

INDUSTRIAL COOPERATION

COMPLETE IN-HOUSE DESIGN & PRODUCTION



pbs.cz

WE OFFER COMPLETE PRODUCTION PROCESSES

As a vertically integrated company we are able to offer a wide range of manufacturing operations “under one roof”, including precision casting, machining, milling, heat treatment, coating,

welding, surface treatment and non-destructive testing. All operations are carried out to a very high quality and with an individual approach to each job.

PRECISION MACHINING



TECHNOLOGY	Dmax	Lmax	TECHNOLOGY	X	Y	Z
CNC turning	300 mm	300 mm	3-axis CNC machining	600 mm	400 mm	400 mm
5-axis CNC milling	600 mm	400 mm				
Centerless grinding	20 mm	100 mm	Flat grinding	600 mm	200 mm	200 mm
Center grinding	280 mm	500 mm				
Cylindrical grinding (inner)	200 mm	200 mm	Electrical discharge hollowing	300 mm	300 mm	300 mm
3D laser cutting & drilling	300 mm	300 mm				

GEAR GRINDING



TECHNOLOGY	Dmax	Bmax	Module	Gearing incl. angle
External involute gearing	320 mm	70 mm	max. 6 mm	0°
Internal involute gearing	300 mm	70 mm	max. 6 mm	0°
Involute gearing milling	150 mm	100 mm	max. 2 mm	±45°
Involute gearing elongation	60 mm	—	max. 2 mm	0°
Gear grinding	260 mm	400 mm	max. 8 mm	±45°

SURFACE TREATMENT



ALUMINIUM ALLOYS	X	Y	Z	COPPER, STEEL, BRASS	X	Y	Z
Hard anodising	1850 mm	850 mm	550 mm	Nickel coating	1200 mm	750 mm	350 mm
Hard black anodising	1850 mm	850 mm	550 mm	Tin coating	1200 mm	750 mm	350 mm
Natural anodising	1850 mm	850 mm	550 mm	Blackening	1200 mm	650 mm	350 mm
Natural black anodising	1850 mm	850 mm	550 mm	Zinc coating with blue passivation	1200 mm	750 mm	350 mm
Chromic acid anodising	1850 mm	850 mm	550 mm	Zinc coating with yellow passivation	1200 mm	750 mm	350 mm

OTHER TECHNOLOGY



TECHNOLOGY	X	Y	Z	TECHNOLOGY	
Heat treatment and soldering	X 600 mm	Y 600 mm	Z 400 mm	TIG manual welding	Steel sheets up to a thickness of 1-2 mm, including stainless steel and Hastelloy X.
Turbine blades coating	X 400 mm	Y 400 mm	—		
Screw-thread rolling	Dmax 18 mm	Pitch 1,5 mm		Resistance spot welding	
Balancing	Dmax 350 mm	Pin Ø 60 mm	max. 15 kg	Resistance seam welding	

OVERVIEW OF AVAILABLE TECHNOLOGIES AND MACHINES

- ✓ 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
- ✓ Surface treatment

AVAILABLE CAPACITIES



TECHNOLOGY	OVERVIEW OF MACHINES
Multifunctional CNC machining	Mazak Integrex 200-IV
	Mazak Integrex 300-IV
	Mazak Integrex i-300
	OKUMA Multus U4000
5-axis milling	Hermle C12U
	Hermle C20U
	Hermle C30U
	Hermle C42U
	Fehlmann Picomax 60
	Fehlmann Picomax 90
3 & 4 -axis milling	Fehlmann Picomax 95
	MCV 750
	MCFV 1000 SPRINT
CNC turning	MCFV 1270 SPRINT
	Mazak QT 100 MSY
	Mazak QTN 100 MY
	Mazak QT 200 MY
Gear grinding	Mazak QTN 200 MY
	Niles ZE 400

PROFESSIONAL EXPERIENCE

PBS Velka Bites **has been successfully** operating in the field of highly demanding **aerospace production for 50 years.**

We develop and manufacture turbine engines, auxiliary power units, enviromental control systems and components for aerospace industry

companies from more than **40 countries** around the world.

We have state-of-the-art machinery, and by combining specialised activities “under one roof,” we help our customers save costs and production time.

ABOUT US

PBS is a globally recognized engineering brand with a history of over two hundred years.

The company specializes in the R&D and manufacturing of turbine engines, APUs, and ECS systems designed for unmanned aerial vehicles, medium helicopters, and airplanes.

PBS also develops and produces cryogenic equipment for the world's largest manufacturers of gas liquefaction systems.

PBS Foundry is one of the leading suppliers of nickel and cobalt-based superalloy castings in Europe.



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