Quill Stop Spindle Brake Deluxe Grizzly G0704 (Weiss BF20) Installation Guide 6/30/2017

Thank you for purchasing the Quill Stop Spindle Brake Deluxe for the Grizzly G0704 and all Weiss BF20 compatible mills. Your feedback is always appreciated. Please email questions and comments to gregpriest@cox.net.

What's Included

1. Quill Stop Spindle Brake plate
2. Spindle Brake Deluxe block
3. Spindle Brake Deluxe knob
4. Quill Stop Block
5. 1/2-20 Button Nut
6. 1/2-20 x 12" Threaded Rod
7. 3/8-16 spring plunger
8. 1/4-20 x 1 1/4" Socket Cap Screw
9. 1/4-20 x 1" Socket Cap Screw (2)
10. 1/4-20 x 5/8" Socket Cap Screw (2)
11. 1/4-20 x 1/4" Socket Set Screw SS (3)
12. 1/4-20 x 1/4" Socket Set Screw Nylon
13. 1/8" x 3/8" steel pin (2)
14. Grommet
15. 12VDC Relay with wire leads and connectors
16. Safety switch
17. 12VDC power adaptor
18. Installation instructions

Required Tools

1/8 and 3/16" hex key wrenches
Slotted (flat-blade) screwdriver

Refer to the picture of the assembled Quill Stop Spindle Brake Deluxe at the end of this document when assembling this tool.

Assemble Quill Stop Spindle Brake plate

1. Insert the 1/8 x 3/8" steel pins (2) into the matching holes in the top of the block.
2. Align the pins in the block with the matching holes in the plate and slowly, gently, evenly press the block onto the plate.
3. Thread the 1/4-20 x 1" socket cap screws (2) through the bottom of the block up into the plate and tighten.
4. Insert the safety switch through the front of the hole on the left side of the block stripped wire end first and run the wire through channel in the bottom of the plate and out the back of the plate. Press the front end of the switch flush with front of the block. Secure the wire in the channel with a supplied 1/4-20 x 1/4" Nylon socket set screw.
5. Retract the spring plunger (nose flush with body). Thread the spring plunger into the matching hole in the front of the block. When retracted, the tip of the spring plunger should be flush with the back of the block. Secure the spring plunger with one of the supplied 1/4-20 x 1/4" socket set screws.

6. Thread the knob onto the other end of the spring plunger until the thread bottoms-out, then back off until the length of the knob is parallel with the length of the block, and the priesttools.com logo is right-side-up. Secure the knob to the spring plunger with one of the supplied 1/4-20 x 1/4" socket set screws.
7. Insert the 1/4-20 X 1 1/4" socket cap screw into the hole adjacent to the slit on the right side of the plate. Do not tighten at this time.

<u>Install Quill Stop Spindle Brake plate</u>

1. Unplug the mill and remove tooling from the spindle.
2. Lower the mill head to its lowest point while still being able to lower the quill to its lowest point.
3. Slide the assembled plate up onto the spindle collar (the non-rotating part). It may be necessary to carefully spread the slit with a slotted screwdriver to get the plate up onto the spindle collar. Align the front edge of the plate with the front edge of the bottom of the mill head, and align the plate in the vertical center of the spindle collar. Place two parallels between the top of the plate and the bottom of the mill head. Push the plate upward against the parallels and mill head and lock the quill. Tighten the 1/4-20 X 1 1/4" socket cap screw that closes the slit and tightens the plate onto the spindle collar.
4. Screw the end of the 1/2-20 X 12” threaded rod with the flat into the hole in the plate leaving one or two threads of the flat showing above the surface of the plate and the flat facing out toward the threaded hole. Secure the threaded rod using one of the supplied 1/4-20 X 1/4" socket set screws.
5. Slide the Button Nut down over the 1/2-20 threaded rod until the top of the Button Nut is just above the top of the E-Stop Switch. It may be necessary to open the yellow E-Stop Switch cover to allow room for the Button Nut in this position. If additional room for the Button Nut is necessary, unscrew the E-Stop Switch and move the E-Stop switch to the side.
6. Slide the Stop Block down over the 1/2-20 threaded rod so that it sits on top of the Button Nut. The Stop Block should now be level and correctly positioned for mounting on top of the Button Nut.
7. Insert a 9/32” transfer pin or drill through one of the holes in the Stop Block and mark a spot on the side of the mill head. Remove the Stop block and drill and tap a 1/4-20 hole at the spot just marked in the side of the mill head. Be careful to make sure the drill is perpendicular to the mill head. Use a 1/8” drill to drill a pilot hole, then a #7 or 13/64” drill for the final hole. Chamfer and tap the hole (use a tapping block if available). Replace the Stop Block and secure it to the mill head with one the supplied 1/4-20 x 5/8 socket cap screws. Repeat this procedure for the other Stop Block threaded hole.
8. Remove the Stop block and Button Nut from the 1/2-20 threaded rod and then slide the Stop Block down the 1/2-20 threaded rod and secure it to the side of the mill head. The 1/2-20 threaded rod should be centered and move freely in the 5/8” Stop Block hole.
9. Slide the Button Nut down over the 1/2-20 threaded rod to any spot above the Stop Block and check the operation of the Quill Stop by rotating the quill until the Button Nut contacts the Stop Block. Minor adjustments may be made to the position of the Stop Block and the rotation of the plate by loosening the fasteners, adjusting, and re-tightening the fasteners.
10. If the E-Stop Switch was removed, replace it now and close the yellow cover.

Quill Stop Operation

The Quill Stop is simple to operate, simply press the button and the nut disengages from the thread. Slide to desired position and release the button to engage the threads. Turning the nut then allows for precision micro-adjustments of depth of cut.

The Quill Stop is great for doing chamfers. With the Spindle stopped and the chamfer tool in the spindle and centered on the hole, lower the quill until the chamfer tool seats in the hole. Then lower the Button Nut until it contacts the Stop Block. Rotate the Button Nut clockwise a half-turn to back out of the hole a bit and release the quill. Lower the spindle using the quill to make sure that the chamfer tool is not contacting the part. Start the spindle turning (150 RPM is recommended for chamfers) and lower the spindle using the quill. Then start a cycle of rotating the Button Nut counter clockwise in small increments while checking the depth of the chamfer by lowering and raising the quill. This is a great way to sneak-up on the correct chamfer depth.

Prepare the Mill to Make the Electrical Connections

1. Unplug the mill.
2. Remove the back panel of the control box and locate a point in the bottom of the control box to drill a 7/16” hole for the cords of the 12VDC power adaptor and safety switch to pass through. Select a location to drill the hole that will not interfere with any of the existing components in the control box.
3. Use a spot drill to fix the hole location, drill a 5/32” pilot hole and then use progressively larger drills ending with a 7/16” drill.
4. Chamfer the hole and insert the supplied rubber grommet in the hole.
5. Run the cords of the 12VDC power adaptor and safety switch through the grommet and into the mill’s control box.
6. Select a location on one of the inside surfaces near the rear of the control box on which to mount the relay with attached wire leads. Check the location by holding the relay in place before mounting. Make sure the control box cover that was removed earlier can be re-installed without interfering with the relay and attached leads.
7. Carefully peel and remove the protective adhesive facing material from the back of the Dual Lock Mushroom Head fastener attached to the relay.
8. Press the relay to the selected location and hold for 30 seconds so the adhesive backing can bond well to the surface.

Quill Stop Spindle Brake Deluxe Grizzly G0704 (Weiss BF20) Installation Guide 6/30/2017

Spindle Brake Deluxe Electrical connections

The relay is delivered "pre-wired". The following block diagram serves as a reference of the layout of the relay's connections in case it is needed in the future.

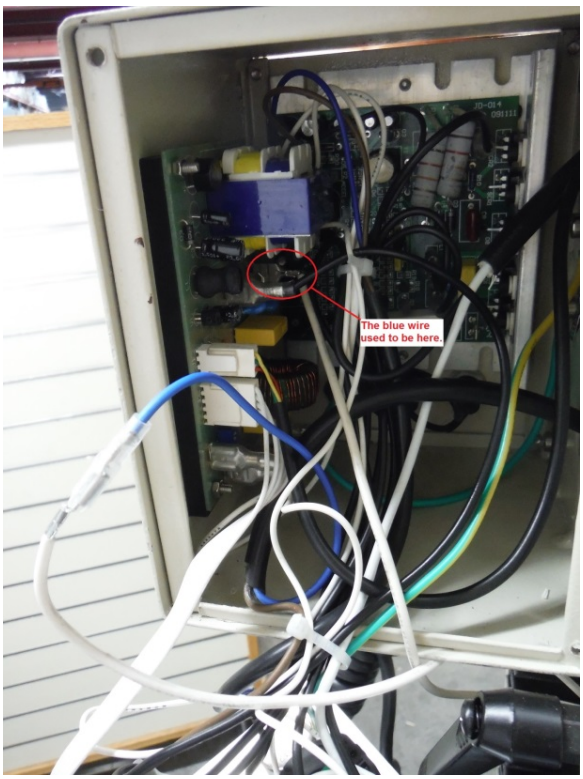
1			
	2	4	3
5			

The following table summarizes the connections of the Spindle Brake Deluxe.

A/C Adaptor 12VDC	Safety Switch	Relay	Mill	Connection
12VDC+ (dashed wire)	Red wire			2X lever nut
12VDC-		Black wire (lug 5)		2X lever nut
	Black wire	Red wire (lug 1)		2X lever nut
		Red wire (lug 3)	E-Stop "L1" lug	Quick disconnect
		Black wire (lug 4)	L1 wire QD	Quick disconnect

Step by Step Electrical Connections

1. 12VDC dashed wire to safety switch Red wire (2X lever nut).
2. 12VDC (no dashes) wire to relay Black wire (2X lever nut).
3. Safety switch Black wire to relay Red wire (2X lever nut).
4. Unplug the mill.
5. Locate the mill Blue L1 wire. Disconnect this wire and connect the 1/4" male quick disconnect from the relay to this (1/4" female quick disconnect of the mill L1) wire.
6. Connect the 1/4" female quick disconnect from the relay onto the lug from which the Blue L1 wire was removed in the previous step.
7. Replace the cover on the rear of the control box.



Spindle Brake Deluxe Operation

Check the operation of the Spindle Brake Deluxe electrical system. Plug-in the supplied 12V power adaptor and provide power to the mill. With the magnets in the knob of the spring plunger facing up and down, the spring plunger is engaged and power to the mill should be off (just as though the E-Stop switch has been activated). Rotate the spindle until the nose of the spring plunger engages with the lock pin hole in the spindle. The spindle should now be locked and power to the mill disabled.

Now retract and rotate the spring plunger knob so that the magnets in the knob align with the white safety switch. The knob should now be locked open (fully retracted) and power to the mill should be restored (just as though the E-Stop switch was reset). If the system is working as described here then replace the control panel cover and you are ready to start using the Spindle Brake Deluxe.

If the system is not working as described, please review the steps above and take corrective action. If you need additional assistance, please email gregpriest@cox.net with a description of the problem and pictures of your setup.