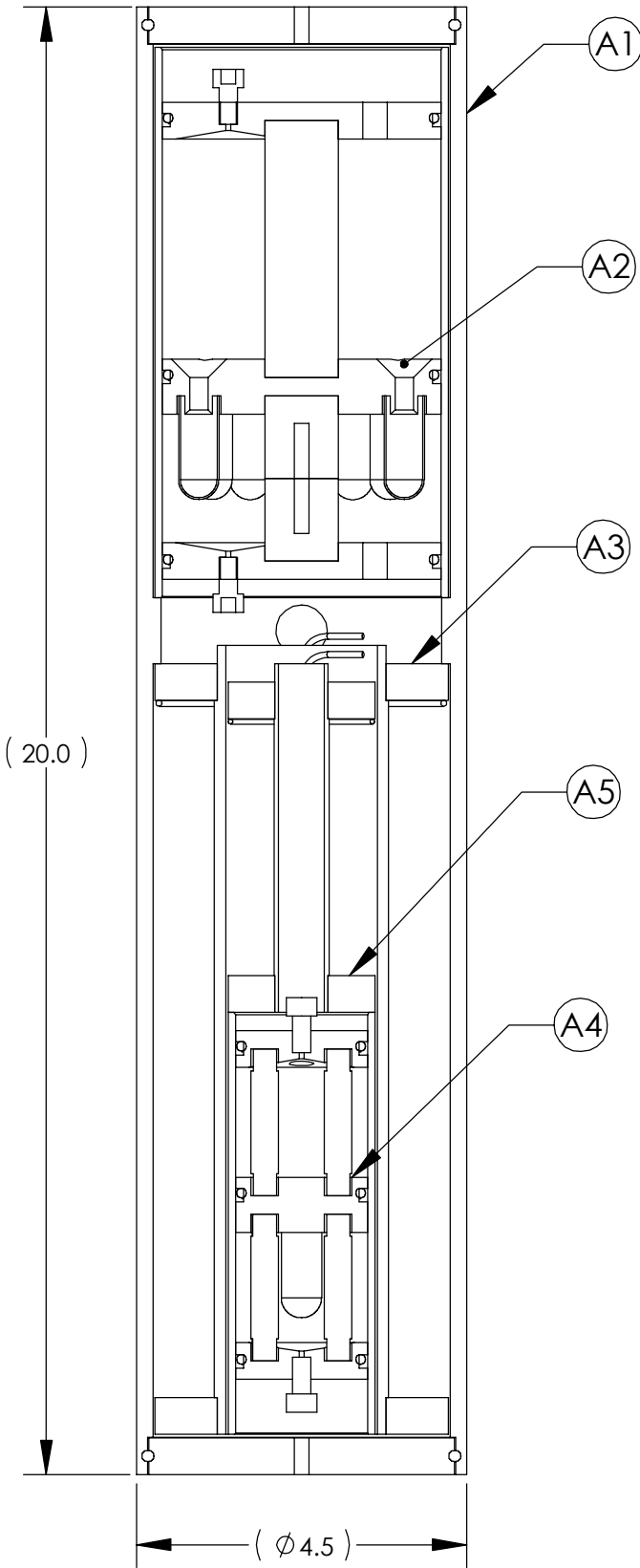
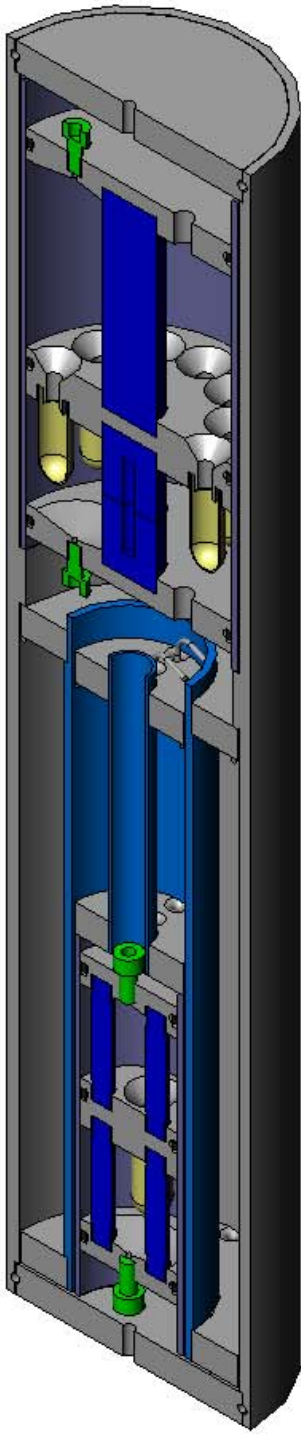
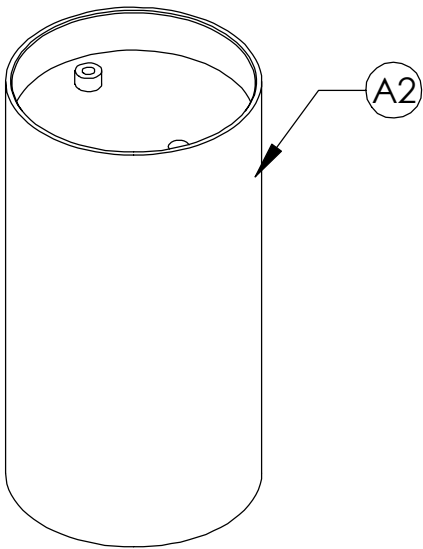


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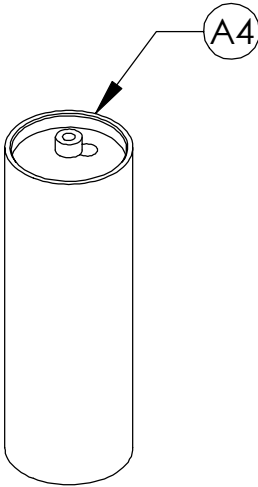
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	INITIAL RELEASE		



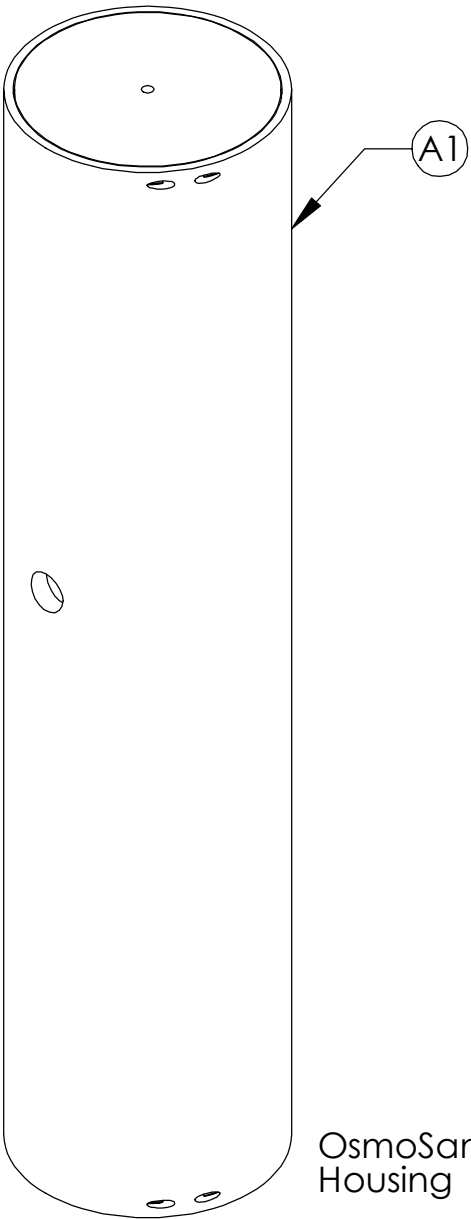
Section View of Assembly
Scale 1:2.5



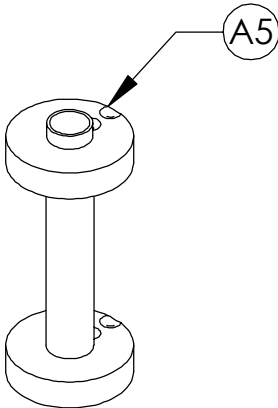
Sample Pump



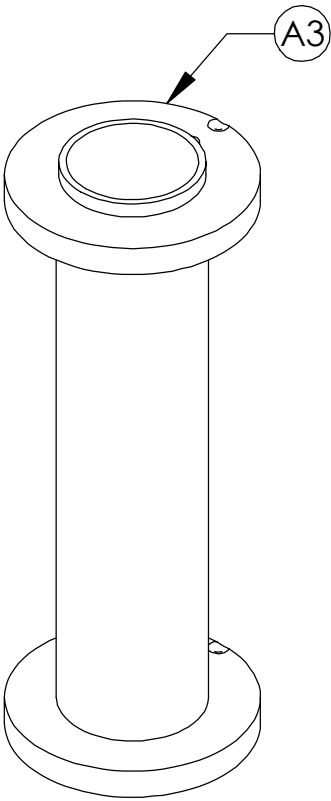
Acid Pump



OsmoSampler
Housing



Acid Coil



Sample Coil

A5	1@		Acid Coil	
A4	1@		Acid Pump	
A3	1@		Sample Coil	
A2	1@		Sample Pump	
A1	1@		Housing	
ITEM NO.	QTY	PART NO.	DESCRIPTION	MATERIAL SPECIFICATION

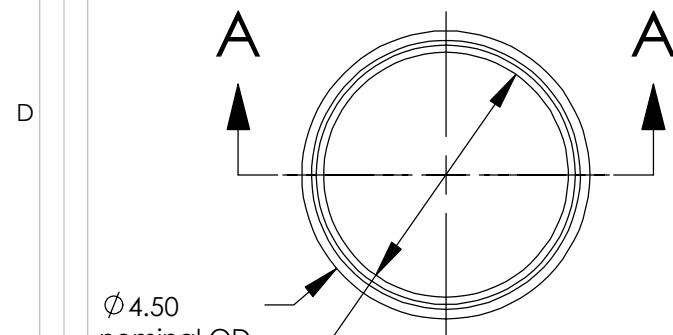
UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:				APPROVALS		DATE	Monterey Bay Aquarium Research Institute	
1 PLACE DIM ±1/16	2 PLACE DIM ±.02	3 PLACE DIM ±.005	ANGLES ±1°	DRAWN	Hans Jannasch	12/31/02	7700 Sandholdt RD. Moss Landing, CA 95039 PH: (408) 775-1700	
1. DIMENSIONS ARE IN INCHES 2. DIMENSION LIMITS HELD AFTER PLATING. 3. REMOVE BURRS AND SHARP EDGES .015 MAX. 4. MACHINED FILLET RADII .0150-.030. 5. MACHINED DIAMETERS ON A COMMON CENTERLINE CONCENTRIC WITHIN .005 6. PERPENDICULARITY & PARALLELISM OF MACHINED SURFACES .002 PER INCH. MAX .012 INCHES FOR SINGLE SURFACE.				ENGINEER				
				CHECKED			Acid-Addition OsmoSampler Version 2	
				PROJECT NO.				
				PROJECT			130jaha.DWG	
				WEIGHT				
							SIZE B	REV.
							SCALE 2:1	SHEET 1 OF 7

NEXT ASSY	USED ON
APPLICATION	

DO NOT SCALE DRAWING

CAD FILE: BARNACLE\ARCHIVE

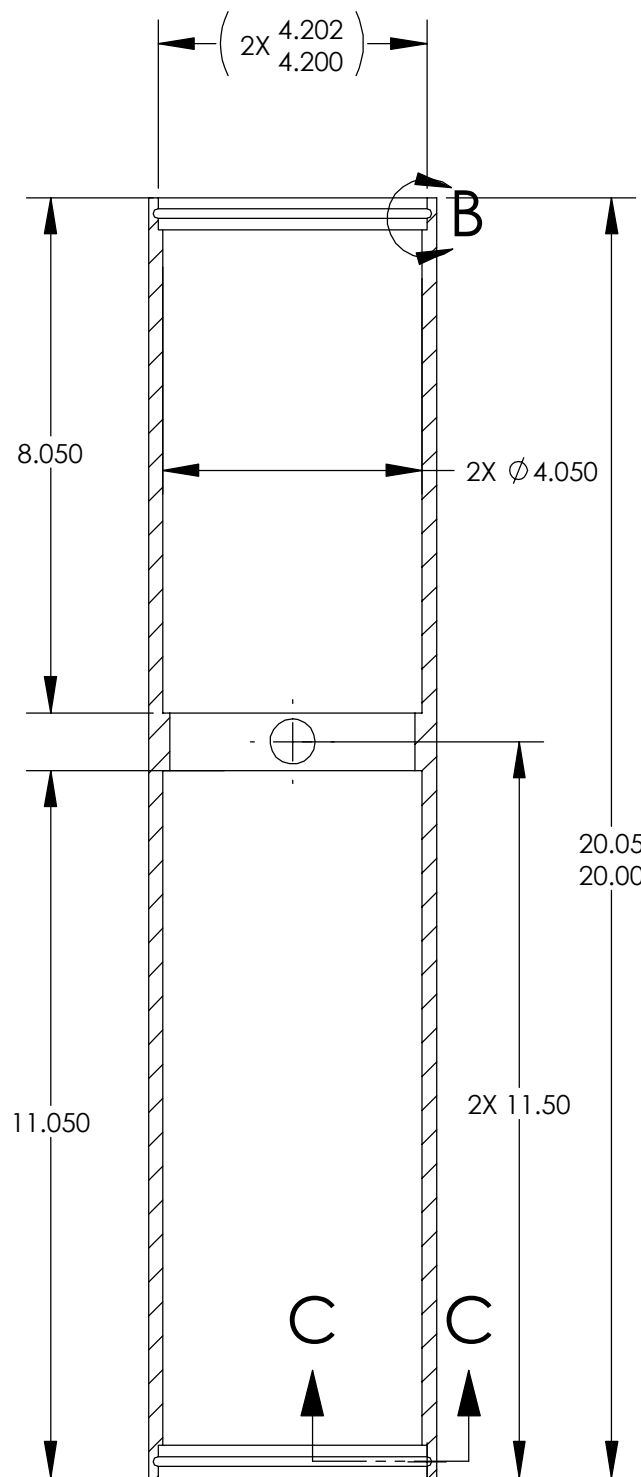
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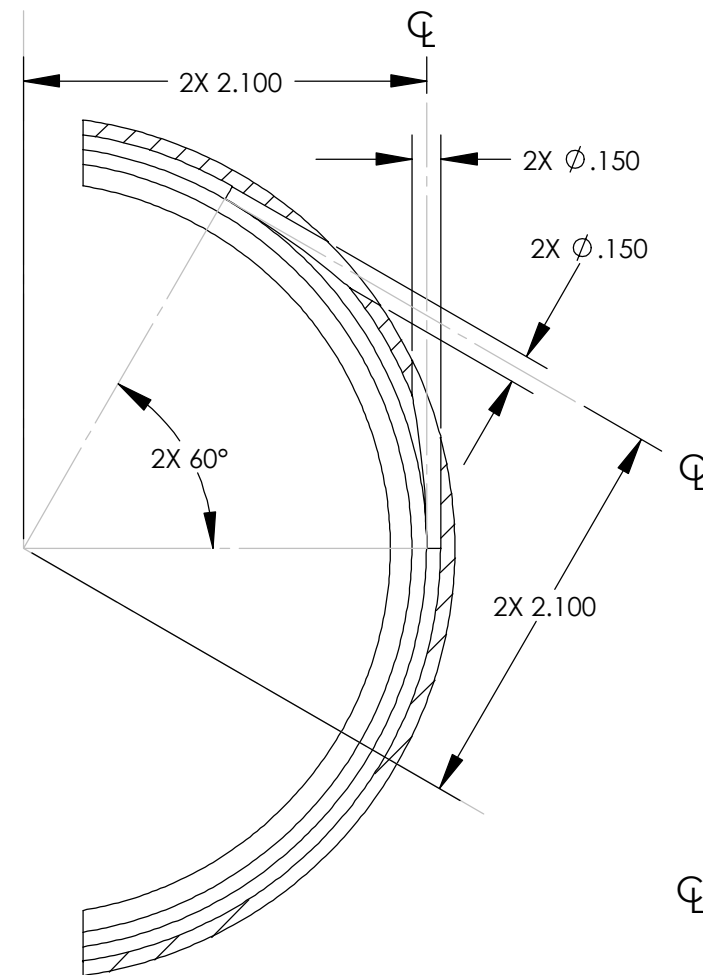
Ø 4.50
nominal OD

Ø 3.83
nominal ID

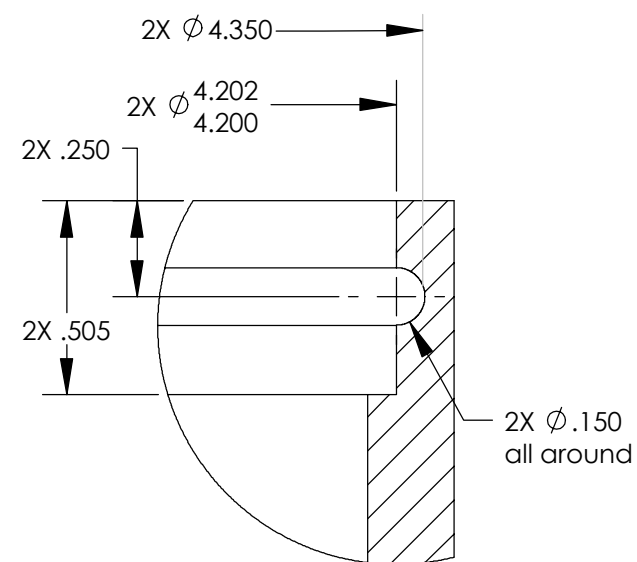
1/2"-14 NPT-2B
2X @180°



SECTION A-A
SCALE 1 : 3

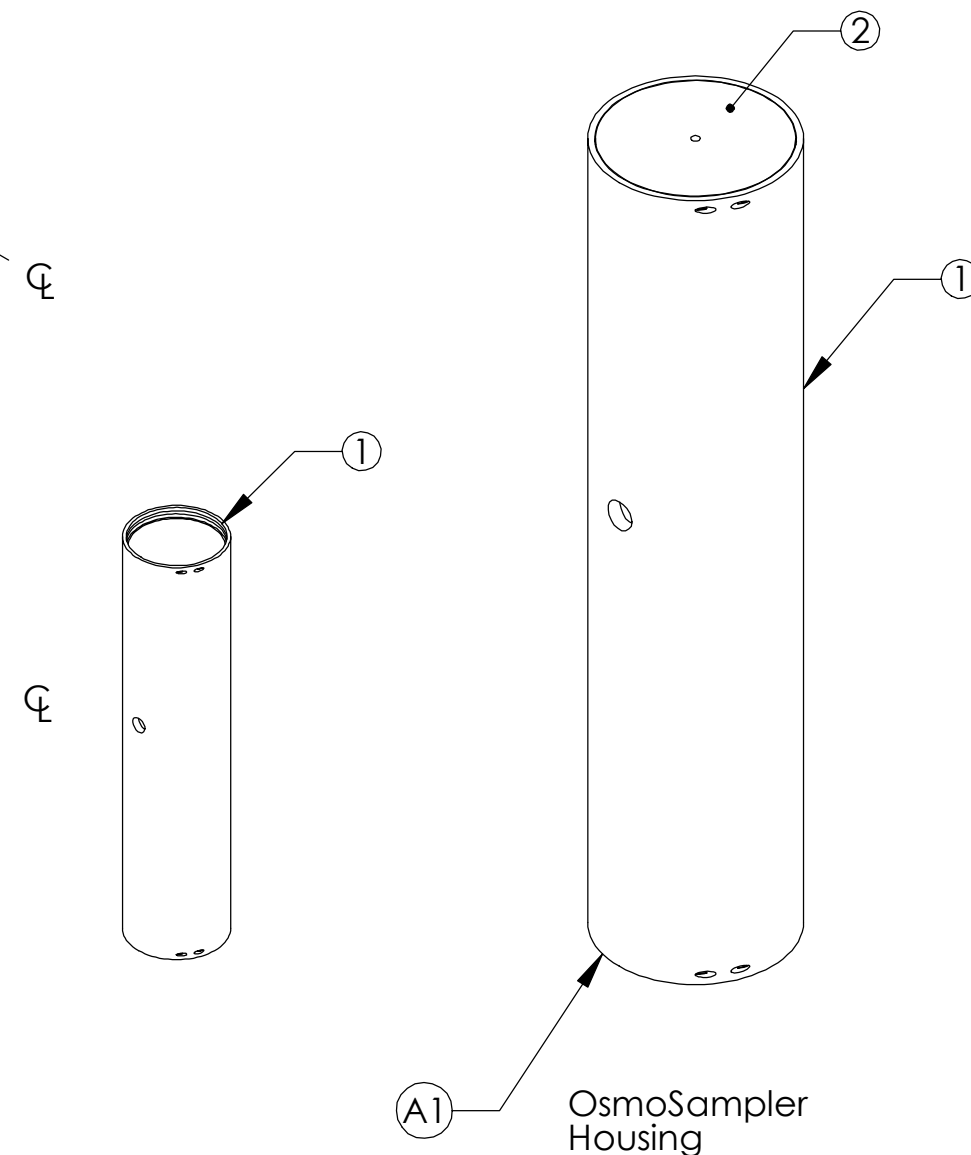


Locking cord feed/return
SECTION C-C
SCALE 1:1
Both ends clocked



DETAIL B
SCALE 2 : 1
Both ends

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	INITIAL RELEASE		

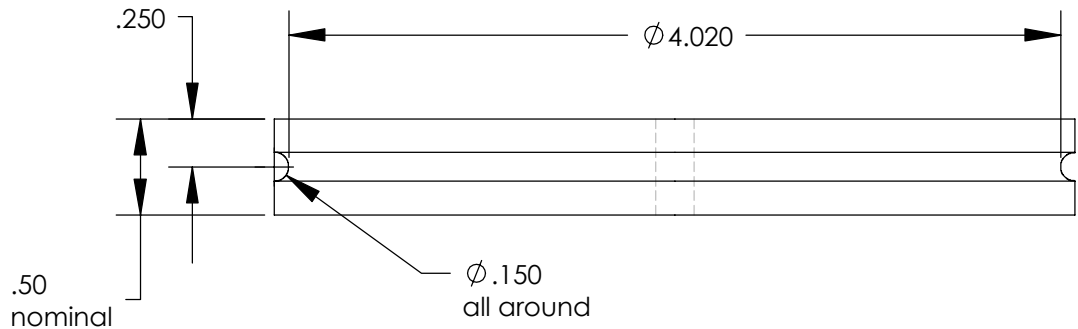
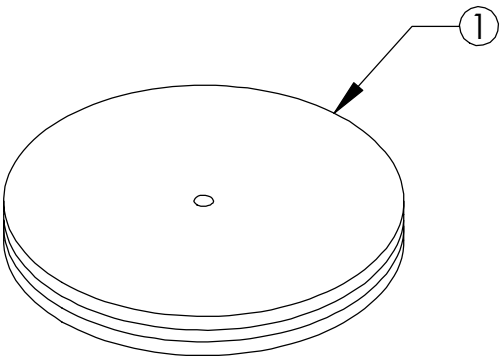
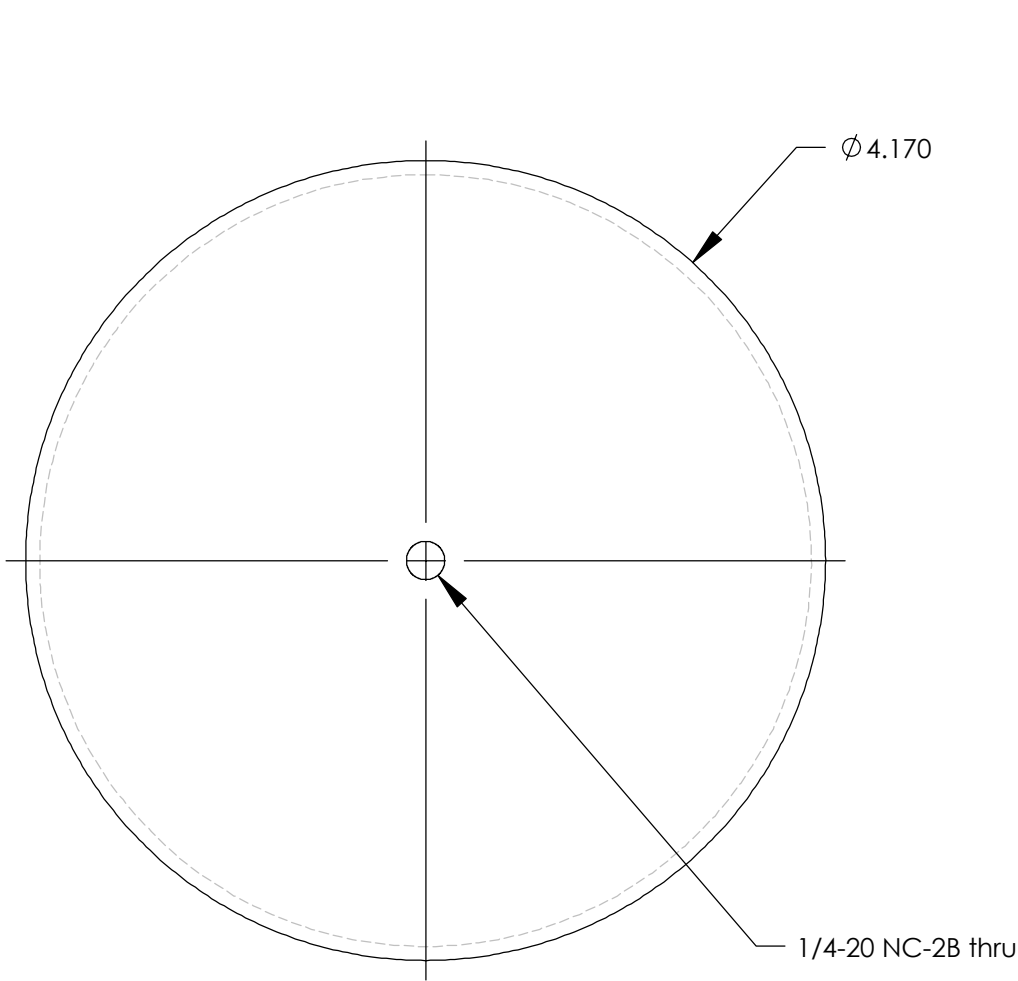


2	2@		Housing endcaps	1/2" PVC plate
1	1@		Main Housing	4" Schedule 80 translucent PVC pipe
A1	1@		Housing	

ITEM NO.	QTY	PART NO.	DESCRIPTION	MATERIAL SPECIFICATION
BILL OF MATERIALS				
UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:			APPROVALS	DATE
1 PLACE DIM ±1/16	2 PLACE DIM ±.02	3 PLACE DIM ±.005	ANGLES ±1°	Monterey Bay Aquarium Research Institute 7700 Sandholdt RD. Mass Landing, CA 95039 PH: (408) 775-1700 Acid-Addition OsmoSampler Version 2 SIZE B DWG. NO. 130jaha.DWG SCALE 2:1 CAD FILE: BARNACLE\ARCHIVE 130jaha.DWG SHEET 2 OF 2
1. DIMENSIONS ARE IN INCHES				
2. DIMENSION LIMITS HELD AFTER PLATING.				
3. REMOVE BURRS AND SHARP EDGES .015 MAX.				
4. MACHINED FILLET RADII .0150-.030.				
5. MACHINED DIAMETERS ON A COMMON CENTERLINE CONCENTRIC WITHIN .005				
6. PERPENDICULARITY & PARALLELISM OF MACHINED SURFACES .002 PER INCH, MAX .012 INCHES FOR SINGLE SURFACE.				
DO NOT SCALE DRAWING			WEIGHT	

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	INITIAL RELEASE		



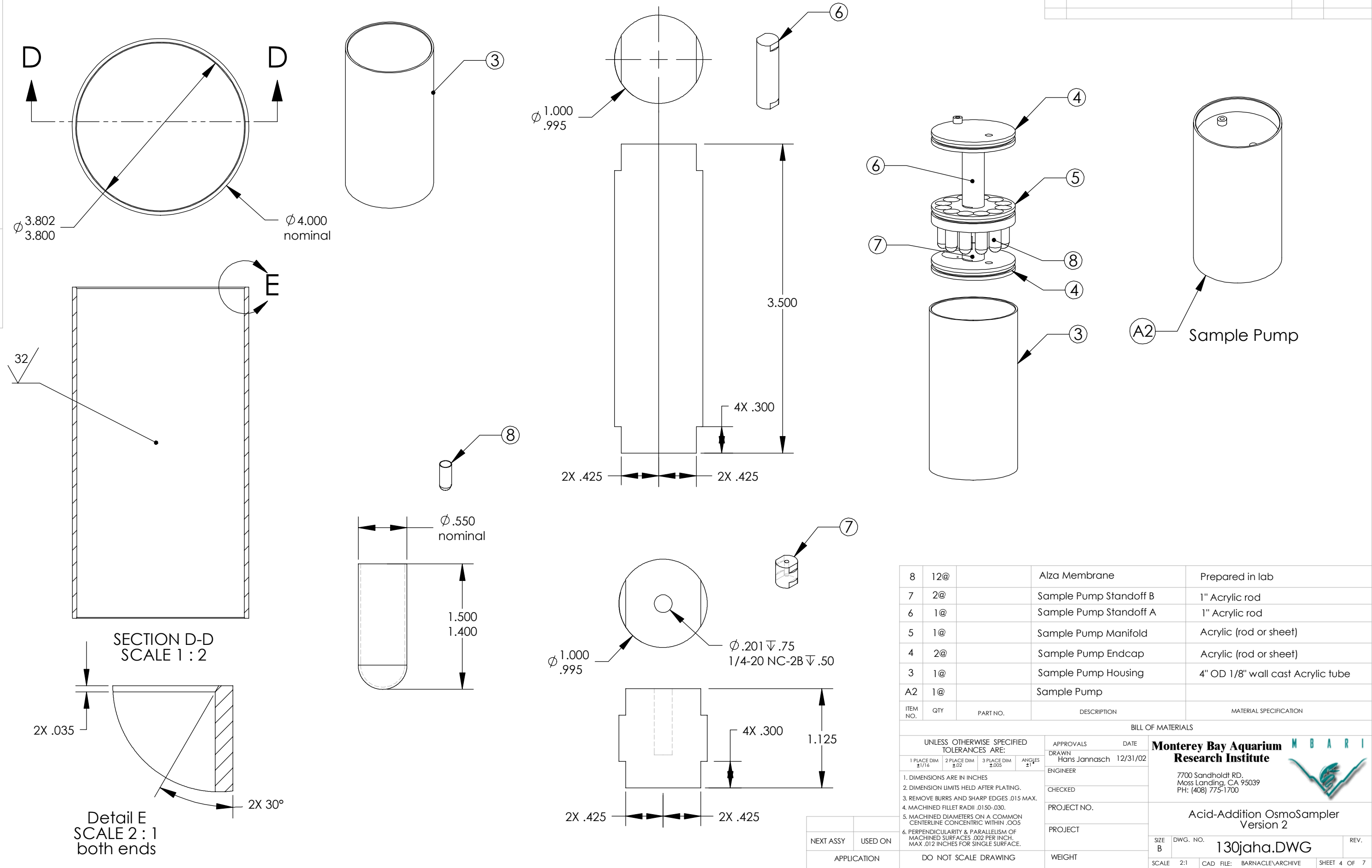
2	2@		Housing endcaps	1/2" PVC plate
1	1@		Main Housing	4" Schedule 80 translucent PVC pipe
A1	1@		Housing	

ITEM NO.	QTY	PART NO.	DESCRIPTION	MATERIAL SPECIFICATION
BILL OF MATERIALS				
UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:			APPROVALS	DATE
1 PLACE DIM ±.116	2 PLACE DIM ±.07	3 PLACE DIM ±.005	ANGLES ±.1°	12/31/02
1. DIMENSIONS ARE IN INCHES			Monterey Bay Aquarium Research Institute  7700 Sandhaldt RD. Moss Landing, CA 95039 PH: (408) 775-1700	
2. DIMENSION UNITS HELD AFTER PLATING.				
3. REMOVE BURRS AND SHARP EDGES .015 MAX.				
4. MACHINED FILLET RADII .0150-.030.				
5. MACHINED DIAMETERS ON A COMMON CENTERLINE CONCENTRIC WITHIN .005			Acid-Addition OsmoSampler Version 2	
6. PERPENDICULARITY & PARALLELISM OF MACHINED SURFACES .002 PER INCH, MAX .012 INCHES FOR SINGLE SURFACE.			SIZE B DWG. NO. 130jaha.DWG REV.	
DO NOT SCALE DRAWING			SCALE 2:1 CAD FILE: BARNACLE\ARCHIVE SHEET 3 OF 7	

NEXT ASSY	USED ON
APPLICATION	

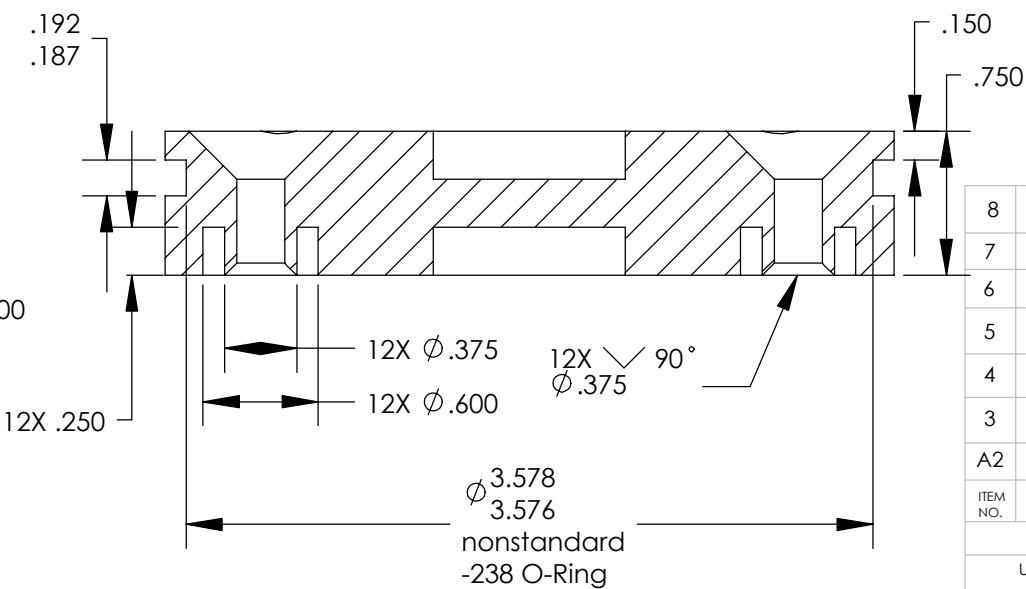
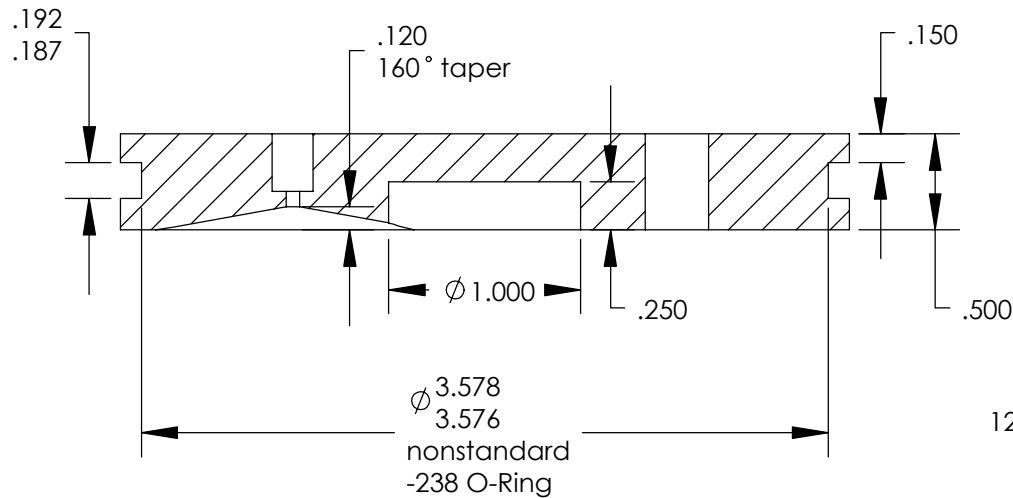
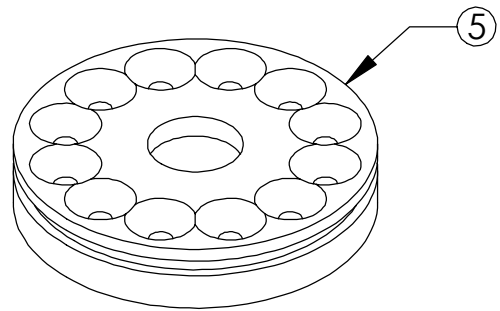
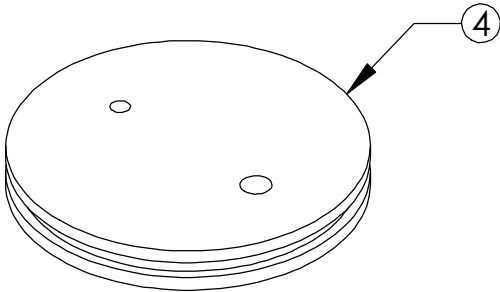
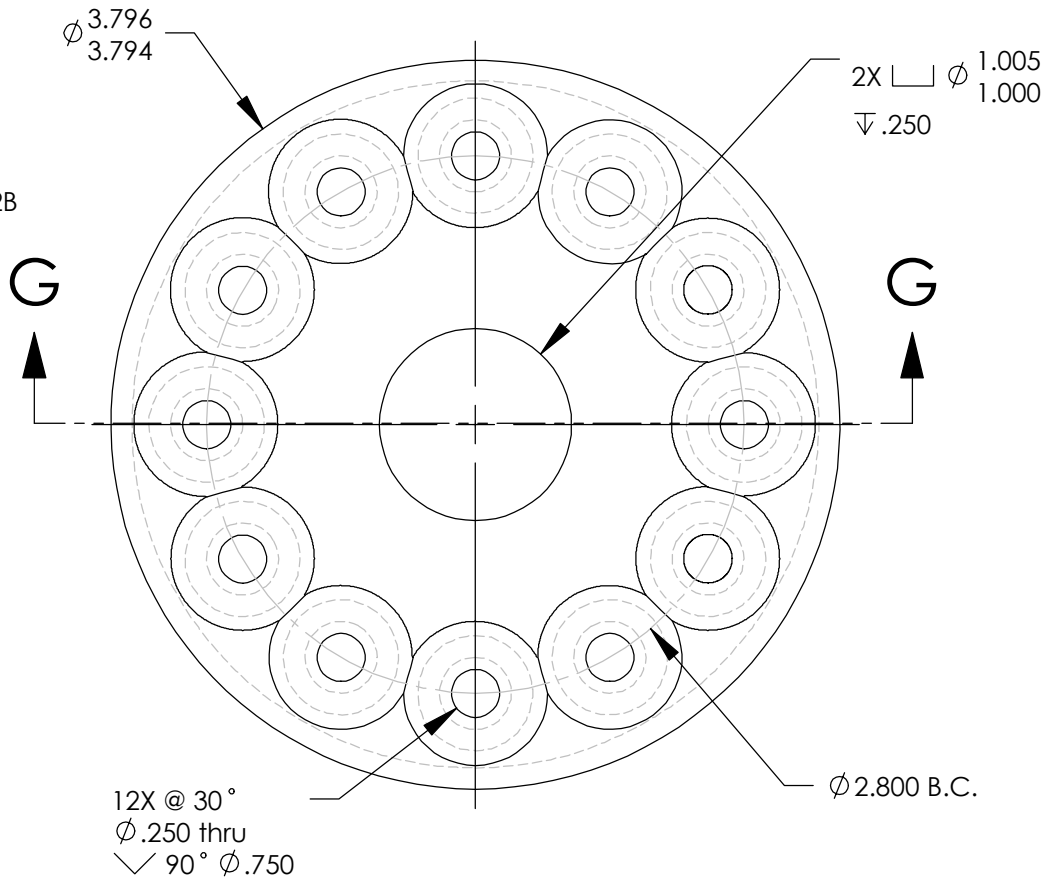
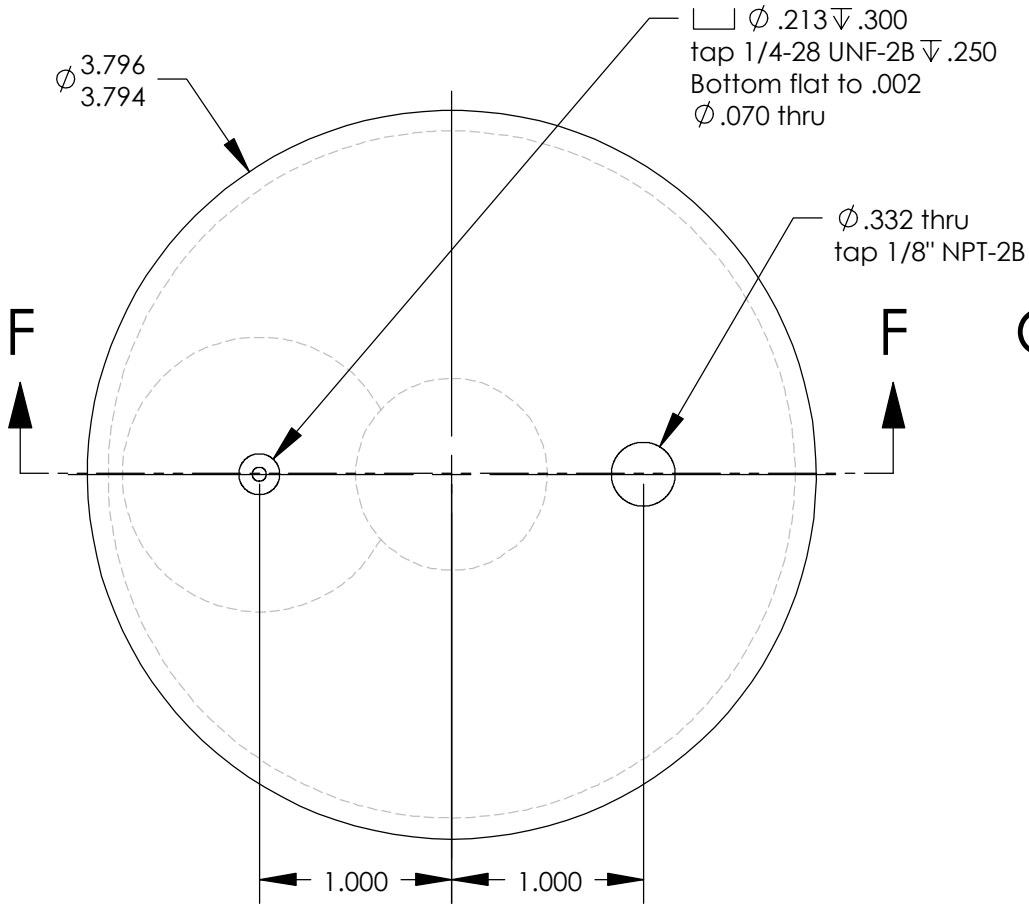
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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	INITIAL RELEASE		



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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	INITIAL RELEASE		



8	12@		Alza Membrane	Prepared in lab
7	2@		Sample Pump Standoff B	1" Acrylic rod
6	1@		Sample Pump Standoff A	1" Acrylic rod
5	1@		Sample Pump Manifold	Acrylic (rod or sheet)
4	2@		Sample Pump Endcap	Acrylic (rod or sheet)
3	1@		Sample Pump Housing	4" OD 1/8" wall cast Acrylic tube
A2	1@		Sample Pump	
ITEM NO.	QTY	PART NO.	DESCRIPTION	MATERIAL SPECIFICATION

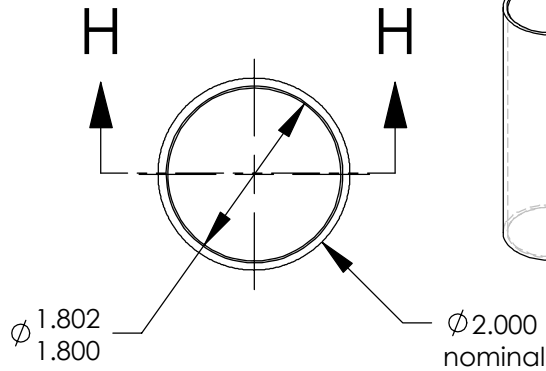
UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:				APPROVALS		DATE	Monterey Bay Aquarium Research Institute	
1 PLACE DIM ±1/16	2 PLACE DIM ±.02	3 PLACE DIM ±.005	ANGLES ±1°	DRAWN	Hans Jannasch	12/31/02	 7700 Sandholdt RD. Moss Landing, CA 95039 PH: (408) 775-1700	
1. DIMENSIONS ARE IN INCHES				ENGINEER				
2. DIMENSION LIMITS HELD AFTER PLATING.				CHECKED				
3. REMOVE BURRS AND SHARP EDGES .015 MAX.				PROJECT NO.			Acid-Addition OsmoSampler Version 2	
4. MACHINED FILLET RADII .0150-.030.				PROJECT				
5. MACHINED DIAMETERS ON A COMMON CENTERLINE CONCENTRIC WITHIN .005				WEIGHT			SIZE B	DWG. NO. 130jaha.DWG
6. PERPENDICULARITY & PARALLELISM OF MACHINED SURFACES .002 PER INCH. MAX .012 INCHES FOR SINGLE SURFACE.							SCALE 2:1	CAD FILE: BARNACLE\ARCHIVE
DO NOT SCALE DRAWING							SHEET 5 OF 7	REV.

SECTION F-F

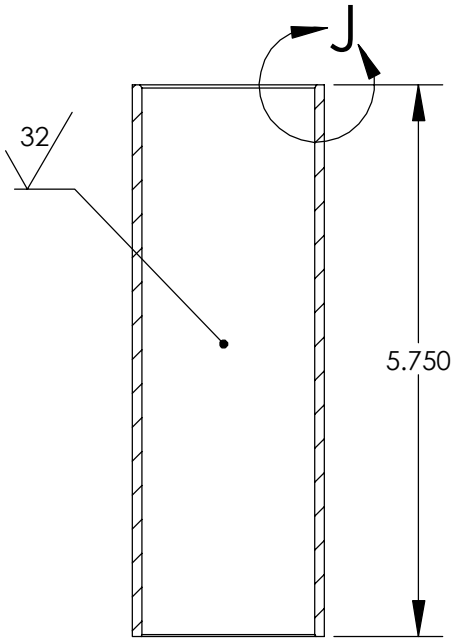
SECTION G-G

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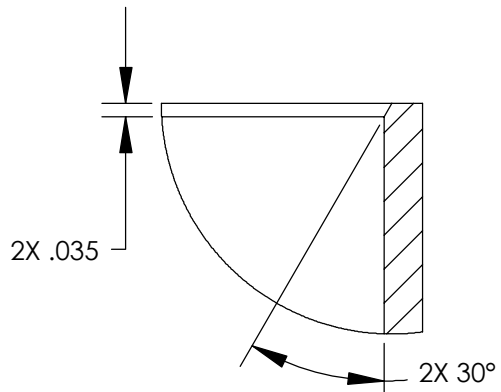
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	INITIAL RELEASE		



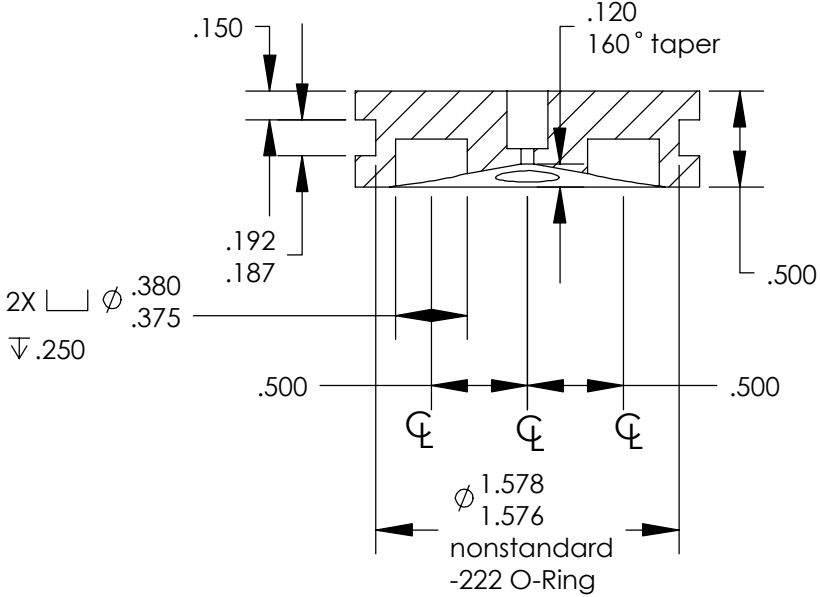
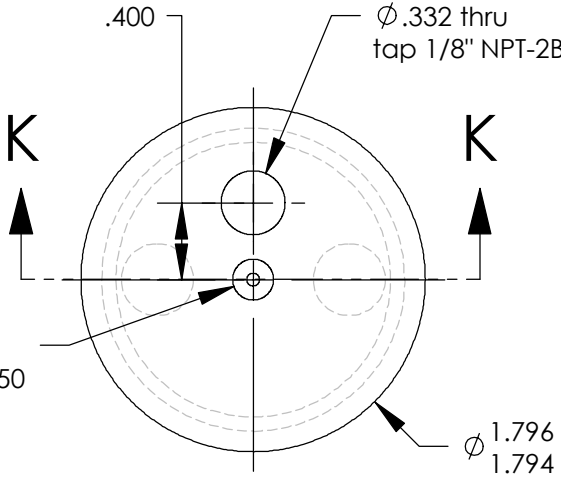
$\square \phi .213 \nabla .300$
tap 1/4-28 UNF-2B $\nabla .250$
Bottom flat to .002
 $\phi .070$ thru



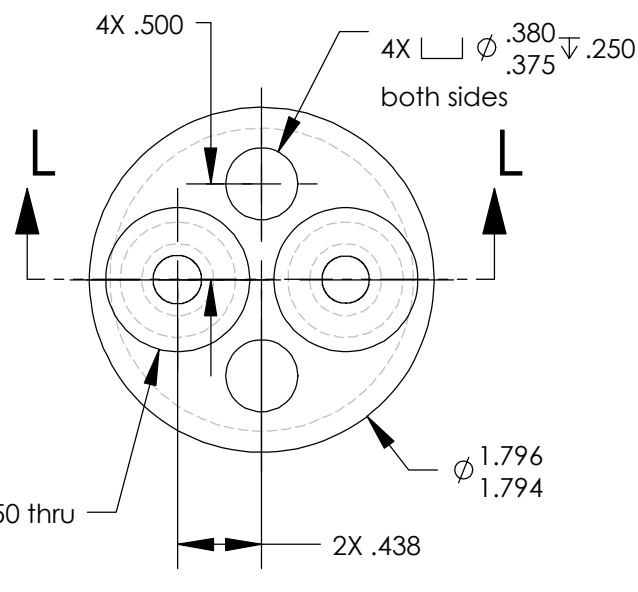
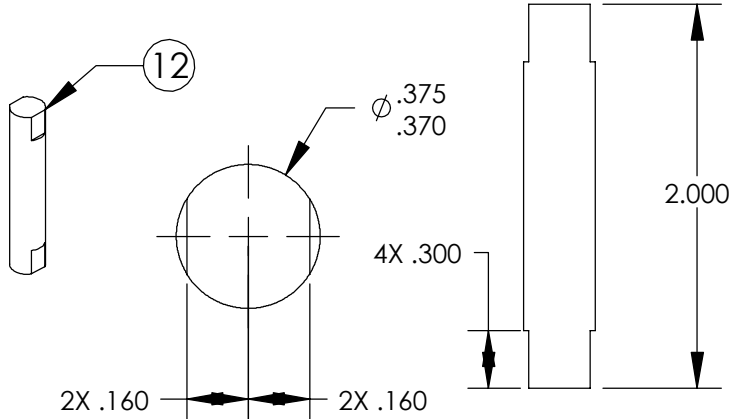
SECTION H-H
SCALE 1 : 2



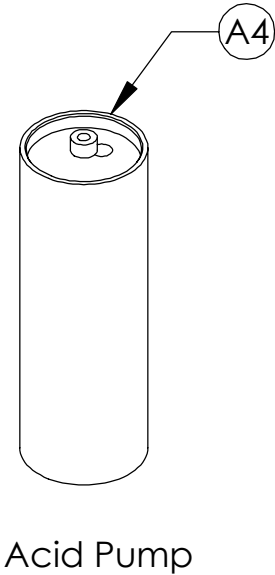
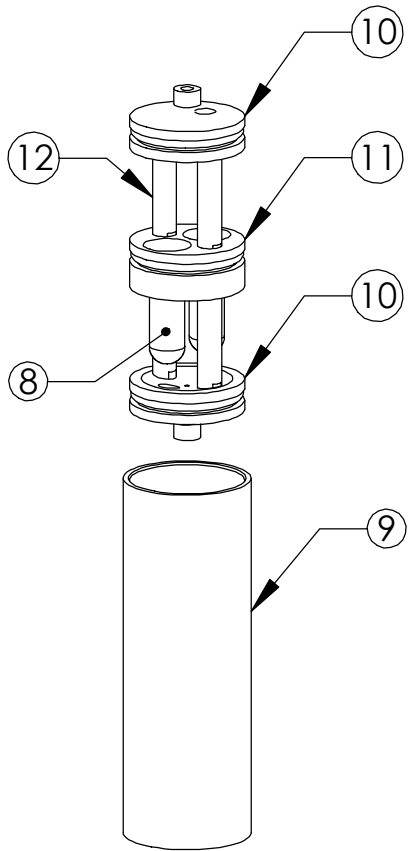
DETAIL J
SCALE 2 : 1



SECTION K-K



SECTION L-L



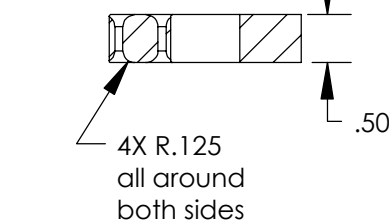
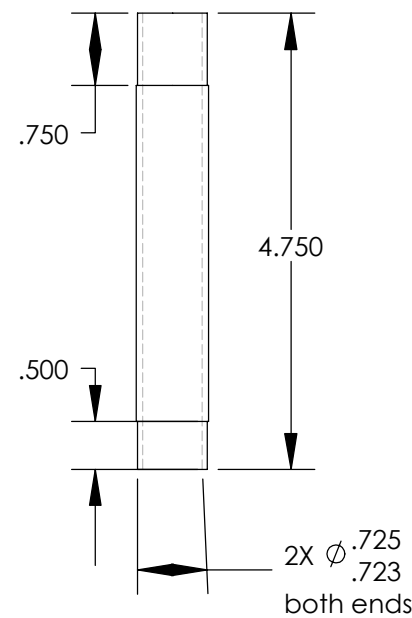
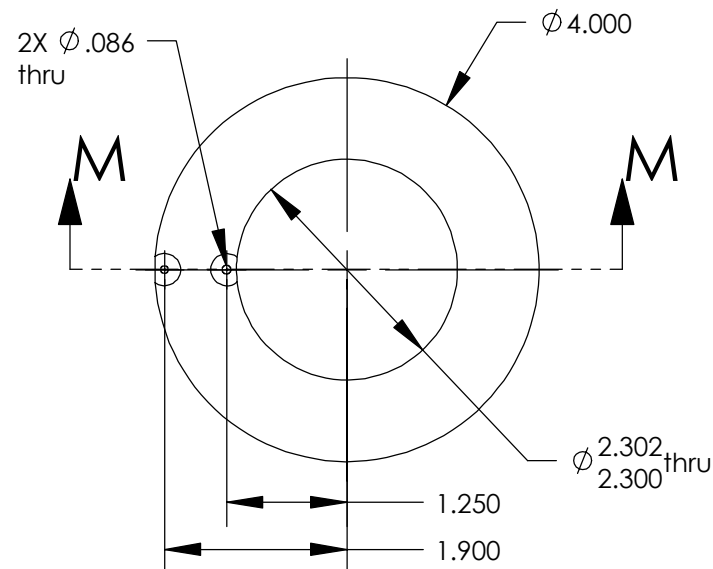
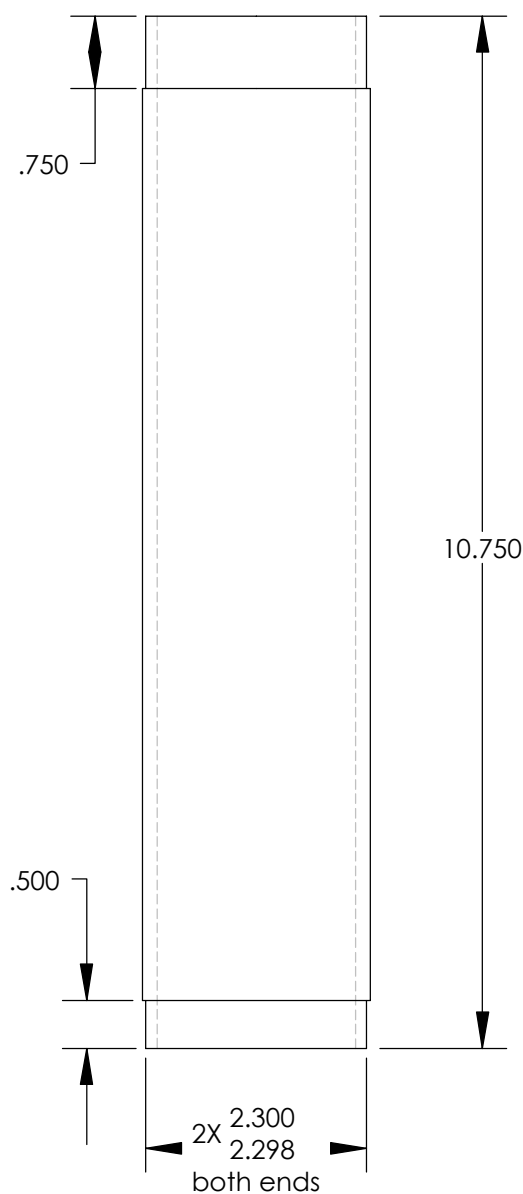
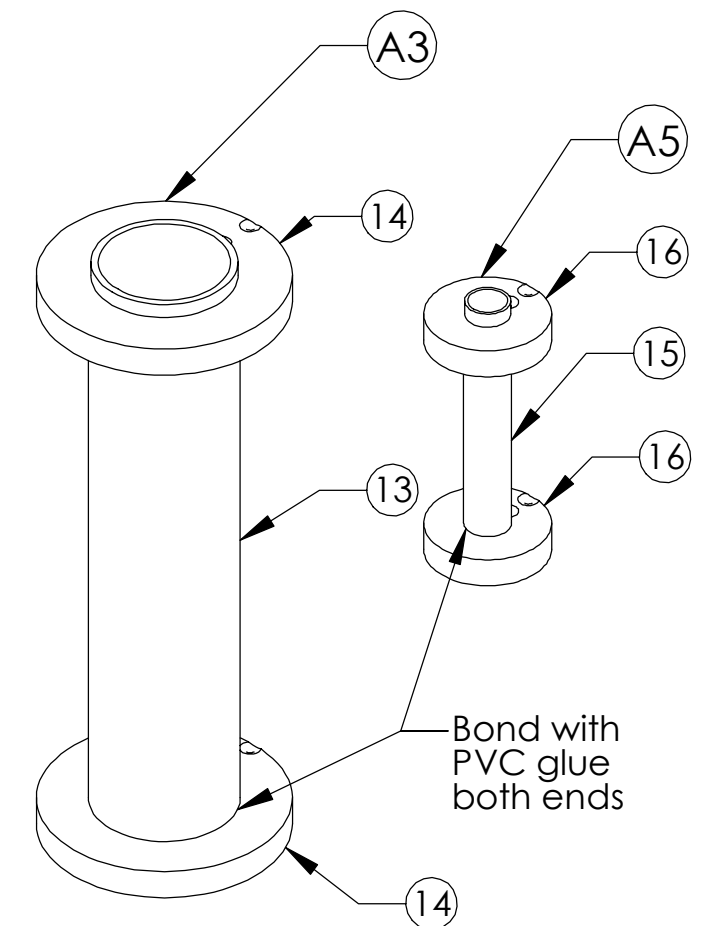
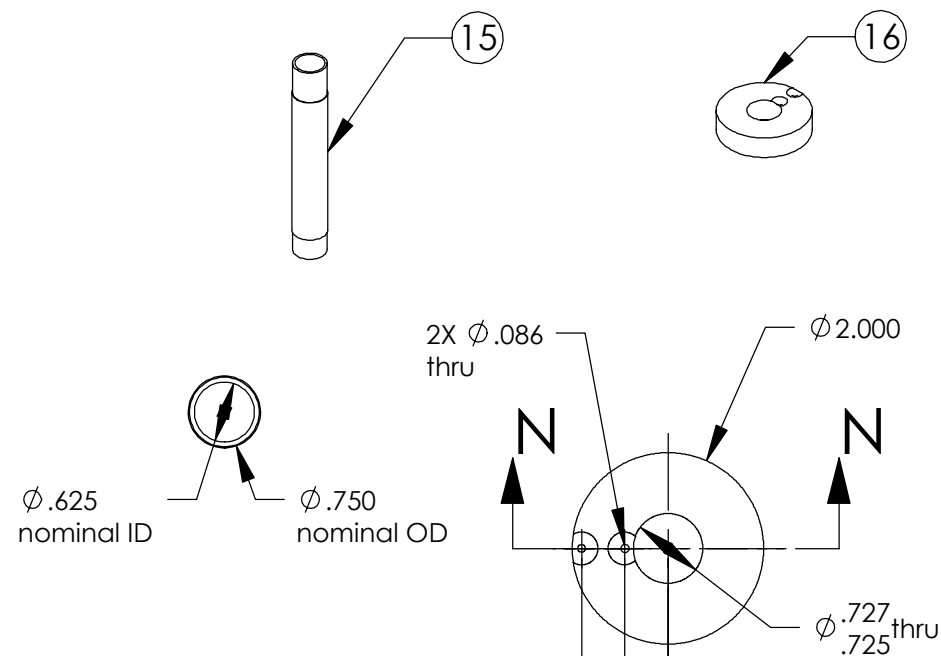
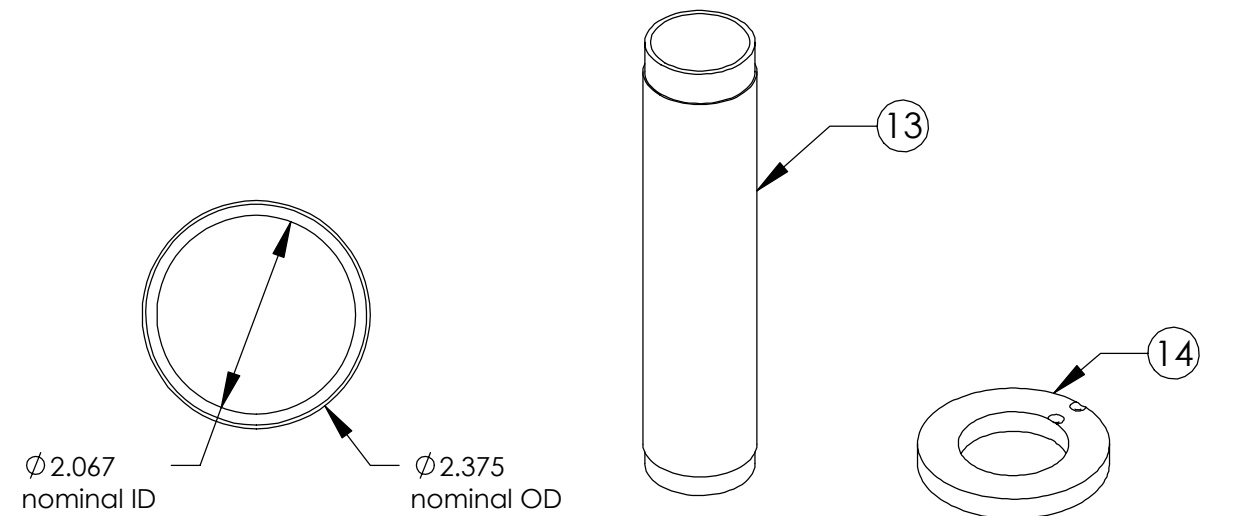
Acid Pump

ITEM NO.	QTY	PART NO.	DESCRIPTION	MATERIAL SPECIFICATION
8	2@		Alza Membrane	Prepared in lab
12	1@		Acid Pump Standoff	3/8" Acrylic rod
11	1@		Acid Pump Manifold	Acrylic (rod or sheet)
10	2@		Acid Pump Endcap	Acrylic (rod or sheet)
9	1@		Acid Pump Housing	2" OD 1/8" wall cast Acrylic tube
A4	1@		Acid Pump	

BILL OF MATERIALS			
UNLESS OTHERWISE SPECIFIED TOLERANCES ARE: 1 PLACE DIM ±1/16 2 PLACE DIM ±.02 3 PLACE DIM ±.005 ANGLES ±1° 1. DIMENSIONS ARE IN INCHES 2. DIMENSION LIMITS HELD AFTER PLATING. 3. REMOVE BURRS AND SHARP EDGES .015 MAX. 4. MACHINED FILLET RADII .0150-.030. 5. MACHINED DIAMETERS ON A COMMON CENTERLINE CONCENTRIC WITHIN .005 6. PERPENDICULARITY & PARALLELISM OF MACHINED SURFACES .002 PER INCH. MAX .012 INCHES FOR SINGLE SURFACE. DO NOT SCALE DRAWING		APPROVALS	DATE
		DRAWN Hans Jannasch	12/31/02
		ENGINEER	Monterey Bay Aquarium Research Institute 7700 Sandholdt RD. Moss Landing, CA 95039 PH: (408) 775-1700 Acid-Addition OsmoSampler Version 2 130jaha.DWG
		CHECKED	
		PROJECT NO.	
		PROJECT	
		WEIGHT	
		SIZE B	DWG. NO.
		SCALE 2:1	CAD FILE: BARNACLE\ARCHIVE
			REV.
			SHEET 6 OF 7

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	INITIAL RELEASE		



SECTION N-N
SCALE 1 : 2

A3 1@

16	2@		Sample coil end	1/2" PVC plate
15	1@		Acid coil center	0.75" OD 1/16" wall Acrylic tube
14	2@		Sample coil end	1/2" PVC plate
13	1@		Sample coil center	2" Sched 40 PVC pipe
A5	1@		Acid Coil	
A3	1@		Sample Coil	

ITEM NO.	QTY	PART NO.	DESCRIPTION	MATERIAL SPECIFICATION
BILL OF MATERIALS				
UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:			APPROVALS	DATE
1 PLACE DIM ±.1/16			DRAWN Hans Jannasch 12/31/02	
2 PLACE DIM ±.02			ENGINEER	
3 PLACE DIM ±.005			CHECKED	
ANGLES ±.1			PROJECT NO.	
1. DIMENSIONS ARE IN INCHES			PROJECT	
2. DIMENSION LIMITS HELD AFTER PLATING.			SIZE B	
3. REMOVE BURRS AND SHARP EDGES .015 MAX.			DWG. NO.	
4. MACHINED FILLET RADII .0150-.030.			130jaha.DWG	
5. MACHINED DIAMETERS ON A COMMON CENTERLINE CONCENTRIC WITHIN .005			REV.	
6. PERPENDICULARITY & PARALLELISM OF MACHINED SURFACES .002 PER INCH. MAX. .012 INCHES FOR SINGLE SURFACE.			SCALE 2:1	
DO NOT SCALE DRAWING			CAD FILE: BARNACLE\LEV\ARCHIVE	
			SHEET 7 OF 7	

Monterey Bay Aquarium **Research Institute**

7700 Sandholdt RD.
Moss Landing, CA 95039
PH: (408) 775-1700

Acid-Addition OsmoSampler
Version 2

SIZE B	DWG. NO. 130jahq.DWG	REV.
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SCALE	2:1	CAD FILE:	BARNACLE\ARCHIVE	SHEET 7 OF 7
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