

57 MHZ Drawing Review

ARGONNE
NATIONAL LABORATORY



United States
Department of Energy

The University of Chicago

ENTRANCE

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Argonne National Laboratory
Operated by The University of Chicago
for the U.S. Department of Energy



Drawing Status and Major Changes Summary

- **Drawing Number sequence changed.**
 - Slide 3
- **Water Tube installation method and sequence revised.**
 - Slide 4
- **Rough machining Process added to Vane.**
 - Slide 5
- **Vane tip revised to fit modulation pattern.**
 - Slides 6-
- **End Cap water flow machining added.**
 - Slides
- **Open issues**
 - Slides

Drawing Number Sequence

- G13430 – RFQ FINAL ASSEMBLY
- G13431 - WATER TUBE ASSEMBLY
- G13432 - WATER TUBE MACHINING
- G13433 - END CAP WATER ASSEMBLY
- G13434 - END CAP PLUG MACHINING
- G13435 - END CAP MACHINING

- G12825 – SEGMENT FINAL MACHINING -CONNECTING PLATES
- G12826 – SEGMENT FINAL MACHINING ASSEMBLY
- G12827 – SEGMENT PRE-BRAZE ASSEMBLY
- G12828 – PRE-BRAZE MACHINING
- G12829 – HALF PERIOD ASSEMBLY
- G12830 – MAJOR VANE ASSEMBLY
- G12832 – VANE FINAL MACHINING
- G12833 – QUADRANT FINAL MACHINING
- G12834 – QUADRANT MACHINING
- G12835 – VANE ROUGH BRAZING
- G12836 – QUADRANT BRAZE ASSEMBLY
- G12837 – QUADRANT DRILLING DETAIL
- G12838 – VANE DRILLING DETAIL
- G12839 – VANE PRE-BRAZE MATERIAL
- G12840 – TUBE PLUG DETAILS
- G12841 – BODY FLANGE ASSEMBLY
- G12842 – BODY FLANGE BRAZING ASSEMBLY
- G12843 – BODY FLANGE MACHINING
- G12844 – BODY RING MACHINING

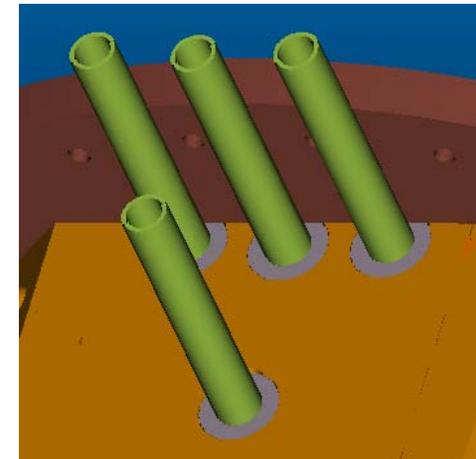
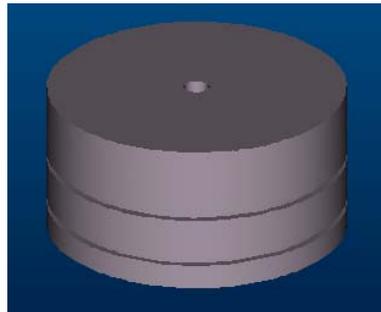
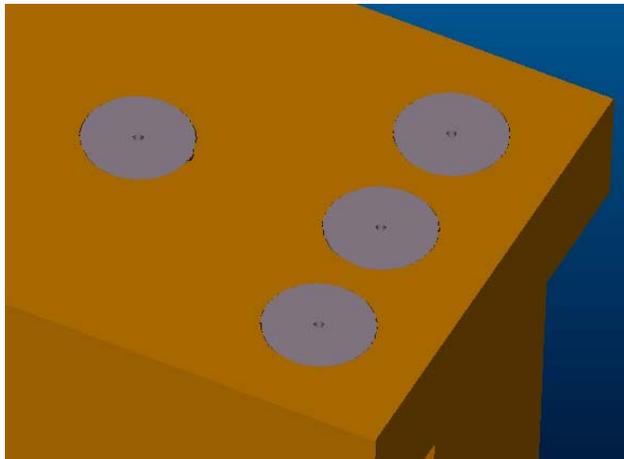
- G13426-VERTICAL VANE FINAL ASSEMBLY
- G13427-VERTICAL VANE MODULATIONS
- G13428-HORIZONTAL VANE FINAL ASSEMBLY
- G13429-HORIZONTAL VANE MODULATIONS

- The drawing numbers were re-arranged for a Bottom up work flow.

- The new sequence allows for a better work flow that is easily divided into logical process steps.

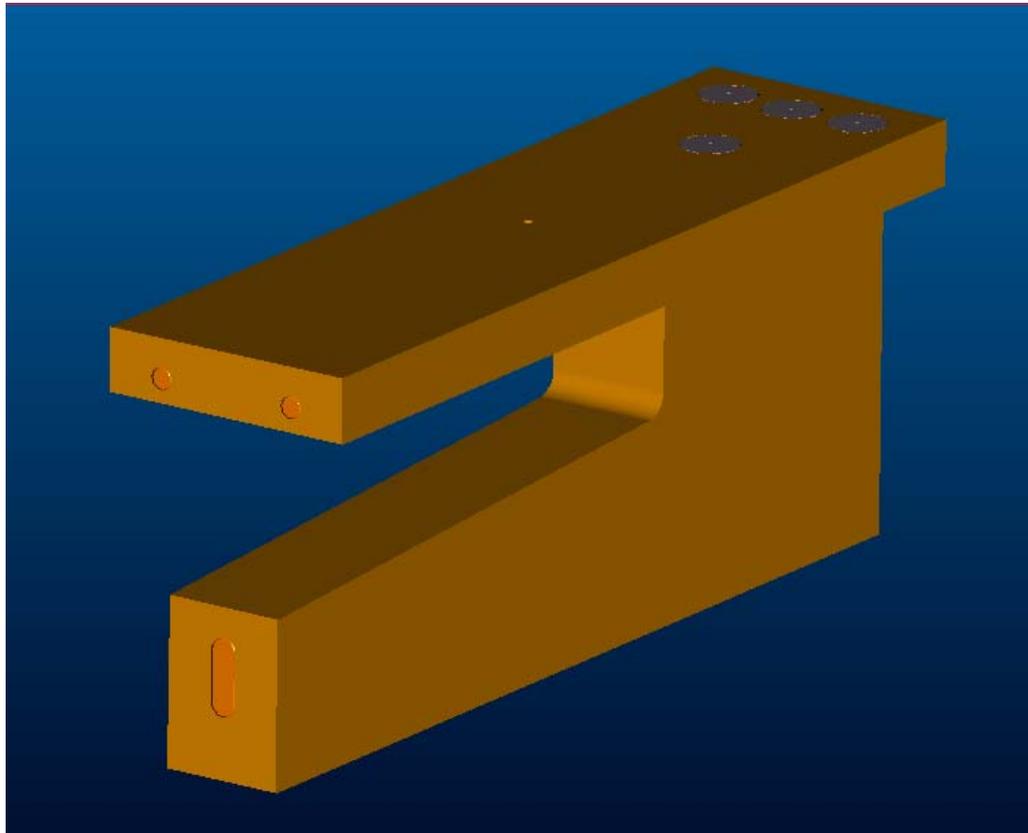
Water Tube Installation Method

- The water tubes are being removed from brazing and added later as threaded components.
- Stainless Steel plugs are being brazed in place where the tubes had been.
 - These plugs are then machined in later stages for NPT taps.
 - The water pipes are added in the final assembly stages.
 - Benefits:
 - *Easier to machine the vane and quadrant pieces.*
 - Flat surfaces for better fixturing and locating of the parts during machining.
 - *Smaller final assembly overall size to braze.*
 - *Vane will fit in ANL furnace for initial braze and future stress relieving.*
 - *Alleviates the possibility of damaging fixed tubes during handling.*



Rough Machining Process

- **The Vane is being machined to a rough state prior to brazing.**
 - Benefits:
 - *Increased stress relieving in final machining area.*
 - *Initial machining will be done in a less annealed material*



Vane Tip Modulations

- sadfg

