

ShopBot®

888-680-4466 • ShopBotTools.com

Hose Cradle Kit Installation

For Gantry Machines Only

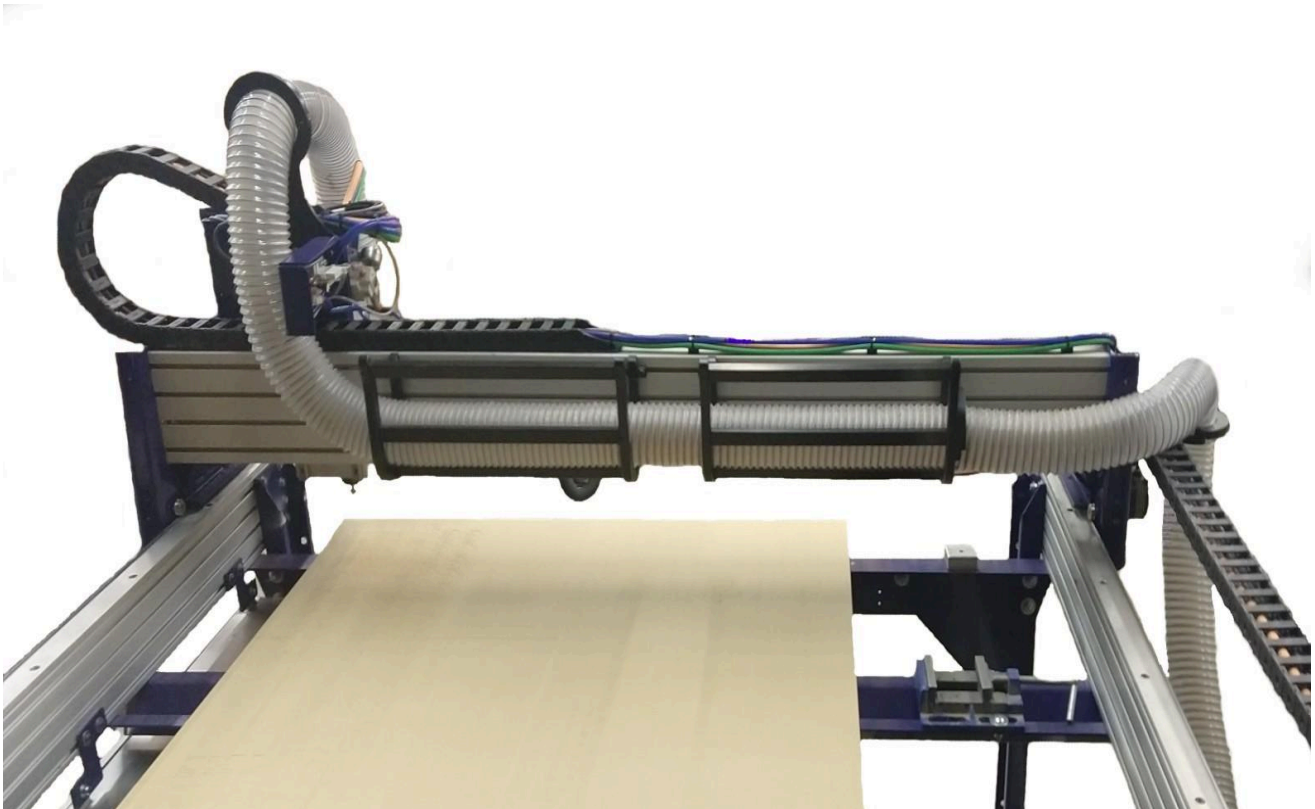


Table of Contents

Introduction	5
What's in the Box	5
Which model ShopBot do you have?	6
Installing the Hose Cradle Kit	7
Mounting the Z Hose Cradle	8
Without an ATC:	8
With an ATC:	9
Mounting the Gantry Hose Cradles	11
Running the Dust Hose along the Gantry Cradles	15
Mounting the Upper X e-chain Hose Cradle	16
Mounting the Lower X e-chain Hose Cradle	17
Additional Hose Cradle for X e-chain Trough	19

Introduction

Dust collection is very important when running a CNC machine. Not only does it help keep the air clean, it also helps keep the cutting area clean of debris. One of the difficult things about having a dust collection system is running the dust hose from the collector to the router on the machine. We have designed a system, the Hose Cradle Kit, that not only keeps the dust hose completely free of the cutting area, but also offers a very clean and professional look.

What's in the Box

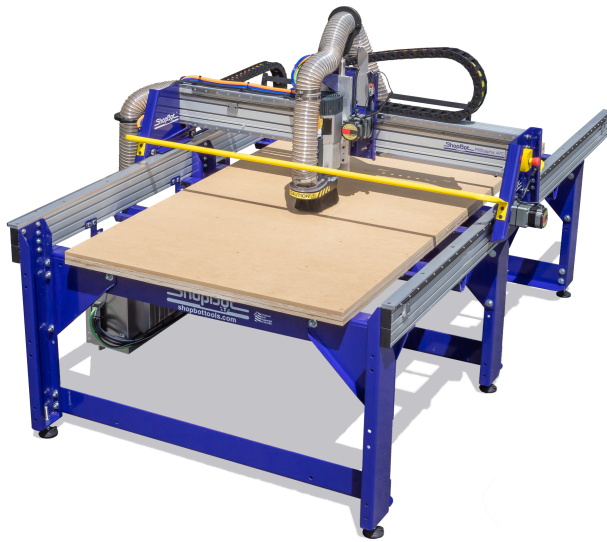
After unpacking, you'll notice that some of the parts have already been preassembled. Please follow the instructions exactly, as these parts have specific locations in the assembly of the Hose Cradle.



Which model ShopBot do you have?



PRS5 Model



PRS4 Model

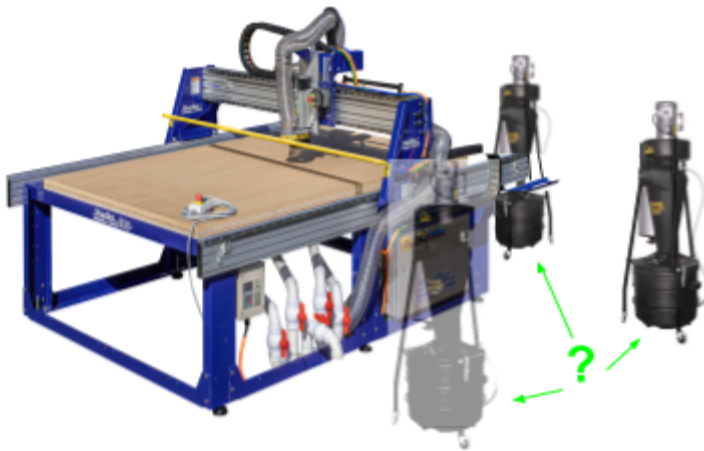
We have different models of our PRS machines that we have sold over the years. The newest model is the PRS5, which we started selling in June, 2024, while the previous model is a PRS4, which we started selling in July, 2017. When assembling the machine, we recommend which side to mount the echain based on which model it is. However, the customer has the option to mount the echain on either side of their machine, based on the floor plan of their shop. The side of your machine that you mount the X echain also dictates the direction you run your dust hose, and therefore how you install the Hose Cradle Kit. For this reason, regardless of which model you have, the instructions will refer to “left” and “right” orientation, which refers to the direction you mount your echain and run all your cables.

Installing the Hose Cradle Kit



First, move the tool to the home position by doing a C3 command. This should bring the Z to the front corner of the tool. Lower the Z all the way down to allow the dust hose to be installed properly..

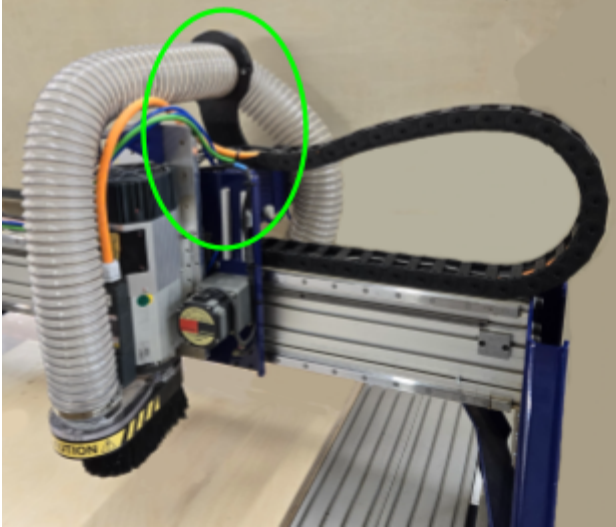
Note: At this point, power off the machine, and disconnect any air lines.



Decide where the dust collector will be located. This will determine if you use one or two hose cradles to secure the hose to the X e-chain trough.

Note: The Hose Cradle Kit only secures the dust hose to the back corner of the tool, you are responsible for securing the hose beyond that point.

Mounting the Z Hose Cradle



Front view of gantry

In this step, you will mount the Z cradle. This bolts to the back of the echain bracket on the back of the gantry, and supports the hose as it comes over the Z assembly from the dust foot. Remember, the echain on your gantry can go in either direction. For this step, what's important is to mount the Z cradle to the echain bracket so that the loop in the cradle is in line with the spindle and dust foot on the front of the machine.

Parts needed for this step:

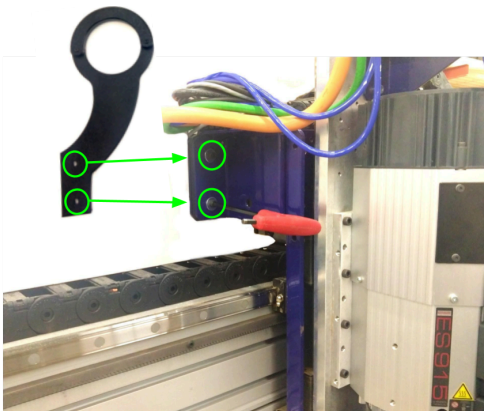


(2) 1/4-20 x 1 SHCS, washers and nylock nuts



(1) Z Hose Cradle

Without an ATC:



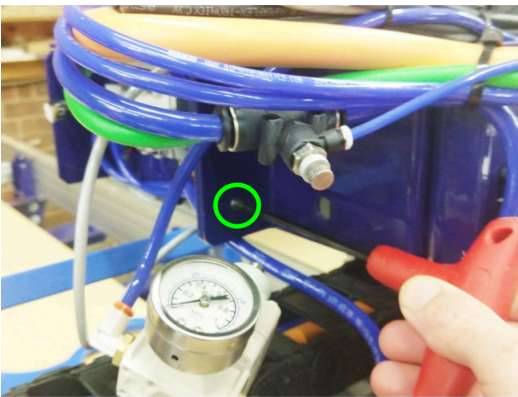
Mount the Z hose cradle to the e-chain bracket on the back of the Z using two 1/4 - 20 x 1 SHCS bolts, washers and nylock nuts. Run the bolts with washers through the front of the e-chain bracket, through the hose cradle, and secure using the two nylock nuts on the back. Remember, make sure the cradle is oriented so the loop is in line with the spindle and dust foot.

At this point you can skip down to “**Securing the Dust Hose in the Cradle**”

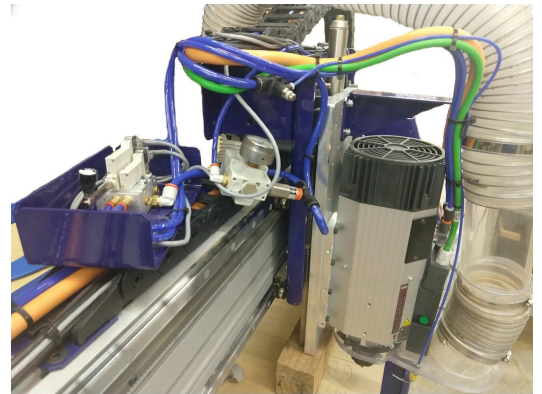
With an ATC:

For a tool that has an ATC, the Z hose cradle goes *between* the e-chain bracket and the air manifold that mounts to the bracket. If you already owned your tool, and purchased the Hose Cradle Kit at a later date, you will first need to remove the ATC manifold located on the back of the Z if it is already installed. If you purchased the Hose Cradle Kit along with the tool, and have not installed the ATC yet, skip down a few steps to “**Mounting the Z Hose Cradle**”.

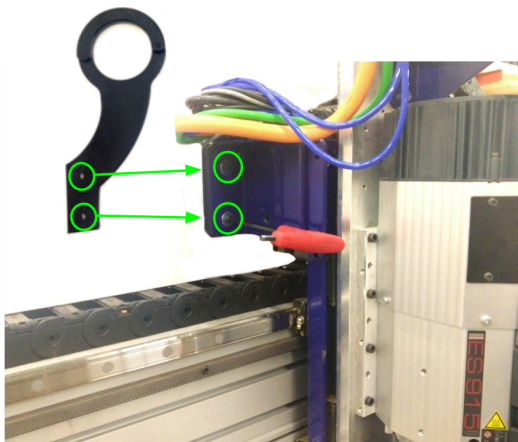
Removing the Manifold



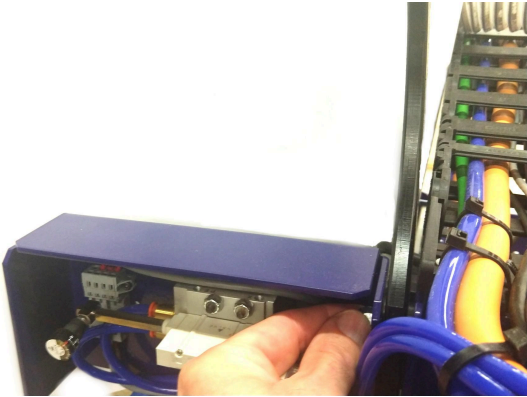
Using a 5/32” allen wrench and 7/16 wrench, remove the two bolts that are securing the manifold to the e-chain bracket, and lay the manifold on the e-chain. You shouldn’t need to remove any of the air hoses to install the hose cradle.



Mounting the Z Hose Cradle

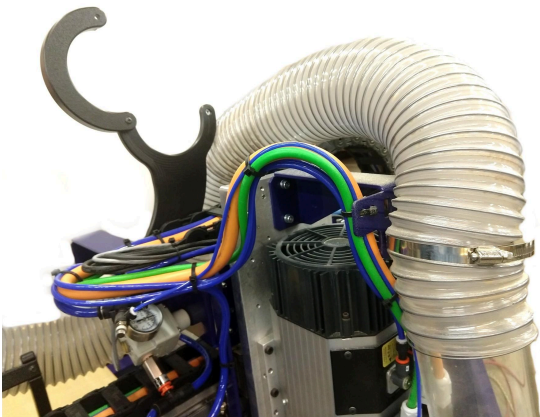


Grab the two 1/4-20 x 1 SHCS bolts from the Hose Cradle Kit, and use these instead of the original hardware that mounted the manifold. Insert them with a washer through the holes in the e-chain bracket, then insert the Z hose cradle onto the bolts.

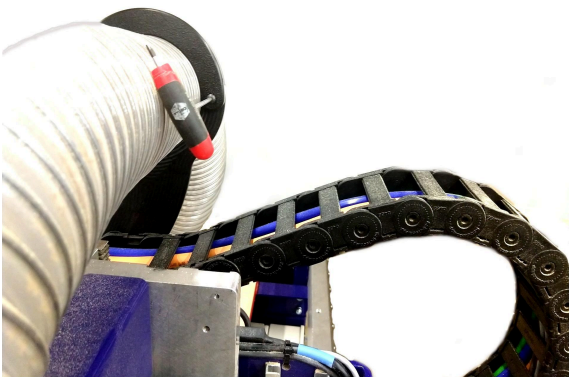


Mount the manifold for the ATC by securing it with the two $\frac{1}{4}$ nylock nuts. The hose cradle should be mounted *between* the e-chain bracket and the manifold. Remember, make sure the cradle is oriented so the loop is in line with the spindle and dust foot.

Securing the Dust Hose in the Cradle

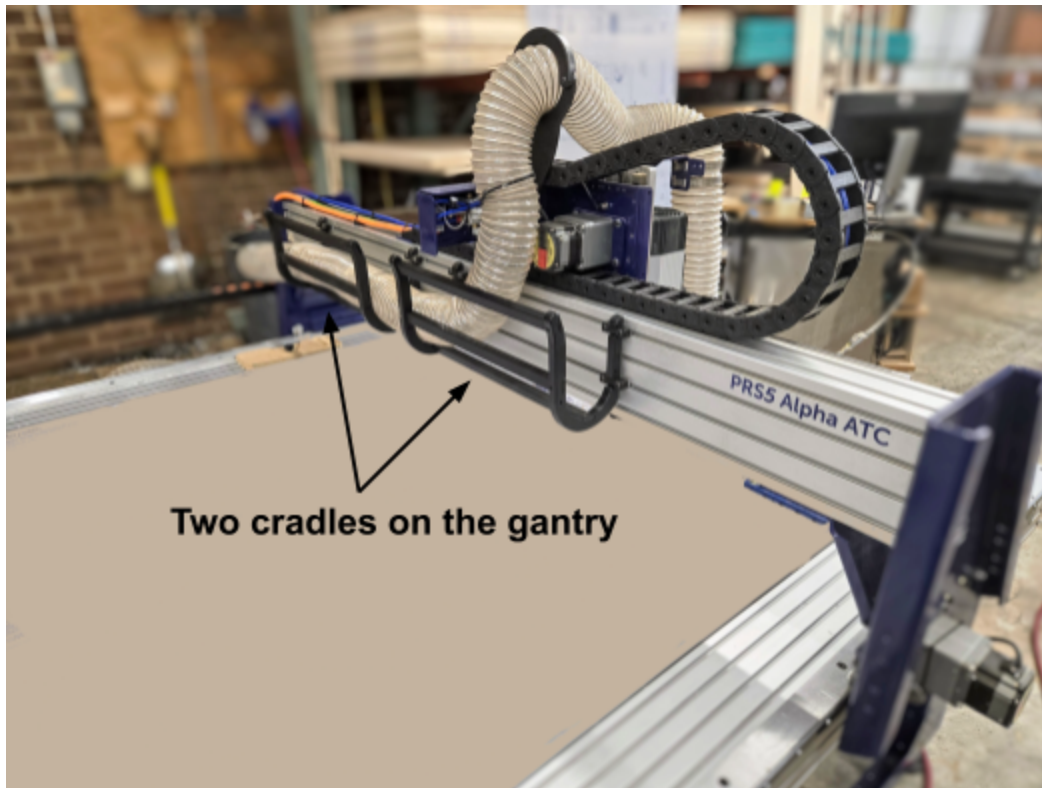


Open up the hose cradle by removing one of the bolts with a $\frac{1}{8}$ " allen wrench, and pulling up on the clamp.



Place the dust hose in the cradle, and close the clamp. Secure the cradle using the 10-32 bolt you took out of the cradle to open the clamp.

Mounting the Gantry Hose Cradles



Now that the Z hose cradle is mounted, the next step is to mount the two cradles to the back of the gantry. Regardless of which model you have, the goal is to have the dust hose running toward whichever side you have mounted the X chain. In the above picture, when looking at the **back** of the gantry, the X chain is on the left side of the machine, so the dust hose is running to the left side of the machine. If your X chain is on the right side, then run the dust hose to the right side of the machine. Which side you run the dust hose will determine how you mount the hose cradles to the gantry.

Parts needed for this step:



(8) Mounting Clamps



(16) 1/4" T-nuts and 1/4" - 20 x 1 BHSCS



(2) Gantry Hose Cradle

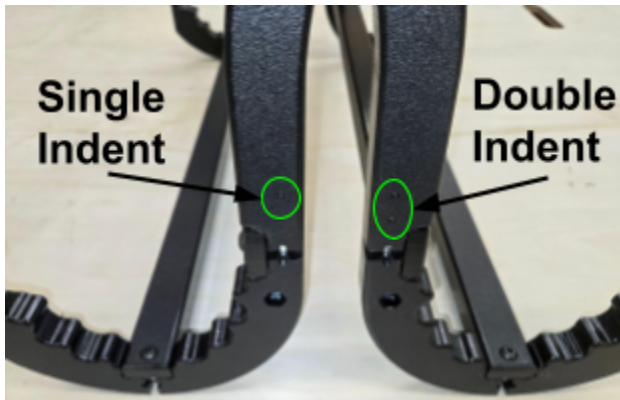


(1) Cradle Clamp

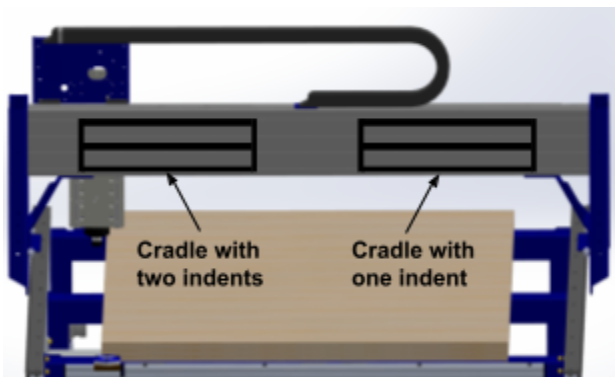


Before installing the hose cradles on the gantry, thread the t-nuts onto the bolts just enough so they stay on. Do this with all 16 bolts, and grab all 8 Mounting clamps

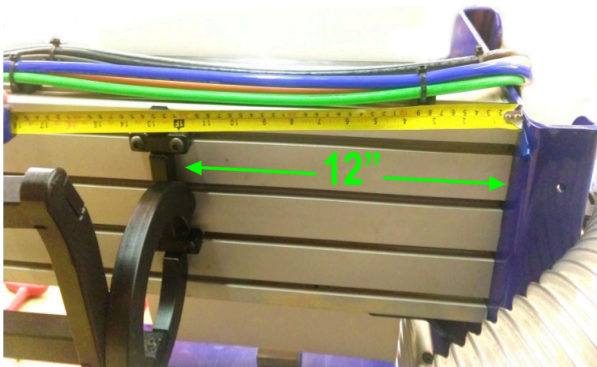




Both of the cradles will look the same. However, one of the cradles has a single indent on the side, and the other cradle has two indents on the side. It is important to mount the cradles in the correct spot, which is shown in the next picture. This is to allow the dust host to be run in either direction, depending on what model you have and what preference you have.



Looking at the back of your gantry, mount the cradle with two indents on the left, and mount the cradle with one indent on the right. This affects how the cradle clamp gets mounted to the cradle to hold your dust hose in place.



Determine which direction you need to run your dust hose, left or right, based on which side your X e-chain is mounted on. Start by mounting a hose cradle 12" from the inside of the end plate that is on the same side as the X e-chain.



The hose cradle has some knobs on the back that align with the slots in the gantry. Place the cradle on the gantry so that the knobs can be inserted into the 1st and 3rd slots from the top of the gantry.

Note: The first cradle you mount should be 12" from the either the right or left end plate, depending on which direction you are running the dust hose.



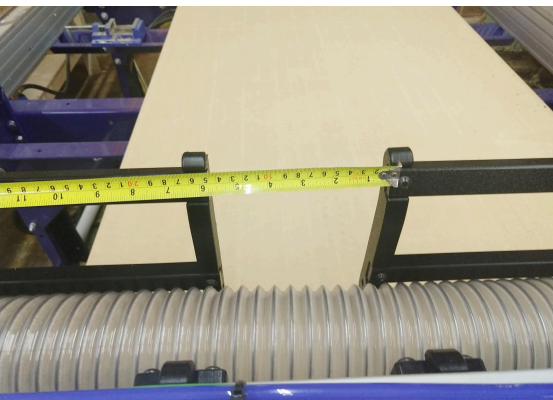
Grab one of the assembled bolts/t-nuts and a clamp. Place the clamp over the vertical bar on the hose cradle. You'll notice each vertical bar has two sections that are pocketed out that are in line with the 1st and 3rd slots in the gantry.



Push the t-nut into the slot next to the clamp, and turn the t-nut 90 degrees using the bolt. This will allow the t-nut to grip the inside of the slots in the gantry.



Slide the bolt into the slot in the mounting clamp as far as it will go. Using an allen wrench, tighten down the bolt. The t-nut should grip the inside of the gantry. After tightening the two bolts for the clamp, the cradle should stay, making it easier to install the other 3 mounting clamps.



The mounting location for the next hose cradle on the back of the gantry is dependent on what size gantry you own. Using the same process, mount the 2nd cradle based on the spacing listed below:

Size of gantry:

32" - no space between cradles

48" - no space between cradles

60" - 6 inches between cradles

72" - 8 inches between cradles



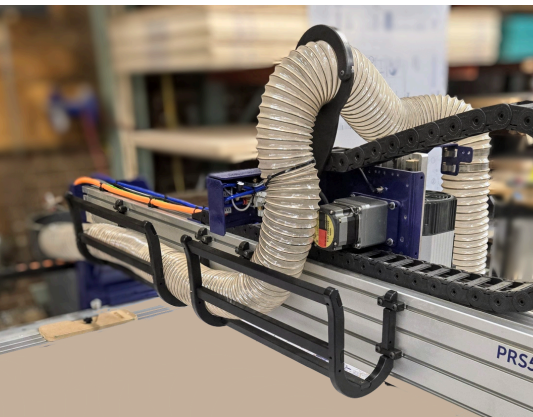
Left side (back of gantry)

Mount the cradle clamp to the end of the cradle that is closest to the end plates of the gantry. Only attach with one bolt at this point, and leave hanging as shown.



Right side (back of gantry)

Running the Dust Hose along the Gantry Cradles



If your machine has an ATC, bring the hose down from the Z cradle along the center of the YZ car, and loop it under the manifold and into the hose cradles. If you don't have an ATC, just simply bring the hose straight down and curve it into the hose cradles.

Note: Make sure the YZ car is at the opposite end of the gantry from where the X chain mounts to the end plate. You want the hose to be fully stretched out in the cradles before mounting the Upper X chain cradle in the next step

Mounting the Upper X e-chain Hose Cradle

Parts needed for this step:



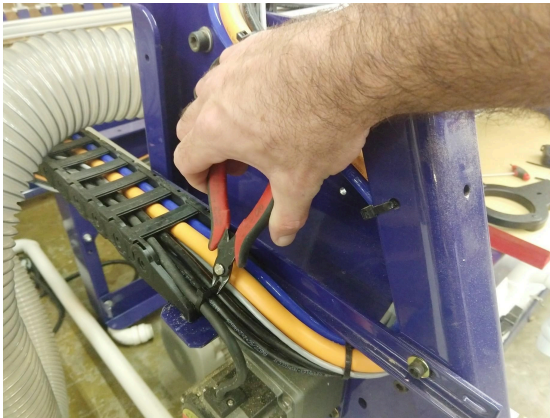
(1) 10-32 x 7/8 BHSCS



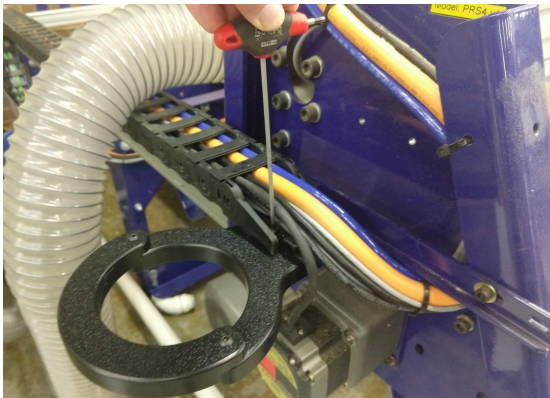
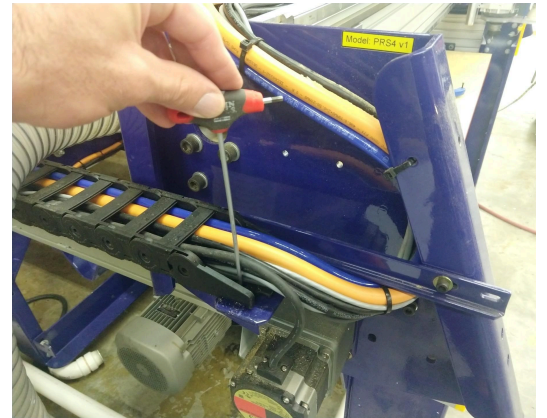
(2) Zip Ties



(1) Upper X e-chain Hose Cradle



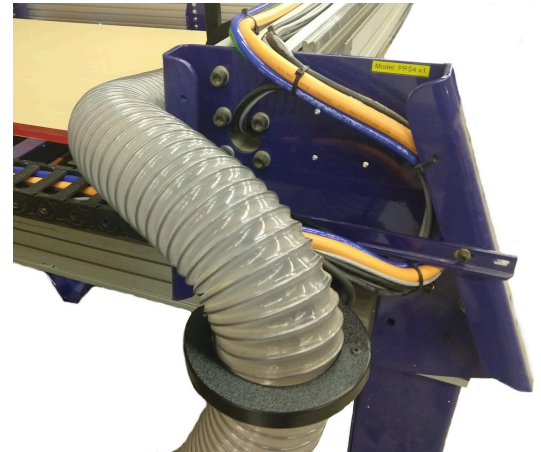
Remove the zip ties that are securing the cables going into the X e-chain. Remove the two bolts attaching the e-chain to the bracket.



Slide the hose cradle in *between* the e-chain and the bracket, and replace the bolts you removed with the longer 10-32 x 7/8 BHSCS from the kit. Secure cables with provided zip ties.



Open the clamp for the hose cradle by removing one of the bolts. Insert the hose as shown, then close the clamp and secure using the same bolt. There should be very little slack in the hose as it comes around the end plate and into the hose cradle.



Mounting the Lower X e-chain Hose Cradle

Parts needed for this step:



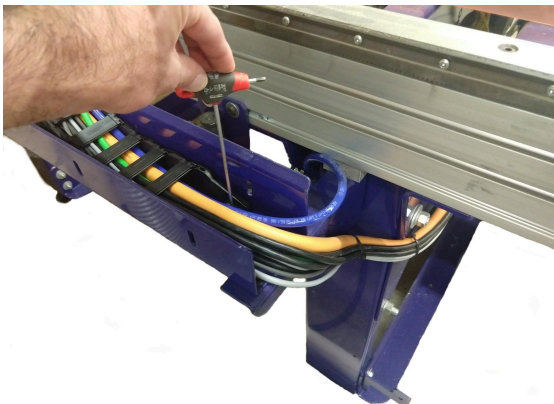
(2) #10 x 1.25 PHS



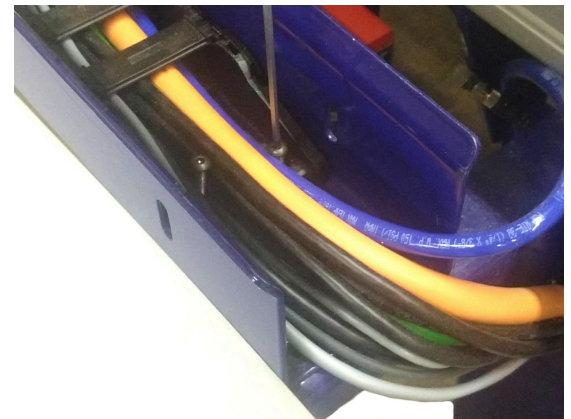
(2) Zip Ties



(1) Hose Cradle



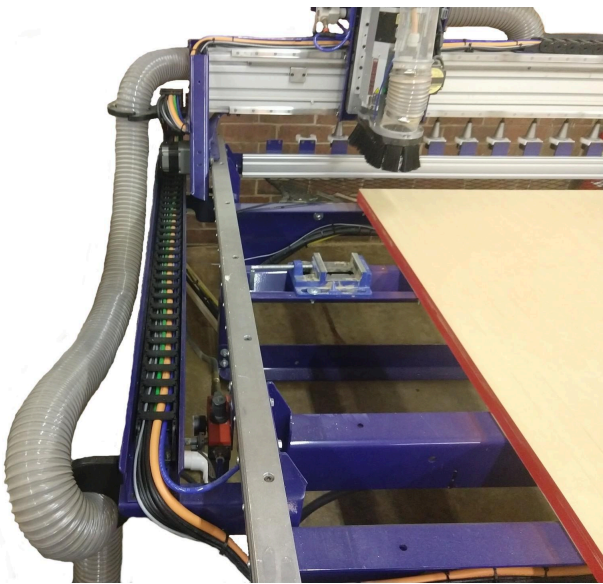
Remove the zip ties and the two bolts and nuts that are securing the X e-chain to the trough bracket on the side of the machine.





Hold the hose cradle in place under the e-chain mounting bracket, and run the two #10x1.25 PHS through the two holes in the X e-chain and mounting bracket, and into the hose cradle. Secure the cables with the provided zip ties.

Note: There are four holes on the bottom of the hose cradle, only two will line up with the holes in the e-chain bracket.



Pull the hose out away from the tool so it doesn't hit anything, and move the gantry all the way to the back, until it is about a 1/4" from the mechanical stops on the table sides.

Remove the 10-32 bolt in the cradle, and pull the clamp down. Route the hose through the cradle as shown, with a little slack to ensure the hose has enough length for full travel. Place the bolt back in, and tighten down completely.



At this point, the installation is complete, unless you own a PRS4 and would like to mount an additional cradle for the X e-chain trough (see following page). It would be good to carefully move the gantry and Z around at full travel to ensure that the dust hose is installed properly, and doesn't get stretched or kinked in any area along the gantry or the X axis. Replacement parts can be ordered from us if they get broken at any point.

Additional Hose Cradle for X e-chain Trough

The Hose Cradle Kit comes with two cradles that can be used along the X e-chain trough. You can use this extra cradle on the X trough to give additional support for the dust hose if it's needed.



If your dust collector will be located more towards the rear of the machine, then you may want to add another hose cradle further down the e-chain trough to support the hose. Use the extra set of #10 PHS to mount the cradle. You will see pairs of holes in the trough every few inches, use whichever set gives the best support.