ZHEJIANG GFIR TECHNOLOGY AND INDUSTRIAL CO.,LTD

SMART CNC

BROCHURE 2020



ZHEJIANG GFIR TECHNOLOGY AND INDUSTRIAL CO.,LTD

FACTORY ADD: NO.178 EAST STREET
CHANGKOU
FUYANG DISTRICT
HANGZHOU
CHINA

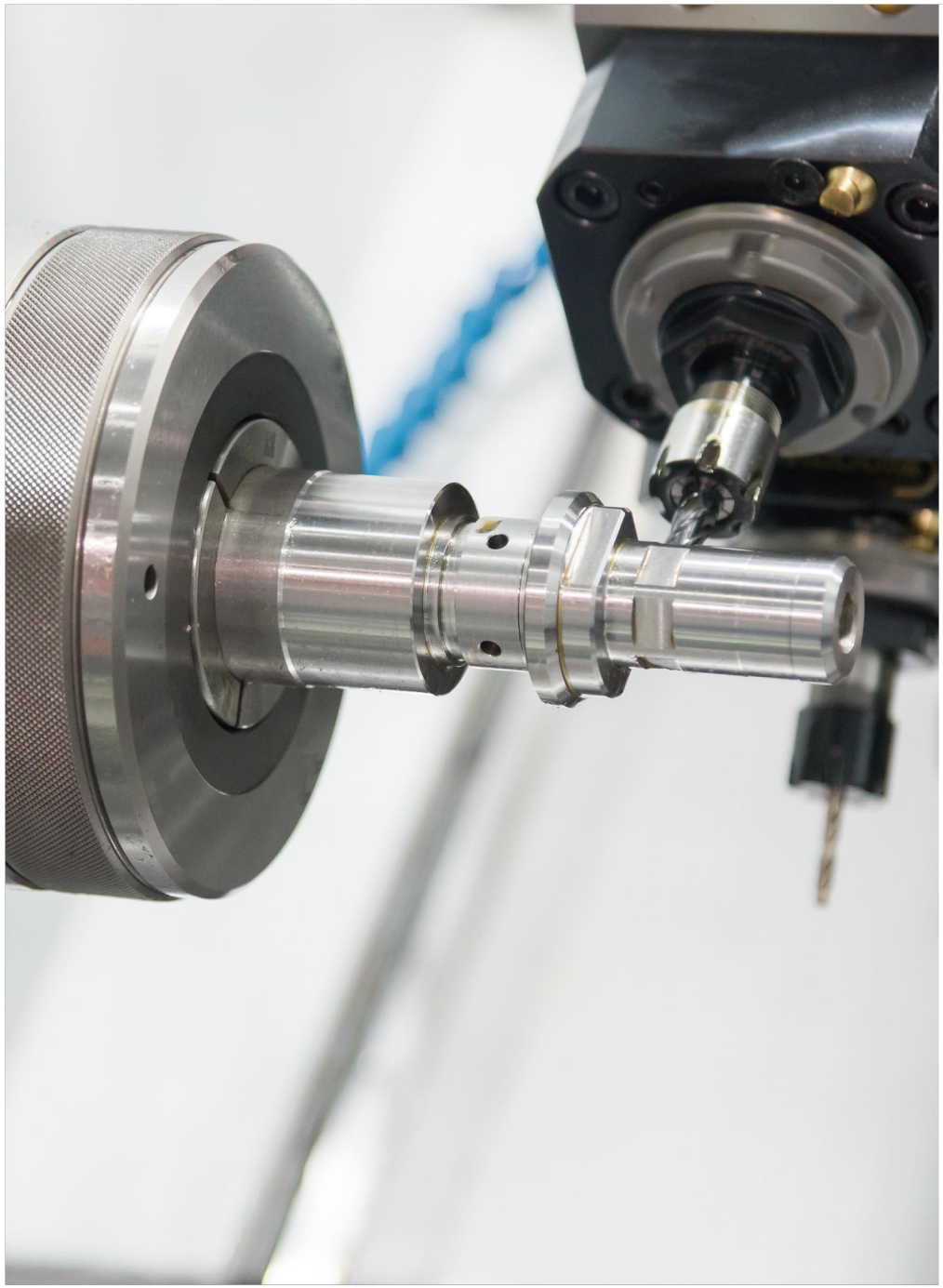
TEL: +86 571-63370880 FAX: +86 571-63368599

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ISO 9001:2008 CE NATIONAL HIGH-TECH ENTERPRISE



Company Overview

GFIR adheres the "quality of gold and The fire of enthusiasm" of the enterprise purpose, GFIR looking forward to create great success with you.

ZHEJIANG GFIR TECHNOLOGY AND INDUSTRIAL CO.,LTD is committed to provide the full set CNC turning solutions for the customer. GFIR manufactures a wide range of CNC lathes, which includes the CNC lathes、CNC special-purpose machines、automatic loading and unloading machines、CNC lathe flexible production line and so on. Our products are widely used on the small、complex、precise parts processing in the industries, such as aerospace、instruments、auto/motorcycle、motor、electronics、communication and medical equipment line.

GFIR was founded in 1991,our company located in the beautiful silk city-Hangzhou. After 30-year accumulation and precipitation, we have more than 30 design engineers, more than 20 application engineers, more than 50 after-sale service personnel. Now the sales service network has spread over more than 40 countries and regions to ensure to solve the customer's problem as soon as possible.

GFIR has been focusing on the CNC production over 30 years, we always pay attention on the technology innovation、product processing and assembly process optimization, strengthen and improve the inspection procedures and rules, And focus on the customer pre-sales and after-sales solutions. All of these are the keys to the progress of GFIR.

It is our enterprise purpose to provide high quality products and services for customers at home and abroad. We are looking forward to creating brilliant future with you.

- Focused on CNC machine over 30 years.
- Professional R&D team.
- TQM quality control.
- Key components be manufactured by special purpose machine.
- Provide turnkey solution.
- Completed after-sales service.





TT5050

Stepped long span guide layout

High rigidity tailstock which is the processing expert within 500 shaft parts

Mono-block design of high rigidity base and bed

Spindle bearings adopt the high rigidity ROBUST structure



TT5050

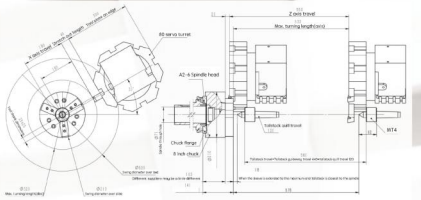
Chuck size	8 inch/10 inch*
Swing diameter over bed	Ø520mm
Swing diameter over slide	Ø210mm
Working piece length(Max.)	500mm
X/Z axis travel	190/ 550 mm
Spindle through hole	Ø50mm
Spindle speed	60~4000rpm
Spindle nose	A2-6
Main motor power	7.5 kW

Clamping	Hydraulic
X/Z axis rapid travel speed	24/24 m/min
X/Z servo motor torque	10/10 N.m
Tools	80 servo turret/80 powered turret*
Tool shank dimension	25*25 mm
Boring tool size	Ø32 mm
Positioning accuracy X/Z axis	0.008/0.016 mm
Repeatability accuracy X/Z axis	0.004/0.006 mm
Tailstock quill diameter	Ø85

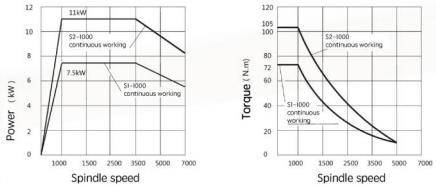
Tailstock travel	440 mm
Tailstock quill travel	120 mm
Tailstock taper	MT4
Coolant pump power	460 W
Hydraulic station tank	45 L
Total power consumption	16 KVA
Overall dimensions(L*W*H)	2475x1810x1735 mm
Weight	3750 Kg

"*" As a selection

Interferogram diagram:

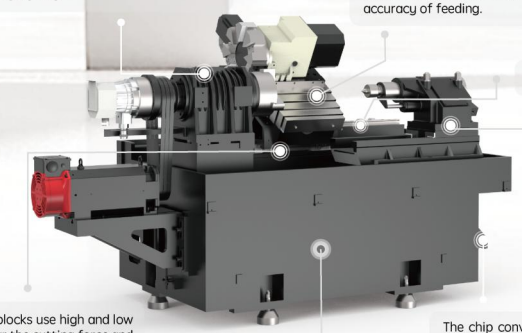


Spindle power& torque diagram:



The headstock adopt the heat radiation rib to reduce the influence of thermal deformation.The spindle bearings use ROBUST structure,which has a good cutting rigidity

X axis ball screw adopts the pretension structure design,reduce the influence of cold and hot states on cutting and greatly improved the positioning accuracy of feeding.



X/Z axis roller linear guide

Detachable hydraulic tailstock, flexible configurations

Z axis runner blocks use high and low layout,can bear the cutting force and gravity evenly.

The chip conveyor can be set on back or side according to the customer layouts.

Mono-block design,lower centre of geavity, horizontal bed with 30° drag board layout

TT4530

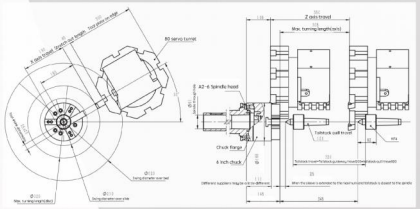
Chuck size	6 inch/8 inch*
Swing diameter over bed	Ø520mm
Swing diameter over slide	Ø210mm
Working piece length(Max.)	300mm
X/Z axis travel	190/ 350 mm
Spindle through hole	Ø45mm
Spindle speed	60~4500rpm
Spindle nose	A2-6
Main motor power	7.5 kW

Clamping	Hydraulic
X/Z axis rapid travel speed	24/24 m/min
X/Z servo motor torque	10/10 N.m
Tools	80 servo turret/80 powered turret*
Tool shank dimension	25*25 mm
Boring tool size	Ø32 mm
Positioning accuracy	0.008/0.016 mm
Repeatability accuracy	0.004/0.006 mm
Tailstock quill diameter	Ø85

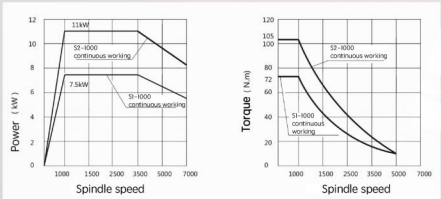
Tailstock travel	200 mm
Tailstock quill travel	120 mm
Tailstock taper	MT4
Coolant pump power	460 W
Hydraulic station tank	45 L
Total power consumption	16 KVA
Overall dimensions(L*W*H)	1960x1810x1735 mm
Weight	3250 Kg

"*" As a selection

Interferogram diagram:



Spindle power& torque diagram:



The headstock adopt the heat radiation rib to reduce the influence of thermal deformation.The spindle bearings use ROBUSTstructure,which has a good cutting rigidity

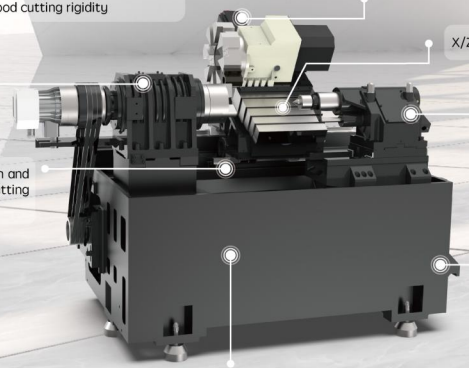
X axis ball screw adopts the pretension structure design,reduce the influence of cold and hot states on cutting and greatly improved the positioning accuracy of feeding.

X/Z axis roller linear guide

Detachable hydraulic tailstock,flexible configurations

Z axis runner blocks use high and low layout,can bear the cutting force and gravity evenly.

The chip conveyor can be set on back or side according to the customer layouts.



Mono-block design,lower centre of geavity, horizontal bed with 30° drag board layout

TT4530

Small slant bed CNC machine with turret,reliable support

Lower centre of geavity,30°slanting carriage design, stepped structure bed
Powered turret is optional to achieve the compound machining of turning and milling
Spindle bearings adopt the ROBUST structure.
Built-in hydraulic tailstock, detachable tailstock guide rail, flexible configuration



TG35/45

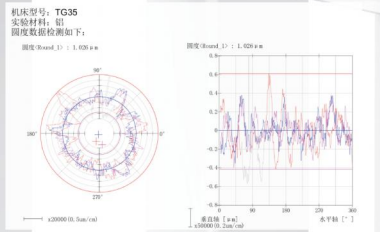
Model	TG35	TG45
Chuck size	Collet/Chuck*	✓
Swing diameter over bed	Ø400mm	✓
Swing diameter over slide	Ø130mm	✓
Working piece length(Max.)	/	/
X/Z axis travel	360/ 360 mm	✓
Spindle through hole	Ø35mm	Ø45mm
Spindle speed	60~4500rpm	✓
Spindle nose	A2-5	A2-6
Main motor power	5.5 kW	5.5 kW

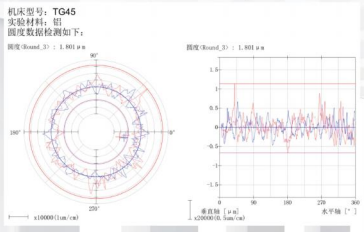
Model	TG35	TG45
Clamping	Hydraulic	✓
X/Z axis rapid travel speed	20/20 m/min	✓
X/Z servo motor torque	7.5/7.5 N.m	✓
Tools	Gang type/8 station servo turret*	✓
Tool shank dimensions	20*20 mm	✓
Boring tool size	Ø25 mm	✓
Positioning accuracy X/Z axis	0.008/0.016 mm	✓
Repeatability accuracy X/Z axis	0.004/0.006 mm	✓
Tailstock quill travel	/	/

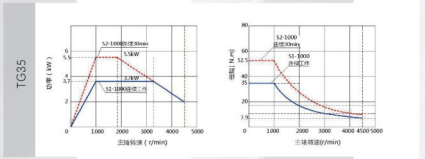
Model	TG35	TG45
Tailstock travel	/	/
Roundness	2μm	✓
Surface roughness(#45 steel)	Ra1.6	✓
Surface roughness(aluminum)	Ra0.2~0.4	✓
Coolant pump power	480 W	✓
Hydraulic station tank	45L	✓
Total power consumption	9.5 KVA	11.5 KVA
Overall dimensions(L*W*H)	2210x1650x1810mm	2210x1650x1810mm
Weight	2200 Kg	2250 Kg

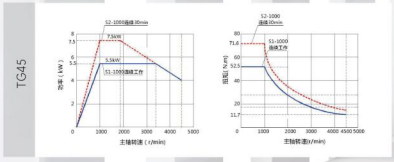
Optional:● 8 station servo turret ●Truss robot Joint robot ●Side、rear chip conveyor

"*" As a selection

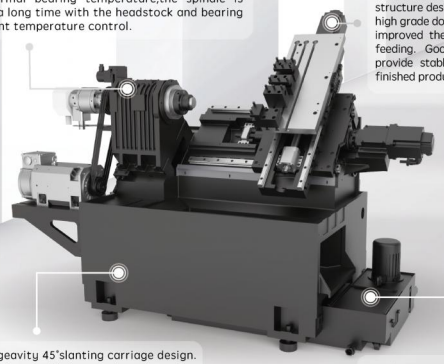








The headstock adopt the heat radiation rib to reduce the influence of thermal deformation.To exclude the normal use of abnormal bearing temperature,the spindle is tested after a long time with the headstock and bearing under constant temperature control.



Lower centre of geavity 45°slanting carriage design. The mono-block base, with low center of gravity, excellent rigidity, durability and thermal stability

X axis ball screw adopts the pretension structure design, use C3 class precision, high grade double nut ball screw,greatly improved the positioning accuracy of feeding. Good cutting stability, can provide stable and high CP value of finished products.







Machine can be equipped side, back chip conveyor, manual chip removal.Excellent drainage and chip removal.

TG35/45

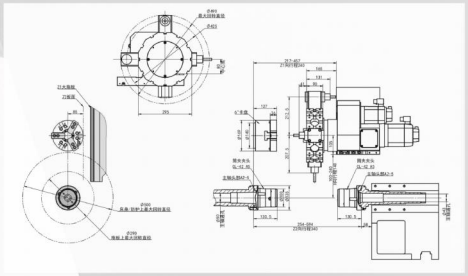
High rigidity,high precision to achieve

Large travel,classical gang type tool post machine
Mono-block design,45°chip removal design
Compact models, save the space

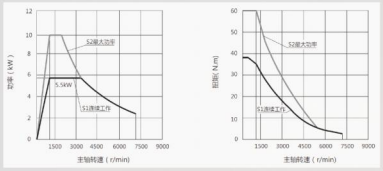


Double spindle Series

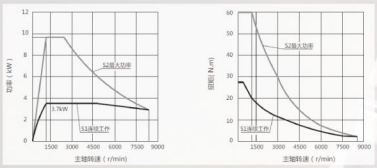
Interferogram diagram:



Spindle power& torque diagram:



Secondary spindle power& torque diagram:



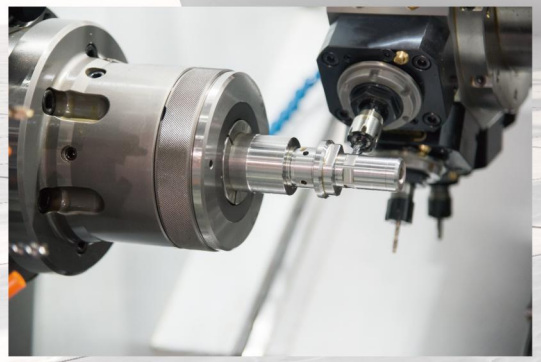
LP40D

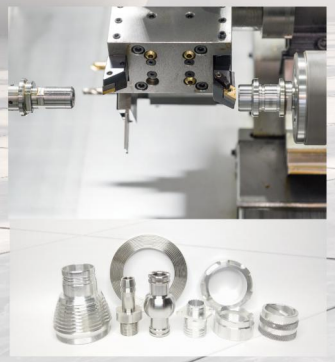
Chuck size	Collet chuck/6 inch*
Swing diameter over bed	Ø500mm
Swing diameter over slide	Ø290mm
Working piece length(Max.)	100mm
X1/Z1/Z2 axis travel	145/ 240/340 mm
Spindle through hole	Ø40mm
Sub-spindle through hole	Ø35mm
Spindle speed	60~5000rpm
Spindle nose	A2-5

Clamping	Hydraulic
Spindle main motor power	5.5 kW
Sub-spindle main motor power	3.7 kW
X1/Z1/Z2 rapid travel speed	20/20/20 m/min
X1/Z1/Z2 servo motor torque	8.5/8.5/8.5 N.m
Tools	Powered turret
Tool shank dimensions	25*25 mm
Boring tool diameter	Ø32 mm
Turret positions	12 stations

Positioning accuracy X1/Z1/Z2 axis	0.008 mm
Repeatability accuracy X1/Z1/Z2 axis	0.003 mm
Surface roughness(#45 steel)	Ra 0.8
Coolant pump power	180 W
Hydraulic station tank	50 L
Total power consumption	18.5 KVA
Overall dimensions(L*W*H)	3230x1710x1920(with chip conveyor)
Weight	3200 Kg

"*" As a selection





LP40D

Double spindles, can make turning and milling compound processing at the front and back

Solid wide frame base
High rigidity、high frequency hardening、high precision rectangular guide
Bar feeder and workpiece collecting device are optional to realize the automatic processing



GFLR6

For turning stainless steel products
X / Z way screw pre-stretched structure to reduce thermal deformation
Front three rear two bearings structure to ensure high rigidity of the spindle
Equipped with servo spindle and live tools, it can complete turning and milling composite processing



Chuck size	collet/ 6 inch*
Swing diameter over bed	Ø320mm
Swing diameter over slide	Ø110mm
Working piece length (Max.)	150mm
X/Z axis travel	300/ 280 mm
Spindle through hole	Ø35mm
Spindle speed	60~4000rpm
Spindle nose	A2-5
Main motor power	4 kW

Clamping	Manual/Hydraulic
X/Z axis rapid travel speed	18/18 m/min
X/Z servo motor torque	6/6 N.m
Tools	gang tool post
Tool shank dimension	20*20mm
Boring tool size	Ø20mm
Positioning accuracy X/Z axis	0.01/0.016 mm
Repeatability accuracy X/Z axis	0.004/0.006 mm
Tailstock quill diameter	/

Tailstock travel	/
Tailstock quill travel	/
Roundness	0.003mm
Surface roughness(45# Steel)	Ra1.6
Coolant pump power	210 W
Hydraulic station tank	/
Total power consumption	7.68 KVA
Overall dimensions(L*W*H)	1670*1450*1630mm
Weight	1850 Kg

"*" As a selection

GFL6A

Double-coordinate two-axis linkage, semi-closed loop control
Good dynamic characteristics, strong rigidity, smooth chip removal
The whole bed base, flat bed layout, small size and compact structure
Gang tool post, turret and live tools can be added



Chuck size	collet/ 6inch*
Swing diameter over bed	Ø340mm
Swing diameter over slide	Ø160mm
Working piece length (Max.)	/
X/Z axis travel	370/ 400 mm
Spindle through hole	Ø36mm
Spindle speed	60~4000rpm
Spindle nose	A2-5
Main motor power	3.7 kW

Clamping	Manual/Hydraulic
X/Z axis rapid travel speed	18/18 m/min
X/Z servo motor torque	6/6 N.m
Tools	gang tool post
Tool shank dimension	20*20mm
Boring tool size	Ø20mm
Positioning accuracy X/Z axis	0.012/0.018mm
Repeatability accuracy X/Z axis	0.006/0.006 mm
Tailstock quill diameter	/

Tailstock travel	/
Tailstock quill travel	/
Roundness	0.004mm
Surface roughness(45# Steel)	Ra1.6
Coolant pump power	180 W
Hydraulic station tank	/
Total power consumption	8 KVA
Overall dimensions(L*W*H)	1960X1525X2045mm
Weight	2020 Kg

"*" As a selection

GFL6 /GFL6C

Economical, high-precision flat bed
Front three rear two structure high-precision angular contact bearings in pairs
High speed, high efficiency, gang tools type lathe
High positioning accuracy, flexible and reliable action



Classic box way, stable and durable

TF10

One V-shape and one flat rail
Independent spindle structure
Easy operation and good stability



	GFL6	GFL6C
Chuck size	collet/ 6 inch*	✓
Swing diameter over bed	Ø260mm	✓
Swing diameter over slide	Ø110mm	✓
Working piece length (Max.)	150	✓
X/Z axis travel	260/ 300 mm	✓
Spindle through hole	Ø36mm	✓
Spindle speed	60~4000rpm	3200rpm
Spindle nose	A2-5	✓
Main motor power	3 kW	✓

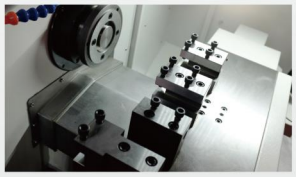
	GFL6	GFL6C
Clamping	Manual	Hydraulic
X/Z axis rapid travel speed	18/20 m/min	18/18 m/min
X/Z servo motor torque	4/6 N.m	4/4 N.m
Tools	gang tool post	✓
Tool shank dimension	20*20mm	✓
Boring tool size	Ø20mm	✓
Positioning accuracy X/Z axis	0.012/0.016 mm	0.016/0.018 mm
Repeatability accuracy X/Z axis	0.004/0.006 mm	0.006/0.006 mm
Tailstock quill diameter	/	/

	GFL6	GFL6C
Tailstock travel	/	/
Tailstock quill travel	/	/
Roundness	0.004mm	0.005mm
Surface roughness(45# Steel)	Ra1.6	✓
Coolant pump power	120 W	✓
Hydraulic station tank	/	✓
Total power consumption	6 KVA	✓
Overall dimensions(L*W*H)	1645X1245X1630mm	✓
Weight	1630 Kg	✓

"*" As a selection





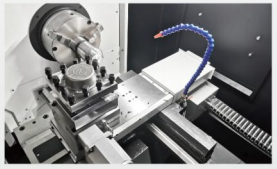


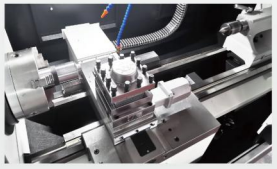
	TF10
Chuck size	10 inch
Swing diameter over bed	Φ560mm
Swing diameter over slide	Ø320mm
Working piece length (Max.)	1000mm
X/Z axis travel	270/ 1000 mm
Spindle through hole	Ø92 mm
Spindle speed	30~2500rpm
Spindle nose	A2-8
Main motor power	11 kW

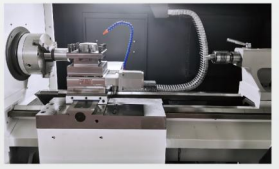
	TF10
Clamping	Manual/Hydraulic*
X/Z axis rapid travel speed	6/8 m/min
X/Z servo motor torque	7.5/10 N.m
Tools	4T electric tool post
Tool shank dimension	25*25mm
Boring tool size	Ø32mm
Positioning accuracy X/Z axis	0.018 mm/0.022
Repeatability accuracy X/Z axis	0.006/0.008 mm
Tailstock quill diameter	Ø75 mm

	TF10
Tailstock travel	/mm
Tailstock quill travel	150 mm
Roundness	0.005mm
Surface roughness(45# Steel)	Ra1.6
Coolant pump power	120 W
Hydraulic station tank	/
Total power consumption	11KVA
Overall dimensions(L*W*H)	2840*2040*1800mm
Weight	2800 Kg

技术参数中带＊号为选配项







TF8

Able to complete all kinds of complicated parts
Adopt collet, chuck or special clamping device
Pneumatic or manual clamping



Swing diameter over bed	Ø400mm
Swing diameter over slide	Ø180mm
X/Z axis travel	250/ 500 mm
Spindle bore	Ø48mm
Speed range	3000rpm
X/Z axis rapid travel speed	10/12 m/min
X/Z servo motor torque	4/6 N.m
Chuck size	6 inch
Tools	Electric tool & Gang type too; post
Tool shank dimensions	20*20mm
Boring tool size	Ø20mm
Clamping	Pneumatic collet
Positioning accuracy X/Z	0.012/0.016 mm
Repeatability accuracy X/Z	0.004/0.006 mm
Tailstock quill diameter	Ø52
Tailstock quill travel	120mm
Tailstock taper	MT4
Roundness	0.005mm
Surface roughness	Ra1.6
Total power consumption	9.12 KVA
Overall dimensions(L*W*H)	2000*1250*1650mm
Weight	1350 Kg

ZM640

Drilling and taping center ZM640



Max taping diameter	M16
Max milling Diamater	63mm
Travel of X/Y/Z	600/400/370mm
X/Y/Z axis motor power	1.3/1.3/3 kW
X/Y/Z motor torque	8.3/8.3/18.6N.m
X/Y/Z rapid travel speed	48/48/48m/min
Spindle speed	12000 rpm
Spindle motor power	5.5 kW
Spindle nose	BT30
Distance between spindle and worktable	260-630mm
Worktable size L*W (mm)	420*750mm
Max weight of workpiece	250kg
T-slots dimension	3*14*80mm
The type of guide way	Box way
The type of magazine	Armless type
Quantity of tools	16
Positioning accuracy of X/Y/Z	0.012/0.012/0.020mm
Repositioning accuracy of X/Y/Z	0.008/0.008/0.008mm
Roundness	0.02mm
Surface roughness	Ra1.6
Machine size L*W*H(mm)	1990*1850*2200mm
Net weight (kg)	3600kg

TF8L

Able to complete all kinds of complicated parts
Adopt collet, chuck or special clamping device
Pneumatic or manual clamping



Swing diameter over bed	Ø470mm
Swing diameter over slide	Ø200mm
X/Z axis travel	300/ 600 mm
Spindle bore	Ø56mm
Speed range	3000rpm
X/Z axis rapid travel speed	8/10 m/min
X/Z servo motor torque	5/7.5 N.m
Chuck size	8 inch
Tools	Electric tool post
Tool shank dimensions	25*25mm
Boring tool size	Ø20mm
Clamping	Manual chuck
Positioning accuracy X/Z	0.012/0.016 mm
Repeatability accuracy X/Z	0.004/0.006 mm
Tailstock quill diameter	Ø65
Tailstock quill travel	130mm
Tailstock taper	MT4
Roundness	0.008mm
Surface roughness	Ra1.6
Total power consumption	9.78 KVA
Overall dimensions(L*W*H)	2200*1350*1620mm

XH7122

Vertical machine center XH7122 specification



Max drilling diameter (mm)	Ø14 mm
Max milling plane	63 mm
Max depth of processing	3 mm
Travel of X/Y/Z	420/230/380 mm
X/Y/Z motor torque	6/6/7.7 N.m
X/Y/Z Rapid travel speed	15/15/15 m/min
Spindle speed	6000 rpm
Spindle motor power	2.2 kW
Spindle nose	BT30
Distance between spindle and worktable	80-460 mm
Distance between spindle and column guideway	345 mm
Worktable size L*W (mm)	500*230mm
Max weight of workpiece	200kg
T-slots dimension	3*14*80mm
The type of guide way	Box way
The type of magazine	Drum
Quantity of tools	8
Positioning accuracy of X/Y/Z	0.022mm
Repositioning accuracy of X/Y/Z	0.012mm
Roundness	0.03mm
Surface roughness	Ra3.2
Machine size L*W*H(mm)	1660*1350*1950mm

TB35-AUTO

In-machine gantry automation integrated machine

The main machine adopts 45-degree inclined guide way integrated casting bed, built-in gantry manipulator, can be equipped with vibrating disc silo, multi-station silo, disc silo, shaft silo and other automatic turning devices. Can greatly reduce the strength of artificial fatigue, improve production efficiency and ensure product stability. Especially suitable for processing large quantities of parts.



Main machine		Manipulator	
Item	Characteristic	Item	Characteristic
Clamping	6'chuck/ spring collet	Max lift weight	2*1kg
Swing dia. Over bed	400m	Parts Diameter	10～100mm
X/Z travel	320mm/300mm	Parts length	5～200mm
X/Z rapid speed	18/20m/min	Horizontal/ longitudinal positioning accuracy	±0.05
X/Z motor torque	6/6 N.m	Horizontal/ longitudinal Driver mode	Servo motor+ Precision reducer
X/Z positioning accuracy	0.010/0.016mm	Horizontal/ longitudinal rapid speed	125 m/min
Clamping method	Hydraulic	Horizontal/ longitudinal transfer method	Helical gear rack
Main motor power	3.7KW	Overall dimension	2600x1650x2650mm

GFLR6-AUTO

In-machine gantry automation integrated machine

The main machine adopts a self-made high-rigidity mechanical spindle (also can use an electric spindle 5000rpm) and a flat guide rail integrated casting bed. The built-in gantry manipulator can be equipped with a vibrating disk silo, multi-station silo, disk silo, and shaft silo and automatic turning device. Can greatly reduce the strength of artificial fatigue, improve production



Main machine		Manipulator	
Item	Characteristic	Item	Characteristic
Clamping	5'chuck/ spring collet	Max lift weight	2*1kg
Swing dia. Over bed	360m	Parts Diameter	10～100mm
X/Z travel	300mm/280mm	Parts length	5～200mm
X/Z rapid speed	18/18m/min	Horizontal/ longitudinal positioning accuracy	±0.05
X/Z motor torque	6/6 N.m	Horizontal/ longitudinal Driver mode	servo motor+ Precision reducer
X/Z positioning accuracy	0.010/0.016mm	Horizontal/ longitudinal rapid speed	125 m/min
Clamping method	pneumatic/Hydraulic	Horizontal/ longitudinal transfer method	Helical gear rack
Main motor power	3.7 KW	Overall dimension	2100x1480x1750mm