Conax® friction clutches CM

Fig. 1
Conax® friction clutch
Type CM

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The characteristic feature of the Conax® clutch is the expanding symmetrical friction ring* between the cone-shaped metal discs. It is divided into six segments which are held together by a tension spring. Axial displacements of the shafts are offset in the bore of the casing when the clutch is disengaged. The contact forces in the system cancel each other out, there is no axial loading of the machine bearings when the clutch is engaged.

Operation of the Conax® friction clutch

When the clutch is being engaged, the sleeve and the deepgroove bearing (17) slide over the clutch levers (5). They press the metal disc (7) against the friction ring* (9) which, as a result, slides outwards evenly until it forms a friction connection with the clutch casing (1) and the flanks of the metal discs (7) and (11). When the clutch is being disengaged, the sleeve and the deepgroove bearing (17) release the clutch levers (5). The pressure springs (8) press the metal discs (7 and 11) apart and the friction ring* segments are pulled inwards by the tension spring (10). As a result the clutch section is completely detached from the casing (1). The clutch is set and re adjusted by tightening the adjusting ring (12), which is secured against turning by the locking screw (19). The segments of the friction ring* are held together by the tension spring up to the speed nF. The tensile force of the spring is greater than the centrifugal force of the segments. In order to avoid a residual torque when the clutch is disengaged, the speed must be reduced to below nF during or shortly after the disengaging operation (see table, page 4). The clutch casing is preferably arranged on the input side. When the clutch hub is located on the input side, a friction ring* with an internal spring has to be used if the speed nF is exceeded. In this case the friction ring* is in contact with the clutch casing.

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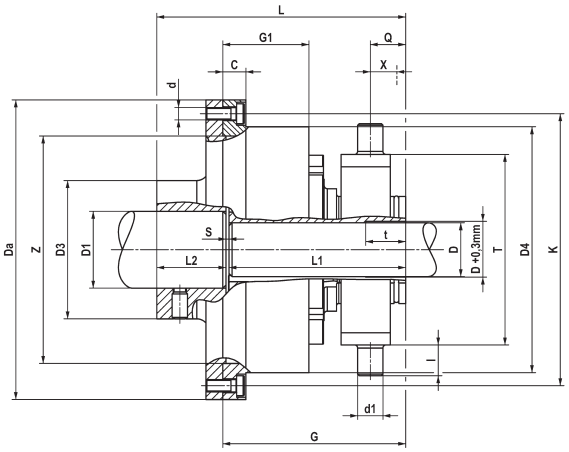

Fig. 6 Type CMW
Size 1 - 16

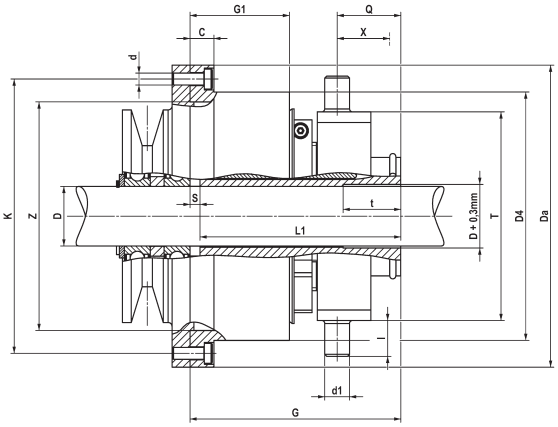

Fig. 7 Type CMF
Size 1 - 16

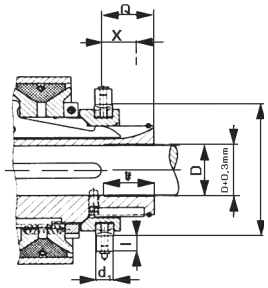

Fig. 8 Type CMW, CMF
Size 25 - 50

Dimensions in mm • Can be delivered ex stock

Size	Torque T_S Nm	Max. speed rpm	Operating speed n_F rpm	C	D_a	D Pilot bore	D[1] (H7) max.	D_1 Pilot bore	D1[1] (H7) max.	D[3]
• 1	100	4000	1900	12	125	10	20	-	30	60
• 2	200	3280	1300	12	152	14	25	-	38	65
• 3	300	2550	1100	15	195	18	35	18	50	90
• 5	500	2120	850	15	235	18	55	25	60	105
• 8	800	1710	730	20	290	18	65	28	70	125
• 16	1600	1360	615	25	365	38	80	32	90	155
25	2500	1225	600	25	410	50	100	42	110	185
50	5000	1080	390	30	460	60	120	48	130	220

Size	D[4]	d	d_1	G	G_1	K	L	L_1	L_2	l
1	100	6 x M 6	11,5	93	45	112	120	90	29	14
2	125	6 x M 6	12,5	104	50	138	135	101	33	14
3	160	6 x M 8	16,5	119	57	177	162	115	45	15
5	200	6 x M 8	16,5	155	78	217	212	149	60	17
8	250	6 x M 10	16,5	159	85	268	231	153	75	18
16	315	6 x M 12	20,5	186	100	340	273	180	90	25
25	355	6 x M 14	25	274	125	383	390	265	120	30
50	400	6 x M 16	28	324	162	430	470	315	150	30

Size	Q	S	T	t	X	Z (H7)	Operating force on sleeve N	Weight [kg] Type CMW	Type CMF
1	22	1	90	25	13	90	560	4,2	3,2
2	26	1	105	29	16	115	700	6,4	5,1
3	32	2	124	26	19	148	900	12,1	8,8
5	44	3	160	45	26	186	1000	21,2	16,1
8	42	3	185	34	28	234	1100	36,2	25,6
16	45	3	225	34	31	295	1800	65	47
25	80	5	250	85	55	335	2600	120	89
50	90	5	300	100	61	376	4500	193	145

1) The keyways usually are executed to DIN 6885/ 1. Clutch hub executed with 1 set screw, displaced to the keyway by 120°, flanged hub with 1 set screw displaced by 180°.

All weights and mass moments of inertia refer to max. bore.