

## CompuCAM. . .CAD to motion

CompuCAM is a Microsoft Windows-based programming package that imports geometry from CAD programs, plotter files, or NC programs and generates 6000 code compatible with Compumotor's 6000 Series motion controllers.

From CompuCAM, run your CAD software package. Once a drawing is created, save it as either a DXF file, HP-GL plot file, or G-code NC program. This geometry is then imported into CompuCAM where the 6000 code is generated. After generating the program, you may use Motion Architect functions such as editing or downloading the code for execution.

Complex moves can be programmed without any 6000 Series coding experience. Simply invoke CompuCAM and import DXF, G-code, or HP-GL files. All set-up can be accomplished within Motion Architect and CompuCAM's menu-driven format.

CompuCAM runs on an IBM PC/AT, or compatible, with 2M RAM, 1M hard disk space, and a VGA colour monitor. Microsoft Windows 3.1 (or greater) and Compumotor's Motion Architect 2.2 (or greater) are required. A maths coprocessor is highly recommended.



### CompuCAM Features

- CompuCAM's three versions import and translate shapes defined in DXF, HP-GL, or G-code
- Compatible with most off-the-shelf CAD packages that output DXF, HP-GL, or G-code files (e.g., AutoSketch)
- Supports:
  - Point-to-point positioning
  - 2-axis circular interpolation (when available)
  - Multi-axis linear interpolation
- CompuCAM's DXF version translates circles and polygons
- Allows imported line and arc segments to be ordered for sequential execution
- Operations such as turning on and off an output can be specified at the beginning and end point of each motion path
- Customized M and H codes can be used to increase CompuCAM's functionality with G-code translation
- Two-way splitter window provides simultaneous views of the imported geometry and the generated 6000 code
- Utilizing the menu bar, the user may:
  - Ascribe motion and I/O to the imported geometry
  - Save work
  - Retrieve previous sessions
  - Zoom/pan geometry
  - Access Help system
  - Sequentially order the execution of motion paths
- Compatible with Compumotor's 6000 Series controllers
- The Motion Architect editor can edit 6000 code generated by CompuCAM
- The Motion Architect terminal emulator can download the generated code to a 6000 Series controller
- CompuCAM offers two alternative code generation schemes: Define, Run, Delete or Define All, Run All
- Ability to step through the program to verify motion

Whether you are outputting geometry from a CAD program as a DXF file, or programming in G-code, CompuCAM has a version for you. Specific information regarding each CompuCAM version follows.

## G-Code Import Filter

The G-Code import filter will handle the following subset of EIA RS-274-D G-Codes:

**F Codes** Feedrate

### G Codes

- G00 Rapid traverse positioning mode (Default)
- G01 Linear interpolation mode
- G02 CW contouring mode
- G03 CCW contouring mode
- G04 Time delay
- G28 Move to home switch input
- G61 Turn off continuous path motion
- G64 Turn on continuous path motion (Default)
- G79 Execute a subroutine prior to each subsequent move
- G80 Cancel G79 mode (Default)
- G90 Absolute positioning mode
- G91 Incremental positioning mode
- G92 Set current position

**H Codes** Add offset to specified axis

**I Codes** 1st axis incremental distance to centre point

**J Codes** 2nd axis incremental distance to centre point

**L Codes** Number of repeats for a subroutine call

### M Codes

- M01 End of program
- M06 Same as M01
- M98 Execute a gosub
- M99 Return from a subroutine
- Mxx M codes (other than those listed) are customizable for I/O control

**N Codes** Optional line number

**O Codes** Begin definition of a subroutine

**P Codes** Time delay or subroutine definition number

**R Codes** Radius of an arc

**X Codes** Commands a move on the X-axis

**Y Codes** Commands a move on the Y-axis

**Z Codes** Commands a move on the Z-axis

**“ ” Codes** All characters between “ ” are sent directly to 6000 product

**( ) Codes** All characters between ( ) are ignored

The G-Code filter will import geometry from NC programs that do interpolated motion as well as XY motion with an unrelated Z motion. The XYZ interpolated motion includes linear XYZ motion and arcs in the XY plane. It does not include arcs in the XZ or YZ planes.

## DXF Import Filter

The DXF import filter will handle the following geometric entities:

- Lines
- Arcs
- Circles
- Polygons
- Polylines representing complex geometry—i.e., ellipses, splines, bezier curves, etc.

The DXF filter will only import curve geometry. This filter does not handle points and text.

## HP-GL Import Filter

The HP-GL import filter will handle the following subset of HP-GL:

- AA Arc Absolute
- AR Arc Relative
- CI Circle
- PA Plot Absolute
- PD Pen Down
- PR Plot Relative
- PU Pen Up
- IP Input P1 and P2
- SC Scale

The HP-GL import filter does not handle instructions from the polygon group, the line and fill attributes group, the character group, or any of the advanced extensions.