

Assembly Parts 1204, 1431, 1805

NCSX Cost and Schedule Review

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Assembly Parts Consist of...

- 1431 Modular Coil Interface Parts Procurements
- 1204 VV System Procurements
- 1805 FPA Fixture Procurements

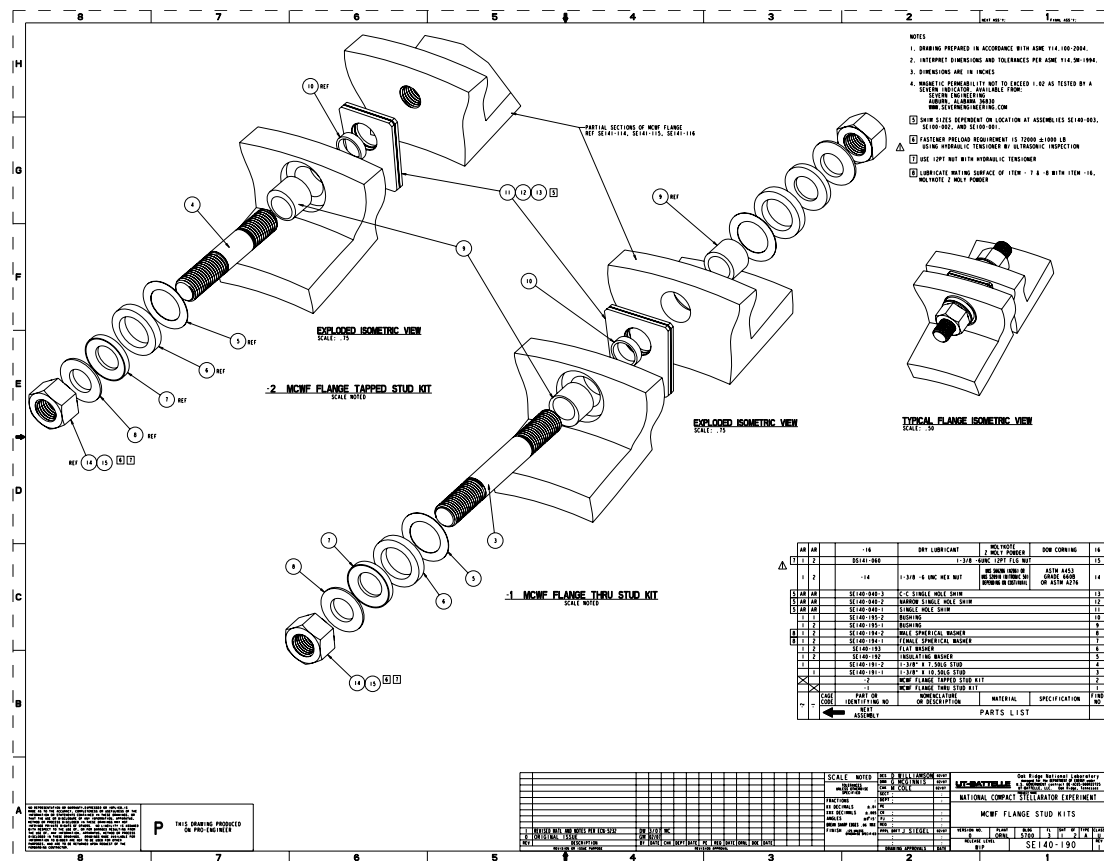
1431 Mod Coil Interface Parts

I 43 I Scope

- Stud Kits
 - ▶ Washers
 - ▶ Sphercial Sets
 - ▶ Nuts
 - ▶ G- I I Bushing
- Shim Blocks
- Supernuts
- Bladders

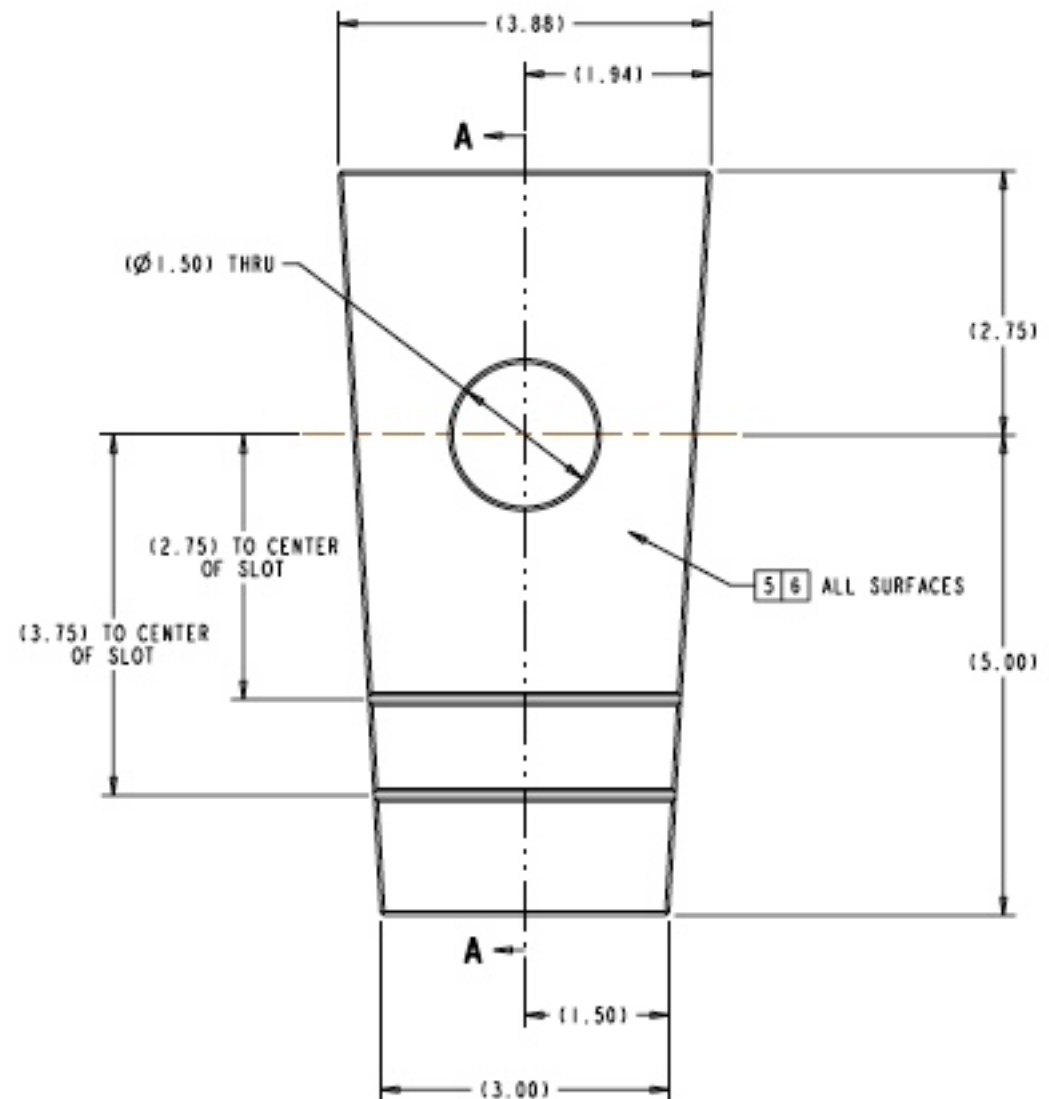
Stud Kits and Bushings

- Quantities based on requirements plus 10-15% spares
- Drawings for some parts still being developed
- Parts for first FPA are on order



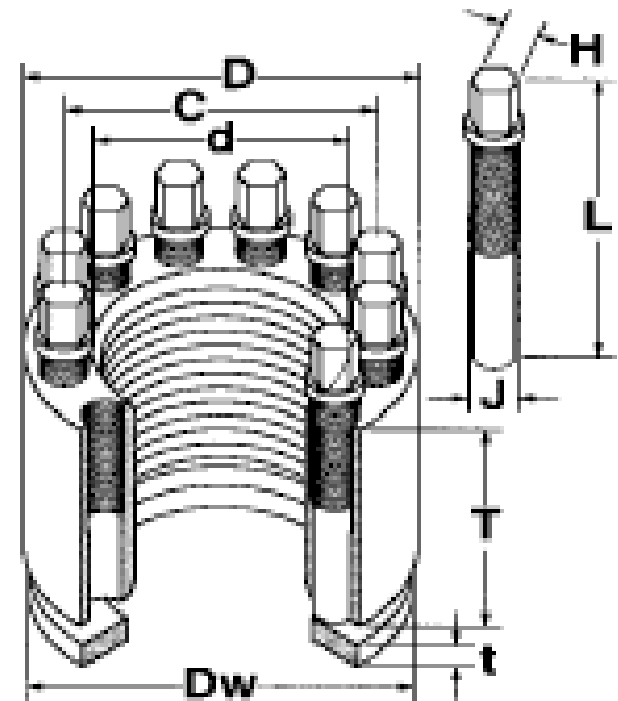
Shims

- Estimate based on 1/2" thick SS shim, waterjet cut to size
- Ground Flat
- Alumina Coated both sides for insulation and friction
- Quantities based on having a variety of thicknesses on hand to select from



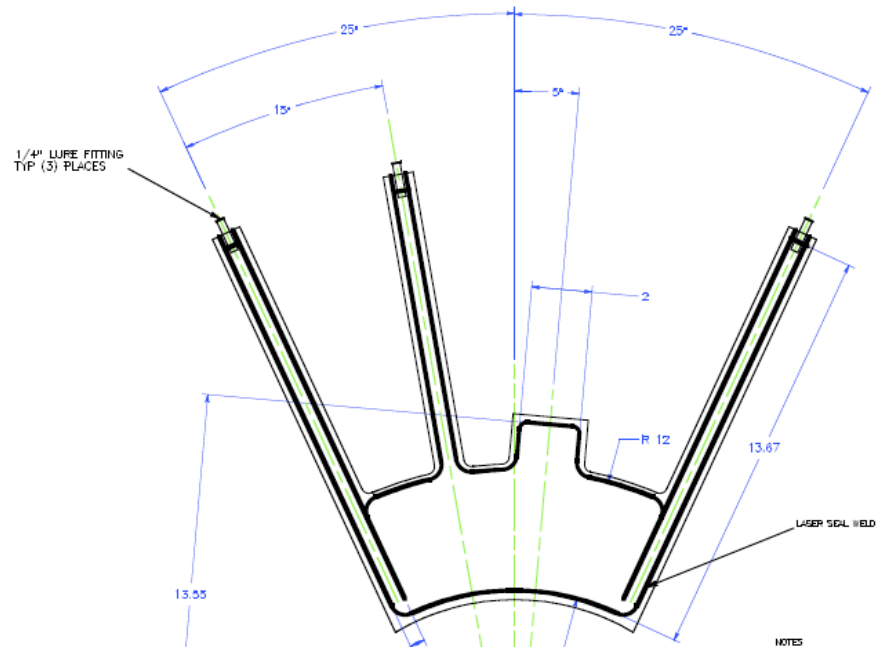
Supernuts

- Used on Modular Coil to coil joint
- Parts have been selected and an order placed for procurement of 500 parts
- Expected delivery Early June



Bladders

- Based on 50 bladders required for shimming between coils
- Based on actual vendor part
- Design was bench tested successfully
- First 5 pieces were ordered and received



Estimate

Item	M&S	Labor
Shim Blocks & Weld	\$109K	448
G-II Bushings	\$8K	554
Stud Kits	\$390K	
Bladders	\$13K	
Supernuts	\$124K	
C-C Joints Hdwr	\$46K	48
TS Support		960
TOTAL	\$689K	1002

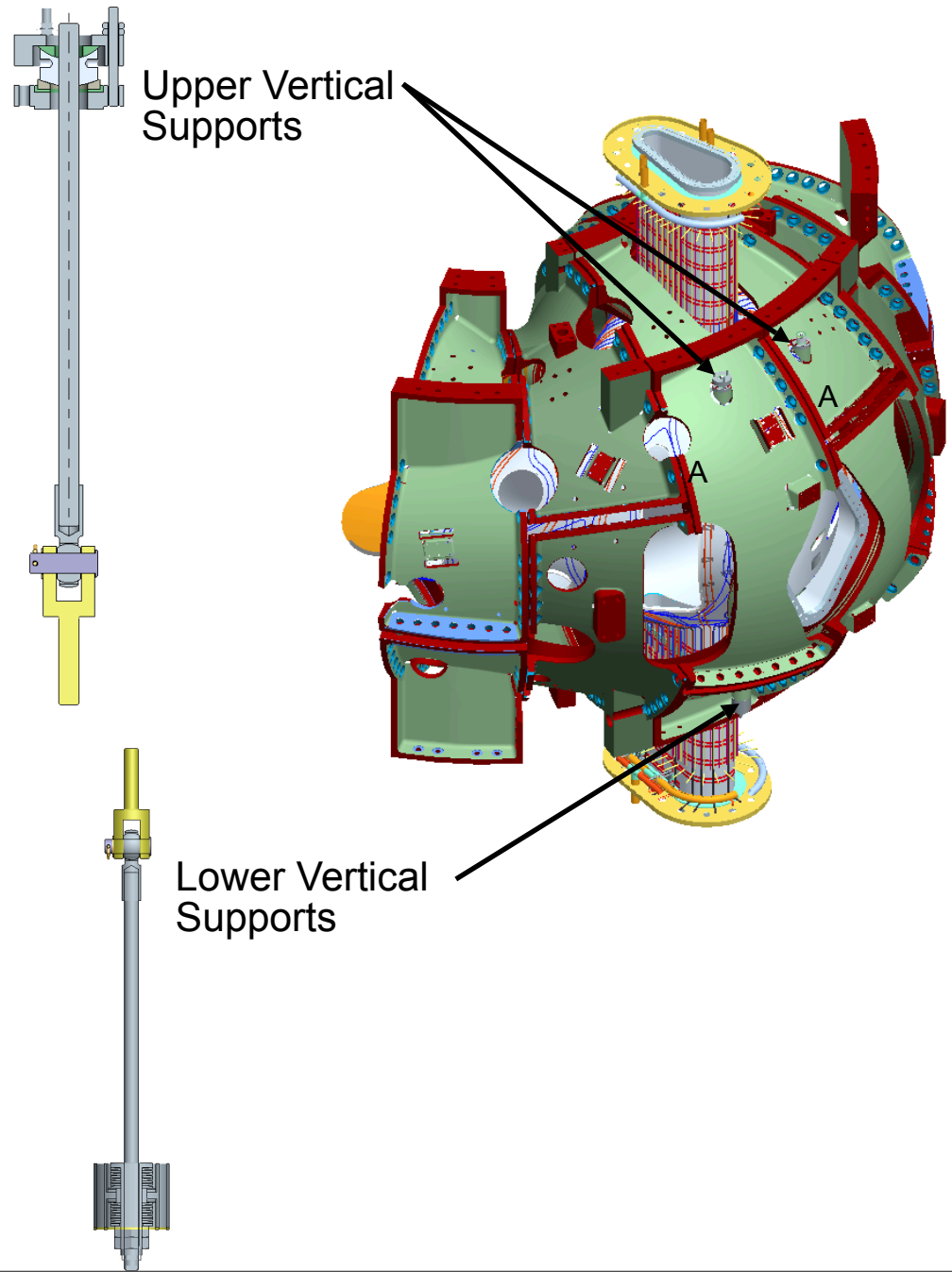
I204 VV System Procurements

I 204 Scope

- VV Vertical Supports
- VV Personnel Access Port & Lateral Supports
- Insulation Boots
- Pourable Insulation - Aerogel granular Insulation
- Port Thermal Insulation - Batt Insulation
- VV Local I&C-Thermocouples
- Heater Tapes for Port Stubs- Identical to items already procured
- VV Interface Hardware
 - ▶ T/C and Heater Tape Leads
 - ▶ Flux Loops Junction Boxes

Vertical Supports

- Vertical Supports are the hangers that support the VV off of the coil castings
- Drawings for these parts were completed over year ago
- Parts have been ordered (outside vendor parts are in house)
- Some remaining parts being fabbed here are outstanding

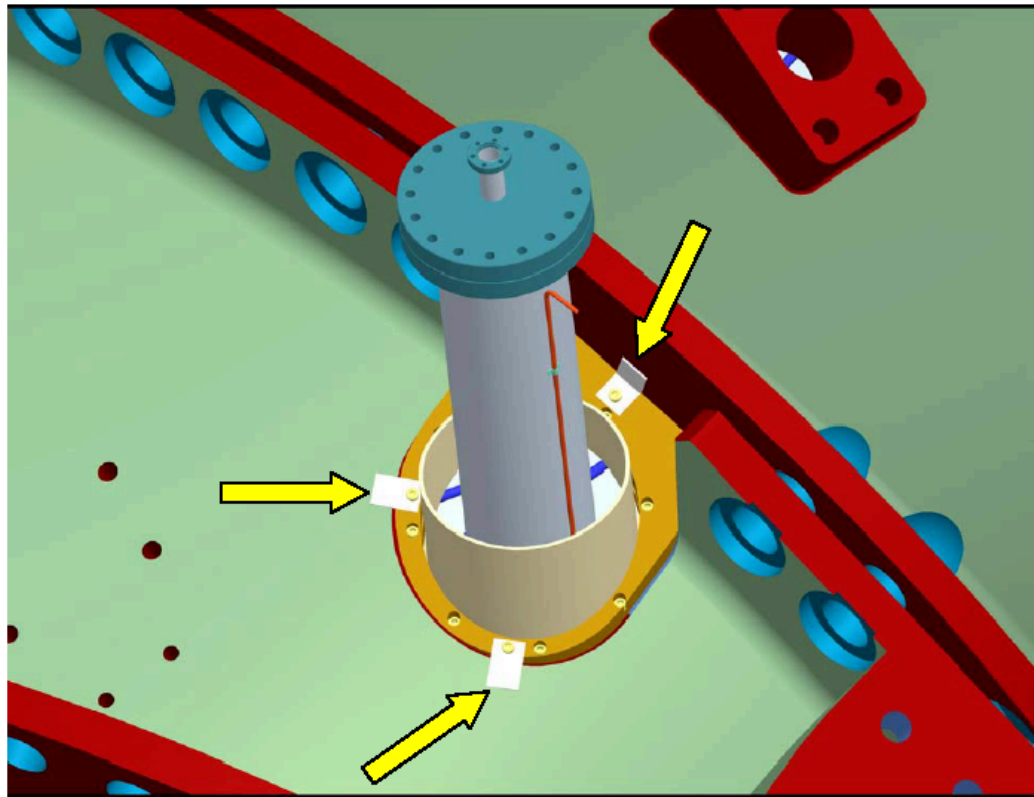


VV Personal Access & Lateral Supports

Simplified Duct	Cost
Duct Material/ fab(I625)	\$5K
22 inch port flange	\$2.0K
22 inch blankoff Flange	\$2.8K
Lateral supports	\$5.0K
NB duct flg rework	\$1.8K
Assy fab	\$2.6K
Bolt kit/o-ring	\$0.3K
SUBTOTAL (Each FPA)	\$19.5K

Boots

- Provide a seal between the VV and Modular Coils to hold the granular Aerogel insulation inside
- Drawings are complete
- Procurement is in the process of being prepared



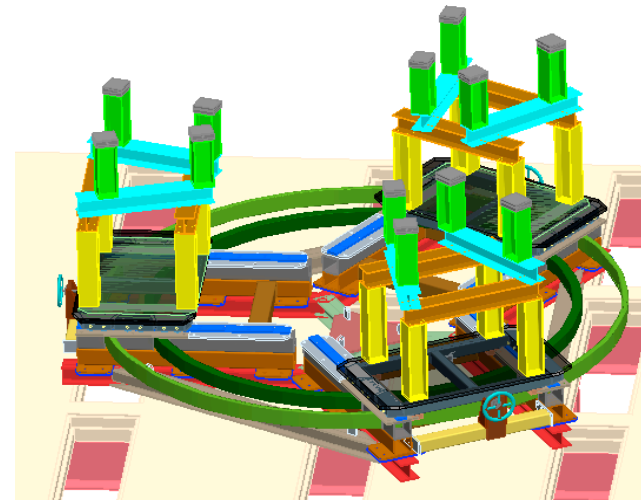
I 204 Estimate

Item	M&S	Labor
Vertical Supports		768 hrs
VV Personnel Access Port	\$58.5K	
Boots	\$55.8K	
Pourable Insulation	\$80.0K	
Port Thermal Insulation	\$25.0K	
Local I&C	\$26.9K	
Heater Tapes - Port Stubs	\$15.4K	
TC & Heater Tape Leads	\$28.2K	
Flux Loop J-Boxes	\$9.6K	
TOTAL	\$299.4K	768 hrs

1805 FPA Fixture Procurements

Scope

- Station 3: Screens and Lift Fixture
- Station 5: TF Coil FPA Station 5
- Final Assy Fixture



Estimate Method

- The FPA Fixtures have been estimated using a price / pound method.
- This rate has been supported by the Station 2 fixture costs and the Modular Coil Winding Fixtures
- Quoted prices by vendors also support these prices

Estimate

Item	M&S
Station 3	\$46.9K
Station 5 (2)	\$71.92K
Final Asm Fixt	\$99.40K
TOTAL	\$218.21K