## Miscellaneous Machining and Casting Issues



Counterbore adjacent to Poloidal Break on E Flange.JPG

Counterbore is next to Poloidal Break on the E flange. Approximately 60% of counterbore cleaned up 100%. The area of non cleanup has tooling gouges and is approximately .050" in depth.

Mike Griffith



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### Miscellaneous Machining and Casting Issues



Noncleanup of foot on back side of D flange.JPG

This area is beneath the leg shown on sheet 4, zone C5. Instead of the 2.38" spot face on the back side, we typically machine this entire surface to a full clean up. The two holes in this view do not have a 100% cleanup. The photo below shows that the flange thickness in this area is approximately 1.100" in the thinnest cross section.



D flange foot thickness of 1.100.JPG

Mike Griffith

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# Miscellaneous Machining and Casting Issues



Tool Gouge short leg E37 wide view.JPG

This is a tooling gouge on the short leg of the "T" on the E flange side located close to hole 37. The gouge is approximately .590" in length by .200" wide and .005" in depth.



Tool Gouge short leg E side adjacent to hole 37.JPG

Mike Griffith

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## Miscellaneous Machining and Casting Issues



Tooling Gouge short leg E83 wide veiw.JPG

This is a tooling gouge on the short leg of the "T" on the E flange side located close to hole 83. The gouge is approximately 2.200" in length by .200" wide and .008" in depth.



Tooling Gouge short leg E side adjacnet to hole 83.JPG

Mike Griffith

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Tool & Machine, Inc.

# Miscellaneous Machining and Casting Issues



Tool Gouge short leg E side adjacent to hole 57.JPG

This is a tooling gouge on the short leg of the "T" on the E flange side located close to hole 57. The gouge is approximately .800" in length by .200" wide and .010" in depth.



Tool Gouge short leg E57 wide view.JPG

Mike Griffith

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## Miscellaneous Machining and Casting Issues



D side interference below VPI groove location 1.JPG

These pictures show the interference below the VPI groove located adjacent to poloidal break on the D side from hole 11 to 13. The interference to the gage is approximately .100" - .200" over a length of about 10".



D side interference below VPI groove location 1 wide view.JPG

Mike Griffith

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Tool & Machine, Inc.

## Miscellaneous Machining and Casting Issues



D side interference below VPI groove location 2.JPG

These pictures show the interference below the VPI groove located on the D side from hole 45 to 50. The interference to the gage is approximately .200" - .300" over a length of about 15".



D side interference below VPI groove location 2 wide view.JPG

Mike Griffith

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Tool & Machine, Inc.

## Miscellaneous Machining and Casting Issues



Casting noncleanup on D side large wing.JPG



Casting noncleanup on D side large wing 2.JPG



Casting noncleanup D side large wing wide view.JPG

The above pictures show noncleanup after final machining on the large flange of the D side. The depths are approximately .02 - .04".

Mike Griffith

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Tool & Machine, Inc.

# Miscellaneous Machining and Casting Issues



Tool Gouge in cast wall D side section PT11 sheet 7.JPG

This photo shows a tooling gouge in the cast wall located below the 6.5" opening shown on sheet 7 section view PT11. Gouge is approximately 1.470" x .800. The casting wall in this area measures 1.3". The gouge is approximately .25" in depth.

Mike Griffith



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