

## Drawbar Assembly Removal

To perform this procedure, you will need a few common hand tools and a few special tools listed below before you begin.

Recommended tools:

- 1) HDW-195-TOOL (Drawbar removal tool)
- 2) SVT-0059 (3 jaw puller can also be used)
- 3) 3/8" extension
- 4) Ratchet and socket set
- 5) Allen wrench set
- 6) Extending magnet

**Safety first:** Remove the air from the machine and make sure all pressure is bled off before starting.

Place the small end of the 3/8" extension up through the bottom of the spindle then jog the Z axis down onto a piece of wood. Apply just enough pressure that the extension does not move (Figure 1).

Remove the head cover exposing the upper bridge assembly.



Figure 2  
Knock out cap

Disassemble the upper bridge assembly and tie it up taking caution not to put strain on the air lines and wiring. At this point you should be able to see the entire spindle pulley and the knock out cap on top of the drawbar. Remove the four socket head cap screws holding the

knock out cap on (Figure 2.)

Position the HDW-195-TOOL on top of the spring pilot and the SVT-0059 tightened down on top of the removal tool as shown in Figure 3.

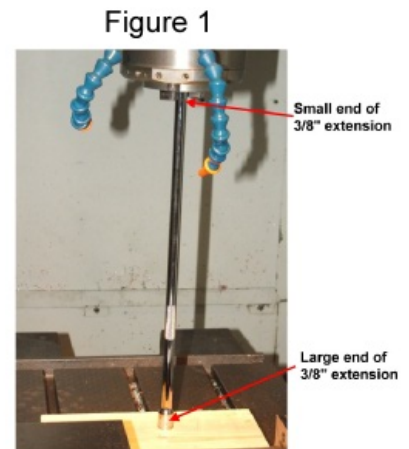


Figure 1

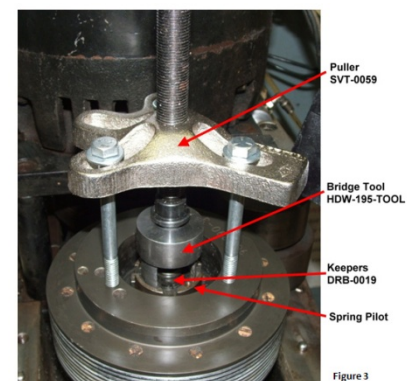


Figure 3

DRB-0003: Locking Drawbar, 10/15k RPM Machines  
DRB-0030: Non-Locking Drawbar, 7.5k & Below Machines  
\*\*Generally, but not always the case\*\*

DRB-0003 Shown Above

Compress the spring pilot with the SVT-0059 until the keepers are free to be removed. Using an extending magnet remove the two keepers and then decompress the SVT-0059. At this point the spring pilot can be removed. Cup your hand under the spindle to catch the drawbar and retention ball bearings (Figure 4) then jog the Z axis up.

Remove the 3/8" extension and the drawbar from the bottom of the spindle. From the bottom of the spindle you can pull the drawbar out and see the floater ring. To remove the Floater ring, insert an extending magnet and pull out the two ball bearings holding it in. The drawbar will now come out the bottom of the spindle, and you can remove the Bellville washers from the top. When replacing the Bellville washers, stack them in alternate cup configurations from bottom to top and make sure you have at least one washer peaking above the spindle shaft. This will insure you are very close with the number of springs to put back into the spindle for proper retention pressure. Replacement springs can be ordered from FadalCNC.com using this part number: HDW-195-TOOL.

It is also HIGHLY RECOMMENDED that you use a drawforce gauge to verify your drawforce tool pressure for reasons of safety. FadalCNC.com offers these gauges for purchase under part number: SVT-250 and is a stocked item for immediate shipment. Reverse the process to install your new drawbar.

Figure 4

