



Andhra Pradesh State Skill Development Corporation



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AutoCAD(CIVIL)

Setting Of Units,Limits and Zoom

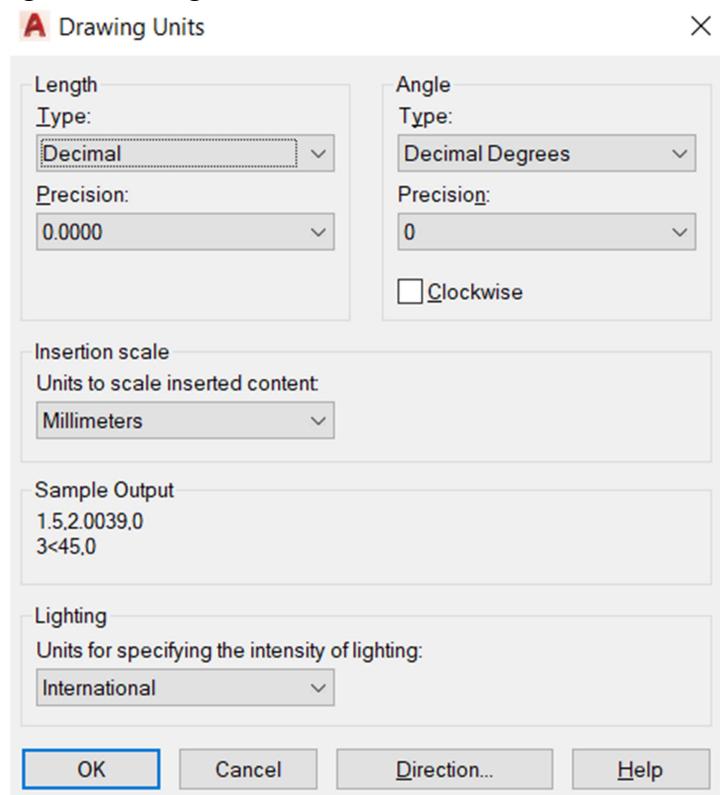


WORKING ENVIRONMENT OF AUTOCAD

SETTING OF UNITS, LIMITS AND ZOOM

Units (UN + Enter):

During drawing setup, you choose settings for length units (for measuring linear objects and distances) and angle units (for measuring angles between nonparallel objects or points on arcs or circles) in the Drawing Units dialog box.



AutoCAD's length unit types are as follows:

- **Architectural:** Architectural units are based in feet and inches and use fractions to represent partial inches: for example, 12'3 1/2". The base unit is the inch unless otherwise specified, so if you enter a number like 147.5, then AutoCAD will understand it to be 12'3 1/2".
- **Decimal:** Decimal units are unit less — that is, they're not based on any particular real-world unit. With decimal units, each unit in the drawing could represent an inch, a millimetre, a parsec, a furlong, a fathom, a cubit (if you're into building arks in case that rainy day should come), or any other unit of measure you deem suitable, from Danish aliens to the Swiss zoll. An example would be 15.5.
- **Engineering:** Engineering units are based in feet and inches and use decimals to represent partial inches: for example, 12'3.5".
- **Fractional:** Fractional units, like decimal units, are unit less and show values as fractions rather than decimal numbers: for example 15 1/2.
- **Scientific:** Scientific units, also unit less and show values as exponents are used for drawing really tiny or really large things. If you design molecules or galaxies, this is the unit type for you. Examples would be 15.5E+06 (which is 15,500,000) and 15.5E-06 (which is 0.0000155).



AutoCAD's angle unit types are as follows:

- **Decimal Degrees** show angles as decimal numbers and are by far the easiest to work with, if your type of work allows it.
- **Deg/Min/Sec** is based on the old style of dividing a degree into minutes and minutes into seconds. Seconds aren't fine enough to display AutoCAD's precision capabilities, though, so seconds can be further divided into decimals. There is no degree symbol on a standard keyboard, so AutoCAD uses the lowercase letter *d*. An example would be 45d30'10.7249". One nautical mile (6,076 feet) is approximately 1 minute of arc of longitude on the equator. David Letterman once said that the equator is so long that it would reach once around the world.
- **Grads** and **Radians** are mathematically beautiful but are not widely used in drafting. There are 400 grads, and 2π (6.2831...) radians, in a circle.
- **Surveyor's Units** type is similar to Deg/Min/Sec but uses quadrants (quarter circles) rather than a whole circle. An angle in Deg/Min/Sec might measure 300d0'0.00", while the same angle in Surveyor's Units would be represented as S 30d0'0.00" E.

Note: The unit types you'll most likely use are Decimal, Architectural, and Decimal Degrees. You'll know or be told if you need to use one of the other types.

- Precision means decimal values- after the point how many values you want.
- If you can check on the clockwise then the angle will be taken in a clockwise direction.

How to set units in AutoCAD

- Type Units and ENTER on your keyboard
- Click on the drop down menu under length type and precision, select the appropriate unit and click on OK.
- Click on the drop down menu under Insertion scale, select the appropriate unit and click on OK.

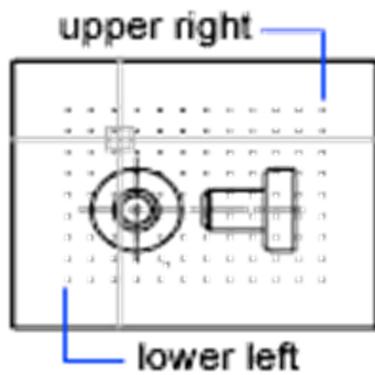
LIMITS:

Sets an invisible rectangular boundary in the drawing area that can limit the grid display and limit clicking or entering point locations.

The following prompts are displayed.

- **Lower-Left Corner**

Specifies the lower-left corner for the drawing limits.



- **Upper right corner**

Specifies a point in the drawing area that represents the opposite corner of the rectangular limits boundary.

- **On**

Turns on limits checking. When a limit checking is on, you cannot enter points outside the grid limits. Because limits checking tests only points that you enter, portions of objects such as circles can extend outside the grid limits.

- **Off**

Turns off limits checking but maintains the current values for the next time you turn on limits checking.

ZOOM:

Increases or decreases the magnification of the view in the current viewport.



Find

You can change the magnification of a view by zooming in and out, which is similar to zooming in and out with a camera. Using ZOOM does not change the absolute size of objects in the drawing. It changes only the magnification of the view.

In a perspective view, ZOOM displays the 3DZOOM prompts.

The following prompts are displayed.

- **Corner of window**

Specify one corner of the area to be zoomed into.

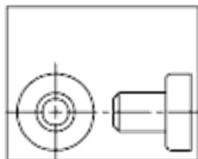
Opposite corner. Specify the opposite corner of the zoom area.

- **All**

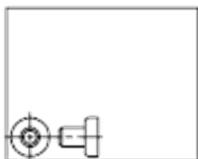
Zooms to display all visible objects and visual aids.



Adjusts the magnification of the drawing area to accommodate the extents of all visible objects in the drawing, or visual aids such as the grid limits (the LIMITS command), whichever is larger.



before ZOOM All



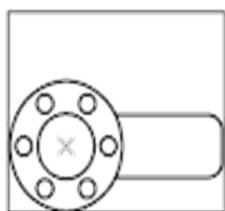
after ZOOM All

In the illustration on the right, the grid limits are set to a larger area than the extents of the drawing.

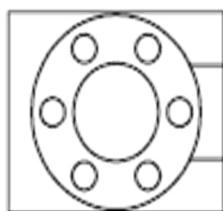
Because it always regenerates the drawing, you cannot use ZOOM All transparently.

- **Center**

Zooms to display a view defined by a center point and a magnification value or a height. A smaller value for the height increases the magnification. A larger value decreases the magnification. Not available in perspective projection.

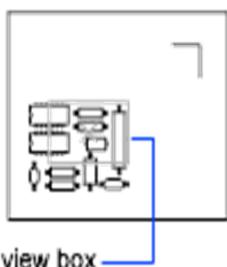


before ZOOM center

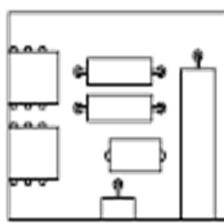
after ZOOM center,
magnification increased

- **Dynamic**

Pans and zooms using a rectangular view box. The view box represents your view, which you can shrink or enlarge and move around the drawing. Positioning and sizing the view box pans or zooms to fill the viewport with the view inside the view box. Not available in perspective projection.



view box



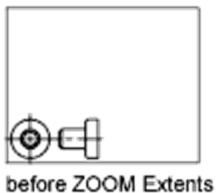
new view

- To change the size of the view box, click, resize it, and click again to accept the new size of the view box.
- To pan with the view box, drag it to the location you want and press Enter.

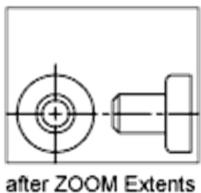
- **Extents**

Zooms to display the maximum extents of all objects.

The extents of each object in the model are calculated and used to determine how the model should fill the window.



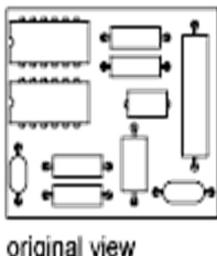
before ZOOM Extents



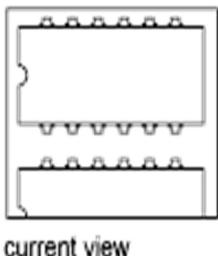
after ZOOM Extents

- **Previous**

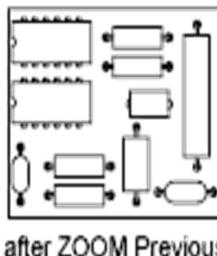
Zooms to display the previous view. You can restore up to 10 previous views.



original view



current view



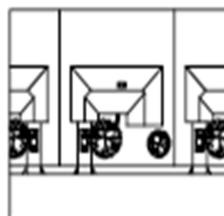
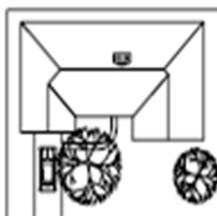
after ZOOM Previous

- **Scale / Scale factor**

Zooms to change the magnification of a view using a scale factor.

- Enter a value followed by x to specify the scale relative to the current view.
- Enter a value followed by xp to specify the scale relative to paper space units.

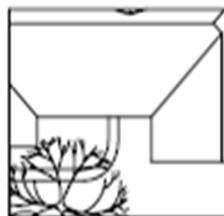
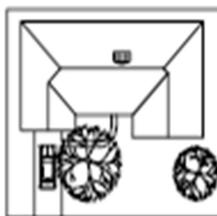
For example, entering $.5x$ causes each object to be displayed at half its current size on the screen.



ZOOM .5x

Entering $.5xp$ displays model space at half the scale of paper space units. You can create a layout with each viewport displaying objects at a different scale.

Enter a value to specify the scale relative to the grid limits of the drawing. (This option is rarely used.) For example, entering 2 displays objects at twice the size they would appear if you were zoomed to the limits of the drawing.

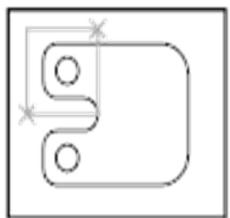


ZOOM 2

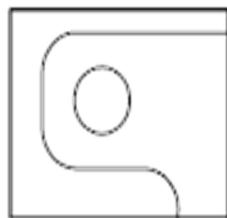
- **Window**

Zooms to display an area specified by a rectangular window.

With the cursor, you can define an area of the model to fill the entire window.



before ZOOM Window



after ZOOM Window

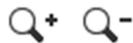
- **Object**

Zooms to display one or more selected objects as large as possible and in the center of the view. You can select objects before or after you start the ZOOM command.

- **Real Time**

Zooms interactively to change the magnification of the view.

The cursor changes to a magnifying glass with plus (+) and minus (-) signs. See Zoom Shortcut Menu for a description of the options that are available while zooming in real time.



Holding down the pick button at the midpoint of the window and moving vertically to the top of the window zooms in to 100%. Conversely, holding the pick button down at the midpoint of the window and moving vertically to the bottom of the window zooms out by 100%.

When you reach the zoom-in limit, the plus sign in the cursor disappears, indicating that you can no longer zoom in. When you reach the zoom-out limit, the minus sign in the cursor disappears, indicating that you can no longer zoom out.

When you release the pick button, zooming stops. You can release the pick button, move the cursor to another location in the drawing, and then press the pick button again and continue to zoom the display from that location.

To exit zooming, press Enter or Esc.