

五軸立式綜合加工機
5 AXIS VERTICAL
MACHINING CENTER



WVM SERIES

先進設計概念 五軸機性能新典範

ADVANCED DESIGN CONCEPT
A New Standard in 5 Axis Machine Performance

機器特性 Machine Features

緊湊式設計

面寬僅1200mm仍擁有直徑400mm大工作空間，充分利用廠房空間，降低管理成本。

龍門式箱型對稱結構

降低熱變位，達到高剛性、高穩定性，更高效率的加工。

THK SVS級線性滑軌

三軸配置THK高精密線性滑軌，耐荷重與高吸震能力優異。

熱溫昇補償 (選配)

採用高精度的位置感應裝置，達到溫升補償的功能，不須暖機的時間並確保工件品質。

L型操作門

無論手動化自動上下料，均能提供便利且寬敞的操作空間。

Compact Structure Design

Although the machine width is only 1200mm, its internal working space can reach a diameter of 400mm. This feature not only allows for greater utilization of factory space, but also lowers management costs.

Double Column Box Symmetrical Structure

This outstanding machine structure can help reduce thermal displacement, while providing high rigidity, high quality, and high efficiency machining.

THK SVS Grade Linear Guideway

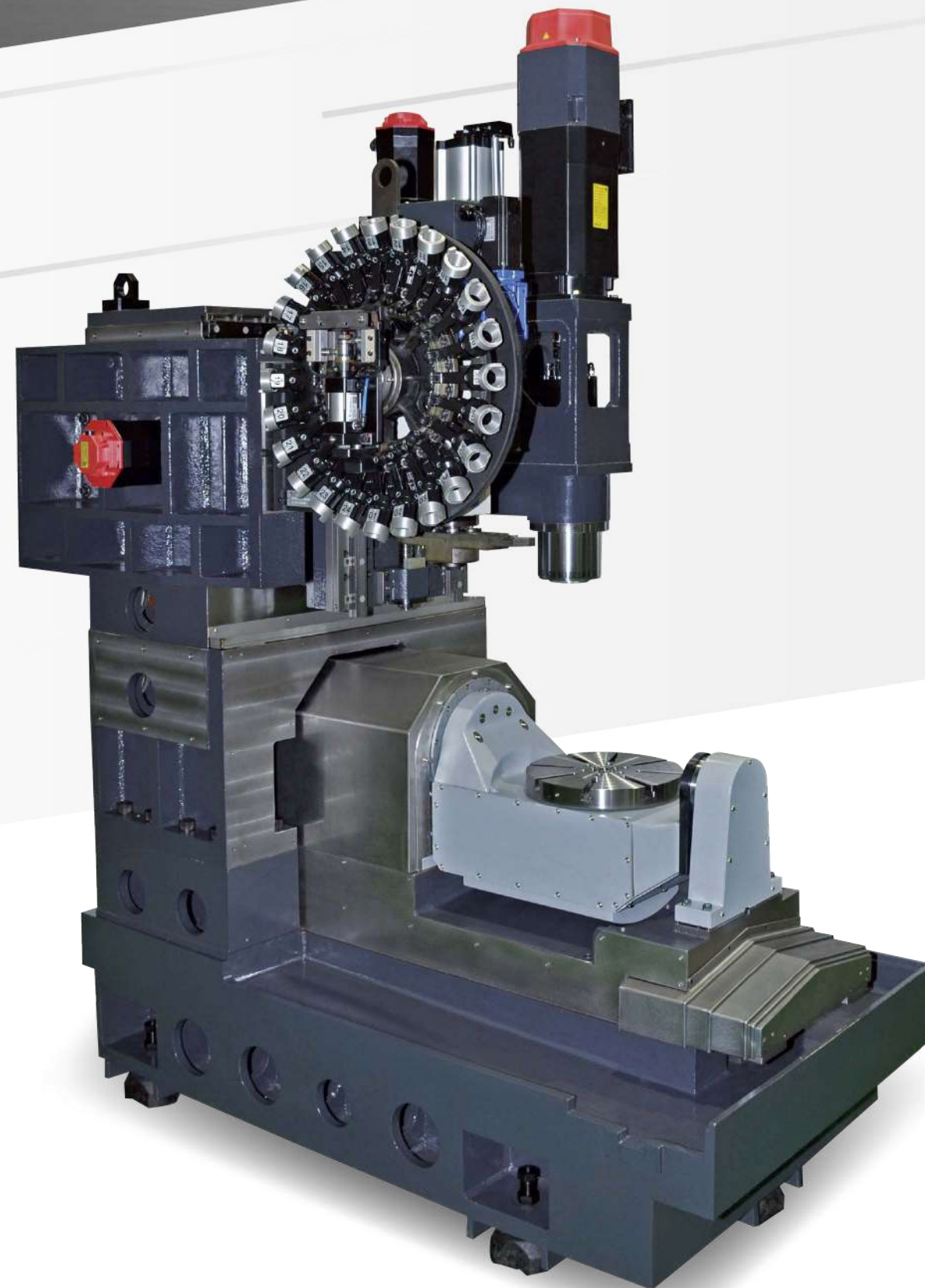
Three axes are mounted with THK high precision linear guideways, featuring heavy load resistance and outstanding vibration dampening capacity.

Thermal Compensation (optional)

A high precision positioning sensing device is employed for the thermal compensation function. Thereby, no warm-up running is required, and machining quality is also ensured.

L Type Operation Door

Whether in manual or automatic workpiece loading/unloading, the operation door provides convenient and spacious working space.



智慧生產-人機介面

將傳統機械面板上的部份操作按鈕整合到人機介面，提供圖形化操作，並可搭配數據中心進行訊息收集。

Intelligent Production - HMI Interface

A few control buttons are integrated into the HMI screen, which provides graphical operation. It can also collect information with the use of a data center.



前置式機外換刀

搭配刀庫操作面板，操作性佳，且不佔用加工時間，提升機台稼動率。

Front-Mount Outside Machine Tool Change

The tool changer is user-friendly in operation with the use of the magazine operation panel. It does not take up machining time while changing tool, which upgrades the machine utilization rate.



設備自檢模式 (選配)

利用各式傳感器，結合外加的監控模組，在自檢模式下檢測設備本身基礎功能，藉此達到預知保養及異常檢出的效果。

高雅的外觀設計

質感LED狀態燈與操作箱、操作門皆在同一個水平線上，以現代簡約、模組化的方式完美結合工業美學及人因工程，提供使用者最佳的操作體驗。

Self-Inspection Mode (optional)

This function employs various sensors in combination with the use of additional monitoring modules. Under the self-inspection mode, the equipment basic functions can be inspected. As such, the operator can predict the maintenance date and the results of error detection.

Elegant Appearance Design

The high quality LED status lights, operation box, and operation door are located at the same level. The modern simplicity and modularity design, in combination with industrial aesthetics and human engineering provide the operator with the optimal machine operating experience.

智慧化與實用性的融合

A Combination of Intelligence and Practicality

技術精度與高效率

- 高剛性的單搖擺 B、C 軸結構，確保任意角度定位精度加工，滿足高複雜加工需求。
- B、C 軸採用全圓周油壓剎車系統，可靠度極高。
- 蝸桿設計成二截式，齒隙調整只需旋轉單邊蝸桿即可。

High Accuracy and High Efficiency

- The highly rigid swing type B, C- axes ensure high machining accuracy at any angular position, thus fully meeting the requirements of complicated machining.
- The B and C axes are designed with full circumference hydraulic brake for maximum dependability.
- The worm shaft is a two-section design, allowing backlash to be adjusted by simply turning a simple side of the worm shaft.



放射型雙伺服刀庫

縮短換刀時間，避免換刀時產生之慣性震盪，有效提供加工精度。

RFID 刀具管理系統 (選配)

減少人員工作負擔、避免人為換刀疏失。亦也能連接生產管理系統，提前通知備刀。

刀庫斷刀檢測 (選配)

內製型斷刀檢測裝置，於刀庫內自動執行刀具檢測，不佔用加工時間即可確保刀具正常。

Radial Type Twin-Servo Magazine

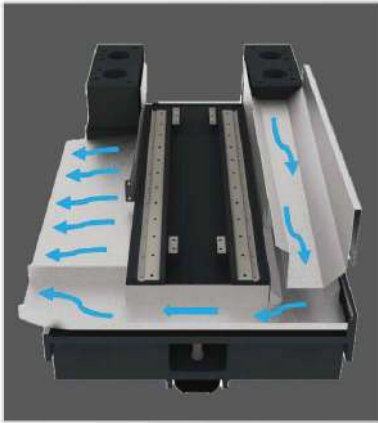
This type of tool magazine can shorten tool change time. It also avoids inertial vibration during tool change, leading to high machining accuracy.

RFID Tool Management System (optional)

The system not only helps to reduce the workload for personnel, but also prevents human error in tool change. Additionally, the production management system can be connected to notify the tool magazine to prepare the tool in advance.

Tool Breakage Inspection in Magazine (optional)

The built-in type tool breakage inspecting device provides automatic tool inspection in the tool magazine. It can ensure that all tools are normal.



隔熱/排屑

機身採用鈹金隔熱與大斜度的導屑槽雙層設計，快速將鐵屑及熱帶離機台，確保機械加工精度。

Heat Insulation / Chip Evacuation

The machine structure is equipped with sheet metal for heat insulation, combined with large slope two-layer chip channels, to quickly remove chips and heat from the machine.



50 / 70 / 105 Bar 高壓中心出水 (選配)

本機可依照客戶加工需求，加裝多段式高壓中心出水系統，延長刀具壽命，解決切屑纏繞問題。

50 / 70 / 105 Bar High Pressure Coolant through Center (optional)

Upon customer's requirement, this machine can be equipped with a multi-step high pressure coolant through center system. It can extend the tool service life and solve chip winding problems.



開關式節能液壓系統 (選配)

開關式零洩漏液壓單元，可以有效降低油壓系統的無效做工，並降低其熱能干擾，進而節能90%。

Switch Type Energy Saving Hydraulic System (optional)

The switch type zero leakage hydraulic power unit can reduce the invalid working of the hydraulic system. In addition, it can lower the interference of thermal energy, resulting in up to 90% energy savings.



氣壓監控系統 (選配)

此系統可監控氣壓壓力及空氣流量，以提前發現異常，避免洩露。也可配合設備控制，在異常或停機時間過長時，可自動關閉截止閥，減少資源浪費。

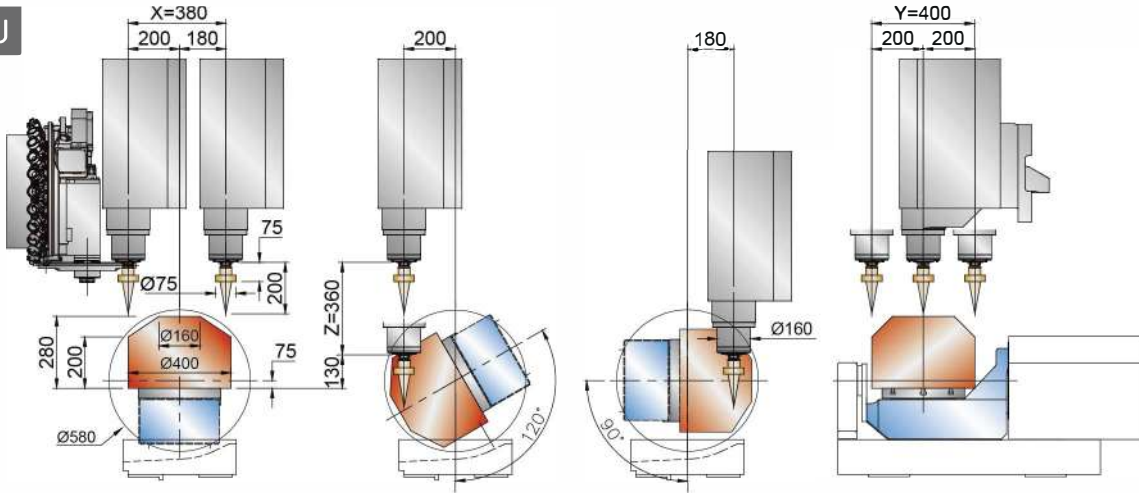
Air Pressure Monitoring System (optional)

The system can monitor air pressure and airflow rate, allowing for detection of malfunctions in advance and preventing leakage. The system can be used with the equipment control. In case of machine malfunction or shutdown, it can automatically close the shut-off valve to save resources.

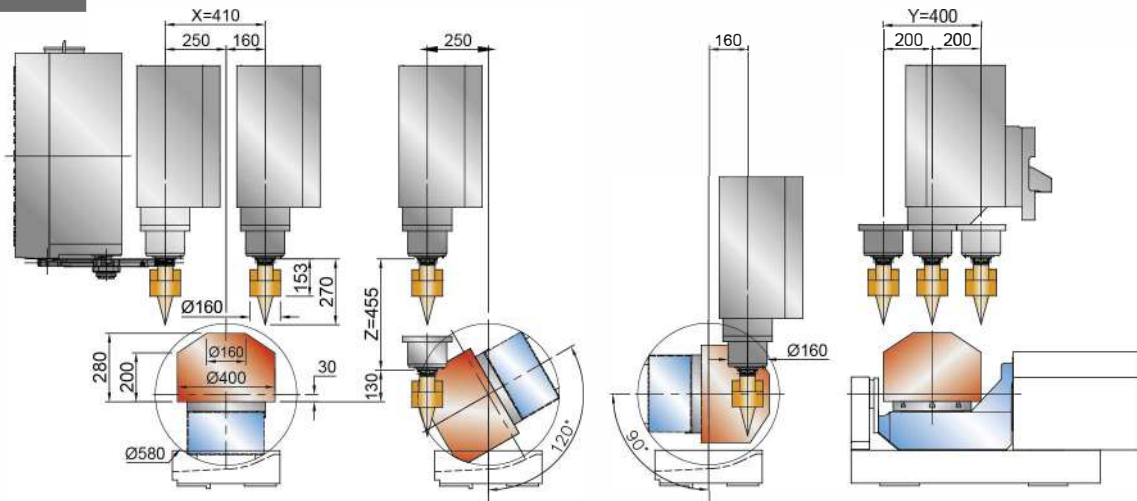
刀具干涉與加工範圍圖 Tool Interference Diagram & Working Area

單位 Unit: mm

380 U



380 UK

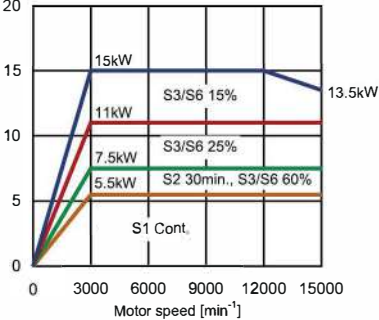


主軸扭力圖 Spindle Power & Torque Diagram

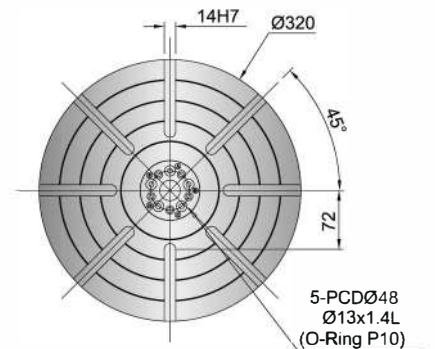
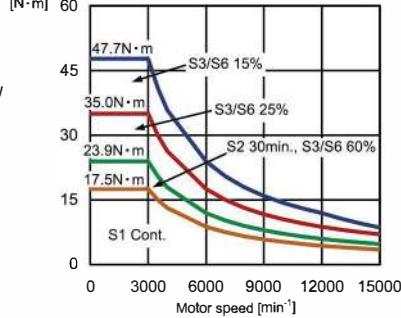
工作台尺寸圖 Workbench Dimensions

Model α IT 3/15000-B

Rated output [kW]

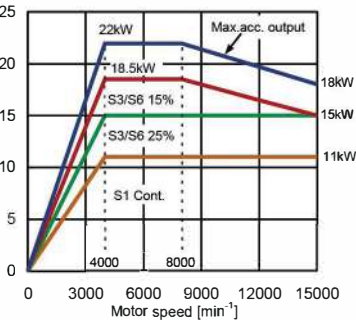


Max acc. torque [N·m]

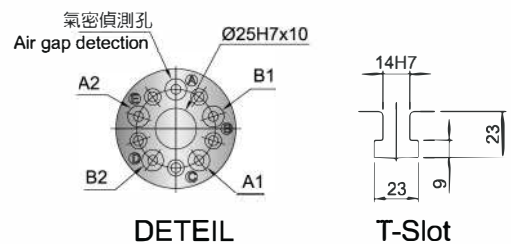
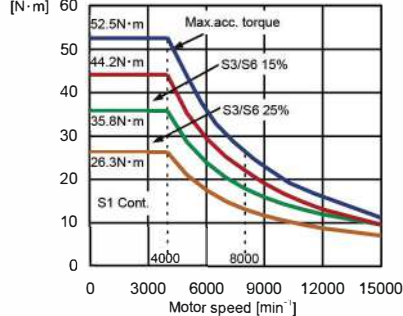


Model α IT 8/15000-B

High-speed winding output (Δ connection) [kW]



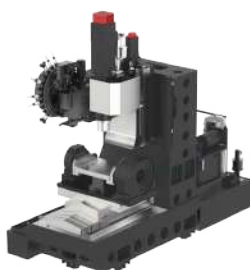
High-speed winding torque (Δ connection) [N·m]



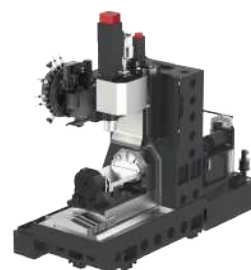
多軸數模組化設計 Multi-axis Modular Design



B+C 軸配置
B+C axis layout

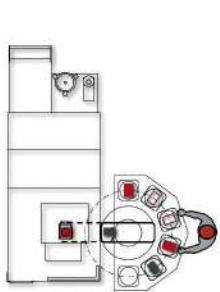


A 軸配置
A-axis layout

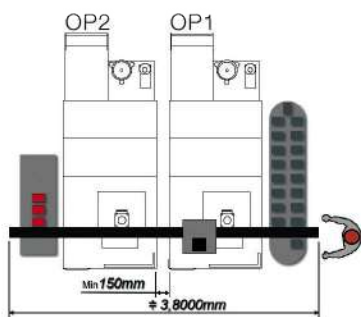


B 軸配置
B-axis layout

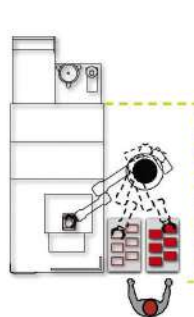
配置應用範例 Configuration Application Example



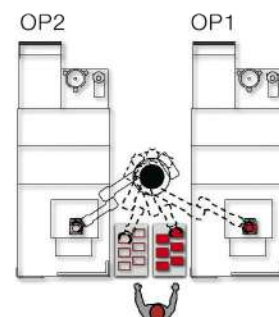
自動化料倉供料
Parts supply by
automated part storage



桁架機械手自動線
Gantry type parts loader for
automated production line



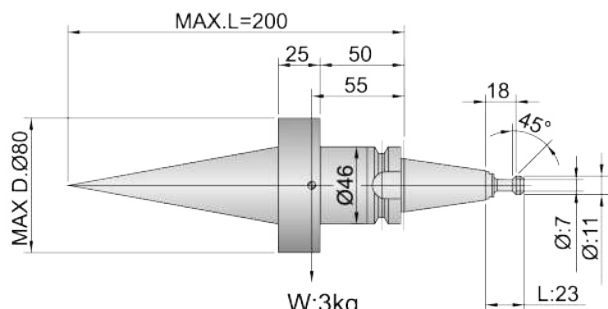
機械手+料盤單機
Robot and parts tray for
single machine



機械手+料盤整線
Robot and parts tray for
production line

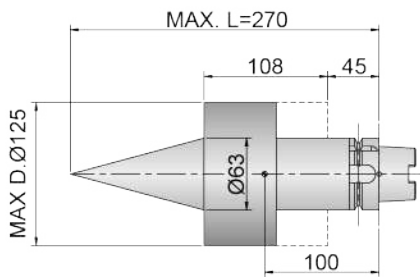
刀具圖 Tool Data

BBT-30



W:3kg
Momentum=3*5.5=16.5kg.cm

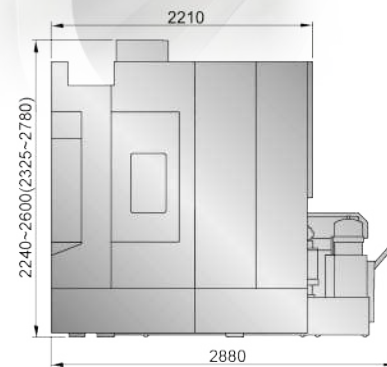
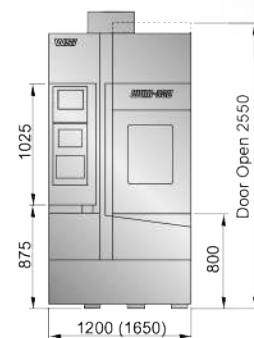
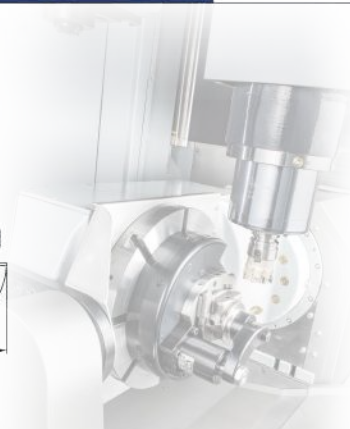
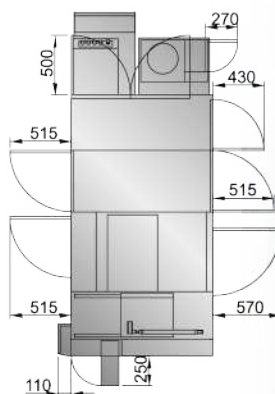
HSK-A63 A/B



W:8kg
Momentum=8*10=80kg.cm

外觀尺寸圖 Machine Dimensions

單位 Unit: mm



註：括號內尺寸為WVM-380UK
Note: Sizes in parentheses are for model WVM-380 UK

規格表 Machine Specifications

機 型	MODEL	WVM-380U	WVM-380UK
主軸	SPINDLE		
鼻端孔型式	Spindle nose type	BBT 30 / HSK 40	BBT 40 / HSK 63
主軸傳動方式	Spindle drive	直結式 Direct drive (Opt. 內藏式 Built-in)	
主軸轉速	Max. spindle speed	12000 (Opt. 15000/ 20000/ 24000/ 30000) rpm	12000 (Opt. 15000/ 20000/ 24000) rpm
主軸軸承內徑	Inside dia. of spindle bearing	Ø60 mm	Ø70 mm
行程	TRAVEL		
X/Y/Z	X/Y/Z	380 / 400 / 360 mm	410 / 400 / 455 mm
B/C	B/C	-90°~+120° / 360°	
進給	RAPID TRAVERSE RATE		
X/Y/Z	X/Y/Z	36 / 36 / 36 m/min	
B/C	B/C	16.7 / 22.2 rpm	
馬達	MOTOR		
主軸	Spindle	5.5 / 7.5 / 11 / 15 kw	11 / 15 / 18.5 / 22 kw
X/Y/Z	X/Y/Z	1.8 / 3 / 1.8 kw	3 / 3 / 3 kw
B/C	B/C	4 / 1.6 kw	
工作台	TABLE		
盤面尺寸	Table size	Ø320 mm	
最大旋徑	Max. swing	Ø400 mm	
最小分度	Min. indexing degree	0.001°	
鼻端至工作台距離	Distance from spindle nose to table surface	130~490mm	130~585 mm
工作台至地面高度	Table height from floor	850 mm	
最大載重水平	Max. load Horiz. (kg)	150 kg	
傾斜	Tilt (kg)	85 kg	
換刀系統	TOOL CHANGER		
刀具數量	Number of tools	24T	32T
刀柄螺柱	Tool shank pull stud	P30T (45°)	-
最大刀具徑/無鄰刀	Max. tool dia. (w/o adjacent tool)	Ø60 / Ø80 mm	Ø75 / Ø125 mm
最大刀長	Max. tool length	200 mm	270 mm
最大刀重	Max. tool weight	3 kg	8 kg
T to T時間	Time (T to T)	1.3 sec	1.6 sec
冷卻系統	COOLING SYSTEM		
水槽容量	Coolant tank capacity	250L	275L
中心出水	Coolant through center	Opt. 20 / 50 / 70 / 105 bar	
外型尺寸	OUTLINE DIMENSION		
深x寬x高	D x W x H	2880 x 1200 x 2600 mm	2880 x 1650 x 2780 mm
重量	Weight	4300 kg	4600 kg

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標準配備

- 控制器Fanuc OiMF Plus
- 鐵屑輸送機
- 智慧人機介面
- 熱交換器
- 全密鈹金
- 自動潤滑泵浦
- 工作燈
- 油水分離機

選配配備

- 高壓中心出水50/70/105 bar
- 光學尺
- 油霧回收機
- 工件量測系統
- 刀具量測系統
- 刀具壽命管理系統
- 電控箱冷氣
- 工件氣密檢知

Standard Accessories

- Fanuc OiMF plus controller
- Chip conveyor
- Intelligent HMI
- Heat exchanger
- Fully enclosed splashguard
- Automatic lubrication pump
- Work lamp
- Oil fluid separator

Optional Accessories

- High pressure CTS (50/70/105 bar)
- Linear scale
- Oil mist collector
- Workpiece measuring system
- Tool measuring system
- Tool life management system
- Air conditioner for electric cabinet
- Air tight detection for workpiece

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