BIRCHWOOD CASEY®

Gun Care *Guide*

A guide to cleaning, protection and maintenance.

Gun Care Guide Contents

There's a lot more to firearm safety than knowing your target and keeping your muzzle pointed in a safe direction. Gun safety begins before you chamber a round and even before you step foot in the field or range. It begins with equipment that is properly maintained and cared for. Gun safety begins with a clean gun.

A clean firearm is a safe firearm. A dirty, fouled action can cause jams, ejection problems, misfeeds and even misfires. Always refer to the manufacturer's manual before taking apart your firearm. Use the proper cleaning solutions for best results. Heavy oils can gum up parts and cause jamming and ejection problems. Especially in cold weather, and general use, lubricants can cause unforeseen complications. All Birchwood Casey products are specially formulated for use with firearms and the environments they are used in.

The experts at Birchwood Casey recommend an easy-to-use 1-2-3 cleaning process to ensure that your gun will perform like it should, look great and retain its value for a long time.

And remember, always keep firearms and ammunition out of the reach of children.

STEP 1

Bore Scrubber® Bore Cleaner

The first step in the process is breaking down the materials that accumulate in your gun every time you fire it. Lead, copper, plastic, carbon, and powder can ruin your barrels and affect accuracy. When these materials are blasted through the barrel, a tough-to-clean residue is left behind.

Many gun cleaning products on the market address only part of the problem: one solvent removes copper, but another is needed to remove nitro fouling. Birchwood Casey BORE SCRUBBER 2-in-1 Bore Cleaner does both jobs quickly, effectively and safely without any highly toxic ingredients. It's great for softening hardened residue in the receiver and trigger action assembly, it also contains a superior rustproofing agent for added production. Tough to reach springs can be removed and soaked. Tricky spots may require the use of a brush or cotton swab.

Bore Scrubber Directions:

1. Place a clean, dry patch on tip end of cleaning rod and push through bore to remove loose fouling.
2. Soak patch with solvent and "wash" the bore to saturate fouling. Repeat with another wet patch and allow to soak for a few minutes. Never cork or plug the barrel.
3. Wet bore brush with solvent and scrub inside of barrel. Push the brush completely through each way.
4. Continue to clean with dry patches until they come out clean.

Tech Tip:

Soaking choke tubes and other hard to clean parts in Bore Scrubber 2-in-1 Bore Cleaner is a great way to use less elbow grease in cleaning these components.

STEP 2

Gun Scrubber® Firearm Cleaner

The second step is essentially stripping your gun of all foreign oil, residue and film. Use Birchwood Casey GUN SCRUBBER Cleaner to remove any grit and residue broken down by the Bore Cleaner. GUN SCRUBBER Cleaner is a jet-action, high-pressure solvent that needs no rinsing. It dries rapidly and leaves firearm metal perfectly clean and free of any film or grease. Use GUN SCRUBBER Cleaner to flush the bore action and trigger assembly, clean the receiver, the bolt of a bolt-action rifle, or the barrel threads and screw-out tubes of a shotgun with removable chokes.

At this point, your gun is completely clean and free of oil and residue. It is now ready for a rust preventative.

Gun Scrubber Directions:

1. Firearm can be disassembled into major components, if desired before starting.

2. Insert extension tube into spray nozzle and spray liberally but in short blasts for best results. Watch out for splash back in eyes. Use aerosol in an upright position to maximize performance. A brush is handy to assist in cleaning stubborn areas.

3. Be certain to direct flexible extension tube into hard-to-reach places and other unseen areas. Use nozzle without extension tube if desired for maximum flushing abilities to broad open assemblies.

Tech Tip:

CAUTION: May harm some plastics, painted surfaces, synthetic stocks, camouflage finishes and wood finishes. Do not allow product to pool on, in or under firearm, or components to reduce the possibility of damage. Test an area before using.

STEP 3

Barricade® Rust Protection for Firearms

By completing steps one and two, you have effectively removed all traces of oil and lubricants necessary to ensure smooth working actions and provide protection from the elements.

Protect and lubricate your firearm with Birchwood Casey BARRICADE Rust Protection, which unlike some other penetrant/lubricant products, is specially formulated for use on firearms. Use sparingly in the action and trigger assembly. BARRICADE Rust Protection drives out moisture from metal pores and deposits a transparent coating that protects against corrosive moisture and fingerprints – common causes of rust on firearms. Because BARRICADE Rust Protection is a superior penetrant, there is no need to leave it "wet" on the metal; a light coating provides complete protection.

Barricade Directions:

1. Wipe off exposed metal surface with a soft cloth to remove dirt and oil before applying BARRICADE Rust Protection.
2. Spray directly on metal parts holding can about six inches away from metal. Use extender tube for hard-to-reach areas.
3. Wipe up any excess BARRICADE Rust Protection with soft, clean cloth.

Tech Tip:

BARRICADE Rust Protection for Firearms can be used to remove light surface rust. Spray on extra and polish with fine steel wool. Remove the rust without damaging the blued surface.

Recommended Products

1-2-3 Aerosol Value Pack

Gun cleaning made simple. 3 easy steps to clean your firearm: dissolve, clean and protect. The 1-2-3 aerosol value pack includes 10 oz aerosol cans of Bore Scrubber®, Gun Scrubber®, and Barricade®.

Synthetic Gun Oil

Reduces the friction between mating surfaces. Will not gum up or lose its viscosity under extreme temperature variations from -55°F to 300°F. The natural solvency of SYNTHETIC Gun Oil cleans as it oils while its low evaporation rate assures protection against rust.

Lead Remover and Polishing Cloth

Quickly removes leading, burn rings, carbon residue including copper and plastic fouling, rust and tarnish. Brings back original luster of stainless steel and most metal surfaces.

No. 77 Muzzle Magic™ Cleaner

Prevent rust and loss of accuracy from blackpowder fouling by cleaning your muzzleloader with No. 77 – the traditional, water-soluble cleaner. Effectively dissolves powder residue and loosens any metal traces for easy removal.

RIG® #2 Oil Lubricant

RIG #2 is a specialty gun oil formulated for lubrication and rust prevention. Excellent for use on all firearm metal surfaces to displace moisture, prevent rust and lubricate moving parts. RIG #2 will not harm painted surfaces, plastics, rubbers or plated surfaces found on modern firearms. Will not gum up or attract dirt.

Recommended Products

Gun & Reel Silicone Cloth

A soft cloth permeated with silicone, perfect for cleaning and protecting wooden gun stocks. Safely removes dust and corrosive fingerprints and leaves a lustrous, lasting protective film on all metal, wood and plastic surfaces. A great post-clean ritual.

Moly Lube™ Dry Film Firearm Lubricant

Designed to lubricate and penetrate, forming a smooth, extremely slippery surface on metal. Molybdenum disulfide particles are deposited onto metal surfaces and give maximum lubricity and wear resistance, even under extreme temperatures and pressures.

RIG® Universal™ Gun Grease

A thin film of RIG Universal Gun Grease will help keep your firearms rust-free. One thorough application of RIG Universal Gun Grease inside and out will protect your rifle, handgun, shotgun or muzzleloader against rust and corrosion. RIG is the ideal choice of rust protection for long-term storage.

Choke Tube Lube

Prevents stuck choke tubes cause by corrosion, high stress of steel shot loads, extreme temperatures and pressure from repeated shooting. This superior anti-seize lubricant guarantees ease in choke tube insertion and remove for all regular and stainless steel tubes.

Tech Tip:

Choke Tube Lube works great for use in mounting the small screws for scope rings and bases for secure tightening that won't rattle loose. Yet ensures easy removal when the time comes. Excellent for use on muzzle loaders and breech plugs to prevent seizing.

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Refinishing *Guide*

A complete guide to stock finishing and gun blueing.

Refinishing Guide Contents

Carmichel's Tips:

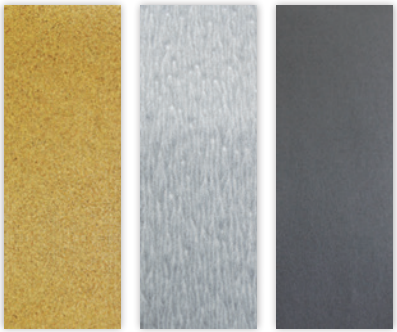
Thanks to Jim Carmichel for his help with this guide. In addition to having been the Shooting Editor for Outdoor Life magazine, Jim is an accomplished gunsmith with tremendous insight on wood finishing, blueing, and browning metal. Follow Carmichel's Tips and you'll make your gun everything it deserves to be!

Wood Preparation

Sanding is a critical step in any wood finishing venture. Yes, it can be tedious. And sometimes it is easy to tell yourself "that's good enough" in order to get on with the more glamorous process of finish application. Resist the temptation to cut corners, because the finish will actually accentuate scratches and other imperfections in the wood.

New Wood

❶ Following final tooling on a new gun stock, begin sanding with a medium to coarse paper. 120 is typically enough grit to remove material quickly without being too aggressive. Always sand with the grain whenever using an abrasive.



120/180 280 400

❷ Work your way down to 180-grit, 280-grit, and finally some extra-fine steel wool to erase even the slightest scratches while knocking down any loose fibers.

❸ If your stock has really tight grain with small pores, wipe it down with a tack cloth and you're ready for staining or applying Tru-Oil® Gun Stock Finish.

Old Wood

❶ First, remove what's left of the stock's original finish with an appropriate stripper (available from any hardware store). Follow the manufacturer's instructions.

❷ If the stock is relatively scratch-free, give it a gentle sanding with 120-grit, 180-grit, and finally 280-grit paper and polish with extra-fine steel wool. Wipe with a tack cloth and go right to staining or applying Tru-Oil® Gun Stock Finish.

❸ If you have some scratches or dents to deal with, use only as much grit as necessary. Light scratches will remove with 280-grit paper, while deeper wounds may require a coarser grit.

❹ When tackling scratch and dent removal, use a sanding block to prevent "digging in," and try to smooth away the affected area with the grain.

Carmichel's Tips:

To keep stock edges sharp and the wood's surface ripple-free, always sand with a sanding block. The block will prevent the abrasive from "digging in" on soft spots in the grain. And remember to sand AROUND checkering to keep the checkered peaks crisp. Keep checkering masked off until final application of oil.

Wood Staining

Now that the wood is properly prepared, light-color wood can be stained. Birchwood Casey Walnut Stain is a water-based stain that will produce a clear, rich walnut color without grain clouding or smearing.

❶ As a test to determine whether to stain or not, examine a portion of the wood while it is wet with water or alcohol. This acts as a close visual approximation to what you can expect the wood color to look like once the Tru-Oil® Gun Stock Finish has been applied.

❷ Walnut Stain is a concentrate solution; color intensity is easily controlled by adding water. Dilute with water before using to achieve a lighter color; or leave full strength for a darker color. It's best to test color intensity on a scrap piece of wood. Generally 50/50 stain and water mix works for most situations.

❸ Apply Walnut Stain with a clean, lint-free cloth or brush. If darker than desired, sponge wood with clear water. If lighter than desired, add more stain.

❺ Allow the Walnut Stain to dry overnight before applying Tru-Oil® Gun Stock Finish.

Wood Filling

The following techniques can be used to help fill the pores and ensure a good grain filling. For non-stained woods you will need to use the wet-sanding technique by using Tru-Oil Gun Stock Finish. If your wood is stained, you will need to use the Sealer and Filler to fill the grain. These specialty steps are optional and are not required.

Non-Stained Woods

❶ First, apply Tru-Oil Gun Stock Finish to the entire stock and allow it to penetrate the grain. Don't rub it in, just let the wood absorb it. When the stock has soaked up all it can absorb, wipe away the excess and let dry for 24 hours (Read Carmichel's Tip below).

❷ Working on 4" x 4" sections, coat the area with Tru-Oil Gun Stock Finish and wet sand with 280-grit wet/dry sand paper.

This wet sanding creates a slurry of wood dust and finish that works its way into the pores. You'll feel and hear the sandpaper cutting. If the finish gets tacky, simply add more Tru-Oil Finish.

❸ Continue wet sanding 4" x 4" sections until the entire stock is covered in the slurry. Work it in small circles with your fingers to drive it into the grain.

❹ Finish by wiping the excess slurry off with a paper towel **cross grain**. This ensures good grain filling.

Carmichel's Tips:

To dispense Tru-Oil® Gun Stock Finish, poke a small hole in the foil cover. This will help prevent your supply from skinning over inside the bottle.

5 Let the stock dry for approximately 24 hours. Then, repeat the process if necessary to fill remaining open pores (Steps 1-4), and wipe away all slurry when complete.

6 After waiting 24 hours, proceed by smoothing any imperfections with 280- or 400-grit sand paper as needed, along with extra-fine steel wool. Wipe with tack or service cloth.

7 Your stock is now totally filled, protected, and ready for the finishing coats.

Stained Woods

1 Apply Birchwood Casey Gun Stock Sealer and Filler generously and directly to wood with brush or a clean, lint-free cloth. Do not over brush. Let dry for 60 minutes or until thoroughly dry.

2 Sand evenly with extra-fine sandpaper to remove surface imperfections or runs.

3 Repeat steps 1 and 2 if grain is not completely filled. Let the stock dry for approximately 1-3 hours or until thoroughly dry. Your stock is now totally filled, protected and ready for the finishing coats.

Tru-Oil® Application

Tru-Oil Gun Stock Finish has been the professional's choice for easy, top-quality gun stock finishing for more than 40 years.

1 To begin, first pour a small quantity of Tru-Oil Gun Stock Finish in a small container and replace the bottle cap. This will help prevent your supply from skinning over (Read Carmichel's Tip on page 5). With the cap on, store the bottle upside down.

❷ **First Finish Coat.** Dip your finger into the cup and hand-apply Tru-Oil Gun Stock Finish in smooth, gliding coats. You'll find that this first coat will absorb readily into the grain. Be careful not to overcoat the first application, as this can cause unwanted build-up and possible runs (see picture on next page).

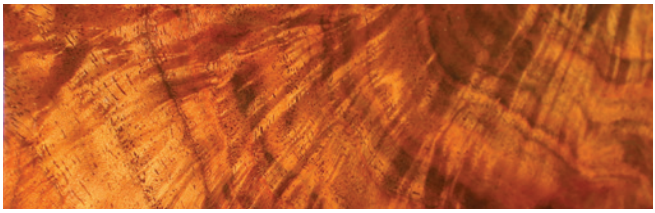
❸ Now hang the stock and allow it to dry up to 24 hours or until thoroughly dry.

❹ Once dry, check the stock for runs, streaks, or rough spots. If they exist, knock them down with fine 400-grit sandpaper or steel wool if desired.

❺ Wipe the wood down with a tack cloth, or provided service cloth, and proceed to the following coats.

❻ **For additional coats** - repeat steps 2 through 5. We recommend waiting at least 12 hours between coats. The number of coats needed will vary depending on the grain of your gun stock and the desired outcome wanted. We recommend 4-5 coats for good overall protection.

❼ **Final Coat** - Apply the final coat carefully and sparingly, spreading the oil so there is no streaking. This coat will dry to a rich gloss finish.



Satin Finish

This step is for those who prefer a traditional, hand-rubbed satin finish.

1. Polish with Birchwood Casey Stock Sheen & Conditioner after waiting at least 7 days after applying your last coat of Tru-Oil Gun Stock Finish. Stock Sheen & Conditioner effectively removes any surface imperfections and leaves your stock with a satin finish.

2. Repeat applications as desired for a softer matte finish.

Added Protection

Offers added protection from weather and handling.

1. Wait at least 7+ days after your last coat of Tru-Oil before proceeding. Apply Birchwood Casey Gun Stock Wax directly on wood, metal or leather surfaces in a thin, even coat.

2. Polish and rub until thoroughly dry.

3. Repeat steps 1 and 2 until desired luster is obtained.

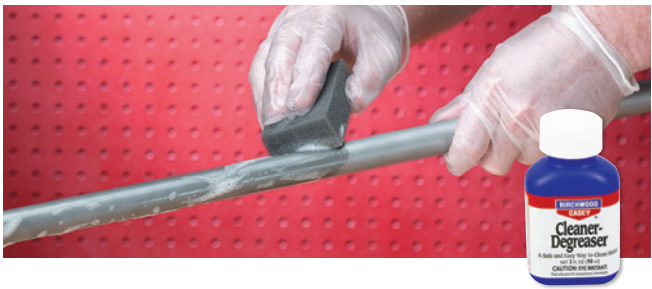
Carmichel's Tips:

If you need to thin Tru-Oil Gun Stock Finish for other application methods, mineral spirits will do the job. Just be aware that by thinning the solution, drying time may increase slightly. You will also find mineral spirits helpful for cleaning tools and your hands following the application process.

Metal Preparation

There's nothing quite like the deep color of a beautifully blued firearm or the authentic patina of a browned muzzleloader. And nothing can help you achieve flawless metal finishing like Birchwood Casey metal finishes.

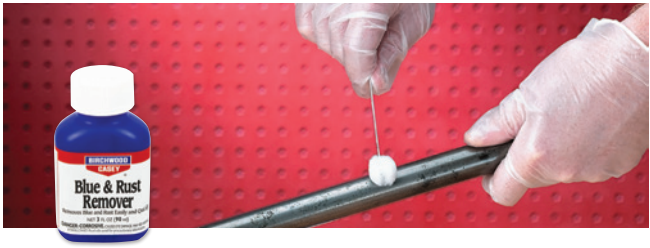
1 Removing old blueing and rust is a necessary step before re-blueing or browning. First, after removing the stock/forearm and trigger assembly, clean all metal surfaces with a saturated sponge of Birchwood Casey Cleaner-Degreaser and rinse thoroughly with water (Read Carmichel's Tip below). Always wear gloves during the preparation and blueing process.



Carmichel's Tips:

Cleaning and degreasing is critical. Do not cut a corner here. For the best results use Birchwood Casey Cleaner-Degreaser. If you do not have access to it, ordinary dish-washing liquid soap will work as a substitution. **When you think it's clean enough, clean it two more times!**

2 Apply Birchwood Casey Blue & Rush Remover with a saturated swab and allow it to work for two minutes. With a small pad of steel wool (dampened with Blue & Rust Remover), polish the metal lightly to remove old blueing and loosened rust. Continue this process until the metal is shiny.



3 If the metal suffers from deep scratches and/or pitting, sand the affected areas with fine 280-grit paper followed by a steel wool polish. A file may be needed for deep pits (Read Carmichel's Tip below).

Carmichel's Tips:

When sanding metal surfaces, wrap the paper around a stiff, flat backer like a file. In addition to reducing hand fatigue, it will keep surfaces flat and edges crisp.

4 Whatever you do, don't try and rush metal preparation. Keep polishing until everything looks right. If you don't, you'll regret it later. Also, don't forget the trigger, screw heads, or anything else that shows. Disassemble any multiple-part mechanisms for preparation and metal finishing.

5 Re-apply the Cleaner & Degreaser, scrub with a sponge and rinse again with **cold** water. At this point, be careful not to touch the metal with your fingers as this can leave tell-tale marks after blueing caused by the natural oils from your hand.

Carmichel's Tips:

When preparing rounded surfaces such as musket and shotgun barrels for browning, take strips of cloth-backed sandpaper or emery cloth and give the barrel a brisk back-and-forth treatment like an old-fashioned shoe shine. This technique cuts mighty fast, so be careful not to cut any unsightly ripples or grooves. Follow up with a good steel wool polishing.

Blueing Application

1 Apply Birchwood Casey Perma Blue® Paste or Liquid Gun Blue with an applicator swab over the entire surface to be blued. Work as quickly as you can, but remember to be thorough. Rather than blueing the entire surface at one time, you may want to divide the work into 2 or 3 sections.

2 Allow the blueing to stand on the metal for **30-60 seconds. No longer.** Then neutralize the chemical reaction by rinsing immediately and thoroughly with **cold** water and wipe dry (Read Carmichel's Tip below).

Carmichel's Tips:

Timing is critical when it comes to blueing. For best results, do not allow solution to contact metal surfaces for longer than 1 minute. It's better to allow the solution to sit on the metal surface for less time rather than too long.

3 After or during rinsing, polish very lightly with fine steel wool to blend the color if needed. If steel wool is used, you must use Cleaner & Degreaser again to remove any surface oils that may have been introduced. Appraise the blueing for coverage. If streaking exists or you desire a deeper/darker blue, simply repeat steps 1, 2, and 3 until the desired color is obtained.

4 Saturate all areas with Birchwood Casey Barricade® Rust Protection and allow your new blueing to cure overnight.

5 Re-assemble your firearm. Your richly blued finish is complete. To keep it looking new, rub on a coat of Barricade Rust Protection from time to time or after each shooting session.

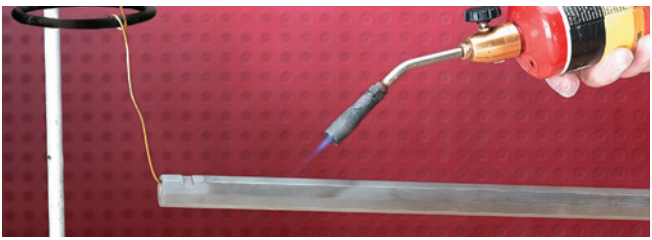
Browning Application

In the old days, gun metal browning was a slow-rust process that involved the proper combination of chemicals and atmospheric conditions to create a thin layer of corrosion on the metal's surface. It was time-consuming and often an inconsistent endeavor.

Today, browning is quick and easy thanks to Birchwood Casey Plum Brown™ Barrel Finish. The most important part of the equation is the proper preparation of the surfaces to be browned. If you're browning an antique muzzleloader or a rough kit weapon, chances are you will need to repair scratched, pitted, rusted or file-marked areas. Refer back to the Metal Preparation section on page 9 when tackling this critical task.

1 Birchwood Casey Plum Brown Barrel Finish requires heat to activate the authentic browning character of the product (a chemical reaction between the solution and ferrous metal). With the steel properly prepared and cleaned/degreased, apply heat using a butane torch, gas, electric stove, or whatever means is safe and convenient. For best results with a propane torch, use a large-flame nozzle and hold it 3-4 inches away from the surface.

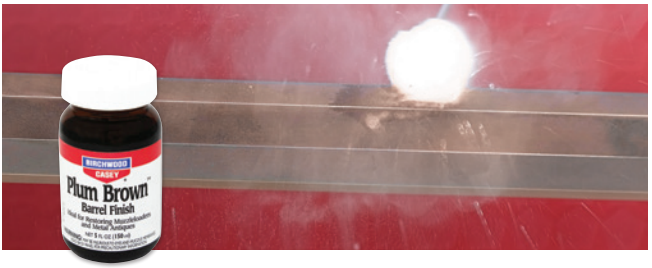
Holding barrels in a vise can create cold spots (since the heat radiates into the vise). Instead, make a barrel cradle out of a bent coat hanger to eliminate this problem.



2 Heat evenly by moving the heat source back and forth along the item being browned. Note that heavier areas (like the barrel breech) will take longer to heat and will retain their temperature longer. Also, small parts are more likely to get overheated. So heat thoroughly to 275°F. To test the temperature Read Carmichel's Tip below. It is not necessary to heat the entire barrel at the same time. The barrel may be heated and finished in sections.

Carmichel's Tips:

For testing temperature, nothing beats the old-fashioned sizzle test. Drop a small amount of water on the heated surface. If it remains on the metal and evaporates slowly, the metal is too cold. If the water vanishes in an puff of steam, it's too hot. Ideally, the water will sizzle and dance about as it evaporates. That is when it's time to apply Plum Brown Barrel Finish.



3 When the ideal temperature of 275°F has been obtained, apply Plum Brown Barrel Finish with a saturated swab in long even strokes. The rich plum brown color will appear immediately. (Read Carmichel's Tip below).

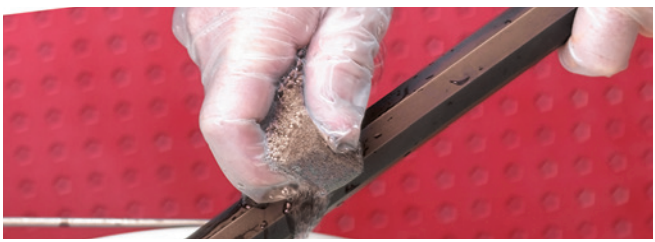
Carmichel's Tips:

275°F is the target temperature for achieving the Plum Brown Barrel Finish effect. The exact temperature isn't too critical, but it is important that the temperature be as uniform as possible. For example, a long Kentucky rifle barrel must be heated uniformly so the temperature is neither too high nor too low in any area. An uneven temperature can possibly result in uneven coloration.

If the color appears to be too thin in any area, it is probably due to a cold spot. Immediately apply heat to this area. If the metal is too hot, the solution may tend to bubble and foam, resulting in a lighter, uneven coloration. If this happens, let the metal cool a bit before continuing. Take your time and apply the solution with care, paying particular attention to color, texture and evenness.

4 As the metal is being browned, you may become concerned at what appears to be a lack of uniformity in both depth and color. This is usually caused by deposits left over from the chemical reaction. Don't worry about this. As long as the color isn't too thin, with areas of bright or semi-bright metal showing, everything is going fine.

5 As soon as the metal is cool enough to handle, rinse it thoroughly with **cold** water, dry with a clean cloth, and polish lightly with steel wool. If you desire a deeper, more uniform finish, repeat the entire heating and browning process.



6 When browning is complete, rub all surfaces down with Barricade Rust Protection. This is very important after rinsing and will penetrate the surface and give you a deep, rich, mahogany-brown permanent coating. Allow to cure for 24 hours.

7 Reassemble your authentically-browned firearm.

Plum Brown Barrel Finish is a protective coating that will withstand lots of hard use and cleaning chemicals. To keep it good looking, just rub on a coat of Barricade Rust Protection from time to time or after each shooting session.

TROUBLESHOOTING

Tru-Oil® Gun Stock Finish

The finish isn't drying completely. Why?

- Tru-Oil Gun Stock Finish will not dry if applied over an oil-emitting wood (like rosewood, ebony, and other exotic woods) or lubrication oil, tung oil, or linseed oil.
- It may be too humid in the drying location or have too many coats without proper drying time between coats.

The Tru-Oil Gun Stock Finish in the bottle skinned over. Why?

- The cap was probably left off too long. Try storing the bottle upside down to keep any skinned finish on the bottom.

There are specks on the dried finish. Why?

- This is generally due to dust. Increase the humidity and work in a dust-free area or try finishing outdoors on a calm day.

What can be done to produce a satin finish?

- Use Stock Sheen & Conditioner or go over the stock lightly with extra-fine steel wool.

How many coats of Tru-Oil should I apply?

- We recommend 4-5 coats for good overall protection. The more coats, the higher the gloss.

Perma Blue Gun Blue

The blueing is splotchy and uneven. Why?

- Either the metal was not thoroughly cleaned and degreased or the solution was left on too long, more than one minute.

The metal does not blue.

- Perma Blue Liquid or Paste Gun Blue will not work on stainless steel or aluminum.
- The solution was left on too long, more than one minute.

The blueing comes off.

- This can happen if the metal is not cleaned, degreased or rinsed well enough.
- The solution was left on too long.

The blueing looked great but then turned to brown rust.

- Did not apply barricade Rust Protection or other moisture-displacing rust preventative.
- Not completely dry before apply oil.
- Not rinsed sufficiently.

Plum Brown Barrel Finish

The brown color is uneven. Why?

- Inconsistent temperatures during the heating process can cause uneven color.
- Not completely cleaned and degreased.
- Deposits may have been left over from the chemical process.

Looked great, but the next day it was rusty.

- Not rinsed well enough or not sufficiently dry before applying next coat or moisture-displacing oil.
- Did not apply Barricade Rust Protection or other moisture-displacing oil.

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Discover other hunting & shooting products on our website.