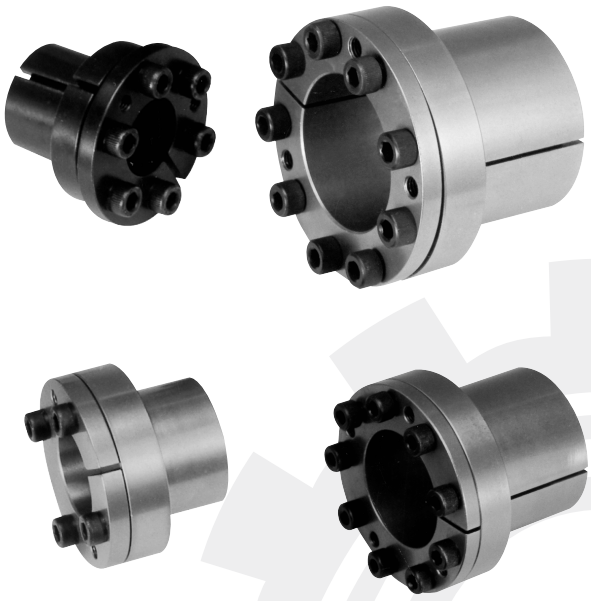
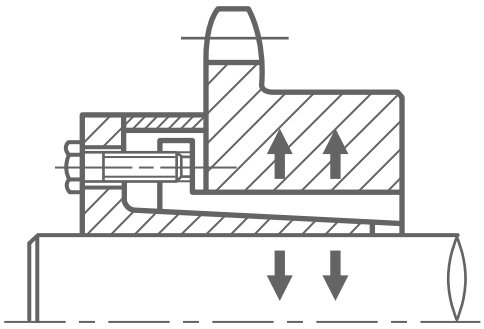
CAPT-LOCKS





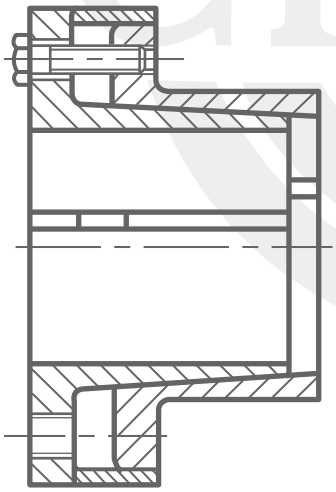
suit for shaft diameter
f6～f130mm

As the specified data between outside diameter D and the inner bore d for CAPT LOCK Type T has a very small difference, and it suit for the connection with the shaft in a medium or small diameter, specially for the connection in a small space between the inner bore of hub and shaft.

The working fundation for CAPT lock Type T is that the inner ring with flange and taper surface is fixed with the outside ring with taper bore by relevant tightening bolt and tighten the bolt to make the inner ring move axially. The emerged pressure and friction in radius effect the connection between hub and shaft.

There is a locating ring between the inner ring and outer ring to use for locating and sealing.

Type T CAPT lock is composed by an inner ring, an outer ring, a locating ring and relevant tightening bolt which have charac teristics for simple structure, self centered , good concentricity, good sealing, dust-proof and water-proof ete.



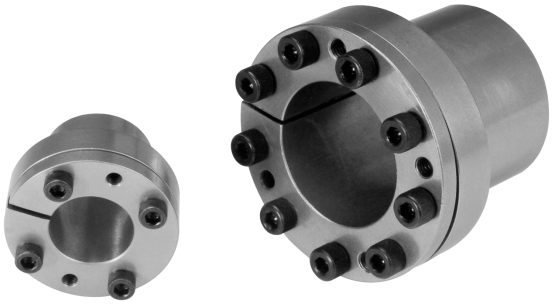
Nomenclature for CAPT-LOCK T

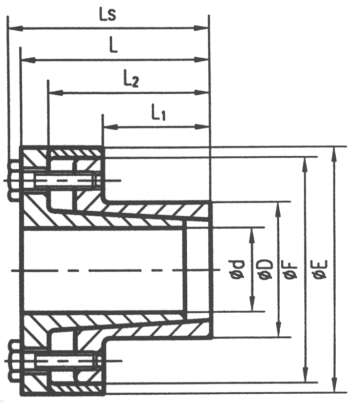
CL 50 X 60 T

- CAPT LOCK T
- out diameter D
- bore diameter d
- enterprise code CAPT-LOCKS

T CAPT-LOCKS

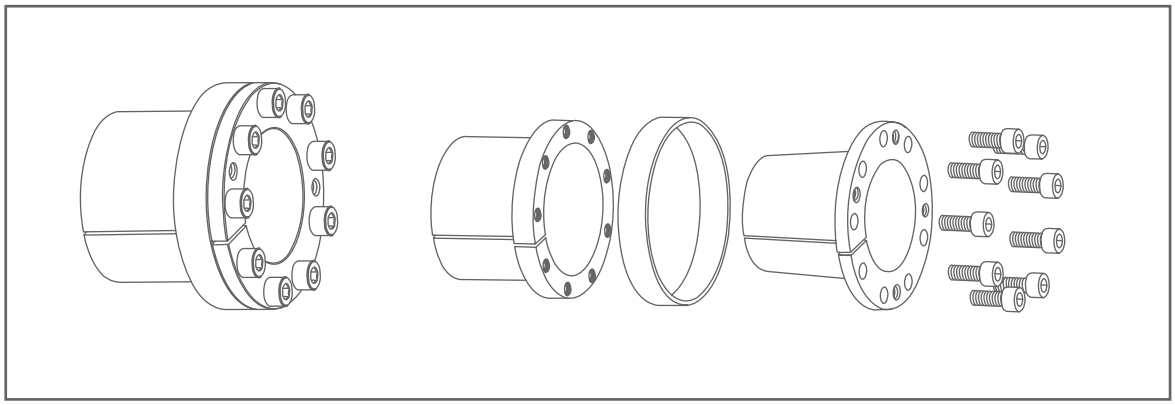
CAPT-LOCKS T





T CAPT-LOCKS ®

Catalog	Fundamental dimensions						SizesxN	Rated load		Ps	Ph	Ma	G
dxD	E	F	L1	L2	L	Ls		Ft(Kn)	Mt(Kn.m)	Mpa	Mpa	N.m	Kg
CL6x14T	25	23	10	18.5	21	24	M3x3	4.2	0.012	185	80	2	0.15
CL7x15T	27	24	12	22	25	29	M4x3	7.4	0.025	235	110	4.9	0.15
CL8x15T	27	24	12	22	25	29	M4x3	7.4	0.029	205	110	4.9	0.16
CL9X16T	28	25	14	23	26	30	m4x4	9.4	0.044	205	115	4.9	0.16
CL10x16T	28	25	14	23	26	30	M4x4	9.8	0.049	185	115	4.9	0.17
CL11x18T	32	28	14	23	26	30	M4x4	9.8	0.053	170	105	4.9	0.17
CL12x18T	32	28	14	23	26	30	M4x4	9.8	0.058	160	105	4.9	0.18
CL13x23T	38	33	14	23	26	30	M4x4	9.8	0.063	140	80	4.9	0.19
CL14x23T	38	33	14	23	26	30	M4x4	9.8	0.068	130	80	4.9	0.2
CL15x24T	45	40	16	29	36	42	M6x3	17	0.127	185	115	17	0.21
CL16x24T	45	40	16	29	36	42	m6x3	17	0.136	175	115	17	0.23
CL17x26T	47	42	18	31	38	44	M6x4	2	0.18	190	125	17	0.25
CL18x26T	47	42	18	31	38	44	M6x4	22	0.20	180	125	17	0.27
CL19x27T	49	43	18	31	38	44	M6x4	22	0.21	170	120	17	0.29
CL20x28T	50	44	18	31	38	44	M6x4	22	0.22	160	115	17	0.30
CL22x32T	54	48	25	38	45	51	M6x4	22	0.25	115	80	17	0.38
CL24x34T	56	50	25	38	45	51	M6x4	22	0.27	105	75	17	0.41
CL25x34T	56	50	25	38	45	51	M6x4	22	0.25	100	75	17	0.45
CL28x39T	61	55	25	38	45	51	M6x6	33	0.465	135	97	17	0.47
CL30x41T	62	57	25	38	45	51	M6x6	33	0.51	127	90	17	0.48
CL32x43T	65	59	25	38	45	51	M6x6	33	0.54	120	90	17	0.52
CL35x47T	69	62	32	45	52	58	M6x8	45	0.79	105	80	17	0.63
CL38x50T	72	66	32	45	52	58	M6x8	45	0.86	100	75	17	0.67
CL40x53T	75	69	32	45	52	58	M6x8	45	0.90	95	70	17	0.73
CL42x55T	78	71	32	45	52	58	M6x8	45	0.95	90	70	17	0.78
CL45x59T	86	80	45	62	70	78	M8x8	84	1.89	110	85	41	1.23
CL48x62T	87	81	45	62	70	78	M8x8	84	2.01	105	80	41	1.24
CL50x65T	92	84	45	62	70	78	M8x8	84	2.10	100	75	41	1.40
CL55x71T	98	92	55	72	80	88	M8x9	94	2.60	85	65	41	1.70
CL60x77T	104	98	55	72	80	88	M8x9	94	2.84	75	60	41	1.90
CL65x84T	111	105	55	72	80	88	M8x9	94	3.07	70	55	41	2.21
CL70x90T	119	113	65	86	96	106	M10x9	150	5.25	90	70	83	3.05
CL75x95T	126	119	65	86	96	106	M10x9	150	5.60	80	65	83	3.32
CL80x100T	131	125	65	86	96	106	M10x12	200	8.02	100	80	83	3.50
CL85x106T	137	131	62	86	96	106	M10x12	200	8.50	95	75	83	3.81
CL90x112T	144	137	65	86	96	106	M10x12	200	9.00	90	75	83	4.20
CL95x120T	149	142	65	86	96	106	M10x14	230	11.0	100	80	83	4.75
CL100x125T	154	147	65	86	96	106	M10x18	300	15.0	120	95	83	5.46
CL110x140T	180	172	90	114	128	140	M12x12	290	16.0	80	65	145	6.05
CL120x155T	198	187	90	114	128	140	M12x12	290	17.5	70	55	145	7.18
CL130x165T	208	197	90	114	128	140	M12x16	384	25.0	90	70	145	8.03



Key elements for designing and calculation T

1.Determine max torque needed and max axial load

$$Mt\ max = \frac{30000H}{p.n} \cdot K(N\ m)$$

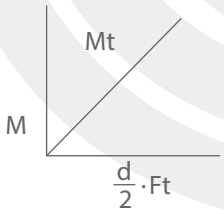
$$Ft\ max = Ft \cdot K$$

H--Transmission power KW
n--rotational speed r/min
K--coefficient needed
Sheet for coefficient needed, K

No shock load, transmitting with little inertia	1.5 – 2.5
Slight shock load,transmitting with middle inertia	2.0 – 4.0
Big shock load, transmitting with heavy inertia	3.0 – 5.0

2.Calculate synthetic load and transmitted torque

$$M = \sqrt{Mt^2 - (\frac{d}{2} x Ft)^2}$$

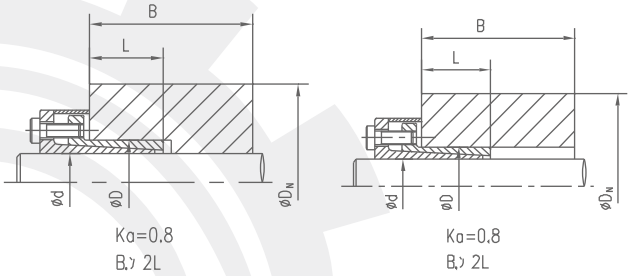


M--Required transmitted torque N.M
Mt--CAPT lock rated transmitted torque N.m
Ft--Rated axial force N
d--Transmission shaft diameter mm

Mt ⩾M, can be used.
Mt<M, need bigger type of CAPT lock or to be installed by two CAPT locks or more together

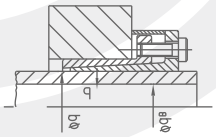
3.Calculation for the hub diameter

$$Da \geqslant D \sqrt{\frac{\sigma b + Ka \cdot Ph}{\sigma b - Ka \cdot Ph}}$$



Da--outside diameter of hub mm
D--inside diameter of hub mm
Ph--surface pressures on hub Mpa
σb--tensile strength of material
Ka--It should be 0.6 for single CAPT lock, it will be 0.8 when two CAPT locks or more are installed together

4.Calculation for the inside diameter of hollow shaft



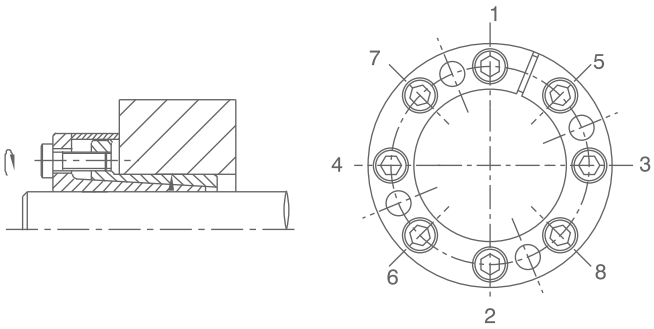
$$dB \leqslant d \sqrt{\frac{\sigma b - 2xPs.K3}{\sigma b}}$$

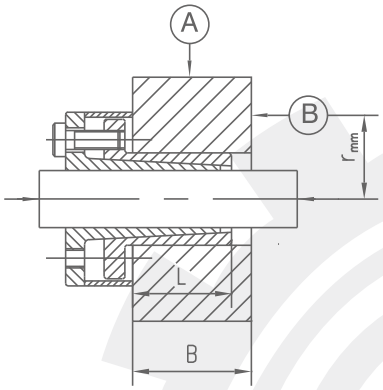
dB--inside diameter of hollow shaft mm
d--outside diameter of hollow shaft mm
6b--tensile strength of shaft material Mpa
Ps--pressure on the surface of shaft Mpa

5.Settlement for the surface roughness and dimension tolerance

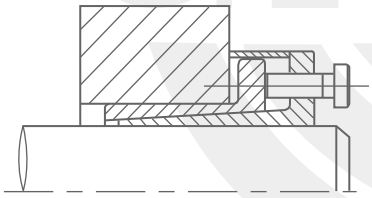
Fitting section	Ra(um) Surface roughness	Dimension precision
Shaft diameter d	1.6	h8
Bore diameter D	1.6	H8

6.Installation and disassembling for CAPT-LOCKS Type T.

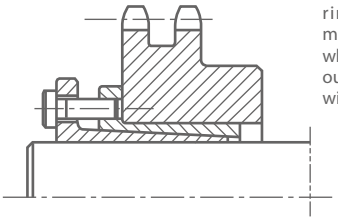




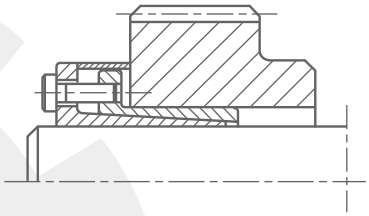
Tighten the bolts one by one as shown in picture 1 and 2. and reach the specified torque step by step. After the correct installation, the run out should be inspected as shown in picture 3.the run out A Should be 0.05mm and B should be 0.002Rmm.

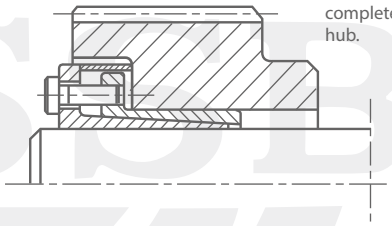


When disassembling, take off all the tightening bolts and insert the unloading bolts into the unloading tap holes and tighten them. By doing this, CAPT lock can be loosen and be separated with hub and shaft.

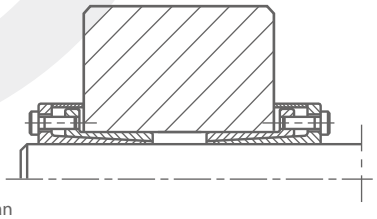


Installed without locatig rings. The inner ring moves in axial direction while tightening, thus the outer ring and hub bore will be tightened.



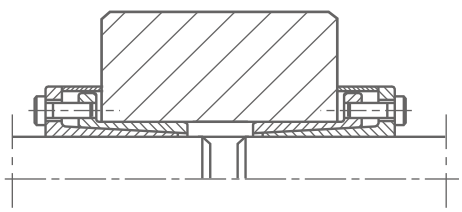


Installed with counter bore. The CAPT-LOCKS can be completely installed into the hub.



Used in pairs. They can transmit greater power.

Used in pairs, and mounted with hubs. They can be used instead of couplings.



While installed with cams, the position and angle of the cams can be adjusted at will.