

Locking Assembly CfN 7012/CfN 7012-IN · Typical installation

Characteristics

As the industry standard, the CfN 7012/CfN 7012-IN Locking Assembly is suitable for most applications.

Transmission of high loads – up to 4 CfN 7012/CfN 7012-IN Locking Assemblies can be used in series, the transmissible torques and axial forces are added. (Please contact our specialists for assistance).

Bending moment and radial loads – Combined loads can be transmitted. (Please contact our specialists for assistance).

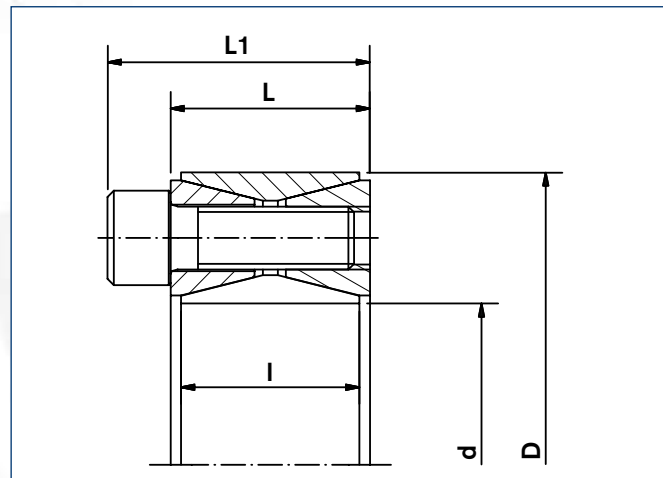
Simplified manufacture – CfN 7012/CfN 7012-IN Locking Assemblies can bridge large clearances without the loss of transmission values.

Low risk to contamination – During the tightening process the functional surfaces of the device are under pressure, sufficient enough to keep contaminants out, thereby preserving the integrity of the the device.

Adjustable transmission values – The screw tightening torque can be varied, thus allowing for different torque transmission values. CfN 7012/CfN 7012-IN Locking Assemblies can be tightened and released repeatedly.

Example applications:

sprockets, gears, coupling hubs, conveyor pulleys, idler wheels, sheaves



Locking Assembly CfN 7012/CfN 7012-IN · Dimensions



Locking Assembly CfN 7012/CfN 7012-IN · Belt pulley

Locking Assembly dimensions								Transmissible torques or axial forces		Surface Pressure		Locking screws DIN EN ISO 4762-12.9			Weight		min. D _N *			
d x D	d	C ₁	D	C ₂	L	I	L ₁	T	F _{ax}	Shaft P _w	Hub P _N	n	Thread		T _A	WT	d _D	R _{p0.2} [psi] 36000 45000 62000		
Inch	Inch							lb-ft	lbs	psi			mm		lb-ft	lbs	mm	Inch		
3/4	0.750	+0	1.850	-0	0.787	0.669	1.083	225	7200	35000	14200	8	M6x18	5	13	0.5	M8	2.565	2.395	2.227
1	1.000	-0.002	1.969	+0.002	0.787	0.669	1.083	337	8088	33000	16800	9	M6x18	5	13	0.6	M8	2.915	2.679	2.454
1 1/8	1.125		2.165		0.787	0.669	1.083	424	9045	30000	15600	10	M6x18	5	13	0.7	M8	3.108	2.878	2.655
1 3/16	1.1875		2.159		0.813	0.669	1.108	445	8994	31000	17100	10	M6x18	5	13	0.7	M8	3.221	2.955	2.702
1 1/4	1.250		2.362		0.787	0.669	1.083	459	8813	35000	18600	12	M6x18	5	13	0.7	M8	3.666	3.330	3.017
1 3/8	1.375		2.365		0.776	0.669	1.071	622	10857	32000	18700	12	M6x18	5	13	0.7	M8	3.681	3.341	3.025
1 7/16	1.4375		2.559		0.787	0.669	1.083	748	12488	35000	19700	15	M6x18	5	13	0.8	M8	4.092	3.689	3.318
1 1/2	1.500	+0	2.559	-0	0.787	0.669	1.083	782	12512	33500	19700	15	M6x18	5	13	0.8	M8	4.092	3.689	3.318
1 5/8	1.625	-0.0025	2.953	+0.0025	0.945	0.787	1.319	1273	18801	39000	21500	12	M8x22	6	30	1.3	M10	4.968	4.417	3.926
1 11/16	1.6875		2.953		0.945	0.787	1.319	1320	18773	34000	19500	12	M8x22	6	30	1.3	M10	4.696	4.240	3.819
1 3/4	1.750		2.953		0.945	0.787	1.319	1368	18761	36000	21400	12	M8x22	6	30	1.3	M10	4.953	4.408	3.921
1 7/8	1.875		3.150		0.945	0.787	1.319	1454	18611	34000	20300	12	M8x22	6	30	1.4	M10	5.122	4.597	4.119
1 15/16	1.9375		3.150		0.945	0.787	1.319	1498	18556	32000	19700	12	M8x22	6	30	1.4	M10	5.037	4.541	4.085
2	2.000		3.346		0.945	0.787	1.319	1808	21696	37000	22200	14	M8x22	6	30	1.4	M10	5.744	5.079	4.493
2 1/8	2.125		3.346		0.945	0.787	1.319	1919	21673	35000	22300	14	M8x22	6	30	1.4	M10	5.761	5.090	4.499
2 3/16	2.1875		3.543		0.945	0.787	1.319	1971	21625	34000	21000	14	M8x22	6	30	1.5	M10	5.875	5.245	4.678
2 1/4	2.250		3.543		0.945	0.787	1.319	2023	21579	32000	20400	14	M8x22	6	30	1.5	M10	5.777	5.181	4.639
2 3/8	2.375		3.531		0.996	0.787	1.370	2127	21494	30500	20600	14	M8x22	6	30	1.5	M10	5.790	5.184	4.636
2 7/16	2.4375		3.740		0.945	0.787	1.319	2497	24586	34000	22200	16	M8x22	6	30	1.6	M10	6.421	5.677	5.022
2 1/2	2.500		3.740		0.945	0.787	1.319	2556	24538	33000	22100	16	M8x22	6	30	1.6	M10	6.402	5.665	5.015
2 9/16	2.5625	+0	3.737	-0	0.959	0.787	1.333	2617	24510	32000	22000	16	M8x22	6	30	1.6	M10	6.378	5.649	5.004
2 5/8	2.625	-0.003	4.331	+0.003	1.102	0.945	1.555	3775	34514	37000	22500	14	M10x25	8	61	2.8	M12	7.502	6.616	5.840
2 11/16	2.6875		4.331		1.102	0.945	1.555	3866	34524	36000	22400	14	M10x25	8	61	2.8	M12	7.479	6.602	5.832
2 3/4	2.750		4.337		1.079	0.945	1.532	4017	35057	36000	22900	14	M10x25	8	61	2.8	M12	7.602	6.681	5.881
2 7/8	2.875		4.528		1.102	0.945	1.555	4175	34852	34500	22000	14	M10x25	8	61	2.9	M12	7.728	6.844	6.063
2 15/16	2.9375		4.528		1.102	0.945	1.555	4262	34821	34000	22100	14	M10x25	8	61	2.9	M12	7.751	6.859	6.071
3	3.000		4.724		1.102	0.945	1.555	4332	34656	33000	21000	14	M10x25	8	61	3.1	M12	7.834	6.993	6.237
3 1/8	3.125		4.724		1.102	0.945	1.555	4515	34675	31000	20600	14	M10x25	8	61	3.1	M12	7.746	6.936	6.203
3 1/4	3.250		4.921		1.102	0.945	1.555	5355	39545	33000	21800	16	M10x25	8	61	3.3	M12	8.350	7.407	6.571
3 3/8	3.375		4.921		1.102	0.945	1.555	5558	39524	34000	23400	16	M10x25	8	61	3.3	M12	8.757	7.663	6.720
3 7/16	3.4375		5.118		1.102	0.945	1.555	5601	39105	32000	21500	16	M10x25	8	61	3.4	M12	8.609	7.655	6.805
3 1/2	3.500		5.118		1.102	0.945	1.555	5706	39127	31000	21200	16	M10x25	8	61	3.4	M12	8.536	7.608	6.776
3 3/4	3.750	+0	5.305	-0.0035	1.142	0.945	1.594	6914	44250	34000	24100	18	M10x25	8	61	3.6	M12	9.646	8.387	7.317
3 15/16	3.3975		5.708		1.301	1.024	1.852	8402	51212	33000	22800	14	M12x30	10	107	4.4	M14	9.975	8.775	7.729
4	4.000		5.843		1.299	1.024	1.850	8489	50934	32000	22000	14	M12x30	10	107	4.4	M14	9.973	8.832	7.823
4 7/16	4.4375		6.496		1.299	1.024	1.850	10498	56778	34000	23300	16	M12x30	10	107	5.2	M14	11.525	10.093	8.859
4 1/2	4.500		6.496		1.299	1.024	1.850	10652	56811	33000	22900	16	M12x30	10	107	5.2	M14	11.386	10.007	8.809
4 15/16	4.9375		7.087		1.496	1.339	2.047	14493	70447	29000	20300	20	M12x35	10	107	7.7	M14	11.523	10.342	9.267
5	5.000		7.087		1.496	1.339	2.047	14672	70426	29000	20500	20	M12x35	10	107	7.7	M14	11.588	10.384	9.293
5 1/2	5.500	+0	7.492	-0	1.449	1.339	2.000	17804	77690	29000	21300	22	M12x35	10	107	8.5	M14	12.531	11.160	9.934
6	6.000	-0.004	8.268	+0.004	1.496	1.339	2.047	22762	91048	30500	22200	26	M12x35	10	107	9.5	M14	14.194	12.550	11.102
6 1/2	6.500		8.858		1.732	1.496	2.362	28336	104625	29000	21300	22	M14x40	12	170	13	M14	14.816	13.195	11.745
7	7.000		9.252		1.732	1.496	2.362	33220	113897	29000	22000	24	M14x40	12	170	13	M14	15.791	13.985	12.388
7 1/2	7.500	+0	9.823	-0	2.126	1.811	2.756	41369	132381	26500	20300	28	M14x45	12	170	18	M14	15.972	14.334	12.844
7 7/8	7.875	-0.0045	10.235	+0.0045	2.051	1.811	2.681	46707	142345	26500	20400	30	M14x45	12	170	19	M14	16.688	14.966	13.402

* B ≥ 21 necessary

To continue see next page

Locking Assembly dimensions							Transmissible torques or axial forces		Surface Pressure		Locking screws DIN EN ISO 4762-12.9			Weight	min. D _N *				
d x D	d	C ₁	D	C ₂	L	I	L ₁	T	F _{ax}	Shaft P _w	Hub P _N	n	Thread d _G	T _A	WT	Rp0,2[psi]			T _{max}
mm	Inch						lb-ft	lbs	psi			mm	lb-ft	lbs	Inch			lb-ft	
																36000	45000	62000	
19 x 47	0.748		1.850	0	0.787	0.669	1.083	229	6745	39162	15955	8	M6 x 18	13	0.5	2.680	2.476	2.280	258
20 x 47	0.787	0	1.850	0	0.787	0.669	1.083	236	6745	37712	15955	8	M6 x 18	13	0.5	2.680	2.476	2.280	273
22 x 47	0.866	-0.002	1.850	+0.002	0.787	0.669	1.083	266	6745	34811	15955	8	M6 x 18	13	0.5	2.680	2.476	2.280	302
24 x 50	0.945		1.969		0.787	0.669	1.083	317	6745	34811	17405	9	M6 x 18	13	0.6	2.961	2.711	2.474	369
25 x 50	0.984		1.969		0.787	0.669	1.083	339	6745	33360	17405	9	M6 x 18	13	0.6	2.961	2.711	2.474	384
28 x 55	1.102		2.165		0.787	0.669	1.083	420	8993	33360	17405	9	M6 x 18	13	0.7	3.256	2.981	2.721	435
30 x 55	1.181		2.165		0.787	0.669	1.083	443	8993	30459	17405	9	M6 x 18	13	0.6	3.256	2.981	2.721	465
32 x 60	1.260		2.362		0.787	0.669	1.083	561	11241	33360	18856	12	M6 x 18	13	0.7	3.691	3.347	3.028	664
35 x 60	1.378		2.362		0.787	0.669	1.083	627	11241	31910	18856	12	M6 x 18	13	0.7	3.691	3.347	3.028	723
38 x 65	1.496	0	2.559	0	0.787	0.669	1.083	775	13489	33360	18856	15	M6 x 18	13	0.8	3.999	3.627	3.280	959
40 x 65	1.575	-0.0025	2.559	+0.0025	0.787	0.669	1.083	819	13489	31910	18856	15	M6 x 18	13	0.7	3.999	3.627	3.280	1033
42 x 75	1.654		2.953		0.945	0.787	1.319	1291	17986	39162	21757	12	M8 x 22	30	1.3	5.005	4.441	3.940	1549
45 x 75	1.772		2.953		0.945	0.787	1.319	1387	17986	36261	21757	12	M8 x 22	30	1.3	5.005	4.441	3.940	1697
48 x 80	1.890		3.150		0.945	0.787	1.319	1468	17986	33360	20306	12	M8 x 22	30	1.4	5.123	4.597	4.119	1770
50 x 80	1.969		3.150		0.945	0.787	1.319	1527	17986	31910	20306	12	M8 x 22	30	1.3	5.123	4.597	4.119	1844
55 x 85	2.165		3.346		0.945	0.787	1.319	1955	22482	33360	21757	14	M8 x 22	30	1.4	5.671	5.032	4.465	2434
60 x 90	2.362	0	3.543	0	0.945	0.787	1.319	2132	22482	30459	20306	14	M8 x 22	30	1.5	5.762	5.171	4.633	2655
65 x 95	2.559	0	3.740	0	0.945	0.787	1.319	2626	24730	31910	21757	16	M8 x 22	30	1.6	6.338	5.624	4.991	3246
70 x 110	2.756	-0.003	4.331	+0.003	1.102	0.945	1.555	4020	35971	36261	21757	14	M10 x 25	61	2.8	7.340	6.513	5.779	4942
75 x 115	2.953		4.528		1.102	0.945	1.555	4286	35971	33360	21757	14	M10 x 25	61	2.9	7.674	6.809	6.042	5311
80 x 120	3.150		4.724		1.102	0.945	1.555	4544	35971	30459	20306	14	M10 x 25	61	3.1	7.682	6.894	6.178	5680
85 x 125	3.346	0	4.921	0	1.102	0.945	1.555	5495	40468	33360	21757	16	M10 x 25	61	3.3	8.340	7.400	6.567	6860
90 x 130	3.543		5.118		1.102	0.945	1.555	5768	40468	30459	21757	16	M10 x 25	61	3.4	8.674	7.697	6.829	7303
95 x 135	3.740	0	5.315	0	1.102	0.945	1.555	6904	44964	33360	23207	18	M10 x 25	61	3.6	9.403	8.242	7.239	8630
100 x 145	3.937	-0.0035	5.709	+0.0035	1.299	1.024	1.850	8188	49460	33360	23207	14	M12 x 30	107	4.4	10.100	8.853	7.775	10474
110 x 155	4.331		6.102		1.299	1.024	1.850	8984	49460	30459	21757	14	M12 x 30	107	4.7	10.341	9.176	8.142	11655
120 x 165	4.724		6.496		1.299	1.024	1.850	11212	58453	31910	23207	16	M12 x 30	107	5.2	11.492	10.073	8.847	14531
130 x 180	5.118	0	7.087	0	1.496	1.339	2.047	15048	71942	27559	18856	20	M12 x 35	107	7.7	11.076	10.044	9.084	19621
140 x 190	5.512		7.480		1.496	1.339	2.047	17851	78687	27559	21757	22	M12 x 35	107	8.5	12.677	11.249	9.981	23235
150 x 200	5.906	0	7.874	0	1.496	1.339	2.047	20654	85432	29009	21757	24	M12 x 35	107	9.0	13.344	11.841	10.507	27145
160 x 210	6.299	-0.004	8.268	+0.004	1.496	1.339	2.047	23973	89928	29009	21757	26	M12 x 35	107	9.5	14.012	12.434	11.033	31423
170 x 225	6.693		8.858		1.732	1.496	2.362	29284	105665	27559	21757	22	M14 x 40	170	13	15.012	13.321	11.820	38947
180 x 235	7.087		9.252		1.732	1.496	2.362	33710	112410	29009	21757	24	M14 x 40	170	13	15.680	13.914	12.346	44996
190 x 250	7.480	0	9.843	0	2.047	1.811	2.677	41529	134892	26108	20306	28	M14 x 45	170	18	16.007	14.365	12.872	55396
200 x 260	7.874		10.236		2.047	1.811	2.677	46840	143885	26108	20306	30	M14 x 45	170	19	16.646	14.938	13.386	62478
220 x 285	8.661	-0.0045	11.220	+0.0045	2.205	1.969	2.913	60339	168615	26108	20306	26	M16 x 50	262	25	18.246	16.375	14.672	80550
240 x 305	9.449		12.008		2.205	1.969	2.913	75903	193345	27559	21757	30	M16 x 50	262	27	20.350	18.058	16.023	101351
260 x 325	10.236	0	12.795	0	2.205	1.969	2.913	92204	215827	29009	23207	34	M16 x 50	262	29	22.636	19.841	17.426	124439
280 x 355	11.024	-0.005	13.976	+0.005	2.598	2.362	3.406	112858	247302	24658	20306	32	M18 x 60	358	42	22.728	20.397	18.276	154239
300 x 375	11.811		14.764		2.598	2.362	3.406	134987	274281	26108	20306	36	M18 x 60	358	45	24.010	21.547	19.307	185958
320 x 405	12.598	0	15.945	0	3.071	2.835	3.957	184409	350719	26108	20306	36	M20 x 70	509	65	25.930	23.270	20.851	252124
340 x 425	13.386		16.732		3.071	2.835	3.957	196580	350719	24658	20306	36	M20 x 70	509	69	27.210	24.419	21.880	267909
360 x 455	14.173	0	17.913	0	3.543	3.307	4.567	258541	436151	24658	20306	36	M22 x 80	686	93	29.131	26.142	23.425	350303
380 x 475	14.961	-0.0055	18.701	+0.0055	3.543	3.307	4.567	270712	433903	23207	18856	36	M22 x 80	686	97	29.227	26.503	23.971	369776
400 x 495	15.748		19.488		3.543	3.307	4.567	283252	431655	23207	18856	36	M22 x 80	686	101	30.457	27.619	24.980	389250
420 x 515	16.535		20.276		3.543	3.307	4.567	328985	476619	23207	18856	40	M22 x 80	686	110	31.688	28.735	25.990	454088
440 x 545	17.323	0	21.457	0	4.016	3.780	5.118	402011	555306	23207	18856	40	M24 x 90	885	142	33.534	30.409	27.504	559275
460 x 565	18.110	-0.006	22.244	+0.006	4.016	3.780	5.118	416764	550809	21757	17405	40	M24 x 90	885	149	33.451	30.630	27.954	584723
480 x 585	18.898		23.031		4.016	3.780	5.118	457334	580036	21757	17405	42	M24 x 90	885	157	34.634	31.714	28.943	640636
500 x 605	19.685	0	23.819	0	4.016	3.780	5.118	494215	602518	21757	17405	44	M24 x 90	885	160	35.819	32.799	29.933	699130
520 x 630	20.472		24.803		4.016	3.780	5.118	520033	609263	21032	17405	45	M24 x 90	885	176	37.299	34.154	31.169	743610
540 x 650	21.260	0	25.591	0	4.016	3.780	5.118	539211	608813	20306	16680	45	M24 x 90	885	181	37.767	34.742	31.845	772230
560 x 670	22.047	-0.007	26.378	+0.007	4.016	3.780	5.118	595271	647932	20306	17405	48	M24 x 90	885	187	39.668	36.322	33.149	854181

Locking Assembly dimensions								Transmissible torques or axial forces		Surface Pressure		Locking screws DIN EN ISO 4762-12.9			Weight	min. D _N *			
d x D	d	C ₁	D	C ₂	L	I	L ₁	T	F _{ax}	Shaft P _w	Hub P _N	n	Thread d _G	T _A	WT	Rp0,2[psi] 36000 45000 62000			T _{max}
mm	Inch							lb-ft	lbs	psi			mm	lb-ft	lbs	Inch			lb-ft
580 x 690	22.835	0	27.165	0	4.016	3.780	5.118	640267	673561	21032	17405	50	M24 x 90	885	194	40.851	37.406	34.138	921601
600 x 710	23.622	-0.007	27.953	+0.007	4.016	3.780	5.118	660921	671987	20306	16680	50	M24 x 90	885	201	41.253	37.949	34.784	953319
620 x 730	24.409		28.740		4.016	3.780	5.118	708867	697617	20306	16680	52	M24 x 90	885	205	42.414	39.017	35.764	1024501
640 x 750	25.197		29.528		4.016	3.780	5.118	759026	723022	20306	17405	54	M24x90	885	212	44.405	40.660	37.107	1098265
660 x 770	25.984		30.315		4.016	3.780	5.118	809923	748201	20306	17405	56	M24x90	885	218	45.588	41.744	38.096	1174536
680 x 790	26.772		31.102		4.016	3.780	5.118	832790	746853	19581	16680	56	M24x90	885	225	45.900	42.224	38.703	1210164
700 x 810	27.559		31.890		4.016	3.780	5.118	916880	798786	20306	17405	60	M24x90	885	229	47.957	43.912	40.076	1334677
720 x 830	28.346	0	32.677	0	4.016	3.780	5.118	941222	1247077	19581	17405	60	M24x90	885	236	49.140	44.996	41.065	1372812
740 x 850	29.134	-0.008	33.465	+0.008	4.016	3.780	5.118	998020	822617	19581	17405	62	M24x90	885	243	50.325	46.081	42.055	1458009
760 x 870	29.922		34.252		4.016	3.780	5.118	1056293	847572	19581	17405	64	M24x90	885	249	51.509	47.165	43.044	1545714
780 x 890	30.709		35.039		4.016	3.780	5.118	1099814	859487	19581	17405	65	M24x90	885	256	52.692	48.249	44.033	1611142
800 x 910	31.496		35.827		4.016	3.780	5.118	1143334	871403	19581	17405	66	M24x90	885	260	53.877	49.334	45.023	1677898
820 x 930	32.283		36.614		4.016	3.780	5.118	1205295	896358	19581	17405	68	M24x90	885	267	55.061	50.417	46.012	1771947
840 x 950	33.071		37.402		4.016	3.780	5.118	1269470	921313	19581	17405	70	M24x90	885	273	56.246	51.503	47.002	1868577
860 x 970	33.858		38.189		4.016	3.780	5.118	1334382	946268	19581	17405	72	M24x90	885	280	57.429	52.586	47.991	1967715
880 x 990	34.646		38.976		4.016	3.780	5.118	1401506	971223	19581	17405	74	M24x90	885	284	58.613	53.670	48.980	2069361
900 x 1010	35.433	0	39.764	0	4.016	3.780	5.118	1450928	982914	19581	17405	75	M24x90	885	291	59.798	54.755	49.971	2145042
920 x 1030	36.220	-0.009	40.551	+0.009	4.016	3.780	5.118	1501087	994604	19581	17405	76	M24x90	885	298	60.981	55.839	50.960	2221904
940 x 1050	37.008		41.339		4.016	3.780	5.118	1571900	1019559	19581	17405	78	M24x90	885	304	62.166	56.924	51.950	2329967
960 x 1070	37.795		42.126		4.016	3.780	5.118	1644188	1044290	19581	17405	80	M24x90	885	309	63.350	58.007	52.939	2440539
980 x 1090	38.583		42.913		4.016	3.780	5.118	1697298	1055980	18856	17405	81	M24x90	885	315	64.533	59.091	53.928	2522564
1000 x 1110	39.370		43.701		4.016	3.780	5.118	1751145	1067671	18856	17405	82	M24x90	885	322	65.718	60.176	54.918	2605843

■ Mounting of Locking Assembly

The Locking Assemblies are supplied slightly oiled and ready-to-use. The values for T, F_{ax}, P_w and P_N apply to Locking Assemblies installed in oiled condition.

■ Surface finishes

For shafts and hub bores

R_a = 125 RMS

■ Tolerances

We recommend the following mounting tolerances

shaft: k9-h9 · hub: N9-H9 - see table above

shaft: k11-h11 · hub: N11-H11

To avoid deformation of the relatively thickwalled thrust rings, the Locking Assembly should be located as symmetrically as possible between shaft and hub bore. If the shaft is smaller than nominal d, the bore should exceed nominal D to the same extent and vice versa. The true run-out quality is determined by the direct centering between shaft and hub.

■ Location of several Locking Assemblies CfN 7012

If several Locking Assemblies are to be installed, the transmission values of the table can be added when the Locking Assemblies are located within a distance of 4 x L₁.

■ Change of screw tightening torques

The Locking Assemblies are equipped with 12.9 grade screws. A reduction of the screw tightening torque is possible. The lowest allowable screw tightening torque is approximately 50% of T_A. There is an approximate linear relationship between T, T_A, F_{ax}, P_w and P_N.

■ Auxiliary Threads

To facilitate removal, the front thrust rings have auxiliary threads for pull-out screws.

* B ≥ 2 l necessary

To continue see next page

Explanations to tables

d, D, l, l_1, l_2 = Basic dimensions, Locking Assemblies not tightened

T = transmissible torque

F_{ax} = transmissible axial force

p_w = surface pressure between Locking Assembly and shaft

p_N = surface pressure between Locking Assembly and hub

n = fastener quantity

d_G = clamping thread

d_D = metric pullout thread dia.

T_A = maximum tightening torque for the screws considered in order to determine the values T, F_{ax}, p_w and p_N

D_N = minimum required outside hub diameter

$R_{p0,2}$ = minimum required yield point of hub material

T_{max} = maximum theoretical transmissible torque

B = minimum hub width

C_1 = Shaft Tolerances

C_2 = Bore Tolerances

s = metric hex key size (across flats)