The MyCustomIndicators folder contains specialized "indicators" that I created in support of two simulation models: a Chronometer Simulation and E. Howard Company (EHC) tower clock. These indicators are copied into the "indicators" folder within the Gearotics installation folder. I use the metric system in all of my simulations and indicators.

Indicators are DXF formatted files that contain "closed" shapes: squares, circles, polylines, etc. If the shape is not closed then it will not be inserted in a simulation model. Nested closed shapes can be used to create holes in an indicator. I use LibreCAD to create my custom indicators simply because the program is free and gets the job done. Free is good when you are retired.

I prefixed the filenames with EHC to make them easier to find in the "indicators" list.

When an "indicator" is added to a project, it can only be added to a shaft. The selected indicator appears to be split along the x-axis and increased in the y-axis by the size of the shaft size defined on the "decorations" panel.

For example: In the simplest case consider a **closed** narrow rectange centered on the x-y axes that is 100mm along the x-axis and 10mm alongthe y-axis. When this indicator is added with a 10mm "decorations" shaft size, the resulting indicator will be 100x20mm. To avoid this expansion in the y-axis, simply make sure that the shaft size on the decorations panel is set to zero when inserting my custom indicators.

When using numbered "dials" it matters whether the viewpoint is from the front or back, right or left, up or down directions. To overcome this viewpoint features of numbered dials, regular and reversed versions of the numbered dials are provided.

A numbered dial orientation (i.e., having the "12" at the top) is dependent on where in a chain of gears/shafts the dial is inserted. The dial needs to be rotated to the read properly and then unlinked from the shaft. The unlink is needed to prevent the dial from rotating with the shaft when the simulation is running.

If you look at the ClkDial, ClkDialDisk, and DialCylinder files in LibreCad you will find that the objects lie within a 200x200mm square, centered on the x-y axes origin (0,0). When added using a 100mm size on the indicator panel the resulting object will be the same size as defined in the DXF files.

EHC-ClkDial-Num
EHC-ClkDial-Num-Rev
These are the foward and reverse arabic numbered dials, designed within a 200x200mm square. Use "thickness" to make the numbers look 3D in the simulation.

EHC-ClkDial-Roman
EHC-ClkDial-Roman-Rev
These are the foward and reverse Roman numbered dials, designed within a 200x200mm square. Use "thickness" to make the numbers look 3D in the simulation

EHC-ClkDial-Disk
The above numbered dials have no backing plate. This file is designed to be placed behind the dials. Use "thickness" to make the backing plate look 3D in the simulation.

EHC-DialCylinder
This DialCylinder is designed to look like a round clock case for my chronometer simulation. It is inserted using the "thickness" parameter on the indicator panel. Consider this is as a circle "extruded" into a cylinder

where "thickness" determines the cylinder's height.

EHC specific "indicators"

On the EHC clock the "snail" determines how many times a bell strikes. The snail for the EHC is a stepped wheel where the deeper the step the more times the bell strikes.

EHC-Snail-2L & EHC-Snail-2R
These are the forward and reverse versions of the EHC snail

EHC-VaneArms, EHC-DualVanes, & EHC-DualVanes-Rev
The "vanes" on the EHC clock serves as a govenor to control the speed of the bell strikes.

The VaneArm and the DualVanes (either forward or reverse) files are meant to be used together. When inserted with a 100mm setting the objects will approximate the size of the actual vanes on the EHC clock. The thickness of the VaneArm and Vanes are adjusted to look good.

Chronometer Simulation Specific "Indicators"

EHC-H4-Vane
This vane file is used in the chronometer simulation. It is the first specialized "indicator" that I designed to simulate the remontoire vane in the chronometer simulation.