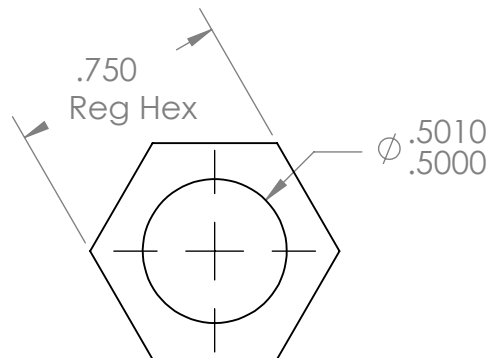
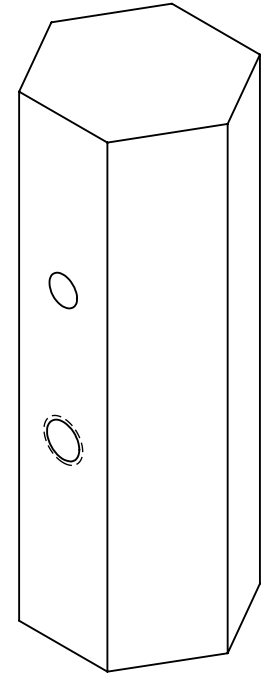
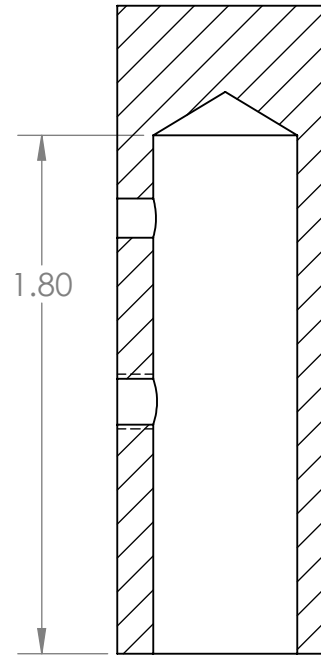
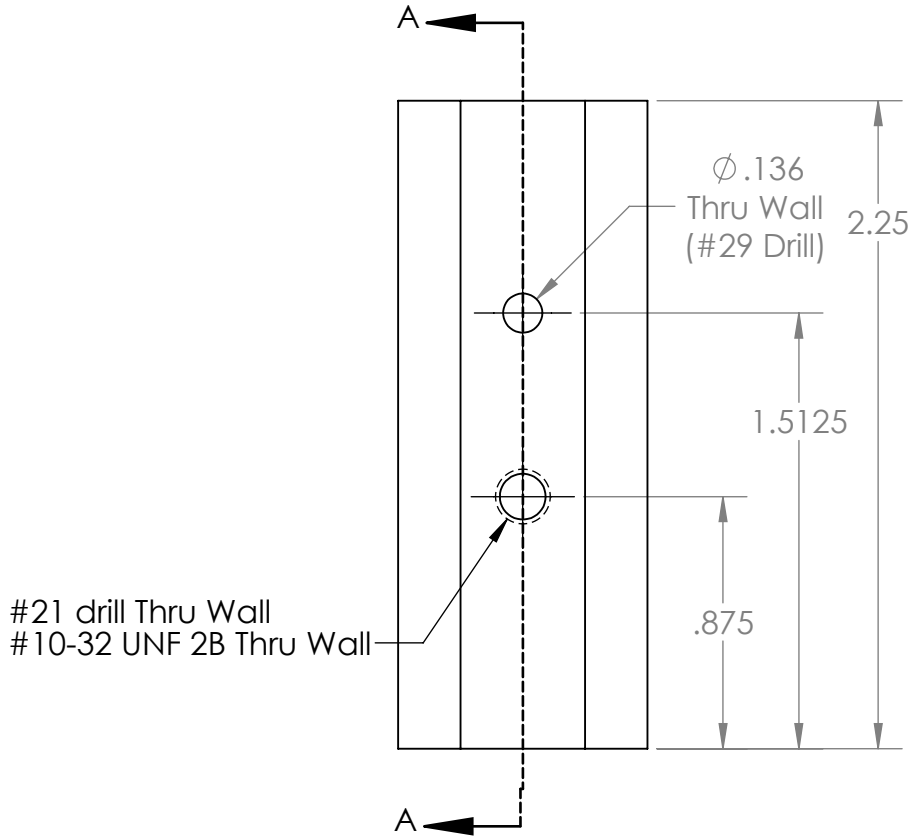
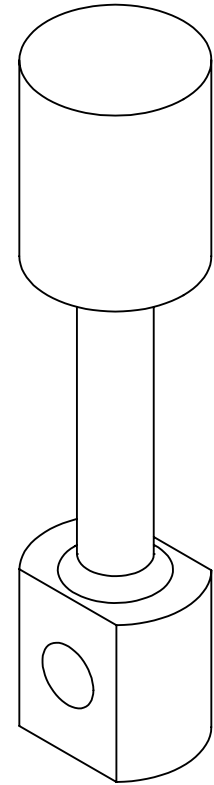
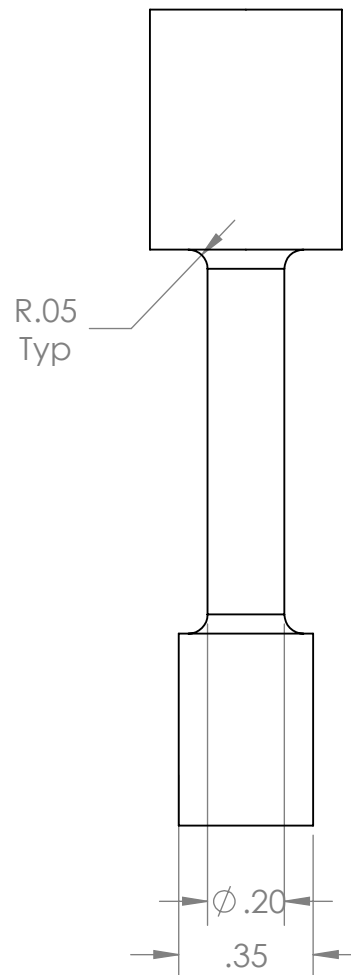
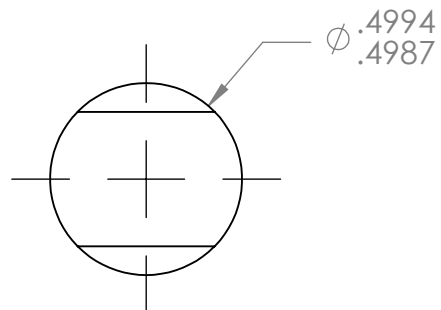
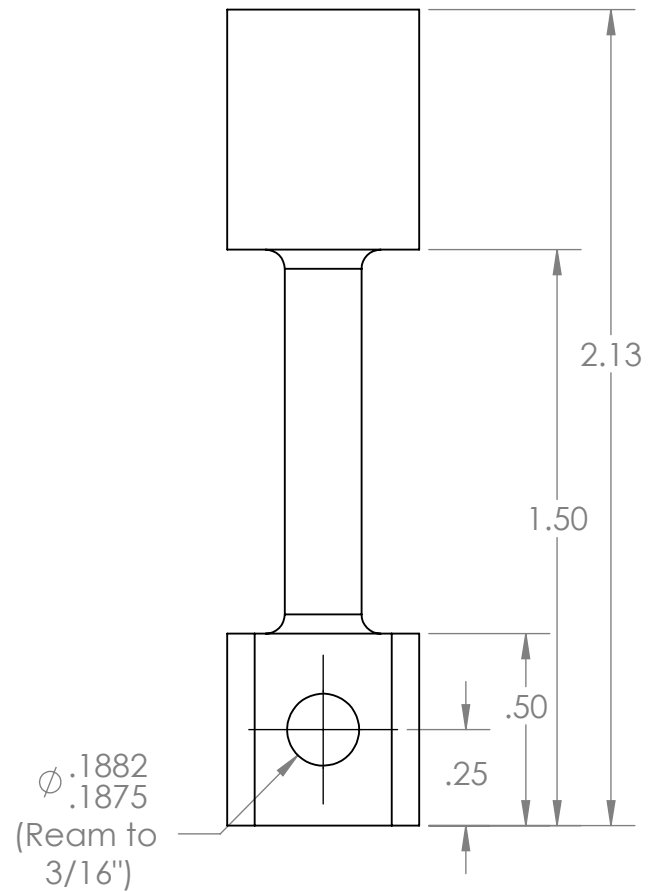


ITEM NO.	PART NUMBER	NAME/DESCRIPTION	Material	QTY.
1	Cylinder	Cylinder	Brass	1
2	Piston	Piston	Steel	1
3	Crank Wheel	Crank Wheel	Steel	1
4	Piston Rod Bushing	Piston Rod Bushing	Brass	1
5	Drive Shaft	Drive Shaft	Steel	1
6	Fly Wheel	Fly Wheel	Aluminum	1
7	Rocker Pin	Rocker Pin	Steel	1
8	Spring Cover	Spring Cover	Brass	1
9	Main Upright	Main Upright	Aluminum	1
10	Small Upright	Small Upright	Aluminum	1
11	Base Plate	Base Plate	Aluminum	1
12	91772A148	6-32 Pan Head Screw 1/2"	Steel	1
13	91771A832	10-32 Flat Head Screw x 7/8"	Steel	2
14	91790A310	10-24 Oval Head Screw x 3/8"	Steel	1
15	91500A829	10-32 Flat Head Screw x 1/2"	Steel	4
16	6391K163	7/16" od x 5/16" id Bushing	Brass	3
17	9657K289	3/8" od x 3/4" length Spring	Steel	1
18	5454K62	10-32 pipe to 1/8" tube Fitting	Brass	1

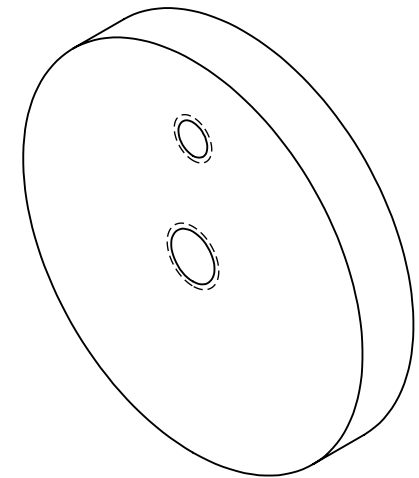
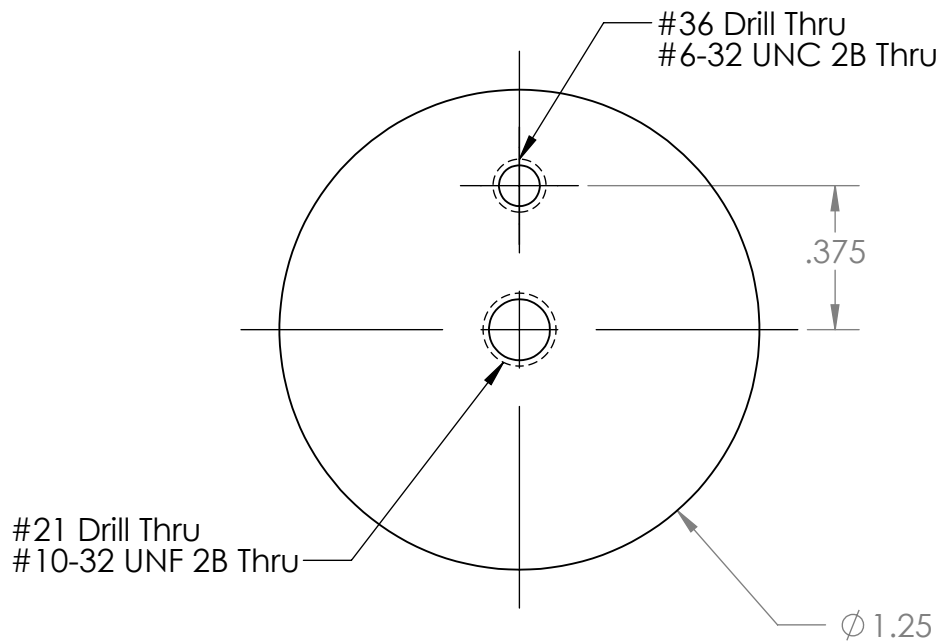
UNLESS OTHERWISE SPECIFIED:		NAME	DATE	Team TA (That's Awesome)		
DIMENSIONS ARE IN INCHES TOLERANCES: x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.02 ∠ x.x ± 0.1		DRAWN	J Mehr			
		CHECKED	J Kjar	8/13/15		
				TITLE: Exploded View		
MATERIAL		COMMENTS:		SIZE	DWG. NO.	REV
N/A				B	A - 02	1
FINISH						
N/A						
DO NOT SCALE DRAWING				SCALE: 1:1		SHEET 1 OF 1



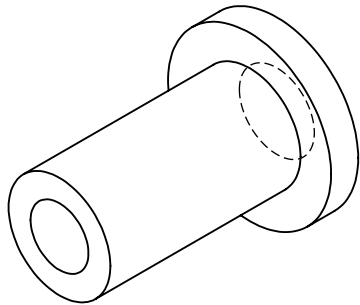
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DIMENSIONS ARE IN INCHES TOLERANCES: x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.02 ∠ x.x ± 0.1		DRAWN	J Mehr	8/13/15	TITLE: Cylinder	
		CHECKED	J Kjar	8/13/15		
		ENG APPR.				
		MFG APPR.				
		Q.A.			SIZE A DWG. NO. 001 REV 1 SCALE: 3:2 SHEET 1 OF 1	
MATERIAL Brass		COMMENTS: Piston/Cylinder Fit is RC4				
FINISH Polished						



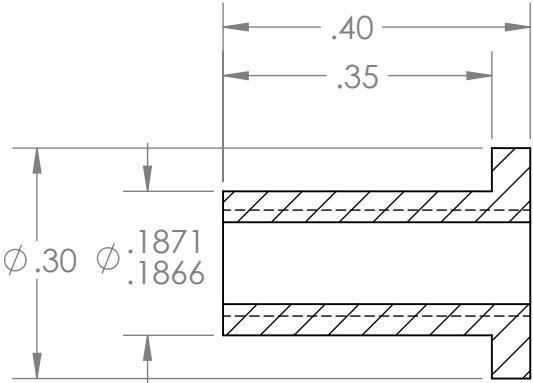
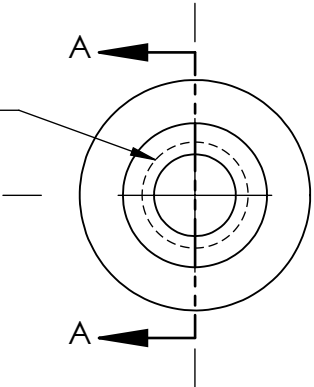
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DIMENSIONS ARE IN INCHES TOLERANCES: x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.02 ∠x.x ± 0.1	DRAWN	J Mehr	8/13/15			
	CHECKED	J Kjar	8/13/15			
	ENG APPR.					
	MFG APPR.					
	Q.A.			SIZE	DWG. NO. <h1>002</h1>	REV <h1>1</h1>
MATERIAL Steel	COMMENTS: Part is Symmetric. Piston/Cylinder and Piston/Bushing Fits are RC4.					
FINISH Polished						
				SCALE: 2:1		SHEET 1 OF 1



UNLESS OTHERWISE SPECIFIED:		NAME		DATE		Team TA (That's Awesome) TITLE: Crank Wheel					
DIMENSIONS ARE IN INCHES TOLERANCES: x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.02 ∠x.x ± 0.1		DRAWN		J Mehr						8/14/15	
		CHECKED		J Kjar						8/14/15	
		ENG APPR.									
		MFG APPR.									
		Q.A.									
MATERIAL Steel		COMMENTS:				SIZE		DWG. NO.		REV	
FINISH Polished						A		003		1	
						SCALE: 2:1				SHEET 1 OF 1	

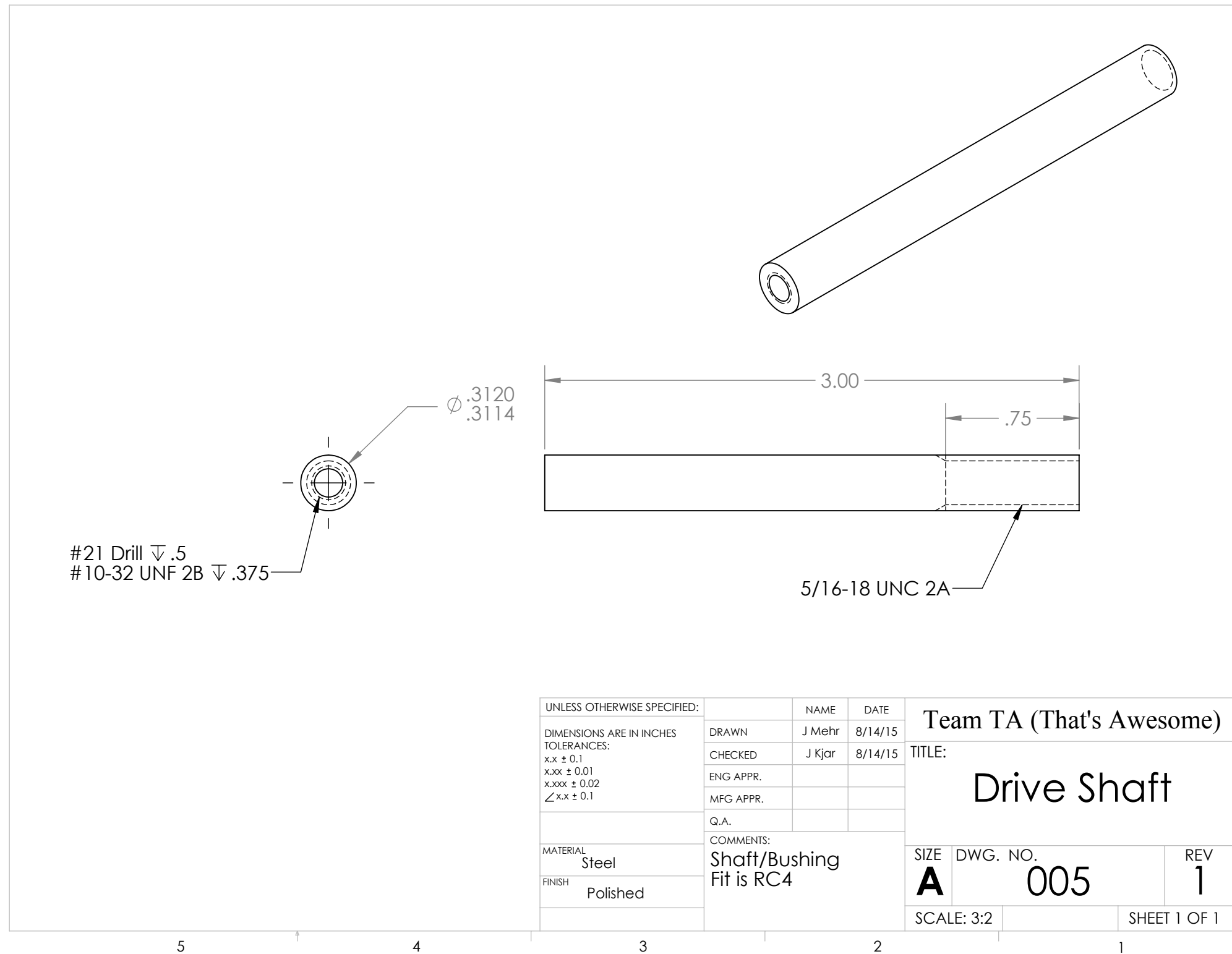


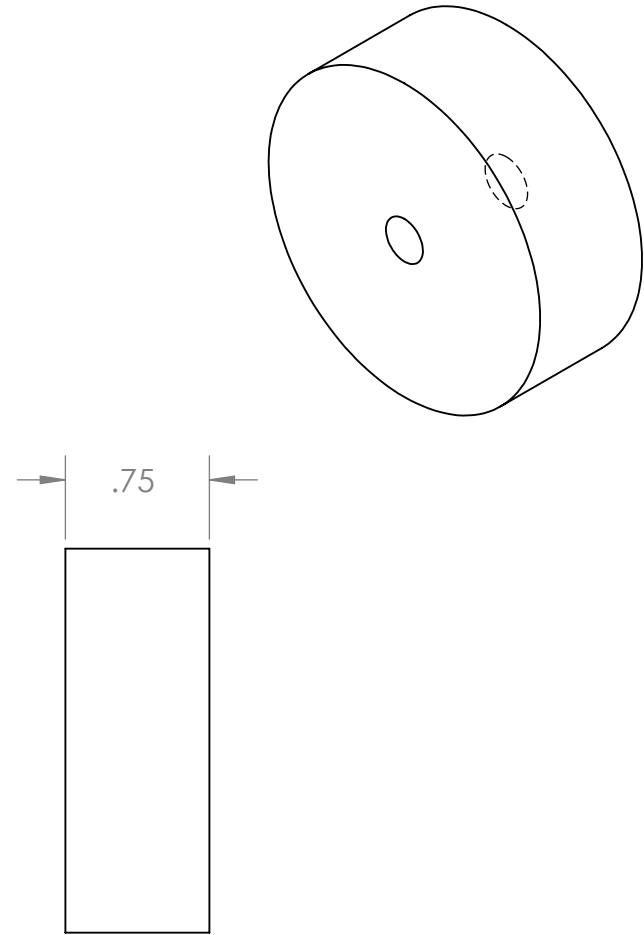
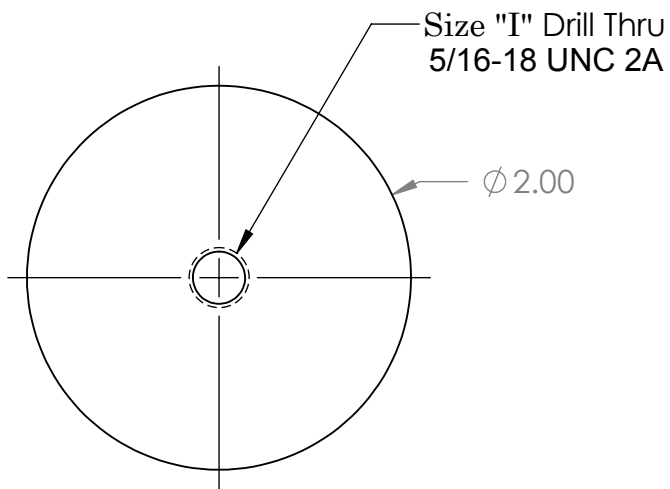
#36 Drill Thru
#6-32 UNC 2B Thru



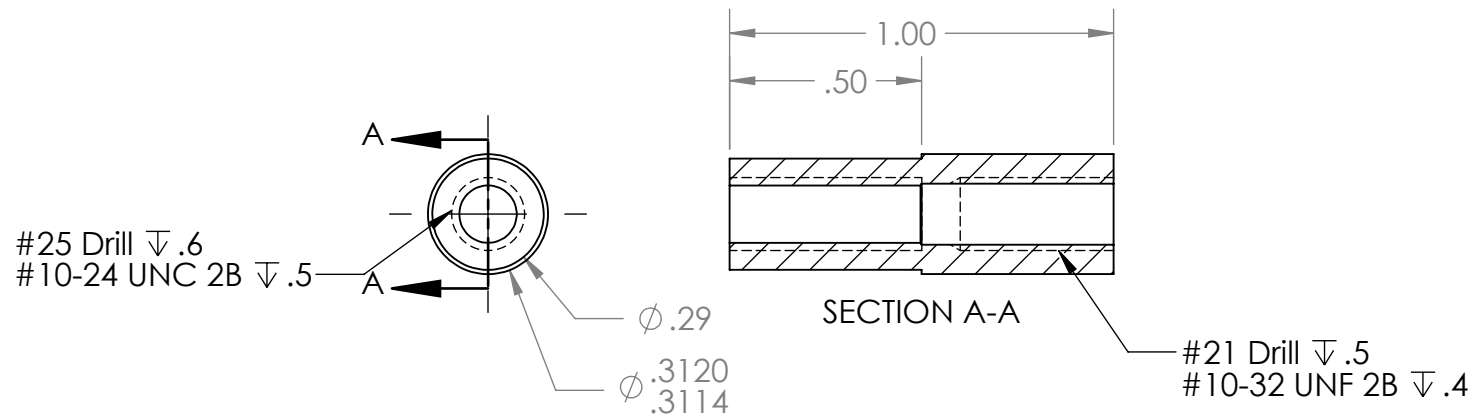
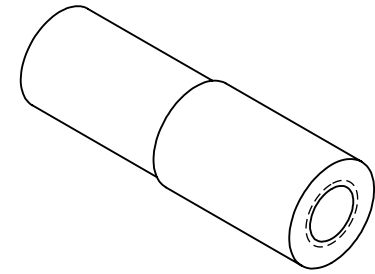
SECTION A-A

UNLESS OTHERWISE SPECIFIED:		NAME	DATE	Team TA (That's Awesome)		
DIMENSIONS ARE IN INCHES TOLERANCES: x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.02 ∠x.x ± 0.1		DRAWN	J Mehr	8/14/15	TITLE: Piston Rod Bushing	
		CHECKED	J Kjar	8/14/15		
		ENG APPR.				
		MFG APPR.				
		Q.A.			SIZE DWG. NO. REV	
MATERIAL Brass		COMMENTS: Piston/Bushing Fit is RC4				
FINISH Polished						
				SCALE: 4:1		SHEET 1 OF 1

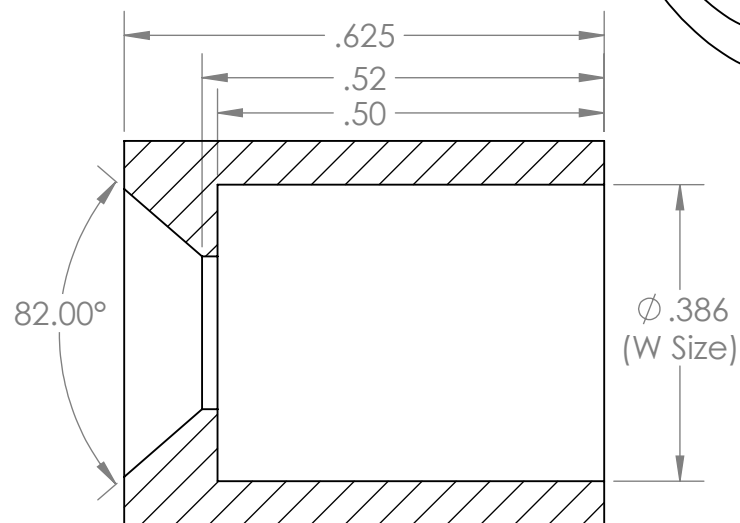
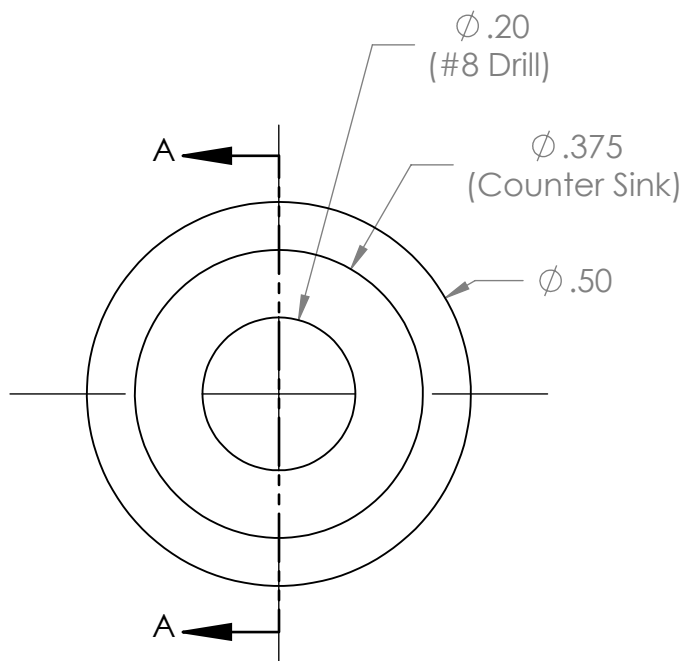




UNLESS OTHERWISE SPECIFIED:		NAME	DATE	Team TA (That's Awesome)		
DIMENSIONS ARE IN INCHES TOLERANCES: x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.02 ∠ x.x ± 0.1	DRAWN	J Mehr	8/14/15	TITLE: <h1>Fly Wheel</h1>		
	CHECKED	J Kjar	8/14/15			
	ENG APPR.					
	MFG APPR.					
	Q.A.					
MATERIAL Aluminum	COMMENTS:			SIZE A	DWG. NO. 006	REV 1
FINISH Sand Blasted				SCALE: 1:1		
				SHEET 1 OF 1		

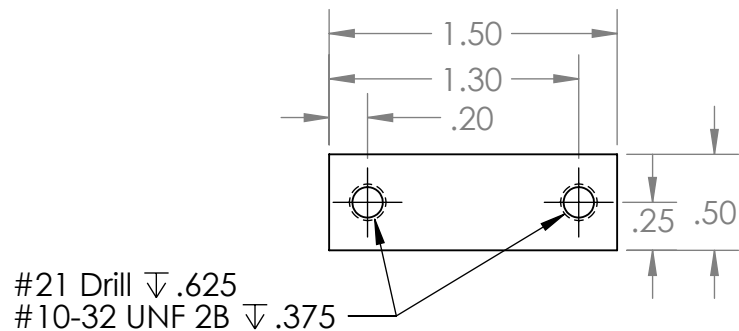
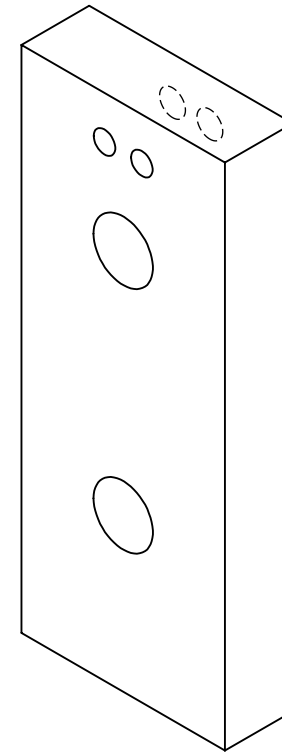
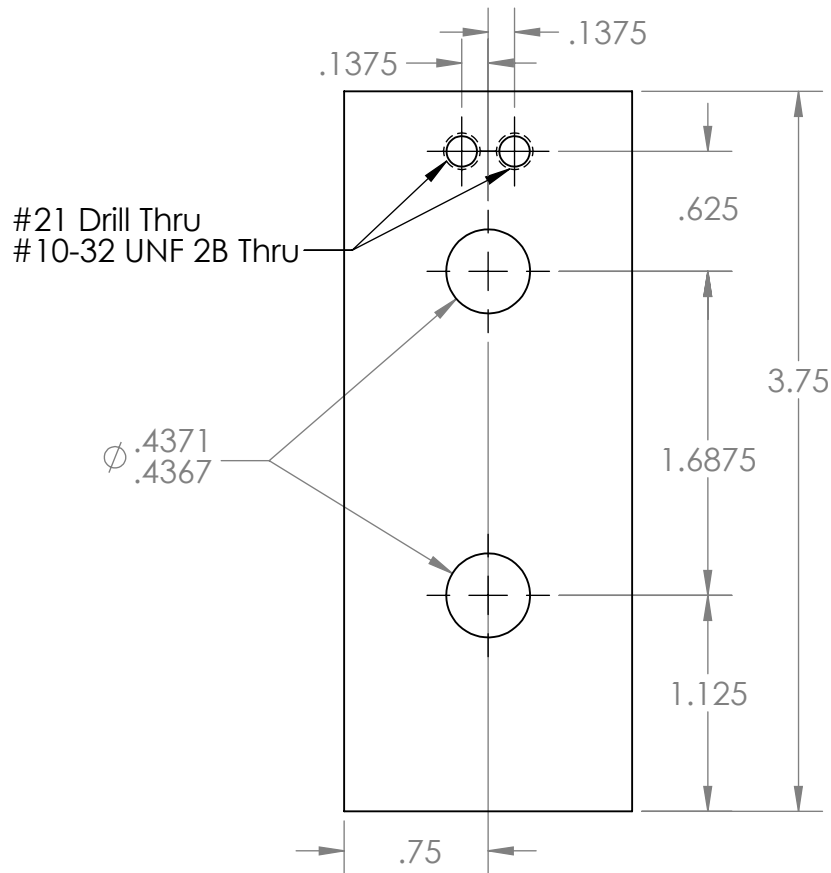


UNLESS OTHERWISE SPECIFIED:			NAME	DATE	Team TA (That's Awesome)					
DIMENSIONS ARE IN INCHES TOLERANCES: x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.02 ∠x.x ± 0.1		DRAWN	J Mehr	8/14/15	TITLE: Rocker Pin					
		CHECKED	J Kjar	8/14/15						
		ENG APPR.								
		MFG APPR.								
		Q.A.			SIZE A SCALE: 2:1					
MATERIAL Steel		COMMENTS: Pin/Bushing Fit is RC4						DWG. NO. 007		REV 1
FINISH Polished										
					SHEET 1 OF 1					

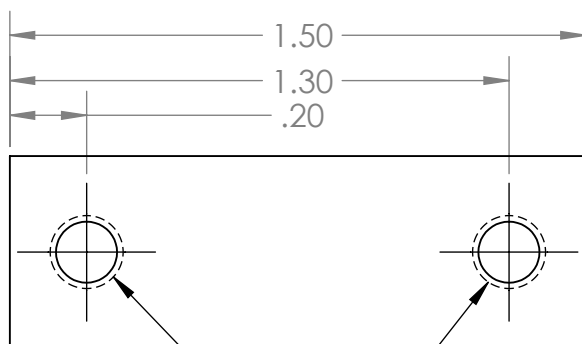
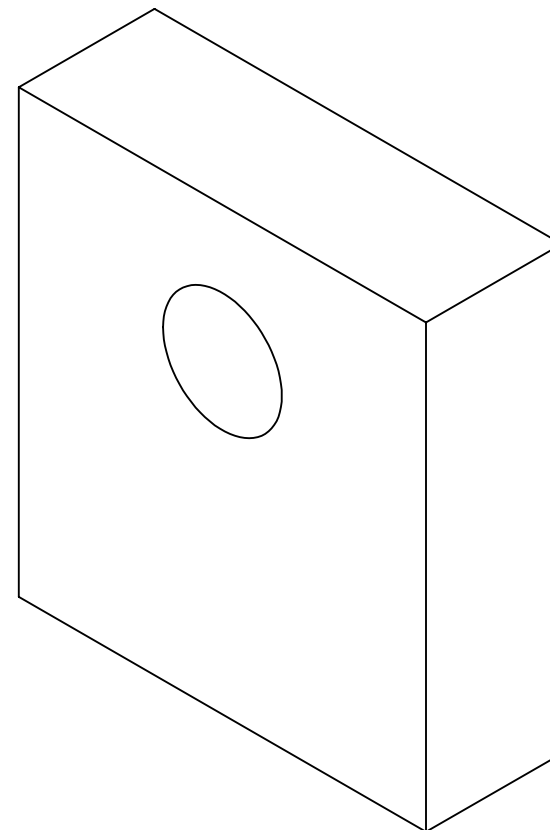
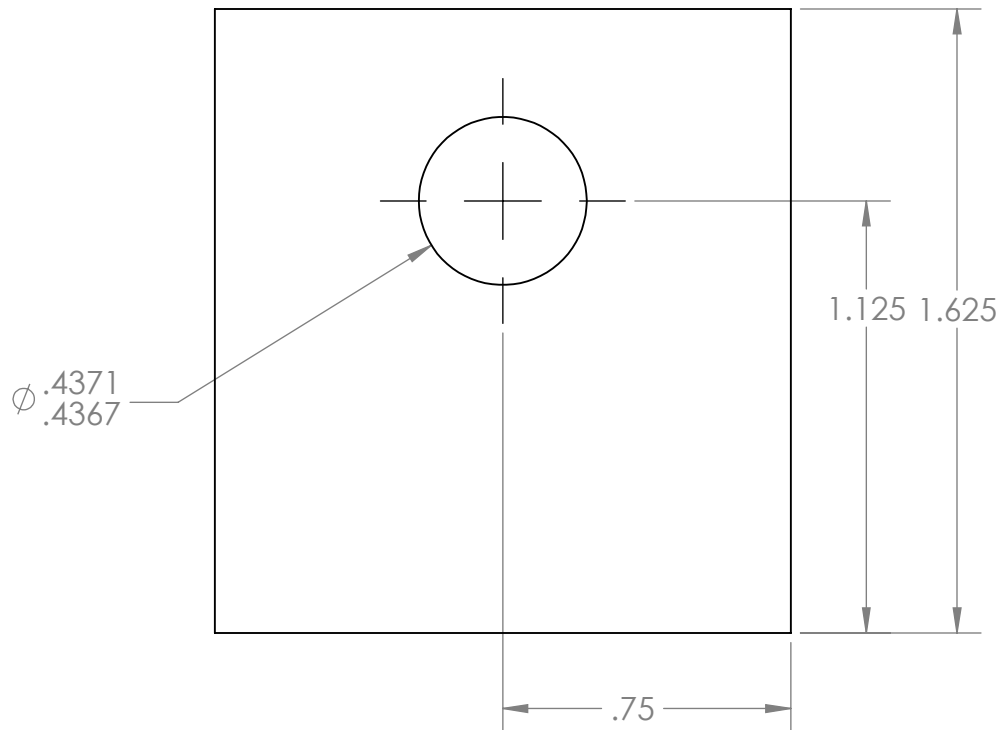


SECTION A-A

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: x.x \pm 0.1 x.xx \pm 0.01 x.xxx \pm 0.02 \angle x.x \pm 0.1		NAME	DATE	Team TA (That's Awesome)		
	DRAWN	J Mehr	8/14/15	TITLE: Spring Cover		
	CHECKED	J Kjar	8/14/15			
	ENG APPR.					
	MFG APPR.					
	Q.A.			SIZE A		
MATERIAL Brass	COMMENTS:					
FINISH Polished						
				SCALE: 4:1		SHEET 1 OF 1

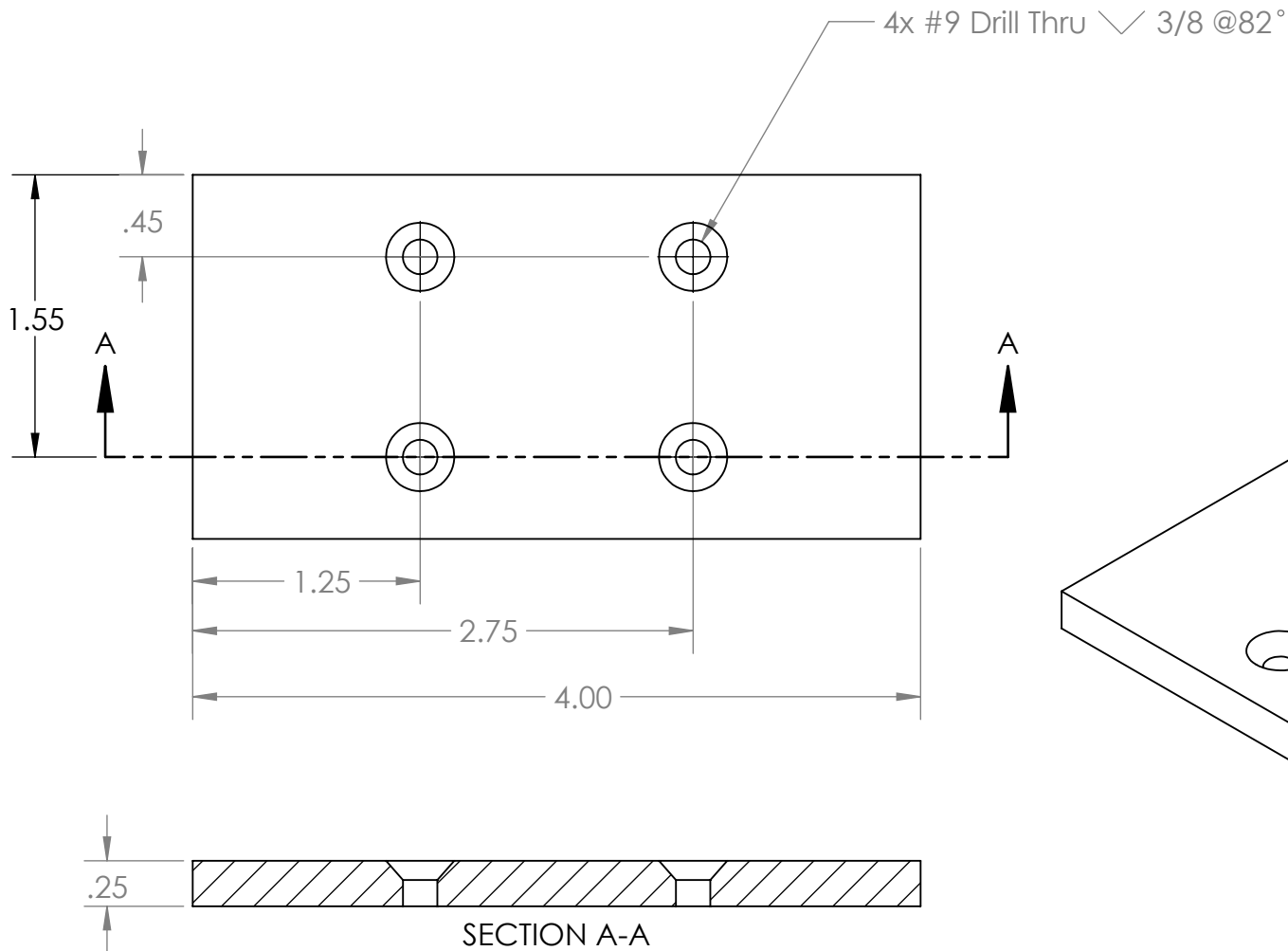


UNLESS OTHERWISE SPECIFIED:		NAME	DATE	Team TA (That's Awesome)		
DIMENSIONS ARE IN INCHES TOLERANCES: x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.02 ∠ x.x ± 0.1	DRAWN	J Mehr	8/14/15	TITLE: Main Upright		
	CHECKED	J Kjar	8/14/15			
	ENG APPR.					
	MFG APPR.					
	Q.A.			SIZE DWG. NO. REV A 009 1		
MATERIAL	COMMENTS: Hole/Bushing Fit is designed to be LN1 but reaming holes at 7/16" should work					
FINISH						
				SCALE: 1:1		SHEET 1 OF 1

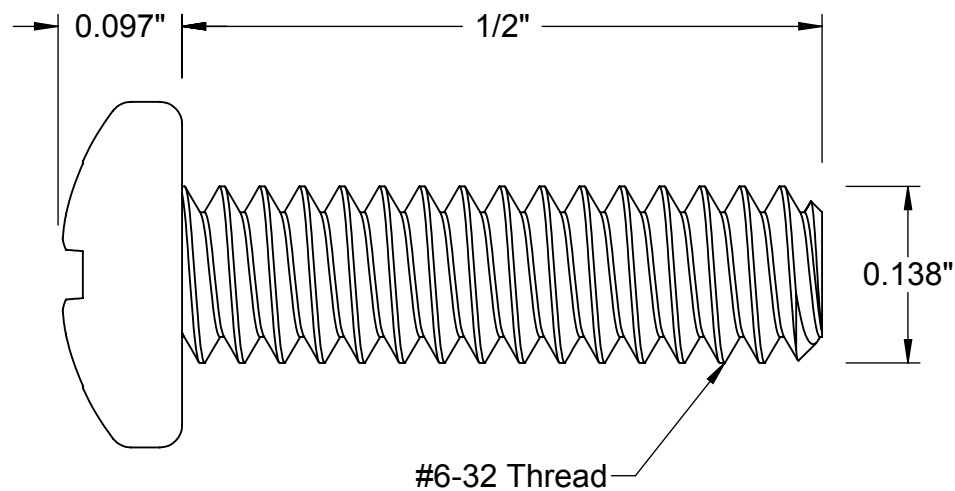
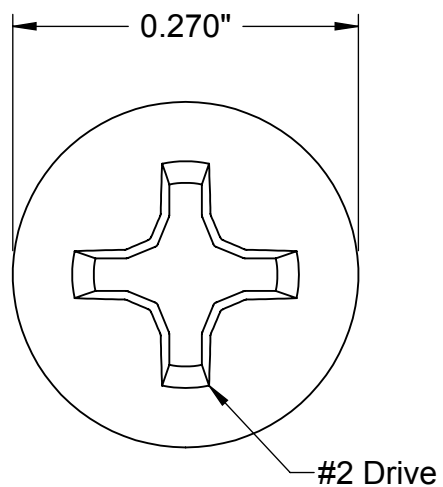
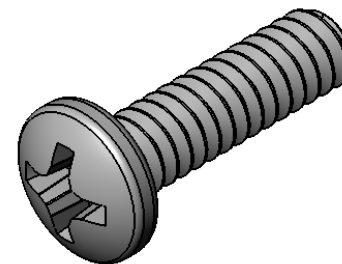


#21 Drill $\nabla .625$
 #10-32 UNF 2B $\nabla .375$

UNLESS OTHERWISE SPECIFIED:		NAME	DATE	Team TA (That's Awesome)		
DIMENSIONS ARE IN INCHES TOLERANCES: x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.02 ∠ x.x ± 0.1	DRAWN	J Mehr	8/14/15			
	CHECKED	J Kjar	8/14/15			
	ENG APPR.					
	MFG APPR.					
	Q.A.			TITLE: Small Upright		
COMMENTS:						
Hole/Bushing Fit is designed to be LN1, but reaming hole at 7/16" should work.						
MATERIAL Aluminum				SIZE A	DWG. NO. 010	REV 1
FINISH Sand Blasted				SCALE: 2:1		SHEET 1 OF 1



UNLESS OTHERWISE SPECIFIED:		NAME	DATE	Team TA (That's Awesome) TITLE: Base Plate		
DIMENSIONS ARE IN INCHES TOLERANCES: x.x ± 0.1 x.xx ± 0.01 x.xxx ± 0.02 ∠ x.x ± 0.1	DRAWN	J Mehr	8/14/15			
	CHECKED	J Kjar	8/14/15			
	ENG APPR.					
	MFG APPR.					
	Q.A.			SIZE DWG. NO. REV		
MATERIAL Aluminum	COMMENTS:					
FINISH Sand Blasted						
				SCALE: 1:1		SHEET 1 OF 1



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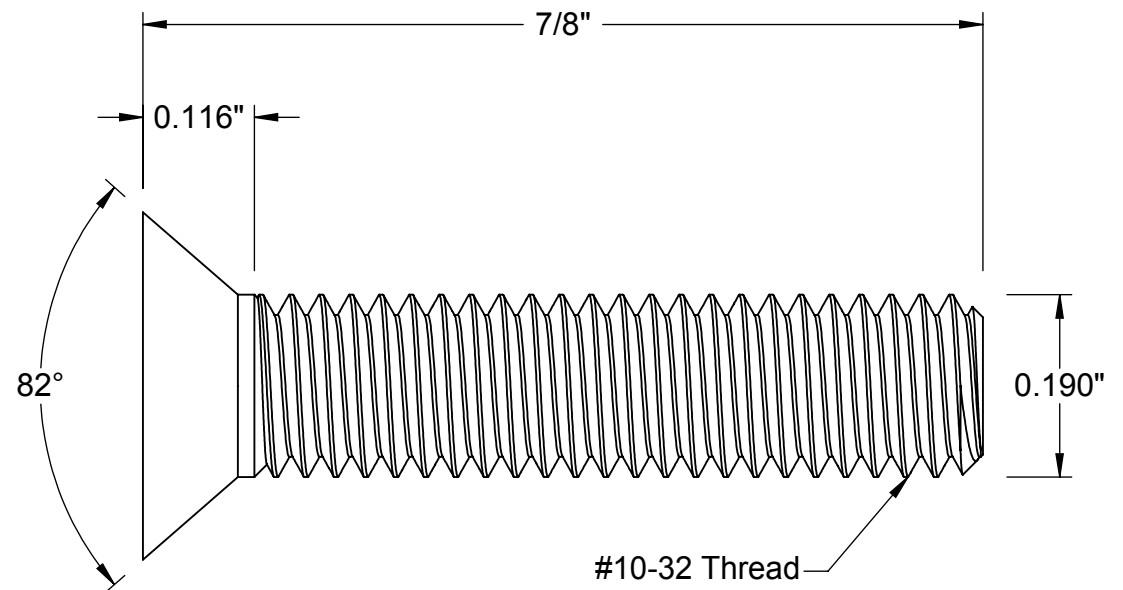
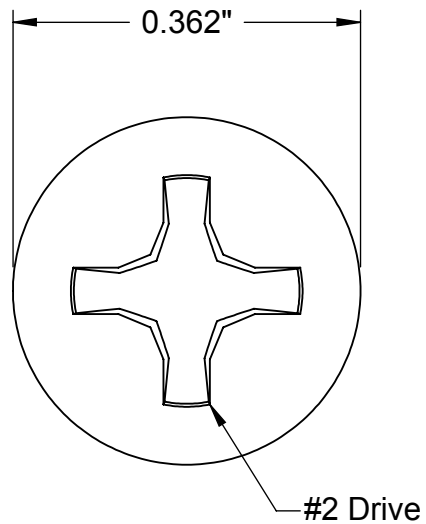
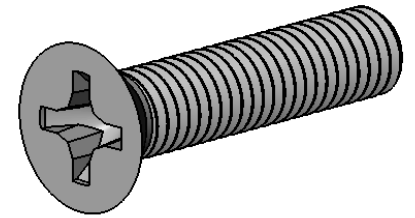
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Information in this drawing is provided for reference only.

PART
NUMBER

91772A148

Pan Head Phillips
Machine Screw



McMASTER-CARR CAD

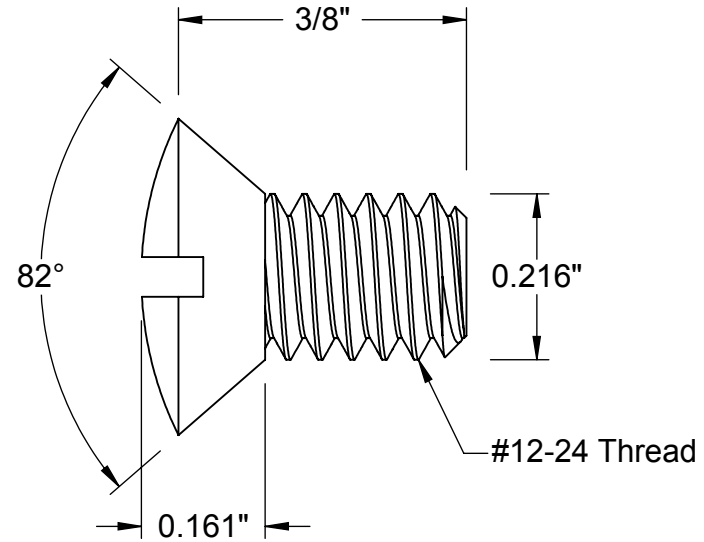
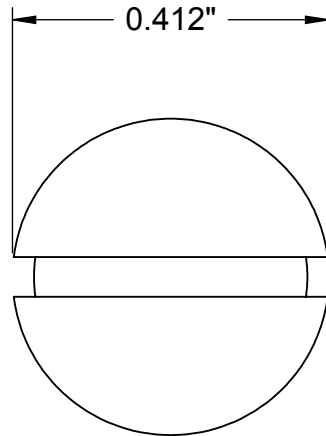
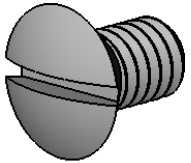
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PART
NUMBER

91771A832

Flat Head Phillips
Machine Screw



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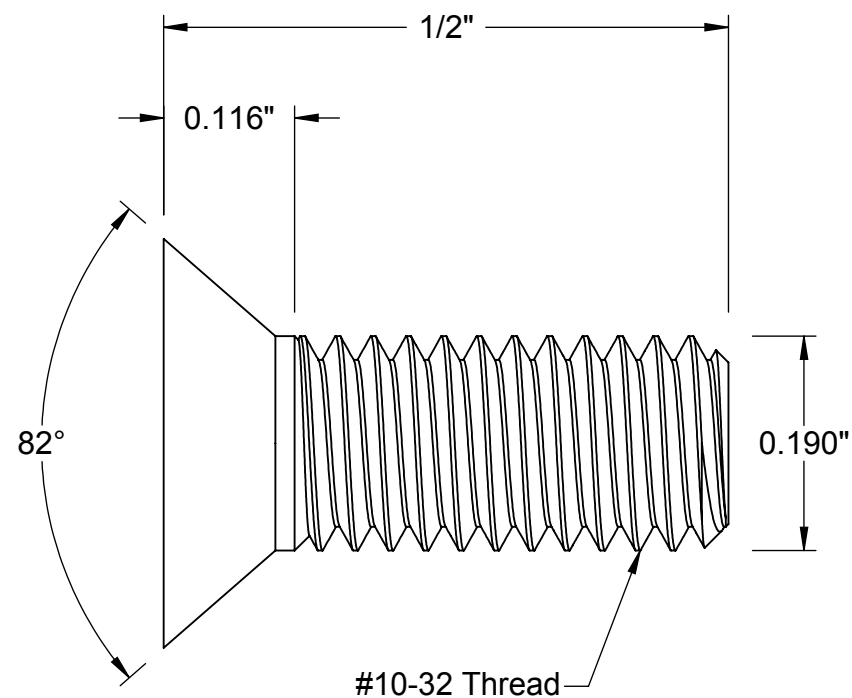
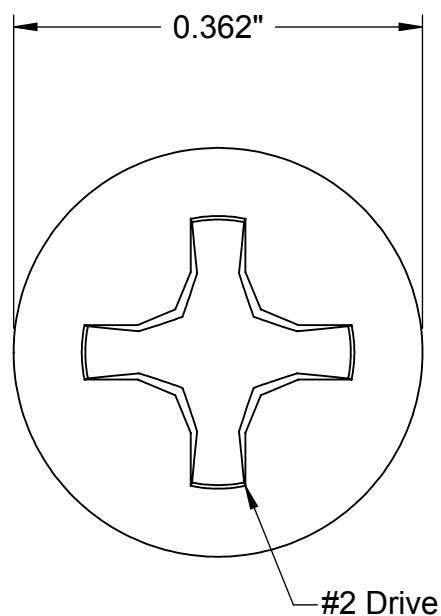
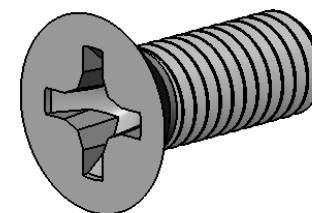
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PART
NUMBER

91790A310

Oval Head Slotted
Machine Screw



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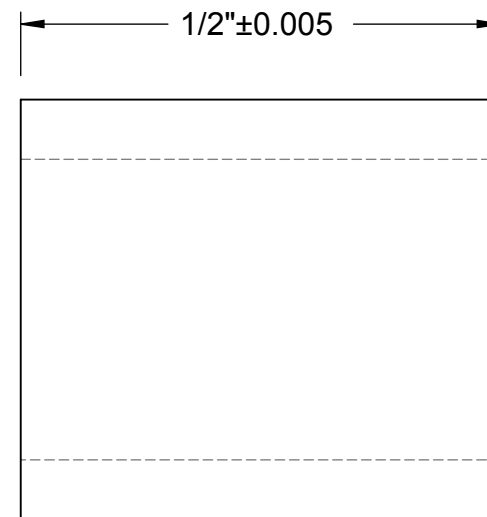
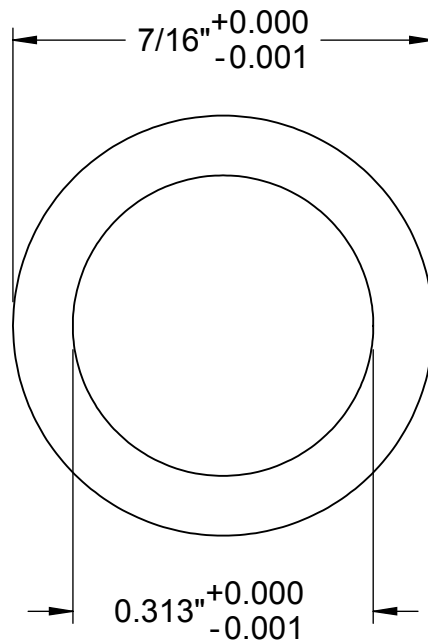
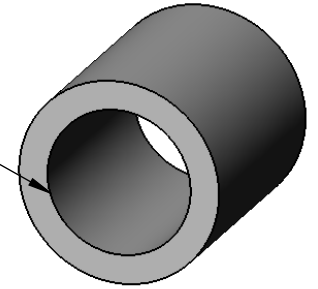
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PART
NUMBER

91500A829

Flat Head Phillips
Machine Screw

For 5/16"
Shaft Dia.



McMASTER-CARR CAD

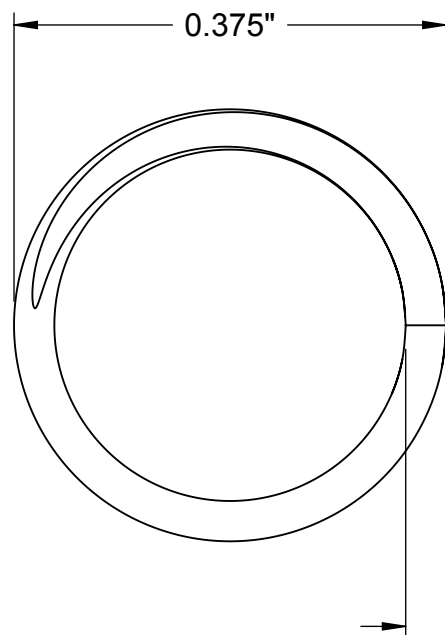
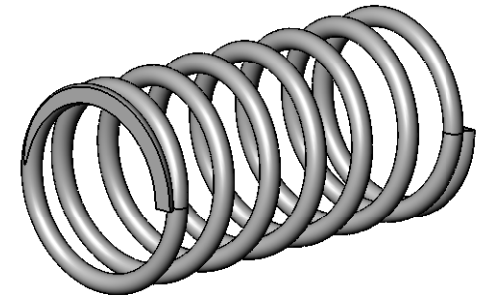
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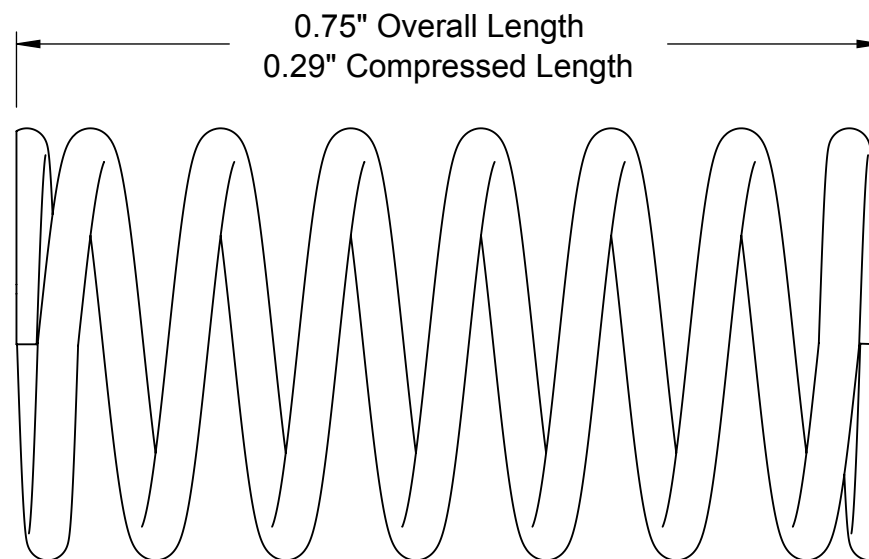
PART
NUMBER

6391K163

Oil-Embedded
Sleeve Bearing



0.035"
Wire Dia.



McMASTER-CARR CAD

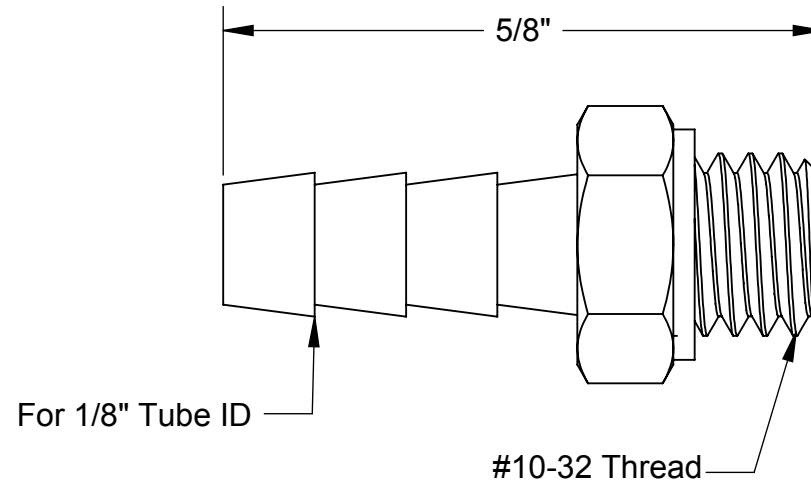
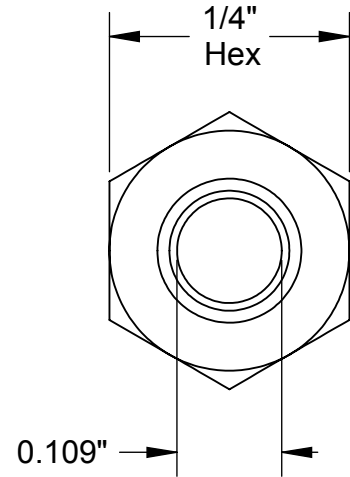
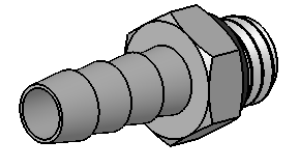
<http://www.mcmaster.com>
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Information in this drawing is provided for reference only.

PART
NUMBER

9657K289

Zinc-Plated Steel Music Wire
Compression Spring



McMASTER-CARR <small>CAD</small> 	PART NUMBER	5454K62
http://www.mcmaster.com	Miniature Brass Barbed Straight	
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