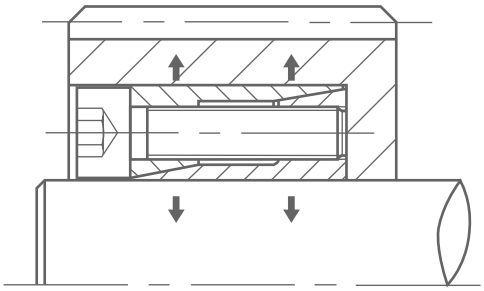
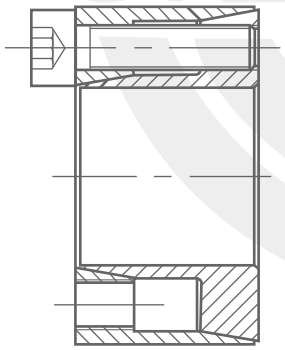
# CAPT-LOCKS



Locking assembly type FAR, bores from 5 to 50mm

-Simple structure
-Ideal power distribution shaft and hub
-Large clamping range
-Good centering ability and cyclic running
-No special tools needed
-No automatic locking
-High transmitted torque
-Shaft and hub up to precision h9-H9
-Shaft and hub without special cyclic tolerances
-Easy assembly & disassembly

Fits surface
By the special structure of the FAR type locking assembly even rough fits can be bridged with excellent centering ability Shaft and hub in qualities up to h9-H9. Surface roughness for shaft and hubis lower than 12mm.



Assembly
You can easily insert locking assemblg and then get it greased, no need MoSzo Tighten screws oppositely and turn by 180° in several stages upto indisated torque.

Important
The locking assembly must be inserted into the drilling at least by measure"12".

Disassembly
Lossen screws oppositelg.

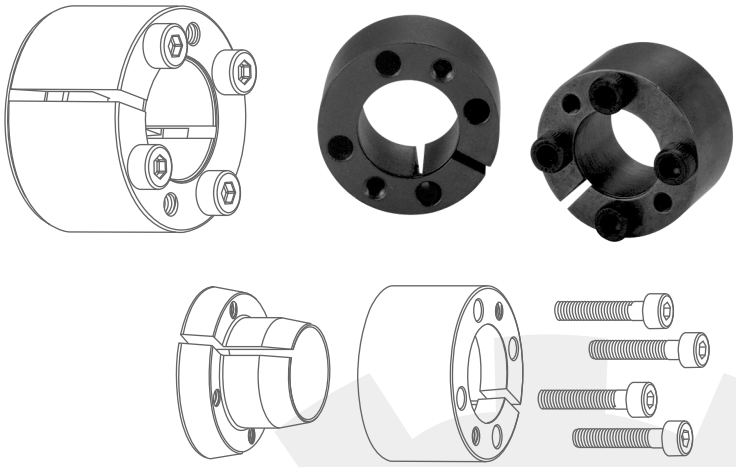
Nomenclature for CAPT-LOCKS FAR

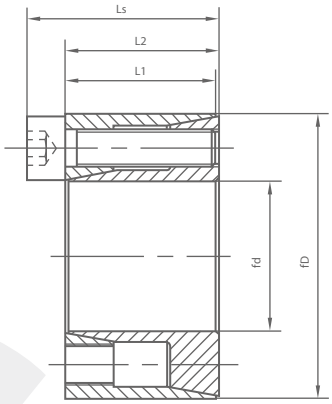
CL 5 X 16 FAR

- CAPT-LOCKS FAR
- outside diameter D
- shaft diameter d
- enterprise code CAPT-LOCKS

**FAR** CAPT-LOCKS

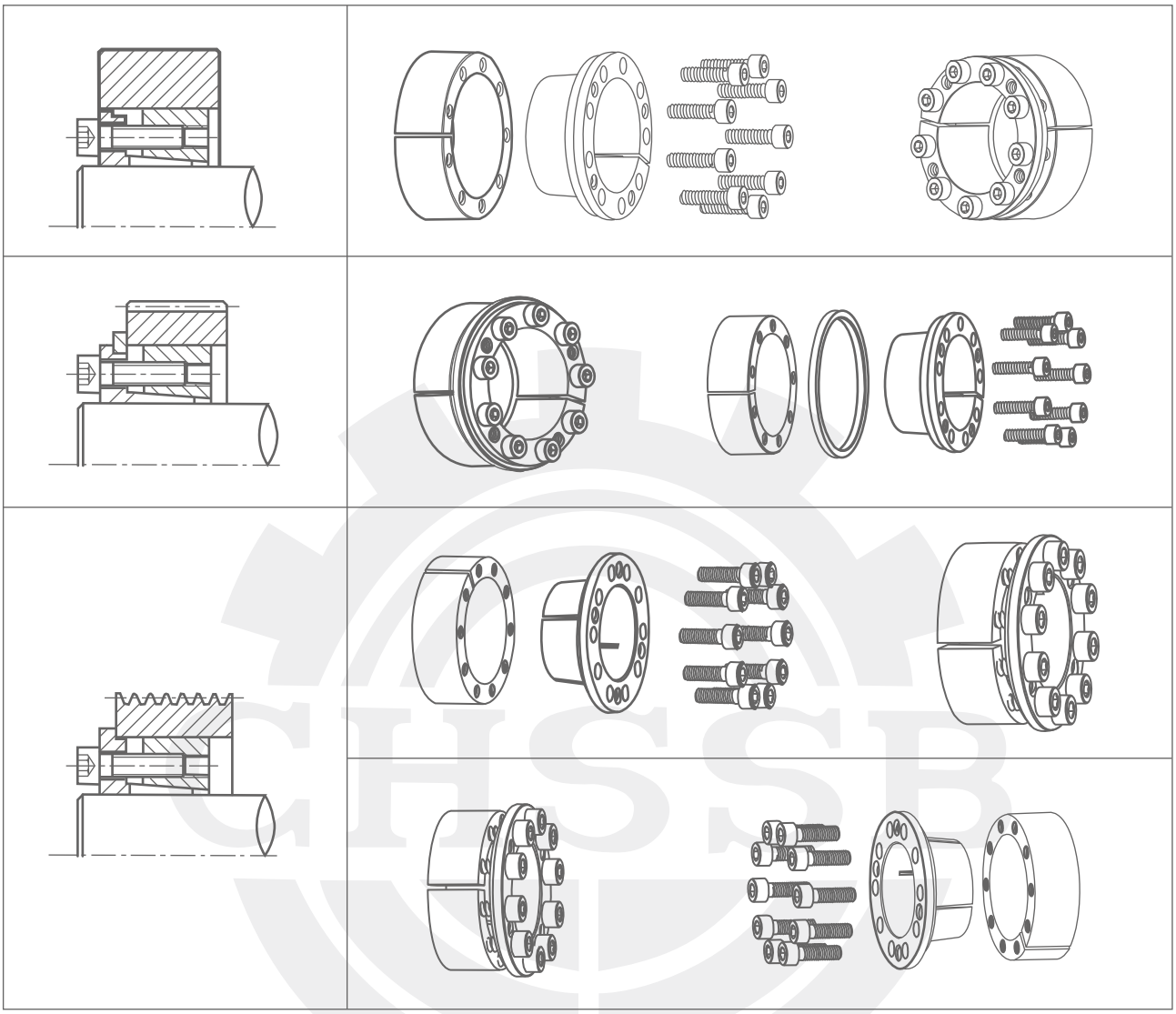
# CAPT-LOCKS FAR






## FAR CAPT-LOCKS ®

| Catalog dxD | Fundamental dimensions | | | Sizes x N | Rated load | | Ps | Ph | Ma | G |
|---|---|---|---|---|---|---|---|---|---|---|
| | L1 | L2 | Ls | | Ft(Kn) | Mt(N.m) | Mpa | Mpa | N.m | Kg |
| CL5x16FAR | 10.5 | 11 | 13.5 | M2.5x3 | 2 | 6 | 150 | 55 | 1.2 | 0.012 |
| CL6x16FAR | 10.5 | 11 | 13.5 | M2.5x3 | 3 | 9 | 184 | 69 | 1.2 | 0.012 |
| CL6.35x16FAR | 10.5 | 11 | 13.5 | M2.5X3 | 3 | 10 | 173 | 69 | 1.2 | 0.012 |
| CL7x17FAR | 10.5 | 11 | 13.5 | M2.5x3 | 3 | 11 | 157 | 65 | 1.2 | 0.013 |
| CL8x18FAR | 10.5 | 11 | 13.5 | M2.5x3 | 3 | 12 | 138 | 61 | 1.2 | 0.015 |
| CL9x20FAR | 12.5 | 13 | 15.5 | M2.5x4 | 4 | 18 | 138 | 62 | 1.2 | 0.02 |
| CL9.53x20FAR | 12.5 | 13 | 15.5 | M2.5x4 | 4 | 19 | 130 | 62 | 1.2 | 0.02 |
| CL10x20FAR | 12.5 | 13 | 15.5 | M2.5x4 | 4 | 20 | 124 | 62 | 1.2 | 0.019 |
| CL11x22FAR | 12.5 | 13 | 15.5 | M2.5X4 | 4 | 22 | 113 | 56 | 1.2 | 0.024 |
| CL12x22FAR | 12.5 | 13 | 15.5 | M2.5X4 | 4 | 24 | 104 | 56 | 1.2 | 0.022 |
| CL14x24FAR | 16.5 | 17 | 20 | M3x4 | 6 | 42 | 99 | 53 | 2.1 | 0.039 |
| CL15x28FAR | 16.5 | 17 | 20 | M3x4 | 6 | 44 | 93 | 50 | 2.1 | 0.044 |
| CL16x32FAR | 16.5 | 17 | 21 | M4x4 | 10.4 | 83 | 152 | 76 | 4.9 | 0.067 |
| CL17x35FAR | 20.5 | 21 | 25 | M4x4 | 10.4 | 88 | 116 | 56 | 4.9 | 0.09 |
| CL18x35FAR | 20.5 | 21 | 25 | M4x4 | 10.4 | 93 | 109 | 56 | 4.9 | 0.087 |
| CL19x35FAR | 20.5 | 21 | 25 | M4x4 | 10.4 | 99 | 104 | 56 | 4.9 | 0.083 |
| CL20x38FAR | 20.5 | 21 | 26 | M5x4 | 17 | 170 | 161 | 85 | 10 | 0.10 |
| CL22x40FAR | 20.5 | 21 | 26 | M5x4 | 17 | 187 | 146 | 80 | 10 | 0.11 |
| CL24x47FAR | 25 | 26 | 32 | M6x4 | 24 | 287 | 153 | 78 | 17 | 0.20 |
| CL25x47FAR | 25 | 26 | 32 | M6x4 | 24 | 299 | 147 | 78 | 17 | 0.19 |
| CL25.4x47FAR | 25 | 26 | 32 | M6x4 | 24 | 304 | 144 | 78 | 17 | 0.18 |
| CL28x50FAR | 25 | 26 | 32 | M6x6 | 36 | 503 | 196 | 110 | 17 | 0.22 |
| CL30x55FAR | 25 | 26 | 32 | M6x6 | 36 | 539 | 183 | 100 | 17 | 0.27 |
| CL32x55FAR | 25 | 26 | 32 | M6x6 | 36 | 575 | 172 | 100 | 17 | 0.25 |
| CL35x60FAR | 30 | 31 | 37 | M6x8 | 48 | 838 | 176 | 102 | 17 | 0.36 |
| CL38x65FAR | 30 | 31 | 37 | M6x8 | 48 | 910 | 162 | 95 | 17 | 0.43 |
| CL40x65FAR | 30 | 31 | 37 | M6x8 | 48 | 958 | 154 | 95 | 17 | 0.40 |
| CL42x75FAR | 35 | 36 | 44 | M8x6 | 66.3 | 1394 | 175 | 98 | 41 | 0.67 |
| CL45x75FAR | 35 | 36 | 44 | M8x6 | 66.3 | 1493 | 163 | 98 | 41 | 0.63 |
| CL48x80FAR | 35 | 36 | 44 | M8x8 | 88.5 | 2124 | 204 | 122 | 41 | 0.74 |
| CL50x80FAR | 35 | 36 | 44 | M8x8 | 88.5 | 2212 | 196 | 122 | 41 | 0.70 |



## Key elements for designing and calculation (FE.FA.FB)

1.Determine max torque needed and max axial load

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

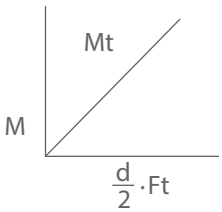
$$Ft\ max = Ft \cdot K$$

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

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

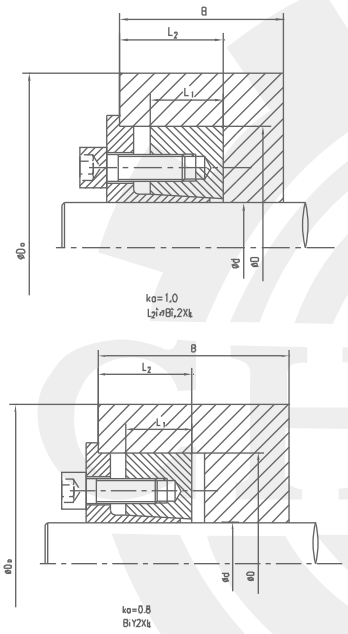
# CAPT-LOCKS

## Key elements for designing and calculation B

### 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 pressure 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



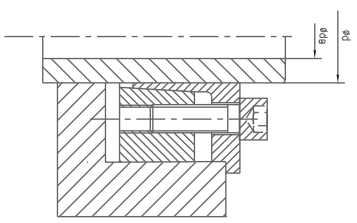

### 4.Determination for the surface roughness and dimension

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

### 5.Calculation for the inside diameter of hollow shaft

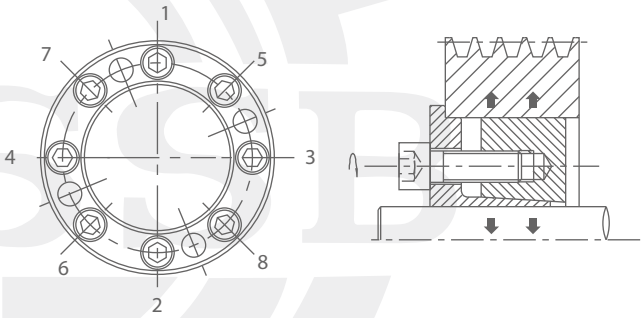
$$dB \leqslant d\sqrt{\frac{\sigma b-2xPs.K3}{\sigma b}}$$

dB--inside diameter of hollow shaft mm
d--outside diameter of hollow shaft mm
6b--tensile strength of shaft material Mpa
Pf--pressure on the surface of shaft Mpa
K3--coefficient=0.6



### 6.Installation for CAPT-LOCKS

Cleaning the CAPT-LOCKS, then install it into corresponding position of hub and shaft(Ref Drawing A). Then acc. to the order in Drawing B. Tighten the bolts in turn, the bolts should be tightened step by step in 3 to 4 times up to specified rated torque.




conceptual diagram
for in installation

After installing the CAPT locks correctly. the radial and axial run out should be inspected according to A≤0.05mm and B ≤0.002.