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130 Series

CNC Horizontal Boring & Milling Machines





130 SERIES CNC Horizontal Boring and Milling Machines

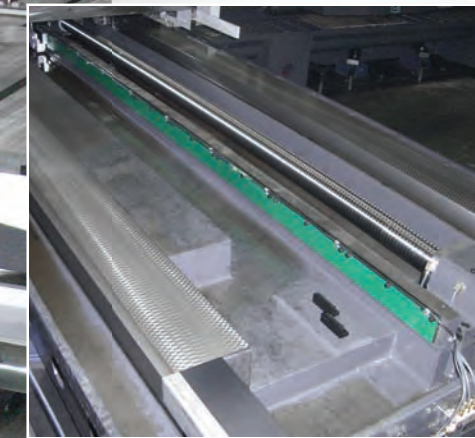
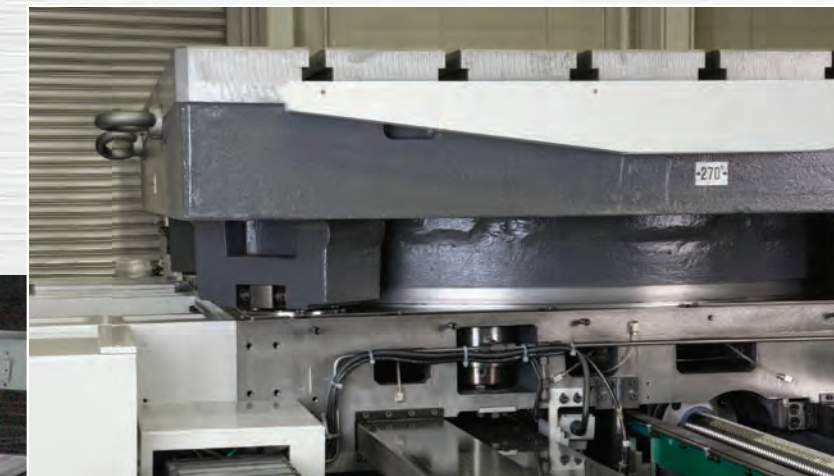
SNK Nissin 130 Series Boring Mills are designed and built to deliver the highest degree of machining accuracy, speed and versatility. Superb design, robust construction and premium-grade components throughout assure optimum power, precision, flexibility of application and long-term machine life. The 130 Series is equipped with many standard features that truly make these machines the choice for maximum return on investment. The X-axis table is of a single piece casting, providing the accuracy and stability of a fully supported cast iron base. The 5-axis simultaneous control expands the 130 Series machining versatility.



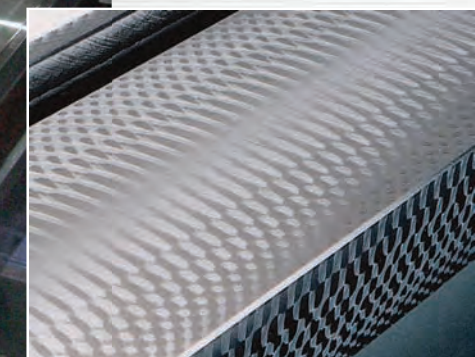
The 130 Series Boring Mills streamline large work machining. The generous work envelope and straightforward design provide for efficient work fixturing. Machine system component layout assures optimum operator convenience and safety.

130 SERIES Designed and Built for Optimum Performance

Maximum accuracy and tough prolonged cutting requires rigid and heavy duty construction. That's why 130 Series Boring Mills are manufactured with heavy, high-quality cast iron throughout. The 130 Series B-Axis is fully supported by a worm and wheel construction with scale feedback. Large work tables with 7 T-slots simplify work fixturing. Peak accuracy is achieved by combining superior mechanical design, thermal compensation, and scales on all axis. B-Axis fully supported by a worm and wheel construction with scale feedback.



Extra-wide solid boxways easily support large heavy work. Oversize ballscrews are employed on all linear axes - X, Y, Z & W. All ballscrews are precision ground and finished to deliver consistent precise positioning even under the most demanding machining conditions. All are fully supported at both ends and double anchored for stability and consistent reliability. Scale feedback on X, Y, Z & B axes is standard.

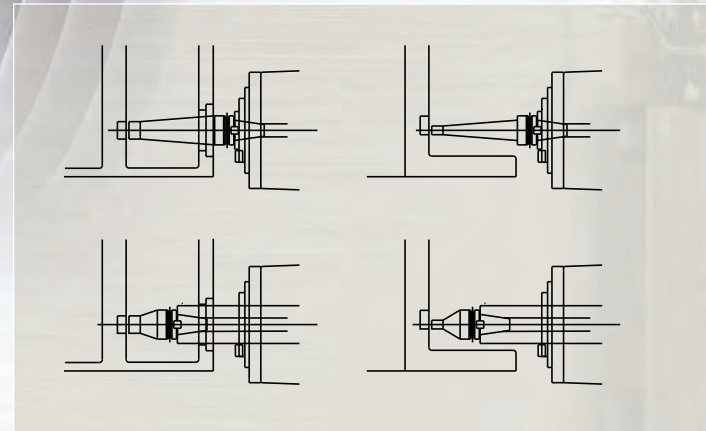


All boxways are ultra-precision finished using SNK's 40 year proven "Mirror Surface Finish" machining technology.



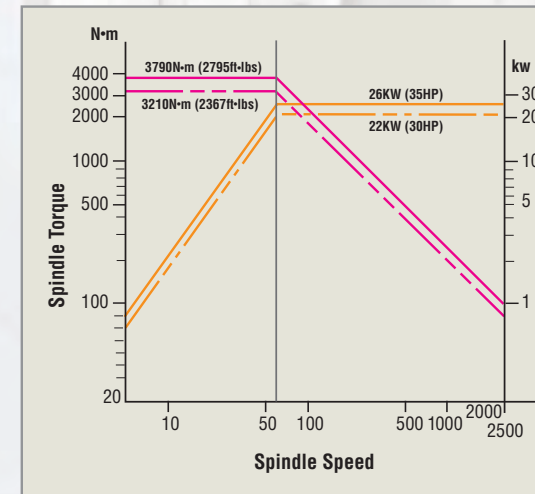
130 SERIES Designed for Precision and Power

Advantage of Quill/Bar Design vs. Fixed Horizontal Design

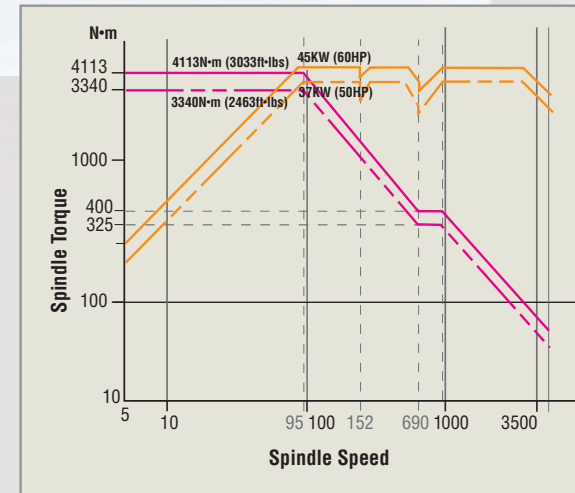


The 130 Series spindles ride on a massive column assembly on hardened and ground 'mirror surface' ways that provide maximum rigidity even under prolonged heavy-duty cutting. This assembly delivers high power and exceptional cutting torque. The 5.1" boring spindle travels within the 8" milling spindle to provide a full 27.5" stroke. The AC 35 HP spindle motor has low, medium and high range (5~2,500 rpm) and generates 2,795 ft•lbs of torque, with an option available for 3500 rpm with AC 60 HP and 3,033 ft•lbs of torque. Incorporated W-axis thermal growth compensation provides optimum accuracy. 5 strategically positioned sensors on the spindle casting and bearings constantly monitor temperature and make changes in the W-axis down to micron levels.

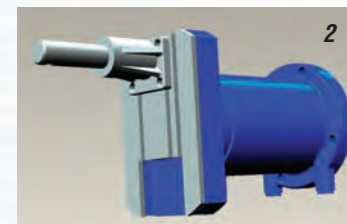
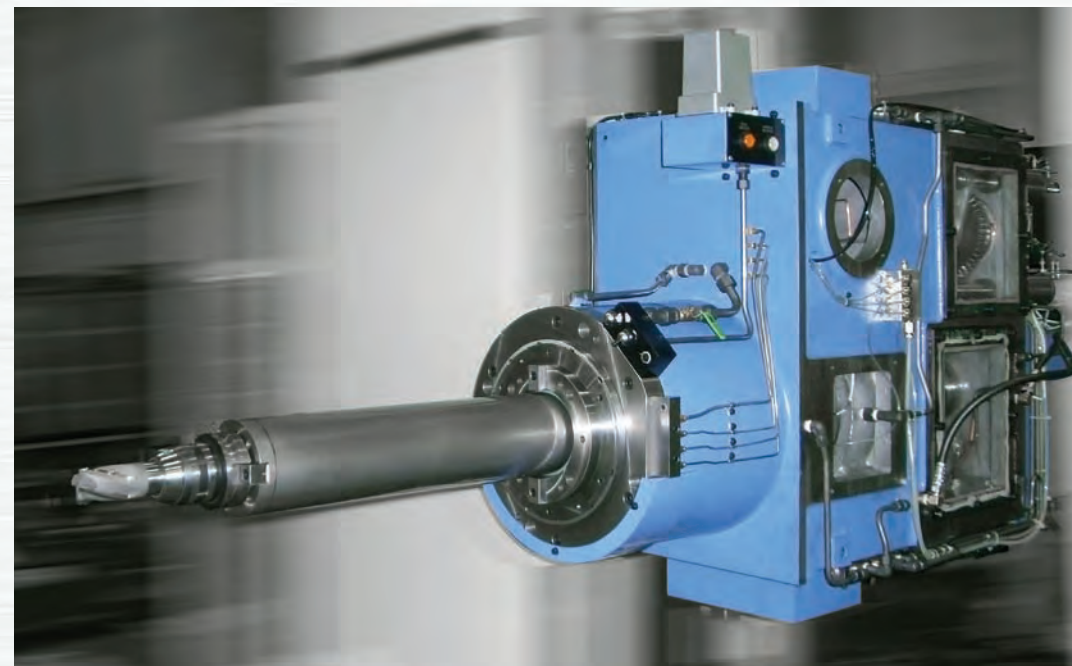
Spindle Output and Torque Diagram



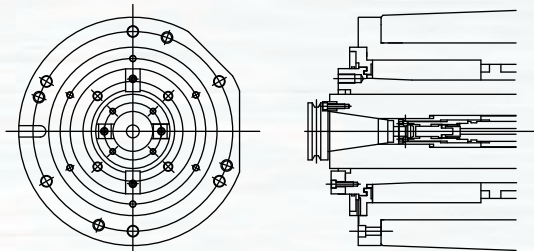
Optional Spindle Output & Torque Diagram



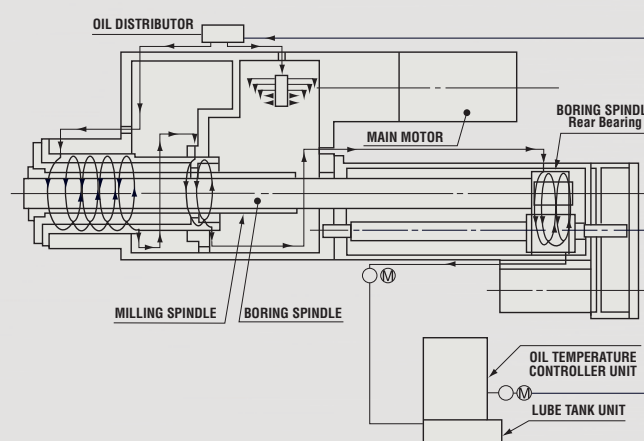
1. Angular Attachment
2. Facing Head, U-Axis, CNC Controlled
3. Universal Attachment



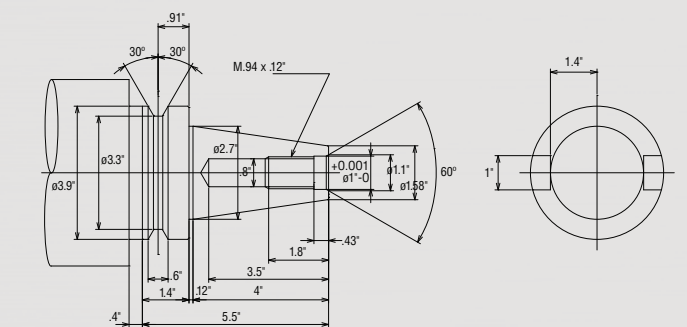
Spindle Nose for 5.1" Bar & 8" Milling Spindle



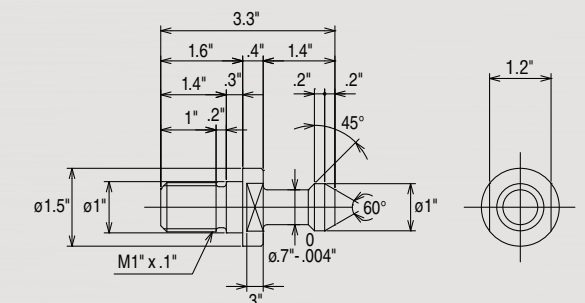
Heavy Duty Gear Box Case is Oil Bath Sealed and Chilled



BT 50 Tool Shank



MAS I Type Pull Stud (45°)





130 SERIES Powerful Control Features

130 Series Boring Mills are equipped with proven Fanuc control and motor technology. For ease of operation the control is pendant mounted. The CNC provides a simultaneous 5-axis control. Standard automation software simplifies a wide range of boring mill tasks. Fanuc's Manual Guide Function in addition to other standard features is also included.

Controlled Axes: 5 Axes (X, Y, Z, W & B Axes)	Decimal Point Programming / Pocket Calculator
Simultaneously Controlled Axes: 5 Axes	Type Decimal Point Programming
Controlled Method: AC Servo Motor + Pulse Corder	Plane Selection (G17, G18, G19)
Minimum Input Unit: 0.001mm (0.001 deg)	Rotary Axis Designation
Max. Command Value: ±8-Digit (±9999.999)	Rotary Axis Roll-Over
Interlock (All axes, each axis, each direction block start, cutting block start)	Workpiece Coordinate System Setting (G92)
Emergency Stop	Automatic Coordinate System Setting
Over-Travel	Manual Absolute On / Off
Stored Stroke Check 1	Subprogram Interpolation by R Programming
Mirror Image (Each axis of X and Y axes by M code)	Auxiliary Function M8-Digit
Followup	Main Spindle Function S5-Digit
Backlash Compensation	Tool Function T8-Digit
Backlash Compensation for Each Rapid Traverse and Cutting Feed	Tool Offset (G43, G44, G49)
Automatic Operation	Number of Registerable Programs: 63 Programs
MDI Operation	Tape Editing
Program No. Search	Program Protect
Sequence No. Search	Status Display
Buffer Register	Clock Function
Dry Run	Current Position Display
Single Block	Program Display
Jog Feed	Parameter Setting and Display
Manual Reference Point Return	Self-Diagnosis Function
Incremental Feed	Alarm Display
Positioning (G00)	Alarm History Display
Exact Stop Mode (G01)	Operation History Display
Exact Stop (G09)	Periodical Maintenance Screen
Linear Interpolation	Maintenance Information Screen
Circular Interpolation	Help Function
Dwell (in seconds) G04	Display of Actual Spindle Speed
Skip Function (G31)	Directory Display of Hardware and Software Configuration
Reference Point Return (G28)	English Display
Reference Point Return Check (G27)	Data Protection Key 1 Kind
2nd Reference Point Return (G30)	Erase CRT Screen Display
Rapid Traverse	Modem Card Control
Rapid Traverse Override: F 0, 25, 50, 100%	External Key INput
Feed Rate per Minute mm/min	External Program INput
Cutting Feed Rate Override: 0 - 200%	External Workpiece Number Search
Jog Feed Override	Memory Card Interface
Override Cancel	Screen Hard Copy
EIA / ISO Automatic Recognition	Servo Wave-Form Display
Label Skip	Fine Acceleration and Deceleration
Parity Check	HRV Control
Control In / Out	Status Display (NC Ready Completion, etc.)
Optional Block Skip: 1 Switch	DNC Operation by Memory Card
Maximum Command Value ±8-Digit	Inch / Metric Changeover
Program No. 04-Digit	Helical Interpolation
Sequence No. N5-Digit	Rigid Tapping
Absolute / Incremental Command in Same Block	Tool Offset Memory C
	Program Storage Tape Length: 160m
	10.4" Color LCD
	Program Restart

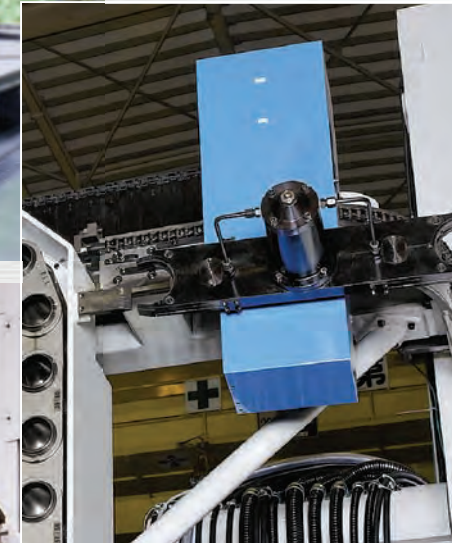


Stored Stroke Check 2
Memory Type Pitch Error Compensation
Manual Handle Feed: 1 Unit
Single Direction Positioning (G60)
Workpiece Coordinate Systems (G52 - G59)

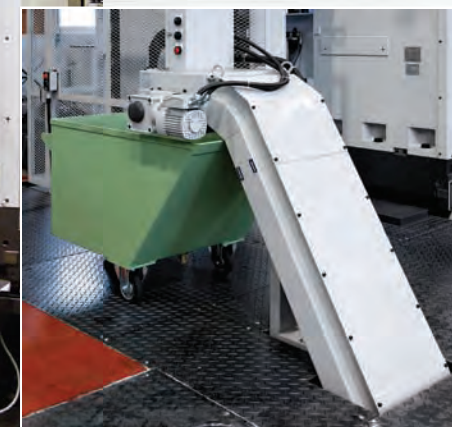
Workpiece Coordinate Preset
Number of Tool Offsets: 99 Pairs
Cutter Diameter Compensation C
Extended Tape Editing
Programmable Data INput (G10)
Canned Cycle (G73, G74, G76, G80 - G89)
Background Editing
Macro Executor
Spindle Serial Output
Spindle Orientation
Position Switch
Run Hour and Parts Count Display
Reader / Puncher Interface
External Data Input
Control Axis Detach
Dual Position Feedback

Specifications subject to change without notice.

130 SERIES Performance Enhancing Components



The standard ATC System provides a generous 60 tool capacity. 90 & 120 tool ATCs are available if additional capacity is required. The standard Pneumatic Foot-pedal frees the operator's hands for faster, safer tool loading and unloading. A reliable, high-efficiency tool change mechanism minimizes machine idle time. Available fully enclosed splash guard promotes shop cleanliness and operator safety.

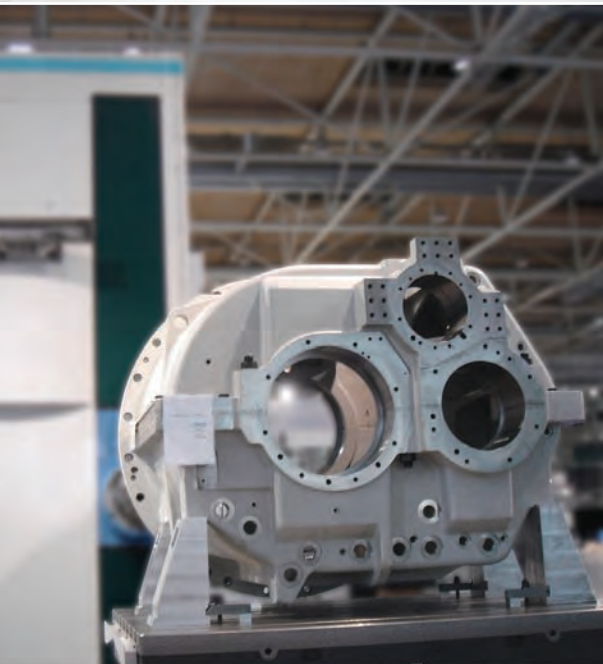


A micro-filtration and chip conveyor system provides efficient chip evacuation. Skimmer, chip covers and splash guards keep ways and drive components clear of chips.

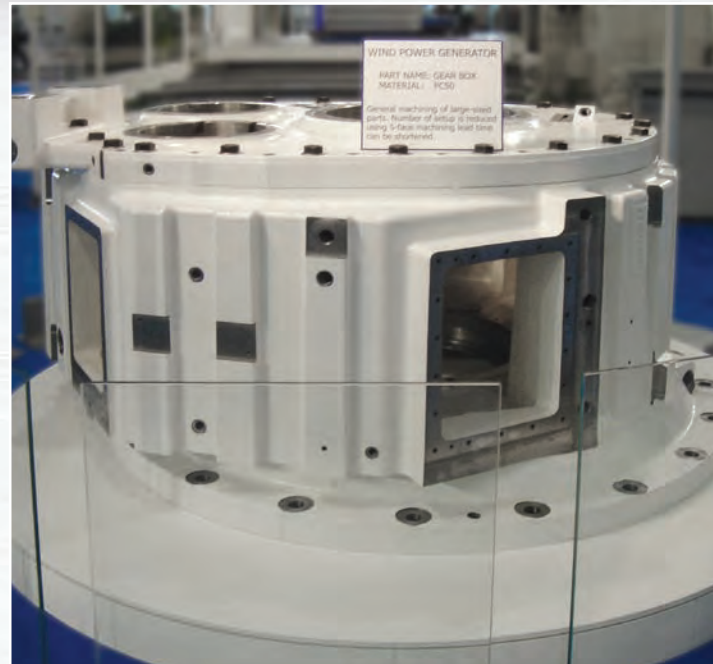


130 SERIES
Designed for the Most Demanding Machining

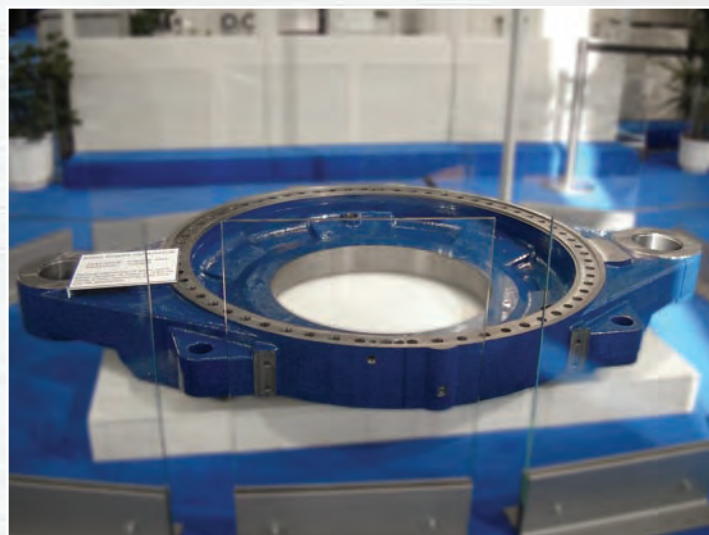
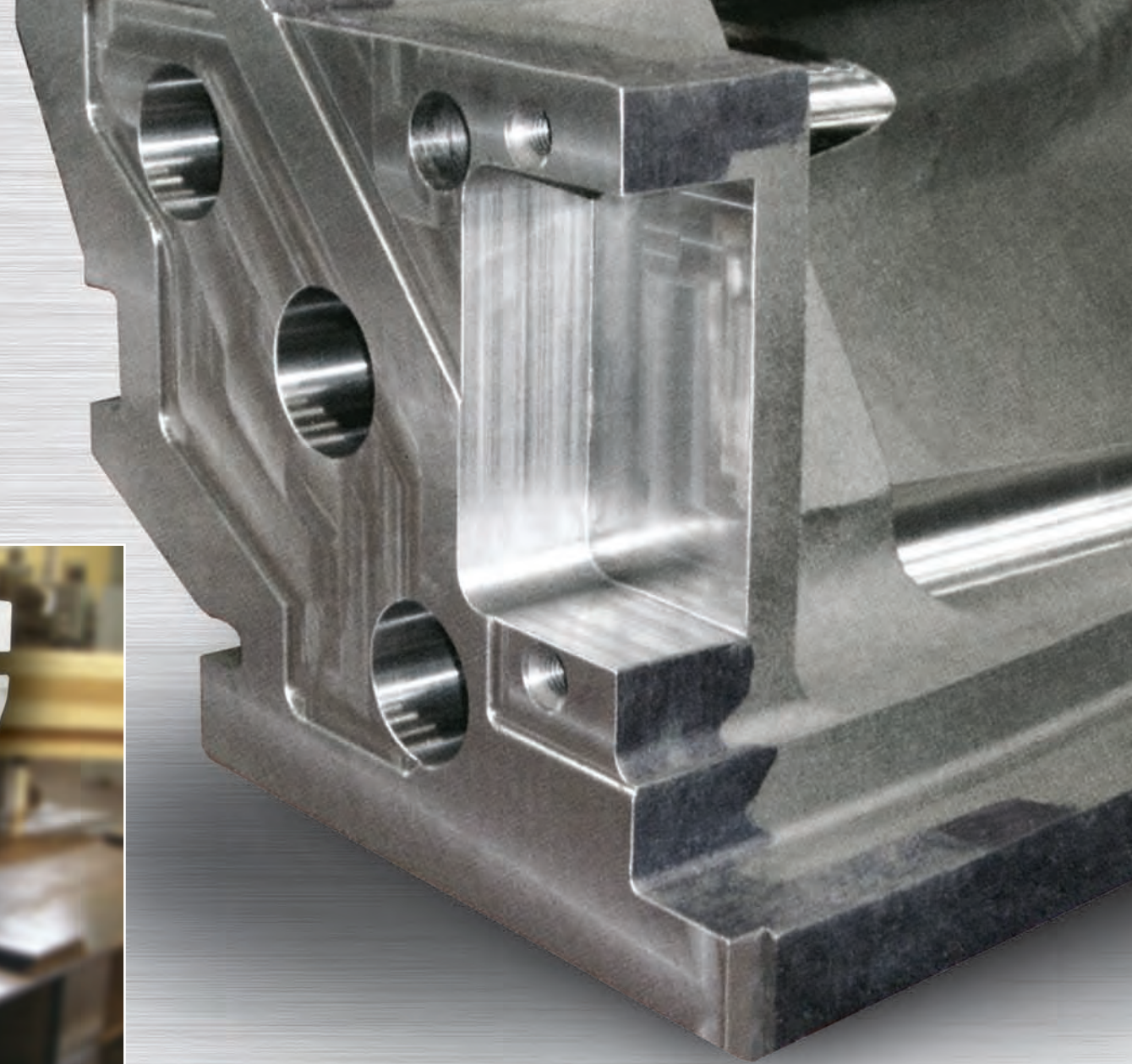
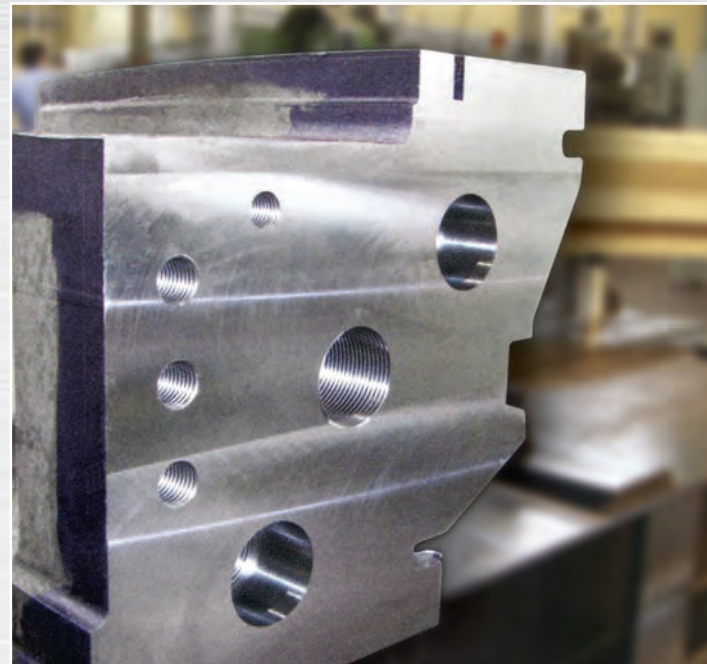
Windmill Gear Box



Power Generation



Heavy Construction



Windmill Torque Arm

Standard Equipment:

- Heavy Duty Box Way Construction
- High Quality Cast Iron Construction
- Spindle Orientation Function
- Automatic Spindle Head Lubrication (Oil-Air Mist)
- Automatic Tool Changer (Std. Magazine Capacity 60 Tools)
- Scale Feedback (X, Y, Z, B Axes)
- Thermally Controlled Head Stock
- Main Operation Panel
- Pendant Control Operation Panel with MPG
- Bed Slideway Cover (Teleflex Cover of X and Z Axes)
- Column Front Slide Cover for Y Axis (Main Spindle Head Up and Down)
- Coil Conveyor (Built-In X Axis Table Bed and Z Axis Column Bed)
- Fanuc CNC System

- 5-Axis Simultaneous Control
- Automation Software
- Helical Interpolation
- Rigid Tapping
- Coolant System and Filter Unit
- Lift-Up Type Chip Conveyor (Hinge-Pan)
- Coolant Through Spindle
- Splash Guard: A Type
 Max Swing of Workpieces:
 ø2390 for BP130 3.0;
 ø2700 for BP130 3.5
- W Axis Thermal Displacement Compensation Function
- Spindle RPM Display and Spindle Motor Load Display (On LCD Screen)
- Automatic Power Shut-Off Function
- Tool No. Display (On LCD Screen)

- Machine Completion Signal Tower (Red - Amber - Green)
- Illumination Equipment (Halogen Light 1 Unit)
- Self-Diagnosis Function (NC Equipment)
- Installation Hardware and Toolbox

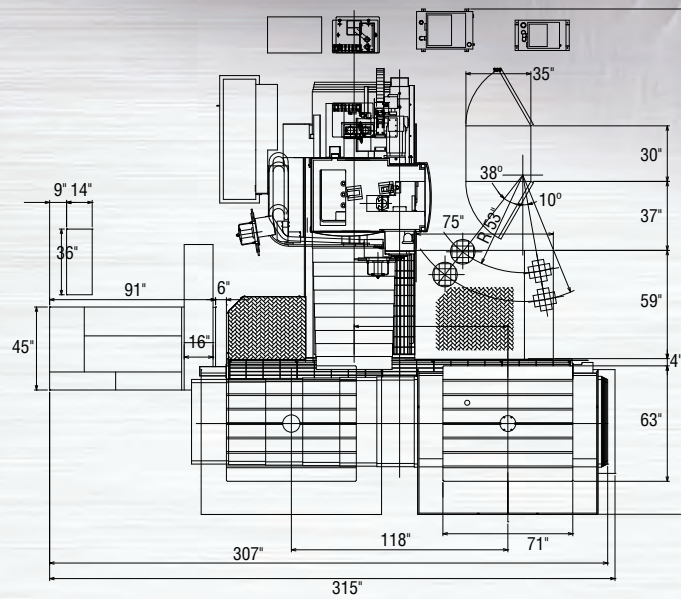
Optional Equipment:

- Right Angle Head
- Universal Attachment
- Angular Attachment
- Facing Head, U-Axis, CNC Controlled
- Plane Table Machine
- Full Enclosure
- ATC Magazine Tool Capacity Extension 90 Tools or 120 Tools
- Pallet Changer Options



130 SERIES Machine and Table Drawings

Top View **BP130 3.0**



Side View **BP130 3.0**

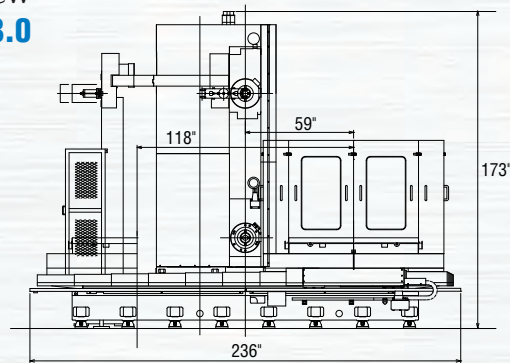
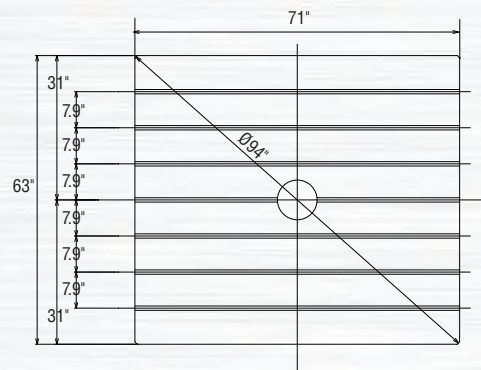
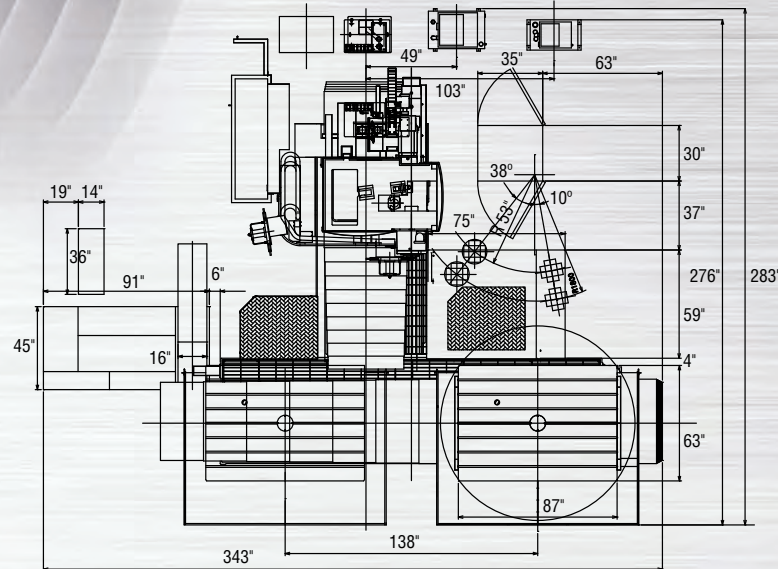


Table **BP130 3.0**



Top View **BP130 3.5**



Side View **BP130 3.5**

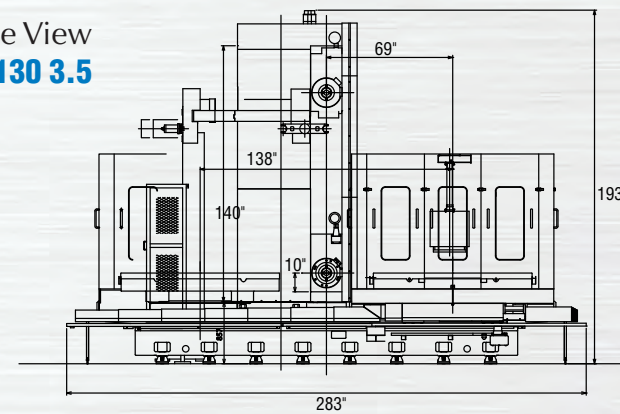
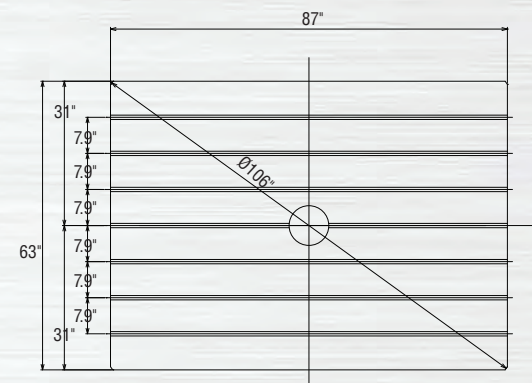


Table **BP130 3.5**



BP130 SERIES Specifications

	BP130-3.0	BP130-3.5	BP130-4.0	BP130-5.0
TABLE				
Full Rotary Table	62.99" x 70.87" (1,600 x 1,800mm)		62.99" x 86.61" (1,600 x 2,000mm)	
Table Indexing	0.001 deg			
Maximum Load Capacity	22,000 lbs (10,000kg) / Optional 33,000 lbs (15,000kg)			
TRAVEL DISTANCE				
X-Axis	118.11" (3,000mm)	137.80" (3,500mm)	157.48" (4,000mm)	196.85" (5,000mm)
Y-Axis	78.74" (2,000mm)	98.43" (2,500mm)		
Z-Axis	62.99" (1,600mm)			
W-Axis	27.56" (700mm)			
SPINDLE				
Spindle Motor	35hp (26kW)			
Optional Spindle Motor	60hp (45kW)			
Spindle Range / Speeds	5 - 2,500rpm			
Optional Spindle Speed	5 - 3,500rpm			
Maximum Torque	2,795 ft•lbs (3,790 N•m)			
Optional Torque	3,033 ft•lbs (4,113 N•m)			
Spindle	3 Range / Gear			
Optional Spindle	4 Range / Gear			
Spindle Diameter	5.12" (130mm)			
Spindle Taper	Cat # 50			
FEEDRATE				
X-Axis	393.70" (10,000mm)	314.96" (8,000mm)		
Y & Z Axis	393.70" (10,000mm)			
W-Axis	236.22" (6,000mm)			
B-Axis	196.85" (5,000mm)			
CUTTING FEEDRATE				
X, Y, Z, W Axes	196.85" (5,000mm)			
B-Axis	1rpm/min			
ATC				
Number of Tools (Optional)	60 (90, 120)			
Max. Dia. (Adj. Pots Empty)	5.51" (9.84mm)			
Max. Length	15.75" (400mm)			
Max. Weight	55.12 (25kg)			
Tool Selection	Random Shortest Route			
ACCURACY				
Position Accuracy				
Full Length with Scales for X, Y and Z Axes	0.0002" (0.005mm)			
Full Length W Axis	0.0004" (0.01mm)			
B Axis NC Rotary	5 arc/sec			
B Axis NC Rotary at every 90° Positioning	5 arc/sec			
Repeatability				
Full Length with Scales for X, Y and Z Axes	0.0001" (0.003mm)			
Full Length W Axis	0.0001" (0.003mm)			
B Axis NC Rotary	3 arc/sec			
B Axis NC Rotary at every 90° Positioning	3 arc/sec			
NET WEIGHT Approx.	72,752 lbs (33,000kg)	79,366 lbs (36,000kg)	83,775 lbs (38,000kg)	88,184 lbs (40,000kg)
MACHINE SPACE W x D x H	20" x 22" x 14" (6,000 x 6,700 x 4,400mm)	24" x 22" x 16" (7,300 x 6,700 x 4,950mm)	28" x 22" x 16" (8,600 x 6,700 x 4,950mm)	37" x 22" x 16" (11,200 x 6,700 x 4,950mm)
POWER	70 kVA (125kVA)			
CNC CONTROL	Fanuc			

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