



Andhra Pradesh State Skill Development Corporation



Andhra Pradesh State Skill Development Corporation



AutoCAD(CIVIL)

Groups and Utilities Panels



HOME TAB PANELS AND ISOMETRIC DRAWING GROUPS AND UTILITIES PANELS

GROUPS PANEL

Groups provide an easy way to combine drawing objects that you need to manipulate as a unit. By default, selecting any member of a group selects all the objects in that group, and you can move, copy, rotate, and modify groups just as you can modify individual objects.

- 1) Group
- 2) Ungroup
- 3) Edit group
- 4) Group selection
- 5) Group manager



1) Group

Using this command you can group multiple objects as a single unit. This command is great for making groupings of similar types of objects like a group of similar blocks. To break this group you can use the UNGROUP command.



Object Groups

A group is a combination of multiple objects made to act as a single object. By default, selecting one object in a group causes the entire group to become selected. Groups are saved with the drawing. Objects can be members of more than one group, and you can nest groups, which means a group can contain another group. You can use nesting to place smaller groups into larger groups for easier editing.

Creating a Group

Group Objects (Unnamed Group)

The fastest way to group objects is to create an unnamed group.

- Select the objects you want to group.
- Click the Home tab groups panel group. Find



- The selected objects are grouped together into an unnamed group, which is assigned a default name such as *A1.



Create a Named Group

- Click the Home tab groups panel group. Find



- At the prompt, enter **n** and type a name for the group.
- Select the objects to group and press Enter.

2) UNGROUPING OBJECTS

The EXPLODE command does not ungroup a group. Access the UNGROUP command and select the objects to ungroup. The Name option allows you to enter the name of the group to ungroup.



Ungroup shapes, pictures, or objects

- Select the group that you want to ungroup.
- To ungroup shapes or other objects, under Drawing Tools, on the Format tab, in the Arrange group, click Group., and then click Ungroup.

3) EDIT GROUP COMMAND

The GROUPEDIT command provides options to add objects to or remove objects from an existing group or to change the name of a group.

Access the GROUPEDIT command and select the group to edit. The Name option allows you to enter the name of the group to edit. After you specify the group to modify, use the Add objects option to select objects to add to the group or use the Remove objects option to select objects to remove from the group.

Press [Enter] to complete the edit. Select the RENAME option to enter a new name for the group. Press [Enter] to finish renaming.



Rename a Group

- Click Home tab groups panel group Edit. Find



- Select the group you want to rename.
- At the prompt, enter ren (rename).
- Enter a new name.

OR

Edit a Group

- Click the Home tab in the Groups panel GroupEdit. Find.
- In the drawing area, select a group.
- At the prompt, do one of the following: Enter A to add objects. Enter R to remove objects.
- Select objects to add to, or remove from, the group.



4) GROUP SELECTION

The PICK STYLE system variable controls whether you can only select a group as a group of objects or as individual objects within a group. By default, when you pick a group, the group acts as a single object.

To be able to select specific objects assigned to a group, deselect the Group Selection On/Off button in the Groups panel of the Home ribbon tab.

Editing objects in a group affects the group.

For example, with group selection turned off, you can alter an object in a group to erase the object from or move the object within the group. To deactivate groups, deselect the Object grouping checkbox in the Selection modes area of the Selection tab in the Options dialog box.



5) MANAGING A GROUP

- Access the Object Grouping dialog box to create, edit, and further manage groups. See Figure.
- The Group Name text box displays the name of the group and shows whether the group is selectable. If a group is selectable, pick any object in the group to select the entire group.
- Make a group unselectable to edit individual objects within the group. In the Group Identification area, pick the Find Name button to display a list of all groups associated with an object.
- When you pick the Find Name button, the Pick a member of a group prompt appears. When you pick an object, the Group Member List dialog box lists any groups associated with the object.



Figure. The elements of the Object Grouping dialog box.

- Select the Highlight button to highlight all members of a group in the drawing window. Pick the Continue button or press [Enter] to return to the Object Grouping dialog box.
- Pick the Include Unnamed checkbox to list unnamed groups with named groups. You can rename unnamed groups using the Rename button.



- The Create Group area contains the options for creating a new group. Pick the New button to create a new group from the selected objects using the name entered in the Group Name: text box.
- Pick the Selectable checkbox to set the initial status of the Selectable value as Yes for the new group. The Selectable list indicates status. Deselect the Selectable checkbox to specify No in the Selectable list.
- You can also change this option later. The Unnamed checkbox indicates whether the new group includes a name. If Unnamed is checked, AutoCAD assigns its own default name as previously described.
- The Change Group area of the Object Grouping dialog box contains options for changing a group. Pick the Remove button to remove objects from a group. Pick the Add button to add objects to a group. Pick the Rename button to change the name of an existing group, including unnamed groups.
- Select the Re-Order... button to display the Order Group dialog box. Objects are numbered in the order you selected them when you defined the group.
- The first object is 0, not 1. The Order Group dialog box allows you to reorder objects within the group. For example, if a group contains a set of instructions, you can reorder the instructions as needed.
- Pick the Description button of the Object Grouping dialog box to update the group with the new description entered in the Description: text box.
- Pick the Explode button to delete the selected group definition, but not the objects in the group. The group name is removed, and the original group is exploded.
- Select the Include Unnamed checkbox to display and allow the exploding of unnamed groups, if needed. The Selectable button toggles the selectable value of a group.

GROUP BONDING BOX

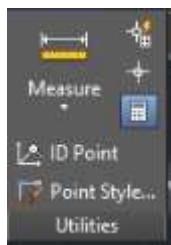
It refers to the box with the smallest measure (area, volume,) within which all the geometry lies. The Minimum volume boundingbox is a new CAD fix Wizard Transform tool that creates a box encapsulating the original bodies. It could apply to each individual body or on a set of bodies in an assembly.

Turn group bonding box ON/OFF.

UTILITIES PANEL

The following are the set of commands.

- 1) Measure (MEA)
 - a) Distance
 - b) Angle
 - c) Area
- 2) ID Point
- 3) Point style
- 4) Quick select
- 5) Select all
- 6) Quick calculator





1) Measurement

MEASUREMENT sets the default value for all new drawings, and MEASUREMENT changes the value for the current drawing. AutoCAD automatically sets the measurement system according to your country when it's being installed, but it can be changed.

You can measure the length of objects, the angle and distance between objects, and the radius of circles and arcs by clicking MEASURE, then moving the pointing device in the drawing area.

MEASURE creates a vertical and horizontal ray from the location of the pointing device, and displays the distance and angles between any objects the vertical and horizontal rays intersect.

You can also measure the distance or area of a sequence of points by selecting Distance or Area.

a) Measure Distance

Measures the distance between two points, as well as the X and Y distances and the angle relative to the UCS.

To measure distance

1. Click MEASURE.
2. Choose Distance.
3. Specify a first and a second point. Use object snaps for precision.



b) Measure Angle

1. Click MEASURE.
2. Choose Angle.
3. Select an arc, circle, or two lines.



c) Measure Area

Measures area and perimeter by specifying corner points.

To measure area:

1. Click MEASURE.
2. Choose Area.
3. Specify points. Use object snaps for precision.
4. When finished selecting points, press Enter.



2) ID Point

This tool can be used to find the coordinate of any point in your AutoCAD drawing. To use this tool, click on the ID Point tool in the expanded Utilities panel on the Home tab and click at the point for which you want to find the coordinates. As always, you will find the results above the command line.

ID lists the X, Y, and Z values of the specified point and stores the coordinate of the specified point as the last point. You can reference the last point by entering @ at the next prompt that requests a point. The UCS coordinate values of the location are displayed at the Command prompt.





3) POINT STYLE

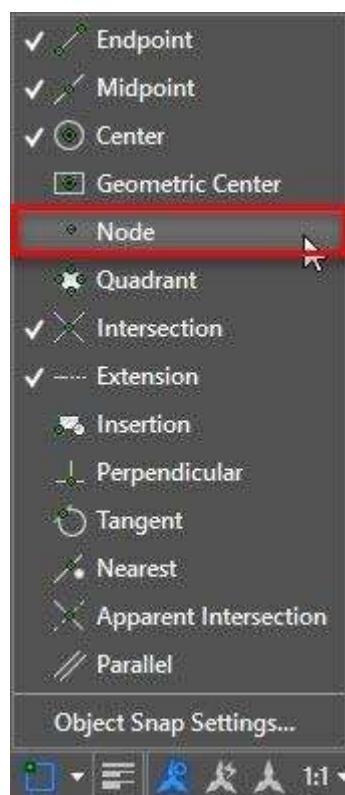
In AutoCAD, you can make simple points using the POINT or PO command, these points are also called nodes.

To make the point simply type PO press enter and then click at a point on the drawing area or specify the coordinates of the point where you want to make the point.



By default, the point will appear as a single dot in the drawing area and you can take reference of these points to make your drawing.

The points will not be selectable by default, to make these points selectable activate the node option in the object snap status bar option as shown in the image below.

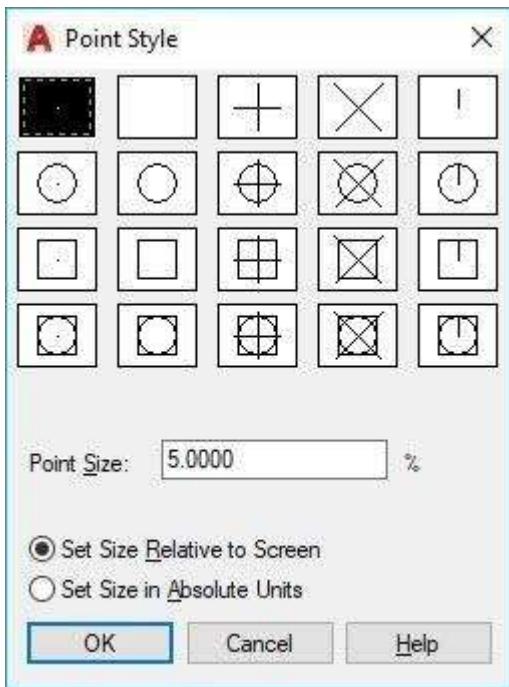


Changing point type

The default point is the very small pixel-sized dot which is great for most of the uses like referring.

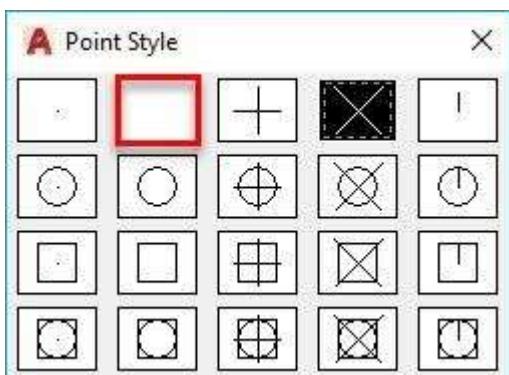
But you can also change the default point style using the PTYPE command.

Type PTYPE on the command line and press enter, Point Style window will open with a list of available point styles. You can select any other point style from this list of points and click OK to apply the point style.



If you have already made points with a different point style and then you change the point style at a later stage then all those point styles on the drawing area will also change to the new point style. If for any reason you want to hide points from the drawing area or if you don't want to plot the points then you can simply select the second point in the Point Style window which is represented by a blank box as shown in the image below.

Alternatively, you can also put the points on a no plot layer or you can use hide or isolate tools of AutoCAD.



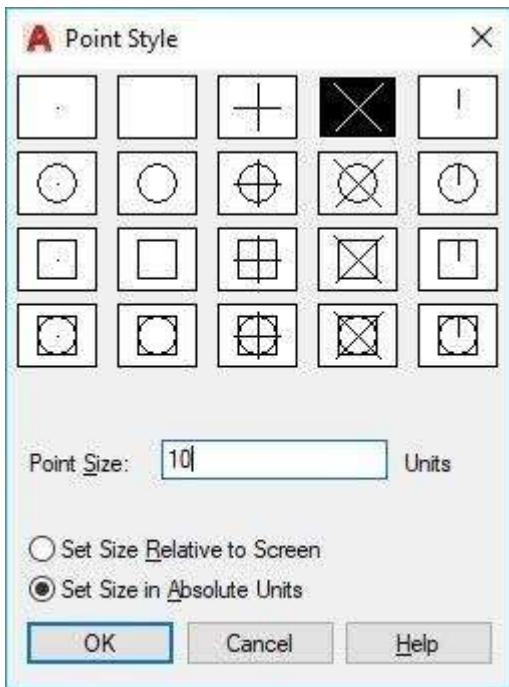
Changing point size

By default, the print size will be relative to the size of the screen and the zoom command will not change the size of the point.

If zooming in and zooming out changes the point size then reset its size concerning the current drawing area by using the RE command which regenerates the drawing objects.

But you can also change this property to make points of an absolute size which changes in size when you zoom in or zoom out.

Type PTYPE and press enter. Select the “Set size in Absolute units” radio button and specify the size of the point which you want in the Point Size field as shown in the image below. Make sure you select any point type other than first and second point types.



Click OK and now you will notice that your points will remain constant in size even when you zoom in, zoom out or regenerate your drawing.

4) QUICK SELECT

The QuickSelect tool is a filtering selection that allows you to select the objects you want. With no command active, right-click in the drawing area and choose QuickSelect. Click the QuickSelect button in the Properties palette. Type “qselect” on the command line.



5)SELECT ALL

CTRL + A will select all items in the drawing even if the layer has been turned off, but will not select objects if they are on a frozen layer.

To Select Objects

- Select individual objects by clicking them.
- Drag from left to right to select all objects that are entirely enclosed in the selection rectangle or lasso (window selection).
- Drag from right to left to select all objects that are crossed by the selection rectangle or lasso (a crossing selection).



6)QUICK CALCULATOR

Perform mathematical and trigonometric calculations

- Access and review previously entered calculations for re-evaluation
- Use the calculator with the Properties palette to modify object properties
- Convert units of measurement
- Perform geometric calculations related to specific objects



- Copy and paste values and expressions to and from the Properties palette and the Command prompt
- Perform computations on mixed numbers (fractions), and feet and inches
- Define, store, and use calculator variables
- Use geometric functions from the QUICCALC command

