

The First **AI** Dental Milling Machine



AI Calibration, introduced by GenCore as the dental industry's first, is the key feature that enables to offer consistent machining results.

AI Calibration accurately identifies various machining conditions, including jig installation, and applies them to the vector coordinate system.

This unique system can detect the subtle changes that are difficult to recognize, such as those occurring during the jig attachment process, ensuring consistent machining precision in all situations.

Therefore, **M AI featuring AI Calibration offers quality that matches or exceeds that of CNC machining**, particularly in handling multiple slots of Ti. Pre-mill blocks simultaneously which requires an exceptionally high level of precision because of their pre-machined implant connection part.

Machine Specification

Milling Type		Compatible with both wet and dry operations
Size (W x D x H)	Machine	607 x 768 x 910mm / 23.90 x 30.23 x 35.43 inch
	Table	607 x 768 x 790mm / 23.90 x 30.23 x 31.10 inch
Weight	Machine	135kg / 297.62 lb
	Table	70kg / 154.32 lb (80~90kg with full option included)
Electrical Specification	Voltage	200~240V
	Frequency	50Hz, 60Hz
Spindle	Capacity	DC 1.37kw
	Max. Rotation	60,000 RPM
	Max. Torque	20,1 Ncm (S1, IEC 60034-1)
Driven Axis		Simultaneous 5 - axis
Motor		400W Servomotors (all 5 axes applied)
Axis Operation System		100% Full Closed-Loop
Axis Operating Equipment	X / Y / Z axis	C5 Class Ballscrew & LM Guide
	A / B axis	Harmonic drive
Axis Drive Range	X / Y / Z axis	200mm / 256mm / 130mm
	A / B axis	+35° to -35° / 360° (Free rotation)
Tool Pocket		28
Monitor		13.3" LCD Touch monitor



The First AI Dental Milling Machine **MAI°**

All five axes of M AI° are equipped with 400W servo motors manufactured by the globally recognized company "YASKAWA".

Also, This exceptional motor precisely controls the linear motion through C5 class Ballscrew and the rotational motion through Harmonic Drive.

Then, these extremely precise industrial components integrated into the M AI° are controlled by a high-performance controller.

Finally, GenCore showcases advanced equipment operation control capabilities through integrated control software, independently developed based on our technical expertise.

GenCore's sophisticated components operation control system 'Full Closed-Loop Control System' defies comparison to other systems which only use the motor drive or controller.

Distinctiveness of this system will be experienced firsthand when performing high-precision dental prosthetic machining tasks, such as **implants or bar bridges**.

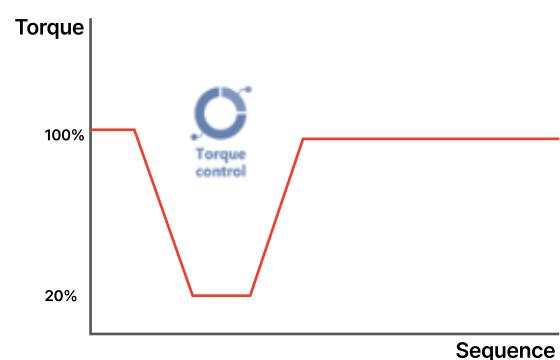
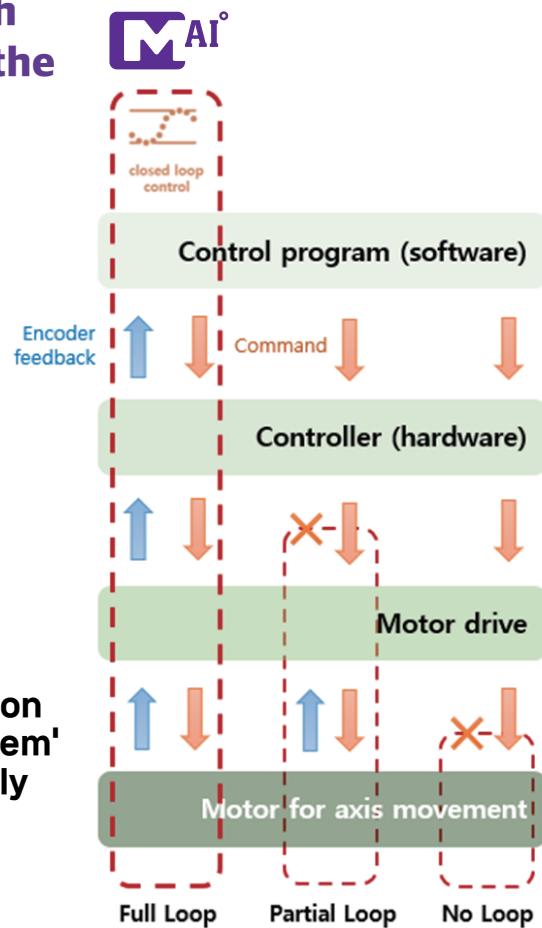
Safe mode

M AI° is the first in the dental industry to incorporate a torque control system that reduces axis drive power by 20% when the door is opened during machine operation.

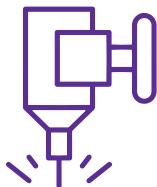
Additionally, if sudden damage that exceeds the standard is detected during machine operation, the machine will be immediately suspended to prevent accidents.

M AI°'s Smart Torque Control System can proactively prevent various potential risks in different situations. this system will enhance manufacturing efficiency and avert possible accidents from occurring during machining.

This feature reflects our design intent for M AI°, with the safety of both the user and the machine as the highest priority.



Spindle



M AI° utilizes the outstanding German spindle manufacturer Sycotec's DC 1.37kw.

DC spindles have many advantages over AC spindles, such as precise speed and torque control, rapid response, exceptional durability and **especially providing stable torque control at low speed.**

For this reasons, it is an essential element for equipment used in small equipment or fields requiring precision control.

M AI°'s DC 1.37kw spindle delivers higher torque compared to an AC spindle of the same class, while providing a performance level similar to that of a 2.2kW AC spindle.

Ballscrew & Reducer



X, Y, Z axis -linear motions

C5 class Ballscrew applied

The higher Ballscrew's precision level, the better the ability to land on the target.

While most companies use C7 class BallScrew, however M AI° equipped with the higher grade C5 class Ballscrew.

A, B axis - rotational motions

Harmonic Drive applied

The harmonic Drive adapts high-precision gear system that provides excellent speed reduction capabilities and high torque transmission, as there is no backlash when the gears mesh.

Nozzle

M AI° designed to spray cutting oil onto tool's blade from four different directions.

This thoughtful design maximizes the contact time of cutting oil with tools during milling process, enabling stable machining operation.



Intuitive UI

M AI°'s user interface(UI) is designed to be intuitive for the user to understand and easy to use.

The user-friendly design not only allows users who are unfamiliar with the machine to easily operate it, but also facilitates smooth interaction between the equipment and user. This feature enhances efficiency and convenience, making tasks easier.



AI Calibration

The process of AI Calibration is fully automated, and the M AI°'s UI is designed to user-friendly. These characteristics make the machine easier to use for novice.

AI Calibration provided by M AI° would minimize the potential issues, both large and small. This significant advantage will bring consistent and accurate machining, allowing the user to achieve efficient and stable result.



A video to show how AI Calibration corrects errors when the jig mounted wrong.

90-degree Milling

M Al°'s Jig is designed to secure the space for various milling directions. **This intention reduces the occurrence of undercuts to a minimum.**

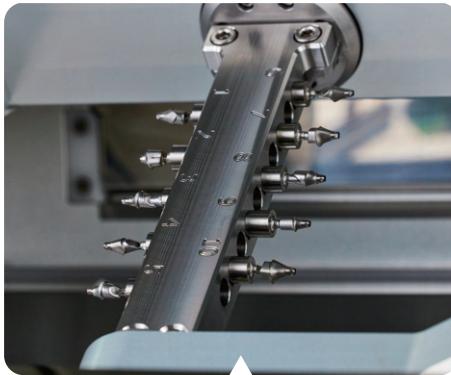
Full closed-loop control system of M Al° ensures precise control, even as each axis allows free movement in various directions. As a result, complex machining tasks using various accessories can be performed with ease.



Type of Jigs



C-Clamp Jig
Ø 98.5mm Disk



Premill Jig #10 Slots
(5-axis machining)



Block Jig #10 Slots
(5-axis machining)

Tools



4 types of Zirconia, 4 types of Glass Ceramic & Various type of Metal and Advanced Tool
28 tools in total



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