

## Special Purpose CNC Grinder (For Slabs of the Railway Table Board)



### Machine efficiency

Under normal condition, the allowance of slab is 2mm, the machine can finish machining 10 - 100 pc slabs per 20 working hours.

Item	Unit	Specification
Machining Range	mm	6500 x 2550 x 1200
X Axis Travel	mm	8700
L/R Grinding head cross travel	mm	From the center line of the machine +1800 or -1800
Z1/Z2 Axis Travel	mm	1200
Distance between gantry	mm	6300
A1/A2 Rotating Range		-3o ~ 93o
C1/C2 Rotating Range		-3o ~ 183o
Grinding wheel size (OD x ID x W)	mm	525 x 305 x 200
Grinding wheel speed	rpm/min	500 - 3000
Grinding wheel motor power (Continuous/intermittent)	kW	103/124
Grinding wheel torque (Continuous/intermittent)	Nm	820/1110
X/Y2/Y1 Axis Moving speed	m/min	0 - 20
Z1/Z2 Axis moving speed	m/min	0 - 6
Coolant flow rate	L/min	750
Linear positioning accuracy		0.020/1000; full length 0.07mm
X / Z1 / Z2 Axis motor		8.17kW, 48Nm
Y1/Y2/A1//A2/C2/C1 Axis motor		3.3kW, 16Nm
Engrave spindle motor power	kW	5
Engrave spindle speed	rpm/min	max. 9000
Total Power	kW	350
Machine Weight	ton	70

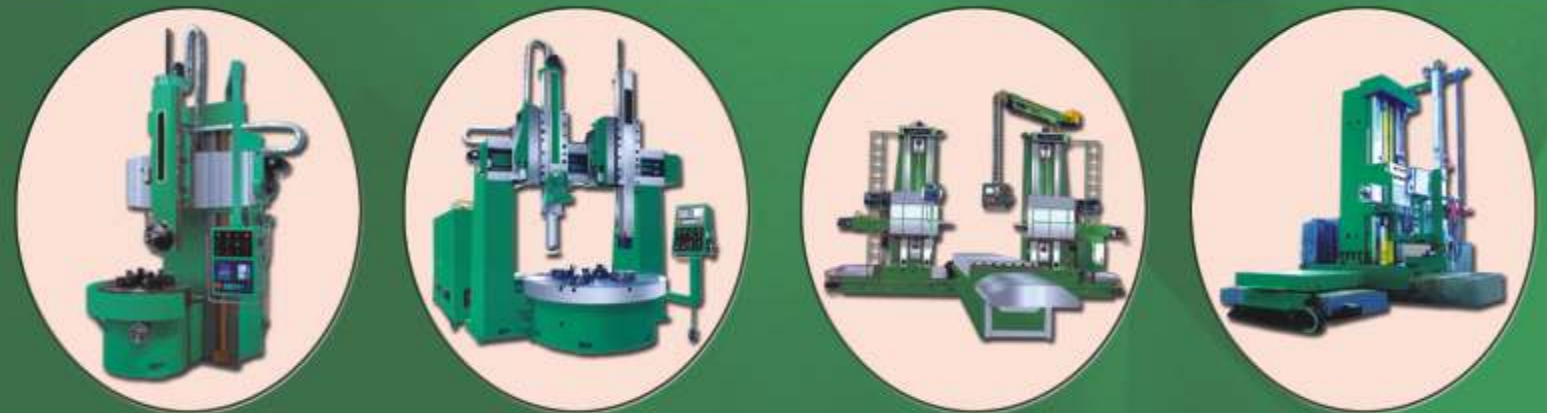


## VTL, HEAVY MILLING & BORING MACHINES

# CUPER

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Conventional / CNC



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**RAILWAY, NUCLEAR POWER, WINDMILLS MANUFACTURING MACHINES**

CNC Single Frame Vertical Lathe Model CK577



This machine is redesigned on the base model of Single Column Vertical Lathe C577. It can satisfy the customers' requests of turning taper surface and cutting slot. The said machine is equipped with the servo motor and CNC system in the vertical and horizontal moving directions of tool post. The tool post can feed simultaneously and steplessly in two coordinate directions. It enlarges the operation range of the machine.

CNC Single Column Vertical Lathe Model CK5112



This CNC series machine belongs to economical CNC products. It is widely used for processing small and medium parts of motor manufacture, pump, petrification, war industry. It can perform the cutting procedures, such as cylindrical surface, inner hole, end face, groove, taper, arc surface. The positioning and clamping of workpiece are both reliable and convenient. The machine has high mechatronics, and it is a high cost-effective product.

CNC Single Column Vertical Lathe Model CK518, CK5110



## Technical Specification

Item	Unit	CK577	CK518	CK5110	CK5112
Max. turning diameter	mm	700	-	-	1250
Max. cutting diameter	mm	-	860	1000	-
Max. height of work piece	mm	650	750	750	1000
Max. weight of work piece	Kg	1000	1200	1200	5000
Max. cutting force	N	11000	14700	14700	20000
Max. torque	N.m.	2200	2940	2940	17500
Max. diameter of working table	mm	650	800	900	1010
Rotary Speed of working table	r/min	38-300 (8 steps)	20-250 (6 steps)	20-250 (6 steps)	6.3-200
Horizontal travel of tool post (X)	mm	420	550	550	700
Vertical travel of tool post (Z)	mm	600	650	650	650
Feed speed of tool post	mm/min	0-2400	1-1200	1-1200	1-2000
Rapid movement of tool post	mm/min	-	-	-	-
Max. dimension of tool bar	mm	-	30 x 40	30 x 40	-
Max. travel of cross rail	mm	-	600	600	750
Moving speed of cross rail	mm/min	-	400	400	440
Main motor	kw	11/14	15	15	22
Total motor power	kw	17	20	20	-
CNC System		SIEMENS802D	SIEMENS802D	SIEMENS802D	SIEMENS802D
Weight of machine	T	4.5	6.5	7	9.3
Overall dimension (LxWxH)	mm	1938x1742x2745	2150x1750x3710	2250x1760x3710	2420x2280x3500

All specifications are subject to change without prior notice.

## Single Column Vertical Lathe Machines



This machine, on the basic functions of boring, can also be used for face cutting and cylindrical turning operations. The double speed motor expands the rotating speed range. The tool post can move horizontally and rapidly. This machine adopts AC frequency conversion motor and the speed can be changed through the clutch. So, the stepless feeding and rapid moving can be realized. All these are not only having the functions of small sized vertical lathes, but expanding the range of lathe applications.



### Features of the Machines

- These machines are suitable for machining of all kinds of industries. It can make rough and accurate turning of external cylindrical surface, circular conical surface, head face, grooving, severance etc.
- Working table adopts hydrostatic guideway. The spindle is to use NN30 (Grade D) bearing and able to turn precisely with good carrying capacity.
- Gear case is to use 40 Cr gear wheel of gear grinding. It has high precision and little noise. Both hydraulic parts and electrical equipment use famous-brand products.
- Plastic coated guide ways are wearable. Centralized lubricating oil supplying is convenient. Raster display is used in standard accessories.
- Castings of lathe are to use lost foam foundry (short for LFF) technique. Castings are wearable with good quality and dealt by aging.

## Single Column Vertical Lathe Machines



### Technical Specification

Item	Unit	C577	C5112D	C5116	C5123	C5125	C5131	C5140
Max. turning diameter	mm	700	1250	1600	2300	2500	3100	4000
Working table diameter	mm	600	1000	1400	2000	2200	2500	3200
Max. weight of work piece	T	1	3.2	5	8	10	10	20
Max. height of work piece	mm	650	1000/1400	1000	1250	1300	1400	2000
Speed range of working table	rpm	38-300	6.3-200	5 - 160	3.2 - 100	2 - 62	2 - 62	2 - 62
Steps		8	12	16	16	16	16	16
Horizontal travel of tool post	mm	420	700	915	1210	1310	1610	2130
Vertical travel of tool post	mm	600	650/800	800	800	800	1100	1000
Horizontal travel of side tool head	mm		700	630	630	630	630	630
Vertical travel of side tool head	mm		800	900	1150	1150	1150	1150
Power of main motor	kW	11/14	22	30	30	37	45	55
Weight	Kg		8500/9500	12100	19800	21800	30000	36000
Overall dimensions								
L x W x H	mm		2460x 2330x3430	2662x 2800x3550	3235x 3240x3910	3380x 3360x4000	3450x 3940x4200	4600x 5300x4300

All specifications are subject to change without prior notice.

# CNC High Speed Vertical Lathe Machines

## CNC High Speed Vertical Lathe



\* The CNC vertical turning lathe is advanced equipment in performance. It has extensive procedure range and high production efficiency.

\* This product is mainly applied to the rough and finish machining of internal and external cylindrical surface, internal and external circular cone, thread, arc surface and complex curved faces of ferrous metal, non-ferrous metal and part of non-metallic parts for high speed, steel, carbide alloy cutters and ceramic cutters.

\* This series of products has the features such as high accuracy, good rigidity, long life, good shock resistance, high reliability and very suitable for high-speed cutting and so on.

\* Each part of the product adopts heat symmetrical structure thereby the rigidity and accuracy of the product is improved.

\* Main drive adopts 1PH7AC main spindle servo motor and realizes large torque and fast speed cutting by gear box. the feeding system adopts Siemens 1FT6 series AC servo motor to drive. The motor directly connects with ball screw to realize backlash free transmission and ensure the high moving accuracy.

\* Working table guide way adopts high-accuracy rolling bearing (less than 2.5m) or hydrostatic guide way (more than 3.5m) in order to ensure the machine is high rotary accuracy and larger loading capacity.

\* The machine is equipped with chip-removing device and semi-closed guard.

\* According to the user's demand, CNC system can choose the product of Siemens or FANUC company and also the user can select other CNC systems.

## CNC Single Column Vertical Lathe



\* The SIEMENS CNC system or FANUC system may be equipped on the machine. There are 3 kinds of tool head forms: Square ram, Electrical turret and Manual turret.

\* The spindle has 2 kinds of speed adjusting forms: 16 steps and 2 grads step less variable speed.

\* This machine not only has common turning function but also can cut with constant linear velocity and threading.

\* We can equip coolant system, chip removal system and semi-sealing protect cover use for integral machine, according to the customer's demands.

The following devices can be ordered: 1. threading device, 2. taper turning device, 3. grinding device, 4. all closed-loop control, 5. coolant system, 6. CNC vertical lathe can be equipped with a function of turning in steady velocity, 7. The standard CNC system is SIEMENS 802D, other CNC system also can be selected.

## CNC Single Column Vertical Lathe with Fixed Crossrail



This machine is controlled by the CNC system and programmable controller (PC). It is equipped one vertical tool head with 4 or 6 position turret. The table adopt manual 4-jaw chuck, 3-jaw self-centering chuck or hydraulic chuck. On the spindle top place, has installed the encoder, so that the machine can finish internal and external cylindrical surface, taper surface and flat surface, can accomplish constant speed cutting, curved surface machining threading.

The following devices can be ordered: 1. threading device, 2. taper turning device, 3. grinding device, 4. all closed-loop control, 5. coolant system, 6. CNC vertical lathe can be equipped with a function of turning in steady velocity, 7. The standard CNC system is SIEMENS 802D, other CNC system also can be selected.

# CNC High Speed Vertical Lathe Machines

## Technical Specification

Particulars	Unit	CK576D	CK578D	CK5112D	CKS5116X12/8	CK5116D	CKS5125X16/16	CK5235X20/32
Diameter of table	mm	615/630	720	1000	1250	1400	2000	3150
Max. machining diameter	mm	630	800	1250	1600	1600	2500	3500
Max. workpiece height	mm	500/700	600	1000/1250/1400	1250	1000/1250/1400	1600	2000
Max. workpiece weight	T	0.8	2	3.2	8	5	16	32
Max. height of tool bar section	mm	32	32	-	32	-	40	40
Max. cutting force of vertical tool hent	KN	10	10	20	16	25	32	40/35
Max. torque of table	KNm	2.5	3.2	10	10	16	32	80
Vertical tool head Electric Turret								
Horizontal stroke	mm	660	710	850	-	1050	-	-
Vertical stroke	mm	-	-	800/850	-	850/1000	-	-
Turret position		-	-	4/6	-	4/6	-	-
Square ram								
Horizontal stroke	mm	-	-	850	-	1050	-	-
Vertical stroke	mm	500	600	800/850	-	950/1000	-	-
Table speed range	r/min	12.5-500	15-460/11.5-460	6.3-200	2.5-400	5-160	1.6-200	0.63-63
Range of feed	mm/min	0.1-1000	0.1-1000	0.1-1000	0.1-2000	0.1-1000	0.1-2000	0.1-2000
Vertical cutter carriage travel horizontal/vertical	mm	-	-	-	-20-1000/800	-	-20-1500/1000	-20-2030/1250
Rapid traverse of vertical tool head	mm	-	-	-	12000	-	8000	6000
Rapid traverse speed of tool head	mm/min	3000	3000	3000	-	3000	-	-
Max. travel of crossbeam	mm/min	-	-	-	1000	-	1250	1720
Locating pitch of cross rail in step, step number	mm	-	-	600/1000	125, 8	600/1000/1200	250, 5	-
Elevation speed of cross rail	mm/min	-	-	660	410	660	340	350
Main motor power (AC variable frequency)	kW	11/18.5	11/22	37/22	28	45/30	55	DC75
Motor power for cross rail elevating	kW	-	-	-	7.5	-	11	11
Torque of feeding AC servo motor	N.m	30	22	18.5/22	42	18.5/22	53	42
CNC System				SIEMENS 802D	FANUC Oi			
No.of linkage axes		-	-	-	2	-	2	2
Square ram section	mm	-	-	-	355x225	-	240x240	240x240
Overall dimensions	mm	3300x2000x3200	4200x2900x3850	3850x2640x3500	-	2450x3190x4170	-	-
Weight of machine	T	8	8.5	9.5/11/12	-	14/14.5/15	-	-

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**Model :  
C5225**



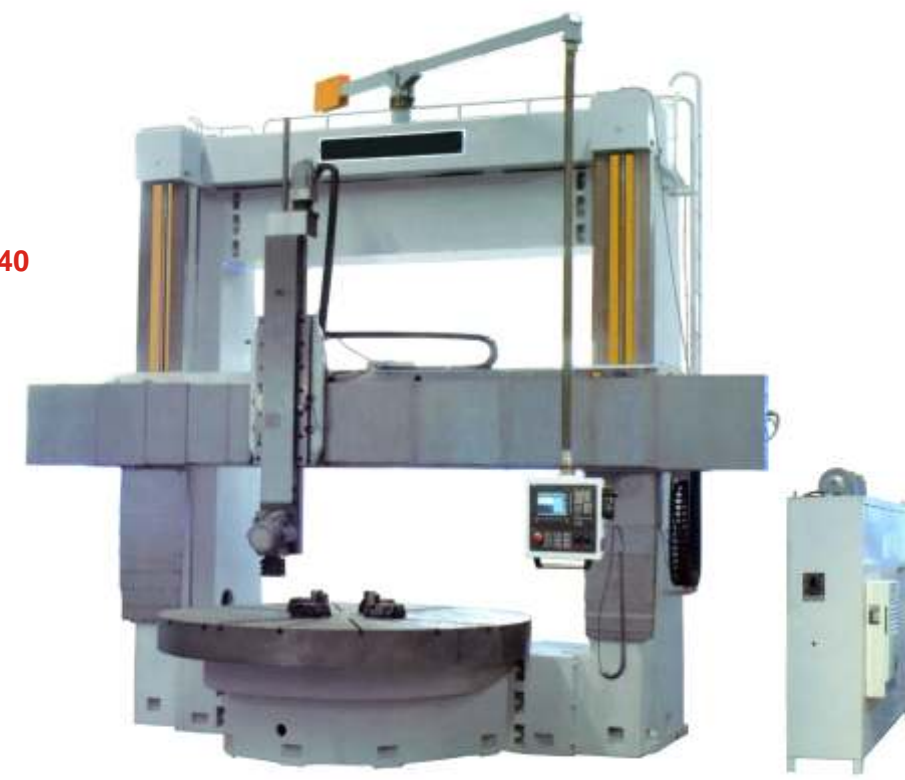
1. This machine is suitable for machining of all kinds of industries. It can make rough and accurate turning of external cylindrical surface, circular conical surface, head face, grooving, severance etc.
2. Working table adopts hydrostatic guideway. The spindle is to use NN30 (grade 1) bearing and able to turn precisely, with good carrying capacity.
3. Gear case is to use 40 Cr gear wheel of gear grinding. It has high precision and little noise. Both hydraulic parts and electrical equipment use famous-brand products.
4. Plastic coated guide ways are wearable. Centralized lubricating oil supplying is convenient. Raster display which is produced by famous companies is used in standard accessories.
5. Castings of lathe are to use lost foam foundry (short for LFF) technique. Castings are wearable with good quality and dealt by aging.

### Technical Specifications

Max. turning diameter	mm	2500
Working table diameter	mm	2250
Max. weight of workpiece	T	10
Max. height of workpiece	mm	2000
Speed range of working table	rpm	2 - 63
Steps		16
Horizontal travel of tool post	mm	1400
Vertical travel of tool post	mm	1000
Power of main motor	kw	55
Weight (approx)	kg	41000
Overall dimensions (LxWxH) (approx)	mm	5180x4560x4680

All specifications are subject to change without prior notice.

**Model :  
CQK5240**



This machine is the CNC double column vertical lathe, widely uses in metallurgy, petrification, mechanism, mining, shipping and other industries. This machine also has the capacity of machining middle, large workpieces. It has the high level of automation and enlarges the process range. CQK5240 is the high cost-effective product.

Instruction of main functions: 1. Working table is driven by spindle servo motor and feedback by encoder so as to realize constant linear speed process and thread turning. 2. The ram of tool post equipped with six-station electric tool carrier. The station can be selected by programming so as to automatically complete multi-process. 3. The ascent and descent of cross rail is separately driven by two servo motor and feedback by encoder. It can ensure the parrallel of the cross rail. 4. This machine not only has the basic functions of CNC vertical lathe, but also equipped with boring, milling tool post accessories which associated with the working table to realize drilling, boring, milling, indexed feed and other multi-process machining.

### Technical Specifications

Max. turning diameter	mm	4000
Max. height of workpiece	mm	2900
Max. weight of workpiece	kg	10000
Max. cutting force of tool post	N	25000
Max. torque of working table	N.m	63000
Table diameter	mm	3150
Speed range of working table	mm/min	0.1 - 40
Horizontal travel of tool post	mm	4000
Vertical travel of tool post	mm	1250
Max. swing angle of tool post	degree	+ 30
Feed range of tool post	mm/min	0 - 1500
Max. travel of cross rail	mm	2550
Main motor	kw	55
	rpm	700
	N.m	750
CNC System		SIEMENS 840D
Machine weight	T	52
Overall dimension (LxWxH)	mm	9390x4755x5855

All specifications are subject to change without prior notice.



This machine is high - efficiency and widely used mechanical equipment with high performance. This series of vertical lathe can be used to machine ferrous and non-ferrous metal with high-speed tool, carbide tool or ceramic tool. Such rough and fine finishing cutting like cylindrical surface cutting, outside and inside conical surface cutting, complicated curve surface cutting etc. can be performed on this series of machine tool.

The hydrostatic guide way of table and the integral and heat symmetric casting of table base and table also the high precision double row short cylindrical roller spindle bearings have ensured the machine tool high precise rotating with high strength and high heat durability.

The column is portal structure, according to the calculation of limited elements, the whole machine dimension and inner stress state have been adjusted to the optimum. Hydrostatic unload guide way and constant flow hydrostatic guide way are used in the horizontal guide way of rail head, for the vertical movement to rail head, the sliding guide way is used/Two direction 0 feed of rail head are separately driven by ball screws and servo motors. To meet the need of some customers.

The main drive system of machine is driven by DC motor, through 2 shift gears, the table speed range can be realized. According to the requirement of customers, SIEMENS, FANUC or other CNC system can be choose.

## Technical Specifications

Particulars	Unit	C5250x3150	CQ5250Dx20/32	CK5250x31/50	CQ5263Dx31/50	CQK5263Dx31/50
Max. machining diameter of workpiece	mm	5000	5000	5000	6300	6300
Max. height of workpiece	mm	3150	2000	3150	3150	3150
Max. weight of workpiece	T	50	32	50	50	50
Diameter of Table	mm	4500	3600	4500	4500	4500
Speed range of table	r/min	0.5-50	1-50	0.5-50	0.5-50	0.5-50
Max. torque of table	KN.m	100	80	100	100	100
Max. cutting force of tool head						
Right	KN	50	35	50	50	50
Left	KN	35	28	35	35	35
Feed range of vertical tool head						
Left	mm/min	0.1-500	0.2-145	0.1-500	0.1-500	0.1-500
Right	mm/min	0.1-500	0.2-145	0.1-1000	0.1-500	0.1-1000
Rapid traverse of tool head	mm/min	4000	1550	4000	4000	4000
Section size of tool bar (WxH)	mm	50x50	40x50	50x50	50x50	50x50
Elevation travel of cross rail	mm	2650	1650	2650	2650	2650
Elevation speed of cross rail	mm/min	310	310	310	310	310
Power of main motor	kW	75	55	75	75	75
Weight of machine tool (approx)	T	100	80	100	120	120

The following devices can be ordered: 1. threading device, 2. grinding device, 3. all closed-loop control, 4. coolant system, 5. CNC vertical lathe can be equipped with a function of turning in steady velocity, 6. The standard CNC system is SIEMENS 802D, other CNC system also can be selected.

All specifications are subject to change without prior notice.



This machine has 2 vertical tool heads, the right head is CNC tool head. This machine can turn internal or external surface, taper surface and curving surface etc.

It has a compact frame and unites mechanical and electrical parts intensively. The auto-lubrication system, electrical grinder, electrical turret may be equipped according to the customers' demand.

## Technical Specifications

Particulars	Unit	CK5220DxH/W	CK5225DxH/W	CK5231DxH/W	CK5240DxH/W
Max. machining diameter of workpiece	mm	2000	2500	3150	4000
Max. height of workpiece	mm	1600/2000	1600/2000/2500	1600/2000/2500	1600/2000/2500
Max. weight of workpiece	T	12	10/20	32	10/20/32
Diameter of Table	mm	1900	2250	2830	2250/2830/3150
Speed range of table	r/min	1.6-125	2-63	2-63	2-63
Speed steps to table	steps	stepless	16	16	16
Max. torque of table	KN.m	50	63	63	63
Max. cutting force of tool head					
Right	KN	35	35	35	35
Left	KN	28	28	28	28
Feed range of vertical tool head					
Left	mm/min	0.25-145	0.25-145	0.25-145	0.25-145
Right	mm/min	0.1-1000	0.1-1000	0.1-1000	0.1-1000
Rapid traverse of tool head (Right/Left)	mm/min	3000/1550	3000/1550	3000/1550	3000/1550
Travel of cross rail	mm	1250/1650	1250/1650/2150	1250/1650/2150	1250/1650/2150
Traverse of tool head					
Horizontal	mm	1150	1400	1735	2150
Right Vertical	mm	1000/1250/1400	1000/1250/1400	1000/1250/1400	1000/1250/1400
Left Vertical	mm	1000/1250/1400	1000/1250/1400	1000/1250/1400	1000/1250/1400
Power of main motor	kW	55	55	55	55
Overall dimensions (LxWxH)	mm	5485x5130x5200	5180x5200x4870	5520x6860x5725	6780x5240x4870
Weight of machine tool (approx)	kg	34000/36000	32000/35000/41000	34000/36000/42000	36000/38000/45000

The following devices can be ordered: 1. threading device, 2. grinding device, 3. all closed-loop control, 4. coolant system, 5. CNC vertical lathe can be equipped with a function of turning in steady velocity, 6. The standard CNC system is SIEMENS 802D, other CNC system also can be selected.

All specifications are subject to change without prior notice.

**Model :  
CMIK5820**



## Technical Specifications

		Turning specification
Working table diameter	mm	1800
Max. turning diameter	mm	2000
Max. height of workpiece	mm	1250
Max. weight of workpiece	kg	6300
Range of working table speed	r/min	2.5 - 80 (stepless)
Horizontal movement of tool post	mm	1150
Vertical movement of tool post	mm	1000
Swing angle of tool post	degree	+ 30
Feed range of gearbox	mm/min	0.25 - 90
Rapid movement of tool post	mm/min	1560
Power of main motor	kW	55 (frequency control)
Rapid motor power	kW	2.2
Power of oil pump motor	kW	2.2
Power of feed motor	kW	0.75 (frequency control)
Power of general motor	kW	about 60
Weight	Kg	about 25000
Overall dimension	m	3.7x3.6x4.7
		Grinding specification
Speed of wheel head	r/min	2890
Power of wheel head	kW	4
Movement speed of wheel head	m/min	0 - 2.5
Feeding speed of wheel head	mm/grid	0.001 Stepless, Min.feed amount
Mode of feeding		Manually-operated or Mechanically-operated
Max. travel of wheel head	mm	740
Grinding diameter	mm	240 - 1000
Grinding depth	mm	420 (Max.560 for special order)