

SHERIDAN

Model A and Model B pneumatic rifle operation - maintenance - repair

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operation and maintenance

This information is taken from the owner's Hand Book

Operation

Open bolt and draw back slightly until it stops against the main spring. Pull bolt back hard against spring until sear engages with a "click". Bolt is now free and should be closed again so that safety lever can be operated. Do not jamb bolt handle down hard when closing. The front of the bolt provides a tight seal in the barrel when it is closed with very little pressure.

Move safety lever to rear to put on "Safe" and forward again for "Fire". The safety can only be operated when the rifle is cocked as described above.

Charge the rifle with the desired number of pumps. As with the operation of the safety, the rifle can only be charged when cocked.

Open bolt and insert bullet (pellet) into chamber at rear of barrel. Push bolt forward forcing bullet (pellet) into rifling and close bolt. Again, as described above, do not jamb bolt handle down too hard. This saves the camming surface on the receiver from unnecessary excess wear.

Shoulder rifle, take aim at target, move safety to "Fire" and squeeze trigger. FOLLOW ALL SAFETY RULES.

Valves

In a pneumatic rifle dirt on the valves or valve seats will naturally cause air leakage. The Sheridan is constructed so that it can be "blown out". That failing to remove the dirt (in case of a gummy sludge) it can even be washed out without taking the mechanism apart.

1. To blow out the valves, merely pump rifle two or three strokes without cocking the action. Make sure before doing this however that there is no bullet in the chamber.
2. To wash out the valves, raise pump lever to top of stroke and squirt a drop or two of light oil in the small air intake hole in the pump tube and (also with action not cocked and rifle unloaded) work the piston to blow oil and dirt on through. This will also lubricate and prevent rust on such internal action parts as valves, firing pin, striker, etc. After doing so, shoot rifle a few times unloaded and against something the oily blast of air cannot spoil. The oil fouling in the barrel should also be cleaned out to retain top velocity and accuracy.

Do not think valves are dirty or leaking if the pressure developed by one or two pumps is not retained in the air chamber over a lengthy period. To withstand pressures up to half a ton, which may be built up in a Sheridan, it is advisable pneumatic engineering not to use a soft valve-seat that would readily seal a few pounds of air, but not hold the higher pressures.....No practical shooting is attempted with only one pump, and two or more will provide sufficient air pressure against the hard and sturdy valves to seal the chamber.

When your Sheridan is not used regularly.....you may encounter normal slight seepage. It will disappear with use – or if the rifle has become extremely dry – with a drop or two of light oil in the air intake hole under the pump lever forced through the valves, by pumping with the action not cocked, in the same manner dirt is washed out.....If slightly dry and seeping, a heavy charge of half a dozen strokes left in overnight will usually completely seal up the chamber.

Dismantling

1. To adjust trigger pull: Remove stock by pushing out safety lever pin and taking out safety lever (Model A only). Then remove forward and rear receiver screws (the two large screws on the underside of the stock). Open pumping arm slightly, and carefully remove action from stock. Pull can be adjusted by changing the position of the sear spring on the notched tang. Move backward to lighten and forward to increase weight.
2. To adjust bolt handle: The locking taper between bolt and handle allows one to set the later were preferred. Keep in mind however that the front end of the bolt body is also a needle valve to eliminate leakage behind the bullet. If bolt handle is adjusted so low that it can strike the wood before needle valve is in position, it will not form a proper seal. To change position of handle, loosen screw (on end of bolt) with large screwdriver. Tap (bolt handle) loose and turn to desired position. Retighten (screw) very firmly to avoid slippage.
3. To clean pump tube: Remove piston assembly by starting with screw on nose of muzzle cap. When this is out, raise pump lever slightly and tap out pivot pin. Remove the two muzzle cap screws, and using a piece of wood tap off the muzzle cap. This allows whole assembly to be withdrawn. A cleaning rod with a good sized cloth over the end works well to clean out the tube. Wipe off and lubricate piston and cross head. Also put a drop of oil in all working points (pivots), and one in the long slot of the pump lever for the leaf spring.

Tips on Re-Assembly

When replacing stock on action raise pumping arm slightly and action will slip into place readily. The longer of the two stock screws goes in the back of the trigger guard. Do not reverse them.

(Model A only) The safety lever is put in from the small slot in the safety lever plate so that the ball on the bottom of the lever is in the hole in the safety slide. When this is in place, move lever back or forward until cross holes line up, and push in pin. If lever slips in handling twist a narrow strip of tape around the very top (of lever) to hold onto.

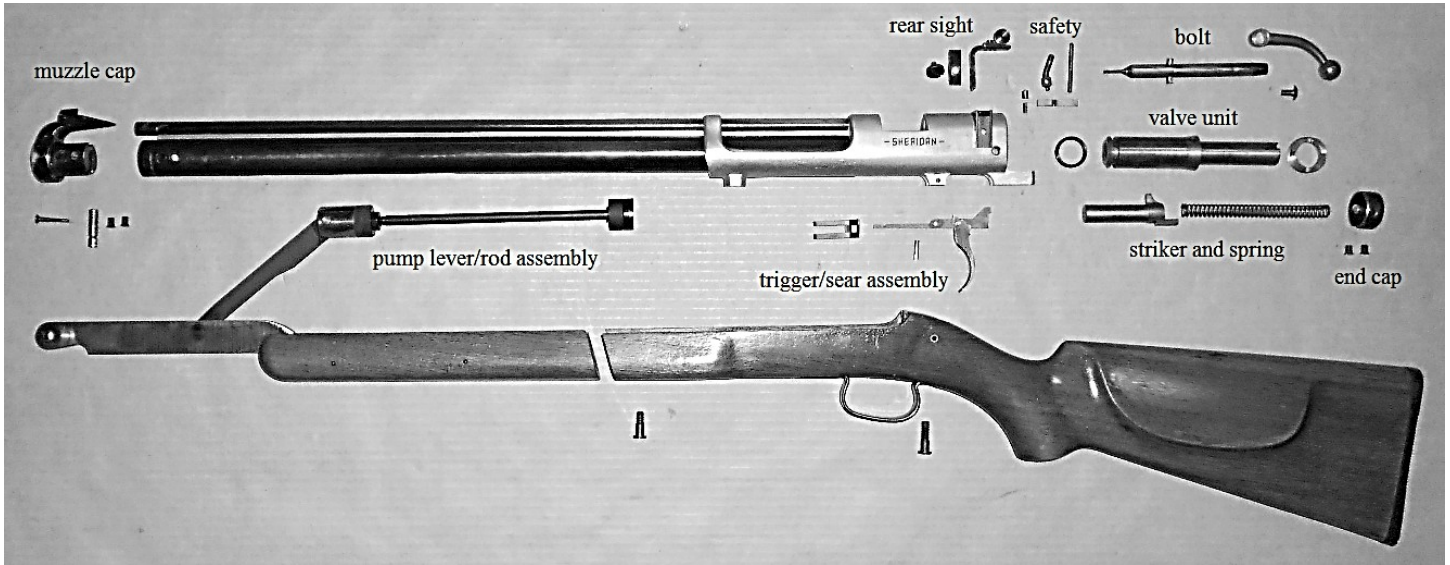
Controlled Power

Controlled power makes a really fine pneumatic a very practical rifle to own. For target practice in the average length basement, three strokes of the piston are sufficient for accuracy. Outdoors at around twenty five yards, five or six strokes should be ample for general use. Velocity and point of impact can be regulated for target work, hunting, plinking, etc., by the number of pumps and how they are handled, fast or slowly. It is always sensible to use no more power than is needed for the job.

Important

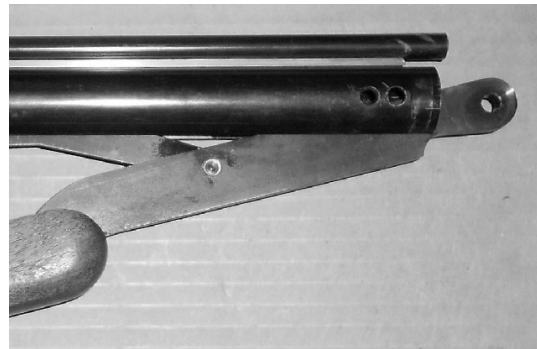
Do not put in over eight pumps because the rifle is designed to operate most efficiently with moderate charges. Do not over-charge and possibly cause an over-heated piston head, scorched valves, or air lock. The muzzle velocity with eight pumps of the efficient piston is more than necessary or practical for the use to which a pneumatic rifle is adapted (note: muzzle velocity with eight pumps averages 650-700 fps).

repair



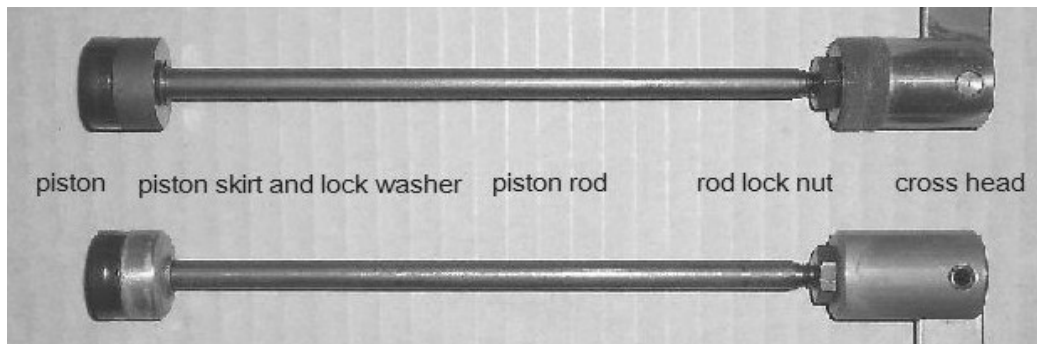
Model A parts diagram / Model B is basically the same

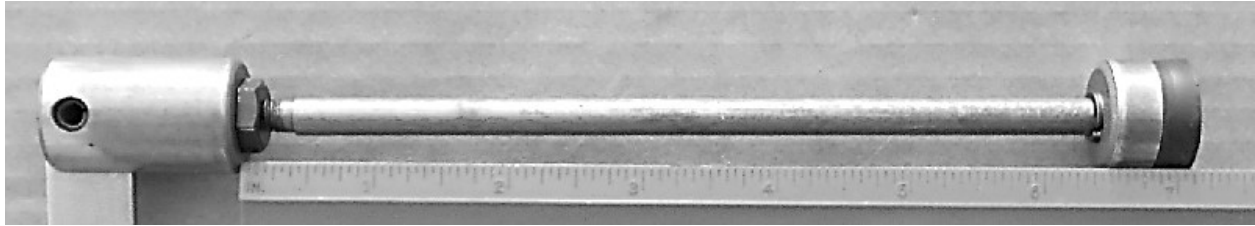
piston / pump cup



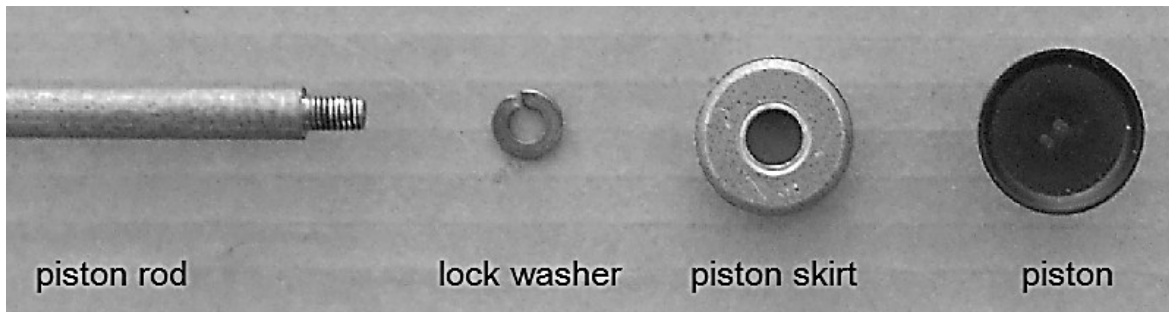
To check condition of piston (pump cup) remove piston assembly (pump lever/rod assembly) as described in Dismantling 3 on page 2.

Photo below shows early style assembly at top and later style at bottom. Original piston is made of hycar cup molded over metal insert.





take note of measurement to end of cup

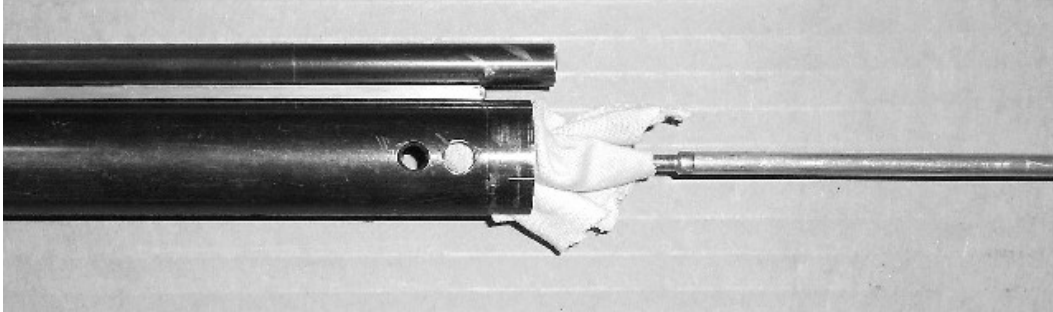


piston (pump cup) is screwed onto rod and held secure with lock washer

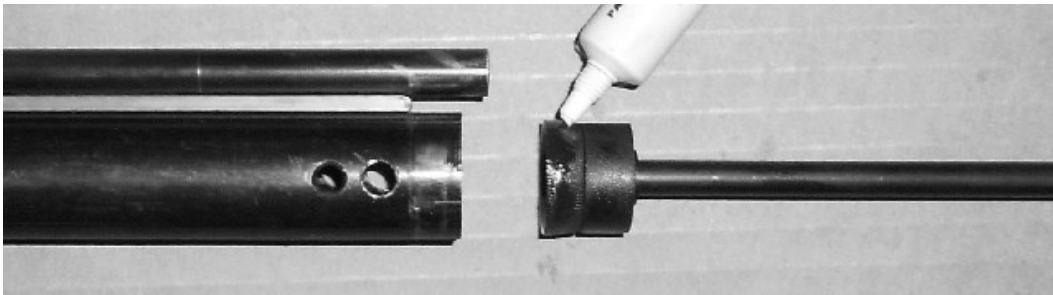


The original piston can often-times be rejuvenated. Coat the piston in oil and place in a vice with a flat metal piece on both ends to protect it. Tighten vice so that the end of the cup flares out slightly. Leave in vice overnight. When removed from vice the cup should remain flared. Follow steps on next page to re-install piston in rifle and check operation of pump. If the piston cannot be rejuvenated do not discard because it can be used in the fabrication of a replacement. **(See Notes on last page for pump cup availability)**

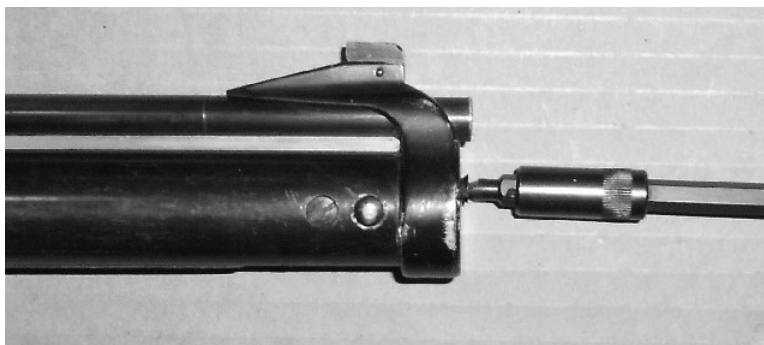
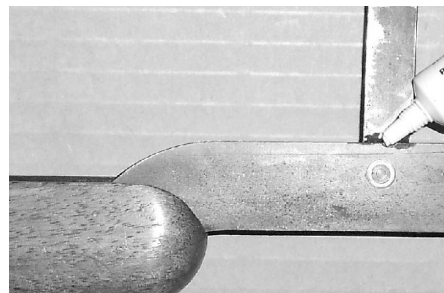
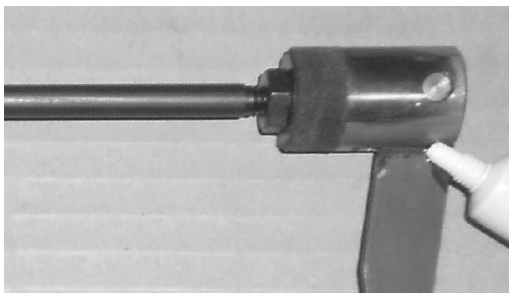
If the piston/pump rod assembly has been taken apart for any reason, re-assemble to length as noted above. Maximum power can be achieved by loosening lock nut and adjusting pump rod for slight over travel at end of pump stroke.



clean inside of air tube before re-assembly



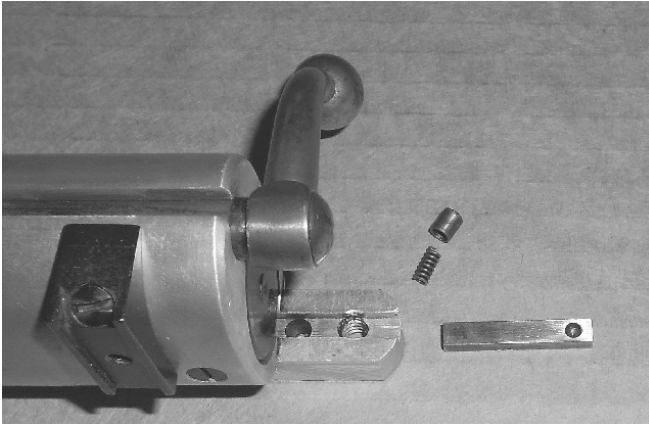
lubricate piston (pump cup) and pump lever joints



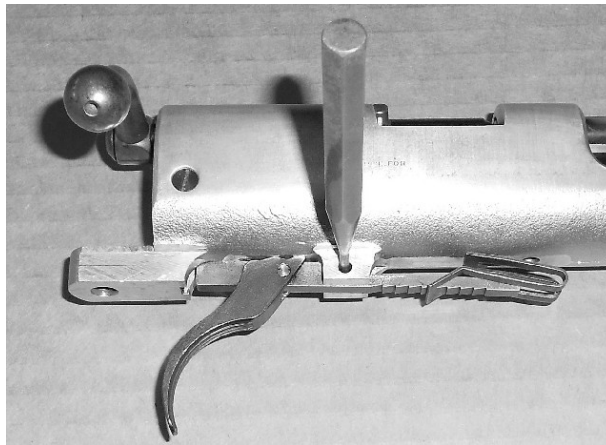
re-assemble in reverse order

valve removal

To remove the valve unit, first remove the stock as described in Dismantling 1 on page 2. The piston assembly must also be removed as previously described.



Remove the safety components as shown above. On left is Model A with safety slide, detent and detent spring removed. On right is Model B with safety lever pin removed, after which lever can be lifted out and safety slide can be removed. Note that Model B has no detent and spring.



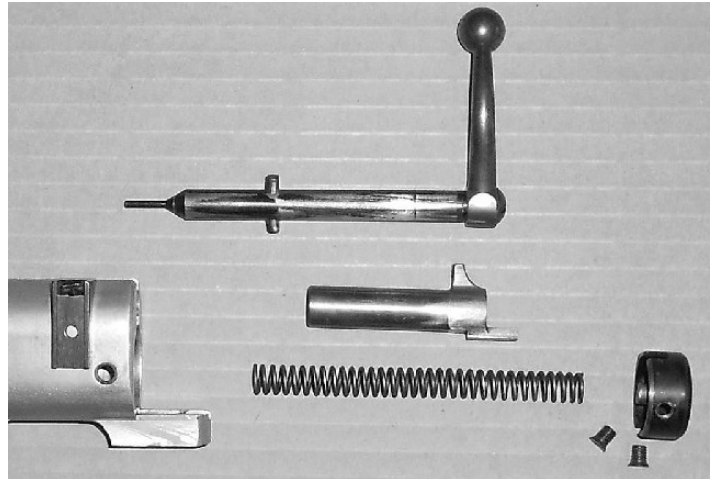
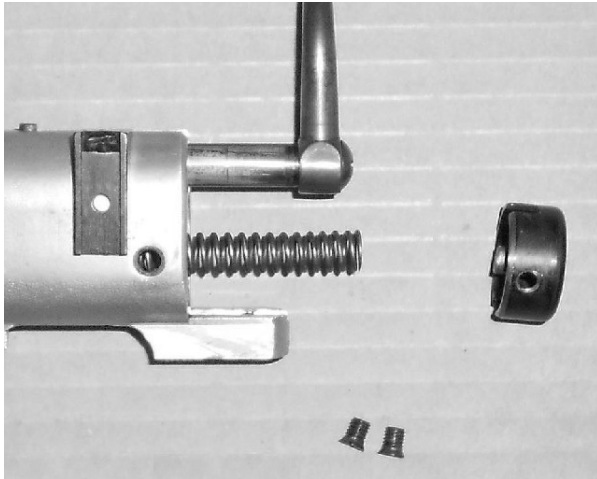
remove pin securing trigger/sear assembly to receiver

Note: this assembly is under slight pressure from the adjustable u-shaped metal sear spring.

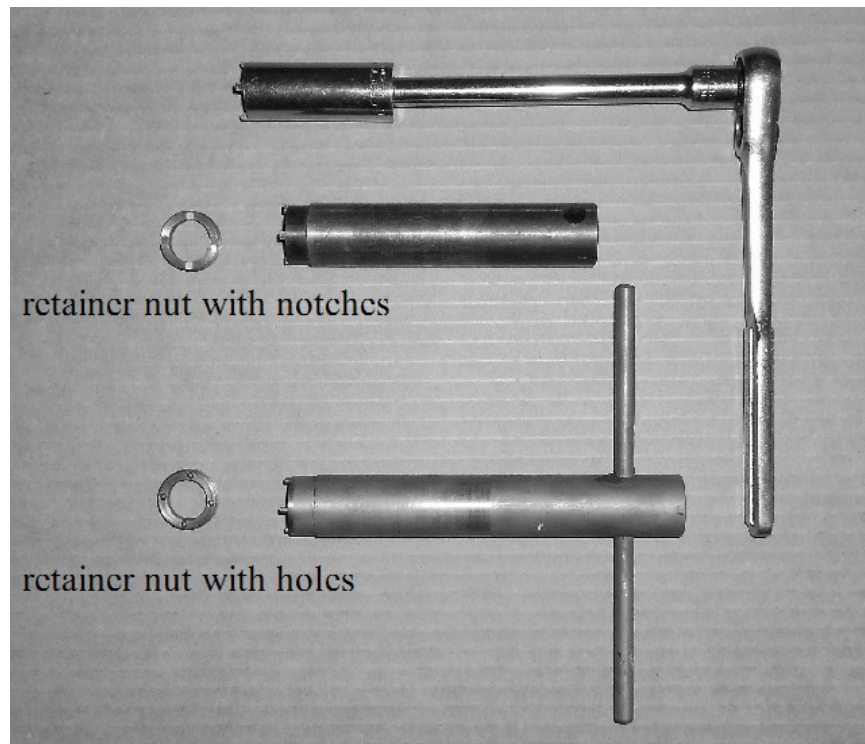
USE CAUTION in the next step as the end cap is under pressure from the striker spring.

Remove the two end cap screws and the cap should be pushed out by the force of the spring. Some caps may be difficult to remove due to a tight fit. A punch can be inserted through the sear slot at the bottom of the receiver to tap the cap off. Again, **USE CAUTION** since the cap is under pressure.

The inside of the receiver can be lightly filed if necessary so that the cap is easier fitted when re-assembled, but still snug.



with end cap removed the bolt, striker and spring can be withdrawn from the receiver

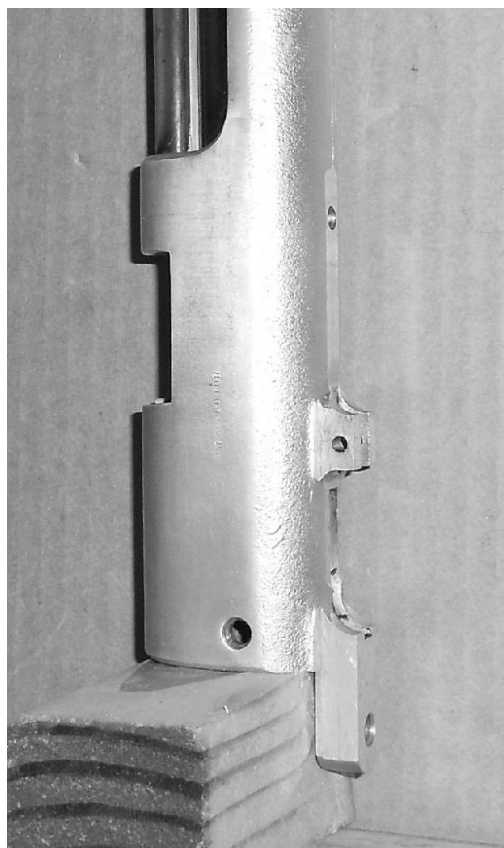
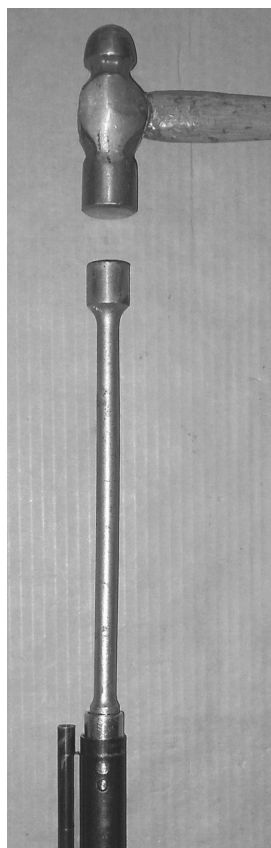


There are two types of valve unit retainer nuts. The most prevalent have four notches and the other type has four circular holes. Pictured are the tools needed to remove each style of nut. The tool at the top is made from an 11/16" deep socket.



Remove the valve unit retainer nut then drive the valve unit out of the receiver. This can be done with a wooden dowel. It helps to loosen the valve unit by spraying penetrating oil down the tube, from the inlet side, and letting it sit for a while. If necessary, a 9/16" socket on a long extension can be used to knock the valve unit loose.

USE CAUTION when loosening the retainer nut to not break or damage the safety housing on the rear of receiver. A block of wood can be used as shown below when driving out the valve unit.





valve unit components

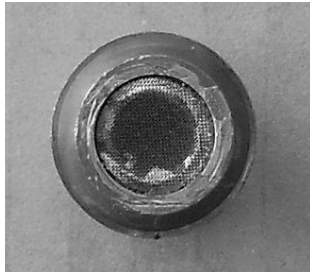


Photo on left shows screen on inlet side of valve unit; take care not to damage when removing unit from receiver.

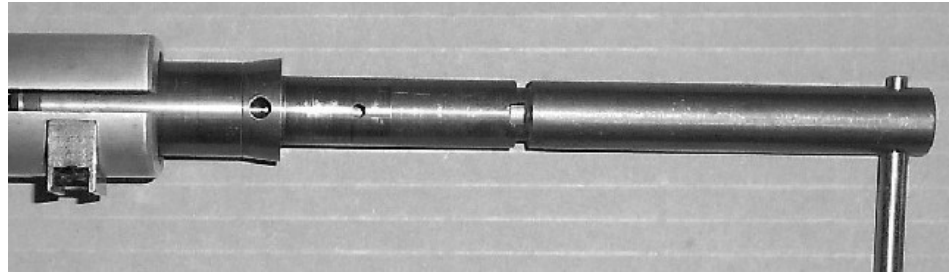


Photo on right shows procedure for re-installing valve unit. Use a new valve body quad seal size #208, or properly sized o-ring, and make sure that exhaust port faces up. The installation tool shown is convenient but not necessary.

Receiver, air tube, bolt, trigger/sear, safety components and other parts should be cleaned. Apply oil/lube in proper areas (bolt, trigger/sear, safety, etc.) upon re-assembly.

Notes:

- 1) Replacement pump cups can be purchased from James Valdez on ebay; user id 82868
- 2) See 'A/B Supplement Manual-1' for pump cup fabrication
- 3) See 'A/B Supplement Manual-2' for valve repair procedures