

機械特性

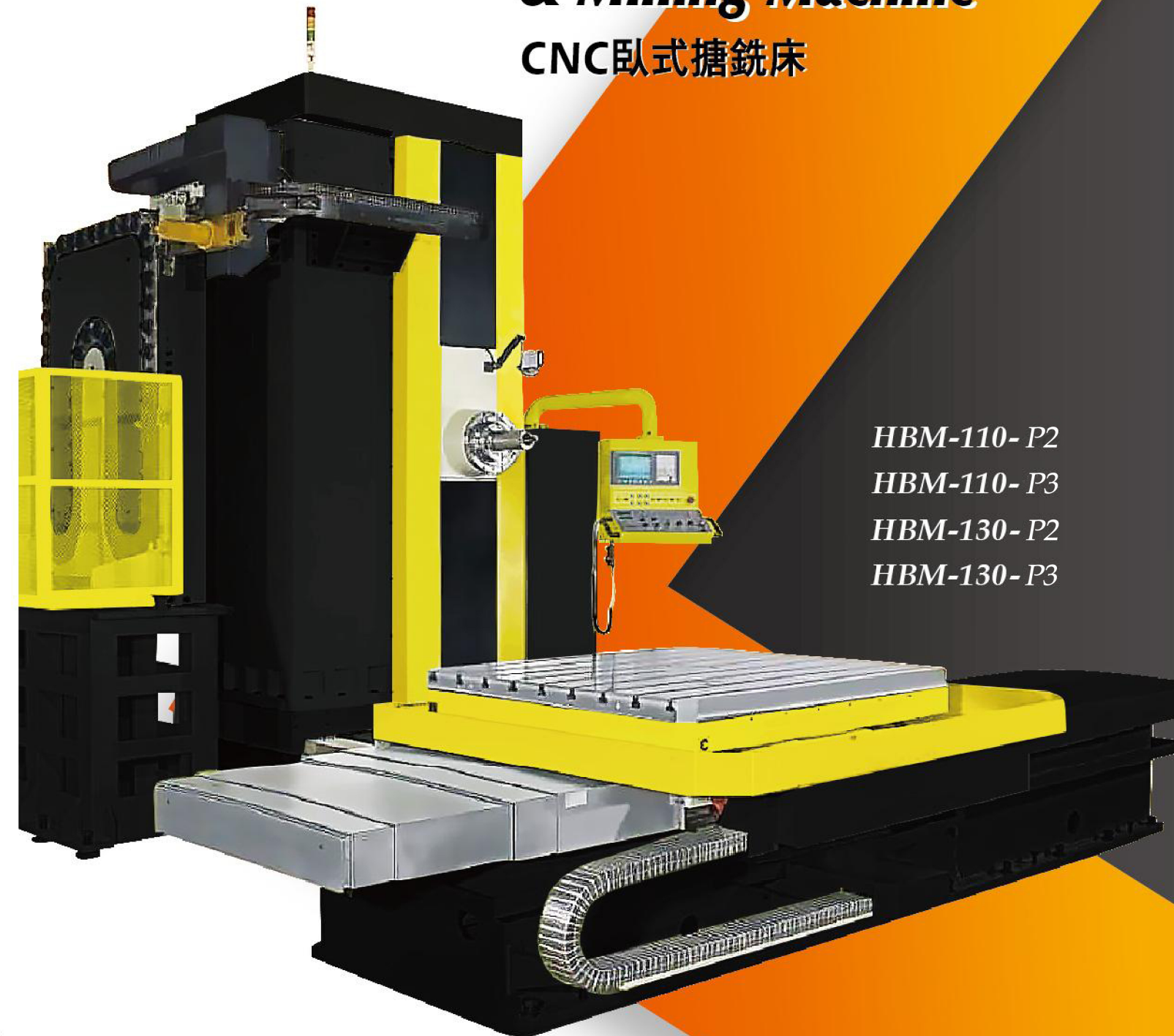
- 動柱式結構
- X,Y,Z硬軌式 X/Y線軌+Z硬軌
- X,Y,Z軸裝置光學尺
- 齒輪式主軸頭，耐重切削
- 0001° 伺服驅動旋轉工作台
- 工作台旋轉採用雙蝸桿/雙蝸輪傳動，無齒輪背隙問題
- W軸延伸無懸垂
- 60把刀鏈條式刀庫機器組裝時，所有地基螺絲均鎖入，確
- 保水平精度的一致性

MACHINERY FEATURES

- Moving column construction
- X/Y/Z box ways or X/Z Linear ways+Y box way
- X,Y,Z-axis are equipped with linear scales.
- Gear-drive type spindle head is excellent for heavy cutting.
- 0,001-degree servo-drive rotary table.
- Table rotation is transmitted through double worm/ double worm gear units to eliminate gear-backlash problem.
- W axis extension is free of deformation.
- Go tools chain type magazine.
- During machine assembly, all foundation bolts have been locked into the foundation to foundation to ensure the consistency of leveling accuracy.

CNC Horizontal Boring & Milling Machine

CNC臥式搪銑床



HBM-110- P2

HBM-110- P3

HBM-130- P2

HBM-130- P3

X,Z-AXIS FEED

THROUGH SPEED REDUCER

X,Z軸進給 經減速機傳動

X,Z軸進給採用伺服馬達驅動，再經由減速傳動滾珠螺桿。X,Z軸加裝減速機，可大幅提升傳動扭力，使軸向進給更輕巧，更順暢。

X,Z-axis feed is driven by independent servo motor, which drive the ball screw through a speed reducer.

The use of speed reducer on the X, Z-axis may dramatically increase transmission torque, making axis feed more effortless and smooth.

MOVING COLUMN CONSTRUCTION

動柱式結構

高剛性的立柱為動柱式設計有效提升作業效率

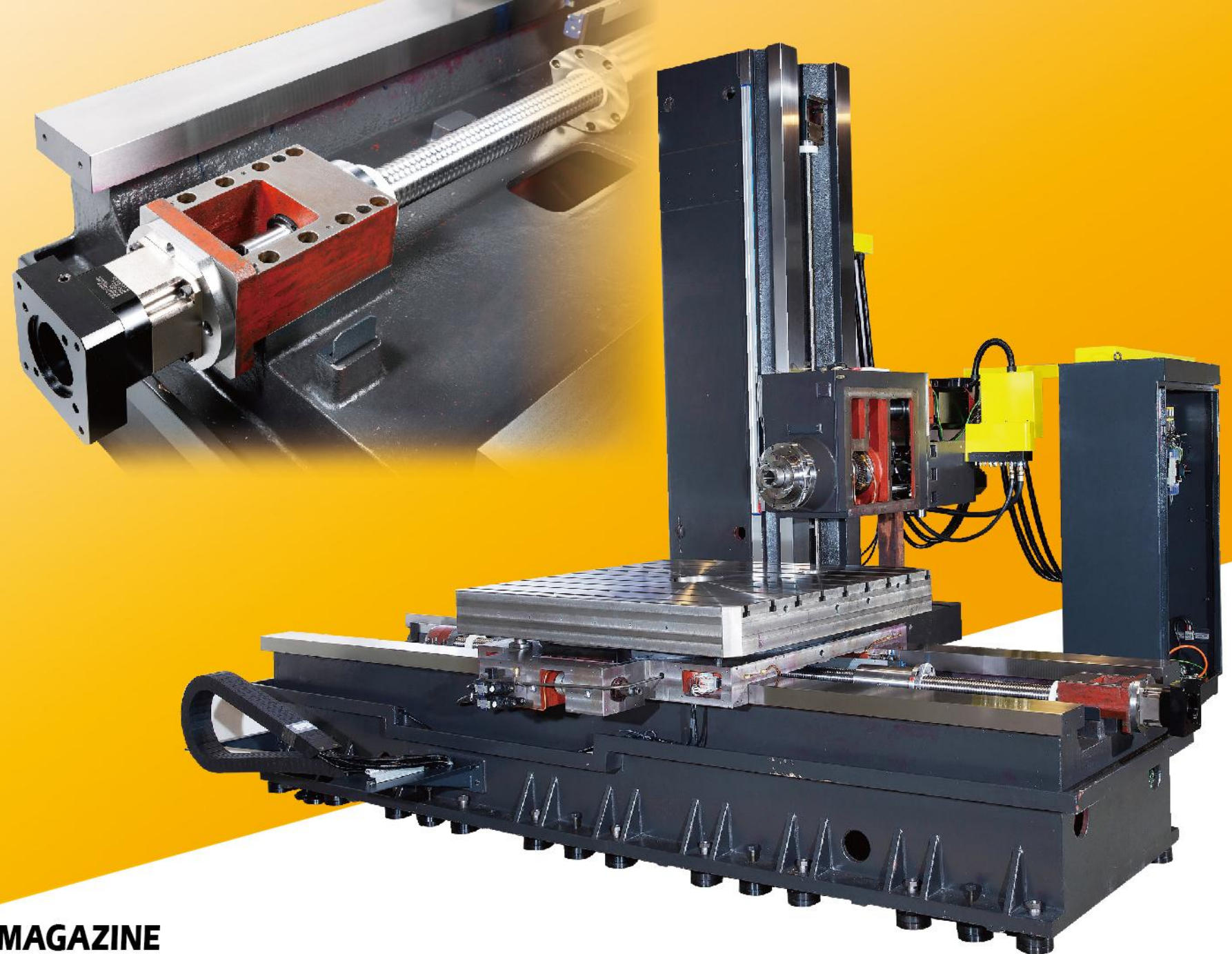
The highly rigid column is a moving column design that effectively upgrades operational efficiency.



60 TOOLS CHAIN TYPE MAGAZINE

60把刀 鏈條式刀庫

- 刀庫之儲刀量為60把刀，可因應各種複雜工件加工之需求。
- 刀庫獨立安裝於機體外，機器精度不會受到刀庫重量及刀具移動之影響。
- 即使使用超大刀具，也不會有刀具碰撞之危險。
- Equipped with 60-tool magazine, the machine is able to meet the requirement of various complicated parts machining. The tool magazine is independently
- Mounted outside of the machine thus the magazines self-weight and tool movement do not affect the machine accuracy.
- Even with the use of oversized tools, there is no risk of tool collision.



HYDRAULIC COOLER

油壓冷卻器

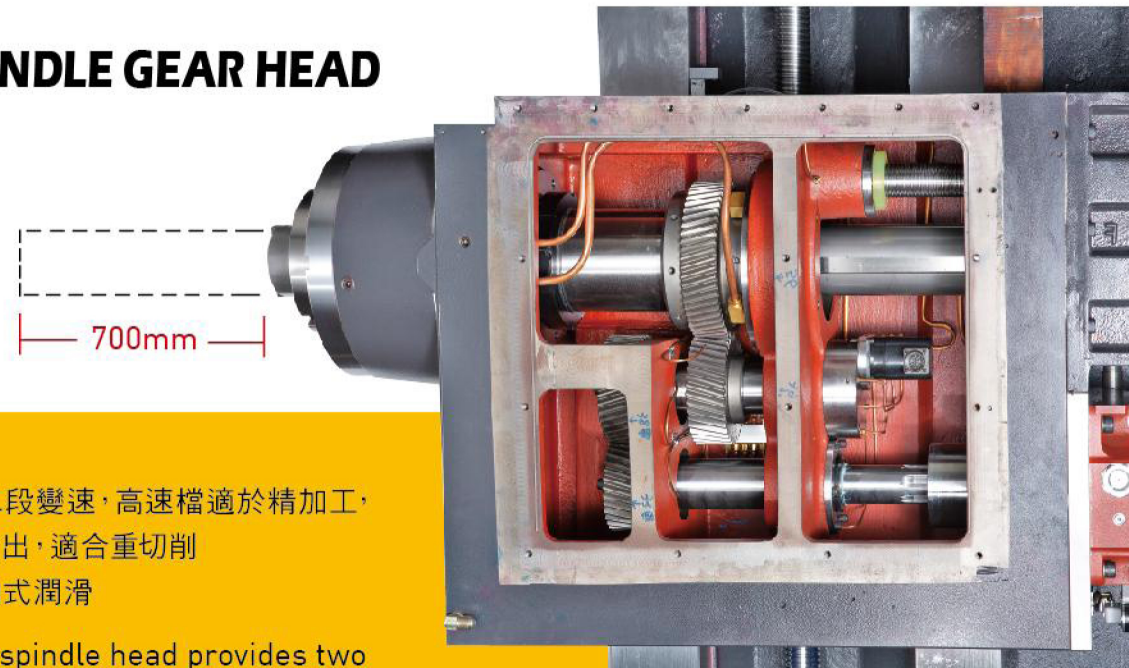
高效率油壓系統冷卻器，有助於油壓系統維持在常溫運做，可延長油壓零件之使用壽命反降低油壓動作異常。

The high efficiency hydraulic cooler helps the hydraulic system to maintain at a constant temperature, leading to extended life of hydraulic parts and a minimum of hydraulic malfunction.



POWERFUL SPINDLE GEAR HEAD

主軸齒輪頭結構

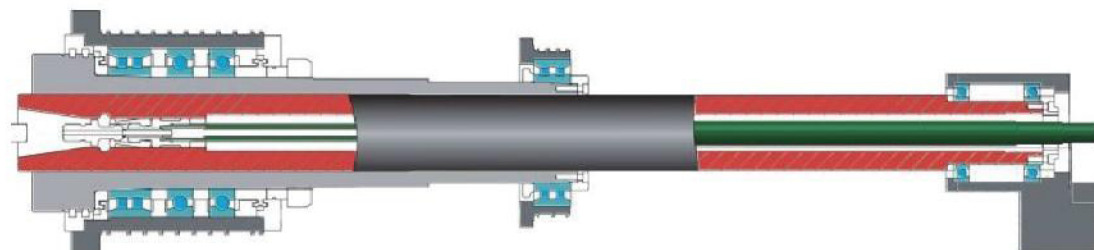


- 主軸頭齒輪箱提供二段變速，高速檔適於精加工，低速檔具有大扭力輸出，適合重切削
- 齒輪箱內部採用噴油式潤滑
- The gearbox of the spindle head provides two steps speed change. The low speed range is suitable for fine machining. The low speed range with great torque output is ideal for heavy cutting.
- The gearbox employs oil-spray lubrication.

HIGHLY RIGID AND STABLE W-AXIS

W軸高剛性、穩定

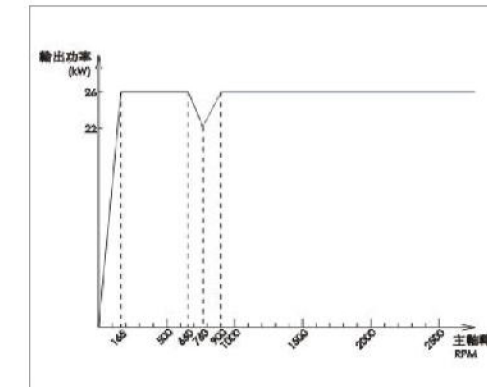
- 主軸套筒壁厚高達29mm，提供W軸最穩固的支撐特色。W軸延伸500mm時，無懸垂問題。重切削時穩定性優異
- 可避免主軸頭與工件之干涉問題
- Extra thick wall of the spindle quill is up to 20mm and provides solid support for W-axis. When W-axis extends to 500mm, there is no deflection and maximum stability in heavy cutting can be achieved.
- No interference between the spindle head and the work piece.



SPINDLE MOTOR TORQUE DIAGRAMS

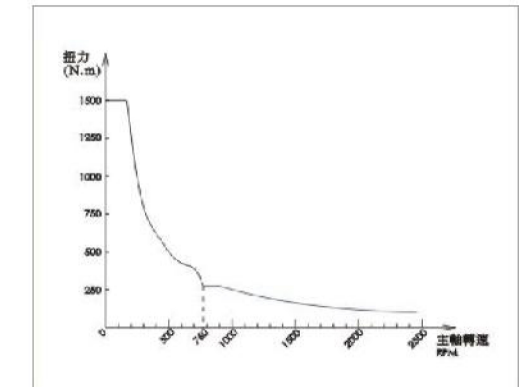
主軸馬達扭力曲線圖

HBM-110-P3



【主軸馬力轉速圖表】
Chart of spindle speed

HBM-130-P3



【主軸扭力轉速圖表】
Chart of spindle torque

0.001° DEGREE ROTARY TABLE

0.001° 旋轉工作台

- Table indexing accuracy: 0.001 degree
- The table is program controlled and can be positioned at 90 degrees, 180 degrees and 270 degrees.
- Indexing resolution for any angle can reach 3.5 sec.
- Maximum speed is 1 rpm for continuous rotation.

- 工作台分割精度0.001°
- 工作台採可程式控制，可在90°、180°、270° 定位
- 任意角度定位解析度可達3.5秒
- 連續運轉時，最大轉速1rpm



● 機械規範

*Rotary table adopt Fagor encoder[Accuracy $\pm 10^{\circ}$]. The above specifications subject to change without prior notice.

- 控制器/Fanuc - 0i MF Controller
- 工具及工具箱/Tools and Tool Box
- 地基螺絲及墊片/Foundation Screws And Bolts
- 主軸油冷機/Spindle oil Cooler
- 工作燈/Working Lamp
- 刀庫鏈條式40刀 (BHG110-T3/T3 標準)/ATC Chain Type 40 Tools
- 主軸襯套(BHB 110-T2/T3 標準)/Spindle Support 250 mm
(BHB 110-T2/T3 Std only)
- 主軸襯套(BHB 130-T3/T4標準)/Spindle Support 350mm
(BHB 130-T3/T4 Std Only)
- 光學尺/Linear Scale/(電子回饋尺)(增量式)
- X軸防塵罩/X axis Dust Cover
- Y軸防塵罩/Y axis Dust Cover
- 手輪/MPG (Manual Pause Generator)
- 自動潤滑系統/Automatic Lubrication System
- 鐵板式鐵屑輸送鐵屑車/Steel Belt Chip Conveyer with cart
- 電器箱冷氣機/Air Conditioner for Electric Cabinet

- 控制器Heidenhain/Siemens:以品牌發那科為主(Standard Controller: Fanuc) , 選配(Optional Controller: Heidenhain / Seimens).
- 主軸中心出水10bar / Coolant Through Spindle 10bar
- 刀庫鍊條式60刀 (BHG110-T3/T3 only) / ATC Chain Type 60 Tools.
- 車削用花盤/Turning Use Faceplate
- 90°頭/Angular Milling Head
- 萬向頭/Universal Millind Head
- 全罩鉋金/Fully Splash Guard
- 半罩鉋金/Semi Splash Guard"
- 工件與刀長量測系統/Workpiece and Tool Length Measuring Device
- CE標準/CE Norm
- 變壓器(外銷專用/Transformer (Export only))

