

Drill Table

Modified by Jason Howie on Sep 2, 2014

Parent page: [Objects](#)

Symbol	Count	Hole Size	Plated	Hole Type
○	2	0.70mm	PTH	Round
✱	2	1.60mm	PTH	Round
⊕	2	3.25mm	NPTH	Round
▽	8	0.90mm	PTH	Round
⊗	20	1.00mm	PTH	Round
□	43	0.40mm	PTH	Round
	77 Total			

The Drill Table presents a live summary of all drill holes present in the board.

Summary

A standard element required for manufacture of a Printed Circuit Board is a drill drawing table, also known as a drill table or a drill drawing legend. The drill table lists the size and number of holes for each drill used on the board. Each drill size can be represented by a symbol, a letter or the actual hole size. When a drill drawing is generated for the board, each actual drill site is marked by a symbol, as shown in the image below. The drill table updates in real time - as hole-containing objects such as pads and vias are placed or removed from the PCB design, the table updates.

Availability

A Drill Table can only be placed in the PCB editor. Note that the drill table must be placed on the Drill Drawing layer, it will be enabled and selected automatically during placement. To place a drill table:

- Click **Home** | **Board** |  .

Placement

After launching the command, a drill table will appear attached to the cursor. Position the table in a suitable location outside the board and click to place it.

Note that the attributes can be modified during placement, press **Tab** to bring up the *Drill Table* dialog. Changes made will affect the object being placed, and subsequent objects placed during the same editing session.

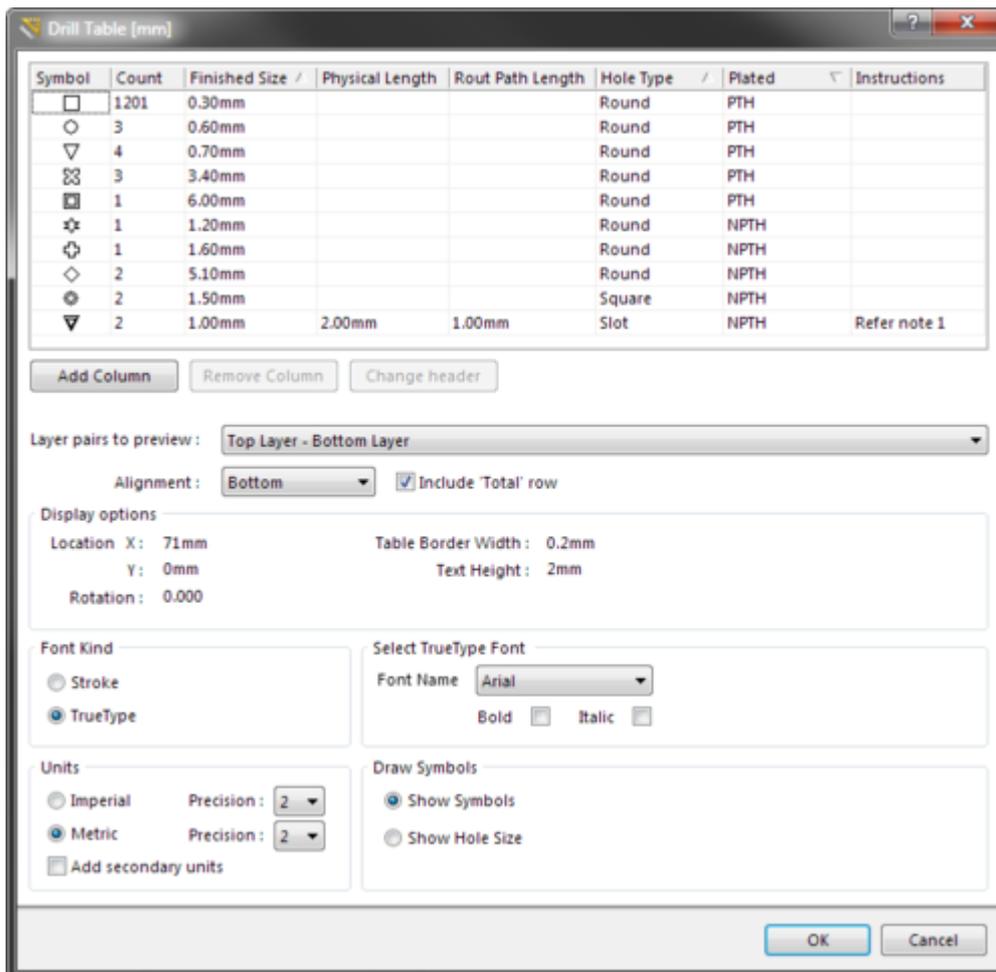
Non-Graphical Editing

The following methods of non-graphical editing are available:

Editing via the Properties Dialog

Dialog page: [Drill Table](#)

This method of editing uses the [Drill Table dialog](#) to modify the properties of a drill table object.



Edit the properties of the Drill Table in the dialog. Note the Instructions column, this is a user-defined column.

The *Drill Table* dialog can be accessed prior to entering placement mode, from the **PCB Editor - Defaults** page of the *Preferences* dialog. This allows the default properties for the drill table object to

be changed, which will be applied when placing subsequent drill tables.

During placement, the dialog can be accessed by pressing the **Tab** key.

After placement, the dialog can be accessed in one of the following ways:

- Double-clicking on the placed drill table object.
- Placing the cursor over the drill table object, right-clicking and choosing **Properties** from the context menu.

Drill Table Sort Order

To sort the drill table, click the required column heading. A small triangle will appear, indicating the current sort direction - click a second time to reverse the sort direction. Multi-level sorting is supported, hold the **Shift** key as you click to sub-sort by a second (or third) column. In the image below the table has been sorted by:

1. **Plated** (to separate plated from non-plated), then
2. **Hole Type** (to order holes to Round then Slot then Square), then
3. **Finished Size** (to order by size).

Symbol	Count	Finished Size /	Physical Length	Rout Path Length	Hole Type /	Plated ▾	Instructions
□	1201	0.30mm			Round	PTH	
○	3	0.60mm			Round	PTH	
▽	4	0.70mm			Round	PTH	
⊗	3	3.40mm			Round	PTH	
□	1	6.00mm			Round	PTH	
☆	1	1.20mm			Round	NPTH	
+	1	1.60mm			Round	NPTH	
◇	2	5.10mm			Round	NPTH	
⊗	2	1.50mm			Square	NPTH	
▽	2	1.00mm	2.00mm	1.00mm	Slot	NPTH	Refer note 1

Sort the drill table by clicking the column headings, hold shift and click to sub-sort by other columns.

Customizing the Table

The drill table can be customized in the dialog, customizations include:

- **Changing the column order** - click and drag on a column header to change the order of columns.
- **Change a column header** - select the column then click the **Change Header** button, or right-click in the column and select **Change Column Header** from the menu.
- **Hide a column** - select the column then click the **Remove Column** button, or right-click and select **Remove Column** from the menu.
- **Show a column** - click the **Add Column** button then select the required column, or right-click and select the relevant **Add Column** menu entry.
- **Add a Custom column** - click the **Add Column** button then select **Custom column**, or right-click and select the **Add Column » Custom Column** menu entry. Both the header and the values are user-defined in a Custom column.

Layer Pairs to Preview

The drill table supports multi-layer boards that use layer-pair drilling. To support the designer in using the drill table during the design process the table includes the **Layer pairs to preview** option, set this to restrict the table to only show the drill holes for just the selected layer-pair. Note that the **Layer pairs to preview** option is *not* used to control which layer-pair drilling is included in the drill table during output generation, that is defined by the **Drill Layers** setting in the *Layer Properties* dialog in the output setup. That means that a single table can be placed on the design, the table will only include the appropriate layer-pair data during output generation of a drill drawing of that layer-pair.

Alignment

The table can be built from the bottom-up, **Alignment = Bottom**, or from the top-down, **Alignment = Top**. Use this setting to allow for table size changes without impacting on surrounding objects in the workspace.

Display Options

The drill table location can be precisely defined by configuring the **Location X** and **Location Y** settings if required. It can also be rotated if necessary. The grid lines in the drill table are actually Line objects, use the **Table Border Width** to set the Line width.

Font Kind

Both Stroke and TrueType fonts are supported for text display in the drill table. Stroke fonts are native to the software and are supplied as part of the installation. TrueType fonts will be those available for this installation of Windows.

Units

Set the Units to Metric or Imperial, and the precision for each as required. Enable the **Add secondary units** option to display both types of units.

The Symbol that Represents each Hole Size

Each hole size can be represented by one of 3 styles of drawing Symbol:

- **Show Symbols** - Draw a small geometric symbol at the location of each drill site. Note that a symbol is automatically chosen for each hole size, up to a total of 15 different sizes. These symbols tend to be open in their design, if a hole center marker is required then include the Drill Guide layer in the output generation. If required, each Symbol can be replaced by a letter, this is done in the **PCB Hole Size Editor**, as described below.
- **Show Hole Size** - Draw the numerical size of the hole at the location of each drill site. Enable **Show Hole Size** option to show hole size in drill table.

Controlling the Assignment of Symbols or Characters

When Symbols are chosen, the software automatically assigns a symbol for each hole size. This automatic assignment can be overridden if required, in the **PCB Hole Size Editor**. To display the **PCB Hole Size Editor**, select it in the drop down at the top of the *PCB* panel. Click on a Symbol in the **Hole Size Editor** to display the Symbol Selection dialog and change the style of that Symbol, or choose a Letter (Character) instead.

17 Unique Holes (0 Highlighted)					
Count	ToolSize /	Length	Type	Pla...	Symbol
1201	0.3mm	-	Round	<input checked="" type="checkbox"/>	□
3	0.6mm	-	Round	<input checked="" type="checkbox"/>	○
4	0.7mm	-	Round	<input checked="" type="checkbox"/>	▽
2	1mm	2mm	Slot	<input type="checkbox"/>	▽
1	1.2mm	-	Round	<input type="checkbox"/>	☆
1	1.5mm	-	Round	<input checked="" type="checkbox"/>	✕
2	1.5mm	-	Square	<input type="checkbox"/>	⊙
1	1.6mm	-	Round	<input type="checkbox"/>	⊕
1	1.7mm	-	Round	<input checked="" type="checkbox"/>	☆
1	1.8mm	-	Round	<input checked="" type="checkbox"/>	✕
1	1.9mm	-	Round	<input checked="" type="checkbox"/>	⊕
1	2.2mm	-	Round	<input checked="" type="checkbox"/>	⊗
1	2.3mm	-	Round	<input checked="" type="checkbox"/>	A
1	2.4mm	-	Round	<input checked="" type="checkbox"/>	B
3	3.4mm	-	Round	<input checked="" type="checkbox"/>	⊗
2	5.1mm	-	Round	<input type="checkbox"/>	◇
1	6mm	-	Round	<input checked="" type="checkbox"/>	□

Configure the assignment of Symbol-to-hole size in the PCB Hole Size editor (*PCB* panel). The assignments are stored in the PCB file.

There is a total of 15 symbols available, as shown below. If there are more than 15 different hole sizes in the PCB then letters are automatically assigned.



The 15 pre-defined graphical symbols that are available.

Editing via the PCB Inspector Panel

An *Inspector* panel enables the designer to interrogate and edit the properties of one or more design objects in the active document. Used in conjunction with appropriate filtering, the panel can be used to make changes to multiple objects of the same kind, from one convenient location.

Graphical Editing

Moving a Drill Table

Click and hold anywhere within the drill table, then move it to a new location in the PCB editor workspace.

Interactively Resizing a Drill Table

The drill table is automatically sized based on the specified **Text Height** setting, as well as the number of different hole sizes (rows) and the number of defined columns. To interactively resize the table, click once to select it, then click and hold on a corner vertex. The *Confirm* dialog will appear, reporting that the table is locked, click **Yes** to continue and resize the table. Note that interactively resizing the table will also increase the font size.

Interactively Switching the Layer Pair to Preview

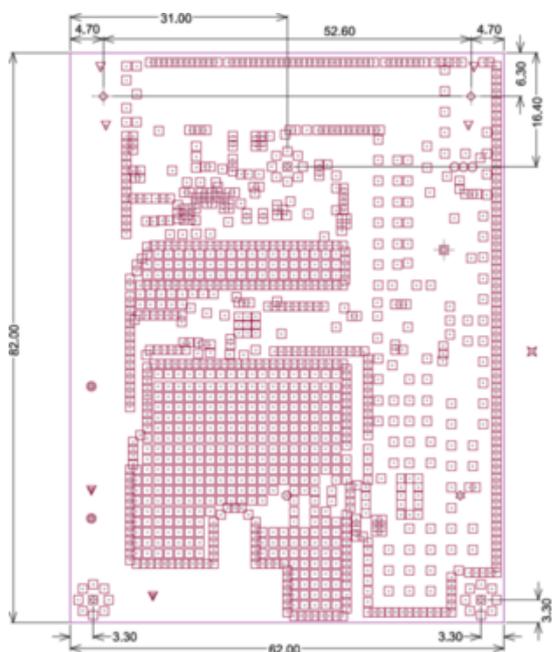
When the board includes layer-pairs, the displayed layer-pair is controlled by the **Layer pair to**

preview option in the *Drill Table* dialog. This chosen layer-pair can also be switched using the PCB editor right-click menu, simply **right-click** on the drill table and select the required layer-pair in the **Drill Table** sub-menu.

An object that has its **Locked** property enabled cannot be selected or graphically edited. Double click on the locked object directly and disable the **Locked** property, to graphically edit the object.

Notes

The drill table will appear on all output that includes the Drill Drawing layer. The image below shows an example of drill drawing output, showing each drill site marked by the symbol that has been assigned to that hole size. This example output also include the Drill Guide layer, which adds a small cross at each hole site.



Symbol	Count	Finished Hole Size	Physical Length	Rout Path Length	Hole Type	Plated	Instructions
□	1201	0.30mm			Round	PTH	
○	3	0.60mm			Round	PTH	
▽	4	0.70mm			Round	PTH	
	1	1.50mm			Round	PTH	
≡	3	3.40mm			Round	PTH	
⊠	1	6.00mm			Round	PTH	
⊙	1	1.20mm			Round	NPTH	
○	1	1.60mm			Round	NPTH	
◇	2	5.10mm			Round	NPTH	
⊖	2	1.50mm			Square	NPTH	
▽	2	1.00mm	2.00mm	1.00mm	Slot	NPTH	Refer note 1
	1221 Total						

Example output of the Drill Drawing layer showing the Drill Table next to the board, with each drill site marked by the appropriate hole size symbol.

Source URL: [http://documentation.circuitmaker.com/display/CMAK/PCB_Obj-DrillTable\(\(Drill+Table\)\)_CM](http://documentation.circuitmaker.com/display/CMAK/PCB_Obj-DrillTable((Drill+Table))_CM)