

PPPL ENGINEERING CHANGE NOTICE (ECN) ECN # 5128R1

COGNIZANT INDIVIDUAL: D. Williamson	
ECN TITLE: MCWF Type-A and -B Modifications	
ASSOCIATED ECP: None	
CC/WP/Job:9450-1***-1403	AREA OR PROJECT: NCSX

LIMITATION OF SCOPE - NOTE: A Work Planning Form is NOT required if the total change to be accomplished (ENG-032):

- Is not large or complex or does not represent a new installation into a usable space
- Does not have a significant ES&H impact
- Does not involve tritium or other radioactive contaminated or activated equipment
- Does not impact multiple projects, systems, or groups

OR does not change the scope or intent of the original design.

Responsible Line Manager CONCURRENCE: _____
 (Signature indicates that no Work Planning form is required.)

If non-concurrence or associated with a work planning form, enter the WP Number:

DRAWING(S) AFFECTED NUMBER:	NEW Revision	TITLE
SE141-114	7	Production Winding Form Type-A
SE141-115	8	Production Winding Form Type-B
Continued on Back		

DESCRIPTION OF CHANGE: (State Drawing No., Zone/Group, or List Attachments)
Revise Type-A flange holes from clearance to tapped holes per RFD-14-018. Ref drawings SE141-114, sheets 4, 5.
Revise Type-B flange holes per notes and discussion with MTM during visit to PPPL. Reference meeting notes, 5/18/06. Ref drawing SE141-115, sheets 4,5.
Revise Type-A T/C hole size and location per RFD-14-017. Ref SE141-114, sheet 9.
Revise Type-B T/C hole size and location per discussion. Ref SE141-115, sheet 9.
Revise Type-B leads interface features, SE141-115, sheet7, quad B-4.
Revise Type-B port geom to match NC programming. Ref Se141-115, sheet 8, quad C-1.
Revise .25-20UNC hole chamfer on -114, sht4, B4, -115, sht4,E1, -115, sht5, F7

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REASON FOR CHANGE:

Major Tool noted casting interference at the bolt locations as shown in the attached figures for the Type A castings. The interference is similar to what was noted on the Type-C winding forms, but more severe. NCSX reviewed the layout for Type-A and -B coils and changed some holes from clearance holes to tapped holes as shown in the attached figure.

In order to facilitate the drilling of the thermocouple holes, MTM proposed to increase the diameter of the hole for all except the last inch of depth. In addition, the location of the inboard thermocouple was changed to eliminate a setup.

Port geometry was changed very slightly in order to use a common setup for nearby external features on the part.

A Project-initiated modification to improve the lead block positioning resulted in a slight reorientation (2.2° horizontal change at the top and 0.114" vertical change) of the Type-B lead slots as shown in the figure (Ref RFD-14-022).

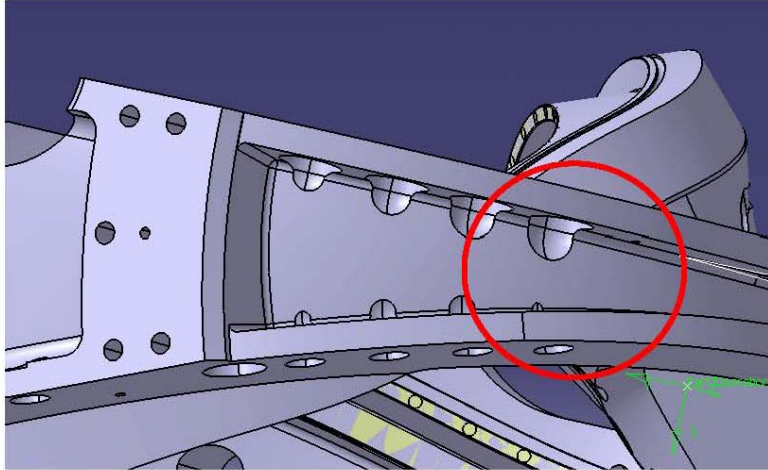
Tapped holes in the flanges (.25-20UNC) have an incorrect chamfer callout on the drawing, though the model is correct.

ENGINEERING CHANGE PROPOSAL:

DATE:

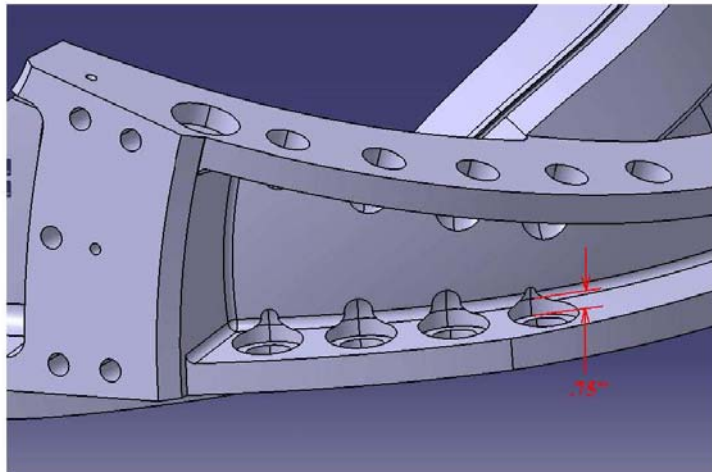
COGNIZANT INDIVIDUAL MAKING THE CHANGE: D. Williamson

RESPONSIBLE LINE MANAGER:

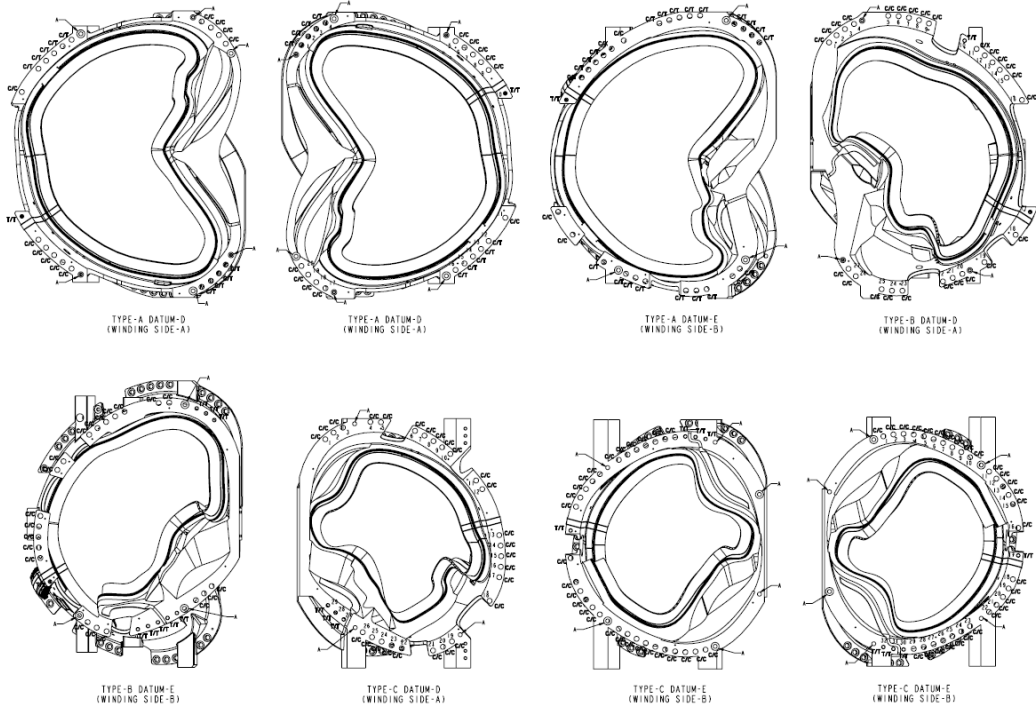


Relief area cut into cast wall

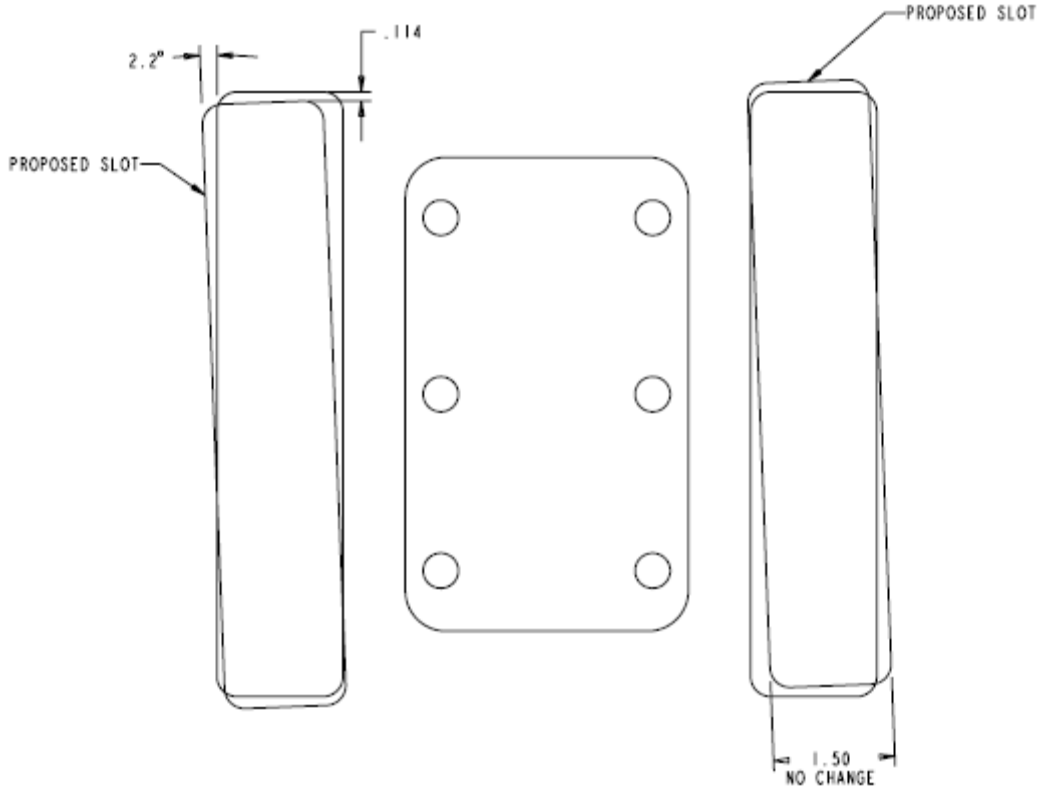
The pictures below illustrate how much casting wall interference there will be on the type A casting. The current machining models for all three winding forms have this interference problem to some degree. The models have a 3" counterbore that extends .75" from the face and the remainder of the feature is a 1.5" radius (see below). This is why Major Tool had to perform the grinding around the counterbores on C4 in order to get the 3" diameter gage to fit.



NOTES:
 A/A = BASELINE/PROPOSED
 A = ALIGNMENT FEATURE
 C = CLEARANCE HOLE, 1.885 ±.003 THRU
 \perp .03, 0 X MIN DEPTH BACKSIDE
 T = THREADED HOLE, 1.375 6 UNC 2B THRU
 X = HOLE TO BE ELIMINATED



Ref drawing SE140-129 (to be released)



Type-B leads area (Ref SE141-115, sht7, B4)