

## 3300M CNC Control Using DXF



DXF file can be converted into 3000 machine programs using the Offline software.

The DXF files are stored in the Program Page.

When going to Program Page only .M file will be displayed,

press **F8** **Display** twice, this will display all files.


If DXF is on disk it needs to be copied into **C:\User** directory.

press **F7** **Log** select **A:**

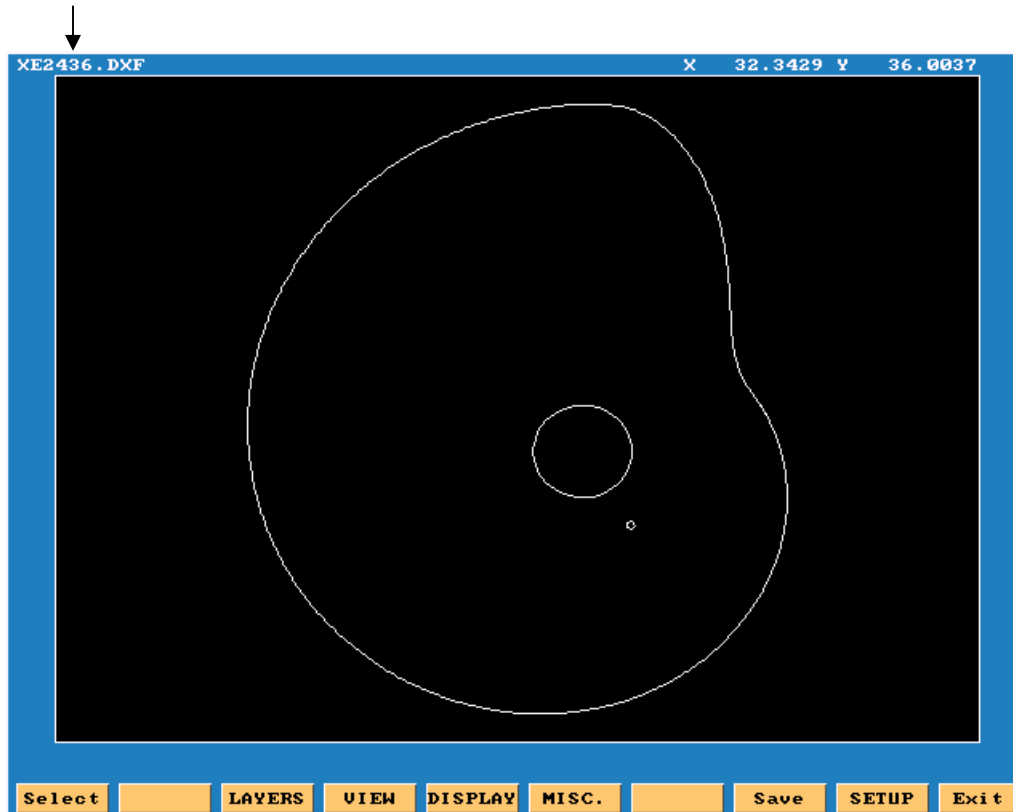
High light required DXF program press **F9** **Utility** Copy to **C:**

High light DXF program 

Press **F9** **Utility** high light DXF Converter

 Press **ENTER**

File name



- Select:** Used when selecting elements on drawing.
- Layers:** Allows layer on drawing to be turned Off or On.
- View:** XY,XZ,YZ or isometric.
- Display:** Fit, window, redraw, half or double.
- Misc.** See below.
- Save:** Saves program with .G once converted.
- Setup:** Allows set of inputs and outputs.

▶ **Entity Info**  
 Set Shift  
 Toggle Endpoints  
 Link or New Shape

Information on a particular entity.  
 Set shifted zero in the **set-up**.  
 Toggle end points of entities **on** or **off**.  
 When turn **ON** will ask question link or new shape.

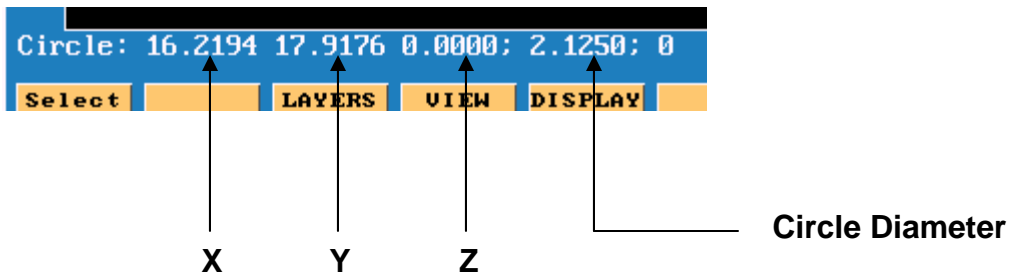
Zero on most drawings is usually not at a point that is convenient for programming, so there is a way it can be changed.

In the case of current drawing, the center of the hole in center of part is the best point X0 Y0. There are two methods find new zero's from an entity on drawing.

1. To do this Press the Ctrl key and hold it down put mouse point on to circle and press left mouse key, it will change to yellow, release keys.
2. Press **MISC** key select **Entity Info** press **ENTER** select entity using mouse

it will turn yellow

At the bottom of screen X, Y, and Z cordinate will appear and also circle diameter.



Now press **ALT** key and letter **T** at the same time first method or **MISC** **Set Shift** press **ENTER**.

This will in put these coordinates in to the **SETUP** and change **X0 Y0** to the center of hole.

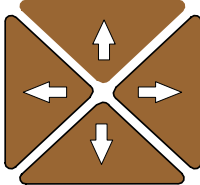


<b>Output program name....</b> Shift X..... Shift Y..... Output dimensions..... Create Mode..... Starting sub number... Output warnings..... Re-calc Intersections.. Output resolution..... Create main in new.... Convert values..... Convert polyline.....	XE2436-1 16.21939 17.91758 Absolute Smart 1 Yes Yes 5 Yes None None	Program name Imported X shift Imported Y shift Absolute/incremental Smart/Overwrite Starting subroutine number Warns if elements done meet Re-calculates intesects Decimal out put Create a main program Inch / Metric / None Convert polyline to arc/prompt/none
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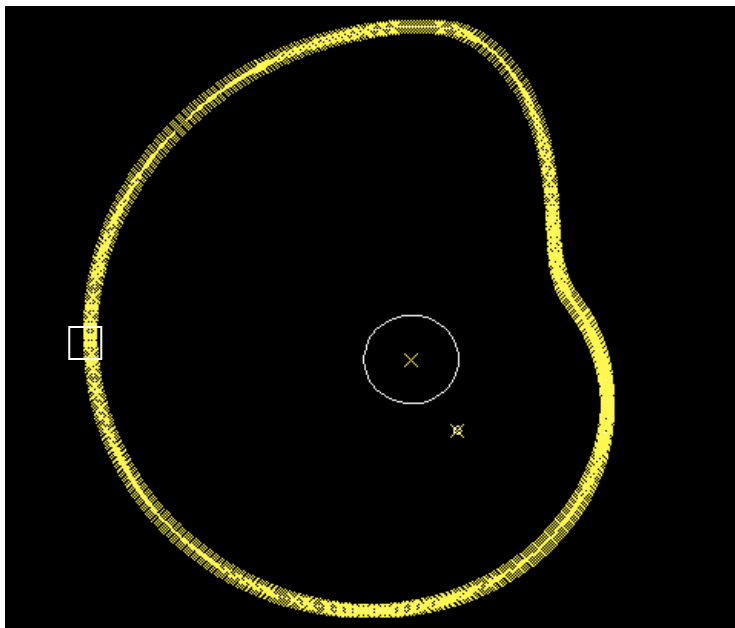
Press **F10** **Exit**

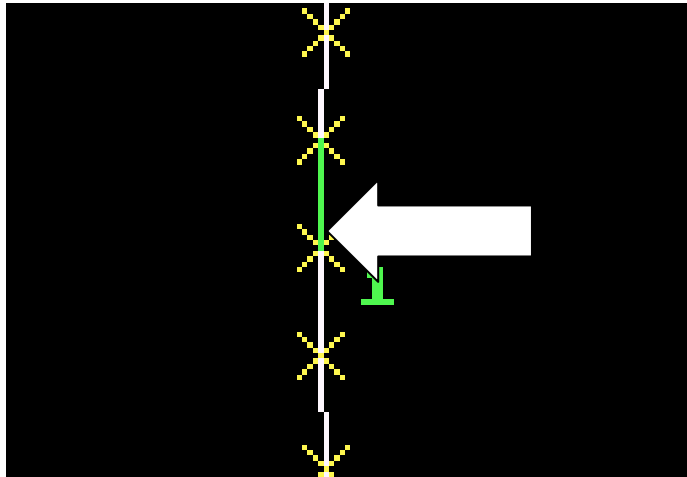
Press **ALT**key and letter **F**key at the same time, this will mark the end of each element.

Press **F5** **DISPLAY** high light **Window**  press **ENTER**

A box will appear on screen move over using 

press **F6** **Compress** position box as shown below press **ENTER**





Press **F1** **Select** point mouse arrow to lower end of a line as shown and press left mouse key. Line will turn green as above and put a number at low end of line, the position of the number is the start point. Now point to the line below it and press left mouse key, all of the line will be come green.

Press **ALT** key and letter **F**key at the same time the end of line markers will disappear.

Press **F5** **DISPLAY** press **ENTER** Part will appear at full size on screen

Press **F8** **Save**



Press **F10** **Exit**



Press **F1** or Press **Y** **ENTER** it will now return to **Program** page.



High light .M file press **F4** **Edit**

High light .M file press

**F4**

**Edit**

```
1 Call 1
2 EndMain
3
4 Sub 1
5 Dim Abs
6 Rapid      X -14.44357 Y 1.05070
7 Line      X -14.44446 Y 1.17741
8 Line      X -14.44421 Y 1.30422
9 Line      X -14.44282 Y 1.43111
```

Start of program



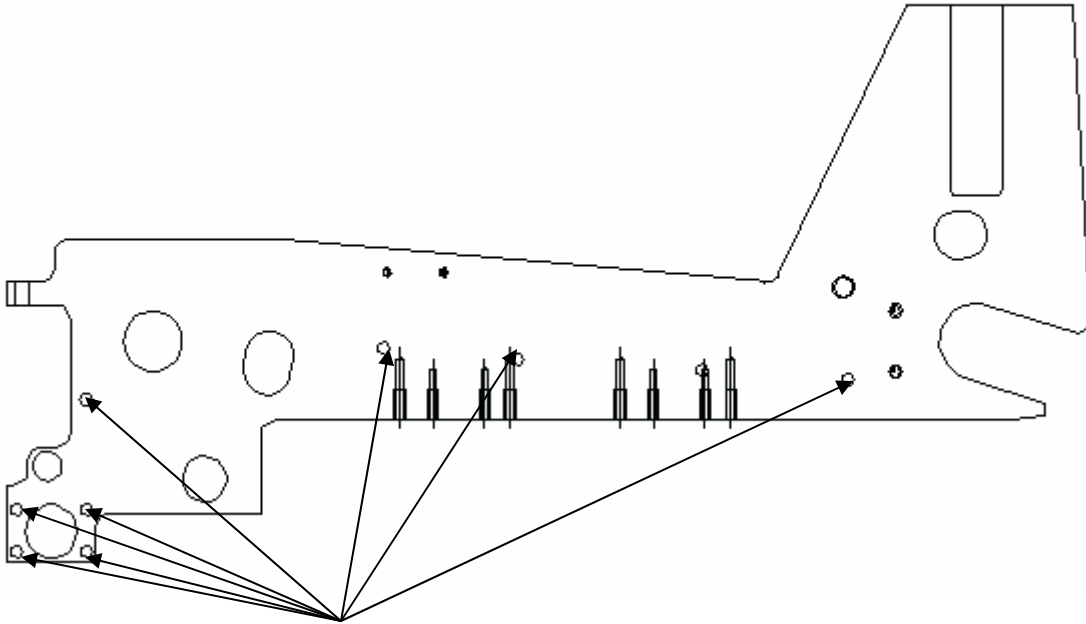
```
719 Line      X -14.40565 Y 0.16721
720 Line      X -14.41445 Y 0.29298
721 Line      X -14.42213 Y 0.41891
722 Line      X -14.42868 Y 0.54500
723 Line      X -14.43410 Y 0.67123
724 Line      X -14.43839 Y 0.79760
725 Line      X -14.44155 Y 0.92409
726 Line      X -14.44357 Y 1.05070
727 EndSub
```

End of program

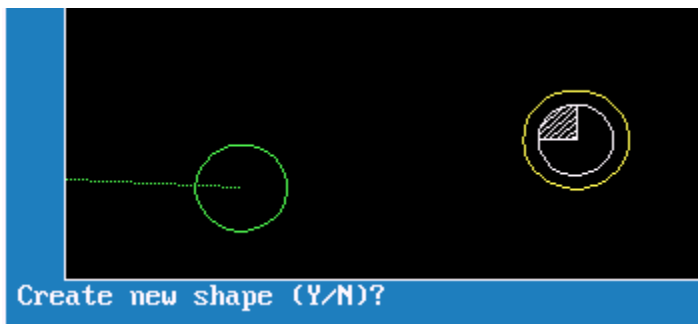
Program has to be **Edited** , to put in tool changes or cutter comp and **Z** moves.



This example will show multiple subroutines.

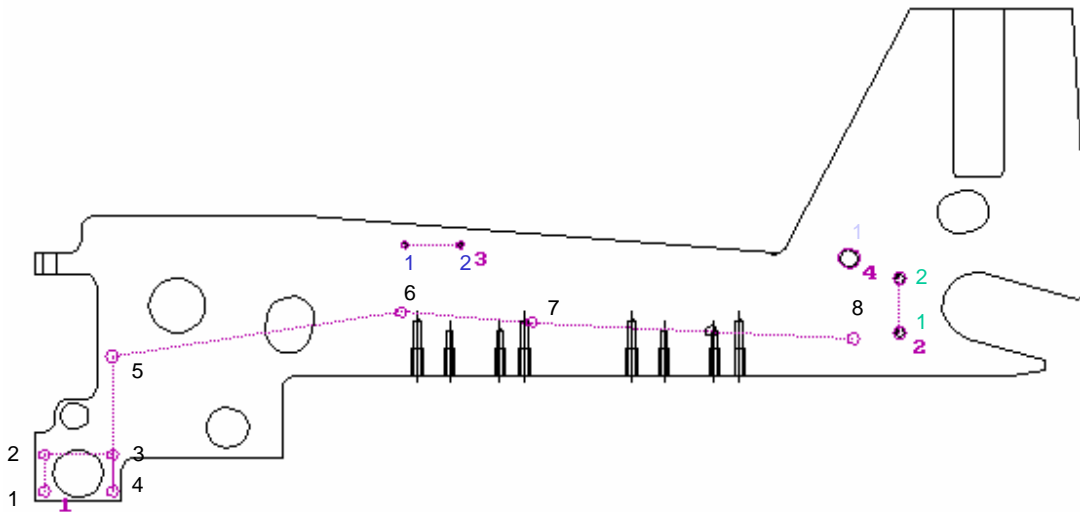


Press **F1** **Select** and pick all holes that are the same size , in this case 8. When going to second set of holes press right key on mouse.



The green circle is the last of previously selected holes. The yellow circle is the one selected with right mouse button and in the bottom left it is asking if this is a new shape, the answer is **Y** .It will put a number 2 next to this hole, meaning this is shape 2.

The print below shows the four shapes of the different sizes holes.



Press **F8** **Save**

Press **F10** **Exit**



Press **F1** or Press **Y** **ENTER** it will now return to **Program page**.

Below show program as it comes from DXF converter.  
 Some work will have to be done in main program to  
 center drill and drill and these holes.

<pre> 1 Call 1 2 Call 2 3 Call 3 4 Call 4 5 EndMain 6 7 Sub 1 8 Dim Abs 9 Rapid      X 1.34375 Y 0.15625 10 Rapid     X 0.15625 Y 0.15625 11 Rapid     X 0.15625 Y 0.84375 12 Rapid     X 1.34375 Y 0.84375 13 Rapid     X 1.34327 Y 2.66153 14 Rapid     X 6.38400 Y 3.50000 15 Rapid     X 8.67900 Y 3.31400 16 Rapid     X 14.30400 Y 3.00000 17 EndSub 18 19 Sub 2 20 Dim Abs 21 Rapid     X 15.10019 Y 3.12200 22 Rapid     X 15.10019 Y 4.12200 23 EndSub 24 25 Sub 3 26 Dim Abs 27 Rapid     X 6.45603 Y 4.75138 28 Rapid     X 7.42403 Y 4.75138 29 EndSub 30 31 Sub 4 32 Dim Abs 33 Rapid     X 14.21138 Y 4.51231 34 EndSub 35 36 &lt;End Of Program&gt; </pre>	<p>Subroutine calls</p> <p>Subroutine for positions of the eight holes numbered in black.</p> <p>Subroutine for positions of the two holes numbered in green.</p> <p>Subroutine for positions of the two holes numbered in blue.</p> <p>Subroutine for positions of the one hole numbered in light blue.</p>
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The following program has been edited to put in drilling cycles and tool changes

```
Dims Abs
Rapid Z0.0000 Tool#0
Rapid X-2.0000 Y-2.0000
Tool#1
BasicDrill Zdepth -0.2000 StartHgt 0.1000 Feed 12.0
Call 1
Call 2
Call 3
Call 4
DrillOff
Rapid Z0.0000 Tool#0
Rapid X-2.0000 Y-2.0000
Tool#2
PeckDrill Zdepth -.5000 StartHgt 0.1000 Peck 0.125 Feed 12.0
Call 1
DrillOff
Rapid Z0.0000 Tool#0
Rapid X-2.0000 Y-2.0000
Tool#3
PeckDrill Zdepth -.5000 StartHgt 0.1000 Peck 0.1250 Feed 11.0
Call 2
DrillOff
Rapid Z0.0000 Tool#0
Rapid X-2.0000 Y-2.0000
Tool#4
PeckDrill Zdepth -0.5000 StartHgt 0.1000 Peck 0.1250 Feed 10.0
Call 3
DrillOff
Rapid Z0.0000 Tool#0
Rapid X-2.0000 Y-2.0000
Tool#5
PeckDrill Zdepth -0.5000 StartHgt 0.1000 Peck 0.1250 Feed 9.0
Call 5
DrillOff
Rapid Z0.0000 Tool#0
Rapid X-2.0000 Y-2.0000
EndMain
```

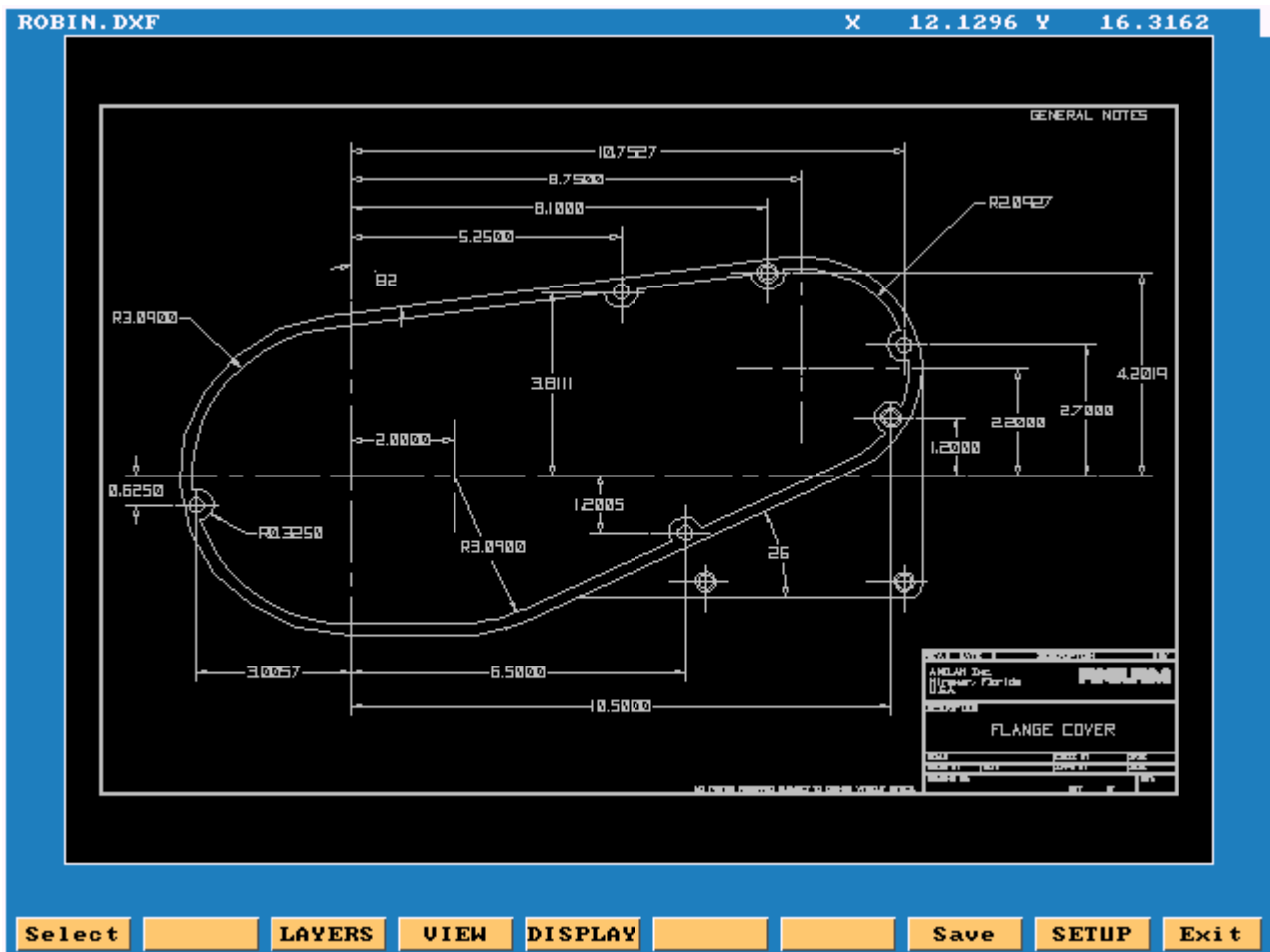
Dimensions Absolute.  
Rapid to Z0 and Tool 0.  
Rapid Tool change position.  
Call tool #1.  
Drill cycle for Center Drill.  
Calling subroutines to center drill all four sets of holes.

Turn off drilling.

Call tool #2.  
Peck drilling Cycle for eight holes.  
Call eight hole pattern.  
Turn off drilling.

In this example of a full drawing and how to turn off unnecessary information ,such as dimensions etc.

The first thing to do is turn off some of the layers so as to leave only the part.



Press **F3** **Layers**

```
All Layers on  
Invert Layers  
Toggle Layers
```

High light **Toggle Layers** press

**E  
N  
T  
E  
R**

Put high light on layers not required and press

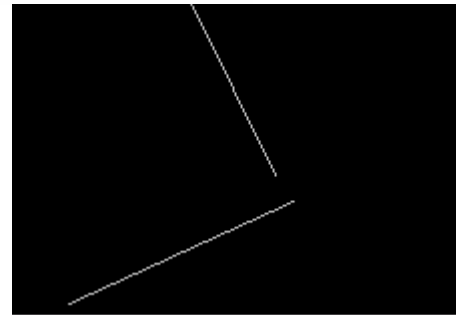
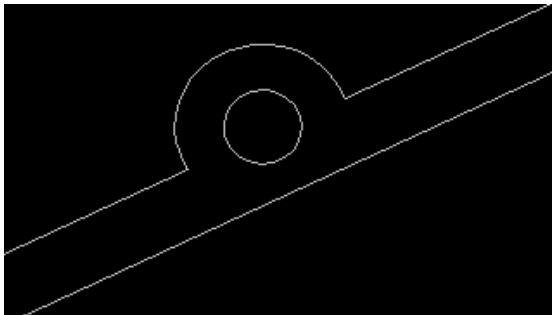
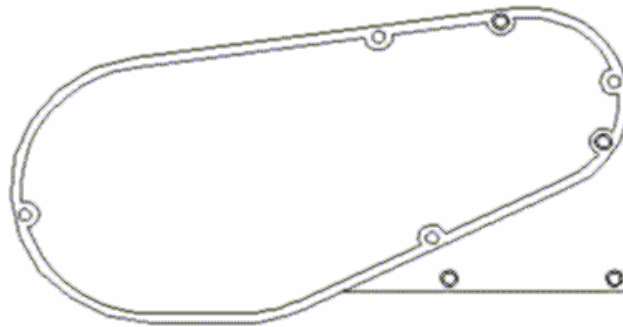
**E  
N  
T  
E  
R**

to turn OFF.

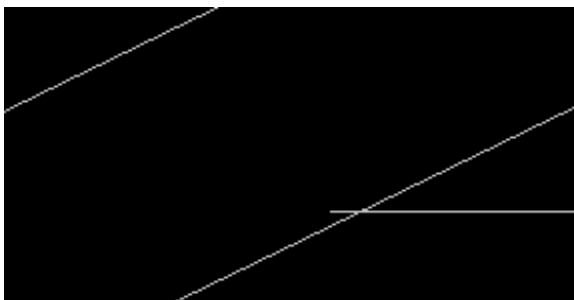
```
Layers  
1. 0..... Off  
2. AM_TR..... Off  
3. AM_BM..... Off  
4. AM_BL..... Off  
5. AM_VIEWS... Off  
6. AM_PARDIM.. Off  
7. AM_REFDIM.. Off  
8. AM_VIS..... Off  
9. AM_HID..... Off  
10. AM_SUPPR... Off  
11. CONT..... On  
12. CEN..... Off  
13. HID..... Off
```

In the drawing shown the only layer left on is #11

Only the part profiles and holes are left.



The first picture shows the area with the problem and shows the problem that the line do not meet. The software will take care of this and join the lines together.



This is another type of problem you see from CAD drawings.