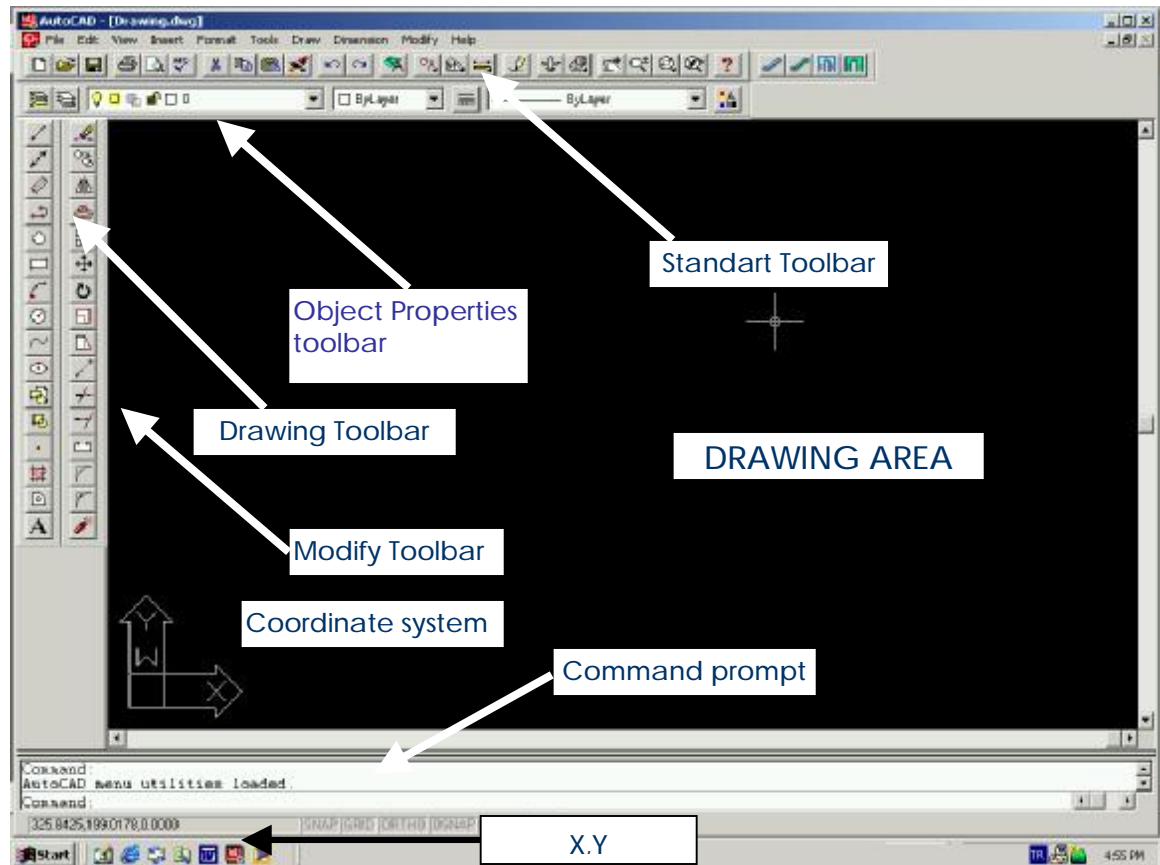


MAK112E Computer Aided Technical Drawing

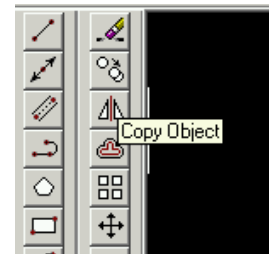
AutoCAD – Getting Strat

AutoCAD Environment as shown Figure below:



Tool Tip

When you move the mouse over an icon, the name of the icon appears below the cursor.



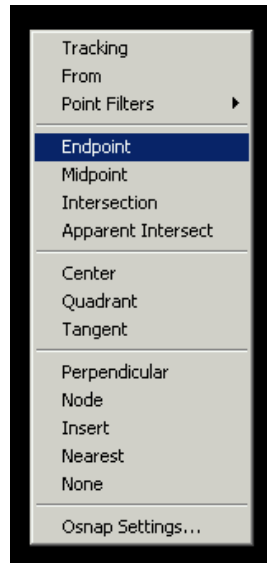
Mouse Functions :

Pick or click : To press quickly and release the left mouse button

Double click: to click the left button twice in rapid succession

Right click : performs the same function as the return button

Shift+Right click : Object snapping menu appear and select an item with the left mouse button.



Command Aliasing :

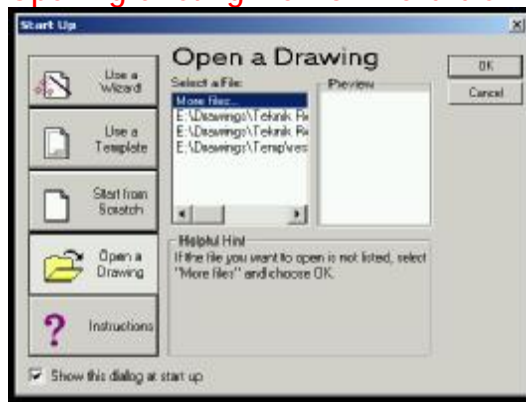
You can type commands quickly through command aliasing.

A arc
C circle
E erase
L line
M move
P pan
R redraw
Z zoom

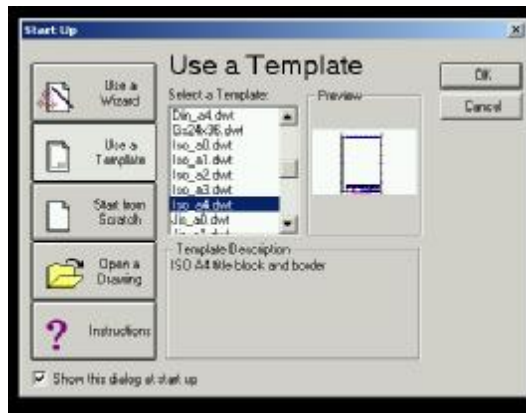
Function Buttons:

F1 Help
F6 Coordinate on/off
F7 grid on/off
F8 ortho mode on/off
F9 snap on/off

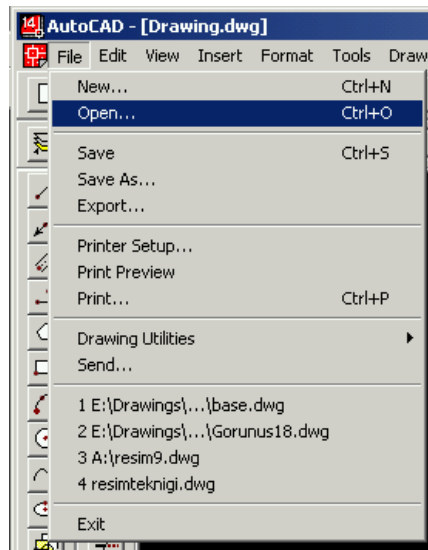
1. Opening existing file from hard-disk or floppy disks:



2. Using a template file which is formatted by AutoCAD



3. Opening a new or existing file from FILE pull-down menu



New : opening new file

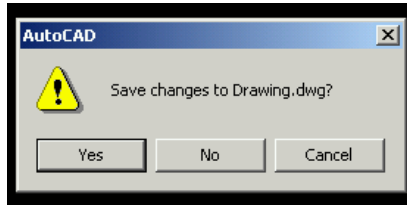
Open : opening existing file



Save : saving the current drawing

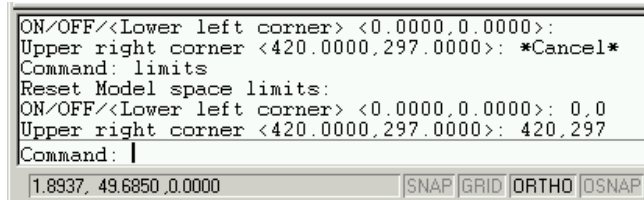
Print : print or plot out the drawing

Exit : exiting or closing the AutoCAD environment



4. Drafting Setup

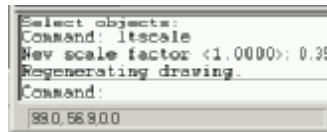
Type limits on command prompt and give the corner of the drawing area for A3 format (0,0 to 420,297)



Type zoom then select all

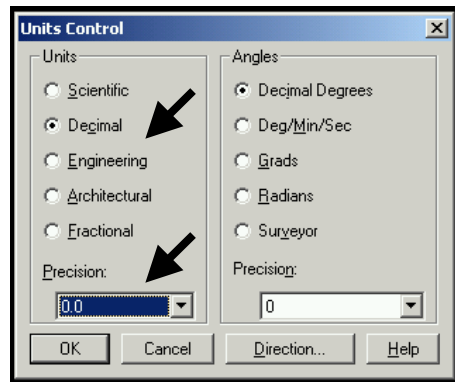
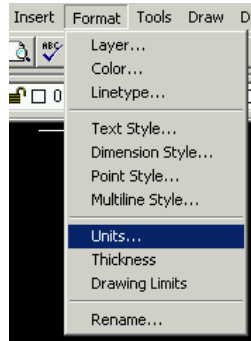


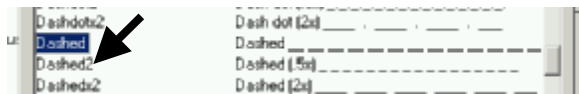
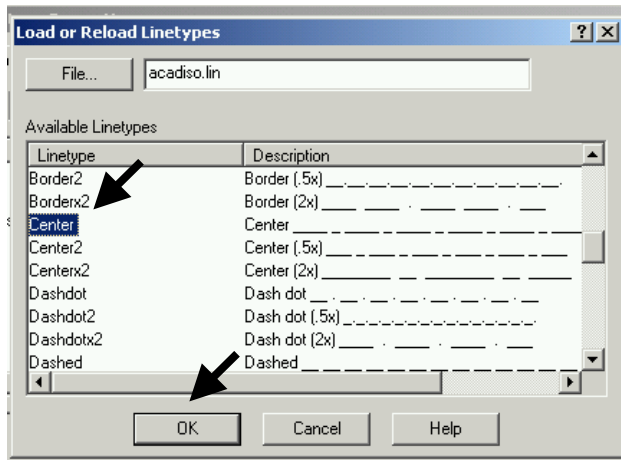
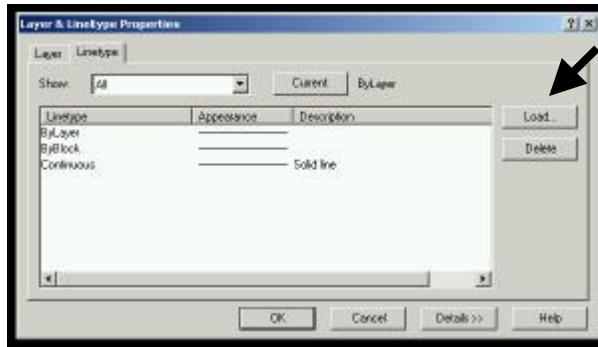
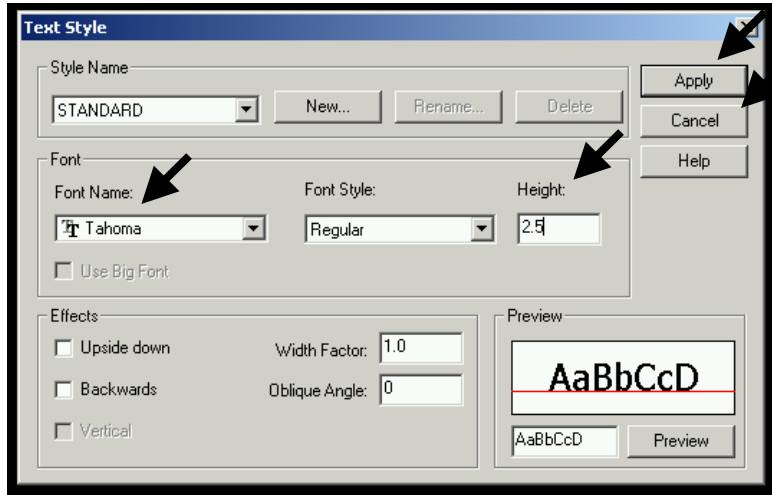
Type Itscale with scaling factor 0.35

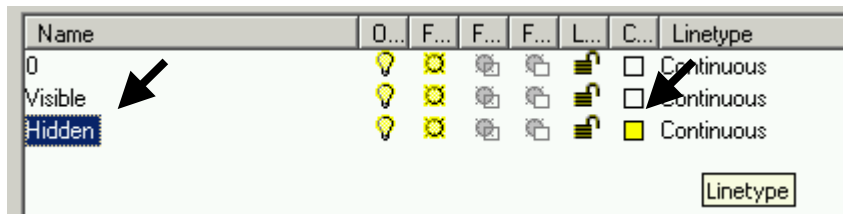
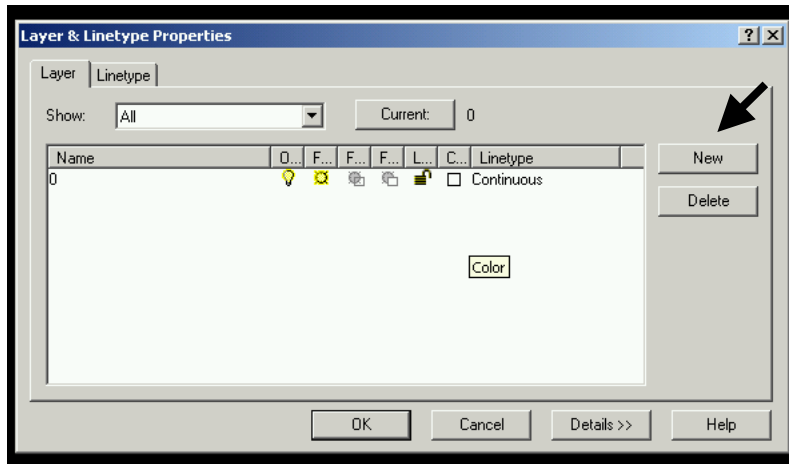
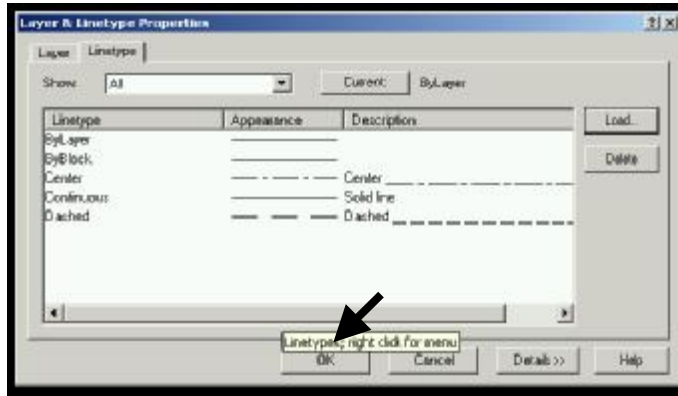


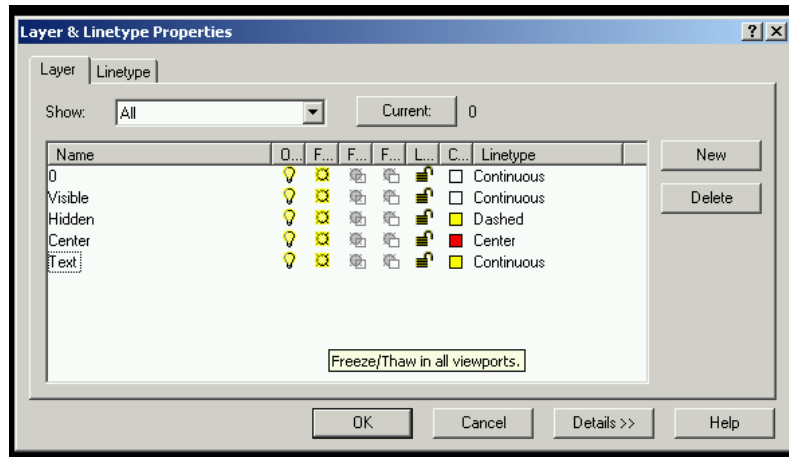
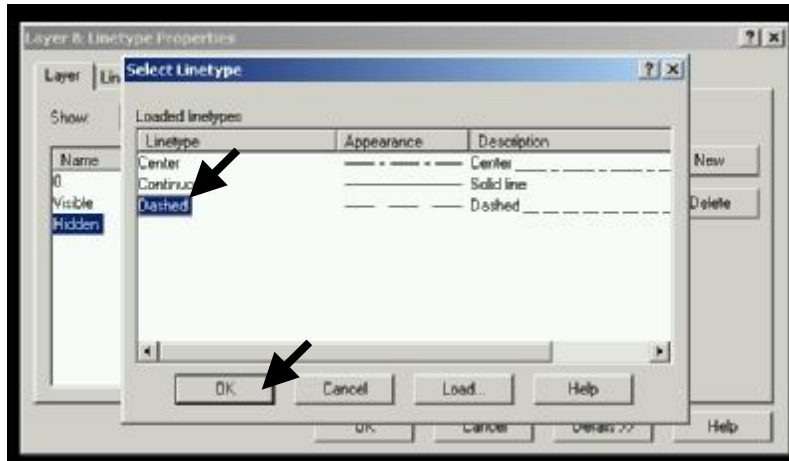
Use Format pull-down menu for formatting the drawing file

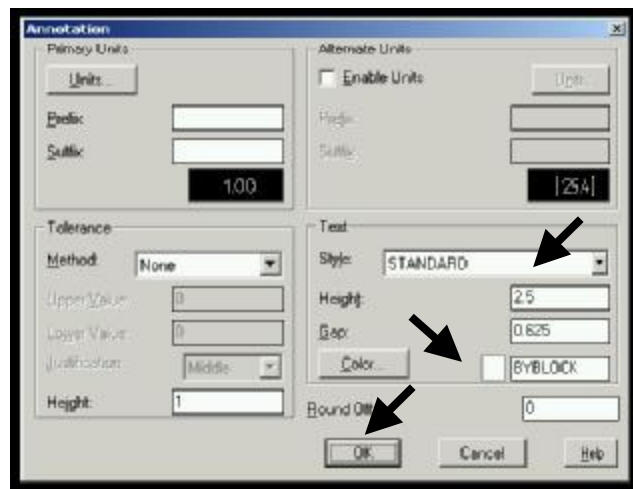
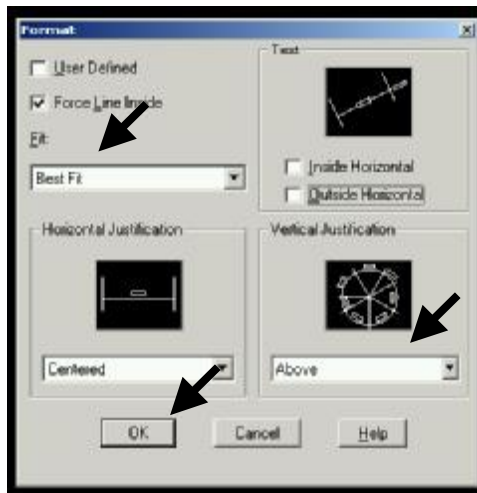
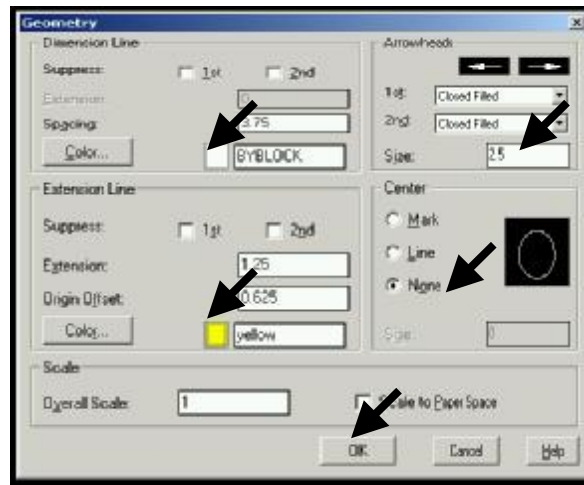
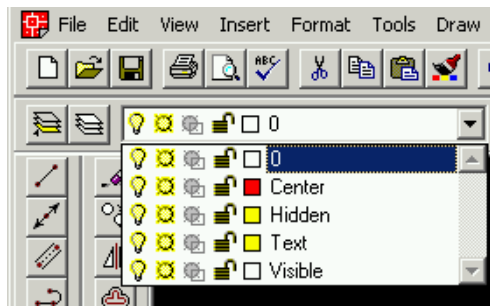
- a) Units
- b) Text style
- c) Linetype
- d) Layer
- e) Dimension style
- f) Color (if necessary)











Line Drawing Command:

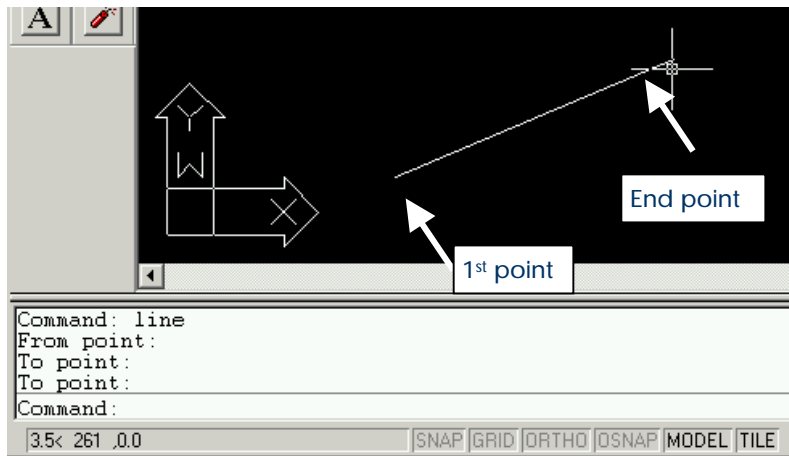
Typing the command name on command prompt and then follow the instruction

From point : starting point giving X,Y coordinate or clicking the left mouse button

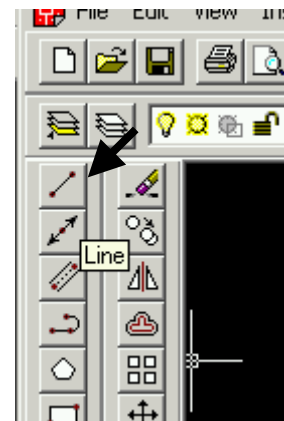
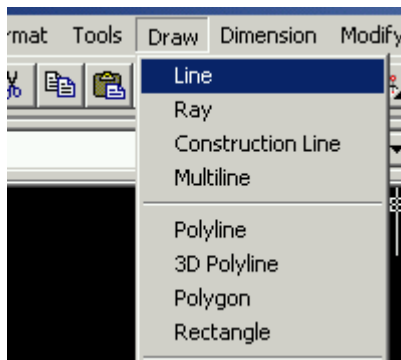
To point : target point

To exit the command click the right mouse button or hit the enter



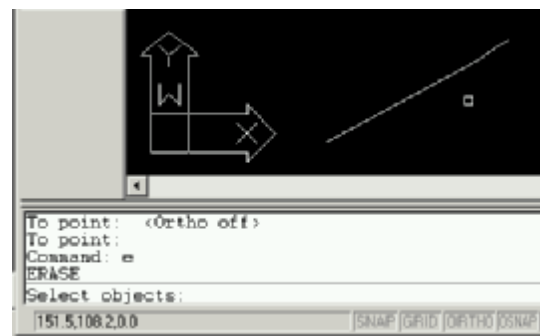
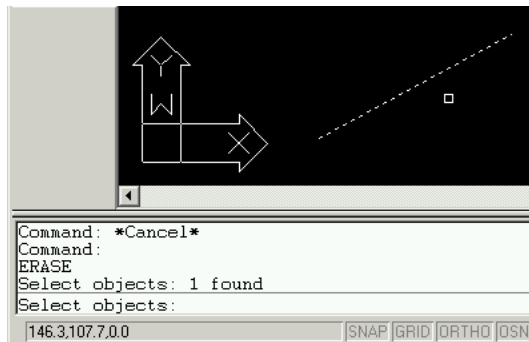


Using line icon or under Draw pull-down menu select Line command and then follow the instruction as mentioned above,



Erase Command :

To delete or erase the existing line or object use Erase (E) command on command prompt area.



The arrow becomes a rectangular box, then select the line (look at the command area and follow the instruction). As soon as selecting a line becomes dashed line and 1 found message appeared. To finish erasing hit the enter.

Example :

From Task 4, drawing the 2nd component's front view

Command : Line

From point : 150,150

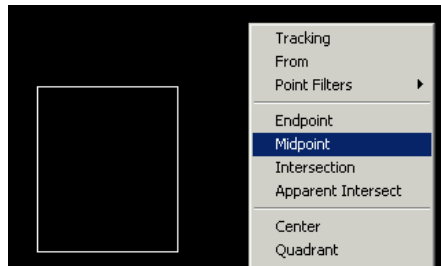
To point : @60<0

To point : @70<270

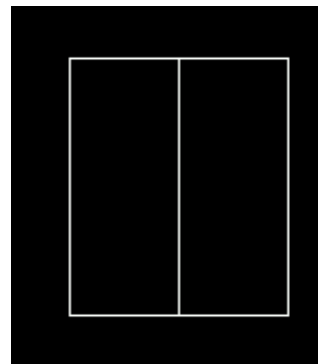
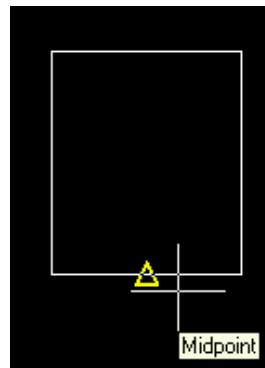
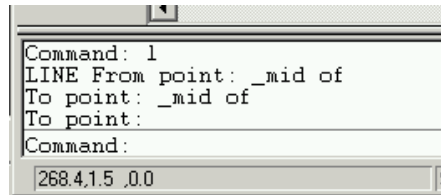
To point : @60<180

To point : c (= close)

Command : Line



- 1) Shift+Right button
Select midpoint



when move the mouse, it shows us the midpoint of the line, select them

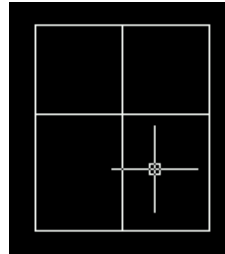
2) Use offset command to copy the base line with a given distance



```

Command:
Command:
Command: _offset
Offset distance or Through <1.0>: 40
Select object to offset:
205.9,73.8,0,0
  
```

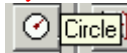
select the line and give the side to copied line



```

Offset distance or Through <1.0>: 40
Select object to offset:
Side to offset?
Select object to offset:
Command:
191.3,101.2,0,0
  
```

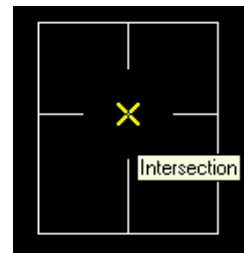
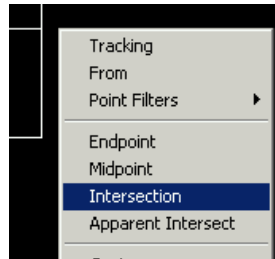
3) Draw a circle



```

Select object to offset:
Command:
Command:
Command: _circle 3P/2P/TTR/<Center point>:
Snaps to the intersection of a line, an arc, or a circle: int
  
```

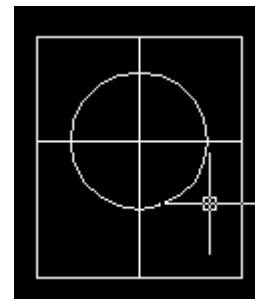
Select the center point using intersection Osnap



type the radius (20)

```

Command:
Command: _circle 3P/2P/TTR/<Center point>: 'osnap
Resuming CIRCLE command:
3P/2P/TTR/<Center point>: _int of Diameter/<radius>: 20
Command:
275.4,319,0,0
  
```

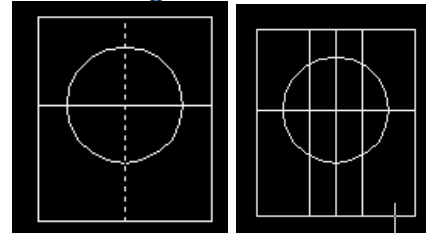


4) Use offset command to copy the center line with a given distance



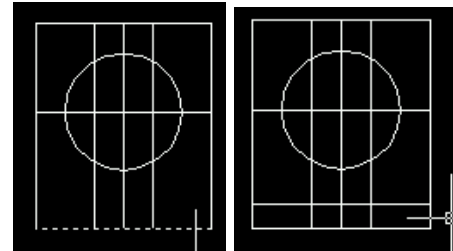
```

Command:
Command:
Command: _offset
Offset distance or Through <40.0>: 10
Select object to offset:
206.4,73.2,0.0
  
```



```

Command:
OFFSET
Offset distance or Through <10.0>: 8
Select object to offset:
Side to offset?
204.7,72.1,0.0
  
```



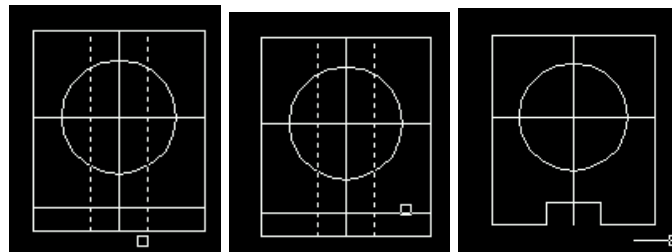
5) Use Trim command to cut right size after selecting the lines then hit the enter



```

Select objects: 1 found
Select objects: 1 found
Select objects:
<Select object to trim>/Project/Edge/Undo:
<Select object to trim>/Project/Edge/Undo:
201.2,89.6,0.0
  
```

and select the line to trim

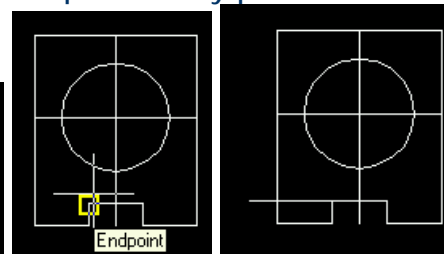
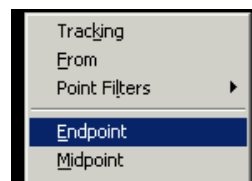


repeat the process to get final figure.

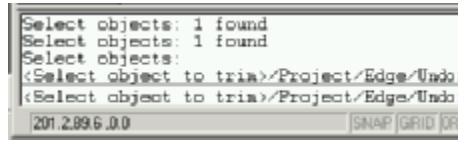
6) Draw hidden line



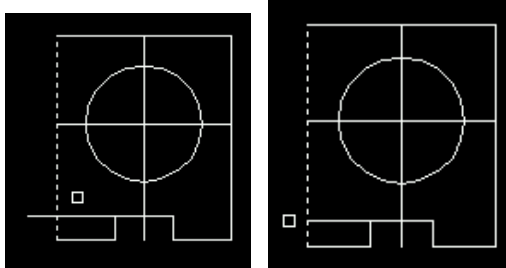
then press **F8** to select ortho mode to draw vertical or horizontal
 From point is endpoint as shown. To point is any point



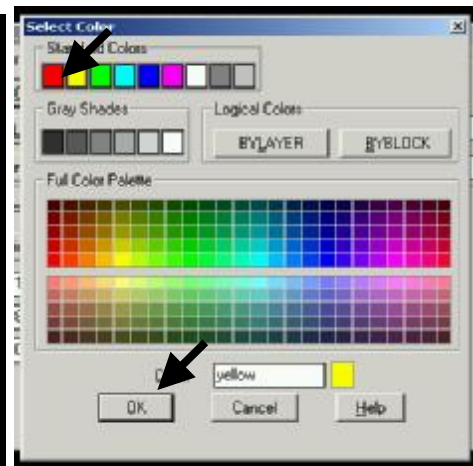
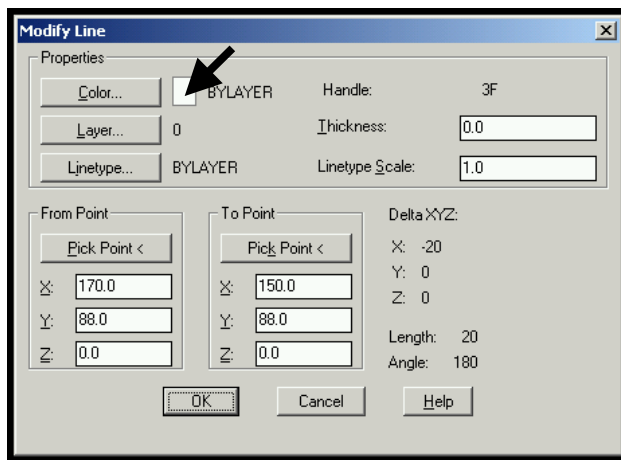
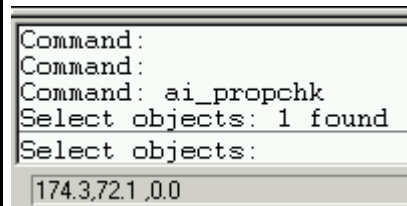
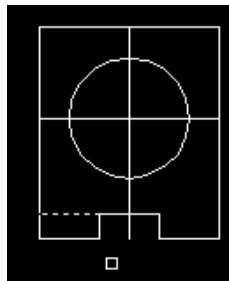
7) Use Trim command to cut right size after selecting the lines then hit the enter

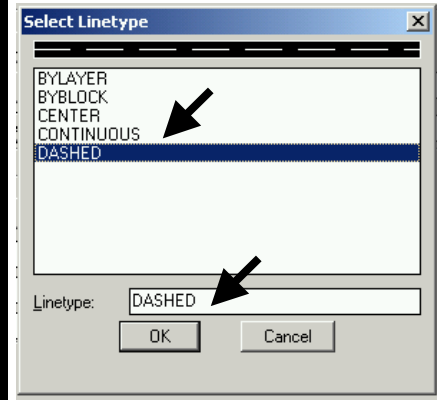
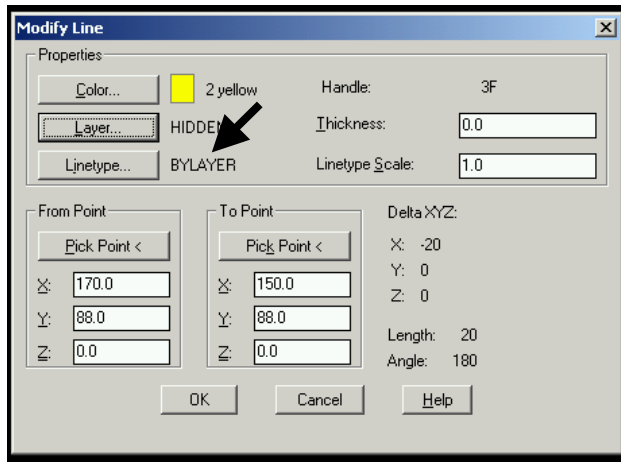
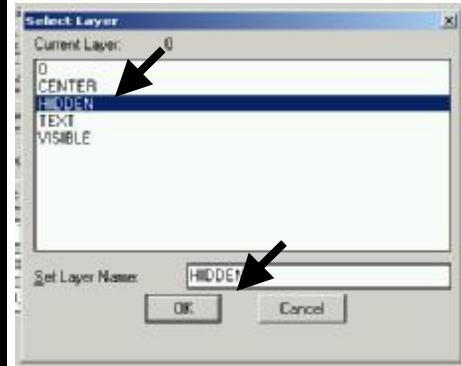
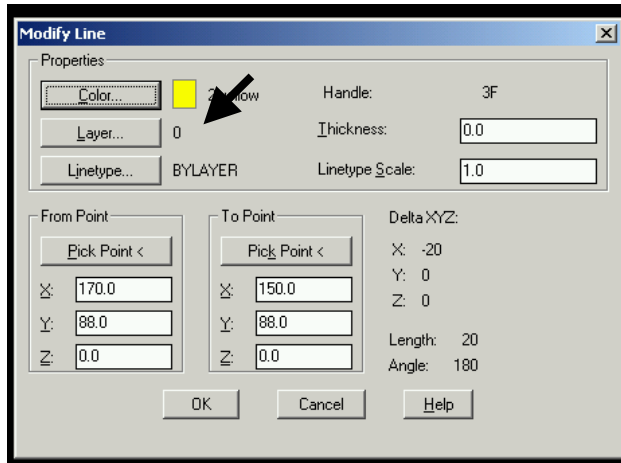


and select the line to trim

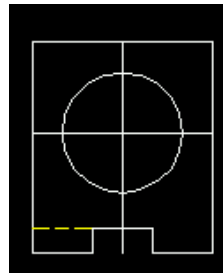


8) Changing the line properties such as linetype, color and layer
Use properties icon and select the line, and then hit the enter and answer the dialog box





If you change the layer to **HIDDEN** you do not need to change Color and Linetype because you have already defined **HIDDEN** layer with them.



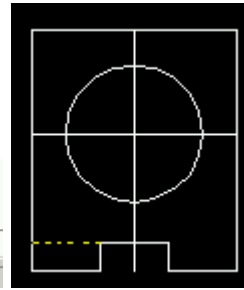
9) Using mirror command to generate same hidden line to other side



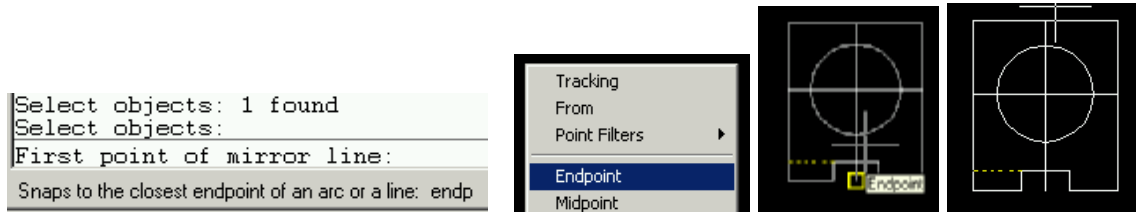
first select to mirroring object and then hit enter

```

Command:
Command: _mirror
Select objects: 1 found
Select objects: |
173.2,72.1 ,0.0
  
```



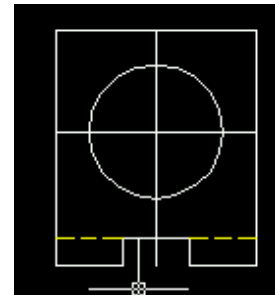
Secondly select the reflecting axis with Osnap command Endpoint



and finally answer question with No (N) or just hit the enter

```

Select objects: 1 found
Select objects:
First point of mirror line: _endp of
Delete old objects? <N>
Command:
174.9,73.2 ,0.0
  
```

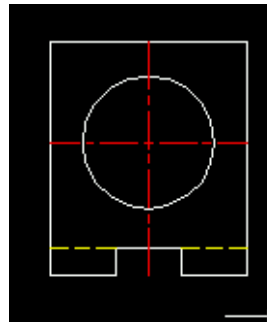
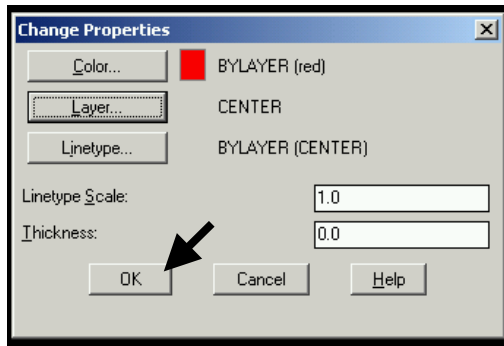
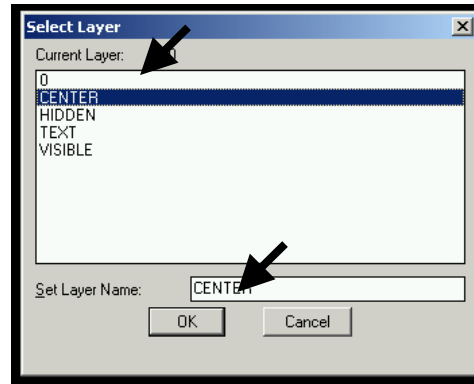
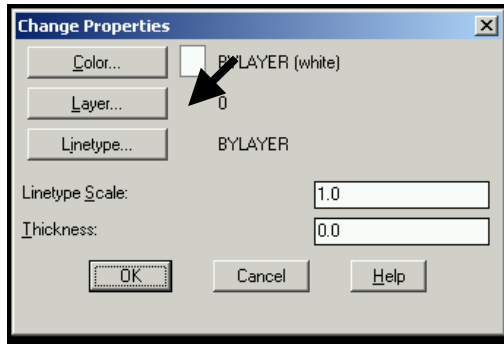


10) Changing the center lines' properties using properties icon as mentioned



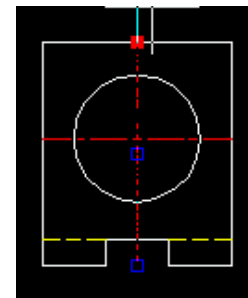
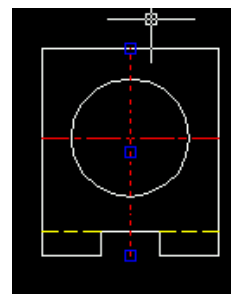
You may select both of them, and after selection hit the enter and follow the instruction



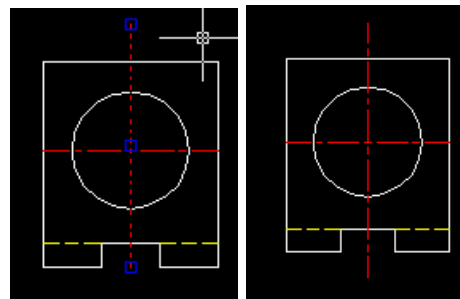


11) Lengthen the center lines

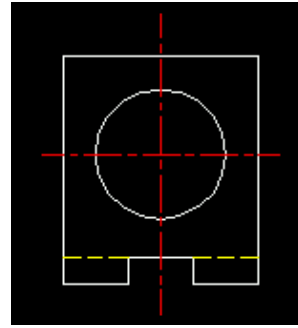
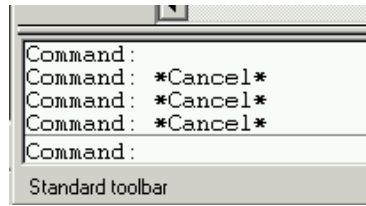
To do this select line without any command selection, line becomes highlighted and 3 blue box appear.



stretch command appears on the command prompt and blue box becomes red, then you may click the left mouse button and give new point of the line.



Repeat the process to the other end points.
 To cancel this process hit **ESC** key three times.

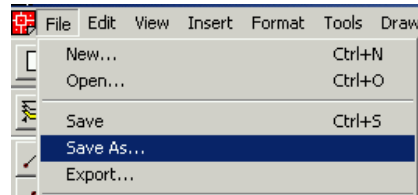


12) Save the current drawing using Save command.
To do this use save icon



or **Ctrl + S**

or from File pull-down select Save or Save As



In the first time you need to give a name i.e. item2



now you may exit AutoCAD.

