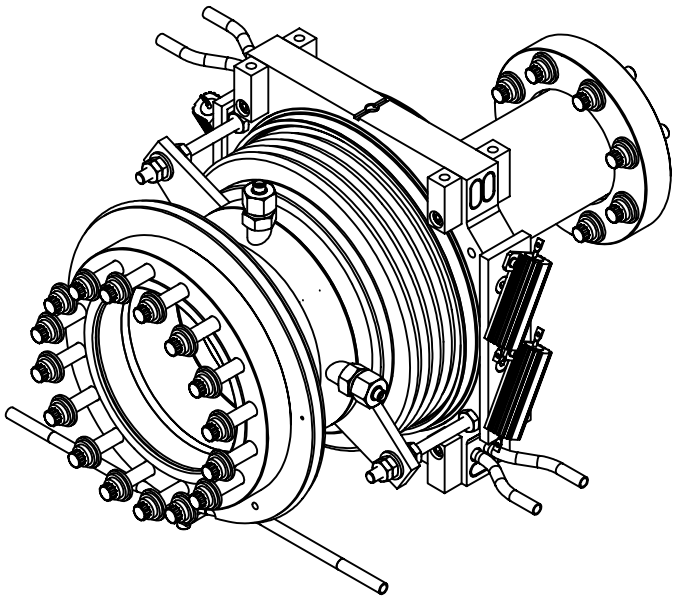


REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		5K HEAT SINK ADDED. BELLOWS MODIFIED. 80K COOLING LINES MODIFIED.	2/8/05	VM
B		5K HEAT SINK, 80K COOLING LINES AND TRANSITION UNIT MODIFIED. 50W AND 5 W RESISTORS ADDED.	4/6/06	VM



83	-	DICRONITED 5/16-24 x 1-1/4 12-POINT BOLT	8		316 SST	
82	-	4-1/2" CF GASKET	1		Varian's FG-0450-CU or equiv.	
78	-	1/4-28 Hex Jam Nut	10		MMC 94805A209 316 SST	
77	-	1/4 Washer	4		MMC 90107A029 316 SST	
76	7102-017 (SH. 11)	1/4-28 THREADED ROD	2		316 SST	
74	-	5/16 WASHER, SAE	24		MMC 91950A030 316 SST	
73	7102-024 (SH. 1)	6" CF GASKET MODIFICATION-106	1		-	
72	-	8 MM FLANGE INCONEL 718 BELLEVILLE WASHER	40		SOLON M8-F-2.0-718	
71	7102-017 (SH. 9)	SUPPORT BAR	8		316L SST	
58	-	#2 Spring Lock Washer	4		MMC 92147A410 316 SST	
57	-	2-56 x 1/4 Socket Hd. Cap Screw	4		MMC 92185A077 316 SST	
56	-	5 W RESISTOR (RH005 TYPE)	1		-	
55	-	#4 Spring Lock Washer	8		MMC 92147A415 316 SST	
54	-	4-40 x 3/8 Socket Hd. Cap Screw	8		MMC 92185A108 316 SST	
53	-	50 W RESISTOR (RH050 TYPE)	4		-	
52	-	10-32 x 1/2 Sock. Flat Hd. Cap Screw	8		MMC 90585A989 316 SST	
51	7102-019 (SH. 2)	50 W RESISTORS PLATE-106H	2		OFE COPPER	
50	-	5/16-24 HEX NUT	16		316 SST	
49	-	DICRONITED 5/16-24 x 2-1/2 12-POINT BOLT	16		316 SST	
48	7102-017 (SH. 9)	THICK WASHER	16		316L SST	
41	7102-018 (SH. 9)	RF PROBE-106 SUBASM	4		-	
37	-	#10 SPRING WASHER	20		MMC 92147A430 316 SST	
36	-	10-32 x 1/2 SOCK. HD. CAP SCREW	20		MMC 92185A989 316 SST	
16	7102-018 (SH. 9)	OUTER HALF SUBASM-106	1		-	
13	7102-019 (SH. 2)	ABSORBERS SUBASSEMBLY-106H	1		-	
8	7102-019 (SH. 4)	TRANSITION UNIT SUBASM	1		-	
2	7102-018 (SH. 2)	COPPER BASE SUBASM-106	1		-	
1	7102-019 (SH. 1)	106 MM HOM HALF LOAD ASMBL.	X		-	

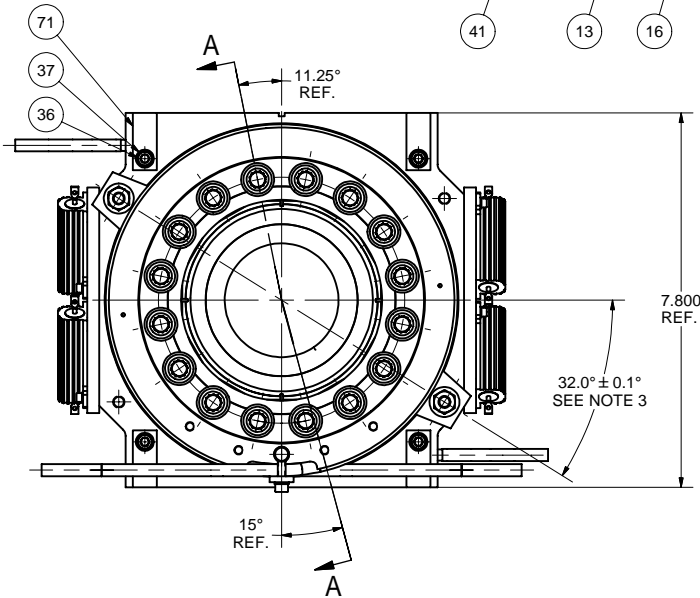
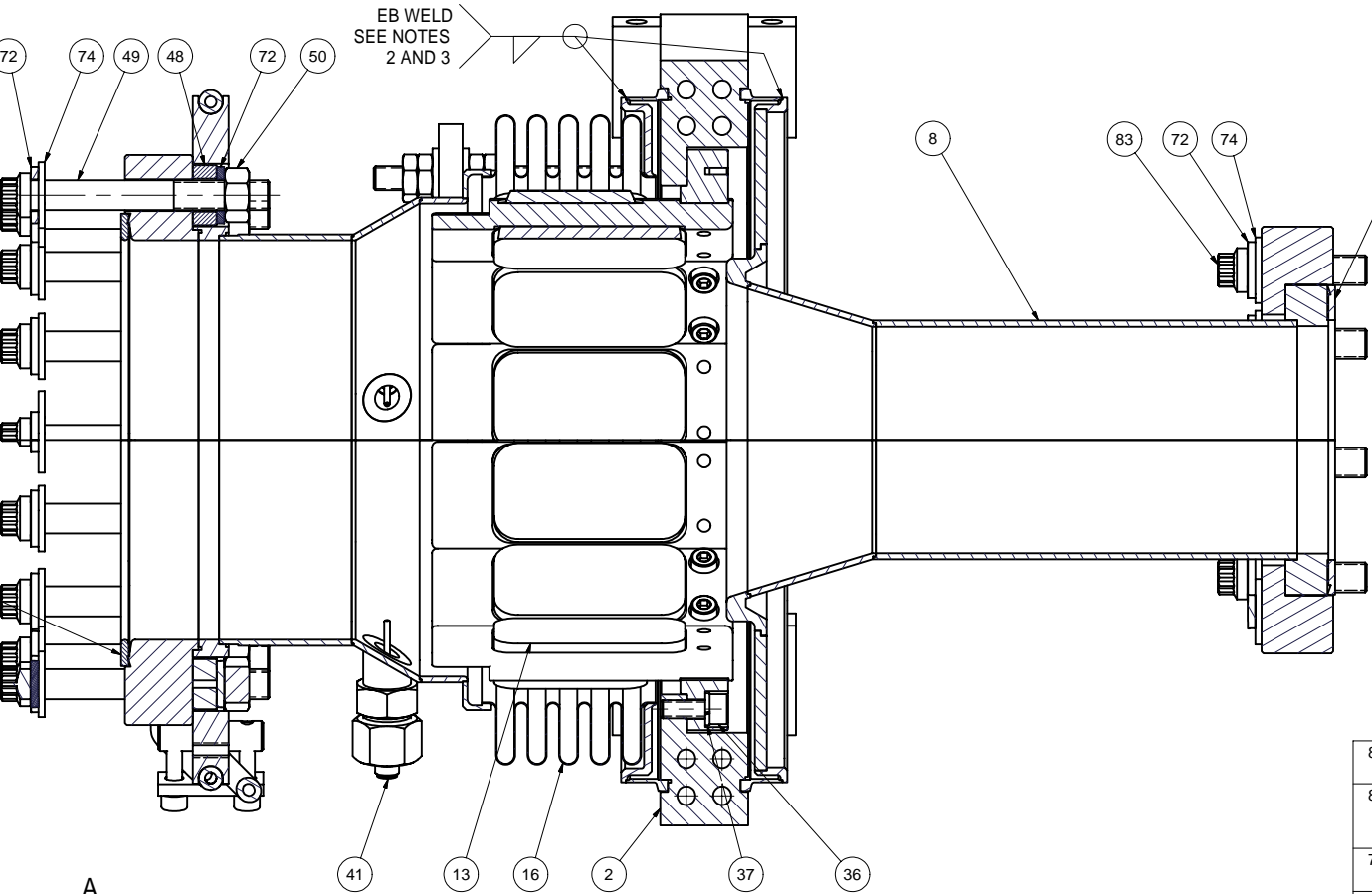
ITEM	DWG. NO.	DESCRIPTION	QUANTITY	REMARKS	REV.
G1	G2	G3			
PLOT DATE: 4/18/2006 CAD FILE NAME: 7102-019-rev-B.idw					
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .00 ± .010 .000 ± .005 FRACTIONS ± 1/64 ANGLES ± 0.5° ALL SURFACES		CORNELL UNIVERSITY LEPP LABORATORY FOR ELEMENTARY PARTICLE PHYSICS CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853			
CHECKED BY: J. SEARS APPROVED BY: M. LIEPE		DRAWN BY VM	DRAWN FOR M.Liepe	DATE 4/5/2006	SCALE D
7102-019 SH. NO. 1 OF 5		106 MM HOM HALF LOAD		7102-019 SH. NO. 1 OF 5	REV. B

FOR MACHINING LUBRICANT USE ONLY
ALKALINE DETERGENT LUBRICANT CIMSTAR 40
OR EQUIVALENT APPROVED BY CORNELL LEPP

TECHNICAL RESOURCE APPROVALS REQUIRED BEFORE FABRICATION			
	OK	DATE	N/A
DRAFTING (O'Connell):	TIO	4-17-06	
MACHINE SHOP (Kaminski):	JPK	4-17-06	
CHEMISTRY (Conklin):			
ELECTRONICS SHOP (Barley):			
FURNACE BRAZING (Sherwood):			
BEAM WELDING (Sears):	JOS	4-17-06	
WELDING OTHER (Gallagher):			
UTILITIES INTEGRATION (Gallagher):			
STOCKROOMS (Lockwood):			

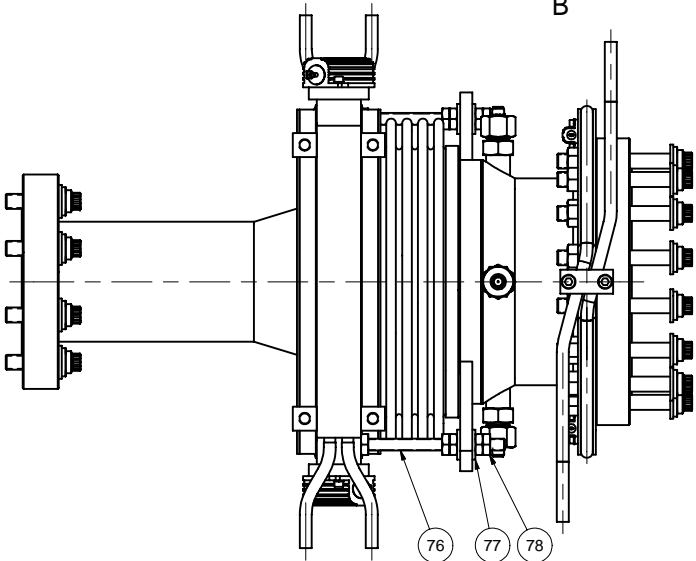
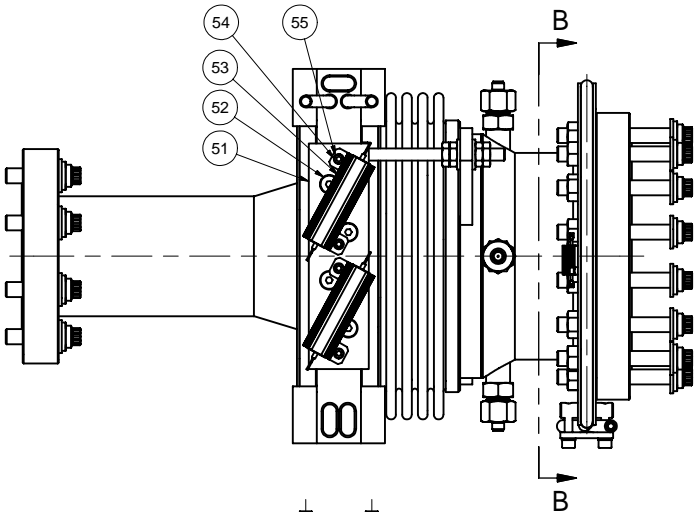
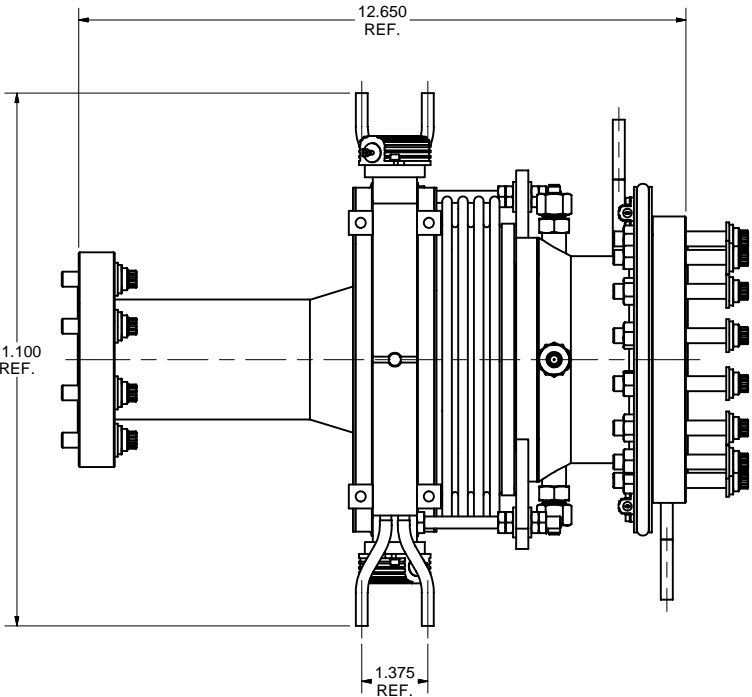
SECTION A-A
SCALE 1 : 1

SECTION B-B

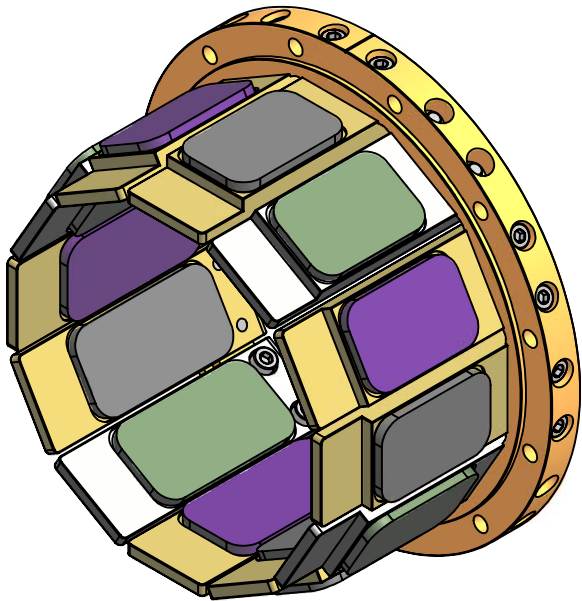
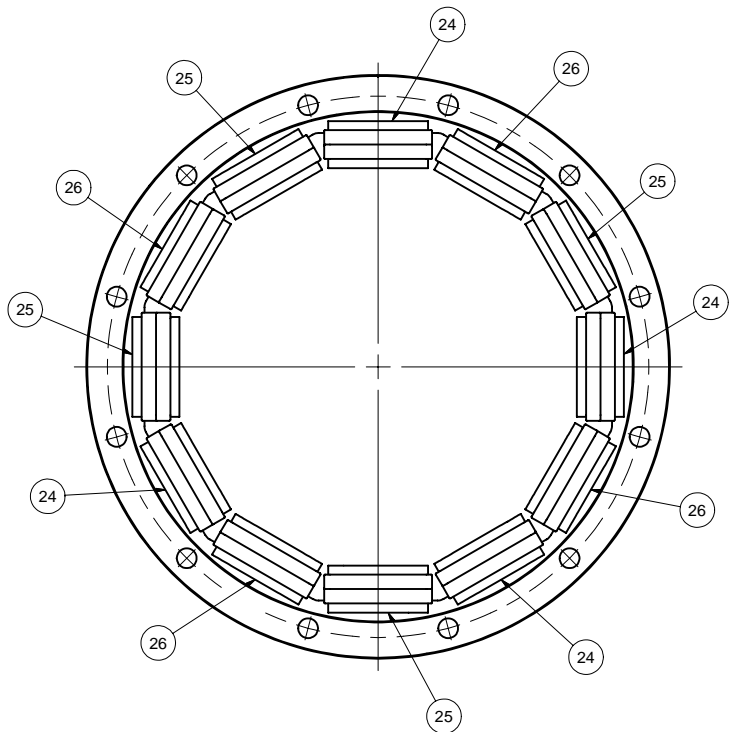
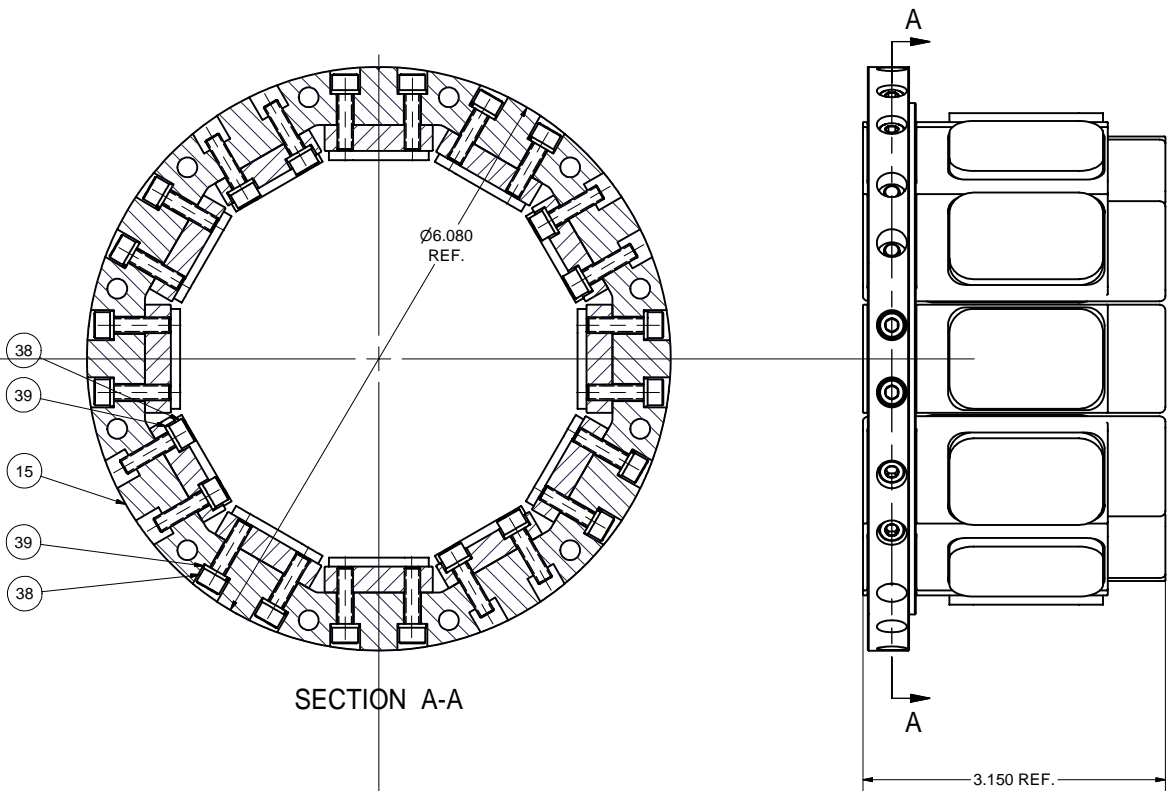


1 106 MM HOM HALF LOAD ASSEMBLY

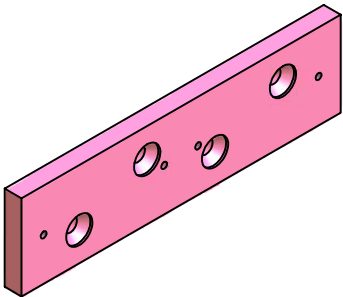
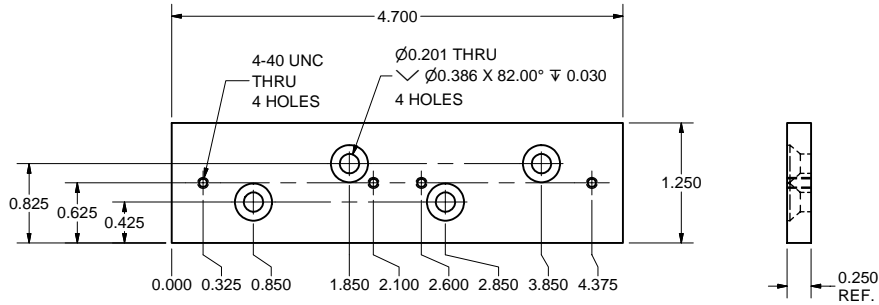
- FILE NAME: 7102-019
SHEET NO.: 1
DFT. SCALE: 1:2
MATERIAL:
QTY: 1 PER CRYOMODULE
NOTES: 1. PAY ATTENTION ON SUBASSEMBLY ITEM 13 GROOVE POSITION.
IT SHOULD BE ON TOP.
2. WELDS TO CONFORM TO UHV SPEC.
3. RODS ITEM 76 SHOULD BE IN CENTER OF BELLOWS BRACKET HOLES WITHIN 0.01 IN.
4. LEAK RATE: <= 1xE-9 mbar x l/sec.



REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
B		POSITIONS OF PLATE SUBASMS (ITEMS 24, 25, 26) CHANGED. PART ITEM 51 ADDED.	4/6/06	VM



13 ABSORBERS SUBASSEMBLY-106H
FILE NAME: 7102-019
SHEET NO.: 2
DFT. SCALE: 1:1
MATERIAL:
QTY: 1 PER ASSEMBLY
NOTES: 1. MAX. TORQUE ON SCREWS ITEM 38: 75 in-lbs.

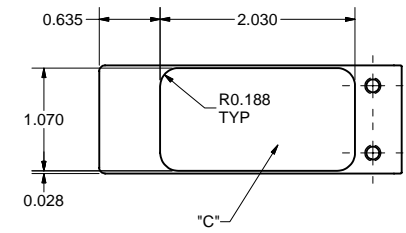
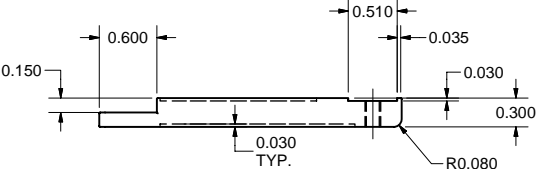
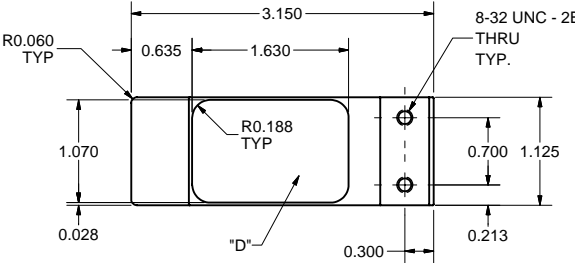


51 50 W RESISTORS PLATE-106H
FILE NAME: 7102-019
SHEET NO.: 2
DFT. SCALE: 1:1
MATERIAL: 1/4" OFE COPPER SHEET
QTY: 2 PER ASSEMBLY
NOTES:

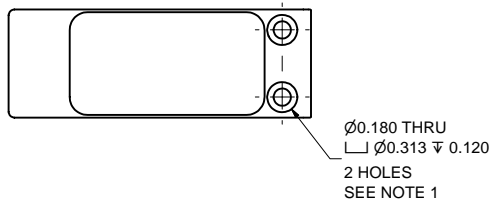
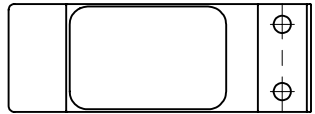
FOR MACHINING LUBRICANT USE ONLY ALKALINE DETERGENT LUBRICANT CIMSTAR 40 OR EQUIVALENT APPROVED BY CORNELL LEPP			
TECHNICAL RESOURCE APPROVALS REQUIRED BEFORE FABRICATION			
DRAFTING (O'Connell):	OK	DATE	N/A
MACHINE SHOP (Kaminski):			
CHEMISTRY (Conklin):			
ELECTRONICS SHOP (Barley):			
FURNACE BRAZING (Sherwood):			
BEAM WELDING (Sears):			
WELDING OTHER (Gallagher):			
UTILITIES INTEGRATION (Gallagher):			
STOCKROOMS (Lockwood):			

ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
39	-	#8 SPRING WASHER				MMC 92147A425 316 SST	
38	-	8-32 x 5/8 Socket Head Cap Screw				MMC 92185A196 316 SST	
26	7102-019 (SH. 3)	ABSORBER PLATE SUBASM 3-106H	4				
25	7102-019 (SH. 3)	ABSORBER PLATE SUBASM 2-106H	4				
24	7102-019 (SH. 3)	ABSORBER PLATE SUBASM 1-106H	4				
15	7102-018 (SH. 4)	COPPER RING-106	1				
13	7102-019 (SH. 2)	ABSORBERS SUBASSEMBLY-106H	X				
PLOT DATE: 4/18/2006 CAD FILE NAME: 7102-019-rev-B.idw							
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .00 ± .010 .000 ± .005 FRACTIONS ± 1/64 ANGLES ± 0.5° ALL SURFACES		CORNELL UNIVERSITY FLOYD R. NEWMAN LABORATORY ITHACA, NY 14853					
Erl Injector Cryomodule 106 MM HOM HALF LOAD		DRAWN BY VM	DRAWN FOR M.Liepe	DATE 4/5/2006	SCALE -	7102-019 SH. NO. 2 OF 5	REV. B

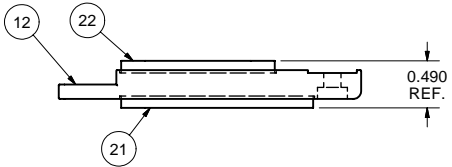
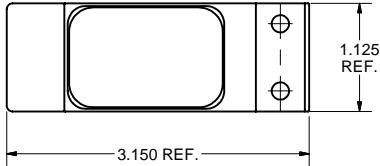
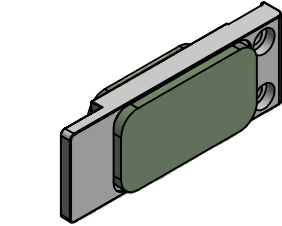
REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		MAJOR CHANGES IN PART NAMES AND MATERIALS.	2/8/05	VM
B		NEW ABSORBER PLATE TYPE (ITEM 12) ADDED.	4/6/06	VM



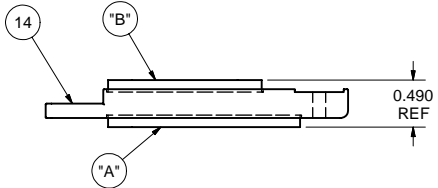
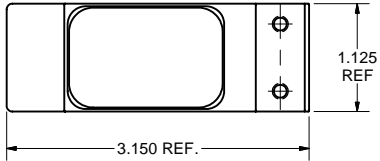
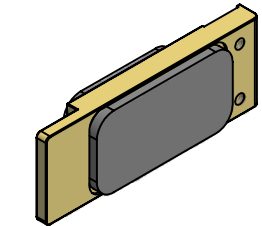
14 ABSORBER PLATE 1-106H
FILE NAME: 7102-019
SHEET NO.: 3
DFT. SCALE: 1:1
MATERIAL: 10W3 ELKONITE (W-75%, Cu-25%)
QTY: 8 PER ASSEMBLY
NOTES: 1. BREAK ALL SHARP EDGES R=0.01" EXCEPT MACHINED RECESSES.
2. METALLIZE SURFACES "C" AND "D" PER LEPP SPEC. PEB-01.



12 ABSORBER PLATE 2-106H
FILE NAME: 7102-019
SHEET NO.: 3
DFT. SCALE: 1:1
MATERIAL: TUNGSTEN ALLOY 18 (W-95%, Ni-3.5%, Cu-1.5%), NONMAGNETIC
QTY: 4 PER ASSEMBLY
NOTES: 1. ALL OTHER DIMENSIONS ARE SAME AS FOR ITEM 14.
2. BREAK ALL SHARP EDGES R=0.01" EXCEPT MACHINED RECESSES.





26 ABSORBER PLATE SUBASM 3-106H
FILE NAME: 7102-019
SHEET NO.: 3
DFT. SCALE: 1:1
MATERIAL:
QTY: 4 PER ASSEMBLY
NOTES: 1. BRAZE TILES 21 AND 22 TO PLATE 12 ACCORDING TO LEPP SPEC. NAS-01.



24 ABSORBER PLATE SUBASM 1-106H
FILE NAME: 7102-019
SHEET NO.: 3
DFT. SCALE: 1:1
MATERIAL:
QTY: 4 PER ASSEMBLY
NOTES: 1. PARTS: "A" - ITEM 17, "B" - 18.
2. SOLDER TILES "A" AND "B" TO PLATE 14 ACCORDING TO LEPP SPEC. PEB-03.

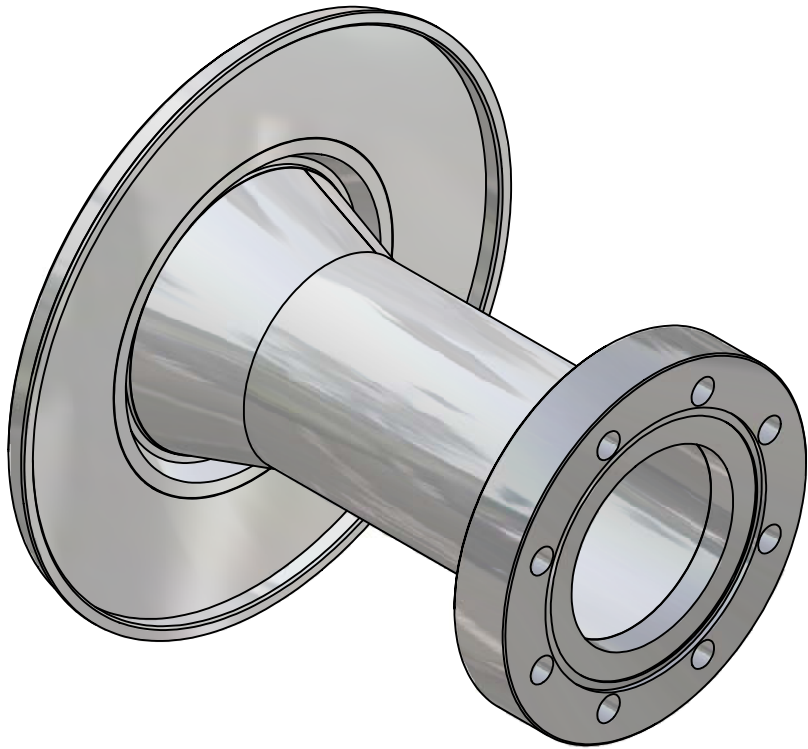
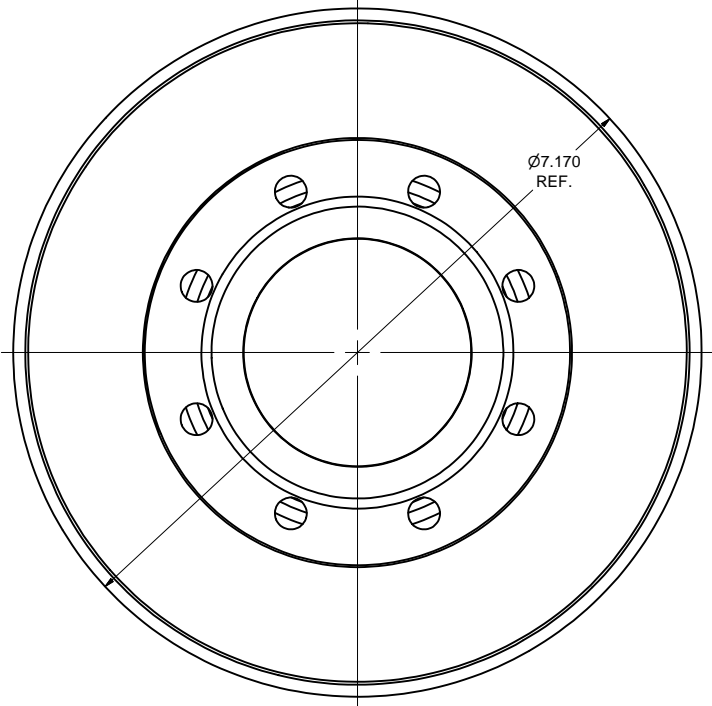
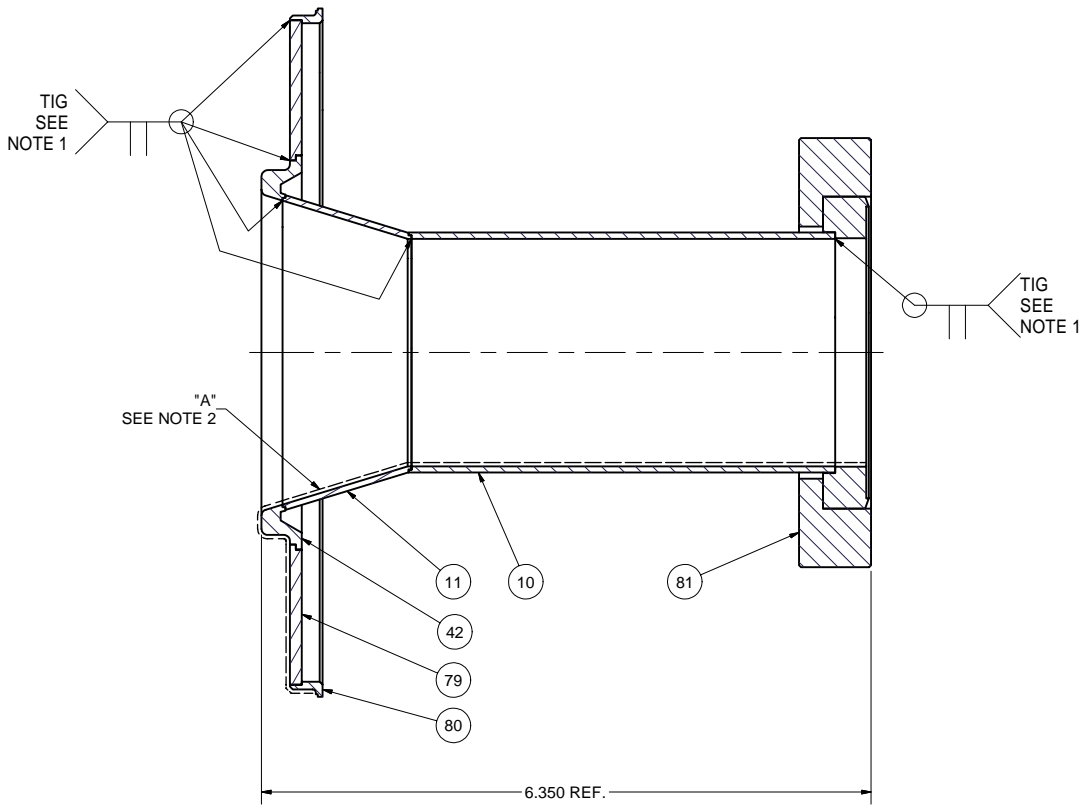
25 ABSORBER PLATE SUBASM 2-106H
FILE NAME: 7102-019
SHEET NO.: 3
DFT. SCALE: 1:1
MATERIAL:
QTY: 4 PER ASSEMBLY
NOTES: 1. PARTS: "A" - ITEM 19, "B" - 20.
2. SOLDER TILES "A" AND "B" TO PLATE 14 ACCORDING TO LEPP SPEC. PEB-03.

22	7102-018 (SH. 5)	SMALL ABSORBER TILE 3-106			1	CERADINE	
21	7102-018 (SH. 5)	LARGE ABSORBER TILE 3-106			1	CERADINE	
12	7102-019 (SH. 3)	ABSORBER PLATE 2-106H			1	W ALLOY 18	
20	7102-018 (SH. 5)	SMALL ABSORBER TILE 2-106		1		Co2Z	
19	7102-018 (SH. 5)	LARGE ABSORBER TILE 2-106		1		Co2Z	
18	7102-018 (SH. 5)	SMALL ABSORBER TILE 1-106	1			TT2-111R	
17	7102-018 (SH. 5)	LARGE ABSORBER TILE 1-106	1			TT2-111R	
14	7102-019 (SH. 3)	ABSORBER PLATE 1-106H	1	1		10W3 ELKONITE	
26	7102-019 (SH. 3)	ABSORBER PLATE SUBASM 3-106H			X	-	
25	7102-019 (SH. 3)	ABSORBER PLATE SUBASM 2-106H			X	-	
24	7102-019 (SH. 3)	ABSORBER PLATE SUBASM 1-106H			X	-	

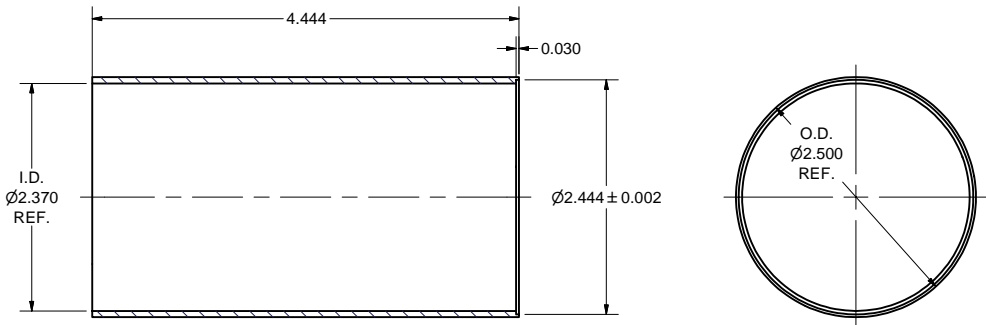
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							QUANTITY							
D	PRINT DISTR.	PLOT DATE: 4/18/2006 CAD FILE NAME: 7102-019-rev-B.idw												
		CR-1	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .00 ± .010 .000 ± .005 FRACTIONS ± 1/64 ANGLES ± 0.5° ALL SURFACES 			CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853								
ERL INJECTOR CRYOMODULE 106 MM HOM HALF LOAD														
7102-019 SH. NO. 3 OF 5	REV. B		CHECKED BY: J. SEARS		DRAWN BY VM		DRAWN FOR M.Liepe		DATE 4/5/2006		SCALE		D	7102-019 SH. NO. 3 OF 5
		APPROVED BY: M. LIEPE												

PRINT DISTR.	CR-1	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .00 ± .010 .000 ± .005 FRACTIONS ± 1/64 ANGLES ± 0.5° ALL SURFACES	CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853	ERL INJECTOR CRYOMODULE 106 MM HOM HALF LOAD	CHECKED BY: J. SEARS APPROVED BY: M. LIEPE	DRAWN BY VM	DRAWN FOR M.Liepe	DATE 4/5/2006	SCALE D	7102-019 SH. NO. 3 OF 5	REV. B
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REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		ITEM 37 WAS 4, ITEM 53 WAS 9. DRAWING OF ITEM 25 REMOVED - NOW IT IS A STANDARD PART.	2/8/05	VM
B		PART ITEM 10: 4.444 WAS 2.121. PART ITEM 53 REMOVED.	4/6/06	VM




8 TRANSITION UNIT SUBASM
FILE NAME: 7102-019
SHEET NO.: 4
DFT. SCALE: 1:1
MATERIAL:
QTY: 1 PER ASSEMBLY
NOTES: 1. WELDS TO CONFORM TO UHV SPEC.
2. COPPER PLATE 0.0004" SURFACE "A".

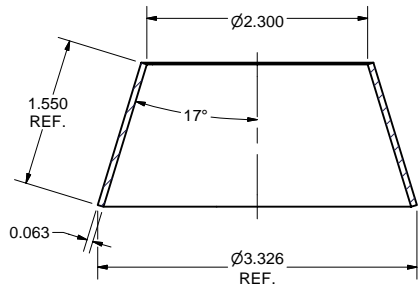


10 SMALL TUBE-106H
FILE NAME: 7102-019
SHEET NO.: 4
DFT. SCALE: 1:1
MATERIAL: 2.5" OD x 0.065 W 316L ST. STEEL TUBE
QTY: 1 PER ASSEMBLY
NOTES:

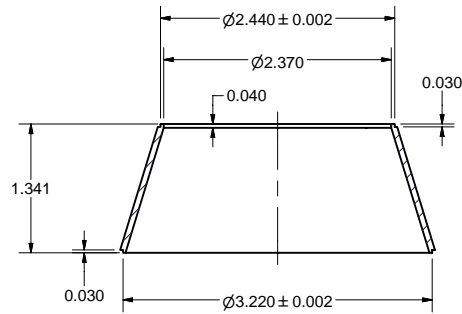
81	-	4-1/2" CF ROTATABLE FLANGE	1			Varian's (or eqv.) F0450-0250-RC 316L SST	
80	7102-019 (SH. 5)	WELD RING-106H	1			316L SST	
79	7102-019 (SH. 5)	TRANSITION DISK	1			316L SST	
42	7102-019 (SH. 5)	CONE RING	1			316L SST	
11	7102-019 (SH. 5)	CONE-106H	1			316L SST	
10	7102-019 (SH. 4)	SMALL TUBE-106H	1			316L SST	
8	7102-019 (SH. 4)	TRANSITION UNIT SUBASM	X				

		ITEM	DWG. NO.		DESCRIPTION			G1	G2	G3	REMARKS		REV.	
								QUANTITY						
D	PRINT DISTR.	PLOT DATE: 4/18/2006 CAD FILE NAME: 7102-019-rev-B.idw												
7102-019 SHEET 4 OF 5	CR-1	UNLESS OTHERWISE SPECIFIED:		CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853										
		DIMENSIONS ARE IN INCHES; TOLERANCES ON: .00 ± .010 .000 ± .005 FRACTIONS ± 1/64 ANGLES ± 0.5° ALL SURFACES ✓		ERL INJECTOR CRYOMODULE 106 MM HOM HALF LOAD										
REV. B		CHECKED BY: J. SEARS		DRAWN BY VM		DRAWN FOR M.Liepe		DATE 4/5/2006		SCALE D		7102-019 SH. NO. 4 OF 5		REV. B
		APPROVED BY: M. LIEPE												

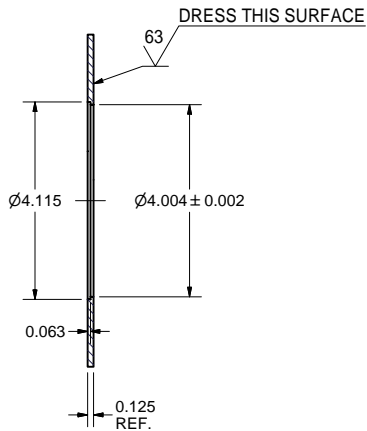
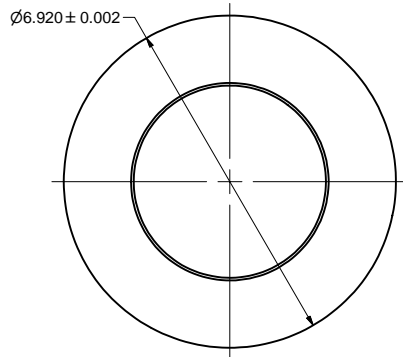
REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		MINOR CHANGES IN DIMENSIONS AND TOLERANCES.	2/8/05	VM
B		MINOR CHANGES IN PARTS ITEM 79 AND 80. MAJOR CHANGES IN PART ITEM 42.	4/6/06	VM



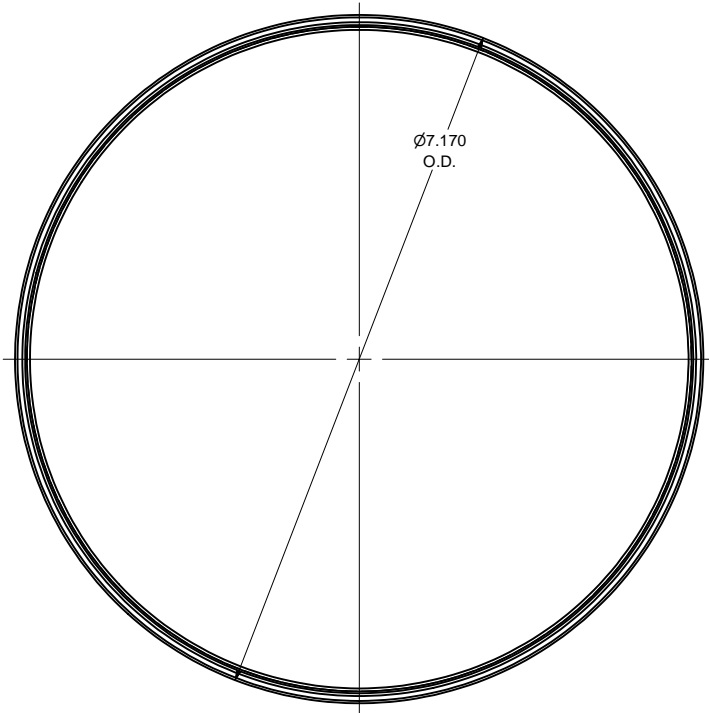
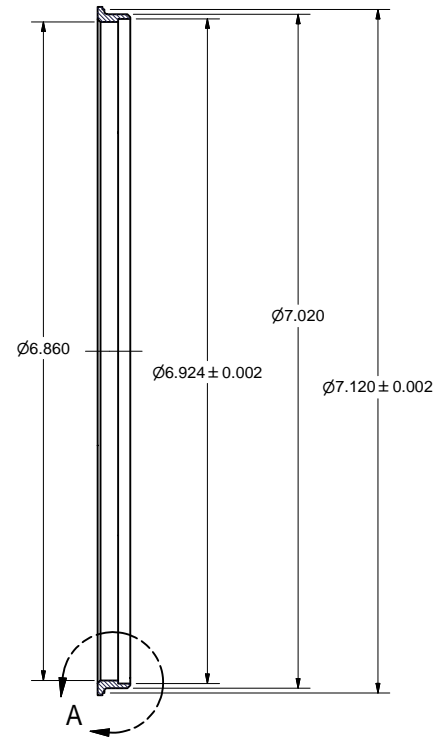
CONE BLANK



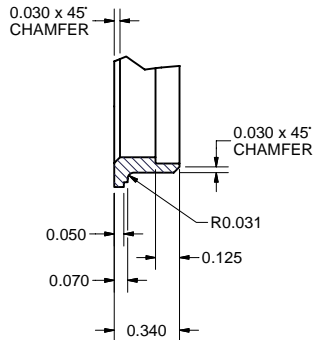
11 CONE-106H
FILE NAME: 7102-019
SHEET NO.: 5
DFT. SCALE: 1:1
MATERIAL: 316L STAINLESS STEEL
QTY: 1 PER ASSEMBLY
NOTES:



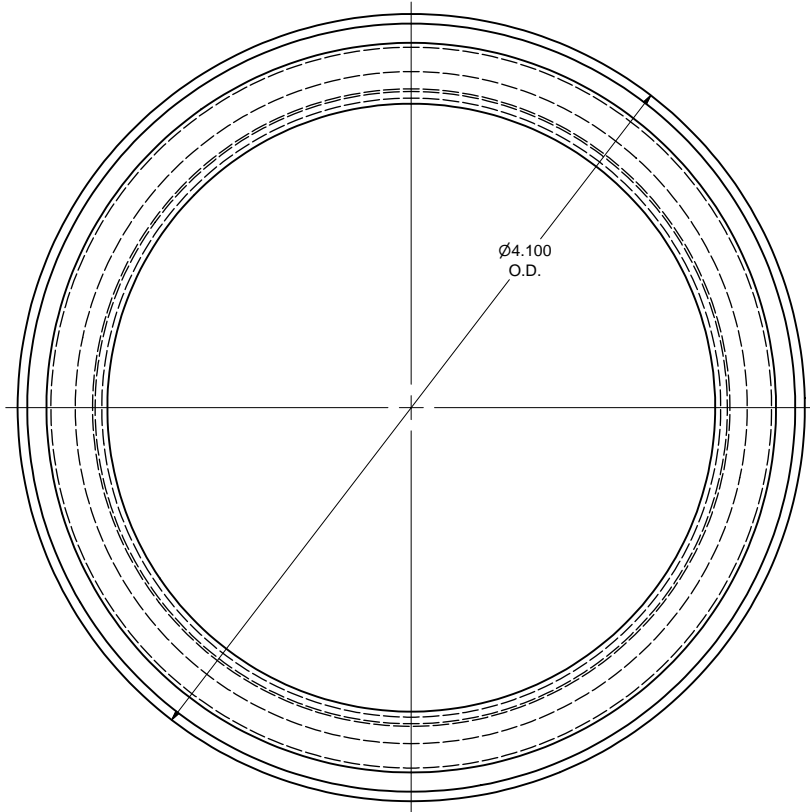
79 TRANSITION DISK
FILE NAME: 7102-019
SHEET NO.: 5
DFT. SCALE: 1:2
MATERIAL: 1/4" 316L STAINLESS STEEL SHEET
QTY: 1 PER ASSEMBLY
NOTES:



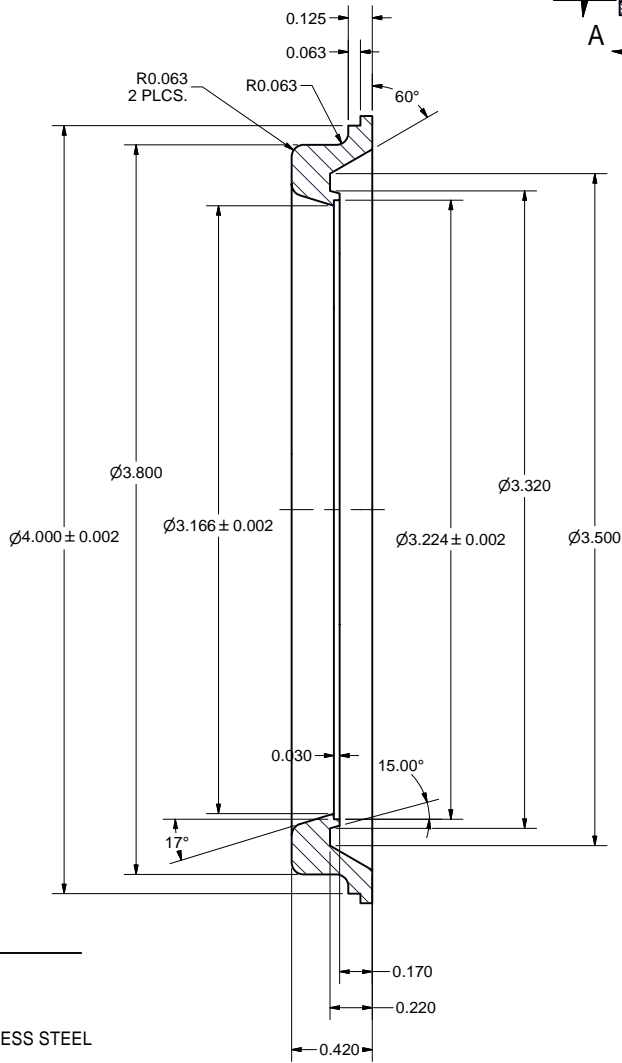
80 WELD RING-106H
FILE NAME: 7102-019
SHEET NO.: 5
DFT. SCALE: 1:1
MATERIAL: 316L ST. ST.
QTY: 1 PER SSEMBLY
NOTES:




DETAIL A
SCALE 2 : 1



42 CONE RING
FILE NAME: 7102-019
SHEET NO.: 5
DFT. SCALE: 2:1
MATERIAL: 316L STAINLESS STEEL
QTY: 1 PER ASSEMBLY
NOTES:



		ITEM			DWG. NO.			DESCRIPTION			G1	G2	G3	REMARKS		REV.	
											QUANTITY						
D		PRINT DISTR.		PLOT DATE: 4/18/2006 CAD FILE NAME: 7102-019-rev-B.idw													
7102-019 SH. NO. 5 OF 5		CR-1		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: .00 ± .010 .000 ± .005 FRACTIONS ± 1/64 ANGLES ± 0.5° ALL SURFACES ✓			CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853										
							ERL INJECTOR CRYOMODULE 106 MM HOM HALF LOAD										
REV. B		CHECKED BY: J. SEARS		DRAWN BY VM			DRAWN FOR M.Liepe			DATE 4/5/2006		SCALE		D		7102-019 SH. NO. 5 OF 5	REV. B
		APPROVED BY: M. LIEPE															