

Process In Brief

A Portable Process for Enhancing Localized Areas on OEM Components or for Making Permanent Repairs



- Over 100 high quality solutions, including pure metals, alloys, anodizing, electropolishing, and preparatory solutions.
- Gives excellent results on virtually all commonly used base metals and alloys.
- Deposit quality and adhesion to base materials equivalent or superior to tank plating.
- Fifty years of research and development in selective plating technology.

The Selective Advantage

The SIFCO Process[®] is a portable method of brush plating localized area without having to use an immersion tank. Originally conceived and developed by Gerorge Ixci in Paris, France in 1938, the technique has been engineered and enhanced by continuous research and development at SIFCO Applied Surface Concepts, formerly SIFCO Selective Plating.

Over 100 pure metals and alloys are available for plating using the SIFCO Process. In addition, five types of anodizing as well as electropolishing can be accomplished using the same SIFCO Process techniques. In contrast to tank plating, the SIFCO Process does not require extensive masking, special fixtures, or elaborate equipment.

SIFCO Process deposits have excellent adhesion and can be plated at rates that are 30 to 60 times faster than conventional tank plating. Quality of deposits and adhesion to base materials are, as a whole, equivalent or superior to that which may be obtained using good tank plating practices. Damage from wear, corrosion, or mis-machining can be repaired using SIFCO Process plating, anodizing, hard coating, or electropolishing solutions. Deposits that offer wear resistance, low electrical contact resistance, or corrosion protection also can be applied selectively to improve components that have been manufactured from inexpensive base metals.

Specially formulated solutions are used that contain substantially higher metal contents than found in standard tank plating solutions. SIFCO Process plating solutions have been formulated to produce a range of metallic deposits that can be hard, fine grained, very low in porosity, and very low in stress. SIFCO Process equipment is portable, enabling the operator to meet plating and build-up requirements wherever they arise. This flexibility is an important cost and time saver. It minimizes dismantling, downtime, turnaround delays, and shipping charges usually associated with sending parts out to be plated.

Basic training for the SIFCO Process usually can be completed in 3 to 5 days. After completion of the training session, a reasonably skilled individual can perform many maintenance and repair jobs within the plant.

Why consider using the SIFCO Process?

Application

- Engineered deposits to enhance localized areas on OEM components
- Salvage mis-machined parts
- Refurbish worn parts such as journals, gears, bearings, oversized ID's and undersized OD's

Advantages

- Prompt, effective on-site plating at minimal total cost
- Pinpoint plating without extensive masking or special fixtures
- Plating done to size with little or no final machining
- Portable equipment that provides immediate in-house capability

Approvals

- Meets numerous federal, military and commercial specification
- AMS 2451
- MIL-STD 865 and 2197 (SH)
- Facilities meet MIL-I-45208
- FAA Approved Repair Station

Support

- On-site contract service available worldwide
- Certified plating consultants
- Technical support staff, available by e-mail, phone or fax
- Complete training for your personnel



APPLIED SURFACE CONCEPTS

ISO 9001 & AS 9100 Registered Quality Systems

*Advancing Selective Plating . . .
... and Moving Beyond*

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Four Key Elements

Power Packs

The SIFCO Process uses specially designed portable DC power packs with a variety of features to supply current. The negative lead (-) from the power pack is connected to the part (cathode) that is to be plated. The positive lead (+) is connected to a plating tool handle which holds a special plating anode. Power packs are available in sizes ranging from 15 amps to 500 amps depending on your application's requirements.



Plating Tools



The plating tools (anodes) are typically made of graphite. The anode is shaped to fit the contour of the surface to be plated and is wrapped with an absorbent cover material saturated with plating solution. The solution-saturated anode is rubbed

over the surface that is to be plated, either manually or mechanically. When the saturated anode cover contacts the metal surface, the electric current causes the positively charged metal ions in the plating solution to move toward the negatively charged metal part (the workpiece), where they are deposited and metallurgically bonded to form an electroplated deposit.

Preparatory and Plating Solutions

The plating solutions used in the SIFCO Process are special electrolytes with metal contents substantially higher than those of standard tank plating solutions. Plating solutions are selected to meet specific demands of the application. Deposits can be produced that are hard, fine grained, very low in porosity, low in stress, and low in hydrogen embrittlement. In addition to metal plating solution, SIFCO Process solutions include preparing, activating, stripping, anodizing (type I, II and III), and electropolishing.



A Trained Operator

Finally, a trained operator is needed to carry out the various procedures presented in the comprehensive, illustrated SIFCO Process Instruction Manual. Training sessions are conducted on a regular basis at SIFCO facilities. In-plant training is available upon request. There is technical support available when you need help. Call our Technical Service Department for the SIFCO Consultant nearest you. Brush Plating has been our only business for 50 years.



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