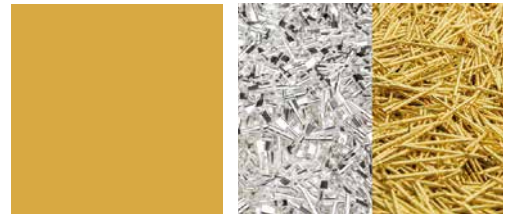
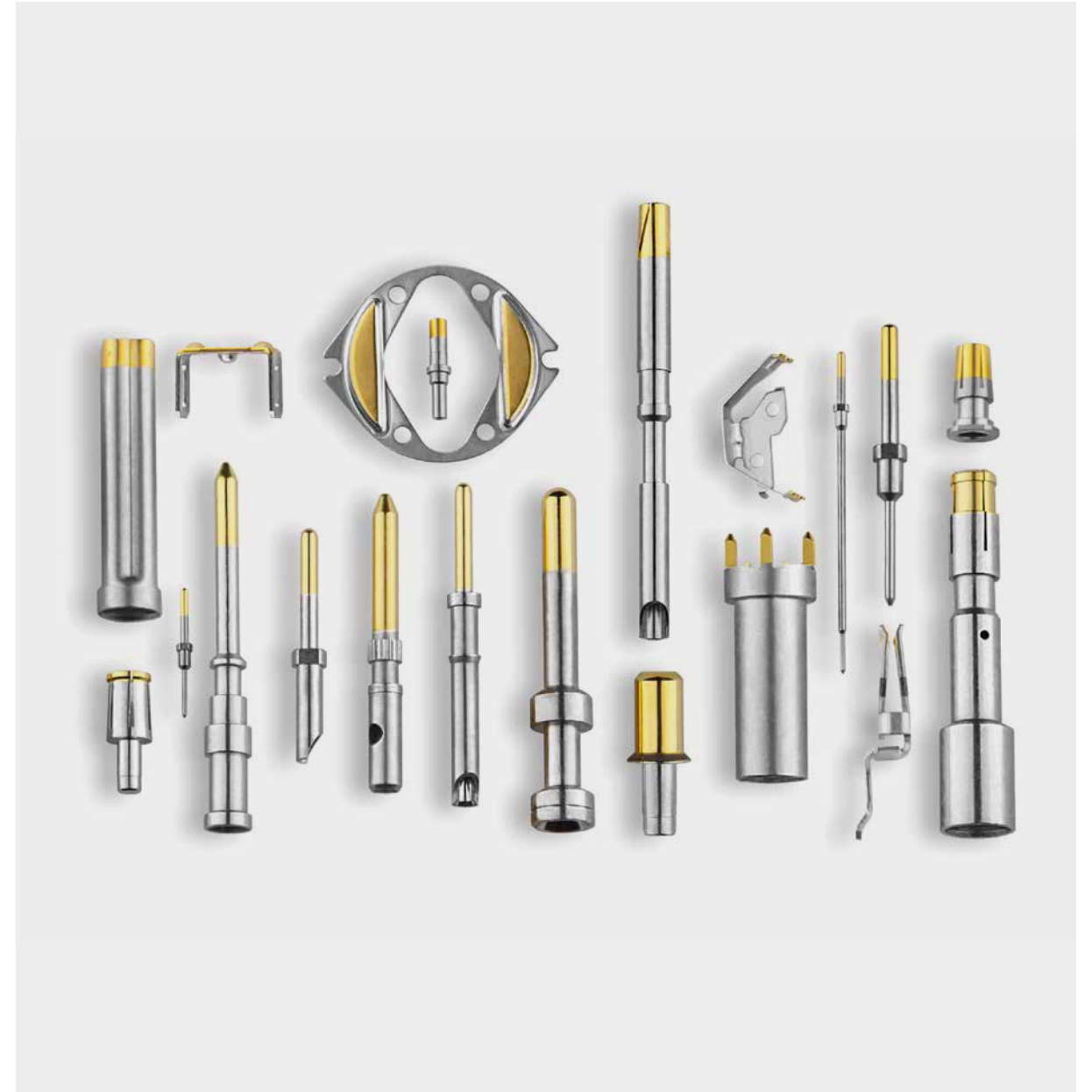


Surface finishing



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Who we are and what we do

binder galvanic surfaces GmbH is based in Pforzheim and is an affiliated company of Franz Binder GmbH & Co. Elektrische Bauelemente KG (Neckarsulm).

As part of the binder Group, we have particular expertise in the functional surface finishing of components for the connector market.

Our range of services includes technical surface coating of precision parts in different electroplating processes and development of individual customer solutions. Our customers from the automotive, electronics, electrical engineering, aerospace engineering, medical engineering and telecommunication sectors benefit from our extensive experience. The wide variety of bulk-good coating options that we offer and our selective systems for bulk goods developed in-house make us a technological leader in surface coating.

Relation to the binder group

binder is a family-owned company shaped by traditional values, employing around 2.000 people worldwide and is one of the leading specialists for circular connectors with its headquarters in Neckarsulm. The binder group includes the binder headquarters, nine international and globally active sales offices, seven production facilities, two system service providers and an innovation and technology centre.

binder produces a wide range of industrial connectors as well as mounting and cable connectors for automation technology. The strengths lie in the individual development, design and automated manufacturing of connectors based on customer specifications.





The product range of binder extends from subminiature connectors to multi-pin machine connectors. binder products are used in agricultural and construction machinery, signal equipment, machine tool construction, medical technology, measuring technology as well as sensor and automation technology.






Since 1960, binder has been synonymous with the highest quality.



PHOTO: FOTOTEILER.M

Core competencies of the binder group

	Cable manufacturing, assembly and production technology	since 1995 www.binder-cableassemblies.hu
	Production of electronic assemblies and systems	since 1995 www.binder-ems.de
	Electronics development and production of electronic assemblies	since 2020 www.binder-electronic-solutions.de
	Surface finishing	since 2019 www.binder-galvanicsurfaces.de
	Research and printed electronics	since 2016 www.binder-itz.de

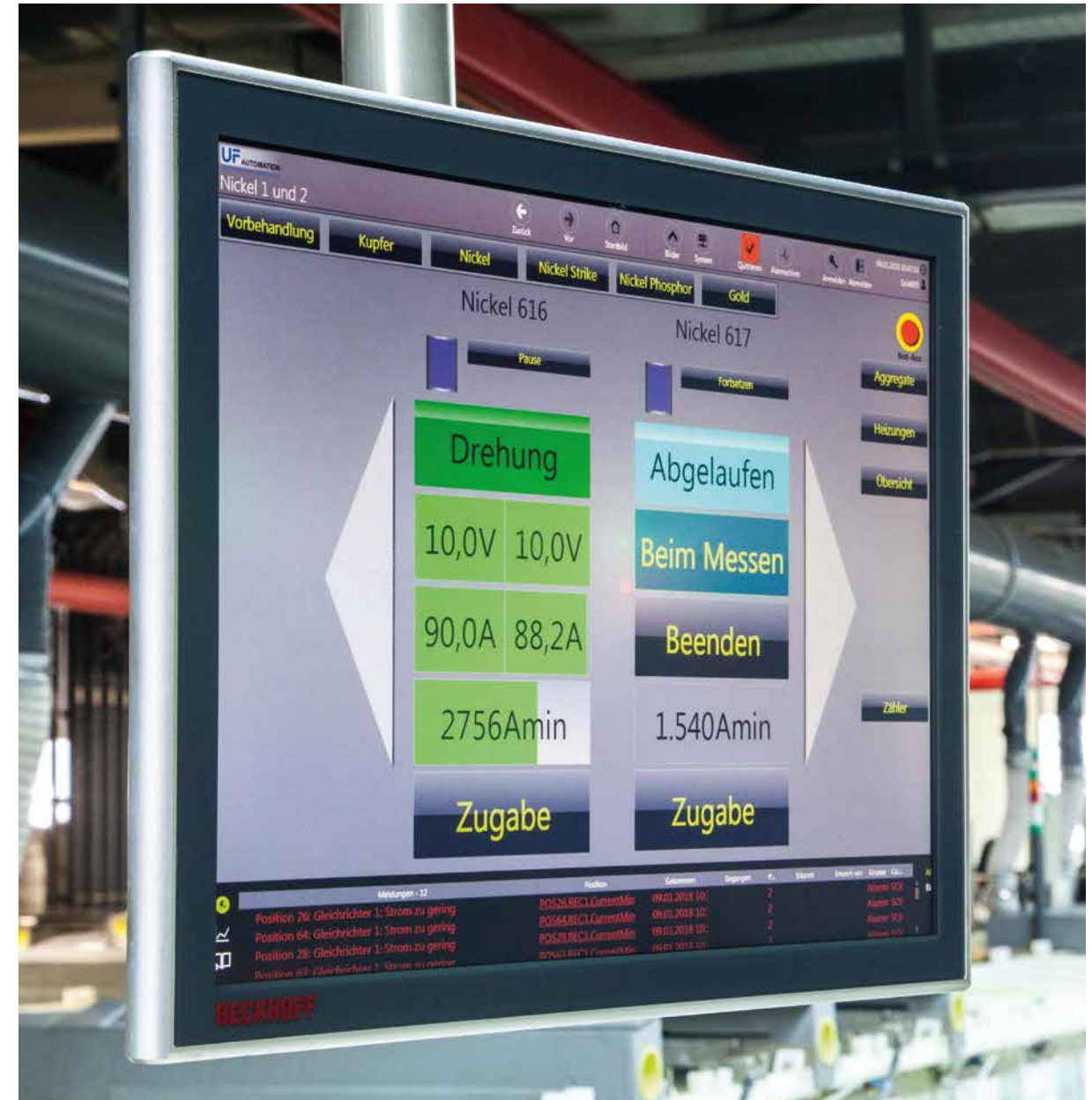
	Production of electronic assemblies and systems	since 2017 www.binder-introbest.de
	Turned parts	since 1979 www.binder-precisionparts.ch
	Customer-specific system solutions	since 2013 www.binder-solutions.com
	Diecast parts	since 1995 www.macrocast.ch
	Stamped and stamped bent parts	since 1979 www.mpe-connector.de

Core competencies and particularities

- Technical surfaces
- Bulk galvanising
- Selective surface finishing in the bulk material and rack segment
- Rack electroplating with electroless nickel
- Corrosion protection and passivation
- Surface protection for silver surfaces
- Stainless steel passivation
- In-house plant construction with galvanising expertise

Advantages

- Process-accompanying quality monitoring from goods receipt to goods issue
- Large part-specific selection of operating materials
- In-house development of selective coating systems
- Decades of expertise in surface technology










Technical surfaces

- Gold
- Silver and hard silver
- Selective gold / gold-gold / gold-tin and special processes
- Nickel sulphamate
- Electroless nickel (Mid- and High-Ph)
- Electrolytic nickel-Ph
- Lead-free tin
- Copper

Coatable materials

- Brass
- Steel
- Bronze
- Aluminium (electroless nickel)
- Stainless steel
- Zinc die casting

Functions and applications

-  Tarnish protection
-  Electrical conductivity
-  Contact resistance
-  Corrosion protection
-  Solderability
-  Mating cycles
-  Wear protection

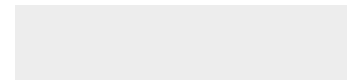


Surface coating

■ Surface coating with gold

The gold used in this context is employed primarily for technical applications in the electrical connector industry, as well as in other industries that manufacture precision parts, such as stamped and bent parts, turned parts, springs, contact pins, contact sockets and reeds.

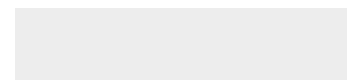
As a safe factor for corrosion protection and electrical contacting, gold serves a primary function.



■ Surface coating with silver

Due to its low electrical resistance, silver or hard silver is an optimal choice for electrical connectors. Silver offers numerous advantages for electrical connectors.

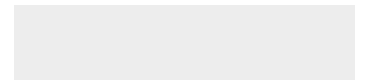
Silver and hard silver have the highest electrical conductivity of all metals and are predominantly employed in the connector industry for larger electrical connectors with higher current ratings.



■ Surface coating with copper

In the context of technical surface finishing, electrodeposited copper is employed primarily as a base coating between the raw material and intermediate coating, or directly underneath the final coating. In certain instances, however, it is advisable to deposit a copper coating directly on the base material. This is particularly the case with certain raw material alloys, steels, or special component geometries. The presence of copper serves to act as a coupling agent between the raw material and the electroplated coating structure.

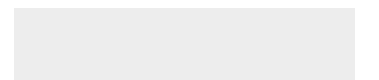
In certain instances, technical copper is employed as the final coating due to its high ductility and very soft characteristics.



■ Surface coating with tin

Both shiny and matte tin can be used on components like square pins, solder sockets, solder pins and punched parts.

Tin has the best soldering properties of all metals and is therefore ideal for components that will be soldered later.



■ Surface coating with nickel

The most common nickel coating is electrodeposited sulfamate nickel, used as a diffusion barrier between the raw material and final coating. This material is also known as “technical nickel”.

Chemically deposited nickel “currentless nickel” is divided into different types. Different surface hardnesses can be achieved thanks to the different phosphorous contents.

The binder galvanic surfaces GmbH range contains both “Mid-Phos” (phosphorous content of 4–7%) and “High-Phos” (9–13%) products.

Electrolytic nickel-phosphorous is deposited under current, like sulfamate nickel. This technical surface coating is a “High-Phos” variant (9–13% phosphorous content).



Quality control

Quality checks and coating thickness measurements are continuously carried out and documented during the coating processes.

- Coating thickness measurement protocols using X-ray measuring devices
- Visual inspection by trained employees
- Bonding strength by means of bending tests, cross-cut or crimping
- Solderability tests in accordance with DIN regulations
- Pore testing by our in-house laboratory
- K2S-Testing of silver passivation
- Ageing test according to customer specifications





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With the surface finishing range of binder galvanic surfaces, the binder group is expanding its expertise.

Markus Binder
General Manager
of the binder group



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