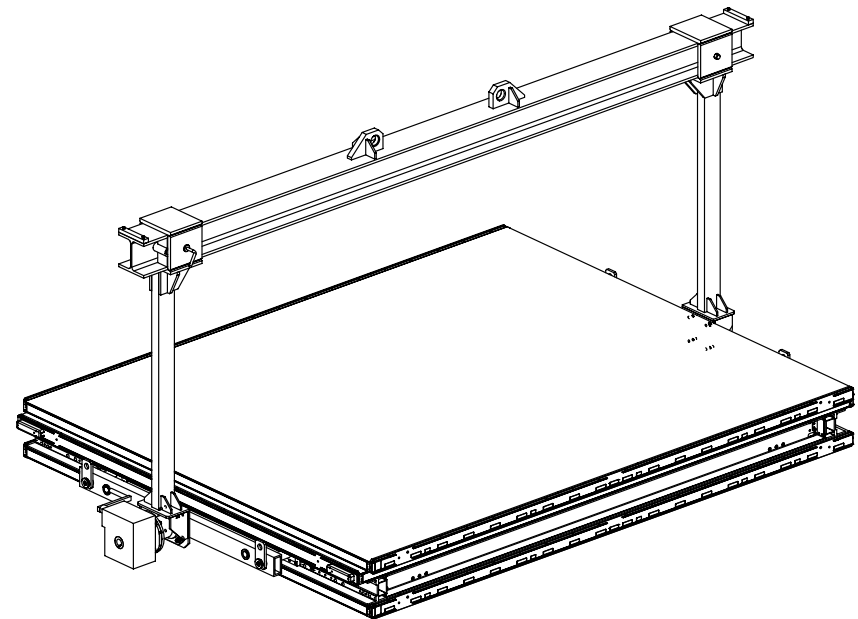
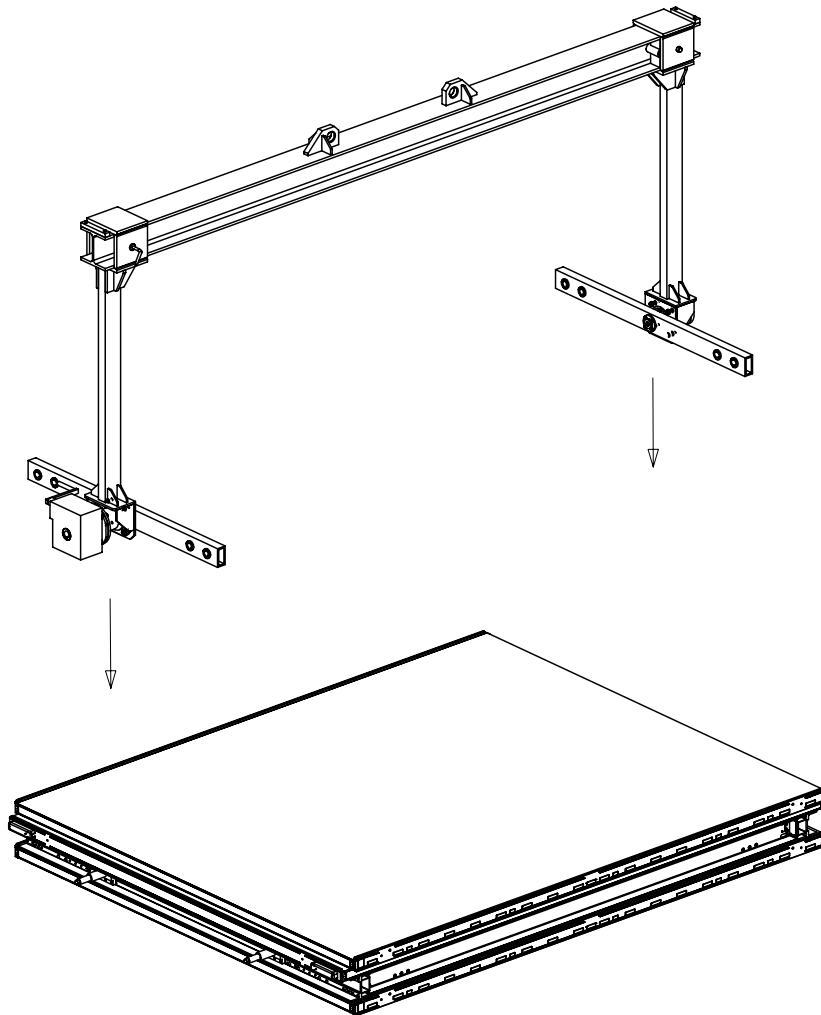
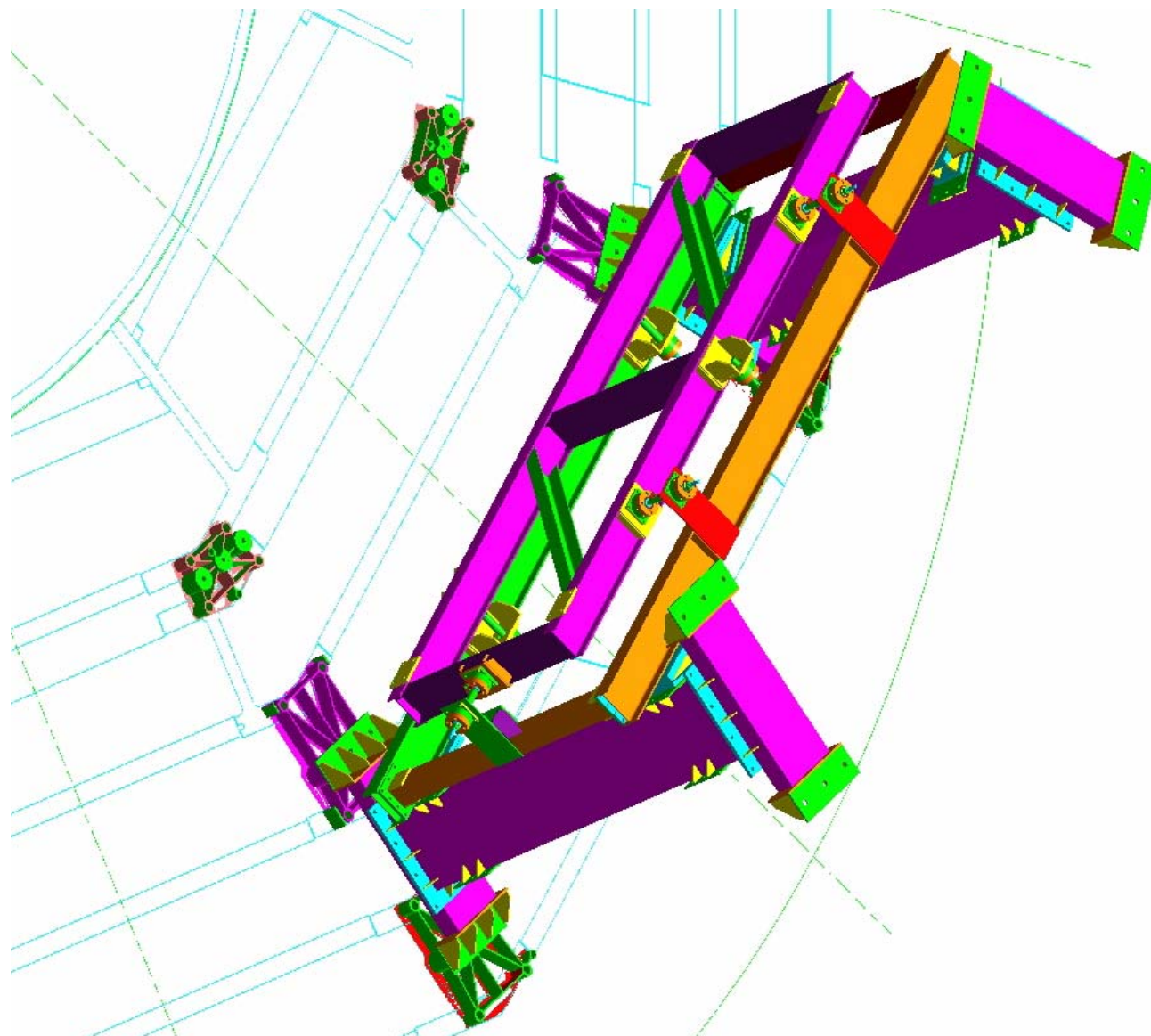


Lifting and rotation frame (through side pads)

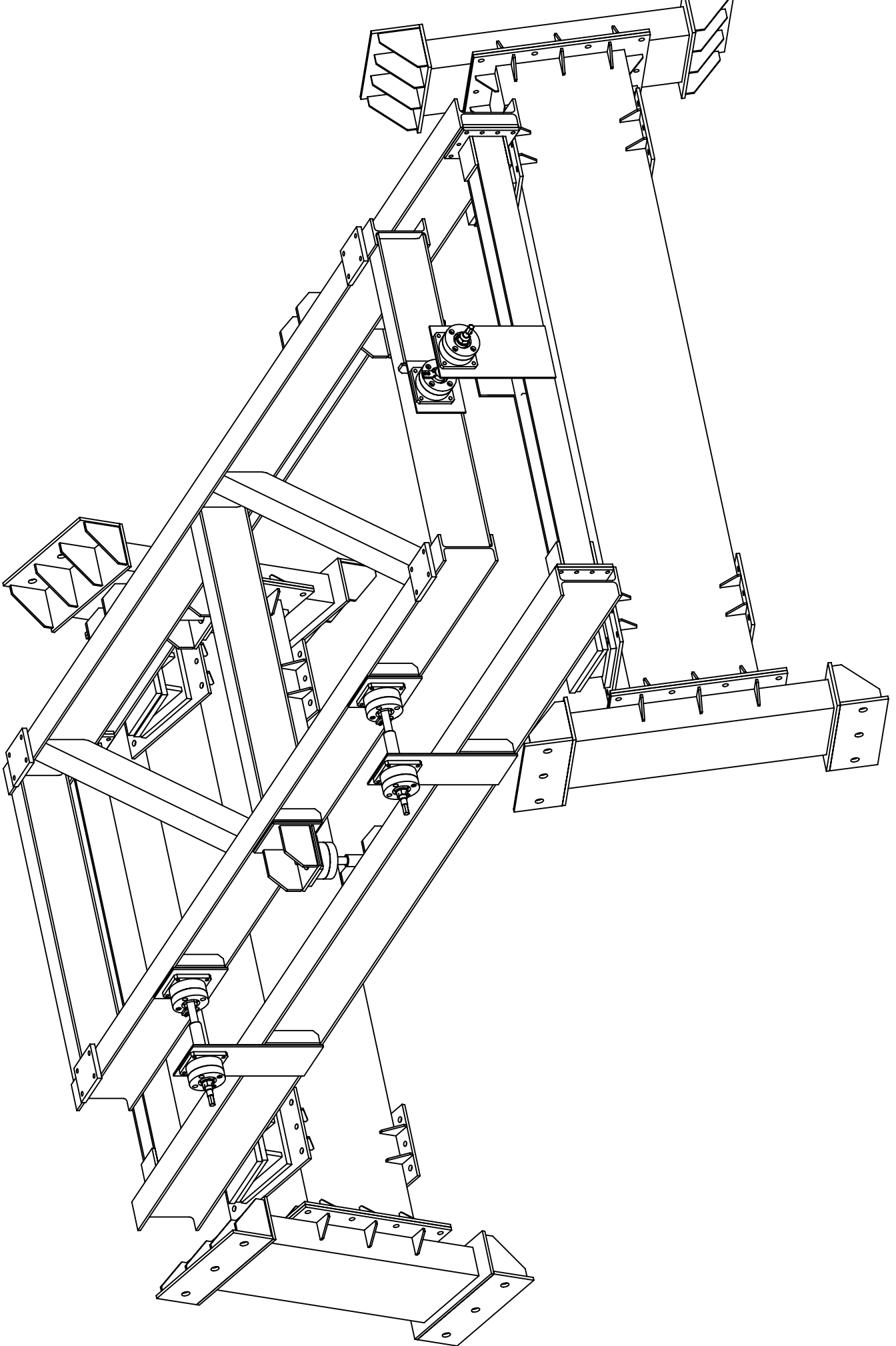


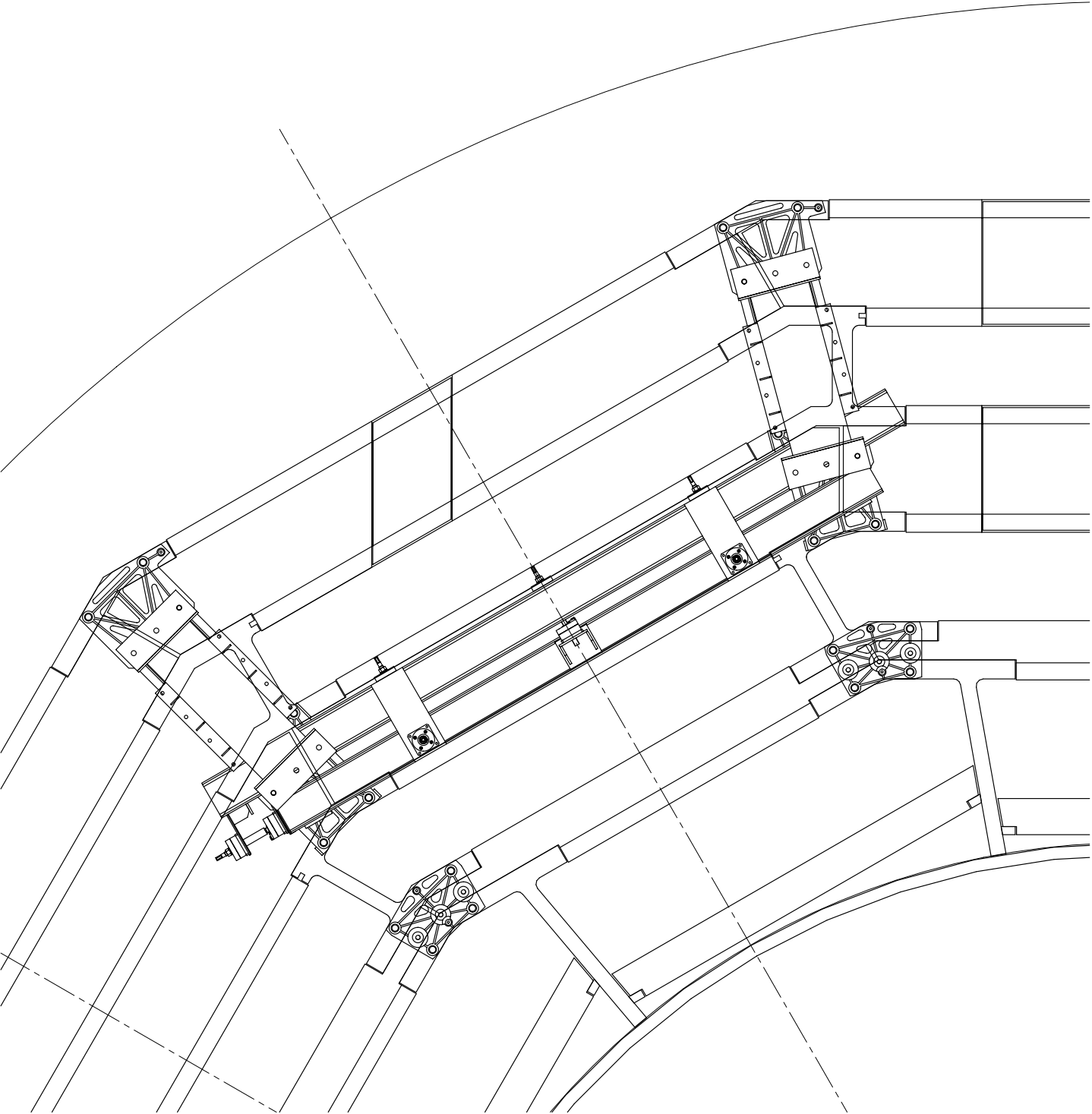
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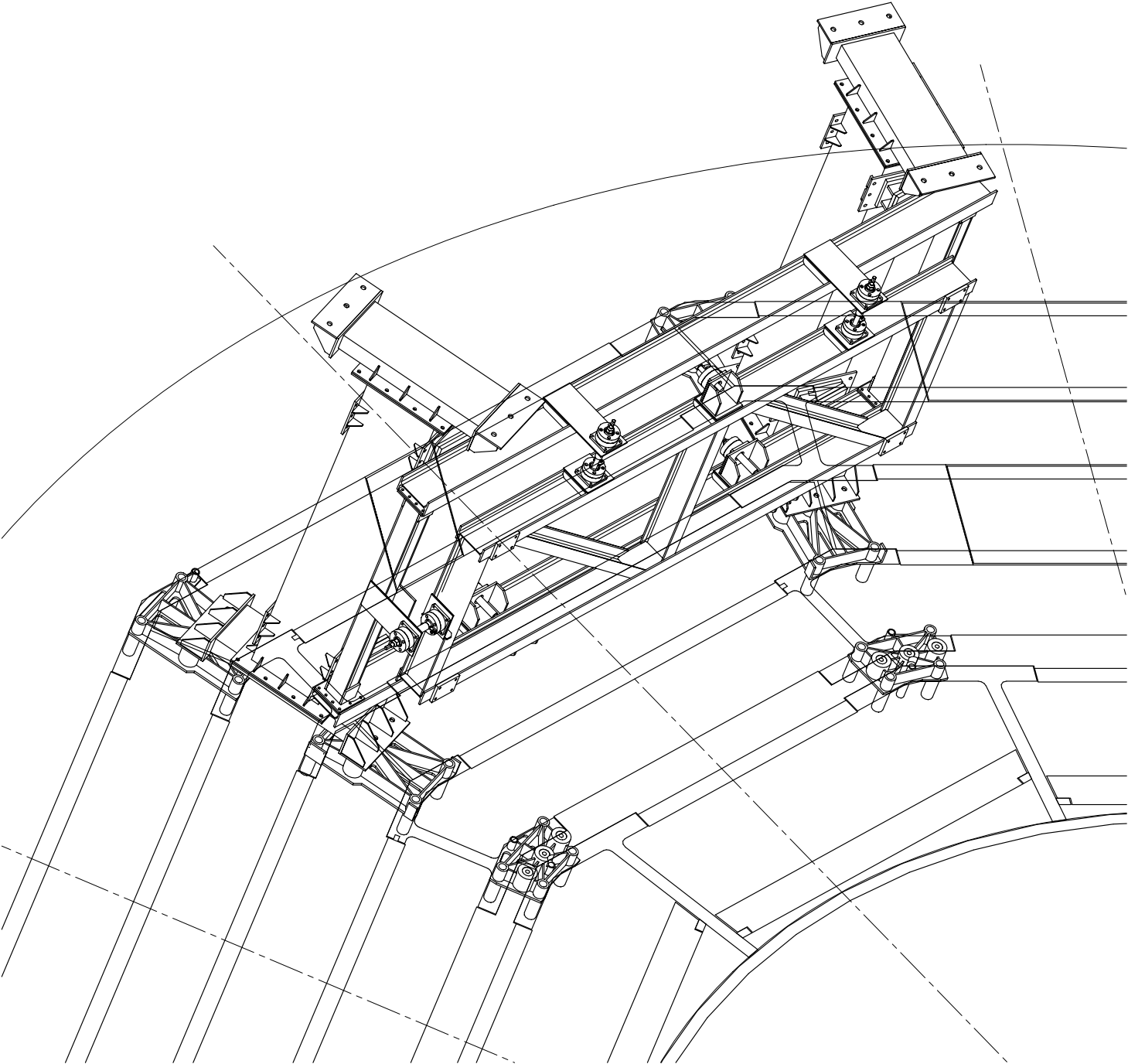


Installation tool frame & fixing pads

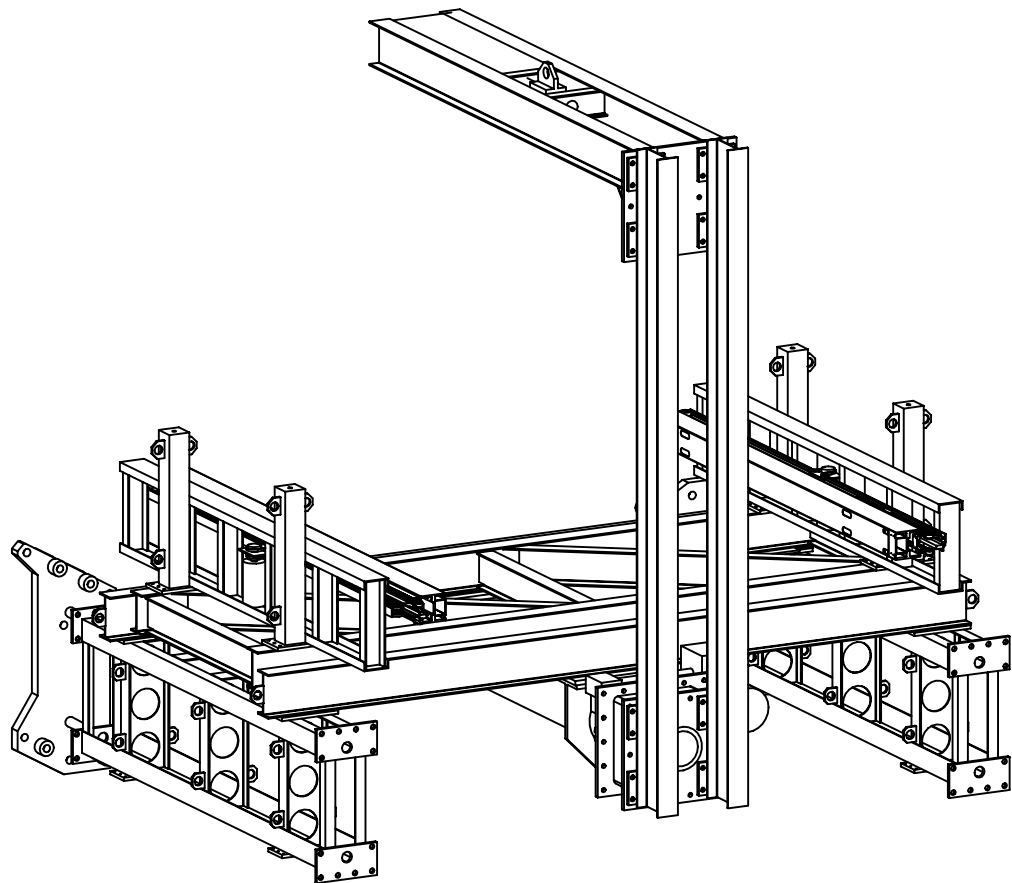
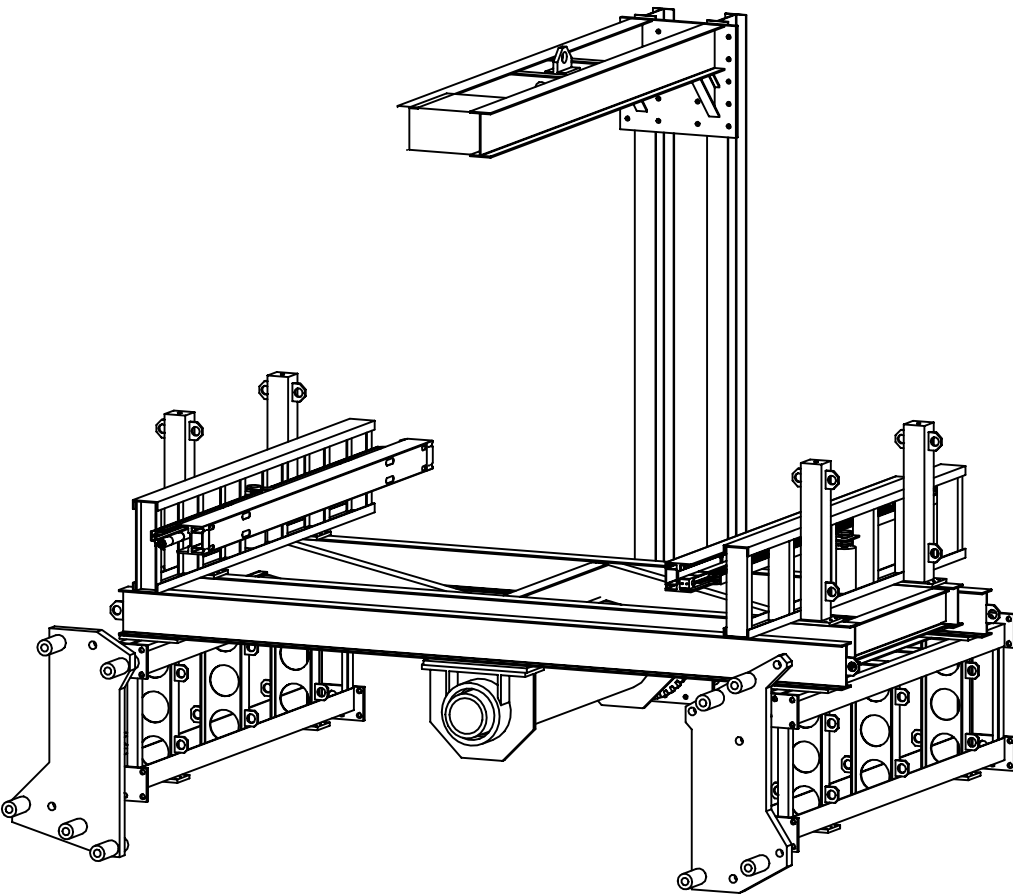
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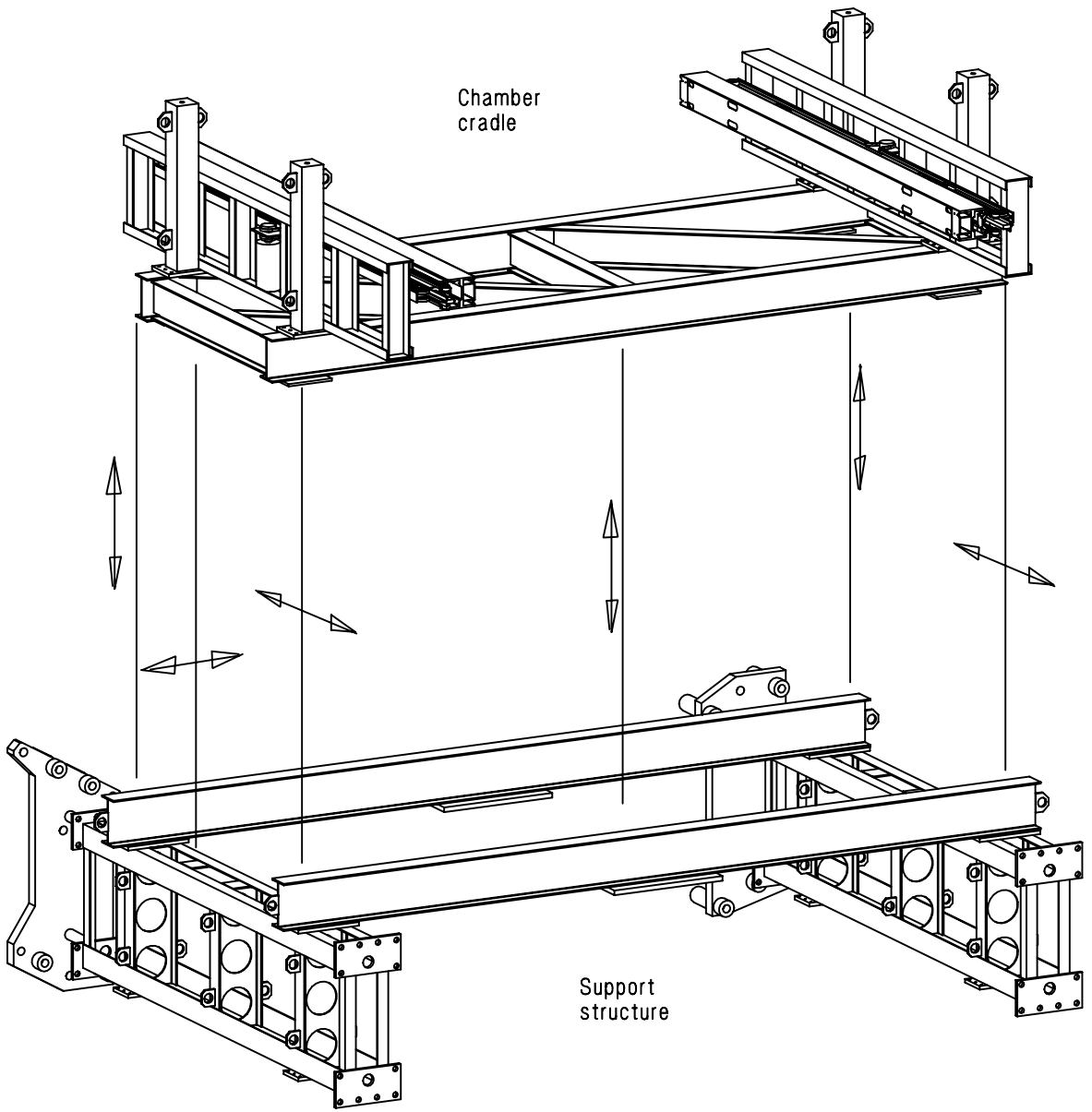




DT installation tool



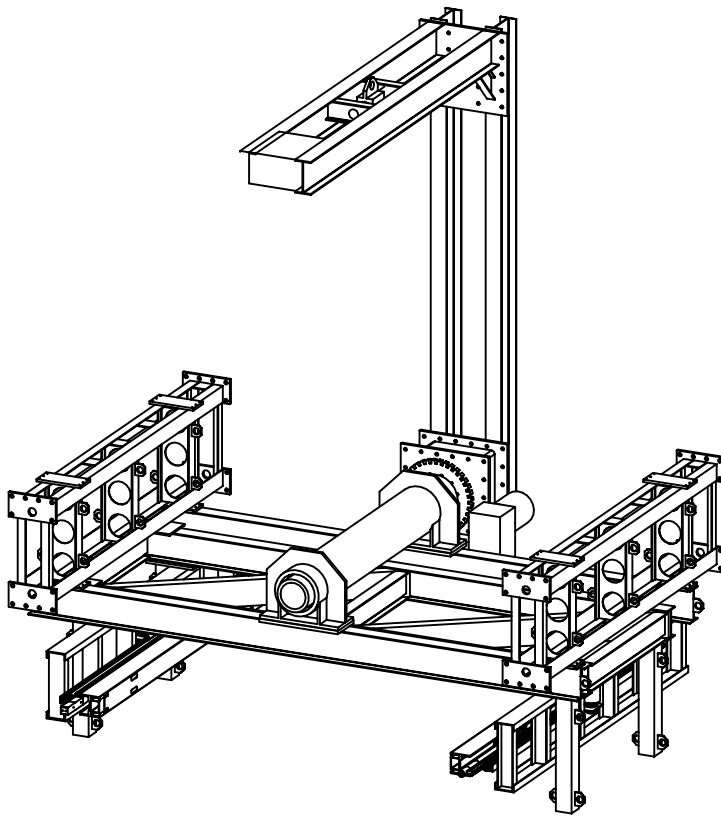
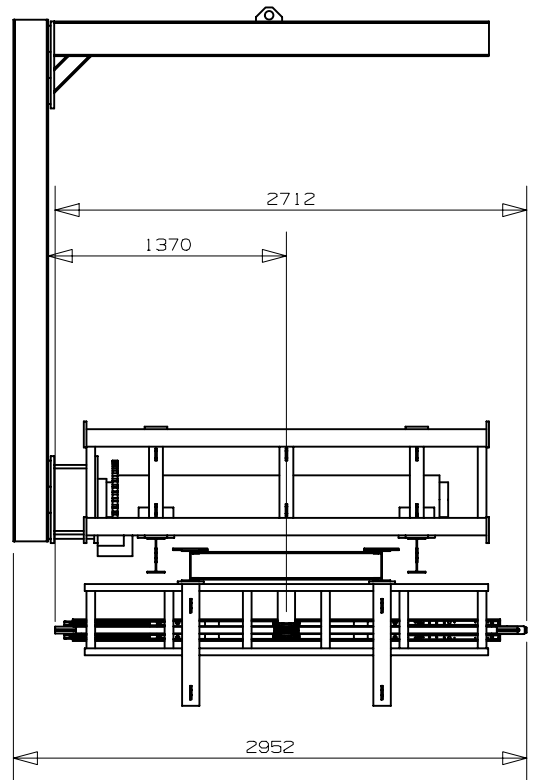
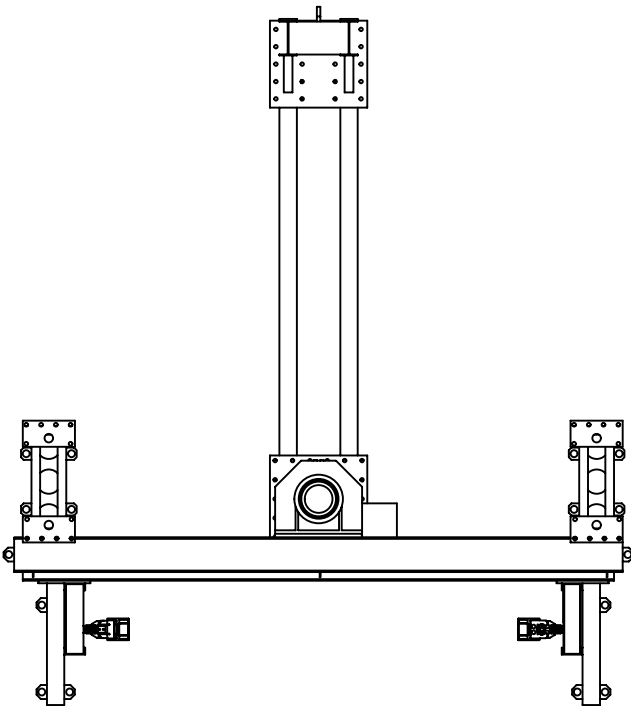
DT installation tool



Adjustable constraint system (isostatic) for extension rails position fine tuning

Massimo B
010425

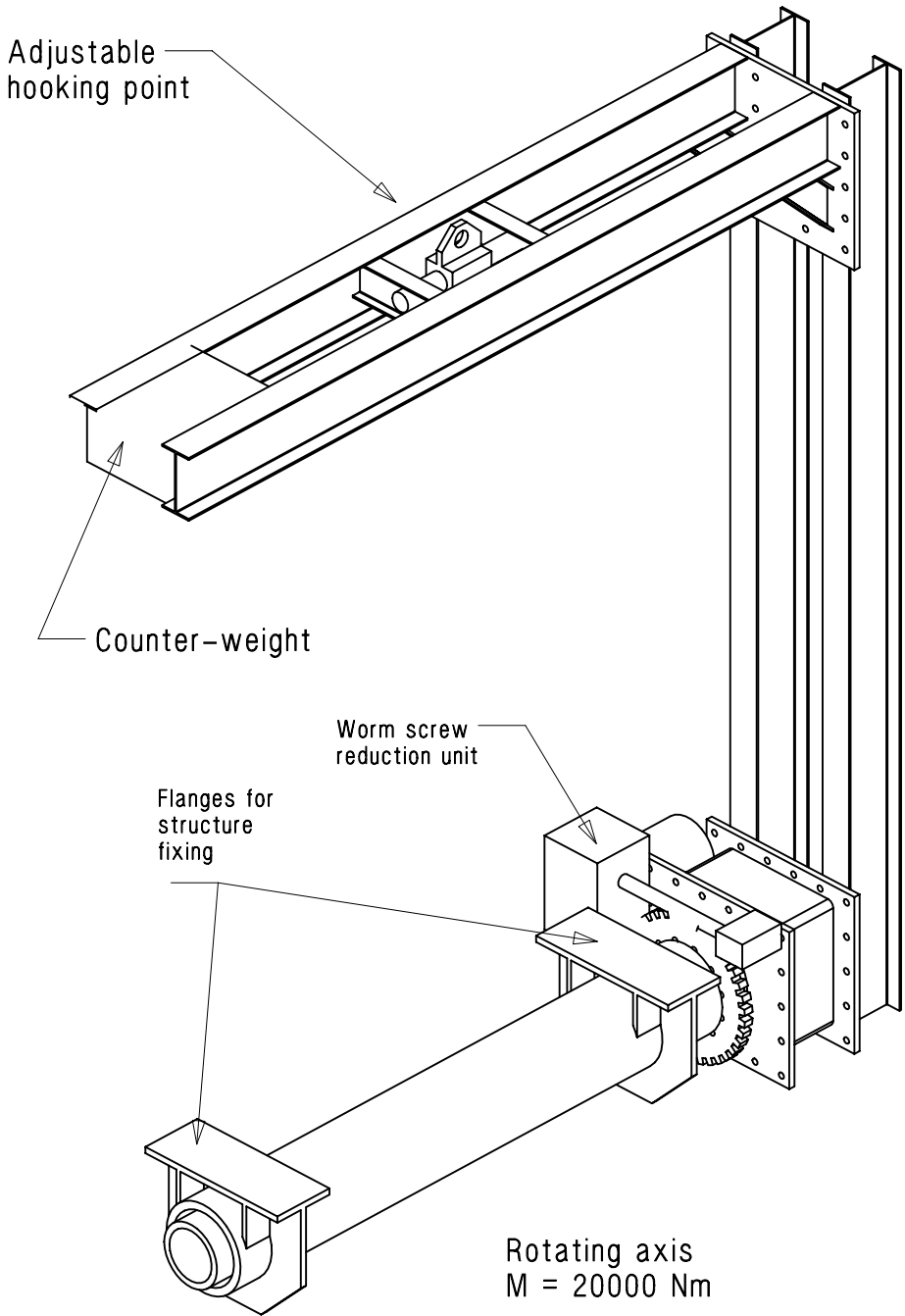
DT installation tool



Cradle position
for chamber loading

Massimo B.
010425

Installation tool rotation device



1st chamber assembly

(M. Benettoni – CMS week 010925)

Goal

understand if we can "survive" with "poor" honeycomb flatness.

Procedure

Measuring of:

- s.l.s thickness and top face flatness before gluing;
- s.l.s and honeycomb top face flatness after gluing.

Gluing of the chamber (stacking as in sector 4), one gluing per time:

- s.l. phi
- Honeycomb panel
- s.l. theta
- s.l. phi

Tools

- Laser tool for straightness measurement
- Table and tool for s.l. relative positioning
- Load frame applied during glue curing (about 17 g/cm²)

Results

S.I. thickness

S.I. thickness control (along border) to be improved

Chamber flatness

With the worst honeycomb panel:

in wires phi direction straightness is better than 0.5 mm

phi cells are inside tolerances

- ~ a half of the theta s.l. is inside flatness tolerance
- ~ a half of the theta s.l. is outside flatness tolerance

Margin of improvement:

gluing of the top phi s.l. will slightly improve the planarity.
increasing the load charge during gluing (for next chambers)

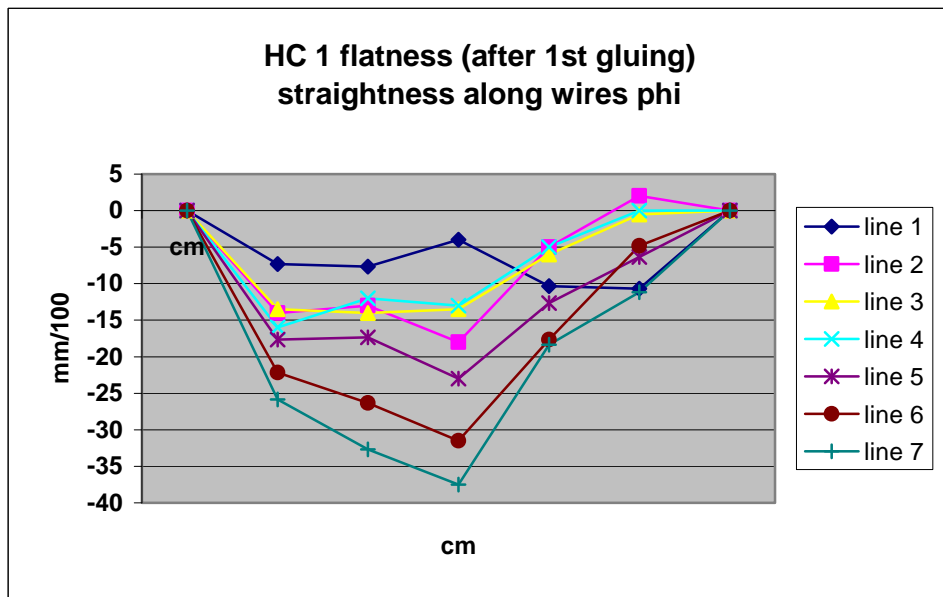
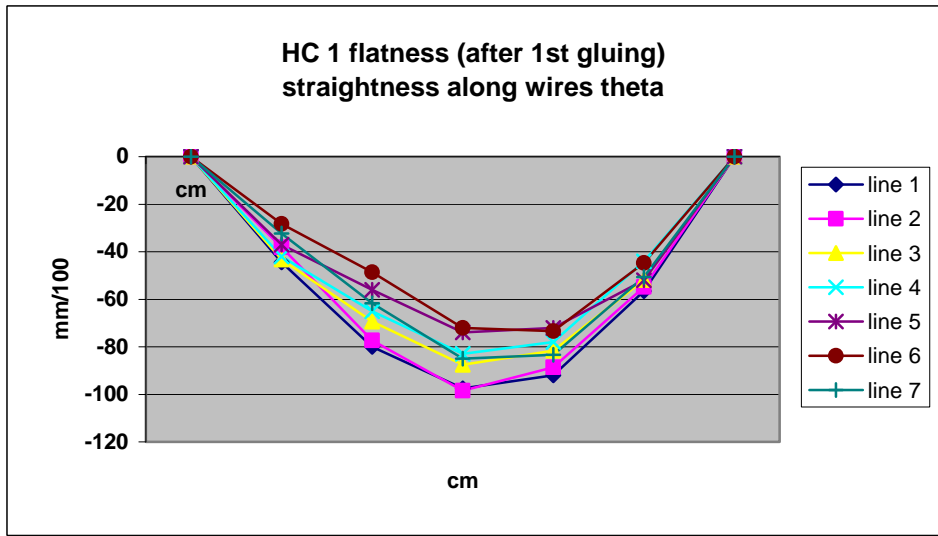
Conclusion

With:

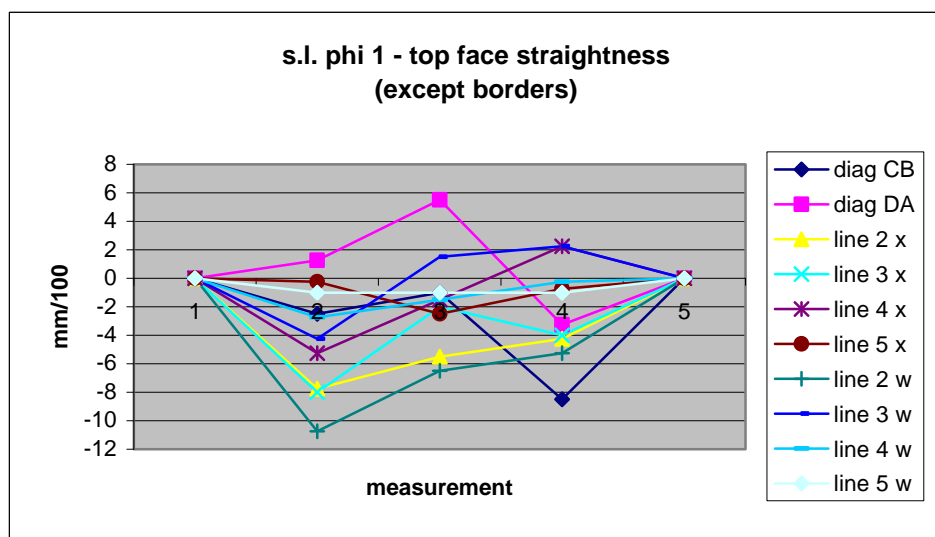
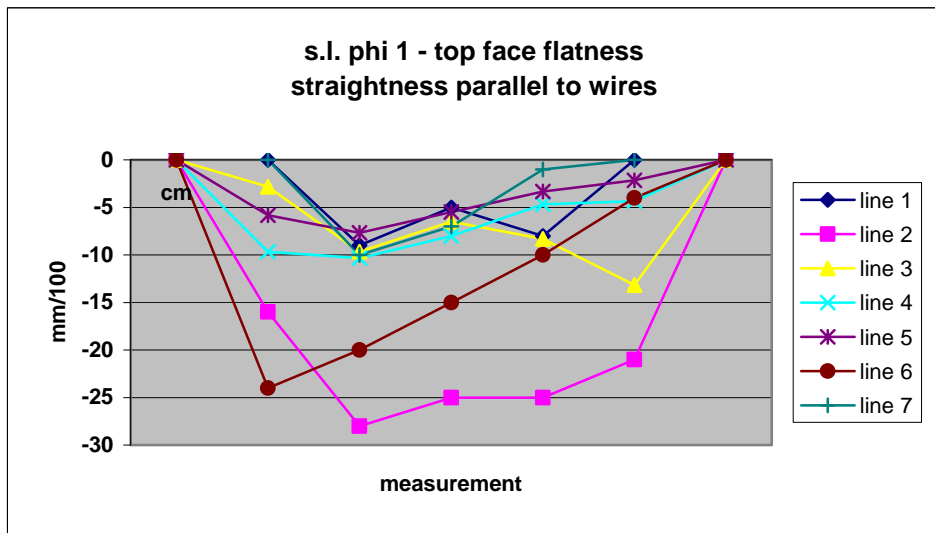
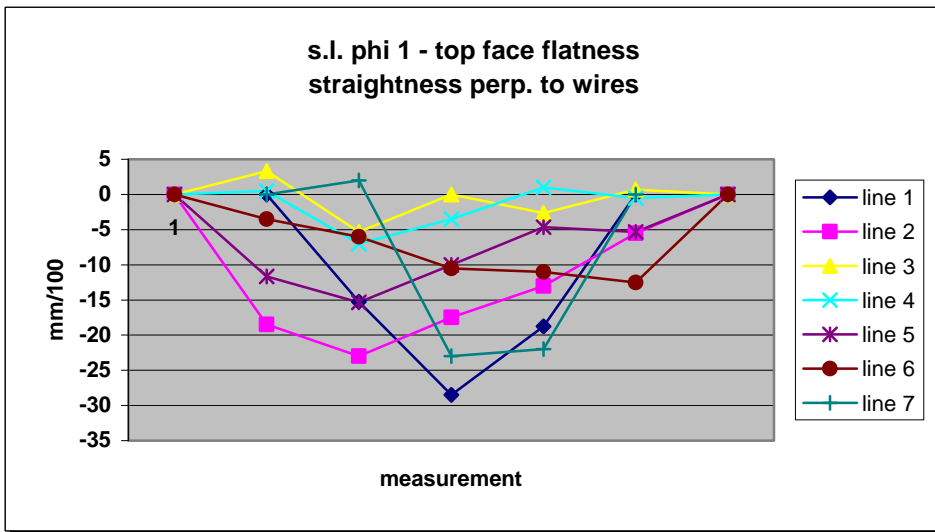
- panels flatness of the order of 1 mm;
- improved tool/procedure;

good chance to match flatness requirement (0.5 mm) on the full chamber.

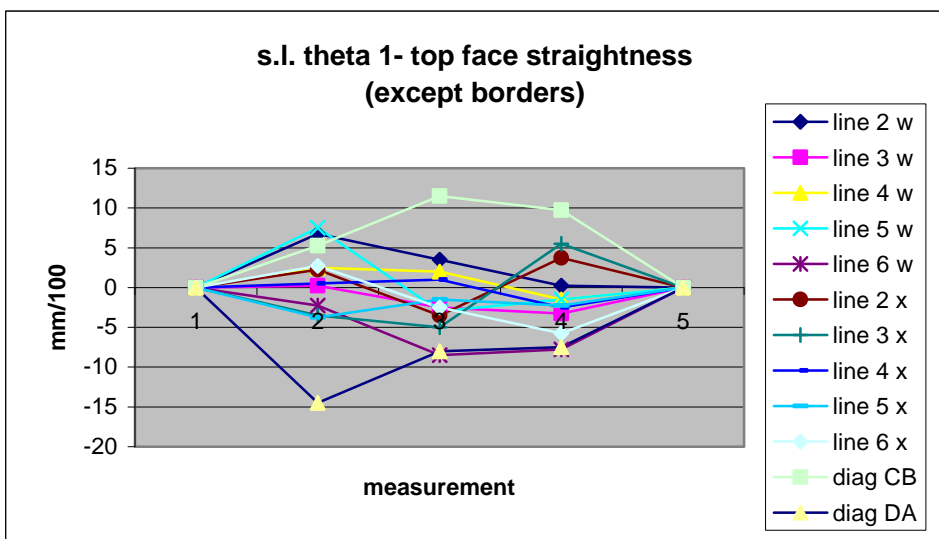
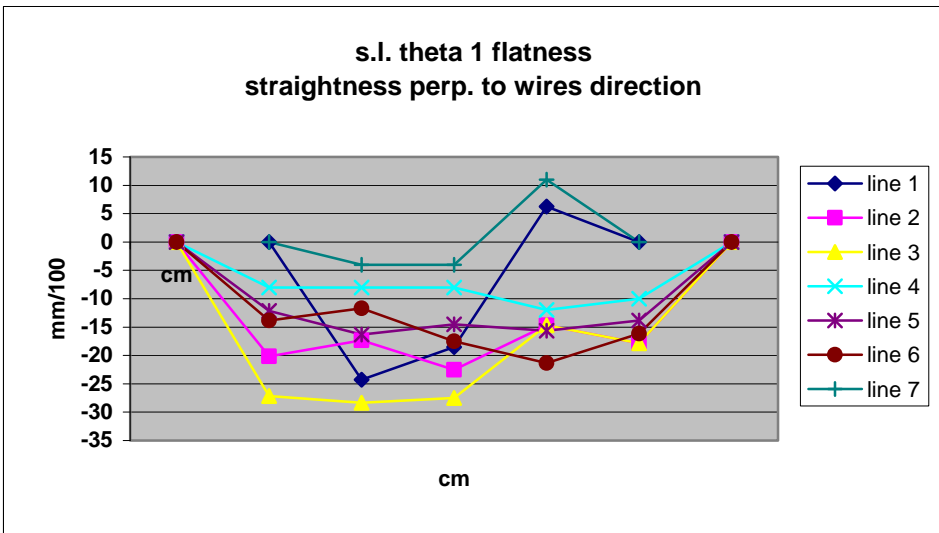
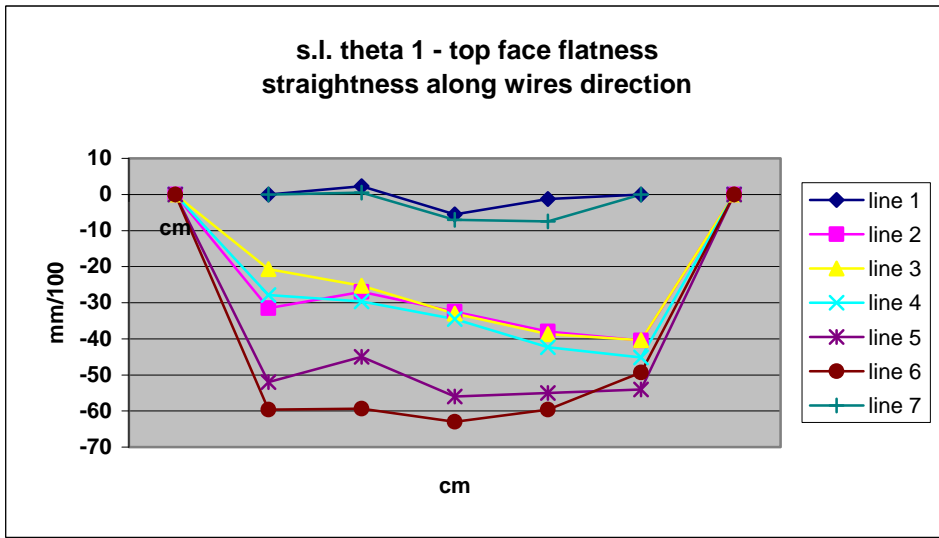
Honeycomb flatness after 1st gluing



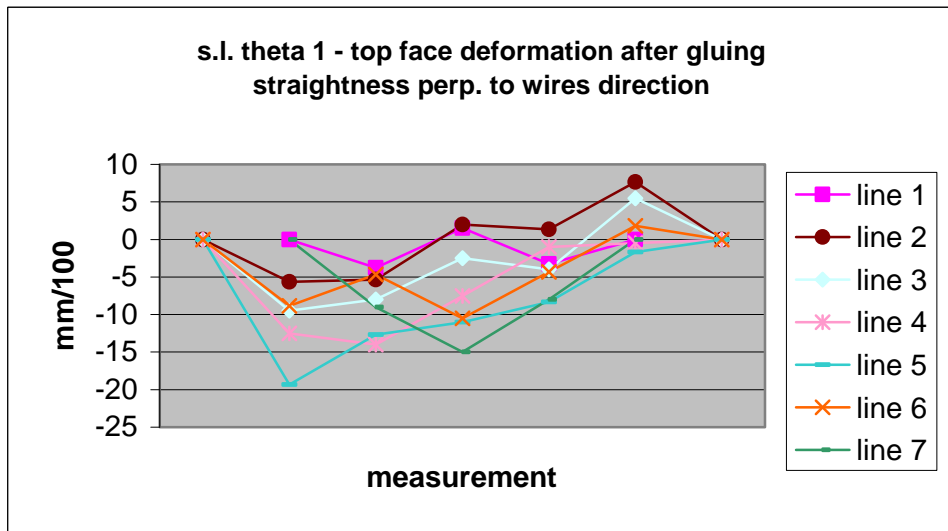
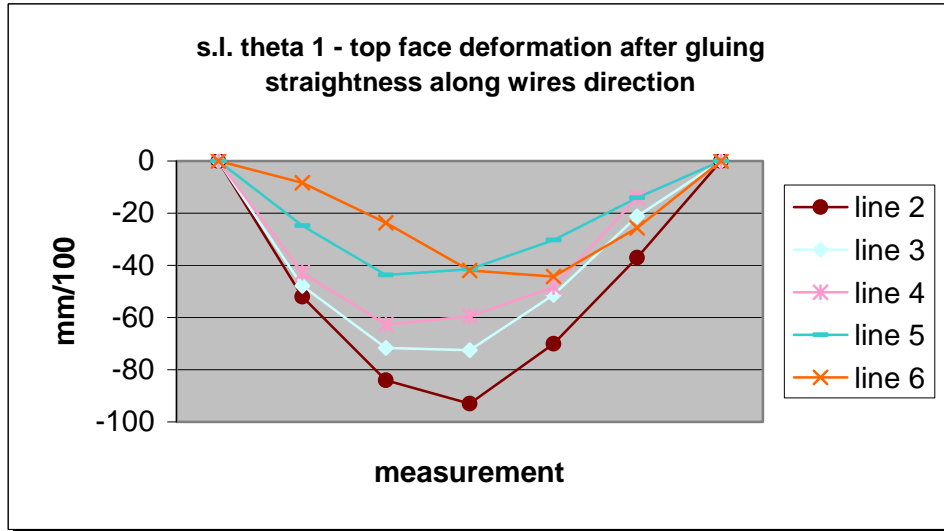
Planarity measurement of s.l. phi 1



Planarity measurement of s.I. theta 1



Planarity measurement of s.l. theta 1 after 2nd gluing



S.I.s side thickness (body)

