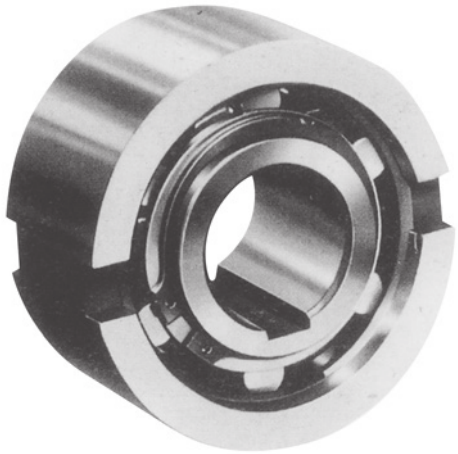
1) $T_{max}=2.5\times T_{KN}$
2) Inner race overruns
3) Outer race overruns
   Keyway to DIN 6885.1

安装参考范例 Mounting example



AE系列圆柱滚子单向离合器

Roller type owc ae series



特性

AE 系列是没有轴承支撑的滚柱型单向离合器。使用时需要有轴承来承受径向及轴向载荷，并且要有润滑及密封。

外径名义尺寸与标准球轴承相同。

这种离合器的典型使用就是与一个具有相同孔径公差的轴承一起安装，如下页图所示。

离合器的内圈用键固定在轴上，外圈有为 r6 等级的正公差，可以压入公差为 H7 的座孔，传递正向扭矩时需要有凹槽。

如果座孔的公差等级是 R6，就不需要键槽，但外圈座必须有足够的强度，避免装配后变形。

内外圈的设计允许轴向有 ±S/2 的偏差。

Description

Type AE is a roller type freewheel non bearing supported. Bearings are required to support axial and radial loads. Lubrication and sealing must also be provided by the installation.

Nominal outside diameter is a standard ball bearing dimension.

A typical arrangement is to install this type beside a bearing with the same housing diameter tolerance as shown on the following page.

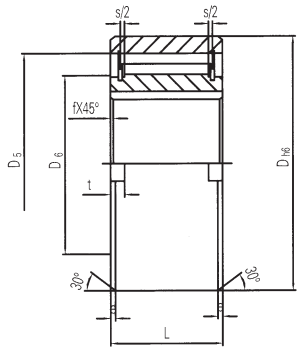
The inner race is keyed to the shaft. The outer race has a positive r6 tolerance to give a press fit in a H7 housing. Additional side notches provide for positive torque transmission.

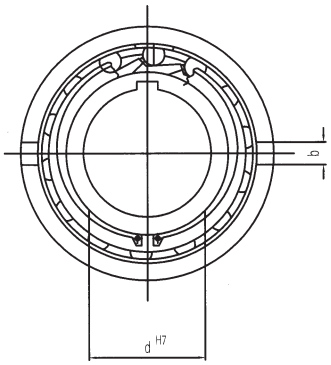
If the housing tolerance is to R6, use of the notches is not necessary, but the housing must be strong enough to not expand after assembly.

The design can accept an axial mis-alignment of inner and outer race of ±S/2.

AE系列圆柱滚子单向离合器

Roller type owc ae series





型号 Type	尺寸 Size	极限速度 Overrunning speed												重量 Weight	摩擦力矩 Resistance torque
	d^{H7} [mm]	TKN[1] [Nm]	n_{imax}[2] [min^{-1}]	n_{amax}[3] [min^{-1}]	D_{h6} [mm]	D_5 [mm]	D_6 [mm]	L [mm]	s [mm]	f [mm]	e [mm]	b [mm]	t [mm]	[kg]	T_R [Ncm]
AE	12	13.2	3,100	6,200	37	28	20	20	4.5	0.5	0.8	6	3	0.11	0.7
	15	44	2,300	5,600	47	37	26	30	4.5	0.8	1.2	7	3.5	0.30	3.5
	20	117	2,000	4,800	62	50	35	34	5.5	0.8	1.2	8	3.5	0.55	8.4
	25	228	1,700	4,000	80	68	45	37	6.5	1	1.8	9	4	0.98	14
	30	400	1,500	3,400	90	75	50	44	6.2	1	1.8	12	5	1.50	23
	35	576	1,300	2,800	100	80	55	48	3.8	1	1.8	13	6	2.00	60
	40	824	1,200	2,500	110	90	60	56	3.8	1.5	1.8	15	7	2.80	72
	45	900	1,050	2,200	120	95	65	56	3.8	1.5	2.6	16	7	3.30	140
	50	1,720	950	2,050	130	110	78	63	5.8	1.5	2.6	17	8	4.20	180
	55	2,140	850	1,950	140	115	82	67	3.8	2	2.6	18	9	5.20	190
	60	2,800	800	1,800	150	125	90	78	7.6	2	2.6	18	9	6.80	240
	70	4,650	650	1,700	170	140	100	95	7.6	2.5	2.6	20	9	10.5	320

备注:

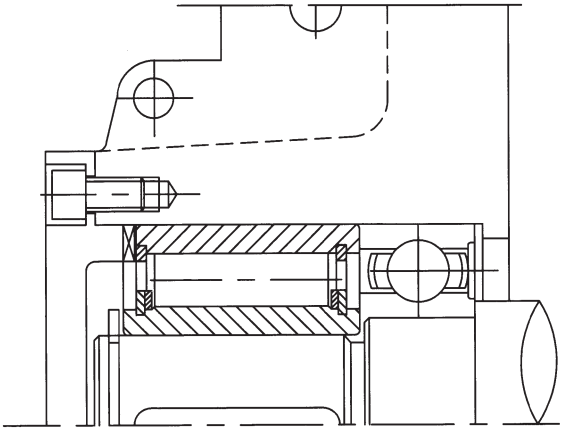
1) $T_{max}=2.5\times T_{KN}$
2) 内圈极限运转速度。
3) 外圈极限运转速度。
   键槽规格符合 DIN 6885.1

Notes:

1) $T_{max}=2.5\times T_{KN}$
2) Inner race overruns
3) Outer race overruns
   Keyway to DIN 6885.1

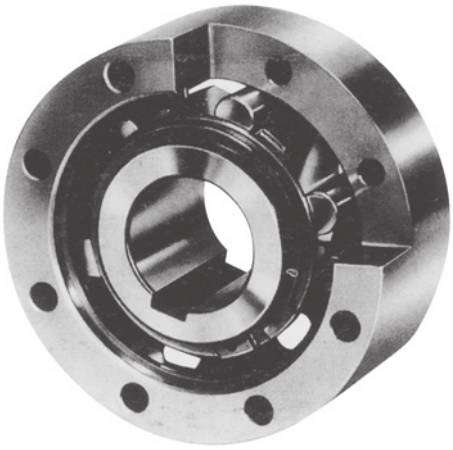
安装参考范例

Mounting example



AA系列圆柱滚子单向离合器

Roller type owc aa series



特性

AA 系列为滚柱式单向离合器，没有轴承支撑。

需要安装轴承支撑轴向和径向载荷。安装时需要润滑和密封。

标准的润滑方式为油润滑。

安装方法见后页。

内圈与轴用键连接。

适合于外圈的中心为 H7 级公差。

用 10.9 级或以上的螺钉与外圈连接。

本设计可以允许内圈和外圈在轴向有±S/2 的偏差。

Description

Type AA a roller freewheel non bearing supported.

Bearings are required to support axial and radial loads. Lubrication and sealing must also be provided by the installation.

Standard lubrication is oil.

A typical installation is shown on the following page.

The inner race is keyed to the shaft.

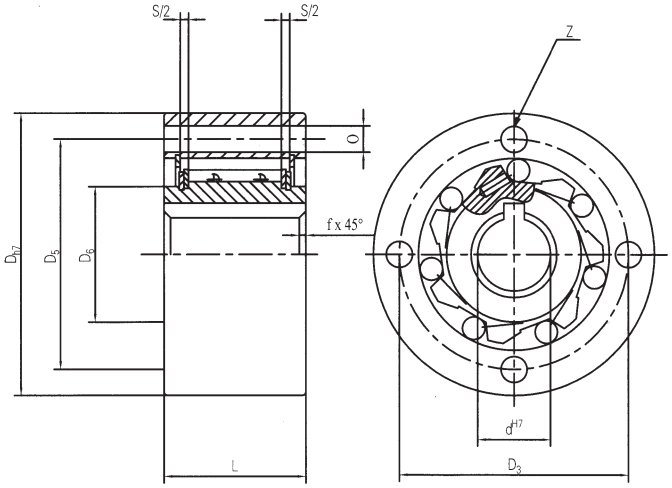
The fit for centering of the outer race must be to H7 tolerance.

Connection of the outer race is via through bolts to grade 10.9 or better

This design can accept an axial misalignment of inner and outer race of ±S/2.

AA系列圆柱滚子单向离合器

Roller type owc aa series



型号 Type	尺寸 Size	极限速度 Overrunning speed												重量 Weight	摩擦力矩 Resistance torque
	d^{H7} [mm]	TKN[1] [Nm]	n_{max}[2] [min^{-1}]	n_{amax}[3] [min^{-1}]	D_{h7} [mm]	L [mm]	D_5 [mm]	D_6 [mm]	D_3 [mm]	Z	O [mm]	f [mm]	s [mm]	[kg]	T_R [Ncm]
AA	12	13.2	3,100	6,200	47	20	28	20	38	3	5.5	0.5	4.5	0.21	0.7
	15	44	2,300	5,600	55	30	37	26	45	3	5.5	0.8	4.5	0.44	3.5
	20	117	2,000	4,800	68	34	50	35	58	4	5.5	0.8	5.5	0.70	8.4
	25	228	1,700	4,000	90	37	68	45	78	6	5.5	1	6.5	1.30	14
	30	400	1,500	3,400	100	44	75	50	87	6	6.6	1	6.5	2.00	23
	35	576	1,300	2,800	110	48	80	55	96	6	6.6	1	6.5	2.60	60
	40	824	1,200	2,500	125	56	90	60	108	6	9	1.5	7.6	3.90	72
	45	900	1,050	2,200	130	56	95	65	112	8	9	1.5	7.6	4.00	140
	50	1,720	950	2,050	150	63	110	78	132	8	9	1.5	7.6	6.00	180
	55	2,140	850	1,950	160	67	115	82	138	8	11	2	7.6	7.20	190
	60	2,800	800	1,800	170	78	125	90	150	10	11	2	7.6	9.20	240
	70	4,650	650	1,700	190	95	140	100	165	10	11	2.5	7.6	11.8	320

备注:

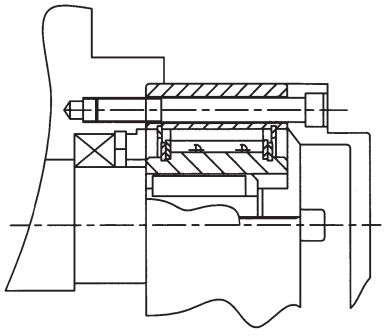
1) $T_{max}=2.5\times T_{KN}$
2) 内圈极限运转速度
3) 外圈极限运转速度。
   键槽规格符合 DIN 6885.1

Notes:

1) $T_{max}=2.5\times T_{KN}$
2) Inner race overruns
3) Outer race overruns
   Keyway to DIN 6885.1

安装参考范例

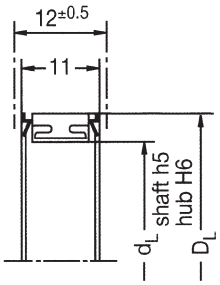
Mounting example



楔块式单向离合器FE系列

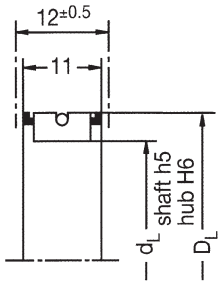
Sprag freewheels FE series

安装距离
Mounting space



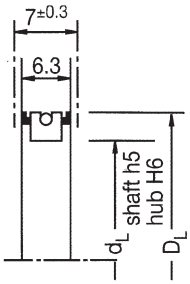
FE400

安装距离
Mounting space



FE400Z

安装距离
Mounting space



FE400Z2

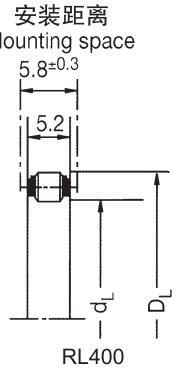
尺寸 Dimensions [mm]		FE 400			FE 400 Z			FE 400 Z2			转速 Idling speed Clutch	尺寸 Dimensions [inch]	
d_L	D_L	Part-number	Torque M [ftlb]	[Nm]	Part number	Torque M [ftlb]	[Nm]	Part number	Torque M [ftlb]	[Nm]	n_{max} [RPM]	d_L	D_L
2	10	10						FE 410 Z2 *	0.2	0.3	10 000	.0787	.3937
4	12				FE 412 Z	2.2	3	FE 412 Z2 *	1.3	1.8	10 000	.1575	.4724
5	13							FE 413 Z2	2.1	2.9	9 000	.1969	.5118
6	14				FE 414 Z	5	7	FE 414 Z2	1.9	2.6	8 500	.2362	.5512
8	16				FE 416 Z *	9	12	FE 416 Z2	5.6	7.6	7 500	.3150	.6299
14	22	FE 422	36	48	FE 422 Z *	32	44	FE 422 Z2	16	21	5 300	5512	.8661
15	23	FE 423	40	55	FE 423 Z	36	48	FE 423 Z2 *	18	24	5 200	.5906	.9055
17	25	FE 425	50	68	FE 425 Z	43	58	FE 425 Z2	22	30	4 700	.6693	.9843
19	27	FE 427	59	80	FE 427 Z	49	66	FE 427 Z2 *	27	36	4 400	.7480	1.0630
20	28	FE 428	64	87	FE 428 Z	55	75	FE 428 Z2	29	39	4 200	.7874	1.1024
22	30	FE 430	75	101	FE 430 Z	64	87	FE 430 Z2 *	34	46	4 000	.8661	1.1811
24	32	FE 432	86	116	FE 432 Z	71	97	FE 432 Z2	39	52	3 700	.9449	1.2598
25	33	FE 433	92	124	FE 433 Z	79	107	FE 433 Z2 *	41	56	3 600	.9843	1.2992
27	35	FE 435	104	141	FE 435 Z	90	121	FE 435 Z2	47	64	3 400	1.0630	1.3780
29	37	FE 437	117	158	FE 437 Z	101	137	FE 437 Z2 *	53	71	3 200	1.1417	1.4567
30	38	FE 438	124	168	FE 438 Z *	106	144	FE 438 Z2 *	56	76	3 100	1.1811	1.4960
34	42	FE 442	152	207	FE 442 Z	131	178	FE 442 Z2	69	93	2 800	1.3386	1.6535
35	43	FE 443	160	217	FE 443 Z	138	187	FE 443 Z2	72	98	2 700	1.3780	1.6929
40	48	FE 448	201	272	FE 448 Z	173	235	FE 448 Z2	90	122	2 500	1.5748	1.8898
45	53	FE 453	246	333	FE 453 Z	207	281	FE 453 Z2	108	146	2 200	1.7717	2.0866
50	58	FE 458 *	295	400	FE 458 Z	254	345	FE 458 ZS	131	178	2 000	1.9685	2.2835
51	59	FE 459	305	414	FE 459 Z	263	357						
55	63	FE 463	348	472	FE 463 Z	300	407	FE 463 Z2 *	149	202	1 900	2.1654	2.4803
60	68	FE 468	405	550	FE 468 Z	349	474	FE 468 Z2	179	243	1 750	2.3622	2.6772
62	70	FE 470	429	583	FE 470 Z	370	502				1 700	2.4409	2.7559
65	73	FE 473	467	633	FE 473 Z	402	545				1 600	2.5590	2.8740
70	78	FE 478	532	722	FE 478 Z	458	622				1 500	2.7559	3.0709
80	88	FE 488	674	914	FE 488 Z	581	788				1 300	3.1496	3.4646

Maximum radial clearance pending application 0.04 mm. * Not a stock item, delivery on request.
Other sizes on request. 10 Nm ≈ 1 kpm, 10 N ≈ 1 kp – Dimensions subject to change!

最大径向间隙待决申请0.04mm.不是一个固定项，根据要求交付
其它尺寸根据要求。10Nm≈1kpm’ 10N≈1kp～尺寸服从变化。

楔块式单向离合器FE系列

Sprag freewheels FE series



RL400

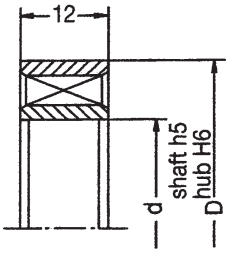
尺寸 Dimensions [mm]		RL 400	载荷能力 Load Capacities				慢速轴承 Idling speed Bearing n_{max}		尺寸 Dimensions [inch]	
			C dyn.		C_0 static		[RPM]			
d_L	D_L	Part number	[lb]	[N]	[lb]	[N]	oil	grease	d_L	D_L
2	10								.0787	.3937
4	12	RL 412	564	2 510	315	1 400	55 000	45 000	.1575	.4724
5	13								.1969	.5118
6	14								.2362	.5512
8	16								.3150	.6299
14	22	RL 422	1 115	4 960	787	3 500	25 000	19 000	.5512	.8661
15	23	RL 423	1 119	4 980	798	3 550	24 000	18 000	.5906	.9055
17	25	RL 425	1 328	5 910	1 023	4 550	21 000	17 000	.6693	.9843
19	27	RL 427	1 427	6 350	1 148	5 110	20 000	15 000	.7480	1.0630
20	28	RL 428	1 425	6 340	1 160	5 160	19 000	15 000	.7874	1.1024
22	30	RL 430	1 515	6 740	1 283	5 710	17 000	14 000	.8661	1.1811
24	32	RL 432	1 508	6 710	1 301	5 790	16 000	13 000	.9449	1.2598
25	33								.9483	1.2992
27	35								1.0630	1.3780
29	37	RL 437	1 663	7 400	1 555	6 920	14 000	11 000	1.1417	1.4567
30	38	RL 438	1 659	7 380	1 562	6 950	13 000	10 000	1.1811	1.4960
34	42	RL 442	1 890	8 410	1 924	8 560	12 000	9 000	1.3386	1.6535
35	43	RL 443	1 883	8 380	1 930	8 590	12 000	9 000	1.3780	1.6929
40	48	RL 448	2 164	9 630	2 416	10 750	10 000	8 000	1.5748	1.8898
42	50								1.6535	1.9685
45	53	RL 453	2 126	9 460	2 441	10 860	9 000	7 000	1.7717	2.0866
50	58	RL 458	2 236	9 950	2 695	11 990	8 500	6 500	1.9685	2.2835
51	59	RL 459	2 373	10 560	2 933	13 050	8 000	6 500	2.0079	2.3228
55	63	RL 463	2 411	10 730	3 068	13 650	7 500	6 000	2.1654	2.4803
60	68								2.3622	2.6772
62	70	RL 470	2 627	11 690	3 566	15 870	7 000	5 000	2.4409	2.7559
65	73	RL 473	2 605	11 590	3 575	15 910	6 500	5 000	2.5590	2.8740
70	78	RL 478 *	2 566	11 420	3 591	15 980	6 000	4 700	2.7559	3.0709
80	88	RL 488 *	2 749	12 230	4 097	18 230	5 300	4 100	3.1496	3.4646

* Not a stock item, delivery on request.
Other sizes on request. 10 Nm ≈ 1 kpm, 10 N ≈ 1 kp – Dimensions subject to change!

不是一个固定项，根据要求交付
其它尺寸根据要求。10Nm≈1kpm’ 10N≈1kp～尺寸服从变化。

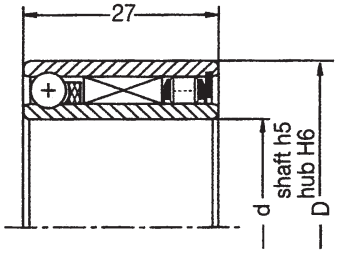
楔块式单向离合器FR系列　　Sprag freewheels FR series

FR 400



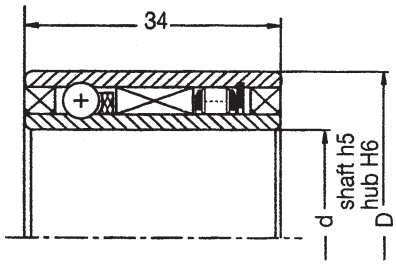
Without bearing support
无轴承座

FP 400



With bearing
带轴承

FPD 400



With bearing and double seal
带轴承和双重密封

尺寸 Dimensions [mm] [inch]		FR 400	FP 400	FPD 400	转矩 Torque M		转速 Idling speed clutch n_{max}	载荷能力 Load Capacities [N] [lb]			
								C dynamic		C_0 static	
d	D	Part number			[ftlb]	[Nm]	[RPM]	Ball	Roller	Ball	Roller
10 .3937	26 1.0236	FR 422	FP 422		36	48	5 300	4 935 1 109	4 960 1 115	2 285 469	3 500 787
		FR 422 Z	FP 422 Z		32	42					
15 .5906	31 1.2205	FR 427	FP 427		59	80	4 400	6 080 1 366	6 350 1 427	2 785 626	5 110 1 148
		FR 427 Z	FP 427 Z		49	66					
20 .7874	36 1.4173	FR 432	FP 432		86	116	3 700	6 555 1 473	6 710 1 508	3 175 714	5 790 1 301
		FR 432 Z	FP 432 Z		71	97					
25 .9843	41 1.6142	FR 437	FP 437		117	158	3 200	7 325 1 646	7 400 1 663	3 870 870	6 920 1 555
		FR 437 Z	FP 437 Z		101	137					
30 1.1811	46 1.8110	FR 442	FP 442	FPD 442	152	207	2 200 (1 500)	7 980 1 793	8 410 1 890	4 570 1 027	8 560 1 924
		FR 442 Z	FP 442 Z	FPD 442 Z	131	178					
35 1.3780	53 2.0866	FR 448			201	272	2 500				
		FR 448 Z			173	235					
40 1.5748	58 2.2835	FR 453	FP 453		246	333	2 200 (1 200)	8 690 1 953	9 460 2 126	5 640 1 267	10 860 2 441
		FR 453 Z	FP 453 Z	FPD 453 Z	207	281					
50 1.9685	68 2.6772	FR 463	FP 463		348	472	1 900	9 295 2 089	10 730 2 411	6 700 1 506	13 650 3 068
		FR 463 Z	FP 463 Z		300	407					
60 2.3622	78 3.0709	FR 473	FP 473		467	633	1 600	9 535 2 143	11 590 2 605	7 420 1 667	15 910 3 575
		FR 473 Z	FP 473 Z		402	545					

The load capacities “C” and “C_0” are not valid for the FR 400 series!
负载能力“C”和“C0”对于FR400系列不适用!

Maximum radial clearance for the FR 400 series pending application 0.02 mm.
FR400系列未决应用的最大轴向间隙为0.02毫米。

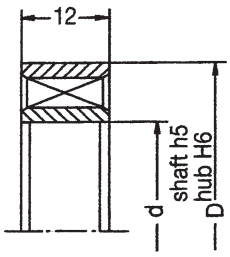
Arrow on inner ring shows: idling direction of outer ring = locking direction of inner ring.
内圈的箭头表示：外圈的空转方向 = 内圈的锁定方向。

* Idling speed for series FPD.
* FPD系列的空转速度

楔块式单向离合器FR系列

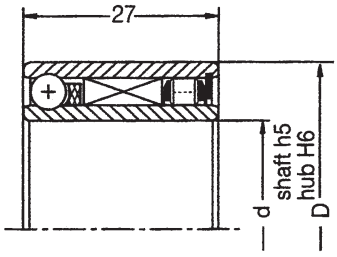
Sprag freewheels FR series

FRN 400*



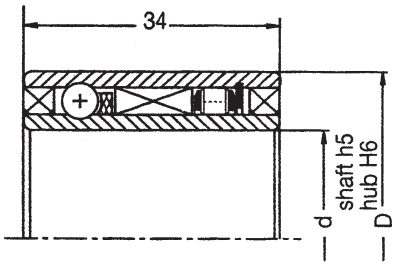
Without bearing support
无轴承座

FN 400



With bearing
带轴承

FND 400



With bearing and double seal
带轴承和双重密封

尺寸 Dimensions [mm] [inch]		FRN 400+	FN 400	FND 400	转矩 Torque M		转速 Idling speed clutch n_{max}	载荷能力能力 Load Capacities [N] [lb]			
								C dynamic		C_0 static	
d	D	Part number			[ftlb]	[Nm]	[RPM]	Ball	Roller	Ball	Roller
10 .3937	31 1.2205	FRN 427			59	80	4 400				
		FRN 427 Z			49	66					
12 .4724	36 1.4173	FRN 432			86	116	3 700				
		FRN 432 Z			71	97					
15 .5906	41 1.6142	FRN 437	FN 437	FND 437	117	158	3 200 *(1 700)	7 325 1 646	7 400 1 663	3 870 870	6 920 1 555
		FRN 437 Z	FN 437 Z	FND 437 Z	101	137					
20 .7874	46 1.8110	FRN 442	FN 442	FND 442	152	207	2 800 *(1 500)	7 980 1 793	8 410 1 890	4 570 1 027	8 560 1 924
		FRN 442 Z	FN 442 Z	FND 442 Z	131	178					
25 .9843	58 2.2835	FRN 453	FN 453	FND 453	246	333	2 200 *(1 200)	8 690 1 953	9 460 2 126	5 640 1 267	10 860 2 441
		FRN 453 Z	FN 453 Z	FND 453 Z	207	281					
30 1.1811	64 2.5197	FRN 459	FN 459	FND 459	305	414	2 000 *(1 100)	8 805 1 979	10 560 2 373	6 010 1 351	13 050 2 933
		FRN 459 Z	FN 459 Z	FND 459 Z	263	357					
35 1.3780	68 2.6772	FRN 463			348	472	1 900				
		FRN 463 Z			300	407					
40 1.5748	75 2.9528	FRN 470	FN 470	FND 470	429	583	1 700 *(1 000)	9 645 2 168	11 690 2 627	7 405 1 664	15 870 3 566
		FRN 470 Z	FN 470 Z	FND 470 Z	370	502					
45 1.7717	78 3.0709	FRN 473			467	633	1 600				
		FRN 473 Z			402	545					

The load capacities “C” and “C_0” are not valid for the FR 400 series!
负载能力“C”和“C0”对于FR400系列不适用!

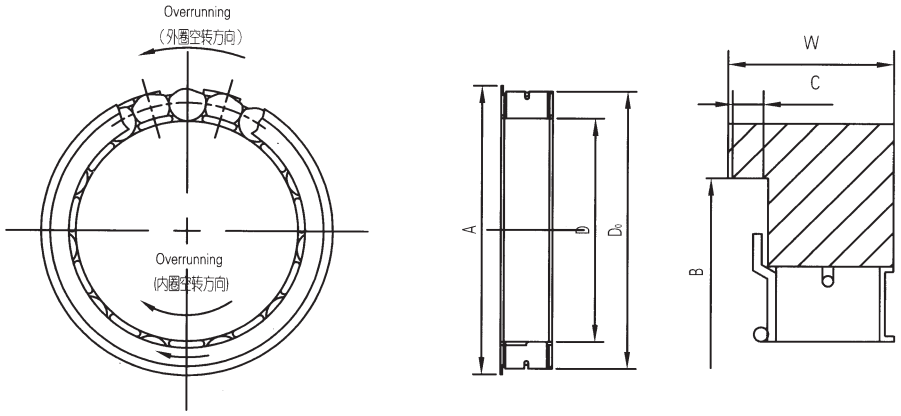
Maximum radial clearance for the FR 400 series pending application 0.02 mm.
FR400系列未决应用的最大轴向间隙为0.02毫米。

- Arrow on inner ring shows: idling direction of outer ring = locking direction of inner ring.
- 内圈的箭头表示：外圈的空转方向 = 内圈的锁定方向。

* Idling speed for series FND.
* FND系列的空转速度

楔块式单向离合器FWD系列Spr　　Spras free wheels FWD series

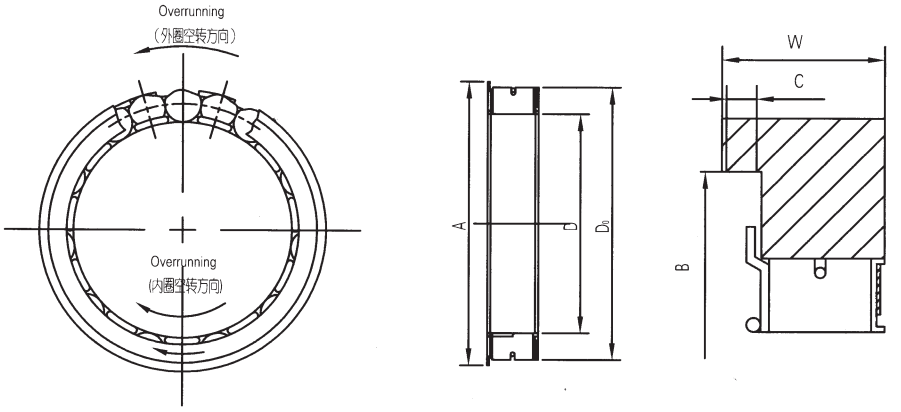
FWD CRB 型



型号	Lnner race (内圈)	Outer race (外圈)	Wmin (最小宽度)	A	B	C $^{+0.2}_{0}$	Tkn (额定扭矩)	Weight (重 量)
	D $^{+0.008}_{-0.005}$ （mm）	D0 ±0.013 （mm）	W (mm)	(mm)	(mm)	(mm)	(Kgf-m)	(g)
FWD331608CRB	39.627	56.294	13.0	60	62	1.0	27	73
FWD331808CRB	45.665	62.332	13.3	65	68	1.0	35	83
FWD332008CRB	51.710	68.377	13.3	71	74	1.0	45	92
FWD332211CRB	57.760	74.427	16.3	76	79	1.0	78	134

(空转方向与上图相反可定制)
Opposite overrunning direction should be ordered separately

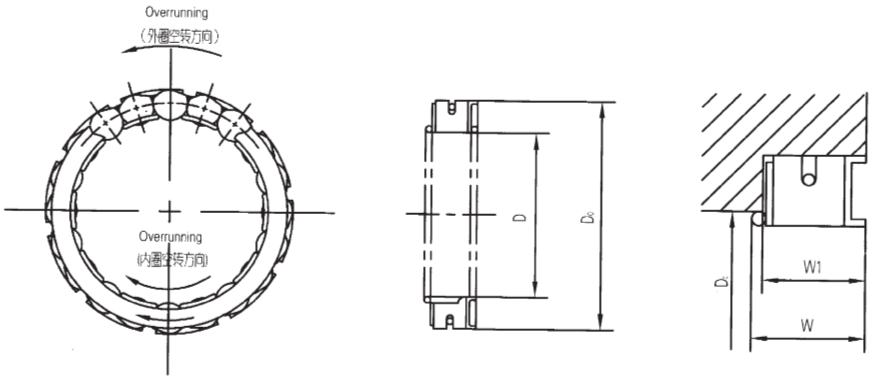
FWD CRS 型



型号	Lnner race (内圈)	Outer race (外圈)	Wmin (最小宽度)	A	B	C $^{+0.2}_{0}$	Tkn (额定扭矩)	Weight (重 量)
	D $^{+0.008}_{-0.005}$ （mm）	D0 ±0.013 （mm）	W (mm)	(mm)	(mm)	(mm)	(Kgf-m)	(g)
FWD331608CRS	39.627	56.294	13.0	60	62	1.0	27	78
FWD331808CRS	45.665	62.332	13.3	65	68	1.0	35	88
FWD332008CRS	51.710	68.377	13.3	71	74	1.0	45	98
FWD332211CRS	57.760	74.427	16.3	76	79	1.0	78	140

(空转方向与上图相反可定制)
Opposite overrunning direction should be ordered separately

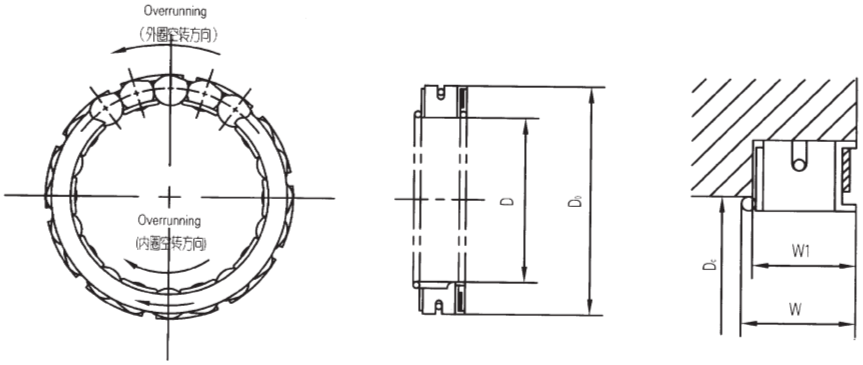
FWD PRB 型



型号	Lnner race (内圈)	Outer race (外圈)	Wmin (最小宽度)	Wmin (最小宽度)	Dc	Tkn (额定扭矩)	Weight (重 量)
	D +0.008 -0.005 (mm)	D0 ±0.013 (mm)	W (mm)	W1 (mm)	(mm)	(Kgf-m)	(g)
FWD331608PRB	39.627	56.294	13.0	11.4	45	27	70
FWD331808PRB	45.665	62.332	13.3	11.7	51	35	80
FWD332008PRB	51.710	68.377	13.3	11.7	57	45	89
FWD332211PRB	57.760	74.427	16.3	14.7	63	78	130

(空转方向与上图相反可定制)
Opposite overrunning direction should be ordered separately

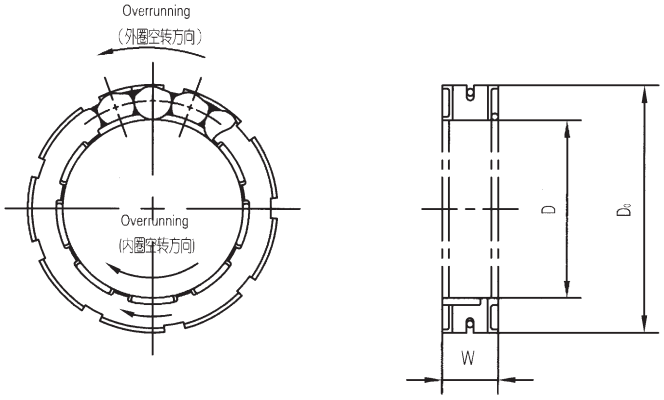
FWD PRS 型



型号	Lnner race (内圈)	Outer race (外圈)	Wmin (最小宽度)	Wmin (最小宽度)	Dc	Tkn (额定扭矩)	Weight (重 量)
	D +0.008 -0.005 (mm)	D0 ±0.013 (mm)	W (mm)	W1 (mm)	(mm)	(Kgf-m)	(g)
FWD331608PRS	39.627	56.294	13.0	11.4	45	27	75
FWD331808PRS	45.665	62.332	13.3	11.7	51	35	85
FWD332008PRS	51.710	68.377	13.3	11.7	57	45	94
FWD332211PRS	57.760	74.427	16.3	14.7	63	78	139

(空转方向与上图相反可定制)
Opposite overrunning direction should be ordered separately

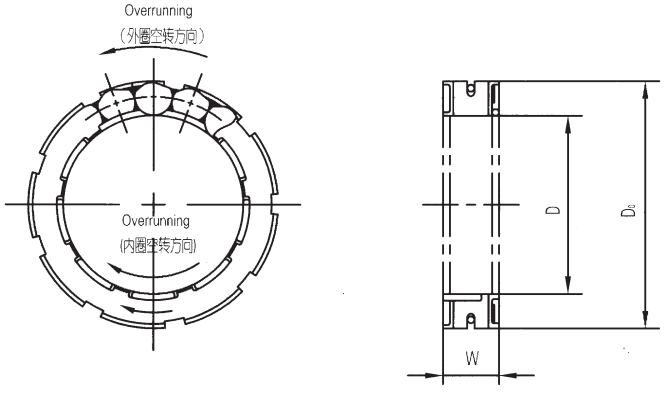
FWD BRB 型



型号	Lnner race (内圈)	Outer race (外圈)	Wmin (最小宽度)	Tkn (额定扭矩)	Weight (重 量)
	D $^{+0.008}_{-0.005}$ (mm)	D0 ±0.013 (mm)	W (mm)	(Kgf-m)	(g)
FWD331608BRB	39.627	56.294	13.0	27	73
FWD331808BRB	45.665	62.332	13.3	35	82
FWD332008BRB	51.710	68.377	13.3	45	91
FWD332211BRB	57.760	74.427	16.3	78	134

(空转方向与上图相反可定制)
Opposite overrunning direction should be ordered separately

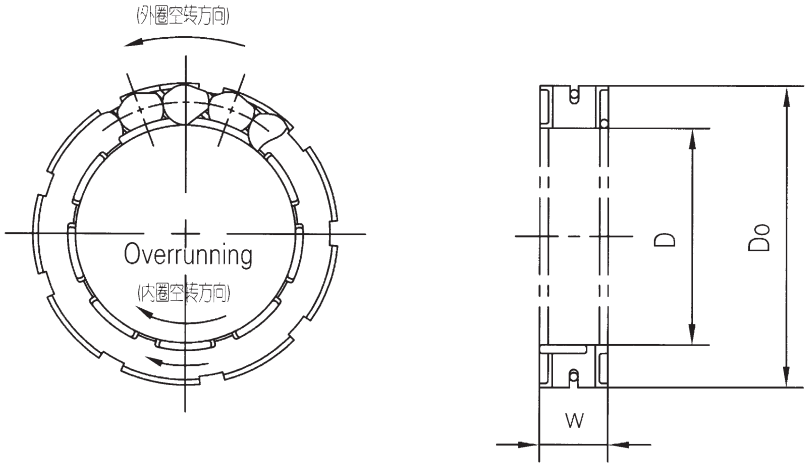
FWD BRS 型



型号	Lnner race (内圈)	Outer race (外圈)	Wmin (最小宽度)	Tkn (额定扭矩)	Weight (重 量)
	D $^{+0.008}_{-0.005}$ (mm)	D0 ±0.013 (mm)	W (mm)	(Kgf-m)	(g)
FWD331608BRS	39.627	56.294	13.0	27	77
FWD331808BRS	45.665	62.332	13.3	35	87
FWD332008BRS	51.710	68.377	13.3	45	97
FWD332211BRS	57.760	74.427	16.3	78	134

(空转方向与上图相反可定制)
Opposite overrunning direction should be ordered separately

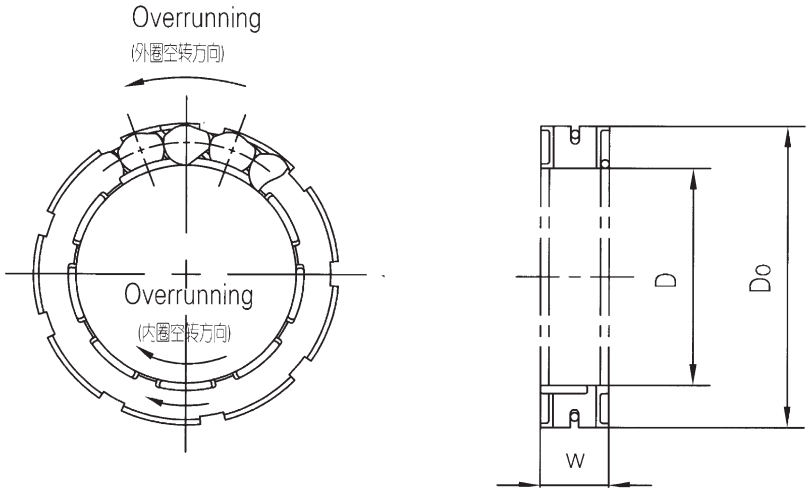
FWA BRB 型



型号	Lnner race (内圈)	Outer race (外圈)	Wmin (最小宽度)	Tkn (额定扭矩)	Weight (重 量)
	D $^{+0.008}_{-0.005}$ (mm)	D1 ±0.013 (mm)	W (mm)	(Kgf-m)	(g)
FWA331608BRB	39.900	56.567	13.0	26	73
FWA331808BRB	45.848	62.515	13.3	35	82
FWA332211BRB	57.760	74.427	16.3	78	134

(空转方向与上图相反可定制)
Opposite overrunning direction should be ordered separately

FEW BRB 型

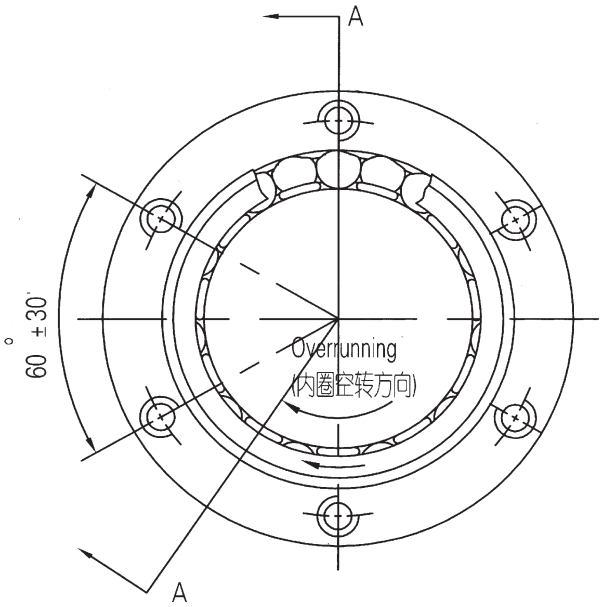


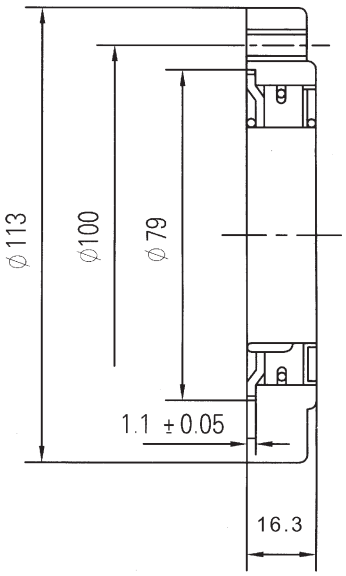
型号	Lnner race (内圈)	Outer race (外圈)	Wmin (最小宽度)	Tkn (额定扭矩)	Weight (重 量)
	D $^{+0.008}_{-0.005}$ (mm)	D1 ±0.013 (mm)	W (mm)	(Kgf-m)	(g)
FWE331608BRB	39.900	56.567	13.0	26	73
FWE331808BRB	45.848	62.515	13.3	35	82
FWE332211BRB	57.760	74.427	16.3	78	134

(空转方向与上图相反可定制)
Opposite overrunning direction should be ordered separately

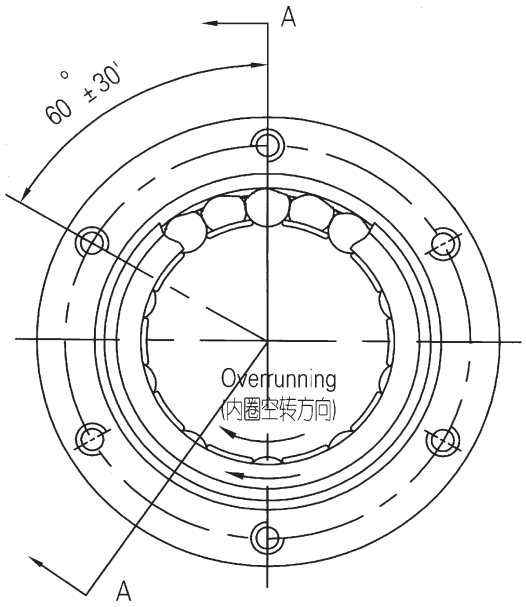
外圈安装后图例

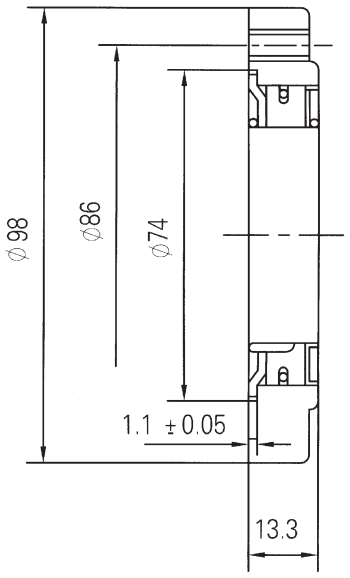
FWD332211CRB+外圈





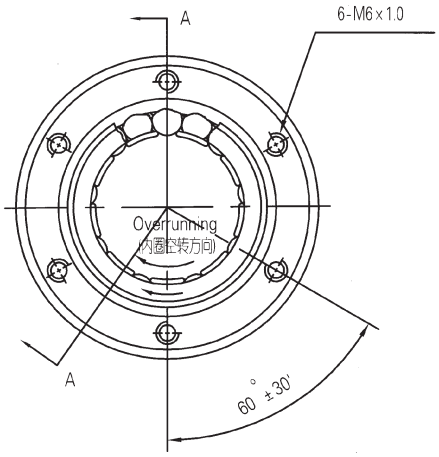
FWD332008CRB+外圈

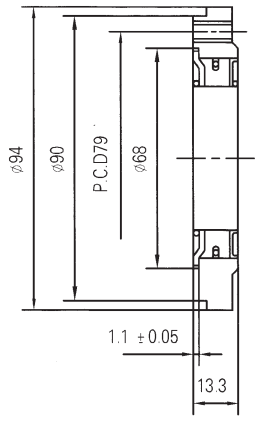




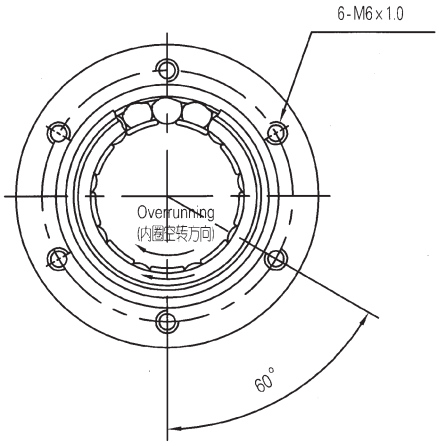
外圈安装后图例（摩托车专用）

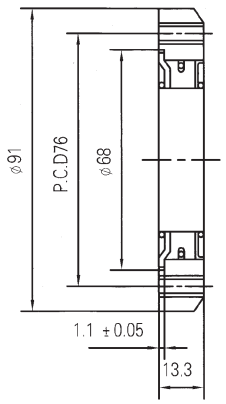
FWD331808CRB+外圈



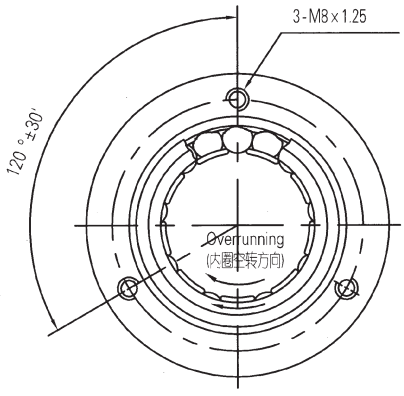


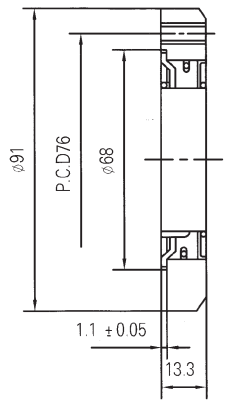
FWD331808CRB+外圈





FWD331608CRB+外圈





冲压外圈滚针离合器、冲压外圈滚针离合器和轴承组件

Drawn Cup Roller Clutches, Drawn Cup Roller Clutches and Bearing Assemblies

1. 结构形式

系列/Series	说　明	Description
HF	钢弹簧冲压外圈滚针离合器	Drawn Cup Roller Clutch with Steel Springs
HF… KF	塑料弹簧冲压外圈滚针离合器	Drawn Cup Roller Clutch with Plastic Springs
HF… R	钢弹簧冲压外圈滚针离合器，外圈部分滚花	Drawn Cup Roller Clutch with Steel Springs and Partially Knurled Outer Ring
HF… KFR	塑料弹簧冲压外圈滚针离合器，外圈部分滚花	Drawn Cup Roller Clutch with Plastic Springs and Partially Knurled Outer Ring
HFL	钢弹簧冲压外圈滚针离合器和轴承组件，滑动轴承或滚动轴承	Drawn Cup Roller Clutch with Bearing Assemblies with Steel Springs, plain or Rolling Bearings
HFL… KF	塑料弹簧冲压外圈滚针离合器和轴承组件，滑动轴承或滚动轴承	Drawn Cup Roller Clutch and Bearing Assemblies with Plastic Springs, plain or Rolling Bearings
HFL… R	钢弹簧冲压外圈滚针离合器和轴承组件，外圈部分滚花	Drawn Cup Roller Clutch and Plain Bearing Assemblies with Steel Springs, partially Knurled Outer Ring
HFL… KFR	塑料弹簧冲压外圈滚针离合器和轴承组件，外圈部分滚花	Drawn Cup Roller Clutch and Plain Bearing Assemblies with Plastic Springs, partially Knurled Outer Ring
HFLK	变形结构	metabolic configuration

2. 检验

将滚针离合器压入标准环规中用塞规检查，环规的壁度大于20mm。

3. 安装

滚针离合器装入座孔中后，不需要另行轴向定位。安装座孔公差与冲压外圈滚针轴承相同，座孔的表面粗糙度小于Ra0.8。

滚针离合器的内接圆直径与HK系列相同。轴的硬度应在HV670～840，并磨削。

工作温度在充分润滑的条件下，钢弹簧的滚针离合器可在-30℃～+120℃温度范围内运行。塑料弹簧的滚针离合器工作温度范围为-10℃～+70℃。

2. Inspection

Press the drawn cup roller clutch into the ring gauge, then inspect with gauge. The wall thickness should over 20mm.

3. Mounting

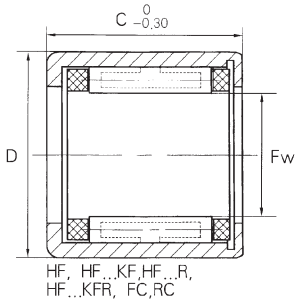
The drawn cup roller clutch is fitted in the housing bore without axial orientation. The roller clutch's tolerance is determined by the accuracy of the housing bore. The surface rouyhness must be less than Ra0.8.

The inscribed circle's diameter of roller chutch is same as series HK's. The grinding operation shaft's hardness should be controlled HV670-840.

Working temperature rang of roller clutches with steel springs is between -30℃ and +120℃, whereas roller clutches with plastic springs' temperature is between -10℃ and +70℃.

冲压外圈滚针离合器

Drawn Cup Needle Roller Clruches



HF, HF...KF,HF...R,
HF...KFR, FC,RC

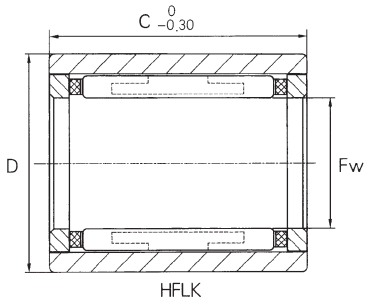
轴径 Shaft Diameter	轴承型号 Bearing Designation		重量 Mass 近似 Approx	外形尺寸 Boundary Dimensions			传动力矩 Pemissible Torque Md	极限转速 Limiting Speed		适用的冲压外圈滚针轴承 Suitable Drawn Cup Bearings
	塑料弹簧 Plastic Springs	钢弹簧 Steel Springs		Fw	D	C		轴旋转 Rotating Shaft Min⁻¹	外圈旋转 Rotatng Outer Ring Min⁻¹	
mm			g	mm			N · m			
3	HF0306KF		0.9	3	6.5	6	0.2	36000	7000	HK0306TN
4	HF0406KF	–	1	4	8	6	0.34	34000	8000	HK0408TN
	HF0406KFR	–	1	4	8	6	0.34	34000	8000	HK0408TN
6		HF061207	2	6	12	7	1	20000	11000	HK0608
	HK0608KF		2.8	6	10	8	1.5	20000	11000	HK0608
	HF0612KF	HF0612	3	6	10	12	1.76	23000	13000	HK0608
	HF0612KFR	HF0612R	3	6	10	12	1.76	23000	13000	HK0608
		HF061210	3.5	6	12	10	3	20000	13000	HK061208
8	HF0812KF	HF0812	3.5	8	12	12	3.15	17000	12000	HK0808
	HF0812KFR	HF0812R	3.5	8	12	12	3.15	17000	12000	HK0808
		HF081210	3.2	8	12	10	3	16000	12000	HK0808
	HF08145.3KF		3	8	14	5.3	4	15000	11000	HK081410
		HF081410	3.6	8	14	10	4.6	15000	11000	HK081410
		HF081607	4.1	8	16	7	5.5	15000	11000	HK081610
	HF1012KF	HF081610	2	8	14	5	5.5	16000	12000	HK101410
	HF1012KFR	HF081412	4	8	14	12	5	16000	12000	HK101410
10	–	HF1012	4	10	14	12	5.3	14000	11000	HK1010
	–	HF1012R	4	10	14	12	5.3	14000	11000	HK1010
12	–	HF1216	11	12	18	16	12.2	11000	8000	HK1212
14	–	HF1416	13	14	20	16	17.3	9500	8000	HK1412
16	–	HF1616	14	16	22	16	20.5	8500	7500	HK1612
18	–	HF1816	16	18	24	16	24.1	7500	7500	HK1812
20	–	HF2016	17	20	26	16	28.5	7000	6500	HK2010
25	–	HF2520	30	25	32	20	66	5500	5500	HK2512
30	–	HF3020	36	30	37	20	90	4500	4500	HK3012
35	–	HF3520	40	35	42	20	121	3900	3900	HK3512

型 号	重 量 g	主 要 尺 寸			传动力矩 N · m
		F w	D	C	
FC4K	1	4	8	6	0.35
FC6	3	6	10	12	1.76
FC6K	3	6	10	12	1.76
FC8	4	8	14	12	5.3
FCL8K	3.5	8	12	12	5
FC10	4.8	10	16	12	6
FCL10K	4	10	14	12	5.3
FC12	11	12	18	16	12.2
FC14K	13	14	20	16	17.3
FC16	14	16	22	16	21.7
FC20	17	20	26	16	32.5
FC25	30	25	32	20	71.0
FC30	36	30	37	20	99
FC35	40	35	42	20	107

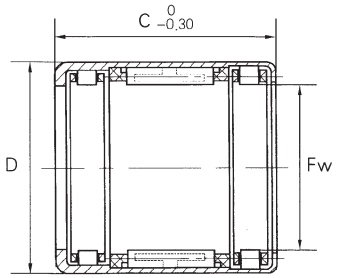
型 号	重 量 g	主 要 尺 寸			传动力矩 N · m
		F w	D	C	
RC02	2	3.175	7.15	6.35	0.32
RC040708	3.5	6.35	11.112	12.7	2.03
RC040708-FS	3.5	6.35	11.112	12.7	2.03
RC061008	4.7	9.525	15.875	12.7	5.45
RC061008-FC	4.7	9.525	15.875	12.7	5.45
RC081208	9.2	12.7	19.05	12.7	8.84
RC081208-FS	9.2	12.7	19.05	12.7	8.84
RC101410	14.5	15.875	22.225	15.88	16.9
RC101410-FC	14.5	15.875	22.225	15.88	16.9
RC121610	16.2	19.05	25.4	15.88	23.3
RC121610-FS	16.2	19.05	25.4	15.88	23.3
RC162110	17	25.4	33.338	15.88	49.6
RC162110-FC	17	25.4	33.338	15.88	49.6

极限转速对油和脂润滑均有效,宽度偏差$^{0}_{-0.30}$mm,特殊要求订货时说明。

冲压外圈滚针离合器和轴承组件　Drawn Cup Needle Roller Clruches and Bearing Asscmblies



HFLK



HFL, HFL...KF, HFL...R
HFL...KFR, FCB, RCB

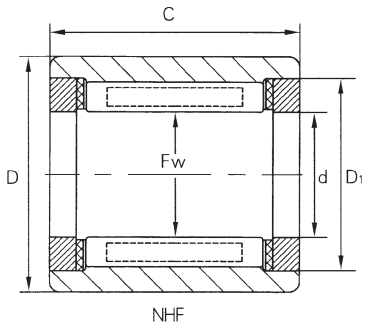
轴径 Shaft Diameter	轴承型号 Bearing Designation		重量 Mass 近似 Approx	外形尺寸 Boundary Dimensions			传动力矩 Pemissible Torque Md	极限转速 Limiting Speed		基本额定负荷 Basic Load Ratings	
	塑料弹簧 Plastic Springs	钢弹簧 Steel Springs		Fw	D	C		轴旋转 Rotating Shaft Min⁻¹	外圈旋转 Rotatng Outer Ring Min⁻¹	C	Co
mm			g	mm			Nm			KN	
3	HFL0308KF		3	3	3.6	8	1				
4	HFL0408KF		3.5	4	8	8	1.5				
6	HFL0615KF	HFL0615	4	6	10	15	1.76	23000	13000	–	–
	HFL0615KFR	HFL0615R	4	6	10	15	0.5	23000	13000	–	–
		HFL061012K	5	6	10	12		21000	12000		
8		HFL081212K	6	8	12	12		20000	12000		
		HFL081412K	7	8	14	12		19000	12000		
	HFL0822KF	HFL0822	7	8	12	22	3.15	17000	12000	4.05	4.15
	HFL0822KFR	HFL0822R	7	8	12	22	1	17000	12000	–	–
10	HFL1022KF	HFL1022	8	10	14	22	5.3	14000	11000	4.3	4.65
	HFL1022KFR	HFL1022R	8	10	14	22	1.5	14000	11000	–	–
12	–	HFL1226	18	12	18	26	12.2	11000	8000	6.3	6.5
14	–	HFL1426	20	14	20	26	17.3	9500	8000	7.1	7.7
16	–	HFL1626	22	16	22	26	20.5	8500	7500	7.3	8.4
18	–	HFL1826	25	18	24	26	24.1	7500	7500	8.3	10.3
20	–	HFL2026	27	20	26	26	28.5	7000	6500	8.2	10.4
25	–	HFL2530	44	25	32	30	66	5500	5500	10.9	14.1
	–	HFL2550	65	25	37	50	100	5000	5500	14	17
30	–	HFL3Q30	51	30	37	30	90	4500	4500	12.6	17.6
35	–	HFL3530	58	35	42	30	121	3900	3900	13	19.3

型 号	重 量 g	主 要 尺 寸			传动力矩 N . m
		Fw	D	C	
FCB8	10	8	14	20	5
FCB10	15	10	16	20	10
FCB12	18	12	18	26	12.2
FCB16	22	16	22	26	20.5
FCB20	27	20	26	26	28.5
FCB25	44	25	32	30	66
FCB30	51	30	37	30	90
FCB35	58	35	42	30	121

型 号	重 量 g	主 要 尺 寸			传动力矩 N . m
		Fw	D	C	
RCB061014	12	9.525	15.875	22.22	4.83
RCB061014-FS	12	9.525	15.875	22.22	4.83
RCB081214	16	12.7	19.05	22.22	7.9
RCB081214-FC	16	12.7	19.05	22.22	7.9
RCB101416	21.3	15.875	22.225	25.4	15.4
RCB101416-FS	21.3	15.875	22.225	25.4	15.4
RCB121616	26.5	19.05	25.4	25.4	20.9
RCB121616-FC	26.5	19.05	25.4	25.4	20.9
RCB162117	44.8	25.4	33.338	26.99	45
RCB162117-FS	44.8	25.4	33.338	26.99	45

极限转速对油和脂润滑均有效,宽度偏差$^{0}_{-0.30}$mm,特殊要求订货时说明。

冲压外圈滚针离合器和轴承组件　Drawn Cup Needle Roller Clruches and Bearing Asscmblies



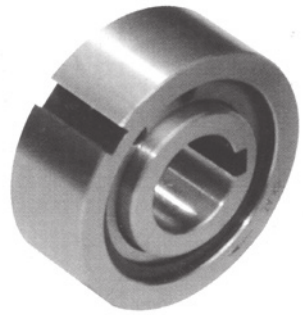
轴径 Shaft Diameter	轴承型号 Bearing Designation	重量 Mass 近似 Approx	外形尺寸 Boundary Dimensions				传动力矩 Pemissible Torque Md
			d	D +0.020 0	(D1)	C 0 −0.020	
mm		g	mm				N · m
4	NHF04	3.4	4 +0.050 +0.020	10	8.4	9	0.29
6	NHF06	4.7	6 +0.055 +0.020	12	10.4	10	0.69
8	NHF08	11	8 +0.055 +0.020	16	13.5	13	2.06
10	NHF10	14	10 +0.060 +0.020	18	15.5	14	3.14
12	NHF12	18	12 +0.065 +0.020	20	17.5	15	4.61

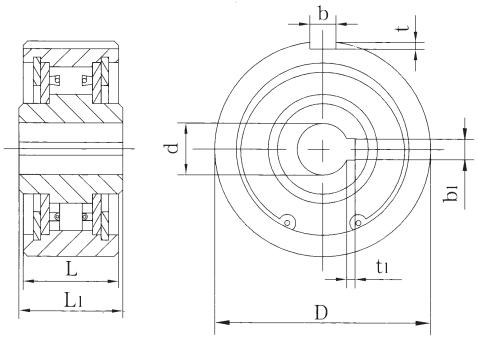
CKA系列单向离合器　　CKA SERIES WAY CLUTCHES

特性及应用：

CKA型为基本型楔块超越离合器，使用时可根据需要安装轴承以承受轴向与径向负载。单向自锁可靠，反向解脱轻便。适用于极限转速为：800～2500r／min，公称转矩为：31.5 ～4500N·m。常用于包装机械、印刷机械、食品机械、医疗机械、纺织机械、各种机床和减速机等机械传动。

结构型式：





单位:mm

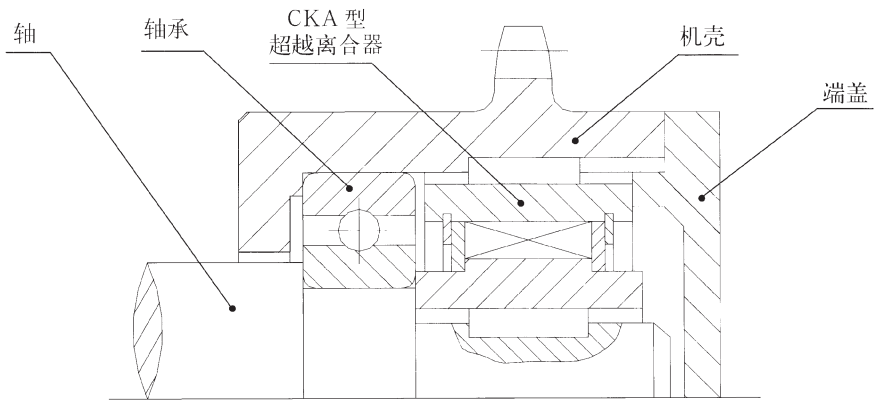
序号	代号	型号	公称转矩 Tn (N·m)	超越时的极限转速 n (r/min)	外环			内环			质量 m (kg)
					D (h7)	键槽 (b×t)	L	d (H7)	键槽 (b_1×t_1)	L_1	
1		CKA50×24–10	31.5	2500	50	3×1.8	22	10	3×1.4	24	0.24
2	CKA1	CKA50×24–12	31.5	2500	50	3×1.8	22	12	3×1.4	24	0.24
3		CKA52×24–16	31.5	2250	52	5×1.9	22	16	3×1.4	24	0.27
4	CKA2	CKA55×24–18	50	2250	55	4×2.5	22	18	4×1.8	24	0.28
5		CKA60×22–19	63	2000	60	6×3.5	22	19	6×2.8	22	0.30
6	CKA3	CKA60×24–20	63	2000	60	6×3.5	22	20	6×2.8	24	0.33
7		CKA63×26–24	100	1800	63	6×3.5	24	24	6×2.8	24	0.37
8	CKA4	CKA63×26–25	100	1800	63	6×3.5	24	25	6×2.8	26	0.37
9	CKA5	CKA63×32–25	140	1800	63	6×3.5	30	25	6×2.8	32	0.48
10		CKA65×26–24	100	1800	65	6×3.5	24	24	6×2.8	26	0.38
11		CKA70×32–12	150	1500	70	8×4.0	30	12	3×1.4	32	0.67
12		CKA70×24–20	150	1500	70	6×3.5	22	20	6×2.8	24	0.62
13		CKA70×32–25	150	1500	70	8×4.0	30	25	8×3.3	32	0.63
14	CKA6	CKA70×32–28	180	1500	70	8×4.0	30	28	8×3.3	32	0.60
15		CKA72×27–25	180	1500	72	6×3.5 L=14	20	25	8×3.3	27	0.54
16		CKA75×40–25	180	1500	75	8×4.0	30	25	8×3.3	40	0.79
17		CKA80×32–22	200	1500	80	8×4.0	30	22	6×2.8	32	1.29
18		CKA80×32–25	200	1500	80	8×4.0	32	25	8×3.3	32	0.90
19		CKA80×26–30	200	1500	80	8×4.0	26	30	8×3.3	26	0.73
20	CKA7	CKA80×32–30	200	1500	80	8×4.0	30	30	8×3.3	32	0.87
21		CKA80×31–35	200	1500	80	12×4	31	35	10×2.5	31	0.75
22		CKA85×28–30	200	1500	85	5×3.0 L=14	20	30	8×3.3	28	0.83
23		CKA90×37–25	200	1500	90	8×4.0	37	25	8×3.3	37	1.00
24		CKA100×34–28	315	1250	100	10×5	32	28	8×4.3	34	1.15
25		CKA100×34–32	315	1250	100	10×5	32	32	10×3.3	34	1.25
26	CKA8	CKA100×34–35	315	1250	100	10×5	32	35	10×3.3	34	1.34
27		CKA100×34–38	315	1250	100	10×5	32	38	10×3.3	34	1.28
28		CKA100×34–40	315	1250	100	10×5 L=28	32	40	10×3.3	34	1.20

CKA系列单向离合器　　CKA SERIES WAY CLUTCHES

单位:mm

序号	代号	型号	公称转矩 Tn (N·m)	超越时的极限转速 n (r/min)	外环			内环			质量 m (kg)
					D (h7)	键槽 (b×t)	L	d (H7)	键槽 ($b_1 \times t_1$)	L_1	
29		CKA100×67–40	315	1250	100	8×4.0 L=20	25	40	10×3.6	67	1.46
30		CKA100×31.5–45	315	1250	100	2–8×4	31.5	45	8×3.3	31.5	1.54
31		CKA105×35–30	315	1250	105	10×5 L=16	20	30	8×3.3	35	1.55
32		CKA105×34–35	315	1250	105	10×5 L=26	32	35	10×3.3	34	1.55
33		CKA105×35–35	315	1250	105	6×3.5	25	35	8×3.3	35	1.56
34		CKA110×34–30	400	1000	110	10×5	32	30	8×3.3	34	1.82
35		CKA110×34–35	400	1000	110	10×5	32	35	10×3.3	34	1.82
36	CKA9	CKA110×34–38	400	1000	110	10×5	32	38	10×3.3	34	1.67
37		CKA110×34–40	400	1000	110	10×5	32	40	10×3.3	34	1.91
38		CKA125×38–50	500	800	125	14×5.5	36	50	14×3.8	38	2.21
39		CKA130×52–38	500	800	130	12×5.0	50	38	12×3.3	52	3.14
40		CKA130×55–40	500	800	130	8×4.0	35	40	12×3.3	55	2.62
41		CKA130×38–45	500	800	130	14×5.5	36	45	14×3.8	38	4.31
42	CKA10	CKA130×38–50	500	800	130	14×5.5	36	50	14×3.8	38	3.02
43		CKA135×38–60	600	800	135	14×5.5	36	60	18×4.4	38	2.65
44		CKA136×52–35	800	800	136	8–Φ9	50	35	10×3.3	52	4.50
45		CKA136×52–45	800	800	136	6–M8	52	45	14×3.8	52	4.32
46		CKA140×55–50	1250	800	140	16×6.0	53	50	16×4.3	55	5.10
47		CKA140×38–60	1000	800	140	14×5.5	36	60	14×3.0	38	2.74
48		CKA145×34–45	1000	800	145	6–M10	34	45	12×3.8	34	3.35
49		CKA160×75–50	1500	800	160	6–M8	72	50	14×3.8	75	7.08
50		CKA160×55–55	2000	800	160	18×7.0	53	55	16×4.3	55	6.96
51		CKA160×35–70	1500	800	160	10×5.0	35	70	8×3.3	35	3.46
52		CKA170×55–60	2240	800	170	18×7.0	52	60	18×4.4	55	7.80
53		CKA170×55–65	2240	800	170	18×7.0	52	65	18×4.4	55	7.61
54		CKA180×52–65	2000	800	180	6–M8	52	65	18×4.4	52	7.35
55		CKA180×55–65	2500	800	180	18×7.0	52	65	18×4.4	55	8.69
56		CKA190×38–85	2500	800	190	14×5.0	36	85	14×3.8	38	5.50
57		CKA200×55–65	2800	800	200	20×7.5	53	65	20×3.9	55	11.02
58		CKA210×88–50	4000	800	210	6–M10	85	50	14×3.8	88	18.52
59		CKA210×85–75	4000	800	210	6–Φ13	70	75	20×4.9	70	14.25
60		CKA215×70–75	4500	600	215	6–M12	70	75	20×4.4	70	15.00

安装参考示意图:

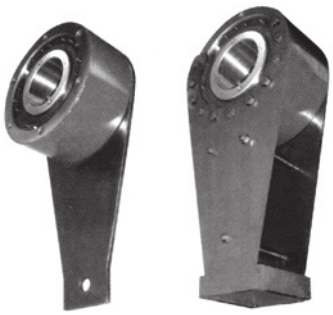


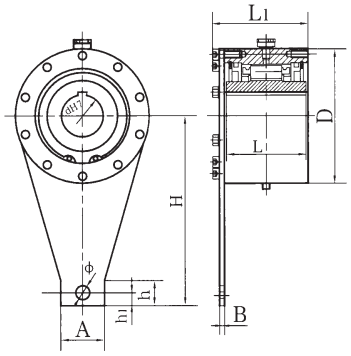
NYD(NJ)型接触式楔块逆止器　　NYD (NJ) contact wedge non–return device

特征及应用:

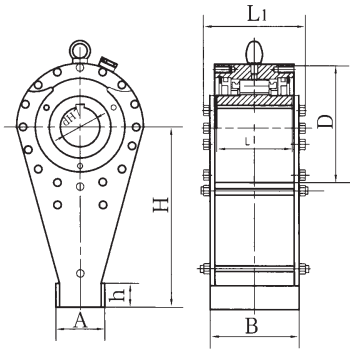
NYD型逆止器是一种适用于低速的接触式防逆转装置。具有重量轻、结构紧凑、逆止可靠、解脱容易、安装方便、适应性强等优点。是提升运输设备上首选的安全保护装置，一般适用于提升带式输送机、斗式提升机、刮板输送机及其他有逆止要求的设备。

结构型式:





NYD65～200 型逆止器(单臂板式)



NYD220～450 型逆止器(双臂板式)

NYD(NJ)型逆止器基本参数和主要尺寸

单位：mm

型号 Model	公称转矩 Torque Tn (N·m)	孔径范围 Pore size range d	内圈最高转速 Speed n (r/min)	空转助力矩 Idling torque (N·m)	结构尺寸 Boundary Dimensions									最大质量 quality m (kg)
					A	B	D	H	h	h1	Φ	L	L1	
NYD65	1600	50–65	150	4	50	6	160	226	30	16	13.5	85	106	13.5
NYD75	2500	60–75		5	65	6	170	269	35	19	16.5	85	106	16.1
NYD85	6000	70–85		8	95	9	210	329	45	29	20.5	110	135	29.2
NYD95	8000	80–95		10	105	9	230	382	55	32	20.5	110	138	37.2
NYD110	11000	90–110		15	110	12	270	425	60	40	26	110	141	46.1
NYD130	16000	100–130	100	20	120	12	320	506	65	36	26	130	161	82.8
NYD160	25000	120–160		35	120	20	360	612	65	32	31	140	183	125
NYD200	38000	160–200		45	130	20	430	623	70	43	41	160	207	180

型号 Model	公称转矩 Torque Tn (N·m)	孔径范围 Pore size range d	内圈最高转速 Speed n (r/min)	空转助力矩 Idling torque (N·m)	结构尺寸 Boundary Dimensions							最大质量 quality m (kg)
					A	B	D	H	h	L	L1	
NYD220	50000	160–220	80	75	238	259	500	820	80	230	303	351
NYD250	90000	180–250	50	95	288	323	600	1000	100	290	367	675
NYD270	125000	200–270		100	298	323	650	1100	110	290	367	737
NYD300	180000	230–300		110	356	335	780	1300	135	290	392	1123
NYD320	270000	250–320		140	386	345	850	1500	135	320	412	1425
NYD350	320000	250–350		160	414	360	930	1600	135	360	426	1955
NYD420	520000	320–420		220	474	484	1030	1800	165	450	550	2930
NYD450	700000	350–450		250	526	494	1090	2000	165	480	574	3380

注：1、孔公差为H7(GB/T1800. 4–1999)，推荐轴公差为h6，配合公差为H7/h6，键槽按GB/T1095–1979的JS9、GB/T1184–1996的7–9级标准制作。

2、请在订货单上标出孔径、尺寸公差，否则按标准配合公差H7加工。

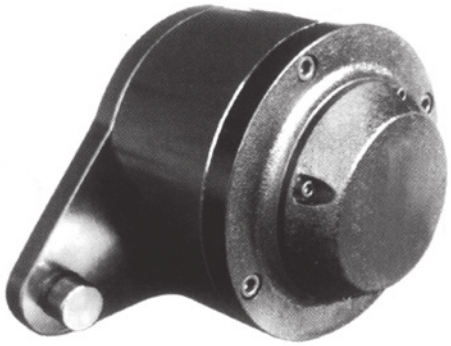
3、请选用优先孔径：50、55、60、65、70、75、80、85、90、95、100、110、120、130、140、150、160、170 180、 190、200、220...450

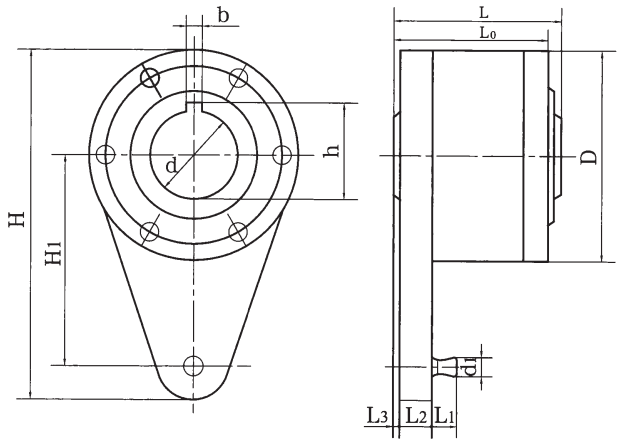
NF型非接触式楔块逆止器　　NF type contactless wedge non–return device

特征及应用:

NF型非接触式逆止器它是利用特殊形状楔块的离心力及其与内、外环之间的特殊几何关系以实现其正向运行时，非接触无磨损运转，反向又能可靠逆止的新型逆止装置。该产品具有逆止功效大，可靠性高。使用寿命长、重量轻、安装维护方便等优点，广泛用于带式输送机、刮板输送机、斗式提升机以及其它有逆止要求的机械设备中。

结构型式:





NF型非接触逆止器基本参数和主要尺寸

单位：mm

型号 Model	额定逆止转矩 Non–return rated torque (N・m)	最小非接触转速 Minimum non–contact speed nF(r/min)	最高转速 Speed nmax (r/min)	孔径范围 Pore size range d	安装轴伸范围 Shaft extension range s	外型及安装尺寸 Installation size is									质量 quality m (kg)
						D	H	H1	L	L0	L1	L2	L3	d1	
NF10	1000	450	1500	40–50	120–142	190	278	150	162	145	25	20	5	28	28
NF16	1600	450	1500	45–60	125–148	208	305	160	167	150	25	22	5	32	31
NF25	2500	425	1500	50–70	130–152	230	330	170	172	155	25	25	5	38	38
NF40	4000	425	1500	60–80	135–162	245	358	185	183	166	28	30	5	42	49
NF63	6300	400	1500	70–90	155–178	260	378	195	196	180	30	35	5	45	62
NF80	8000	400	1500	80–100	160–182	275	410	210	200	185	35	35	5	48	73
NF100	10000	400	1500	90–110	170–218	295	440	225	238	220	35	45	5	52	98
NF125	12500	375	1500	100–130	180–248	330	492	250	262	250	40	50	8	58	154
NF160	16000	375	1000	110–140	200–258	360	532	270	273	260	40	55	8	62	175
NF200	20000	350	1000	120–150	205–258	400	570	300	275	260	50	58	8	65	214
NF250	25000	350	1000	130–160	230–268	430	646	335	285	270	50	63	8	70	256

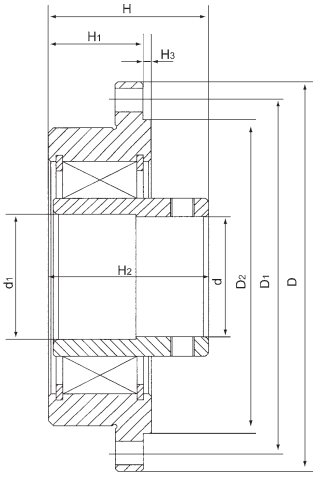
各种孔径的键槽尺寸

单位：mm

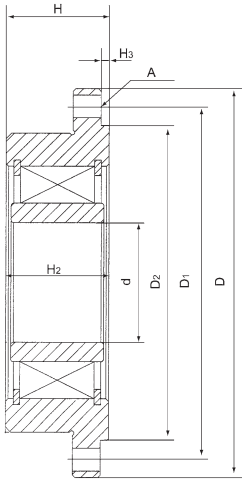
d (E7)	40	42	45	48	50	55	60	65	70	75	80
h	43.3	45.3	48.8	51.8	53.8	59.3	64.4	69.4	74.9	79.9	85.4
b (C11)	12	12	14	14	14	16	18	18	20	20	22
d (E7)	85	90	95	100	110	120	130	140	150	160	
h	90.4	95.4	100.4	106.4	116.4	127.4	137.4	148.4	158.4	169.4	
b (C11)	22	25	25	28	28	32	32	36	36	40	

备注：内孔公差为E7，推荐轴公差为h6;键槽尺寸及公差按GB／T1095–1979选取

RBDN系列电动滚筒逆止器　　RBDN SERIES BACKSTOP FOR ELECTRIC ROLLER



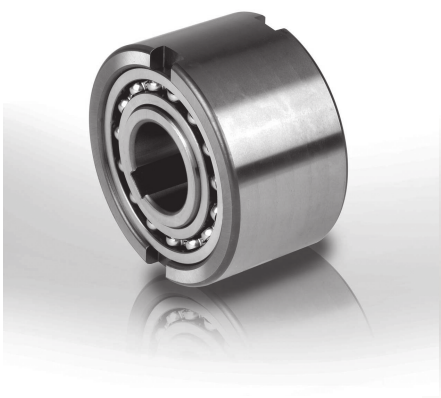
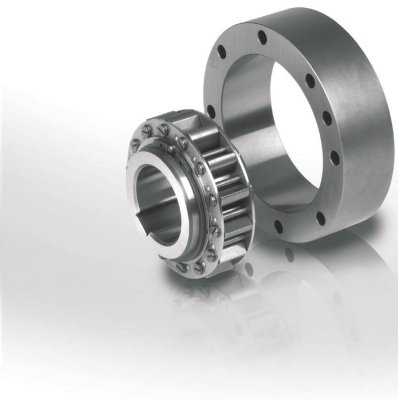
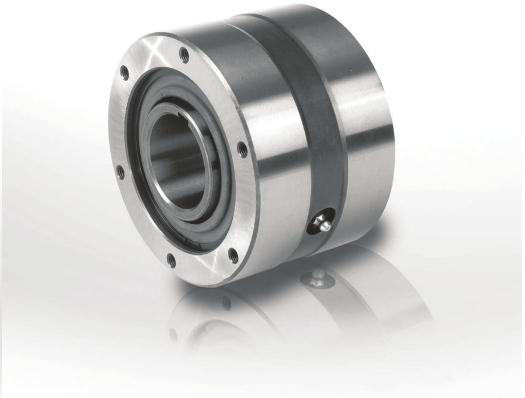
RBDN...J

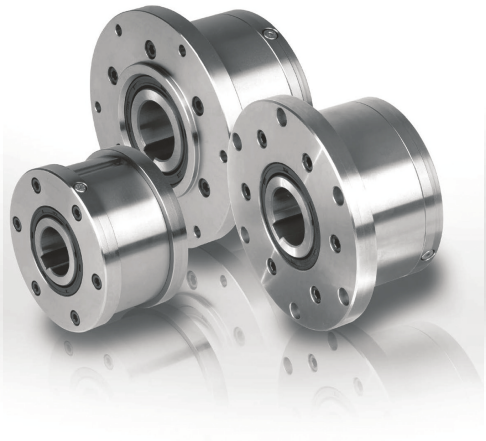
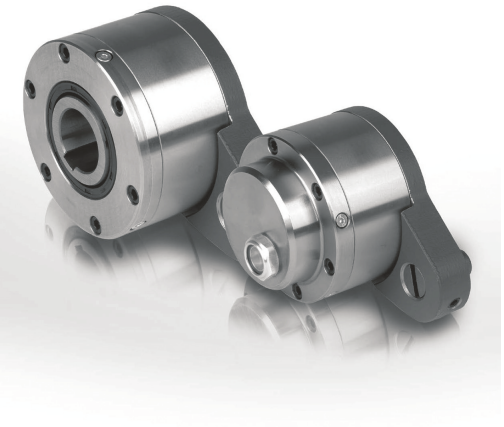


RBDN

型号	外圈内径 D	内圈内径 d(H7)	内圈键槽尺寸	总高度 H	外圈高度 H_1	内圈高度 H_2	内台阶外径 D_2	内台阶高度 H_3	固定螺孔直径 A	螺孔中心圆直径 D_1	扭力
RBDN30–98	98	30	8*3	22.5	22.5	20.5	64	3	3–8.6	84.4	400
RBDN40–138	138	40	10*3	22.5	22.5	22.4	90	3.5	3–8.6	122.4	850
RBDN40–138	138	40	10*3	22.5	22.5	22.4	100	3.5	3–8.6	122.4	850
RBDN45–138	138	45	12*3	22.5	22.5	22.4	100	3.5	3–8.6	122.4	1100
RBDN55–160	160	55	12*3.5	24.5	24.5	18.7	120	3	3–9	140	2200
RBDN35–136	136	35	10*3.5	39	39	21	100	3	6–7	121	1300
RBDN39–136	136	39	10*3.5	39	39	21	100	3	6–7	121	1300
RBDN45–149	149	45	12*3	49	49	21	120	3	6–9	135	2500
RBDN60–180	180	60	12*3	41	41	20.5	140	3	6–9	165	2750
RBDN42–135J	135	42	M12	60	37.5	60	100	3	6–6.5	115	1200
RBDN48–155J	155	48	M14	60	37.5	60	120	3	6–9	140	2500
RBDN55–170J	170	55	M16	60	37.5	60	130	3	6–9	150	2650
RBDN60–190J	190	60	M18	60	37.5	70	140	3	6–11	165	2650
RBDN35–140G	140	35	10*3.3	38	38	21	90	3	6–7	120	1300
RBDN40–150G	150	40	12*3.5	38	38	21	100	3	6–7	125	1300
RBDN45–170G	170	45	12*3.8	38	38	21	110	3	6–7	140	2500
RBDN50–180G	180	50	14*3.8	38	38	21	120	3	6–9	150	2500
RBDN60–200G	200	60	18*4.4	40	40	21	150	3	6–9	175	2650
RBDN65–190W	190	60	18*4.4	30	30	30	无	无	6*13	165	2350
RBDN28–108	108	28	8*3.3	33	33	13.3	72	3	4–7	94	700

电动滚筒逆止器装配尺寸　型号末尾英文字母　《J》表示加长内圈　《G》表示外圈盖板　《W》表示无内台阶

ITJ BEARINGS

www.itjbearings.co.jp