strötzel
Oberflächentechnik

anke brunner haslinger strötzel

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Our factory site in Hildesheim

A reliable partner

Find out for yourself!

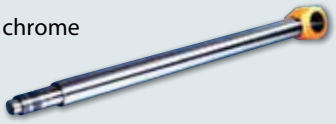
strötzel is a company operating in the field of **surface technology** and **mechanical processing.**

Our experienced team will explore the best solution with you

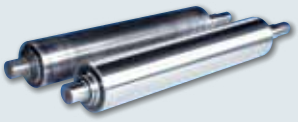
Our scope

- ☑ Chemical nickel

- ☑ Nickel / hard chrome



- ☑ Hard chrome



- ☑ Mechanical processing:
  grinding – polishing – honing

- ☑ Repairs:
  piston rods – cylinders – drums

Coating with contour accuracy

Absolute dimensional accuracy with chemical nickel

Procedure

In case of chemical nickel this is an autocatalytic precipitation of a nickel-phosphorus alloy without external current. Precipitation occurs with contour accuracy even on edges, in drilled holes, in cavities and even in case of strongly structured surfaces.

The dimensional accuracy of the coat thickness at a micro level (+/- 2 µm) is guaranteed to be perfect thanks to the process flow. A chemical nickel coat does not require any dimensional correction through mechanical reworking. Depending on the technical requirement coat thicknesses from 2 – 100 µm are possible.

In many cases, for example, expensive stainless steel can be replaced with nickel coated steel. Even the already outstanding basic characteristics of aluminium alloys can be enhanced by an additional nickel coat.

Recommended coat thicknesses according to the level of load

Load	Coat thickness
light	3 – 10 µm
moderate	10 – 25 µm
heavy	25 – 50 µm
very heavy	min. 50 µm

In our two chemical nickel facilities both the smallest components (bulk goods) and large scale productions (rack goods) as well as individual and heavy parts can be nickel coated.

If you have questions about coat thicknesses or types of coating for your desired usage please contact our specialist personnel.

Protection against corrosion and abrasion

The corrosion protection of the nickel coat is excellent due to the precipitation being amorphous and free of cracks. The abrasion protection effect of the nickel coat can be significantly enhanced through hardening in a warm air oven. Hardnesses from 540 to approx. 1000 HV are possible.

Combining chemical nickel with hard chrome considerably increases the level of abrasion and corrosion protection of the component part. This two coat procedure is explained in detail on the next page.

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Our scope – Chemical nickel

Materials

- ☑ Steel and stainless steel
- ☑ Grey cast iron
- ☑ A large number of aluminium alloys
- ☑ Copper and brass

Component sizes

Steel parts
- ☑ max. W×H, length: 740 x 1350 mm, 3800 mm
- ☑ max. weight: 3500 kg

Aluminium parts
- ☑ max. W×H, length: 350 x 950 mm, 1800 mm
- ☑ max. weight: 500 kg

A good combination

The combination of chemical nickel and hard crome

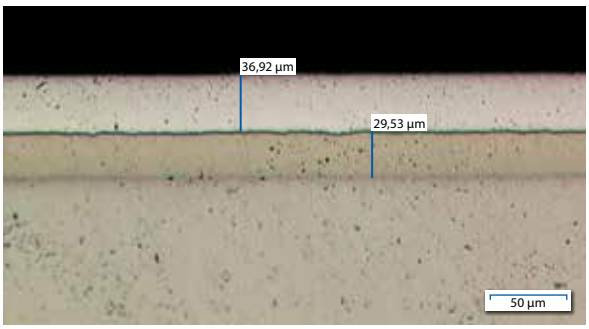
Areas of use

Combination coating with chemical nickel/hard chrome is tried and tested. It combines the benefits of both coatings and is characterized by a very high level of corrosion and abrasion protection.

The procedure is used above all for components which are in contact with corrosives substances e.g. sea water.

The procedure

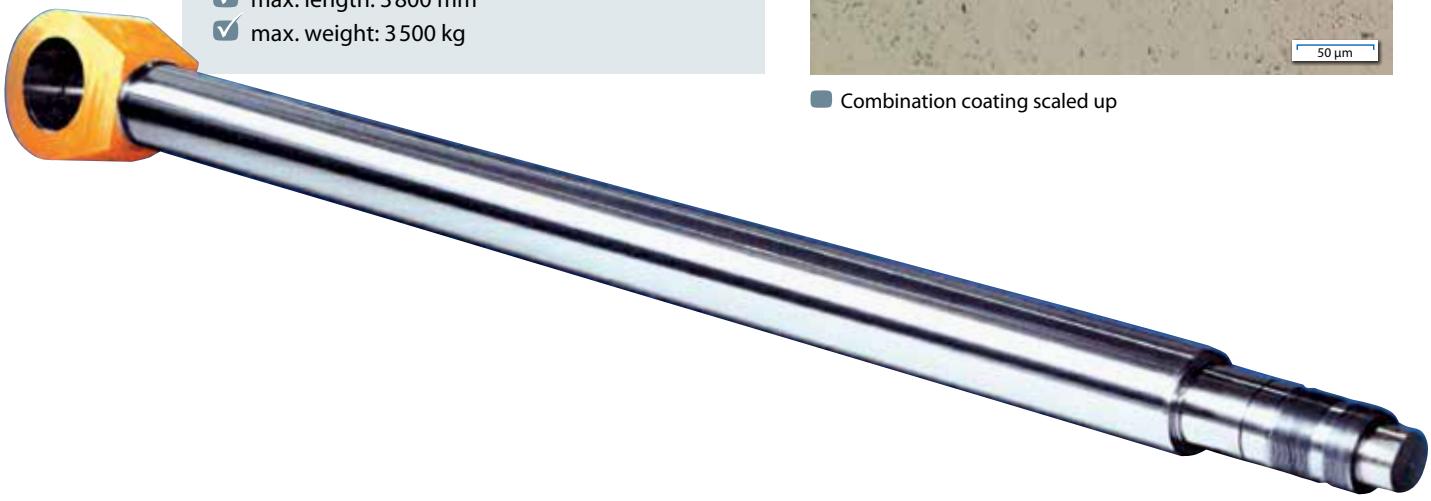
The nickel-hard chrome coat system enables a perfect transition to the base material (steel), homogenous distribution of the micro-cracks along with a moderate hardness of approx. 900 to 1000 HV.



Combination coating scaled up

Our scope – nickel / hard chrome

- ☑ max. diameter: 500 mm
- ☑ max. length: 3800 mm
- ☑ max. weight: 3500 kg



Hard shell through hard chrome coating

Areas of use

Hard chrome coats are used when there is a high level of abrasion. Due to the high surface hardnesses (up to 1000 HV) this coating leads to a reduction of abrasion and as a result to an increase in the lifetime of heavily used components.

Furthermore, a hard chrome coat improves the corrosion performance. Other benefits of this type of coating are anti-adhesive performance, a low friction coefficient, high resistance to temperatures and tarnishing, it polishes up well and also has outstanding resistance to a variety of aggressive substances.

Our scope – hard chrome

Materials

- ☑ Alloyed and unalloyed steels
- ☑ Hardened steels
- ☑ A wider variety of cast iron steels
- ☑ Copper and brass

Component sizes

The following dimensions and weights of components are possible in our five hard chrome facilities:

- ☑ max. length: 4800 mm
- ☑ max. diameter: 1500 mm
- ☑ max. weight: 4500 kg

Hard chrome interior (above) and hard chrome exterior (below)

Chrome plating procedure

These chrome plating procedures are available from us:

- The **one coat procedure** with a high grade hard chrome is the most cost-effective type of coating. Depending on load, coats of 10 – 500 µm thickness against abrasion and corrosion can be produced.
- The **multi-coat procedure**: through multiple alternating chrome coats the highest required levels of corrosion and abrasion protection can be achieved.

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Precision shaping

Our in-house mechanical processing

15 different polishing and cylindrical grinding machines are available for processing your components.
We can stone grind, belt grind and polish in line with your requirements.

We achieve a true running accuracy of 5 µm and a roughness depth of R_a 0.04 µm.

Dimensions and weights possible for cylindrical grinding			
Type of grinding	**Diameter in mm**	**Gewicht in kg**	**max. length in mm**
Interior grinding	40 – 500	500	700
Centreless grinding	5 – 120	50	Plunge 150 Through-feed 600
Cylindrical grinding between centres	15 – 500	3500	3800
Belt grinding	12 – 115	500	5000
Polishing	600	3000	3800

Options for processing components			
Honing machine	**Ø-drilled hole in mm**	**Weight in kg**	**Length in mm**
Hommel Sunnen 3000	50 – 380	1000	3000 / 5500 folded
Honing machine	35 – 545	1000	2600 / 4700 folded

Precision honing

Through honing the required levels of

– surface finish
– dimensional accuracy
- contouring accuracy
are produced.

High quality repairs

Piston rods, guide shafts, drums, cylinders, etc. often sustain a high level of wear. The chrome coat needs renewing. Tolerances which are not accurately produced often lead to the component being unusable. By adding additional chrome to the flawed areas these parts can still be used.

Comprehensive capacities in the field of chrome plating and mechanical processing enable the quickest turnaround times in the case of repairs. A further positive effect is an increase in lifetime compared with new parts through the stronger chrome coat.

Quality counts

Reliable quality management is a fundamental part of our company philosophy. Our own test laboratory is an important stage as part of our quality management.

Strötzel's quality management system is certified in accordance with DIN EN ISO 9001:2008 by DNV.

Our test laboratory

Electrodialysis facility

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