



TDIS absorber

Mechanical design update

WP14 Coordination meeting

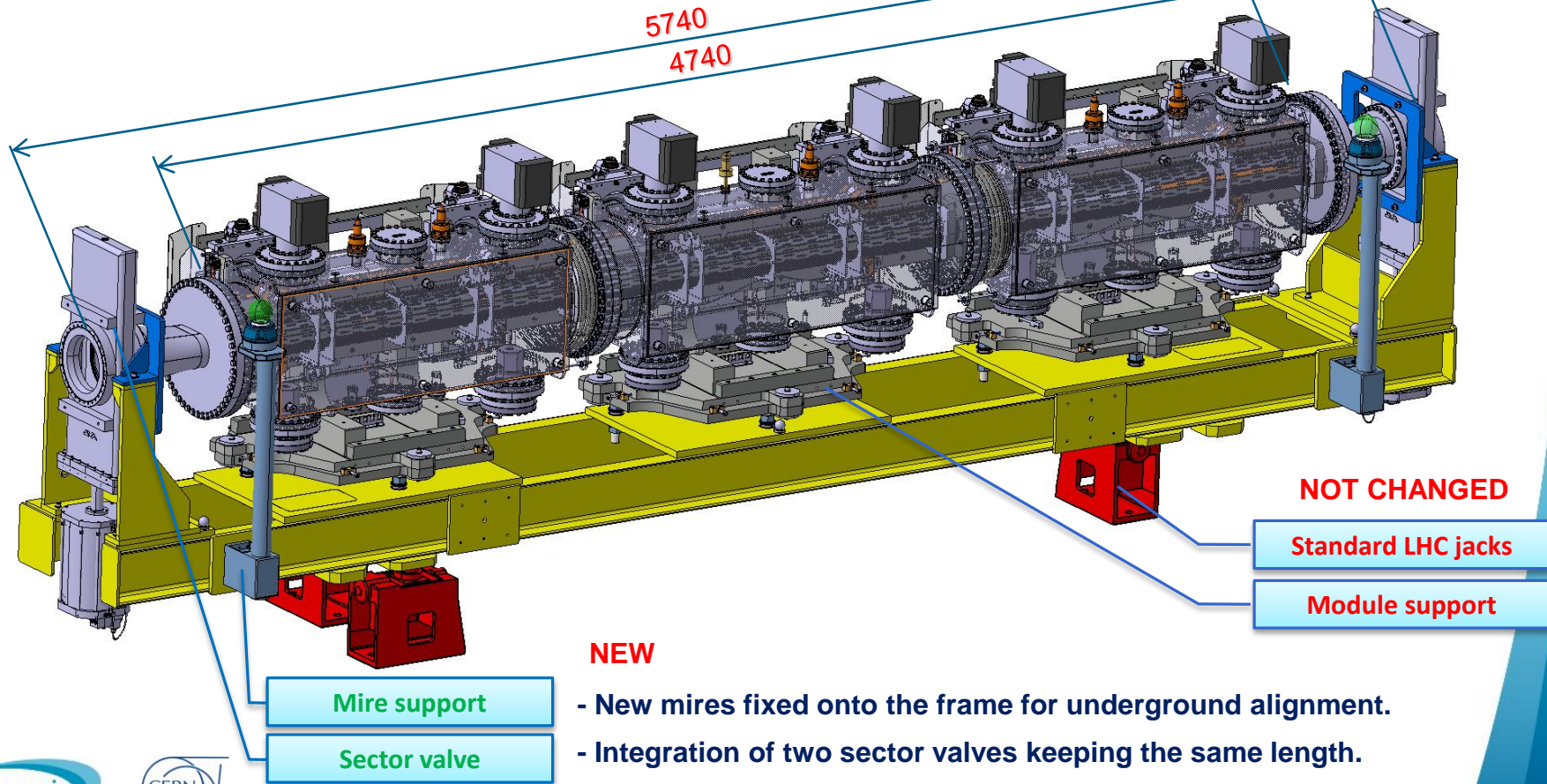
Luca Gentini, Antonio Perillo, David Carbajo Perez, Anton Lechner



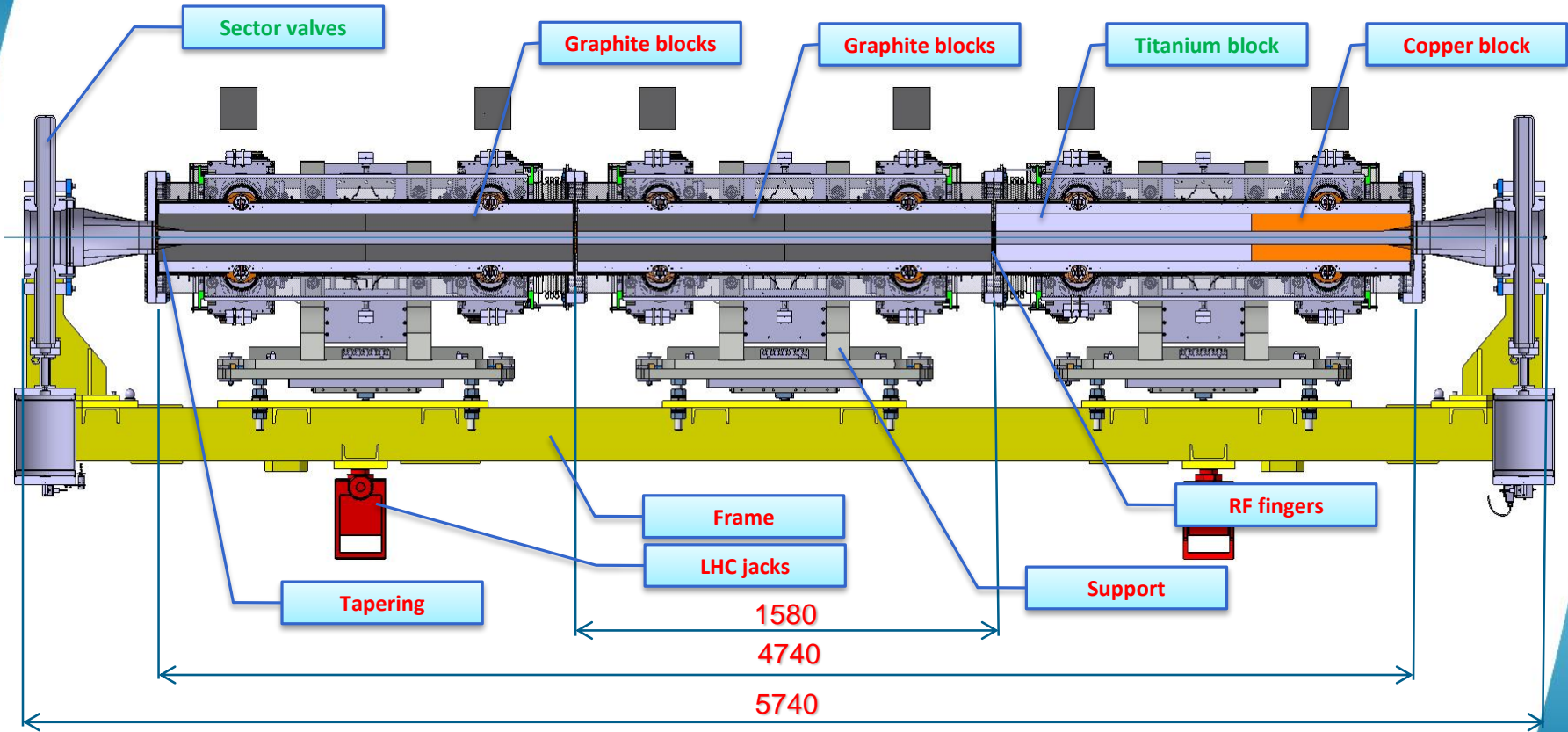
CONTENTS

- **Design modification overview**
 - Outside
 - Inside
 - Jaws
- **Design remind**
- **Design status**

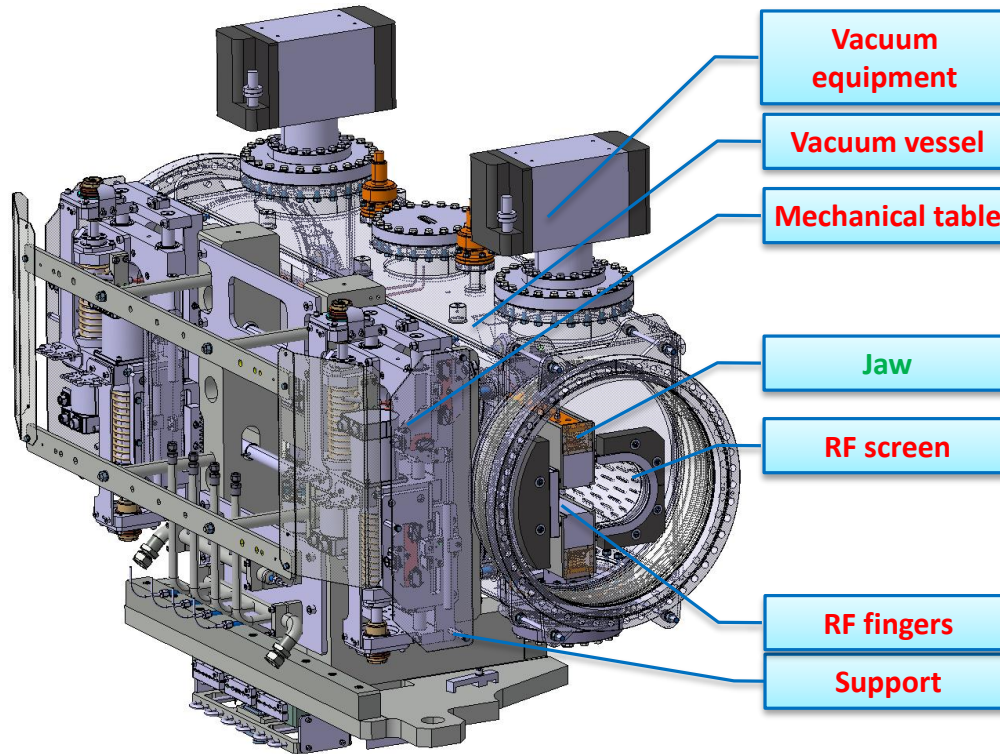
DESIGN MODIFICATION OVERVIEW



DESIGN MODIFICATION OVERVIEW



DESIGN MODIFICATION OVERVIEW



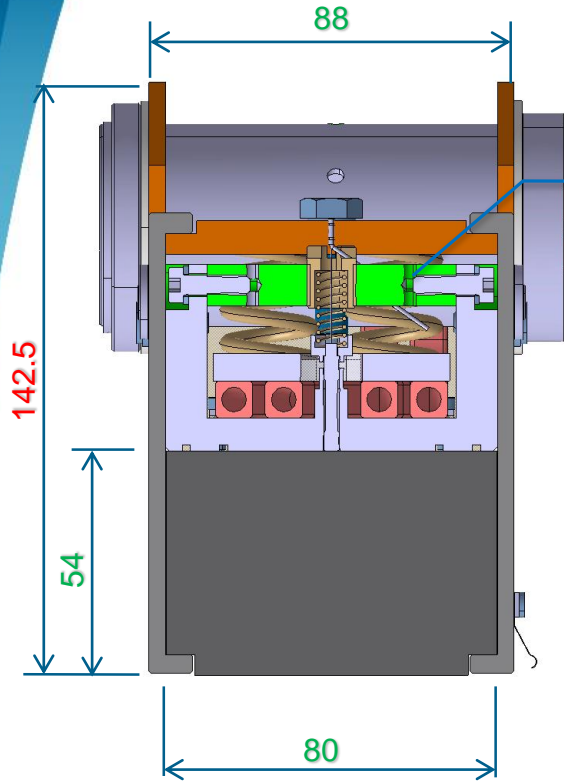
CapaciTorr HV1600 + VPIB- VACION PLUS 75

2 types: 2 with bellows and 1 without bellow

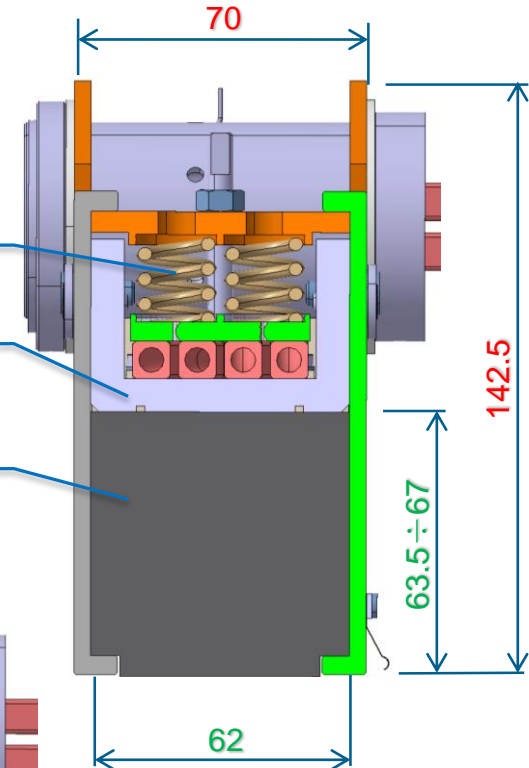
New design

NEW JAW DESIGN

Old design



New design



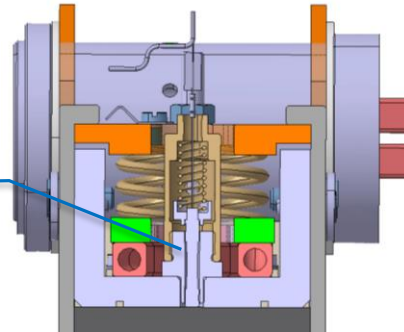
No more back stiffener plate

Spring dimension (same contact pressure)

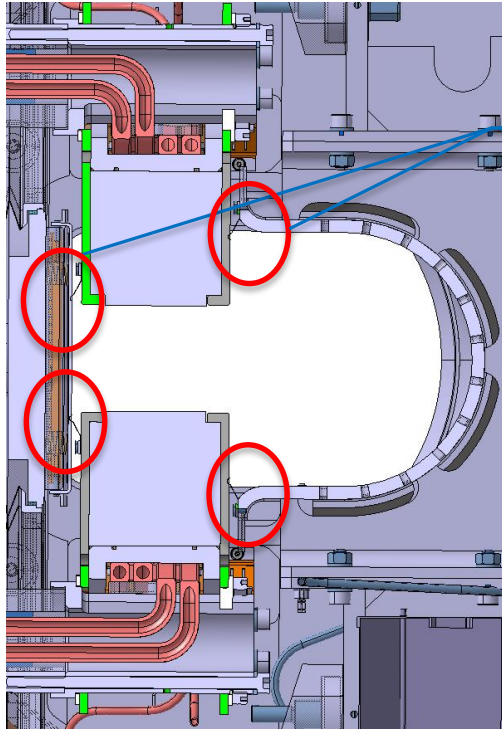
Back stiffener dimension and material
(Al → TZM)

Absorber block dimensions

New temperature
probe support



SLIDING JAW RF CONTACTS



Transversal fingers

Transition plate

Longitudinal jaw fingers

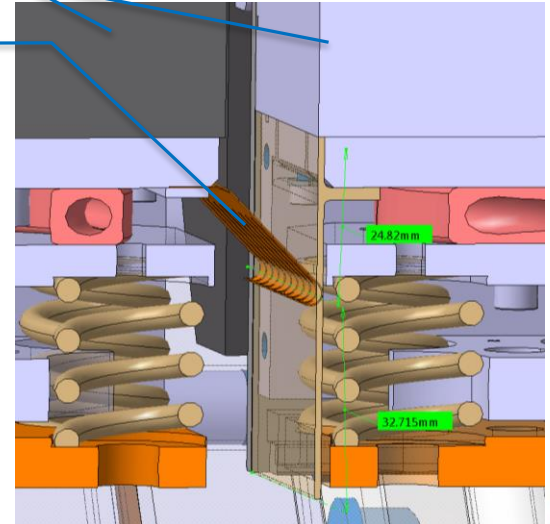
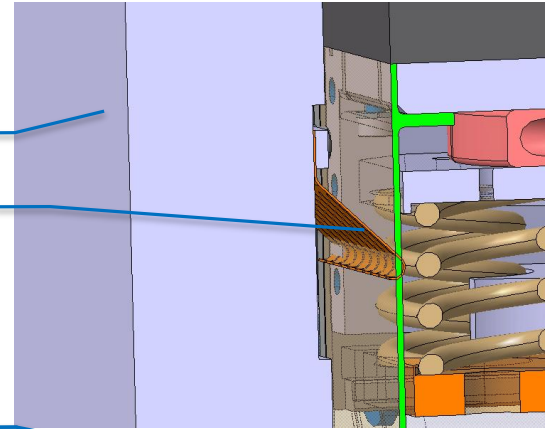
Absorber blocks

Longitudinal jaw fingers

The longitudinal jaw fingers are installed behind the absorber blocks. They admit a relative stroke between the jaws in operation of +24mm -32mm, over that:

- 1- The fingers can slide on the absorber blocks (graphite or Aluminum).
- 2- We lose contact between the jaws.

In both cases no finger damage is expected.

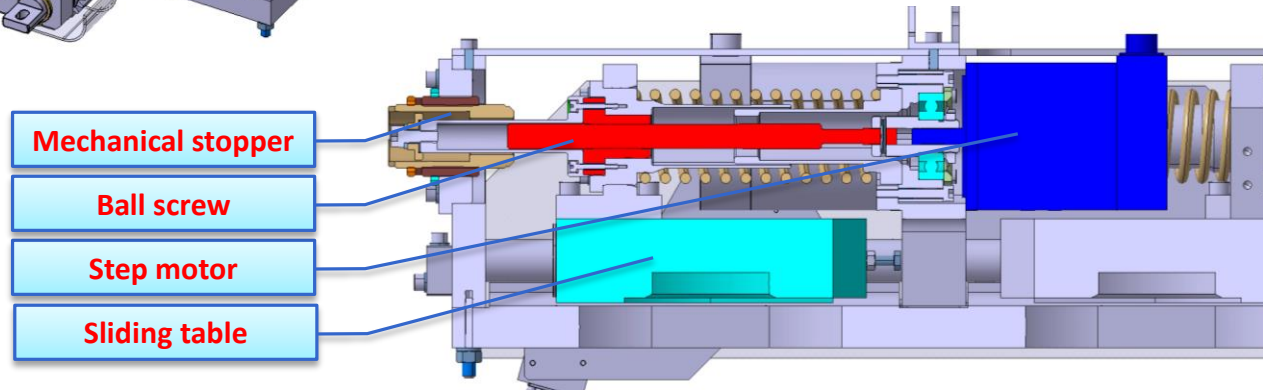
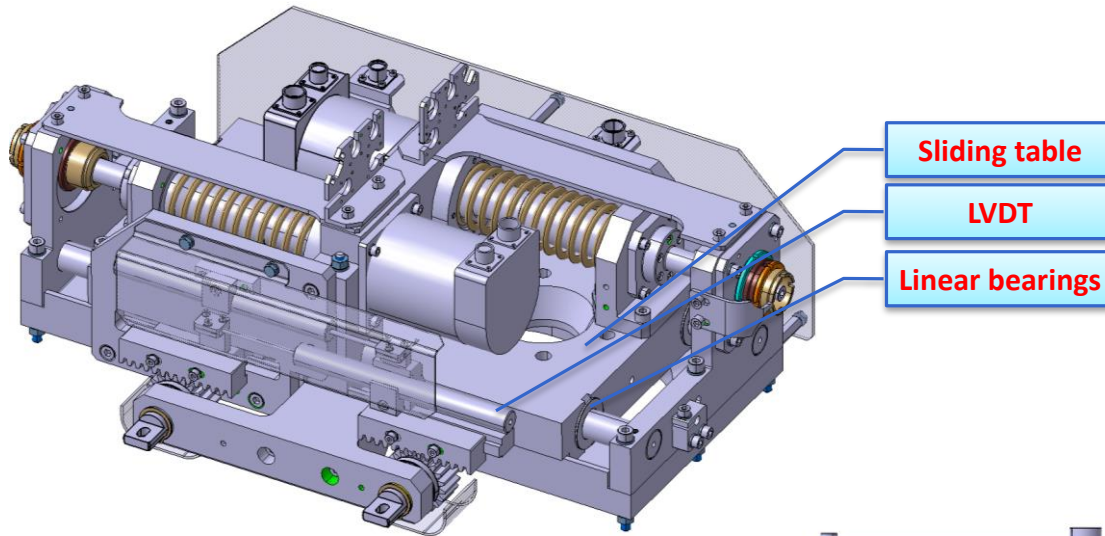


All the RF fingers are in CuBe C17410 silver coated sliding on St. Steel surfaces.

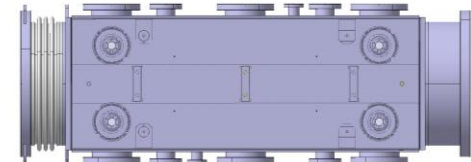
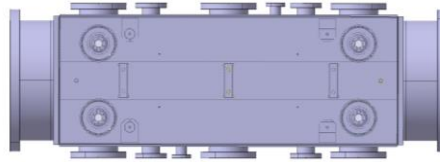
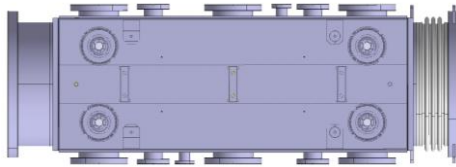
MECHANICAL TABLE - MOTORIZATION

The design came from the collimator PhII mechanical table but much stiffer.

Same motors
Same resolution
Same instrumentation: 3 LVDT, 5 switches



VACUUM TANK

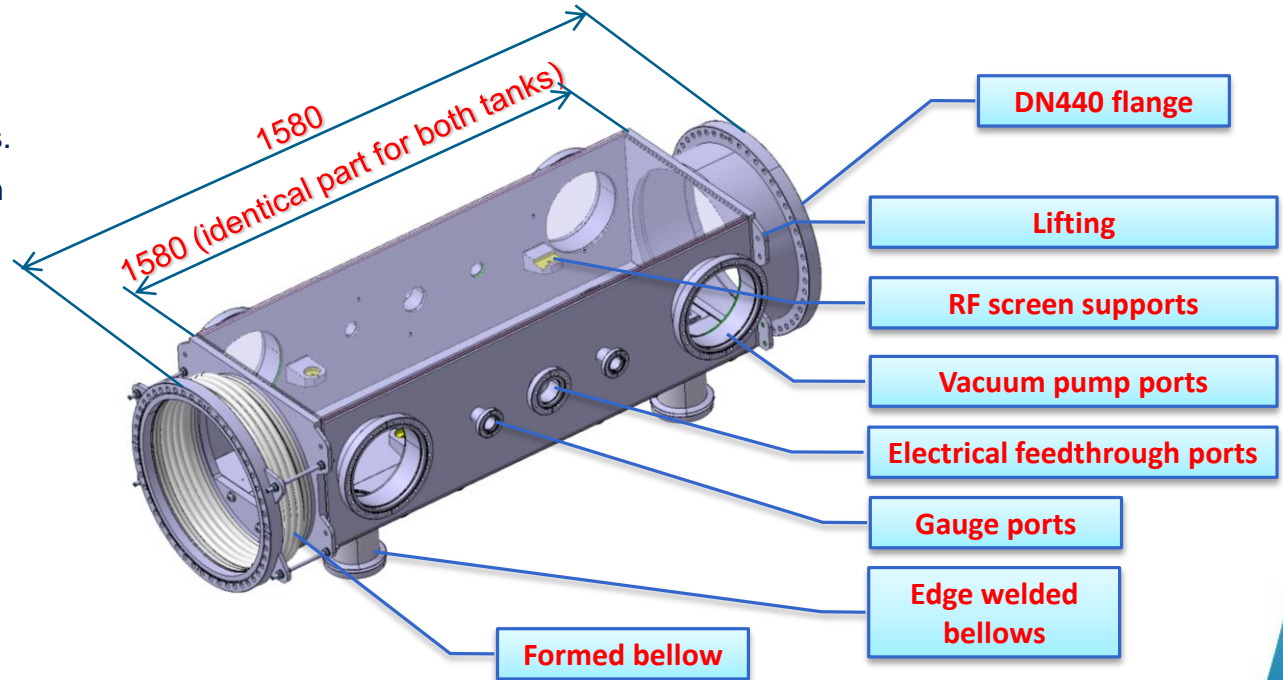


2 different vacuum tanks

The box is identical for both tanks.

All box welds are done in electron beam welding, based on the collimator experience.

Pick-up and formed bellow welds are in TIG.



PROTOTYPE DESIGN STATUS

Tools	Components	3D model	Drawings	Dwg checking
Jaw		90%	80%	0%
RF screen		100%	100%	30%
Mechanical table		100%	100%	100%
Tank		100%	100%	100%
Support		100%	100%	80%
Cooling circuit		100%	100%	100%
Electrical box		100%	100%	80%
Frame		100%	100%	80%
Heating jackets		100%	100%	0%
Mechanical table alignment		100%	100%	0%
Table spring compression		100%	100%	0%
Tank bellow welding		100%	100%	0%
Shaft welding		100%	100%	0%
Shaft machining		100%	100%	0%
Jaw insertion		100%	100%	0%
RF screen insertion		100%	100%	0%
Module tilting		100%	100%	0%
Transport tool		80%	80%	0%

Market survey on-going



Thank you for your attention

