Hard chrome plating

It is hard to imagine modern technology without hard chrome plating. Therefore characteristic features of chrome plating are decisive.

- High resistance to wear
- Hardening up to 1,100 HV, making chromium significantly harder than case-hardened or nitrided steels
- Good corrosion resistance through variation in layer composition and layer structure
- Chemical Resistance
- High temperature resistance
- Hydrophobic characteristics
- Low coefficient of friction
- Extremely economical through possibility for reprocess of wear parts

Pillars, hard chrome plated and polished, dimensions Ø 260 x 7,480 mm
Our expertise in the field of hard chrome plating enables us to recommend a suitable layer composition for each application.

Your choice of following processes:

- Micro-chrome plating
- Double-chrome plating
- Three-layer-chrome plating
- Inside chrome plating of pipes and bores
- TSI finishing treatment

We would be glad to aside you our benefit of years of experience.

Hard chrome plating of a hydraulic piston, dimensions Ø 400 x 4,800 mm
Micro-chrome plating involves micro-cracked chromium layers that are deposited from a mixed-acid chromium electrolyte.

The micro-cracked chromium layers are characterized by a finely woven network of cracks. The micro-chrome layers have good resistance to corrosion at high chrome layer hardness. The micro-chrome layers can be deposited in variable thicknesses up to about 500 µ. We recommend 25 µ as minimum layer thickness.
Double-chrome plating

For components subject to strong corrosion stress, we recommend our double-chrome plating process, which was developed and tested in our laboratory.

In this process, the surface area to be chrome-plated is finely finished to a roughness of Rz < 1.5 µ. Followed by the deposit of a first micro-cracked chrome layer with thickness of about 20-25 µ. After mechanical and chemical intermediate treatment, happens the application of a second micro-cracked chrome layer with minimal layer thickness of 25 µ. Finally a TSI- finishing treatment (TSI = Teflonizing) is carried out. The downstream polishing process serves to smooth the surface. For this process, we recommend a total layer thickness of 50 – 80 µ. Our process offers you an advantage in comparison to conventional hot chrome plating by eliminating an uncontrolled fracturing of the chromium coating under operational conditions.

Surface image
Crack structure double-chrome layer

Cross-section polish of a double-chrome layer. M = 500 times
Inside chrome plating

Another of our specialty fields is inside chrome plating of pipes, borings and running surfaces.

Through an own fixture construction, we can guarantee ideal layer thickness distribution even for complex part geometries.

Piston tubes
Boring
hard chrome plated
Layer thickness 25 µ

Tubes
Inside hard chrome plated with layer thickness 40 µ
Through a TSI finishing treatment (TSI= Teflonization), the corrosion resistance of hard chrome plating can be increased even more. In this process, an additional sealing of the chrome surface is carried out. Protracted tests and practical trials have confirmed the effectiveness of this process.