

# BARON-MAX<sup>®</sup> EC-5 Series

## Horizontal

Boring/Milling/Drilling/Tapping machine

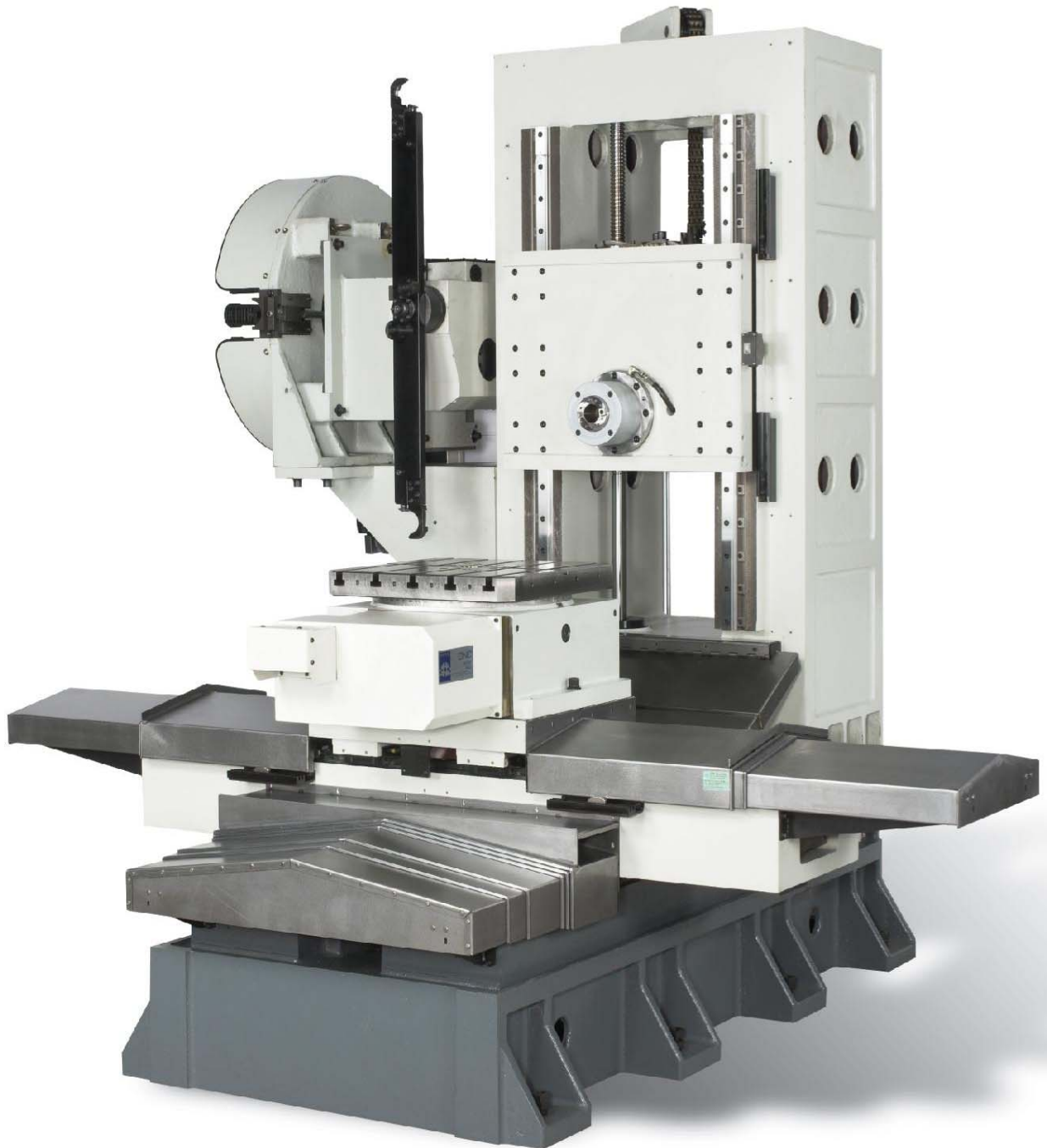
Compact, Performance advantages

With competitively priced



**Powerful**  
**Effective chip removal**

# High-Rigidity Cast Frame Structure



The EC-5 Series Horizontal Boring, Milling, Drilling and Tapping machining center with a working envelope of 600 (X) by 600 (Y) by 550mm (Z axis), the machine features a 24 pocket side-mount Arm type tool changer (40 pocket as an available), and equipped with an 10,000 rev/min spindle is powered by 20-hp AC digital servo motor, #40-taper spindle that uses an inline direct-drive system couples the motor directly to the spindle to provide fine surface finishes, Four 35 mm Roll Linear Ways on Y axis, C3 precision ground ball-screws with high-torque servomotors on all axes provide rapids to 30 m/min and 10 m/min cutting feeds to reduced non-cutting times.

## EC-5 Series – Versatile 3, 4 and 5-axis configurations



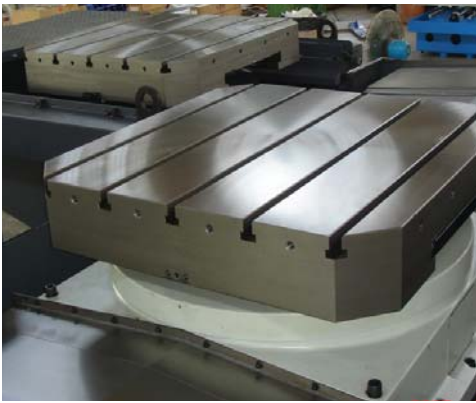
The EC-500T is a 3 axis HMC with 5 T slot table (1200 mm x 600 mm)



The EC-500R is a full 4th-axis with integrated 0.001° rotary table



The EC-5 TR is incorporates a dual-axis Tilting table to provide full 5 axis simultaneous machining.



The EC-5 APC is a full 4th-axis integrated with two platter



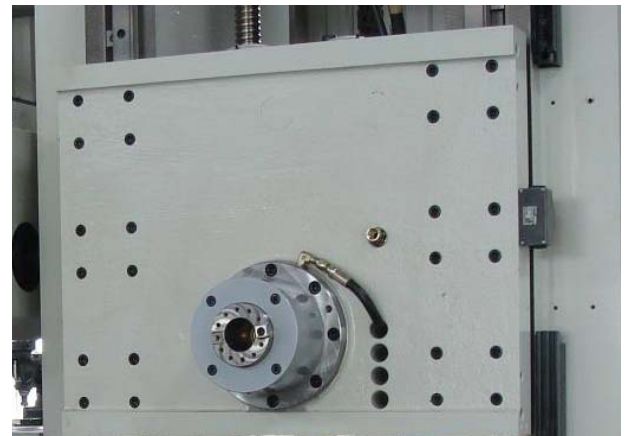
40 tools Magazine (option)



#40 inline direct-drive spindle, #50 as an option

### Heavy Duty Spindle and Headstock

- Main spindle is supported by ultra high precision bearings, permanently grease lubricated, dimensioned to support heavy machining, with excellent high speed performance, superior rotational accuracy and minimal temperature increase
- Spindle taper air blast on tool change and built-in clamping jaws and spring loaded tool retention system.
- SIEMENS 21 HP(12/16 KW), spindle with speed range from 80 to 10,000 rpm





### Simple, Dependable, 1° Indexing System

- Mechanism is integral with the machine mounted directly on the slide
- Indexing lifting system by hydraulic. Indexing rotation is achieved using a servo motor, drive gear and pinion.
- The location at the front of the EC-5R gives easy access for part loading and unloading and makes set up and part clamping fast and easy.

Indexing Accuracy	± 3 arc-sec
Repeatability	± 1 arc-sec
Gear Ratio	72:1 worm & gear
90° Rotation Time (indexer)	3.6 sec

### Double Arm Automatic Tool Changer

- Swing double arm ATC for faster toolchange time, 2.9 second tool to tool time
- 24 tools ATC Magazine allows ample storage of tool for a wide variety of operations,
- Shortest path/bidirectional tool selection



## Features for EC-5 Series . . . . .

### **Configurations:**

- EC-5 T : 3-axis w/ 500 x 600mm T-slot table**
- EC-5 - 4AX: 500 x 600mm T-slot table w/integrated 4th-axis**
- EC-5 R : 4-axis w/built in 500 x 500 mm rotating table**
- EC-5 APC: 4-axis w/Dual 500 x 500 mm rotating table pallet changer**
- EC-5 TR : 5-axis w/250 mm dual-axis tilting table in place of the standard T-slot table**

- EC-5 series has a high-rigidity cast frame structure combined with roller linear guideways

minimize chatter and vibration to give maximum rigidity.

- EC-5T has a machining volume of X-Y & Z axes travel: 600 x 600 x 550 mm with an 3-axis HMC with a standard 600 x 500 mm with 5 T-slot table
- EC-5 R is a full 4th axis HMC features in X-Y & Z axes 600 x 600 x 550 mm work cub, integrated 0.001° Horizontal Rotary table (500 x 500 mm) with coupling gear indexing, none lifting gives high positional accuracy with hydraulic clamping.
- EC-5 APC is a full 4th axis HMC features in X-Y & Z axes 600 x 600 x 550 mm work cub, integrated w/Dual pallet changer with 500 x 500 mm rotating table.
- 20 HP(11/15 KW), 10,000 rpm 40 taper spindle inline direct-drive system that couples the motor directly to the spindle to provide fine surface finishes
- Rear Access Door with Swivel Operator's Station.
- 24-pocket quick-change double-arm gripper swaps tools in 3.9 seconds
- X-Y-Z Axis Roller linear Guideway for high rigidity and very high load capacity.
- Rapid feed rates of 30 m/min (1181 IPM) in the X-Z & Y axes
- Direct coupled servomotors to eliminate backlash And Pre-tensioned double anchored ballscrews
- Fully enclosure guard features large doors for easy access to the worktable
- Telescopic steel covers & waterfall coolant designed to keep chip from remaining on the table or the augers.
- Air-Hydraulic counter balance as a unique feature on the machines. This counterbalance offers smooth and more responsive positioning with the high rapid feed rates associated with this machine.
- Auger Style Chip Removal System

***For added performance, the machine can be equipped with an optional 12,000 rpm spindle powered by a 30-hp drive system. An optional 40 pockets side-mount ATC is also available.***

<b>SPECIFICATIONS</b>		
<b>ITEM</b>	<b>EC-5 T</b>	<b>EC-5 R</b>
X axis travel	600 mm	600 mm
Y axis travel	600 mm	600 mm
Z axis travel	550 mm	550 mm
B axis	- - -	360°
Spindle center to table surface	90 -690 mm	
Spindle nose to table center	100 mm – 710 mm	
Spindle speed	10,000 rpm (Std) / 18,000 rpm (Opt - built-in spindle)	
Spindle taper	BT#40 or CT#40, (ISO 50 – Option)	

Table size	500 x 600 mm	
Rotary Indexer	- - -	500 x 500mm
Indexing angle	- - -	1° or 0.001° degree
Load on table (pallet)	800 kg	600 kg
Rapid feed X/Y/Z	30 / 24 / 30 m/min (1181/945/1181 ipm)	
Cutting feed	1~ 10,000 mm/min	
Spindle motor	11/15 kW direct couple drive spindle	
X, Y, Z /B servo motor	3.0 kw (Y axis with brake)	
Number of tools	24 pockets (40 pockets an option)	
Tool shank type	BT 40 / CAT 40	
Tool selection	Shortest path	
Max. tool weight	8 kg	
Max. tool diameter/length	80 mm x 300 mm	
Tool exchanging Time	2.9 seconds	
Accuracy	Positioning	± 0.005/500 mm
	Repeatability	± 0.0025 mm
	Circularity	0.003 mm
Machine area	3500 x 3900 x 2900 mm	
Packing Size (L x W x H)	3700 x 4100 x 2550 mm	
Machine weight	7500 kg	8,000 kg
Coolant Capacity	60 gallon	
Air required	6.5 bar (100 psi)	
Power Required	25 KVA, 200 – 250 VAC	
CNC Controller	SIEMENS 802D sl (Std) or Mitsubishi M700	

All data subject to change without notice

## OPTIONAL ACCESSORIES

- Tool pre-setter
- 40 tools Swing Arm Type ATC
- High pressure coolant thru spindle (25 bar)
- Linear scale
- Rotary table (1°)
- 18000 rpm spindle speed
- Electronic compensation of thermal expansion
- SIEMENS 828D / 840D CNC controller
- Manual guide i (18iM)
- Mitsubishi CNC M720A



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