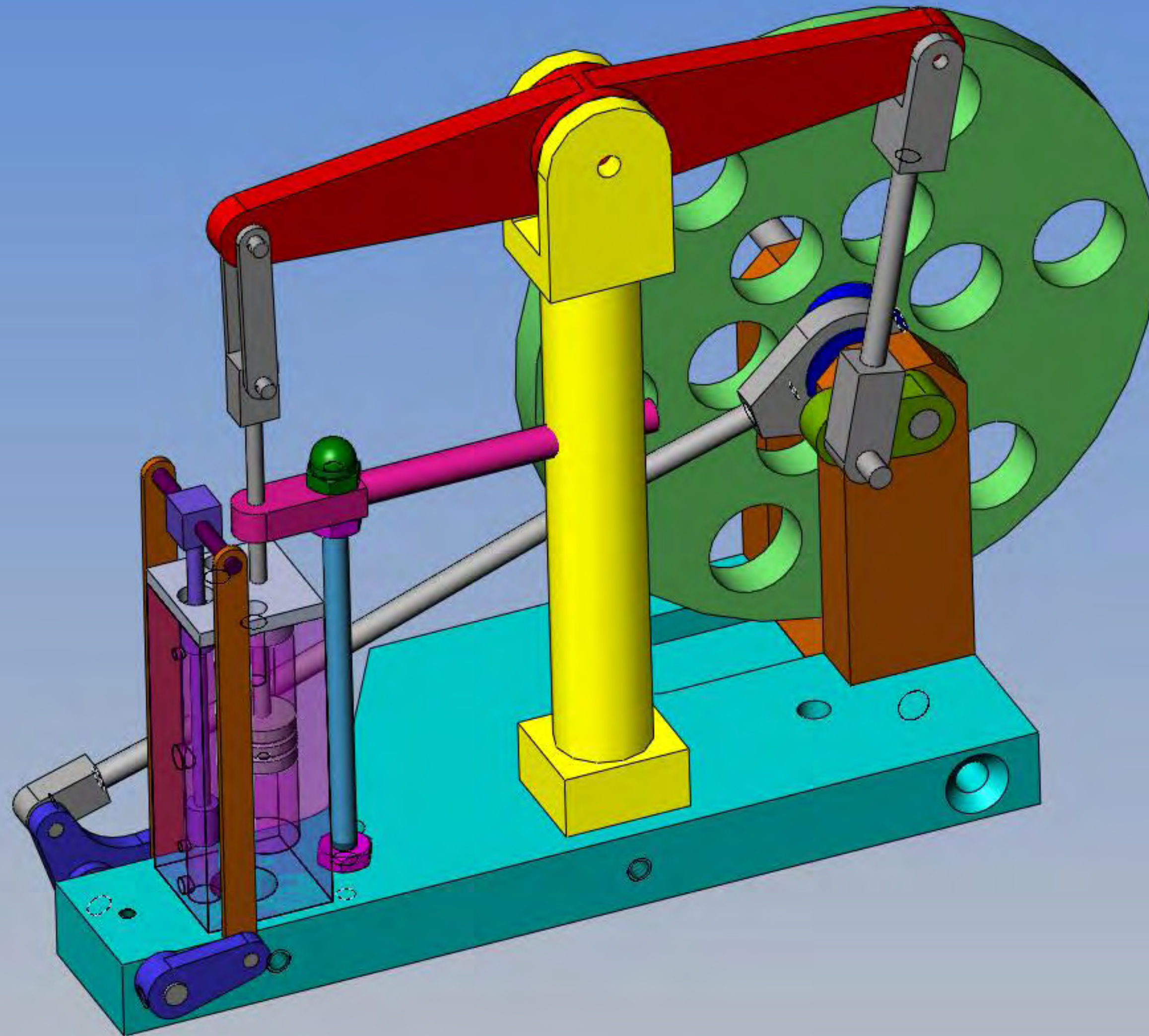
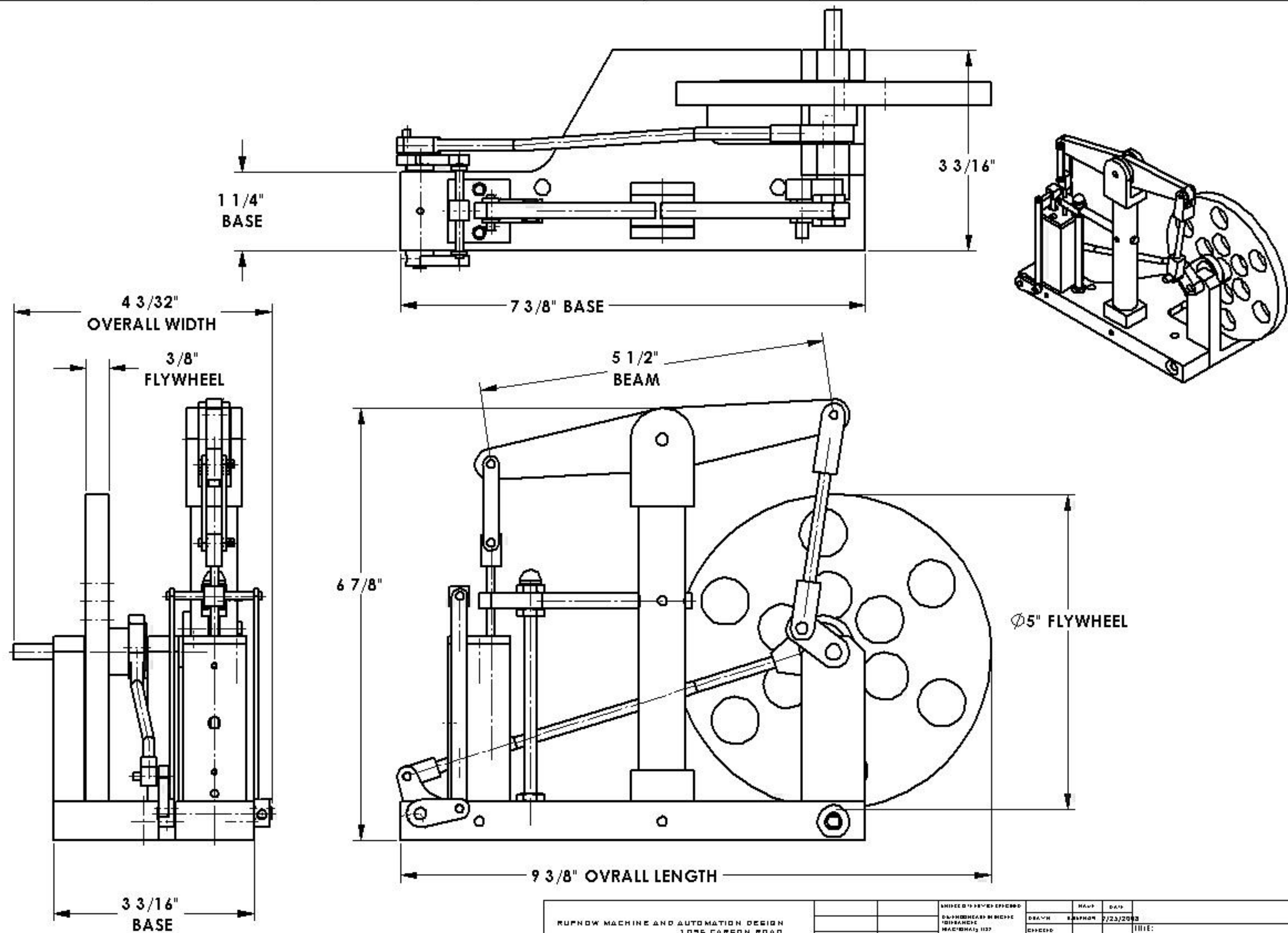






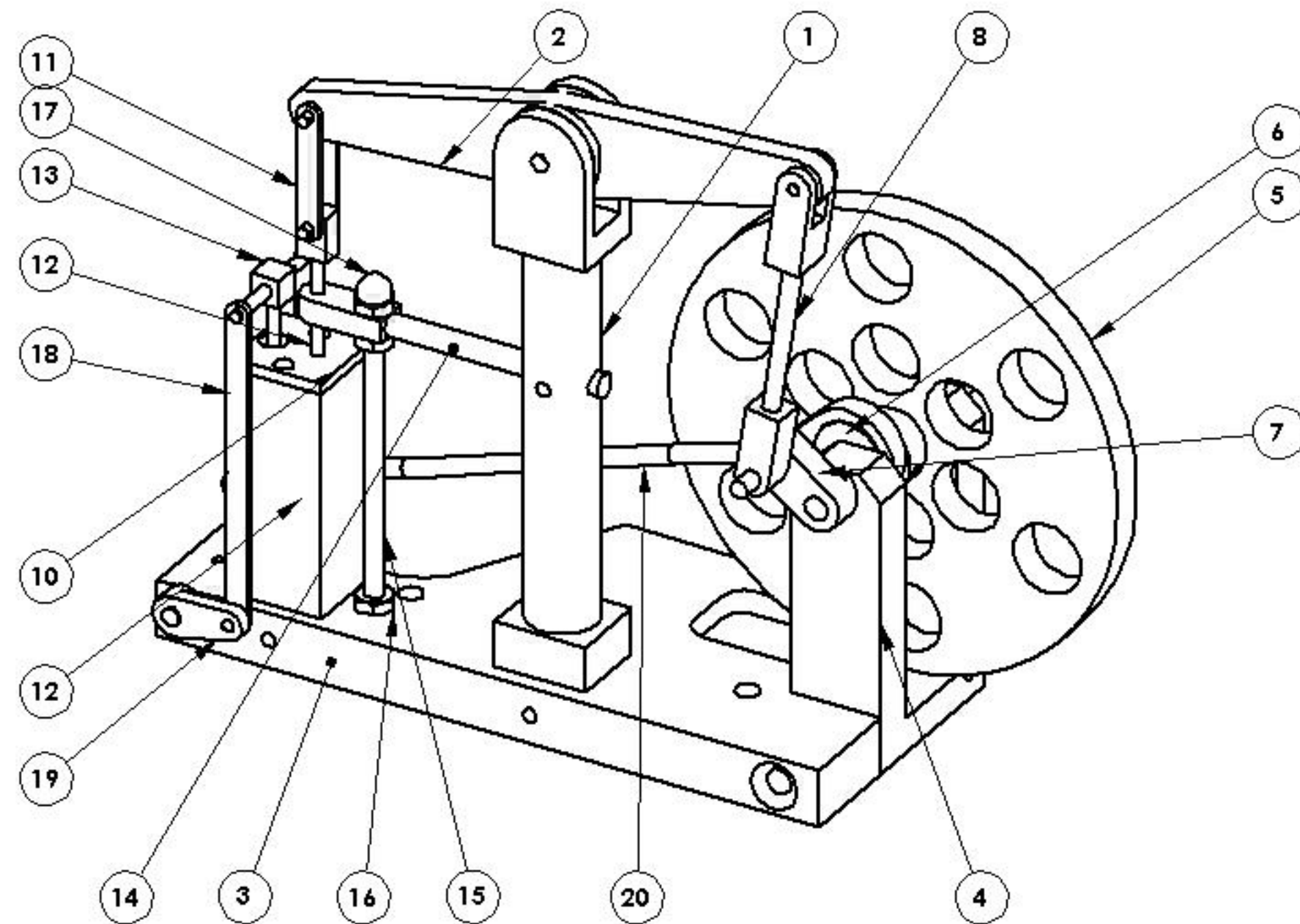
THIS IS A MULTIPLE SHEET DRAWING
SEE SECOND SHEET FOR PARTS LIST AND AUXILIARY VIEWS

RUPNOW MACHINE AND AUTOMATION DESIGN
1056 CARSON ROAD
SARASOTA, FL 34231
L4M455

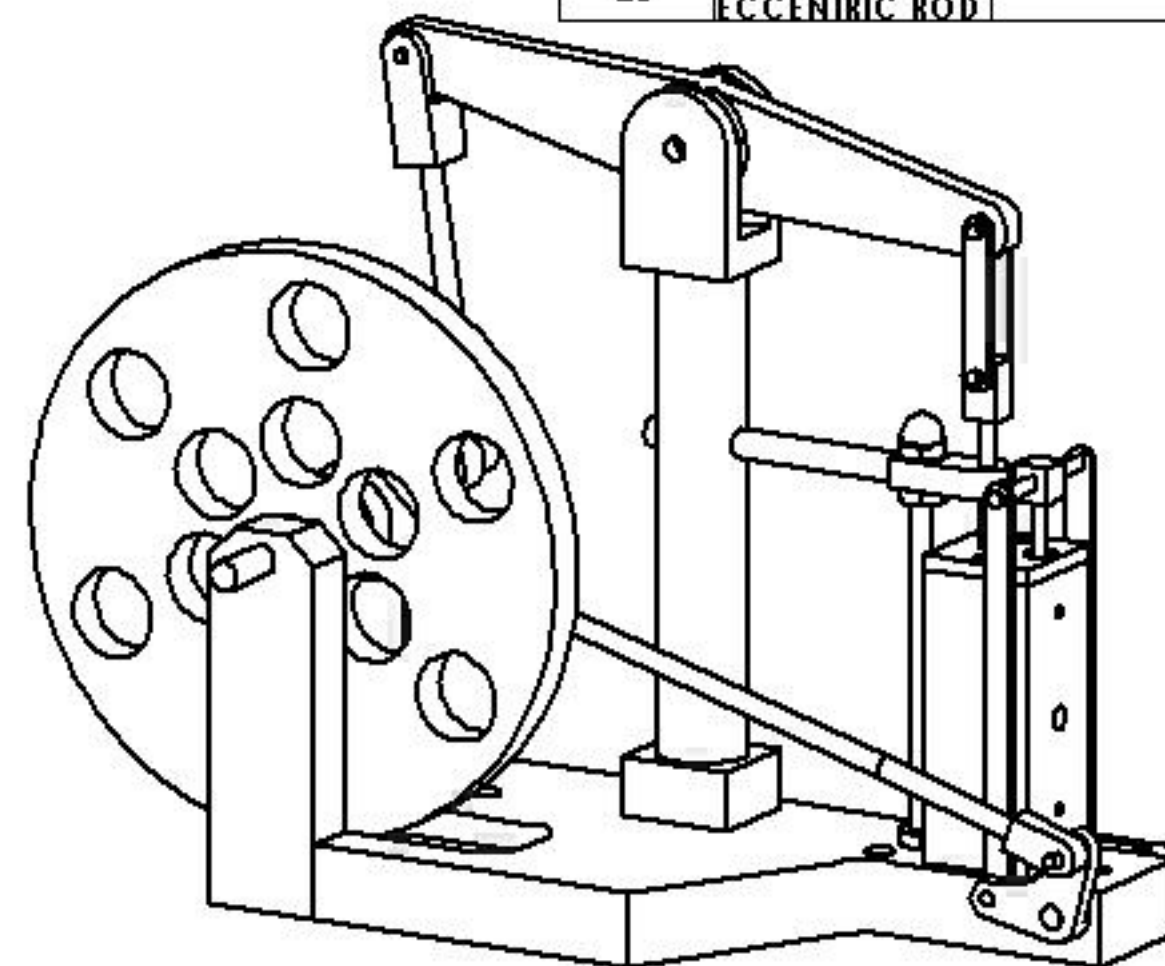
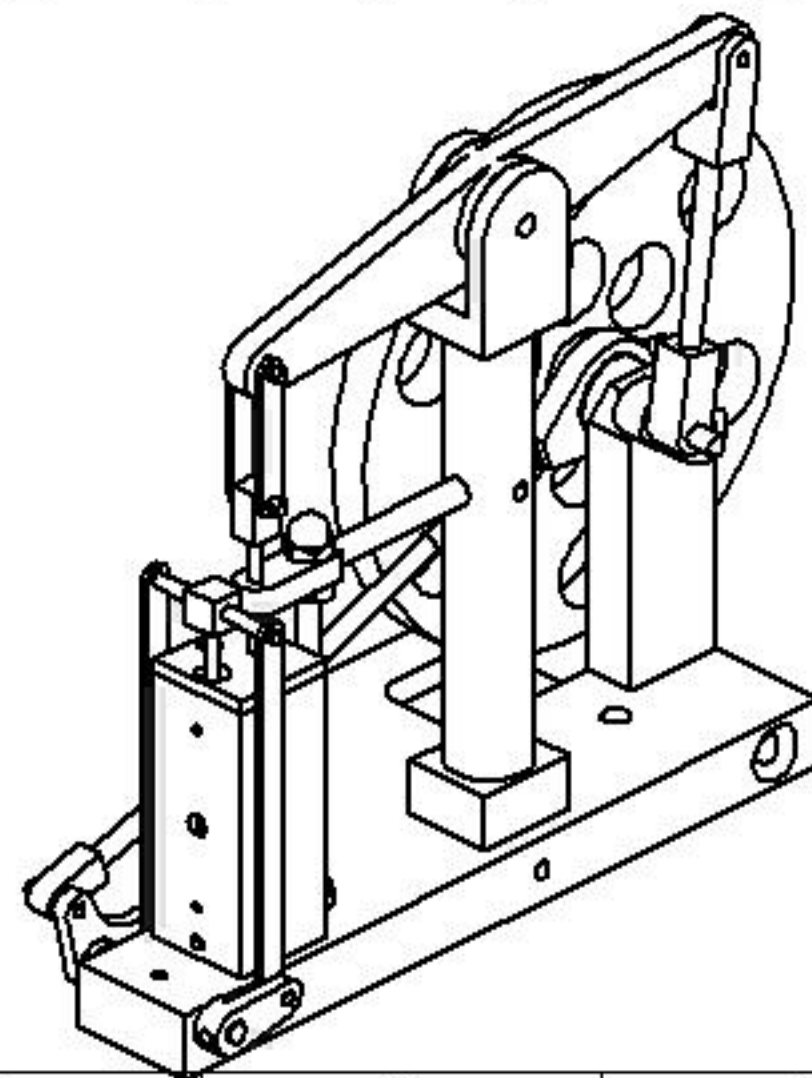
TEL: (705) 734-6271
FAX: (705) 734-6271
EMAIL: RUPNOW@ROGERS.COM

DESIGNED BY		NAME	DATE
DRAWN BY		RUPNOW	7/23/2003
CHECKED BY			
ENG. APPR.			
MFG. APPR.			
QA			
COUNTER			
REV		TITLE:	
APP. 1/28/03		SHEET Dwg. NO.	
APP. 1/28/03		REV	
APP. 1/28/03		SCALE: 1:2	
APP. 1/28/03		SHEET 1 OF 2	

FULL ASSEMBLY



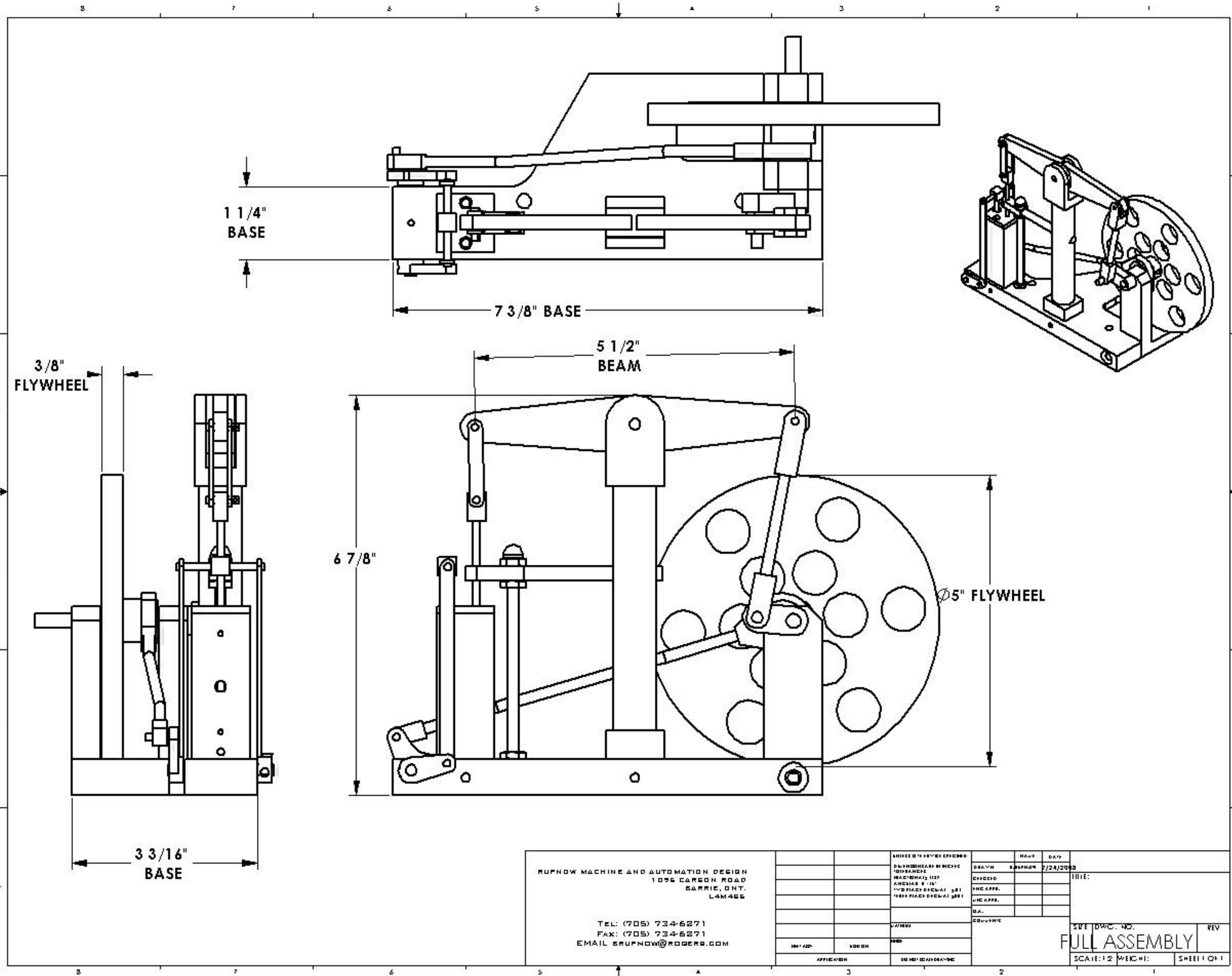
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	COLUMN		1
2	BEAM		1
3	BASE		1
4	BEARING		1
5	FLYWHEEL		1
6	ECCENTRIC HUB		1
7	SUB ASSEMBLY OF CRANKSHAFT		1
8	SUB ASSEMBLY OF CONNECTING ROD		1
9	CYLINDER		1
10	CYLINDER HEAD		1
11	FULL ASSEMBLY OF BEAM LINK		1
12	FULL ASSEMBLY OF PISTON AND SOLDERED PISTON ROD WITH END		1
13	VALVE		1
14	PISTON ROD GUIDE		1
15	PISTON GUIDE SUPPORT		1
16	#10 hex nut		2
17	#10 hex DOME nut		1
18	SOLDERED ASSEMBLY OF VALVE ARMS		1
19	ASSY OF LOWER VALVE LEVERS AND SHAFT		1
20	ASSEMBLY OF ECCENTRIC ROD		1



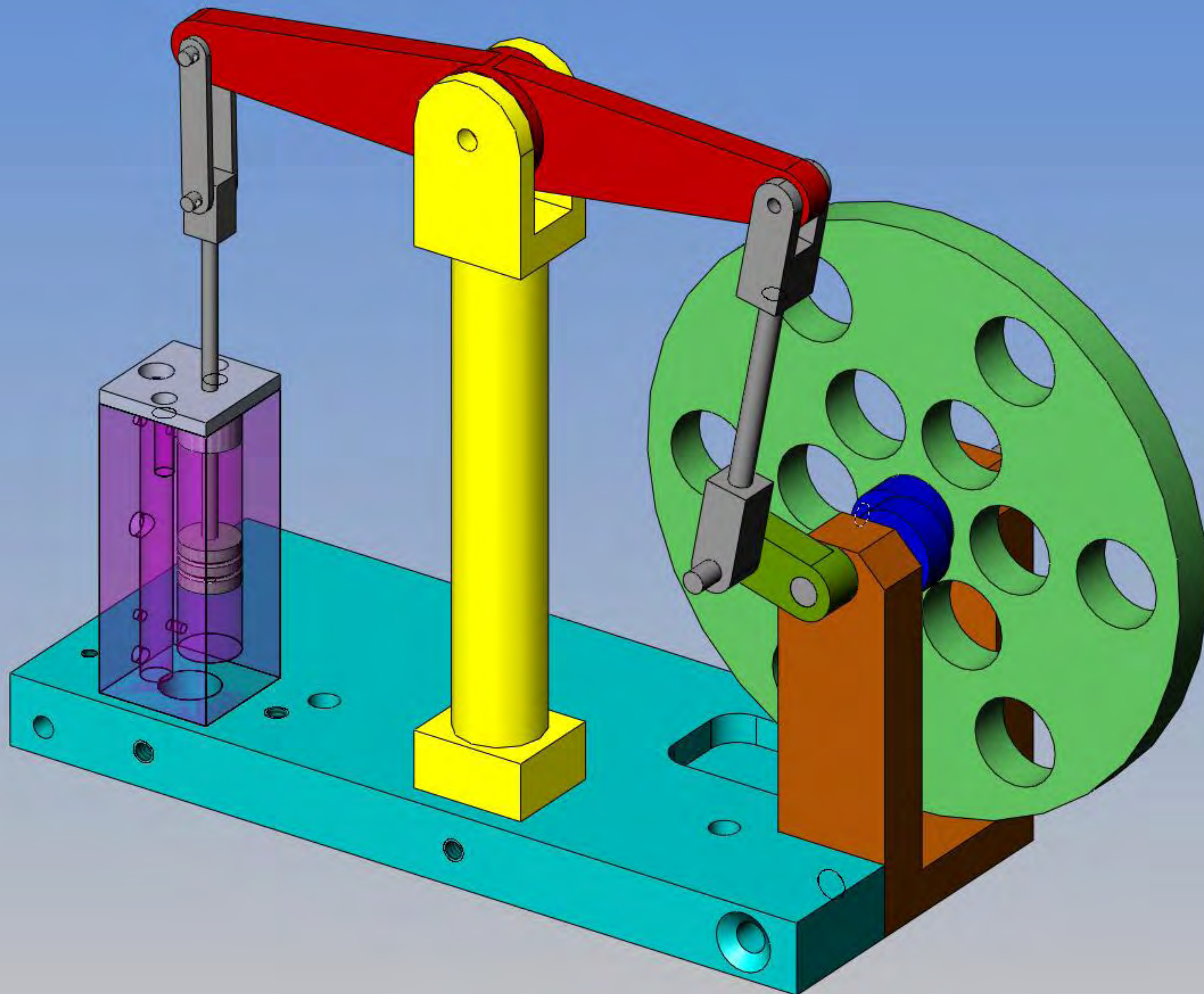
RUPNOW MACHINE AND AUTOMATION DESIGN
1056 CARRON ROAD
SARIE, ONT.
L4M4S6

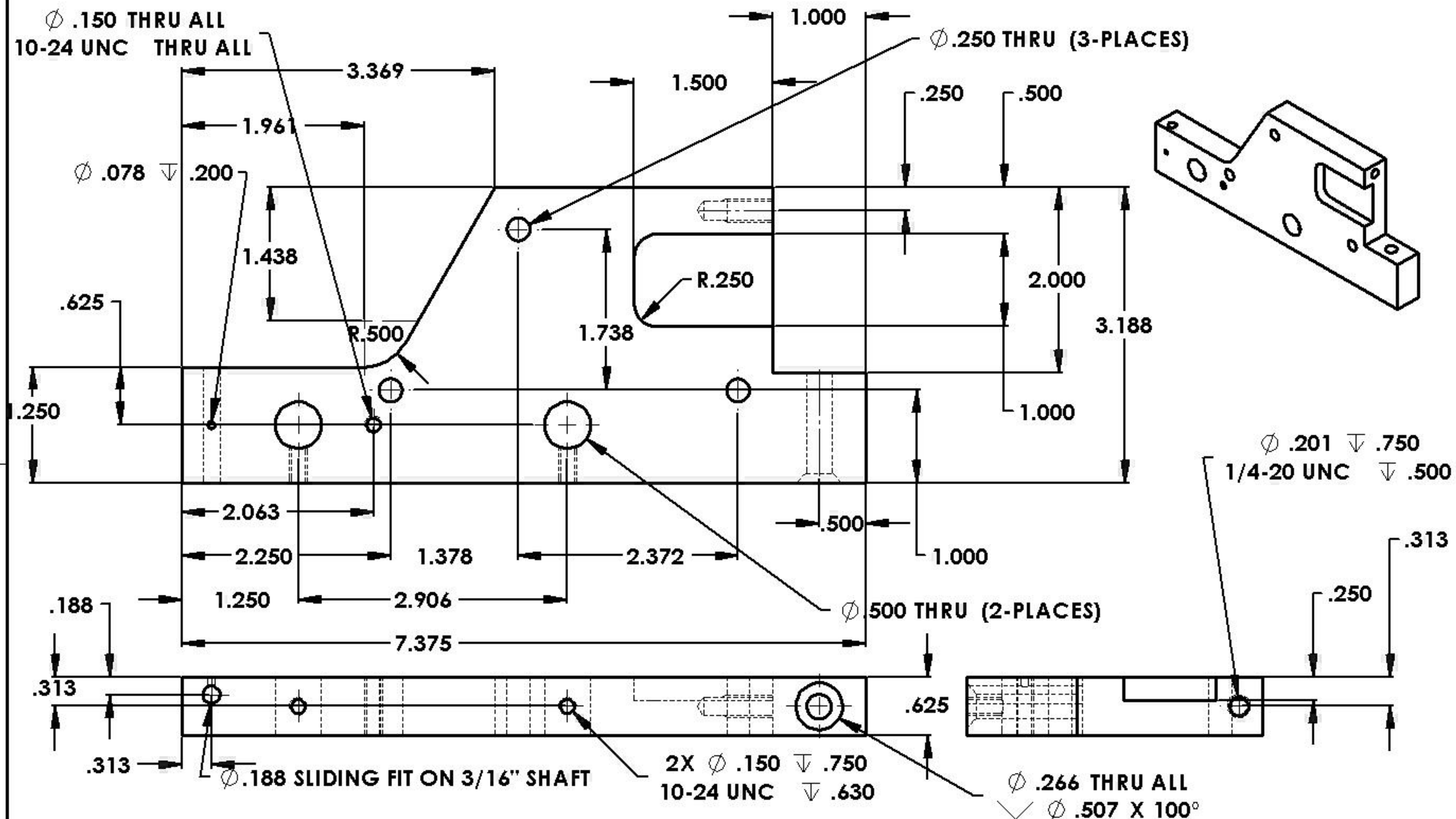
TEL: (705) 734-6271
FAX: (705) 734-6271
EMAIL: RUPNOW@ROGERS.COM

UNLESS OTHERWISE SPECIFIED:		DATE	REV
BY: RUPNOW	DATE: 10/10/00	REV: 1	DATE: 10/10/00
CHECKED: RUPNOW	DATE: 10/10/00	REV: 2	DATE: 10/10/00
APPROVED: RUPNOW	DATE: 10/10/00	REV: 3	DATE: 10/10/00
TITLE: FULL ASSEMBLY		SCALE: 1:2	
SHEET 2 OF 2		REV	

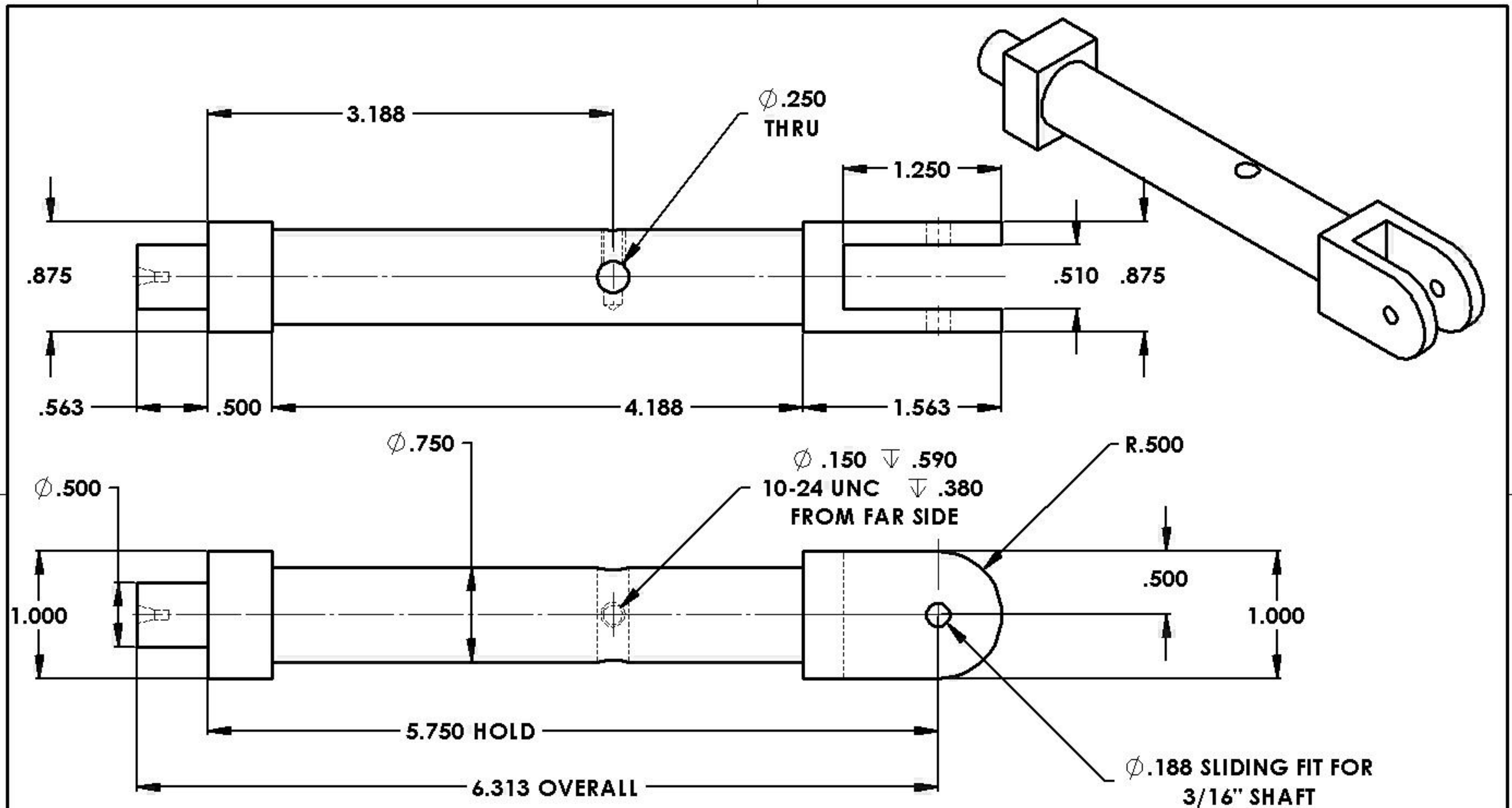


RUPNOW MACHINE AND AUTOMATION DESIGN 1056 CARSON ROAD SARASOTA, FL 34231 TEL: (941) 734-6271 FAX: (941) 734-6271 EMAIL: RUPNOW@ROGERS.COM		DESIGNED BY: RUPNOW CHECKED BY: RUPNOW DATE: 7/24/2003 TITLE:	
APPROVED:		SCALE: 1:2	
DO NOT SCALE DRAWING		SHEET 1 OF 1	





RUPNOW MACHINE AND AUTOMATION DESIGN 1095 CARSON ROAD BARRIE, ONT. L4M4S5 TEL: (705) 734-6271 FAX: (705) 734-6271 EMAIL BRUPNOW@ROGERS.COM	UNLESS OTHERWISE SPECIFIED				MATERIAL:	DESIGNED BY:	PART DESCRIPTION											
	UNITS:	INCHES	TOLERANCES		HARDNESS:	DRAWN BY:					BRIAN RUPNOW							
	ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0. ± 0.5	COATING:			PART NUMBER										
	REMOVE ALL SHARP EDGES		0.0 ± 0.3	0.00 ± 0.1	CUSTOMER:		ALUMINUM OR STEEL ONE REQUIRED											
	THIRD ANGLE PROJECTION 		0.0000 ± 0.05 UNLESS MARKED THEN ± 0.0005															
			ANGULAR TOLERANCES $\pm 0.15^\circ$				BASE <table><tr><td>SIZE B</td><td>SCALE 1:1</td><td>WASS</td><td>JOB NO.</td><td>QTY 1</td><td>LAST REV 0</td><td>DATE PRINTED 7/25/2008</td><td colspan="2">SHEET 1 OF 1</td></tr></table>				SIZE B	SCALE 1:1	WASS	JOB NO.	QTY 1	LAST REV 0	DATE PRINTED 7/25/2008	SHEET 1 OF 1
SIZE B	SCALE 1:1	WASS	JOB NO.	QTY 1	LAST REV 0	DATE PRINTED 7/25/2008	SHEET 1 OF 1											



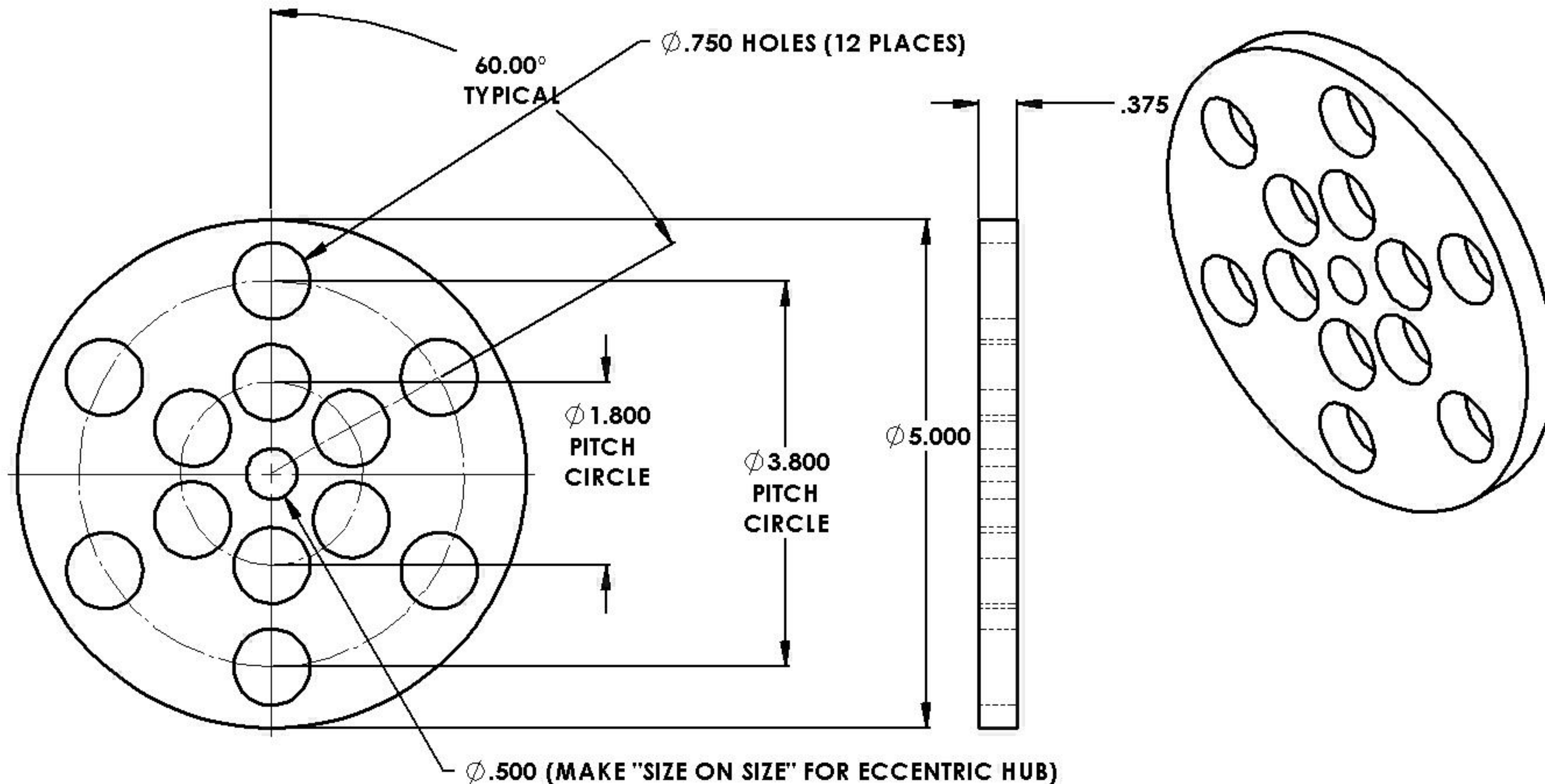
ONE REQUIRED---ALUMINUM OR STEEL

RUPNOW MACHINE AND AUTOMATION DESIGN
1095 CARSON ROAD
BARRIE, ONT.
L4M4B5
TEL: (705) 734-6271
FAX: (705) 734-6271
EMAIL: BRUPNOW@ROGERS.COM

UNLESS OTHERWISE SPECIFIED			
UNITS:	INCHES	TOLERANCES	
ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0. $\pm .05$
REMOVE ALL SHARP EDGES		0.0 $\pm .03$	0.00 $\pm .01$
THIRD ANGLE PROJECTION		0.0000 $\pm .005$ UNLESS MARKED	THEN $\pm .0005$
		ANGULAR TOLERANCES $\pm 0^{\circ}15'$	

MATERIAL:		DESIGNED BY:	
HARDNESS:		DRAWN BY:	BRIAN RUPNOW
COATING:			
CUSTOMER:			

PART DESCRIPTION							
PART NUMBER							
COLUMN							
SIZE	SCALE	WASS	JOB NO.	QTY	LAST REV	DATE PRINTED	SHEET 1 OF 1
B	1:1			1	0	7/24/2008	



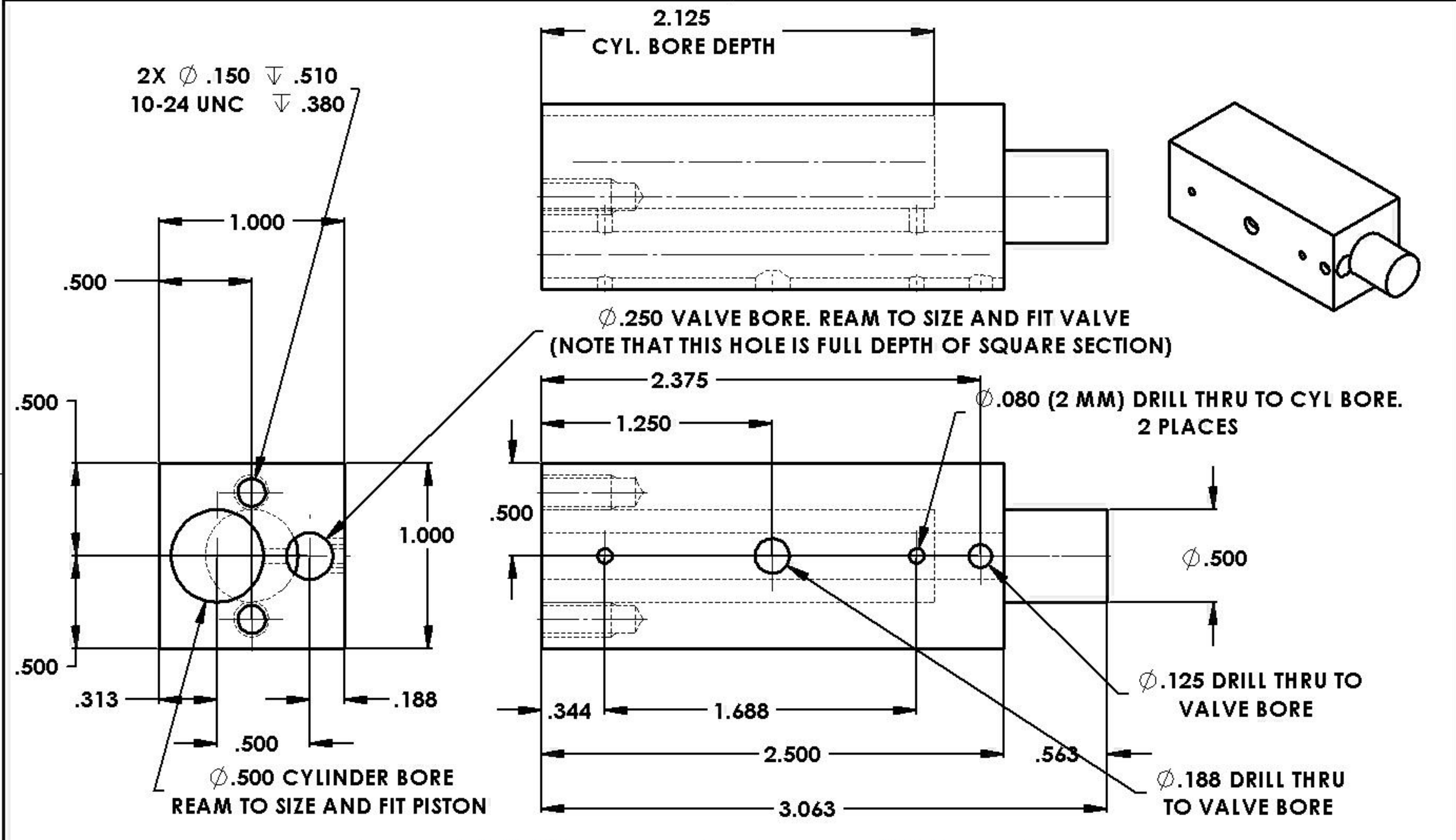
ONE REQUIRED MATERIAL: ANY METAL (BRASS WOULD BE MY CHOICE \$\$\$\$)

RUPNOW MACHINE AND AUTOMATION DESIGN
1095 CARSON ROAD
BARRIE, ONT.
L4M4B5
TEL: (705) 734-6271
FAX: (705) 734-6271
EMAIL: BRUPNOW@ROGERS.COM

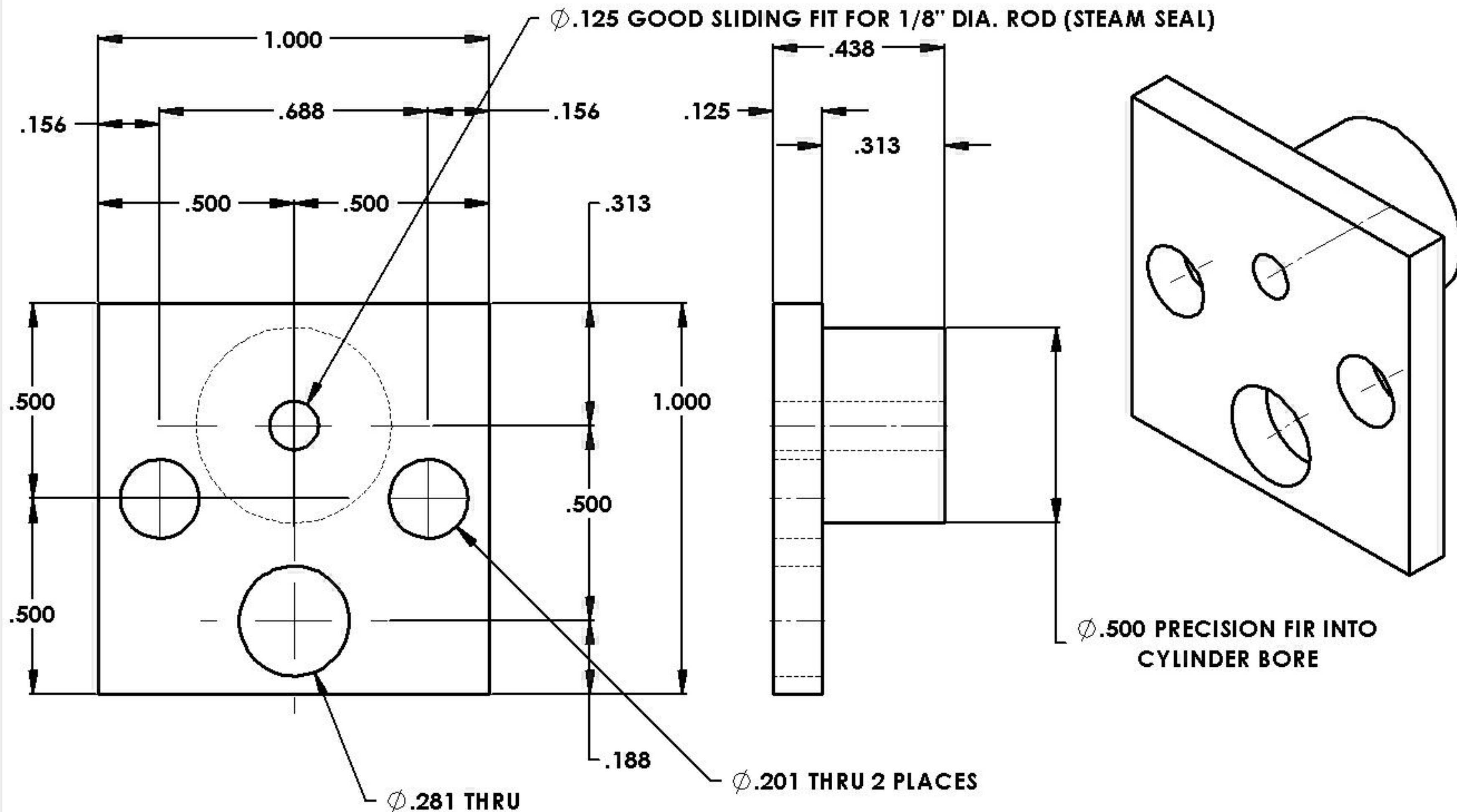
UNLESS OTHERWISE SPECIFIED			
UNITS:	INCHES	TOLERANCES	
ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0. $\pm .05$
REMOVE ALL SHARP EDGES		0.0 $\pm .03$	0.00 $\pm .01$
THIRD ANGLE PROJECTION		0.0000 $\pm .005$ UNLESS MARKED	THEN $\pm .0005$
		ANGULAR TOLERANCES $\pm 0^\circ 15'$	

MATERIAL:		DESIGNED BY:	
HARDNESS:		DRAWN BY:	BRIAN RUPNOW
COATING:			
CUSTOMER:			

PART DESCRIPTION							
PART NUMBER							
FLYWHEEL							
SIZE	SCALE	WASS	JOB NO.	QTY	LAST REV	DATE PRINTED	SHEET 1 OF 1
B	1:1			1	0	7/24/2008	



RUPNOW MACHINE AND AUTOMATION DESIGN 1095 CARSON ROAD BARRIE, ONT. L4M4S5 TEL: (705) 734-6271 FAX: (705) 734-6271 EMAIL: BRUPNOW@ROGERS.COM		UNLESS OTHERWISE SPECIFIED		MATERIAL:	DESIGNED BY:	PART DESCRIPTION			
		UNITS:	INCHES	HARDNESS:	DRAWN BY:	CYLINDER			
		ROUGHNESS, Ra:	63 MICRONS	COATING:	BRIAN RUPNOW	PART NUMBER			
		REMOVE ALL SHARP EDGES		CUSTOMER:		SIZE	SCALE	WASS	JOB NO.
THIRD ANGLE PROJECTION		TOLERANCES		MATERIAL: BRASS		B	2:1		QTY
		FRACTIONS $\pm 1/32$	0. $\pm .05$						1
		0.0 $\pm .03$	0.00 $\pm .01$						LAST REV
		0.0000 $\pm .005$ UNLESS MARKED							0
		THEN $\pm .0005$							DATE PRINTED
		ANGULAR TOLERANCES $\pm 0^{\circ}15'$							7/24/2008
									SHEET 1 OF 1



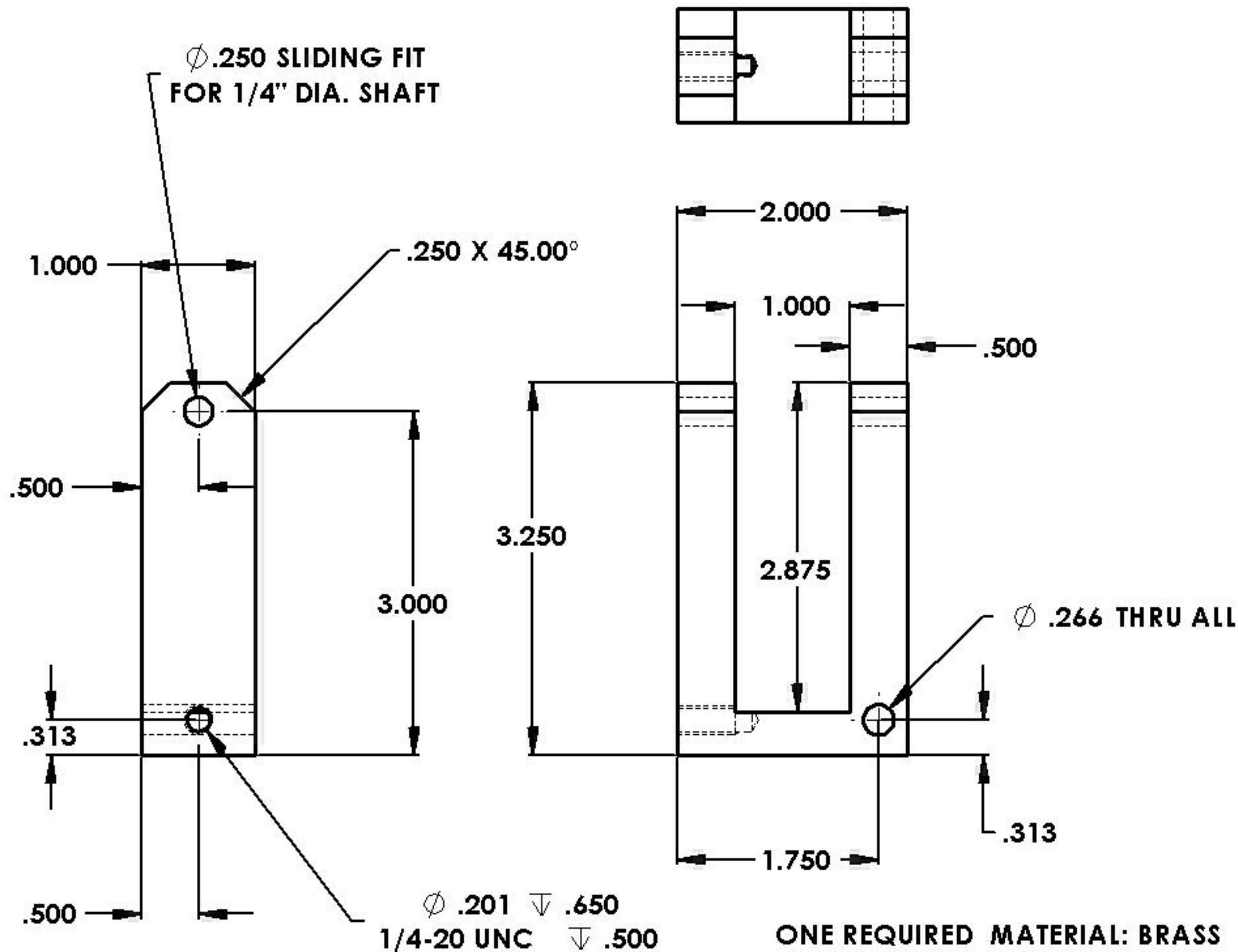
ONE REQUIRED---BRASS

RUPNOW MACHINE AND AUTOMATION DESIGN
1095 CARSON ROAD
BARRIE, ONT.
L4M4S5
TEL: (705) 734-6271
FAX: (705) 734-6271
EMAIL: BRUPNOW@ROGERS.COM

UNLESS OTHERWISE SPECIFIED			
UNITS:	INCHES	TOLERANCES	
ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0. $\pm .05$
REMOVE ALL SHARP EDGES		0.0 $\pm .03$	0.00 $\pm .01$
THIRD ANGLE PROJECTION		0.0000 $\pm .005$ UNLESS MARKED	THEN $\pm .0005$
		ANGULAR TOLERANCES $\pm 0^\circ 15'$	

MATERIAL:		DESIGNED BY:	
HARDNESS:		DRAWN BY:	BRIAN RUPNOW
COATING:			
CUSTOMER:			

PART DESCRIPTION							
CYLINDER HEAD							
SIZE	SCALE	WASS	JOB NO.	QTY	LAST REV	DATE PRINTED	SHEET 1 OF 1
B	4:1			1	0	7/25/2008	



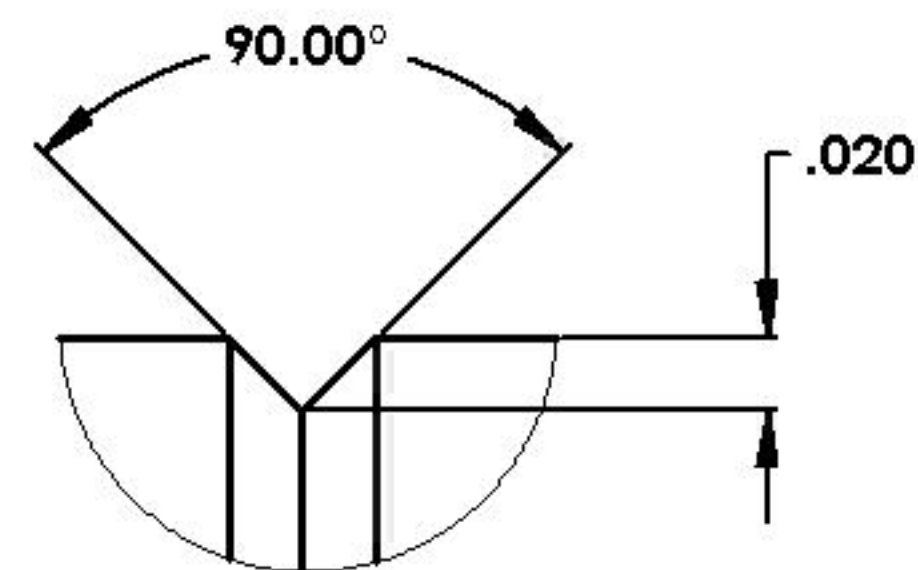
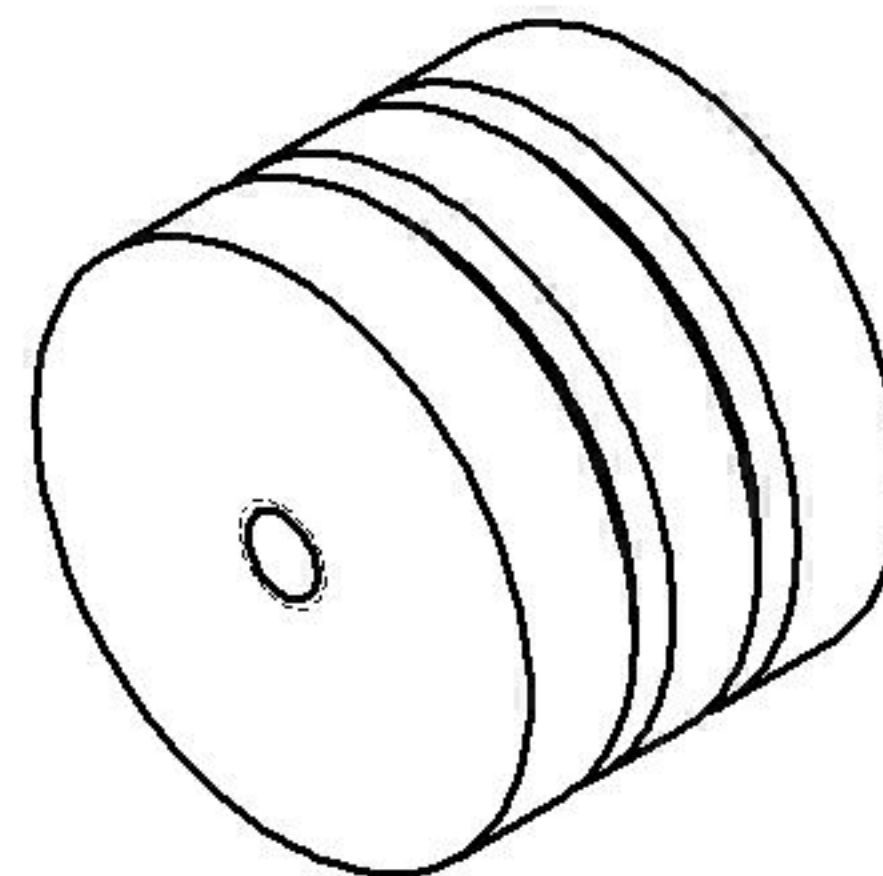
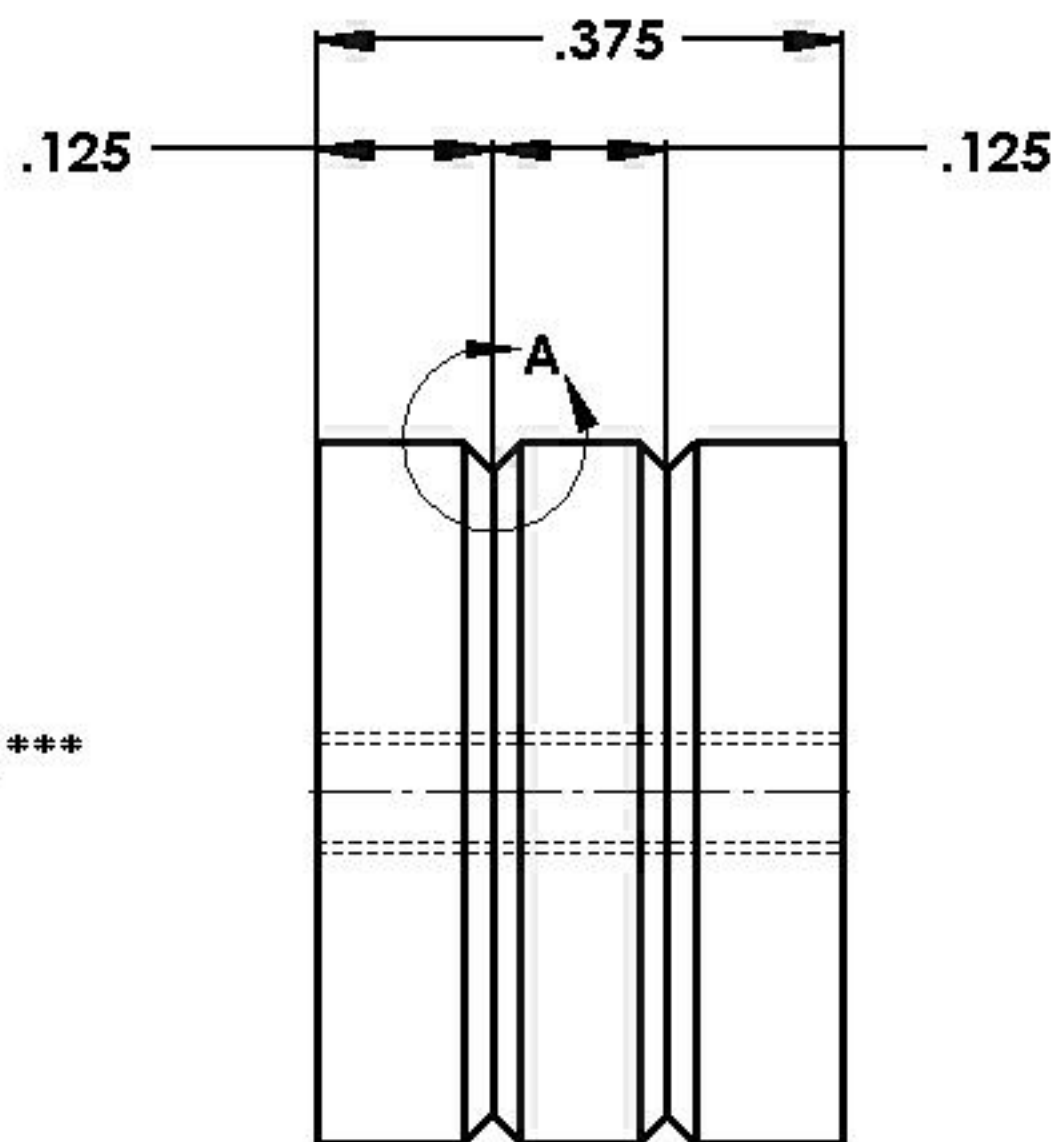
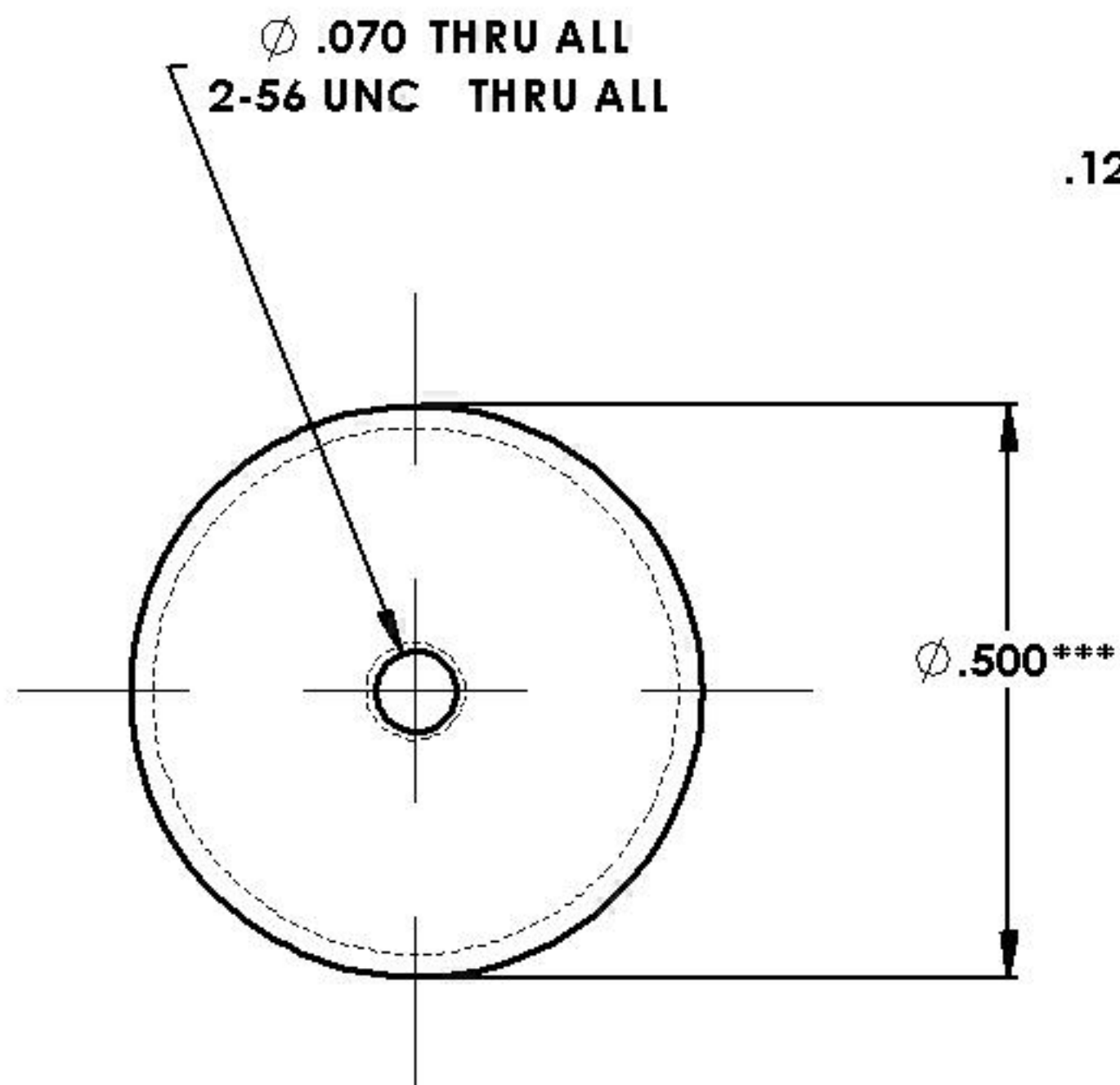
ONE REQUIRED MATERIAL: BRASS
(ALUMINUM WILL DO IF YOU MACHINE SOME BRASS BUSHINGS)

RUPNOW MACHINE AND AUTOMATION DESIGN
1095 CARSON ROAD
BARRIE, ONT.
L4M4S5
TEL: (705) 734-6271
FAX: (705) 734-6271
EMAIL: BRUPNOW@ROGERS.COM

UNLESS OTHERWISE SPECIFIED			
UNITS:	INCHES	TOLERANCES	
ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0. $\pm .05$
REMOVE ALL SHARP EDGES		0.0 $\pm .03$	0.00 $\pm .01$
THIRD ANGLE PROJECTION		0.0000 $\pm .005$ UNLESS MARKED	
		THEN $\pm .0005$	
		ANGULAR TOLERANCES	$\pm 0^\circ 15'$

MATERIAL:		DESIGNED BY:	
HARDNESS:		DRAWN BY:	BRIAN RUPNOW
COATING:			
CUSTOMER:			

PART DESCRIPTION							
BEARING							
SIZE	SCALE	WASS	JOB NO.	QTY	LAST REV	DATE PRINTED	SHEET 1 OF 1
B	1:1			1	0	7/24/2008	



DETAIL A
SCALE 16:1

*** MATCH THIS DIAMETER TO BORE IN CYLINDER
FOR A GOOD FIT, YOU WANT JUST A BIT OF DRAG IN THE BORE,
THEN LAP WITH TOOTHPASTE FOR A PRECISION SLIDING FIT

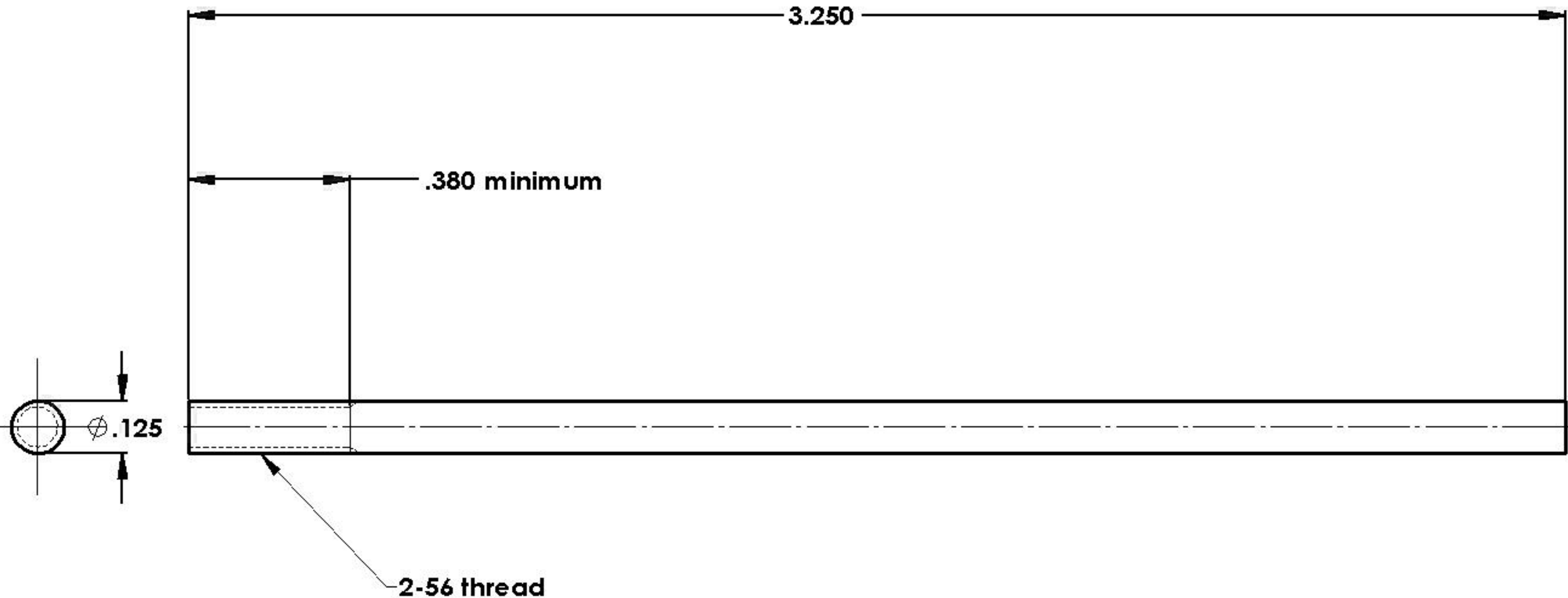
MATERIAL: ALUMINUM

RUPNOW MACHINE AND AUTOMATION DESIGN
1095 CARSON ROAD
BARRIE, ONT.
L4M4B5
TEL: (705) 734-6271
FAX: (705) 734-6271
EMAIL: BRUPNOW@ROGERS.COM

UNLESS OTHERWISE SPECIFIED			
UNITS:	INCHES	TOLERANCES	
ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0. $\pm .05$
REMOVE ALL SHARP EDGES		0.0 $\pm .03$	0.00 $\pm .01$
THIRD ANGLE PROJECTION		0.0000 $\pm .005$ UNLESS MARKED	THEN $\pm .0005$
		ANGULAR TOLERANCES	$\pm 0^{\circ}15'$

MATERIAL:		DESIGNED BY:	
HARDNESS:		DRAWN BY:	BRIAN RUPNOW
COATING:			
CUSTOMER:			

PART DESCRIPTION							
PISTON							
SIZE	SCALE	WASS	JOB NO.	QTY	LAST REV	DATE PRINTED	SHEET 1 OF 1
B	4:1			1	0	7/24/2008	



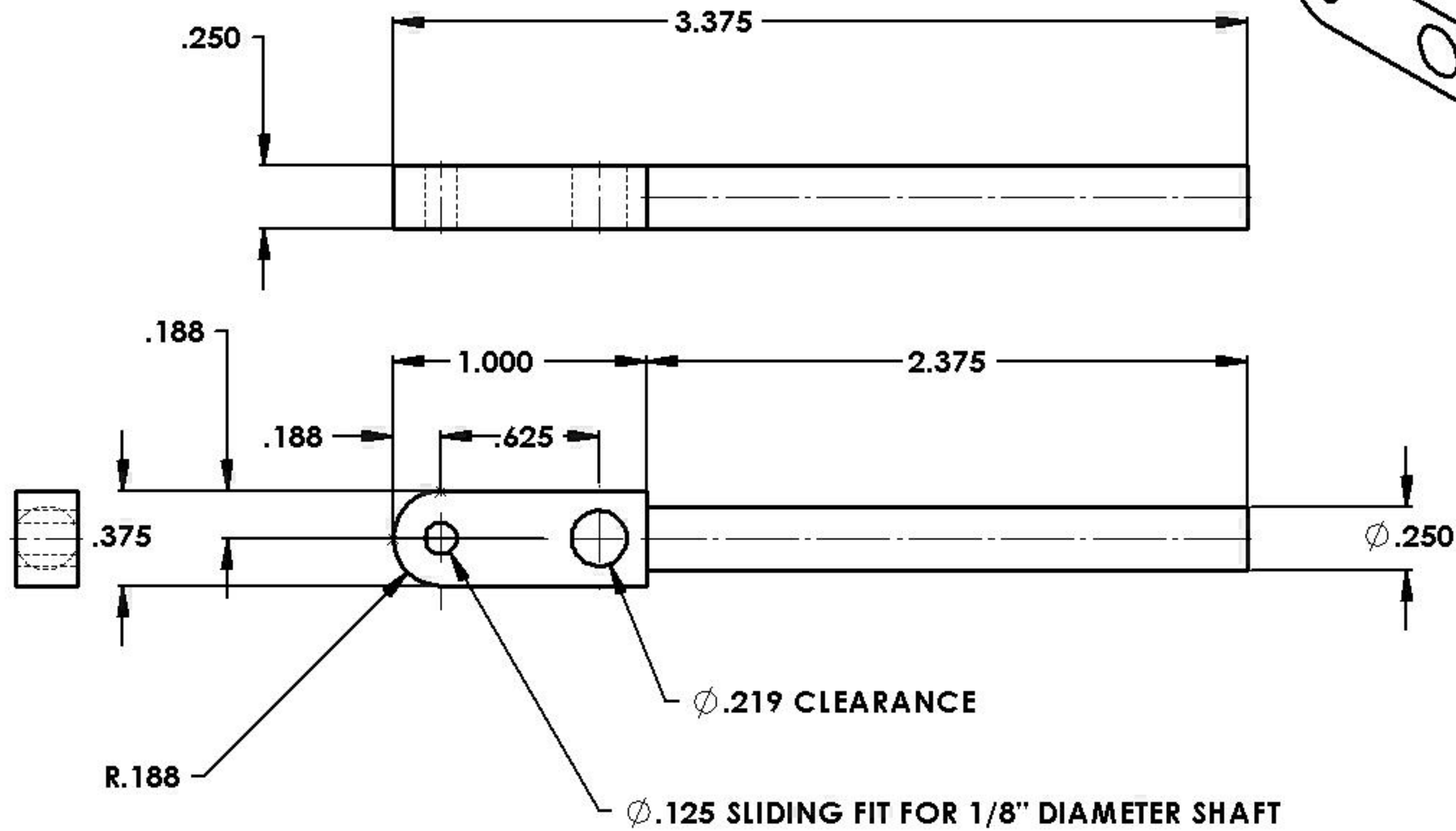
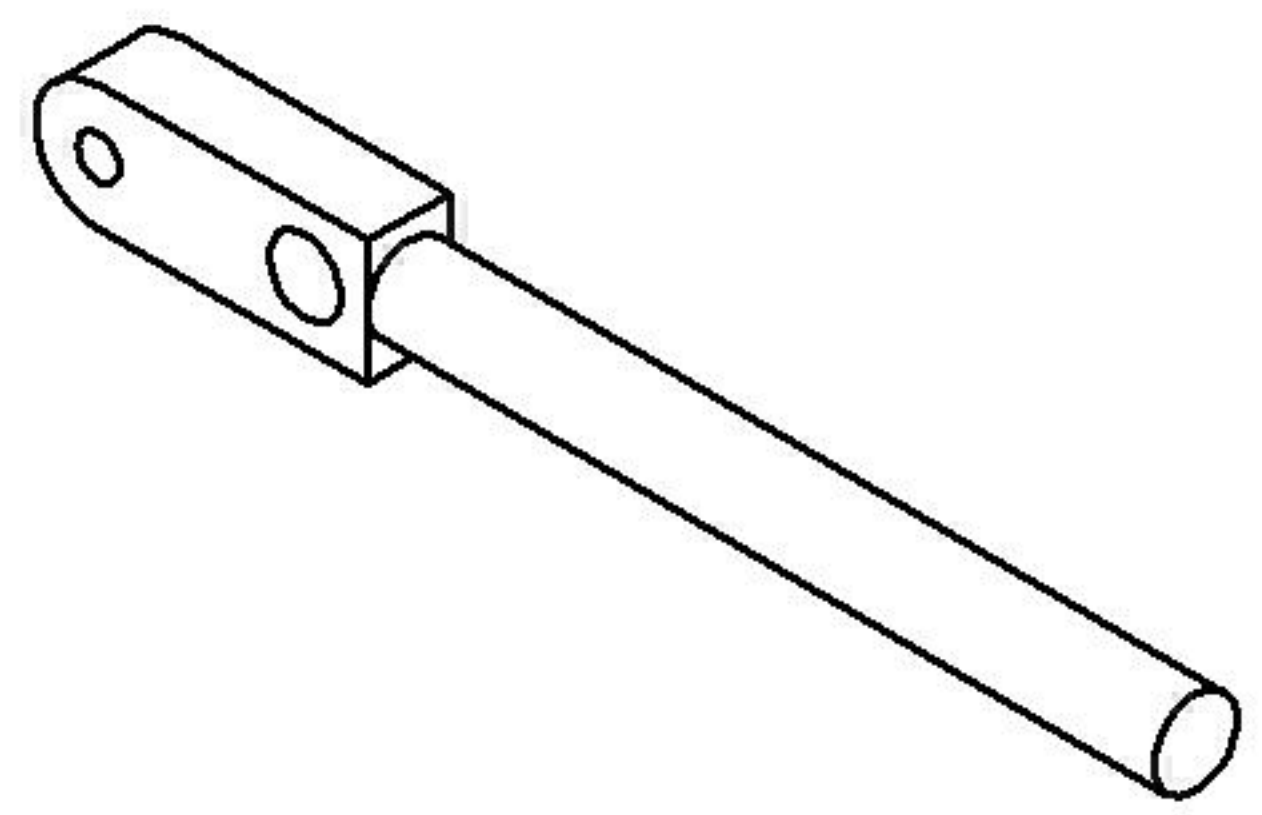
**MATERIAL: STEEL
(I WOULD USE DRILL ROD)**

RUPNOW MACHINE AND AUTOMATION DESIGN
1095 CARSON ROAD
BARRIE, ONT.
L4M4B5
TEL: (705) 734-6271
FAX: (705) 734-6271
EMAIL: BRUPNOW@ROGERS.COM

UNLESS OTHERWISE SPECIFIED			
UNITS:	INCHES	TOLERANCES	
ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0. $\pm .05$
REMOVE ALL SHARP EDGES		0.0 $\pm .03$	0.00 $\pm .01$
THIRD ANGLE PROJECTION		0.0000 $\pm .005$ UNLESS MARKED THEN $\pm .0005$	
		ANGULAR TOLERANCES $\pm 0^{\circ}15'$	

MATERIAL:		DESIGNED BY:	
HARDNESS:		DRAWN BY:	BRIAN RUPNOW
COATING:			
CUSTOMER:			

PART DESCRIPTION							
PART NUMBER							
PISTON ROD							
SIZE	SCALE	WASS	JOB NO.	QTY	LAST REV	DATE PRINTED	SHEET 1 OF 1
B	1:1			1	0	7/24/2008	



ONE REQUIRED---BRASS

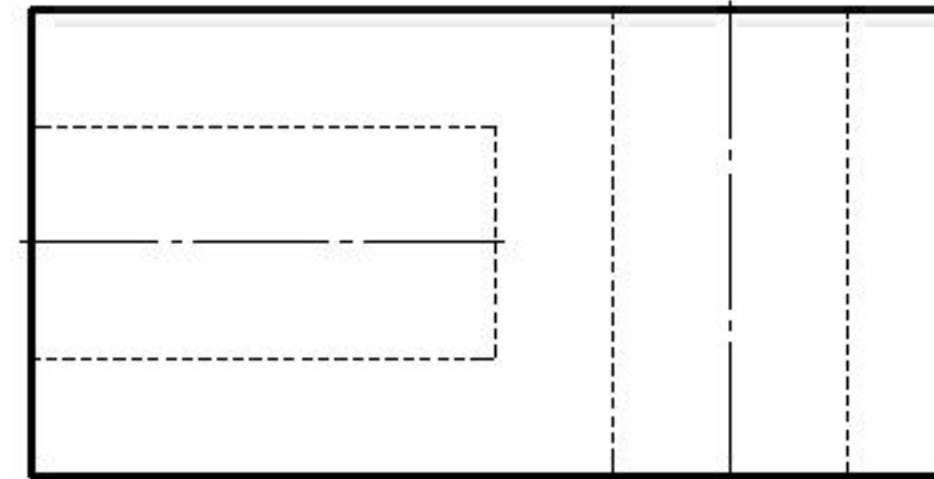
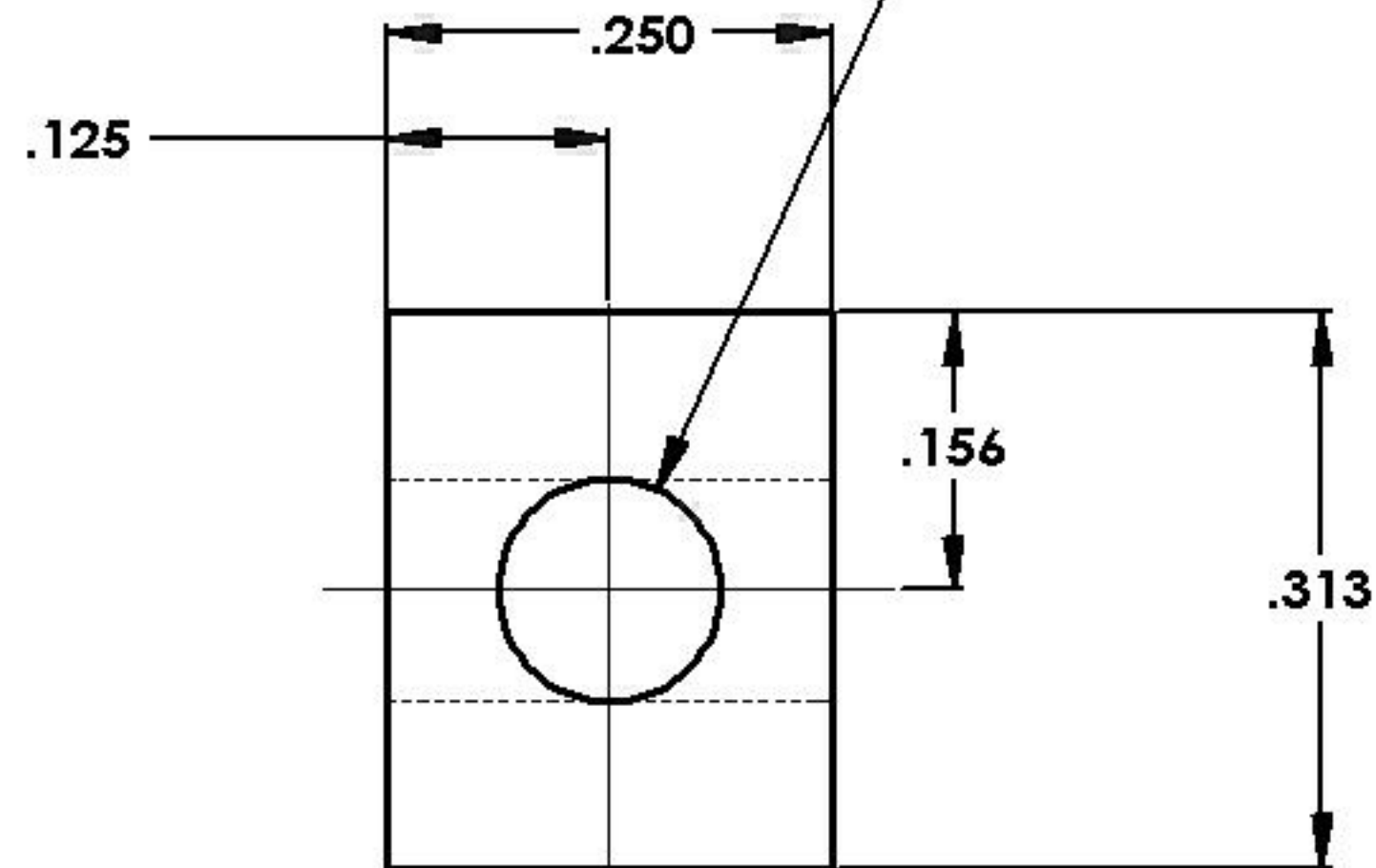
RUPNOW MACHINE AND AUTOMATION DESIGN
1095 CARSON ROAD
BARRIE, ONT.
L4M4S5
TEL: (705) 734-6271
FAX: (705) 734-6271
EMAIL: BRUPNOW@ROGERS.COM

UNLESS OTHERWISE SPECIFIED			
UNITS:	INCHES	TOLERANCES	
ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0. $\pm .05$
REMOVE ALL SHARP EDGES		0.0 $\pm .03$	0.00 $\pm .01$
THIRD ANGLE PROJECTION		0.0000 $\pm .005$ UNLESS MARKED	THEN $\pm .0005$
		ANGULAR TOLERANCES $\pm 0^{\circ}15'$	

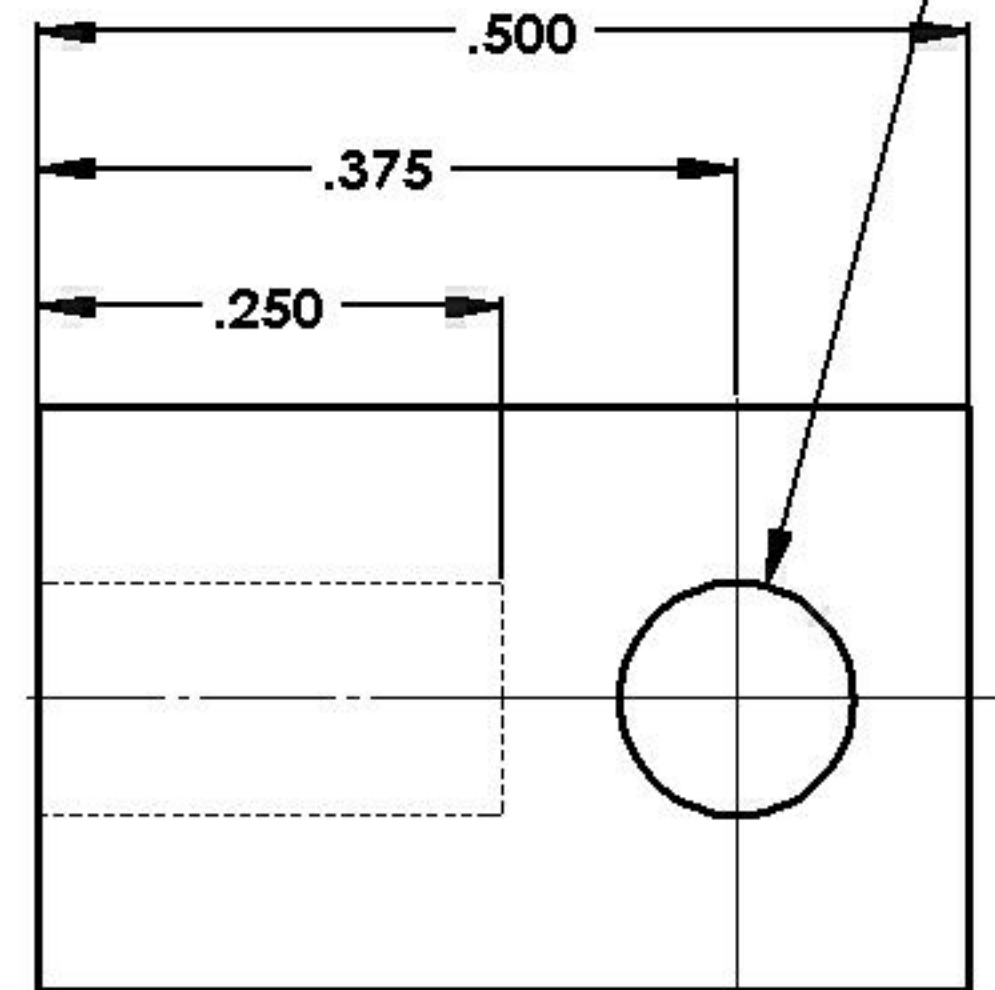
MATERIAL:		DESIGNED BY:	
HARDNESS:		DRAWN BY:	BRIAN RUPNOW
COATING:			
CUSTOMER:			

PART DESCRIPTION							
PART NUMBER							
PISTON ROD GUIDE							
SIZE	SCALE	WASS	JOB NO.	QTY	LAST REV	DATE PRINTED	SHEET 1 OF 1
B	2:1			1	0	7/25/2008	

**Ø.125 SLIDING FIT FOR 1/8" DIA. ROD
(BLIND HOLE, 0.25" DEEP)**

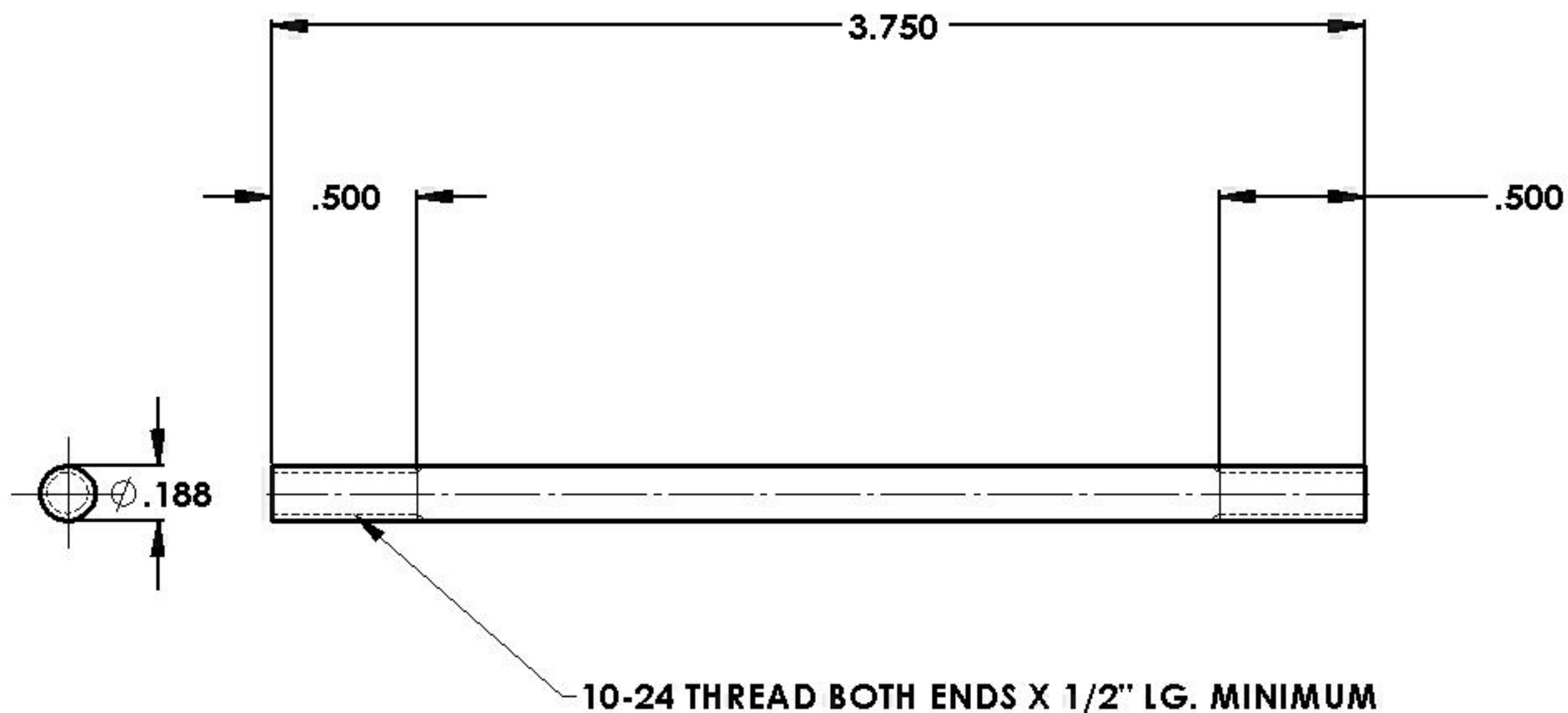


Ø.125
SLIDING FIT FOR 1/8" DIA ROD.



MATERIAL: BRASS

RUPNOW MACHINE AND AUTOMATION DESIGN 1095 CARSON ROAD BARRIE, ONT. L4M4B5 TEL: (705) 734-6271 FAX: (705) 734-6271 EMAIL: BRUPNOW@ROGERS.COM		UNLESS OTHERWISE SPECIFIED			MATERIAL:		DESIGNED BY:		PART DESCRIPTION				
		UNITS:		TOLERANCES		HARDNESS:		DRAWN BY: BRIAN RUPNOW					
		ROUGHNESS, Ra: 63 MICRONS		FRACTIONS $\pm 1/32$		0. $\pm .05$		COATING:					
		REMOVE ALL SHARP EDGES		0.0 $\pm .03$		0.00 $\pm .01$		CUSTOMER:					
THIRD ANGLE PROJECTION 		0.0000 $\pm .005$ UNLESS MARKED THEN $\pm .0005$ 								PART NUMBER END FOR PISTON ROD			
ANGULAR TOLERANCES $\pm 0^\circ 15'$													
										SIZE B SCALE 8:1 MASS JOB NO. QTY 1 LAST REV 0 DATE PRINTED 7/24/2008 SHEET 1 OF 1			



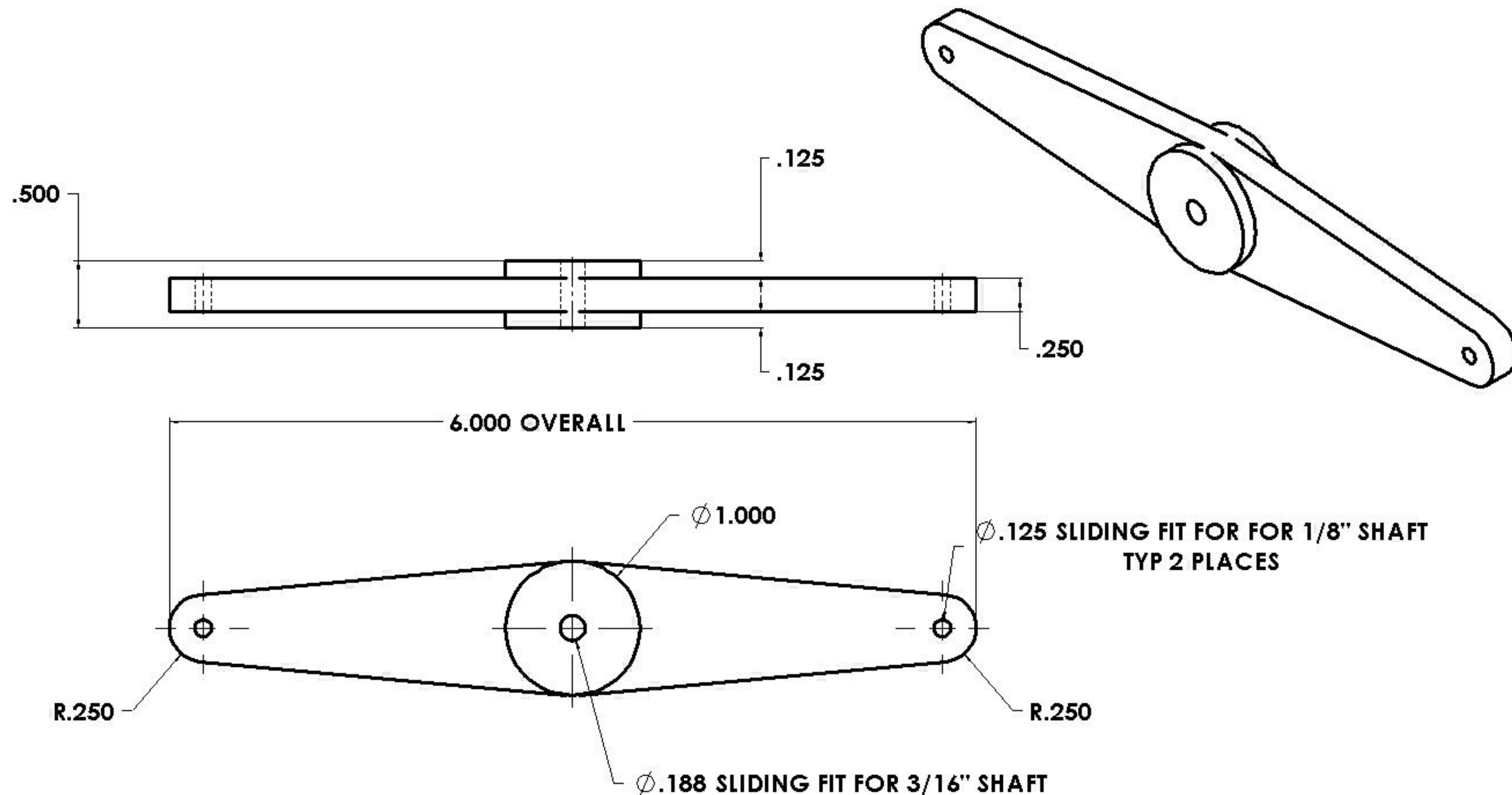
ONE REQUIRED MATERIAL : STEEL

RUPNOW MACHINE AND AUTOMATION DESIGN
1095 CARSON ROAD
BARRIE, ONT.
L4M4B5
TEL: (705) 734-6271
FAX: (705) 734-6271
EMAIL BRUPNOW@ROGERS.COM

UNLESS OTHERWISE SPECIFIED			
UNITS:	INCHES	TOLERANCES	
ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0. $\pm .05$
REMOVE ALL SHARP EDGES		0.0 $\pm .03$	0.00 $\pm .01$
THIRD ANGLE PROJECTION		0.0000 $\pm .005$ UNLESS MARKED THEN $\pm .0005$	
		ANGULAR TOLERANCES $\pm 0^{\circ}15'$	

MATERIAL:		DESIGNED BY:	
HARDNESS:		DRAWN BY:	BRIAN RUPNOW
COATING:			
CUSTOMER:			

PART DESCRIPTION							
PART NUMBER							
PISTON GUIDE SUPPORT							
SIZE B	SCALE 1:1	WASS	JOB NO.	QTY 1	LAST REV 0	DATE PRINTED 7/25/2008	SHEET 1 OF 1



ONE REQUIRED
MATERIAL: ALUMINUM

RUPNOW MACHINE AND AUTOMATION DESIGN
1095 CARSON ROAD
BARRIE, ONT.
L4M4B5
TEL: (705) 734-6271
FAX: (705) 734-6271
EMAIL: BRUPNOW@ROGERS.COM

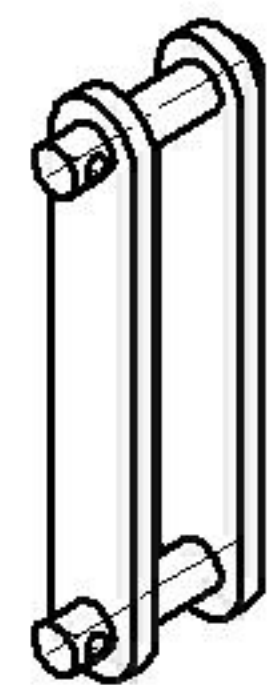
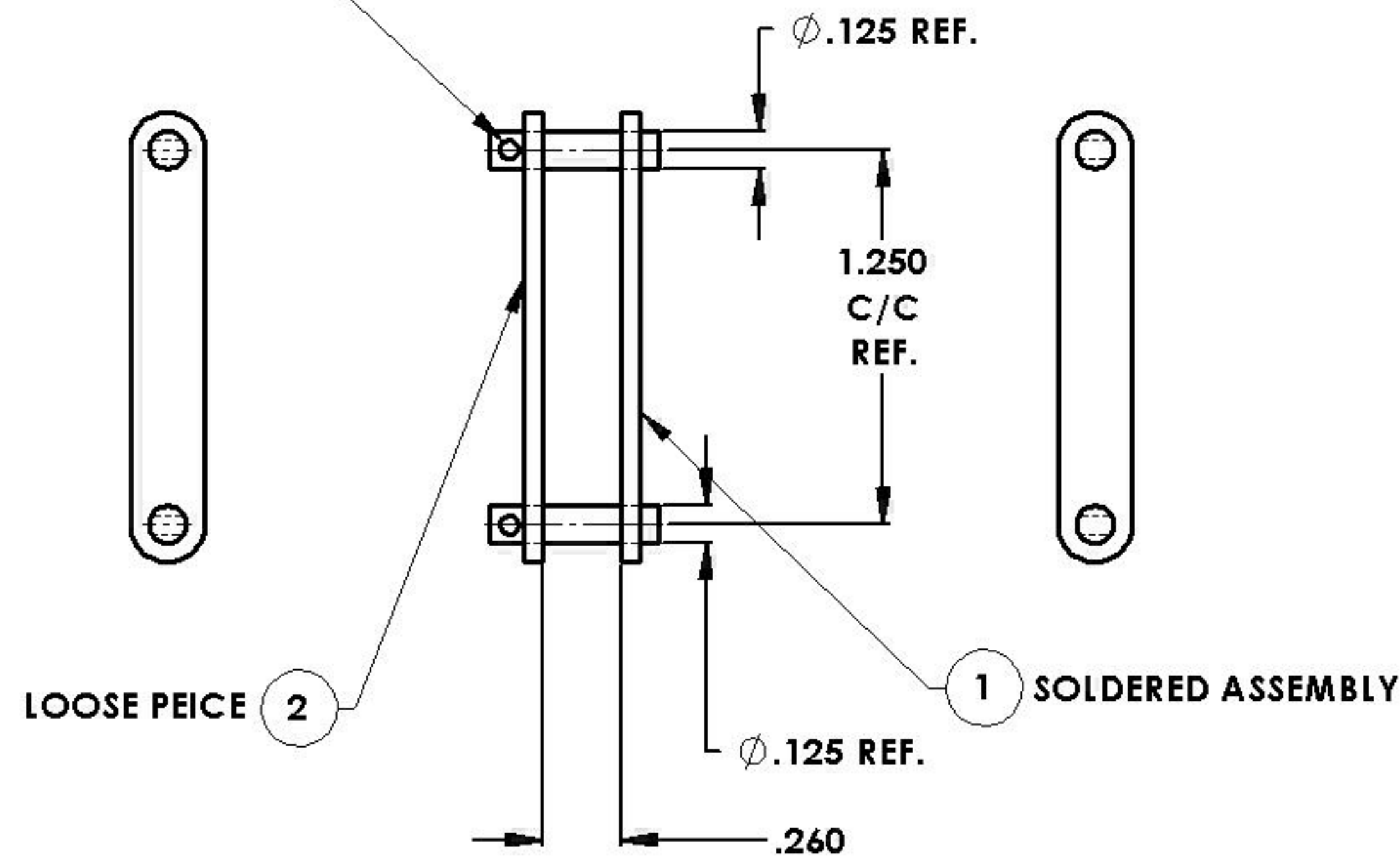
UNLESS OTHERWISE SPECIFIED			
UNITS:	INCHES	TOLERANCES	
ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0.0005
REMOVE ALL SHARP EDGES		0.00 ± 0.03	0.00 ± 0.01
THIRD ANGLE PROJECTION		0.0000	0.0005 UNLESS MARKED
			THEN ± 0.0005
		ANGULAR TOLERANCES $\pm 0.1^\circ$	

MATERIAL:		DESIGNED BY:	
HARDNESS:		DRAWN BY:	BRIAN RUPNOW
COATING:			
CUSTOMER:			

PART DESCRIPTION							
PART NUMBER							
BEAM							
SIZE	SCALE	WASS	JOB NO.	QTY	LAST REV	DATE PRINTED	SHEET 1 OF 1
B	1:1			1	0	7/24/2008	

USE MINIATURE COTTER PINS
OR BENT WIRE
AS RETAINERS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	SOLDERED ASSEMBLY OF BEAM LINK		1
2	ARM FOR BEAM LINKAGE		1

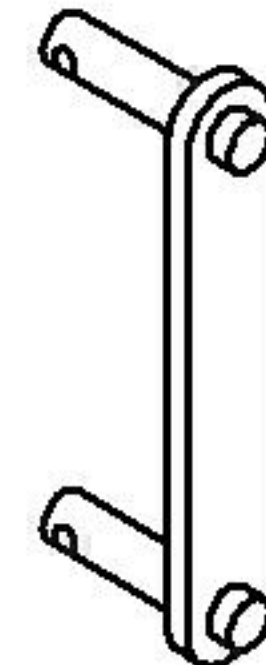
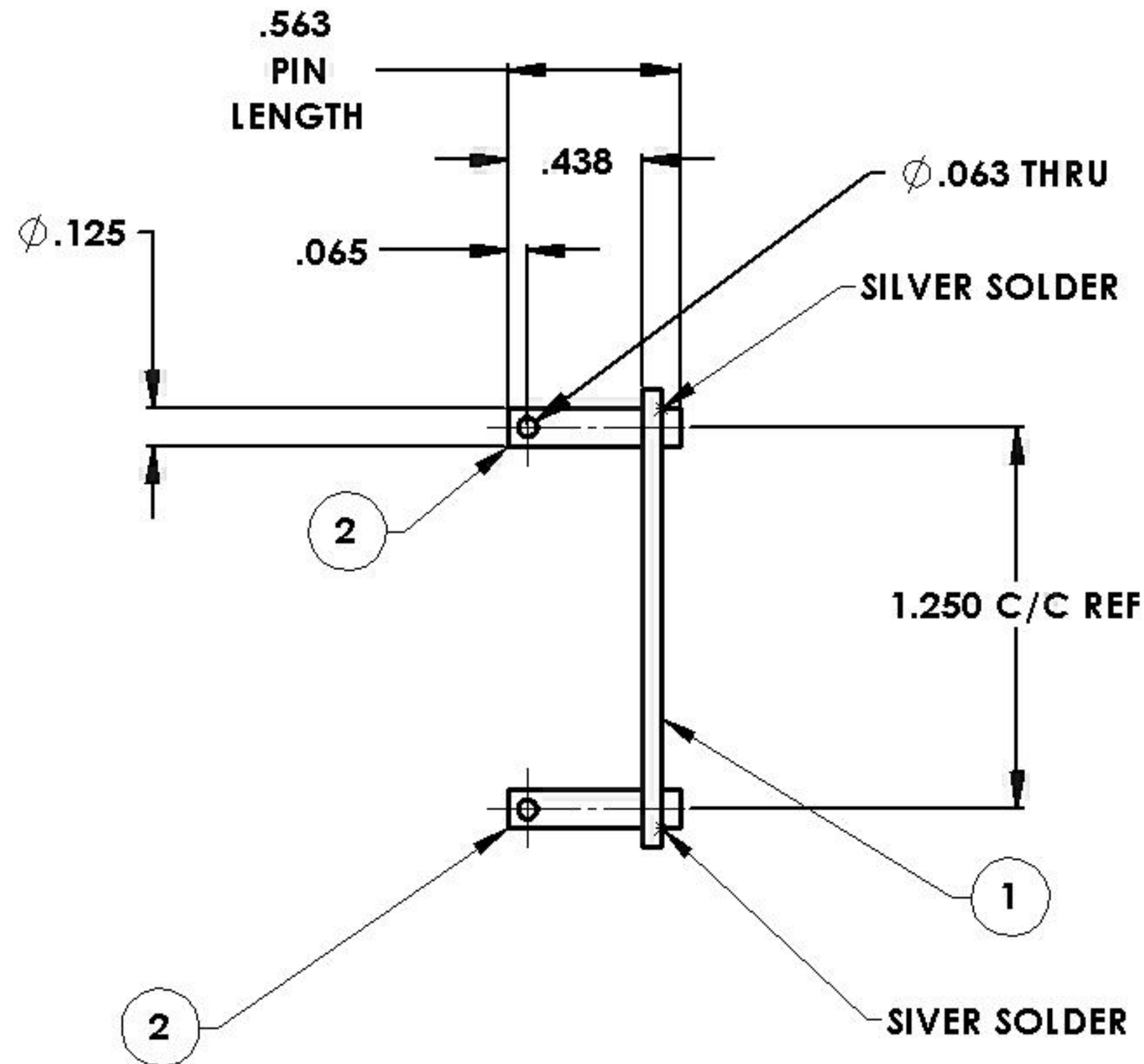


ONE ASSEMBLY REQUIRED AS SHOWN

RUPNOW MACHINE AND AUTOMATION DESIGN 1095 CARSON ROAD BARRIE, ONT. L4M4B5 TEL: (705) 734-6271 FAX: (705) 734-6271 EMAIL BRUPNOW@ROGERS.COM	UNLESS OTHERWISE SPECIFIED				MATERIAL:		DESIGNED BY:		PART DESCRIPTION			
	UNITS:	INCHES	TOLERANCES		HARDNESS:		DRAWN BY:	BRIAN RUPNOW				
	ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0. $\pm .05$	COATING:							
	REMOVE ALL SHARP EDGES		0.0 $\pm .03$	0.00 $\pm .01$	CUSTOMER:				PART NUMBER			
	THIRD ANGLE PROJECTION		0.0000 $\pm .005$ UNLESS MARKED									
			 THEN $\pm .0005$									
			ANGULAR TOLERANCES $\pm 0.15^\circ$									

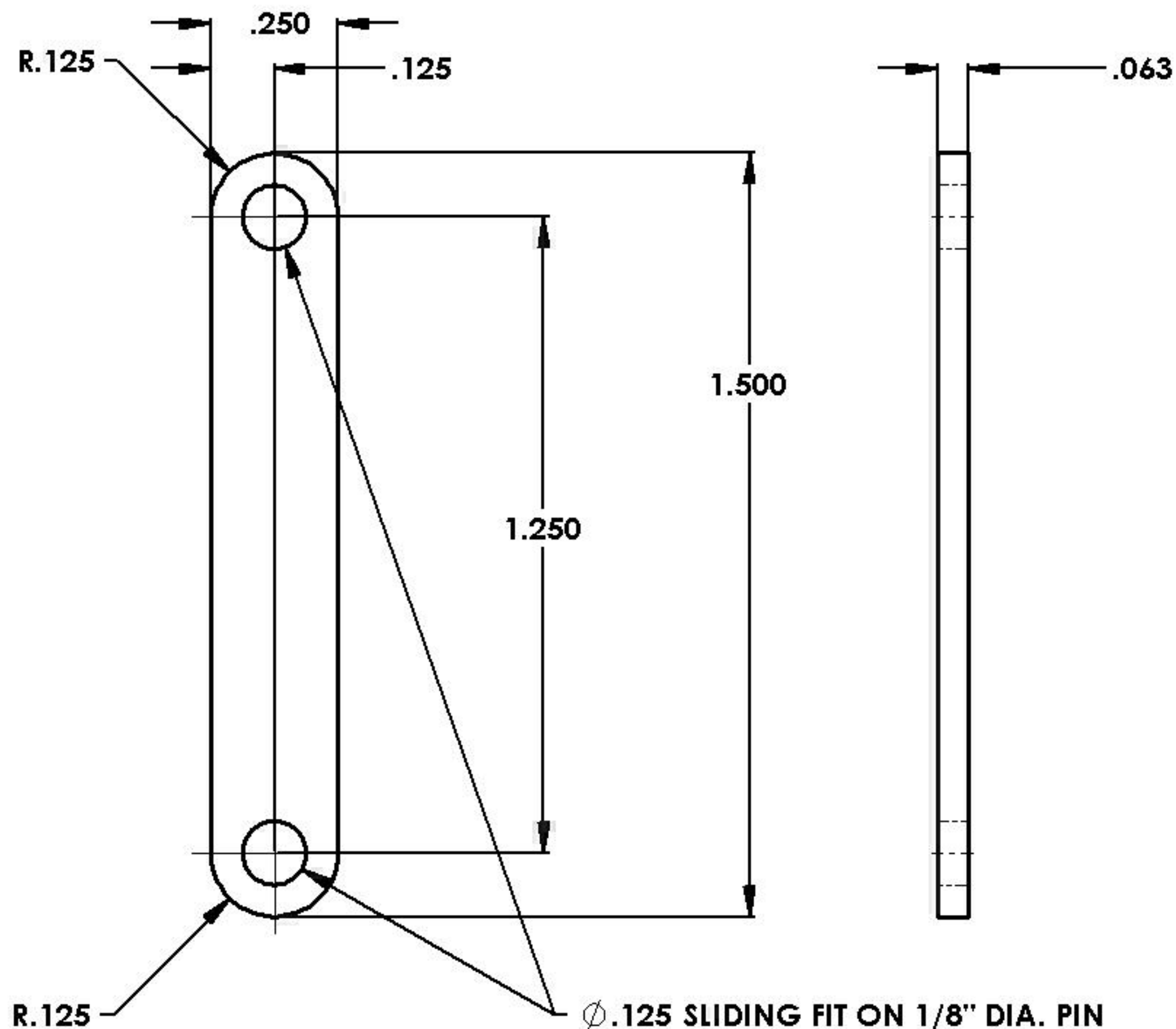
FULL ASSEMBLY OF BEAM LINK									
SIZE	SCALE	WASS	JOB NO.	QTY	LAST REV	DATE PRINTED	SHEET 1 OF 1		
B	2:1			1	0	7/25/2008			

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	ARM FOR BEAM LINKAGE		1
2	SHAFT FOR BEAM LINKAGE		2



ISOMETRIC

RUPNOW MACHINE AND AUTOMATION DESIGN 1095 CARSON ROAD BARRIE, ONT. L4M4S5 TEL: (705) 734-6271 FAX: (705) 734-6271 EMAIL BRUPNOW@ROGERS.COM	UNLESS OTHERWISE SPECIFIED				MATERIAL:		DESIGNED BY:		PART DESCRIPTION			
	UNITS:	INCHES	TOLERANCES		HARDNESS:		DRAWN BY:	BRIAN RUPNOW	PART NUMBER SOLDERED ASSEMBLY OF BEAM LINK			
	ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0. $\pm .05$	COATING:							
	REMOVE ALL SHARP EDGES		0.0 $\pm .03$	0.00 $\pm .01$	CUSTOMER:							
	THIRD ANGLE PROJECTION		0.0000 $\pm .005$ UNLESS MARKED THEN $\pm .0005$									
			ANGULAR TOLERANCES $\pm 0^{\circ}15'$									
		SIZE	SCALE	WASS	JOB NO.	QTY	LAST REV	DATE PRINTED	SHEET 1 OF 1			
		B	2:1			1	0	7/25/2008				



MATERIAL: BRASS

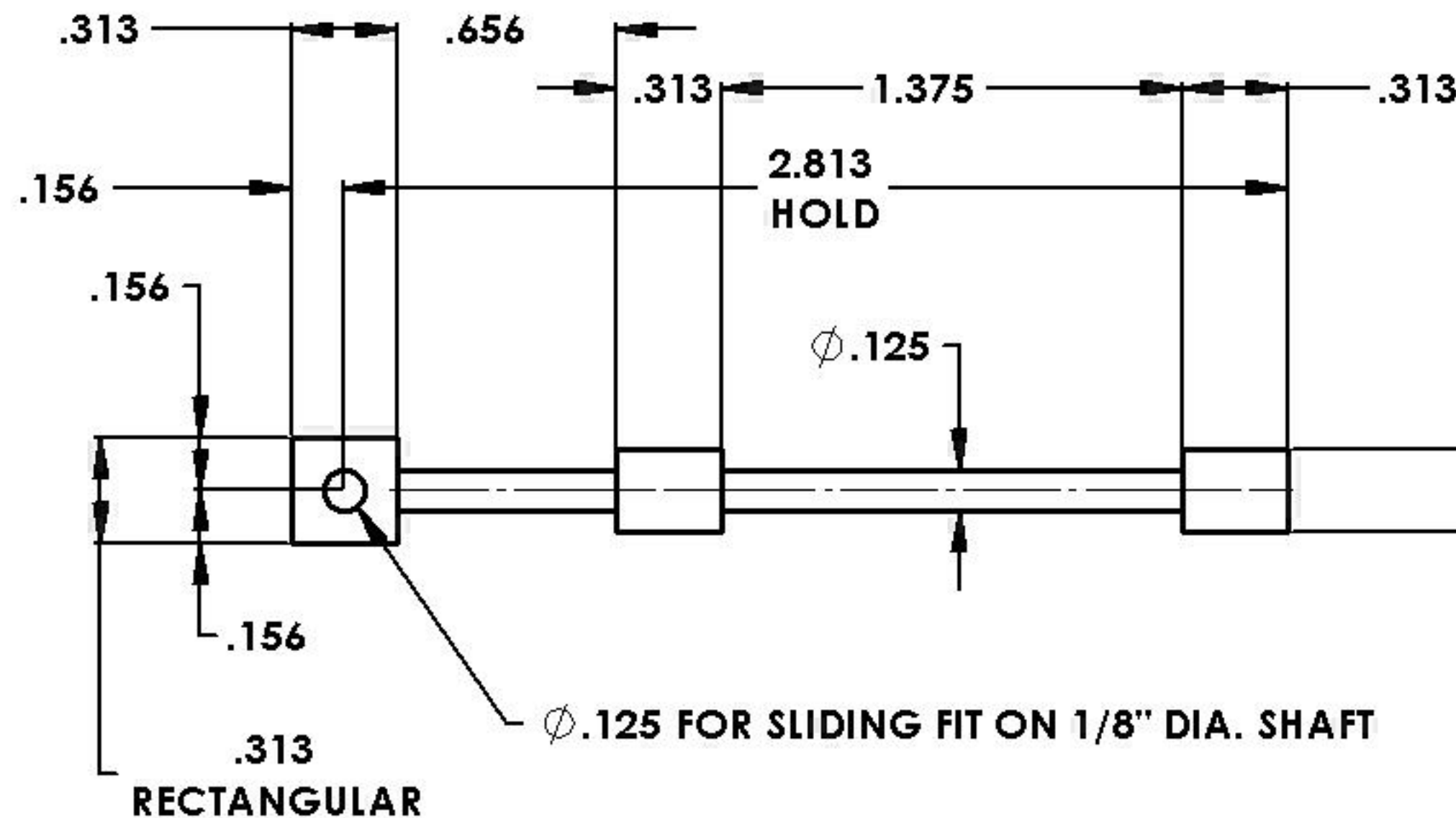
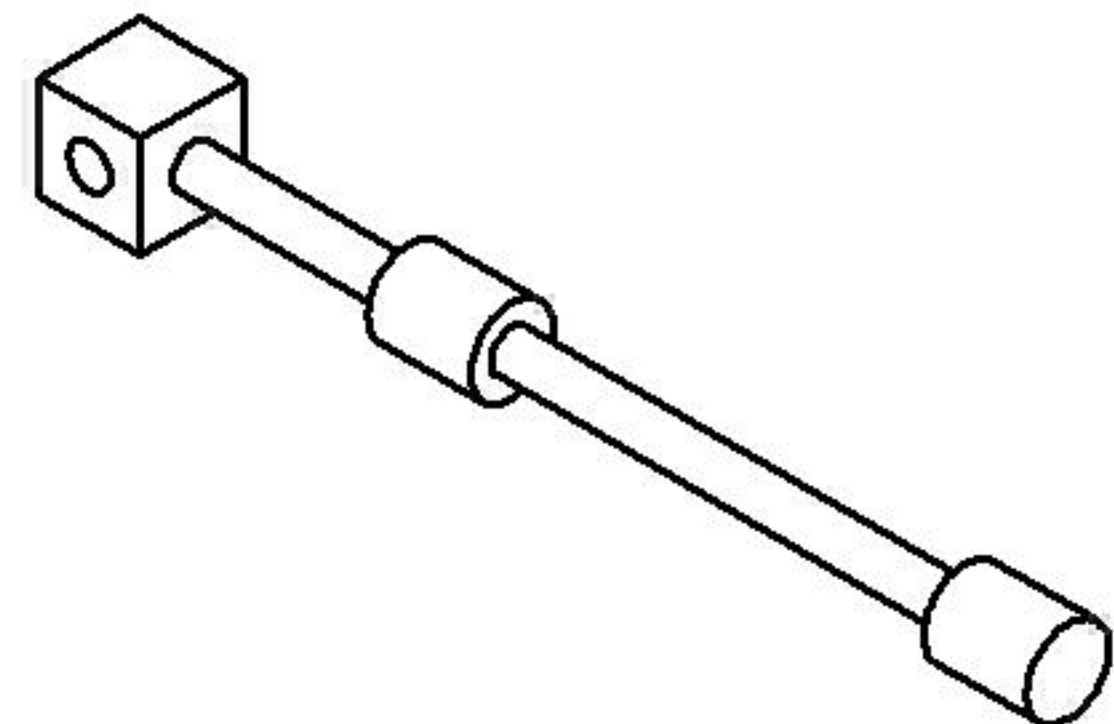
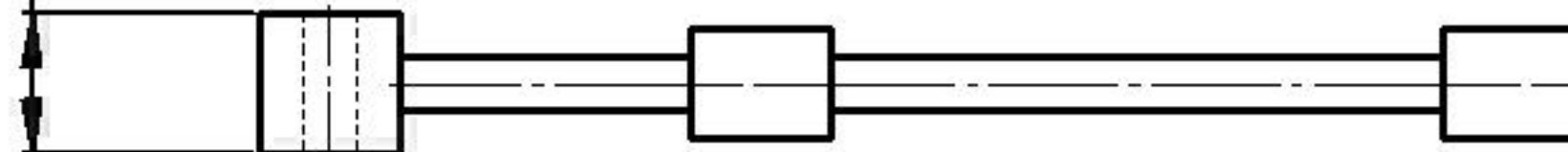
RUPNOW MACHINE AND AUTOMATION DESIGN
1095 CARSON ROAD
BARRIE, ONT.
L4M4B5
TEL: (705) 734-6271
FAX: (705) 734-6271
EMAIL: BRUPNOW@ROGERS.COM

UNLESS OTHERWISE SPECIFIED			
UNITS:	INCHES	TOLERANCES	
ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0. $\pm .05$
REMOVE ALL SHARP EDGES		0.0 $\pm .03$	0.00 $\pm .01$
THIRD ANGLE PROJECTION		0.0000 $\pm .005$ UNLESS MARKED	THEN $\pm .0005$
		ANGULAR TOLERANCES $\pm 0^{\circ}15'$	

MATERIAL:		DESIGNED BY:	
HARDNESS:		DRAWN BY:	BRIAN RUPNOW
COATING:			
CUSTOMER:			

PART DESCRIPTION							
PART NUMBER							
ARM FOR BEAM LINKAGE							
SIZE	SCALE	WASS	JOB NO.	QTY	LAST REV	DATE PRINTED	SHEET 1 OF 1
B	2:1			1	0	7/25/2008	

.313 RECTANGULAR



ϕ .250 TURN FOR VERY PRECISE FIT INTO
VALVE PORT IN CYLINDER
(LAP WITH TOOTHPASTE IF NECESSARY)



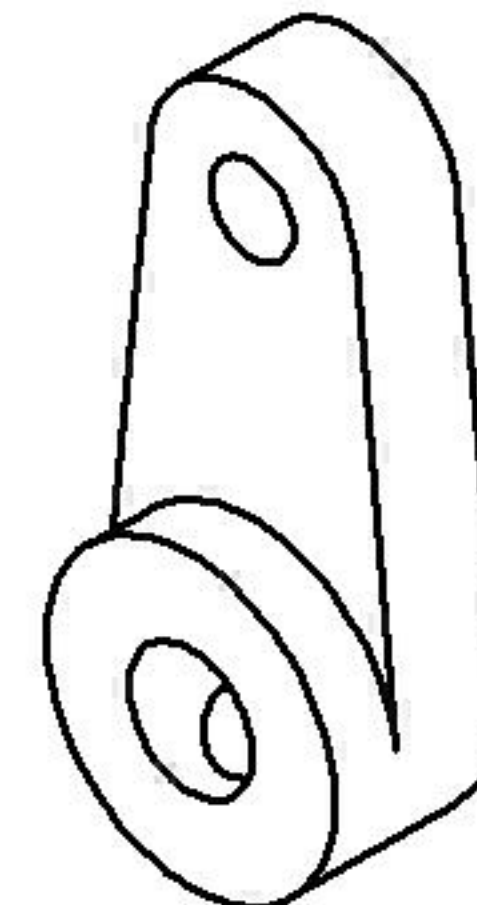
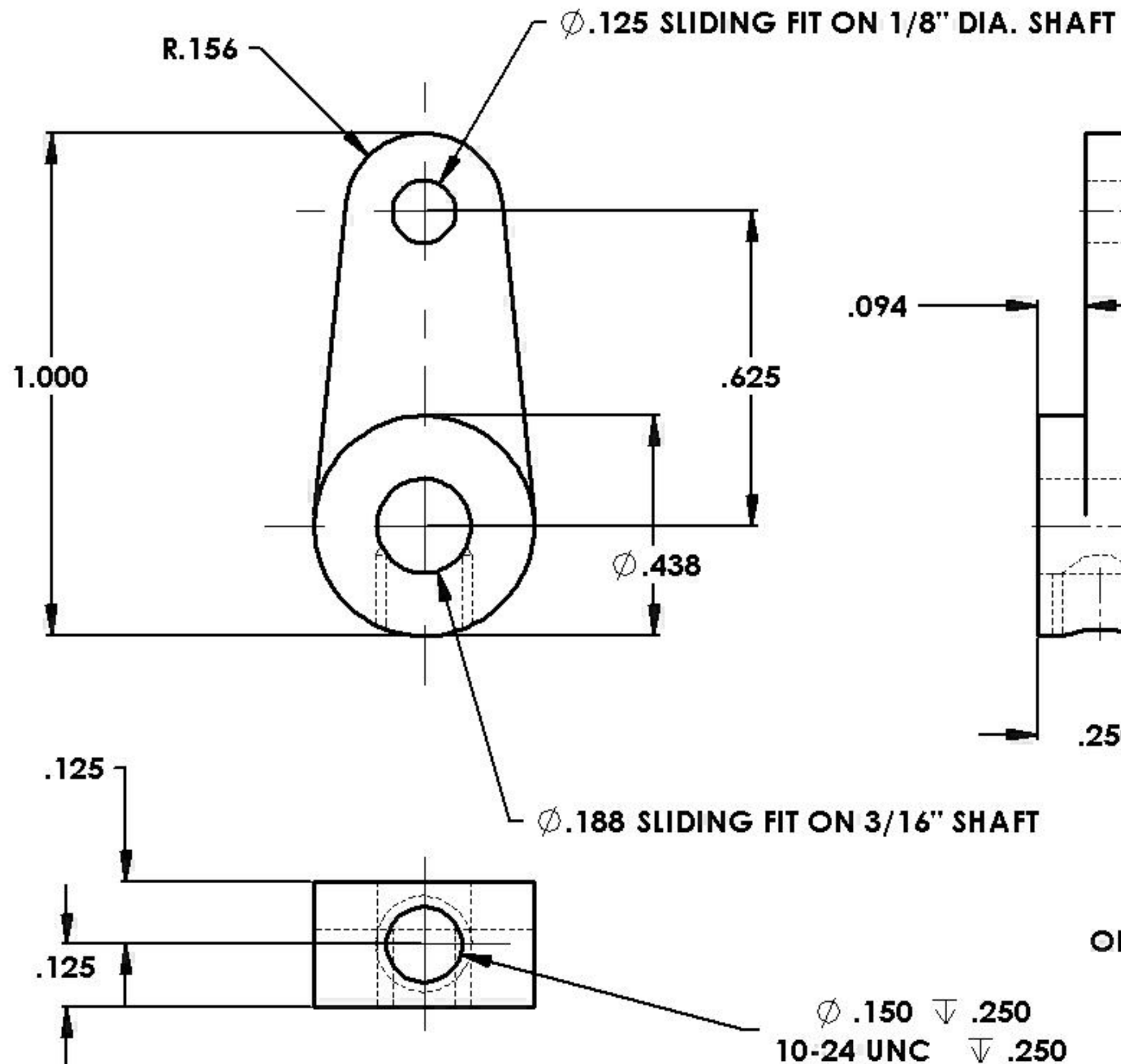
BRASS---ONE REQUIRED

RUPNOW MACHINE AND AUTOMATION DESIGN
1095 CARSON ROAD
BARRIE, ONT.
L4M4B5
TEL: (705) 734-6271
FAX: (705) 734-6271
EMAIL: BRUPNOW@ROGERS.COM

UNLESS OTHERWISE SPECIFIED			
UNITS:	INCHES	TOLERANCES	
ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0. $\pm .05$
REMOVE ALL SHARP EDGES		0.0 $\pm .03$	0.00 $\pm .01$
THIRD ANGLE PROJECTION		0.0000 $\pm .005$ UNLESS MARKED THEN $\pm .0005$	
		ANGULAR TOLERANCES $\pm 0^{\circ}15'$	

MATERIAL:		DESIGNED BY:	
HARDNESS:		DRAWN BY:	BRIAN RUPNOW
COATING:			
CUSTOMER:			

PART DESCRIPTION							
VALVE							
SIZE	SCALE	WASS	JOB NO.	QTY	LAST REV	DATE PRINTED	SHEET 1 OF 1
B	2:1			1	0	7/25/2008	



ONE REQUIRED---BRASS

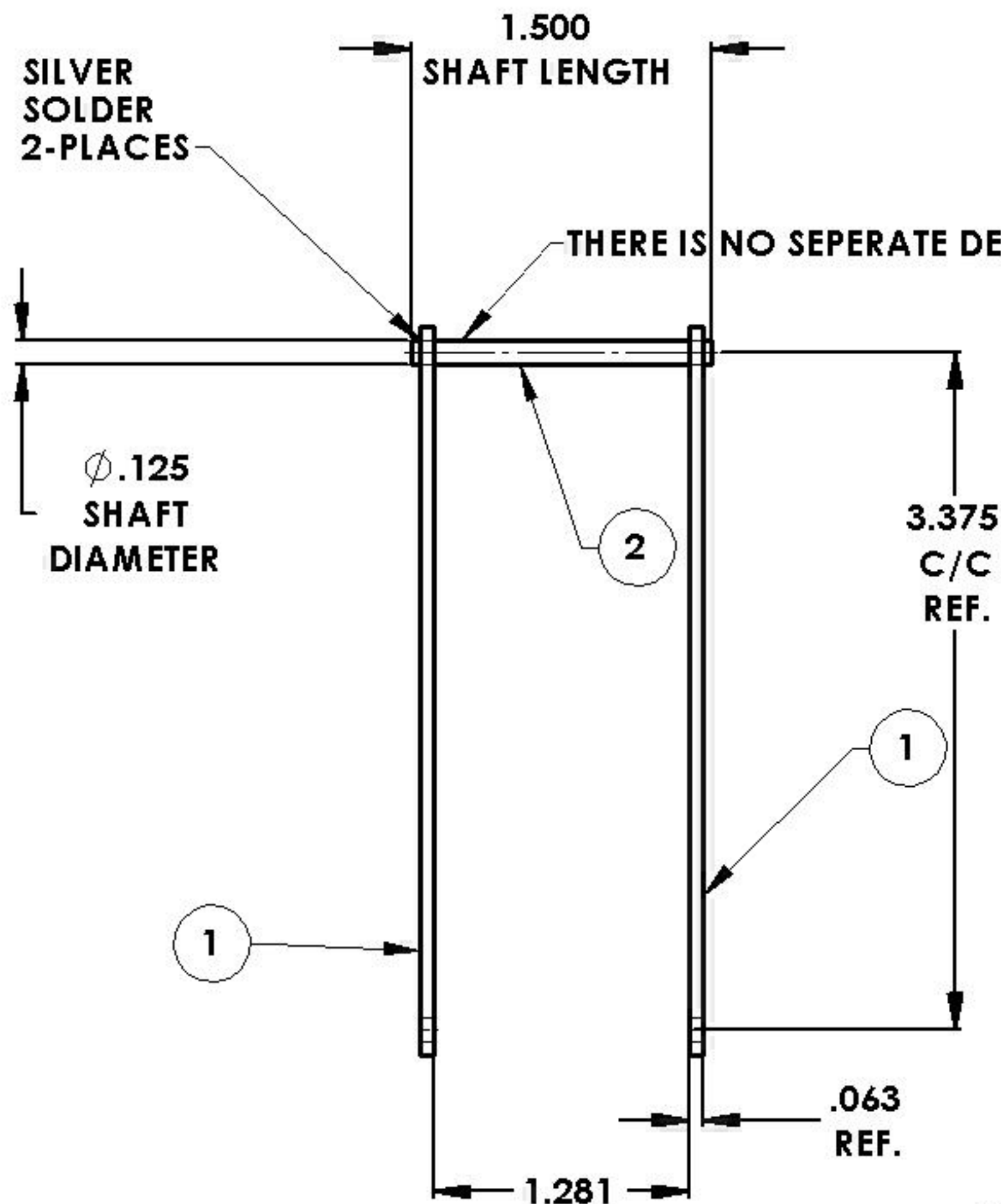
RUPNOW MACHINE AND AUTOMATION DESIGN
1095 CARSON ROAD
BARRIE, ONT.
L4M4B5
TEL: (705) 734-6271
FAX: (705) 734-6271
EMAIL: BRUPNOW@ROGERS.COM

UNLESS OTHERWISE SPECIFIED			
UNITS:	INCHES	TOLERANCES	
ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0. $\pm .05$
REMOVE ALL SHARP EDGES		0.0 $\pm .03$	0.00 $\pm .01$
THIRD ANGLE PROJECTION		0.0000 $\pm .005$ UNLESS MARKED	THEN $\pm .0005$
		ANGULAR TOLERANCES $\pm 0^{\circ}15'$	

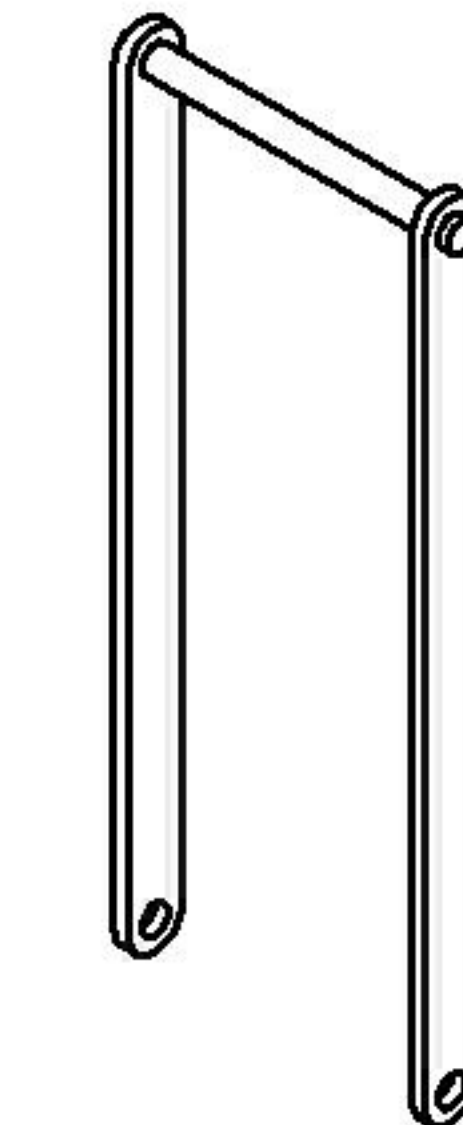
MATERIAL:		DESIGNED BY:	
HARDNESS:		DRAWN BY:	BRIAN RUPNOW
COATING:			
CUSTOMER:			

PART DESCRIPTION							
PART NUMBER							
LOWER VALVE LEVER							
SIZE	SCALE	WASS	JOB NO.	QTY	LAST REV	DATE PRINTED	SHEET 1 OF 1
B	4:1			1	0	7/25/2008	

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	ARM FOR VALVE LINKAGE		2
2	VALVE LINKAGE CROSS PIN		1

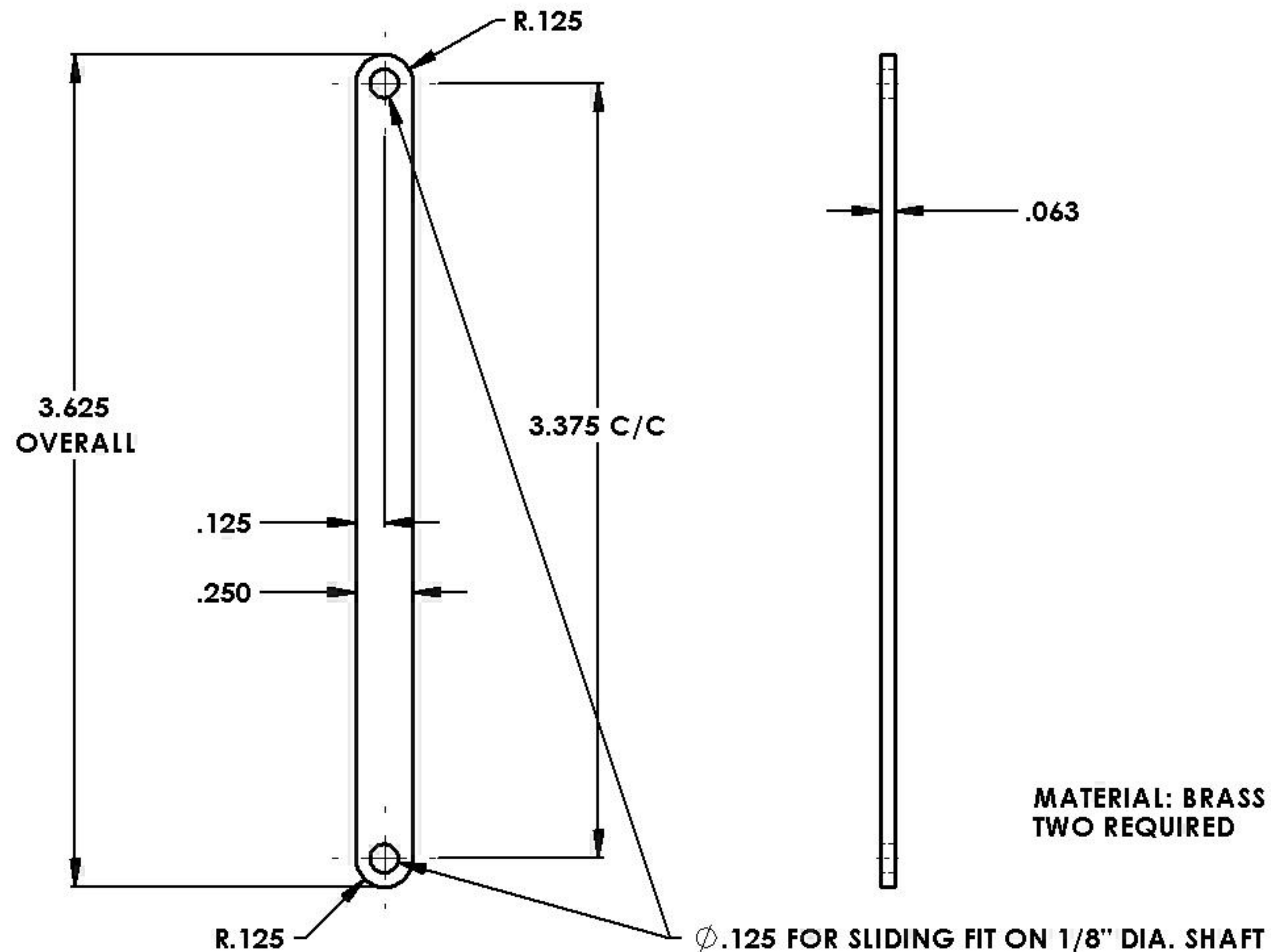


ONE OF THESE ASSEMBLIES REQUIRED



ISOMETRIC

RUPNOW MACHINE AND AUTOMATION DESIGN 1095 CARSON ROAD BARRIE, ONT. L4M4B5 TEL: (705) 734-6271 FAX: (705) 734-6271 EMAIL BRUPNOW@ROGERS.COM	UNLESS OTHERWISE SPECIFIED				MATERIAL:		DESIGNED BY:		PART DESCRIPTION			
	UNITS:	INCHES	TOLERANCES		HARDNESS:		DRAWN BY:	BRIAN RUPNOW				
	ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0. $\pm .05$	COATING:				PART NUMBER			
	REMOVE ALL SHARP EDGES		0.0 $\pm .03$	0.00 $\pm .01$	CUSTOMER:			SOLDERED ASSEMBLY OF VALVE ARMS				
	THIRD ANGLE PROJECTION		0.0000 $\pm .005$ UNLESS MARKED THEN $\pm .0005$									
			ANGULAR TOLERANCES $\pm 0^\circ 15'$									
		SIZE B	SCALE 1:1	WASS	JOB NO.	QTY 1	LAST REV 0	DATE PRINTED 7/25/2008	SHEET 1 OF 1			



RUPNOW MACHINE AND AUTOMATION DESIGN
1095 CARSON ROAD
BARRIE, ONT.
L4M4B5

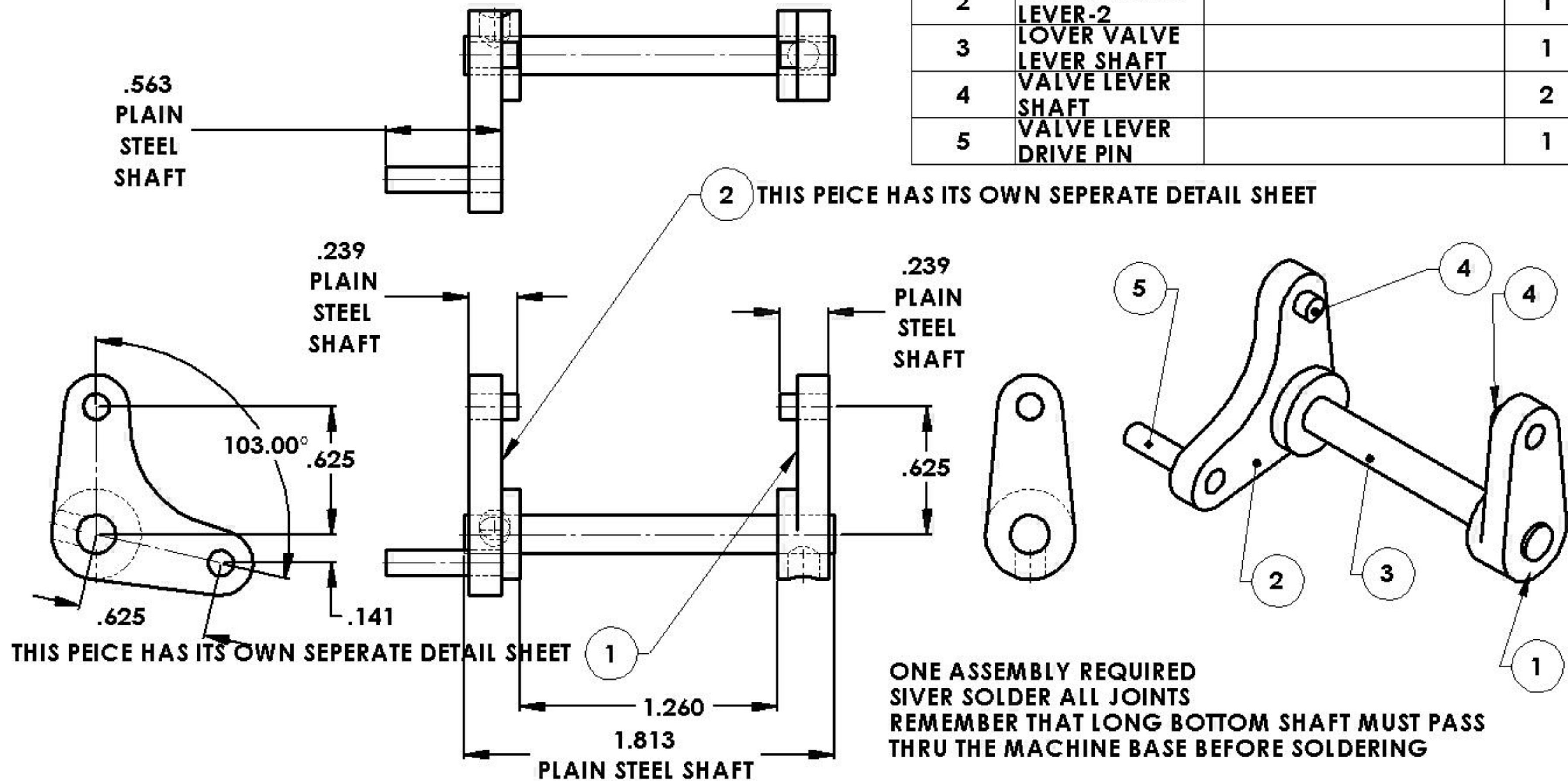
TEL: (705) 734-6271
FAX: (705) 734-6271
EMAIL: BRUPNOW@ROGERS.COM

UNLESS OTHERWISE SPECIFIED			
UNITS:	INCHES	TOLERANCES	
ROUGHNESS, Ra:	63 MICRONS	FRACTIONS ± 1/32	0. ± .05
REMOVE ALL SHARP EDGES		0.0 ± .03	0.00 ± .01
THIRD ANGLE PROJECTION		0.0000 ± .005 UNLESS MARKED	THEN ± .0005
		ANGULAR TOLERANCES ± 0°15'	

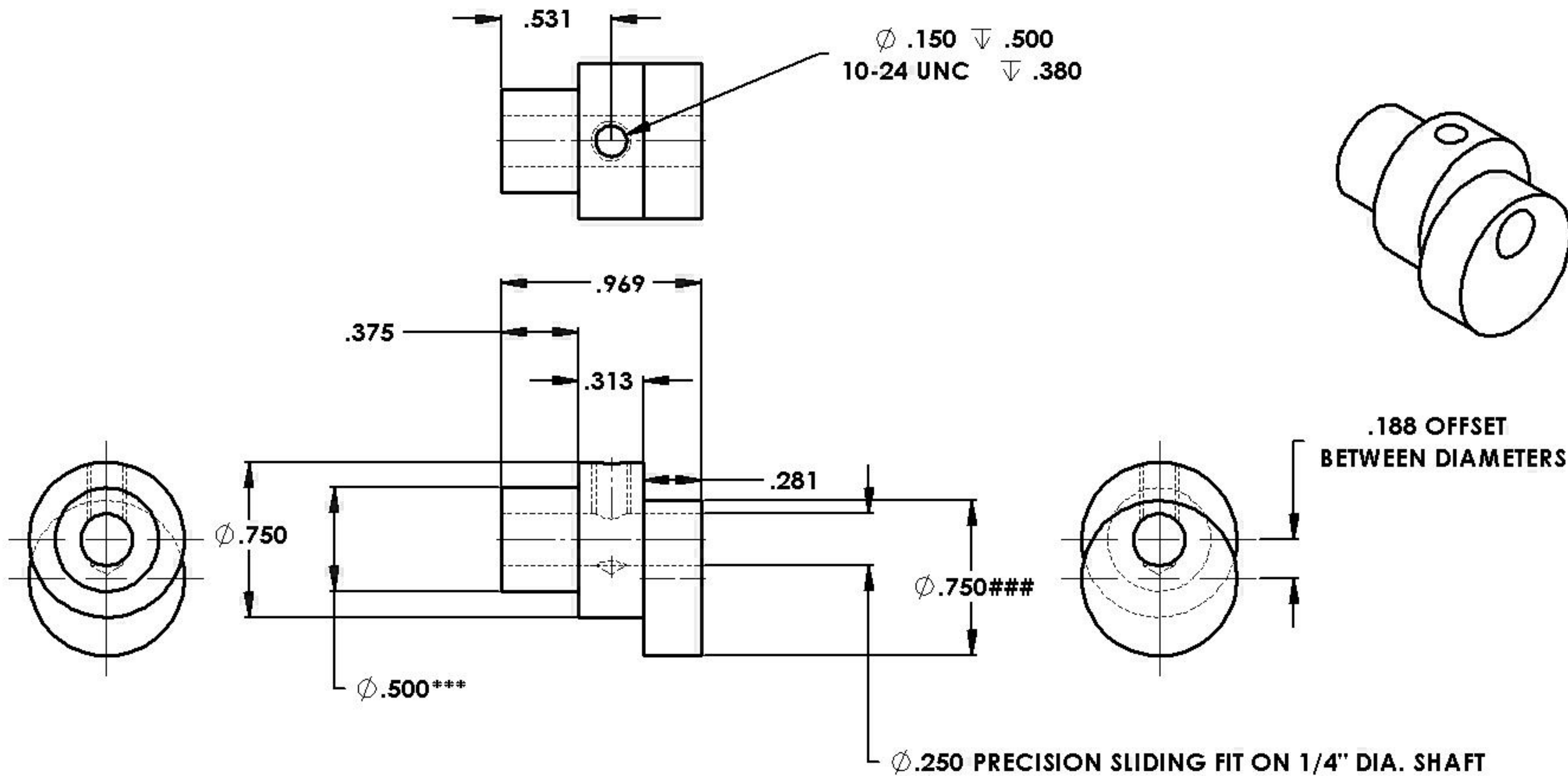
MATERIAL:		DESIGNED BY:	
HARDNESS:		DRAWN BY:	BRIAN RUPNOW
COATING:			
CUSTOMER:			

PART DESCRIPTION							
PART NUMBER							
ARM FOR VALVE LINKAGE							
SIZE	SCALE	WASS	JOB NO.	QTY	LAST REV	DATE PRINTED	SHEET 1 OF 1
B	1:1			1	0	7/25/2008	

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	LOWER VALVE LEVER		1
2	LOWER VALVE LEVER-2		1
3	LOVER VALVE LEVER SHAFT		1
4	VALVE LEVER SHAFT		2
5	VALVE LEVER DRIVE PIN		1

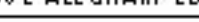


RUPNOW MACHINE AND AUTOMATION DESIGN 1095 CARSON ROAD BARRIE, ONT. L4M4B5 TEL: (705) 734-6271 FAX: (705) 734-6271 EMAIL BRUPNOW@ROGERS.COM	UNLESS OTHERWISE SPECIFIED				MATERIAL:		DESIGNED BY:		PART DESCRIPTION			
	UNITS:	INCHES	TOLERANCES		HARDNESS:		DRAWN BY:	BRIAN RUPNOW				
	ROUGHNESS, Ra:	63 MICRONS	FRACTIONS ± 1/32	0. ±.05	COATING:				PART NUMBER			
	REMOVE ALL SHARP EDGES		0.0 ±.03	0.00 ±.01	CUSTOMER:			ASSY OF LOWER VALVE LEVERS AND SHAFT				
	THIRD ANGLE PROJECTION		0.0000 ±.005 UNLESS MARKED THEN ±.0005									
			ANGULAR TOLERANCES ±0°15'									
								SIZE B				
							SCALE 2:1					
							WASS					
							JOB NO.					
							QTY 1					
							LAST REV 0					
							DATE PRINTED 7/25/2008					
							SHEET 1 OF 1					

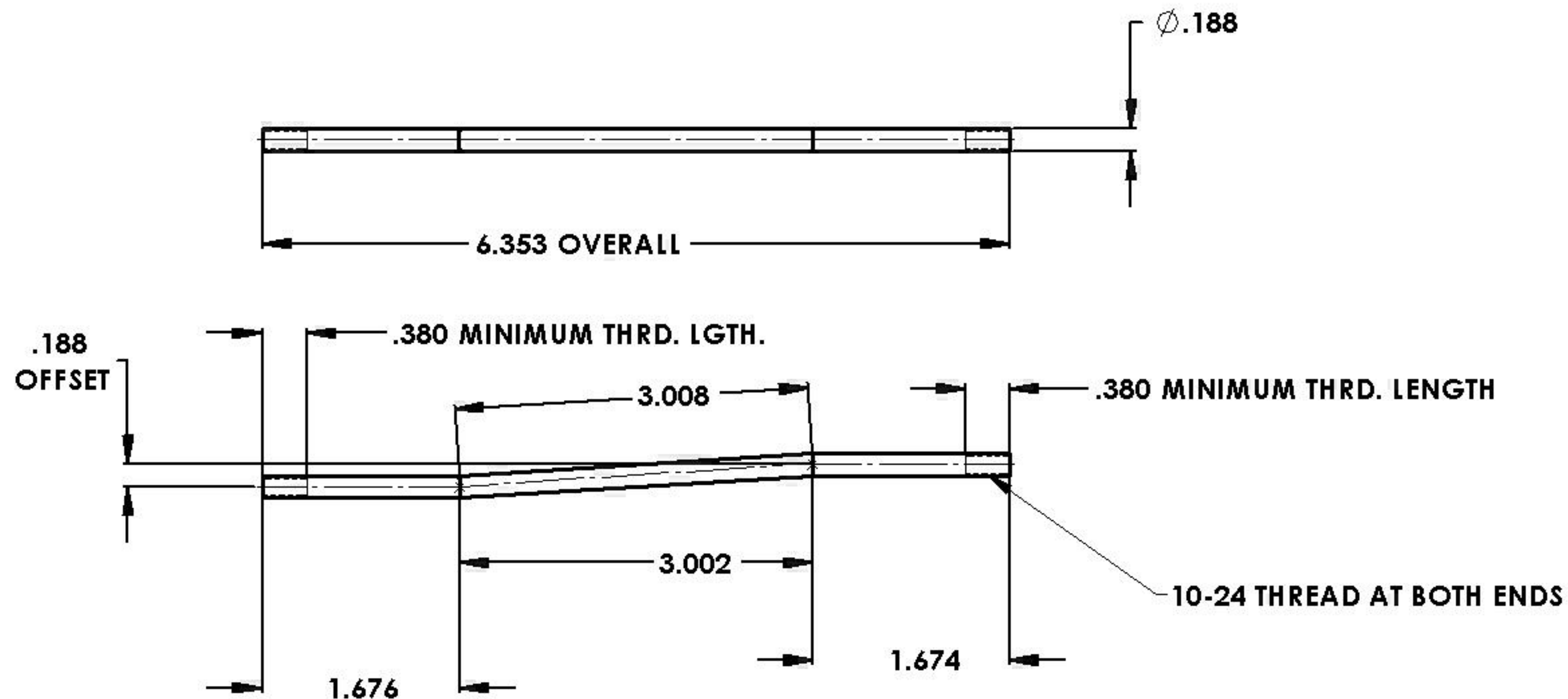


*** PRECISION FIT INTO BORE IN FLYWHEEL
 ### PRECISION FIT INTO END OF ECCENTRIC STRAP

ONE REQUIRED---MAKE FOM STEEL

RUPNOW MACHINE AND AUTOMATION DESIGN 1095 CARSON ROAD BARRIE, ONT. L4M4B5 TEL: (705) 734-6271 FAX: (705) 734-6271 EMAIL BRUPNOW@ROGERS.COM	UNLESS OTHERWISE SPECIFIED				MATERIAL:		DESIGNED BY:		PART DESCRIPTION			
	UNITS:	INCHES	TOLERANCES		HARDNESS:		DRAWN BY:	BRIAN RUPNOW				
	ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0. $\pm .05$	COATING:				PART NUMBER ECCENTRIC HUB			
	REMOVE ALL SHARP EDGES		0.0 $\pm .03$	0.00 $\pm .01$	CUSTOMER:							
	THIRD ANGLE PROJECTION 		0.0000 $\pm .005$ UNLESS MARKED THEN $\pm .0005$ 									
	ANGULAR TOLERANCES $\pm 0^{\circ} 15'$											

SIZE B	SCALE 2:1	WASS	JOB NO.	QTY 1	LAST REV 0	DATE PRINTED 7/25/2008	SHEET 1 OF 1
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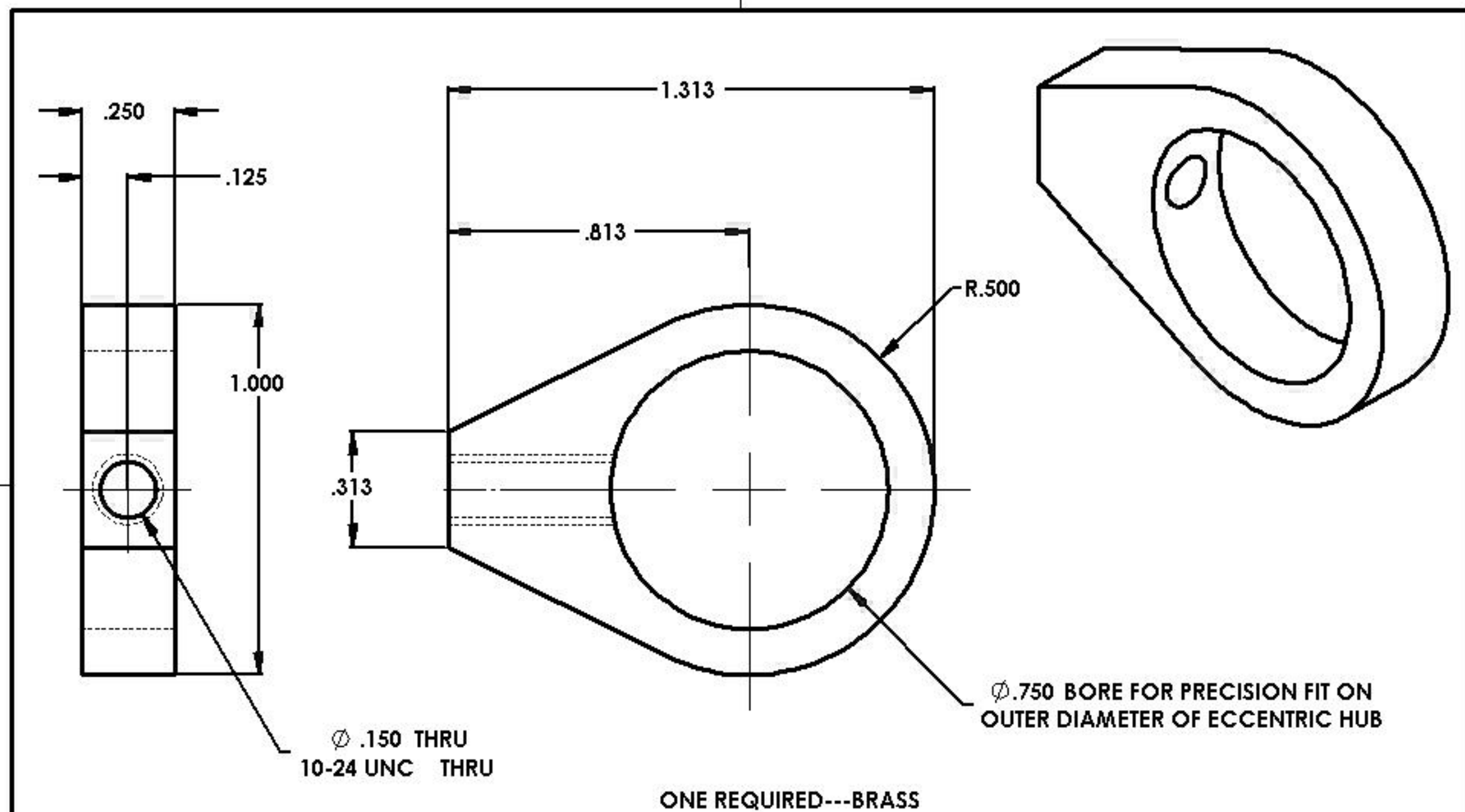
ONE REQUIRED 3/16" DIA. MILD STEEL ROD

RUPNOW MACHINE AND AUTOMATION DESIGN
1095 CARSON ROAD
BARRIE, ONT.
L4M4S5
TEL: (705) 734-6271
FAX: (705) 734-6271
EMAIL: BRUPNOW@ROGERS.COM

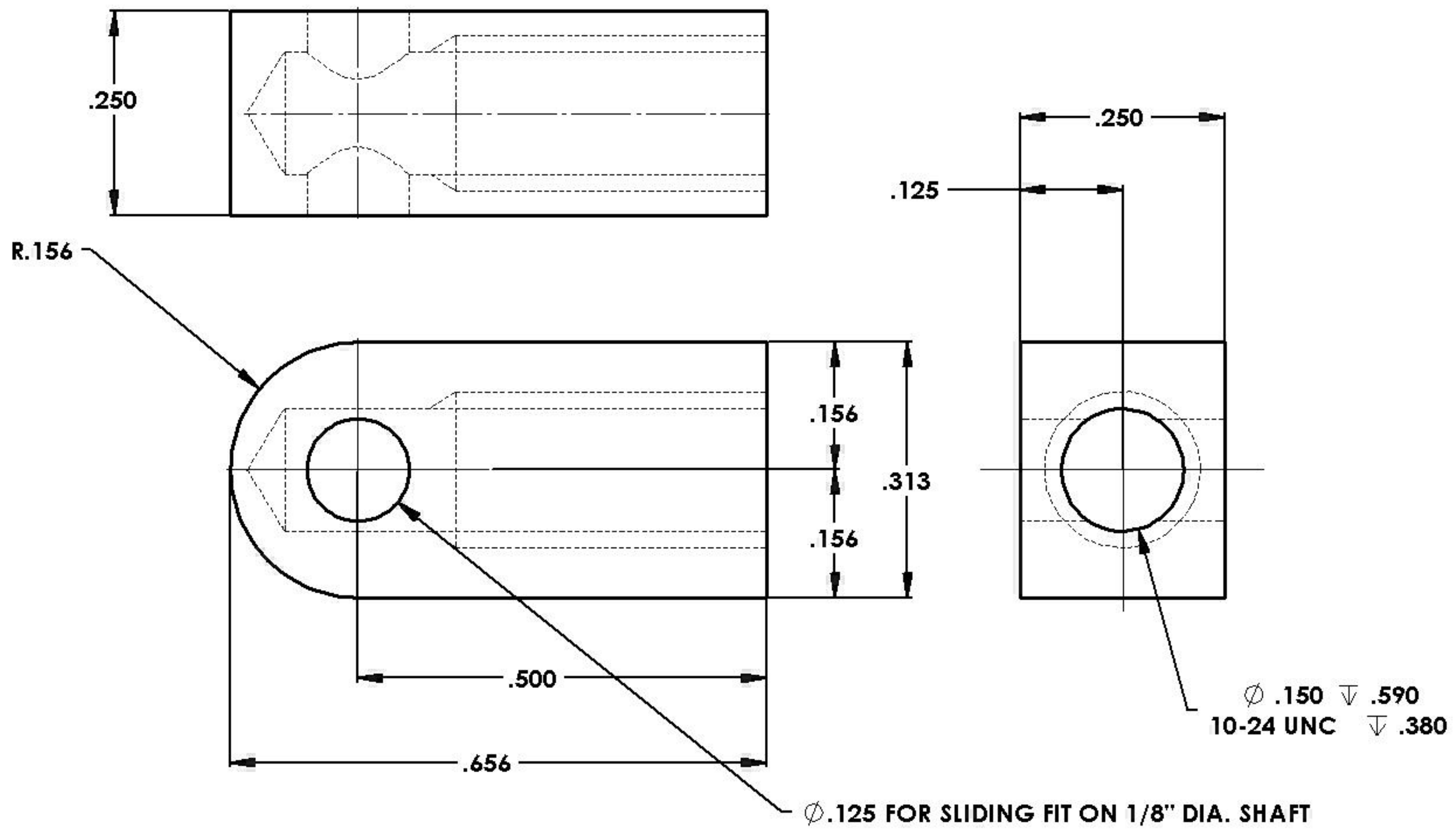
UNLESS OTHERWISE SPECIFIED			
UNITS:	INCHES	TOLERANCES	
ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0. $\pm .05$
REMOVE ALL SHARP EDGES		0.0 $\pm .03$	0.00 $\pm .01$
THIRD ANGLE PROJECTION		0.0000 $\pm .005$ UNLESS MARKED	
		THEN $\pm .0005$	
		ANGULAR TOLERANCES	$\pm 0^\circ 15'$

MATERIAL:		DESIGNED BY:	
HARDNESS:		DRAWN BY:	BRIAN RUPNOW
COATING:			
CUSTOMER:			

PART DESCRIPTION							
PART NUMBER							
ECCENTRIC ROD							
SIZE	SCALE	WASS	JOB NO.	QTY	LAST REV	DATE PRINTED	SHEET 1 OF 1
B	1:1			1	0	7/25/2008	

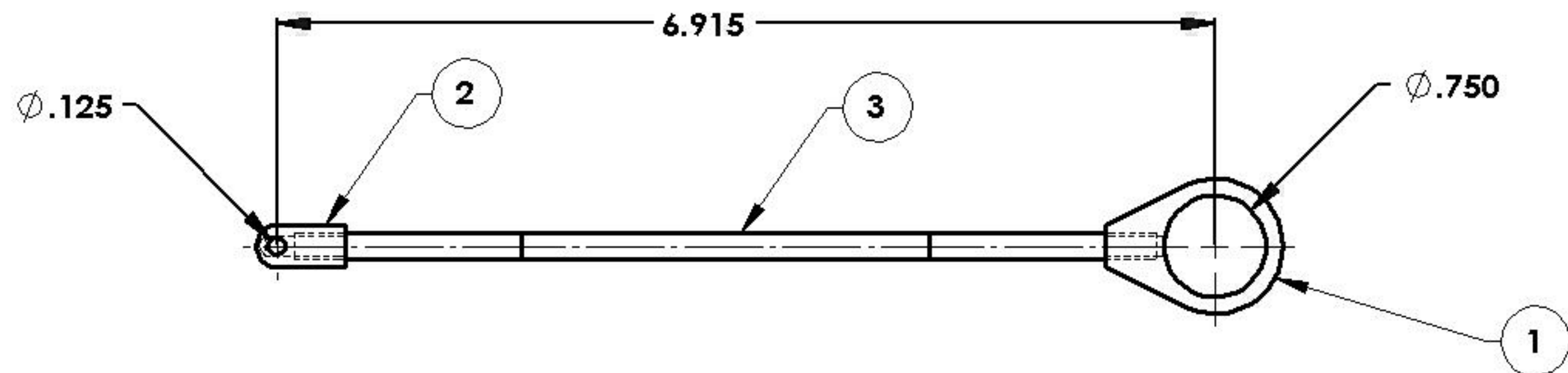
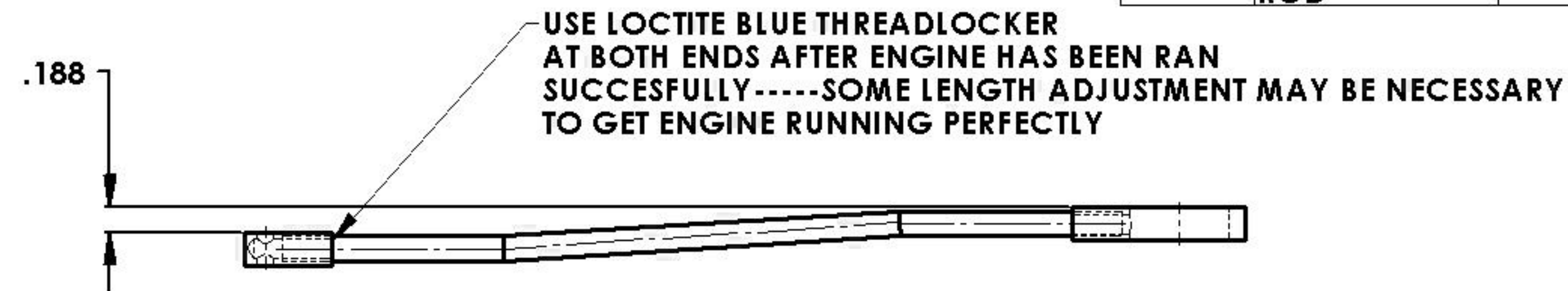


RUPNOW MACHINE AND AUTOMATION DESIGN 1095 CARBON ROAD BARRIE, ONT. L4M 4B5 TEL: (705) 734-6271 FAX: (705) 734-6271 EMAIL: BRUPNOW@ROGERS.COM		UNLESS OTHERWISE SPECIFIED		PARTIAL		DESCRIPTION		PART DESCRIPTION	
		UNITS: INCH	TOLERANCES		FABRIC:	DRAWN:	BRIAN RUPNOW	PART NUMBER	
ROUGHNESS: Ra: 42 MICROINCH		FRACTIONS: 1/32	0.0005	±.003	COATING:			LARGE END OF ECCENTRIC ROD	
REMOVE ALL SHARP EDGES		0.0005	±.003	0.0005	0.001			REV	DATE
THIRD ANGLE PROJECTION		0.0005	±.003	0.0005	0.001			8	4:1
ANGULAR TOLERANCES: 10°/15°								1	0
								7/25/2008	SHEET 1 OF 1



RUPNOW MACHINE AND AUTOMATION DESIGN 1095 CARSON ROAD BARRIE, ONT. L4M4B5 TEL: (705) 734-6271 FAX: (705) 734-6271 EMAIL BRUPNOW@ROGERS.COM	UNLESS OTHERWISE SPECIFIED				MATERIAL:		DESIGNED BY:		PART DESCRIPTION			
	UNITS:	INCHES	TOLERANCES		HARDNESS:		DRAWN BY:	BRIAN RUPNOW	PART NUMBER SMALL END OF ECCENTRIC ROD			
	ROUGHNESS, Ra:	63 MICRONS	FRACTIONS ± 1/32	0. ± .05	COATING:							
	REMOVE ALL SHARP EDGES		0.0 ± .03	0.00 ± .01	CUSTOMER:							
	THIRD ANGLE PROJECTION		0.0000 ± .005 UNLESS MARKED THEN ± .0005									
			ANGULAR TOLERANCES ± 0°15'									
							SIZE B					
							SCALE 8:1					
							WASS					
							JOB NO.					
							QTY 1					
							LAST REV 0					
							DATE PRINTED 7/25/2008					
							SHEET 1 OF 1					

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	LARGE END OF ECCENTRIC ROD		1
2	SMALL END OF ECCENTRIC ROD		1
3	ECCENTRIC ROD		1



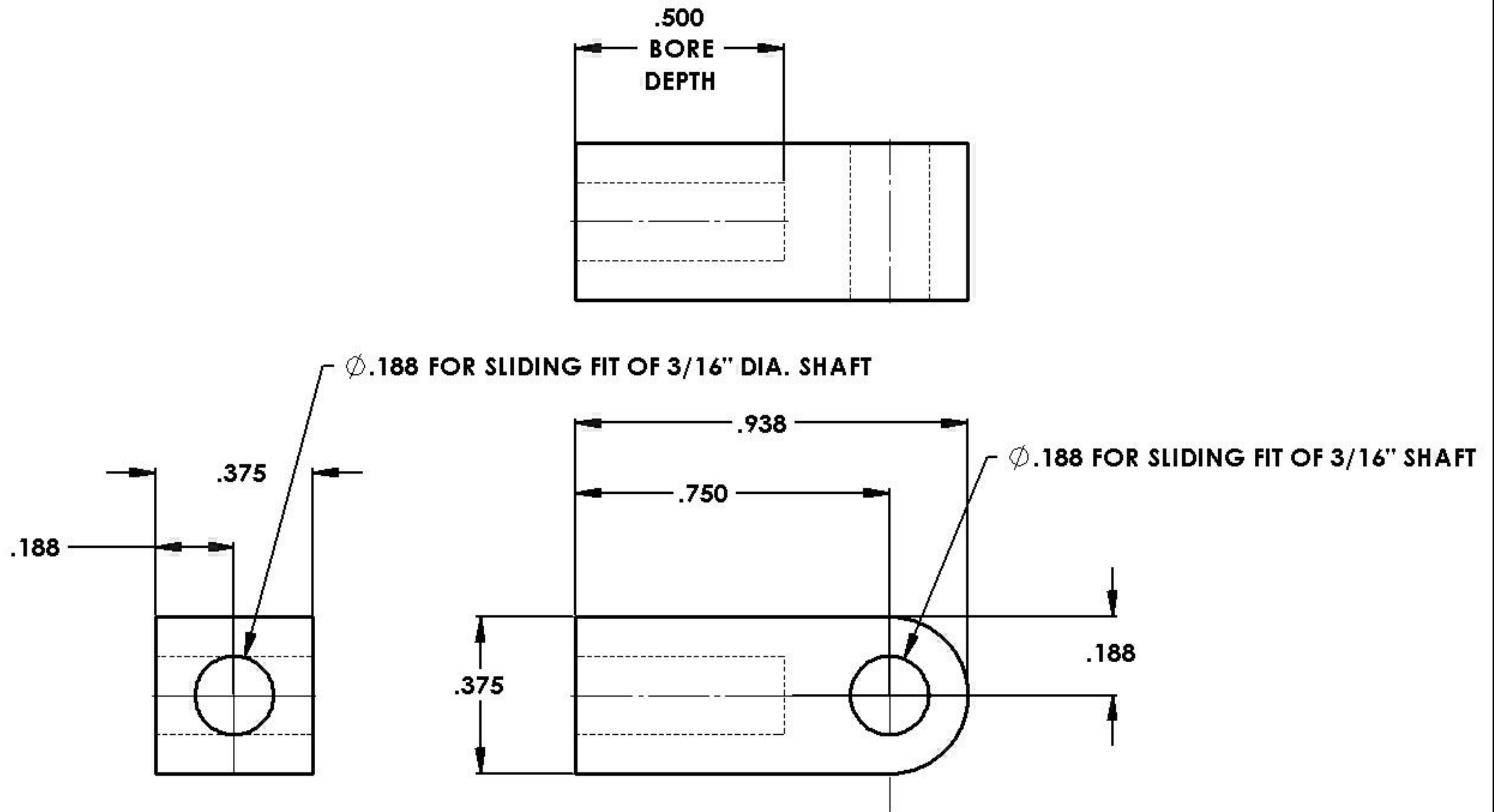
ONE ASSEMBLY REQUIRED

RUPNOW MACHINE AND AUTOMATION DESIGN
1095 CARSON ROAD
BARRIE, ONT.
L4M4B5
TEL: (705) 734-6271
FAX: (705) 734-6271
EMAIL BRUPNOW@ROGERS.COM

UNLESS OTHERWISE SPECIFIED			
UNITS:	INCHES	TOLERANCES	
ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0. $\pm .05$
REMOVE ALL SHARP EDGES		0.0 $\pm .03$	0.00 $\pm .01$
THIRD ANGLE PROJECTION		0.0000 $\pm .005$ UNLESS MARKED	THEN $\pm .0005$
		ANGULAR TOLERANCES $\pm 0.15^\circ$	

MATERIAL:	DESIGNED BY:
HARDNESS:	DRAWN BY: BRIAN RUPNOW
COATING:	
CUSTOMER:	

PART DESCRIPTION							
PART NUMBER							
ASSEMBLY OF ECCENTRIC ROD							
SIZE B	SCALE 1:1	WASS	JOB NO.	QTY 1	LAST REV 0	DATE PRINTED 7/25/2008	SHEET 1 OF 1

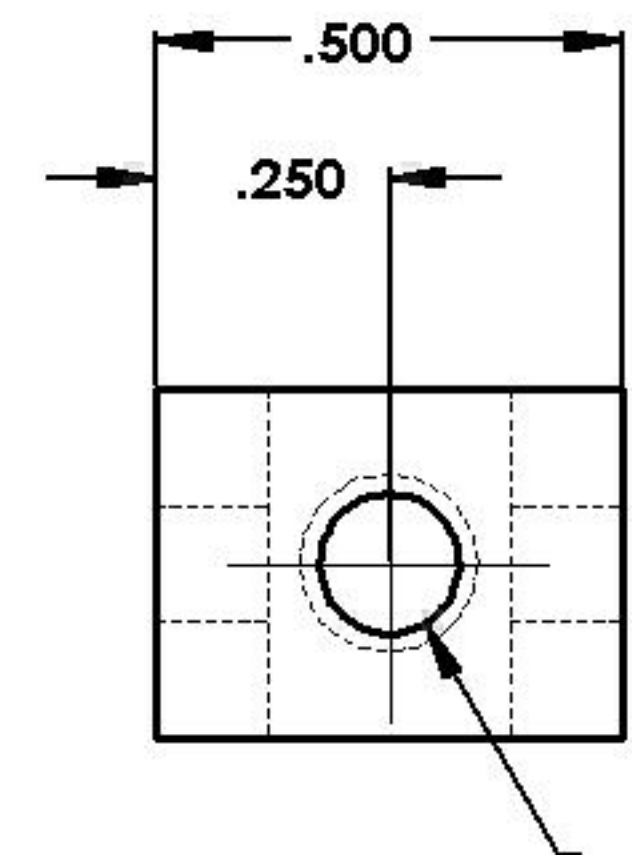
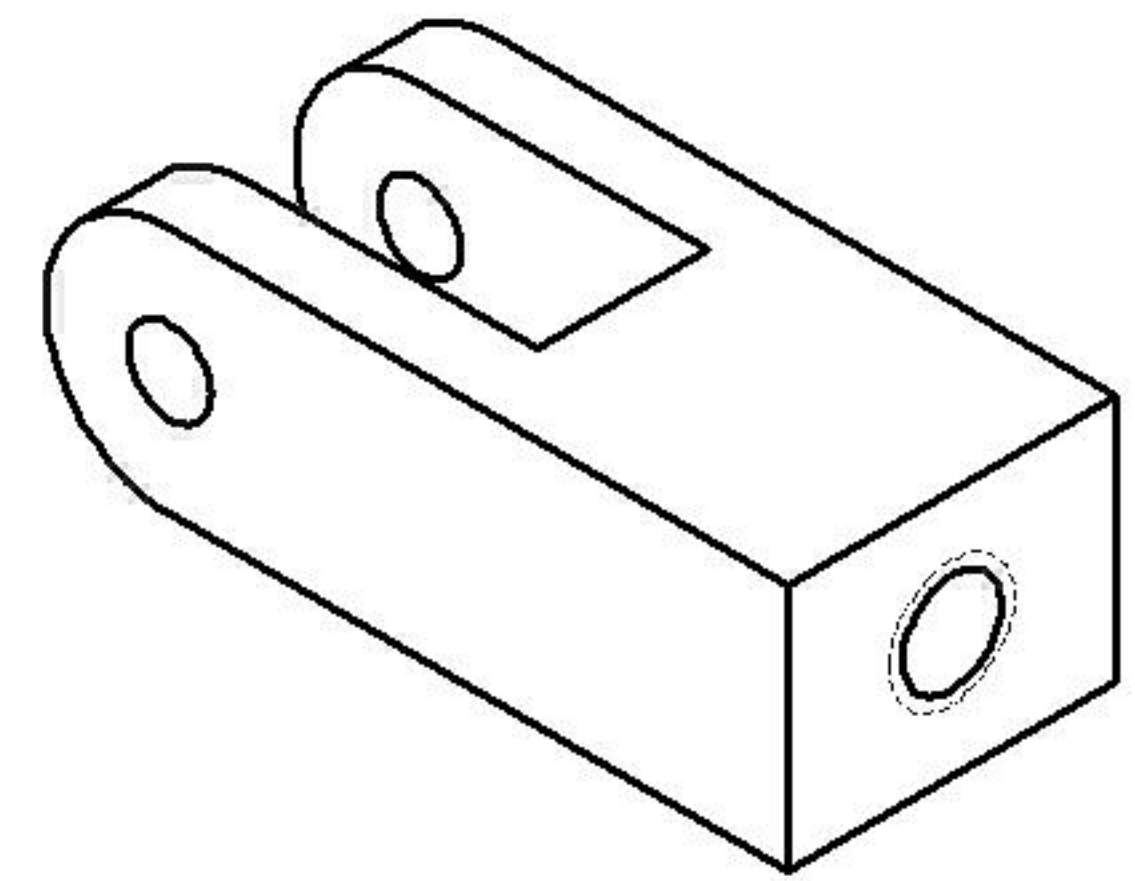
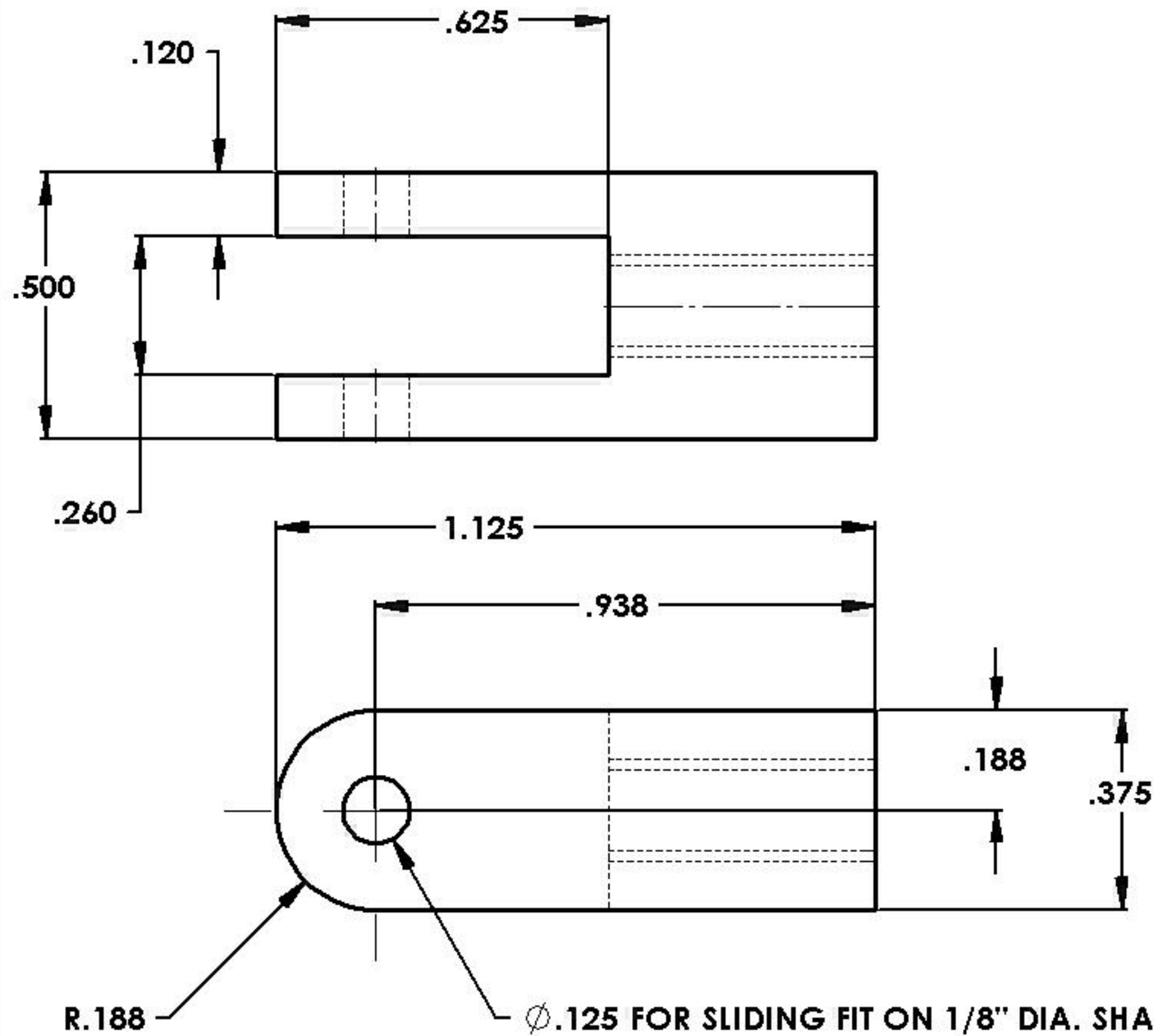


RUPNOW MACHINE AND AUTOMATION DESIGN
1095 CARSON ROAD
BARRIE, ONT.
L4M4B5
TEL: (705) 734-6271
FAX: (705) 734-6271
EMAIL: BRUPNOW@ROGERS.COM

UNLESS OTHERWISE SPECIFIED			
UNITS:	INCHES	TOLERANCES	
ROUGHNESS, Ra:	63 MICRONS	FRACTIONS ± 1/32	0. ± .05
REMOVE ALL SHARP EDGES		0.0 ± .03	0.00 ± .01
THIRD ANGLE PROJECTION		0.0000 ± .005 UNLESS MARKED	THEN ± .0005
		ANGULAR TOLERANCES ± 0° 15'	

MATERIAL:		DESIGNED BY:	
HARDNESS:		DRAWN BY:	BRIAN RUPNOW
COATING:			
CUSTOMER:			

PART DESCRIPTION							
CONNECTING ROD END							
SIZE	SCALE	WASS	JOB NO.	QTY	LAST REV	DATE PRINTED	SHEET 1 OF 1
B	4:1			1	0	7/25/2008	

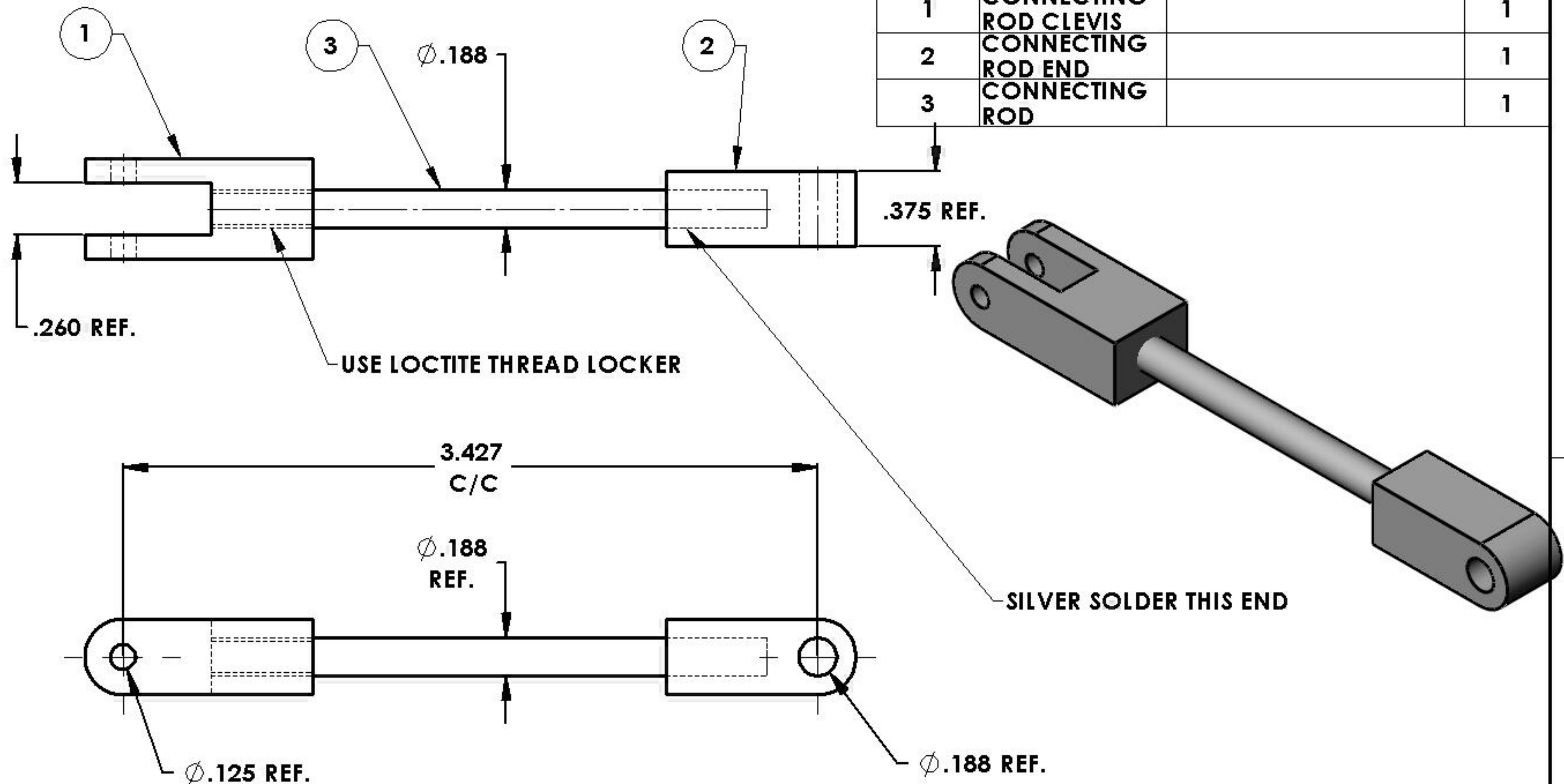


Ø .150 THRU ALL
10-24 UNC THRU ALL

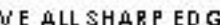
MATERIAL: BRASS ONE REQUIRED

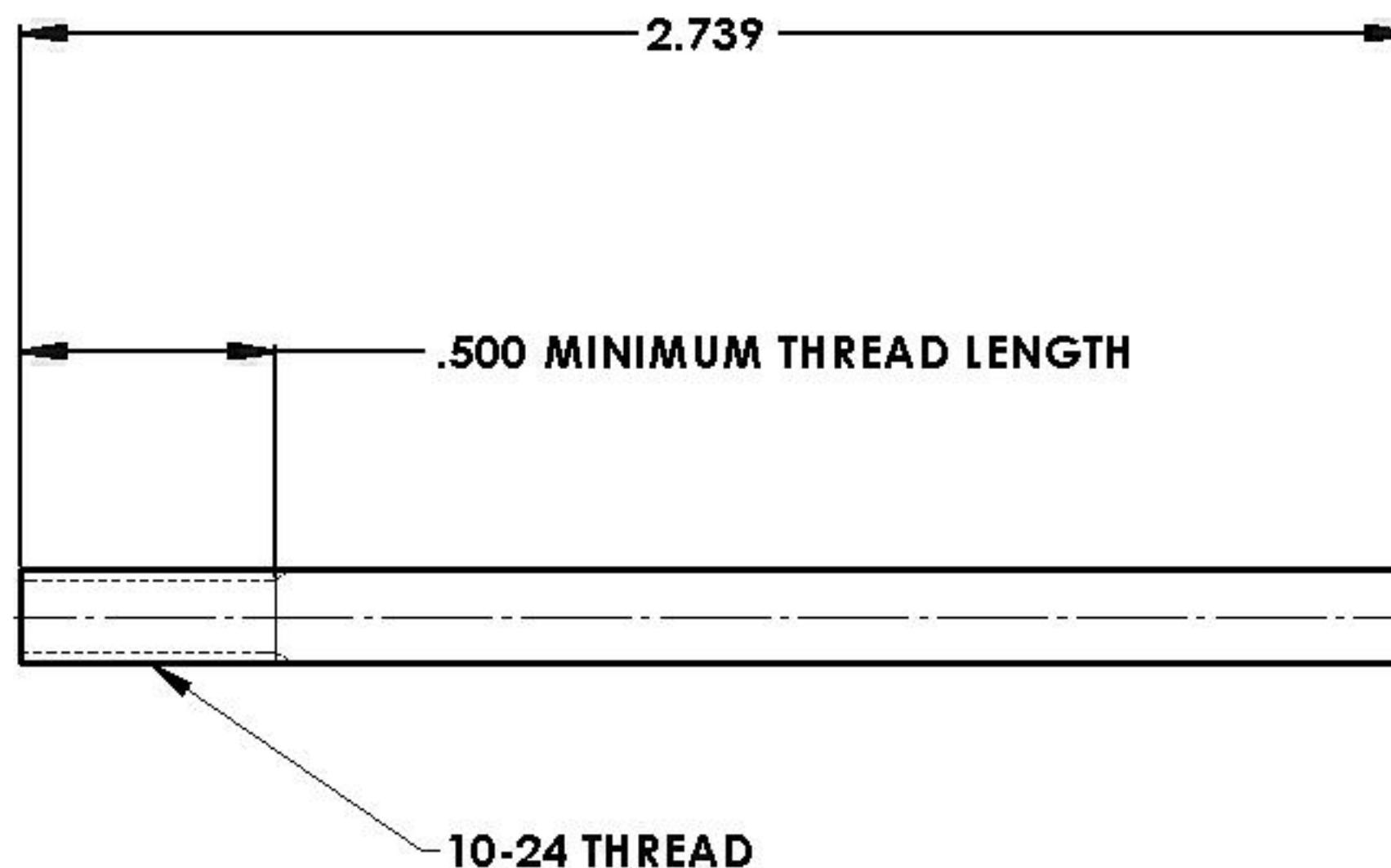
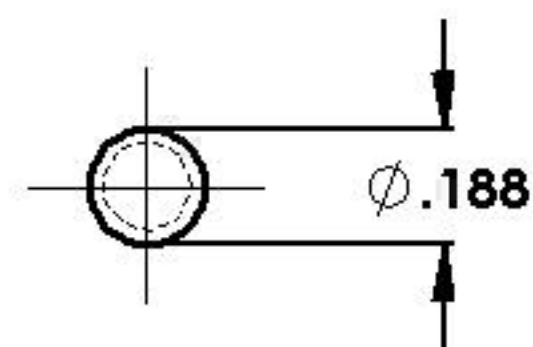
RUPNOW MACHINE AND AUTOMATION DESIGN 1095 CARSON ROAD BARRIE, ONT. L4M4B5 TEL: (705) 734-6271 FAX: (705) 734-6271 EMAIL BRUPNOW@ROGERS.COM	UNLESS OTHERWISE SPECIFIED				MATERIAL:		DESIGNED BY:		PART DESCRIPTION			
	UNITS:	INCHES	TOLERANCES		HARDNESS:		DRAWN BY:	BRIAN RUPNOW				
	ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0. $\pm .05$	COATING:							
	REMOVE ALL SHARP EDGES		0.0 $\pm .03$	0.00 $\pm .01$	CUSTOMER:			PART NUMBER				
	THIRD ANGLE PROJECTION		0.0000 $\pm .005$ UNLESS MARKED THEN $\pm .0005$	CONNECTING ROD CLEVIS								
			ANGULAR TOLERANCES $\pm 0^{\circ} 15'$									
SIZE	SCALE	WASS	JOB NO.	QTY	LAST REV	DATE PRINTED	SHEET 1 OF 1					
B	4:1			1	0	7/25/2008						

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	CONNECTING ROD CLEVIS		1
2	CONNECTING ROD END		1
3	CONNECTING ROD		1



ONE ASSEMBLY REQUIRED

RUPNOW MACHINE AND AUTOMATION DESIGN 1095 CARSON ROAD BARRIE, ONT. L4M4B5 TEL: (705) 734-6271 FAX: (705) 734-6271 EMAIL BRUPNOW@ROGERS.COM	UNLESS OTHERWISE SPECIFIED				MATERIAL:		DESIGNED BY:		PART DESCRIPTION						
	UNITS:	INCHES	TOLERANCES		HARDNESS:		DRAWN BY:	BRIAN RUPNOW							
	ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0.0000	COATING:										
	REMOVE ALL SHARP EDGES		0.0000	0.0000	CUSTOMER:				PART NUMBER SUB ASSEMBLY OF CONNECTING ROD						
	THIRD ANGLE PROJECTION		0.0000	0.0005 UNLESS MARKED											
			THEN 0.0005												
		ANGULAR TOLERANCES $\pm 0.15^\circ$						SIZE	SCALE	WASS	JOB NO.	QTY	LAST REV	DATE PRINTED	SHEET 1 OF 1
								B	2:1			1	0	7/25/2008	



MATERIAL: STEEL ONE REQUIRED

RUPNOW MACHINE AND AUTOMATION DESIGN
1095 CARSON ROAD
BARRIE, ONT.
L4M4B5
TEL: (705) 734-6271
FAX: (705) 734-6271
EMAIL BRUPNOW@ROGERS.COM

UNLESS OTHERWISE SPECIFIED			
UNITS:	INCHES	TOLERANCES	
ROUGHNESS, Ra:	63 MICRONS	FRACTIONS $\pm 1/32$	0. $\pm .05$
REMOVE ALL SHARP EDGES		0.0 $\pm .03$	0.00 $\pm .01$
THIRD ANGLE PROJECTION		0.0000 $\pm .005$ UNLESS MARKED THEN $\pm .0005$	
		ANGULAR TOLERANCES $\pm 0^{\circ}15'$	

MATERIAL:		DESIGNED BY:	
HARDNESS:		DRAWN BY:	BRIAN RUPNOW
COATING:			
CUSTOMER:			

PART DESCRIPTION							
PART NUMBER							
CONNECTING ROD							
SIZE B	SCALE 2:1	WASS	JOB NO.	QTY 1	LAST REV 0	DATE PRINTED 7/25/2008	SHEET 1 OF 1