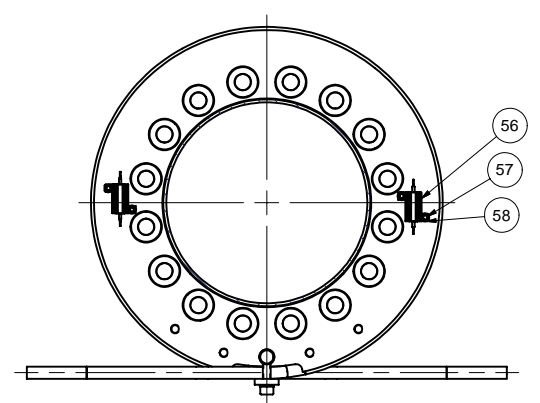


SECTION A-A  
SCALE 1 : 1



SECTION B-B

- 1 106 MM HOM LOAD ASSEMBLY
- FILE NAME: 7102-018  
SHEET NO.: 1  
DFT. SCALE: 1:2  
MATERIAL:  
QTY: 2 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 16 SHOULD BE IN CENTER OF BELLOWS BRACKET HOLES WITHIN 0.01 IN.  
4. LEAK RATE:  $\leq 1 \times 10^{-9}$  mbar x l/sec.

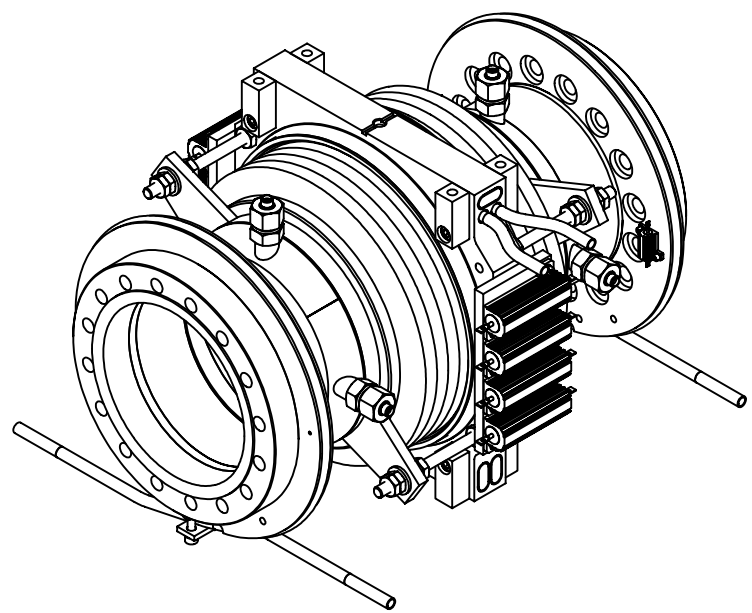
FOR MACHINING LUBRICANT USE ONLY  
ALKALINE DETERGENT LUBRICANT CIMSTAR 40  
OR EQUIVALENT APPROVED BY CORNELL LEPP

TECHNICAL RESOURCE APPROVALS REQUIRED BEFORE FABRICATION			
	OK	DATE	N/A
DRAFTING (O'Connell):	TIO	3-9-06	
MACHINE SHOP (Kaminski):	JPK	3-9-06	
CHEMISTRY (Conklin):			
ELECTRONICS SHOP (Barley):			
FURNACE BRAZING (Sherwood):			
BEAM WELDING (Sears):	JOS	3-9-06	
WELDING OTHER (Gallagher):			
UTILITIES INTEGRATION (Gallagher):			
STOCKROOMS (Lockwood):			

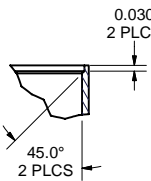
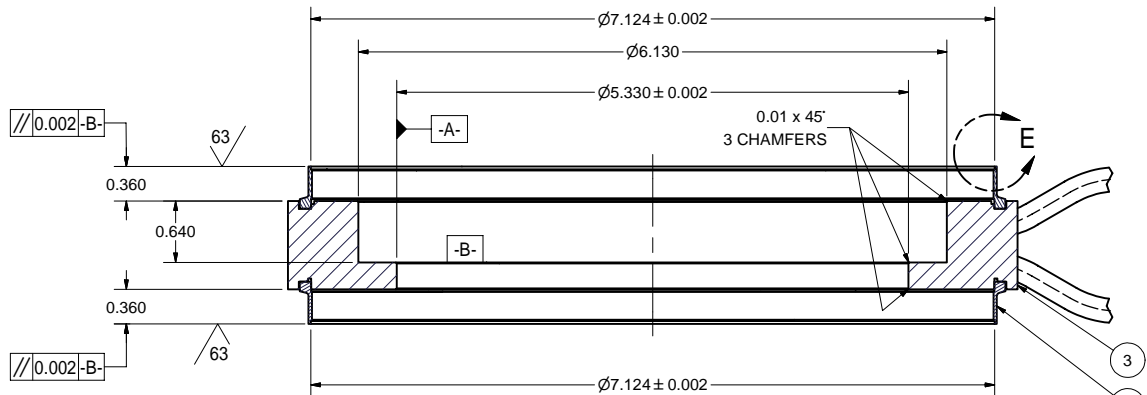
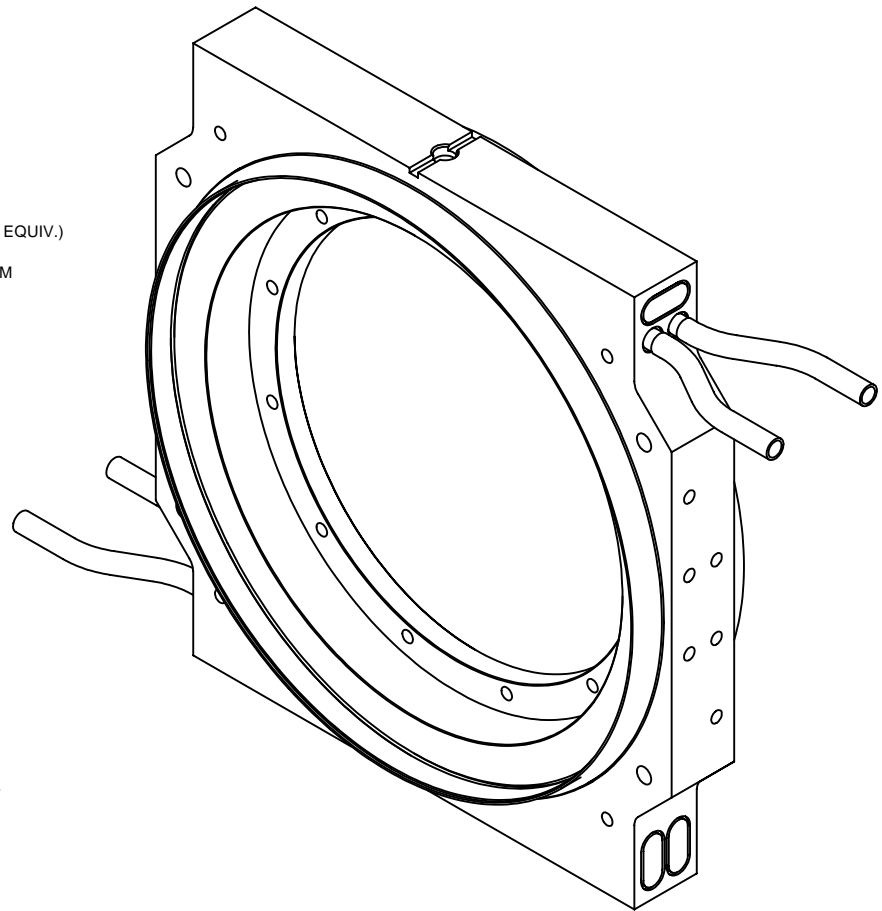
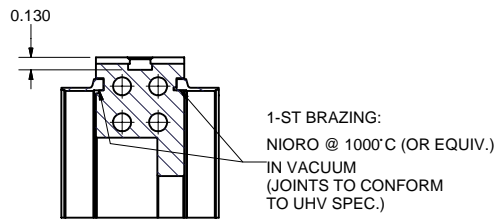
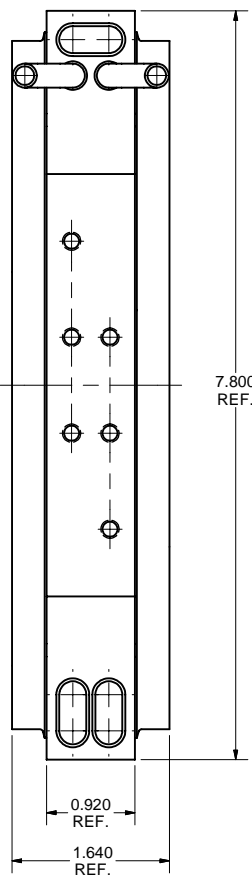
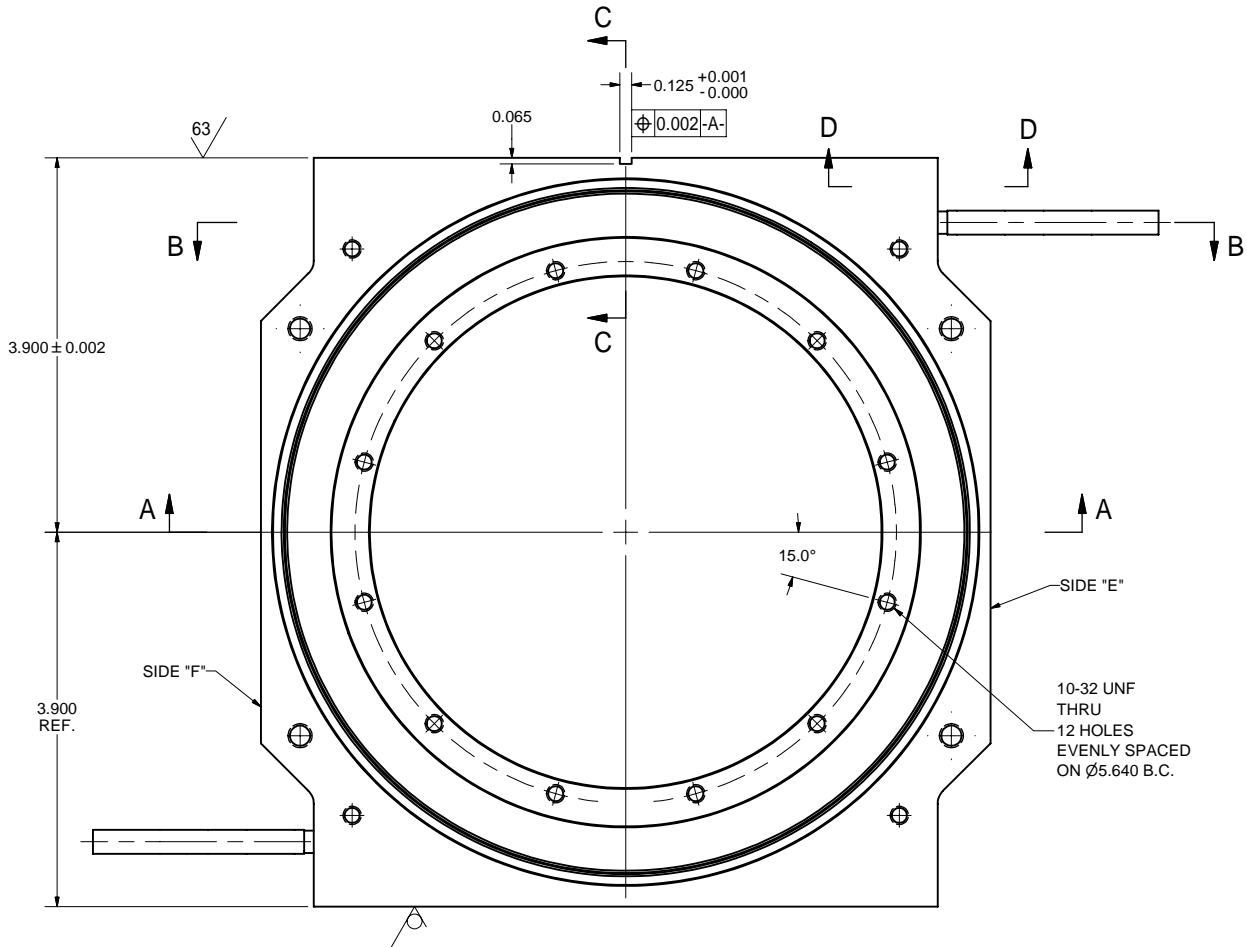
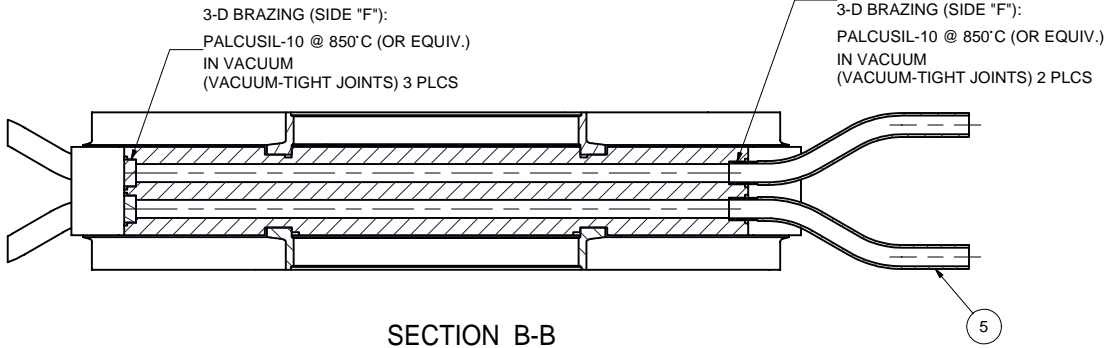
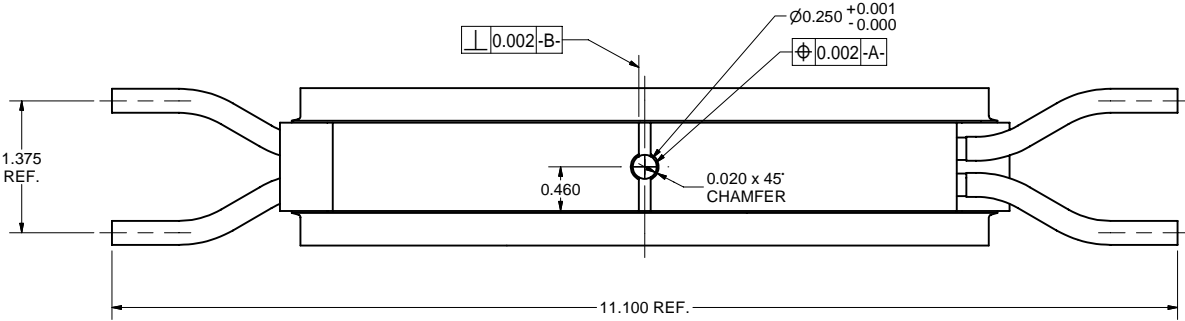
ITEM	DWG. NO.	DESCRIPTION	QUANTITY			REMARKS	REV.
			G1	G2	G3		
78	-	1/4-28 Hex Jam Nut	20			MMC 94805A209 316 SST	
77	-	1/4 WASHER	8			MMC 90107A029 316 SST	
76	7102-017 (SH. 11)	1/4-28 THREADED ROD	4			-	
73	7102-024 (SH. 1)	6" CF GASKET MODIFICATION-106	2			-	
71	7102-017 (SH. 9)	SUPPORT BAR	8			316L SST	
57	-	2-56 x 1/4 Sock. Head Cap Screw	8			MMC 92185A077, 316 SS	
58	-	#2 Spring Lock Washer	8			MMC 92147A410, 316 SS	
56	-	5 W RESISTOR (RH005 TYPE)	16			-	
55	-	#4 Spring Lock Washer	16			MMC 92147A415, 316 SS	
54	-	4-40 x 3/8 Socket Head Cap Screw	16			MMC 92185A108, 316 SS	
52	-	10-32 x 1/2 Sock. Flat Hd. Cap Screw	8			MMC 90585A989, 316 SS	
53	-	50 W RESISTOR (RH050 TYPE)	16			-	
51	7102-017 (SH. 9)	50 W RESISTORS PLATE	4			OFE COPPER	
48	7102-017 (SH. 9)	THICK WASHER	32			316L SST	
41	7102-018 (SH. 9)	RF PROBE-106 SUBASM	8			-	
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	2			-	
13	7102-018 (SH. 4)	ABSORBERS SUBASSEMBLY-106	1			-	
2	7102-018 (SH. 2)	COPPER BASE SUBASM-106	1			-	
1	7102-018 (SH. 1)	106 MM HOM LOAD ASSEMBLY	X			-	

CR-1	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .00 ± .010 .000 ± .005 FRACTIONS ± 1/64 ANGLES ± 0.5° ALL SURFACES	<b>CORNELL UNIVERSITY</b> <b>LEPP</b> LABORATORY FOR ELEMENTARY PARTICLE PHYSICS	CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853
7102-018 SH. NO. 1 OF 11	CHECKED BY: J. SEARS APPROVED BY: M. LIEPE	DRAWN BY: VM DRAWN FOR: M. LIEPE DATE: 4/3/2006 SCALE: -	7102-018 SH. NO. 1 OF 11

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		5K HEAT SINK PLATE ADDED. BELLOWS MODIFIED. 80K COOLING LINES MODIFIED.	12/6/05	VM
B		5 K HEAT SINK MODIFIED. 80 K COOLING LINES MODIFIED. 50 W AND 5 W RESISTORS ADDED.	2/22/06	VM
C		PARTS ITEM 74, 76, 77, 78 ADDED.	4/3/06	VM
D		BOM EDITED TO STANDARDIZE VENDOR PART #'s. D.M.E.	6-14-06	TIO
E		FASTENERS ITEM 49, 50, 72, 74 REMOVED.	01/24/07	VM



REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		80 K COOLING LINES MODIFIED.	12/6/05	VM
B		80 K COOLING LINES REMODIFIED.	2/22/06	VM
C	C,D-7,8	FOUR 1/4-28 HOLES ON PART ITEM 3 SHOWN.	4/3/06	VM
D		BOM EDITED TO STANDARDIZE VENDOR PART #'s. D.M.E.	6-14-06	TIO



**2 COPPER BASE SUBASM-106**  
FILE NAME: 7102-018  
SHEET NO.: 2  
DFT. SCALE: 1:1  
MATERIAL:  
QTY: 1 PER ASSEMBLY  
NOTES: 1. ALL MACHINING SHOULD BE DONE AFTER BRAZING.

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

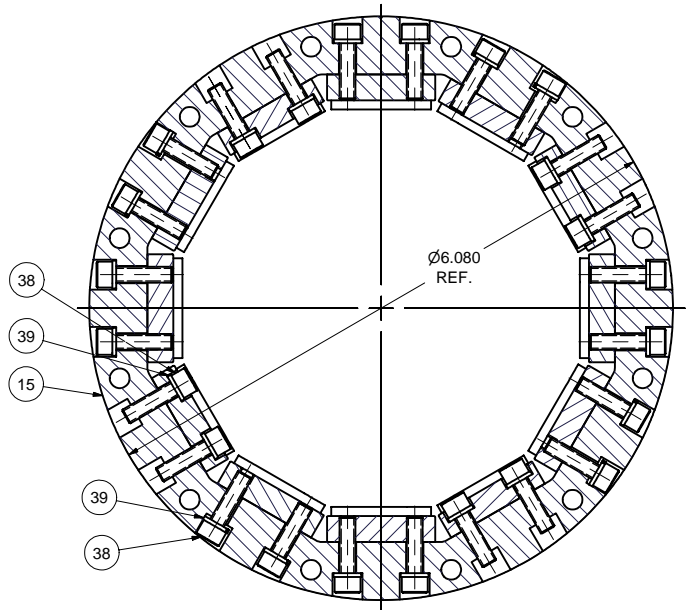
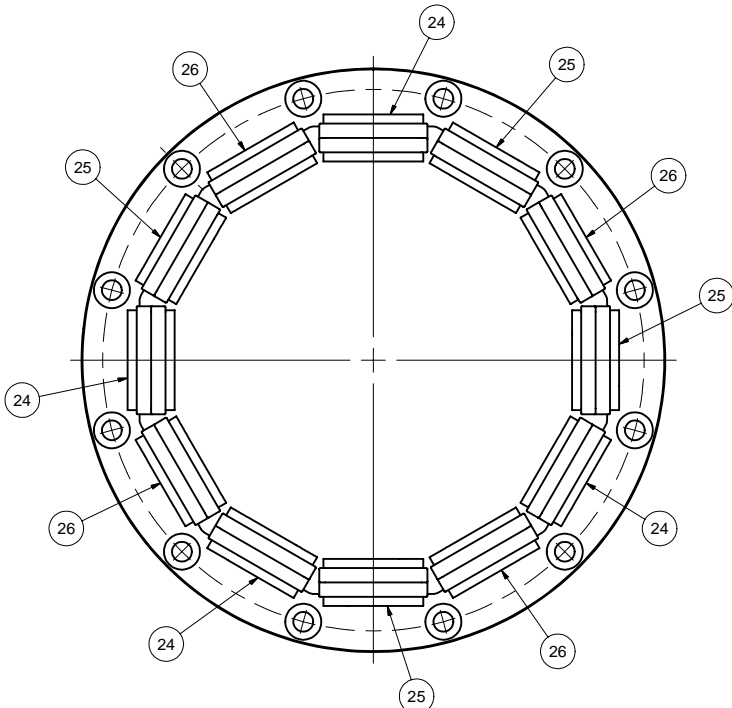
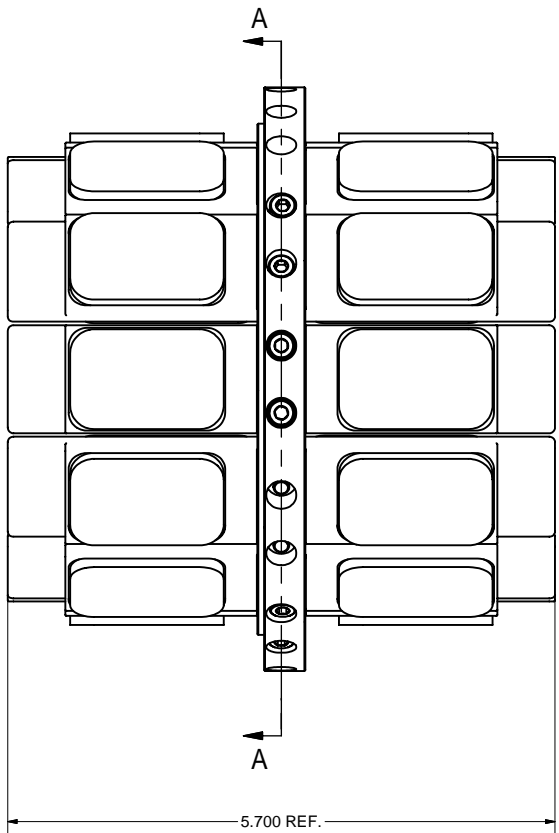
TECHNICAL RESOURCE APPROVALS REQUIRED BEFORE FABRICATION			
	OK	DATE	N/A
DRAFTING (O'Connell):			
MACHINE SHOP (Kaminski):			
CHEMISTRY (Conklin):			
ELECTRONICS SHOP (Barley):			
FURNACE BRAZING (Sherwood):			
BEAM WELDING (Sears):			
WELDING OTHER (Gallagher):			
UTILITIES INTEGRATION (Gallagher):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

ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	QUANTITY	REMARKS	REV.
6	7102-017 (SH. 3)	CAP 1					OFE COPPER	
5	7102-017 (SH. 3)	80 K COOLING TUBE					MMC 89785K823 316L SST	
4	7102-018 (SH. 3)	CONNECTION RING-106					316L SST	A
3	7102-018 (SH. 3)	COPPER BASE-106					OFE COPPER	
2	7102-018 (SH. 1)	COPPER BASE SUBASM-106					-	
PLOT DATE: 6/13/06 CAD FILE NAME: 7102-018.idw								
CR-1		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .00 ± .010 .000 ± .005 FRACTIONS ± 1/64 ANGLES ± 0.5° ALL SURFACES	<b>CORNELL UNIVERSITY</b> <b>LEPP</b> LABORATORY FOR ELEMENTARY PARTICLE PHYSICS			CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853		
EVL INJECTOR CRYOMODULE 106 MM HOM LOAD		CHECKED BY: J. SEARS APPROVED BY: M. LIEPE	DRAWN BY: VM	DRAWN FOR: M. LIEPE	DATE: 4/3/06	SCALE: -	7102-018 SH. NO. 2 OF 11	REV. D





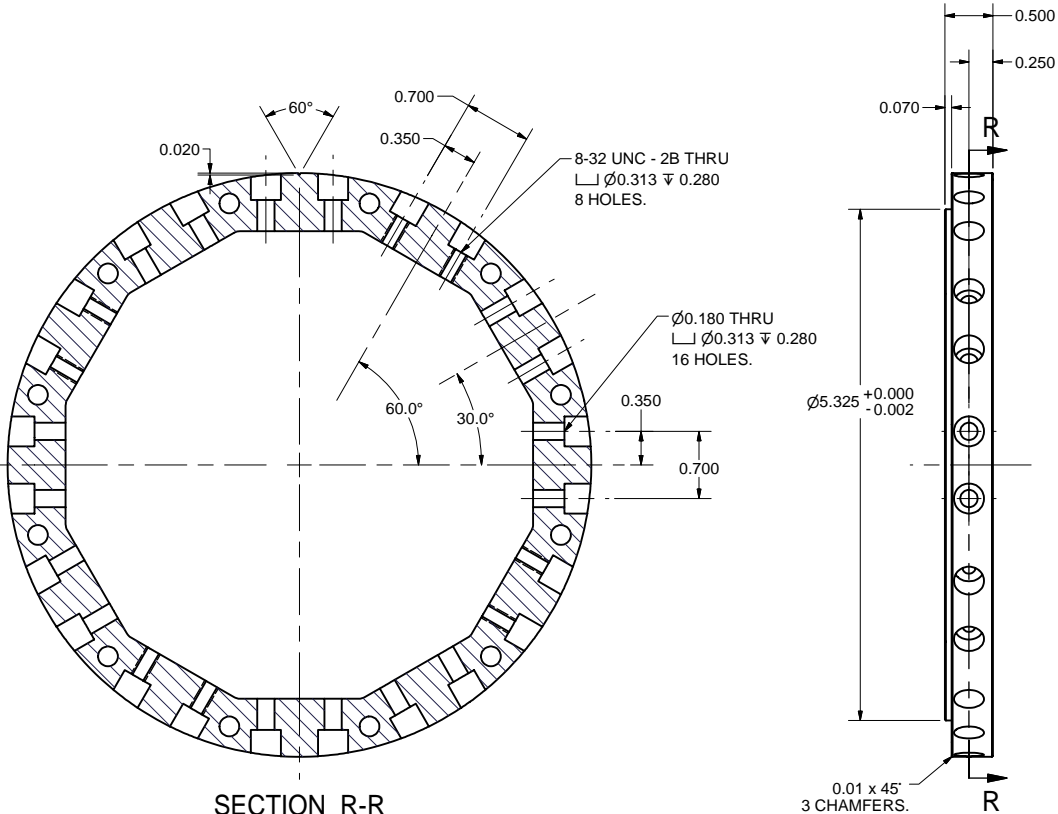
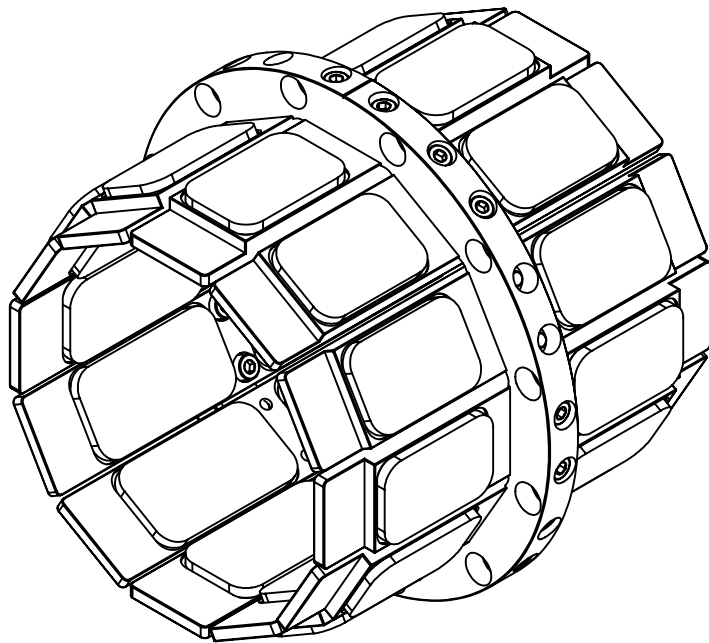
REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
B		THREADED HOLES ADDED TO COPPER RING (ITEM 15). POSITION OF PLATES SUBASMS (ITEMS 24, 25, 26) CHANGED.	2/22/06	VM
C		BOM EDITED TO STANDARDIZE VENDOR PART #'s. D.M.E.	6-14-06	TIO



SECTION A-A

13 ABSORBERS SUBASSEMBLY-106

FILE NAME: 7102-018  
SHEET NO.: 4  
DFT. SCALE: 1:1  
MATERIAL:  
QTY: 1 PER ASSEMBLY  
NOTES: 1. MAX. TORQUE ON SCREWS ITEM 38 : 75 in-lbs.

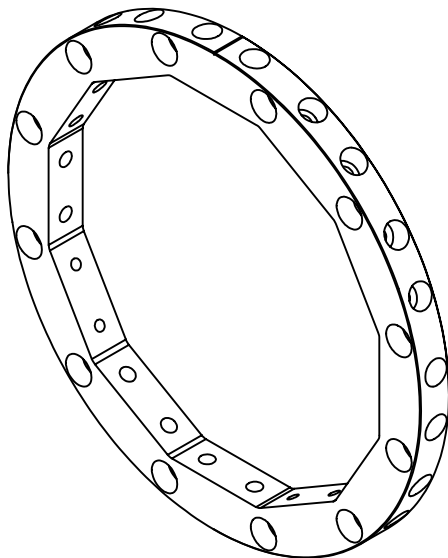
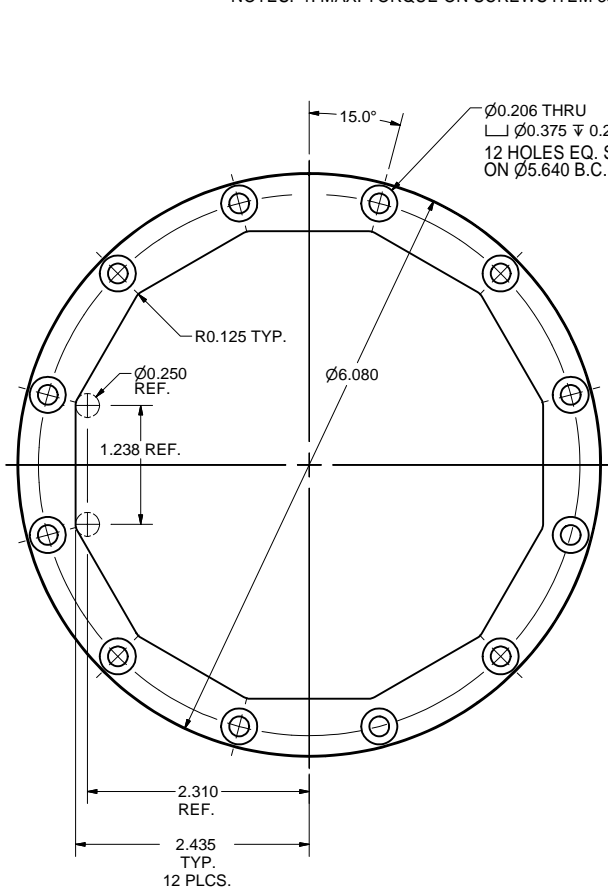


SECTION R-R  
SCALE 1 : 1

15

COPPER RING-106

FILE NAME: 7102-018  
SHEET NO.: 4  
DFT. SCALE: 1:1  
MATERIAL: OFE C10100 COPPER (RRR-200 OR BETTER)  
QTY: 1 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			
	OK	DATE	N/A
DRAFTING (O'Connell):			
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	QUANTITY	REMARKS	REV.
39	-	#8 Sock. Hd. Screw Spring Washer	24		
38	-	8-32 x 5/8 SOCKET HD. CAP SCREW	24		
26	7102-018 (SH. 5)	ABSORBER PLATE SUBASM 3-106	4		
25	7102-018 (SH. 5)	ABSORBER PLATE SUBASM 2-106	4		
24	7102-018 (SH. 5)	ABSORBER PLATE SUBASM 1-106	4		
15	7102-018 (SH. 4)	COPPER RING-106	1		
13	7102-018 (SH. 4)	ABSORBERS SUBASSEMBLY-106	X		

39	-	#8 Sock. Hd. Screw Spring Washer	24		MMC 98437A106 18-8 SST	
38	-	8-32 x 5/8 SOCKET HD. CAP SCREW	24		MMC 92185A196 316 SST	
26	7102-018 (SH. 5)	ABSORBER PLATE SUBASM 3-106	4		-	
25	7102-018 (SH. 5)	ABSORBER PLATE SUBASM 2-106	4		-	
24	7102-018 (SH. 5)	ABSORBER PLATE SUBASM 1-106	4		-	
15	7102-018 (SH. 4)	COPPER RING-106	1		OFE COPPER	
13	7102-018 (SH. 4)	ABSORBERS SUBASSEMBLY-106	X		-	
ITEM	DWG. NO.	DESCRIPTION	QUANTITY	REMARKS	REV.	
PLOT DATE: 6/13/06 CAD FILE NAME: 7102-018.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 LOAD						
CHECKED BY: J. SEARS	DRAWN BY: VM	DRAWN FOR: M. LIEPE	DATE: 4/3/06	SCALE: -	7102-018 SH. NO. 4 OF 11	REV. C
APPROVED BY: M. LIEPE						

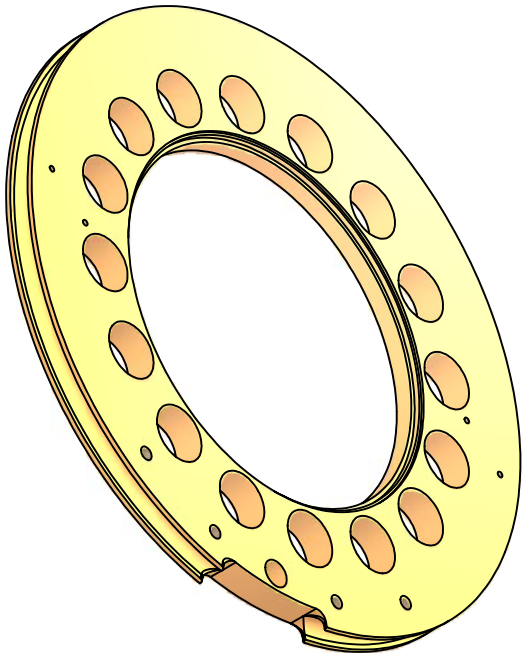
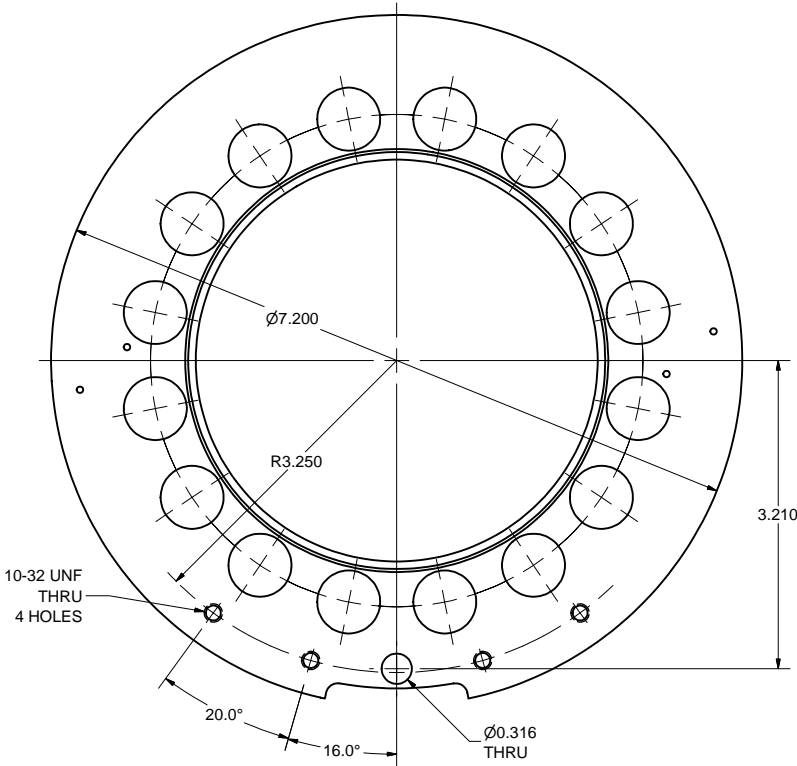
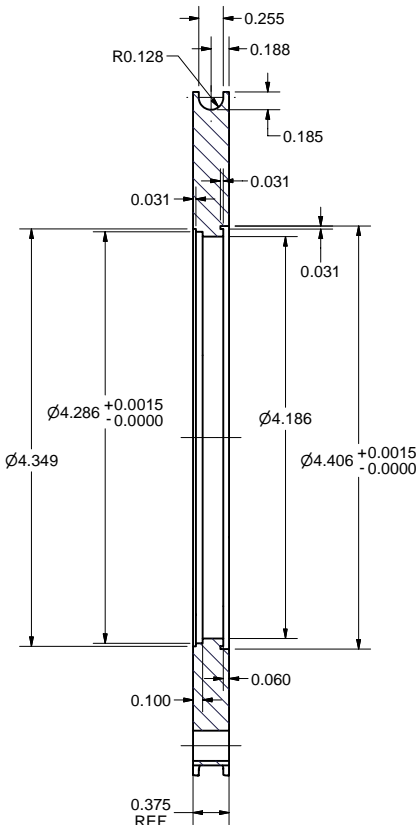
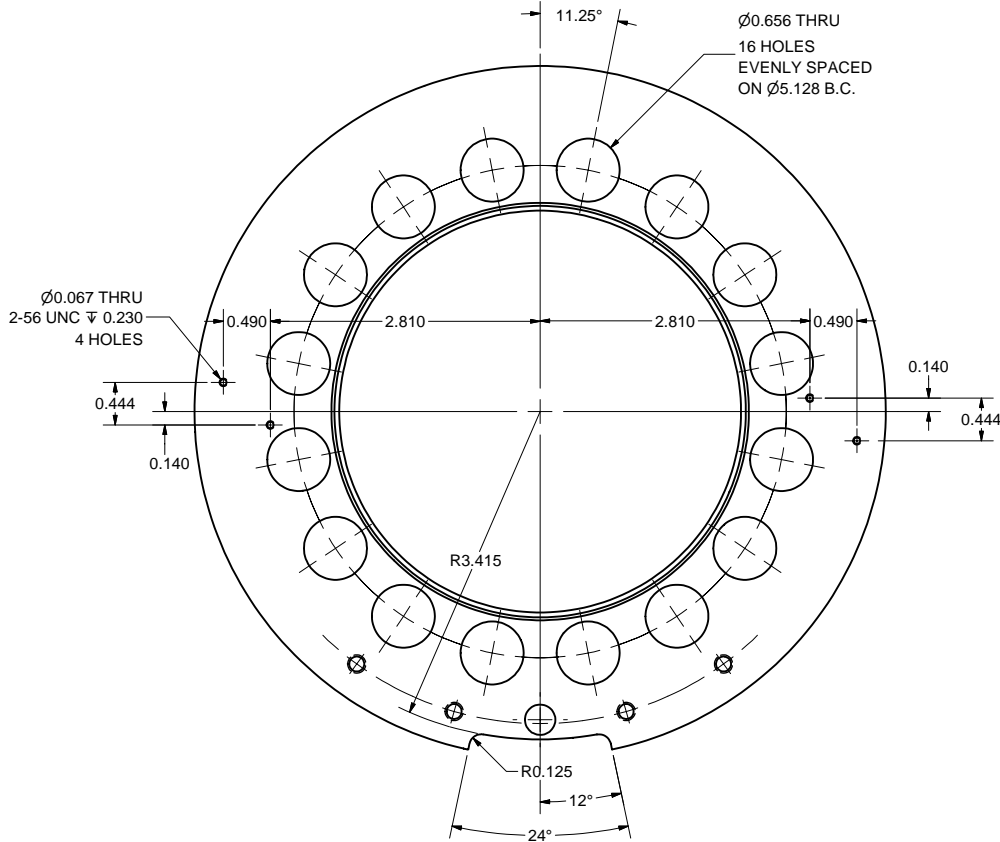




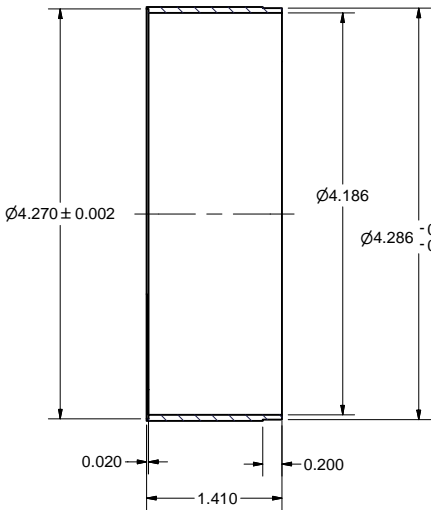
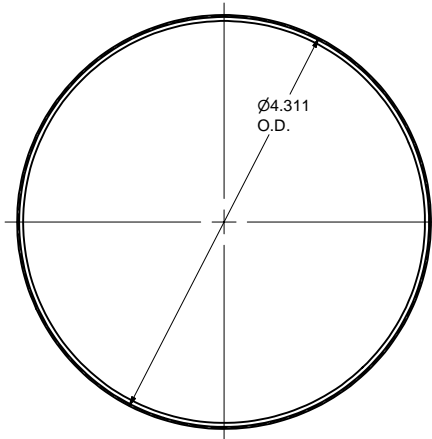
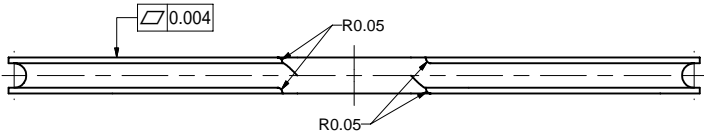




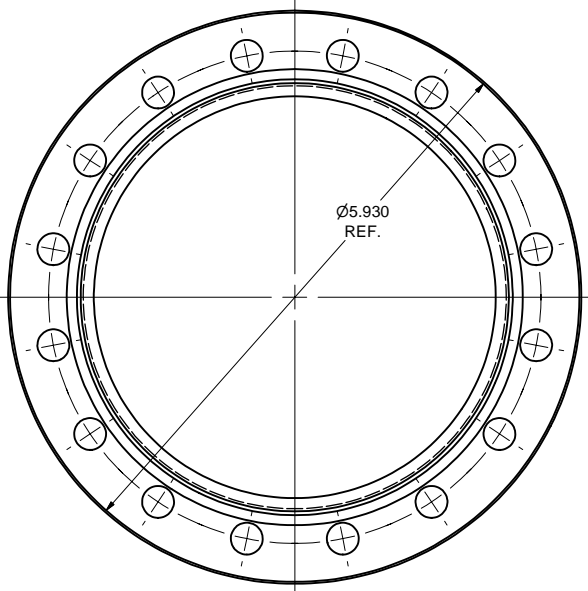
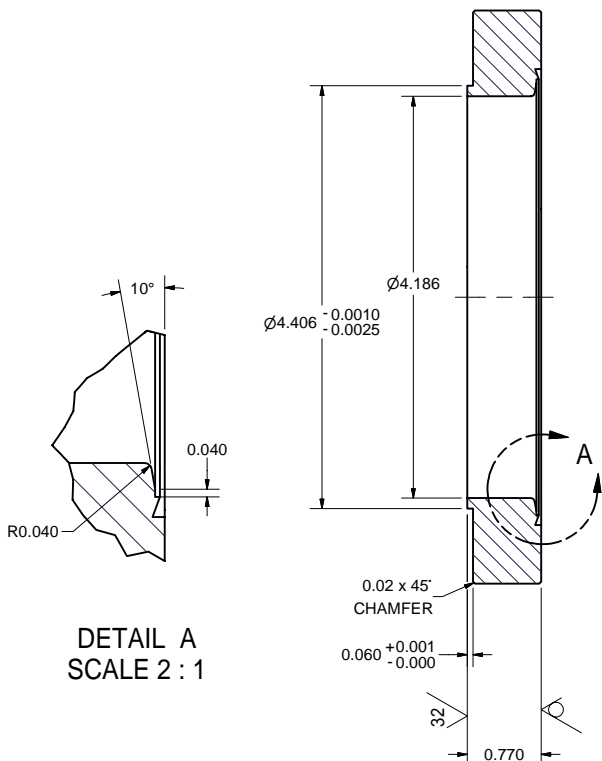
REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		PART 23 - NEW.	12/6/05	VM
B		NEW DESIGN OF HEAT SINK PLATE ITEM 23.	2/22/06	VM



23 5 K HEAT SINK PLATE PLATE-106  
FILE NAME: 7102-018  
SHEET NO.: 8  
DFT. SCALE: 1:1  
MATERIAL: 3/8" OFE C10100 COPPER SHEET (RRR-200 OR BETTER)  
QTY: 2 PER ASSEMBLY  
NOTES:



31 SMALL TUBE-106  
FILE NAME: 7102-018  
SHEET NO.: 8  
DFT. SCALE: 1:1  
MATERIAL: 316L STAINLESS STEEL  
QTY: 2 PER ASSEMBLY  
NOTES:



40 6" CF FLANGE MODIFICATION  
FILE NAME: 7102-018  
SHEET NO.: 8  
DFT. SCALE: 1:1  
MATERIAL: SEE NOTE 1  
QTY: 2 PER ASSEMBLY  
NOTES: 1. MAKE FROM VACUUM GENERATORS #ZFL100A OR EQUIV.  
MATERIAL: 316LN STAINLES STEEL

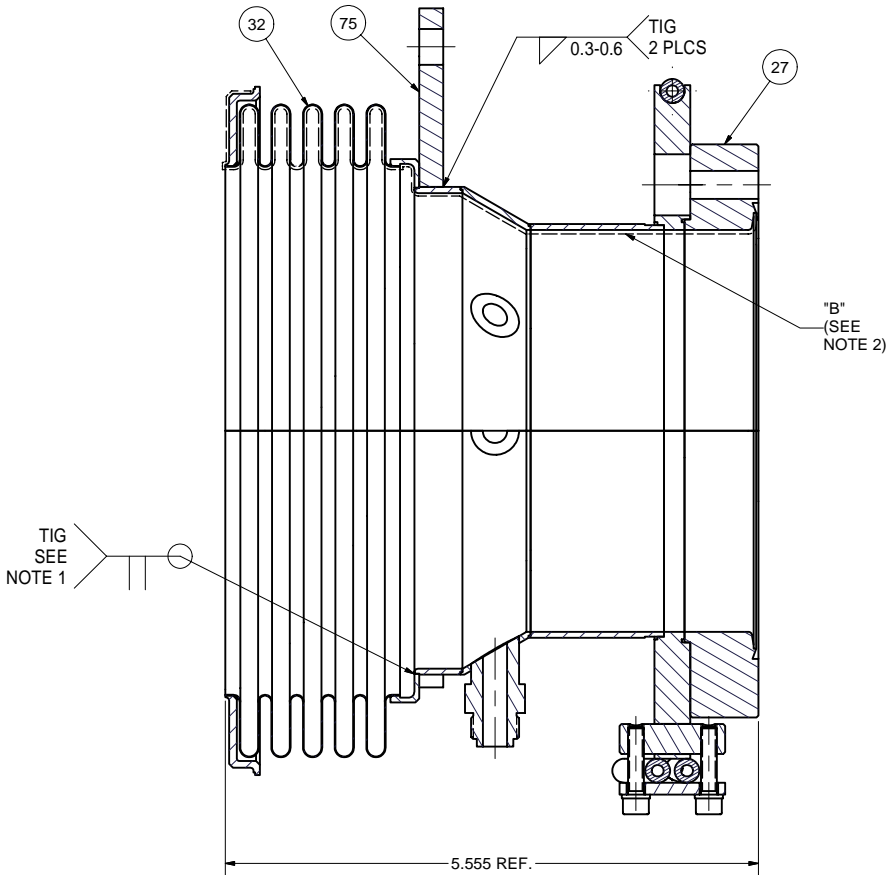
FOR MACHINING LUBRICANT USE ONLY  
ALKALINE DETERGENT LUBRICANT CIMSTAR 40  
OR EQUIVALENT APPROVED BY CORNELL LEPP

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

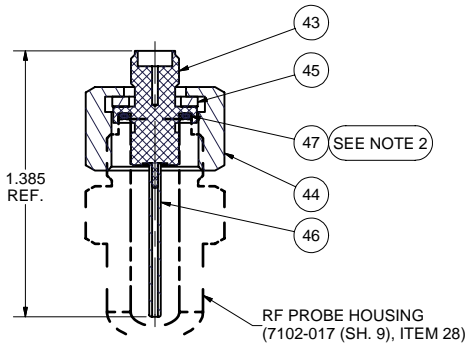
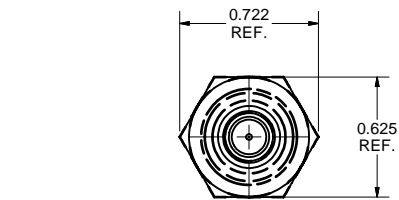
		ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS		REV.
								QUANTITY				
D		PRINT DISTR.		PLOT DATE: 6/13/06 CAD FILE NAME: 7102-018.idw								
7102-018 SH. NO. 8 OF 11		CR-1	UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES: TOLERANCES ON: .00 ± .010 .000 ± .005 FRACTIONS ± 1/64 ANGLES ± 0.5° ALL SURFACES		<div> CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div> <div>ERL INJECTOR CRYOMODULE 106 MM HOM LOAD</div>							
REV. B		CHECKED BY: J. SEARS  APPROVED BY: M. LIEPE		DRAWN BY VM	DRAWN FOR M. LIEPE	DATE 4/3/06	SCALE -	D		7102-018 SH. NO. 8 OF 11		REV. B



REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
B		NEW DESIGN OF SUBASM ITEM 16.	2/22/06	VM
C		BRACKET ITEM 75 ADDED	4/3/06	VM
D		ITEM 41: 1.385 WAS 1.625 ITEM 46: DELETED NOTE 1, PROBE TIP IS .800 LONG. D.M.E.	8-29-07	JOS

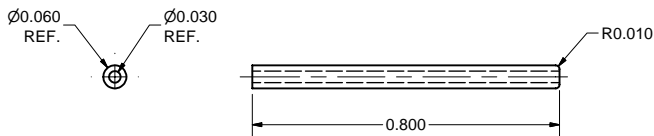


SECTION A-A



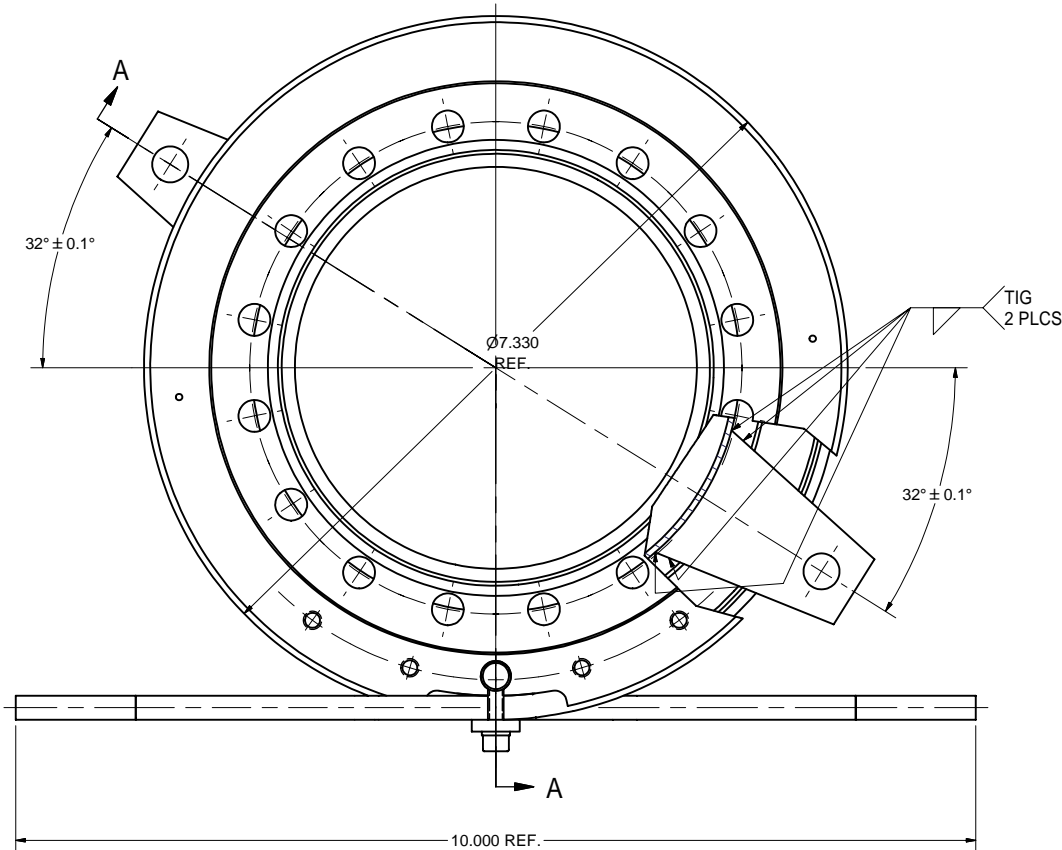
41 RF PROBE-106 SUBASM

FILE NAME: 7102-018  
SHEET NO.: 9  
DFT. SCALE: 4:1  
MATERIAL:  
QTY: 8 PER ASSEMBLY  
NOTES: 1. USE OMNI-SPECTRA CRIMPER, 76873-2,  
SETTING #3 TO FIX TIP 46 ON CONNECTOR 43.  
2. MAY USE 0.060 DIA. INDIUM INSTEAD OF PARKER SEAL.



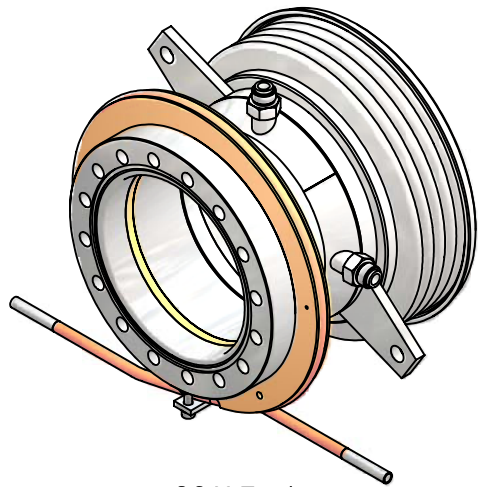
46 RF PROBE TIP-106

FILE NAME: 7102-018  
SHEET NO.: 9  
DFT. SCALE: 4:1  
MATERIAL: 1/16 O.D. COPPER TUBE. K+S ENGINEERING #117 OR EQUIV.  
QTY: 8 PER ASSEMBLY  
NOTES:

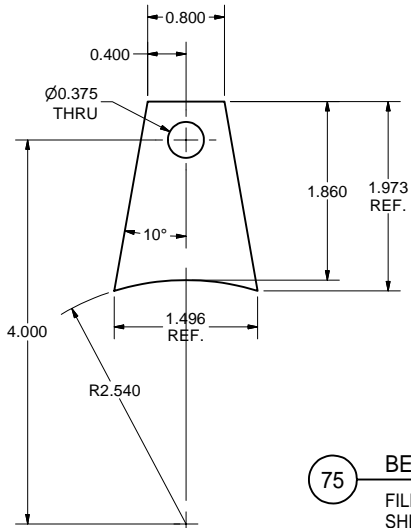


16 OUTER HALF SUBASM-106

FILE NAME: 7102-018  
SHEET NO.: 9  
DFT. SCALE: 1:1  
MATERIAL:  
QTY: 2 PER ASSEMBLY  
NOTES: 1. WELD TO CONFORM TO UHV SPEC.  
2. COPPER PLATE 0.0004" SURFACE "B".



SCALE 1 / 2



75 BELLOWS BRACKET-106

FILE NAME: 7102-018  
SHEET NO.: 9  
DFT. SCALE: 1:1  
MATERIAL: 1/4" 316L STAINLESS STEEL SHEET  
QTY: 4 PER ASSEMBLY  
NOTES:

47	-	PARKER ULTRA SEAL #QO-55	1		SEE NOTE 2	
46	7102-018 (SH. 9)	RF PROBE TIP-106	1		COPPER	
45	7102-017 (SH. 11)	RF PROBE WASHER	1		AMPCO 18	
44	7102-017 (SH. 11)	RF PROBE SEAT NUT	1		316L SST	
43	7102-017 (SH. 11)	RF CONNECTOR MODIFICATION	1		-	
41	7102-018 (SH. 9)	RF PROBE-106 SUBASM	X		-	
75	7102-018 (SH. 9)	BELLOWS BRACKET-106	2		316L SST	
32	7102-018 (SH. 10)	BELLOWS SUBASM-106	1		-	
27	7102-018 (SH. 6)	FLANGE UNIT SUBASSEMBLY-106	1		-	
16	7102-018 (SH. 9)	OUTER HALF SUBASM-106	X		-	

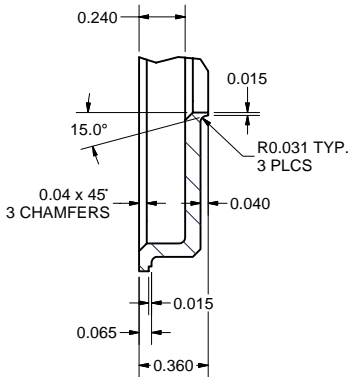
FOR MACHINING LUBRICANT USE ONLY  
ALKALINE DETERGENT LUBRICANT CIMSTAR 40  
OR EQUIVALENT APPROVED BY CORNELL LEPP

TECHNICAL RESOURCE APPROVALS REQUIRED BEFORE FABRICATION			
OK	DATE	N/A	
DRAFTING (O'Connell):			
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	QUANTITY	REMARKS	REV.
47	-	PARKER ULTRA SEAL #QO-55				1	SEE NOTE 2	
46	7102-018 (SH. 9)	RF PROBE TIP-106				1	COPPER	
45	7102-017 (SH. 11)	RF PROBE WASHER				1	AMPCO 18	
44	7102-017 (SH. 11)	RF PROBE SEAT NUT				1	316L SST	
43	7102-017 (SH. 11)	RF CONNECTOR MODIFICATION				1	-	
41	7102-018 (SH. 9)	RF PROBE-106 SUBASM	X			-	-	
75	7102-018 (SH. 9)	BELLOWS BRACKET-106				2	316L SST	
32	7102-018 (SH. 10)	BELLOWS SUBASM-106				1	-	
27	7102-018 (SH. 6)	FLANGE UNIT SUBASSEMBLY-106				1	-	
16	7102-018 (SH. 9)	OUTER HALF SUBASM-106	X			-	-	

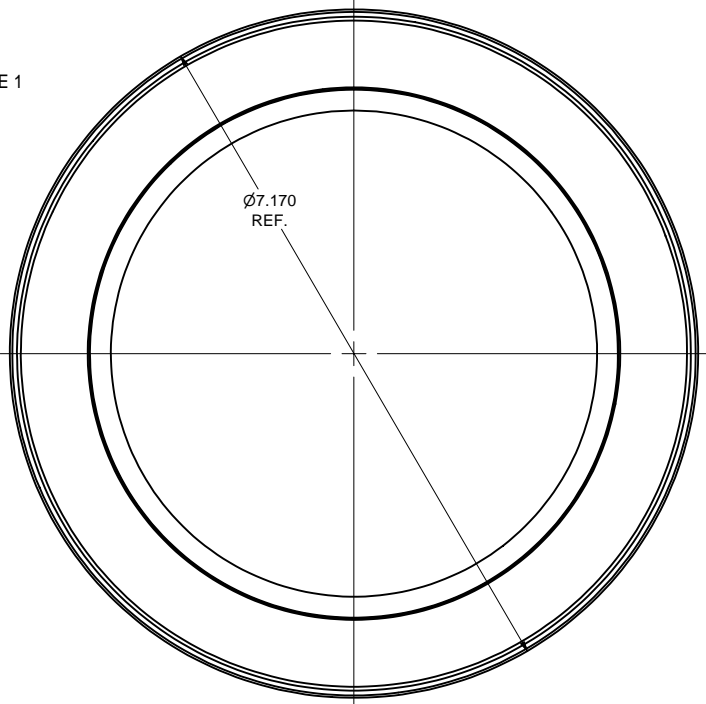
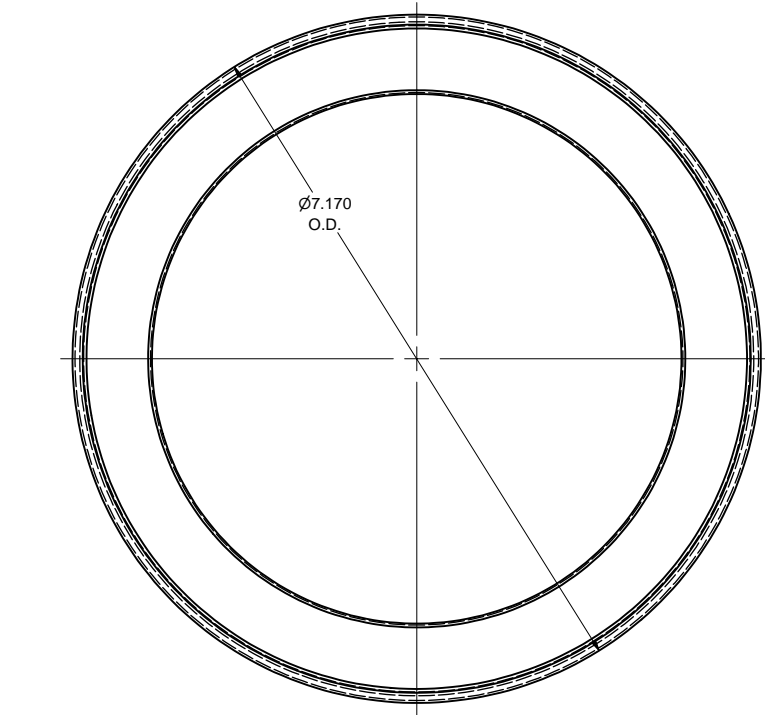
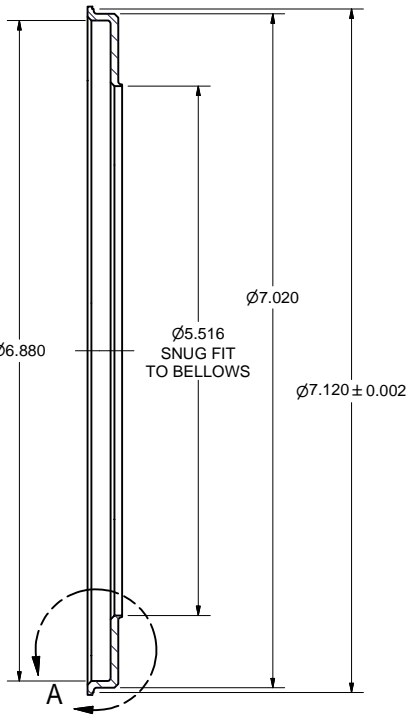
7102-018	CR-1	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .00 ± .010 .000 ± .005 FRACTIONS ± 1/64 ANGLES ± 0.5° ALL SURFACES	CORNELL UNIVERSITY FLOYD R. NEWMAN LABORATORY ITHACA, NY 14853	ERL INJECTOR CRYOMODULE 106 MM HOM LOAD	CHECKED BY: J. SEARS APPROVED BY: M. LIEPE	DRAWN BY: VM M. LIEPE	DATE: 4/3/2006	SCALE: -	7102-018 SH. NO. 9 OF 11	REV. D
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REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		PARTS 33 AND 34 MODIFIED. NEW BELLOWS TYPE IN SUBASSEMBLY 32.	12/6/05	VM
B		ALL PARTS RETURNED TO ORIGINAL VERSION WITH MINOR CHANGES.	2/22/06	VM



DETAIL A  
SCALE 2 : 1

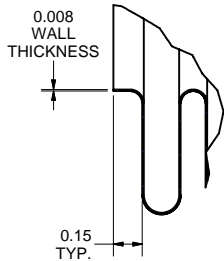
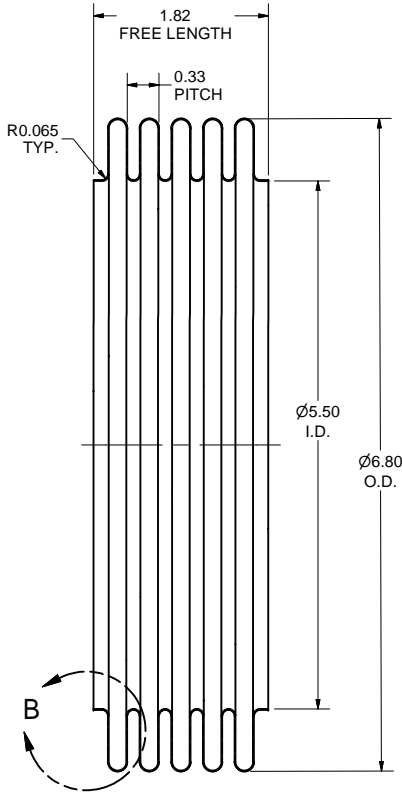
33 LARGE BELLOWS RING-106  
FILE NAME: 7102-018  
SHEET NO.: 10  
DFT. SCALE: 1:1  
MATERIAL: 316L STAINLESS STEEL  
QTY: 2 PER ASSEMBLY  
NOTES:



32 BELLOWS SUBASM-106  
FILE NAME: 7102-018  
SHEET NO.: 10  
DFT. SCALE: 1:1  
MATERIAL:  
QTY: 2 PER ASSEMBLY  
NOTES: 1. WELDS TO CONFORM TO UHV SPEC.  
2. MANUFACTURER: AMERIFLEX INC. (OR EQUIV).

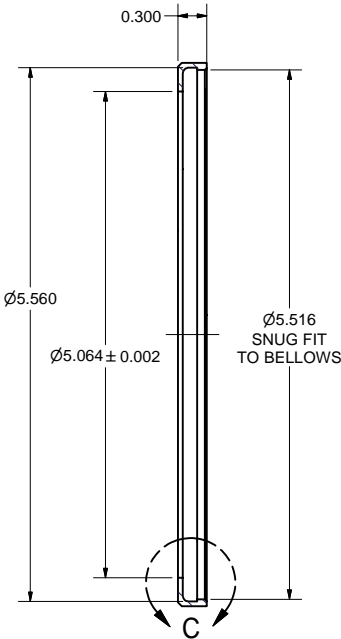
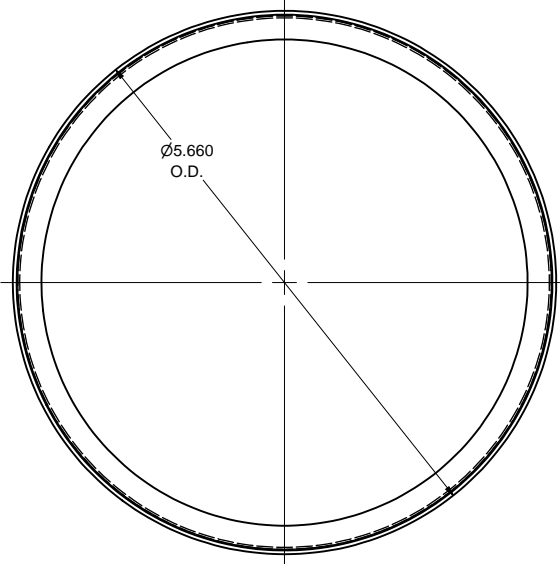
**OPERATING CONDITIONS:**  
Temperature: 5 K to 77 K across bellows  
Vacuum inside and outside  
Stroke: 2 mm (0.08 inch)  
Shift: 1 mm (0.04 inch)  
Maximum temperature: 200 C (473 K)  
Minimum temperature: -268 C (5 K)  
**Leak Rate:** < 1E-9 mbar x l/sec

**DESIGN SPECIFICATION:**  
Burst Pressure, Internal: >= 30 psia (2 bar) @ 293 K  
External: >= 22.5 psia (1.5 bar) @ 293 K  
Working Pressure: > 15 psia (1 bar) @ 293 K  
**Size:**  
O.D.: 6.8 inch (172.7 mm)  
I.D.: 5.5 inch (139.7 mm)  
Overall Length: 1.82 inch (46.2 mm)  
Pitch: 0.33 inch (8.4 mm)  
Minimum Stroke: ± 0.250 inch (6.4 mm)  
Minimum Lateral Shift: 0.08 inch (2 mm)  
Minimum Cycle Life: 10000



DETAIL B  
SCALE 2 : 1

35 BELLOWS 5.5 x 6.8 x 0.008 x 5  
FILE NAME: 7102-018  
SHEET NO.: 10  
DFT. SCALE: 1:1  
MATERIAL: 316L STAINLESS STEEL  
QTY: 2 PER ASSEMBLY  
NOTES: 1. NO. OF CONVOLUTIONS: N = 5  
2. MANUFACTURER: AMERIFLEX INC. (OR EQUIV).



DETAIL C  
SCALE 2 : 1

34 SMALL BELLOWS RING-106  
FILE NAME: 7102-018  
SHEET NO.: 10  
DFT. SCALE: 1:1  
MATERIAL: 316L STAINLESS STEEL  
QTY: 2 PER ASSEMBLY  
NOTES:

35	7102-018 (SH. 10)	BELLOWS 5.5 x 6.8 x 0.008 x 5	1			316L SST	
34	7102-018 (SH. 10)	SMALL BELLOWS RING-106	1			316L SST	
33	7102-018 (SH. 10)	LARGE BELLOWS RING-106	1			316L SST	
32	7102-018 (SH. 10)	BELLOWS SUBASM-106	X			AMERIFLEX	

ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	QUANTITY	REMARKS	REV.
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PLOT DATE: 6/13/06  
CAD FILE NAME: 7102-018.idw

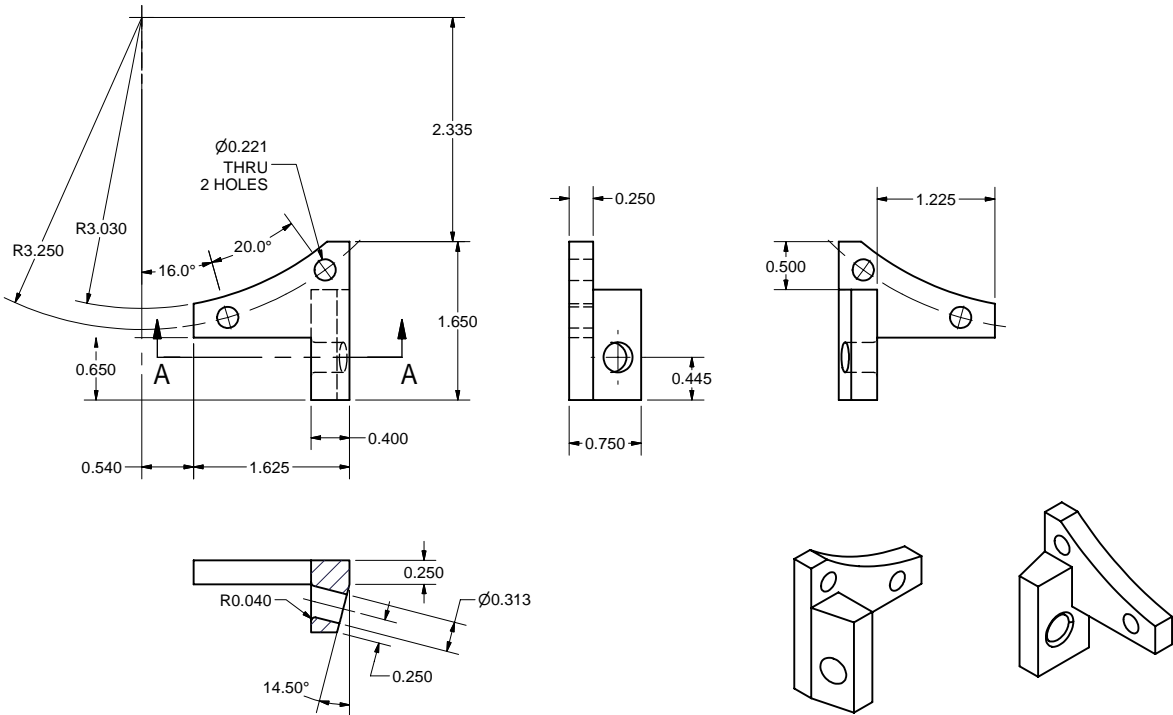
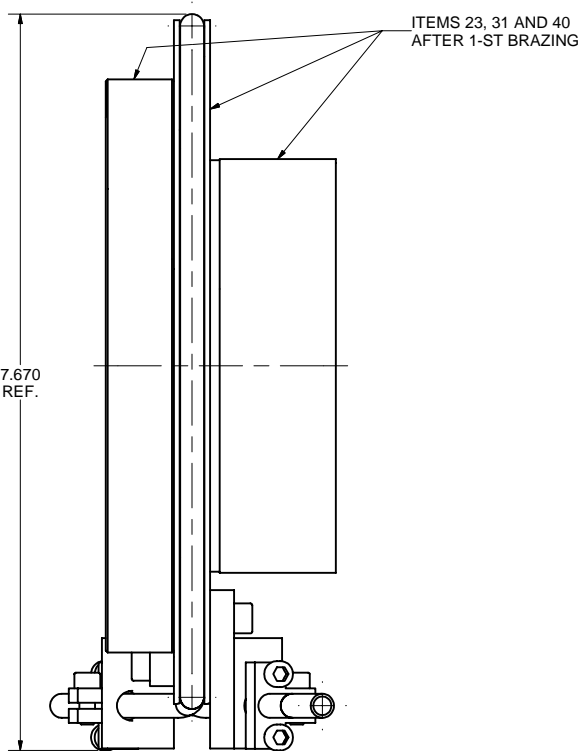
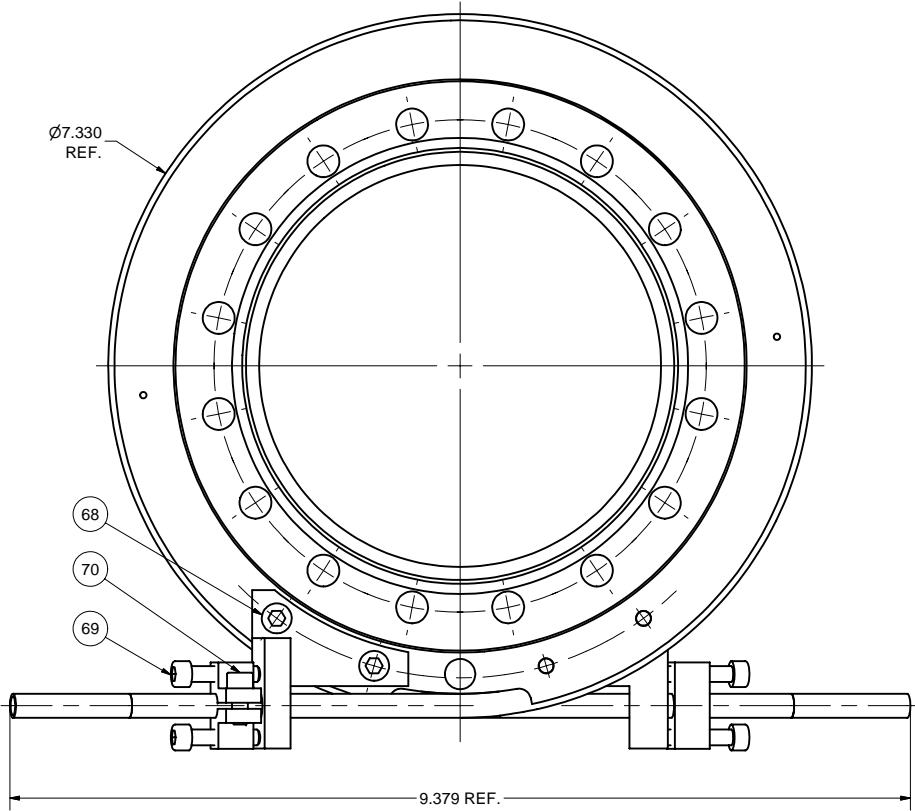
FOR MACHINING LUBRICANT USE ONLY  
ALKALINE DETERGENT LUBRICANT CIMSTAR 40  
OR EQUIVALENT APPROVED BY CORNELL LEPP

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

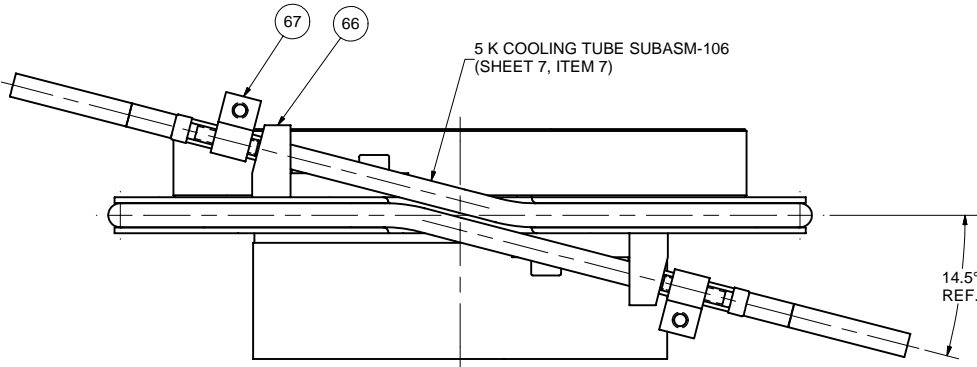
REV.	7102-018	SH. NO. 10 OF 11
D	PRINT DISTR.	
B	REV.	

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 LOAD			
CHECKED BY: J. SEARS APPROVED BY: M. LIEPE	DRAWN BY VM	DRAWN FOR M. LIEPE	DATE 4/3/06
SCALE -	D	7102-018 SH. NO. 10 OF 11	REV. B

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
B		ALL PARTS NEW.	2/22/06	VM
C		BOM EDITED TO STANDARDIZE VENDOR PART #s. D.M.E.	6-14-06	TIO



SECTION A-A



**65 5 K COOLING TUBE TENSION DEVICE-106**  
FILE NAME: 7102-018  
SHEET NO.: 11  
DFT. SCALE: 1:1  
MATERIAL:  
QTY: 1 PER PROJECT  
NOTES:

**66 TENSION BRACKET-106**  
FILE NAME: 7102-018  
SHEET NO.: 11  
DFT. SCALE: 1:1  
MATERIAL: 304 STAINLESS STEEL  
QTY: 2 PER PROJECT  
NOTES:

70	-	8-32 x 3/8 Socket Head Cap Screw	2			MMC 92185A192 316 SST	
69	-	8-32 x 3/4 Socket Head Cap Screw	4			MMC 92185A197 316 SST	
68	-	10-32 x 5/8 Socket Head Cap Screw	4			MMC 92185A990 316 SST	
67	7102-017 (SH. 12)	TUBE CLAMP	2			304 SST	
66	7102-018 (SH. 11)	TENSION BRACKET-106	2			304 SST	
65	7102-018 (SH. 11)	5 K COOLING TUBE TENSION DEVICE-106	X			-	

FOR MACHINING LUBRICANT USE ONLY ALKALINE DETERGENT LUBRICANT CIMSTAR 40 OR EQUIVALENT APPROVED BY CORNELL LEPP		TECHNICAL RESOURCE APPROVALS REQUIRED BEFORE FABRICATION		PLOT DATE: 6/13/06 CAD FILE NAME: 7102-018.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	
DRAFTING (O'Connell):	OK	DATE	N/A	7102-018	CR-1	ERL INJECTOR CRYOMODULE 106 MM HOM LOAD		CORNELL UNIVERSITY FLOYD R. NEWMAN LABORATORY ITHACA, NY 14853	
MACHINE SHOP (Kaminski):				7102-018	CR-1	ERL INJECTOR CRYOMODULE 106 MM HOM LOAD		CORNELL UNIVERSITY FLOYD R. NEWMAN LABORATORY ITHACA, NY 14853	
CHEMISTRY (Conklin):				7102-018	CR-1	ERL INJECTOR CRYOMODULE 106 MM HOM LOAD		CORNELL UNIVERSITY FLOYD R. NEWMAN LABORATORY ITHACA, NY 14853	
ELECTRONICS SHOP (Barley):				7102-018	CR-1	ERL INJECTOR CRYOMODULE 106 MM HOM LOAD		CORNELL UNIVERSITY FLOYD R. NEWMAN LABORATORY ITHACA, NY 14853	
FURNACE BRAZING (Sherwood):				7102-018	CR-1	ERL INJECTOR CRYOMODULE 106 MM HOM LOAD		CORNELL UNIVERSITY FLOYD R. NEWMAN LABORATORY ITHACA, NY 14853	
BEAM WELDING (Sears):				7102-018	CR-1	ERL INJECTOR CRYOMODULE 106 MM HOM LOAD		CORNELL UNIVERSITY FLOYD R. NEWMAN LABORATORY ITHACA, NY 14853	
WELDING OTHER (Gallagher):				7102-018	CR-1	ERL INJECTOR CRYOMODULE 106 MM HOM LOAD		CORNELL UNIVERSITY FLOYD R. NEWMAN LABORATORY ITHACA, NY 14853	
UTILITIES INTEGRATION (Gallagher):				7102-018	CR-1	ERL INJECTOR CRYOMODULE 106 MM HOM LOAD		CORNELL UNIVERSITY FLOYD R. NEWMAN LABORATORY ITHACA, NY 14853	
STOCKROOMS (Lockwood):				7102-018	CR-1	ERL INJECTOR CRYOMODULE 106 MM HOM LOAD		CORNELL UNIVERSITY FLOYD R. NEWMAN LABORATORY ITHACA, NY 14853	
CHECKED BY: J. SEARS		DRAWN BY		DATE		SCALE		7102-018	
APPROVED BY: M. LIEPE		VM		4/3/06		-		SH. NO. 11 OF 11	