



Working with Probe Files in Aspire

Note: This document is geared towards users already familiar with Aspire. If unfamiliar with this software, there are many in-depth video tutorials available at Vectric's website: http://www.vectric.com/WebSite/Vectric/support/aspire/aspire_tutorials_v3.htm

It will also be helpful to read through the "Probe" document before starting this one.

Overview

This document gives a brief overview of tools and techniques for working with 3D probe files in Aspire. It specifically covers working with probe models that were created in multiple parts, which is something that may be encountered if creating large probe files.

In some situations, it may be helpful to do a probe file in two parts or more. Using a wrench as an example, the widest part of the wrench is a little over 2", while the handle is no wider than 7/8". If we probe the entire wrench at 2," it would waste a lot of time covering all that space around the handle. This is also useful information if the probe file is interrupted due to a power outage or other unexpected event, and the file needs to re-start halfway through.



Preparing the Files

If files are incomplete (they will be, assuming the probe operation was interrupted before completing), it will not be possible to open them right away. Please reference the "Probe" document to add the necessary closing statements to the files. Be sure to also create a readable .dxf by running the files through the probe to surface translator in the ShopBot control software (see "Probe" document).

Opening the Files in Aspire

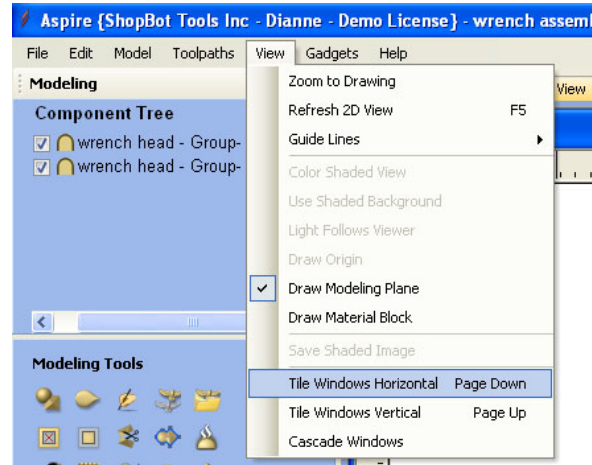
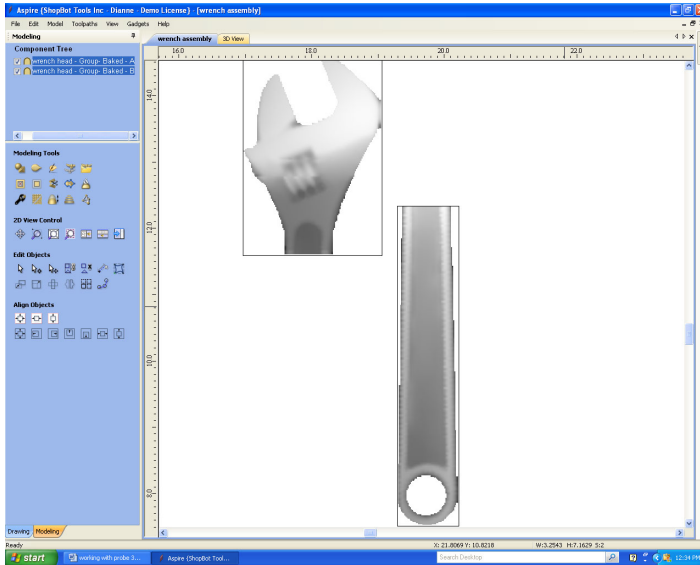
Start a new file in Aspire and set up the job dimensions. Import the 3D components by clicking to File > Import > Import Component or 3D model.

There are four basic tools and processes for bringing together two probe files. These steps are:

- Aligning components in the X- and Y-axes
- Adjusting the components for height
- Merging the two components
- Trimming the edges using boundary vectors

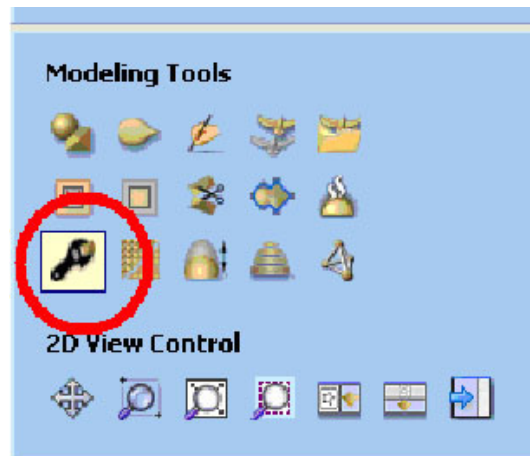
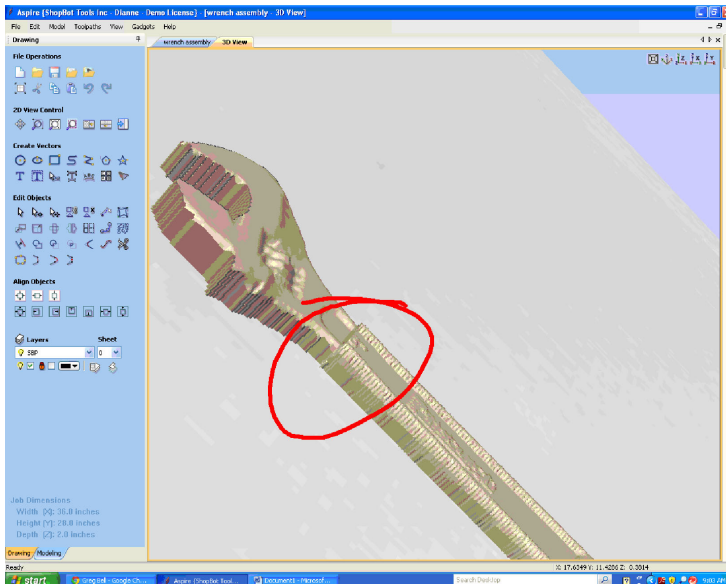
Aligning Components

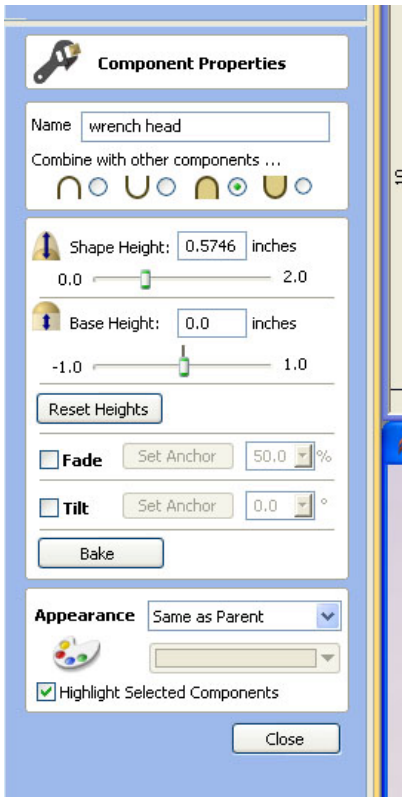
The components will likely show up on the screen out of line with each other. In 2D view, double-click on a component to move it into position by either dragging it or using the arrow keys on the keyboard. It is very helpful to tile 2D and 3D horizontally to get a clearer view. Do this by clicking to View > Tile windows horizontal.



Adjusting for Component Height

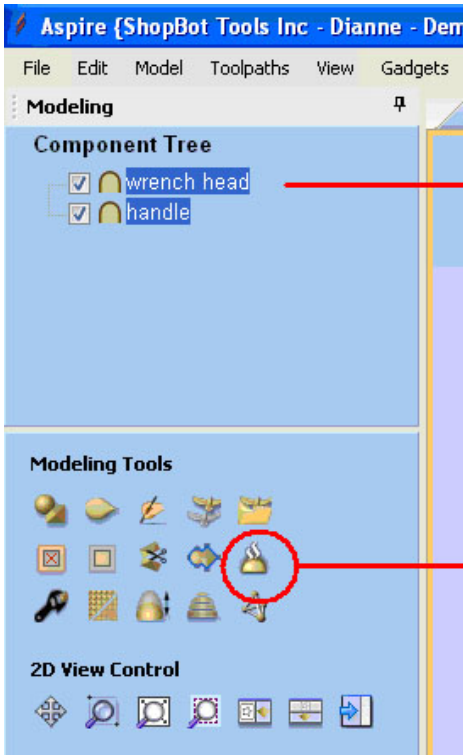
As shown here, components don't always line up properly in the Z-axis. To correct this, double-click on the component to change, and then click on the component properties tool.





Within the component properties toolbar, it is possible to adjust both shape height and base height. The main difference between the two is that shape height will change the geometry of the component, while changing the base height will simply lift the shape up as if on a platform.

It is also helpful to change the combine mode to merge. This will provide a smoother transition between components.



hold down the shift key to select multiple components

the baking tool

Merging Components

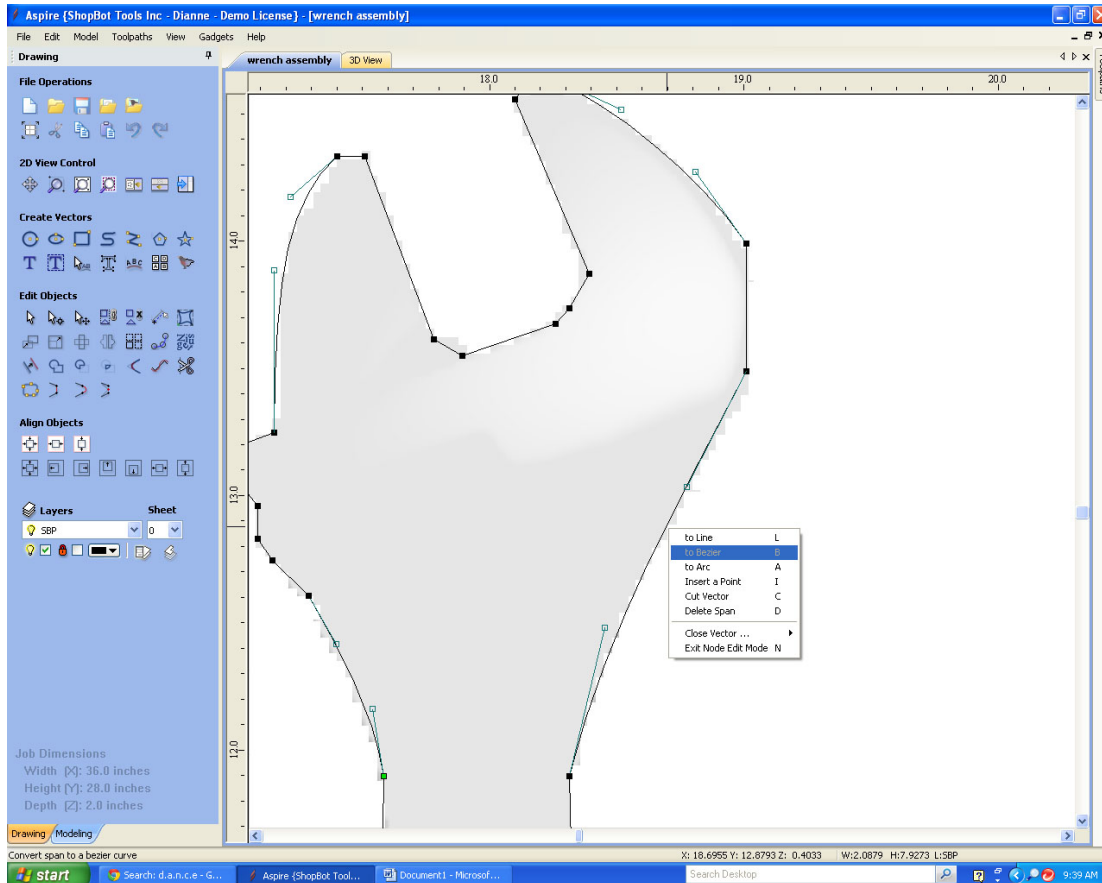
Once satisfied with the placement of the two components, it is possible to merge them into one part for further use. In Aspire, this is called baking. Baking a single component makes any changes a permanent part of that component. When applied to two components, it merges them together.

In the component tree window, select all the components to merge by holding down the shift key while clicking on them. Click on the Baking tool icon to create one solid model.

Trimming the Edges

To clean up the edges of a model, use the “clear area of selected component” tool. It allows a closed vector to serve as a boundary, and provides the option of removing any part of a 3D component from inside or outside that vector.

Switch over to 2D drawing mode, and trace over the outline of the areas to trim. Think of this outline as a cookie cutter that will trim away excess material.



Select both the vectors and component to trim. Switch back to the modeling tab, and select the clear model inside/outside vectors button. To edit the outline vectors, just undo the clearing operation and switch back to the 2D drawing tab. Click on the vector and select the node editing tool to move the vectors towards or away from the edge of the model.

