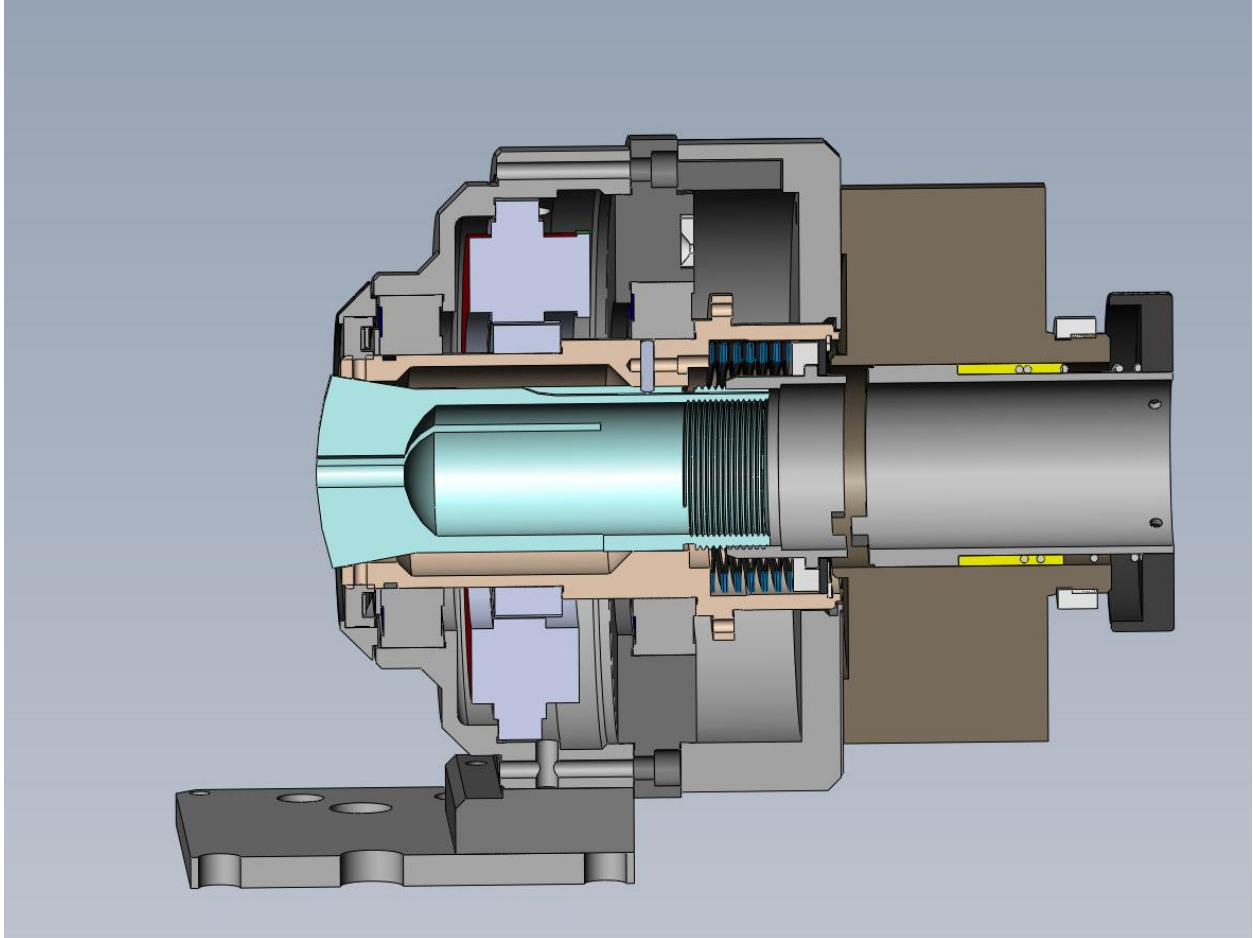


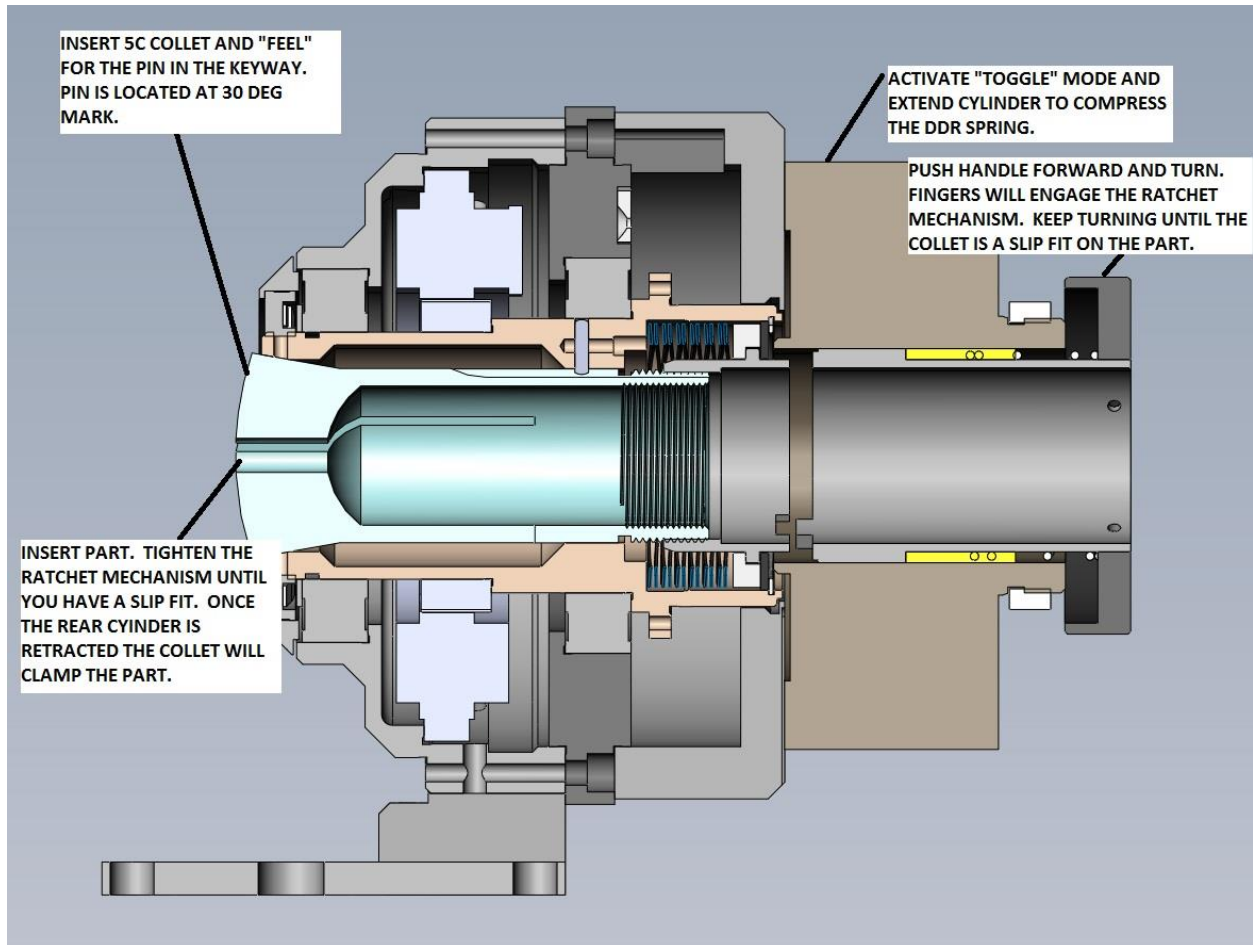
DDR-01C Operation and Maintenance

Below is a section view of the DDR-01C



DDR-01C OPERATION:

Proper Adjustment of 5C collets in the DDR



Activate the "Toggle" mode on the machine (Press and hold the collet button and then the reset button, and then let go of both). Press the collet button and watch the rear knurled black handle of the DDR move inwards towards the back of the cylinder (3mm Max, if more, adjust stop ring) and stay compressed. This will hold the spindle in place while tightening the 5C collet.

Install the 5C collet into the spindle of the DDR. Take note to roughly align the keyway of the collet with the M2.5 location pin in the spindle. The location pin is located approximately at the 30 degree mark.

Gently push on the front of the 5C collet and push in the rear knurled black knob of the DDR. Turn the knurled knob, and you'll feel it engage the ratchet

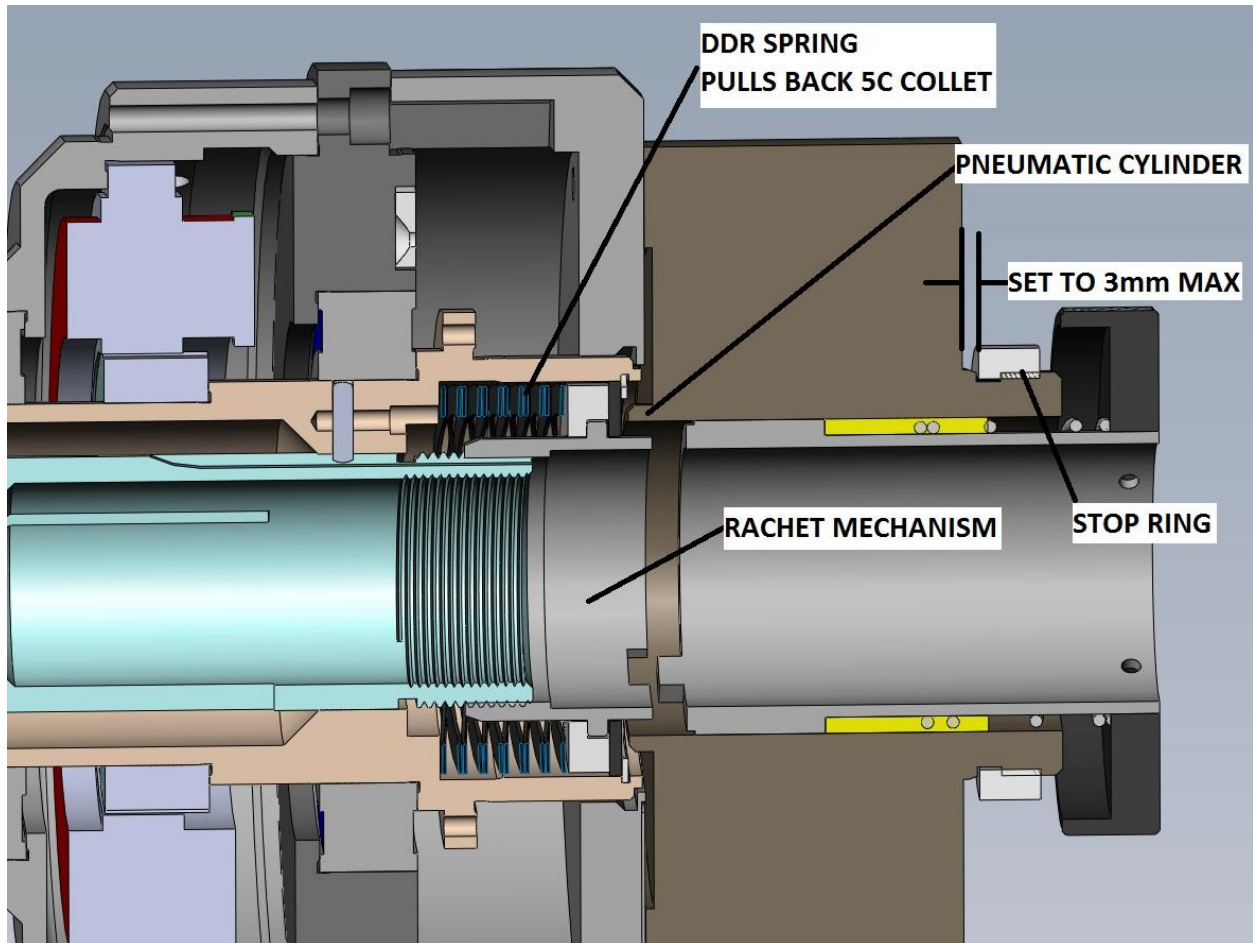
mechanism. As you continue turning the knurled knob the 5C collet will be drawn into the spindle of the DDR. Insert a part and continue turning the knob until the 5C collet is a slip fit with the part. If you have to really crank down on the rear knurled knob, the 5C collet is most likely too big for the part.

Once the 5C collet is a slip fit with the part, take it out of “Toggle” mode (Press and hold the collet button and then the reset button, and then let go of both). Now it should be in “Momentary” mode. Each time you push the collet button the cylinder will extend and open the 5C collet. When you let go of the collet button the cylinder will retract and close the 5C collet on the part.

IT IS EXTREMELY IMPORTANT TO LEAVE THE DDR IN “MOMENTARY” MODE WHEN NOT CHANGING COLLETS! If the machine is left in “Toggle” mode with the cylinder compressing the DDR spring, the encoder will tell the motor to fight for position, and depending on the tuning, the amp could pump a considerable amount of current into the motor. This could cause the DDR to get very hot over time, and possibly damage the motor windings. The Prolas 4000 can utilize the temperature switch in the DDR to prevent damage, but the older systems cannot.

DDR-01C MAINTENANCE:

Broken DDR Spring



A broken spring can occur if the stop ring is set to more than 3mm. Most occurrences occur because the white delrin stop ring breaks, which allows the pneumatic cylinder to travel more than 3mm. This over traveling causes the spring to fatigue and break. Kohler Design has an aluminum replacement now available (Kohler# 100.5219B).

Symptoms of a broken spring are:

1. Rear black knurled handle is hard to turn when engaged with the ratchet mechanism.
2. Collets are hard to load because the ratchet mechanism is tilted.
3. Collets may not close on the part or they will be looser.

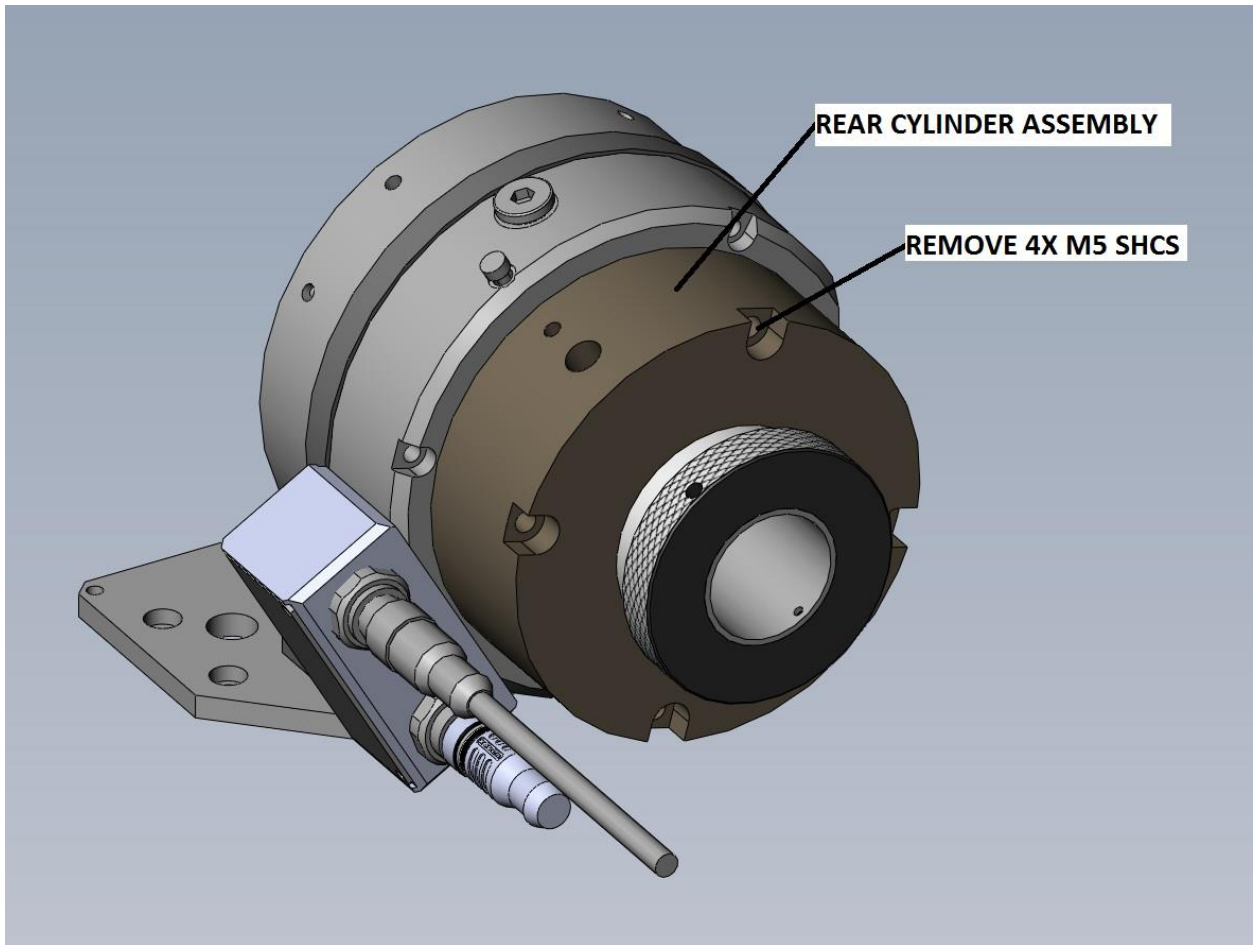
Collet Modification

Applications in which the rear stop ring must be set to more than the recommended 3mm, in order to close the collet on a part, should select a slightly smaller collet or have the collet modified to close more easily. The DDR only has 300lbs of closing force. Below is an example of a modified collet. It has had a bore placed at the 3 ends of the slots. This dramatically aids in closing the collet.

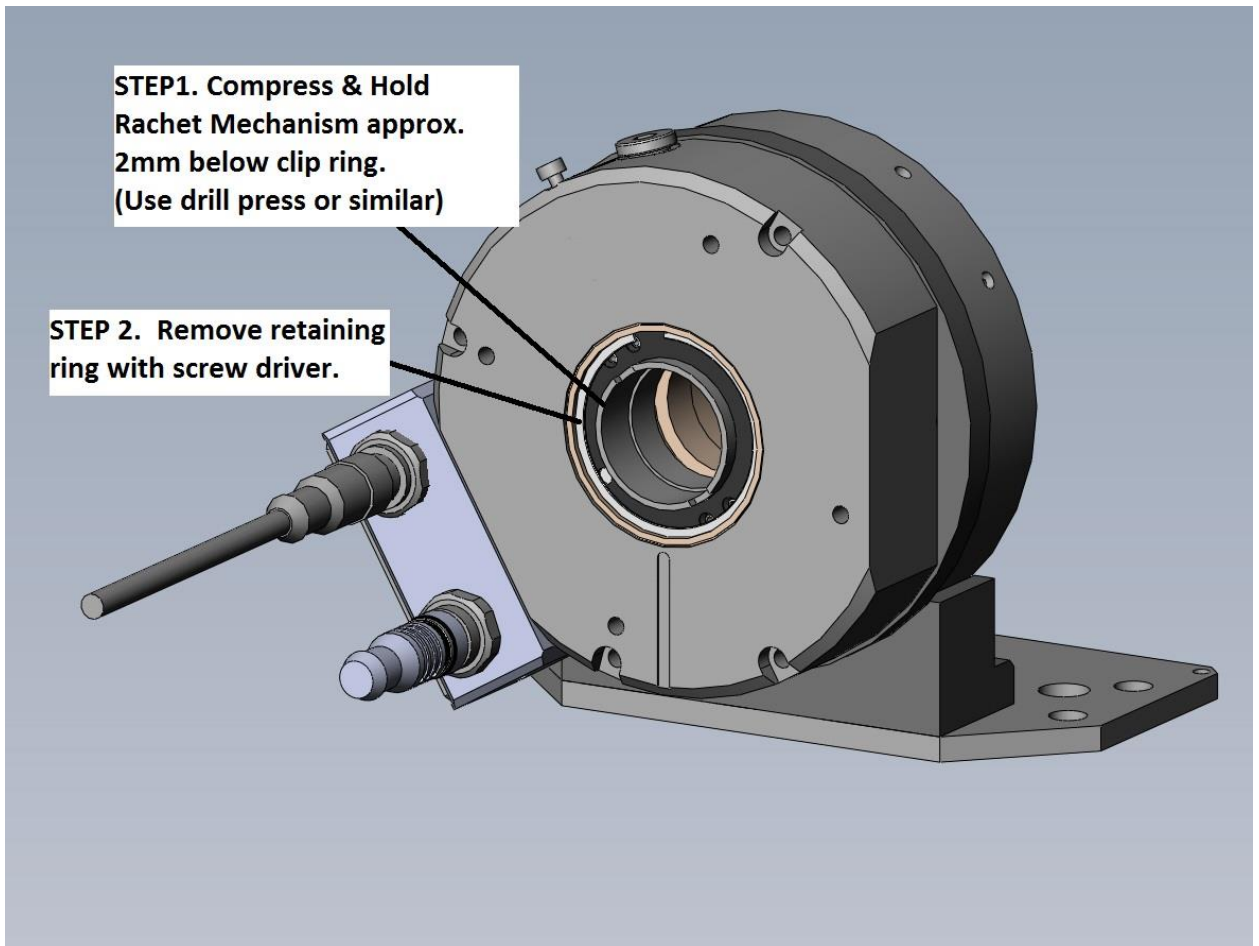


Spring Replacement

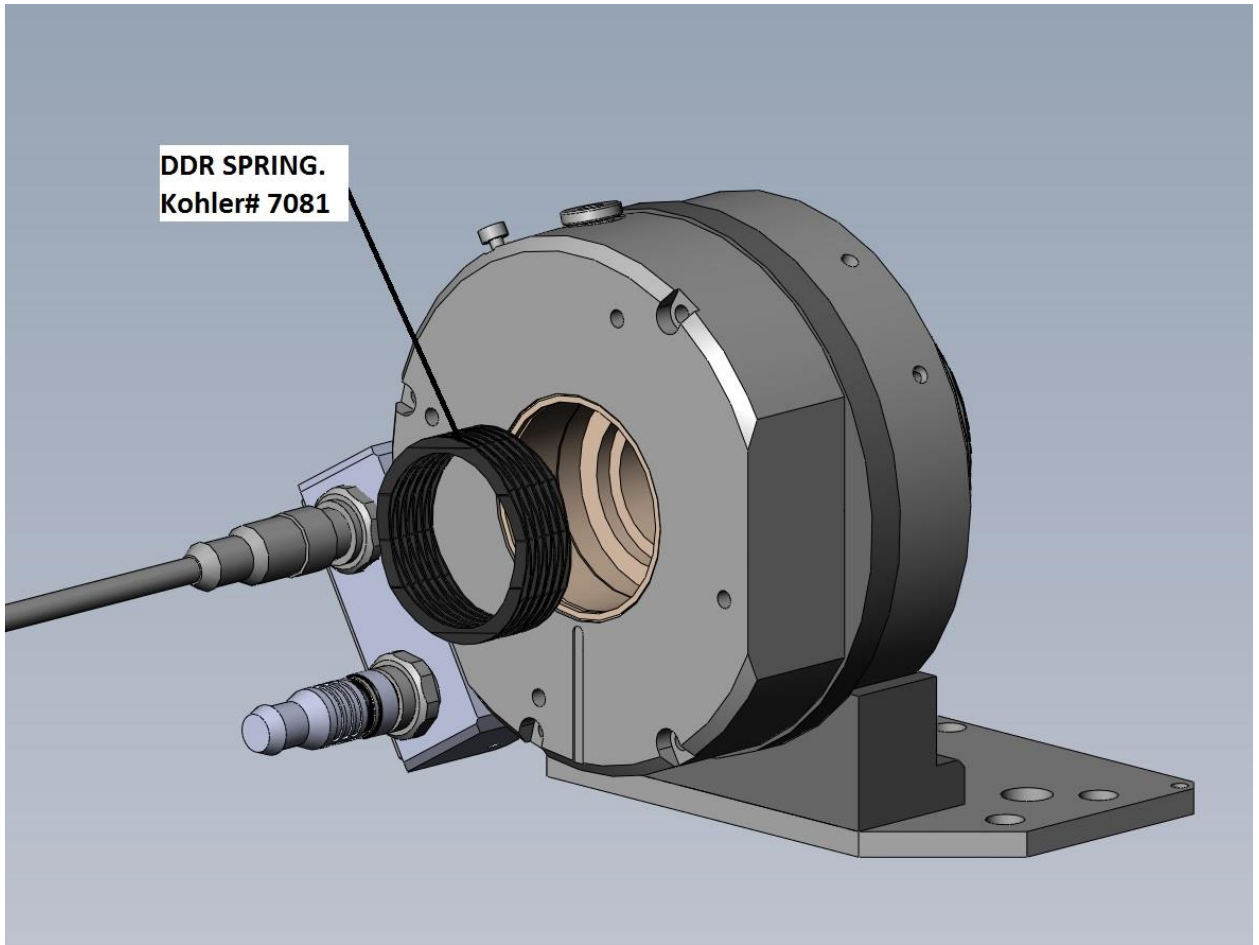
1. Remove the rear pneumatic cylinder assembly



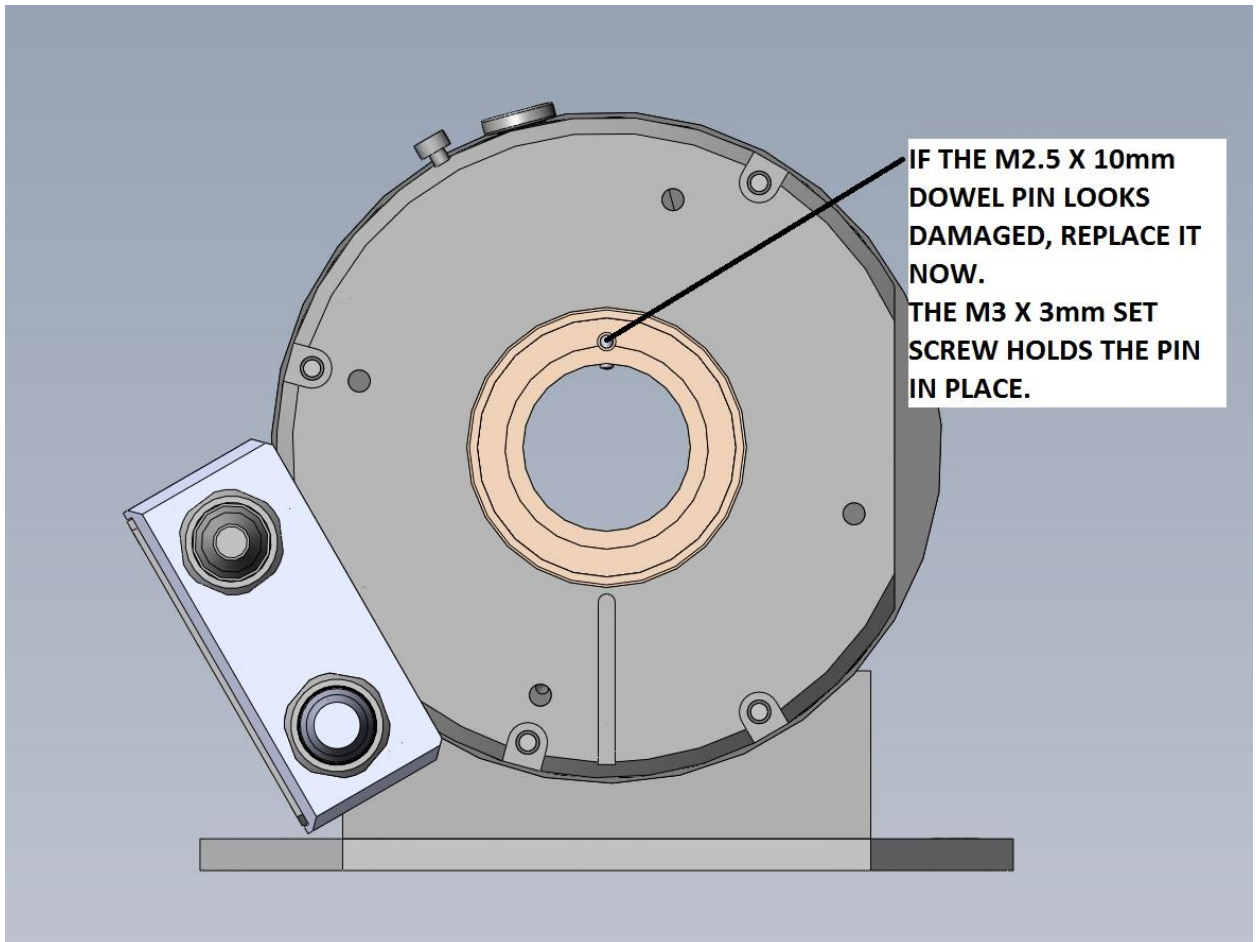
2. Compress 300lb DDR spring with Mill or Press approximately 2mm.
Remove Clip Ring.



3. Remove Ratchet Mechanism and pull out DDR Spring.

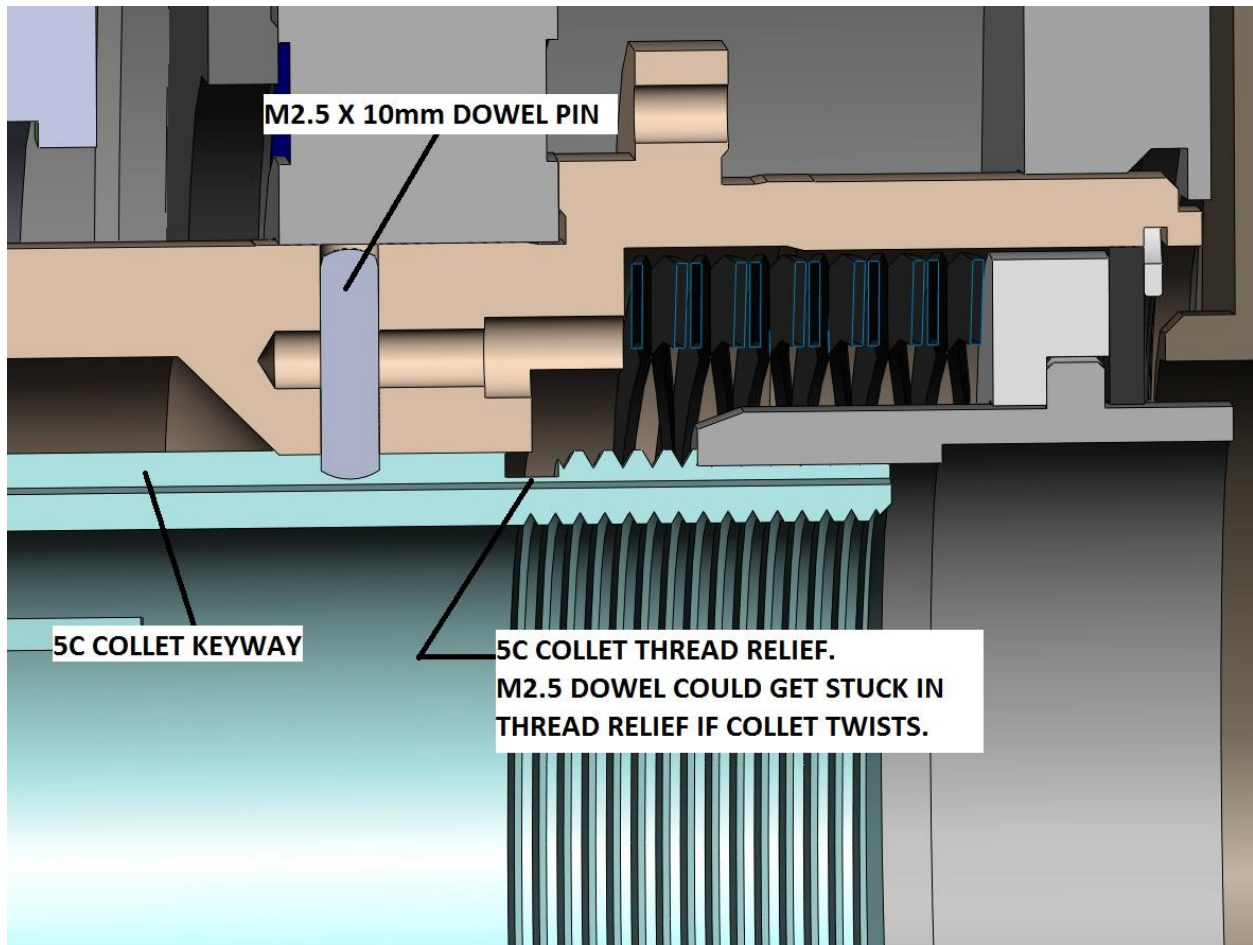


4. If the 5C locating dowel pin (M2.5 x 10mm) looks damaged replace it now. If not, Insert new DDR spring, and reverse the procedure.



If replacing the M2.5 dowel pin, do not re-use the M3x3mm set screw (install new one). Make sure when installing a new M2.5 dowel pin to insert the tapered end first into the spindle. DO NOT force the pin into the hole, it should go in easily. If forced into the hole, it may not be removable ever again.

Stuck Collet While Inserting Or Removing.



The 5C collet needs to be guided out of the DDR with one hand, while the other hand turns the back handle. This requires the “Toggle Mode” to be on, so that the spring is compressed and the spindle will not turn.

If the M2.5 dowel pin happens to be lined up with the 5C thread relief groove while being removed, and the 5C collet twists, it is possible for the M2.5 dowel pin to get stuck in the relief groove. This will cause the collet to become stuck. **DO NOT FORCE IT OUT!** Try and line the 5C collet keyway back up with the M2.5 dowel pin and turn the rear handle to remove it (The pin is located approximately at the 30 degree mark).

Lubrication

Lubrication is NOT necessary. If you feel you need lubrication to aid in threading in the 5C collets into the ratchet mechanism, apply the lubrication to the 5C collet threads ONLY. DO NOT spray lubricants inside the DDR.