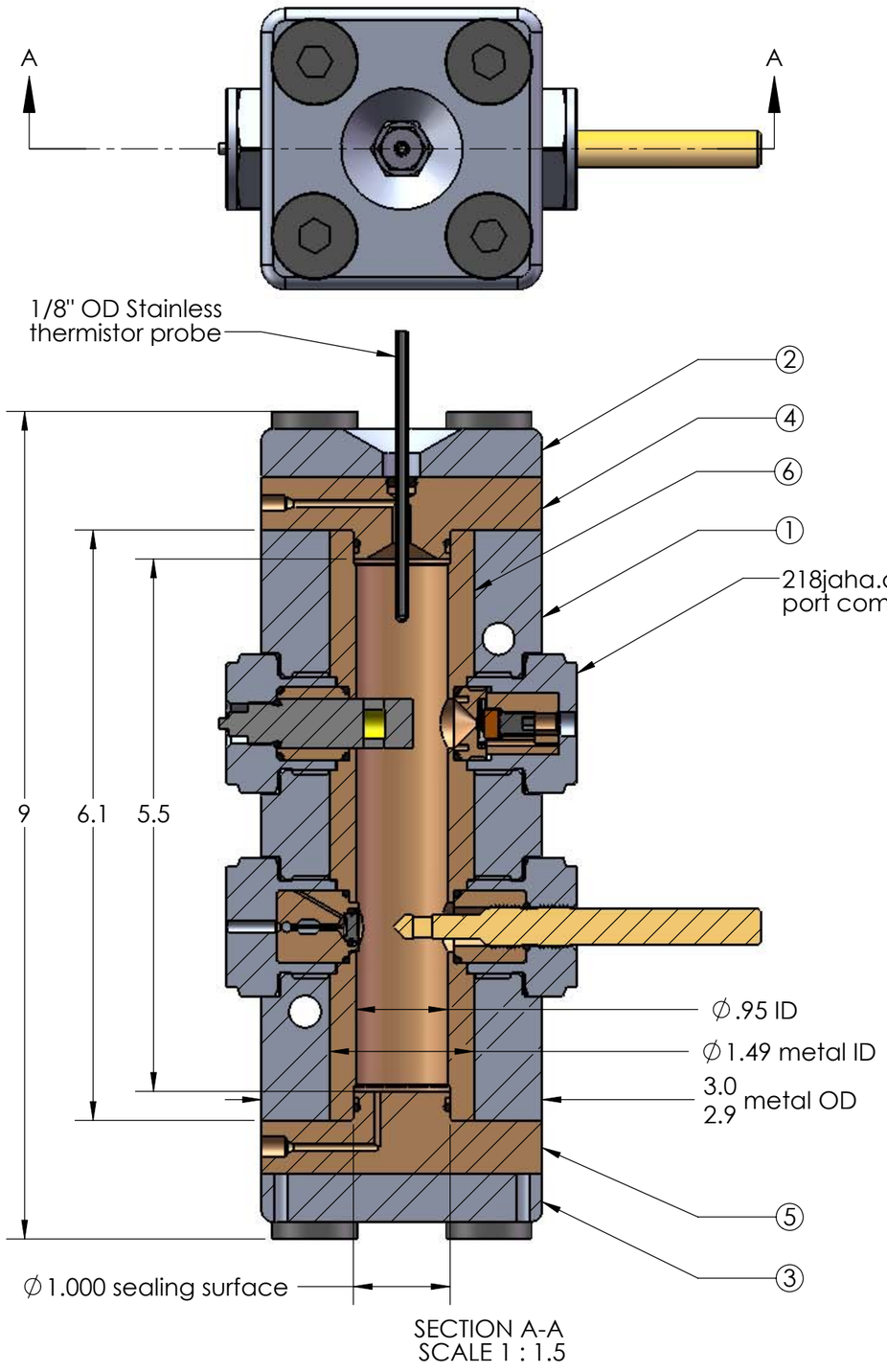
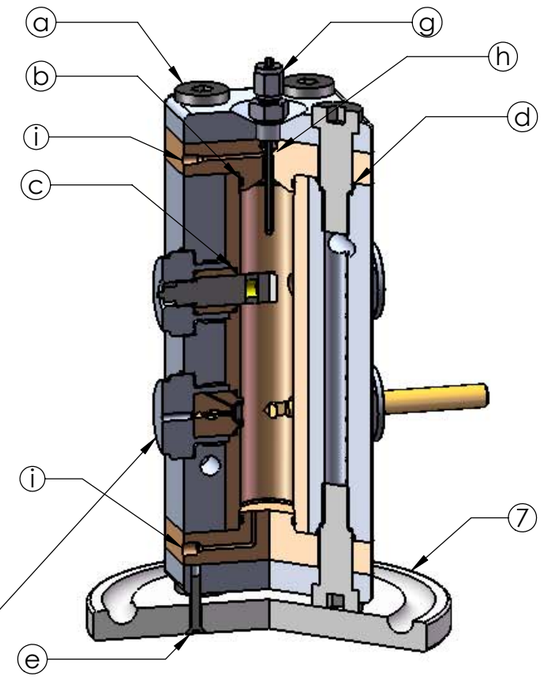
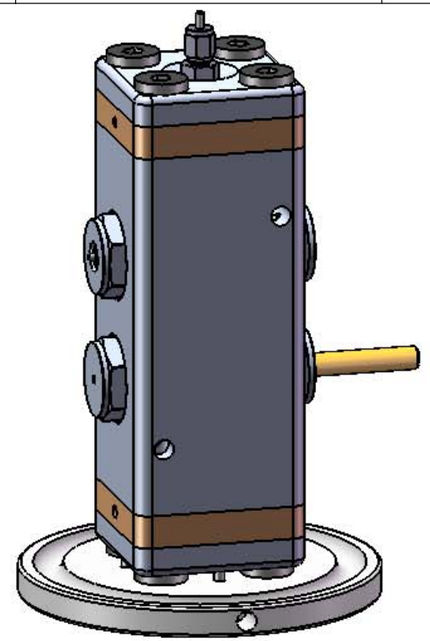
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	INITIAL RELEASE		



SECTION A-A
SCALE 1 : 1.5



Cut-away View



ASSEMBLY

Item No.	Qty	Part No.	Description	Material Specification
i	2 sets		Upchurch fittings for 1/16" PEEK tubing	LT-110 PEEK nut & LT-135 ferrule
h	1		Viton O-ring (D90) w/Parbak	Viton D90 2-104
g	1		Swagelock fitting	SS-200-1-4ST (bored thru)
f	26		SS 8-32x.25 sealing flathead screw	McMaster PN# 98070A310
e	4		SS Flathead screw	SS 8-32 x 1" flathead screw
d	8		O-ring	2-016
c	4		Viton O-ring (D90)	Viton D90 2-016
b	2		Viton O-ring (D90) w/Parbak	Viton D90 2-020
a	8		SS Shoulder Screw	McMaster PN#90298A794
A1	1		Parts #1 and 6 press fit together	
7	1		Stand	PVC
6	1		PEEK Liner	PEEK Rod
5	1		Endcap (Bottom)	PEEK
4	1		Endcap (Top)	PEEK
3	1		Endcap retainer (Bottom)	Ti Alloy Gr. 5 (6AL-4V)
2	1		Endcap retainer (Top)	Ti Alloy Gr. 5 (6AL-4V)
1	1		SS Housing	Ti Alloy Gr. 5 (6AL-4V)

Bill of Materials

Shop / Q.C.	
Inspector	
Shop Foreman	
Engineer	
NEXT ASSY Description	NEXT ASSY Number
Application	

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

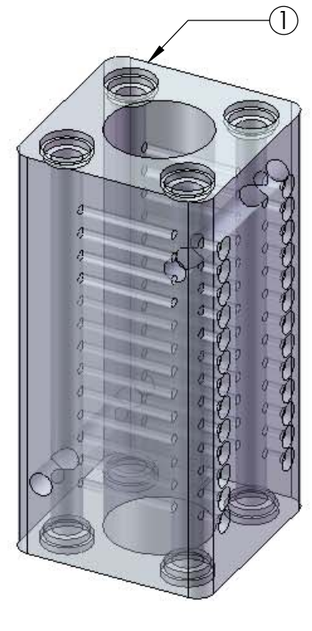
APPROVALS	DATE
DRAWN Hans Jannasch	4/22/09
ENGINEER	
CHECKED	
PROJECT NO.	900918
PROJECT	Novel Sensors
WEIGHT	

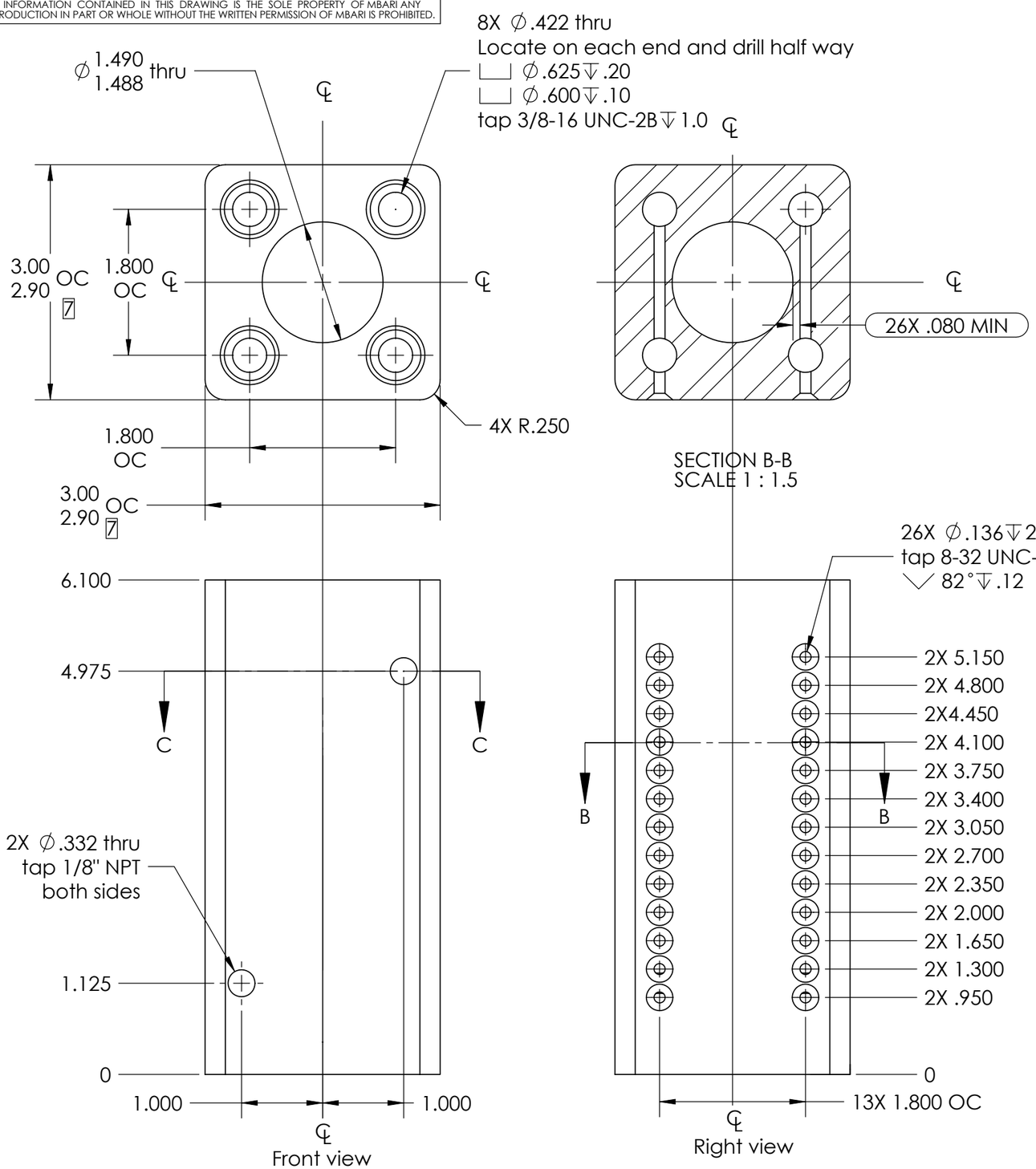
Monterey Bay Aquarium Research Institute
MBARI
7700 Sandholdt RD.
Moss Landing, CA 95039
PH: (831) 775-1700

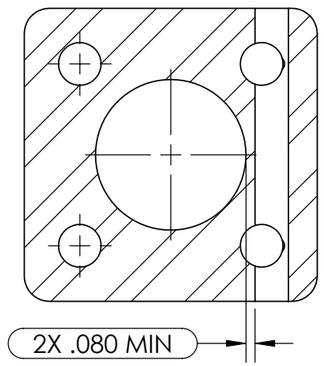
P/T Test Chamber

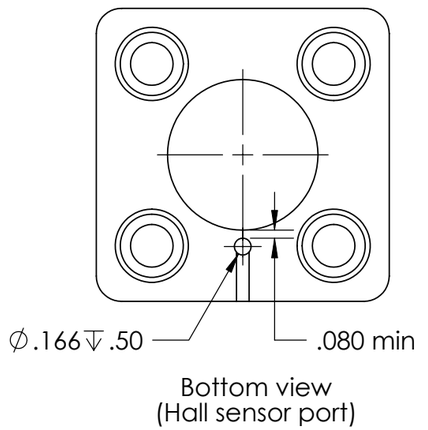
SIZE	DWG. NO.	REV.
B	217jahaPTtestChamber	
SCALE 1:3	CAD FILE: Tornado/chem/SWfiles	SHEET 1 OF 6

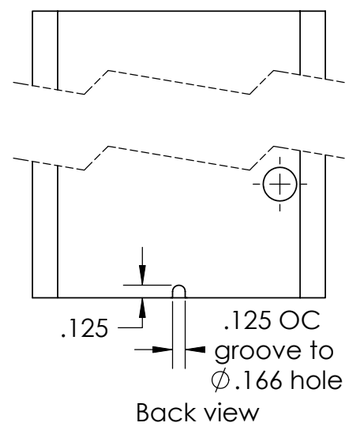
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	INITIAL RELEASE		











NOTE 7: The OD (2.9 to 3.0") of all parts should be the same, so that the assembly has an even exterior.

Item No.	Qty	Part No.	Description	Material Specification
1	1		SS Housing	Ti Alloy Gr. 5 (6AL-4V)

Bill of Materials

Shop / Q.C.		UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:		
Inspector		1 PLACE DIM ±1/16	2 PLACE DIM ±.02	3 PLACE DIM ±.005	ANGLES ±1°
Shop Foreman		1. DIMENSIONS ARE IN INCHES		
Engineer		2. DIMENSION LIMITS HELD AFTER PLATING.		
		3. REMOVE BURRS AND SHARP EDGES .015 MAX.		
NEXT ASSY Description	NEXT ASSY Number	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.		
Application		DO NOT SCALE DRAWING		

APPROVALS	DATE
DRAWN Hans Jannasch	4/22/09
ENGINEER	
CHECKED	
PROJECT NO. 900918	
PROJECT Novel Sensors	
WEIGHT	

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MBARI
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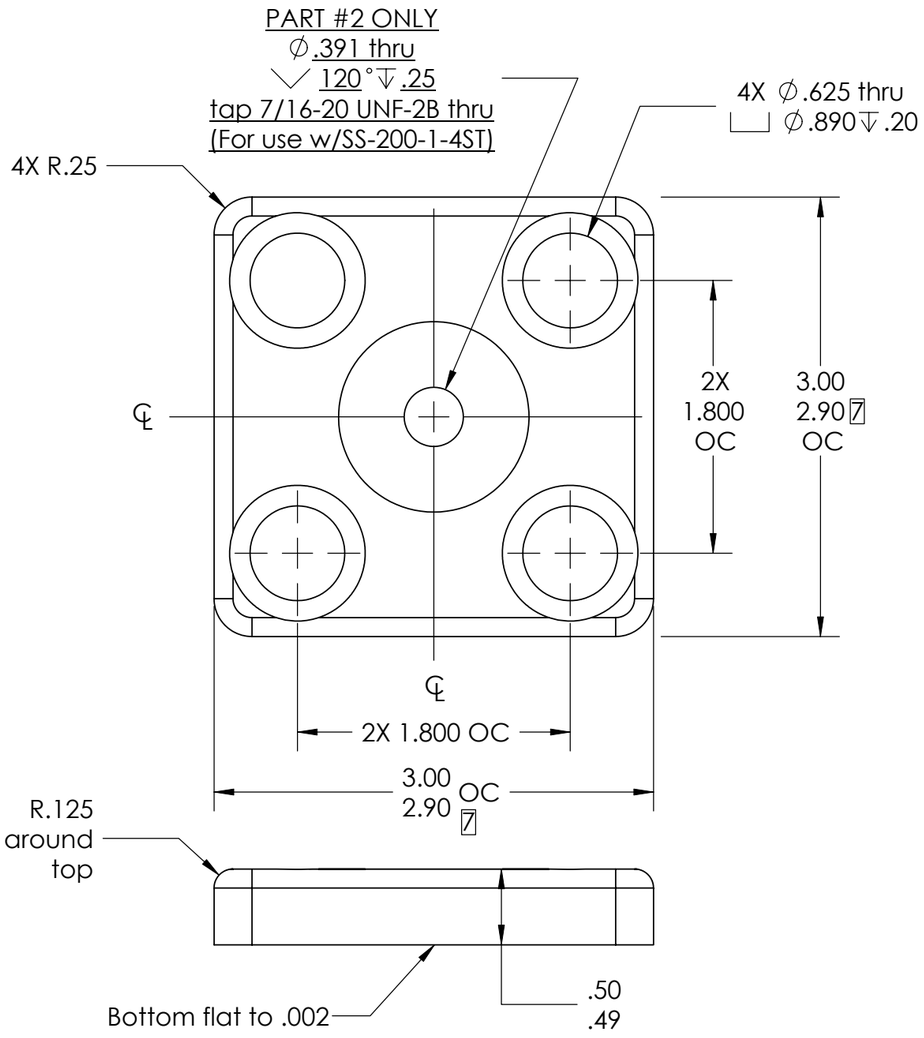
Moss Landing, CA 95039
PH: (831) 775-1700

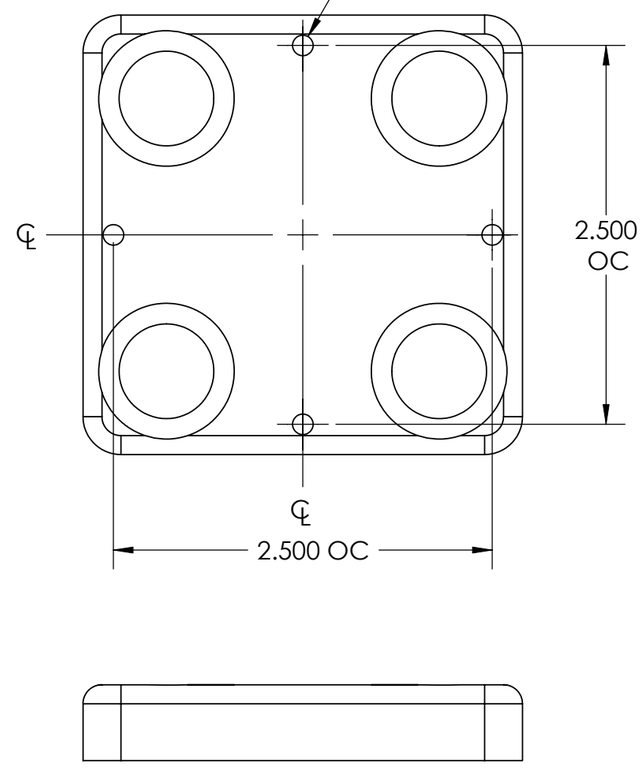
P/T Test Chamber

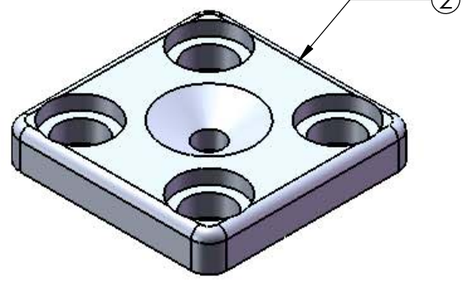
SIZE	DWG. NO.	REV.
B	217jahaPTtestChamber	

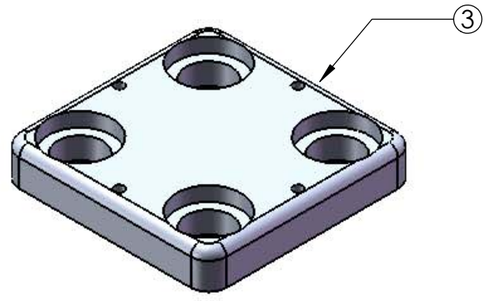
SCALE 1:3 | CAD FILE: Tornado/chem/SWfiles | SHEET 2 OF 6

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	INITIAL RELEASE		









All dimensions for both parts
except as noted

NOTE:
The only difference between Parts #2 and #3 are:
1) The center countersunk thru-hole (only in Part #2) and
2) The 4X #8 mounting holes (only in Part #3).
The dimensions for these features are underlined.

NOTE 7: The OD (2.9 to 3.0") of all parts should be the same, so that the assembly has an even exterior.

Item No.	Qty	Part No.	Description	Material Specification
3	1		Endcap retainer (Bottom)	Ti Alloy Gr. 5 (6AL-4V)
2	1		Endcap retainer (Top)	Ti Alloy Gr. 5 (6AL-4V)

Bill of Materials

Shop / Q.C.		NEXT ASSY Description	NEXT ASSY Number
Inspector			
Shop Foreman			
Engineer			
Application			

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	4/22/09
ENGINEER	
CHECKED	
PROJECT NO.	900918
PROJECT	Novel Sensors
WEIGHT	

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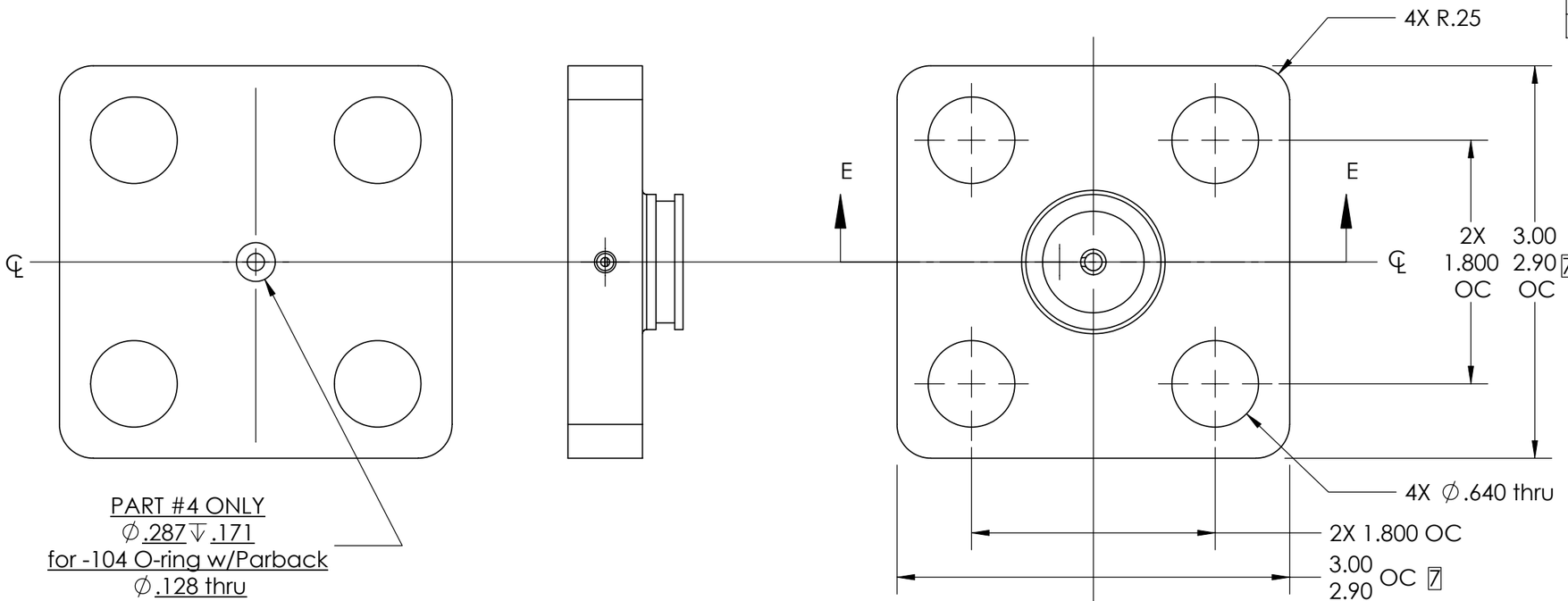
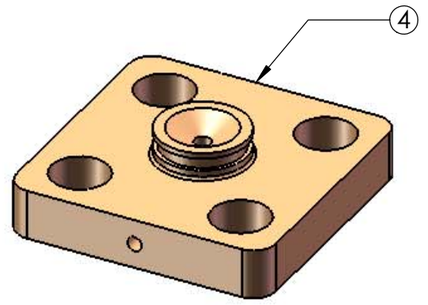
7700 Sandholdt RD.
Moss Landing, CA 95039
PH: (831) 775-1700

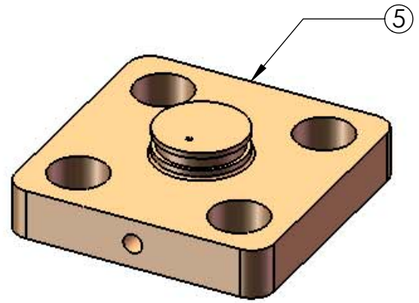
P/T Test Chamber

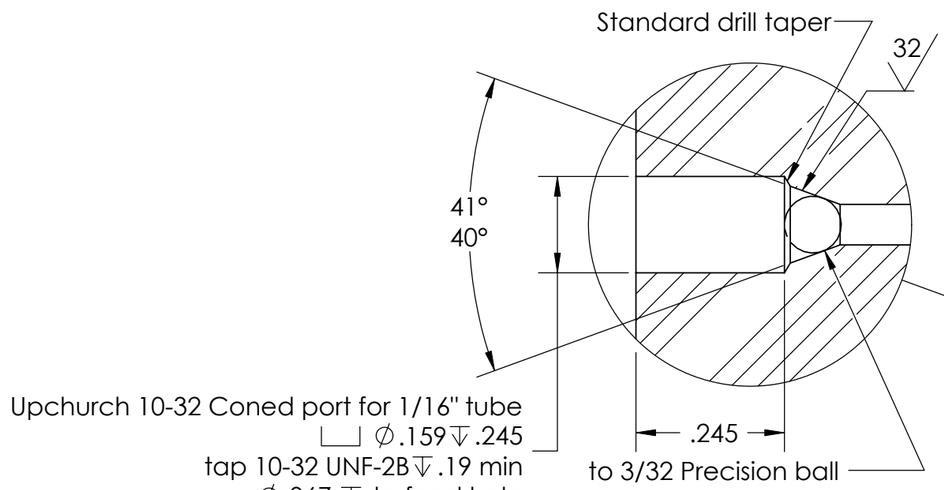
SIZE	DWG. NO.	REV.
B	217jahaPTtestChamber	
SCALE 1:3	CAD FILE: Tornado/chem/SWfiles	SHEET 3 OF 6

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	INITIAL RELEASE		

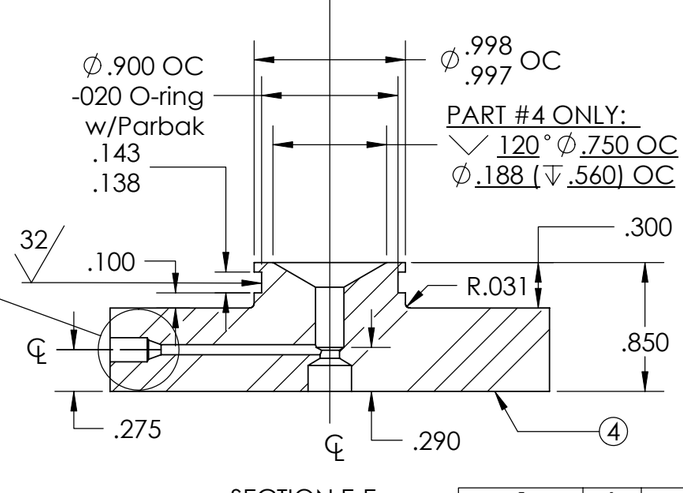




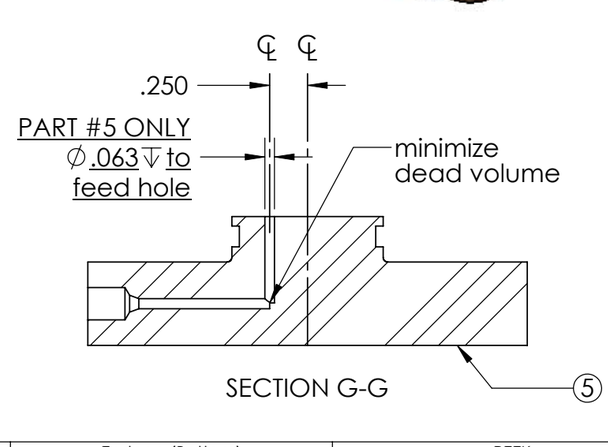




DETAIL F
SCALE 4 : 1



SECTION E-E



SECTION G-G

Item No.	Qty	Part No.	Description	Material Specification
5	1		Endcap (Bottom)	PEEK
4	1		Endcap (Top)	PEEK

Bill of Materials

NOTE:
The only difference between Parts #4 and #5 are:
1) The center 1/4-28 port and thru-hole (only in Part #4)
2) The debubbling 120° countersink (only in Part #4)
3) The off-center fill port (only in Part #5).
The dimensions for these features are underlined.

NOTE 7: The OD (2.9 to 3.0") of all parts should be the same, so that the assembly has an even exterior.

Shop / Q.C.		UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:				APPROVALS	DATE
Inspector		1 PLACE DIM ±1/16	2 PLACE DIM ±.02	3 PLACE DIM ±.005	ANGLES ±1°	DRAWN Hans Jannasch	4/22/09
Shop Foreman		1. DIMENSIONS ARE IN INCHES				ENGINEER	
Engineer		2. DIMENSION LIMITS HELD AFTER PLATING.				CHECKED	
NEXT ASSY Description	NEXT ASSY Number	3. REMOVE BURRS AND SHARP EDGES .015 MAX.				PROJECT NO.	900918
		4. MACHINED FILLET RADII .0150-.030.				PROJECT	Novel Sensors
		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.					
Application		DO NOT SCALE DRAWING				WEIGHT	

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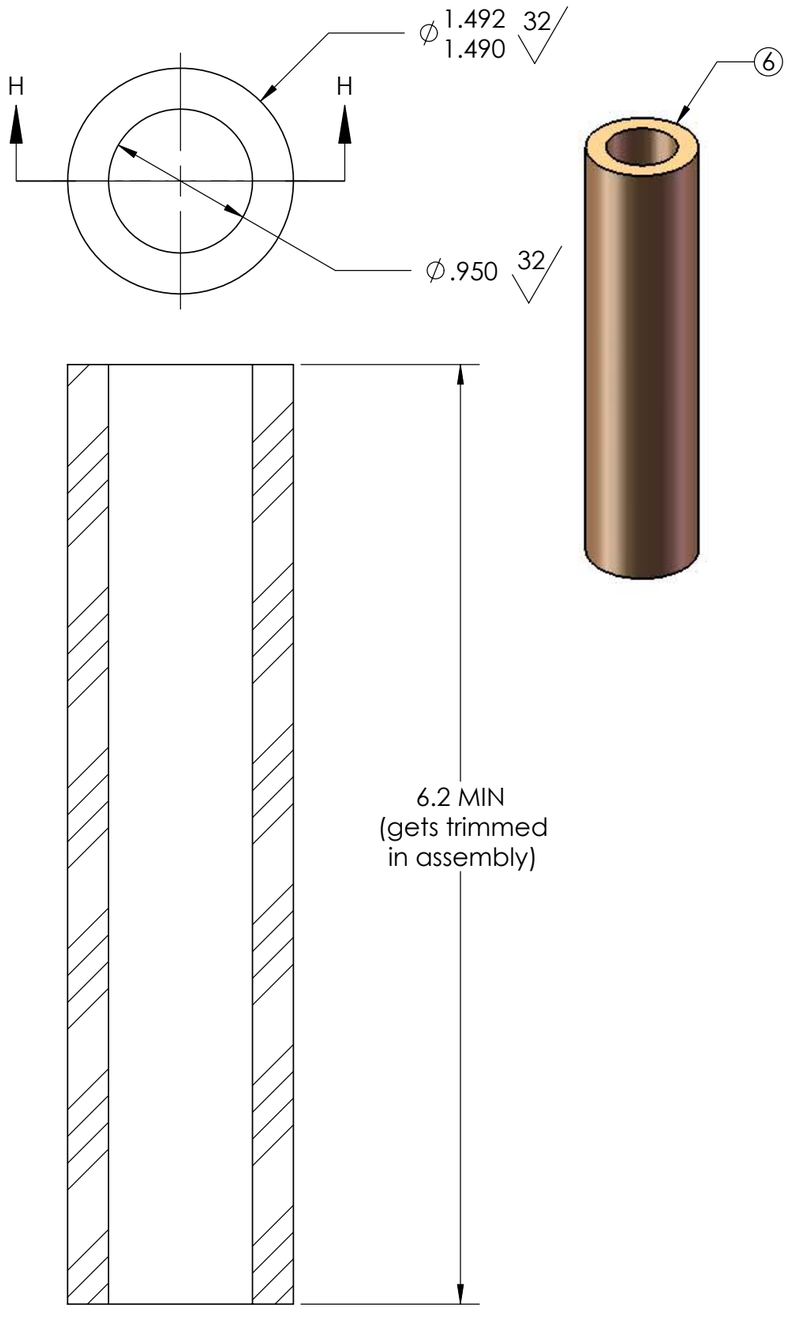
Moss Landing, CA 95039
PH: (831) 775-1700

P/T Test Chamber

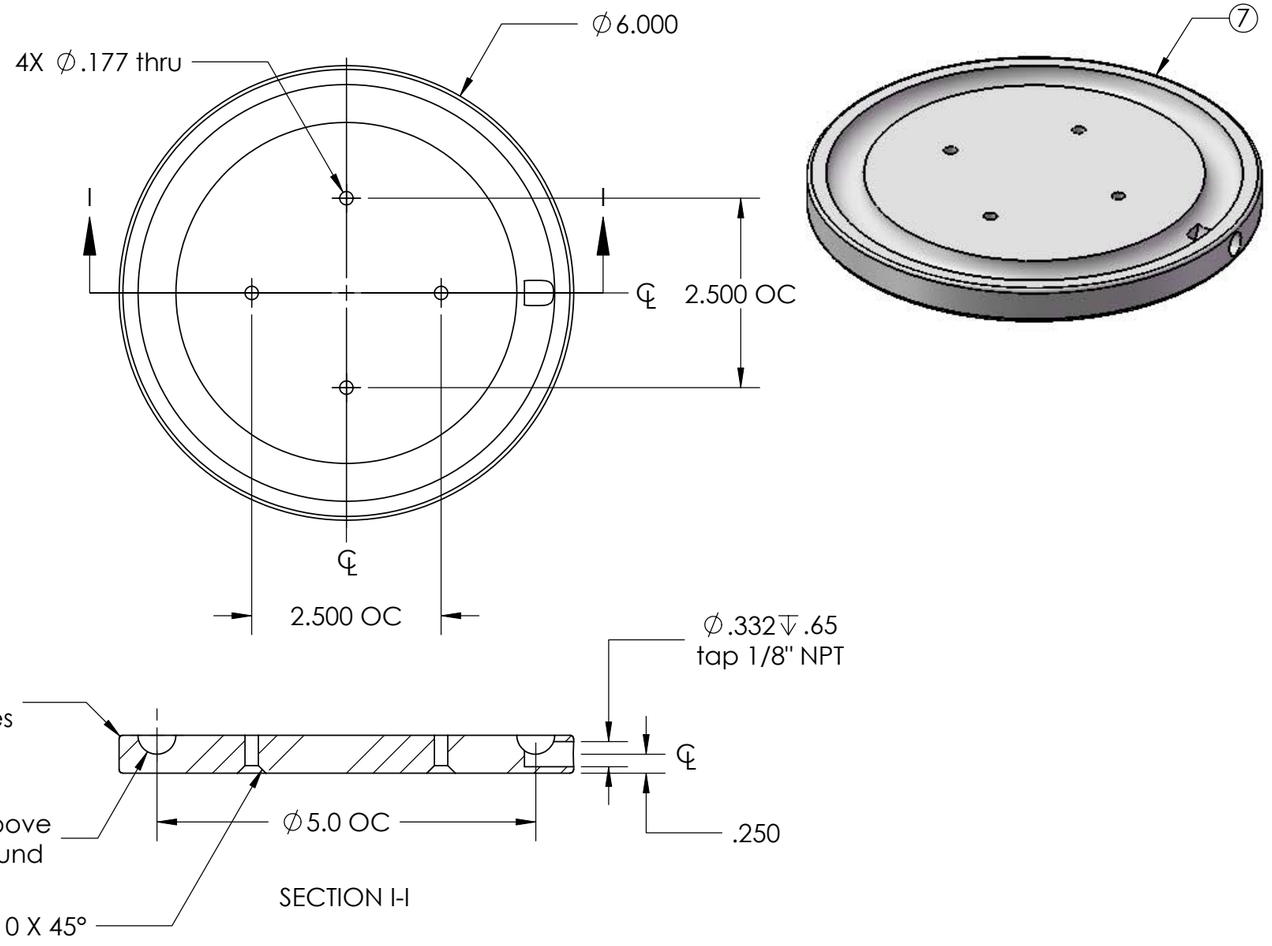
SIZE	DWG. NO.	REV.
B	217jahaPTtestChamber	

SCALE 1:3 | CAD FILE: Tornado/chem/SWfiles | SHEET 4 OF 6

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	INITIAL RELEASE		



SECTION H-H
SCALE 1 : 1



SECTION I-I

Item No.	Qty	Part No.	Description	Material Specification
7			Stand	PVC
6			PEEK Liner	PEEK Rod

Bill of Materials

Shop / Q.C.	
Inspector	
Shop Foreman	
Engineer	
NEXT ASSY Description	NEXT ASSY Number
Application	

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	4/22/09
ENGINEER	
CHECKED	
PROJECT NO. 900918	
PROJECT Novel Sensors	
WEIGHT	

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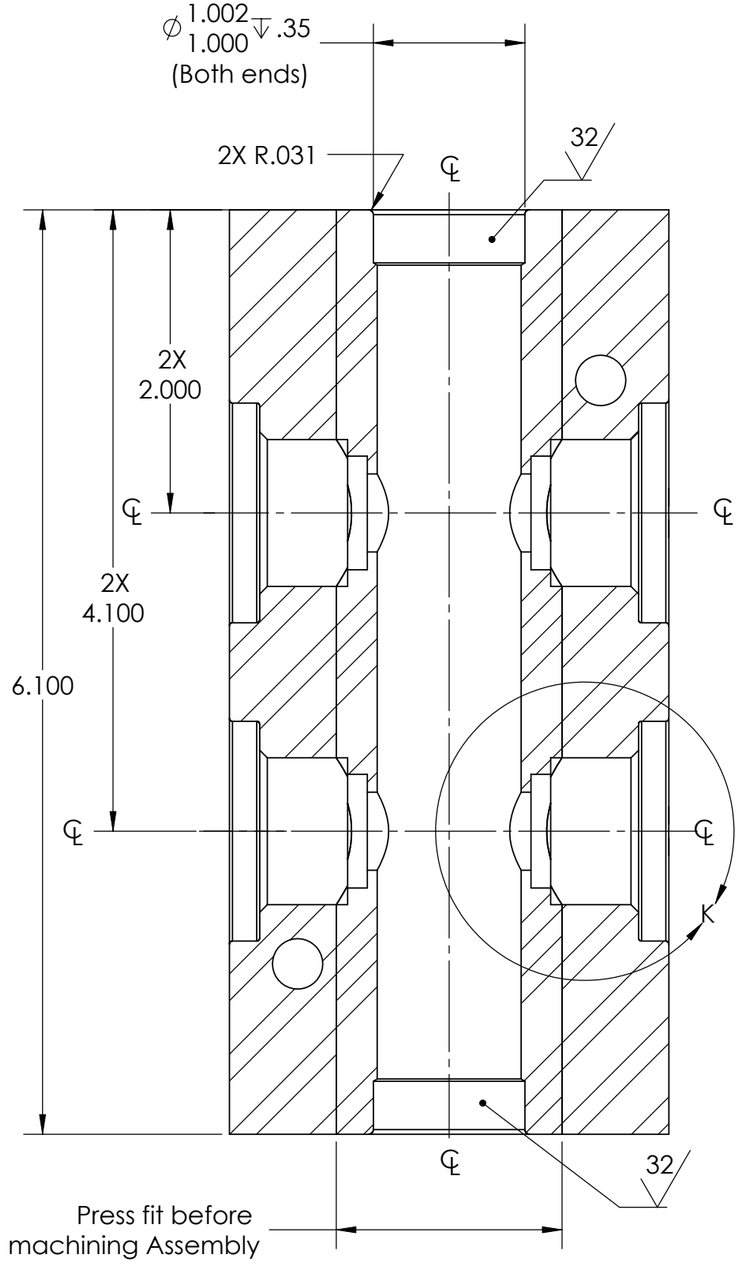
7700 Sandholdt RD.
Moss Landing, CA 95039
PH: (831) 775-1700

P/T Test Chamber

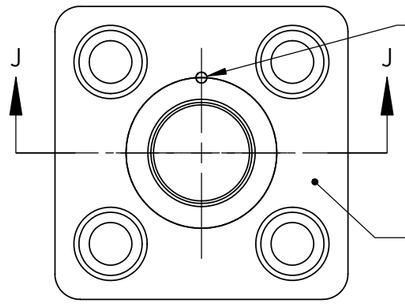
SIZE	DWG. NO.	REV.
B	217jahaPTtestChamber	

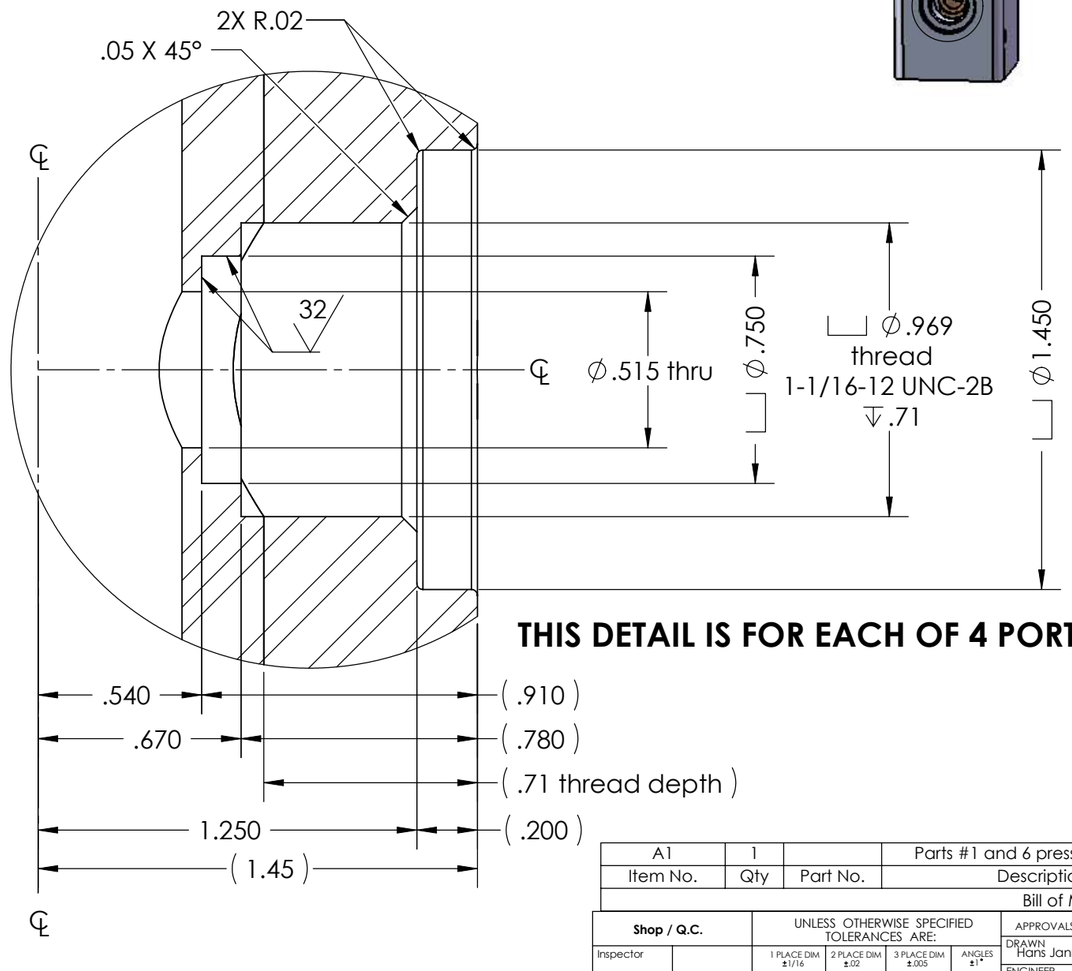
SCALE 1:3 | CAD FILE: Tornado/chem/SWfiles | SHEET 5 OF 6

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	INITIAL RELEASE		

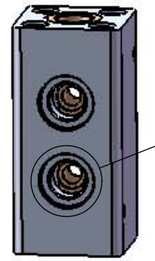


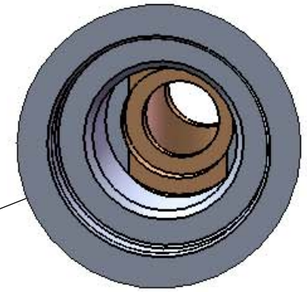
SECTION J-J
SCALE 1 : 1

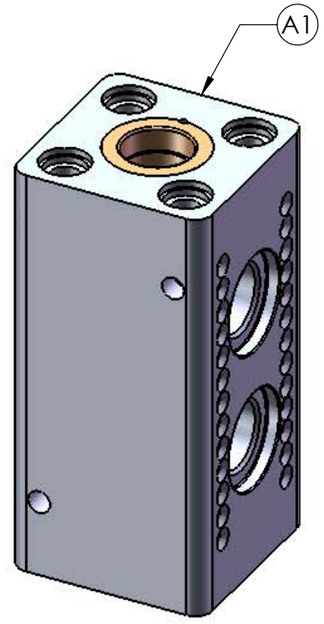




DETAIL K
SCALE 2 : 1







THIS DETAIL IS FOR EACH OF 4 PORTS

Item No.	Qty	Part No.	Description	Material Specification
A1	1		Parts #1 and 6 press fit together	

Bill of Materials

Shop / Q.C.		NEXT ASSY Description	NEXT ASSY Number
Inspector			
Shop Foreman			
Engineer			
Application			

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	4/22/09
ENGINEER	
CHECKED	
PROJECT NO. 900918	
PROJECT Novel Sensors	
WEIGHT	

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MBARI
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PH: (831) 775-1700

P/T Test Chamber

SIZE	DWG. NO.	REV.
B	217jahaPTtestChamber	

SCALE 1:3 | CAD FILE: Tornado/chem/SWfiles | SHEET 6 OF 6