



CW^T®

广州市鹏发进出口贸易有限公司

GUANGZHOU PENGFA IMPORT & EXPORT TRADING CO.,LTD

Ring-die Manufacture *from China Scheme*



1. Forged Ring



2. CNC Vertical Lathe



3. Four-roll Gun Drill



4. CNC Horizontal Countersinking Machine



8. CNC Refurbishing machine



7. Ring-die



6. CNC Lapping & Blast Cleaning Machine for Ring-die



5. Vertical Vacuum Gas-quenching Furnace

CW^T means **"Coincide With the Tide, Create the World's Top"**

与时俱进，力创世界一流

Just as everybody knows, The easily - worn parts on feed pellet mill or wood pellet mill are Ring-die and Roller shells which are manufactured and controlled by a few large enterprises in the world for a long time. Since China is a nation with a full industrial chain and her industrial automation lever is going up continuously, Adhering to the faith of "**Lowering the production cost and optimizing the manufacture technology on the ring die**", GUANGZHOU PENGFA IMPORT & EXPORT TRADING CO.,LTD have been devoting to searching & combining the top equipment in the relative field into a perfect production line for ring die with excellent quality, high efficiency. Through 7 years' exploration and experience, Ring-die manufacture from China Scheme comes into the world..

GUANGZHOU PENGFA IMPORT & EXPORT TRADING CO.,LTD (**Called "PENGFA"**) is located in Panyu District, Guangzhou which is called "Commercial Port" with one thousand of business history. It aims at exporting **ring-die** and the **full-industry-chain products** of producing the ring die from the raw material -- forged ring to series of CNC production equipment like CNC Vertical Lathe / Four - roll Gun Drill, CNC Horizontal Countersinking machine, Vacuum Furnace , CNC Lapping & Blast cleaning machine and **CNC Refurbishing machine** for maintenance on ring die as well. PENGFA is an unique company in China which promotes Chinese experience on ring-die manufacture abroad. In the meanwhile, In order to meet the demand from Feed pellet plant or wood pellet plant, PENGFA periodically supplies the relative spare parts like screeners, hammers / drag flights etc to their clients. The above products have passed the strict technical test by the relative government offices and got their approval. They also got good feedback from our clients.

Relying on the Specialized group, Strict management & our cooperative partners' permanent innovation and development, "CWT" staff brings the brand-new CNC equipment of unique structure . high pressure . low energy-consuming and high efficiency into this world one after one, More and more Ring- die production lines are "flying" to every corner in the world. They carry "CWT" people's devotion to new CNC equipment and fully set forth to **the meaning of "CWT"** to great extent: "**Coincide With the Tide, Create the World's Top**".

Adhering to the Management Concept of "**Quality, Reputation Pioneer**", "**CWT**" staff provides best service to their customers by good quality, beautiful design, reasonable price and prompt delivery. Complying with the business ethics "**Customers are our God, Quality is the life of the enterprise**", we are strict with ISO 2001 Quality Criterion. we exert ourselves on what we can to make every product perfect and to provide customers a safe and excellent product.**We have a common wish: "Make people's living cost lower, Make people's living quality better, Make it more harmonious between human and the environment, Make your tomorrow brighter and clearer"**.



Ring-die Manufacture from China Scheme

--Let Ring-die production simpler & easier

■ Making Process Drawing According to Customer's request

■ Choosing Raw Material

- (1) Purchasing raw material from famous steel companies; (2) Ultrasonic inspect raw material;
(3) High Chrome Stainless Steel with 12.5% - 14.5% Chrome, In China, the usual **stainless steel material** : X46Cr13 (4Cr13); **Alloy-steel material**: SAE-8620 (20CrNiMo) and 20CrMnTi (20MnCr5);

Referring to [Ring-die Manufacture from China Scheme](#)--Forged rings

■ Rough turning: Rough process to make sure incision precisely; Preparation for next - process

■ Semi-turning: From raw material to semi-products according to customer special need

Referring to [Ring-die Manufacture from China Scheme](#)-- CNC Vertical Lathe

■ Drilling, reaming holes (*Relief hole*) & Countersinking

By full-automatic **four - roll gun drill** or CNC Drilling machine, guarantee drill hole accurately.

Optional Machining Equipment: Four - roll gun drill / CNC Drilling machine (HMZK1150 / HMZKD900) / CNC

Countersinking machine (DJCKS-1200 / DJCKS-800);

Referring to [Ring-die Manufacture from China Scheme](#)-- Four - roll Gun Drill / CNC drilling machine / CNC Horizontal Countersinking Machine

■ Keyseat to fix the position of key groove

Optional Machining Equipment: Flange hole keyseat milling machine (FDM1515) / CNC Ring-Die Heavy Vertical Lathe*machining center (CK5112ATC/CK5116ATC) / Universal milling machine + Radial drilling machine

■ Heat Treatment: For X46Cr13 (4Cr13), By China vacuum furnace to HRC54 \pm 2 hardness;

Ring die for wood pellet mill: X46Cr13 (4Cr13): HRC54 -56; SAE-4140(42CrMo): 50-52HRC; 20CrMnTi: 60 - 62HRC

Ring die for feed pellet mill: X46Cr13 (4Cr13): HRC52 -54; 20CrMnTi: 58 - 60HRC;

Roller shell: SAE-4140(42CrMo): 51-54HRC; 20CrMnTi:50-52HRC (Cementation: 1.4-1.5mm)

Optional Heat Treatment Equipment:

- Vertical vacuum gas quenching furnace (6 bar) cooling with nitrogen GAS, Max. Temperature: 1320°C (For tempering dies in 4Cr13)
- Pit type gas cementation furnace (1050 °C) (For make cementation dies in material 20MnCr5: 2-3mm; 7 hours at least)
- Pit type cylindrical tempering furnace (650 °C) (For tempered dies in 20MnCr5 and X46Cr13 after making hardest surface)
- Ultrasonic cleaning machine (for clean dies in material X46CR13 and 20MnCr5 before putting inside furnaces)
- Quenching oil tank (With heating & cooling oil circulation (For cooling dies 20MnCr5 after pit type gas cementation)

■ Finish turning to proper size

Optional Machining Equipment: CNC Ring-Die Heavy Vertical Lathe (CK5112ATC/CK5116ATC);

■ Lapping & Blast cleaning finished products to remove oxide and increase smoothness

Optional Machining Equipment: Full-automatic CNC Lapping & Cleaning Machine (CR1200)

■ Quality Inspection: Measuring each size according to final drawing / Inspecting hole's smooth finish /

Hardness inspected by sclerometer;

■ Grease anti-corrosive oil to sustain shipment

■ Pneumatic Portable Industrial Marker; Model No.:BK-100A

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1. Ring-die Manufacture from China Scheme--Forged rings



Forged Ring State



Delivery State with 5mm allowance



Profiled Forged Ring State



Delivery State with 5mm allowance



Inspection



Container Loading

Inspection Instrument: Ultrasonic Flaw Detector:RFD8000

Material: X46Cr13(4Cr13/INOX) / SAE-8620(20CrNiMo) / 20CrMnTi(20MnCr5) (for ring-die);
SAE-4140 / 20CrMnTi (20MnCr5)/ 40Cr / SAE-1045 (for Roller shell)

Item Name: Forged Ring

[Technical Specification]

DIN Standard	X46Cr13(INOX)	20CrNiMo&20CrMnTi and 42CrMo
Other Grade	AISI 420	AISI8620 and AISI4140
Material Type	Stainless Steel	Alloy Steel
Hardness	2x soft annealed max. 207HB	Annealed to 170-210 HB
Material Allowance	+5.0 mm (OD, H) radius / -5.0 mm (ID) radius	
Surface Finished	Machined(rough turned with material allowance)	
US Test /Inspection	SEP 1921 PG3, D, d (12/84) /EN 10204 / 3.1 (CA, BHN, US)	
Grain Size	(ASTM E112) 6-8 ASTM	

[Chemical Composition]

DIN	X46Cr13	AISI 8620	AISI 4140	20CrMnTi
Werkstoff No.:	1.4034	1.6523	1.7225	
C%	0.42-0.50	0.18-0.23	0.38-0.43	0.17-0.23
Mn%	<1.00	0.70-0.90	0.75-1.00	0.80-1.10
P%	<0.030	0.040	0.035	<0.035
S%	<0.030	0.040	0.035	<0.035
Si%	<1.00	0.20-0.35	0.20-0.35	0.17-0.37
Ni%	0.21-0.3	0.40-0.70		<0.30
Cr%	12.5-14.5	0.40-0.60	0.80-1.10	1.00-1.30
Mo%	<1.00	0.15-0.25	0.15-0.25	<0.25
Ti%				0.04-0.10

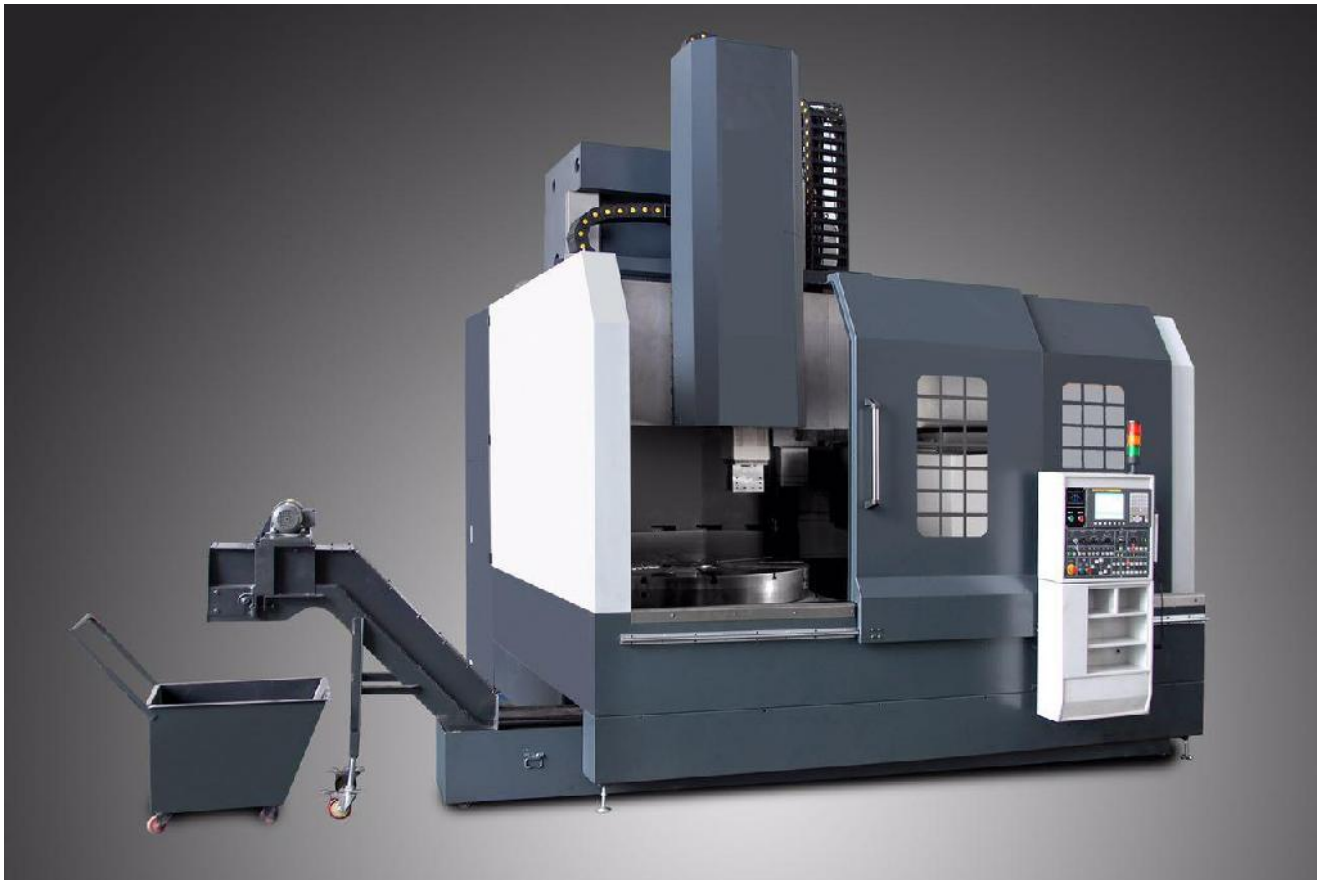
[SUPPLIED DOCUMENTS]

Chemical Analysis Certificate / Ultrasonic Test Certificate / Mechanical Properties Certificate / Hardness Certificate / Grain Size Certificate / Charge Identification (Order x Item)

NOTES: FORGINGS SHALL NOT BE WELDED OR REPAIRED.

About the **working videos**, please refer to <https://www.youtube.com/dashboard?o=U> & <https://www.facebook.com/Forged-ring-228723964176244>

2. Ring-die Manufacture from China Scheme-- CNC Vertical Lathe



CNC Ring-Die Heavy Vertical Lathe (CK5112ATC/CK5116ATC) -- The most ideal ,

unique lathe for ring die machining (Rough turning / Semi-turning / Finish Turning), It can do the finish turning on the material with the hardness to HRC65(Precision Grade $\pm 0.05\text{mm}$) and the roughness to Ra1.1. the grinding lathe is unnecessary during ring-die process.

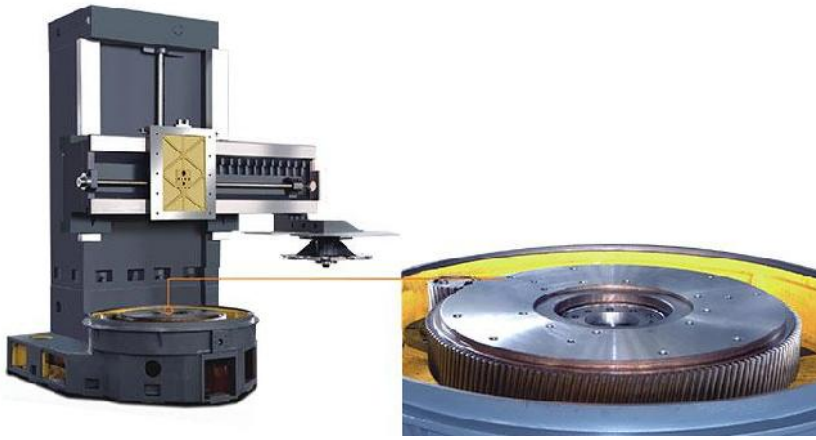
High precision、High Rigidity、Heavy Cutting、High Efficiency

- The beam and base adopt the excellent resin bonded sand cast iron、thick rib plate and multi-layer body structure after normalization to ensure the equipment's **high rigidity and stability** ;
- The stand column and beam adopt wide MBI guideway with perfect **loading capacity and shockproof function** ;
- The beam adopts steel guideway and rolling & sliding composite structure with **small friction resistance and long service life** ;
- Ram adopts the perfect alloy-steel forgings with high density、high strength and abrasion resistance ;
- Great gear with precision grinding function together with **ZF gearbox from Germany** ensure the lathe output with big torque and high speed, 16 step mechanic gear shift or AC Variable frequency combined 4 step gear shift for the master drive's option.

Excellent Composite Function

- The second main shaft in BT50 Structure can **directly install** the standard BT50 drilling bits, milling bits and grinding wheel for the corresponding machining process ;
- The workbench with high precision indexing plate along CF axis and **the self-centering hydraulic brake unit** ensure this machine to run the composite function well.

ATC Tooling System



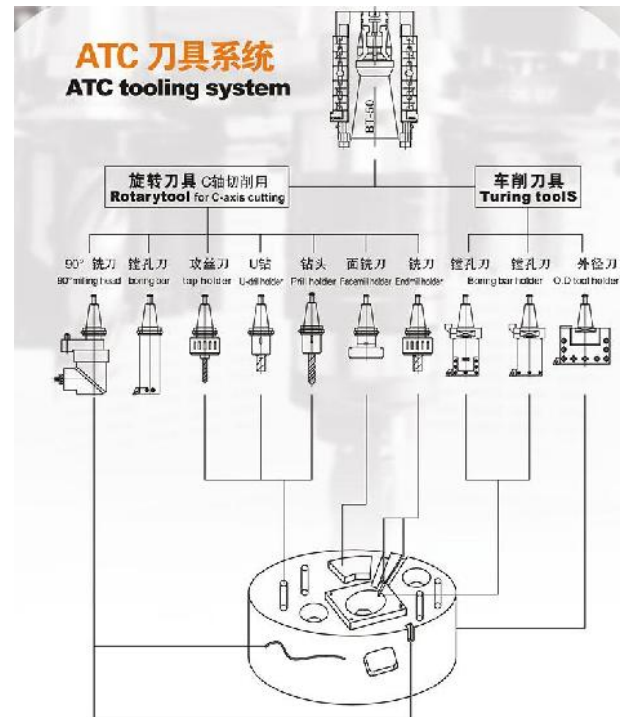
High Rigidity



Solid Base and Gearbox from Germany



Excellent Composite Function

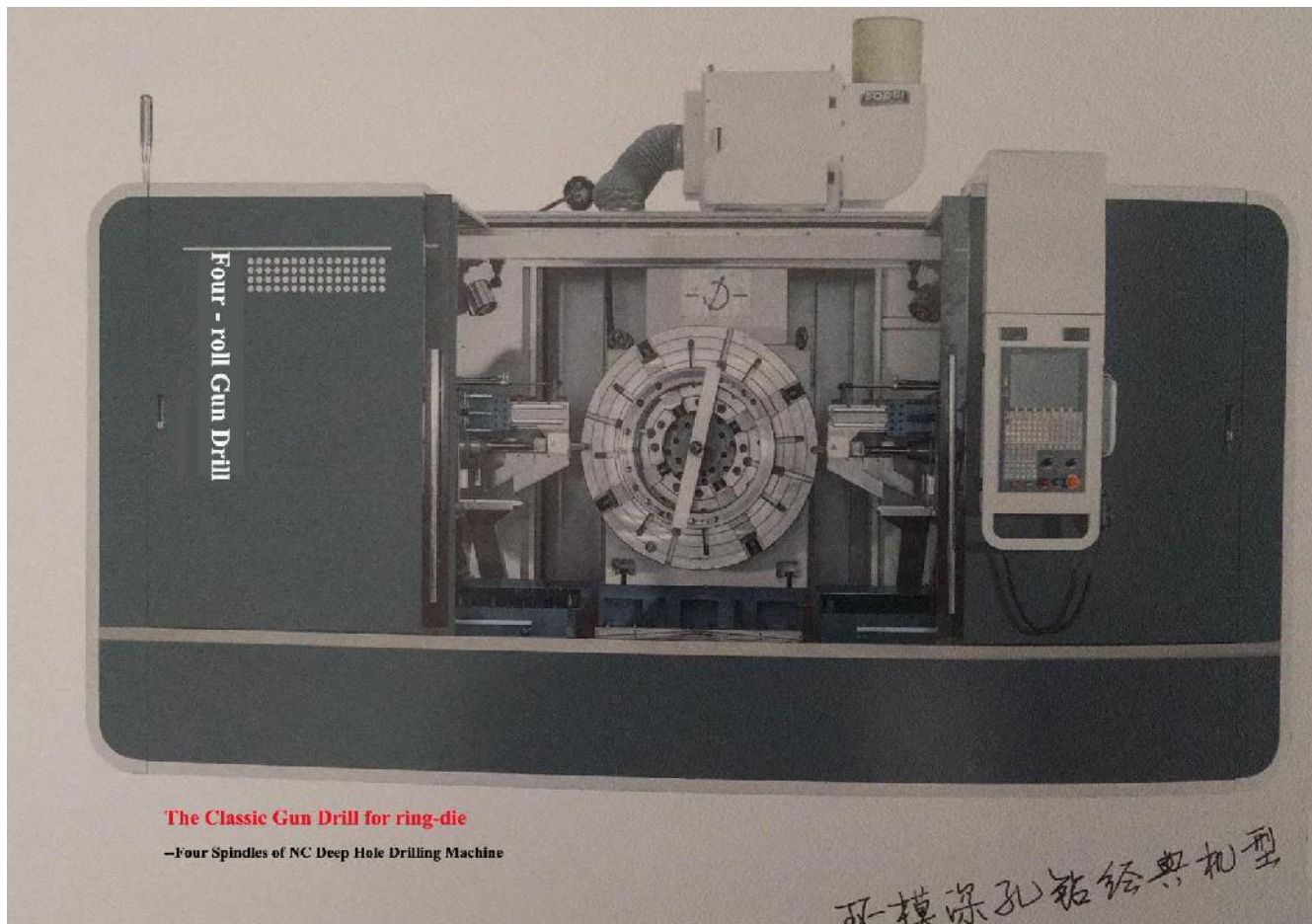


Key Technical Parameters:

Model	CJK5112	CJK5116	CJK5120
Max Cutting workpiece Diameter	1250mm	1600mm	2000mm
Workbench diameter	1000mm	1400mm	1800mm
Max workpiece height	1000/1200/1400/1600mm	1000/1200/1400/1600mm	1250/1600/1800mm
Max workpiece weight	5 ton	8 ton	10 ton
Max cutting force	20kn	25kn	30kn
Max cutting force of slant cutter frame	20kn	20kn	20kn
Total cutting force	35kn	40kn	45kn
Max torque of workbench	17.5kn.m	25kn.m	32kn.m
Circular speed range of workbench	6.3-200 r/min	5-160 r/min	3.2-100 r/min
Max slant degree of vertical cutter frame	±30°	±30°	±30°
Feeding grade of of vertical cutter frame	stepless	stepless	stepless
Feeding range of of vertical cutter frame	0.1-500 mm/min	0.1-500 mm/min	0.1-500 mm/min
Feeding range of of slant cutter frame	0.25-90 mm/min	0.25-90 mm/min	0.25-90 mm/min
Beam moving range	650/850/1050/1250 mm	650/850/1050/1250mm	900/1250/1750mm
Beam moving speed	440 mm/min	440 mm/min	440 mm/min
Vertical travel of vertical cutter frame	650/800 mm	800/1000/1100 mm	800/1000/1100 mm
Horizontal travel of vertical cutter frame	750 mm	950 mm	1200 mm
Moving speed of vertical cutter frame	3000 mm/min	3000 mm/min	1800 mm/min
Vertical travel of slant cutter frame	900 mm	900 mm	900 mm
Horizontal travel of slant cutter frame	630 mm	630 mm	630 mm
Moving speed of slant cutter frame	1800 mm/min	1800 mm/min	1800 mm/min
Cutter bar cross section size (W * H)	40*40 mm	40*40 mm	40*40 mm
Main motor power	22 Kw	30 Kw	37 Kw
CNC System	FANUC / SIEMENS / GUANGSHU / HUAZHONG		
Pendant Hand-held controllers	TOSOKU from Japan		
Machine Size (L*W*H) (cm)	240*247*350 Working Height:100	283*287*387 Working Height:100	321*405*420 Working Height:125
Machine Weight (ton)	9	12	18
Remarks	<ol style="list-style-type: none"> When the vertical cutter frame is chose as the slant ram,the vertical travel can't be prolonged; The first parameter is listed as the standard configuration if there are several parameters. 		

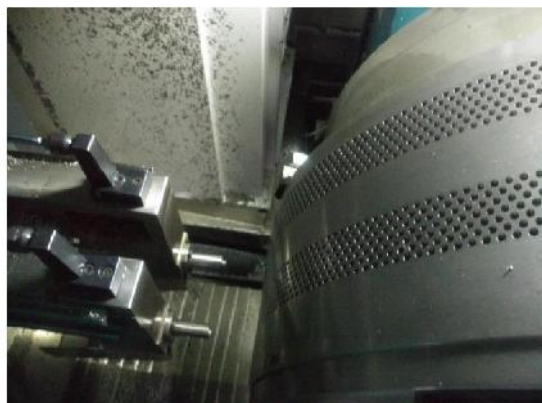
3. Ring-die Manufacture from China Scheme

---CNC Four - roll Gun Drill



The Classic deep hole drilling machine for ring - die

- High performance price ratio classic machine;
- Intelligent control, Stable & reliable;
- Humanized operation, easy to learn;
- The preferred machine of ring-die manufacturers;
- Ring-die **dedicated drilling system**, Mature hardware and software systems, user-friendly, intuitive interface, stable performance, no programming, the relevant parameters of the hole through the CNC system interface can be filled.
- Motors with anti-oil, anti-corrosive function etc.





Front View



AC Cooling System



Hydraulic System



Automatic Scrapes Removal System



Container Loading (1)



Container Loading (2)

Key Technical Parameters: CNC 4-roll gun drill for ring die

No	Component	Parameter	Features
1	NC Control System	Z228i Special System	User friendly, intuitive interface, stable performance, no programming required.
2	Spindle number	4 spindles	Each Spindle RPM real-time monitor
3	Spindle RPM	0-15000 r/min	Frequency control, free rotating speed monitor setting
4	Tool fitting way	Plug-in type+ ER20 collect lock	Combine both advantage of the fitting ways
5	Tool holder applicable range	Ø4、 Ø10	Fully compatible with various size f drill bits holder in this field
6	Drilling range	Ø1 ~ Ø6 mm	Auto load the machining data of different hole (pressure / feed / rotation speed)
7	Spindle Oil Supply Method	Direct Oil Supply	DEUBLIN from USA rotating joint for direct oil supply
8	Spindle Oil Supply Switch	4 axis independent high-speed switch	Convenient for stop the oil supply to the redundant spindle when drilling the left single row.
9	Spindle belt protection	yes	
10	Drill bit space display	NC System digital display, alarm protection	Auto compute the drill bit space, real-time digit display, with position tolerance alarm, Totally avoid manual error
11	Spindle space adjustment range	50~150 mm	The smallest drill bit spacing,the biggest drill bit space in this field can effectively reduce the left non-drilled rows for the ring die of different size, greatly shorten process time.
12	Max Outer Diameter	Ø1160 mm	
13	Min Inner Diameter	Ø300mm	
14	Max Die Thickness	≤120MM	Can drill 150mm thickness with long-end tool
15	Max Die Height	550 mm	
16	Max Die Weight	600KG	
17	Die clamping way	4 jaw independent chuck	Easy to adjust
18	Turn-key die adjustment		special system unique die-alignment design
19	Guide slide-arm structure	Double linear guide rail	Unique design, flexible cylinder control, more convenient to use (Patented Design)
20	Remaining process time	Auto compute	Real-time update according to feed rate
21	Drill bits spacing / Remaining row	Auto compute	One key realize, no need to compute by user
22	Back to appointed row & hole function	Auto react	Input the appointed row and hole number then enter
23	Side rows relief hole depth control	Intelligent calculation	Side rows relief hole special depth mode
24	Even number hole check		Avoid wrong input in the hole number by hand
25	Tool - sharpen hint		Countdown counting
26	Feed speed range	≤1500 mm/min	Multi-step different speed flexible feed acceleration, unique design, good for the drill bits
27	Fast forward / back speed	≤6000 mm/min	Multi grade option
28	Approach speed	120~1200 mm/min	Especially suitable for decompression drilling, high efficiency
Main Parts			
29	NC Rotary Table	Yantai -universal	
30	Main spindle bearing	FAG / NSK	
31	Main spindle motor	4x2.2KW Variable Frequency motor	
32	Spindle Frequency Converter	Mitsubishi	

33	Electrical Components	Schneider	
34	Wiring terminal	Phoenix	
35	Electric cabinet Air Conditioner	WORLDER (Wuxi)	
36	Oil Mist Purifier	BODHI(Wuxi)	
37	Ball Screw	HIWIN (TAIWAN)	
38	Linear guide rail	HIWIN (TAIWAN)	X axis uses cylindrical roller heavy load linear guide rail
39	Machine Frame Material	Whole work-piece casting	Meehanite cast iron whole piece casting, high deformation resistance, long term stable precision
Hydraulic, Filtration, Cooling, Scrapes Removal System			
40	High Pressure Oil Pump	MOOG(German) * 2; Double pumps set solution	
41	Max pressure	18Mpa	
42	Oil Pressure Control		
43	Max flow	75L / Min	
44	Oil Filtration	Multi grade filtering	4 grade filtering: strong magnet + precipitation + strong magnet + filter cloth fine filtration
45	Filter fineness	10 Um	Nylon filter cloth can repeatedly use after cleaning
46	Tank Capacity	1000L	
47	Oil Cooling	Oil cooling device (Compressor refrigerating) or Water Cooling device (Plate heat ex-changer); Equip according to customer machine quantity to save energy	
48	Auto scrapes cleaner	Magnetic scrapes cleaner	Can set the start-stop interval time
49	Scrapes collect cart	Yes	Double layer trolley, upper layer for scrapes, bottom layer for oil, recycle every drop of oil
Machining Accuracy			
50	Drilling slant deviation	≤1/1000	Length-diameter smaller than 100
51	Drilling Size Precision	IT7~IT10	refer to 45# steel, thermal refining
52	Drilling roughness	Ra0.4~Ra0.8	Far higher than the industry standard Ra0.8
53	Hole dividing Isosceles error	<0.03mm	Measure the ring die at 500mm (outer diameter)
54	Hole dividing joint error	<0.06mm	Measure the ring die at 500mm (outer diameter)
Machine Power Supply (Total Power: 23KW)			
55	Main Spindle motor power	8.8KW	With energy-saving control
56	Indexing motor power	2KW	Servo motor for Workpiece rotary
57	Oil pump motor power	7.5KW + 5.5 KW	Double pump set, arbitrary switched start-stop
58	Feed Servo motor power	1.5KW	
59	Oil cooler power	3KW	Real - time temperature control
Size and Weight			
60	Dimension : (L*W*H)	3700*2000*2700 (mm)	
61	Main Machine Weight	7500KG	
62	Hydraulic system weight	800KG	

4. Ring-die Manufacture from China Scheme-- CNC Drilling Machine



Item Name: Full-automatic CNC Drilling Machine for Ring-die & Roller Shells

[Mechanic Brief Description]

This full-automatic CNC drilling machine for ring-die and roller shells is specially designed for fine machining for ring die and roller shells with such advantages as Low investment cost/High Efficiency/Good drilling Quality/Stable Function etc; The electric control system consists of high sensitive CNC system with variable frequency control & servo motor. The motion system consists of screw rod(ball-spindle)& rail with high precision.

Equipment's Features & Function:

- Hole number can be arbitrarily set as per your requirement, Equal hole spacing, Positioning accuracy up to 0.001mm.
- Full automatic processing, free processing **speed adjustment** (the falling speed / rotate speed of drill chuck and indexing speed of universal indexing plate). unique cutting craft. Greatly reduce the tool wearing speed and extend the life time.
- Release hole **depth** of different row can be set at once, Automatic detection in processing.
- **Drilling bit torque upper and lower limit setting avoid the drilling bit breaking.** the wear on drilling bit can be monitored at any time thus it can effectively prevent the drill-bit breaking unexpectedly.
- The falling depth of drill chuck can be set at will; the semi-finished holes can be conveniently improved by hand.
- Pause / Start at any time, Directly start drilling after tool replacement, no need to align hole.
- Memory function when power –off.
- One man can operate several machines, double working efficiency.
- Easy Operation, user can learn how to operate in 5 minutes. Hole diameter input complete in one minute.



Single - Roll CNC Drilling Machine for Ring-Die



Double - Roll CNC Drilling Machine for Ring -Die



Double -Roll CNC Drilling Machine for Roller Shell

Key Technical Parameters:

Model	HMZK - 900	HMZK - 1150	YLZK-500
Horizontal Stroke	400mm	450mm	400mm
Z axis stroke	300mm	320mm	200mm
Drilling Diameter	φ2.0~φ5.0 or φ6.0~φ16.0	φ2.0~φ5.0 or φ6.0~φ16.0	≤ φ 10
Ring Die Diameter	350mm (min ID), 900mm (Max OD)	400mm (min ID), 1150mm (Max OD)	120mm (min ID), 650mm (Max OD)
Ring Die Width	≤500mm	≤500mm	Roller shell Width ≤300mm
Positioning accuracy	0.02mm	0.02mm	0.02mm
Spindle Speed	0-3000rpm	0-3000rpm	0-3000rpm
Fast Moving speed	X axis: 12000; Z axis: 10000mm/min		
Spindle power	Taiwan Dongli brand, 1.5KW-4P	2.2KW-4P	Taiwan Dongli brand, 1.5KW-4P
System language	Chinese / English	Chinese / English	Chinese / English
Equipment Size	1873 × 1194 × 2120mm	1873 × 1194 × 2420mm	1770× 920× 2340mm
NC Control System	from www.leisai.com	from www.leisai.com	from www.leisai.com
Weight	1200KG	1375KG	1000KG
Power requirement	220 / 380V, 50/60Hz	220 / 380V,50/60Hz	220 / 380V, 50/60Hz

No	Main components specification		
1	Taiwan Lead Screw	2pcs	Precision grade
2	Taiwan Linear guide rail	4sets	Precision grade
3	CNC Control System www.maxsine.com	1set	Including 3 sets of servo drive & motor
4	Electric cabinet	1 set	Schneider components
5	Pendant Hand-held controllers	1 set	Convenient for drilling control
6	Universal indexing rotary plate	1pc	Suit for all the die size below the diameter limit
7	Cooling tank	1 set	Water pump, lubricator
8	Total power		3KW
Remarks: 1) No Programming required the machine has easy type of operation function, Directly input drilling parameter. 2)Client factory power requirement (customized)			

Attached spare tools with machine			
Item	Tools	Size	QTY
1	Open wrench 1	24 ~ 27	1 PC
2	Open wrench 2	30 ~ 32	1 PC
3	Hex Key 1	6mm	1 PC
4	Hex Key 2	12mm	1 PC
5	ER20 Collect chuck	4 ~ 12	1 set
6	Anchor screw	M16*40	4 PCS

Range of application: This machine is used for drilling to all kinds of holes on **the ring die and roller shells.**

5. Ring-die Manufacture from China Scheme

-- CNC Horizontal Countersinking Machine



Item Name: Full-automatic CNC Horizontal Countersinking Machine for Ring-die

[Mechanic Brief Description]

Self-development、 manufactured 、 sold by us, This full-automatic **CNC Horizontal countersinking machine** for ring-die is the rare equipment presently in China which specially aimed at the countersinking process for ring die; The electric control system consists of high sensitive CNC system with variable frequency control & servo motor. The motion system consists of screw rod (ball spindle) & rail with high precision.

Equipment's Features & Function:

- With **Countersinking、 Drilling Relief hole** function
- Fast machining speed, fully automatic processing;
- Simple operation, no professional training required;
- Ring die size self adapt to process, no need measuring ;
- One man can operate several machines, double working efficiency;
- All the exposed lead screws and guide rails are protected with cover to extend this machine service life
- The chamfer is even and beautiful with uniform depth.
- It effectively makes up for the deficiencies countersinking by hand with different depth and low efficiency.

Vertical Series and Horizontal Series for your option:

Vertical Series: Because the ring-die is set in vertical direction and is supported by two roller-assemblies, when the ring-die rotates, the roller-assembly can slip relative to the ring-die sometimes so that **the indexing isn't very accurate**. because there is the sliding phenomenon between the ring die and the supporting roller, the machining **hole quality isn't very good** either and holes occur a little deviation from time to time. the users will often make the adjustment. Therefore **the operation is more complicate**. Likely, Because of the sliding phenomenon, the ring die's rotation speed can't be very high therefore **the efficiency isn't very good either**.

Therefore, this vertical series are only suitable for chamfer to those finished holes with single function such as maintenance on ring-die of pellet mill.

Horizontal Series: Compared with the vertical CNC countersinking machine, our horizontal CNC countersinking machines made a great improvement on the above disadvantage. The ring-die is fixed on the universal indexing plate thus the indexing is accurate and ensures the chamfer quality to the ring-die. Despite our Horizontal CNC countersinking machine is more expensive than Vertical CNC countersinking machine, the holes' quality and effect is much better. Besides, Our horizontal CNC countersinking machine has the following three function: **chamfer, relief hole/reaming, drilling screw hole** on the same fixture / holder

Key Technical Parameters:

Model	DJCKS - 800	DJCKS - 1200
Horizontal Stroke	920mm	1420mm
Z axis stroke	500mm	500mm
Chamfer Diameter	≤φ12	≤φ12
Ring Die Diameter	350mm (min ID), 900mm (Max OD)	400mm (min ID), 1400mm (Max OD)
Ring Die Width	≤500mm	≤500mm
Positioning accuracy	0.02mm	0.02mm
Spindle Speed	0-3000rpm	0-3000rpm
Fast Moving speed	X axis: 12000; Z axis: 10000mm/min	
Spindle power	Taiwan Dongli brand, 2.2KW-4P	
System language	Chinese / English	Chinese / English
Equipment Size	2900×1000×2565mm	2900×1000×2565mm
NC Control System	from www.leisai.com	from www.leisai.com
Weight	2200KG	2350KG
Power requirement	220 / 380V, 50/60Hz	220 / 380V,50/60Hz

No	Main components specification		
1	Taiwan Lead Screw	2pcs	Precision grade
2	Taiwan Linear guide rail	4sets	Precision grade
3	CNC Control System www.maxsine.com	1set	Including 3 sets of servo drive & motor
4	Electric cabinet	1 set	Schneider components
5	Pendant Hand-held controllers	1 set	Convenient for drilling control
6	Universal indexing rotary plate	1pc	Suit for all the die size below the diameter limit
7	Cooling tank	1 set	Water pump, lubricator
8	Total power		3KW
Remarks: 1) No Programming required, the machine has easy type of operation function, Directly input chamfer parameter. 2) Client factory power requirement (customized)			

Attached spare tools with machine

Item	Tools	Size	QTY
1	Proximity switch		1 PC
2	Hex Key 1	1.5-10mm	1 PC
3	Anchor screw	M16*40	4 PCS

Range of application: This machine is used for chamfer to all kinds of holes. It can connect to multi-axis machine and process many holes once.

6. Ring-die Manufacture from China Scheme

-- CNC Flange Drill & Keyway Milling Machine



Unique Flange Drill &Keyway Milling Machine

环模专用钻铣



Item Name: CNC Flange Drill & Keyway Milling Machine for ring-die

Equipment's Features & Function:

- **With 4 in 1 function:** Drilling flange hole and flat die, Milling the keyway and tapping.
- Special design for the ring-die process, High quality & Economical use.
- Small body, large stroke and high rigidity.
- The integrated machining for the flange hole and keyway on the ring die.
- Only input the ring-die diameter, installation / flange hole number , keyway width and groove depth, the process is automatically done by the machine.
- **A key switch between drilling and milling process.**
- Friendly man-machine interface can be only input the processing parameters.
- High-precision on milling slot and drilling, no need to draw lines operation on the ring die.
- Full-automatic drilling and milling the groove, the batch processing can be executed on this machine.
- Worktable with the overall casting, increasing machine load capacity.
- BT30 spindle with pneumatic cutting function & high precision, the cutting tool can be easily and swiftly changed.
- Professional customized CNC system to ensure the machining reliability and Stability.
- With long Z-axis travel, Most ring dies with various thickness can be processed.

Key Technical Parameters:

Control Axis QTY	3	Spindle Travel Range (X × Y)	1500 × 1500 mm
Workbench Space (L × W)	1500 × 1500 mm	Axis Z travel Range	550mm
Spindle Specification	BT30	Spindle Speed	0-3000rpm
Scope of drilling	Φ 30	Tool Change Mode	Pneumatic cutting
The clamping way	Customized JIG	Main-Axis Power	3.7KW
Machine Weight	4680KG	Dimension (L×W × H)	2420 × 2300 ×2354 mm

7.Ring-die Manufacture from China Scheme

-- VERTICAL VACUUM GAS-QUENCHING FURNACE



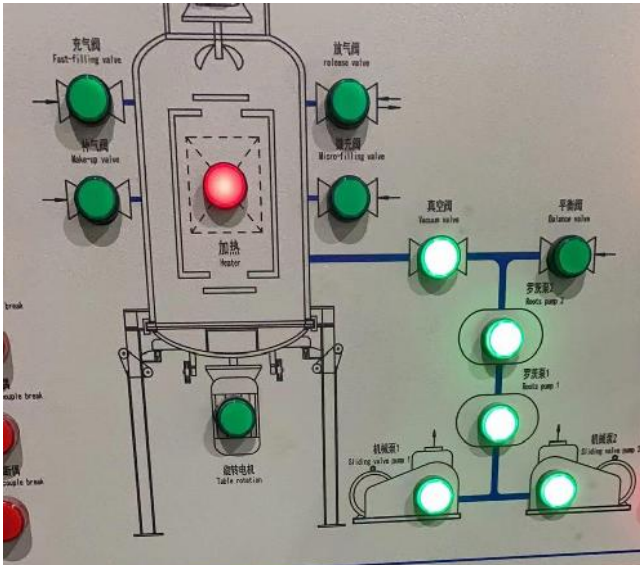
Item Name: VERTICAL HIGH-PRESSURE GAS QUENCHING VACUUM FURNACE

Model: HZQL-200 / HZQL-300 / HZQL-450

Equipment's Usage & Formation:

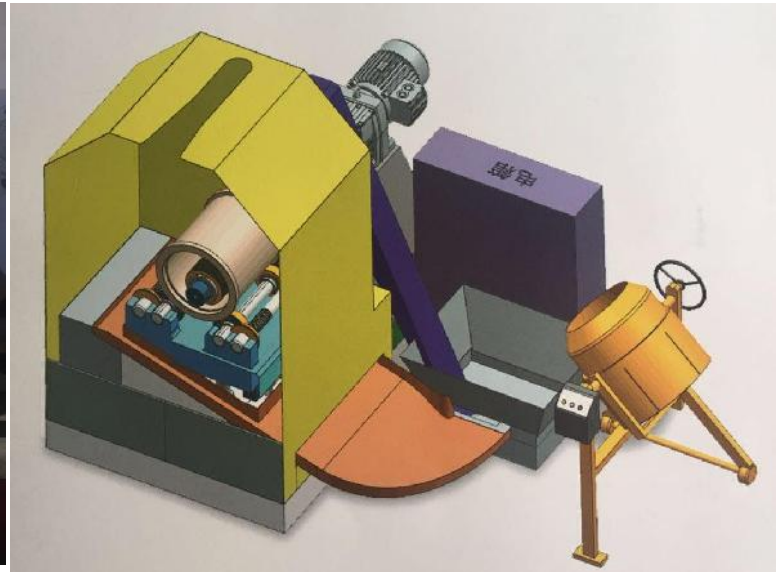
Model: **HZQL-300 / HZQL-450** Vertical high pressure gas quenching vacuum furnace, mainly used for high speed steel, cold and hot die steel, stainless steel, elastic alloys, high temperature alloy material such as vacuum heat treatment; the equipment has high reliability and continuous working ability, high automation, easy operation, automatic alarm & protection system perfect and reliable, and accessories of compact design, easy maintenance, good service after sales, safety and environmental protection in line with the state standards. It can produce high quality vacuum heat treatment products according to different sizes of heat treatment workpiece, mainly used in heat treatment process such as quenching under high vacuum and no oxidation;

HZQL-300 / HZQL-450 Vertical high pressure gas quenching vacuum furnace adopts **graphite or alloy-steel :Cr25Ni20 as the heating resource**. The furnace is Vertical, single chamber, double layer water wall structure (bottom loading). This vacuum furnace is made up of the furnace host, vacuum system, recharge gas system, gas cooling system, pneumatic system, water cooling system, electric control system and so on.



8. Ring-die Manufacture from China Scheme

-- CNC Lapping & Blast Cleaning Machine for Ring-die



Item Name: Full-automatic CNC Lapping & Blast Cleaning Machine for Ring-die

Model: CR1200

[Mechanic Brief Description]

For a new ring die, Considering the roughness of holes after the normal heat treatment (except for the vacuum furnace:0.8 Ra or so) is around 1.50 Microns RA, the ring die suppliers need a **machine** to reduce the roughness to 0.8 Microns so that they can deliver a brand-new ring die with the **finishing surface of holes like mirror** to their customers ; This machine is just our CNC Feeding material machine CR1200, it can remove oxide and polish those holes from all kinds of ring dies which are equipped on the feed pellet mill、 wood pellet mill and other biomass pellet mill like straw、 bamboo、 sugarcane pellet mill.

Equipment's Features & Function:

- With **cleaning and rust prevention** function for new ring dies
- Fast machining speed, fully automatic processing;
- Simple operation, no professional training required;
- Ring die outer diameter range: 400-1200mm;
- Max ring die height: 500mm, thickness: 100mm, weight: 2000kg;
- Max Roller-assembly speed :220rpm
- Feeding ring die hole diameter range: 0.8-9mm
- Total Power: 11KW
- Machine Size: 2200*1200*2400mm, Weight: 3500KG.

Range of application: This machine is used for polishing those holes from all kinds of ring dies

9. Ring-die Manufacture from China Scheme-- Ring-die



[Brief Introduction]

Ring-die is divided into two kinds according to the raw material type: one is Stainless Steel Ring-die[X46Cr13 / INOX (4Cr13)], the other is Alloy-Steel Ring-die [20CrNiMo(SAE-8620) or 20CrMnTi(20MnCr5)]

[Technical Specification]

Stainless Steel Ring-die: Material Type:X46Cr13 / INOX (4Cr13); Hardness: HRC54 -56(For wood pellet mill); HRC52 -54(For feed pellet mill);

Alloy-Steel Ring-die: Material Type: 20CrNiMo(SAE-8620) or 20CrMnTi(20MnCr5);Hardness: HRC60 -62(For wood pellet mill); HRC58-60(For feed pellet mill);

[Chemical Specification]

DIN	Stoff nr	C%	Mn%	P%	S%	Si%	Ni%	Cr%	Mo%	Ti%
X46Cr13	1.4034	0.42 - 0.50	<1,000	<0.040	<0.030	<1,000	<1,000	12.5-14.5		
SAE-8620	1.6523	0.18- 0.23	0.7- 0.9	<0.04	<0.04	0.2-0.35	0.4-0.7	0.4-0.6	0.15-0.25	
20CrMnTi		0.17-0.23	0.8-1.1	<0.035	<0.035	0.17-0.37	<0.30	1.0-1.3	<0.25	0.04-0.10

Range of application: These matrices will be done strictly according to the customer's drawing or requirement.

They can be used as all kinds of **feed pellet mill** or **wood pellet mill**.

10. Ring-die Maintenance from China Scheme

-- CNC Refurbishing machine for maintenance on ring die



Item Name: Unique CNC Refurbishing Machine for Ring-die

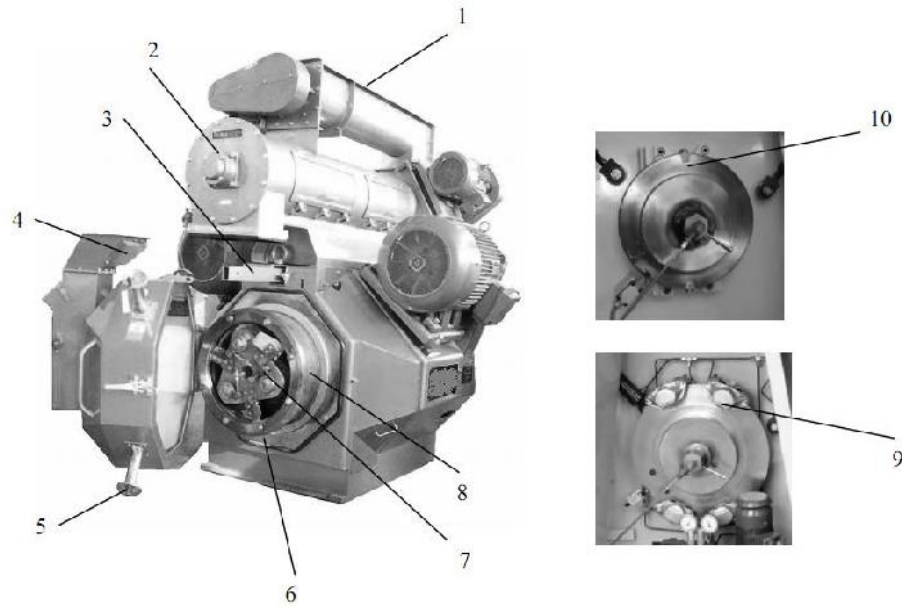
[Mechanic Brief Description]

In order to save the production cost and go on using the used ring die, the feed plant has been looking for an integrated machine with **both countersinking function and grinding the internal diameter** of the ring die to repair the used ring die and prolong its service life. With this goal, our CNC Refurbishing Machine came into being. It is the **only equipment** presently in China which specially aimed at the **maintenance process** of ring dies **on one machine**.

Equipment's Features & Function:

- With **Countersinking**、 **Grinding the internal diameter of ring dies** and **hole cleaning** function
- Fast machining speed, fully-automatic processing
- Simple Operation, no professional training required
- One person can operate several machines
- Ring die size self adapt to process, no need measuring
- All the exposed lead screws and guide rails are protected with cover to extend the machine service life.
- The chamfer is even and beautiful with uniform depth.
- It effectively makes up for the deficiencies countersinking by hand with different depth and low efficiency

Range of application: This machine is specially used for **maintenance on all kinds of ring dies** in the feed plant or biomass pellet factory.

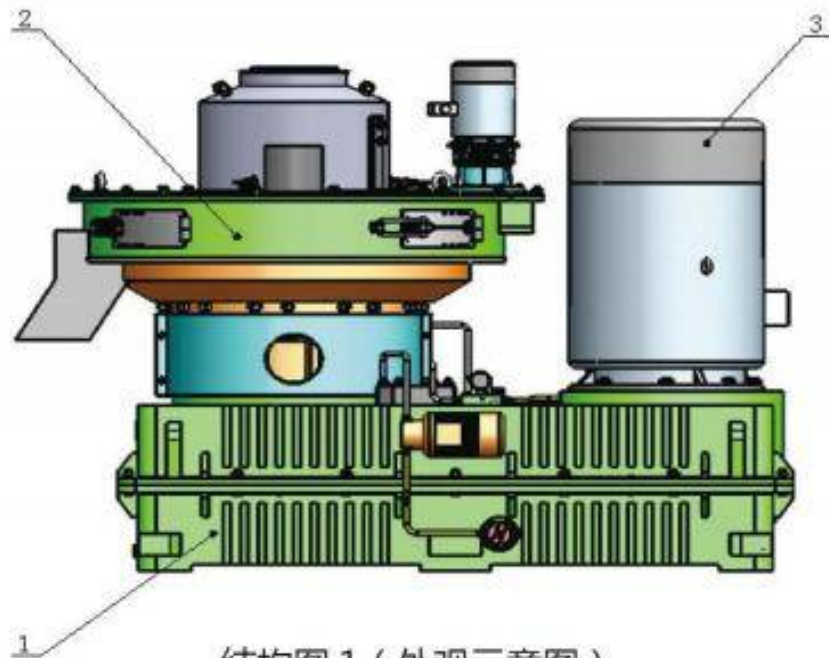


- 1、喂料器 2、调质器 3、提升梁 4、磁铁 5、切刀 6、刮刀
7、压辊 8、环模 9、液压抱箍装置 10、安全锁装置

图 2.1 颗粒机结构图

Feed Pellet Mill

Structure diagram



结构图 1 (外观示意图)

Structure Figure 1 (appearance diagram)

1. 齿轮箱 (Gear box) 2. 制粒部分 (pelleting parts) 3. V1 电机 (V1 motor)

Wood Pellet Mill



Faceplate



Matrice Clamp



Roller Assembly



Roller Shell



Eccentric Shaft



Roller Oil Seal



Roller Cover



Big Gear



Pinion Shaft



Sieves / Screeners



Hammer Beater



Screen Wire Mesh



Splined Shaft



Item Name: CNC Screw Rod Milling Machine

Model: HXK200×4000

[Mechanic Brief Description]

HXK200×4000 CNC screw rod milling machine is a special machine designed for processing spline shaft. Hob head can roll cut splines. High reliability, good rigidity, low price, most suitable for specific users. The machine is equipped with a wide range of 218-MC system.

[Equipment's Features & Function]

- 1、HXK200×4000 CNC spline shaft milling machine has the following characteristics:
Overall bed design, three guide rail layout, guide rail surface high-frequency quenching, good rigidity, high precision. The large drag plate is on two guide rails, and the center frame is on the other two guide rails. The machine tool is equipped with a center frame, and the machine tool has a rolling milling head.
- 2, the milling head using spindle servo motor, through the synchronous wheel + gear + worm and worm drive, can make the milling cutter achieve stepless speed change, wide speed range.
- 3、X axis and Z axis reciprocating motion using ball screw to achieve high precision of repeated positioning.
- 4、C axis drive for worm gear and worm structure, smooth transmission, accurate indexing.
- 5、The saddle is dovetail guide rail with high position accuracy and good speed.
- 6、Spindle bearings are lubricated by oil, which provides low temperature rise, high durability and no need for daily lubrication maintenance.
- 7、The tailstock is mechanical, flexible and reliable.
- 8、The machine is equipped with a wide range of control system.
- 9、The machine is equipped with a chip discharging machine, the iron filings generated in the milling process directly into the chip discharging machine, to ensure the clean working environment.
- 10、The electrical components in the machine control cabinet are delixi brand.

[Key Technical Parameters]

Item	Content	Unit
Usage	Rolling spline	
Bed length	6700	mm
Bed width	800	mm
Bed guide rail type	Three guides	
Maximum/minimum machining diameter	Φ200-Φ50	mm
Maximum workpiece length	5000	mm
Maximum machining modulus	5	mm
Maximum milling spline length	4700	mm
Milling head motor power	5.5 (Servo spindle motor)	KW
Milling head motor speed	1500	r/min
Milling head reduction ratio	1:10	
Milling head tool shaft diameter	Φ32	mm
Spindle diameter of tailstock	Φ130	mm
Maximum stroke of tailstock sleeve	150	mm
Tailstock sleeve mounting taper hole	Morse # 6	
Number of servo control shafts	Workpiece rotation (C-axis)	
	Transverse saddle (Z axis)	
	Longitudinal slide (X axis)	
Numerical control system	Four axis and three linkage	
C axis motor	30	Nm
C axis drive type	Worm gear and worm	China
C axis transmission ratio	1:30	
Maximum speed of axis C	50	r/min (CVT)
C axis positioning accuracy	8	Angle of seconds
C axis chuck specifications	K72-315-A28	
The X axis motor	18	Nm
X axis ball screw specifications	5010	China

X axis guide rail pair type	55 ° dovetail	
X axis positioning accuracy	0.02	mm
The Z axis motor	30	Nm
Z axis ball screw specifications	8010	China
Z-axis bed saddle guide rail pair type	Mountain track + horizontal track	
Cooling water pump	High pressure water pump	450W
Machine tool dimensions	8600×1800×1900	
Machine weight	≈9.5	tons

[Range of application]

This machine is a special machine designed for processing spline shaft.





Item Name: CNC Gear Form Grinding Machine

Model: YK7332A

[Mechanic Brief Description]

YK7332A CNC form gear grinding machine is designed for grinding precision gears which less than diameter of 320mm and special gears for industries of automotive, aviation, transmission and machine tool in batches. And it is especially suitable for grinding high- speed gears and multiple gears with special profile modification or special fillet at tips and roots. Besides, it can also be used for grinding non-involute components like cycloidal gear, rotors of oil pumps, precision splines etc.

[Equipment's Features & Function]

- QIN CHUAN CNC system is chosen for this machine. There are altogether 4 servo axes for this machine: axis X for feed of grinding head, axis Z for movement of grinding head, rotary axis A of grinding head and indexing axis C. Among them, axes X, Z and C are all controlled with semi-closed loop. Imported linear roller guide ways with high precision and rigidity are used for the guide ways of the linear axes X and Z. And precision combined bearings are chosen for the rotary axis of the wheel so as to guarantee the accurate positioning for the helix angle of the grinding head and the high rigidity. A dual worm backlash relieving mechanism is exploited for the indexing axis C to reach the requirement of indexing and positioning accuracy.
- For the motor of the grinding head, a spindle motor with the speed up to 18,000 rpm is used, which meet the needs for small wheels with high periphery speed.
- This machine is designed for using ordinary wheels. Based on the data file created with the form dressing software according to the requirement for profile modification and the fillet curves at the tip and root, the dressing of the wheel is carried out with a diamond roller through the compensation of axes X and Z. The grinding cycle is controlled with the CNC control; and the wheel dressing, compensating, and automatic grinding cycle are finished with one programming.
- The grinding parameters and allowances are displayed automatically. And this machine is characterized as easy

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operation and high grinding accuracy.

- A fully enclosed cover is designed for this machine. A static exhaustion device ensures the clean working environment.
- Paper bag filter system is adopted, together with both large flow capacity coolant pump for cooling of workpiece and an air conditioning system to ensure the satisfaction for the cooling requirement of grinding process and easy maintenance.

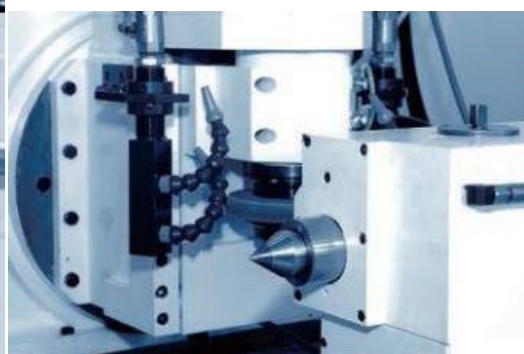
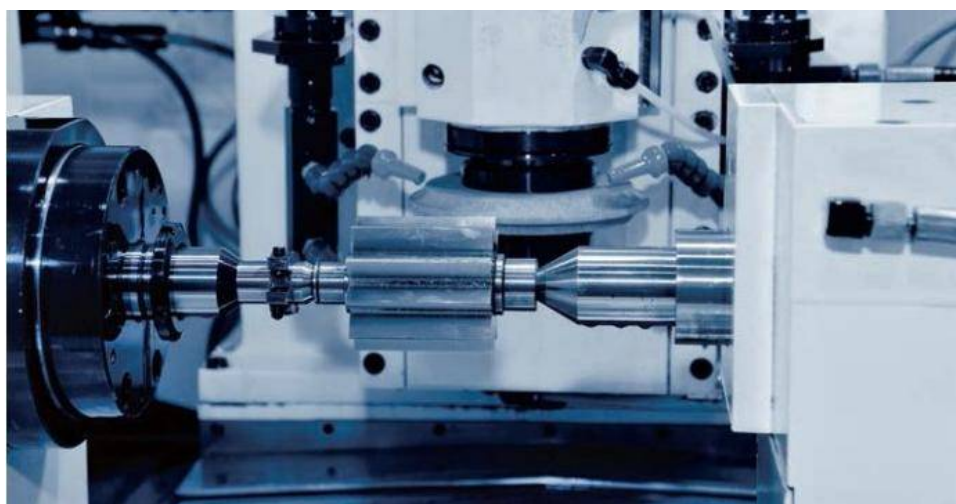
[Key Technical Parameters]

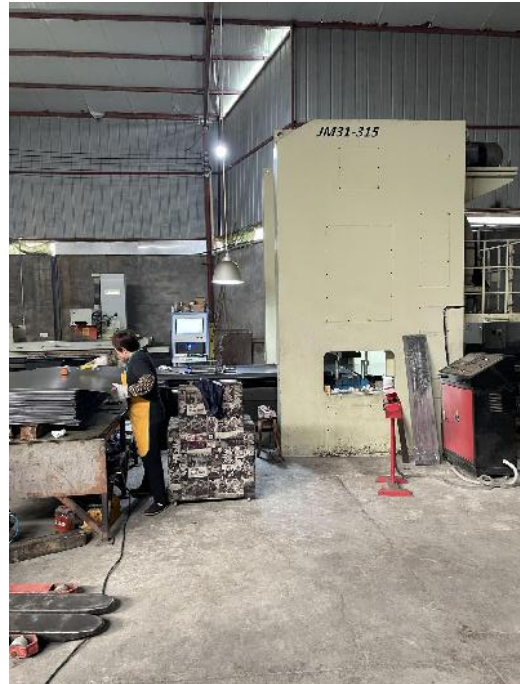
Machine data and working range

<u>Max.~ min. work piece diameter</u>	<u>320-30mm</u>
<u>Max. Normal module</u>	<u>10</u>
<u>Max. Helix angle</u>	<u>±45°</u>
<u>Number of teeth</u>	<u>≥6 (gears without root cut)</u>
<u>Max. Face width</u>	<u>600mm</u>
<u>Periphery speed of wheel</u>	<u>30-50m/sec</u>
<u>Max. Speed for movement of grinding head</u>	<u>10m/min</u>
<u>Max. feed speed of grinding head</u>	<u>6m/min</u>
<u>Max. travel for movement of grinding head</u>	<u>1000mm</u>
<u>Max. Travel for feed of grinding head</u>	<u>250mm</u>

Max. Weight of workpiece

80kg(with fixture)





Item Name: CNC Gantry Press (Straight Single Point with entire frame); **Model:** JM31-315

[Mechanic Brief Description]

CNC Gantry Press (Straight Single Point with entire frame):JM31-315 is improved to produce sieves with holes in diameter from 0.6 to 1.5mm for hammer mills together with one set of special mold and feeding mechanism.

[Equipment's Features & Function]

- High rigidity, high precision and high efficiency;
- Compact transmission structure and strong bearing capacity;
- The slider has beautiful appearance and high guiding accuracy;
- Low transmission noise;
- The copper sleeves have good wear-resistant function;
- Reasonable material selection;
- Electric adjustment of mold height reduces the labor intensity of workers;

[Key Technical Parameters]

Specifications		Code	Unit	Parameter
Nominal Capacity		Pe	KN	3150
Nominal		Sp	mm	8
Slide Stroke		S	mm	250
Max Die Height		H2	mm	500
Die Height Adjustment		t	mm	120
Distance Between Uprights			mm	1400
Upper table size	LxR	a	mm	1200
Slide Bottom Size	FxB	b	mm	750
Die shank hole size	Diameter	d	mm	70
Bolster Thickness	Depth	l	mm	95
Bolster Size	LxR	C	mm	1350
	FxB	D	mm	850
	Blanking hole diameter	φ	mm	400
Side opening dimension			mm	900×500
Bolster Thickness		H3	mm	200
Bolster Surface Height		H1	mm	1050
Motor	Power		KW	30
Weight			KG	31500

[Range of application]

This machine is a **special machine designed for** producing sieves with holes in diameter from 0.6 to 1.5mm for hammer mills.

Forged Bar / Forged Tubes / Forged Tube Peripheral



Forged steel round bar



Forged Tubes



Forged Tubes Perinheral



Full Container Loading



Less than Container Loading

Item Name: Forged Bar / Forged Tubes / Forged Tube Peripheral

[Technical Specification]

DIN Standard	SAE-4145 (42CrMo4)
Other Grade	Werkstoff Nr. 1.7220 - SAE/AISI 4145
Steel Type:	Alloyed Steel
Material Allowance	Dimensions (mm): OD +5/-0, ID ±1,0, Length +10/-0
Heat Treatment	Normalized
Hardness	210 - 240 HB
Granulometry	(ASTM E112): 5 - 8 ASTM austenitic
Cylindricity	According DIN 7184 $\sqrt{R} = 3,0$ mm
Surface Finished	Machined (rough turned with material allowance)
Tolerances	±10% is allowed

[CHEMICAL COMPOSITION]

DIN	SAE-4145
C%	0.43 - 0.48
Si%	0.20 - 0.35
Mn%	0.75 - 1.00
P%	< 0.035
S%	< 0.035
Cr%	0.80 - 1.10
Mo%	0.15 - 0.25

NOTES: BARS SHALL NOT BE WELDED OR REPAIRED

[Technical Requirement]

Steel specification: according to NIF CR-016 (Technical Specification of Supply for forged bar and tubes)

Peripheral Holes: according to NIF CR-028 (Technical Specification of Supply for peripheral bores)

Dimensions and tolerances: according to the drawings

[Documentation & Material Requirements]

1. Chemical Analysis Certificate (of each charge);
2. Ultrasonic Test Certificate ASTM A-388/80
3. Mechanical Properties Certificate;
4. Hardness Test Certificate (of each forged part)
5. Charge identification (order and item) in each forged part;
6. Grain Size Certificate (of each charge);
7. Inspection Protocol (peripheral holes for each forged tube);

Peripheral Hole Dimensional Protocol

Inspection of drilling deviations must be done by ultrasound along the length of the holes. Points A and B must be registered, where the holes are spliced, as the drilling process is done in two stages, from the face to the center of the bar.

Range of application: These forged tubes are used for making the roller on the corrugated machine..

**ITEM NAME:** Twin-Screw Extruder**MODEL NO:** 150*2

[Function and Features]

Highly efficient extruder for aqua feed, food, pet food and raw material treatment, especially sticky formulations.

- **Easy operation**

PLC and touch screen for convenient control; by-pass provided for avoiding blockage; easy operation, precise and reliable.

- **High efficiency**

Optimal chamber groove and screw flight profiles, minimum SME input; efficient DDC conditioner and jacketed barrel with stabilized and facilitated extrusion, maximum energy utilization; unique suspending cutter, adjustment without down time.

- **More flexibility**

Modularized barrel and screw structure with many add-ons, adaptable to varied high-fat or -moisture formulations; controllable temperature, pressure and density, minimizing reconfiguration acquired.

[Main Technical Parameters]

Model		SZTX150×2I	SZTX150×2	YYSP150×2
Capacity (t/h)		3.5 - 6.0	6.0 - 7.5	7.5 - 10.0
Power Of Main Motor (kw)		160 - 6P	200 - 6P	315 - 4P
Conditioner Power (kw)		11 + 15	11+18.5	11+22
Feeder Power (kw)		1.5	2.2	3.0
Dia Of Rotor (mm)		1500	1500	1500

Note: The above data only refers to aqua feed extrusion, for the other applications, please contact us.

Key Spare Parts (Easily-worn Parts)



Splined Screw Segment



Hexagonal Screw Segment



Inner Sleeves



Twin Screw(Main-shaft)



Flat Die for extruder



Modularized Barrel



Pressure Bush

Enterprise Ethics:

- ***Loyalty***

All staff devotes to our cause, all employees are loyal to the enterprise. Every person is loyal to his department.

- ***Sincerity & Trust***

Sincerity & Trust is the base of our enterprise. Not only the enterprise is credible for the market and their clients, But also the boss is credible for their employees.

- ***Harmonious Synthesis***

The products from our enterprise contribute to the human being and are harmonious to the environment. Not only the enterprise is peaceful with the society, but all people in the enterprise can get on well with each other.

- ***Innovation***

The enterprise keeps on innovating in our products to meet the different clients' need. The management system of the enterprise also goes on updating to ensure the enterprise's continuous development and grandness.



CWT

Coincide With the Tide, Create the World's Top

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