



# CHEM PROCESSING, INC.

*Platings & Coatings for Industry*

## Hard Chrome Electroplating

There are two distinct types of chromium plating, bright chromium plating (decorative) and hard chromium plating (engineering). Hard chrome plating demonstrates excellent hardness, wear minimization, lubricity, friction reduction, and prevention of galling. These characteristics are applicable for critical engineering applications, including: machine tool cutting surfaces, cylinder bores, strut rods, crankshafts and hydraulic shafts. Hard chrome is generally applied to a bare, properly prepared, ferrous, aluminum, or copper base material.

### Chem Processing Inc. Chromium Plating Capabilities:

- **Typical Plating Thickness Range is 0.00005 to 0.02500 in.** (for information on plating over 0.025 in., please contact Chem Processing, Inc.)
- **Plating of Very Large Parts by Selective Surface Masking**
- **Hydrogen Embrittlement** (Parts with a hardness of 36 Rc or greater will be baked a minimum of 3 hours at 375° F to relieve entrapped hydrogen)
- **Thickness Analysis on a Fischer Technology XDL-B X-Ray Fluorescent Spec**

### Applicable Specifications:

QQ-C-320

MIL-C-20218

ASTM B456

MIL-C-23422

AMS 2406

### Properties of Electroplated Chromium:

- **Hardness:** Plated chromium is extremely hard. A conventional bath will yield a Vickers diamond pyramid hardness of 900-1200.
- **Low Coefficient of Friction:** Chromium plating is optimal for: hydraulic pistons and cylinders requiring a low-pressure differential; the prevention of galling and life extension of low friction gears; the addition of anti-stick properties to plastic molds.
- **Part Salvaging:** Hard chromium can be used to restore parts to their original dimensions, such as large shafts.

**Chem Processing Inc.** is committed to excellence in metal finishing. Chem Processing Inc. uses their engineering expertise and computerized process controls to **exceed their customer's expectations** when adherence to strict thickness specifications is essential.