

Quick reference guide

CURSOR MOVEMENT

Up, down, right, and left keys or joystick in CTRL-1. Keys 1-9 are number of pixels moved with each key stroke or key repeat.

MENUS

Create Menu for model creation, Rotation Menu for rotating models into other orientations, and the Display Menu for removing hidden lines and surfaces, adding notes, displaying in perspective, and dumping to a printer.

MODELS

3 types available in Create Menu: cell models, surfaces of revolution, and free form models. Free form models do not use the model building intelligence of the program and are not able to be displayed with hidden lines or surfaces removed.

INPUT

Single key entry for commands; lower case unless command prompt is capitalized. Numeric entry allows one math operator: add, subtract, multiply, divide, or raise to power (+, -, *, /, ^)

CREATE MENU

bkgrd — Sets background color.
— **Background color number:** (ENTER to return)

model start — Initializes new model and sets color.
— **Model color number:** (ENTER to return)

DISP — Moves program from Create Menu to Display Menu.

FILES — Save, load, or merge models to and from storage devices.
— **load/save/merge/cat/drive/return**
— Sets default storage device(active drive).
— Calls a directory of files on storage device.
— Adds set of models from storage device to current set of models. New set of models is added at current cursor position.
— Saves set of models to storage device.
— Loads set of models from storage device. Current set of models (if any) in QL are eliminated. Disk must not be write protected.

ROTATE — Sends program to Rotation Menu.

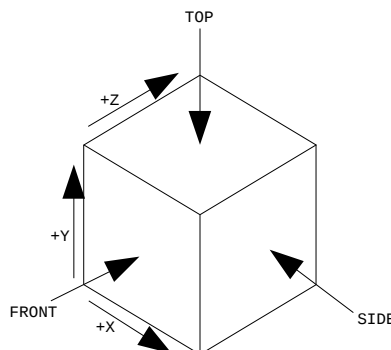
window — Changes viewing scale of screen and centers screen on cursor.
— **Key size or ENTER:** (1 is full scale, 2 is half scale, 1/3 is 3 times scale, etc.)

front/top/side — 3 basic views. (see figure)

x/y/z — Sets value of x, y, or z screen position, places cursor on new position and returns to Create Menu. ENTER returns without changes.
— **Key X [(current value)]:**

k — Sets constant value. Value is any real number whose absolute value (disregarding + or - sign) is greater than .1. Constant can be used with math operators.
— **Constant, k [(current value)]:**

point — Places point in current model color on 3D cursor position. Required as first element in model unless model is started with a circle, ellipse, or box.



circle Draws circles and ellipses in current model color with 3D cursor at center.
circle/ellipse/return
 —major dia:—minor dia:—tilt angle:
 —diameter:—

F2band Turns rubber band from previous coordinate to 3D cursor position, on or off.

F5draw Draws a line from previous coordinate to 3D cursor position in current model color.

F4del Deletes lines and points in reverse order of creation. Does not delete first point in model.

[F4]rstr Shifted F4. Restores lines and points after deleting with F4.

BOX Draws a 2D box with the cursor centered within it.
 —width:—height:—

CELLS Defines current model as a cell model. Should be keyed after first 2D bulkhead is created.
 —constant cross section?(y/n/escape)
 —open ended/closed ended
 —open ended/closed ended
 —depth(+for pos dir, -for neg):—
 —number of cells:—
 Return to Create Menu.—

SURF REV Defines current model as a surface of revolution and displays an axis. After keying S again, all elements created are swept all or part way around axis to form the model.
 —Angle of rev(ENTER=360 deg):—

ZAP Erases all models or deletes one at a time.
 —erase all/delete model/return
 —model#(ENTER to escape):
 (model #'s above the one deleted are reduced by 1 to eliminate "holes" in model structure)

loc Finds coordinate at or near cursor position and displays x, y, z, and model number.
 —model X: Y: Z: locate/set point/return (hi-res only)
 Places 3D cursor on point.
 Locate a point at a different depth.

relocate Relocates a model in 3D moving and/or rotating it, or copies a model and moves and/or rotates it into new 3D position
 —model X: Y: Z: continue/locate/return (hi res only)
 —locate pivot point at new depth.
 —Move cursor to new location and press 'r'
 —add model/move
 —model/all/bulkhead
 —Model color number:—
 —Enter rotation angle about Y:
 —Angle about X: (ENTER=0° for all)
 —Angle about Z:—

edit Moves a single coordinate in 3D space.
 —model X: Y: Z: continue/locate/return (hi res only)
 —Move cursor to reference point and press 'e'

get scale Scales a model, bulkhead, or everthing. Element is identified and cursor is moved to scaling center point (reference point).
 —model X: Y: Z: continue/locate/return (hi res only)
 —Move cursor to reference point and press 'g'
 —Scale factor:—

attr Resets model color and whether model is open or closed section.

hi-lo Switches between hi res (4 color) and lo res (8 color) modes.

ROTATION MENU

- rotate** — Rotates all models in 3D from a front view reference centering on point 0,0,0.
 - **Enter rotation angle about Y:** (ENTER=0° for all)
 - **About X:**
 - **About Z:**

- isometric** — Rotates all models to an isometric projection from a front view reference centering on 0,0,0.

- create menu** — Returns program to the Create Menu.

DISPLAY MENU

- wndow** — Changes viewing distance of screen and centers on cursor. Redefines eyepoint when perspective is on.
 - **Key size or ENTER:** (1 is normal viewing distance, 2 is twice normal, .5 is half normal viewing distance)

- persp** — Allows setting of eyepoint distance for 3D perspective
 - **Enter eyepoint distance(0=off):** (distance to model coordinate nearest screen)

- surf** — Eliminates hidden surfaces. Models are drawn with rectangular panels of model color bordered with black or white depending on background and model color. ENTER halts execution.

- line** — Eliminates hidden lines. ENTER halts execution.

- o ride** — Allows you to select sequence of models to be surface or line modeled if necessary.
 - **override/reset**
 - **Model#():** (asks sequence of all models; number one gets modeled first)

- txt** — Prints any current notes and allows entry of up to 20 notes of 34 characters in any of 5 text sizes anywhere on the screen. Position, color, and size can be changed.
 - **input/change/return**
 - **[>]/[<]/(ENTER)/delete/return**
 - **[>]** — Back to Display Menu.
 - **[<]** — Deletes current text.
 - **(ENTER)** — Selects current text.
 - **[]** (enter text)
 - **Color number:** (0 through 7 only)
 - **Chr size(1,2,3,4,5):** (1 is smallest, 5 is largest)

- dump** — Prints screen to Epson compatible printer using the Easel screen dump program.
 - **Put EASEL in MDV1 & press any key** — **go/return**

- rtn** — Returns to the Rotation Menu.