RCBS®

# THE GRAND

## PROGRESSIVE SHOTSHELL RELOADING PRESS

PRODUCT INSTRUCTIONS

## IMPORTANT

Before using the RCBS Shot Shell Press, read these instructions carefully to fully learn how to safely operate the related reloading equipment. Failure to properly operate certain reloading equipment can result in severe personal injury and/or equipment damage.

**If you have any questions while assembling or operating this tool, call us at 1-800-533-5000 or 1-530-533-5191 Monday - Thursday 6:30 a.m. to 3:00 p.m. Pacific Time**

*The instruction manual contains specific safety and operating information. It should be considered a permanent part of your reloading equipment and remain with the equipment at all times for easy reference.*

### SAFETY

Reloading is an enjoyable and rewarding hobby that can be conducted safely. But, as with any hobby, carelessness or negligence can make reloading hazardous. This product has been designed from the beginning with the user's safety in mind. When reloading, safety rules must be followed. By observing these rules, the chance of a hazardous occurrence causing personal injury or property damage is minimized.

### GENERAL

- Use all equipment as the manufacturer recommends. Study the instructions carefully and become thoroughly familiar with the operation of the product. If you do not have written instructions, request a copy from the equipment manufacturer.
- Don't take short cuts. Attempting to bypass established procedures is an invitation to an accident.
- Observe "good housekeeping" in the reloading area. Keep tools and components neat, clean and orderly. Promptly and completely clean up primer and powder spills.
- Reload only when you can give your undivided attention. Do not reload when fatigued or ill, or under the influence of medications or alcohol.
- Develop a reloading routine to avoid mistakes which may prove hazardous. Don't rush - load at a leisurely pace.
- Always wear adequate eye protection to protect your eyes from flying particles. You assume unnecessary risk when reloading without wearing safety glasses.

### LOADING DATA

- Use only laboratory tested reloading data. There are many lab tested shotshell manuals available. Always follow the load data exactly as it is published in any shotshell reloading manual.
- Never substitute components
- OBSERVE ALL WARNINGS ABOUT THE USE OF MAXIMUM LISTED LOADS

### PRIMERS AND POWDER

- Store primers and powder beyond the reach of children and away from heat, dampness, open flames and electrical equipment. Avoid areas where static electricity is evident.
- Do not use primers of unknown identity.
- Dispose of unknown primers in accordance with applicable regulations.
- Keep primers in the original factory container until ready to use. Return unused primers to the same factory packaging for safety and to preserve their identity. Primer packaging is designed to provide safe storage.
- DO NOT store primers in bulk. The blast of just a few hundred primers is sufficient to cause serious injury to anyone nearby.
- DO NOT force primers. Use care in handling primers.
- DO NOT have more than one can of powder on the bench at one time. Powder cans should be stored away from the bench to avoid picking up the wrong one.
- DO NOT use any powder unless its identity is positively known. The only positive identification is the manufacturer's label on the original canister. Discard all mixed powder and those of uncertain identity.
- Always replace the lids on both the powder hopper and shot hoppers after they have been filled.
- When you finish a reloading session, pour any remaining powder back into its original factory container. This will preserve the identity and shelf life of the powder.
- DO NOT smoke while reloading.

### RECORD KEEPING

- Keep complete records of reloads. Apply a descriptive label to each box showing the date produced, and the primer, powder, wad and shot used.

  Never attempt to guess at the identity of your ammunition.

*Because RCBS has no control over the choice of components, the manner in which they are assembled, the use of this product, or the guns in which the resulting ammunition may be used, we assume no responsibility, expressed or implied, for the use of ammunition reloaded with this product.*

# THE “GRAND”

1 POWDER SYSTEM - Hull activated, no hull, no powder. No need to manually turn powder on and off. No spillage of powder can occur.

2 SHOT SYSTEM - Hull activated, no hull, no shot. No need to manually turn shot on and off. No spillage of shot when problems occur.

3 CASE HOLDERS - Easy removal of hull at all stations. Universal 12 and 20 gauge case holders allows cases to be sized down around the rim.

- The combination of the Powder System, Shot System and the Case Holders allows the user to reload one shell without fear of spillage.

4 PRIMING SYSTEM - Allows only one primer to feed at a time and is an extremely reliable primer feed system.

5 STEEL SIZE RING - Provides complete resizing of high and low base hulls. Not found in most presses.

- AUTO INDEX - Simple and very reliable automatic indexing system that can be easily removed for manual indexing.

6 TILT-OUT WAD GUIDE - For easy and convenient feeding of wads.

- MASSIVE FRAME - With compound leverage for smooth solid feel.

7 QUICK DRAIN SYSTEM - Both powder and shot hoppers have three locating positions. Off, on, and a forward drain position for quick and convenient removal.

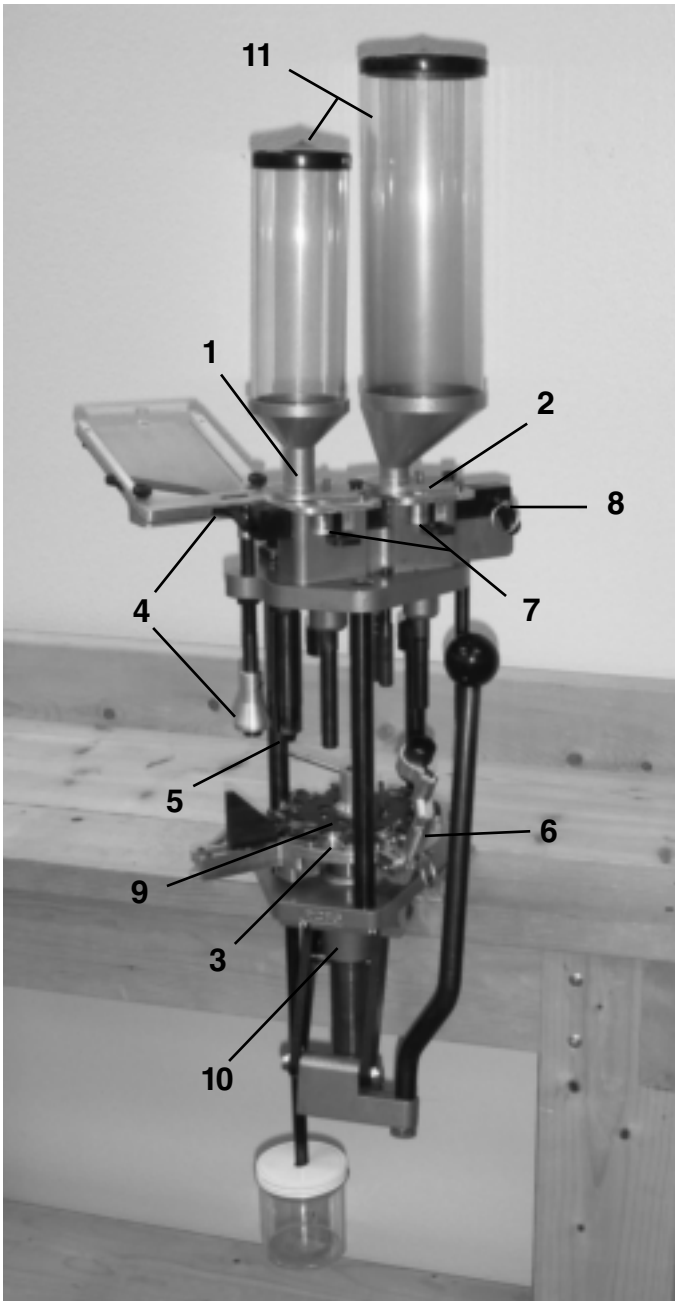
8 QUICK CHANGE - Of powder and shot bushings. Changes over in less than one minute.

9 POWDER CHARGE - Is easy to check because the powder station is directly in front of the press and it is easy and convenient to remove the powder charge hull.

10 LARGE OPEN FRAME - Designed for convenient easy access to all 8 stations.

- EASY CONVERSION - Changing from 12 gauge to 20 gauge is quick and easy with our convenient conversion kit.

11 SHOT & POWDER HOPPERS - Holds 25 pounds of shot and 1 pound of powder.




89001 THE GRAND, 12 ga. Shotshell Press
89003 THE GRAND, 20 ga. Shotshell Press
89005 Shotshell Press Conversion Kit, 20 ga.
89007 Shotshell Press Conversion Kit, 12 ga.
89010 Riser Stand
89100 Charge Bar

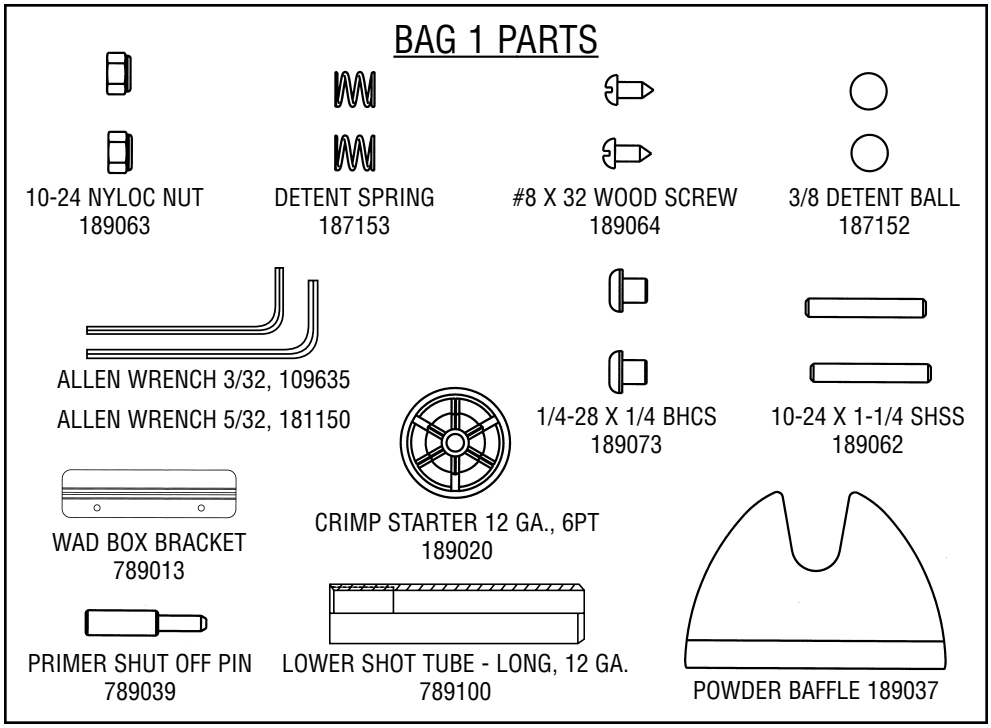
*For shot and powder bushing information see page 14.*

## UNPACKING THE GRAND

A. Shot Hopper
B. Spent Primer Tube Assembly
C. Powder Hopper
D. Drain Tube (Clear Rubber Hose)
E. Press Assembly
F. Wad Box

Video
Wad Box Bracket
Discharge Chute
Primer Tray

Bag 1, Parts List
#8 x 3/8 Wood Screw
1/4-28 x 1/4 BHCS
3/8 Detent Ball
Detent Spring
Shotshell Crimp Starter 12 Ga., 6 Pt
Shotshell Primer Shut Off Pin
10-24 x 1-1/4 SHSS
10-24 Nyloc Nut
Shotshell Press Powder Baffle
Hex Wrench, 5/32
Hex Wrench, 3/32




Your Grand is set up at the factory for the following loads:

## 12 GA. LOAD INFORMATION

**Federal Gold Medal 2¾" hull, 17.5 gr. Red Dot, 452 powder bushing, CCI 209M primer, Federal 12S3 wad, 1⅛ oz. #7½ shot bushing**

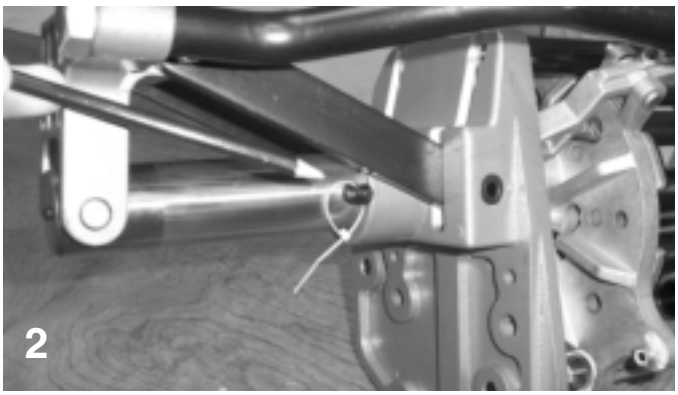
## 20 GA. LOAD INFORMATION

**Winchester 2¾" hull, 16.0 gr. Unique, 381 powder bushing, CCI 209M primer, Winchester WAA20 wad, ⅞ oz #7½ shot bushing.**

A Hydraulic conversion unit is also available for The Grand shotshell press. For pricing and information, contact RCBS direct at 1-800-533-5000.

As you remove press from box, take caution not to lay press against primer channel. *(photo 1)* Lay press on opposite side so that the primer channel extends upward as shown below. Lay press on opposite side so that the primer channel extends upward as shown.


After laying press on bench, remove plastic tie securing the Lockout pin to the Ram of the press and remove Lockout pin. *(photo 2)* The Lockout pin can be used with a small lock (not included), to secure press when not in use.




**CAUTION: SHELL PLATE POSITION**

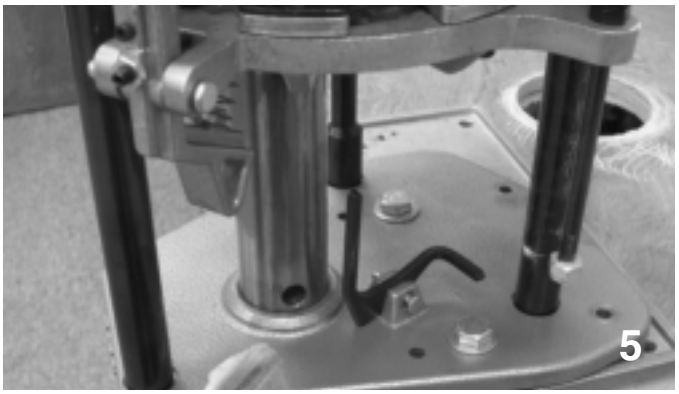
**Care must be taken that the shell plate is always in the proper position. *(photo 3)* Check index position before cycling.**

Press must never be partially indexed, this results in damage to the Case Holders. Rotate Shell Plate and feel for Index Ball to position properly.


## PRESS MOUNTING

**Step 1** Attach Discharge Chute to the bottom of the Shell Plate Holder as shown in photo 1. Use two 1/4-28 x ¼ Button Head Cap Screws and 5/32 hex wrench.

**Step 2** Mount your press to a solid bench. Presses mounted to a weak or flexible bench are a safety hazard and will not produce a consistent loaded round. The Grand press is designed with two sets of mounting holes, three larger holes (two of these holes for mounting to an optional RCBS Accessory Base Plate-2 part number 09280) or four small holes for the optional RCBS Riser Stand part number 89010.

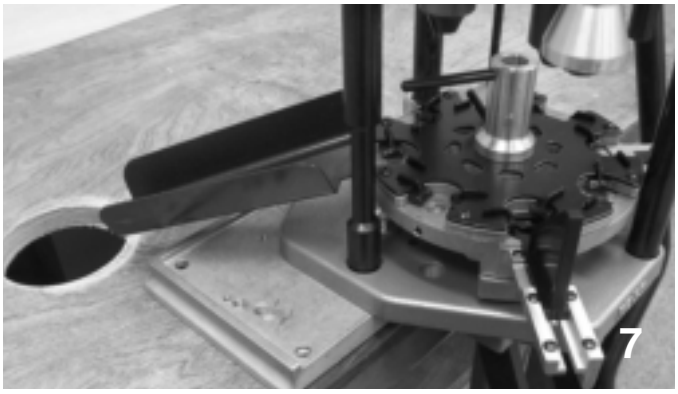



Select an area on your bench with approximately one-foot clearance on each side of The Grand. Install press with three ⅜" bolts or four ¼" bolts, length to be determined by the thickness of your bench (mounting hardware not included). The press can also be mounted on our optional Riser Stand, which raises the press four inches above your bench (Riser Stand part number 89010) *(see photo 6).*

The front edge of your bench must have a minimum of 1½" of clearance to allow the press handle to cycle completely. The optional Riser Stand angles forward off your bench to allow the complete cycle of the press handle. Insure that the toggle block does not strike the face of your bench.


## LOADED ROUND CONTAINMENT

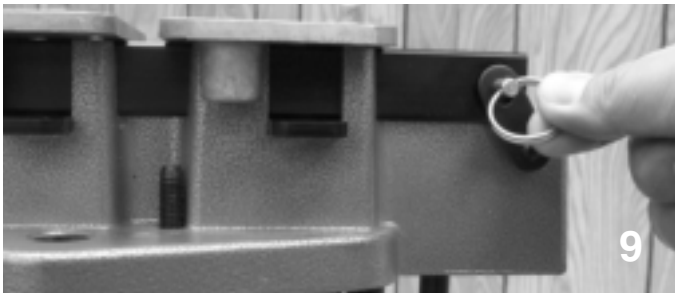
For presses mounted directly to the bench, you may want to drill a 3" hole just off the end of the Discharge Chute and catch your loaded rounds beneath the bench.




Use of the optional Riser Stand allows the loaded rounds to drop into a container on top of the bench (Riser Stand and container not included).


## POWDER AND SHOT SYSTEM

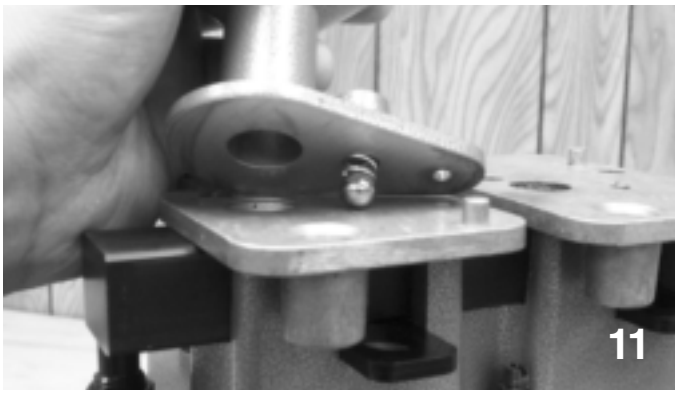
The Grand 12 gauge comes with one #452 powder bushing and a 1⅛ oz. #7½ shot bushing. The 20 gauge Grand comes with one #381 powder bushing and a 7/8 oz. #7½ shot bushing. To change bushings, before powder and shot are added, just remove charge bar locking pin *(photo 9)* and slide the charge bar to the right. This allows the removal of the charge bar to change bushings *(photo 10)*.




## INSTALL POWDER AND SHOT HOPPERS

The Powder Hopper (smaller diameter tube) is to be mounted on the left and the Shot Hopper (larger diameter tube) on the right.

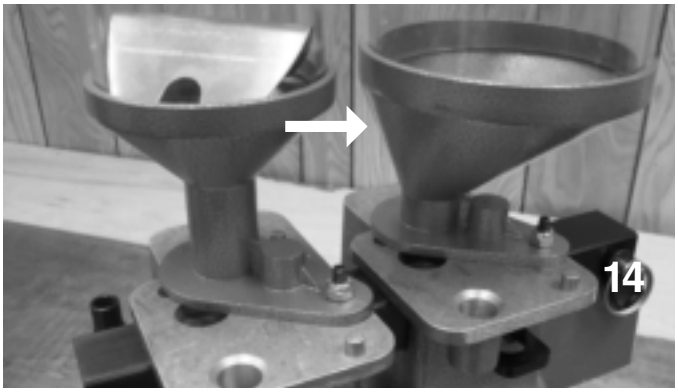
Install detent spring then ball into hopper funnel assembly and install on the press as shown in photo 11.




Install 10-24 x 1¼" set screw securely through hopper funnel base and into the top of the shut off plate. Install 10-24 Nyloc nut to secure hopper funnel base to top of press. Use 3/32 hex wrench and 3/8 wrench (not provided).



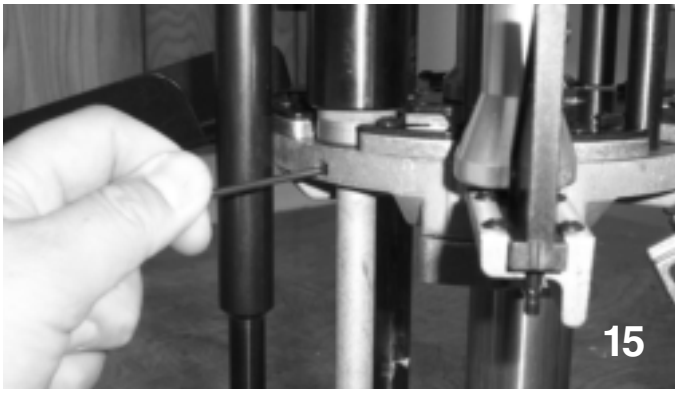
Funnels must be tightly secured but be able to pivot between OFF, ON and DRAIN positions. Install powder baffle through the top of the powder hopper as shown in photo 14.




**Note:** In OFF position

## INSTALL SPENT PRIMER TUBE ASSEMBLY

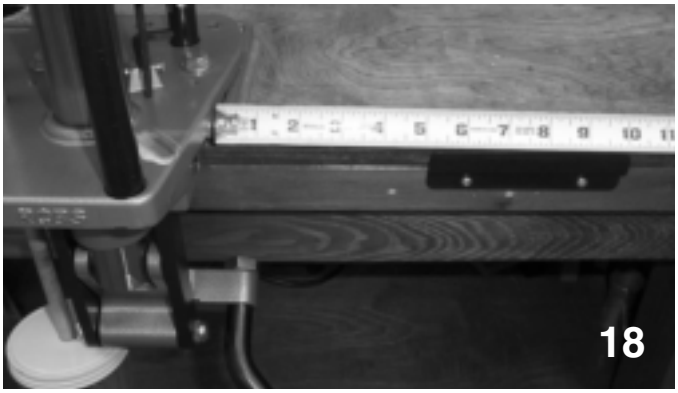
Raise ram to the top of the press stroke and install the tube as shown in photo 15. Tighten the setscrew to secure the tube. Do not over tighten, use 3/32 hex wrench.



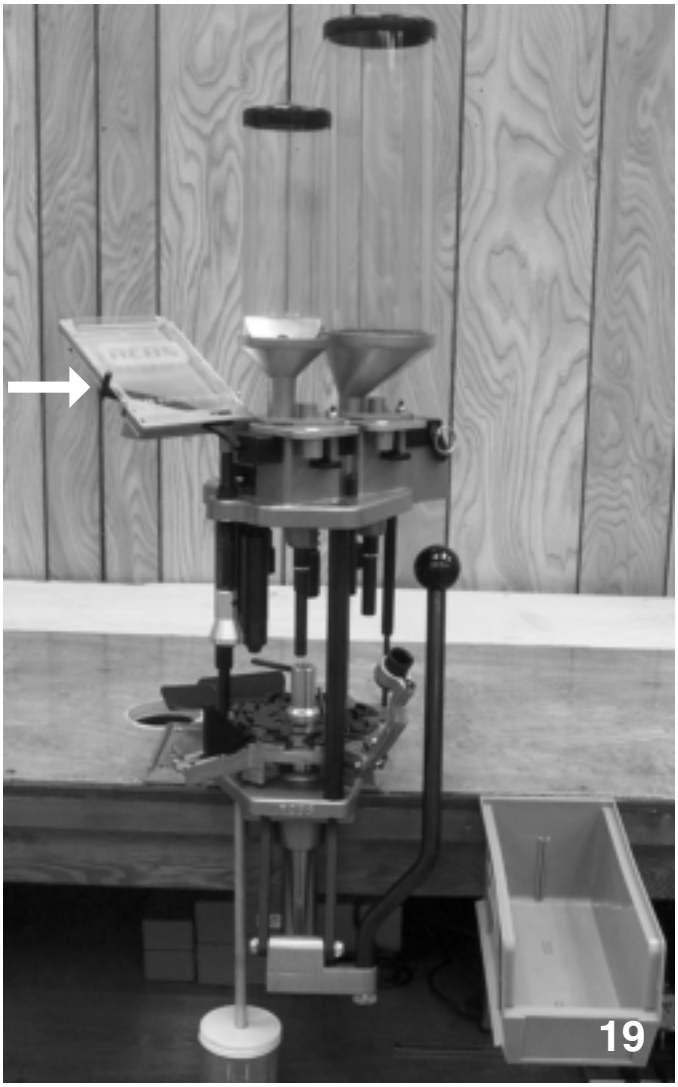

## INSTALL PRIMER TRAY

With ram still raised to the top of the press stroke, place Primer Tray on Primer Tube as shown in photo 16. Primer Tray is held in place by its own weight. Primer Tray body is to the left of the Powder Shut Off Plate and does not ride on top of the plate *(photos 16 & 17)*.


Install Wad Box Bracket approximately six inches from the right side of the press to provide clearance between the handle and the box *(photo 18)*. The top of the Bracket should be flush with the bench top. Attach using the two 8x32 Wood Screws provided. Hang Wad Box on Bracket.




Install Primer Shut Off Pin into Primer Tray (*photo 19)*. Assembly is complete.

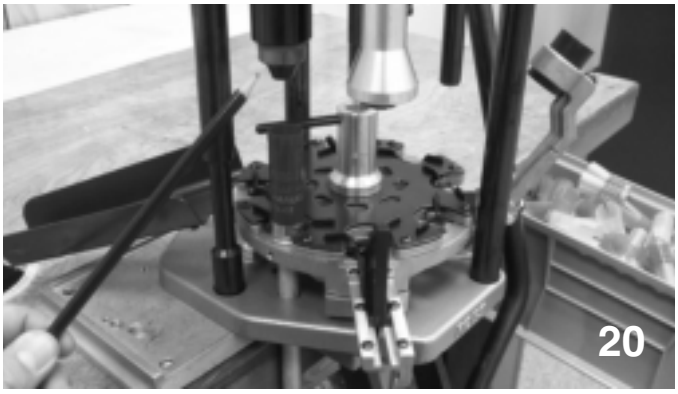



## PRESS FUNCTIONS BY STATION

The Grand is an eight-station auto indexing progressive shotshell reloader. All functions occur on the upstroke of the Ram with the exception of indexing, which occurs on the down stroke of the Ram. The Index Arm may be removed for manual indexing of the press.

### STATION 1

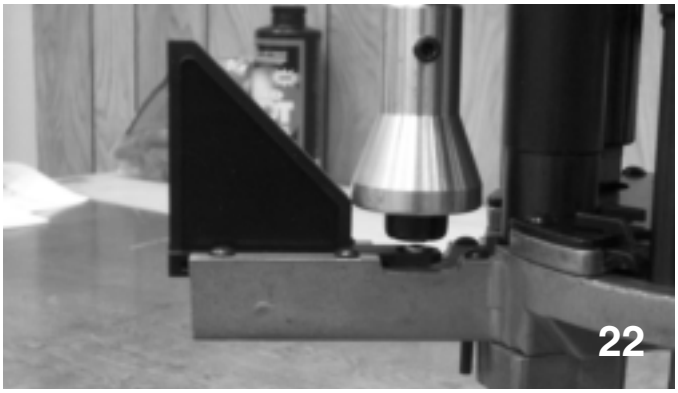
Full length resizing and spent primer removal. Resizing is accomplished with a steel sizing ring *(photo 20)*.




### STATION 2

Priming. Primers are fed from the Primer Tray to the Primer Drop Tube *(photo 21)*.


Primer is dropped from the Primer Drop Tube Collet to the Primer Transfer Bar *(photo 22)*.

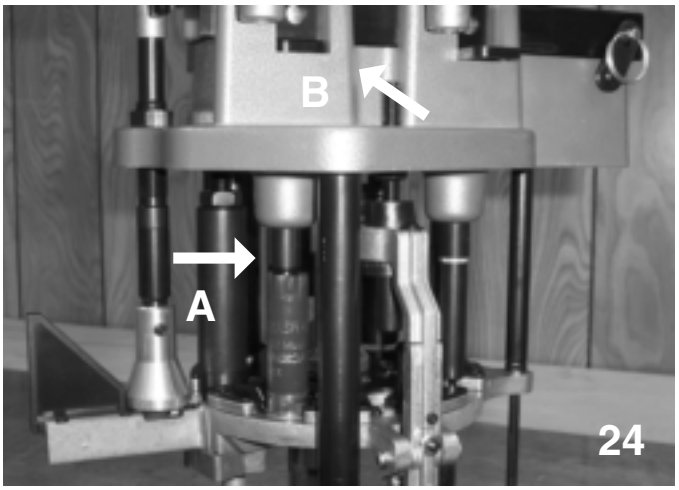


Primer Transfer Bar delivers the primer to the primer station *(photo 23)*.


Primer is seated at the top of the stroke.

### STATION 3

Powder Charge. Case activated, will not drop powder if a hull is not present. Drop Tube (A) drives the Powder Shut Off gate (B) to drop the powder charge *(photo 24)*. If no hull is present, the Drop Tube assembly does not activate the Powder Shut Off gate.

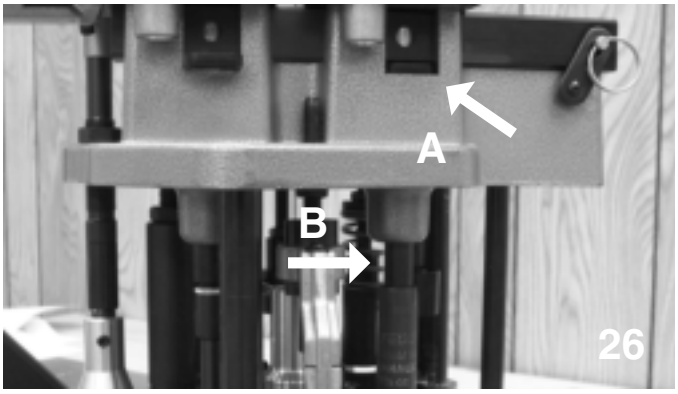


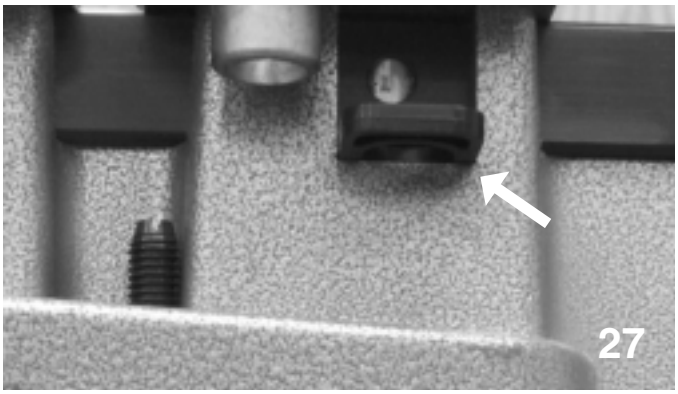

### STATION 4

Wad insertion *(photo 25)*.


### STATION 5

Shot Drop and Wad Seating. Case activated, will not drop a shot charge without a hull with a wad present. Drop Tube (A), driven by the bottom of the wad cup, drives the Shot Shut Off gate (B) to drop the shot charge *(photo 26)*. If no hull is present or a hull with no wad *(photo 27)*, the Drop Tube assembly does not activate the Shot Shut Off gate. The Wad is seated at the top of the stroke.

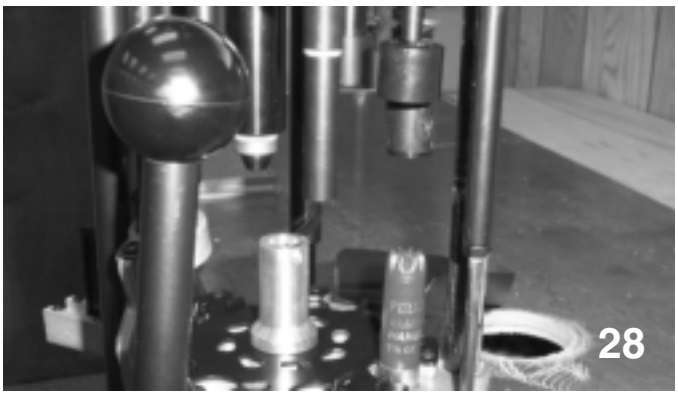



**NOTE:** No wad present.

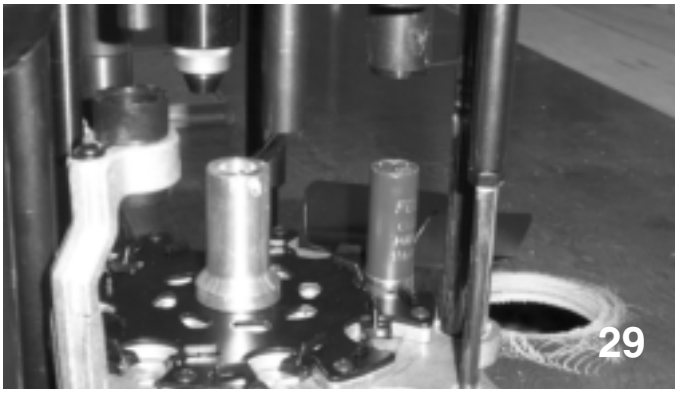
### STATION 6

Crimp Start. An 8 point Crimp Starter is installed at the factory *(photo 28)*. A 6 point Crimp Starter is included in the accessory box.



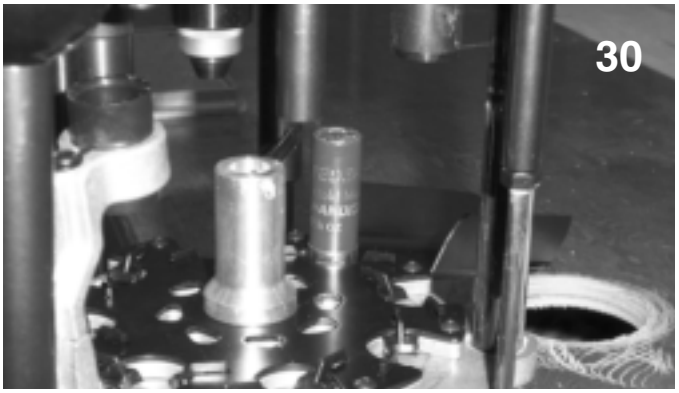
**STATION 7**

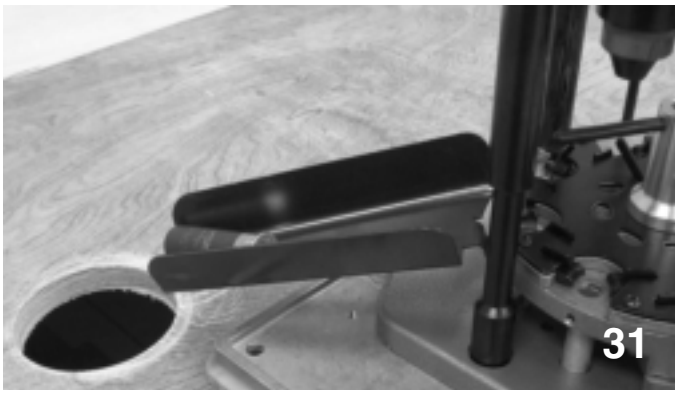
Crimp. The Crimp Die is pre-adjusted for Federal Gold Medal Hulls with a Federal 12S3 wad *(photo 29)*. **NOTE:** The use of other components may require adjustments.




**STATION 8**

Final Crimp. Removes "nail head." Loaded round is radiused (tapered) at the nose at the top of the downstroke *(photo 30)* and ejected at the end of the upstroke as the Case Holder Plate indexes *(photo 31)*.




## DRY CYCLE PRESS

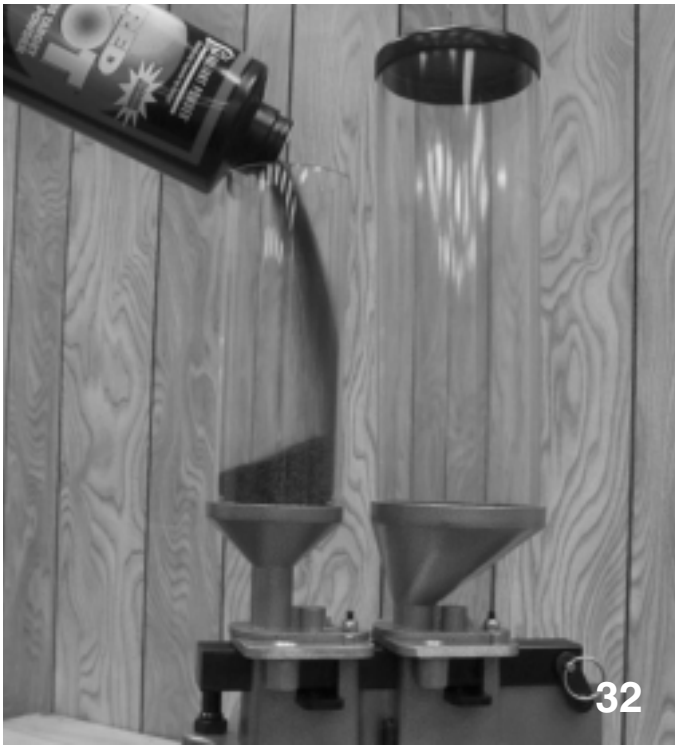
Before adding shot, powder and primers, take some time to cycle a few hulls in the press. Advance the case from one station to the next by cycling the press handle with a **SLOW, STEADY and COMPLETE** stroke. Get a feel for how easily the press indexes. The Grand press does not require a lot of effort to index the press when returning the handle forward.

**CAUTION:** Shell Plate must never be partially indexed, this results in damage to the Case Holder Plate. Turn Case Holder Plate and feel for index ball to position *(see photos 3 & 4)*.

When cycling the press, always use full stroke of the handle and the Case Holder Plate will always properly align itself.

## FILL POWDER AND SHOT HOPPERS

The next step is to load the Powder Hopper. The Powder Hopper is the smaller diameter tube on the left. Be sure the Hopper is in the ON (middle) position as shown in photo 32. Remove the cap and pour the powder into the Powder Hopper. The Powder Hopper will hold approximately one pound of powder (varies based on powder type). After filling the Powder Hopper, replace the cap.




Adding shot is the next step. The Shot Hopper is the larger diameter tube on the right. Be sure the Hopper is in the ON (middle) position. Remove cap and place a funnel (not included) in the top of the Shot Hopper and pour the shot into the Shot Hopper. The Shot Hopper will hold a full 25 pound bag of shot. After filling the Shot Hopper, remove funnel and replace cap. #5 size shot is the largest shot size that The Grand will accommodate.

## FILL PRIMER TRAY

Loading the primer tray is next. Insure that Primer Shut Off Pin is installed into Primer Transfer Arm. Next, pull the press handle all the way down (**NOTE:** Insure Case Holder Plate is indexed properly). Lift the Primer Tray off the Priming Tube. The Primer Tray can be laid flat on the bench for easy loading of the primers. The front end of the Primer Tray that attaches to the Drop Tube should extend beyond the edge of your bench *(photo 33)*. This will allow the Primer Tray to lay flat.

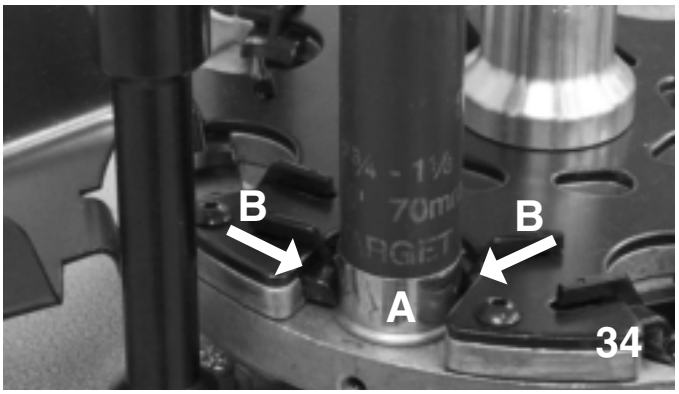
Open the Primer Tray Lid. Place a sleeve of 209 primers upside down on the Primer Tray. Slide the outer sleeve off to the rear. You will need to slightly raise the outer sleeve to clear the Primer Tray Lid. The primers will be properly oriented. Properly close the Primer Tray Lid and replace Primer Tray onto Priming Tube. (**Tip:** Drop four to five primers manually into the Primer Drop Tube before installing the loaded Primer Tray. This acts as a "reserve" supply should you have a primer "bridge" in the Primer Tray during operation of the press.)

## FILL WAD BOX

Fill wad box with appropriate type wads.

## PRESS OPERATION – SINGLE ROUND

With your right hand on the Handle Ball, pick up an empty hull with your left hand and insert into station 1 by sliding the hull base flat on the Shell Plate Holder (A), under the two Case Holders (B). The Case Holders will self-align the hull for the sizing and spent primer removal operation *(photo 34)*.




Remove Primer Shut Off Pin from the Primer Tray and place in hole in bottom left corner of the Primer Tray for storage. Smoothly lower the Handle. This resizes and deprimes the hull in Station 1. Raise the Handle completely, this will index the hull to Station 2. Reinstall the Primer Shut Off Pin into the Primer Tray, this prevents an excessive amount of primers from being fed into the Primer Drop Tube.

Lower the Handle and this will prime the hull in Station 2. Raise the Handle completely and index the hull to Station 3.

Make sure that your Powder Hopper is in the ON position. Lower the Handle and the hull will actuate the powder drop system allowing a charge to fill the hull. Raise the Handle completely and index the hull to Station 4.

Place a wad into the Wad Guide of the tilt out Wad Guide Carrier with your right hand and then lower the Handle. This inserts a wad into the hull. Raise the Handle completely and index the hull to Station 5.

Make sure that the Shot Hopper is in the ON position. Lower the Handle, the inserted wad in the hull will actuate the shot drop system allowing a shot charge to fill the hull. The wad is also being seated at this point.

Lowering and raising the Handle three more times will start the crimp, crimp, final (taper) crimp and eject the loaded round.

Notice the ease of loading just one round, powder and shot are dropped only when a hull was present. You can continue to practice one at a time or begin your continuos progressive loading process.

**Caution must be taken when loading one round at a time with The Grand shot shell press. Press vibration causes powder and shot to settle and pack into the charge bushings. The powder and shot charges can be increased by up to 12%. Do not use the first powder and shot charges after several empty cycles of the press handle.**

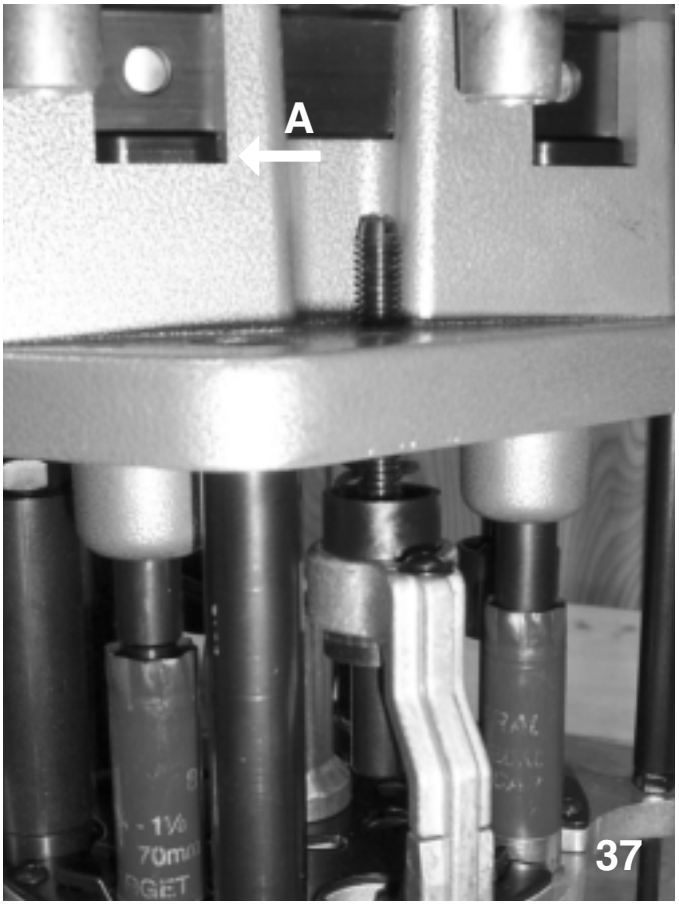
## COMPONENT ADJUSTMENT SECTION

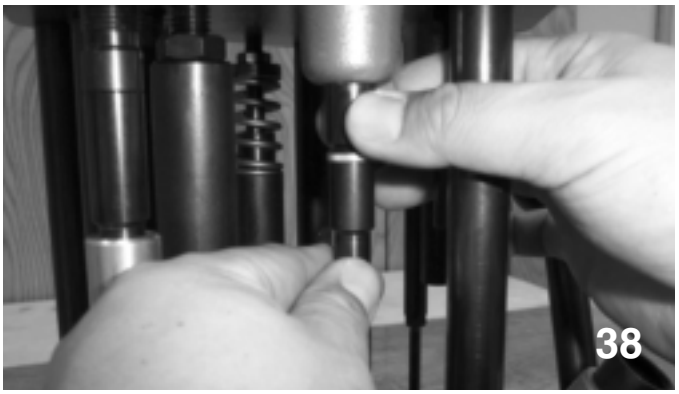
If using other than Federal Gold Medal 2¾" hulls, Federal 12S3 wads, CCI 209M primers, Alliant Red Dot powder or 1 1/8 oz of #7½ shot, a few simple adjustments may be necessary. If loading **3½" hulls**, the Index Arm **must** be removed and the press **indexed manually**.

1. **Powder or Shot Bushing change** Refer to section *Powder and Shot Charge Bushing Change*, page 9.
2. **Sizing** The Grand is shipped with the Size Die adjusted for proper hull ejection pressure. Rough handling during shipping can cause this to change. If excessive pressure is felt during resizing or hulls stick up in the Sizing Die please readjust. Proper setting is with one to three threads showing. Simply screw up or down the top portion of the Sizing Die *(photo 35)*.

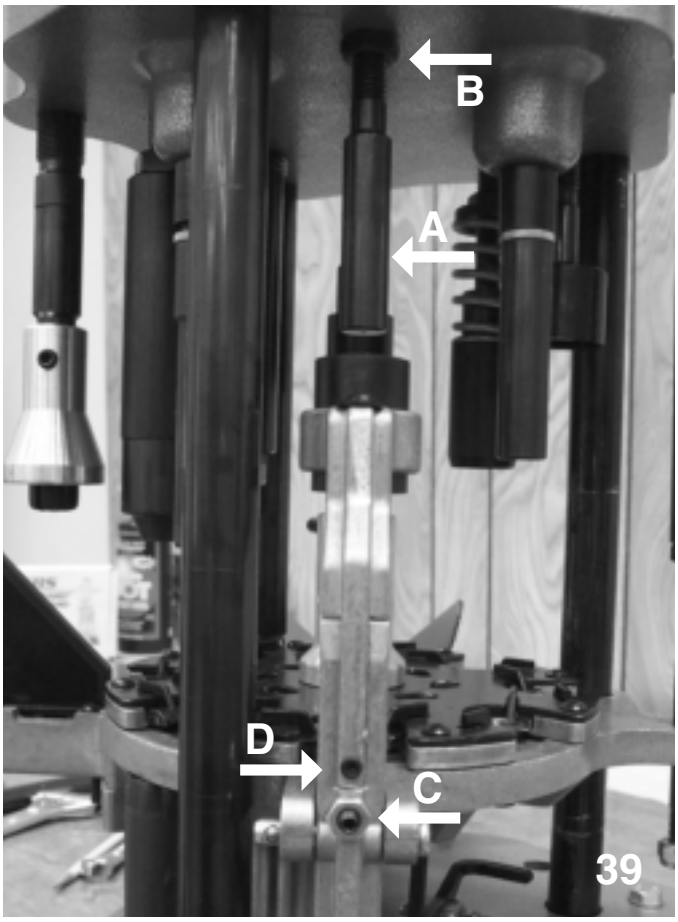

3. **Priming Station Adjustment** The Primer Stem Assembly is under spring tension to compensate for varying internal base wad heights between hull manufacturers. Should it become necessary to adjust primer depth, the Primer Seater Body Assembly can be moved up or down. To make this adjustment, loosen the top ¾" lock nut and screw rod up or down in ¼ turn increments until desired primer seating depth is achieved *(photo 36)*.

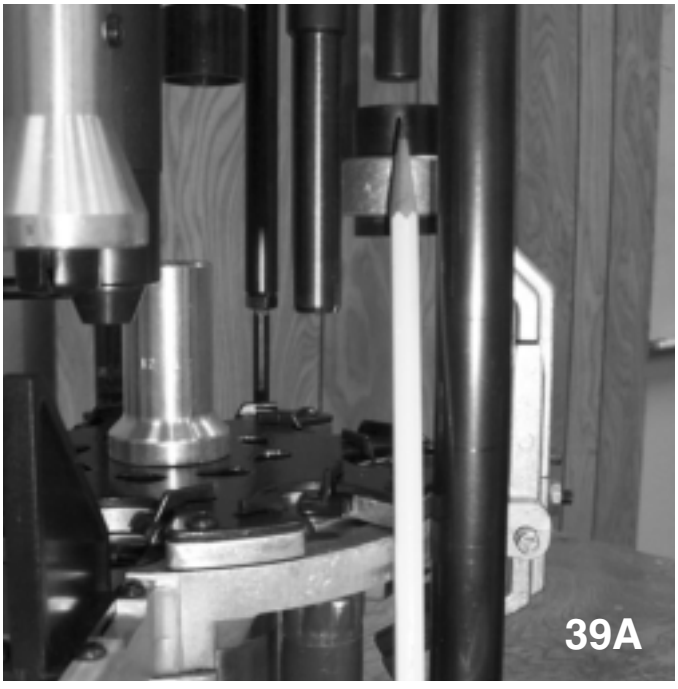
4. **Powder Station Adjustment** Once again, due to base wad height, it may be necessary to adjust the Powder Drop Tube to obtain proper Powder Shut Off Gate movement. With a hull present and the Handle lowered, the Shut Off Gate should be flush to ¼" inset with the Top Plate casting *("A" photo 37)*. To make this adjustment, with an empty station 3, grasp the Upper Drop Tube with the fingers of the one hand and unscrew the Lower Drop Tube with the fingers of the other hand *(photo 38)*. Secure with brass lock ring.




5. **Wad Insertion Adjustment** If wad petals contact Wad Starter Rod (A), loosen nut (B) *(photo 39)* and adjust rod up until wad petal clears, retighten nut. This prevents folding over of the wad petal as it is inserted into the hull. If the Wad Carrier is not centered over the hull, crushed hulls, damaged wads or broken Wad Fingers may result. To center the Wad Carrier, place a fired 2¾" hull between the bottom casting and the shell plate holder assembly at station 3, this will prop up the plate and more easily allow adjustment. Loosen the lower lock nut on the adjustment set screw and adjust the set screw (C) until the Wad Guide is centered to slightly forward under the Starter Rod *(see photo 39A)*, retighten lock nut. To load 3" or 3½" hulls, remove top lock nut (D) and socket head cap screw on Wad Guide Arm and raise upper half of Wad Guide Arm. Position upper half of Wad Guide Arm to clear the hull and reinstall socket head cap screw and nut. You must also raise the Wad Starter Rod. Due to shot cup length of some 1¼ oz. and greater wads, you may have to manually insert wads. First, remove the Wad Carrier arm and remove the Wad Guide. You then place a wad into the Wad Guide and place over the hull mouth. Cycle the press. The Wad Guide must then be removed from the Wad Starter Rod and the process repeated.

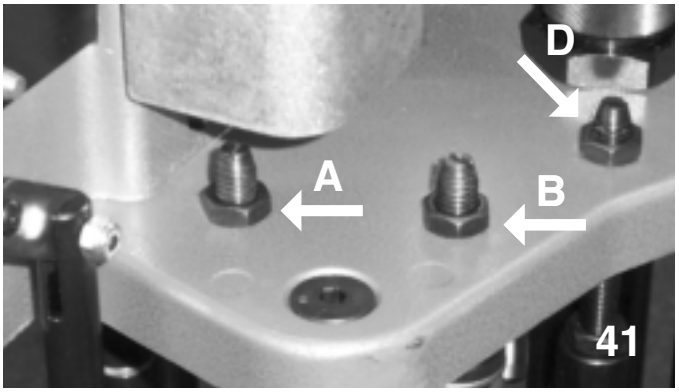


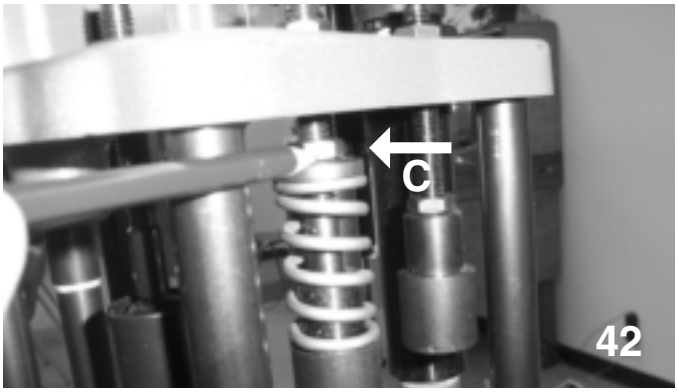
6. **Shot Drop and Wad Seating Station Adjustment** #5 size shot is the largest size The Grand will dispense. Larger shot sizes must be weighed separately and manually put into the hull prior to the Crimp Start station. Due to varying base wad heights and design, as well as wad design, it may be necessary to adjust the Lower Shot Tube to obtain proper wad seating depth. Adjust by grasping the Upper Drop Tube with the fingers of one hand and unscrew the Lower Drop tube with the fingers of the other hand *(photo 40)*. Secure with brass lock ring. Shot Shut Off Gate movement will typically be from ¼" out to all the way in. For 12 gauge hulls with tapered internal bases such as Winchester AA red or gray, Remington STS or Nitro 27, etc., a longer Lower Shot Tube has been provided to achieve proper wad seating depth. (**NOTE:** Improper wad seating depth will cause hull collapse/buckling or crimp problems at Station 7).

   For proper wad seating, 20 gauge loaders need to adjust a gap of ¼" to 5/16" between the Upper and Lower Shot Drop tubes.


7. **Crimp Start Adjustment** Crimp start is an up or down adjustment. Loosen the top lock nut (A) and adjust Crimp Start assembly up or down, retighten lock nut *(photo 41)*. Too much Crimp Start can cause a bulge on the side at the top of the hull during crimp. Not enough crimp start can leave a hole in the center of your hull after crimp.




8. **Crimp Adjustment** Crimp is also an up or down adjustment. The crimp depth is controlled by loosening lock nut (B)*(see photo 41)*, adjusting the Crimp Die assembly, up or down and retighten lock nut. If hulls bulge or collapse during crimp, reduce crimping spring pressure. To reduce crimp spring pressure, adjust nut (C)*(photo 42)* up towards the bottom of the Top Plate. If the crimp is concave or dished, add spring pressure. If the crimp is peaked, reduce crimp spring pressure and check that wad is seated to the correct depth. (**NOTE:** If wads are not seated deep enough, the shot column will be too high in the hull thus causing problems with crimp.)




9. **Final Crimp Adjustment** Final crimp is an up or down adjustment to radius the end of the loaded round. Loosen the top lock nut (D)*(see photo 41)*, adjust Final Crimp die up or down and retighten lock nut.
10. **Case Eject Adjustment** The Press is preset for proper case eject. Should adjustment become necessary, using a 5/16" hex key wrench, loosen the socket head cap screw in the top of the Eject Rod Holder, position the Case Eject Arm to just clear the final crimp die and retighten the cap screw. (**CAUTION:** Do not use the Case Eject Rod to try to tighten the Eject Rod Holder!)

## DRAIN SHOT AND POWDER HOPPERS

Place the flexible drain tube on the boss below the hopper you wish to empty. Place a container beneath the drain tube. Rotate the Hopper to the DRAIN position and the Hopper will empty in a matter of seconds *(photo 43)*.


## POWDER AND SHOT BUSHING CHANGE

The Grand shot shell press uses replaceable powder and shot bushings to control charge weights. Carefully check the charge weights thrown as they can vary based on powder type, age of powder and type of shot used.

Empty charge bar for bushing change. To change Powder or Shot bushings, but staying with the same type of powder and size of shot, move Hoppers to the OFF position. If you are changing type of powder or shot, DRAIN hoppers first. You must then remove the powder and shot left in the Charge Bar. With the press clear of hulls, place a fired hull in station 3 and a fired hull with a wad in Station 5. Lower the Handle, dropping the charges in the charge bar. Raise the Handle completely, remove the hulls, empty hulls and replace back into Stations 3 and 5. Lower and raise the Handle once more. Remove and empty the hulls. Your Charge Bar is now cleared. Remove the Charge Bar locking pin and the slide to the right allowing changing of the Bushings.

(**CAUTION:** Be sure to support underneath the Charge Bar to keep from dropping the Bushings out the bottom.)

Install appropriate Powder and Shot Bushings, the Shot Bushing is the larger diameter of the two and should be on the right side, reinstall the Charge Bar. (**NOTE:** The windows on the Charge Bar allow you to see what type of bushings that you have installed, the windows should face the front of the press.)

Reinstall Charge Bar Locking Pin through the Index Shaft Bracket and Charge Bar. (**NOTE:** Lowering the Handle slightly, allows movement of the Push Rod, allowing the Locking Pin to be installed through the Index Shaft Bracket easier.)

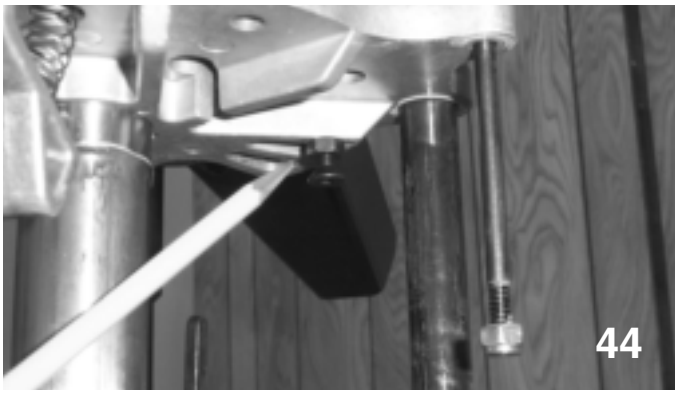
## TROUBLESHOOTING

1. **Hulls:**

   Split or crushed hulls are not to be used. Out of round hulls may catch on Size Ring or Primer Seat Die. Return to round before using.

2. **Indexing:**

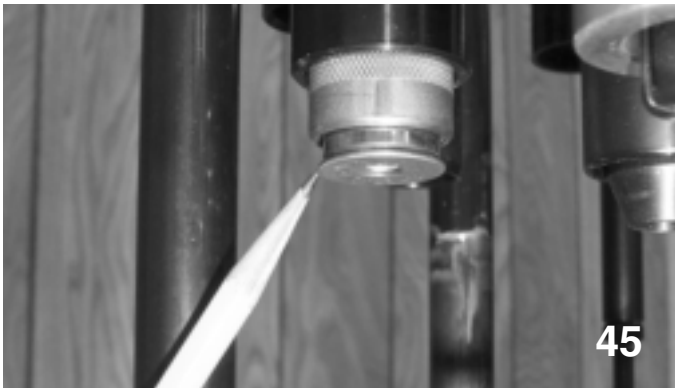
   The Case Holder Plate indexing is set at the factory. Should adjustment become necessary, adjust the adjustment screw up or down. Indexing can be affected if errant shot finds its way into the Case Holder Plate or under the Indexing Arm *(see photo 44)*.




3. Adjusting the upper bushing of the size die will increase or decrease the amount force used to push the hull from the Size Die. Adjust so you feel the minimal amount of force to size but enough to eject the spent primer and push the hull from the Size Ring. *(see photo 45.)*

4. **Hull stuck in the Size Die:**

   Typically not enough spring pressure. Adjust the upper bushing of the Size Die down to push the hull from the Size Die. High base brass may require more hull ejection spring pressure. If hull ejection pressure is at a maximum setting and the hulls continue to stick in the Size Die, inspect Case Holders for damage or this may be a sign that there is base wad separation in the hull. Inspect the offending hull, if base wad separation is noticed, discard hull. **CAUTION:** If this hull is loaded, the base wad may separate when fired and lodge in the barrel causing damage to the firearm and potential injury to the shooter.




5. **Primers do not transfer from Primer Tray to Drop Tube:**

   Remove Lock Pin from Primer Tray.

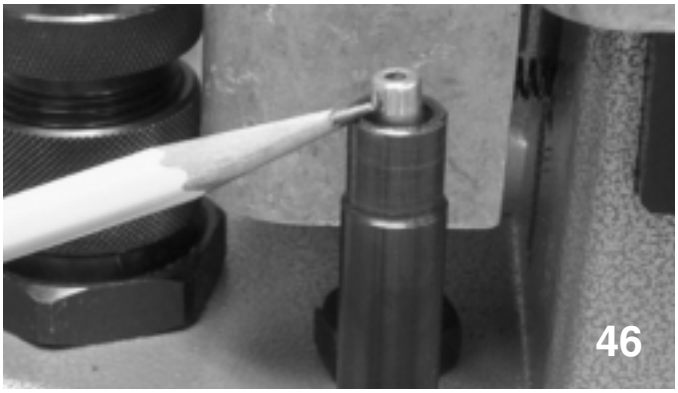
   Primer Tray may not be seated properly on Drop Tube. *See photos 16 & 17*.

   Charge Bar not making full and proper travel. The Handle is not being cycled completely or check Index Shaft and Brackets for wear or looseness.

   Broken Primer Transfer Arm. (see #7 below)

6. **Primer Tray fell off press:**

   Improperly seated or the Primer Shut Off Pin was not inserted when single rounds were loaded. If the Primer Shut Off Pin is not inserted, primers will continue to feed into the Drop Tube, the Drop Tube fills with primers (@25) and works the Primer Tray up and off the press *(see photo 46)*.




7. **Primers found on top of press:**

   Broken Transfer Arm. This is usually caused when the Primer Drop Tube is filled with primers and the top primer wedges between the Transfer Arm and the Drop Tube. The Charge Bar pushes the Transfer Arm to the left and breaks off the right side that is contained inside the Primer Tray. With the right side of the Transfer Arm broken off, primers will eventually push out the broken piece and also fall out onto the top of the press instead of down into the Drop Tube.

## We're here to help!

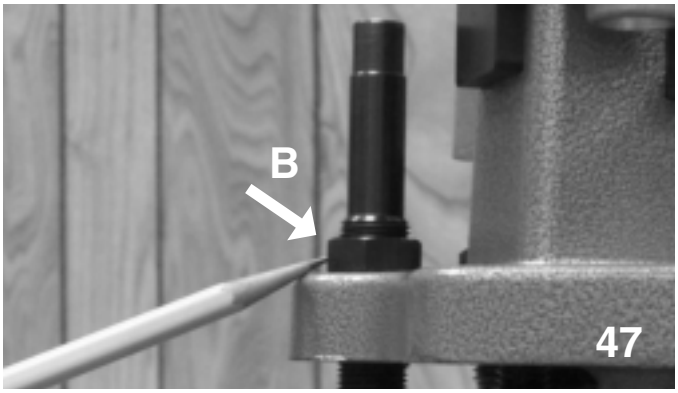
If you have any questions, call RCBS Customer Service at 1-800-533-5000, Monday - Thursday, 6:30 a.m. to 3:00 p.m.

8. **Primers do not drop from Collet to Transfer Bar:**

   Check Collet for damage or burrs.

   Check Primer Transfer Bar for damage or burrs.

   Loosen lock nut (B) on the top of the Primer Drop Tube and adjust down in ¼ turn increments until primers drop freely. Retighten lock nut *(photo 47)*. (**CAUTION:** Adjusting the Primer Drop Tube Assembly too far down may cause damage to the Primer Transfer Bar.)




9. **Primers drop from the Primer Transfer Bar before reaching the end of its travel:**

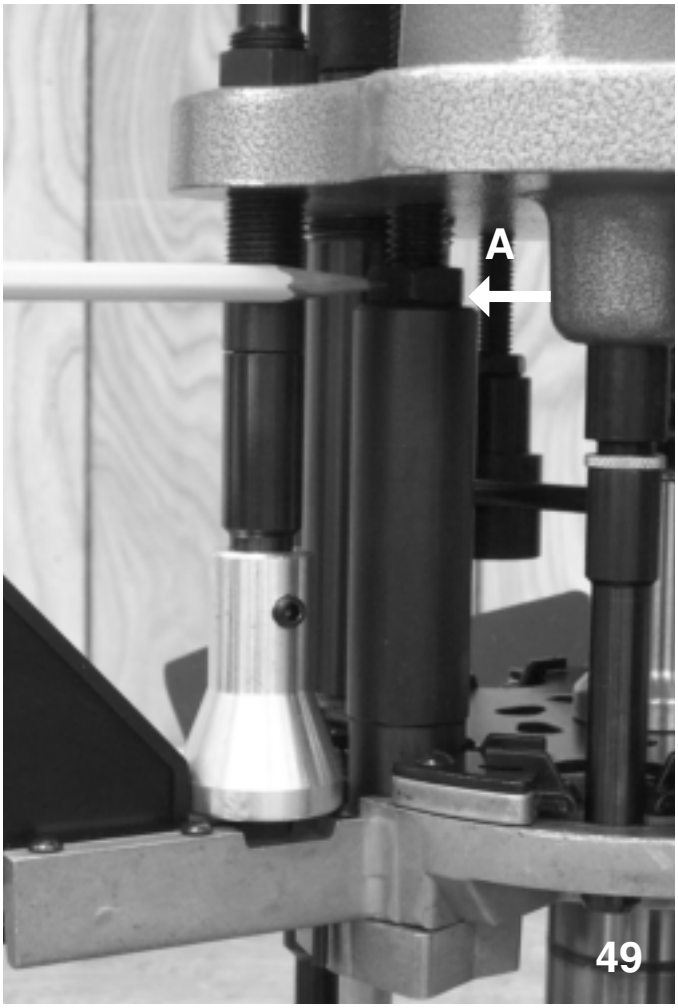
   The Primer Sleeve in the lower casting may not have returned upward. Foreign material may be lodged in the assembly. Remove Primer Seater Casting, inspect for damage, clean (or replace damaged parts) and reinstall.

10. **Hulls stick below Case Holder Plate after priming, causing press not to index:**

    Use of very low base brass hulls is typically the cause. The Primer Seat Die outer body is clearing the Case Holders before the brass portion of the hull is exposed. Loosen Lock Nut (A) and lower outer die body down in ¼ turn increments until problem solved *(photo 49)*.


11. **Hull mouths catch going into the Primer Seat Die:**

    Hulls are either not round or there is a slight die body alignment problem. Return hull mouth to “round” condition. To realign, remove primers, insert a hull in Station 2, loosen lock nut (A, *photo 49*), lower Handle while guiding hull up into Primer Seat Die, with Handle at very bottom of stroke, retighten lock nut (A).




12. **Powder below the shell plate at Station 3:**

    Hull is missing primer.

    Check to insure that primer supply has not run out.

    Check for damage to Primer Transfer Bar that may cause primers to drop in sideways onto Primer Seat Plug.

13. **Inconsistent powder charges:**

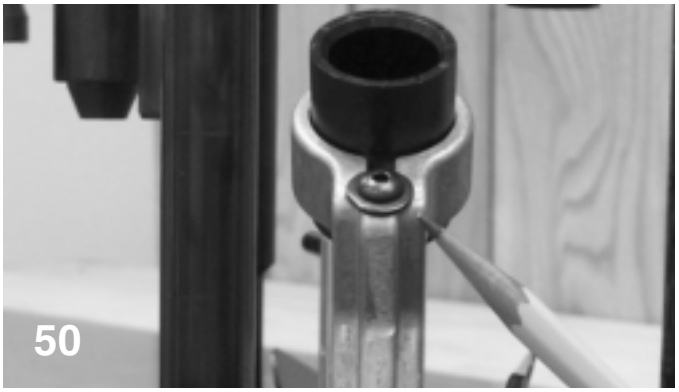
    Foreign material may have made its way into the powder bushing. We have seen strings from shot bags, seals from the powder canister and pieces of plastic.

    Lower drop tube may not be adjusted to basewad in hull to provide full travel of Shut Off.

    Index Shaft and Brackets may be worn or loose causing the Charge Bar to not make complete left and right movements.

14. **Hulls pop out at Station 4 - wad insertion:**

    The Wad Guide is not returning up. Remove cap screw and washer *(photo 50)*, remove Wad Guide and check to see that the three springs are stacked properly. Check that Wad Starter Rod is not adjusted too far up. If Wad Starter Rod is too far up, it will not insert the wad past the Wad Guide. The wad sticks in the Wad Guide and when the Wad Carrier tips back, the hull is pulled from the press. Adjust Wad Starter Rod to just clear wad petals as Wad Guide tips inward.




15. **Wads crush hull mouths upon insertion:**

    Check Wad Guide for missing wad fingers. Replace if fingers are missing.

    Check alignment of Wad Carrier Arm. At the insertion position, the Wad Guide should be centered to slightly forward of center in relationship to the Wad Starter Rod above it. See #5 *(page 8)* of Component Adjustment section.

16. **Inconsistent shot charges:**

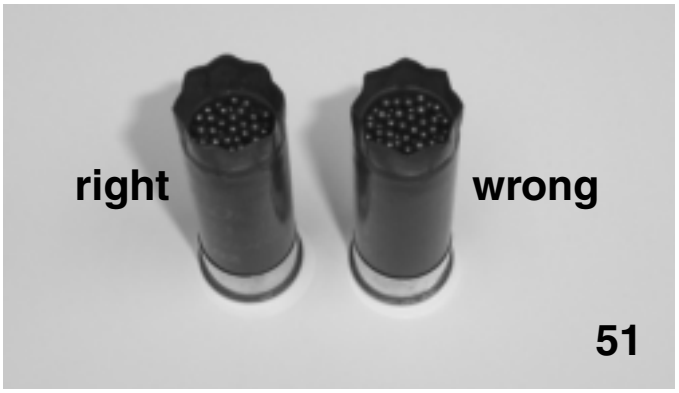
    Index Shaft and Brackets may be worn or loose causing the Charge Bar to not make complete left and right movements.

    The Shot bushings were calibrated to soft lead shot. Chilled or Magnum shot has a higher antimony content and though the shot size may be #8 or #7.5 etc., there is less mass for the same volume versus soft lead. Bushings may be enlarged to drop a larger volume of shot or sleeved to reduce the volume of shot.

17. **Hulls collapse at Station 7 – crimp:**

    Wads are not seated deeply enough causing the shot column to be too high. The crimp die cannot push the crimp closed over the shot column, exerts excessive force and collapses the side of the hull.

    Too much crimp pressure, reduce crimp spring force.




18. **Hull sticks up into Crimp Die at Station 7:**
    Crimp Die is adjusted down too far and/or Crimp Spring force is excessive. Reduce spring pressure by backing off nut above spring *(See photo 42)*. Also, if the wad is not seated deeply enough *(Station 5)*, the shot column is too high, not allowing for proper crimp.

    Case Holders may be damaged and must be replaced.

19. **Hull sticks up into Taper Crimp Die at Station 8:**

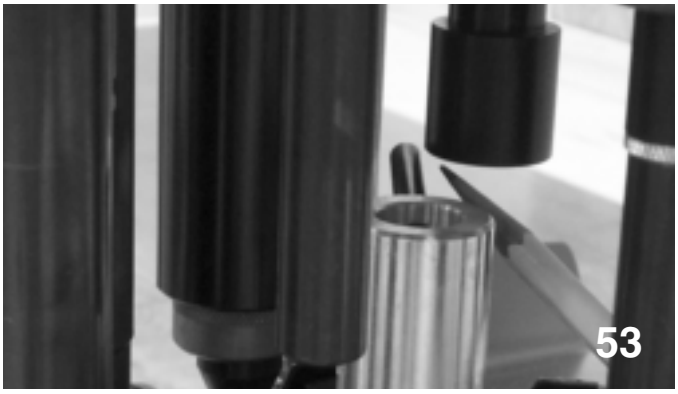
    Excessive taper crimp being applied-loosen top lock nut and raise die.

    Or as above, improper wad depth, causing too high of a shot column.

    May be sporadic due to a damaged Case Holder, only affects one of the eight case holder stations. If multiple Case Holders are damaged, it will happen more frequently. Damaged Case Holder(s) need to be replaced.

20. **Hard ejection of loaded round at Station 8:**

    Typically caused by a damaged case holder. The Case Holder does not retract causing extra force to be used to eject round. If multiple Case Holders are damaged, it will happen more frequently. Damaged Case Holder(s) need to be replaced. Remove hulls from press. Using a 5/16" hex wrench, loosen socket head cap screw inside of Case Eject Rod Holder *(photo 52)* and remove from press (**CAUTION:** Note position of Case Eject Rod, if it is not positioned properly upon reattachment, damage may occur). Remove Case Holder Plate Assembly by lifting counter clockwise from Shell Plate Holder. Remove eight 8-32 button head cap screws with provided 3/32" wrench. Lift off top plate, replace damaged Case Holders and reassemble. Insure all Case Holders retract freely before tightening the screws. Reinstall onto press ensuring Case Eject Rod is in the correct position *(photo 53)*.


21. **Case Eject Rod broken:**

    As above, the extra force necessary to eject the loaded round with damaged case holders puts extra force on the Case Eject Rod, causing it to break. Also, after removing and cleaning under the Case Holder Assembly, the Case Eject Holder was aligned improperly under a die station, when the handle is cycled, the die breaks off the eject rod.

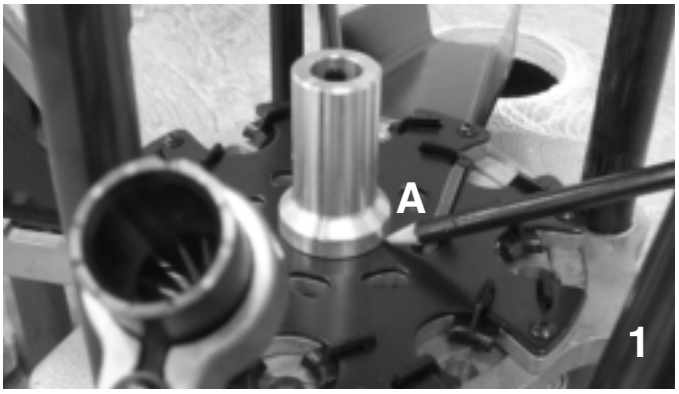
22. **Powder or shot is dropped without a hull present:**

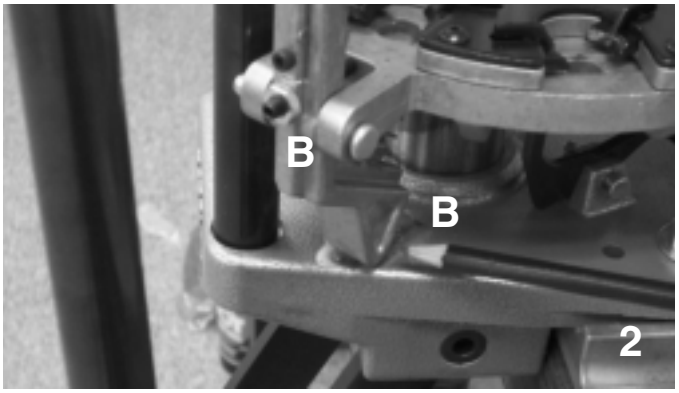
    Shut Off is stuck to the rear. Shut Offs, Charge Bar and housing may need to be cleaned. Powder dust residue may cause the Shut Off to bind. Also, If your shot is very dusty, this also causes the Shut Off to bind. ***DO NOT USE RECLAIMED SHOT!***

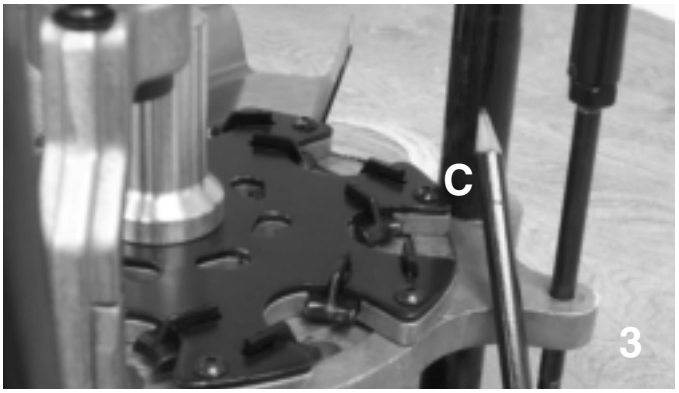
## MAINTENANCE

Three areas that require more frequent lube are the Shell Plate Assembly, *(photo 1)* contact area of the *(photo 2)* Wad Carrier and the *(photo 3)* back Support Rod. Any light oil or grease will suffice.

The Case Holder Assembly must be removed to properly lubricate. Follow *Troubleshooting #20, page 12* for directions on how to properly remove and replace the Shell Plate Holder Assembly.

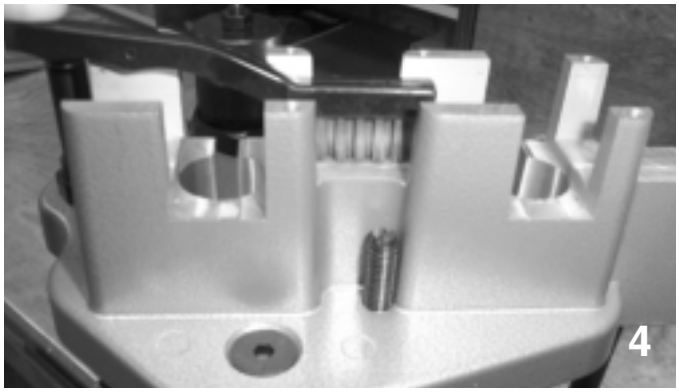


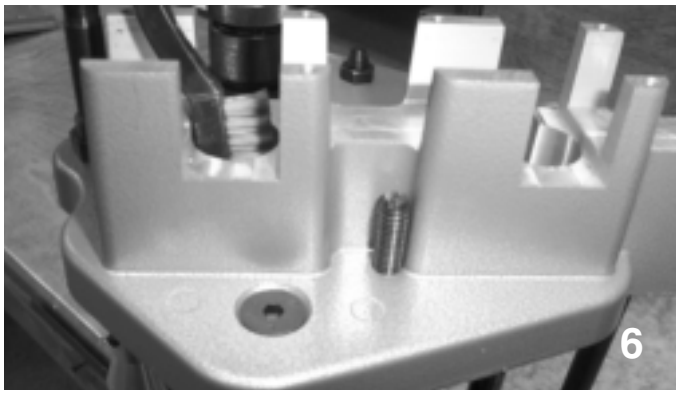



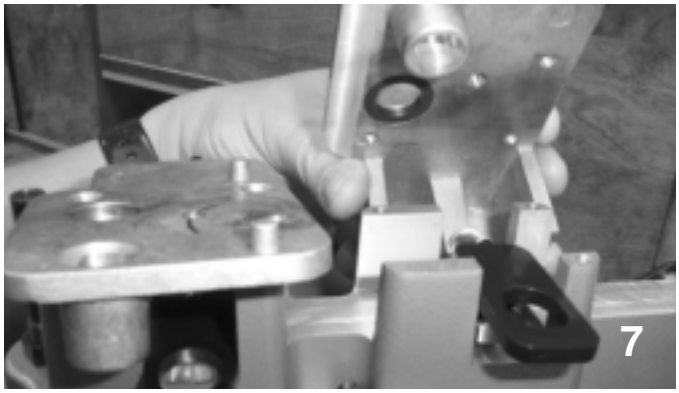

Periodic cleaning of the Charge Bar channel, Shut Off channel and Upper Drop Tube holes in the Upper Casting will lessen down time due to damaged or worn parts.

To clean these areas, drain and remove Powder and Shot hoppers. Drain Powder and Shot bushings and remove Charge Bar. Remove the Powder and Shot Shut Off Plates. This allows complete access to the areas that require cleaning. When reassembling, make sure that the Shut Off Plates are on the correct side. The Shot Shut Off Plate goes on the right side and has a rubber washer installed in the hole. Also, make sure that the extension in the back of the Shut Off is surrounded by the return spring.







| 89100 | THE GRAND, Charge Bar |
|---|---|

## POWDER CHARGE WEIGHT IN GRAINS

| GRAINS | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Accurate Solo 1000 | 387 | 399 | 411 | 420 | 432 | 438 | 447 | 459 | 474 | | | | | | | | | | | | | | | | | | | | | |
| Accurate Solo 1250 | 369 | 384 | 396 | 408 | 420 | 429 | 441 | 453 | 459 | 471 | 480 | 492 | 501 | 510 | 516 | 525 | 537 | 543 | 555 | 558 | | | | | | | | | | |
| Accurate No. 2 Improved | | | | 357 | 366 | 378 | 387 | 396 | 408 | 417 | | | | | | | | | | | | | | | | | | | | |
| Accurate Nitro 100 | 375 | 387 | 399 | 411 | 423 | 435 | 447 | 456 | 465 | | | | | | | | | | | | | | | | | | | | | |
| DuPont 700-X | | 402 | 414 | 429 | 441 | 453 | 465 | 471 | 486 | 498 | | | | | | | | | | | | | | | | | | | | |
| DuPont PB | 366 | | 390 | 402 | 414 | 426 | 435 | 447 | 456 | 465 | 474 | 486 | | | | | | | | | | | | | | | | | | |
| DuPont SR 7625 | 345 | | | 381 | 390 | 402 | 414 | 426 | 438 | 444 | 453 | 462 | 474 | 486 | | | | | | | | | | | | | | | | |
| DuPont 800-X | | 372 | 390 | 402 | 414 | 423 | 429 | 438 | 447 | 459 | 468 | 480 | | | 507 | 525 | | 534 | | 549 | 558 | | | | | | | | | |
| DuPont SR 4756 | | 366 | | | | 408 | | 426 | 435 | 447 | 459 | 471 | 480 | | | | | | 525 | 534 | | 549 | 558 | | | 580 | 588 | | | | |
| DuPont 4227 | | | | | | | | | 366 | | | 390 | | 408 | 414 | 420 | 426 | 435 | 441 | 447 | 453 | 462 | 468 | 474 | 480 | 486 | | 498 | | |
| Alliant American Select | | | 417 | 423 | 432 | 447 | 456 | 468 | 477 | 483 | | | | | | | | | | | | | | | | | | | | |
| Alliant Red Dot & E3 | 405 | 423 | 438 | 453 | 468 | 480 | 489 | 498 | 510 | 519 | | | | | | | | | | | | | | | | | | | | |
| Alliant Green Dot | 390 | 405 | 420 | 435 | 447 | 456 | 468 | 480 | 492 | 501 | 513 | 522 | 534 | | 549 | 558 | | | | | | | | | | | | | | |
| Alliant Unique | 354 | 369 | 381 | 393 | 405 | 414 | 423 | 435 | 444 | 453 | 465 | 474 | 483 | 492 | 501 | | 510 | | | | | | | | | | | | | |
| Alliant Herco | 369 | 381 | 393 | 405 | 414 | 426 | 438 | 450 | 462 | 471 | 477 | 489 | 498 | | 513 | 522 | 531 | | 549 | 558 | 564 | 573 | | 588 | 594 | | | | | |
| Alliant Blue Dot | | | | | 366 | 372 | 381 | 390 | 396 | 408 | 414 | 423 | 435 | 441 | 447 | 459 | 468 | 474 | 483 | 489 | 495 | 501 | 510 | 516 | 522 | 531 | 534 | 543 | 549 | 555 |
| Alliant 2400 | 291 | 300 | 312 | 324 | 330 | 339 | | | | | | | | | | | | | | | | | | | | | | | | |
| Hodgdon Clays | | | 429 | 441 | 456 | 468 | 483 | 495 | 507 | | | | | | | | | | | | | | | | | | | | | |
| Hodgdon International | 375 | 390 | 402 | 414 | 423 | 435 | 447 | 459 | 471 | 483 | 495 | 507 | | | | | | | | | | | | | | | | | | |
| Hodgdon Universal | 342 | 354 | 366 | 378 | 390 | 402 | 411 | 420 | 429 | 438 | 447 | 456 | 468 | 480 | 489 | 501 | | | | | | | | | | | | | | |
| Hodgdon HS-6 | | | | 300 | 309 | 318 | 327 | 336 | 345 | 357 | 360 | 366 | 375 | 381 | 387 | 393 | 402 | 408 | 414 | 423 | 429 | | | | | | | | | |
| Hodgdon HS-7 | | | | | | 318 | 330 | 339 | 348 | 357 | 363 | 369 | 378 | 384 | 390 | 396 | 405 | 411 | 417 | 423 | 429 | 438 | 444 | 450 | | | | | | |
| Hodgdon Titewad | | 384 | 396 | 408 | 420 | 432 | 441 | 453 | 462 | 474 | 486 | 492 | | | | | | | | | | | | | | | | | | |
| Hodgdon Longshot | 300 | 309 | 318 | 330 | 345 | 348 | 357 | 366 | 372 | 381 | 390 | 396 | 405 | 414 | 423 | 429 | 435 | 444 | 450 | 459 | 465 | 471 | 480 | 486 | 492 | 498 | | | | |
| Hodgdon Titegroup | | 324 | 330 | 343 | 351 | 360 | 369 | 378 | 387 | 396 | 405 | | | | | | | | | | | | | | | | | | | |
| Winchester 540 | | | | 300 | 309 | 318 | 327 | 336 | 345 | | 360 | 366 | | 381 | | | 402 | 408 | 414 | 423 | 429 | 435 | 441 | 444 | 450 | 459 | 465 | 471 | | |
| Winchester 571 | | | | | | 318 | | | | | | | | | 390 | 396 | | | | 423 | 429 | 438 | 444 | 450 | 456 | 462 | 468 | 474 | 480 | 486 |
| Winchester Super Target | | | | | 414 | 429 | 438 | 450 | 459 | 471 | 480 | | | | | | | | | | | | | | | | | | | |
| Winchester Super Lite | | | | 345 | 354 | 363 | 372 | 381 | 390 | 402 | | | | | | | | | | | | | | | | | | | | |
| Winchester Super Field | | | 327 | 345 | 354 | | | | | | | | 420 | 426 | 432 | 441 | 450 | 456 | 462 | | | | | | | | | | | |

**HOW TO SELECT BUSHINGS FOR HALF GRAIN CHARGES:**

Powder bushings are identified by numbers that correspond to the size of their inside diameter. (For instance, the inside diameter of the #456 bushing is .456 inches.) Bushings for powder charges in half-grain increments can be calculated from this chart. Simply "split the difference" between the two even-grain bushings, and select the bushing nearest the result.

**Example:** To find the bushing for 18 1/2 grains of Alliant Red Dot powder, note that bushing #468 gives a charge of 18 grains and that bushing #480 gives 19 grains. Split the difference between 468 and 480, and the result is 474. Thus, the correct bushing for 18 1/2 grains of Red Dot is bushing #474.

All charges listed on this chart are an average of several loads, weighed following the complete reloading cycle. Powders used in establishing these loads were from ballistic samples supplied by the manufacturer or sealed tins of recent manufacture. **Charges may vary slightly due to operator's technique and/or powder variables.**

### THE GRAND, Powder Bushings

| Part Number | Bushing# | Part Number | Bushing# | | Part Number | Bushing# | Part Number | Bushing# |
|---|---|---|---|---|---|---|---|---|
| 89111 | 354 | 89119 | 408 | | 89127 | 438 | 89135 | 462 |
| 89112 | 360 | 89120 | 414 | | 89128 | 441 | 89136 | 465 |
| 89113 | 366 | 89121 | 420 | | 89129 | 444 | 89137 | 468 |
| 89114 | 372 | 89122 | 423 | | 89130 | 447 | 89138 | 471 |
| 89115 | 381 | 89123 | 426 | | 89131 | 450 | 89139 | 474 |
| 89116 | 390 | 89124 | 429 | | 89132 | 453 | 89140 | 480 |
| 89117 | 396 | 89125 | 432 | | 89133 | 456 | 89141 | 486 |
| 89118 | 402 | 89126 | 435 | | 89134 | 459 | 89142 | 498 |

**THE GRAND, Lead Shot Bushings**
**For Field Loads #6's**
Compensates for tighter packing of smaller shot size.

| Part Number | Bushing Description |
|---|---|
| 89170 | 7/8 oz. |
| 89171 | 1 oz. |
| 89172 | 1-1/8 oz. |
| 89173 | 1-1/4 oz. |
| 89174 | 1-3/8 oz. |
| 89175 | 1-1/2 oz. |

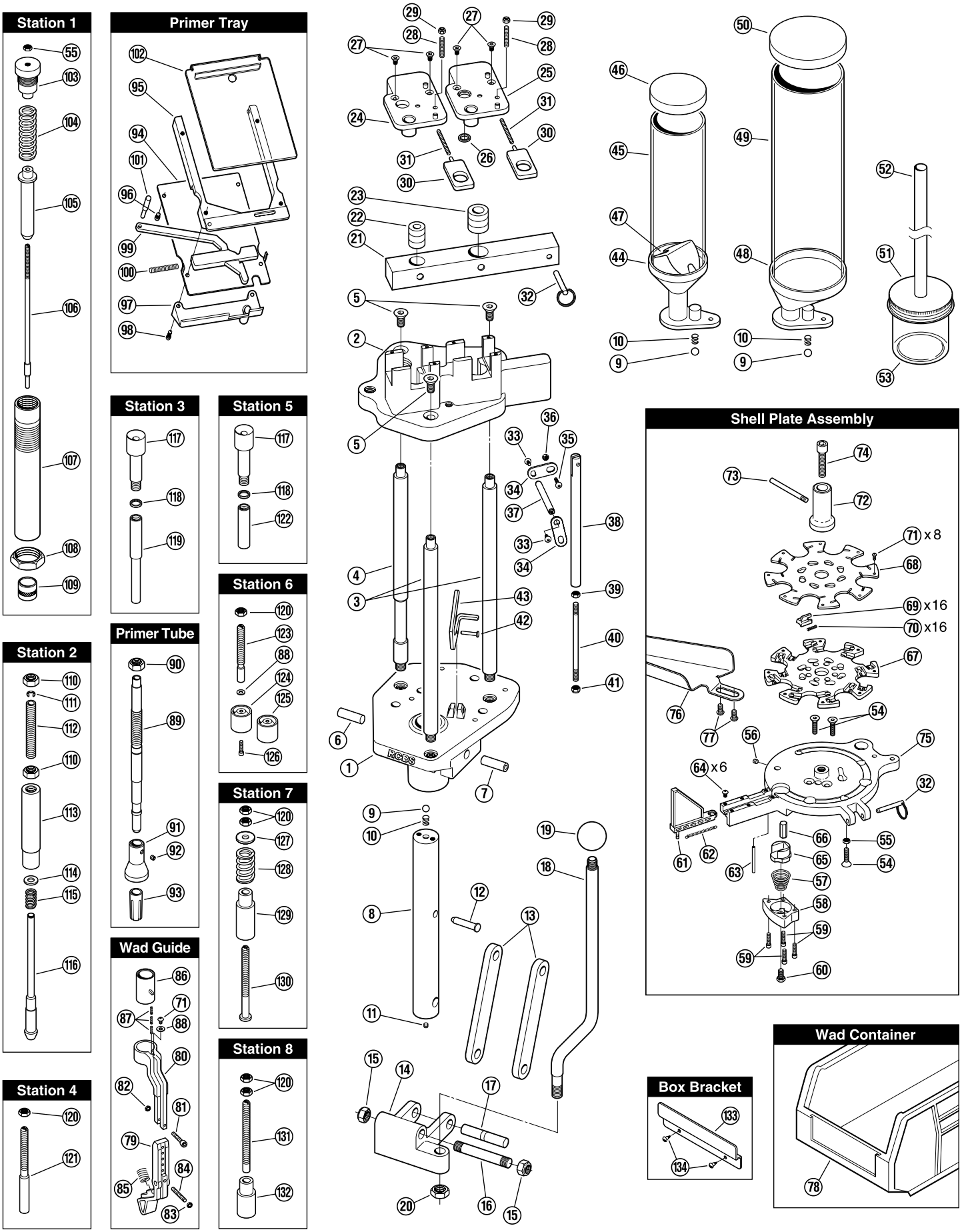
**INTERCHANGEABLE CHARGE BUSHINGS**
For use with THE GRAND shotshell reloader. Designed so shot and powder bushings cannot be accidentally reversed in the charge bar. The bushings make it easy to change from one load to another.

**THE GRAND, Lead Shot Bushings**
**For Target Loads**
Calibrated to measure maximum legal loads for trap and skeet shooting.

| Part Number | Bushing Description |
|---|---|
| 89188 | 7/8 oz. #9 |
| 89189 | 1 oz. #7-1/2 |
| 89190 | 1 oz. #8 |
| 89191 | 1-1/8 oz. #7-1/2 |
| 89192 | 1-1/8 oz. #8 |
| 89193 | 1-1/8 oz. #8-1/2 |
| 89194 | 1-1/8 oz. #9 |

# THE GRAND PARTS LIST • NOVEMBER 2003

| # | Description | Part # | Qty |
|---|---|---|---|
| 1 | SS Frame | 789000 | 1 |
| 2 | SS Top Plate | 789001 | 1 |
| 3 | SS Support Rod | 789023 | 2 |
| 4 | SS Support Rod Turned | 789031 | 1 |
| 5 | 3/8-16 x 1 Flat Head Cap Screw | 188750 | 3 |
| 6 | Link Pin Left | 788258 | 1 |
| 7 | Link Pin Right | 788257 | 1 |
| 8 | SS Ram | 789020 | 1 |
| 9 | Detent Ball | 187152 | 3 |
| 10 | Detent Spring | 187153 | 3 |
| 11 | 1/4-28 x 3/8 Socket Head Set Screw | 187219 | 1 |
| 12 | SS Lock Out Pin | 789022 | 1 |
| 13 | Link | 188719 | 2 |
| 14 | SS Toggle Block | 789002 | 1 |
| 15 | 7/16-20 Nyloc Nut | 188108 | 2 |
| 16 | Toggle Block Pin | 788256 | 1 |
| 17 | SS Ram Pin | 789021 | 1 |
| 18 | Handle | 786862 | 1 |
| 19 | Handle Ball | 109121 | 1 |
| 20 | 5/8-18 Hex Nut | 109136 | |
| 21 | SS Charge Bar | 789018 | 1 |
| 22 | SS Powder Bushing | SEE CHART | |
| 23 | SS Shot Bushing | SEE CHART | |
| 24 | SS Shut Off Plate Powder | 789062 | 1 |
| 25 | SS Shut Off Plate Shot | 789010 | 1 |
| 26 | Rubber Washer | 189039 | 1 |
| 27 | 10-24 x 1/2 Flat Head Cap Screw | 189077 | 4 |
| 28 | 10-24 x 1-1/4 Socket Head Set Screw | 189062 | 2 |
| 29 | 10-24 Nyloc Nut | 189063 | 2 |
| 30 | SS Shut Off | 189019 | 2 |
| 31 | SS Spring | 189061 | 2 |
| 32 | SS Self Locking Pin | 189036 | 2 |
| 33 | 8-32 x 1/4 Button Head Cap Screw | 188041 | 10 |
| 34 | SS Index Shaft Bracket | 789006 | 1 |
| 35 | 8-32 x 3/4 Button Head Cap Screw | 187221 | 1 |
| 36 | 8-32 Nyloc Nut | 189078 | 1 |
| 37 | SS Charge Bar Index Shaft | 789047 | 1 |
| 38 | SS Charge Bar Push Rod Upper | 789045 | 1 |
| 39 | 1/4-28 Hex Nut | 109604 | 1 |
| 40 | SS Charge Bar Push Rod Lower | 789046 | 1 |
| 41 | 1/4-20 Nyloc Nut | 189072 | 1 |
| 42 | 3/16 x 1 Clevis Pin | 189038 | 1 |
| 43 | SS Index Arm | 789009 | 1 |
| 44 | SS Powder Funnel | 789011 | 1 |
| 45 | SS Powder Hopper | 189031 | 1 |
| 46 | SS Powder Hopper Cap | 189029 | 1 |
| 47 | SS Powder Baffle | 189037 | 1 |
| 48 | SS Shot Funnel | 789012 | 1 |
| 49 | SS Shot Hopper | 189030 | 1 |
| 50 | SS Shot Hopper Cap | 189028 | 1 |
| 51 | SS Spent Primer Bottle Cap | 789016 | 1 |
| 52 | SS Decap Tube | 789030 | 1 |
| 53 | SS Spent Primer Bottle | 189032 | 1 |
| 54 | 1/4-28 x 1 Flat Head Cap Screw | 189075 | 3 |
| 55 | 1/4-28 Hex Nut | 189604 | 2 |
| 56 | SS 10/32 x 1/4 Socket Head Set Screw | 109099 | 1 |
| 57 | SS Spring | 189055 | 1 |
| 58 | SS Primer Seater Casting | 189026 | 1 |
| 59 | 6-32 x 5/8 Socket Head Cap Screw | 198964 | 4 |
| 60 | 1/4-28 x 1/2 Hex Head Bolt | 189067 | 1 |
| 61 | SS Primer Transfer Bar | 789102 | 1 |
| 62 | SS Spring | 189054 | 1 |
| 63 | 1/8 x 1 Roll Pin | 189079 | 1 |
| 64 | 6-32 x 1/4 Button Head Cap Screw | 189066 | 6 |
| 65 | SS Primer Sleeve | 189025 | 1 |
| 66 | SS Primer Plug | 789034 | 1 |
| 67 | SS Case Holder Plate 12 GA. | 789004 | 1 |
| 67 | SS Case Holder Plate 20 GA. | 789110 | 1 |
| 68 | SS Case Holder Top Plate Cap | 789005 | 1 |
| 69 | SS Case Holder 12 GA. | 189015 | 16 |
| 69 | SS Case Holder 20 GA. | 789109 | 16 |
| 70 | SS Spring | 189052 | 16 |
| 71 | 8-32 x 5/16 Button Head Cap Screw | 186147 | 9 |
| 72 | SS Eject Rod Holder 12 GA. | 789054 | 1 |
| 72 | SS Eject Rod Holder 20 GA. | 789119 | 1 |
| 73 | SS Eject Rod | 789055 | 1 |
| 74 | 3/8-16 x 1-1/2 Socket Head Cap Screw | 189074 | 1 |
| 75 | SS Shell Plate Holder | 789003 | 1 |
| 76 | SS Discharge Chute | 789017 | 1 |
| 77 | 1/4-28 x 1/4 Button Head Cap Screw | 189073 | 2 |
| 78 | SS Green Wad Box | 189033 | 1 |
| | **Wad Carrier Assy 12 GA. 789078, 20 GA.** | **789132** | |
| 79 | SS Wad Carrier Bottom | 789008 | 1 |
| 80 | SS Wad Carrier Top | 789007 | 1 |
| 81 | 5-40 x 3/4 Socket Head Cap Screw | 189068 | 1 |
| 82 | 5-40 Hex Nut | 189069 | 1 |
| 83 | 10-24 Hex Nut | 189086 | 1 |
| 84 | 10-24 x 1-1/4 Socket Head Set Screw | 189062 | 1 |
| 85 | SS Spring | 189058 | 1 |
| 86 | SS Wad Guide 12 GA. | 189016 | 1 |
| 86 | SS Wad Guide 20 GA. | 189017 | 1 |
| 87 | SS Spring | 189057 | 3 |
| 88 | 8-32 Flat Washer | 189080 | 2 |
| 89 | SS Primer Drop Tube Assy | 789096 | 1 |
| 90 | SS 5/8-18 Lock Ring | 789059 | 1 |
| 91 | SS Transfer Bar Actuator | 789033 | 1 |
| 92 | 1/4-28 x 1/4 Socket Head Set Screw | 189076 | 1 |
| 93 | SS Primer Dispenser Collet | 189024 | 1 |
| | **Primer Tray Assy** | **789087** | |
| 94 | SS Primer Tray Bottom | 189027 | 1 |
| 95 | SS Primer Tray Frame | 789014 | 1 |
| 96 | 10-32 x 1/4 Socket Head Cap Screw | 187687 | 2 |
| 97 | SS Primer Tray Base | 789015 | 1 |
| 98 | 10-32 x 5/8 Socket Head Cap Screw | 186624 | 2 |
| 99 | SS Primer Feed Bar | 189034 | 1 |
| 100 | SS Spring | 189061 | 1 |
| 101 | SS Primer Shut Off Pin | 789039 | 1 |
| 102 | SS Primer Tray Lid | 189035 | 1 |
| | **Size Die Assy 12 GA. 789071, 20 GA.** | **789128** | |
| 103 | SS Size Die Bushing | 789025 | 1 |
| 104 | SS Spring | 189053 | 1 |
| 105 | SS Hull Extractor 12 GA. | 789029 | 1 |
| 105 | SS Hull Extractor 20 GA. | 789112 | 1 |
| 106 | SS Decap Rod Assy | 789072 | 1 |
| 107 | SS Size Die Body | 789024 | 1 |
| 108 | SS 1-3/8-12 Lock Ring | 789058 | 1 |
| 109 | SS Size Ring 12 GA. | 789026 | 1 |
| 109 | SS Size Ring 20 GA. | 789111 | 1 |
| | **Primer Body Assy 12 GA. 789074, 20 GA.** | **789129** | |
| 110 | 1/2-13 Hex Nut | 189081 | 2 |
| 111 | Snap Ring | 180052 | 1 |
| 112 | SS Primer Body Bushing | 789038 | 1 |
| 113 | SS Primer Body | 789037 | 1 |
| 114 | SS Primer Stem Washer | 789063 | 1 |
| 115 | SS Spring | 189056 | 1 |
| 116 | SS Primer Stem Assy 12 GA. | 789075 | 1 |
| 116 | SS Primer Stem Assy 20 GA. | 789130 | 1 |
| | **Powder Tube Assy** | **789076** | |
| 117 | SS Upper Drop Tube | 789101 | 1 |
| 118 | SS Drop Tube Lock Ring, Brass | 789056 | 1 |
| 119 | SS Powder Tube Lower | 789042 | 1 |
| | **Shot Drop Tube Assy 12 GA. 789077, 20 GA.** | **789131** | |
| 117 | SS Upper Drop Tube | 789101 | 1 |
| 118 | SS Drop Tube Lock Ring, Brass | 789056 | 1 |
| 122 | SS Shot Tube Lower 12 GA. | 789044 | 1 |
| 122 | SS Shot Tube Lower 20 GA. | 789115 | 1 |
| | **Wad Starter** | | |
| 120 | 3/8-16 Hex Nut | 189082 | 1 |
| 121 | SS Wad Starter 12 GA. | 789043 | 1 |
| 121 | SS Wad Starter 20 GA. | 789114 | 1 |
| | **Crimp Starter Assy 12 GA. 789091, 20 GA.** | **789133** | |
| 120 | 3/8-16 Hex Nut | 189082 | 1 |
| 123 | SS Crimp Start Rod | 789048 | 1 |
| 124 | SS Crimp Starter 12 GA. 8 POINT | 189021 | 1 |
| 124 | SS Crimp Starter 20 GA. 8 POINT | 189023 | 1 |
| 125 | SS Crimp Starter 12 GA. 6 POINT | 189020 | 1 |
| 125 | SS Crimp Starter 20 GA. 6 POINT | 189022 | 1 |
| 126 | 8-32 x 1/2 Socket Head Cap Screw | 187227 | 1 |
| | **Crimp Closer Assy 12 GA. 789082, 20 GA.** | **789134** | |
| 120 | 3/8-16 Hex Nut | 189082 | 2 |
| 127 | SS Crimp Closer Washer | 789051 | 1 |
| 128 | SS Spring | 189059 | 1 |
| 129 | SS Crimp Closer Sleeve 12 GA. | 789049 | 1 |
| 129 | SS Crimp Closer Sleeve 20 GA. | 789116 | 1 |
| 130 | SS Crimp Closer Plunger 12 GA. | 789050 | 1 |
| 130 | SS Crimp Closer Plunger 20 GA. | 789117 | 1 |
| | **Final Crimp Assy 12 GA. 789083, 20 GA.** | **789135** | |
| 120 | 3/8-16 Hex Nut | 189082 | 2 |
| 131 | SS Final Crimp Rod | 789052 | 1 |
| 132 | SS Final Crimp Sleeve 12 GA. | 789053 | 1 |
| 132 | SS Final Crimp Sleeve 20 GA. | 789118 | 1 |
| 133 | SS Wad Box Bracket | 789013 | 1 |
| 134 | #8 x 1/2 Wood Screw | 189064 | 2 |
| **Not Pictured** | | | |
| | SS Drain Tube | 789019 | 1 |
| 122 | SS Lower Shot Tube - Long | 789100 | 1 |


Station 1
Primer Tray
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Station 5
Primer Tube
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Station 7
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