ATC Pedestal Install Guide

This guide outlines the steps to install your Portland CNC Modular ATC Pedestal Upgrade (not Drop-in). The most updated, detailed, & media-rich version is on our Helpdesk: pdxcnc.com/atc-install 👉

> 🚨 **Disclaimer:** We give you the best guide we can. Every machine can have slight differences – be aware and adapt. **DO NOT blindly trust our guides – think through each step yourself!**
>
> 👋 ***Skim the whole guide before starting!***

Expected time: 3-5 hrs

You'll Need: 🅿️ = PDX CNC provided

- ☐ **Tool holder + End Mill** - face HDPE infill
  - ☐ .50" 2-FL Downcut flat-end mill
- ☐ **Tool holder** for **#8 drill** (.199") 🅿️
- ☐ **3*, 4, 5, 6mm Allen Wrenches** 🅿️
- ☐ **M6 x 1 Tap** 🅿️
- ☐ **Tap Handle** for M6 x 1 tap
- ☐ **Powered Drill** - drill steel frame with #8 drill
- ☐ **Wireless Keyboard** - Or pendant, nice amzn.to/3UeoYyu

Modular Pedestal Install on ShopSabre CNC Router

1) Measure Tools - ***Before removing your ATC Rack or Tool Probe***

- ☐ **Setup and Measure Tool lengths with your Tool Height Probe:**
  - ☐ .50" 2-FL Downcut flat-end mill in Tool holder as T1
  - ☐ #8 Drill (7/32 collet) in Tool Holder as T2

2) Backup your WinCNC Folder

- ☐ Open `C:\WinCNC` on your CNC PC.
- ☐ Copy this folder and Paste it somewhere safe. E.G. – A USB flash drive or your Desktop.
- ☐ Then rename it to `WinCNC - BACKUP`.

3) Download CAD/CAM Files for your Machine

- ☐ See the link to download CAD files – pdxcnc.com/atc-install#cad

4) Remove Existing ATC Tool Rack & Z-Probe

- ☐ Remove anything that is mounted in the area of the ATC rack.

5) Screw HDPE Inserts in ATC Rack Slot

- ☐ Use provided Flat 13mm diameter ¼-20 screws to attach HDPE infill parts in ATC Rack slot using existing ATC Rack mount holes. *The HDPE parts will be proud of your bed, we will face this down to flush.*

6) Machine HDPE

- ☐ Manually tool change and tell the machine which tool you're using:
  - ☐ Insert T2 - #8 drill into the spindle by hand.
  - ☐ Type **`L110T2`** in WinCNC to tell the machine you've inserted T2 in the spindle. Press Enter - *That updates in lower right corner of WinCNC.*

Set X0Y0Z0

- ☐ Set **`Z0`** to the top of your table.
- ☐ Turn **off Soft Limits** – type **`L21`** into WinCNC. Press Enter
- ☐ Jog using keyboard or pendant with T2 to any existing ¼-20 ATC Rack Bolt Hole.
- ☐ **Align the drill bit** with the center of any existing bolt hole in the ATC Rack pocket.
- ☐ Raise the tool in Z if needed but do not change Y as you **jog to the left edge (-X)** of your CNC Table.
  - ☐ Make sure to do this cautiously as *Soft Limits are turned off*.
- ☐ With the Y aligned to the bolt-hole center and X to the left of the table (-X), hit the **XY Zero button** on WinCNC to set your origin here.
- ☐ With a tape measure, confirm the width of your table in X is the same as our CAD file download details for the machine that you downloaded previously.
- ☐ Insert the previously tool heighted T1 - End Mill tool holder into the spindle to face HDPE.
- ☐ Type **`L110T1`** in WinCNC to tell the machine you've inserted T1 in the spindle. Press Enter - *You'll see that update in the lower right corner of the program.*

- ☐ Turn off Soft Limits – type **L21** into WinCNC, Press Enter
- ☐ Preview the downloaded file in WinCNC and jog the area that will be machined and drilled to confirm fit on the table. Turning off Soft Limits means you can crash or drive the gantry off the back of the machine on IS & newer PRO. Work with caution!
- ☐ **Open and Run** the Machining Operation for HDPE Facing.

7) Drill Operation

- ☐ Insert the tool T2 - #8 drill, manually.
- ☐ Type **L110T2** in WinCNC to tell the machine you've inserted T2 in the spindle. Press Enter - *You'll see that update in the lower right corner of the program.*
- ☐ X0Y0 and Z0 should **remain the same** as the previous operation.
- ☐ Turn off Soft Limits – type **L21** into WinCNC, Press Enter
- ☐ Open, preview, and jog the location of the drilling coordinates to make sure they clear any hardware that may be in your table (bolt heads etc). Turning off Soft Limits means you can crash or drive the gantry off the back of the machine on IS & newer PRO. Work with caution!
- ☐ Run the Drilling Operation.

8) Tap Frame/Table for Base Mounting

After you've machined the HDPE flush and drilled your base patterns, the best method is to hand drill and tap into the steel frame. If you have an MDF top this is necessary. A phenolic top can be tapped directly, however attaching to the steel frame is the best option – and the hardware we've included is suited for that.

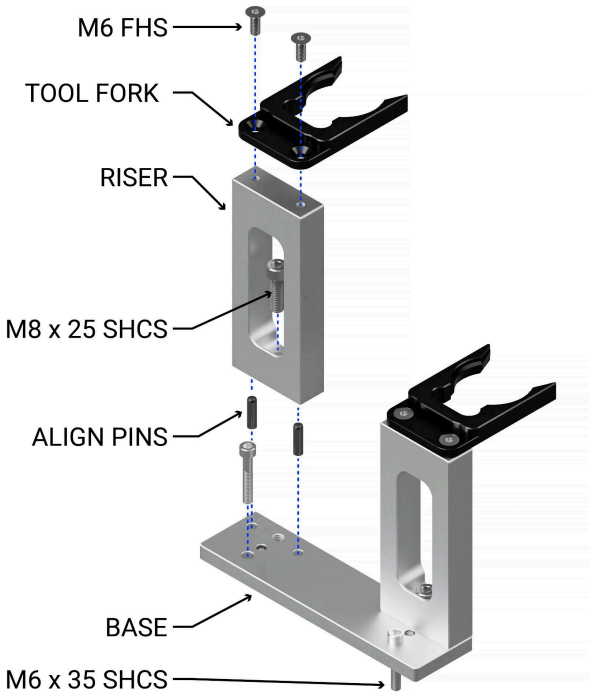
- ☐ Use a hand-powered drill and insert the **#8 drill** to drill into the steel below for each of your mount holes.
    - Alignment pin holes do not need to be hand drilled (these are shallow holes).
- ☐ Use the **M6 x 1** tap to hand tap the steel frame (and table material above it). Tap fluid like Tap Magic or a little oil is recommended for tapping.
- ☐ There should be 1-2 tap holes for your Z-probe stand as well. This may not reach into steel depending on your machine model. (It takes very little lateral force in use).

9) Assemble Parts

A) Attach Bases to Table

- ☐ Starting at the right of your machine (+X), insert two dowel pins into the table for each Base.
- ☐ Use **2ct - 5mm dowel pins** & **1ct - M6 x 35mm SHCS** - per position in each Base.
- ☐ Work your way to the left side (-X), the order of Bases is not important.
- ☐ Hand tighten (don't overtighten) **M6 SHCS** to secure Bases to table with 5mm Allen wrench.

  Only 2 SHCS/Base needed. Extra holes are available if a hole interferes (bolt below). Use outside holes when possible.





B) Attach Risers to Bases

- ☐ Use **1ct - M8 SHCS** & **2ct - 5mm** dowel pins per Riser.
- ☐ Insert **Dowel Pins** into Base, then drop Riser onto dowel Pins with logo facing Y+.
- ☐ Use 6mm Allen wrench with ball end to tighten each Riser to its Base.
- ☐ Use the short end of Allen wrench for a bit more torque. Hand snug is good.

C) Attach Forks to Risers

- ☐ Use **2ct - 6mm Flat Head Screws** to attach **1ct - ISO30 Tool Fork** to each Riser.
- ☐ Tool Fork should be open towards **Y+** or the back of the machine.
- ☐ Snug each screw down, no need for heavy force.
- ☐ The white Tool Fork is a "spare tire" in case you break one. *We sell Forks on our Shop* 😉

D) Attach Z-Probe Stand to Table

- ☐ Use **2ct - 5mm Dowel Pins** into the table
- ☐ Drop Z-Probe Stand on top of pins
- ☐ Attach with **M6 SHCS** (1 or 2ct depending on style)
  If your probe wire does not reach to new location you may need to hand-drill a new hole in the table to create a better path.

E) Attach Z-Probe to Probe Stand

- Depending on your Probe model:
  - **ALU Rectangle Probe** - Use previous screws to attach to stand
  - **Cylinder Body Probe** - Use provided **2ct - M4 SHCS**

10) Update WinCNC Files – pdxcnc.com/atc-install#wincnc

See the full guide for this step at QR code or link.

- **WinCNC.ini**
- **CNC.mac**
- **SPOS.POS**
- **TC.mac**
- **TU.mac**

After changing and saving these files, restart WinCNC. Homing will be required after.

11) Disable the Dust Dock - pdxcnc.com/atc-install#dd

Have the Dust Dock? You'll need to disable it. You'll also need to remove the Yellow Dust Dock arm for full travel capacity.

12) Change Z-Probe Position – pdxcnc.com/atc-install#probe

Your Z-probe is now in a new position. You need to tell WinCNC where that is.
After changing and saving WinCNC files, restart WinCNC. Homing will be required after.

13) Calibrate Positions – pdxcnc.com/atc-install#calibrate

Changing ATC tool positions will impact tool changes. Our self-centering ATC Forks and precision dowel pin-aligned Bases, and Risers prevent position shifting. When installing,

ensure each position aligns where the machine expects it by following a deliberate jogging procedure.

14) Tool Height All Tools

After moving your Tool Height Probe you want to make sure to re-height every tool. During the first auto-tool heighting, make sure everything clears as expected. Hover over ESC or E-stop. Try to tool change each position with a dummy tool.

- *Need help? Email us –* help@portlandcnc.com
- *If you're in a dire situation give us a call, please leave a voicemail* – 971-444-5673

Visit our Shop for an ever-growing list of CNC tools and supplies – shop.pdxcnc.com 👉







Troubleshooting

1) Symptom: My table is a little different than listed X width?

If you have a larger table than our listed size - that happens, ShopSabre changes things frequently. For example, if you have a 77" table width & our listed width is 75", you can center your Pedestals by moving the X0 +1 on in from edge of table in Step 6.

3) Symptom: Spindle won't drop far enough for Tool Height

https://pdxcnc.freshdesk.com/support/solutions/articles/62000229375
You'll likely need to Set a lower Soft Limit in WinCNC. Visit the link or QR code to view the article on these steps.

4) I need more _____!

We have just anything you may need! From shorter or longer tool holders (at a screaming price), collets, CNC tooling, dust collection, replacement ATC forks, and on!

If there's something you're looking for we'd love to know - reach out please: *help@portlandcnc.com*