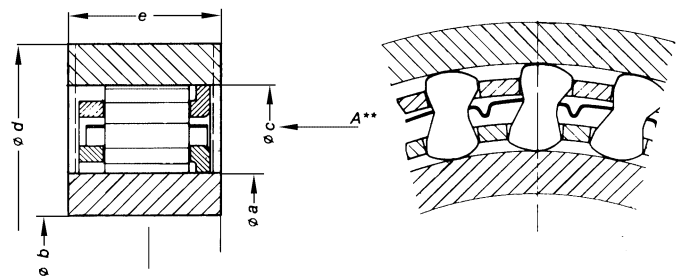
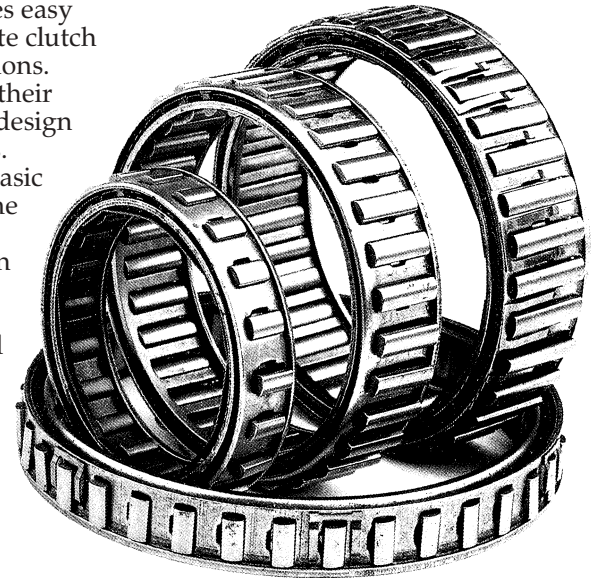


Sprag Clutches



The double cage sprag elements are complete units capable of high torque transmission within confined spaces. Their unit construction enables easy assembly into cylindrical inner and outer races to provide a complete clutch suitable for most overrunning, backstopping and indexing applications. The sprags are individually energised by a brass ribbon spring, but their relative movement to one another is controlled by the double cage design to ensure load sharing and prevent de-phasing of individual sprags. Standard sprags are manufactured from 52100 bearing steels. Two basic designs of sprag are available, disengaging types (Diseng.) where the sprag lifts-off from the inner race when the outer is rotated at high speeds, and engaging types (Eng.) where the contact forces between sprag and inner race increase as the outer race is rotated. The sprag element is designed to rotate with the outer housing, this being essential for correct operation of the unit. In applications with rapid speed changes additional clamping of the element to the housing is essential and this is achieved by clips/T bars fixed to the outer cage. To reduce wear of sprags during overrunning drag strips may be fixed to the inner cage to rotate this relative to the outer and so reduce sprag contact during overrun.

The table below shows dimensions and construction of standard sprag elements in heavy print are preferred sizes, normally available from stock, which should always be used for new designs unless large production volumes are envisaged. Sprag elements are best applied where high torque transmission is required, but space is limited, and where direct installation into machine parts is required. The clutches double cage design makes them particularly suitable where torsional vibrations are present. Ability to control the operating characteristics has made them suitable for a wide range of applications including turbine starters, marine drives, gearbox backstops, winches, printing machines and machine tools.



Dimensions

Clutch Part No.	Dimensions mm					Sprags		No. Drag Strips	No NClips or T Bar	Direction Operation **	Nominal Torque (2)	Approx Weight
	Std Sprag	a* +.008 -.005	c +.013 -.013	e min	b max	d min	No.					
133590	22.225	38.887	10.0	17	50	12	Diseng.			CW	74	30
13143	27.767	44.425	13.5	21	58	14	Eng.			CW	139	55
133034	30.342	47.000	13.5	23	62	14	Diseng.			CW	124	60
1310028	31.750	48.410	13.5	24	63	16	Diseng.		3	CW	159	66
133392	38.092	54.750	16.0	30	71	18	Diseng.			CCW	324	85
1310145	41.275	57.937	13.5	32	75	14	Diseng.		3	CW	210	90
132909	44.450	61.112	16.0	34	79	20	Diseng.	2	3	CW	424	100
133339	49.721	66.383	13.5	38	85	22	Diseng.	2	4	CW	366	100
1310003	49.721	66.383	13.5	38	85	22	Diseng.		4	CW	366	100
1310172	54.765	71.427	16.0	42	92	24	Eng.			CW	640	120
1310226	54.765	71.427	16.0	42	92	24	Diseng.	2	4	CW	610	130
136709	54.765	71.427	21.0	42	92	24	Eng.	3	10	CW	907	180
1310147	54.765	71.427	25.4	42	92	24	Diseng.	3	8	CW	1160	200
13239	57.760	74.427	16.0	45	95	26	Eng.			CW	710	110
136324	57.760	74.427	19.0	45	95	26	Eng.			***	710	130
1310299	59.537	76.200	28.9	46	98	26	Eng.		4	***	1418	240
136334	63.340	80.000	21.0	50	104	26	Diseng.			CW	806	175
1310080	72.217	88.882	13.5	56	115	30	Diseng.			CW	793	140
13168	72.217	88.882	21.0	56	115	30	Eng.			CCW	1520	185
134012	72.217	88.882	21.0	56	115	30	Eng.	4	10	CCW	1489	215
133687	79.698	96.363	13.5	62	124	24	Diseng.	3	4	CW	680	155
137322	79.698	96.363	25.4	62	124	34	Diseng.	5	12	CW	2396	280
138334	83.340	100.000	25.4	65	130	34	Diseng.			CW	2055	270
138316	83.597	102.596	25.4	65	132	34	Diseng.	5	12	CW	3032	275
134008	85.776	104.776	25.4	66	135	34	Eng.	5	17	CW	3073	280
136715	87.290	103.960	16.0	67	135	34	Diseng.			CW	1470	165
13261	103.231	119.983	16.0	80	154	40	Diseng.	6	10	CCW(1)	1900	205
13236	117.391	136.391	16.0	91	176	30	Diseng.	5	6	CCW	1970	240
1312334	123.340	140.000	25.4	96	181	50	Diseng.			CW	4800	400
133403	123.881	142.880	25.4	96	184	44	Eng.			CW	5740	460
133403B	123.881	142.880	25.4	96	184	44	Eng.		11	CW	5740	470

*For shaft dia. 75mm plus tolerance extended to ±0.013mm.

**Direction of rotation of outer race freewheeling viewed from 'A'.

***These clutches are fitted with end bearings.

(1) Note the centering flanges on type 13261 face each other.

(2) Nominal torque can be exceeded to maximum 1.7x for short periods.

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