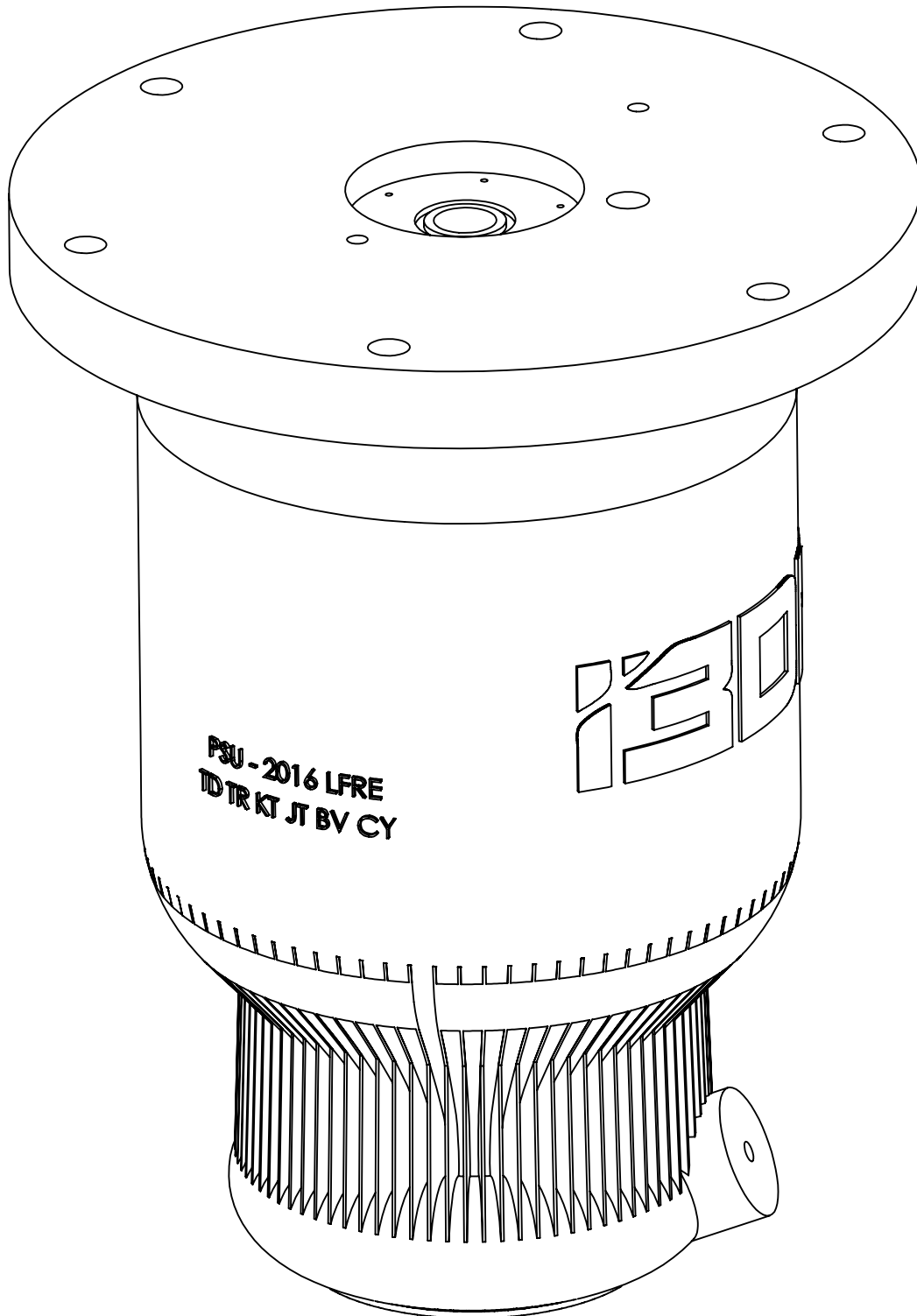


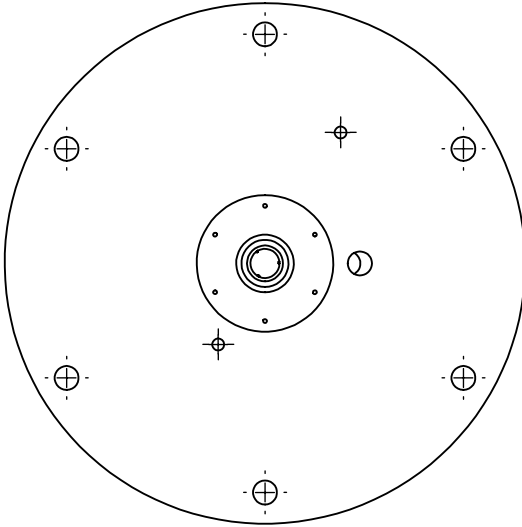
# 3D-PRINTED 2kN LOX/ALCOHOL ROCKET ENGINE

PORTLAND STATE AEROSPACE SOCIETY

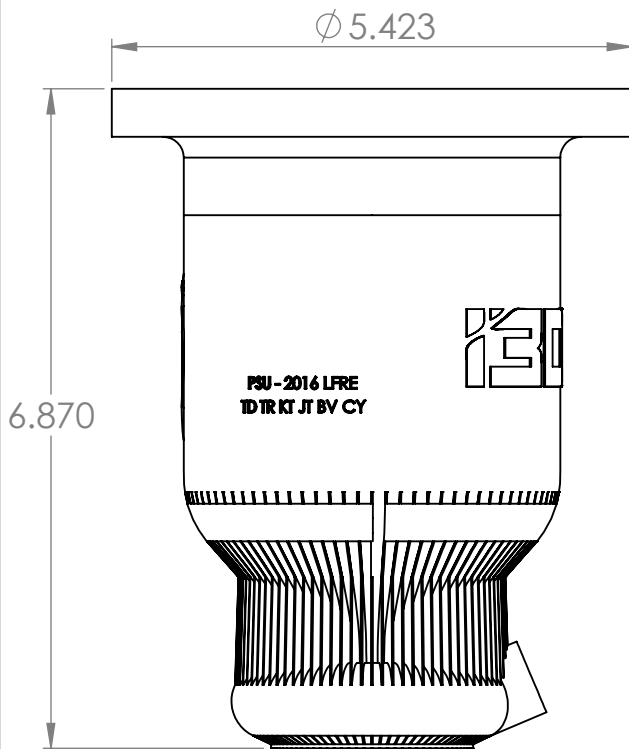
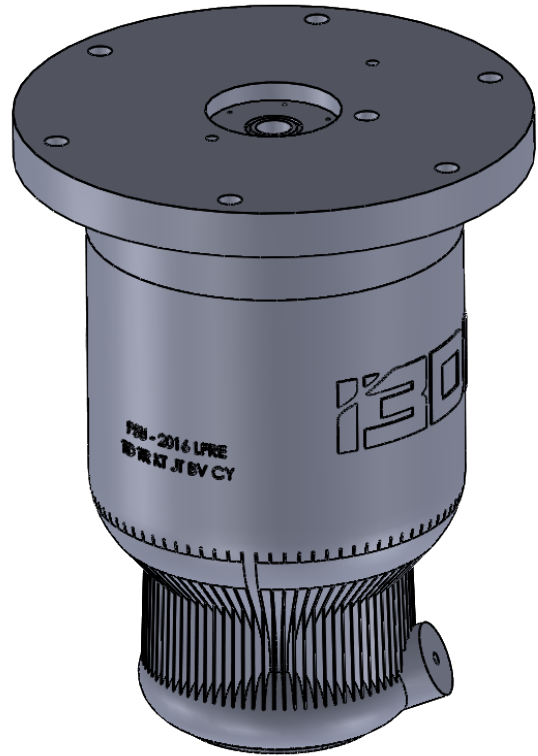


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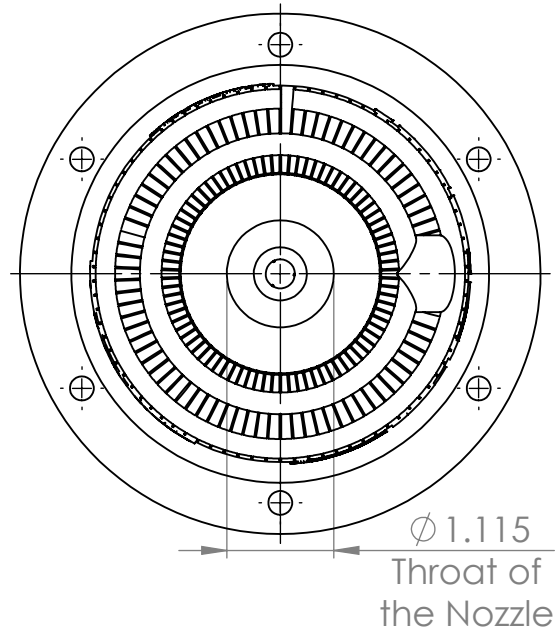
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BOTTOM VIEW



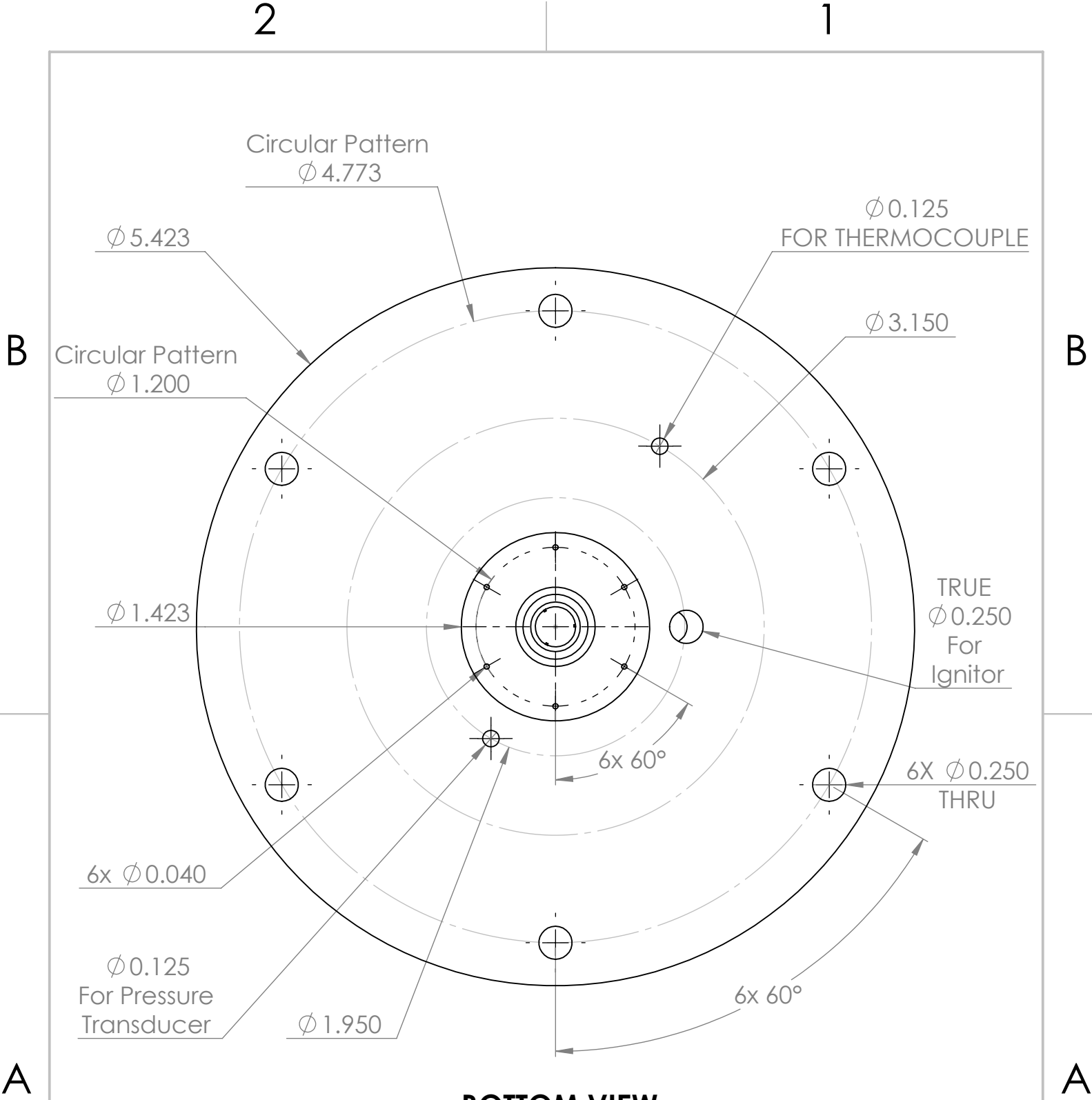
FRONT VIEW



TOP VIEW

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		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm$ ANGULAR: MACH $\pm$ BEND $\pm$ TWO PLACE DECIMAL $\pm$ THREE PLACE DECIMAL $\pm$	NAME	DATE	
			DRAWN		
			CHECKED		
			ENG APPR.		
			MFG APPR.		
		MATERIAL	Q.A.		COMMENTS:
		DMLS AISI12			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			
			SIZE	DWG. NO.	REV.
			A	Nozzle Manifold	
			SCALE:1:2	WEIGHT:	SHEET 2 OF 6

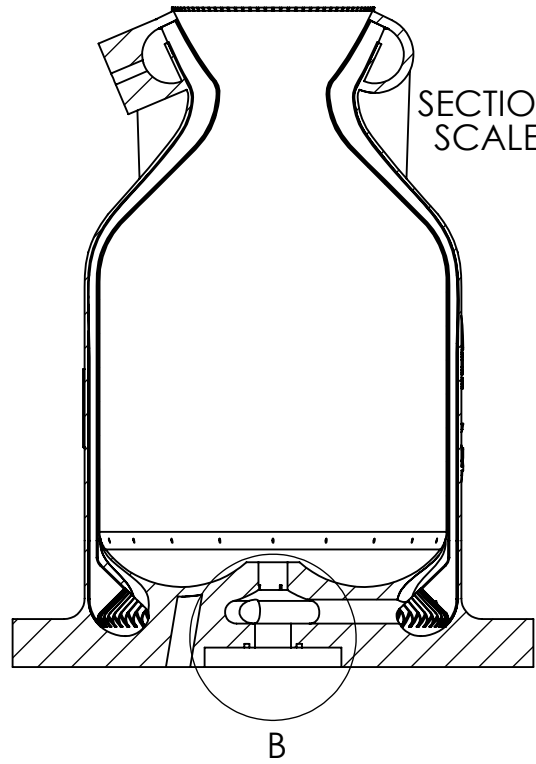


**BOTTOM VIEW**

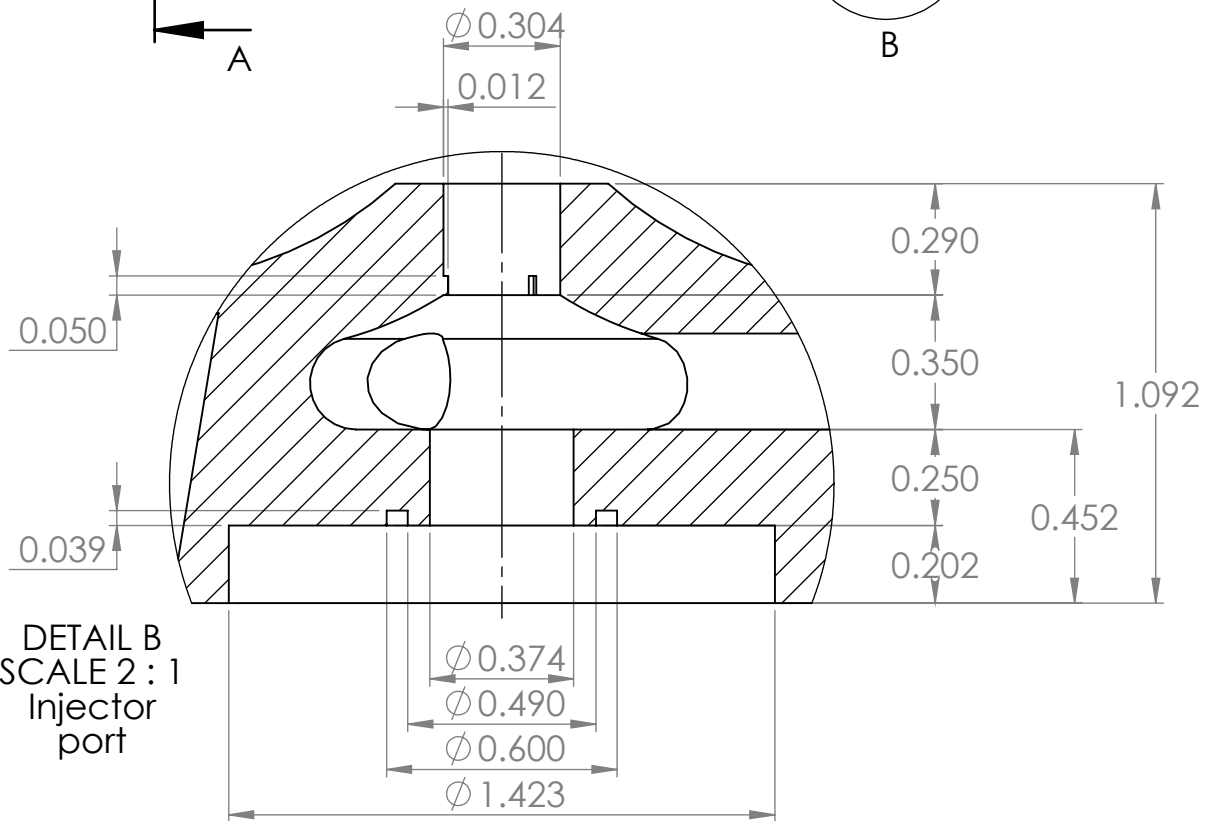
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			CHECKED			
			ENG APPR.			
			MFG APPR.			
		MATERIAL	DMLS AISI12	Q.A.		
				COMMENTS:		
NEXT ASSY	USED ON	FINISH				
APPLICATION		DO NOT SCALE DRAWING				
		SIZE DWG. NO. <b>A</b> Nozzle Manifold REV.				
		SCALE:1:1		WEIGHT:		SHEET 3 OF 6



**RIGHT SIDE  
VIEW**



**SECTION A-A  
SCALE 1 : 2**



**DETAIL B  
SCALE 2 : 1  
Injector  
port**

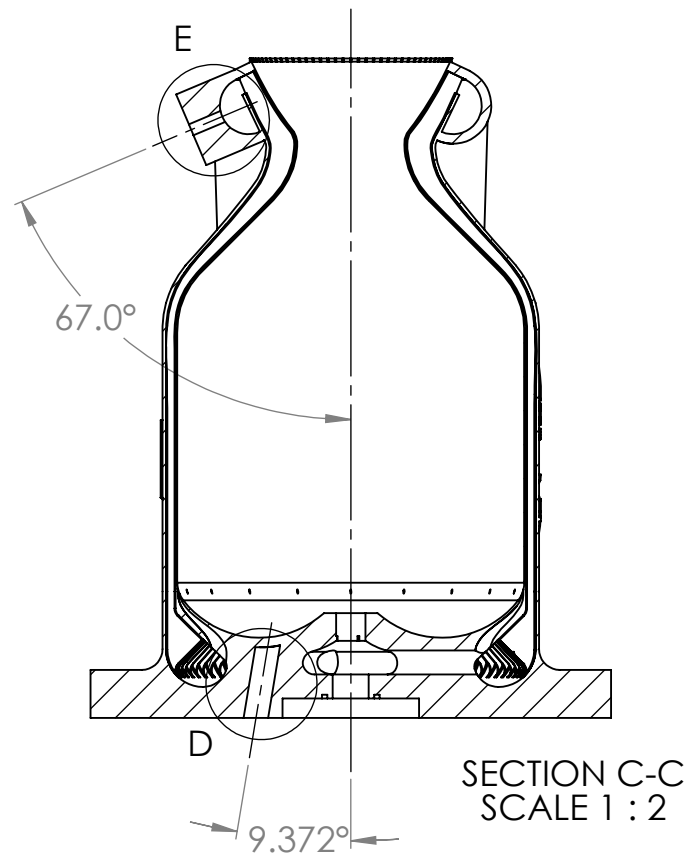
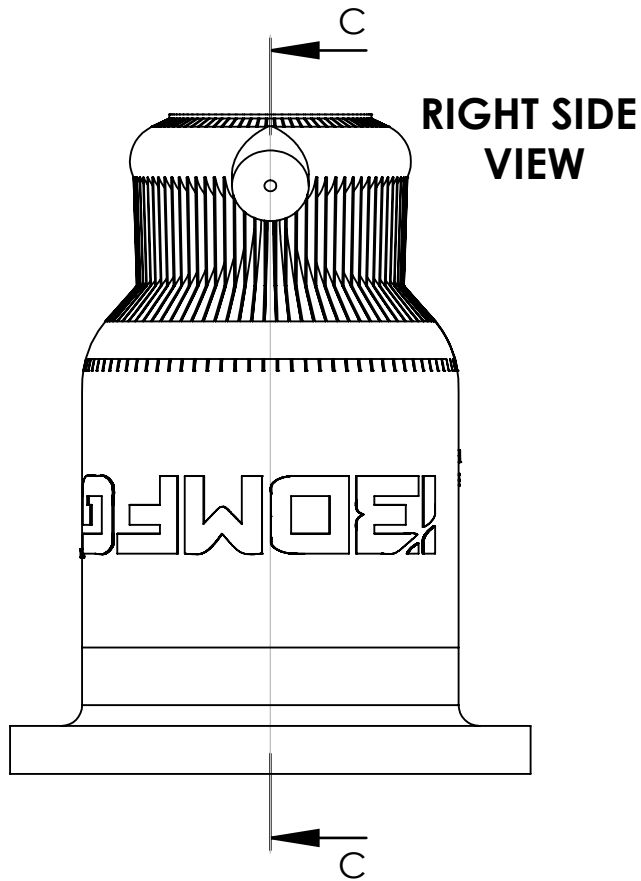
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±			NAME	DATE	
MATERIAL DMLS AISI 12			DRAWN		
FINISH			CHECKED		
NEXT ASSY USED ON			ENG APPR.		
APPLICATION			MFG APPR.		
DO NOT SCALE DRAWING			Q.A.		SIZE DWG. NO. <b>A</b> Nozzle Manifold REV. SCALE: 1:1 WEIGHT: SHEET 4 OF 6
			COMMENTS:		

2

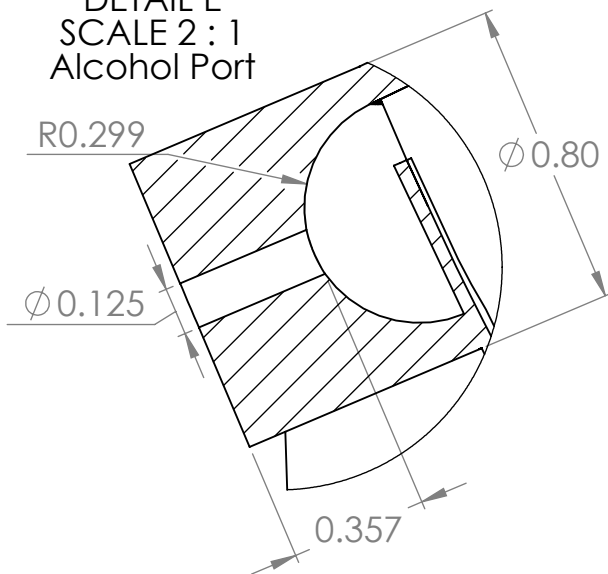
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B

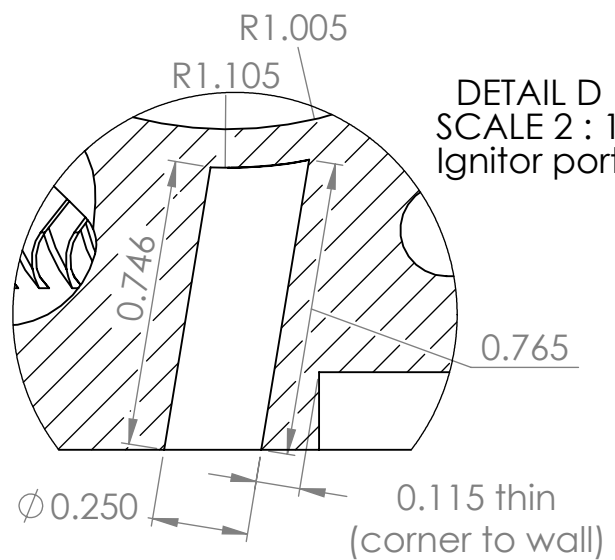
B



**DETAIL E  
SCALE 2 : 1  
Alcohol Port**



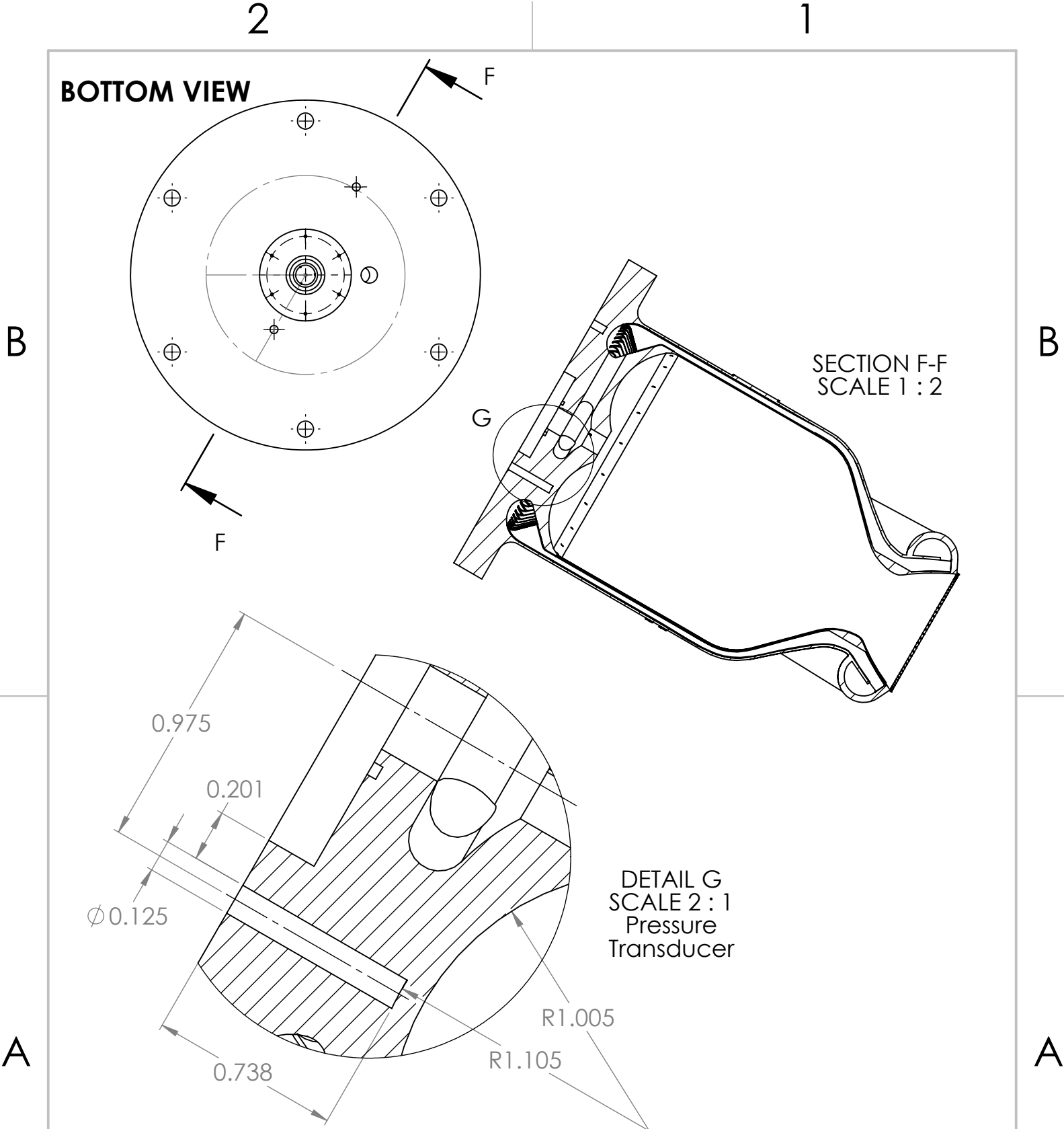
**DETAIL D  
SCALE 2 : 1  
Ignitor port**



A

A

		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ±    BEND ± TWO PLACE DECIMAL    ± THREE PLACE DECIMAL    ±		NAME	DATE	
			DRAWN			
			CHECKED			
			ENG APPR.			
			MFG APPR.			
		MATERIAL	Q.A.			
		DMLS AISI12	COMMENTS:			
		FINISH				
NEXT ASSY	USED ON					
APPLICATION		DO NOT SCALE DRAWING	SIZE    DWG. NO.    REV.			
			SCALE:1:1    WEIGHT:    SHEET 5 OF 6			



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		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ±    BEND ± TWO PLACE DECIMAL    ± THREE PLACE DECIMAL    ±		NAME	DATE	
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			CHECKED			
			ENG APPR.			
			MFG APPR.			
		MATERIAL		Q.A.		
		DMLS AISi12	COMMENTS:			
NEXT ASSY	USED ON	FINISH				
APPLICATION		DO NOT SCALE DRAWING	SIZE DWG. NO.			
			A Nozzle Manifold REV.			
			SCALE:1:1 WEIGHT:		SHEET 6 OF 6	