

The Latest and Best Quality Machinery.

**DAHLIH®**

**VERTICAL  
MACHINING CENTER**



**MCV-720**



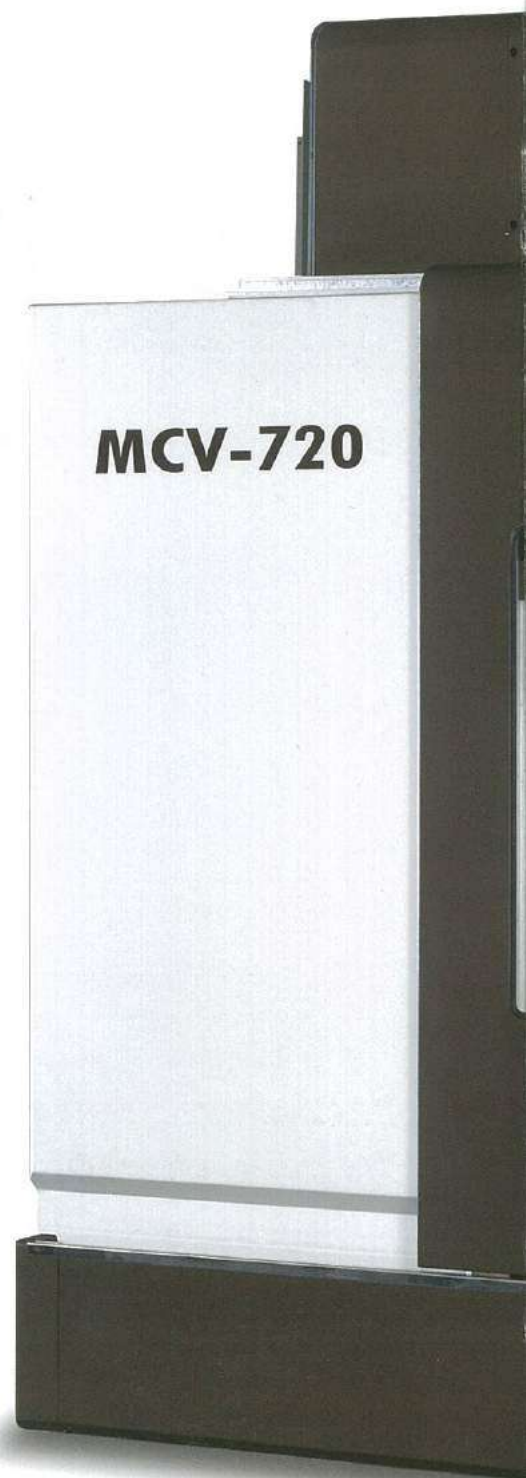
The Latest and Best Quality Machinery.

# **DAHLIH<sup>®</sup>**

## **VERTICAL MACHINING CENTER**

### **A Design Concept that Combines Precision and Dependability.**

- Built with Dah Lih's tradition of high reputation and fine craftsmanship.
- The major castings are designed and analyzed by advanced "Finite Element Analysis" for optimum structural rigidity and accuracy.
- The entire machine is ruggedly constructed throughout for lifetime accuracy and rigidity.
- Choice of carousel type (16 tools) or CAM type (24 tools) magazine.
- Linear guide ways on X and Y axes. Box ways on the Z axis.
- Coolant jets around the spindle ensure excellent heat removal from the cutting tool and workpiece.
- 8,000 RPM spindle is standard.
- 15,000 RPM high speed spindle is optional with direct drive spindle.
  - ★ High rigidity, high precision, minimum vibration, minimum noise. Easy to install and maintain.





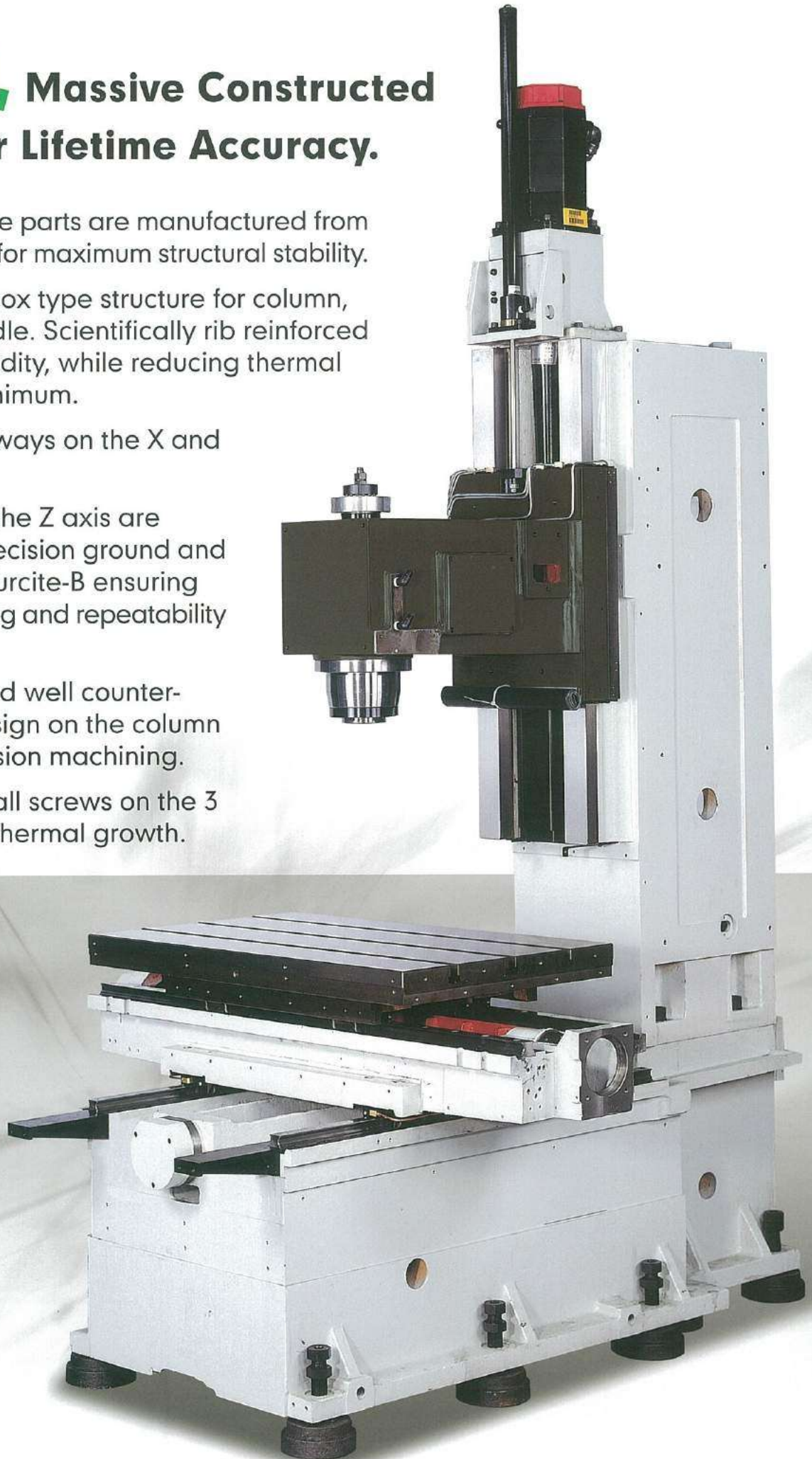


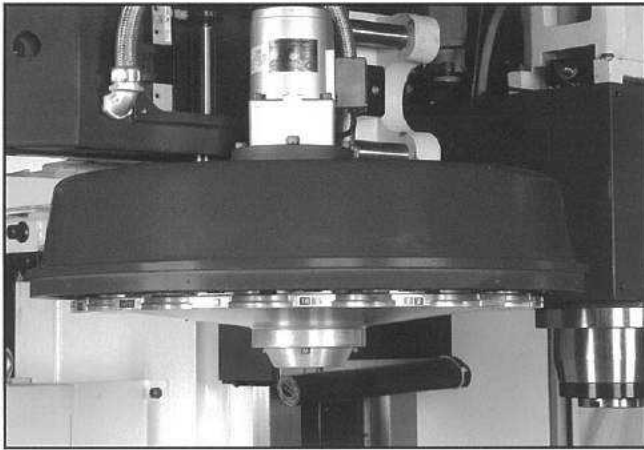
MCV-720



# **Rigid,** Massive Constructed Design for Lifetime Accuracy.

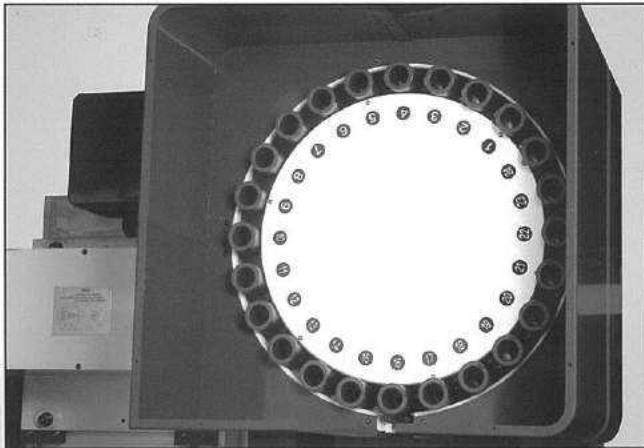
- Major machine parts are manufactured from rigid cast iron for maximum structural stability.
- Double wall box type structure for column, bed and saddle. Scientifically rib reinforced for added rigidity, while reducing thermal strain to a minimum.
- Linear guide ways on the X and Y axes.
- Box ways on the Z axis are hardened, precision ground and coated with Turcite-B ensuring high positioning and repeatability accuracy.
- Symmetric and well counter-balanced design on the column assures precision machining.
- Pre-loaded ball screws on the 3 axes reduce thermal growth.





### **CAROUSEL TYPE MAGAZINE**

The standard carousel type magazine provides a loading capacity of 16 tools. It features bi-directional random tool selection for highly efficient tool changing.



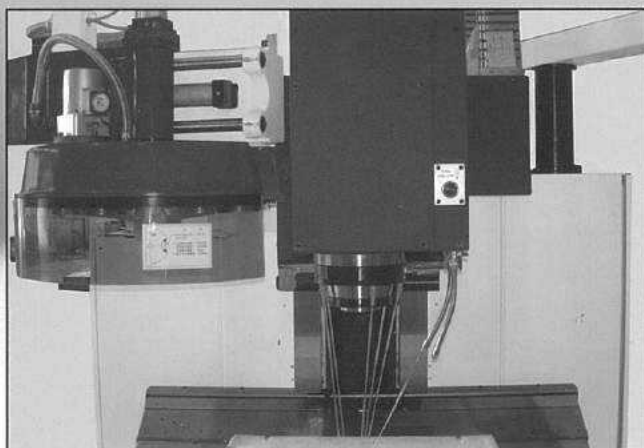
### **CAM TYPE MAGAZINE (OPTIONAL)**

The CAM type magazine rotation is driven by a cylindrical cam for fast and dependable tool change. Tool loading capacity is 24 tools. random tool selection provides highly efficient tool changing.



### **FRONT MOUNTED CHIP AUGER**

During machining, chips are flushed and fall down to the front mounted chip auger for delivering to the chip conveyor. It efficiently removes chips to eliminate affection from chip heat and keeps work area clean at all times.



### **COOLANT AROUND SPINDLE**

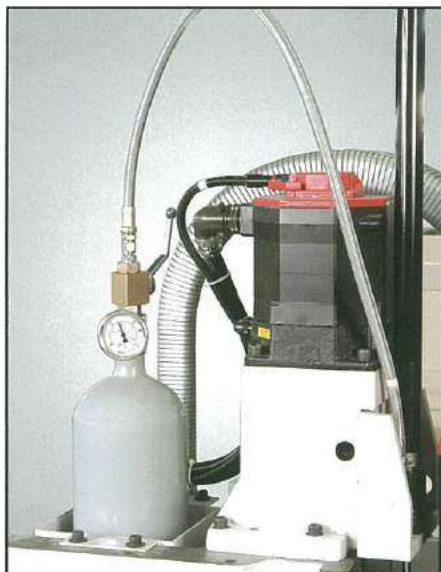
The coolant jets around the spindle effectively remove heat from the cutting tool and the workpiece ensuring high cutting accuracy.





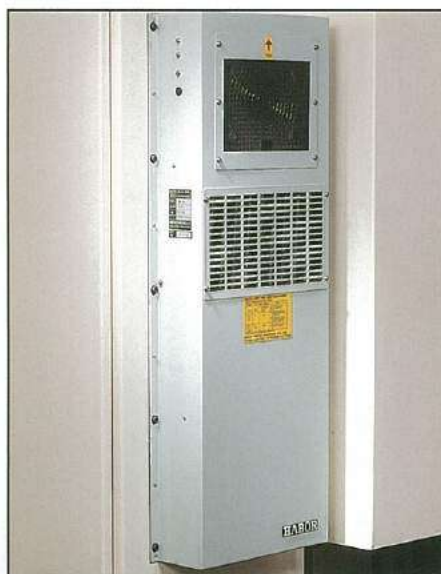
### LATEST ADVANCED CNC CONTROLLER

Equipped with Fanuc, Heidenhain and others CNC controllers.



### NITROGEN GAS COUNTER-BALANCE (OPTIONAL)

- The newly designed nitrogen gas counter-balancing system employs an accumulator which does not require additional power.
- No hydraulic power unit is required.
- No noise, extremely stable motion, no resonance and greatly upgrades machining efficiency.
- Easy to adjust servo parameters.

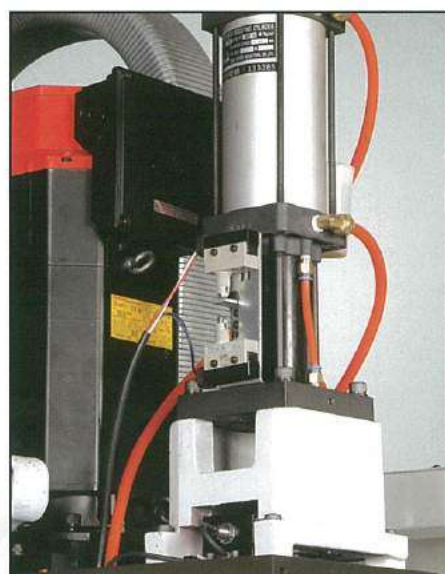


### HEAT EXCHANGER FOR CONTROL CABINET

The high performance heat exchanger ensures a constant temperature inside the control cabinet. It provides protection for electronic components, controller and motor driver.



### Coolant & Air Gun



### TOOL KNOCKING DEVICE

- The tool knocking device with floating design features a buffering function which not only fully avoids damage on the spindle and bearings during tool release, it also extends the service life of the spindle.
- Tool knocking motion is actuated by an air cylinder for efficient tool release.



### WORK LIGHT

Two quartz work lights provide lighting for the working area. They feature soft illumination without being irritating to the operator's eyes.



### SPINDLE COOLER

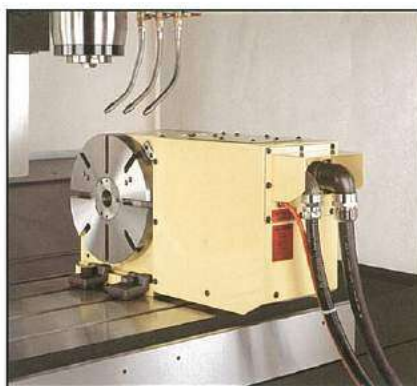
Spindle & Ballscrew Cooling Unit



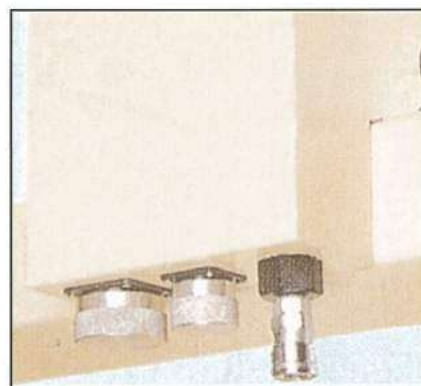
# More Powerful and Efficient Operations with Extra Optional Accessories



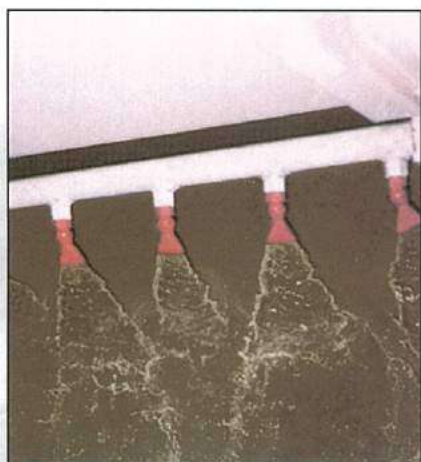
**Automatic Tool Length Measuring Device**



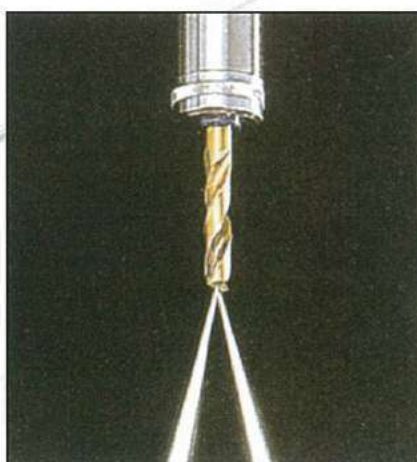
**Rotary Table With 4<sup>th</sup> Axis Control**



**4<sup>th</sup> Axis Connector**



**Coolant Wash**



**Coolant Through Spindle Device**



**SCREW TYPE CHIP CONVEYOR**



**COOLANT THROUGH BALL SCREW**

Coolant through ball screws on the three axes effectively prevent thermal growth while ensuring highly accurate machining.



**FLAT TYPE CHIP CONVEYOR**



# Direct Drive Spindle

Designed and

**Dah Lih's All New MCV-720 . . .**  
**A Precise Performer with Advanced Control.**

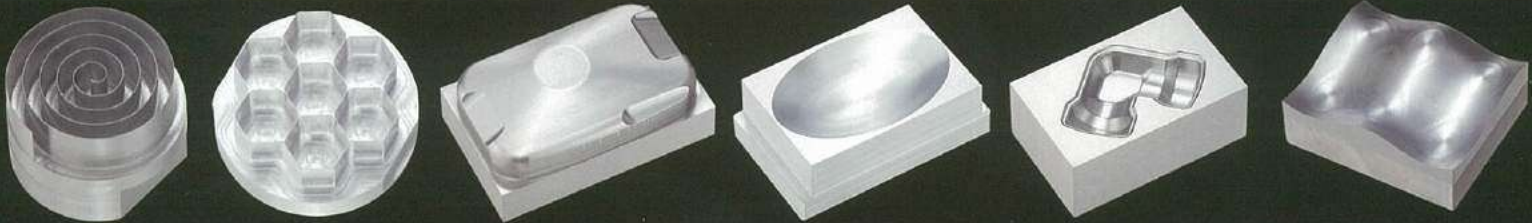
ACC/DEC Speed  
Control

High Precision  
Contour Control

Quadrant  
Change Offset

Data Server

Extremely



## EQUIPMENT FOR GRAPHITE MACHINING

The equipment is recommended when performing graphite machining. It prevents graphite dust from splashing to the working environment which may causes damage to the operator's health and circuit board in the control box.



For wet cutting, centrifuge coolant purifying unit, the water curtain guard and graphite filtration device (separator and filter bag) are recommended.



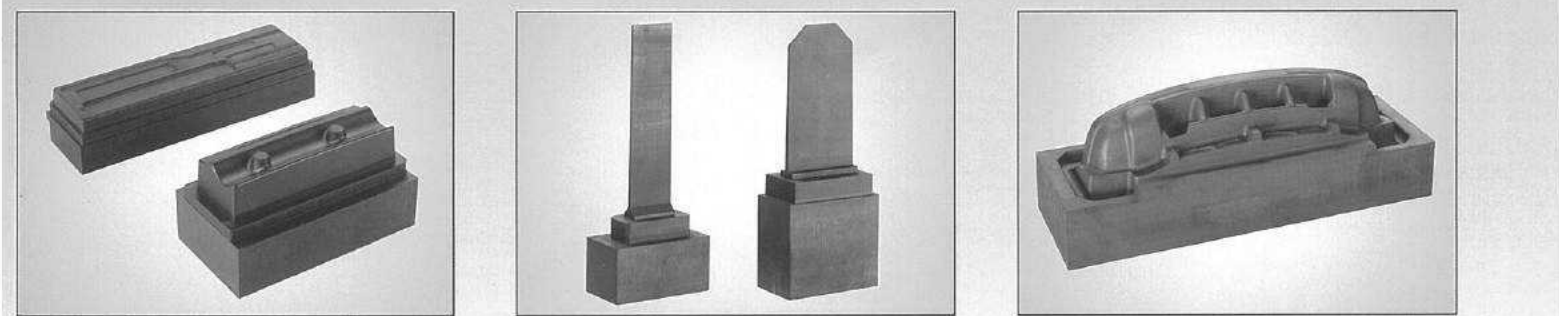
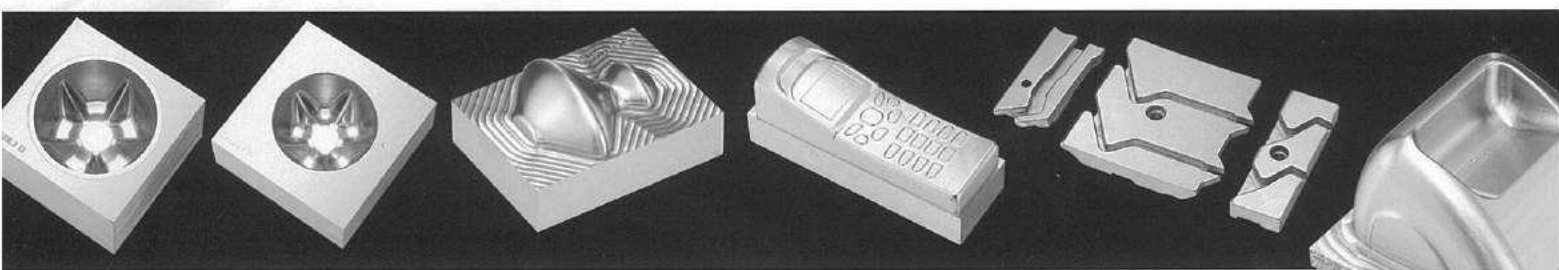
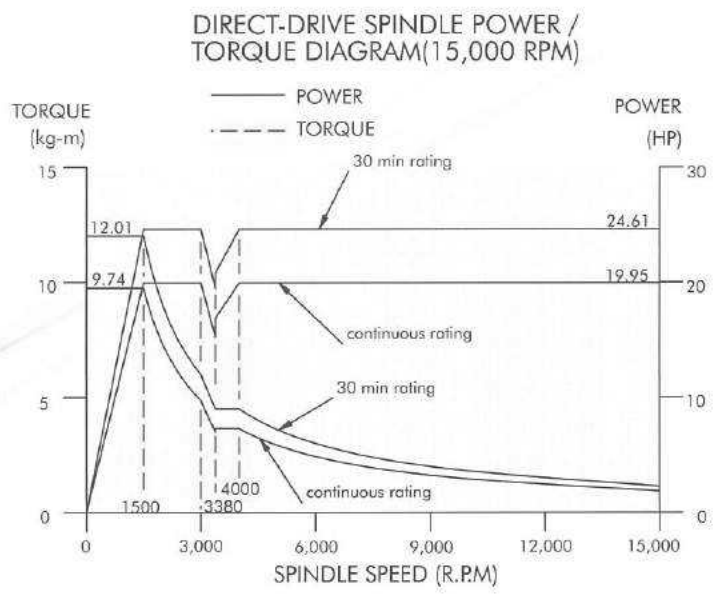


# Engineering with Speed and Precision in Mind!



## High Speed High Precision

- Vibration Dampening
- Nurbs Interpolation
- High Speed Spindle
- High Torque Servo Drive System
- Rigid Structure



## SPECIFICATIONS:

MODEL	UNIT	MCV-720
<b>TABLE</b>		
Working Surface	mm (inch)	950 x 560 (37.40 x 22.05)
T-Slots (Size x Number)	mm (inch)	18 x 3 (0.71 x 3)
Max. Table Load	kg (lbs)	500 (1100)
<b>TRAVEL</b>		
Longitudinal Travel (X)	mm (inch)	720 (28.35)
Cross Travel (Y)	mm (inch)	460 (18.11)
Headstock Travel (Z)	mm (inch)	510 (20.8)
Distance Between Spindle End and Table Top	mm (inch)	150-660 (5.91-25.98)
Distance Between Spindle Center and Column Surface	mm (inch)	480 (18.90)
<b>SPINDLE</b>		
Spindle Nose		N.T. 40
Spindle Speeds	R.P.M.	8000
Spindle Speed Range		Infinite variable
<b>FEED</b>		
Cutting Feed	mm/min (inch/min)	10000 (393.7)
Rapid traverse	mm/min (inch/min)	30/30/20 (1181/1181/787)
Minimum Input Increment	mm (inch)	0.001 (0.0001)
<b>ATC (Automatic Tool Changer)</b>		
Tool Holder		BT 40
Tool Storage Capacity	Tools	16
Max. Tool Dia. x Length	Ø x mm (inch)	90 x 250 (3.54 x 9.84)
Max. Tool Weight	kg (lbs)	6 (13)
Tool Selection		Bi-Directional
<b>MOTORS</b>		
Spindle Drive	Continuous Rating	Kw (HP) 7.5 (10)
Motor	Rated Output for 30 Minutes	Kw (HP) 11 (14.7)
Drive Motors	X, Y, Z Axis	Kw (HP) 1.2 (1.6), 1.2 (1.6), 3.0 (4)
<b>MACHINE WEIGHT SPACE AND PACKING</b>		
Floor Space	mm (inch)	3118x2640(122.76x103.94)
Net Weight	Kg (lbs)	4400 (9680)

Specifications are subject to change without prior notice.

## STANDARD ACCESSORIES:

- Heat Exchanger
- Removable Manual Pulse Generator
- Coolant Around Spindle
- Spiral Type Chip Conveyor
- Enclosed Splash Guard
- RS-232 Interface
- Automatic Power Off
- Call Light
- Automatic Lubrication Equipment
- Work Light
- Tool Kit
- Spare Fuses
- Pendant Type Operator Panel
- Spindle Cooler
- Rigid Tapping

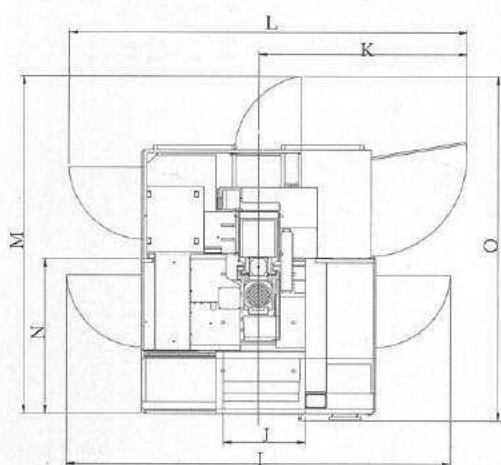
## SPECIAL ACCESSORIES:

- Screw type chip conveyor & chip bins
- Flat Type Chip Conveyor
- Rotary Table With 4th Axis Control
- 4th Axis Connector
- Coolant Through Spindle With Filter
- Coolant Wash
- Automatic Tool Length Measuring Device
- Automatic Centering Device (Renishaw MP-10)
- Automatic Pallet Changer
- Cam Mechanism ATC (24 Tools)

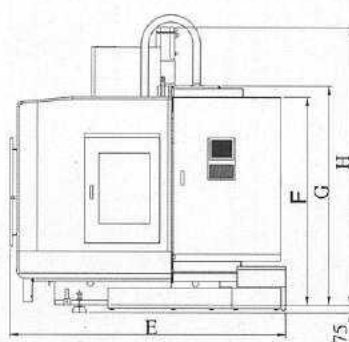
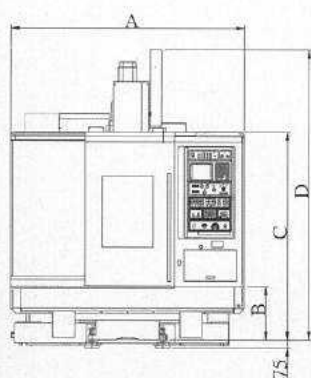
Max. Tool Dia. x Length	Ø x mm Ø x inch	77 x 300 3.03 x 11.81
Max. Tool Weight	kg lbs	7 15
Max. Tool Dia. of adjacent pots are empty	Ømm	127

- 10,000/12,000/15,000 rpm Spindle Speeds
- Graphite Filtering System





## MACHINE DIMENSIONS:



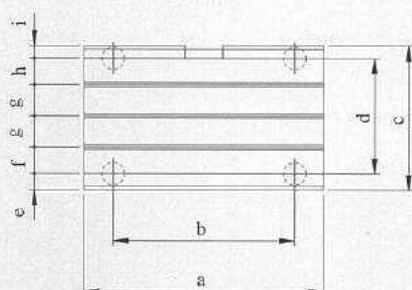
## EXTERNAL DIMENSIONS

TYPE.720		
unit	mm	inch
A	2170	85.43
B	490	19.29
C	1915	75.39
D	2675	105.31
E	2570	101.18
F	1915	75.39
G	2015	79.33
H	2565	100.98
I	3570	140.55
J	762	30
K	1935	76.18
L	3695	145.47
M	3140	123.62
N	1437	56.57
O	3205	126.18

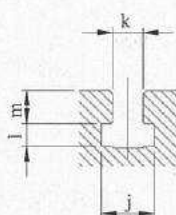
## TABLE & T-SLOT

TYPE.720		
unit	mm	inch
a	950	37.4
b	720	28.35
c	575	22.63
d	460	18.11
e	65	2.56
f	105	4.13
g	150	5.91
h	105	4.13
i	50	1.97
j	31.5	1.24
k	18	0.71
l	13.5	0.53
m	20	0.79
n	138	5.43
o	88.88	3.5
p	44.45	1.75
q	15.9	0.63
r	8	0.31
s	13	0.51
t	20	0.79

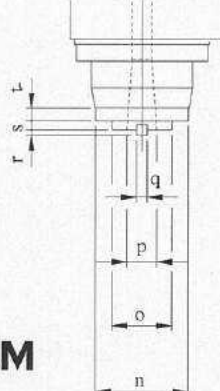
### TABLE



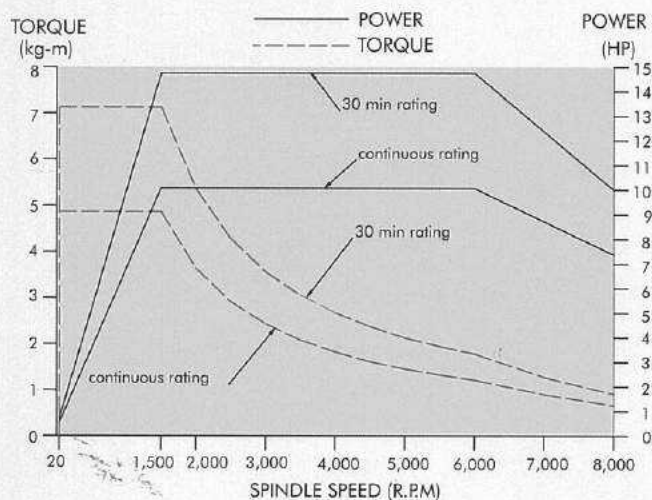
### T-SLOT



### SPINDLE



## SPINDLE POWER / TORQUE DIAGRAM (8000 RPM) (STANDARD)





**DMV-800**  
Traveling Column  
Vertical Machining Center



**PT-86**  
Rortal Type  
Machining Center



**DMH-500**  
Horizontal Machining Center



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