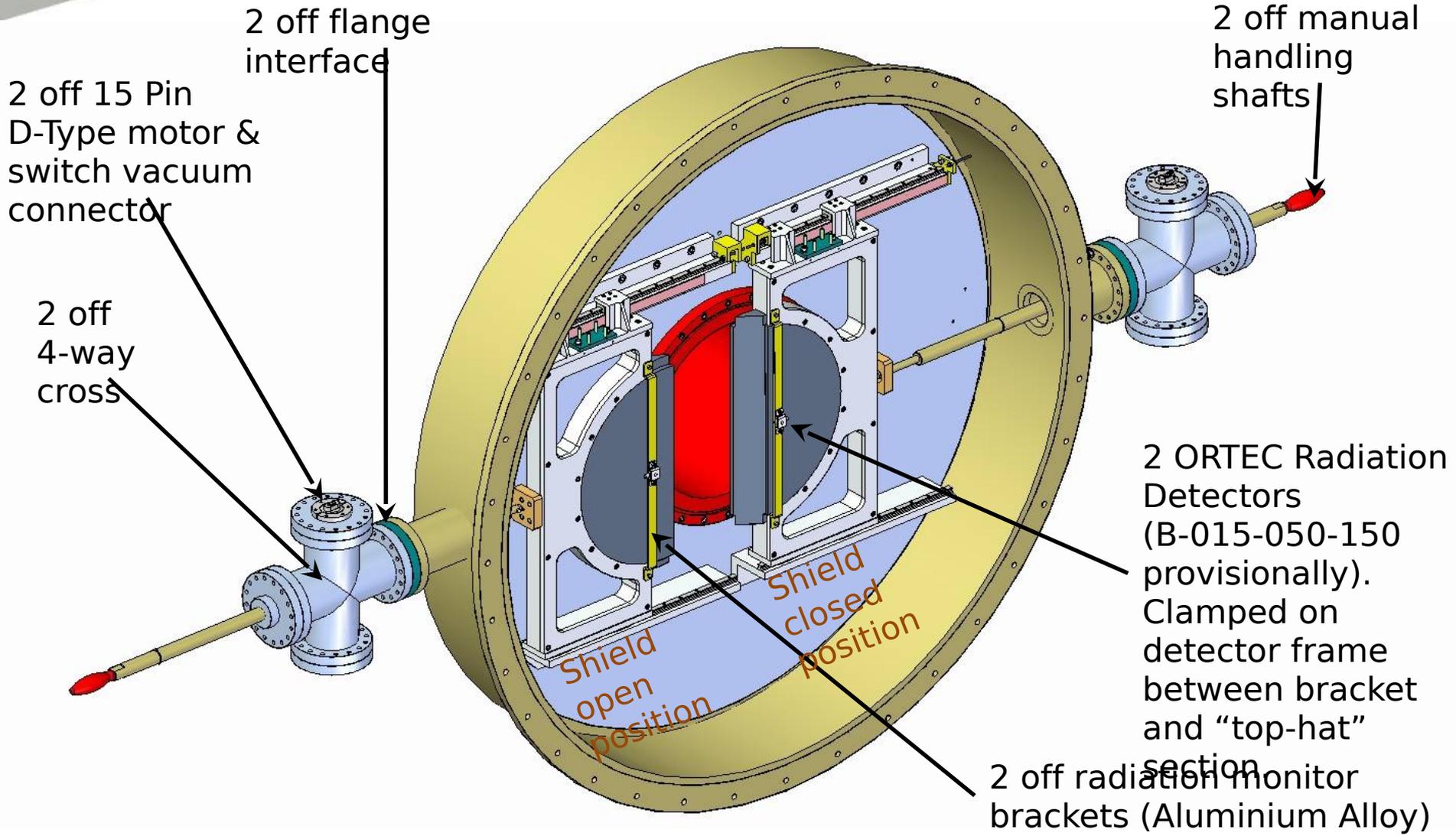


MICE Radiation Shield – Radiation Monitor



MICE Radiation Shield – Radiation monitor associated components

Some components depend on the decision to house the amplifier inside or outside the vessel.

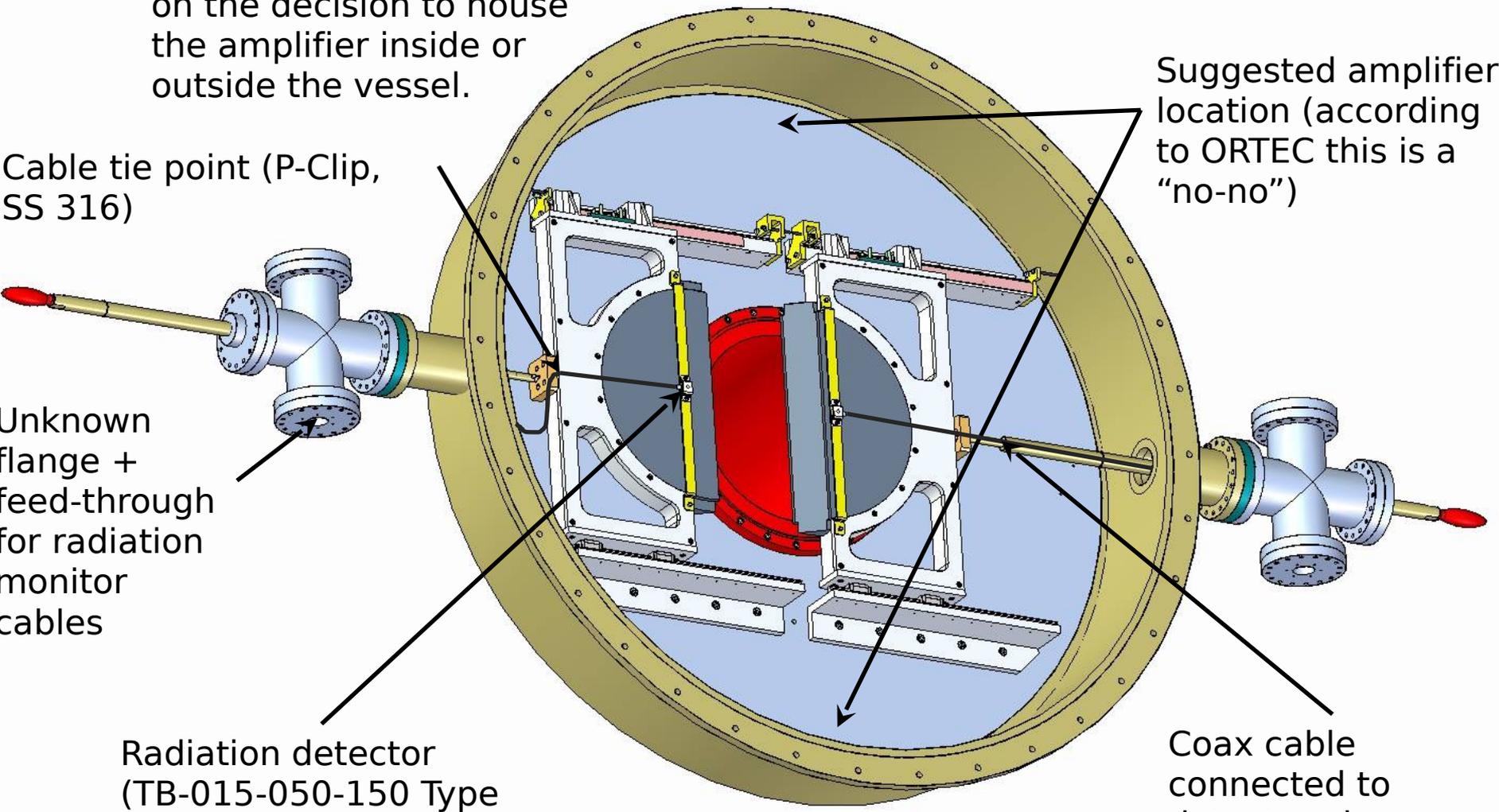
Suggested amplifier location (according to ORTEC this is a "no-no")

Cable tie point (P-Clip, SS 316)

Unknown flange + feed-through for radiation monitor cables

Radiation detector (TB-015-050-150 Type T shown)

Coax cable connected to detector via MicroBNC



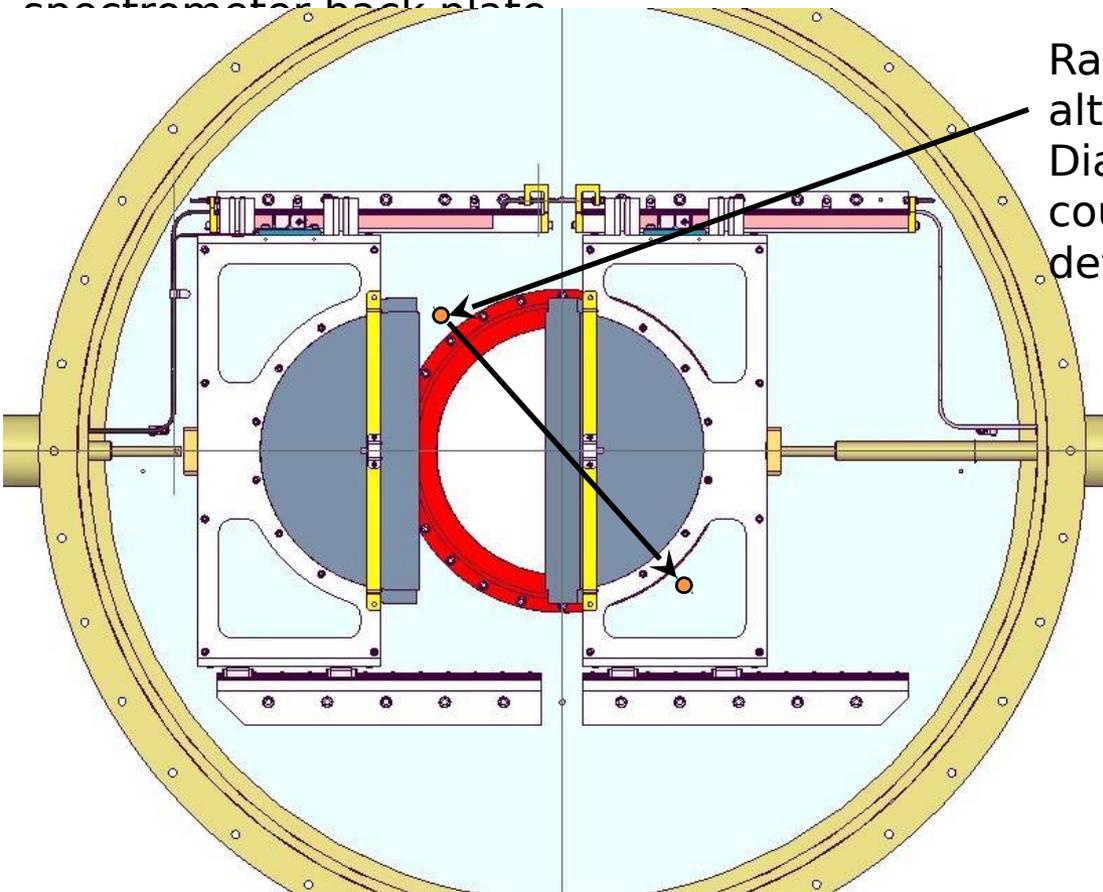
MICE Radiation Shield – Radiation monitor Summary

Summary:

1. Provisional design bearing in mind the criteria set; attach to shutter, close proximity to beam axis, perpendicular to beam, not infringe beam aperture, etc.
2. Cost of manufacture and modification of existing components to be kept to a minimum
3. Simple AL-ALLOY thick strip acts as bracket fastened to shutter frame (additional tapped hole modification), Radiation detector “sandwiched” between bracket and AL-ALLOY “top-hat” section (small recess to prevent it dislocating)
4. Distance of detectors symmetric relative to beam centre vertically and on beam centre in the horizontal plane, bracket can be altered to bring detector closer to beam centre
5. Coax-Cable connected via a Micro BNC pointing away from beam centre towards the 4-way cross, secured to frame using a Stainless Steel P-Clip. Must permit a loop in cable for shutter motion.
6. “Spare” vacuum flange available for feed through connector(s) for detector on 4-way cross. Currently blanked off

MICE Radiation Shield – Radiation monitor Suggestion

Suggestion:
Could locate Radiation Detectors directly onto spectrometer back plate



Radiation detector alternate location. Diagonally opposite could be second detector.

Coax does not need loop to allow for shutter motion and it will be partially shielded by shutter and not part of shutter motion (running between shutter and spectrometer backplate -> cable life, noise, etc.). One bracket (yellow) less required, hence cheaper option.

Depending on the window design it is approximately the same distance from the beam centre (as shown).

Could be 'larger' detector.

Same cable route and feed through in 4-way cross