



# *Trolley Design & Production*

Design & Engineering Division

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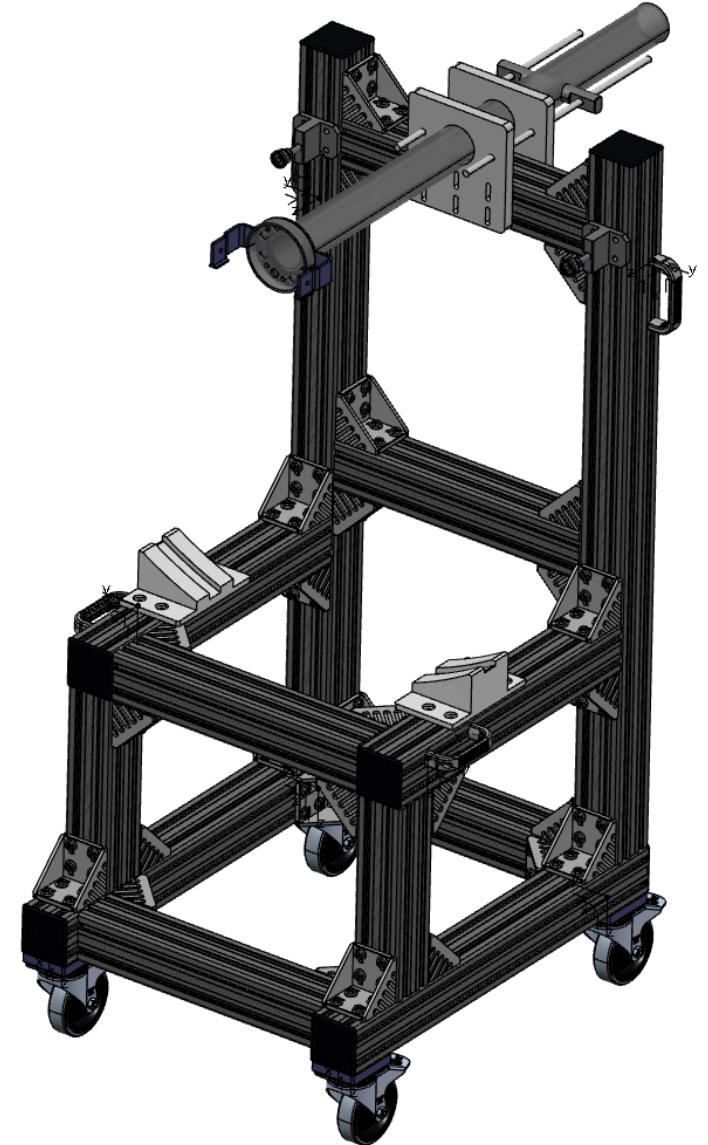
2023-09-22

# Trolley Design

The design of the trolley for the Cryo Modules maintenance released on 25<sup>th</sup> of August 2023.

The scope of the trolley is to support the maintenance operation in the tunnel and in the MML lab.

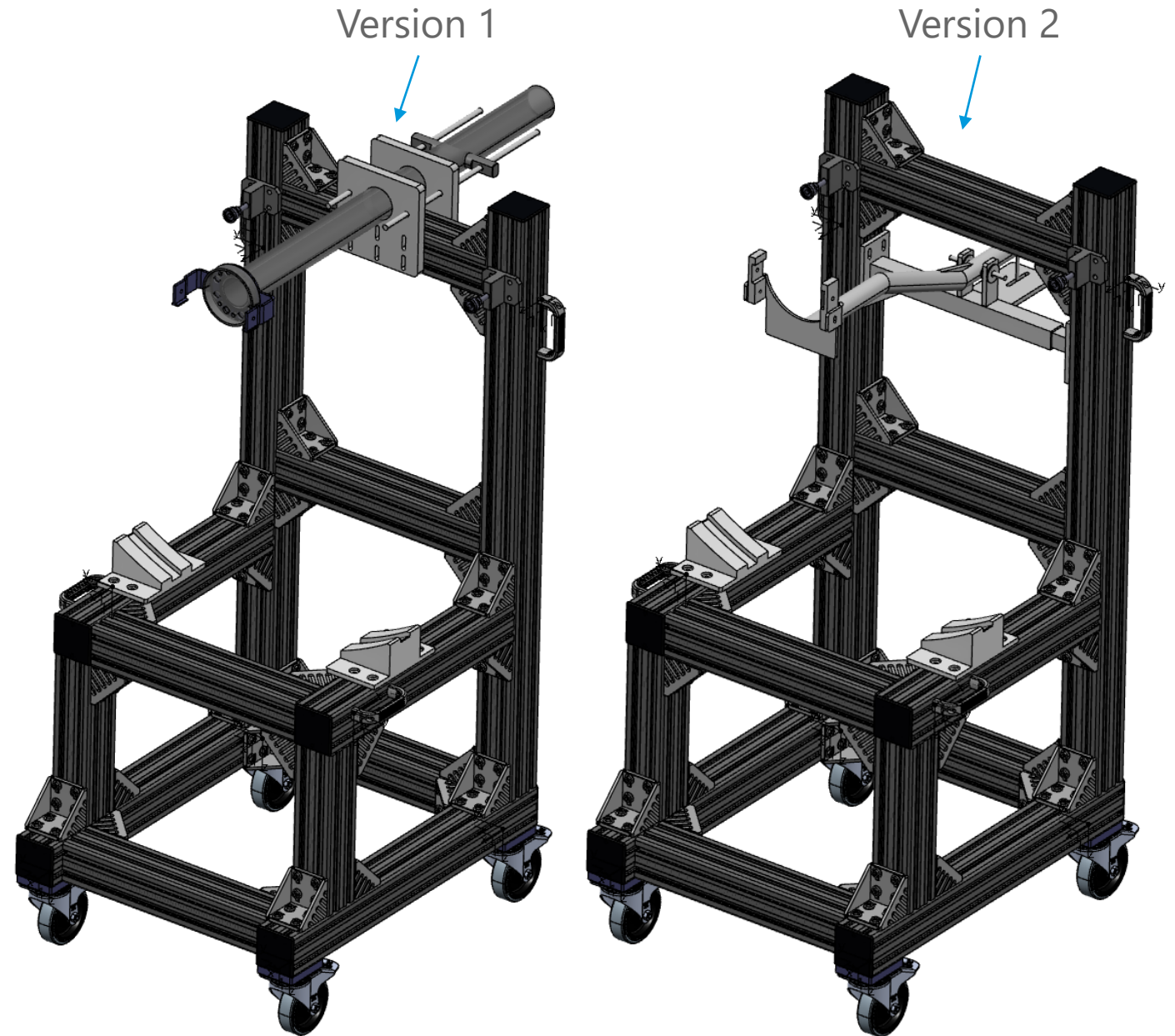
- The trolley is moveable,
- Can be handled by one person only,
- This version is lightweight but at the same time, stiff enough to handle the weight of the lid,
- Smaller and more flexible.



# Trolley Design

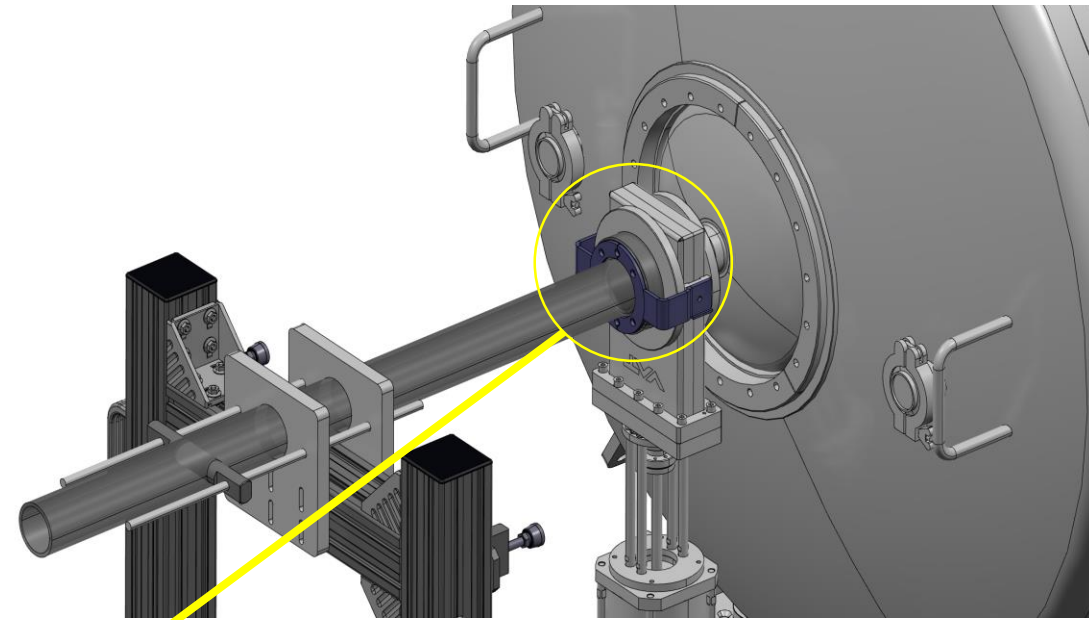
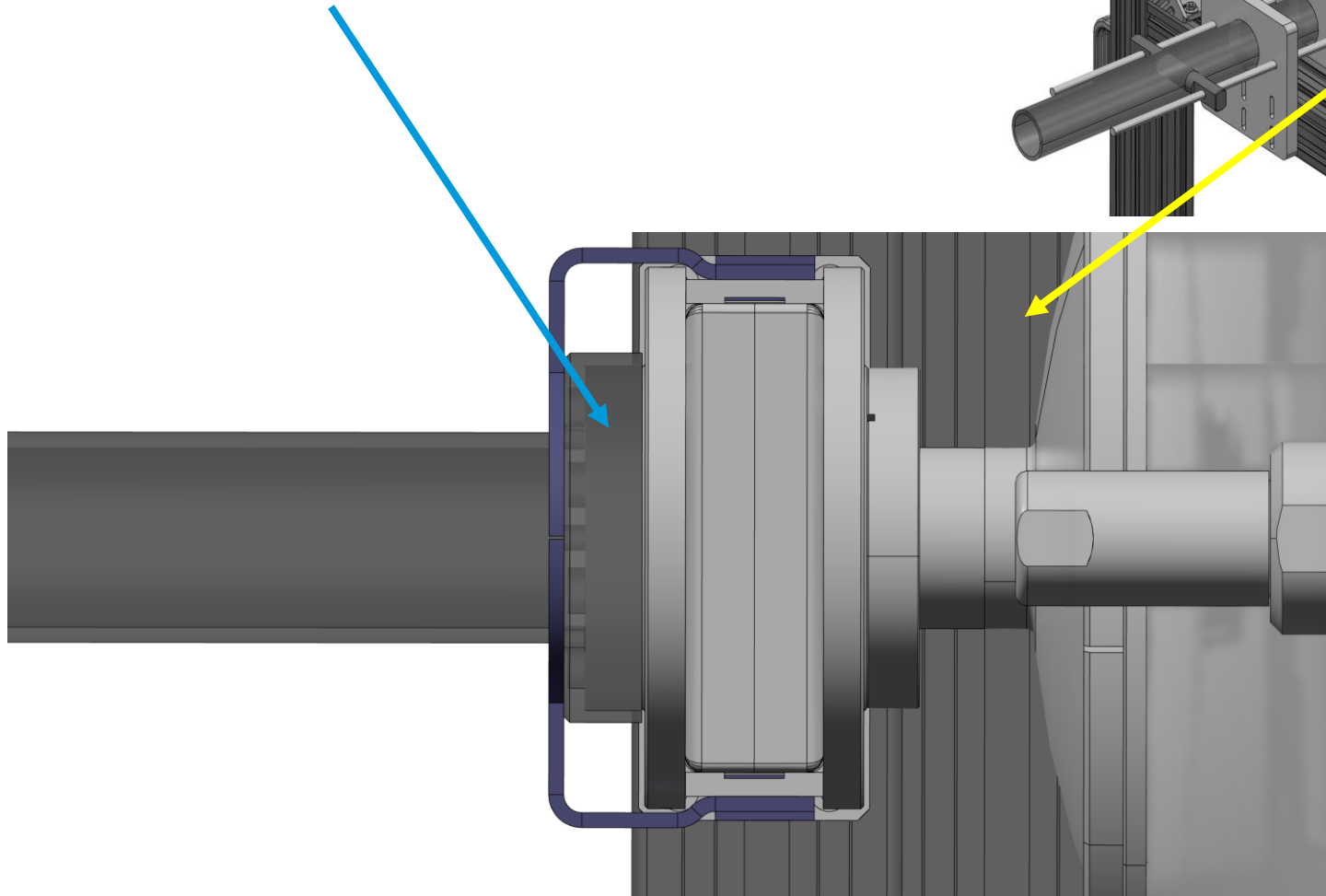
Up to now, two different versions for two different scenarios have been designed.

- **Version-1:** it is under production since 8<sup>th</sup> of September ([MFGREQ-889](#))
- **Version-2:** has been sent out officially on 19<sup>th</sup> of September. Order it is under approval. The parts are **already produced on 21<sup>st</sup> of September.**



# Trolley Interface – Version 1

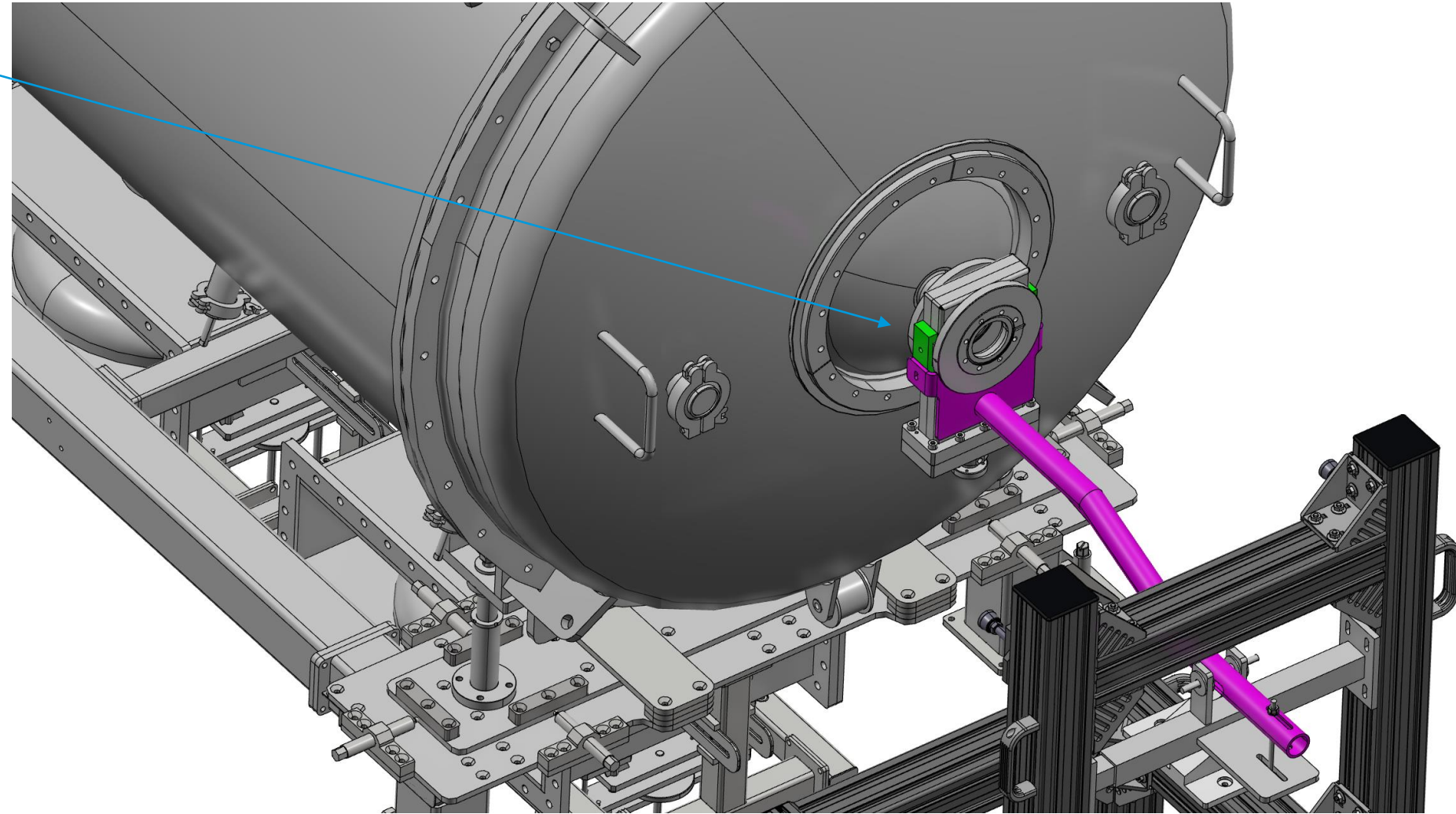
This interface requires the support of the valve with lateral supports, and a blank flange installation in between the support interface and the Cryo module.



# Trolley Interface – Version 2

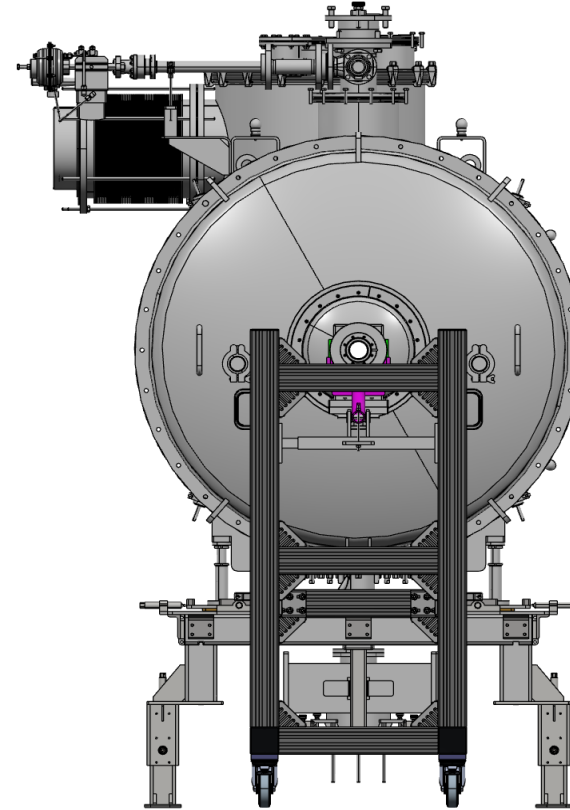
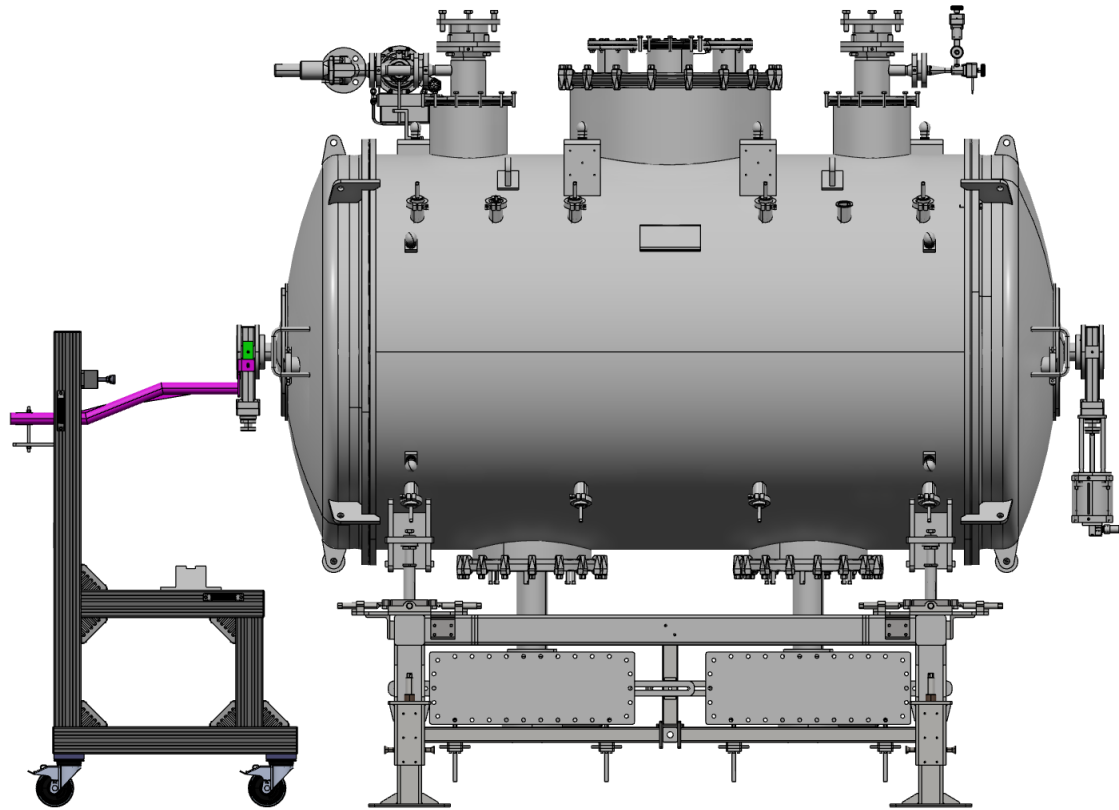
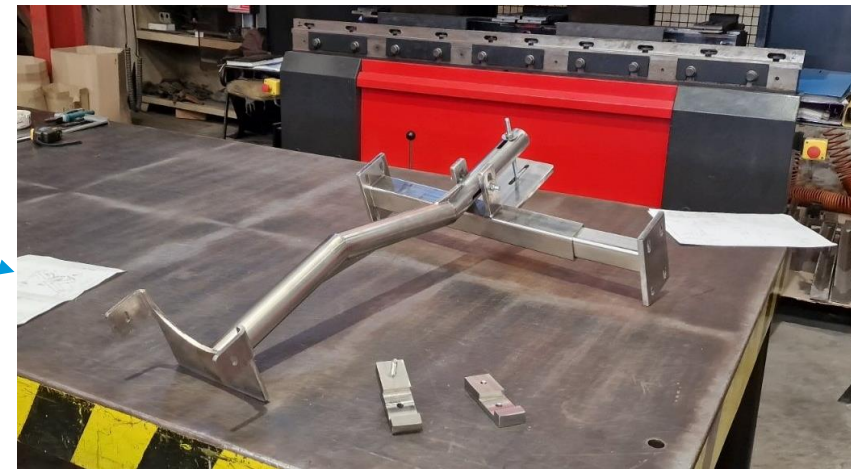
The interfaces between the trolley and the Cryo module are two lateral supports mounted directly by screws on the valve's side holes by 2 screws M6.

All the materials used are SS.



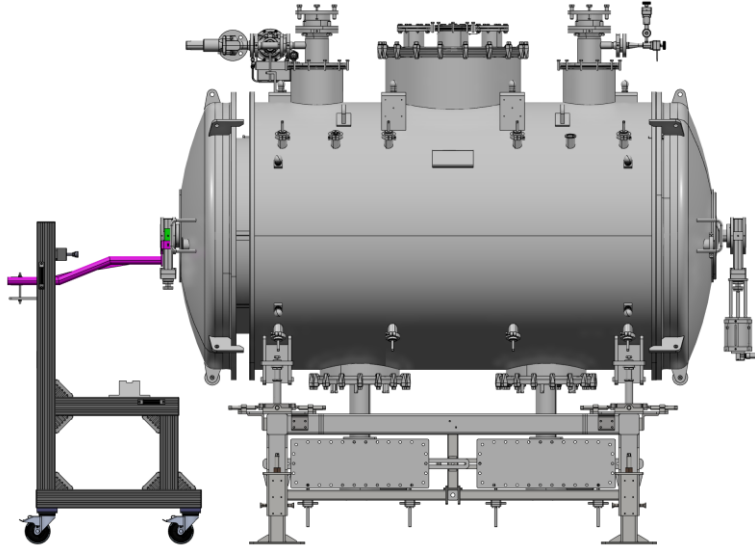
# Trolley – Version 2

Version-2 parts are produced since 21<sup>st</sup> of September.

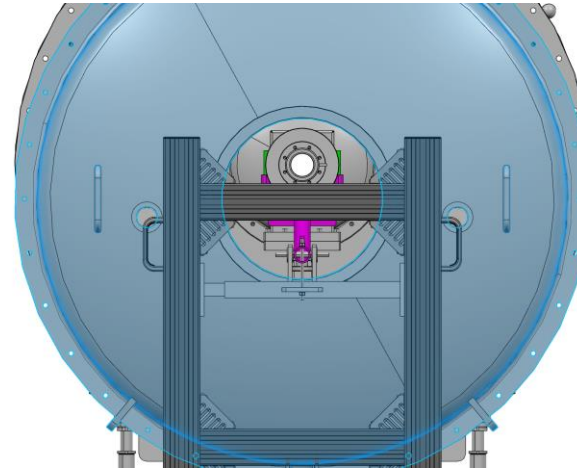


# Trolley – Procedure for opening the Cryo module

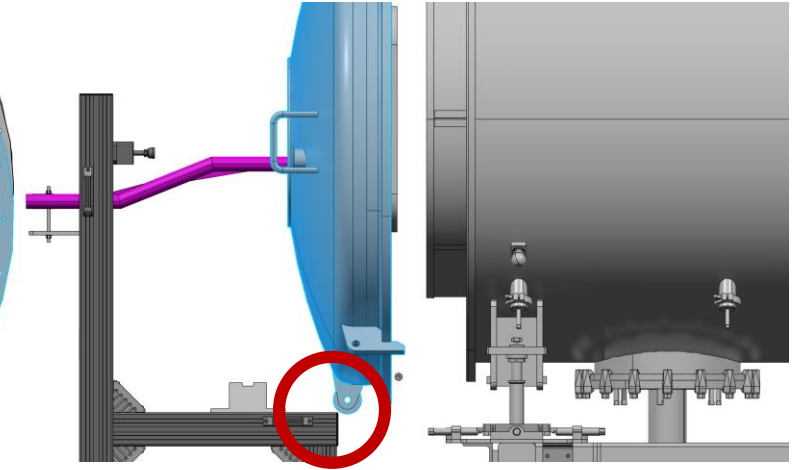
1. Mounting the trolley's interface in Cryo's valve



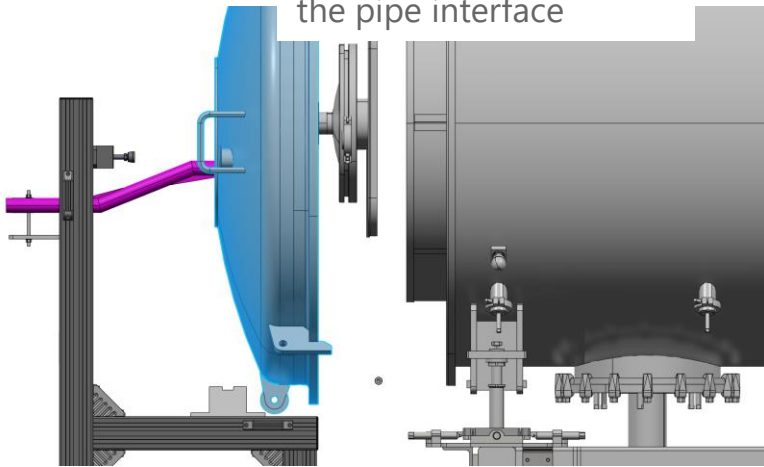
2. Hold the lid from the crane and unscrew the screws from the lid



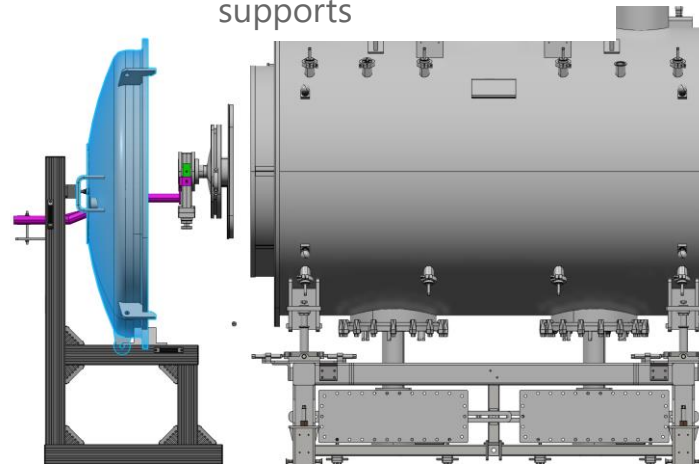
3. Move horizontal and down to avoid the valve



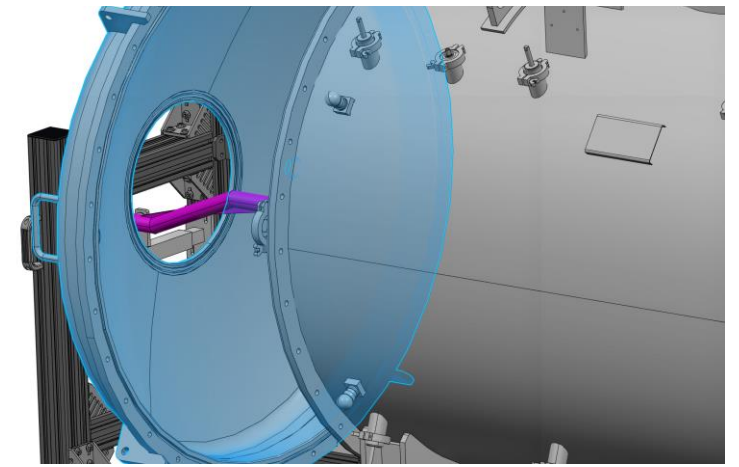
4. Move in parallel with the pipe interface



5. Place the lid on the supports



6. Secure the lid.





Thanks for your attention!

Questions?