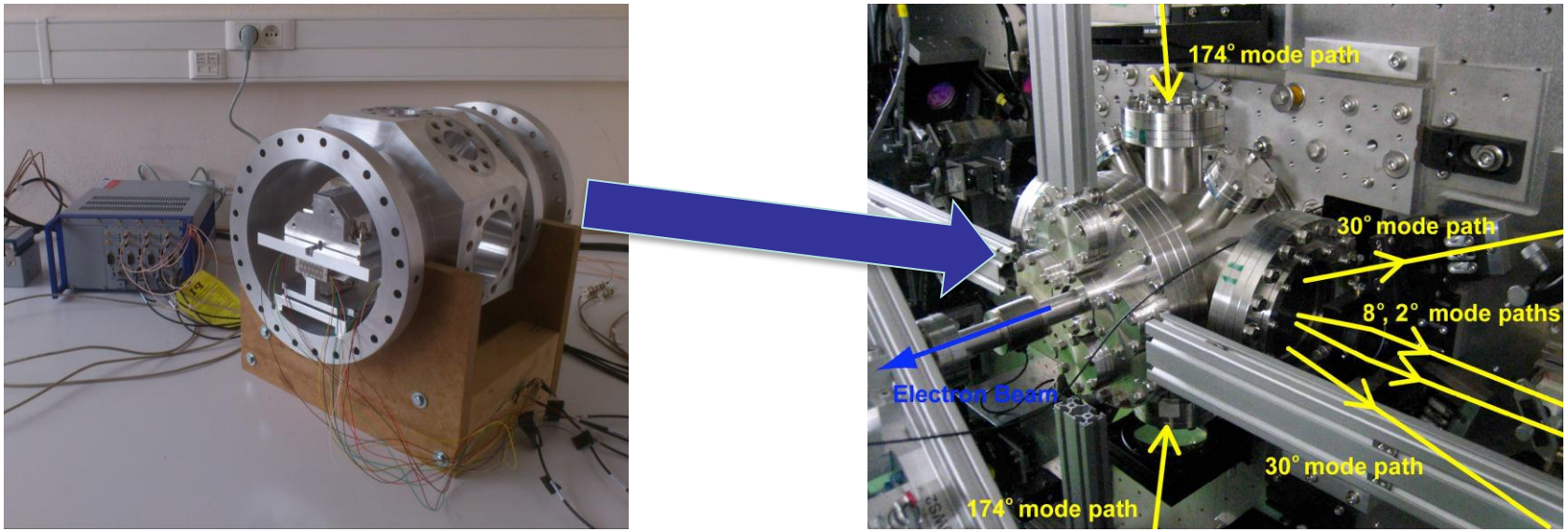
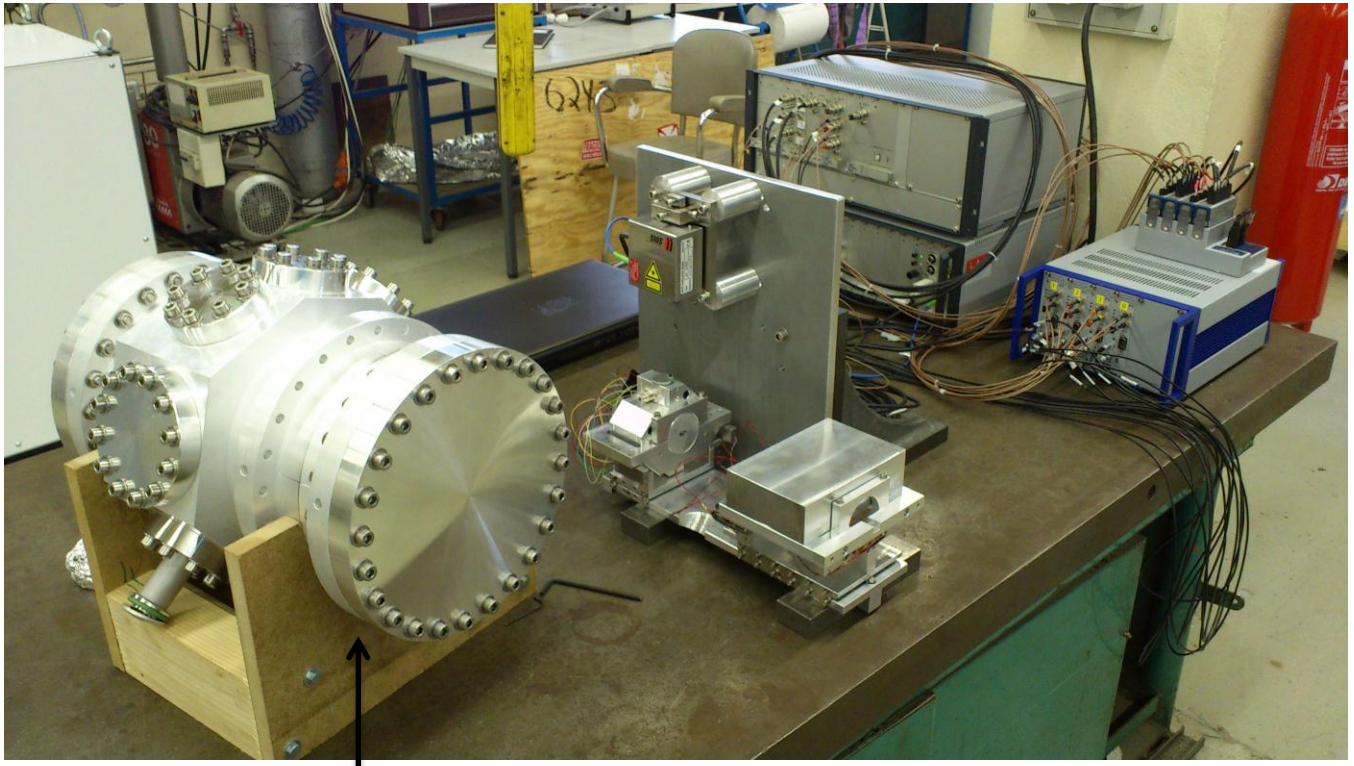
ATF2 - IP Chamber for IP-BPM

Shipment, installation, mount / demount procedures, alignment



Shipment



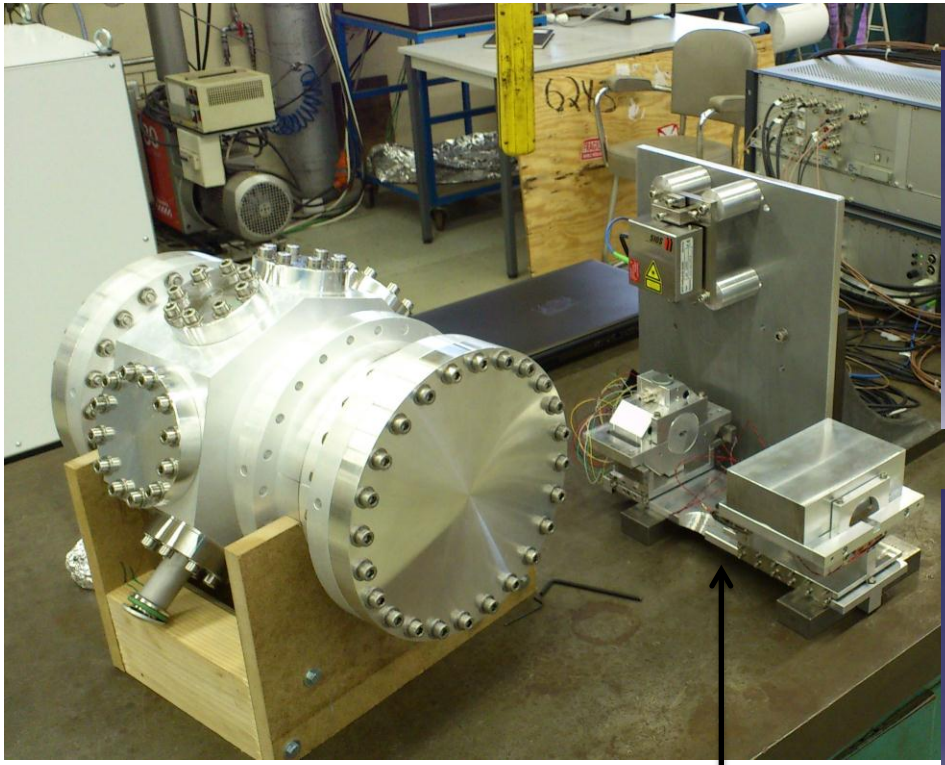
Chamber (with blank aluminum flanges)

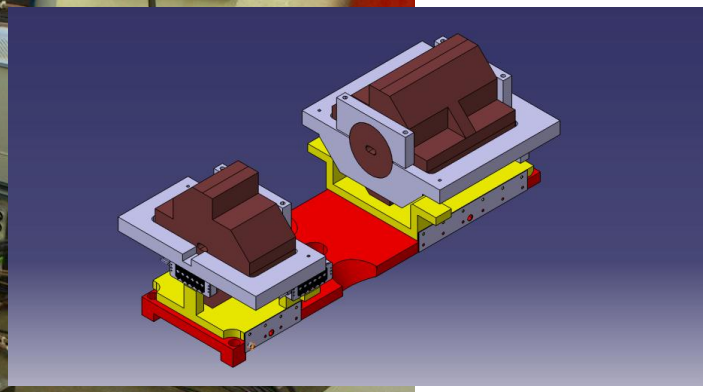
Permanent exportation to KEK (tax to pay)

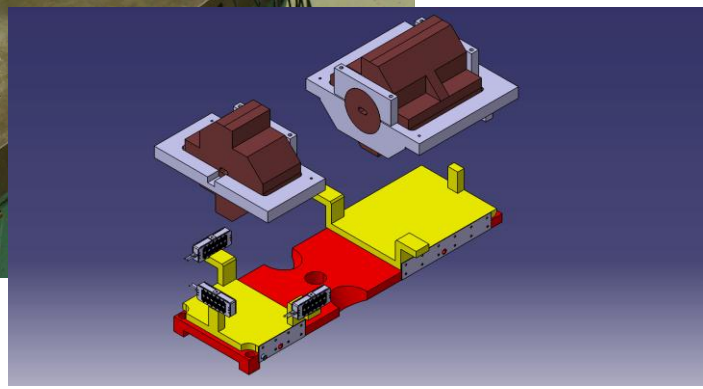
Shipped in strong wooden crate with bottom cradle and top reusable cradle

Net weight : 27 kg (body : 15 ; Al DN 200 flanges : 2,5x2 ; other Al flanges : 3 ; screws&nuts : 3,2)

Shipment







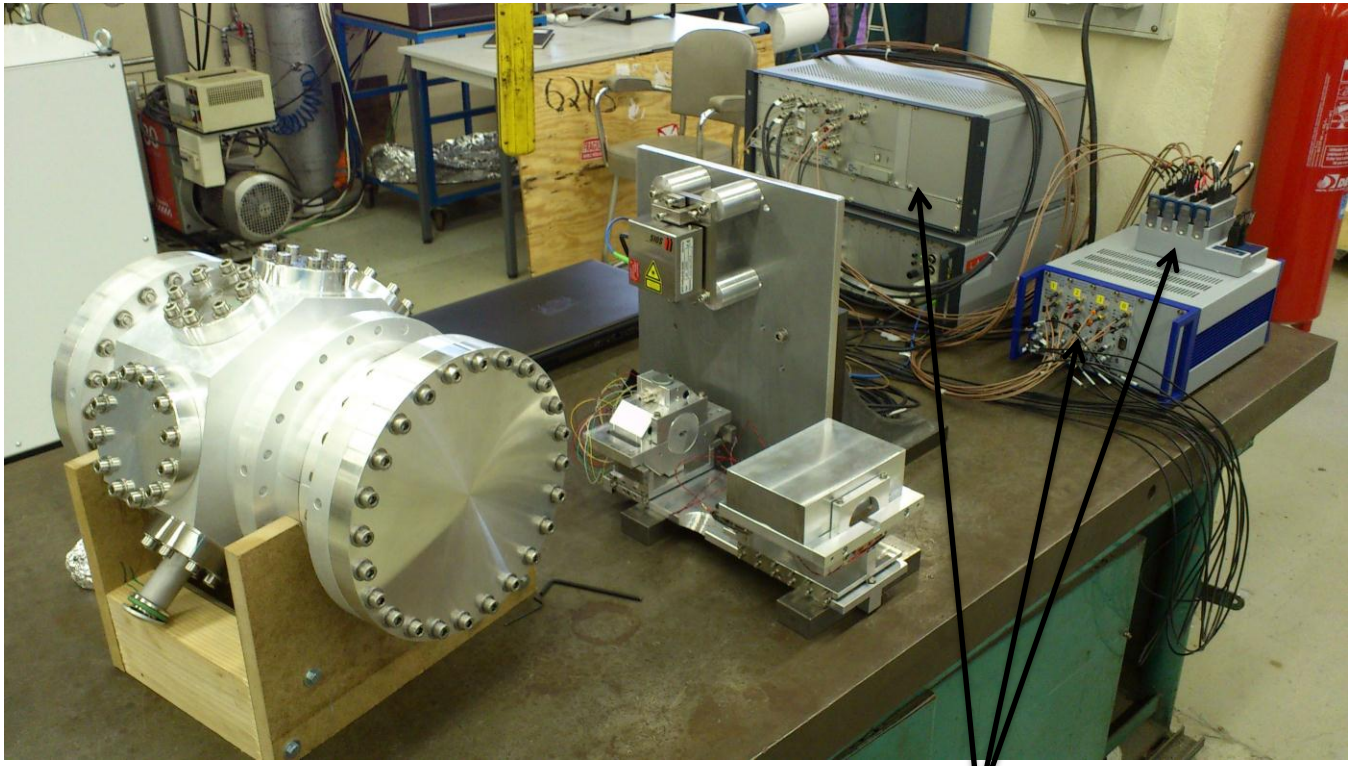
BPMs displacement system

Permanent exportation to KEK (tax to pay)

2 ways : - Shipped as single part (with external base to clamp moving parts
- Shipped partially demounted (BPM+cradle removed)

Net weight : 4,3 kg

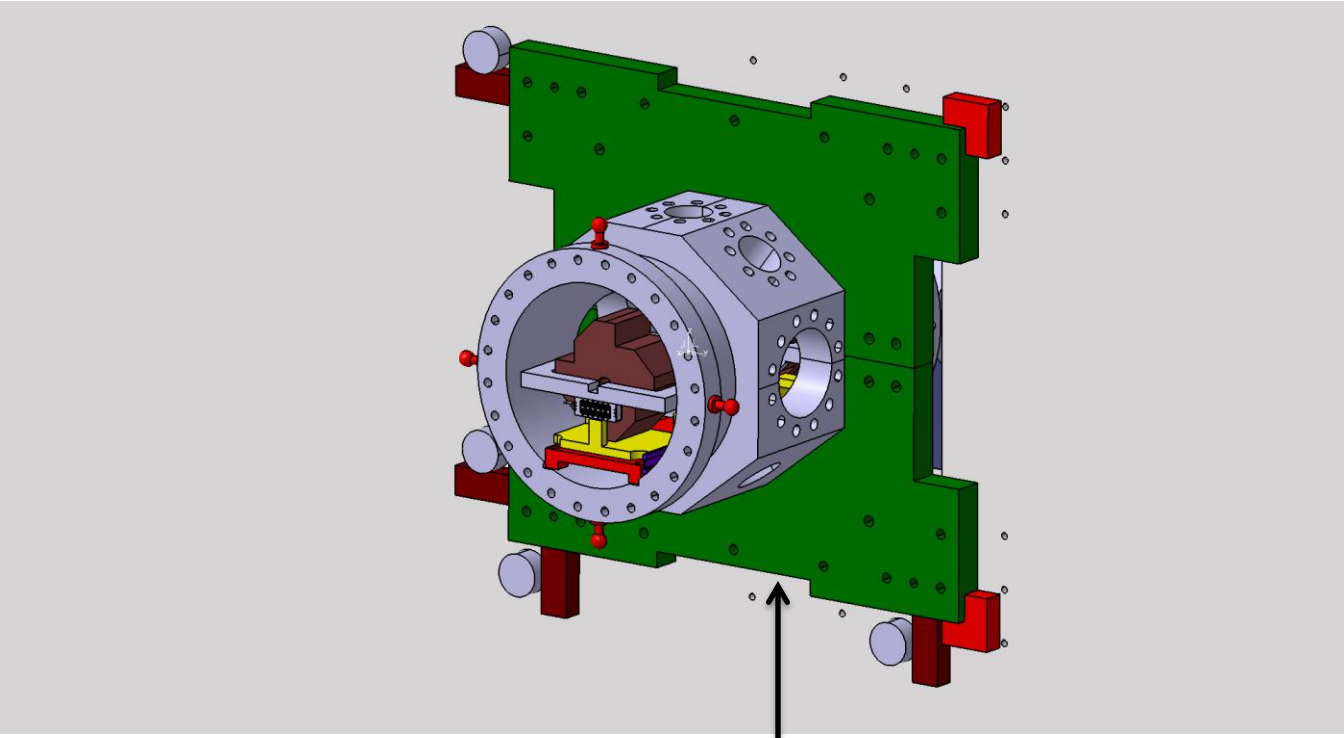
Shipment



Electronic equipment (Cedrat act., PI act. PLC)

Temporary exportation to KEK (no tax to pay, but paperwork)

Shipment



Chamber to optical table fixture (2 parts)

Permanent exportation to KEK

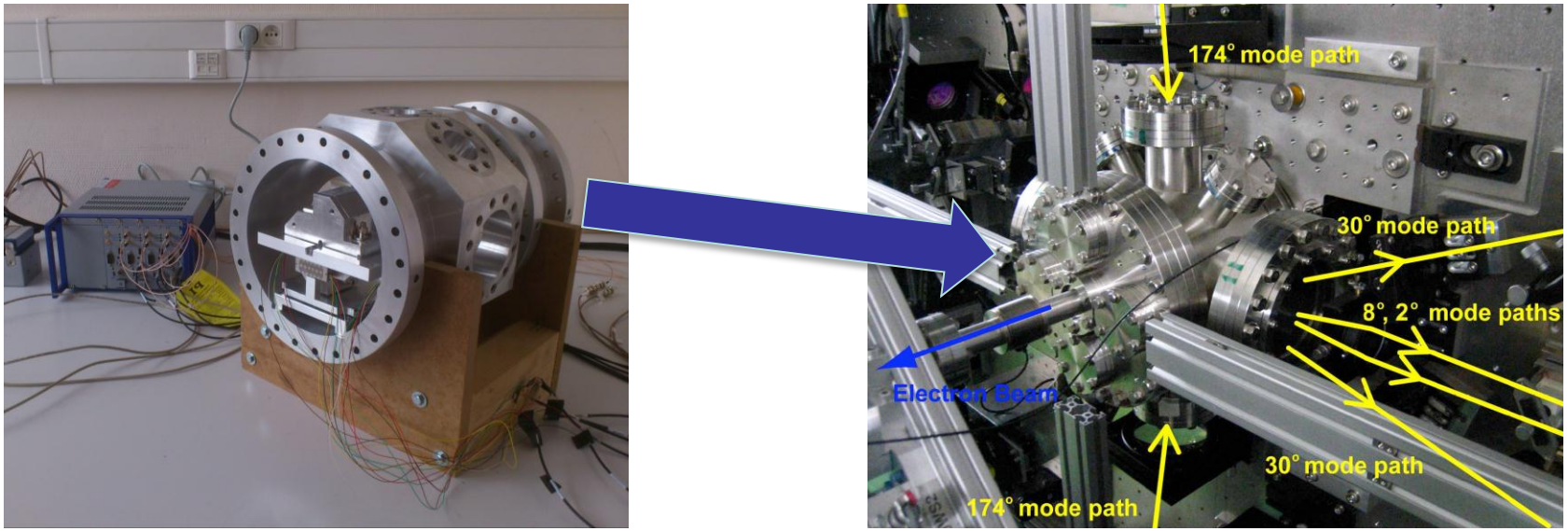
Could be included in Chamber package

Net weight : 32 kg (16x2 for SS 25 mm thick plate)

Shipment date

Shipment date : at least one month before installation date

Installation



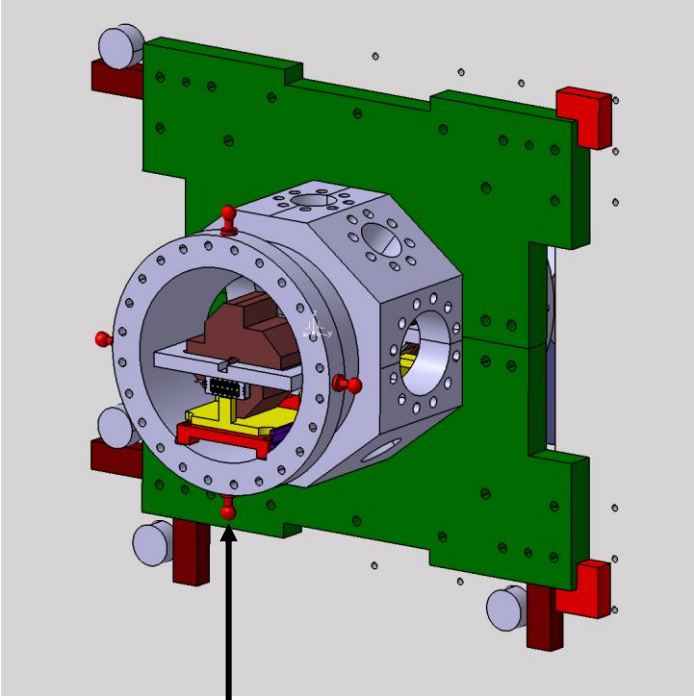
Installation date : to be discussed

One week for preparation

One week for installation (seem slightly short)

Support after beam start : 2/3 days

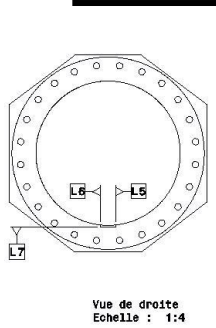
LAL's workshop alignment / checks #1

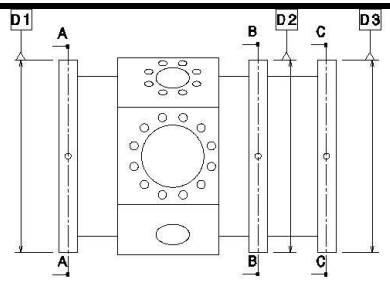


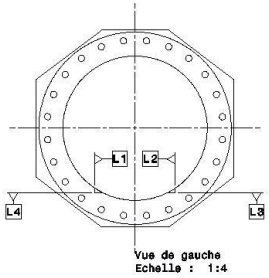
Position of internal references were measured with regard of external references (for mires)

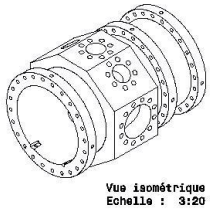
→ Data useful for BPMs external pre-alignment

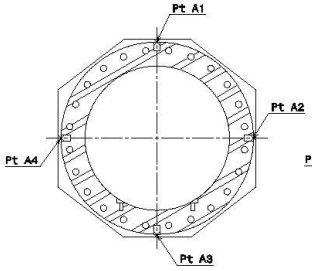
→ Checks performed with 3D Mitutoyo machine (5 μm accuracy, 1 μm resolution

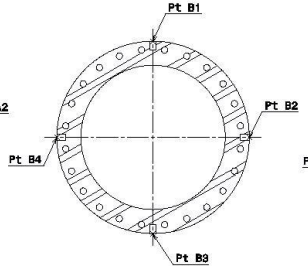


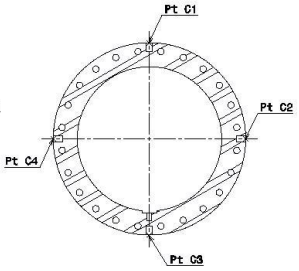








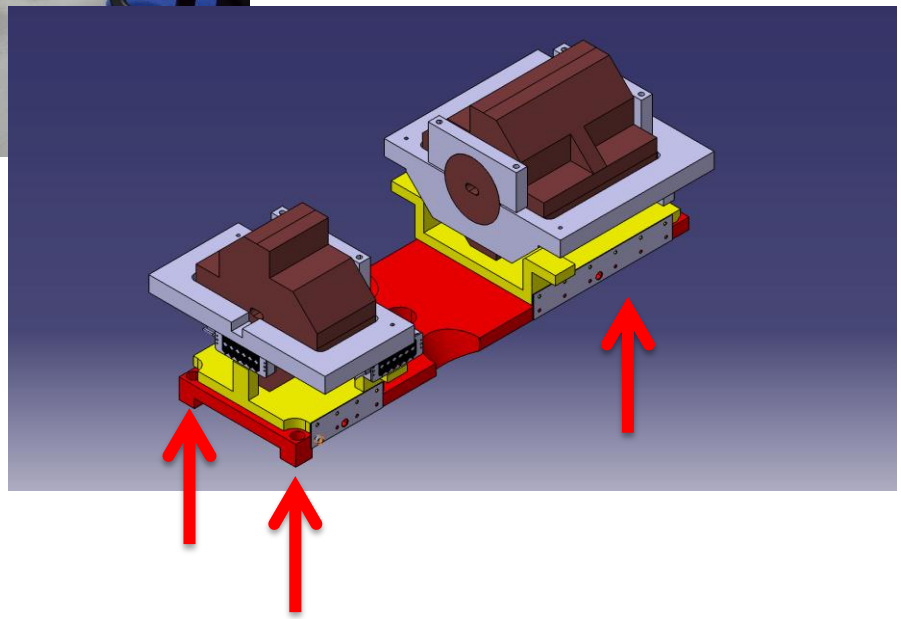




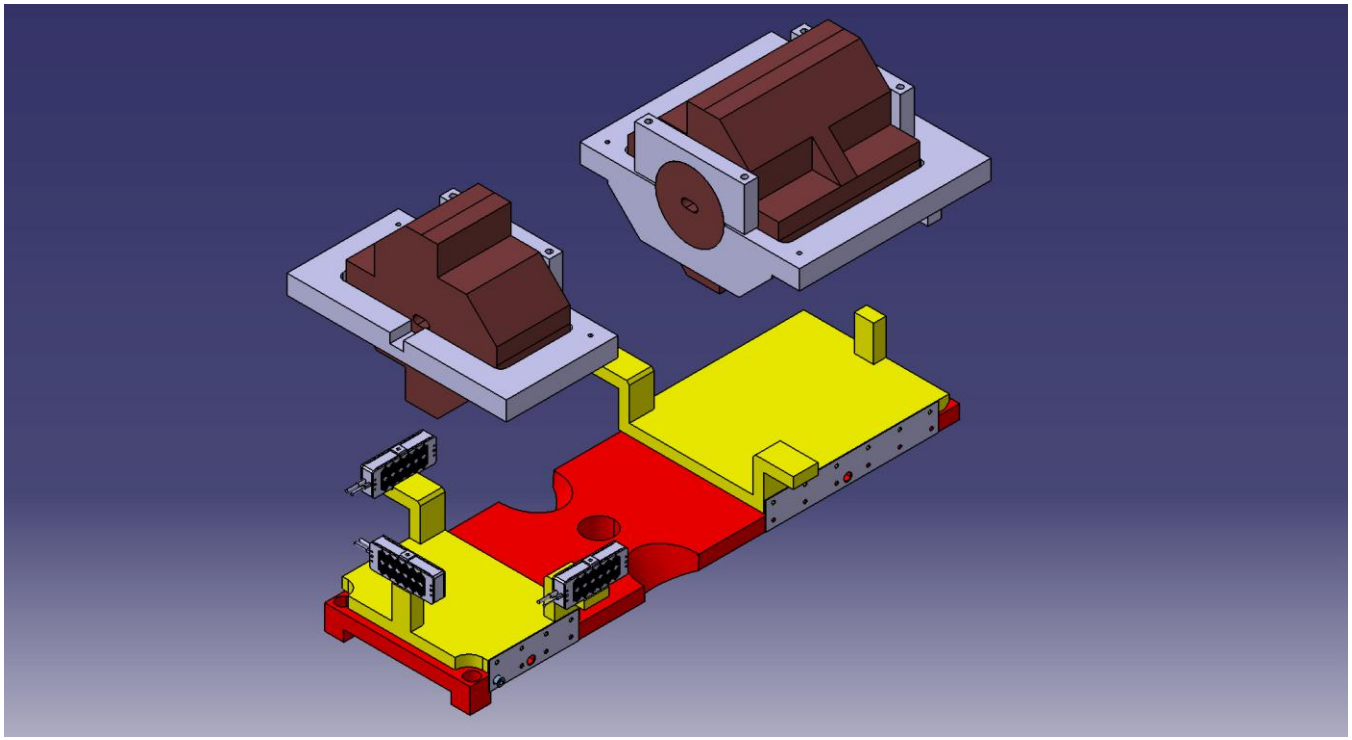
LAL's workshop alignment / checks #2

Checked BPMs axis with regards of interfaces « Chamber / BPMs displacement system »

- → Shims placed between actuators and cradles correct BPMs vertical position, roll and pitch angles
- → **To be done with actuators running at mid stroke**
- → Checks performed with 3D Mitutoyo machine (5 μm accuracy, 1 μm resolution



Mount procedure

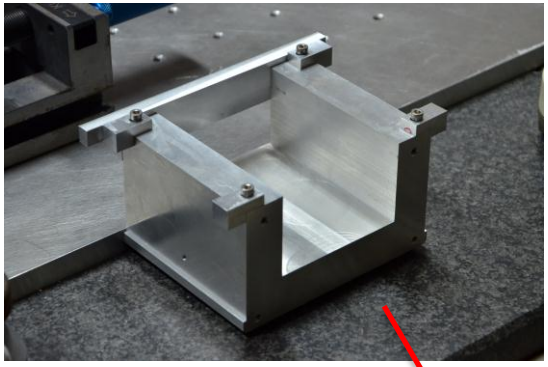


1. Mount BPM to cradle ; set roll angle to zero thanks mounting shims (this position can be definitely “fixed” by placing a pin → is it allowed to drill the BPMs)
2. Mount base plate, intermediate plate, and elastic foil thanks 2 mm shims ; tighten all screws
3. Mount lateral actuators to intermediate plate ; place dedicated shims ; tighten all screws
4. Mount vertical actuators to intermediate plate ; tighten all screws

Step 5 : next slide

Mount procedure

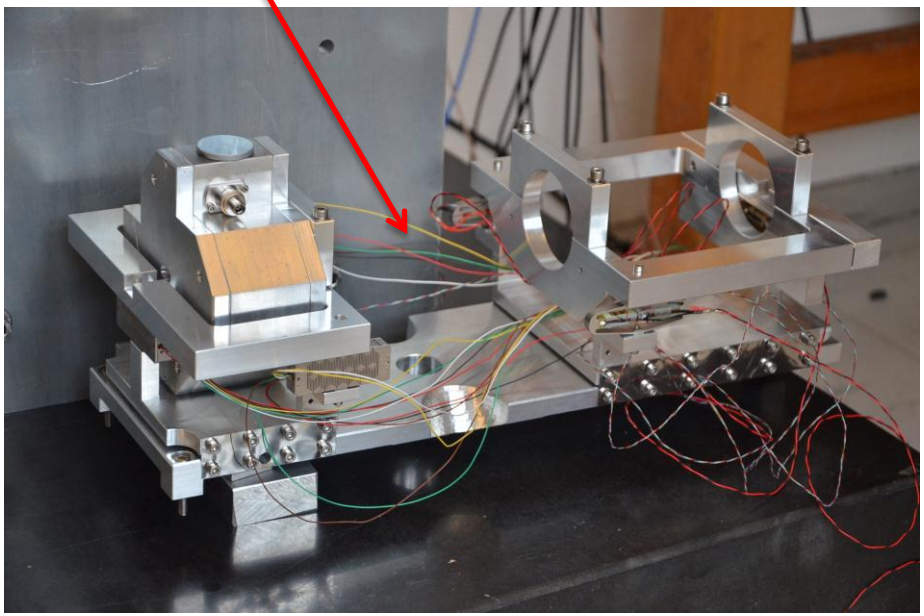
(Step : internal mechanical adjustments of BPMs position)



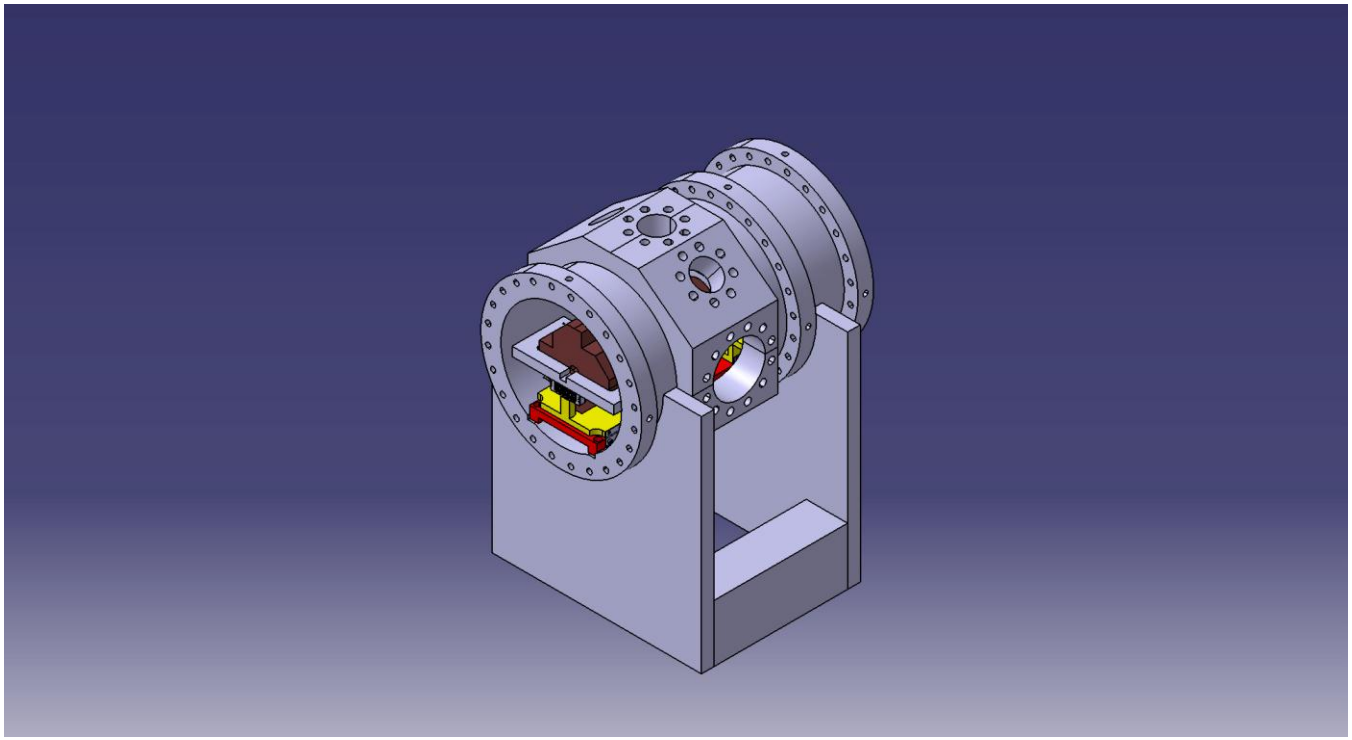
5. :

- Mount BPM+cradle assy with dedicated shims above actuators (see LAL's workshop alignment / checks #2)
- Place BPMs positioning tool (correct yaw angle, distance to IP and lateral position)
- Tighten all screws

→ **To be done with actuators running at mid stroke**



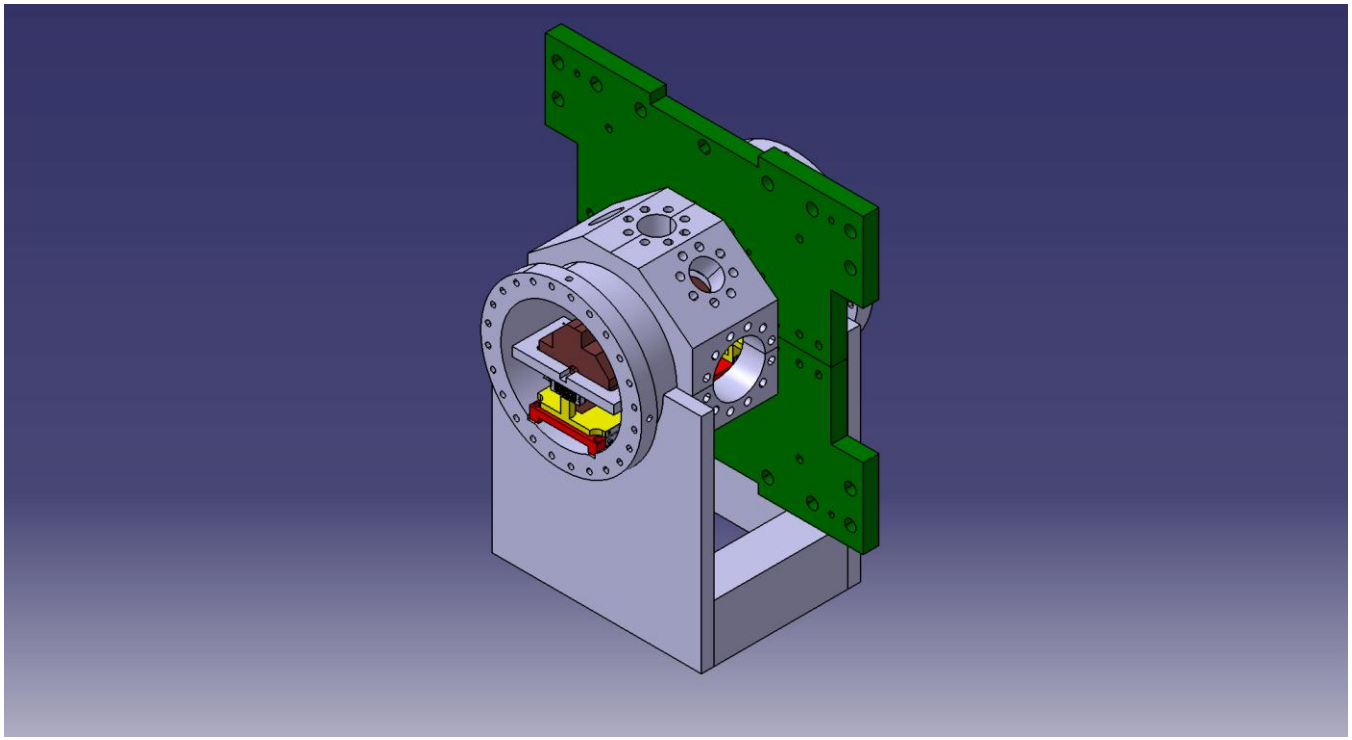
Mount procedure



1. Place chamber on support cradle

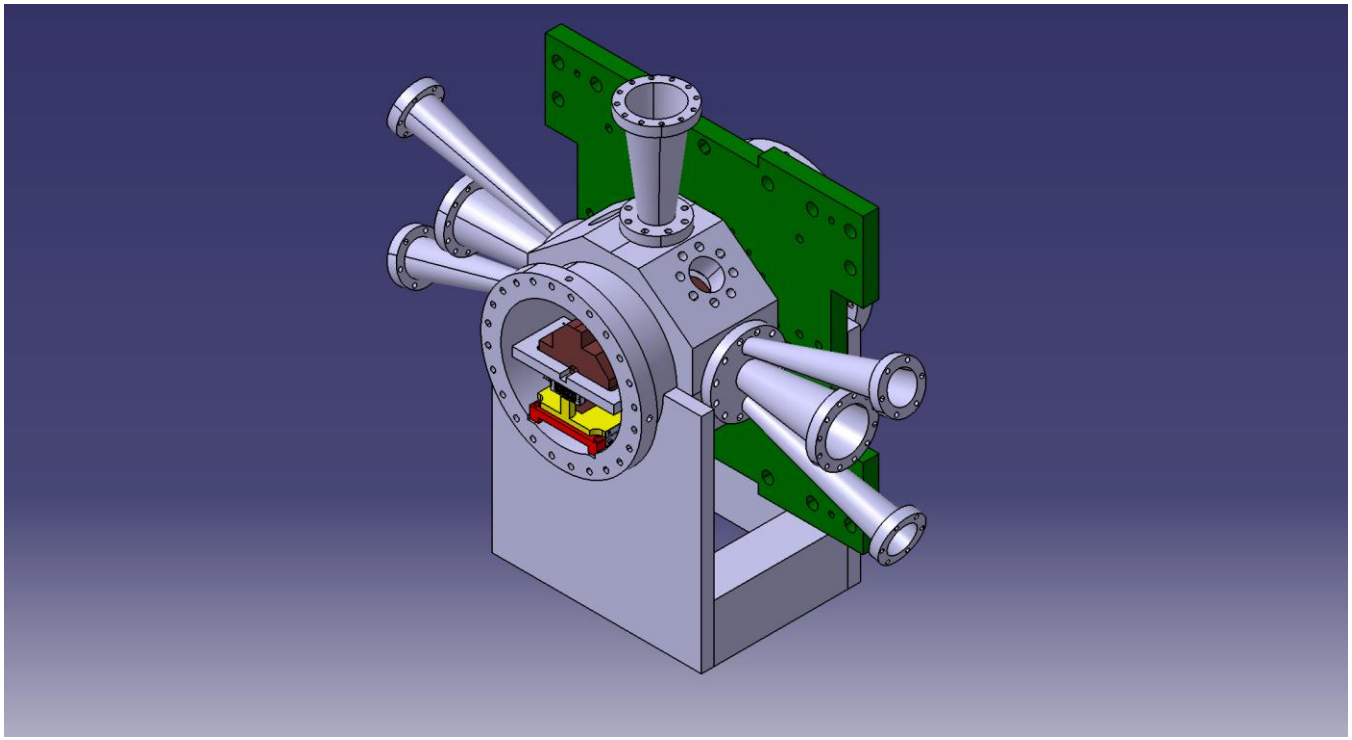
2. Mount BPMs displacement system ; use shims to ajust lateral position of BPMs displacement system (see LAL's workshop alignment / checks #1 and #2)

Mount procedure



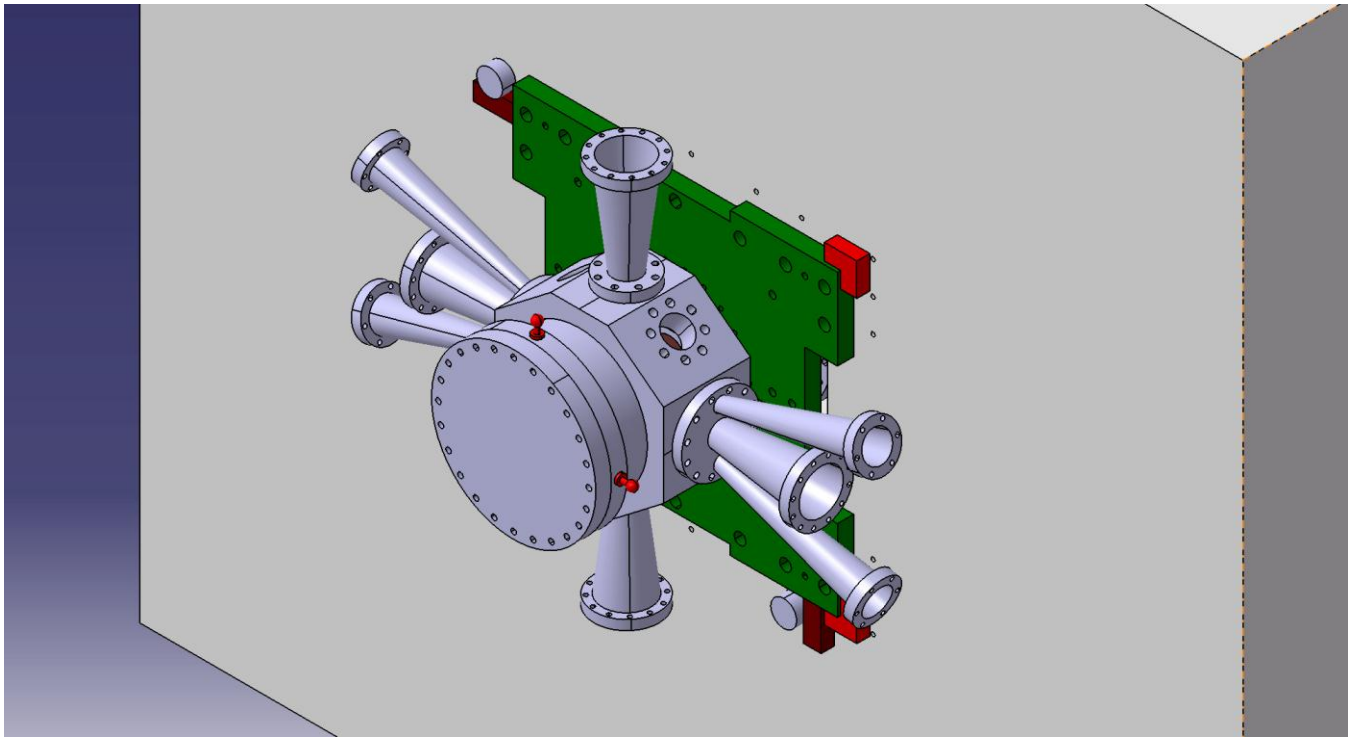
Mount chamber to optical table fixture

Mount procedure



Mount viewport extensions ; extension chamber and end flanges (not shown)

Mount procedure



Place the assy to the optical table (mounting tool needed, kind of trolley with girder

Conclusion

Shipment

- At least one month before installation
- Mix of temporary and permanent exportations
- All shipments with DHL service via Ulisse (CNRS goods transportation Dpt.)

Installation at KEK

- Date to be defined
- Duration to be well estimated

Some jobs in progress / to do

- LAL : Chamber to optical table fixture ; LAL's workshop alignment / checks #2 (postponed, 3D machine need check-up)
- KEK : extension chamber (downstream) ; handling tool (girder)…