

# MAINTENANCE & LUBRICATION

## For

### Ponsness/Warren Reloaders

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**APPLICATION:** These recommended instructions are written for the Platinum 2000, 900/950, L/S-1000, and the 800 Plus, and the old 800B.

#### **NOMENCLATURE OF REFERENCED PART NUMBERS**

PARTS SCHEMATICS REFERENCE NUMBER WILL BE AS FOLLOWS

“P” = **Platinum 2000**, such as **P66** for part #66 as shown in the Owner’s Manual.  
“+” = **800 Plus**, such as **+101** for part #101 as shown in Owner’s Manual.  
“B” = **800B/C/CVT**, such as **B66** for #66 or **B41<sup>1</sup>** for #41<sup>1</sup> as shown in the Owner’s Manual.

#### **RECOMMENDED LUBRICANTS**

- aLube<sup>®</sup> by S&W Supply or STOS<sup>®</sup>
- a VERY LIGHT wheel-bearing grease
- 3-in-One<sup>®</sup> Oil (or similar)
- Powdered graphite (available at automotive parts stores; used in door locks)
- Loctite BLUE

#### **GENERAL MAINTENANCE**

Periodic lubrication, cleaning, and maintenance will give your Ponsness/Warren reloader additional years of trouble-free operation. This is a mechanical machine and as such, it requires periodic attention to insure it operability.

1. Keep your machine clean and free of debris including freestanding shot and powder. Powder had a tendency to adhere to lubricants and this in turn inhibits the lubricant’s ability to serve its purpose.
2. Periodically clean the wad guide channel located on the left vertical shaft.
  - A. To accomplish this, you should loosen/remove the wad carrier bolt (P66, +101, B21<sup>2</sup>) and the wad carrier hold-down button (P94, +78, B22) to permit free movement of the wad carrier assembly.
  - B. Closely inspect this bolt for signs of wear – if you see worn flats on this bolt it should be replaced – it determines the “swing” of the wad carrier assembly.
  - C. Check the plastic ring (P73, +108, B21<sup>7</sup>) on the underside of the wad guide carrier for a crack and/or if the coil spring is exposed. Occasionally this coil spring will work itself down and get lodged between the plastic ring and the aluminum lower wad guide housing. It cracked, replace for certain.
  - D. Thoroughly clean this groove of all grease and shot and powder residue.
  - E. Slide the wad carrier assembly up and down to clean the entire groove.

- F. Re-grease this slot on the Left Guide Post (P65, +110, B27ax) – Use STOS, wheel-bearing grease, or aLube™ grease. I prefer aLube™ grease for all my reloaders and Perazzi shotguns. It is available from me or a good substitute is available at auto parts stores such as NAPA stores. It is soft, white Lithium based grease designed for high precision equipment.
- G. Re-grease the left guidepost, and return the wad carrier to it normal condition. NOTE: When re-inserting the wad carrier bolt, MAKE SURE you can see NO WHITE plastic in the threaded hole. There is a slot in the white nylon plastic bushing permitting the insertion of this bolt. You may have to rotate the housing to “find” this original slot.
3. Clean and lubricate the Right Guide Post (P96, +77 B27b). I recommend a small ring of grease both on top of the Crosshead and below it at the posts.
4. Remove the top Shot and Powder Reservoir and the two plastic gears with related shot and powder bushings.
5. Remove and clean the rack gear (P13, +17, B9) and the groove it slides in.
6. Remove the shut-off handles (P17, +22, B19) and screw them vertically down into the shot and powder shut-off plates in the threaded holes provided.
7. CAREFULLY and slowly pull these up to remove from the aluminum housing.
  - A. You have to gently “rock” these from side-to-side to get them to slide up, especially if this area is dirty from residue.
  - B. BE AWARE that there are two ball-bearings (P16c, +14, B10) which serve as detents located at 3 o'clock in the bottom-right side of the aluminum housing
  - C. Behind them are two (2) small coil springs (one in each hole) – one for the Shot shut-off plate and one for the Powder shut-off plate. These have a tendency to fall out and disappear.
8. Thoroughly clean the area under where these plates sit. No lubricant here except graphite, please.
9. Reinsert the ball bearing, coil springs, etc., if they have been removed or fell out. (NOTE – you can insert the coil spring from the other side (right side) by removing the small hex set screw.) The rear (shot) set screw is hard to get out due to the final crimp tool head's threaded rod. If you do this, do NOT over tighten these setscrews. They are not necessarily set flush with the aluminum housing.
10. Gently set in place the shot shut-off plate (NOTE: There is a stamped “S” on this plate). If you did not remove the screw-in handle, then you are re-inserting it correctly. You can place it in up side down, if you are not careful and if you have removed the handle.
11. Do NOT lubricate any of this area, except the rack channel BOTTOM. I recommend a small tube of graphite powder. Automotive stores carry this for door locks. Use sparingly.
12. You may want to Graphite under the Rack Gear. Insert the two black plastic shot and powder gears. The shot gear has a larger hole in it. Shot gear sets at the rear of the machine.
13. Pull the Rack Gear forward to align the plastic gears with the timing marks on the Rack Gear.
14. Some folks “advance” these gears a tooth or two. Don't do this. It is done so that it is easier to remove a shot or powder bushing. The CORRECT WAY to do this is to simply pull on the Rack Gear (towards you) a bit, which makes it easy to remove your bushings during the reloading operation.

### **DIE REMOVAL**

15. If your machine has the Die Removal System, then remove all eight dies from the machine.
16. If you do NOT have this system, then remove the thumbscrew holding in the Die Access Plate (black plastic, P97, +80, B-none used) located at the Shell Insertion Station. I call this Station 1; Station 8 being the finished shell ejection station.
  - A. Remove each die by rotation the machine slowing.
  - B. Thoroughly clean each die; inside and out. You can use a drill and gauged cleaning brush. I do this with a high-speed air drill or in a lathe and soak the cleaning brush in lacquer thinner.

### **CENTER INDEXING SHAFT ON THE PLATINUM, L/S, AND 900/950 SERIES**

17. Honestly, I really recommend that you remove the two Allen head hex bolts (P81 & P81a) so you can clean the Index Post (P87). 900 models with serial numbers under #4931 differ from later 900 models with serial number greater than #4930. Earlier models (<4931) use a ball-bearing riding in the Index Post groove. Later models >4930 use a roller pin and collar.

18. Closely inspect the Index post groove for wear on older 900 models and replace as necessary. On later models closely inspect the roller and (P91) and Index Post screw which centers in the collar (P88).
19. Very thoroughly clean this groove. Reapply a light coating of grease at reassembly.
20. Reassemble in reverse order.

### **INDEX GEAR TIMING ON THE 800B AND 800 PLUS**

21. Loosen Allenhead hex bolt (+94, B34<sup>6</sup>). It has resistance from the two roll-pins located 180° apart. Do NOT remove these roll-pins.
22. Gently wiggle/pry the Main Indexing Gear Cap (+93, B34) up and off the cylinder area. Be aware that two ball bearing and associated coil springs are under this cap.
23. Thoroughly clean the underside of the Gear Cap. Clean out the eight (8) indented holes in the underside of this cap thoroughly. If the underside is worn, replace it – this is the indexing system!

**IMPORTANT NOTICE:** It would really, really be a great idea if you do the next few steps, but be aware that there are some timing issues that need to be done at reassembly. These are not hard and I will walk you through them.

### **REMOVING THE CYLINDER AND INDEXING GEAR ON THE 800B AND 800 PLUS**

**(PLATINUM AND 900/950/LS OWNERS SKIP THE NEXT TWO SECTIONS)**

24. Locate BOTH set screws (+89, B23<sup>1</sup>) in the holes 180° apart on the aluminum cylinder. Remove these. On the 800B there are four (4) of these, or should be. The outermost setscrews are used to keep the inner setscrews from becoming loose. THESE ARE THE TIMING SETSCREWS. I will walk you through their correct reassembly.
25. Now, try to lift off the aluminum cylinder (+90, B23) from the Main Index Gear (+86, B34).
  - A. If this cannot be done, then proceed to the next step below.
  - B. With the Crosshead fully UP, loosen (NOT REMOVE) the Allenhead hex bolt (+26, B41<sup>4</sup>) and washer.
  - C. Gently tap this hex bolt, loosen it more, tap more, loosen more, tap more, until you are able to remove the Center Pin shaft and collar spacer (+84 and +85), (B36 and B34<sup>1</sup>). There is a small keyway pin. Keep that in place for reassembly. Clean and oil all of these parts.
26. Clean everything removed and the reservoir area under the gear.
27. You should also remove the Star Gear Assembly (+70, B19) located on the underside of the crosshead and held in place by two Allenhead hex bolts. **SEE BELOW...**

**IMPORTANT: YOU MUST MARK THE CORRECT orientation of the aluminum block holding the Star Gear. It MUST be reinstalled with the same surfaces touching the crosshead. Make a mark with a permanent marker on the hex bolt head (outside) of this block, before you forget it.**

28. Inspect the Star Gear. If it shows signs of flat spots from wear, then you are probably experiencing rotation problems. It can only be replaced as an assembly, unfortunately. You cannot purchase just the Star Gear alone. You must purchase the gear, aluminum block as an assembly. The NEW Star Gear is a beefier gear.
  - A. You can reverse the Star Gear if you feel up to it. Drive out the roll-pin and remove the “axle” holding the Star Gear in place. Remove the Star Gear and flip it over and reinstall in the reverse order. The flat spot on the axle faces towards the Crosshead
  - B. Loctite Blue the two bolts back into their respective holes and hand tighten.
29. **Inspection and Cleaning of the Indexing Pad:** Several folks have asked that I include some simple instructions for this often over-looked, but important piece of equipment.

- A. Mark the orientation of how this sits in the aluminum base – a slight aligning mark on the shaft (B43<sup>2</sup>) and the aluminum base will help you return it to its proper alignment—we'll call these "timing marks.
- B. The Index Pad (B43) has three (3) areas of IMPORTANCE: (1) wear on the edge of the pad (B43<sup>1</sup>), wear on the shoulder bolt (B43<sup>5</sup>) and how the shoulder bolt move without resistance in its groove, and (3) the coil spring.
- C. Disassembly the entire unit, BUT do not change the height-adjusting screw and nut (43<sup>4</sup>). Clean everything thoroughly, smooth-out the groove the shoulder bolt slides in, and the hollow where the Index Coil Spring (B43<sup>3</sup>) resides.
- D. REASSEMBLE: Oil all components; pad shaft, coil spring, and grease the shoulder bolt and groove. REPLACE THE SHOULDER BOLT if it shows any signs of wear. These should be replaced annually, if you reload a lot.
- E. Often over-looked, the Index Pad should be replaced if the Star Gear has worn a groove in the pad's edge.
- F. Align complete unit with the "timing" marks you made with a center punch in Step 29. A. above. Proper alignment is done thusly: with machine handle all the way back in its home position, you should have approximately 0.020" clearance between the pad edge and the Index Pin (B24<sup>1</sup>) located in the crosshead.

### **REASSEMBLY OF GEAR AND CYLINDER**

30. Reinstall the Star Gear in place. Apply a light coat of grease on the gear, and oil its axle shaft, especially where it touches the aluminum block. Notice the oval indents on the top-outsides of the Star Gear. You will be looking for these in Step 36. A. below. I Blue Loctite the two Allenhead bolts.
31. Slide back into place the Center Pin (+84, B36), and the Allenhead hex bolt with its thick black washer. Apply a dab of Loctite Blue on the threads and tighten with gusto.
32. Slide the Main Index Gear Spacer (collar) into place (+85, B34<sup>1</sup>).
33. Apply a light coating of grease to this Pin and Spacer.
34. Place the Main Gear (+86, B34) in place. It should be cleaned and either oiled or a light grease coating. Check it for wear. – IT SHOULD SPIN FREELY ON THE CENTER PIN SHAFT.
35. Place the aluminum cylinder onto the gear – it should slide on, but may need a tap from a plastic hammer – DO NOT STRIKE WITH A METAL HAMMER – EITHER THE ALUMINUM OR THE GEAR!

### **ALIGNMENT FOR TIMING**

36. You should be able to spin the aluminum cylinder around the gear. It may not spin, but it should move.
  - A. You will insert the Allenhead setscrews in place on the side on the aluminum cylinder (180° apart) AFTER you sight through one of the holes with a flashlight. You are looking for a circular indent as mentioned in Step 30 above. Rotate the aluminum cylinder until you can see one. Remember, you removed these in Step 24.
  - B. With the cylinder lined-up with one of these indent locations sighted, insert, and tightened the Allenhead set screw that you removed when you removed the aluminum cylinder. Gently tighten for now.
  - C. Insert the second Allenhead set screw in the opposite hole, but do not tighten up. (800B owners, you are only inserting ONE setscrew per hole now – after timing is completed, you will tighten these and then insert and tighten the remaining two setscrews).
37. Heavily grease the two coil springs (+87, 131) and insert into the two holes in the Index Gear.
38. Heavily grease the TOP of the coil springs so that you can now set the two ball bearings onto the tops of the coil springs – they must not fall off during reassembly.
39. Reinstall the Main Indexing Gear Cap (+93, B34<sup>4</sup>). Turn it so that when you insert the Allenhead hex bolt (+94, B34<sup>6</sup>) and tighten it, the cap is set to accept the two roll-pins.
40. *NOTE: Tighten this Allenhead bolt thusly: When it is nearly fully in place, continue to rotate the cylinder with your hand. You have to "feel" the cylinder indexing on the two ball bearings. If you tighten too much, then the cylinder will not index very easily. This cap is NOT supposed to be flush with the top of the gear or aluminum turret.*

41. Insert all eight (8) of the sizing dies either through the slots in the Die Removal areas, or through the one location where you removed them from at the Shell Insertion Station, Station #1.
42. Replace the black plastic die access plate (+80), washer, thumbscrew (Shell feeder folks do not use a thumbscrew, but an Allenhead cap screw).

### **COMPLETE TIMING PROCEDURE**

43. Gently raise the crosshead up (operating handle down). If the shell knockout shaft (final reloading station #8) cannot come down entirely, then loosen the Allenhead setscrew you gently tightened in Step 36.A. above. This will free-up the aluminum cylinder, permitting you to turn it one way or the other (you should not have to move it much).
  - A. Correct timing is achieved when the knockout shaft is centered in the center of the die at Station #8, the finished shell knockout station.
  - B. 800 Plus owners should use the depriming station as the centering station because the knockout shaft is difficult to see centered on the die.
  - C. With centering accomplished, tighten BOTH Allenhead setscrews in the sides of the cylinder (+89, B23<sup>1</sup>).
  - D. 800B owners, now is the time to insert the two remaining setscrews on top of the setscrews already in place and tightened. Don't over-tighten – you are working with aluminum threads.

### **ALL RELOADER MODELS MAY RESUME HERE**

44. Lightly place a few drops around each die in the cylinder. There are two schools of thought here. Some disagree doing this. Either lube the outside of the dies where they contact aluminum with oil or graphite. You have two dissimilar metals in constant contact, and you will get aluminum adhesion onto the dies eventually without any kind of lubricant.
45. Squirt a shot of grease on the white nylon liners and spacers on the horizontal main Cross Shaft (PN/N, +155, B28). This is the MAIN AREA FOR MACHINE WEAR. I have requested that P/W make a nylon bushing kit for the entire reloader which will replace ALL the different nylon liners. I sell these kits for \$30 and they are a part of the rebuilding process.
46. Clean out the two areas located on the extreme right and left undersides of the Crosshead. These areas on the under side hold the top to the two Side Links (P121, +160, B170). Two shoulder bolts (P95, +74, B145) (one on each side) must have lube (grease).
47. Oil or lube the tops and bottoms of ALL links on the machine. Including the underside of the toolhead at P58, +62, B96.

### **PRIMER SEATING ASSEMBLY**

48. Remove the Primer Seating Assembly (Careful not to let the bottom screw turn because this will change your primer seating height on non-externally adjustable assemblies).
49. Remove the three small Allenhead cap screws holding the Primer Feed Cover in place. There is a coil spring in there – don't lose it. Note that the two top setscrews may have flats ground on them. If they do, keep the left screw and right screw separated. They must go back into their same holes.
50. Slide the Primer Feed Ram back and forth to check for free movement and/or burrs. It MUST travel freely.
51. Remove the Primer Feed bearing and inspect and clean. There is a small spacer/roller bearing that must not be lost. Inspect it for a flat spot and replace if worn.
52. Check the inside groove on the aluminum/brass housing where this spacer moves for burrs. CLEAN EVERYTHING THOROUGHLY.
53. Remove the small Allenhead set screw (3/32" Allen wrench) holding the Primer Seating Rod/Ram. Hold, as the spring may want to shoot this apart. Thoroughly clean this piece.
54. Remove the Primer Post Pin P140, +148, B33<sup>3</sup>.
55. Roll this pin on a flat surface to check for trueness. If it is bent, it needs to be replaced. If the top of the flat surface is worn, bent or scored, it should be replaced. It must be absolutely flat.
56. Thoroughly clean this pin shaft.
57. Thoroughly clean the aluminum or brass housing especially the recess area where the Primer Post Pin sits and slides.

58. Reassembly: You may want to hold this in a vice (NO SERRATED JAWS, PLEASE) as you reassemble.
59. Oil the ram shaft. When reinserting the Primer Post Pin into correct position, you should sight through the small setscrew hole and look for the oval indent in the shaft. This is where the shaft must be when you reinsert and tighten the setscrew (P147, +140, B124).
60. When you reinstall the Primer Feed Ram, now would be a great time to replace the ram if you still use the old style "U" spring on the end of the ram. The new slot-cut ram is much nicer to use and does not tend to tip the primer over as the U-spring type do. I sell hardened rams not available through the factory.
61. I would stretch out the coil spring (P138, +134, B120) a bit to give it some greater tension.
62. Reinsert all the Primer Feed Cover cap screws in their correct locations.
63. Give all of the areas a light coat of oil EXCEPT the slot where the primer feed ram slides. I would use Graphite powder here.
64. If your Primer Feed Gate is loose, tap the holding rivet and this should increase the resistance enough to make the gate stay put where you want it.
65. Reinsert the primer assembly and tray, and this about does it.

### **OFTEN ASKED QUESTIONS BY 800B, 800C OWNERS**

Can an 800B or 800C 12 gauge machine be converted to a .410 machine? The answer is NO. Reason is this: The slot in the crosshead accepting the aluminum primer seating assembly is too large. It is sized to hold a 12 gauge die and 12 gauge brass from pushing down and out of the die when being deprimed. A .410 shell is too small in diameter, and it gets pushed out of its die when being deprimed. The 800CVT is not affected by this design and will accept the conversion.

### **INSPECTION AND PERSONAL NOTES**

- A newly inserted hull should be inserted so that the brass is just flush with the die.
- Primers should be set so that they are just flush, and do not protrude from the brass.
- Oil all the coil springs on the tool head and the primer seating assembly.
- 800B owners should inspect the Index Pad #43 for wear. This area determines some timing issues and a worn pad will cause some timing problems.
- These reloaders are machines and machines need to be watched for wear, kept clean, and tightened up occasionally. Like your vehicle, lubricant is important.
- When you have a problem, ALWAYS SUSPECT THE SIMPLEST SOLUTION FIRST.

### **COMMON SENSE CONCLUSION**

In mathematics there exists a statistics and probability algorithm called the Factorial. Commonly shown by use of the exclamation sign "!". Mathematically, **3!** means **3 Factorial**, or  $3 \times 2 \times 1 = 6$ . **4!** means  $4 \times 3 \times 2 \times 1 = 24$ .

It has much more in-depth applications in statistics, but here is one case I think it applies.

Simplistically, when you adjust two things on a reloader, you have two (2) possible ways to readjust, or  $2!$  ( $2 \times 1 = 2$ ). When you change three (3) things, you have  $3!$  or six (6) possible ways to readjust: ( $3 \times 2 \times 1 = 6$ ). When you have four (4) settings, you have  $4!$  or twenty-four (24) possible ways to readjust: ( $4 \times 3 \times 2 \times 1 = 24$ ). Therefore, when altering or adjusting parts on your reloader, keep the Factorial Sequence in mind. The more parts involved - it doesn't take much to really mess thing up!

I put this together one evening and there certainly are errors, typos, and omissions. Should you like to add to this, please feel free to email me at the address below with your suggestions. I'd appreciate hearing from you.

Jim "Whiz" White

S&W Supply Co., Inc.

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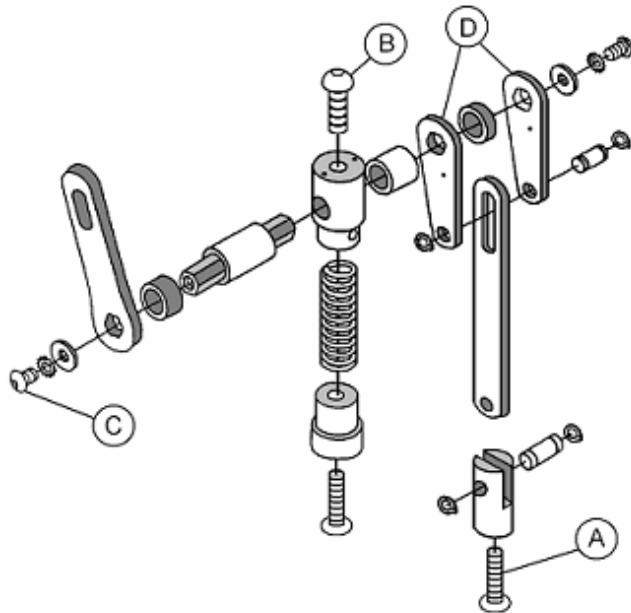
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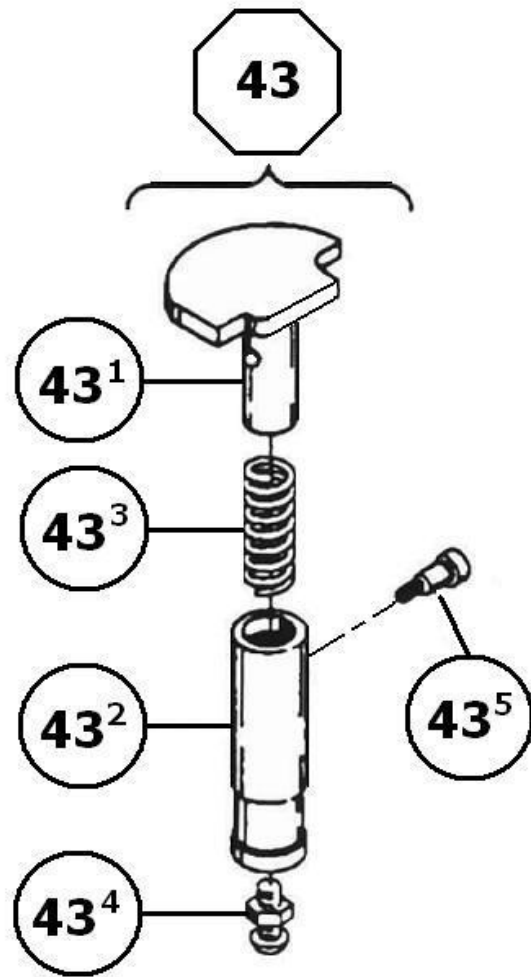
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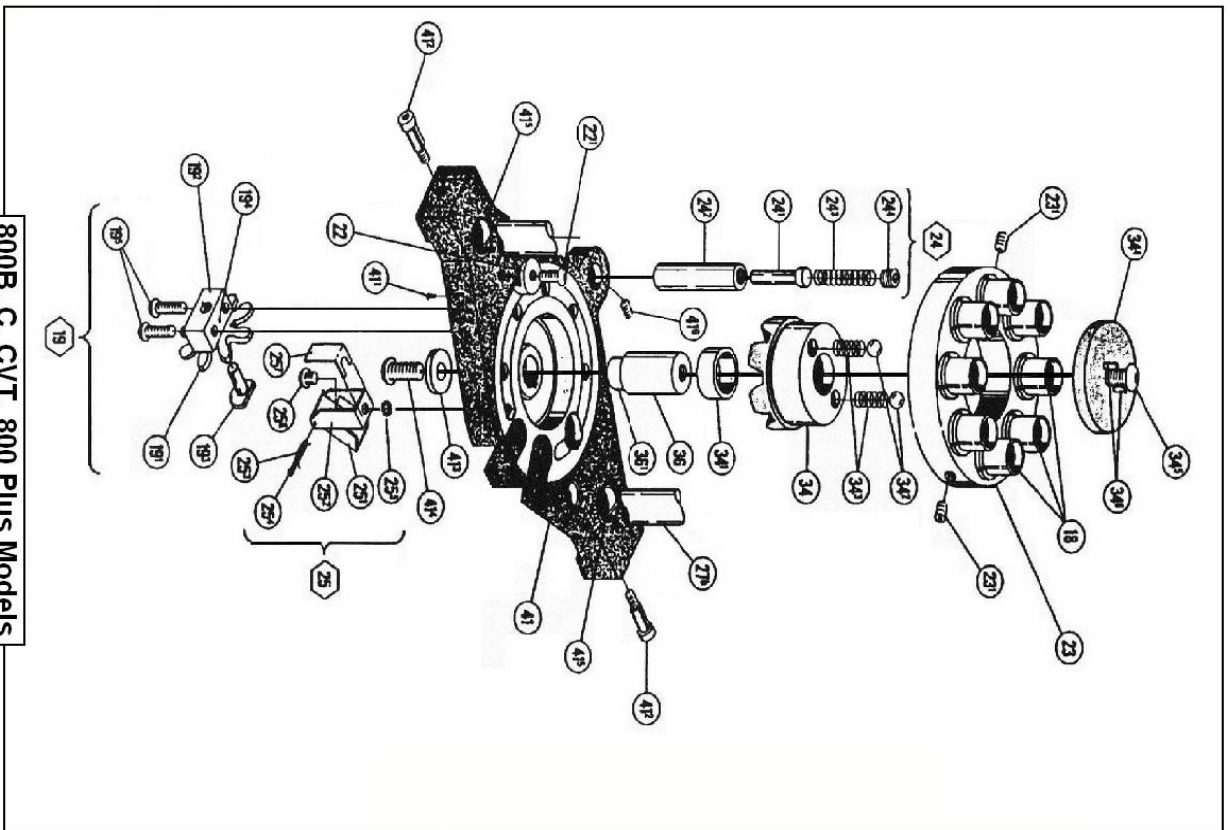
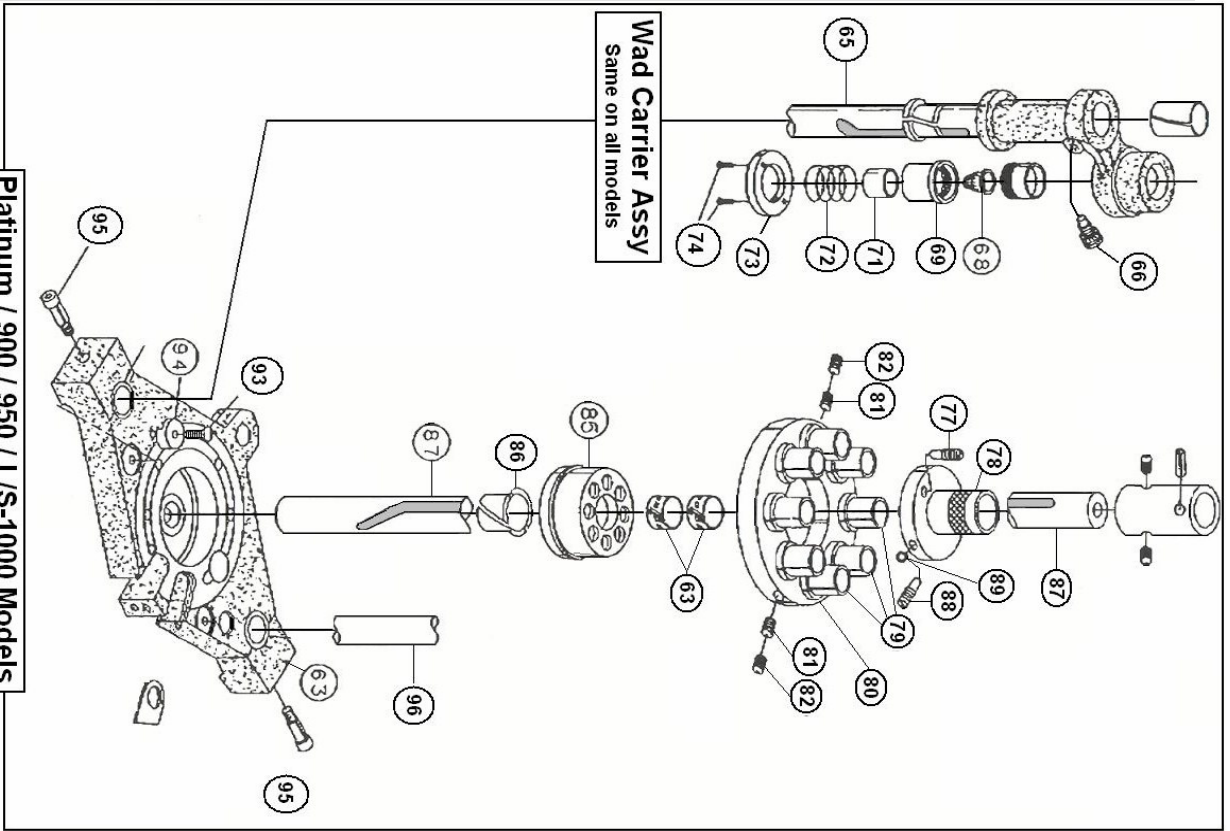
## Actuating Link Area Under Crosshead



## INDEX PAD

800B/C/CVT & 800 PLUS MACHINES ONLY





Compliments from S&W Supply Co - Jim "Whizzer" White - Rapid City SD  
 E-mail: whiz@swwsupply.com (605) 341-4412