

Bridgeport Spindle Rebuild Instructions



**H&W Machine Repair
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Bridgeport Spindle Removal

(Spindle Removal without Head Disassembly)

1. Lower the quill about an inch with the quill-feed handle and engage the quill lock.
 2. Identify the rotational position of the Nose Piece to the Quill by putting an alignment mark across both the Quill and Nose Piece. You will need this mark for final reassembly. You can use a Sharpe or other marker for this line.
 3. Using a 1/8" Allen Wrench, remove the nose piece set screw. It is located on the back of the quill, about 3/8 of an inch above the gap between the quill and the nose piece.
 4. Remove the Nose Piece by turning it counter clockwise. You may need to use a 2-pin spanner wrench to remove the Nose Piece.
 5. Release the quill lock, return the quill to its full up position and reengage the quill lock.
 6. Lower the table to a point where the Spindle can be removed (about 24" from table to spindle).
 7. Place a piece of wood or other soft material on the table top as a safety should the spindle fall unexpectedly.
 8. With the Drawbar in place, begin tapping on it with a soft hammer. This will drive the Spindle Assembly down and out the bottom of the Quill.
 9. You may need to remove the drawbar and use a brass or aluminum bar to tap the spindle down to where it can be removed.
- ALERT: The spindle will reach a point where it will fall, try to keep one hand on the spindle as it is coming out to keep it from free falling and hitting the table.*** (See line 7)
10. Once the spindle is removed, follow the Spindle Rebuild Instructions included in the Spindle Rebuild Kit.
 11. Check your Collet Alignment Key. This is the best time to change it as it is most accessible at this time.
 12. After the spindle is rebuilt, slide the spindle assembly back up through the quill,
NOTE: *When sliding the spindle assembly up you must go straight up through the Felt Washer and line up with the spline in the Splined Gear Hub.*
 13. Once you have cleared the Felt Washer and passed through the Splined Gear Hub, tap the spindle up into position using your soft hammer.
 14. Rotate the nose piece to the spot where the marks align and reinstall the socket set screw; make sure you do not over tighten the set screw. This could distort the shape of the lower quill, making it stick when retracting to the up position.

If you have any problems or questions please call:

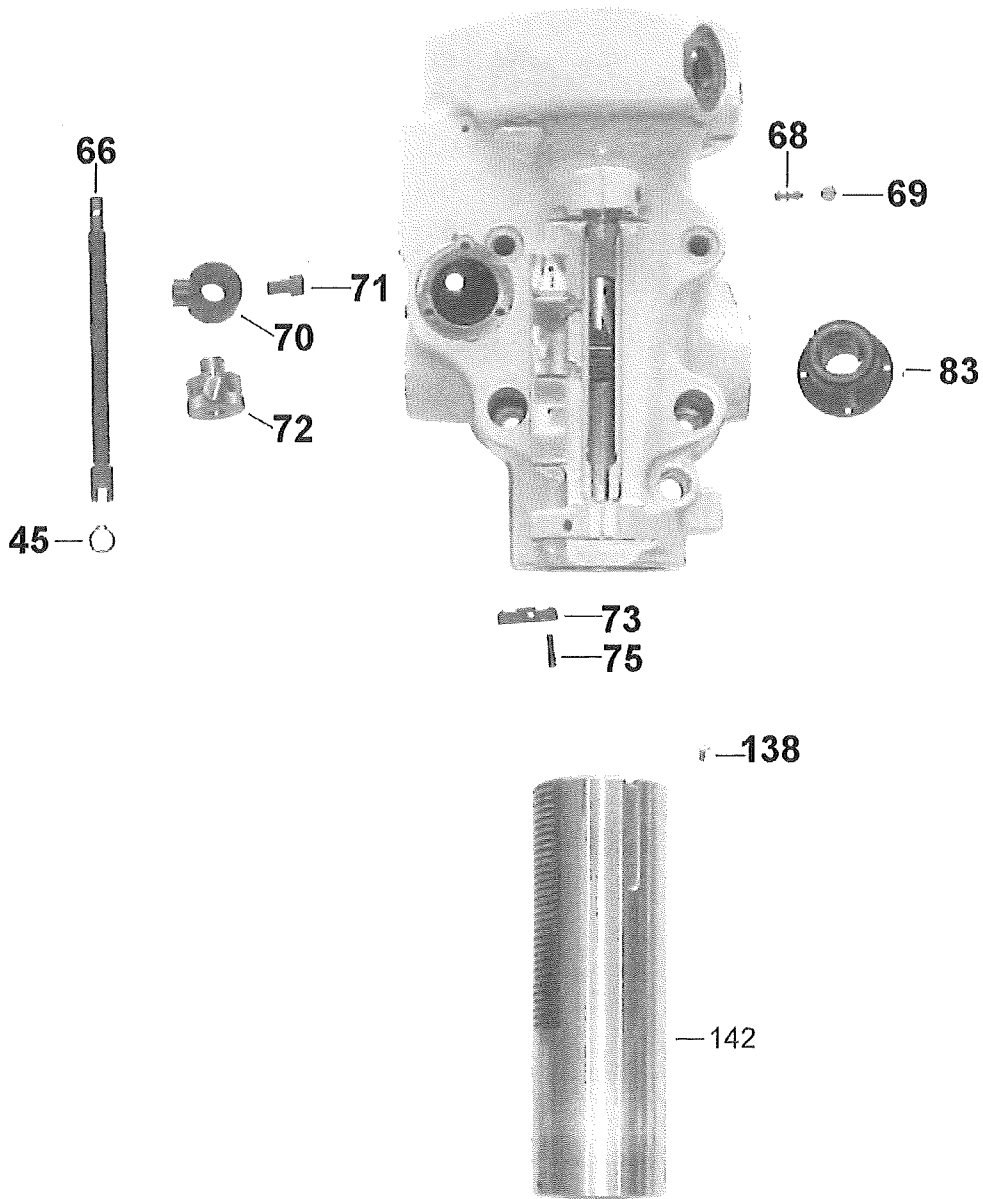
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Bridgeport Quill Removal

1. This procedure can only be completed when the top half of the head is removed from the quill housing (143)
2. Remove the two quill washer head screws (138) from the top of the quill.
3. Remove the reverse trip ball lever screw (69).
4. Remove the reverse trip ball lever (68) by inserting a 4-40 thread bolt into the end and pulling out (this part may come out very hard or may even be broken in two pieces, if broken the only way to remove the back half is with a pick).
5. Remove the trip lever pin (75) from the bottom of the half of the quill housing.
6. Remove the feed trip lever from the bottom of the quill housing (73).
7. Remove the snap ring (45) from the bottom of the quill stop micro screw (66).
8. As you feed the quill stop micro screw (66) down, unthread the micrometer nuts (72) off the top of the screw.
9. Loosen the clock spring assembly (83) by removing the two round head machine screws (1) CAUTION: This is spring loaded so be careful.
10. Set the quill lock on before proceeding beyond this step.
11. Remove the SHCS (71) from the front of the quill and remove the quill stop knob (70).
12. WARNING: Make sure you have a "soft" landing area below the quill in case the quill falls straight down before you can catch it.
13. Remove the spindle by releasing the quill lock and sliding the quill down through the quill housing. Some quill fall right out while some need to be tapped with a dead blow or rubber hammer to get the quill to come out.
14. Follow the quill disassembly instruction for bearing installation.
15. Reassemble by following the instructions in reverse order.

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Bridgeport Spindle Disassembly

1. Set the quill/spindle assembly in a vice to hold stationary (Do not over tighten or you may distort, scratch or damage the quill).
2. Remove the socket set screw (1307) from the back of the quill.
3. Using a spanner wrench, remove the nosepiece (1420) from the bottom of the quill.
4. Using a dead blow or other soft hammer, tap the spindle assembly from the top down through the quill until it can be removed (do not allow the spindle to fall out or damage may occur).
5. Remove the quill from the vice and put the spindle assembly in the vise clamping it to the upper spline on the quill (wrap the part to be clamped in a rag and tighten very lightly to avoid damage to the spline).
6. Using a spanner wrench, remove the lock nut (1416) from the spindle.
7. Remove the lock washer (1417) from the spindle.
8. Remove the upper bearing (1418) from the spindle (an arbor press is best to remove this bearing with).
9. Remove the sleeve (1419) from the spindle.
10. Using a soft hammer, tap the spindle bearings set (1422), bearing spacer set (1423) and the spindle dirt shield (1421) from the spindle by situating the spindle nose loosely between the jaws of a vice.
11. Check the collet alignment screw (1137) for damage (this is the best time to replace it if necessary).
12. Clean all disassembled components.
13. Flush the new spindle bearings (1422) with new, clean solvent. Divide the small cup of red grease (supplied) and work half into one bearing and the remainder in the other. Make sure you force the grease completely through each bearing and when completed each bearing should be packed about 1/3 full (do not over pack the bearing as that could cause excess heat).
14. When you install the new bearings the "thick" side of the outer bearing race should be facing each other.
15. Reassemble the spindle in the reverse order that you disassembled.

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R8 SPINDLE FOR A SERIES I BRIDGEPORT MILL

- 1416 Locknut
- 1417 Lock Washer
- 1418 Upper Bearing

1419 Sleeve

- 1422 Spindle Bearing

- 1423 Bearing Spacer Large & Small

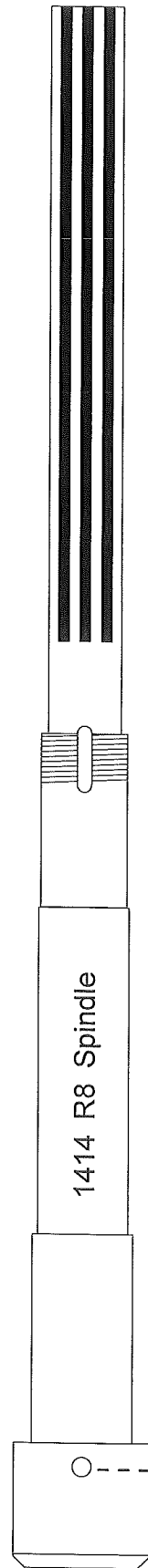
- 1422 Spindle Bearing

- 1421 Spindle Dirt Shield

Bearings are mounted BACK to BACK

1420 Nose Piece

1307 Socket Set Screw



□ 1137 Collet Alignment Screw

□ 1424 Special Socket Set Screw

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