SHOOTING THOMPSON/CENTER SIDE LOCK BLACK POWDER MUZZLELOADING FIREARMS

⚠ DANGER

The material in this booklet must be read and understood before attempting to use your Thompson/Center firearm. If pertinent safety information is not read, and →⚠WARNING← statements are not understood and adhered to, death and/or injury may result.

READ THIS MANUAL IN ITS ENTIRETY BEFORE USING YOUR FIREARM

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IMPORTANT NOTE: This book has no specific references to the T/C SCOUT Carbine, Black Diamond, Woods Rifle, System 1, Encore 209x50, ThunderHawk, Fire Hawk, Omega, Patriot or Black Mountain Magnum. Separate Owner's Manuals for these are available free upon request.

NOTE: The loading data found in this manual was compiled using Black Powder or Pyrodex as a propellant. With any other approved Black Powder substitute follow the instructions supplied by the manufacturer and heed all warnings as they apply to loading and usage of that product.

This booklet contains information that is essential to the safe use and maintenance of Thompson/Center muzzleloading firearms. You must read this material in its entirety and fully understand its significance before you can safely use your muzzleloader. If a Thompson/Center muzzleloading firearm is loaned or sold (by an individual or a dealer), this booklet must accompany the firearm. Replacement booklets are available at no charge from our factory.

If, after reading this booklet, you still have questions concerning the safe use of your Thompson/Center firearm, write or call our Customer Service Department at:

Thompson/Center Arms Co., Inc.
Farmington Road, P.O. Box 5002
Rochester, New Hampshire 03867
Telephone: 1-603-332-2333

• And Remember •
The Fundamental National Rifle Association Rules for Safe Gun Handling Are:

1 - Always keep the gun pointed in a safe direction.
2 - Always keep your finger off the trigger until ready to shoot.
3 - Always keep the gun unloaded until ready to use.

- WARNING -
Discharging firearms in poorly ventilated areas, cleaning firearms or handling ammunition may result in exposure to lead and other substances known to cause birth defects, reproductive harm and other serious physical injury. Have adequate ventilation at all times. Wash hands thoroughly after exposure.

General Rules for Use and Handling of Thompson/Center Black Powder Muzzleloading Firearms

1 If you are unfamiliar with muzzleloading firearms seek professional instruction. Qualified organizations such as local gun clubs, The National Rifle Association, The National Muzzleloading Rifle Association and state Hunter Safety Programs offer approved courses which teach safe gun handling and proper hunting procedure. Those who are unfamiliar with muzzleloading firearms should seek guidance from an instructor who is qualified by one of these organizations.

2 If you are uncertain of the terminology or meaning of any word used in this booklet, write to Thompson/Center Arms. Throughout this booklet the term "Prime" or "Primed" applies to the act of placing a percussion cap on the nipple of a cap lock rifle or the pouring of priming powder into the pan of a flint lock rifle. "Unprime" or "Unprimed" refers to the opposite condition and indicates the percussion cap (cap lock) or priming charge (flint lock) has been removed or is not in place. In addition, the frizzen on the flint lock must be open and the hammer at half-cock to put the firearm in an unprimed condition. "Charge" or "Charged" applies to the presence of a propellant powder charge and projectile in the bore of the rifle. "Uncharge" or "Uncharged" refers to the opposite condition and indicates that the powder charge and projectile have been either fired or removed and that the bore is completely clear.

3 Know the muzzleloading firearm before attempting to use it. The overall functioning and safety features of a muzzleloading firearm are different from modern rifles, shotguns, and pistols. Because of these differences the user must exercise caution and skill in the use of a muzzleloading gun. You must read and understand the workings of the muzzleloading firearm as explained in this booklet before attempting to use it.

4 Use Black Powder or an approved Black Powder substitute, such as Pyrodex® only to load your muzzleloading firearm. WARNING: The use of smokeless powder, or a mixture of smokeless and Black Powder (duplex loads) or the wrong type or granulation of Black Powder or an approved Black Powder substitute, such as Pyrodex or overloading may cause serious injury and/or death to the shooter or bystanders and damage to property. See section on "Black Powder or an approved Black Powder substitute, such as Pyrodex®," in this booklet. Thompson/Center muzzleloaders are designed and intended to be used only with a commercially manufactured Black Powder or an approved Black Powder substitute, such as Pyrodex propellant of the specific granulation or type called for in this book-

let. By Black Powder we mean a powder which is manufactured specifically for use in muzzleloading firearms as opposed to smokeless powder which is manufactured for use in metallic cartridges or shotshells. NO smokeless powder, even those which appear black in color, should ever be used in a muzzleloading firearm. Be sure you know what type and granulation of powder you are loading. Never buy or use powder unless you have seen it poured from the original manufacturer's container which is clearly identified on the label. Use Black Powder or an approved Black Powder substitute, such as Pyrodex, only of the type and granulation specified in this booklet and never load charges heavier than those listed.

5 **Always point the muzzle of your Black Powder Gun downrange.** The possibility of accidental discharge is a constant danger when using a firearm. If the muzzle is pointed downrange, away from yourself, other people, domestic animals or property, then injury or damage from an accidental discharge is less likely to occur.

6 **Be sure of your target.** Never fire a muzzleloading firearm unless there is a backstop behind your target. Never fire your muzzleloader in the field unless you have a clear view of your target. Never fire at noise or movement in the brush. If hunting with companions or in an area where there are other hunters, know where members of your party and/or hunters are located. Never fire your muzzleloader if there is a possibility that other hunters are downrange. Never shoot at flat, hard surfaces such as rocks or water. **WARNING: A projectile may ricochet off these surfaces and may cause serious injury and/or death to the shooter or bystanders and damage to property.**

7 **Never prime your muzzleloading gun until you are ready to fire it.** Your muzzleloader should remain unprimed until the instant before firing. After you prime the firearm, your full concentration should be on the target and the act of firing. **WARNING: Failure to follow this rule can result in an accidental discharge which may cause serious injury and/or death to the shooter or bystanders and damage to property. Uncharge the firearm by firing it into a suitable backstop before returning to the road or vehicle.**

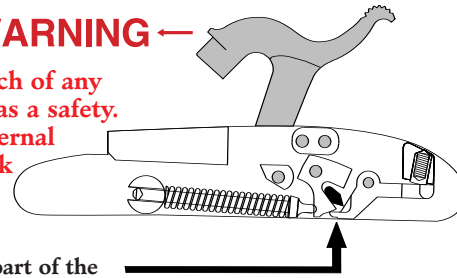
8 **Never transport or carry a charged muzzleloading firearm in a vehicle. WARNING: Uncharge the firearm by firing it into a suitable backstop before returning to the road or vehicle. Failure to follow this rule may cause serious injury and/or death to the shooter or bystanders and damage to property.** Due to the large number of firearms accidents which occur in or near vehicles, this is a most important rule. The game laws in most states prohibit the taking of game from a road or vehicle. The rules of sportsmanship and common sense dictate that the firearm should not be charged until you are a safe distance away from the vehicle, road and companions. Never prime the firearm until you are actually ready to fire.

9 **Do not rely on the half-cock notch of any Thompson/Center muzzleloader as a safety.** The half-cock notch should be used as a convenience to

keep the hammer off the nipple on a percussion gun or the flint away from the frizzen on a flint lock. **WARNING: Dropping or striking a blow to a gun may cause the hammer to fall from the half-cock notch. It is therefore not to be relied on as a safety. Failure to follow this rule may cause serious injury and/or death to the shooter or bystanders and damage to property.**

⚠WARNING

Do Not rely on the half-cock notch of any Thompson/Center muzzleloader as a safety. A sharp or heavy blow to the external hammer can fracture internal lock parts and cause a malfunction or discharge of the firearm.



The external hammer is an intricate part of the lock system. A heavy or sharp blow to the hammer can fracture the sear, half cock notch or other internal working parts, creating a dangerous situation.

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10 Never hand a charged muzzleloading firearm to another person. Once charged, a muzzleloading firearm requires your complete attention. Never charge the firearm and then hand it to another to shoot. Equally you should never shoot a muzzleloading firearm that has been charged by someone else. Only the person doing the loading knows whether the firearm has been charged properly. **WARNING: Overloads and/or improper loading may cause serious injury and/or death to the shooter or bystanders and damage to property.**

11 Never lean a charged and primed rifle against a tree, wall or any surface. Once the rifle has been charged it is your responsibility to guard it against accidental bumps.

12 Never store a charged muzzleloading firearm in a home, camp, vehicle or building. WARNING: After use, a muzzleloading firearm should be discharged (fired) into a suitable backstop before returning to the home or camp. Failure to follow this rule may cause serious injury and/or death to the shooter or bystanders and damage to property.

13 Never attempt to clean a charged muzzleloading firearm.

14 Use pure lead only when casting round balls, Maxi-Balls or Maxi-Hunters. Lead alloys which contain large amounts of antimony or other metals are not suitable for muzzleloading projectiles. **Do not use commonly found alloys such as wheel weights or Linotype because they produce hard, oversize projectiles that are difficult to load. WARNING: Improper loading (projectile not seated on powder charge) may cause serious injury**

and/or death to the shooter or bystanders and damage to property. See section on "Bullet Molds" in this booklet.

15 Wear protective gear when firing your muzzleloading firearm. Always wear shooting glasses to protect your eyesight from airborne particles and ear protectors to guard against hearing loss due to loud noise when firing your muzzleloader. Protect your arms from flying particles of percussion caps or priming powder by wearing a heavy shirt or jacket with long sleeves. **WARNING: When firing, stand well forward of all bystanders to ensure that they are not struck by particles of powder or caps. Failure to follow this rule may cause serious injury and/or death to the shooter or bystanders and damage to property.** Those wearing long hair or beards should use extra caution when firing a flint lock. A flint lock can torch hair.

16 Do not load or prime your muzzleloading firearm directly from a can, horn or flask. A spark from a previous firing may ignite the stream of powder being poured into the gun and cause the container to explode. **WARNING: The explosion of powder can, horn or flask may cause serious injury and/or death to the shooter or bystanders and damage to property. Use a separate pre-calibrated measuring device containing small quantities of powder to load and prime your gun and keep your face, hands and body well away from the muzzle when loading and the pan when priming.**

17 Do not smoke while using your muzzleloader. The spark from a lighted cigarette, cigar, or pipe can ignite Black Powder, a Black Powder substitute or Percussion Caps. **WARNING: Smoking around a charged and/or primed muzzleloader, percussion caps, priming powder or supply of powder may cause premature firing of the gun or an explosion of the powder can, horn or flask causing serious injury and/or death to the shooter or bystanders and damage to property.**

18 Keep powder and percussion caps well away from a firing position or shooting bench. A powder horn, flask, can of powder or box of percussion caps can ignite with deadly force if exposed to sparks or intense heat. Follow the manufacturer's instructions for safe handling and storage of powder or caps. **WARNING: Keep unused caps and powder well away from firearms that are being discharged. Sparks from the discharge of a muzzleloading firearm may cause an unused supply of powder or caps to ignite causing serious injury and/or death to the shooter or bystanders and damage to property.**

19 Give the firearm your complete concentration. Never cross a fence, jump a ditch or engage in any activity which distracts your attention while holding or carrying a charged and primed muzzleloading firearm.

20 Know the condition of your muzzleloading firearm before charging, priming or firing. Function the lock of your gun to be sure that the half-cock and full-cock notches are working properly before loading a charge. Be sure

the muzzleloading firearm is properly loaded. **Use recommended loads of BLACK POWDER OR PYRODEX ONLY for your specific model and caliber.** Mark your ramrod as explained in this booklet and always be certain that the ball, bullet or shot charge is seated properly on the powder charge. Be sure the barrel is clear of obstructions (including excess oil, mud, dirt, snow or any foreign material). **WARNING: Failure to observe any of these rules may cause serious injury and/or death to the shooter or bystanders and damage to property.**

21 Be physically fit and mentally alert when using your muzzleloading firearm. The use of your muzzleloader involves forceful physical actions which require strength and concentration. Never use alcoholic beverages or drugs before or when shooting or handling your muzzleloader. Never use your muzzleloading firearm when you are overly tired. If you use medication or have medical implants consult your physician before using your muzzleloading firearm.

22 At their very best, tree stands are potentially hazardous. Even with good equipment, safety depends upon the age, health, dexterity and sound judgement of the user. If you feel that you must use a tree stand, purchase a top quality brand only and follow the manufacturer's instructions to the letter. **WARNING: Never climb to or descend from a tree stand with a primed muzzleloading firearm. Never raise or lower a primed muzzleloading firearm to or from a tree stand. Failure to follow this rule may cause serious injury and/or death to the shooter or bystanders and damage to property.**

23 Respect the muzzleloading firearm. Used properly, your muzzleloader will give you years of pleasure. Used improperly, carelessly or abused, your muzzleloading firearm is a dangerous instrument and is capable of causing serious injury, death or property damage. Always treat your muzzleloader as if it were loaded. Do not drop your muzzleloader or allow it to be struck a blow. Dropping or striking it may cause movement and/or damage to internal parts in such a manner as to cause an accidental discharge. If the gun is dropped it should be examined. **WITH THE FIREARM UNPRIMED**, place the hammer in half-cock position and slide your ramrod into the bore to ensure that the barrel is not obstructed. Check your ramrod mark to be certain that the projectile is seated firmly on the powder charge. Check the firearm for external damage. Check the lock to be sure that the half-cock and full-cock notches are functioning properly.

24 Use extreme care in the selection and/or use of accessories, implements or components. Thompson/Center muzzleloaders are manufactured to a controlled tolerance and are intended for use with accessories and implements of Thompson/Center brand only. For example, Thompson/Center mould dimensions are carefully calculated to produce cast (pure lead) round balls, Maxi-Balls or Maxi-Hunters of a proper size and hardness which are consistent with the specific caliber requirements of our product line. Patch material bearing the T/C brand is of the proper size and thickness for the cal-

iber and round balls specified in this booklet and in our catalog.

The reader is warned against the use of any unauthorized accessories, implements or components which are not of our manufacture and over which we have no control. Before purchasing or using accessories, implements or components, the reader must assure himself that such items are safe to use with Thompson/Center firearms. Responsibility for the safe use of such items rests totally with their manufacturer and/or dealer selling these products. If you are unsure as to the safety or compatibility of accessory items to use with our firearms, write to us at the address shown below.

25 The reader is warned against custom alterations and conversions. Thompson/Center does not endorse or recommend any type of alteration other than those performed by the Thompson/Center Custom Shop. Replacement nipples, replacement barrels, priming devices or any other unit not of Thompson/Center manufacture and used as a replacement part or attachment to a Thompson/Center firearm is potentially dangerous. Responsibility for such devices rests totally with the manufacturer of the device and/or with the dealer selling the device or the person or persons installing it.

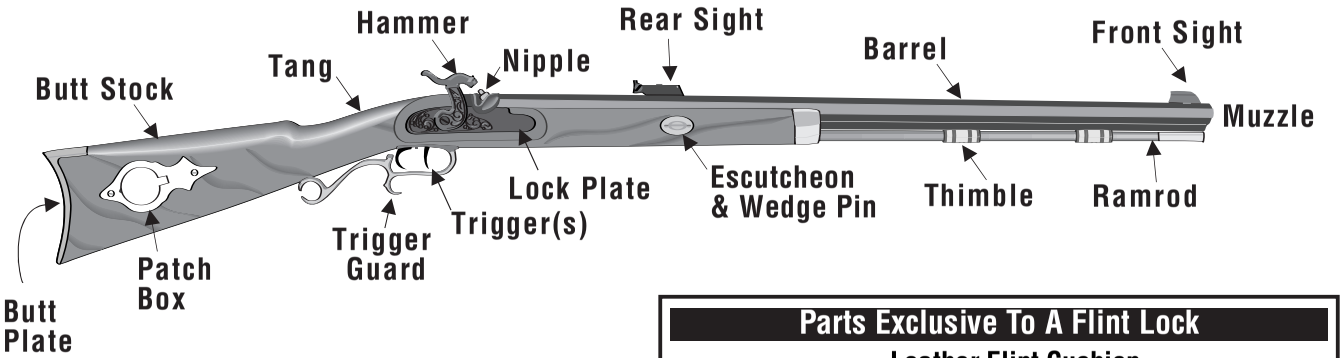
26 Use Thompson/Center scope mounts only. The Thompson/Center Catalog lists a series of scopes and mounts which are designed specifically for use with our firearms. These mounts replace the factory rear sight on our muzzleloading rifles and make use of existing screw holes. Those who desire a scope sight should make use of Thompson/Center mounts. **WARNING: Do not drill additional holes in the barrel as this could weaken the barrel structure leading to a rupture. A ruptured barrel can cause serious injury and/or death to the shooter or bystanders and damage to property.**

27 Follow Kit instructions carefully. A copy of this booklet is included with all Thompson/Center factory finished muzzleloaders - both kit and finished models. Readers who purchase kits must realize that Thompson/Center Arms Co., Inc. has no control over the final finishing and assembly of kit products. The kit builder must follow instructions to the letter. Alteration of factory parts, the drilling of additional holes in the barrel, excessive heat and/or removal of excess quantities of metal from the barrel or breech plug can weaken the firearm or cause it to malfunction.

The foregoing general rules and cautions are printed to contribute to your safety when using Thompson/Center muzzleloading firearms. These rules must be read, understood and adhered to. The remainder of this book is equally important. It contains information which is essential to the proper use and care of your muzzleloading firearm. **Do not attempt to load or fire your muzzleloading firearm until you have read this booklet in its entirety.**

If, after reading this booklet, you still have questions concerning the safe use of your Thompson/Center firearm, write or call our Customer Service Department at: (see address on page 8)

Nomenclature



Know your muzzleloading firearm before attempting to use it. This booklet will help you to become familiar with the various terms associated specifically with this type of firearm. The diagram to the left calls out some of the more commonly mentioned parts. The diagram directly above details those parts which are found exclusively on a flint lock.

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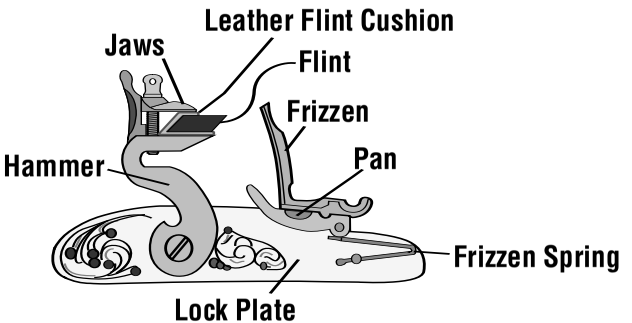
Parts Exclusive To A Flint Lock



Assembly Of Your Thompson/Center Muzzleloader

When you purchase your T/C Muzzleloading Rifle, it may have been packaged disassembled. Assembly is easy:

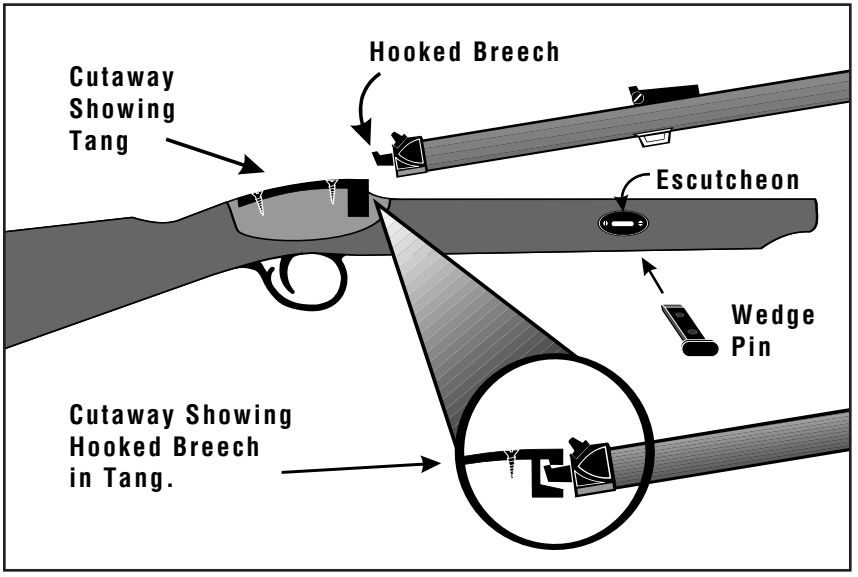
1. Remove the ramrod from the thimbles under the barrel.

2. Insert the hooked breech of the barrel into the slot of the tang making sure that it engages fully.

3. Tip barrel down into the barrel channel in the stock. If properly engaged, there will be only a slight tension to overcome. Once the barrel has been fully seated in the stock, insert the wedge pin through the escutcheon hole and the wedge pin slot of the barrel. The pin should fit tightly and you may have to tap it in place (lightly) with a mallet or appropriate tool.

NOTE: If, when pulling the barrel down into the stock, there appears to be excessive resistance, stop and check to ensure the hooked breech is fully engaged into the slot in the tang. If these two are not engaged fully, it will cause the barrel to hang incorrectly, and when forced into the stock, may cause the stock to split.

4. Once the barrel has been assembled to the stock, insert the ramrod through the thimbles.



Basic Equipment For Shooting Your Muzzleloader

In order to shoot your T/C muzzleloading rifle, the minimum accessories or equipment will be necessary.

⚠WARNING

Do Not attempt to shoot your muzzleloading firearm until you have read this manual in its entirety and understood it fully. FAILURE TO READ AND FOLLOW THESE INSTRUCTIONS COULD RESULT IN AN ACCIDENTAL DISCHARGE, CAUSING INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY. If you are unable to understand any or all of this material, call the customer Service Department at Thompson/Center Arms at (603) 332-2333.

1. Proper eye protection

2. Proper ear protection

3. Black Powder or an approved Black Powder substitute such as Pyrodex, in the appropriate granulation for your particular firearm.

4. Powder Measure.

5. Projectiles: Appropriate for your firearm.

6. #11 Percussion Caps, Musket Caps, 209 Shotgun Primers or T/C Flints (with proper priming powder) depending on the lock type and/or nipple that your muzzleloader has.

7. Patch worm for retrieving lost cleaning patches.

8. Cleaning patches

9. Jag for cleaning patches (one comes with each new T/C muzzleloader).

10. An appropriate bore cleaner and lubricant.

Black Powder And Pyrodex®

Make no mistake about it, Black Powder or an approved Black Powder Substitute such as Pyrodex® are the only propellant powders that are safe to use in a muzzleloading firearm. Oh, you will hear, or possibly read, advice to the contrary but don't follow it for you will never hear such advice from a competent source.

The reason for using a low yield powder such as Black Powder or Pyrodex is quite basic and it is related to firearm design. When used as a propellant, Black Powder or Pyrodex generates a relatively low breech pressure. Replica firearms, even with their modern steel barrels, are not designed to withstand the high pressures produced by a Smokeless Powder charge. Think about it for a minute and you will understand why. The ignition hole in a muzzleloading firearm is a direct port into the combustion chamber. This port is sealed only by the thin foil of a cap and weight of the hammer in the cap lock model. In the flint lock design this port is not sealed at all. The high pressure of a Smokeless Powder charge would destroy this ignition system and the gun itself.

To avoid any misunderstanding on the part of the reader let us explain further why Smokeless Powder cannot be used in a muzzleloader in any quantity. People who become interested in muzzleloading tend to research and to seek out some of the early journals which describe loading implements, components and powders of yesterday. **Reading these old books can be pleasurable. Never assume, however, that obsolete printed material has a safe application in today's world.**

In the early days of the breech loader there were powders manufactured which were called "Bulk Smokeless". These powders were measured by the volume and used interchangeably with Black Powder in early cartridge firearms. Even in their time these powders were never used in muzzleloading firearms.

Early "Bulk Smokeless" powders are not available today and, even if they were, their erratic performance (extreme variations in pressure) would not meet current industry standards. By modern standards, such early bulk powders were unsafe, even in the days of their use. The same type of misinformation exists concerning "duplex loads" or the mixing of Smokeless Powder with quantities of Black Powder. This practice was popular in the days of the early breech loaders. It was dangerous then and it is even more dangerous now for modern Smokeless Powders are far more complex in their composition.

All presently available Smokeless Powders are designed for use with metallic cartridges and shotshells in strong modern breech loading firearms. They should never be used in a muzzleloading firearm of any type. Some of these powders are "Black" in color making proper identification ex-

tremely important. It is the characteristic of Smokeless Powders to burn in a controlled manner within a given pressure range. Control of this pressure range requires the proper application of the powder to the specific purpose and in the quantities for which it was designed to be used.

→⚠WARNING←

Never use smokeless powder of any type or in any quantity in a muzzleloading firearm, and never mix powders. THE USE OF ANY SMOKELESS POWDER COULD RESULT IN A DETONATION OR EXPLOSION WHICH COULD CAUSE INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

Confine your use to Black Powder or an approved Black Powder substitute such as Pyrodex® and learn how to identify these powders and to use them correctly in your muzzleloading firearm. Here we will deal first with Black Powder for certainly it is the oldest of our propellant powders.

Black Powder is manufactured in four specific types or granulations for use in firearms. Generally speaking, it is the granule size which determines the appropriate use of Black Powder. Coarsest granulations are naturally the slowest burning and, therefore, work best in large caliber rifles and shotguns. Pistols or small caliber rifles require a finer or faster burning powder. The priming powder used in the pan of a flint lock is extremely fine and fast burning. The accompanying chart will help you to recognize the various granulations of Black Powder and to relate them to their proper use.

Black Powder Chart Showing Appropriate Use Of The Various Granulations

FG (commonly called Single "F")

The muzzleloading enthusiast finds little use for this very coarse black powder. Its use is restricted to the large bore (10, 8, 4 gauge) shotguns of yesterday.

FFG (commonly called Double "F")

This is a very popular for the larger (.45 to .58) caliber rifles. It is also used for 12, 16, and 20 gauge muzzle-loading shotguns. While it is not considered a pistol powder, it is sometimes used in very large caliber single shot pistols.

FFFG (commonly called Triple "F")

Due to its wide range of uses, Triple "F" is the black powder that is most commonly found on a dealer's shelf. It is used in all percussion revolvers, most single shot pistols, and most of the smaller (under .45 caliber) rifles. In a pinch, it can also be used to prime a flint lock.

FFFFG (commonly called Four "F")

The finest of all currently available black powders, Four "F" is best used for priming flint locks.
Due to its limited use, it is sometimes difficult to obtain.

When purchasing Black Powder be certain that it is in the original manufacturer's container and that its granulation or type is clearly marked on the label. Follow the storage and handling precautions which are on the label. If you have any questions concerning the safe handling or storage of Black Powder, write to the manufacturer of the powder. Additional information on powder storage is available from the National Fire Protection Association, P.O. Box 9146, Quincy, Mass. 02269. Or call 1-800-344-3555. Ask for pamphlet #495.

This instructional booklet lists a range of Black Powder loads which are proper for your Thompson/Center firearm. Use only the granulation of Black Powder that is listed for your specific caliber and model. You will note that a series of charges are shown in each instance. The lightest charge shown for your firearm is **the starting load**. The heaviest charge listed is **the maximum load**. Start with the lightest load and work upwards gradually until you reach your best performing load. **You will find that the best shooting load is well below the maximum charge listed.**

⚠ WARNING

Never exceed the maximum load listed for your particular firearm. OVERLOADS MAY CAUSE DAMAGE TO THE FIREARM AND INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

Pyrodex is a propellant powder designed for use in muzzleloading **cap lock** rifles, pistols and shotguns. Pyrodex is not a Black Powder. In accordance with the manufacturer's instructions, Pyrodex relates closely to Black Powder on a **volume to volume basis (not weight of charge)**. In other words, a black powder measure set to dispense 70 grains of black powder will, in fact, dispense approximately 52 grains of Pyrodex (by weight). **However, this lighter charge of Pyrodex will provide a charge which is ballistically similar to 70 grains of Black Powder. For all practical purposes, knowing the actual weight of a charge of Pyrodex may be informative, but not necessary. Your black powder measure will dictate the proper amount by its graduations according to volume.** If you want to know the actual comparative weight of a Pyrodex charge, contact the manufacturer, Hodgdon Powder Co. Inc., Shawnee Mission, KS. 66201.

Pyrodex does not ignite as easily as Black Powder and, consequently, it is not recommended for use in flint lock firearms. Flint locks require strong, positive ignition and should be charged and primed with Black Powder of the appropriate granulation only.

Chart Showing Various Grades Of PYRODEX® And Their Intended Use...

PYRODEX CTG
FOR BLACK POWDER CARTRIDGES. This powder was designed to be used in early model breech loading cartridge firearms (rifles, pistols & shotguns) which were intended for use with Black Powder only. **It has no application in Thompson/Center muzzleloading firearms.** It is listed here simply for your identification.

PYRODEX RS or PYRODEX SELECT (RS)
RIFLE & SHOTGUN POWDER. Designed for use in all calibers of percussion muzzleloading rifles and shotguns, this powder has a wide application.
It may be used with all Thompson/Center cap lock rifles and shotguns. **Pyrodex Select (RS)** may also be used in this application.

PYRODEX P
PISTOL POWDER. Designed for use in some percussion muzzleloading pistols and cap and ball revolvers, **this powder has application in the Thompson/Center Patriot Pistol. IT MUST NOT BE USED IN THE T/C SCOUT PISTOL.**

⚠WARNING

The reader should bear in mind that Thompson/Center does not manufacture or sell powder of any type. If there is ever a question as to the proper application of a particular powder or the safety of a given charge, write to the manufacturer of the powder. Adhere to the safe handling and storage precautions printed on the manufacturer's container and never purchase or use powders which have been removed from their original container. USE OF THE WRONG PROPELLANT MAY CAUSE INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE to property. For information on Pyrodex write to Hodgdon Powder Co., Inc., Shawnee Mission, Kansas 66202.

Ignition in a Muzzleloader

Considering that Black Powder ignites easily and burns almost instantaneously, it would not seem that ignition could create problems for the muzzleloading enthusiast. Yet, it was in the age of Black Powder that such terms as misfire, hangfire and flash in the pan found their origins. The problem, of course, is that the muzzleloader requires a great deal more care in its cleaning and handling than does a modern cartridge firearm (see section on "Cleaning Your Muzzleloading Firearm.")

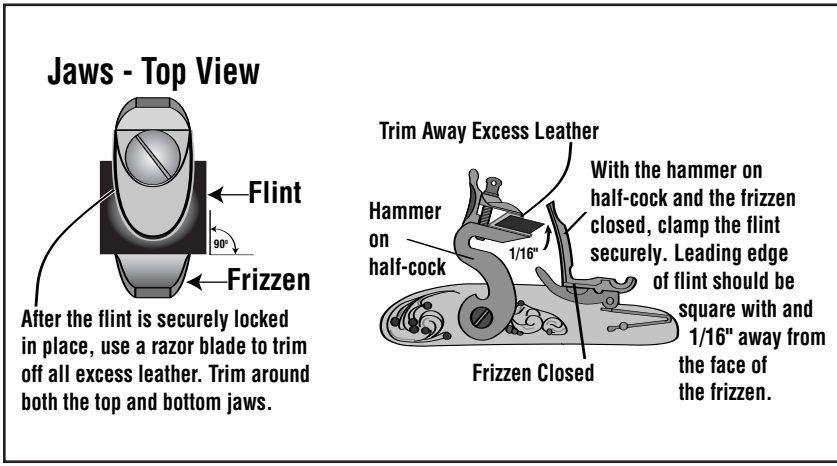
The propellant Black Powder charge may not ignite if the nipple port is blocked by fouling, if the charge is dampened by oil or water or if the powder and/or caps have been allowed to deteriorate by improper storage (exposure to extreme temperature changes and/or dampness). Maintain the high quality of your Thompson/Center muzzleloader by meticulous cleaning. Make certain that the chamber, nipple port, pan and flashhole are free from oil, water or powder fouling. An appropriate nipple pick is a handy tool for cleaning nipple ports and flashholes. Thompson/Center cap lock rifles, shotguns and pistols use a No.11 percussion cap or in some instances, a musket cap or #209 shotgun primer and it is important that the caps or primers fit properly on their respective nipples. Use only high quality caps or primers and make certain that the cap is pushed securely onto the nipple, or the primer securely into the primer pocket of the breech plug.

⚠WARNING

Pyrodex, while cleaner burning, is somewhat harder to ignite than Black Powder. If while shooting, you should experience a misfire, hold the firearm downrange and treat the firearm as if it could go off at any minute - it might. After waiting at least one minute, clean out the nipple port or flashhole using your nipple pick. Replace the priming charge(flint lock) or percussion cap (or primer) and try firing the rifle again. Continue to point the firearm downrange while clearing ignition ports and repriming to prevent injury in the event of a discharge. If, after several tries, the firearm still refuses to fire, then the charge must be deactivated and pulled (See section on "Pulling a Charge"). FAILURE TO FOLLOW THESE INSTRUCTIONS MAY CAUSE DAMAGE TO THE FIREARM AND INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

Flint lock models do require slightly more care and understanding than cap lock models but, if properly maintained, they are very reliable. The following line drawing shows how to position a flint in your rifle. Keep the flint 1/16" off the frizzen as shown and always trim off excess leather. Excess leather, especially if oil-soaked, can smolder and cause premature firing. The bevel on the flint itself may be positioned either up or down, though it is generally recognized that bevel down will produce maximum surface contact with the frizzen.

Before priming a flint lock, always push your flashhole pick (nipple pick) through the flashhole into the main powder charge. This ensures a clear passage for the flash. this is particularly important after repeated firings have fouled the flashhole.



Never Attempt To Change A Flint In A Charged Rifle

⚠WARNING

Never attempt to change a flint in a charged rifle. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY CAUSE DAMAGE TO THE FIREARM AND INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

Black Powder Pressures And Velocities

It is not the purpose of this text to delve deeply into the complex subject of chamber pressure or how it relates to all firearms. There are, however, some basic differences between a muzzleloader and a modern cartridge firearm. The reader must understand and respect these differences if he or she is to use their T/C muzzleloader in a safe manner.

⚠WARNING

Shooting muzzleloading firearms requires rethinking all that you have learned about firearms. It requires discipline to cope with the requirements of being a reloader and rifleman at the same time. It requires strict adherence to the instructions set forth in this booklet. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY CAUSE DAMAGE TO THE FIREARM AND INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

Odd as it sounds, your safe introduction to replica firearms requires a good deal of reverse thought. Our forefathers, trained in the use of muzzleloaders, had little difficulty using the products of their day or adapting to improved concepts as each new idea presented itself in a normal progression. The transition from flint lock to cap lock to breech loader each represented a step forward toward a more technically sophisticated era. Users of firearms had hundreds of years to adapt to these changes. In a single lifetime, no one was exposed to drastic change.

The muzzleloading enthusiast of today, however, has been trained in the use of cartridge firearms. To safely use a muzzleloader he must adjust his thinking backward - bridging hundreds of years of product development - in one giant step! Those reading this booklet must face the realization that the design of a muzzleloading firearm is rooted in tradition. In other words, a manufacturer of replica firearms, while he does have the benefit of using modern steel, proper heat treating and other technical advances, does not have the option of drastically altering a design which is centuries old. To use a muzzleloader safely requires considerable mental adjustment on the part of today's shooter.

Modern cartridge firearms depend heavily upon the strength of a brass cartridge case to seal the chamber and to safely confine expanding gas. Equally, it is the cartridge case which holds the bullet in a fixed position, confines the powder charge to a given volume and controls headspace. Modern cartridge firearms are designed to withstand high working pressures, since these same pressures make possible the high velocities, flat trajectories and increased range of modern ammunition. Yet, the modern firearm is no stronger

than the cartridge case that is used in its chamber. If the case ruptures, the primer punctures or if the headspace is altered, hot powder gases under extreme pressure will flow back through every seam in the action possibly destroying the firearm and causing injury to the shooter.

The propellant charge in a muzzleloader is poured directly into the barrel of the firearm and then compressed by the projectile in the chamber area. Think about this for a minute! Lacking the restraints and protection supplied by a modern cartridge case, the muzzleloading charge rests directly against the steel chamber walls and the face of the breech plug. The ignition port in a cap lock or flint lock is a simple hole leading directly into the chamber. Certain surfaces of the breech plug and nipple are directly exposed to chamber pressure. Judged by the design standards set for modern firearms, the muzzleloader is extremely primitive. Its design will not tolerate high pressure.

The following text applies to the use of your Thompson/Center muzzleloader with Black Powder or Pyrodex charges properly restricted to the loading information shown in this booklet. It deals with those conditions which singularly or cumulatively can affect muzzleloading pressures.

For years it has been assumed that it is impossible to overload a firearm using Black Powder. The theory was that only a certain portion of a heavy Black Powder charge will burn and that the remaining powder is blown out of the bore in unburned condition. This thinking led to the belief the pressures created by a Black Powder charge would reach a certain (undetermined) range and climb no higher. **Our testing indicates that this theory is completely unfounded.** As heavier and heavier charges were loaded, our pressure readings climbed accordingly. At no time was there any indication of a leveling off of pressure. **Unreasonably heavy charges of Black Powder or an approved Black Powder substitute, such as Pyrodex can be dangerous. Restrict yourself to the loads listed in this booklet and start with the lightest load shown for your particular model and caliber. Bear in mind that the following conditions can be cumulative. If you load the heaviest charge listed without following instructions (working slowly upward), then other conditions such as powder fouling, hard projectiles and improper loading, can carry you well beyond the maximum safe pressure range of muzzleloading firearms.** All propellant powders (depending upon their design and composition) will function most efficiently within a given pressure range. Our testing indicates that the Black Powder used in our testing operated most efficiently in or near the 7,000 P.S.I. range. In other words, those charges which are approximately midway in our loading charts recorded the highest velocity in relation to the lowest pressure. **Heavier loading showed marked increases in pressure for only minor gains in velocity and were less accurate.**

Fouling in the bore of a muzzleloader will increase pressure. With Black Powder, consecutive shots without cleaning will display rapid shot-to-shot increases in pressure, a variation in velocity and a resultant decrease in accuracy. As Black Powder fouling builds in the bore of your muzzleloader, loading

will become more difficult until it reaches the point where it becomes impossible to properly seat the projectile.

Different types of lubricants used in cleaning, or in conjunction with lubing patched round balls and conical projectiles, will produce different degrees of fouling when they react to the combustion of Black Powder. Generally, petroleum based (or synthetic) lubricants will produce far more fouling and cleaning the bore between shots will be necessary in order to maintain consistent pressures, or ease the loading process from shot to shot. A natural lubricant, such as T/C's Natural Lube 1000 Plus, will season the bore from shot to shot, drastically reducing fouling. The shooter will not have to clean between shots and pressures will remain consistent.

Muzzleloading projectiles must be cast from pure lead. Many lead alloys, such as those found in Linotype and wheel weights, resemble lead but will cast hard, oversize projectiles. Such projectiles will prove extremely difficult to load and raise pressures even in a clean bore (see section on "Bullet Moulds"). Never use lead alloys to cast muzzleloading projectiles.

Any increase in bullet weight with a given powder charge will always increase pressure. If a shooter has been loading a patched round ball and then decides to use the heavier Maxi-Ball or Maxi-Hunter he must go back to the starting charge and work up slowly to the best performing load.

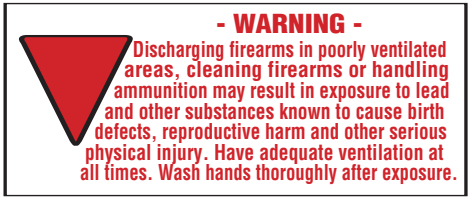
Improper loading can lead to a serious and dangerous pressure condition. To function properly the muzzleloading projectile (Maxi-Ball, Maxi-Hunter or Patched Round Ball) must be seated tightly against the powder charge. **Never fire a muzzleloading firearm if the ball or bullet is only part way down the barrel.** Mark your ramrod, as explained in the "Loading Section", and follow instructions carefully.

Variations in patch lubricants and bullet lubricants will effect velocity and accuracy, as well as having an effect on the amount of fouling which develops. Use of T/C's Natural Lube 1000 Plus, an all natural lubricant, developed far less fouling, and permitted extended reloading between shots without the necessity to clean between these shots. Velocity and accuracy improved over other lubricants used.

→⚠WARNING←

Hammer blow back (hammer driven back to the half-cock position when the shot is fired) should always be viewed as an unsafe pressure condition. Clean the bore and reduce the charge immediately! EXCESSIVE PRESSURE OR OVERLOADS MAY CAUSE INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY. If the condition persists or is encountered when using any of the loads listed in this booklet, return your firearm (with a letter of explanation) to our Service Department.

The preceding text is offered in an attempt to guide the novice and to help him obtain optimum results from his muzzleloading firearm. The reader must bear in mind that a muzzleloader is not capable of developing the high velocity or handling the high pressures of a modern firearm. Restricted to a primitive design, the muzzleloading hunter takes game by depending upon a large caliber heavy bullet traveling at a mild velocity.



Thompson/Center Lead Bullet Moulds

⚠WARNING

When using T/C moulds, follow the instructions supplied with the mould block.

Lead is a potent, systemic poison that serves no known useful function once absorbed by your body. Lead can be absorbed into your body by inhalation (breathing) and ingestion (eating). Taken in large enough doses, lead can kill you in a matter of days. Even in small quantities, lead dust, fumes or mist can be inhaled or ingested and cause serious injury in the respiratory system. Children are especially vulnerable to this.

Never allow children to be present in the room where you are casting bullets. Ensure that your work area is well ventilated so that hazardous vapors are ported away from you.

Lead can also be absorbed through your digestive system if lead gets in your mouth and is swallowed. If you handle food, cigarettes, chewing tobacco, or make-up which have lead on them, or handle them with hands contaminated with lead, this will contribute to ingestion. Always be sure to wash your hands after handling lead.

No eating, drinking or smoking should take place in any area you are working with lead.

When casting lead bullets, use only pure lead (PB). Wear long sleeves, safety glasses, gloves, and a canvas apron to protect you against lead splatters. Molten lead will react violently if it comes into contact with water or other liquids. The molten lead can erupt with steam and hot lead spewing in all directions. Keep your bullet casting furnace away from possible sources of water such as the condensation from overhead pipes. Be certain that any new lead being added to the old lead is absolutely dry.

FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN INJURY AND/OR DEATH TO THE BULLET CASTER OR BYSTANDER, AND DAMAGE TO PROPERTY.

Muzzleloading projectiles must be cast from pure lead. Most lead alloys commonly found in Linotype and wheel weights contain antimony. While such alloys are very desirable for fixed cartridge projectiles, they are impractical for muzzleloading use. Alloys containing antimony are harder and lighter than pure lead. Consequently, projectiles cast from such materials will be overly hard (depending on the amount of antimony present) and somewhat lighter than the bullet weight listed for the mould. The biggest problem, however, is

that **antimony alloys have less a shrinkage factor than pure lead. Antimony alloys produce an extremely hard, over size projectile which is very difficult to load properly. Pure lead can be obtained from a plumbing supply house.**

The reader must realize that Thompson/Center has no control over cast projectiles, bullet moulds or patch material offered by other sources. Before using such items, the user must assure himself that the components or moulds are proper and safe to use with our firearms. If you have questions concerning the correctness of a product or component, write to the Customer Service Department, Thompson/Center Arms, Farmington Road, P.O. Box 5002, Rochester, New Hampshire 03866.

For bullet specs and loading data, refer to page 68 of this booklet.

Patching The Round Ball

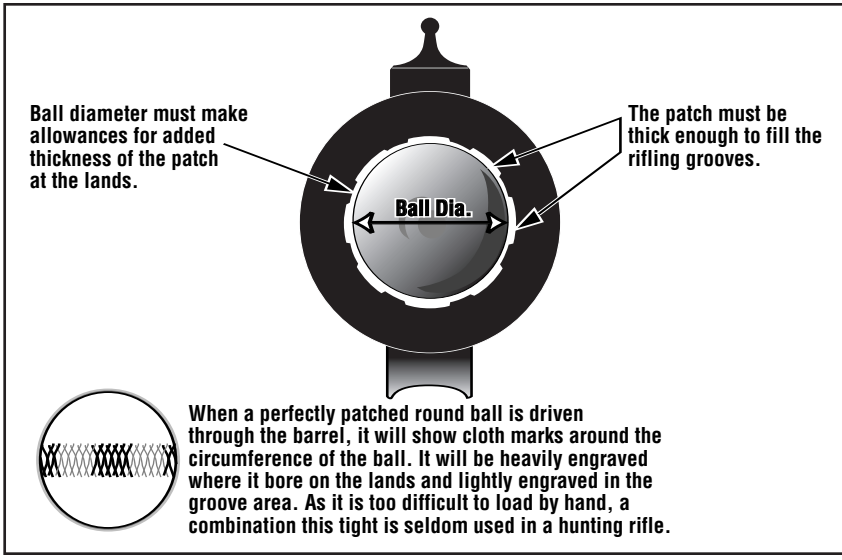
⚠WARNING

To shoot properly, the round ball must be tightly patched. If the round ball is not tightly patched, it may, by movement of the firearm, work its way off the powder charge and up the bore. UNDER SUCH A CONDITION THE BALL WILL ACT AS A BARREL OBSTRUCTION AND FIRING CAN CAUSE INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

The novice at muzzleloading is often perplexed by the problem of trying to figure out the correct patch and ball combination for his firearm. More often than not, he ends up using a loose fitting combination which loads easily but leaves something to be desired in the way of accuracy and safety.

Accuracy with a muzzleloader is based on a paradox: an undersize ball is spun by rifling that it never touches! It is the job of the patch to hold the ball tightly against the powder charge until firing and to securely grip both the ball and the rifling so as to transfer the spin of the rifling to the projectile itself. If the patch fits too loosely, the ball will not spin and its flight will be unstable. **If the patches vary in thickness, or manner of loading, or the amount of lubricant they carry, shot to shot stability and accuracy will be affected.**

To perform its task properly, the patch material must be extremely tough and it must be under considerable compression- not only in the area where it bears on the lands but also at the bottom of each groove.



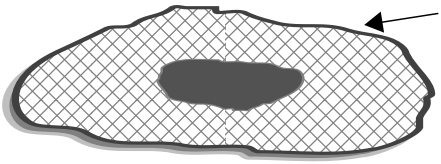
For target shooting, an extremely tight fitting combination of patch and ball is sometimes used. Often a bullet starter, shaped to the contour of the ball, is employed and a hammer is used to start the projectile. Such a combination is, naturally, too difficult to load under field conditions and, therefore, most hunting rifles use a slightly looser fit.

T/C Patch Material is available (unlubricated or prelubricated) in sizes which relate directly to the proper round ball diameter and barrel dimensions of each specific caliber. (See the current T/C catalog). T/C Patch Material represents an optimum compromise between tight fit and loadability. Bear in mind that the ball must be seated firmly against the powder without excessive battering or flattening of the projectile itself. To obtain accuracy it is essential that the front of the ball remain round. When used with the proper size (lead) round ball, T/C patch material allows the shooter to load under field conditions and obtain fine accuracy.

When targeting a muzzleloading firearm, it is wise to recover a few of the fired patches and to check their condition. Fired patches can usually be found lying on the ground about 10 yards in front of the muzzle. The following illustrations will help you to determine whether your patch and/or lubricant is doing its job.

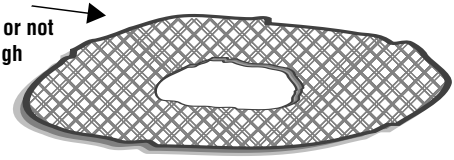
Lubricant is required to ease loading and prevent the patch material from burning. The “spit” patch (wet with saliva) should be avoided as it will dry out

and cease to function as a lubricant. Thompson/Center recommends the use of either our Maxi Lube or our Natural Lube 1000+ . It should be rubbed into the patch material with the fingers. Saturation of the patch material should be complete but not excessive.



Efficient Patch
A patch which is working correctly can be found intact. The area behind the ball which is exposed to burning powder will be blackened .

Burned Out Patch
If the patch material is too thin, frail, or not properly lubricated, it may burn through upon firing. The patch shown here illustrates this condition.



⚠WARNING

Do not use any type of plastic patch or sabot with a ROUND BALL in any Thompson/Center firearm. When such patches or sabots are used, it is possible, even under optimum tolerance conditions, for the ball and patch or sabot to disengage themselves from each other. This results in the ball moving forward (leaving air space between the patch or sabot and the ball). UNDER SUCH CONDITIONS, THE BALL WILL ACT AS A BARREL OBSTRUCTION AND FIRING CAN RESULT IN INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

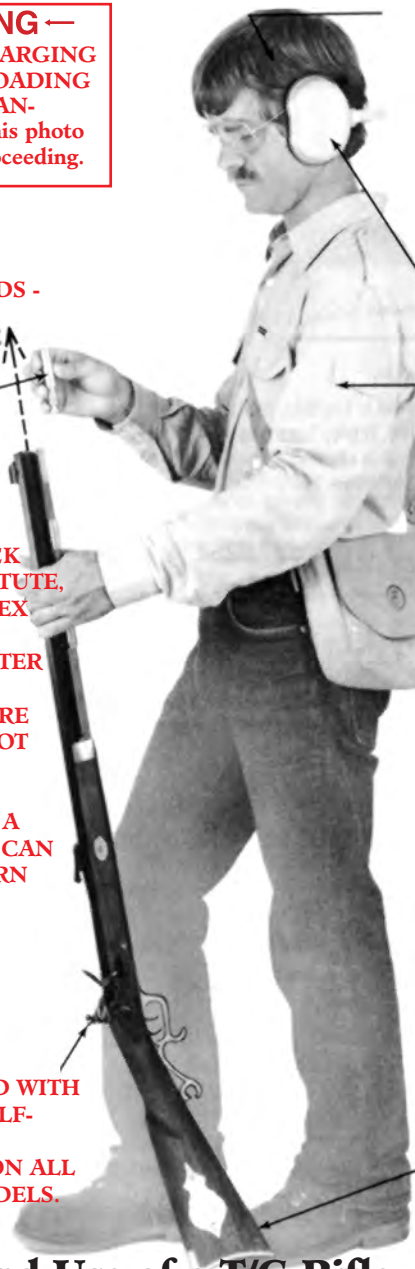
⚠WARNING

Various manufacturers have introduced plastic sabots which are used with pistol bullets in muzzleloading firearms. Thompson/Center Arms and others have tested these sabots. Satisfactory results have been obtained when following the instructions as provided by the manufacturer of the sabots. It is important to note that only those bullets recommended by the manufacturer of the sabot should be used. Sabots must not be used with round balls.

For specific loading information on Thompson/Center's Sabots see the Loading Section in this manual.

Rifle Section

⚠WARNING
IMPROPERLY CHARGING YOUR MUZZLELOADING RIFLE CAN BE DANGEROUS. Study this photo carefully before proceeding.



STAY MENTALLY ALERT. THIS TASK REQUIRES YOUR COMPLETE ATTENTION.

BARREL HELD SECURELY WITH MUZZLE UPWARDS - DIRECTED AWAY FROM FACE AND BODY.

EYES, EARS & ARMS PROTECTED.

USE BLACK POWDER OR AN APPROVED BLACK POWDER SUBSTITUTE, SUCH AS PYRODEX ONLY. USE A THOMPSON/CENTER GRADUATED POWDER MEASURE ONLY AND DO NOT OVERCHARGE. NEVER CHARGE DIRECTLY FROM A POWDER FLASK, CAN OR POWDER HORN

DO NOT SMOKE WHILE LOADING ANY MUZZLE-LOADER

KEEP COMPONENTS & RESERVE POWDER WELL AWAY FROM FIREARM.

BUTT RESTING FIRMLY ON GROUND SUPPORTED BY SIDE OF FOOT TO PREVENT SLIPPING.

RIFLE UNPRIMED WITH HAMMER ON HALF-COCK.
FRIZZEN OPEN ON ALL FLINT LOCK MODELS.

Loading And Use of a T/C Rifle

Understanding The Various Rifle Trigger Mechanisms

This section applies to T/C rifles only. It does not apply to the Patriot Pistol with double set triggers which operate differently. For information on the Patriot Pistol, see the section in this manual pertaining to the Patriot Pistol.

Depending upon the model, Thompson/Center muzzleloading rifles are equipped with two different types of trigger mechanisms (Single Trigger or Double Set Triggers). Single trigger models are non adjustable and require little explanation. With these models, the rifle is fired simply by placing the hammer in full-cock position and squeezing the trigger.

Double set trigger models will function either as "double-set" or "single stage". In other words, you need not set the rear trigger to fire the rifle. The rifle will fire simply by pulling the hammer to full-cock position and squeezing the front (firing) trigger. Always use the trigger in this "single stage" manner when hunting game.

⚠WARNING

The purpose of the set (rear) trigger is to decrease the amount of creep in the front trigger and to lighten trigger pull when the rifle is being fired from a rest position and at a stationary target. Always be certain that the rifle is in a rest position with the muzzle on target before you set the trigger. When ready, squeeze the rear trigger hard until an audible "click" is heard. The front trigger will now have a very light trigger pull so be extremely careful. The use of this device is optional and it should be used with discretion and common sense. Use the set trigger only when shooting from a bench at a stationary target. Never set the triggers while hunting or shooting off-hand. FAILURE TO FOLLOW THESE RULES MAY CAUSE AN ACCIDENTAL DISCHARGE, RESULTING IN INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

ADJUSTMENT OF THE SET TRIGGER

The adjustment screw located in front of the rear trigger controls the amount of set trigger engagement. This adjustment screw has no affect on single stage trigger pull! Single stage trigger pull is non-adjustable.

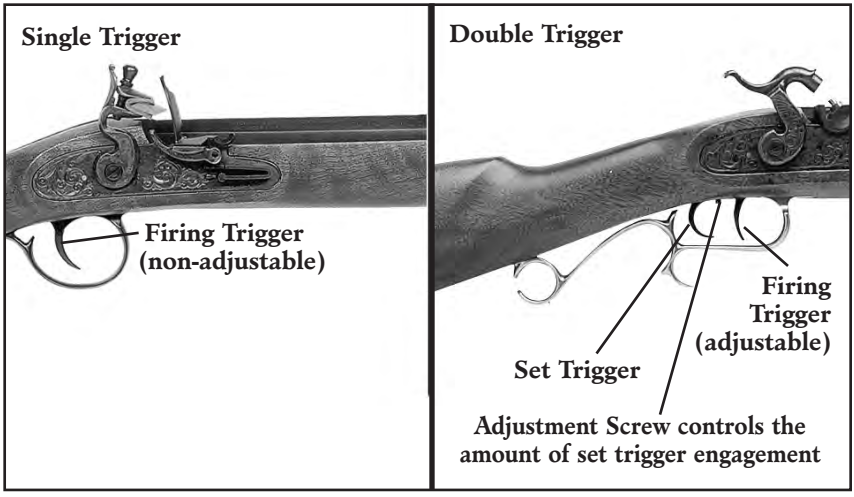
The set triggers on T/C rifles are adjusted to our production standard before shipment. Triggers are adjusted to what we feel is an optimum let-off travel.

In order to check the adjustment for let-off travel, the following procedure should be used: **With the rifle uncharged and unprimed,** place the hammer

in half-cock position. Set the rear trigger. With the trigger "set", carefully turn the adjustment screw clockwise until the trigger mechanism "snaps" into "unset" position. Stop turning the instant the mechanism "snaps". **Do not turn the adjustment screw beyond this point for it marks the instant of total set trigger disengagement.** Once the mechanism "snaps", **turn the adjustment screw counter clockwise one full turn.**

⚠ WARNING

This is the minimum setting for let-off travel with the trigger set. If you require additional let-off travel, continue turning the screw counter clockwise until you reach the desired engagement. In no event should the engagement be set at less than one full turn counter clockwise from the point of total set trigger disengagement. IMPROPER USE AND/OR IMPROPER ADJUSTMENT OF THE SET TRIGGERS CAN RESULT IN AN ACCIDENTAL DISCHARGE WHICH CAN CAUSE INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.



Charging And Priming The Muzzleloading Rifle

⚠WARNING

If you have not read this manual in its entirety, do so before attempting to load YOUR firearm. IMPROPER LOADING AND USE OF YOUR FIREARM CAN CAUSE INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY

The photo on page 26 pictures a shooter in the process of loading a muzzleloading rifle. **Study this photo carefully and read all of the captions before you proceed to charge your rifle.**

Before charging, insert the ramrod into the barrel and tap it up and down several times. You will hear the metal cap of the ramrod "clink" as it contacts the steel face of the breech plug. Note exactly how far the ramrod goes into the barrel and how much of the rod extends beyond the muzzle when the barrel is uncharged. Commit this exercise to memory and practice it every time that you handle a muzzleloading firearm. Before you attempt to load it - before you store it away - before you hand it to a friend or leave it unattended, **always check to ensure that the firearm in uncharged.**

The next precharging exercise is to wipe the bore free of all oil. **Be meticulous with your cleaning - for the presence of any amount of oil in the barrel or chamber can dampen the powder charge and cause the rifle to misfire or hangfire (see section on "Cleaning").** Point the muzzle in a safe direction and snap several caps on the nipple before charging. This will ensure ignition and clear away any oil that may have accumulated in the nipple port.

If your rifle is a flint lock model, open the frizzen and wipe the pan area clean with a soft dry cloth. Run your frizzen pick or nipple pick into the flashhole to ensure that it is free of fouling and debris. **Do not snap off a priming charge before charging a flint lock as there is no indication that this practice actually helps to clear away oil and residue from the chamber.**

Adjust the powder measure to the desired charge and fill it with Black Powder or an approved Black Powder substitute, such as Pyrodex®. To achieve accuracy, consistency in the powder charge is required. Fill the measure exactly the same each time.

The rifle is now ready to be charged. **With a cap lock rifle, place the hammer in half-cock position. With a flint lock rifle, place the hammer in half-cock position and open the frizzen (striker plate forward). The frizzen must be open and the striker plate in a forward position to guard against accidental dropping of the hammer which can spark ignition even in an unprimed rifle.**

Set the rifle on its butt and **hold the muzzle away from your face and body as pictured on page 26.**

Pour the measured charge down the barrel and strike the side of the barrel several sharp raps with the heel of your hand. This will settle the powder into the chamber area of the barrel.

IF YOU ARE LOADING A ROUND BALL WITH PATCH PROCEED AS FOLLOWS:

Lay your lubricated cloth patch over the muzzle and place the round ball in the center of the patch. Uniformity is important. Be certain that the patch is centered and that the weave of the cloth is placed exactly the same each time. Also, the sprue mark (flat section on a cast ball) should be in the up position and carefully centered.

Place the stubby end of the bullet starter on the top of the ball, as shown in Photo "A", and apply pressure until the ball starts into the barrel. A tightly patched ball will require a good deal of pressure and it starts suddenly. It will usually "snap" smartly into the barrel flush with the muzzle.

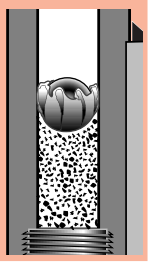
PHOTO A
Start the ball with the stubby end of the Bullet Starter. A tight fitting combination will load smartly. Never attempt to start the ball with the ramrod. Used improperly the ramrod will break and possibly injure your hand.

Once the ball is started, reverse the bullet starter, as shown in Photo "B", and place the rod end on the top of the ball. With a sharp blow of the hand, drive the ball down about four inches into the barrel. The ball and patch have now been formed to the rifling and will (if the bore is not fouled) load easily from this point.

PHOTO B
Drive the ball down into the barrel with one sharp blow. Never attempt to start the ball with the ramrod. Used improperly the ramrod will break and possibly injure your hand.

Using the ramrod, push the ball the remainder of the way down the barrel until it contacts the powder charge. **Seat the ball firmly against the powder charge but do not pound on it.** Pounding on the ramrod will deform the ball. A deformed ball will not shoot accurately. Load and seat each ball with exactly the same pressure, shot after shot. **With successive shots, fouling in the bore may build up in sufficient quantity to make loading more difficult, or even impossible. When using a petroleum based lubricant, the buildup will be much more apparent, and cleaning between shots will be necessary. When using an all-natural lubricant such as T/C Natural Lube 1000+ in keeping with the "all natural approach, " this buildup will be far less, and cleaning between shots will not be necessary. BUT, if for any reason you experience progressively more difficult loading due to buildup of fouling, you must clean the bore, or safe loading will become impossible. See the section on "Cleaning" and the section on "Pulling a Charge."**

PHOTO C
Use the ramrod to push the ball down the barrel and to seat it against the charge.



Once the ball has been loaded, **it is necessary to carefully mark your ramrod at the muzzle.** A reference mark on the ramrod will allow you to ensure that all the future projectiles are seated to the same depth (see Photo "D").

If you are loading a MAXI-BALL® or MAXI-HUNTER® proceed as follows; - Do not use a cloth patch with these projectiles. Wipe the oil from the bore and follow the precharging instructions given for your particular style of rifle (cap lock or flint lock). Use Black Powder or Pyrodex® only.

PHOTO D
Mark the ramrod at the muzzle. Use a marking pencil to mark the ramrod. This will allow you to ensure that each ball is seated to the same depth. Erase and remark each time you adjust the charge or change projectiles. when you arrive at the desired charge, cut a clean notch in the ramrod so you will have a permanent reference mark. This reference mark will serve as an indicator only with the charge and projectile used when it was marked. When the charge and/or projectile change, the reference mark will also change.

Start with the lightest charges listed in our loading chart for your caliber. Use T/C graduated powder measure and measure each charge carefully. Lubricate these bullets with a quality bullet lubricant like T/C's Natural Lube 1000+ Bore Butter as shown in Photo "E". **The Maxi-Ball and Maxi-Hunter are designed to be shot as cast (not sized before loading).** Sizing will alter the diameter of the forward bearing band. This destroys the accuracy of the projectile and dangerously decreases its diameter (a loose fitting projectile can move off the powder charge). Study Photo "E". Note how the forward bearing band graves to the rifling when loading. The base of the bullet upsets (increases in diameter) on firing causing it to fill the grooves thus stabilizing the projectile.

Hold the rifle as pictured on page 26 and pour your measured powder charge into the barrel. Start the lubricated bullet into the bore with your fingers. The base of the bullet and the rear bearing band will enter the bore easily with finger pressure. The projectile will hang-up when the forward bearing band reaches the muzzle. The diameter of the forward bearing band is somewhat larger than the rest of the bullet and must be engraved to the muzzle to ensure a snug fit. Start the Maxi-Ball or Maxi-Hunter into the muzzle with the stubby end of the bullet starter. Reverse the starter and drive the bullet down about four inches into the barrel with the rod end of the starter. Now use the ramrod to push the projectile the remainder of the way down the barrel until it contacts the powder charge. **As with the round ball, the Maxi-Ball and Maxi-Hunter must be seated firmly against the powder charge.** Seat the bullet with exactly the same pressure shot after shot. Study Photo "F".
Remove the ramrod before you prime the firearm.

PHOTO E
FORWARD BEARING BAND (SLIGHTLY OVER BORE DIA.) GRAVES TO RIFLING WHEN LOADING. The BASE & REAR BEARING BAND ARE SLIGHTLY UNDER BORE DIAMETER TO ENSURE THAT THE BULLET STARTS EASILY AND ALIGNS PROPERLY. The base of the bullet enters the bore (straight) with only thumb pressure. Pressure of the bullet starter graves the forward bearing band to the rifling as it enters the muzzle.

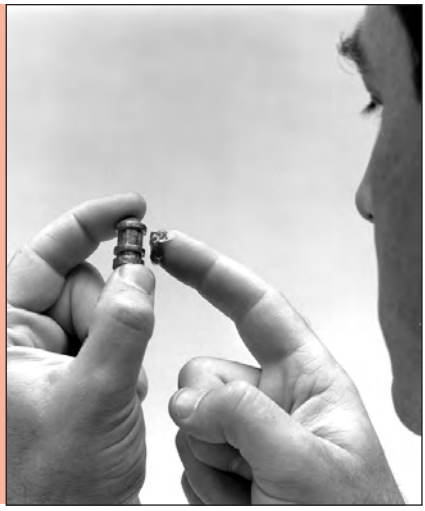
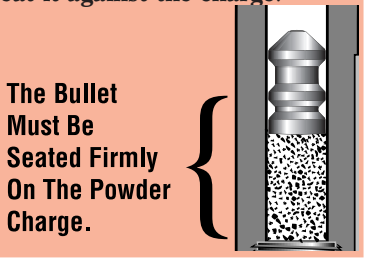


PHOTO F
Use the ramrod to push the bullet down the barrel and to seat it against the charge.



After the bullet is seated tightly against the charge, mark your ramrod in the same manner as previously instructed when loading the round ball.

⚠WARNING

Never fire a muzzleloader unless you are sure the projectile is firmly seated on the powder charge and the ramrod has been removed from the bore. Shooters should bear in mind that the muzzleloading projectile is not crimped into position as is the fixed cartridge projectile. If a patched round ball or bullet does not fit tightly then jarring or movement of the firearm can cause it to move forward. If the rifle is fired when a projectile is forward or off the powder charge,or the ramrod is still in the bore, then the projectile or ramrod may act as a bore obstruction. This can cause a ruptured or burst barrel. A RUPTURED OR BURST BARREL MAY CAUSE INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY. If, due to fouling, a bullet or ball becomes lodged part way down the barrel, the rifle must be disassembled and the charge removed. See section on "Cleaning". Also see section on "Pulling a Charge".

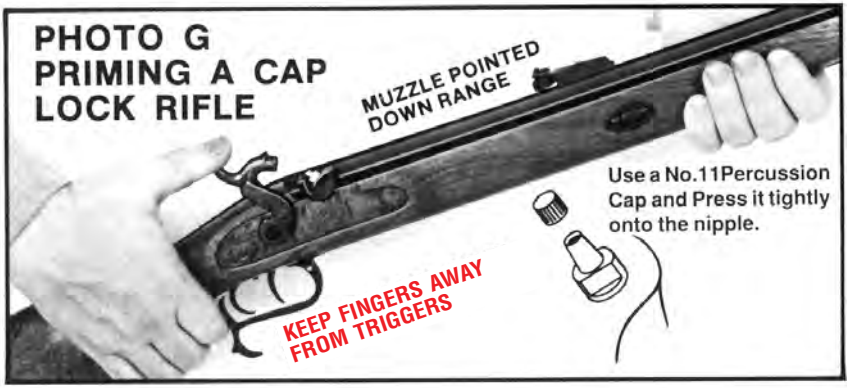
Priming Your Charged Muzzleloading Rifle. If you have followed the preceding instructions your muzzleloading rifle will now be charged with Black Powder or an approved Black Powder substitute, such as Pyrodex® and a round ball, Maxi-Ball® or Maxi-Hunter® will be firmly seated against the powder charge. **Your ramrod will be marked to the exact seating depth allowing you to ensure that each future projectile is seated in the same careful manner. The hammer of your rifle will be in half cock position,and, if it is a flint lock model, the frizzen will be open.**

⚠WARNING

Do not prime the rifle until you are actually ready to fire and you have double checked to ensure that the ramrod has been removed from the bore. Thompson/Center does not recommend priming the rifle until the instant before actual firing. Carrying a charged, primed rifle and relying upon the half-cock notch to act as a safety can be dangerous. ACCIDENTAL DISCHARGE IS A CONSTANT HAZARD WHICH, IF IT OCCURS, CAN CAUSE INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY. The only safe way to guard against an accidental discharge is to carry a cap lock rifle unprimed with the hammer on half cock, and a flint lock rifle with the frizzen open, unprimed, and with the hammer at half cock. Keep the muzzle pointed downrange away from yourself, bystanders or property.

Priming

WHEN YOU ARE READY TO FIRE YOUR CAP LOCK, PRIME IT AS SHOWN IN PHOTO "G".



Hold the cap lock rifle firmly with the muzzle pointed in a safe direction and **pull the hammer back to full-cock position**. Press the No. 11 Percussion Cap down tightly onto the nipple and the rifle is ready to fire. **RAISE THE RIFLE AND FIRE THE SHOT!**

→⚠WARNING←

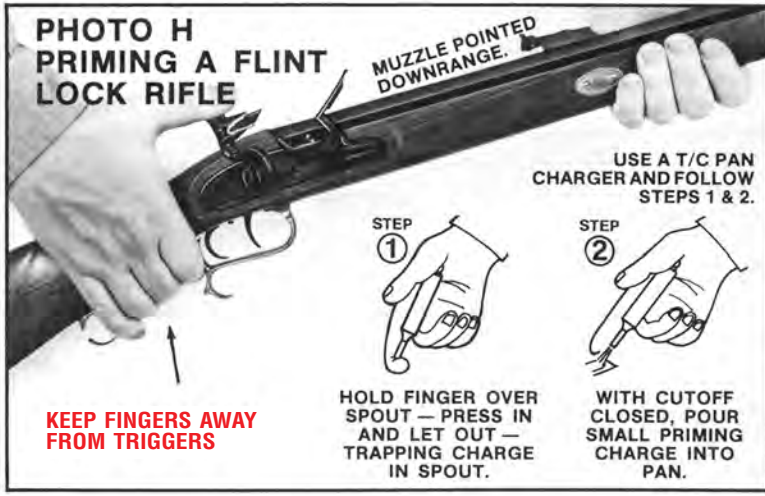
When firing, hold the gun tightly against the shoulder allowing your body weight to absorb and buffer the force of recoil. AN IMPROPERLY HELD FIREARM CAN "KICK" UPWARDS CAUSING FACIAL INJURY AND/OR BRUISING.

If you decide not to fire, remove the cap from the nipple. Use a suitable decapping tool like T/C's Decapper. Hold your thumb on the hammer so that it can not drop freely and pull the trigger. Allow the hammer to move forward slowly until it rests on the nipple. **Return the hammer to half-cock position.**

→⚠WARNING←

If the rifle is no longer going to be used, uncharge it by firing it into a suitable backstop or pull the charge before returning it to your vehicle, camp or home (see section on "Pulling a Charge). AN ACCIDENTAL DISCHARGE CAN CAUSE INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

WHEN YOU ARE READY TO FIRE A FLINT LOCK, PRIME THE RIFLE AS SHOWN IN PHOTO "H"



Hold the flint lock firmly with the muzzle pointed in a safe direction and **pull the hammer back to full-cock position.** Use a T/C Pan Charger (following Steps 1 and 2) to fill one-half the pan with FFFFG Black Powder. Close the frizzen and the rifle is ready to fire. **RAISE THE RIFLE AND FIRE THE SHOT!**

⚠WARNING

When firing, hold the rifle tightly against the shoulder allowing your body weight to absorb and buffer the force of recoil. AN IMPROPERLY HELD FIREARM CAN "KICK" UPWARDS CAUSING FACIAL INJURY AND/OR BRUISING.

If you decide not to fire, open the frizzen and dump the priming charge. Leave the frizzen open. Hold your thumb on the hammer so that it can not drop freely, and pull the trigger. Allow the hammer to move slowly forward until it reaches full down position. **Return the hammer to half-cock position.**

⚠WARNING

If the rifle is no longer going to be used, uncharge it by firing it into a suitable backstop or pull the charge before returning it to your vehicle, camp or home (see section on "Pulling a Charge). AN ACCIDENTAL DISCHARGE CAN CAUSE INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

Summary of Charging & Priming Your Muzzleloader

1. Check to ensure that the firearm is uncharged.

2. Wipe the bore free of all oil.

3. Pointing the muzzle in a safe direction, snap several caps on the nipple clearing away any oil/residue which may be in the nipple channel. Dry the flash pan completely in a flint lock model.

4. Place hammer in half-cock notch. Keep the Frizzen open on the flint lock models.

5. Set rifle on its butt, holding muzzle away from your face and body.

6. Pour pre-measured powder charge down the bore and settle the powder.

7. Load round ball by placing patch over muzzle, centering it, and placing ball on top, or load bullet by placing it in muzzle straight.

8. Drive patched ball or bullet into muzzle with appropriate short starter.

9. Push the patched ball or bullet the remainder of the way down the bore using short strokes with the ramrod.

10. Firmly seat the projectile on the powder charge. Check the ramrod to ensure that the bullet and charge are seated to the proper depth.

11. Return ramrod to proper location in thimbles under the barrel.

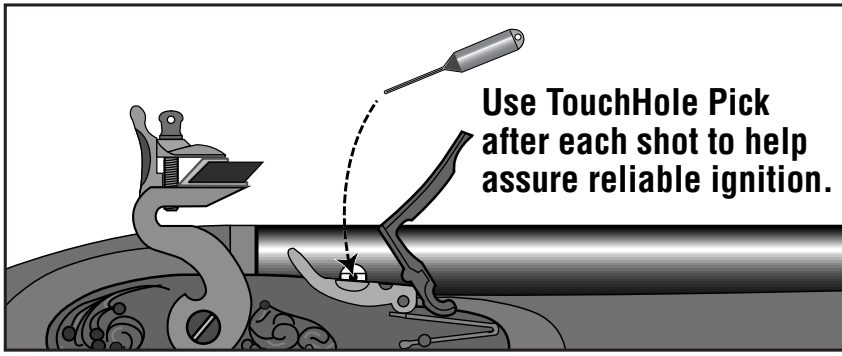
12. Carefully place a Number 11 Percussion Cap, Musket Cap or 209 Primer on the nipple immediately prior to aiming and shooting, or prime flash pan and close the frizzen.

Loading and Practical Tips for the Flint Lock Rifle

⚠WARNING

Never prime your flint lock until you are ready to fire it. Your flint lock should remain unprimed (absent of any priming powder in the pan) until the instant before firing. After you prime your flint lock, your full concentration should be on the target and the act of firing. FAILURE TO FOLLOW THIS RULE CAN RESULT IN AN ACCIDENTAL DISCHARGE WHICH MAY CAUSE SERIOUS INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

T/C recommends that you carry the flint lock with the touchhole pick inserted into the touchhole, the pan empty, the frizzen closed, and the hammer at half cock. Tying a thong to the touchhole pick and attaching it to the trigger guard will prevent its loss.

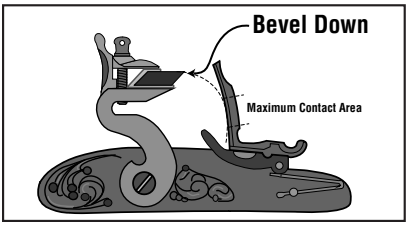


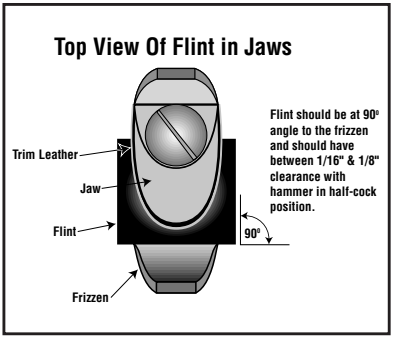
Many pioneers and frontiersmen often used a feather this way; inserting the quill into the touch hole, with the frizzen closed, holding it in place. When it was time to prime, they opened the frizzen, pulled the quill and primed the pan. Fill one-half the pan with FFFFG (4F) black powder.

Flint Installation - Reliable ignition of any flint lock is of utmost importance. Many variables affect a flint lock's ignition and need to be addressed to provide reliable ignition. But, then again, that's what makes using a flint lock so much fun. Here are some factors which will affect ignition, and some tips to eliminate as many of the "demons" as possible for positive ignition.

1. Insert your flint into the jaws of the hammer, BEVEL DOWN. Make sure that the flint is cushioned by a leather pad, surrounding the end of the flint which goes into the jaws. The flint should be held firmly in the jaws, and, bevel down, it should come to within 1/16" to 1/8" from the face of the frizzen when

the frizzen is closed and the hammer is at half-cock. If it is inserted all the way into the jaws and it comes in contact with the face of the frizzen, your flint is too long - you need to acquire a shorter one. If it does not come to within 1/16" to 1/8" from the frizzen when fully seated, your flint can be moved forward in the jaws and then tightened securely.





Make sure the flint is aligned in the jaws perfectly square so that the edge of the flint is perfectly horizontal across the face of the frizzen. This will ensure maximum contact of the entire flint edge with the face of the frizzen.

When the flint is well secured in the jaws, bevel down (see diagram), you will get maximum surface contact with the frizzen when the flint strikes the face of the frizzen. The higher the initial contact, the more surface area is used to create the sparks. The more sparks there are, the better the ignition potential.

2. After the flint is securely locked in place, trim off the excess leather around both the top and bottom jaws of the lock.

3. Make sure the surface of the frizzen, the pan, flint, and the leather cushion is free of any oil or lubricant, and as dry as possible. Never wipe down these parts with any type of lubricant. If, in the process of cleaning your rifle, a lubricant comes in contact with one or all of these parts, use a good degreaser to remove this oil. Dry is the key to good ignition.

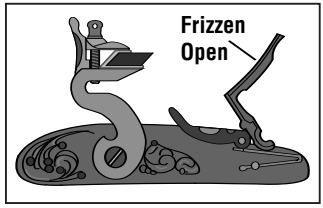
4. Sharp flints are a must.

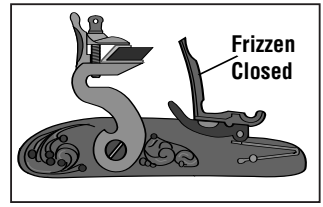
5. The ignition time of a flint lock is slower than a cap lock. Hold your sight picture steady, despite that "flash" that is going on in the pan. Its a test of true marksmanship to remain on target during the ignition of the priming powder. A flinch at this time will mean you are off target when the main charge goes off.

6. Use your touch hole pick after each shot. When the flint lock discharges, powder and fouling is also blown out the touch hole. This debris must be cleared before loading the next projectile. A partially or totally plugged hole will result in a misfire or "flash in the pan".

7. Always wear eye protection and hearing protection. Protect your arms from flying particles as well, by wearing a shirt with long sleeves. Those wearing long

hair or beards should use extra caution when firing a flint lock. A flint lock can torch hair.



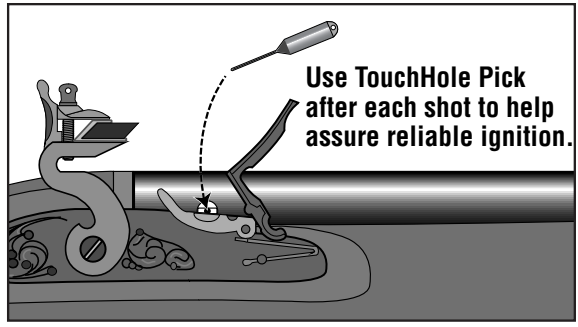


Practical Tips For Your Flint Lock

Reliable ignition of your flint lock rifle depends on more than just proper installation of the flint. It is equally important to make sure your flint lock is clean, dry, and void of any oil, fouling or moisture.

If your flint lock was just purchased, it is well oiled to protect it. It is necessary to completely clean it, and remove this oil. If it has a removable breech plug, like T/C's Fire Storm, remove the breech plug as well, and clean and dry it. Also remove the touch hole bushing and clean and dry it. In fact, both the breech plug and the touch hole bushing of your Fire Storm should always be removed and cleaned after a day of firing. This should be part of your normal maintenance. If your breech plug is fixed as is with the Hawken or Pennsylvania Hunter models, cleaning the breech will be done through the muzzle with a jag, cleaning patches and a good bore cleaner like T/C's No. 13 Bore Cleaner.

Priming the Pan



Before priming the pan of your flint lock rifle, use a touch hole pick to ensure that the ignition channel has been cleared of fouling or other obstructions. Insert the pick into the touch hole, move it (in and out) several times. You will notice that after you fire your flint lock, a certain amount of fouling will build up. This crust of powder residue must be cleared as it will block or partially block the ignition channel. Clear this ignition channel prior to loading your next charge.

Pouring the Priming Powder

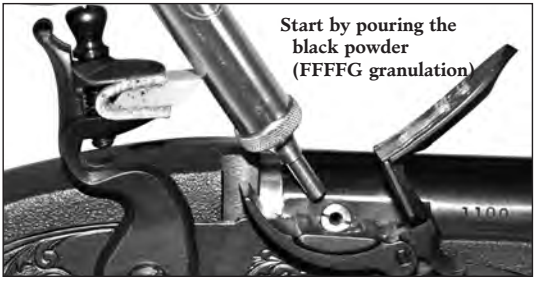
Once you are assured that the ignition channel is free of debris, start by taking your pan charger and trickling some FFFFG priming powder directly

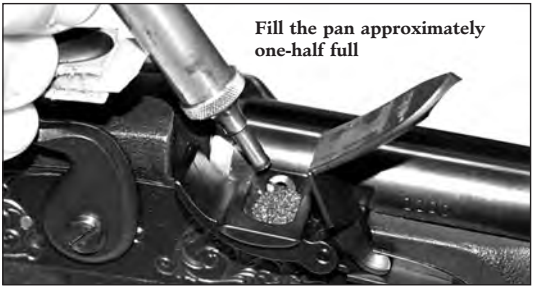
into the touch hole. Then fill the pan approximately 1/2 full. In essence, you are "laying a fuse" from the pan to the main charge. By giving the stock a few "taps" with the heel of your hand, you help settle more of the priming powder deeper into the ignition channel.

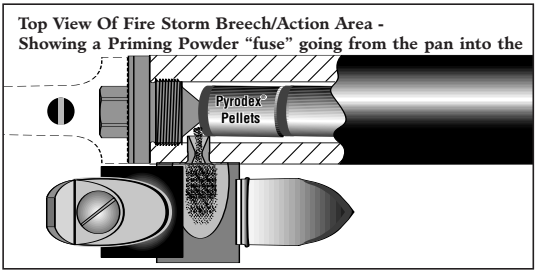
If you maintain your flint lock as prescribed; keeping it dry and free of oil, moisture and residue, and follow these helpful tips in loading and priming, your experience in shooting your rifle will be fun and rewarding. Remember, ignition and shooting a flint lock is more challenging than shooting a cap lock, and that's what makes it fun.

NOTE: Priming the pan of your flint lock correctly is as important as getting good sparks from your flint. The two go hand-in-hand with regards to reliable ignition. The following steps should be taken to ensure reliable ignition.

Priming Tips For Your Flint Lock







Shotgun Section

⚠WARNING

IMPROPERLY CHARGING YOUR MUZZLE-LOADING SHOTGUN CAN BE DANGEROUS. Study This Photo Carefully Before Proceeding.

STAY MENTALLY ALERT. THIS TASK REQUIRES YOUR COMPLETE ATTENTION.

EYES, EARS & ARMS PROTECTED.

BARREL HELD SECURELY WITH MUZZLE UPWARDS - DIRECTED AWAY FROM FACE AND BODY.

DO NOT SMOKE WHILE LOADING ANY MUZZLE-LOADER

USE FFG BLACK POWDER OR AN APPROVED BLACK POWDER SUBSTITUTE, SUCH AS PYRODEX® ONLY. USE A THOMPSON/CENTER GRADUATED POWDER MEASURE ONLY AND DO NOT OVERCHARGE. NEVER CHARGE DIRECTLY FROM A POWDER FLASK, CAN OR POWDER HORN

KEEP COMPONENTS & RESERVE POWDER WELL AWAY FROM FIREARM.

SHOTGUN UNPRIMED WITH HAMMER ON HALF-COCK.

BUTT RESTING FIRMLY ON GROUND SUPPORTED BY SIDE OF FOOT TO PREVENT SLIPPING.

Loading And Use of a T/C Single Barrel Shotgun

T/C Muzzleloading Shotguns

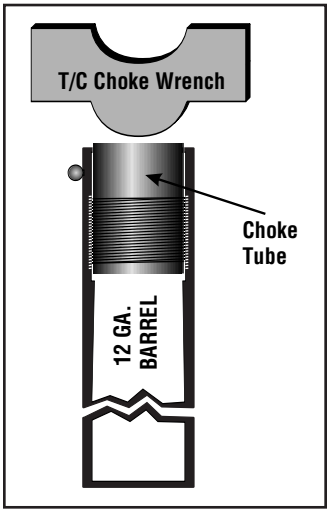
Thompson/Center Arms makes two styles of 12 Ga. muzzleloading shotguns. One style features a cylinder bore barrel (no choke). It can be identified by the absence of any internal choke tube. The second style features an internal choke tube. T/C's models featuring this internal choke tube are shipped with a full choke tube inserted in the barrel. Other tubes; Improved Cylinder and Modified, are available as accessory items.

⚠WARNING

Never attempt to install a choke tube or remove a choke tube from a loaded firearm. Always ensure that the firearm is UNLOADED. FAILURE TO HEED THIS WARNING COULD RESULT IN AN ACCIDENTAL DISCHARGE CAUSING INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

1. Never fire your Thompson/Center Shotgun, which has been designed to accept internal choke tubes, **WITHOUT A CHOKE TUBE INSTALLED**. This will result in damage to the threads in the barrel and could render your shotgun inoperable with regards to using the internal screw-in choke tubes.

2. The threads of your T/C choke tubes should be kept clean and lightly lubed at all times. When installing the choke tube into the barrel, make sure the muzzle is pointed away from you, in a safe direction, and never "force" the choke tube into the barrel. If the tube does not screw-in easily, the threads in the barrel or tube could be clogged, or you could be cross-threading the parts. The choke tube should screw in easily by hand. Use the wrench provided to tighten it until snug, but **DO NOT OVER-TIGHTEN IT AS IT COULD DAMAGE THE TUBE**.



3. (See Choke diagram) Wrench shown engaging slots in choke tube. To insert, turn clockwise. To remove, turn counter clockwise.

4. Thompson/Center's screw-in choke tubes are marked **IMP CYL**, **MOD**, or **FULL**. The **MOD** and **IMP CYL** tubes can be used with steel shot without damage to the barrel or choke tube. **THE FULL CHOKE TUBE SHOULD NOT BE USED WITH STEEL SHOT**. These tubes are intended for use in Thompson/Center shotguns **ONLY** and should not be used in other brands of guns.

—⚠WARNING—

Never attempt to use any other choke tube in a Thompson/Center shotgun. MISMATCHING CHOKE TUBES IN ANY SHOTGUN COULD RESULT IN DAMAGE TO THE SHOTGUN, OR SERIOUS INJURY AND/OR DEATH TO THE SHOOTER AND/OR BYSTANDER.

If you have any questions concerning installation of your choke tube, contact Thompson/Center's Repair Department or call: **Thompson/Center Arms, P.O. Box 5002, Farmington Road, Rochester, New Hampshire 03867, Phone (603-332-2333).**

It is important for you to understand which model 12 Ga. T/C Muzzleloading Shotgun you own... with or without internal choke tube. This will dictate which T/C 12 Ga. Wads you should use when charging your shotgun.

When charging your T/C Muzzleloading Shotgun with no internal choke tube (cyl. bore), you can use either T/C's 1/2" fiber cushion wad or T/C's woven wool pre-lubricated Natural Wad. As there is no constriction at the end of the muzzle, either wad will conform to the diameter of the bore and position itself firmly against the powder charge.

The photo on page 42 shows a shooter in the process of loading a muzzleloading shotgun. **Study this photo carefully and read all of the captions before you proceed to charge your shotgun.**

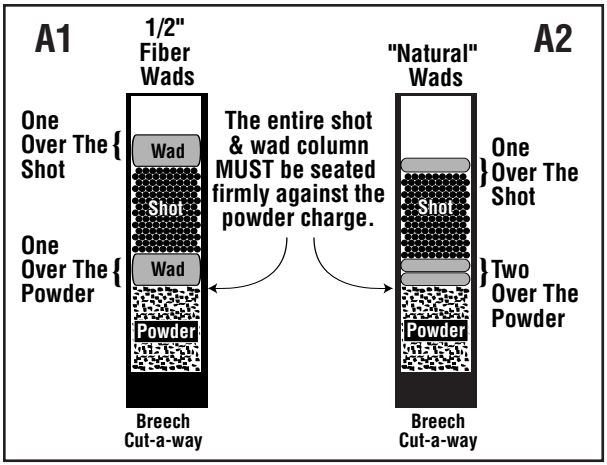
Before charging, insert the ramrod into the barrel and tap it up and down several times. You will hear the metal cap of the ramrod "clink" as it contacts the steel face of the breech plug. Note exactly how far the ramrod extends beyond the muzzle when the barrel is uncharged. Commit this exercise to memory and practice it every time that you handle a muzzleloading firearm. Before you attempt to load it, store it away, hand it to another person, or leave it unattended, **always check to ensure that the firearm is uncharged.**

The next precharging exercise is to wipe the bore free of all oil. Be meticulous with your cleaning, for the presence of any amount of oil in the barrel or chamber can dampen the powder charge and cause the gun to misfire or hangfire. Point the muzzle in a safe direction and snap several No.11 percussion caps on the nipple before charging. This will ensure ignition by clearing away any oil that may have accumulated in the nipple vent. Set the hammer in half-cock position and your gun is now ready to be charged.

The steps in charging the cylinder bore models are as follows:

Step 1: Pour a measured charge of FFG Black Powder or an approved Black Powder substitute, such as Pyrodex®) into the barrel.

Step 2: Seat one T/C 1/2" fiber cushion wad (or two T/C Natural Wads) firm-



ly against the powder charge.

Step 3: Pour a measured shot charge into the barrel.

Step 4: Seat one T/C 1/2" fiber cushion wad (or one T/C Natural Wad) firmly against the shot charge. See illustration "A-1" and "A-2".

When charging your T/C Muzzleloading Shotgun with a choked barrel (internal choke tube), the **ONLY** wads you can safely use are the T/C Natural Wad. T/C's 1/2" fiber cushion wads should NOT be used, as once it is constricted enough to be inserted in the full choke tube, it will not re-expand to the diameter of the bore over the powder charge. T/C's Natural Wad is made of woven wool and has a memory. It will retain its original size even after having been compressed to fit down the full choke tube.

The steps in charging your choked T/C Muzzleloader are as follows:

Step 1: Pour a measured charge of FFG Black Powder or an approved Black Powder substitute, such as Pyrodex®) into the barrel.

Step 2: Seat two T/C Natural Wads firmly against the powder charge.

Step 3: Pour a measured shot charge into the barrel.

Step 4: Seat one T/C Natural Wad firmly against the shot charge. See illustration "A-2".

If you have a T/C Muzzleloading Shotgun with an internal choke tube, care must be taken to install your choke tube correctly and maintain the choke tube in order to insure the proper functioning of the tube.

Once again, the photo on page 42 shows a shooter in the process of loading a muzzleloading shotgun. **Study this photo carefully and read all of the captions before you proceed to charge your shotgun.**

PHOTO B
Use one T/C 1/2" fiber wad or two T/C Natural Wads (placed together as one) over the powder charge.
Start the wad or wads into the muzzle with your fingers as pictured.
Push the wad or wads down flush with the muzzle.

PHOTO C
Hold the ramrod short (as pictured) and push the wad down (about 4") into the barrel.

PHOTO D
Using short strokes, push the wad slowly down the barrel, allowing time for trapped air to bleed off.

The wad MUST be seated firmly against the powder charge.

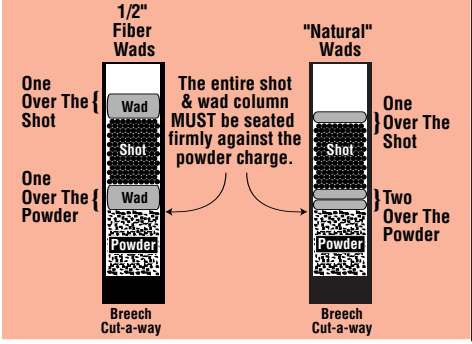
Breech Cut-a-way

When charging your T/C Muzzleloading Shotgun, adjust your powder measure to the desired charge and fill it with FFG Black Powder or an approved Black Powder substitute, such as Pyrodex®). To achieve accuracy and uniform patterns, consistency in the powder charge is required. Fill the measure exactly the same each time. The use of the Part #7040 T/C Measure is recommended because it will measure both the powder and shot in the increments specified in our data section.

Pour the measured powder charge down the barrel and strike the side of the barrel several sharp raps with the heel of your hand to settle the powder in the chamber area.

Start the over powder wad or wads into the muzzle as shown in photo "B". (When using two Natural Wads, put them together and insert them together "as one wad"). Once the wad or wads are started, it will move easily down the barrel. Holding the ramrod about 4" up from the bottom, push the wad or wads down the barrel as shown in photo "C". Then, using short strokes of the ramrod, slowly push the wad or wads the remainder of the way down the barrel until it contacts and bears firmly against the powder charge. Bear in mind that air is trapped underneath the wad or wads as you load it so you must push slowly...allowing time for this trapped air to bleed off around the wad or wads. See photo "D".

PHOTO E
Load over the shot wad(s) slowly to force trapped air out of the barrel.



Use your graduated powder measure to measure your shot charge (see information contained in the loading data). Measure your shot as carefully as you measure your powder. Pour your shot charge down the barrel and start your Thompson/Center 1/2" Fiber Cushion Wad or Thompson/Center Natural Wad into the muzzle with your fingers. Load this "over shot wad" with the same care you used in seating your "over powder wad". Allow time for trapped air to bleed off and seat the wad firmly against the shot charge. See photo "E".

PHOTO F
Mark the ramrod at the muzzle. Use a marking pencil to mark the ramrod. This will allow you to ensure that each charge is seated to the same depth. Erase and remark each time you adjust the charge or change shot charges. When you arrive at the desired charge, cut a clean notch in the ramrod so you will have a permanent reference mark. This reference mark will serve as an indicator only with the powder charge and shot charge used when it was marked. When the powder charge and/or shot charge change, the reference mark will also change.

Once the shotgun is charged (wads and shot column firmly seated against the powder charge as shown in the illustrated insert Photo "E"), it is necessary to carefully mark your ramrod at the muzzle. A reference mark on the ramrod will ensure that all future charges are seated properly. See Photo "F". **Remove the ramrod before priming the firearm.**

→⚠WARNING←

Never fire a muzzleloading shotgun unless you are sure that the entire wad and shot column is properly seated firmly against the powder charge and the ramrod has been removed from the bore. Shooters should bear in mind that the muzzleloading charge is not crimped into position as is the fixed cartridge. If wads do not fit tightly then jarring or movement of the firearm can cause wads to move forward. If the shotgun is fired with the wad and shot column (or part of it) off the powder charge, or the ramrod is still in the bore, the wadding or the ramrod may act as a bore obstruction. THIS CAN CAUSE A RUPTURED OR BURST BARREL RESULTING IN POSSIBLE INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY. Mark the ramrod as directed and always use the ramrod to check that the charge is properly seated before priming and firing the shotgun. If, due to fouling, a charge of shot becomes lodged part way down the barrel, the shotgun must be disassembled and the charge removed. See section on "Cleaning". Also see section on "Pulling a Charge".

Priming Your Charged Muzzleloading Shotgun. If you have followed the preceding instructions, your muzzleloading shotgun will now be charged with FFG Black Powder or an approved Black Powder substitute, such as Pyrodex® and the wads and shot charge will be firmly seated against the powder charge as illustrated on page 45. Your ramrod will be marked to the exact seating depth ensuring that all following charges are seated in the same careful manner. The hammer on your firearm will be in half-cock position.

—⚠WARNING—

Do not prime the firearm until you are actually ready to fire and you have double checked to ensure that the ramrod has been removed from the bore. Thompson/Center does not recommend priming the shotgun until the instant before actual firing. Carrying a charged primed firearm and relying upon the half-cock notch to act as a safety can be dangerous. Accidental discharge is a constant hazard which, if it occurs, can cause injury and/or death to The shooter or bystanders and damage to property. The only safe way to guard against an accidental discharge is to carry the shotgun unprimed with the hammer on half-cock and the muzzle pointed downrange away from yourself, bystanders or property.

WHEN YOU ARE READY TO FIRE THE CAPLOCK MUZZLELOADING SHOTGUN, PRIME THE FIREARM AS SHOWN IN PHOTO "G".

Hold the shotgun firmly with the muzzle pointed in a safe direction and pull the hammer to full-cock position. Press the No.11 Percussion Cap down tightly onto the nipple and the firearm is ready to fire. **RAISE THE SHOTGUN AND FIRE THE SHOT!**

—⚠WARNING—

When firing, hold the shotgun tightly against the shoulder, allowing your body weight to absorb and buffer the force of recoil. HELD IMPROPERLY, A FIREARM CAN "KICK" CAUSING FACIAL INJURY AND/OR BRUISING.

If you decide not to fire, remove the cap from the nipple using a suitable decapping tool like T/C's Decapper. Hold your thumb on the hammer so that it cannot drop freely and pull the trigger. Allow the hammer to move forward slowly until it rests on the nipple. **Return the hammer to half-cock position**.

→⚠WARNING←

If the shotgun is no longer going to be used, uncharge it by firing it into a suitable backstop or pull the charge before returning it to your vehicle, camp or home (See section on "Pulling a charge.") AN ACCIDENTAL DISCHARGE MAY CAUSE INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

Suggested Black Powder Loads For T/C 12 Gauge Muzzleloading Shotguns

The following charts show recommended black powder charges for Thompson/Center's 12 Ga. muzzleloading shotguns. Make certain that you use the appropriate wad corresponding to your shotguns choke (or lack of choke).

T/C's 1/2" fiber cushion wads and T/C's Natural Wads can be used in non-choked (cyl. bore) barrels; T/C's Natural Wads should be used in any T/C choked barrel(with an internal choke tube). The 1/2" fiber cushion wad **SHOULD NOT BE USED IN CHOKED BARRELS**. Wads must be used in all loads and positioned as illustrated on page 45. Mark your ramrod as explained in the text and always check to make certain that the wads and shot column are firmly seated against the powder charge as shown on page 47.

⚠WARNING

Black Powder or an approved Black Powder substitute are the only types of powder that can be safely used in muzzleloading firearms.

Finer granulations of Black Powder (FFFG or FFFFG) cannot be used as they will increase pressure and can create a potentially dangerous condition. Never attempt to use smokeless powders of any type or in any quantity. Some smokeless powders are "black" in color, making proper identification extremely important. Smokeless powders produce pressures which are unsafe in a muzzleloading firearm. THESE EXCESS PRESSURES MAY DAMAGE THE FIREARM AND CAUSE INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

Do not exceed the maximum charge listed. Thompson/Center is not responsible for loading information printed in sources other than this booklet.

Start with the lightest load and work up to higher loads cautiously until you reach the load which best suits your needs.

Lead Shot Loads Only For T/C Muzzleloading Shotguns

12 GAUGE TRAINING & CLAY TARGET LOAD
Containing approx. **1 oz. of shot**, this load approximates a 20 gauge field load and is most effective when used with #8 or #9 lead shot.

POWDER	WADS	LEAD SHOT
70 Grains FFG Black Powder	Either Two T/C 12 ga. 1/2" Fiber Wads. One wad over the powder and another over the shot as illustrated on page 45. Or, Two 12 Gauge Natural Wads Over The Powder And One Over The Shot.	This load uses approximately 1 oz. of shot. Use powder measure to measure shot. *(See message below)

*Use your graduated powder measure to measure your shot charge. When the measure is set for 70 grains of FFG Black Powder it will hold approx. 1 oz. of shot by volume.

12 GAUGE HUNTING & CLAY TARGET LOAD
Containing approx. **1 1/8 oz. of shot**, this is an excellent upland hunting or clay target load. Most effective when used with #7 1/2, #8 or #9 lead shot.

POWDER	WADS	LEAD SHOT
80 Grains FFG Black Powder	Either Two T/C 12 ga. 1/2" Fiber Wads. One wad over the powder and another over the shot as illustrated on page 45. Or, Two 12 Gauge Natural Wads Over The Powder And One Over The Shot.	This load uses approximately 1 1/8 oz. of shot. Use powder measure to measure shot. *(See message below)

*Use your graduated powder measure to measure your shot charge. When the measure is set for 80 grains of FFG Black Powder it will hold approx. 1 1/8 oz. of shot by volume.

12 GAUGE SMALL GAME LOAD

Containing approx. **1 1/4 oz. of shot**, this is a good all around load for the muzzleloader hunter. It has respectable working velocity and the heavier shot charge (more pellets) improves pattern density--allowing use of some of the larger shot sizes. Most effective when used with #6, #7 1/2, #8 or #9 lead shot.

POWDER	WADS	LEAD SHOT
90 Grains FFG Black Powder	Either Two T/C 12 ga. 1/2" Fiber Wads. One wad over the powder and another over the shot as illustrated on page 45. Or, Two 12 Gauge Natural Wads Over The Powder And One Over The Shot.	This load uses approximately 1 1/4 oz. of shot. Use powder measure to measure shot. *(See message below)

*Use your graduated powder measure to measure your shot charge. When the measure is set for 90 grains of FFG Black Powder it will hold approx. 1 1/4 oz. of shot by volume.

12 GAUGE HEAVY HUNTING LOAD

Containing approx. **1 3/8 oz. of shot**. The shooter should not exceed this load. The heavy weight of the shot charge (more pellets) improves pattern density--allowing a wide selection of shot sizes to be used. Most effective when used with #4,#6,#7 1/2, #8 or #9 lead shot.

- MAXIMUM -

POWDER	WADS	LEAD SHOT
100 Grains FFG Black Powder	Either Two T/C 12 ga. 1/2" Fiber Wads. One wad over the powder and another over the shot as illustrated on page 45. Or, Two 12 Gauge Natural Wads Over The Powder And One Over The Shot.	This load uses approximately 1 3/8 oz. of shot. Use powder measure to measure shot. *(See message below)

*Use your graduated powder measure to measure your shot charge. When the measure is set for 100 grains of FFG Black Powder it will hold approx. 1 3/8 oz. of shot by volume.

Steel Shot Loads Only For T/C Muzzleloading Shotguns Not Recommended For Guns With a Full Choke Tube

⚠WARNING

FOR STEEL SHOT ONLY! Do not use when shooting lead shot. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY CAUSE SERIOUS INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

12 GAUGE LIGHT TARGET LOAD FOR STEEL SHOT
Modified, Improved Cylinder or cylinder bore choke only!
Full choke not recommended for steel shot loads.

POWDER	WADS	STEEL SHOT ONLY
80 Grains FFG Black Powder	Two 12 Gauge Natural Wads Over The Powder And One Over The Shot.	Use T/C powder measure set to measure 80 grs. of FFG powder. This will deliver the correct amount of shot by volume.

12 GAUGE LIGHT HUNTING LOAD FOR STEEL SHOT
Modified, Improved Cylinder or cylinder bore choke only!
Full choke not recommended for steel shot loads.

POWDER	WADS	STEEL SHOT ONLY
90 Grains FFG Black Powder	Two 12 Gauge Natural Wads Over The Powder And One Over The Shot.	Use T/C powder measure set to measure 100 grs. of FFG powder. This will deliver the correct amount of shot by volume.

12 GAUGE HEAVY HUNTING LOAD FOR STEEL SHOT
Modified, Improved Cylinder or cylinder bore choke only!
Full choke not recommended for steel shot loads.

- MAXIMUM -

POWDER	WADS	STEEL SHOT ONLY
100 Grains FFG Black Powder	Two 12 Gauge Natural Wads Over The Powder And One Over The Shot.	Use T/C powder measure set to measure 120 grs. of FFG powder. This will deliver the correct amount of shot by volume.

Pulling a Charge

⚠WARNING

Never attempt to remove a charge from any muzzleloading firearm until you are absolutely certain that the firearm is unprimed. (Caplock; percussion cap removed from the nipple, hammer at half-cock. Flintlock; Frizzen open and pan wiped clean with hammer at half-cock). Do not attempt to pull a charge from any gun until the powder charge has been rendered inert (barrel removed and its breech section submerged in water for at least one-half hour) as explained in the following text dealing with pulling a charge. AN ACCIDENTAL DISCHARGE CAN CAUSE INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

PULLING A CHARGE FROM A MUZZLELOADING RIFLE OR PISTOL

Under normal conditions a muzzleloading rifle or pistol is unloaded simply by firing it into a suitable and safe backstop. There are, however, some conditions under which the firearm cannot be fired and the charge must be pulled.

SOME OF THE MOST COMMON CONDITIONS ARE AS FOLLOWS:

1. If the ball or bullet is not seated firmly against the powder charge - Stop immediately! Do not attempt to fire the rifle or pistol. You must pull the charge and clean the barrel.

2. If the rifle or pistol is loaded in a proper manner, yet fails to fire after repeated repriming and clearing of the ignition ports (as explained in the "Ignition" section).

3. If you are at a location that is unsuitable for discharging the firearm before transporting it.

Keep the muzzle downrange and remove all priming from the firearm. Carefully remove the forend wedge and disengage the barrel from the stock. Lay the charged barrel on the ground **using extreme care to ensure that its muzzle is always pointed in a safe direction.** Secure a pail of water (hot if possible) and submerge the breech section of the barrel into the water. Make certain that at least 8 inches of the breech section is under water and allow the barrel to remain submerged for at least one-half hour. The barrel should be transported only after water has totally saturated the powder charge and rendered it inert.

The charge should be pulled by using a Thompson/Center Ball and Bullet Puller as follows:

Carry the barrel to an area where you have access to a strong vise and where you can work without distraction. To ensure that the charge has not dried out and that it is completely inert, re-soak the breech section in **very hot water.** While the breech is soaking, pour some hot water into the muzzle end (flush with the muzzle). This will soften the powder fouling which has accumulated in the bore and ease removal of the projectile.

After one-half hour, remove the barrel from the water. Pour the water out of the muzzle and wipe excess water with a rag. Pad the jaws of your vise with two blocks of wood and securely clamp your barrel so that you have access to the muzzle end. Use care to ensure that the barrel is not marred in the process of clamping it. Be equally certain that it is clamped securely.

Thread a T/C Ball & Bullet Puller of the proper caliber onto your ramrod and slip the ramrod into the bore until the screw on the puller contacts the projectile. Rotate the ramrod slowly clock wise as you tap lightly on the end of the ramrod with a hammer. As the puller screw bites deeper and deeper into the soft lead projectile, the ramrod will become difficult to turn and it will require the use of pliers. Pad the jaws of the pliers so that you do not mar the ramrod. Once the puller screw has embedded itself firmly into the projectile, pull out on the ramrod and extract the ball or bullet. In actuality, this process is somewhat tedious and it will require your patience. When working with a badly fouled bore, the puller screw may pull free from the projectile several times before you can successfully extract the projectile. If you are persistent, you will succeed!

After the projectile has been removed from the bore, clean the bore, barrel and parts as explained in the "Cleaning" section and reassemble the firearm.

If for any reason you are unable to remove the charge in the manner recommended, soak the barrel in very hot water for one-half hour. Once the powder has been rendered inert, take the barrel to a qualified gunsmith. Explain the condition and ask that he remove the breech plug, clear the barrel and replace the breech plug.

Since the removal of a breech plug involves the risk of bending or marring of the barrel, the amateur should not attempt to remove the breech plug itself.

PULLING A CHARGE FROM A T/C SINGLE BARREL MUZZLELOADING SHOTGUN

As with the rifle or pistol, the shotgun is normally unloaded simply by firing it into a suitable and safe backstop. There are, however, some occasions when a wad puller is used to pull the charge.

SOME OF THE MOST COMMON CONDITIONS ARE AS FOLLOWS:

1. If the shot charge is not seated firmly against the powder charge stop immediately! Do not attempt to fire the shotgun. You must pull the charge and clean the barrel.

2. If the shotgun is loaded in a proper manner yet fails to fire after repeated repriming and clearing of the ignition ports (as explained in the "Ignition" section).

3. If you are at a location that is unsuitable for discharging the firearm before transporting it.

→⚠WARNING←

Never attempt to remove a charge from any muzzleloading firearm until you are absolutely certain that the firearm is decapped (percussion cap removed from the nipple) and that the hammer is in half-cock position. Do not attempt to pull a charge from any gun until the powder charge has been rendered inert (barrel removed and its breech section submerged in water for at least one-half hour) as explained in the previous text dealing with pulling a charge from a rifle or pistol. AN ACCIDENTAL DISCHARGE CAN CAUSE INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

Pull the charge as follows; disassemble it as instructed in previous text and soak the breech section of the unprimed barrel in water for at least one-half hour. Screw the wad puller onto the wad seating end of your ramrod. Insert the ramrod into the muzzle (wad puller end down) and rotate the ramrod clockwise while bearing down at the same time.

The wad puller will imbed itself in the over shot wad in the same manner as a corkscrew grips a cork in a bottle. Once the wad puller grips the wad securely, pull up on the ramrod and remove the wad from the barrel. Dump the shot charge and extract the over powder wad in the same manner as you did the over shot wad. Dump the powder charge and your shotgun is unloaded.

After the charge has been removed from the bore, clean the firearm as explained in the "Cleaning" Section and reassemble the firearm.

Cleaning Your T/C Muzzleloading Firearm

⚠WARNING

Never attempt to clean a charged muzzleloading firearm. AN ACCIDENTAL DISCHARGE CAN CAUSE INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

CLEANING A T/C MUZZLELOADING RIFLE OR PISTOL

Black Powder and Pyrodex are very corrosive, and the residue or fouling left over in the bore after firing your firearm can be very destructive to the steel, causing oxidation, rust, and pitting. Leaving your firearm uncleaned with this fouling present can lead to a ruined firearm.

When using a petroleum based lubricant, the build up of this fouling is much more apparent, and often it is necessary to clean the rifle or pistol between shots. Cleaning between shots will be necessary whether using black powder or Pyrodex. Failure to eliminate this residue will be destructive to the bore if left uncleaned for any length of time.

When using an all natural, non-petroleum based lubricant such as T/C's Natural Lube 1000+ , the bore becomes seasoned with use, much like the surface of a cast iron skillet. Fouling is greatly reduced, and as a result it is not necessary to clean between shots, or even immediately after extended firing. The reduction of fouling present and the void of any petroleum combine to eliminate the corrosive effects on the steel. This does not mean that your obligation to clean the firearm after use is eliminated. The use of T/C's Natural Lube 1000+ merely eliminates the need to clean between shots as excessive fouling will not build up. You can also delay cleaning after you have shot for at least the duration of your hunting trip without fear of damaging your firearm. You should clean your firearm after use prior to storing it away, and in order that you do not lose the "seasoned" characteristics already imparted to your bore, you should clean it with a non-petroleum based cleaner such as T/C's all natural #13 Bore Cleaner. Once a petroleum based solvent is introduced, the "seasoning" process is neutralized, much like washing your cast iron skillet with detergent.

Often, when using petroleum based lubricants, consecutive shots with black powder will produce shot-to-shot increases in pressure with the build up of fouling. This will greatly affect accuracy. Eventually, (if not cleaned) the muzzleloading firearm will become impossible to load properly. Driven part way down the bore and blocked by powder fouling, the projectile will hang up and refuse to budge further.

—⚠WARNING—

A PROJECTILE WHICH IS SEATED ONLY PART WAY DOWN THE BARREL SETS UP A HIGHLY DANGEROUS CONDITION WHICH MAY CAUSE A BURST BARREL AND INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDER AND DAMAGE TO PROPERTY. The projectile must be seated firmly against the powder charge. If the ball or bullet is not seated against the powder charge the firearm must be disassembled and the charge removed (see section on "Pulling a Charge"). Never fire a muzzleloading firearm unless the projectile is firmly seated on the powder charge.

The use of Thompson/Center's Natural Lube 1000+, a non-petroleum based lubricant will eliminate most of this build up of black powder fouling, and the cleaning and accuracy problems associated with it.

Actually the user of a Black Powder rifle or pistol has two types of cleaning with which to contend. One is total or complete cleaning which is done after shooting for the day and before the rifle or pistol is put away. (This must be done after using either Black Powder or an approved Black Powder substitute). The other is a simple "wiping out" of the bore which is done between shots to clear away fouling and to ease loading (this is essential with Black Powder). This is referred to as "field cleaning".

PHOTO A
Use a Jag for field cleaning (A Worm will work as a substitute if you don't have a Jag with you.)

No.13 Powder Solvent is specifically designed for field cleaning.

The saturated patch is then followed by several dry patches to absorb moisture.

Cleaning between shots may be necessary when using Black Powder. It will depend on how much fouling is developed from shot to shot, and how progressively difficult it is to load as a result of it. It will also depend on how tight your initial patched round ball fits. The tighter the initial fit , the more difficult it will be to load successive shots as the powder residue or fouling builds up. As previously described in the above text, the use of an all natural lube aids in re-

loading as it "seasons" the bore and produces far less fouling. However, no matter what you use for a lube, consistency is the key to accuracy; so much that target shooters will use the tightest combination of patch and ball they can load, and they will wipe the bore between each shot. A good all natural bore cleaner like T/C's No.13 Bore Cleaner will work extremely well in these situations, and because it contains no petroleum base, it is highly compatible for use with an all natural lube such as Natural Lube 1000+ Bore Butter.

Depending upon the specific load (heavier charges burn less consistently creating more fouling) and temperature, a series of shots with Black Powder can be fired before it becomes necessary to wipe the bore. How many? Under favorable conditions **five shots** can usually be fired without adverse affect on loading. Under less favorable conditions, loading may become difficult **sooner.** If you are using a natural lubricant such as Natural Lube 1000+ , with no petroleum base, you will be able to shoot many more shots without the need to wipe the bore. In fact, T/C's test gun had over 1000 rounds shot through it without the need to wipe the bore even once. Bear in mind though, that the pressure does build and accuracy falls off as fouling builds in the barrel. So, regardless of your lube, if you feel that it is getting more difficult to load as a result of excessive fouling, it will be necessary to wipe the bore. The best method is to pay close attention to loading (and group size). If the ball seems to drag or is somewhat difficult to seat then you must clean the bore before you load the next charge.

For complete cleaning when using Black Powder or an approved Black Powder substitute the best solvent is hot soapy water. It is necessary that the water be very hot so that it heats up the barrel metal. A hot barrel will dry rapidly without rusting.

The "hooked breech" system found on Thompson/Center muzzleloaders (rifles, pistols and shotguns) allows the barrel to be removed easily for cleaning. Simply remove the ramrod from the ramrod channel and tap out the forend wedge (see Photo "B"). Once the forend wedge has been removed, pull the hammer back to full-cock position to clear the breech section. Now, by applying upward pressure to the muzzle, the barrel can be raised free from the stock.

The recommended method of cleaning is as follows: Fill a pan with very hot soapy water. Submerge the breech of the barrel in the water and push a wet patch down the barrel on the end of your cleaning rod. Pump the rod and patch up and down in the barrel. This will draw water into the barrel and flush it out through the nipple hole. When the barrel is clean, wipe off the excess water and set the barrel aside to dry. Fouling on the stock, lock and exterior parts should be wiped off with an oily cloth or T/C's Wonder Cloth saturated with Natural Lube 1000+ . When the barrel has dried, either oil it well (inside and out) or, in keeping with the all natural approach of seasoning your bore, wipe it with a patch saturated with Natural Lube 1000+. Reassemble the firearm.

PHOTO B
The T/C Wedge Puller affords easy removal of the wedge pin. It is also a nipple wrench.

Never attempt to clean a charged firearm. See section on "Pulling a Charge."

CLEANING A T/C SINGLE BARREL MUZZLELOADING SHOTGUN

⚠WARNING

Never attempt to clean a charged muzzleloading firearm. AN ACCIDENTAL DISCHARGE CAN CAUSE INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

As explained in the previous text, both Black Powder and Black Powder substitutes, such as Pyrodex® are corrosive, requiring careful cleaning of the firearm after firing and before storage. It is not necessary to clean a shotgun between shots.

The "Hooked breech" system found on Thompson/Center muzzleloaders allows the barrel to be removed easily for cleaning. Simply remove the ramrod from the ramrod channel and tap out the forend wedge. Once the forend wedge has been removed, pull the hammer back to full cock position to clear the breech system. Now, by applying upward pressure to the muzzle, the barrel can be raised free from the stock.

The recommended method of cleaning is as follows: fill a pan with very hot soapy water. Submerge the breech of the barrel in the water and push a wet patch down the barrel on the end of your cleaning rod. Pump the rod and patch up and down in the barrel. This will draw water into the barrel and flush it out through the nipple hole. When the barrel is clean, wipe off the excess water and set the barrel aside to dry. Fouling on the stock, lock and exterior parts should be wiped off with an oily cloth or T/C's Wonder Cloth saturated with Natural Lube 1000+ . When the barrel has dried, either oil it well (inside

and out) or in keeping with the all natural approach of seasoning your bore, wipe it with a patch saturated with Natural Lube 1000+. Reassemble the firearm.

GENERAL COMMENTS ON CLEANING

You will note that throughout this manual, references are made about using lubricants (patch lubricant, bullet lubricants and bore cleaners) which are both petroleum based such as T/C Maxi Lube, and non petroleum based like our Natural Lube 1000+ .

While we have no intention of changing your successful practices of lubing or cleaning, we do want to point out that our experience in using non petroleum based lubes has shown us that it does improve performance and ease of loading, while also eliminating the need to clean between shots. Natural products were used in the early 1800's with a great deal of success, and it wasn't until petroleum based lubes were used that the corrosive nature of black powder fouling seemed to present a problem in both maintenance and in reloading. Fouling is fouling, and regardless of the system used to lube and clean your muzzleloader (petroleum based oils versus all natural non petroleum based products) excessive fouling will be evident to the shooter as he experiences more difficulty in loading from shot to shot.

The advantages to using all natural non petroleum based lubes and cleaning products are many; the elimination of having to wipe your bore between shots or of having to immediately clean your gun after use; and the increase in accuracy due to more consistent velocities and more uniform pressures.

However, the responsibility to clean your muzzleloader thoroughly before putting it away still exists. It's a tradition that has always existed and for good reason. A well maintained firearm is a safer firearm, and it's up to the owner/user to keep it that way.

USING CLEANING IMPLEMENTS

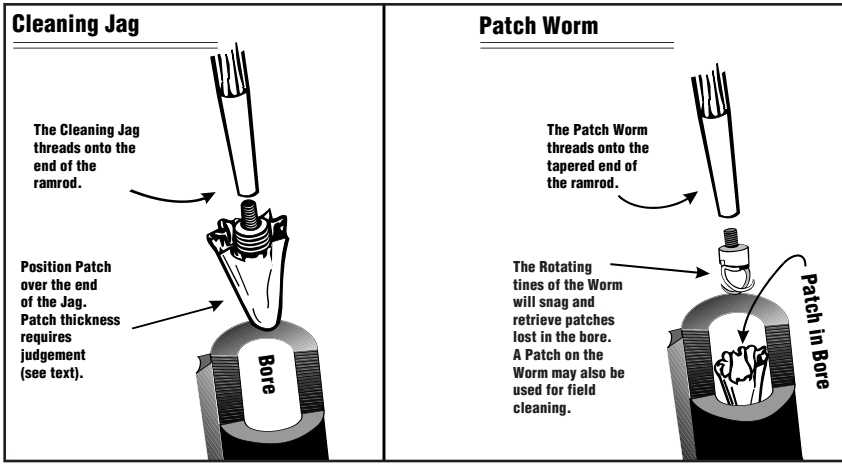
Thompson/Center muzzleloading rifles and pistols are supplied with a cleaning jag which is the proper size for the particular caliber. For cleaning use commercial cleaning patches (round or square) or pieces of discarded clothing.

When using the cleaning jag, patch size and thickness are important. Start with a patch that is approximately 2 1/2" square (or in diameter). Position it over the jag as pictured in the illustration and try it in the bore of the firearm (wet patches will enter more easily than dry ones). If it seems to be too tight - don't force it. If your trial patch proves to be too tight, use a smaller size patch and/or thinner material.

A patch which is too small or thin will pull free from the jag teeth during the cleaning process. Such "lost patches" can be quickly retrieved by use of the

worm (see illustration). Cleaning will go easier, however, if you establish and maintain an optimum patch/jag/bore fit.

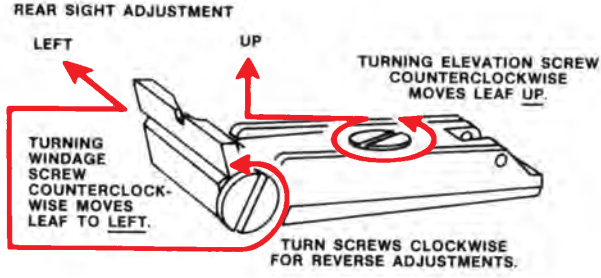
Thompson/Center does not package the worm with each firearm. This is an optional tool and must be purchased separately (one size fits all calibers - see current catalog). **The worm is an extremely important muzzleloading tool** and every shooter should carry one in his implement bag. While its prime purpose is to retrieve "lost patches", it can also be used for field cleaning. To do so you simply catch the cleaning patch on the tines of the worm and push it into the bore in the conventional manner.



Miscellaneous

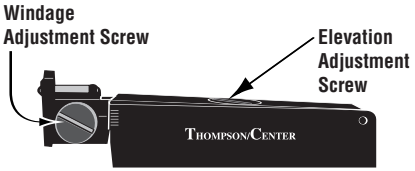
IRON SIGHT ADJUSTMENT

While various sights will differ in shape, all T/C rifle and pistol sights adjust in the same manner. See illustration. Move the rear sight blade in the same direction that you want your shot to strike. EXAMPLE: Shots are hitting to the right and low, turn the elevation screw counterclockwise (blade moves up) and the windage screw counterclockwise (blade moves left) to bring the sight into adjustment.



Some models are equipped with a "positive lock" Allen set screw on the windage adjustment (see illustration below). This set must be loosened before you make a windage adjustment and retightened after the adjustment is made.

Some T/C muzzleloaders are equipped with a "fiber optic" rifle rear sight which is adjustable for elevation and windage.



To adjust elevation, moving the elevation "bade" up or down changes the point of impact. To do this, turn the Elevation Adjustment Screw clockwise (as viewed from the receiver end) to lower the point of impact, and counter-clockwise, to raise the point of impact.

To adjust the windage it is necessary to move the entire rear sight leaf left or right by using the slotted screw head on the right side of the rear sight (as viewed from the receiver end of the sight). Move the rear sight blade in the direction you want your shots to hit-- (Example; Turn the screw clockwise - thereby moving the sight blade to the right, to move your shots to the right and counter-clockwise to move the shots to the left).

SCOPE MOUNTING

The factory iron sights on T/C rifles are removable. Scope mounts which make use of existing screw holes are available (See current catalog).

⚠WARNING

DO NOT DRILL ADDITIONAL HOLES IN THE BARREL AS THIS COULD WEAKEN ITS STRUCTURE AND CONTRIBUTE TO A RUPTURE CAUSING INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

Service for your T/C Muzzleloader

SERVICE Department Telephone Number 603-332-2333

Should your T/C muzzleloading firearm require adjustment, repair or refinishing, we strongly recommend that the rifle be returned to the factory for such work. There is no other way to ensure that the work will be done by competent staff or trained technicians. Send your rifle back to the factory unloaded with a letter describing the problem.

Firearms returned to the factory should be **marked to the attention of the service department.** A letter of instructions should be enclosed to facilitate handling. Firearms should be uncharged, disassembled and shipped via United Parcel Service (U.P.S.).

Any T/C muzzleloader should be sent prepaid (we will not accept collect shipments). Do not include gun case, sling, scopes or other custom accessories and packaging and product literature that you consider to be collectable. These items may be damaged or lost in transit.

The Federal Gun Control Act allows an individual (who is not otherwise barred from purchasing or possessing a firearm) to ship a firearm directly to the manufacturer for purposes of repair. However, before shipping your rifle to us, be certain that your state and local laws permit such shipments and that they will also permit us to return the rifle directly to you. If receiving a rifle is not permitted, then arrangements will have to be made to ship your rifle to a Federally Licensed Firearms Dealer. We will need a signed copy of that dealers Federal Firearms License (F.F.L.).

Muzzleloading firearms that are returned to the factory should be marked for the attention of the service department. A letter of instructions should be enclosed with the gun. Adherence to these suggestions will prevent loss of time and facilitate handling at the factory.

Our service department will give your muzzleloading firearm a complete inspection. They will evaluate the problem or problems specified in your covering letter. If the work required is not covered by our “Lifetime Warranty” you will receive a quotation which must be authorized by you.

Ship complete muzzleloading firearms via U.P.S. or Parcel Post. The shipment should be insured.

Statement Of Liability

This gun is classified as a **FIREARM OR DANGEROUS WEAPON** and is surrendered by us with the express understanding that we assume no liability for its resale or unsafe handling under local laws and regulations. Thompson/Center Arms assumes no responsibility for physical injury or property damage resulting from either intentional or accidental discharge, or for the function of any gun subject to influences beyond our control, and will honor no claim which may result from careless or improper handling, unauthorized adjustments, improper loading, use of improper powder or components, corrosion or neglect.

For your protection, examine your firearm carefully at the time of purchase. Fill out and mail the registration card promptly. Be certain that it bears the firearm's serial number which you will find on the barrel.

—⚠WARNING—

Thompson/Center does not approve or recommend any type of custom conversion or alteration. Muzzleloading firearms subjected to alteration are not covered by our factory warranty. Responsibility for alterations rests totally with the gunsmith or individual performing the work. THE CONSUMER IS WARNED THAT IF SUCH WORK IS DONE IMPROPERLY OR WITHOUT PROPER JUDGEMENT, THE FIREARM CAN MALFUNCTION OR RUPTURE CAUSING INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

LIMITED WARRANTY

THOMPSON/CENTER ARMS provides a warranty for all factory finished firearms for the **LIFETIME OF THE ORIGINAL CONSUMER PURCHASER**. Any firearm, or part thereof, returned, postage paid, to the factory at Rochester, New Hampshire 03867, will be repaired or replaced to our commercial standard free of charge, and returned to the consumer purchaser postage prepaid. This warranty is established by return of our authorized warranty card which should be done within (30) days of purchase. **This warranty does not cover any damage caused by custom alteration of the firearm! Thompson/Center Arms reserves the right to refuse to repair or replace firearms, or parts thereof, damaged by abuse or misuse.**

This warranty does not cover "Kit" models. While Thompson/Center does guarantee the quality and workmanship of the parts contained in each kit (and will replace any part which is proven, by our inspection, to be faulty in either workmanship or material) we have no control over the final finishing and assembly of these products. Therefore, no responsibility for either the construction or use of kit models is implied or assumed. This warranty gives you specific legal rights, and you may also have other rights which vary from State to State.

Address all correspondence and inquiries to:

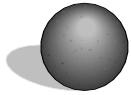
THOMPSON/CENTER ARMS
P.O. Box 5002, Farmington Road
Rochester, New Hampshire 03867

WARNING
Discharging firearms in poorly ventilated areas, cleaning firearms or handling ammunition may result in exposure to lead and other substances known to cause birth defects, reproductive harm and other serious physical injury. Have adequate ventilation at all times. Wash hands thoroughly after exposure.

PARTS LIST AVAILABLE UPON REQUEST.
SPECIFY MODEL, CALIBER AND SERIAL NUMBER
in addition to the specific parts you are looking for

Bullet Data For Thompson/Center Muzzleloading Rifles

Round Balls For T/C Firearms



.315" DIAMETER (47 grs.) Use with patch material No.7036, No.7042, No.7131, or No.7135 in .32 caliber models.

.350" DIAMETER (65 grs.) Use with patch material No.7036, No.7042, No.7131, or No.7135 in .36 caliber models.

.440" DIAMETER (127 grs.) Use with patch material No.7030, No.7043, No.7132, or No.7136 in .45 caliber models.

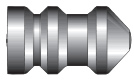
.490" DIAMETER (175 grs.) Use with patch material No. 7030, No. 7043, No.7132, or No.7136 in .50 caliber models.

.530" DIAMETER (230 grs.) Use with patch material No. 7034, No. 7044, No.7133, or No.7137 in .54 caliber models.

.550" DIAMETER (265 grs.) Use with patch material No.7034, No.7044, No.7133, or No.7137 in .56 caliber models.

.570" DIAMETER (279 grs.) Use with patch material No.7035, No.7041, No.7134, or No.7138 in .58 caliber models.

Maxi-Balls® For T/C Firearms



.32 Caliber (103 grs.) A small game bullet for .32 caliber rifles. Lubricate with either T/C Maxi-Lube or T/C Natural Lube 1000 Plus.

.36 Caliber (128 grs.) A small game bullet for .36 caliber rifles. Lubricate with either T/C Maxi-Lube or T/C Natural Lube 1000 Plus.

.45 Caliber (200 grs.) For small to medium (deer-sized) game. Now factory lubricated with T/C Natural Lube 1000 Plus.

.45 Caliber (240 grs.) For small to medium (deer-sized) game. Now factory lubricated with T/C Natural Lube 1000 Plus.

.45 Caliber (320 grs.) For medium (deer-sized) game. Now factory lubricated with T/C Natural Lube 1000 Plus.

.50 Caliber (320 grs.) A medium game (deer-sized) bullet for .50 caliber rifles. Now factory lubricated with T/C Natural Lube 1000 Plus.

.50 Caliber (370 grs.) A medium and big game bullet for .50 caliber rifles. Now factory lubricated with T/C Natural Lube 1000 Plus.

.50 Caliber (460 grs.) A big game bullet for .50 caliber rifles. Now factory lubricated with T/C Natural Lube 1000 Plus.

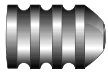
.54 Caliber (365 grs.) A medium (deer-sized) and big game .54 caliber bullet Now factory lubricated with T/C Natural Lube 1000 Plus.

.54 Caliber (430 grs.) For medium (deer-sized) and large game, this .54 caliber bullet is now factory lubricated with T/C Natural Lube 1000 Plus.

.54 Caliber (530 grs.) For large game. This .54 caliber bullet is now factory lubricated with T/C Natural Lube 1000 Plus.

.58 Caliber (555 grs.) For the large game encountered in North America and throughout the world. Factory lubricated with T/C Natural Lube 1000 Plus.

Maxi-Hunters® For T/C Firearms



Offering Maximum expansion on deer-sized game!

.45 Caliber (190 grs.) A bullet designed specifically for small to medium sized game. Now factory lubricated with T/C Natural Lube 1000 Plus.

.45 Caliber (255 grs.) A bullet designed specifically for medium (deer-sized) game. Now factory lubricated with T/C Natural Lube 1000 Plus.

.45 Caliber (320 grs.) A bullet designed specifically for deer-sized game. Now factory lubricated with T/C Natural Lube 1000 Plus.

.50 Caliber (275 grs.) A bullet designed for .50 caliber T/C rifles and deer sized game. Now factory lubricated with T/C Natural Lube 1000 Plus.

.50 Caliber (350 grs.) A bullet designed for .50 caliber T/C rifles and deer sized game. Now factory lubricated with T/C Natural Lube 1000 Plus.

.50 Caliber (470 grs.) A bullet designed for .50 caliber T/C rifles and medium (deer-sized) to large game. Now factory lubricated with T/C Natural Lube 1000 Plus.

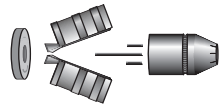
.54 Caliber (360 grs.) Designed for maximum expansion on deer sized game. Now factory lubricated with T/C Natural Lube 1000 Plus.

.54 Caliber (435 grs.) Designed for maximum expansion on deer sized game. Now factory lubricated with T/C Natural Lube 1000 Plus.

.54 Caliber (540 grs.) Designed for medium (deer-sized) to large game. Now factory lubricated with T/C Natural Lube 1000 Plus.

.58 Caliber (560 grs.) Maximum expansion in a heavy big game bullet. Now factory lubricated with T/C Natural Lube 1000 Plus.

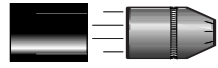
Thompson/Center's Break-o-Way™ Sabots



.50 Caliber (For .429" to .430" Bullets) Designed for using jacketed pistol bullets in a muzzleloader. With a Woven Wool "doughnut" that is factory lubricated with Natural Lube 1000 Plus - Bore Butter.

.54 Caliber (For .429" to .430" Bullets) Designed for using jacketed pistol bullets in a muzzleloader. With a Woven Wool "doughnut" that is factory lubricated with Natural Lube 1000 Plus - Bore Butter.

Thompson/Center's Mag Express™ Sabots



.50 Caliber Sabots For XTP™ Bullets (For .429" to .430" Bullets) Designed for using jacketed & lead pistol bullets in a muzzleloader.

.50 Caliber For PTX™ Bullets (For .451 to .452" Bullets) Designed for using jacketed & lead pistol bullets in a muzzleloader.

.54 Caliber For PTX™ Bullets (For .451 to .452" Bullets) Designed for using jacketed & lead pistol bullets in a muzzleloader.

Suggested Black Powder Loads For Thompson/Center Muzzleloading Rifles

The following charts show recommended charges for Thompson/Center rifles. Charges are listed by caliber, style of rifle and type of projectile (round ball, Maxi-Ball® or Maxi-Hunter®, Sabot). **Note that in each instance a series of charges are listed. More than one charge is shown in each category to clearly illustrate the safe loading range for that particular caliber, model and projectile.**

⚠WARNING

Maximum loads are not to be exceeded nor is a substitution of powder or granulations to be attempted! Only use loads that are listed for your particular caliber, model and bullet style. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

The shooter is instructed to start with the lightest charge listed. As you become familiar with the firearm, increase your charges gradually until you reach your best performing load (most accurate). In all instances the most accurate load will be found approximately half-way through our loading chart. **The large asterisk indicates that charge which, in our testing, proved to be the most accurate.** Your optimum charge will be at or near this point. **NEVER EXCEED THE MAXIMUM CHARGE LISTED.**

Thompson/Center Arms is not responsible for loading information printed in sources other than this booklet.

Note: All loading data contained in this book is the result of testing by Thompson/Center Arms. Testing was done under carefully controlled conditions with the components specified in the text. 28 inch barrels were used to produce the data unless otherwise specified. Since Thompson/Center has no control over the components or equipment which may be used with this information, no responsibility is implied or assumed for the results obtained.

The loading data found in this manual was compiled using Black Powder or Pyrodex as a propellant. With any other approved Black Powder substitute follow the instructions supplied by the manufacturer and heed all warnings as they apply to loading and usage of that product.

Suggested Loads For T/C Seneca™ & Cherokee™ Black Powder Muzzleloading Firearms

For Use With .32 Caliber Cherokee & Seneca Rifles Patches Lubricated with Bore Butter Use a #11 Percussion Cap		.32 Caliber Rifle Black Powder & Round Ball Loads	
.315" Diameter Lead Ball Weight (Grains)	Black Powder Charge (Grains)	Muzzle Velocity (Feet Per Second)	Muzzle Velocity (Feet Per Second)
47 Grain Lead Ball	30 grs. FFFG	1714 F.P.S.	307 F.P.S.
	40 grs. FFFG	1929 F.P.S.	388 F.P.S.
	50 grs. FFFG	2055 F.P.S.	441 F.P.S.
Load Shown in Red is Maximum			

For Use With .36 Caliber Cherokee & Seneca Rifles Patches Lubricated with Bore Butter Use a #11 Percussion Cap		.36 Caliber Rifle Black Powder & Round Ball Loads	
.350" Diameter Lead Ball Weight (Grains)	Black Powder Charge (Grains)	Muzzle Velocity (Feet Per Second)	Muzzle Velocity (Feet Per Second)
65 Grain Lead Ball	40 grs. FFFG	1894 F.P.S.	518 F.P.S.
	50 grs. FFFG	2034 F.P.S.	597 F.P.S.
	60 grs. FFFG	2150 F.P.S.	667 F.P.S.
Load Shown in Red is Maximum			

For Use With .45 Caliber Cherokee & Seneca Rifles Patches Lubricated with Bore Butter Use a #11 Percussion Cap		.45 Caliber Rifle Black Powder & Round Ball Loads	
.440" Diameter Lead Ball Weight (Grains)	Black Powder Charge (Grains)	Muzzle Velocity (Feet Per Second)	Muzzle Velocity (Feet Per Second)
127 Grain Lead Ball	50 grs. FFG	1584 F.P.S.	708 F.P.S.
	60 grs. FFG	1701 F.P.S.	816 F.P.S.
	70 grs. FFG	1800 F.P.S.	914 F.P.S.
	80 grs. FFG	1904 F.P.S.	1022 F.P.S.
	90 grs. FFG	1980 F.P.S.	1106 F.P.S.
Load Shown in Red is Maximum			

For Use With .32 Caliber Cherokee & Seneca Rifles Bullets Lubricated with Bore Butter Use a #11 Percussion Cap		.32 Caliber Rifle Black Powder & Maxi-Ball Loads	
.32 Caliber Lead Bullet Weight (Grains)	Black Powder Charge (Grains)	Muzzle Velocity (Feet Per Second)	Muzzle Velocity (Feet Per Second)
103 Grain Lead Bullet	30 grs. FFFG	1418 F.P.S.	460 F.P.S.
	40 grs. FFFG	1628 F.P.S.	606 F.P.S.
	50 grs. FFFG	1749 F.P.S.	700 F.P.S.
Load Shown in Red is Maximum			

Seneca™ & Cherokee™ Cont'd...

For Use With .36 Caliber Cherokee & Seneca Rifles Bullets Lubricated with Bore Butter Use a #11 Percussion Cap		.36 Caliber Rifle Black Powder & Maxi-Ball Loads	
.36 Caliber Lead Bullet Weight (Grains)	Black Powder Charge (Grains)	Muzzle Velocity (Feet Per Second)	Muzzle Velocity (Feet Per Second)
128 Grain Lead Bullet	40 grs. FFFG	1761 F.P.S.	882 F.P.S.
	50 grs. FFFG	1843 F.P.S.	965 F.P.S.
	60 grs. FFFG	2001 F.P.S.	1138 F.P.S.
Load Shown in Red is Maximum			

For Use With .45 Caliber Cherokee & Seneca Rifles Bullets Lubricated with Bore Butter Use a #11 Percussion Cap		.45 Caliber Rifle Black Powder & Maxi-Ball • Maxi-Hunter Loads	
.45 Caliber Lead Bullet Weight (Grains)	Black Powder Charge (Grains)	Muzzle Velocity (Feet Per Second)	Muzzle Velocity (Feet Per Second)
190-200 Grain Lead Bullet	60 grs. FFG	1502 F.P.S.	1002 F.P.S.
	70 grs. FFG	1575 F.P.S.	1101 F.P.S.
	80 grs. FFG	1643 F.P.S.	1199 F.P.S.
240 - 255 Grain Lead Bullet	60 grs. FFG	1369 F.P.S.	1061 F.P.S.
	70 grs. FFG	1456 F.P.S.	1201 F.P.S.
	80 grs. FFG	1541 F.P.S.	1345 F.P.S.
320 Grain Lead Bullet	60 grs. FFG	1258 F.P.S.	1125 F.P.S.
	70 grs. FFG	1334 F.P.S.	1265 F.P.S.
	80 grs. FFG	1420 F.P.S.	1433 F.P.S.
Load Shown in Red is Maximum			

Suggested Loads For All Other Thompson/Center Black Powder Muzzleloading Firearms

For Use With .45 Caliber Rifles Patches Lubricated with Bore Butter Use No.11 Percussion Cap, Musket Cap or T/C Flint with 4F (FFFFG) Priming Powder		.45 Caliber Rifle Black Powder & Round Ball Loads	
.440" Diameter Lead Ball Weight (Grains)	Black Powder Charge (Grains)	Muzzle Velocity (Feet Per Second)	Muzzle Velocity (Feet Per Second)
127 Grain Lead Ball	50 grs. FFG	1605 F.P.S.	727 F.P.S.
	60 grs. FFG	1720 F.P.S.	835 F.P.S.
	70 grs. FFG	1825 F.P.S.	940 F.P.S.
	80 grs. FFG	1929 F.P.S.	1050 F.P.S.
	90 grs. FFG	2003 F.P.S.	1122 F.P.S.
	100 grs. FFG	2081 F.P.S.	1132 F.P.S.
	110 grs. FFG	2158 F.P.S.	1314 F.P.S.
Load Shown in Red is Maximum			

For Use With .50 Caliber Rifles Patches Lubricated with Bore Butter Use No.11 Percussion Cap, Musket Cap or T/C Flint with 4F (FFFFG) Priming Powder		.50 Caliber Rifle Black Powder & Round Ball Loads	
.490" Diameter Lead Ball Weight (Grains)	Black Powder Charge (Grains)	Muzzle Velocity (Feet Per Second)	Muzzle Velocity (Feet Per Second)
175 Grain Lead Ball	50 grs. FFG	1357 F.P.S.	716 F.P.S.
	60 grs. FFG	1434 F.P.S.	799 F.P.S.
	70 grs. FFG	1643 F.P.S.	1050 F.P.S.
	80 grs. FFG	1838 F.P.S.	1313 F.P.S.
	90 grs. FFG	1950 F.P.S.	1478 F.P.S.
	100 grs. FFG	2052 F.P.S.	1637 F.P.S.
	110 grs. FFG	2135 F.P.S.	1772 F.P.S.
Load Shown in Red is Maximum			

Suggested Loads Cont'd...

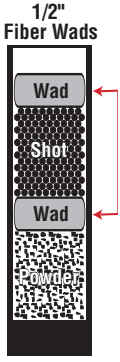
For Use With .54 Caliber Rifles Patches Lubricated with Bore Butter Use No.11 Percussion Cap, Musket Cap or T/C Flint with 4F (FFFFG) Priming Powder		.54 Caliber Rifle Black Powder & Round Ball Loads	
.530" Diameter Lead Ball Weight (Grains)	Black Powder Charge (Grains)	Muzzle Velocity (Feet Per Second)	Muzzle Velocity (Feet Per Second)
230 Grain Lead Ball	60 grs. FFG	1263 F.P.S.	815 F.P.S.
	70 grs. FFG	1469 F.P.S.	1102 F.P.S.
	80 grs. FFG	1654 F.P.S.	1397 F.P.S.
	90 grs. FFG	1761 F.P.S.	1584 F.P.S.
	100 grs. FFG	1855 F.P.S.	1758 F.P.S.
	110 grs. FFG	1931 F.P.S.	1905 F.P.S.
	120 grs. FFG	1983 F.P.S.	2009 F.P.S.
Load Shown in Red is Maximum			

For Use With .56 Caliber Rifles Patches Lubricated with Bore Butter Use No.11 Percussion Cap, Musket Cap or T/C Flint with 4F (FFFFG) Priming Powder		.56 Caliber Rifle Black Powder & Round Ball Loads	
.550" Diameter Lead Ball Weight (Grains)	Black Powder Charge (Grains)	Muzzle Velocity (Feet Per Second)	Muzzle Velocity (Feet Per Second)
265 Grain Lead Ball	80 grs. FFG	1195 F.P.S.	840 F.P.S.
	90 grs. FFG	1285 F.P.S.	972 F.P.S.
	100 grs. FFG	1300 F.P.S.	995 F.P.S.
Load Shown in Red is Maximum			

Suggested Loads Cont'd...

For Use With .56 Caliber Smoothbore T/C Renegade Use Two Wads - one over the powder, one over the shot. Use No.11 Percussion Cap or Musket Cap		.56 Caliber Black Powder & Bird Shot Loads	
Lead Shot #6 or 7 1/2 Weight (Grains)	Black Powder Charge (Grains)	.56 Cal 1/2" Thick Fiber Wads	Muzzle Velocity (Feet Per Second)
7/8 oz. (approx) Lead Shot	80 grs. FFG	Two Are Used	1116 F.P.S.
Load Shown in Red is Maximum			

SPECIAL INSTRUCTIONS FOR SHOT LOAD
This load was developed for the .56 Cal Renegade Smoothbore and must be used as described. **STEP ONE:** Set your powder measure for 80 grains of FFG. Fill the measure with powder and pour it into the muzzle. **STEP TWO:** Seat one .56 Cal T/C wad firmly against the powder charge. **STEP THREE:** Reset your powder measure for 60 grains of powder. At this setting the measure will hold approximately 7/8 ounces of shot. Fill the measure with #6 or #7 1/2 shot and pour it into the muzzle. **STEP FOUR:** Seat one .56 Cal T/C wad firmly against the shot charge. Follow all of the loading and safety precautions listed in this booklet. **USE THIS LOAD WITH SPECIAL .56 CALIBER T/C WADS ONLY. SEE DRAWING ON RIGHT!**



NOTE: SPECIAL .56 CAL. T/C WADS MUST BE SEATED FIRMLY AGAINST POWDER CHARGE AND OVER SHOT CHARGE AS SHOWN.

For Use With .58 Caliber Rifles Patches Lubricated with Bore Butter Use No.11 Percussion Cap, Musket Cap or T/C Flint with 4F (FFFFG) Priming Powder		.58 Caliber Rifle Black Powder & Round Ball Loads	
.570" Diameter Lead Ball Weight (Grains)	Black Powder Charge (Grains)	Muzzle Velocity (Feet Per Second)	Muzzle Velocity (Feet Per Second)
279 Grain Lead Ball	80 grs. FFG	1302 F.P.S.	1050 F.P.S.
	90 grs. FFG	1373 F.P.S.	1168 F.P.S.
	100 grs. FFG	1428 F.P.S.	1263 F.P.S.
	110 grs. FFG	1519 F.P.S.	1430 F.P.S.
	120 grs. FFG	1595 F.P.S.	1576 F.P.S.
Load Shown in Red is Maximum			

Suggested Loads Cont'd...

For Use With .45 Cal. T/C Rifles Bullets Lubricated with Bore Butter Use No.11 Percussion Cap, Musket Cap or T/C Flint with 4F (FFFFG) Priming Powder		.45 Caliber Rifle Black Powder & Maxi-Ball • Maxi-Hunter Loads	
.45 Caliber Lead Bullet Weight (Grains)	Black Powder Charge (Grains)	Muzzle Velocity (Feet Per Second)	Muzzle Velocity (Feet Per Second)
190-200 Grain Lead Bullet	80 grs. FFG	1711 F.P.S.	1300 F.P.S.
	90 grs. FFG	1786 F.P.S.	1417 F.P.S.
	100 grs. FFG	1843 F.P.S.	1509 F.P.S.
	110 grs. FFG	1902 F.P.S.	1607 F.P.S.
240 - 255 Grain Lead Bullet	70 grs. FFG	1522 F.P.S.	1312 F.P.S.
	80 grs. FFG	1605 F.P.S.	1459 F.P.S.
	90 grs. FFG	1672 F.P.S.	1583 F.P.S.
	100 grs. FFG	1735 F.P.S.	1705 F.P.S.
320 Grain Lead Bullet	70 grs. FFG	1406 F.P.S.	1405 F.P.S.
	80 grs. FFG	1497 F.P.S.	1593 F.P.S.
	90 grs. FFG	1570 F.P.S.	1752 F.P.S.
	100 grs. FFG	1612 F.P.S.	1847 F.P.S.
Load Shown in Red is Maximum			

Suggested Loads Cont'd...

For Use With .50 Cal. T/C Rifles Bullets Lubricated with Bore Butter Use No.11 Percussion Cap, Musket Cap or T/C Flint with 4F (FFFFG) Priming Powder		.50 Caliber Rifle Black Powder & Maxi-Ball • Maxi-Hunter Loads	
.50 Caliber Lead Bullet Weight (Grains)	Black Powder Charge (Grains)	Muzzle Velocity (Feet Per Second)	Muzzle Velocity (Feet Per Second)
275-320 Grain Lead Bullet	80 grs. FFG	1494 F.P.S.	1586 F.P.S.
	90 grs. FFG	1551 F.P.S.	1709 F.P.S.
	100 grs. FFG	1629 F.P.S.	1886 F.P.S.
	110 grs. FFG	1661 F.P.S.	1961 F.P.S.
350 - 370 Grain Lead Bullet	70 grs. FFG	1327 F.P.S.	1447 F.P.S.
	80 grs. FFG	1418 F.P.S.	1652 F.P.S.
	90 grs. FFG	1465 F.P.S.	1764 F.P.S.
	100 grs. FFG	1525 F.P.S.	1911 F.P.S.
460 - 470 Grain Lead Bullet	70 grs. FFG	1225 F.P.S.	1566 F.P.S.
	80 grs. FFG	1297 F.P.S.	1756 F.P.S.
	90 grs. FFG	1374 F.P.S.	1970 F.P.S.
	100 grs. FFG	1416 F.P.S.	2093 F.P.S.
Load Shown in Red is Maximum			

Suggested Loads Cont'd...

For Use With .54 Cal. T/C Rifles Bullets Lubricated with Bore Butter Use No.11 Percussion Cap, Musket Cap or T/C Flint with 4F (FFFFG) Priming Powder		**.54 Caliber Rifle** **Black Powder &** **Maxi-Ball • Maxi-Hunter Loads**	
.54 Cal.Lead Bullet Weight (Grains)	Black Powder Charge (Grains)	Muzzle Velocity (Feet Per Second)	Muzzle Energy (Foot Pounds)
360-365 Grain Lead Bullet	90 grs. FFG	1390 F.P.S.	1566 F.P.S.
	100 grs. FFG	1483 F.P.S.	1783 F.P.S.
	110 grs. FFG	1551 F.P.S.	1950 F.P.S.
	120 grs. FFG	1607 F.P.S.	2094 F.P.S.
430 - 435 Grain Lead Bullet	90 grs. FFG	1263 F.P.S.	1541 F.P.S.
	100 grs. FFG	1345 F.P.S.	1748 F.P.S.
	110 grs. FFG	1428 F.P.S.	1970 F.P.S.
	120 grs. FFG	1499 F.P.S.	2171 F.P.S.
530 - 540 Grain Lead Bullet	90 grs. FFG	1218 F.P.S.	1779 F.P.S.
	100 grs. FFG	1298 F.P.S.	2021 F.P.S.
	110 grs. FFG	1339 F.P.S.	2150 F.P.S.
	120 grs. FFG	1396 F.P.S.	2337 F.P.S.
Load Shown in Red is Maximum			

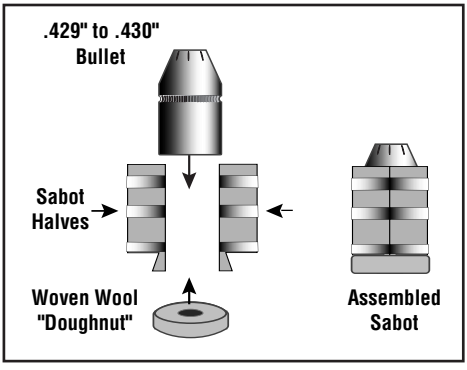
For Use With .58 Cal. T/C Rifles Bullets Lubricated with Bore Butter Use No.11 Percussion Cap, Musket Cap or T/C Flint with 4F (FFFFG) Priming Powder		**.58 Caliber Rifle** **Black Powder &** **Maxi-Ball • Maxi-Hunter Loads**	
.58 Cal.Lead Bullet Weight (Grains)	Black Powder Charge (Grains)	Muzzle Velocity (Feet Per Second)	Muzzle Energy (Foot Pounds)
555 - 560 Grain Lead Bullet	80 grs. FFG	1093 F.P.S.	1486 F.P.S.
	90 grs. FFG	1149 F.P.S.	1642 F.P.S.
	100 grs. FFG	1221 F.P.S.	1854 F.P.S.
	110 grs. FFG	1282 F.P.S.	2044 F.P.S.
	120 grs. FFG	1331 F.P.S.	2203 F.P.S.
Load Shown in Red is Maximum			

Assembly And Loading Of T/C Break-O-Way™ Sabots

⚠WARNING

When loading T/C's Break-O-Way Sabots, make sure that your gun is unprimed, and that your Break-O-Way Sabot has been properly assembled. Failure to assemble and load your sabot correctly could result in the bullet, sabot halves, or woven wool doughnut separating and disengaging from themselves. This could result in an air space between the components. Under such a condition, one or more of the components may act as a barrel obstruction and firing can result in a damaged firearm and POSSIBLE INJURY OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

To properly assemble your T/C Break-O-Way Sabot, position the two sabot halves together forming a complete sabot cup. Press the woven wool "doughnut" firmly on the base, allowing the flange to protrude through the hole. Your sabot is now ready to accept a .429" - .430" diameter .44 cal bullet. Use only bullets of these dimensions.



⚠WARNING

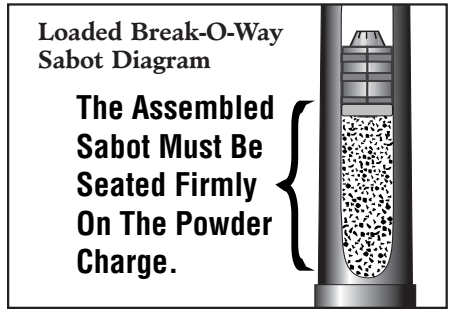
Use only bullets measuring .429" - .430" designed for use in .44 caliber pistols or rifles. Using bullets of lesser diameter may cause the bullet to separate from the sabot resulting in a barrel obstruction. Using bullets of larger diameter could result in difficult loading, or a condition where the sabot is not seated all the way down in the powder charge, resulting in a barrel obstruction. Either case can result in a damaged firearm and POSSIBLE INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

The photo on page 26 pictures a shooter in the process of loading a muzzleloading rifle. Study this photo carefully and read all the captions before you proceed to charge your rifle.

The complete sabot unit should be seated firmly on the powder charge as indicated in the illustration below.

⚠ WARNING

Do not exceed the recommended loading data in this manual when using T/C Break-O-Way Sabots in Thompson/Center rifles. When using rifles not manufactured by Thompson/Center, do not exceed the recommended loads provided by the manufacturer of your rifle.



Suggested Black Powder Loads For Break-o-Way™ Sabots in T/C Muzzleloading Rifles

For Use With .50 Caliber T/C Muzzleloading Rifles Use No.11 Percussion Cap, Musket Cap or T/C Flint with 4F (FFFFG) Priming Powder		.50 Caliber Rifle Black Powder & Break-O-Way™ Sabot Loads	
For Use With .429" - .430" Bullets	Black Powder Charge (Grains)	Muzzle Velocity (Feet Per Second)	Muzzle Energy (Foot Pounds)
200 Grain Bullet	80 grs. FFG	1634 F.P.S.	1186 F.P.S.
	90 grs. FFG	1673 F.P.S.	1243 F.P.S.
	100 grs. FFG	1730 F.P.S.	1329 F.P.S.
240 Grain Bullet	80 grs. FFG	1466 F.P.S.	1146 F.P.S.
	90 grs. FFG	1606 F.P.S.	1375 F.P.S.
	100 grs. FFG	1640 F.P.S.	1434 F.P.S.
Load Shown in Red is Maximum			

For Use With .54 Caliber T/C Muzzleloading Rifles Use No.11 Percussion Cap, Musket Cap or T/C Flint with 4F (FFFFG) Priming Powder		.54 Caliber Rifle Black Powder & Break-O-Way™ Sabot Loads	
For Use With .429" - .430" Bullets	Black Powder Charge (Grains)	Muzzle Velocity (Feet Per Second)	Muzzle Energy (Foot Pounds)
200 Grain Bullet	90 grs. FFG	1652 F.P.S.	1212 F.P.S.
	100 grs. FFG	1709 F.P.S.	1297 F.P.S.
	110 grs. FFG	1795 F.P.S.	1431 F.P.S.
	120 grs. FFG	1871 F.P.S.	1555 F.P.S.
240 Grain Bullet	90 grs. FFG	1620 F.P.S.	1399 F.P.S.
	100 grs. FFG	1662 F.P.S.	1472 F.P.S.
	110 grs. FFG	1728 F.P.S.	1592 F.P.S.
Load Shown in Red is Maximum			

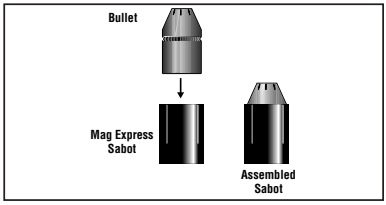
Assembly and Loading of T/C Mag Express™ Sabots

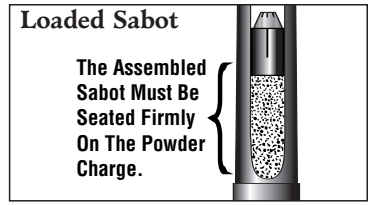
T/C Mag Express Sabots come in several variations for .50 caliber muzzle-loading applications; some accept 44 caliber (.429" - .430" diameter) bullets and others accept 45 caliber (.451" - .452" diameter) bullets. In either case, insert the correct diameter projectile into the sabot and press firmly, making sure the bullet is fully seated.

⚠ WARNING

When loading T/C's Mag Express Sabots, make sure that your gun is unprimed, and that your Mag Express Sabot has been properly assembled. Failure to assemble and load your sabot correctly could result in the bullet disengaging from the sabot. This could result in an air space between the components. Under such a condition, one or more of the components may act as a barrel obstruction and firing could result in a damaged firearm and POSSIBLE INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

To properly assemble your T/C Mag Express Sabot, insert the projectile into the sabot and press firmly, making sure the bullet is fully seated. Use only bullets of the correct diameter.





⚠WARNING

Use only bullets of the correct diameter that were designed for the sabots you are using. Using bullets of lesser diameter may cause the bullet to separate from the sabot resulting in a barrel obstruction. Using bullets of larger diameter could result in difficult loading, or a condition where the sabot is not seated all the way down on the powder charge, resulting in a barrel obstruction. EITHER CASE CAN RESULT IN A DAMAGED FIREARM AND POSSIBLE INJURY AND/OR DEATH TO THE SHOOTER OR BYSTANDERS AND DAMAGE TO PROPERTY.

The photo on page 26 pictures a shooter in the process of loading a muzzleloading rifle. Study this photo carefully and read all the captions before you proceed to charge your rifle.

The complete sabot unit should be seated firmly on the powder charge as indicated in the illustration below.

⚠WARNING

Do not exceed the recommended loading data in this manual when using T/C Mag Express Sabots in Thompson/Center rifles. When using rifles not manufactured by Thompson/Center, do not exceed the recommended loads provided by the manufacturer of your rifle.

Suggested Black Powder Loads For T/C .50 Caliber Rifles Only with .44 Caliber Bullets in T/C Mag Express™ Sabots

For Use With .50 Caliber T/C Rifles Use No.11 Percussion Cap, Musket Cap or T/C Flint with 4F (FFFFG) Priming Powder		.50 Caliber Rifle Using Black Powder & Mag Express™ Sabot Loads	
For Use With .429"-.430" Bullets	Black Powder Charge (Grains)	Muzzle Velocity (Feet Per Second)	Muzzle Energy (Foot Pounds)
200 Grain Bullet	80 grs. FFG	1634 F.P.S.	1186 Ft. Lbs.
	90 grs. FFG	1673 F.P.S.	1243 Ft. Lbs.
	100 grs. FFG	1730 F.P.S.	1329 Ft. Lbs.
	110 grs. FFG	1759 F.P.S.	1374 Ft. Lbs.
240 Grain Bullet	80 grs. FFG	1466 F.P.S.	1146 Ft. Lbs.
	90 grs. FFG	1606 F.P.S.	1375 Ft. Lbs.
	100 grs. FFG	1640 F.P.S.	1434 Ft. Lbs.
	110 grs. FFG	1686 F.P.S.	1515 Ft. Lbs.
275 Grain Bullet	80 grs. FFG	1445 F.P.S.	1275 Ft. Lbs.
	90 grs. FFG	1533 F.P.S.	1435 Ft. Lbs.
	100 grs. FFG	1590 F.P.S.	1544 Ft. Lbs.
	110 grs. FFG	1640 F.P.S.	1643 Ft. Lbs.
300 Grain Bullet	80 grs. FFG	1434 F.P.S.	1370 Ft. Lbs.
	90 grs. FFG	1512 F.P.S.	1523 Ft. Lbs.
	100 grs. FFG	1582 F.P.S.	1666 Ft. Lbs.
	110 grs. FFG	1619 F.P.S.	1747 Ft. Lbs.
Load Shown in Red is Maximum			

Suggested Black Powder Loads For T/C .54 Caliber Rifles Only with .45 Caliber Bullets in T/C Mag Express™ Sabots

For Use With .54 Caliber T/C Muzzleloading Rifles Use No.11 Percussion Cap, Musket Cap or T/C Flint with 4F (FFFFG) Priming Powder		.54 Caliber Rifle Black Powder & Mag Express™ Sabot Loads	
For Use With .451" - .452" Bullets	Black Powder Charge (Grains)	Muzzle Velocity (Feet Per Second)	Muzzle Energy (Foot Pounds)
250 Grain Bullet	80 grs. FFG	1417 F.P.S.	1115 F.P.S.
	90 grs. FFG	1466 F.P.S.	1193 F.P.S.
	100 grs. FFG	1514 F.P.S.	1273 F.P.S.
	110 grs. FFG	1611 F.P.S.	1441 F.P.S.
	120 grs. FFG	1660 F.P.S.	1530 F.P.S.
Load Shown in Red is Maximum			

Representative Ballistics For Black Powder Loads.

Bullet	Grains Of FFG Black Powder	Range In Yards	Impact From Line Of Sight	Velocity F.P.S.	Energy Ft./Lbs.
Ballistics Using .50 Caliber Conical Bullets					
350 Grain Maxi-Hunter® or 370 Grain Maxi-Ball® Lead Conical	100 grs. FFG	0	-.8	1465	1764
	100 grs. FFG	50	+2.1	1213	1209
	100 grs. FFG	100	0.0	1044	896
	100 grs. FFG	150	-9.6	942	729
	100 grs. FFG	200	-28.1	869	621
Ballistics Using .50 Caliber Mag Express Sabots					
240 Grain XTP™	100 grs. FFG	0	-.8	1640	1434
	100 grs. FFG	50	+1.6	1479	1166
	100 grs. FFG	100	0.0	1346	966
	100 grs. FFG	150	-6.3	1226	801
	100 grs. FFG	200	-16.6	1129	679
275 Grain XTP™	100 grs. FFG	0	-.8	1590	1544
	100 grs. FFG	50	+1.7	1433	1254
	100 grs. FFG	100	0.0	1294	1023
	100 grs. FFG	150	-6.8	1179	849
	100 grs. FFG	200	-18.5	1089	724
300 Grain XTP™	100 grs. FFG	0	-.8	1582	1668
	100 grs. FFG	50	+1.6	1443	1387
	100 grs. FFG	100	0.0	1330	1178
	100 grs. FFG	150	-6.4	1230	1008
	100 grs. FFG	200	-17.8	1146	875
250 Grain PTX™	100 grs. FFG	0	-.8	1626	1468
	100 grs. FFG	50	+1.7	1433	1140
	100 grs. FFG	100	0.0	1270	896
	100 grs. FFG	150	-7.0	1157	743
	100 grs. FFG	200	-21.1	1047	609
Ballistics Using .54 Caliber Mag Express Sabots					
250 Grain PTX™	100 grs. FFG	0	-.8	1514	1273
	100 grs. FFG	50	+2.0	1339	995
	100 grs. FFG	100	0.0	1192	789
	100 grs. FFG	150	-8.1	1090	660
	100 grs. FFG	200	-23.5	1017	574

Mailing & Shipping Information

Thompson/Center Mailing Address:

Thompson/Center Arms Company, Inc.
P.O. Box 5002
Rochester, New Hampshire03866

Thompson/Center Shipping Address:

Thompson/Center Arms Company, Inc.
Farmington Road
Rochester, New Hampshire03867

For Your Records

Important Note: For fire, theft and insurance purposes, retain this record with your important papers.

My Thompson/Center:_____

Was Purchased From: _____

On (date): _____ 20_____

Serial Number: _____ Caliber: _____

Accessories: _____

Owner Registration Card Mailed on: _____

Notes: _____

_____

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This area is provided for your convenience. We suggest that you make a list of important information that pertains to your specific firearm (best performing load, etc.). Keep this booklet with your firearm and review your notes before each hunting season or whenever the firearm has not been used for extended periods.

Thompson/Center Arms Co., Inc.
P.O. Box 5002
Rochester, New Hampshire 03866

NOTE: The loading data found in this manual was compiled using Black Powder or Pyrodex as a propellant. With any other approved Black Powder Substitute follow the instructions supplied by the manufacturer and heed all warnings as they apply to loading and usage of that product.

No.7390

Rev 06/06

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