Accessories	HCMC-1100	HCMC-1365	HCMC-1370	HCMC-1682	HCMC-2082	HCMC-2110
Item						
1. Full Enclosure	●	●	●	●	●	●
2. Coolant System	●	●	●	●	●	●
3. Pressure-Release Lubrication System	●	●	●	●	●	●
4. Dual-Side Chip Conveyor in Machine Base	○	●	●	●	●	●
5. Coolant Tank	●	●	●	●	●	●
6. Operation Manual and Electrical Drawings	●	●	●	●	●	●
7. LED Work Light ×1	●	●	●	●	●	-
8. Spindle Air Blow System	●	●	●	●	●	●
9. Foundation Bolts and Leveling Pads	●	●	●	●	●	●
10. Portable Manual Pulse Generator (MPG)	●	●	●	●	●	●
11. Electrical Cabinet Air-to-Air Heat Exchanger	●	●	●	●	●	●
12. Automatic Power-Off Function	●	●	●	●	●	●
13. Machining Complete Indicator Light	●	●	●	●	●	●
14. RS-232 Interface	●	●	●	●	●	●
15. Tool Kit	●	●	●	●	●	●
16. Suspended Operator Panel	-	●	●	●	●	●
17. Spindle Ring Coolant System	●	●	●	●	●	●
18. LED Work Lights ×2	○	○	○	○	○	●
19. #50 Drum-Type Tool Magazine	○	○	●	●	●	●
20. Spindle Oil Cooler	●	●	●	●	●	●
21. 20 Bar Through-Spindle Coolant (Without Coolant Cart)	○	○	○	○	○	○
22. 25 Bar Through-Spindle Coolant (With Coolant Cart)	○	○	○	○	○	○
23. Through-Spindle Coolant System	○	○	○	○	○	○
24. Linear Scale System	○	○	○	○	○	○
25. Automatic Tool Length and Diameter Measurement System	○	○	○	○	○	○
26. Oil Mist Collector	○	○	○	○	○	○
27. NC Rotary Table	○	○	○	○	○	○
28. DNC Software	○	○	○	○	○	○
29. 90° Angle Head	-	-	○	○	○	○
30. Chain-Type Chip Conveyor with Rolling Chip Bin	○	○	○	○	○	○
31. Automatic Workpiece Measurement System	○	○	○	○	○	○
32. Chip Flushing System	○	○	○	○	○	○
33. Coolant Wash Gun	○	○	○	○	○	○
34. Air Blow Gun	○	○	○	○	○	○
35. Oil Skimmer	○	○	○	○	○	○
36. Signal Tower Light	○	○	○	○	○	○

Standard ● Optional ○

Standard & Optional Electrical Functions

Hartrol / Standard	Hartnet / Optional	Electrical Function / Optional
• Workpiece Calibration by MPG Directly	• Management system of Utilizaion	• Lifting Function against gravity
• Tool Magazine Display	• Machining Time Countdown	• Retraction for Rigid Tapping
• Parameter Package	• Convenient File Transfer	• Intelligent MPG
• Threading Cutting (Only for 0i & 31i)		
• Monitoring of Tool Status(Only for 0i & 31i)		
• Special engraving		

Hartford

Hartrol · Smartcenter · Robocell

Only High-Quality Intelligent Machines

SHE HONG INDUSTRIAL CO., LTD.

No.3,Jingke N. Rd.,Nantung District,Taichung City, 40852 Taiwan(R.O.C)
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CAT.No.：20260720 - E26

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Website

Hartford

Vertical Machining Center

HCMC Series

HCMC-1100
HCMC-1365
HCMC-1370
HCMC-1682
HCMC-2082
HCMC-2110

▲ HCMC-1100

▲ HCMC-1365

▲ HCMC-1682

01 Workpiece Machining Applications

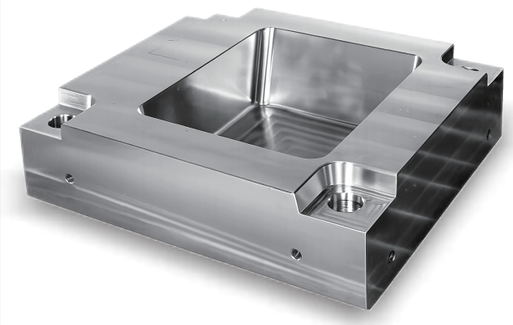
Engineered for Heavy-Duty Cutting Redefining Productivity in Precision Machining

The Super Tornado Series is designed to excel in heavy-duty machining and high-volume production. Its premium Meehanite cast iron construction and optimized high-rigidity structure provide exceptional stability, powerful cutting capability, and superior surface finish. From aggressive roughing to precision finishing, every machine is built to reduce cycle times and maximize manufacturing efficiency.

1

2

3



4

1 | 2
3 | 4

Aerospace

1 Honeycomb Structural Components

Machinery

2 Hydraulic Manifold Components

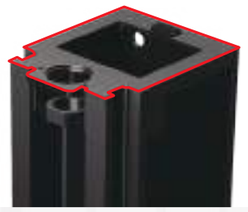
Mold

3 Plastic Injection Mold Bases
4 Automotive Engine Cover Molds

02 Machine Structure Features

Premium Meehanite Cast Iron Construction for Superior Vibration Damping, Strength, and Rigidity

Full-Travel Structural Support Design

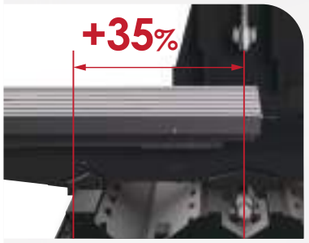


High-Rigidity Column Design

The column features a specially engineered box-type cross-section from top to bottom, ensuring cutting forces are evenly distributed throughout the structure. This design also enhances resistance to torsional deformation, maintaining machining accuracy even under heavy cutting loads.

Programmable Coolant Nozzle Opt.

Featuring 30 programmable spray positions (1°–45°), the nozzle automatically adjusts to match the selected tool, delivering coolant precisely to the cutting point for improved cooling, better chip evacuation, longer tool life, and higher machining efficiency.

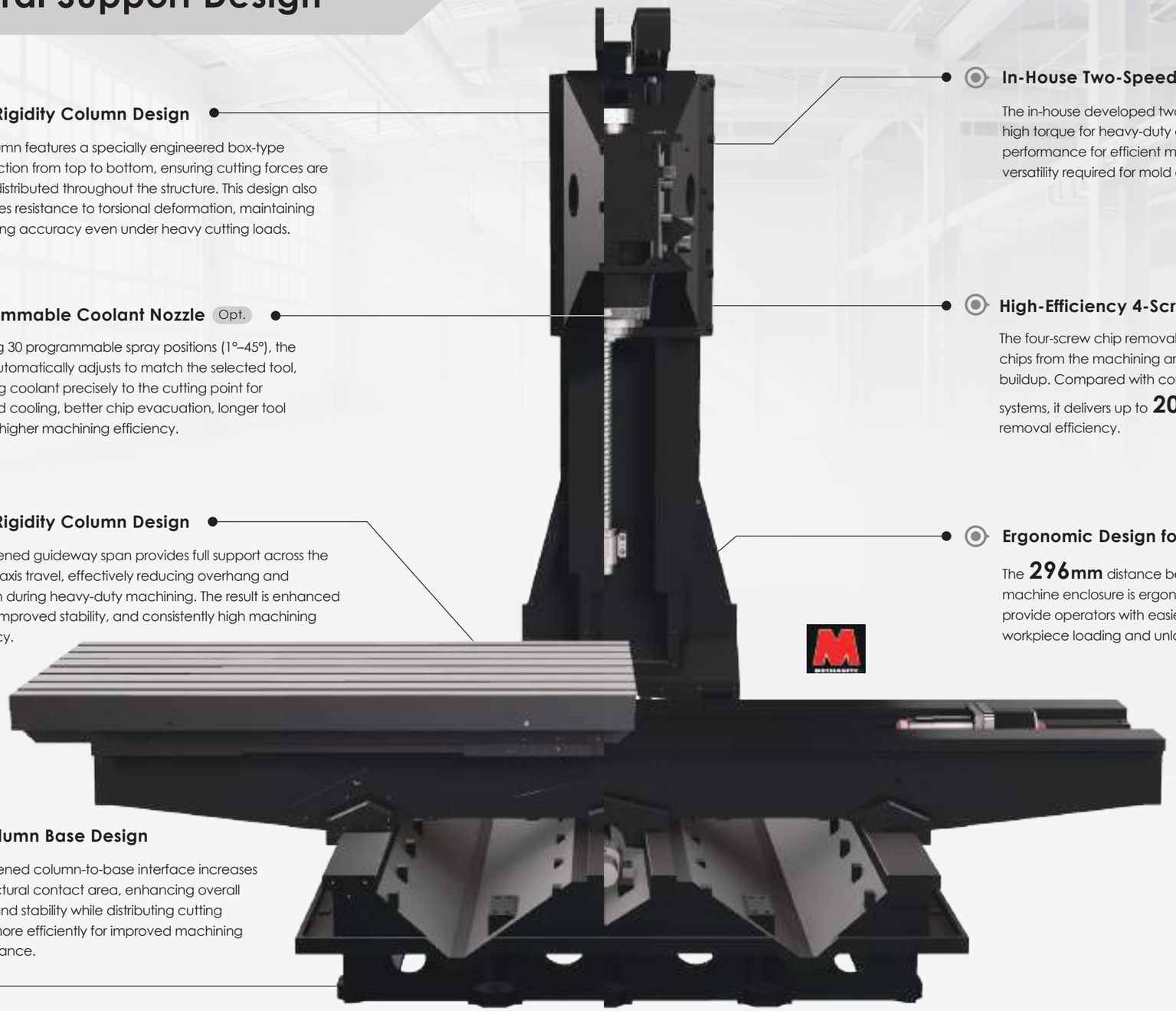


High-Rigidity Column Design

The widened guideway span provides full support across the entire X-axis travel, effectively reducing overhang and vibration during heavy-duty machining. The result is enhanced rigidity, improved stability, and consistently high machining accuracy.

A+ Column Base Design

The widened column-to-base interface increases the structural contact area, enhancing overall rigidity and stability while distributing cutting forces more efficiently for improved machining performance.

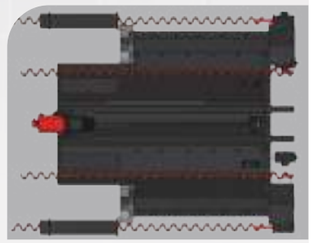


In-House Two-Speed Gearbox

The in-house developed two-speed gearbox delivers high torque for heavy-duty cutting and high-speed performance for efficient machining, providing the versatility required for mold and die applications.

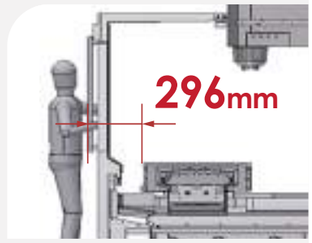
High-Efficiency 4-Screw Chip Removal

The four-screw chip removal system quickly removes chips from the machining area, minimizing chip buildup. Compared with conventional chip removal systems, it delivers up to **200%** higher chip removal efficiency.



Ergonomic Design for Easy Operation

The **296mm** distance between the worktable and machine enclosure is ergonomically designed to provide operators with easier and more convenient workpiece loading and unloading.



5 YEAR Warranty on Guideways for All Models

Warranty coverage will not apply under following conditions :

1.Improper operation(collision)

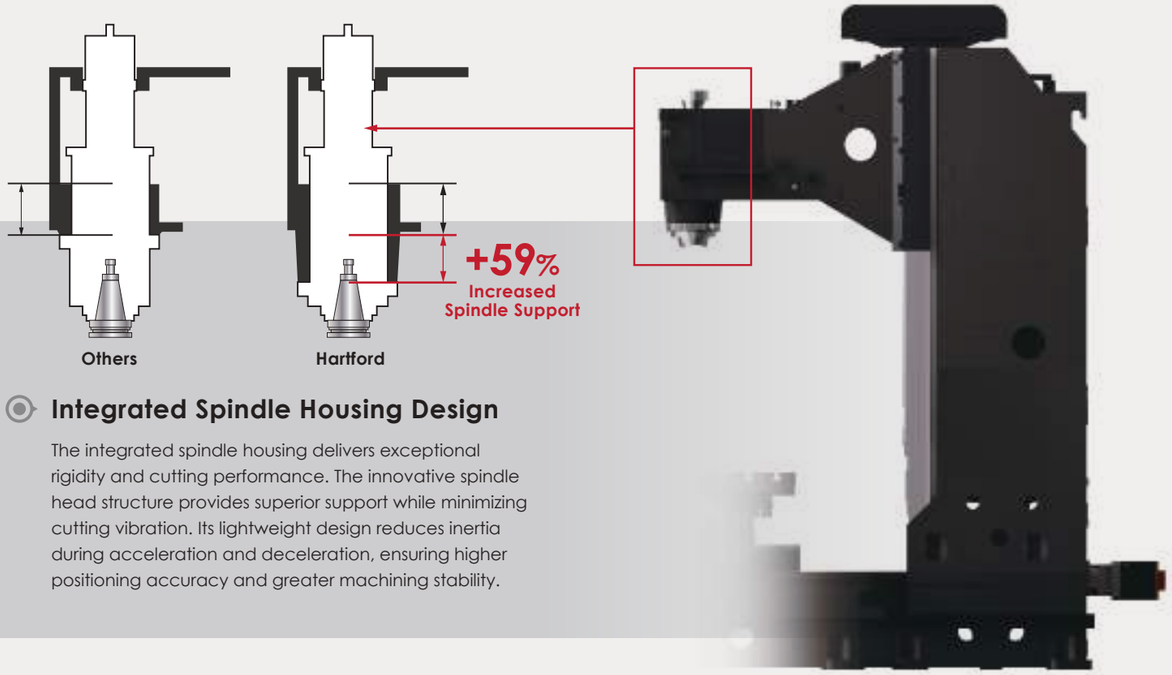
2.Lack of regular cleaningof accumulated debris causing damage to the linear rails &carriages.

Note : The illustration shown is the HCMC-1892 model.

02 Machine Structure Features

Rock-Solid Spindle Structure Elevating Heavy-Duty Cutting Performance

The Super Tornado Series features a precision-optimized spindle head design that provides exceptional spindle support, effectively absorbs cutting forces, and minimizes overhang-induced deflection to enhance machining rigidity and stability. The lightweight spindle head design also reduces inertia during acceleration and deceleration, delivering higher positioning accuracy and improved overall machining performance.



Integrated Spindle Housing Design

The integrated spindle housing delivers exceptional rigidity and cutting performance. The innovative spindle head structure provides superior support while minimizing cutting vibration. Its lightweight design reduces inertia during acceleration and deceleration, ensuring higher positioning accuracy and greater machining stability.

Gear-Driven 8,000rpm Spindle

- G0.4 Dynamic Balancing
- 5μm Spindle Runout
- 100% German FAG Bearings

The two-speed gear-driven spindle is precision-assembled and dynamically balanced to deliver outstanding machining performance. With spindle runout controlled to just 5 μm and premium German FAG bearings, it provides exceptional rigidity, stability, and accuracy for demanding mold & die and precision machining applications.

03 Smart Factory / Intelligent Automation

One unit capable of connectingup to 10 or 20 machines

Smart i-Factory System with Superbox (Opt.)

Through i-Factory, all machinery and equipment in the factory can be connected, and the machine connections are no longer limited to Hartford. Machines from other manufacturers can also be connected for real-time visualization and management. The system is composed of five key components: real-time monitoring, production planning, alert notifications, data analysis, and remote connectivity, allowing you to move away from traditional management models and embrace a simpler and more convenient approach to factory management.

Tailored one-to-many automation planning

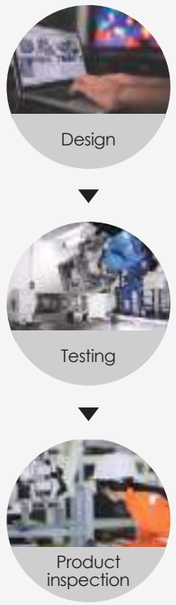
Intelligent Automated Production Line Unit (Opt.)

Customizing an automated factory just for you, effectively reducing costs and enhancing competitiveness.

Easy to get started
Hartford Robocell provides you a professional robot training and rich automation experience, to let you quickly learn and easily operate your automation systems.

Quality control monitoring
Automation systems have to pass all the strict Quality Control tests at every stage like design, assembly, testing, final inspection and shipment, complete quality control processes for all the products.

Professional analysis
Robocell Machining optimization service, to let you be on the top by using professional machining methods.



Detailed specifications please contact our sales staff.

Hartrol Premium

Hartford Smartcenter APPS

1 Automation & Smart Factory

- Autopilot V2 Package
- Real-time Monitor Package
- Efficiency Improvement Package
- Smart Lubrication System
- Machine Play – Smartphone Remote Operation
- Wireless Network Function (Wi-Fi)

2 Monitoring & Energy Management

- Real-time Monitor Package (CCD Monitor / IP Camera)
- Energy Monitoring

3 Tool Protection & Machining Stability

- Tool Protection Suite (TPS)
- AFC – Automatic Feed Control
- Rigid Tapping Automatic Learning

4 CNC Control & Operation Enhancement

- Handwheel Simulation Mode
- HP Level R1–R10 Parameter Package

5 High-Speed / High-Accuracy Machining

- SSS High-speed High-accuracy Control
- High-speed High-accuracy Control III (G5P20000)
- High Speed Milling

6 Programming & User Interface

- Conversational Programming (HCP)

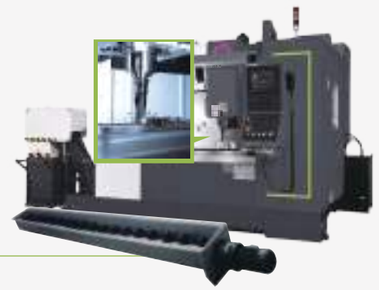
24 HR

Online Update System
Keep your operating system in optimal condition and stay up to date with the latest features from Hartford.

Hartford ZDT
Early warning before machine failure helps reduce unexpected downtime, minimizing productivity loss and cost.

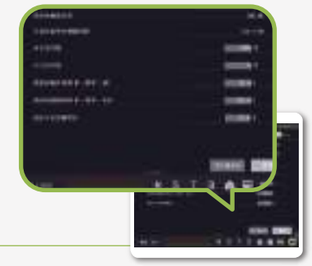
Chip Conveyor Opt.

Smart detection based on spindle current clears chips only when needed. The system runs on a 50% on/off cycle during cutting to save up to 50% motor power, and automatically reverses when chips build up to prevent overload and protect the conveyor.



Lubrication Opt.

The system smartly delivers oil based on machine and cutting conditions, saving up to 50% oil and reducing costs while supporting eco-friendly operation.

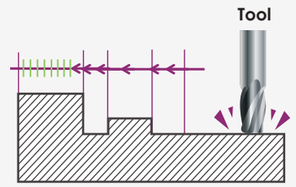


Position Opt.

When performing workpiece measurement with Hartrol Premium and Fanuc 15" IPC, operators can simply enter values through the intuitive guided interface—no need to memorize complex measurement commands, making the process effortless.

AFC Opt.

Spindle load monitoring allows users to set tool-specific load limits, boosting efficiency by up to 21% in heavy operations like face and side milling.

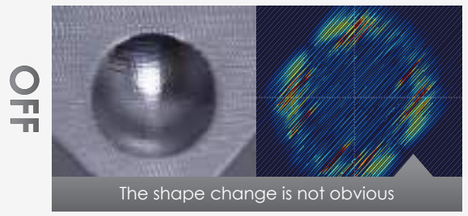


Eliminate interference and mechanical collision issues during the machining process

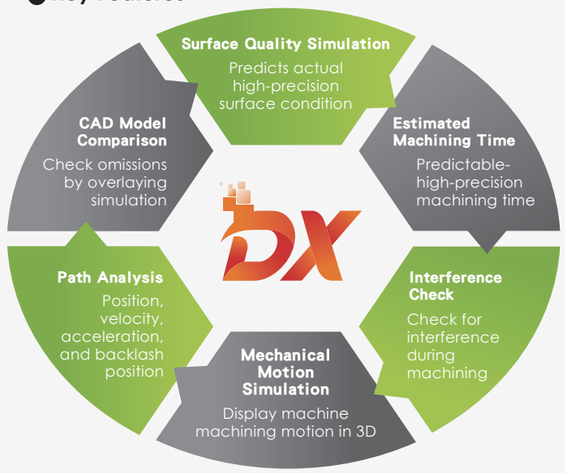
Digital Transformation (Opt.)

Digital Twin-NCVS software combines workpiece CAD, tools, and machine parameters to simulate the machining process in advance. It accurately reflects real conditions, going beyond traditional CAD/CAM by including machine data. The system verifies CNC parameter settings, analyzes part geometry and machine travel limits, and ensures alignment between programmed data and actual machine performance.. This helps prevent interference and collisions, ensuring safe, stable machining and better productivity.

▪ Simulation vs. Actual Machining Results



▪ 6 Key Features

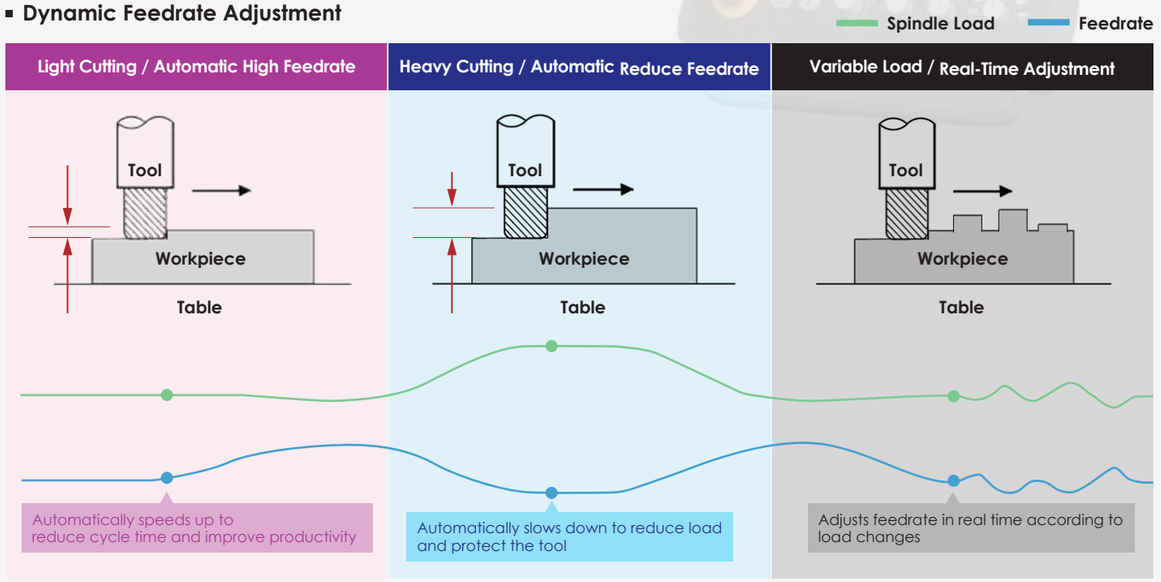


Built-in Spindle Overload Protection, Reduce Manual Monitoring and Labor Costs

Automatic Feedrate Control (Opt.)

AFC monitors spindle load in real time and automatically adjusts the feedrate based on cutting conditions, reducing feed during heavy cutting to protect the tool and increasing feed during light cutting to shorten machining time. Protection levels can be set for different tools, reducing manual Override adjustments while improving machining safety and efficiency. Actual applications can improve machining efficiency by approximately 18%–23%.

▪ Dynamic Feedrate Adjustment



05 Actual Cutting Tests / Spindle Torque Diagrams

Spindle type

- #40 Pulley 8000/10000/12000 rpm (HCMC-1100/1365)
- #40 Gear 6000/8000 rpm (HCMC-1100/1365)
- #40 DDS 10000/15000 rpm (HCMC-1100/1365)
- #50 Gear 4000 rpm (HCMC-1370/1682/2082/2110)
- #50 Gear 6000/8000 rpm
- #50 DDS 10000/12000 rpm

BBT for optional

- Dual contact between the taper and theflange
- Improves the rigidity, accuracy, speed and performance. Radial deflection, vibration and deviationare significantly reduced

Not suitable for DDS 20,000 rpm spindle

Optimized performance for speed and cutting efficiency

Model：HCMC-1100

- Spindle：6,000 rpm#50 Gear type15kw
- Cutting material：S45C

Face milling		End Milling		Tapping		Drilling	
Tool diameter	Ø125 mm	Tool diameter	Ø63 mm	Tool diameter	Ø42 mm	Tool diameter	Ø50 mm
Feed rate	1,800 mm/min	Feed rate	3,000 mm/min	Feed rate	315 mm/min	Feed rate	250 mm/min
Cutting depth	3 mm	Cutting depth	30 mm	Cutting depth	42 mm	Cutting depth	50 mm
Cutting width	100 mm	Cutting width	5 mm				
Cutting volume	540 cc	Cutting volume	450 cc				

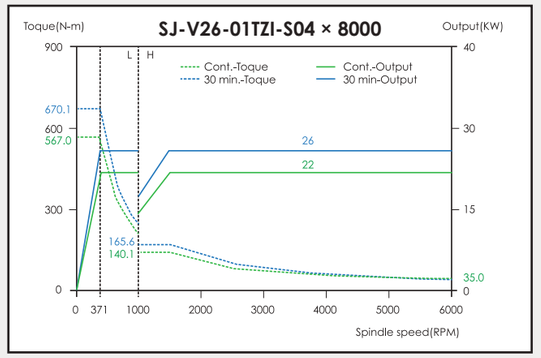
Model：HCMC-1682

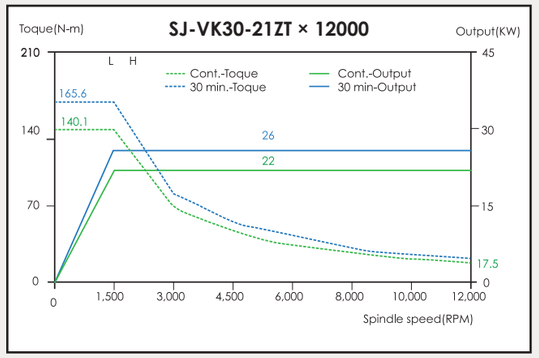
- Spindle：6,000 rpm#50 Gear type 26kw
- Cutting material：S45C

Face milling		End Milling		Tapping		Drilling	
Tool diameter	Ø125 mm	Tool diameter	Ø63 mm	Tool diameter	Ø42 mm	Tool diameter	Ø76 mm
Feed rate	1,800 mm/min	Feed rate	2,600 mm/min	Feed rate	315 mm/min	Feed rate	60 mm/min
Cutting depth	3 mm	Cutting depth	40 mm	Cutting depth	50 mm	Cutting depth	50 mm
Cutting width	100 mm	Cutting width	5 mm				
Cutting volume	540 cc/min	Cutting volume	520 cc/min				

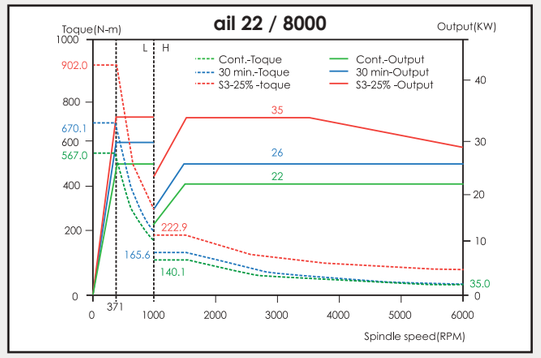
Spindle Torque Diagrams

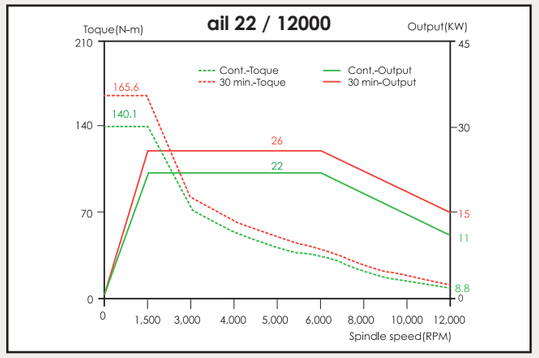
■ Mitsubishi



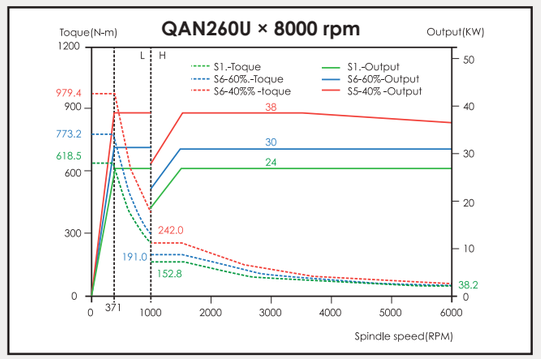


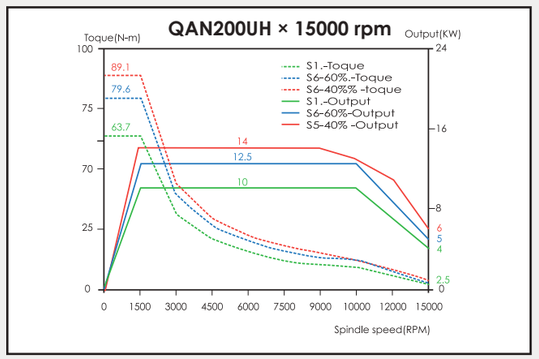
■ Fanuc





■ Heidenhain



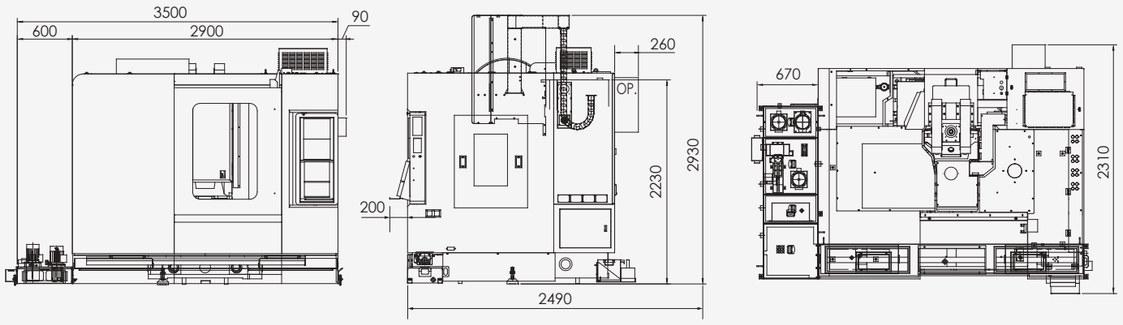


All the results featured in this calogue were produced under shich testing condilion in a special zed testing enviroment.
Under dfferent festing conditions and in less than ideal tesing environments. That the rest results vary fom those shown in this catalogue.

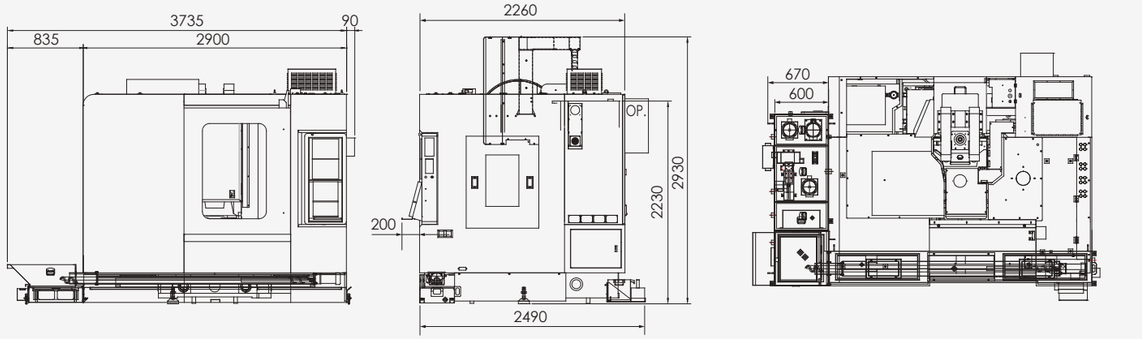
06 Machine Dimension

HCMC-1100

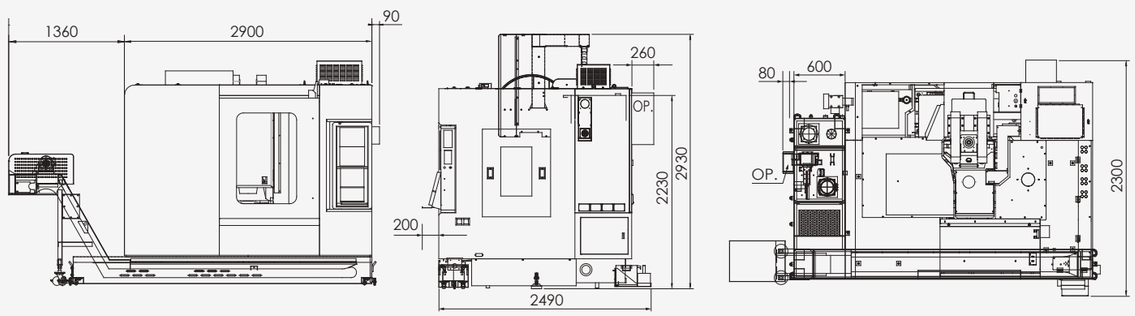
■ Chip Collecting Tank Type



■ Front Screw Type Chip Conveyor

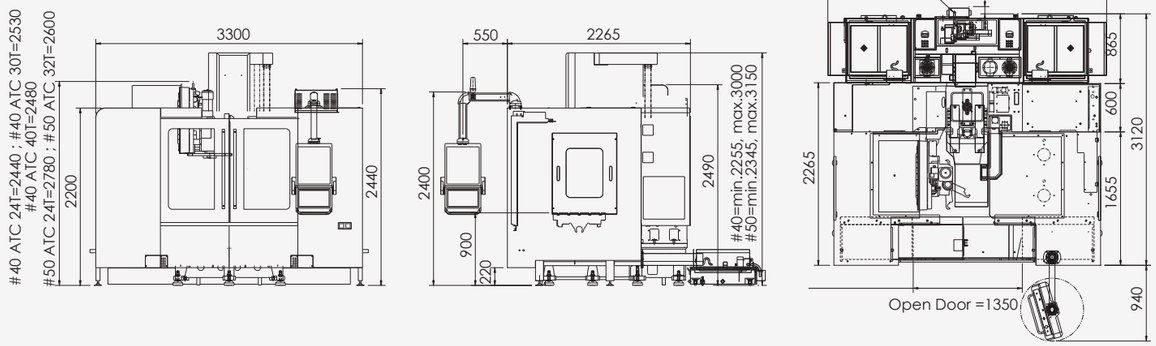


■ Link Type Chip Conveyorr

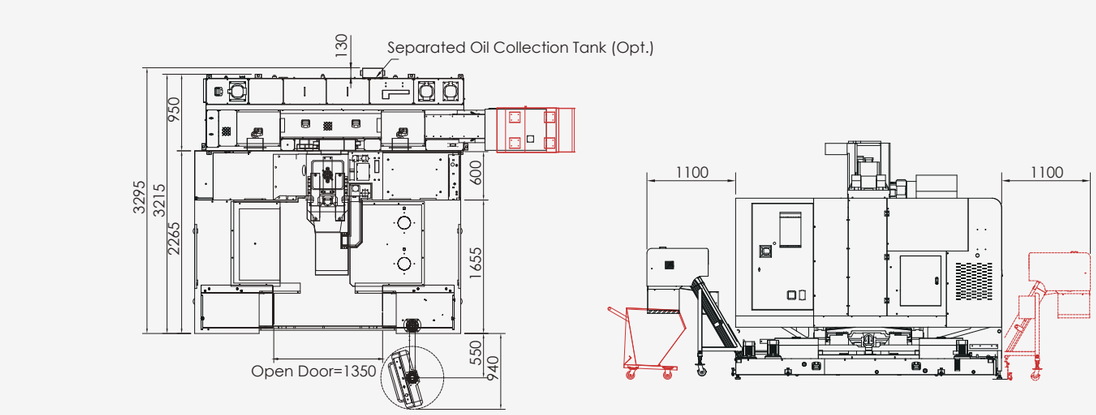


HCMC-1365

■ Two Side Chip Coolant Tank Type



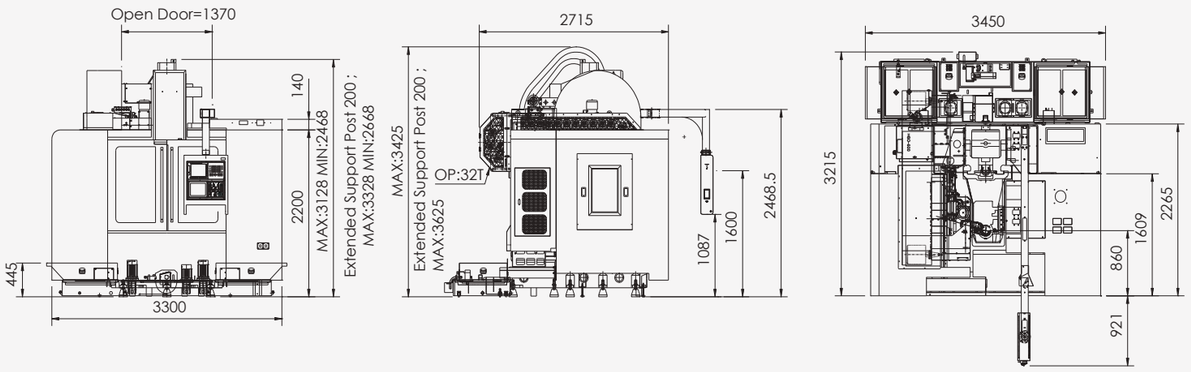
■ Link Type Chip Conveyor (Configurable for Left- or Right-Side Sorting)



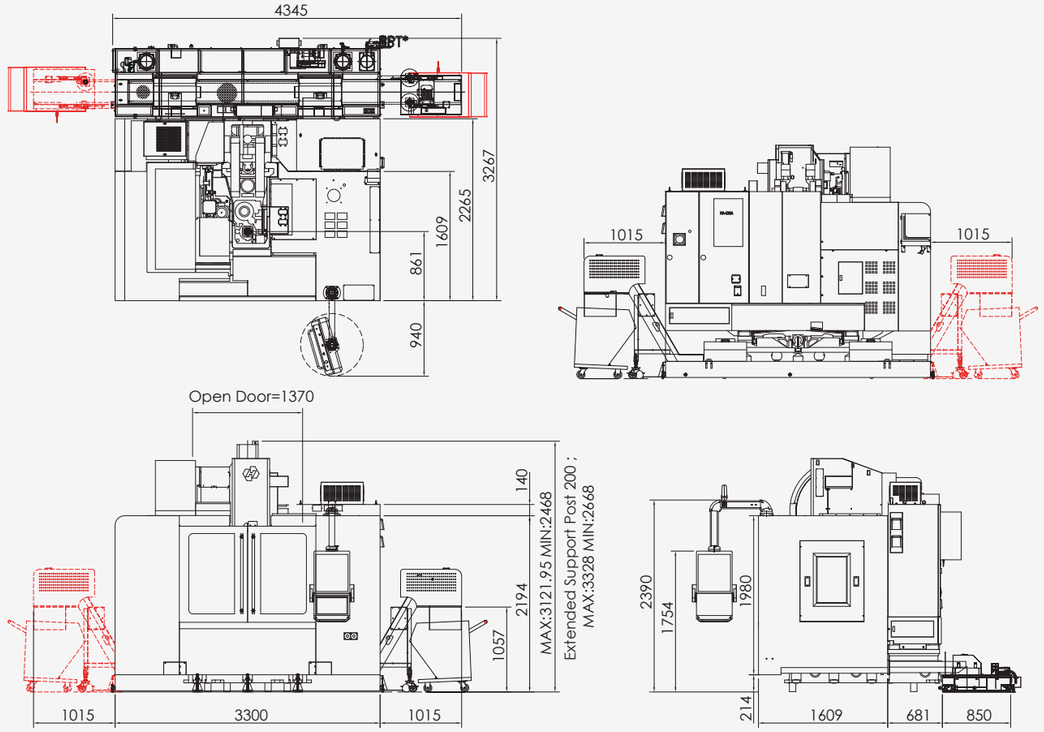
06 Machine Dimension

HCMC-1370

■ Two Side Chip Coolant Tank Type

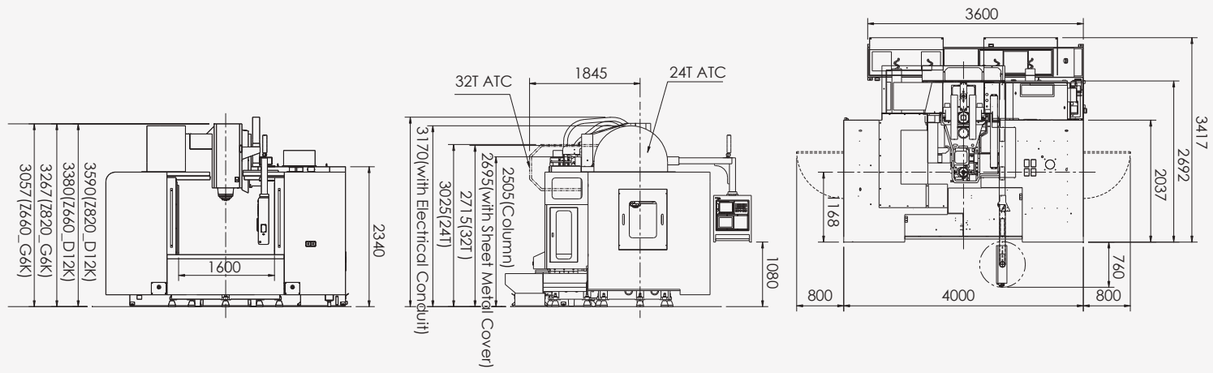


■ Link Type Chip Conveyor (Configurable for Left- or Right-Side Sorting)

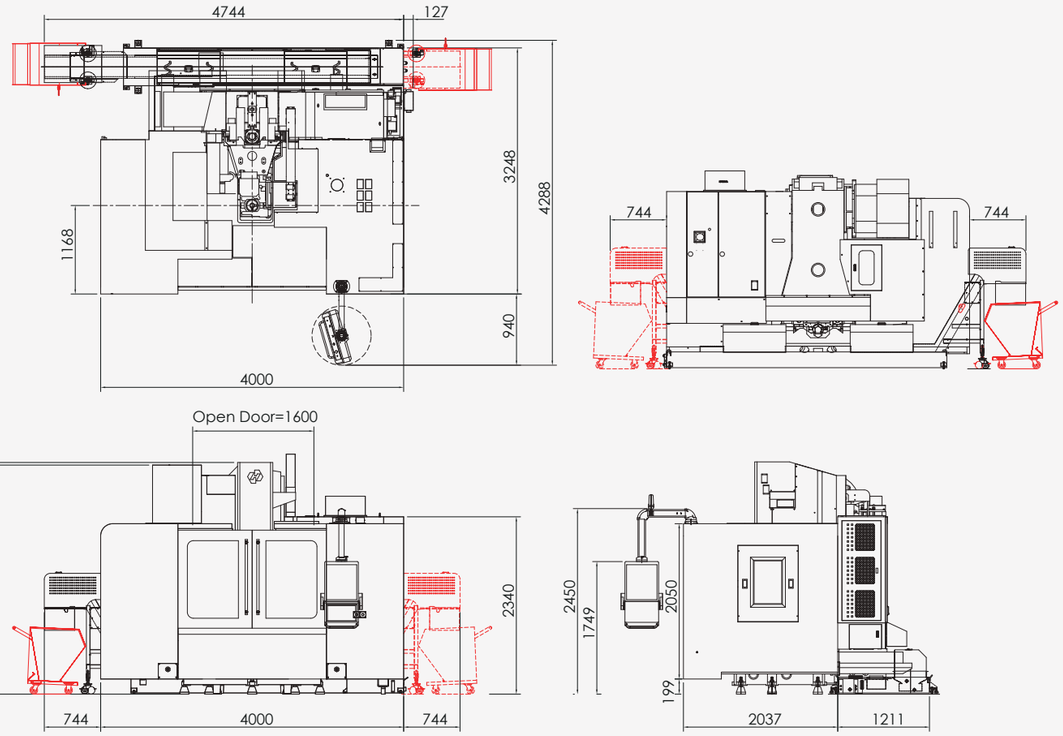


HCMC-1682

■ Two Side Chip Coolant Tank Type



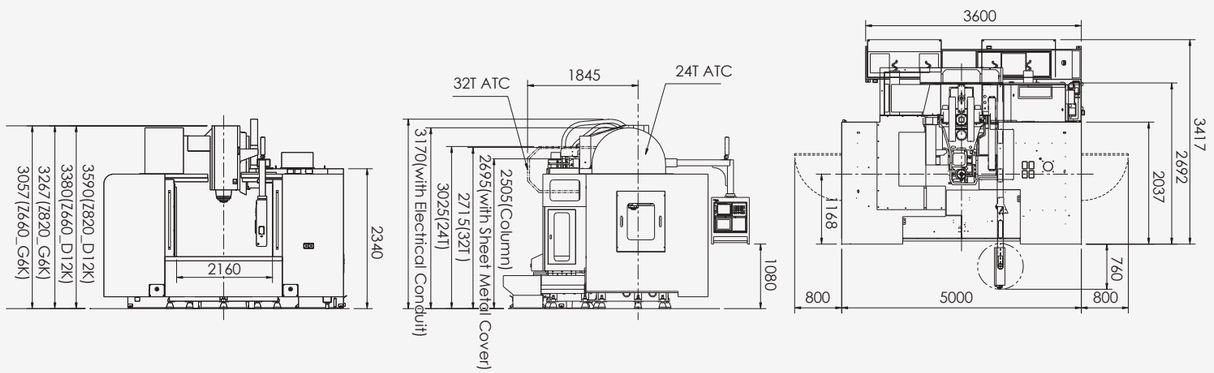
■ Link Type Chip Conveyor (Configurable for Left- or Right-Side Sorting)



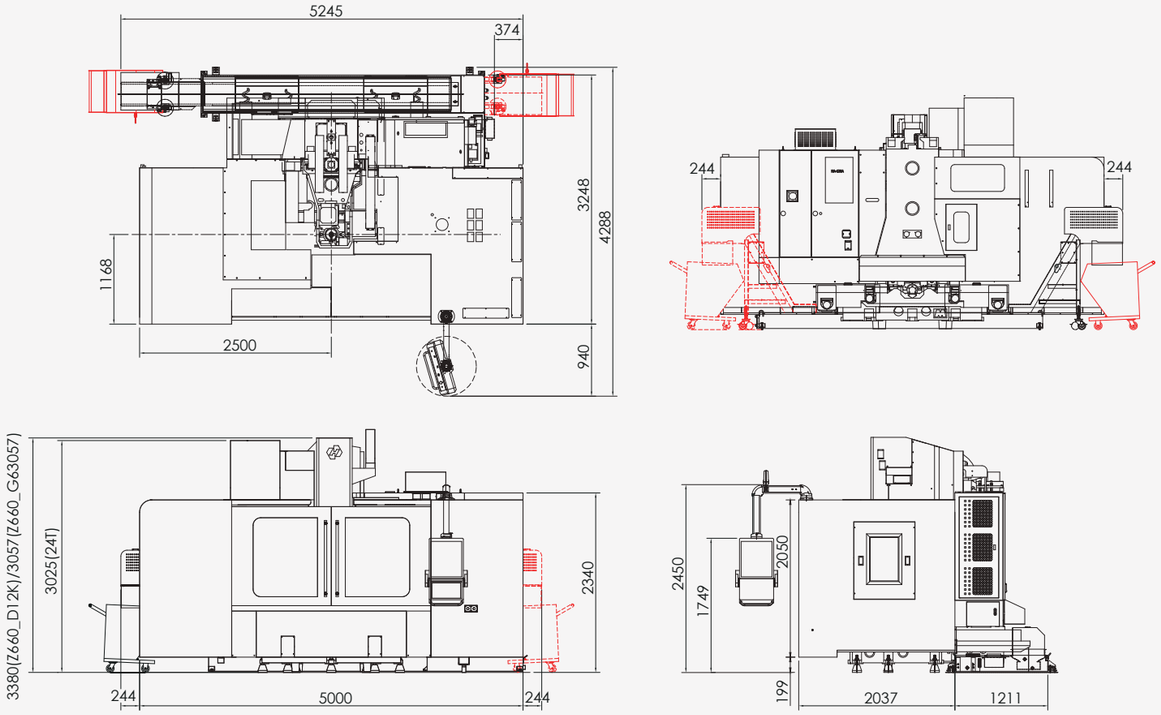
06 Machine Dimension

HCMC-2082

■ Two Side Chip Coolant Tank Type

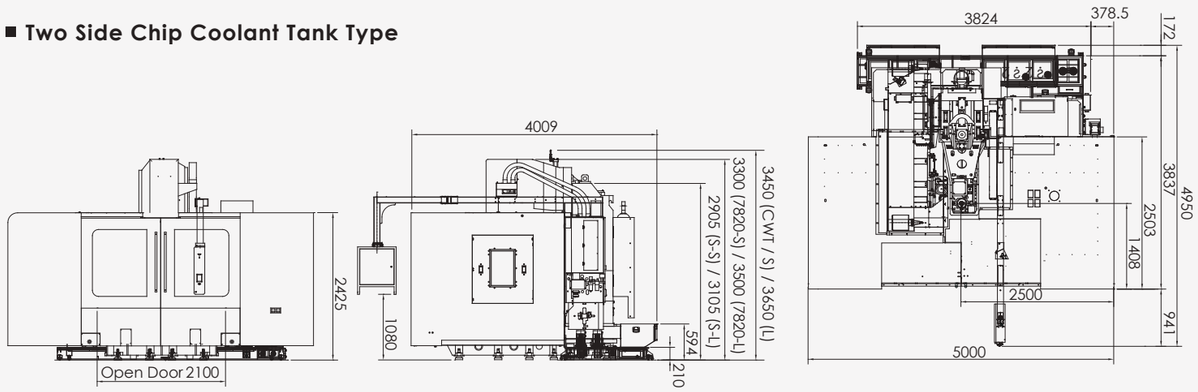


■ Link Type Chip Conveyor (Configurable for Left- or Right-Side Sorting)

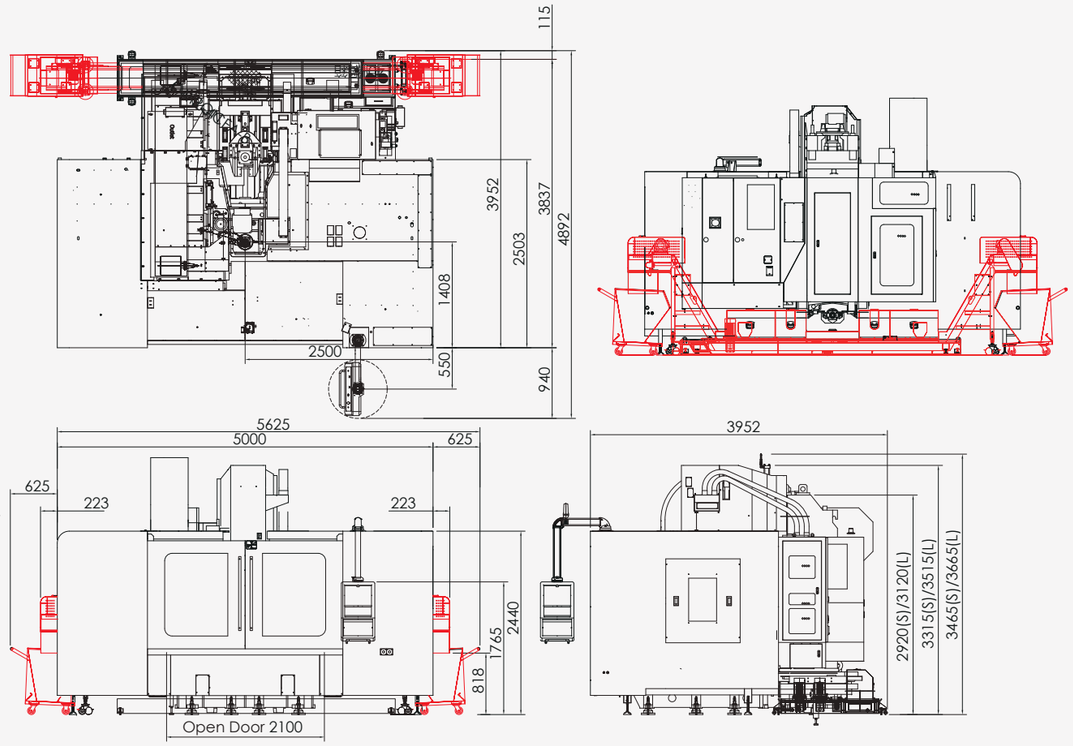


HCMC-2110

■ Two Side Chip Coolant Tank Type



■ Link Type Chip Conveyor (Configurable for Left- or Right-Side Sorting)



08 Machine Specifications

		Unit	HCMC-1100	HCMC-1365	HCMC-1370	HCMC-1682	HCMC-2082	HCMC-2110
Table	Working surface	mm	1270 x 600	1400 x 650	1450 x 700	1750 x 820	2150 x 820	2250 x 1020
	T-slot Width x pitch(number)	mm	18 x 120(5)	18 x 130(5)	18 x 130(5)	18 x 150(5)	18 x 150(5)	20 x 150(7)
	Max.load (Average)	kg	1200	1200	1500	2200	2600	3000
Travel	X-axis travel	mm	1100	1300	1300	1600	2060	2100
	Y-axis travel	mm	600	650	700	820	820	1020
	Z-axis travel	mm	630	630	660	660 opt.820	660 opt.820	820
	Distance from spindle to table	mm	100~730	120~750 opt.320~950	120~780 opt.320~980	150~810 opt.200~1020	150~810 opt.200~1020	200~1020 opt.400~1220
	Distance from spindle center to column	mm	645	695	745	865	865	1080
Spindle	Spindle nose taper	rpm	#40/#50	#40/#50	#50	#50	#50	#40/#50
	Spindle speed(Pulley)	rpm	#40 : 8000 /10000 /12000	#40 : 8000/10000/12000	-	-	-	-
	Spindle speed(Gear)	rpm	#40 / #50 : 6000/8000	#40/#50 : 6000/8000	4000/6000/8000	4000/6000/8000	4000/6000/8000	4000/6000/8000
	Spindle speed(DDS)	KW	#40 : 10000/15000 #50 : 10000/12000	#40 : 10000/15000 #50 : 10000/12000	10000/12000	10000/12000	10000/12000	10000/12000
Feed	Cutting feedrate(X/Y/Z)	m/min	12/12/12	12/12/12	12/12/12	12/12/12	12/12/12	10/10/10
	Rapid traverse rate (X/Y/Z)	m/min	24/24/20	#40 : 24/24/20 ; #50 : 24/24/18	24/24/20	20/20/18	18/18/18	15/15/15
ATC	Capacity	pcs	#40 A : 24(30/40) ; #50 A : 24(32)	#40 A : 24(30/40) ; #50 A : 24(32)	A : 24(30/32/40)	A : 24(30/32/40)	A : 24(30/32/40)	A : 24(32/40)
	Max.tool weight	kg	#40 : 7 ; #50 : 15	#40: 7; #50 :15	20	20	20	20
	Max.tool size(dia.x length)	mm	#40 A : Ø75 x 300L #50 A : Ø105 x 300L	#40 A : Ø75 x 300L ; #50 A : Ø105 x 300L	A : Ø125 x 350(A24/32/40) Ø110 x 350(A30)	A : Ø125 x 350L(A24/32/40) Ø110 x 350L(A30)	A : Ø125 x 350L(A24/32/40) Ø110 x 350L(A30)	A : Ø125 x 350L
	Tool shank		BT40(CAT/DIN/BBT) BT50(CAT/DIN/BBT)	BT40(CAT/DIN/BBT) BT50(CAT/DIN/BBT)	BT50(CAT/DIN/BBT)	BT50(CAT/DIN/BBT)	BT50(CAT/DIN/BBT)	BT50(CAT/DIN/BBT)
	Pull stub bolt		P40T-1(CAT40/DIN69872) P50T-1(CAT50/DIN69872)	P40T-1(CAT40/DIN69872) P50T-1(CAT50/DIN69872)	P50T-1(CAT50/DIN69872)	P50T-1(CAT50/DIN69872)	P50T-1(CAT50/DIN69872)	P50T-1(CAT50/DIN69872)
Motor	Spindle drive motor (cont./30 min)	kw	#40 : 7.5/11 opt.11/15,15/18.5 #50 : 11/15 opt.15/18.5	#40 : 7.5/11 opt.11/15,15/18.5 #50 : 11/15 opt.15/18.5	7.5/11 opt.15/18.5/22/26	11/15 opt.15/18.5/22/26	11/15 opt.15/18.5/22/26	15/18.5 opt.18.5/22/26
Positioning Accuracy	Positioning accuracy (JIS B6330), without linear scale	mm	±0.010	±0.010	±0.010	±0.010	±0.012	±0.012
	Repeatability (JIS B6330), without linear scale	mm	±0.003	±0.003	±0.003	±0.003	±0.003	±0.003
	Positioning accuracy (JIS B6330), with linear scale	mm	±0.008	±0.008	±0.008	±0.008	±0.010	±0.010
	Repeatability (JIS B6330),with linear scale	mm	±0.003	±0.003	±0.003	±0.003	±0.003	±0.003
	Positioning accuracy (VDI 3441)	mm	0.022	0.024	0.024	0.024	0.030	0.030
	Repeatability(VDI 3441)	mm	0.010	0.012	0.012	0.012	0.016	0.016
Other	Required air pressure	kg/cm^2	6.5	6.5	6.5	6.5	6.5	6.5
	Electric power requirement	KVA	20~40	20~40	25~55	25~55	25~55	30~50
	Machine weight	kg	8000	#40:7350 ; #50:7600	9000	11300	12900	16200
	Coolant tank(standard)	L	283	340	340	390	390	480
	Machine dimension(LxWxH)	mm	#40：2900 x 2295 x 2930 #50：2900 x 2290 x 3060	#40 : 3300 x 2265 x 3000 #50 : 3300 x 2265 x 3150	3300 x 2265 x 3128	4000 x 2692 x 3380	5000 x 2692 x 3380	5000 x 3638 x 3450
	Floor space(standard tank)	mm	4630 x 3600	3450 x 4000	3450 x 4136	4000 x 4477	5000 x 4477	5000 x 4950

Specifcations & dimensions are subject to change without notice (for actual weight, shipped product shall prevail.)