



4483 Solid Column Conversion Kit

Follow these steps to convert your Tilting Column HiTorque Mini Mill to a Solid Column HiTorque Mini Mill.



Head Teardown

Keep track of the fasteners as you disassemble the unit. You will need them for reassembly.

Follow these steps to disassemble your mini mill.

1. Unplug the power cord.
2. Remove the cover from the electronics box on the back of the column.
3. Remove the circuit board from the box, but do not detach any wires.
There are four Phillips head screws.

4. Disconnect the green or green and yellow ground wires connected to the column. There are two or three Phillips head screws.
5. Remove the box from the back of the column. There are four Phillips head screws.
6. Remove the cap screw and plastic bushing that limits the upward travel of the Z-axis.
7. Move the head up near the top of the column so the load is off the torsion spring. Using the locking lever on the right side, lock the head in place.
8. Slide the Z-axis stop up to the bottom of the head and lock it in place with the locking lever.
9. Remove the torsion spring assembly. Remove the anchor pin that slides in the arm first. You can control the spring by pressing down on the end of the arm. Then disassemble the spring pivot shaft and remove it.

Chris' Tip: Now is a great time to install an Air Spring Kit (PN 4005) to support the head. You can discard all those torsion spring parts.

10. Loosen the locking lever on the right side of the head assembly. Slide the head assembly up and off of the column. Set it aside. Pick up the gib that fell away and put it with the head assembly.
11. Remove the Z-axis stop from the column. Pick up the gib that fell away and put it with the Z-axis stop.
12. Remove the rack from the column. There are three flat head socket screws.

Table Teardown

13. Remove the left end cap from the table. There are two socket head cap screws.
14. Remove both chip guard bellows. There are two Phillips head screws under each end of each bellows.
15. Remove the table by cranking it all the way to the right. When the screw disengages with the nut, slide the table off the saddle. Pick up the gib that fell away and put it with the table.
16. Remove the two socket head cap screws that secure the Y-axis screw retainer.
17. Loosen the cap screw directly over the Y-axis screw that secures the Y-axis nut in the saddle.
18. Remove the Phillips head cap screw and washer from the back end of the Y-axis feed screw.
19. Turn the hand wheel clockwise to remove the Y-axis screw and retainer from the saddle.
20. Slide the saddle forward and off the dovetails. Pick up the gib that fell away and put it with the saddle.

Table Assembly

21. Loosen the Y-axis gibs two turns or more.
22. Slide the carriage assembly onto the dovetails of the new base. Insert the Y-axis gib.
23. Readjust the Y-axis gib. See your User's Manual for the correct procedure.
24. Lock the Y-axis using the locking lever on the right side.
25. Insert the Y-axis nut into the saddle and insert the Y-axis feed screw and move it into position by turning it counterclockwise.
26. Install the Phillips head cap screw and washer in the end of the Y-axis screw.
27. Replace the socket head cap screw and washer on the back end of the Y-axis feed screw.
28. Replace the two socket head cap screws that secure the Y-axis screw retainer. Be sure the graduation marks are on the top.
29. Move the saddle all the way to the front—as close to the hand wheel as you can. Snug the cap screw that secures the Y-axis nut. This should not be fully tight so the Y-axis nut can move left to right.
30. Loosen the X-axis gibs two turns or more.
31. Slide the table into place and replace the X-axis gib.
32. Engage the X-axis feed screw.
33. Reinstall the left end cap on the table. There are two socket head cap screws.
34. Readjust the X-axis gib. See your User's Manual for the correct procedure.
35. Replace the two chip guard bellows. There are a total of 8 Phillips head screws.

<p>Chris' Tip: If your column is not drilled and tapped for the chip guard bellows, drill and tap two holes. A drawing showing the proper location is at the end of these instructions.</p>
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Head Assembly

36. Install the new column on the base using the four hex head cap screws, four flat washers, and four lock washers included with the kit.
37. Install the Z-axis stop and gib on the column. The handle goes on the right side.
38. Install the rack on the column. There are three flat head socket screws.
39. Move the Z-axis stop about halfway up the column and tighten the locking lever.
40. Slide the head assembly down over the column and set it on the Z-axis stop.

41. Loosen the Z-axis gib adjusting screws a few turns. Slide the gib into place aligning the dimples with the gib adjusting screws.
42. Tighten the gib adjusting screws, then back them off about $\frac{1}{4}$ turn.
43. Reassemble the torsion spring assembly.
44. Replace the cap screw and plastic bushing that limits the upward travel of the Z-axis.
45. Mount the plastic electronics box on the back of the column.
46. Reconnect the green or green and yellow ground wires to the back of the column. There are two or three Phillips head screws.
47. Replace the circuit board into the box. There are four Phillips head screws.
48. Replace the cover on the electronics box. There are four Phillips head screws.
49. Readjust the Z-axis gib. See your User's Manual for the correct procedure.