Modification toolbar

The modification toolbar is considered one of the most important ribbons in AutoCAD and is equally important drawing toolbar In terms of using its commands, you can move an element from one place to another , and you can copy it over and over again, and work on turning it at a certain angle, and you can connecting and trimming drawing lines, and you can also convert a block to its primitive elements during its detonation, you can also change the properties of any element in terms of color and type and the thickness (height in 3D) and its layer... and a lot of modifications that provided by the program.

Modification commands

Erase command (remove elements):

This command is used to delete an element or a group of elements that you have drawn

Methods of executing the order:

-from the drop-down list **Modify < Erase.**

-From the modify toolbar, click on the command icon   .

- By typing or abbreviating the command **E** on the command bar.

When you request the command in one of the ways described above, the program will ask you to select the item to be removed

Select objects:

There are several ways to select items:

1-**pick method:** Activate the erase command, the cursor will turn into a selection box, then select the items to be removed, it will appear dotted (active), then press enter to carry out the erasing process.

inactive item

Selection box

items before erase

The active items that will be removed
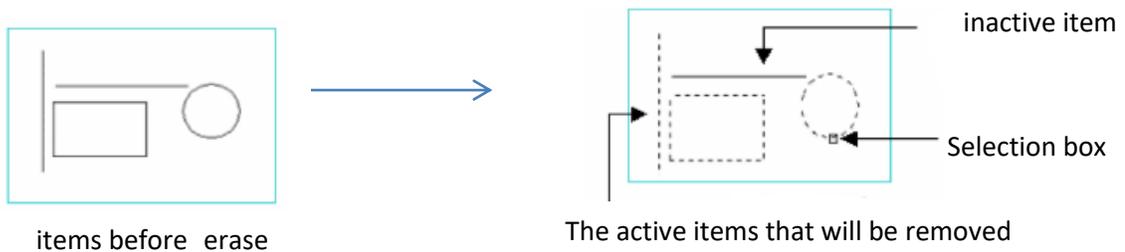
2-**The erase method creates a window from right to left:** Where it removes all the elements that are inside or intersect with the window.

working method: Activate the erase command, the cursor will turn into a selection box, then press the right of the item to be removed, then drag the mouse to the left, you will see a window that moves with the movement of the mouse, then click on the mouse to select the second corner of the window, after which the item will appear dotted (active) Then perform the erase operation by pressing **enter.**

Second corner of the window

First corner of the window

The active items after clicking on the second corner of the window
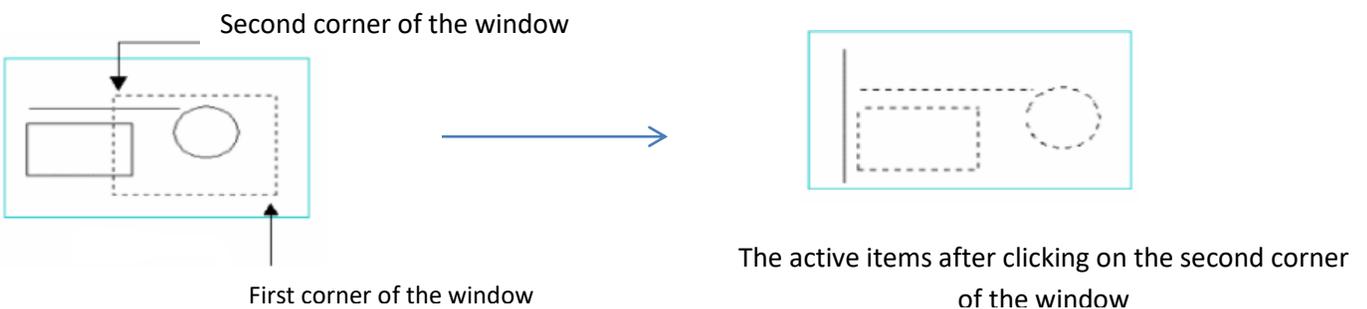
3-The erase method creates a window from left-to-right : All items inside the window are erased only.

working method: Activate the erase command, the cursor will turn into a selection box, then press the Left of the item to be removed, then drag the mouse to the Right, you will see a window that moves with the movement of the mouse, When the horizontal line and the rectangle are inside the window, then click on the mouse to select the second corner of the window, which will look like all the elements inside the window only dotted (active), then perform the erase

operation by pressing enter, which will then erase the horizontal line and rectangle.

Second corner of window

First corner of window
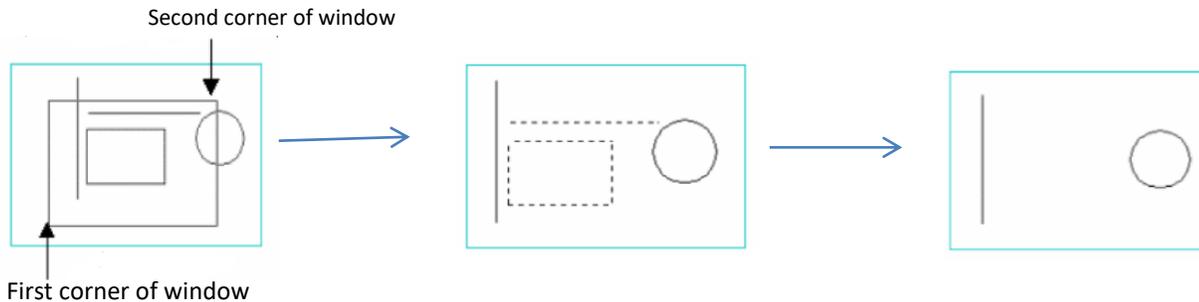
copy command: This command is used to copy an element an infinite number of times and paste it on the drawing screen at a specified distance from the origin point of the element.

Ways to choose an command:

- from the drop down menu bar **Modify < copy**
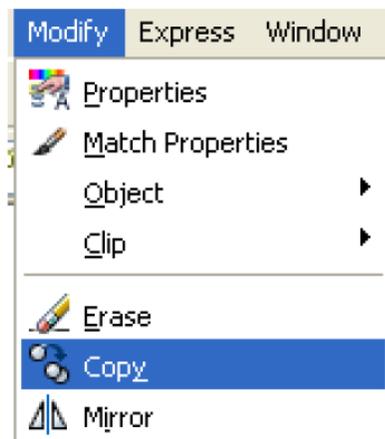
- From the modification toolbar, click on the command icon   .

- By typing or abbreviating the command **CO** on the command bar.

The method of executing the command:

After choosing the command in one of the ways described above, the program message appears asking to select the item to be copied **Select object** Choose the item or items to be copied in one of the ways to select the item and then press enter, The program now asks to specify the base point for the element to be copied **Specify base point or [displacement]**
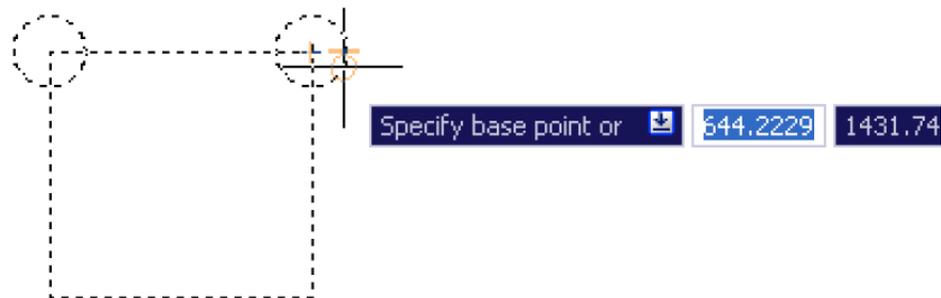
Choose the base point from which you want the transfer to be done with the help of Osnap by clicking on it with the left mouse button, The program will ask you to enter the second point to which you want to copy the element, relative to the base point you chose previously:

**Specify second point or < use first point as displacement>**

You will have several ways to determine the second point, which is:

- Left-click on the point where you want the copy to be made

- By writing the coordinates of the point, if known to you, knowing that they will be relative to the base point.

- By typing a space and moving the cursor to the side you want.

- To agree to the accompanying order, which is to adopt the coordinates of the first point attributed to the same point, that is, if the first point is located at the coordinates of 300,400, then the second point will move 400 units towards the x

axis and 300 units towards the y axis from the first point (the base point), as if you had entered the relative coordinates @ 300,400.

If you choose the accompanying option **Displacement**, and that is by typing the letter **D** when the Determine Base Point command appears, or by pressing the Enter key, then you only need to specify the distance or coordinates for the second point. without specifying the base point.

Mirror command (Reflect items): This command is used to copy an element by producing reflect of it around an axis, and the resulting element is inverted sideways, and this command is useful in the case of symmetrical drawings around one of the axes, where it is sufficient to draw half of the element and make a copy of it inverted sideways on the axis of symmetry. The axis is called the mirror axis, (mirror line) and it is defined by two points.
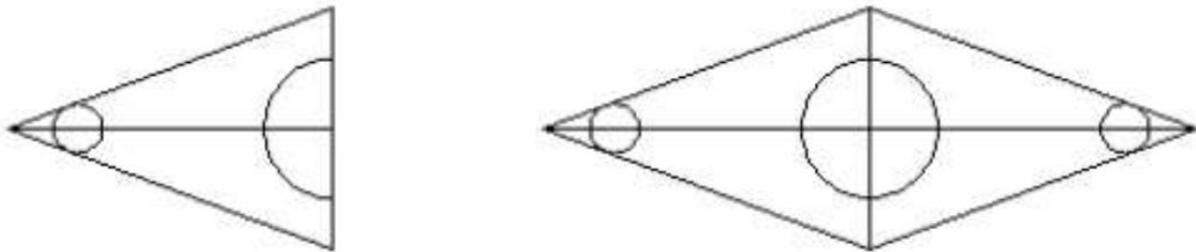

Ways to execute the command: Choose the command in one of the following ways:

- From the drop-down list **Modify < Mirror**

- From the modification toolbar by clicking on the command icon

- By typing or abbreviating the command MI on the command bar.

When executing the command in one of the ways shown above, the program will ask you to select the object to be reflected

Select objects:

Select the item in one of the previously explained item selection methods, then press Enter.

Select objects:
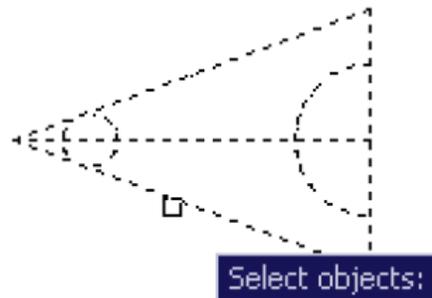
The program will ask you to specify the first point of the mirror axis through the message:

Specify first point of mirror line:

With the help of **Osnap** select the first point or by writing the coordinates of the first point, if known to you. Select the second point with the help of **Osnap** or by writing the coordinates of the second point if known to you.

Endpoint
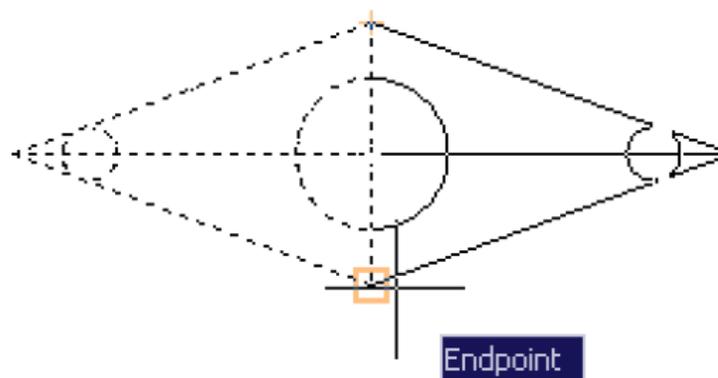
The program will not generate the drawing until it asks you if you want to erase the original object??

Erase source object [yes/no] <N>??

You have to answer yes or no. If you want to delete the element and just keep its reflection, enter the letter Y If you do not want to erase it, enter the letter N or press Enter so that the program knows that you have agreed to the default option No.

Offset command: This command is used to produce a new element with another element in which the resulting shape is parallel to the original element and is a specified offset distance from it, similar to the Copy command from as the two commands copy elements similar to the original, but the offset command differs in terms of:

1- Only one item is copied per command .

2- Copies the element at a specified offset distance and saves it as the default until it is changed.

3- It only works with the following items:

-Lines
-Arcs
-Circles
-Polylines
Ways to execute the command:
-Choose the command from the dropdown list **Modify < Offset**
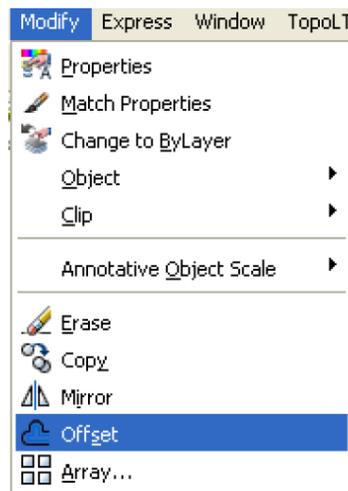
- Or from the editing toolbar, click on the command icon

- By typing or abbreviating the command O on the command bar.

By choosing the command in one of the ways, an AutoCAD message will appear on the command bar asking you to specify the offset distance

Specify Offset distance or [Through/Erase/Layer]

-Type the offset value you want, then press enter

- The program will ask you to select the element to be moved **Select Object to Offset:** Select the item by clicking on it with the left mouse button

Select object to offset or
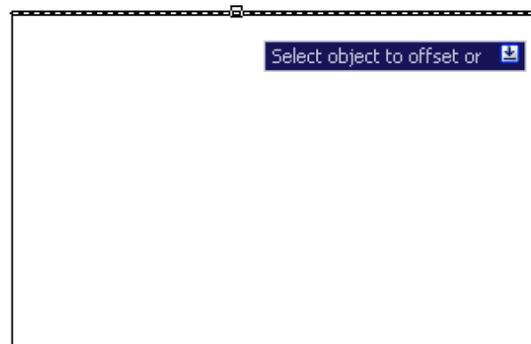
-The program will ask you to specify the displacement direction of the element by selecting a point outside or inside the element.

Specify Point On side to Offset

Determine the direction of displacement by clicking the left mouse button at any point on the drawing screen direction you want.

Specify point on
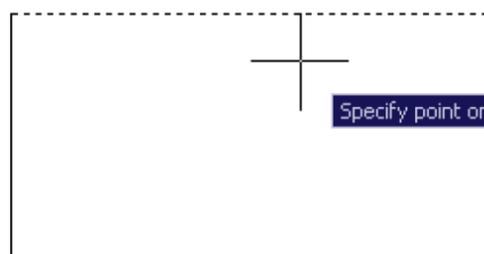
The program draws the new element at the offset distance that you specified

□

Select object to offset o

- The program will not exit the command, but will ask you to select another element to draw a parallel to with the same offset distance that you set for the first element and in the direction you want .
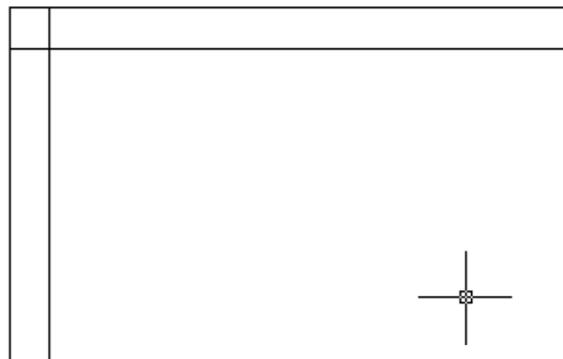
Thus, you can make several items in this way, and to exit the command, press Enter or the Scape key.

move command : This command is used to move graphic elements to a specified distance from the element for a specific direction, you can use the coordinates or the Object snap to move the item with perfect accuracy .

The way the command is executed:

-From the drop down menu bar **Modify > move**

-From the modification toolbar, click on the command icon

- By typing or abbreviating the command **M** on the command bar.

-When activating the command in one of the above ways, the usual AutoCAD message appears with a selection the item to be moved **Select object:**

Select the item using one of the select items methods, then press **Enter.**

-After selecting the element, the program will ask you to specify the base point for the element the transfer will start from there

  Specify base point or [displacement]

Select the base point and let it be the center of the circle. If you choose the accompanying option **Displacement**, you will have to enter the coordinates of the base point

-After selecting the base point, you will notice that the element has stuck to the cursor and is moving in the direction of the cursor movement until you specify the second point to which it will move from the base point

Specify second point:
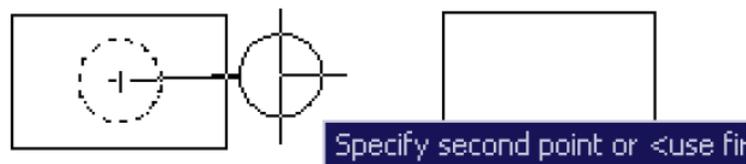
You can specify the second point that the element will move to in the following ways:

1) Direct entry of the distance by writing its value and directing the mouse pointer to the direction in which it is located you want.

2) Capture the point on the drawing screen with the help of hopping tools.
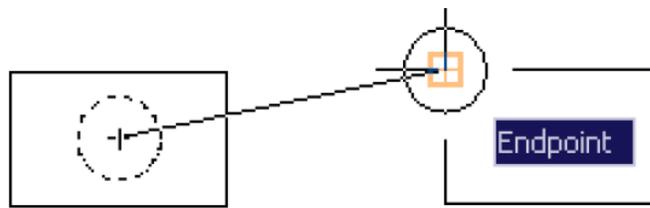
3) Enter the coordinates of the absolute or relative point.

 After selecting the second point in one of the ways, you will find that the element has moved to its new location.

Explode command (Exploding items): With this command, we can convert unified elements such as blocks and polyline into its basic components of the elements. This process is taken advantage of when desired to enter modifications to parts of a unitary element, or the use of parts of a block to create a block new, for example.

Execution method:

-from dropdown lists **Modify > Explode**.

-From the modification toolbar by clicking on the icon

-By typing or abbreviating the command **X** on the command bar.

When the command is requested in one of the ways described above, the program asks you to select the items **Select Objects** to be detonated, then select the element or elements in one of the methods of selecting the elements previously explained, and then press **Enter**. The program will directly detonate the selected elements. You will notice the difference after detonation. When you place the mouse cursor on one of the elements, you will find it separate from the rest of the other parts other than the situation before the explode, so it is completely connected and treated as a single element when the mouse pointer is placed on it.
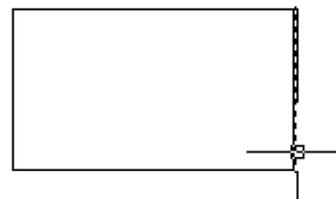
Before Explode   After Explode

The program gives you the option to do this with modifications to the item's properties after detonating it, such as changing the color, the thickness of the line, changing the layer of the element, the type of the line.