

PROGRESS ON DESIGN WORK WP11



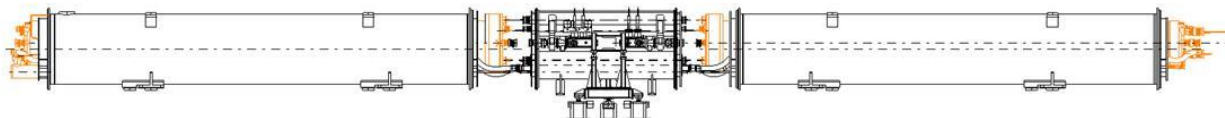
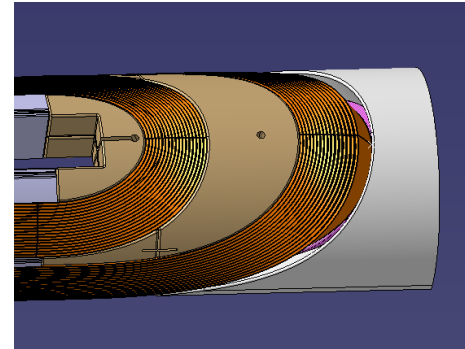
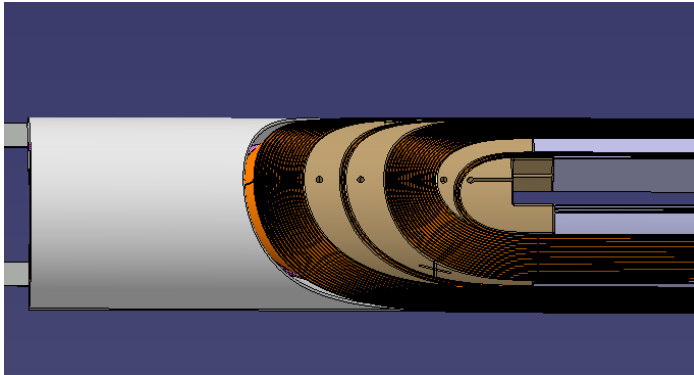
A. Temporal



DESIGN MAGNET 11T 1 IN 1 AS BUILT

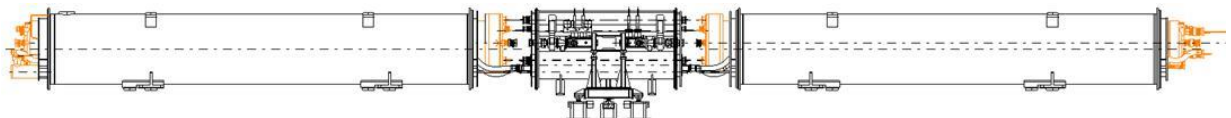
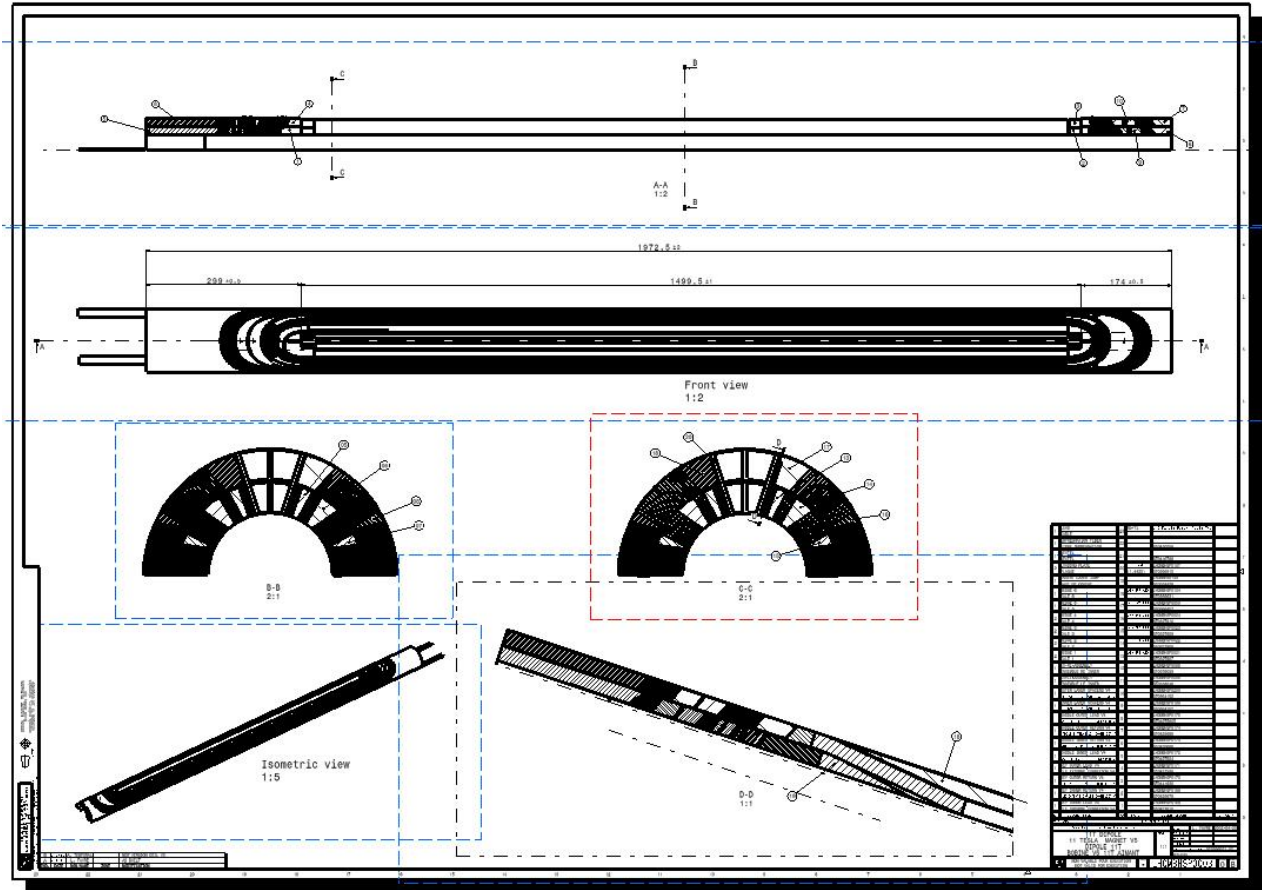
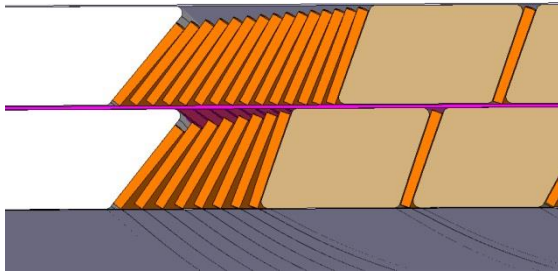
- Priority 1: Produce V5 of single aperture model, which shall be an update of V4 with the following changes:

Remove the 8-9 mm gap that was left between the outermost turn and the saddle because the coils were actually longer than defined by Roxie. We are now able to produce the coils at the length defined by Roxie in a reproducible way;



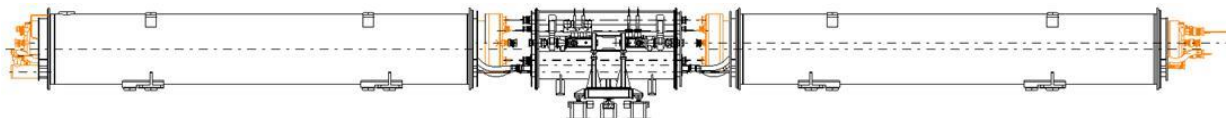
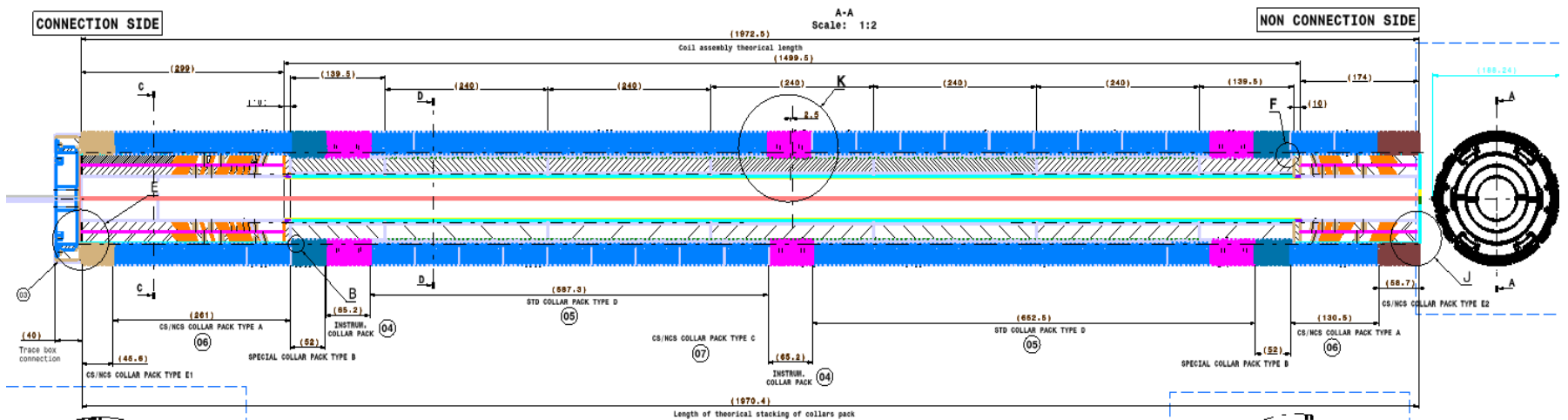
DESIGN 11T 1IN1 COIL V5

- 3D DESIGN and ASSEMBLY DRAWING UPDATED

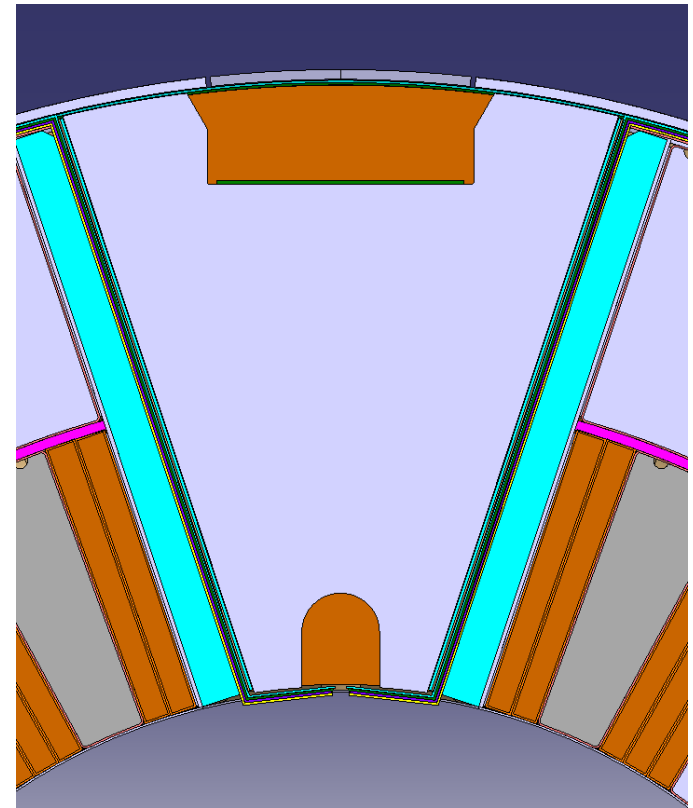
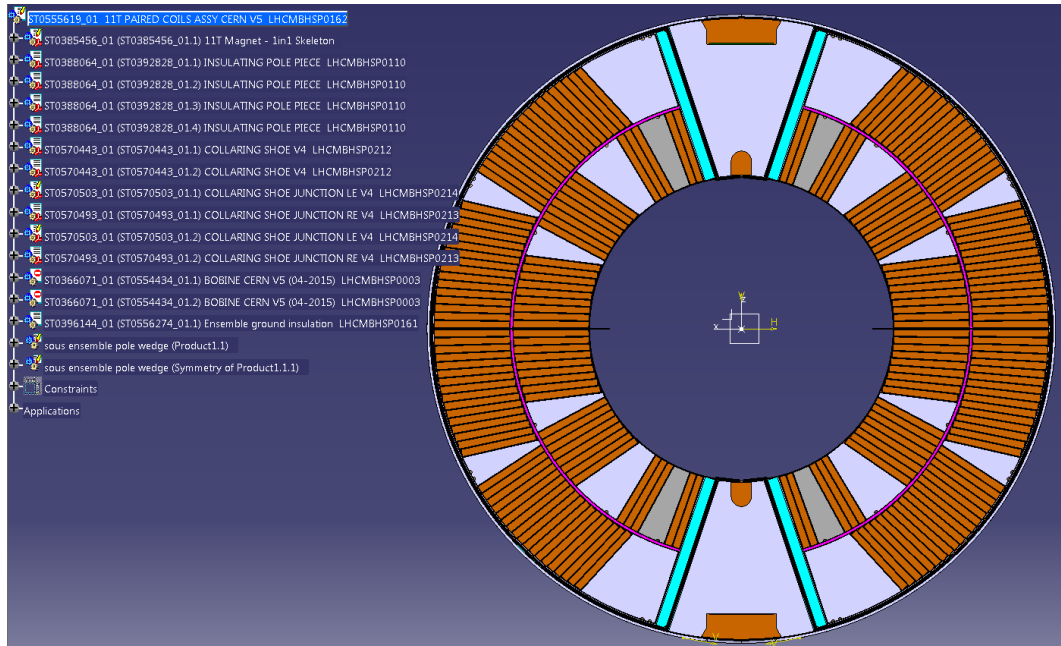


11T dipole 1 in 1 collared coils V5

- Implement the latest version of the instrumented collar packs. There are now 3 instrumented collar packs;
- Remove the capacitive gauges and correct the pole piece/collar as needed;
- Implement collar packs of uniform length.



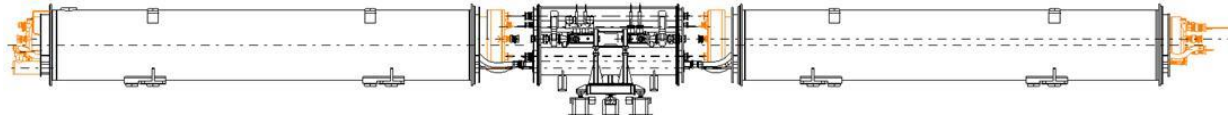
11T dipole 1 in 1 collared coils V5



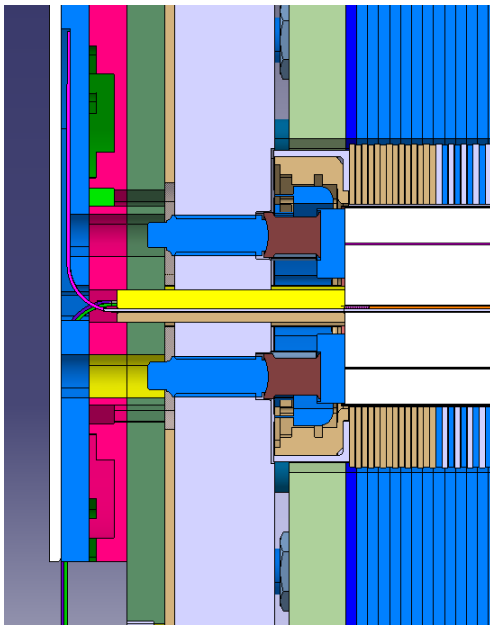
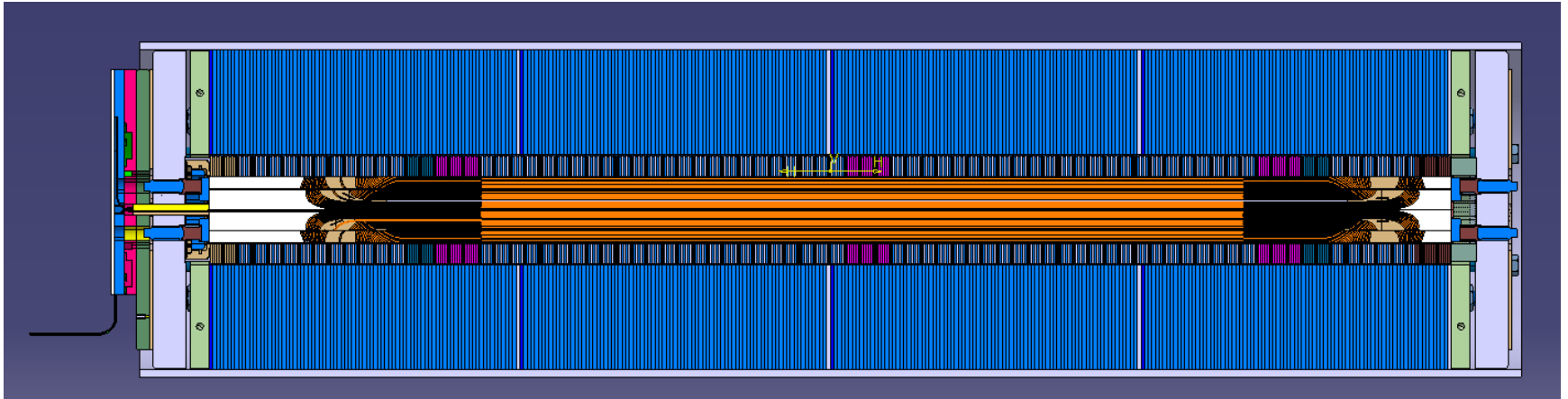
The collared coils design is finished and the drawings are in work.

11T DIPOLE 1IN1 V5 DRAWING REVIEW

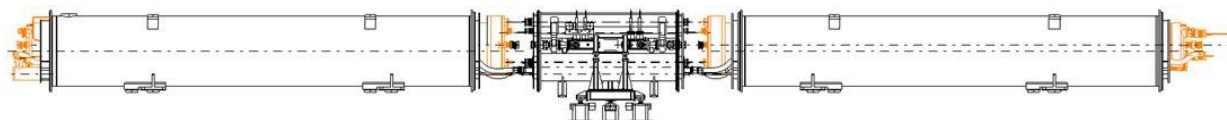
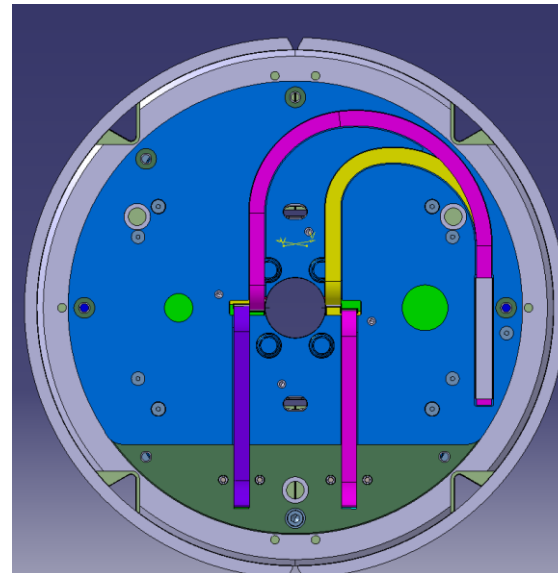
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11T	1IN1 MAGNET ASSEMBLY V5																																
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	11T-001	11T-001-002	11T-001-002	1	ASSEMBLY																												
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	11T	COLLAR ASSEMBLY V5																															
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11T DIPOLE MAGNET 1IN1 V5



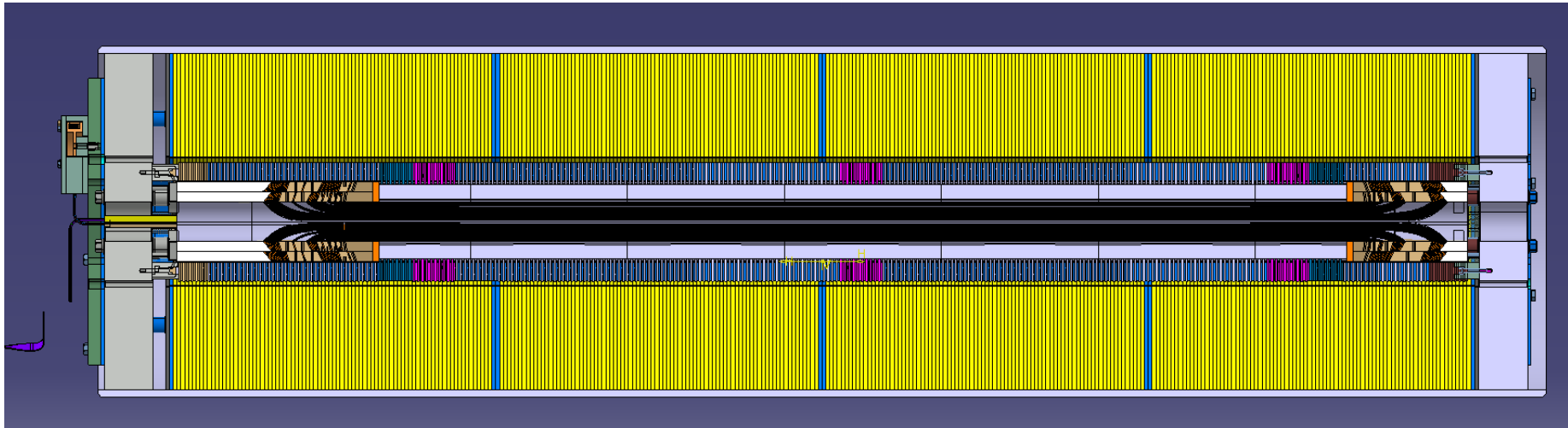
it remains the modification of the routing of cables at the pizza box



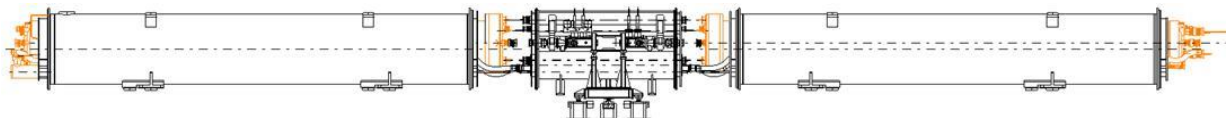
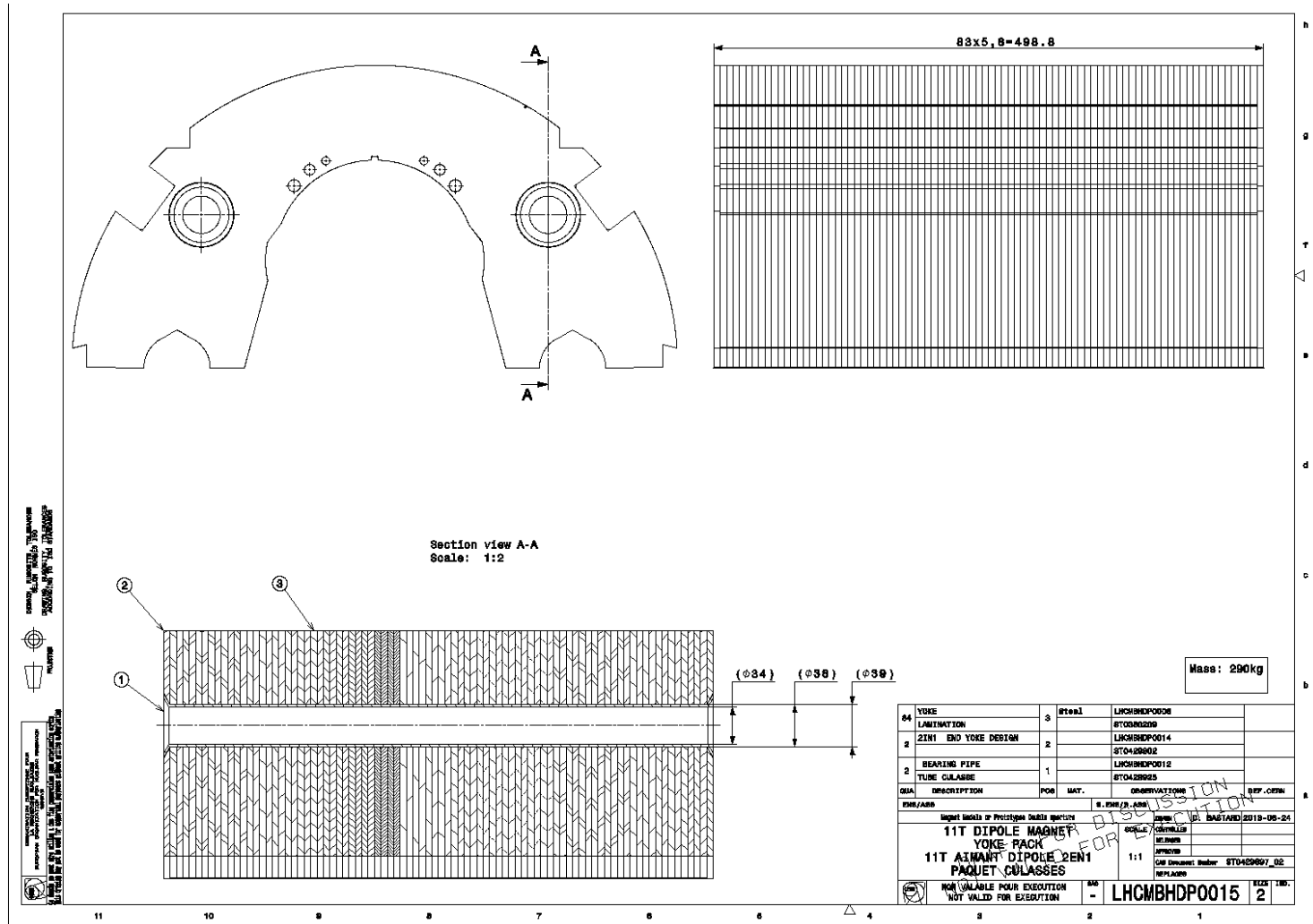
11T DIPOLE MAGNET 2 in 1 MBHDP101

Priority 2: Develop the 3D model of the extremities of the prototype and of the model MBHDP101 for the 2-1 assembly. They should be 'nearly' identical (for example, the diameter of the yoke, i.e. also that of the end plate will be different, as the yoke will have a 540 mm OD in the prototype). What we need is described here after.

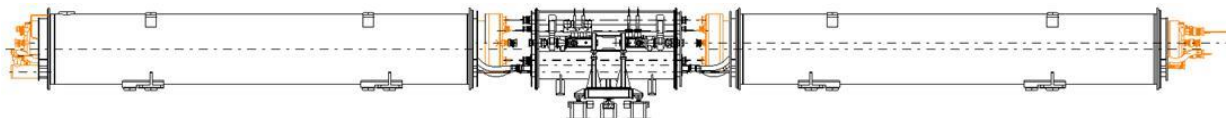
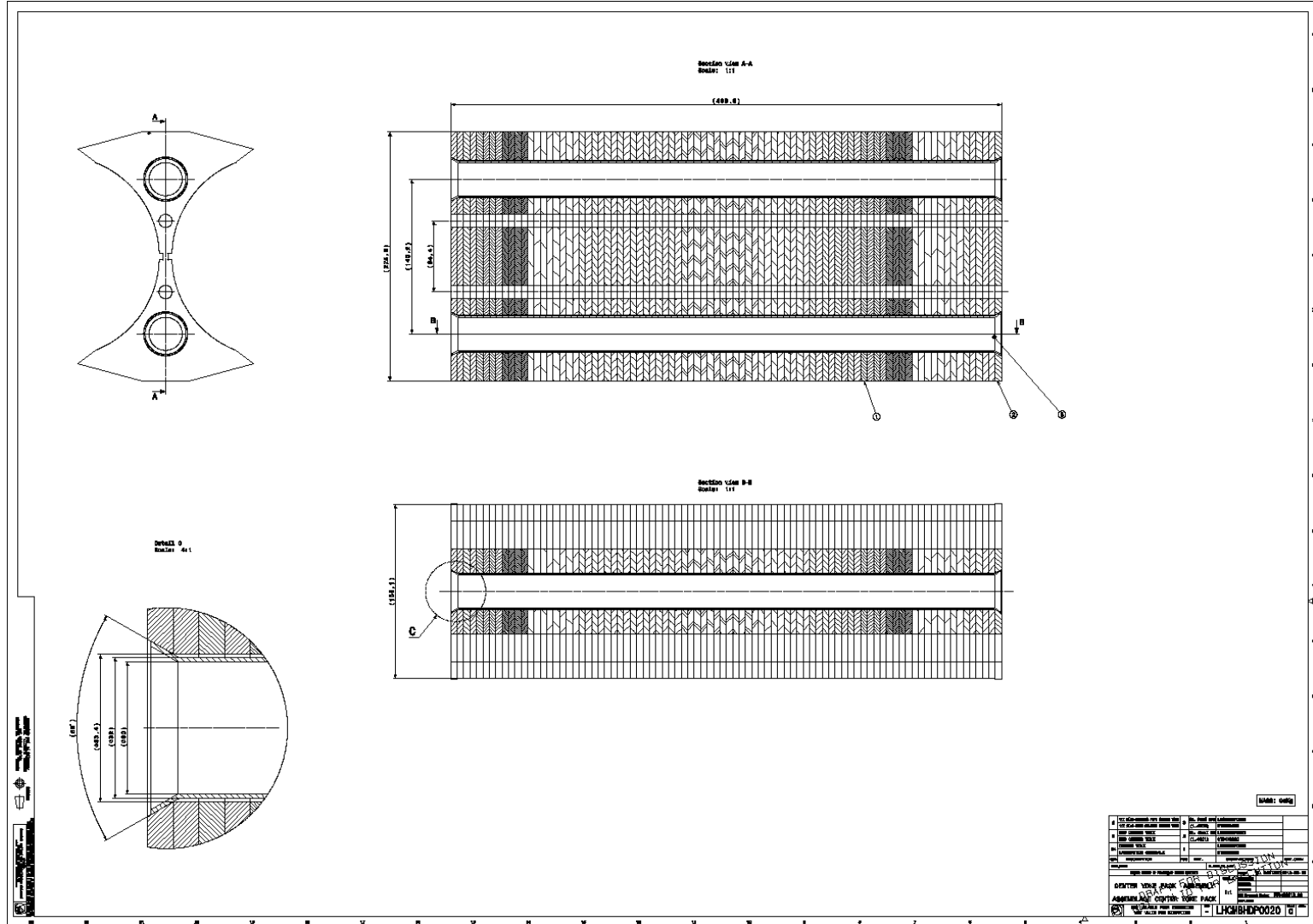
- First model 2-in-1, named MBHDP101, with the existing yoke of 550 mm OD (I recall here that we already have yoke laminations on stock that we are going to use);
- The end plates shall be 75-mm thick and the bullet gauges as per concept shown during the meeting of Tuesday. Regarding the bullet gauges, Hervé to confirm the final details of integration and Christian/Friedrich to confirm that the level of stress especially in the threads and the stress field in the region of the gauges are acceptable;
- The electrical instrumentation (trace, V-taps) shall be compatible with the instrumentation scheme of the 1-in-1 assembly (same remark applies for the insulation/connection box aka 'pasta box'), as we are going to use the same collared coils (the collared coils of the 'SP' models will go in the 'DP' models);
- Electrical connections to be designed identical to those of the MBH #2 (Hervé to give details on this point), including insulation plates/supports as needed;
- $\frac{1}{2}$ -Yokes to be made of 500 mm packs, as done for the single aperture model.



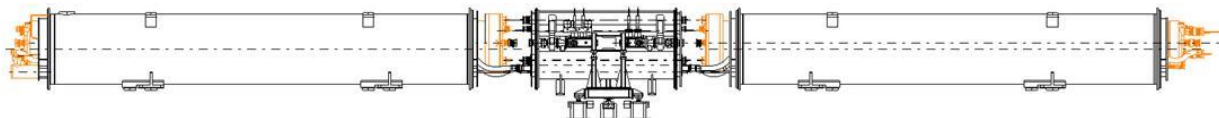
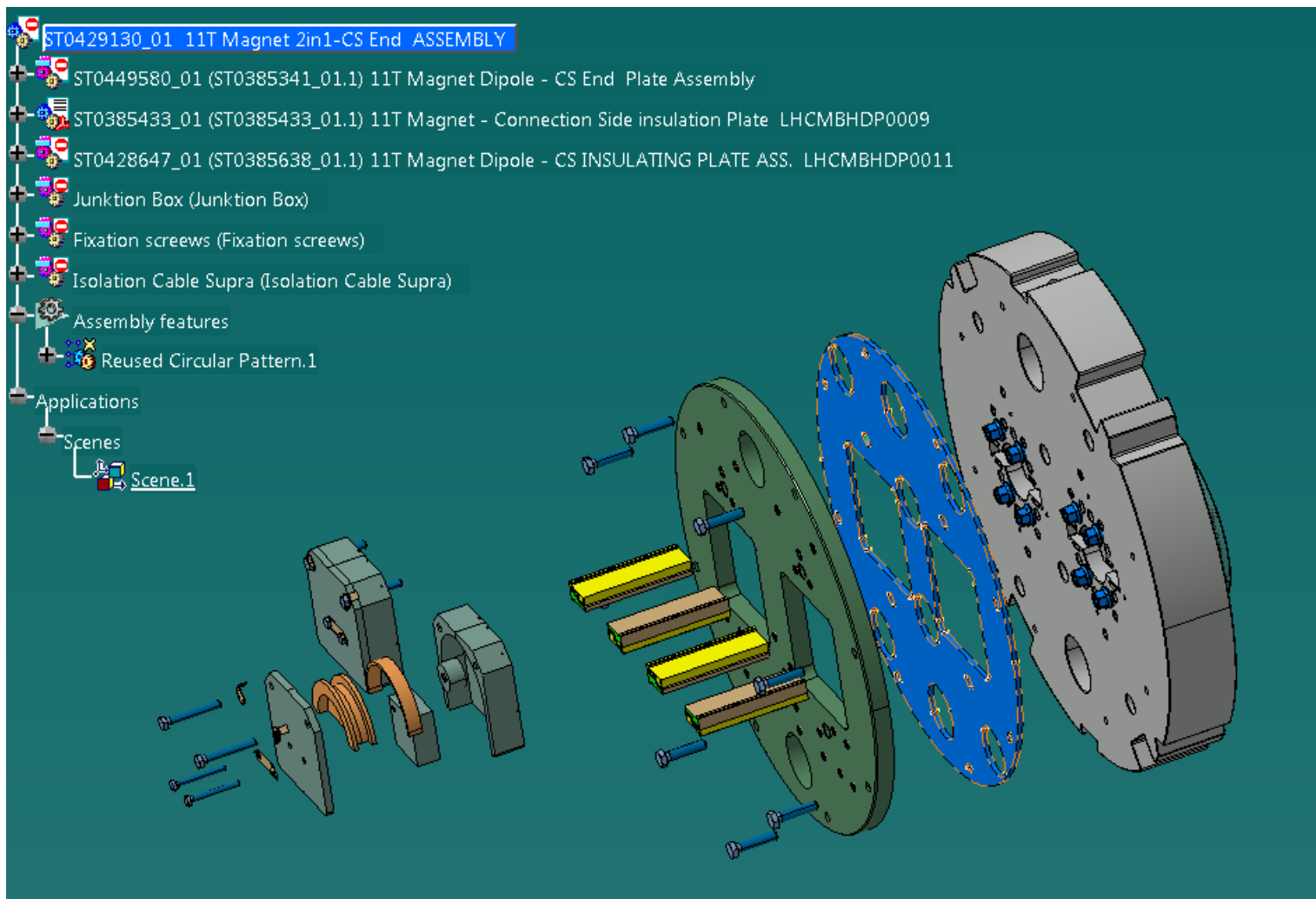
11T DIPOLE MAGNET 2 in 1 MBHDP101



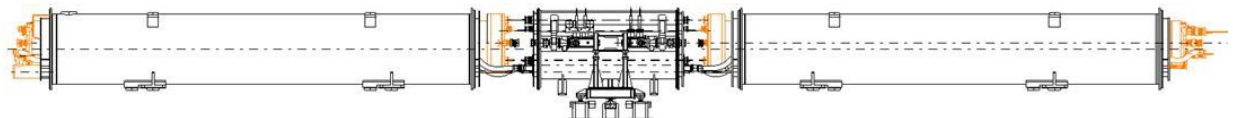
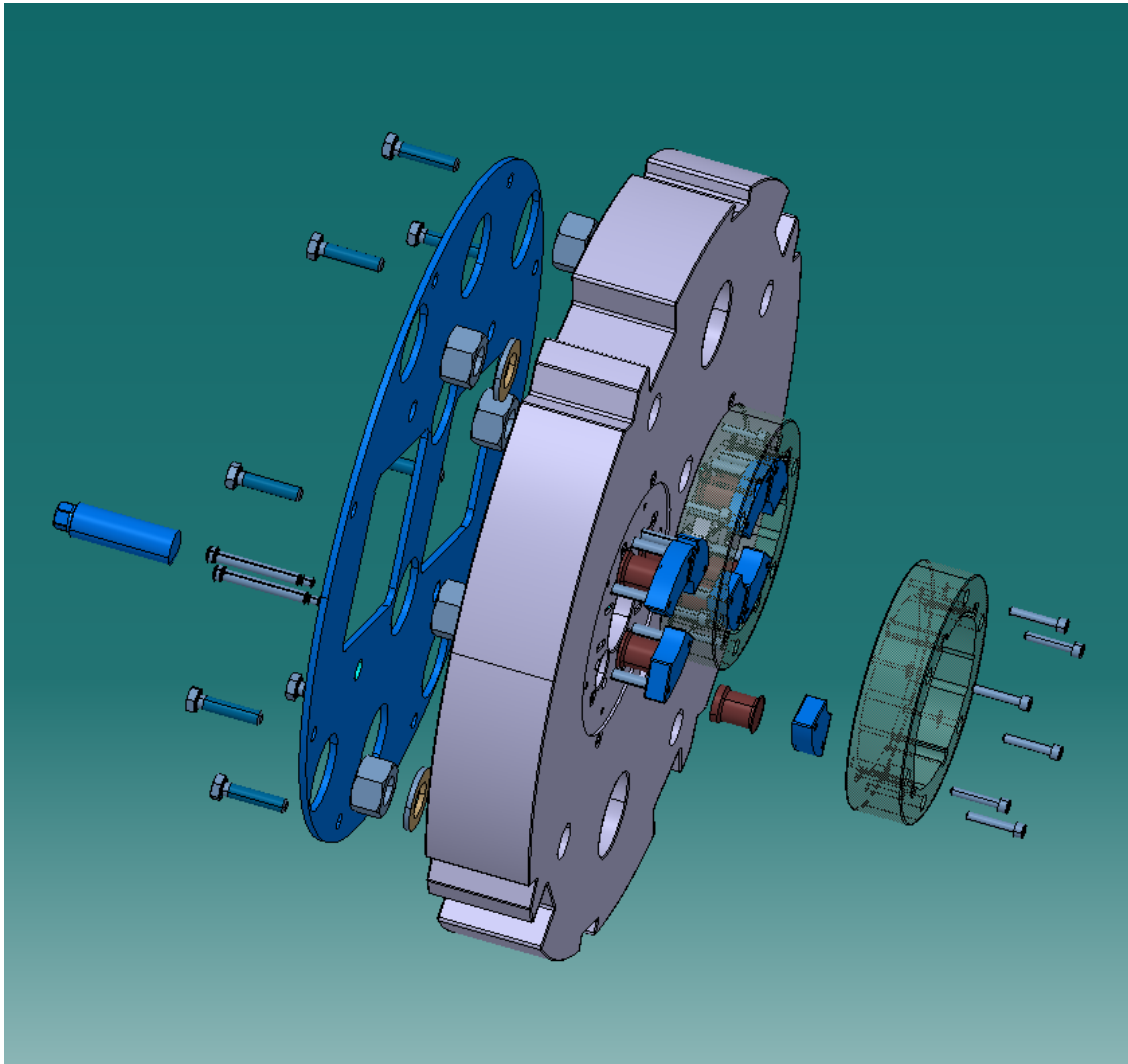
11T DIPOLE MAGNET 2 in 1 MBHDP101



11T DIPOLE MAGNET 2 in 1 MBHDP101



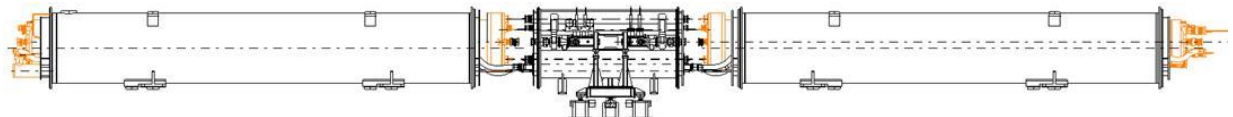
11T DIPOLE MAGNET 2 in 1 MBHDP101



11T DIPOLE MAGNET 2 in 1 MBHDP102

Priority 3: Develop the 3D model of the extremities of the prototype and of the model for the 2-1 assembly MBHDP102. They should be identical.

- The yoke OD shall be 540 mm and the yoke shall have an integrated cut-back, i.e. non-magnetic steel laminations in the ends (Frédéric and Susana to check whether these can be full non-magnetic laminations);
- The design of the yoke shall be revised to be compatible with the alignment features and assembly requirements (Hervé to check this). Once the design is revised, we shall check the magnetic design (Susana) and the mechanical integrity (Christian/Friedrich);



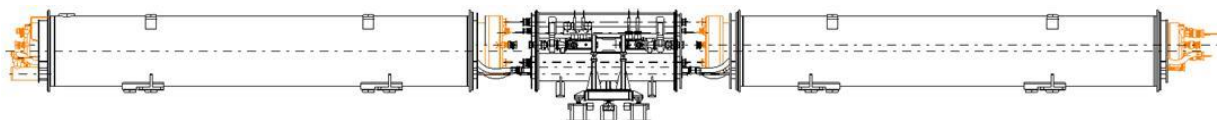
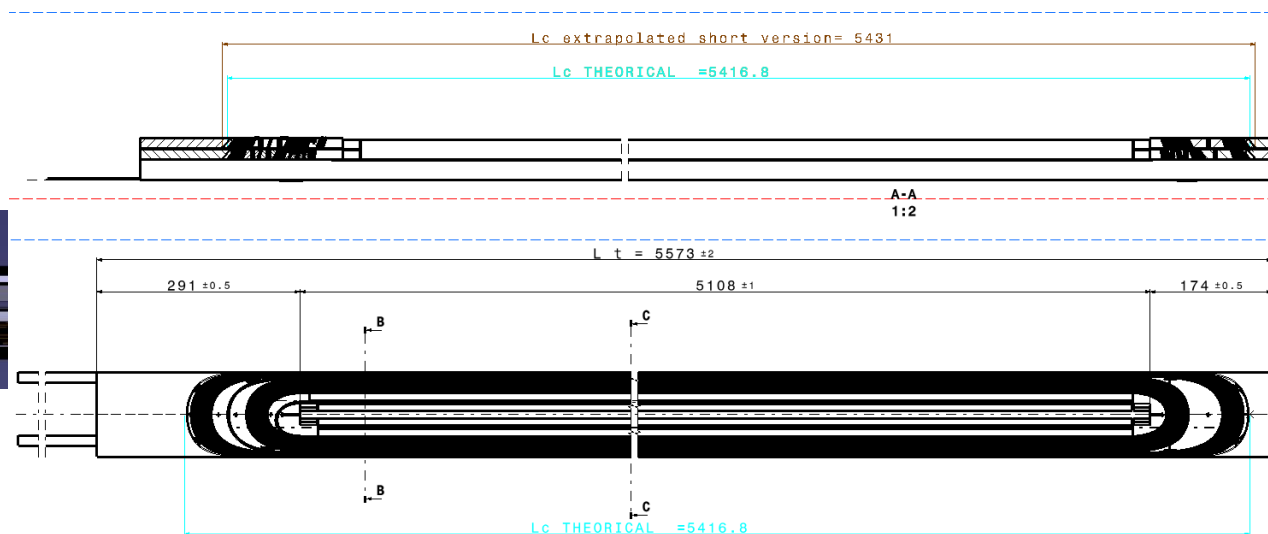
DESIGN 11T 2 in 1 LONG COIL

- Remove the 8-9 mm gap that was left between the outermost turn and the saddle because the coils were actually longer than defined by Roxie.

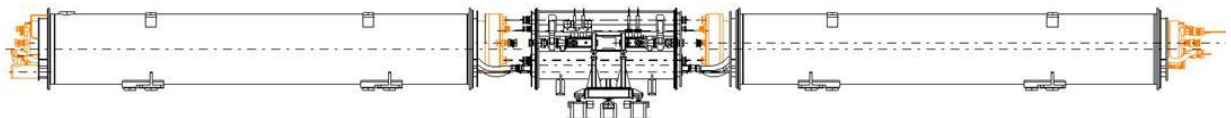
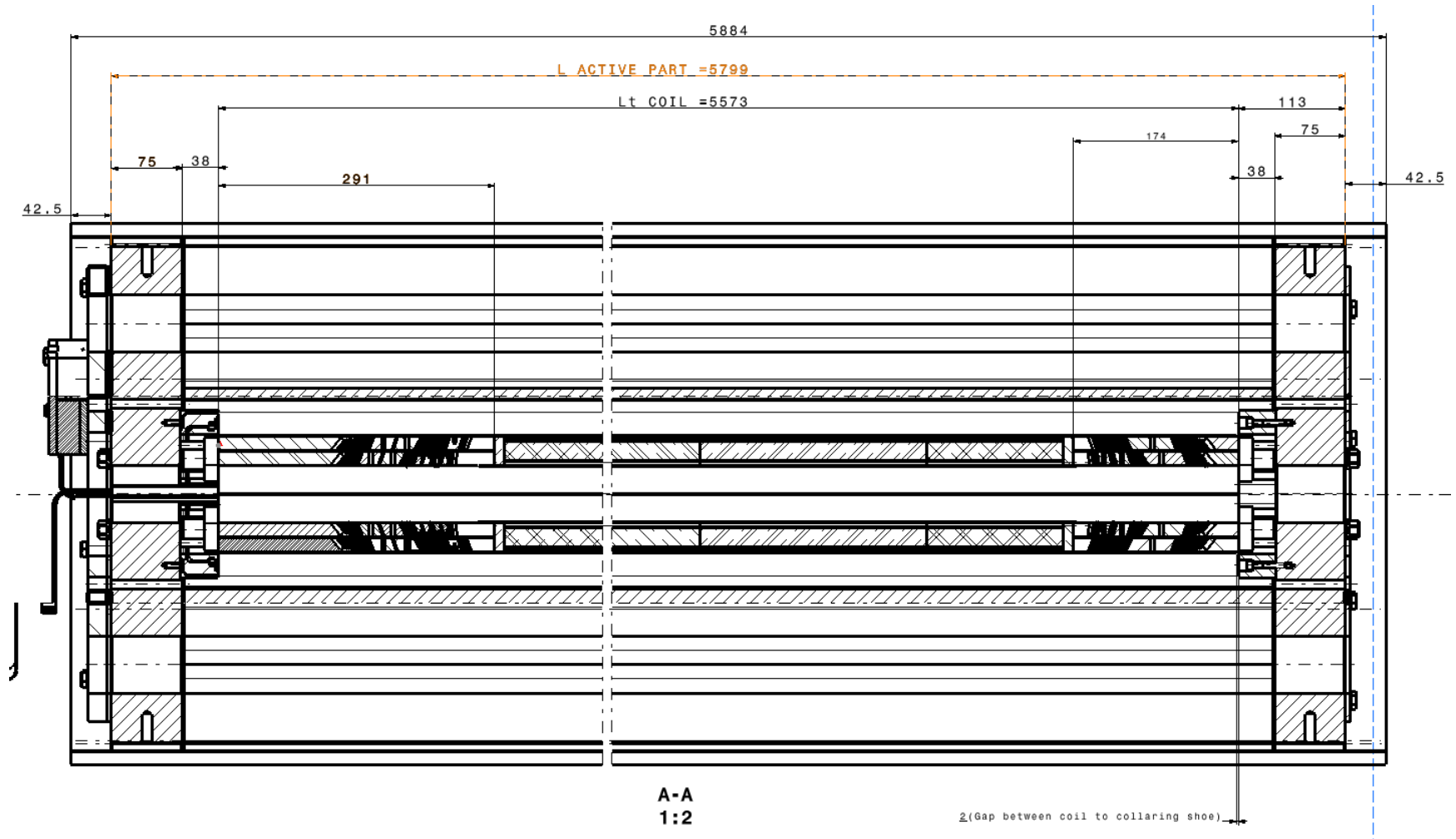
However, we do not make the saddles longer to compensate for this.

This means that the coils will be shorter than what we have on the drawing because we will not change now the length of the winding pole and, anyway,

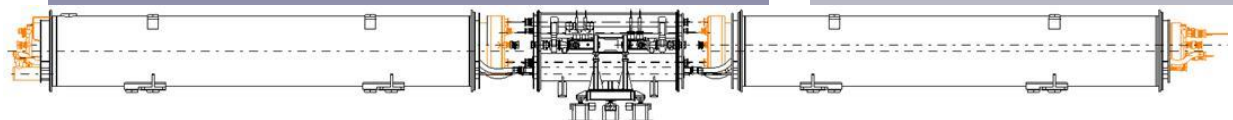
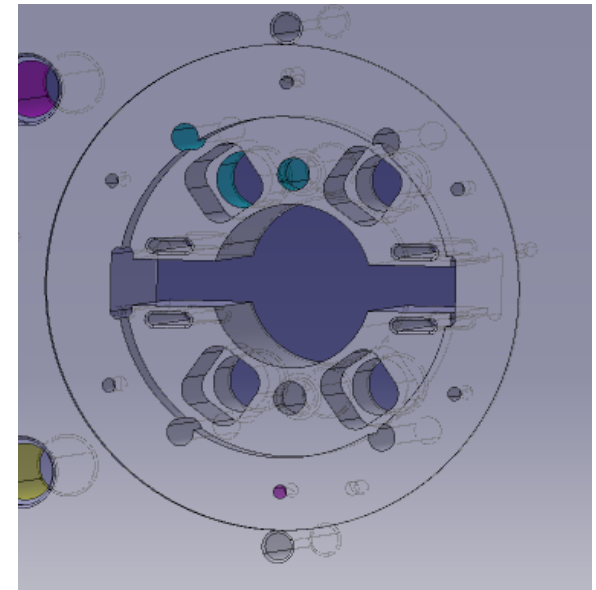
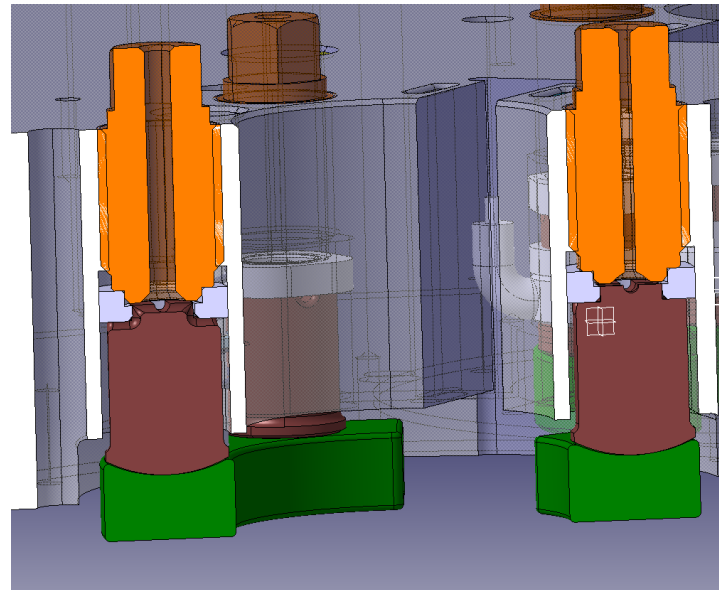
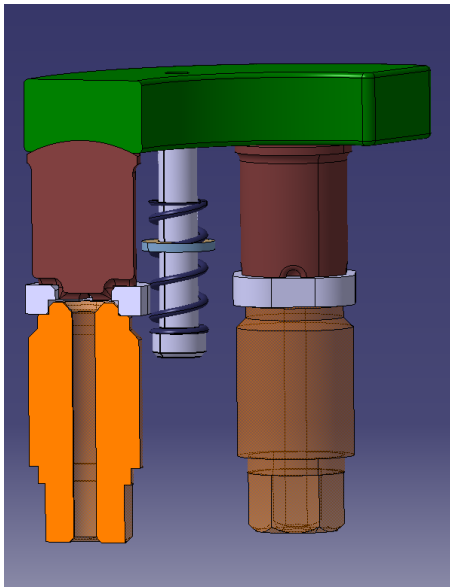
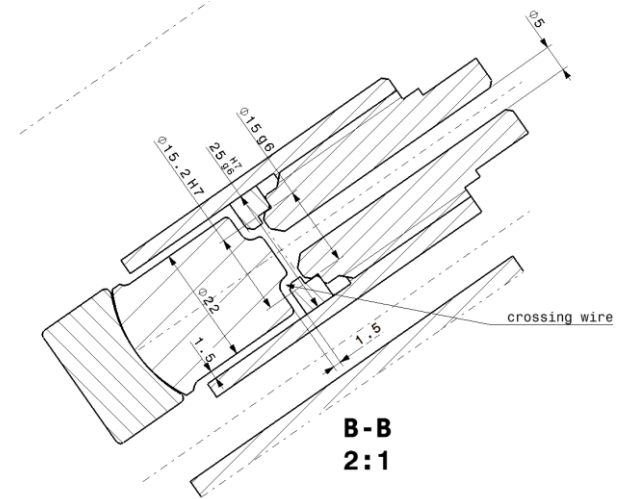
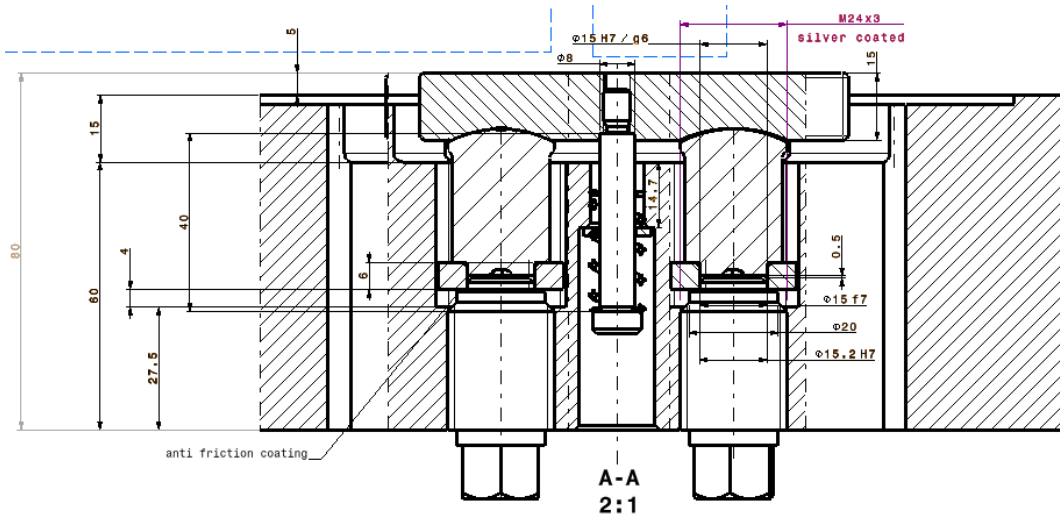
there are other reasons for the coils to be different in length in reality, when compared to the drawing. The model and the drawings will be updated when the prototype is done and we have all the necessary information to determine the exact length of the coils that we need for the series.



11T dipole Active part



Design of the instrumented bullet gauges



Space win $113-80=33$ mm

