

8

7

6

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4

3

4"

1

DWG. NO. 2512154 SIZE REV. SH. 1 1

ITEM	PART NO	RECD	DESCRIPTION	MATERIAL
4	251652	1	BRAIDED FLEX HOSE, 1/2" ID X 5' LIVE LENGTH, 12mm X 1/2" ELBOW WELD ENDS	
2	-	1	TUBE 2, PER ASTM A269	
1	-	1	TUBE 1, PER ASTM A269	SS 304L
1	-	1	FLANGE	

NOTES: (UNLESS OTHERWISE SPECIFIED)

- THIS IS A CRYOGENIC VACUUM COMPONENT.
- WELDING PROCEDURE: PER VENDOR SPECIFICATION WITH LBNL APPROVAL.
- CLEANING PROCEDURE: PER VENDOR SPECIFICATION WITH LBNL APPROVAL.
- PACKAGING AND STORAGE PROCEDURE OF THE COMPONENTS: PER VENDOR SPECIFICATION WITH LBNL APPROVAL.
- DIMENSIONS AND TOLERANCING PER ANSI Y14.5M-1982. UNITS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.
- USE OF SULFUR OR SILICONE BEARING OILS, LUBRICANTS, OR COOLANTS ARE STRICTLY PROHIBITED.
- USE OF RESIN OR RUBBER BONDED ABRASIVES UNDER POWER IS STRICTLY PROHIBITED. USE VITREOUS BONDED ABRASIVES ONLY.
- VENDOR SUGGESTED CHANGES TO WELD PREPS; SUBJECT TO LBNL APPROVAL.
- ELBOWS MAY BE USED ON THE TUBE BENDS AS NEEDED.

~~9. COMPONENT BENDS MAY BE MADE TO TWO SEPARATE BENDS UPON LBNL APPROVAL.~~

This wording seems awkward, or I just don't understand what is intended.

10. VENDOR SUGGESTED CHANGES TO TOLERANCES TO FACILITATE FABRICATION OR ASSEMBLY; SUBJECT TO LBNL APPROVAL.

11. REMOVE ALL THE BURRS AND REAM THE ENDS FOR CIRCULARITY AND CLEAN ENDS.

12. TUBE END SURFACE MUST BE PERPENDICULAR TO THE TUBE AXIS WITHIN +/- .010.

13. PERFORM ACCEPTANCE TESTS PER SECTION 3.2 OF LBNL SPECIFICATION M856.

~~PERFORMANCES PER LBNL ACCEPTANCE CRITERIA SEE SPECIFICATION NUMBER LBNL N. M8056 AND BY VENDOR AND LBNL APPROVED SPECIFICATION.~~

- ~~a) OPERATING TEMPERATURE 4.2°K~~
- ~~b) THERMAL SHOCK WELDS TO LN TEMPERATURE 2 TIMES ONE HOUR INTERVAL~~
- ~~c) TEST PRESSURE 375 PSIG~~
- ~~d) VACUUM CHECK WITH HELIUM LEAK MASS SPECTROMETER DETECTOR. THE LEAK RATE AT ANY LOCATION SHALL NOT EXCEED 1 X 10⁻⁹ STD CC/SEC.~~

~~15. EST. WT.: 1.110 LB~~

~~16. NOMINAL INTERCONNECT PLANE LOCATION. WHERE PIPE IS TO BE CUT DURING INSTALLATION.~~

~~17. MUST HAVE 4.0" MIN CLEARANCE PLANE FOR PIPE WELDER USED DURING INSTALLATION.~~

~~18. PIPE MUST HAVE 1.0" OF LINEAR TRAVEL THROUGH THE SUPPORT SPIDER IN BOTH DIRECTIONS.~~

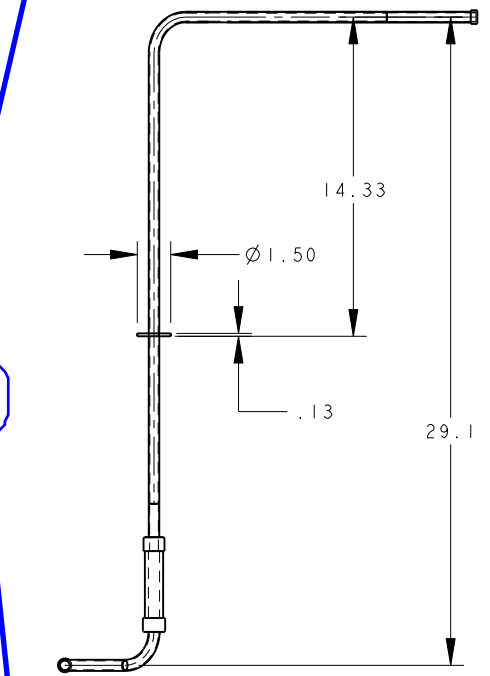
14. A MARK DESIGNATING THE INSTALLED LENGTH WILL BE UTILIZED DURING FINAL INSTALLATION OF THE FEEDBOX ASSEMBLY. MARK, SCRIBE OR ETCH THIS LOCATION IN A PERMANENT MANNER, SUBJECT TO LBNL APPROVAL, TO AN ACCURACY OF +/- 0.063".

15. PROVIDE A MINIMUM LENGTH OR 4.0" OF STRAIGHT, SMOOTH PIPE ON THE INDICATED SIDE OF THE INSTALLED LENGTH MARK FOR PIPE WELDING DURING FINAL INSTALLATION OF THE FEEDBOX ASSEMBLY.

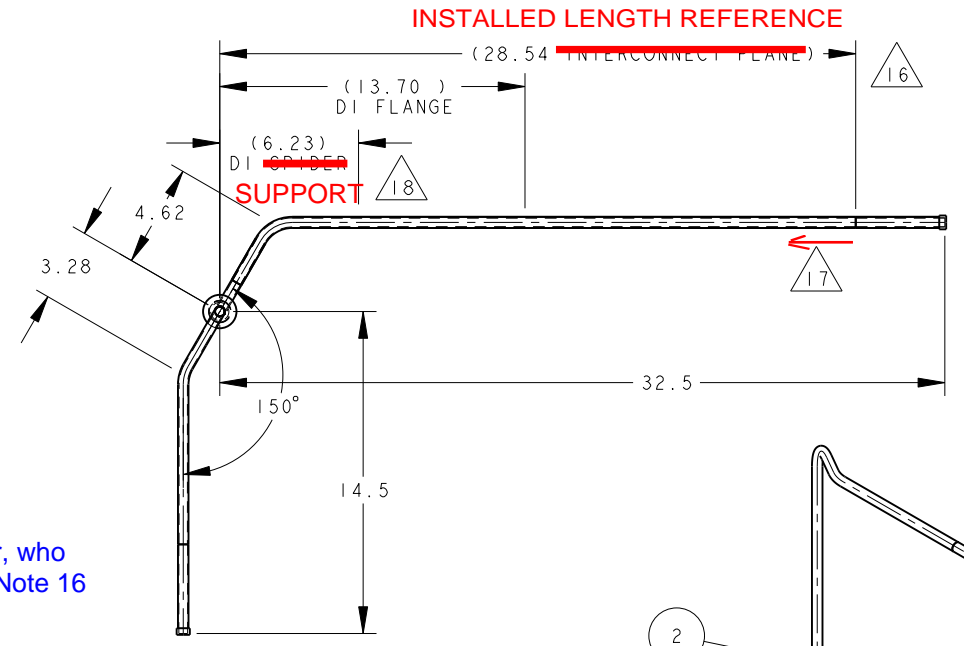
16. PIPE MUST BE STRAIGHT AND SMOOTH (NO BUMPS) FOR 0.5" ON EITHER SIDE OF THE CENTER-PLANE OF THE SUPPORT.

17. CAP BOTH ENDS OF PIPE AFTER ACCEPTANCE TESTS PER SECTION 3.2 OF LBNL SPECIFICATION M856.

Does this "cut" refer to CERN's cut at final installation? If so, this will confuse the vendor, who might think he should cut during installation. Note 16 should be clarified.

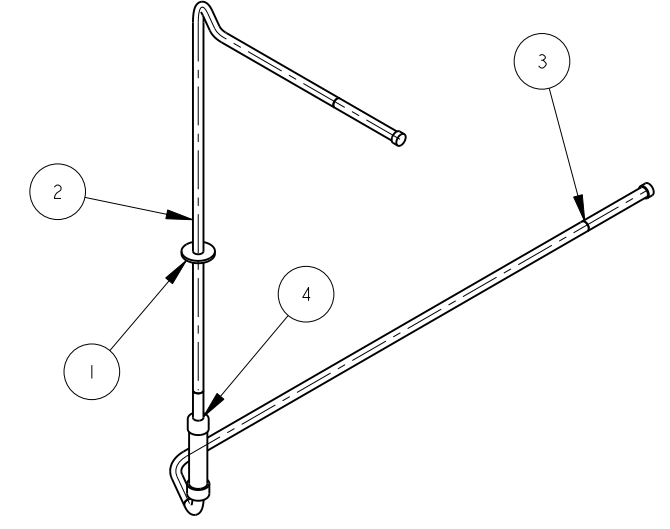


Again, does this refer to installation at CERN or at the vendor. The vendor may not need 4 inches clearance and so ignore this note.



Ø .472 TUBE X .049 WALL
[12 mm TUBE X 1.25 mm WALL]

Ø .500 TUBE X .049 WALL



REV	DWG	CHK	ZONE	DATE	CHANGES
A	JR			7/15/02	CHANGES PER PRODUCTION READINESS REVIEW

TOLERANCES		UNLESS OTHERWISE SPECIFIED		SHOP ORDERS	
X.X ± 0.1	FRACTION ± 1/64	ACCT NO.	NO.	SER. NO.	DATE
X.XX ± 0.03	ANGLES ± 1.00°	DEL TO	ISSD	DATE	REV.
X.XXX ± 0.010	FINISH 125/1000	SURFACE TREATMENT			
DO NOT SCALE PRINT		IDENT. TAG			
THREADS ARE CLASS 2		PROJECT NUMBER			
CHAMFER ENDS OF ALL SCREW THREADS 30°		PROJECT NAME			
CUT ROUNDS, 1.5 THREAD RELIEF ON MACHINED THREADS		DWG. R. LA MANTIA			
BREAK EDGES .016 MAX. ON MACHINED WORK		DATE 12-Dec-01			
REMOVE BURRS, WELD SPATTER & LOOSE SCALE		CHK. BY Jon Zbasnik			
IN ACCORDANCE WITH ASME Y14.5M & B46.1		DATE 19-Mar-02			
		APR. BY Jon Zbasnik			
		DATE 19-Mar-02			

ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY			
UNIVERSITY OF CALIFORNIA - BERKELEY			
LHC IR FEEDBOX CRYOGENICS PIPE, CY2			
MICROFILMED:	DWG. TYPE	SHOWN ON	SCALE: 1/4
	ASSEM	251226	DO NOT SCALE PRINTS
PATENT CLEAR:	DESIGN ACCT. NO.	CATEGORY CODE	DWG. NO.
	Z5LCE2	LH2003	2512154
			SIZE REV. 1

NAME: DULIE OBJECT: 251215 DATE: 13-Jul-02 20:56:30