



Spindle Brake Flip Little Machine Shop 5500 Mill Installation Instructions

The enclosed Spindle Brake Flip is for use on the Little Machine Shop 5500 mill. The Spindle Brake locks the spindle and removes power to the mill to facilitate tool changes. With the Spindle Brake engaged, power to the mill is cut allowing for safe tool changes.

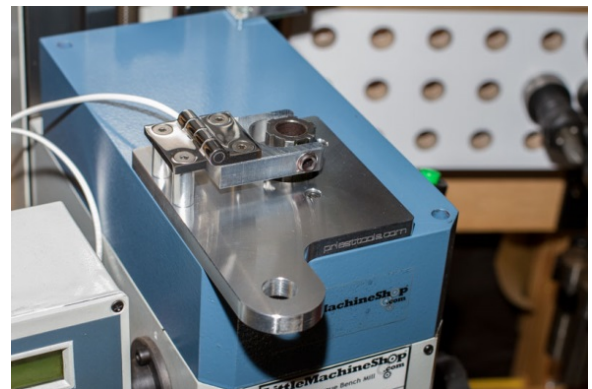
What's Included

1. Spindle Brake Flip plate
2. Spindle Brake Flip fork
3. Modified R8 drawbar
4. Stainless steel hinge & #10 mounting screws
5. 12VDC relay
6. 12VDC power adaptor
7. Safety switch and mounting screws
8. Relay connecting wire
9. 3/4" Aluminum spacers (2)
10. Wire clip
11. Velcro fastener
12. Hex cap screw, M4 x 20mm



Step by Step Installation Instructions

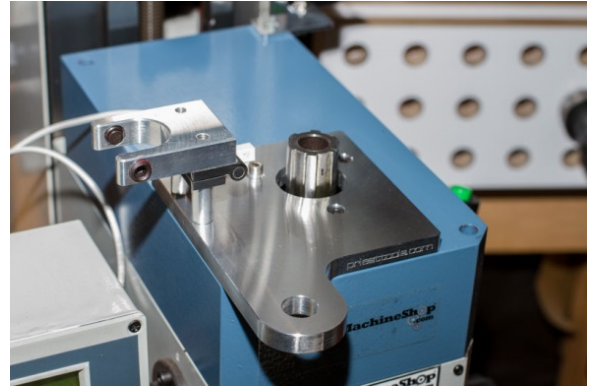
1. Unplug the mill from the electrical source.
2. Unscrew and remove the spindle cover.
3. Remove the 3 socket cap screws securing the spindle cover collar and remove the collar.
4. Fasten the supplied safety switch to the Spindle Brake Flip plate using the supplied screws.
5. Mount the hinge onto the fork using the short #10 socket cap screws. With the hinge on the left side of the fork, the magnet must be facing to the back. Mount the hinge and fork onto the left side of the Spindle Brake Flip plate using the long socket cap screws and spacers. When finished with this step, the assembly should look like the following picture.





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6. Slide the Spindle Brake Flip plate down over the spindle and align the left side of the plate with the left side of the mill head. Install two of the three socket cap screws removed previously in the front-center and right rear holes of the plate. Install the supplied socket cap screw and spacer in the left-rear hole of the plate. Do not tighten these at this point.
7. Flip the locking “fork” of the Spindle Brake down over the top of the spindle. It is usually necessary to rotate the spindle by hand so that the female splines of the spindle match the socket set screws in the Spindle Brake “fork” until they mesh.
8. Two adjustments are usually required at this point to complete this part of the installation. The first is to adjust the Spindle Brake plate so that the Spindle Brake “fork” is in good alignment with the spindle. If necessary, move the plate in small increments to get the best alignment with the spindle.



The second adjustment is to the socket set screws on the Spindle Brake “fork”. The “fork” should slip easily over the spindle, but without excess play. The screw settings may be just right out of the box, but in case they are too tight or loose adjust the screws accordingly. Once the adjustments are complete, tighten the socket cap screws securing the Spindle Brake Flip plate to the top of the mill.

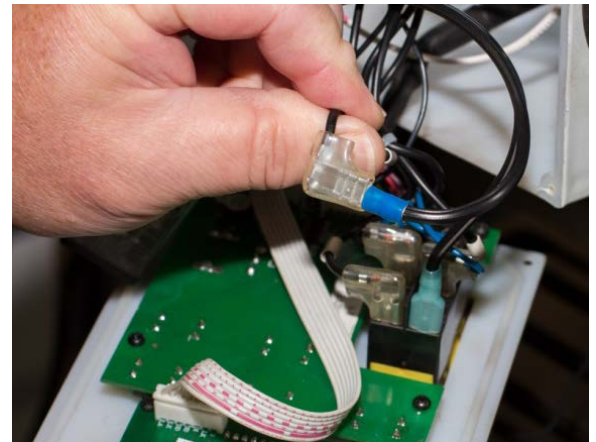
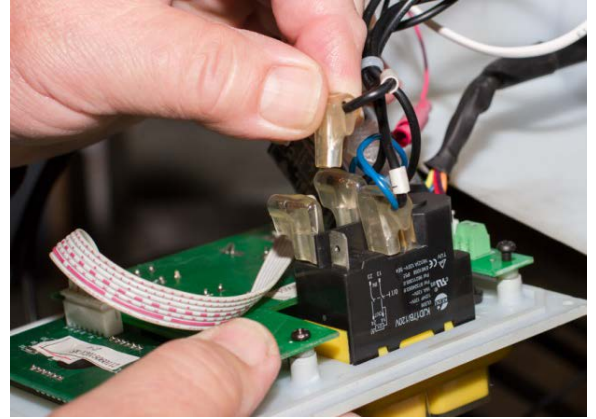
9. Remove the front panel of the control box and gently let the front panel hang down



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below the front of the control box. Mark a point in the upper right corner inside the control box about 3/4" from the top and 1/2" from the side. Drill a 3/8" hole at this point and debur the hole. Run the safety switch wires and 12VDC power adaptor wires through the hole and into the control box.

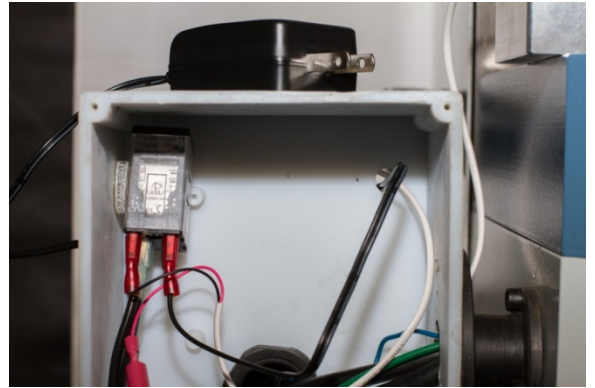
10. Refer to the Wiring Diagram at the end of this document for the next several steps.
11. Remove the wire marked 1 indicated in the picture to the right from the E-stop switch.
12. Plug the 1/4" male quick disconnect lead of the relay into this female connector which was removed from the E-Stop switch in the previous step.
13. Plug the supplied 1/4" female quick disconnect of the relay into the male connector on the E-Stop switch.
14. Connect the 12VDC+ wire (marked with dashes) of the power adaptor with the Red wire of the safety switch with one of the supplied lever nuts. Pull open the levers so they are perpendicular to the body of the nut, insert the wires, and close the levers firmly to make the connection.
15. Connect the stripped Black wire of the safety switch with the stripped Red wire from the relay with one of the supplied lever nuts.
16. Connect the stripped Black wire of the relay with the 12VDC- stripped black wire (no dashes) with one of the supplied lever nuts.





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17. Peel the cover tape from one side of the Velcro fastener and stick to the side of the relay. Peel the tape from the remaining side of the Velcro fastener and press into the back left corner inside the control box.
18. Replace the cover of the control box.
19. Restore power to the mill and test the operation of the safety switch by flipping the Spindle Brake "fork" open and closed. When the Spindle Brake is engaged (down over the spindle), power to the mill should be off. When it is flipped back up over the spindle, power to the mill should be on.



Congratulations, your Spindle Brake Flip is now installed and ready for use!

Please email the address below with your comments and questions.

Wiring Diagram

12VDC		Safety	
<u>Adaptor</u>		<u>Switch</u>	
(+) 1	-----	1	
(-) 2	└─┘	2	└─┘
		<u>Relay</u>	
	└─┘	5	1 └─┘
		2 —	to mill E-Switch wire that was disconnected
		4 —	to E-Switch 1/4" male connector from which the wire was removed
		x	