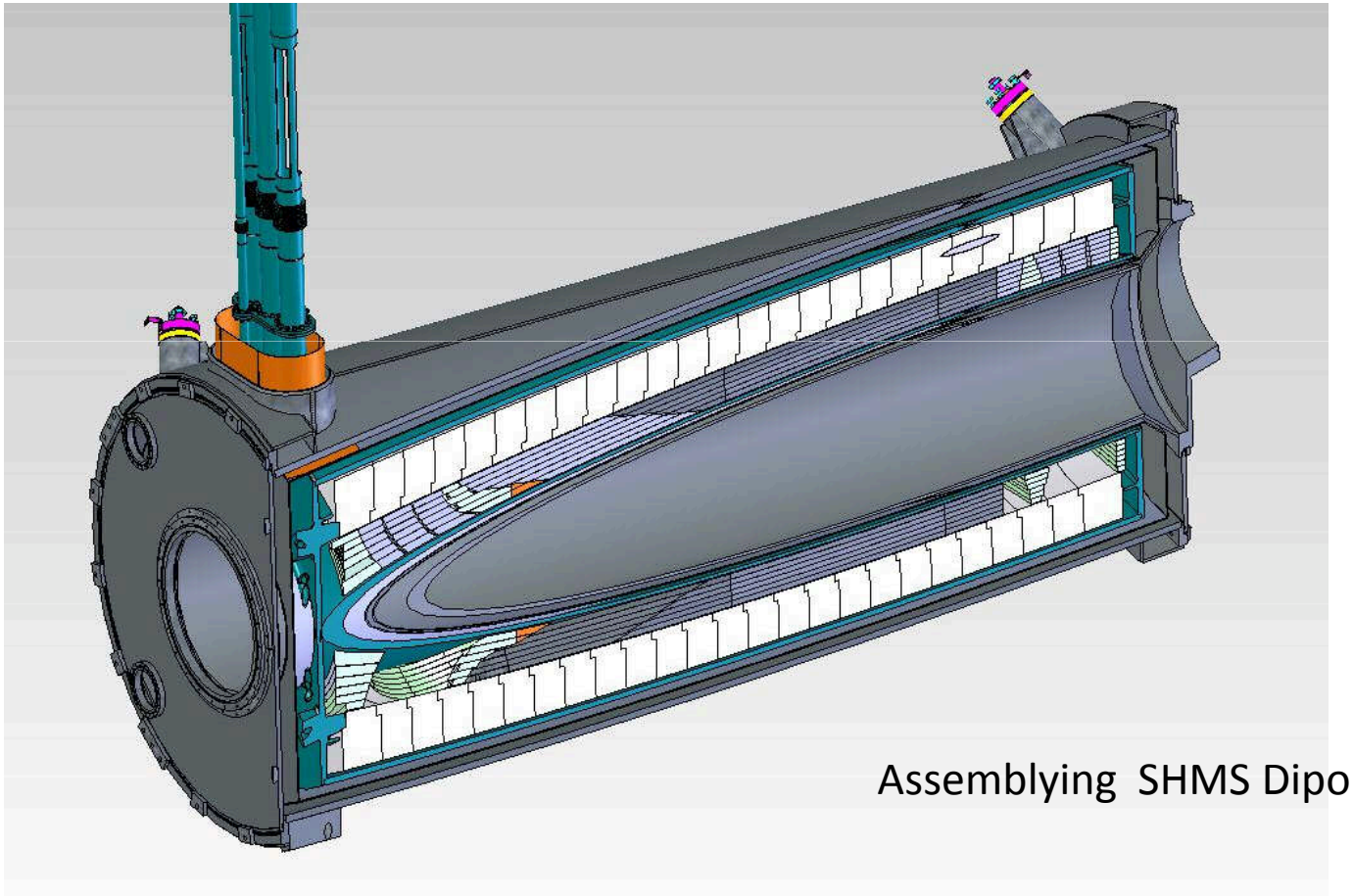
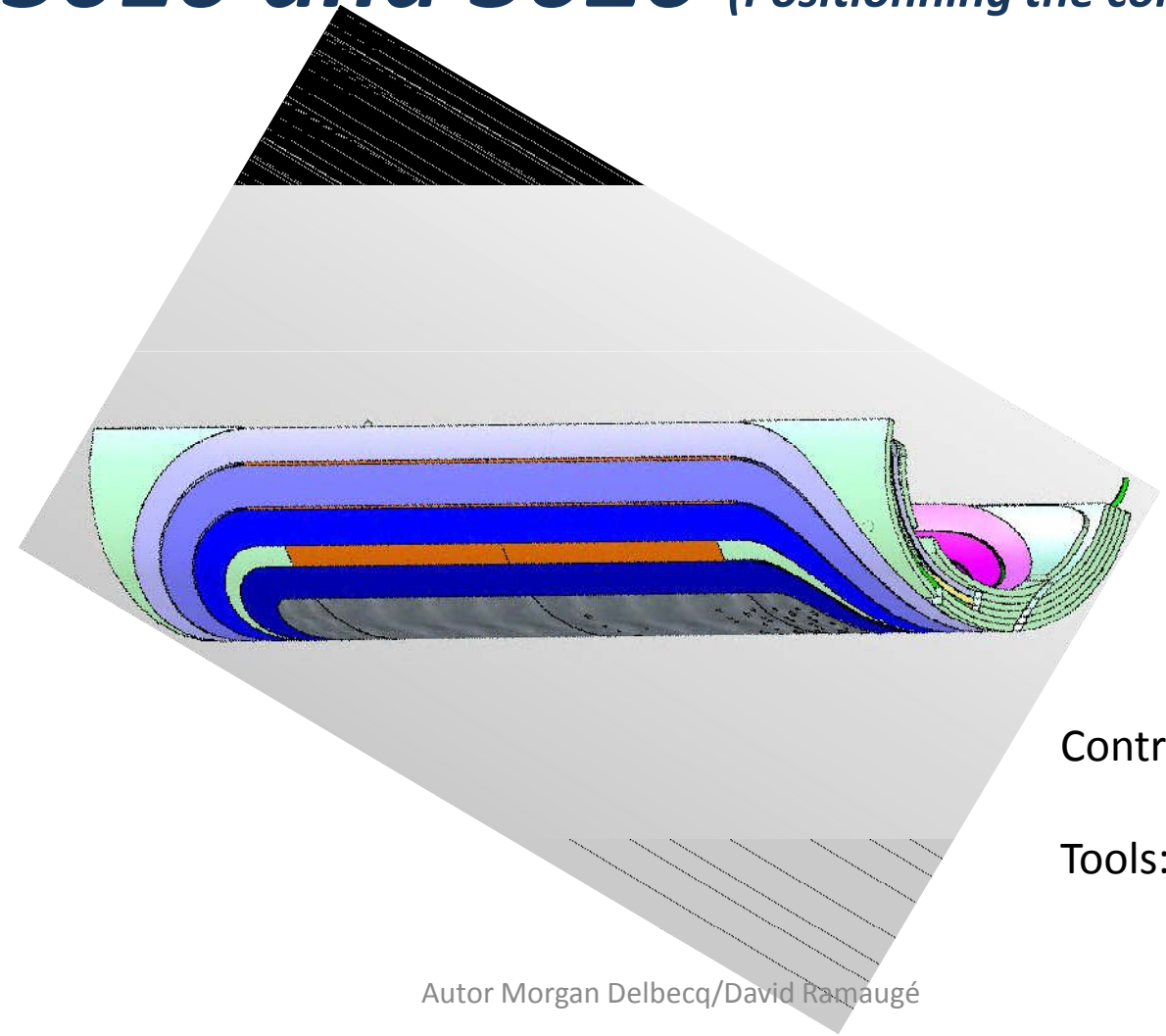
SHMS PROCESS



Assemblying SHMS Dipole

Autor Morgan Delbecq/David Ramaugé

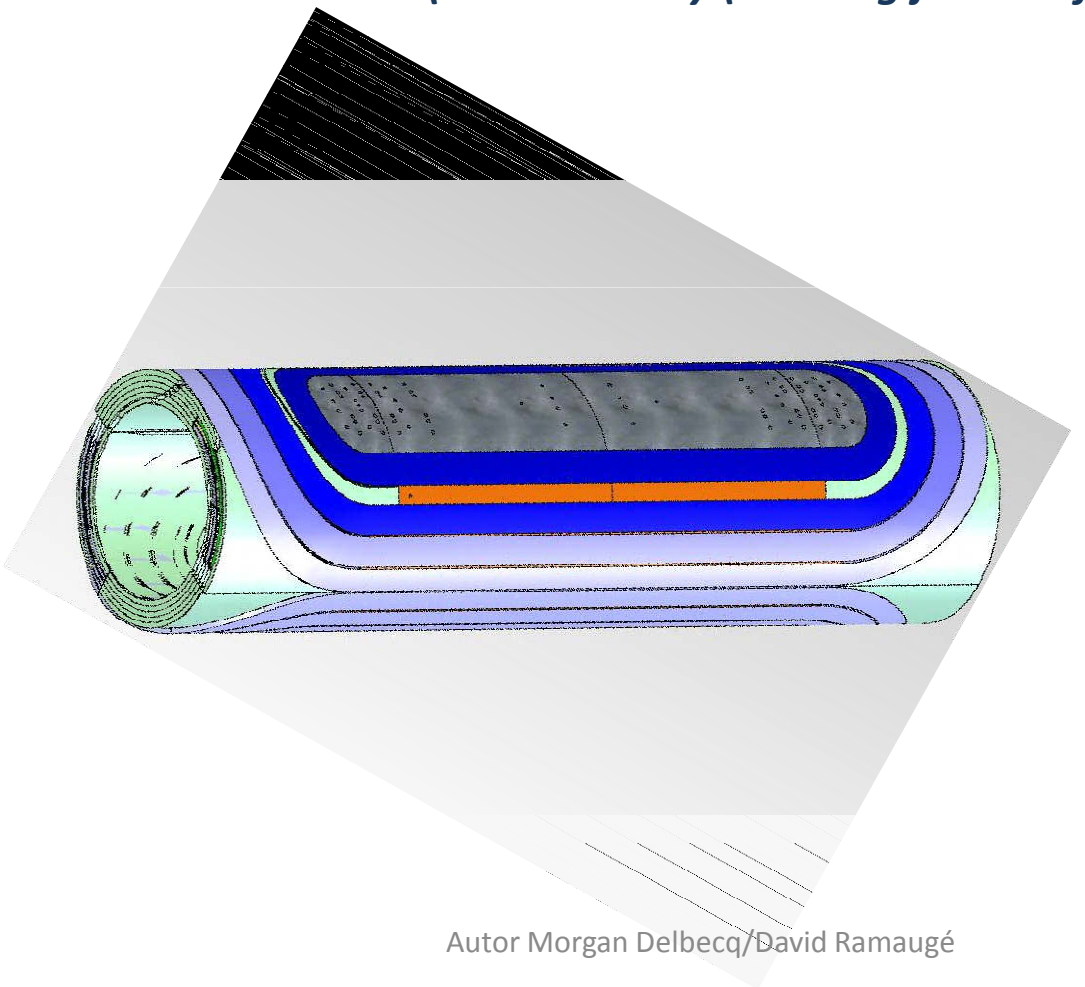
OP 3010 and 3020 *(Positionning the coil on it support)*



Control:

Tools: support #1

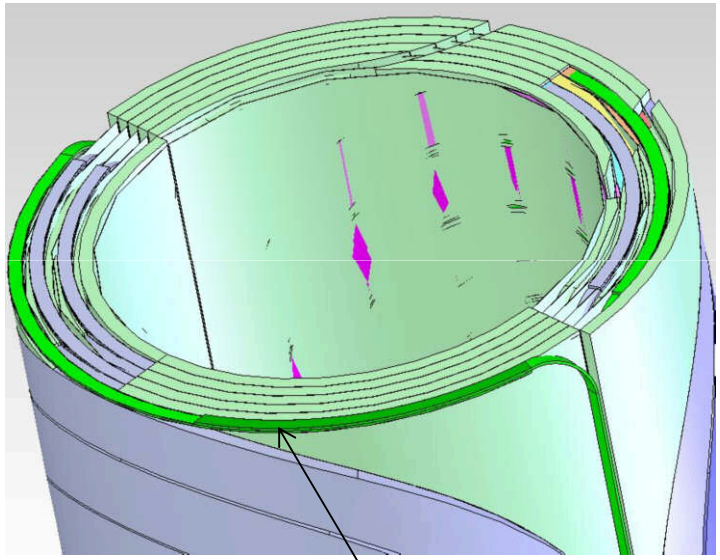
OP 3040,3050,3060,3070,3080 and 3090*(Coil assembly (bonding joint surface))*



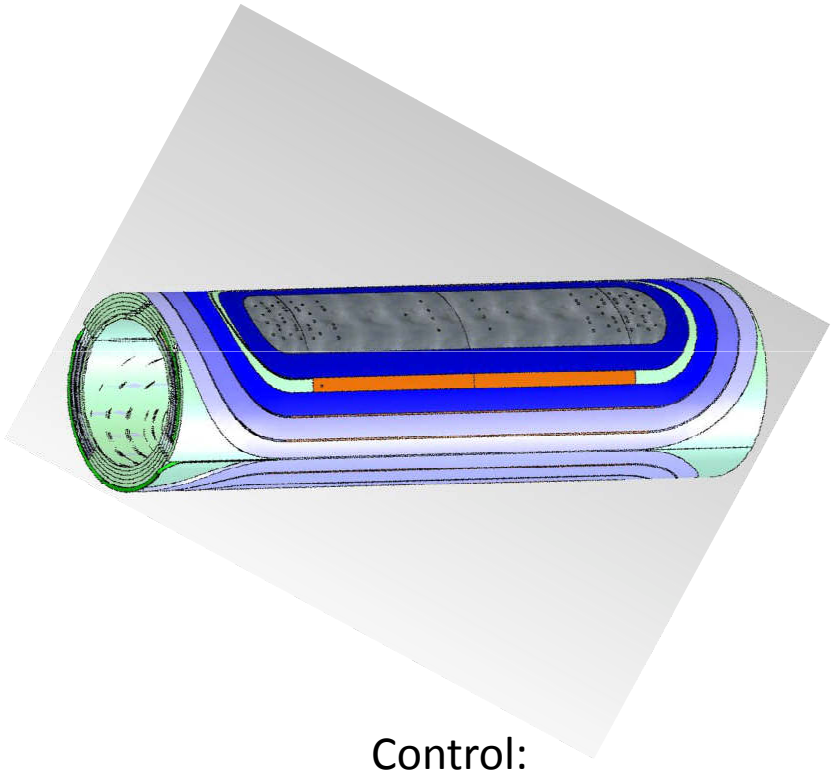
Control: check the cylindricity and the outer diameter

Tools: support #1 + clamps#1

OP 3100 *(coils connection (soldering))*



Connection



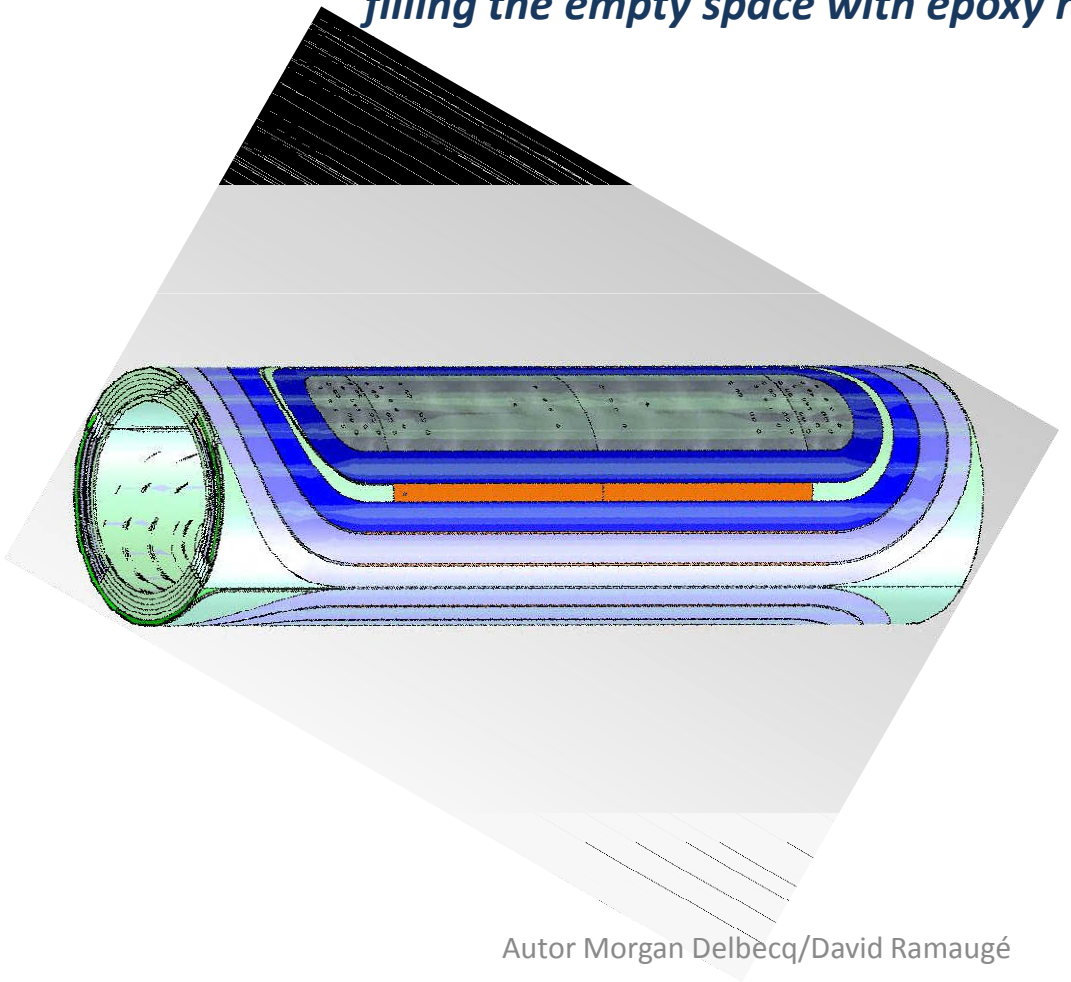
Control:

Tools: support #1 + clamps#1 + shaping tool + soldering tool

MAGNETS AND BEAM TRANSPORT

SHMS PROCESS

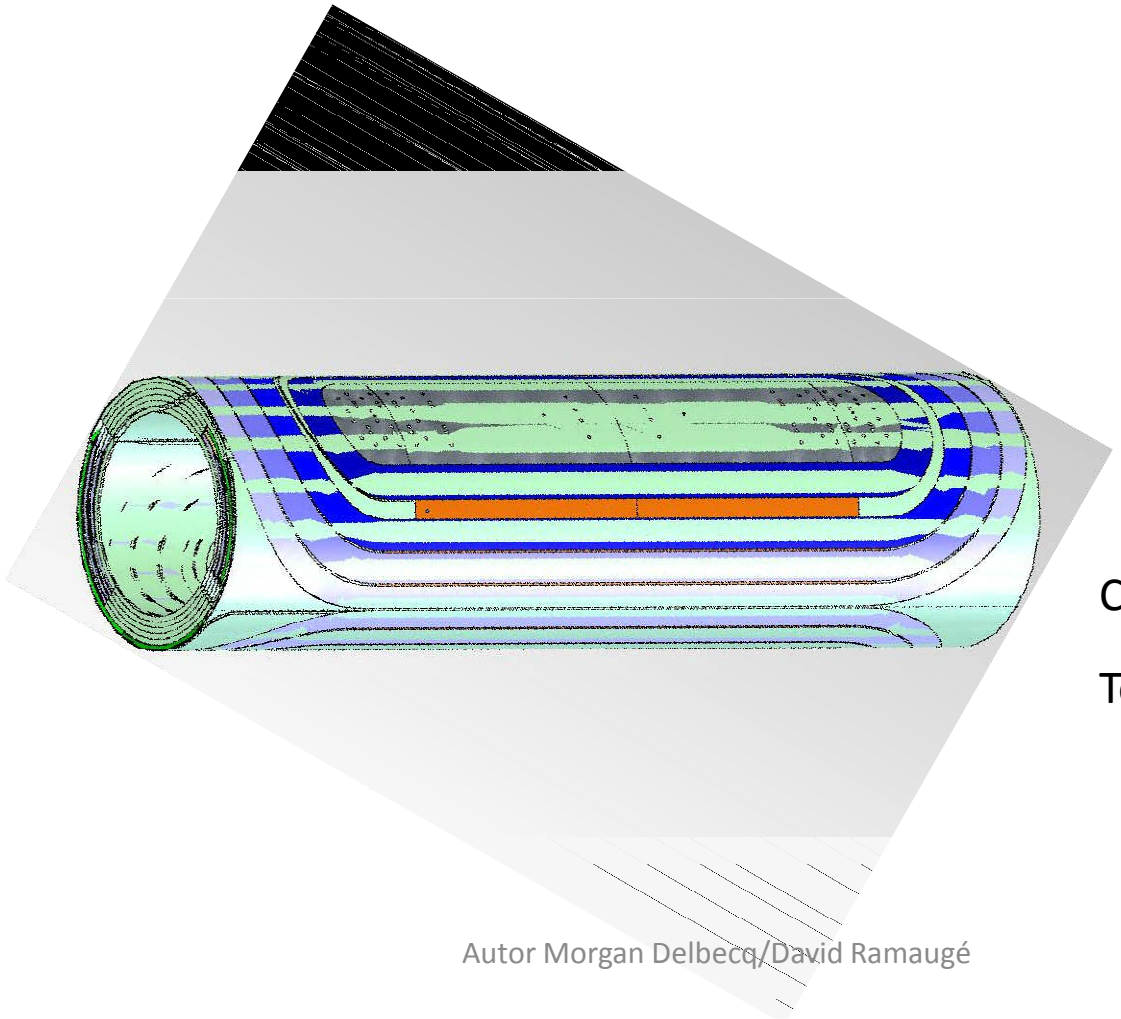
OP 3110 *(Wrapping the connection with Kapton, with B-stage tape or fiber glass tape, positionning the different sensors, positionning the last spacers and filling the empty space with epoxy resin)*



Control: find a referent for machining (to avoid conductor machining)

Tools:

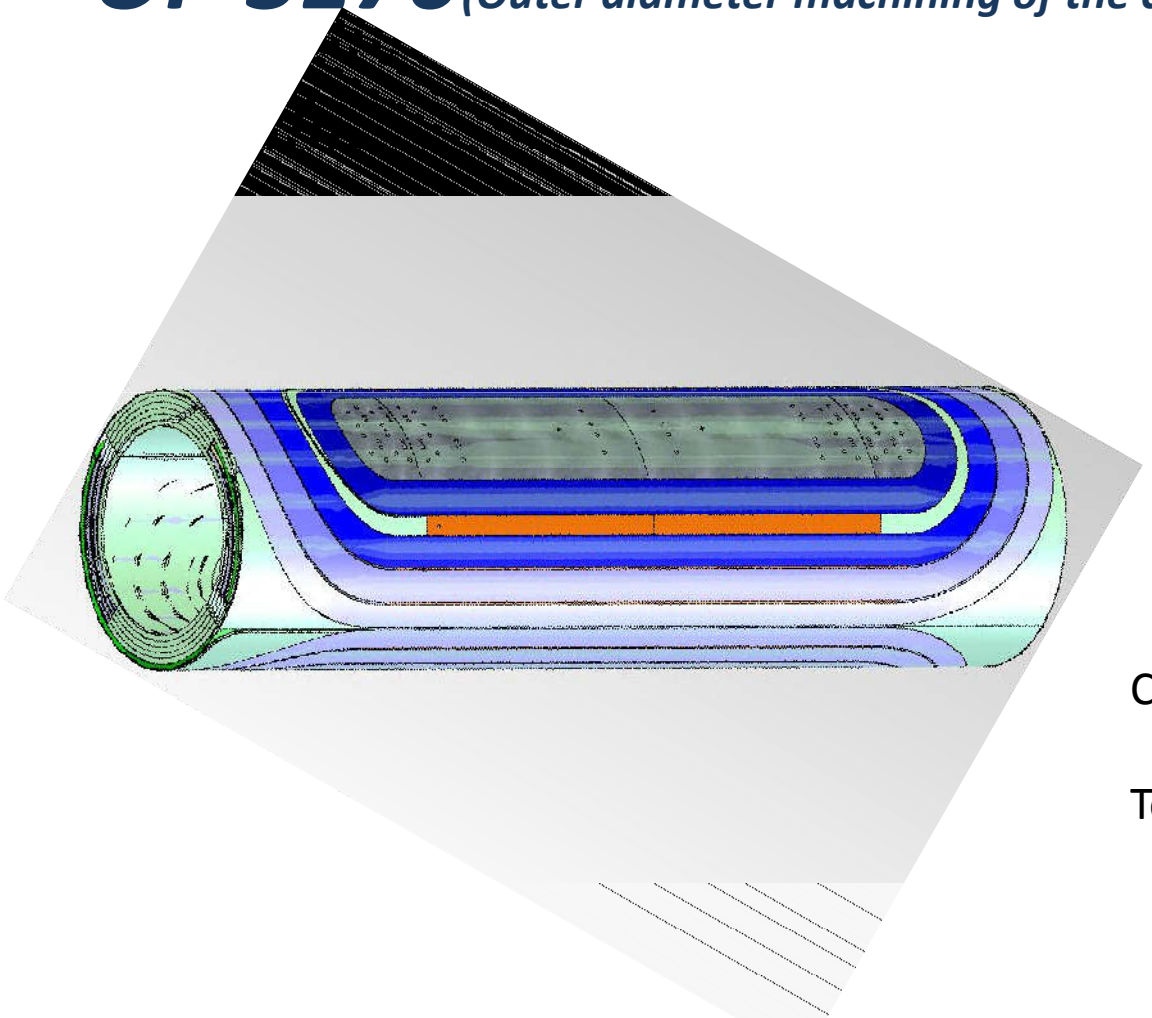
OP 3130, 3140, 3150 and 3160 (Wrapping the assembly with B-stage tape or fiber glass tape and heating)



Control:

Tools:

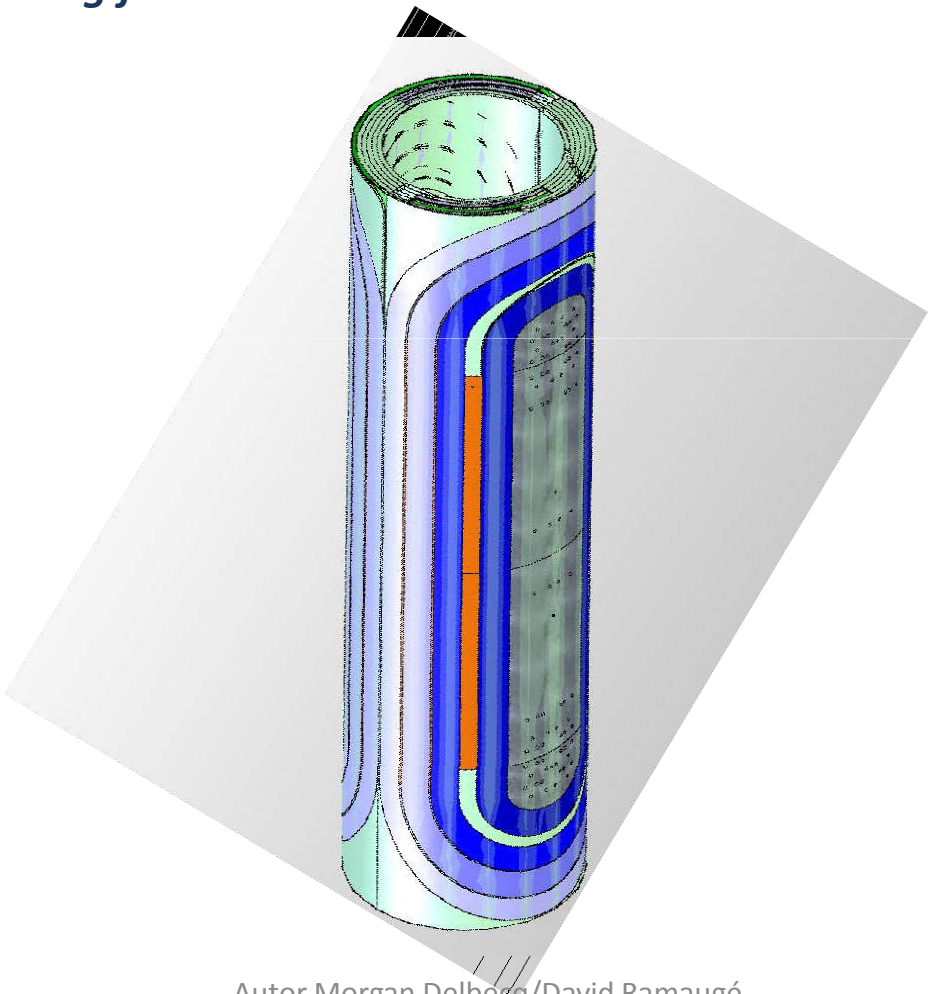
OP 3170 *(Outer diameter machining of the coil assembly)*



Control:

Tools:

OP 4030 and 4040 *(Measure the coil assembly outer diameter to define the ring force inner diameter and the coil assembly 90° rotation)*

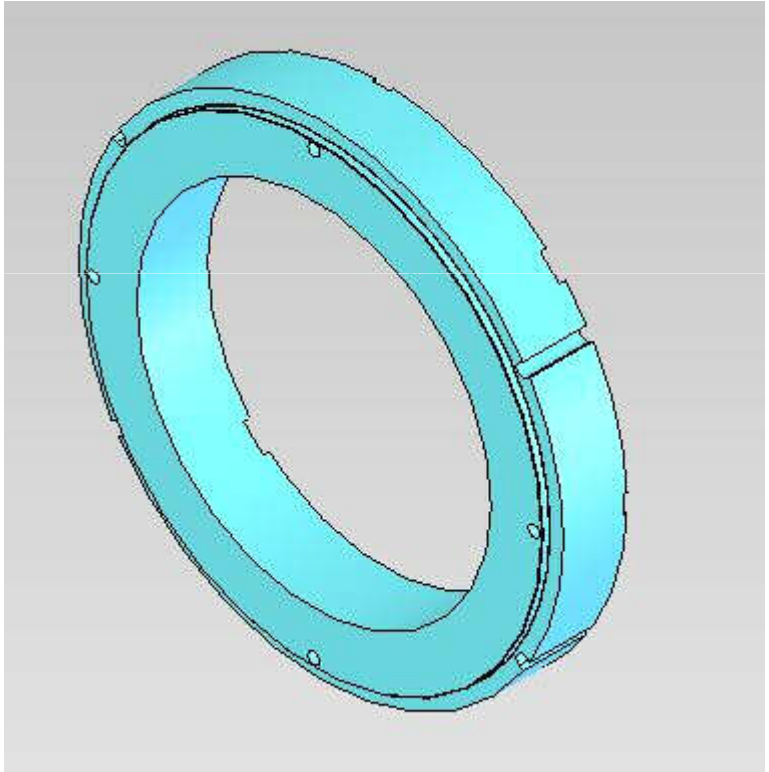


Autor Morgan Delbecq/David Ramaugé

MAGNETS AND BEAM TRANSPORT

SHMS PROCESS

OP 4060(ring force heating)



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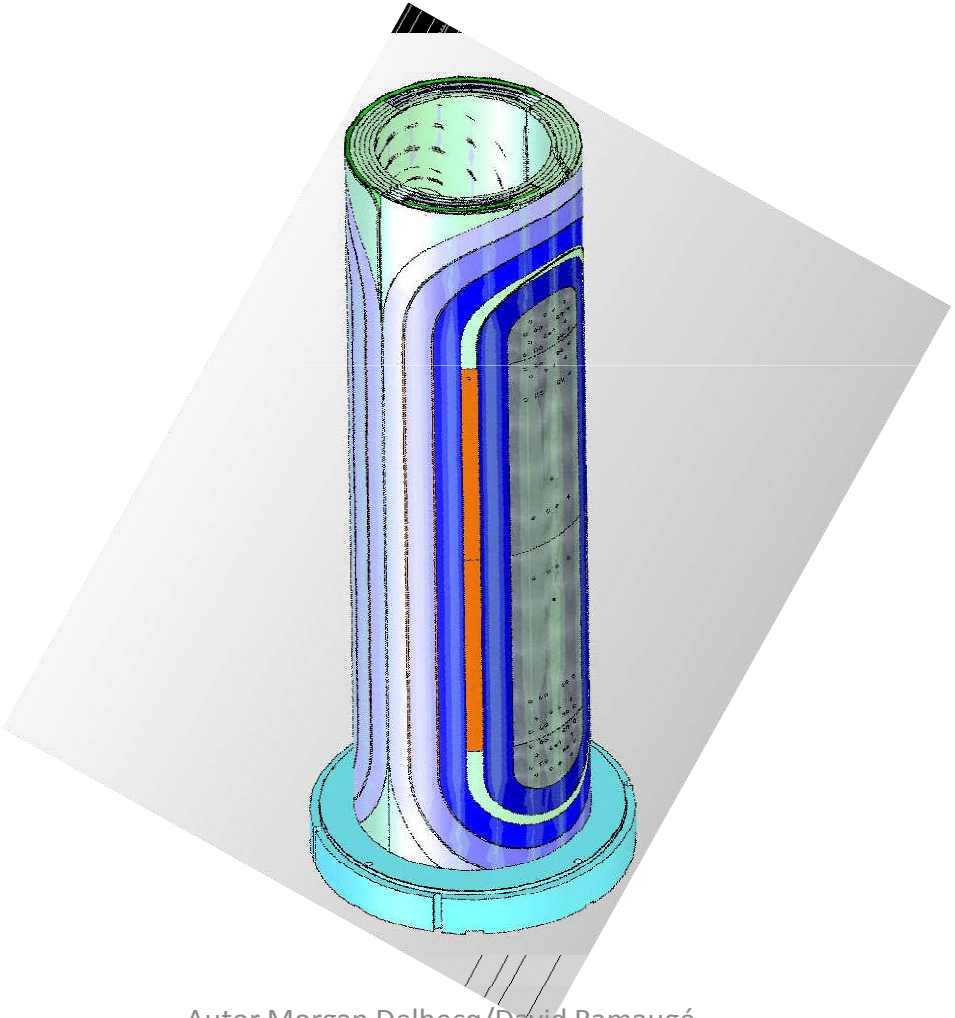
OP 4070 (Positionning the first force ring)



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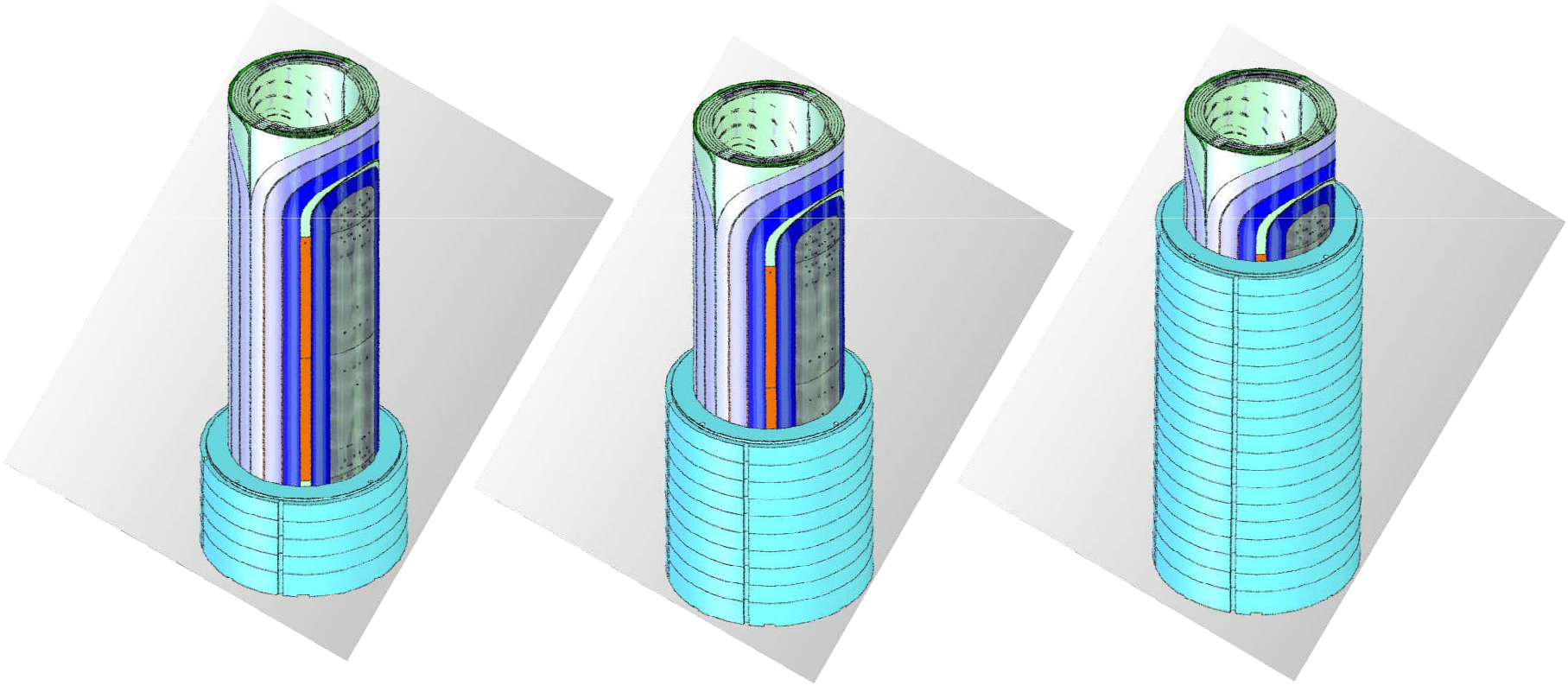
OP 4080 *(Positionning the force rings)*



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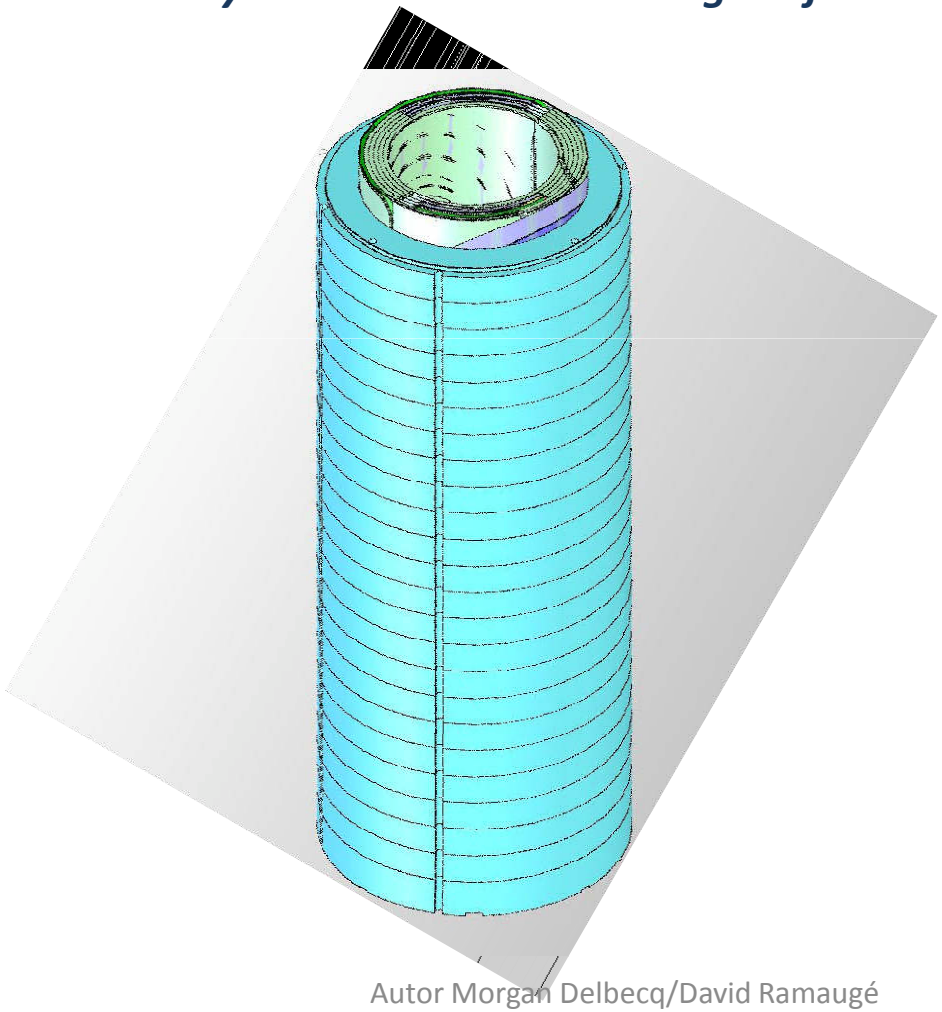
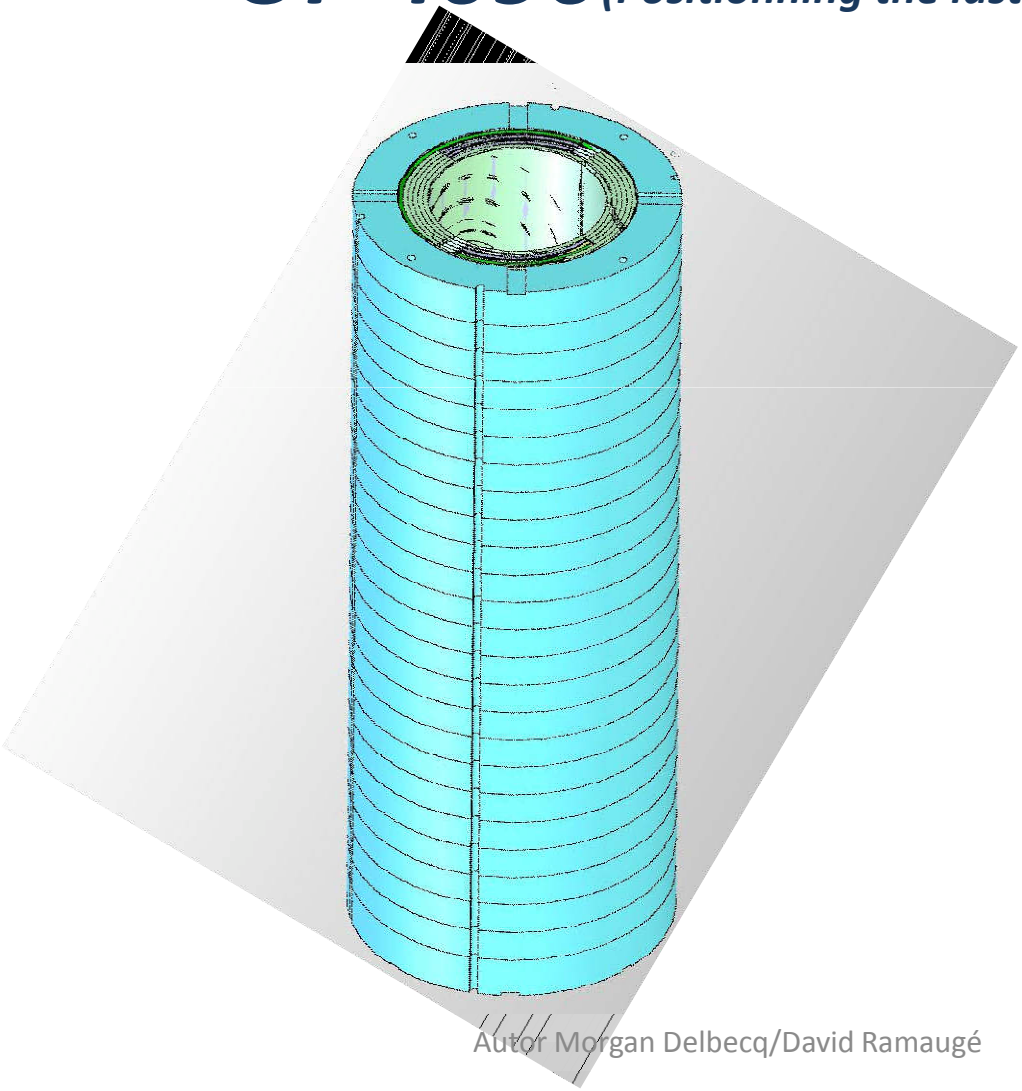
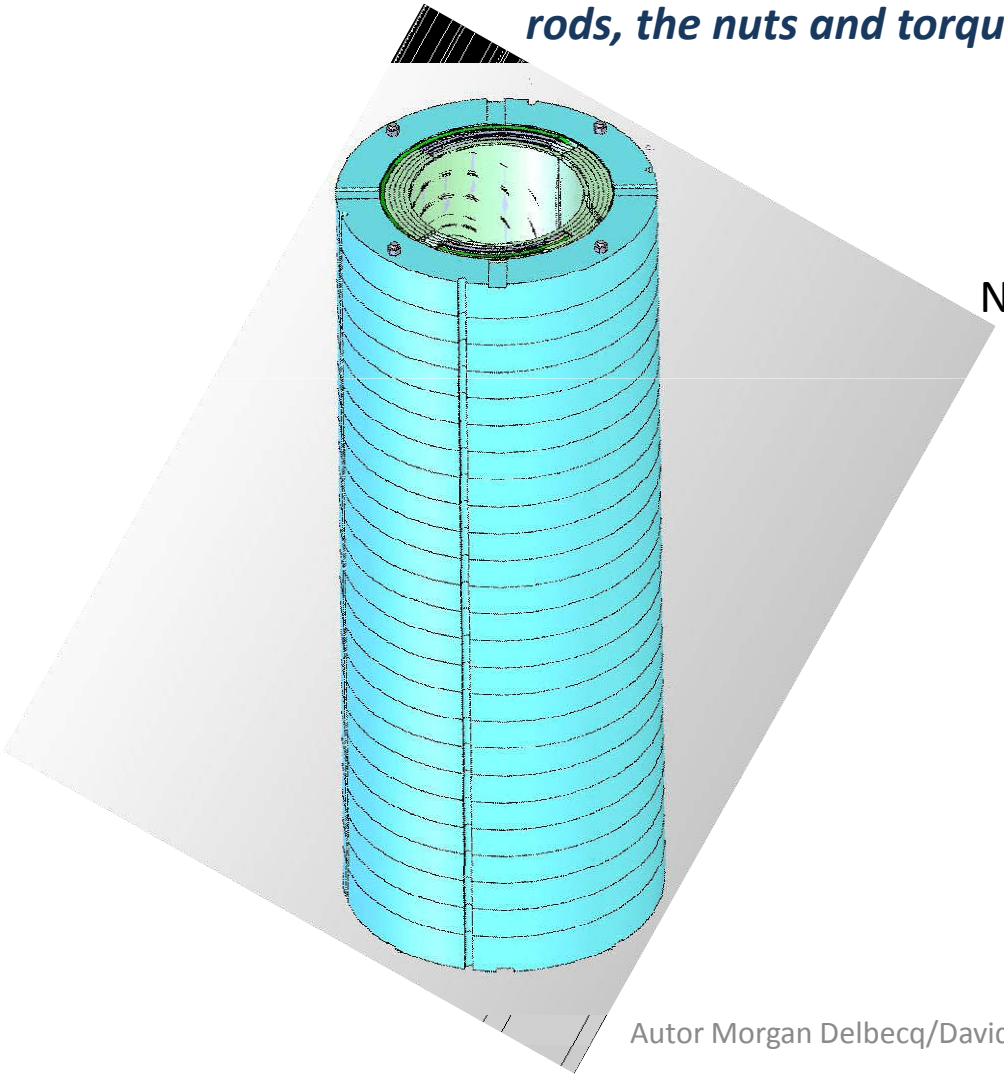
OP 4085 *(measure the height difference between the coil and the force ring assembly to determinate the height of the last force ring)*

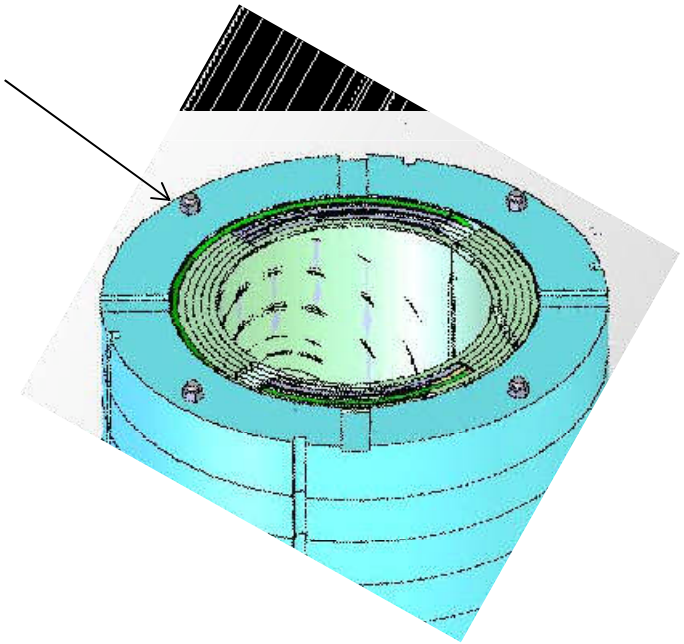


OP 4090 *(Positionning the last force ring)*

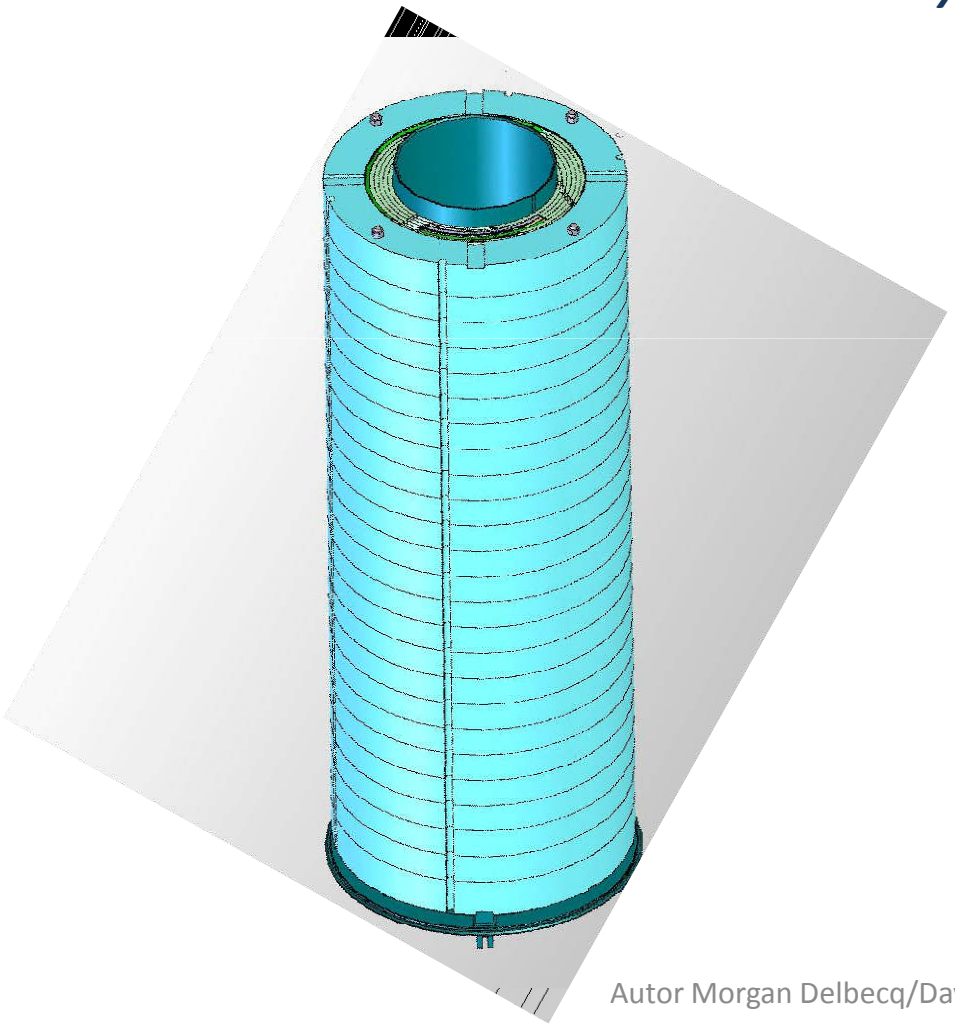


OP 4100, 4110 and 4120 *(Positionning the threaded rods, the nuts and torque tightening)*



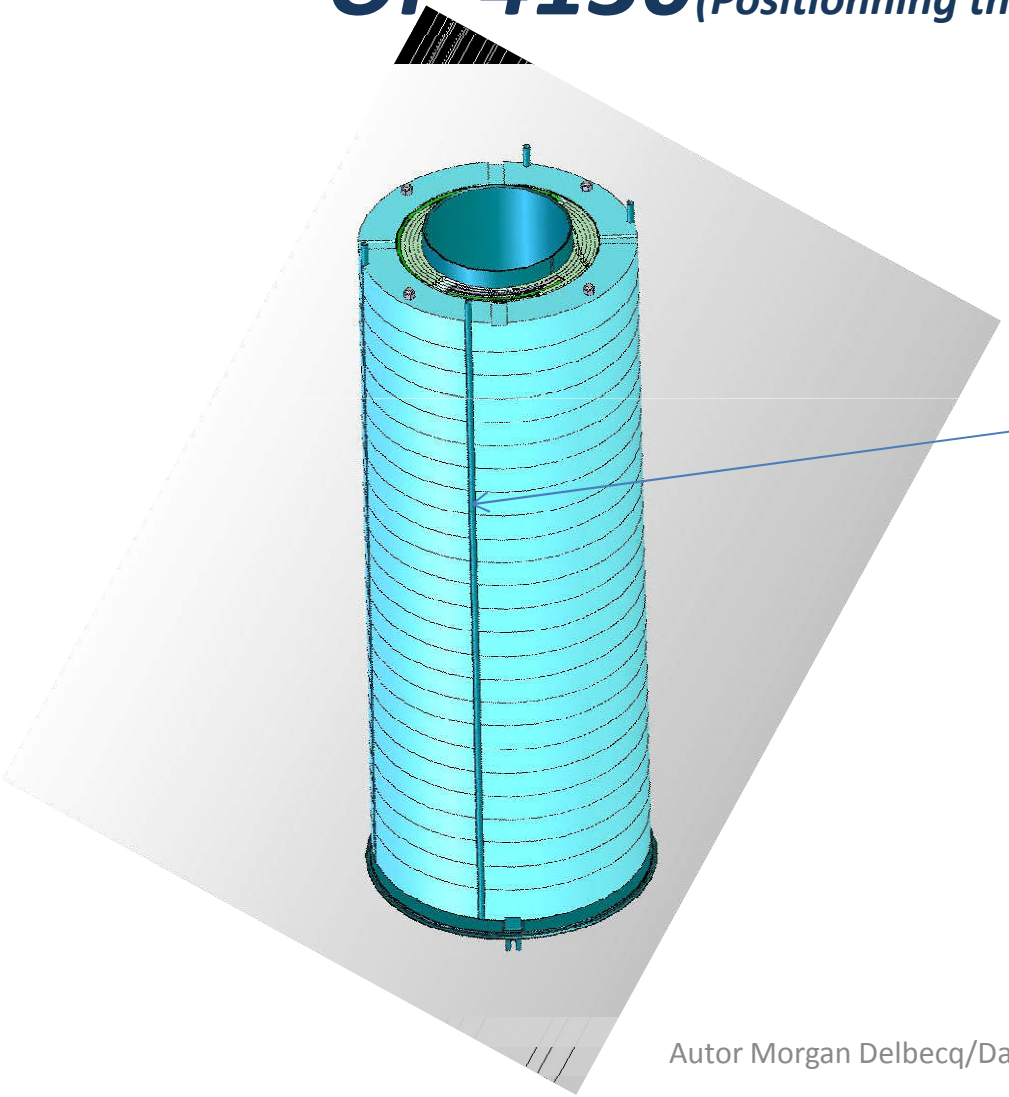


4125 *(Positionning Helium inner tube inside with flange inside the ring force assembly)*



Autor Morgan Delbecq/David Ramaugé

OP 4130 *(Positionning the pipe for the helium inlet)*



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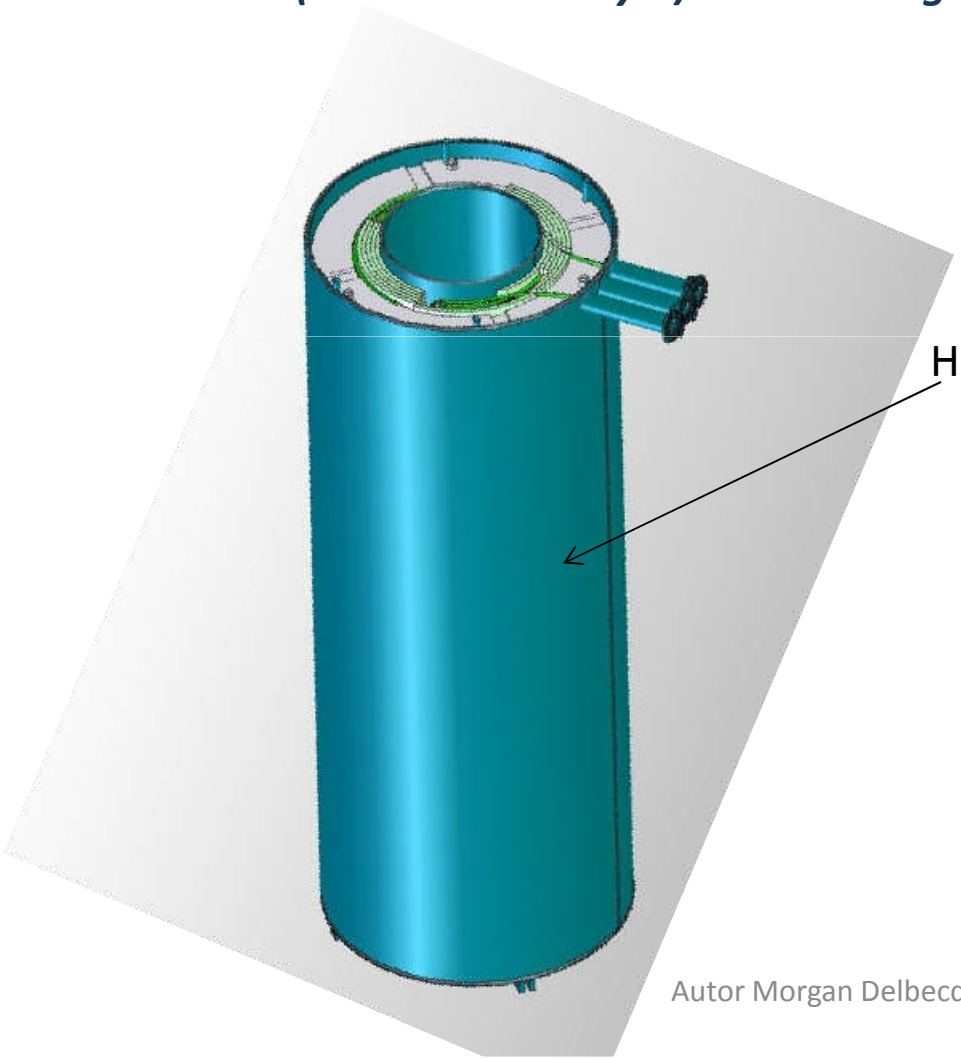
OP 4140 and 4150 *(Positionning the Helium vessel outer tube (with « cheminey ») and welding the flange with the outer tube)*



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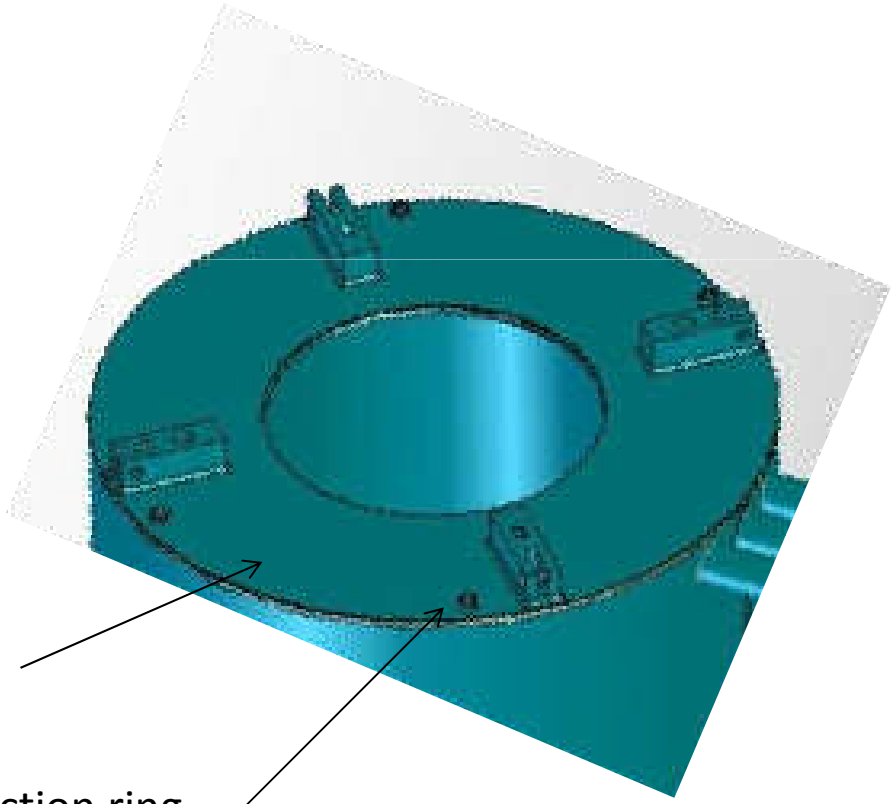
OP 4180, 4190 and 4200 *(Flange positionning and Connection ring welding then flange welding)*



Autor Morgan Delbecq/David Ramaugé

MAGNETS AND BEAM TRANSPORT

SHMS PROCESS

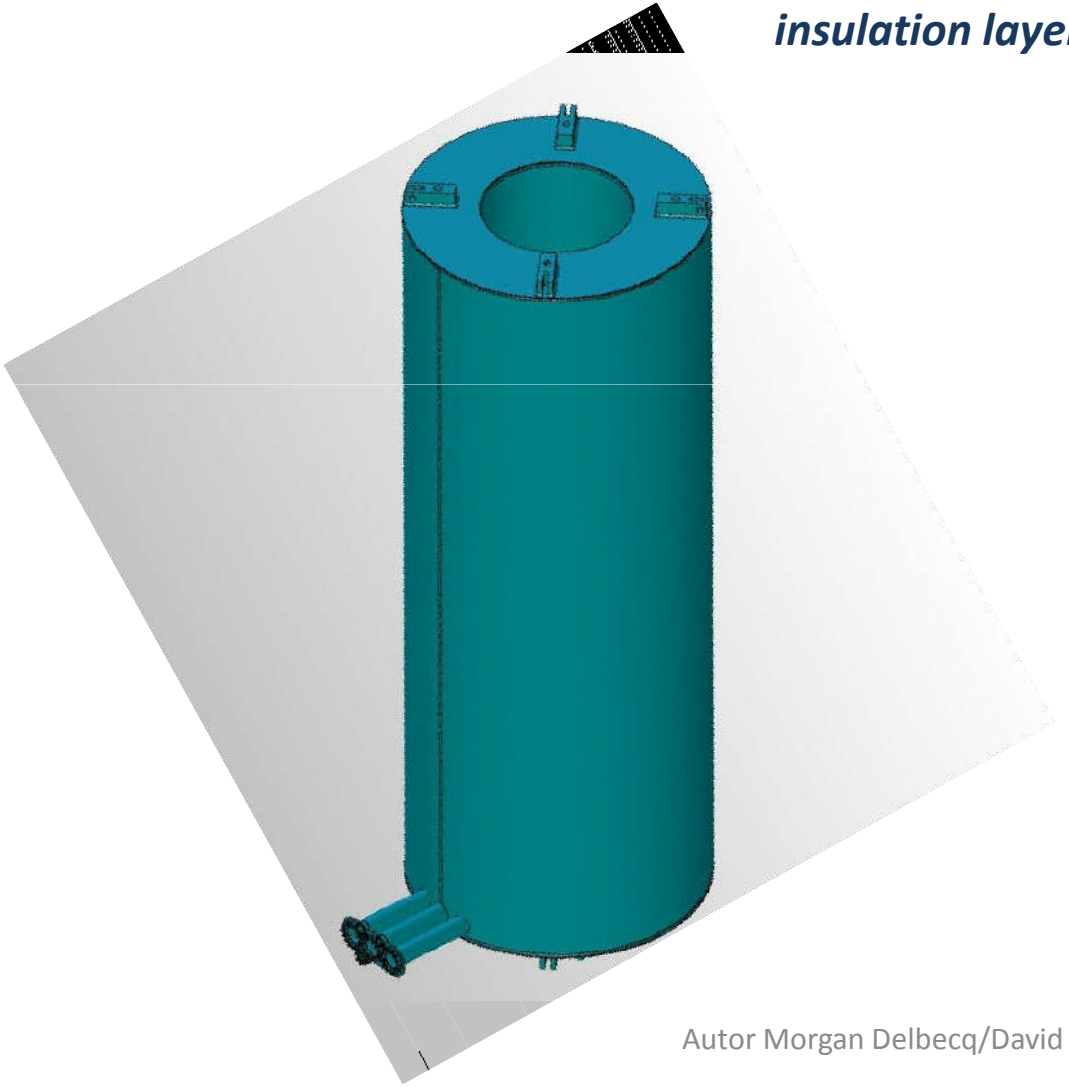
OP 4210, 4220 and 4230 (Pipe for helium inlet welding and closing the cheminey to avoid pollution)

Autor Morgan Delbecq/David Ramaugé

Control: helium leakage test, dye penetrant test, radiography or ultrasonic test, pneumatic pressure test

Tools:

OP 5010 et 5020 *(180° rotation and positionning 10 super insulation layers)*



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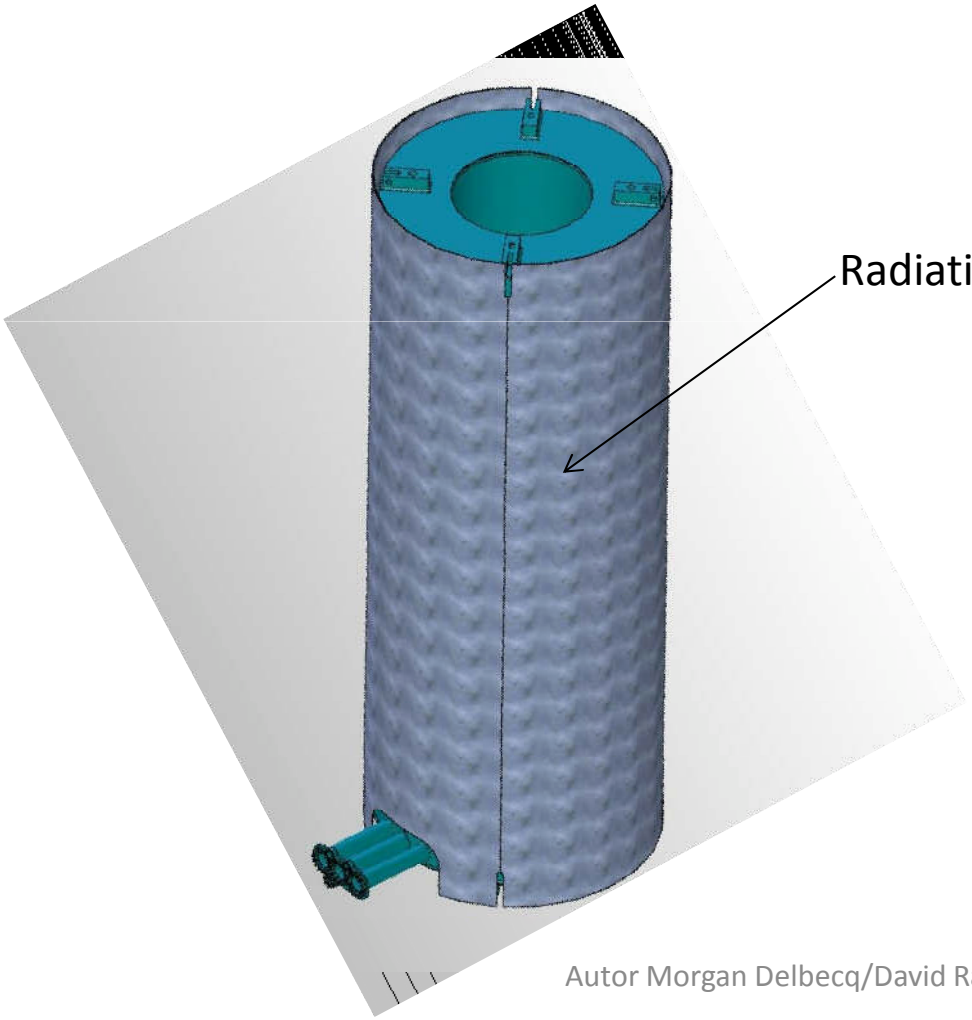
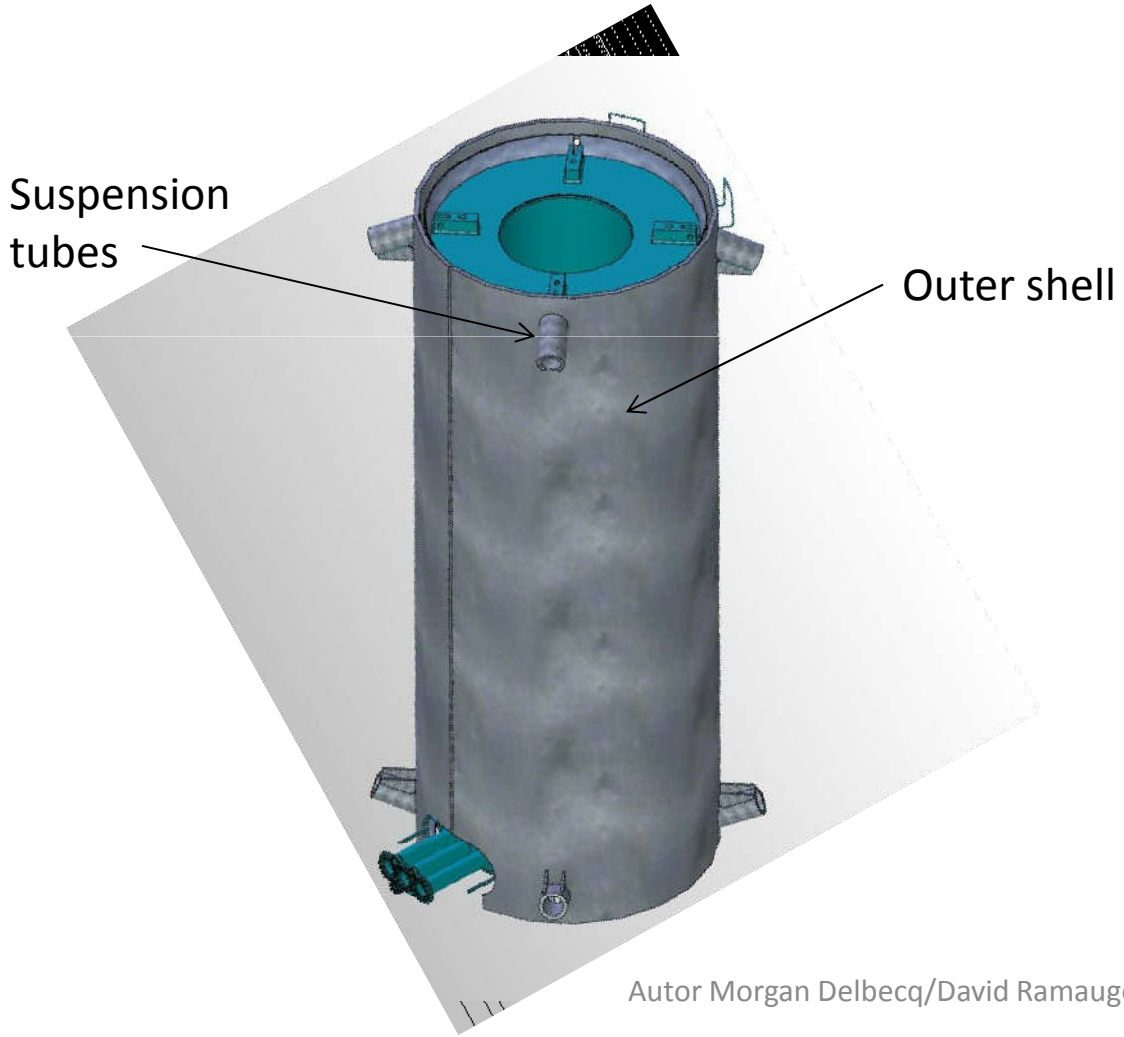
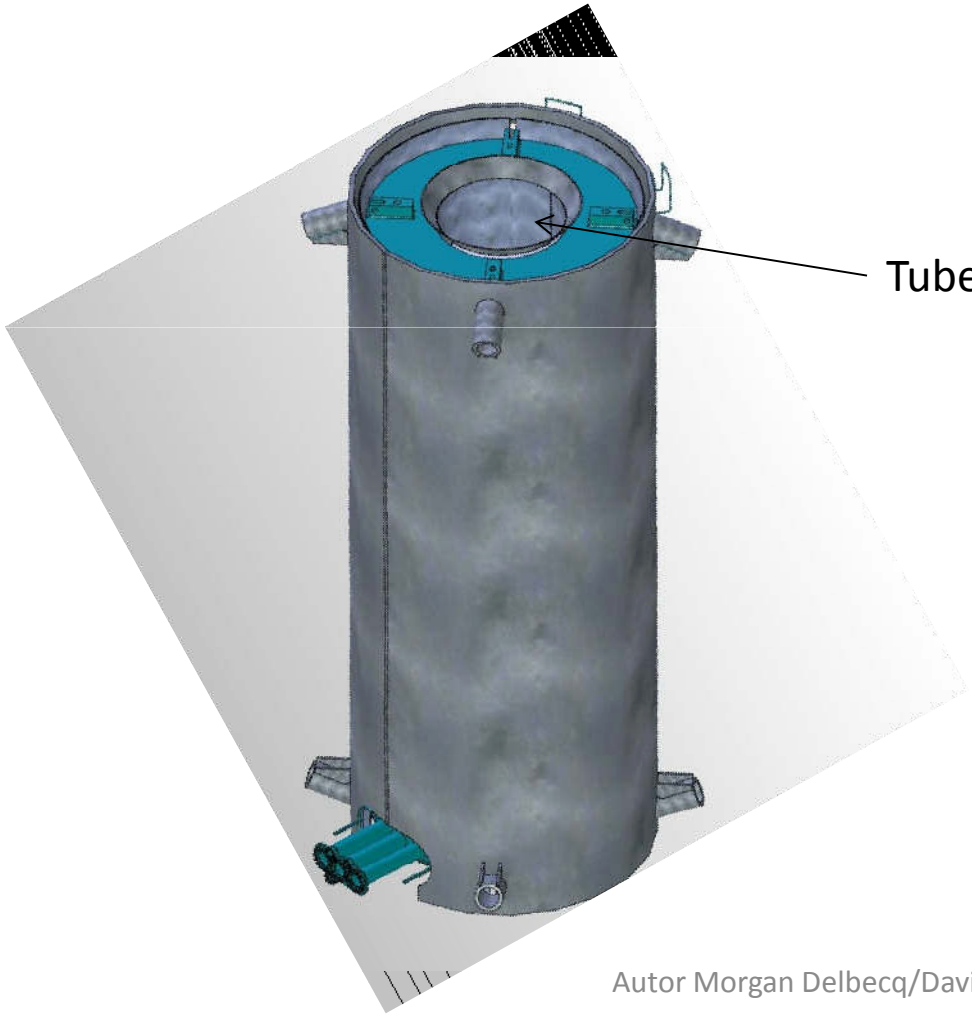
OP 5030 and 5040 *(Positionning the 4 Radiation Screen outer pannels and 40 super insulation layers)*



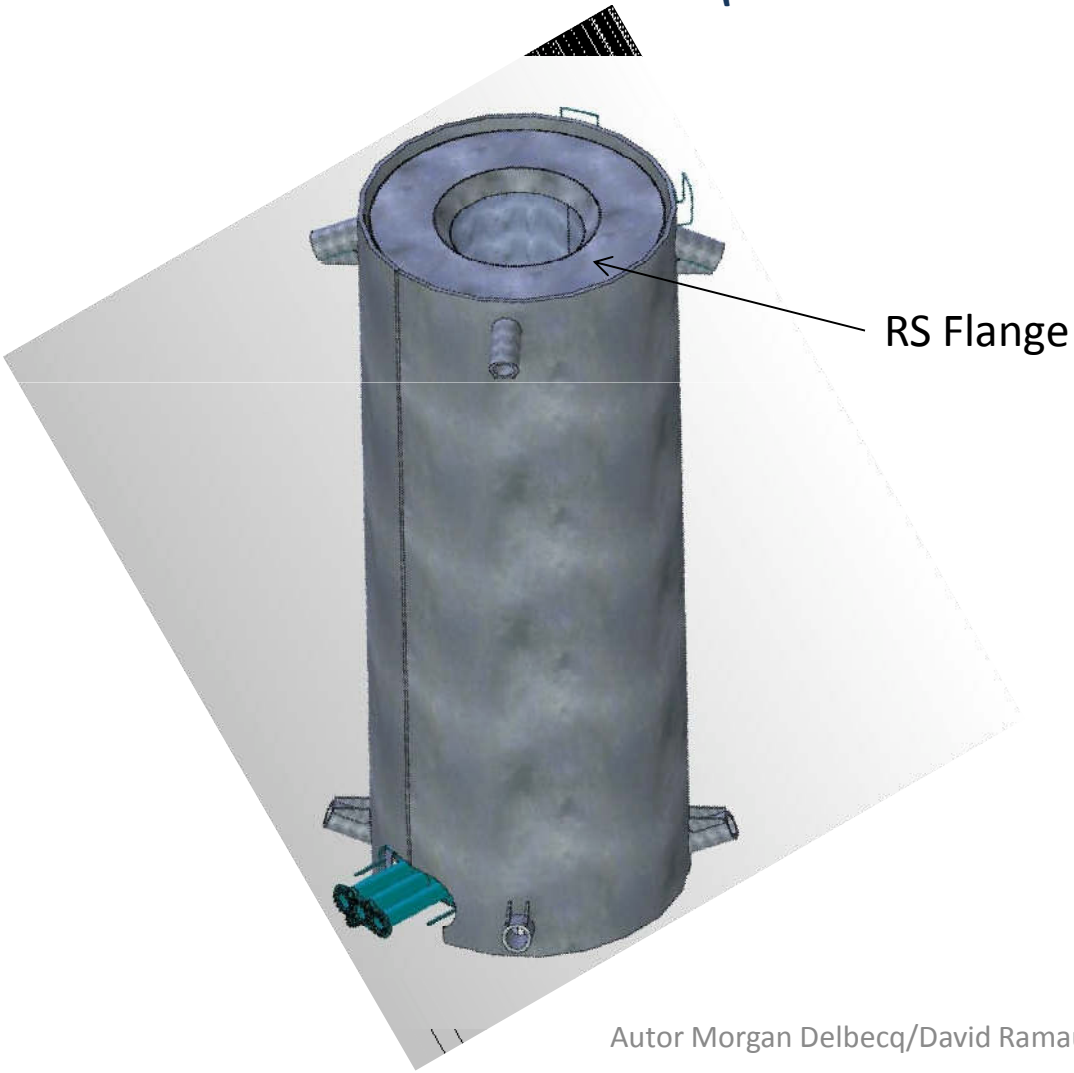
OP 5050 *(Positionning the outer shell outer tube (with suspension tubes)*



OP 5060 *(Positionning the RS inner tube with it cone (with around 10 super insulation layers)*



OP 5070 *(Radiation Screen flange welding)*



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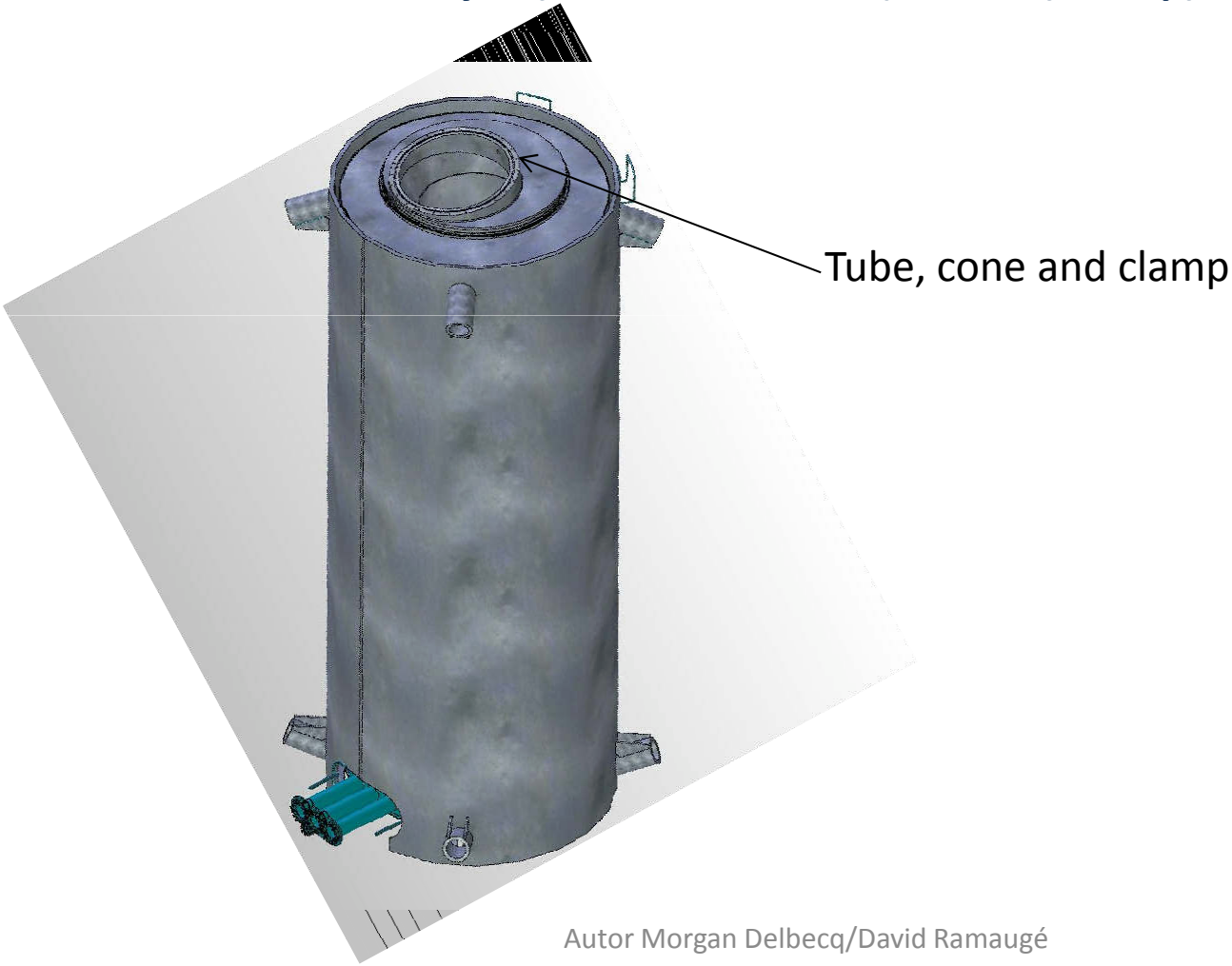
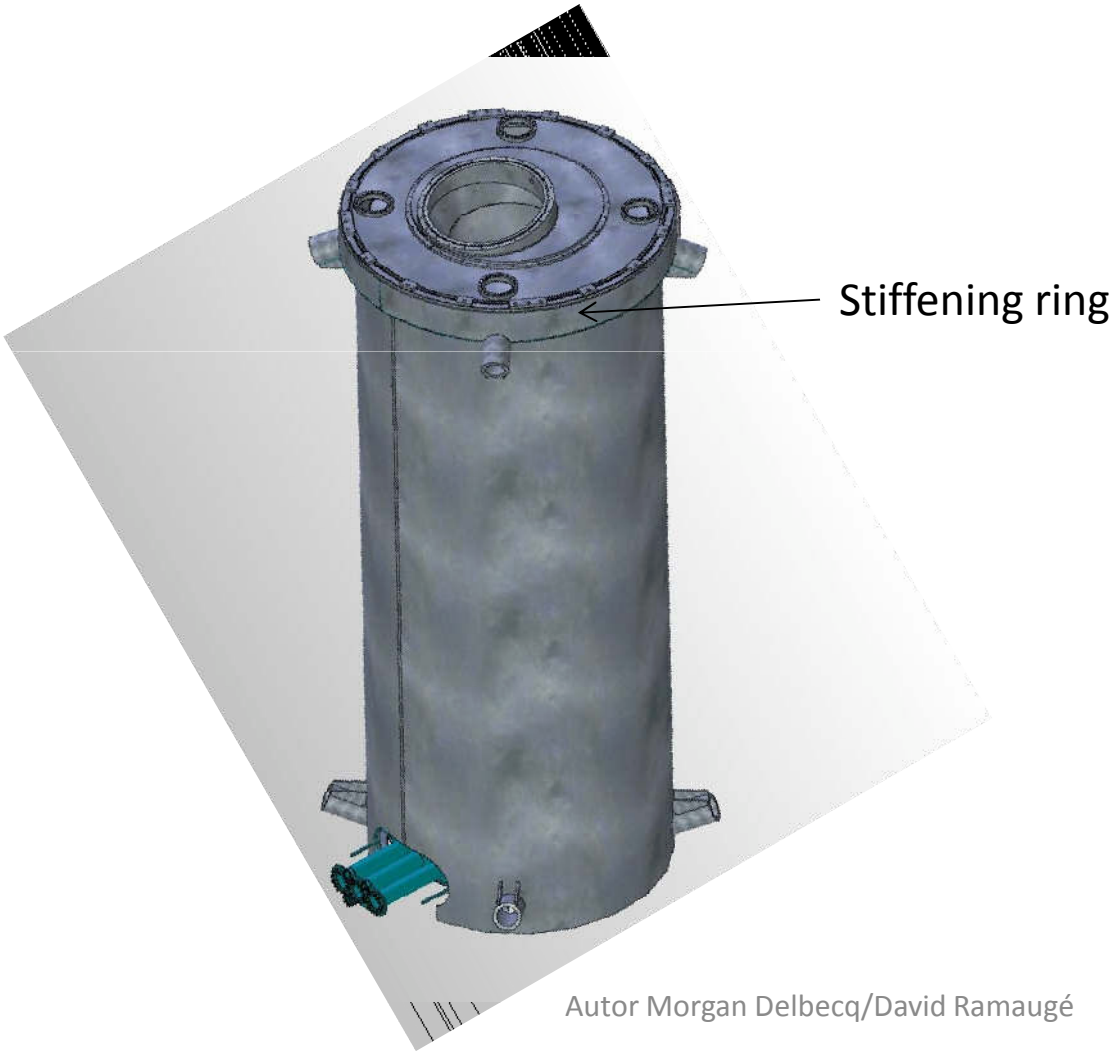
OP 5080 *(Positionning the outer shell inner tube(with 40 super insulation layers) with it cone and (701-011) clamp)*



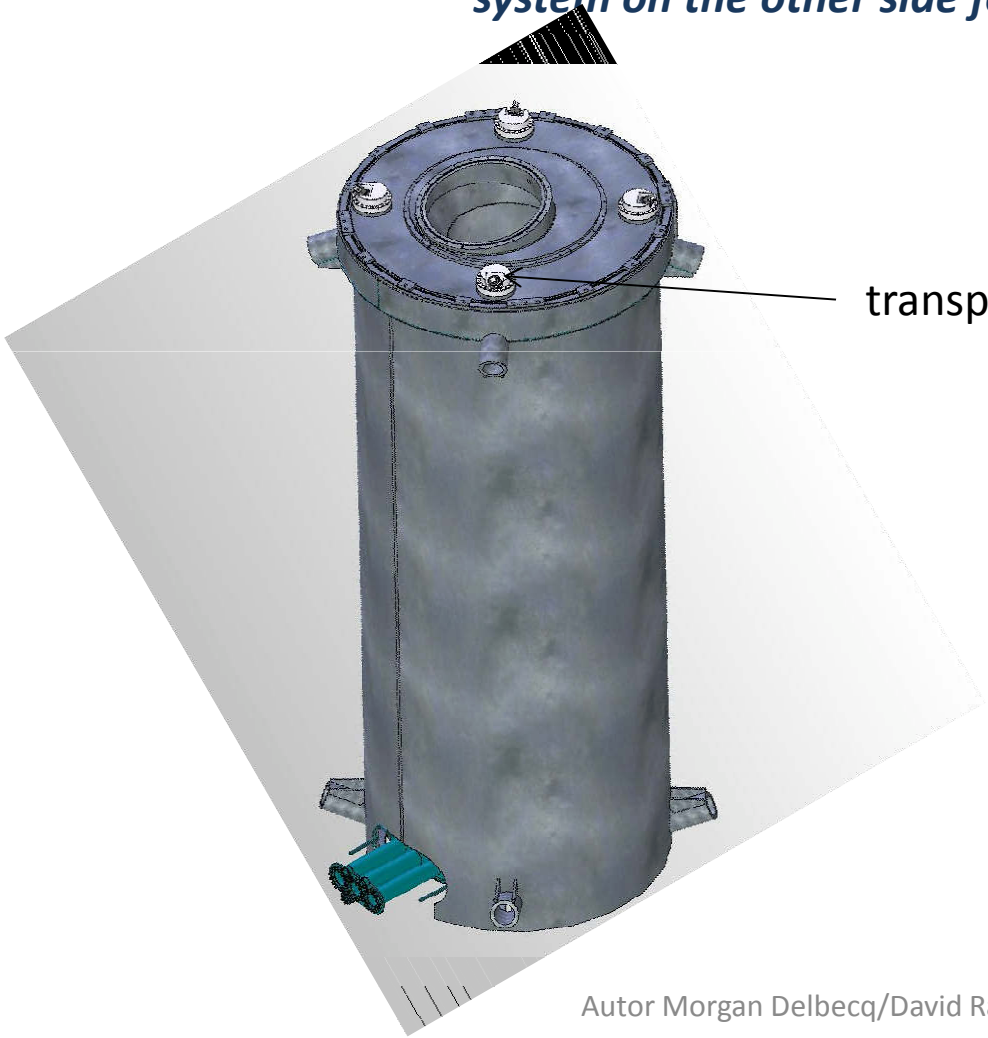
OP 5090 *(Outer shell flange welding)*

Autor Morgan Delbecq/David Ramaugé

OP 5100 *(Stiffening ring and pad welding)*



OP 5110 *(Positionning the transport flange and clampling with temporary system on the other side for rotation)*



OP 5120(180° rotation)

Autor Morgan Delbecq/David Ramaugé

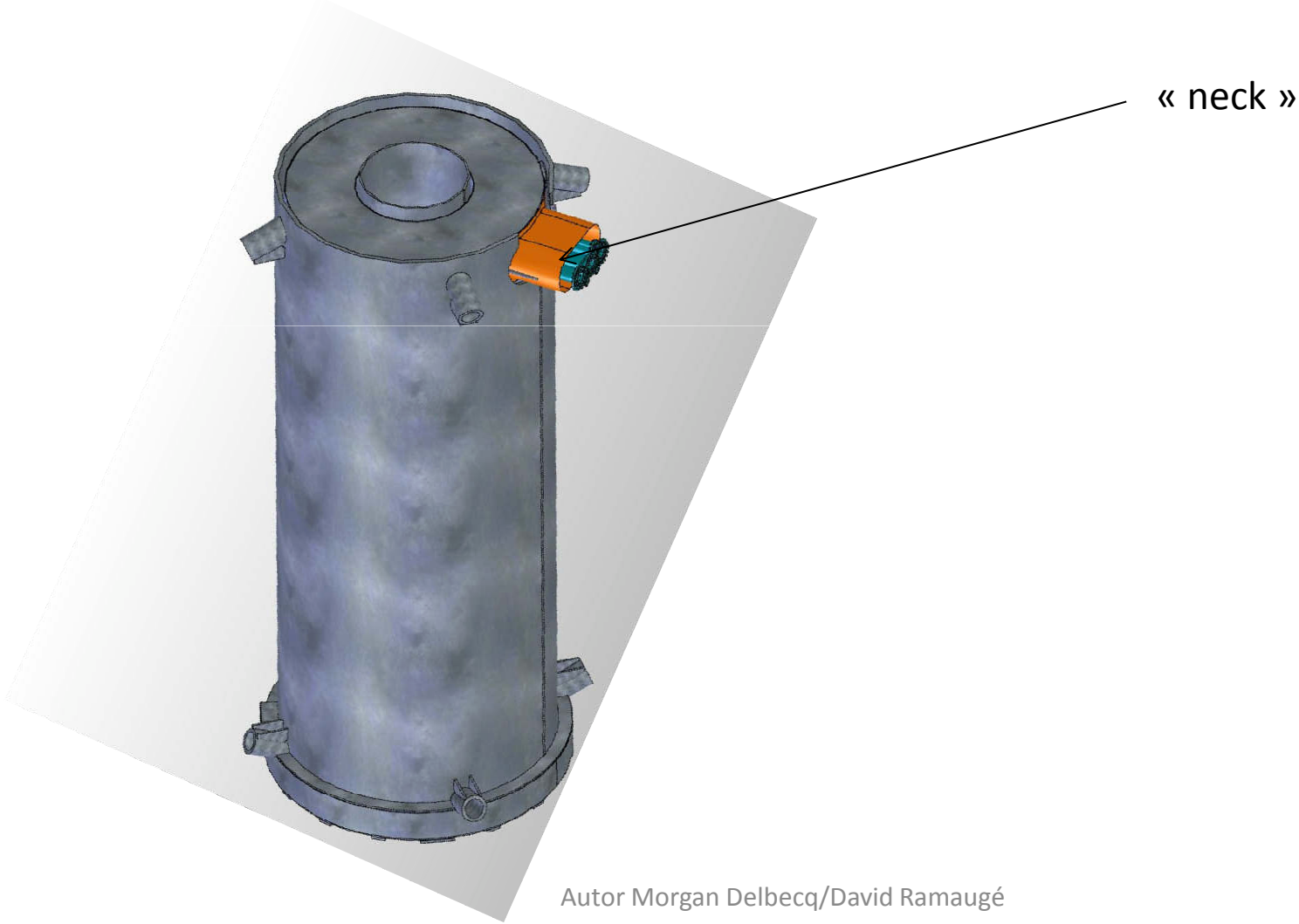
MAGNETS AND BEAM TRANSPORT

SHMS PROCESS

OP 5130 and 5140*(Last RS flange welding and RS hydraulic connection)*

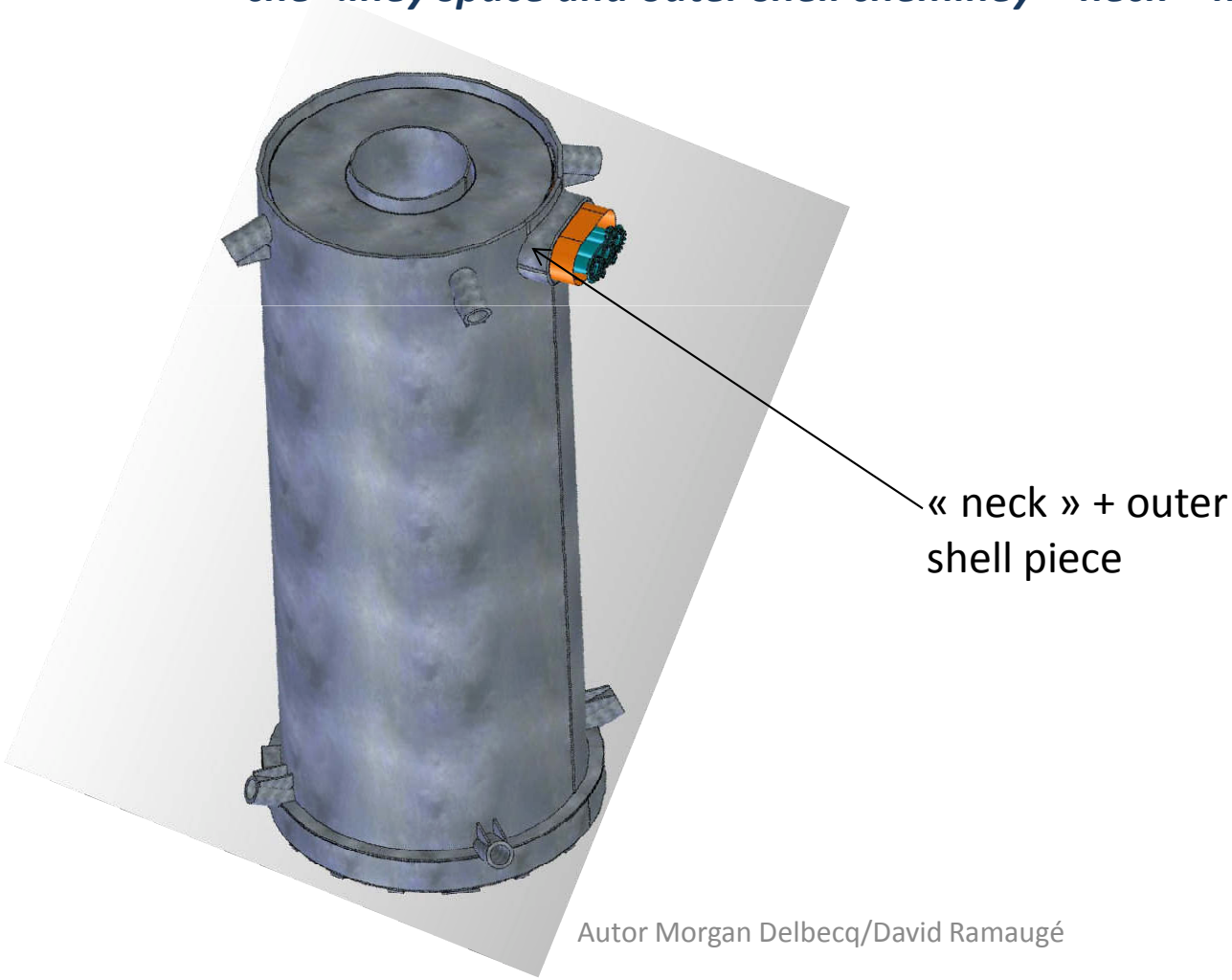
Autor Morgan Delbecq/David Ramaugé

OP 5150 *(Copper « neck » assembly on the Radiation Screen)*



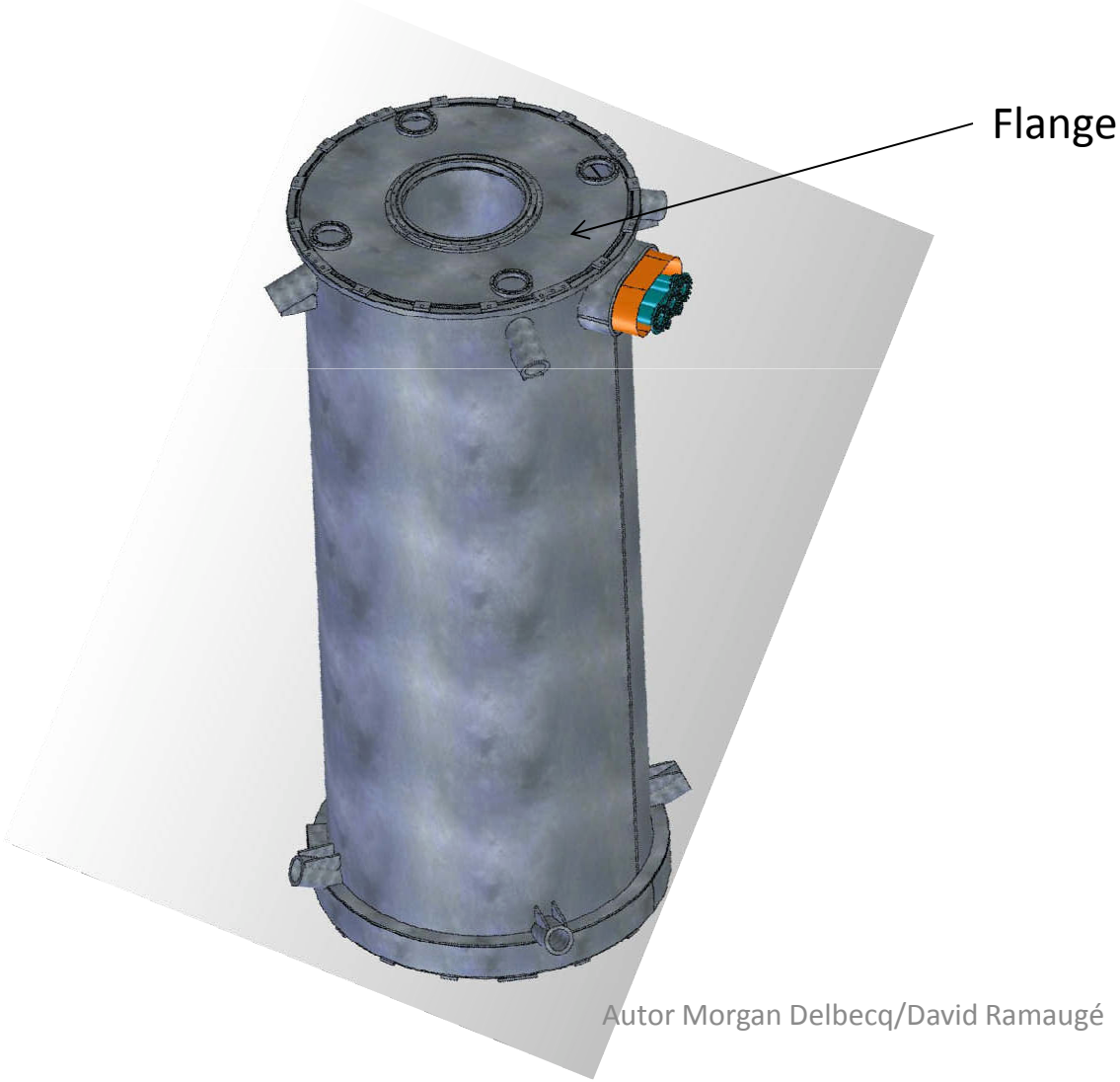
Autor Morgan Delbecq/David Ramaugé

OP 5160 and 5170 (Positionning the closing of the outer shell cheminey space and outer shell cheminey « neck » mounting)



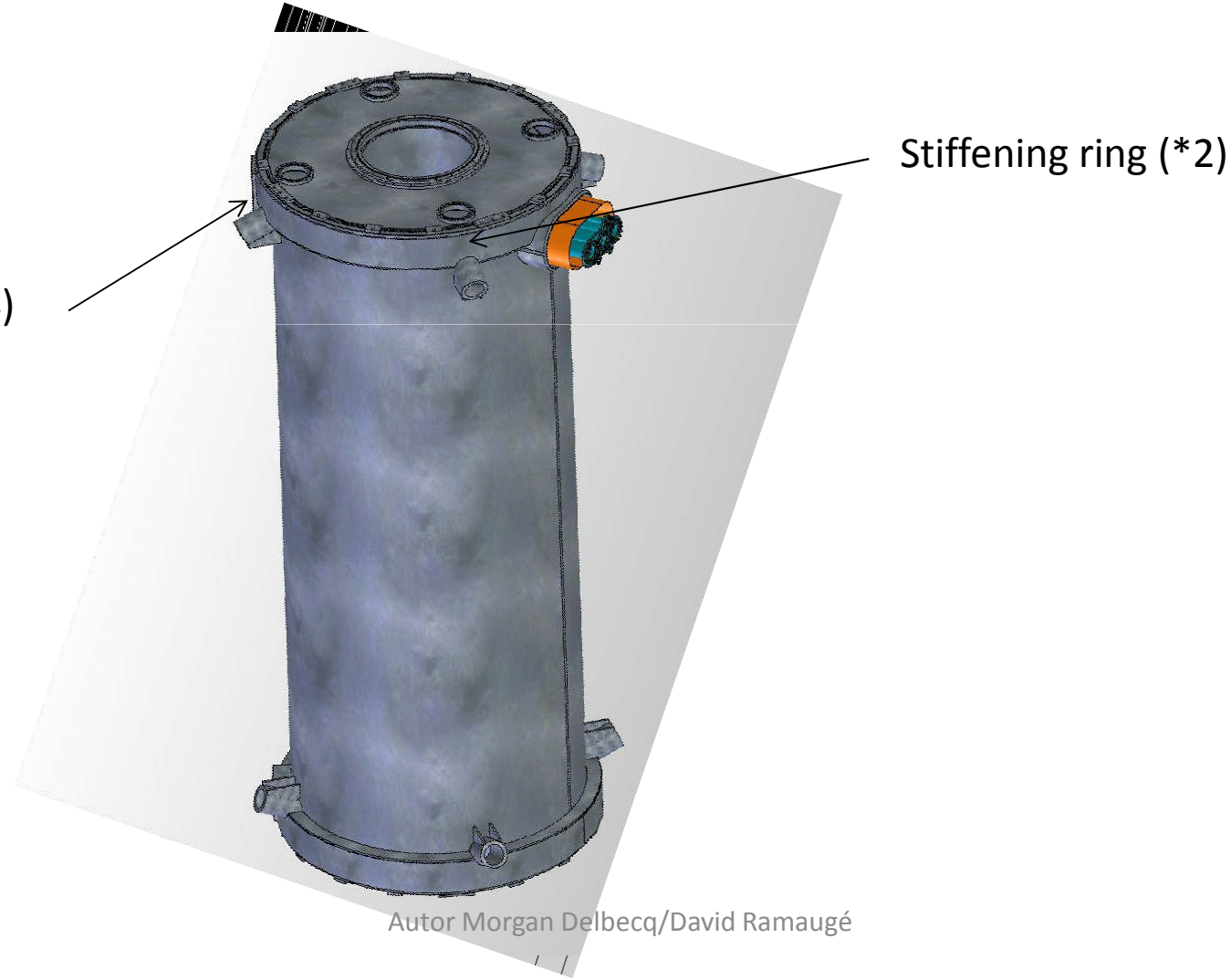
Autor Morgan Delbecq/David Ramaugé

OP 5180 *(Outer shell flange welding)*

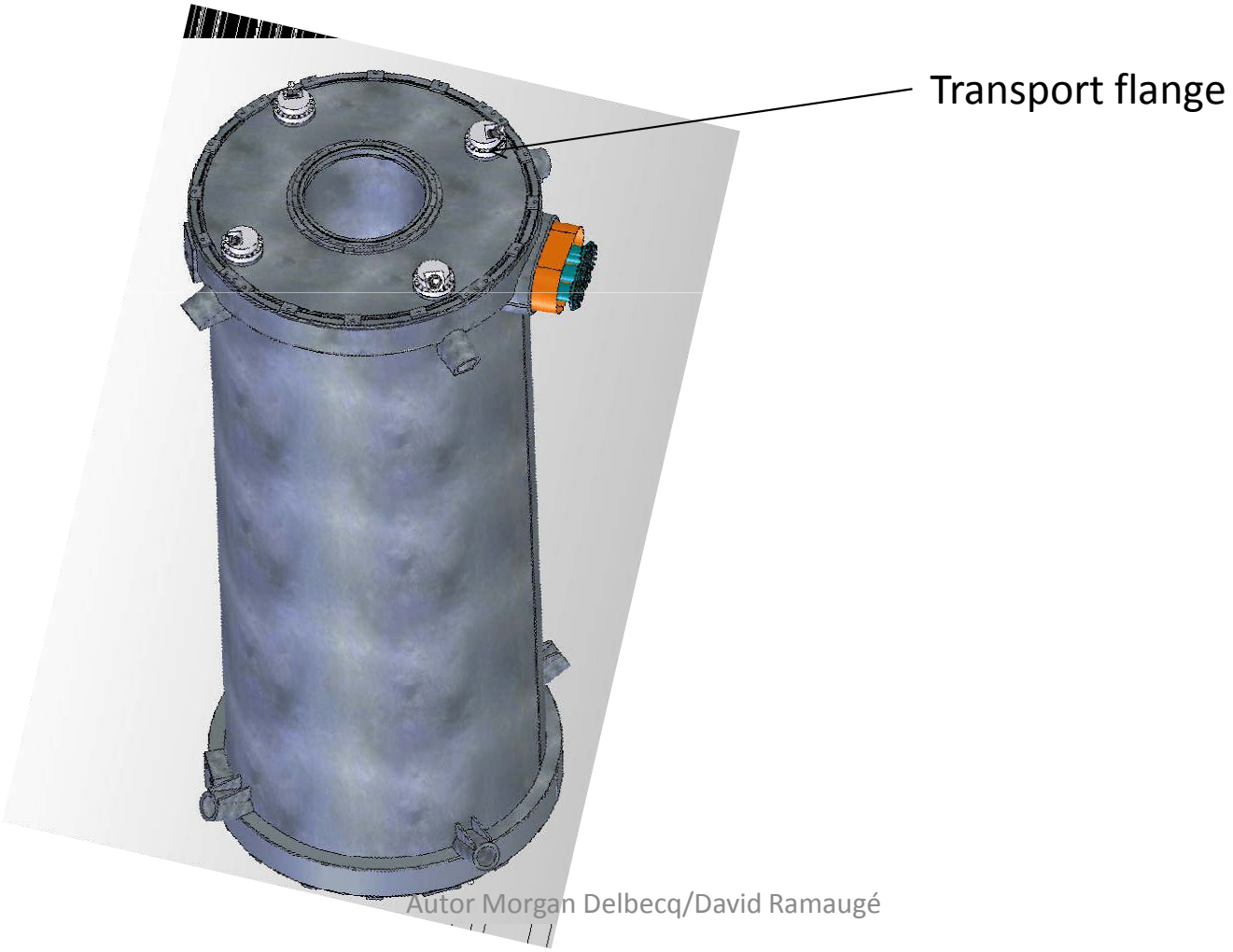


Autor Morgan Delbecq/David Ramaugé

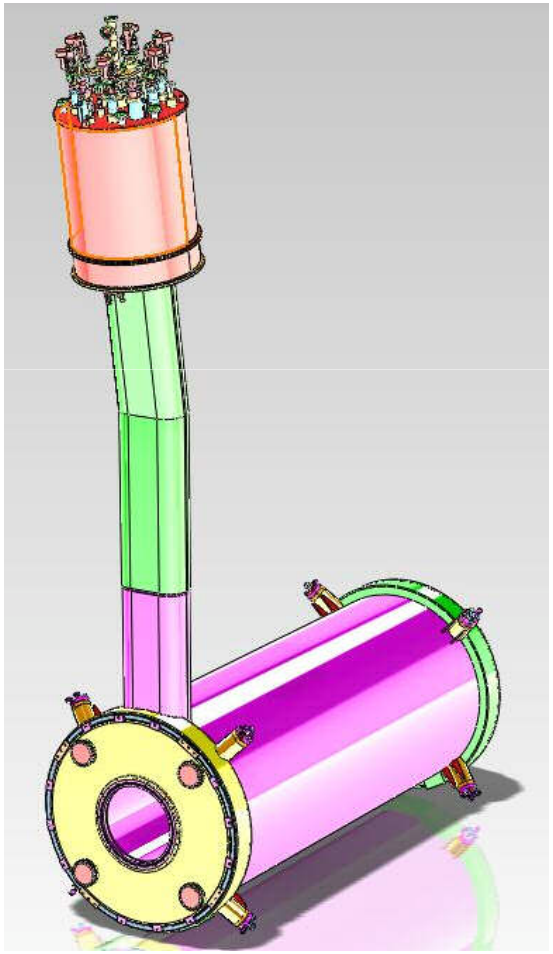
OP 5190 *(Stiffening ring and pad welding)*



OP 5200 *(Positionning the transport flange for rotation)*



OP 5210 (Jlab installation)



Autor Morgan Delbecq/David Ramaugé