

# AutoCAD 2D

## Essential Commands Reference

Master the 80/20 Rule: Commands You'll Use 80% of the Time

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Professional Engineering Training Material

### About This Reference Guide

This comprehensive guide contains the most **essential AutoCAD 2D commands** organized by function. These commands represent approximately **80% of daily AutoCAD usage**, following the **Pareto Principle** for maximum efficiency and productivity.

## ❖ DRAWING COMMANDS

COMMAND	SHORTCUT	DESCRIPTION
LINE	L	Draws straight line segments from one point to another. The most fundamental command in AutoCAD. Press Enter to finish or C to close the shape.
POLYLINE	PL	Creates connected line segments as a single object. Can have varying widths and includes both straight and curved segments.
CIRCLE	C	Draws circles by specifying center point and radius, or using diameter, 2-point, 3-point, and tangent options.
ARC	A	Creates arc segments using various methods including 3 points, start-center-end, start-end-angle, and center-start-angle.
RECTANGLE	REC	Quickly draws rectangular shapes by specifying two diagonal corners. Creates a closed polyline.
POLYGON	POL	Creates regular polygons with 3 to 1024 sides. Can be inscribed in or circumscribed about a circle.
ELLIPSE	EL	Draws ellipses and elliptical arcs by specifying axis endpoints and distances for the other axis.
SPLINE	SPL	Creates smooth freeform curves that pass through or near specified fit points using mathematical precision.
POINT	PO	Places point markers at specified coordinates. Useful for reference locations and object snap points.
XLINE	XL	Creates construction lines of infinite length extending in both directions from a specified point.
RAY	RAY	Draws semi-infinite lines that start at a point and extend to infinity in one direction only.
HATCH	H	Fills enclosed areas with patterns, solid fills, or gradient colors. Essential for section drawings and presentations.
REGION	REG	Converts closed 2D shapes into region objects for area calculations and Boolean operations.



## MODIFY COMMANDS

COMMAND	SHORTCUT	DESCRIPTION
ERASE	E	Deletes selected objects permanently from the drawing. Can be undone with UNDO command.
COPY	CO / CP	Creates one or more duplicate copies of selected objects at specified locations or distances.

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COMMAND	SHORTCUT	DESCRIPTION
MOVE	M	Relocates selected objects from current position to a new location without changing size or orientation.
ROTATE	RO	Rotates selected objects around a specified base point by entering an angle or picking two points.
SCALE	SC	Enlarges or reduces selected objects proportionally from a base point using a scale factor.
STRETCH	S	Moves or stretches objects by displacing selected points while keeping other connections intact.
TRIM	TR	Cuts away portions of objects at intersection points with cutting edges. Press Enter to select all as cutting edges.
EXTEND	EX	Lengthens objects to meet a boundary edge. Opposite function of TRIM command.
OFFSET	O	Creates parallel copies of lines, circles, arcs, and polylines at a specified distance from the original.
MIRROR	MI	Creates a mirror image of selected objects across a specified mirror line. Can delete or keep source objects.
ARRAY	AR	Creates multiple copies in rectangular patterns, circular patterns, or along a path with specified spacing.
FILLET	F	Creates rounded corners between two objects. Set radius to 0 for sharp corners. Very useful for cleanup.
CHAMFER	CHA	Creates beveled corners between two lines at specified distances or angles. Alternative to FILLET.
BREAK	BR	Divides an object into two parts or removes a portion between two points on the object.
JOIN	J	Combines multiple separate line, arc, or polyline segments into a single continuous object.
EXPLODE	X	Breaks compound objects like blocks, dimensions, and polylines into their individual component parts.
PEDIT	PE	Edits polylines: add vertices, join segments, change width, fit curves, or convert lines to polylines.
LENGTHEN	LEN	Changes the length of objects using delta, percent, total, or dynamic methods without changing angle.
ALIGN	AL	Moves and rotates objects to align with other objects in 2D or 3D space using source and destination points.

## ● TEXT & ANNOTATION COMMANDS

COMMAND	SHORTCUT	DESCRIPTION
MTEXT	MT / T	Creates multi-line paragraph text with full formatting control including fonts, sizes, colors, bullets, and alignment.
TEXT / DTEXT	DT	Creates single-line text entries. Simpler than MTEXT but with limited formatting options.
STYLE	ST	Opens Text Style dialog to create, modify, and set text styles including font, height, width factor, and oblique angle.
MLEADER	MLD	Creates leader lines with text annotation. More flexible and feature-rich than the older LEADER command.
LEADER	LEAD	Creates traditional leader lines connecting notes and labels to objects in the drawing.

## ✖ DIMENSION COMMANDS

COMMAND	SHORTCUT	DESCRIPTION
DIMLINEAR	DLI	Creates horizontal or vertical linear dimensions. AutoCAD automatically measures the distance between points.
DIMALIGNED	DAL	Creates dimensions aligned with selected objects, following their angle regardless of orientation.
DIMANGULAR	DAN	Measures and displays the angle between two lines, arc segments, or three points.
DIMRADIUS	DRA	Dimensions the radius of circles and arcs with leader line pointing to the arc.
DIMDIAMETER	DDI	Dimensions the diameter of circles and arcs with optional center mark display.
DIMBASELINE	DBA	Creates multiple dimensions measured from the same baseline with consistent spacing between dimension lines.
DIMCONTINUE	DCO	Creates chain dimensions continuing from the previous dimension's second extension line.
DIMSTYLE	D	Opens Dimension Style Manager to create, modify, and control dimension appearance and behavior.
QDIM	QDIM	Quick dimension command that creates multiple dimensions automatically based on selected geometry.

## ▲ LAYER & PROPERTIES COMMANDS

COMMAND	SHORTCUT	DESCRIPTION
LAYER	LA	Opens Layer Properties Manager to create, delete, and control layer settings including color, linetype, and visibility.
LINETYPE	LT / LTS	Loads and sets linetypes for objects such as continuous, dashed, center, hidden, and phantom lines.
LINEWEIGHT	LW	Sets the display linewidth (thickness) for objects and controls whether lineweights display on screen.
COLOR	COL	Sets the current color for new objects or changes the color of selected existing objects.
PROPERTIES	PR / CH	Opens the Properties palette showing detailed information about selected objects with editing capabilities.
MATCHPROP	MA	Copies properties from one source object to one or more destination objects (like format painter).
LAYMCUR	—	Changes the layer of selected objects to the current layer. Very useful for layer management.
LAYOFF	—	Turns off the layer of selected objects, making all objects on that layer invisible.

## ❑ BLOCK & INSERT COMMANDS

COMMAND	SHORTCUT	DESCRIPTION
BLOCK	B	Creates a reusable block definition from selected objects with a defined insertion point.
INSERT	I	Inserts a previously defined block or external drawing file into the current drawing at specified location.
WBLOCK	W	Writes objects or a block to a new drawing file. Used to save blocks as separate DWG files.
BEDIT	BE	Opens the Block Editor for modifying block definitions including adding parameters and actions.

## ✓ VIEWING & DISPLAY COMMANDS

COMMAND	SHORTCUT	DESCRIPTION
ZOOM	Z	Increases or decreases the magnification of the view in the current viewport without changing object size.

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COMMAND	SHORTCUT	DESCRIPTION
ZOOM EXTENTS	Z + E	Zooms to display all objects in the drawing at the largest possible magnification.
ZOOM ALL	Z + A	Zooms to display the drawing limits or all objects, whichever is greater.
ZOOM WINDOW	Z + W	Zooms to display the area specified by a rectangular window you define.
PAN	P	Moves the view in the drawing area without changing magnification. Click and drag to pan around.
REGEN	RE	Regenerates the entire drawing, refreshing the display and recalculating all geometry from database.
REGENALL	REA	Regenerates all viewports in the current drawing simultaneously. Useful for multiple viewport setups.
REDRAW	R	Refreshes the display in the current viewport by redrawing the graphics without regenerating.
VIEW	V	Saves and restores named views for quick navigation to frequently accessed areas of large drawings.

## ☞ INQUIRY & MEASUREMENT COMMANDS

COMMAND	SHORTCUT	DESCRIPTION
DISTANCE	DI	Measures the distance and angle between two specified points and displays results in command line.
AREA	AA	Calculates the area and perimeter of objects or a series of points. Essential for quantity takeoffs.
LIST	LI / LS	Displays detailed database information about selected objects including layer, color, and coordinates.
ID POINT	ID	Displays the X, Y, Z coordinates of a specified point location in the current coordinate system.
MEASUREGEOM	MEA	Provides multiple measurement tools including distance, radius, angle, area, and volume in one command.

## ★ OBJECT SNAP & PRECISION COMMANDS

COMMAND	SHORTCUT	DESCRIPTION
<b>OSNAP</b>	<b>OS</b>	Opens Object Snap settings dialog to configure automatic snap to endpoints, midpoints, centers, intersections, etc.
<b>OSNAP TOGGLE</b>	<b>F3</b>	Toggles Object Snap on and off quickly during command execution without opening settings.
<b>ORTHO MODE</b>	<b>F8</b>	Constrains cursor movement to horizontal and vertical directions only for precise orthogonal drawing.
<b>POLAR TRACKING</b>	<b>F10</b>	Enables cursor tracking along specified polar angles like 0°, 45°, 90° for angled precision.
<b>OBJECT SNAP TRACKING</b>	<b>F11</b>	Tracks along alignment paths from object snap points for precise positioning relative to geometry.
<b>GRID DISPLAY</b>	<b>F7</b>	Toggles the display of grid dots or lines that help visualize drawing space and spacing.
<b>SNAP MODE</b>	<b>F9</b>	Toggles snap mode which restricts cursor movement to specified grid intervals for precision.

## ✍ UTILITY & FILE COMMANDS

COMMAND	SHORTCUT	DESCRIPTION
<b>UNDO</b>	<b>U</b>	Reverses the effect of the previous command. Can undo multiple commands by specifying a number.
<b>REDO</b>	<b>REDO</b>	Reverses the effect of the previous UNDO command, restoring what was undone.
<b>OOPS</b>	<b>OOPS</b>	Restores objects that were erased with the most recent ERASE command without undoing other commands.
<b>SAVE</b>	<b>QSAVE</b>	Saves the current drawing using the existing filename and location. Quick save without dialog.
<b>SAVEAS</b>	<b>SAVEAS</b>	Saves the drawing with a new name, different location, or in a different file format.
<b>OPEN</b>	<b>OPEN</b>	Opens an existing drawing file from your computer or network location.
<b>NEW</b>	<b>NEW</b>	Creates a new drawing file based on a default template or selected template file.
<b>PLOT</b>	<b>PLOT</b>	Opens the plot dialog for printing drawings to paper, PDF, or other output formats.
<b>PURGE</b>	<b>PU</b>	Removes unused items from the drawing database including blocks, layers, linetypes to reduce file size.
<b>AUDIT</b>	<b>AUDIT</b>	Evaluates the integrity of the drawing and fixes errors or corruption found in the file.
<b>RECOVER</b>	<b>RECOVER</b>	Attempts to repair and open a damaged or corrupted drawing file.

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COMMAND	SHORTCUT	DESCRIPTION
UNITS	UN	Sets the drawing units, precision, and angle format for measurements and coordinates.
LIMITS	LIMITS	Sets the drawing boundaries (limits) for the grid display and zoom all extent.

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## PROFESSIONAL AUTOCAD TRAINING

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*Engineering & Design Training Specialist*

*Master these 70+ commands and handle 80% of all AutoCAD 2D tasks!*

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