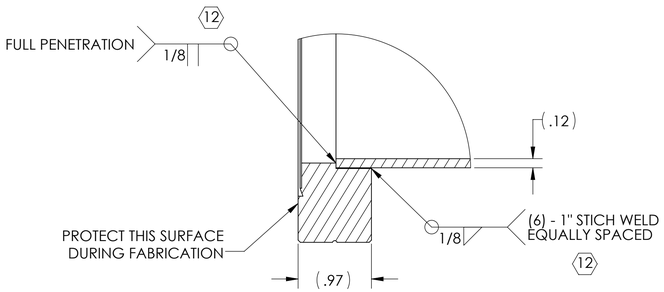
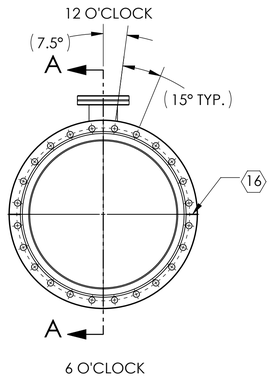
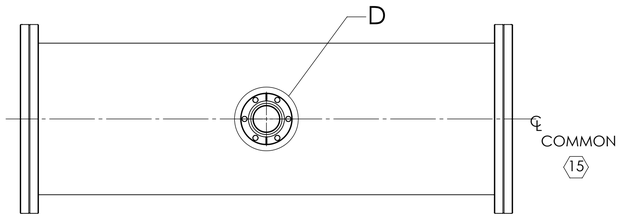
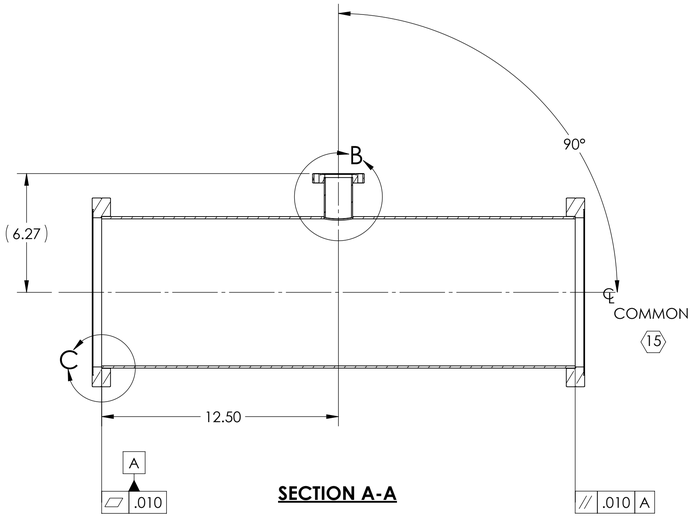
REV.	DATE	DCN #	DRAWING TREE #
v1	02 FEB 2023	E2300027-x0	-
v2	13 APR 2023	E2300027-v1	-
-	-	-	-



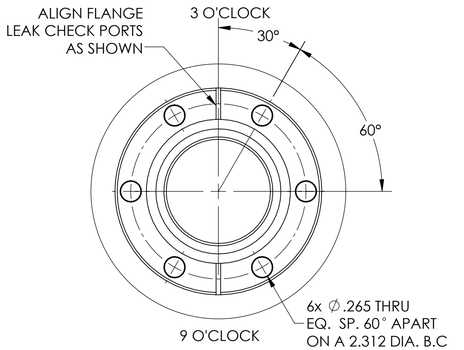
DETAIL C
SCALE 1 : 1
2 PL.



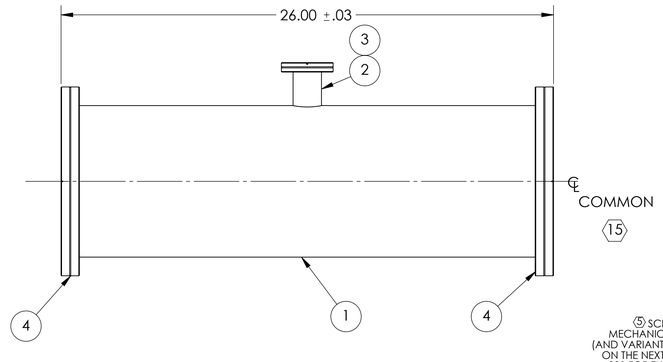


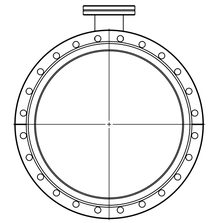


SECTION A-A



DETAIL D
SCALE 1 : 1





NOTES CONTINUED:

⑤ SCRIBE, ENGRAVE (A VIBRATORY TOOL MAY BE USED), LASER MARK OR MECHANICALLY STAMP (NO INKS OR DYES) DRAWING PART NUMBER, REVISION (AND VARIANT OR "TYPE" IF APPLICABLE) ON NOTED SURFACE OF PART FOLLOWED ON THE NEXT LINE WITH A THREE DIGIT SERIAL NUMBER. SERIAL NUMBERS START AT 001 FOR THE FIRST ARTICLE AND PROCEED CONSECUTIVELY. USE MINIMUM 0.12" HIGH CHARACTERS, UNLESS THE SIZE OF THE PART DICTATES SMALLER CHARACTERS. EXAMPLE: DXXXXXXX-VY, TYPE-XX, S/N XXX

6. ALL MATERIAL IS TO BE VIRGIN MATERIAL (i.e. NO WELD REPAIRS, PLUGS OR RECYCLED MATERIAL). NO REPAIRS SHALL BE MADE UNLESS APPROVED IN ADVANCE, AND IN WRITING, BY LIGO LABORATORY. REFER TO LIGO SPECIFICATION E0900364

7. MAXIMUM SURFACE ROUGHNESS FOR SURFACES EXPOSED TO VACUUM SHALL BE 63 MICRO-INCH (Ra). CONFLAT SEAR SURFACES SHALL BE 32 MICRO-INCH (Ra) WITH CONCENTRIC MACHINE TOOL LAY.

8. GRINDING TO INTERNAL VACUUM BOUNDARY SURFACES IS NOT ALLOWED. DO NOT USE CARBON STEEL BRUSHES OR BRUSHES CONTAMINATED WITH CARBON STEEL ON STAINLESS OR ALUMINUM MATERIAL.

9. FLANGES WILL BE USED IN UHV SERVICE.

10. NO ABRASIVE STONES, CLOTHS OR GRINDING WHEELS MAY BE USED.

11. NO OIL BASED OR HYDROCARBON BASED CUTTING FLUIDS MAY BE USED.

⑫ FOR WELDING AND HELIUM LEAK TEST SPECIFICATIONS REFER TO LIGO E0900408 & E0900404.

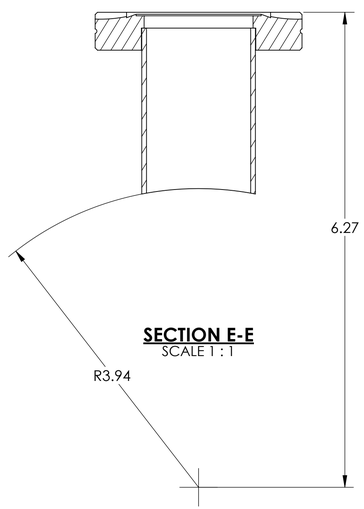
⑫.① PULLED PORT TECHNIQUE ACCEPTABLE WHERE POSSIBLE.

13. CONFLAT FLANGES ARE TO BE PROTECTED WITH RIGID COVERS AT ALL TIMES DURING AND AFTER MANUFACTURING.

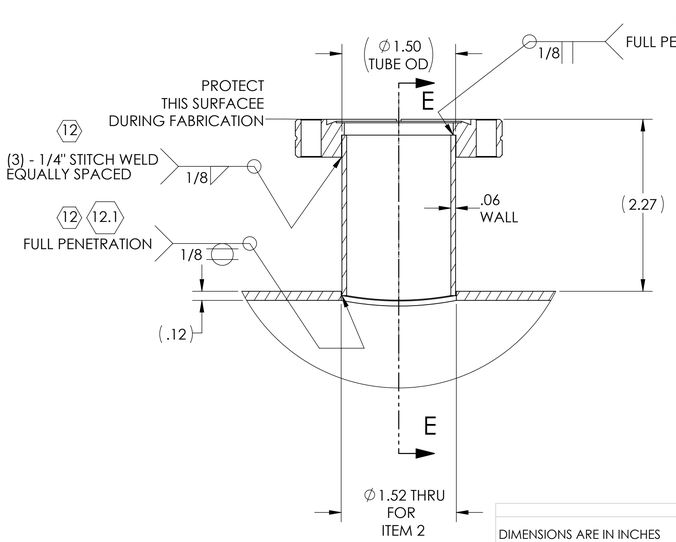
14. PACKAGE, HANDLE, AND SHIP IN SUCH A MANNER S TO MAINTAIN SPECIFIED SURFACE FINISHED AND FLATNESS TOLERANCES.

⑮ CENTER LINES OF ITEM 1 (8" OD TUBE) AND 4 (FLANGES) ARE TO BE ON THE COMMON CENTER LINE WITHIN ±1/16".

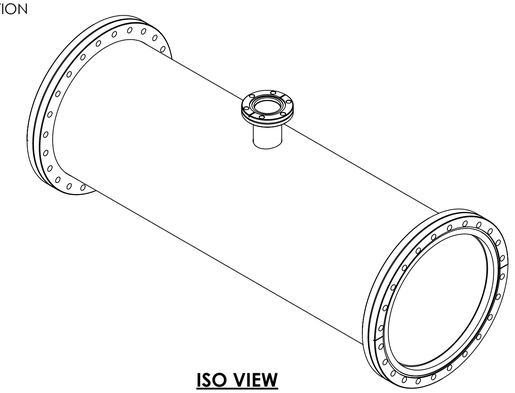
⑯ FLANGE LEAK PORTS SHALL BE CENTERED AT 3 AND 9 O'CLOCK POSITIONS.



SECTION E-E
SCALE 1 : 1



DETAIL B
SCALE 1 : 1



ISO VIEW

ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL	QTY.
4	1000-800N NOR-CAL OR EQ.	FLANGE, CF 10in. X 8in, NR	AISI 304	2
3	275-150N NOR-CAL OR EQ.	FLANGE, CF, 2.75" OD X 1.5" ID NR, THRU HOLES	AISI 304	1
2	TBD	TUBE, 1.5in. O.D., 0.065in WALL	304 SSTL	A/R
1	TBD	TUBE, 8in. OD x.120in. WALL	W304/304L A778	A/R

PARTS LIST

DIMENSIONS ARE IN INCHES

TOLERANCES:
.XX ± .03
.XXX ± .010

ANGULAR ± 0.5°

NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)

1. INTERPRET DRAWING PER ASME Y14.5-1994.
2. REMOVE ALL SHARP EDGES, .005-.015. FOR MACHINED PARTS.
3. DO NOT SCALE FROM DRAWING.
4. ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE.

MATERIAL N/A

FINISH N/A µinch

LIGO **CALIFORNIA INSTITUTE OF TECHNOLOGY**
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

SYSTEM A+ **SUB-SYSTEM** VE

NEXT ASSY D2100534

PART NAME A+, VAC, HAM 5/7 Relay Ported Spool

DESIGNER	E.SANCHEZ	02 FEB 2023	**SIZE**	**DWG. NO.**	**REV.**
DRAFTER	E.SANCHEZ	02 FEB 2023	D	D2300065	v2
CHECKER	SEE DCC	SEE DCC			
APPROVAL	SEE DCC	SEE DCC	**SCALE:** 1:4	**PROJECTION:**	SHEET 1 OF 1

PART PDM VERSION: y-004
DWG PDM VERSION: y-003
D2300065 A+, VAC, HAM 5_7 Relay Ported Spool