SUZHOU GUDWAY CNC EQUIPMENT CO.,LTD

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Flat Bed Type Turning Lathe

SUZHOU GUDWAY CNC EQUIPMENT CO.,LTD

GUDWAY Large Size/Heavy-Duty CNC Horizontal Lathe

GUDWAY's large size/heavy-duty CNC lathe is designed and engineered to meet the world class processing needs of various industries. GUDWAY's zero-defect manufacturing process has won the trust and praise of many customers in the world.

GFT series large size / heavy-duty CNC lathe adopts international advanced technologies and quality control methods, such as 3D modeling, dynamic simulation, static analysis, dynamic analysis, and modular applications to improve continuously the machine quality and guarantee customer's satisfaction.

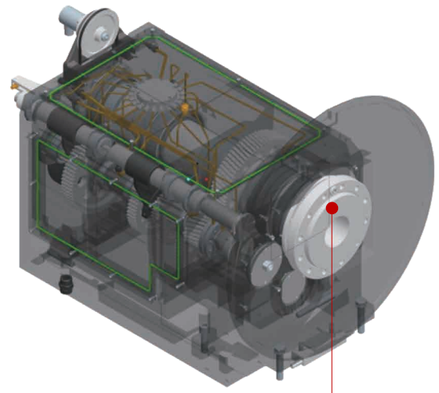
GUDWAY is a world class machine tool builder integrating electric, programmable automatic control, hydraulic control, and modern mechanical design. GUDWAY has developed and own independent and mature intellectual property rights on most of their machine designs and components.

GUDWAY ' s GFT series lathe can finish various processing on shaft and disc parts, such as turning external circle, inner hole, end face, taper surface, grooving, threading, etc.

GFT series
Medium-Duty Flat-Bed CNC Lathe(850-1250mm Swing)

- Apply integrated electromechanics design to realize the machine with compact and reasonable overall layout, convenient installationand maintenance.
- The spindle drive adopts hydraulically controlled auto shifting. A quiet stable transmission provides low noise.
- The spindle adopts three supports and a high-precision spindle bearing combination to achieve high precision accuracy and high rigidity.
- The bed adopts a unique “ Box- Ducktail-Box ” three-rail design, which effectively improves the rigidity and the vibration resistance of the cutting and ultimately improves part finishes.
- This series lathe is suitable for the processing of key components of large equipment, such as ships, valves, wind power equipment,aerospace, steam turbine rotors, large motor spindles, wind turbine and so on.

- High precise, two axis accuracy is higher 20% than the national standard.
- Rapid travel speed 10m/min, 150mm longer than you expect on Z axis travel.
- This series lathe makes it easier for boring with large tool shanks. The high rigidity and torque are very suitable for heavy-duty cutting. They also realize high speed and high positioning accuracy.



Spindle Box

- Hydraulic control automatic gear shifting, quick and reliable, smooth and low noise.
- Sub-wide gear speed control structure with an expansion sleeve transmission provide more balanced force.
- Three supports high precision spindle bearing combination provides high rigidity and high output torque.

Spindle speed up to 500rpm
Output torque is up to 7530N.M

Utilize constant stepless speed changing, the transmission ratio is up to 50 , super power, wide speer range, suitable for rough machining and finish machining of multi-materials.

Chip Discharge

Internal slant-channel design helps chips discharge efficiently.

Standard:
Dual chip trays on the machine ’ s frontside and backside, which are set on the floor, easy for maintenance and cleaning.

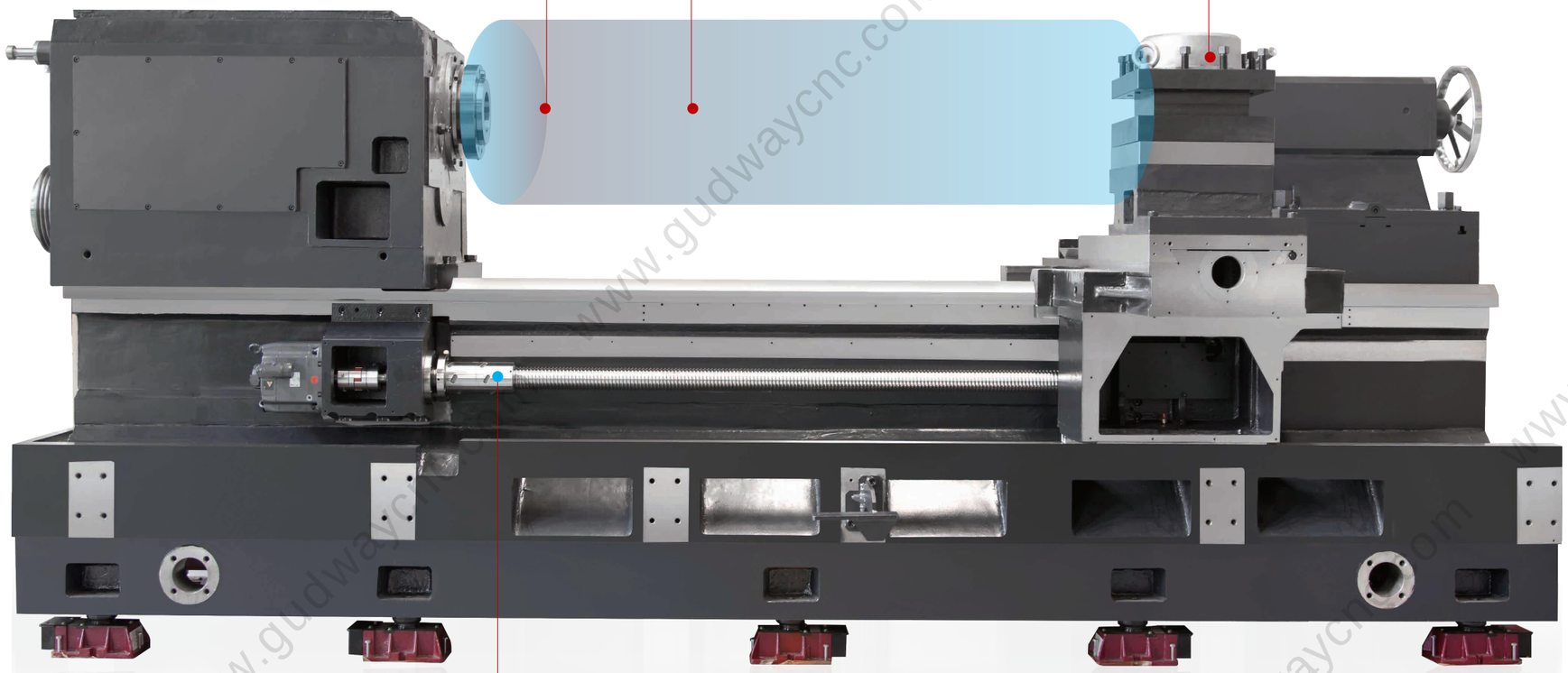
Automatic chip conveyor is optional

- Composite chain plate structure, specially designed for moving a large mass of chips.
- Double chip conveyor both in machine ’ s front and back, collect all of the coolant and chips.
- Set on the floor, easy to move outside for maintenance and cleaning.

Φ500(19,69") ~ 950mm (37.4') Max. turning Diameter(shaft parts)

6000kg (13,200lbs) max loading weight

50mm over the center, easy for boring



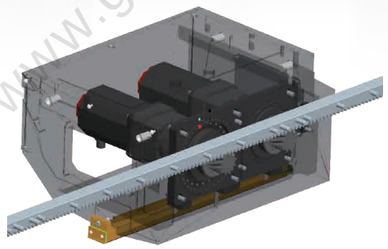
Tailstock

- Robust tailstock body, NO vibration when make heavy duty cutting.
- The anti-return locking device ensures that the workpiece is clamped reliably.
- The tailstock uses two "Ducktail-Box" guideways to distribute the force evenly and effectively distribute the workpiece weight.

Z axis travel 1650 (64.9")~5150mm (202.8")

GUDWAY Pre-Tensions all Ball screws to Eliminate Back Lash

Their pre-stretching process of the ball screw effectively reduces the influence of thermal deformation on ball screw. It improves the transmission accuracy, strengthen the rigidity and resistance to heat deformation, guarantee longer using life with less wear and reduce the stress on major components.



Drive Transmission

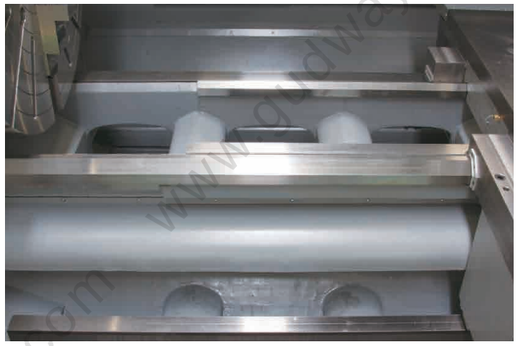
- Adopt advanced dual-motor drive and gear transmission technology, electrical backlash compensation, linear scales for full-closed feedback to achieve excellent transmission performance and industry leading accuracy.
- Excellent precision retention, high reliability, flexible control, quick response and easy maintenance.

Precision Machining

- Standard automatic 4-position tool post
- Tool shank 50 x 50 mm (2 x2”)
- Machining precision IT6

“Box-Ducktail-Box” 3 guideways Structure

- National patent, initiative design in the world.
- Stable moving, high precision, effectively eliminate the cutting vibration

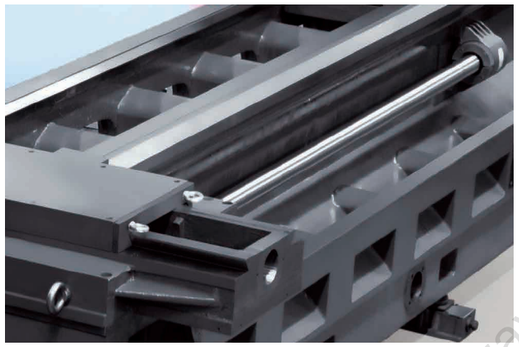


Strong Cutting, More than Enough

- Material: steel #45
- Width13mm, thickness 1mm

Closed Triangle + W-shaped Rib Design

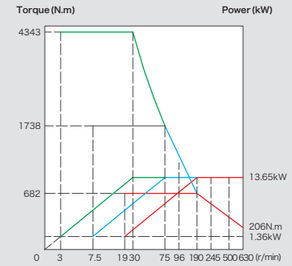
- Excellent bending and torsion resistance.
- Double 45° slant chip dropping channel to realize smooth chip removing



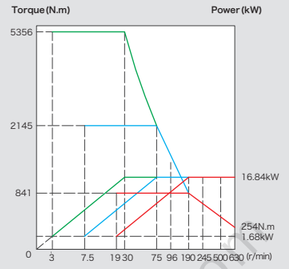
Spindle Power Torque Diagram

(Unit: mm)

GFT85S Series

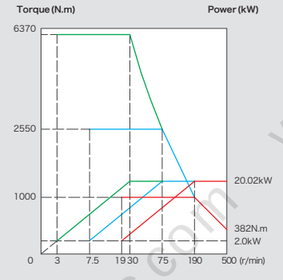


Power torque diagram for continuous rating

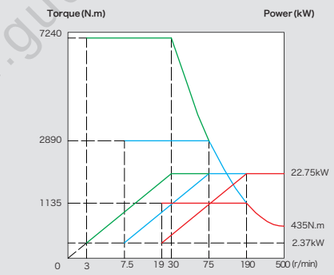


Power torque diagram for 30 minutes rating

GFT100 Series

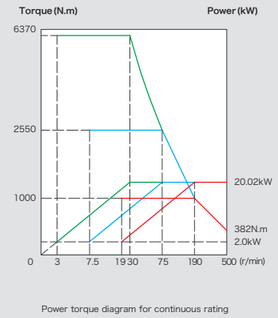


Power torque diagram for continuous rating

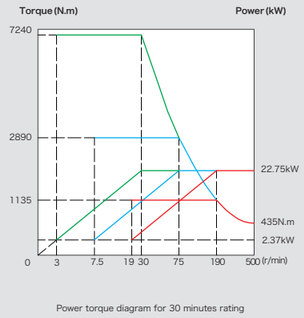


Power torque diagram for 30 minutes rating

GFT125 Series



Power torque diagram for continuous rating

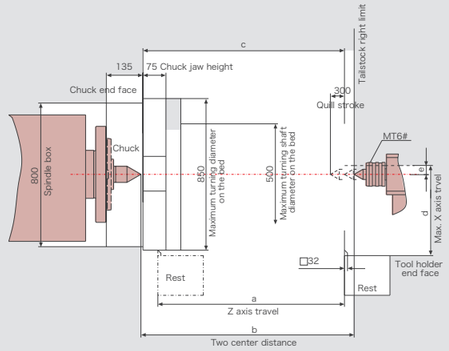


Power torque diagram for 30 minutes rating

Work Area Diagram

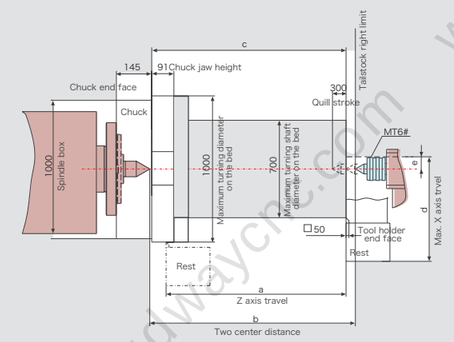
(Unit: mm)

GFT 85 Series



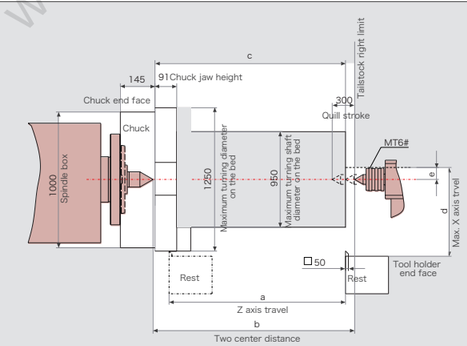
Model	a	b	c	d	e
GFT8515S	1650	1830	1710	530	50
GFT8530S	3150	3330	3210	530	50
GFT8550S	5150	5330	5210	530	50

GFT 100 Series



Model	a	b	c	d	e
GFT10015SH	1650	1830	1710	605	50
GFT10030SH	3150	3330	3210	605	50
GFT10050S/H	5150	5330	5210	605	50

GFT 125 Series

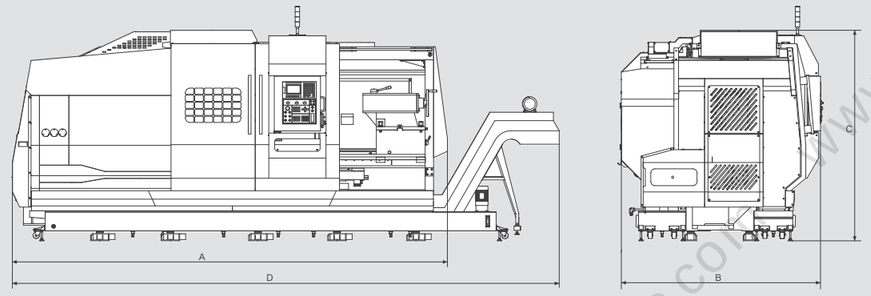


Model	a	b	c	d	e
GFT12515SH	1650	1830	1710	730	50
GFT12530SH	3150	3330	3210	730	50
GFT12550S/H	5150	5330	5210	730	50

External Dimensions

(Unit: mm)

GFT 85/100/125S Series



Model	A	B	C	D	Remark
GFT8515S	5170	2400	2405	6500	Automatic chip removal
	5170	2400	2405	5515	Manual chip removal
GFT8530S	6670	2400	2405	8000	Automatic chip removal
	6670	2400	2405	7015	Manual chip removal
GFT8550S	8670	2400	2405	10000	Automatic chip removal
	8670	2400	2405	9015	Manual chip removal
GFT10015S/H	5170	2480	2505	6500	Automatic chip removal
	5170	2480	2505	5515	Manual chip removal
GFT10030S/H	6670	2480	2505	8000	Automatic chip removal
	6670	2480	2505	7015	Manual chip removal
GFT10050S/H	8670	2480	2505	10000	Automatic chip removal
	8670	2480	2505	9015	Manual chip removal
GFT12515S/H	5170	2605	2630	6500	Automatic chip removal
	5170	2605	2630	5515	Manual chip removal
GFT12530S/H	6670	2605	2630	8000	Automatic chip removal
	6670	2605	2630	7015	Manual chip removal
GFT12550S/H	8670	2605	2630	10000	Automatic chip removal
	8670	2605	2630	9015	Manual chip removal

Item			Unit	GFT8515S	GFT8530S	GFT8550S	GFT10015S/H	GFT10030S/H	GFT10050S/H	GFT12515S/H	GFT12530S/H	GFT12550S/H
Capacity	Max. swing over bed		mm	Φ850(bed)/Φ500(saddle)			Φ1000(bed)/Φ700(saddle)			Φ1250(bed)/Φ950(saddle)		
	Max. turning diameter		mm	Φ850(disc)/Φ500(shaft)			Φ1000(disc)/Φ700(shaft)			Φ1250(disc)/Φ950(shaft)		
	Max. turning length		mm	1500	3000	5000	1500	3000	5000	1500	3000	5000
	Max. workpiece weight		kg	6000			6000			6000		
Travel	X travel		mm	530			605			730		
	Z travel		-	1650	3150	5150	1650	3150	5150	1650	3150	5150
Spindle box	Spindle nose type		-	A2-11			A2-11/A2-15			A2-11/A2-15		
	Spindle center taper		-	14° 15′			14° 15′			14° 15′		
	Spindle bore taper		-	Metric 120			Metric 140			Metric 140		
	Spindle bore		mm	Φ100			Φ110/Φ130			Φ110/Φ130		
	Spindle speed change		-	Hydraulic auto gear shift (3 steps)			Hydraulic auto gear shift (3 steps)			Hydraulic auto gear shift (3 steps)		
	Spindle speed		r/min	3～630 (speed limit 400)			3～500 (speed limit 315)			3～500 (speed limit 315)		
	Spindle torque		N.m	4343			6370			6370		
Tailstock	Tailstock quill diameter		mm	Φ160			Φ160			Φ160		
	Tailstock quill travel		mm	300			300			300		
	Tailstock quill taper		-	Mose 6#			Mose 6#			Mose 6#		
Tool post	Type		-	Electrical, vertical 4 position			Electrical, vertical 4 position			Electrical, vertical 4 position		
	Tool size		mm	32X32			50X50			50X50		
Churk	Manual 4 jaw chuck		mm	Φ800			Φ1000			Φ1000		
Spindle motor	Model		-	Frequency conversion: SFC YPNC-50-15-B(B3)			Frequency conversion: SFC YPNC-50-22-B(B3)			Frequency conversion: SFC YPNC-50-22-B(B3)		
	Power		kW	Frequency conversion: 15/18.5			Frequency conversion: 22/25			Frequency conversion: 22/25		
Travel speed	Rapid travel speed (X/Z)		m/min	8 / 10			8 / 10			8 / 10		
	Cutting feedrate		mm/min	1~8000			1~8000			1~8000		
Accuracy	Minimum setting unit		mm	0.001 / 0.001			0.001 / 0.001			0.001 / 0.001		
	Positioning accuracy	X axis	mm	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012
		Z axis	mm	0.020	0.035	0.050	0.020	0.035	0.050	0.020	0.035	0.050
	Repeatability accuracy	X axis	mm	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007
		Z axis	mm	0.013	0.020	0.020	0.013	0.020	0.020	0.013	0.020	0.020
Other	CNC system		-	SIEMENS 828D Basic			SIEMENS 828D Basic			SIEMENS 828D Basic		
	Auto chip conveyer		-	Double chip collection plate			Double chip collection plate			Double chip collection plate		
	General power capacity		KVA	40	40	40	45	45	45	45	45	45
	Coolant tank		L	400	800	1200	400	800	1200	400	800	1200
	Dimension (L×W×H)		mm	5170x2400x2405	6670x2400x2405	8670x2605x2630	5170x2480x2505	6670x2480x2505	8670x2480x2505	5170x2605x2630	6670x2605x2630	8670x2605x2630
	Machine weight		kg	11000	13000	16000	12500	14500	17500	14500	16500	19500

Standard configurations:

Double chip collection plate, lighting device, auto coolant system, auto lubrication system, air conditioner, indication light

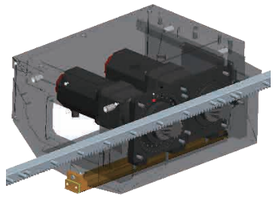
Optional accessories:

FANUC 0i-TF(5)/FANUC 0i-TF(1) CNC system, 8 position turret, closed steady rest, double auto chip conveyer

GFT series-

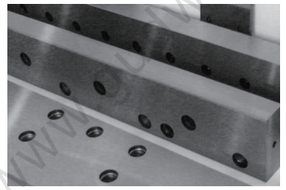
Heavy-Duty Flat-Bed CNC Lathe(1600-2200mm Swing)

- The spindle box adopts thermal symmetrical structure to overcome the influence of temperature rise on machining accuracy. The extremely rigid design insures high positioning accuracy and high repeatability accuracy.
- Integral inlaying steel box guide way with good wear resistance. The auxiliary guide rails improve the anti-subversion ability of the machine when cutting.
- The tailstock consists of upper and lower bodies, equipped with a digital center-pressure display and a workpiece thermal deformation compensation device.
- 4-position tool post as standard configuration. The horizontal 8-station, fixed tool holder, etc. are optional.
- The series lathe is suitable for the processing of key components of large equipments, such as ships, valves, wind power equipment, aerospace and other industries, such as turbine rotors, large food processing, large motor spindles,wind turbine spindles, etc.



Maximum part's loading up to 20 Tons

Z-axis: gear rack transmission, double motor driver,electrical eliminate the backlash (for 4m length or longer Z axis travel).

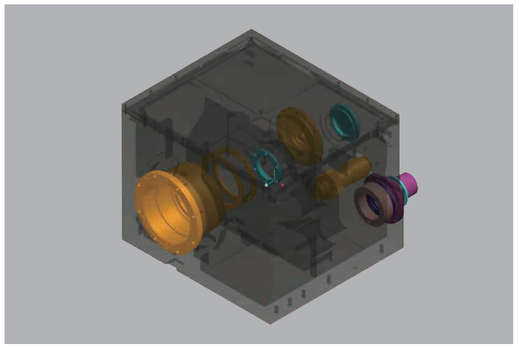


Auxiliary Inlaying Steel Guideway

To guarantee the high rigidity and no vibration when cutting huge parts.

Four-guideway Inlaying Steel Structure Bed Design

The machine bed is equipped with four pairs inlaying steel guide ways (glue filling for positioning). Reasonable design machine bed section and reinforce rib structure, optimize structure by FEA, execute standardized design to fundamentally solve the lack rigidity problem happened on the traditional heavy duty CNC horizontal lathe. These methods greatly improve the workpiece processing accuracy, ease processing, realize heavier loading, reduce operator's working force, improve the production efficiency and extend machine using life.



Spindle Headstock

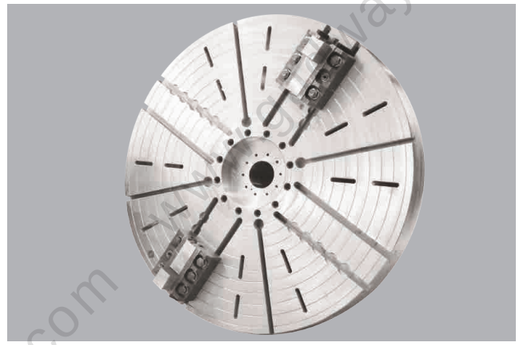
(2-speed transmission, maximum speed 450 rpm)

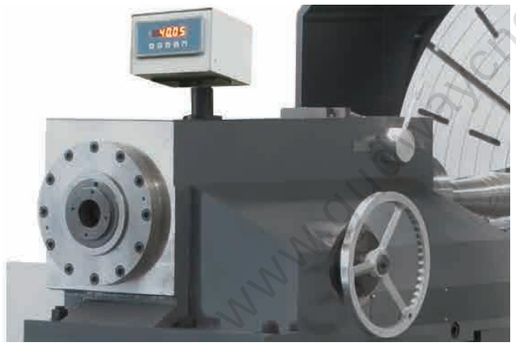
- The gears are made on a precision gear grinding machine to realize low noise and reliable performance ;
- The cooling system in the spindle box has a powerful lubrication system with an oil chiller to control the oil temperature, keeps the oil temperature always within the set range, reduce the thermal deformation caused by heat and maintain the machining accuracy.

Chuck

The chuck structure has obtained the patent (patent number: ZL201110123384.2)

- **Standard:**
  Manual 4 jaw single-action heavy duty chuck:
  Modularization design: Φ1250, Φ1400, Φ1600
- **Options:**
  The built-in jaw mechanical booster screw chuck:
  Large clamping diameter, heavy load capacity, high clamping force, reliable clamping, high efficiency and simple operation.





Tailstock

- Integrated box structure, the motor drive gear and rack transmission the tail stockbody move, which can realize theauto matic clamping and releasing.
- The tail stock is equipped with a digital center-pressure display. The operator can precisely adjust the center's pressure according to the displayed value.

Electrical 4 Position Tool Post

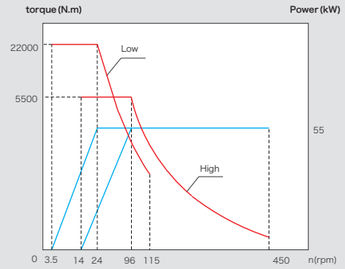
- High rigid dovetatil board structure, suitable for heavy duty cutting, cutting depth can be 25mm.

GUDWAY

Spindle Power Torque Diagram

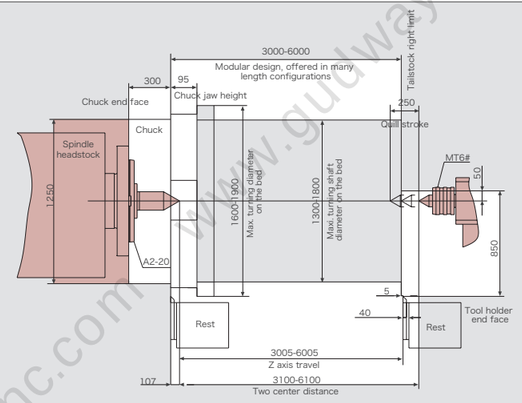
GFT160 Series

(Unit: mm)



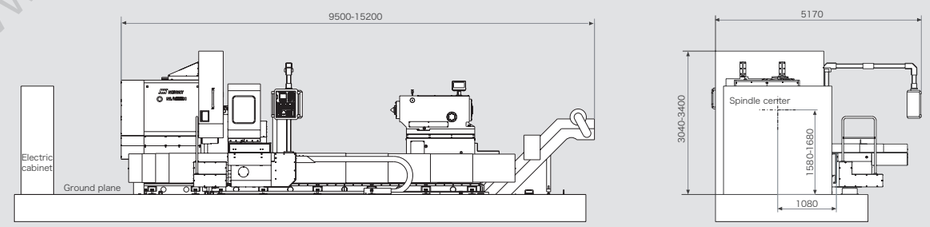
Work Area Diagram

GFT160 Series



External Dimensions

GFT160 Series



Item			Unit	GFT16030S	GFT16060S	GFT20050S	GFT20060S
Capacity	Max. swing over bed		mm	1600	1600	2200	2200
	Max. swing turning diameter		mm	1300	1300	1600	1600
	Max. turning length		mm	3000	6000	5000	6000
	Max. workpiece weight		kg	20000			
Travel	X travel		mm	850	850	930	930
	Z travel		-	3000	6000	5000	6000
Spindle box	Spindle nose type		-	A2-20			
	Spindle center taper		-	Metric 160			
	Spindle bore		mm	Φ130			
	Spindle speed change		-	Hydraulic automatic shift, stepless (two gears)			
	Spindle speed		r/min	450			
	Spindle torque		N.m	22000			
Tailstock	Tailstock quill diameter		mm	Φ320			
	Tailstock quill travel		mm	250			
Tool post	Type		-	Electrical			
	Tool size		mm	40×40			
Churk	Manual 4 jaw chuck		mm	1400		1800	
Spindle motor	Model		-	SIEMENS 1PH8			
	Power		kW	55			
Travel speed	Rapid travel speed (X/Z)		m/min	6 / 6			
Accuracy	Min. setting unit		mm	0.001 / 0.001			
	Positioning accuracy	X aixs	mm	0.050			
		Z aixs	mm	0.080			
	Repeatability accuracy	X aixs	mm	0.020			
		Z aixs	mm	0.035			
Other	CNC system		-	SIEMENS 828D Basic			
	Auto chip conveyer		-	Back row crumbs device			
	General power capacity		KVA	100			
	Dimension (L×W×H)		mm	12200x5170x3300	15200x5170x3300	14200x5170x3500	15200x5170x3500
	Machine weight		kg	35000	42000	45000	48000

Other

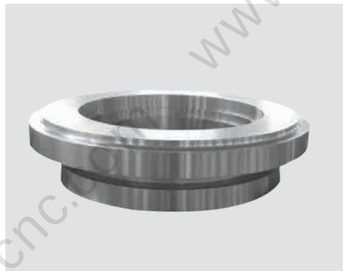
Standard configurations: rear auto chip conveyer, electrical tool post, linear scale.

Optional accessories: steady rest, fixed tool post, boring shaft supporter.

Industry Application

Valve body

Wind power main drive shaft



Disc type parts

Crank shaft

Roller

Nuclear power rotor

Disc wheel

Motor rotor

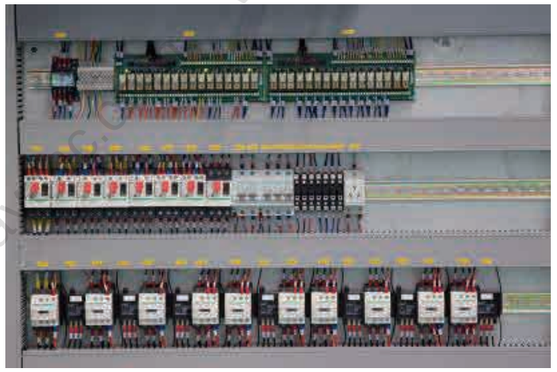
Large valve body

Humanized Design

- Swing controller box, remote MPG, convenience for the operat.

- Wider door open space for easy part loading/unloading.

- The rear chip removable cover design is convenient for iron cleaning.

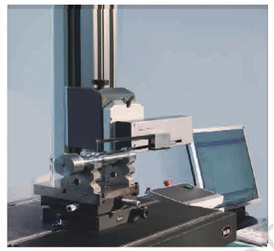


- The electrical cabinet is arranged neatly and orderly, and the cable and wire serial numbers are marked, which is convenient for maintenance and fault finding and shortens the trouble shooting time.

Manufacturing and Testing

- High-precision spindle grinding

- High precision spindle boring



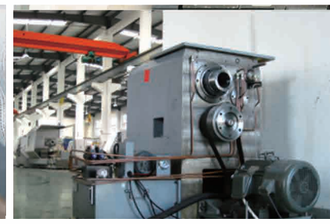
- Optics test equipment

- Belt tension test

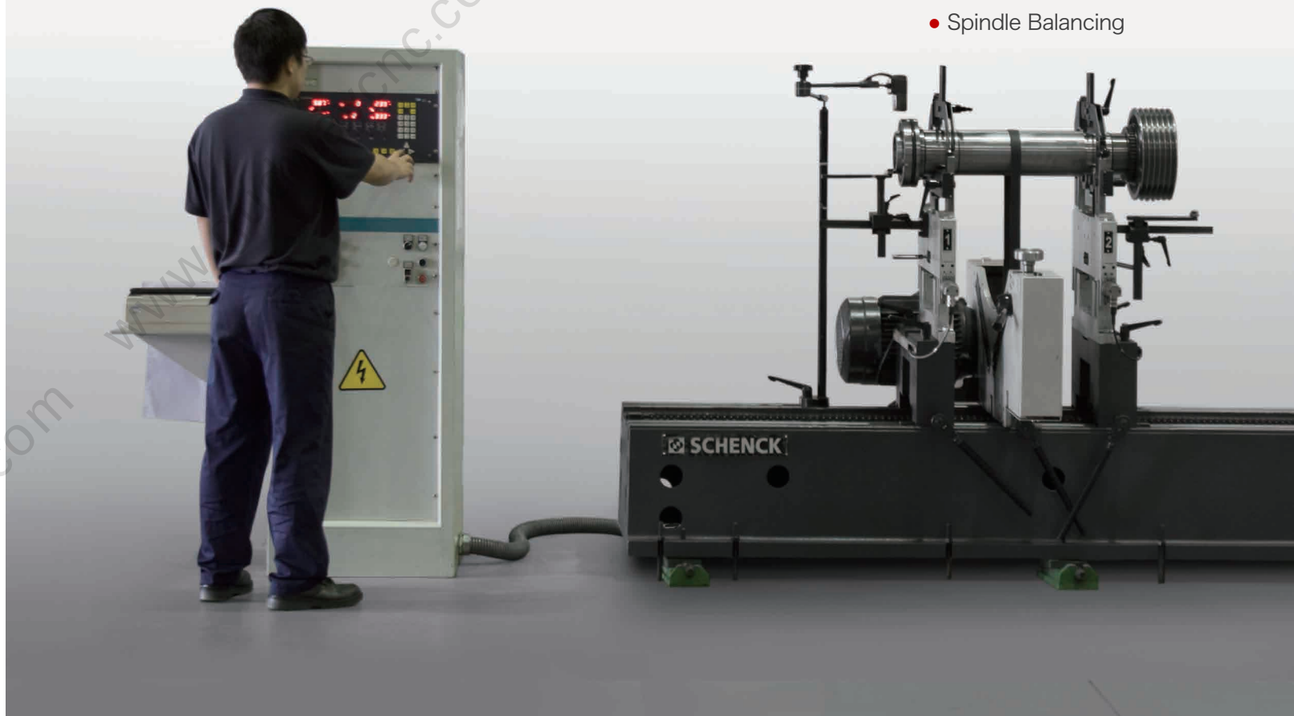
- Assembly inspection

- Boring bar concentricity inspection

- Hand scraping



- Laser calibration
  Headstock temperature & noise test



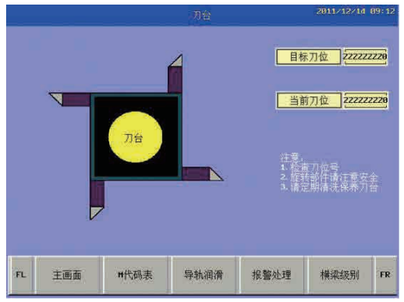
- Spindle Balancing

Controller

We use the PICTURE function to carry out some secondary development of man-machine friendly interface on the CNC controller.

1 Tool post display

Showing actual tool position & target tool position and the tool post applying attention.

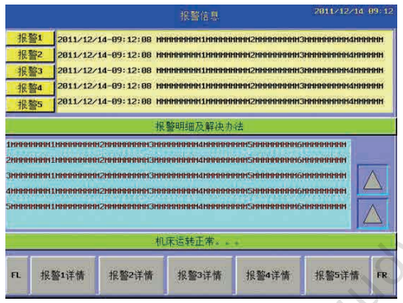


2 Machine M code interface

Introduce M code function

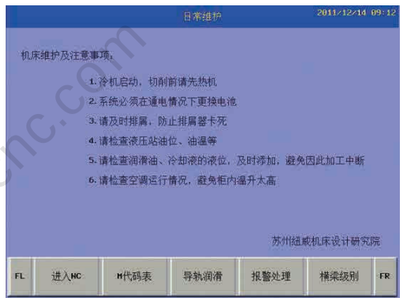
3 Alarm information interface

Showing machine alarm information and solutions.



4 Daily maintenance interface

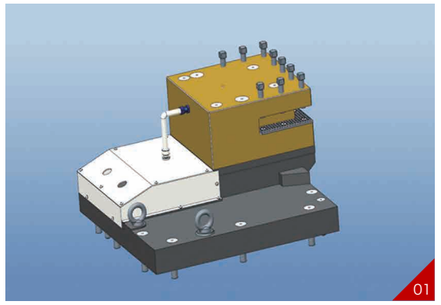
Showing the notice of the machine daily maintenance.

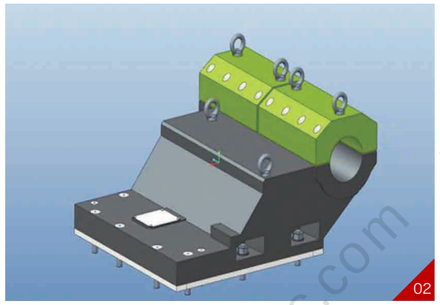


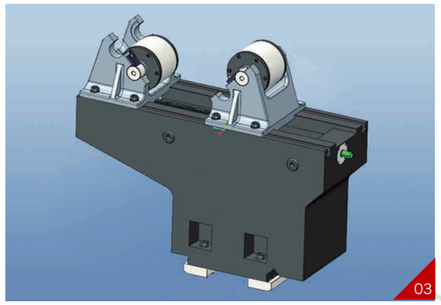
5 Lubrication setting interface

The lubrication volume and interval time can be adjusted according to customer’s requirements.

Options







01 Fixed tool post
02 Boring bar seat
03 Open type steady rest
04 Close type steady rest
05 Linear scale
06 Chip conveyer