ProvelPrint was designed for printing prosthetic sockets using Provel Print Cups and the Provel E2.20 Extrusion Printer.

**Before using ProvelPrint**

The user will import a residual limb shape file created by scanning patient anatomy or by casting the residual limb and digitizing with a cast digitizer. The resulting STL file will be imported into a prosthetic limb CAD program for modification. Once the necessary adjustments have been made, the shape is ready to open in ProvelPrint.

**Help Menu**

**File**

Allows the user to navigate to and open a file.

**Preference**

Allows the user to enter a port and the printer IP address to establish connection with the printer.

**Port**

This shows the user if the port is open and allows it to be opened if not.

**Lock side**

Indicates which side the release button hole in the cup should be on when loading the cup in the cup fixture.

**Cup**

Allows selection of the correct cup diameter and height.

**Nozzle**

Generally a 5 mm nozzle will be used to print adult sockets, but a smaller nozzle (4 mm) may be more typical for a juvenile or pediatric socket.

**Material**

CP1 is the same polypropylene copolymer used to injection mold Provel Print Cups. This provides best adhesion between the cup and the socket. There is a long history in the industry of using polypropylene copolymer for thermoplastic sockets.

**Layer Height**

A layer height of 2.0 mm (.080”) might be typical. But for abrupt contour changes, a thinner layer height will allow greater overlap and commensurate improvements in layer to layer adhesion. Thicker layer heights will usually print faster.

**Wall Thickness adjustment**

Allows the user to taper the wall thickness from from proximal to distal.

**Print Time**

Displays print time remaining.

**Verify Print Size**

Allows for shrinkage compensation and is tied to Material selected. When the Print Test button is pressed, a file for the test object will be sent to the printer. When Start is pressed on the printer display, a small test object will be printed for inside diameter measurement by the user. The user will then enter the measured value and ProvelPrint will adjust all prints to match the desired size until the Print Test is used again.

**Extrusion Adjustment**

This allows user correction for minor over or under extrusion while printing.

**View**

This simply changes the view orientation of the socket.

**Set Anterior**

Allows rotation of the socket to set the anterior view orientation.

**Conform End**

Blends the distal end of the socket shape to the groove in the top of the chosen cup size.

**Send File**

Sends the completed and sliced file to the printer.