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Vectric Project Tutorial
www.vectric.com

Compatible with Current Version of:

Aspire

Sample Carved with:
ShopBot Buddy
PRSalpha BT48

ShopBot®
www.shopbottools.com

Vintage Candlestick Telephone Clock
Designed for Vectric™ by Michael Tyler

This interesting novelty clock is based upon the antique Model 50AL candlestick phone introduced in 1919 as the first free-standing table-top dial telephone. Thus, began the era of rotary dial telephone sets which would span most of the 20th century.

Antique telephone

The project features segmented construction for the handset and mouthpiece assemblies. Aspire's two-rail sweep modeling features were used to create the segmented components and produce quite a reasonable simulation of an antique candlestick telephone!

An angled wedge platform for the clock insert was created using Aspire's tilt feature applied to a modeled round disc shape.

The overall dimensions of the Vintage Candlestick Telephone Clock are approximately:
5.6 " W x 5.4 " D x 12 " T

Main items you will need:

1) The Project File(s) (included):
• Clock_Base_Sections.crv3d
• Handset_6_Sections.crv3d
• Mouthpiece-and-Hook.crv3d

2) Material with these dimensions:
Clock Base: 0.75 " x 7 " x 15.5 "
Handset: 0.75 " x 5.5 " x 7.5 "
Mouthpiece: 0.75 " x 7 " x 13 "

3) 0.125 ", 0.25", and 1 " diameter wooden dowels, wood glue, paint or stain and clearcoat

4) Soft black airline tubing to fit onto a 0.125 " dia. wooden dowel or soft wire or thin rope for phone cord

5) A 3.1875 " clock insert (example: model #15706 or #15708 from http://www.klockit.com)

6) A Dremel-type rotary tool with assorted sanding wheels and bits to sand and/or shape components.

CNC Bits used for the Sample:

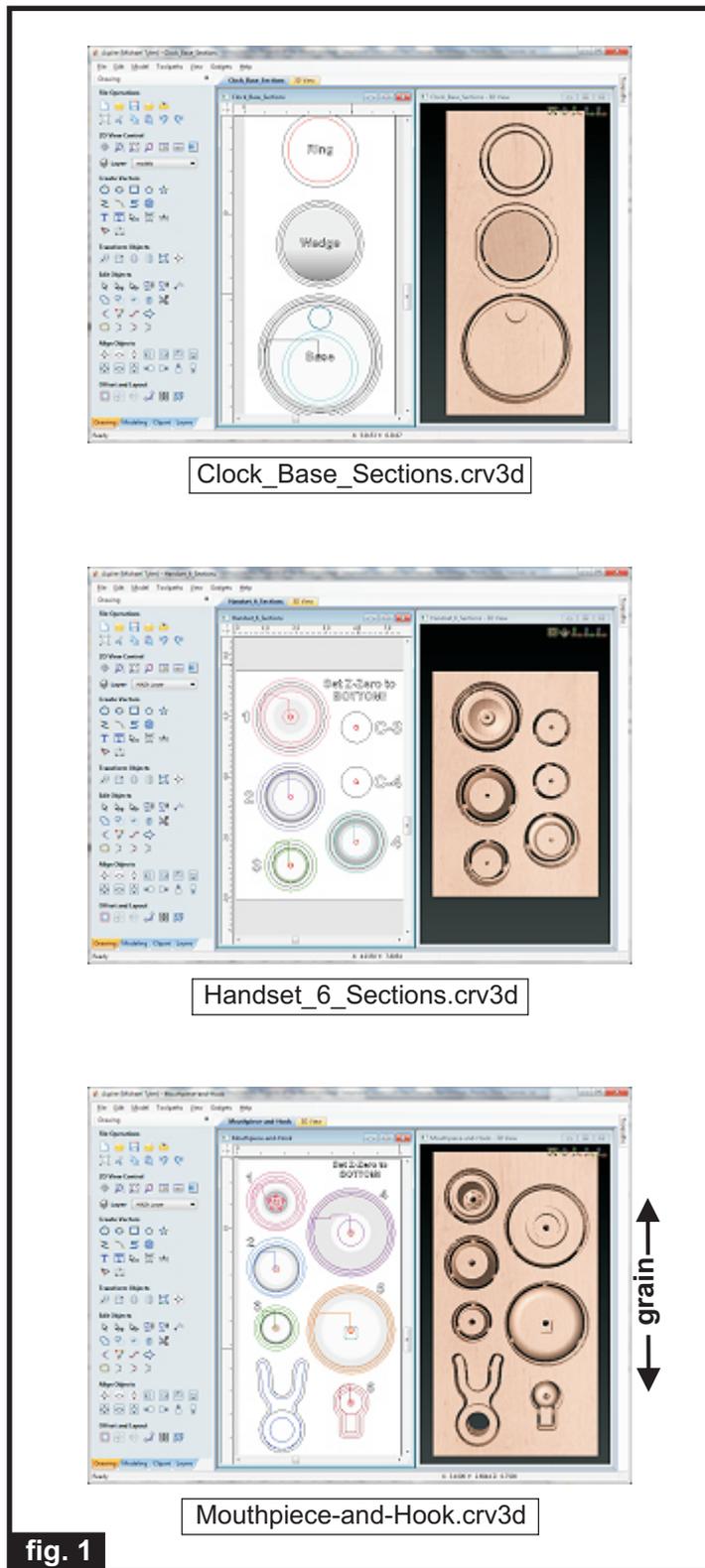|	
0.25 "	Down-Cut End Mill (EM)
0.125 "	End Mill (EM)
0.125 "	Ball Nose (BN)

STEP 1 - Open and Review the Project Files
Start your Aspire software and open the project files. (fig. 1)

Clock_Base_Sections.crv3d

Handset_6_Sections.crv3d

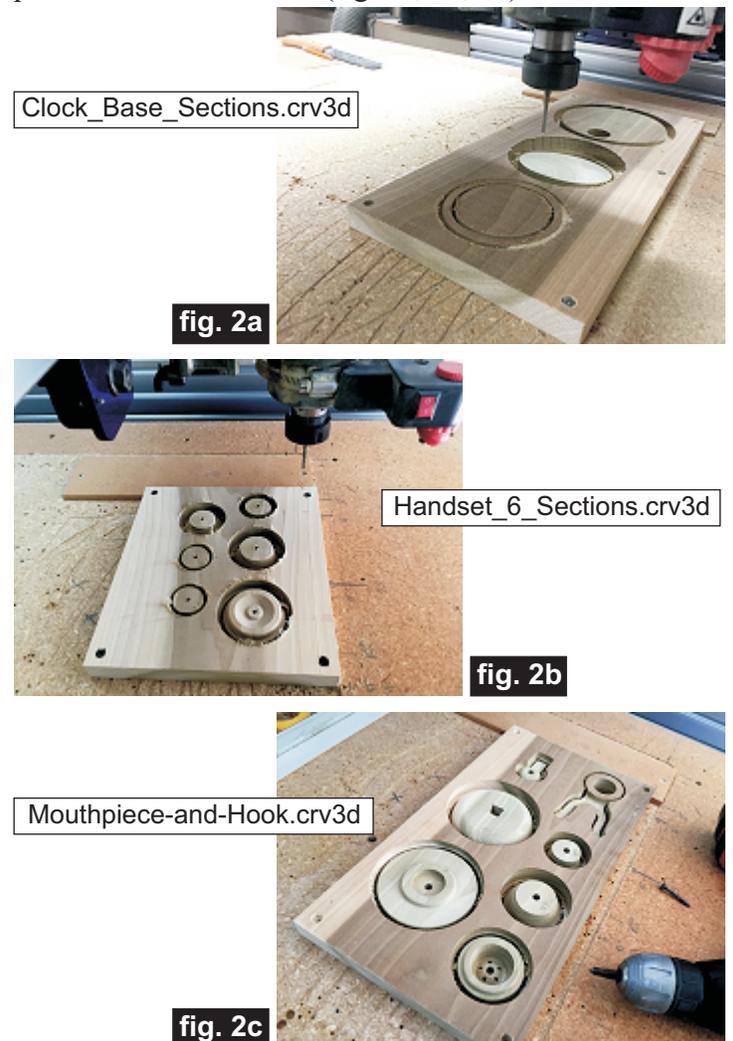Mouthpiece-and-Hook.crv3d

grain

fig. 1

Carefully review all the toolpaths and make any necessary changes to suit your particular bits and machine. The toolpaths are currently set with feeds, speeds and pass depths that were used in creating the original sample. Please don't use them directly until you review them for your own setup.

You can edit the tools and change the settings to your own preferences and requirements. **It is very important to recalculate all toolpaths after making any edits/changes.** Once you have recalculated for your own machine and bits, reset the preview, then preview all toolpaths again to visually verify the project outcome on-screen.

STEP 2 - Run the Project
When you are satisfied with your settings, save the toolpaths to the appropriate Post Processor for your machine. Place your material on your machine bed and proceed to run the files. (fig. 2a, 2b, 2c)

Clock_Base_Sections.crv3d

fig. 2a

Handset_6_Sections.crv3d
fig. 2b

Mouthpiece-and-Hook.crv3d

fig. 2c

(cont.)

STEP 3 - Separate Parts from Material

You may find it helpful to label the parts before separating them from the boards. Separate the parts from the boards. Sand off tabs and toolmarks. (fig. 3a, 3b)

Label parts with a pencil before separating from boards

fig. 3a

Separate the parts from boards

fig. 3b

STEP 4 - Parts Assembly

Cut the dowels to length as follows. (fig. 4a, 4b)

0.125 " dia. dowels: 1.5" length & 6 " length

0.25" dia. dowels: 1.5" length & 2.375" length

1 " dia. dowel: 10 " length

Cut dowels to length

fig. 4a

fig. 4b

Slide the Handset parts onto the 0.125 " x 6 " dowel. Rotate the sections to make a pleasing grain pattern and mark a pencil line along the length for reference when the parts are glued together. (fig. 4c)

Arrange the sections to make a pleasing grain pattern. Draw a reference line along the length.

fig. 4c

Apply glue to each section's flat area and the dowel, leaving 0.75 " of the dowel protruding from the small end of the Handset. This leaves the dowel recessed into the center hole of the large end, and is intentional. (fig. 4d)

Glue sections together, leaving 0.75" protruding from small end

fig. 4d

Glue the Mouthpiece sections #4 and #5 together using the 0.25 " x 2.375 " dowel for alignment. Make sure the end of the dowel is **flush with the backside recessed pocket** surface of part #5. Allow to dry. (fig. 4e, 4f)
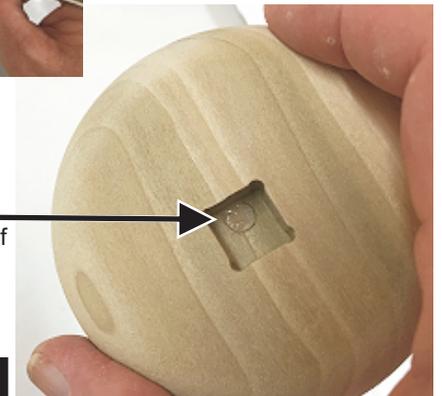
fig. 4e

Glue Mouthpiece sections #4 and #5 together using the 0.25 " x 2.375 " dowel

Make sure the dowel end is flush with the pocket bottom on the backside of section #5

fig. 4f

(cont.)

STEP 4 - Parts Assembly (cont.)

Glue the Mouthpiece sections #1, #2 and #3 together using a scrap length of a 0.25" diameter dowel for alignment. This scrap dowel is NOT to be glued in place, but is only used for alignment of these parts. Remove the dowel immediately after glue-up alignment. Set the assembly aside to dry. (fig. 4g)

Glue the 1,2,3 sections together. Align with a scrap dowel, then remove the dowel immediately after glue-up.

fig. 4g

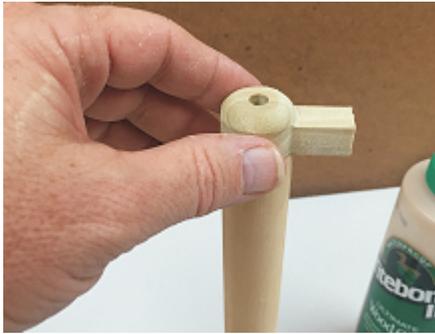Glue part #6 on top of the 1"x 10" dowel. (fig. 4h)

fig. 4h

After it is dry, drill a 0.25" diameter hole through part #6 and into the end of the dowel about 0.5" deep. Glue the 0.25"x 1.5" dowel into the hole. Trim and sand the dowel flush with the top when dry. (fig. 4i, 4j)

fig. 4j

Glue in dowel. Trim and sand flush when dry.

fig. 4i Drill hole into dowel end using existing hole in part #6 as a guide

Glue the Ring to the Wedge. Make sure the Wedge is flipped correctly before gluing. Allow to dry. (fig. 4k)

Glue the Ring to the Wedge. Check diagram to make sure Wedge is flipped correctly.

fig. 4k

Sand and blend sections of all assemblies. (fig. 4l)

fig. 4l

Glue the two Mouthpiece assemblies together. (fig. 4m)

fig. 4m

Make a mark 7.125" from the bottom of the 1"x 10" dowel. Slide the Hook onto the dowel and glue the Hook so the ring's top edge meets the mark. (fig. 4n, 4o)

Mark dowel at 7.125" from bottom

fig. 4n

Glue the Hook so the ring meets the mark. Wipe away excess glue with a damp rag. The Hook is positioned at a 90-degree angle from the tenon of part #6.

fig. 4o

(cont.)

STEP 5 - Phone Assembly

Glue the dowel post into the base. The tenon at the top will face directly forward. (fig. 5a)

Glue dowel post into the base with tenon facing forward.

fig. 5a

Glue the clock housing assembly to the base. The apex of the wedge shape is at 12 o'clock position. (fig. 5b)

The highest part of the wedge at the 12 o'clock position

fig. 5b

Glue the Mouthpiece assembly to the tenon at the top of the dowel post.

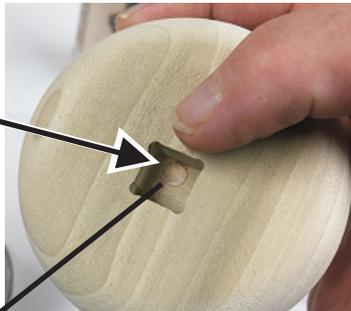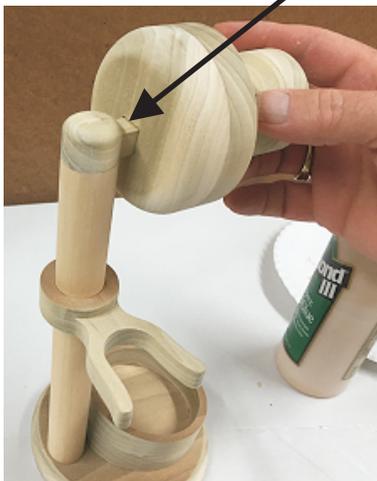Make sure the pocket dowel is at the TOP of the assembly when gluing it onto the tenon. (fig. 5c, 5d)

fig. 5c

Glue Mouthpiece assembly to tenon

fig. 5d

The assembly will look like this. (fig. 5e)

fig. 5e

STEP 6 - Apply Finish

Apply your choice of finish. Here's what I used on the sample Vintage Candlestick Telephone Clock made of Poplar: (fig. 6a, 6b)

• Applied Rust-Oleum Ultimate Stain - Carrington
• Several coats of Krylon Clear Acrylic spray
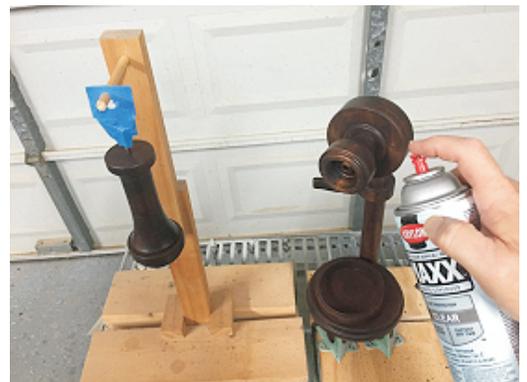

Apply Stain

fig. 6a

Apply Krylon clearcoats

fig. 6b

(cont.)

STEP 7 - Final Assembly

Drill a hole on the back edge of the Base to accept a 0.125" dia. dowel for the black tubing. Insert and glue in a dowel, leaving about 0.75" protruding. (fig. 7a, 7b)

fig. 7a

fig. 7b

Cut a length of soft black tubing (I used a 14" length). Push the tubing onto the Handset and Base dowels. Wrap some tape around the dowels, if necessary, to create a very snug fit for the tubing. (fig. 7c)

Slide on the tubing over the Handset and Base dowels

fig. 7c

NOTE: Alternatives to the soft tubing could be electrical cord, telephone cord, thin rope and so on. In these cases, you may want to drill appropriately sized holes into the end of the Handset and Base edge and epoxy in whatever "phone cord" substitute you choose. (fig. 7d)

fig. 7d   Alternate "phone cord" possibilities

IN CONCLUSION

Place your clock insert into the clock housing and some protective felt, cork or silicon pads underneath the base to complete the project.

Place the "phone" on a guest room bedside table, your work desk, a low shelf or wherever you like. It is certainly a conversation starter and should bring a smile to observers' faces. I hope you enjoyed making your Vintage Candlestick Telephone Clock!
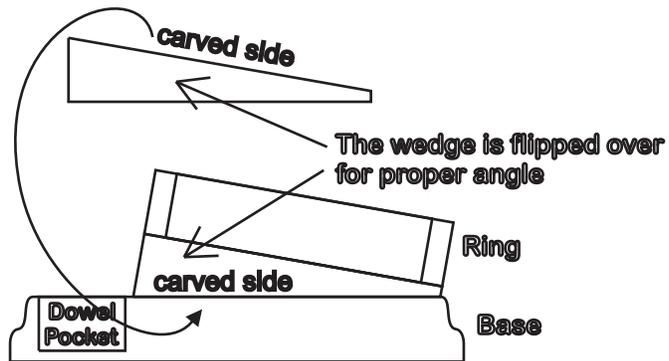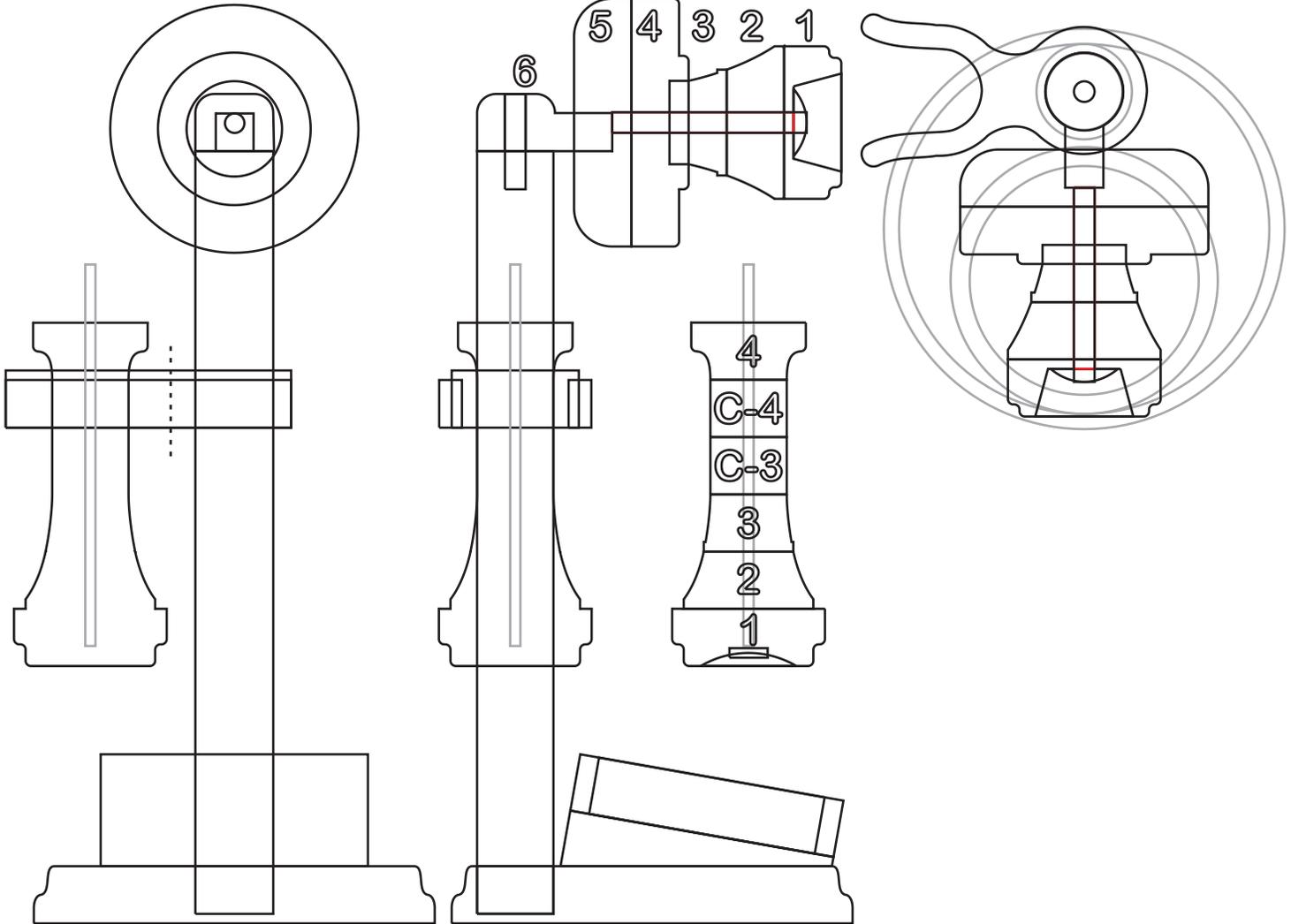
Happy Carving!

Michael
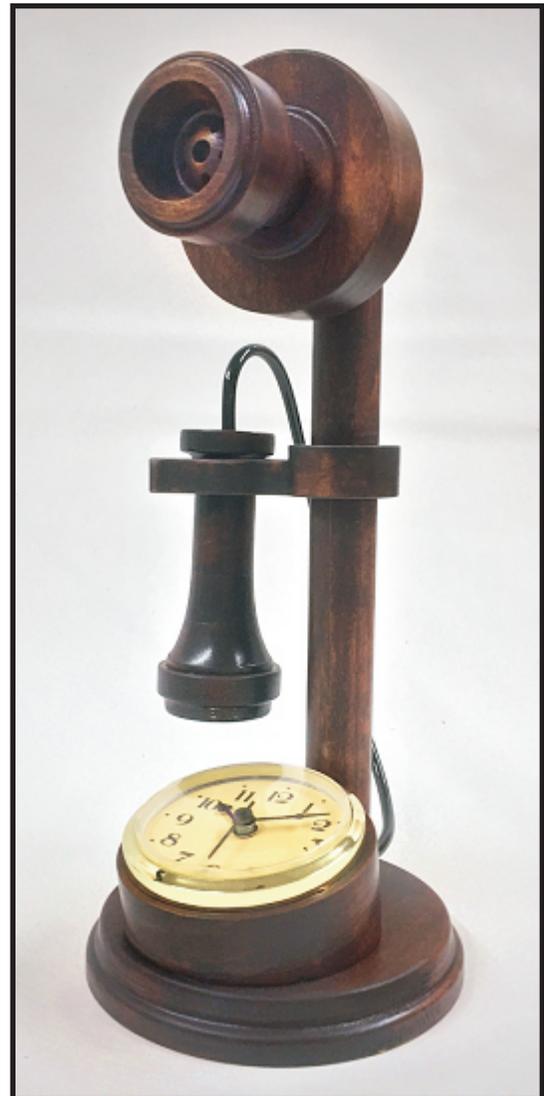
Layout and Placement Guides
(Not to scale - true scale layouts are shown in the project files)

Front View

Side View

TOP View

5 4 3 2 1

6

4
C-4
C-3
3
2
1

carved side

The wedge is flipped over
for proper angle

Ring

carved side

Dowel
Pocket

Base

(cont.)

Materials Source Page

• **3M Radial Bristle Discs from www.mcmaster.com**
(stack 3 discs at a time on your rotary tool mandrel)
    80-grit: part # 4494A19
    220-grit: part # 4494A18

Items Purchased at Home Depot™ or Lowes™

• **0.125 ", 0.25", and 1 " diameter wooden dowels**
• **Rust-Oleum Ultimate Wood Stain - Carrington**
• **Sandpaper, Wood Glue**
• **Disposable Brushes and Paint Rags**

Items Purchased from Amazon.com

• **Black aquarium air tubing. Examples below:**

Saim® Flexible Air-Line Tubing for Aquariums, 20-Feet (Black)

Lee's Sleek Airline Tubing, 25-Foot, Black

**Krylon Clear Gloss
from WalMart**

Part #15706   Part #15708

3.1875" Clock inserts from www.klockit.com

RESOURCES...

There are numerous resources for Vectric software owners to make their experience with their products more enjoyable. The Vectric website includes video tutorials and more, to provide a good overview of the software products and how to use them. Please visit the Support page for a complete listing of available resources for you.

Vectric Support: http://support.vectric.com/

Vectric User Forum

Every owner should join the Vectric User Forum (http://www.vectric.com/forum/) where fellow users share their experience and knowledge on a daily basis. It is a FREE service that you will surely appreciate. A handy Search Feature helps you find answers to any questions you may have. There are Gallery sections as well, where you can post and view photos of projects created with Vectric software.

IMPORTANT: Before outputting any toolpaths you should carefully check all part sizes and the material setup to make sure they are appropriate for your actual setup.You should also check and re-calculate all toolpaths with safe and appropriate settings for your material, CNC machine and tooling.

Terms of Use: This Project and artwork is provided on the understanding that it will only be used with Vectric software programs. You may use the designs to carve parts for sale but the Files and/or Vectors, Components or Toolpaths within them (or any derivatives) may not be converted to other formats, sold to, or shared with anyone else. This project was created by Michael Tyler and is Copyright 2016 - Vectric Ltd.