FIRE EATER ENGINE
BY ANTHONY DAVIES
DALLAS HIGH SCHOOL
2004

1 1.1		
2 1.1		
1 1.1		
1 1.1		
1 1.3	2 1.3	5 1.1
1 1.3		1 3.1
2 1.2		
3 1.3	3 1.2	
1 2.1	3 1.1	
1 1.2		

MAIN ASSEMBLY

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7.5

3.375

0.562

No.29
DRILL

1.5

2.176

1.25

TAP 4-40 x 4

No.29
DRILL

4.75

0.625

1.125

2.375

5.5625

0.25

0.125

COUNTERSINK 0.17" DEEP
FOR 8-32 SOCKET SCREW
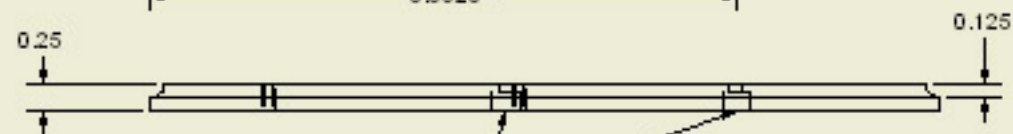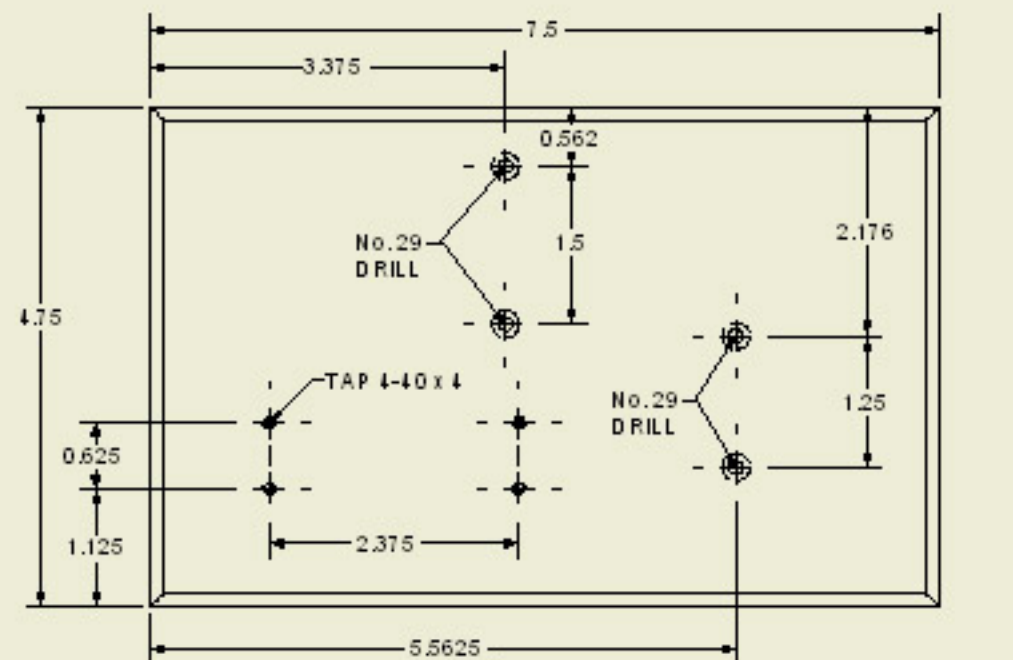
1	BASE PLATE	
1.2	QTY:1	MTL: ALUMINUM

0.1875

0.1875

0.4375

0.2188

3/16" HOLES

0.375

14°

1

2	TANK CLAMP	
1.2	QTY:1	MTL: ALUMINUM

0.1875

0.1875

0.4375

0.1875

0.375

0.375

14°

1

No.31 DRILL

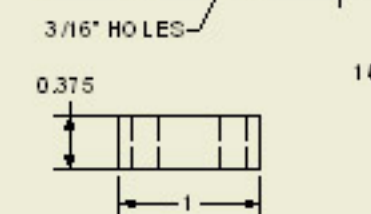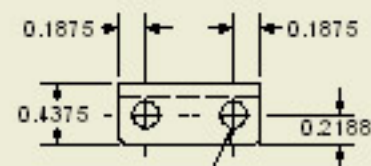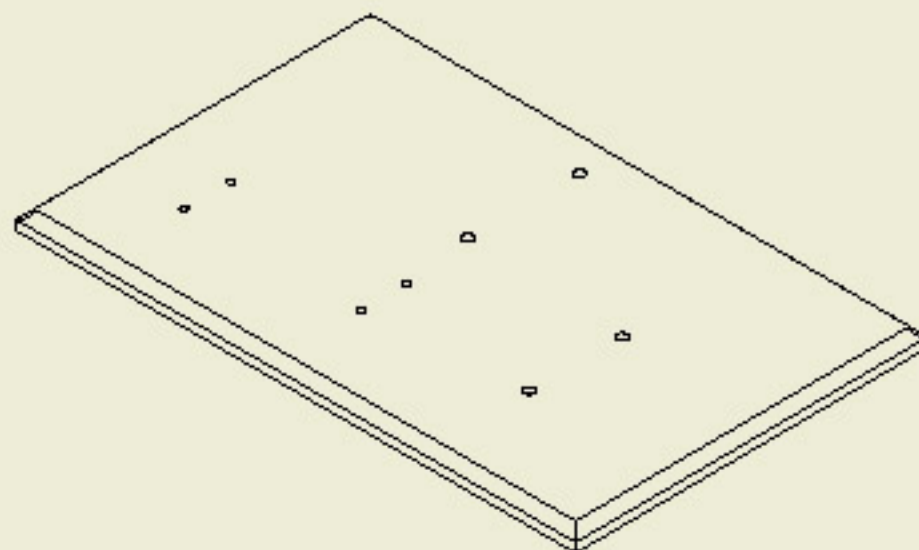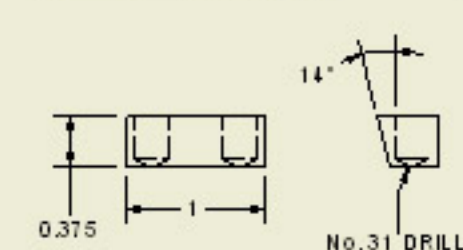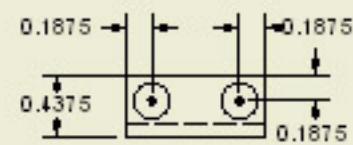| 3	TANK CLAMP	
1.2	QTY:1	MTL: ALUMINUM

FIRE EATER PARTS

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Cylinder dimensions:
- 2.65625
- .0002" PRESS FIT TO PEDESTAL
- 0.0938
- 0.0938
- 0.1875
- 0.125
- 0.2816
- 0.0938
- 0.0938
- 0.75
- 1.5
- 0.25
- 0.375
- 1.0313
- 3
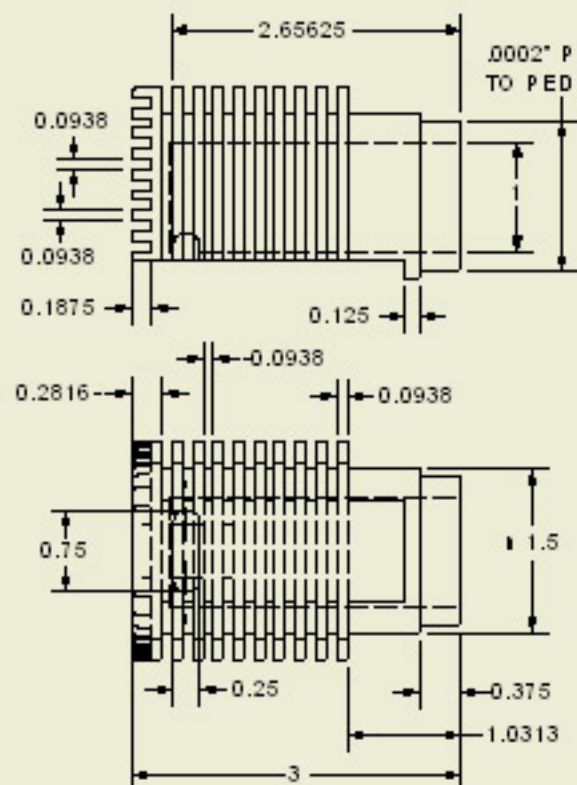
① CYLINDER
1.3 / QTY:1   MTL: ALUMINUM

Cylinder Pedestal dimensions:
- 0.8125
- R0.375
- 0.5" APPROX.
- 1.5
- 2
- 2
- 0.375
- 1.375
- 0.1875
- 0.375
- 0.375
- 0.75
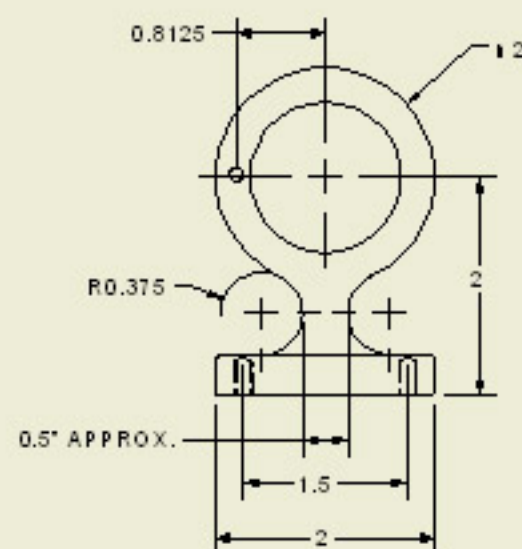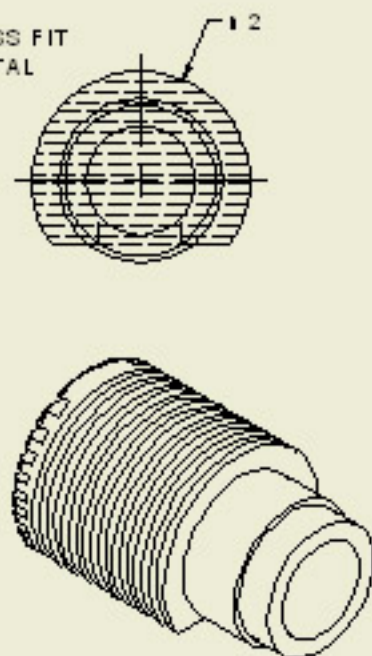
② CYLINDER PEDESTAL
1.4 / QTY:1   MTL: ALUMINUM

Fuel Tank:
- SOLDER BRASS TUBING 7/16" OD x 1 1/8"
- 1.7231
- 40°
- 1
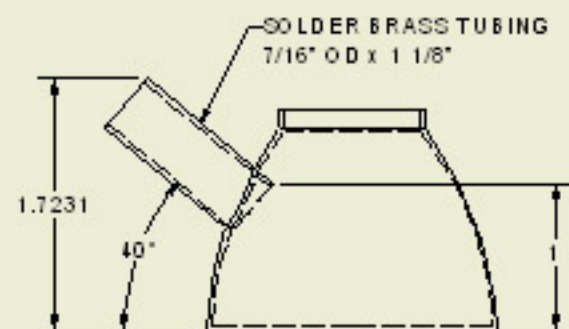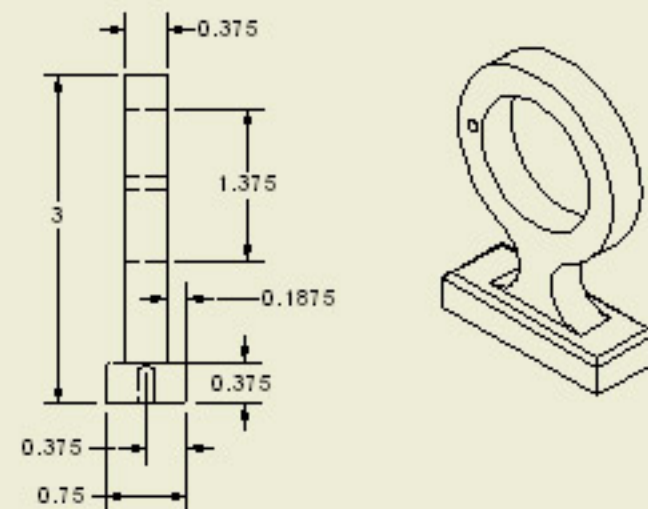
③ FUEL TANK
1.3 / QTY:1   MTL: BRASS

Fuel Tank Lid:
- VENT HOLE No. 55 DRILL
- APPROX. ⌀ 0.8438
- 0.625
- 0.125
- 0.375
- 98°
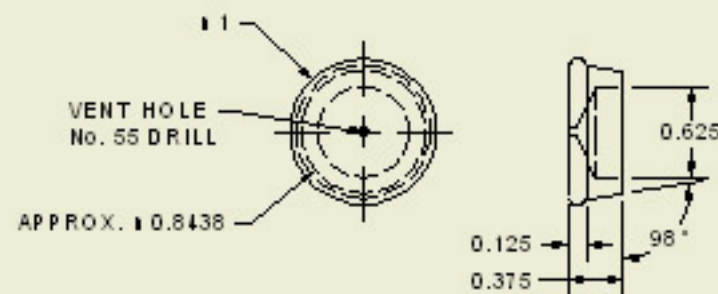
④ FUEL TANK LID
1.3 / QTY:1   MTL: BRASS

FIRE EATER PARTS

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1.3	N.T.S.	2/5/04	1

0.625

0.018

0.5

0.0625

0.0313

R.0 5

0.1563

0.9375

1 VALVE
1.4 QTY:1   MTL:CRS

1.125

0.5

0.1563

0.25

165°

0.5

0.625

R.1

0.125
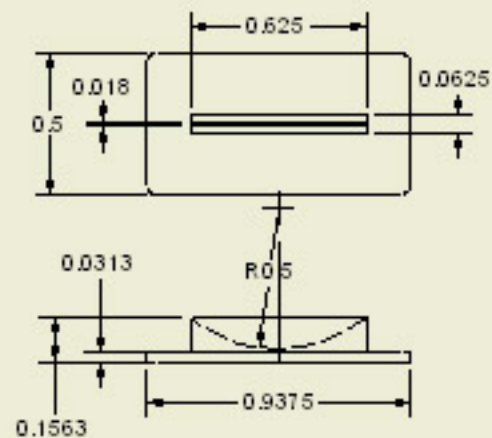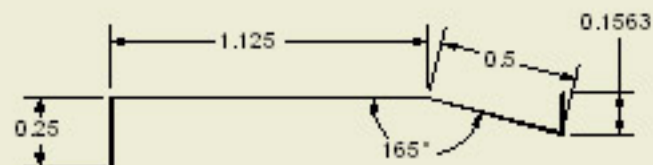
2 .007" VALVE FLAT SPRING
1.4 QTY:1   MTL:STEEL SHIM STOCK

FLAT FOR
SET SCREW

5-40 THREAD

0.125

0.09375

0.4375   0.3125

2.625

3 VALVE PUSH ROD
1.4 QTY:1   MTL:CRS

0.2

5-40 THREAD

0.0625
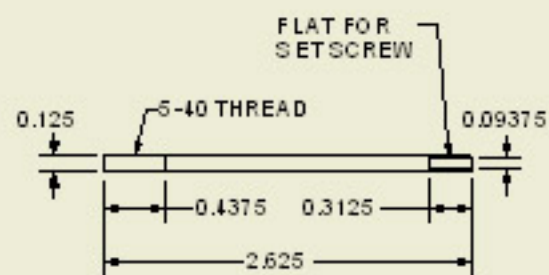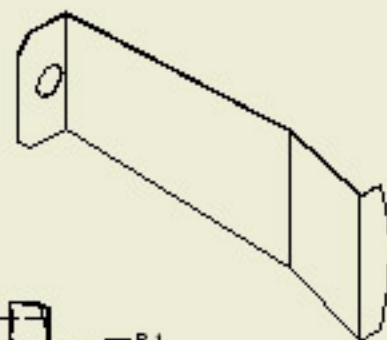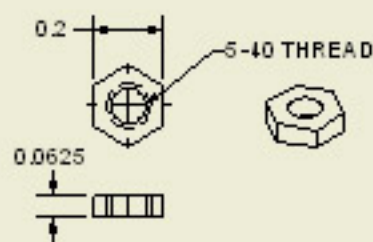
4 VALVE PUSH ROD NUT
1.4 QTY 2   MTL:CRS

1.1875

11/64" DIAMETER
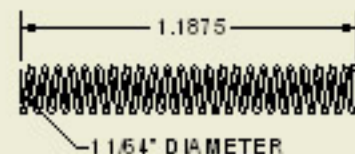
5 SPRING - 32 TURNS W/.015" DIAM
1.4 QTY:1   MTL:SPRING WIRE

FIRE EATER PARTS
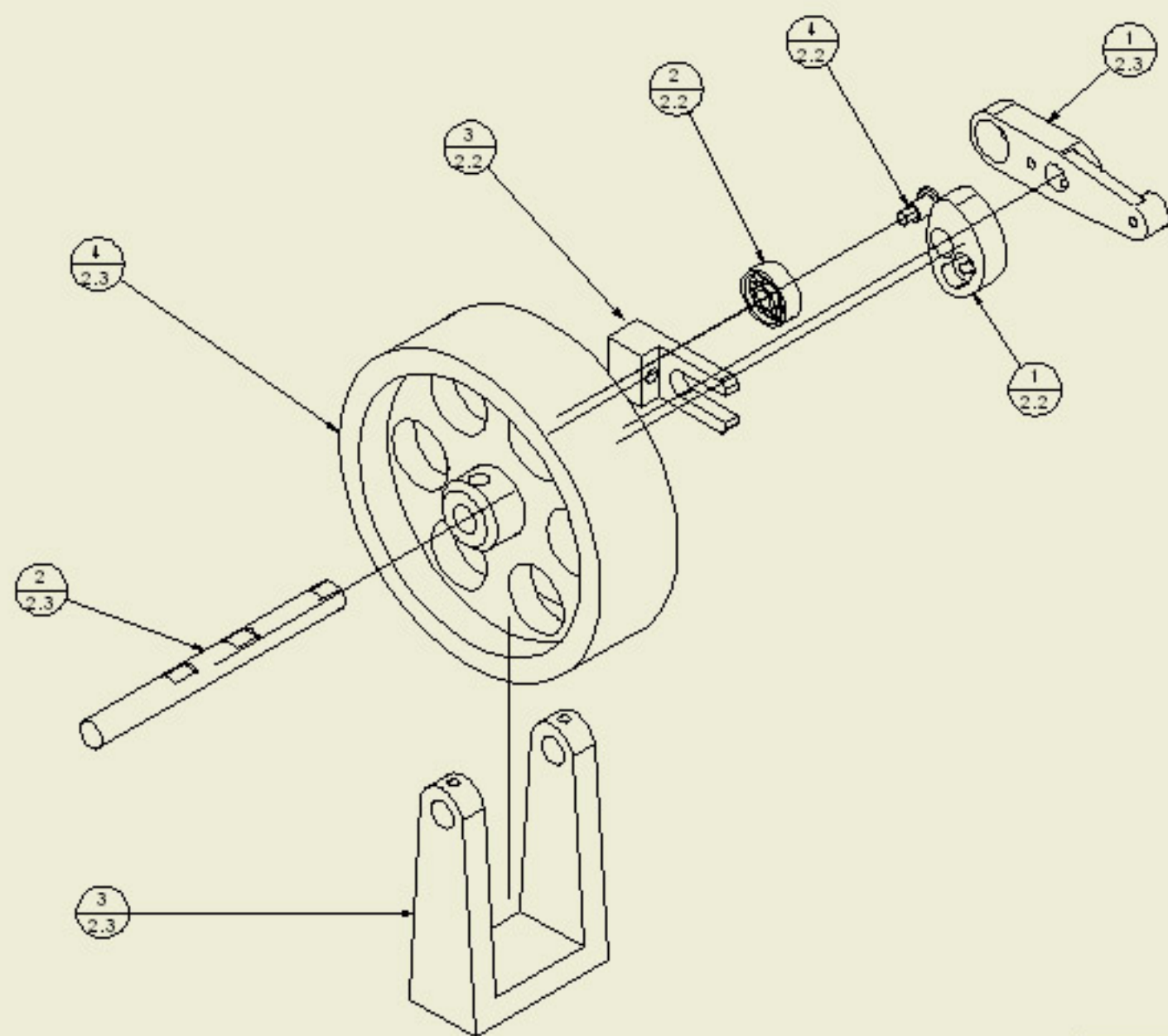
CAM ASSEMBLY

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CAM PARTS

Part 1 — CAM

Dimensions:
- 0.6375
- R0.1875
- R0.7188
- R0.4688
- 0.2195
- 0.3445
- 0.3125
- 0.4375
- 0.125
- 0.25
- 0.0625
- 0.25
- REAM 1/4"
- 0.125

| ① | CAM |
| 2.2 | QTY:1 MTL: ALUMINUM |

Part 2 — CAM ROLLER

Dimensions:
- 0.0625
- 0.0625
- REAM 5/32"
- 0.4688
- 0.2188
- 0.01
- 0.185
- 45°
- 0.0938
- 0.32
- Section A-A
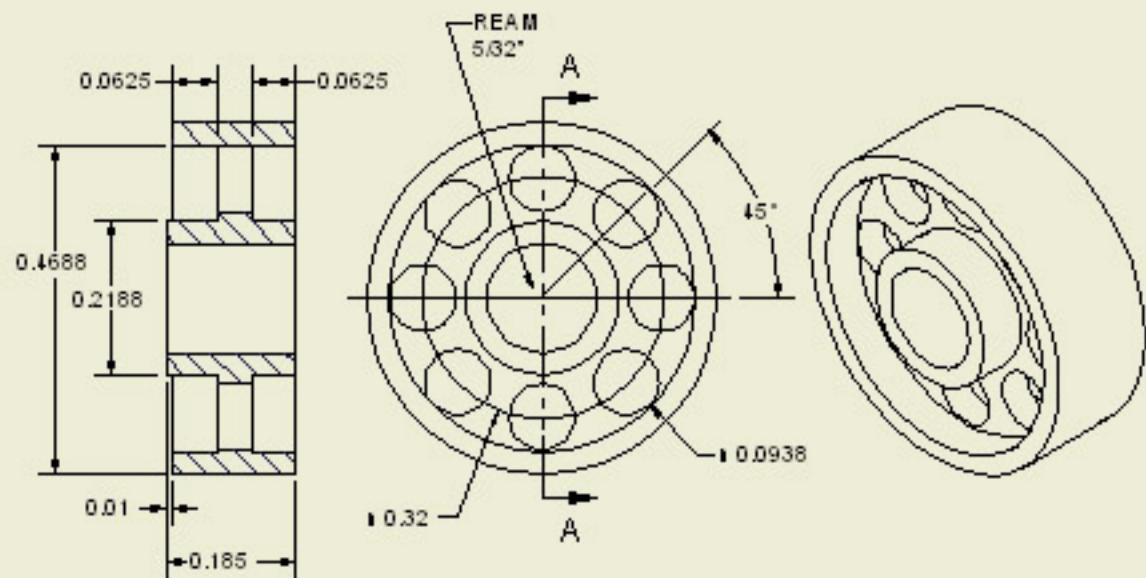
| ② | CAM ROLLER |
| 2.2 | QTY:1 MTL: CRS |

Part 3 — CAM ROLLER FORK

Dimensions:
- 0.375
- 0.1875
- TAP 4-40
- TAP 4-40
- REAM 1/8"
- 0.3438
- 0.217
- 0.14
- 0.625
- 0.25
- 0.5
- 0.251
- 0.25
- 1.125

| ③ | CAM ROLLER FORK |
| 2.2 | QTY:1 MTL: ALUMINUM |

Part 4 — CAM ROLLER SHAFT

Dimensions:
- 0.1875
- 0.0313
- 0.0313
- 0.156
- 0.25
- 0.125
- 0.0156
- 0.3438
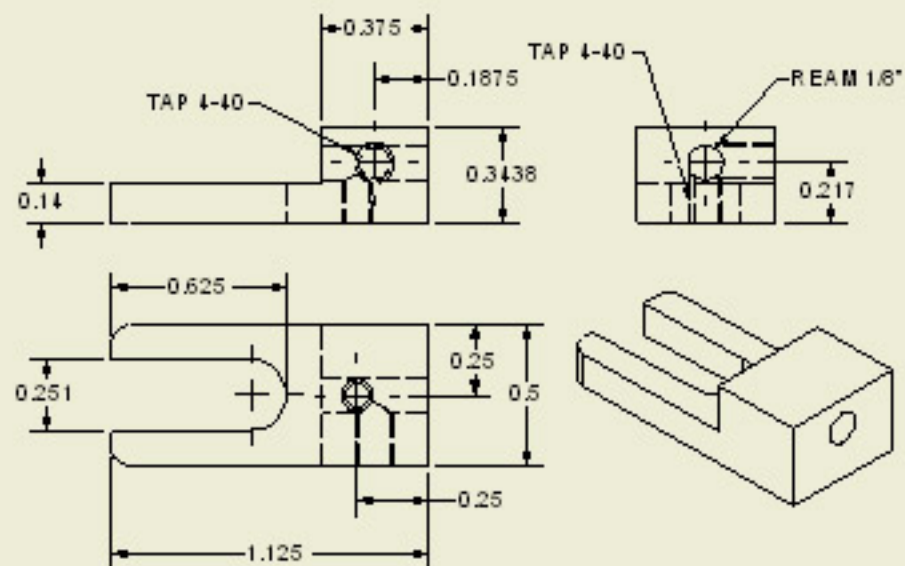
| ④ | CAM ROLLER SHAFT |
| 2.2 | QTY:1 MTL: CRS |

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CAM PARTS

Part 1 — CRANK ARM

2

0.125 0.3125 0.25

TAP 6-32

REAM 3/6" PRESS
IN A BRASS PLUG

0.5

0.25

TAP 4-40

0.282

0.875

7~

-0.1563
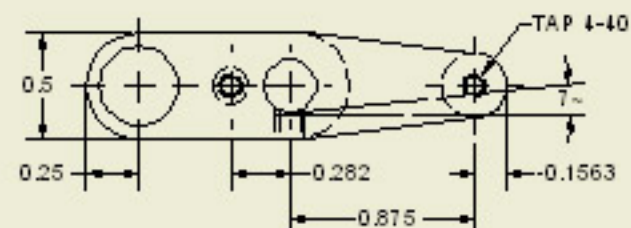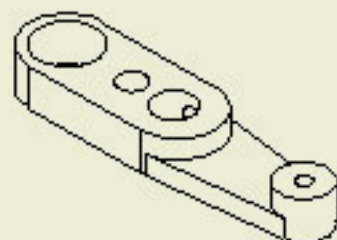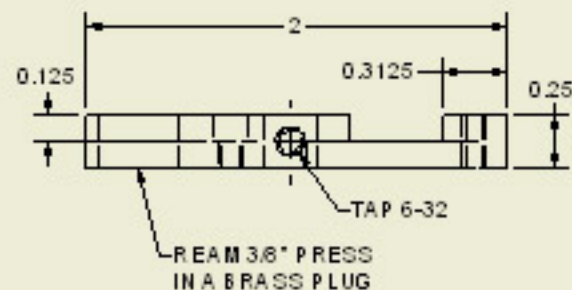
1 CRANK ARM
2.3 QTY:1   MTL:ALUMINUM

Part 2 — CRANKSHAFT

2.75

0.25   0.25   0.2188

3 SETSCREW
FLATS

0.9375

1.625

0.25

2 CRANKSHAFT
2.3 QTY:1   MTL:CRS

Part 3 — CRANKSHAFT BEARING BRACKET

3/32" OIL HOLES

REAM 1/4"

1.002

2.25

0.375

2

0.25

4~

0.625

1.25

1.5

-0.125

0.75

3 CRANKSHAFT BEARING BRACKET
2.3 QTY:1   MTL:ALUMINUM

Part 4 — FLYWHEEL

B

60~

0.625

1.75

B

0.875   0.375

0.625

10°

0.25

3.375

0.3125

1
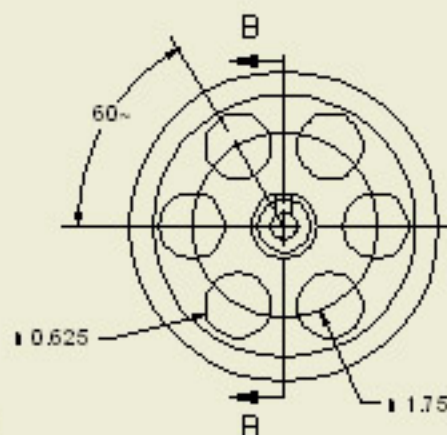
4 FLYWHEEL
2.3 QTY:1   MTL:ALUMINUM
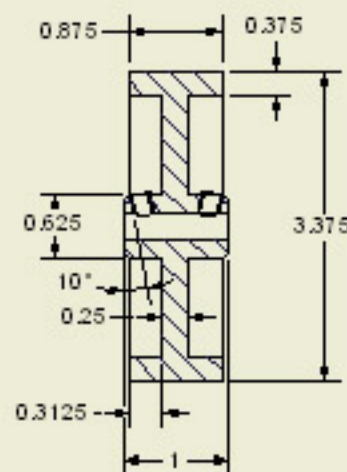
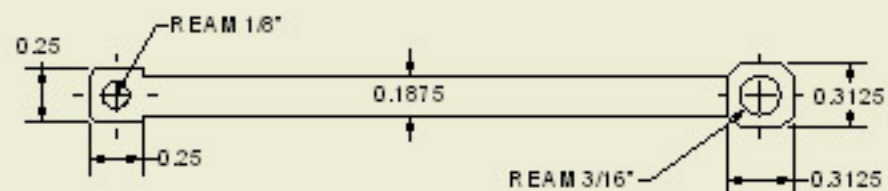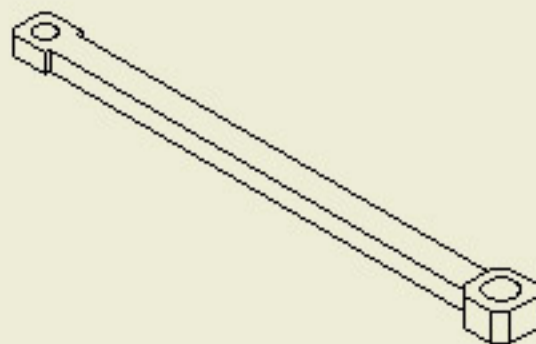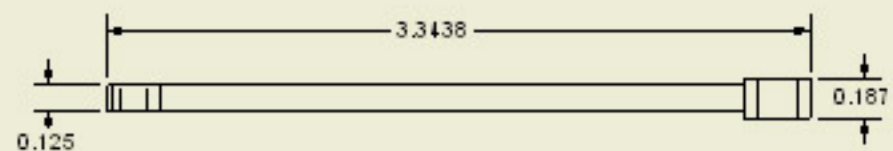| CAM PARTS			
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2
3.2

3
3.2

1
3.2

4
3.2
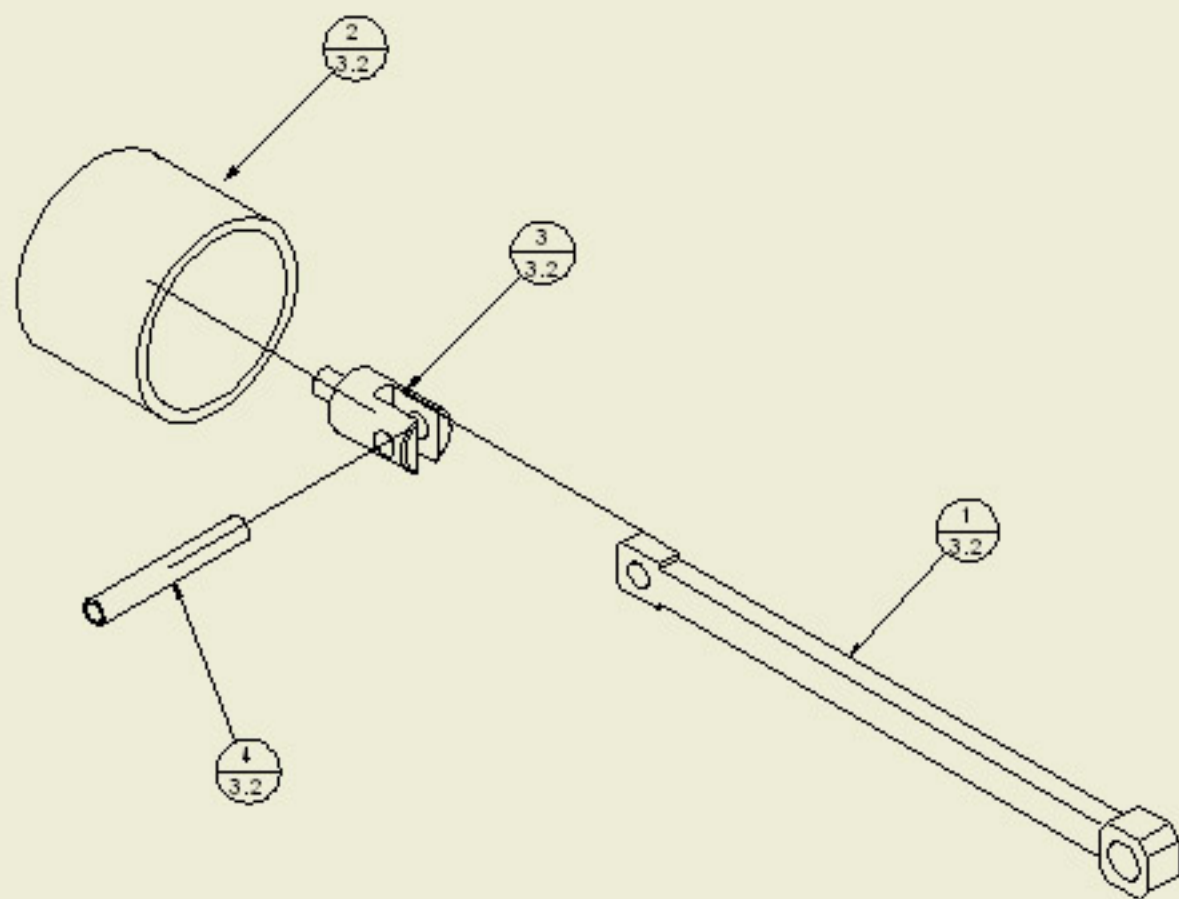
PISTON ASSEMBLY

| PAGE: 3.1 | SCALE: N.T.S. | DATE: 2/5/04 | REV: 1 |

3.3438

0.187

0.125

0.25

REAM 1/8"

0.1875

0.3125

0.25

REAM 3/16"

0.3125

① CONNECTING ROD
3.2 QTY:1   MTL:ALUMINUM

0.75

0.6875

0.375

0.875

No.29 DRILL

0.998

0.0313
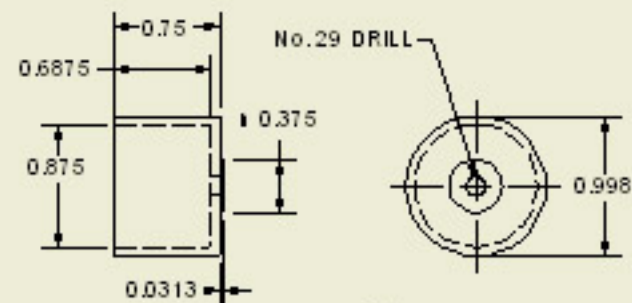
② PISTON
3.2 QTY:1   MTL:BRONZE

0.3438

6-32

0.125

0.3125

0.2813

0.1875

0.4688

REAM 1/8"

③ WRIST PIN YOKE
3.2 QTY:1   MTL:ALUMINUM

0.9063

0.125

DRILL 3/32"
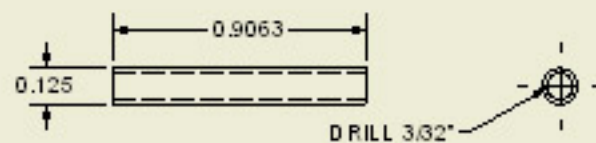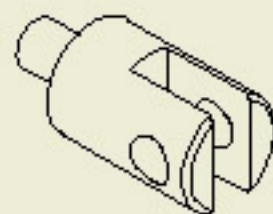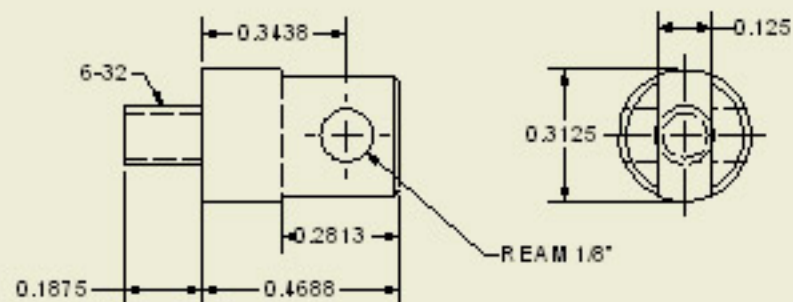
④ WRIST PIN
3.2 QTY:1   MTL:CRS

PISTON PARTS

| PAGE: 3.2 | SCALE: N.T.S. | DATE: 2/5/04 | REV: 1 |