

RELEASE NOTES FOR V2.3.4

October 2019

ENHANCEMENTS


All

- We increased the number of work coordinate systems from 9 to 500. (PP-2439)
You can access the extended work offsets by using G54.1 with a P word value of 1 to 500. G54.1 P1 through P9 refer to the same work offsets as the classic G54, G55,..., G59.3 codes, as shown in the following figure.

Work Offset Naming						
Extended Name	Name	X	Y	Z	A	
G54.1 P1	G54	0.0	0.0	0.0	0.0	
G54.1 P2	G55	0.0	0.0	0.0	0.0	
G54.1 P3	G56	0.0	0.0	0.0	0.0	
G54.1 P4	G57	0.0	0.0	0.0	0.0	
G54.1 P5	G58	0.0	0.0	0.0	0.0	
G54.1 P6	G59	0.0	0.0	0.0	0.0	
G54.1 P7	G59.1	0.0	0.0	0.0	0.0	
G54.1 P8	G59.2	0.0	0.0	0.0	0.0	
G54.1 P9	G59.3	0.0	0.0	0.0	0.0	
G54.1 P10		0.0	0.0	0.0	0.0	
G54.1 P11		0.0	0.0	0.0	0.0	
G54.1 P12		0.0	0.0	0.0	0.0	
G54.1 P499		0.0	0.0	0.0	0.0	
G54.1 P500		0.0	0.0	0.0	0.0	

Can use either name to refer to work offsets 1-9

Offsets beyond 9 must use extended name and P value

- You can now add videos to display in an M00 or M01 break by adding the file name (which is case sensitive) as a comment after the M-code. (PP-2500)
- From the Main tab, you can now quickly edit a G-code program with conversational programming by either (PP-2539):
 - Using a new keyboard shortcut: Shift+Alt+E.
 - Selecting **Show in File tab** by right-clicking inside the G-Code tab or selecting the Options  menu.
- We reduced the sensitivity of the Zoom slider on the View Options tab for touch screen users. (PP-2562)
- We added support for 1100MX and 770MX mills. (PP-2592)
- We added support for xsTECHrouter bench-top router. (PP-2593)
- You can now create a new G-code file from PathPilot: from the Settings tab, make sure that no file is selected, and then select **Edit G-Code**. (PP-2610)

Mills

- You can now use M07 for mist coolant on base M machines with the second J5 relay. (PP-2499)
- You can now toggle the spindle speed range between high and low during a manual tool change operation. (PP-2589)

RELEASE NOTES

- In the Probe Setup tab, we added an Effective Tip Diameter section. This means that:
 - Probe feed rates are no longer controlled by the main feed rate DRO field. Instead, use the feed rate DRO fields on the Probe Setup tab as shown in the following figure.



- You can use PathPilot to measure the effective probe tip diameter:
 - Position the probe tip inside a known diameter, like a ring gauge or bearing race.
 - In the Ring Gauge Dia DRO field, type the known diameter.
 - Select Move/Set Tip Diameter.
The probe measures the inside diameter of the ring and computes the effective probe tip diameter.
 - In the Effective Tip Dia DRO field, read the value displayed. This value is also set in the tool table entry for the probe (tool 99).



- We added support for G74 (left-hand threading) and G84 (right-hand threading) tapping cycles. Depending on the machine, G74/G84 adapts its behavior to provide the best tapping available. For example, on an MX mill, it'll use the encoder for feedback with rigid tapping; on all other machines, it'll depend on timing with a tension/compression tapping head.

The following words are supported with G74 and G84:

Word	Meaning
X	Tapped hole X position
Y	Tapped hole Y position
Z	Nominal Z depth
R	Z retract height
P	Dwell time (ignored for rigid tapping)
K	Thread pitch in units per thread
F	Feed rate (indirectly specifies thread pitch along with spindle speed)

To more easily use the K word to specify imperial threads, you can:

- Do simple math in the G-code. For example, to program a 10 TPI thread:

```
G84 ... K[U_INCH[1 / 10]]
```

The U_INCH operator treats the value in brackets as a value in inches and, if G21 is active, it's automatically converted internally as necessary.

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- Use a new U_TPI operator. For example:

```
G84 ... K[U_TPI[10]]
```

Peck tapping is also supported. For example:

```
G0 Z1 (start at a safe clearance height)
G99 G84 X1 Y2 Z-.1 R.1 K0.125
Z-.2
Z-.3
...
Z-1.0
G80
G0 Z1 (back to clearance height)
```

- On MX mills with a RapidTurn or High-Speed Spindle installed, PathPilot now automatically switches VFD modes. This means that MX mill users don't need an SD card to switch between milling operations and RapidTurn or High-Speed Spindle operations.

Lathe

- We updated the referencing behavior on lathes and RapidTurn so that it's consistent with mill configurations. You can now select the buttons one right after another, and once the machine references one axis, it'll move on to the next. (PP-2591)

FIXED ISSUES

All

- We updated the jogging behavior (especially with a jog shuttle wheel) and user interface so that it's consistent across mill, lathe, and RapidTurn configurations. (PP-1427)
- We fixed issues where:
 - When creating conversational jobs in metric mode (G21), the job assignment editor indicated that jobs were unsaved even if they were unchanged. (PP-2487)
 - If the probe input bounced between G38.2 and G38.6, an error occurred: "Probe tripped during non-probe motion." (PP-2495)
 - In some situations, attempting to jog the machine with the jog shuttle while PathPilot was loading a file sometimes resulted in difficult-to-stop axis motion. (PP-2566)
 - In some situations, PathPilot became unresponsive after selecting the Exit button, and then selecting OK in the dialog box with an E-stop reminder. (PP-2575)
 - Running over 500 G-code files or performing more than 200 conversational edits without powering off PathPilot could result in failures, sometimes with a "Too many open files" error. (PP-2640)

Mills

- We fixed issues where:
 - When switching between the Probe and Status tabs, the accessory input status LEDs displayed inconsistent states. (PP-2425)
 - When creating a rectangular face in conversational programming, the spiral count was sometimes off by one. (PP-2493)
 - On M, M+, and MX mills, pushing in the Emergency Stop button didn't turn off the coolant if it was already on. (PP-2641)

Lathe

- We fixed an issue where, when loading a G-code file, an error could occur regarding M3 or M4 aborting due to collet clamping status. (PP-2586)

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" (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



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**.

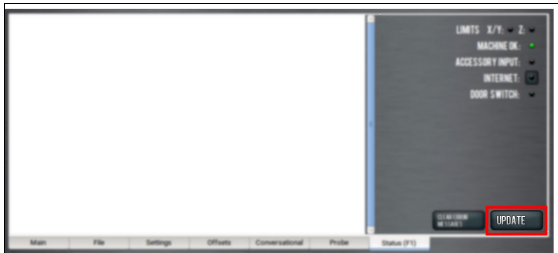


Figure 2-1: Update button on the Status tab.

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

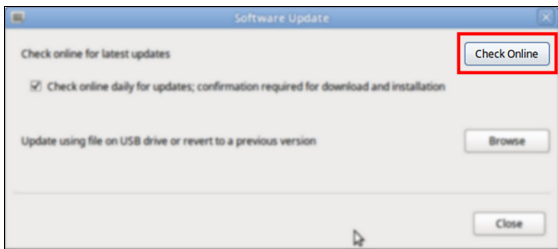


Figure 2-2: Software Update dialog box.

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**.

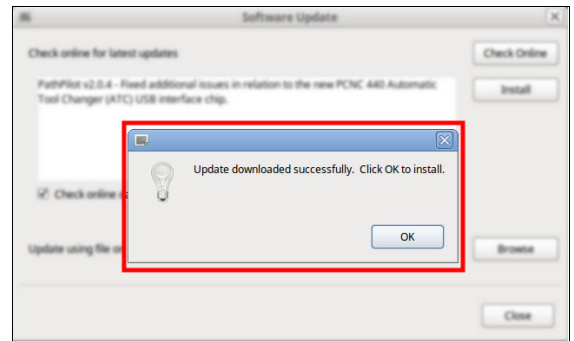


Figure 2-4: OK button on the dialog box.

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, 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.

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- From the PathPilot interface, on the **Status** tab, select **Update**.

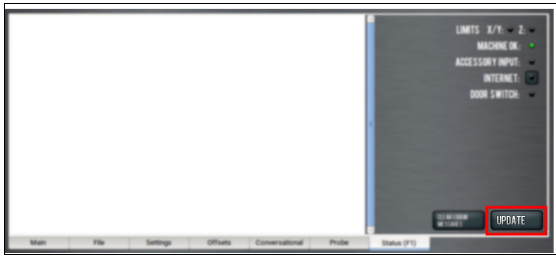


Figure 2-5: Update button on the Status tab.

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

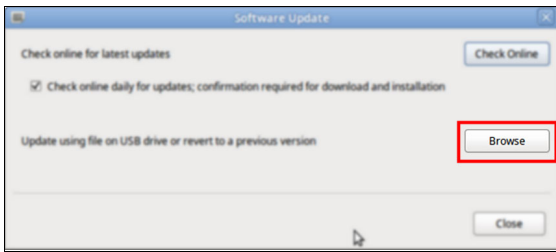


Figure 2-6: Software Update dialog box.

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



Figure 2-7: Browse dialog box.

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

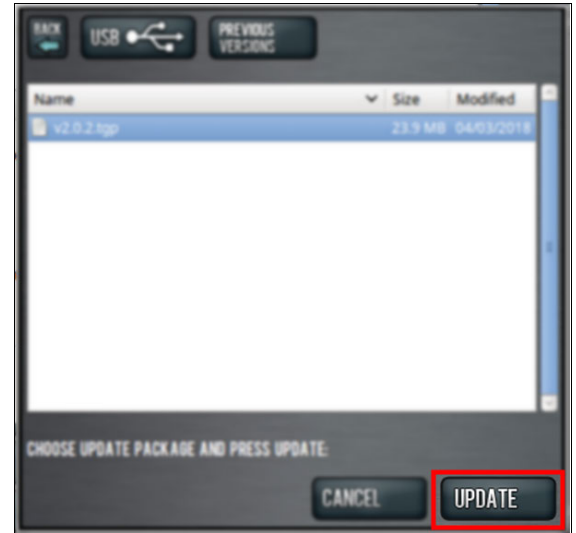


Figure 2-8: Update button.

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**.

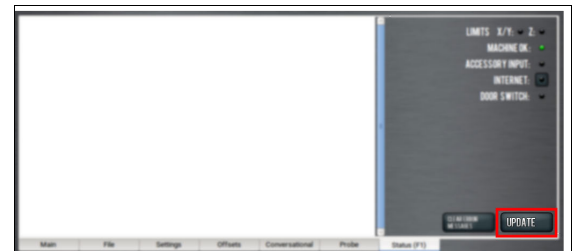


Figure 2-9: Update button on the Status tab.

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

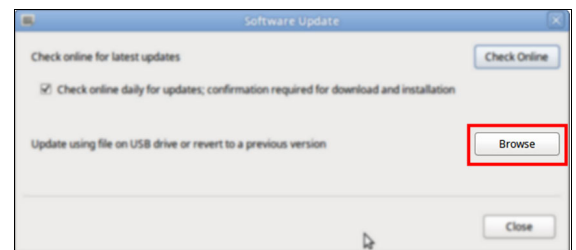


Figure 2-10: Software Update dialog box.

RELEASE NOTES

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

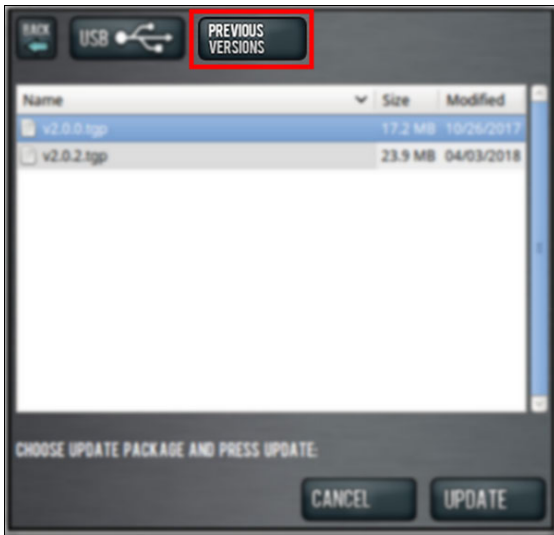


Figure 2-11: Browse dialog box.

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

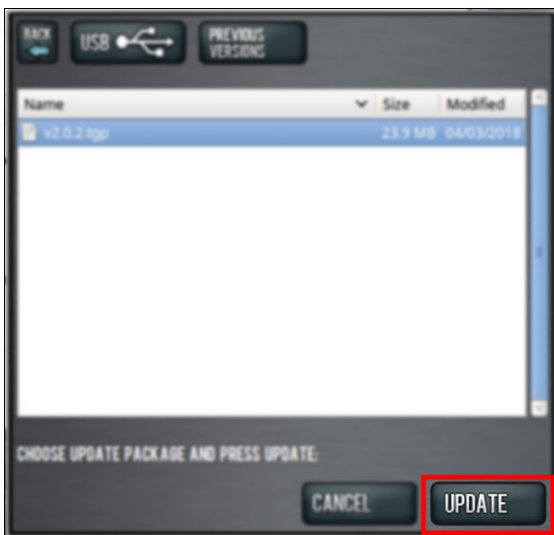


Figure 2-12: Update button.

The update file is installed on the PathPilot controller.

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