

# HEAVY DUTY CNC LATHE

**BNC-5000/6500 Series**  
BNC-2000/e200 261162



National Award  
of Outstanding



ISO 14001:2004  
EMS 546518



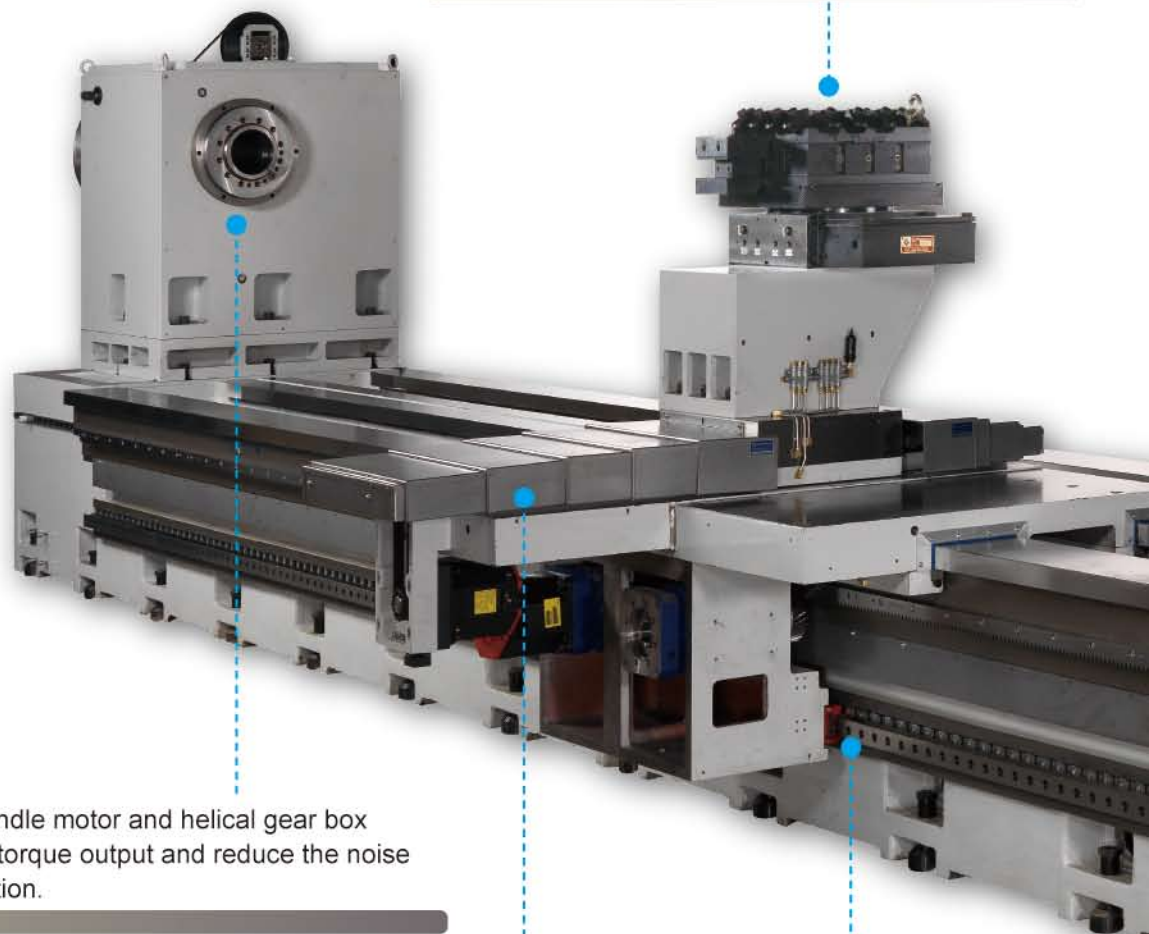
ISO 9001:2008  
FM 538421

# HEAVY DUTY CNC LATHE

## BNC-5000 / 6500 Series

Featuring the high rigid structure of box way with one-piece bed, MICROCUT's Heavy Duty CNC Lathe BNC-5000/6500 series are specially designed for heavy duty cutting. Four-guideway bed with high torque output provides the best cutting performance. To offer a one-shot setup and best finishing, C axis with braking system is available for multiple operations. The model BNC-5000/6500 can be widely utilized in various fields, such as oil field, construction industry, rubber industry, power plant, ship yard, as well as iron & steel industries, etc., which can meet diverse industries' demands.

Various turrets meet all kinds of machining demands.



AC servo spindle motor and helical gear box provide high torque output and reduce the noise during operation.

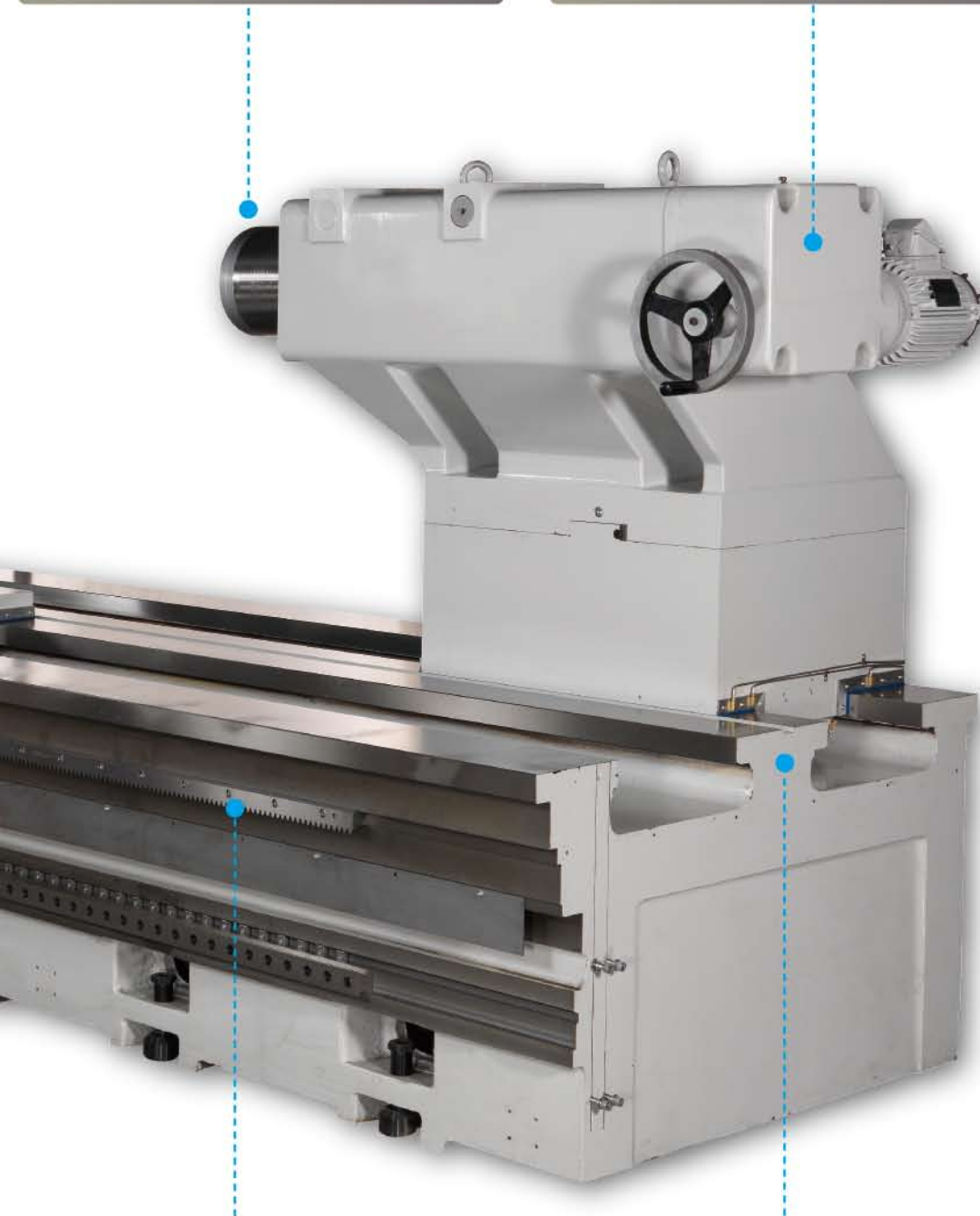
The cross slide with cover is supported by additional roller type linear way to ensure the best accuracy with long X travel.

Driven by twin servo motors with reduction gear box, the roller type linear guideway of Z axis ensures high rigidity and reduces backlash of the gear and rack.

Rack traverse on X axis ensures high rigidity and stability for long X travel.

Motorized quill supports the long workpiece to ensure the machining stability.

Motorized tailstock with heavy loading design ensures the best cutting performance.



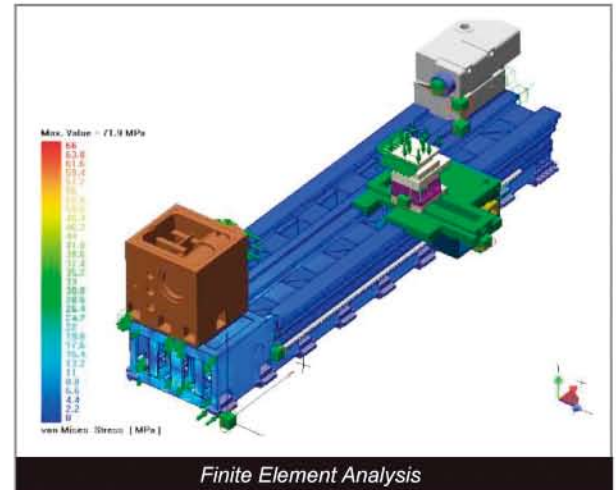
Z axis offers accuracy and travel and heavy duty machining.

Four wide guideways on one-piece bed are provided for heavy duty cutting.



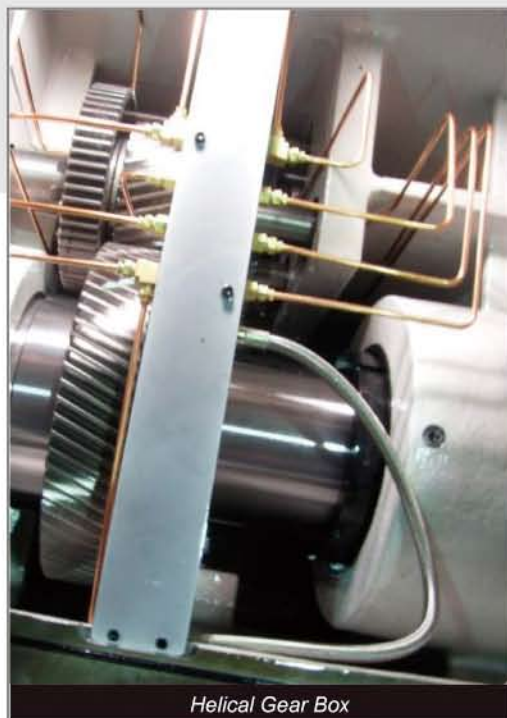
## Structural Optimization

The surface of bed way is hardened (HRC48-52) by heat treatment. Wide bed design keeps carriage stable movement. One-piece bed with four wide guideways offers higher rigidity for heavy duty cutting. The whole structure design is optimized by using finite element analysis.



## Powerful Cutting

High spindle output torque provides powerful cutting performance. Built-in two-step gear box is driven by hydraulic pressure for automatic spindle speed change. Gear box is built with helical gears which provide advantages of noise and vibration reductions and full power transmission when performing heavy duty cutting. Oil cooler keeps the gear box and headstock at low temperature to perform high accuracy machining.



## Interlocked Sliding Chuck Guard (Opt.)

The chuck guard with the interlock switch meets CE marking regulation.



*AC Servo Motor for Spindle*

## Easy Chip Removing Design

- The bed structure is designed with easy chip flow to the rear of the machine.
- The stainless steel plate is added inside of the front door, for easy chips collecting and preventing scratches caused by sliding chips.
- The chip collection tray is standard and the chip conveyor seated at the rear or front is available for the selection.



*Chip Flow Design on Bed Structure*



*Chip Conveyor (Opt.)*

# Powerful Transmission for Heavy Duty Cutting

## The Transmission of Feed Movement to the longitudinal slide and Precision Rack with Tilted Teeth

High precision and stiffness of double pinion and rack carry the Z axis. Two servo motors with reduction gear boxes drive longitudinal slide offering best solution for backlash compensation and high axis thrust force.





## Automatic / Manual Chuck (Opt.)

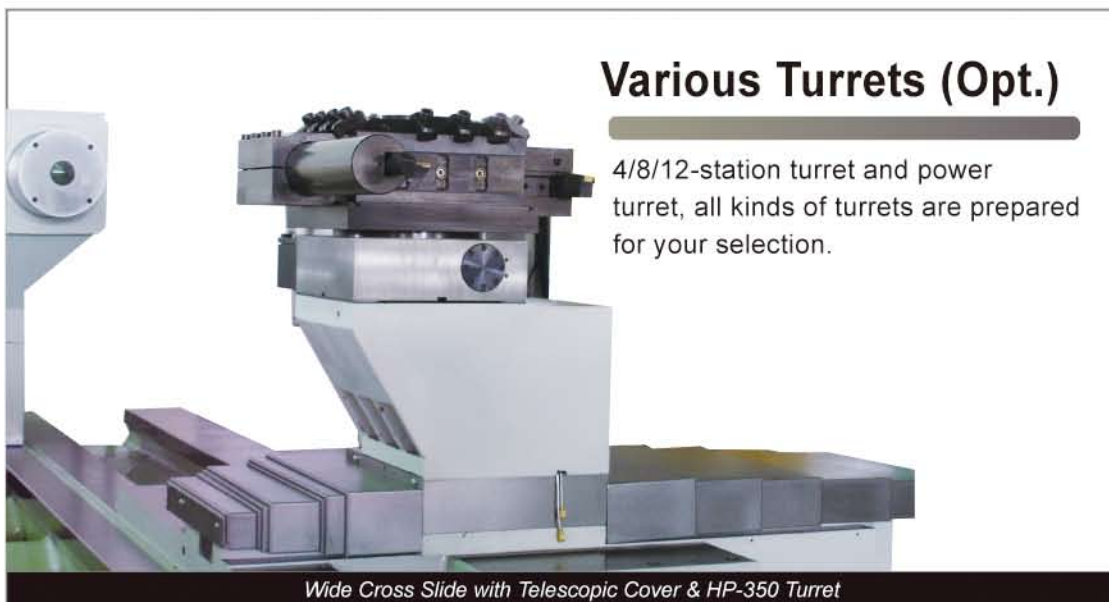
Larger bore with usual chucks as well as largest bore with power operated chucks for higher gripping force are all made from high-grade alloy steel for high-precision and high-reliability cutting performance.

## Telescopic Cover on X Axis

Larger bore with usual chucks as well as largest bore with power operated chucks for higher gripping force are all made from high-grade alloy steel for high-precision and high-reliability cutting performance.



*Manual 4-Jaw Chuck*



*Wide Cross Slide with Telescopic Cover & HP-350 Turret*

## Various Turrets (Opt.)

4/8/12-station turret and power turret, all kinds of turrets are prepared for your selection.

# Standard Accessories:

- FANUC 0iTD control with 10.4" LCD and Manual Guide i
- Helical gear box with automatic speed changer
- Chuck sliding guard with interlock device
- Motorized tailstock
- Travelling front single door interlocked with carriage
- Coolant system
- Lubrication system
- Low voltage circuit system
- CE declaration of conformity for EU countries
- Leveling pads
- Tool set & kits
- Operation manual & parts list
- Linear scale for Z axis

## CNC Control with “Teach-In” and “Thread Repair” Facility

The starting point of threading can be measured by making a threading tool touch onto the actual thread and the broken thread can be repaired easily. “Teach-In” standard function is available on FANUC Manual Guide i, FAGOR or SIEMENS controller.

## CE-Marked Electric Cabinet

The electric cabinet meets the latest CE marking regulation. All CE marking declared components are applied and easy to find the replacement locally. A totally sealed cabinet ensures a good quality environment for the wiring and electrical components.





## Motorized Movement of Tailstock Body & Quill

The movement of tailstock and quill is driven by industrial motors, plus reduction gear box offer high output torque.



## Two Servo Motors on Z Axis

Two servo motors on Z axis achieve the best cutting performance and reduce backlash of gear and rack.

## Z Axis with Linear Scale

The machine is equipped with the linear scale on Z axis as standard accessory ensures high precision cutting performance.



# Optional Accessories:

- HP-350 hydraulic turret
- 8 / 12 stations automatic turret
- Turret with live tooling
- 80 / 100 / 150mm boring bar holder & boring bar
- Second carriage for simultaneous or alternative processes of turning, boring, milling, or drilling.
- FAGOR 8055i POWER 11" LCD full key controller / SIEMENS 840D sl controller with Shop Turn
- Chip conveyor
- C axis with braking system
- Automatic or manual chuck
- Close or open fixed steady rest / two-point steady rest
- Self-centering hydraulic steady rests commanded by the CNC automatic anchoring, displacement and turning.
- Probes for tools & workpiece measuring
- EMC
- Transformer for Fanuc and voltage except voltage 400V

## Lubrication Detection & Monitoring System

- The lubrication system is designed with 2 different types of distributors for selection—the pressure-released and volumetric types.
- A buzzer will alarm when the lubricant is under a certain level.



**HP-350 Hydraulic Turret**

## Probes for Tools & Workpiece Measuring

The Renishaw tool probe and workpiece probe provide automatic measurement and reduce setting time.



## Hydraulic Steady Rest

Hydraulic steady rest preparation includes support for hydraulic steady rest, hydraulic tank and wiring.



## Boring Bar Holder & Boring Bar

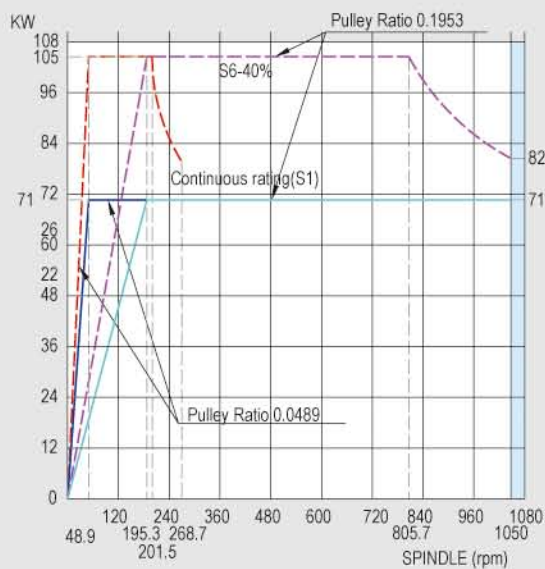
80 / 100 / 150mm boring bar holder and boring bar are available for selection.



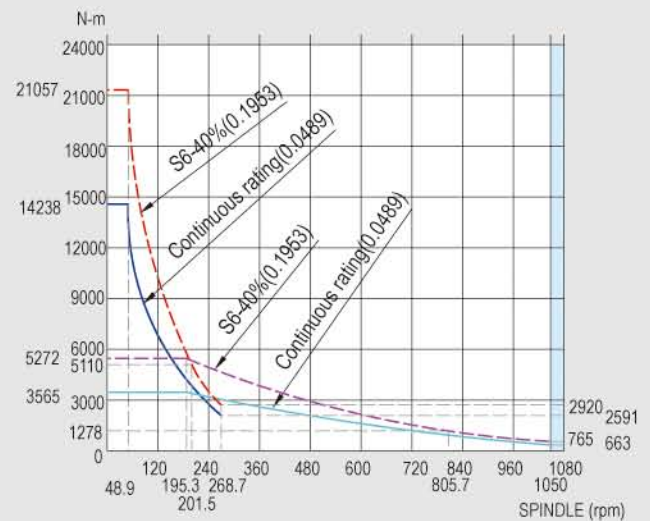
# Power & Torque Chart

## SIEMENS Control

Power Chart



Torque Chart

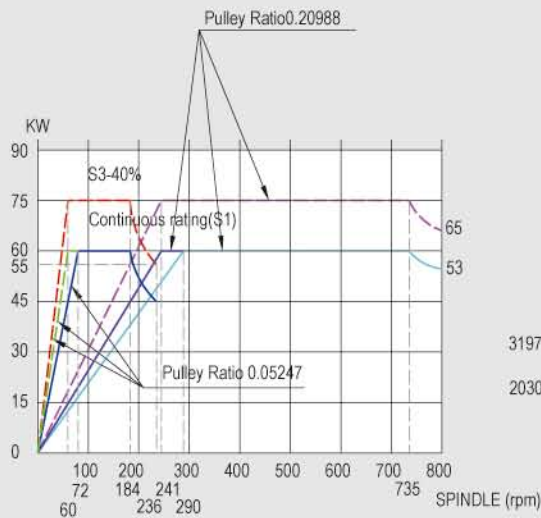


Power / Torque Chart Data			
Spindle Taper	ISO	A2-11(153mm)	Spindle Motor
		-	Motor Output
		-	Gear Ratio
Spindle Speed	1050 RPM	0.1953/0.0489	Pulley Ratio
		-	-

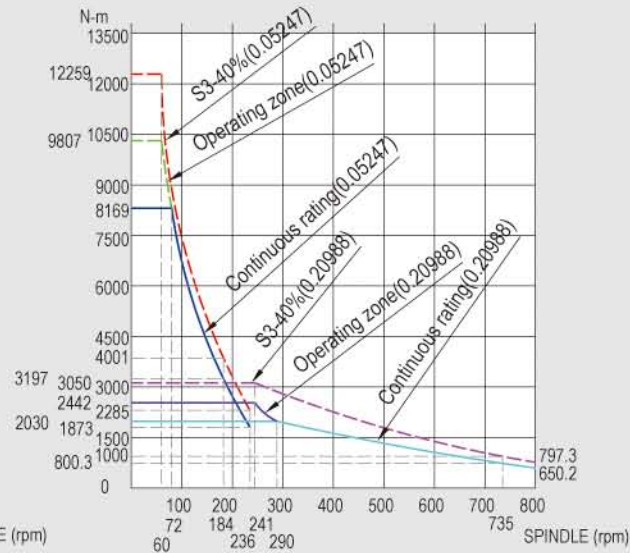
# Power & Torque Chart

## FANUC Control

Power Chart



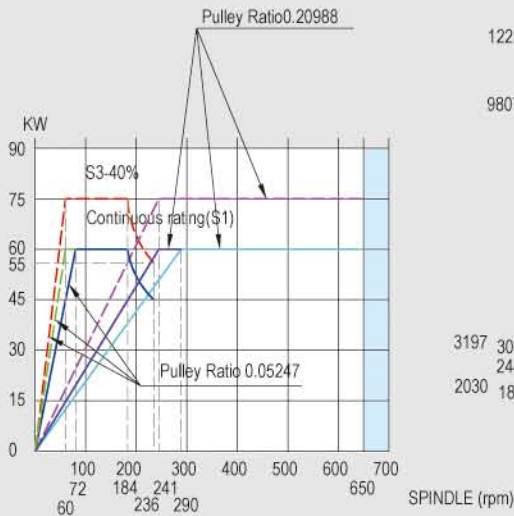
Torque Chart



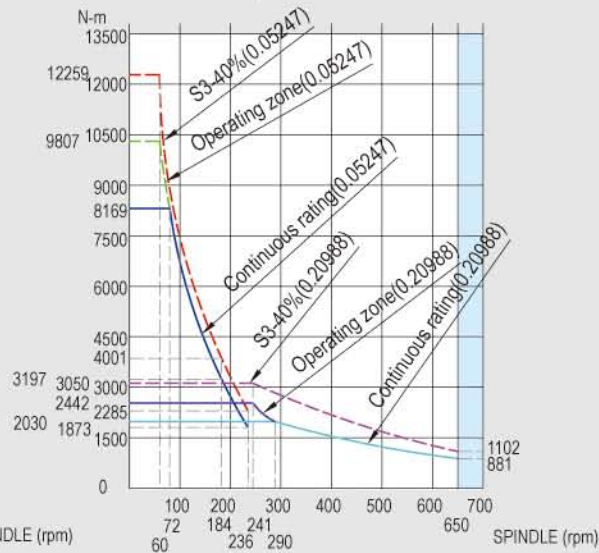
Power / Torque Chart Data				
Spindle Taper	ISO	A2-11(153mm)	Spindle Motor	Fanuc ail60/4500HV
		-	Motor Output	60/75 kw
		-	Gear Ratio	0.20988/0.05247
Spindle Speed	800 RPM		Pulley Ratio	-

## FANUC Control

Power Chart



Torque Chart

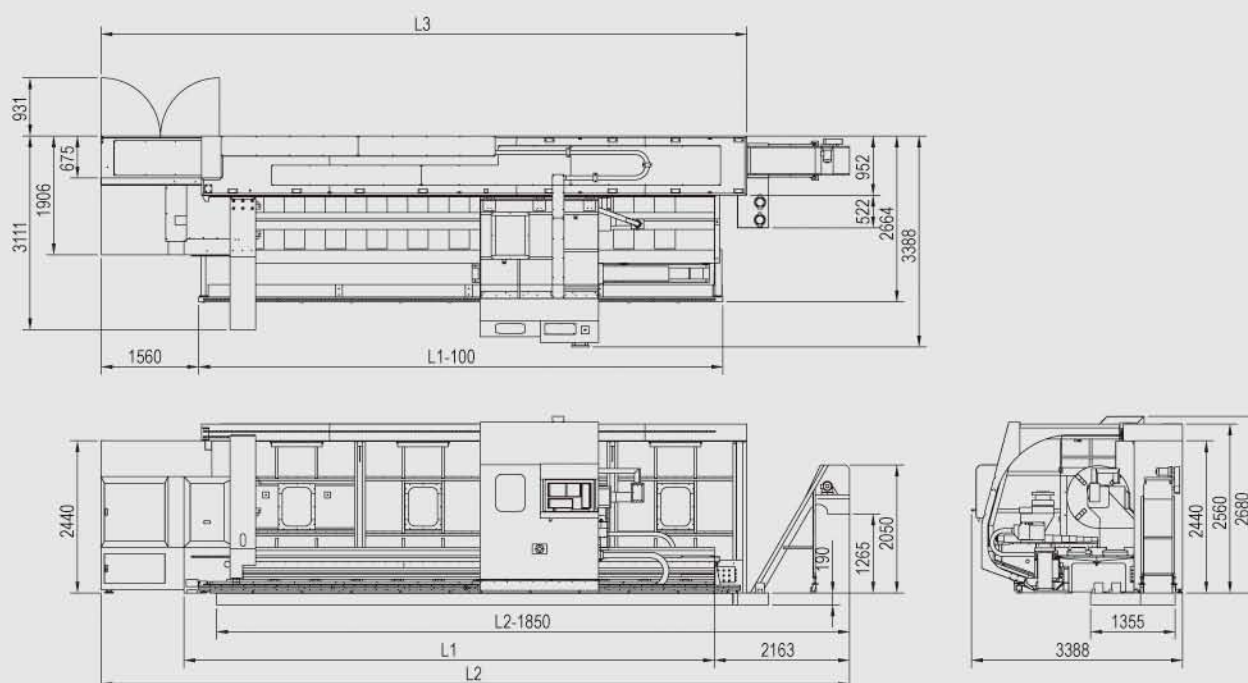


Power / Torque Chart Data				
Spindle Taper	ISO	A2-15(254mm)	Spindle Motor	Fanuc ail60/4500HV
		-	Motor Output	60/75 kw
		-	Gear Ratio	0.20988/0.05247
Spindle Speed	650 RPM		Pulley Ratio	-

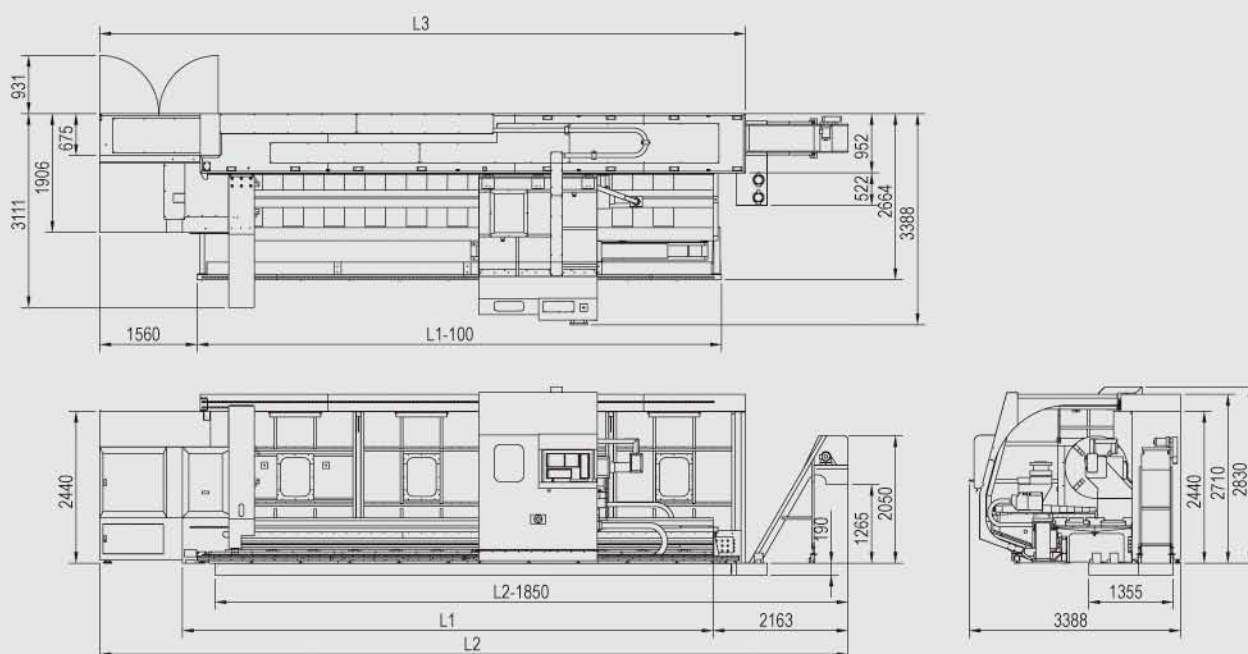
# Layout

B.C.D.	3000mm	4000mm	5000mm	6000mm	8000mm	10000mm	12000mm
L1	5540	6530	7520	8510	10490	12470	14450
L2	9030	10020	11010	12000	13980	15960	17940
L3	7520	8510	9500	10400	12470	14450	16430

## BNC-5000 Series



## BNC-6500 Series





# Specification

Item	Unit	BNC-5000	BNC-6500
Capacity			
Swing over bed	mm	1300	1600
Swing over cross slide	mm	980	1280
Max. turning length (w/ turret)	mm	3000/4000/5000/6000/8000/10000/12000	
Max. workpiece weight (w/ tailstock)	kg	10000	
Travel			
X axis	mm	650	800
Z axis	mm	3000/4000/5000/6000/8000/10000/12000	
Spindle			
Speed taper		ASA, A2-11	
Spindle hole diameter	mm	Ø153	
Suitable chuck size (opt.)	mm	500	
Spindle speed	rpm	FANUC: 1-800 ; FANUC: 1-735; SIEMENS: 1-800	
Motor output	kW	FANUC: 60/75; SIEMENS: 51/76.5	
Transmission		Belt	
Turret (option)			
Number of tool stations		4 (HP-350)	8~12 (VDI_60)
Tool allowance (square)	mm	40 x 40 (HP-350)	32 x 32 (VDI_60)
Shank diameter for boring bar	mm	Ø100 (HP-350)	Ø50 (VDI_60)
Axes Feed Rate			
X axis rapid feed	m/min	10	10
Z axis rapid feed	m/min	10	10
Jog feed per revolution	m/min	3	3
Accuracy			
Positioning	mm	±0.005	±0.005
Repeatability	mm	±0.005	±0.005
Axes Transmission			
X axis ballscrew	mm	Ø40 x P5 x C3	
X axis transmission		Belt	
X axis power	Nm	FANUC: 22; SIEMENS: 27	
Z axis rack	mm	M4	
Z axis transmission		Rack	
Z axis power	Nm	FANUC: 22; SIEMENS: 27	
Guideway			
X axis guideway type		Box way	
X axis guide distance	mm	1200	
Z axis guideway type		Box way	
Z axis guide distance	mm	1300	
Tailstock			
Quill stroke	mm	230	
Quill diameter	mm	240	
Quill inside taper	MT	6	
Coolant			
Pump motor	W	450 (50Hz) / 560 (60Hz)	
Max. pump flow	L/min	58 (50Hz) / 66 (60Hz)	
Max. pump pressure	Kg/cm²	10	
Lubrication			
Pump motor	W	850 (50Hz)/1290 (60Hz)	
Max. pump flow	L/min	58 (50Hz)/66 (60Hz)	
Max. pump pressure	Kg/cm²	10	
Miscellaneous			
Length (chip conveyor excluded)	mm	7520/8510/9500/10400/12470/14450/16430	
Length (chip conveyor included)	mm	9030/10020/11010/12000/13980/15960/17940	
Width	mm	3388	
Height	mm	2680	
Weight	Kg	18/21/24/27/33/39/45	

\*Specifications are subject to change without notice.



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