

Mechanical Dimensions of Vacuum Capacitors

When installing or removing vacuum capacitors, extreme care must be taken to avoid damage to the body of the capacitor, as the electrodes are easily displaced. While this was quite obvious for the old glass capacitors, it is less so for the modern ceramic types that can take higher mechanical and electrical/thermal loads. Although they look very rugged from the outside it must be remembered that, due to the brazing process used to join ceramic and copper, the copper is in a soft, annealed condition and is therefore highly susceptible to mechanical deformation. For this reason, any rough handling, like machining of the flanges, must be avoided. Use existing threads and holes for fixation.

See also Service Bulletin **SB-25**.

Mechanical Dimensions

The main dimensions are shown on Fig. 1:

- K** Overall length
- A** Ceramic diameter
which are also listed in the product catalogue

Other important dimensions for installing:

- H** Mounting or Block length
- I** Length of drive system
- B** Mounting flange diameter
- E** Lead screw shaft diameter

All other dimensions are less important for installation and are shown for information reason only. Diameter **C** for example has a welding seam at the free end, which doesn't allow for installation purposes.

On the data sheets the top view, Fig. 2, and bottom view Fig. 3 are given for detailed mounting flange dimensions like bolt circle **D** and mounting threads **P1** and **P2**. If angles are shown on the drawing **M**, the accuracy of the alignment is within 2°

Please note: The mounting holes or threads of the variable and fixed flange are aligned within 2°.

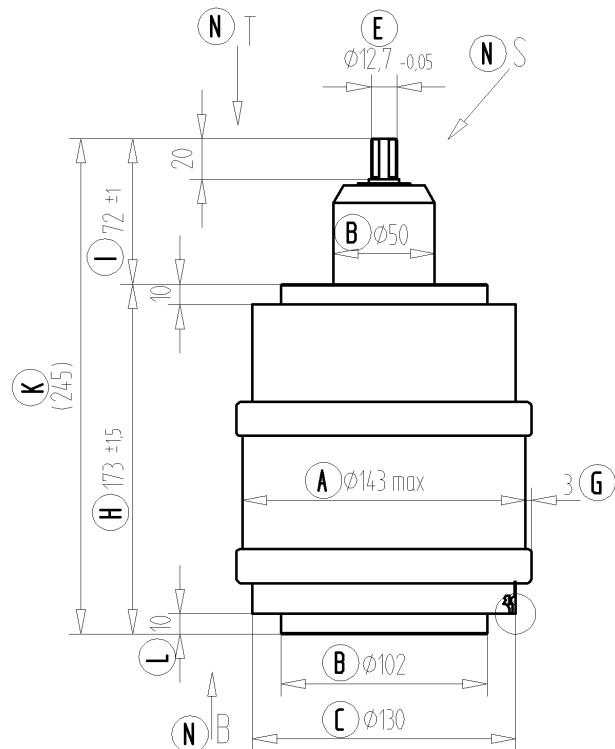


Fig. 1

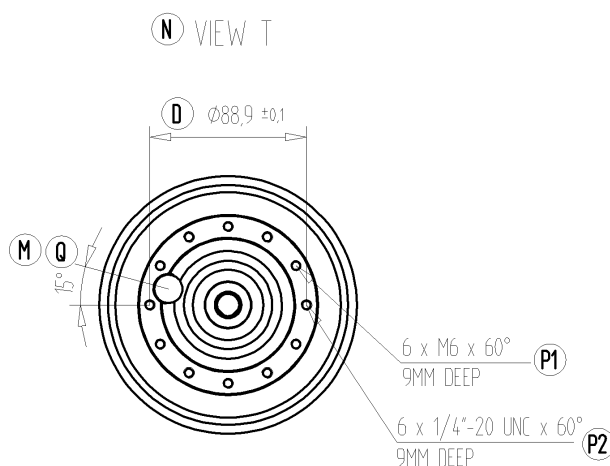


Fig.2 Top view

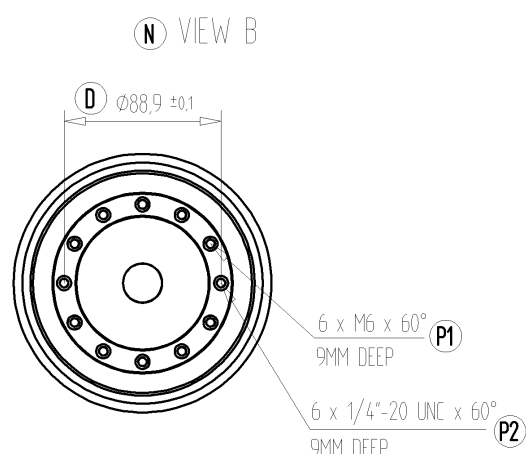


Fig. 3 Bottom view

General Tolerances

Different tolerances on the different dimensions depend on the kind of fabrication steps. Machined parts, lead screws for example, have a higher accuracy than welded and brazed parts like collars and ceramics.

Mounting ring diameter B and bold circle D - tolerances depending on size:

(Diameters and length of machined parts)	(if not specified on data sheet)			
Diameter [mm]	≥ 0.5 bis 6	>6 bis 30	>30 bis 120	>120 bis 400
Tolerance [mm]	±0.1	±0.2	±0.3	±0.5

Collar diameter C, brazed or welded - tolerance depending on size:

Diameter [mm]	≥ 0.5 bis 3	>3 bis 6	>6 bis 30	>30 bis 120	>120 bis 400
Tolerance [mm]	±0.2	±0.3	±0.5	±0.8	±1.2

Mounting (block) length H - tolerance depending on size:

Length [mm]	≥ 0.5 bis 30	> 30 bis 100	> 100 bis 200	> 200
Tolerance [mm]	±0.5	±1	±1.5	±2

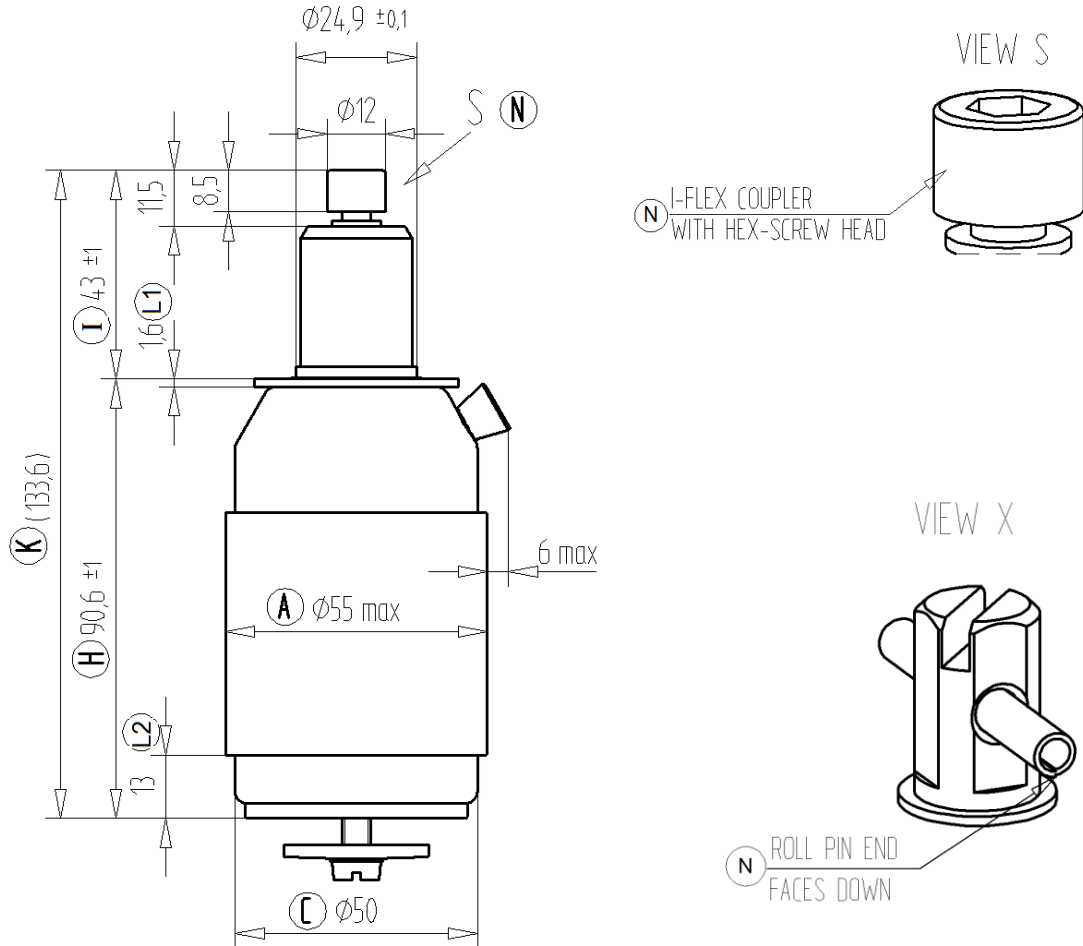
Overall length K (in brackets), tolerance results from accumulated tolerances of **H, I** (and **J** and **L** if applicable)

The datasheet for the specific capacitor designation is the official specification for the dimensions. When not otherwise specified, the general tolerance DIN ISO 2768-mK is applicable.

Mounting of drive system

The lead screw on the variable side has to be mounted axial over a flexible coupler to the motor. No side load should be applied to prevent a reduced life time of the drive system of the capacitor.

The figures below show examples of coupler adaptors:



Concentricity of the lead screw shaft

The concentricity of the lead screw shaft referring to the variable flange depends on the size of the capacitor.

Concentricity of lead screw - tolerances depending on dimension of (I)

length	$\geq 0.5 \text{ bis } 30$	$> 30 \text{ bis } 100$	$> 100 \text{ bis } 200$	> 200
tolerance	± 0.5	± 1	± 1.5	± 2

Installation

For all capacitors it is recommended that one side be mounted non-rigid to prevent excessive thermo-mechanical and external forces from acting on the capacitor. Most COMET capacitors are equipped with copper mounting flanges at both ends. This is shown on the individual product data sheets. We suggest using these mounting flanges for all mechanical and electrical connections. Many standard solid flanges contain 6 metric thread holes alternating with 6 inch-sized thread holes.

Max. admissible Tightening Torque [Nm]											
	M3	M4	M5	M6	1/4"-20UNC	1/4"-28UNF	8-32UNC	3/8"-32UNEF	3/8"-16UNC	1/2"-28	M12x0.75
Basic-Con		1									
Dual-Con	1							2			
HAMi-Con									10		
Hexa-Con		2									
Hiper-Con				2	2						
LAMi-Cap				2	2						
LAMi-Con				2	2						
Li-Con						2					
Lumi-Con	1										
MAMi-Cap				2	2						
MAMi-Con				2	2						
Maxi-Con		2									
Midi-Con			2				2				
Mini-Cap		2									
Mini-Con			2								
Mono-Con								2			
NAMi-Cap				2	2						
NAMi-Con				2	2						
Power-Con		2									
SAMi-Cap				2	2						
SAMi-Con				2	2						
Smart-Con			2							2	
Supra-Con				2							
Trimmer-Cap											2
Uni-Con		1	2	2							
Uni-Select		1	2	2							
X-Cap			2								

Tab. 1: admissible torques for COMET Vacuum Capacitors