

GALVANIC SURFACE TREATMENTS AND FINISHINGS



AEROSPACE • INVESTMENT CASTING • CRYOGENICS • SURFACE TREATMENT

COOPERATE WITH US

Our electroplating plant has been providing its services to internal and external customers for more than forty years.

We offer anodizing, blackening, zinc plating, tin plating, nickel plating and other surface treatments in top quality and with a responsible

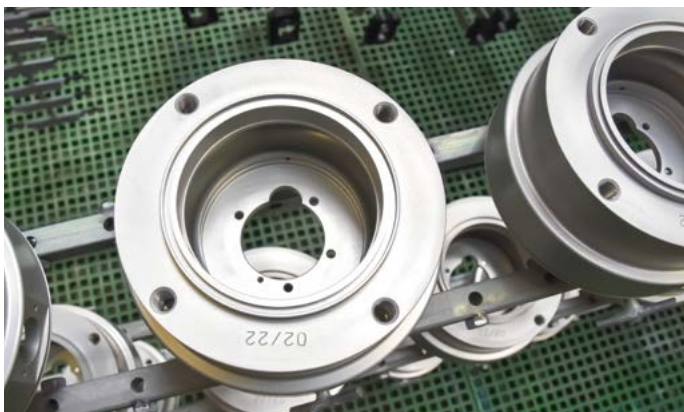
professional approach to every job.

We treat our customers individually and can respond flexibly to their requirements. Our team of skilled professionals is ready to tackle even unconventional orders.



WE BRING TO MUTUAL COOPERATION

- › 200 years of tradition in mechanical engineering
- › Experience in high-precision engineering
- › Fast and fair approach
- › In-house research and development
- › In-house testing laboratory
- › Non-destructive testing - NADCAP certification



SURFACE TREATMENTS

1. Hard anodising
2. Hard black anodising
3. Natural anodising
4. Natural black anodising
5. Chromic acid anodising
6. Blackening
7. Zinc plating with blue passivation
8. Zinc plating with yellow passivation
9. Tin plating
10. Nickel plating



SPECIALIZATION

We are specialists in natural and hard anodising of aluminium alloy parts, up to part lengths of 1,850 mm. For all parts, we are able to design fixtures and jigs according to their structure.

We can provide any masking of holes and threads. Thanks to regular and ongoing inspections of orders, our surface treatments are characterised by precise workmanship and high quality.



ANODISING OF ALUMINIUM AND ITS ALLOYS

- › Anodising in sulphuric acid or chromic acid
- › Durability, hardness and abrasion resistance
- › Possibility of EO or E6 etching (satin pickling)
- › Final black colouring with sealing
- › Automatic line controlled by computer with process course recording
- › Possibility of sealing in demineralised water or potassium dichromate



MAXIMUM DIMENSIONS OF THE PARTS: 1,850 X 750 X 550 (mm)

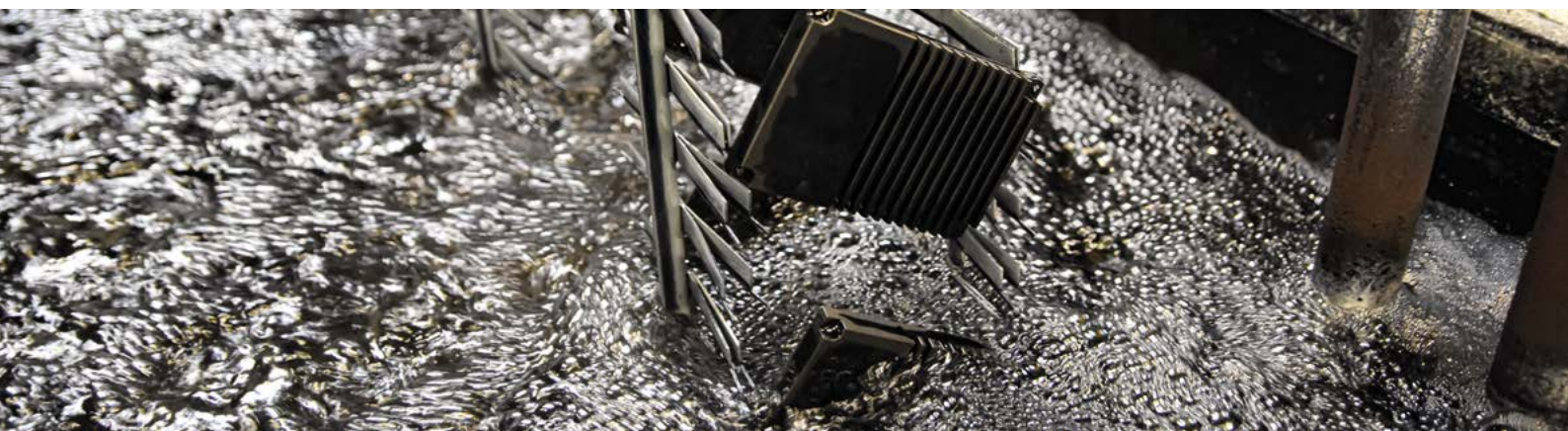
SURFACE TREATMENTS	DESCRIPTION	CHARACTERISTICS
Hard anodising	Aluminium and its alloys with a layer thickness of 5-100 µm . Suitable for functional and mechanically stressed parts.	High hardness and abrasion resistance. The final colour is determined by chemical composition of the base material and the layer applied (shades of brown, brownish grey, olive green).
Hard black anodising	Aluminium and its alloys with a layer thickness of 5-100 µm . Subsequent refinishing in black. Suitable for both functional and decorative purposes.	High hardness and abrasion resistance. Black colour.
Natural anodising	Aluminium and its alloys in sulphuric acid followed by sealing in demineralised water or potassium dichromate. Layer thickness 5-30 µm.	Good corrosion resistance. Decorative appearance, silver colour.
Natural black anodising	Aluminium and its alloys in sulphuric acid with refinishing in black and subsequent sealing in demineralised water. Layer thickness 5-30 µm.	High corrosion resistance. Decorative appearance, black colour.
Chromic acid anodising	Aluminium and its alloys in chromic acid with subsequent sealing in demineralised water or potassium dichromate. Light grey, layer thickness min. 3 µm.	High corrosion resistance of the applied layer. Suitable as base preparation for subsequent painting or final surface for special applications. For use in the aerospace and military industries.

OTHER SURFACE TREATMENTS AND TECHNOLOGIES

MAXIMUM DIMENSIONS OF THE PARTS: 1,200 x 750 x 350 (mm)*

SURFACE TREATMENTS	DESCRIPTION	CHARACTERISTICS
Blackening	Blackening on the hinges. A fully automated line with the possibility of recording the entire process ensures high quality parts even in serial production. The thickness of the resulting layer is only $0.5 \div 0.8 \mu\text{m}$.	Decorative finish - e.g., for hunting weapons and optical components, etc. The layer thickness of the coating has a minimum protective effect even in normal atmosphere. It is therefore necessary to impregnate the resulting layer with a suitable preservation means.
Zinc plating with blue passivation	Zinc plating of steel parts in an alkaline cyanide-free bath followed by blue passivation.	Excellent corrosion protection. Silver with a tinge of blue. For decorative purposes.
Zinc plating with yellow passivation	Zinc plating of steel parts in an alkaline cyanide-free bath followed by yellow passivation.	Excellent corrosion protection and yellow. For decorative purposes.
Tin plating	High-gloss tin layer on parts made of iron, copper and copper alloys (bronze, brass).	Good corrosion resistance, solderability and electrical conductivity of metal-plated parts. The applied tin layer is hygienically safe, suitable for use in the food industry.
Nickel plating	A layer with a characteristic high gloss and hardness.	Decorative surface layer. It can also be used as a functional surface finishing with high corrosion resistance and resistance to mechanical wear.

*Max. dimensions applicable to blackening 1,200 x 650 x 350 mm.



CERAMIC CORE LEACHING

- › We offer ceramic core removal technology in a leaching autoclave, which ensures the removal of ceramic cores from castings for demanding applications in the aerospace and power engineering industries.
- › Integrated washing cycle
- › Quicklock® Door - patented design, fast and safe operation
- › Electric heating – an economical, efficient, clean and low-maintenance solution
- › Programmable control system

WHY SHOULD YOUR ORDERS BE ENTRUSTED JUST TO US?

- › We do not compromise on quality
- › We cooperate with the customer already during the product design phase
- › We have a comprehensive range of electroplating surface treatment services
- › We operate with high capacity and time efficiency
- › We closely monitor the process of the order
- › We have a team of skilled and experienced professional staff members



WE ALSO OFFER FREE CAPACITIES

- › CNC machining, milling and drilling
- › Center and centerless grinding
- › Surface grinding
- › Electrical discharge machining
- › 3D laser cutting and drilling
- › Vacuum furnace annealing and soldering
- › TIG and resistance welding
- › Rotor balancing
- › Reverse engineering
- › Rapid prototyping
- › Non-destructive testing

WHO ARE OUR CUSTOMERS?

We provide services to customers in various industrial sectors. We cooperate with customers in the aviation, military, automotive, space, construction and hobby industries.

Our surface treatments and finishings can be found on functional parts (pistons, hydraulic parts, vacuum technology components, engine

parts, cylinders and rotating parts, etc.) and on design elements (parts and components for transport aircraft assembly systems, parapet caps, control system components, window components for the transport industry and optical equipment).



WE ARE PBS

The PBS brand history in precision engineering goes 200 years deep. Today's PBS Velka Bites is an innovative engineering company focusing its activities foremost in aerospace industry. **PBS develops and manufactures turbojet, turboprop and turboshaft engines, auxiliary power units (APU) and environmental control systems (ECS).**

The PBS production program also includes precision casting, precision machining, metal finishing and last but not least production of components for cryogenics. PBS Velka Bites is a member of PBS GROUP a.s.



DOA, POA a MOA



AS 9100,
ISO 9001 a ISO 14001



Non-destructive
testing (PT, RT)



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