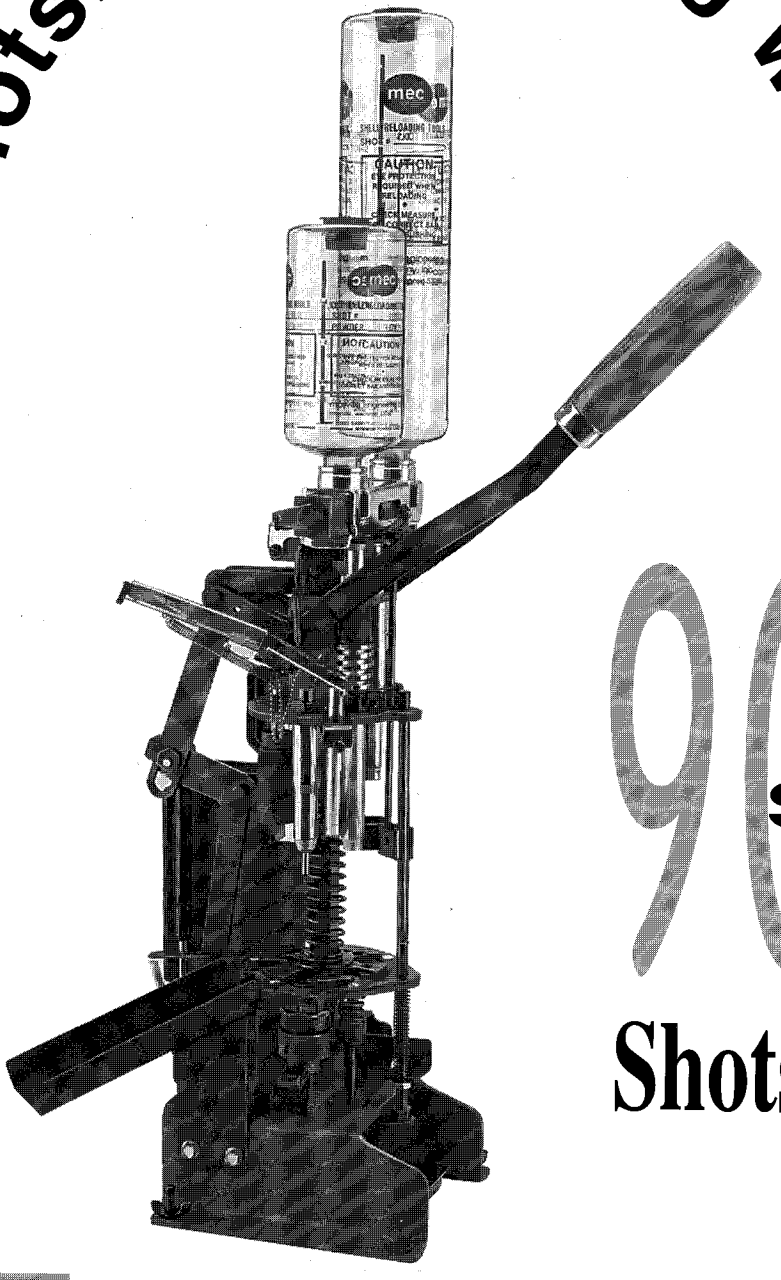
Shotshell Reloading with the...



9000 SERIES

Shotshell Reloaders

mec™

SHOTSHELL RELOADING WITH THE

9000 Series™

9000G Manual

9000H Hydraulic with Motor and Pump

9001H Hydraulic without Motor, Hose and Pump

TM

Mayville Engineering Company, foremost manufacturer of reloading equipment in America, is widely respected for its continuing dedication to precision engineering.

This precision is incorporated into every one of MEC's reloaders rendering truly innovative and efficient engineering designs.

The 9000 series reloaders are no exception. They are the latest in our line of progressive machines. The 9000 series reloaders feature automatic indexing and finished shell ejection and allow you to resize any American and most foreign shells in either high or low brass. They can be converted to reload 3" in 12 & 20 gauge only and will reload steel shot.

The Model 9000G is a hand-operated reloader. This reloader provides an economical way of reloading shells rapidly. The 9000H is a hydraulic powered reloader. The handle is replaced with a foot-operated hydraulic system. This added feature makes this model the smoothest and most consistent system developed. The motor for the hydraulic system operates on a standard 110 volt outlet and the pump supplies consistent pressure throughout the reloading operation. The 9001H offers the same operating features as the 9000H. However, the unit is supplied without the motor, hose and hydraulic pump.

To convert to 3" shell reloading (12 & 20 gauge *only*), Kit No. 8582 is necessary. Refer to the instruction sheet enclosed in the kit for installation.

This reloader will allow you to reload with steel shot. If your reloader has not been converted to reload 3" shells, Kit No. 8581-12 is necessary. However, if your reloader is equipped to reload 3" shells, you need only order our single stage steel shot adapter, Kit No. 8433.

A special steel shot charge bar must be used when loading steel shot. Do not use charge bars designed for lead shot when loading steel shotshells.

Common sense precautions are advised. Careless handling of flammables and explosives can result in serious injury. We endorse checking charges with a reliable scale which will disclose variations in powder weights. Adhering to loads recommended by the powder manufacturer is a must and the use of *safety glasses is strongly encouraged.* We disclaim any liability for damage or injury resulting from reloading shotshells.

We disclaim any liability resulting from the use of any parts or accessories not manufactured or recommended by MEC.

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INSIDE A SHOTSHELL

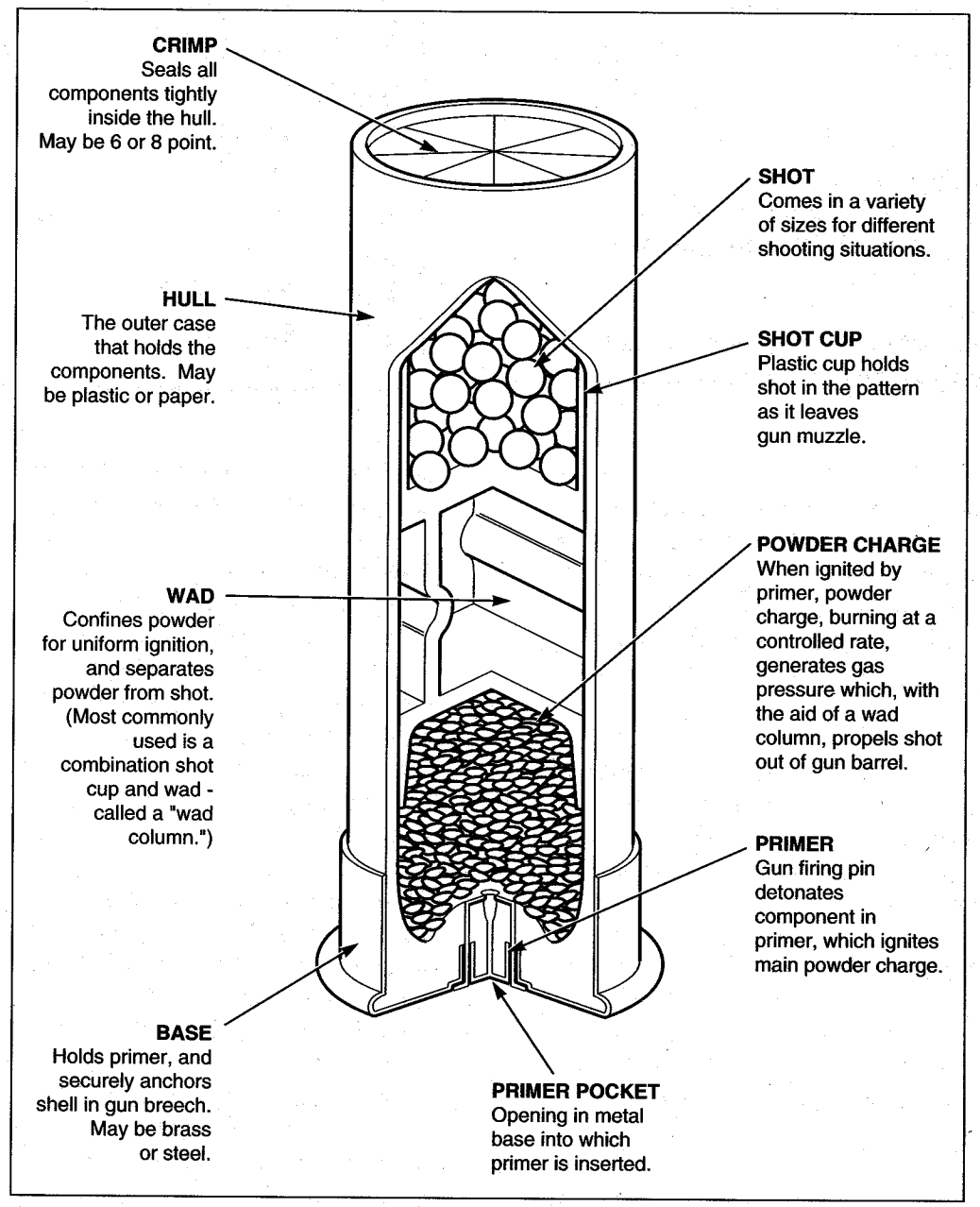


Figure 1

As we saw on the previous page, a shotshell is made up of several different components. There are many different variations of each component.

Packed with every MEC reloader are brochures supplied by leading component manufacturers. A study of this literature will show you numerous combinations of primer, powder charge, wad, and shot you should use with each empty hull, for waterfowl, small game, or trap and skeet. Each combination of components has been carefully tested by ballistics experts for maximum effectiveness and safety.

WARNING

Experimenting with combinations not recommended by a component manufacturer is fool-hardy and dangerous!

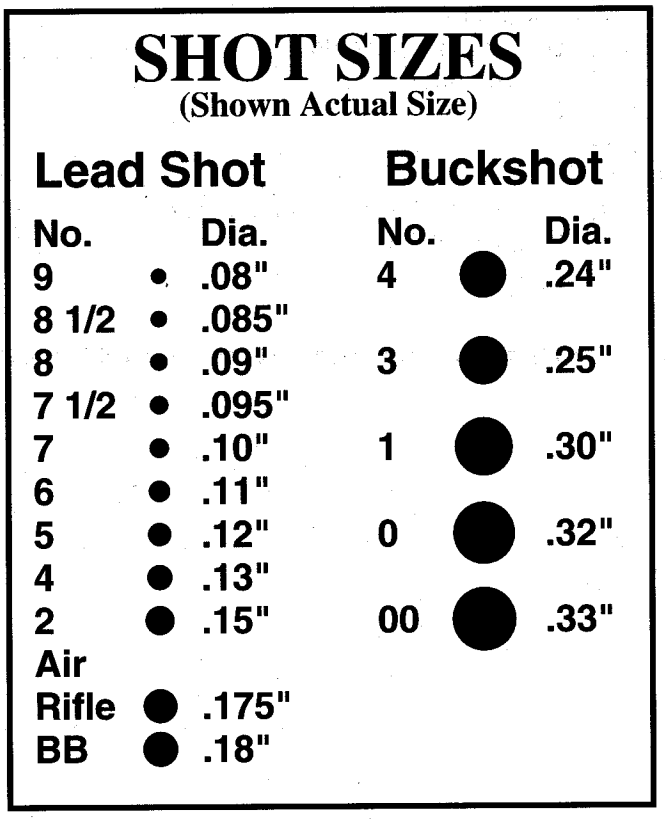
Choosing the Hull.
Proper choice of empty hulls is one of the most important choices you must make to keep your reloading simple.

The problems encountered by trying to use any and all of the hulls you may find are usually quite discouraging. Not all hulls have the same capacity. Not all hulls have the same crimp. Each time that you use a hull with a different capacity (usually caused by different base wad height) you must assemble a different set of components to properly fill this case.

We are not recommending that you throw away all the nonstandard hulls that you have, but are advising you to keep it simple until you have gained the experience necessary to assemble the different components.

Selecting the Right Wad.
The wad is that part of the shotshell between the powder and the shot. A tight seal permits the expanding gas from the burning powder to push the shot column out of the gun barrel with maximum velocity.

Modern "wad columns" combine both the shot cup and the wad in one piece. These one-piece wad columns are the easiest to use, and therefore are most popular - especially with beginning reloaders. There are many different kinds. Use only the specific wad column recommended for the other components you are using.



The Shot.
There are different kinds of shot. At this time lead and steel are the most common. ***Lead and steel shot are not interchangeable.*** Reloading with steel shot requires special wads. Using wads designed for lead shot will not only ruin your gun, but could cause high pressures that could burst the gun causing injury or death to the shooter or bystander.

There are two kinds of lead shot - chilled and magnum (hard). Chilled shot is manufactured with an antimony content of 0.05% to 2.00% which was the standard shot used for many years for target shooting and factory field loads. Magnum, or sometimes called hard shot, has an antimony content between 3.0% and 6.0%. The increase in the antimony content produces less shot deformation and also maximum pattern density. Chilled shot weighs more than magnum shot of the same pellet size because of the percentage of antimony being used. The higher the antimony level the less the shot weighs.

When loading with steel shot, it is imperative that steel shot components be used and the instructions for these components be followed to the letter. Select only components that are suited for steel shot reloading.

Steel shot is approximately three times harder than lead shot and must be used with components that are designed *specifically* for steel shot reloading.

As the size of the shot increases, fewer pellets can be loaded into the hull. The smaller sizes are used for trap and skeet, doves, varmints, small game, etc. The larger shot sizes are for heavier game - ducks, geese, turkeys, etc.

All Powder Is Not Alike.
Different powders have different burning speeds, which make them useful for different jobs. The heavier the shot load, the slower the powder must burn. It takes longer to accelerate a heavy shot load than it does a light one.

WARNING

A fast-burning powder ignited behind a heavy shot load could cause excessive "breech pressure" which might cause damage to the gun and even injury to the shooter or bystander.

Breech pressure is the pressure of the gas which is created by the burning powder. It is this breech pressure which forces the shot through the barrel.

On the other hand, using a slow-burning powder to propel a light load of shot will not work effectively. Without the proper pressure buildup, many powders will not burn uniformly and provide sufficient velocity to the shot. Never interchange powders for reloading steel shot. A powder that generates acceptable pressures on 1⅛ oz. of lead shot cannot be used to propel 1⅛ oz. of steel shot. The pressures will raise to dangerous levels.

Which Primer to Use?
The primer ignites the powder. When you pull the trigger, the hammer falls on the firing pin, denting the primer cup. This causes the component in the primer to detonate, igniting the main powder charge.

Different primers have different characteristics depending on their purpose. Use only the primer that is recommended by the component manufacturer for the hull, powder, wad, and shot load you are using.

HANDLING PRECAUTIONS

To make reloading safe, all it takes is common sense and the ability to read and follow the directions of the various component manufacturers.

When you purchase your powder, get a copy of the "SAAMI" (Sporting Arms and Ammunition Manufacturers Institute) pamphlet on the properties and storage of smokeless powder. Read this literature and abide by it. Generally speaking, powder is safer than gasoline, because unlike gasoline, it does not give off explosive fumes. If ignited, powder will burn until it consumes itself. Modern smokeless powders must be confined to cause an explosion. The containers that powder is purchased in are designed to burst without causing an explosion if the powder is accidentally ignited. Your powder should be kept in these containers until it is used up. It is unsafe to put powder in a glass jar or bottle or any other container which could cause pressure buildup. Store your powder where there is no chance of sparks, fire or flame, where it is cool and dry, and where children cannot reach it.

Primers also require care in handling. Never take primers from the container that they come in until ready for use. Storage of primers in anything but the container that they were purchased in is unsafe. Exposing a primer to excessive heat, fire, flame, or rough handling will cause it to explode. Do not store primers near your powder or where children can get at them.

Lead, a substance known to cause birth defects, reproductive harm, and other serious physical

HANDLING PRECAUTIONS

injury, must be handled with extreme care. Handle lead shot only in a well-ventilated area and **ALWAYS** wash your hands after handling lead and before eating. Discharging firearms in poorly ventilated areas, cleaning firearms, or handling ammunition also may result in exposure to lead. Have adequate ventilation at all times.

When a manufacturer tells you to use a particular set of components in a shell, it means precisely that. You cannot indiscriminately experiment with or substitute components without experiencing problems. At best, you will get a shell which fails to give the performance you expect. At worst, you may inflict serious injury upon yourself or someone else who fires your reloaded shells. The manufacturer has extensively tested recommended loads and knows how they perform. Always follow these recommendations exactly.

WARNING

It is highly recommended that safety glasses be worn when reloading.

When finished reloading, remove the containers from your machine and seal them with caps and put them in a safe place. Also, return all primers to their original container and store them in a safe place. It is important that these materials are kept out of the reach of children and other unauthorized persons.

WHAT IT IS

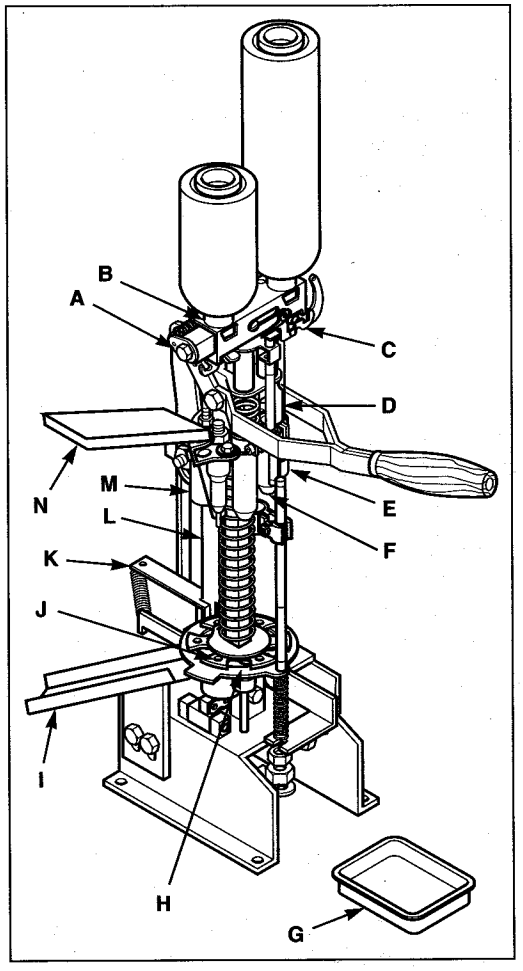


Figure 2

Before you try to assemble your reloader and actually try reloading, we recommend that you look over your reloader and compare it with Figure 2, identifying all the major components you'll be using.

A. CHARGE BAR is located just under the powder and shot containers.
B. MEASURE ASSEMBLY pivots back for easy changing of loads.
C. AUTOMATIC-BAR MECHANISM. Each stroke of the handle automatically moves the charge bar to left or right, measuring and charging precise amounts of powder or shot into the shells.
D. WAD PRESSURE INDICATOR gives amount of pressure actually being applied to the wad column at the bottom of the handle stroke.
E. SPINDEX™ CRIMP STARTING with swivel action to correctly align with the original shell creases. Can be changed from 6 to 8 point in seconds. (Smooth cone available for 12 GA. paper shells.)
F. RAMMER TUBE is used to seat the wad column and load shot into the shell.
G. PRIMER CATCHER is placed under the base to collect spent primers pressed out of brass.
H. REPRIMING STATION at which shell is also charged with powder. Spring tension automatically applies the proper pressure and compensates for variations in height of base wad while seating primer.
I. FINISHED SHELL SLIDE.
J. SHELL CARRIER into which shells are placed and which positions each shell at the proper station.
K. AUTOMATIC INDEX ASSEMBLY. Rotates shell from station to station.
L. SERIAL NUMBER is located on side plate.
M. CRIMPING STATION with the exclusive cam-operated two-stage crimping apparatus. Die is adjustable for depth of crimp (not shown).
N. AUTOMATIC PRIMER FEED positions primers in shell carrier with each stroke of the handle.

After removing your new reloader from its carton, inspect it carefully

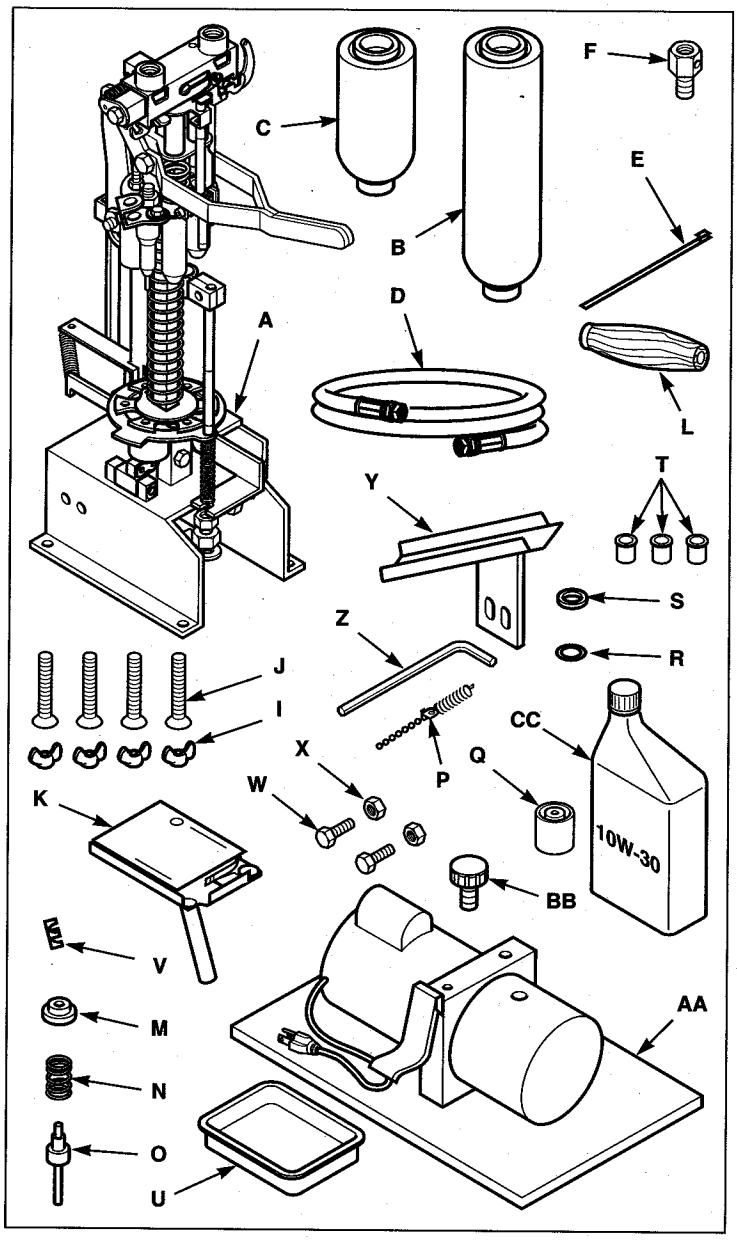


Figure 3

for damage. You should have all parts shown in Figure 3.

A. Reloader
B. Shot Container (Large)
C. Powder Container (Small)
D. Hose Assembly (9000H only)
E. Hose Ties (5) (9000H and 9001H only)
F. Breather Adapter (9000H and 9001H only)
G. Parts Box (not shown)

Contents of Parts Box

I. Base Mounting Wing Nuts (4)
J. Base Mounting Bolts, ¼–20 x 2" Long (4)
K. Primer Feed
L. Handle (9000G Only)
M. Spring Pad
N. Spring
O. Primer Seating Post
P. Primer Feed Spring/Chain
Q. Spindex Crimp Starter 6 pt. (12-16-20 gauge only)
R. Brass Powder Washer
S. Grommet (Spare)
T. Bushings (3)
U. Spent Primer Catcher
V. Retaining Clip
W. Slide Mounting Bolt, ¼–20 x ⅝" (2)
X. Slide Mounting Nut (2)
Y. Slide
Z. Allen Wrench

Contents of Hydraulic Pump Box (9000H only)

AA. Pump and Motor Power Pack
BB. Breather Cap
CC. Oil, 10W-30 (1 Quart)

Literature Provided (When Available)

Winchester Reloading Components Manual
Hodgdon Basic Reloaders Manual
Reloaders' Guide for Alliant Smokeless Powders
IMR Handloaders Guide
Accurate Powder Guide
MEC Powder Bushing Chart and Charge Bar Selection Information
MEC Price List
MEC Accessories... for Added Shooting Enjoyment

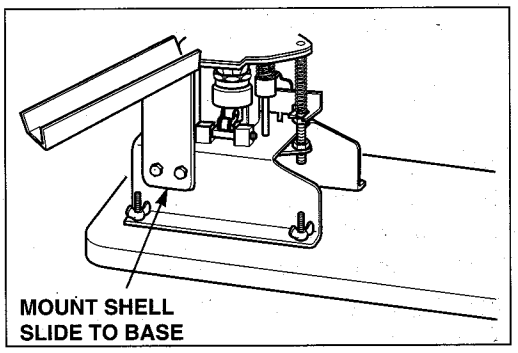


Figure 4

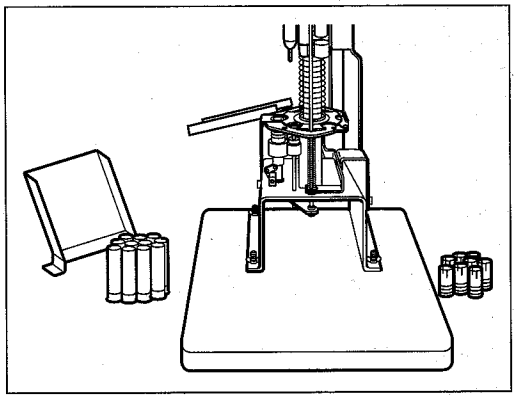


Figure 5

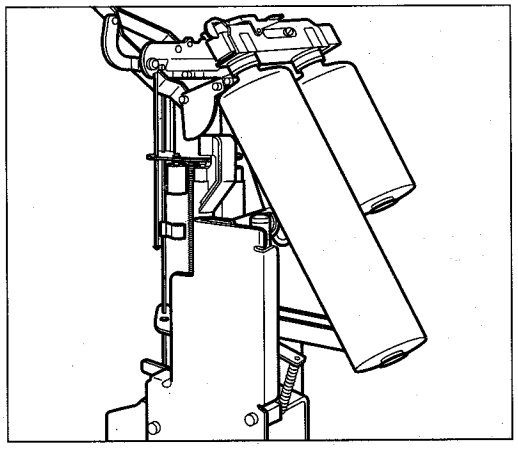


Figure 6

Installing the Shell Slide.
Use two 7/16" inch box wrenches to mount the shell slide to the base with two 1/4–20 x 5/8" bolts and nuts provided in the parts box, Figure 4.

Mounting Your Reloader.
Although it is desirable to have your reloader mounted permanently to a bench, it is not a necessity. If you cannot mount your reloader permanently to a bench, we recommend placing your reloader on a piece of 3/4" x 12" x 18" plywood. The reloader should be positioned toward the rear of the plywood as much as possible, as shown in Figure 5. By positioning the reloader in this position, the plywood will counter the force used to provide a downstroke and prevent the reloader from tipping forward. However, when automatically reloading shells, it is very difficult to apply enough force for a complete downstroke. A large number of indexing problems will be prevented or solved by permanently mounting the reloader. Regardless of where or how you mount your reloader, allow sufficient room behind the reloader (12½" minimum) to tilt the measure assembly and containers as shown in Figure 6. Also allow 12" above the measure assembly for clearance of the shot and powder containers.

To mount the reloader, place it in the location described above, marking through the holes with a pencil, then remove your reloader and drill a 9/32" hole at these locations. Put the reloader back in position and fasten securely with the 1/4–20 x 2" countersunk stove bolts with wing nuts. Place the bolts in from the bottom up and draw them up tight enough so the heads are slightly depressed so that they will not scratch the bench or table.

By this time you should have made your choice of components. Figure 5 shows how these components should be placed for the most efficient operation of your reloader.

Installing the Wood Handle Grip (9000G only).
Drive handle onto lever up to the mark on the side of the handle, Figure 7.

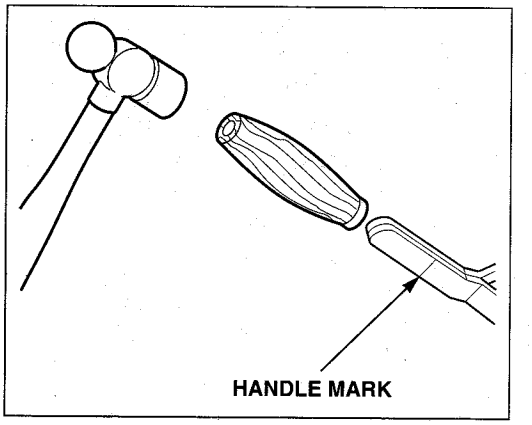


Figure 7

Installing the Hydraulic System (9000H only).
Your 9000H is supplied with all the components needed to provide proper downstroke by pressing the foot pedal.

CAUTION

To avoid damage to the reloader, do not operate the pump and motor power pack until the automatic index has been adjusted, as described in the Functioning Automatic Index section.

To install the hydraulic unit, refer to Figure 8 and perform the following steps:

1. Remove the plastic cap plug from the breather hole located on the top of the reservoir.
2. Pour one quart of oil into the pump reservoir.
3. Using a ⅞ inch open-end wrench, screw the brass breather adapter into the reservoir.
4. Screw the breather cap into breather adapter.
5. Remove the plastic cap plug from the hose port on top of the pump bracket manifold.
6. Remove the plastic cap plugs from the hose assembly and attach one end to the hose port on top of the pump manifold. Tighten with an 11/16 inch open-end wrench.
7. Remove the plastic cap plug from the hose fitting on the cylinder assembly valve.
8. Attach the free end of the hose assembly to the hose fitting on the cylinder assembly valve. Tighten with an 11/16 inch open end wrench.
9. Insert the free end of the cylinder assembly breather tube into the brass breather adapter on top of the reservoir.

NOTE

Do not let the breather tube run up hill anywhere. If oil is allowed to be collected in the tube, it may block off air to the cylinder and create a vacuum. When this happens the cylinder is not allowed to breath and will not return to the top of its stroke.

1. Secure the hose assembly and breather tube with hose ties as needed.

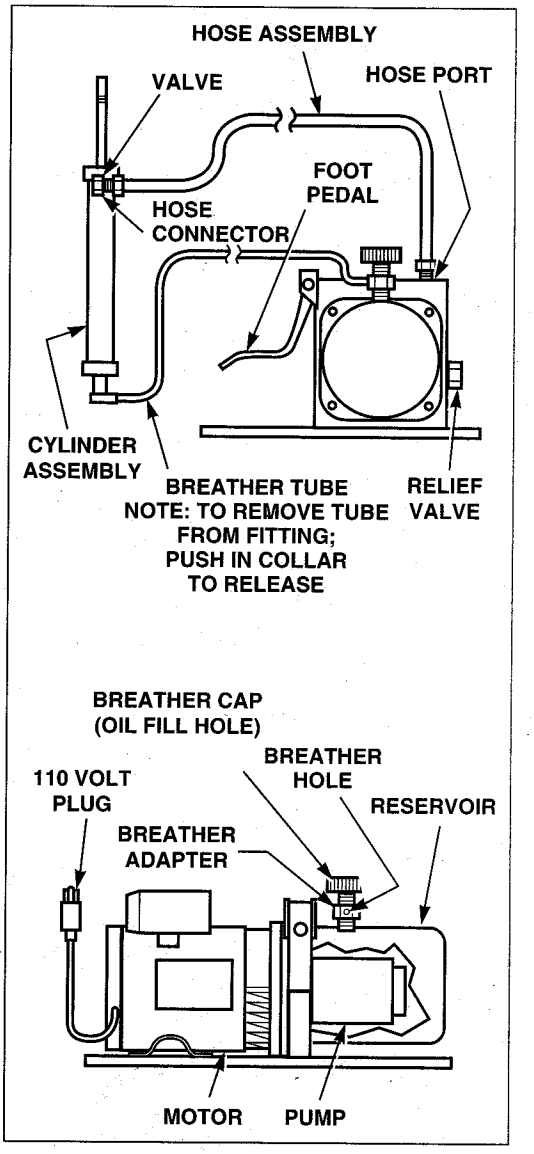


Figure 8

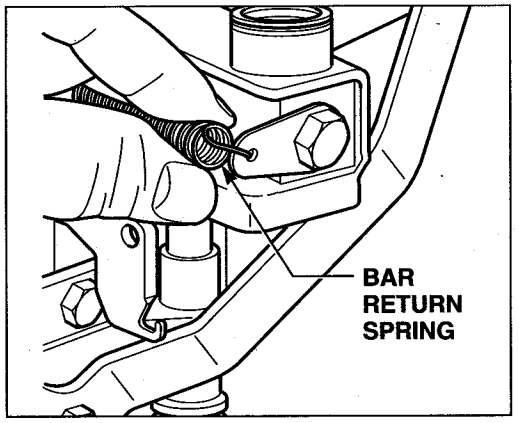


Figure 9

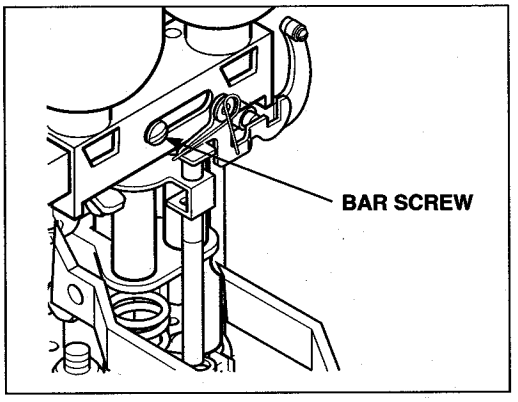


Figure 10

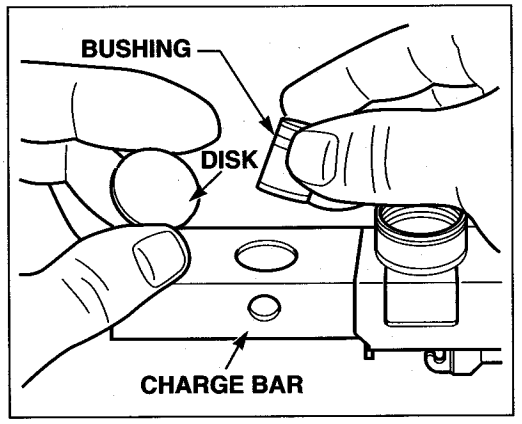


Figure 11

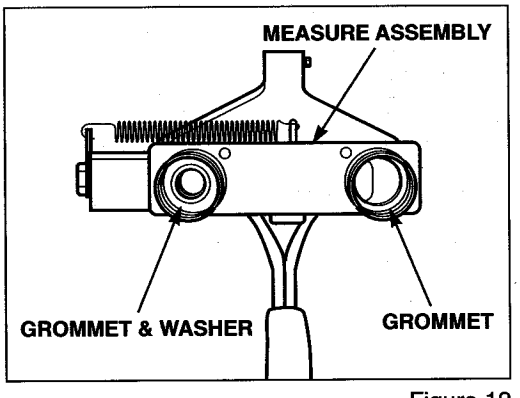


Figure 12

Measure Assembly.
As you face the loader, you will see the measure assembly. On this measure you will see **POWDER** on the left and **SHOT** on the right. During the reloading process, the charge bar moves between **SHOT** and **POWDER.** The bar screw located in the center of the bar restricts the movement of the charge bar.

To install the powder bushing in the charge bar:

1. Disconnect the bar return spring from the charge bar, Figure 9.
2. Remove the bar screw, Figure 10.

3. Remove the charge bar by sliding it to the left, as shown in Figure 11, and remove the disc covering the powder bushing hole.

WARNING

Experimenting with powder, shot, primer, wad, and hull combinations not recommended by a component manufacturer is fool-hardy and dangerous!

4. Select the proper bushing. The bushing selected determines how much powder will be loaded in the hull. The amount of powder needed is determined by the ballistics desired and components used. Refer to the supplied manufacturer's brochures to determine the amount of powder needed for the required shotshell load. Next, refer to the *Powder Bushing Chart and Charge Bar Selection Information* booklet and select the bushing needed to deliver the proper amount of powder. Place the proper bushing in the charge bar.

5. Replace the charge bar, bar screw, and bar return spring.

6. Remove the neoprene grommet from the powder opening of the measure assembly, Figure 12.

7. Install the brass washer, with dimples facing up, on the powder side of the measure assembly. Place the neoprene grommet over the washer, Figure 12.

NOTE

The screw on which the measure assembly pivots should be kept tight enough so that some resistance is felt when tilting the measure assembly.

8. Lock the charge bar in position as shown in Figure 13, by sliding the charge bar to the left and placing the bar lock hook upward into position.

NOTE

Use the large container for shot and the small container for powder.

9. After making sure that the brass washer and two neoprene grommets are in place in the measure assembly, Figure 12, screw the empty plastic shot and powder containers into each of the threaded cups.

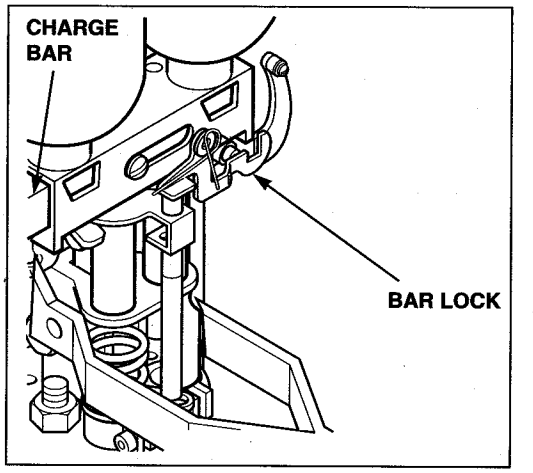


Figure 13

Functioning Automatic Index.

Your reloader is shipped with the shell carrier in the half index position. To move the shell carrier to the required position for reloading, lift the arm of the slide bracket at the rear of the reloader (Figure 14) to allow the shell carrier to rotate. Rotate the shell carrier counterclockwise and locate the slide bracket finger into one hole of the shell carrier, Figure 15.

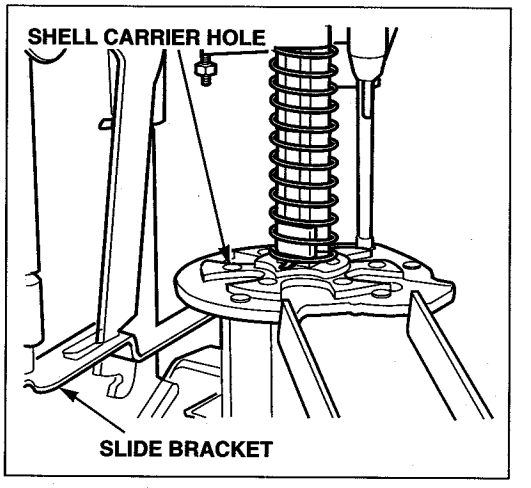


Figure 14

CAUTION

- ***Make sure there are no obstructions between the dies and shell carrier. Be sure the wad guide is positioned so that the rammer tube passes through the center of the wad guide.***
- ***While your 9000H Reloader has been designed with your safety in mind, it must be remembered that it is a powerful tool and if carelessly operated can inflict serious injury to the fingers of the hands of the user. The following precautions should always be observed.***

1. ***Clear hands from reloader before depressing foot pedal.***
2. ***Disconnect power before making adjustments or clearing unit of damaged shells.***
3. ***DO NOT ALLOW children to tamper with or operate the unit.***

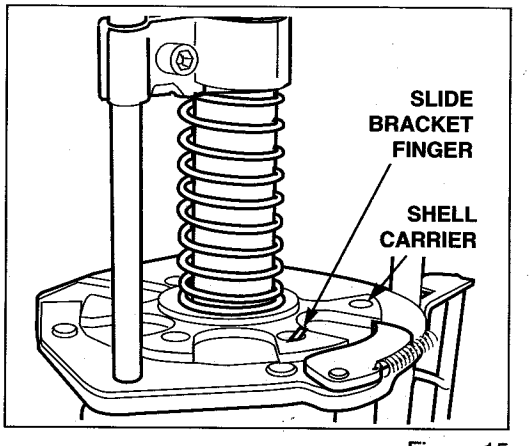


Figure 15

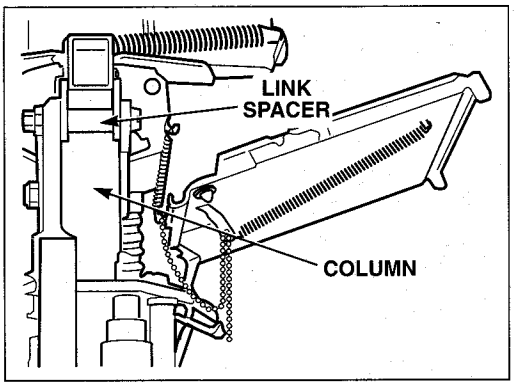


Figure 16

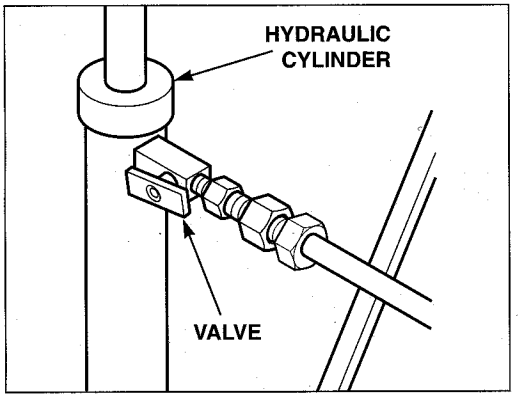


Figure 17

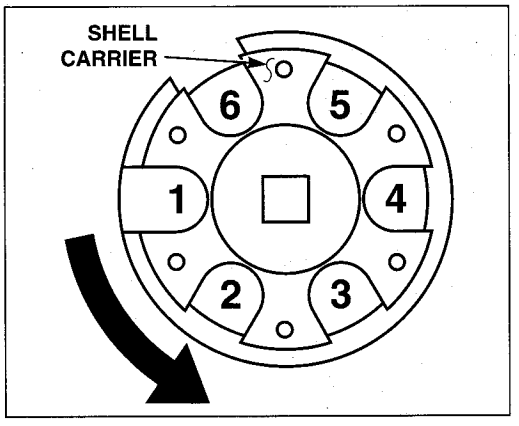


Figure 18

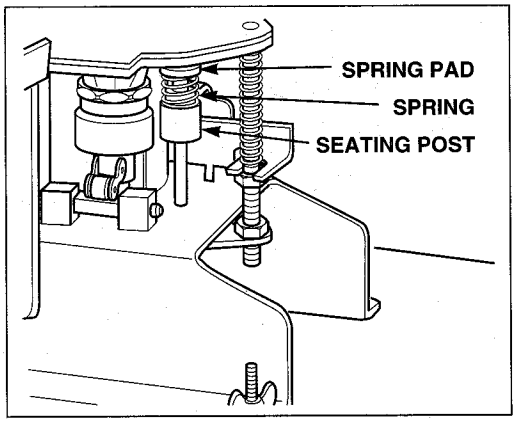


Figure 19

On the 9000G, make several **complete** strokes as follows:

Downstroke: For a complete downstroke, pull the handle down until the link spacer on the back of the reloader contacts the column (Figure 16).

Upstroke: You will notice that when the handle is returned to the top of its stroke that the shell carrier will rotate to the next position. Make sure that you operate the handle in a smooth and consistent manner.

NOTE

You may notice a slight resistance when you reach the top of the stroke with the handle. This is caused by the release of the automatic index mechanism.

On the 9000H, plug the pump and motor assembly into a grounded 110 VAC outlet and make several **complete** strokes as follows:

Downstroke: Press the foot pedal until the link spacer on the back of the reloader contacts the column (Figure 16). At this point you may hear a slight squealing sound. This is caused by the relief valve and will not damage the hydraulic unit. Also, at the bottom of the downstroke, you may feel pressure from the foot pedal. This is another indication of a complete downstroke.

Upstroke: Release the foot pedal. When the machine returns to the top of the stroke, the shell carrier rotates to the next position. Due to air in the lines when the reloader is first used, it may be necessary to operate the foot pedal several times until the action becomes smooth. The speed of the return can be regulated by adjusting the valve on the hydraulic cylinder, Figure 17. Turning the valve counterclockwise will speed up the return and turning it clockwise will slow down the speed of return.

For all reloaders, if the carrier should fail to index properly and a shell cannot be placed in Station No. 1 (Figure 18), refer to **If You Have Trouble**, beginning on page 18.

Installing the Primer Seating Assembly.
Your 9000 Series is equipped with the exclusive self-cleaning primer seating assembly. It consists of 3 parts: spring pad, spring, and seating post, as shown in Figure 19.

To Install:

1. Place spring on seating post.

2. While holding the spring pad in place on the underside of the base with one hand, insert the spring and seating post into the pad using upward pressure with your other hand.

3. Seat the pointed base of the seating post in the detent of the reloader base.

To Remove: simply grasp the seating post, lift and pull toward you.

Installing the Primer Feed Tray.

1. Locate the primer feed tray, spring and chain assembly, and retaining clip from the parts box.

2. Remove the screw and yellow caution tag from the tube clamp on the reloader.

3. Set the retaining clip in place, Figure 20.

4. Insert the primer feed tray tube into the tube clamp and replace the screw. Finger tighten the screw at this time with approximately one inch of the tube above the clamp.

5. Apply and hold a downstroke to the reloader. Position the primer feed tray so that the primer tube is positioned over the primer receiver hole in the shell carrier, Figure 21. The tube should just contact the shell carrier. Tighten the screw to hold the tube and tray in position.

6. Hook the spring and chain assembly in position, Figure 22. The spring actuates the primer feed when you depress the handle. Adjust the chain so that the primer will drop when the primer tube is approximately ¼ inch away from the shell carrier, Figure 23.

NOTE

On the 9000H, the downstroke may be stopped by decreasing pressure applied to the foot pedal. Be sure to complete the downstroke by applying more pressure to the foot pedal.

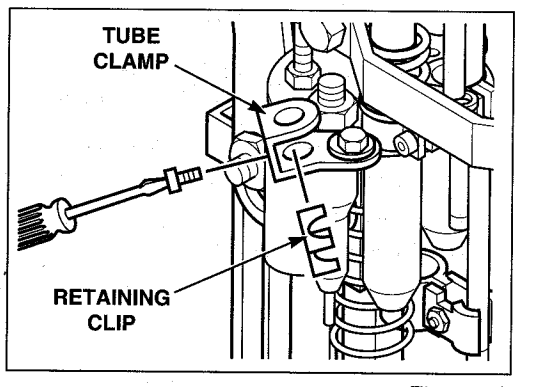


Figure 20

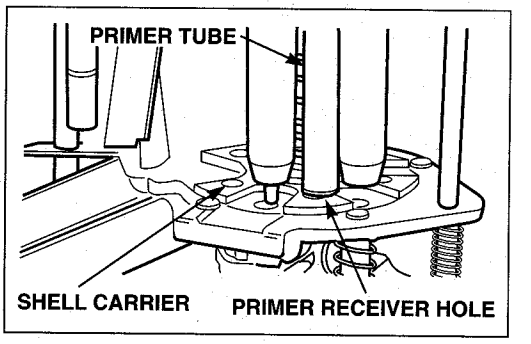


Figure 21

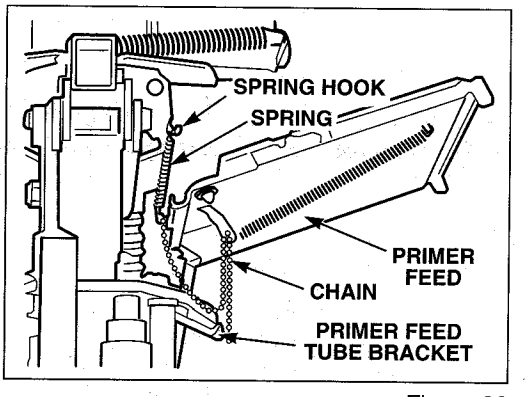


Figure 22

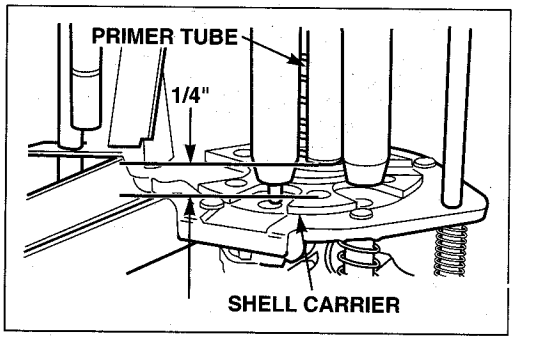


Figure 23

FILLING THE SHOT AND POWDER CONTAINERS

WARNING

Experimenting with powder, shot, primer, wad, and hull combinations not recommended by a component manufacturer is fool-hardy and dangerous!

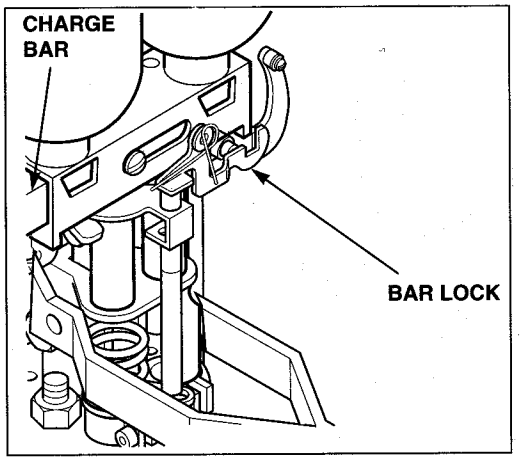


Figure 24

Move the charge bar to the left as far as it will go and lock it in this position with the bar lock, Figure 24. With the charge bar in this position, you may put the proper powder and shot into their respective containers by removing the red plugs from the containers. Shot and powder should only be added with the charge bar in this position.

Static electricity may cause the powder to stick to the side of the powder container. A laundry dryer "antistatic" sheet can be used to help reduce this problem. Remove the red cap plug from the powder container. Place a five to six-inch strip of the sheet into the powder container, leaving approximately one inch hanging out of the opening. Add powder to the powder container and replace the cap plug.

With the 9000G, to remove or install filled or partially-filled containers, tilt the measure assembly back as far as possible and unscrew the containers.

With the 9000H, you must tilt the measure assembly back as far as possible. Applying a downstroke to the reloader will allow you to finish tilting the measure assembly back and remove the containers. Holding the pedal down will not damage the unit. To return the measure assembly to normal position, tilt the measure assembly halfway forward, provide an upstroke by removing your foot from the foot pedal, and tilt the measure assembly fully forward when machine returns to top of stroke.

SINGLE SHELL RELOADING

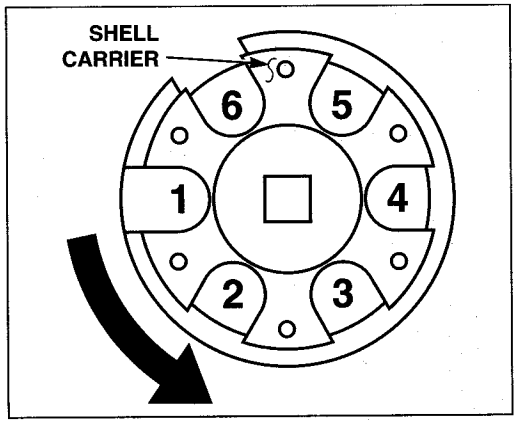


Figure 25

The 9000 series reloaders are small, complex, semiautomatic reloading factories. As a result, you must be completely aware of what is supposed to happen at each station, every time.

The drawing in Figure 25 shows a top view of the six shotshell reloading stations. You will note that your shells are processed in a counterclockwise rotation.

NOTE

In order to accomplish the reloading sequence step-by-step using only one shell, and going through each reloading station, unhook the spring and chain that activates the primer feed.

Manual loading of the primer will be necessary while reloading shells one at a time. Before proceeding, make sure the charge bar is locked as far left as possible, as shown in Figure 24.

STEP ONE

This step lowers the shell into the resize collet where it is resized and the spent primer is removed.

Place an empty shell into the carrier at Station No. 1. Then place a fresh primer into the primer receiver hole, Figure 26, and apply a downstroke to the reloader.

When an upstroke is applied, the carrier automatically indexes the shell to Station No. 2 under the reprime tube, Figure 27.

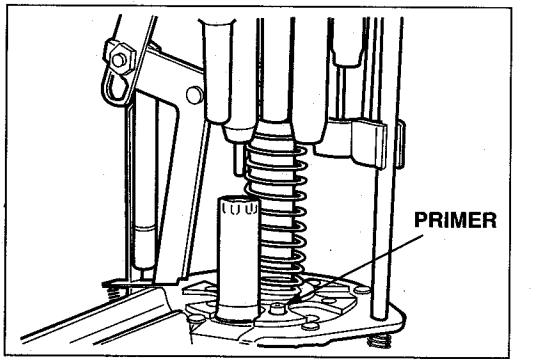


Figure 26

STEP TWO

During step 2, a new primer is pressed into the hull and the proper powder charge is added.

Again, apply a downstroke to the reloader. This action presses the primer into the shell. The charge bar lever automatically unlocks the charge bar.

When an upstroke is applied, the charge bar moves to the right releasing the proper powder charge into the shell casing. The carrier then automatically indexes the reprimed shell with the proper powder charge to Station No. 3.

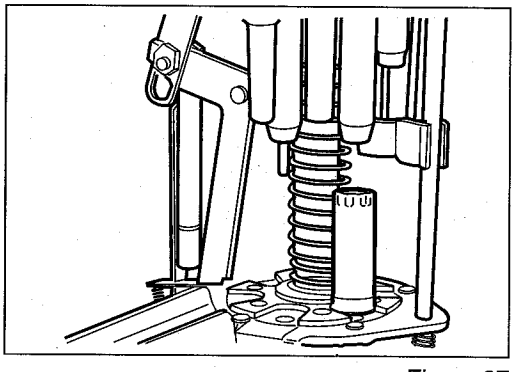


Figure 27

STEP THREE

At station 3, the wad and shot charge are placed into the shell.

Important: Do not force wads into the guide, as this spreads the fingers, preventing the wad guide from dropping into position on the shell. Placing the wad on the ram at a slight angle or resting the wad on the wad guide will hold the wad in place. The wad guide will position the wad into the shell in the proper position during the downstroke.

Using your right hand, place the proper wad on the wad ram, Figure 28. With a reloader downstroke, the wad is seated. Also, the charge bar moves to the left and drops a shot charge. At this point, because no shell was positioned in Station No. 2, the bar lock should raise, locking the bar to the left and no more shot or powder should be dispersed during the following operations.

When an upstroke is applied, the carrier automatically indexes the shell to Station No. 4.

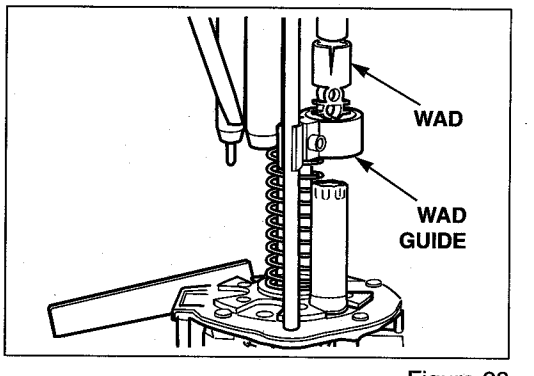


Figure 28

STEP FOUR

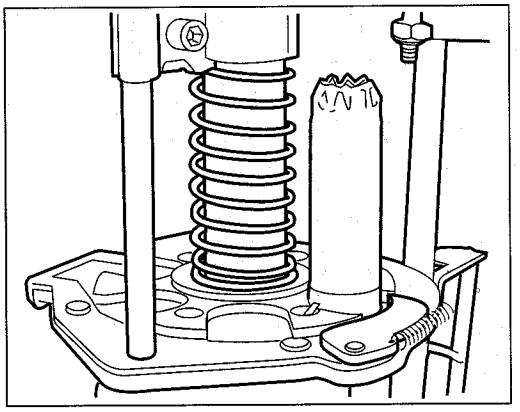


Figure 29

At station 4, the crimp is started with the exclusive Spindex™ crimp starter.

A properly started crimp should look like that depicted in Figure 29. It is important that shells are crimped with the same crimp as the original, either 6 or 8 point.

When the reloader is returned to the top of the stroke, the carrier automatically indexes the shell to Station No. 5.

STEP FIVE

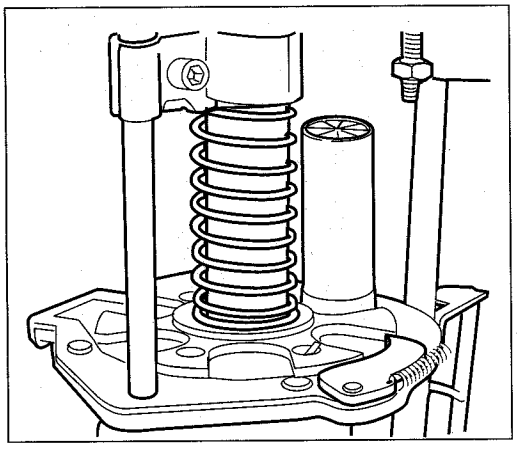


Figure 30

At Station No. 5, the closing station, the shell is crimped.

As you apply a downstroke to the reloader, the crimp punch and die move down on the casing and your reloaded shell begins to take on a factory appearance, Figure 30.

When the reloader is returned to the top of the stroke, the carrier automatically indexes the shell to Station No. 6.

STEP SIX

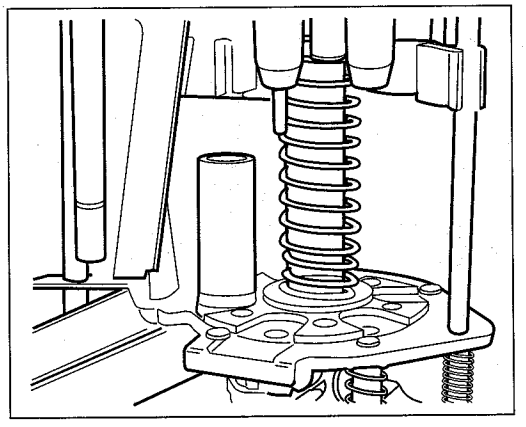


Figure 31

At Station No. 6, the reloader puts a finished radius on the shell, Figure 31.

A downstroke applied to the reloader lowers the finish die on the shell. The result is a perfectly reloaded shell. A properly loaded and crimped shell should look like the shell in Figure 32.

When the reloader is returned to the top of the stroke, the carrier automatically indexes and the finished shell is ejected from the carrier.

THE FINISHED SHELL

We recommend that the size of the shell be checked with a shell checker. If a shell checker is not available, refer to the resized brass dimensions table on page 32 for the size of brass that should be obtained from your reloader.

If at this point, you do not have a good looking crimp, it would be wise to recheck for proper components and shell case.

Not all crimps will look identical and each crimp may not be perfect. This is due to the size of the hulls, material of the hull, and the force applied to the loader.

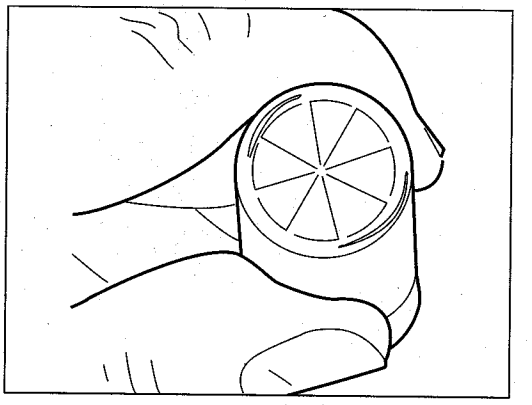


Figure 32

AUTOMATIC SEQUENCE

NOTE

In order to understand the operation of the reloader, it is highly recommended that you practice reloading using the Single Shell Reloading procedure beginning on page 12.

Preparing the Reloader.
Now that we have gone through the loading sequence with one shell, let's proceed with the setup of the automatic sequence that will give us a loaded shell with each cycle of the reloader. The 9000G and 9000H are very easy to operate, but attention must be paid to detail. The misloading of one shell may affect the characteristics of all shells in the press at that time. Before beginning, be sure the shot and powder containers are filled as shown in **FILLING THE SHOT AND POWDER CONTAINERS** on page 12. Then, load the automatic primer feed tray using the procedure below.

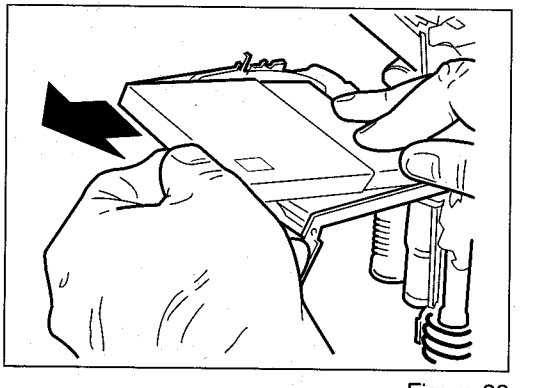


Figure 33

1. Remove the primer feed cover by sliding the cover away from the reloader and lifting.

2. Place a box of primers on the tray with the liner facing up.

3. Slide the box cover off slowly, leaving the liner and primers on the tray, Figure 33.

4. Carefully lift the liner, leaving the primers on the tray, Figure 34.

5. Replace the primer feed cover.

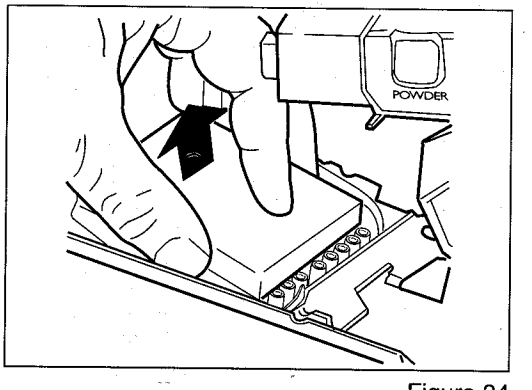


Figure 34

IMPORTANT: Primer feed cover must be installed to prevent primers from tipping over in the feed tray.

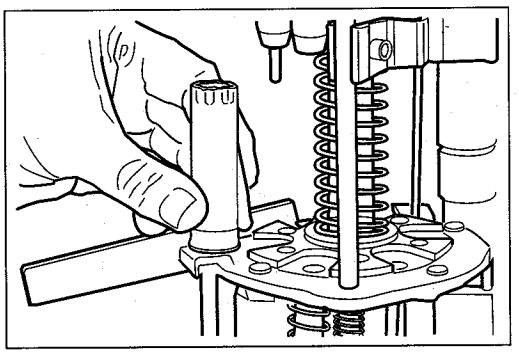


Figure 35

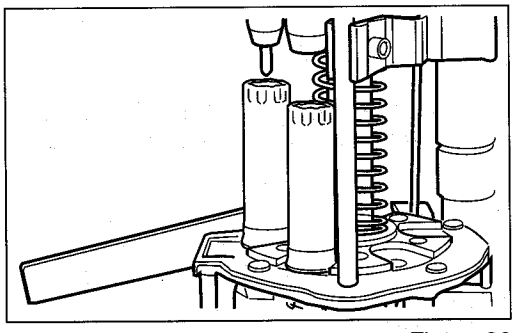


Figure 36

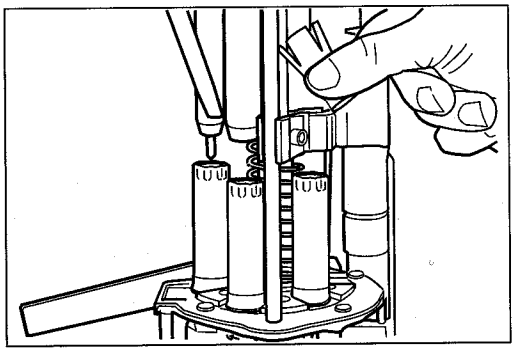


Figure 37

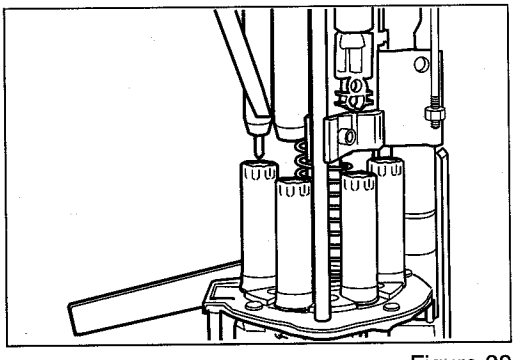


Figure 38

To assure proper operation of the primer feed and index mechanism, it is important to operate the machine through its full stroke. Check to be sure primers drop into the primer receiver hole, Figure 21 on page 11, advance, and drop into the primer seating assembly. Do this to 50 or more primers. If primers lie cocked on top of the carrier or do not drop into the primer receiver hole until the upstroke of the machine, it may be necessary to adjust or bend the tube clamp, Figure 20 on page 11.

Automatic Reloading.
Place an empty shell in Station No. 1, Figure 35. Make certain that the charge bar is locked all the way to the left position by the bar lock, Figure 24 on page 12. Apply a downstroke to the reloader. This will remove the old primer as well as place a new primer in position and resize the brass head of the shell.

When an upstroke is applied to the reloader, the carrier will automatically index. Now place another empty shell in Station No. 1. Repeat the downstroke and upstroke sequence.

When the reloader returns to the top of the stroke, the carrier will automatically index. Insert a wad on the wad ram, and place another empty shell in Station No. 1. Repeat the sequence. Repeat the above procedure each time to obtain a reloaded shell with each **complete** cycle of the reloader. The sequence shown in Figure 36 through Figure 40 should occur.

To avoid mistakes and problems, it is necessary to watch for certain things:

1. Do not mix shell types or sizes while loading. Process only one kind of shell with matching components at a time. Mixing shells is sure to cause trouble.

2. Check all shells for defects, split plastic, cracked brass, and foreign objects before placing in machine. Each defective shell processed will probably cause trouble and trouble means "downtime" not only to remove the defective shell but to clean up the mess that it may have caused.

3. Do not run out of shot, powder, or primers. Develop a regular sequence for replacing these components. (Example: every four boxes of shells, primers must be added - every eight boxes, shot and powder must be replenished.) Also, remove the spent primers from under the machine each 400 rounds.

4. Make sure that a primer has dropped into the carrier and then into the primer seating assembly as the carrier is advanced.

5. **Always** be sure to make a full stroke of the reloader.

6. **Never** "double stroke" the reloader because of an incomplete first stroke, without first checking to see whether any shot or powder has been dropped.

7. If you notice unusual resistance on the downstroke - **stop**. Return the handle to the top of the stroke and locate the problem. Failure to do so will result in damage to the machine.

8. Anytime that you make a mistake or something goes wrong - **stop**. Tip the measure back, lock the bar to the left, unload all shells from the machine, open them and remove the contents before starting over. Do not allow incomplete or incorrectly loaded shells to get mixed in with good shells. To remove individual shells or empty the carrier, refer to **IF YOU HAVE TROUBLE**, beginning on page 18.

Important: Do not operate the reloader with the measure tipped back and the containers installed. Remove containers when operating reloader with measure tipped back.

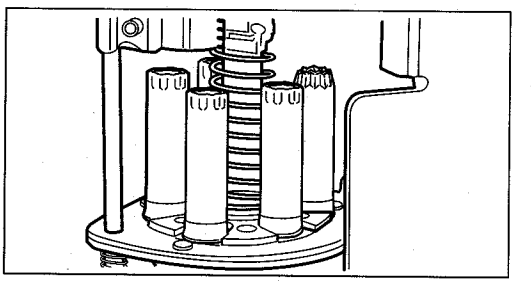


Figure 39

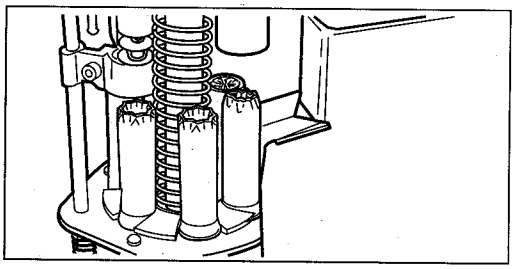


Figure 40

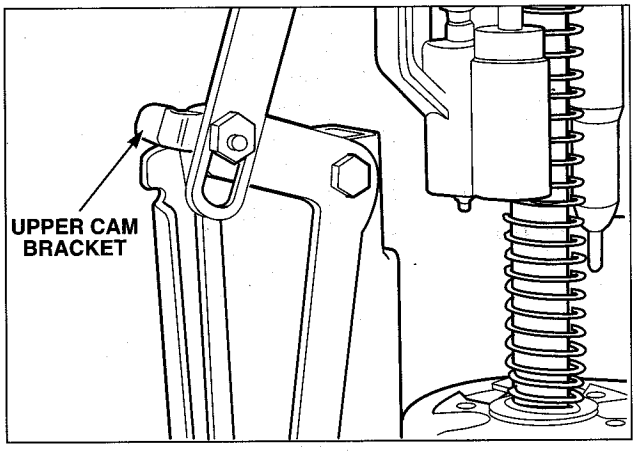


Figure 41

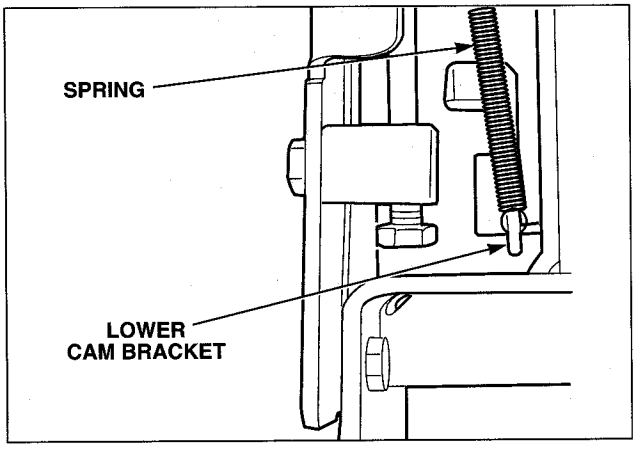


Figure 42

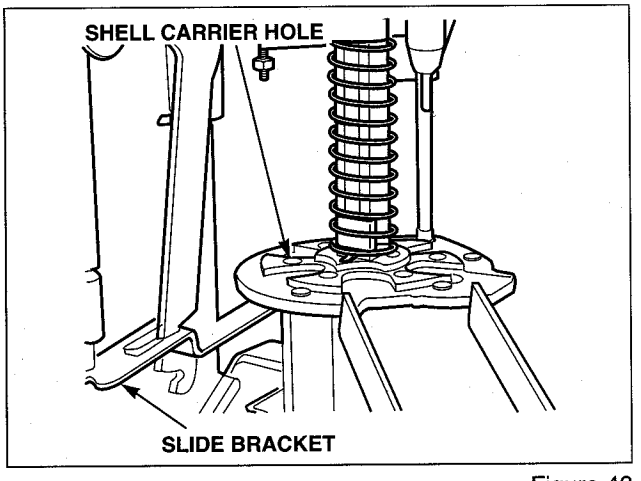


Figure 43

During the reloading process, problems may occur or you may notice unusual resistance on the downstroke. If this happens, **stop** the reloading process and locate the problem. It is best to remove partially reloaded shells, empty their contents, and begin the reloading process again.

If the carrier fails to rotate completely to the next position due to a primer becoming lodged and not dropping properly into primer seating assembly, simply push down slightly on the upper cam bracket, Figure 41, to back up the shell carrier allowing the primer to drop properly into the seating assembly. When the primer is seated properly, release the upper cam bracket allowing the shell carrier to advance normally. Continue reloading.

Removing Shells From the Reloader.
Individual shells may be removed from the machine at any station. Tip the top of the shell inward to raise the rim above the base ring and slide them out.

If you wish to clear the carrier because of a mistake, push down on the upper cam bracket, Figure 41, and manually rotate the shell carrier counterclockwise until the slide bracket finger picks up the next forward hole in the shell carrier. Then release the upper cam bracket. Repeat this procedure until the carrier is empty.

Disengaging Auto-Index.
Unhook the spring attached to the lower cam bracket, Figure 42. The slide bracket, Figure 43, can be removed by raising the bracket, then pushing the bracket forward and dropping it out of the hook of the upper cam bracket. Now the carrier is free to index manually. When reengaging the auto-index, be sure that the slide bracket finger is in the shell carrier hole.

If You Spill Shot or Powder.
If shot or powder has been spilled in the reloader, the following steps should be followed to remove shot or powder from the moving parts.

1. Remove all shells from the shell carrier as described in **Removing Shells From the Reloader** on page 18, noting the station of each shell.

2. Lift the column spring above the hole in the column and insert an allen wrench (or nail) in the hole, Figure 44.

3. Remove the index spring and carrier hold down pin. Use care to avoid losing the index ball which is under the index spring.

4. Insert a screwdriver blade between the carrier hold down and carrier, pry up slightly, alternating pressure from various points until the hold down is high enough to raise the carrier. Remove the index ball.

5. Remove the primer seating assembly, Figure 45.

6. Remove all pellets or powder that may be trapped beneath the carrier or between the outer edge of the collet and inside edge of the opening in the base.

7. Remove the shell lifter from the collet by reaching under the machine and pushing it up with one hand while removing with the other, Figure 46.

8. Remove all pellets or powder from collet slots, Figure 47.

9. Reposition the shell carrier and carrier hold down, replace the index ball, index spring, and carrier hold down pin.

10. Replace the primer seating assembly.

11. Withdraw the retaining pin and ease the column spring into position over the flange of the index spring. Pivot the measure to the rear and manually lock the charge bar to the left. Return the measure to upright position.

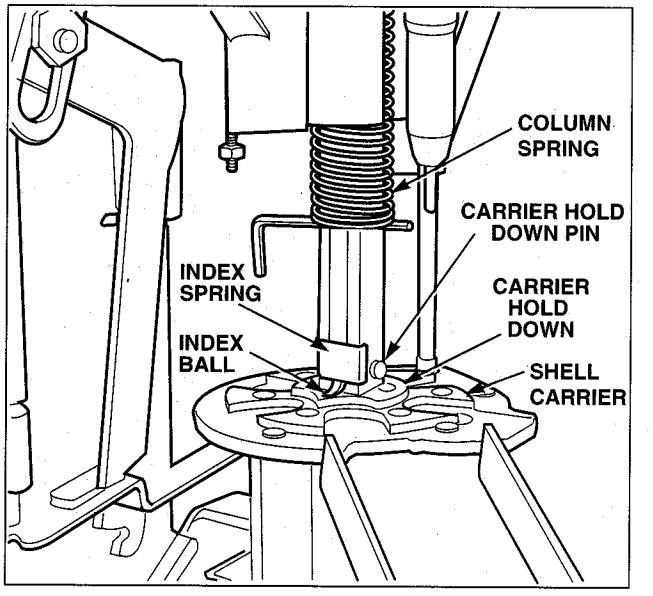


Figure 44

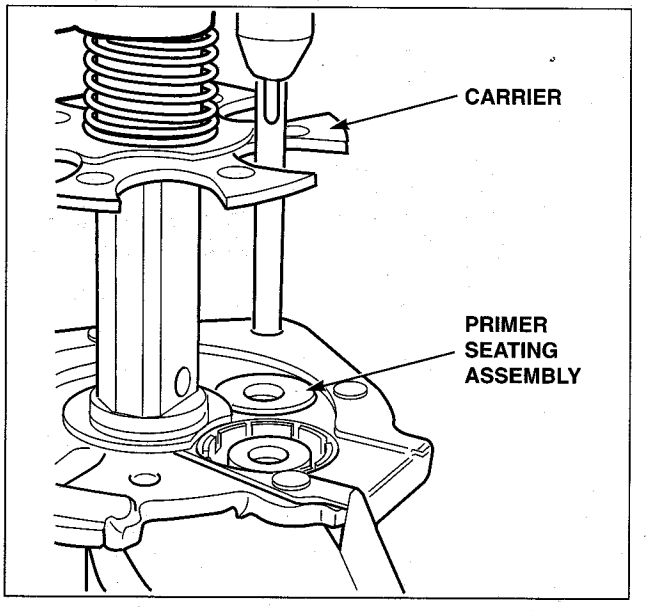


Figure 45

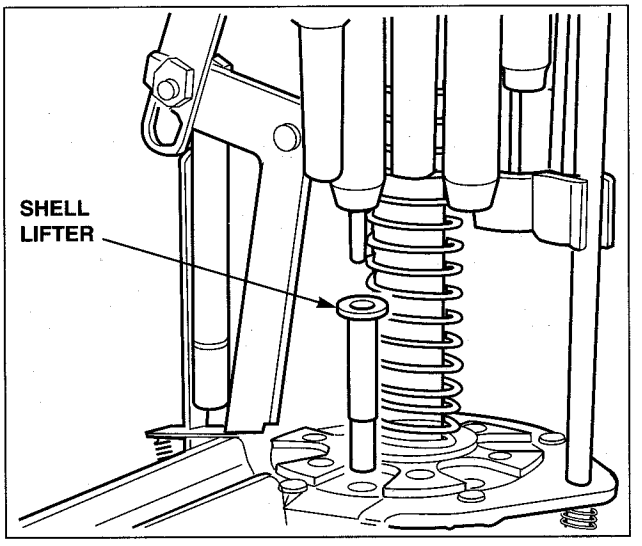


Figure 46

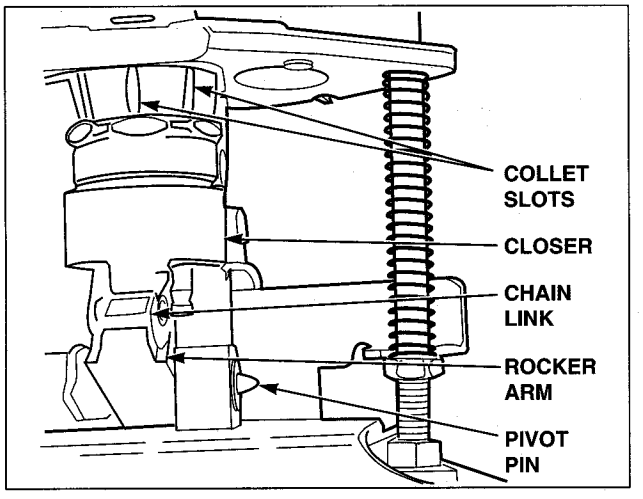


Figure 47

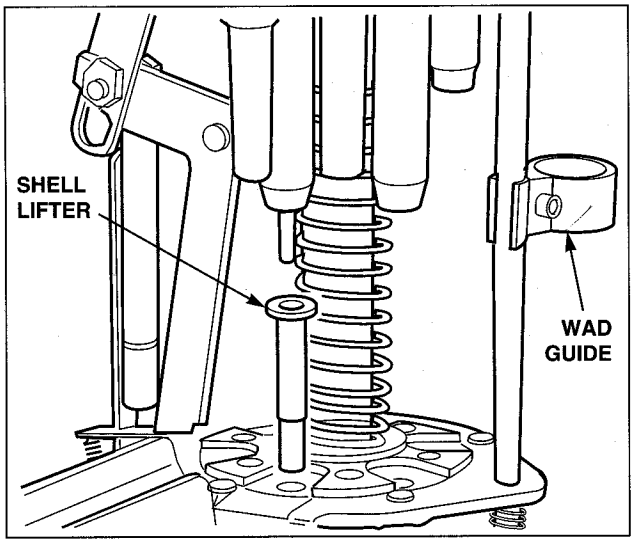


Figure 48

12. Replace the shell lifter. The shell lifter must go in the yolk that is mounted at the bottom of the wad guide rod. The shell lifter must be kept clean and dry.

13. Reposition the last three shells in the carrier in the order in which they were removed. Place an empty shell in the first station and proceed with the normal reloading sequence after disposing of the first three shells on which preliminary operations were performed.

Cleaning and Lubricating Collet.

1. Remove pivot pin and disassemble chain link, Figure 47.
2. Remove the rocker arm by pulling it to the left.
3. The closure assembly can now be pulled down to expose all the fingers of the collet.
4. Clean out the inside of the closer with solvent or blow out with air.
5. Clean out the slots of the collet with a pick or a knife.
6. Relubricate the inside of the closer with an anti-seize lubricant. Also apply a light coat to the outside of the collet fingers. See **LUBRICATION AND CLEANING** on page 31.
7. Reinstall rocker arm, pivot pin, and chain link.

Removal of Collet.

1. Remove the shot and powder containers from the machine.
2. Remove the shell lifter from the collet by reaching under the machine and push it up with one hand while removing with the other, Figure 48.
3. Swing the wad guide to the right.
4. Raise the column spring and place a pin through the hole in the column. Also remove the index spring and ball along with the carrier hold down pin, Figure 49.
5. Enter a screwdriver under the carrier and raise the carrier alternating pressure from side to side until the carrier can be raised as in Figure 50.
6. Remove the loader from the bench or board on which it is mounted.

7. Tip the machine on its side and using a 13/16" socket, remove the nut that locks the collet. The collet is now free to turn up and out of the top of the base.

8. To aid in turning the collet out of the base, insert a large screwdriver with a blade width of at least .450" wide to the bottom of the collet. By applying slight pressure and turning the screwdriver clockwise, the collet will thread out of the top of the base assembly.

CAUTION

Applying too much pressure may put burrs in the collet or crack the collet itself.

9. To reinstall the collet, push the collet through the base and turn the collet clockwise to engage the threads in the lower base. Once the threads are engaged, use the screwdriver to aid in turning the collet counter clockwise back down into the base. The normal collet adjustment is so the top of the collet is flush with the top of the base. Lock collet into position with the 13/16" nut.

10. Turn machine upright and lower carrier assembly back in place and replace carrier hold down pin.

11. Replace index ball and spring and lower column spring.

12. Install the shell lifter.

13. Install the shot and powder containers.

Reloader Troubleshooting.
The adjustments of your reloader should be correct as set at the factory. However, over time, the reloader will need adjusting and minor maintenance. Also, due to the wide variety of shells that can be reloaded with this machine, adjustments will need to be made for optimum results. The following chart describes possible problems that can occur and what can be done to solve the problem.

To understand the operation of the reloader parts, see Checking the Measure Assembly on Page 28.

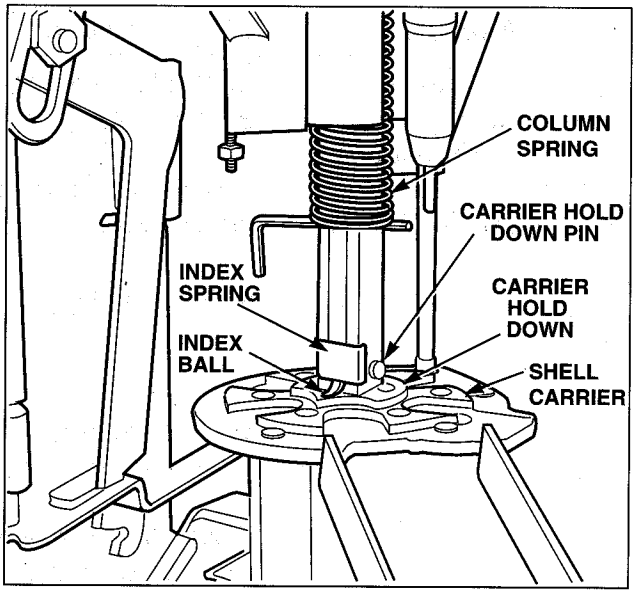


Figure 49

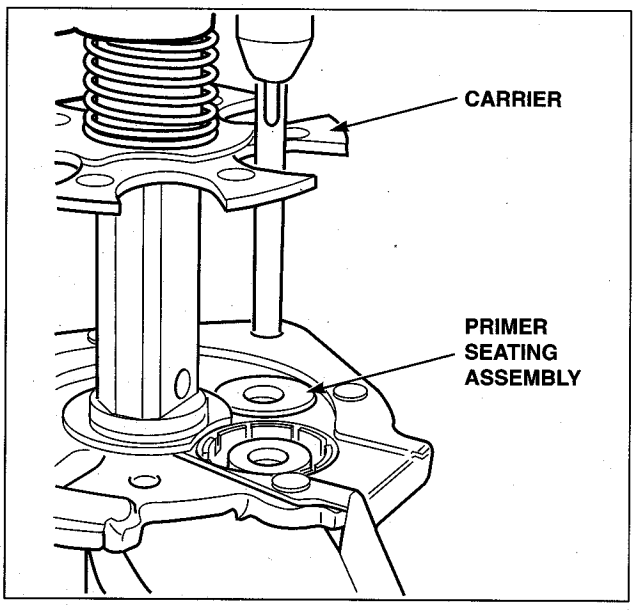


Figure 50

IF YOU HAVE TROUBLE

Problem	Cause	Solution	Reference
Reloader bottoms before making complete downstroke with shell in resize station (Station No. 1).	Shell lifter does not drop all the way.	Clean powder/shot from inside of collet.	If You Spill Shot or Powder (pg. 19).
	Too many spent primers under base.	Empty spent primer tray more often.	
	Oil on shell lifter.	Clean shell lifter.	If You Spill Shot or Powder, Steps 7 and 11 (pg. 19).
	Wad guide positioned too low in bracket.	Adust wad guide.	Wad Guide Replacement (pg. 26).
	Collet does not open far enough to allow shell to drop all the way down.	Adjust collet.	Station No. 1 Resize and Deprime (pg. 25).
Reloader does not index.	Foreign material in primer seat assembly.	Clean primer seat assembly.	Installing the Primer Seating Assembly (pg. 10).
		1. Use correct size primer.	
		2. Increase travel of reprime tube.	Station No. 2 Reprime (pg. 26).
	Primer not seated deep enough.	Adjust reprime tube.	Station No. 2 Reprime (pg. 26).
	Shell catches in Station No. 1 collet.	1. Adjust collet.	Station No. 1 Resize and Deprime (pg. 25).
		2. Adjust shell carrier.	Adjustment for Shell Carrier Release (pg. 31).
	Auto index releases too soon.	Adjust auto index.	Adjustment for Shell Carrier Release (pg. 31).
	Incorrect travel of advancing bracket.	Adjust advancing bracket.	Adjusting Travel of Slide Bracket (pg. 30).
	Automatic index does not release at correct time.	Adjust auto index.	Adjustment for Shell Carrier Release (pg. 31).
Excessive pressure needed for downstroke.	Reprime tube set too low.	Adjust reprime tube.	Station No. 2 Reprime (pg. 26).
Reprime tube clamp slips.	Reprime tube set too low.	Adjust reprime tube.	Station No. 2 Reprime (pg. 26).

Problem	Cause	Solution	Reference
Charge bar does not operate.	Measure assembly not fully tipped forward.		
	Measure assembly pivot loose.	Tighten pivot screw.	
	Reprime tube set too high.	Adjust reprime tube.	Station No. 2 Reprime (pg. 26).
Charge bar will not lock.	Bar stop screw does not touch left side of measure assembly slot.	Adjust charge bar travel.	Measure Assembly (pg. 28). Charge Bar Travel (pg. 29).
	Bent bar actuator.	Straighten or replace bar actuator.	
	Bar actuator out of adjustment.	Adjust bar actuator.	Measure Assembly (pg. 28).
	Bar Lock does not move into place.	Repair or replace bar lock and/or bar lock spring.	
	Reprime tube set too low.	Adjust reprime tube.	Station No. 2 Reprime (pg. 26).
Powder leaks from measure assembly.	Brass washer missing or incorrectly installed on measure assembly.	Install brass washer.	Measure Assembly (pg. 8).
	Grommet missing or damaged on measure assembly.	Replace grommet.	Measure Assembly (pg. 8).
Finished sheel brass not proper size.	Resizing collet out of adjustment.	Adjust closer adjustment nut.	Station No. 1 Resize and Deprime (pg. 25).
Primer not fully seated.	Reprime tube set too high.	Lower reprime tube.	Station No. 2 Reprime (pg. 26).
Crimp not deep enough.	Crimp punch adjusted too high.	Lower crimp punch.	Station No. 5 Crimp Close (pg. 27).
	Shell too full.	Check hull, wad, powder, and shot combination.	Consult Powder Manual.
Crimp too deep.	Crimp punch adjusted too low.	Raise crimp punch.	Station No. 5 Crimp Close (pg. 27).
	Shell not full enough.	Check hull, was, powder, and shot combination.	Consult Powder Manual.

IF YOU HAVE TROUBLE

Problem	Cause	Solution	Reference
Opening in center of shell.	Cam set too high.	Lower cam adjustment.	Station No. 5 Crimp Close (pg. 27).
	Crimp starter out of adjustment.	Lower crimp starter.	Station No. 4 Crimp Starter Station (pg. 27).
Shell has swirl in crimp.	Cam set too low.	Raise cam adjustment.	Station No. 5 Crimp Close (pg. 27).
	Crimp starter out of adjustment.	Raise crimp starter.	Station No. 4 Crimp Starter Station (pg. 27).
Improperly formed crimp.	Wrong crimp starter.	Replace crimp starter.	Station No. 4 Crimp Starter Station (pg. 27).
Incorrect shell radius.	Finish die out of adjustment.	Adjust finish die.	Station No. 6 Final Crimp (pg. 28).
Shell bulges above the brass.	Shell overfilled.	Check hull, wad, powder and shot combination.	Consult Powder Manual.
	Cam set too low.	Raise cam adjustment.	Station No. 5 Crimp Close (pg. 27).
	Finish die set too low.	Raise finish die.	Station No. 6 Final Crimp (pg. 28).
Inaccurate powder or shot charges.	Short travel of charge bar.	Adjust bar actuator.	Measure Assembly (pg. 28).

STATION NO. 1 RESIZE AND DEPRIME.

Collet Closure Adjustment.

The collet as it comes from the factory is adjusted to give a dimension that is the same as factory loads. After a period of time, this may require adjustment. To make the proper collet closure adjustment for proper resizing, follow these instructions:

1. Remove all shells from the shell carrier as described in **Removing Shells From the Reloader** on Page 18.

2. Using a wrench, turn the collet closer adjustment nut, Figure 51, either counterclockwise or clockwise.

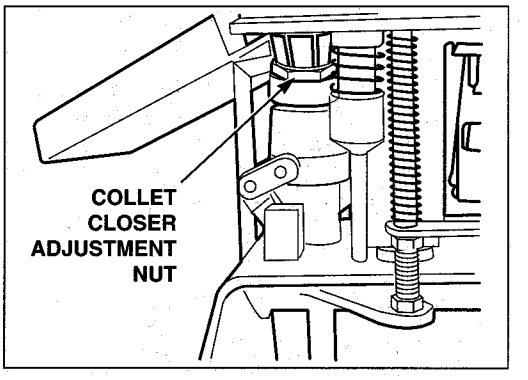


Figure 51

A counterclockwise adjustment raises the nut to resize the brass smaller. A clockwise adjustment lowers the nut and will not resize the brass as much. Always make sure that a flat side of the closer nut is properly aligned with the base support. It is recommended not to resize the head of the brass any smaller than is necessary to fit into the tightest chambered gun you shoot.

It is important to keep the inside of the collet clean and dry. Only lubricate the outside segments of collet with recommended lubricant. See **Lubrication and Cleaning** for details.

Shell Lifter Height Adjustment.

It is necessary for the shell lifter to be level with the track in which the shells ride around the machine. To adjust shell lifter height:

1. Make sure the reloader is at the top of its stroke.

2. Loosen the wad guide mounting screw slightly (enough so you may turn it on the wad guide rod).

3. Using a ½ inch open-end wrench, loosen the lock nut, Figure 52.

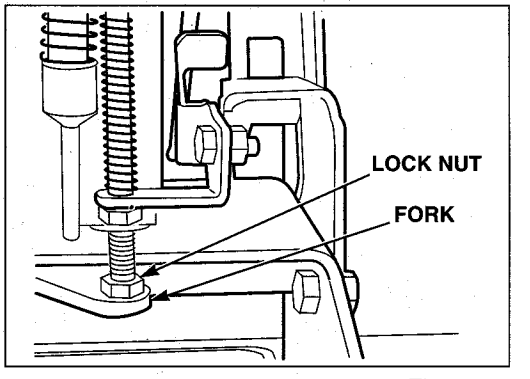


Figure 52

4. Put a straight edge in the track above the shell lifter, Figure 53.

5. Raise or lower the shell lifter as required by turning the wad guide rod in or out of the fork until the top of the shell lifter is level with the surface of the track.

6. Tighten the lock nut, Figure 52.

7. Reposition the wad guide and tighten the mounting screw. Refer to **Wad Guide Replacement/Adjustment** on page 26.

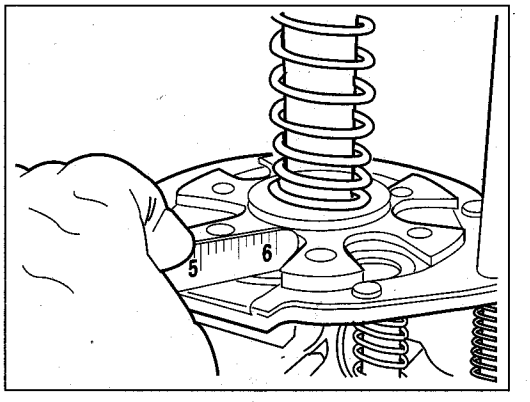


Figure 53

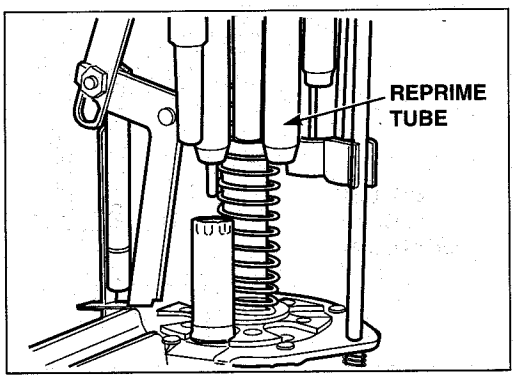


Figure 54

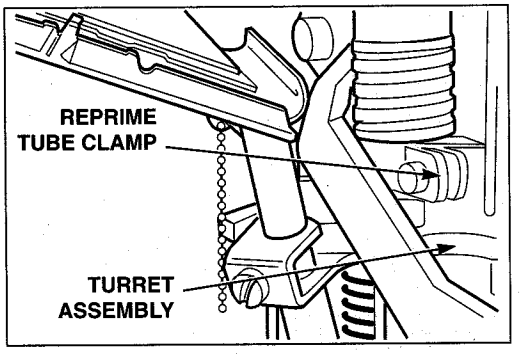


Figure 55

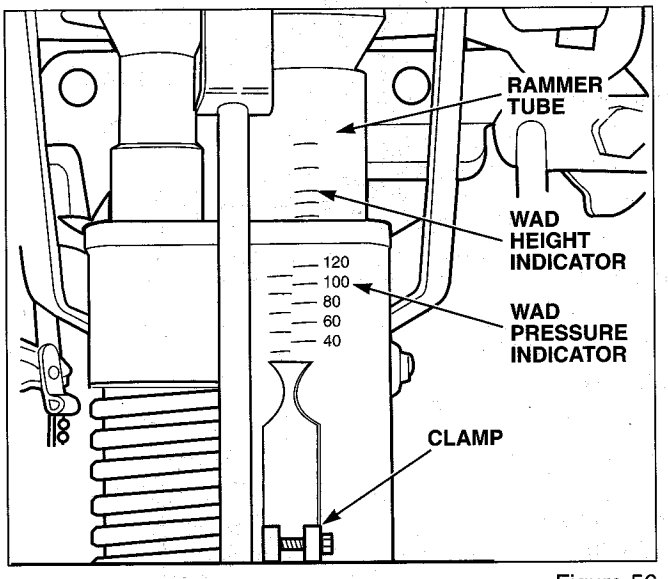


Figure 56

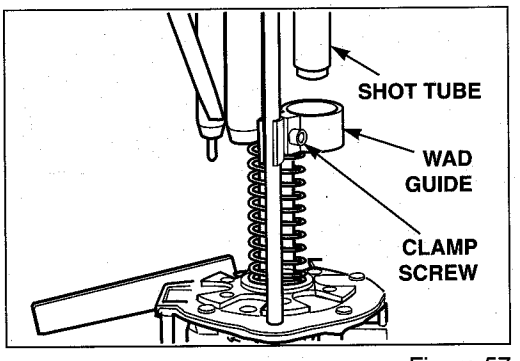


Figure 57

STATION NO. 2 REPRIME.

The only adjustment is to raise or lower the reprime tube, Figure 54, to accommodate different base wad heights. With a shell in this position, the reprime tube clamp should lift 3/16 inch off the turret assembly at the full bottom of the downstroke, Figure 55. To adjust, loosen the reprime tube clamp and slide the tube up or down to the required position and retighten.

STATION NO. 3 SHOT AND WAD.

Wad Pressure Adjustment.

When loading with modern one-piece plastic wads, it is usually not necessary to have wad pressure show on the Wad Pressure Indicator, Figure 56. However, the wad should be pushed down tight against the powder. In addition, some wad manufacturers have specific recommendations for wad pressure.

Wad pressure is set by adjusting the height of the rammer tube, Figure 56. The wad pressure may be raised or lowered by loosening the reprime tube clamp. Move the tube to the desired position and tighten clamp. See the recommended settings of the rammer tube in the table on page 32.

Wad Guide Replacement/Adjustment.

The wad guide is removed or adjusted by loosening the clamp screw and removing or adjusting the wad guide, Figure 57.

NOTE

Top of wad guide should be flush to 1/16 inch above clamp.

When installing or adjusting the wad guide, leave the clamp screw loose and slowly apply a full downstroke to the reloader. With the shot tube through the wad guide, tighten the clamp screw using care not to move the wad guide with the wrench. The rammer tube should pass through the center of the wad guide.

STATION NO. 4 CRIMP STARTER STATION.
It is important to crimp all shells with their original crimp, either 6 point or 8 point. If you are reloading paper shells, a smooth cone crimp starter is available which will do the best job.

To remove the Spindex™ crimp starter from the reloader, simply cock it to one side and pull down. To install the Spindex™ crimp starter, simply snap it in place.

The crimp starter may be adjusted up or down by first loosening the nut, Figure 58, located on top of the turret. The nut under the turret may be turned either up or down to give less or more crimp start.

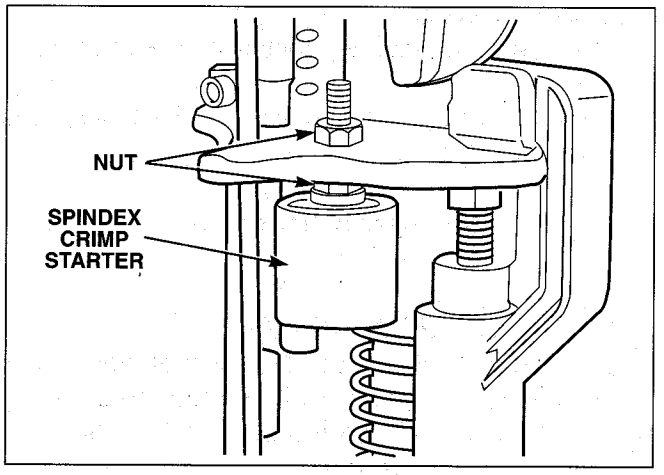


Figure 58

Remember - giving more or less of a crimp start will often improve the final crimp.

STATION NO. 5 CRIMP CLOSE.
As your loader comes from the factory, the crimp close adjustments should be correct for most shells. However, two adjustments can be made in the crimp close station. They are the cam adjustment and the punch adjustment.

Four common problems that can be corrected by crimp station adjustments are shown in Figure 59 and described below.

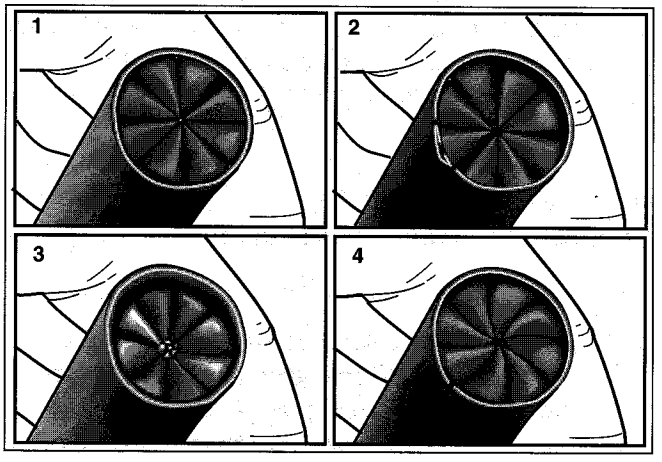


Figure 59

Shell No. 1 - Crimp not deep enough. Correct by lowering the crimp punch.

Shell No. 2 - Crimp too deep. Correct by raising the crimp punch.

Shell No. 3 - Opening in center of shell. Correct by lowering cam adjustment approximately 1/32 inch as shown by direction of arrows.

Shell No. 4 - Swirl in the crimp. Correct by raising cam adjustment approximately 1/32 inch.

Crimp Punch Adjustment.
1. Using a ½ inch open-end wrench, loosen lock nut, Figure 60.

2. Turn the slotted screw at the top of the crimp punch clockwise to increase depth of crimp or counter clockwise to decrease depth of crimp.

3. Tighten the lock nut.

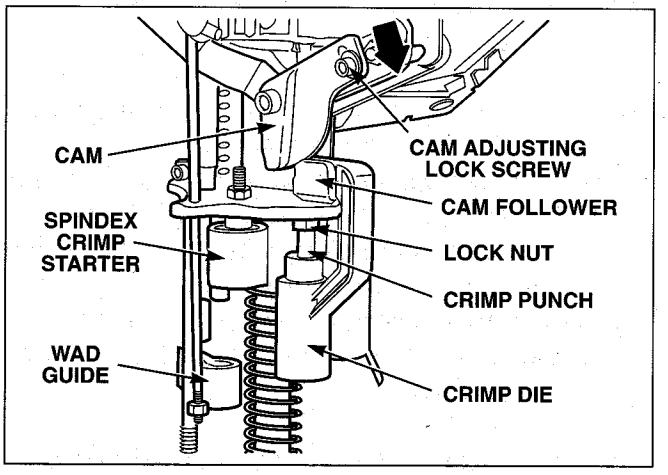


Figure 60

Cam Adjustment.

1. Loosen cam adjusting lock screw, Figure 60.
2. Adjust cam. See description for Shell No. 3 and Shell No. 4 above.
3. Tighten cam adjusting lock screw.

STATION NO. 6 FINAL CRIMP.

This station puts the "lead" or radius on your shells for easy feeding, especially in auto loaders and pumps. This can be lowered or raised to get the desired "lead." It is important not to have this station adjusted too deep or you will crush the shell just above the brass. This is very critical with paper shells, and straight wall cases. To adjust, loosen the lock nut on top of the turret with a ½ inch open-end wrench, rotate the slotted screw at the top of the finish die to adjust, and tighten the lock nut.

MEASURE ASSEMBLY.

Checking the Measure Assembly.

NOTE

The containers need not be in position to check the action of the measure assembly, and we suggest they be removed or that they be emptied. The measure assembly must be tipped forward in an upright and level position, and the charge bar positioned to the left as shown in Figure 61.

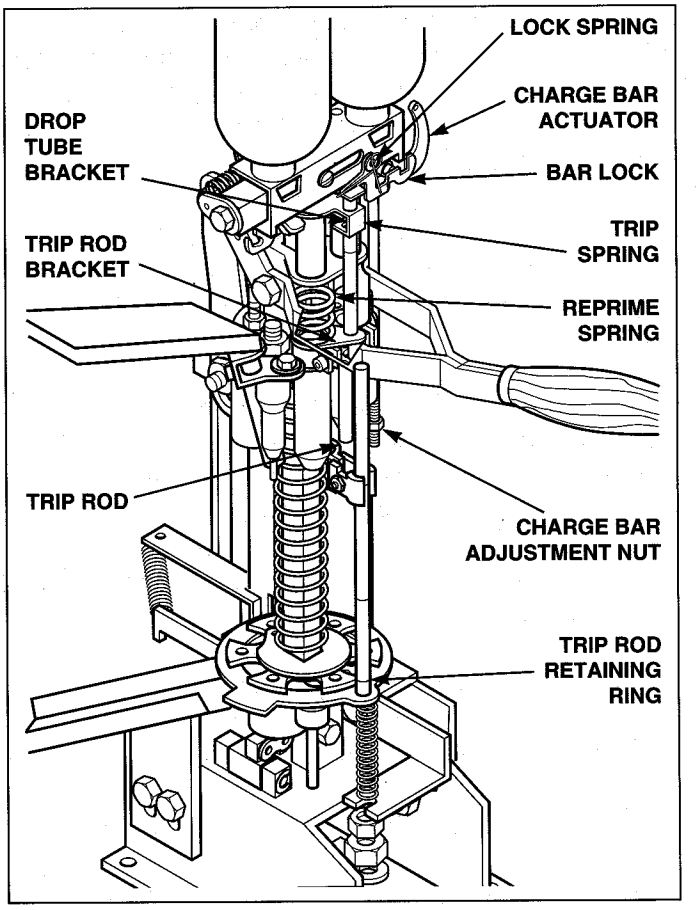


Figure 61

The measure assembly is controlled by the MEC Auto-Cycle Mechanism. The Auto-Cycle is activated by the compression of the reprime spring, Figure 61, at the time that the primer is being seated. To position the charge bar for auto-cycling, the charge bar must be moved to the left either manually or by applying a downstroke to the reloader to allow the bar lock to hold the bar in the extreme left position.

When the carrier is empty and a downstroke is applied, the charge bar remains locked to the left as shown in Figure 61. At the bottom of the downstroke, the trip rod bracket engages the retaining ring at the lower end of the trip rod, maintaining the compression of the trip spring.

Upon inserting a shell in the carrier and moving it to the reprime station and applying a downstroke, the spring compresses and the trip rod bracket no longer engages the retaining ring at the lower end of the trip rod. This relationship no longer holds the compression of the trip spring. Its expansion causes the bar lock to drop down. An upstroke of the reloader causes the charge bar to move to the right and drop powder in the shell. When the shell is moved to the wad ramming station without a shell at the reprime station, the trip spring is again compressed by the engagement of the trip rod bracket with the retaining ring at the lower end of the trip rod. The lock spring lifts the bar lock to again maintain the position shown.

Charge Bar Travel.

NOTE

It is recommended that powder and shot charges always be checked with a reliable scale. When checking these charges, do it during the normal operation of the machine.

A properly adjusted charge bar will operate as follows: at the bottom of the downstroke, the bar stop screw should just contact the left side of the measure assembly slot, Figure 10.

To adjust the travel of the charge bar, turn the charge bar adjustment nut up on the operating rod so that the bar stop screw just contacts the left side of the measure assembly slot when the reloader reaches the end of the downstroke. If the charge bar travel is too far, a complete downstroke of the reloader can not be made. To correct, lower the adjustment nut.

If the charge bar does not move, check for a bent charge bar actuator, No. 8054. It must push the charge bar to the left when a downstroke is applied to the reloader.

Charge Bar Replacement.

NOTE

Because of the increased use of hard or often called magnum shot we strongly suggest the use of our charge bars with the soft insert to prevent the shearing of shot. Using our bars without the insert may cause shot shearing problems which could result in damage to the machine.

MEC offers a complete assortment of "quick-change" charge bars for any load or gauge. See the *Powder Bushing Chart and Charge Bar Selection Guide* packed with each loader or write to MEC for a complete list of bars.

Your 9000 Series was designed as a high-production machine. To prevent the lodging of large lead shot in the rammer tube, we recommend the use of our Adapter Kit, No. 8581-12, designed for large shot. This kit is available in 12 gauge ONLY. Our charge bars with the soft insert allow you to reload with virtually any shot size up to BB.

To replace the charge bar:

1. Tilt the measure assembly back, remove the shot and powder containers from the measure assembly. Tilt the measure assembly up in place.
2. Move the charge bar to the right by holding the charge bar in place with one hand and releasing the bar lock with the other hand. Slowly allow the charge bar to slide to the right.
3. Disconnect the bar return spring from the spring anchor attached to the charge bar.
4. Remove the bar stop screw from the center of the charge bar.
5. Slide the charge bar to the left and remove it from the reloader. The brass washer in the powder side of measure assembly may drop out when the charge bar is removed.
6. Remove the grommet from the powder side of the measure assembly.
7. Remove the bushing, bolt, and spring anchor from the charge bar. Note the position of the anchor.
8. Install the spring anchor, bolt, and bushing in the new charge bar.
9. Slide the charge bar assembly into the measure assembly.
10. Install the bar stop screw in the charge bar.
11. Connect the bar return spring to the charge bar.
12. Install the brass washer, with dimples facing up, into the powder opening of the measure assembly.
13. Install the grommet into the powder opening of the measure assembly.
14. Check the charge bar travel as described previously in this section.
15. Tilt the measure assembly back and install the powder and shot containers.

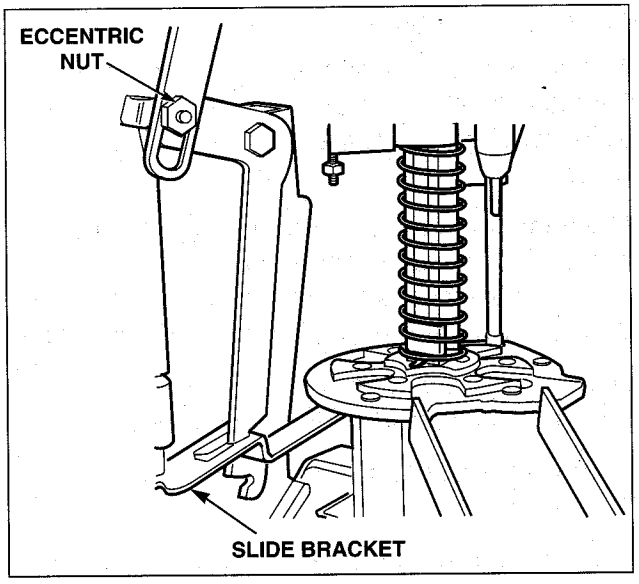


Figure 62

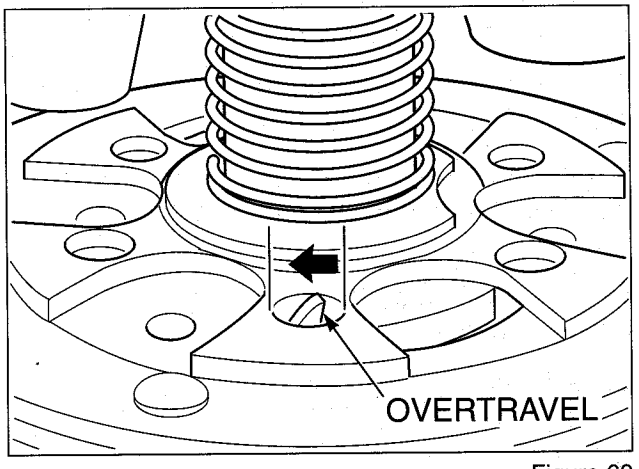


Figure 63

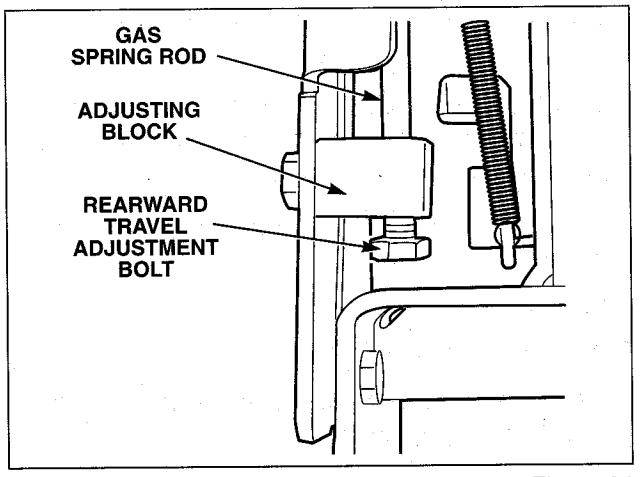


Figure 64

Adjusting Travel of Slide Bracket.
The amount of **forward** travel of the slide bracket is regulated by the eccentric nut, Figure 62. While holding the eccentric nut with a 5/8 inch box wrench, loosen the ball joint with a 7/16 inch open-end wrench. Turning the eccentric nut will increase or decrease the forward travel.

A small amount of overtravel as shown in Figure 63 is necessary.

This overtravel can only be seen during the downstroke of the machine, at about 1/3 of the handle travel.

To retighten, hold the eccentric nut in position with a 5/8 inch box wrench and tighten the ball joint into the nut with a 7/16 inch open-end wrench.

The amount of **rearward** travel of the slide bracket is regulated by the bolt in the adjusting block (at the bottom of the gas spring rod), Figure 64. Using a 1/2 inch box wrench, turn the bolt up in the hole of the block to increase the amount of rearward travel of the slide bracket. The rearward travel should be just enough for the anti-reverse lock to slide into position, Figure 65.

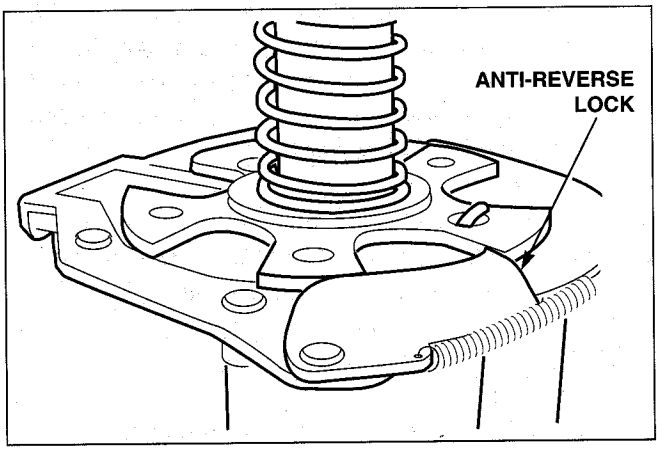


Figure 65

Adjustment for Shell Carrier Release.
The rotation of the shell carrier is regulated by the lock nut on the wad guide rod, Figure 66.

NOTE

If the shell carrier fails to rotate when the handle returns to the top of the stroke, using a ½" open end wrench, turn the lock nut up on the wad guide rod until the carrier rotates. If the carrier rotates too early, turn the lock nut down on the wad guide rod, Figure 66.

The shell carrier should rotate just as the handle returns to the top of the stroke.

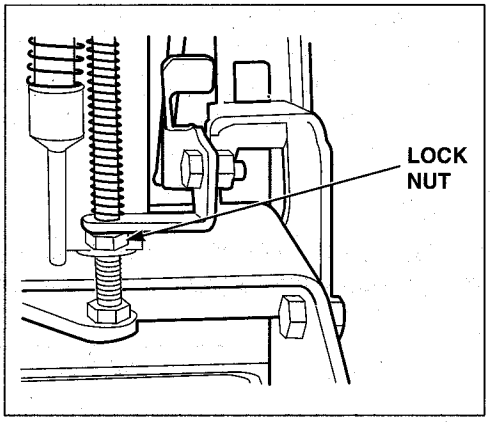


Figure 66

LUBRICATION AND CLEANING

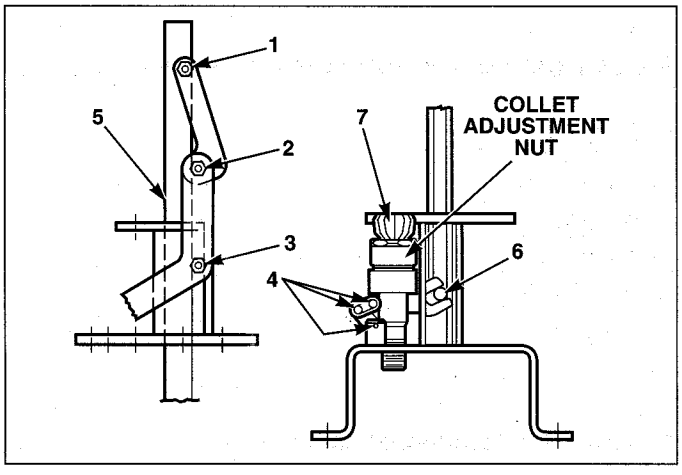


Figure 67

NOTE

We DO NOT recommend the use of spray lubricants on the reloader. These sprays cause a buildup of residue over the entire reloader.

Pivot points 1, 2, and 3 (Figure 67) of the scissors linkage and the chain link and pivot pin, point 4 of the closer assembly, are to be oiled periodically on both sides using EP90 or its equivalent (gear oil). The column in the area where the turret slides, point 5, must also be kept lubricated with EP90 or its equivalent.

A drop of EP90 oil should occasionally be applied at the metal to metal contact area of the operating rod and the bar, as well as to the shoulder bolt which pivots the bar actuator. The roller on the bar actuator, roller on cam crimp die, and roller in the actuator rod (point 6) should be kept lightly oiled. Also, there are three points on the index mechanism that require oil. They are the eccentric nut, the shoulder bolt for upper cam bracket, and the shoulder bolt for lower cam bracket.

Occasionally, feel the inside of the cam crimp die and finish die. If you should notice any buildup of dirt or residue, it can be removed using a swab with any household cleaner.

The outside of the eight collet segments (point 7), in the area where the collet closer bears against the collet, must be GREASED. We have not found an oil or spray lubricant that is satisfactory. We prefer Antiseize lubricant, a product of Loctite™, or a graphite impregnated grease (Outers Gunslick™ or its equivalent). Lack of lubricant on the collet will result in additional effort required on the downstroke and possible damage to the unit when the closer is forced away from the collet on the upstroke. The inside of the collet and shell lifter must be kept **clean** and **dry**.

Wipe the primer tray with tissue or a silicone cloth to allow the primers to slide freely.

CAUTION

Only dry lubricant, such as powdered graphite, is to be used on the charge bar slide or at any point where lubricant may contact powder.

LUBRICATION AND CLEANING

Cleanliness is not a virtue, it's a necessity for efficiency. Powder residue is abrasive and flammable, don't allow an accumulation. Shot should be in the container or in the shell. The results of loose pellets found under a bare foot, in your rug or in the reloader mechanism will, in some manner, adversely affect your efforts.

A little care for a lot of service.

RESIZED BRASS DIMENSIONS

Gauge	Minimum Diameter (inches)	Maximum Diameter (inches)
12	0.804	0.806
16	0.739	0.743
20	0.692	0.694
28	0.622	0.628
410 Bore	0.472	0.476

RAMMER TUBE SETTINGS

Gauge	Rammer Tube Setting
12	5th Line from top
16	3rd Line from top
20	3rd Line from top
28	3rd Line from top
410 Bore	2nd Line from top

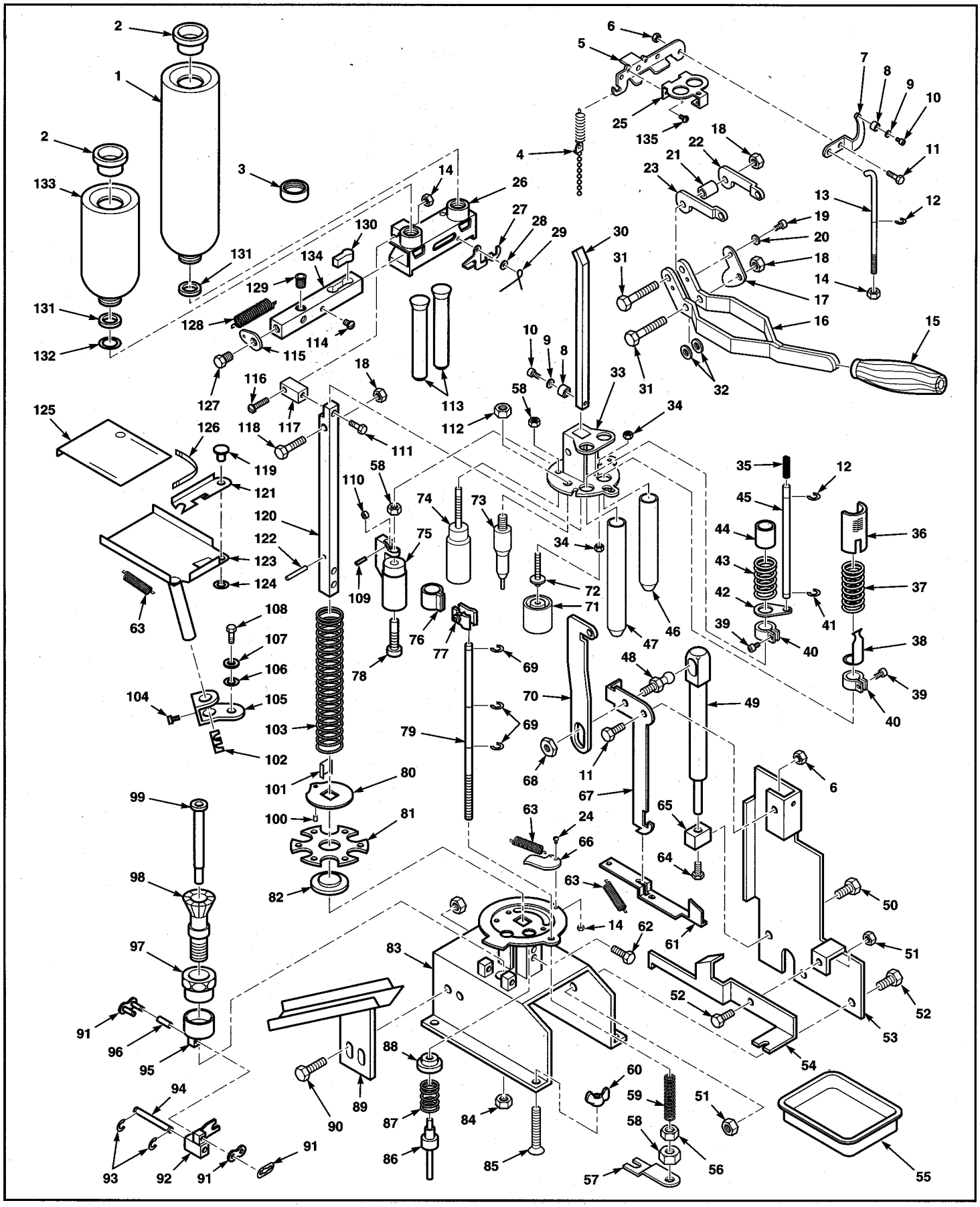
9000H PUMP AND MOTOR SPECIFICATIONS

Motor	
Manufacturer	Emerson, St. Louis, MO
Power	¼ HP
Voltage	115 VAC, 60 Hz.
Speed	1725 RPM
Current	5.8 Amps
Rating	Continuous Duty

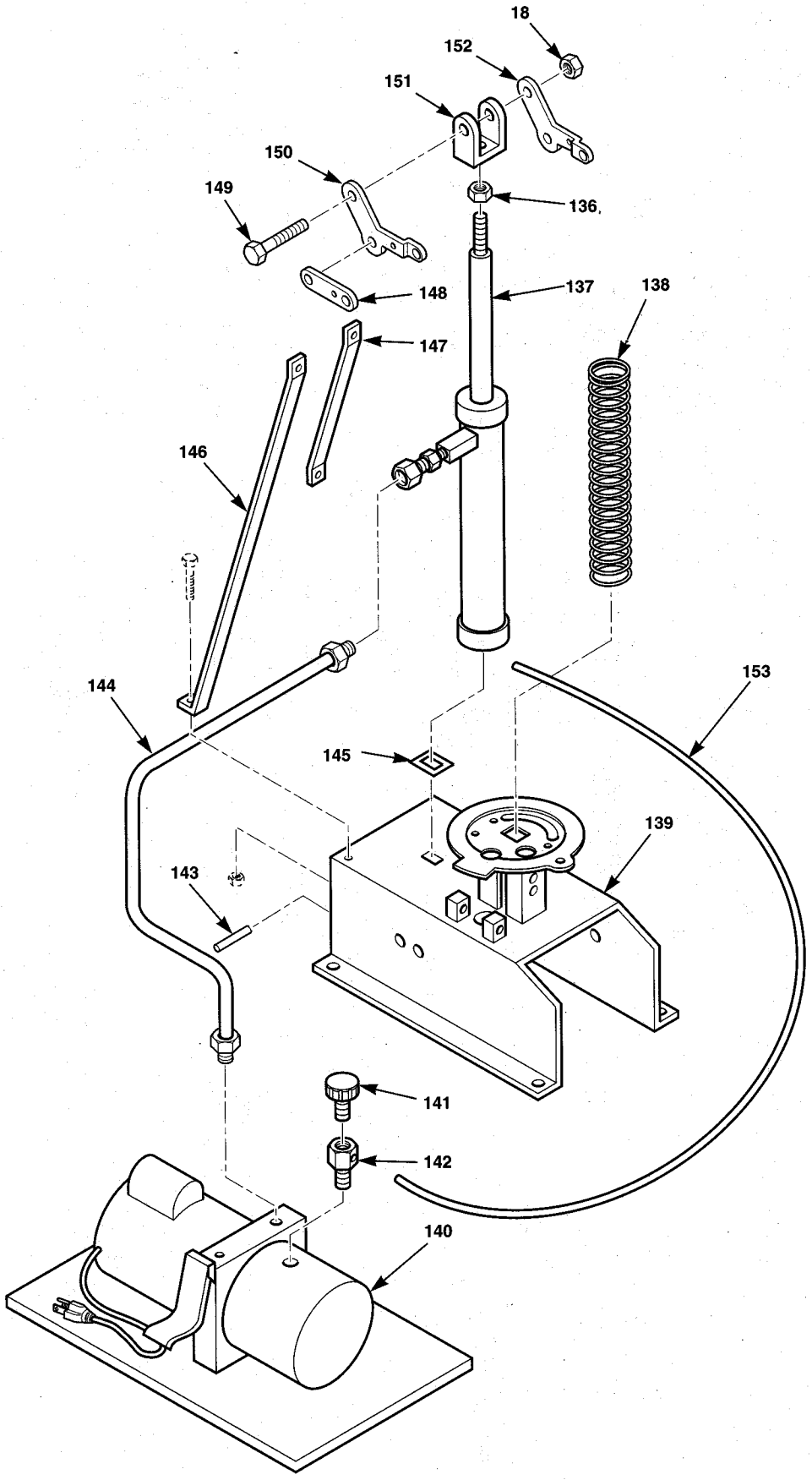
Motor	
Manufacturer	Fenner Fluid Power, Rockford, IL
Fluid Capacity	1 Quart
Oil Type	10W30
Pressure	Relief set at 800 PSI
Flow	0.50 GPM @ 650 PSI

To convert voltage and current ratings to power:

Voltage Rating x Current Rating = Watts
For this motor: 115 volts x 5.8 amps = 667 watts



9000G and 9000H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9000H ONLY

Index No.	Part. No.	Description
1	8042	Shot Container
2	13X	Cap Plug
3	304C	Cap
4	8276	Spring with Chain
5	8045	Bar Act. Mounting Bracket
6	460A	Lock Nut
7	8053	Bar Actuator
8	623B	Cam Roller
9	8712	Sleeve
10	8713	Cam Roller Bolt
11	570A	Screw
12	670J	Retaining Ring
13	8055	Operating Rod
14	304J	Nut
15	8400	Handle Grip
16	609	Handle
17	723	Cam
17	8808	Cam (.410 Gauge Only)
18	309E	Stop Nut
19	8324	Screw
20	623C	Washer
21	510B	Link Spacer
22	610RH	Link, Right
23	610LH	Link, Left
24	304L	Screw (12, 16, 20 Gauge Only)
24	8718	Bolt (28 & .410 Gauge Only)
25	670C	Drop Tube Bracket
26	8059	Measure Assembly
27	670A	Bar Lock
28	670G	Washer
29	670B	Lock Spring
30	8310	Actuator Rod
31	609B	Link Bolt
32	609F	Washer
33	8035	Turret Assembly
34	8476	Nut
35	670D	Trip Spring
36	306F	Pressure Indicator Face
37	306T	Pressure Spring
38	306P	Pointer
39	507A	Screw
40	507	Clamp
41	670K	Retaining Ring
42	670E	Trip Rod Bracket
43	8025	Lower Reprime Spring
44	8344	Spacer
45	670F	Trip Rod

Index No.	Part. No.	Description
46	505B*	Rammer Tube
47	505C*	Reprime Tube
48	8678	Balljoint
49	8791	Gas Spring
50	8663	Bolt
51	460A	Nut
52	570A	Bolt
53	8653	Side Plate Indexer
54	8651	Lower Cam Bracket
55	8067	Primer Catcher
56	8649	Lock Nut
57	8563	Shell Lifter Bracket
58	461A	Lock Nut
59	8724	Spring
60	713D	Wing Nut
61	8654	Slide Bracket
62	8024	Column Bolt
63	385Q	Spring
64	8141	Block Bolt
65	8670	Adjusting Block
66	8681	Carrier Stop (12, 16, 20 Gauge Only)
66	8716	Carrier Stop (.410 Gauge Only)
66	8739	Carrier Stop (28 Gauge Only)
67	8650	Upper Cam Bracket
68	8671	Nut
69	616A	Retaining Ring
70	8669	Actuating Bracket
71	8439*	Spindex Star Crimp
72	8419	Ball Pivot Pin
73	8107*	Deprime Punch
74	522P*	Finish Die
75	621CAP*	Cam Crimp Housing
75	721CAP*	Cam Crimp Housing (16, 28 & .410 Gauge Only)
76	453P-410	Wad Guide Fingers (.410 Only)
76	8300*	Wad Guide Fingers (12, 16, 20, 28 Only)
77	8377	Wad Guide Clip
78	621B*	Cam Crimp Punch
79	8561*	Wad Guide Rod
80	615B	Carrier Holddown
81	615*	Shell Carrier
82	8112	Carrier Bushing
83	8676*	Base Assembly

* Specify Gauge

PARTS LIST

Index No.	Part. No.	Description
84	8017	Collet Lock Nut
85	313C	Base Mounting Bolt
86	525A	Guide Post
87	630	Spring
88	531-12	Spring Pad
89	8666	Shell Slide
90	8662	Bolt
91	8032	Chain Line with Keeper
92	8608	Rocker Arm
93	8023	Retaining Ring
94	8022	Pivot Pin
95	8491	Collet Closer
96	8113	Bushing
97	8492	Collet Closer Nut
98	8080*	Collet
99	8560*	Shell Lifter
100	515D	Index Ball
101	615C	Index Spring
102	385E	Retaining Clip
103	612	Column Spring
104	303	Screw
105	385C	Tube Clamp
106	685H	Lock Washer
107	685G	Washer
108	685F	Mounting Screw
109	613D	Cam Roller Pin
110	8312	Cam Roller (20 Gauge Only)
110	8699	Cam Roller
111	504D	Pivot Block Screw
112	459A	Lock Nut
113	8205*	Drop Tube
114	303	Stop Screw
115	572	Spring Anchor
116	304D	Measure Pivot Screw
117	504C	Measure Support Block
118	610A	Link Bolt
119	314A	Rivet
120	8010	Column
121	285G	Pickup Arm

Index No.	Part. No.	Description
122	8348	Hold Down Pin
123	385A1	Primer Tray
124	285H	Retaining Ring
125	285ML	Cover
126	285P	Primer Feed Spring
127	8024	Bolt
128	573	Bar Return Spring
129	050	Powder Bushing
130	8440	Rubber Insert
131	304G	Grommet
132	304W	Brass Washer
133	301L-13X	Powder Container
134	502	Charge Bar
135	304L	Screw
136	691D	Jam Nut
137	8861	Hydraulic Cylinder
138	8683	Column Spring
139	8677*	Base Assembly
140	690	Hydraulic Unit
141	8265	Breather Cap
142	8868	Breather Adapter
143	691B	Roll Pin
144	690A	Hose Assembly
145	691E	Formed Spacer
146	8058	Truss Rod L.H.
147	8661	Truss Rod R.H.
148	694	Link Strap
149	110A	Bolt
150	8071	Link L.H.
151	691A	Pivot Bracket
152	8072	Link R.H.
153	8876	Breather Hose
—	8581-12	Steel Shot Kit (2¾ inch)
—	8582-12	3 Inch Conversion Kit (12 Gauge)
—	8582-20	3 Inch Conversion Kit (20 gauge)
—	8433**	Steel Shot Kit
—	843912S	Smooth Cone

* Specify Gauge
** Must be used with 3-inch conversion kit.
— Not Illustrated.

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