NEWAY INTERNATIONAL GROUP Head Office
10749 Cash Road Stafford, Texas 77477
Tel: +1(281) 276-7100
Fax: (281) 276-7199

NEWAY CNC Equipment (Suzhou) Co.,Ltd
No 69 Xunyangjiang Road,Suzhou new district, P.R. China
Tel: 86-512-6239-2186
Fax: 86-512-6607-1116
E-mail: cncsale@neway.com.cn
www.newaycnc.com

NEWAY CNC (USA), INC.
9757 Stafford Centre Drive
Stafford, Texas 77477 USA
Tel: 281-969-5800
Fax: 281-969-5903

New CNC Europe GmbH
Bahnhofstrabe 3
D-57072 Siegen
Tel: +49 271-7701978-20
Fax: +49 0271-7701978-29

Agency:

* The content of the catalogue is subject to change without notice.

NEWAY

VERTICAL LATHE

VNL(H/HT)

Cat.NO：E-VNL-2013-1

CONTENTS

1 ~ 18 Single column vertical lathe

1 ~ 8	VNL803H
9 ~18	VNL1254H/HT VNL1605H/HT

19 ~24 Double columns vertical lathe

25 ~26 Control system

27 ~28 Humanization design

Neway CNC vertical lathe is manufactured with high-quality components and parts, through the strict quality control, especially suitable for large, heavy, thin, and other special-shaped parts processing, widely application in engineering machinery, industrial valves, military industry, aerospace and other industry fields.

THIS SERIES:

Include, single-column	VNL803H VNL1254H/HT VNL1605H/HT
Double column type	VNL2506H

SINGLE COLUMN VERTICAL LATHE

VNL803H

Mechanical,hydraulic,electriccalintegration design, compact structure, small floor area;

Reinforcement layout, finite element analysis and optimization, wide guideway design, good rigidity;

Funnel shaped chip conveyor design, chip removal smoothly and scrap iron chip removal to device directly.

VNL803H need only 1/2 foor area of the same specification horizontal CNC lathe, improved the plant space utilization;

Totally enclosed protection cover will segregate scrap iron and cooling liquid within the machine tool, provide safe and clean working environment.

Totally enclosed protection cover will segregate scrap iron and cooling liquid within the machine tool, provide safe and clean working environment.

Spindle motor (αP40) with high torque ,large power 18.5/22 kw , powerful cutting can be performed

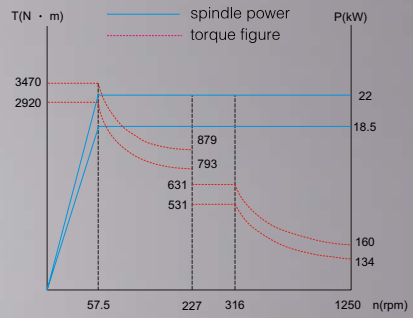
Also introduced with Germany imported ZF gear box, with wide speed and big torque heavy cutting

Spindle maximum torque **2800 Nm**, the maximum cutting force of turret **9180 N**

ZF double reducer has two gears speed output, which can satisfy the requirement of low speed and heavy cutting for large diameter workpieces, and also the requirements of high speed cutting for small diameter workpieces.

Top gear (1:1)
Low gear (1:5)

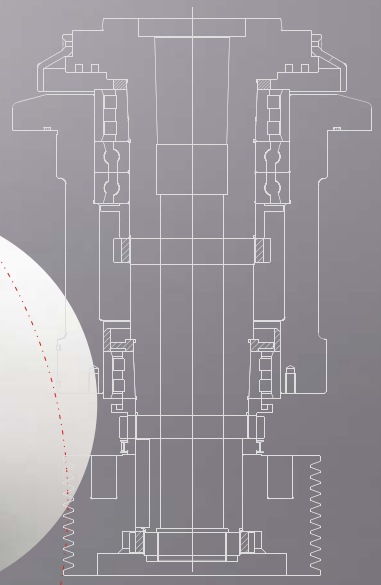
SPINDLE POWER & TORQUE FIGURE

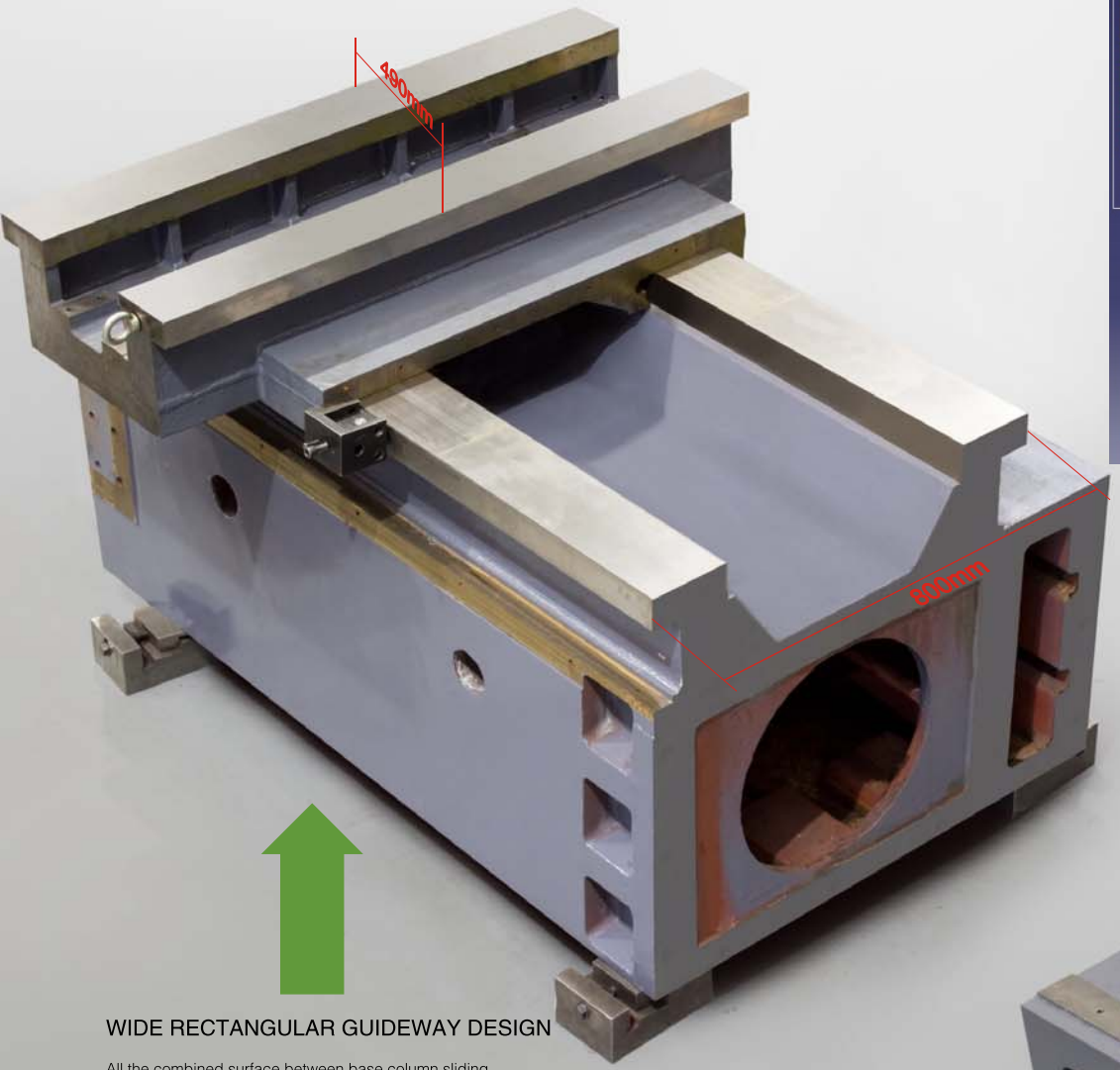


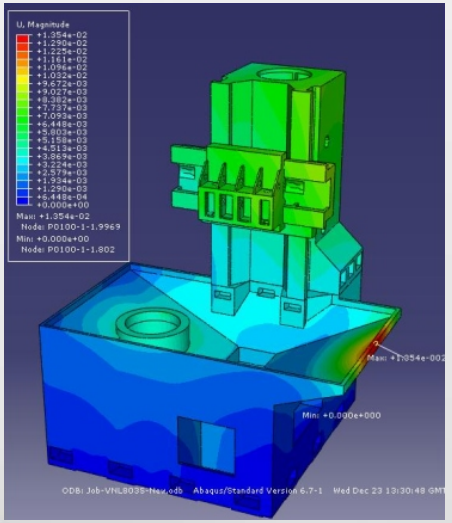
MAIN TRANSMISSION SYSTEM

High rigidity, high precision, imported spindle bearing, which can bear radial load, axial load and torque load, guarantee the good machining precision under the condition of heavy cutting in long time, and effectively extend the lifespan of the product.

Two shifting speed, speed range are: low gear for 10–316 RPM
Top gear 55–1250 RPM



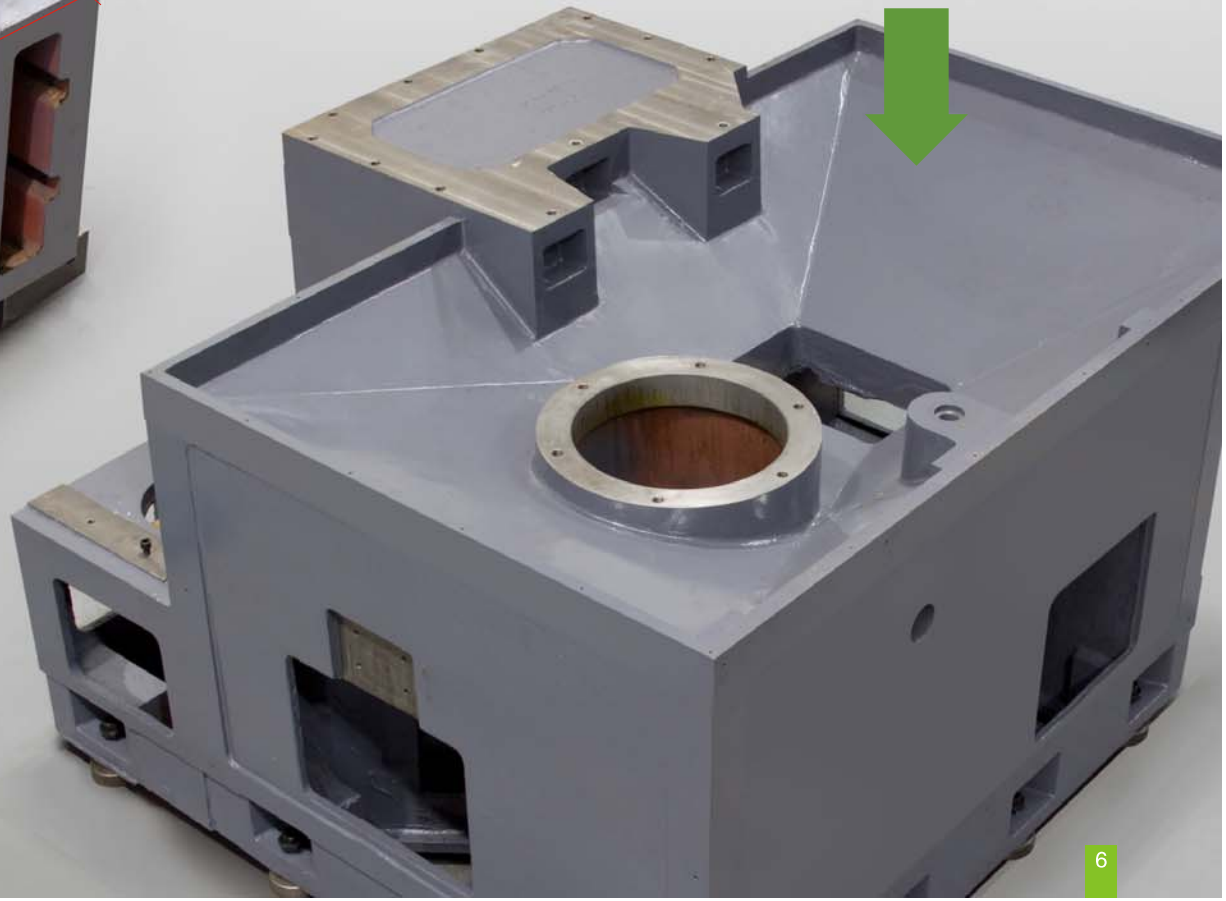




With the application of finite element analysis, to make the reinforcement of base, column and other important castings into the optimize design, casting rigidity is increased by **30%**, compared with traditional design The products can keep good accuracy in the long–term heavy cutting .

Funnel design of machine base makes the chips directly remove into the chip removal device;

Base design is nearly square , which can withstand the static and dynamic stress, distortion and deformation to ensure the high rigidity and high stability.



WIDE RECTANGULAR GUIDEWAY DESIGN

All the combined surface between base,column,sliding seat, turret, each bearing base are scraped by manual work , to ensure the maximum contact rigidity

Column, beam adopts advanced cast iron manufacturing, after aging treatment, stress relief, box structure design makes the machine has the heavy cutting capacity and high stability

TAIWAN BRAND HYDRAULIC TURRET

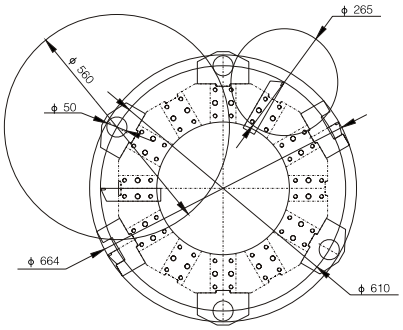
Fast speed for tool changing,
high repeated positioning accuracy

12 T turret, 4 sets boring holder,
2 sets endface tool holder

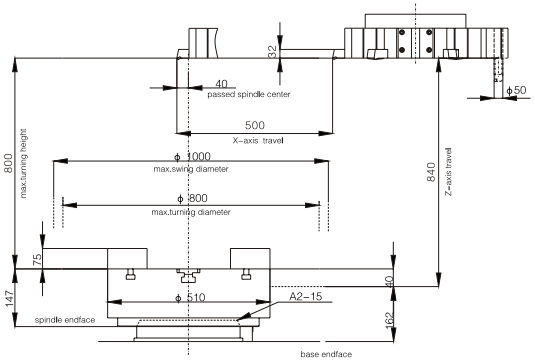
Imported high quality hydraulic chuck and cylinder

Chuck diameter 500 mm, high precision positioning, flexible and reliable;
Option: diameter of chuck 630 mm and 1000 mm, to satisfy the customer's need;
With high rotation precision of cylinder,and reliable clamping force.

TOOL INTERFERENCE FIGURE



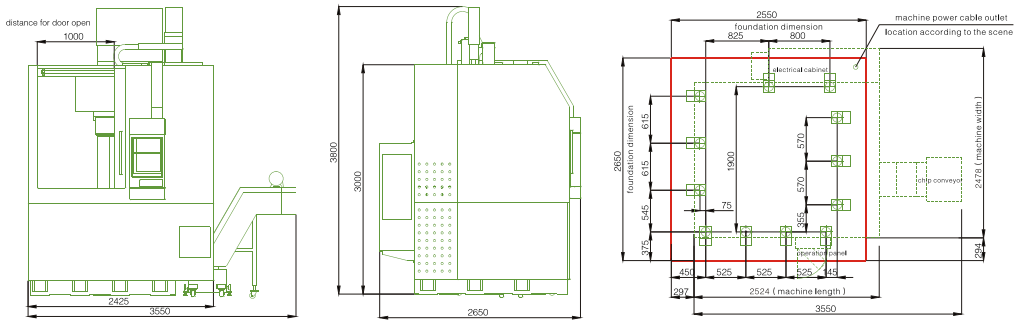
WORKING AREA



TECHNICAL PARAMETERS

item		unit	single–column lathe VNL803H
processing range	maximum rotating diameter	mm	1000
	max.turning diameter	mm	800
	max.height of workpiece	mm	800
	max.weight of workpiece	kg	/
worktable	motor power	kW	18.5/22
	worktable diameter	mm	500(power chuck)
	worktable maximum speed	r/min	1250
	worktable maximum torque	N・m	/
turret	station		12
	turning tool size	mm	32×32
	drive mode		液压
X&Z axis	X axis bearing diameter/pitch	mm	50/8
	Z axis bearing diameter/pitch	mm	50/8
	Max.travel X/Z	mm	500/840
	Rapid Traverse speedX/Z	m/min	12/12
machine accuracy	positional accuracy (X/Z)	mm	0.016/0.025
	repeated positioning accuracy (X/Z)	mm	0.007/0.015
auto chip conveyor			side chip conveyor
CNC system			FANUC 0i–TD
servo motor torque (X/Z)		N・m	22/40
Power capacity		kVA	40
Net weight		kg	16000
Dimension(length ×breadth × height)		mm	3550×2650×3800
STANDARD			Automatic lubrication system, electrical cabinet air conditioner, trichromatic lamp, constant temperature oil tank
OPTION			SIMENS 828D
			linear scales, special fixture, etc

WIDTH FOR DOOR OPEN



VNL1254H/HT
VNL1605H/HT

This series machine is suitable for large, heavy, thin, and other special–shaped parts processing;

Vertical structure avoids the deviation from circular form due to gravity of workpiece in horizontal clamping, ensures the roundness accuracy of parts;

Workpiece sheer weight guarantees that the wages and clamp are tightly fitted , to get high positioning accuracy and machining accuracy;

Mechanical and electrical integration of vertical design, the overall rational layout is compact, easy for installation and maintenance.

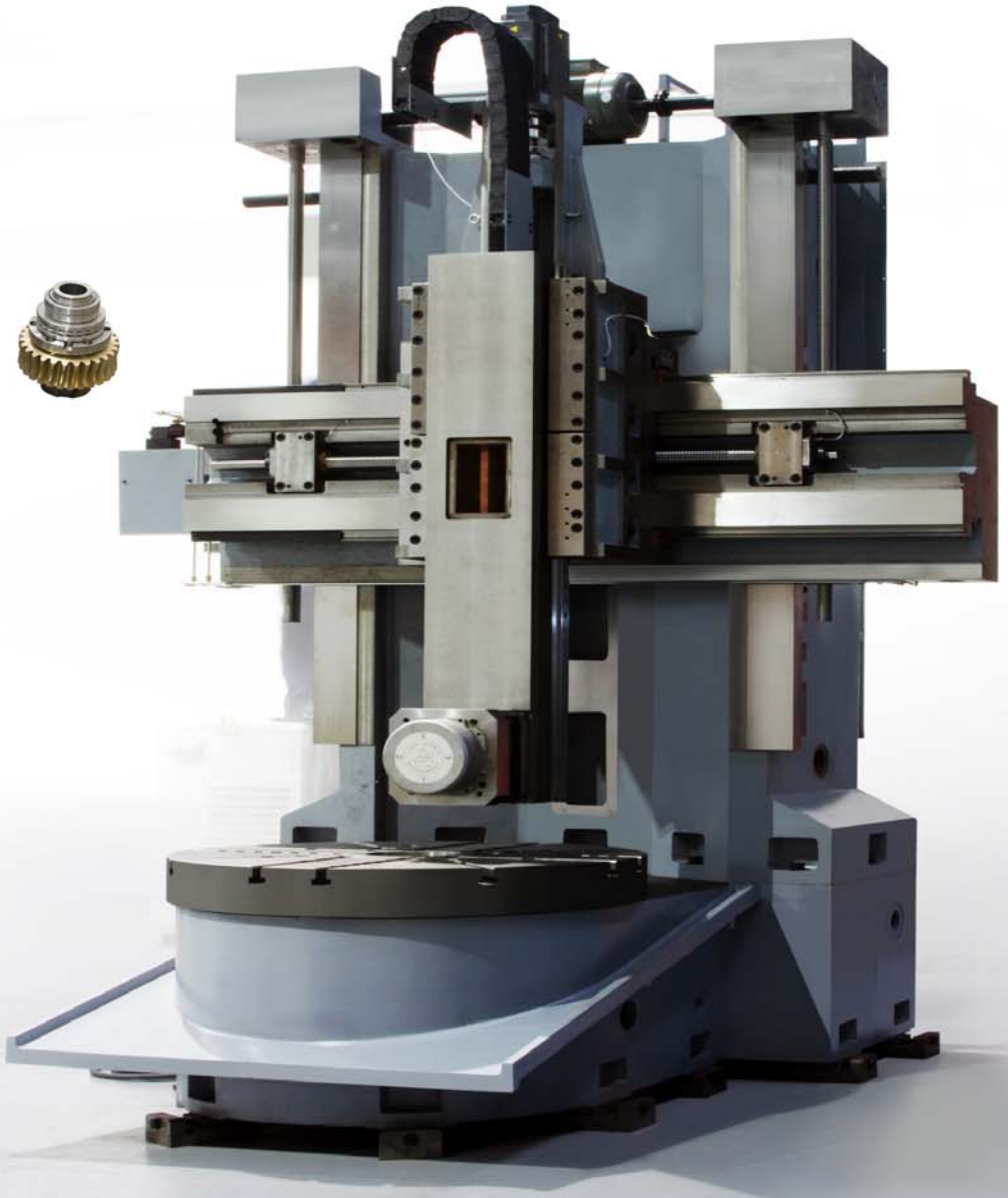
Beam lifting system

Move the beam up and down through a worm gear and worm drive screw . compact structure, large transmission ratio, more reliable drive

Beam can be moved up and down, with large range of processing, to ensure the machine tool has the best rigidity when machining parts with different height

Beam hierarchical mobile positioning, fully controled by PLC, the operation is simple and reliable

Special assembly process, to ensure that the geometry precision of beams in each position



VNL1254H/HT
VNL1605H/HT

Spindle motor with high torque ,large power , powerful cutting can be performed

Also introduced with Germany imported ZF gear box, with wide speed and big torque heavy cutting

ZF double reducer has two gears speed output, which can satisfy the requirement of low speed and heavy cutting for large diameter workpieces, and also the requirements of high speed cutting for small diameter workpieces.

Top gear (1:1)e
low gear (1:4)

SPEED RANGE

Unit：rpm

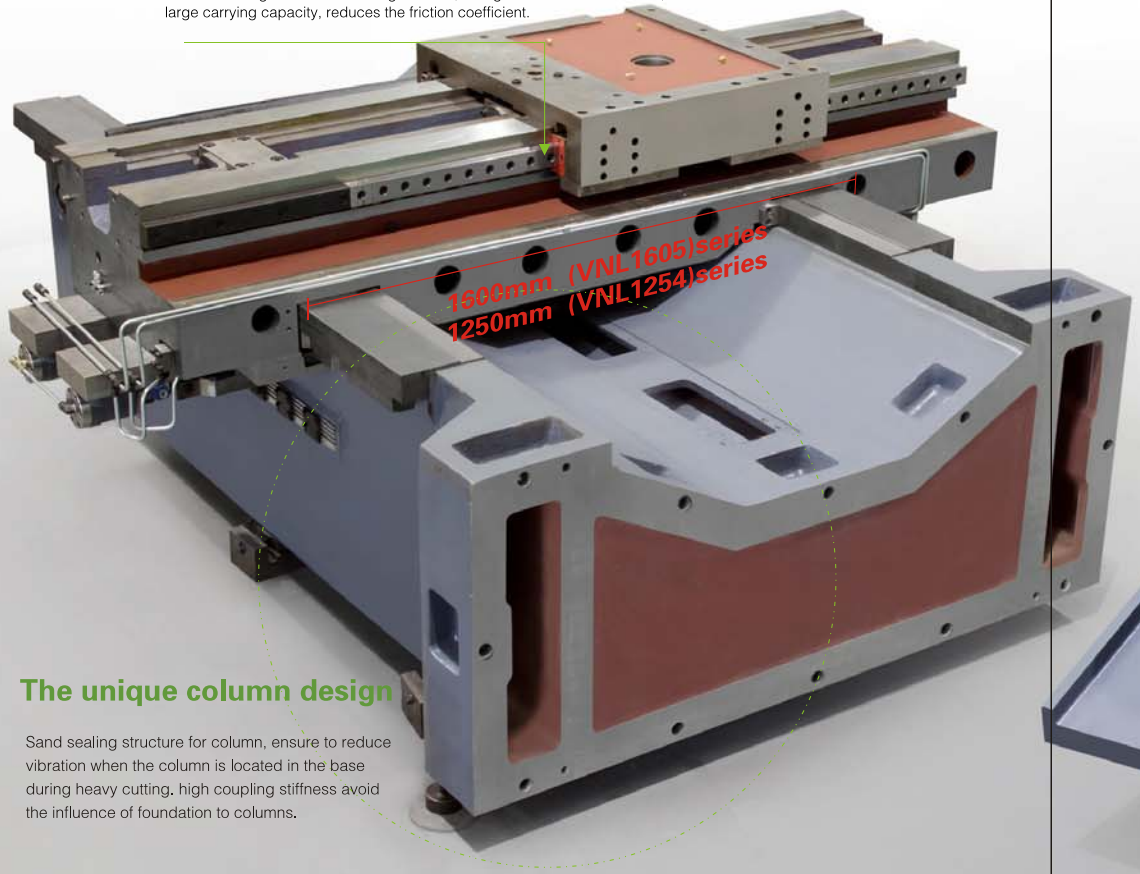
	VNL1254H/HT	VNL1605H/HT
Low gear	4–126	3.15–100
Top gear	16–500	12.6–400

GUIDE RAIL STRUCTURE

Linear guide and the slide guide, can ensure the long–term stability of accuracy and heavy cutting performance;

Guide rail is the linear guide, to attain the aim that friction is less than the lower pressure, accuracy remains the same in long running;

Plastic coatedguide rail for bearing the load, with good vibration resistance, large carrying capacity, reduces the friction coefficient.



The unique column design

Sand sealing structure for column, ensure to reduce vibration when the column is located in the base during heavy cutting. high coupling stiffness avoid the influence of foundation to columns.

INTEGRAL BASE, RIGID FOUNDATION

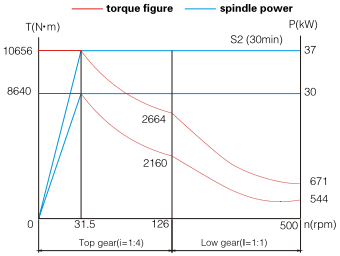
Base adopts thermal symmetric structure, overcome the influence on machining accuracy due to spindle temperature rise, the finite element analysis base reinforcement model, optimization design, make the machine has high rigidity ,cast iron with high density is used, with high strength, good shock absorption.

ZF gear reducer with back type motor installation, make maintenance more convenient.

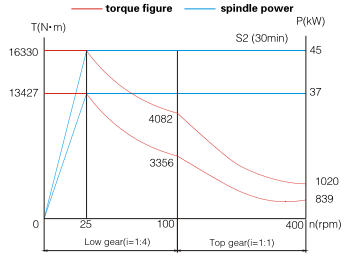
Spindle unit

High rigid and precision spindle bearing pack, high–class alloy steel gear, after proper heat treatment and high precision grinding, ensures the minimum spindle rotary noise.

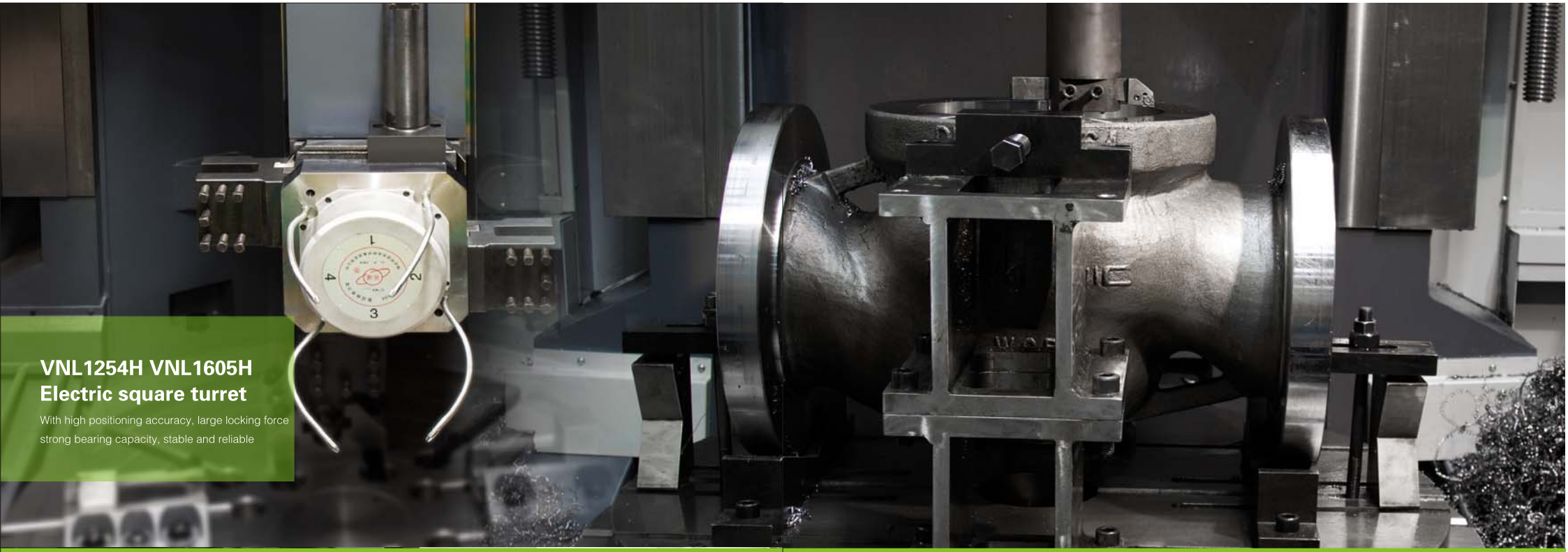
SPINDLE POWER & TORQUE FIGURE



VNL1254H/HT



VNL1605H/HT



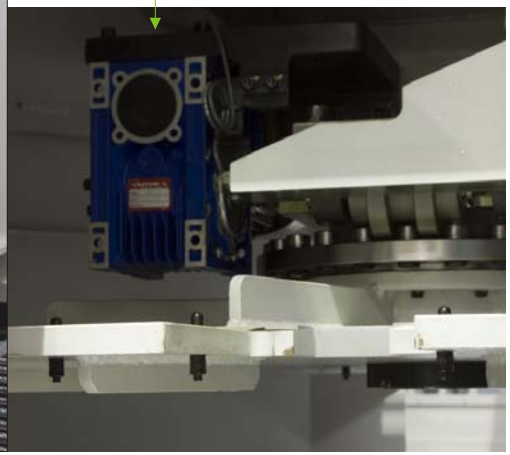
VNL1254H VNL1605H
Electric square turret

With high positioning accuracy, large locking force
strong bearing capacity, stable and reliable

VNL1254HT/VNL1605HT
Hat type Attached

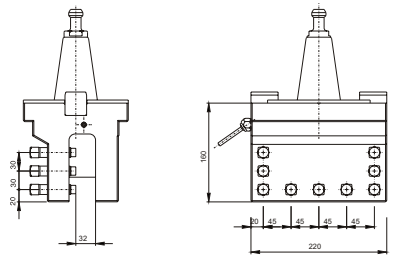
Instead of the ordinary electric turret, can automatically change the tools, machining efficiency is much higher

Configuration BT50 the handle of tool holder, totally 4sets of tool holder, including 3 pecs turning tool holder, one pec boring holder

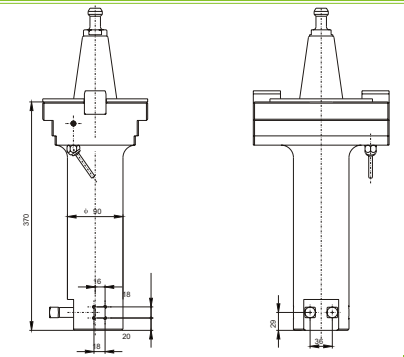


Cutting tool system BT50

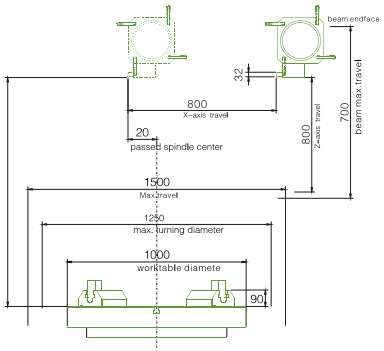
external circular tool



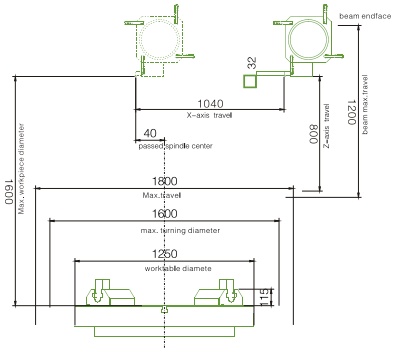
boring tool



WORKING AREA



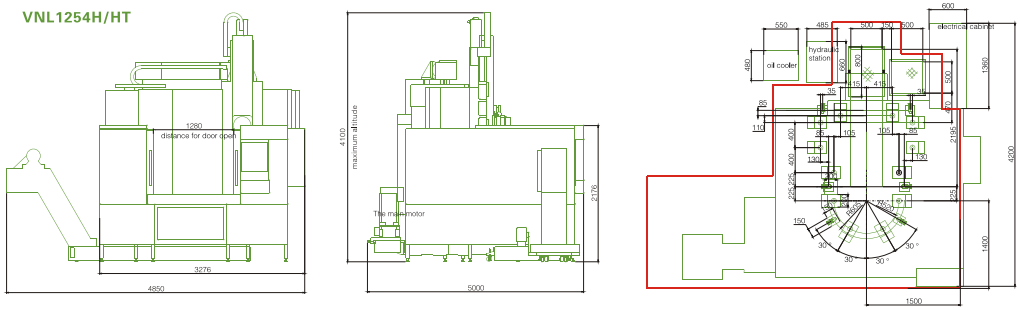
VNL1254H/HT



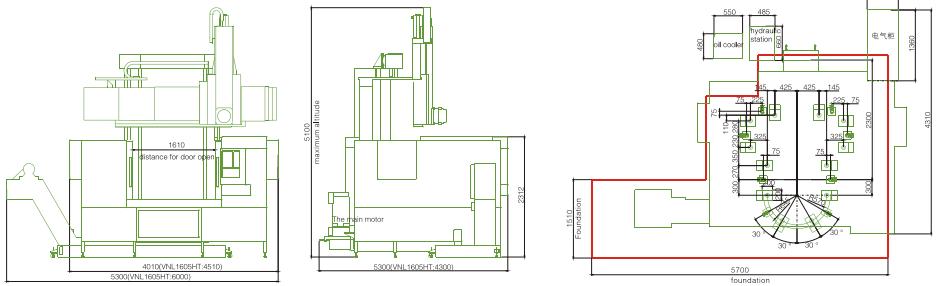
VNL1605H/HT

WIDTH FOR DOOR OPEN

VNL1254H/HT



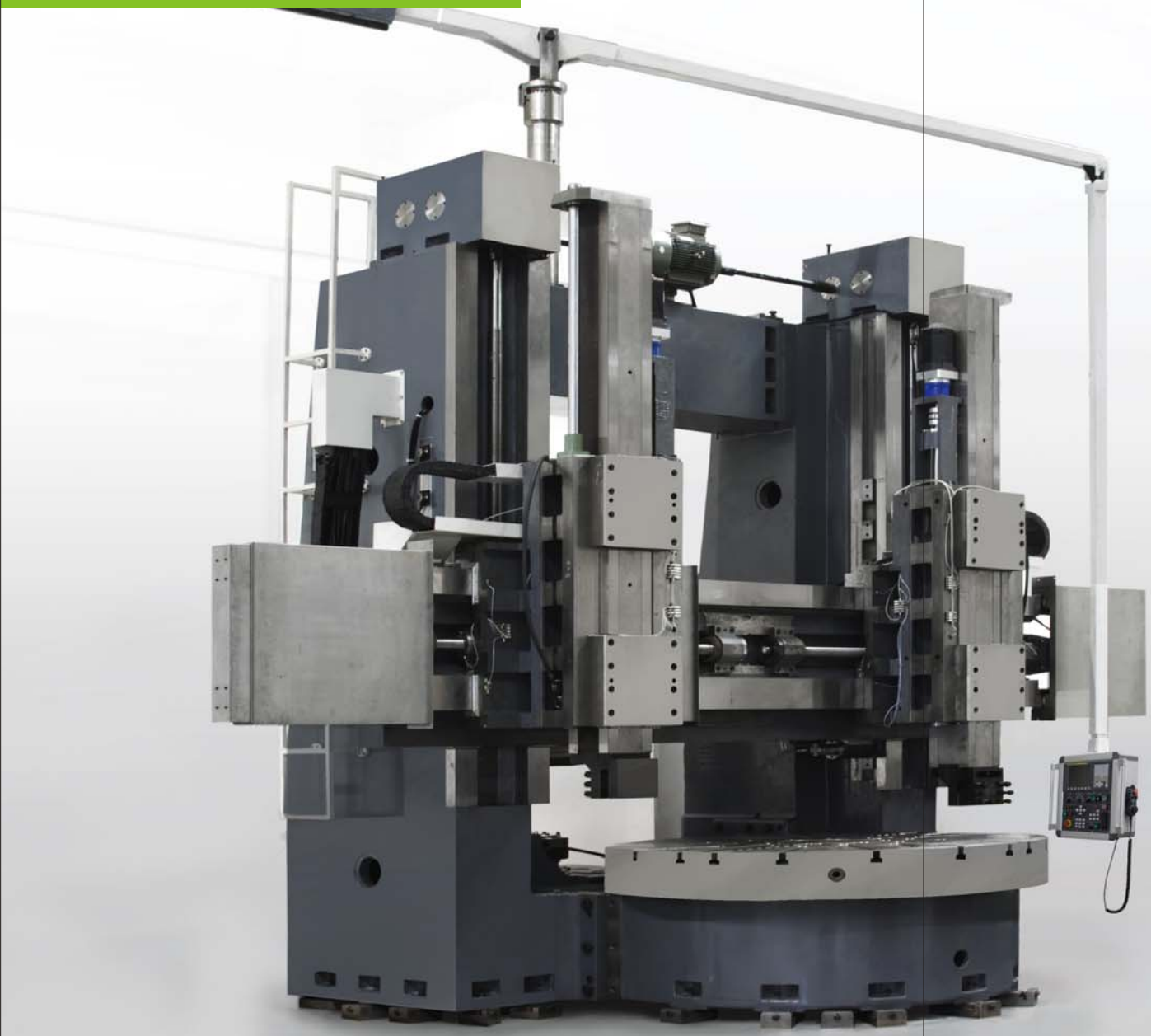
VNL1605H/HT



TECHNICAL PARAMETERS

item		unit	single-column lathe		
			VNL1254H	VNL1605H	VNL1605HT
processing range	maximum rotating diameter	mm	1500	1800	1800
	max.turning diameter	mm	1250	1600	1600
	max.height of workpiece	mm	1000	1600	1600
	max.weight of workpiece	kg	5000	8000	8000
worktable	motor power	kW	30	37	37
	worktable diameter	mm	1000	1250	1250
	worktable maximum speed	r/min	500	400	400
	worktable maximum torque	N・m	6000	14000	14000
turret	station		4	4	12T
	turning tool size	mm	32×32	32×32	32×32
	drive mode		electric	electric	electric
X&Z axis	X axis bearing diameter/pitch	mm	63/10	63/10	63/10
	Z axis bearing diameter/pitch	mm	63/10	63/10	63/10
	Max.travel X/Z	mm	800/620	1040/800	1050/800
	Rapid Traverse speedX/Z	m/min	12/12	12/12	12/10
machine accuracy	positional accuracy (X/Z)	mm	0.03/0.03	0.03/0.03	0.03/0.03
	repeated positioning accuracy (X/Z)	mm	0.015/0.015	0.015/0.015	0.015/0.015
auto chip conveyor			side chip conveyor	side chip conveyor	side chip conveyor
CNC system			SIMENS 828D		
servo motor torque (X/Z)		N・m	25/37	37/37	37/20.5
Power capacity		kVA	65	80	80
Net weight		kg	18000	26000	27000
Dimension (length ×breadth × height)		mm	4850×5000×4100	5800×5300×5100	6000×4300×5100
STANDARD			Automatic lubrication system, electrical cabinet air conditioner, trichromatic lamp, constant temperature oil tank		
OPTION			SIMENS 828D		
			linear scales, special fixture, etc		

DOUBLE COLUMNS VERTICAL LATHE
VNL2506H



Whole casting structure design for gantry column, with higher product stability;

Double turret , double machining efficiency. Floor area is only the half of horizontal lathe which has the same production capacity;

Using fanuc two–channel cnc system, dual channels control two turret respectively, finish rough machining and finish machining at the same time;

With a symmetrical layout, reduced the influence of spindle temperature rise;

Columns are fixed on the base and foundation at the same time, with better rigidity;

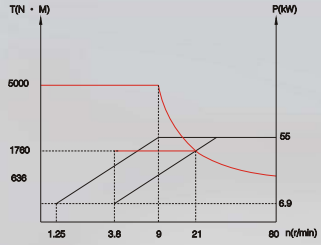
Hierarchical position for beam moving, guarantee heavy cutting within the shortest length of ram.

POWERFUL CUTTING ABILITY

55 kw ac frequency spindle motor , rated speed **750 rpm**, suitable for heavy cutting in low speed;

After a multistage gear deceleration, the maximum torque of worktable is **63000 N.m**. the total cutting force is **65000N**.

SPINDLE POWER & TORQUE FIGURE



THE INTEGRAL STRUCTURE

Columns are symmetric gantry structure, which can effective control the influence of machine tool accuracy due to thermal deformation;

Columns on the base is fixed on the ground at the same time, greatly enhance the integral rigidity of the machine tool;

Four large cross–section rectangular guideway design, guarantee the columns have high precision, high stability;

Main components, such as base, worktable, pillar, middle beam adopt high strength cast iron, guarantee the stability, rigidity ,accuracy retentivity of the machine tool.

BEAM LIFTING SYSTEM

Beam can be moved up and down, with large range of processing, to ensure the machine tool has the best rigidity when machining parts with different height;

Beam hierarchical mobile positioning, fully controled by PLC, the operation is simple and reliable;

Special assembly process, to ensure that the geometry precision of beams in each position.

X/Z axis drive reducer

Adopt imported gear reducer (ratio 1:4), reverse clearance is less than 3 arcmin, transmission efficiency is more than 97%, quick dynamic response, high torsional rigidity

Hydraulic counterweight system

Effectively balances the gravity load, which can guarantee the machine can rapidly response and keep good geometric accuracy in any state

Main transmission structure

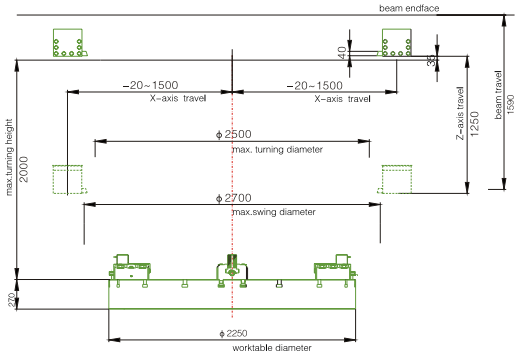
The completely symmetrical structure, effectively controls the influence of thermal deformation on the workbench。

Big gear is made of advanced alloy steel, after proper heat treatment and high precision grinding processing, make spindle running noise to a minimum,

Thrust ball bearing outside diameter is **1250 mm**, which make machines can bear capacity of **16 tons**

Dynamic balance test is done for driving wheel , make the machine tool vibration to a minimum during high speed, to ensure the roughness of processed parts

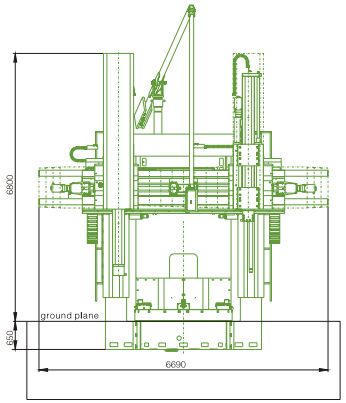
WORK AREA

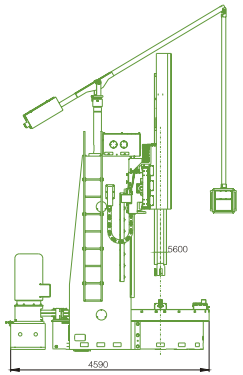


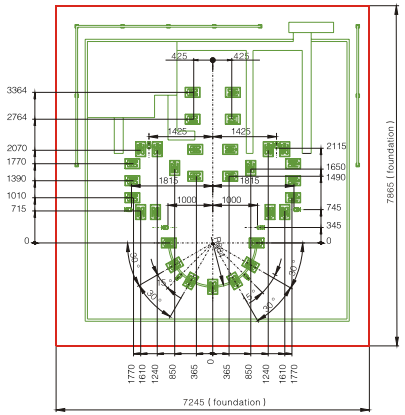
TECHNICAL PARAMETERS

item		unit	double column vertical lathe VNL2506H
processing range	maximum rotating diameter	mm	2700
	max.turning diameter	mm	2500
	max.height of workpiece	mm	2000
	max.weight of workpiece	kg	16000
worktable	motor power	kW	55
	worktable diameter	mm	2250
	worktable maximum speed	r/min	80
	worktable maximum torque	N・m	50000
turret	station		1
	turning tool size	mm	40×40
	drive mode		无
X&Z axis	X axis bearing diameter/pitch	mm	80/10
	Z axis bearing diameter/pitch	mm	80/10
	Max.travel X/Z	mm	1520/1200
	Rapid Traverse speedX/Z	m/min	7.5/7.5
machine accuracy	positional accuracy (X/Z)	mm	0.03/0.03
	repeated positioning accuracy (X/Z)	mm	0.015/0.015
auto chip conveyor			无
CNC system			FANUC 0i-TD (two-channel)
servo motor torque (X/Z)		N・m	22/22
Power capacity		kVA	170
Net weight		kg	42000
Dimension(length × breadth × height)		mm	6690×4590×7450
STANDARD			Automatic lubrication system, electrical cabinet air conditioner, trichromatic lamp, constant temperature oil tank
OPTION			SIEMENS 840D
			linear scales, special fixture, etc

WIDTH FOR DOOR OPEN







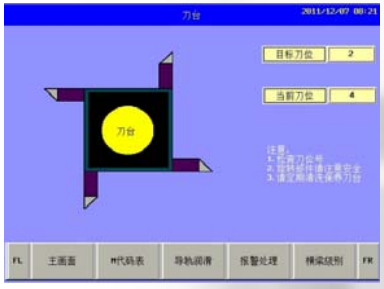
APPLICATION RANGE

Especially suitable forlarge, heavy, thin, and other special-shaped parts processing, widely used in mining machinery, valves, military, aerospace and other industries.

CONTROL SYSTEM

With the help of PICTURE function,friendly man–machine interface is studied on the system as the secondary development

Tool display interface



Beam shifting interface

Alarm information interface

Daily maintenance interface

Time setting interface for lubrication oil pumping

Machine M code interface

Rotating control console, mobile MPG, convenient operation,especially console for VNL2506H can be moved freely from multiple perspectives, which is more handy for operators

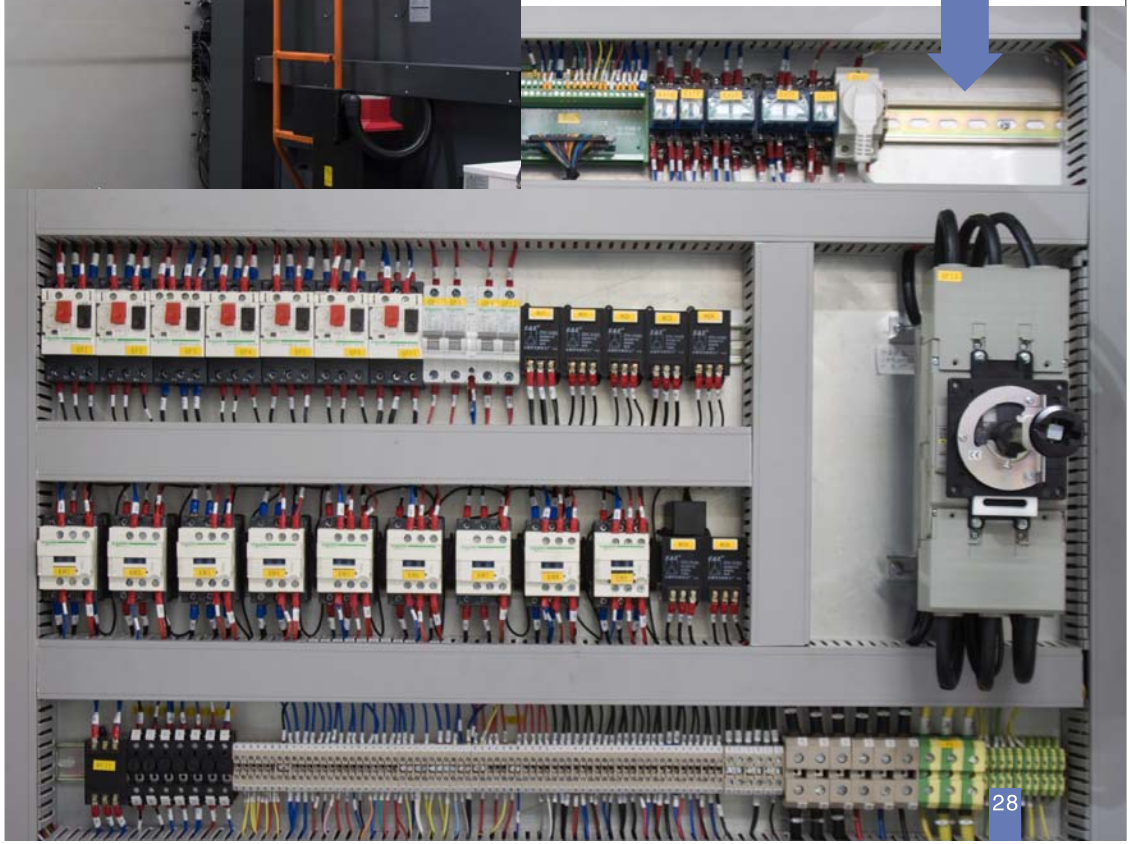
HUMANIZED DESIGN

90° rotary controller panel, with a touchpad controlled microprocessor, humanized position design, make the operation much easier

Cabinet design, convenient to place something such as drawings, keys and measuring tool

Internal space and sliding door open distance is big enough, easily for the workpiece loading and unloading

Ladder fence inside space is large, convenient and has safety protection

Reasonable lighting

Orderlyarrangement in electric cabinet, cable wire is marked with serial number, which is easy for maintenance and shorten the processing time for solving problem.