BROWNELLS GUNSMITHS DATA RING BINDER

SAVE THESE INSTRUCTIONS IN YOUR

WARNING

Never attempt to disassemble or reassemble a firearm unless you are absolutely certain that it is empty and unloaded. Visually inspect the chamber, the magazine and firing mechanism to be absolutely certain that no ammunition remains in the firearm. Disassembly and reassembly should follow the manufacturer's instructions. If such instructions are not immediately available, contact the manufacturer to see if they are available. If they are not available at all, then you should consult other reference sources such as reference books or persons with sufficient knowledge. If such alternative sources are not available and you have a need to disassemble or reassemble the firearm, you should proceed basing your procedures on common sense and experience with similarly constructed firearms.

With regard to the use of these tools, the advice of Brownells Incorporated is general. If there is any question as to a specific application it would be best to seek out specific advice from other sources and not solely rely on the general advice and warnings given.

HOW TO USE

All parts need to be properly polished before you can blue them. A 320 grit polish is usually sufficient for Rust Bluing, as the acid in the bluing solution tends to etch the metal. In fact, too high a polish will not allow the acid to "bite" the steel, and will add to the amount of time, and the number of coats required to achieve a satisfactory job. A blending wheel, which is a .003 or .004 wire wheel, turned at 1750 RPM used with oil on the parts, does an excellent job of blending the polish marks and will reveal any deep scratches that may show after the bluing is complete.

De-greasing is the most critical step in the entire bluing process. If you do not de-grease well, the job simply will not be satisfactory. We always recommend a hot cleaning bath, since the hot solution will work into the small areas that are difficult to work with conventional solvents.

If you do use solvent (we recommend TCE **#083-060-128**), submerge the parts, and allow them to soak, then scrub them vigorously. When you remove them, and allow them to dry, look for streaks at screw holes, pin holes, etc. If there is any film at all on the parts they will not blue and you will have to start all over again!

If you are using a hot cleaning a bath, you will also need a source of hot water to rinse the parts in after cleaning. Ideally, a second tank of boiling water is best, but it can be done with hot tap water under a sink faucet. Just make sure there is no cleaning residue left on the parts. You can use nitrile gloves on your hands to rub the parts as you rinse them if desired. We recommend using hot water because it keeps the parts hot which will make the initial coat of bluing solution easier to apply.

This is also a good time to degrease your steel wool that you will use for carding. You can clean it in the same tank as the parts. If you are using a carding wheel, make sure you degrease it also.

If you are using the same tank to clean as you are for boiling the parts, discard the cleaning agent, rinse the tank, and refill with clean water. This way it will be ready when you need to boil the parts.

If you are bluing barrels, it is necessary to plug the bores to avoid the acid etching the bore. We recommend swabbing the bore with RIG prior to plugging the bore as additional assurance of protection, especially with wood plugs, as they will have a tendency to wick water into the bore. On double barrels, you need to vent the ribs by drilling a small hole in an area that will be covered by the forearm, which can be plugged after you are finished. Shotgun barrels that are going to have the bores polished are not necessary to plug, but if you plug one end on each barrel, they will make good handles when you are applying the solution. For small parts, you will need to hang them and handle them with iron wire.

BROWNELLS®

CLASSIC RUST BLUE

#082-000-010

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READ & FOLLOW THESE

INSTRUCTIONS

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To apply the solution, pour a small quantity into a separate plastic or glass container. You never want to dip a swab directly into the bottle. This will contaminate the contents, and make the solution un-usable. Use either a shop swab, or take a piece of cotton about 1½" in diameter, and clamp it in a clothes pin. Dip the swab into the solution, and then squeeze out as much solution as possible from the swab on the sides of the dish. You do not want to apply the solution "wet", it is only necessary to lightly coat the surface. Remember, it is best if the parts are hot when applying the solution, but is not absolutely necessary. It only aids in the solution drying quickly on the surface.

Using long strokes the full length of the part apply the solution. Go the same direction each time. Always work right to left, or left to right. Try not to overlap each stroke more than necessary. Don't stop and scrub a bad spot! This will only make it worse. Avoid runs at all cost, they will make you start all over again! The idea is to apply a nice uniform coat that just barely wets the metal surface and dries quickly. Proper application of the first coat is essential to achieve a proper blue. Once you have started applying solution, you must not touch the parts. This will leave oil from your hand on the surface, so always wear gloves and handle with the plugs or the wires. Once you have the first coat applied, set aside for about 1 hour, then apply another coat of solution, then set aside to allow them to rust.

The rusting process will take anywhere from several hours to as much as 24 hours, depending on heat and humidity. If you live in a cool dry climate, it will take much longer for the rust to form than it will in warm humid climate. If you live in a dry cool area, you may want to look into using a damp box. Plans for building one are available on the internet and will speed up the rusting. What you want is for a nice red coating to form on the surface, that will have a grey-black appearance underneath. If allowed to rust tool long it will over-etch the metal, so watch the parts, and as soon as they have a rusted appearance, you will want to boil them.

Put the rusted parts into your boiling water tank and allow them to boil for 20-to 30 minutes. The longer the boil, the better conversion from red oxide to black oxide. Once you remove them from the boiling water they will look

like they are covered in black velvet. It is critical that the parts dry as fast as possible, so on parts as large as barrels, it might be a good idea to have on old hair dryer to use. This can be used as a blower to remove any water standing on the parts to avoid water spots.

Take your de-greased steel wool pull off a piece about 3 inches square, and roll it into a ball. Start rubbing the surface to remove the velvet coating. What will appear underneath is a gun metal gray surface. If you find streaks or spots, work them a little harder, but not so hard that it removes the initial coating. They will blend as you apply more coats. Turn the steel wool frequently to expose a fresh surface. Make sure you remove all the coating or it will prevent the next coat from contacting the metal.

Now apply another coat of solution. Do not apply another coat in an hour like you did on the first application, that's only for the first coat to ensure proper coverage. Apply each new coat just like the first, only dryer, if possible. Always use a clean swab for each coat and never put a dirty swab into the container; it will contaminate the solution and won't work.

Allow the coat to rust as before: Boil and card again. Repeat as necessary to achieve a proper bluing. Harder steel will require more coats than softer steel, so be patient, it will take anywhere from 6 to 20 applications. You will also find that any defects in the first coat will tend to blend with each application. The carding will also become easier with each application. If you had any oil spots, or streaks that remained, they will show up as bare metal, and will never blend, so make sure you have the part perfectly clean before you start!

Once you have the color level you desire, remove any bore plugs, oil the parts by either dipping in water displacing oil, or saturating with gun oil. Set aside and allow to cure for 24 hours.

After 24 hours, rub the parts down will with clean, soft paper towels. You will probably get a little black residue from rubbing them down, but this is just some of the loose oxide remaining, and is nothing to worry about. Pat yourself on the back! You just did a great job!

TOOLS AND EQUIPMENT:

1) Some method of boiling water in a container large enough to hold the parts you are bluing. Ideally, a 6" x 6" x 40" iron tank (**#082-003-664**) over a gas burner. (**#082-040-000**).
2) A good source of clean filtered water. Any dissolved metallic salts in the water source will possibly cause a problem with the finish. City water will usually be OK, but well water is not unless it goes through a water treatment system.
3) Disposable gloves. Nitrile are great and soft cotton will work but may leave impressions in the final finish.
4) A good hot water cleaning agent, such as Dicro Clean 909 (**#082-005-008**). Solvents, such as acetone, lacquer thinner, etc, may be used, but could create problems from inadequate degreasing!
5) Wooden clothes pins.
6) A good grade of surgical cotton, or Brownells Shop Swabs. (**#080-529-040**).
7) A small glass, or plastic dish to hold the bluing solution.
8) Soft, black iron wire. (**#038-018-003**).
9) Rubber, or wood barrel plugs.
10) 4/0 steel wool, or a very fine .025" (**#360-164-581**) to .004" (**#671-230-500**, **625**, **750**, or **875**) wire brush rotating at no more than 850 RPM.
11) Hand Carding Brush. (#**353-012-003** or **#084-091-006**).
12) Paper towels.
11) Water displacing oil, (**#082-057-128**) or a good quality gun oil, not Teflon based.

It is always a good idea to have all your supplies in place before you begin to ensure a good, even work flow for your project. Place them in a convenient location so they are well within reach when you need them, so there is no chance of having to set the parts down and contaminate the job, while you are trying to find something!

Reassemble the firearm according to the manufacturer's instructions. Check for proper functioning using **ACTION PROVING DUMMIES.** Make sure **ALL SAFETY MECHANISMS** are fully functional as designed and approved by the manufacturer. If these tests prove satisfactory, test-fire the firearm with live ammunition in a **SAFE** and **APPROPRIATE** manner. **IMPORTANT!** Start the live ammunition tests by first loading an **ACTION PROVING DUMMY**, then a live round, into the magazine. Only after several tests have been conducted in this manner should additional rounds be placed in the magazine and fired.