Spindle Installation: Mechanical

ShopBot Tools, Inc.
3333-B Industrial Drive,
Durham NC 27704
ShopBotTools.com

Technical Support
support@shopbottools.com
1-888-680-4466

Revision History

Date:	ECO:	Change:	Changed By:
2015 11 30		New Release	M. Cummings

Introduction

Follow these directions closely. The misalignment of the spindle can result in bad cuts, inaccurate locations, and poor bit life. A spindle that is not properly tightened can produce run-out, creating bad cuts, poor surface finish, inaccurate dimensions, and increased wear on bits. Pay close attention to the spindle alignment and perform regular inspection and readjustment as required.

Before performing the steps of this document, the Z rail must be bare. If upgrading from a router, remove the router using the router removal document (see www.shopbotdocs.com) before installing the spindle. If replacing a spindle, this document's steps can be used in reverse order for removal of a spindle.

Parts list

Supplied parts:

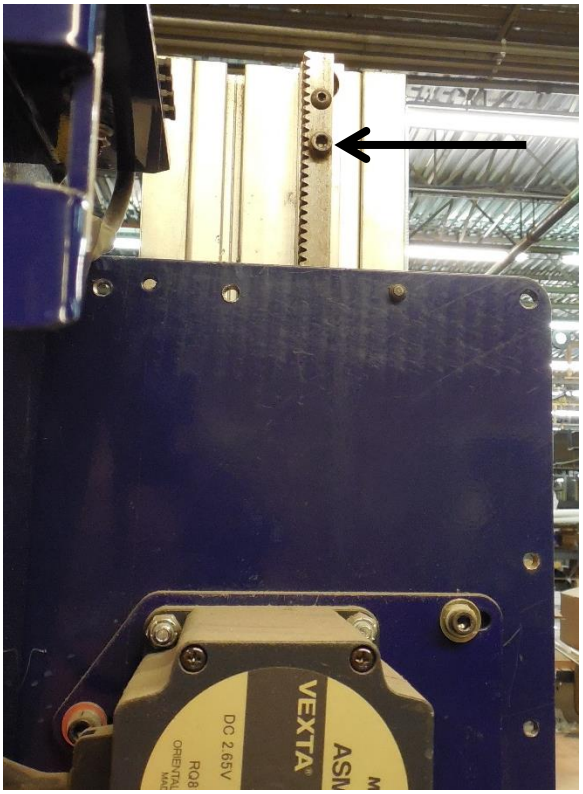
- Spindle with mounting plate attached
- 6 - 5/16"-18 x 1 1/2" bolts

Tools needed

- 3/16" long reach ball-nosed Allen wrench (to remove and install Z-axis extrusion bolts)
- Machinist/Carpenter square (for truing spindle to table)
- 3/16" Allen wrench (To remove stop bolt if needed)

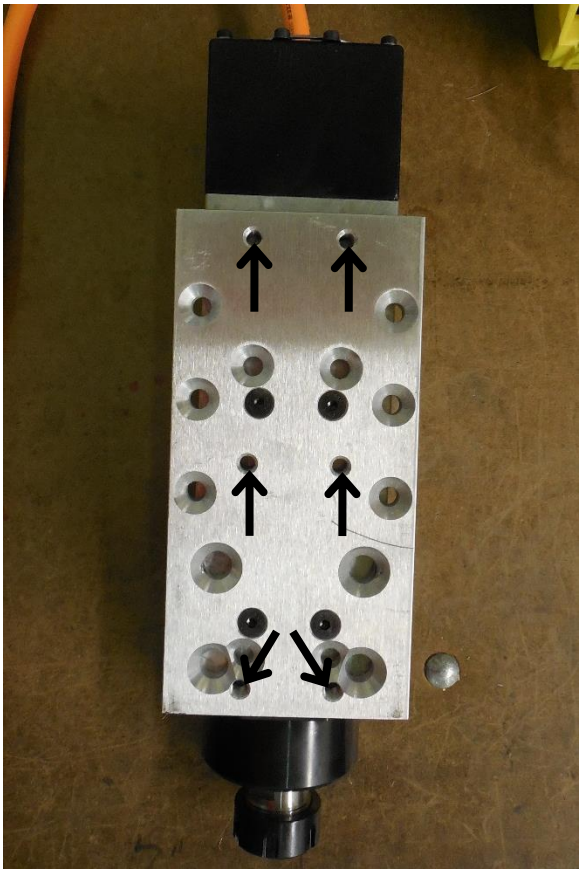
Spindle mounting

Step 1:
There are six holes in the Z-axis extrusion. The bottom four holes are used to mount the router and the top two are only used to mount the spindle.

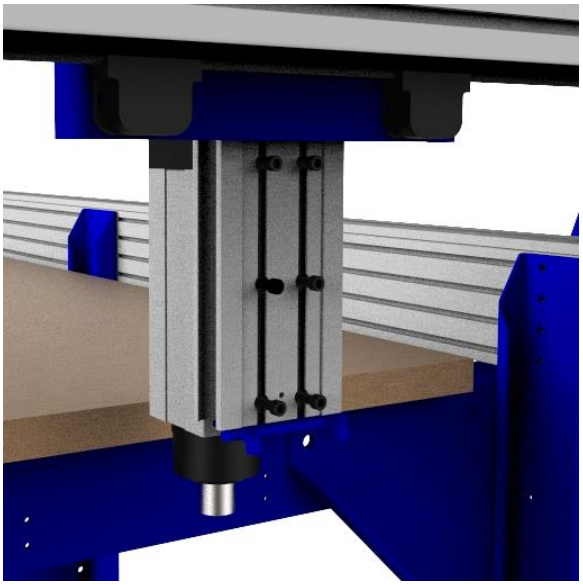


If the Z-axis will not travel down far enough to get to the top two holes, it is likely being limited by the stop bolt. To remedy this, raise the Z-axis above the gantry until a bolt that is not recessed into the rack on the backside becomes visible. Remove this bolt with a 3/16” Allen wrench, being careful to support the Z-axis and ensuring it does not move down enough to disengage the rack from the pinion gear.

NOTE: Do not remove any low profile bolts such as the one above the stop bolt (stop bolt shown by the arrow in the image to the left). These hold the rack onto the tool and removal may cause misalignment.

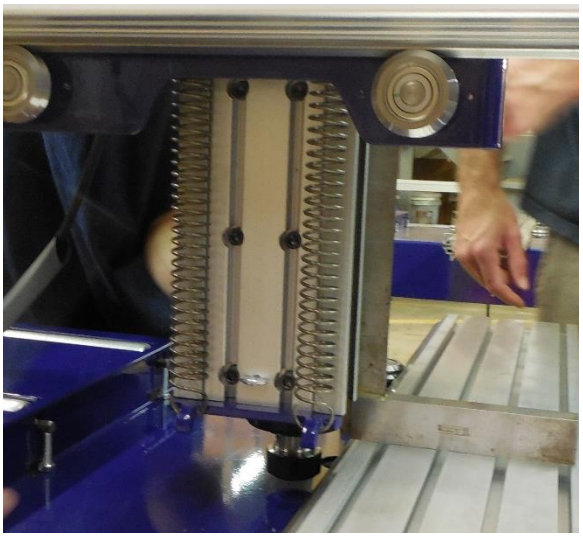


Step 2:
The spindle already has the mounting plate attached. The six tapped holes on the plate will correspond with the holes on the Z-axis extrusion. The other holes are for other spindle models and will not be used.

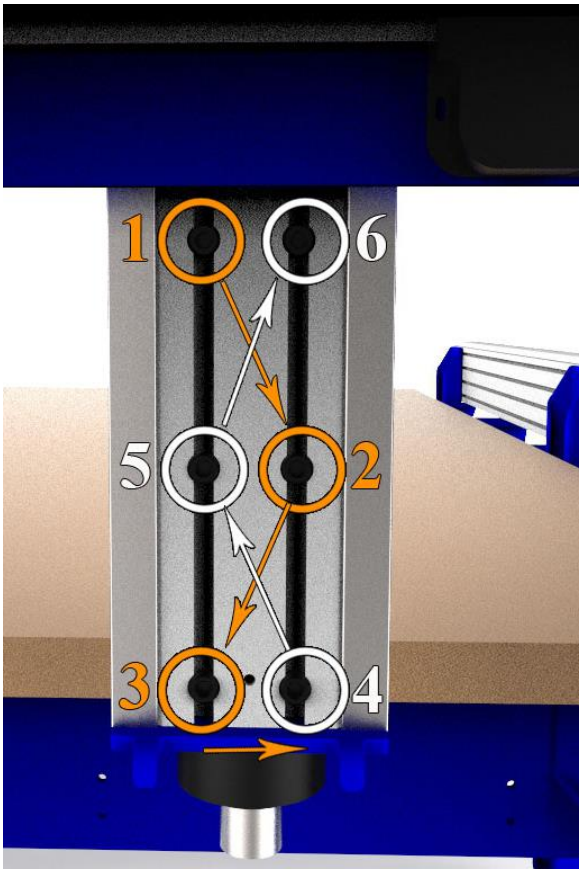


Step 3:
Hold the spindle up to the Z-axis extrusion and loosely attach the 6 screws into the spindle to hold it in place.

Step 4:
Put spindle over the cutting surface and place a square against the side (as shown here) to adjust the spindle until it is perpendicular.



Step 5:
Ensure the tool is down far enough in the Z-axis to allow access to all six screws.



Step 6:
Tighten the screws to hold the spindle in the proper alignment. Once the screws are snug, perform a final tightening in the sequence shown on left.

Step 7:
Reinstall the Z-axis stop bolt if necessary using the 3/16” Allen wrench. Install it snugly, then test the Z travel to ensure the bolt stops travel at the bottom of its range.