



Unleash your Router's 3D Capabilities

What is behind the Key?

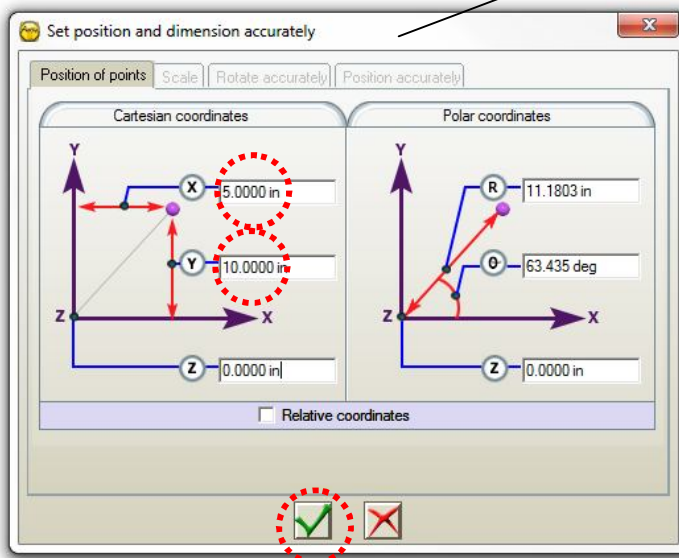
You may want to teach yourself a couple of key strokes to use more efficiently ArtClip3D. This tutorial deals with the first most important, the **F2** which is as you will discover a concentration of power dealing with 2D and 3D elements.

- **Defining Objects**

Select the **Marker** tool (click it) and hold the **F2** key.



The **Set position and dimension accurately** window pops up.

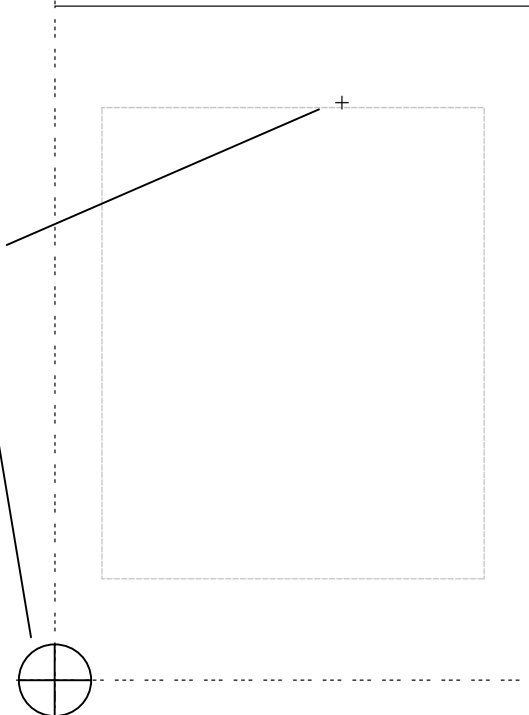


Entering a coordinate in X and Y will position the marker representation at a location computed from the absolute origin of your Artwork or Working area.

For instance, if we enter 5 for X and 10 for Y, after validation we will find the marker at that location from the Absolute Origin of the Working area, which is by default located at the bottom left corner, where most CNC machines have their set as well.

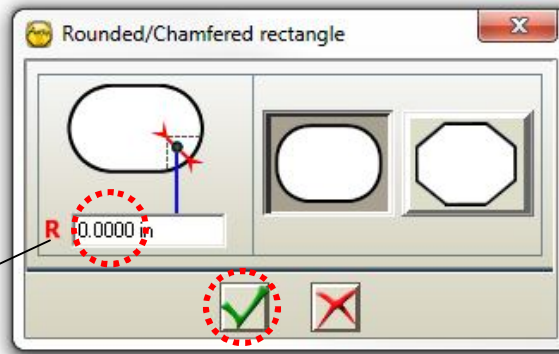
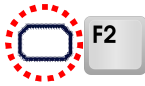


If your machine Absolute Origin is located somewhere else then the directions XY might be reversed, which is not of a big deal for following this tutorial.



Let's work further with the **F2** key to define position and size of geometrical shapes.

- Select the **Rounded/Chamfered rectangle** tool, and then hold the **F2** Key.

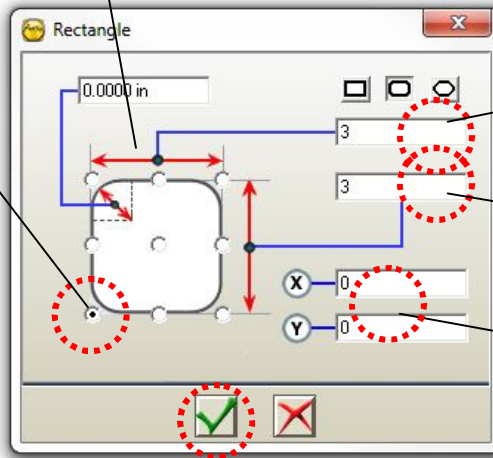


The settings window appears. **R** corresponds to the Radius of the corners. To keep the corner straight enter 0, and then validate that definition with a click on the tick sign.




Hold the **F2** key one more time, the **Rectangle's** window then opens.

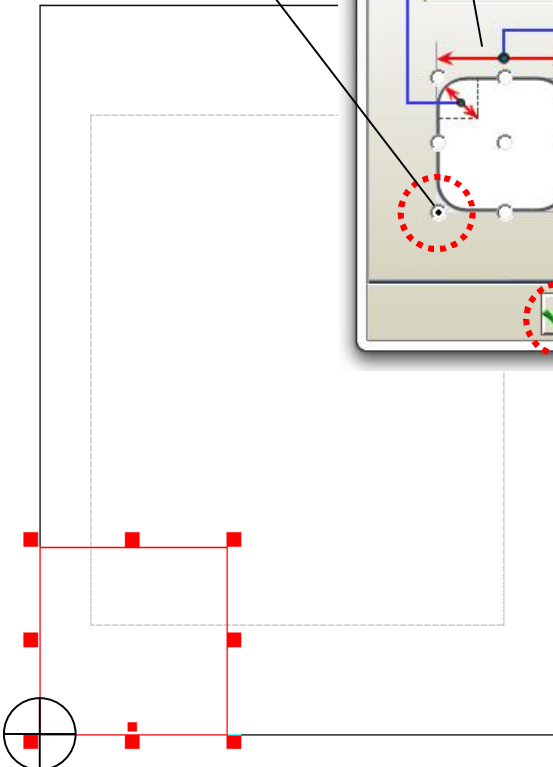
In this 2nd window you can refine the Corner definition if you like; set the size of the rectangle as defined by the red length arrows, and set the location of the starting point defining the origin in X and Y. Note there are 9 points defining any middle and corner position of the object being created.



Enter 3 for the Width (X)

Enter 3 for the Height (Y)

Enter 0 for the XY position of the starting point and validate.




The rectangle is actually giving a square with a side of 3, located from the bottom left corner on the origin of the working area.

Let's add another rectangle of the same size (3 x 3) but located to another XY location.



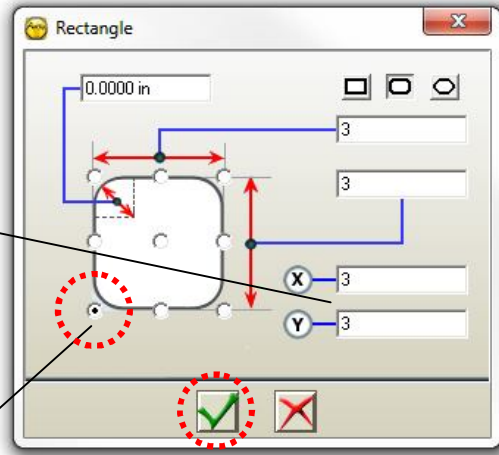
The rectangle tool should still be active and show its specific mouse pointer.

Hold the **F2** key.

If the pointer does not show the rectangle, then reselect the tool to make it shown.

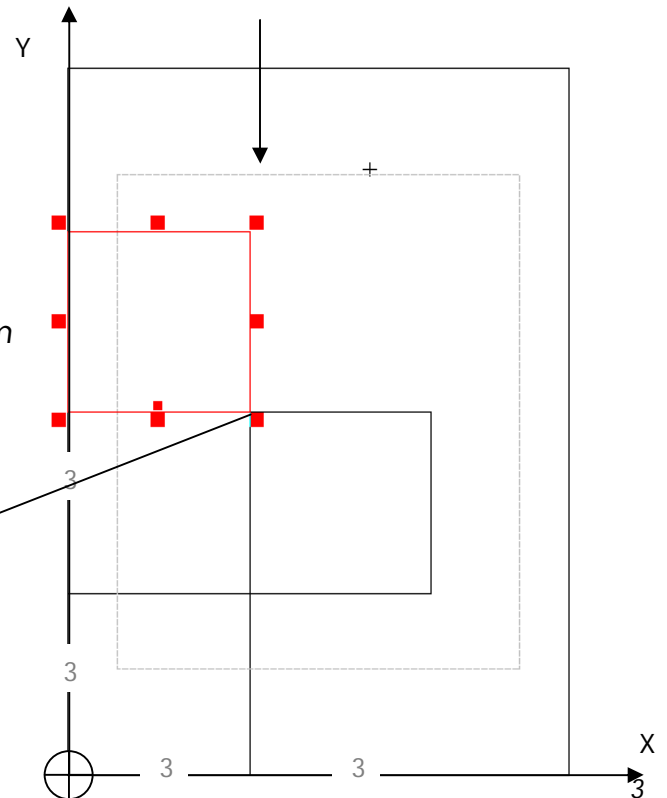
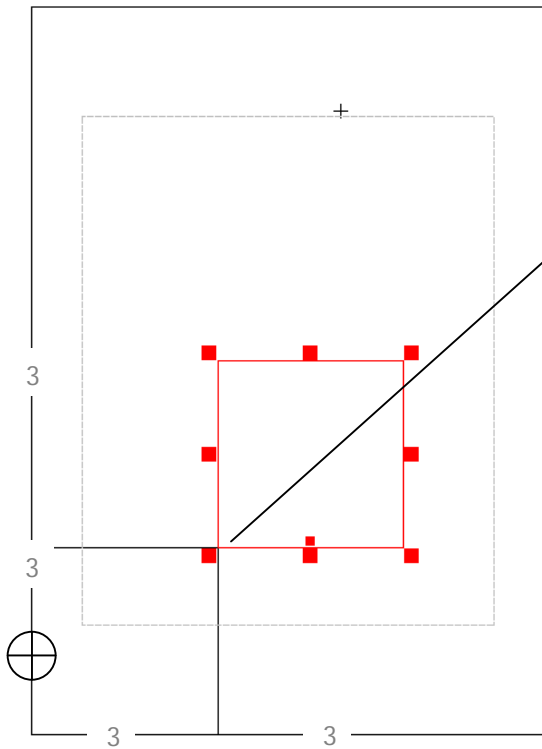


Enter 3 for X position and 3 for Y.
Validate.

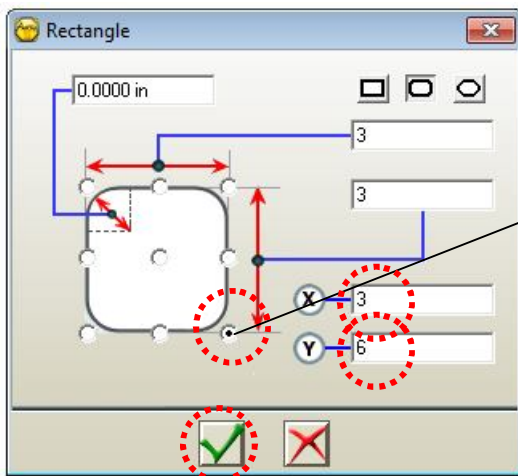


See how the 2nd square of 3 x 3 went to position itself with its starting point at X= 3 and Y= 3. Its starting point is perfectly on top of the opposite corner of the 1st square. The accuracy here can be up to 16 digits after the decimal, this is perfectly accurate.

You can from the starting point define any starting location for your 2D objects. For instance next we want to achieve the result below.

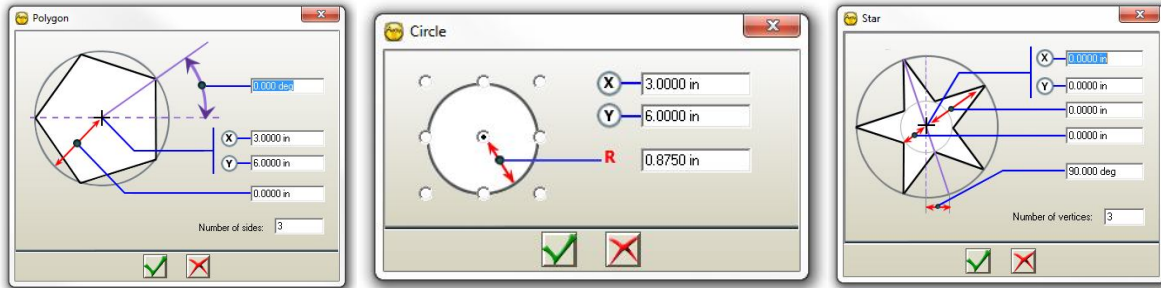


Enter for that 3 in X and 6 in Y position.
Do not forget to click the starting point, bottom right.



The **F2** key as you can see offers for the 2D construction tools an utmost precision.

The Circle, the Polygon, the Star etc... offer the same type of sub menus directly displayed from the **F2** key. Use them unlimitedly.

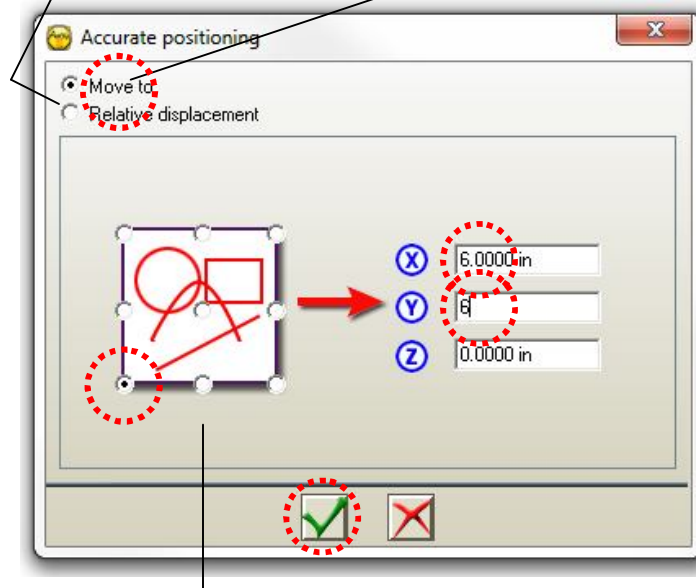


Let's see now another aspect of ArtClip3D with the use of **F2** key this time for Re-Positioning.

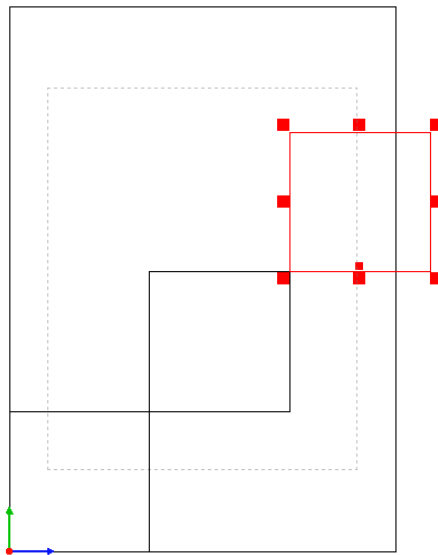
- **Re-positioning a 2D, 3D object**

It may happen that you built an object or wish to change the way you made something by changing its position. To apply a change to an already built object, you need to re-select the object and apply a slight motion to it while at the same time holding the **F2** key. Do it on the last square made for instance. Reselect it, move it slightly. Hold **F2**, this will bring the **Accurate positioning** window as shown below.

This window works with **Relative** motions (incremental) or with **Absolute** motions. Select the **Move to** option.

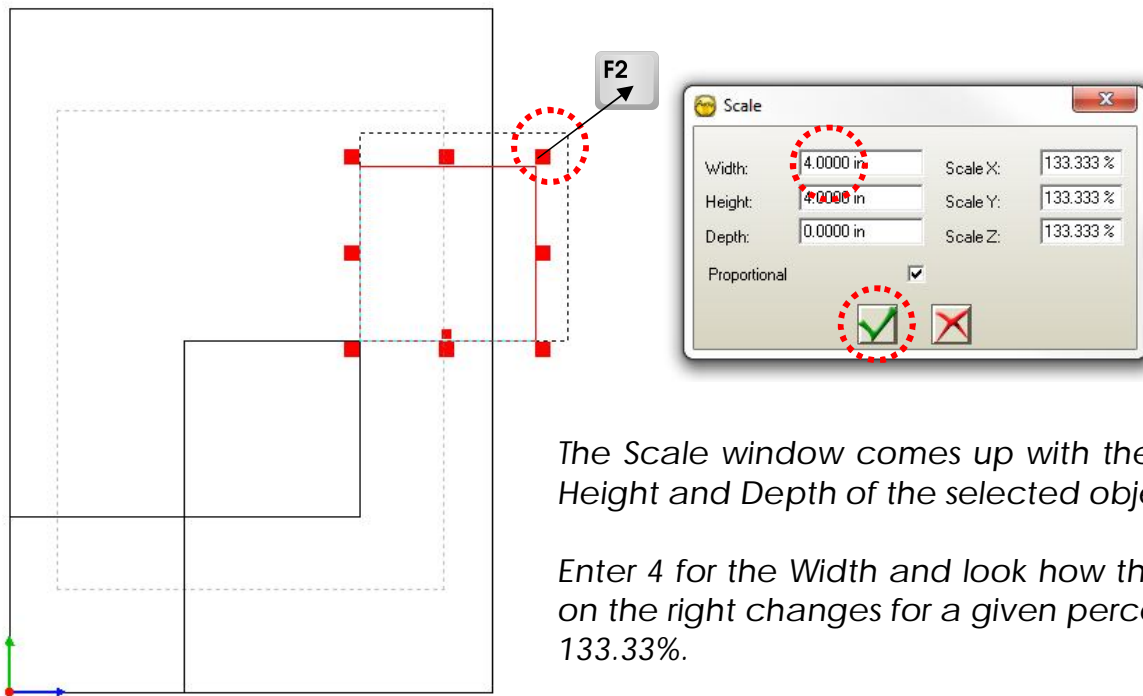


You find again in the lower left the 9 positioning points which defines the extremity of the bounding box of the object, then on the right the XYZ positions in absolute coordinates. If you click the bottom left corner of the bounding box and enter 6 in X, Y then validate, you will be moving the last object to its new location as shown below.



- **Re-Scaling an object**

Another attribute of the **F2** key, is the capability of resizing an object already built. Re-Select the square you just moved in the previous step of this tutorial and grab the top right corner handle; increase the size of the object slightly and hold the **F2** key.

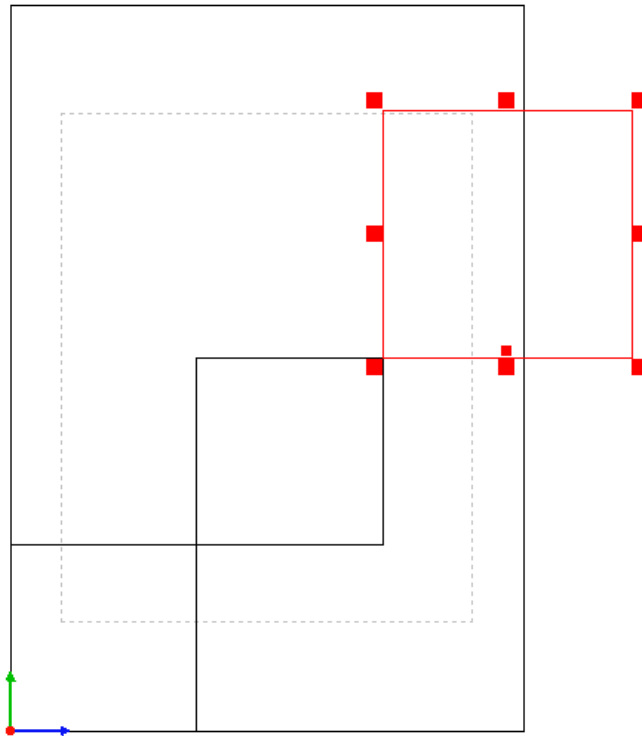


The Scale window comes up with the Width, Height and Depth of the selected object.

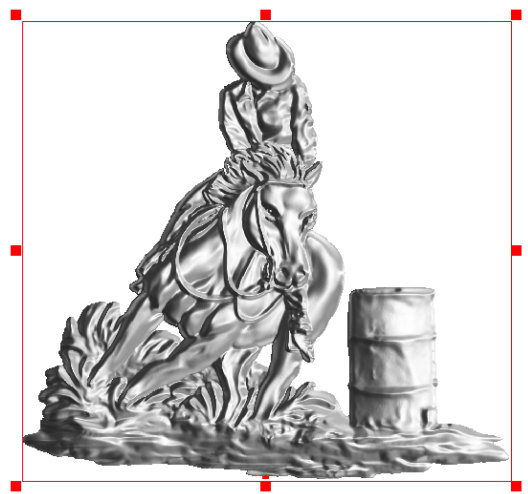
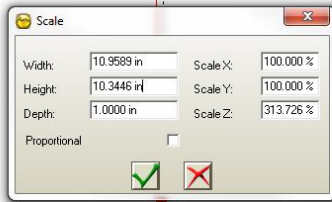
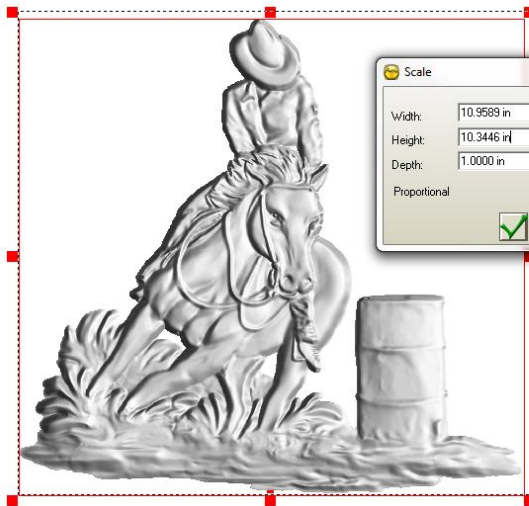
Enter 4 for the Width and look how the Scale on the right changes for a given percentage: 133.33%.

You can either enter a percentage or a size to change the object you selected, and also make it proportionally using the Proportional box. Un-checking this box will give you full control along the 3 axis with any dimension you may want to apply.

With 4 entered and validated you can see that the square has changed size increasing of 33.333%.

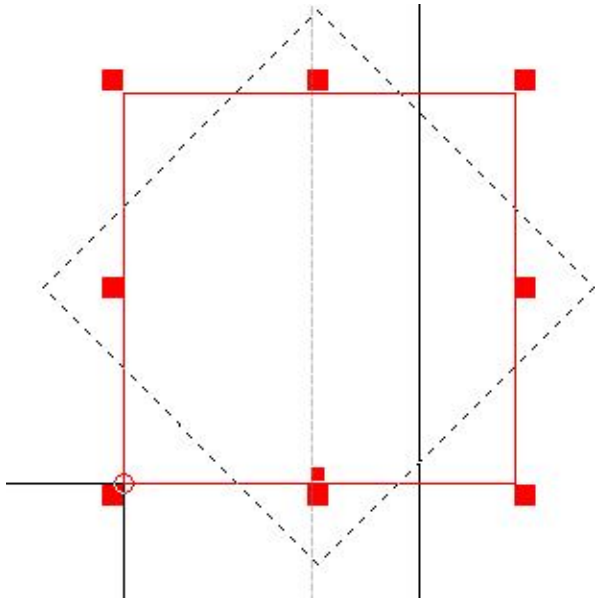


This can also be applied on 3D objects to increase for instance the level of details within the 3D. See for instance on the right a change made on the Depth field giving a stronger shading level increasing the overall details of the 3D model.

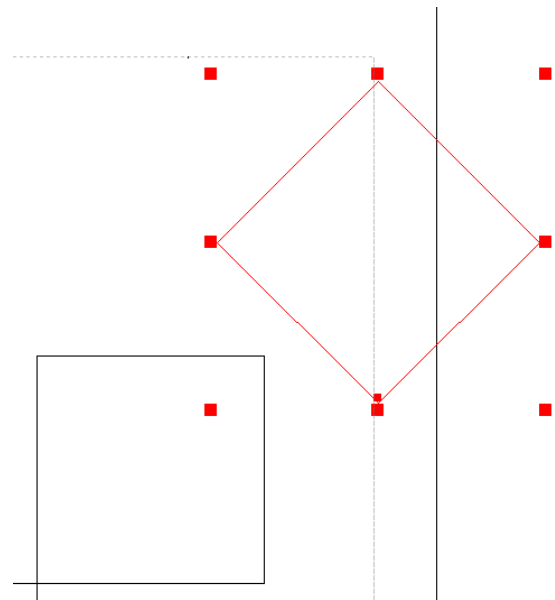


- **Applying rotations on objects**

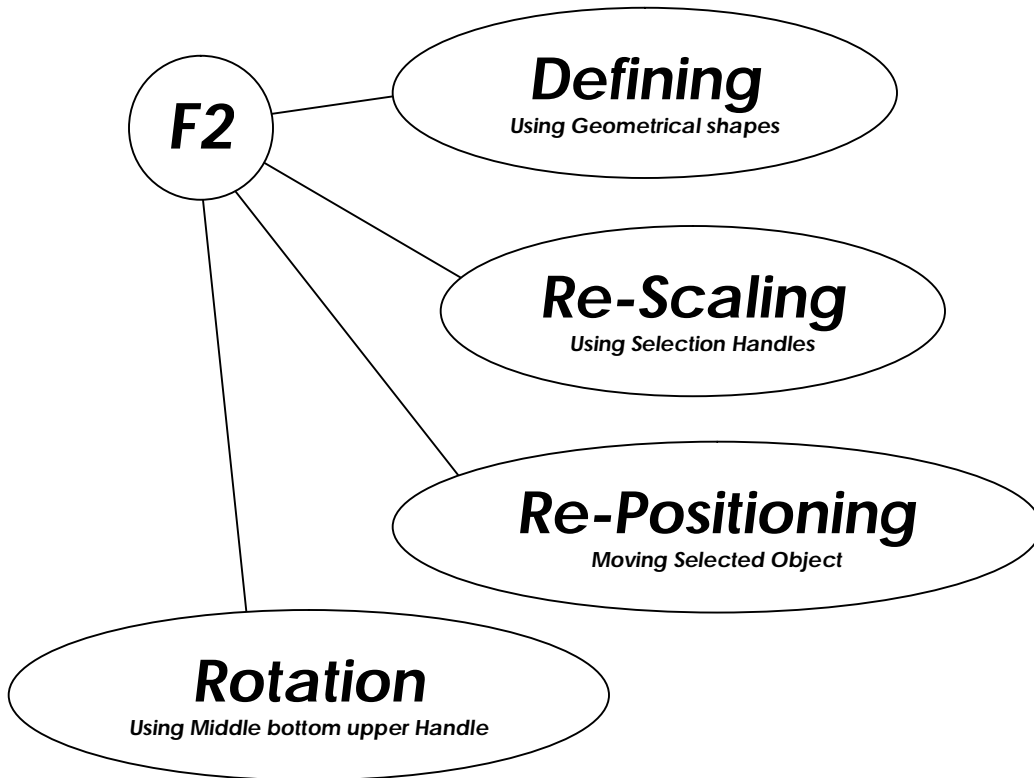
The **F2** key also allows the rotation with precision. At the bottom middle of the selected object there is a double handle. The upper one gives access to the rotation option. While clicking this handle and holding the F2 key the Rotation window opens.



Enter 45 degrees and Validate.



To summarize what you can do with the **F2** key, the following sketch is what you should keep engraved in your mind.



Also available under the Set position and dimension accurately the action tabs allow you to modify your objects as needed.

