

# Restore Rust Remover

## Hints & Tips

The following hints and tips are offered in good faith and are the result of hundreds of hours of use and laboratory observation.

**Dealing with Surface contamination:-**

### 1. Degreasing / Cleaning :- **VERY IMPORTANT**

It is **essential** to thoroughly degrease/clean parts before attempting to derust parts with Restore Rust Remover. If using paraffin or white spirit/mineral spirit **always** follow with a detergent degreaser; Restore Pre-Clean for instance, which will remove all traces of oil, grease, grime and the thin oily film left by white spirit and paraffin.

Failure to clean and degrease parts thoroughly is the usual cause of variable/patchy results.

Other sources of contamination which will prevent Restore Rust Remover from working correctly are varnishes, waxes and finishing oils. These are typically found on wood turners chucks and chuck jaws. These products are often applied using an aerosol spray. Any overspray results in a thin contamination layer which may not even be visible to the naked eye. To remove this we recommend a preliminary dip in cellulose thinner or acetone followed by a wipe with clean kitchen paper followed by cleaning with Restore Pre-Clean as described above.

Paraffin wax and linseed oil are also the main contaminants found on the soles of planes. These products are used by woodworkers to reduce friction. They will also prevent Restore Rust Remover from working. Household paints, putty and adhesives are also known to cause problems. To remove these, a soak for a couple of hours in a 10% soln. by wt. of caustic soda will strip off all dirt, grime and general 'crud'. Observe correct handling procedures when using this technique and **always** use the correct PPE (personal protection equipment). Extended dipping in caustic soda will also remove the original paint finish and any filler, which if carrying out a full 'bare metal' restoration may be extremely beneficial.

### 2. Rinsing:-

After degreasing, rinse the part in clean hot water and avoid handling the part with bare hands. Disposable vinyl or latex gloves are ideal.

### 3. Dilution:-

Always dilute Restore Rust Remover to the correct ratio. A 250ml bottle will make a 5 litre soln. A 500ml bottle will make a 10 litre soln. There is nothing to be gained by making a more concentrated solution. A weaker solution will take longer to work.

### 4. Choice of Tank/Vessel:-

Select a receptacle that is sufficiently large to contain the part so that it is completely submerged. If this is not possible, **always** turn the part end over end during the derusting process to avoid a 'tide mark'. Plastic containers can be used if the derusting soln. is used cold.

For hot derusting, use a stainless steel tank/pot. (A chefs stainless steel stock pot is ideal, and are available up to about 25 litre capacity)

To derust parts which are largely flat sided (a woodworkers plane for instance) it is necessary to raise the lowest surface off the bottom of the tank. Plastic painters pyramids are ideal for this.

## 5. Choice of process:-

Restore Rust Remover can be used in several ways. Depending on the process chosen and the severity of the rust, the time taken to derust a part completely, will vary. The following gives an indication of achievable times. *Please note, these are for guidance only.*

- |                                    |                                     |
|------------------------------------|-------------------------------------|
| A. Cold (plastic container)        | - (Reference process) (1hr to 24hr) |
| B. Warm/Hot (Stainless steel bath) | - quicker                           |
| C. Ultrasonic (cold)               | - faster                            |
| D. Ultrasonic (hot)                | - v. fast (10 mins. plus)           |

During process (A) and (B) it will be necessary to periodically remove the part from the soln. and manually remove the black deposit from the surface. This is most easily achieved by using a washing up brush, an old tooth brush or a fine stainless steel wire brush.

Note: To prolong the life of the bath the scrubbing process should be carried out under running water or in a bucket of clean water. This avoids particles of rust which have been removed from the surfaces being dissolved, hence 'wasting' the solution.

When using an ultrasonic cleaner the black deposit is continuously removed, the progress of the derusting process is therefore more easily seen.

For thick rust the part can be left in an ultrasonic cleaner overnight – switched off. In the morning the cleaner can be switched on for 5 to 10 minutes. The black residue will be removed rapidly leaving a clean grey surface.

## 6. Prolonging the life of the bath:-

After use, allow the bath to settle and then filter the black deposit from the solution. A funnel and paper coffee filter works well.

## 7. Dealing with assemblies seized solid with rust:-

Parts which are rusted solid will be freed-up after derusting, permitting disassembly without resorting to excessive force on threaded fasteners. The Record 043 featured in the Shield Technology Photo Gallery – see website, could not be dismantled, and was placed as a single item into an ultrasonic cleaner. After derusting it could be dismantled with ease.

## 8. Brass parts:-

Heavily soiled/tarnished parts can be cleaned effectively with Restore Rust Remover. Leave the part in the soln. until clean and the surface is a uniform copper colour. To brighten and bring back the brass colour, use metal polish or a soft brass or bronze wire brush. A brass suede brush is ideal. This is particularly effective on knurled brass knobs.

## 9. Brightening nickel :-

Restore Rust Remover will also brighten nickel plating. Please observe correct degreasing procedure to achieve a uniform result.

## 10. Chemically blackened parts:-

Parts which have a black phosphate coating, typically found on modern firearms and many items of small engineers tooling will have the black coating removed leaving a matt grey surface. Parts can be re-polished and re-blackened at this point.

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