

# 2010 Screenset – **Toolbar**

## Toolbar Buttons - Shortcut Keys

-  Open G-code file - Ctrl-O
-  Edit G-code file - Ctrl-E
-  Close G-code File - Ctrl-C
-  Select Wizard - Ctrl-W
-  Mach3 Mill Add-Ons Wizard  
Loads Mach3 Mill Add-Ons Wizard (Newfangled Solutions)
-  Toolpath On/Off (On State)  
Toggles toolpath display on/off.
-  Regen Toolpath
-  Open G-Code List  
Opens Mach3MillGcode.htm in a browser window
-  XY Probing Wizard  
Loads 2010 Probing Wizard
-  Simple Auto Zero Macro  
Executes the Simple Auto Zero macro, M889.m1s
-  Initial Auto Zero Macro for Tool Changes  
Executes the Initial Auto Zero macro, M881.m1s
-  Go To Toolchange Position  
Rapid move to the Toolchange Position as specified in the DRO's on the Toolchange Tab. The Toolchange Position is in MACHINE COORDINATES. Z moves first, followed by a combined XY move. If SafeZ is enabled in Config>SafeZ, then a SafeZ move is done first, followed by an XY, followed by a Z move to the Toolchange Position. (M882.m1s)
-  M6 Macro  
Executes the M6 toolchange macros. Same as M6 in g-code.
-  M7 Mist On/Off  
Toggles Mist coolant On/Off. Same as M7 / M9 in g-code.
-  M8 Flood On/Off  
Toggles Flood coolant On/Off. Same as M8 / M9 in g-code.

## Toolbar Buttons - Shortcut Keys

-  Spindle On/Off  
Toggles spindle On/Off. Same as M3 / M5 in g-code.
-  Zero to Laser Crosshair  
Sets X,Y DRO's to 0,0 at Laser Crosshair position. (M890.m1s)
-  Ref All Home - Ctrl-Home  
Executes VB Homing script. (M884.m1s)
-  Ref X  
Executes VB Homing script for X axis. (M885.m1s)
-  Ref Y  
Executes VB Homing script for Y axis. (M886.m1s)
-  Ref Z  
Executes VB Homing script for Z axis. (M887.m1s)
- Ref A  
4 axis screen only. Executes Homing script for Z axis. (M888.m1s)
-  De-Ref All Axis
-  Go To Safe Z - Ctrl-Z  
Rapid move to Safe Z position if SafeZ is enabled.
-  Go To Zero's - Alt-Ctrl-Z  
Rapid Move to 0,0,0
-  Go To Park Position - Ctrl-P  
Rapid move to "Park" Position as specified on "Offsets" Tab, using "SafeZ" and "Machine Coordinates" options if enabled. Safe Z for Park Position moves will use coordinate system specified in Park Position options, which may or may not be the same coordinate system used for normal SafeZ operation. (M883.m1s)
-  Diagnostics - TAB  
Opens slide out Diagnostics screen.
-  Reset - ` ~ (Tilde key)  
The Reset LED is located in the lower right corner of the screen.

# 2010 Screenset – X-Y Probing Wizard

## Settings:

**Initial Feedrate** – This is the standard Probing speed

**Slow Feedrate** – When set to > 0, all probe routines will probe at initial feedrate, then back off slightly, and probe again at this slower feedrate, for more accuracy.

**Max Distance** – Maximum length of probing move. Be sure to set it for a longer distance than needed. (You can probably set it very high, with no ill effects)

**Plate Offset** – if a wired plate is used to probe an edge, enter the plate thickness here.

**Z Clearance** – Distance Z axis will lift when probing outside cylinders

**Probe Tip Dia.** – Enter Diameter of Probe, or tool used for probing. If 0.0 is entered, the diameter of the current tool will be used.

**XY Clearance** – Distance Probe will pull away after contact (used for edge and corner probing)

**Probe X Offset/ Probe Y Offset** – If probe is mounted away from spindle, specify the offsets here. Allows for a remotely mounted probe.

**Edge Length** – Distance between probe points when edge probing is selected. Note: If EdgeLength is less than 0 (negative), then edge travel will be in the – direction (reversed)

## Options:

**Auto Zero Coordinates** – When selected, automatically sets X and/or Y axis zero to probed edge position. For pocket operations, sets center of pocket to 0,0.

**One Time Edge Mode** – When selected, Probe Edge will be disabled at the end of the probing routine. Use this option to prevent edge probing from accidentally being left on.

**Probe Edge** – When selected, two points along an edge will be probed, and return the angle from the edge axis, and the offset distance between the two points. Used with X+, X-, Y+, and Y- only. Ignored when using other operations.

## Probe Routines



Probe in X+ direction - M901



Probe in X- direction - M902



Probe in Y+ direction - M903



Probe in Y- direction - M904



Probe Corner in X+ Y+ directions - M905  
Y axis First, followed by X axis



Probe Corner in X+ Y- directions - M906  
X axis first, followed by Y axis



Probe Corner in X- Y- directions - M908  
Y axis first, followed by X axis



Probe Corner in X- Y+ directions - M907  
X axis first, followed by Y axis

Prior to starting a corner probe operation, the probe needs to be within 38mm of the corner. After probing the first edge, the tool will move 38mm, to the left of the initial probing direction, before moving around the corner to probe the other edge.



Outside Cylinder Center Finding – M910

When using this routine, the first move is always at the bottom of the part, in the Y+ direction. Edgelenlength is the distance traveled over the part, and should be greater than the diameter of the cylinder. Z Clearance is the vertical travel of the probe from the starting position.



Pocket Center Finding – M909

Find center of cylindrical or rectangular pocket



X axis Pocket Length - M911



Y Axis Pocket Length - M912

## Typical Corner Probing Operation

