

# Welding and Brazing Final Visual Inspection

(See [ES&H Manual Welding and Brazing Program Supplement](#) for more information.)

## FINAL VISUAL INSPECTION – INFORMATION

Group: <b>SNS PPU</b>		Component: <b>Helium Vessel – Probe End Head Weldments</b>		Date: <b>9/25/20</b>
Drawing #: <b>1042211700-M8U-8200-A025</b>		Rev#:	PQR #: <b>On File</b>	WPS/BPS #: <b>On File</b>
Welder/Brazer #: <b>Vendors Welder (On File)</b>		Process: <b>GTAW</b>		B31.3 Fluid Service: <b>N/A</b>
ACCEPTANCE CRITERIA	<input type="checkbox"/> ASME B31.3 Chapter VI [Table 341.3.2]	<input type="checkbox"/> AWS D1.1 Chapter VI [Table 6.1]	<input checked="" type="checkbox"/> Other Code(s): <b>ASME Section VIII- Div. 1</b>	
# of Welds or Brazes Examined: <b>All welds on the Header - SN: AA, AF, AH, AJ, AK, AL, AM</b>		# of Mechanical Joints Examined: <b>N/A</b>		

## FINAL VISUAL INSPECTION – CHECKLIST

	Accept	Reject	N/A
1. Mechanical joints have been properly assembled	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Mechanical joints have been properly erected including alignment supports and cold spring	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Welds/Brazes were sufficiently cleaned as not to impair visual inspection and are uniquely identified	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Geometry or profile conforms to WPS/BPS, drawing details or Code requirements	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Weld joint was properly identified to welder/brazer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. All flux/slag removed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>WELDING ONLY:</b>			
7. Weld has no visible cracks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Thorough fusion (weld and base metals) and complete penetration if required exist	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Surface porosity or exposed slag inclusion	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Surface finish	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Concave root surface (suck up) or lack of weld joint break down	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Internal and external reinforcement within allowable limits	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Any fillet weld under-size (AWS only) within limits and undercutting depths	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## REMARKS:

SIGNATURE

*Jenord Alston*

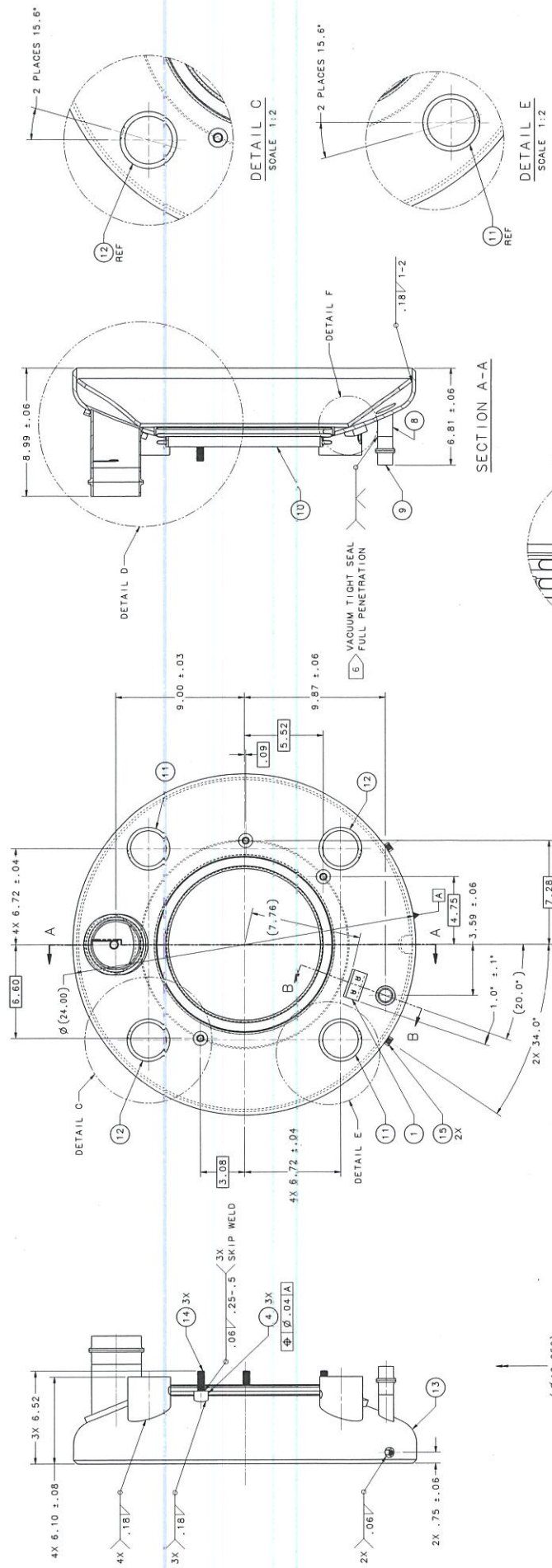
EXAMINER / INSPECTOR



Jenord Alston  
CWI 09111931  
QC1 EXP. 11/1/2021

DATE **9/25/20**

ISSUING AUTHORITY	TECHNICAL POINT-OF-CONTACT	APPROVAL DATE	REVIEW DATE	REV.	Page
ESH&Q Division	<a href="#">Jenord Alston</a>	02/06/2017	02/06/2022	1.1	1 of 2

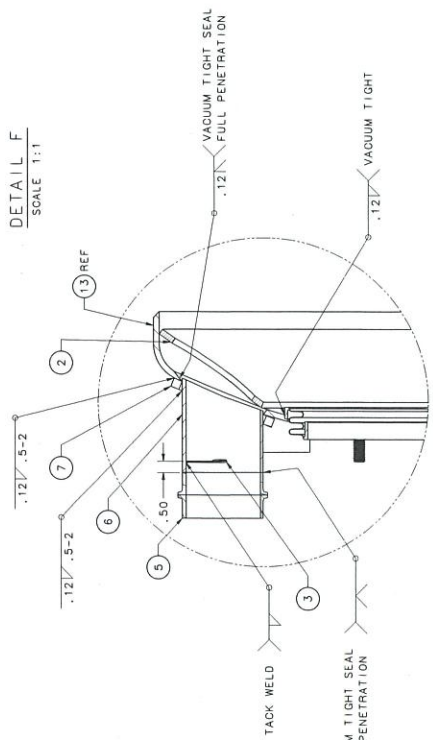
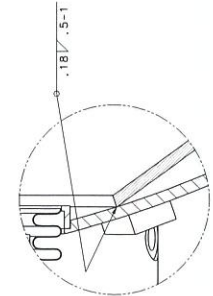


SECTION A-A

DETAIL F  
SCALE 1:1

SECTION B-B  
SCALE 1:2

DETAIL D  
SCALE 1:2



- NOTES:
1. CLEAN AND HANDLE TITANIUM PER JLAB SPECIFICATION: 11520-S-0100
  2. VACUUM LEAK CHECK SHALL BE IN ACCORDANCE WITH JLAB SPECIFICATION: 11141-S-0029  
No detectable leak greater than 1X10<sup>-10</sup> STD cc of He/sec
  3. WHEN WELDING ITEM 5 TO ITEM 6 AND ITEM 9 TO ITEM 8 INSURE THAT THE TITANIUM ENDS OF THE TRANSITION PIECES (ITEM 5 AND 9) ARE THE ENDS BUTTED AGAINST THEIR RESPECTIVE PIPES (ITEM 6 AND 8) PRIOR TO WELDING.
  4. THIS DRAWING SHOWS ROD SUPPORTS (ITEM 11 AND 12) AND TUNER BOSSES (ITEM 4) MACHINED PRIOR TO WELDING TO THE DISHED HEAD (ITEM 13). VENDOR'S OPTION TO WELD SUPPORTS AND BOSSES TO DISHED HEAD AND THEN MACHINE.
  5. FOR INTERNAL USE ONLY: REFERENCE DRAWING CRM9007020-1001 AND 104100000-NBU-8200-A025  
ITEMS TO BE BEVELED PRIOR TO WELDING WHERE THEY ARE BUTTED TOGETHER FOR FULL PENETRATION WELD.
  7. SEE 104211700-NBU-8200-A001-SOW FOR STATEMENT OF WORK.

ITEM	DESCRIPTION	QUANTITY	UNIT
2	15	1	375-16 HEAVY HEX NUT
3	14	1	.500-13 UNC-2B X 2.00 LONG TITANIUM GRADE 2
1	13	1	104211700-NBU-820 PRIME END DISHED HEAD
2	12	1	104211700-NBU-820 OUTER ROD SUPPORT
2	11	1	104211700-NBU-820 INNER ROD SUPPORT
1	10	1	104211700-NBU-820 HELIUM VESSEL - BELLOWS
1	9	1	104211700-NBU-820 HELIUM INLET TRANSITION
1	8	1	104211700-NBU-820 HELIUM INLET PIPE PRIME END
1	7	1	104100000-NBU-820 REINFORCEMENT RING
1	6	1	104211700-NBU-820 HELIUM OUTLET PIPE PRIME END
1	5	1	104100000-NBU-820 HELIUM OUTLET TRANSITION
3	4	1	104100000-NBU-820 TUNER BOSS
1	3	1	104100000-NBU-820 CABLE SUPPORT
1	2	1	104100000-NBU-820 HEAD STIFFENER
1	1	1	104100000-NBU-820 TERMINAL STRIP

FOR JLAB INTERNAL USE ONLY  
SEE JLAB MANUAL CHAPTER 8101 FOR PRESSURE VESSEL AND JLAB MANUAL CHAPTER 8102 FOR PRESSURE VESSEL  
WELD JOINTS AND SEALS SHALL BE INSPECTED AND TESTED IN ACCORDANCE WITH JLAB SPECIFICATION: 11141-S-0029

WELD CLASS: BPVC  
PRESSURE SYSTEM NUMBER: PS-CRM-18-001

THIRD ANGLE PROJECTION

SEE PARTS LIST

CRN  
SPALLATION NEUTRON SOURCE - PPU  
HE VESSEL  
PROBE END HEAD WELDMENT  
104211700-NBU-820-A025

DATE: 10/20/2018  
DRAWN: J. B. BARNES  
CHECKED: J. B. BARNES  
APPROVED: J. B. BARNES