PROTOCASE DESIGNER USER GUIDELINES

1. Introduction

Protocase Designer is a free downloadable 3D computer aided design (CAD) enclosure design application. It is user friendly and simple to use. The goal of the designer's was to make this application as intuitive as possible, thus minimizing the learning curve and for client's who don't want to spend excessive dollars on costly mechanical CAD software.

Protocase Designer is based on templates, a starting point for designing an enclosure, and then customizing it to the needs. Protocase Designer currently hosts three templates, which are:

- Rack mount template,
- U-shape template and
- Flat panel template.

This user guide has been designed to assist the user to understand the basic functionality of Protocase Designer. Apart from this user guide, we also have tutorials intended to explore the basics of enclosure design, silk-screening and self-clinching fasteners among others in our tutorial homepage.

The latest version of Protocase Designer is 2.1 (build 266).

2. Installing Protocase Designer

a. Download Protocase Designer
b. Run the Protocase Designer installer and follow the on screen instruction

3. How to ... ?
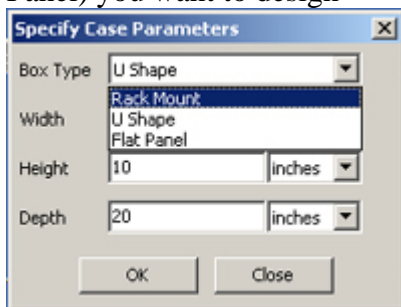
3.1 Create a new file

a. To create a new file if your application is not active

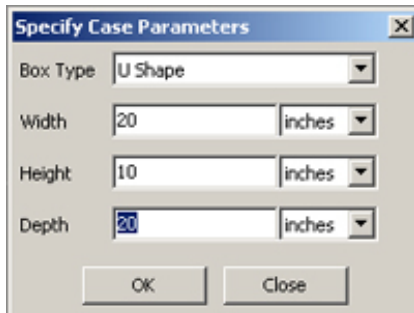   i. Open Protocase Designer

    ii. Click the New button

    iii. Choose one of the custom enclosure templates (Rack Mount, U Shape or Flat Panel) you want to design
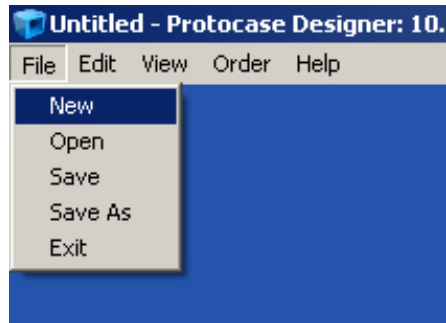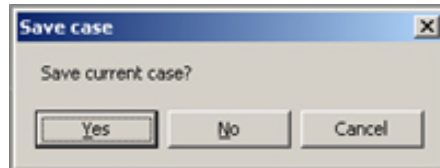

    iv. Enter the dimension

b. To create a new file if your application is active
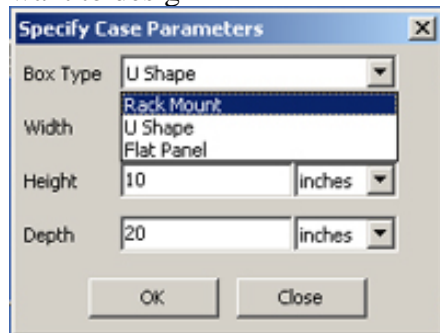
    i. Click the File menu
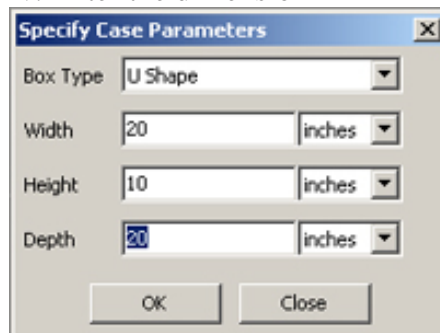
    ii. Click New

iii. Click either Yes or No to save the existing file

iv. Choose one of the custom enclosure (Rack Mount, U Shape or Flat Panel) you want to design
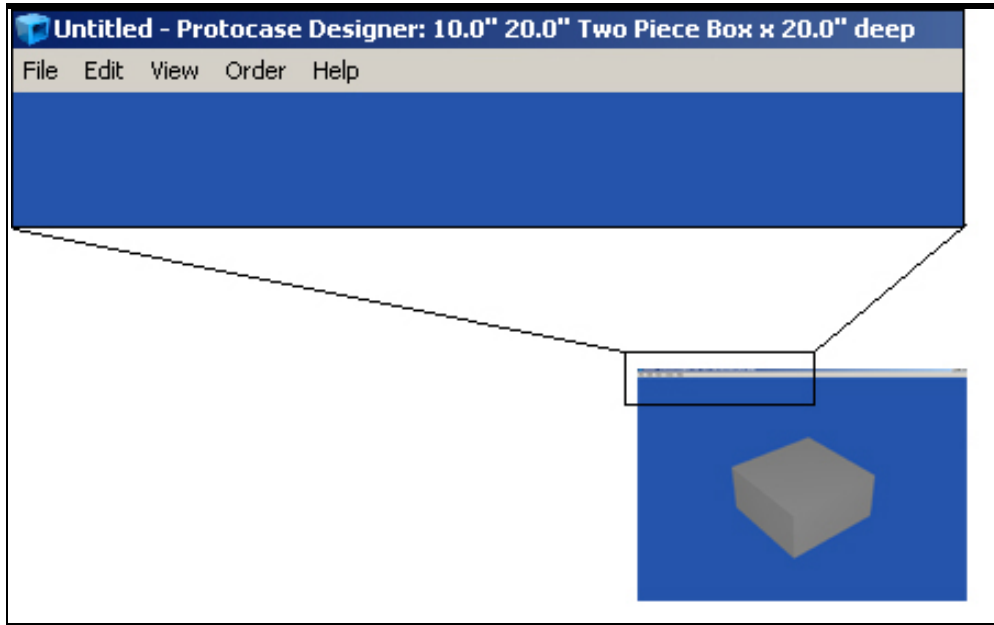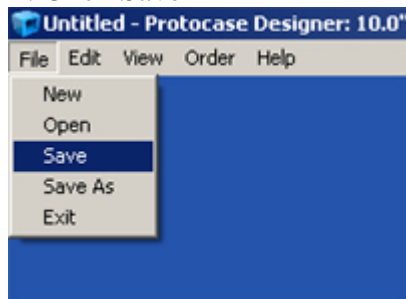

iv. Enter the dimension

Note:
Please note that the dimension of the enclosure can always be seen on the top-left part of the screen.
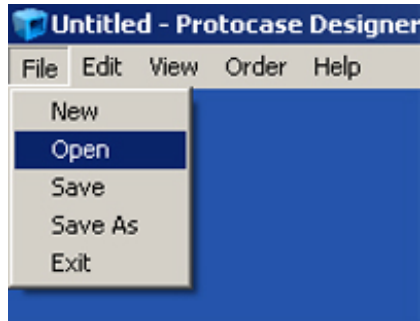
3.2 Save a file

- To save a file

  i. Click the File menu
  ii. Click Save

  iii. Choose your file name and the location where you want to save the file
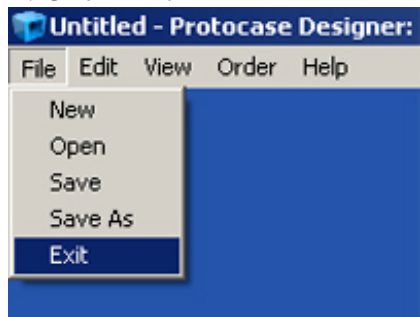
3.3 Open a file

- To open a file
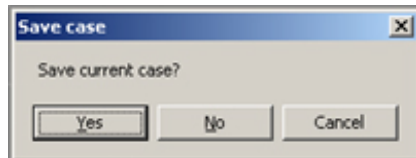
  i. Click the File menu
  ii. Click Open

iii. Select the file name to open

3.4 Exit from the tool

- To exit from the tool
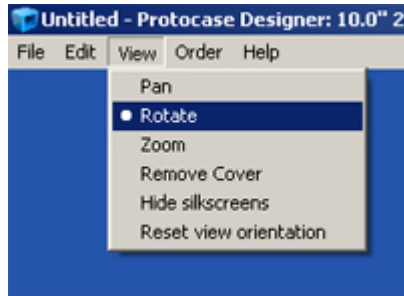
  i. Click the File menu
  ii. Click Exit

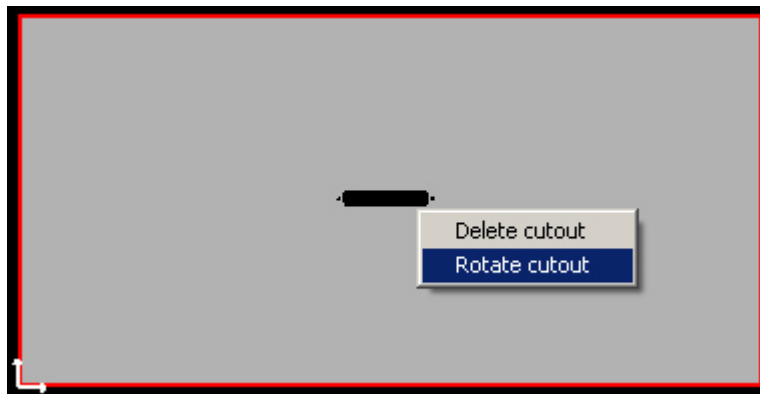iii. Click either Yes or No to save the file

3.5 Rotate

a. Rotate the enclosure
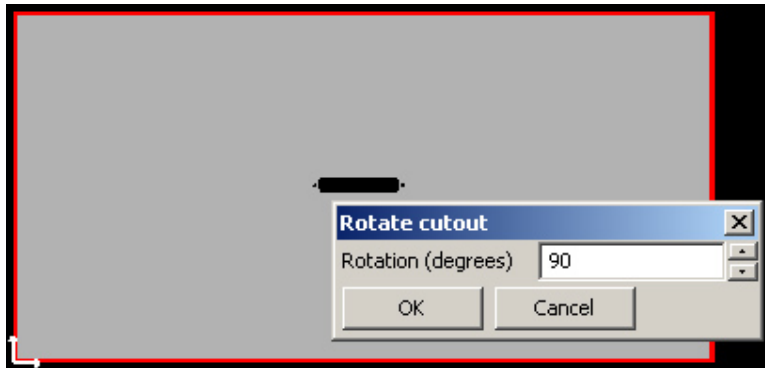
  i. Click View
  ii. Click Rotate

iii. Click the left mouse button and move your mouse pointer

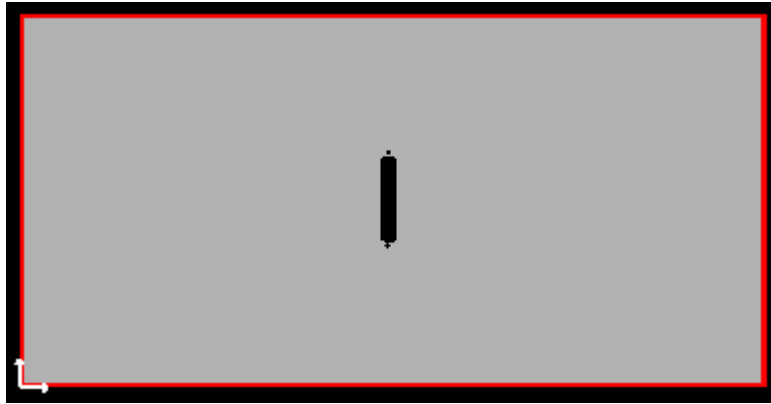b. Rotate the cutouts: rectangular, circular and ports

i. Right click the cutouts (here Db 37) and select 'Rotate Cutout'.

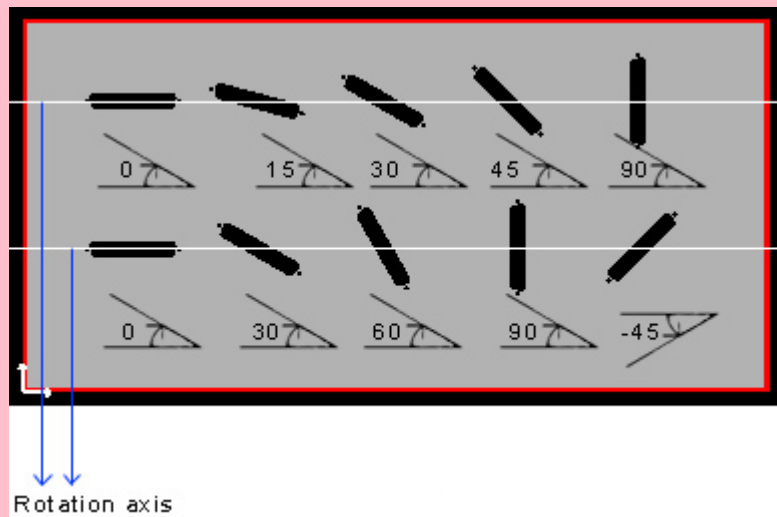ii. Enter the angle of rotation. **Note:** the angle of rotation is calculated in degrees.

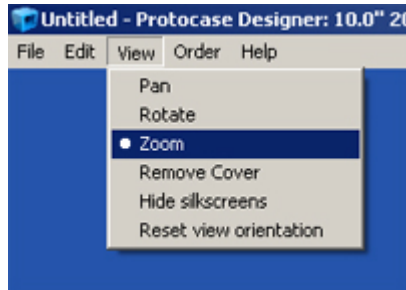iii. The result of the rotation is shown below

Note:

The rotation always takes place with respect to the horizontal axis, even if you are rotating an object for the second time. For an example if you rotate DB port to 30 degrees and if you want to rotate the same DB port again to 90, you should rotate the DB port to 90 degrees instead of rotating it to 60 degrees.

For an example let's rotate the DB 37 in various degrees.

Rotation axis

3.6 Zoom

- To zoom in and out
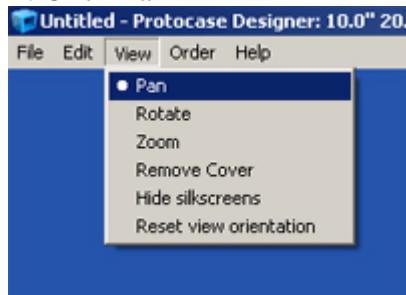
    i. Click View
    ii. Click Zoom

iii. Click the left mouse button and move your mouse pointer

3.7 Move the enclosure

- To move the enclosure from one place to another within the screen

  i. Click View
  ii. Click Pan

  iii. Click the left mouse button and move your mouse pointer

4. How to design?

Design process starts by selecting a face of the enclosure and is done in the Face Editor. In Face Editor you can design
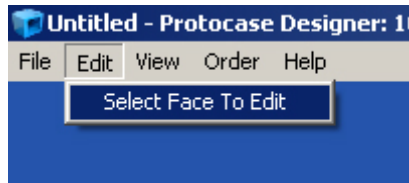
- cutouts: like circles and rectangles
- standard ports: like DB-9, DB-15,
- studs, nuts and standoffs
- custom cutouts with the help of the Component Manager

To start designing select a face of the enclosure. You may even remove the cover if you wish to. To remove cover click View and click remover cover.
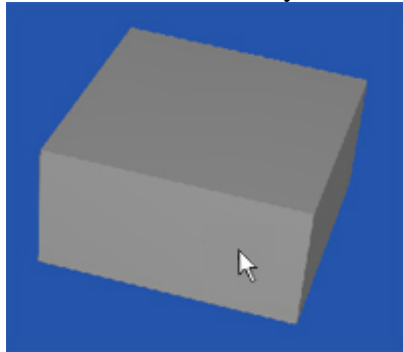
4.1 Select a face

- To select a face
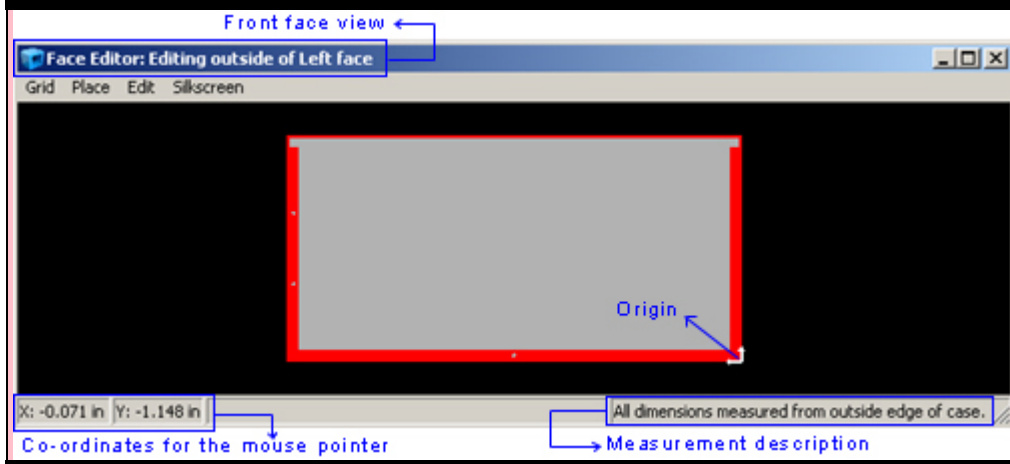
i. Click Tool

ii. Click Select Face to Edit

iii. and select a face by the mouse pointer

Note:
After you select a face a child window (called as Face Editor) will pop up. The face editor shows a 2D view of the face. Please view the three blue rectangles as shown in the image below. Depending upon the face you select, the origin can be either on the left bottom or on the right bottom part of the design.
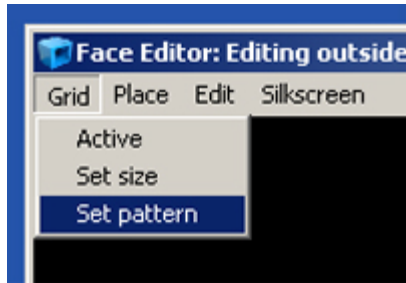

4.2 Activate the grid?

We would encourage you to activate the grid before you start designing on the face. There are two patterns/types of grids: **Lines** and **Dots**. Below you will learn on how to set, choose and activate the grid.
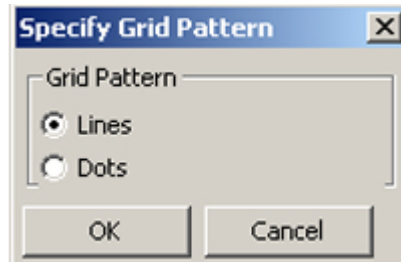
a. Choose the grid pattern
   o To choose a grid pattern

      i. Click Grid

      ii. Click Set Pattern

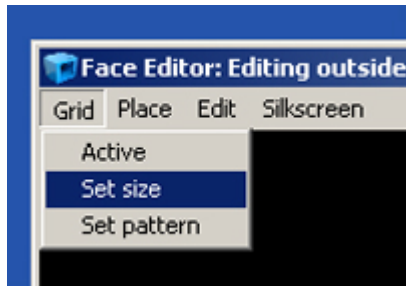   iii. Select the Grid Pattern: either Lines or Dots
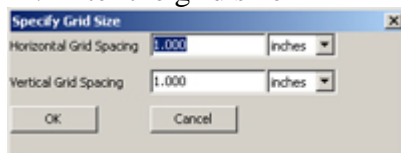

      iii. Click Ok

b. Set grid size
   o To set grid pattern

      i. Click Grid

      ii. Click Set Size
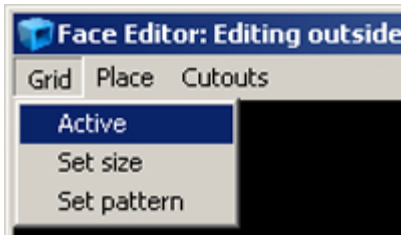

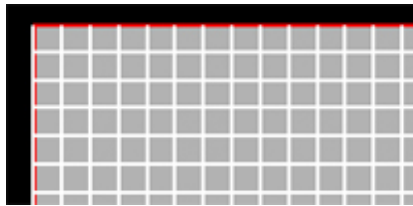   iii. Enter the grid size

      iii. Click Ok

c. Activate the grid
   o To activate the grid

   i. Click Grid

   ii. Click Active

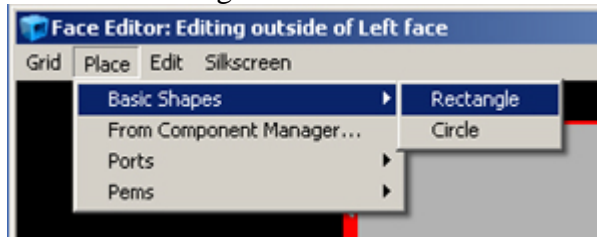   If you selected Lines as your Grid Pattern you should see a screen as shown below.

4.3 Place basic shapes, ports and self-clinching fasteners on the face

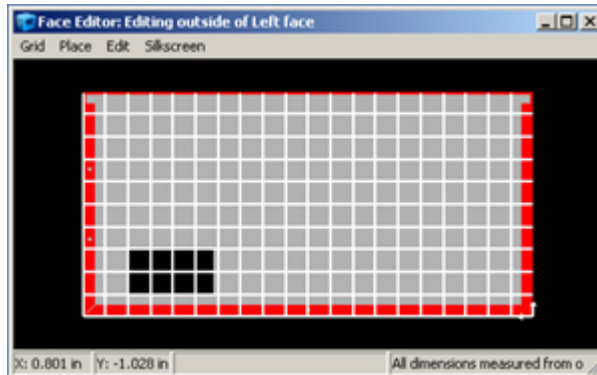a. Place a rectangle
   o To place a rectangle

   i. Click Place

   ii. Click Basic Shapes

   iii. Click Rectangle

   iv. In the selected face click the left-mouse button and drag till you draw your rectangle
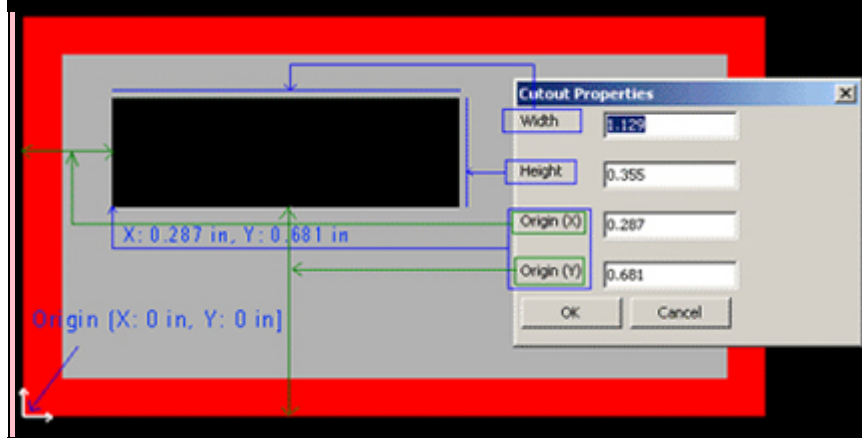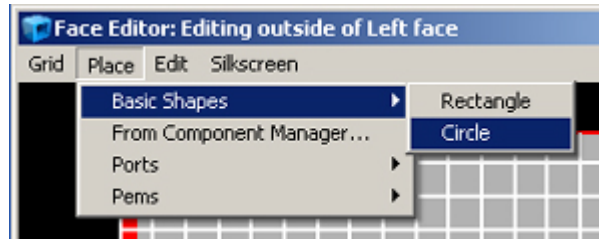
Note:

For more information on the rectangle measurements and reference point please take a look at the image shown below.

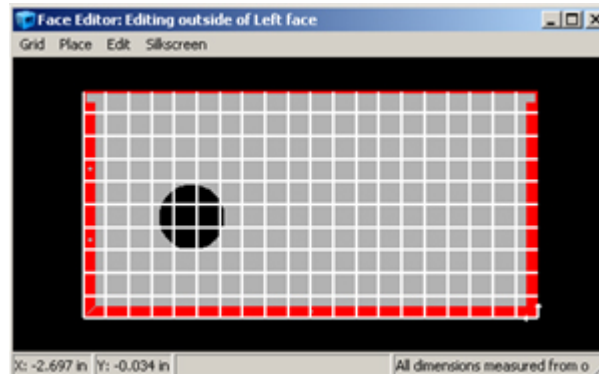Delete and change rectangle cutout

- To delete the rectangle cutout; right click the rectangle and click Delete Cutout.
- To change the property of the rectangle; click Cutouts, click Properties and click the rectangle.

b. Place a circle
   o To place a circle

      i. Click Place
      ii. Click Basic Shapes
      iii. Click Circle

iv. In the selected face click the left-mouse button and drag till you draw your circle
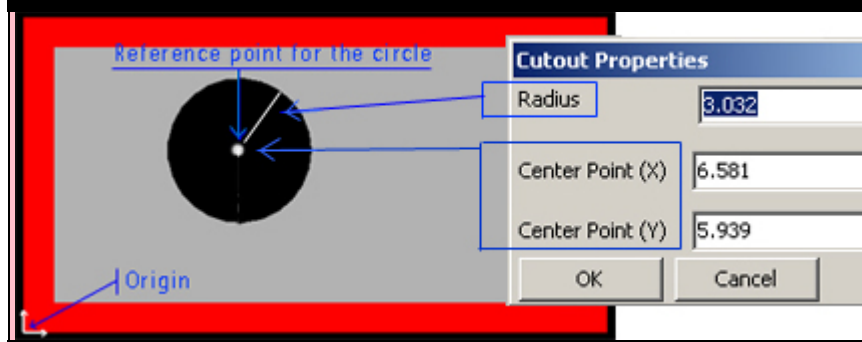

Note:
For more information on the circle reference point please take a look on the below image.

Delete and change circular cutout

- To delete the circular cutout; right click the circle and click Delete Cutout.
- To change the property of the circle; click Cutouts, click Properties and click the circle.
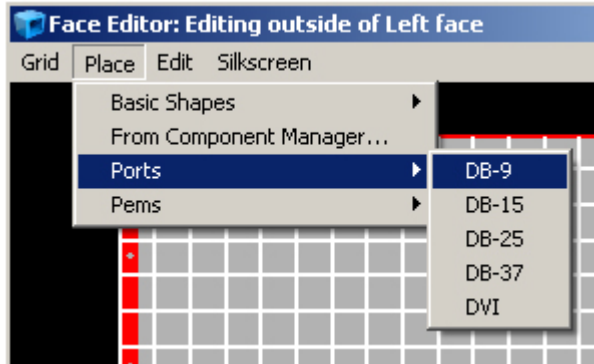
c. Place a serial port cutout
  o To place a serial port cutout
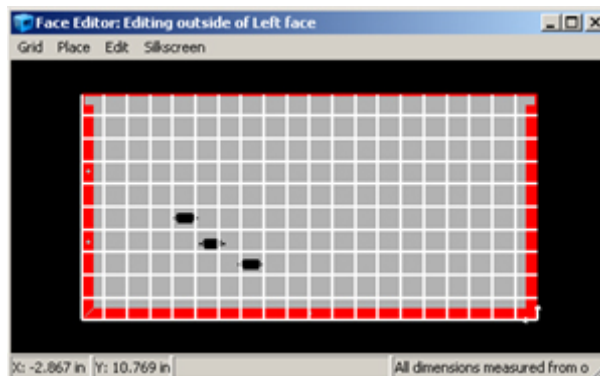
    i. Click Place

    ii. Click Ports

    iii. Select one of the ports from the list

    iv. In the selected face click the left-mouse button and place the ports.
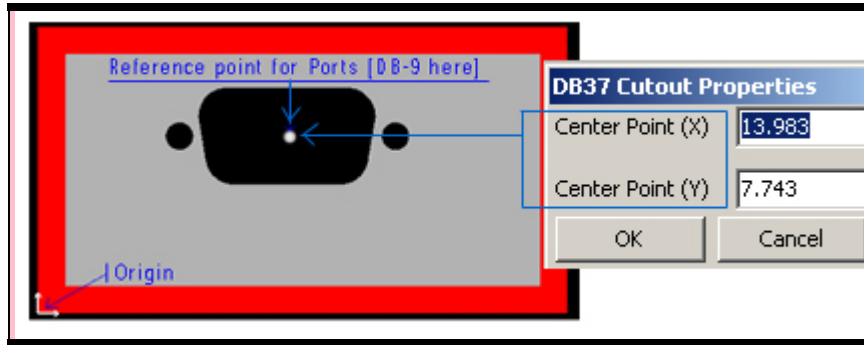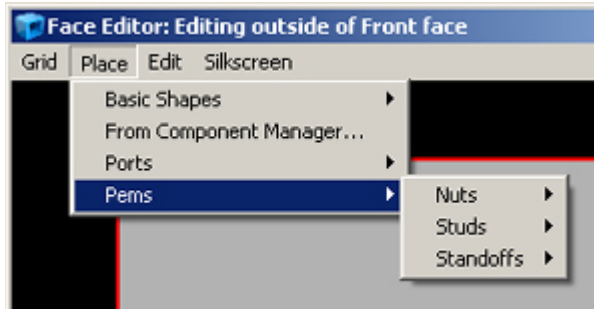

Note:
For more information on the port reference point please take a look on the below image.
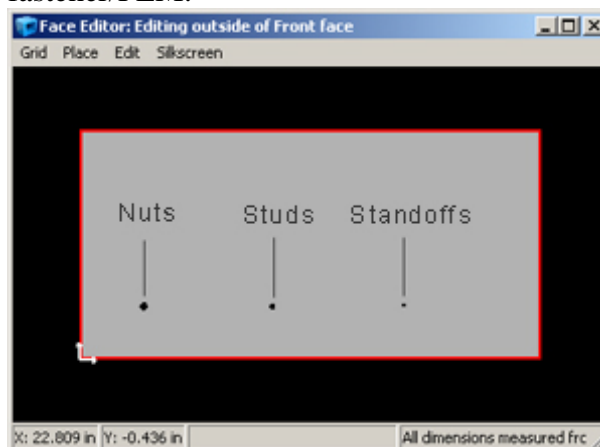
Delete and change port cutout

  ▪ To delete the port cutout; right click the port and click Delete Cutout.
  ▪ To change the property of the port; click Cutouts, click Properties and click the port.

d. Place a self-clinching fastener/PEM
- o To place self-clinching fastener/PEM on the face

i. Click Place

ii. Click Pems

iii. Select one of the Nuts, Studs or Standoffs from the list

iv. In the selected face click the left-mouse button and place the self-clinching fastener/PEM.

The Nuts, Studs and Standoffs as see in Protocase Designer™ for the above pictures is shown below.

	Nuts	Studs	Standoffs	

Place more than one serial port, self clinching fasteners, rectangular, circular and custom cutouts

1. Select the port, self clinching fasteners, rectangular, circular and custom cutouts
2. Left click on the face editor,
3. Relocate the mouse pointer and left click,
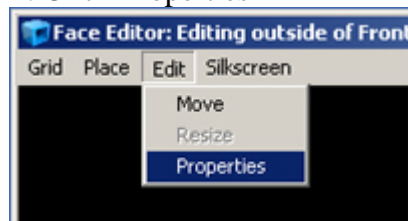4. Continue step 3 to add more serial port cutout

4.4 Properties

After you design a cutout or have placed standard Pems or ports you may wish to change the dimensions and their locations. To do so you should view the properties.
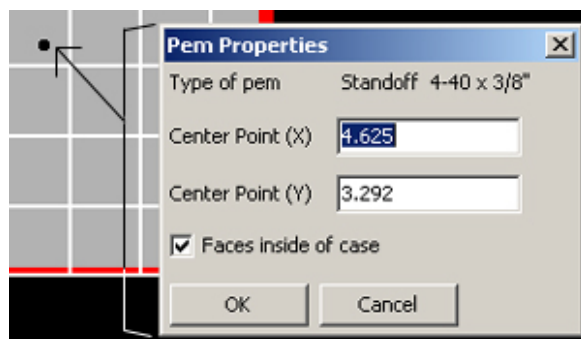
    a. To view the properties of the Pems:

        i. Click Cutouts
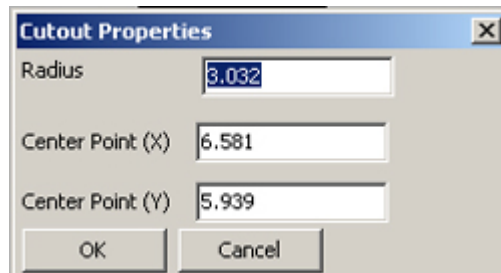
        ii. Click Properties

iii. Click the left-button of the mouse on the cutouts, ports or Pems. You should see a screen as shown below. The below screen example is the property pop-up box for the standoff we earlier placed. From the property box you can relocate the Standoffs 4-40 x 3/8" by changing the value for the Center Point (X) and the Center Point (Y). To face the standoff inside or outside the case use the Faces inside the case property.
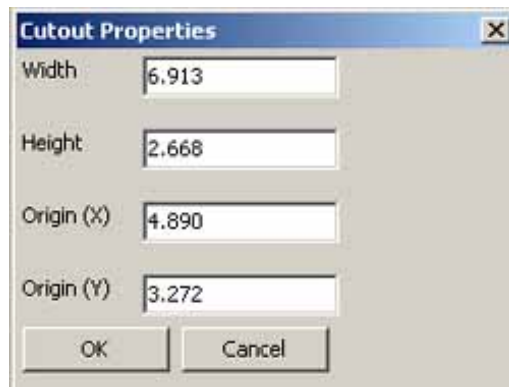
b. Circle property
    To change the circle property (i.e. change the measurements and/or locations) click
    Cutouts, click Properties and click the circle. After you do so, you should get a screen;
    called as Cutout Properties, as shown below. From Cutout Properties you can change
    the radius and the center; shown as Center Point (X) and Center Point (Y), of the
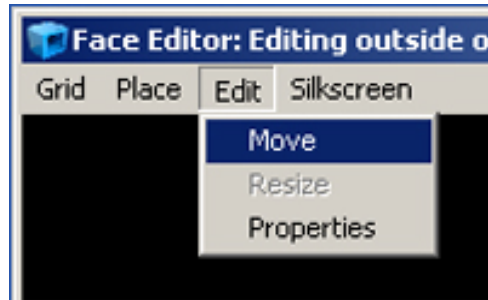   circle.

Rectangle property
To change the rectangle property (i.e. change the measurements and/or locations)
click Cutouts, click Properties and click the rectangle. After you do so, you should get
a screen; called as Cutout Properties, as shown below. From Cutout Properties you
can change the size of the rectangle by Width and Height property and the location of
the rectangle by Origin (X) and Origin (Y) property.

4.5 Move the shapes, ports and self-clinching fasteners

You can move the shapes, ports and self-clinching fasteners from one place to another.

- To do so:

  i. Click Cutouts
  ii. Click Move

iii. Click the cutouts, ports or Pems and drag it (do not realease the mouse while dragging) from one location to another.

4.6 Delete the shapes, ports and self-clinching fasteners

- Right click the cutout, port or self-clinching fasteners on the face
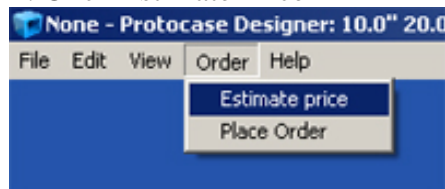- Click Delete cutout.

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5. Silkscreen

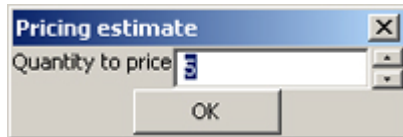Please refer our [silkscreen tutorial](#).

6. Calculate the price

Protocase Designer™ has Estimate Price feature that will enable you to check the price of the enclosure while designing it.

- To check the price of the enclosure

  i. Click Orders
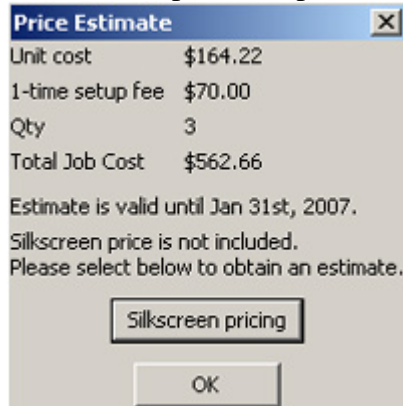 ii. Click Estimate Price

iii. A Estimate Price box will pop-up, where you can increase or decrease the quantity of the enclosure.

iv. Click OK

v. A small report with price estimation will pop-up as shown below.

vi. The price as shown above does not include the silkscreen price. To get the price estimate click on the "Silkscreen pricing" button and follow the instruction. Please note you will be redirected to our website for silkscreen pricing.
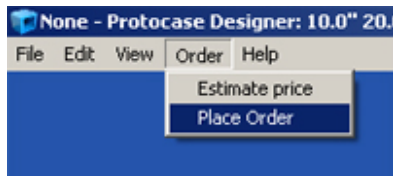
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7. Send the enclosure to us

After the design is complete you can send Protocase Designer™ file directly to us.

- To send the file to us

i. Click Orders

ii. Click Place Order

iii. A Client Information box will pop-up, where you will submit the required information for order processing.

iv. Click Send

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8. Contact Information

Email

Technical support: tech@protocase.com

Sales: info@protocase.com

Feedback: feedback@protocase.com

Phone

Toll free: 1-866-849-3911 (US & Canada)

Tel: 1-902-567-3335

Fax: 1-902-567-3336