

## INDEXING PROBLEMS ASSOCIATED WITH THE 900/950/PLATINUM

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Now appears to be the time to spend some time discussing the present rash of calls I have been receiving relating to the above problem(s).

I seem to be spending about half my time assisting shooters in solving these problems and that is detracting from me getting orders out the door> I seem to be working well into midnight on many occasions. Therefore, I present the following information to help you self-diagnose your problems into solutions.

**You need to read through this BEFORE you call me for help, or I will direct you to this document on my website, before I spend any appreciable time on the phone.**

First, let's talk about the 900/950 and Platinum and how they differ from the other P/W progressives in how they index. Incidentally, the 900 and 950 could be 20+ years old.

All three models index using a center vertical shaft with a groove and either a ball-bearing (900's prior to serial number 4390), or a small collar "sleeve" and machined hex nut (machined screw on the ball-bearing machines) serving as the "axle" for that collar. (See picture).

NOTE: I recently had in the shop a 900 serial number 4330, which according to the factory's information should have had a ball-bearing (it was the 60<sup>th</sup> reloader PRIOR to the design change), but it had the collar. FYI.

900's prior to 4390 had a center vertical shaft with a semi-circular groove in which a ball-bearing traveled up and down and served to rotate the turret (or cylinder, as I call it). It was touchy to set properly, BUT it was much harder than the collar design, in my opinion.

Oh, another thought before it escapes me: The 950 and 950 Elite differ only in utilizing shorter blued "sizing dies" or "shell holders" that measure about 1" in height. The majority of the 900's and Platinum's sold have the full-length sizing dies. Also, the only difference between a 950 and 950 Elite (that word "Elite" does NOT mean it is a better machine) is that the Elite had a couple of options that were standard. I kind of disapprove of the use of the word "Elite," because it was NOT elite. You could purchase these for any machine and add them to the 900, Platinum, 800B/C/CVT, 800 Plus, etc.

## HOW IS COMPLETE INDEXING ACCOMPLISHED?

Center vertical shaft models as listed above have a groove, or keyway, (we'll call the ball-bearing raceway a groove for practical purposes). That groove is 90% vertical, however at the base of the groove is a dog-leg.

As the handle is/was pulled down, the Crosshead would raise causing the collar to slide vertically down the groove until it hit the dog-leg. At that point the turret was forced to rotate clock-wise; or as we call it "INDEX."

Unfortunately, and because of extended wear, the turret would/could index about 99% of the way, but would stall out and then not center the dies under the tooling. To overcome this issue, an aluminum "L" bracket was used with a strong coil spring and a ball-bearing sitting on top of it. This aluminum "L" bracket was bolted to the underside of the Crosshead at the 9:00 position. It is held in place with two ¼x20 hex-head bolts. You need to check the dog-leg too for burrs. (See photo).

Because ALL coil springs lose their elasticity from the first moment they are compressed, over a period of time, they shrink and lose their rebounding properties and then fail to serve in full capacity. When this occurs, and it WILL OCCUR, the turret just can't make that final 1% movement to full index. Hey, it's a machine, and machines need maintenance and parts replacement as with most mechanical devices.

Also, if (I say "if" candidly, because it really is WHEN) the collar which rides in the center vertical shaft's keyway wears, this then causes a failure to even get to the 99% index rotation. There is no "if," because this collar WILL WEAR. If you have not changed this collar in over 10,000-20,000 reloads, you should.

From a physics point of view, this collar receives and provides an enormous amount of torque. This little collar is what generates the force to move the entire turret, loaded with shells, and in some cases, shells that drag on the crosshead. The collar itself is a poor design simply because it does not always "roll" on its axle hex bolt, but will slide up and down the keyway instead. As it slides, and because you have not cleaned and thoroughly and properly greased this keyway, shot, powder, dirt, etc beats the hell out of that little collar, and excessive clearance or a flat spot on the collar occurs.

A better design would have been the use of a needle bearing, and I am sure the factory thought of that. They did not utilize that design because there just was not enough metal in the center shaft to adequately provide a workable keyway and dog-leg machining.

**NOTE:** Because the collar is made of soft 12L14 steel, I have available a hardened steel collar that is more resistant to the above mentioned wear causes.

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### **CORRECTING THE PROBLEM(S)**

1. Install a new coil spring in the "L" bracket and ball-bearing. (See below issue).
2. Remove the top toolhead and thoroughly clean and re-grease the keyway groove. Don't use heavy grease. I recommend my aLube or STOS or even Vaseline.
3. Remove the collar and hex-head bolt axle (models higher than 4390) and install new replacements.
4. Reset turret timing, remembering that there are 2 PAIRS of set-screw in the turret. Remove the outers and loosen the inners to readjust the turret.
5. Remove the two outer pairs of smaller set-screws at the BASE of the reloader holding the left and right vertical shafts, and then loosen the inner set-screws. Smack these shafts briskly to ensure they are fully seated DOWN in the reloader's base.
6. Reinstall all outer set-screw and tighten.

### **"L" BRACKET INSTALLION CONCERNS**

When reinstalling the "L" bracket, you MUST thoroughly grease the new coil spring such that there is sufficient great to hold the ball-bearing in place during installation.

You then should raise the Crosshead (pull operating handle down and leave it down), and VERY CAREFULLY insert the "L" bracket straight up ensuring that the ball-bearing stays on TOP of the coil spring. You may want to use a flashlight to check the bearing's placement.

While steadily and carefully holding the bracket, coil spring and ball-bearing in place, insert one of the ¼x20 hex bolts and hand tighten all the way. Only then can you remove your hold on the bracket. If you do NOT hold the bracket tightly in place, the ball-bearing will fall off and into the recess in the Crosshead. If/when this happens, the turret will not make the 1% final index.

### **PERSONAL NOTE**

I have owned every single P/W progressive model in the past 38 years. I own Patriot #3 and even worked on its or other development in conjunction with the factory. I have also been to the factory numerous times talking shop. I also worked on the development of the Automate for both the P/W and Spolar. I have worked on my own to maintain them, and have rebuilt hundreds for my customers. I could be wrong, but I think I have a good grasp on their idiosyncrasies. Every single progressive on the market has its own set of idiosyncrasies. I have owned Mec, RCBS, Hornady and several Spolar's. I do know what I am talking about – they ALL have their issues.

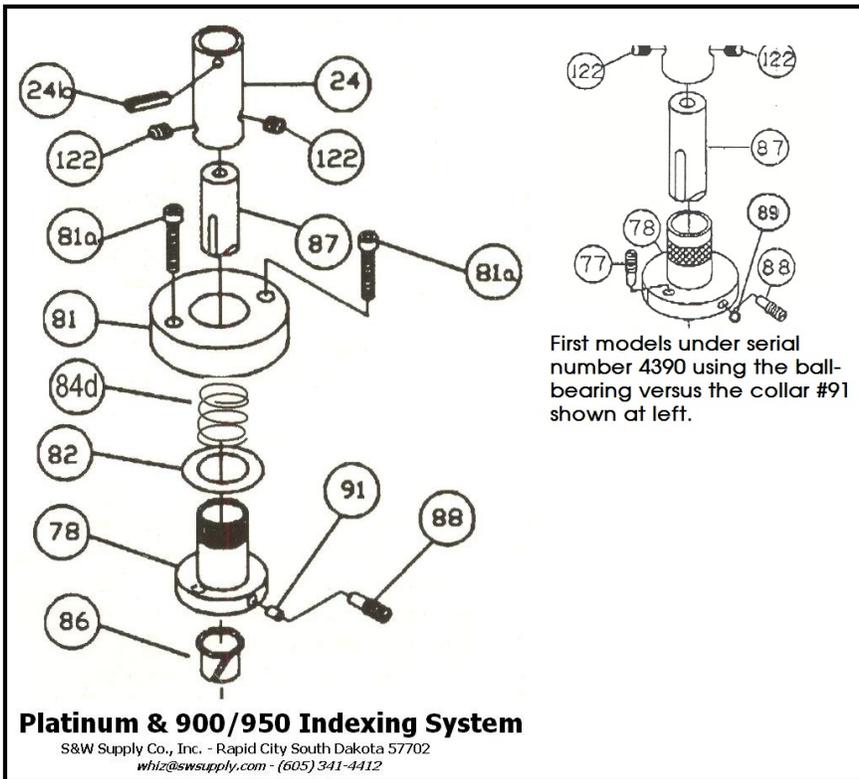
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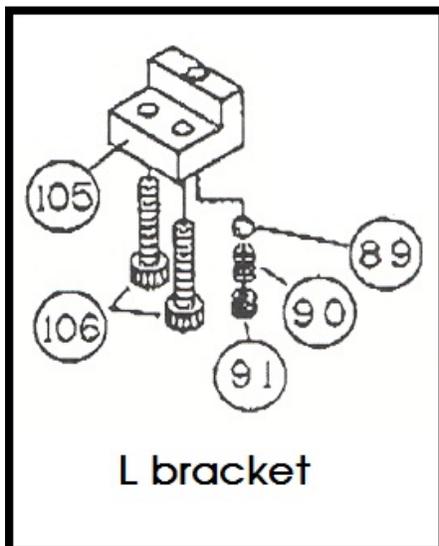
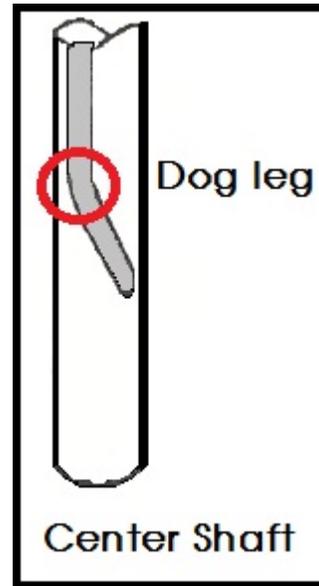
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My website location is located at the bottom of this page.



First models under serial number 4390 using the ball-bearing versus the collar #91 shown at left.



91 Some models had this hex set-screw which permitted the easier install of the ball-bearing (#89) and coil spring (#90).

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