

Exercise Nr. 2 for CNC-Calc

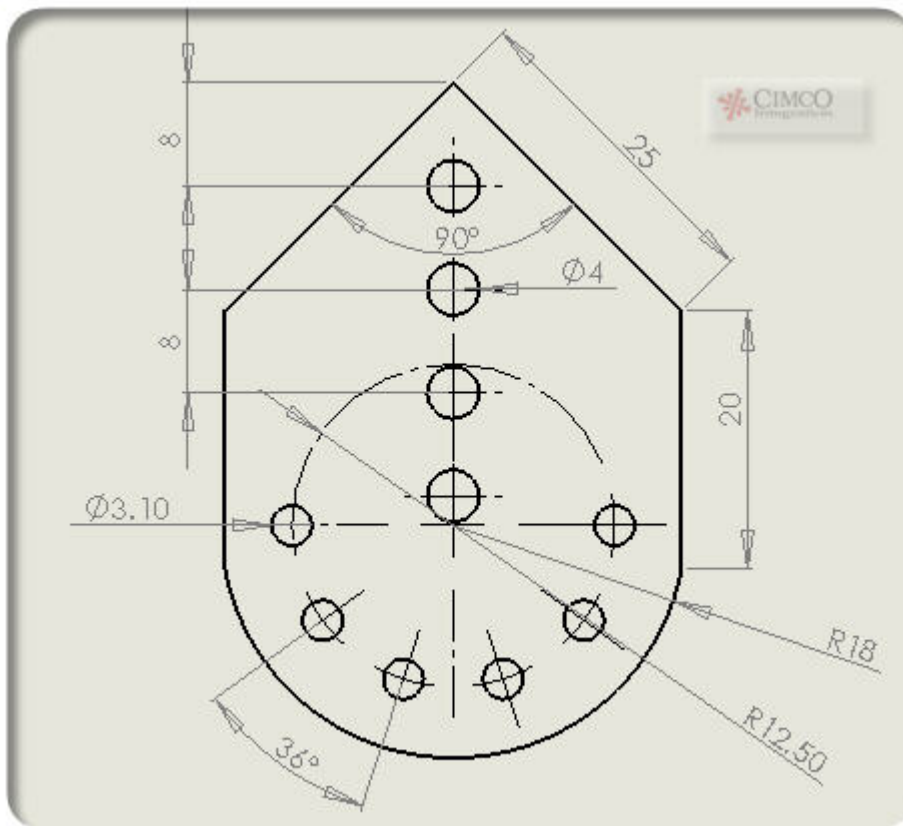
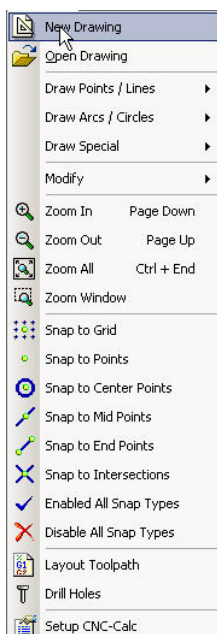


Fig. 1.

In this assignment, we will get into the use of following tools for construction of this contour.

- Polar line
- Vertical line
- Mirror element
- Snap
- Delete element
- Rectangular bolt pattern
- Circular bolt pattern
- Two point arc



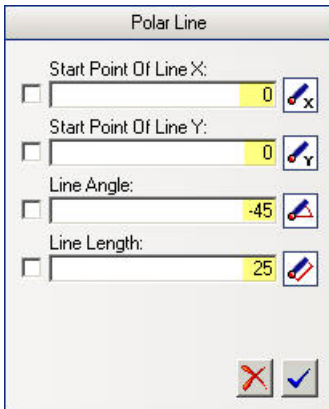
Print Fig. 1 and use it as constructional design. As we precede through the assignment, the tools above will be illustrated and explained.

In the toolbar selected CNC-CALC and New drawing Press save and name it exercise 2.

Fig. 2.

Line functions

Select now construct polar line.



Use the measures from Fig. 1 to dimension the line.

We set the start point for the first line to 0,0 our centerpoint. Line angle set to -45 degrees. Line length is 25mm.

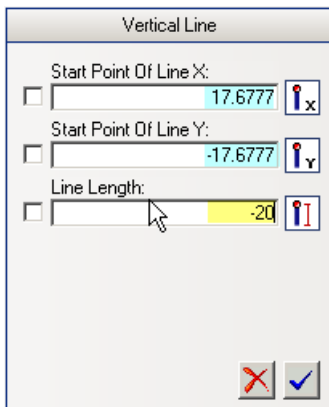
Press  to accept.

Fig. 3

Turn snap to endpoints on.



Choose construct vertical line.



Pull the cursor down to the terminus of the first line which we constructed. There will now appear a quadrangle in front. Left click the mouse, to choose this point. The start point for the coordinates x,y will now be indicated. The length of the line is -20.

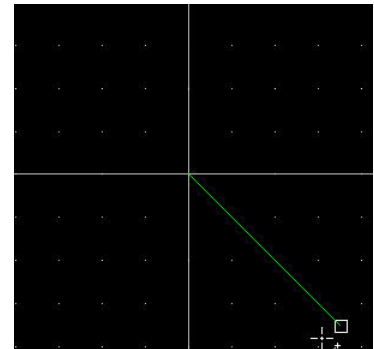


Fig. 4.

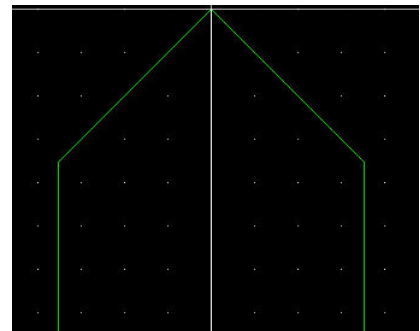
Mirror function

The first we need to do to mirror our two lines, is to make a centerline to mirror around. Stay with the vertical line function and select the start point at 0,0 and thereafter the end point of the second line, which we just have drawn.

Select the mirror function



The first line we choose is the line which we want to mirror around. Thereafter we select the elements which we want to be mirrored. The result should appear like this.



Delete element

The centerline we have used to mirror with have now served its purpose, and need to be deleted. Select delete element and press the line.



Two point arc

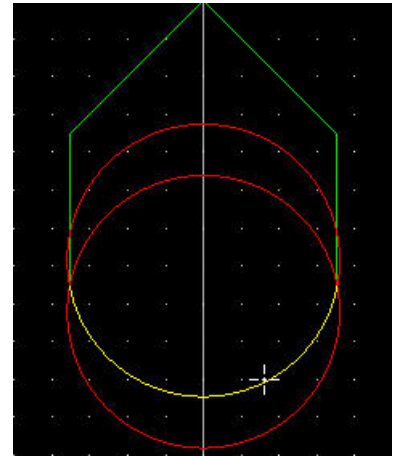
Choose Arc through two points



Arc Through 2 Points	
First Point On Arc X:	<input type="checkbox"/> <input type="text" value="17.6777"/>
First Point On Arc Y:	<input type="checkbox"/> <input type="text" value="-37.6777"/>
Second Point On Arc X:	<input type="checkbox"/> <input type="text" value="-17.6777"/>
Second Point On Arc Y:	<input type="checkbox"/> <input type="text" value="-37.6777"/>
Circle Radius:	<input type="checkbox"/> <input type="text" value="18"/>

We once more use the function, snap to endpoint to choose the two points which will be the start and end point of our arc. We can now see that the coordinates have been transferred to our function window. All that we need, before we press accept is to apply the radius of the arc.

When we have accepted, there will be several circles shown in the construction window. We therefore need to select which of the circles we want to keep. Pull the cursor along to the circle which we want to keep, when the circle turns yellow. Click the left mouse button



to accept your choice.

Rectangular bolt pattern

Choose Rectangular bolt pattern.



Rectangular Bolt Pattern	
Origin Of Bolt Pattern X:	<input type="checkbox"/> <input type="text" value="0"/>
Origin Of Bolt Pattern Y:	<input type="checkbox"/> <input type="text" value="-8"/>
Hole Distance X:	<input type="text" value="0"/>
Hole Distance Y:	<input type="text" value="-8"/>
Number Of Holes X:	<input type="text" value="1"/>
Number Of Holes Y:	<input type="text" value="4"/>
Hole Diameter:	<input type="text" value="4"/>

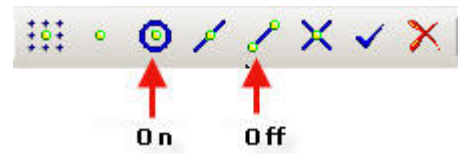
Origin is the position which we want as our basic point, therefore 0,-8. Now we need to indicate the hole distance which is 0,-8. the total number of holes in the x direction is 1 and 4 in the y direction. Now all we need is to indicate the hole diameter, which is 4. Press accept



Fig. 6.

Circular bolt pattern

Turn snap two endpoints off and snap two circles and arcs centre points on.

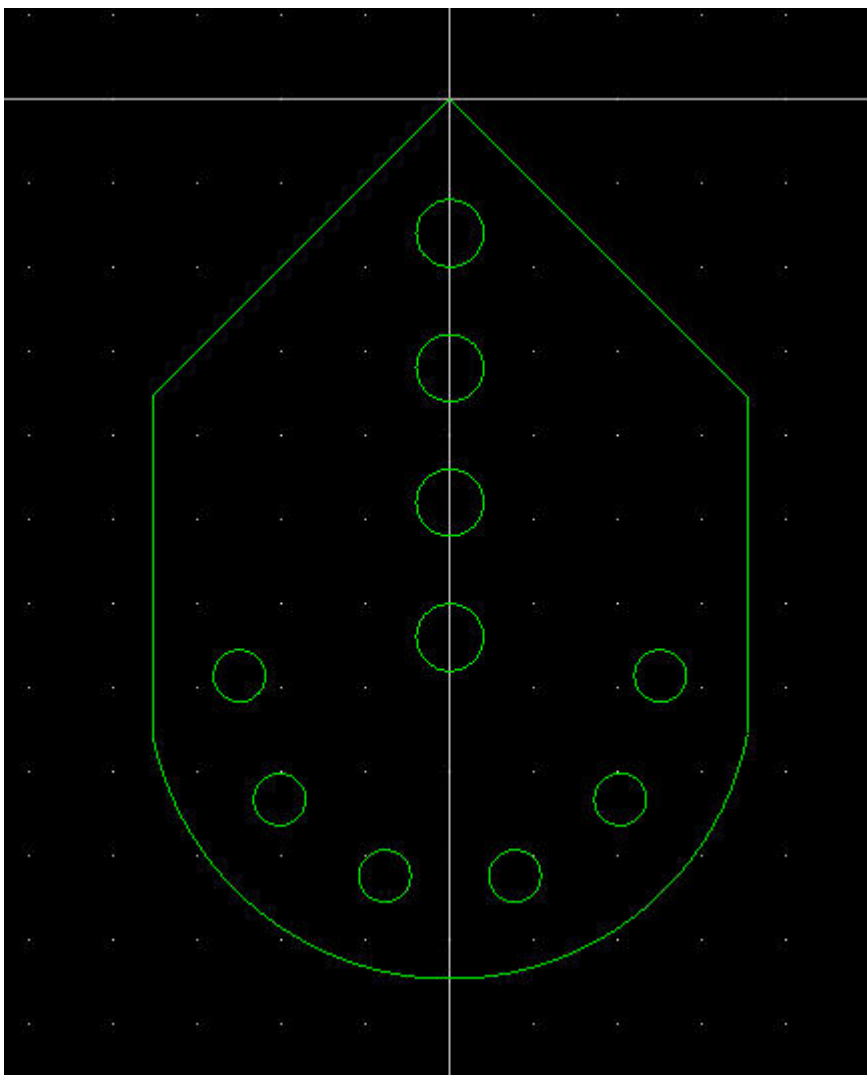


Choose Circular bolt pattern.



Circular Bolt Pattern	
Center Of Bolt Pattern X:	<input type="text" value="0.0000"/>
Center Of Bolt Pattern Y:	<input type="text" value="-34.2867"/>
Radius Of Bolt Pattern:	<input type="text" value="12.5"/>
Start Angle:	<input type="text" value="-180"/>
Delta Angle:	<input type="text" value="36"/>
Number Of Holes:	<input type="text" value="6"/>
Hole Diameter:	<input type="text" value="3.1"/>

Move the cursor towards the centre of the arc and click when centre point is marked. Hereby we have indicated the centre of the bolt pattern x,y. The radius is 12,5 and the start angle is -180. The distance between the circles is 36 degrees per. circle. The total amount of circles is 6, and hole diameter is 3,1.



The finish result should now appear like this. Remember to save the assignment. Try to draw this assignment again, with some of the different tools.

Enjoy.