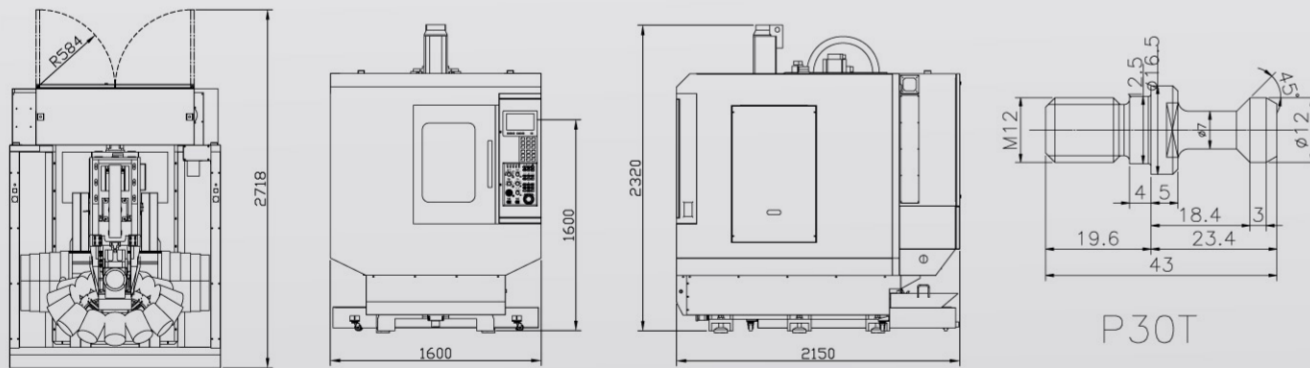


Specification	VD-510	VD-510S
<b>TRAVEL</b>		
X / Y / Z travel	510 / 406 / 330 mm	
X / Y / Z slideway	Linear guideways	
Distance between spindle nose to table surface	170 ~ 500 mm	
Distance between spindle center to column surface	460 mm	
<b>TABLE</b>		
Table size	650 X 400 mm	
Table load	250 kgs	
T-slot (NO. x W x Distance)	3 X 14 X 125 mm	
<b>SPINDLE</b>		
Speed	10000rpm	12000rpm(15000/20000rpm opt.)
Taper	BT-30	
Transmission	Direct type	
<b>FEED RATE</b>		
X / Y / Z rapid feed rate	48 / 48 / 60 m/min	
Cutting feed rate	1~12 m/min	
<b>ATC (DISC TYPE)</b>		
Tool storage capacity	14 Tools (Inverter)	14 Tools (Servo)
Tool type	MAS403-P30T-1(45°)	
Max tool diameter (full)	Ø80	
Max tool length	200 mm	
Max. tool weight (full)	25 kgs / 14T	
Max. tool weight (single)	3 kgs	
Tool change time (T-T)	1.8 sec	1.6 sec
Tool change time (C-C)	2.8 sec	2.5 sec
Tool change time (opposite tools)	3.5 sec	2.8 sec
<b>CNC CONTROL SYSTEM &amp; MOTOR</b>		
CNC control system	Mitsubishi M70	
Spindle motor	2.2 / 3.7 kw (5HP)	2.2 / 3.7 kw (5HP) Low inertia motor
X & Y axis motor	1.5 kw (HF154)	
Z axis motor	3.5 kw with brake (HF354)	
<b>MACHINE DIMENSION</b>		
Machine dimension (L X W X H)	1600 X 2150 X 2320 mm	
Packing dimension (L X W X H)	1790 X 2640 X 2300 mm	
Net weight	2600 kgs	
Gross weight	2800 kgs	

■ We reserve the right to modify and improve our products without any advance notice.

**Machine dimension diagram**

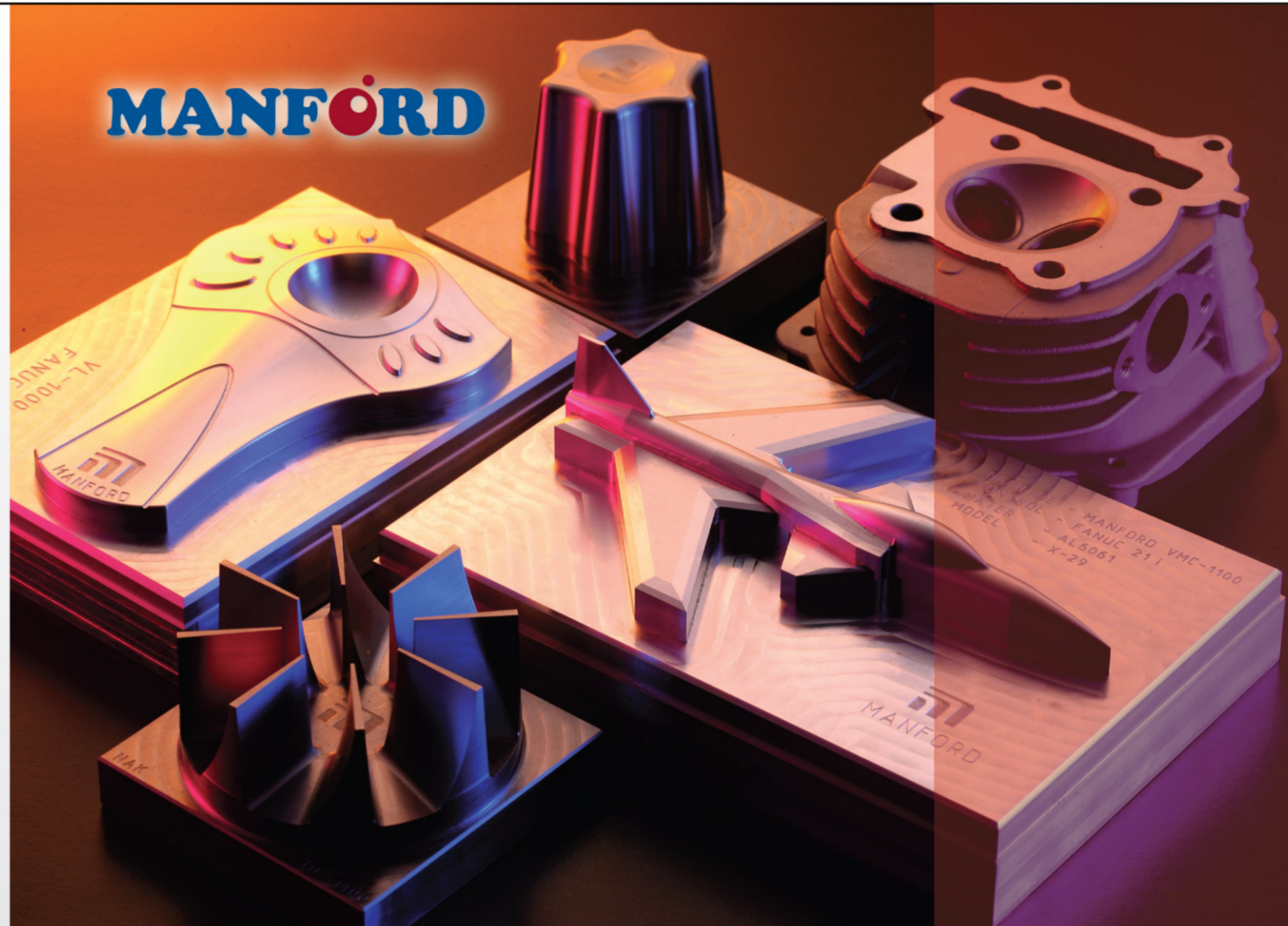


**Standard accessories**

- Full guarding
- Rigid tapping
- Coolant system
- Heat exchanger for electrical box
- Auto power off
- Auto lubrication system
- Halogen work light
- RS-232 interface
- Programming light
- Y axis rear screw type chip conveyor and chip tank
- Spindle air blow
- Leveling pads & bolts
- Tools & tool box
- Operational manual

**Optional accessories**

- 4th axis
- Spindle oil cooler
- Transformer
- Automatic voltage regulator
- High pressure water scour for chip removal (Left & Right)
- Oil skimmer
- Oil mist collector
- Automatic tool length measurement
- Automatic workpiece measurement
- Automatic pallet exchange



**High speed · High efficiency · High precision**



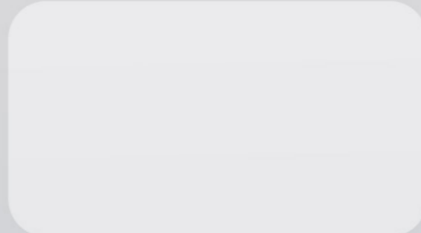
**HIGH SPEED TAPPING CENTER**  
**VD-510/VD-510S**



**MANFORD**

**MANFORD MACHINERY CO., LTD.**  
No.18, HSIN JEN RD. SEC 1, TAIPING, TAICHUNG, TAIWAN  
TEL:+ 886-4-22758120 + 886-4-22754899  
FAX:+ 886-4-22758737  
URL: www.manford.com.tw  
E-mail: manford@manford.com.tw

Agent:



# HIGH SPEED TAPPING CENTER

Revolutionary design disc type ATC by servo motor,  
High speed, Light weight,  
Low noises and Zero breakdown.

www.manford.com.tw

## FRONT SIDE DISC TYPE ATC

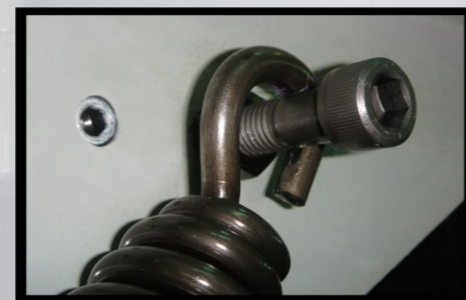
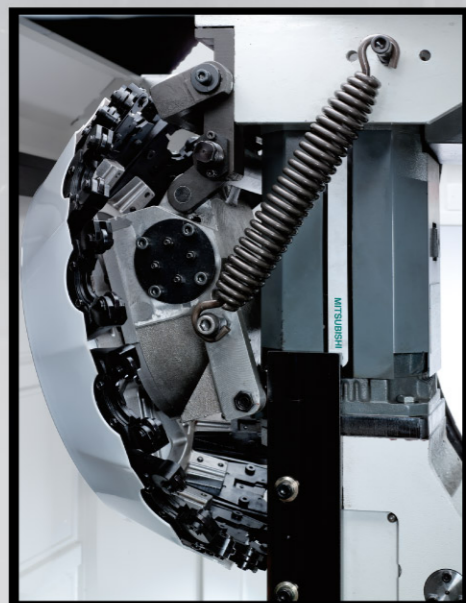
**Rapid Tool Change  
Structure Greatly Shortens  
Tool Change Time**

- Multi-link floating arm structure design efficiently shortens tool change time and reduces the vibration.
- Build-in SENSOR with high distinguishable signal light is designed for easy maintenance.
- Light weight aluminum alloy but rigid structure of magazine body & tool disc decreases magazine rotating inertia and spindle inertia load.
- High toughness compound gripper protects spindle during tool change.
- Individual unit design on grippers allows easy replacement after long period of use or consuming.



## ATC SPRINGS AND FIX BOLTS

**Titanium Alloy Fix Bolts**



- Big size alloy springs offer quick & smooth tool change and extend its service life.
- Fix bolts on each end of the spring are made of titanium alloy, which assures longer service life of ATC.

## HIGH RIGIDITY, HIGH EFFICIENT DESIGN

**High Rigidity Casting, Fast Rapid Feed  
& Tool Change System Design**

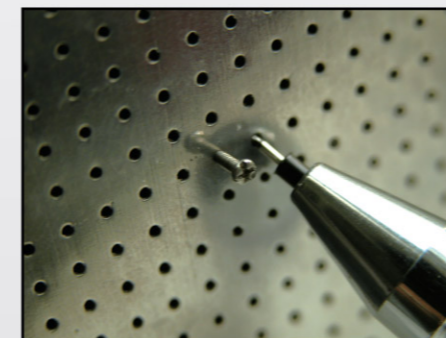
- X & Y axes rapid feed rate is 48m/min, Z axis is 60m/min.
- New disc type ATC remarkably shortens SENSOR reaction time. Tool change time is only 1.6 sec(T-T) · 2.5 sec(C-C) · 2.8sec(Opposite Side) by servo motor. (With inverter motor, tool change time is 1.8 sec(T-T) · 2.8 sec(C-C) · 3.5sec(Opposite Side).)
- Rigid casting design provides sufficient rigidity during high speed movement and heavy cutting, which is not only suitable for drilling & tapping but also for engraving & milling.



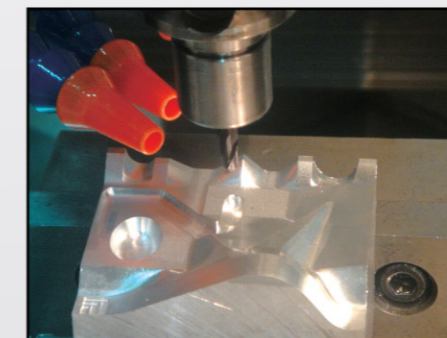
VD-510 with 10000rpm direct type spindle.  
VD-510S with 12000rpm direct type spindle.  
(15000/20000rpm OPT.)

## MACHINING EXAMPLES

**Drilling & Tapping · Curve Surface Machining ·  
Die Casting Machining**



Subject : M1.0 tapping square workpiece  
Tool : M1.0 P0.25 tap  
Speed : 6000rpm, 1250mm/min  
Holes : 1023  
Machining type : Rigid tapping  
Machining time : 26 min. 57 sec. / 1023=1.58sec

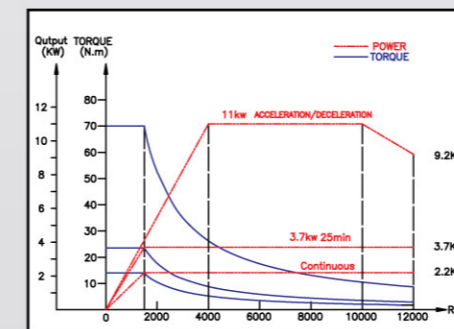


Subject : BENZ mold  
Tool : 25D R5 radius end mill, R4 ball end mill,  
0.5 ball end mill  
Speed : 8,000rpm, 1500mm/min  
Allowance for finishing : 0.15mm  
Machining type : Curve surface machining  
Machining time : 3hr. 23min. 18sec.



Subject: Die casting workpiece

- Die casting parts of automobiles & motorbikes
- Magnesium alloy case for Notebook
- Die casting of various kinds of lamps
- Die casting of pumps & connectors



Mitsubishi low inertia spindle motor capability drawing.

**Low Inertia Spindle Motor Is  
Adopted For Quick Spindle  
Acceleration**

## SPINDLE MOTOR

- With new type Mitsubishi low inertia spindle motor, spindle response time is greatly shortened. It takes only 1.0 second for spindle to run up to 12000 rpm from 0 rpm. During continuous & repeating acceleration or deceleration rigid tapping process such spindle speed cooperates with 3 axes rapid movement can greatly shorten machining time and improves machining efficiency.

**Better Stability  
During ATC Rotation**

## FULL ENCLOSED INDEX CAM

- Full enclosed index cam structure ensures the stability of the parts in ATC, which also prevents the dust & mist generated during the machining.
- Servo motor and inverter motor for ATC rotating position are both available.
- Transmission is by high precision ground gear.

