



銳格精機股份有限公司  
REGAL MACHINERY CO., LTD.  
http://www.rgl.com.tw  
Email: hi.rglco@gmail.com

銳格關係企業  
鼎神精機有限公司  
DING SHEN MACHINERY CO., LTD.  
Email: info.hobbing@gmail.com



No.16, Ln 56, FuZhuang St., Bel Zhuang Village, Sheng Kang Dist., Taichung City 429014, Taiwan  
TEL: 886-4-2561-5999 FAX: 886-4-2561-6658



Gear Reducers / Worm Gear Reducers Manufacturer

Manufacturing of Power Transmission Components

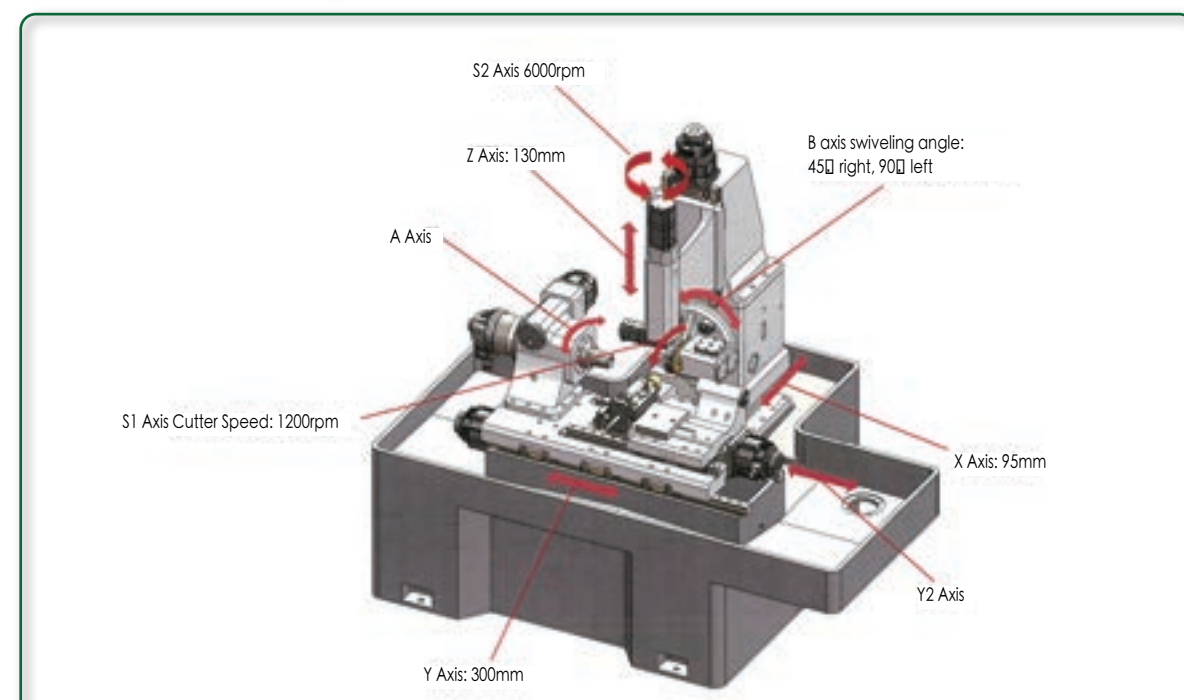
Multifunctional Worm Gear Thread Rolling Machining Equipment



## DS-300 HZ

### Machine Features

- For components with a module below 3, steel forming milling cutters are used for faster cutting. Additionally, mechanical arms can be employed to address labor shortage in high-volume production scenarios.
- Thread milling.
- Sharp edge removing.
- Keyway machining.
- Industry applications: screws for the automotive industry, brush screws, electric massage chair screws, scooter screws, sun tracking systems, worm gears, and other related components.



### MACHINE STRUCTURES

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### MACHINE SPECIFICATIONS

MODEL	DS-300HZ
<b>CAPACITY</b>	
Range of module	M0.25 - M3
Degrees of indexing	360°
Max. cutting length	300mm
Max. cutting diameter	40mm
Max. tool dia. (hole * Keyway)	110* 25.4* 6.35 mm
Helical angle	R.H.45° L.H. 90°
Workpiece clamping method	collet type
Tailstock method	Servomotor
Number of simultaneously moving shaft	8-Axis simultaneous processing
<b>SPEED</b>	
Max. speed of X-axis (for. / back.)	5000mm / min
Max. speed of Y-axis (right / left)	5000mm / min
Max. speed of Y2-axis (right / left)	5000mm / min
Max. speed of A-axis (chuck)	6000mm / min
Max. speed of B-axis (Cutter tilting axis)	300mm / min
Max. speed of Z-axis (up / down)	5000mm / min
Max. angular speed of S1-axis cutter	1500rpm
Max. angular speed of S2-axis cutter	6000rpm
Max. speed of cutting stroke	5000mm/min
<b>ACCURACY</b>	
Perpendicularity of machining	+ 5um / 100mm
Workpiece precision	3~4 levels
Workpiece surface quality (um)	Ra 0.8
<b>MOTOR</b>	
KW / N-m	
X axis motor	1.8KW / 11.5 N-m
Y axis motor	1.8KW / 11.5 N-m
Y2 axis motor	1.3KW / 8.34 N-m
A axis motor	0.85KW / 5.39 N-m
B axis motor (Cutter tilting axis)	400W / 1.27 N-m
Z axis motor	0.85KW / 5.39 N-m
S1 axis cutter motor	4.4KW / 28.4 N-m
S2 axis cutter motor	1KW / 3.18 N-m
Cutting fluid motor	1.5 KW(2HP)
Hydraulic motor	0.75 KW(1HP)
Oil controller	150W
Cutting fluid separation tank	1/8HP
mist collector	0.25 KW
Chip conveyor	40W
<b>MISCELLANEOUS</b>	
Total power (KW)	18KW
Net Weight	2000KGS
Gross Weight:	2300KGS
Machine dimensions	206*155*198 CM
positioning space dimensions	211*212*243 CM
Packing dimensions	236*232*228 CM

\*Due to continuous improvement and development, specifications are subject to change without prior notice.



Low Carbon Industry Alliance(LCIA) awards commendation to outstanding forward members



## REGAL's Energy-saving and Carbon Reduction Measures

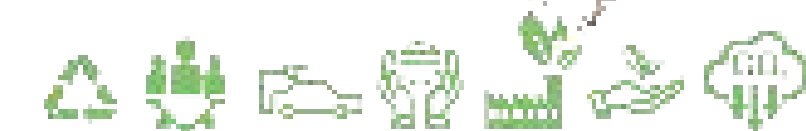
- ➔ Initiate carbon footprint assessment. Diagnose carbon hotspots and implement improvements.
- ➔ Design green factory buildings. Utilize environmental planning to reduce air conditioning, lighting, and power usage.
- ➔ Invest in equipment and increase in-house capabilities to reduce transportation carbon emissions.
- ➔ Choose low-carbon materials and local manufacturers to ensure products have both high efficiency and green competitiveness.
- ➔ Develop in-house software for worm gear equipment to shorten processing times and fulfill corporate carbon reduction responsibilities..
- ➔ Customize products based on user needs to extend product lifecycles.
- ➔ Implement energy monitoring for processing equipment, assess environmental impact, and gradually realize green energy production plans.
- ➔ Continuously promote the concept of low-carbon alliances and collaborate with upstream,



Regal Machinery

Green Manufacturing

Inviting you to join us



REGAL MACHINERY CO., LTD.



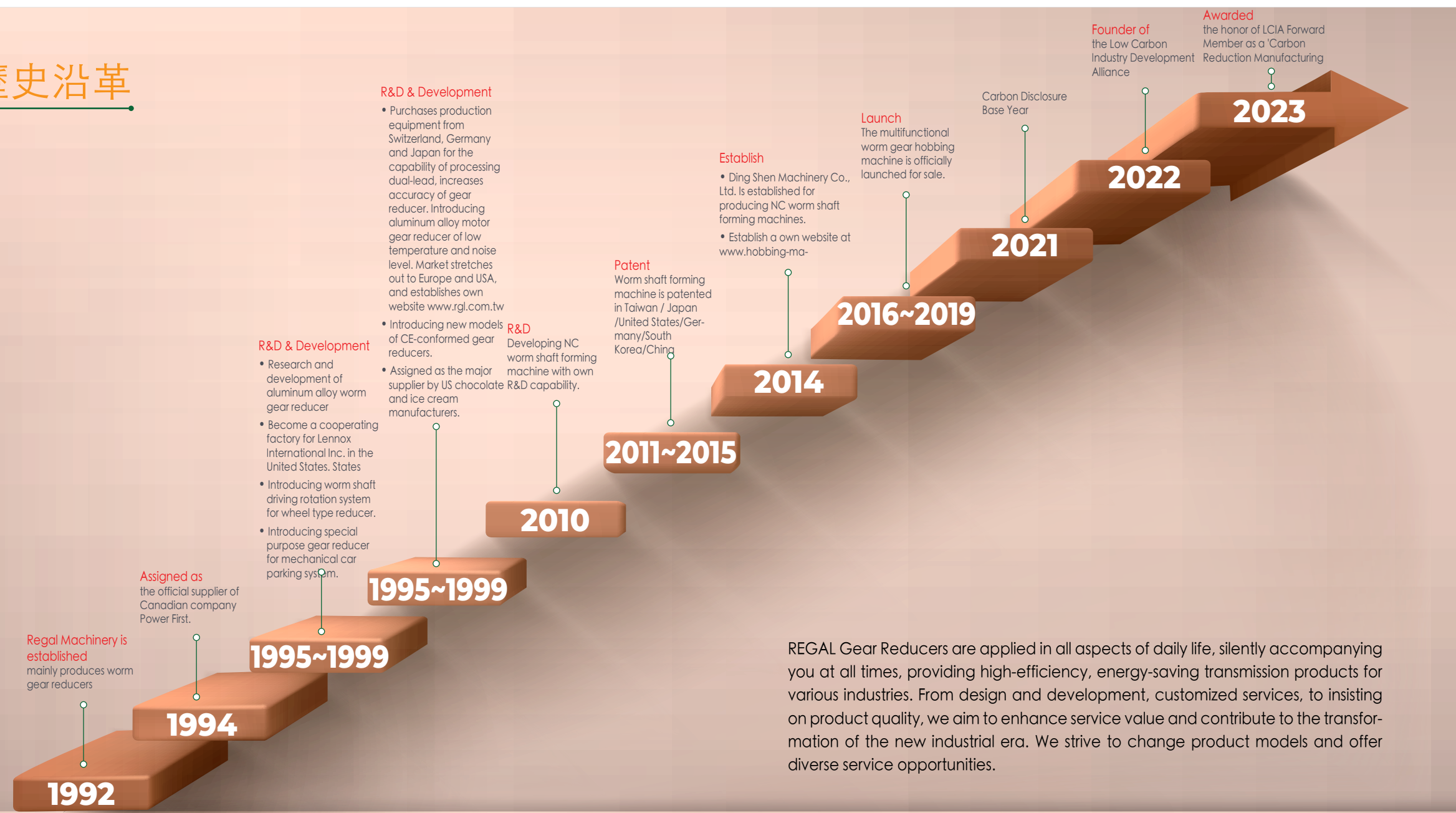
# Committed to becoming a low-carbon, intelligent and automated supply chain partner for the industry

## About REGAL - WORM GEAR REDUCER EXPERT

The core values of the products designed by Regal Machinery are high quality, high efficiency, high protection and hope to convey the concept of healthy and energy-saving life in each design.

Treat the shared environment of the earth to provide users with a lower carbon option. It is the goal of the sustainable development of the REGAL team.

### 歷史沿革

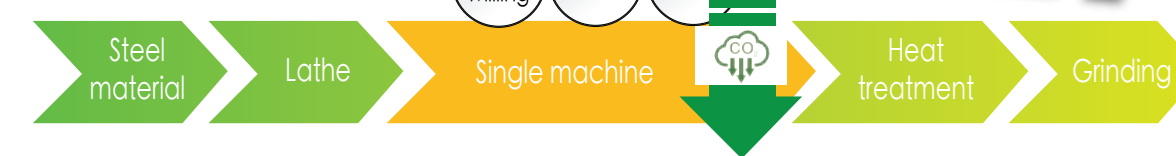


REGAL Gear Reducers are applied in all aspects of daily life, silently accompanying you at all times, providing high-efficiency, energy-saving transmission products for various industries. From design and development, customized services, to insisting on product quality, we aim to enhance service value and contribute to the transformation of the new industrial era. We strive to change product models and offer diverse service opportunities.

### Worm Gear Traditional Manufacturing Process

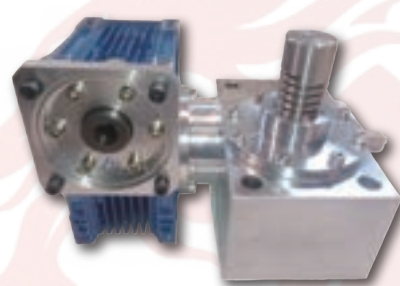


### Advanced Process

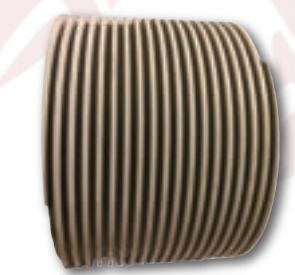


### Four Major Products

1. Manufacture of Gear Reducers / Worm Gear Reducers, Customized Transmission Mechanism Design and Gear Reduction Box.



2. Grinding Wheel Slotting Service



- ▶ Save time, labor, power, money, space
- ▶ High edge motion, high yield, high cost performance
- ▶ Intelligent, low-carbon, automated high-quality

The REGAL team designs multifunctional worm gear machining equipment from the perspectives of users and processors, offering unique worm gear carbon reduction production equipment. Additionally, they hold numerous patents in multiple countries.

The objective is to:

1. Meet the demand for small quantity, diverse production. This is achieved through the use of specialized software and a human-machine interface input operation mode, which reduces the time for workpiece conversion processes.
2. By concentrating multiple worm gear processes on the same machining equipment to complete the manufacturing procedure, not only is the time for loading and unloading materials reduced, but the precision of the workpiece is also enhanced, and the machining errors that occur when changing processing equipment are minimized.

The advantages of carbon reduction in the manufacturing process:

Comparison of Processing Speeds:  
Utilizing all servo motors paired with dedicated milling cutters, verified by third-party PMC certification, results in a time reduction of up to 3-5 times.

Verification of Accuracy:

- The German KLINGLBERG inspection machine achieves rough rolling accuracy of 3-5 grades.
- The Japanese inspection machine verifies workpiece Tti. The rough rolling accuracy can reach 1-2 grades.

The purpose of multifunctional design is to respond to green manufacturing by integrating multiple processes into a single equipment process, reducing working hours, minimizing electricity usage, and achieving the most practical process carbon reduction goals, thus moving towards a green supply chain!

3. Worm Gear, Worm Wheel, and Parts Machining Service

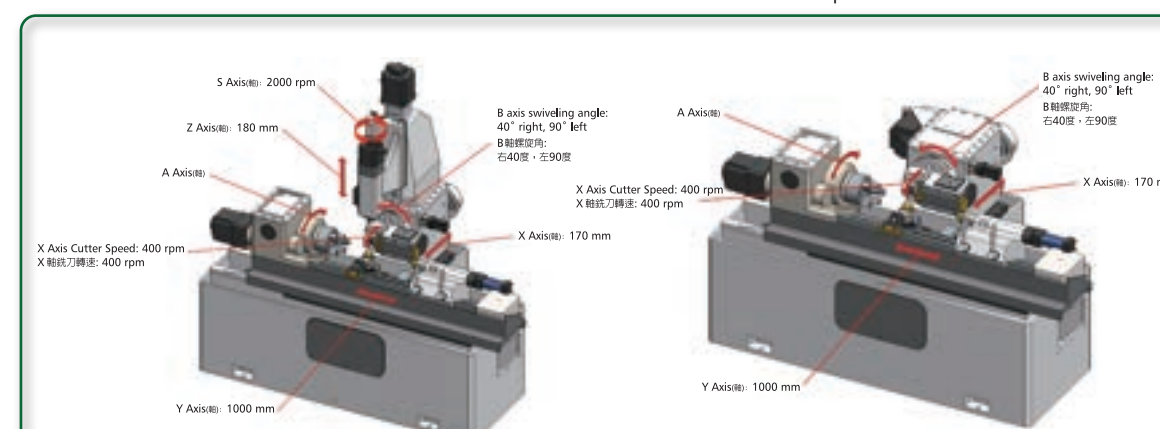


4. Manufacturer of Multifunctional CNC thread rolling machine equipment



### Machine Features

- Combined processes result in faster processing speeds (thread rolling, chamfering, and keyway machining synchronized).
- Quick workpiece loading and unloading.
- Wide processing range (M1-M10).
- High machining precision.
- Original design, multiple patents in various countries.
- Specialized software for easy learning and operation.



#### DS-1000HZ

- THREAD MILLING
- SHARP EDGE REMOVING
- KEYWAY MACHINING

**MACHINE STRUCTURES**

- Stroke of X, Y, Z axis 180 x 1000 x 180 mm.
- The first tool holder is designed for thread forming, spline cutting, and grinding wheel slotting.
- The second tool holder (Z axis) is designed for thread sharp edge removing, keyway machining, and polygon milling.
- The first tool holder can be tilted for machining helical angles. (40° right hand angle and 90° left hand angle).
- Angular speed of the thread milling cutter (X axis) is 400 rpm.
- Angular speed of the sharp edge removing cutter (S axis) is 2,000 rpm.

#### DS-1000HJ

- THREAD MILLING (Single lead, dual lead, hypoid gear and Niemann type machining)
- SPLINE SHAFT MACHINING
- GRINDING WHEEL SLOTTING

**MACHINE STRUCTURES**

- X, Y-axis travel: 180 x 1000 mm.
- The first tool holder is designed for thread forming, spline cutting, grinding wheel slotting.
- The first tool holder can be tilted for machining helical angles (45° right hand angle and 90° left hand angle).
- Angular speed of the thread milling cutter (X axis) is 400 rpm.

### MACHINE SPECIFICATIONS

MODEL	DS-1000HZ	DS-1000HJ
<b>CAPACITY</b>		
Range of module	M0.25 - M10 (Available with multiple feeds.)	
Degrees of indexing	360°	
Max. cutting length	900 mm	
Max. cutting diameter	250 mm	
	135 * 31.75 * 7.93 mm	
Max. tool dia. (hole x keyway)	135 * 25.4 * 6.35 mm	
	135 * 32 * 8 mm	
Helical angle	R.H. 45° · L.H. 90°	
Workpiece clamping method	6" Hydraulic Chuck	
Tailstock method	Hydraulic	
Number of simultaneously moving shaft	7-Axis simultaneous processing	5-Axis simultaneous processing
<b>SPEED</b>		
Max. speed of X-axis (for. / back.)	5000 mm/min	5000 mm/min
Max. speed of Y-axis (right / left)	5000 mm/min	5000 mm/min
Max. speed of A-axis (chuck)	4800 mm/min	4800 mm/min
Max. speed of Z-axis (up / down)	5000 mm/min	-
Max. angular speed of S-axis cutter	2000 rpm	-
Max. angular speed of X-axis cutter	400 rpm	400 rpm
Max. speed of cutting stroke	5000 mm/min	5000 mm/min
<b>ACCURACY</b>		
Perpendicularity of machining	±5 μm / 100 mm	
Workpiece precision	3~4	
Workpiece surface quality (μm)	Ra 0.8	
<b>MOTOR</b>		
X axis cutter motor	7.5 KW / 48 NM	7.5 KW / 48 NM
X axis motor	1.8 KW / 11.5 NM	1.8 KW / 11.5 NM
Y axis motor	1.8 KW / 11.5 NM	1.8 KW / 11.5 NM
Z axis motor	1.8 KW / 11.5 NM	-
A axis motor	1.8 KW / 11.5 NM	1.8 KW / 11.5 NM
S axis cutter motor	1.8 KW / 11.5 NM	-
B axis motor (Cutter tilting axis)	0.4 KW / 1.27 NM	0.4 KW / 1.27 NM
Cutting fluid motor	0.4 KW (1 / 2 HP)	0.4 KW (1 / 2 HP)
Hydraulic motor	0.75 KW (1 HP)	0.75 KW (1 HP)
Oil controller	0.15 KW	0.15 KW
Chip conveyor x 2 unit	40W*1 / 0.2 KW*1	40W*1 / 0.2 KW*1
<b>MISCELLANEOUS</b>		
Total power (kw)	19 KW	15 KW
Net Weight	4000 KGS	3650 KGS
Gross Weight	4500 KGS	4100 KGS
Machine dimensions	376 * 171 * 222 CM	376 * 171 * 178 CM
Packing dimensions	400 * 190 * 250 CM	400 * 190 * 210 CM

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