

NOTES: UNLESS OTHERWISE SPECIFIED

1. INTERPRET DRAWING IAW THE GLOBAL PROFESSIONAL PUBLICATIONS "DRAWING REQUIREMENTS MANUAL", EIGHTH EDITION.
2. INTERPRET DIMENSIONS AND TOLERANCES IAW ANSI Y14.5M - 1982.
3. BREAK SHARP EDGES .002-015.
4. INTERPRET ABBREVIATIONS IAW MIL-STD-12.
5. SEE MATERIALS SCIENCE, INC. DOCUMENT NO. 251011 FOR PROPER INSTALLATION, OPERATION AND USE OF POLARIS SPUTTERING SOURCES.

△6 GAS FITTING, SWAGelok (ITEM 8) IS INCLUDED WITH SOURCE. IT IS ALSO AVAILABLE FROM:  
[HTTP://WWW.SWAGelok.COM](http://www.swagelok.com)

△7 WATER LINE TUBE UNIONS, (ITEM 7) ARE INCLUDED WITH THE SOURCE AND ARE ALSO AVAILABLE FROM:  
 ALPHA TECHNOLOGIES  
 320 PREMIER COURT, SUITE 222  
 FRANKLIN, TN 37067  
 TEL: (615) 771-6650  
 APHA PART NUMBER 88040-04

△8 USER SUPPLIED - MINIMUM 60" LONG POLYETHYLENE WATER LINES REQUIRED FOR SAFE OPERATION. DO NOT USE METAL WATER LINES TO MEET THIS REQUIREMENT - ELECTRICAL ISOLATION IS NECESSARY.

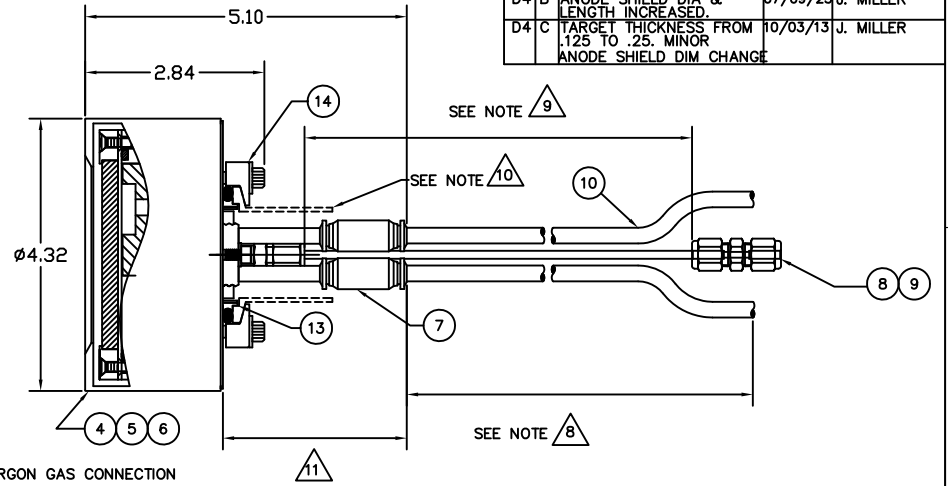
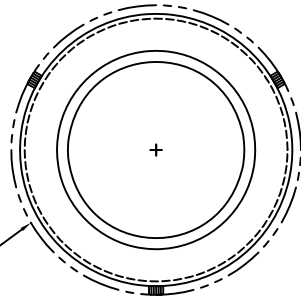
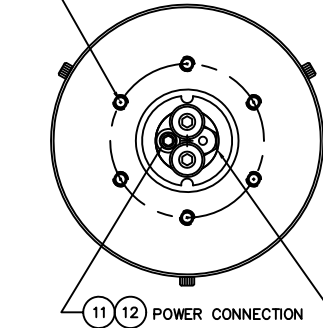
△9 MINIMUM 36" LONG TEFLON PFA LINE REQUIRED (36" INCLUDED WITH SOURCE) FOR SAFE OPERATION. DO NOT USE METAL GAS LINES TO MEET THIS REQUIREMENT - ELECTRICAL ISOLATION IS NECESSARY.

△10 THE CENTERING RING AND BULKHEAD CLAMP SET ARE INCLUDED WITH THE BASIC SPUTTERING SOURCE. FEEDTHROUGH ASSEMBLIES CAN BE PURCHASED SEPARATELY OR ARE PROVIDED BY THE USER. WATER, POWER AND GAS CONNECTIONS MUST BE MADE AT ATMOSPHERE.

△11 3" MINIMUM STRAIGHT CLEARANCE MUST BE ALLOWED FOR WATER FITTINGS PRIOR TO ANY BENDING OF BELLWS OR RADIUS IN HARD PLUMBED FEEDTHROUGH ASSEMBLY. DO NOT LET ID OF BELLWS RUB AGAINST WATER FITTINGS.

12. MASS OF SPUTTERING SOURCE FULLY ASSEMBLED IS 4LBS, DRY.

VACUUM CONNECTION.  
 6X .190-32UNC-2A FASTENERS  
 ON A Ø2.440 BOLT CIRCLE.  
 (DESIGNED TO INTERFACE WITH A  
 STANDARD KF-40 BULKHEAD FLANGE)



-4 ASSY  
 CLAMPED TARGET ASSY SHOWN

ZONE	REV	DESCRIPTION	REVISION	DATE	APPROVED
		INITIAL RELEASE		06/10/02	J. MILLER
D3	A	WATER TUBE LENGTH WAS 4.18" - NOW 4.94"		07/08/10	J. MILLER
D4	B	ANODE SHIELD DIA & LENGTH INCREASED.		07/09/25	J. MILLER
D4	C	TARGET THICKNESS FROM .125 TO .25. MINOR ANODE SHIELD DIM CHANGE		10/03/13	J. MILLER

QTY	UNIT	ASSEMBLY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	ZONE	ITEM NO	
1	1	1	00000016	CLAMP KIT, BULKHEAD KF-40	18-8 CRES		14	
1	1	1	00000100-3	CENTERING RING, KF-40, VITON O-RING	18-8 CRES		13	
1	1	1	00000030-81	SOC HD CAP SCREW, .164-32UNC-2A X .25 LG	18-8 CRES		12	
1	1	1	00000061-4	WASHER, MS-807, FLAT NO. 8	18-8 CRES		11	
1	1	1	00000074-1	TUBING, 1/4" OD X .170" ID X 60" MINIMUM	POLYETHYLENE		10	
1	1	1	00000038-1	TUBING, 1/8" OD X 1/16" ID X 36" MINIMUM	TEFLON PFA		9	
1	1	1	△6 00000316	FITTING, SWAGelok, SS-200-6	316 CRES		8	
2	2	2	△7 00000658-2	1/4 INCH OD PUSH-TO-CONNECT TUBE UNION			7	
1			00000697-3	3 INCH INTERNAL CATHODE (CLAMPED TARGET)			6	
	1		00000697-2	3 INCH INT CATHODE (DIRECT WATER COOLED TGT)			5	
		1	00000697-1	3 INCH INTERNAL CATHODE (BONDED TARGET)			4	
			00000278-3	3 INCH INTERNAL CATHODE (CLAMPED TARGET)			3	
			00000278-2	3 INCH INT CATHODE (DIRECT WATER COOLED TGT)			2	
			00000278-1	3 INCH INTERNAL CATHODE (BONDED TARGET)			1	
-3	-2	-1	CAGE CODE	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	ZONE	ITEM NO

INSTALLATION CONTROL DRAWING

QUANTITY PER ASSEMBLY -3   -2   -1		CAGE CODE   PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		MATERIAL SPECIFICATION		ZONE		ITEM NO	
PARTS LIST				DRAWN: PAT MANLEY 06/10/02 APPROVED: J. MILLER 07/04/20		MATERIALS SCIENCE, INC. Vacuum and Thin Film Technology www.msinc.com					
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:				FINISH:		THIS DRAWING CONTAINS PROPRIETARY INFORMATION AND ANY REPRODUCTION, INCLUDING OR USE OF THIS DRAWING WITHOUT WRITTEN PERMISSION FROM MATERIALS SCIENCE, INC. IS EXPRESSLY PROHIBITED.					
NEXT ASSEMBLY   USED ON				APPLICATION		DO NOT SCALE DRAWING		SCALE: 1/1" = 1"		SHEET 1 OF 1	
DRAWING DATE: 06/10/02				DRAWING NO.: 00000278		REV: C		POLARIS CATHODE, 3 INCH, INSTALLATION CONTROL			