

## Spindle Brake for SX3 Installation Guide

Thank you for purchasing the Spindle Brake from Priest Tools. I developed this tool because I found it awkward and cumbersome to make tool changes using the spindle spanner and hex wrench supplied with my mill/drill. So I searched the Internet for a better tool, but did not find a satisfactory solution.

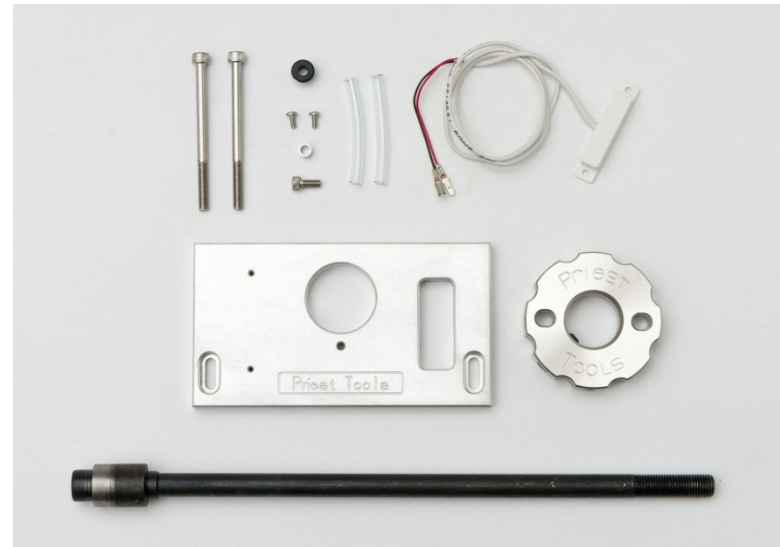
I decided to design and build a tool that made tool changes easier and more convenient. The Spindle Brake is made from alloy 303 stainless steel and is machined to exacting specifications in state-of-the-art CNC machining centers. The Safety Switch ensures that the mill cannot be turned-on while the Spindle Brake is in place. The Spindle Brake is a very high quality tool that works well and is a great addition to your collection of mill accessories.

I am very interested in your feedback on this product. Please email me with your questions, comments, or concerns at [gregpriest@cox.net](mailto:gregpriest@cox.net). If requested, I will respond to your inquiry at my earliest opportunity.

I hope you enjoy using the Spindle Brake from Priest Tools for many years to come.

Greg Priest  
Priest Tools, Inc.

### What's Included









### Hardware

1. Spindle Brake disc
2. Spindle Brake plate
3. Safety switch
4. 5 x 70mm socket cap screws (2)
5. 8-32 x 3/8" socket cap screw
6. 1/4"OD x 3/16" L x #8 spacer
7. #4-40 x 1/4" machine screws (2)
8. Rubber grommet
9. Drawbar
10. Instructions



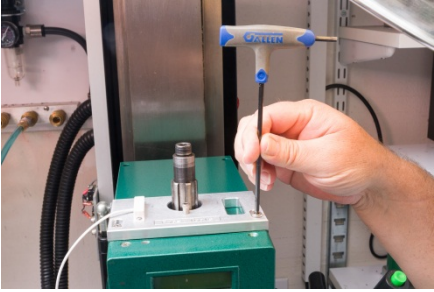
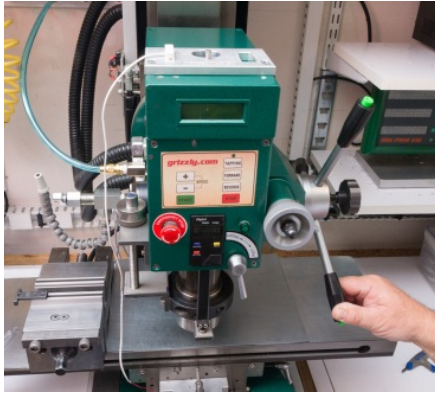
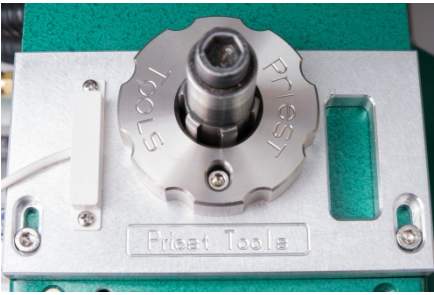

### Tools required for installation

1. #1 Phillips screw driver
2. 9/64" & 4mm hex wrenches

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<ol style="list-style-type: none"> <li>1. Remove power to the mill.</li> <li>2. Remove tooling from the Spindle.</li> </ol>		<ol style="list-style-type: none"> <li>5. Remove the lower left screw from the display housing.</li> </ol>	
<ol style="list-style-type: none"> <li>3. Unscrew and remove the Spindle Cover.</li> </ol>		<ol style="list-style-type: none"> <li>6. Enlarge this hole to 9/32. Be sure to firmly control the drill so that it does not "hog-in" and deform the hole.</li> </ol>	
<ol style="list-style-type: none"> <li>4. Remove the Spindle Cover Base by unscrewing 3 M4-.7 X 10MM cap screws and lifting the cover over the spindle.</li> </ol>		<ol style="list-style-type: none"> <li>7. Clean and debur the hole.</li> <li>8. Insert the supplied rubber grommet.</li> </ol>	

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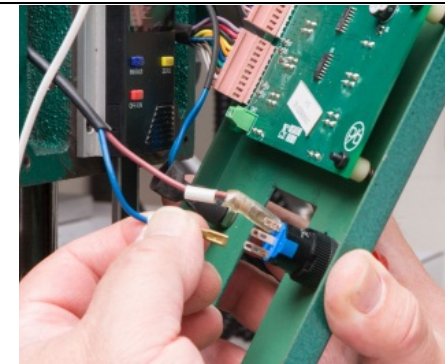
<p>9. Remove the 2 front M5-.8 x 40MM cap screws from the Belt Cover on top of the mill.</p>		<p>14. Unscrew and remove the Hub &amp; Lock Bolt on the lower right corner of the Control Panel.</p>	
<p>10. Mount the Spindle Brake Plate on the top front of the mill as shown using the 2 supplied M5-.8 x 70M cap screws. <u>Do not tighten at this time.</u></p> <p>11. Mount the supplied #8-32 x 3/8" lock screw and spacer onto the Plate.</p> <p>12. Mount the supplied Safety Switch onto the Plate as shown.</p>		<p>15. Using the quill, lower the spindle to its lowest point and lock the quill using the Fine Feed Lock Knob on the end of the Quill.</p> <p><u>Important, the Control Panel will not be able to be removed if this is not done first.</u></p> <p>16. Lower the mill head to near its lowest point.</p>	
<p>13. Slide the Spindle Brake Disc down over the top of the drawbar and spindle and rotate it into place so that one of the slotted holes in the Disc slides down over the lock screw and the Disc is flush with the Plate. Adjust the Plate so that the lock screw is in the center of the slotted hole in the Disc. Then tighten the two socket cap screws installed previously securing the Plate to the top of the mill.</p>		<p>16. Remove 4 M4-.7 X 16MM flat head machine screws holding the Control Panel. Carefully remove the Control Panel and gently let it hang-down below the mill head.</p>	

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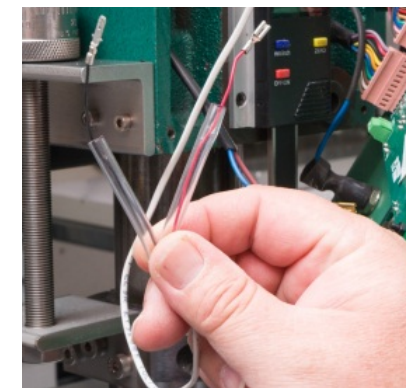
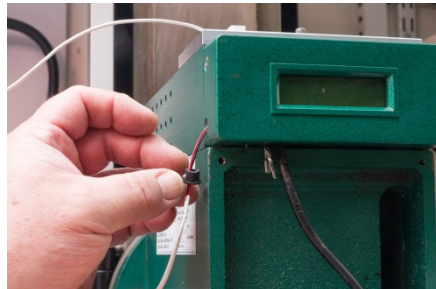
18. Gently bend a 3" curve in the end of the Safety Switch wires so that they can be routed into the Control Panel space. Route the Safety Switch wire through the grommet, the hole drilled above, down through the matching notches in display housing and Control Panel to the E-Switch.



19. Disconnect one wire from one of the E-Switch lugs.



20. Slide the supplied rubber tubes over the ends of the safety switch wires.

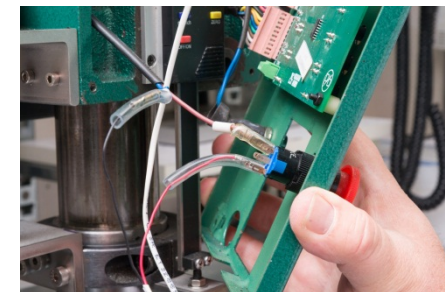


Pull the excess wire all the way through. Leave some slack in the wire so that it is not taught.



21. Connect the female Safety Switch wire to the lug on the E-Switch where the wire was removed and slide the tube over the connection.

22. Connect the male Safety Switch connector to the female connector that was removed from the E-Switch. Slide the other tube over this connection.



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23. Replace the Control Panel. As you bring the Control Panel back up into place, carefully tuck the Safety Switch and E-Switch wires back into the cavity in the mill head behind the E-Switch.



24. Reinstall the Hub & Lock Bolt on the lower right corner of the Control Panel.

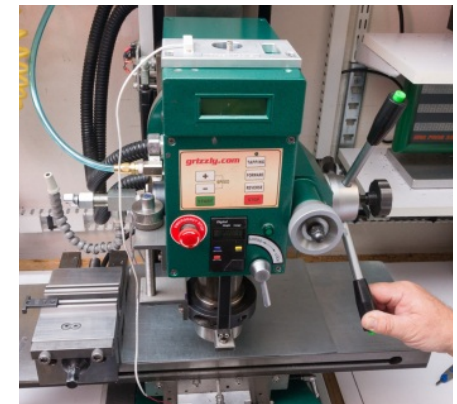


Make absolutely certain that the wires leading up into the notch on the top left of the Control Panel and the bottom left of the display housing are not pinched between the mill head and Control Panel.

Install the 4 screws that hold the Control Panel in place.



25. With one hand on a quill handle, release the spindle by turning the Fine Feed Lock Knob and raise the spindle to its top position.



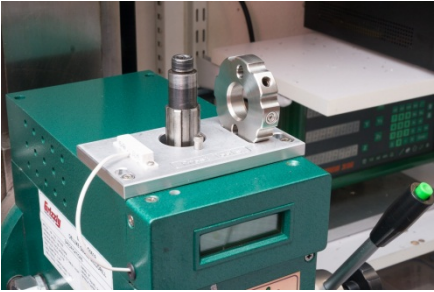
Gently tug on the Safety Switch wire to make sure that it is not pinched between the mill head and Control Panel.



26. Test the operation of the Spindle Brake. Slide the Spindle Brake Disc down over the top of the drawbar and spindle. With the Spindle Brake Disc correctly in place, the spindle should be locked and the power to the mill cut. When lifting the Disc off of the plate, power should return to the mill.



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<p>27. Store the Spindle Brake Disc in the slot on the Spindle Brake Plate. This way, you will always know where it is and it serves as a visual queue as to whether or not the Brake is installed.</p> <p>Congratulations, the installation of your new Spindle Brake is complete!</p>		<p>30. <u>Adjustment of Tightness of Fit of Spindle Brake Disc to Spindle.</u> The self-locking 5/16-18 socket set screw can be turned using a 5/32" hex wrench to tighten or loosen the fit of the Disc as it slides along the mill spindle. This screw has been pre-set at the factory, but you may wish to fine tune the Disc's fit with the spindle of your mill.</p>	
<p>28. Adjusting the Spindle Brake. There are two basic adjustments that allow the Spindle Brake to operate smoothly. 1) The alignment of the slotted holes in the Spindle Brake Disc to the lock screw in the Plate, and 2) the tightness of fit of the Spindle Brake Disc as it slides over the top of the spindle.</p>			
<p>29. <u>Alignment of Spindle Brake Plate and Disc.</u> The Plate can be adjusted by loosening the two 5x70MM socket cap screws holding the plate to the top of the mill. Slide the Disc over the top of the spindle and rotate it into place flush with the surface of the Plate. If the lock screw is not in the center of the slotted hole in the Disc, then adjust the Plate and re-tighten the mounting screws for the Plate.</p>	