

Founded in 1976, Pinnacle is specialized in manufacturing all kinds of machining centers with excellent experience in technology, quality and service. Pinnacle machining centers range from 5-axis, double column, vertical and horizontal types, to CNC lathes as well as conventional milling machines.

Well-trained service engineers are familiar with each step of assembly to ensure our quality service works and keep all machines running in the best status. The sales and service departments provide customers pre-sale and after-sale services. Prompt reaction is just our basic attitude to all customers only, accurate and effective technical solutions are provided within the shortest time.

**Product, Quality and Service, Pinnacle exceeds your expectations!**



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***Pinnacle***  
Since 1976

Benefit between Speed and Rigidity  
**Box Guide Ways**





# The Classic High Performance Models for Maximum Versatility

## SV85 / 105

- 850(1020) x 560 x 560 mm travel
- Rapid Feedrate 20 / 20 / 20 M/min.
- 10 HP (15 HP) Spindle Motor
- ISO40 Spindle Taper
- Spindle Speed 8,000 rpm
- X, Y, Z Axis Box Guide Way



- The Pinnacle SV Series machines are classic models designed especially for rigid cutting. The Meehanite cast iron is used on all structural components for its excellent properties in vibration dampening and resistance to distortion; it is optimized using Finite Element Analysis (FEA) to produce the optimum performance of all machines.
- Lubrication is one of the most important technologies for box guide way machines. Pinnacle employs Fixed-Volume Type Oil Distributor that ensures all mating surfaces are properly lubricated. The lubrication volume can be adjusted mechanically, and the lubrication interval time can be controlled by PLC.

## Hardened Slide Ways

Through high frequency induction, the X / Y / Z slide ways are hardened up to HRC 55, and the 2 mm hardened depth provides nearly permanent rigid support to 3 axes' high speed movement without sacrificing the accuracy.





# SV116 / 126

## Generous Cross Travel Capacity for Mold Making

Y Axis travel is the most concerned data when selecting machines. Pinnacle SV series machines offer

All SV series machines are availability with BT, CAT or DIN standard.

- Standard belt drive system provides best combination of spindle torque and speed for a wide selection of machining operations.
- Direct Drive mechanism features thermo isolation between motor and spindle, offering smooth cutting operation for good surface finishes.
- Pinnacle adopt ZF Gear box structure provides high torque during low spindle range, suitable for heavy duty cutting.

The SV Series machines accumulate 30 years of machining center experiences with state-of-the art craftsmanship by Pinnacle engineering team. With many optional features and configurations available such as coolant through spindle, #40 or #50 spindle taper, the proven quality of SV series machine is certainly your best investment of all time.



● BT40

● BT50

## SV116 / 126

- 1140(1300) x 610 x 610 mm travel
- Rapid Feedrate 20 / 20 / 20 M/min.
- 15 HP Spindle Motor
- ISO40 (ISO50 optional) Spindle Taper
- Spindle Speed 8,000 rpm
- 10,000 / 12,000 / 15,000 rpm (optional)
- X, Y, Z Axis Box Guide Way



The sliding contact surfaces, flange of motor seats or ball screw seats are fine scraped by hand, the standard is at least 12-scrapes per square inch.





# Power Spindles

From high speed to high torque, from power milling to small radius interpolation, Pinnacle offers a wide range spindle specifications to choose from. Plus the peripheral functions such as coolant through spindle and coolant curtain, the SV series machines are capable of handling all of the cutting conditions you need.



Floating unclamping mechanism



BT50 Spindle.

Direct-drive Spindle.

Belt-drive Spindle.

Spindle Taper	Spindle Type	Spindle Speed	SV85/105	SV116/126
BT 40	Belt Type	8000rpm	●	●
		10000rpm	○	○
		12000rpm	○	○
	ZF Gear Box	8000rpm	X	○
		10000rpm	○	○
		12000rpm	○	○
BT50	Direct Drive	15000rpm	○	○
		8000rpm	X	○
	Belt Type	8000rpm	X	○
		8000rpm	X	○

Not Applicable:X

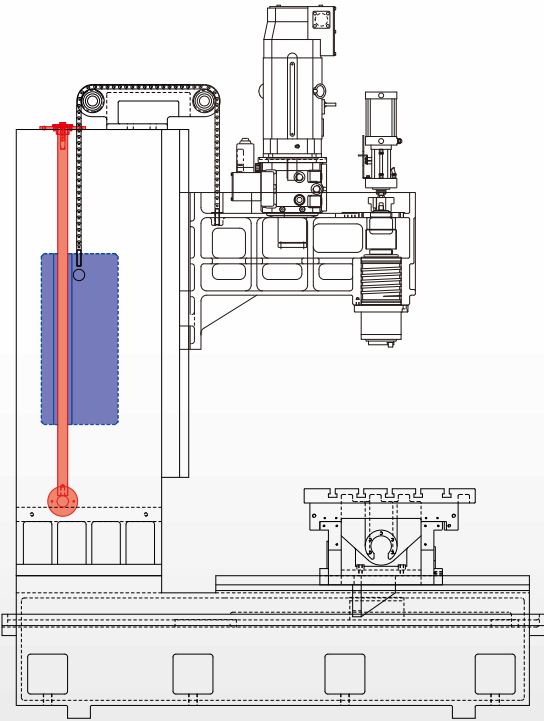
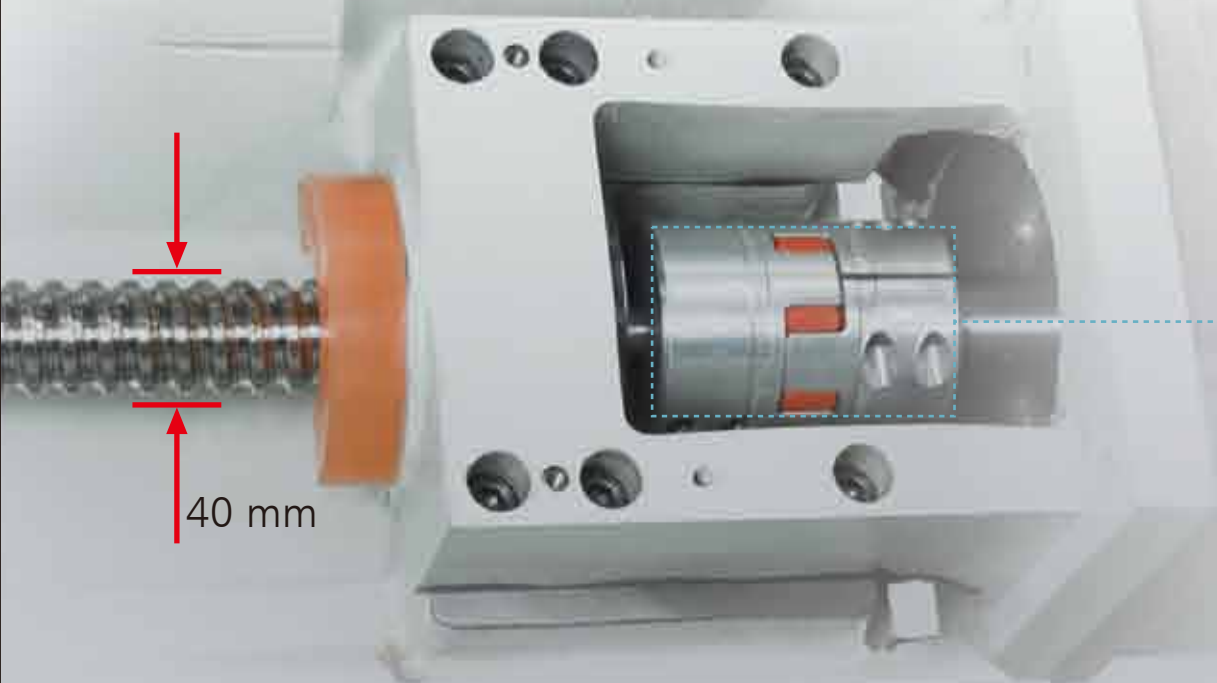
Standard:●

Option:○



**Big enough to cut extra large workpieces.**  
**Compact enough to be shipped in a container.**

Even the Z-axis stroke is extended to 810 mm., the SV116 / 126 can be loaded in a container. This important feature saves expensive shipping costs considerably, and the benefits are directly reflected by to the machine users.



## Counter Weight Balance System

Exclusively designed counter weight balance system. The counter-balance weight moves on a guide shaft to assure movement straightness accuracy. There is no vibration in the forward/backwards and in the right/left directions. This creates superior workpiece surface accuracy to meet various mold machining requirements. Patented in Taiwan and China.

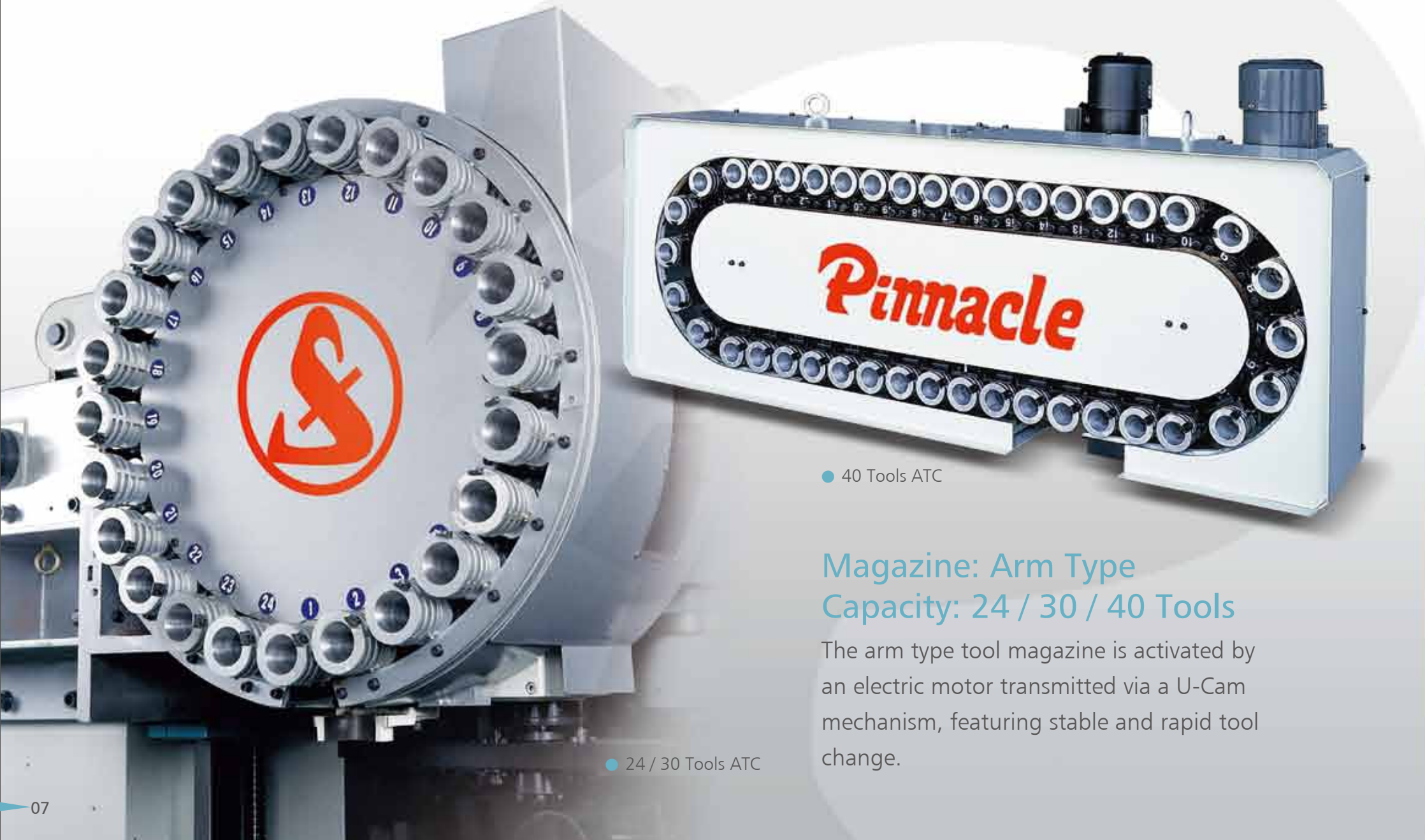
## ROTEX Coupling from Germany

The SV series machines adopt C3 grade 40 mm. ball screws on 3 axes(\*), which are direct coupled with drive motors.

Remark (\*): SV116 / 126



# Automatic Tool Changer



● 40 Tools ATC

Magazine: Arm Type  
Capacity: 24 / 30 / 40 Tools

The arm type tool magazine is activated by an electric motor transmitted via a U-Cam mechanism, featuring stable and rapid tool change.

● 24 / 30 Tools ATC



## Quality Through Precision Inspections

Each Pinnacle machine is subject to dynamic and static accuracy tests. Pinnacle machine accuracy meets VDI 3441, ISO 230, JIS B6388 and ASMEB5 standards.



Laser Inspection



Ball Bar Inspection



Right angle test on X and Y axes



Cutting Test



Dynamic Vibration

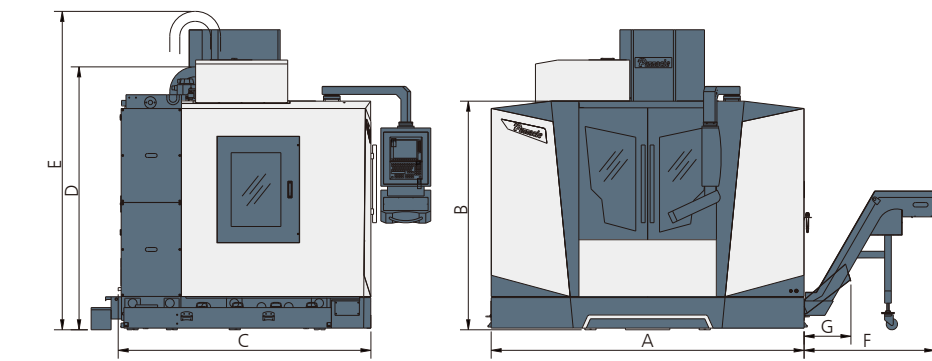


Noise Inspection



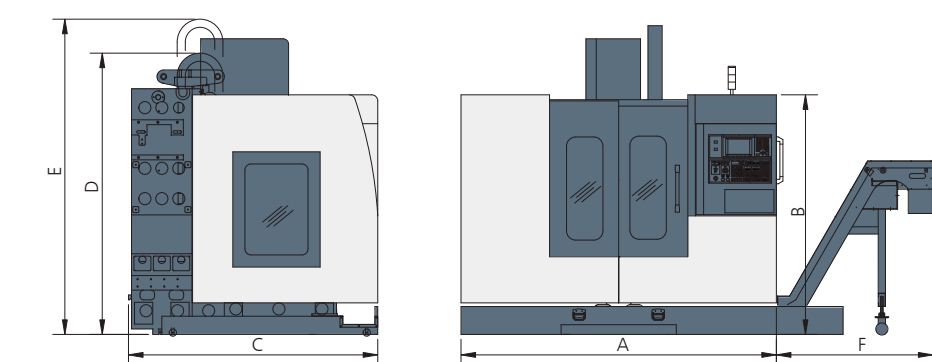
# Machine Dimensions

## SV85 / SV105



MODEL	A	B	C	D	E	F	G
SV85	2600	2060	2280	2370	2650	1180	430
SV105	2820	2060	2280	2370	2650	1180	430

## SV116 / SV126



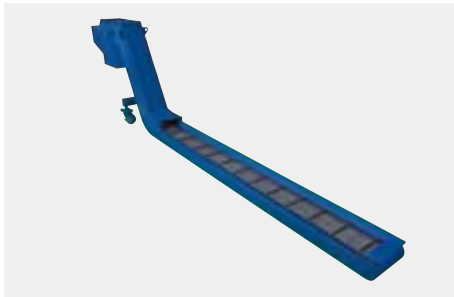
MODEL	A	B	C	D	E	F
SV116	3100	2145	2230	2365	2670	1180
SV126	3400	2145	2230	2365	2670	1180



**Automatic Tool Measurement**  
Automatic measuring and data setting for tool diameter and length.(optional)



**20 Bar Hi-pressure Pump And Tank**  
20 μ m filter and extra large coolant tank to assure CTS system offers the highest efficiency.(optional)



**Chip Conveyor**  
Chip conveyor device in the front side of machine removes chips efficiently.(optional)



**Coolants Jets Around Spindle**  
Improved cooling efficiency on workpiece. (ISO 40 standard, ISO 50 optional)



**Chips Flushing Nozzles**  
Coolant flushing nozzles on rear inner wall of guard prevent jam of chips during operation.



**Twin Chip Augers**  
Chip Augers are deployed on the two sides of machine base to evacuate cutting chips efficiently. (SV116 / 126 optional)

MODEL	SV85	SV105	SV116	SV126
TABLE				
Table Size (mm)	1000 x 510	1200 x 510	1300 x 610	1400 x 610
Travel Ranges (X x Y x Z mm)	850 x 560 x 560	1020 x 560 x 560	1140 x 610 x 610	1270 x 610 x 610
Max. Table Load (Kgs)	600	600	850	850
Spindle Nose to Table Surface (mm)	100~660	100~660	110~720	110~720
T-Slot (Width x Distance x Number mm)	18 x 100 x 5	18 x 100 x 5	18 x 125 x 5	18 x 125 x 5
SPINDLE				
Distance Between Column (mm)	ISO40		ISO40	ISO50
Spindle Inner Diameter (mm)	Ø60		Ø70	Ø80
Spindle Center to Column (mm)	620		675	675
Spindle Speed (rpm) Belt	60~10000		60~8000 (10,000)	60~8000 (10,000)
Spindle Speed (rpm) Gear	-		L40~2000, H2001~8000	-
Spindle Speed (rpm) Direct-Drive	10000 (12000/15000)		12000	-
Draw Bar Force (kgf)	700		950	2000
Main Motor (con/30 min Kw)	5.5 / 7.5 (7.5 / 11)		7.5 / 11	11 / 15
FEED RATE				
Rapid Feed Rate (X/Y/Z m/min)	20 / 20 / 20		20 / 20 / 20	
Feed Rate (X/Y/Z/ mm/min)	10000		10000	
AXIS SERVOMOTOR				
Mitsubishi X/Y/Z (Kw)	HF354 (3.5)		HF354 (3.5)	
Fanuc (Kw)	B22i / 3,000 (2.5) or α 12i / 3,000 (3.0)		B22i / 3,000 (2.5) or α 12i / 3,000 (3.0)	
Siemens (Kw)	1FK7 063 (2.9)		1FK7 063 (2.9)	
Fagor (Kw)	FKM 64.30A		FKM 64.30A	
Heidenhain (Kw)	QSY155B (2.47)		QSY155B (2.47)	
AUTO TOOL CHANGER			ISO40	ISO50
ATC Type	PLATE / DISK		PLATE / DISK	
Cam Type	GENOVA / DAUL ARM		GENOVA / DAUL ARM	
Tool Selection (Bi-direction)	ABSOLUTE / RANDOM		ABSOLUTE / RANDOM	
Tool Storage Capacity (PCs)	20 / 24		20 / 24	24
Max. Tool Diameter (mm)	Ø100 / Ø90		Ø100 / Ø90	Ø105
Max. Tool Length (mm), Weight (kgs)	250 , 8		250 , 8	300 , 15
MISCELLANEOUS				
Air Requirement (Kg/cm²)	6		6	
Voltage	220		220	
Power Requirement (KVA)	20		25	30
Coolant Tank Capacity (L)	200		300	
Machine Weight (Kgs)	5600	5800	6500	6800
Machine Height (mm)	2750		2950	
Floor Space (L x W mm)	2600 x 2280	2820 x 2280	3100 x 2230	3400 x 2230
Packing Size (L x W x H mm)	2900 x 2300 x 2540	2900 x 2300 x 2540	3450 x 2300 x 2530	3450 x 2300 x 2530

● ALL SPECIFICATIONS AND DESIGNS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

## ■ Standard Accessories:

- Air blast through spindle
- Air blast for workpiece (nose)
- Coolant flushing system
- 3 axes telescopic covers
- Full splash guard
- Centralized automatic lubrication system
- Working lamp
- Operation status light
- Cooling system
- Air gun and water spray-gun
- MPG handwheel
- Heat exchanger
- RS-232 Interface
- Rigid tapping
- Spindle oil cooler
- Adjusting tools and box
- Leveling bolts and pads
- Operation and programming manual

## ■ Control System:

- Mitsubishi: M70/ M720
- Fanuc: Oi-MD / 31i-MB
- Heidenhain: iTNC530 / TNC620
- Siemens: 828D
- Fagor: 8055i Plus