AutoCAD® cheat sheet

Francesco Bianconi

Department of Engineering
Università degli Studi di Perugia
Via Goffredo Duranti, 93 – 06125 Perugia (Italy)
bianco@ieee.org

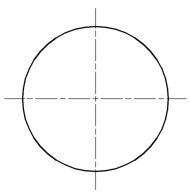
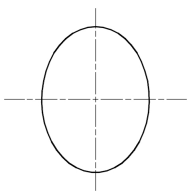
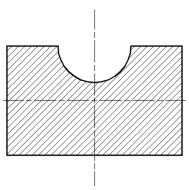
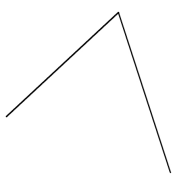
Up-to-date with AutoCAD 2023 (some commands may not work with previous versions). Last revision: October 21, 2022.

Contents

1. Reference systems and coordinate insertion

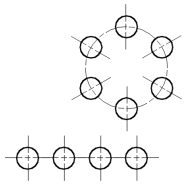
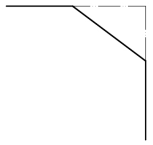
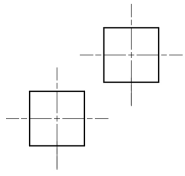
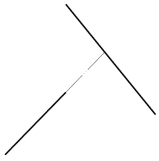
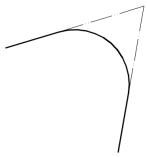
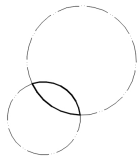
Reference system	Insertion mode	
	Cartesian	Polar
Global (WCS)	$*x,y$	$*\rho < \theta$
User (UCS)	x,y	$\rho < \theta$
Local	$@x,y$	$@\rho < \theta$

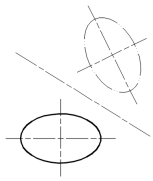
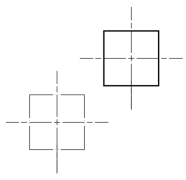
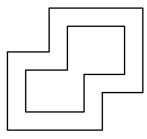
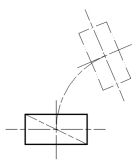
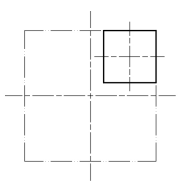
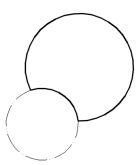
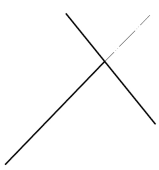
2. Creating graphical objects

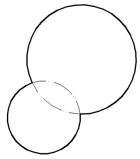
Command	Action	Main parameters
_arc 	Creates a circular arc.	**C**: Accepts the centre as the first input (instead of the starting point).
_circle 	Creates a full circle.	**D**: Accepts the diameter instead of the radius. **3P**: Generates a circle based on three points. **2P**: Generates a circle based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

_point	Generates one point.	
_polygon	Generates an inscribed or circumscribed regular polygon.	**C**: Generates a circumscribed polygon. **I**: Generates an inscribed polygon.
_rectang	Generates a rectangle.	**C**: Defines the dimensions of the chamfers (for a rectangle with chamfered vertices). **R**: Defines the radius of the fillets (for a rectangle with rounded vertices). **Q**: Defines the width and height of the rectangle.

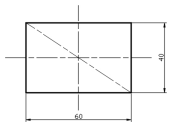
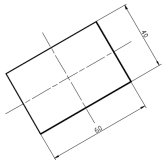
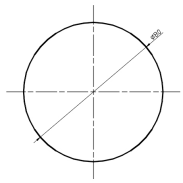
3. Editing graphical objects

Command	Action	Main parameters
_arrayclassic 	Creates copies of objects along a linear or circular array.	
_chamfer 	Chamfers two rectilinear edges. The two edges (or their extensions) must intersect.	**D**: 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.
_copy 	Creates copies of objects.	**S**: Sets the displacement vector
_erase	Deletes the selected objects (same effect as pressing Canc).	
_explode	Splits an object into separate parts (opposite effect than _join).	
_extend 	Extends objects to meet the edges of other objects.	
_fillet 	Fillets the edges of two 2D objects by creating an arc of given radius. The two edges (or their extensions) must intersect	**RA**: Sets the fillet radius.
_intersect 	Returns the intersection (Boolean AND) between two closed objects. The objects must be previously converted into regions through _region.	

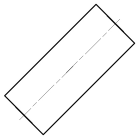
_join		Joins lines, polylines, splines and adjacent arcs (opposite effect than _explode).	
_mirror		Mirrors objects across a given axis.	**N**: Keeps the source objects (creates a copy). **S**: Removes the source objects.
_move		Moves objects.	**S**: Sets the displacement vector.
_offset		Offsets an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

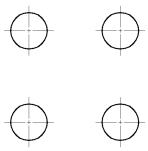
_union		Returns the union (Boolean OR) between two closed objects. The objects must be previously converted into regions through _region.

4. Inserting dimensions and managing their style

Command		Action	Main parameters
`_dimlinear`		Creates a linear dimension parallel to one of the axes of the UCS.	
`_dimaligned`		Creates a linear dimension that is aligned with the origin points of the extension lines.	
`_dimdiameter`		Creates a diameter dimension with a diameter symbol (ϕ) in front of it.	
`_dimradius`		Creates a radius dimension with a radius symbol (`R`) in front of it.	
`_dimstyle`		Opens the window that allows to manage the dimension style.	

5. Inserting text and annotations

Command		Action	Principali parametri
_mtext		Inserts multi-line text.	**H**: Specifies the text height. **J**: Sets text justification and flow in relation to the text boundary (see _text). **W**: Specifies the width of the text boundary.
_qleader		Creates a leader and leader annotation.	
_text		Inserts single-line text.	**J**: Sets text justification and flow in relation to the text boundary. Possible options: • **TL** (Top left) • **TC** (Top centre) • **TR** (Top right) • **ML** (Middle left) • **MC** (Middle centre) • **MR** (Middle right) • **BL** (Bottom left) • **BC** (Bottom centre) • **BR** (Bottom right) **W** Specifies the width of the text boundary; words wrap to fit the width.
_tolerance		Creates symbols for geometric tolerances and datums.	
_centerline		Draws the axis between two parallel or non-parallel lines.	

_centermark		Draws the centre mark of a circle or arc.

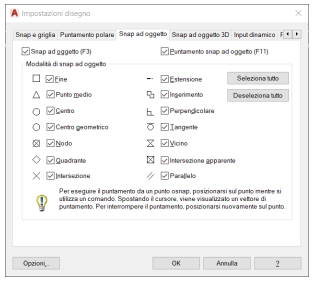
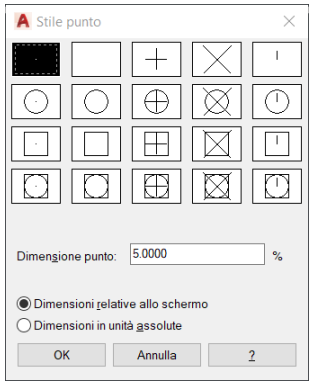
5.1. Inserting special characters

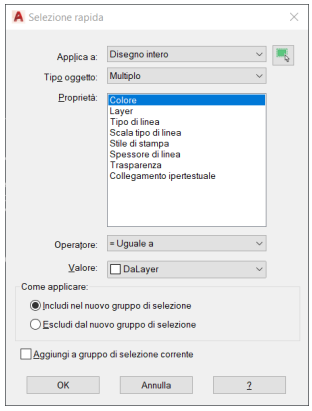
Property name	Symbol	AutoCAD sequence	Unicode sequence
Diameter	ø	%%c	\U+00B0
Envelope requirement	Ⓔ	–	\U+24BA
Degrees	°	%%d	\U+2205
Plus/minus	±	%%p	\U+00B1
Square	□	–	\U+25A1

5.2. Inserting special characters via gdt font

Property name	Symbol	AutoCAD sequence
Diameter	ø	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	Action	Main parameters
`_dynmode`	Sets the dynamic input mode.	`1`: Turns dynamic input on. `0`: Turns dynamic input off.
`_layer`	Opens the window for creating, deleting and modifying layers.	
`_matchprop`	Applies the properties of a selected object to other objects (similar to paste format in Microsoft Word).	
`_navbardisplay`	Controls the display of the navigation bar.	`1`: Displays the navigation bar. `0`: Hides the navigation bar.
`_orthomode`	Constrains cursor movement parallel to UCS axes.	`1`: Turns orthogonal mode on. `0`: Turns orthogonal mode off.
`_osnap`	Opens the window for managing object snaps.	
`_polarang`	Sets the polar angle increment for tracking.	`0`: No polar tracking. `]0,90]`: Polar tracking by steps of the given value.
`_ptype`	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.	
_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)
Canc	Deletes the selected objects.
Ctrl + B	Turns the grid snap on/off.
Ctrl + O	Opens an existing document.
Ctrl + Q	Closes the applications.
Ctrl + Z	Undoes the previous action.
Ctrl + Y	Redoes the previous action (reverses a previous undo).
Ctrl + 9	Hides/displays the command line.
Esc	Exits a command. Deselects all objects.
Invio	Finalises a command, the input of a parameter or the selection of objects within one command. Repeats the latest command.
F3	Turns object snap on/off.
F8	Turns orthogonal mode on/off.
F10	Turns polar tracking on/off.
F11	Turns object snap tracking on/off.
F12	Turns dynamic mode on (but not off).
⇧ , Shift	Removes objects from the current selection if pressed or held down while selecting objects.