

Where Can You Lower Costs in Your Metal Finishing Process?

- **Here are 3 plus ideas to use today to lower process cost and increase productivity**

With the right preparation, consultation and adaptation, opportunities exist to reduce operating costs. Let's identify some areas of change that may lower operating costs and perhaps even improve your operating system.

1. Parts

It is important for fabricators to advise the job shop plater of any changes regarding parts, including switching to different processing oils, heat treatment and the grade of base material. Any changes in the routine for these and other steps have raised major problems in surface preparation. Alerting the plater to practical modifications necessary in their operating cycle can maintain or increase production throughput. Minimizing rejects eliminates the tripling operating costs or worse – disposing of rejects.

- Fabrication of parts is also critical. Consider suggesting minor alterations to your customer that would make the plater's job easier. Examples include drilled holes to improve drainage; casting or stamping parts in an orientation that minimizes nesting in barrels; and better racking.
- Larger bulk shipments from the customer can reduce related shipping costs both ways. Some finishers may not handle certain jobs but could do so in a joint venture with other finishers.
- Small parts for barrel finishing may be handled in a bulk surface preparation, such as ambient temperature mass finishing. This would eliminate a series of surface preparation tanks (hot soak and electrocleaners) and their rinse tanks. It would also save time and effort.

2. Product Selections

By considering surface preparation, soak cleaning can be achieved using emulsification or displacement cleaners. The benefit to displacement cleaning is that oils are continually displaced



to be removed manually or mechanically. This process extends the service life of the cleaner, which leads directly to less chemical consumption, downtime, scheduled dumps, and burden on waste-treatment systems.

- Some cleaners are formulated as combination soak and electro cleaners. This represents another cost savings, simplifying product inventory and perhaps removing the requirement of a rinse between soak and electrocleaner.
- Blended acid salts contain accelerators, are inhibited to prevent immersion deposits and are effectively buffered for extended bath service life. They replace strongly corrosive, dangerous-to-handle, inorganic straight acids that are missing such additives. Straight acids are supplied in deposit drums, which is not an expense with blended acid salts.

3. Liquid Cleaners: The Case for Economy

The metal finisher has a choice of powder or liquid cleaners. While their performance is relatively equivalent, as concentrates, the liquid cleaner may be slightly more expensive. However, it presents operating, economic and safety benefits that are hard to beat, resulting in actual cost savings.

- Liquid cleaners are safer and easier to handle and dispense
- They do not require premixing
- Result in 75-80% less sludging than powders to ease waste-treatment demand
- Offer accurate and simpler process control and EPA F-006 regulated metal hydroxide waste compliance
- Excellent versatility to meet NADCAP aerospace requirements
- Continuous analysis by conductivity with automatic cleaner additions
- They require less inventory

Some additional saving ideas

1. Liquid cleaners can be packaged in 200 gallon or greater volume returnable totes and 55-gallon drums. Product totes and drums can be stored and/or dispensed with in areas farther away from a potentially cluttered and tight floor space in a plating line.
2. Product concentrates can be automatically pumped through conveniently installed plumbing directly to the cleaner tank. This represents an effective means of monitoring



concentration as it is related to the solution's conductivity. Automatic dosing of the cleaner will closely maintain its concentration to the initial make-up. This significantly helps to minimize rejects due to poor cleaning.

3. Liquid cleaners also offer another significant cost savings with regards to a two-part product system. In cleaning steel, (soak & electro), the finisher adds the 50% Liquid Caustic solution in ratio with the supplier's additive. The result: 40-50% chemical cost savings.
4. In certain instances, such as cleaning steel parts, the cleaner concentrate additive may be dosed in a specific ratio with liquid 50% caustic soda in the soak tank and a specific ratio in the electrocleaner tank. This allows the finisher to reduce inventory and use the same products in two cleaner tanks.
5. Because liquid cleaners contain less solids, they are less sludging. This makes tank preparation after dumps easier and quicker. It also speeds new make-up, reducing overall downtime, so that production may resume. Due to less sludging, heavy metals precipitation in waste treatment is easier and more complete.

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