DUCORA
Advancing Solutions Through Innovation & Technology

Advanced Electro-metals Technology / High Performance Coatings

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# DucoraTek™ Hard Chrome Resurfacing

## On site rod repair without disassembly

Repair scores, dings, gouges, and pits on rods and damaged cylinders in the shop, in the field, on time, on budget

Minimize downtime by using Ducora, with our portable systems that adds efficiency and savings to your operation

Set up low-cost, preventive maintenance programs that ensures environmentally safe, on-site repairs

HARD CHROME RESURFACING, GUARANTEED NOT TO CRACK, FLAKE, OR SEPERATE

# Repair damaged hard chrome surfaces at a fraction of the cost.



### *COMPARE REPAIR TIME AND DOWNTIME*

As a typical example, consider a 3-4 inch score on a rod which measures 4 inches in diameter by 6 feet long. The standard practice of replating the entire rod requires skilled personnel and takes 8-12 hours, plus time for staging, shipping, and reassembly. Equipment downtime can be anywhere from 2-14 days.

A localized repair using the Ducora process takes 30-40 minutes, easliy completed by one of our skilled operators, on-site, without disassembly and reassembling the part. Equipment downtime can be as low as 1 hour.

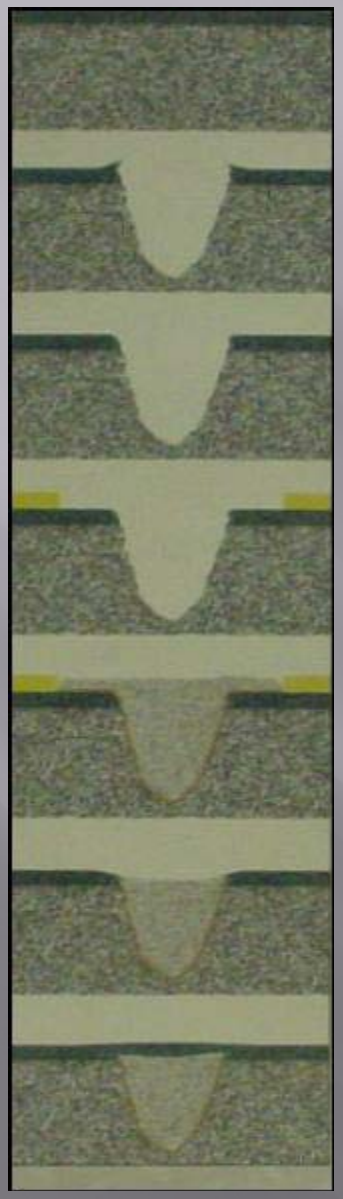
The national average for a plating shop charges $0.75/sq. in. for hard chrome plating, which makes your repair cost $687 based on the example above. This doesn't include the cost of disassembly, transportation, and reassembly. Most importantly, this doesn't consider your downtime costs, nor your customers.

Ducora's charge is based on a direct labor rate per hour. Considering the example, you would save approximately $450 just on the repair, without disassembly, reassembly, and costly downtime.

### *RESULT: YOU SAVE WITH DUCORA*

Your immediate savings is substantial. Now add your company's downtime savings and you can see why Ducora's repair service pays for itself. Ducora has the only hard chrome surface repair process that combines cutting edge technology and performance with exceptional value and gives your company a competitive edge.

# How the DucoraTek™ on-site repair process works.



1. Undamaged Hard Chrome Surface - A plated surface of a hydraulic rod consists of a layer of chrome (typically 1-8 thousandths of an inch) plated directly over an alloy steel.

2. The surface Damage - Typical rod damage such as scores, gouges and dings will create burrs and sharp edges. Exposed steel base metals become a site for accelerated corrosion.

3. Preventative Maintenance Step - Burrs and sharp edges should be removed as soon as possible to prevent seal damage. If successful, this will allow the repair to be performed on the equipment without costly disassembly for seal replacement.

4. Preperation - The preperation step includes cleaning and masking the area, then electrochemically activating the base metal and surrounding chrome plate to accept th filler metal.

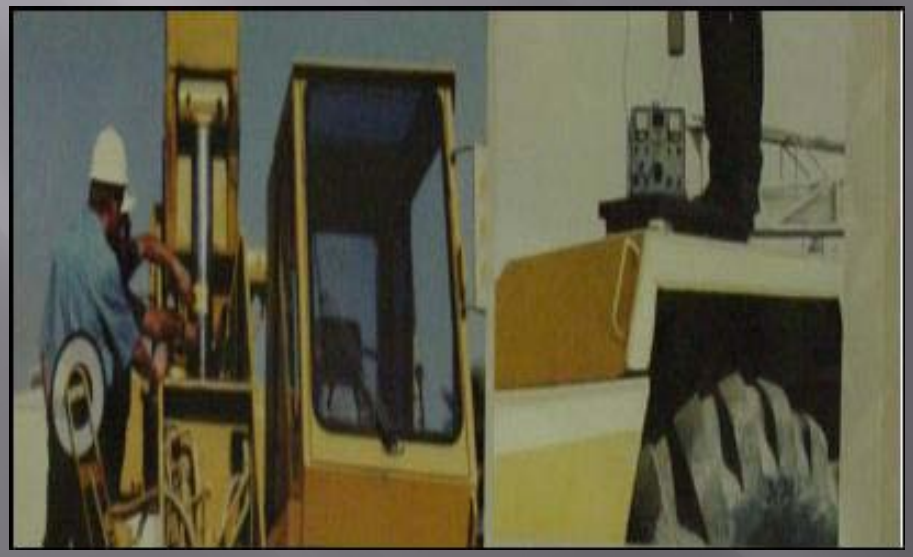
5. Fill - A metal bonding layer is first applied which will not separate from the base metal. The Hyfrofill metal is deposited over the bonding layer and allowed to build beyond the original surface resulting in a repair which is a dense, pore-free extension of the base metal.

6. Dress Back - Excess Hydrofill is removed with a special tool which is designed to quickly prepare the surface for the final deposit of a durable hard-cap.

7. Hard Capping - A thick EnviroMetal hard-cap is applied over the fill area. A thinner coating extends slightly beyond the fill area cosmetically blending with the surrounding chrome and completely sealing the repair.

8. Repaired Surface - The EnviroMetal Repair has a restored surface with a color, lubricity, and strength similar to the original chrome. The complete repair is a metal composite consisting of three layers, each metallurgically linked to the next creating a permanent repair which will not crack, flake or separate.

# DucoraTek™ Portable Electro-metal Technology



# Why DucoraTek™ Hard chrome repairs are superior to others

NO POROSITY OR EROSION AS WITH EPOXY REPAIRS, NO CRACKING OF SURROUNDING CHROME WHICH CAN BE CAUSED BY THE HEAT OF WELDING

100% METAL-MOLECULAR BONDING PROVIDES A PERMANENT REPAIR - IT WON'T PEEL, IT WON'T CHIP, IT WON'T FLAKE

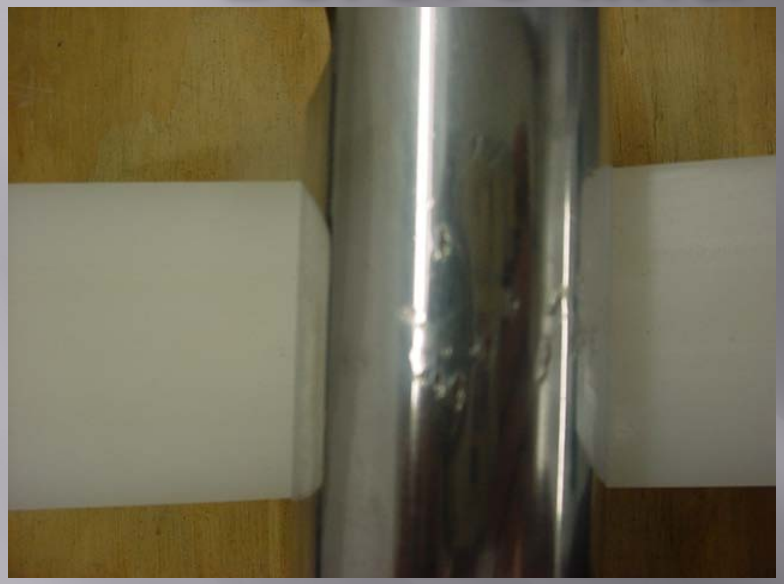
OTHER REPAIRS CAN DO MORE DAMAGE THAN GOOD BY LEAVING DEBRIS THAT CONTAMINATES THE ENTIRE HYDRAULIC SYSTEM

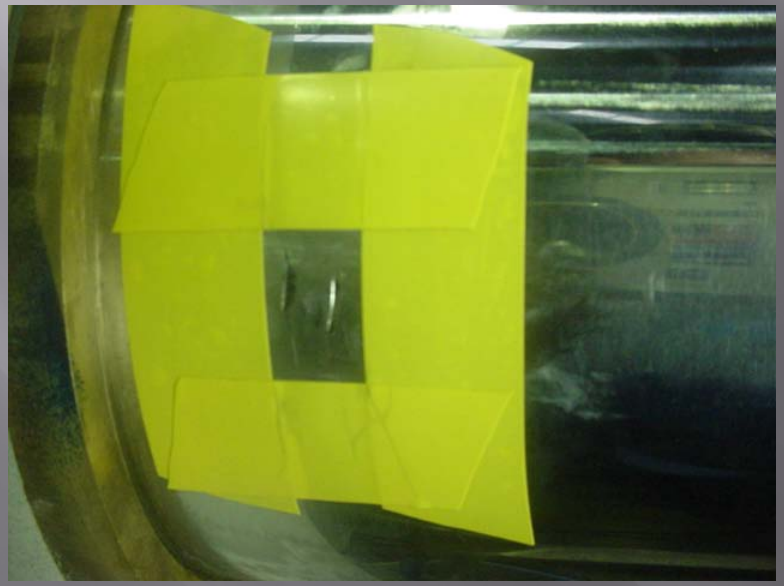
REPAIRS PASS PRESSURE TESTS - MEETS MILITARY AND NASA ELECTROPLATING STANDARDS

HARD, LOW-FRICTION, CHROME-LIKE METALLIC SURFACE REPAIR COSMETICALLY BLENDS WITH SURROUNDING CHROME

QUICK, SIMPLE, DUCORA PROCESS MAKES IT EASY TO RESTORE ACCURATE DIAMETER TOLERANCES WITHOUT GAUGING

# Before and after repairs





# Other non-cylinder repairs