



EUMASPINNER

We do the best that you need

Notice:Euma policy prohibits these products being used for the development or production use or stockpiling of weapons of mass destruction.
(nuclear weapons ,biological weapons ,chemical weapons or missiles)

- According to the content of catalogue, please contact with EUMASPINNER agency or service center if you have any question.
- The content of catalogue start and valid from July 2019, it will not notice separately if any design change of Spec.
- EUMA has final explanation if the content of catalogue and machine have any difference.

EUMASPINNER

WENZHOU EUMA MACHINERY CO., LTD.

Machine tool Sales&Service center

508-5, Success Building, Liuhongqiao Road,
Lucheng District, Wenzhou, Zhejiang
P. C. : 325000
Tel: +86 577 8823 9930
Mob: +86 138 1973 8388 Justin
E-mail: info@eumaspinner.com
Http://www.eumaspinner.com

EUMASPINNER (Nanjing) CNC Technology Co., LTD.

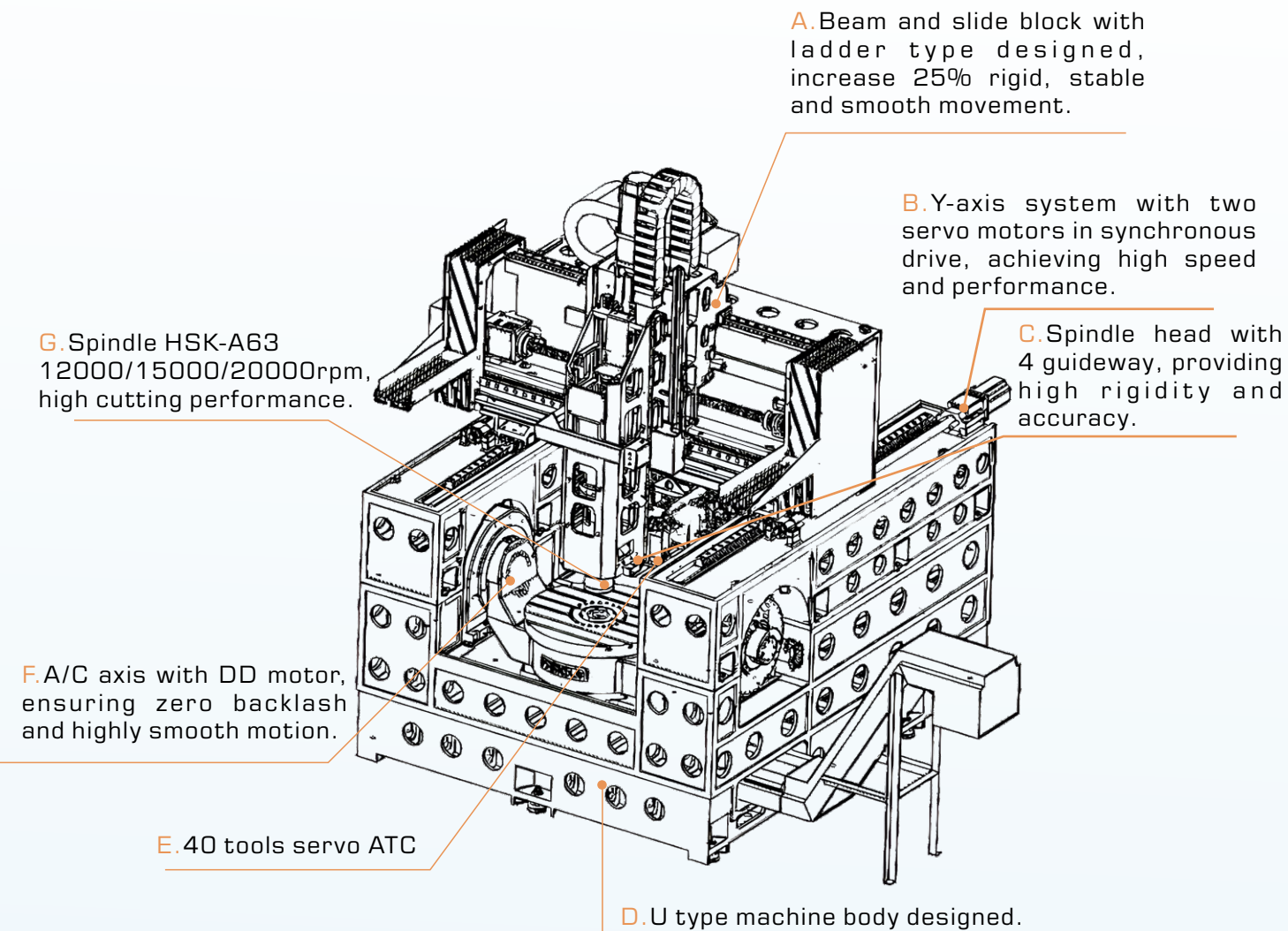
Machine tool production base

No.1 Chayuan Road,Huangmei street,
Jurong City, Jiangsu Province
P. C. : 212400
E-mail: office@eumaspinner.com
Http://www.eumaspinner.com



DX SERIES 5-AXIS MACHINING CENTER (A/C Axis)

Superior Design



- ◆ High speed, high power, high torque precision electric spindle, large load direct drive rotary table.
- ◆ X, Y, Z, A, C axis adopt full closed-loop control, equipped with absolute grating scale and circular encoder.
- ◆ Y-axis double drive gantry crane structure, short spindle overhang, strong cutting rigidity.
- ◆ Z-axis has 4 guide rails for sliding.
- ◆ Trapezoid structure of crossbeam and sliding seat.



Overview

The DX5 series machining center adopts a gantry-type structure, featuring high dynamic rigidity to efficiently meet the demands of high-strength 5-axis simultaneous machining. The base casting is made of high-strength ductile iron using resin sand molding, offering strong damping and vibration suppression capabilities.

Through FEA and dynamic optimization, the machine achieves high stability and precision, ensuring optimal machining accuracy and surface quality. The composite cradle rotary table, work surface, and base are made of ductile iron, providing high rigidity. Combined with a high-speed precision electric spindle, it meets diverse complex surface machining requirements, reduces workpiece clamping cycles, improves part accuracy and productivity, and lowers processing costs.



Characteristics

- ◆ X/Y/Z axes equipped with original imported THK linear roller guideways.
- ◆ C3 class customized high accuracy ball screw as standard. Taiwan original PMI/HIWIN ultra high accuracy CO ball screw as optional, Repeat positioning accuracy on full travel stability at 0.003mm.
- ◆ X, Y, Z, A/C axis adopts full closed-loop control, equipped with grating scale and circular grating encoder.
- ◆ Direct-drive or built-in spindle with SK40 or HSK A63 taper is customized to the requirement.



Spindle Characteristics

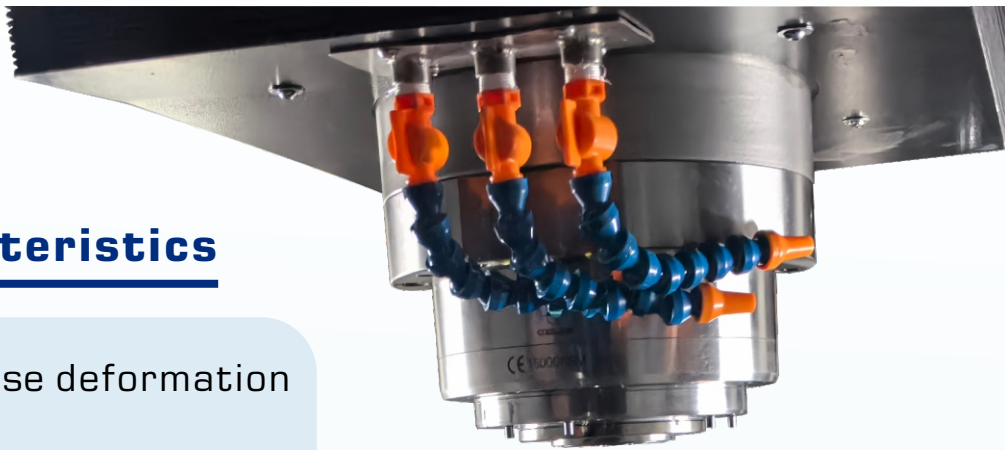
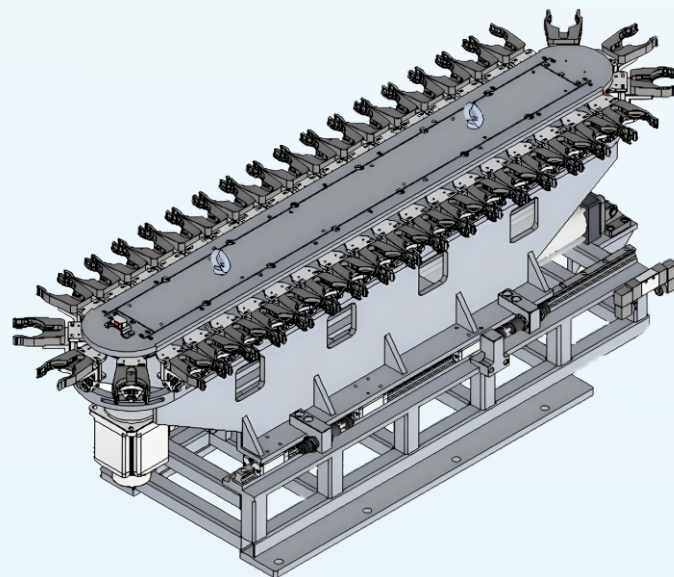
- ◆ Minimize spindle nose deformation during cutting.
- ◆ Shorten the time for the spindle system to reach temperature steady state during warm-up.
- ◆ Improve the rigidity of the spindle and cutting tools.
- ◆ The spindle is equipped with a high-power motor.
- ◆ High-speed and high-precision bearing arrangement design.
- ◆ Spindle configuration center water outlet rotary joint.

Tool Magazine

Adopting A/B translational chain tool magazine, installed on the rear side of the machine tool, each tool magazine comes standard with 40 tool positions, and can be optionally equipped with 80 (40x2) spindle picking tool changing method.

During the operation of the machine tool, maintenance tools can be replaced through manual work doors. Through the control of CNC numerical control system, functions such as tool magazine management, power-off, gas stop protection, collision protection, etc. can be achieved. In case of tool magazine failure, manual recovery can be carried out.

Maximum diameter of cutting tool: $\Phi 75/\Phi 120$ (adjacent space)-Maximum length of cutting tool: 300mm.



Spindle specification

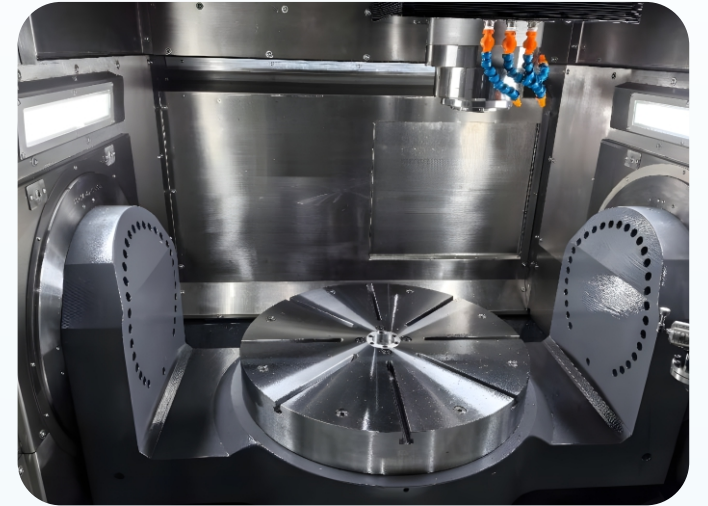
- ◆ Direct spindle (standard):
- ◆ 15000RPM
- ◆ Electrical spindle (optional):
- ◆ 20000RPM
- ◆ Spindle tool taper: SK40/HSK-63A
- ◆ Spindle thermal compensation system (optional)

Double Support Rotating and Swing Table (A/C axis)

The A and C axes of the composite cradle style rotary worktable are both driven by direct drive motors, with the A axis being synchronously driven by dual direct drive motors to achieve high torque output and heavy load processing. The A/C axis is equipped with an absolute circular grating measurement system, forming a fully closed-loop control to ensure the machining accuracy of complex parts.

The core shaft of rotary worktable is reserved with air and oil interfaces for easy implementation of automatic fixtures and functional expansion. It can be controlled by solenoid valves and pressure reducing valves, making it convenient for users to connect fixtures and automate control.

The maximum load of the standard milling worktable is 850kg, with a max speed of 60rpm for the A-axis and 100rpm for the C-axis.



Tool Cooling System

The spindle is equipped with external and internal cooling systems for the cutting tools, which can be turned on simultaneously or controlled independently through programming. adjustable. The external cooling mode uses coolant/compressed air to cool the tool through an adjustable nozzle at the front of the spindle head.

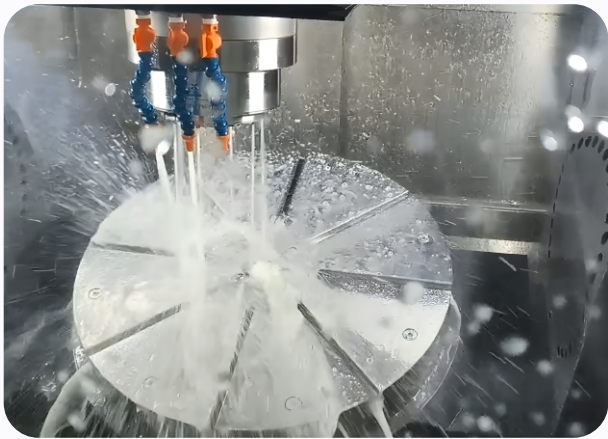
The high-pressure coolant in the tool internal cooling mode is sprayed out from the tool tip through the spindle center, which can directly cool the workpiece and the cutting edge of the tool, take away the cutting heat source, and ensure the quality of the workpiece. The internal cooling pressure is 40 bar, and the pressure is continuously adjustable.



Chip Cooling System

Configure a chain type chip conveyor located in the middle of the lower front of the base. The chips are transported to the side of the machine through the chain plate, and then flow into the coolant tank through multi-stage filtration to achieve the circulation of cutting fluid.

The chip conveyor has a large conveying capacity, low noise, overload protection device, safe and reliable operation, and can be suitable for the use of various materials of chips and rolls.



Collision Avoidance System

In complex machine tool movements at high speeds, the machine tool anti-collision system can help machine operators avoid collisions.

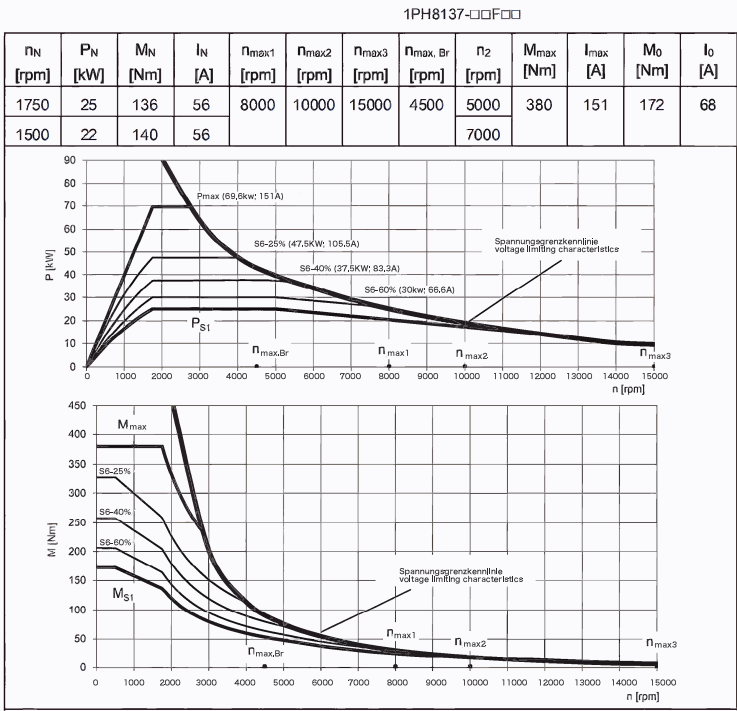


If the CNC system detects any collision during the stroke of the collision motion, machining will be automatically interrupted with axis movement halted and error message displayed.

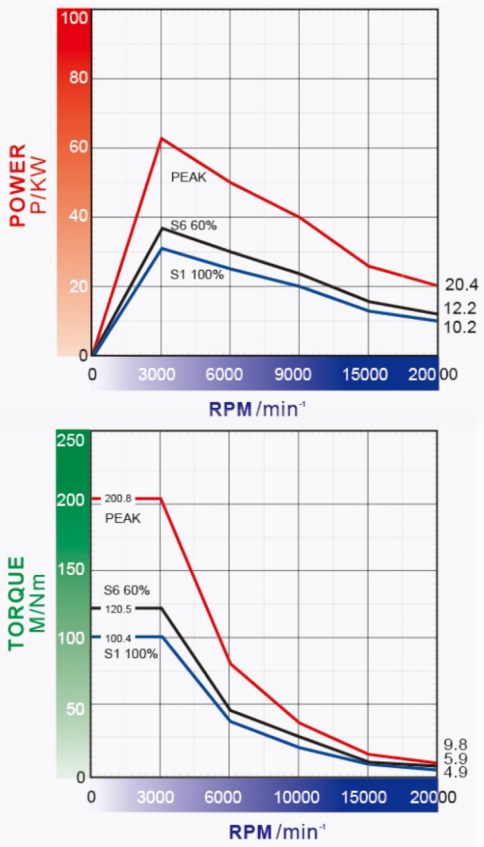


Spindle Motor Power and Torque

Direct-drive motor 15000rpm



Electrical motor 20000rpm



Siemens One

M dynamic+5-axis mold package

- + It's a Shop Mill+Residual material sensing+Spline interpolation
- + 3D real-time simulation
- + 5-axis machining program package
- + 3D tool change compensation
- + Pre read 1000 program segments+Advanced Surface
- + Transmission and Circular Surface Conversion
- + Measurement cycle+Add HMI memory capacity to on CF card
- + Coordinate boundary measurement

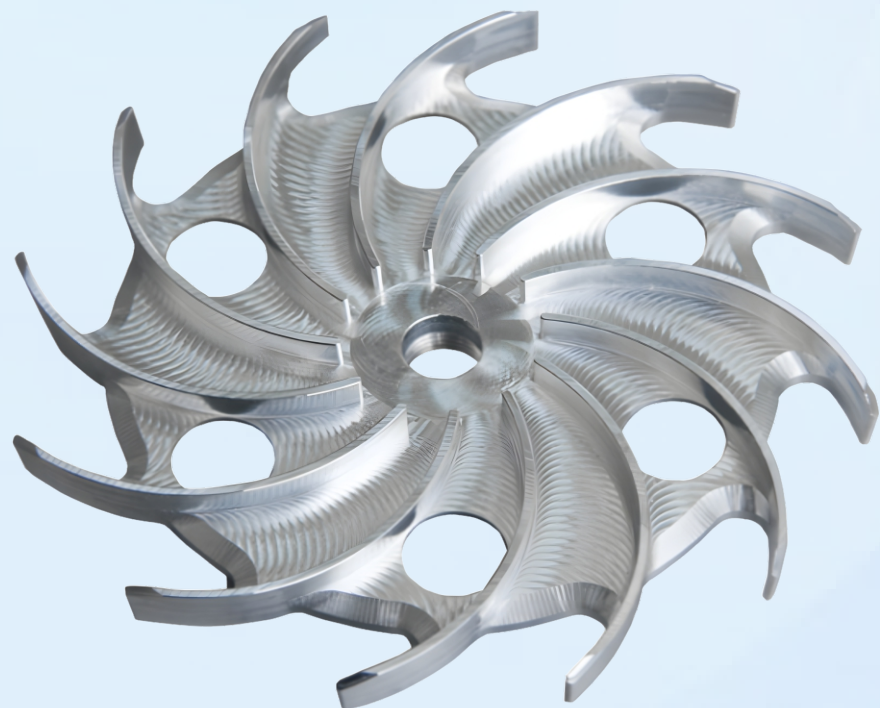
Powerful CNC Machine Control Platform

- + Simple Interactive Programming Method
- + No Additional Documents Required for Programming
- + Rich Cycle Options
- + Pre-Processing Simulation for High Reliability
- + Efficient Tool Management

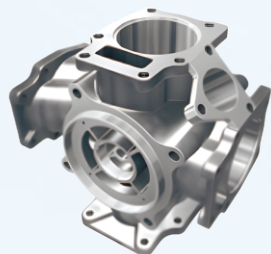


Application

The DX5 series is one of the few five-axis machining centers capable of handling heavy-duty milling tasks. Equipped with high-end imported spindle technology and a high-rigidity, high-torque torque motor A/C cradle rotary table, combined with precisely analyzed and optimized bed structure, it effortlessly meets the demands of high-speed, high-efficiency, and high-precision machining for various materials.



Application | +Automotive +Aerospace +Industrial Equipment +Mold



Workpiece: Fluid Velocity Measurement Pump
Material: Aluminum Alloy



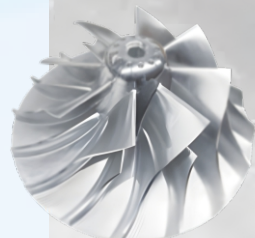
Workpiece: Human Skeleton Framework
Material: Titanium



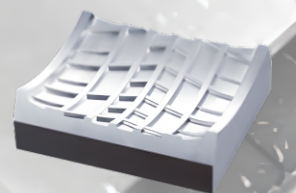
Workpiece: Blisk
Material: Stainless Steel Alloy



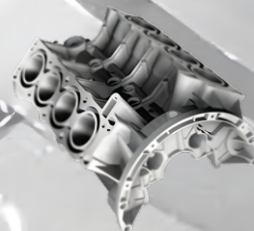
Workpiece: Automotive structural component
Material: Aluminum alloy



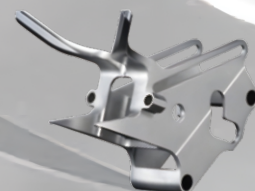
Workpiece: Impeller
Material: Aluminum



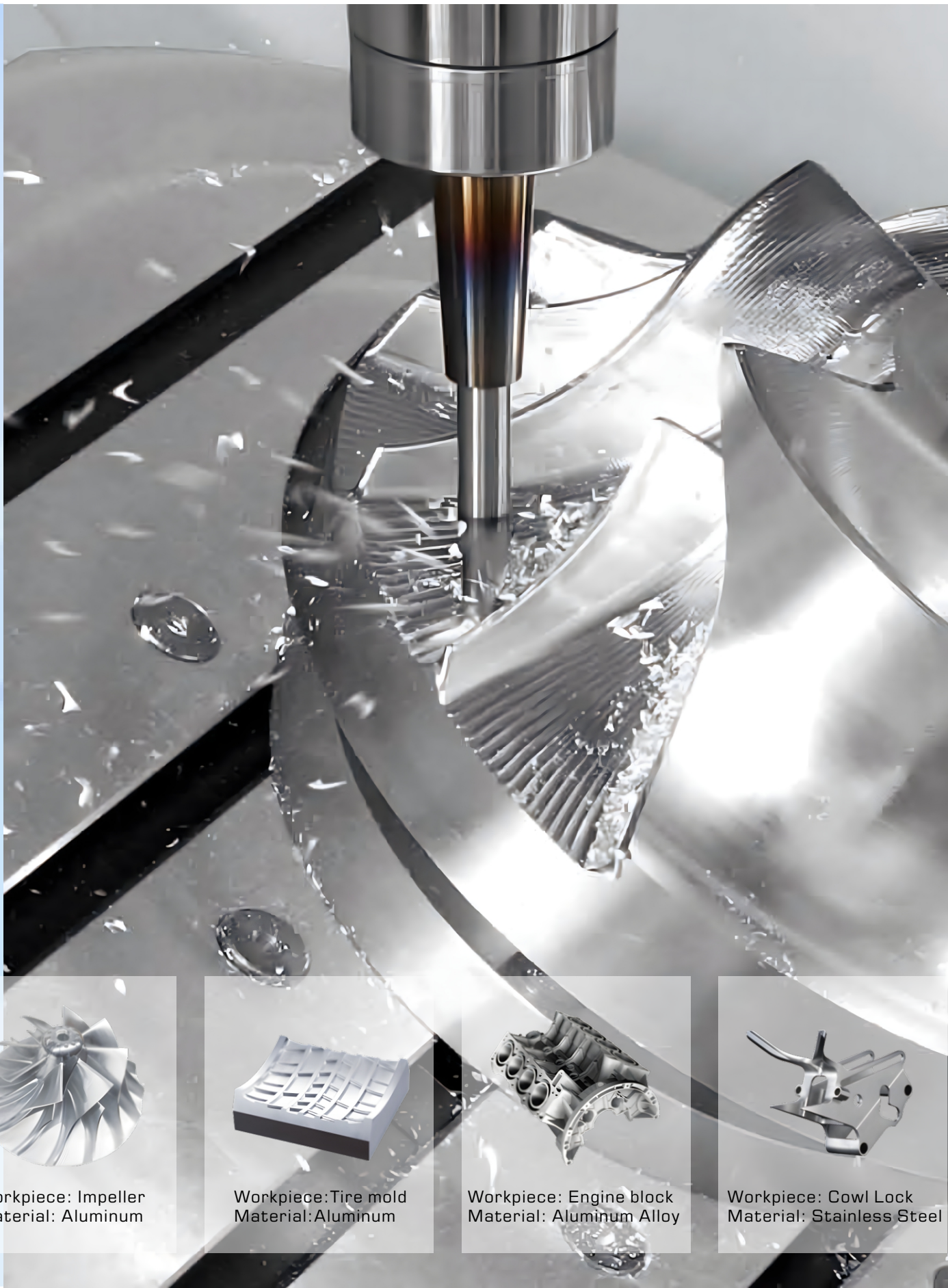
Workpiece: Tire mold
Material: Aluminum



Workpiece: Engine block
Material: Aluminum Alloy



Workpiece: Cowl Lock
Material: Stainless Steel



Precision Control

The positioning and repeatability accuracy of the DX5 5-axis machining center are measured in micrometers, ensured through optimized machine tool design, precision component selection, advanced cooling systems, and meticulous assembly processes to guarantee both mechanical and machining accuracy.

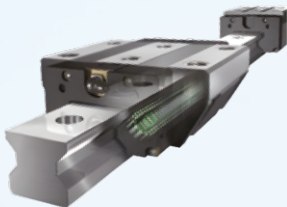
- + High-precision P-class roller guideways provide precise and stable linear feed motion characteristics.
- + Ultra-high-precision CO-class roller ball screw drive with optional internal cooling technology effectively suppresses ball screw thermal elongation, ensuring stable long-term machining accuracy.
- + Taiwan's premium torque motor rotary table incorporates latest-generation technology to maintain accuracy while delivering maximum torque, achieving optimal efficiency and rigidity.
- + Direct-drive spindle features Germany's Siemens water-cooled spindle drive motor, offering superior power output and thermal expansion control compared to conventional air-cooled motors.
- + Integrated electric spindle minimizes thermal deformation, ensuring high-precision performance for demanding machining applications.
- + HSK-A63 tool taper maintains dynamic rotational accuracy during high-speed operation, guaranteeing exceptional surface finish and contour precision.
- + Standard configuration includes rotary table circular encoder (optional axial linear scale available).
- + Dual cooling systems: oil cooling and water cooling controllers.
- + All machined components undergo precision processing, comprehensive testing, careful adjustment, and strict quality-controlled assembly.
- + RTPC (Real-Time Position Compensation) calibration system.
- + Taiwan-certified skilled hand-scraping process.
- + Final assembly performed in climate-controlled workshop.



NAS Part Precision Inspection		
NAS part	Circular path accuracy	0.012mm (X/Y feed rate 3m/min, ϕ 200mm)
	Roundness	<0.006mm (five-axis linkage)
	Flatness	<0.01mm (ϕ 80/300x400mm)
	Surface roughness	Ra1.6~0.8 (ϕ 80/300x400mm)

* Depending on the measurement environment and processing conditions, there may be deviations from the data stated in the catalog.

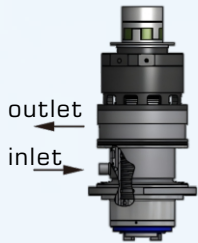
	DX5-630	DX5-800
X/Y/Z positioning accuracy	0.006	0.008
repeat accuracy	0.003	0.004
A/C	4 arcsec	4 arcsec



Linear guideway



Hollow ball screw cooling (optional)



Spindle water cooling



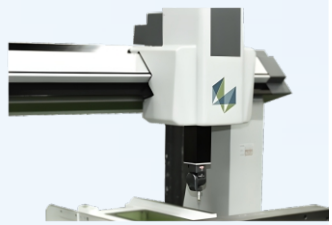
Grating scale



Tool setter



Scraping technology



3D coordinate measurement

Parameters

Items	unit	DX5-630	DX5-800
X/Y/Z axis travel	mm	700/700/500	800/900/620
Maximum turning diameter of table	mm	800	1000
Maximum load of table	kg	800	1200
Distance between table and spindle nose	mm	120-620	120-740
Spindle speed	mm	20000 (electrical spindle)	15000 (direct drive spindle)
Spindle taper	-	HSK A63	HSK A63
Main motor power	kw	31/37.2 (S1/MAX)	25/37.5(S1/S6-40%)
Main motor torque	Nm	100/120 (S1/MAX)	136/260 (S1/S6-40%)
X/Y/Z axis fast feed speed	m/min	36/36/36	36/36/36
X/Y/Z axis cutting feed speed	mm/min	1~20000	1~20000
X/Y/Z axis feed motor power	kw	4.9/3.1 * 2/4.9	4.9/3.1*2/4.9
Diameter of rotary table surface	mm	Ø630	Ø800
Table T-slot size	mm	14H8	14H8
A-axis travel (swing axis)	degree	±120°	±120°
C-axis travel (rotary axis)	degree	360°	360°
A/C-axis speed	rpm	60/100	60/100
A/C axis motor power	kw	11.4 * 2/11.4	15 * 2/15
Rated torque for A/C axis	Nm	1290 * 2/600	2200 * 2/1800
A/C axis torque	Nm	2400 * 2/1100	3900 * 2/2230
Tool magazine capacity	pcs	40	40
Maximum tool diameter (adjacent/without adjacent)	mm	Ø75/Ø120	Ø75/Ø120
Maximum tool length	mm	300	300
Maximum tool weight	kg	8	8
Tool change time (tool to tool)	sec.	5.0	5.0
Cutting fluid tank capacity	L	250	300
Cutting coolant motor power	kw	1.0+1.0	1.0+1.0
Power supply capacity	kva	65	90
Air pressure requirements	kg/cm²	6	6
Air pressure flow rate	L/min	500	500
Machine size (length x width x height)	mm	5200x3300x3400	5500x3600x3750
Machine weight	kg	16000	23000
Positioning accuracy (X/Y/Z axis) VDI3441	mm	0.006	0.008
Positioning accuracy (A/C axis)	sec.	10"	10"
Repeat positioning accuracy (X/Y/Z axis) VDI3441	mm	0.003	0.004
Repeat positioning accuracy (A/C axis)	sec.	4"	4"
CNC control system	sec.	SIEMENS ONE	SIEMENS ONE

Configurations

Standard Configuration	Optional Configuration
1.Fully enclosed protective cover 2.Automatic tool changer 40 tools 3.THK linear roller guideway 4.X/Y/Z three-axis THK ball screw 5.Torque motor A/C rotary table 6.A/C axis Heidenhain circle encoder 7.Cutting coolant system 8.Chip flushing device 9.Oil-water seprator 10.Chain plate automatic chip conveyor + chip collector 11.Cutting fluid cleaning spray gun and air gun 12.Automatic central lubrication system 13.Hydraulic station system device 14.Spindle blowing device 15.Portable electronic handwheel 16.RS232C, USB and DNC Ethernet interface 17.LED Working lights 18.3 color lights 19.Automatic power cut M30 20.Basic tool box 21.Electric cabinet air conditioner 22.Horizontal adjustment bolts and foundation blocks 23.CNC system:SIEMENS ONE	1.80 postion tool magazines 2.Automatic doors 3.NX post-processor 4.3-axis HEIDENHAIN grating scales 5.Anti-collision system 6.Magnetic water tank separator 7.Full top covers 8.Rotating window 9.Spindle and 3-axis temperature compensation 10.Reinishaw laser tool setter device NC4 11.Renishaw workpiece measurement OMP60 12.Oil mist collector 13.Spindle inner coolant 20-70 bar 14.Ultra-high accuracy CO class ball screw 15.Explosion proof dust collector