



HARDINGE TA 42 TA 51 TURNING CENTER



TA-Series Precision CNC Turning Center

TA series is multi-functional CNC turning center in compact footprint, with Y-axis and powerful milling turret and counter spindle or servo driven tailstock, provide more precision, higher rigidity and higher efficiency, which can satisfy the application of complex precision parts with multiple processes in one-setup.



Collet-Ready Spindle Features

The Hardinge Collet-Ready spindle is the most versatile machine spindle in the industry – it is uniquely designed to accept both collets and jawchucks without the use of an adaptor. Because the collet seats directly in the spindle, the workpiece is held close to the spindle bearings which provides the ultimate in accuracy, rigidity and gripping force. It also allows for maximum spindle RPMs which increases productivity.

- Compatible with collets and three-jaw chucks, no additional spindle adapters are required.
- A2-5/16C spindle, bar passing capacity 42mm, can be used with 6" three-jaw chuck and 16C collet.
- A2-6/20C spindle, bar passing capacity 51mm, can be used with 8" three-jaw chuck and 20C collet.
- The collet can be quick change, eliminating the time for workholding alignment, saving the machine idle time.
- The labyrinth seal structure and air purge protection can prevent coolant and dust from entering spindle bearings.

Machine Configurations

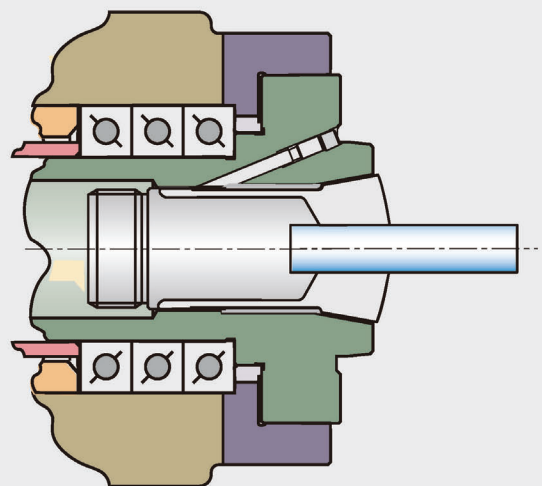
- TA 42 MYT
- TA 42 MSY
- TA 51 MYT
- TA 51 MSY

M-12T BMT55 Turret and C axis

Y - Y axis

S - A2-5/16C Sub-spindle

T - Servo Driven Tailstock



Hardinge Collet-Ready Spindle

Standard

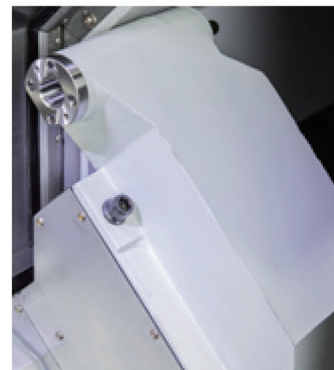
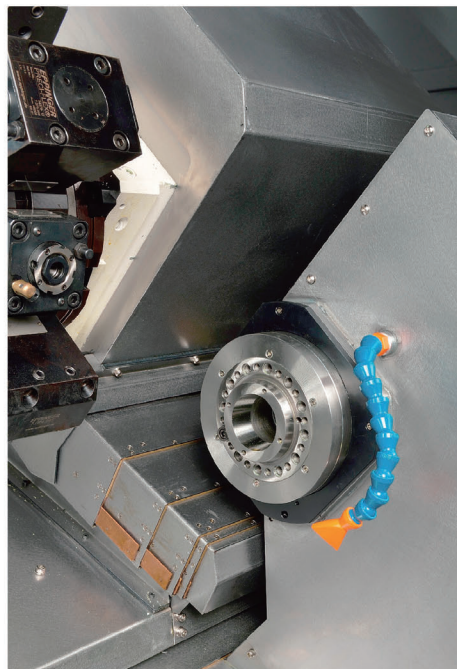
- Fanuc Oi TF Plus
- Manual Guide i
- 10.4" Display
- Ethernet interface
- Auto Centralized Grease Lubrication System
- 12T BMT55 Turret
- Foot Switch (Spindle Closer)
- Tri-stack Status Light
- Coolant Flush Nozzle
- LED Working Lighting
- Manual Air Gun
- Coolant Tank and Pump
- Foundation Pads

Optional

- Siemens 828D System
- X/Y/Z axis Linear Scales
- 16T BMT45 Turret
- Auto Door
- Tool Touch Probe
- Coolant Washing Gun
- Oil Skimmer
- Oil Mist Collector
- Coolant through Spindle
- Air Blast through Spindle
- Air Blast on Spindle Side
- Part Ejector (Pneumatic)
- Part Detection (Sub-spindle)
- Part Catcher
- Bar Feeder Interface
- Electric Cabinet Air Conditioner
- 20/50/70bar High Pressure Pump
- Automation Interface
- Chip Conveyor

Machine Features

- Improves machining accuracy and surface roughness
- Latest Fanuc Oi TF Plus or Siemens 828D
- One-piece high-quality cast iron machine base for superior rigidity and stability
- Configured with heavy-duty roller linear guides to provide super machining performance
- Standard 12-station BMT55 turret, also optional 16-station BMT45 turret for flexible tooling configuration
- Equip with MT#4 servo driven tailstock or Collet-Ready sub-spindle to match different application requirements
- Standard with Y-axis function, which significantly improves the processing flexible
- Wide range of optional functions for various applications



MACHINE STRUCTURE

12 tools BMT55 servo-driven turret, improves tool holders setup accuracy and rigidity, provide power milling performance. The live tools is driven by an independent Fanuc servo spindle motor, with higher reliability.

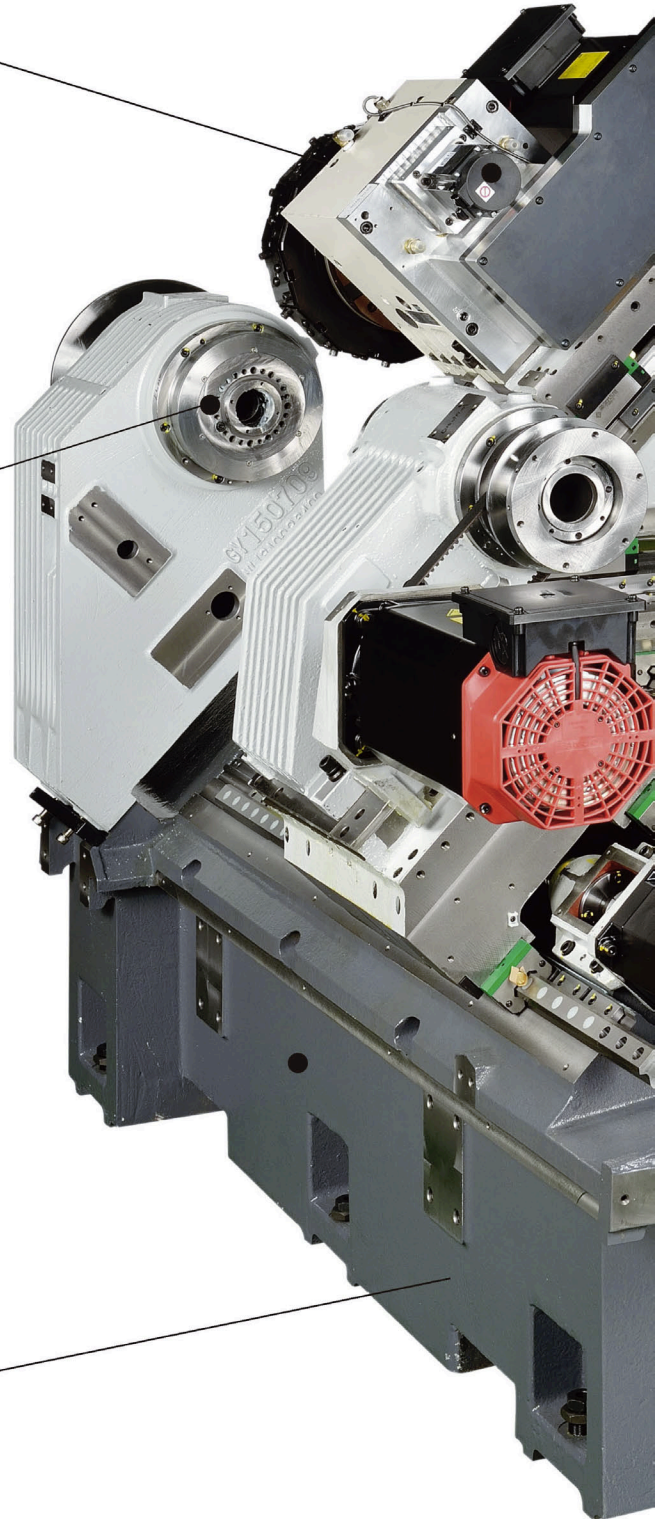
Live tool holders start at 6,000 RPM and are capable of up to 24,000 RPM when purchased with ratios of 2:1 or 4:1 when high speeds are required.

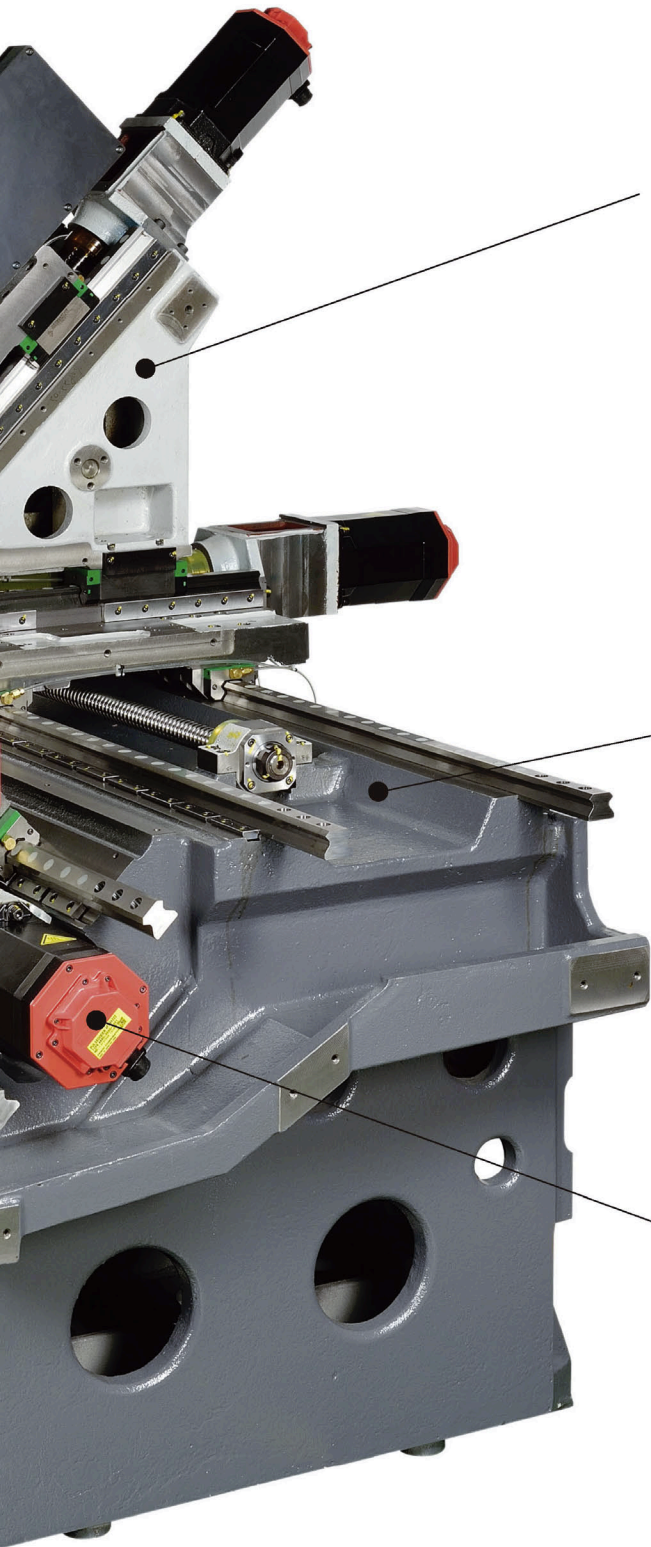
TA 42 series equip A2-5/16C spindle, max speed 6,000 rpm, with 42mm thru-spindle capacity, can use 16C precision collet, 6" chuck.

TA 51 series equip A2-6/20C spindle, Max speed 5,000 rpm, with 51mm thru-spindle capacity, can use 20C precision collet, 8" chuck.

Hardinge C Style collets seat directly into the spindle closest to the bearings, so that spindle accuracy is transferred directly to the workpiece. Take advantage of using maximum spindle speeds and feeds, utilizing the maximum working envelope with quick job to job changeover from bar work to chucking, allowing for higher part to part accuracy, better surface finish with longer tool life capability.

The latest software design platform and FEA (Finite Element Analysis) techniques were used to design and build a rigid, structurally-balanced machine to assure optimum performance and machine life. The FEA software accurately depicts the structural deflection, stress levels, thermal response and vibration response of the assembled components and the assembled machine. Extreme-case loadings are used to verify adverse machining conditions.





Y-axis capability is a huge productivity enhancement on a turn/mill machine tool. To get Y-axis motion, an extra set of ways is used to move the live tool across the face of the spindle. By adding a third linear axis to the turning-center turret it enables rotary cutters to machine across the spindle center line thus greatly expanding the milling capabilities of the machine.

The wedge type Y-axis structure optimizes the force of the turret in Y axes, improves the rigidity of the turret and saddle, and is beneficial to the overall rigidity of the machines.

The X/Y/Z axis guides are 35mm roller type linear guides. The Z-axis guide way is designed with step height structure, the force-bearing structure is more reasonable, which improves the load capacity of the Z-axis saddle for better machining performance.

The ball screw and the servo motor are directly connected by the coupling, and the pre-stretched installation structure is adopted to better thermal growth control.

All TA series are equipped with automatic centralized lubrication system, which uses more environmentally friendly grease, provide longer maintenance cycle, no oil leakage, no pollution, and environmentally friendly.

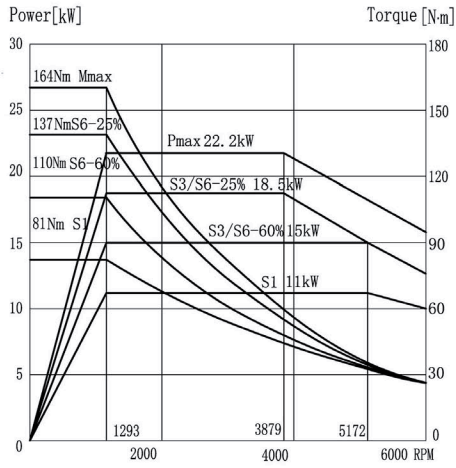
Equipped with the latest Fanuc α series servo motors, with faster response speed, stronger overload capacity, higher control accuracy, improve acceleration and deceleration performance, provide faster machining cycle time and high precision machining capacity.

The machine can equip MT4 servo-type tailstock, rapid traverse speed is 30m/min, and working force is programmable.

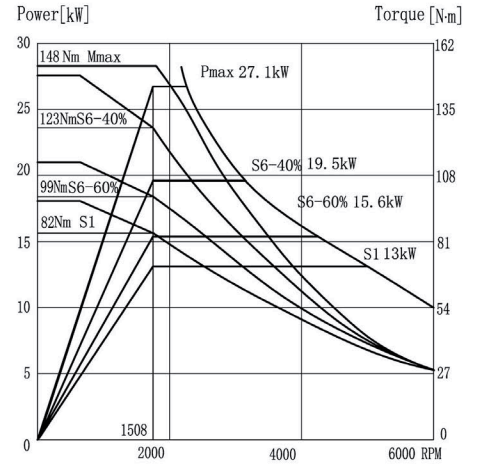
TA series can also equip 16C/A2-5 sub-spindle with a maximum speed of 6000 rpm.

POWER-TORQUE CURVE

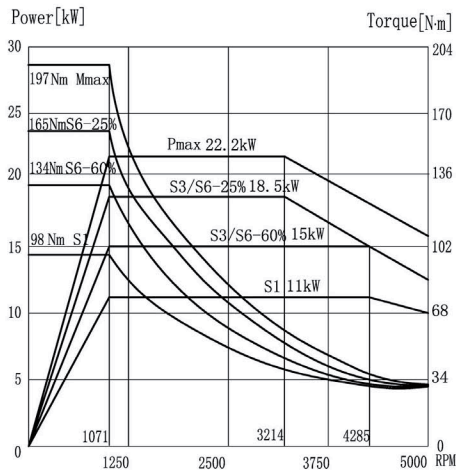
TA42
Fanuc



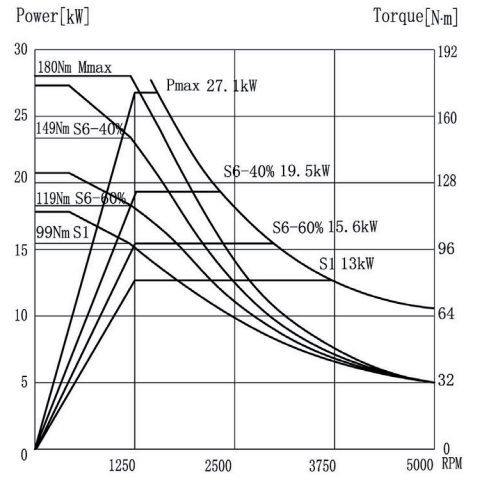
TA42
Siemens



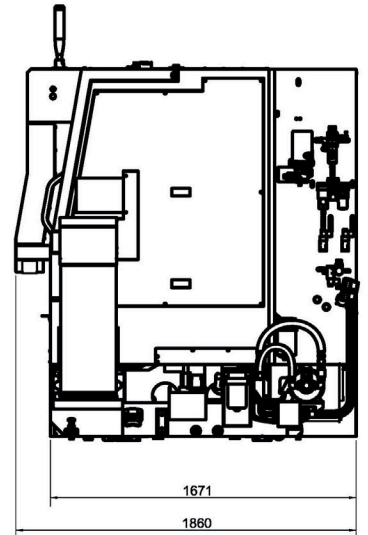
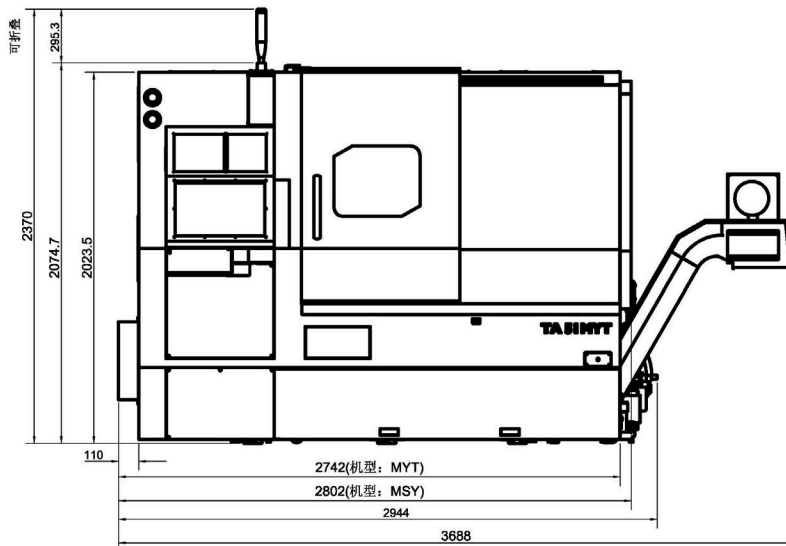
TA51
Fanuc



TA51
Siemens



LAYOUT



SPECIFICSTION

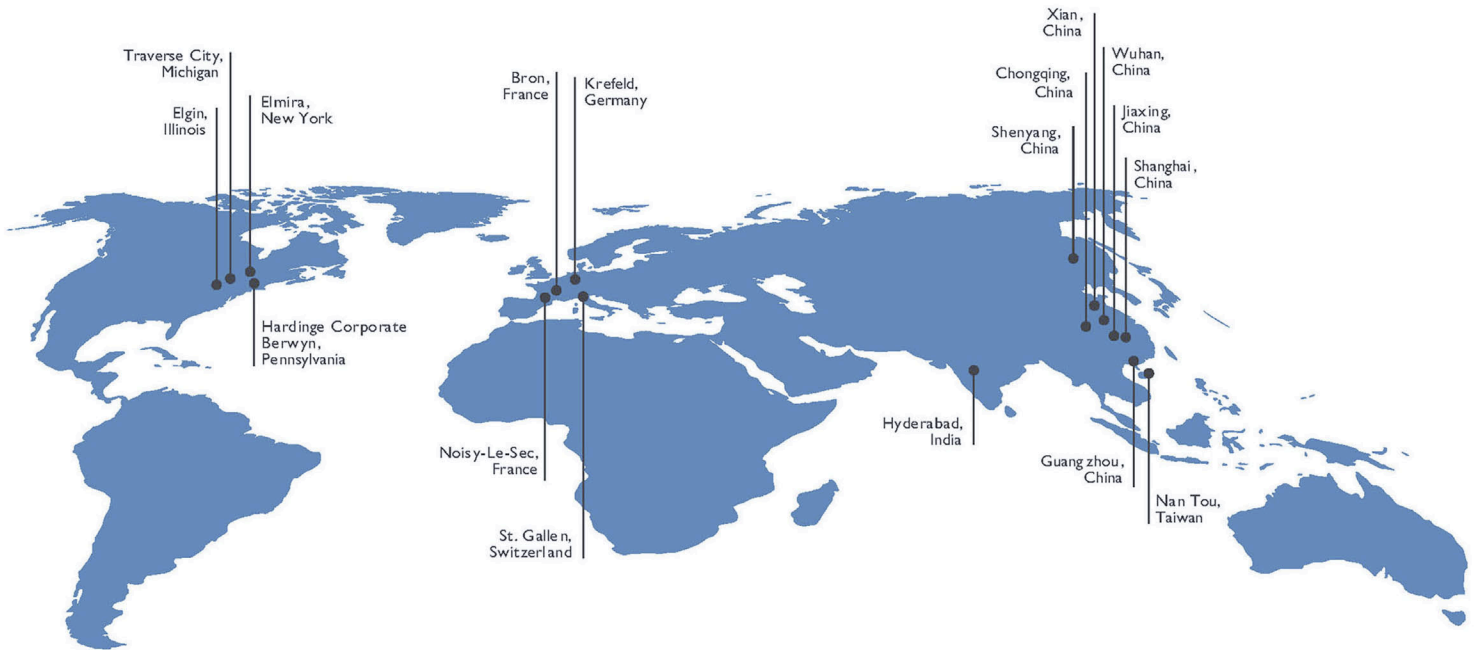
TA 42 MYT,MSY

TA 51 MYT,MSY

	Fanuc	Siemens	Fanuc	Siemens
Spindle				
Spindle Nose	A2-5/16C		A2-6/20C	
Max. Bar Hole Through Diameter	42mm		51mm	
Clamping Type	6" Chuck/16C Collet		8" Chuck/20C Collet	
Swing Over Lathe	550mm		550mm	
Max.Turning Diameter	340mm		340mm	
Max.Turning Length (with collet)	580mm		578mm	
Max.Turning Length (with chuck)	469mm		457mm	
Spindle Drive				
Max. Spindle Speed	6000rpm		5000rpm	
Power (S1/Max)	11/22 kW	13/27 kW	11/22kW	13/27 kW
Torque (S1/Max)	81/163N.m	82/148N.m	98/197N.m	99/180N.m
Sub-Spindle				
Spindle Nose	A2-5/16C		A2-5/16C	
Max. Bar Hole Through Diameter	42mm		42mm	
Clamping Type	6" Chuck/16C Collet		6" Chuck/16C Collet	
Sub-Spindle Drive				
Max. Spindle Speed	6000rpm		6000rpm	
Power (S1/Max)	3.7/11 kW	5.4/15.2 kW	3.711 kW	5.4/15.2 kW
Torque (S1/Max)	23/70N.m	22.4/63N.m	23/70N.m	22.4/63N.m
Servo Axis				
X-Axis Travel	180mm		180mm	
Z-Axis Travel	652mm		652mm	
Y-Axis Travel	±42mm		±42mm	
X/Z Axis Rapid Traverse Rate	30m/min		30m/min	
Y Axis Rapid Traverse Rate	10m/min		10m/min	
Positioning (ISO230-2)	0.008mm		0.008mm	
Repeatability (ISO230-2)	0.004mm		0.004mm	
Power Turret				
Turret Type	BMT55		BMT55	
Max. Number of Tools	12		12	
Turning Tools(Square)	25mm		25mm	
Boring Tools(Round)	Φ40mm		Φ40mm	
Tool Change Time (T-T)	0.47sec		0.47sec	
Power Tool System				
Max. Tool Speed (rpm)	6000		6000	
Max. Power	3.7kW		3.7kW	
Max. Torque	28.3N.m		28.3N.m	
Others				
Length x Depth x Height	2944×1860×2075mm		2944×1860×2075mm	
Machine Weight	5800Kg		5800Kg	
Power Requirements	25KVA, 3~380V		25KVA, 3~380V	

Note: The sample data is based on the printing period level only, and any technology and parameters are subject to change without notice.

HARDINGE COMPANIES WORLDWIDE



Hardinge is a leading international provider of advanced metal-cutting solutions. We provide a full spectrum of highly reliable CNC turning, milling, and grinding machines as well as technologically advanced workholding accessories.

The diverse products we offer enable us to support a variety of market applications in industries including aerospace, agricultural, automotive, construction, consumer products, defense, energy, medical, technology, transportation and more.

We've developed a strong global presence with manufacturing operations in North America, Europe, and Asia. Hardinge applies its engineering and applications expertise to provide your company with the right machine tool solution and support every time.

AMERICAS

PENNSYLVANIA

Hardinge Corporate
1235 Westlakes Drive
Suite 410
Berwyn, PA 19312

NEW YORK

Hardinge
One Hardinge Drive
Elmira, NY 14903
P. 800-843-8801
E. info@hardinge.com
www.hardinge.com

ILLINOIS

Hardinge
1524 Davis Road
Elgin, IL 60123
P. 800.843.8801

ASIA

CHINA

Hardinge Machine
(Shanghai) Co. Ltd.
1388 East Kangqiao Road
Pudong, Shanghai 201319
P. 0086 21 3810 8686

TAIWAN

Hardinge Machine Tools
B.V., Taiwan Branch
No.11, Tzu Li 3rd Rd.,
Nantou City, 540 Taiwan
P. 886 49 2260 536
E. cs@hardinge.com.tw

EUROPE

FRANCE

Jones & Shipman SARL
8 Allée des Ginkgos
BP 112-69672
Bron Cedex, France

GERMANY

Hardinge GmbH
Fichtenhain A 13c
47807 Krefeld
P. 49 2151 49649 10
E. info@hardinge-gmbh.de

SWITZERLAND

L. Kellenberger & Co. AG
Heiligkreuzstrasse 28
CH 9008 St. Gallen
Switzerland
P. 41 71 2429111
E. info@kellenberger.net