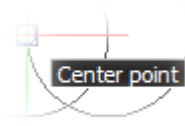




Entity snaps are called “esnaps” for short. To help you further, the program displays tooltips to identify geometric features, such as “Center point,” as illustrated below.



*Tooltip identifying the name of the entity snap*

## SELECTING ENTITIES

When it comes to editing drawings, you need a way to select the entities to be edited. Selection tells the program which group of entities you need to modify. In most cases, you must use the mouse to select entities; in a few cases, you use the keyboard instead.

There are two ways to select entities:

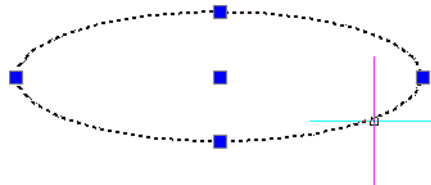
- *Before* starting an editing command (called “grips editing”).
- *After* starting an editing command (called “entity selection”).

You will probably find both methods useful, but for different kinds of editing operations.

## GRIPS EDITING

Grips editing is the kind of editing you may be familiar with from other drawing programs. It starts when no command is active, and you select one or more entities by picking them with the cursor.

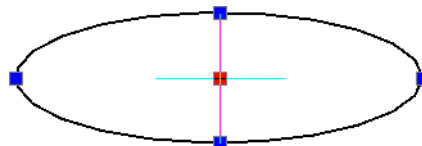
Notice that the entities selected change to dotted outlines, as shown below. The program responds in this way to let you know which entity you picked.



*Blue squares indicate the locations of editing grips*

In addition to the dotted outlines, one or more blue squares appear. These squares are the grips. Blue grips are also known as “cold grips.” Their sole purpose is to show you where grips are located on the entity.

Move the cursor over a grip, and then click on it. Notice that the grip turns red.



*Red square indicating the “hot” grip, which edits the entity*

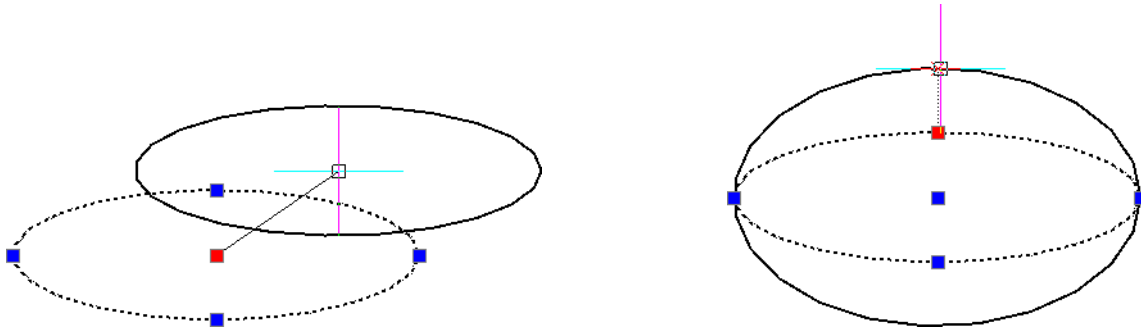
This is known as a “hot grip,” the purpose of which is to edit the entity. The editing function varies, depending on which grip you chose; most often, it moves or stretches the entity.



## Moving and Stretching with Grips

Drag the hot grip. Notice that the action edits the entity in some way. The exact type of editing depends on the location of the grip. In general:

- **Centrally**-located grips tend to move the entity.
- **Peripherally**-located grips tend to stretch the entity.



*Left: Using the hot center grip to move the ellipse*

*Right: Using the hot edge grip to stretch the ellipse*

Additional editing options are available in the command window:

STRETCH

Options: **Base point**, **Copy**, **Undo**, **eXit** or

Stretch point»

**Base point** relocates the base point (the “start point”).

**Copy** copies the entity, instead of moving it.

**Undo** undoes the last action.

**eXit** exits grips editing. You can also press **Esc** to exit.

## NAVIGATING BY TOUCHSCREEN

Windows has long supported touch screens — remember 1990s Windows for Pen Computing? Touching was done with a pen. Not until Windows 8 did Microsoft support screens that recognized human touches.

The program does not specifically support touch screens, because support comes from the operating system. The following touch motions work:

Touch Action	Reaction
Tap	Selects UI elements, picks entities (like clicking left mouse button)
Hold	Displays context menu (like clicking right mouse button)
Drag and tap	Windowed selection of entities (like click and drag with a mouse)
Double-tap	Selects file, opens folder (like double-clicking with a mouse)

Holding the finger down on the screen acts like pressing the right mouse button. In this case, Windows displays a square to show that it has registered the action. When we lift our finger, the context menu appears.

There were, however, other common touches that do not work, such as pinching two fingers to zoom in or dragging two fingers to pan.

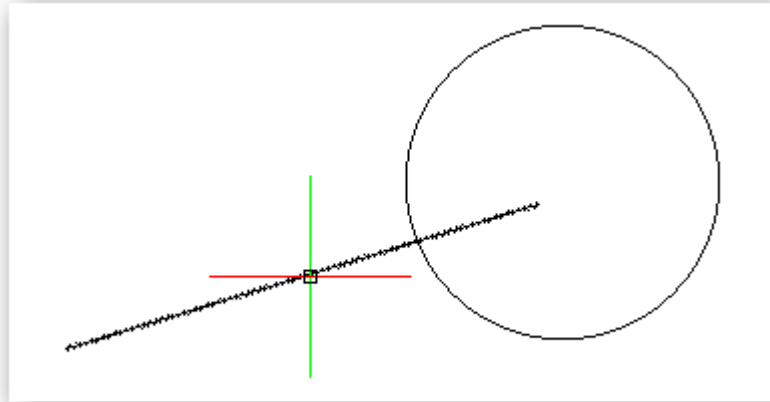


## Erasing with Grips

To erase selected entities, press the **Del** or **Back** key (**Delete** on Macs) on the keyboard.

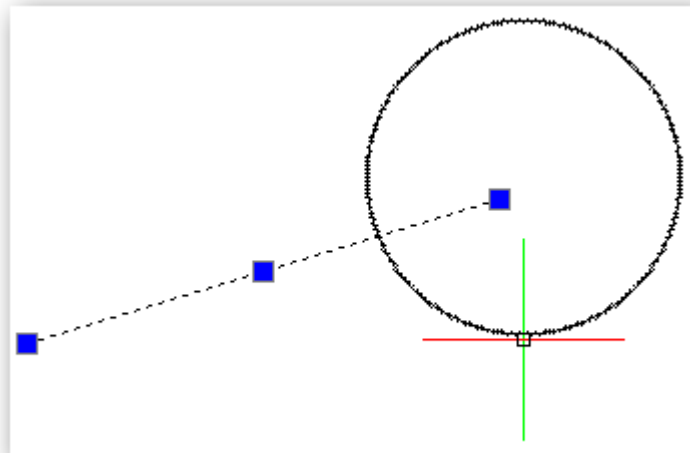
## SELECTING MULTIPLE ENTITIES

You select a single entity by picking it with the cursor. Ensure part of the entity is within the cursor's pickbox.



*Picking an entity with the cursor*

To select additional entities, keep picking them.



*Picking a second entity*

*(blue squares show the other entities that were selected)*

## Selecting Multiple Entities by Rectangle

After a while, picking entities one-by-one becomes tedious, and so the program provides ways to pick groups of entities. One method is the selection rectangle. It selects entities within an area specified by a rectangle, which is created like this:

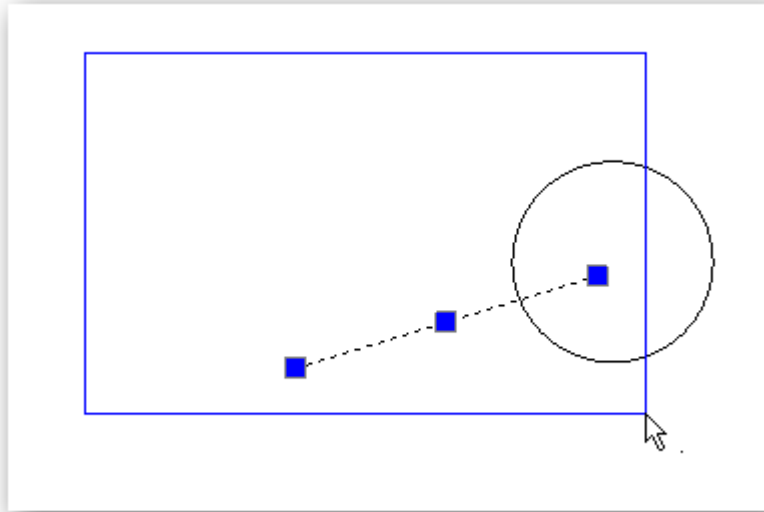
1. Pick in a blank point in the drawing away from any entities.



2. Form a rectangle by moving the cursor diagonally. The program reacts differently, depending on whether you move the cursor to the right or the left:

**Right** — moving the cursor right forms a *windowed* selection. The program selects all entities that fall *entirely within* the selection rectangle. It ignores entities that cross the rectangle or fall outside the rectangle. The program colors the selection rectangle **blue**.

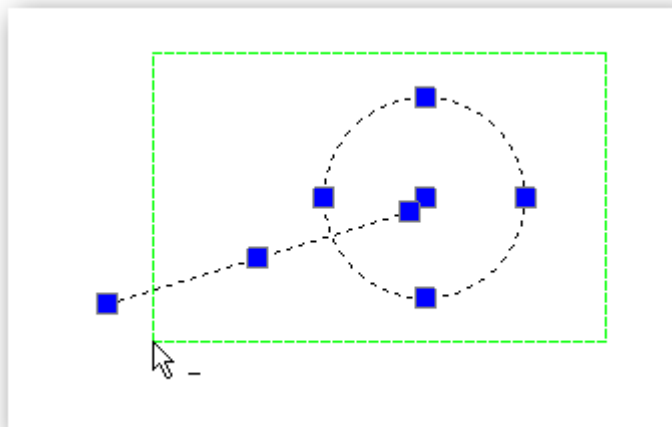
Entities selected by windows selection mode are highlighted by the program after you pick the second point of the selection rectangle. In the figure below, only the line is selected.



Selecting multiple entities entirely within the rectangle

**Left** — moving the cursor left forms a *crossing selection*. The program selects all entities within the selection rectangle, as well as those crossing the rectangle. It colors the selection rectangle **green**.

In the figure below, both the circle and line are selected.



Selecting multiple entities within and crossing the rectangle



## SELECTING ENTITIES BY LOCATION

But there are more selection modes! Selection areas need not be rectangles; they can also be polygons and fences. These other selection modes become useful when editing commands ask you to specify entities.

For example, the Copy command prompts you, as follows:

```
: copy
Specify entities» (Enter the name of a selection type or mode.)
```

At the 'Specify entities' prompt, you can pick entities with the mouse, or enter one of the following options. I've highlighted each option's abbreviation with underlined, boldfaced text.

Selection Option	Meaning
<b><u>ALL</u></b>	Selects all non-frozen entities in the drawing
<b><u>A</u>uto</b>	Selects an entity when picked directly; picking a blank spot starts Window or Crossing mode
<b><u>BOX</u></b>	Starts Windows and Crossing mode, depending on how the cursor is moved: Right to left = Crossing mode Left to right = Window mode
<b><u>C</u>rossing</b>	Selects entities contained within or crossing the boundary of a rectangular selection area
<b><u>CP</u>olygon</b>	Selects entities contained within or crossing the boundary of a polygonal selection area
<b><u>F</u>ence</b>	Selects entities crossing a series of line segments
<b><u>L</u>ast</b>	Selects the entity most recently added to the drawing
<b><u>P</u>revious</b>	Selects entities included in the previous selection set
<b><u>W</u>indow</b>	Selects entities contained entirely within a rectangular selection window
<b><u>WP</u>olygon</b>	Selects entities contained entirely within a polygon selection window
<i>Modes</i>	
<b><u>A</u>dd</b>	Adds one or more entities to the selection set; used after the Remove option
<b><u>EG</u>roup</b>	Selects entities of a named group (created by the EntityGroup command)
<b><u>R</u>emove</b>	Removes one or more entities from the selection set
<b><u>M</u>ultiple</b>	Selects multiple entities without highlighting them
<b><u>S</u>ingle</b>	Selects one entity, then carries on with the command; the 'Specify entities' prompt doesn't return
<b><u>U</u>ndo</b>	Undoes the last selection

You can create selection sets with the Select command. Then, during an editing command use the Previous option to employ the stored set, like this:

```
: select
Specify entities» (Choose one or more entities.)

: copy
Specify entities» p
```



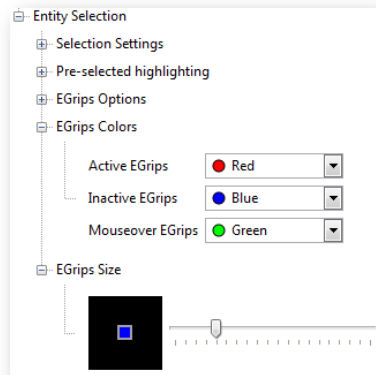
**TIP** To see a list of selection options, enter a question mark at the 'Specify entities' prompt, like this:

: copy

Specify entities» ?

«Invalid selection» Specify a point or **Window, Last, Crossing, BOX, ALL, Fence, WPolygon, CPolygon, EGroup, Add, Remove, Multiple, Previous, Undo, AUto, SIngle**

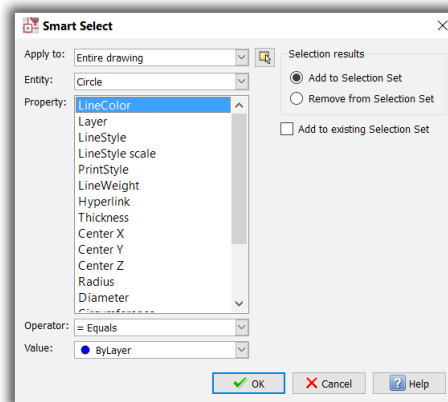
**TIP** To change the size and color of grips, enter the **DraftingOptions** command, and then expand the **Entity Selection** node (illustrated below). Sizes are changed with the **EGrips Size** node, colors with the **EGrips Colors** one.



## SELECTING ENTITIES BY PROPERTIES

The selection options listed in the table above are meant for selecting entities based on their location in the drawing. A different method is to select them by their properties, such as all entities colored red or with a specific hyperlink.

The **SmartSelect** command displays a dialog box that lets you choose entities based on any of their properties. The most common properties include color, layer name, line style, line style scale, print style, lineweight, or hyperlink.



*Selecting entities by common properties*

(This dialog box is also available through the Properties palette by clicking the Smart Select icon.)