



# ENDURA

LONG RANGE MUZZLELOADER

Owner's Manual

# CVA® ENDURA™ OWNER'S MANUAL

**WARNING:** The load components and loading procedures recommended in this Owner's Manual have been tested and deemed safe for use ONLY in the CVA Endura muzzleloading rifle.

**YOU MUST READ AND FOLLOW THESE INSTRUCTIONS AND WARNINGS VERY CAREFULLY, AS FAILURE TO SO MAY RESULT IN SERIOUS INJURY OR DEATH TO YOU AND/OR BYSTANDERS.**

## **YOUR CVA MUZZLELOADING RIFLE**

We at CVA would like to thank you for purchasing our product. You can be assured that the CVA rifle you have chosen has been manufactured to exact tolerances and has passed rigid quality control standards before being shipped. You must remember, however, that no amount of engineering, precision manufacturing, or safety inspections can replace the common sense and safe gun handling habits for which you are solely responsible. Some portions of this pamphlet are printed in **RED** to emphasize their special importance. However, this should in no way lessen the importance of the rest of the information in this pamphlet. Even the smallest and most innocent loading and/or safety mistakes can result in tragic loss.

CVA encourages you to take a certified Hunter Safety Course before using any firearm. Consult your local firearm retailer or Game & Fish authorities for information on the courses available. Even if you do not intend to hunt game animals, the information gained from taking a Hunter Safety Course can help prevent dangerous and/or fatal accidents.

Additional sources for general muzzleloading information and instruction:

1. National Muzzle Loading Rifle Association
2. National Shooting Sports Foundation.
3. National Rifle Association
4. Local gun dealers
5. State Game and Fish Agency or Department of Natural Resources
6. Local muzzleloader shooting or hunting clubs

This **SAFETY & INSTRUCTION MANUAL** should always accompany this firearm and be transferred with it upon change of ownership or when the firearm is loaned to another person.

**WARNING:** YOU ARE RESPONSIBLE FOR FIREARM SAFETY! AS AN OWNER, YOU MUST ACCEPT A SET OF DEMANDING RESPONSIBILITIES AT ALL TIMES AND YOU MUST HANDLE YOUR RIFLE WITH RESPECT FOR ITS POTENTIAL DANGERS.

THE INFORMATION CONTAINED IN THIS OWNER'S MANUAL IS CRITICAL FOR PROPER USE AND CARE OF YOUR CVA MUZZLELOADING RIFLE. DO NOT ATTEMPT TO LOAD OR FIRE YOU RIFLE UNTIL YOU READ AND THOROUGHLY UNDERSTAND THIS INFORMATION.

THE SAFETY MECHANISM OF A FIREARM IS A MECHANICAL DEVICE AND AS WITH ALL MECHANICAL DEVICES THE POSSIBILITY OF FAILURE IS ALWAYS PRESENT. NO MECHANICAL "SAFETY" SHOULD EVER BE RELIED UPON TO TAKE THE PLACE OF SAFE GUN HANDLING! THEREFORE, YOUR SAFE DIRECTIONAL CONTROL OF THE MUZZLE IS ESSENTIAL, REGARDLESS OF THE POSITION OF THE GUN'S "SAFETY."

## **CVA ENDURA™ INSTRUCTION MANUAL TABLE OF CONTENTS**

1. GENERAL WARNINGS
2. GENERAL FIREARMS SAFETY RULES
3. MUZZLELOADING SPECIFIC SAFETY RULES
4. BEFORE LOADING AND FIRING THE ENDURA
5. COMPONENTS AND FEATURES OF THE ENDURA
6. ITEMS NEEDED TO LOAD AND FIRE THE ENDURA
7. MOUNTING A SCOPE ON THE ENDURA
8. TOOLS INCLUDED WITH THE ENDURA
9. VARIFLAME™ ADAPTERS AND HOW TO PRIME THEM
10. ADJUSTING THE TRIGGER WEIGHT-OF-PULL OF THE ENDURA
11. ADJUSTING THE STOCK OF THE ENDURA
12. RECOMMENDED PROJECTILES FOR THE ENDURA
13. APPROVED PROPELLANTS FOR THE ENDURA
14. APPROVED PROPELLANT CHARGES FOR THE ENDURA
15. BASIC BALLISTICS FOR THE ENDURA
16. TIPS FOR OPTIMAL PERFORMANCE WITH THE ENDURA
17. LOADING AND FIRING THE ENDURA
18. UNLOADING THE ENDURA
19. CLEANING AND MAINTAINING THE ENDURA
20. REPAIR AND SERVICE
21. LIMITED LIFETIME WARRANTY
22. VOLUNTARY RECALL INFORMATION

## 1. GENERAL WARNINGS

This Owner's Manual is furnished to assist you in learning to properly load, fire, and maintain your CVA Endura rifle. Before handling and loading this rifle, please be sure to fully read this Owner's Manual. Please be a responsible shooter and help to promote firearm safety by making yourself a safe example to others. If necessary, seek safety training from your local firearms dealer, hunter education instructor, or an experienced friend.

If, after reading the instructions, warnings, and risks detailed in this manual, you are still not ready or willing to accept the responsibility involved in handling and shooting a firearm safely, please return the unused gun to the place of purchase.

**! WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For other information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)**

**WARNING: YOU MUST FOLLOW ALL OF THESE SAFETY RULES TO ENSURE THE SAFE USE OF YOUR FIREARMS. THE FAILURE TO FOLLOW THE INSTRUCTIONS AND WARNINGS IN THIS USER MANUAL COULD LEAD TO SERIOUS PERSONAL INJURY AND/OR DEATH TO YOU AND/OR BYSTANDERS, AS WELL AS DAMAGE TO PROPERTY.**

When you become a firearm owner, you take on serious and demanding responsibilities. How seriously you take these responsibilities can be the difference between life and death. There is no excuse for reckless or abusive handling of a firearm. At all times you must handle your firearm with an intense respect for its potential danger.

## 2. GENERAL FIREARMS SAFETY RULES

1. No matter if you are at home, in the field, at the range or anywhere; your primary concern as a firearm owner must always be safety. You must always apply the following safety rules regardless of the type of firearm and in every situation. Be sure to read the Owner's Manual thoroughly and carefully. Become familiar with all the features and functions of the firearm. Heed the safety warnings and follow the directions concerning the safe loading, unloading, and care of the gun.
2. Always keep the muzzle pointed in a safe direction, even when the gun is believed to be unloaded.
3. Keep fingers away from the trigger, and the safety in the "safe" position, until ready to fire the gun.

4. Be sure of the target and what is beyond it before aiming or firing.
5. Never rely upon the mechanical safety of any firearm, as mechanical devices can and do fail.
6. All firearms should remain unloaded until they are ready to be fired. Unload the gun whenever crossing difficult terrain, climbing fences, climbing into tree stands, etc.
7. ALWAYS use eye protection when loading, shooting, or cleaning a firearm.
8. ALWAYS use hearing protection when shooting. Even when hunting and especially when using a muzzle brake.
9. Check to be sure that the barrel is free from any obstruction before loading and firing.
10. Handle all firearms as if they are loaded.
11. Store all firearms fully cleaned and unloaded in a secure, locked area separate from all ammunition and/or components of ammunition.
12. Do not consume alcohol or drugs before or while loading, shooting, or hunting with a firearm.
13. Do not alter the firearm. Have the gun serviced regularly by a qualified gunsmith or factory service center. Check all vital functions before each use.
14. Do not lean a firearm against a wall, a tree, a vehicle, or any other surface. A firearm that slides and falls may accidentally fire, potentially causing damage, injury, or death.
15. Do not transport a loaded firearm in a vehicle.
16. Do not load a firearm inside a house, tent, camper, vehicle, etc., or take a loaded firearm into such structures.
17. Do not allow children, or any inexperienced persons, unattended access to a firearm.
18. Do not attempt to modify any parts of a gun. Doing so may cause an accidental discharge and/or potential damage to the gun and/or injury or death to the shooter and/or by-standers. Also, unauthorized alterations may void manufacturers' warranties.

### 3. MUZZLELOADING SPECIFIC SAFETY RULES

CAREFULLY READ THIS SECTION, AS THESE SAFETY CONCERNS ARE APPLICABLE SPECIFICALLY TO MUZZLELOADERS. If you have questions, doubts, or concerns, please call CVA Customer Service at 770-449-4687.

1. Never smoke when shooting or handling a muzzleloader or related equipment. Ashes and/or loose sparks may cause powder or caps/primers to ignite, resulting in personal injury or death.
2. Always wear eye protection. Flying debris from the breech area and muzzle may occur.
3. Always wear hearing protection.
4. Never pour powder into a muzzleloader directly from a powder can, flask, horn, or any other large volume, enclosed container, as hot embers or sparks in the barrel can cause a flash that, in turn, could cause the container to explode.
5. All powder storage containers and primers/caps should be kept well away from the shooting area. Sparks from shooting could cause accidental ignition of these materials. Follow manufacturers' instructions regarding long-term storage of these products.
6. **USE ONLY the load components and loading procedures recommended in this Owner's Manual. Use only the recommended load components, amounts, and loading procedures recommended in this Owner's Manual. The improper loading or overloading of a muzzleloader can result in severe injury or death.**
7. **DO NOT USE modern smokeless powder in any muzzle loading firearm not specifically designed for its use. The CVA ENDURA is the only CVA muzzleloader designed for use with and limited to specific types and amounts of modern smokeless rifle powders.**
8. Always check to make sure the muzzleloader is in good working order before use. Assess the hammer (if applicable), trigger, and breech carefully prior to loading.
9. Never prime or cap a muzzleloader until you are ready to fire. The primer/cap should always be removed when walking, climbing trees or fences, transferring the gun from one person to another, leaving the gun unattended, etc.
10. Never give, or accept from anyone else, a loaded muzzleloader. Only the person who loaded or witnessed the loading of a muzzleloader should fire it. This practice will help avoid dangerous mistake of double-loading, which may result in severe injury or death upon firing.
11. **Never store a loaded muzzleloader.** The projectile, propellant, and primer/cap should be removed and the gun cleaned prior to storage. This will ensure that there is no inadvertent double-loading of the rifle in its next use.

12. Never load a muzzleloader without first making sure the barrel is unloaded and unobstructed.
13. When loading, always use a ramrod that has been previously marked to indicate where the bullet is fully seated on a proper load (see Section 16). This will ensure that bullets are properly seated in subsequent loading and that there is no inadvertent “short start” (leaving an air space between the propellant and the bullet) or a double load of bullets and/or powder which could produce dangerous pressures in the barrel.
14. Use extreme caution when hunting from a tree stand. The accidental dropping of a muzzleloader may cause a discharge, which could result in severe injury or death. Be sure the primer is removed from the muzzleloader before raising or lowering to or from a tree stand.
15. Always use proper cleaning procedures. Firing of an improperly maintained or corroded muzzleloader may lead to unsafe pressure conditions which could cause the barrel to rupture, causing severe injury or death to the shooter and/or bystanders.
16. Always keep the barrel pointed in a safe direction when loading. Never allow the barrel to point at any part of your body while loading.
17. **Never attempt to shoot an obstruction from the barrel of a muzzleloader.** ANY obstruction (mud, snow, cleaning patch, another bullet, ramrod, ramrod attachment, etc.), no matter how light in weight, may cause the barrel to rupture and may cause severe injury or death to the shooter and/or by-standers.
18. **Beware of the DOUBLE-LOAD.** Pay close attention throughout the entire loading process and confirm the load depth with a marked ramrod to ensure that only one properly seated load is in the barrel.

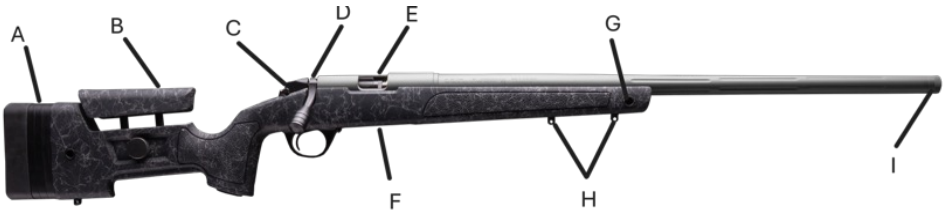
#### **4. BEFORE LOADING AND FIRING THE ENDURA™**

Familiarize yourself with the rifle and its functions. Learn how it works before you attempt to load it. Below are the steps you should follow:

1. **Read this entire Owner’s Manual carefully and completely, paying close attention to the warnings and safety information.** DO NOT attempt to load and shoot your rifle until you have thoroughly read this user manual and are fully familiar with its content.
2. The rifle comes coated in heavy oil and with the bolt detached. Before installing the bolt, clean the outside of the rifle and the interior of the bore as described in the maintenance section of this manual. Be sure that there is nothing loaded into or obstructing the bore and that there is no primer in the breech plug.
3. Insert the bolt into the action as described in the maintenance section of this manual (see Section 18).

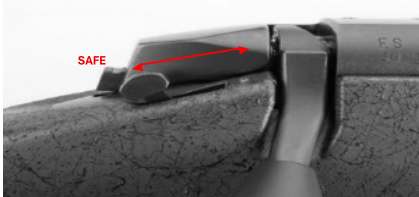
4. Check the trigger and safety for proper function.
5. Dryfire the rifle several times, checking the function of the firing pin and safety each time.
6. If you have any questions or concerns, contact CVA Customer Service before proceeding.

## 5. COMPONENTS AND FEATURES OF THE ENDURA



- |                          |   |
|--------------------------|---|
| A. Adjustable LOP        | F. Floorplate with Storage                  |
| B. Adjustable Comb Riser | G. QD Sling Swivel Sockets                  |
| C. Safety                | H. Sling Swivel Studs                       |
| D. Bolt Assembly         | I. Bullet Guiding Muzzle and Muzzle Threads |
| E. Priming Port          |   |

### Operation of the Safety Lever



### Removal of the Bolt Action



PUSH RELEASE IN TO RELEASE BOLT

## 6. ITEMS NEEDED TO LOAD AND FIRE THE ENDURA™

1. **VariFlame™ Primer Adapters** –These reusable adapters, and their associated priming tools are included with your rifle. The VariFlame is a stainless-steel adapter that closely resembles the common 209 shotshell primer. The adapter, however, is made to carry a replaceable large rifle primer. There is another section later in this manual that describes how to insert and replace the large rifle primers into the VariFlame adapters (see Section 9). In this manual the VariFlame Adapter is often referred to as the “primer.”
2. **Recommended Propellants** - Blackhorn 209® is a commonly used black powder substitute that performs very well in the Endura. Certain specific and limited types and amounts of modern smokeless rifle powders may be substituted

for Blackhorn 209, if necessary, preferred and/or legal for hunting (see Section 13).

3. **PowerBelt® ELR™** Bullets – This projectile is designed specifically for long-range rifles like the ENDURA. The elongated ELR bullet has a high ballistic coefficient, as compared to most other muzzleloading projectiles and thus minimizes long-range drop and maximizes long-range stability. Other non-saboted projectiles that have been performance tested with the Endura are mentioned in Section 12.
4. **Powder Scale** – Measuring powder by-weight rather than by-volume is much more precise and precise measures of Blackhorn 209 or specific types and amounts of smokeless rifle powders are critical to optimal and safe performance of the ENDURA. Powder scales can be obtained through virtually any reloading supply store.

**Warning:** Only the load components and loading procedures recommended in this manual are tested and deemed safe and best performing for use in the ENDURA rifle. Therefore, CVA cannot recommend, endorse, condone, deem safe, or approve of the use of any types or brands of propellants, measurements of propellants, loading procedures and/or projectiles not specifically described in this Owner's Manual. The use of any load components and/or loading procedures not recommended herein are at the user's own risk and will void the warranty if damage to the gun occurs.

## 7. MOUNTING A SCOPE ON THE ENDURA

The ENDURA is precision drilled and tapped for scope mounting and will accept any one or two-piece base made for the Remington 700 Short Action rifle. This common base set is available almost everywhere that quality firearms are sold. For the best long-range performance, we recommend using a one-piece rail made to Picatinny specs with a 0 (standard ranges) or 20 (longer ranges) MOA slant. If such a rail mount is not available in your area, CVA stocks DuraSight® mounts in these configurations that can be ordered through CVA Customer Service or at CVA.com.

Equally important is a set of quality rings. Make sure the rings selected are heavy duty and fit the chosen base properly. There are many manufacturers of quality scope bases and rings. Each manufacturer has its own specifications for installing the parts. Follow the manufacturer's instructions when installing, including the recommended torque settings for the screws (if provided).

## 8. TOOLS INCLUDED WITH THE ENDURA

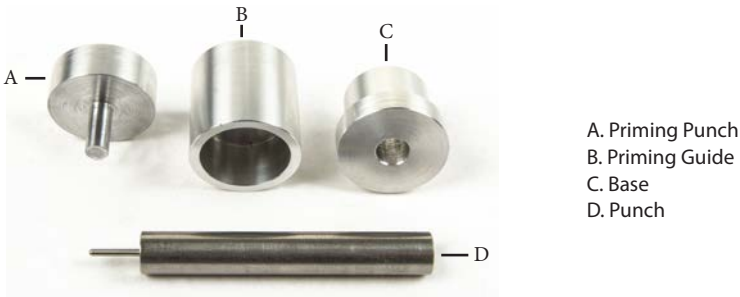
- **Collapsible Field Loading Ramrod** – This ramrod is for field reloading only. Deploy by holding onto the Palmsaver™ handle and letting the rest of the ramrod drop. The shock cord will pull the sections together into a rod that is stiff

and strong enough to seat a bullet. To return the ramrod to the pouch, simply pull the sections apart and fold it.

- **Ramrod Holster** – For carrying the collapsible ramrod in the field, the holster can be attached to a belt, pack frame, shoulder straps, etc.
- **Solid Aluminum Cleaning and Range Loading Rod** – For cleaning and range loading.
- **Breech Plug Wrench** – For breech plug removal and installation. Follow the instructions in Section 18.
- **10 VariFlame Adapters**
- **VariFlame Priming Tools** – See Section 9 or instructions regarding priming the adapters.
- **Magnetized Rifle Priming Tool** – For inserting the VariFlame Adapter into the primer well of the breech plug. (VariFlame Adapters can also be inserted by attaching them to the magnetized bolt face either with fingers through the priming port or by removing the bolt and placing the VariFlame against the magnetic bolt face and then letting the bolt seat the VariFlame Adapter into the primer well upon closure.)
- **Brass Cleaning Jag for Range Rod** – Holds patches on end of rod for cleaning.
- **Loading Tip for Range Rod** – Prevents damage to bullet tip while loading.

## 9. VARIFLAME® ADAPTERS AND HOW TO PRIME THEM

Tools for loading Large Rifle Primers into the VariFlame Adapters are included with your Endura rifle. These tools provide a simple and inexpensive way to install, remove, and reinstall Large Rifle Primers into the reusable VariFlame Adapters. An alternative method is to use a reloading press for this process using a shell holder sized for the .22 Hornet.



A. Priming Punch  
B. Priming Guide  
C. Base  
D. Punch

1. Always wear eye protection while loading VariFlame Adapters, as primers may explode if too much force is used in installing.
2. If the VariFlame Adapter has been previously used, stand it upright in the Base Tool and use the provided punch to remove the fired primer.



**! WARNING: Attempting to remove an unfired primer in this manner could result in the primer detonating. This could cause injury to eyes from debris and ears from noise.**

3. Turn the empty VariFlame Adapter over and insert it into the well of the Base Tool.



4. Place the Primer Guide Tool over the Base Tool.
5. Slide a Large Rifle Primer, open side down, across the top of the Primer Guide Tool until it drops into the hole of the Primer Guide Tool.
6. Insert the stem of the Primer Seating Tool into the hole.
7. Gently tap the top of the Primer Seating Tool with a small plastic head hammer until the Primer Seating Tool is flush with the top surface of the Primer Guide Tool.

Note: There are several brands and types of Large Rifle Primers. CVA recommends the “standard” primers over the “magnum” primers. For the most consistent accuracy results, the same quality brand of Large Rifle Primers should always be used.

## 10. ADJUSTING THE TRIGGER WEIGHT-OF-PULL OF THE ENDURA

The standard Endura trigger is adjustable for the weight-of-pull. At the factory the pull weight is pre-set to approximately 3 pounds. The total range of adjustments is approximately 2- 4 pounds. Reference the photos below and follow these instructions:

1. Using a properly fitting hex wrench, turn the adjustment screw clockwise to raise the trigger pull weight or counterclockwise to reduce the trigger pull weight. Make small adjustments and test frequently, preferably with a trigger pull gage.
2. When satisfied with the trigger pull weight, operate the bolt vigorously and check for any failures. The cocking indicator should always be visible when the bolt handle is lowered. If the firing pin falls when the bolt handle is lowered contact CVA Customer Service immediately.



## 11. ADJUSTING THE STOCK OF THE ENDURA

The Endura features a stock that is adjustable for either LOP and/or comb height to fit the individual shooter. To adjust the cheek piece, loosen the screw on the right side of the buttstock. Raise or lower the cheek piece for a proper and comfortable cheek weld, then retighten the screw firmly by hand.

1. To adjust the length of pull, lightly lubricate a #2 Phillips screwdriver and insert it into the holes in the recoil pad to loosen the retaining screws about 3 or 4 turns. The butt spacers interlock with each other.
2. Manipulate the spacers to unlock them.
3. Pivot the top of a spacer outward to the right side of the top retention screw then pull upward from the bottom retention screw to remove.
4. Add or remove spacers as needed for a comfortable fit.
5. Tighten the retention screws hand tight. Do not over-tighten the retention screws.



## 12. RECOMMENDED PROJECTILES FOR THE ENDURA

During the development of the ENDURA, numerous combinations of projectiles, projectile weights, propellants, volumes of propellants, etc. were assessed. Based on these tests, the bullets specified below are recommended for hunting and/or target shooting.

Of all bullets evaluated, CVA has concluded that the **PowerBelt ELR 285-grain** bullet, which was developed specifically for use in long-range muzzleloaders, offers the best combination of accuracy, ease-of-use, terminal performance, and affordability. It is therefore CVA's most highly recommended projectile for the Endura .45.

Some of CVA's competitive long-range shooters have also reported success with certain "bullet to bore" or "bore rider" bullets. The most highly rated amongst this class of bullets are the **Parker Black Max™ 275-grain (CVA Version)** and the **Pittman AccuMax™ 275-grain**.

**For best accuracy performance, as well as safety, bullet weights should not exceed 300 grains for the .45 caliber Endura.**

**WARNING: Saboted bullets should NEVER be used in the CVA Endura, as the high velocities will cause the plastic to melt in the bore. Also, the diameters of some sabots may be too large for the bore of the Endura, potentially causing dangerous over pressure.**

For more and/or updated information, please see:



### 13. APPROVED PROPELLANTS FOR THE ENDURA

**Blackhorn 209** is CVA's all-around recommended propellant for the Endura rifle, as it is both a great performer and legal for use during most muzzleloading hunting seasons.

However, since Blackhorn 209 can sometimes be hard to find, the CVA Endura was designed to also be usable with specific types and amounts of modern smokeless rifle powders. These approved smokeless rifle powders are **IMR 4198** and **VihtaVuori N120**. Be sure to check your local hunting regulations before using such modern smokeless rifle powders for hunting.

**WARNING: THESE ARE THE ONLY APPROVED PROPELLANTS FOR USE IN THE CVA ENDURA. DO NOT LOAD ANY OTHER TYPES OF MODERN SMOKELESS POWDER, INCLUDING OTHER SUCH POWDERS DESIGNED FOR PISTOLS, SHOTGUNS, OR RIFLES, IN A CVA ENDURA.**

### 14. APPROVED PROPELLANT CHARGES FOR THE ENDURA

Regarding the specific by weight or by volume recommended propellant charges, CVA's testing has shown loads somewhere within the below specified ranges will provide the best combination of accuracy, trajectory, and manageable recoil. ***By weight measuring will give the best results and is the only measuring method that should be used with the below recommended modern smokeless rifle powders.*** Performance can vary from gun to gun. Exceeding the maximum recommended by-weight charges shown below will not effectively increase ballistic and/or accuracy performance.

#### **RECOMMENDED WEIGHT/VOLUME RANGE FOR BLACKHORN 209**

.45 CALIBER: 98 – 112 grains by weight (140 – 160 grains by volume)

## **RECOMMENDED WEIGHT RANGE FOR IMR 4198**

.45 CALIBER: 58 – 63 grains by weight (do not measure by volume)

## **RECOMMENDED WEIGHT RANGE FOR VIHTAVUORI N120**

.45 CALIBER: 50 – 55 grains by weight (do not measure by volume)

**Warning:** Propellant loads exceeding the maximums listed above may create barrel pressures that could be unsafe. **DO NOT EXCEED THE RECOMMENDED LOADS.**

**IMPORTANT:** When using Blackhorn 209, measuring charges by weight with a powder scale is far more precise than measuring by volume and will provide the best results. **DO NOT ATTEMPT TO MEASURE THE RECOMMENDED MODERN SMOKELESS RIFLE POWDERS BY VOLUME.**

For more and/or updated information, please see:



## **15. BASIC BALLISTICS FOR THE ENDURA**

Below are the approximate muzzle velocities produced when using the recommended loads of the recommended propellants with a PowerBelt ELR 285 grain bullet. By programming these velocities, the ballistic coefficient of the bullet (.333), and the elevation at which you will be shooting into a ballistic calculator app you can determine the approximate drops you should experience at various ranges.

| <b>Powder Charges by Weight</b>  | <b>Bullet</b>       | <b>Velocity (fps)</b> |
|----------------------------------|---------------------|-----------------------|
| VihtaVuori N120 @ 50gr by Weight | PowerBelt 285gr ELR | 2343                  |
| VihtaVuori N120 @ 55gr by Weight | PowerBelt 285gr ELR | 2444                  |
| IMR 4198 @ 55gr by Weight        | PowerBelt 285gr ELR | 2406                  |
| IMR 4198 @ 63gr by Weight        | PowerBelt 285gr ELR | 2530                  |
| Blackhorn 209 @ 98gr by Weight   | PowerBelt 285gr ELR | 2293                  |
| Blackhorn 209 @ 112gr by Weight  | PowerBelt 285gr ELR | 2430                  |

For more and/or updated information, please see:



## 16. TIPS FOR OPTIMAL PERFORMANCE WITH THE ENDURA

Remember that shot-to-shot consistency in every loading step is the key to shooting tight long-range groups with the ENDURA.

- Use one of the recommended loads.
- Use a powder scale to measure propellant by weight.
- Seat the bullet against the propellant, avoiding excessive pressure. Attempt to use the same pressure with each seating.
- Use the included loading tip to avoid damage to the bullet tip.
- Use a solvent for cleaning that will remove copper fouling.
- Clean the breech plug after each shooting session.
- Use a top-quality scope mount and rings.
- Use a high-quality scope of at least 15x max power and with easily repeatable elevation adjustment.
- Always use a range finder when attempting longer shots in the field.

## 17. LOADING AND FIRING THE ENDURA

**WARNING: Do not load the rifle until you have read and understood this manual. Do not load until you are ready to begin shooting. Unload the rifle when finished shooting. ALWAYS make sure that the barrel is clean and unobstructed before loading. A muzzleloading projectile that is not fully seated on the powder charge is an obstruction. Firing an obstructed barrel can lead to a barrel rupture and possible injury or death to the shooter and/or bystanders.**

**WARNING: DOUBLE LOADING of bullets and/or powder can result in injury or death to the shooters and/or bystanders. BE SURE to pay close attention throughout the entire loading process. Avoid any time lapses between the individual loading steps and/or distractions during the entire loading process. When seating the bullet, if your ramrod does not go all the way in to the “loaded mark” (see below) made to indicate a proper load, DO NOT fire the rifle! Remove the breech plug and unload the rifle.**

1. Rotate the safety lever rearward to the safe position. Open the bolt and pull it to the rear.
2. Be sure that the breech plug does not contain a primer. The breech plug well can be viewed through the priming port when the bolt is in the unlocked and reward position.

**Breech Plug Clear**



**Breech Plug Prime**



3. Insert the Field Loading Ramrod into the barrel to be sure that the barrel is not loaded or obstructed. The Palmsaver™ handle on the Field Loading Rod should be approximately ½ inch from the muzzle in an empty barrel.

**Unloaded with Field Loading Rod**



4. To remove any moisture from the breech plug, with the gun unloaded and the barrel pointing downrange or in an otherwise safe direction, either place the primed VariFlame™ adapter onto the magnetized bolt face (which will seat the VariFlame adapter into the primer well of the breech plug upon closing of the bolt) or use the included priming tool to insert the VariFlame directly into the breech plug primer well. Close the bolt, rotate the safety lever to the fire position and fire. Repeat this one more time.
5. Carefully measure the proper amount of Blackhorn™ 209 muzzleloading propellant or other approved propellant and pour it into the barrel. Propellant may be measured by weight with a powder scale or, if using Blackhorn 209, by volume with a volumetric powder measure. Measuring by weight with a powder scale is recommended for maximum precision.
6. Press the bullet into the Bullet Guiding Muzzle. Using the Field Loading Rod, or the Range Rod with the provided loading tip attached, push the bullet into the bore until it seats gently on the powder charge. Note: It is important to apply, as closely as possible, the same amount of bullet to propellant seating pressure with each loading. Also, this is a good time to mark the ramrod at the muzzle of the gun as an indicator to ensure complete seating of the bullet in subsequent loadings.



8. With the barrel pointing downrange or in an otherwise safe direction, place the primed VariFlame Adapter onto the magnetized priming tool and insert the VariFlame directly into the primer well of the breech plug, or place a primer onto the magnetized bolt face by hand through the priming window, or position it on the bolt face with the bolt removed – either of which will allow the bolt to insert the VariFlame upon closing.



9. Close the bolt and make sure the safety is engaged (in the rearward position).
10. Being certain of the target and the safety of what potentially lies beyond, aim the rifle, rotate the safety lever forward to the fire position, and gently pull the trigger to fire.
11. To reload, repeat the steps above.

## **18. UNLOADING THE ENDURA**

To unload the loaded muzzleloader, follow these steps:

1. Rotate the safety lever rearward to the safe position.
2. Open the bolt and remove the primer from the breech plug.
3. Press the bolt release on the left side of the receiver and pull the bolt to the rear, removing it from the receiver.
4. Use the provided breech plug wrench to unscrew the breech plug from the barrel.
5. Insert the range rod into the muzzle of the barrel and push the bullet and powder out the breech of the barrel.
6. Clean the rifle before storage.

## 19. CLEANING AND MAINTAINING THE ENDURA

**! WARNING:** ALWAYS make sure that your ENDURA is unloaded before leaving the range or the field. NEVER transport a loaded rifle in your vehicle or take a loaded rifle into the home. Before beginning your cleaning process, check again to be certain that the primer is out of the breech plug and there is no load in the barrel.

The ENDURA has a stainless-steel barrel with a nitride treatment that makes it highly corrosion resistant. However, long term neglect can allow corrosion to form. Therefore, proper maintenance is needed to ensure that the ENDURA muzzleloader remains in top condition and accurate for years to come. The CVA Barrel Blaster line of cleaning products is recommended. The solid aluminum range rod provided with your rifle should be used in the following steps. Please follow these steps to properly maintain the rifle:

1. Rotate the safety lever rearward to the safe position.
2. Open the bolt and move it to the rear.
3. Press the bolt stop, located on the left side of the receiver, and pull the bolt out of the receiver. Set aside.
4. Visually examine the breech plug to be sure that there is no primer installed.
5. Make sure that the barrel is empty by inserting the Range Rod with the jag installed into the muzzle and down the bore. There should be a metallic “clink” as the jag makes direct contact with the face of the breech plug. The Range Rod (with the supplied Cleaning Jag installed) should extend from the muzzle about 4 ½ inches. If the Range Rod extends more than 4 ½ inches beyond the muzzle there is a load or some kind of obstruction in the bore. If so, it should be carefully removed before proceeding.
6. Insert the Breech Plug Wrench through the rear of the receiver and engage the hex shaped end of the breech plug. The wrench is supplied with a short metal handle. Insert the handle through the cross-hole at the rear of the wrench and turn counterclockwise to remove the breech plug. Note: A 7/16ths socket wrench with extension can be used instead of the supplied Breech Plug Wrench.
7. Thoroughly wet the breech plug with cleaning solvent and set aside.
8. Wet a patch with a copper dissolving cleaning solvent and place it over the end of the cleaning jag. Push the patch through the bore using short scrubbing strokes until it exits the other end. Repeat this several times.
9. Place a dry patch over the end of the cleaning jag and push it through the bore. Repeat several times until the patches come out relatively clean.
10. If the patches are not showing a clean barrel, or if they are not pushing smoothly

through the bore, run a bronze cleaning brush through the bore and repeat steps 5 & 6.

11. When clean, run a patch with a small amount of oil through the barrel.

12. Using a paper towel or rag and cotton swabs, thoroughly clean the breech plug paying special attention to the primer pocket and the recess in the front of the plug. Hold the breech plug towards a light and be certain that the flash hole in the center of the plug is clear. If necessary, pass a small wire to clear any debris.

13. Coat the breech plug threads with breech plug grease or anti-seize and re-install into the rear of the barrel. Tighten with light pressure only. Usually, the bolt only requires light cleaning in the bolt face with an oily swab. Occasionally you may want to disassemble the bolt for thorough cleaning. To do so, grasp the bolt shroud in one hand, the bolt body in the other and twist the shroud clockwise approximately  $\frac{1}{4}$  turn. The bolt shroud, with the attached firing pin assembly, will “pop” out of the bolt body.



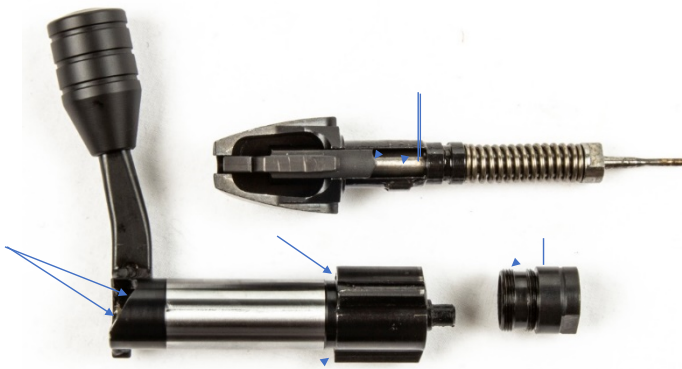
14. Using a 9/16 inch or a 14mm wrench, or a crescent wrench, unscrew the breech face from the bolt body.



15. Reassemble in reverse order. When installing the bolt shroud and firing pin back into the bolt body, align the small tab on the shroud with the corresponding groove in the bolt body. Press the bolt shroud, compressing the firing pin spring, until it can be rotated back into position. When the firing pin clicks into a small detent, just before the angled cut in the bolt, it is correct.

16. Wipe the exterior parts of the rifle with an oily rag until clean.

17. Lubricate points indicated below



18. If you have removed the stock while cleaning your rifle, tighten the retaining screws to 50 – 55-inch pounds of torque during reassembly.
19. Insert the bolt into the receiver, close the bolt, and check the function of the trigger and safety. If you detect anything that is not as it should be, contact CVA customer Service immediately.

## 20. REPAIR AND SERVICE

In the case that your CVA ENDURA rifle needs repair or service we recommend that you return it postage paid to our facility. This will ensure that your rifle is repaired by trained, qualified gunsmiths who are familiar with all CVA firearms. We do not have approved gunsmiths outside our facilities and will not warrant the work of others. You should first contact CVA Customer Service by phone or through our web site to initiate the repair process. The Return Number and Return Authorization will be sent to you by email. Pack your rifle carefully with a copy of the Return Authorization and send postage-paid to the repair facility in your country.

**USA CUSTOMERS:**  
BPI OUTDOORS  
ATTN: CVA Repairs  
1270 PROGRESS CENTER AVE, STE 100  
LAWRENCEVILLE, GA 30043  
770-449-4687  
<https://cva.com/help-center/>

## **CANADA CUSTOMERS:**

For warranty repair needed on any CVA model, please visit <https://bpioutdoors.com/cva/warranty/> for information on where to send your CVA rifle or muzzleloader. If you do not have email or cannot contact CVA prior to returning your rifle, be sure to include your name, address, best daytime phone number, and a detailed note regarding your repair. The Return Authorization will be generated when the rifle arrives, and we will contact you if needed. A slight delay in processing can be expected.

Many times, small issues and concerns can be addressed with CVA Customer Service and taken care of without sending your rifle in. Use the contact information above.

## **21. LIMITED LIFETIME WARRANTY**

CVA warrants all factory-finished firearms to be free of defects in workmanship or materials for the lifetime of the firearm. This Limited Lifetime Warranty only applies to the original consumer owner. This warranty is activated by the return of the authorized warranty card within 15 days of purchase and is not transferable. To save time and postage, the warranty information may also be transmitted electronically via our web site at <https://cva.com/warranty/>.

Any covered CVA firearm that is returned postage paid to the Repair Department will be repaired or replaced to our commercial standard, free of charge, and returned to the consumer postage prepaid. This warranty does not cover damage to structures, buildings, vehicles, persons or animals, or any other damage resulting from careless handling, improper loading, rust or corrosion, neglect, improper maintenance, or unauthorized repairs and modifications.

CVA reserves the right to refuse to repair or replace any firearm or parts damaged by any of the above. The warranty does not cover normal wear of any part, metal or stock finish, cost of inconvenience due to product failure, or transportation to the Repair Department.

State and Federal regulations and laws regarding the transportation and transfer of firearms will be strictly adhered to.

**YOU MUST VERIFY THAT THE GUN IS UNLOADED BEFORE SHIPPING!  
SHIPPING A LOADED GUN IS A CRIME.**

If your Endura rifle is loaded and you don't know what to do, please call CVA Customer Service for instructions. ***It is not only unsafe and irresponsible to ship a loaded gun; it is a violation of Federal Law that will be reported. THERE WILL BE AN ADDITIONAL \$100 CHARGE TO UNLOAD THE GUN.***

This warranty gives you certain specific legal rights. CVA excludes all other warranties expressed and/or implied. This warranty is void if:

- Any propellant other than the correct type and amount of Blackhorn 209 black powder substitute or a specifically recommended modern smokeless rifle powder (Endura only) is used.
- If unauthorized repair work has been performed by anyone other than CVA, or a CVA recommended maximum powder charge or
- Any sabot bullet has been used.
- If the gun is returned in an abused or neglected condition (rusty, corroded, etc.).
- Any failures concerning any non-CVA OEM parts such as a non-CVA accessory breech plug, repair part or barrel.

## **22. VOLUNTARY RECALL**

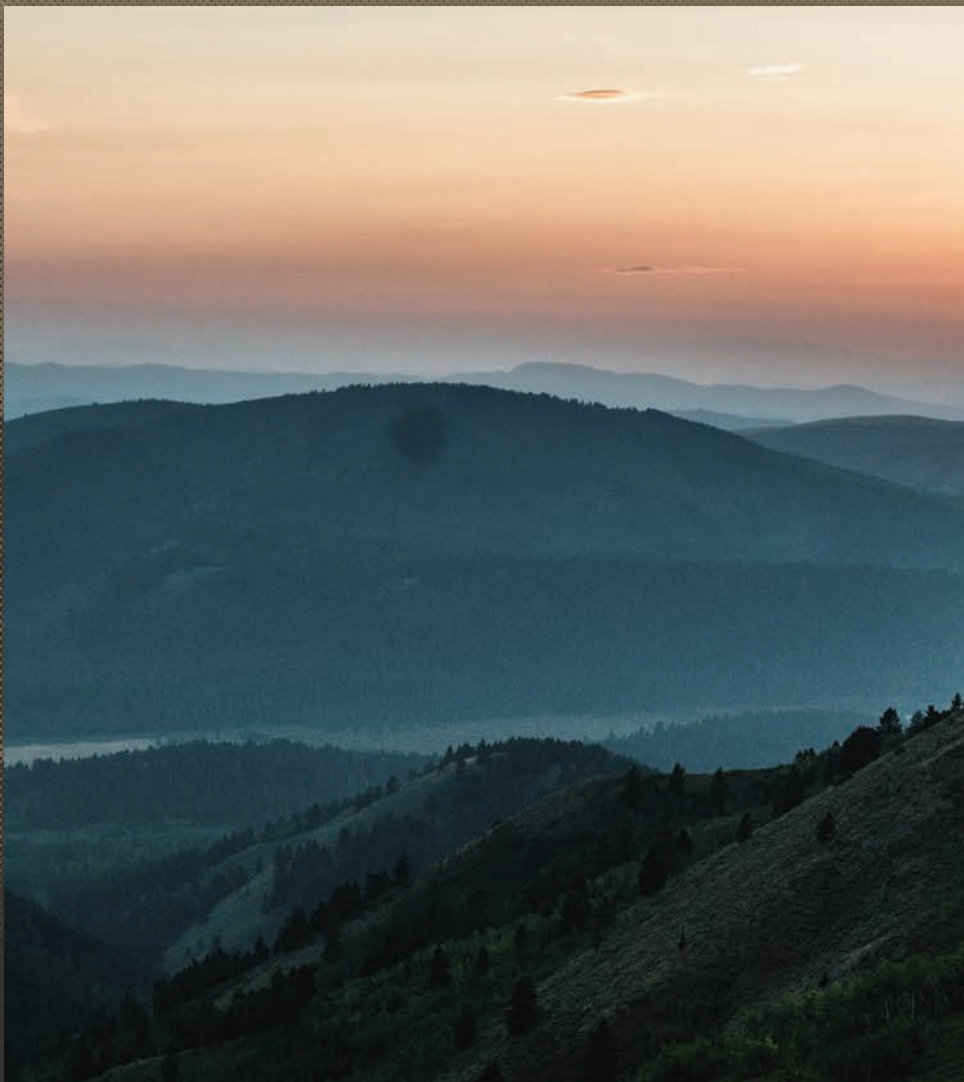
In August of 1997, Connecticut Valley Arms, Inc. implemented a Voluntary Recall of all in-line rifle models with serial numbers ending in -95 or -96.

Example of a recalled serial number: 61-13-XXXXXX-95

If you, or someone you know, have a CVA in-line with such a serial number, do not use or allow anyone else to use the rifle under any circumstances. Call CVA immediately at 770-449-4687 or contact CVA Customer Service through the web site at <https://cva.com/help-center/>. You will receive complete instructions on how to receive a replacement gun at no charge.


In May of 1999, Blackpowder Products, Inc. purchased the assets of Connecticut Valley Arms, Inc. and now operates under the trade name of Connecticut Valley Arms and/or CVA. Any claims related to the above-described Voluntary Recall should be addressed to Connecticut Valley Arms, Inc., not to Blackpowder Products, Inc. Blackpowder Products, Inc. assumes no responsibility for any products manufactured or sold prior to January 1, 1998.







**BPI Outdoors**

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Lawrenceville, GA 30043  
[www.CVA.com](http://www.CVA.com)

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