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 26, 2022.
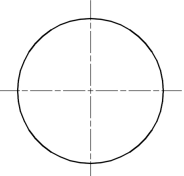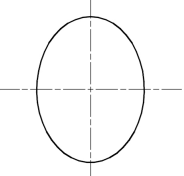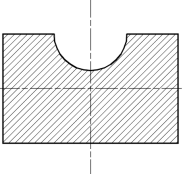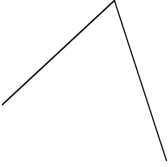
Contents

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
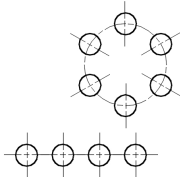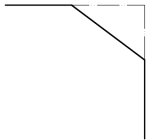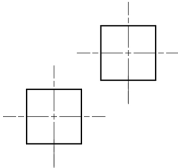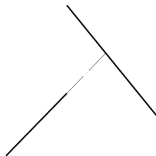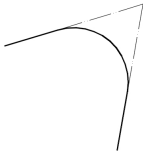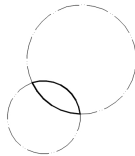
Command		Effect	Main parameters
`_arc`		Creates a circular arc.	`C`: Accepts the centre as the first input (instead of the starting point).
`_circle`		Creates a full circle.	`D`: Accepts the diameter instead of the radius. `3P`: Generates a circle based on three points. `2P`: Generates a circle based 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 available when there the polyline has at least three points).
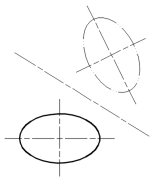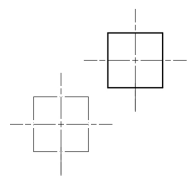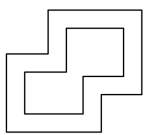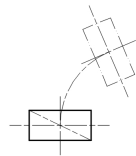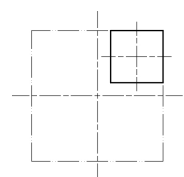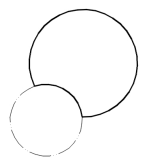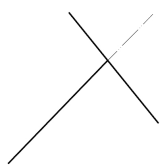
`_point`		Generates one point.	
`_polygon`		Generates an inscribed or circumscribed regular polygon.	**C**: Generates a circumscribed polygon. **I**: Generates an inscribed polygon.
`_rectang`		Generates a rectangle.	**C**: Defines the dimensions of the chamfers (for a rectangle with chamfered vertices). **F**: Defines the radius of the fillets (for a rectangle with rounded vertices). **D**: Defines the width and height of the rectangle (available once the first corner is specified).

3. Editing graphical objects

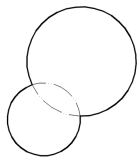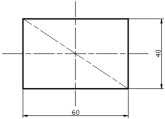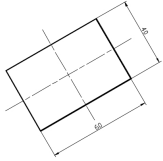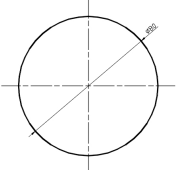| Command		Effect	Main parameters
`_arrayclassic`		Creates copies of objects along a linear or circular array.	
`_chamfer`		Chamfers two rectilinear edges. The two edges (or their extensions) must intersect.	**D** : Sets the chamfer distance from the intersecting point of the first and second object. The input order reflects the order whereby the entities are selected.
`_copy`		Creates copies of objects.	**D** : 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.	**R** : Sets the fillet radius.
`_intersect`		Returns the intersection (Boolean AND) between two closed objects. The objects must be previously converted into regions through `_region`.	

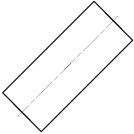| Command		Description	Options
`_join`		Joins lines, polylines, splines and adjacent arcs (opposite effect than `_explode`).	
`_mirror`		Mirrors objects across a given axis.	`N`: Keeps the source objects (creates a copy). `Y`: Removes the source objects.
`_move`		Moves objects.	`D`: Sets the displacement vector.
`_offset`		Offsets an object to a given 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.	

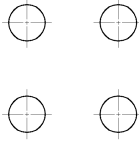|		
`_union`		Returns the union (Boolean `OR`) between two closed objects. The objects must be previously converted into regions through `_region`.

4. Inserting dimensions and managing their style

Command		Effect	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		Effect	Principali parametri
_mtext	Testo multilinea	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	Testo	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	⊥ 0.1Ⓜ A	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	Effect	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.	
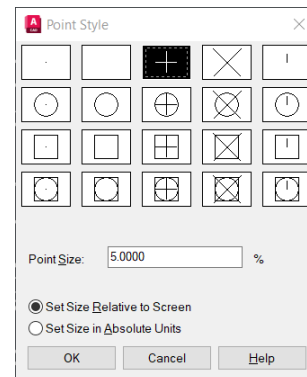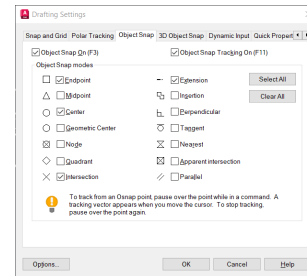
`_qselect`	Selects objects based on filtering criteria.	
`_regen`	Regenerates the drawing in the current viewport. Recomputes the locations and visibility of all objects in the current viewport.	
`_redraw`	Refreshes the display in the current viewport.	
`_savetime`	Sets the automatic save time interval (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.	
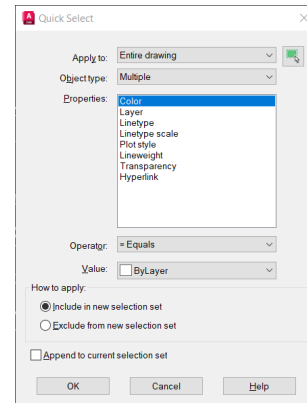
## 7. Keyboard shortcuts

Key	Effect(s)
Canc	Deletes the selected objects.
Ctrl + B	Turns the grid snap on/off.
Ctrl + F4	Closes the current document.
Ctrl + O	Opens an existing document.
Ctrl + Q	Closes the application.
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 when pressed or held down while selecting objects.