

1T MCP STATUS

Stefan



Agenda

Design parameters

3D drawings

Implementation

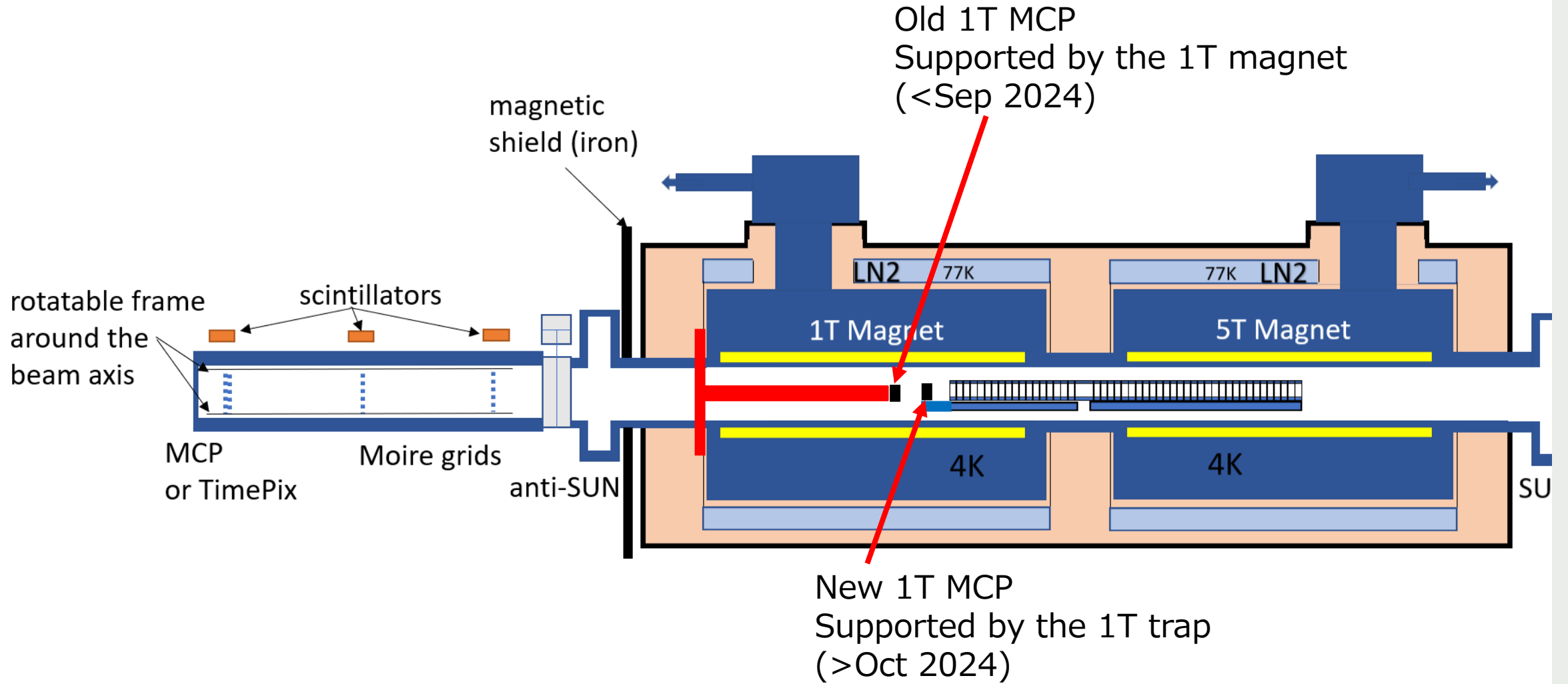
Tests



Design parameters

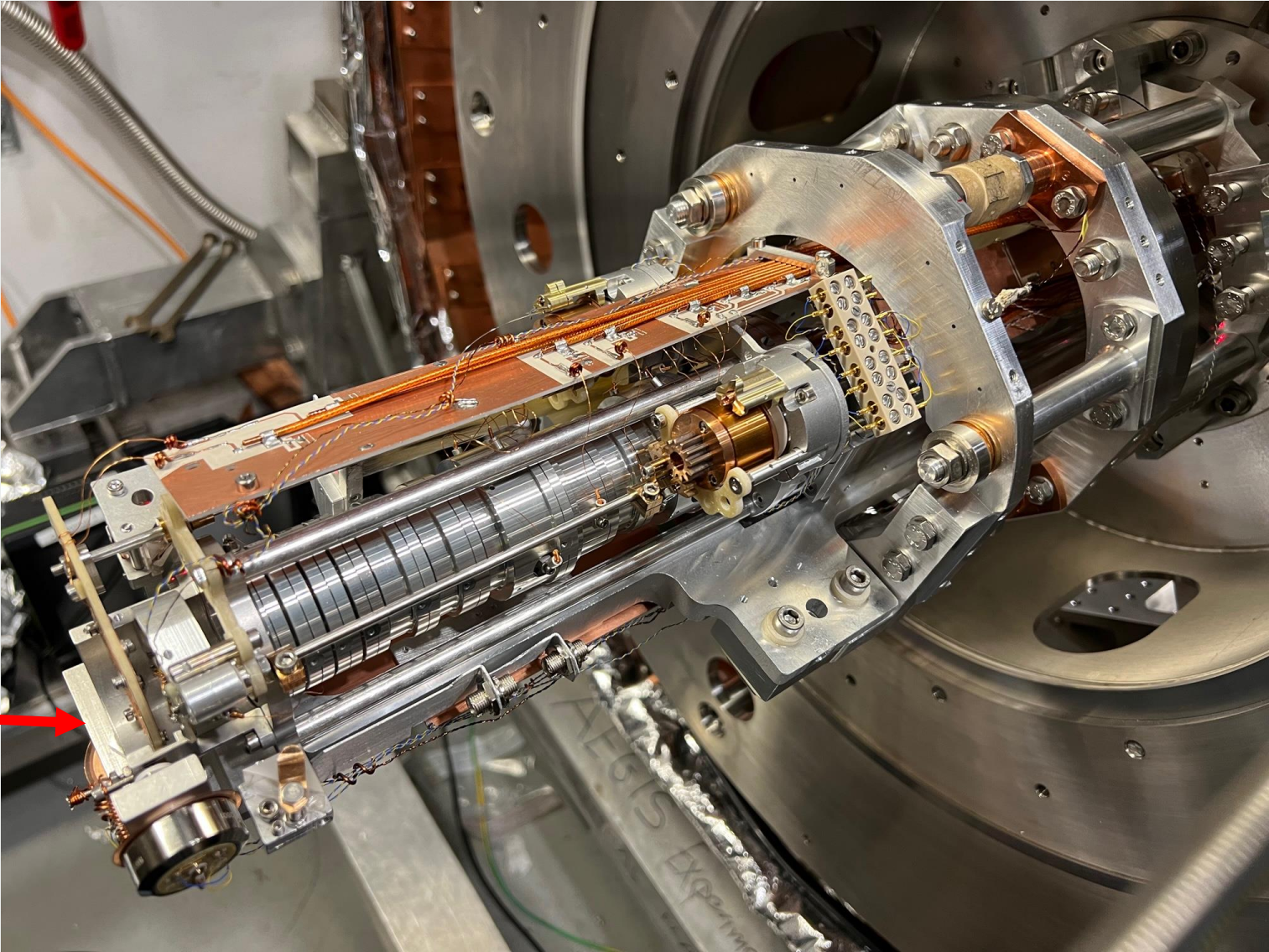
- The 1T MCP is one of the most important analysis devices in AEGIS. For plasma diagnostics, beam steering, timing, charge collection, etc...
- But sending H-bar to the Moire deflectometer is impossible, because the MCP is in the flight path
- Hence:
 - for diagnostic, keep it on the beam line
 - remove it from the beam line for H-bar/Moire runs
- Actuation with another cryo motor envisaged
- Infrastructure as usual for MCPs: heater, temperature sensor, LED for camera focus

Cross section of AEGIS

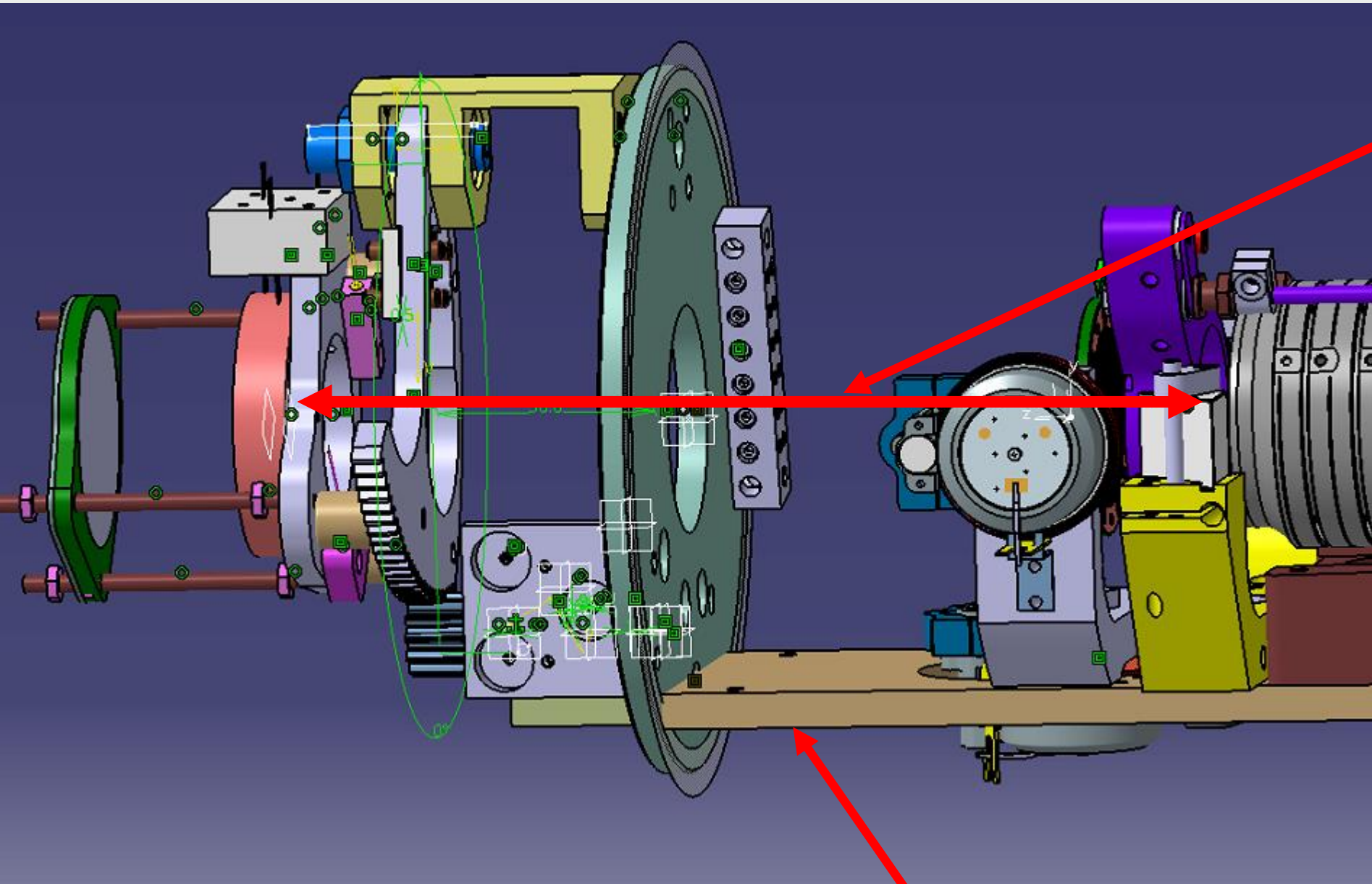


1T Trap <Sep 2024

Short base plate



Distance MCP-IN to
Target surface:
160mm

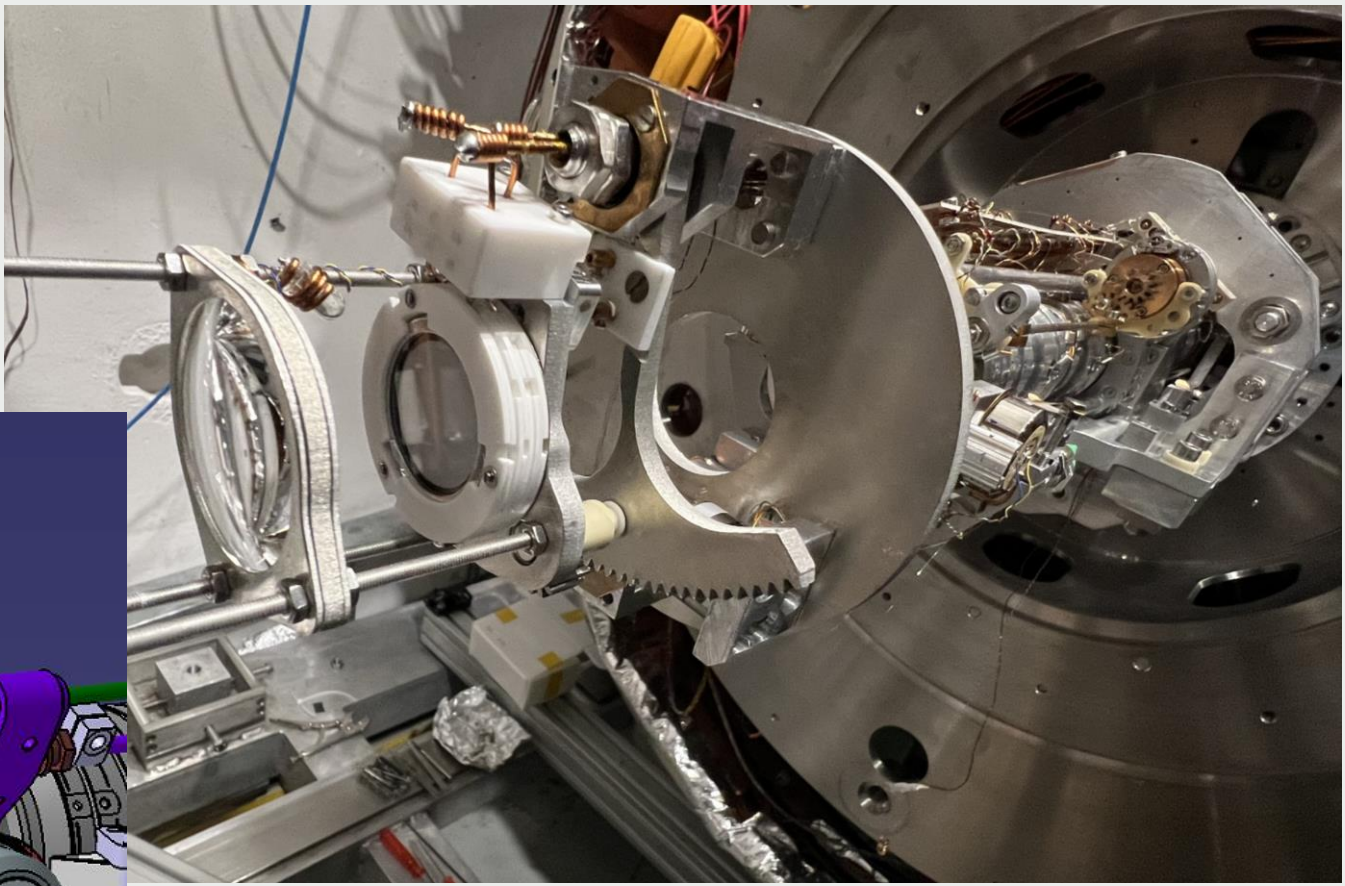
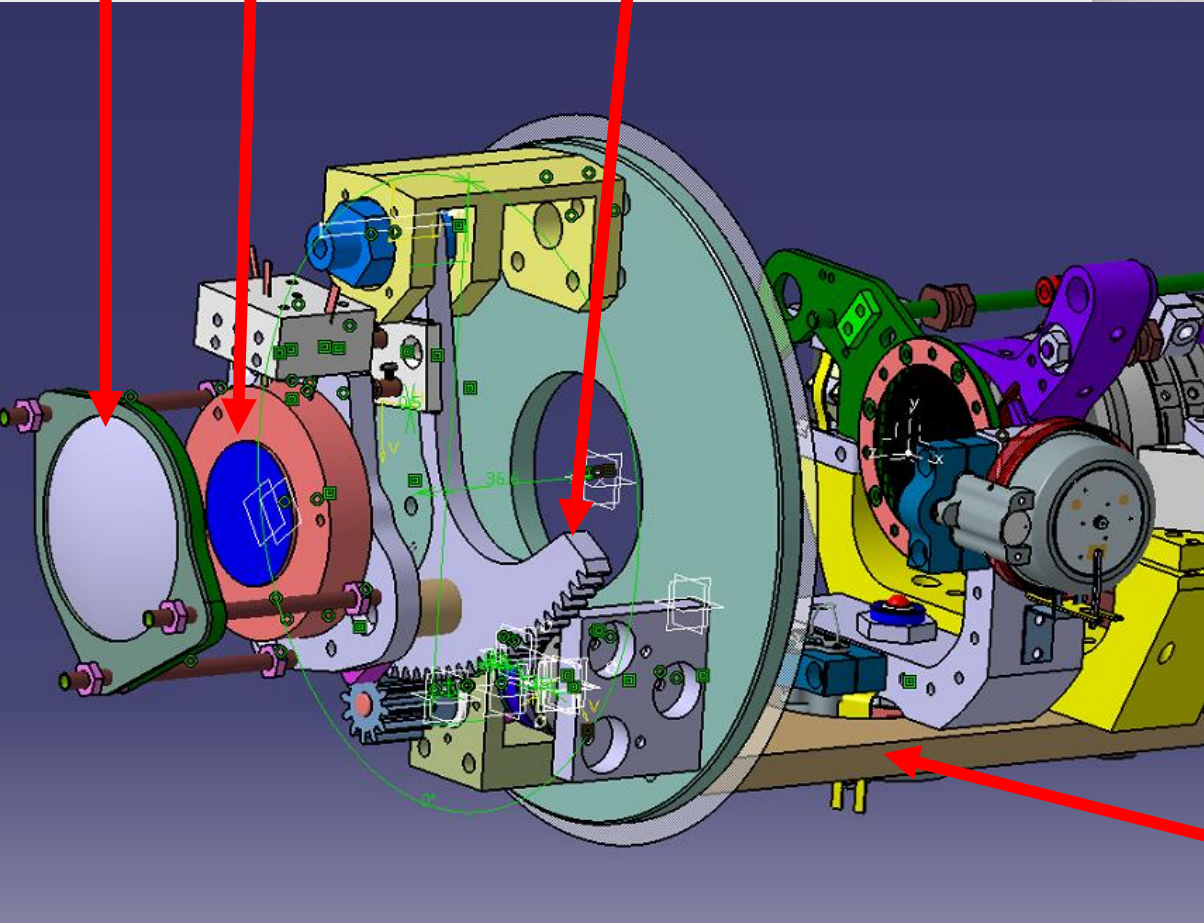


Long base plate for new MCP support

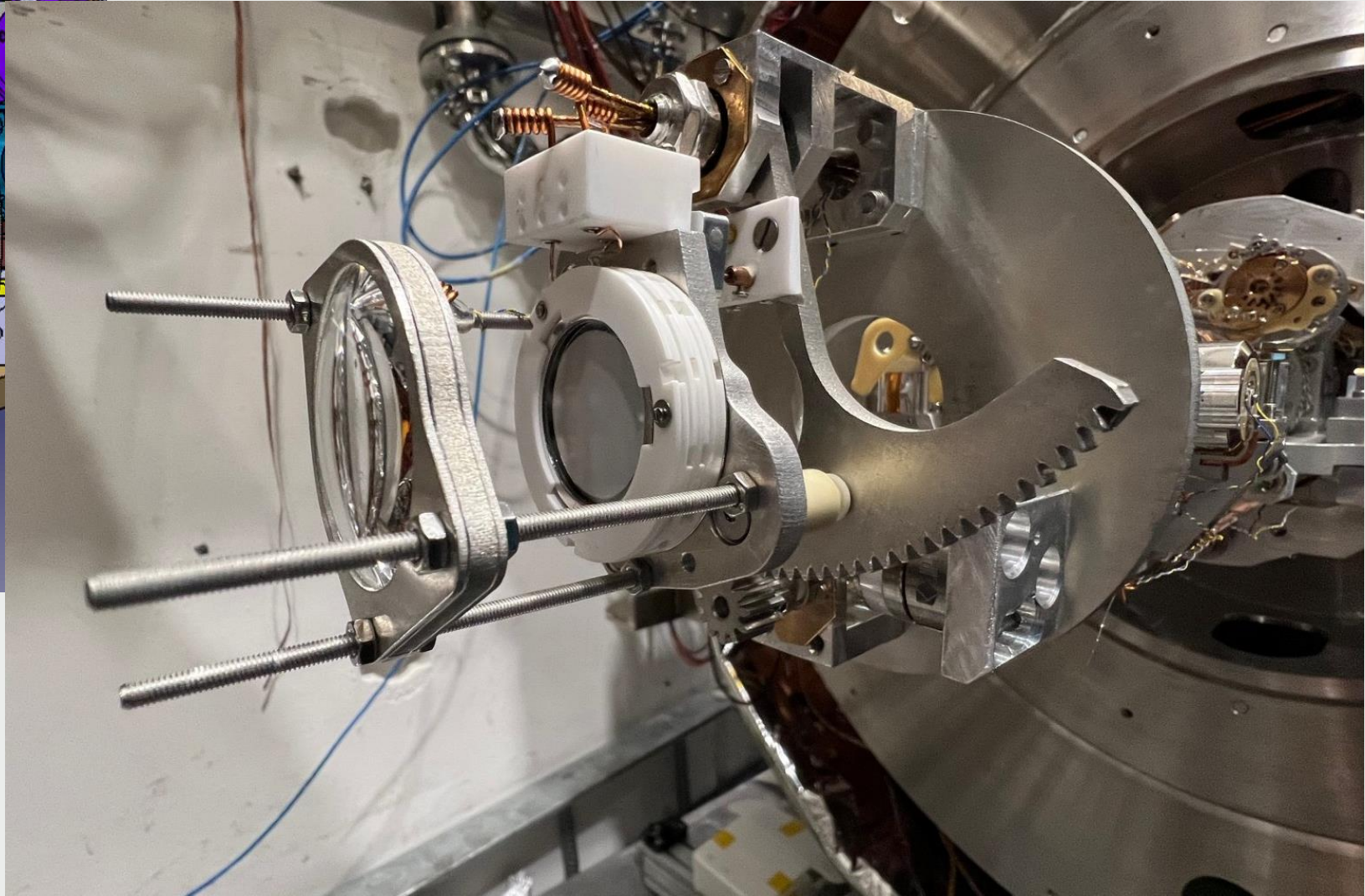
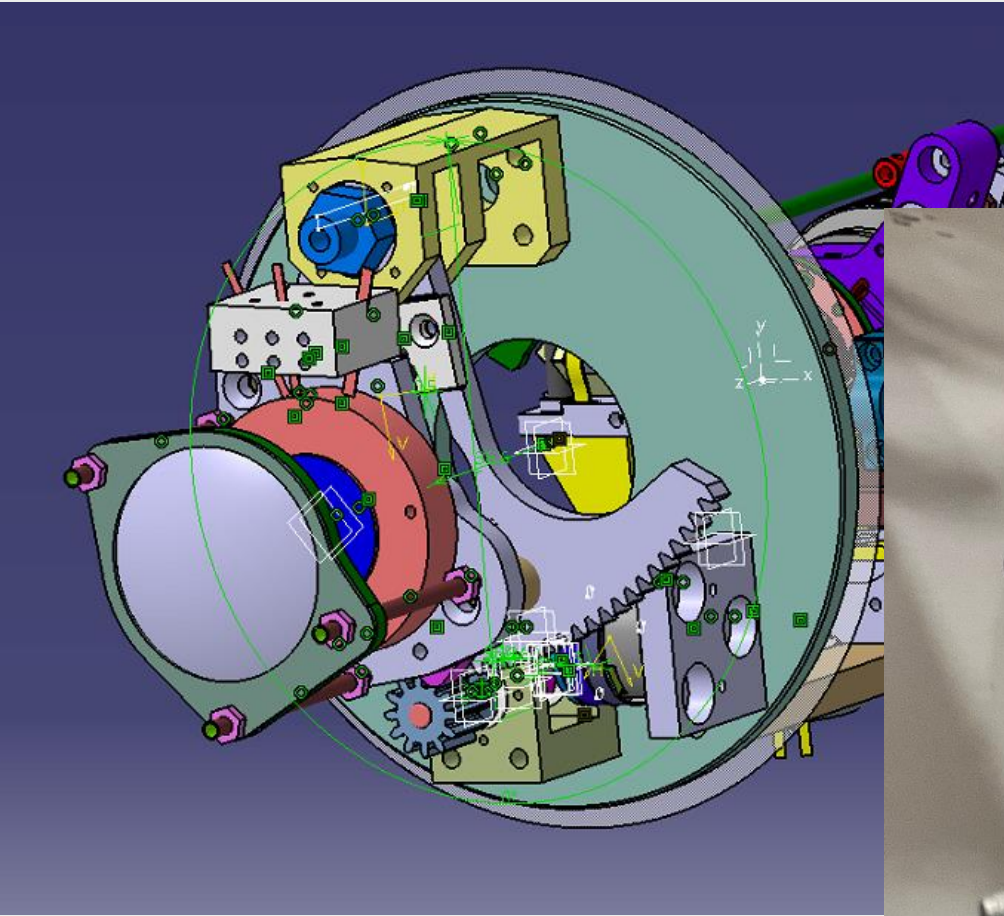
MCP base with large gear
For moving it out of beam line

1T MCP

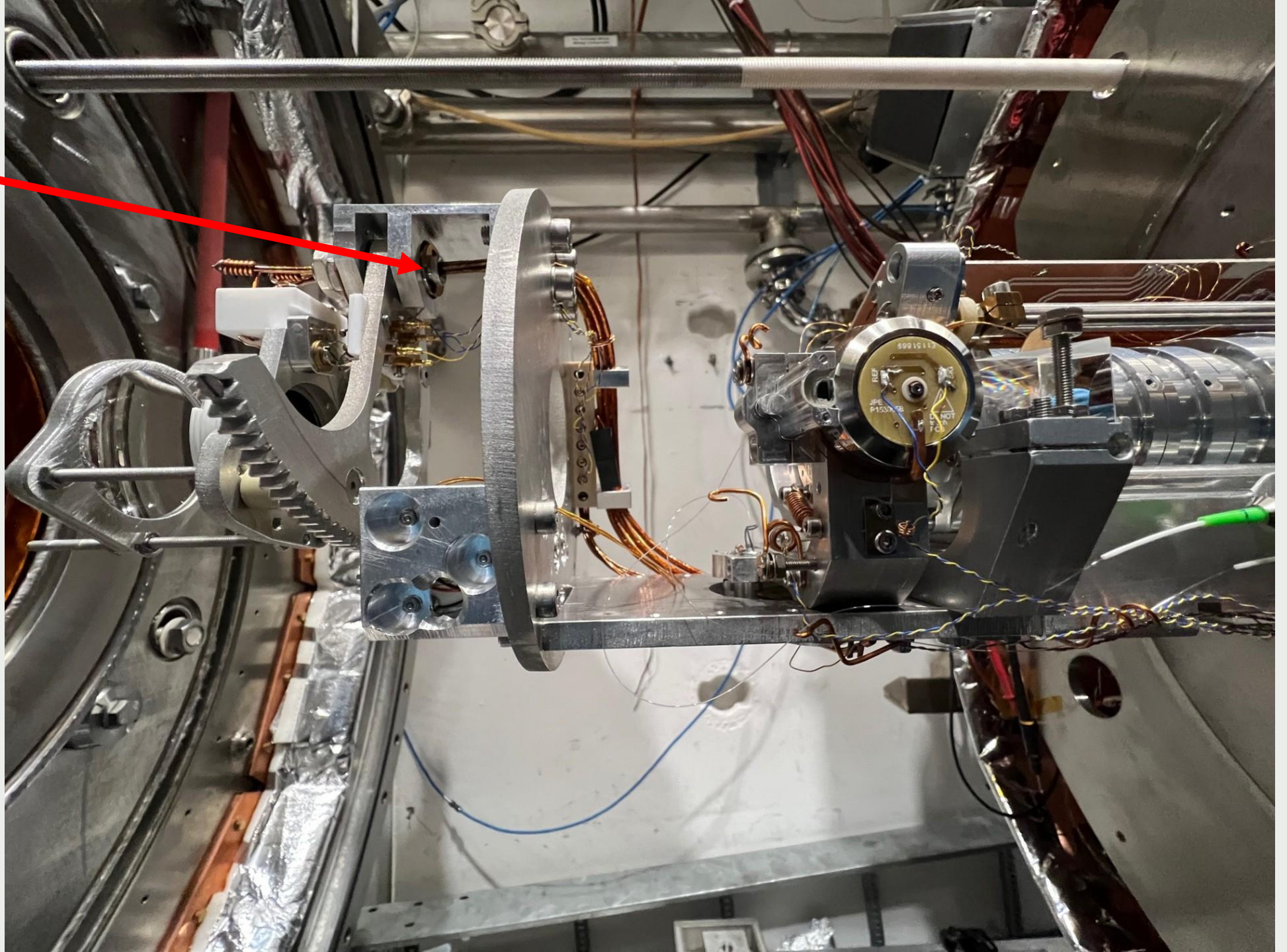
Lenze



Long base plate



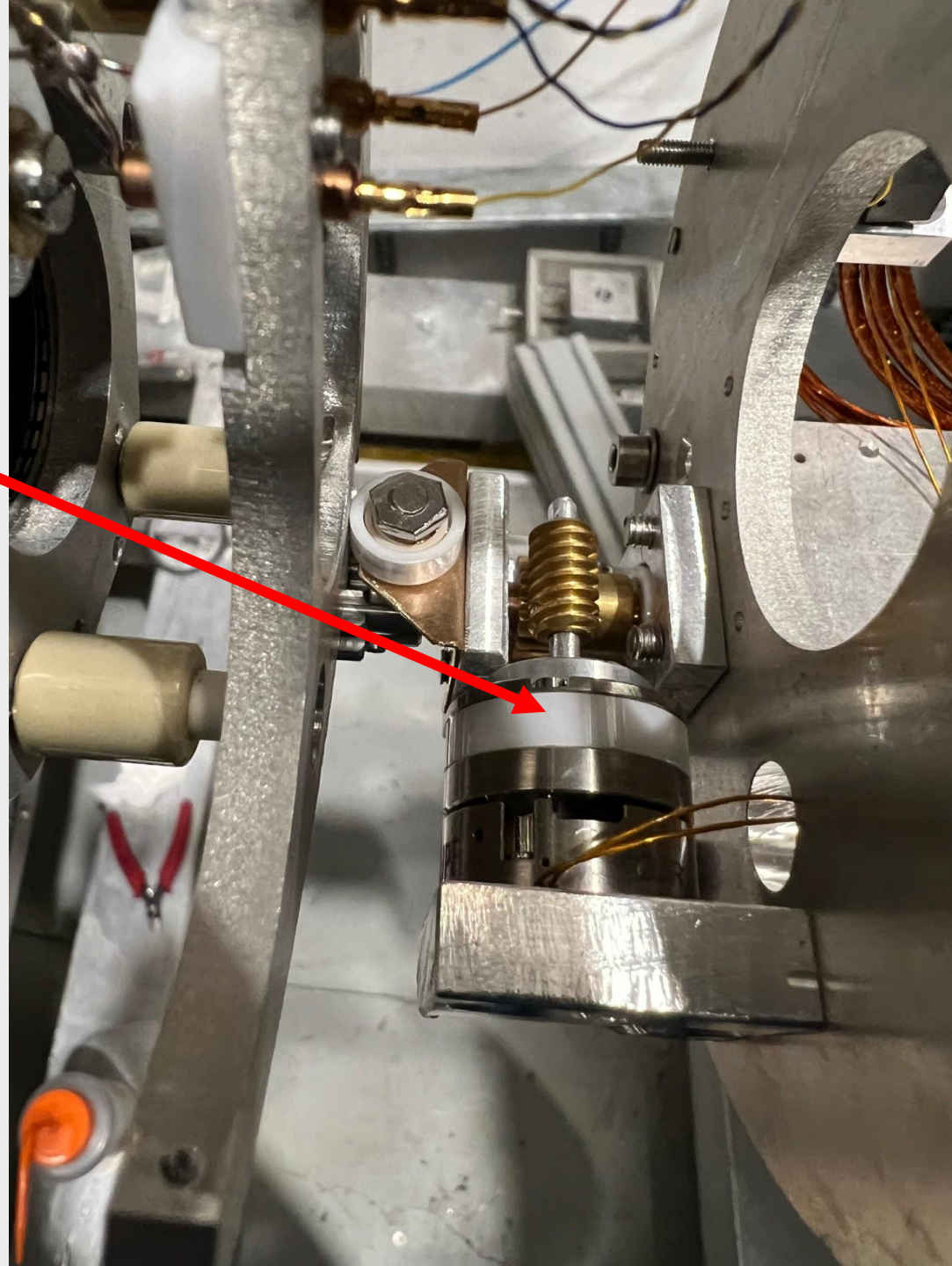
10kV cables
Come through the
Pivot axis!



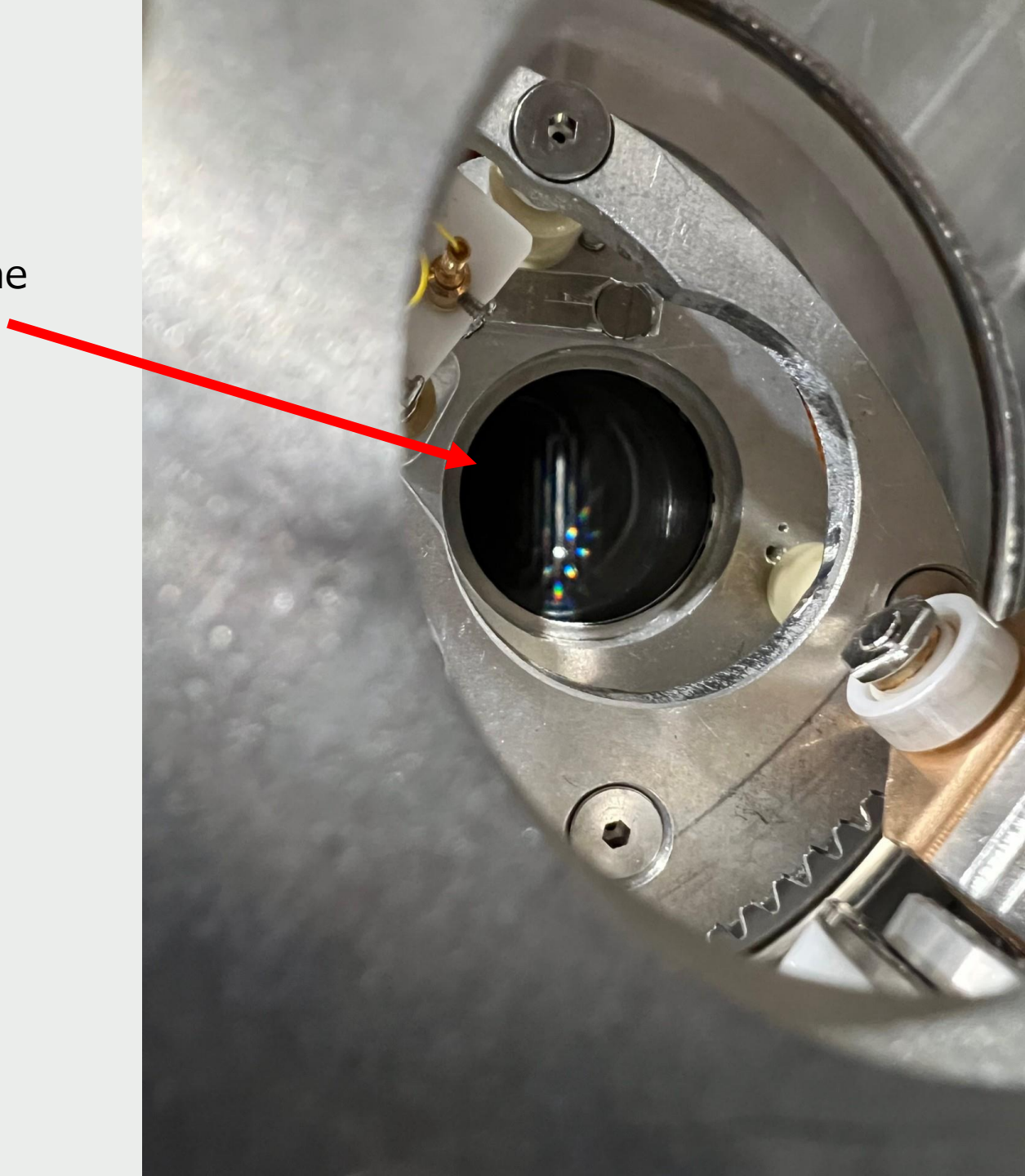
Cryogenic motor
With worm gear-box

Due to the weak nature of this
Cryo motor, a worm-gear with a
10:1 gear ratio is used.

Result: to move the MCP out
Of beam axis takes 7 minutes!!

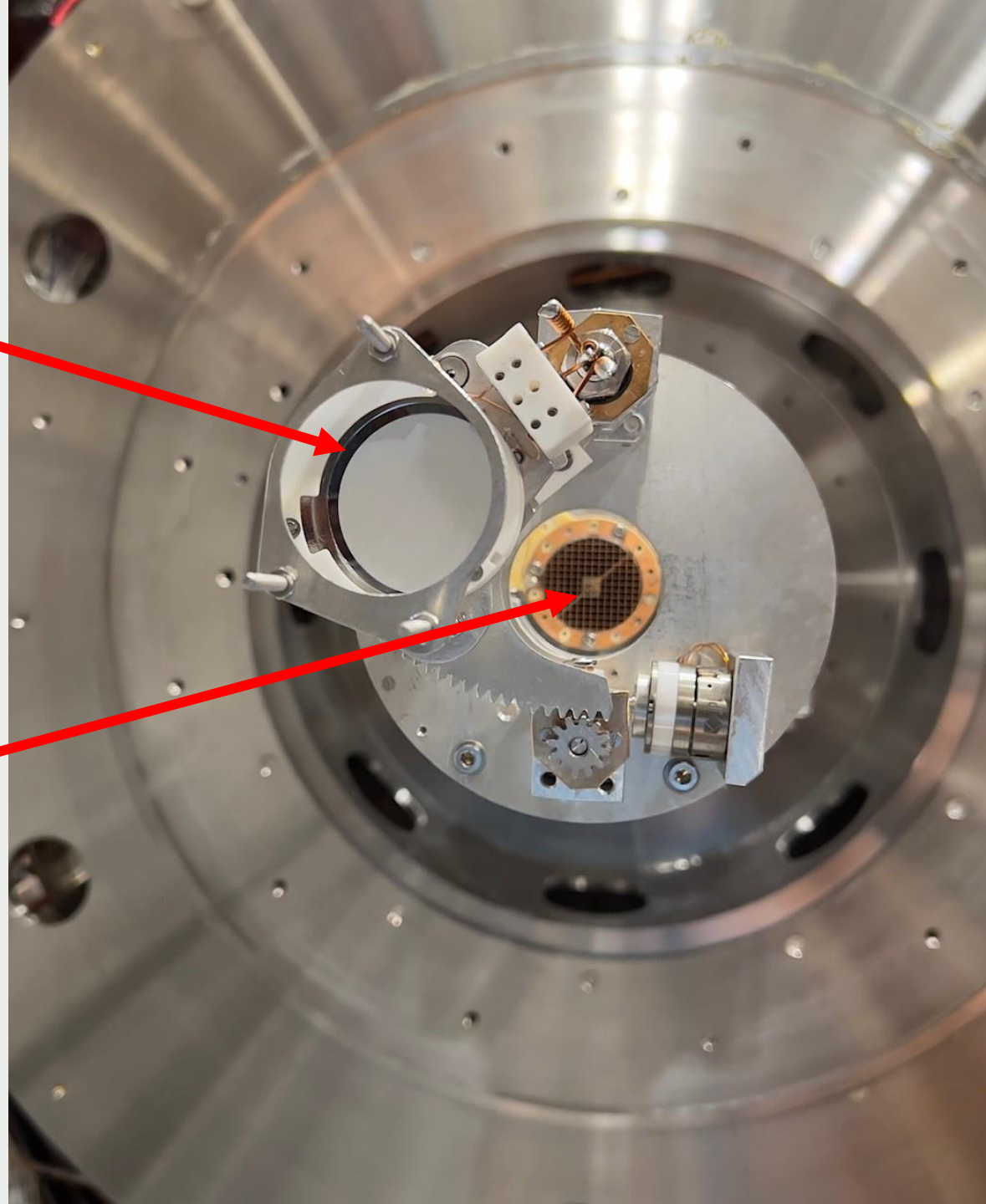


MCP IN plate. This is the
"view" of the particles



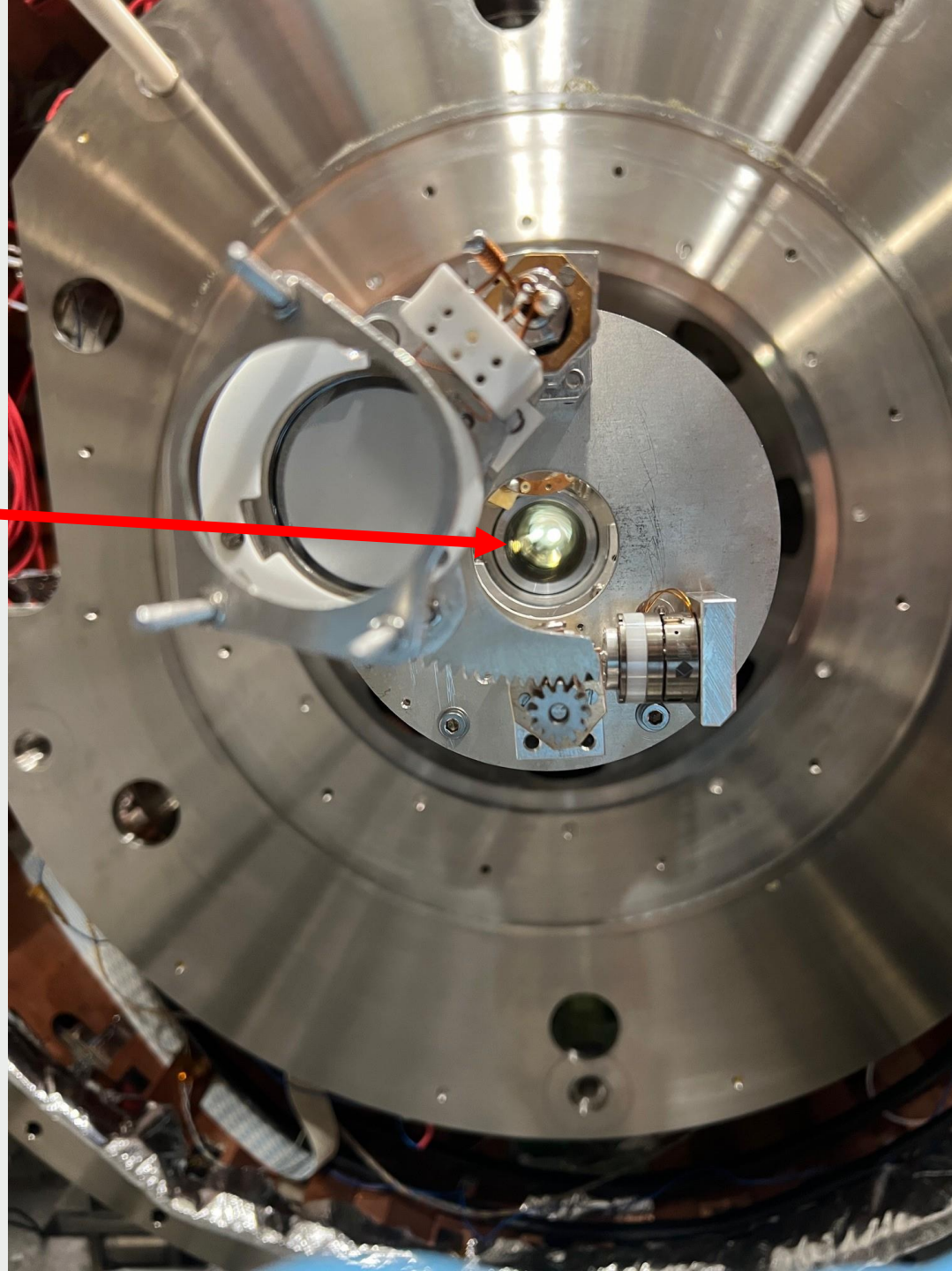
MCP in park position
(away from the beam line)

Free line of flight for H-bar
Toward the Moire
deflectometer !!



No obstruction what so ever:
Target, Grid and 1T MCP
Are out in park position.

"P-bars to Moire" - mode...



Seen from the back of
the experiment

MCP in beam position

FACT tube

