

# COOPERATION - OFFER OF PRODUCTION CAPACITIES



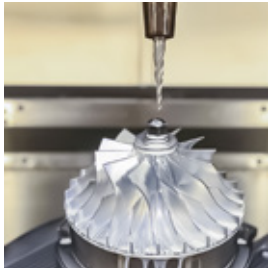
AEROSPACE • INVESTMENT CASTING • CRYOGENICS • SURFACE TREATMENT

# WE OFFER COMPLETE PRODUCTION PROCESSES

We are a vertically integrated company and this is why we are able to offer a **wide range of manufacturing operations** „under one roof“, including precision casting, machining, milling, heat tre-

atment, coating, welding, surface treatment and non-destructive testing. **Everything 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	1 850 mm	850 mm	550 mm	Nickel coating	1 200 mm	750 mm	350 mm
Hard black anodising	1 850 mm	850 mm	550 mm	Tin coating	1 200 mm	750 mm	350 mm
Natural anodising	1 850 mm	850 mm	550 mm	Blackening	1 200 mm	650 mm	350 mm
Natural black anodising	1 850 mm	850 mm	550 mm	Zinc coating with blue passivation	1 200 mm	750 mm	350 mm
Chromic acid anodising	1 850 mm	850 mm	550 mm	Zinc coating with yellow passivation	1 200 mm	750 mm	350 mm

## OTHER TECHNOLOGY



TECHNOLOGY				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	—	Resistance spot welding		
Screw-thread rolling	Dmax 18 mm	Pitch 1,5 mm		Resistance seam welding		
Balancing	Dmax 350 mm	Pin Ø 60 mm	max. 15 kg			
CERAMIC CORE LEACHING				X	Y	Z
Maximum casting dimensions				500 mm	500 mm	380 mm

# 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
<b>Multifunctional CNC machining</b>	Mazak Integrex 200-IV
	Mazak Integrex 300-IV
	Mazak Integrex i-300
	OKUMA Multus U4000
<b>5-axis milling</b>	Hermle C12U
	Hermle C20U
	Hermle C30U
	Hermle C42U
	Fehlmann Picomax 60
	Fehlmann Picomax 90
	Fehlmann Picomax 95
<b>3 &amp; 4 -axis milling</b>	MCV 750
	MCFV 1000 SPRINT
	MCFV 1270 SPRINT
<b>CNC turning</b>	Mazak QT 100 MSY
	Mazak QTN 100 MY
	Mazak QT 200 MY
	Mazak QTN 200 MY
<b>Gear grinding</b>	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, environmental 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 can help our customers save on costs and production time.

# 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



MAA 056 a MAA 076  
Ministry of Defence, Czech Republic



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