

# AutoCAD® cheat sheet

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Up-to-date with AutoCAD 2023 (some commands may not work with previous versions). Last revision: October 22, 2022.


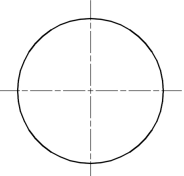
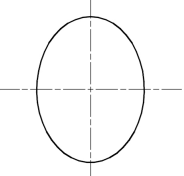
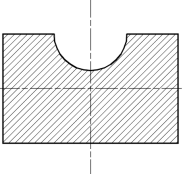
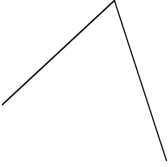
## Contents

<b>1</b>	<b>Reference systems and coordinate insertion</b>	<b>2</b>
<b>2</b>	<b>Creating graphical objects</b>	<b>2</b>
<b>3</b>	<b>Editing graphical objects</b>	<b>4</b>
<b>4</b>	<b>Inserting dimensions and managing their style</b>	<b>7</b>
<b>5</b>	<b>Inserting text and annotations</b>	<b>8</b>
5.1	Inserting special characters . . . . .	9
5.2	Inserting special characters via gdt font . . . . .	9
<b>6</b>	<b>Managing user interface, system variables and object properties</b>	<b>10</b>
<b>7</b>	<b>Keyboard shortcuts</b>	<b>12</b>


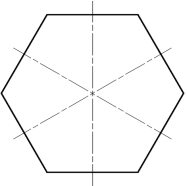
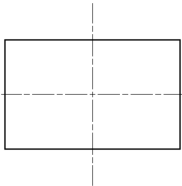
## 1. Reference systems and coordinate insertion

Reference system	Insertion mode	
	Cartesian	Polar
Global (WCS)	$*x,y$	$*\rho < \theta$
User (UCS)	$x,y$	$\rho < \theta$
Local	$@x,y$	$@\rho < \theta$

## 2. Creating graphical objects

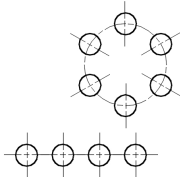
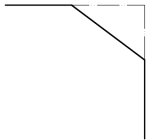
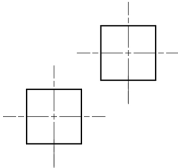
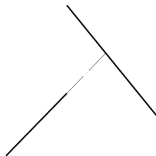
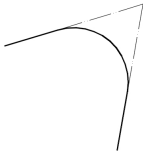
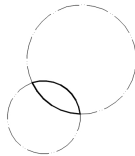
Command	Effect	Main parameters
<code>_arc</code>	 Creates a circular arc.	<b>C</b> : Accepts the centre as the first input (instead of the starting point).
<code>_circle</code>	 Creates a full circle.	<b>D</b> : Accepts the diameter instead of the radius. <b>3P</b> : Generates a circle based on three points. <b>2P</b> : Generates a circle based on two diametrically opposite points. <b>T</b> : Generates a circle tangent to three objects.
<code>_ellipse</code>	 Creates a full ellipse or an elliptical arc.	<b>A</b> : Generates an elliptical arc (instead of a full ellipse). <b>C</b> : Generates an ellipse or an elliptical arc starting from the centre.
<code>_hatch</code>	 Hatches a closed region	
<code>_line</code>	 Generates a single line or a polyline.	<b>C</b> : Closes the polyline (only available when there the polyline has at least three points).

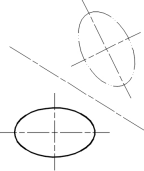
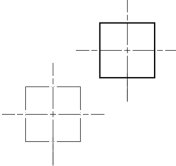
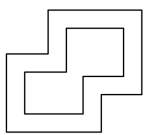
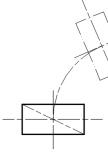
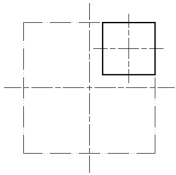
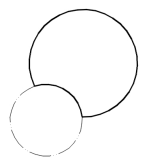
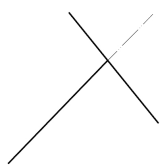


<code>_point</code>		Generates one point.	
<code>_polygon</code>		Generates an inscribed or circumscribed regular polygon.	<b>C</b> : Generates a circumscribed polygon. <b>I</b> : Generates an inscribed polygon.
<code>_rectang</code>		Generates a rectangle.	<b>C</b> : Defines the dimensions of the chamfers (for a rectangle with chamfered vertices). <b>F</b> : Defines the radius of the fillets (for a rectangle with rounded vertices). <b>D</b> : Defines the width and height of the rectangle (available once the first corner is specified).



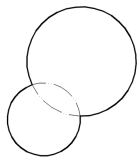
### 3. Editing graphical objects

Command		Effect	Main parameters
<code>_arrayclassic</code>		Creates copies of objects along a linear or circular array.	
<code>_chamfer</code>		Chamfers two rectilinear edges. The two edges (or their extensions) must intersect.	<b>D</b> : Sets the chamfer distance from the intersecting point of the first and second object. The input order reflects the order whereby the entities are selected.
<code>_copy</code>		Creates copies of objects.	<b>D</b> : Sets the displacement vector
<code>_erase</code>		Deletes the selected objects (same effect as pressing <b>[Cancel]</b> ).	
<code>_explode</code>		Splits an object into separate parts (opposite effect than <code>_join</code> ).	
<code>_extend</code>		Extends objects to meet the edges of other objects.	
<code>_fillet</code>		Fillets the edges of two 2D objects by creating an arc of given radius. The two edges (or their extensions) must intersect.	<b>R</b> : Sets the fillet radius.
<code>_intersect</code>		Returns the intersection (Boolean AND) between two closed objects. The objects must be previously converted into regions through <code>_region</code> .	

<code>_join</code>		Joins lines, polylines, splines and adjacent arcs (opposite effect than <code>_explode</code> ).	
<code>_mirror</code>		Mirrors objects across a given axis.	<b>N</b> : Keeps the source objects (creates a copy). <b>S</b> : Removes the source objects.
<code>_move</code>		Moves objects.	<b>D</b> : Sets the displacement vector.
<code>_offset</code>		Offsets an object to a given distance.	
<code>_rotate</code>		Rotates objects.	<b>C</b> : Keeps the original objects (creates a copy).
<code>_scale</code>		Applies a scale transform.	<b>C</b> : Keeps the original objects (creates a copy).
<code>_subtract</code>		Returns the difference (Boolean XOR) between two closed objects. The objects must be previously converted into regions through <code>_region</code> .	
<code>_trim</code>		Trims objects to meet the edges of other objects.	

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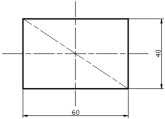
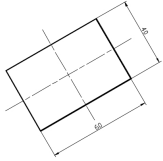
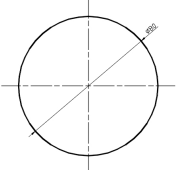

`_union`





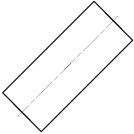
Returns the union (Boolean OR) between two closed objects. The objects must be previously converted into regions through `_region`.

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4. Inserting dimensions and managing their style

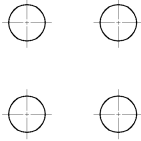
Command		Effect	Main parameters
<code>_dimlinear</code>		Creates a linear dimension parallel to one of the axes of the UCS.	
<code>_dimaligned</code>		Creates a linear dimension that is aligned with the origin points of the extension lines.	
<code>_dimdiameter</code>		Creates a diameter dimension with a diameter symbol ( $\phi$ ) in front of it.	
<code>_dimradius</code>		Creates a radius dimension with a radius symbol (R) in front of it.	
<code>_dimstyle</code>		Opens the window that allows to manage the dimension style.	

5. Inserting text and annotations

Command		Effect	Principali parametri
<code>_mtext</code>	Testo multilinea	Inserts multi-line text.	<b>H</b> : Specifies the text height. <b>J</b> : Sets text justification and flow in relation to the text boundary (see <code>_text</code> ). <b>W</b> : Specifies the width of the text boundary.
<code>_qleader</code>		Creates a leader and leader annotation.	
<code>_text</code>	Testo	Inserts single-line text.	<b>J</b> : Sets text justification and flow in relation to the text boundary. Possible options: <ul style="list-style-type: none"><li><b>TL</b> (Top left)</li><li><b>TC</b> (Top centre)</li><li><b>TR</b> (Top right)</li><li><b>ML</b> (Middle left)</li><li><b>MC</b> (Middle centre)</li><li><b>MR</b> (Middle right)</li><li><b>BL</b> (Bottom left)</li><li><b>BC</b> (Bottom centre)</li><li><b>BR</b> (Bottom right)</li></ul> <b>W</b> Specifies the width of the text boundary; words wrap to fit the width.
<code>_tolerance</code>		Creates symbols for geometric tolerances and datums.	
<code>_centerline</code>		Draws the axis between two parallel or non-parallel lines.	



`_centermark`



Draws the centre mark of a circle or arc.

### 5.1. Inserting special characters

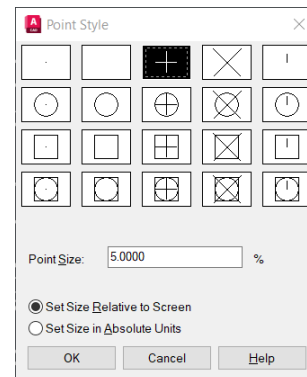
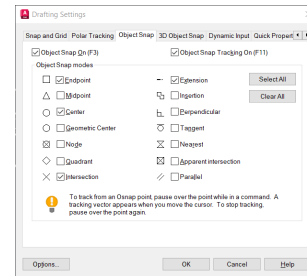
Property name	Symbol	AutoCAD sequence	Unicode sequence
Diameter	∅	%%c	\U+00B0
Envelope requirement	Ⓔ	–	\U+24BA
Degrees	°	%%d	\U+2205
Plus/minus	±	%%p	\U+00B1
Square	□	–	\U+25A1

### 5.2. Inserting special characters via *gdt* font

Property name	Symbol	AutoCAD sequence
Diameter	∅	n
Square	□	o
Counterbore	⌊	v
Countersink	∇	w
Deep/Depth	⌵	x
Taper	⌵	y
Maximum material requirement	Ⓜ	m
Minimum material requirement	Ⓛ	l

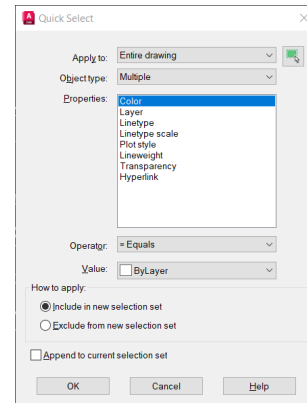
## 6. Managing user interface, system variables and object properties

Command	Effect	Main parameters
<code>_dynmode</code>	Sets the dynamic input mode.	<b>1</b> : Turns dynamic input on. <b>0</b> : Turns dynamic input off.
<code>_layer</code>	Opens the window for creating, deleting and modifying layers.	
<code>_matchprop</code>	Applies the properties of a selected object to other objects (similar to paste format in Microsoft Word).	
<code>_navbardisplay</code>	Controls the display of the navigation bar.	<b>1</b> : Displays the navigation bar. <b>0</b> : Hides the navigation bar.
<code>_orthomode</code>	Constrains cursor movement parallel to UCS axes.	<b>1</b> : Turns orthogonal mode on. <b>0</b> : Turns orthogonal mode off.
<code>_osnap</code>	Opens the window for managing object snaps.	
<code>_polarang</code>	Sets the polar angle increment for tracking.	<b>0</b> : No polar tracking. <b>[10, 90]</b> : Polar tracking by steps of the given value.
<code>_ptype</code>	Opens the window for setting the display style and size of point objects.	



`_qselect`

Selects objects based on filtering criteria.



`_regen`

Regenerates the drawing in the current viewport. Recomputes the locations and visibility of all objects in the current viewport.

`_redraw`

Refreshes the display in the current viewport.

`_savetime`

Sets the automatic save time interval (in minutes).

`_ucs`

Sets the origin and orientation of the UCS.

`_ucsicon`























Controls the appearance of the UCS icon.

**ON** : Shows UCS icon.  
**OF** : Hides UCS icon.  
**OR** : Displays the icon at the origin (0,0,0) of the UCS.

`_units`

Opens the dialogue box to control format, precision and other settings used to display coordinates, distances and angles.

## 7. Keyboard shortcuts

Key	Function(s)
	Deletes the selected objects.
 + 	Turns the grid snap on/off.
 + 	Opens an existing document.
 + 	Closes the application.
 + 	Undoes the previous action.
 + 	Redoes the previous action (reverses a previous undo).
 + 	Hides/displays the command line.
	Exits a command. Deselects all objects.
	Finalises a command, the input of a parameter or the selection of objects within one command. Repeats the latest command.
	Turns object snap on/off.
	Turns orthogonal mode on/off.
	Turns polar tracking on/off.
	Turns object snap tracking on/off.
	Turns dynamic mode on (but not off).
 , 	Removes objects from the current selection if pressed or held down while selecting objects.