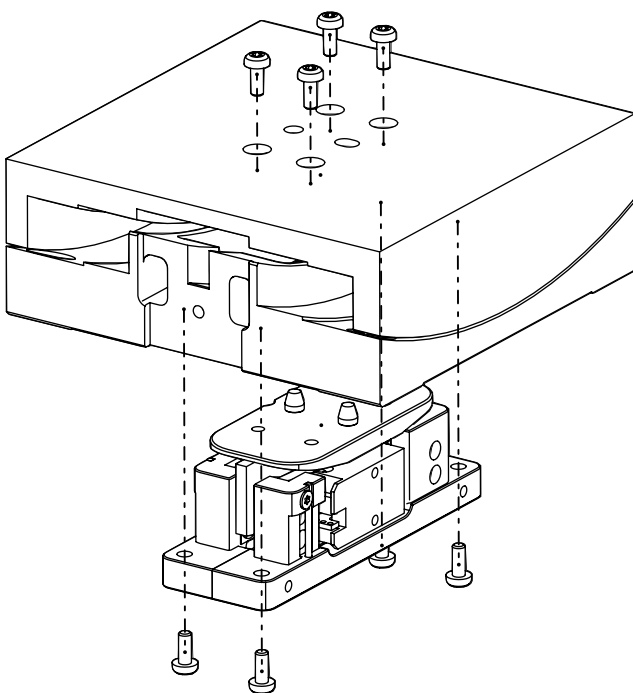


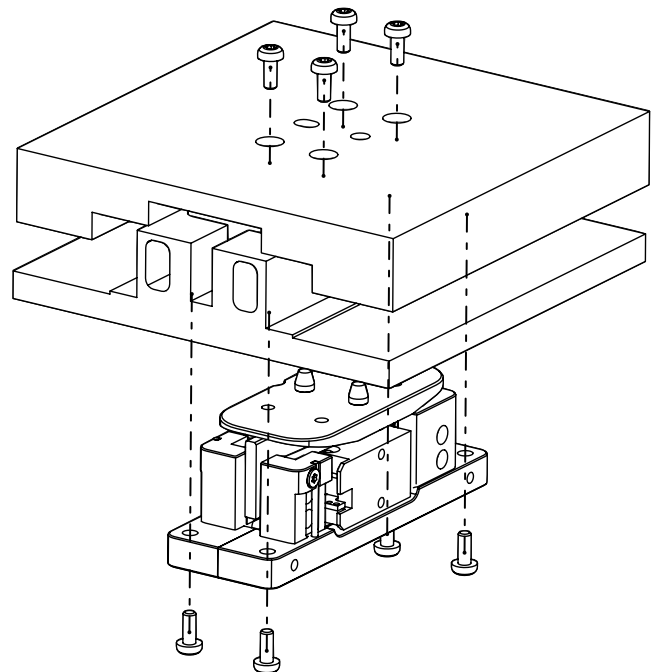


The Piezo LEGS Caliper is a high precision motor made for stage integration. The motor comes in one version for goniometer stages and in a second version for linear stages. Design of surrounding mechanics have to be done with guidance from the drawings in this document, keeping within the given tolerances. Performance as well as life time will be severely affected if motor is not installed with great care. The illustrations below show examples of what kind of stages to build for the Piezo LEGS Caliper to be fitted inside.

**Piezo LEGS® Caliper
Gonio version - LC2010**

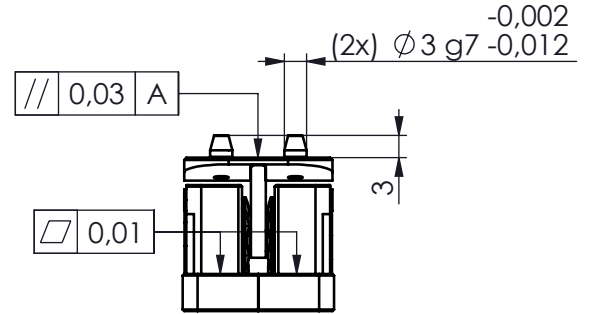
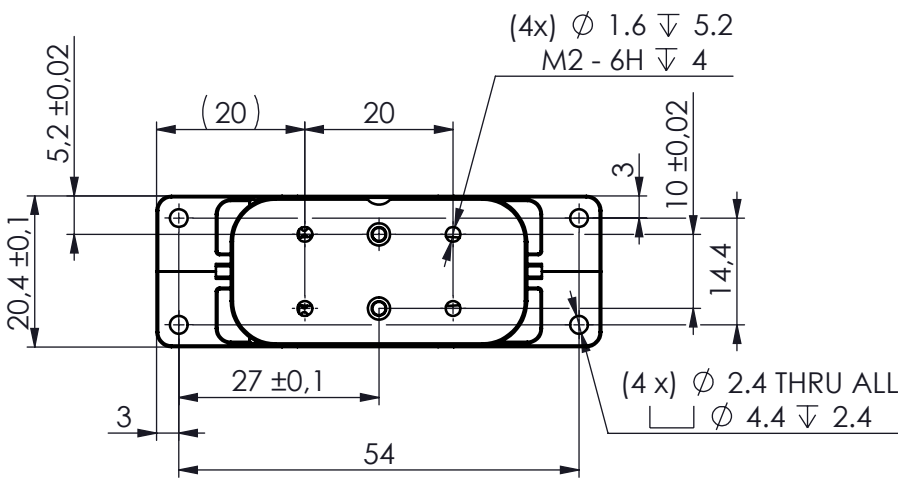
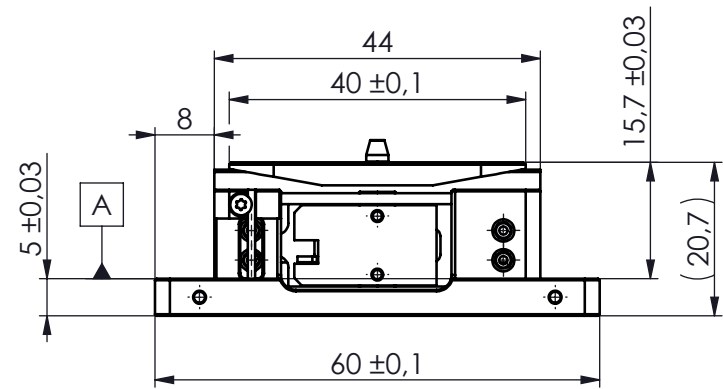


**Piezo LEGS® Caliper
Linear version - LC2020**



- The Piezo LEGS Caliper is mounted inside the stage unit using 8 screws. The example above shows both versions of the motor (for goniometer stage and for linear stage).
- **CAUTION!** The Piezo LEGS Caliper motor cannot be driven without guidance from surrounding mechanics. The drive rod must not be removed from the motor, and it must not be moved to a position where contact with any drive leg is lost. The drive legs will be severely damaged if they are not preloaded while motor is running. Repositioning a drive rod that has come out of place may crack the ceramic drive legs. Keep transport safety holder on the motor until you are ready to mount.

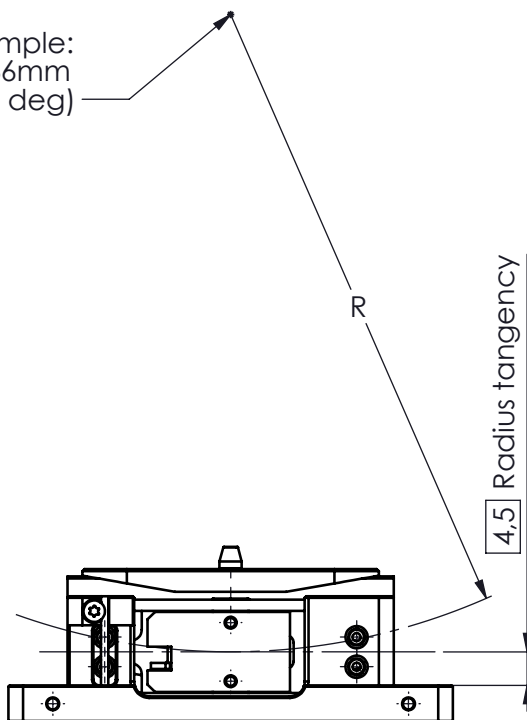
Main Dimensions Gonio and Linear



- The stroke (using linear version) is ± 14.5 mm from center position.
- **CAUTION!** Driving the motor outside of limits will damage the motor permanently.

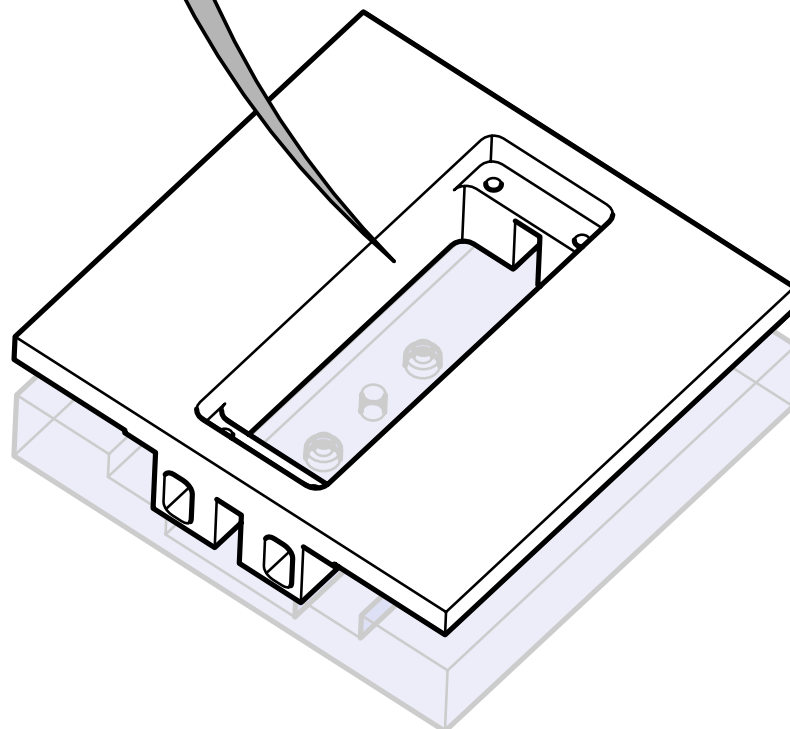
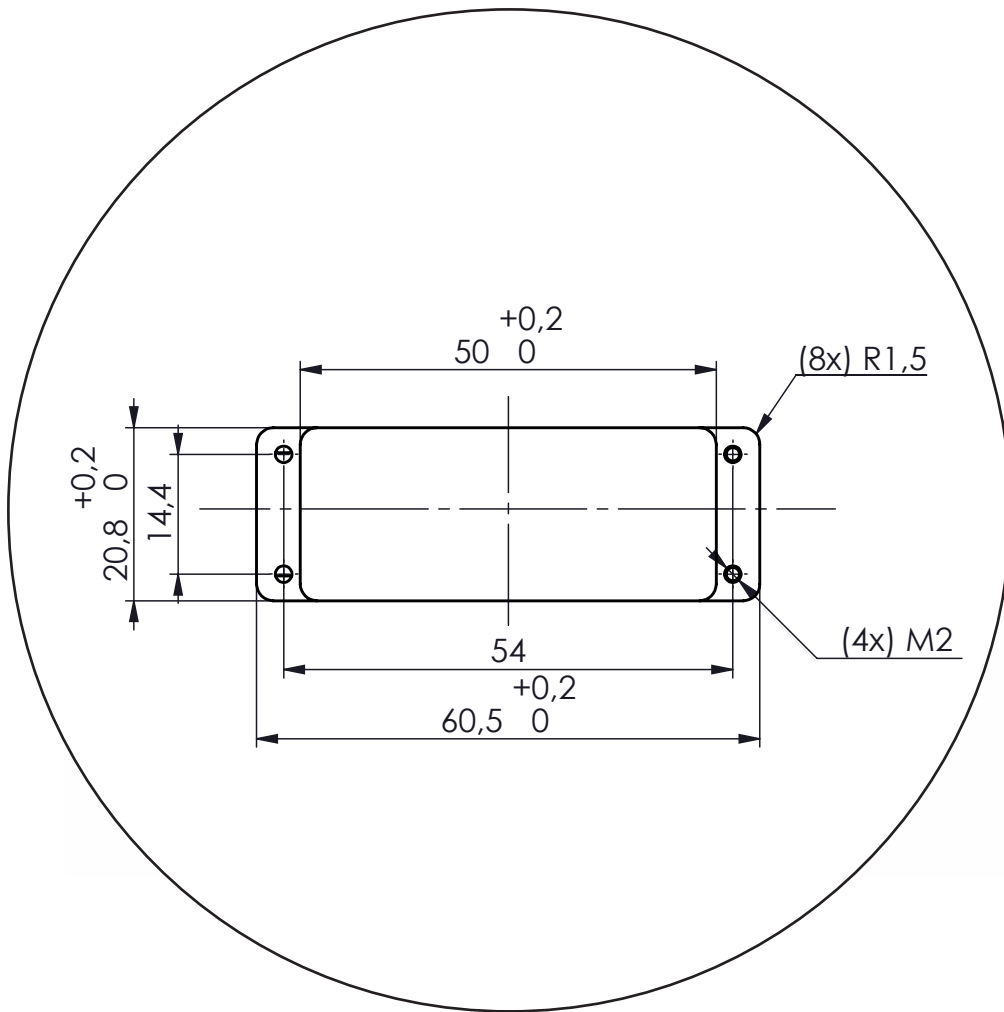
Additional Specifications Gonio version

Application sample:
(Stage radius 86mm
max stroke ± 10 deg)

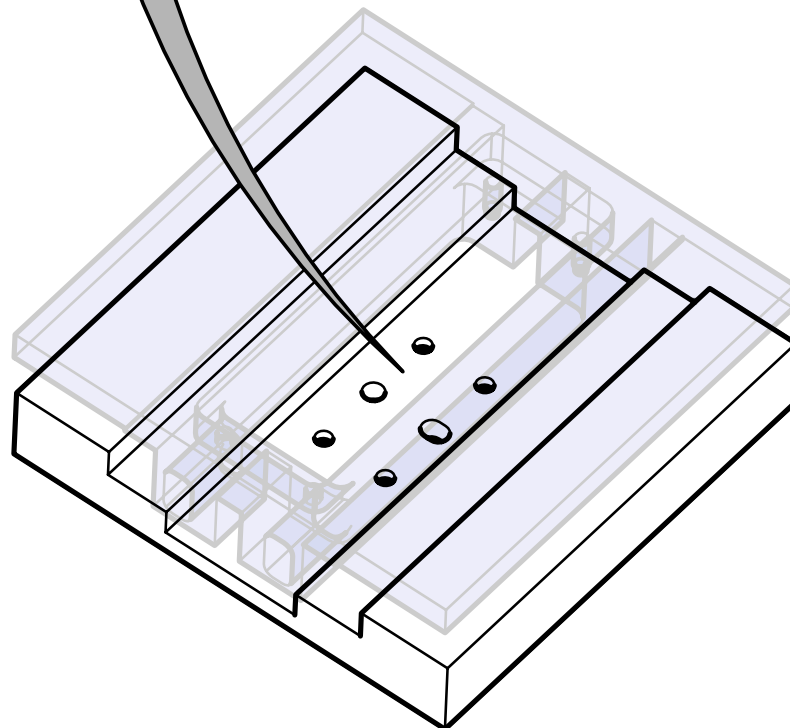
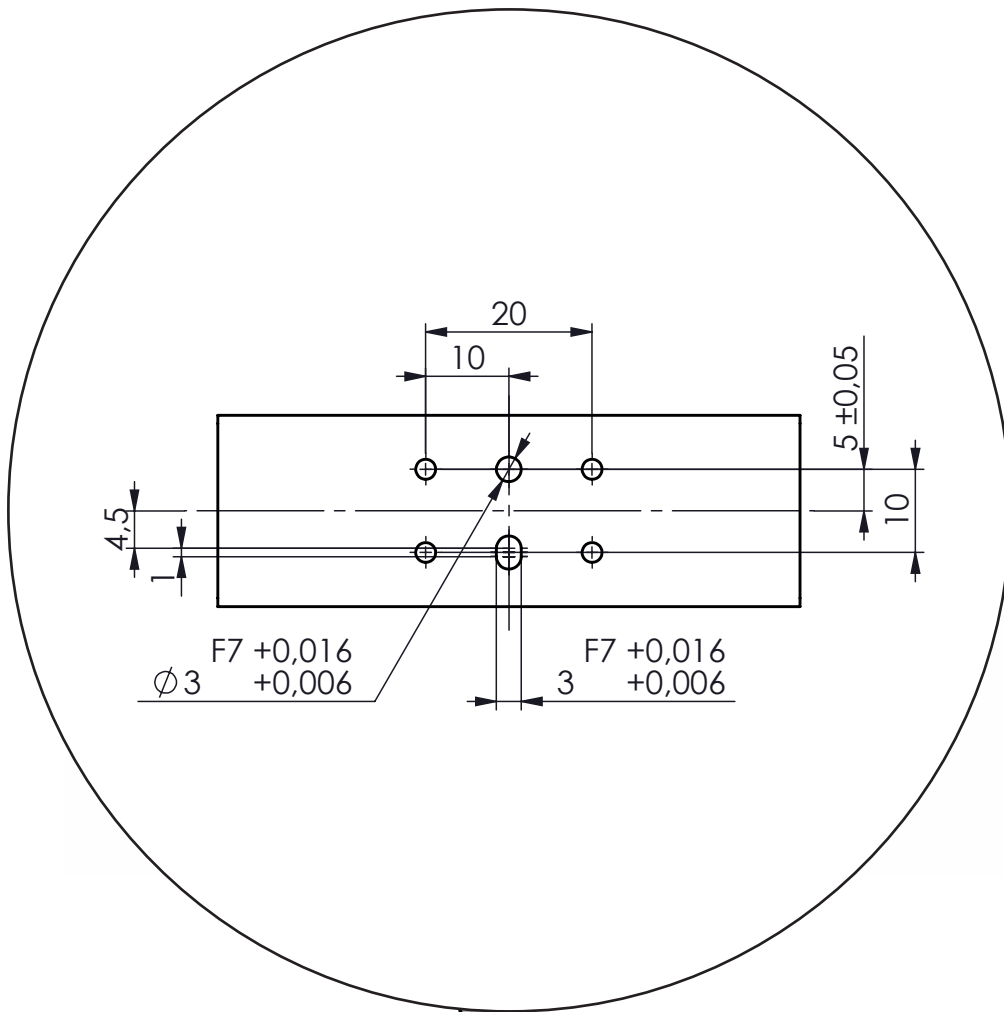


- The stroke (using gonio version) is depending on radius. Minimum radius is 86 mm. See table below for some different radii.

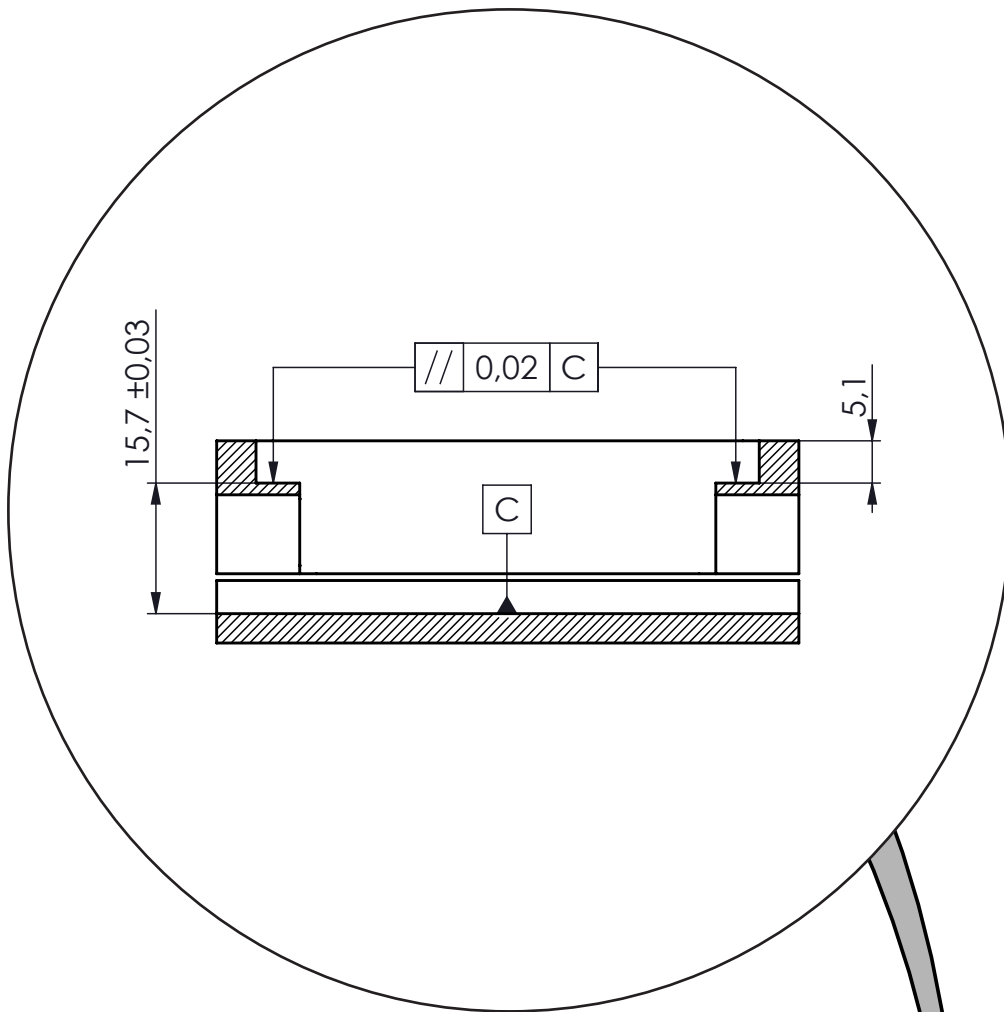
Strokes at different radii	
Radius	Stroke
86 mm	$\pm 10^\circ$
96 mm	$\pm 9^\circ$
106 mm	$\pm 8^\circ$
116 mm	$\pm 7^\circ$



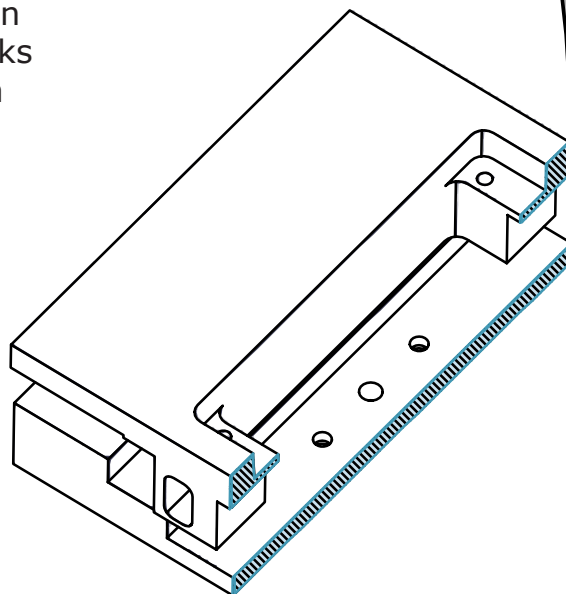
Bottom stage block mounting socket – View from below



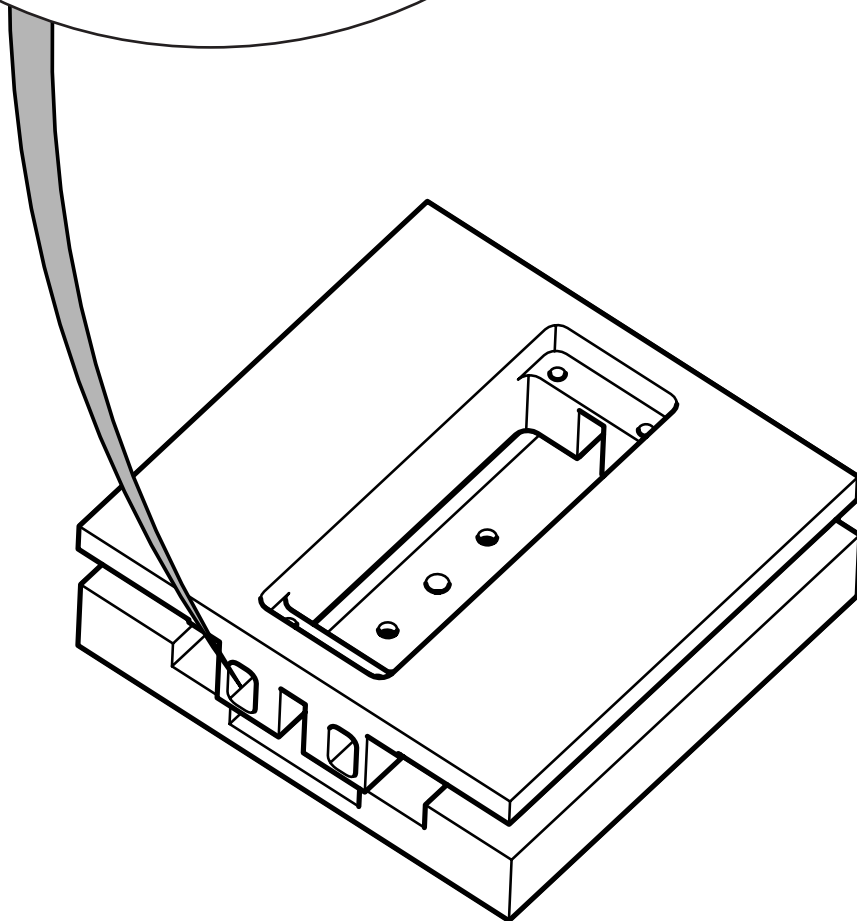
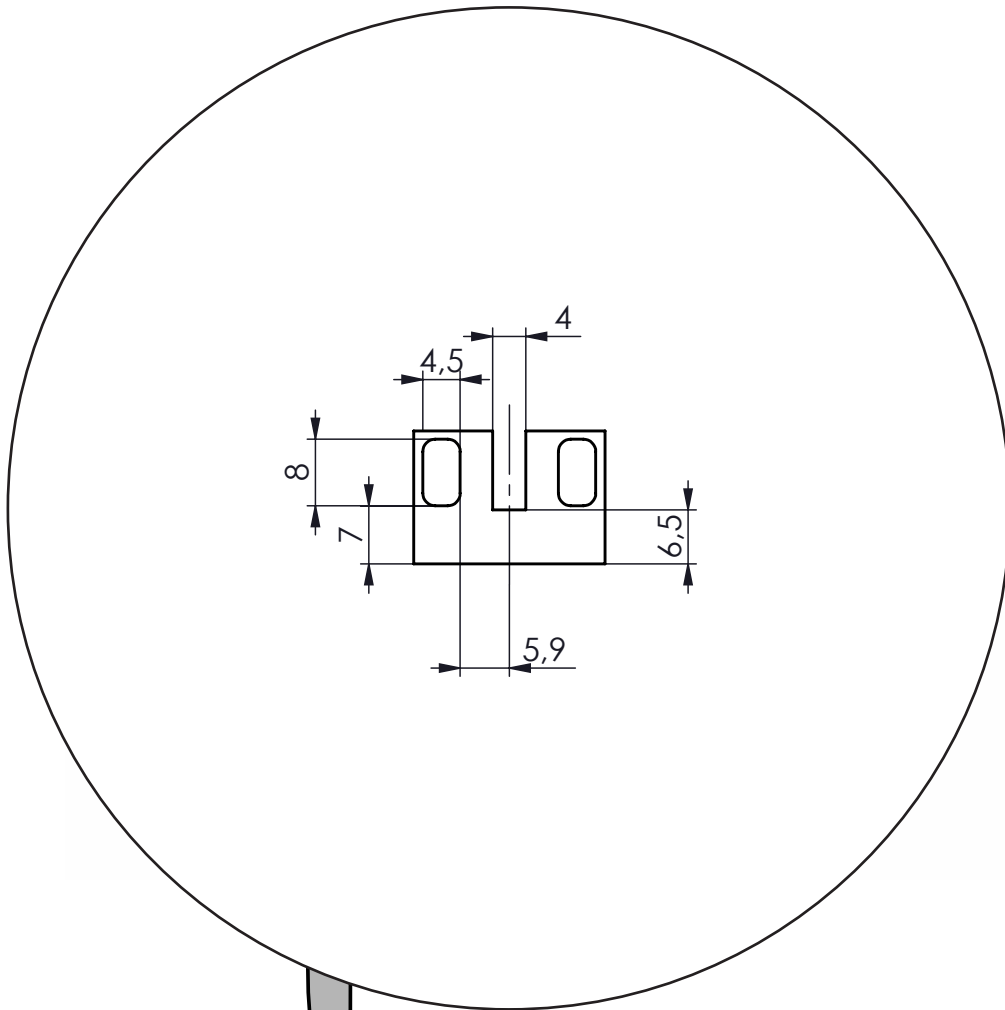
Top stage block mounting surface – View from below



- It is very important that mounting surfaces on bottom and top blocks are parallel to within 0.02 mm.



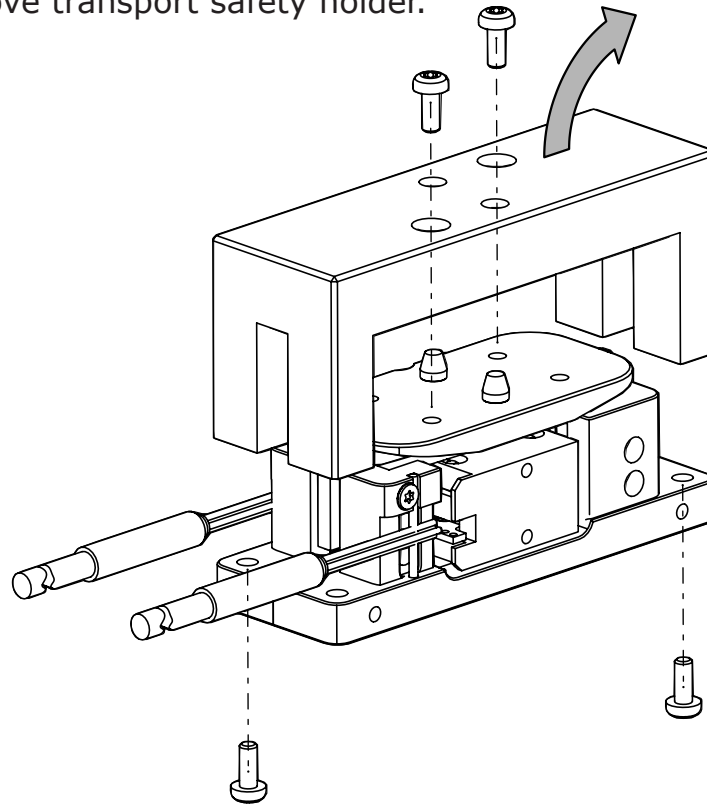
Cut plane through both stage blocks



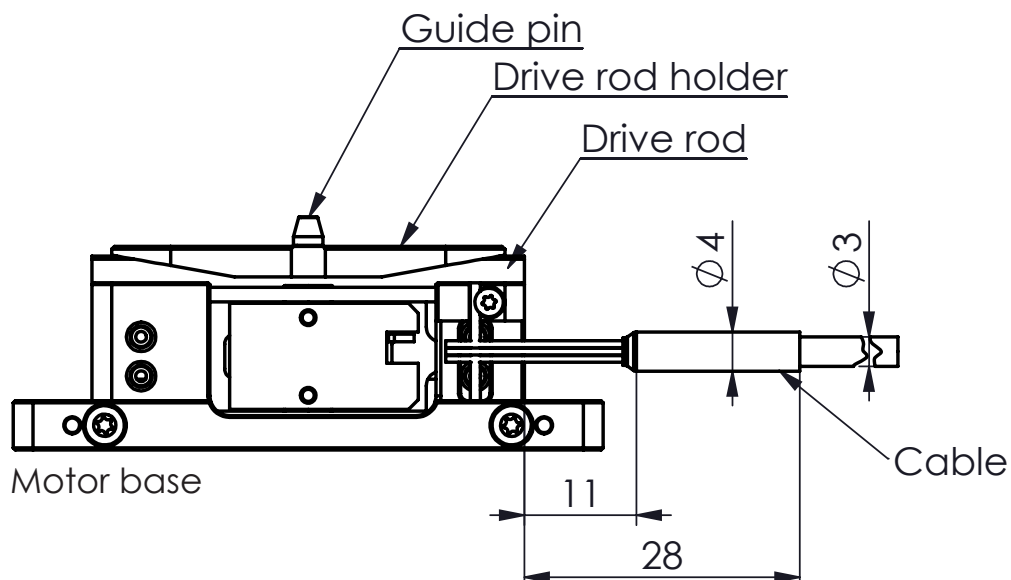
Bottom stage block – Cable holes and clearance for drive rod

Mounting instructions

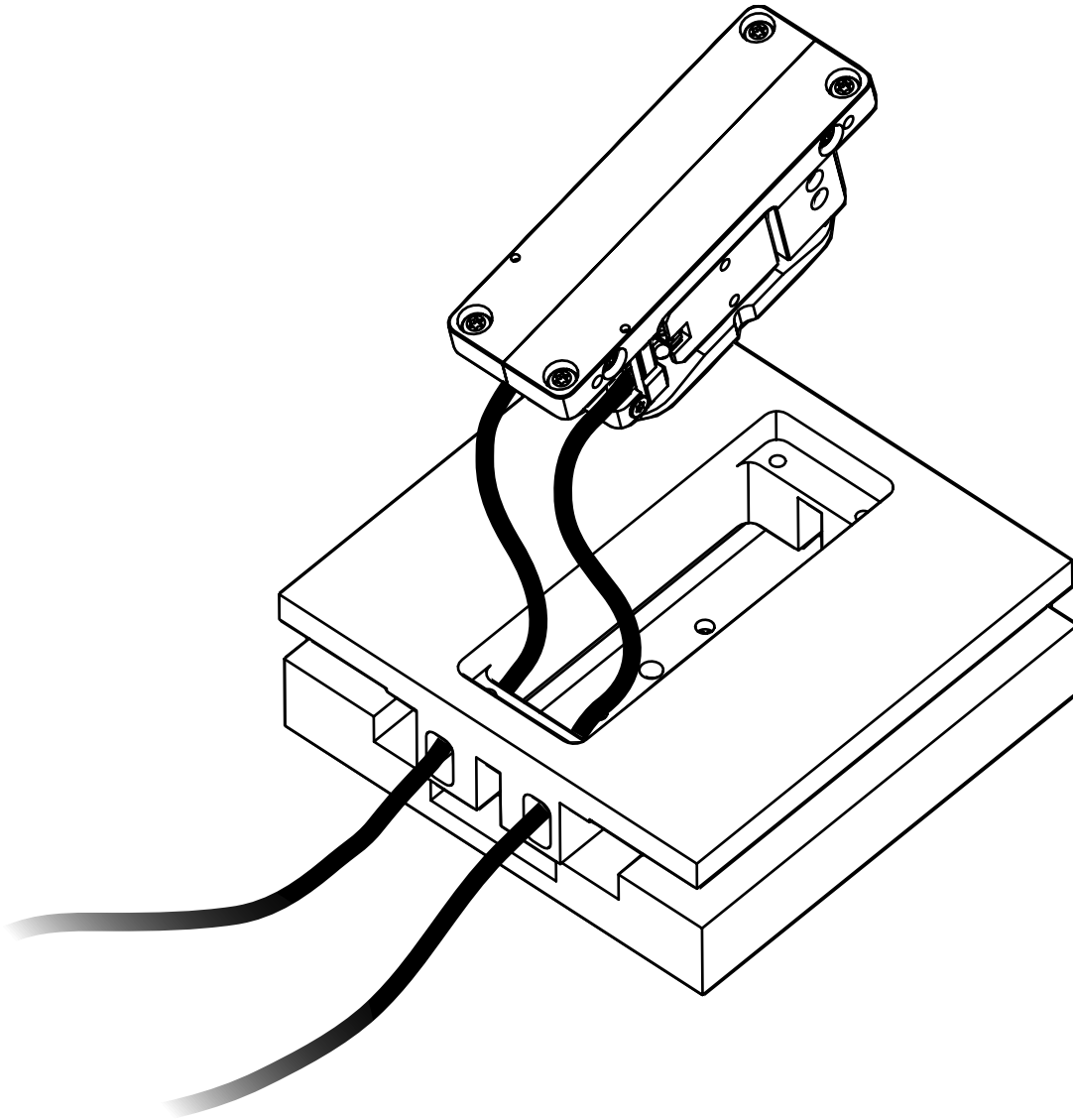
- Step one is to remove transport safety holder.



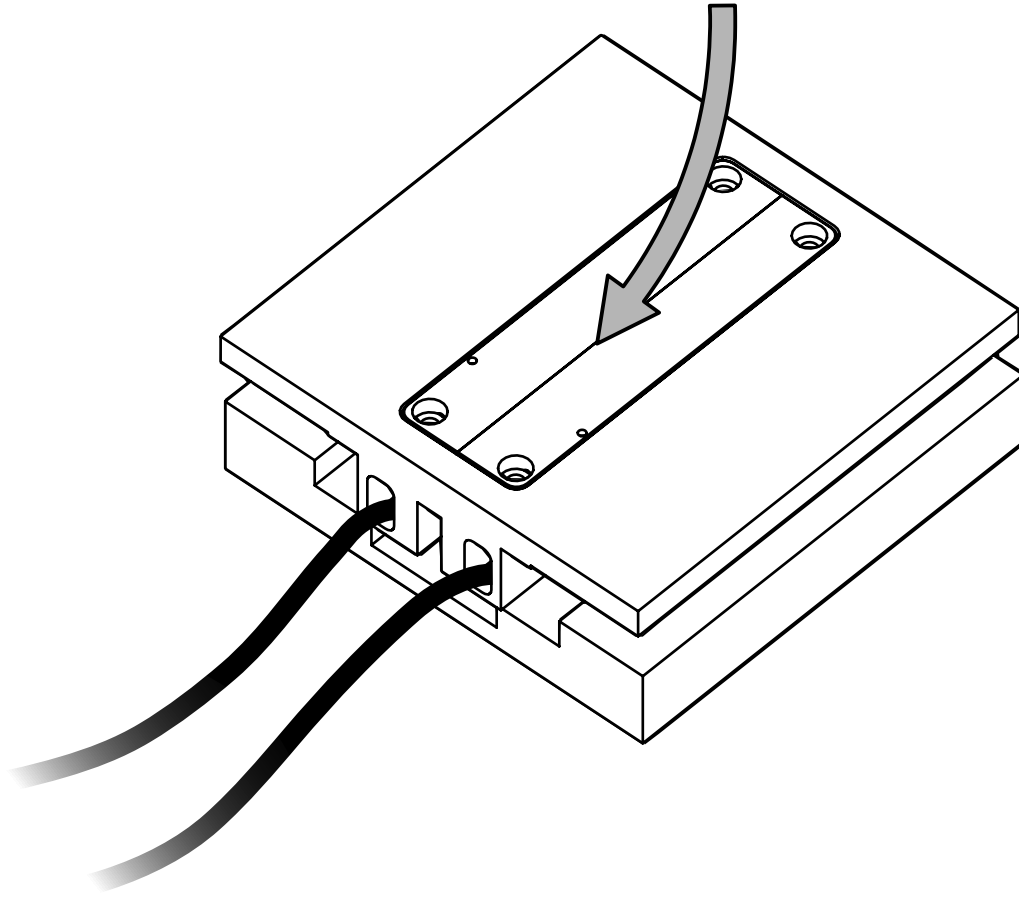
- **CAUTION!** Driving the motor outside of limits, or in other ways displacing the drive rod away from the drive legs, will damage the motor permanently. When designing the parts you must include mechanical end stops to prevent stage from moving outside of the specified limits.
- In the illustration below the different parts are named for reference. The illustration also shows cable and its dimensions.



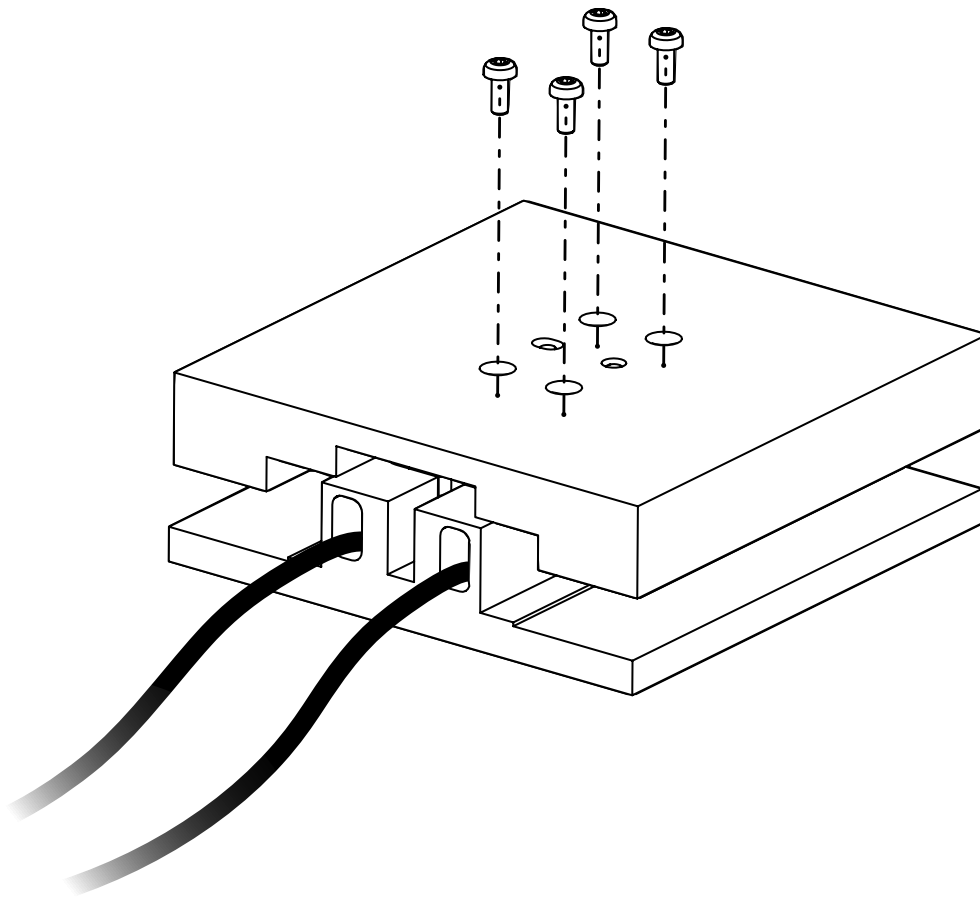
- Bottom side up. Feed cables through the holes on the stage block.



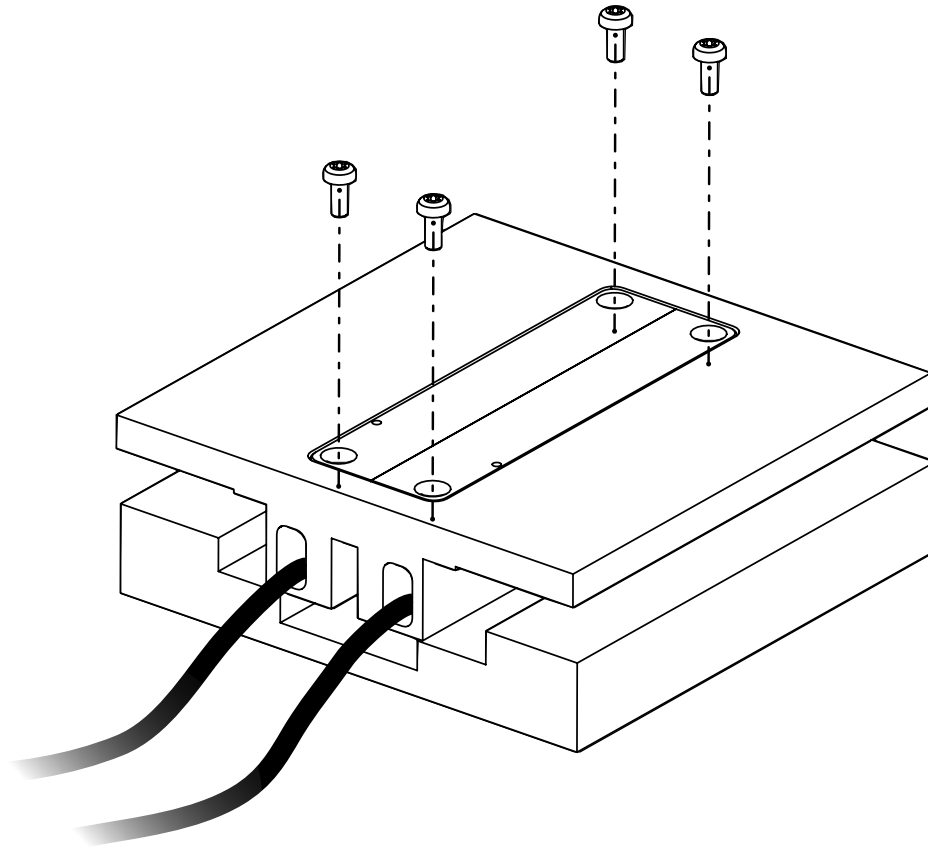
- Slide motor in place. Make sure the *Guiding Pins* are entering the guiding holes in the stage top block.



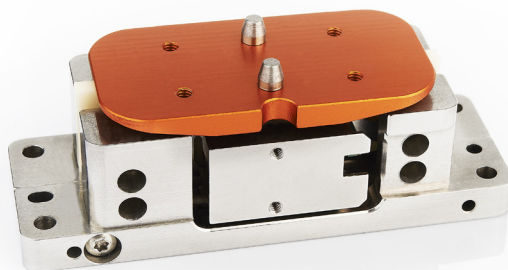
- Turn the stage over, **top side up**. Mount screws (4 x M2) to fixate the *Drive Rod Holder*. Tighten screws crosswise.
- **CAUTION!** For the motor to work properly it is very important to mount the top side screws first.



- Turn the stage over, **bottom side up**. Adjust the bottom block to center *Motor Base* lengthwise.
- **CAUTION!** It is very important that the *Motor Base* is self aligned. Do not force motor in any direction. Insert screws (4 x M2) and tighten them crosswise without disturbing the self aligned position of the *Motor Base*.



- The cables need to be secured with cable relief (of your design).
- CAD files of motors in both versions, and mock-up stage units are downloadable from the PiezoMotor webpage: www.piezomotor.com



**More information about the
Piezo LEGS Caliper is found
in the product data sheet
and on our homepage...**

**Visit our website for application examples,
CAD files, videos and more...**

www.piezomotor.com



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