



- NOTES:
- THIS IS A ULTRA-HIGH WELDMENT ASSEMBLY (UVA). ELECTROPOLISHING IS NEEDED BEFORE WELDING. PRIOR TO ELECTROPOLISHING, THE ASSEMBLY MUST GO THROUGH A MULTISTEP CLEANING PROCESS INVOLVING DEGREASING, WASHING, AND DRY NITROGEN BLOW DOWN.
 - WHEN MACHINING VACUUM PARTS, USE OF SILICONE AND SULFUR-BASED CUTTING FLUIDS IS PROHIBITED. USE ONE OF THE FOLLOWING:
 - A) CIMCOOL 5 STAR 49
 - B) TRIM SOL
 - WELDMENT ASSEMBLY SHALL BE LEAK TESTED USING A MASS SPECTROMETER WITH MINIMUM SENSITIVITY FOR HELIUM OF 2X 10⁻¹⁰ STANDARD CC/SEC PER LEAK METER DIVISION, SUCH AS:
 - ALCATEL ASM-1107CL
 - VARIAN NCR 923 OR 936
 - VEECO MS-9, MS-90 OR MS-18
 - DU PONT CEC 24-120B
 - CALIBRATION OF THE LEAK DETECTOR SENSITIVITY SHALL BE PERFORMED JUST PRIOR TO TESTING.
 - FINAL TEST WILL CONSIST OF SURROUNDING THE CHAMBER (BAGGING) WITH HELIUM. THE CHAMBER WILL BE REJECTED IF A 2% DEFLECTION IN THE MOST SENSITIVE RANGE OF THE LEAK DETECTOR IS SENSED WITHIN 1 MIN.
 - BEFORE SOLDERING ITEM #2, TO ITEM #1, SLOT IN TUBING MUST BE ORIENTED TO ALLOW MAX. FLOW OF WATER
 - ASSEMBLY SHALL ALSO BE WATER TESTED FOR LEAKS @ 300 P.S.I.
 - KEEP THE PART CLEAN, AND WRAP FOR UHV PACKING WITH ALUMINUM FOL.
 - DIMENSIONS IN [] ARE MILLIMETERS

REF. SOURCE

(SWAGLOCK)
 DEARBORN VALVE & FITTING CO.
 1540 N. OLD RIVER ROAD
 P.O. BOX 847
 WAUCONDA, IL 60084-0847
 708-526-8900
 FAX: 708-526-1221

THE LEE CO.
 2 PETTIPaug RD.
 P.O. BOX 424
 WESTBROOK, CN 06498-0424
 203-399-6281
 FAX: 203-399-7058

ITEM	QUANTITY	DESCRIPTION	UNIT	REV.
10	P4102010105-210008	4" O.D. EXTENSION TUBE	SST	1
9	P4102010105-210006	RECTANGULAR EXTENSION TUBE	SST	1
8	PL CA40050205	LEE FLANG	SST	14
7	600-6-65V	3/8" TUBE SOCKET WELD UNION	SST	8
6		3/8 X .035 WALL X 1.218 LG. TUBING	SST	4
5	P4102010105-210004	M2 M COPPER MESH WITH SCREW	COPPER & SST	14
4	P4102010105-210005-01	M2 LEFT END VACUUM FLANGE	SST	1
3	P4102010101-210004-02	M1 RIGHT END VACUUM FLANGE	SST	1
2	P4102010101-210007-03	M2 LEFT & RIGHT TUBE CONNECTIONS	SST	4
1	P4102010101-210001-02	M2 MAIN BODY	SST & GLID - COP	1

REV.	DESCRIPTION	DATE	BY	CHKD.
1	DRAWING BROUGHT UP TO DATE	5/10/04	M.J.M.	D. SHU
2	DRAWING BROUGHT UP TO DATE	5/10/04	M.J.M.	D. SHU

REV.	DESCRIPTION	DATE	BY	CHKD.
1	DRAWING BROUGHT UP TO DATE	5/10/04	M.J.M.	D. SHU
2	DRAWING BROUGHT UP TO DATE	5/10/04	M.J.M.	D. SHU

ARGONNE NATIONAL LABORATORY

ADVANCED PHOTON SOURCE

M2 APS I.D. FRONT END
 2-ND FIXED MASK
 MAIN BODY
 WELDMENT ASSEMBLY

DATE: 5/10/04
 SHEET: 1 of 1
 E P4102010105-210000-02