

## RELEASE NOTES FOR PATHPILOT V2.4.2

February 2020

### ENHANCEMENTS

#### All

- To increase visibility, we added a blue background to messages in the Tool Path display (like when a tool change requires operator help, or M00/M01 comments). (PP-2806)
- We improved the stability of USB devices (like a keyboard or a mouse). (PP-2776)
- Starting the program in the middle with start line now accurately restores machine state as though it had executed the program up to that line. Additionally, you now have three options for control over lead-in moves. For information, see "Set a New Start Line" (page 4). (PP-2691)
- We added several MDI commands to help you more easily navigate large G-code files. (PP-2731) New MDI commands include:
  - `GOTO [line-number]` and `N [line-number]`: Scrolls to the specified line in the G-code.
  - `SET START [line-number]`: Scrolls to the specified line in the G-code and sets it as the start line with no lead-in move.
  - `SET START [line-number] LINEAR`: Scrolls to the specified line in the G-code and sets it as the start line with a linear lead-in move.
  - `SET START [line-number] PLUNGE`: Scrolls to the specified line in the G-code and sets it as the start line with a Z plunge lead-in move.
- You can now access a calculator when you type the command `ADMIN CALC` into the MDI Line DRO field. (PP-2764)

#### Mills

- We improved Conversational pocketing:
  - Rectangular pockets are now specified by their center point using the pattern table on the Drill/Tap tab. This means that you can now define multiple rectangular pockets in one Conversational step (like you can with circular pockets).
  - We adjusted spiraling feeds, which were previously slow, to use the feed DRO.
  - Tighter geometries are now supported. If a pocket is too small for a spiral entry strategy, PathPilot now uses a zigzag or plunge entry.
  - We enhanced chip clearing by raising the tool between cutting sections of the geometry.
- To avoid rare situations in which using non-Tormach probes resulted in an error ("Probe is already tripped when starting G38.2 or G38.3 move"), we increased the probe retract distance. Previously, for a typical probe tip diameter of about 0.118 in., the retract increased from about 0.020 in. to 0.059 in. Now, the retract distance is half of the probe tip diameter. (PP-2793)
- We added support for the BT30 spindle upgrade kit, which adds all MX functionality to an M+ mill. (PP-2773)
- If X or Y tool offsets are applied, the Tool DRO field now displays in italics. You can hover over the field to read the offset value. (PP-2726)
- The Set Reference Height button on the Probe Setup tab now includes an LED light. When it's lit, it indicates that the probe length reference height has been set. (PP-2690)

# RELEASE NOTES

- We improved Z depth control while rigid tapping on MX mills (peck tapping). (PP-2608)

For example:

```
M3 S500
G84 X1 Y2 Z-.3 R.1 K0.1
Z-.6
Z-.9
Z-1.2
(etc)
```

- You can now use an optional `I` word with G33.1 to increase the retraction speed while rigid tapping on MX mills. (PP-2552)
- For threading and rigid tapping on MX mills, the thread start position is consistent over a wider spindle speed range. (PP-2549)
- We added an `ADMIN ENCODER TEST` command, which verifies the installation and operation of the spindle encoder on MX mills. (PP-2424)

## Lathe

- The default rapids are now 100 ipm. To decrease the maximum velocity, we added an `ADMIN RAPIDS` command. (PP-2728)

## FIXED ISSUES

### All

- We fixed issues where, in some situations, selecting Stop from the PathPilot interface caused the following issues:
  - Incorrectly altered the G-code modal machine state. (PP-2762)
  - Didn't highlight the current line in orange. (PP-2761)
- We fixed an issue where, if a G-code file had G37 programmed on the same line as M6, the tool offset didn't correctly apply. (PP-2746)
- For touch screens that have the X and Y sensor axis swapped, we improved the calibration process. (PP-2752)
- Previously, using conversational editing removed any unavailable tabs from the PathPilot interface. Now, the tabs are shown as disabled. (PP-2578)
- We fixed issues where:
  - Aborting a program during execution incorrectly applied G92 offsets. (PP-1262)
  - Using conversational engraving to engrave a serial number of 0 failed. (PP-2751)
  - In rare situations, stopping program in middle of tool change sometimes displayed a dialog box that required the user to add or remove tools from spindle. (PP-2730)

### Mills

- We fixed the following Conversational DXF issues:
  - After loading a .dxf file, the generated G-code file ignored any changes to DRO values on the left side of the Conversational tab (like Tool or Spindle RPM). (PP-2796)
  - Coolant and the spindle are no longer turned off and back on in between every shape in the generated G-code file. (PP-2795)
  - DXF to G-code now correctly supports 0 rpm. This means that machine motion won't stall while it's waiting for the spindle-at-speed signal. (PP-2794)
- Previously, if you re-edited a .dxf to G-code conversational file, but the .dxf file had been moved, PathPilot displayed an error message. Now, a dialog box displays from which you can navigate to the new .dxf file location. (PP-2781)

# RELEASE NOTES

- We fixed issues where:
  - When using Fusion 360 probe subroutines, the probe's tool path preview didn't match the actual run-time tool path. (PP-2747)
  - The probe length setup procedure in G21 didn't work correctly. (PP-2765)
  - When switching probe or tool setter types, if the verification dialog was canceled, later probe or tool setter trips caused PathPilot to exit unexpectedly. (PP-2755)
  - While using a high-speed spindle on a PCNC 1100 mill, typing any value into the RPM DRO field resulted in an error. (PP-2753)
- We improved the decision making that's made when the Automatic Tool Changer (ATC) moves to the tray in position. (PP-2719)

# RELEASE NOTES

## SET A NEW START LINE

The start line (the line from which PathPilot starts the program) is, by default, the first line of code in the program.

To set a new start line:

- From the **Main** tab, on the **G-Code** tab, do one of the following:
  - Right-click any line in the program.

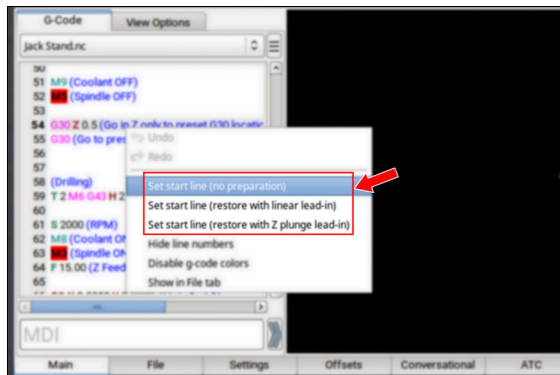





Figure 1-1: Accessing the Options menu by right-clicking.

- Tap the line. Then, select the **Options**  menu.
- Select the desired lead-in move, as described in the following table.

Select ...	To ...	Use Case Example
<b>Set start line (no preparation)</b>	Keep the current tool in the spindle, with the current tool length applied. The machine executes the start line from the current position. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">  <b>Note:</b> We don't recommend this option for starting partway through a cut.                     </div>	<ul style="list-style-type: none"> <li>Starting the program at a tool change.</li> <li>Starting the program with a different tool in the spindle than the program calls for (like if your tool broke, which you've replaced, but you'd rather not edit the entire program or the tool table entry).</li> </ul>
<b>Set start line (restore with linear lead-in)</b>	Perform a tool change (as required). The machine rapids in X and Y, then Z to the current position, then feeds in a straight linear line to the start line position. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">  <b>Note:</b> This option assumes that the current position is the lead-in position.                     </div>	Quickly resuming work after stopping the program to make an adjustment to the machine setup (like clearing chips, removing an object, or turning on the coolant pump). Because the machine's already set up, you can position the tool near the stopping point.
<b>Set start line (restore with Z plunge lead-in)</b>	Perform a tool change (as required). The machine rapids in Z to G30 clearance height, rapids in X and Y to the start line position, then feeds in Z to the start line position.	Running a sub-section of a large program when the correct tool isn't loaded (and positioning the tool tip near the starting point is difficult, like with a long tool or fly cutter loaded). This option doesn't require you to jog to the exact lead-in position.

# RELEASE NOTES

## MANAGE PATHPILOT VERSIONS



**Note:** You don't need to install updates sequentially. You can update from any previous version to the current version of PathPilot.

Depending on what you want to do, refer to the following sections:

- "Download and Install an Update File from the Controller" (below)
- "Install an Update File from a USB Drive" (below)
- "Install a Previous Version of an Update File" (on the next page)

### 2.1 DOWNLOAD AND INSTALL AN UPDATE FILE FROM THE CONTROLLER



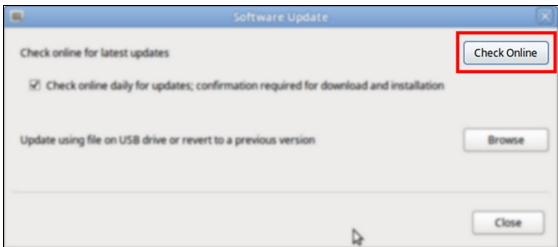
**Note:** Downloading and installing an update file requires an Internet connection. From the PathPilot interface, confirm that the Internet button LED light is on.

1. Confirm that the PathPilot controller is powered on and out of **Reset** mode.
2. From the PathPilot interface, on the **Status** tab, select **Update**.



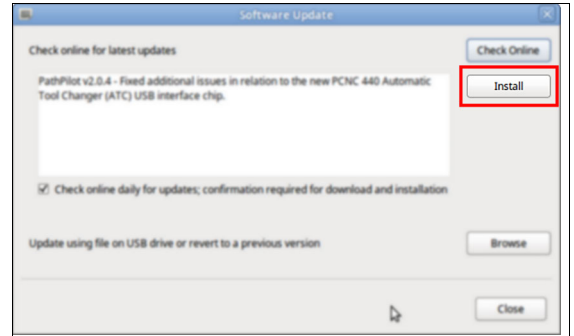
**Figure 2-1: Update button on the Status tab.**

3. From the **Software Update** dialog box, select **Check Online**.



**Figure 2-2: Software Update dialog box.**

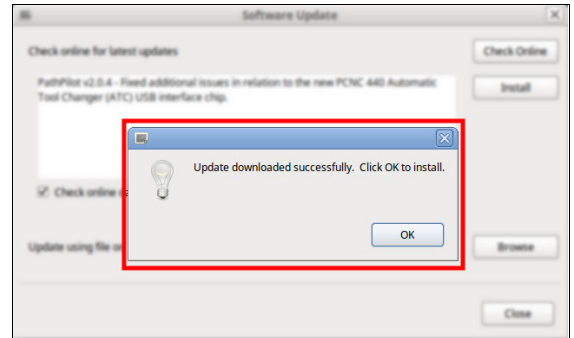
4. Select **Install**.



**Figure 2-3: Install button on the Software Update dialog box.**

The update file is downloaded, and a notification dialog box displays.

5. From the dialog box, select **OK**.



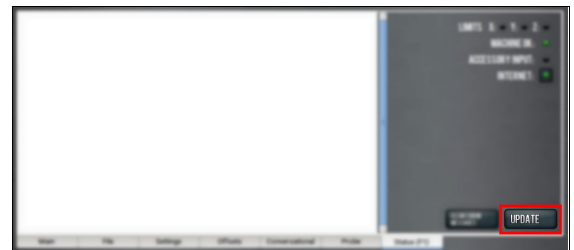
**Figure 2-4: OK button on the dialog box.**

The update file is installed on the PathPilot controller.

6. Follow the on-screen instructions to restart the PathPilot controller.

### 2.2 INSTALL AN UPDATE FILE FROM A USB DRIVE

1. From [tormach.com/pp-updates](http://tormach.com/pp-updates), download the most recent PathPilot update file.
2. Transfer the PathPilot update file to a USB drive.
3. Put the USB drive into the PathPilot controller.
4. Confirm that the PathPilot controller is powered on and out of **Reset** mode.
5. From the PathPilot interface, on the **Status** tab, select **Update**.



**Figure 2-5: Update button on the Status tab.**

# RELEASE NOTES

- From the **Software Update** dialog box, select **Browse**.

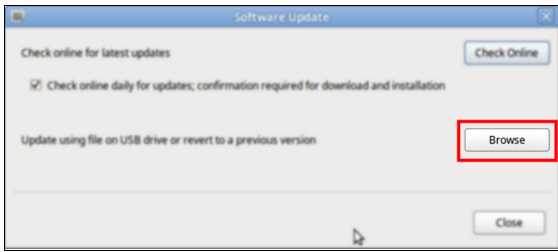


Figure 2-6: Software Update dialog box.

- From the **Browse** dialog box, select **USB**.



Figure 2-7: Browse dialog box.

- Select the desired update file, and then select **Update**.



Figure 2-8: Update button.

The update file is installed on the PathPilot controller.

- Follow the on-screen instructions to restart the PathPilot controller.

## 2.3 INSTALL A PREVIOUS VERSION OF AN UPDATE FILE

- Confirm that the PathPilot controller is powered on and out of **Reset** mode.
- From the PathPilot interface, on the **Status** tab, select **Update**.

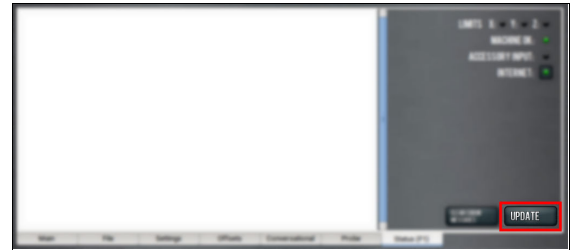


Figure 2-9: Update button on the Status tab.

- From the **Software Update** dialog box, select **Browse**.

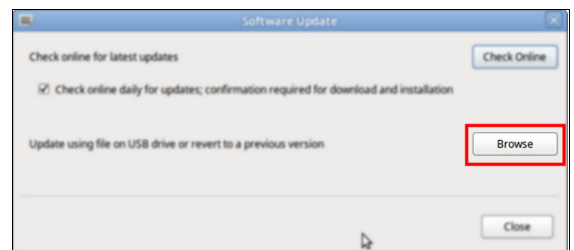


Figure 2-10: Software Update dialog box.

- From the **Browse** dialog box, select **Previous Versions**.

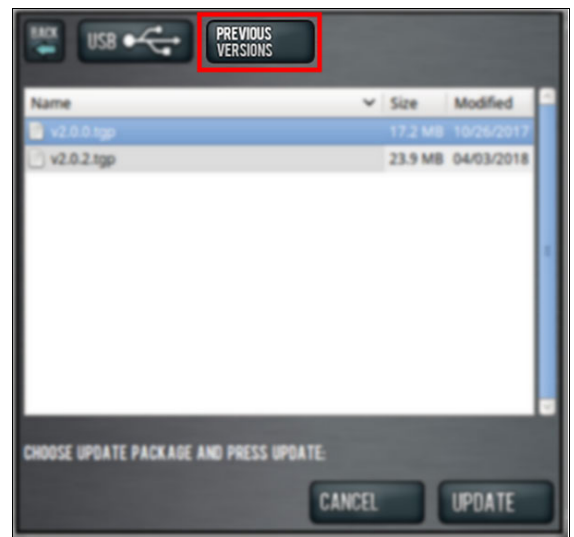


Figure 2-11: Browse dialog box.

# RELEASE NOTES

5. Select the desired update file, and then select **Update**.



**Figure 2-12: Update button.**

The update file is installed on the PathPilot controller.

6. Follow the on-screen instructions to restart the PathPilot controller.