

The Newly Developed LB3000 EXIII and MB-46V II 5 μ m Precision and Energy-saving Green-Smart Machines

**- Using the next-generation OSP-P500 CNC with
next-generation global-standard machines -**

Okuma Corporation has developed the **LB3000 EXIII** CNC lathe and **MB-46V II** vertical machining center which are world-class Green-Smart Machines with high precision and energy-saving performance.

Both series of machines have unbeatable machining performance, precision stability, and stable operation for extended periods that achieve their superior reliability. Both series offer our representative best-seller machines that have been highly rated by the global market. (The cumulative sales of the LB-EX series are **over 18,000 units**, and the MB-V series are over **11,000 units**.)

The newly developed LB3000 EXIII and MB-46V II are Green-Smart Machines that include the OSP-P500 next-generation CNC unit to **offer both high precision and energy-saving performance**. The machines will offer production innovation to growth industries, such as the automobile/EV sector and the semiconductor manufacturing device sector.

(1) The highest level of precision stability in the world.

**Machining dimension changes over time of 5 μ m or less (First in the industry.
When the ambient temperature change is 8°C.)**

(2) High productivity, high precision, and decarbonization, all at a high level.

Throughput improved by 14% (MB-46V II)

Power consumption: LB3000 EXIII reduced by 14%; MB-46V II reduced by 15%.

(Okuma estimates)

Contributing to decarbonization through process-intensive machining.

Integration of gear machining and grinding processes with the LB3000 EXIII.

(3) Innovative HMI (Human-Machine Interface)

**Even beginners who know nothing about machining programs can learn how
to make a program and machine their first workpiece in a day.**

Solving the societal issues faced by the manufacturing industry

Okuma has pursued good and accurate grinding performance with machines that can be used safely which are the basics of metal part machining. We have developed lathes and machining centers (MC) for many years and added various intelligent technologies to evolve our products into autonomous machine tools. As a result, the LB-EX series and the MB-V series were developed in that way and have been highly rated by our customers ever since they were introduced.

The LB3000 EXIII and MB-46V II have been developed to be new lathes and machining centers that can contribute to the solution of societal issues (the decreasing working population, the skill transfer problem, decarbonization, etc.).

Ultimate precision stability:

The Thermo-Friendly Concept intelligent technology is used to have machines autonomously maintain stable precision. This technology achieves world-class precision stability even in general factory environments.

MB-46V II machining dimensional changes over time: **5 μm or less (8 μm for conventional machine tools)**

LB3000 EXIII machining dimensional changes over time: **ϕ 5 μm or less**

Contributing to decarbonization through process-intensive machining:

The demand for gear machining is increasing because of the shift to EVs.

The LB3000 EXIII integrates gear machining processes through gear skiving to replace specialized machines. Moreover, it has improved gear machining precision when compared with conventional machines by improving spindle positioning accuracy. Additionally, its highly rigid and highly precise machine construction allows hard turning for finishing after heat treatment to reduce grinding. This helps to reduce the industrial waste produced by the grinding process.

Automation and labor reduction:

To meet the demand for automation and reducing manpower that comes from the aging of skilled workers and lack of labor, our automated systems that can be used easily by anyone can be adapted flexibly to our customers' production styles.

The MB-46V II has improved the stability of precision to the next level to cope with high-precision parts, especially semiconductor manufacturing device parts. It has also improved internal chip discharge performance which is important for automating vertical MCs. The machine design has been renewed to reduce the load of internal cleaning and to cope with automation.

Additionally, a greased spindle (special specification) does not require compressed air for oil lubrication so machining is more environmentally friendly.

By reducing compressed air usage, power consumption is reduced by **7%** (Okuma estimate)

The LB3000 EXIII and MB-46V II are the world's best machines in their classes and can achieve "high productivity and high precision," "labor reduction and automation," "energy saving (decarbonization)," and "monozukuri DX" for a wide range of markets, starting with the growing EV, semiconductor manufacturing, and precision parts markets, and help to solve societal problems.

Please use this information to introduce these new products.