



GENERAL PROCESS FOR ELECTROPOLISHING

The general steps prescribed by MCP for most electropolishing operations are listed schematically above and will be discussed individually in the following pages. The general process incorporates the principles of Good Metal Finishing Practice, and is designed to produce consistent, top quality finishes in day-to-day production.

The diagram is intended to indicate the preferred sequence of operations, and not necessarily the number of tanks required. For example, the diagram illustrates that counterflow rinsing is normally used after electropolishing. Certain types of parts may require multi-station rinsing after all chemical process tanks, in order to thoroughly rinse chemical residues out of blind holes, threads, or other complex geometric shapes. Similarly, some soils may require more than one cleaning station to remove stubborn greases or finishing compounds from the surface. Most plating systems routinely utilize more than one type of alkaline cleaning station to ensure complete removal of contaminants.

The sequence of metal finishing operations is essentially the same for all types of processes. Operations such as painting, plating, anodizing, black oxide, etc., all require adequate metal preparation (cleaning and/or deoxidizing) prior to finishing, and all require post-treatment (adequate rinsing and appropriate sealing or drying) after applying the finish.

CLEANING FOR ELECTROPOLISHING

■ TO REMOVE :

- OILS - lubricants, coolants
- FATS - fatty acid based greases
- WAXES - markers, paraffin-based lubes
- GREASE - cutting compounds, lubricants
- ADHESIVES - from protective plastic films
- SHOP DIRT - from storage and transfer
- FINGERPRINTS - racking and inspection

ALKALINE SOAK CLEANER

Modern alkaline soak cleaners are blends of several ingredients designed to perform a combination of reactions with soils:

Wetting agents -	Penetrate soil film
Emulsifiers -	Lift soil particles
Saponifiers -	Dissolve fatty materials
Suspension agents -	Hold particles in suspension

Each type of soil may require one or more of these reactions to completely remove the contaminant, to keep it suspended, and to prevent redeposition.

Cleaners should be skimmed during the immersion cycle to eliminate contacting the parts with oily films upon entering the tank and again upon withdrawal from the tank. A small amount of oily or greasy soil can quickly contaminate every tank in the line if the floating film is not removed between racks.

Proper preventative maintenance is essential to ensure continuous performance of the alkaline cleaner. In general, cleaning baths are cheap insurance compared to the cost of rework.