

B10 – Bell Roller -- Final Project

In this exercise you will draw Orthographic views and an Assembly Section of the components of the Bell Roller.

You will apply dimensions, annotation, utilize blocks and attributes, page set-up, plotting and paper-space using multiple scales.

This project is the **Final Project** for DRAF-1100; Drafting Fundamentals

1. Initial Set-up:

Start a NEW **Imperial** drawing

Use DDUNITS to set units to Fractional (accuracy 1/16")

Set LIMITS to 0,0 and 36,24

ZOOM, All

Create the following LAYERS and then SAVE!

Call your drawing "xx-bell-roller" where xx are your initials.

You will email this completed drawing to your instructor for marking.

Layer Name	Linetype	Colour	Line Thickness on Plotter
Object	Continuous	White	.5
Center	Center	Red	.2
Hidden	Hidden	Yellow	.3
Phantom	Phantom2	Blue	.4
Dimension	Continuous	Green	.3
Section	Phantom2	Magenta	.6
Hatch	Continuous	Blue	.2
Text	Continuous	Cyan	.4
C1	Continuous	Red	.2
C2	Continuous	Yellow	.3
C3	Continuous	Green	.3
C4	Continuous	Cyan	.4
C5	Continuous	Blue	.2
C6	Continuous	Magenta	.6
C7	Continuous	White	.5
Border	Continuous	Magenta	.6
Outline	Continuous	Red	.2

3. Annotation and Dimensions:

Create the following Text Styles:

Style Name	Font	Height	Width Factor	Purpose
N1	romans.shx	1/8	1	Notes
N2	romans .shx	3/16	1	Titles
DIM	romans.shx	0	0.8	Dimensions

Create DIM Style: **I-MECH** with **these settings**:

- Dim lines Green
- Dim lines baseline spacing 3/8
- Extension lines colour #9
- Ext lines beyond dim line spacing of 3/16
- Ext lines offset origin of 1.16
- Closed filled arrows
- Arrow size of 1/8
- Center marks size of 1.16
- Text using DIM text style
- Text colour cyan
- Text height 1/8
- Vertical placement centered
- Horizontal placement centered
- Text offset from dim line of 1/16
- Text aligned Horizontal
- Fit overall scale of 1.0
- Do not draw dim line between extension lines
- Fractional units
- Precision set to 1/16
- Fractional format of diagonal
- Angular dimensions decimal, precision of 0.0
- No alternate units
- No tolerance used.

Dimension and Annotate the components as indicated by textbook guidelines and supplemented by the instructor.

4. Assembly Section:

Use the COPY command to make a copy of the required view of each component.

Trim out the component as though it was cut in **Section**

Apply correct HATCH pattern to each component (according to its material)

Create a BLOCK of each component, use appropriate names for each block.

Assemble using OSNAPS to place components

(Remember to leave the Shaft whole, do **not** section it)

5. Insert Title block in Paper Space

Use the **d-size.dwg** title block from <\\Hobbes\lab\student\Office\Title-Blocks> and fill in all attributes.

(note: insert on correct layer, in Paper Space, insertion point 0,0, scale 1:1)

Use Layout 1 for the title block. You should rename the layout tab "D Size"

Drawing Number will be of the format:

D-1100-xxx

Where xxx is the next sequential number for your drawing log.

6. Make Viewports

Set up viewports In Paper Space, on the D-Size layout tab (layout 1.) Make sure they are on the right layer!

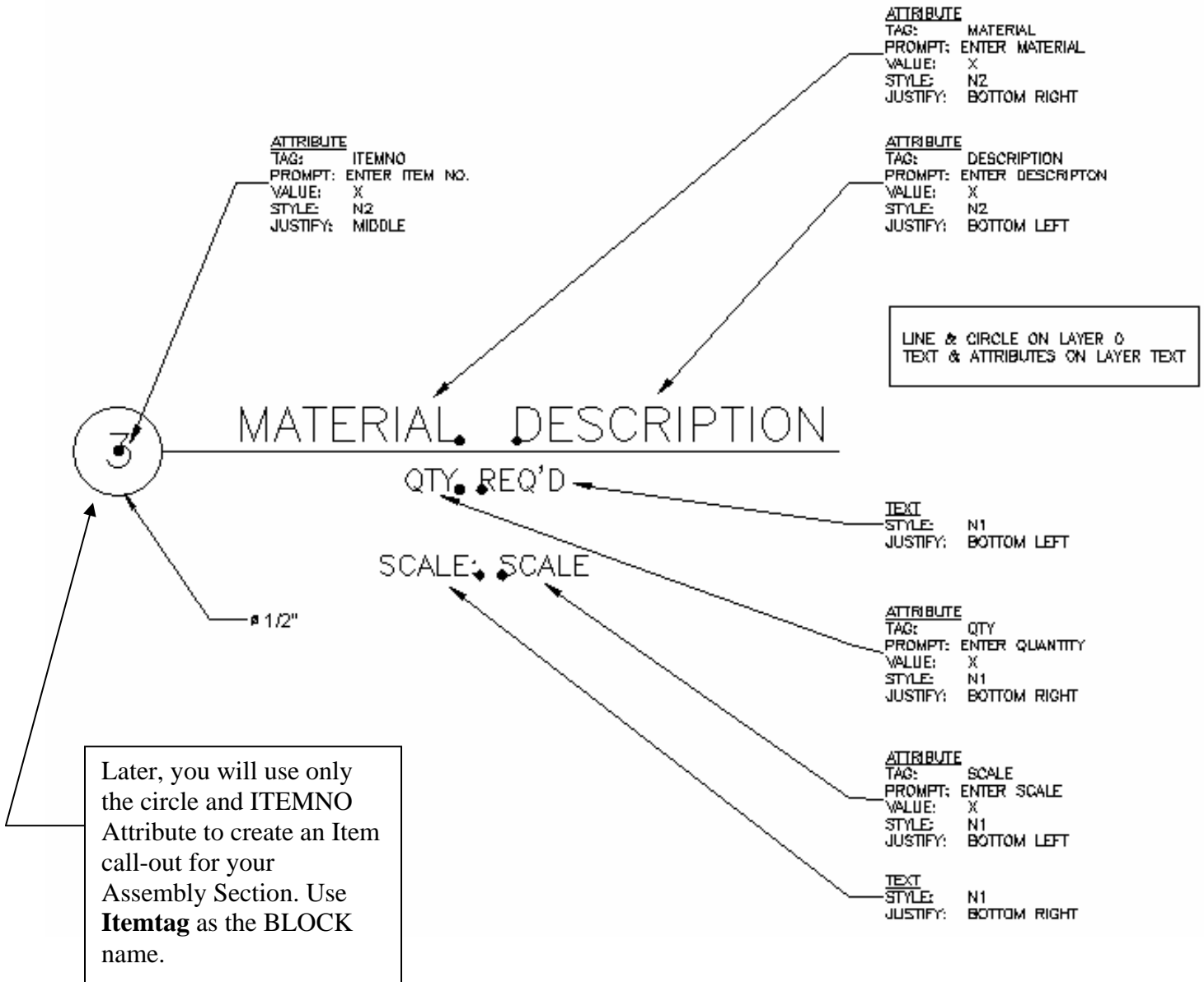
The Bushing will be at a scale of 2:1

All other views will be 1:1

You may need multiple viewports.

Modify annotation values for the correct scale for each viewport.

7. Create Label block with Attributes



Save BLOCK as **Label** (BLOCK name)

Submit for mark up

Please plot using the DWF plotter, a D-Size plot file. Use the DWF viewer to print the plot file to the HP 8000 using the 11 x 17 paper (Tabloid) to a FIT page setting.

Also e-mail the instructor with the location of the matching DWG file for review and mark up. I would prefer not to have the DWG attached to the e-mail.

FAQ

The lubrication hole in the center of the steel shaft is “1/4 DRILL, 2 ¼ DEEP”

The cast-steel base is upset 1/8” from the bottom

The cast-steel brackets have a base thickness of 3/8”

The shaft has a BORE diameter of 1”

Each bracket has a 3/16” fillet on the surface facing the roller when assembled. This is indicated with a linear dimension on one of the illustrations.

All unmarked radii are 1/8”

This is an imperial drawing. – D size

Project name = course name: DRAF 1100 FUNDAMENTALS

Drawing name = BELL ROLLER

Drawing name 2nd line: ASSEMBLY

The assembly comprises two cast-steel brackets, two bronze bushings, stainless steel shaft, stainless-steel roller, and cast-steel base. The bushings are pressed into the roller, and the shaft is drilled for lubrication.

Layer 0 is to be used to create the required blocks ONLY, no drawing objects should be placed on layer 0 (This layer will be frozen before marking the drawing.)

Correct use of layers is part of the marking scheme.

Process information, such as DRILL is to be included in the annotation, DRILL implies a Diameter.