

1

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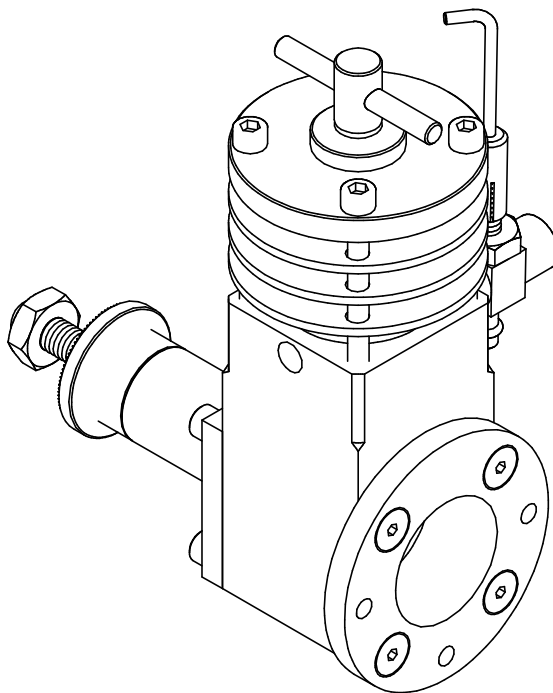
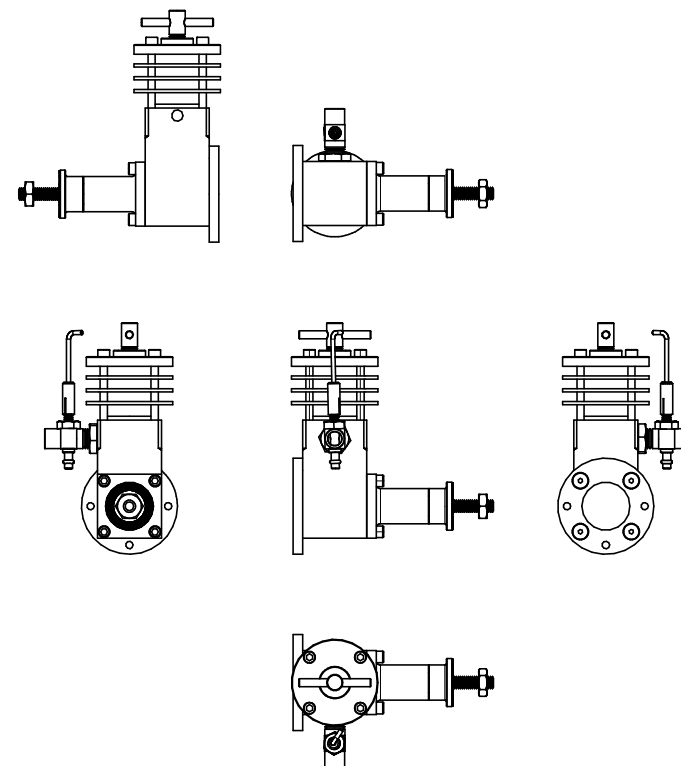
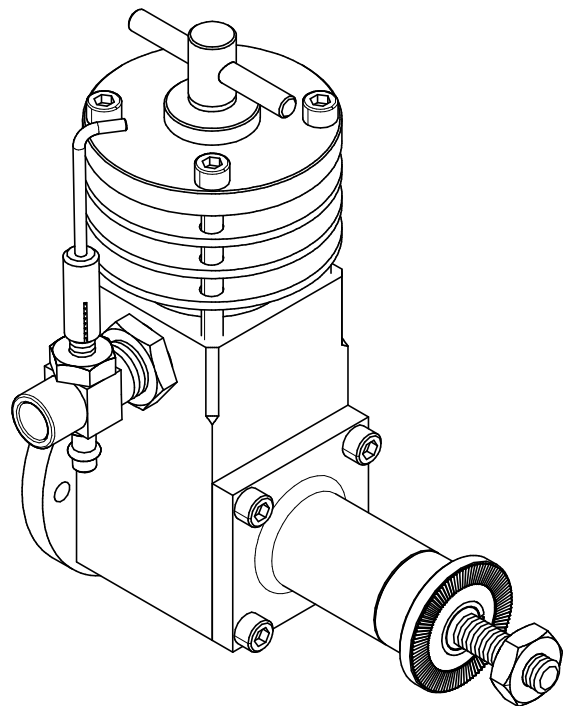
6

RevNo	Revision note	Date	Signature	Checked
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BollAero 18

Designed by Chris Boll (UK)

Bore: 0.500 (12.7 mm)
Stroke: 0.560 (14.22 mm)
Displacement: 0.110 cuin (1.8cc)



A

A

B

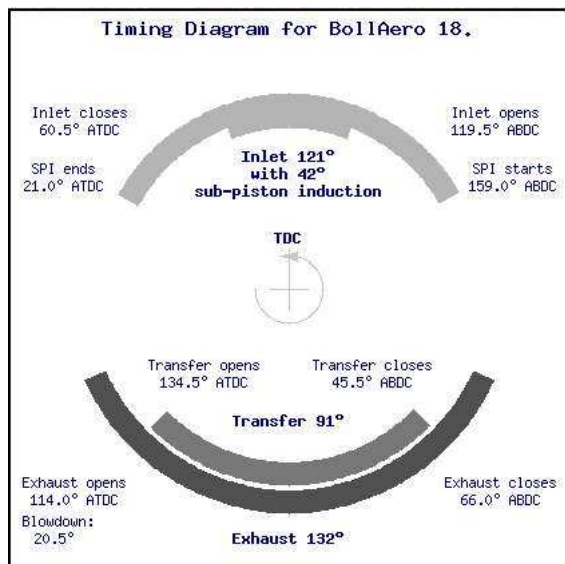
B

C

C

D

D



Note: The 1-1 Crankcase is symmetrical and may be reversed to place the venturi and needle valve on the side that is most convenient for the operator.

BollAero 18 - 3 Views				
Drawn by Chris Boll	CAD by Ron Chernich 2009-10-27		Edition 1	Sheet 9

1

2

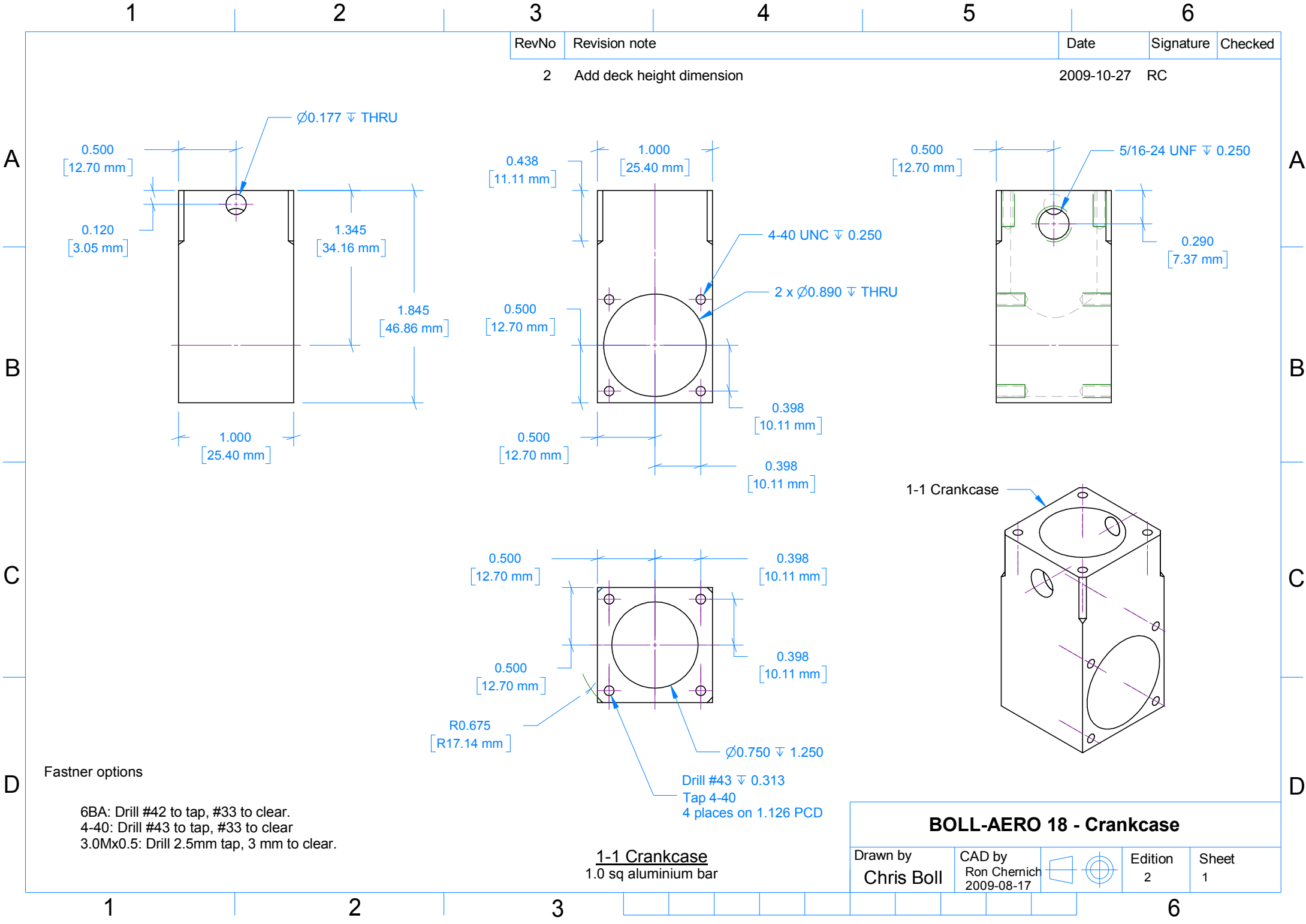
3

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RevNo	Revision note	Date	Signature	Checked
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2 Add deck height dimension

2009-10-27 RC



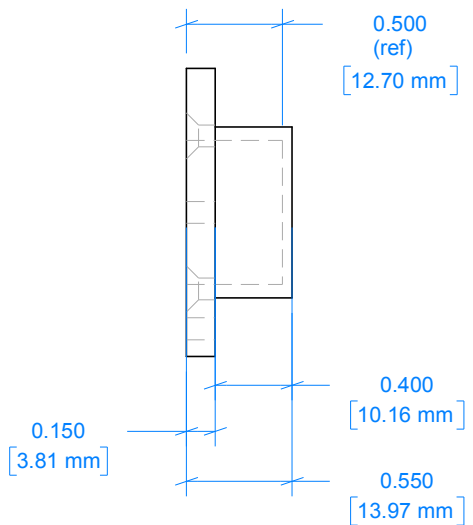
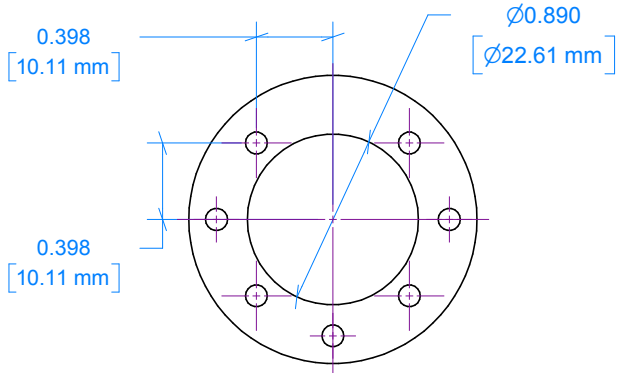
BOLL-AERO 18 - Crankcase				
Drawn by Chris Boll	CAD by Ron Chernich 2009-08-17		Edition 2	Sheet 1

RevNo	Revision note	Date	Signature	Checked
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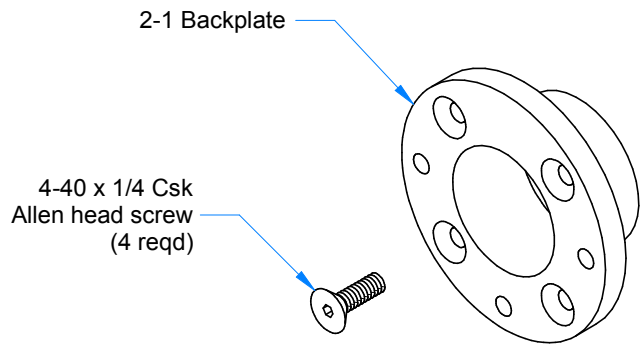
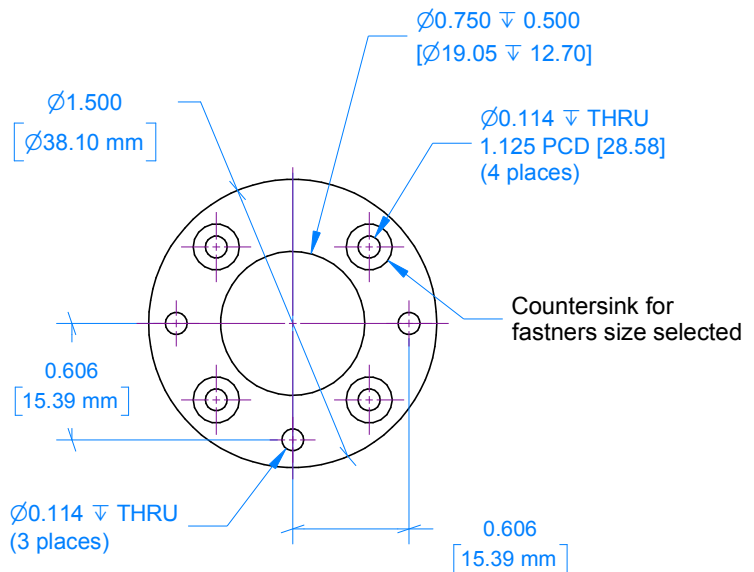
2 Correct Attachment hole spacing and reposition hole callout. 2009-10-19 Ron C.

A
B
C
D

A
B
C
D



2-1 Backplate
Ø1-1/2 aluminium bar



BOLL-AERO 18 - Backplate				
Drawn by Chris Boll	CAD by Ron Chernich 2009-08-17		Edition 2	Sheet 2

1 2 3 4 5 6

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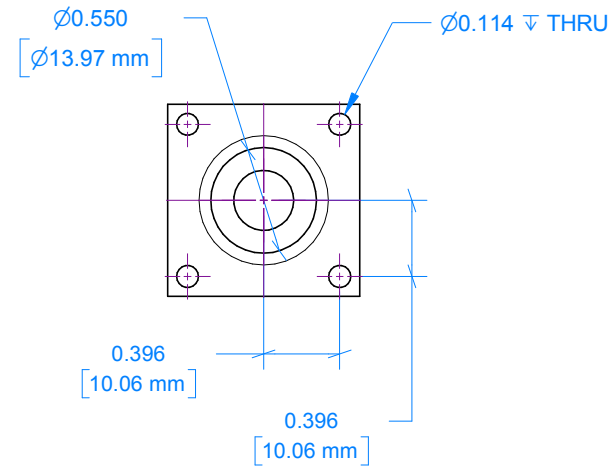
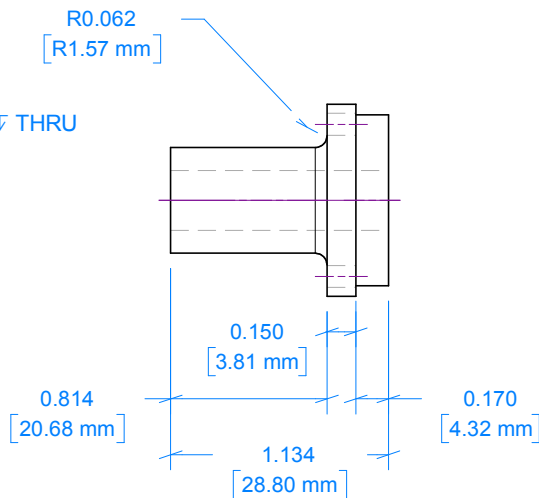
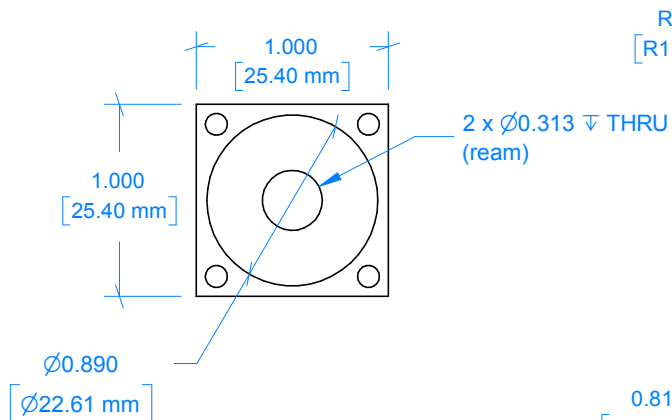
RevNo	Revision note	Date	Signature	Checked
2	Add suggested radius dimension for turned journal to flange transition.	2009-10-19	Ron C	

2 Add suggested radius dimension for turned journal to flange transition.

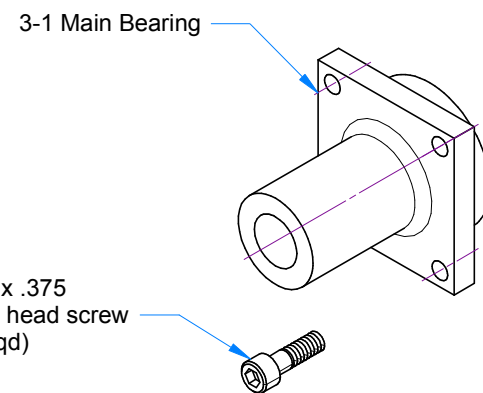
2009-10-19 Ron C

A

A



3-1 Main Bearing Housing
1.0 sq aluminium bar



B

B

C

C

D

D

BOLL-AERO 18 - Main Bearing

Drawn by Chris Boll	CAD by Ron Chernich 2009-08-17		Edition 2	Sheet 3
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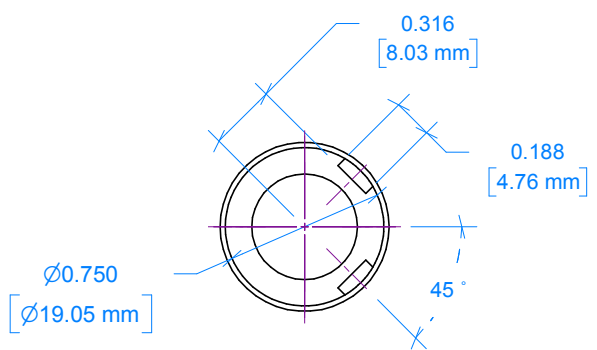
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5

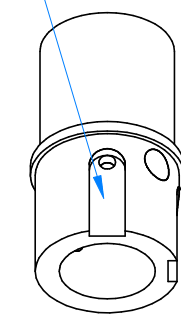
6

RevNo	Revision note	Date	Signature	Checked
2	Correct the note regarding milling depth of transfer passage.	2009-10-19	Ron C	

A

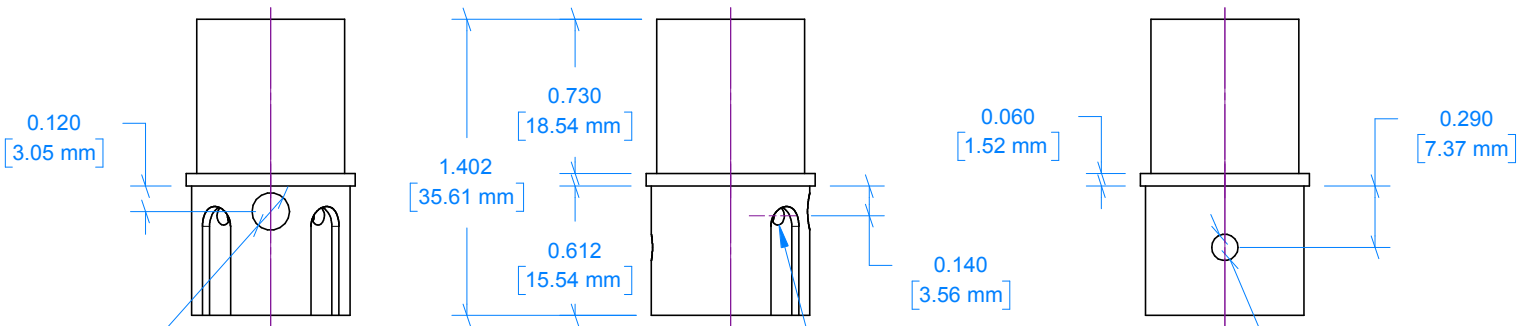


Mill Transfer passages 0.059" deep [1.5mm] using a Ø3/16" slot-drill [5 mm] so top of port reaches the top of the transfer port.



A

B



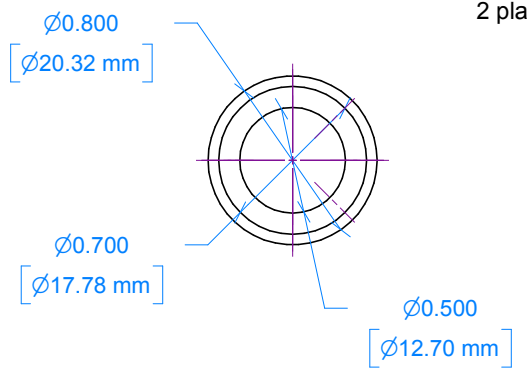
Exhaust port drill Ø0.177 (#16)
[Ø4.50 mm]

Transfer port drill 0.086 (#44)
[2.2mm]
2 places

Inlet port drill Ø0.125
[Ø3.18 mm]

B

C



4-1 Cylinder
Ø7/8 12L14 Steel

C

D

BOLL-AERO 18 - Cylinder				
Drawn by Chris Boll	CAD by Ron Chemich 2009-10-01		Edition 2	Sheet 4

1

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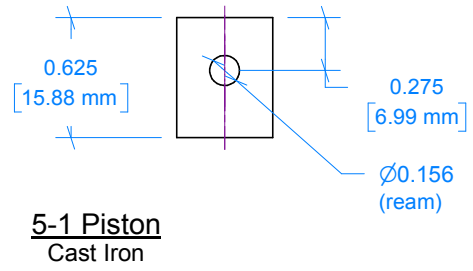
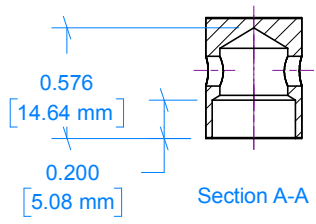
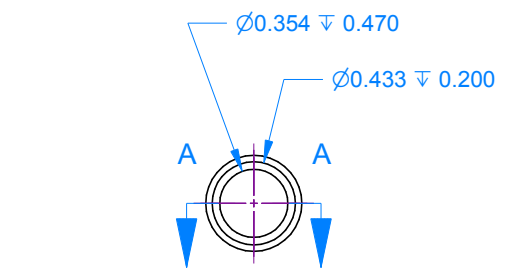
RevNo	Revision note	Date	Signature	Checked
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- 2 Add Note 1.
- 3 Revise conrod cross section to circular.

2009-10-19 Ron C.
2009-10-26 Ron C.

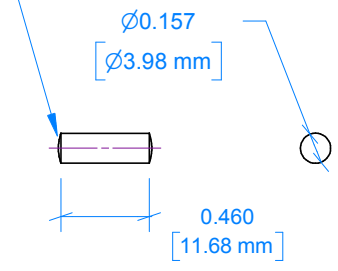
A
B
C
D

A
B
C
D

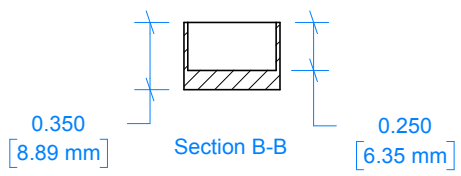
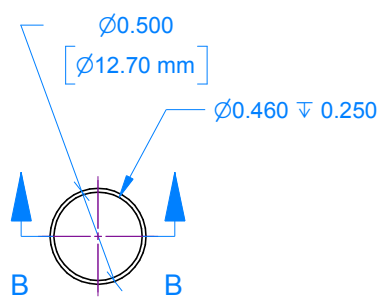
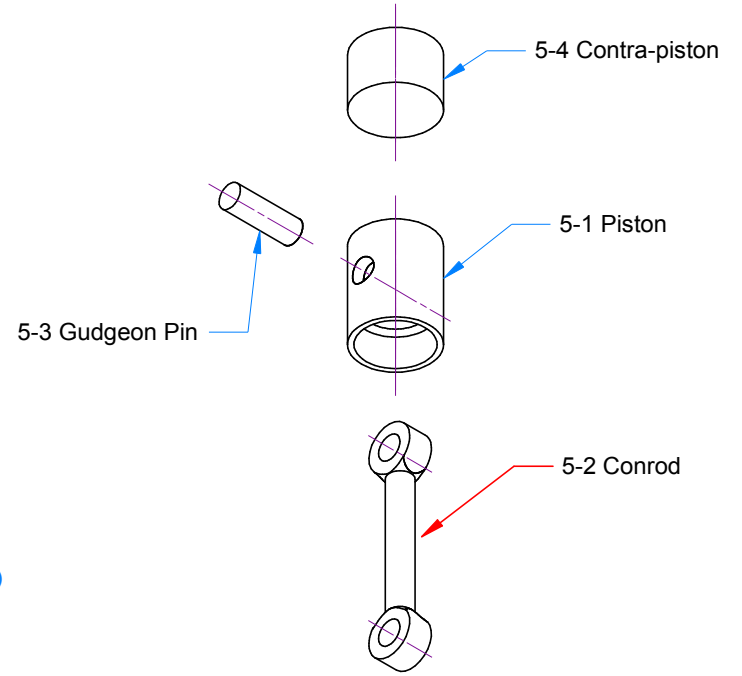


5-1 Piston
Cast Iron

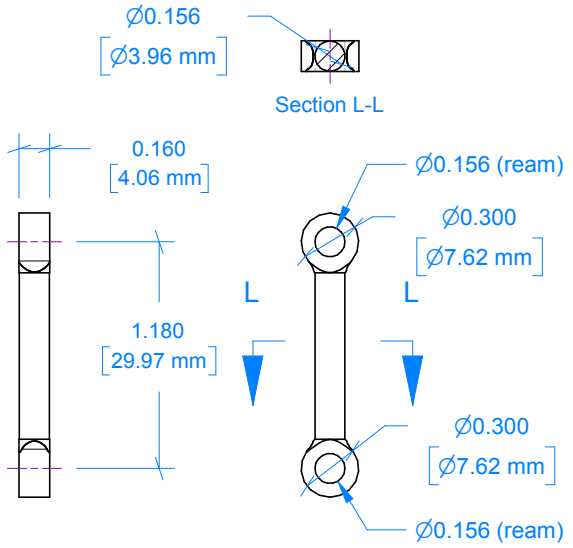
Dome and polish ends (Note 1)



5-3 Gudgeon Pin
Ø5/32" Drill Rod



5-4 Contra-piston
Cast Iron



5-2 Conrod
2024 T3 Aluminium

Note 1. The -3 Gudgeon pin is a fully floating fit in the -1 Piston and -2 Conrod. Dome and polish the ends to prevent scoring of the 4-1 Cylinder Liner.

BOLL AERO 18 - Pistons and Rod				
Drawn by Chris Boll	CAD by Ron Chernich 2009-10-01		Edition 3	Sheet 5

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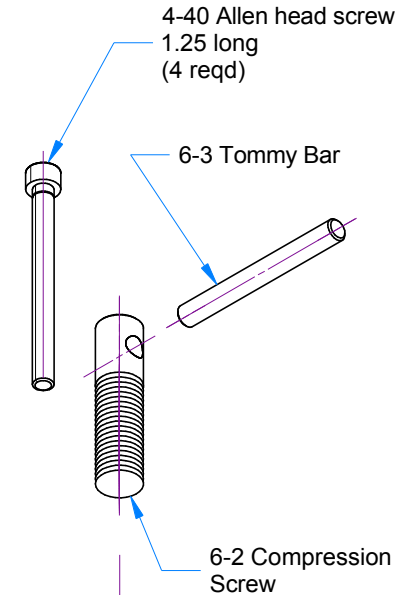
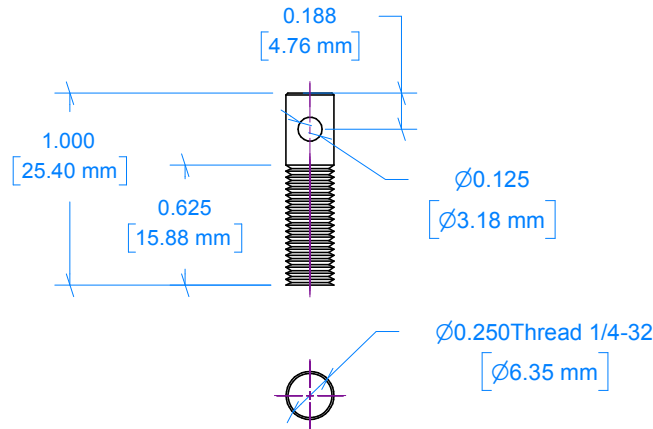
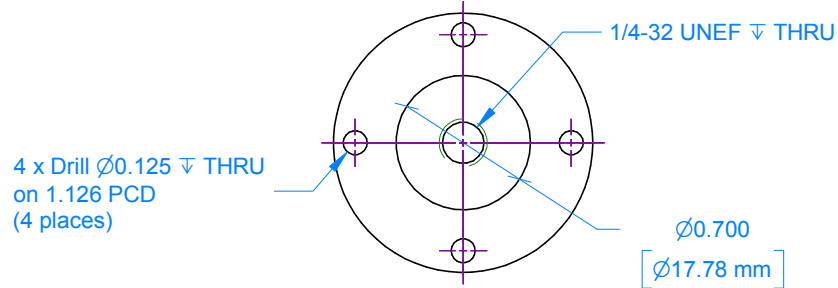
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5

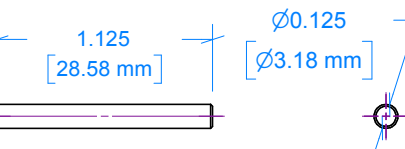
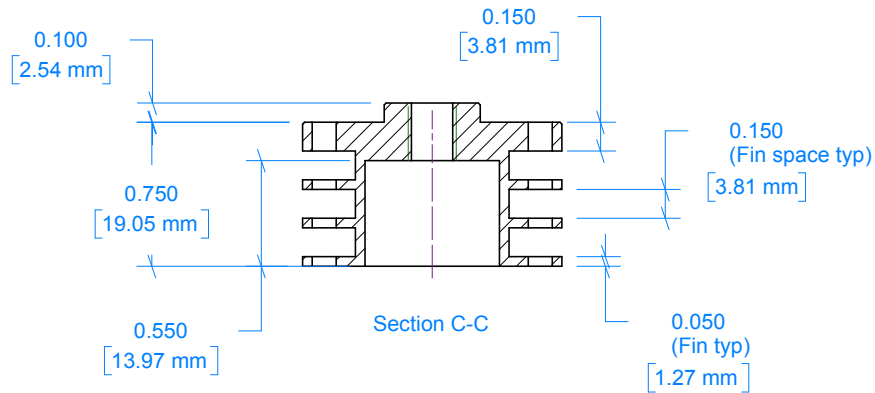
6

RevNo	Revision note	Date	Signature	Checked
2	Add Thread callout to -2 Compression Screw.	2009-10-19	Ron C.	
3	Correct the PCD note.	2009-10-27	Ron C.	

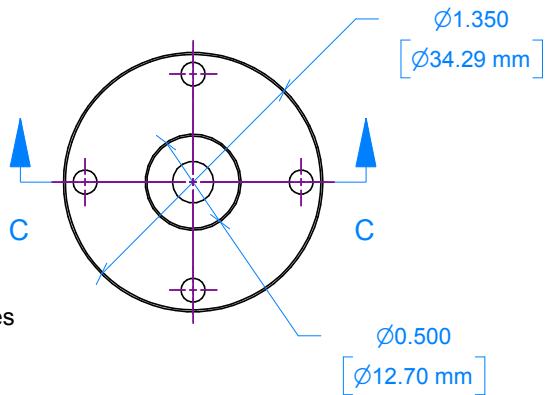
A



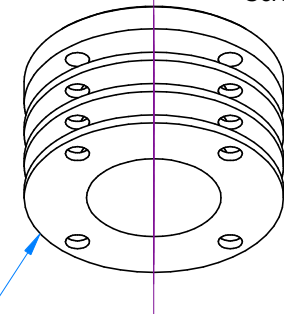
B



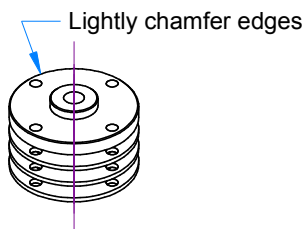
C



6-3 Tommy Bar
 $\varnothing 1/8$ Music Wire



D



6-1 Cylinder Head
 $\varnothing 1\text{-}3/8$ aluminium bar

6-1 Cylinder Head

BOLL AERO - Cylinder Muff

Drawn by Chris Boll	CAD by Ron Chernich 2009-10-01		Edition 3	Sheet 6
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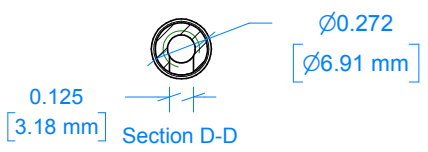
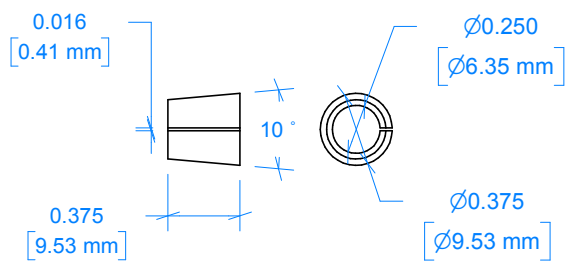
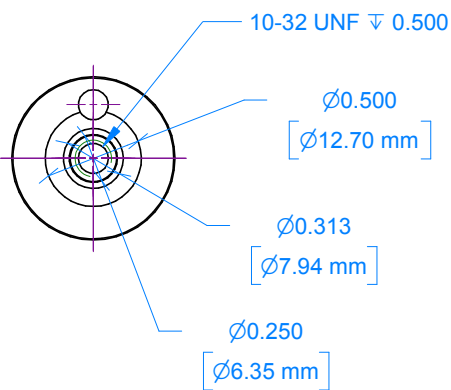
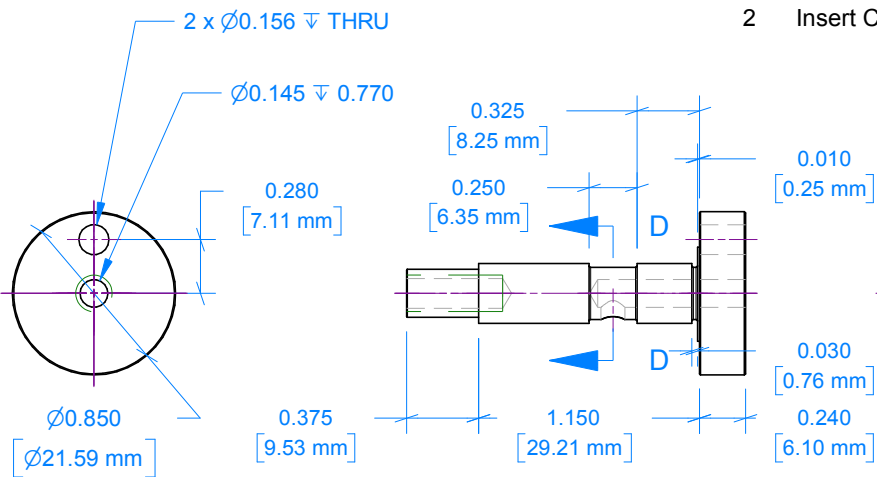
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6

RevNo	Revision note	Date	Signature	Checked
2	Insert Centers.	2009-10-20	Ron C	

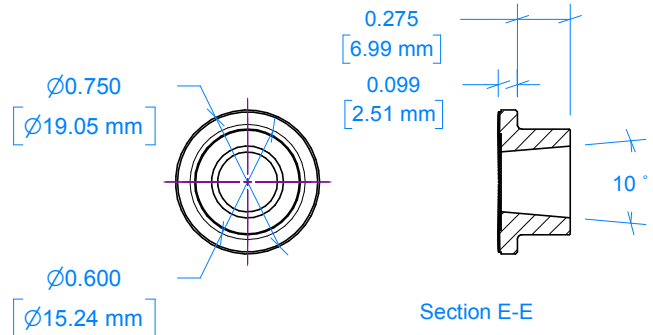
A
B
C
D

A
B
C
D

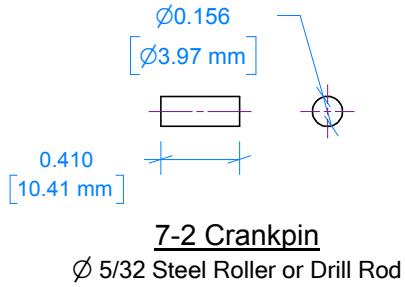
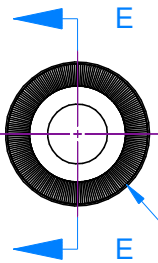


7-1 Crankshaft
 $\varnothing 7/8$ stressproof steel, or HT bolt

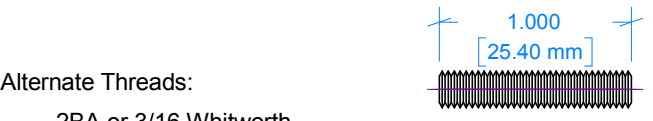
7-5 Collet
 $\varnothing 3/8$ Brass



7-4 Prop Driver
 $\varnothing 3/4$ aluminium bar

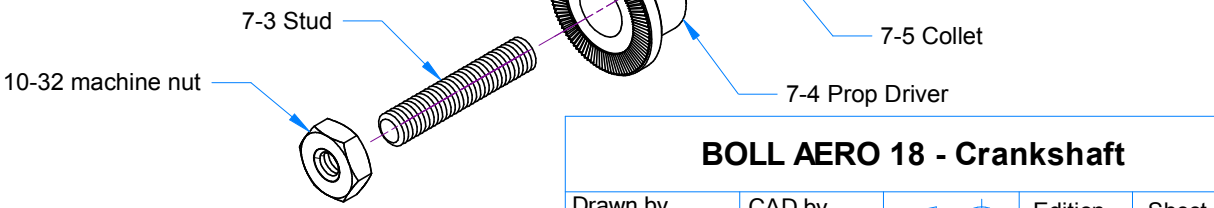


7-2 Crankpin
 $\varnothing 5/32$ Steel Roller or Drill Rod



7-3 Stud
 Cut from 10-32 machine screw

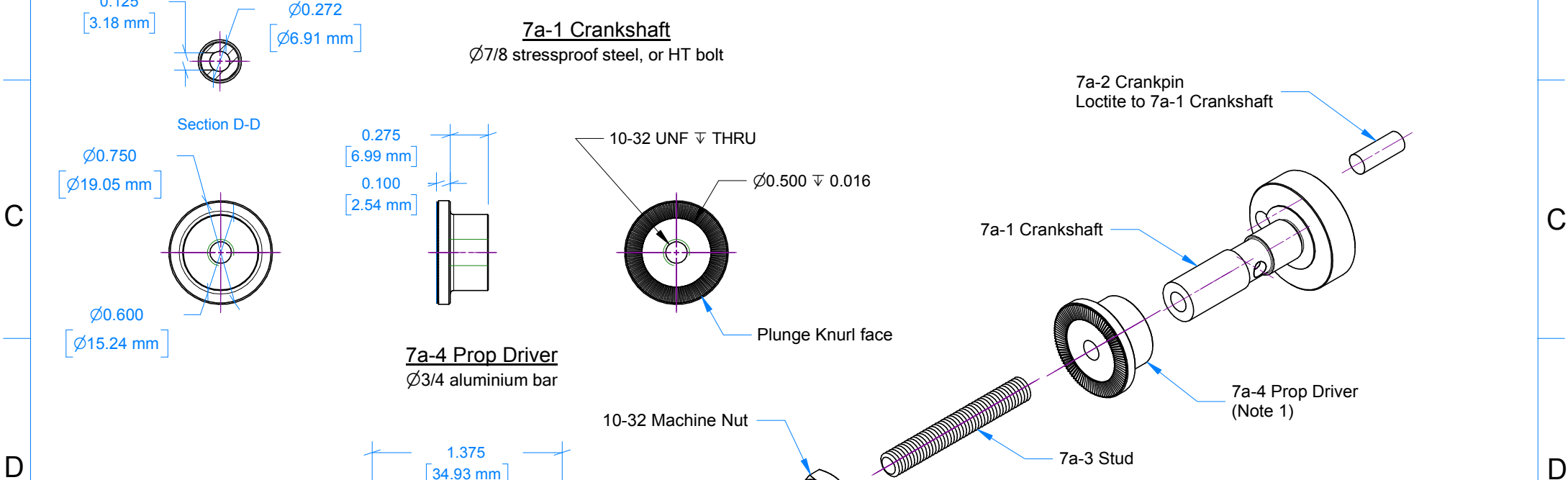
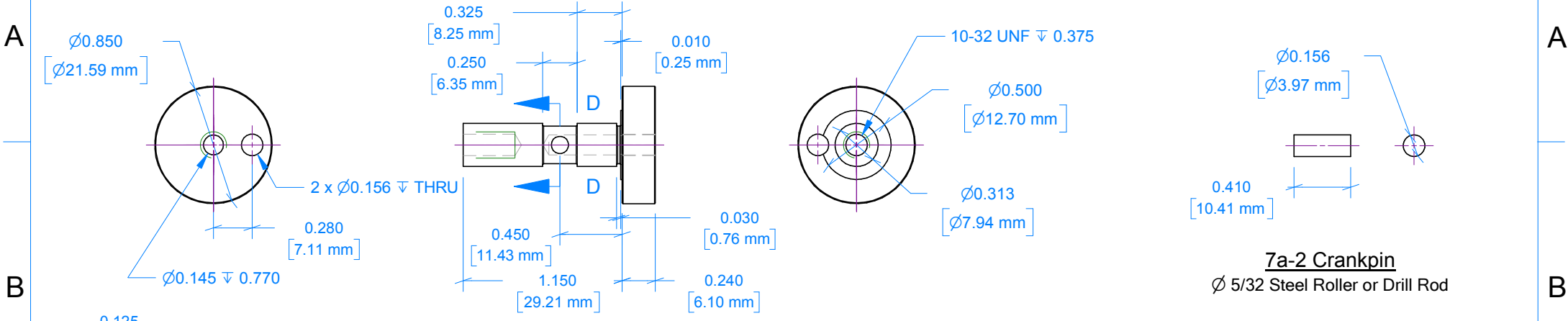
Alternate Threads:
 2BA or 3/16 Whitworth
 UNF 10-32
 4Mx0.7



BOLL AERO 18 - Crankshaft				
Drawn by	CAD by Ron Chernich 2009-10-01		Edition 2	Sheet 7

RevNo	Revision note	Date	Signature	Checked

Note 1: This sheet depicts the original crankshaft and Prop Driver design. The method of fixing the -4 Prop Driver is simpler than that shown on Sheet 7, but may result in a thrown prop.



Alternate Threads:
 2BA, or 3/16 Whitworth
 UNF 10-32
 4Mx0.7

BOLLAERO 18 - Crankshaft (alt 1)				
Drawn by Chris Boll	CAD by Ron Chernich 2009-10-20		Edition 1	Sheet 7a

1

2

3

4

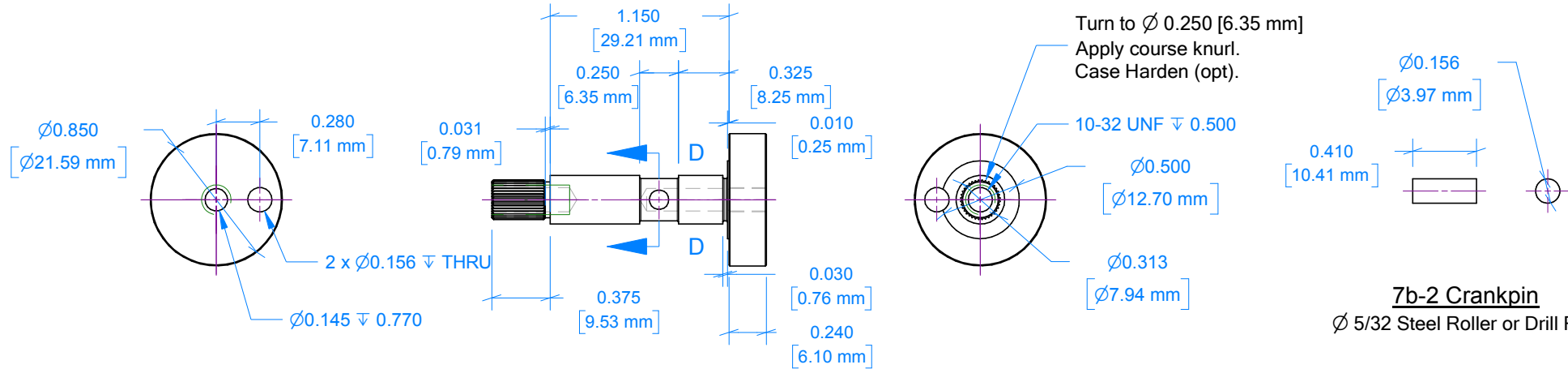
5

6

Note 1: Drill -4 Prop Driver 0.240 (Letter "C") for a force-fit on knurled section of -1 Crankshaft.

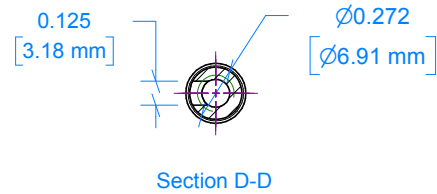
RevNo	Revision note	Date	Signature	Checked
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A



A

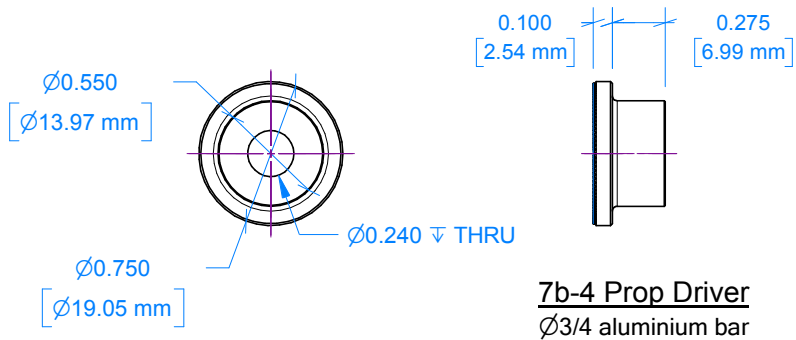
B



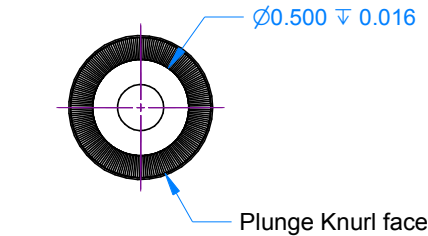
7b-1 Crankshaft
 $\phi 7/8$ stressproof steel, or HT bolt

B

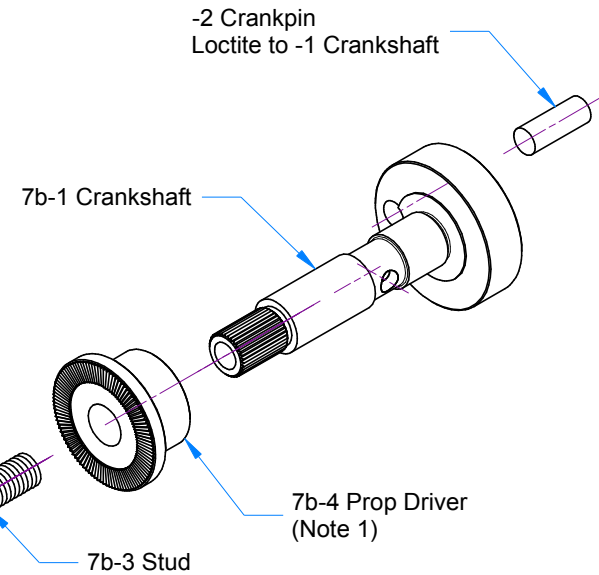
C



7b-4 Prop Driver
 $\phi 3/4$ aluminium bar



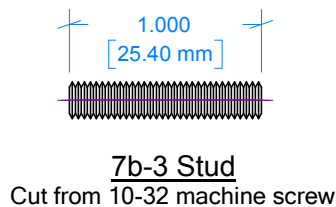
10-32 Hex Machine Nut



C

D

Alternate Threads:
2BA or 3/16 Whitworth
UNF 10-32
4Mx0.7



7b-3 Stud

Cut from 10-32 machine screw

D

BOLLAERO 18 - Crankshaft (alt 2)

Drawn by	CAD by Ron Chernich 2009-10-20		Edition 1	Sheet 7b
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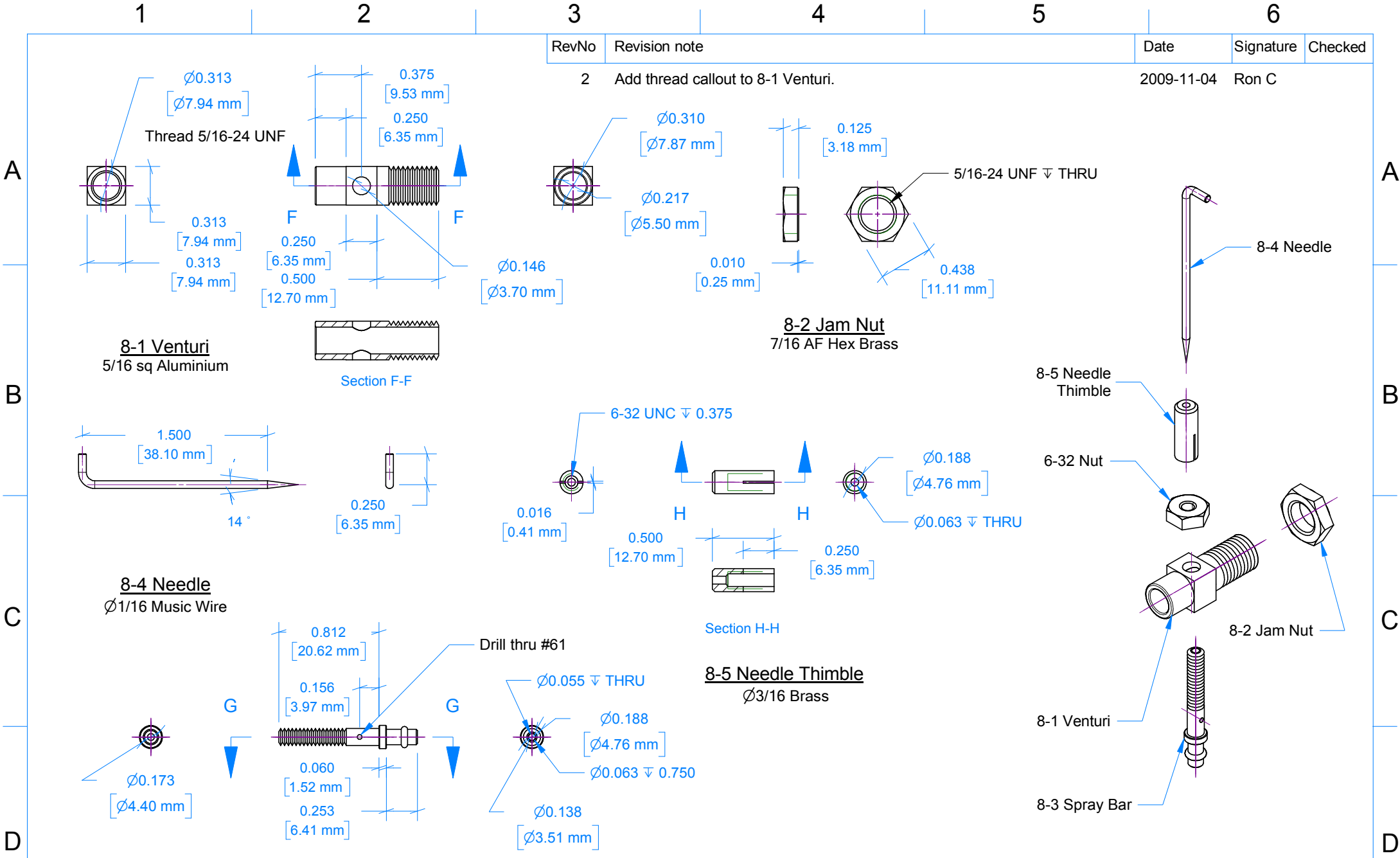
1

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RevNo	Revision note	Date	Signature	Checked
2	Add thread callout to 8-1 Venturi.	2009-11-04	Ron C	



BOLL AERO 18 - Fuel System				
Drawn by Chris Boll	CAD by Ron Chemich 2009-10-01		Edition 2	Sheet 8

Alternate Threads
 Spraybar and Thimble: 6BA, 6-32 UNC. 3.5Mx0.6
 Venturi and Jam Nut: 5/16-32 ME, 5/16-24 UNF, 8Mx1.25