

The hydraulic micropositioner HYDRAP



HYDRAP consists of a manually actuated fine pitch screw (acting as hydraulic displacer), which is hydraulically connected to an actuating element by a thin polymer hose.

The design of the hydraulic components result in a reduction of the displacerscrews movement by a factor of nearly 100. Together with the steady and smooth action of the hydraulic system, an excellent positioning sensitivity is achieved.

HYDRAP features:

- **excellent positioning sensitivity**
- **large working range**
- **remote control capability**
for vibrationfree positioning, application of the actuator at inaccessible sites

– **compact dimensions of the actuator element**
for space saving arrangements

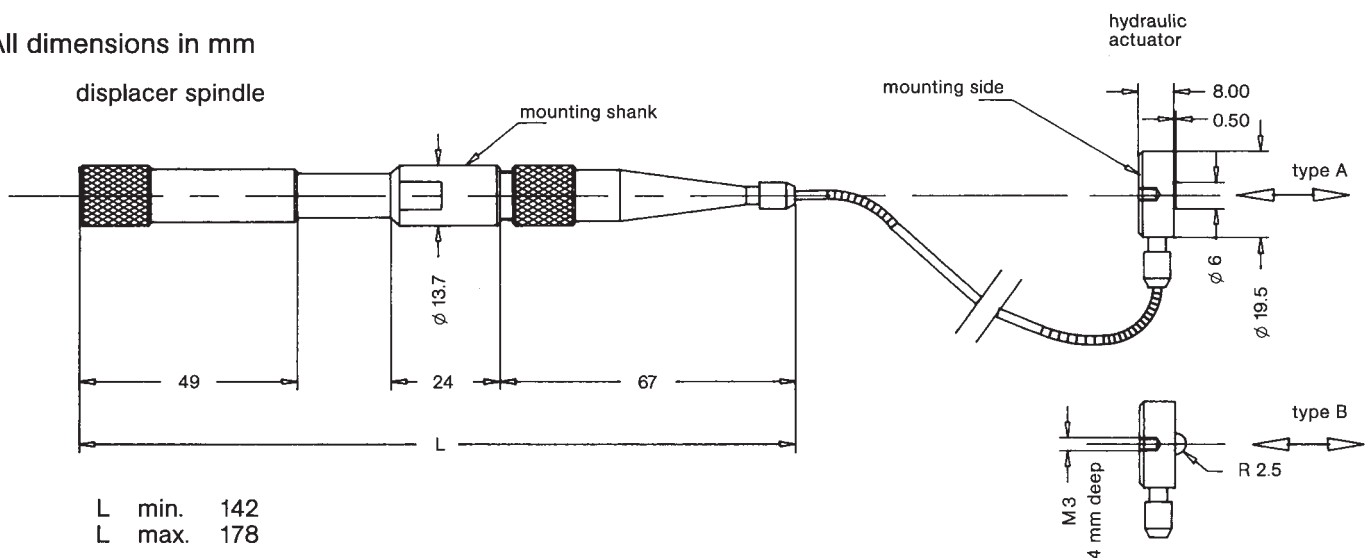
– **electrical insulation from manual drive and actuating element**

Applications:

Everywhere, where manual submicron positioning in R & D activities or in other technical disciplines is needed. E.g. coherent optics, interferometry, laser tuning, fiber optics, microscopy, micro biology, investigations of biological cells, gen technology.

Dimensions and technical data

All dimensions in mm



Type A: flat front piece of hydraulic actuator, to be combined preferentially with a spherical counterpiece e.g. like a front tip of a micrometer for coarse adjust.

Type B: spherical front piece of the hydraulic actuator, to be combined preferentially with a flat counter piece.

Total travel: 400 μ m

Positioning sensitivity: 50 Nanometers

Max. load: 40 N

Hydraulic transfer range: 500 mm, other length on request

Temperature stability: $\approx 1 \mu\text{m}/^\circ\text{C}$

Stability criteria

Moving of the hydraulic connecting hose does not influence the actual position, because the liquid behaves like a neutral fiber.

HYDRAP shows no creep or delay during positioning under nearly constant load conditions. This is the case in most adjusting devices like stages or mirror mounts, using reset springs.

When the load is changed remarkably (e.g. the max. load is applied to the formerly unloaded actuator) creep occurs for some minutes. After setting to the new equilibrium, HYDRAP can be operated without creep etc. as mentioned above.

Ordering information

Hydraulic micropositioner, consisting of displacer, hydraulic actuator with plane faced front, connecting hose **HYDRAP A**

Hydraulic micropositioner as mentioned above, but spherical front piece **HYDRAP B**