

Mark Lee Express Blue #1 Instructions

Wear safety glasses while performing the following operations.

Metal Preparation Tools Required:

- Abrasive paper, preferably cloth backed ranging from 120 to 400 grit.
- Selection of files.

Remove pitting with files or abrasive paper. Your metal preparation will probably begin with a 120-140 course grit abrasive paper, but should be completed using 320 to 400 grit.

Degreasing Tools Required:

- Detergent, Simple Green® recommended
- Scrub brush
- Tongs or wire hooks
- Air compressor or paper towels
- Clean cotton gloves.

Degreasing is essential to getting fine results. Parts should be soaked in hot soapy water using a cleaner such as Simple Green®. Scrub parts with a brush during the cleaning process. Remove parts from the cleaning solution with tongs or hooks. After initial cleaning, a light scrub down with a scotch bright pad while in the water rinse is often helpful to insure that all cleaner residue is removed. Rinse thoroughly with hot water, and dry with compressed air or blot with paper towels. Do not touch cleaned parts with bare hands, the oils from your body can contaminate the metal. Wear cotton gloves while handling degreased metal parts.

Etching Tools Required (optional):

- Sandblasting gun
- 150 grit garnet (aluminum oxide can be used)

Etching helps the first applications to take hold of the base metal. Etching can be accomplished chemically (acid dip) or mechanically (blasting with media). I do not recommend using acid because it is too hard to control. Blasting with 150 grit garnet is the best. Garnet is preferred for etching (blasting) as it is unlikely to imbed in the metal. This is only a concern on parts that rub against each other such as a bolt. The polished metal will appear dull gray after blasting but the process of rust bluing will bring the sheen back. The finish will look almost the same whether or not it is blasted. The blasting is best performed after degreasing and parts should only be handled with clean cotton gloves. **Warning:** Do not blast with glass beads as the beads produce different textures on hard and soft steel.

Application Tools Required:

- Vinyl or latex gloves
- Cotton gloves
- Natural sea sponge, cellulose sponge, cotton swabs, or poly foam paint brush
- Small glass or plastic container
- Propane torch or other heat source
- Container for boiling distilled or deionized water. (Tap water can be used in many parts of the country but it depends on the mineral content in your area.)
- Steel wire brush (.003- .005" bristles) or oil free steel wool

Pour solution into small glass or plastic container. Warm metal parts to 150-200 degrees Fahrenheit with propane torch or other heat source. Use vinyl or latex gloves during application. Dip applicator in solution and apply to warmed metal parts to dry the coating. A coating of brown to yellow rust will imme-

diately form.

Coat two more times drying the coating with the flame each time. Submerge part in boiling water for 2 minutes, remove from water and dry with compressed air or paper towels. The boiling water converts the red rust to black rust. Wearing clean cotton gloves remove the powdery residue with steel wool or a fine wire brush. The coating is very tough so do not be afraid of carding it to hard. The metal should now be a silver gray, black and mottled. Look closely and if you see any red or brown colored areas card these areas until they are silver gray. Do not worry about the uneven finish, as it will even out with each application. Warm the metal parts again and coat with solution three times. Boil in water again to covert the red rust to black. Remove from water, dry, card. After the first boiling and carding examine the metal under the light of a incandescent light bulb or sunlight. If you see any shade of brown or purple card the metal until the metal is silver, gray, or black. Applying coats over the top of area of bad color will lock in the existing color. Typically this will not occur until after the first boiling and carding. Repeat the application, boiling, and carding 6 to 10 times. When satisfied with the metal finish, oil parts and coat the bluing with RIG, rust inhibiting grease, and leave set for 24 hours.

Neutralizing Tools Required:

- Baking soda and water
- Container large enough to submerge the part

This step should be eliminated if fresh water is used to boil the last few coats. Soak blued parts in a solution of baking soda and water at room temperature for 5 minutes, rinse and oil.

Tips from Mark Lee:

Do not touch the metal with your bare hands, you can leave contamination spots in the finish.

If you have a very small spot along a rib that does not want to accept the color, take a piece of new 400 grit sandpaper and scuff the small area. The following coats should take to that area.

If you use steel wool for carding, only use oil free steel wool. It is available at fine wood working stores. If you must use regular steel wool soak in acetone to remove the oil.

Do not try to blue the ends of a barrel, you don't want to get any bluing solution in the bore. Polish the barrel crown back to white after bluing. I don't plug bores anymore but I make sure I'm using fresh water on each process when doing barrels.

I have found that I can usually repair rust blue finishes without stripping the part. Polish only the problem area. Coat that section and when the color matches, then coat the entire part with one or two coats.

Using the rust blue to touch up damaged screw heads is easy and the bluing will not rub off.

If you do not have a boiling tank and are only going to do a few guns you can buy a piece of PVC pipe, glue a cap on one end, and hang your barrel in the pipe and fill the pipe with boiling water each cycle.

Parts can be strung on a degreased wire for boiling, but -DO NOT- wire brush the parts with the wire attached. The wire brush can grab the chain of parts and cause serious injuries!

Sometimes carding with steel wood and water can blend a streak in the blued finish.

Rust bluing can be lightly buffed with a loose muslin wheel and a compound used for mirror finishing. This adds some sheen to the finish. This operation can be done just before applying grease or oil to the finished parts.

The Mark Lee Express Blue #1 and
RIG® Gun Grease are both available at:
www.trackofthewolf.com

#ML-XBLUE-1-4 Express Blue 4 fl. oz. bottle
#RIG-1 Rust Inhibiting Grease 1.5 oz.

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