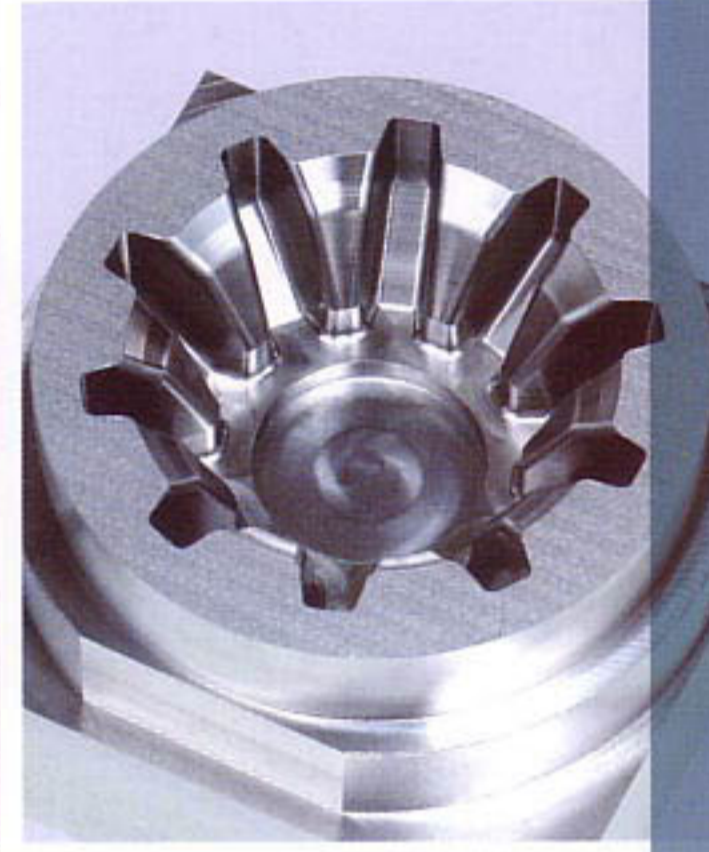
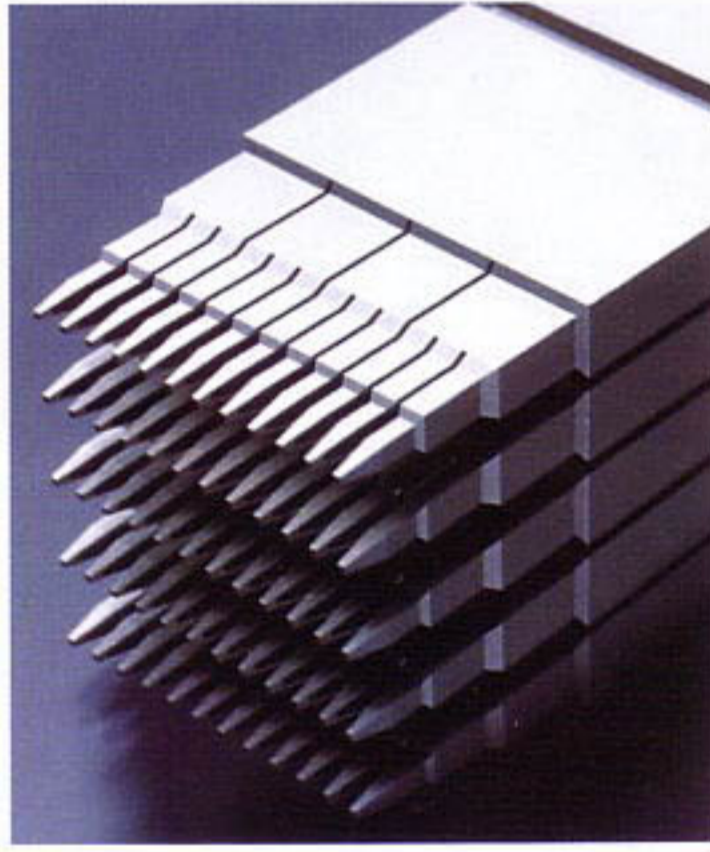
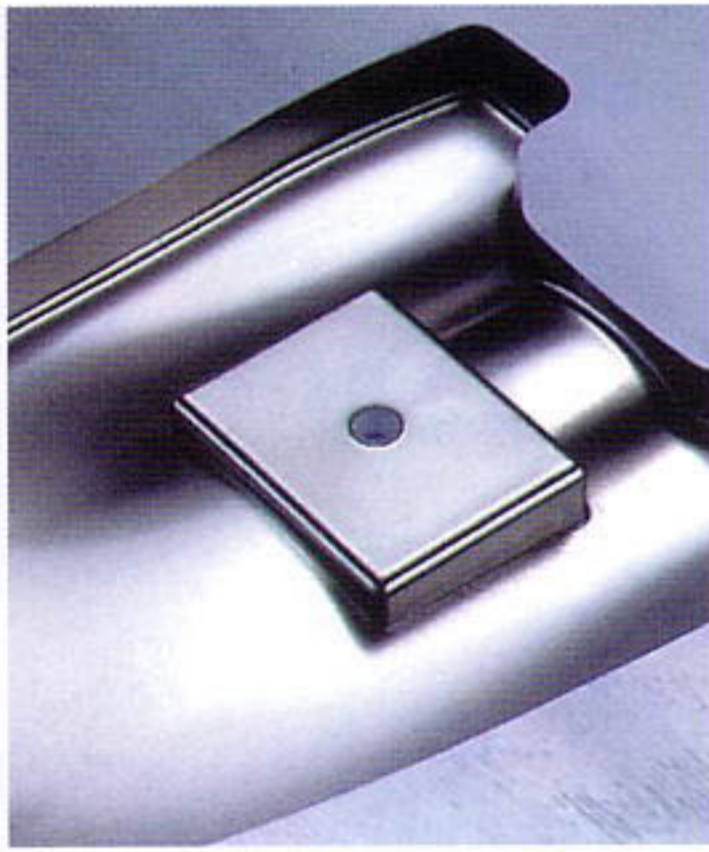
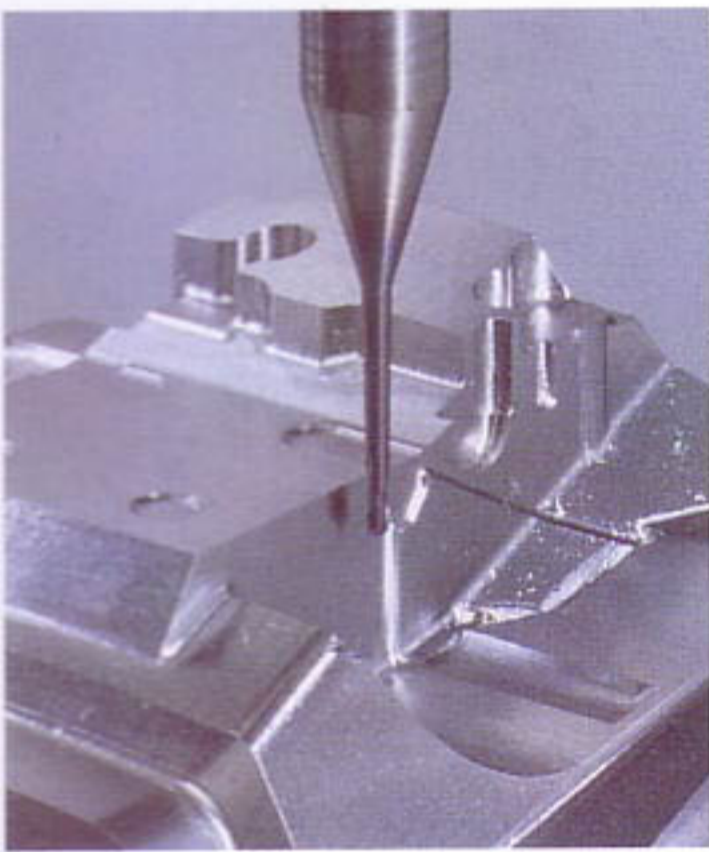
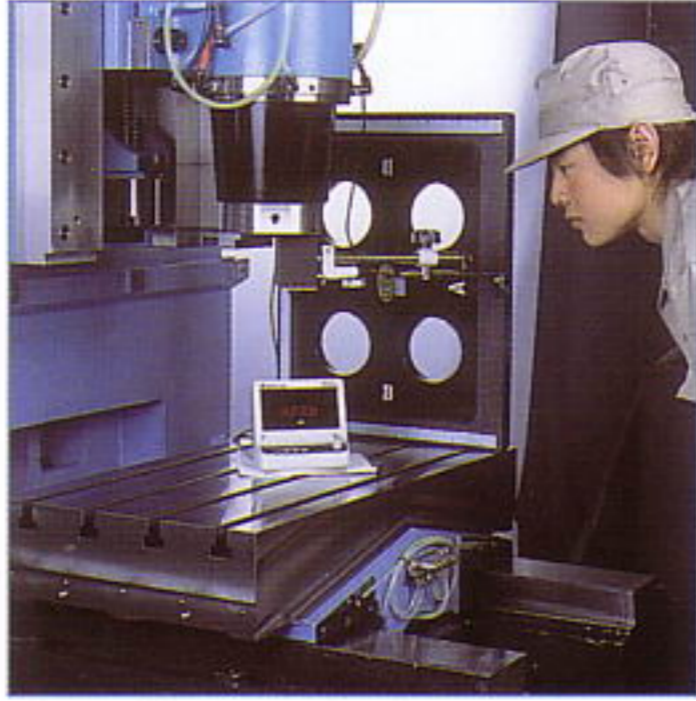


Die & Mold





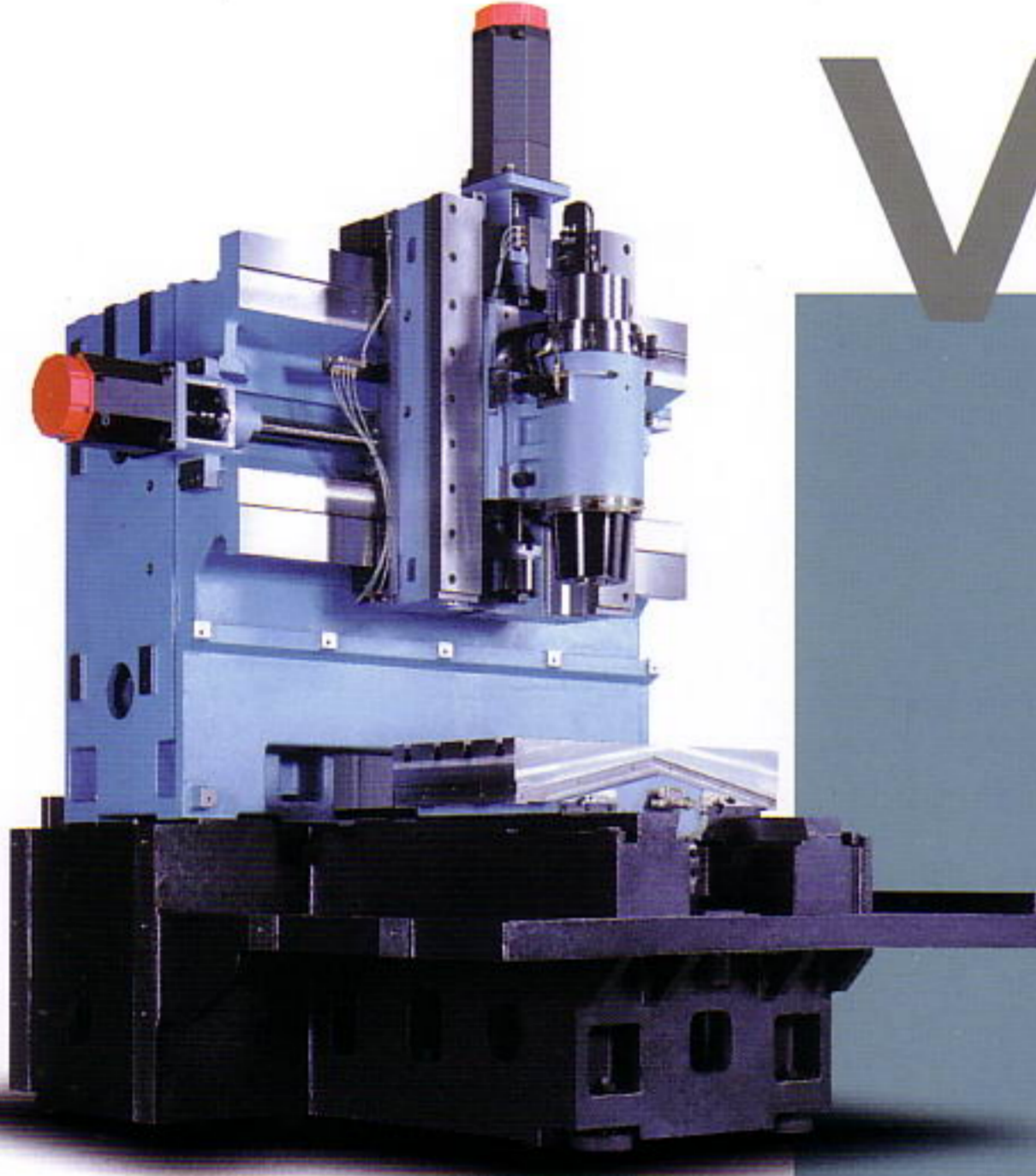
Meticulously hand-scraped



Assembled to sub-micron accuracy



V VERTICAL MACHINING CENTER SERIES



Machine construction with no overhangs in any axis

The standard machine for small die & mold machining

V33 Vertical Machining Center

Axis travels (XYZ) : 600 x 400 x 350 mm

Spindle speed range : 200 - 20000 min⁻¹

Spindle taper hole : 7/24 No. 40 taper

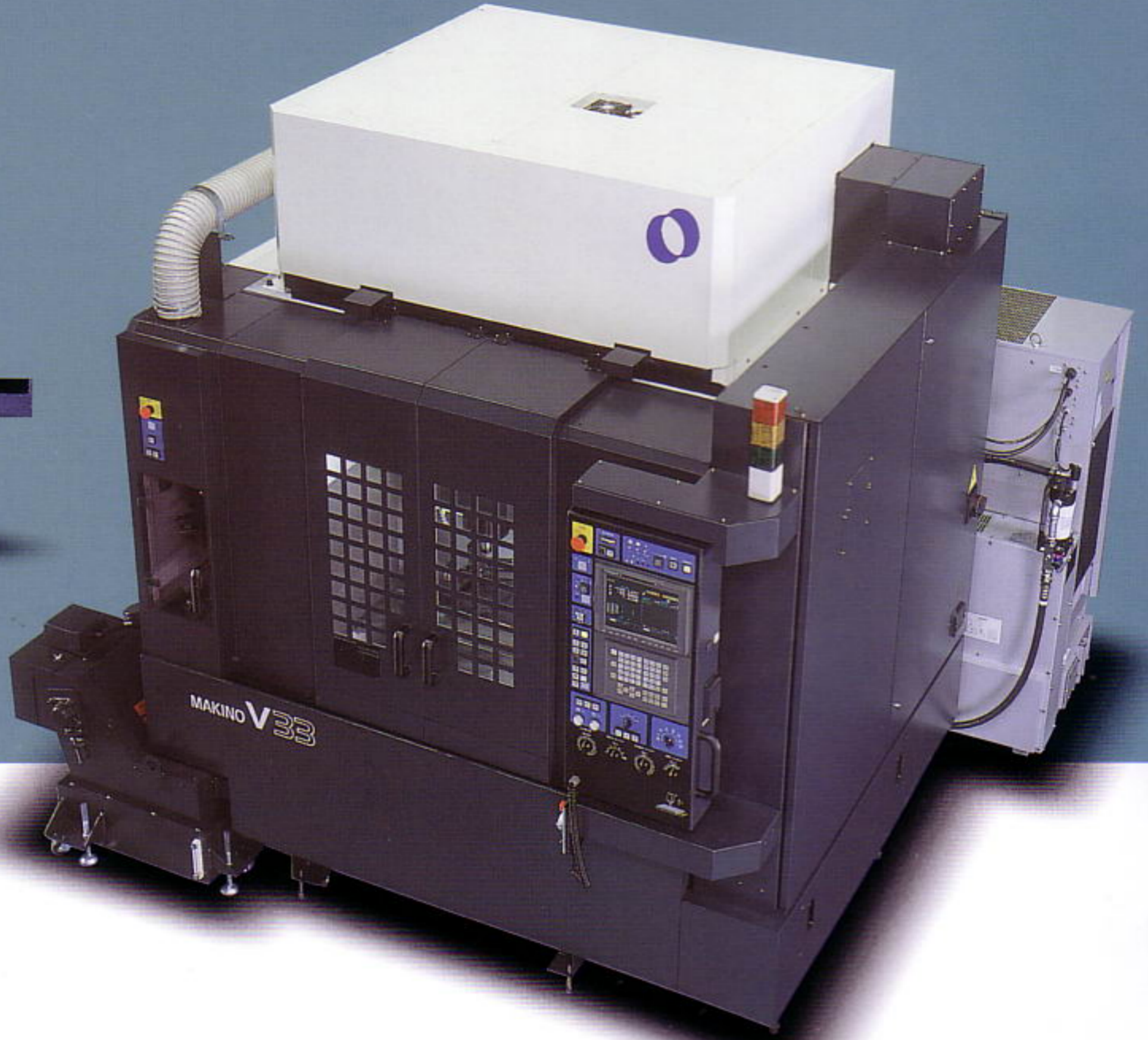
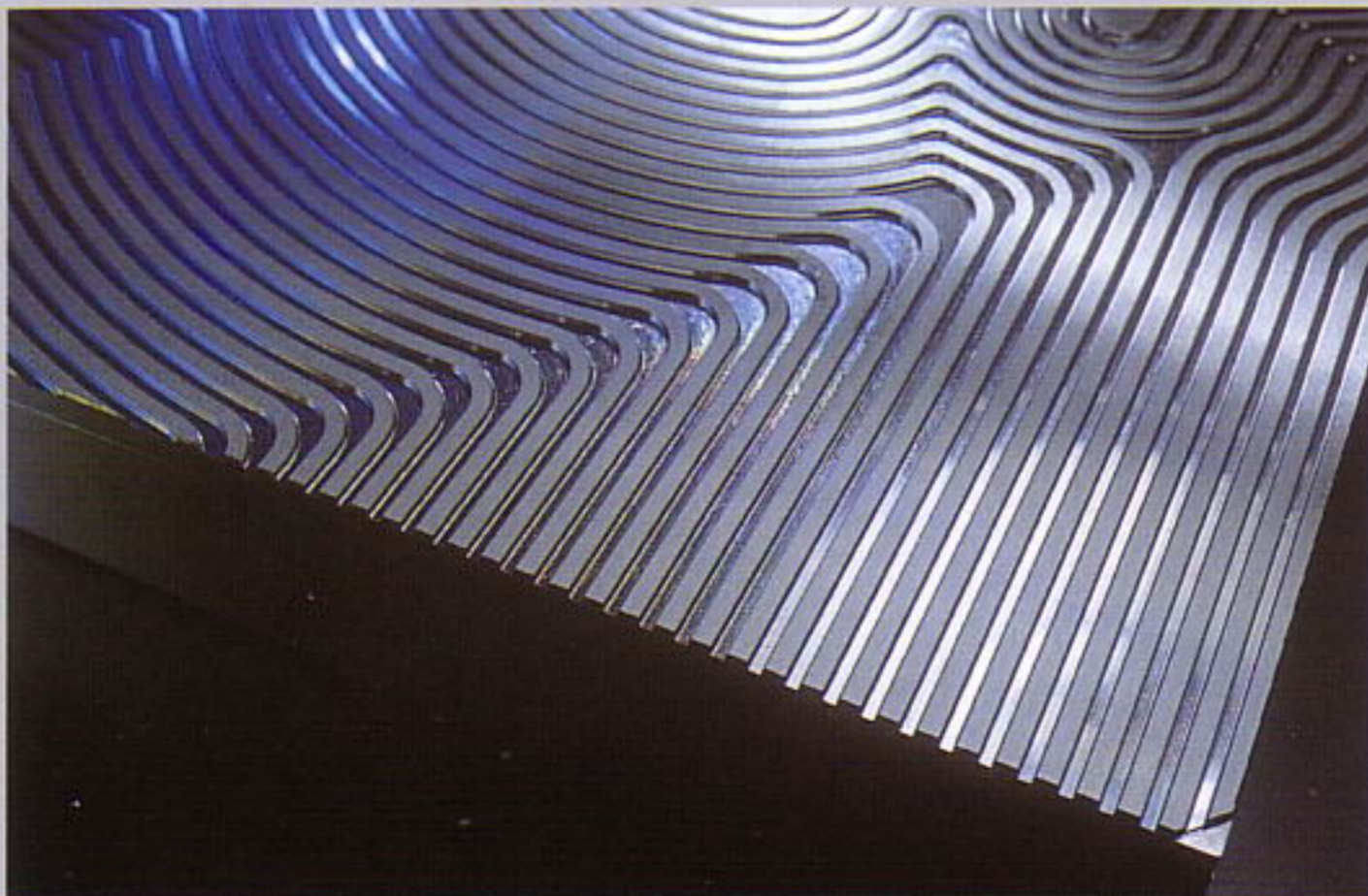


Photo: V33 with Thermal Guard specification



KEY TECHNOLOGY

Thermal Guard

The Thermal Guard covers the top of the machine to keep out ambient air, thereby minimizing machine attitude changes due to ambient temperature fluctuations.

(Optional Specification)

Thermal stability measures: *Makino Thermal Stabilizer*

Makino Thermal Stabilizer is a general name for functions that suppress machine attitude changes caused by the ambient temperature. The Thermal Guard is optionally available on V Series machines.

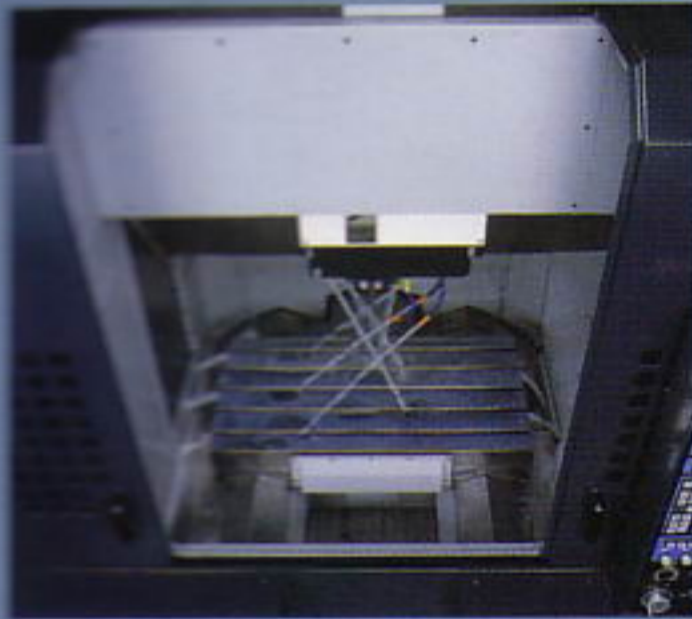
Eliminating the need to polish
medium-size dies/molds

V56 Vertical Machining Center

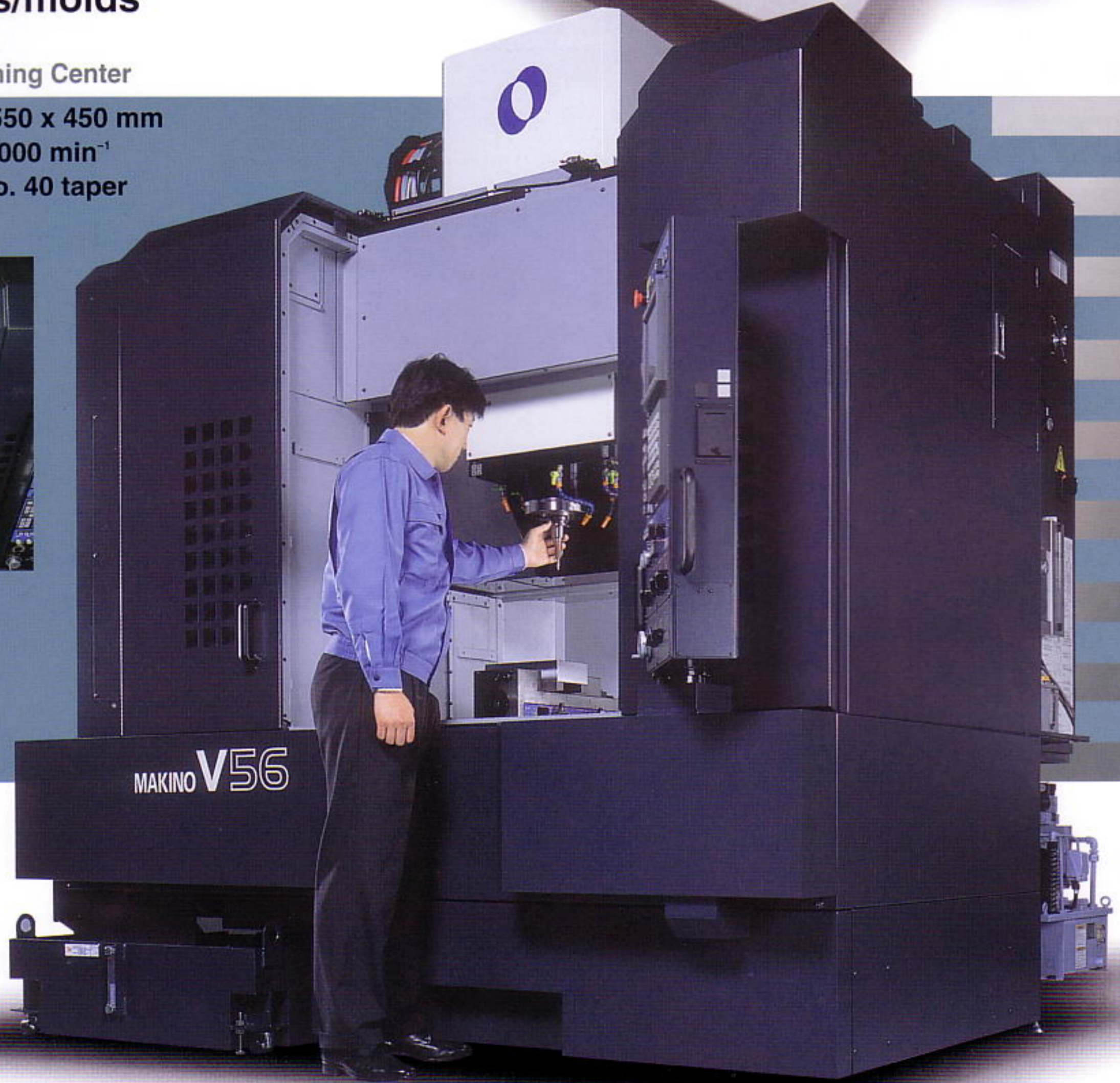
Axis travels (XYZ) : 900 x 550 x 450 mm

Spindle speed range : 50 - 20000 min⁻¹

Spindle taper hole : 7/24 No. 40 taper



Reliable chip removal



KEY TECHNOLOGY

For maintaining superb shape accuracy in
high-speed machining

GI.3 / Super GI.3* / Super GI.4 control* (*Optional Specifications)

GI control is Makino's unique axis feed control system for maintaining precise shape accuracy even during high-speed machining. It is one of the most powerful tools for shortening lead times in die & mold manufacturing.



↑ With Super GI.3 control



↑ Without Super GI.3 control

Responding to the advanced machining needs for precision press dies

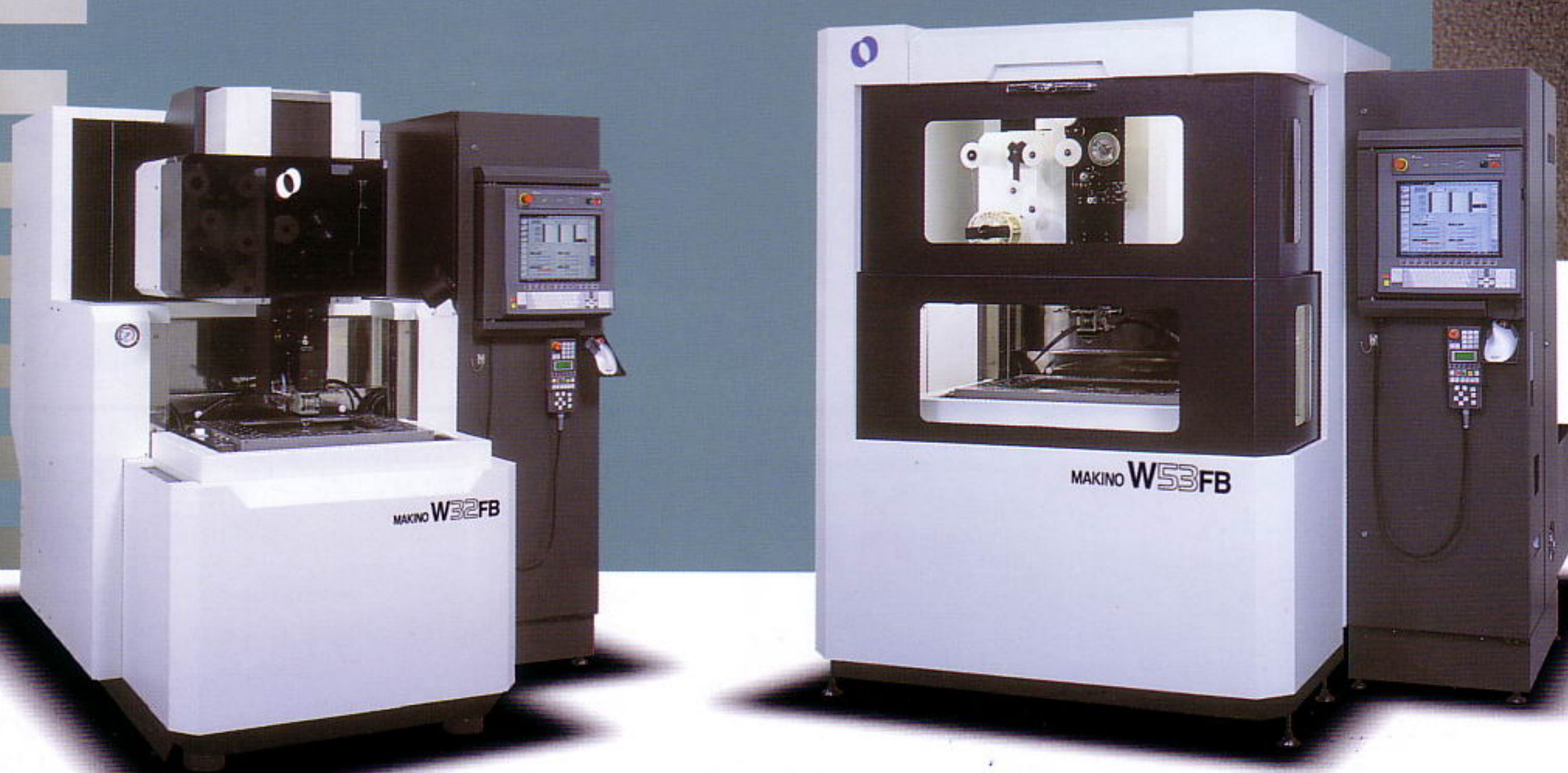
Reliable tools supporting cutting-edge technologies

- Ultimate machining capabilities for high-accuracy, high-quality punches and dies
- Makino Thermal Stabilizer enables machines to ensure their own accuracy
- Newly developed water jet for superior automatic wire threading performance
- Drop tank design opens on three sides for outstanding accessibility

W32FB/W53FB

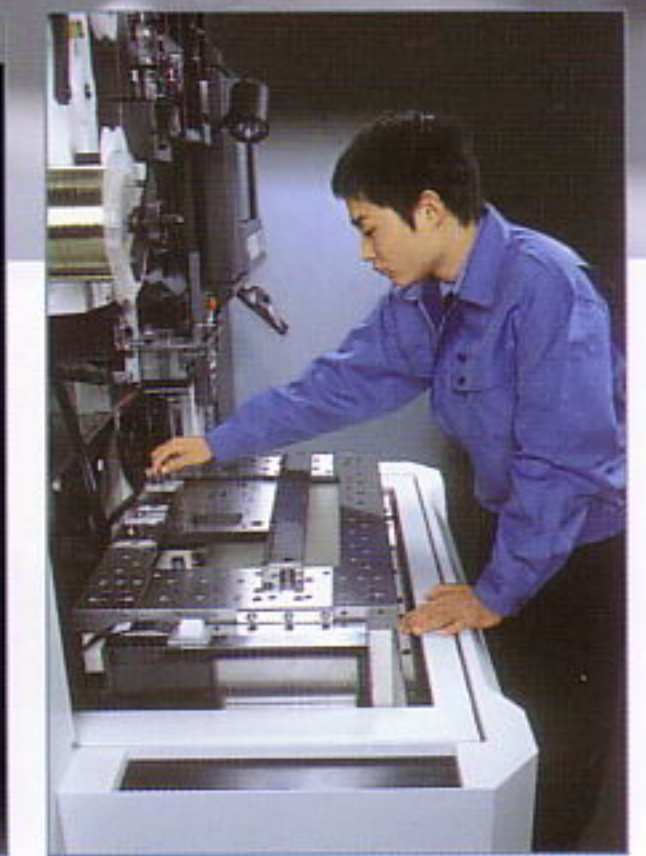
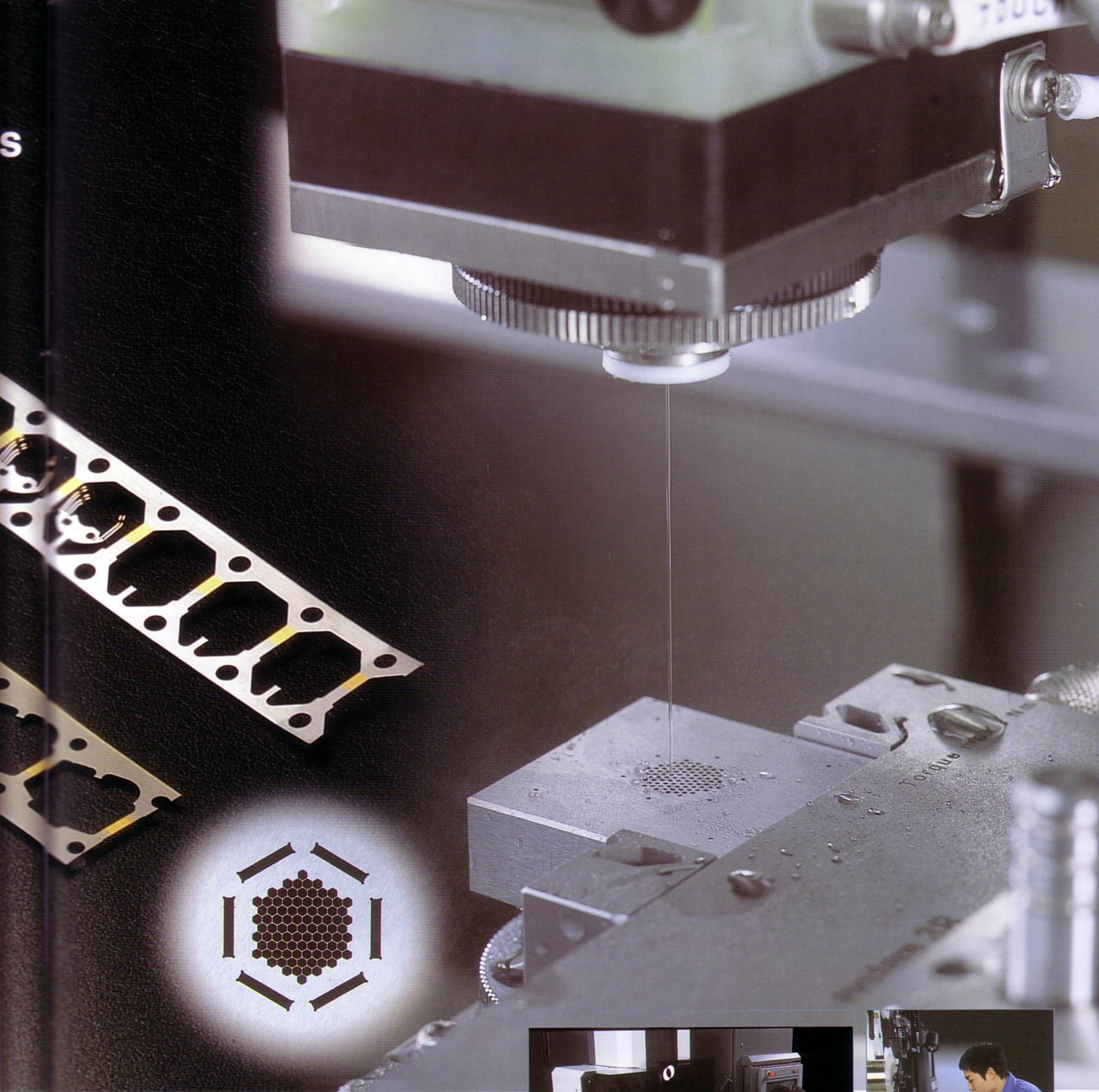
High Accuracy Wire Electrical Discharge Machines

Thermal Guard Specification



W32FB / W53FB

Axis travels (XYZ) : 370 x 270 x 220 mm / 550 x 370 x 220 mm
Wire electrode diameter : 0.1, 0.15, 0.2, 0.25 mm dia.



◎ **Drop tank design accessible from three sides**

The height of the work tank and dielectric fluid can be set to match the workpiece thickness. Because the machining process is readily visible, the operator can accurately confirm the machining condition even for thin workpieces. In addition, core removal during machining, workpiece loading/unloading, centering, end face alignment and other tasks can be done with exceptionally high efficiency.

WEDM

WIRE ELECTRICAL DISCHARGE MACHINE



Excellent shape accuracy and surface finish are obtained in one machining pass in order to deliver maximum accuracy.

U32i / U53i

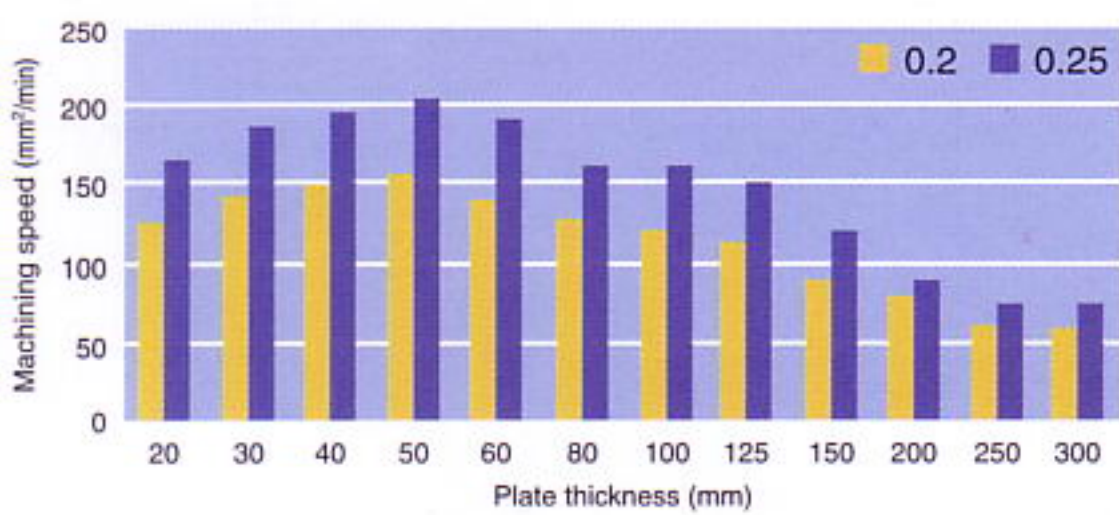
High Accuracy Wire Electrical Discharge Machines

UP32i / UP53i

High Accuracy Wire Electrical Discharge Machines

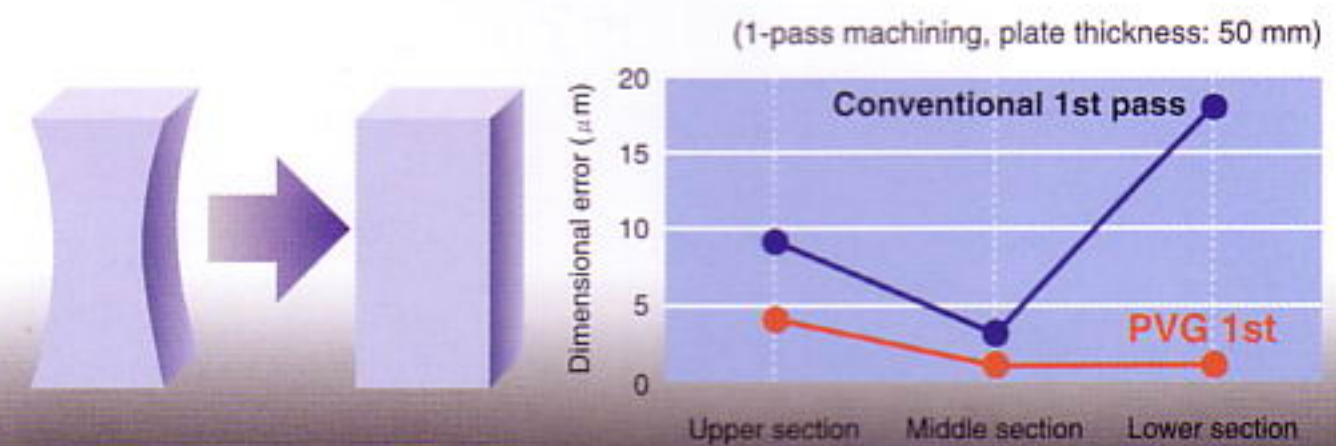
◎ P-Cut for faster rough machining speeds and enhanced surface finishes

P-Cut facilitates high-speed machining by optimally controlling the electrical discharge pulses to avoid wire breakage. This ensures stable machining against changes in the dielectric fluid pressure that can occur, for example, when starting to machine from an end face.



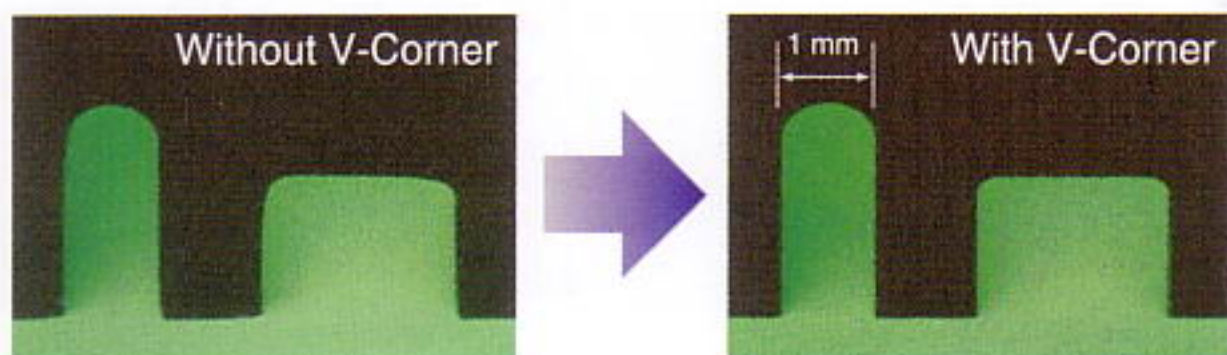
◎ GS-Cut for improved straightness accuracy

Outstanding straightness is achieved from the first pass to support high-speed, high-accuracy machining. Shape accuracy to within 5 μm is obtained in the first machining pass.



◎ V-Corner for enhanced corner accuracy

Makino's unique corner control feature delivers superb shape accuracy.



◎ Wire Wizard

Machining data can now be entered without any wasted effort by simply following the logical progression from programming to actual machining. Three separate screens are provided to make each task much easier to understand.

