

# SHOTGUN Warranty Information

You can  
Shoot it™

**WARNING**

You must read this prior to  
construction or shooting.



# Muzzleloading Shotguns

Replicas of original muzzleloading guns are as faithful to the original designs as possible. For this reason, replicas cannot be made with many of the refinements and features the shooter has come to expect as standard on modern cartridge firearms.

Each shooter should remember that now, just as in colonial days, there is no way to build a shotgun to absolve the user of the need to use good judgment.

When handled properly, a shotgun is a safe and enjoyable firearm to shoot. If abused, harmful consequences can result. Remember, this shotgun should be treated with the full respect due any firearm.

You should know that the warranty applies only to parts of this product which have not been altered in any way. Therefore, it is important that you take the time to familiarize yourself with each part and its function prior to shooting.

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## **A. IMPORTANT CAUTIONS**

1. Always wear shatter proof shooting glasses and ear protection.
2. Use blackpowder only. (See page 4.)
3. Never fire a muzzleloading shotgun unless wad (or ball) is firmly seated against powder charge.
4. Do not exceed recommended maximum powder charges. (See page 9.)
5. Never lean over (or stand in front of) muzzle at any time.
6. Never attempt to shoot out a wad (or ball) which is not firmly seated against powder charge.
7. Treat a misfire or failure to fire as though the gun can fire at any second. (See page 23.)
8. Do not use any form of wadding except those recommended by CVA. (See page 14.)
9. Handle a muzzleloading shotgun with the same respect due all firearms.
10. Be sure all spectators and bystanders are completely behind you when firing. Flames and cap bits sometimes exit to the side of the gun.
11. Never smoke while loading, shooting or handling black powder.
12. If one barrel of the muzzleloading shotgun is fired, remove the percussion cap from the unfired barrel prior to reloading the fire barrel.

## **B. INTRODUCTION**

1. This manual contains instructions, cautions and dangers for the safe use of CVA muzzleloading shotguns. They should be **FOLLOWED COMPLETELY**.
2. When properly handled, a muzzleloading shotgun is safe and enjoyable to use, if you follow a **FEW BASIC RULES**.
3. There is no way to build a muzzleloading shotgun to absolve the user of the need to use **GOOD JUDGMENT**. Do not abuse your muzzleloading shotgun.
4. Your muzzleloading shotgun should be treated with the **RESPECT DUE ANY FIREARM**; in addition to the specific cautions and dangers in this manual.

**NOTE:** If, after reading the instructions, cautions and dangers contained in this manual, you are not willing to accept the responsibilities involved in shooting a muzzleloading shotgun, return the gun (or kit) to your dealer before firing or building or write directly to: CVA, Customer Service Department, P.O. Box 7225, Norcross, GA 30071.

**CAUTION:** If you sell, trade or give this gun (or kit) to another person, make sure you give the new owner a copy of this manual or inform him to get a free copy from CVA.

### C. BLACKPOWDER

1. BLACKPOWDER is the only safe propellant to use in any muzzleloading firearm. Pyrodex RS is an acceptable substitute.
2. The term BLACKPOWDER does not mean any powder that is black in color. Modern smokeless powders are also black in color. Always be sure that the blackpowder used is commercially manufactured blackpowder for use in muzzleloaders, offered for sale by a reputable dealer. *TAKE NO CHANCES!!*

**DANGER: Use of smokeless powder in any muzzleloader will result in excessively high pressures and can cause serious damage to the muzzleloading firearm and possibly to the shooter.**

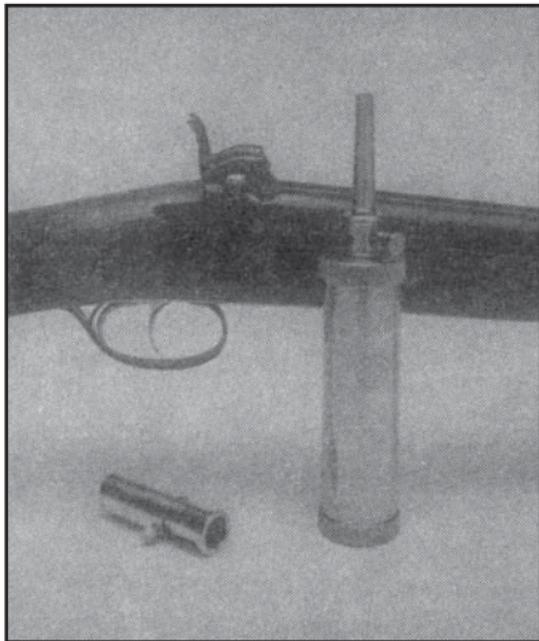
3. The applications of the various granulations of blackpowder are as follows:
  - a. 1f or fg—Coarsest granulation, used for model cannons and very large caliber rifles.
  - b. 2f or ffg—Less coarse granulation, used for rifles .45 to .58 caliber and the only granulation for use in muzzleloading shotguns.
  - c. 3f or fffg—Standard granulation, used for all revolvers and pistols and all small bore rifles (.40 caliber and under).
  - d. 4f or ffff—Fine granulation, used only as a primer for flintlocks.
4. Blackpowder should be stored according to manufacturer's instructions listed on container. Local fire regulations should be followed.

**CAUTION:** Never smoke while loading, shooting or handling blackpowder. Always follow manufacturer's safety precautions, as listed on the container.

#### **D. PREPARATION BEFORE LOADING**

**NOTE:** The shotgun must be cleaned prior to loading to remove the factory applied preservative and any foreign matter that may be in the barrels.

1. Lock function and adjustment.
  - a. Set the right hammer on **HALF-COCK**. At this setting it should not be possible to manually push the right hammer forward and the hammer should not move when the front trigger is pulled.
  - b. Check the left hammer with the rear trigger in the same manner.



- c. Pull each hammer to FULL-COCK position. The hammers should be securely locked in that position. It should be impossible to push the hammers forward manually. Pull each trigger separately. Take care not to let the hammers slam onto a bare nipple by restricting their forward travel with your thumb. Allowing a hammer to hit a bare nipple with force can cause the end to flatten and create difficulty during installation and removal of percussion caps.
- d. If the locks do not operate properly, removal and adjustment by means of turning the sear adjustment screw is necessary (See Figures 2-4B).

**IMPORTANT:** The sear must have secure engagement with the full-cock notch (See Figure 4A). This prevents a dangerous or lightweight trigger setting as pictured in Figure 4B.

**IMPORTANT:** Do not set either sear so that the triggers require less than four pounds of pull to fire. Such a light setting could cause the second barrel to fire from the recoil of the first.

**CAUTION: Do not reduce sear engagement beyond full face of the sear point (See Figure 4B). To do so will cause rapid wear of the sear point and notch, creating the possibility of accidental firing.**

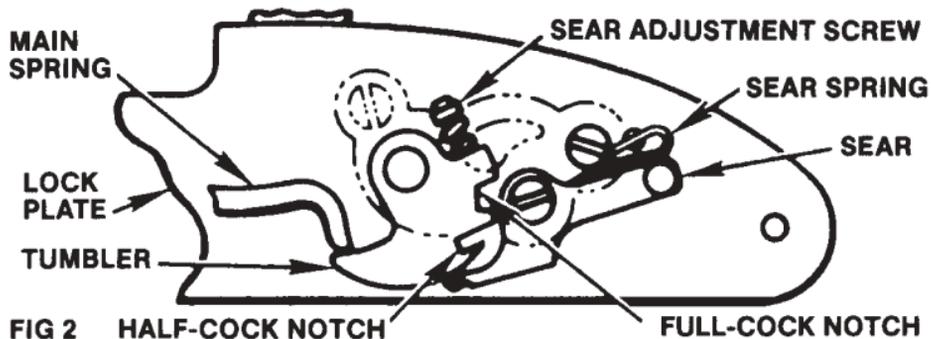


FIG 2 HALF-COCK NOTCH

FULL-COCK NOTCH



FIG 3A

CORRECT, SECURE  
HALF-COCK NOTCH



FIG 3B

INCORRECT, UNSAFE  
HALF-COCK NOTCH



FIG 4A

CORRECT, SECURE  
FULL-COCK NOTCH



FIG 4B

INCORRECT, UNSAFE  
FULL-COCK NOTCH

**CAUTION: The adjustments mentioned in 1d are very critical. If you do not feel comfortable making them yourself, have a competent gunsmith make the necessary settings. DO NOT operate the gun with any faulty mechanism.**

## **E. SUITABLE BLACK POWDER CHARGE FOR MUZZLELOADING SHOTGUN**

1. The correct powder charge for a muzzleloading shotgun is never weighed. It is determined by volume measure and the same measuring device is also used to achieve the volume measure for the shot charge as well. This type of measuring is known as Volumetric Balanced Loading.
2. A volumetric balance load will provide the most efficient shot pattern, regardless of the amount of shot chosen. Adding more powder will result in a wide dispersion of the shot pattern; less powder will result in insufficient energy per shot pellet.
  - a. Volumetric balanced loads will result in velocities from 1,000 to 1,050 feet per second, regardless of the shot size or shot charge chosen.
3. There are only three loads to be used in a 12 gauge CVA Shotgun:

**TABLE 1**  
**Suitable Charges**

<b>Light Load</b>	<b>Field Load</b>	<b>Heavy Load</b>
1 ounce of shot	1 1/8 ounce of shot	1 1/4 ounce of shot
plus measuring device filled with same volume of	plus measuring device filled with same volume of	plus measuring device filled with same volume of
2f (ffg) blackpowder	2f (ffg) blackpowder	2f (ffg) blackpowder

**CAUTION:** A *shot charge* in excess of 1 1/4 ounces is considered unsafe and should not be used. A *powder charge* in excess of the volume area occupied by 1 1/4 ounce of shot is considered unsafe and should not be used. Do not use an unbalanced load (more shot than powder or visa versa). Do not use 3f (ffg) blackpowder.

**NOTE:** The shot sizes in Table 1 include sizes ranging from #10, #9, #8, #7 1/2, #7, #6, #5, #4, #2 and #BB. Do not confuse the size #BB with the term used to describe air rifle steel shot. Air rifle shot should never be used in a muzzleloading shotgun.

## F. SHOT

1. There are three basic types of shot available in the various shot pellet sizes.
  - a. Soft Shot: The most common type and the least expensive. These almost pure lead pellets are very soft and are easily deformed during passage up the barrel bore. Therefore, they spread quite rapidly after exiting the bore. Soft shot is primarily used for skeet and close range targets.
  - b. Chilled Shot: Individual shot pellets containing a slight percentage of the hardening agent, antimony. Consequently, the shot becomes less deformed during passage up the bore. The shot pattern also becomes more efficient.
  - c. Hard Shot (also known as Magnum Shot): Pellets which are further hardened with antimony, resulting in little deformation during bore passage. Primary use is for maximum range and dense patterns. The most expensive of the three varieties.

**WARNING: NEVER USE ANY STEEL SHOT IN A CVA SHOTGUN UNLESS YOUR MODEL IS DESIGNED TO HANDLE THIS TYPE OF SHOT.**

**HELPFUL HINT:** The exact number of pellets can vary depending on brand or lot. To determine the shot size (diameter), multiply the shot size by .01 then subtract the answer from .17 (constant). Example for shot size #6:  $6 \times .01 = .06$ ;  $.17 - .06 = .11$  diameter.

**TABLE 2**

Approximate Shot Characteristics Per Given Charge

Shot Size	Number of Pellets Per:			Size Per: Pellet	
	1 oz.	1 1/8 oz.	1 1/4 oz.	Diameter	Weight
#2	90	102	113	.15"	4.86 grs.
#4	135	152	169	.13"	3.24 grs.
#5	170	192	213	.12"	2.57 grs.
#6	225	253	281	.11"	1.94 grs.
#7 1/2	360	393	437	.095"	1.25 grs.
#8	410	463	513	.09"	1.07 grs.
#9	585	658	731	.08"	0.75 grs.

**G. BUCKSHOT**

1. Although the shot size numbers are the same as some buckshot numbers, do not confuse the two. Buckshot pellets are larger in diameter. Buckshot hardness is about the same as that of chilled shot pellets.

**TABLE 3**

Approximate Buckshot Characteristics Per Given Charge

Buckshot Size	Count Per:	Size Per:	
	1 1/8 oz.	Diameter	Weight
#4	23	.24"	20.70 gr.
#3	20	.25"	23.55 gr.
#2	16	.27"	29.70 gr.
#1	12	.30"	40.50 gr.
#0	10	.32"	49.00 gr.
#00	8	.34"	59.00 gr.
#000	7	.36"	70.00 gr.

1. When loading buckshot, the correct procedure is to *count* the number of pellets before inserting them into the bore. (See Table 3.)
  - a. The buckshot load for the 12 gauge CVA Shotgun should not exceed a total weight of 490 grains.
2. When using buckshot of any size, the powder charge is the same as the volumetric load for 1 1/8 ounce of shot. (See Table 1.)

**CAUTION: Do not use a greater load of powder than stated in Table 1. Use only 2f (ffg) blackpowder. Do not use 3f (fffg) blackpowder.**

## H. SINGLE PROJECTILE

1. There is one and only one single projectile for the 12 gauge CVA Shotgun. It is a .690 diameter round lead ball, weighing approximately 495 grains. This ball must be suitably patched. (See Page 17.)
2. The powder charge is the same as the volumetric load for 1 1/8 ounce of roundballs. (See page 9 for Table 1.)

**CAUTION: Do not use more powder. Use only 2f (ffg) blackpowder. Do not use 3f (fffg) blackpowder.**

3. The above projectile, when suitably loaded, will give approximately 1,000 feet per second velocity and 1,100 foot pounds of energy. Velocity at 100 yards is approximately 800 feet per second. Energy at 100 yards is approximately 700 foot pounds.

**WARNING: Under no circumstances should a mini ball, maxi ball, R.E.A.L. Bullet®, rifled or unrifled shotgun slug be used in the CVA Shotgun. Use will exceed safety limitations of this type of firearm.**

## I. BUFFERING COMPONENTS

1. Breach loading shotguns, utilizing modern smokeless powder, often have the addition of buffering components to the shot pellets to prevent deformation and to increase pattern percentage.

2. Buffering agents or components consist of small round balls made from plastic or other materials, such as flour, etc.

**WARNING: Under no circumstances should any form of buffering agent be added to the shot load for the CVA Shotgun. Use will exceed safety limitations of this type of firearm.**

## J. WADS

1. The wads, more than any other single shooting accessory used in a muzzle-loading shotgun, determine the efficiency of the load.
2. Wads must be inserted into the shotgun barrel in correct sequence without deviation.
3. There are two basic categories of wads. (See Figure 5.)
  - a. Traditional, independent wads.
  - b. Modern, one-piece plastic wad.

**DANGER: Do not confuse the term plastic *wad* with that of plastic *patch*, used in loading single shot muzzleloaders. CVA does not recommend the use of any plastic patch due to ball-to-plastic patch fit. To use any type of plastic patch will void the warranty.**

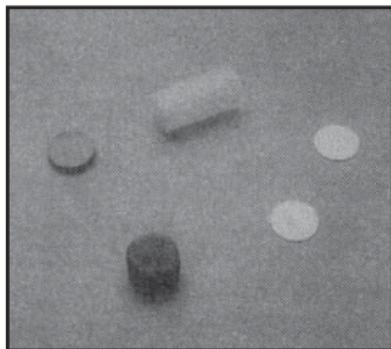


Figure 5

4. Characteristics of independent wads.
  - a The over-powder wad consists of a disk of firm cardboard, approximately 1/4-inch thick. Its purpose is to fit the bore in order to seal the gas released by the burning of black powder. When the gas pressure builds, the over-powder wad expands slightly to form a gasket and utilizes the full energy of the gas pressure to push the charge out the barrel. Do not lubricate the edges of the wad. To do so will prevent a good seal.
  - b. The filler wad consists of a disk of pressed felt or cork, approximately 1/2-inch thick. Its purpose is to cushion the shock of the gas pressure and, thereby, prevent the shot pellets from becoming deformed. Deformed shot pellets will not pattern well as they exit the bore.

NOTE: Never substitute a filler wad or shot wad as a replacement for the over-powder wad, as it will not properly seal the gas pressure.

- c. The over-shot wad consists of a disk of thin cardboard, approximately 1/32-inch thick. As its name implies, its purpose is to hold the shot pellets in position and prevent them from rolling down and out the bore.
- d. The barrel loading sequence when independent wads are utilized is:
  1. Chosen volumetric powder charge
  2. One over-powder wad
  3. One filler wad
  4. Chosen volumetric shot pellet charge
  5. One over-shot wad

**CAUTION: Do not use the wads for anything other than their designated purpose. Do not substitute wads. Do not use more than one wad for each load. Never use a cloth patch, loose cloth or loose paper as a substitute for a wad.**

5. Characteristics of one-piece plastic wad. (See Figure 5.)
  - a. The one-piece plastic wad is an adaptation of a modern shotshell and can be used with the muzzleloading shotgun with one minor addition: the over-shot wad. The cup shaped portion of the plastic wad replaces the need for an over-powder wad in the traditional method. Its purpose is the same. It fits the bore in order to seal the gas released by the burning blackpowder. As the gas pressure builds, the edges of the cup expand outward and seal the cup edge firmly against the barrel wall.

The next segment of the plastic wad acts as the filler wad. The “spokes” are designed to collapse slowly under pressure and prevent shot pellet deformation.

The “petal” segment of the plastic wad encases the shot pellets. When the gun is fired, the “petals” protect the individual pellets from contacting the barrel wall and becoming deformed. As the plastic wad exits the bore, the air pressure folds the “petals” backward and separates the plastic wad from the shot.
  - b. To secure the loose shot pellets from rolling down and out the bore, an over-shot wad must be inserted into the bore to rest on the shot charge
  - c. The barrel loading sequence when a one-piece plastic wad is utilized is:
    1. Chosen volumetric powder charge
    2. One-piece plastic wad (for .720 bore diameter)

3. Chosen volumetric shot pellet charge
4. One over-shot wad

**CAUTION: Do not substitute an independent over-powder wad for the over-shot wad. Do not substitute a filler wad for an over-shot wad. Do not use a cloth patch, loose cloth or loose paper as a substitute for an over-shot wad.**

6. Buckshot wads
  - a. There are two types of wads which can be used with buckshot.
    1. Independent wads with larger size buckshot, such as #0, #00 and #000 will give generally better pattern performance.
    2. One-piece plastic wad with smaller buckshot size pellets, such as #1, #2, #3 and #4. Do not use a one-piece plastic wad with #0, #00, or #000 buckshot. To do so will result in poor pattern performance.
7. Single Projectile Wad
  - a. Surround the .690 round ball with a lubricated cloth patch of sufficient thickness to create a gasket seal.
  - b. No wad is used with the .690 round ball. Use of any form of wad will decrease efficiency and could result in excessive pressure.

## **K. LOADING AND SHOOTING OF PERCUSSION SHOTGUN**

1. Wear shatterproof shooting glasses since percussion caps may shower sparks or bits of the cap when fired.
2. If your CVA Shotgun has two barrels: To prevent loading the same barrel twice, partially insert a wad (or cloth patch) just into the muzzle of the bore NOT to be loaded first. Position the wad so that it can be removed by hand later. Its purpose is to serve only as a safety 'reminder.'
3. Be sure the shotgun is unloaded.
  - a. Place ramrod down barrel to breech plug and mark ramrod at muzzle.
  - b. Remove the ramrod and lay it along the outside of the barrel. Line up the mark at the muzzle. The other end of the ramrod should be at the breech mechanism. This practice shows the shotgun is unloaded. If the ramrod does not line up to the breech mechanism, the barrel has an obstruction and should be cleared before proceeding.
4. Check the half-cock safety settings of the hammers as outlined in section D.
5. Clean all oil and grease from barrel interior (refer to page 28 for cleaning and maintenance).
6. **WITH THE GUN POINTED IN A SAFE DIRECTION** and the hammer on half-cock, place a percussion cap on the nipple. All CVA muzzle-loading shotguns use a #11 size cap.

**CAUTION: Use a capper to place a cap on the nipple. Percussion caps are sensitive to pressure and can explode under extreme finger pressure.**

7. Fully cock the hammer and fire to dry out the base of bore and nipple. Point muzzle at grass and watch for motion. Repeat this procedure three times on each nipple.
8. Be certain that neither nipple has a percussion cap on it and that no part of your body ever extends over the muzzle. Pour a volumetrically measured powder charge down the barrel. (See page 9 for suitable charges.)



**CAUTION: Do not pour a powder charge directly from a horn or flask. If a smoldering ember is present, it could ignite the powder in the container, as well as that of the powder charge as it is poured into the barrel. This excessive amount of blackpowder could cause a dangerous explosion. Therefore, be safety minded, use a small measuring device.**

9. Slap side of barrel in front of lock. This assures that powder will fully enter the nipple and breech mechanism.

**NOTE:** At this point, the Loading Sequence varies depending on the type wad or projectile you've chosen. Turn to the section appropriate for your sequence to continue the Loading Sequence procedure.

#### **FOR INDEPENDENT WADS**

*Continuation of Steps 1 through 9 of the Loading Sequence, as previously listed.*

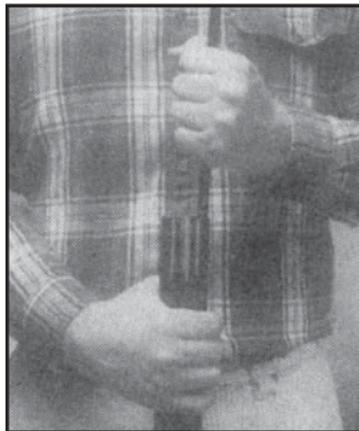
10. Insert a “reminder” wad partially into the muzzle of the barrel NOT being loaded.
11. Set the hammer at half-cock to allow any trapped air to escape out the nipple. To do so will insure that the over-powder wad seats directly on the powder.
12. With your thumb, press one over-powder wad down the bore as far as possible.



**CAUTION: Do not use loose paper, cloth, or other materials as a partial or full substitute for independent wads. Loose paper or cloth will not provide needed wadding and can be dangerous.**

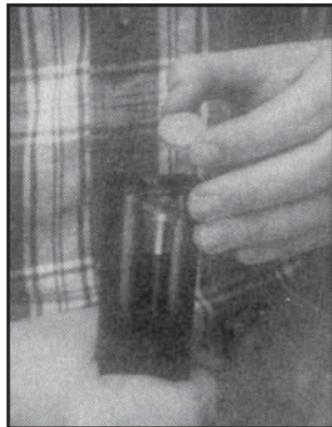
With a ramrod, press the over-powder wad down onto the top of powder. Proceed smoothly and firmly making sure not to crush the powder.

**NOTE:** Crushing the powder will cause it to become a finer grade.



**CAUTION: When using the ramrod, never grab it more than 8 inches above the muzzle. To do so could cause a side stress, break the ramrod and possibly puncture your hand.**

13. Insert one filler wad down the bore as far as possible with your thumb. Using a ramrod, press the filler wad firmly against the top of over-powder wad.
14. Volumetrically measure the shot charge and pour it down the barrel. (See page 11 for Table 2.)
15. Insert one over-shot wad down the bore as far as possible with your thumb. Using a ramrod, press the over-shot wad firmly against the shot charge.



16. One barrel is now loaded.
17. Switch the “reminder” wad to the loaded barrel.
18. Repeat steps 10 through 15 to load the second barrel.
19. Dispose of the “reminder” wad.
20. Wear hearing protection.
21. **WITH THE SHOTGUN POINTED IN A SAFE DIRECTION** and hammers at half-cock, place a percussion cap on each nipple. **THE SHOTGUN IS NOW LOADED.**

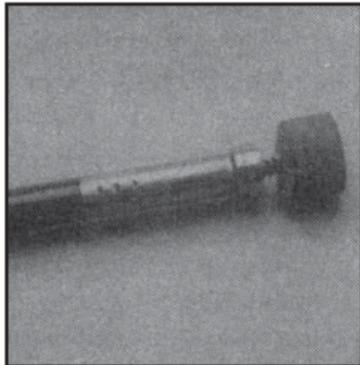
22. Pull back the hammer of the barrel you wish to fire to the full-cock position and **YOU ARE READY TO FIRE**. Aim at target and **FIRE**. Fully cock second barrel, aim and **FIRE**.

**Remember:**

- a. Front trigger activates right barrel
- b. Rear trigger activates left barrel.

**CAUTION: If reloading the *just-fired* barrel is desirable, remove the remaining percussion cap from the loaded barrel prior to commencing the reloading sequence.**

23. After firing, wait two minutes before reloading. This allows all remaining sparks in barrel to burn out prior to reloading.
24. In the event of a misfire or failure to fire, wait at least one minute with gun always pointing in a safe direction.
- a. After waiting period, remove old percussion cap and install new one.
  - b. Fully cock hammer and fire at target.
  - c. If cap fires and main load in barrel still does not fire, remove nipple, place a small charge of powder into the nipple hole in barrel, replace nipple securely. Using a new cap attempt to fire the barrel again.



- d. If the gun still does not fire, the shot charge (or ball) and powder charge must be removed. Using a ball puller (a small screw-like device placed on end of ramrod) screw directly into wads (or ball). Once the ball puller is anchored into wad (or ball) it can be pulled out of the bore. Dump out the shot charge and/or powder.
- e. Go back to Step 1 and repeat, being sure bore and nipple are free and clean.

**NOTE:** Do not try to remove, alter or change position of the breech mechanism. To do so is dangerous and will void the warranty.

**CAUTION:** Do not confuse the term plastic *wad* with that of plastic *patch* used in loading single shot muzzleloaders. CVA does not recommend the use of any plastic patch due to ball-to-plastic patch fit. To use any type of plastic patch will void the warranty.

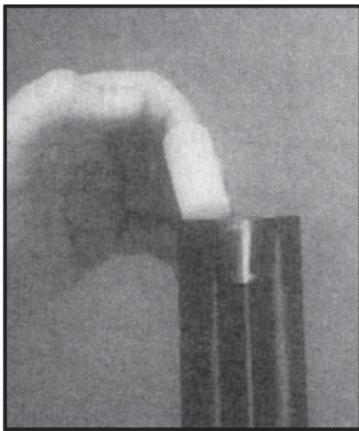
## FOR ONE-PIECE PLASTIC WAD

*Continuation of Steps 1 through 9 of the Loading Sequence, as previously listed.*

10. Insert a “reminder” wad partially into the muzzle of the barrel NOT being loaded.
11. Set hammer at half-cock to allow any trapped air to escape out the nipple. To do so will ensure that the plastic wad seats directly on the powder.

12. With your fingers, insert one plastic wad into the bore as far as possible.
  - a. “Cupped” section of wad goes in first so that “petal” section faces the muzzle.
  - b. With a ramrod, press plastic wad down on top of powder, smoothly and firmly. Be careful not to crush the powder.

**CAUTION: When using the ramrod, never grab it more than 8 inches above the muzzle. To do so could cause a side stress, break the ramrod and, possibly, puncture your hand.**



13. Volumetrically measure the shot charge and pour it down the barrel. See page 11 for Table 2.)
- NOTE: Do not insert the shot charge into the “petal” section of the plastic wad while it is at the muzzle. Seat the plastic wad first.

**CAUTION: 12 gauge plastic wads are available in several shot weight size designations. Be sure your shot charge matches the shot designation marked on the plastic wad container.**

14. Insert one over-shot wad down the bore as far as possible with your thumb. With a ramrod, press the over-shot wad firmly against the shot charge.

15. One barrel is now loaded.
16. Switch the “reminder” wad to the loaded barrel.
17. Repeat Steps 2 through 15 of the Loading Sequence and those of this section to load the second barrel.
18. Dispose of the “reminder” wad.
19. Refer to the Loading Sequence for the remaining Steps 14 through 17.

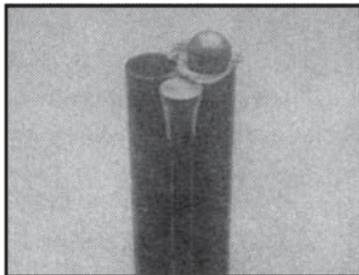
### **FOR SINGLE PROJECTILE**

***Continuation of Steps 1 through 9 of the Loading Sequence, as previously listed.***

10. Insert a “reminder” wad partially into the muzzle of the barrel NOT being loaded.
11. Center a well lubricated cloth patch over the bore.

**CAUTION: Do not use any type of independent wad or plastic wad when loading the single ball projectile.**

12. Press round ball with sprue (or flat portion) facing upward on lubricated patch.  
(See page 13 for ball size.)
  - a. With “starter” end of ball seater, press patched ball just into muzzle.



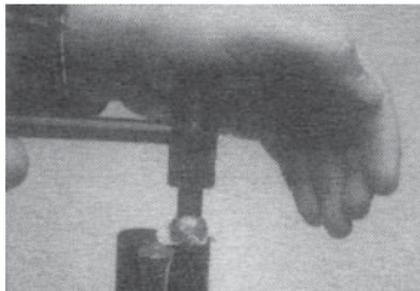
- b. Use longer end of ball seater to move patched ball about six inches down the bore.
- c. With a ramrod, push patched ball down on top of powder, firmly. Be careful not to crush the powder.

**CAUTION: When using a ramrod, never grab it more than 8 inches above the muzzle. To do so could cause a side stress, break the ramrod and, possibly, puncture your hand.**

13. Be sure the ball is seated firmly against the powder. No air space should exist between ball and powder.

**DANGER: Firing a muzzleloader with the ball off the powder or partially up the barrel may cause serious damage to the firearm and possibly to the shooter.**

**NOTE:** A good method to determine proper load depth is to insert ramrod when firearm is fully loaded and mark ramrod at the point where it protrudes from the muzzle. This mark should serve as a reference point each time you load. If the mark is above the muzzle, you know the ball is not against powder. Always seat ball to mark.



14. One barrel is now loaded.
15. Switch the “reminder” wad to the loaded barrel.
16. Repeat Steps 2 through 14 of the Loading Sequence and those of this section to load the second barrel.
17. Dispose of the “reminder” wad.
18. Refer to the Loading Sequence of the remaining Steps 19 through 24.

## **L. CLEANING AND MAINTENANCE**

1. The bore of a muzzleloader should be cleaned after every few shots during shooting or whenever ramming the wads down the barrels becomes at all difficult.
  - a. This will eliminate fouling which prevents proper seating of wads (or ball) on powder.
  - b. This will also reduce danger of ramrod breakage.
2. Black powder fouling is extremely corrosive and can rust the barrel in a short time. All muzzleloaders must be thoroughly cleaned after firing is completed.
3. Use a black powder solvent or hot soapy water.
4. Pump it through the nipple hole with a patch and cleaning rod.
5. Flush with hot water and completely dry gun while still hot.

6. When gun is cool, oil the barrel and other metal parts with a rust preventative.
  - a. Store firearms in a dry place with good air ventilation.
  - b. If stored in a container, it should be well ventilated.

**UNDER NO CIRCUMSTANCES SHOULD YOU REMOVE THE BREECH MECHANISM DURING CLEANING. TO DO SO WILL VOID THE WARRANTY.**

**M. TEN COMMANDMENTS OF MUZZLELOADING.**

1. Always treat every gun as if it is loaded.
2. Use only blackpowder.
3. Be sure of your target before firing
4. Be sure the wad (or ball) is firmly seated on the powder charge before you pull the trigger.
5. Never climb or jump fences or other obstacles with a loaded gun in your hand.
6. Treat a misfire or failure with extreme care.
7. Make sure your gun is unloaded before you store or transport it.
8. Always store the gun, powder and caps in separate places.
9. Protect your eyes and ears while shooting.
10. Never drink alcoholic beverages prior to or during shooting and never smoke while loading, shooting or handling black powder propellants.

## **N. ORDERING INSTRUCTIONS**

1. All correspondence and orders must be addressed to:  
CVA  
5988 Peachtree Corners East  
Norcross, GA 30071  
Attention: Customer Service
2. Include in the order:  
Model of the Gun or Accessory Part Number  
Part Description  
Caliber and Type (Percussion, Flintlock)
3. If the proper part identification is not possible from the parts list, send the specific part in question to aid identification.
4. Discontinued items are subject to availability. CVA will reserve the right to make compatible substitutions when necessary.
5. Enclose the total retail price of the item plus postage and handling. Refer to the chart below to determine this. C.O.D. orders are not accepted. Prices may be changed without notice.
6. Please allow four to six weeks from receipt of order for delivery.

**POSTAGE AND HANDLING** - See page 34

## **O. LIMITED ONE YEAR WARRANTY**

Connecticut Valley Arms, Inc. warrants all factory finished firearms to be free of defects in material or workmanship for one year from date of purchase. This warranty is established by return of the authorized warranty card within fifteen (15) days of purchase.

Any CVA firearm or part thereof returned postage paid to the address below will be repaired or replaced to our commercial standard free of charge, and returned to the purchaser postage prepaid.

This warranty does not cover any damage resulting from careless handling, improper loading, corrosion, neglect, or custom alteration.

Connecticut Valley Arms reserves the right to refuse to repair or replace firearms or parts thereof damaged by the above.

This warranty does not apply to "kit" models. While CVA does guarantee quality and workmanship of the parts contained in each kit, we have no control over final finishing and assembly of these products. Therefore, no responsibility for construction or use of kit models is implied or assumed. Any part determined, by our inspection, to be faulty will be replaced free of charge.

This warranty gives you specific legal right. You may also have other rights which vary from state to state.

This warranty is void if:

- Any propellant other than correct type Blackpowder or Pyrodex has been used.

- The Percussion Bolster or Breech mechanism has been tampered with or removed.
- CVA recommended powder charge has been exceeded.
- Any form of plastic patch has been used other than standard wads.
- Any buffer component has been used.
- Any or slug has been used.

Connecticut Valley Arms, 5988 Peachtree Corners East, Norcross, GA 30071

## **P. STATEMENT OF LIABILITY**

This gun is classified as a firearm or dangerous weapon and is sold by us with the express understanding that we assume no liability for its resale or unsafe handling under local laws and regulations. Connecticut Valley Arms assumes no responsibility for physical injury or property damage resulting from intentional or accidental discharge, or the function of any gun subject to influences beyond our control. We will honor no claim which was the result of careless or improper handling, unauthorized adjustment, improper loading, use of improper powder or components, corrosion or neglect.

For your protection, examine this firearm carefully at the time of purchase. If any unsafe condition exists contact your dealer or CVA immediately.

Connecticut Valley Arms does not recommend or approve of any custom alteration or conversion. Firearms subjected to alteration are not covered by factory warranty. Responsibility for these alterations rests totally with the individual performing such work. Any such work done improperly or without proper judgment may cause malfunction or damage resulting in injury or death to the shooter and/or bystanders.

## **8. SERVICE – (770) 449-4687**

Should your CVA firearm require repair, we recommend that it be returned to our factory. This will ensure all work is performed by a competent staff of trained technicians.

Any firearm returned to the factory should be marked to the attention of the Service Department. A letter of instructions should be enclosed to facilitate handling. All firearms must be uncharged and shipped via United Parcel Service (UPS).

Our Service Department will inspect and evaluate the problem. Should any work required not be covered by warranty, you will be advised of the cost. No work will be done without your approval.



**Questions With  
Assembly?**

**Need Parts  
Information?**

**770-449-4687**



Mail this form, with check or money order to:  
**Connecticut Valley Arms**  
**5988 Peachtree Corners East, Norcross, GA 30091**

Please Send To \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Model No.	Item	Quantity	Each*	Amount
AC1401	Deluxe Shot/Powder Patch		\$ 40.95	
AC1412	Shotgun Volumetric Measure		\$ 9.95	
AC1493	25 Plastic Shot Cups/Overshot Wads		\$ 7.25	
AC1515	100 12 ga. Overshot/Overpowder Wads		\$ 4.00	
AC1516	100 12 ga Preconditioned Cushion Wads		\$ 4.25	
MC1994	"Successful Muzzleloading" VHS Video		\$ 9.95	

\*(All prices subject of change without notice)  
 Please allow 4-6 weeks for delivery.

**Shipping & Handling Chart**

**Order Amount**

Up to \$20.00  
 \$ 20.01 - \$ 30.00  
 \$ 30.01 - \$ 50.00  
 \$ 50.01 - \$ 80.00  
 \$ 80.01 - \$110.00  
 \$110.01 - \$200.00  
 \$200.01 - \$500.00  
 Over \$500.00

**Regular Surface Shipping**

\$ 3.50  
 \$ 5.00  
 \$ 7.00  
 \$10.00  
 \$15.00  
 \$20.00  
 \$25.00  
 \$30.00

(All prices subject to change without notice)

Please allow 4-6 weeks for delivery.

Subtotal \$ \_\_\_\_\_

Postage/Handling \$ \_\_\_\_\_

See Chart

6% Sales Tax \$ \_\_\_\_\_

GA Residents Only

Total Enclosed \$ \_\_\_\_\_

## WARRANTY CARD (Please complete all sections)

Name \_\_\_\_\_ Phone (\_\_\_\_) \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Store Name \_\_\_\_\_ Date Purchased \_\_\_\_\_

Street \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Product: \_\_\_\_\_

Caliber \_\_\_\_\_ Model # \_\_\_\_\_ Serial No. \_\_\_\_\_

1. In what type of store was product purchased?

- |                                   |   |                                     |
|-----------------------------------|---|-------------------------------------|
| <input type="checkbox"/> Gun      | <input type="checkbox"/> Chain/Discount | <input type="checkbox"/> Hobby      |
| <input type="checkbox"/> Sporting | <input type="checkbox"/> Hardware       | <input type="checkbox"/> Mail Order |

2. Why did you select a CVA product?

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Reputation     | <input type="checkbox"/> Special Feature  | <input type="checkbox"/> Price             |
| <input type="checkbox"/> Recommendation | <input type="checkbox"/> Impulse Purchase | <input type="checkbox"/> CVA Advertisement |

3. Intended Use:  Hunting  Target Shooting  Decoration

What features do you like? \_\_\_\_\_

Are there any features you dislike? \_\_\_\_\_

What improvements would you recommend? \_\_\_\_\_

Place  
Stamp  
Here

**Connecticut Valley Arms  
5988 Peachtree Corners East  
Norcross, GA 30071**