

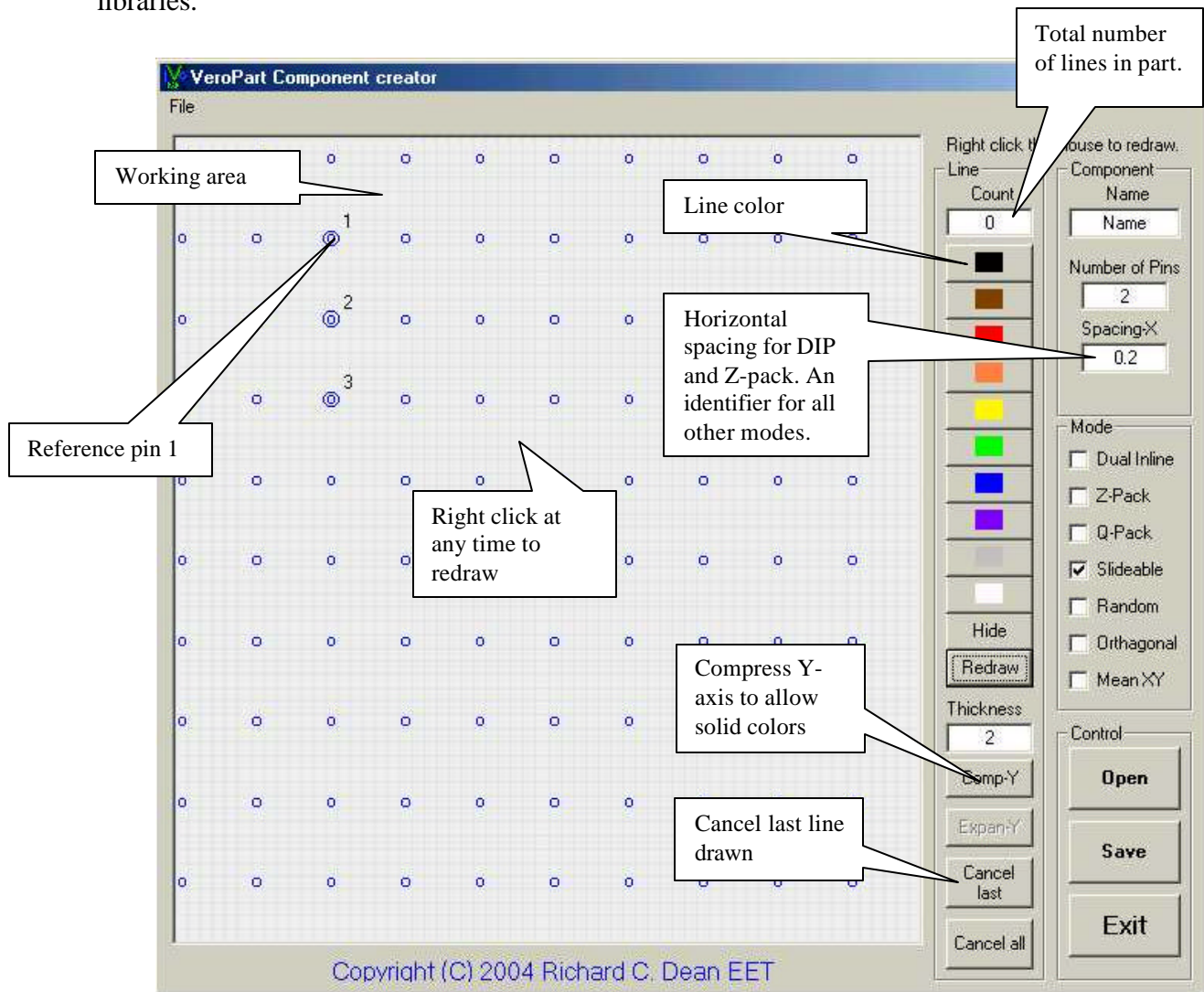
# VeroPart from the Wings of Technology

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VeroPART allows the creation or modification of parts for VeroCAD.

## Introduction:

The product VeroCAD uses predefined component libraries. These libraries contain components that are the basic building blocks of the VeroCAD program. VeroPART is the tool that allows the creation or modification of the components in the VeroCAD libraries.



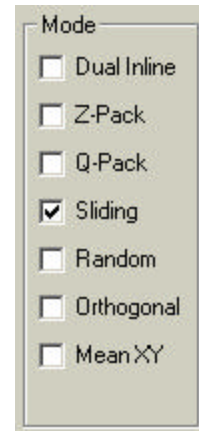
VeroPART main working area

# VeroPART Manual

## Components:

There are seven modes for components.

- Dual in line (DIP) will force orthogonal and is not sliding.
- Z pack will force orthogonal and is not sliding.
- Quad pack will force orthogonal and is not sliding.
- Sliding allows the component body to be moved between pins
- Random allows diagonal components.
- Orthogonal Up/Down or Left/Right components.
- MeanXY centers the package on the mean of the pin xy's.

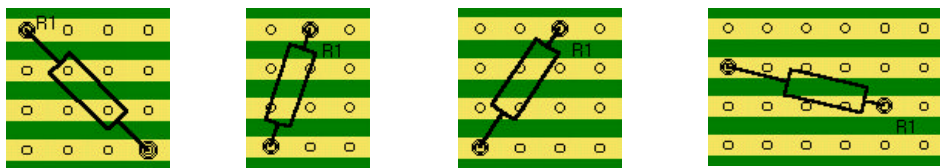


Mode as applied to pin count:

- Two pin components can be sliding or not sliding.
- Three pin components are forced orthogonal and are not sliding.
- Four pins or more are not sliding.

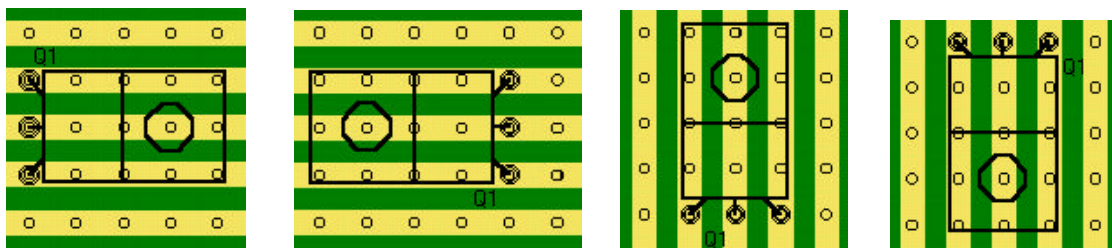
## Random

If Random is selected then orthogonal and diagonal pin placement will be allowed.



## Orthogonal

If DIP is selected then orthogonal pin placement will be forced so that the component will be placed horizontally or vertically as shown.



When creating a new parts, keep in mind that the image you created and the placement of holes are separate internal functions. This means that if you select DIP and draw a circle then the resulting component will be a set of dual inline pins starting a pin 1 and the circle you created will be drawn relative to pin 1.

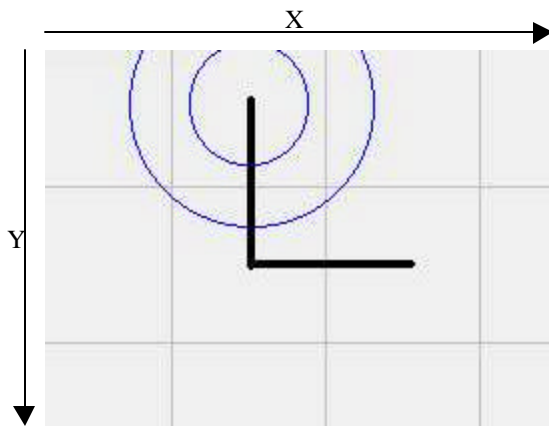
Effect of mode on pin placement for 3 pins or more:

Random	DIP	Quad	Z-Pack
○	○ ○	○ ○ ○ ○	○
○	○ ○	○ ○	○ ○
○	○ ○	○ ○ ○	○ ○
○	○ ○	○ ○ ○ ○	○ ○

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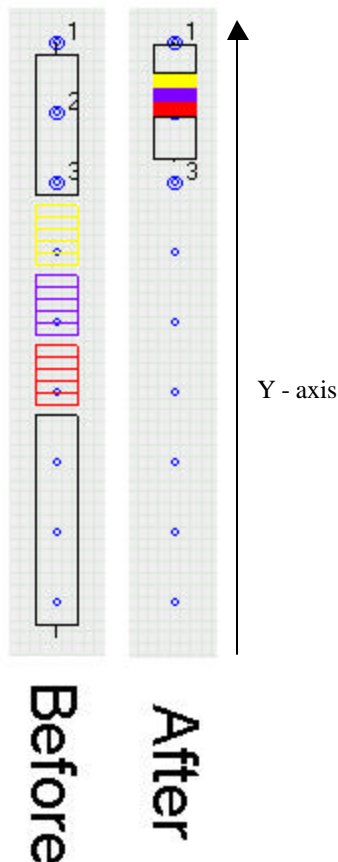
## Part creation:

- All parts must originate at pin 1. (If the part ends at pin 1 then an auto save is initiated).
- The X-axis is left to right and the Y-axis is top to bottom.



- The grid has pin one through 3 marked as such with a spacing of 0.1". The grid between each pin is one sixth. A vector that is placed within a grid will be automatically connected to the end of the preceding vector.

- Select the color using the color buttons on the right. (When Hide is selected the line will not be drawn in VeroCAD).



- Comp-Y (Compress the Y axis) / Expand-Y (Expand the Y axis) allows the designer to draw a component then compress all of the horizontal lines to form a solid color. The compress ratio is 5 so if the finished part length is 0.1 then the starting part length must be 0.5 before the compress is started.

Since compress will be used the component body must also be five times the finished length.

VeroCAD includes a set of 0.25 and 0.5-Watt color-coded resistors from 100 through 20,000,000 ohms. These components are located in Res025.lib and Res050.lib files.

Check the web site for updates and additions.

- Select the package form, Random, Dual inline, Z pack or Q pack by setting the mode.

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## Component body creation

### Axial 0.2

### Example:

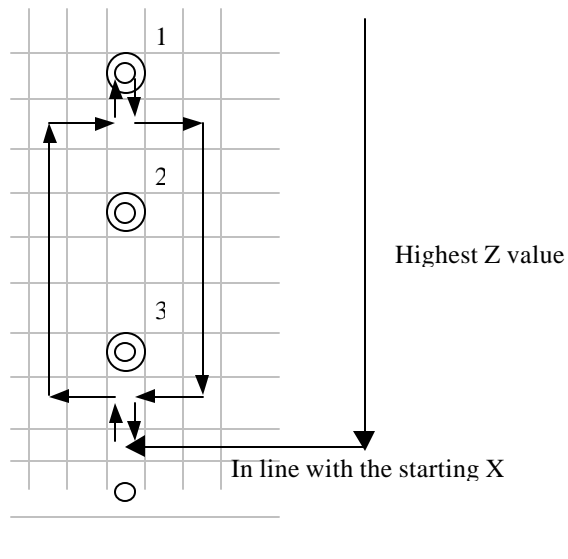
The following tutorial will create a sliding two pin component body. Critical to the success of this particular type of component is that the start and end is on pin one, and that all vector graphics are symmetrical. i.e. the number of vectors between pin 1 and the farthest point (maximum Y) must equal the number of vectors from the farthest point back to pin 1. This ensures that the slide feature will be uniform and predictable.

1. Create the line sequence as shown:

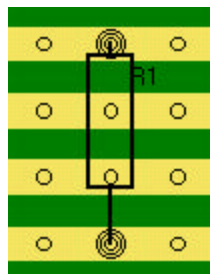
Start and end on pin 1

Since the component Body will be 0.2 in length then end the part two holes down.

The part is sliding so the Z axis must contain the highest value for Z and be in line with X of pin 1



2. Before clicking on the last pin (pin 1) change “Name” to the component name desired (Axial 0.2). Ending on the starting pin causes an automatic save. You can however save at any time, but ensure that you component is complete. Now set the number of pins to 2, Sliding and Random.
3. The new component will appear at the end of the library list.



### The component as it will appear in VeroCAD

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## Component body creation Dip4 0.3

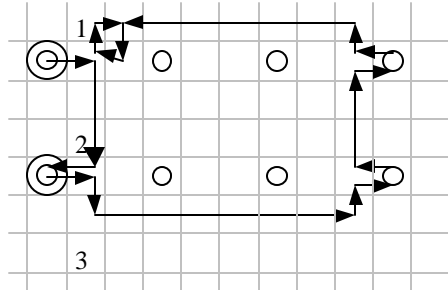
### Example:

The following tutorial will create a dual inline 4 pin component body.

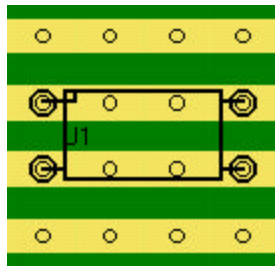
1. Create the line sequence as shown:

Starting and ending on pin 1

2. Before clicking save, change “Name” to the component name desired (Dip4). You can however save at any time, but ensure that your component is complete. Now set the number of pins to 4, Spacing-X to 0.3 and mode to DIP.



2. The new component will appear at the end of the library list.



**The component as it will appear in VeroCAD**

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## Component body creation A 4.7K resistor - Res4K7

### Example:

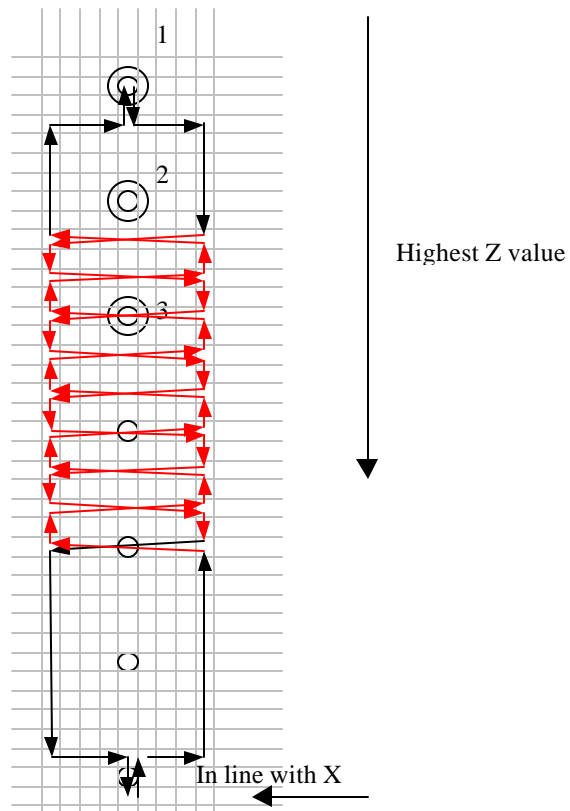
The following tutorial will create a sliding two pin component body with color bands.

1. Create the line sequence as shown:

Start on pin 1

The part is sliding so the Z axis must contain the highest value for Z and be in line with X of pin 1

2. To compress the horizontal lines click Comp-Y, now the component will appear to have solid colors in the component body. NOTE: this is an example, for best results use 5 horizontal lines per color.
3. Before clicking save, change "Name" to the component name desired (Res4k7). Now set the number of pins to 2 and select Sliding and Random.



4. The new component will appear at the end of the library list.

### NOTE:

For components that exceed 100 vectors or the size limits of VeroPART we offer a component design service at reasonable rates.

Please email [sales@wings-of-technology.com](mailto:sales@wings-of-technology.com) for a quote.