

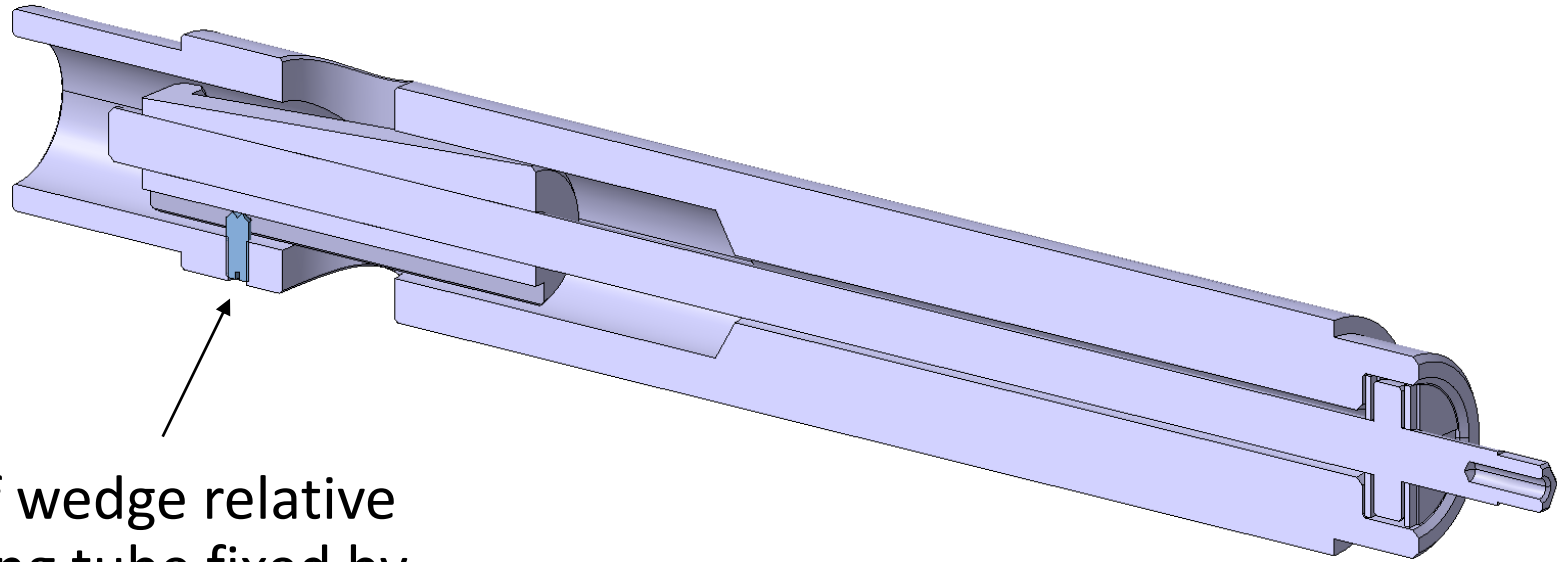
SAS Adjustment Platform

07-09-19

Changes

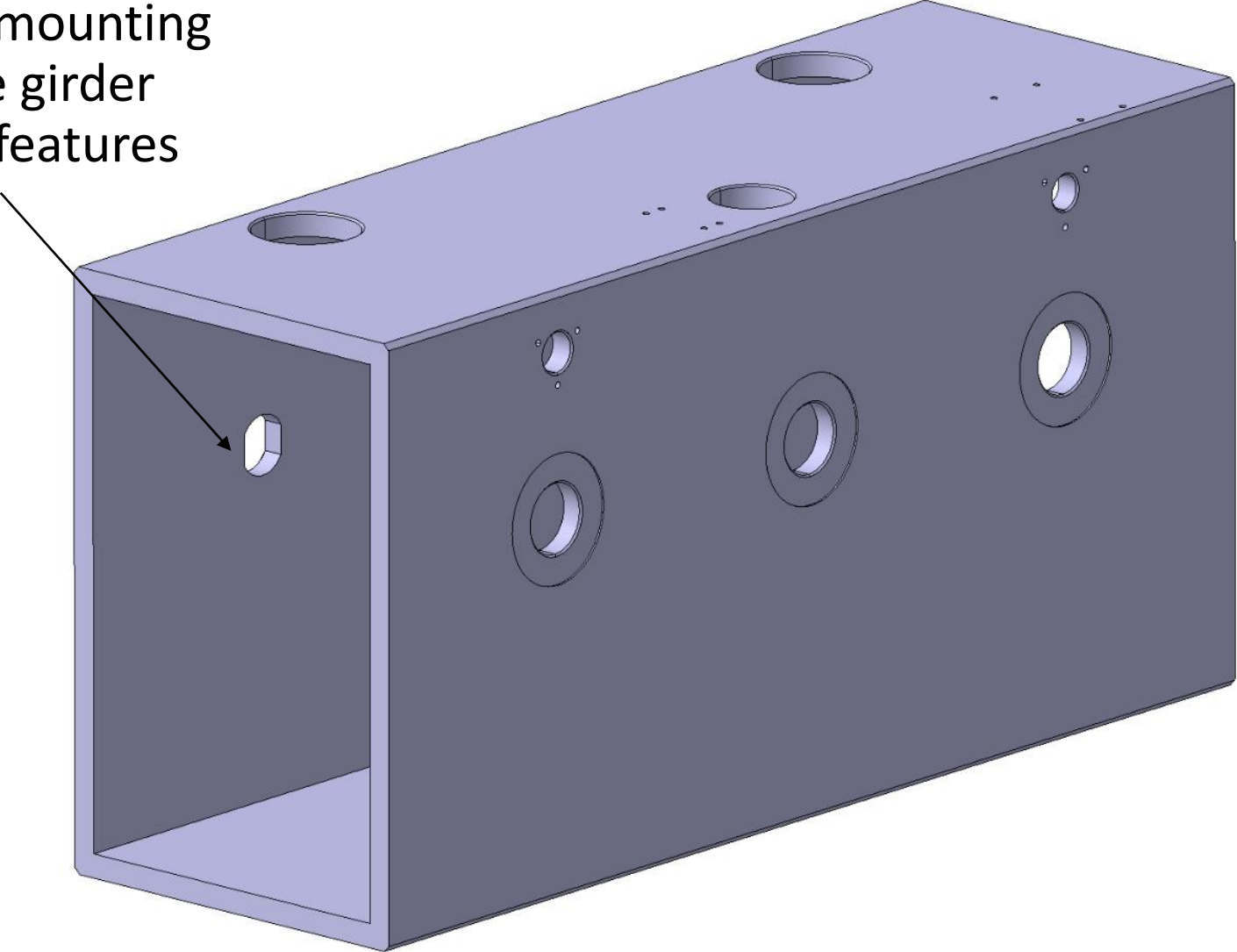
Feedback from Mateusz:

- Removing the gearboxes driving the lateral flexures, use differential threads (like DBQs)
- Increasing the spring forces:
 - Look into Belleville washers
- Ease installation of vertical flexures:
 - Lock orientation of the wedges
 - Reconsider separating the adjustment platform from the girder

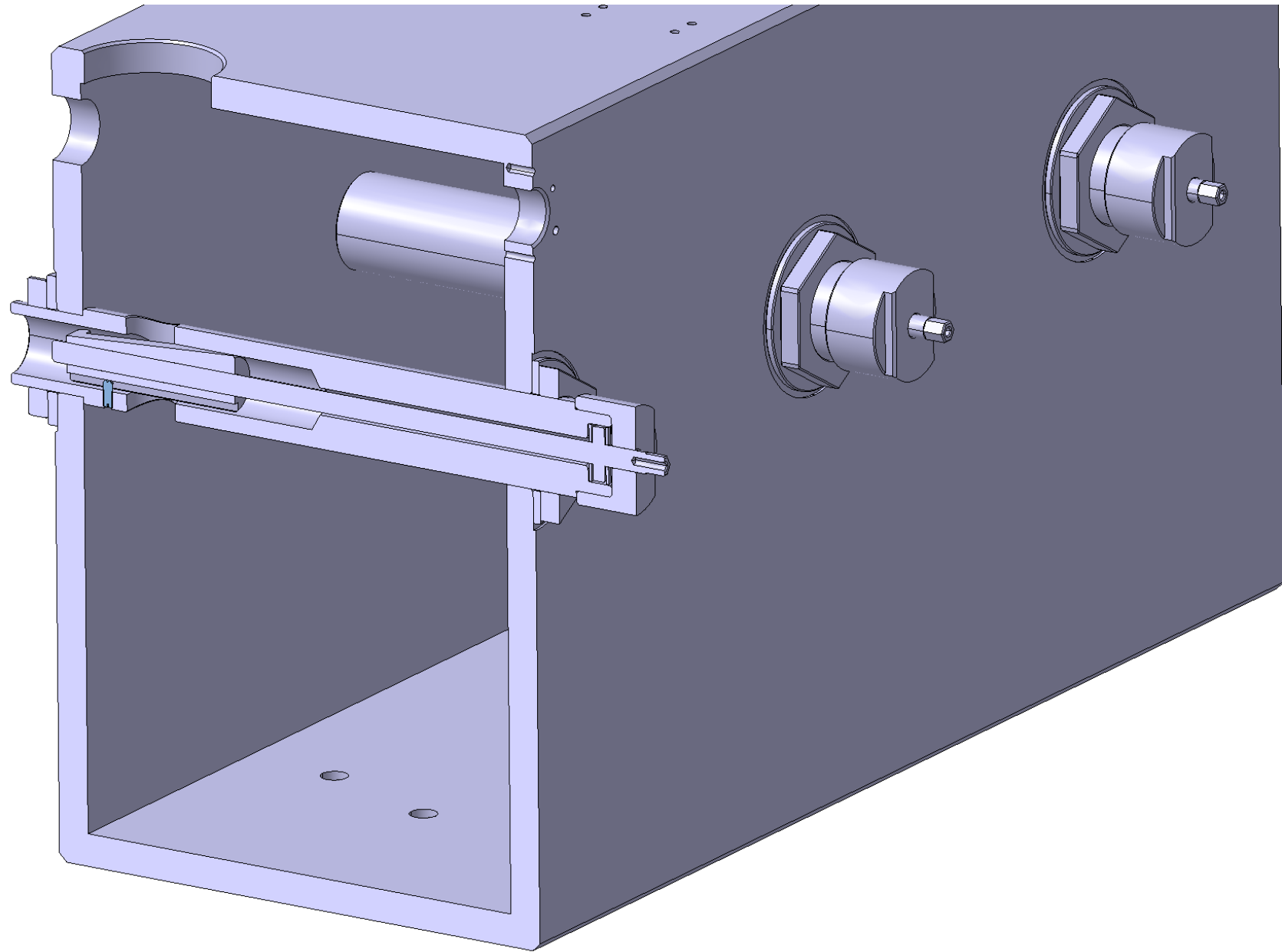


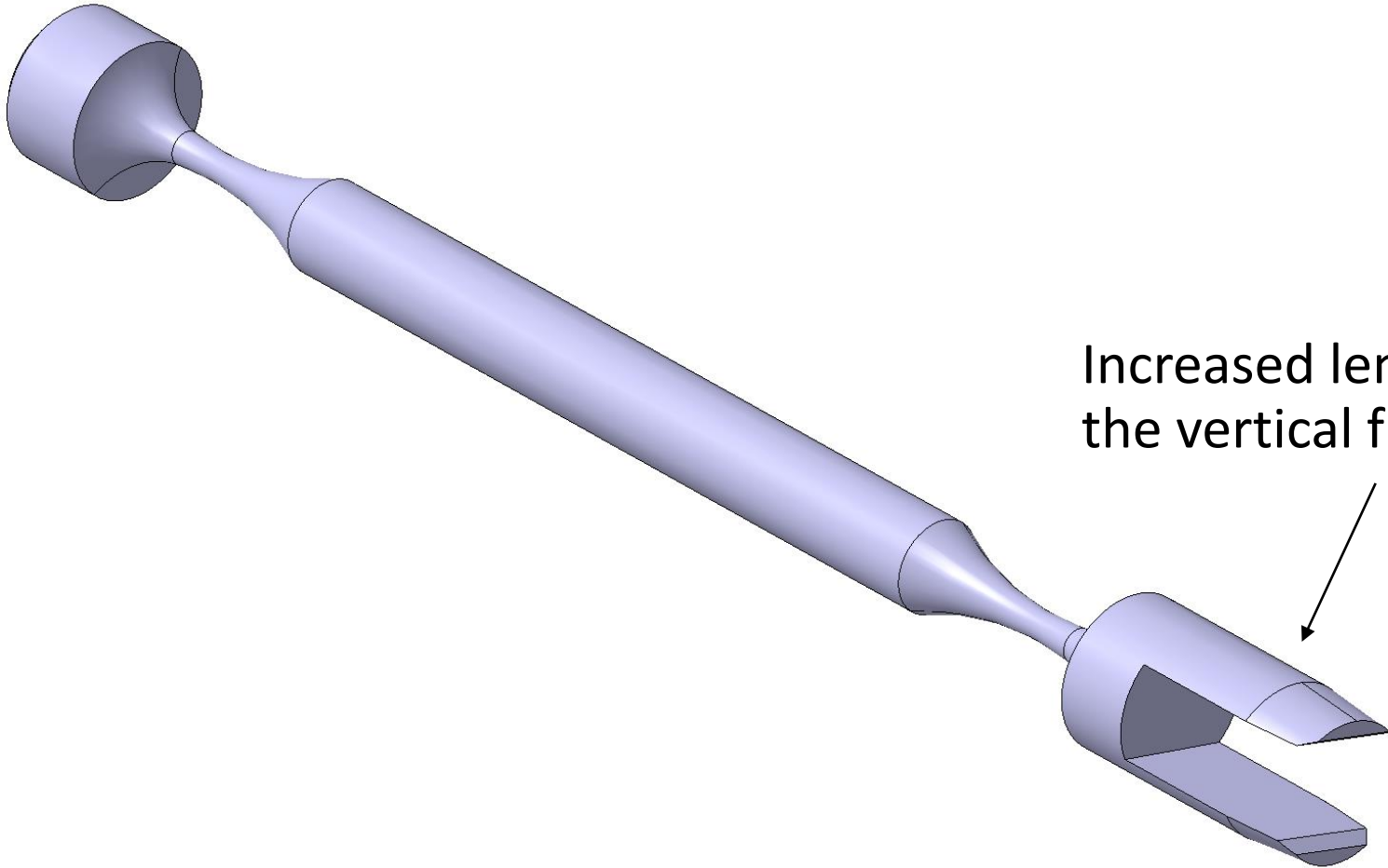
Orientation of wedge relative
to the mounting tube fixed by
a grub screw

Orientation of the mounting
tube relative to the girder
fixed by mounting features



Orientation of
wedge relative
to the girder
fixed

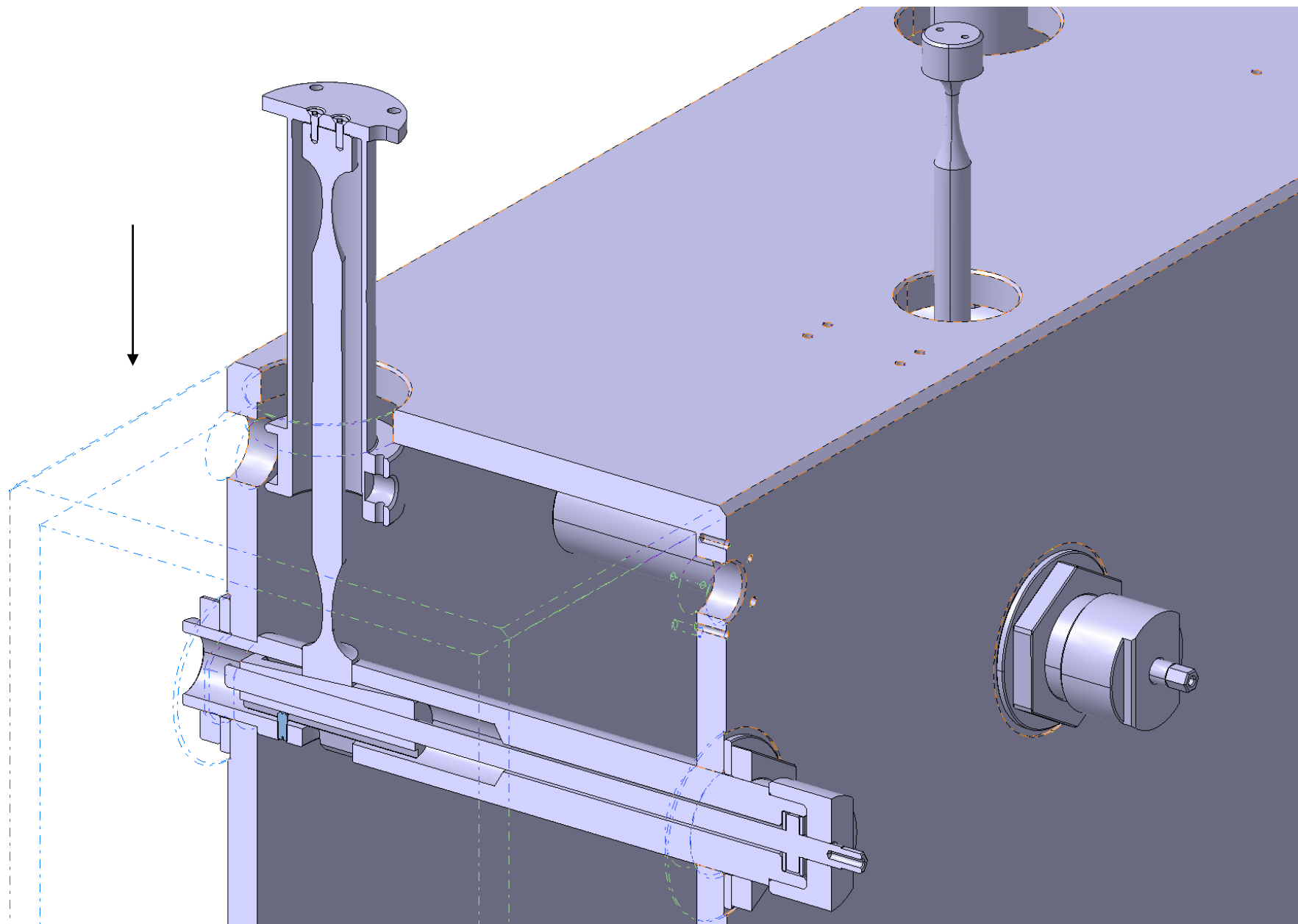




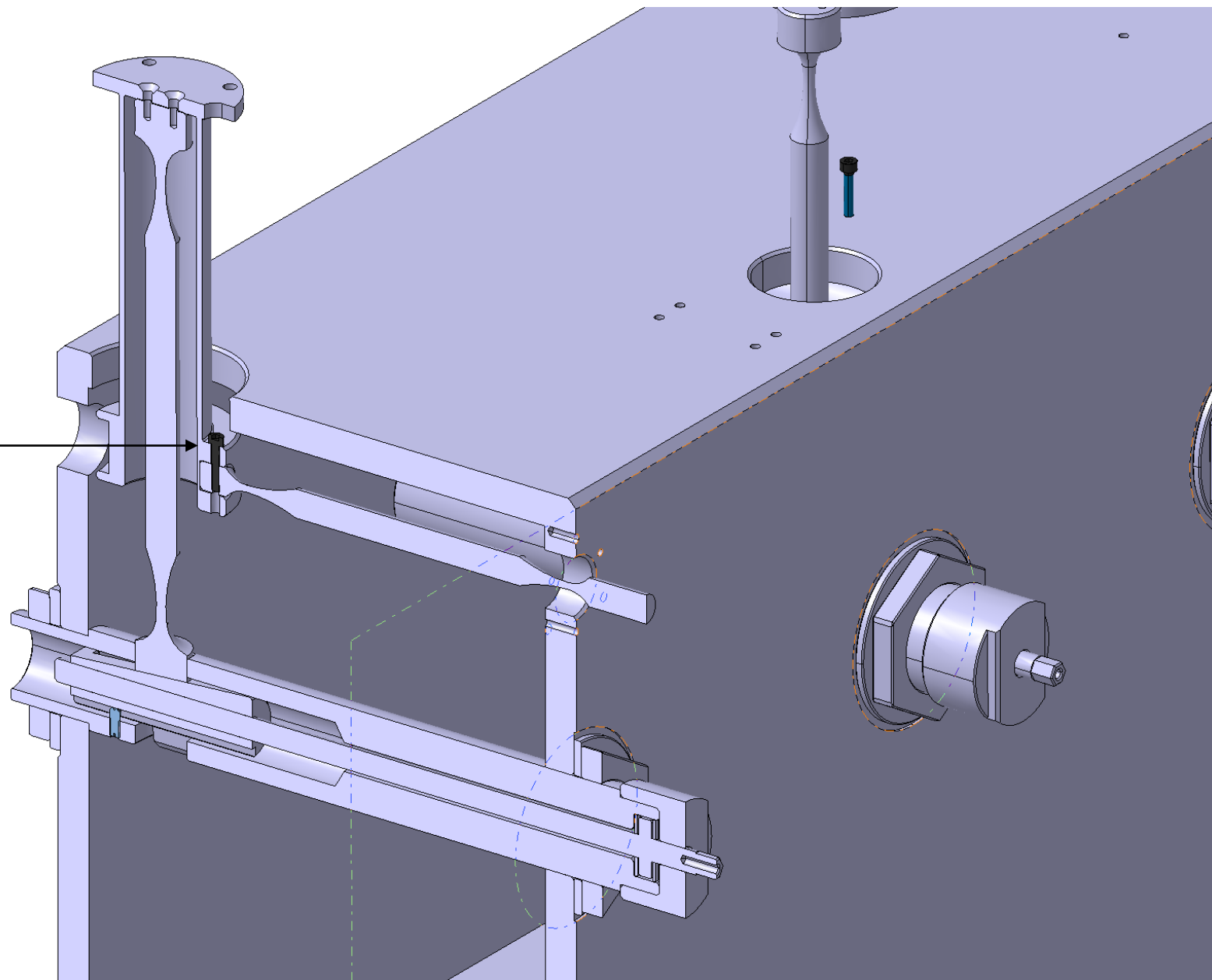
Increased length and taper of
the vertical flexure



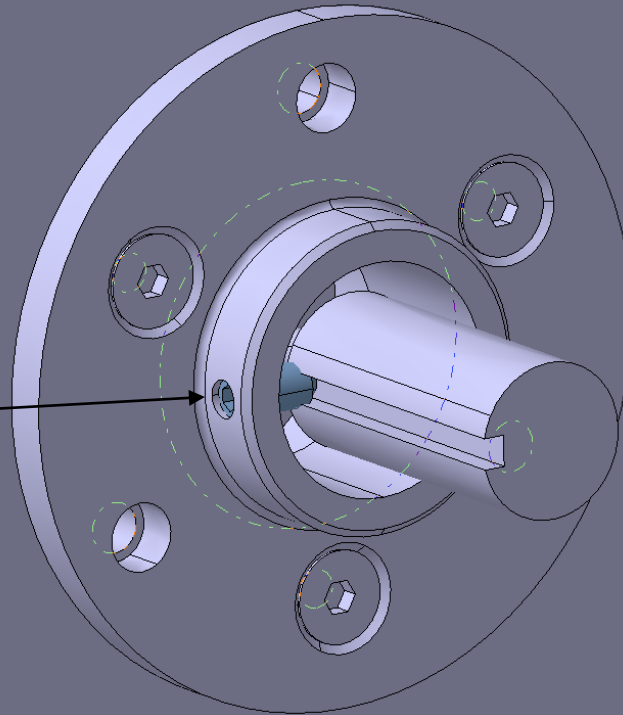
Installation of
vertical flexure
from above

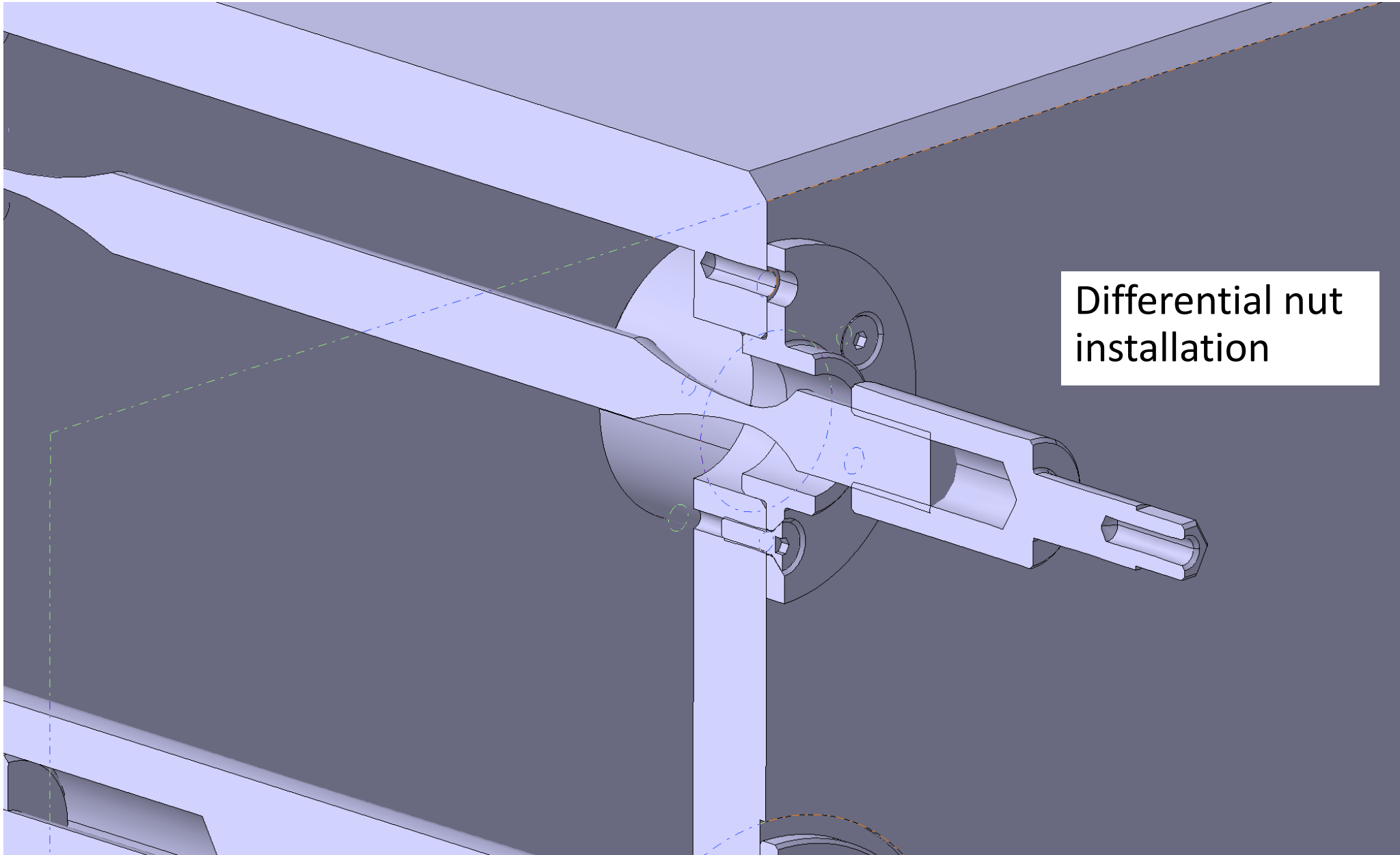


Lateral flexure
inserted and fixed
with screw

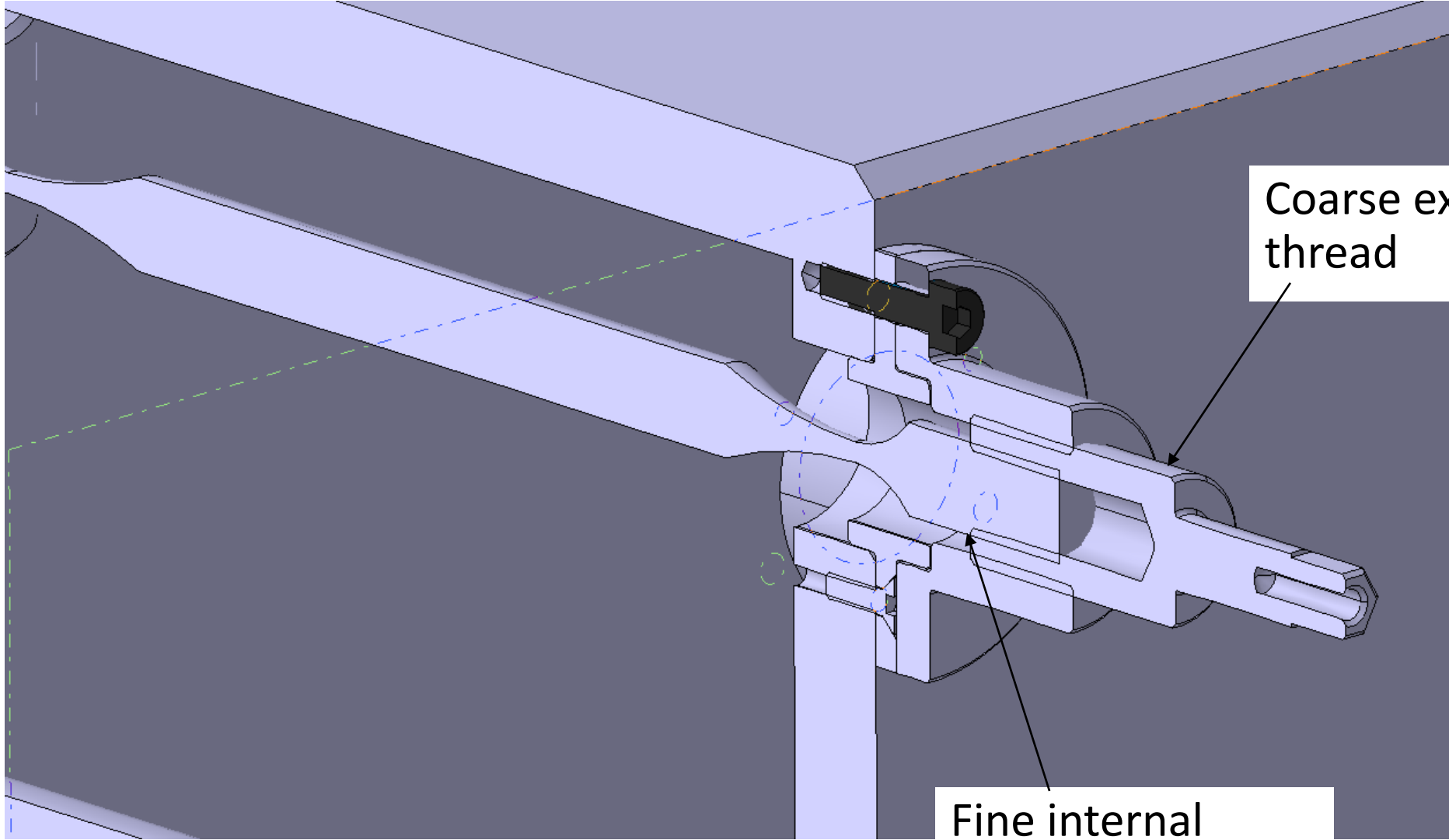


Rotation of the lateral flexure fixed by a grub screw



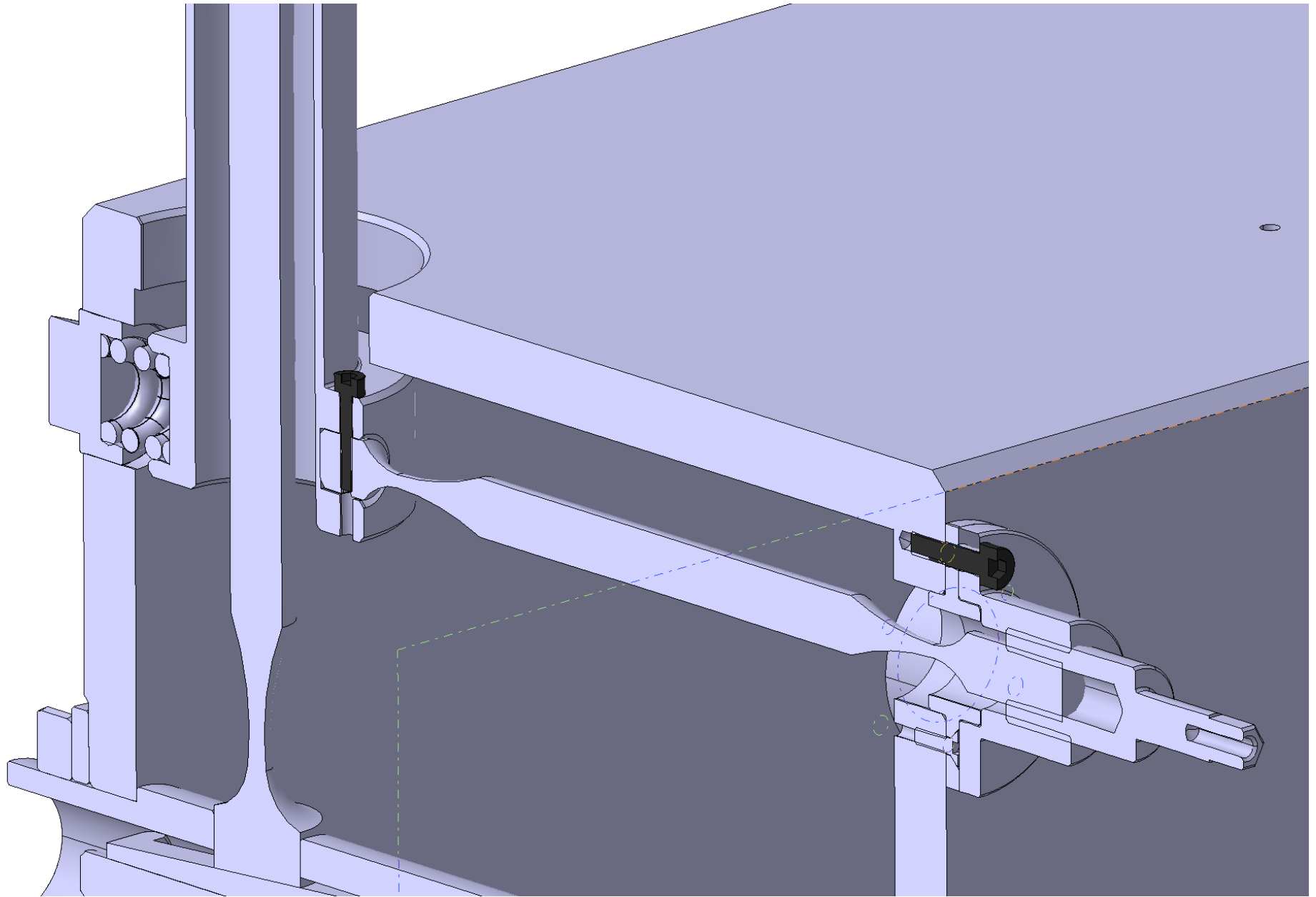


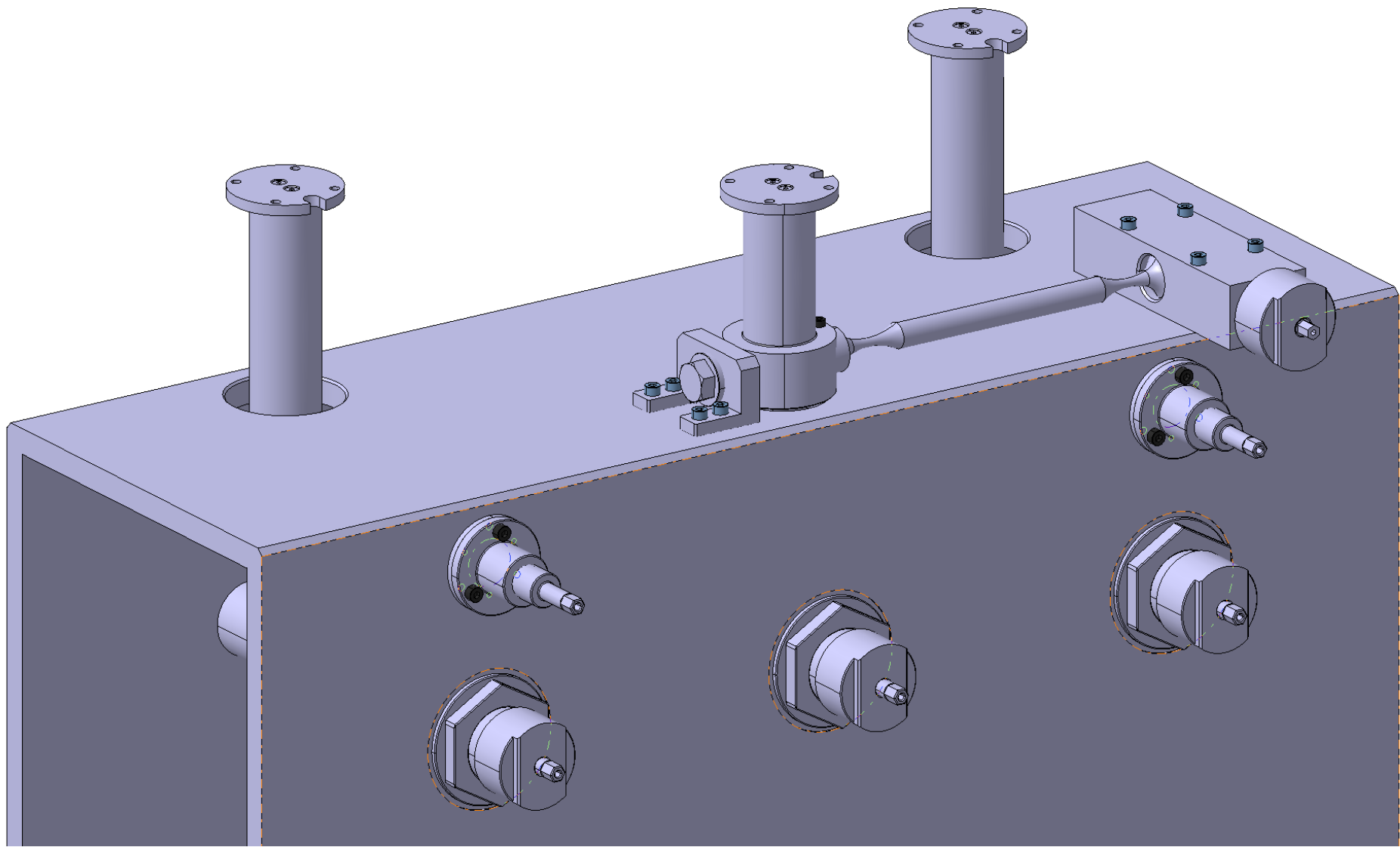
Differential nut
installation



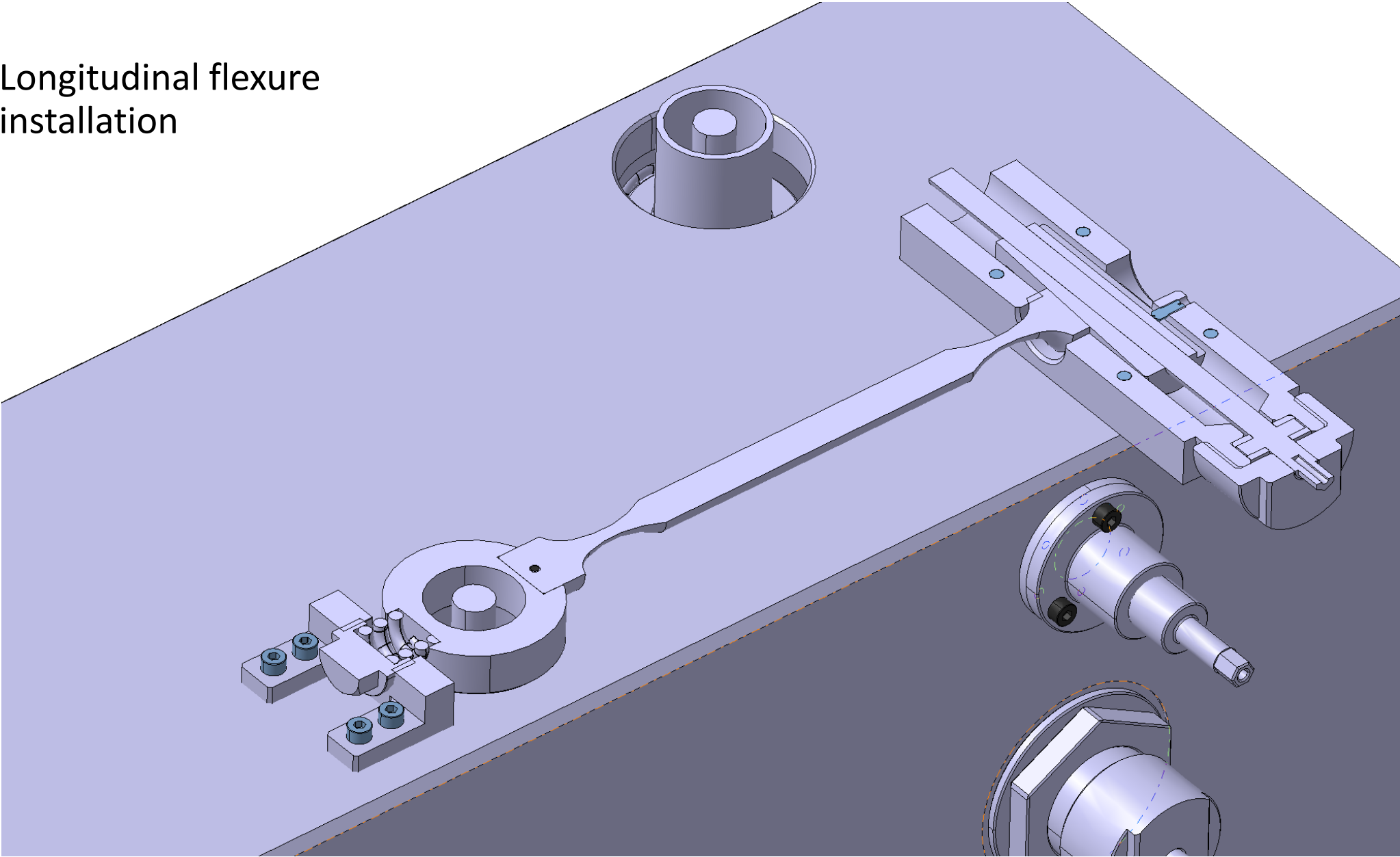
Coarse external thread

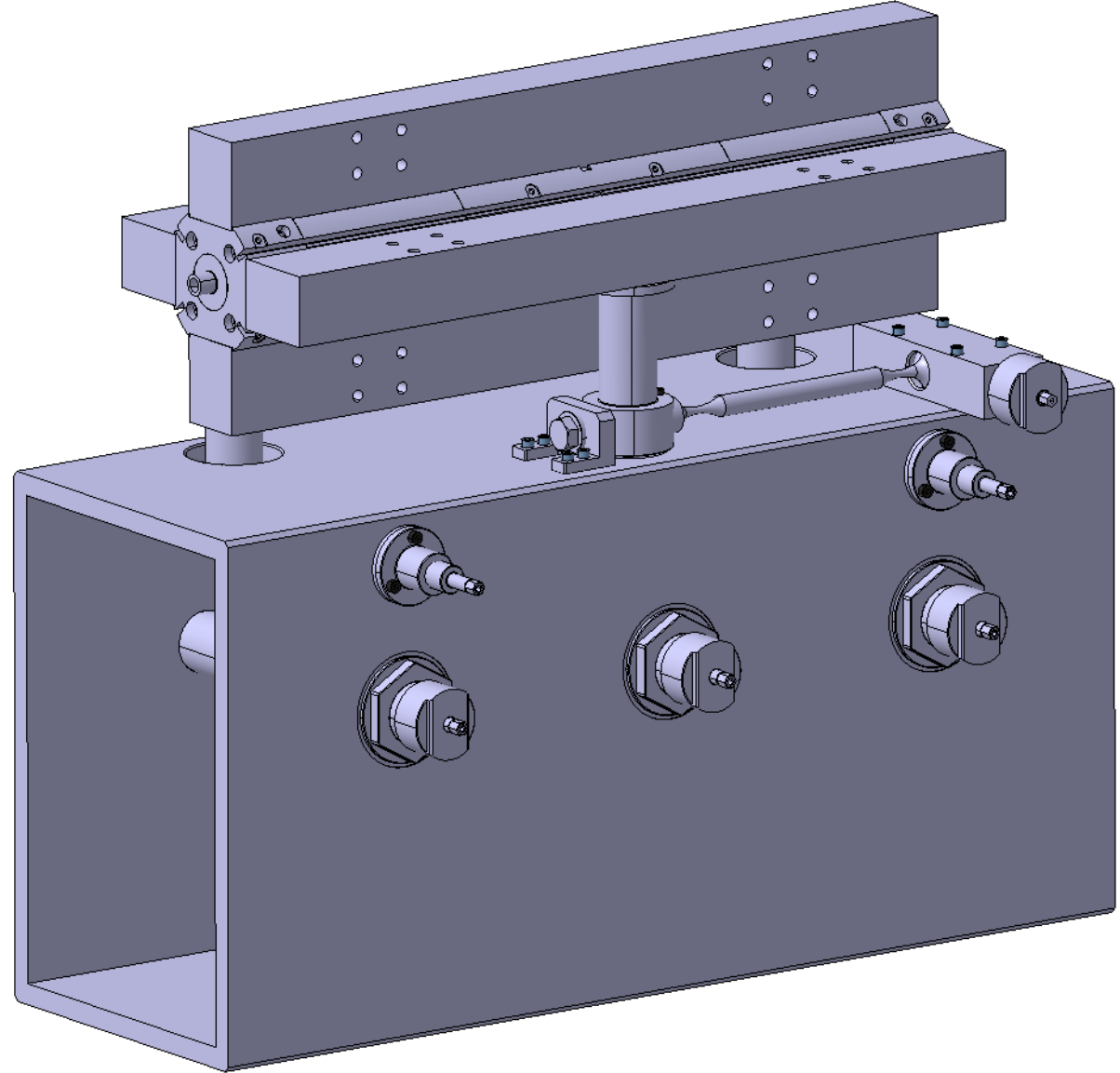
Fine internal thread





Longitudinal flexure
installation

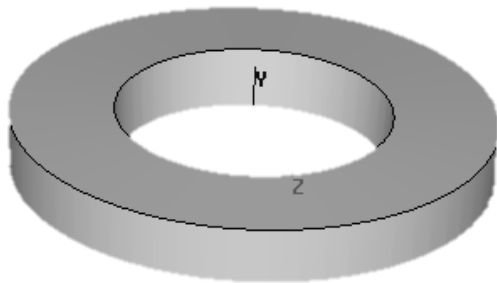




Springs Vs Belleville Washers

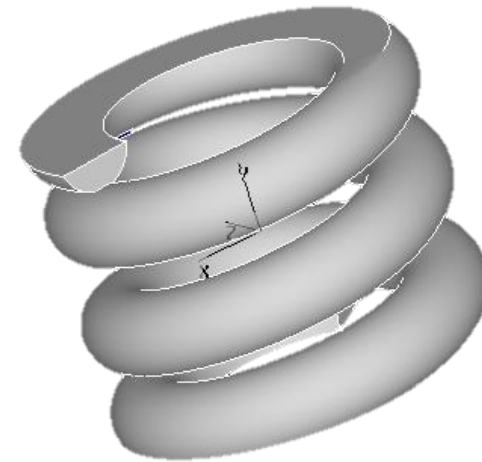
Belleville Washers

- Much greater stiffness possible
 - Up to 80kN/mm
- Limited range
 - Around 0.5mm
 - Stacking possible to increase the range
- Not good with off axis deflection



Compression Springs

- Stiffness up to 800N/mm
- Sufficient range ($\pm 1.5\text{mm}$)
- Can cope with the off axis deflection



Alternative: Plate Mounted Assembly

Also discussed with Mateusz; possibility to return to a separate adjustment assembly mounted on top of the girder

Pros:

- Easier assembly
 - Although fit around the vertical flexures remains the same

Cons:

- Increased number of machined components
- Requires accurate positioning of the assembly on the girder

