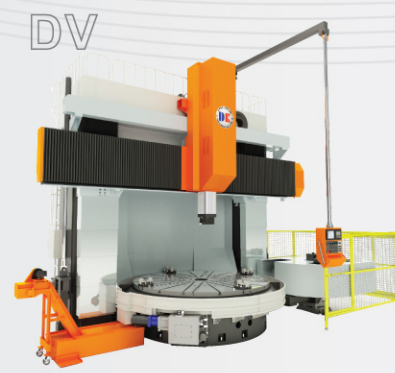
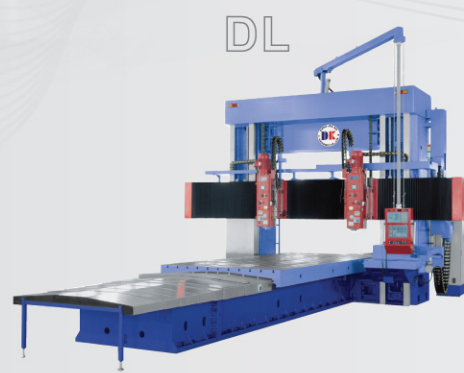
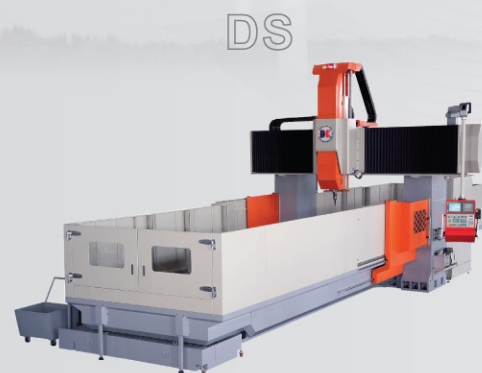




## 鼎冠機械股份有限公司

**DING-KOAN MACHINERY CO., LTD**

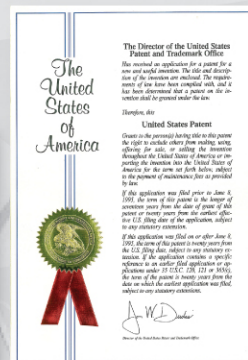
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Clean energy is the only way  
to preserve earth  
Let us work together





# 龍門 CNC Double Column Machining Center 動樑綜合加工機 Crossrail Movable Type

## 成本節省，效益提高

橫樑自由升降龍門銑床，能合乎加工物件高低的變化而任意移動 W 軸適當高度，提高工作效率，降低生產成本，加工範圍更廣更多元、更合乎經濟效益。

## 超強切削性能

橫樑能更有效的接近加工物件，使主軸與橫樑更貼合減少加工主軸之延伸，發揮高鋼性切削能力、速率提高、降低刀具損耗。

## 功能多元性

配合刀庫使用 W 軸可任何高度位置靜止時更換刀具與周邊配備，刀具數量更可依客戶需求安裝。

## 超強結構

橫樑與立柱採用液壓鎖固強化門型整體結構，橫樑與立柱緊密貼合，鋼性超強，精度穩定。

## Characteristic of Cross-rail upon-down

The cross rail (W axis) could move upon the height of working piece, to increase the efficiency of machining and save the production cost and enlarge the production range.

## Super machining ability

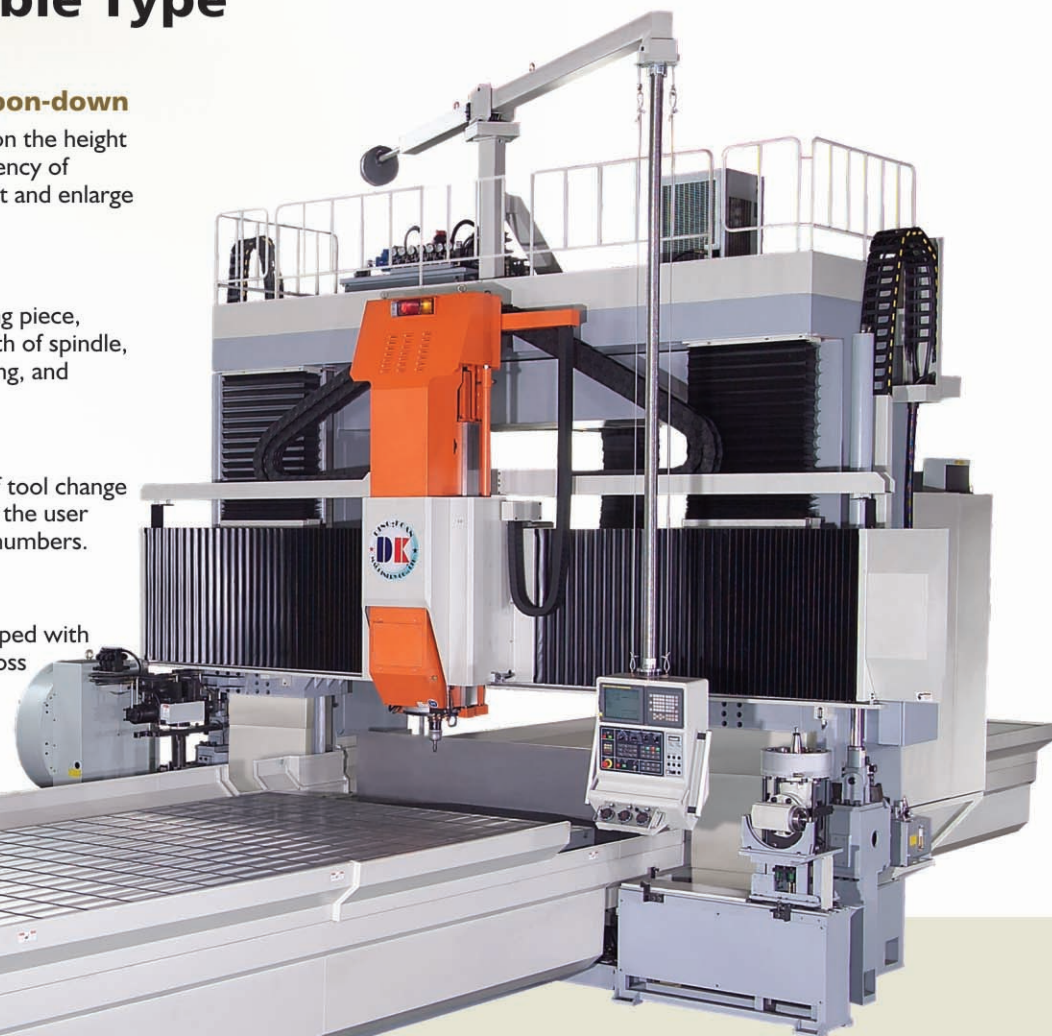
The cross rail could be close to working piece, make sure the shortest extending length of spindle, increasing the performance of machining, and extend the lifetime of tooling.

## High Flexibility features

When ATC equipped, the command of tool change could be executed at any position, and the user have several different choices of ATC numbers.

## Strong structure

Both cross rail and column were equipped with hydraulic locking system ensure the cross rail and column matched closest, high rigidity and high accuracy.

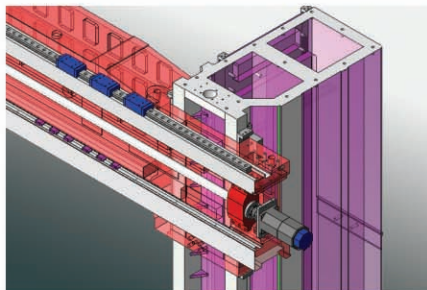


## Y 軸軌道特性

Y 軸軌道組裝使用雙軌平行式，搭配滾柱與平面滑塊組裝，線軌能保持高速運行靈活性與直線運動，而平面滑塊能高荷重使切削時能產生更高抗力並能保持滑座與橫樑緊密貼合度與移動順暢。

## Y axis

Parallel slide ways designed for Y axis, accompanying with both roller and flat type tracker. The linear guide ways keep the sensibility of high-speed moving, and flat type tracker offers higher loading capacity.



## 控制箱

控制箱外型無菱角設計符合安全可避免碰撞受傷，面板控制鈕為單一元件損壞時可單獨替換，夜間操作有背光顯示功能標示清楚不模糊。

## Controller cabinet

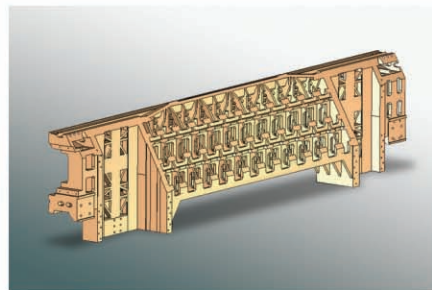
No-shape design cabinet of controller to avoid any accident during operation. Single-unit controlling button could be replaced separately when it was damaged. Background light makes sure the correct operation under the dark operation environment.

## 橫樑結構特性

橫樑為一體鑄造成型，結構設計採用高鋼性前段交叉肋骨後段箱型結構體，平均分配橫樑背部，外型為橋樑式拱型設計能有效支撐垂直重力與橫向抗力並再切削時發揮最佳剛性。

## Cross rail

One-piece iron-casting cross rail, high rigidity structure of Crossing Rib designed of front part and Box type design for rear part. Accompanying bridge type outline, it could support the vertical force of gravity and horizontal resistance, to make sure the best rigidity in machining process.



## 控制吊桿（選購）

控制箱可依操作時加工工件高低將控制箱、前後、上下、左右移位以達操作者能直接水平目視也可以最短距離控制機器。

## Pendant arm of controller cabinet (Optional)

Friendly design of pendant arm. The cabinet of controller could be moved forward-backward, upon-down, right-left, to make sure the operator could operate the machine in the best position.



## 模具加工特性：

**粗胚加工：**切削量大速度快，高深度加工穩定共振量低。  
**細胚加工：**表面精細平順，曲線圓角不失真，分割線精準無段差。

## Characteristic of mold machining Rough molding machining :

Large cutting capacity, high speed, stabilized and lower vibration

## Finished molding machining :

Excellent surface, minimized error of curve / roundness, without segment mark.

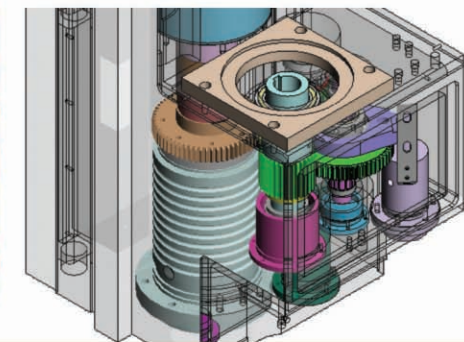


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## 主軸齒箱

1. 主軸頭部採用四方型高鋼性設計，方型結構體，440 X 440mm，強度足且不易干涉加工物，滑軌設計階梯型包覆設計主軸中心更接近橫樑切削穩定。
2. 齒輪箱體與主軸主體採一體加工完成，切削扭力之傳導距離短輸出力強切削時抗力穩定，長時間運轉順暢噪音低。



## Gear box of spindle

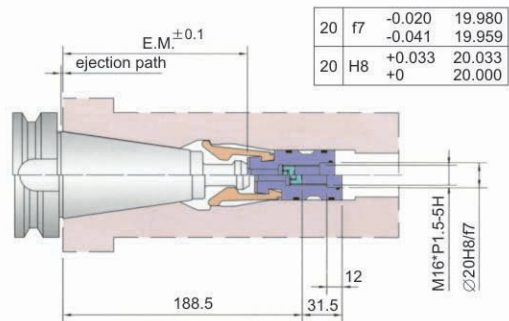
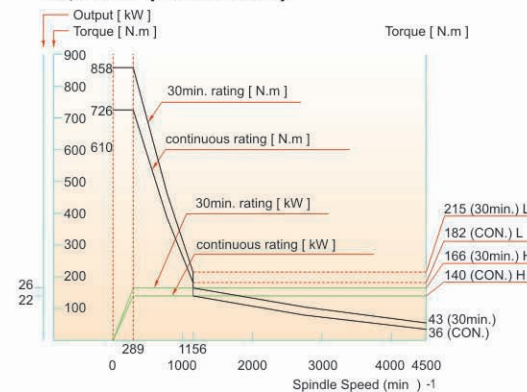
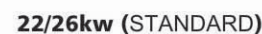
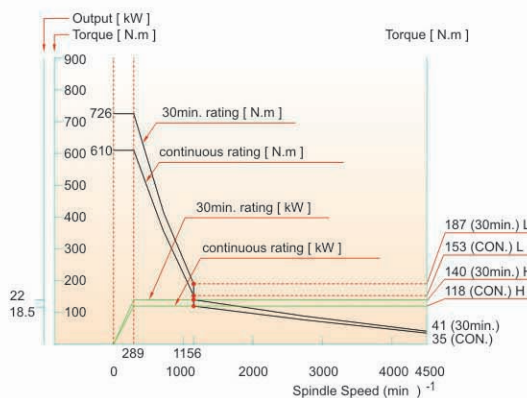
1. Square type design, 440 \* 440 mm dimension, high rigid structure, minimized the possibility of interference with working piece. Ladder type slide-way make the spindle center most close to the cross rail, increasing the stabilization of machining.
2. Gear box and spindle housing is one-piece iron casting. The short transmission of cutting twist, large output power, stable resistance in large cutting, offer the best machining performance and lowest noise.



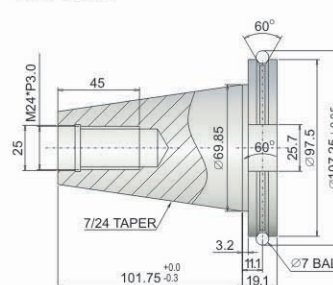
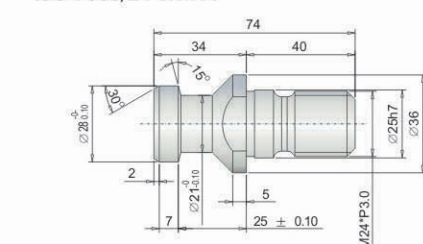
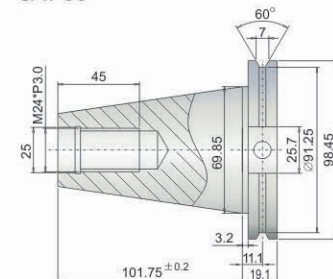
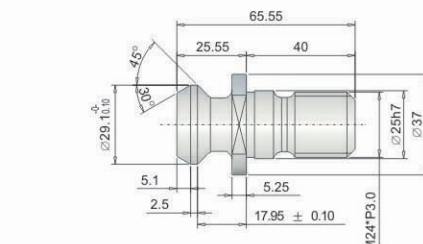
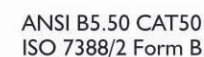
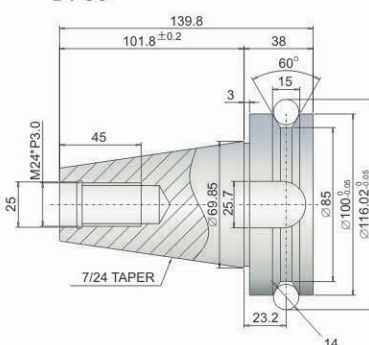
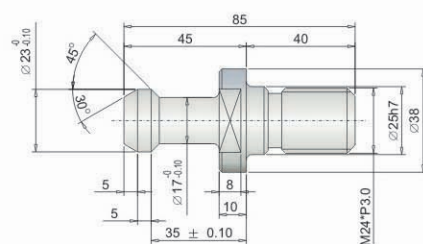


| Spanner Code       | A              | B      | C      | D      |
|--------------------|----------------|--------|--------|--------|
| E.M. (mm)          | 134.6          | 126    | 145.75 | 145.75 |
| Ejection path (mm) | 1              | 1      | 1      | 1      |
| Max pull force (N) | 25,000         | 25,000 | 25,000 | 25,000 |
| Max Stroke (mm)    | 6              | 6      | 6      | 6      |
| medium transfer    | axial transfer |        |        |        |

| Tool Standard                       | Code     |
|-------------------------------------|----------|
| DIN 69871/69872 ISO 7388/1/1 Type A | <b>A</b> |
| ANSI B 5.50-78 ISO 7388/1/2 Type B  | <b>B</b> |
| MAS 403-1982 BT/PT 2 (30°)          | <b>C</b> |
| MAS 403-1982 BT/PT 1 (45°)          | <b>D</b> |



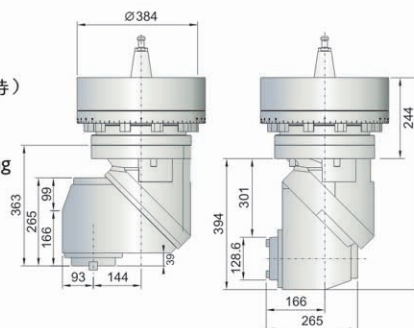
**刀把尺寸 TOOL SHANK APPLICABLE**



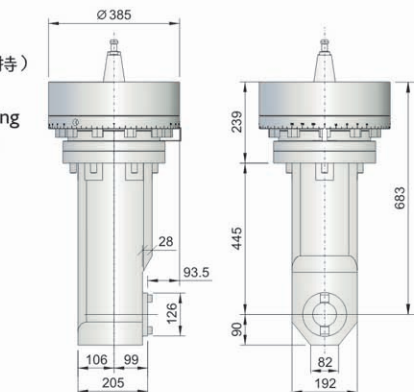
## 選購附件 OPTIONAL SPECIFICATION



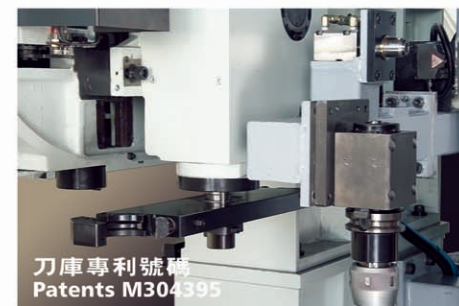
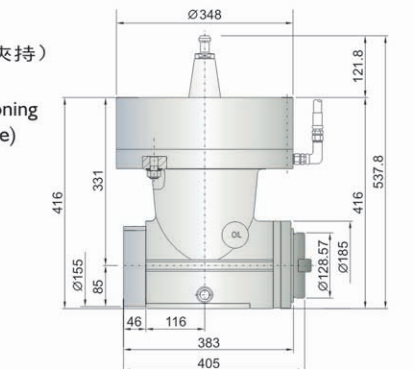
**萬向銑頭**  
(曲齒定位，油壓夾持)  
**MULTIANGULAR**  
**MILLING HEAD**  
(Conical Teeth Positioning  
Hydraulic Tool Release)  
最大轉速  
Speed: 1200RPM  
BT50



**90度深搪銑頭**  
(曲齒定位，油壓夾持)  
**ANGULAR HEAD**  
(Conical Teeth Positioning  
Hydraulic Tool Release)  
最大轉速  
Speed:800RPM  
BT50



**90度銑頭**  
(曲齒定位・油壓夾持)  
**ANGULAR HEAD**  
(Conical Teeth Positioning  
Hydraulic Tool Release)  
最大轉速  
Speed:1500RPM  
BT50



**刀庫系統**  
**Tool Magazine Capacity**



**BT50-24 支刀**

Specification  
Model No.: BT50-20,24DV  
Power Supply of Magazine: Electric  
Power Supply of ATC: Electric  
Max. Tool Weight: 15 kgs  
Max. Tool Length: 350 mm  
Max. Tool Dia. (All pockets full):  $\varnothing 110, 200/\text{mm}$

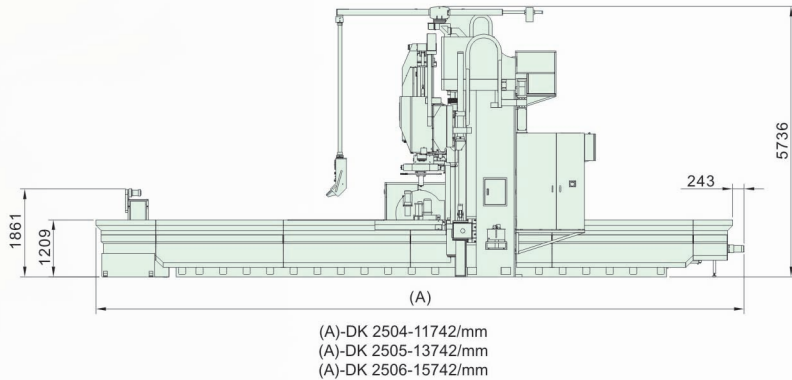
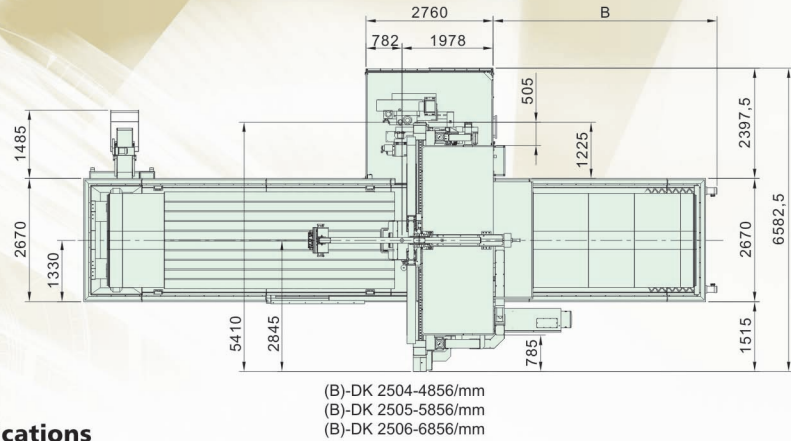
### BT50-32 支刀

Specification  
Model No.: BT50-32,40CV Power Supply of  
Magazine: Electric  
Power Supply of ATC: Electric  
Max. Tool Weight: 18 kgs  
Max. Tool Length: 350 mm  
Max. Tool Dia. (All pockets full):  $\varnothing 125/250$  mm

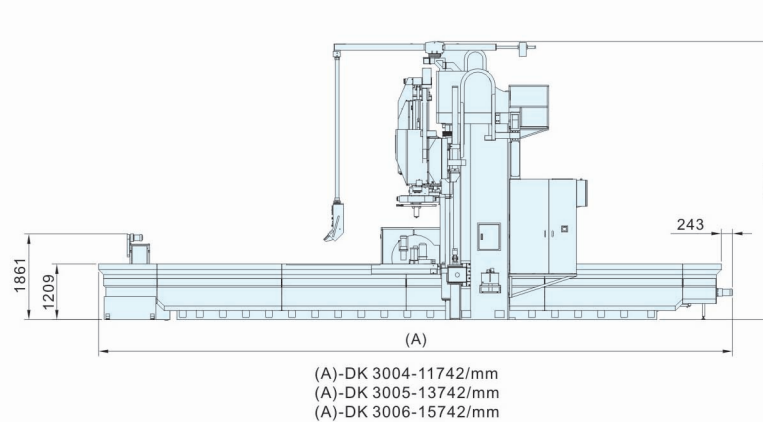
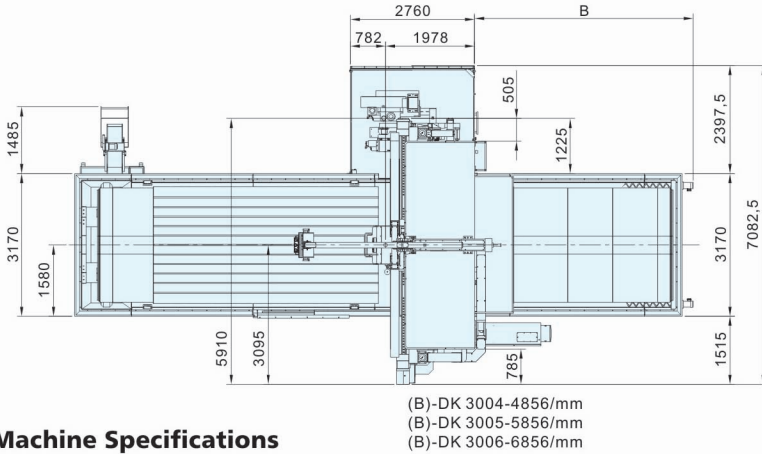




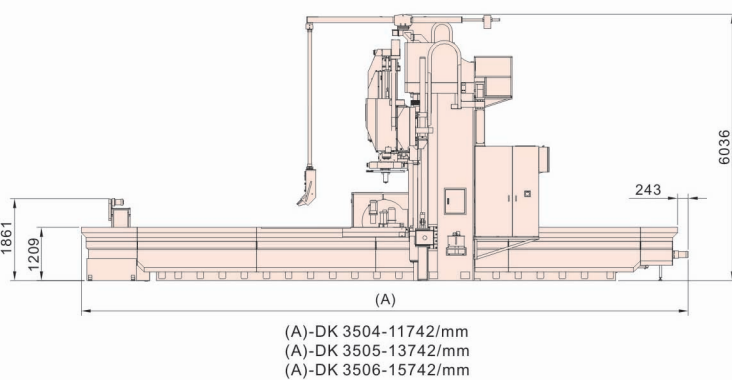
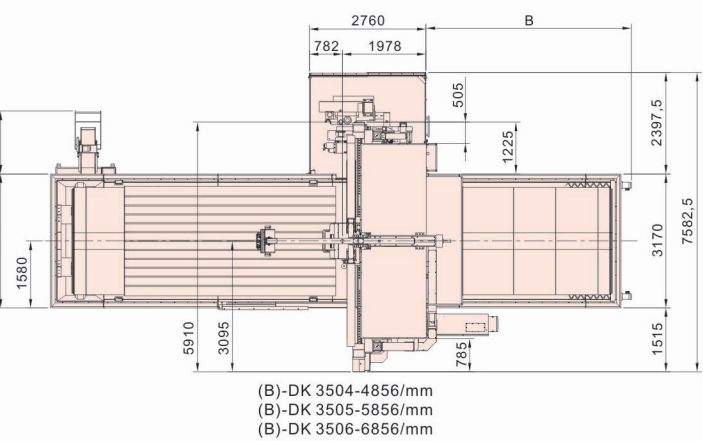
DK-2500



DK-3000



DK-3500



機器規格 Machine Specifications

| 說明/機械規格 Description/Model                          | 單位 UNIT      | DK-2504       | DK-2505                                   | DK-2506        |
|----------------------------------------------------|--------------|---------------|-------------------------------------------|----------------|
| X軸行程 X-axis travel                                 | mm           | 4150          | 5150                                      | 6150           |
| Y軸行程 Y-axis travel                                 | mm           | 2800          | 2800                                      | 2800           |
| Z軸行程 Z-axis travel                                 | mm           | 600           | 600 (800~1000 選購 Optional)                | 600            |
| 主軸鼻端至工作台面距離 Distance from spindlenose and to table | mm           | 400-1500      | 400-1500                                  | 400-1500       |
| 雙柱間距離 Distance between columns                     | mm           | 2600          | 2600                                      | 2600           |
| 工作台尺寸(長*寬) Work table size (L x W)                 | mm           | 4000 X 2100   | 5000 X 2100                               | 6000 X 2100    |
| 工作台T槽尺寸 T slot size of worktable                   | mm           |               | (寬Wide)22*(距Pitch)210*9                   |                |
| 工作台最大載重量 Max.worktable load                        | kg           | 13000         | 15000                                     | 17000          |
| 主軸馬達(連續30分鐘) Spindle motor (Cont./30min)           | HP           |               | 25/30 (35/30 選購 Optional)                 |                |
| 主軸轉速 Spindle speed                                 | rpm          |               | 40-4500-齒輪齒箱 Gear Box                     |                |
| 主軸轉速變換 Spindle speed variation                     |              |               | H/L、無段液壓變速                                |                |
| 主軸內錐孔 Spindle taper                                |              |               | BT50 (ISO50)                              |                |
| 快速進給速率X-Y軸 Rapid traverse (X/Y axis)               | mm/min       | 9000          | 9000-Box Way Y:10000                      | X:8000 Y:10000 |
| 快速進給速率Z軸 Rapid traverse Z axis                     | mm/min       |               | 10000-Box Way                             |                |
| 切削進給速度 Cutting feedrate                            | mm/min       |               | I-5500                                    |                |
| 橫樑升降動力 W-axis motor                                | HP           |               | AC5                                       |                |
| 橫樑升降動力-NC系統 W-axis motor-for NC                    | KW           |               | 5 (選購 Optional-NC-System)                 |                |
| 橫樑升降滾珠螺桿-NC系統 W-axis-for NC                        |              |               | Ø70P10(Optional-NC-System)                |                |
| 橫樑升降速度 W-axis speed                                | mm/min       |               | 500                                       |                |
| X-Y-Z伺服馬達 FANUC-X.Y.Z.servo motor                  |              | α40, α30, α30 | α40, α30, α30                             | α40, α30, α30  |
| X-Y-Z伺服馬達 MITSUBISHI- X.Y.Z.servo motor            |              | HA700,300,300 | HA700,300,300                             | HA700,300,300  |
| 刀庫容量 ATC Tool magazine                             | pcs          |               | (24、32、40、60、120 選購 Optional)             |                |
| 最大刀具直徑(滿刀/鄰刀空) Maximum tool Dia (All pockets full) | mm           |               | 24pcs/Ø110, Ø200、32pcs/Ø125, Ø250         |                |
| 最大刀具長度 Maximum tool length                         | mm           |               | 350                                       |                |
| 最大刀具重量 Maximum tool weight                         | kg           |               | 15kg / 18kg                               |                |
| 刀具選刀方式 Tool selection                              |              |               | 任意刀號儲存系統 Random tool change system        |                |
| 刀柄 Tool holder                                     |              |               | BT50 (ISO50)                              |                |
| 拉力螺栓 Pull stud                                     |              |               | MAS403P50T-I、(45°) DIN69872 (選購 Optional) |                |
| 換刀時間 Tool changing time                            | sec          |               | 8                                         |                |
| 需求電力 Electrical Power Supply                       |              |               | 60KVA, AC220V, 3 phase, 60Hz              |                |
| 氣壓需求 Air Source                                    | kg/cm2       |               | 5 以上 above                                |                |
| 液壓油箱容量 Hydraulic oil capability                    | Liter        |               | 300、(5hp、pump)                            |                |
| 潤滑油箱容量 Lubricator oil capability                   | Liter        |               | 20                                        |                |
| 切削液箱容量 Cutting fluid box capacity                  | Liter        |               | 1000                                      |                |
| 佔地面積 Floor space                                   | 長度 Length/mm | 11742         | 13742                                     | 15742          |
| 寬度X高度 Machine W*H(max~mine)                        | mm           |               | 6582X5736/5236、(最高highest/最低lowest)       |                |
| 機器淨重 Machine net weight                            | kg           | 46600         | 51800                                     | 57000          |

機器規格 Machine Specifications

| 說明/機械規格 Description/Model                          | 單位 UNIT      | DK-3004       | DK-3005                                    | DK-3006       | DK-3504       | DK-3505                                   | DK-3506       |
|----------------------------------------------------|--------------|---------------|--------------------------------------------|---------------|---------------|-------------------------------------------|---------------|
| X軸行程 X-axis travel                                 | mm           | 4150          | 5150                                       | 6150          | 4150          | 5150                                      | 6150          |
| Y軸行程 Y-axis travel                                 | mm           | 3300          | 3300                                       | 3300          | 3800          | 3800                                      | 3800          |
| Z軸行程 Z-axis travel                                 | mm           | 600           | 600 (800~1000 選購 Optional)                 | 600           | 600           | 600                                       | 600           |
| 主軸鼻端至工作台面距離 Distance from spindlenose and to table | mm           | 400-1800      | 400-1800                                   | 400-1800      | 400-1800      | 400-1800                                  | 400-1800      |
| 雙柱間距離 Distance between columns                     | mm           | 3100          | 3100                                       | 3100          | 3600          | 3600                                      | 3600          |
| 工作台尺寸(長*寬) Work table size (L x W)                 | mm           | 4000 X 2550   | 5000 X 2550                                | 6000 X 2550   | 4000 X 2750   | 5000 X 2750                               | 6000 X 2750   |
| 工作台T槽尺寸 T slot size of worktable                   | mm           |               | (寬Wide)22*(距Pitch)210*11                   |               |               | (寬Wide)22*(距Pitch)210*11                  |               |
| 工作台最大載重量 Max.worktable load                        | kg           | 17000         | 19000                                      | 21000         | 18000         | 20000                                     | 22000         |
| 主軸馬達(連續30分鐘) Spindle motor (Cont./30min)           | HP           |               | 30/25 (35/30 選購 Optional)                  |               |               | 25/30 (35/30 選購 Optional)                 |               |
| 主軸轉速 Spindle speed                                 | rpm          |               | 40-4500-齒輪齒箱 Gear Box                      |               |               | 40-4500-齒輪齒箱 Gear Box                     |               |
| 主軸轉速變換 Spindle speed variation                     |              |               | H/L、無段液壓變速                                 |               |               | H/L、無段液壓變速                                |               |
| 主軸內錐孔 Spindle taper                                |              |               | BT50 (ISO50)                               |               |               | BT50 (ISO50)                              |               |
| 快速進給速率X-Y軸 Rapid traverse (X/Y axis)               | mm/min       |               | X:8000-Box Way Y:9000                      | X:8000 Y:9000 |               | X:8000-Box Way Y:9000                     | X:7000 Y:9000 |
| 快速進給速率Z軸 Rapid traverse Z axis                     | mm/min       |               | 10000-Box Way                              | 10000         |               | 10000-Box Way                             | 10000         |
| 切削進給速度 Cutting feedrate                            | mm/min       |               | I-5500                                     |               |               | I-5500                                    |               |
| 橫樑升降動力 W-axis motor                                | HP           |               | AC5                                        |               |               | AC5                                       |               |
| 橫樑升降動力-NC系統 W-axis motor-for NC                    | KW           |               | 5(選購 Optional-NC-System)                   |               |               | 5(選購 Optional-NC-System)                  |               |
| 橫樑升降滾珠螺桿-NC系統 W-axis-for NC                        |              |               | Ø80P10(選購 Optional-NC-System)              |               |               | Ø80P10(選購 Optional-NC-System)             |               |
| 橫樑升降速度 W-axis speed                                | mm/min       |               | 500                                        |               |               | 500                                       |               |
| X-Y-Z伺服馬達 FANUC-X.Y.Z.servo motor                  |              | α40, α30, α30 | α40, α30, α30                              | α50, α30, α30 | α40, α30, α30 | α50, α30, α30                             | α50, α30, α30 |
| X-Y-Z伺服馬達 MITSUBISHI- X.Y.Z.servo motor            |              | HA700,300,300 | HA700,300,300                              | HA900,300,300 | HA700,300,300 | HA900,300,300                             | HA900,300,300 |
| 刀庫容量 ATC Tool magazine                             | pcs          |               | (24、32、40、60 選購 Optional)                  |               |               | (24、32、40、60 選購 Optional)                 |               |
| 最大刀具直徑(滿刀/鄰刀空) Maximum tool Dia (All pockets full) | mm           |               | 24pcs/Ø110, Ø200、32pcs/Ø125, Ø250          |               |               | 24pcs/Ø110, Ø200、32pcs/Ø125, Ø250         |               |
| 最大刀具長度 Maximum tool length                         | mm           |               | 350                                        |               |               | 350                                       |               |
| 最大刀具重量 Maximum tool weight                         | kg           |               | 15kg / 18kg                                |               |               | 15kg / 18kg                               |               |
| 刀具選刀方式 Tool selection                              |              |               | 任意刀號儲存系統 Random tool change system         |               |               | 任意刀號儲存系統 Random tool change system        |               |
| 刀柄 Tool holder                                     |              |               | BT50 (ISO50)                               |               |               | BT50 (ISO50)                              |               |
| 拉力螺栓 Pull stud                                     |              |               | MAS 403P50T-I、(45°) DIN69872 (選購 Optional) |               |               | MAS403P50T-I、(45°) DIN69872 (選購 Optional) |               |
| 換刀時間 Tool changing time                            | sec          |               | 8                                          |               |               | 8                                         |               |
| 需求電力 Electrical Power Supply                       |              |               | 65KVA, AC220V, 3 phase, 60Hz               |               |               | 75KVA, AC220V, 3 phase, 60Hz              |               |
| 氣壓需求 Air Source                                    | kg/cm2       |               | 5 以上 above                                 |               |               | 5 以上 above                                |               |
| 液壓油箱容量 Hydraulic oil capability                    | Liter        |               | 300、(5hp、pump)                             |               |               | 300、(5hp、pump)                            |               |
| 潤滑油箱容量 Lubricator oil capability                   | Liter        |               | 20                                         |               |               | 20                                        |               |
| 切削液箱容量 Cutting fluid box capacity                  | Liter        |               | 1200                                       |               |               | 1300                                      |               |
| 佔地面積 Floor space                                   | 長度 Length/mm | 11742         | 13742                                      | 15742         | 117420        | 13742                                     | 15742         |
| 寬度X高度 Machine W*H(max~mine)                        | mm           |               | 7082X6536/6036、(最高highest/最低lowest)        |               |               | 7582X6536/6036、(最高highest/最低lowest)       |               |
| 機器淨重 Machine net weight                            | kg           | 55000         | 61000                                      | 67000         | 79000         | 85000                                     | 91000         |

◎另有機器規格 Are available DK3007, DK3008, DK3009

◎另有機器規格 Are available DK3507, DK3508, DK3509

●本規格僅供參考，如須選購附件，以設計圖及契約為準。The present specifications for reference only, such as the need to purchase accessories, to design and the contract shall prevail.

◎另有機器規格 Are available DK2507, DK2508, DK2509

●本規格僅供參考，如須選購附件，以設計圖及契約為準。The present specifications for reference only, such as the need to purchase accessories, to design and the contract shall prevail.



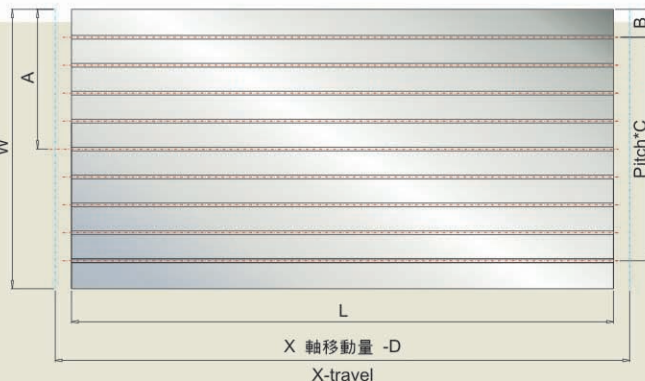
#### 標準附件

1. 主軸溫控系統
2. Z 軸潤滑監測裝置
3. 主軸H/L變速齒輪箱
4. 三軸防撞安全機構
5. X 軸伸縮鉸金護蓋
6. 中央集中潤滑系統
7. 切削液系統(含泵及儲存箱)
8. 冷卻出水噴頭
9. Y 軸折疊式伸縮罩
10. 腳踏鬆刀開關
11. 可移出式手輪
12. 工作燈
13. 程式結束及警示燈
14. RS-232接口
15. 螺旋排屑槽
16. 調整用手工具一套
17. 技術手冊一套

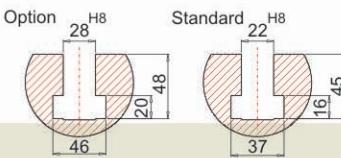
#### 選購附件

1. 主軸轉速 6000~8000 rpm
2. Heidenhain 數字尺全閉迴路
3. 刀庫容量: 24、32、40、60、120刀
4. 手動式90度銑頭
5. 90度銑頭風壓鎖刀機
6. 手動轉角萬向銑頭
7. 排屑車
8. 主軸中央出水系統
9. 自動刀長量測系統
10. 自動工件測量系統
11. NC第四軸旋轉工作台
12. 橫樑升降W軸NC系統
13. Z軸行程800~1000 mm
14. X軸鋼軌滾柱系統

#### 床台尺寸 Table size



#### T槽尺寸 Tslot size



|         | W    | L    | A    | B   | C      | D    |
|---------|------|------|------|-----|--------|------|
| DK-2003 |      | 3000 |      |     |        | 3300 |
| DK-2004 | 1700 | 4000 | 850  | 220 | 210*7  | 4300 |
| DK-2005 |      | 5000 |      |     |        | 5300 |
| DK-2006 |      | 6000 |      |     |        | 6300 |
| DK-2503 |      | 3000 |      |     |        | 3300 |
| DK-2504 | 2100 | 4000 | 1050 | 210 | 210*9  | 4300 |
| DK-2505 |      | 5000 |      |     |        | 5300 |
| DK-2506 |      | 6000 |      |     |        | 6300 |
| DK-3004 |      | 4000 |      |     |        | 4300 |
| DK-3005 | 2550 | 5000 | 1275 | 175 | 220*11 | 5300 |
| DK-3006 |      | 6000 |      |     |        | 6300 |
| DK-3007 |      | 7000 |      |     |        | 7300 |

#### Standard accessories

1. Spindle temperature control system
2. Z axis lubrication monitoring device
3. Spindle H/L gear box
4. Protection mechanism for three axis
5. Telescopic cover for X axis
6. Centralized automatic lubricating system
7. Cutting fluid system
8. Cooling water nozzle
9. Y axis slideway dust cover
10. Foot-paddle automatic tool release switch
11. MPG
12. Working lamp
13. Program ending & warning light
14. RS-232 Interface
15. Screw type chip conveyor
16. Adjustment-use hand tool (one set)
17. Technique manual

#### Optional accessories

1. Spindle speed 6000(Gear Box)~8000(Pulley Type) rpm
2. Heidenhain optical scale
3. Tool magazine capacity: 24, 32, 40, 60, 120 tools
4. Manual type Angular head
5. Angular head with Air power drawbar
6. Manual type universal milling head
7. Chip conveyor
8. CTS system
9. TS-27R Auto- tool length measurement system
10. MPI10 Auto-workpiece measurement system
11. Rotary table
12. Cross rail(W axis) with NC system
13. Z-axis travel 800~1000 mm
14. X-axis Steel Roller way

## 龍門 CNC Double Column Machining Center 定樑綜合加工機

#### 門型穩定 不易變形

橫樑固定龍門加工中心機，將橫樑採鎖固方式組裝門型架構強度足，當長時間使用時垂直及平行度均能保持相當精確。

#### 靈活性

當主軸高速移動時由於重心低框架穩定不易產左右慣性搖擺而整體貼合緊密度相當密合，高鋼性之強度。

#### 維修單純

精度公差保持度久而調機快速。

#### 橫樑穩定

橫樑鎖固強化門型整體結構，橫樑水平穩定減少自然彎曲下垂能有效支撐主軸重量

#### 折裝快速

橫樑為一體鑄造成型，結構設計採用高鋼性前段交叉肋骨後段箱型結構體，平均分配橫樑背部，外型為橋樑式拱型設計能有效支撐垂直重力與橫向抗力並再切削時發揮最佳剛性。

#### Stabilized structure

Fixed type cross-rail with strong structure, keeping the excellent verticality and parallelism even though long period operation.

#### Active design

Lower position of center of gravity plus stabilized structure columns avoid the vibration when spindle moving with high speed.

#### Simplified maintenance

High rigidity and stabilized structure keep machine's accuracy for longest period, and simplified the maintenance.

#### Stabilized Cross-rail

Stabilized cross-rail offers the best parallel stabilization to support the weight of spindle and headstock.

#### Fast assembling / disassembling



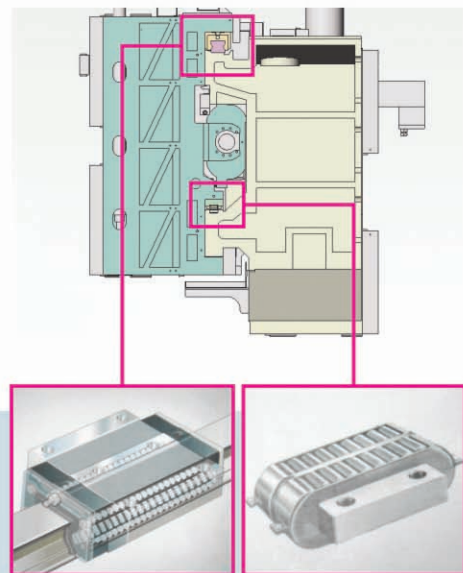
#### Y軸軌道複合式系統設計

機器Y軸左右採用上方水平軌(滾柱型線性滑軌 Roller Rail Way)與下方水平軌(滾柱平板滑塊 Roller Way)複合式組裝均能使機器再移動時速度加快，而正面方形硬軌與滑座緊密貼合衝擊時切削更加穩定，精度保持長久。

#### Combination system of Y axis sliding

Roller rail way has been equipped for upper slide and roller way was used for bottom slide, combination system offers faster speed of moving. And box way matches with tracker closely to make sure the stabilization of machining and keep the accuracy.

#### 橫樑軌道系統 DK-DS Cross Rail Way Systems



#### 滾柱線軌 Roller Rail Way

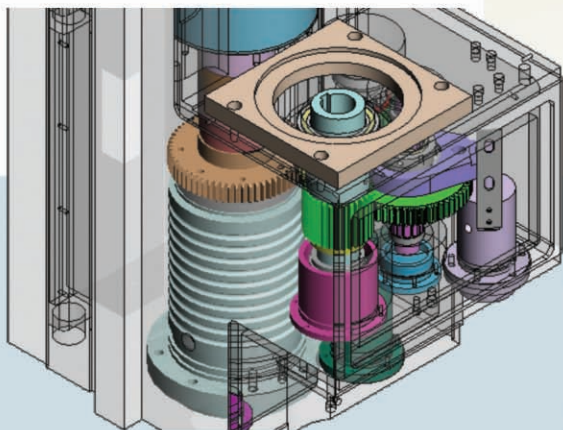
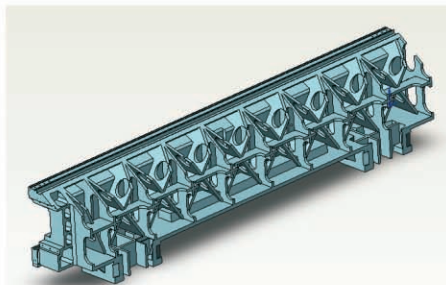
#### 平板滾柱滑塊 Flat Slider

#### 橫樑結構特性

橫樑為一體鑄造成型，結構設計採用高鋼性前段交叉肋骨後段箱型結構體，平均分配橫樑背部，外型為橋樑式拱型設計能有效支撐垂直重力與橫向抗力並再切削時發揮最佳剛性。

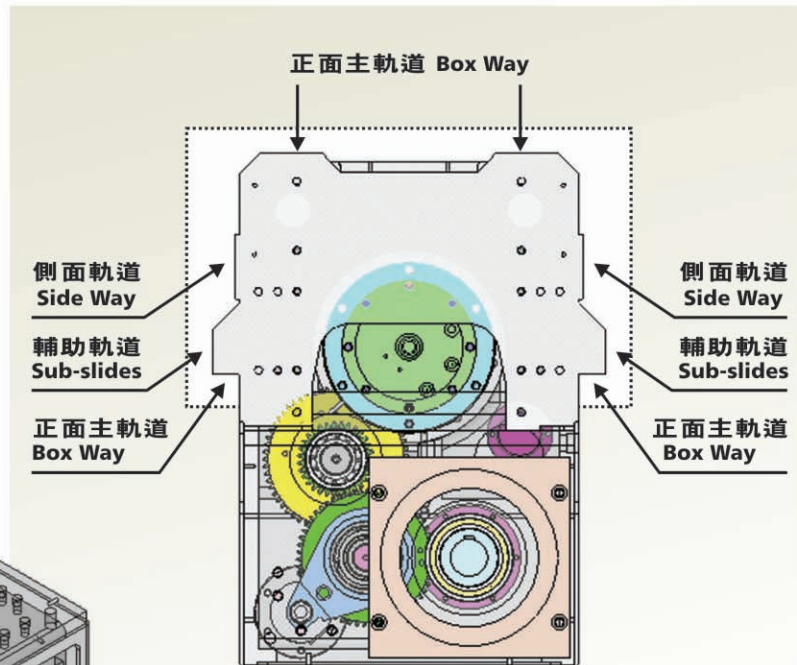
#### Cross rail

One-piece Cross rail, high rigidity structure design Crossing Rib design for front part and Box type design for rear part. Accompanying bridge type outline, it could support the vertical force of gravity and horizontal resistance, to make sure the best rigidity in machining process.



#### 銑削頭示意圖

主軸軌道包覆面，採外殼全包覆設計當主軸加工延伸時能全支撐發揮剛性佳，切削力強之特性並提高穩定性。



#### Milling Head

Full-covered sliding, supporting the excellent cutting performance and best rigidity when machining, and increasing the stabilization.

#### 主軸齒箱

1. 主軸頭部採用四方型高鋼性設計，方型結構體，440X440mm，強度足且不易干涉加工物，滑動設計階梯型包覆設計主軸中心更接近橫樑切削穩定。
2. 齒輪箱體與主軸主體採一體加工完成，切削扭力之傳導距離短輸出力強切削時抗力穩定，長時間運轉順暢噪音低。

#### Gear box of spindle

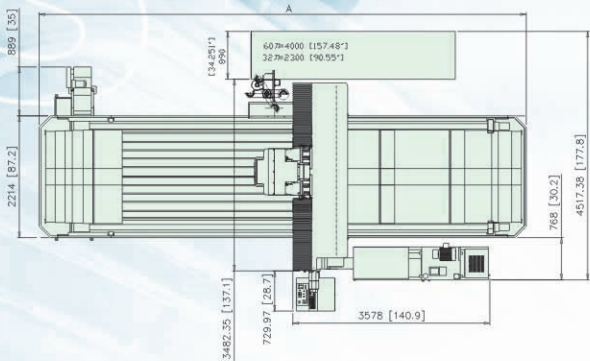
1. Square type design, 440 \* 440 mm dimension, high rigid structure, minimized the possibility of interference with working piece. Ladder type slide-way make the spindle center most close to the cross rail, increasing the stabilization of machining.
2. Gear box and Spindle housing is one-piece die casting, offer the best machining performance and lowest noise.



鼎冠機械股份有限公司  
DING-KOAN MACHINERY CO., LTD



DS-2000



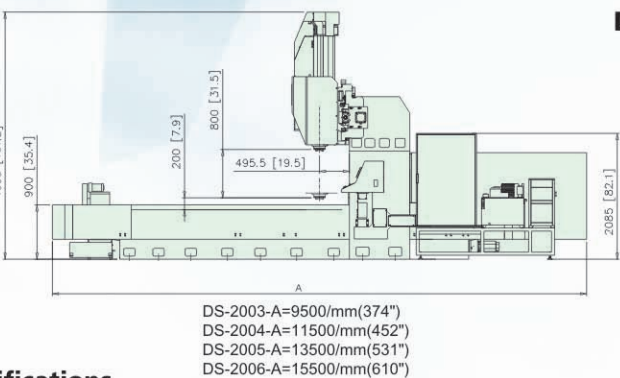
標準附件

- 1. 主軸溫控系統
- 2. Z 軸潤滑監測裝置
- 3. 主軸H/L變速齒輪箱
- 4. 三軸防撞安全機構
- 5. X 軸伸縮鉸金護蓋
- 6. 中央集中潤滑系統
- 7. 切削液系統(含泵及儲存箱)
- 8. 冷卻出水噴頭
- 9. Y 軸折疊式伸縮罩
- 10. 腳踏鬆刀開關
- 11. 可移出式手輪
- 12. 工作燈
- 13. 程式結束及警示燈
- 14. RS-232接口
- 15. 螺旋排削槽
- 16. 調整用手工具一套
- 17. 技術手冊一套

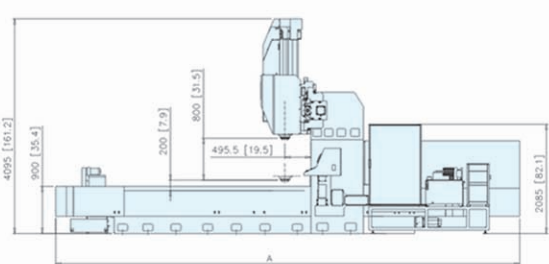
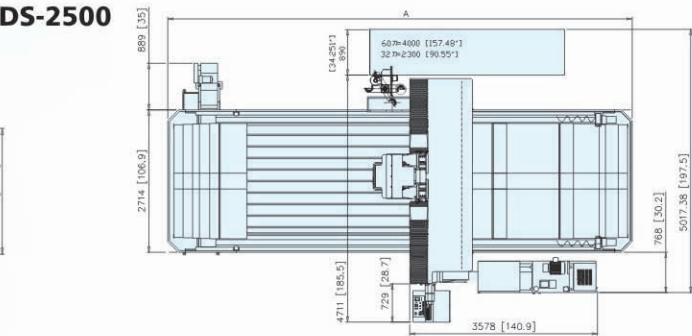
選購附件

- 1. 全罩式鉸金護罩
- 2. 主軸轉速 6000 rpm
- 3. Heidenhain數字尺全閉迴路
- 4. 刀庫容量:40、60刀
- 5. 手動式90度銑頭  
曲窗自動定位
- 6. 90度銑頭風壓鎖刀機
- 7. 手動轉角萬向銑頭
- 8. 排屑收集車
- 9. 主軸中央出水系統
- 10. 自動刀長量測系統
- 11. 自動工件測量系統
- 12. NC第四軸旋轉工作台

DS-2500

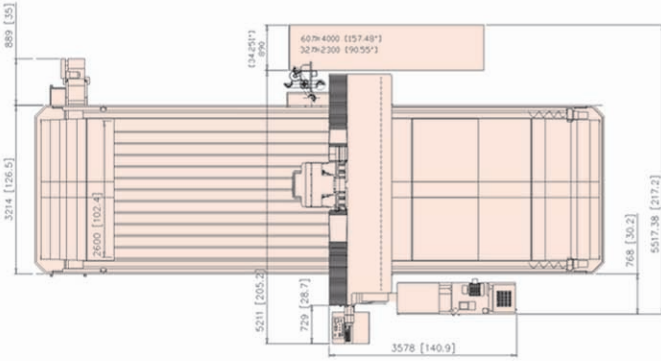


DS-2003-A=9500/mm(374")  
DS-2004-A=11500/mm(452")  
DS-2005-A=13500/mm(531")  
DS-2006-A=15500/mm(610")

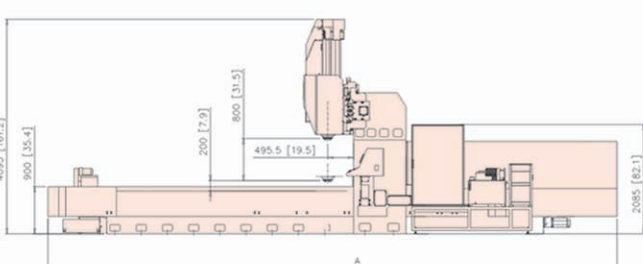


DS-2503-A=9500/mm(374")  
DS-2504-A=11500/mm(452")  
DS-2505-A=13500/mm(531")  
DS-2506-A=15500/mm(610")

DS-3000



DS-3003-A=9500/mm(374")  
DS-3004-A=11500/mm(452")  
DS-3005-A=13500/mm(531")  
DS-3006-A=15500/mm(610")



機器規格 Machine Specifications

| 說明/機械規格 Description/Model                          | 單位 UNIT      | DS-2004                                   | DS-2005       | DS-2006        | DS-2504         | DS-2505                                   | DS-2506        | DS-3004        | DS-3005                                   | DS-3006        |
|----------------------------------------------------|--------------|-------------------------------------------|---------------|----------------|-----------------|-------------------------------------------|----------------|----------------|-------------------------------------------|----------------|
| X軸行程 X-axis travel                                 | mm           | 4150                                      | 5150          | 6150           | 4150            | 5150                                      | 6150           | 4150           | 5150                                      | 6150           |
| Y軸行程 Y-axis travel                                 |              | 2300                                      | 2300          | 2300           | 2800            | 2800                                      | 2800           | 3300           | 3300                                      | 3300           |
| Z軸行程 Z-axis travel                                 | mm           | 800                                       | 800           | 800            | 800             | 800                                       | 800            | 800            | 800                                       | 800            |
| 主軸鼻端至工作台面距離 Distance from spindlenose and to table | mm           | 200-1000                                  | 200-1000      | 200-1000       | 200-1000        | 200-1000                                  | 200-1000       | 200-1000       | 200-1000                                  | 200-1000       |
| 雙柱間距離 Distance between columns                     | mm           | 2100                                      | 2100          | 2100           | 2600            | 2600                                      | 2600           | 3100           | 3100                                      | 3100           |
| 工作台尺寸(長*寬) Work table size (L x W)                 | mm           | 4000 X 1700                               | 5000 X 1700   | 6000 X 1700    | 4000 X 2100     | 5000 X 2100                               | 6000 X 2100    | 4000 X 2550    | 5000 X 2550                               | 6000 X 2550    |
| 工作台T槽尺寸 T slot size of worktable                   | mm           | (寬Wide)22*(距Pitch)210*7                   |               |                |                 | (寬Wide)22*(距Pitch)220*9                   |                |                | (寬Wide)22*(距Pitch)220*11                  |                |
| 工作台最大載重量 Max.worktable load                        | kg           | 10000                                     | 12000         | 14000          | 13000           | 15000                                     | 17000          | 18000          | 20000                                     | 22000          |
| 主軸馬達(連續30分鐘) Spindle motor (Cont./30min)           | HP           | 30/25 (35/30 選購 Optional)                 |               |                |                 | 25/30 (30/35 選購 Optional)                 |                |                | 30/25 (30/35 選購 Optional)                 |                |
| 主軸轉速 Spindle speed                                 | rpm          | 40-4500(6000選購 Optional) Gear box         |               |                |                 | 40-4500(6000選購 Optional)                  |                |                | 40-4500(6000選購 Optional)                  |                |
| 主軸轉速變換 Spindle speed variation                     |              | H/L、液壓變速                                  |               |                |                 | H/L、液壓變速                                  |                |                | H/L、液壓變速                                  |                |
| 主軸內錐孔 Spindle taper                                |              | BT50 (ISO50)                              |               |                |                 | BT50 (ISO50)                              |                |                | BT50 (ISO50)                              |                |
| 快速進給速率X、Y軸 Rapid traverse (X/Y axis)               | mm/min       | 10000-Box Way                             |               | X:8000 Y:10000 | X:10000 Y:10000 | X:10000 Y:10000                           | X:8000 Y:10000 | X:8000 Y:10000 | X:8000 Y:10000                            | X:8000 Y:10000 |
| 快速進給速率Z軸 Rapid traverse Z axis                     | mm/min       | 10000-Box Way                             |               |                |                 | 10000-Box Way                             |                |                | 10000-Box Way                             |                |
| 切削進給速度 Cutting feedrate                            | mm/min       | I-5500                                    |               |                |                 | I-5500                                    |                |                | I-5500                                    |                |
| X、Y、Z伺服馬達 FANUC-X.Y.Z.servo motor                  |              | α30, α30, α30                             | α30, α30, α30 | α40, α30, α30  | α40, α30, α30   | α40, α30, α30                             | α40, α30, α30  | α40, α30, α30  | α40, α30, α30                             | α50, α30, α30  |
| X、Y、Z伺服馬達 MITSUBISHI- X.Y.Z.servo motor            |              | HA300,300,300                             | HA300,300,300 | HA700,300,300  | HA700,300,300   | HA700,300,300                             | HA700,300,300  | HA700,300,300  | HA700,300,300                             | HA900,300,300  |
| 刀庫容量 ATC Tool magazine                             | pcs          | 32 ( 40-60 選購 Optional)                   |               |                |                 | 32 ( 40-60 選購 Optional)                   |                |                | 32 ( 40-60 選購 Optional)                   |                |
| 最大刀具直徑(滿刀/鄰刀空) Maximum tool Dia (All pockets full) | mm           | Ø125, Ø250                                |               |                |                 | Ø125, Ø250                                |                |                | Ø125, Ø250                                |                |
| 最大刀具長度 Maximum tool length                         | mm           | 350                                       |               |                |                 | 350                                       |                |                | 350                                       |                |
| 最大刀具重量 Maximum tool weight                         | kg           | 18                                        |               |                |                 | 18                                        |                |                | 18                                        |                |
| 刀具選刀方式 Tool selection                              |              | 任意刀號儲存系統 Random tool change system        |               |                |                 | 任意刀號儲存系統 Random tool change system        |                |                | 任意刀號儲存系統 Random tool change system        |                |
| 刀柄 Tool holder                                     |              | BT50 (ISO50)                              |               |                |                 | BT50 (ISO50)                              |                |                | BT50 (ISO50)                              |                |
| 拉力螺栓 Pull stud                                     |              | MAS403P50T-I、(45°) DIN69872 (選購 Optional) |               |                |                 | MAS403P50T-I、(45°) DIN69872 (選購 Optional) |                |                | MAS403P50T-I、(45°) DIN69872 (選購 Optional) |                |
| 換刀時間 Tool changing time                            | sec          | 4                                         |               |                |                 | 4                                         |                |                | 4                                         |                |
| 需求電力 Electrical Power Supply                       |              | 55KVA, AC220V, 3相 phase, 60Hz             |               |                |                 | 60KVA, AC220V, 3相 phase, 60Hz             |                |                | 65KVA, AC220V, 3相 phase, 60Hz             |                |
| 氣壓需求 Air Source                                    | kg/cm2       | 5 以上 above                                |               |                |                 | 5 以上 above                                |                |                | 5 以上 above                                |                |
| 液壓油箱容量 Hydraulic oil capability                    | Liter        | 250、(5hp、pump)                            |               |                |                 | 250、(5hp、pump)                            |                |                | 250、(5hp、pump)                            |                |
| 潤滑油箱容量 Lubricator oil capability                   | Liter        | 20                                        |               |                |                 | 20                                        |                |                | 20                                        |                |
| 切削液箱容量 Cutting fluid box capacity                  | Liter        | 900                                       |               |                |                 | 1000                                      |                |                | 1000                                      |                |
| 佔地面積 Floor space                                   | 長度 Length/mm | 11500                                     | 13500         | 15500          | 11500           | 13500                                     | 15500          | 11500          | 13500                                     | 15500          |
| 寬度X高度 Machine W*H(max~mine)                        | mm           | 4285X3295/4095、(最高highest/最低lowest)       |               |                |                 | 5600X3295/4095、(最高highest/最低lowest)       |                |                | 6100X3295/4095、(最高highest/最低lowest)       |                |
| 機器淨重 Machine net weight                            | kg           | 28500 (約)                                 | 32000 (約)     | 35500 (約)      | 34100 (約)       | 38000 (約)                                 | 41000 (約)      | 40500 (約)      | 46500 (約)                                 | 52500 (約)      |

●本規格僅供參考，如須選購附件，以設計圖及契約為準。The present specifications for reference only, such as the need to purchase accessories, to design and the contract shall prevail.

◎另有機器規格 Are available DS2507, DS2508, DS2509

◎另有機器規格 Are available DS3507, DS3508, DS3509

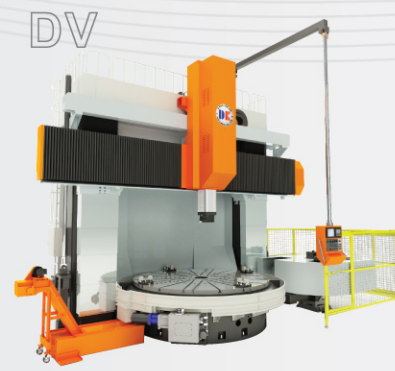
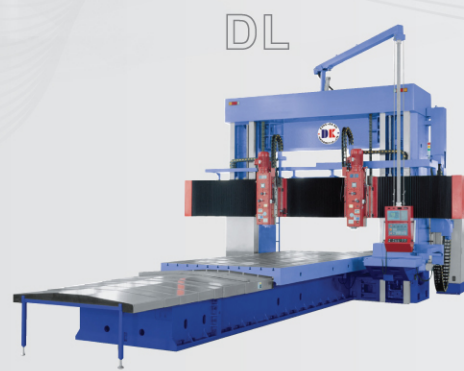
Standard accessories

- 1. Spindle temperature control system
- 2. Spindle lubrication monitoring device
- 3. Spindle H/L gear box
- 4. Protection mechanism for three axes
- 5. Galvanized telescopic cover for X axis
- 6. Centralized automatic lubricating system
- 7. Cutting fluid system
- 8. Cooling water nozzle
- 9. Y axis slideway dust cover.
- 10. Foot-paddle automatic tool release switch
- 11. MPG
- 12. Working lamp
- 13. Program ending & warning light
- 14. RS-232 Interface
- 15. Screw type chip conveyor
- 16. Adjustment-use hand tool (one set)
- 17. Technique manual

Optional accessories

- 1. Full-closed splash guard
- 2. Spindle speed 6000~8000(Pulley) rpm
- 3. Heidenhain Digital scale
- 4. Tool magazine capacity: 40, 60 tools
- 5. Manual type Angular head
- 6. Angular head with Air power drawbar
- 7. Manual type universal milling head
- 8. Chip cart
- 9. CTS system
- 10. TS-27R Auto- tool length measurement system
- 11. MP10 Auto-workpiece measurement system
- 12. Rotary table





## 鼎冠機械股份有限公司

**DING-KOAN MACHINERY CO., LTD**

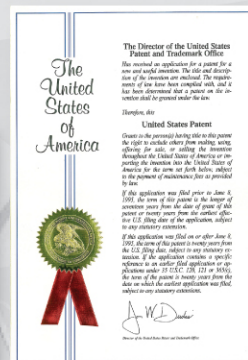
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Clean energy is the only way  
to preserve earth  
Let us work together

