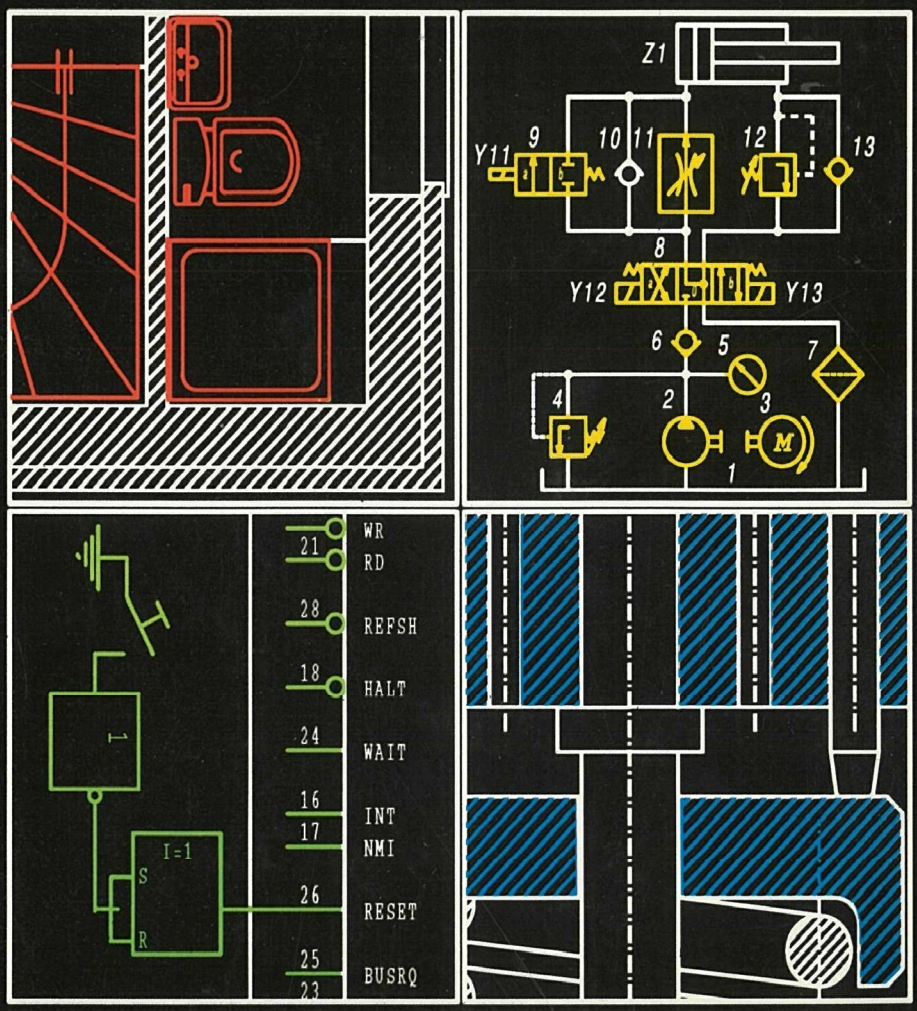
MENU O/+A ·I·I· MODE

MEGA CAD

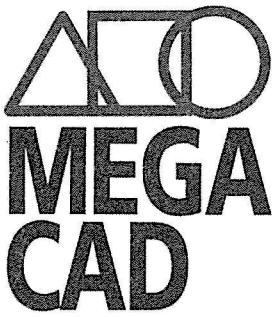
USER'S GUIDE



MS-DOS Version +

MICROSOFT® WINDOWS™ COMPATIBLE

USER'S GUIDE



MegaTech Software GmbH, 10587 Berlin

INTRODUCTION TO MEGACAD

⇨ Introduction

Introduction 1.1

Entering Data ad Commands....1.2

The Menu System 2.1

General 1
Starting the Menu System....2.1
The Menus 2
Executing a Program....2.4
Setting up a Submenu....2.4
Deleting a Submenu....2.4
Entering a Program Call....2.5
Example....2.6
Deleting a Program Call....2.8

The Design Program 3.1

General....3.1
Starting the Design Drafting Program....3.1
Starting via the Menu System....3.1
Starting from the Operating System....3.1
Basic Operating Principles....3.2
The Mouse....3.2
Operating MegaCAD with a Digitiser....3.2
The Drawing Area....3.3
The Status Area....3.3
Windows....3.3
The Calculator....3.3
The Entities....3.3
The Main Menu....3.4
The Mode Menu....3.6
Attribute Definition....3.7
The SEGMENT (SEG) Function....3.7
Setting Attributes Interactively....3.7
Drawing Mode....3.10
Free....3.11
Grid Point....3.11
Point....3.12
Mid-point....3.12
End-point....3.12

End-point Distance....3.13
Nearest Entity....3.14
Segment Entity Proportionately....3.14
Intersection Point (Simple)....3.15
Intersection Point (1/2)....3.15
End-point/Mid-point....3.16
Tangent Point (Simple)....3.16
Tangent Point (1/2)....3.16
45° Angle Steps....3.17
angular tolerance....3.17
Keyboard....3.17
Multiple entities....3.19
Specify Multiple entities....3.19
Example of parallel entities....3.21
Digitiser....3.22
Construction mode....3.23
Construction mode symbol switch....3.23
The "Hold one Entity" function....3.24
Entity Selection Mode....3.26
Selecting Entities by Type....3.27
Single....3.27
Display....3.27
Window....3.28
Group....3.28
Layer....3.29
Colour....3.29
Profile....3.30
Polyline....3.31
Area....3.32
The Function UNDO / REDO....3.32
UNDO....3.32
REDO....3.33

The Management of Drawings 4.1
File Manager....4.2
Current directory....4.2
Listed names....4.2
Sort....4.3
Keyboard....4.3
Window....4.3
File List....4.4
View....4.5
Create Path....4.5
File libraries....4.6

Delete....4.7
Load / New....4.8
Insert....4.9
Save....4.10
Save as....4.10
Extract....4.10
Define 5 windows....4.11
Print....4.11
DOS....4.13

Macro-symbol Management....5.1
File Manager....5.2
Keyboard....5.3
Window....5.3
File List....5.4
View....5.4
Create Path....5.5
File libraries....5.6
Delete....5.7
Load / New....5.7
Insert....5.8
Using Cursor Keys to Rotate the Macro-symbol....5.12
Mirroring a macro-symbol when inserting it....5.13
DB Info....5.13
Exclusive....5.14
Save....5.14
Save as....5.17
Extract....5.17
Define 5 windows....5.18
Print....5.18
DOS....5.19

The function "Draw points" 6.1

Free Points....6.2
Equally Spaced Points....6.2
Points spaced at equal defined intervals....6.4
Point on a Circle....6.5
Star Pattern....6.6
Polygon....6.8
Point Mesh....6.9

The Function "Draw Lines" 7.1

Free Lines....7.2
Free lines with construction lines....7.3
Tangent to a Circle....7.4
Tangent to Two Circles....7.5
Tangent to a Circle at a Specified Angle....7.6
Orthogonal Lines....7.7
Specify Line by an Angle and Length....7.8
Horizontal/Vertical Lines....7.10
Horizontal Lines....7.10
Vertical Lines....7.11
Horizontal and Vertical Lines....7.12
Rectangles....7.12
Rectangles: diagonally opposite corners....7.13
Rectangles: centre point and one corner....7.13
Bisector....7.13
Rotate Line....7.15
Parallels....7.16
line parallel to an existing line....7.16
line trace together with its parallels....7.17
Multiple parallel lines....7.19
Perpendicular to a Line....7.19
Line Mesh....7.20
Freehand Line....7.23
Polygon....7.24
Splines....7.25
Bezier Statistic Spline....7.27
Bezier Cubic Spline....7.28
Modified Bezier Spline....7.29
Natural Parametric Spline....7.31
Periodic Parametric Spline....7.31
Parallel splines....7.33
Polylines....7.33
polyline options....7.35
Break up a polyline....7.37
Create a polyline....7.37

The Function "Draw Circles"....8.1
Centre Point and Radius....8.2
Radius and two Points....8.3
Centre Point and Point on Circumference....8.5
Centre Point and Tangent....8.5
Three Points....8.6

Tangent Point and Point on Circumference....8.7
Two Points....8.7
Tangent Point (with Circle) and Point on Circumference....8.8
Radius and two Tangents....8.8
Three Tangents....8.10
Tangents and Point....8.10
Concentric Circles....8.11
Tangent and two Points....8.12
Centre Point (Cartesian Co-ordinates) and Radius....8.13
Radius, Tangent and Point....8.14
Centre Point (Polar Co-ordinates) and Radius....8.15

The Function "Draw Arcs" 9.1

Centre Point, Radius, Start and End Angles....9.3
Radius and Two Points....9.4
Centre Point, Diameter, Start and End Angles....9.5
Radius, Tangential Entities, Start and End Angles....9.6
Start Point, End Point and Angle....9.8
Concentric Arcs....9.9
Arc Through Three Points....9.10
Extend Arc/Line to a Point....9.11
Centre Point and Two Points....9.12
Three Tangents....9.13
Extend Arc/Line with Specified Radius....9.14
Two Tangents and a Point....9.16
Centre Point (Polar Co-ordinates), Radius, Start and End Angles....9.18
Centre Point (Cartesian Co-ordinates), Radius, Start and End Angle....9.19

The Function "Draw Ellipses" 10.1

Centre Point and A-B Axes of the Ellipse....10.2
Elliptical Arc, Centre Point and A-B Axes of the Ellipse....10.4
Ellipse Bounded by a Rectangle....10.5
Elliptical Arc Bounded by a Rectangle....10.6
Concentric Ellipses....10.7
Concentric Elliptical Arcs....10.8
Ellipse Defined by Half-axes and Angle....10.9
Elliptical Arc Defined by Half-axes and Angle....10.10
Ellipse Defined by its Foci and a Point on the Circumference....10.11
Elliptical Arc Defined by its Foci and a Point on the Circumference....10.12
Ellipse Defined by two Tangents....10.13
Elliptical Arc Defined by Two Tangents....10.14

Ellipse Defined by a Rectangle and an Angle....10.15
Elliptical Arc Defined by a Rectangle and an Angle....10.16
Ellipse by Keyboard Entry of Data....10.18
Elliptical Arc by Keyboard Entry of Data....10.18

3D Views 11.1

Display box showing type of view selected....11.3
Rotate X, Y and Z axes in space....11.3
Input field for altering angle of view rotation....11.4
Selectable projections: Isometric, Dimetric, Cabinet and Cavalier....11.4
Isometric....11.4
Dimetric....11.4
Cabinet....11.5
Cavalier....11.5
Object depth specification (thickness, or Z value)....11.5
Example....11.6
3D view for specified depth....11.7
Connecting lines in the 3D view....11.8
3D view from elevations, not using depth specification....11.9
Switch the Selection of Drawing Entities ON/OFF....11.17
Final Remarks....11.18
A further example:....11.18

The Function "Draw Text" 12.1

Text Parameters....12.2
Font - No....12.2
Character Height....12.2
Character Width....12.3
Character Angle....12.3
X spacing....12.4
Y offset....12.4
Line Slope....12.4
Line Spacing....12.5
Menu Icons....12.5
BOX....12.5
Single Line....12.5
Block of Text....12.7
Search....12.7
>>....12.8
Replace....12.8
Merge File....12.10

Undo....12.10
Block of Text (Text File editor)....12.11
Function Keys in the Text Editor....12.11
File Editor (Text File Editor)....12.14
Position Text Item....12.14
Defining the text line angle on insertion....12.15
Using Cursor Keys to Rotate a Text Line or Block....12.16

The Function "Dimensioning" 13.1

Methods of Dimensioning....13.2
Horizontal Linear Dimensioning....13.3
Vertical Linear Dimensioning....13.4
Oblique Linear Dimensioning....13.4
Oblique Linear Dimensioning Parallel to a Reference Line....13.5
Oblique Linear Dimensioning Perpendicular to a Reference Line....13.6
Angle Dimensioning....13.7
Angle Dimensioning with Identifier Arrow....13.8
Dimensioning Arc Lengths....13.10
Diameter Dimensioning....13.10
Diameter Dimensioning with Identifier Arrow....13.11
Radius Dimensioning....13.12
Radius Dimensioning with Identifier Arrow....13.13
Geometric Tolerances....13.13
Co-ordinate Dimensioning with Identifier Arrows....13.14
Co-ordinate Dimensioning....13.15
Setting Dimensioning Entity Attributes....13.17
Individual Dimensions, Chain Dimensions and Parallel Dimensions....13.18
Dimensioning Text Above, Below or On the Dimension Line....13.20
Dimensioning Text Horizontal or Parallel to Dimension Line....13.21
Text Position....13.21
External or Internal Terminations....13.22
Projection Lines....13.23
Dimension Line Terminations....13.24
Tolerance Dimensioning....13.25
Diameter and Radius Symbols....13.26
Scale Factor....13.27
BOX....13.28
Circle as Dimension Line Terminator at First Position Clicked on....13.29
Circle as Dimension Line Terminator at Second Position Clicked on....13.29
Projection Line Extension....13.30
Projection Line Depth....13.30
Edit Dimensioning Entity....13.31
Change Position....13.32

Edit Dimensioning Attributes....13.32
Projection Line Extension....13.34
Output Trailing Zeroes....13.34
Full Length Dimension Line....13.34
Fill in Arrowheads....13.34
Set Attributes of Dimension Line Terminations....13.34
Setting Dimensioning Text Attributes....13.35
Amending Dimensioning Text....13.36
Circle as Dimension Line Terminator at First Position Clicked on....13.36
Circle as Dimension Line Terminator at Second Position Clicked on....13.36
Switch off Circle at Position Clicked on....13.37
Further Information....13.37

The Function "Hatch" 14.1

Selecting Individual Boundaries for the Hatching....14.3
Automatic Profile Definition....14.4
Hatching Boundary Defined as an Area....14.5
Hatching Boundary Defined by a Polyline....14.6
Selection of an Existing Hatched Profile....14.7
Aligning the Hatching....14.8
Spacing of the Hatching....14.9
Edit Hatching....14.9
Note !....14.10
Hatching patterns / Application....14.10
Creating New User-specific Hatching Patterns....14.15
*NAME....14.15
Angle....14.15
Start Point....14.16
Spacing, Offset....14.16
Line Style....14.16
EXAMPLE 1....14.17
EXAMPLE 2....14.17
EXAMPLE 3....14.19

Editing Drawings 15.1

Edit Text....15.2
Convert Single Line of Text to Block of Text....15.3
Amend Text Attributes....15.3
Alter Group Membership....15.4
Alter Layer Membership....15.4

Move and Copy....15.4
Using Cursor Keys to Rotate Entities Which are Being Moved....15.5
Automatic Determination of the Orientation When Entities are Moved....15.5
Scale and Copy....15.7
Mirror....15.9
Rotate and Copy....15.10
Fillet....15.12
Chamfer....15.14
Trim....15.15
Trim Single Entity....15.15
Trim Two Entities....15.16
Trim Multiple Entities....15.17
Trim free....15.18
Trim by Specified Amount....15.18
Amend Attributes....15.18
Stretch....15.19
The Function "Split / Cut"....15.21
Break....15.23
"Break, between two points"....15.23
"Break, automatic"....15.23

INFO **16.1**

Individual Entity....16.2
Co-ordinates....16.3
Distance to Entity....16.4
Distance between Positions....16.4
Angle - between Lines....16.4
Angle - Free Choice....16.5
Length....16.5
Perimeter....16.6
Area....16.6
Centroid....16.7

The Function "Layer" **17.1**

Layers and Groups....17.2
Assignment of Drawing Entities to Layers....17.3
Switching Layers On and Off....17.3
Naming the Layers....17.4
Processing All the Entities on a Layer Together....17.5

The Function "Group" 18.1

Groups and Layers....18.2
Assignment of Drawing Entities to Groups....18.2
Switching Groups On and Off....18.2
Naming the Groups....18.3
Processing All the Entities in a Group Together....18.4

The Function "Redraw" 19.1

The Function "Delete"....19.1
To exit from the "Delete" function....19.1
Deleting Single Drawing Entities....19.3
Deleting all Entities on the Display....19.3
Deleting all Entities in a Window....19.4
Deleting all Entities in a Group....19.4
Deleting all Entities on a Layer....19.5
Deleting all Entities of a Particular Colour....19.5
Undoing a Deletion....19.5
Function Key Call....19.5

The Function "Zoom" 20.1

Half Scale....20.2
Zoom to fit....20.2
Default 1:1....20.3
Window....20.3
Pan....20.3
User-defined Zoom Windows....20.4
Defining a Window....20.4
Displaying a Window....20.4
Calling up a Window....20.5

Parts Lists and Database Information 21.1

Show macro....21.1
DB Info....21.2
Exchange....21.2
Exclusive....21.3
All/Single....21.3
Database and Parts List Outputs....21.4
Keywords....21.4

TEXT....21.4
FORMAT....21.4
REPEAT....21.5
END....21.5
ATTRIB....21.6
LINE....21.6
SEARCH....21.7
Example....21.7

The Function USERMENU **22.1**

Loading the USERMENU/creating a new one in the MCONFIG program....22.2
Functions in the USERMENU (DOS-MENU)....22.3
Exec....22.3
Examples of parameters....22.4
Batch....22.5
Examples of batch files....22.5
Creating an input file for external programs....22.6

The Function "Grid" **23.1**

The Grid Options....2
The Screen Grid....2
The Snap Grid....3
Set Identical Grids....3
Angular Grid and Radial Grid4
Grid Origin....4
Drawing Origin....5
Drawing Sheet Size....5
Units of Measurement....6

Co-ordinate Interface **24.1**

Comments....24.4
Select Drawing Entities....24.5
Point Co-ordinates....24.5
Copy to File....24.6
Read from File....24.6
Read HPGL Data....24.7

Setup (Saving Parameter Settings) 25.1

Exiting from the Design Program....25.1

Exiting from the Design Program 26.1

The Plot Program A-1.1

General....A-1.1
Starting the Plot Program....A-1.1
Starting via the Menu System....A-1.1
Starting from the Operating System....A-1.2
The Initial Menu....A-1.3
The Main Menu....A-1.5
Load Drawing....A-1.6
Keyboard Selection....A-1.7
Select from List....A-1.8
Position Drawing....A-1.9
Move Drawing....A-1.11
Delete....A-1.12
Redraw....A-1.12
Define Extract....A-1.12
Plot Drawing....A-1.13
Create HPGL File....A-1.15
Save Composite Drawing....A-1.16
Print Drawing....A-1.16
Calibrate Plotter....A-1.17
Example:....A-1.18
Layer....A-1.19
Groups....A-1.19
Enter Text....A-1.20
Zoom....A-1.21
Zoom to Page Size....A-1.22
Reconfigure to Install Printer or Plotter....A-1.22
File print....A-1.24
DOS....A-1.24
END....A-1.25
Postscript support in the Plot program....A-1.25
Using Parameters in the Plot Program call....A-1.27

Function Keys B-1.1

Editing functions....B-1.1
Screen display....B-1.1
Drawing modes for defining points....B-1.2
Selection modes for defining entities....B-1.2
Miscellaneous Functions....B-1.2

Programs for Library Management C-1.1

The structure of File Libraries....C-1.1

Use of DXF Files for Data Interchange D-1.1

General....D-1.1
Copying DXF files into MegaCAD....D-1.2
Copying from MegaCAD to AutoCAD....D-1.2
The CONVDXF Program....D-1.3
Starting via the Menu System....D-1.3
Starting from the Operating System....D-1.3
Output a DXF File (PRT to DXF)....D-1.4
Input a DXF File (DXF to PRT)....D-1.6
Suppress Drawing Entities....D-1.7
Terminate Program....D-1.8
Using Parameters in the Program call....D-1.8