MetMax Europe
BÁRMIT KIHOZUNK A FÉMBŐL

METMAX EUROPE Nyrt.

Condensed Technical Capability Summary

Overview

Our manufactured components can be characterised as complex, comprising multiple operations, and, depending on the design, featuring tight dimensional tolerances and high added value. Annually, production quantities range from a few dozen up to 70,000–80,000 units. Our facility is fully climate-controlled to ensure stable and process-capable manufacturing of components. We possess 119 CNC-controlled machining machines, with several similar machines for potential interchangeability.

Turning Technology and Capabilities

Our turning capabilities cover diameters from 3 mm up to 650 mm, and in special cases up to 1,200 mm, with component lengths reaching up to 1,000 mm depending on the design. Among our machines, we have:

- Single-spindle horizontal and vertical lathes
- Single-spindle lathes with Y-axis
- Dual-spindle lathes with robotic loading
- Counter-spindle units with 2 or 3 turret heads
- Turning-milling centres

Most of our CNC lathes are equipped with measuring probes, enabling not only the measurement of components but also automatic correction. By utilising the Y-axis and driven tools, our machines are capable of not only turning but also milling and drilling, resulting in significant reduction of secondary time. Thanks to our technological expertise, we can also turn hardened components, in some cases eliminating the need for grinding operations.

Milling Technology and Capabilities

For milled components, we can machine up to an approximate overall size of 650x650x500 mm, but in special cases—and depending on the component design—we can process lengths up to 1,400 mm.

Our machining centres include:

- 3-axis machines
- 4-axis machines with 2 pallets
- 4-axis machines with 6 pallets
- 5-axis machines

Here as well, most of our machines are equipped with measuring probes, allowing us to check component dimensions and perform positioning. Thanks to the design of our machines, we can also machine hardened components.

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With turning and milling, we can achieve machining tolerances as tight as 0.005 mm for size, form, and position. The achievable surface roughness is Ra=0.4.
Most of our machining equipment is networked. Thanks to our CIMCO system, accurate and real-time production data can be monitored and accessed, permitting immediate intervention based on performance data. Our programming is supported by a CAM system, enabling us to simulate machining before production begins. The completed CNC programmes are transferred to the machines via the network.

Process Engineering

During process engineering, we consider the possibility of machining with custom tools, which we design in collaboration with tool manufacturers. We have designed several tools that enable the combination of operations and, thanks to special designs, allow machining from a single setup by eliminating the need for additional clamping. We also take into account fixture solutions, even custom-designed, that allow us to place multiple components within the workspace or minimise the number of clamping operations. This results in significant savings of both main and secondary time.

Materials

We have experience in machining steel and its alloys, aluminium and its alloys, non-ferrous metals, cast iron, various stainless and duplex materials, as well as special materials such as molybdenum, zirconium Zr702, Hastelloy C276, C2000, Inconel, and heat-resistant steels.
In terms of machined materials, we have experience working with steel and its alloys, aluminium and its alloys, non-ferrous metals, cast iron, various stainless and duplex materials, as well as special materials such as molybdenum, zirconium Zr702, Hastelloy C276, C2000, Inconel, and heat-resistant steels.

Grinding Technology and Capabilities

Our grinding technologies include:

- Cylindrical grinding: diameters from 3 mm up to 300 mm, and up to 650 mm in length, with special cases up to 1 m in length
- Surface grinding: within a range of 500x1,000 mm
- Centreless grinding: diameters from 3 mm up to 45 mm, and lengths up to 200 mm
- Parallel grinders: up to 230 mm overall size
- Slitting grinders: for 4, 5, or 6 mm wide slits

The accuracy of our grinding machines is within 0.002 mm, and the achievable surface roughness is approximately Ra=0.2.

Other Technologies and Capabilities

We have two CNC-controlled induction hardening machines, capable of hardening up to a diameter of 110 mm and a length of 750 mm. We also have two tempering furnaces, heatable up to 300°C, for cases where we are heat treating large quantities of parts and

tempering is not done in the induction machines. To reduce stresses arising in parts during manufacturing, we also have two stress-relieving furnaces heatable up to 750°C.
For induction-hardened parts, our laboratory can perform microhardness testing and magnetic crack inspection, and we issue certificates for these tests.
Our company is also equipped with two wire EDM machines, universal lathes and milling machines, a spark erosion machine, orbital riveter, hydraulic presses, vibratory finishing machines, and a tunnel washer.
Component inspections are performed in our measuring room using five measuring machines, a form tester, height gauges, contour graphs, surface roughness testers, and various hand-held measuring and inspection tools. We can issue measurement certificates for every manufactured part.

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