



**HIGH SPEED DOUBLE COLUMN MILLING MACHINE
HIGH SPEED DOUBLE COLUMN MACHINING CENTER**

DM SERIES

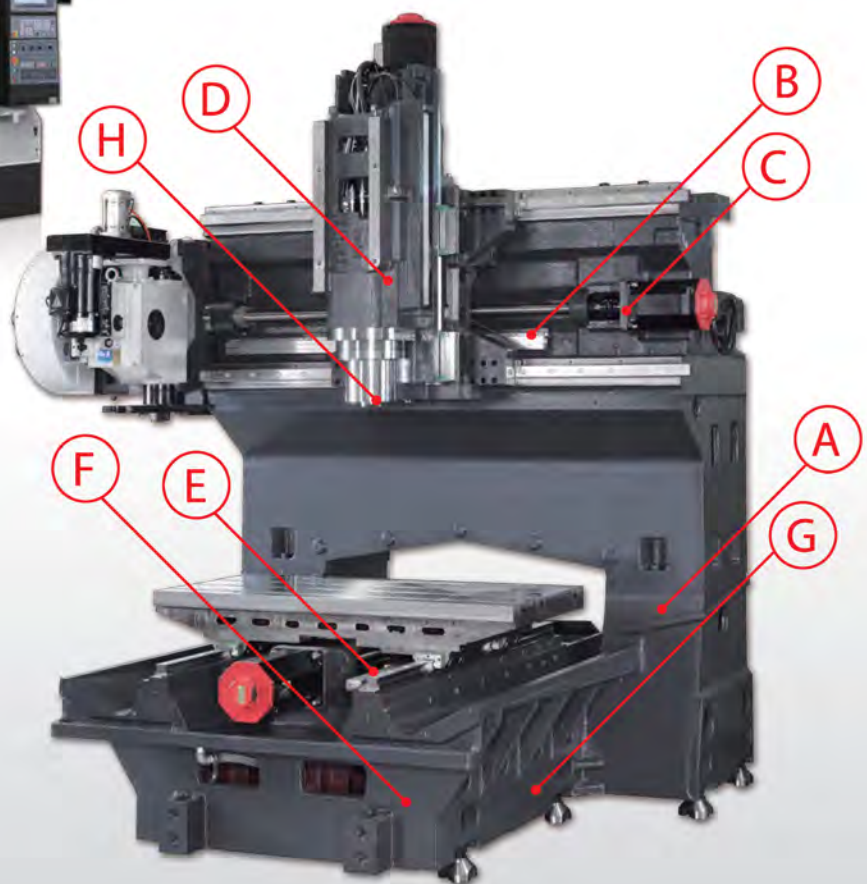
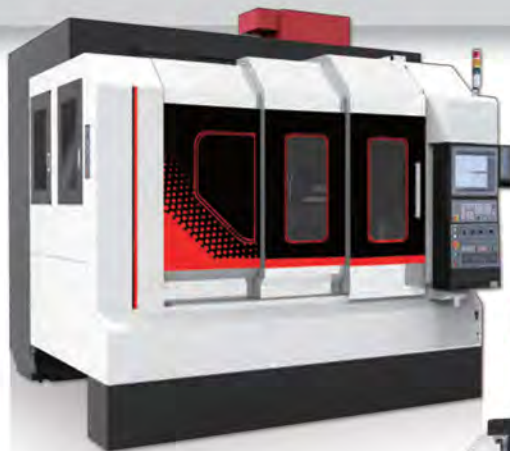


DM-560 / 1100

HIGH SPEED DOUBLE COLUMN MILLING CENTER HIGH SPEED DOUBLE COLUMN MACHINING CENTER

FEATURES

- A:** With thermal symmetry structure, machine columns and base can effectively improve machining accuracy and avoid thermal deformation.
- B:** Linear scales of 3 axes adopt the closed-loop control system which can perform high-precision positioning and contour machining.
- C:** The three-axis feed system adopts one-piece design which can enhance positioning accuracy and reach high acceleration and deceleration when machining.
- D:** Z-axis is designed with the short throat to shorten the distance between linear guideway and spindle and reach to great accuracy and rigid.
- E:** The adoption of imported high load linear guideway can ensure dynamic accuracy and extend lifetime.
- F:** Through FEM analysis, the enhanced machine structure provides great cutting rigidity and effectively avoids cutting flutter to ensure machining accuracy.
- G:** Castings are produced with stress relief and aging treatment which can avoid deformation and meet the requirements of accuracy.
- H:** The advantages of built-in type spindle are high rotating speed and low vibration which can improve machining efficiency.



DM-1300 / 1800 / 2300

HIGH SPEED DOUBLE COLUMN MILLING CENTER HIGH SPEED DOUBLE COLUMN MACHINING CENTER

OPTIMIZED SPINDLE (BUILT-IN TYPE)

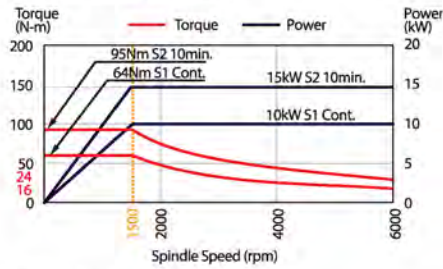
- Spindle is produced with high-rigidity bearings of which diameter are $\varnothing 70\text{mm}$.
- The motor of built-in type spindle is high speed and high precision, and the output is 25/29kW.
- Under long-term manufacturing, it has great suppression effects on vibration and thermal displacement, and can maintain good dimensional tolerance and shape accuracy.



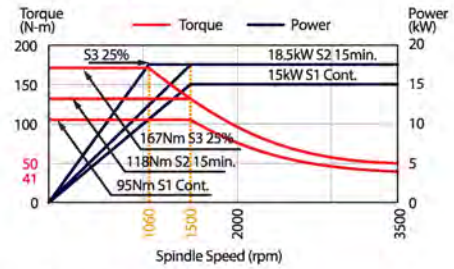
DM-560, DM-1100

/ SPINDLE POWER-TORQUE DIAGRAM

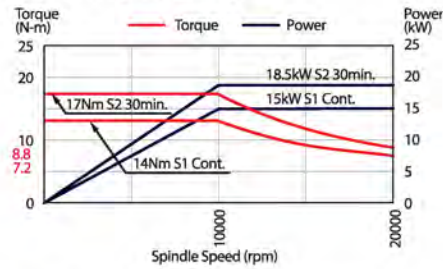
• Royal 20000 RPM (Low Winding)



• Royal 15000 RPM (Low Winding)



• Royal 20000 RPM (High Winding)



• Royal 15000 RPM (High Winding)



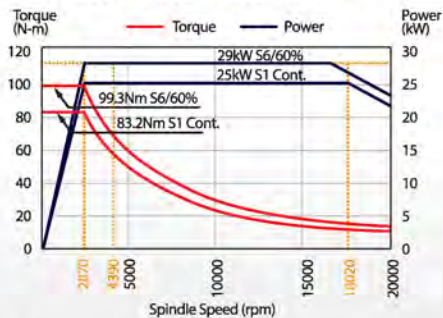
/ BUILT-IN TYPE SPECIFICATION (WITH FANUC)

| | | | |
|----------------------------|-----|------------------------|------------------------|
| Rated Power (S1/S2) | kW | 15/18.5 | 18.5/22 |
| Rated Torque (S1/S2 or S3) | N-m | 64/95 | 95/167 |
| Rated Speed | rpm | 1500 | 1500 |
| Max. Speed | rpm | 20000 | 15000 |
| Bearing Diameter | mm | Front: ø70 / Back: ø65 | Front: ø70 / Back: ø65 |
| Tool Interface | | BBT40 | |
| Bearing Lubrication | | Oil-air | |
| Motor | | Synchronous | |
| Motor Cooling | | Oil | |

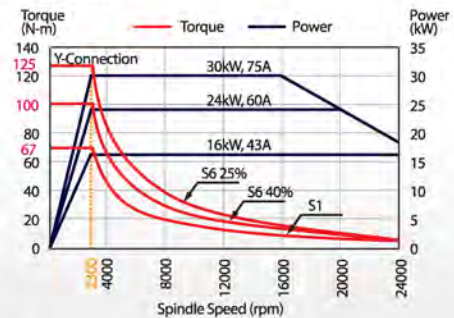
DM-1300, 1800, 2300

/ SPINDLE POWER-TORQUE DIAGRAM

• Taiwan Brand 15000 / 18000 / 20000 RPM



• Kessler 24000 RPM



/ BUILT-IN TYPE SPECIFICATION (WITH SIEMENS / HEIDENHAIN)

| | | | | | |
|--------------------------|-----|------------------------|------------------------|------------------------|------------|
| Rated Power (S1/S3 40%) | kW | 25/29 | 25/29 | 25/40 | 16/24/30 |
| Rated Torque (S1/S3 40%) | N-m | 83.2/99.3 | 83.2/99.3 | 87/135 | 67/100/125 |
| Rated Speed | rpm | 2870 | 2870 | 2800 | 2300 |
| Max. Speed | rpm | 15000 | 18000/20000 | 20000 | 24000 |
| Bearing Diameter | mm | Front: ø70 / Back: ø60 | Front: ø70 / Back: ø60 | Front: ø80 / Back: ø55 | ø70 |
| Tool Interface | | HSK A63 | | | |
| Bearing Lubrication | | Grease | | Oil-air | |
| Motor | | Asynchronous | | | |
| Motor Cooling | | Water with Additive | | | |

OPTIONAL ACCESSORIES

/ ATC SYSTEM

- With hardware limit position, the built-in type ATC can move to 2nd reference point rapidly. To prevent chips damaging tools, ATC system moves to the outside of machining area while the machine is operating.

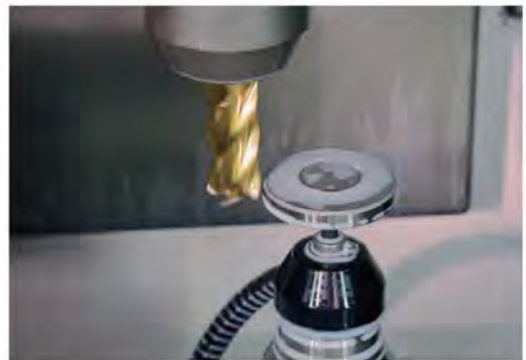
The chuck is made of the plastic composite which can clamp tools stably and protect spindle and turret when improper tool change happened. ATC can run smoothly, quietly and operate under precise position with the use of cam type motor-driven system.



/ TOOL MEASURING INSTRUMENT

- The integral system can reach to high accuracy of inspection. The minimum tool diameter of measurable is 50 μ m and the repeatability accuracy is 0.5 μ m. The level of protection is IP68, which can prevent cutting fluid from splashing and efficiently avoid chips damage.

The measuring instrument adopts stably movable stage which is placed outside of machining area to prevent chips damaging the instrument and extend lifetime.



FULL STRICT TESTS FOR QUALITY ASSURANCE



/ 3D PROBE SYSTEM
QUALITY ASSURANCE
(CMM)



/ LASER INSPECTION



/ 3D CIRCULAR BALL
MILLING

High Speed Double Column Machining Center • DM Series

| / Model | | DM-560 | DM-1100 | DM-1300 | DM-1800 | DM-2300 |
|---|-------------------------------|---|----------|-------------------------------|--------------|---------|
| / Travel | | | | | | |
| X-axis | mm | 560 | 1100 | 1300 | 1800 | 2300 |
| Y-axis | mm | 460 | 610 | 1000 | 1300 | |
| Z-axis | mm | 460 | 460 | 700 | | |
| Rapid Travel Rate (X / Y / Z) | m/min | 40 / 40 / 32 | | | 20 / 20 / 20 | |
| Cutting Rate | m/min | 32 | | | 20 | |
| Distance From Spindle Nose to Table Surface | mm | 150 - 610 | | | 125 - 825 | |
| Distance Between Two Columns | mm | 860 | 1400 | 1500 | | |
| / Table | | | | | | |
| Table Dimension (X) | mm/mm | 760 | 1250 | 1300 | 2000 | 2500 |
| Table Dimension (Y) | mm/mm | 460 | 610 | 1000 | 1300 | |
| T-slots Size×Number×Pitch | mm | 3×18×150 | 5×18×125 | 7×18×125 | 8×22×160 | |
| Max. Loading Capacity | kg | 500 | 1000 | 2000 | 4000 | 5000 |
| / Spindle | | | | | | |
| Spindle Speed | rpm | 15000 / 20000 | | 15000 / 18000 / 20000 / 24000 | | |
| Spindle Motor Output (Continuous / 30 mins) | kW | (14 / 18.9 / 22) / (25 / 29) / (25 / 29) / (25 / 29) / (16 / 24 / 30) | | | | |
| Spindle Rated Torque | Nm | (74 / 100 / 116.8) / (82.5 / 99.3) / (82.5 / 99.3) / (82.5 / 99.3) / (67 / 100 / 125) | | | | |
| Spindle Tool Interface | | BBT-40 | | HSK A63 | | |
| / ATC System | | | | | | |
| Tool Magazine Capacity | tools | 20 / 32 | | 16 / 24 / 32 / 40 | | |
| Tool Diameter (with adjacent tools) | mm | Ø90 | | Ø35 | | |
| Max. Tool Diameter | mm | Ø125 | | Ø35 | | |
| Max. Tool Length | mm | 300 | | 220 | | |
| Max. Tool Weight | kg | 8 | | 7 | | |
| / Controller | | | | | | |
| Controller Model | | Siemens 840D SL / Siemens 820D / Fanuc / Heidenhain | | | | |
| / Accuracy | | | | | | |
| Positioning Accuracy (JIS 6338) | mm | ±0.01 Full Travel | | ±0.015 Full Travel | | |
| Positioning Accuracy (VDI 3441) | mm | P 0.02 | | | | |
| Repeatability Accuracy (JIS 6338) | mm | ±0.003 | | | | |
| Repeatability Accuracy (VDI 3441) | mm | Ps=0.015 | | | | |
| / Others | | | | | | |
| Power Supply | kVA | 35 | 45 | 55 | | |
| Compressed Air Supply | kg/cm ² | 6 | | | | |
| Length | mm | 2739 | 2750 | 4080 | 5565 | 6565 |
| Width | mm | 1979 | 2611 | 3900 | 3236 | |
| Height | mm | 2742 | 2837 | 4150 | 4150 | |
| Net Weight | Kg | 6000 | 9000 | 16500 | 18500 | 20000 |
| / Standard Accessories | | | | | | |
| Coolant Unit | Air Gun & Coolant Gun | Air Blast Function for Workpiece (M07) | | ATC Automotive Door | | |
| Spindle Blast | M30 Auto Power Off | RS232 Interface & Port & Cable (10M) | | Rigid Tapping Function | | |
| Tool Box | Dual Screw Type Chip Conveyor | Spindle Oil Mist Lubrication (Except 15000 rpm) | | Movable MPG Hand Wheel | | |
| USB Interface | Lift-up Type Chip Conveyor | Foot Pedal for Manual Tool Release | | Tri-color Status Light | | |
| Working Light | 3 Axes Linear Scale | Operation & Maintenance Manual | | Leveling Bolts & Pads | | |
| / Optional Accessories | | | | | | |
| Oil-mist Collector | Auto Workpiece Measurement | Auto Tool Length & Diameter Measurement | | | | |

Mighty Viper reserves the right to modify the specifications without further notice.

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