

BRUSH NICKEL PLATING

**FOR FULL OR
DECORATIVE PROTECTION
OF**

IRON STEEL COPPER BRASS

VW19

HEALTH & SAFETY

Please read and observe all safety warnings within this booklet and contained on labels attached to some products supplied.

Wear gloves if coming into contact with the solution.

Wear eye protection at all times whilst brushing the solution.

Do not eat, drink or smoke whilst operating the system. Do not allow children near to any of the materials or equipment. Please wash your hands after handling any of the equipment or chemicals.

The kit consists of the following:-

- 1) 1) 1 LITRE brush nickel plating solution.
- 1) Applicator brush.
- 1) Electronic control unit.
- 1) Power supply unit.
- 1) Work tray.
- 1) scourer pack.
- 1) Instruction booklet.

In addition to the above list you will require clean water for rinsing off the work after plating is completed

This system has been developed from the Frost plating systems, which use a tank of solution to house the parts being plated.

The chemicals are similar to those in other tank systems, but are very special to this particular kit and must not be used with any other system. The chemicals supplied have been pre-mixed and are ready to use from the bottle. This system allows parts to be plated on the bench or 'in situ,' for example a part on a vehicle, which may be impractical to remove or will not easily fit into a tank. With this system the nickel is brushed directly onto the metal providing a, rust-resistive surface which can be polished or painted. Imperfections, which show up later, can be re-treated as required by re-applying more nickel with this system, following the proper preparations of cleaning and scouring.

The electrical supply is extremely low voltage and current and is not hazardous. Follow the simple instructions on the next page and with very little practice you will obtain excellent results.

PREPARATION

The metal to be plated must first be prepared to accept the plating to its surface. The plating metal produced by the system during the plating process will not attach itself to the item to be plated if the surface has not been properly prepared. The surface to be plated must be completely free of rust,dirt,grease,paint,oil,etc.

Any spots or areas not clean will not be plated.

Wire brushing, emery paper, wire-wool are other accepted cleaning processes. Plating will not cover scratches or other surface imperfections so fully finish all surfaces to the required Standard of finish before attempting to plate.

SCOURING

The final part of the preparation is to scour the surface with scourer powder.This will remove any surface contaminants and ensure that the plating metal will adhere properly to the surface. Using a toothbrush for small items or a clean scrubbing brush for larger items, dip the brush into clean water and then into the scourer powder. Rub the scourer into all crevices and ensure the whole area to be plated has been scoured then rinse thoroughly with clean water, aim to achieve a continuous film of water over the surface, without globules forming.A surface on which globules form is usually oily.

When rinsed clean, plate immediately before rust or other contamination can form.

THE PLATING PROCESS

Arrange the work tray provided so as to be beneath the item to be plated. This will ensure that all drips of solution from the brush will fall into the tray. Pour a small amount of plating solution into the tray, sufficient to fully load the plating brush. Connect the electronic control unit to the plating brush red lead; connect the black lead by the clip to the metal to be plated. Plug the control unit into the mains supply. Test the connections by dipping the brush into the solution and applying the brush to the item being plated, this completes the electrical circuit and the indicator on the control unit should flash. Do not allow the metal part of the brush to contact the work. Flashing will occur at all times when plating is taking place to indicate a completed circuit. Keeping the brush loaded with solution paint lightly over the surface many times; each coating will build upon the item so that the more coatings applied the thicker the final plating. Keep the brush moving whilst in contact with the work. Try to make an even number of passes over all areas to maintain even plating. Ensure all surfaces are adequately covered. It is not possible to see the thickness of the plating so it is important to systematically cover all areas evenly. The more passes are made the thicker the plating will be. Less passes are required for decorative finishes on copper or brass. When you are satisfied that you have applied a satisfactory plating, the whole of the area plated and the surrounding areas affected by the solution must be washed with clean water to remove all traces of the plating solution. Using a container of water and a rinsing brush, not the plating brush, thoroughly wash and rinse the whole area. Rinse the tray to remove all traces of solution.

In order to ensure a circuit is completed to allow plating to take place **the brush must be fully saturated or loaded with plating solution right up to the level of the metal brush band**. In order to do this the brush should be submerged in the brush nickel solution upright so that the solution reaches above the bottom edge of the metal band for several minutes before plating is attempted. The brush needs to then be repeatedly put back into the brush nickel solution during the brush plating process to maintain saturation of the bristles.

In cold environments the nickel solution should be warmed to around 30 degrees C to ensure conductivity of the solution is high enough for plating. The bristle length of the brush can also be reduced if necessary to help maintain a fully saturated brush.

WHEN PLATING IS COMPLETED

All parts need to be thoroughly washed and rinsed to remove all traces of plating solution, which is **very corrosive**. Failure to properly clean the equipment will result in corrosion of any metal parts and cause permanent damage. Dry all components thoroughly before storing.

The electronic control unit should be kept well away from the solutions at all times and should be stored separately from the other parts of the kit to avoid corrosion taking place whilst in storage.

The solutions should be stored out of reach of children and only in the bottles provided, ensuring that all labels are intact.

ALWAYS

Observe and obey all labels and warnings.

Wear protective gloves when using the solutions.

Wear eye protection when painting with the solutions.

Wash hands thoroughly after using the system.

NEVER

Eat, drink or smoke when using the system.

Allow children or pets near the system or the components at any time.

CLEANLINESS

It is vital that all items of equipment and solutions are kept clean and free from contamination or poor plating will result. Oil or grease are sure to cause problems

BLASTING

Blasting is a commonly used process to prepare items for further treatments, but it is not the best process if the item is intended for plating for the following reasons.

- 1 Old plating is not always successfully removed by the blasting process, despite the appearance of the metal surface after blasting is complete. It can appear as if the uniform surface that results is the base metal, usually steel, but plating can be very resistant to blasting, often needing many hours to remove it fully.
- 2 Even if blasting is successful at removing the rust or old plating it will often leave the resulting surface passive, (resistant to accepting new plating.)

Wherever possible other methods of removing rust or plating should be employed such as mechanically on a wire wheel, or chemically using an electrolytic stripping kit, or a chemical dip stripping solution suitable for the plated metal to be removed. If blasting is employed in the preparation process then the surface should be further treated with a wire wheel or an acid activation dip prior to scouring and plating. To ensure an active surface. FROST can supply equipment suitable for these procedures.